MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF

RECONSTRUCTION OF BRIDGE STREET

IN THE CITY OF

BEVERLY

ESSEX COUNTY

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	80
PROJECT FILE NO.	608348		

TITLE SHEET & INDEX

608348_HD8\TITLE SHEET.DWG Plotted on 4-Dec-2017 11:06 AM

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2015, THE 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

25% SUBMITTAL

INDEX

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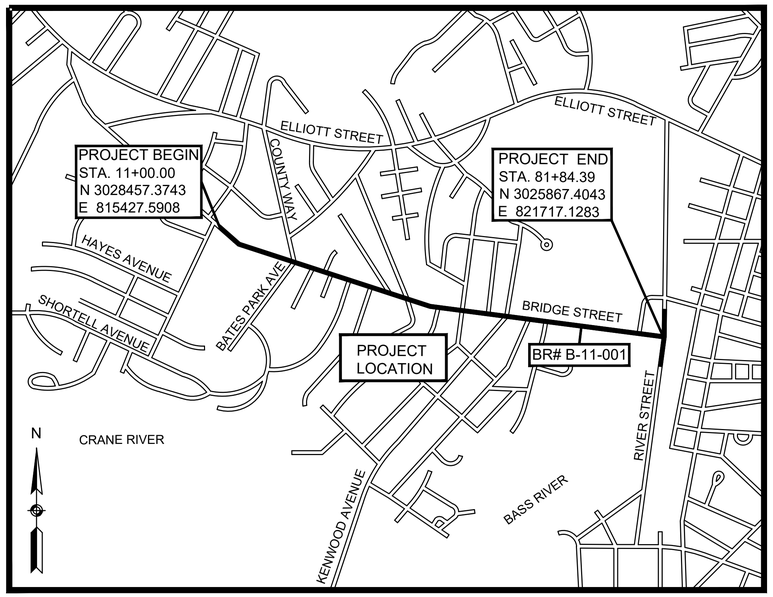

0 750 1500 2250 3000

SCALE: 1" = 750'

LENGTH OF PROJECT = 7084.39 FEET = 1.34 MILES

DESIGN DESIGNATION (BRIDGE STREET)

DESIGN SPEED	35 MPH
ADT (2015)	14,700
ADT (2035)	18,000
K	9%
D	51.4%
T (PEAK HOUR)	3%
T (AVERAGE DAY)	3%
DHV	1620
DDHV	830
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL

WORLDTECH ENGINEERING
300 TRADE CENTER, SUITE 5580
WOBURN, MA 01801-7433
PHONE: 781-933-4800
FAX: 781-933-4801

DATE	DESCRIPTION	REV #
11-30-2017	25% SUBMISSION	0

massDOT Massachusetts Department of Transportation Highway Division

RECOMMENDED FOR APPROVAL

CHIEF ENGINEER DATE

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

APPROVED

HIGHWAY ADMINISTRATOR DATE

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER ON BRIDGE OR 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
SP		STEEL POLE
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
		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)
		BALANCE STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
x	x	CHAIN LINK OR METAL FENCE
		WOOD FENCE
		COMPOST FILTER TUBES
		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

TRAFFIC SYMBOLS

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

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
ONLY	ONLY	PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE
	SL	STOP LINE - 12"
	CW 8'	CROSSWALK - 12" LINES SPACED 8' APART
	SWL	SOLID WHITE LINE - 6"
	SWSHL	SOLID WHITE SHOULDER LINE - 6"
	SYL	SOLID YELLOW LINE - 6"
	BWL	BROKEN WHITE LINE - 6"
	BYL	BROKEN YELLOW LINE - 6"
	DWL	DOTTED WHITE LINE - 6"
	DYL	DOTTED YELLOW LINE - 6"
	DWLEx	DOTTED WHITE LINE EXTENSION - 6"
	DYLEx	DOTTED YELLOW LINE EXTENSION - 6"
	DBWL	DOUBLE WHITE LINE - 2 - 6" LINES
	DBYL	DOUBLE YELLOW CENTERLINE - 2 - 6" LINES

GENERAL NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. 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 RESOLUTION OF THE CONFLICT.
3. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
4. 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.
5. THE TERM "PROPOSED" (PROP.) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, REUSING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
6. JOINTS BETWEEN NEW BITUMINOUS CONCRETE ROADWAY PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED IN ACCORDANCE WITH ITEM 453. OF THE SPECIAL PROVISIONS.
7. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
8. ALL PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
9. 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.
10. FIELD SURVEY PROVIDED BY CHAPPELL ENGINEERING ASSOCIATES, LLC., 201 BOSTON POST ROAD WEST, SUITE 101, MARLBOROUGH, MA 01752 IN JULY 2016. HORIZONTAL DATUM IS BASED ON MASS GRID SYSTEM NAD 1983. ELEVATIONS SHOWN ON THIS PLAN REFER TO THE NAVD OF 1988.

ABBREVIATIONS

GENERAL

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

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	2	80
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LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

GENERAL

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

TRAFFIC SIGNAL

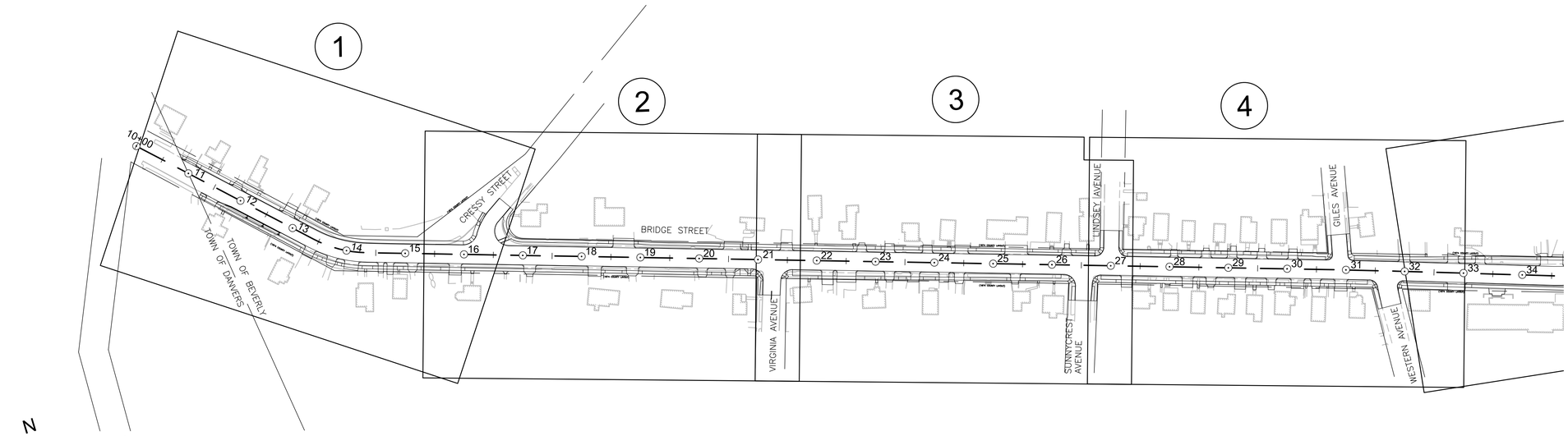
CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR AMBER
FYL	FLASHING AMBER LEFT ARROW
FYR	FLASHING AMBER RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN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

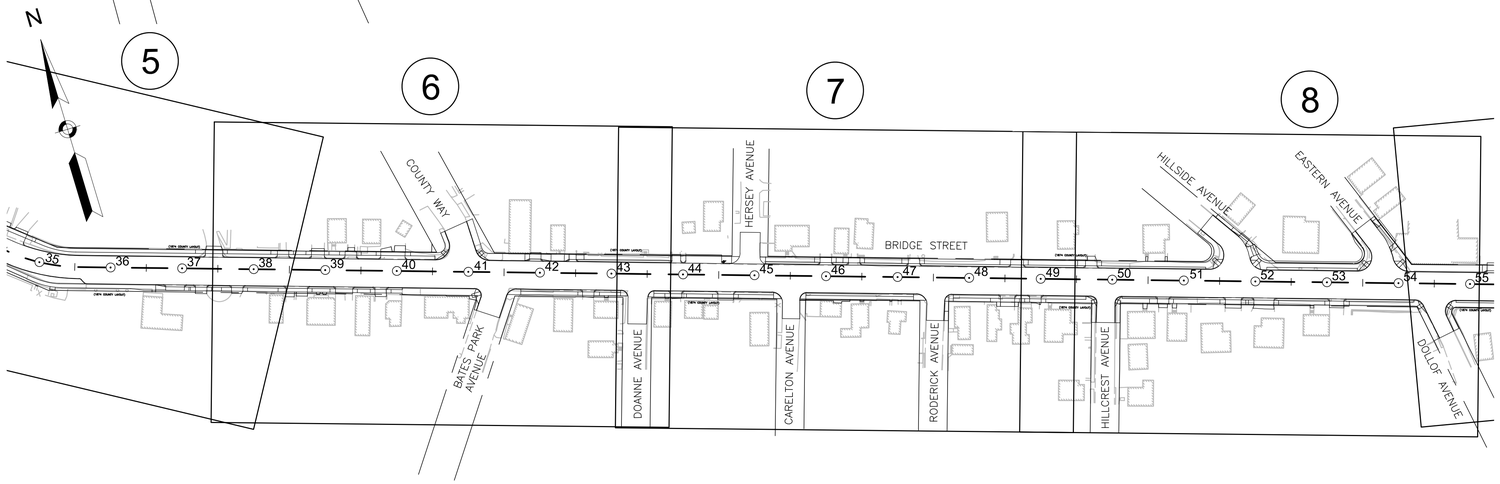
608348_HD7(LEGEND).DWG Plotted on 4-Dec-2017 11:06 AM

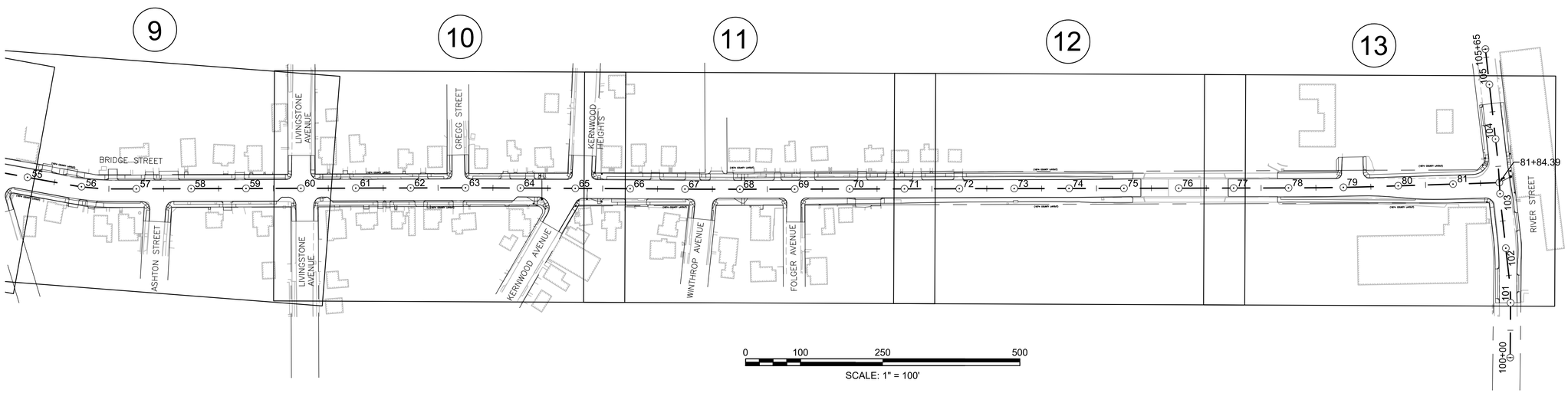
BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	3	80
PROJECT FILE NO.	608348		

KEY PLAN







0 100 250 500
SCALE: 1" = 100'

SHEET REFERENCE:	1	2	3	4	5	6	7	8	9	10	11	12	13
Drawing Title:	Sheet Number:												
Construction Plans	8	9	10	11	12	13	14	15	16	17	18	19	20
Profiles	21	22	23	24	25	26	27	28	29	30	31	32	33/34
Drainage and Utility Plans	35	36	37	38	39	40	41	42	43	44	45	46	47
Sign and Pavement Marking Plans	48	49	50	51	52	53	54	55	56	57	58	59	60

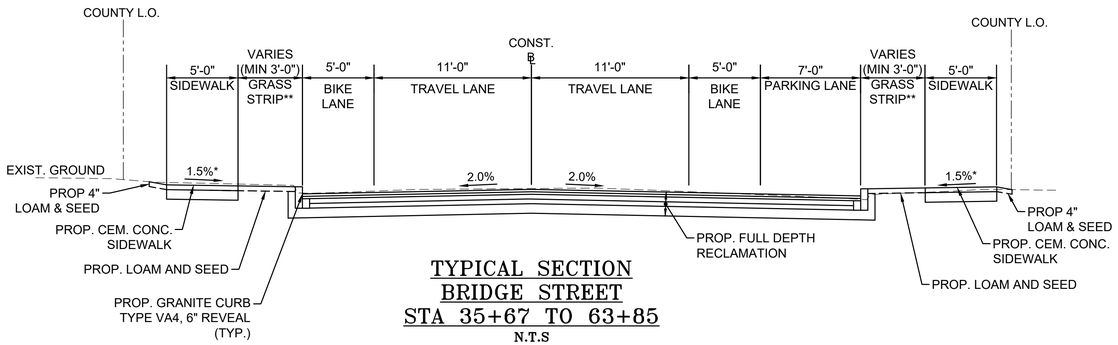
608348_HDS(KEY PLAN).DWG Plotted on 4-Dec-2017 11:06 AM

BEVERLY
BRIDGE STREET

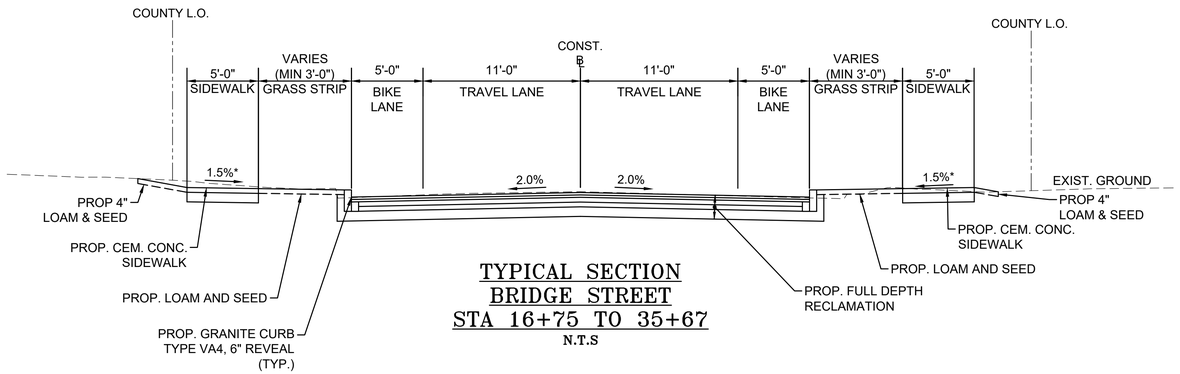
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	4	80
PROJECT FILE NO.	608348		

TYPICAL SECTIONS
SHEET 1 OF 2

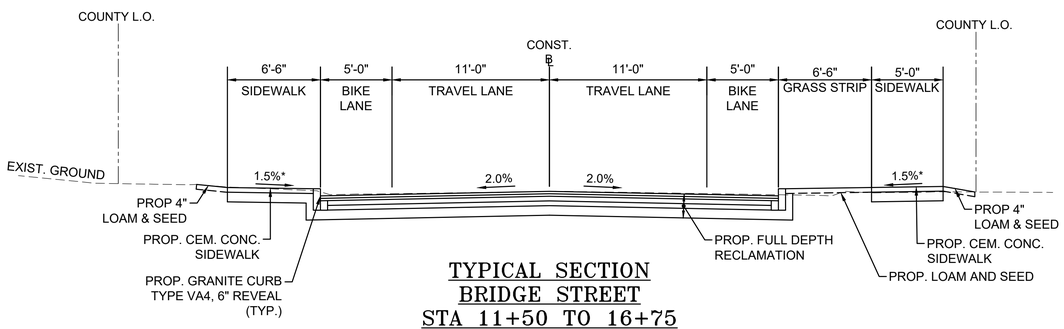
608348_HD6(TYPICAL SECTIONS).DWG Plotted on 4-Dec-2017 11:06 AM



TYPICAL SECTION
BRIDGE STREET
STA 35+67 TO 63+85
N.T.S



TYPICAL SECTION
BRIDGE STREET
STA 16+75 TO 35+67
N.T.S



TYPICAL SECTION
BRIDGE STREET
STA 11+50 TO 16+75
N.T.S

* CONSTRUCTION TOLERANCE ±0.5%
** NO GRASS STRIP FROM STATIONS:
35+67 TO 37+00 RT
40+00 TO 41+25 RT
40+50 TO 42+50 LT
54+00 TO 56+65 LT

PAVEMENT NOTES:

PROPOSED PAVEMENT MILLING AND OVERLAY:
1 3/4" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5) OVER
0.07 GAL/SY TACK COAT OVER
VARIABLE DEPTH PAVEMENT MICROMILLING

PROPOSED FULL DEPTH RECLAMATION:
2" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5) OVER
0.05 GAL/SY TACK COAT OVER
2 1/2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER
0.05 GAL/SY TACK COAT OVER
3 1/2" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5) OVER
4" DENSE GRADED CRUSHED STONE OVER
8" RECLAIMED PAVEMENT FOR BASE COURSE

PROPOSED FULL DEPTH MINOR BOX WIDENING (LESS THAN 4' WIDE):
1 3/4" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5) OVER
0.05 GAL/SY TACK COAT OVER
1 3/4" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER
0.05 GAL/SY TACK COAT OVER
6" H.E.S. CEMENT CONCRETE BASE OVER
8" RECLAIMED PAVEMENT FOR BASE COURSE

PROPOSED CEMENT CONCRETE WALKS / WHEELCHAIR RAMP:
4" CEMENT CONCRETE 4000 PSI, 3/4", 610, AIR ENTRAINED
AIR ENTRAINED 4000 PSI, 3/4" 610 OVER
8" GRAVEL BORROW OR EXCESS RECLAIMED PAVEMENT

PROPOSED CEMENT CONCRETE SIDEWALK AT DRIVEWAY:
6" CEMENT CONCRETE 4000 PSI, 3/4", 610, AIR ENTRAINED
AIR ENTRAINED 4000 PSI, 3/4" 610 OVER
8" GRAVEL BORROW OR EXCESS RECLAIMED PAVEMENT

PROPOSED HMA DRIVEWAYS / HMA WALK
1 1/2" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER
0.05 GAL/SY TACK COAT OVER
2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER
8" GRAVEL BORROW OR EXCESS RECLAIMED PAVEMENT

PROPOSED GRAVEL DRIVEWAYS:
4" STONE DUST OVER
GEOTEXTILE FABRIC FOR SEPARATION OVER
8" GRAVEL BORROW OR EXCESS RECLAIMED PAVEMENT

PROPOSED BRICK WALK:
2 1/4" BRICK OVER
8" GRAVEL BORROW OR EXCESS RECLAIMED PAVEMENT

PROPOSED LAWNS AND SLOPES:
4" LOAM AND SEED

PROPOSED TEMPORARY PATCH (WITHIN ROADWAY LIMITS):
3" HOT MIX ASPHALT OVER
12" GRAVEL BORROW OVER
SUITABLE BACK FILL MATERIAL OR
CONTROLLED DENSITY FILL TYPE 1E EXCAVATABLE (CONDUIT ONLY)

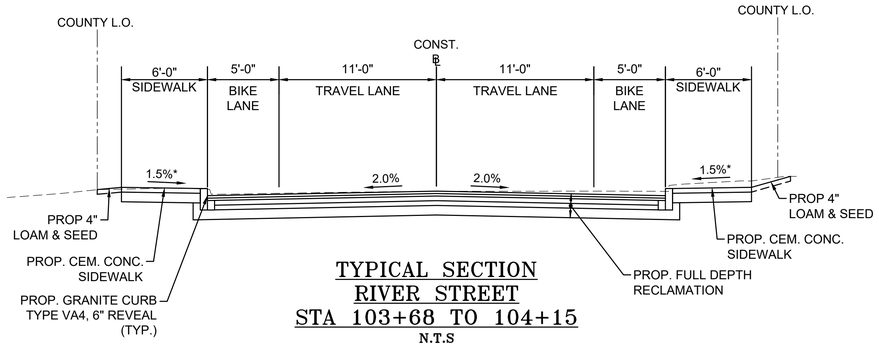
GENERAL NOTE:
PREPARATION OF UNDERLYING SURFACE, ASPHALT EMULSION FOR TACK COAT, HMA FOR PATCHING, AND HMA JOINT SEALANT SHALL BE IN ACCORDANCE WITH SECTION 450.

BEVERLY
BRIDGE STREET

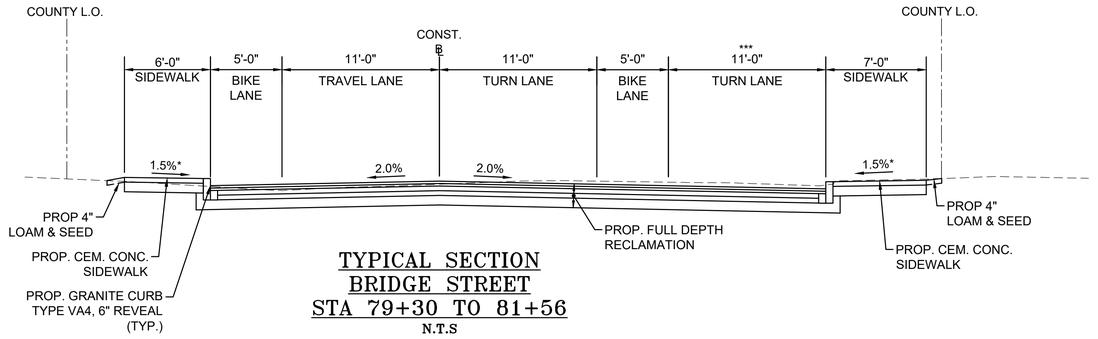
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	5	80
PROJECT FILE NO.	608348		

TYPICAL SECTIONS
SHEET 2 OF 2

608348_HD6(TYPICAL SECTIONS).DWG Plotted on 4-Dec-2017 11:06 AM

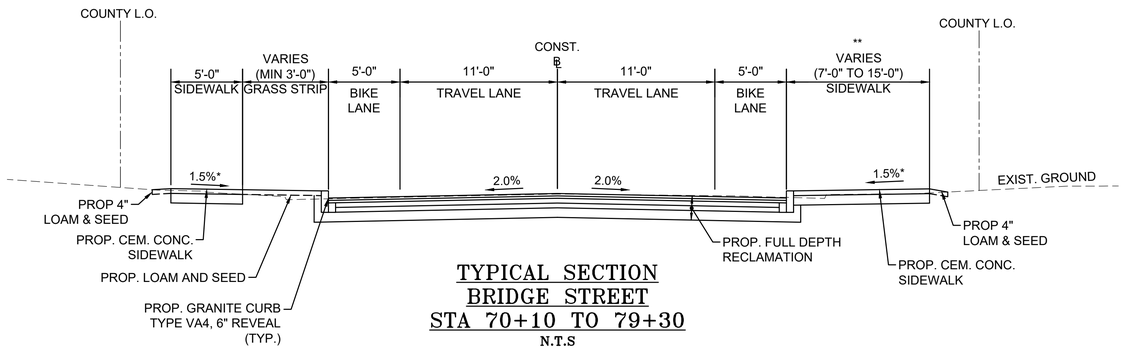


TYPICAL SECTION
RIVER STREET
STA 103+68 TO 104+15
N.T.S



TYPICAL SECTION
BRIDGE STREET
STA 79+30 TO 81+56
N.T.S

*** RIGHT TURN LANE TAPERS FROM STA. 79+30 TO STA. 80+58



TYPICAL SECTION
BRIDGE STREET
STA 70+10 TO 79+30
N.T.S

** 8'-0" GRASS STRIP FROM STA. 65+70 TO STA. 67+00

* CONSTRUCTION TOLERANCE ±0.5%

BEVERLY
BRIDGE STREET

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MA	-	6	80
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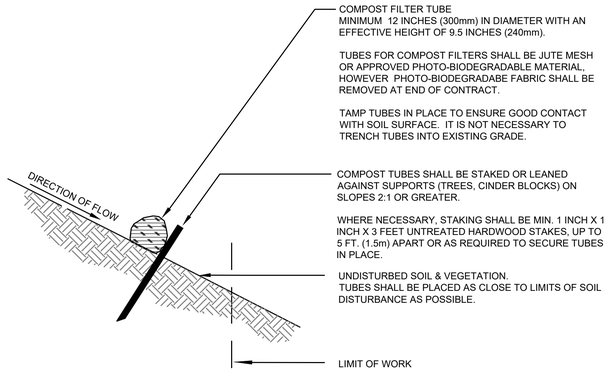
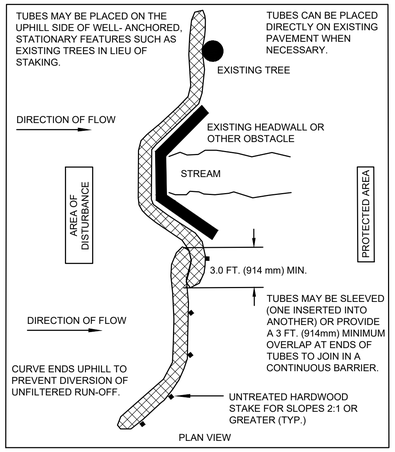
CONSTRUCTION DETAILS
SHEET 1 OF 2

608348_HD16(CONSTRUCTION DETAILS).DWG Plotted on 4-Dec-2017 11:06 AM

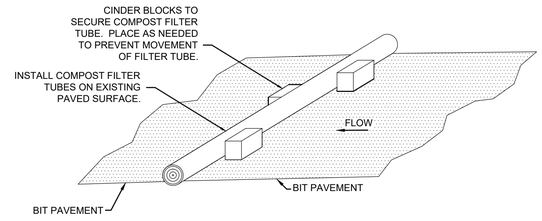




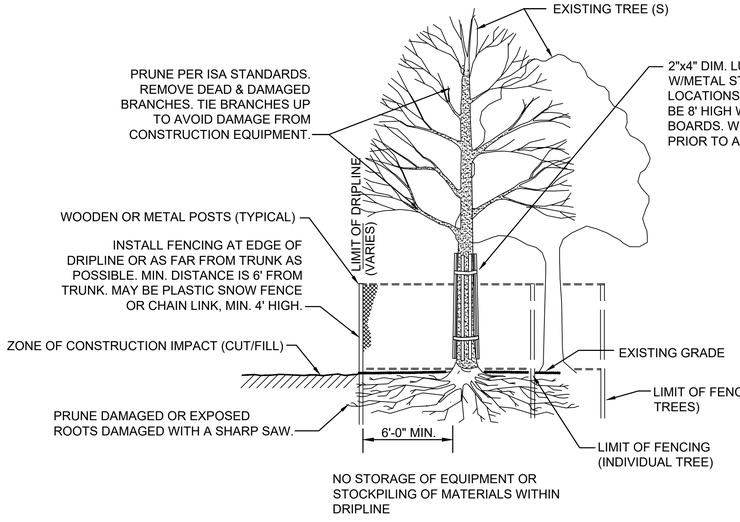
GENERAL NOTES:

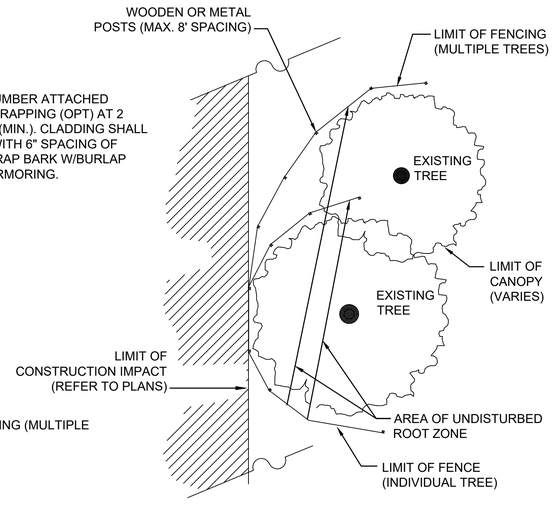
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
4. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
5. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
6. ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.

COMPOST FILTER TUBE DETAIL
N.T.S.



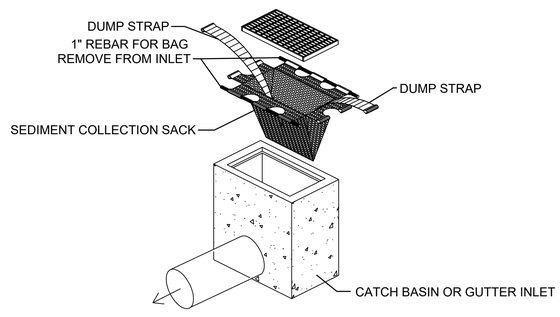
COMPOST FILTER TUBE ON PAVED SURFACES
N.T.S.



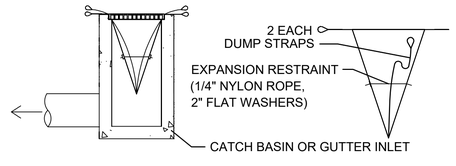


PLAN VIEW

TREE PROTECTION DETAIL
N.T.S.



INSTALLATION DETAIL



BAG DETAIL

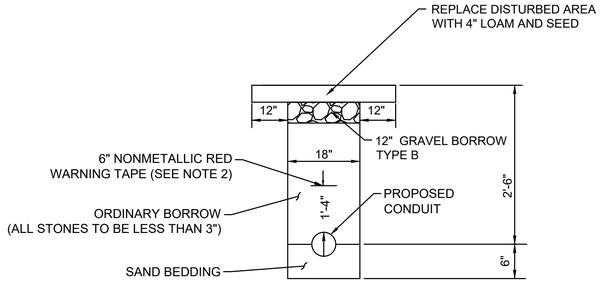
SILT SACK DETAIL (ITEM 697.1)
N.T.S.

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	7	80
PROJECT FILE NO.	608348		

CONSTRUCTION DETAILS
SHEET 2 OF 2

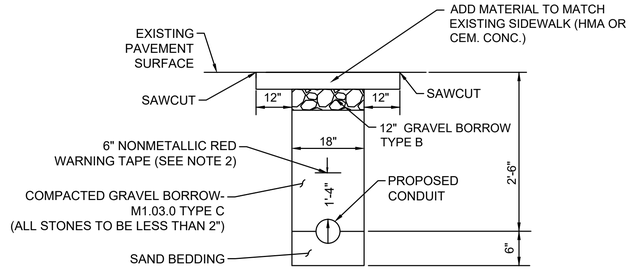
608348_HD16(CONSTRUCTION DETAILS).DWG Plotted on 4-Dec-2017 11:07 AM



NOTES:

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

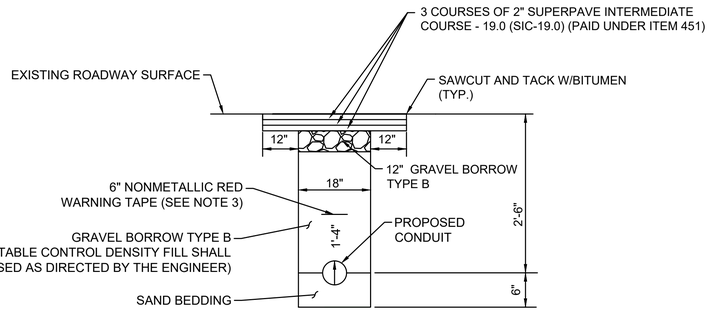
CONDUIT UNDER GRASS AREAS
N.T.S.



NOTES:

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

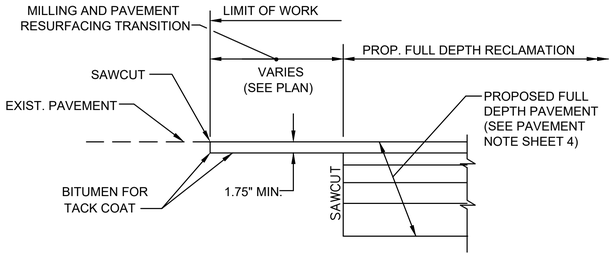
CONDUIT UNDER SIDEWALK AREAS
N.T.S.



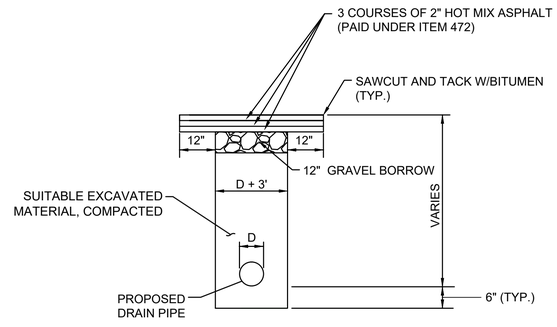
NOTES:

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.

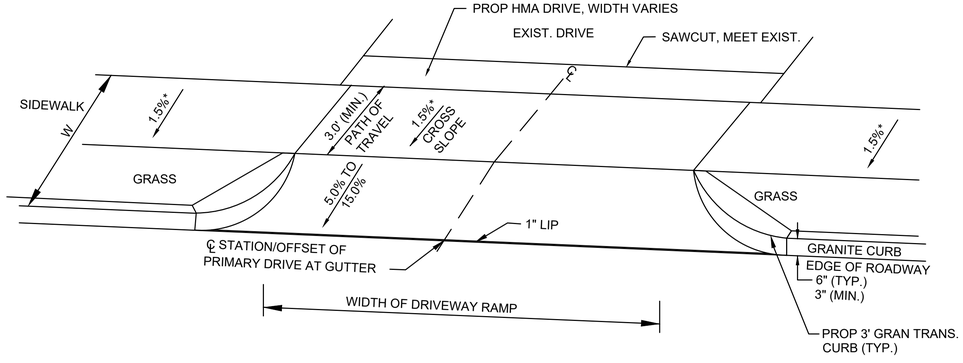
CONDUIT CROSSING ROADWAY



JOINT DETAILS AT PAVING LIMITS
N.T.S.



PERMANENT TRENCH PATCH FOR DRAINAGE PIPE (WITHIN ROADWAY) DETAIL
N.T.S.



CEMENT CONCRETE SIDEWALK AT DRIVEWAYS WITH GRASS STRIP
N.T.S.

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	8	80
PROJECT FILE NO.	608348		

CONSTRUCTION PLANS
SHEET 1 OF 13

608348_HD2(CONSTRUCTION PLANS).DWG Plotted on 4-Dec-2017 11:07 AM

HIGHWAY GUARD DETAILS

TANGENT END TREATMENT
STA 11+80.55 RT TO STA 12+18.05 RT

W-BEAM GUARDRAIL
STA 12+18.05 RT TO STA 12+47.98 RT

FLARED END TREATMENT
STA 12+47.98 RT TO STA 12+85.48 RT

TRAFFIC SIGNAL CONDUIT

SEE SIGNAL PLANS

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE DRAINAGE & UTILITY PLANS
ON SHEET 35

N

BRIDGE STREET
(PUBLIC WAY - 60' WIDE)

CRESSY STREET
(PUBLIC WAY - VARIABLE WIDTH)

BEGIN PROJECT
STA 11+00
N3028457.3743
E815427.5908
PROP. SAWCUT

LIMIT OF WORK
STA 3+00
N3028078.2815
E815813.0634
PROP. SAWCUT

S23°03'17"E
340.74'

N79°20'39"E
125.36'

S49°45'50"E
1634.46'

PC +40.74

PT +74.64

PT +33.98

R=200.00'
L=93.23'
13+88.22

R=100.00'
L=68.26'

PC +06.39

N40°14'10"E
6.39'

2+00

2+00 CRESSY STREET=
16+29.77 BRIDGE STREET

(1874 COUNTY LAYOUT)

PROP. MILLING & OVERLAY (TYP.)

PROP. SAWCUT AT LIMITS OF FULL DEPTH RECLAMATION (TYP.)

PROP. FULL DEPTH RECLAMATION (TYP.)

PROP. MINOR BOX WIDENING

PROP. TEMP. EASEMENT (TYP.)

PROP. TREE PROTECTION (TYP.)

RET. UP (TYP.)

PROP. LIMIT OF GRADING (TYP.)

PROP. GRANITE CURB TYPE VA-4 (TYP.)

PROP. GRANITE CURB TYPE VA-4 (TYP.)

R&R MAILBOX

PROP. CEM. CONC. APRON (TYP.)

PROP. CEM. CONC. APRON (TYP.)

PROP. BRICK WALK

PROP. BRICK WALK

PROP. LOAM & SEED (TYP.)

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

PROP. CEM. CONC. SIDEWALK (TYP.)

MEET EXIST. SIDEWALK (TYP.)

MEET EXIST. EOP

PROP. HMA WALK (TYP.)

PROP. HMA DRIVEWAY (TYP.)

PROP. GRANITE CURB TYPE VA-4 (TYP.)

PROP. LOAM AND SEED (TYP.)

PROP. WCR# 1

PROP. WCR# 2

R&R GRANITE CURB

R&R JERSEY BARRIER BEHIND SIDEWALK STA. 12+74 - STA. 13+05

R&R STEEL W-BEAM GUARDRAIL STA. 11+80 - STA. 12+85

R&D STEEL W-BEAM GUARDRAIL STA. 15+44 TO STA. 15+70

PROP. 3' CURB CORNER (TYP.)

PROP. GRAVEL DRIVEWAY

PROP. CEM. CONC. SIDEWALK (TYP.)

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

PROP. HMA DRIVEWAY (TYP.)

PROP. HMA WALK (TYP.)

PROP. GRAVEL

PROP. HMA DRIVEWAY (TYP.)

PROP. LOAM & SEED

PROP. CEM. CONC. WALK

PROP. LOAM AND SEED (TYP.)

MAP 17 LOT 23-217
n/f
ALLISTER B. MELVIN
217 BRIDGE STREET
BK 27044 PG 69

MAP 17 LOT 24
n/f
JOSEPH WILLIAM CARGILE
215 BRIDGE STREET
BK 30120 PG 90

MAP 17 LOT 25
n/f
DEBRA A. TAYLOR
213 BRIDGE STREET
BK 26172 PG 107

MAP 17 LOT 26
n/f
JAMES P. WEBB
211 BRIDGE STREET
BK 9288 PG 363

MAP 17 LOT 27
n/f
ESTEBAN L. ACOSTA
31 CRESSY STREET
BK 27216 PG 537

MAP 17 LOT 21
n/f
MATTHEW A. WELNAK
214 BRIDGE STREET
BK 28730 PG 372

MAP 17 LOT 19
n/f
TED S. RAMSDELL
210 BRIDGE STREET
BK 10171 PG 561

MAP 17 LOT 16
n/f
SIDERIS NOMINEE TRUST
204 BRIDGE STREET
BK 12174 PG 89

MAP 17 LOT 17
n/f
N/A
206 BRIDGE STREET
BK 15779 PG 18

MAP 17 LOT 16A
n/f
N/A
BRIDGE STREET
BK 15779 PG 18

MAP 17 LOT
n/f
N/A
202H BRIDGE
BK 5707 P

FOR PROFILES:
SEE SHEET NOS. 21-34

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 9

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	80
PROJECT FILE NO.		608348	

CONSTRUCTION PLANS
SHEET 2 OF 13

608348_HDZ(CONSTRUCTION PLANS).DWG Plotted on 4-Dec-2017 11:07 AM

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SIGNAL PLANS

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE DRAINAGE & UTILITY PLANS ON SHEET 36

N

MAP 17 LOT 28
n/f
LOUIS J. MUGGEO
27 CRESSY STREET
BK 7964 PG 565

MAP 17 LOT 103
n/f
MARY C. ORLOWSKI IRREV TR.
26 CRESSY STREET
BK 28222 PG 566

MAP 17 LOT 105
n/f
ALBERT H. MARCOS
187 BRIDGE STREET
BK 5088 PG 567

MAP 17 LOT 106
n/f
N/A
185 BRIDGE STREET
BK 14947 PG 597

MAP 17 LOT 103A
n/f
N/A
191 BRIDGE STREET
BK 27561 PG 51

MAP 17 LOT 104
n/f
N/A
32 CRESSY STREET
BK 5389 PG 428

LIMIT OF WORK
STA 3+00
N3028078.2815
E815813.0634
PROP. SAWCUT

CRESSY STREET
(PUBLIC WAY - VARIABLE WIDTH)
N79°20'39"E
125.36'

4+00

MEET EXIST. EOP

PROP. MILLING & OVERLAY (TYP.)

(1874 COUNTY LAYOUT)

PROP. SAWCUT AT LIMITS OF FULL DEPTH RECLAMATION (TYP.)

PT =74.64

MEET EXIST. CURB (TYP.)

PROP. GRANITE CURB TYPE VA-4

PROP LOAM & SEED (TYP.)

PROP. WCR# 1

PROP. LIMIT OF GRADING (TYP.)

R&D

R=100.00'
L=68.26'

R&D STEEL W-BEAM GUARDRAIL STA. 2+43 TO STA. 2+77

R&R GRANITE CURB (TYP.)

2+00 CRESSY STREET=
16+29.77 BRIDGE STREET

PROP. WCR# 2

PC +06.39

N40°14'10"E
6.39'

PROP. FULL DEPTH RECLAMATION (TYP.)

S49°45'50"E
1634.46'

RET. UP (TYP.)

PROP. CEM. CONC. APRON (TYP.)

PROP. TEMP. EASEMENT (TYP.)

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

PROP. CEM. CONC. SIDEWALK (TYP.)

PROP. WCR# 3

PROP. HMA DRIVEWAY (TYP.)

PROP. LOAM AND SEED (TYP.)

2+00 VIRGINIA AVENUE=
21+24.93 BRIDGE STREET

BRIDGE STREET
(PUBLIC WAY - 60' WIDE)

CONTINUED ON SHEET NO. 8

CONTINUED ON SHEET NO. 10

R&D STEEL W-BEAM GUARDRAIL STA. 15+44 TO STA. 15+70

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

PROP. HMA DRIVEWAY (TYP.)

RET. UP (TYP.)

PROP. MINOR BOX WIDENING

PROP. WCR# 4

REM EXIST. TREE

R&R UP (B.O.)

PROP. WCR# 6

PROP. CEM. CONC. APRON (TYP.)

PROP. BRICK WALK

PROP. LIMIT OF GRADING (TYP.)

PROP. 3' CURB CORNER (TYP.)

R&R GRANITE CURB (TYP.)

PROP. CEM. CONC. SIDEWALK (TYP.)

PROP. WCR# 5

PROP. LOAM & SEED

PROP. TREE PROTECTION (TYP.)

PROP. LOAM AND SEED (TYP.)

PROP. GRANITE CURB TYPE VA-4

MEET EXIST. SIDEWALK (TYP.)

VIRGINIA AVENUE
(PUBLIC WAY - 50' WIDE)

150.00'
S41°05'45"W

LIMIT OF WORK
STA 2+60
N3027669.9720
E816064.7361
PROP. SAWCUT

MAP 17 LOT 13
n/f
SUKHDEV BANGAR
200 BRIDGE STREET
BK 30266 PG 292

MAP 17 LOT 12A
n/f
N/A
198 BRIDGE STREET
BK 32631 PG 457

MAP 17 LOT 14
n/f
N/A
202 BRIDGE STREET
BK 6681 PG 267

MAP 17 LOT 15
n/f
N/A
202H BRIDGE STREET
BK 5707 PG 756

MAP 17 LOT 16A
n/f
N/A
BRIDGE STREET
BK 15779 PG 18

MAP 17 LOT 12
n/f
STEVE C. VASELIS
1 VIRGINIA AVENUE
BK 10229 PG 598

MAP 17 LOT 11
n/f
JOHN L. COSTA
3 VIRGINIA AVENUE
BK 9521 PG 439

FOR PROFILES:
SEE SHEET NOS. 21-34

0 20 50 100

SCALE: 1" = 20'

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SIGNAL PLANS

WATER SUPPLY ALTERATIONS

NONE

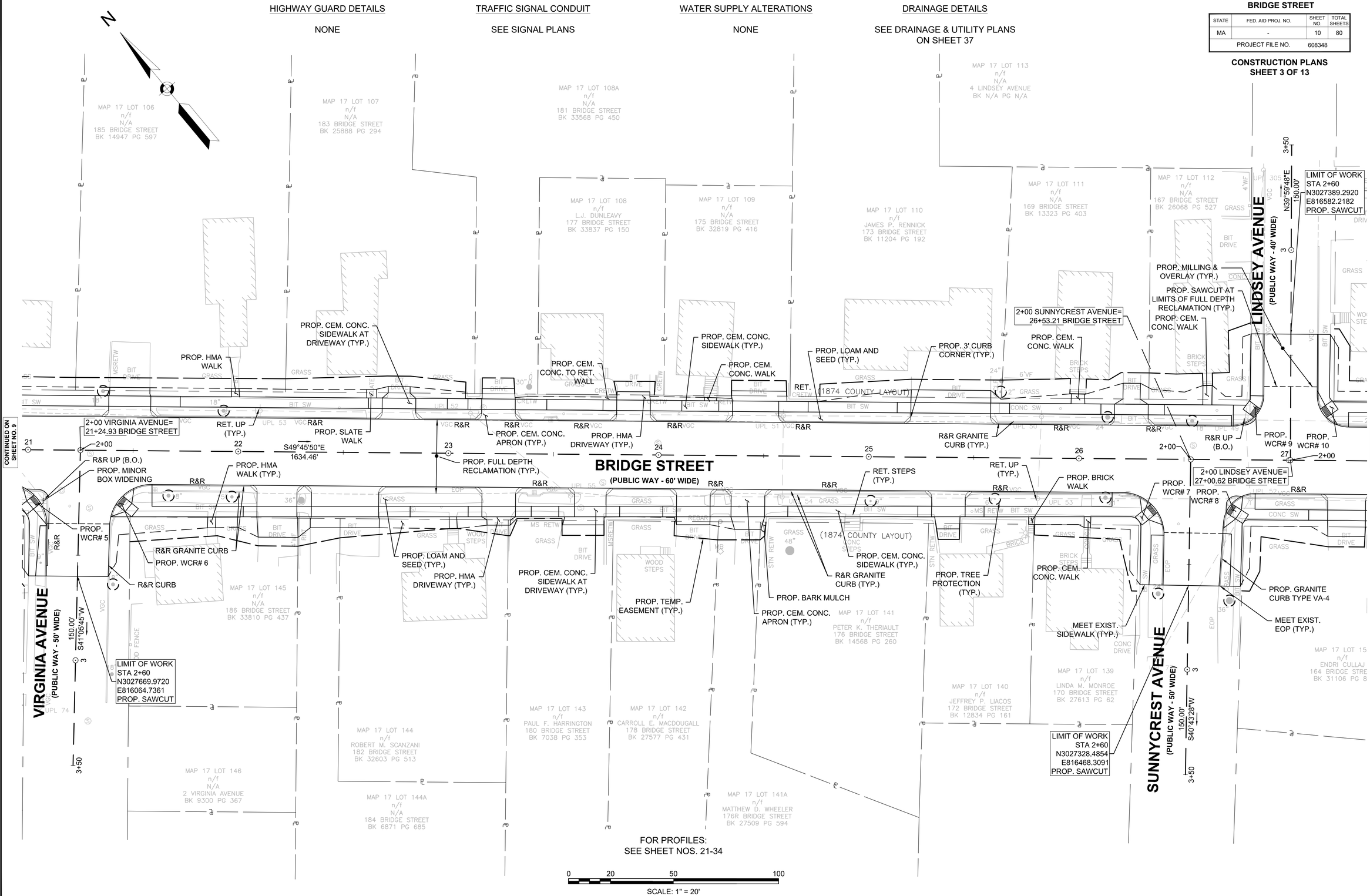
DRAINAGE DETAILS

SEE DRAINAGE & UTILITY PLANS ON SHEET 37

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	80
PROJECT FILE NO.	608348		

CONSTRUCTION PLANS
SHEET 3 OF 13



FOR PROFILES:
SEE SHEET NOS. 21-34

0 20 50 100

SCALE: 1" = 20'

608348_HD2(CONSTRUCTION PLANS).DWG Plotted on 4-Dec-2017 11:07 AM

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SIGNAL PLANS

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE DRAINAGE & UTILITY PLANS ON SHEET 38

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	80
PROJECT FILE NO.	608348		

CONSTRUCTION PLANS
SHEET 4 OF 13

608348_HD2(CONSTRUCTION PLANS).DWG Plotted on 4-Dec-2017 11:07 AM

N

LINDSEY AVENUE
(PUBLIC WAY - 40' WIDE)

LIMIT OF WORK
STA 2+60
N3027389.2920
E816582.2182
PROP. SAWCUT

N39°39'48"E
150.00'

3+50

3

MAP 17 LOT 123
n/f
N/A
3 LINDSEY AVENUE
BK 13172 PG 444

MAP 17 LOT 124
n/f
N/A
1 LINDSEY AVENUE
BK 19834 PG 20

MAP 17 LOT 125
n/f
MICHAEL A. JACOBSON
161 BRIDGE STREET
BK 17802 PG 555

MAP 17 LOT 126
n/f
N/A
159 BRIDGE STREET
BK 30812 PG 63

MAP 17 LOT 127
n/f
N/A
157 BRIDGE STREET
BK 29802 PG 25

MAP 17 LOT 128
n/f
MICHAEL J. LORETI
155 BRIDGE STREET
BK 24470 PG 118

MAP 17 LOT 129
n/f
MICHAEL R. NELSON
153 BRIDGE STREET
BK 7830 PG 275

MAP 17 LOT 130
n/f
N/A
151 BRIDGE STREET
BK 32418 PG 148

MAP 17 LOT 131
n/f
N/A
35 GILES AVENUE
BK 34046 PG 542

GILES AVENUE
(PUBLIC WAY - 40' WIDE)

3+50

LIMIT OF WORK
STA 2+60
N3027140.1290
E816876.3256
PROP. SAWCUT

N35°27'11"E
150.00'

3

MAP 17 LOT 155
n/f
N/A
40 GILES AVENUE
BK 29640 PG 566

MAP 17 LOT 156
n/f
CHERYL SNOW
42 GILES AVENUE
BK 8028 PG 121

MAP 18 LOT 147
n/f
N/A
145 BRIDGE STREET
BK 33395 PG 262

MAP 18 LOT 158
n/f
JUDY A. GERRISH
143 BRIDGE STREET
BK 27015 PG 321

PROP. CEM. CONC. SIDEWALK (TYP.)

PROP. WCR# 10

PROP. HMA DRIVEWAY (TYP.)

2+00 LINDSEY AVENUE=
27+00.62 BRIDGE STREET

PROP. CEM. CONC. WALK

PROP. CEM. CONC. WALK

PROP. LOAM AND SEED (TYP.)

R&R GRANITE CURB

PROP. WCR# 11

PROP. MILLING & OVERLAY (TYP.)

PROP. SAWCUT AT LIMITS OF FULL DEPTH RECLAMATION (TYP.)

2+00 GILES AVENUE=
30+90.84 BRIDGE STREET

PROP. LOAM AND SEED (TYP.)

PROP. WCR# 9

R&R UP (B.O.)

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

RET. UP (TYP.)

PROP. CEM. CONC. APRON (TYP.)

PROP. CEM. CONC. DRIVEWAY

PROP. MINOR BOX WIDENING (TYP.)

PROP. WCR# 12

R&R GRANITE CURB (TYP.)

PROP. SLATE WALK

R&R UP (B.O.)

PROP. CEM. CONC. SIDEWALK (TYP.)

PROP. HMA DRIVEWAY (TYP.)

PROP .CEM. CONC. WALK

PROP. FULL DEPTH RECLAMATION (TYP.)

RET. UP (TYP.)

PROP .CEM. CONC. WALK

PROP. HMA WALK (TYP.)

PROP. WCR# 14

PROP. HMA WALK

PROP. WCR# 8

PROP. GRANITE CURB TYPE VA-4

PROP. TREE PROTECTION (TYP.)

PROP. LOAM AND SEED (TYP.)

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

PROP .CEM. CONC. WALK

PROP. CEM. CONC. APRON (TYP.)

R&R GRANITE CURB (TYP.)

PROP. TEMP. EASEMENT (TYP.)

PROP. 3' CURB CORNER (TYP.)

PROP. CEM. CONC. WALK

PROP. WCR# 13

MEET EXIST. SIDEWALK (TYP.)

MEET EXIST. CURB (TYP.)

2+00 WESTERN AVENUE=
31+71.41 BRIDGE STREET

LIMIT OF WORK
STA 2+60
N3026988.9079
E816870.1196
PROP. SAWCUT

S25°48'08"W
105.75'

WESTERN AVENUE
(PUBLIC WAY - 50' WIDE)

MAP 9 LOT 68
n/f
N/A
148 BRIDGE STREET
BK 8499 PG 78

MAP 17 LOT 159
n/f
ENDRI CULLAJ
164 BRIDGE STREET
BK 31106 PG 82

MAP 17 LOT 162
n/f
N/A
162 BRIDGE STREET
BK 34329 PG 505

MAP 17 LOT 160
n/f
ALBERT J. BRINDLE JR.
160 BRIDGE STREET
BK 6331 PG 038

MAP 17 LOT 156
n/f
N/A
158 BRIDGE STREET
BK 28431 PG 508

MAP 17 LOT 155
n/f
ISAAC A. BRUTON
156 BRIDGE STREET
BK 25011 PG 422

MAP 17 LOT 154
n/f
N/A
154 BRIDGE STREET
BK 15083 PG 519

MAP 17 LOT 153A
n/f
ROBERT F. O'NEIL
152 BRIDGE STREET
BK 20949 PG 470

MAP 17 LOT 153
n/f
N/A
150 BRIDGE STREET
BK 10811 PK 212

MAP 17 LOT 167
n/f
SHAUN P. HAYES
14 NETHERTON AVENUE
BK 32925 PG 331

S49°45'50"E
1634.46'

S49°04'40"E
266.12'

S40°49'34"W
16.88'

PC +68.43

PC +16.88

PT +88.18

PT +44.25

L=27.37'
R=100.00'

BRIDGE STREET
(PUBLIC WAY - 60' WIDE)

(1874 COUNTY LAYOUT)

CONTINUED ON SHEET NO. 10

CONTINUED ON SHEET NO. 12

FOR PROFILES:
SEE SHEET NOS. 21-34

0 20 50 100

SCALE: 1" = 20'

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	12	80
PROJECT FILE NO.	608348		

CONSTRUCTION PLANS
SHEET 5 OF 13

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

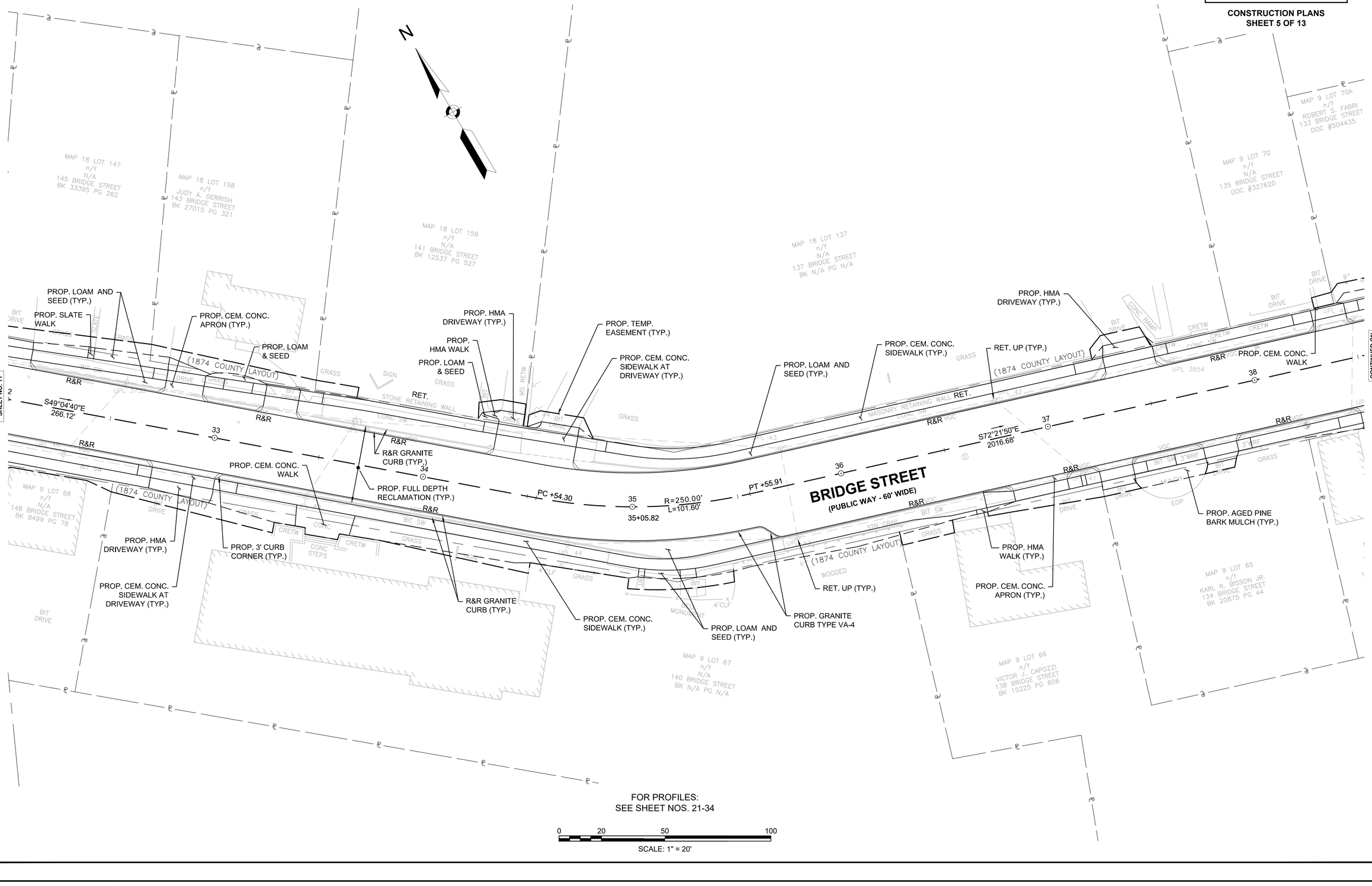
SEE SIGNAL PLANS

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE DRAINAGE & UTILITY PLANS ON SHEET 39



FOR PROFILES:
SEE SHEET NOS. 21-34

0 20 50 100

SCALE: 1" = 20'

608348_HD2(CONSTRUCTION PLANS).DWG Plotted on 4-Dec-2017 11:07 AM

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SIGNAL PLANS

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE DRAINAGE & UTILITY PLANS
ON SHEET 40

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	13	80
PROJECT FILE NO.	608348		

CONSTRUCTION PLANS
SHEET 6 OF 13

608348_HD2(CONSTRUCTION PLANS).DWG Plotted on 4-Dec-2017 11:07 AM

N

MAP 9 LOT 74
n/f
N/A
10 COUNTY WAY
DOC #478615

MAP 9 LOT 70A
n/f
ROBERT S. FABRI
133 BRIDGE STREET
DOC #504435

MAP 9 LOT 71
n/f
N/A
131 BRIDGE STREET
DOC #333154

MAP 9 LOT 70
n/f
N/A
135 BRIDGE STREET
DOC #327620

MAP 9 LOT 72
n/f
N/A
129 BRIDGE STREET
DOC #465734

MAP 9 LOT 73
n/f
N/A
127H BRIDGE STREET
DOC #548541

MAP 9 LOT 81
n/f
N/A
7 COUNTY WAY
BK 24627 PG 354

MAP 9 LOT 82
n/f
NICOLE B. B. BOUSQUET
5 COUNTY WAY
BK 18661 PG 199

MAP 9 LOT 84
n/f
CG REAL ESTATE TRUST
125 BRIDGE STREET
BK 14625 PG 25

MAP 9 LOT 83
n/f
KBC PROPERTIES LLC
127 BRIDGE STREET
BK 27293 PG 165

MAP 9 LOT 87
n/f
N/A
123H BRIDGE STREET
BK 23330 PG 483

MAP 9 LOT 88
n/f
BRIAN A. CORMIER
121 BRIDGE STREET
BK 23818 PG 507

COUNTY WAY
(PUBLIC WAY - 70' WIDE)

3+50
N15°13'31"W
67.75'
PT +92.25

LIMIT OF WORK
STA 2+65
N3026705.3060
E817724.4178
PROP. SAWCUT

MEET EXIST. SIDEWALK (TYP.)

PROP. MILLING & OVERLAY (TYP.)

PROP. SAWCUT AT LIMITS OF FULL DEPTH RECLAMATION (TYP.)

2+00 BATES PARK AVENUE=
41+37.73 BRIDGE STREET

PROP. GRANITE CURB TYPE VA-4

PROP. GRAVEL DRIVEWAY

PROP. MINOR BOX WIDENING

PROP. WCR #15

PROP. WCR# 16

PROP. LOAM AND SEED (TYP.)

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

PROP. TEMP. EASEMENT (TYP.)

PROP. CEM. CONC. WALK

2+00 DOANE AVENUE=
43+36.71 BRIDGE STREET
(1874 COUNTY LAYOUT)

R=125.00'
L=71.69'
PC +10.56
N17°38'10"E
10.56'
2+00

PROP. CEM. CONC. APRON (TYP.)

RET. UP (TYP.)

PROP. CEM. CONC. SIDEWALK (TYP.)

R&R GRANITE CURB (TYP.)

PROP. FULL DEPTH RECLAMATION (TYP.)

PROP. HMA DRIVEWAY (TYP.)

S72°21'50"E
2016.68'

BRIDGE STREET
(PUBLIC WAY - 60' WIDE)

S17°38'10"W
11.52'
PC +11.52
R=125.00'
L=35.90'

PROP. MINOR BOX WIDENING (TYP.)

R&R UP (B.O.)

PROP. WCR# 17

PROP. WCR# 18

PT +47.42

PROP. LOAM & SEED (TYP.)

PROP. HMA DRIVEWAY (TYP.)

PROP. WCR# 19

PROP. EDGE OF PAVEMENT (TYP.)

PROP. WCR# 20

R&R GRANITE CURB (TYP.)

PROP. LOAM & SEED

PROP. HMA WALK

PROP. HMA WALK (TYP.)

RET. UP (TYP.)

PROP. CEM. CONC. SIDEWALK (TYP.)

2+00 COUNTY WAY=
40+93.03 BRIDGE STREET

PROP. PERM. EASEMENT

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

PROP. LOAM AND SEED (TYP.)

PROP. 3' CURB CORNER (TYP.)

PROP. CEM. CONC. APRON (TYP.)

PROP. HMA DRIVEWAY (TYP.)

MEET EXIST. BERM (TYP.)

LIMIT OF WORK
STA 2+60
N3026574.3186
E817732.8129
PROP. SAWCUT

LIMIT OF WORK
STA 2+70
N3026500.9140
E817927.3772
PROP. SAWCUT

MAP 9 LOT 65
n/f
KARL R. BISSON JR.
134 BRIDGE STREET
BK 20875 PG 44

MAP 9 LOT 64
n/f
THOMAS BLAIR &
JUNE CONNORS
132 BRIDGE STREET
DOC #556573

MAP 9 LOT 63
n/f
THOMAS BLAIR &
JUNE CONNORS
128-130 BRIDGE STREET
DOC #560840

MAP 9 LOT 62
n/f
N/A
126 BRIDGE STREET
DOC #550309

MAP 9 LOT 61
n/f
N/A
124 BRIDGE STREET
DOC #556696

MAP 9 LOT 60
n/f
122 BRIDGE STREET
REALTY TRUST
122 BRIDGE STREET
DOC #249905

MAP 9 LOT 59
n/f
JAMES AUFIERO JR.
7 BATES PARK AVENUE
DOC #510716

BATES PARK AVENUE
(PUBLIC WAY - 50' WIDE)
102.58'
S34°05'53"W
3+50

MAP 9 LOT 210
n/f
LINDA M. MCCARTHY
2-4 BATES PARK AVENUE
BK 21043 PG 186

MAP 9 LOT 211
n/f
N/A
6 BATES PARK AVENUE
BK 310728 PG 65895

MAP 9 LOT 209
n/f
JORGE FERNANDO JR.
118H BRIDGE STREET
DOC #380928

MAP 9 LOT 208
n/f
RALPH L. LEONARD JR.
118 BRIDGE STREET
BK 9431 PG 099

MAP 9 LOT 207
n/f
ROGER H. WILLIAMS
3 DOANE AVENUE
BK 32930 PG 12

DOANE AVENUE
(PUBLIC WAY - 40' WIDE)
150.00'
S17°38'10"W
3+50

MAP 9 LOT
n/f
N/A
116 BRIDGE ST
BK 32090 PG

FOR PROFILES:
SEE SHEET NOS. 21-34

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 12

CONTINUED ON SHEET NO. 14

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SIGNAL PLANS

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE DRAINAGE & UTILITY PLANS ON SHEET 41

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	14	80
PROJECT FILE NO.	608348		

CONSTRUCTION PLANS
SHEET 7 OF 13

608348_HD2(CONSTRUCTION PLANS).DWG Plotted on 4-Dec-2017 11:07 AM

CONTINUED ON SHEET NO. 13

CONTINUED ON SHEET NO. 15

N

HERSEY AVENUE
(PUBLIC WAY - 50' WIDE)

BRIDGE STREET
(PUBLIC WAY - 60' WIDE)

DOANE AVENUE
(PUBLIC WAY - 40' WIDE)

CARLETON AVENUE
(PUBLIC WAY - 40' WIDE)

RODERICK AVENUE
(PUBLIC WAY - 40' WIDE)

LIMIT OF WORK
STA 2+60
N3026577.3607
E818115.9982
PROP. SAWCUT

2+00 DOANE AVENUE=
43+36.71 BRIDGE STREET

2+00 HERSEY AVENUE=
44+93.30 BRIDGE STREET

2+00 CARLETON AVENUE=
45+51.71 BRIDGE STREET

2+00 RODERICK AVENUE=
47+54.70 BRIDGE STREET

S72°21'50"E
2016.68'

LIMIT OF WORK
STA 2+70
N3026500.9140
E817927.3772
PROP. SAWCUT

S17°38'10"W
150.00'

LIMIT OF WORK
STA 2+60
N3026445.3057
E818135.3020
PROP. SAWCUT

S17°38'10"W
150.00'

LIMIT OF WORK
STA 2+60
N3026384.3263
E818327.1897
PROP. SAWCUT

S19°12'29"W
150.00'

PROP. MILLING & OVERLAY (TYP.)
PROP. SAWCUT MEET EXISTING HMA PARKING LOT
PROP. HMA
PROP. WCR# 19
PROP. MINOR BOX WIDENING
PROP. CEM. CONC. WALK
PROP. GRANITE CURB TYPE VA-4
R&R UP (B.O.)
PROP. CEM. CONC. WALK
PROP. FULL DEPTH RECLAMATION (TYP.)
PROP. HMA WALK
PROP. WCR# 20
PROP. HMA DRIVEWAY (TYP.)
PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)
PROP. LOAM & SEED (TYP.)
PROP. CEM. CONC. WALK (TYP.)
PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)
R&R GRANITE CURB (TYP.)
PROP. WCR# 21
PROP. WCR# 22
RET. UP (TYP.)
PROP. SAWCUT AT LIMITS OF FULL DEPTH RECLAMATION (TYP.)
PROP. MILLING & OVERLAY (TYP.)
PROP. 3' CURB CORNER (TYP.)
PROP. CEM. CONC. SIDEWALK (TYP.)
PROP. TREE PROTECTION (TYP.)
PROP. TEMP. EASEMENT (TYP.)
PROP. HMA DRIVEWAY (TYP.)
PROP. LOAM & SEED
PROP. CEM. CONC. WALK
PROP. HMA WALK
PROP. WCR# 23
PROP. LOAM AND SEED (TYP.)
PROP. AGED PINE BARK MULCH
PROP. EDGE OF PAVEMENT (TYP.)
PROP. GRANITE CURB TYPE VA-4
PROP. WCR# 24
MEET EXIST. SIDEWALK (TYP.)
MEET EXIST. BERM (TYP.)
PROP. CEM. CONC. SIDEWALK (TYP.)
PROP. CEM. CONC. APRON (TYP.)
PROP. CEM. CONC. WALK
R&R UP (B.O.)
R&R
RET.

MAP 9 LOT 88 n/f BRIAN A. CORMIER 121 BRIDGE STREET BK 23818 PG 507
MAP 9 LOT 89 n/f SUSAN W. POWELL 119 BRIDGE STREET BK 21841 PG 253
MAP 9 LOT 94 n/f N/A 117 BRIDGE STREET BK 8019 PG 333
MAP 9 LOT 95 n/f HOWARD G. SWEENEY 115 BRIDGE STREET BK 32906 PG 84
MAP 9 LOT 96 n/f N/A 113H BRIDGE STREET BK 33336 PG 562
MAP 9 LOT 97 n/f N/A 113 BRIDGE STREET BK 21874 PG 356
MAP 9 LOT 98 n/f N/A 97 BRIDGE STREET BK 28070 PG 387
MAP 9 LOT 93 n/f RICHARD D. DINKIN 99 BRIDGE STREET BK 6505 PG 237
MAP 9 LOT 193 n/f CHRISTOPHER ZORZY 114 BRIDGE STREET BK 26958 PG 212
MAP 9 LOT 194 n/f N/A 116 BRIDGE STREET BK 32090 PG 97
MAP 9 LOT 192 n/f N/A 112 BRIDGE STREET BK 14740 PG 504
MAP 9 LOT 187B n/f FRATES REALTY TRUST 108 BRIDGE STREET BK 18288 PG 589
MAP 9 LOT 186 n/f N/A 104 BRIDGE STREET BK 14591 PG 339
MAP 9 LOT 187 n/f FRATES REALTY TRUST 106 BRIDGE STREET BK 30823 PG 232
MAP 9 LOT 180 n/f N/A 100 BRIDGE STREET BK 19110 PG 219
MAP 9 LOT 179 n/f N/A 96 BRIDGE STREET BK 14155 PG 381
MAP 9 LOT 178 n/f DOUGLAS E. ESANCY 94 BRIDGE STREET BK 13126 PG 168
MAP 9 LOT 292 n/f N/A 5 HILLCREST AVENUE BK 11245 PG 247
MAP 9 LOT 179A n/f N/A 98 BRIDGE STREET BK 23132 PG 335
MAP 9 LOT 186A n/f TARA M. PAULIN 7 RODERICK AVE BK 30845 PG 1

(1874 COUNTY LAYOUT)
MASONRY RETAINING WALL

FOR PROFILES:
SEE SHEET NOS. 21-34

0 20 50 100
SCALE: 1" = 20'

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SIGNAL PLANS

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE DRAINAGE & UTILITY PLANS ON SHEET 42

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	15	80
PROJECT FILE NO.	608348		

CONSTRUCTION PLANS
SHEET 8 OF 13

608348_HDZ(CONSTRUCTION PLANS).DWG Plotted on 4-Dec-2017 11:07 AM

N

LIMIT OF WORK
STA 3+00
N3026405.0662
E818730.7660
PROP. SAWCUT

HILLSIDE AVENUE
(PUBLIC WAY - 40' WIDE)
3+50
88.70'
N33°17'50"W
3

MEET EXIST. CURB (TYP.)
PROP. CEM. CONC. WALK
R&R VGC
RET.

MAP 9 LOT 118
n/f
N/A
12 EASTERN AVENUE
BK 31834 PG 447

MAP 9 LOT 116
n/f
FERNANDO J. ABATE
72 HILLSIDE AVENUE
BK 33973 PG 395

MAP 9 LOT 139
n/f
RALPH A. PARISELLA
REALTY TRUST
77-81 BRIDGE STREET
BK 9402 PG 375

EASTERN AVENUE
(PUBLIC WAY - 40' WIDE)
3+50
78.19'
N20°46'50"W
3

LIMIT OF WORK
STA 2+90
N3026338.0015
E818938.7262
PROP. SAWCUT

PROP. MILLING & OVERLAY (TYP.)
PROP. SAWCUT AT LIMITS OF FULL DEPTH RECLAMATION (TYP.)
PROP. CEM. CONC. APRON (TYP.)
PROP. CEM. CONC. SIDEWALK (TYP.)
PT +71.82
L=87.05'
R=100.00'

MAP 9 LOT 117
n/f
N/A
83 BRIDGE STREET
BK 25034 PG 66

2+00 EASTERN AVENUE=
53+82.83 BRIDGE STREET

2+00 DOLLOFF AVENUE=
54+49.44 BRIDGE STREET

R&R GRANITE CURB (TYP.)

PROP. WCR# 30

PROP. HMA

PROP. WCR# 29

PC +04.77

N17°38'10"E
4.77'

2+00

R&R UP (B.O.)

PROP. CEM. CONC. SIDEWALK (TYP.)

PROP. LOAM AND SEED (TYP.)

PROP. HMA WALK (TYP.)

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

PROP. CEM. CONC. APRON (TYP.)

PROP. WCR# 28

PROP. HMA DRIVEWAY (TYP.)

2+00 HILLSIDE AVENUE=
51+73.35 BRIDGE STREET

PROP. TEMP. EASEMENT (TYP.)

PROP. 3' CURB CORNER (TYP.)

PROP. CEM. CONC. WALK

PROP. WCR# 27

PT +61.30

L=28.68'
R=32.26'

PC +32.62

N17°38'10"E
32.62'

2+00

R&R UP (B.O.)

PROP. HMA WALK

PROP. HMA

PROP. LOAM & SEED (TYP.)

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

PROP. CEM. CONC. WALK

RET. UP (TYP.)

R&R GRANITE CURB (TYP.)

PROP. WCR# 26

PROP. MINOR BOX WIDENING (TYP.)

PROP. WCR# 25

PROP. LOAM & SEED

PROP. WCR# 31

PROP. WCR# 32

PC +22.03

S17°38'10"W
22.03'

2+00

R&R UP (B.O.)

R&R GRANITE CURB (TYP.)

PROP. LOAM & SEED

REM. WALK

PT +45.67

L=23.63'
R=50.00'

R&R GRANITE CURB

R&R VGC

R&D

MEET EXIST. SIDEWALK (TYP.)

S17°38'10"W
100.00'
3+00

HILLCREST AVENUE
(PUBLIC WAY - 40' WIDE)

LIMIT OF WORK
STA 2+60
N3026311.9994
E818554.6222
PROP. SAWCUT

LIMIT OF WORK
STA 2+75
N3026157.2133
E819005.4877
PROP. SAWCUT

DOLLOF AVENUE
(PUBLIC WAY - 40' WIDE)
3+50
S9°26'50"E
104.34'

2+00 HILLCREST AVENUE=
49+91.71 BRIDGE STREET

PROP. HMA WALK

R&R GRANITE CURB

PROP. HMA DRIVEWAY (TYP.)

R&R UP (B.O.)
(1874 COUNTY LAYOUT)

RET.
MASONRY RETAINING WALL

RET.
MS RETWALL
(1874 COUNTY LAYOUT)

RET.
WRETW

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

PROP. LOAM & SEED (TYP.)

RET. UP (TYP.)

PROP. CEM. CONC. WALK

PROP. WCR# 27

PROP. WCR# 28

PROP. WCR# 29

PROP. WCR# 30

PROP. WCR# 31

PROP. WCR# 32

PROP. LOAM & SEED

REM. WALK

PROP. CEM. CONC. WALK

PROP. 3' CURB CORNER (TYP.)

PROP. HMA DRIVEWAY (TYP.)

PROP. TEMP. EASEMENT (TYP.)

PROP. MINOR BOX WIDENING (TYP.)

MEET EXIST. SIDEWALK (TYP.)

BRIDGE STREET
(PUBLIC WAY - 60' WIDE)

HILLCREST AVENUE
(PUBLIC WAY - 40' WIDE)

EASTERN AVENUE
(PUBLIC WAY - 40' WIDE)

DOLLOF AVENUE
(PUBLIC WAY - 40' WIDE)

S72°21'50"E
2016.68'

PROP. FULL DEPTH RECLAMATION (TYP.)

49 50 51 52 53 54 55

2+00

MAP 9 LOT 93
n/f
RICHARD D. DINKIN
99 BRIDGE STREET
BK 6505 PG 237

MAP 9 LOT 100
n/f
FERNANDO J. ABATE
85-87 BRIDGE STREET
BK 22061 PG 427

MAP 9 LOT 178
n/f
DOUGLAS E. ESANCY
94 BRIDGE STREET
BK 13126 PG 168

MAP 9 LOT 292
n/f
N/A
5 HILLCREST AVENUE
BK 11245 PG 247

MAP 9 LOT 293A
n/f
DIANE M. KOCHILARIS
90 BRIDGE STREET
BK 20055 PG 382

MAP 9 LOT 293
n/f
CHARLES F. BULGER
88 BRIDGE STREET
BK 14345 PG 173

MAP 9 LOT 294
n/f
NU CHUNG
86 HILLCREST AVENUE
BK 17218 PG 294

MAP 9 LOT 315A
n/f
N/A
86 BRIDGE STREET
BK 33187 PG 484

MAP 9 LOT 315
n/f
N/A
84 BRIDGE STREET
BK 12681 PG 402

MAP 9 LOT 314
n/f
N/A
82 BRIDGE STREET
BK 13292 PG 136

MAP 9 LOT 313
n/f
FIRST ASSEMBLY OF GOD
BRIDGE STREET
BK 5981 PG 653

MAP 9 LOT 312
n/f
N/A
BRIDGE STREET
BK 5981 PG 652

MAP 9 LOT 179
n/f
N/A
DGE STREET
155 PG 381

MAP 9 LOT 98
n/f
N/A
3E STREET
0 PG 387

BIT PARKING LOT

BIT DRIVE

CONC SW

UPL 29

UPL 28

UPL 2955

GRASS

WOOD STEPS

CONC STEPS

4'CLF

4'WF

BIT BERM

VGC

EOP

CONTINUED ON SHEET NO. 14

CONTINUED ON SHEET NO. 16

FOR PROFILES:
SEE SHEET NOS. 21-34

0 20 50 100

SCALE: 1" = 20'

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SIGNAL PLANS

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE DRAINAGE & UTILITY PLANS ON SHEET 43

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	16	80
PROJECT FILE NO.	608348		

CONSTRUCTION PLANS
SHEET 9 OF 13

608348_HD2(CONSTRUCTION PLANS).DWG Plotted on 4-Dec-2017 11:08 AM

N

CONTINUED ON SHEET NO. 15

CONTINUED ON SHEET NO. 17

MAP 9 LOT 141 n/f RALPH A. PARISELLA REALTY TRUST 77-81 BRIDGE STREET BK 9402 PG 375

MAP 9 LOT 142 n/f N/A 69 BRIDGE STREET BK 12124 PG 420

MAP 9 LOT 143B n/f DAVID Z. NOLAN 67R BRIDGE STREET BK 16721 PG 201

MAP 9 LOT 143-3 n/f N/A 67R BRIDGE STREET BK 34530 PG 366

MAP 9 LOT 143A-A n/f SERENE TRUST 65 BRIDGE STREET BK 32930 PG 550

MAP 9 LOT 144 n/f SERENE TRUST 63 BRIDGE STREET BK 32887 PG 628

MAP 9 LOT 144A n/f N/A 49 LIVINGSTONE AVENUE BK 10039 PG 548

MAP 10 LOT 144 n/f GRASS N/A 59 BRIDGE STREET BK 23429 PG 353

2+00 DOLLOFF AVENUE= 54+49.44 BRIDGE STREET

PROP. CEM. CONC. SIDEWALK (TYP.)

PROP. 3' CURB CORNER (TYP.)

R&R GRANITE CURB (TYP.)

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

PROP. TEMP. EASEMENT (TYP.)

2+00 ASHTON STREET= 57+41.26 BRIDGE STREET

PROP. LOAM AND SEED (TYP.)

PROP. HMA DRIVEWAY (TYP.)

PROP. SAWCUT AT LIMITS OF FULL DEPTH RECLAMATION (TYP.)

PROP. MILLING & OVERLAY (TYP.)

LIVINGSTONE AVENUE (PUBLIC WAY - 50' WIDE)

N7°18'55"E 150.00'

LIMIT OF WORK STA 2+60 N3026191.9277 E819556.6426 PROP. SAWCUT

PROP. WCR# 36

R&R UP (B.O.)

PROP. WCR# 35

PROP. WCR# 39

PROP. WCR# 40

PROP. WCR# 38

PROP. GRANITE CURB TYPE VA-4

PROP. HMA WALK

BRIDGE STREET (PUBLIC WAY - 60' WIDE)

S82°57'40"E 591.12'

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

R&R UP (B.O.)

RET. UP (TYP.)

PROP. CEM. CONC. APRON (TYP.)

PROP. CEM. CONC. WALK (TYP.)

PROP. MINOR BOX WIDENING (TYP.)

PROP. WCR# 34

PROP. LOAM AND SEED (TYP.)

PROP. TREE PROTECTION (TYP.)

PROP. CEM. CONC. APRON (TYP.)

2+00 LIVINGSTONE AVENUE (N)= 60+00.00 BRIDGE STREET

2+00 LIVINGSTONE AVENUE (S)= 60+06.74 BRIDGE STREET

PROP. WCR# 37

MEET EXIST. SIDEWALK (TYP.)

PROP. CEM. CONC. WALK

LIMIT OF WORK STA 2+60 N3026072.0391 E819548.3663 PROP. SAWCUT

S72°21'50"E 2016.68'

S17°38'10"W 22.03'

PC +22.03

PROP. CEM. CONC. WALK

PROP. WCR# 31

L=23.63' R=50.00'

PT +45.67

PROP. WCR# 32

PROP. LOAM & SEED

PROP. GRANITE CURB TYPE VA-4

PROP. HMA DRIVEWAY

PC +72.59

R=500.00' L=92.48'

PROP. FULL DEPTH RECLAMATION (TYP.)

PROP. BRICK WALK

PT +65.07

R&R GRANITE CURB (TYP.)

PROP. HMA DRIVEWAY (TYP.)

PROP. WCR# 33

PROP. CEM. CONC. SIDEWALK (TYP.)

PROP. LOAM & SEED

MEET EXIST. BERM (TYP.)

DOLLOFF AVENUE (PUBLIC WAY - 40' WIDE)

S9°26'50"E 104.34'

LIMIT OF WORK STA 2+75 N3026157.2133 E819005.4877 PROP. SAWCUT

ASHTON STREET (PUBLIC WAY - 50' WIDE)

S10°19'01"W 150.00'

LIMIT OF WORK STA 2+60 N3026105.0928 E819281.4649 PROP. SAWCUT

LIVINGSTONE AVENUE (PUBLIC WAY - 50' WIDE)

S7°00'53"W 150.00'

MAP 9 LOT 252 n/f N/A 70 BRIDGE STREET BK 26236 PG 301

MAP 9 LOT 249 n/f PAUL C. ESTES 66 BRIDGE STREET BK 14000 PG 78

MAP 9 LOT 251 n/f N/A 68 BRIDGE STREET BK 33954 PG 314

MAP 9 LOT 250 n/f N/A 66C BRIDGE STREET BK 20925 PG 525

MAP 9 LOT 316 n/f N/A 64 BRIDGE STREET BK 32667 PG 199

MAP 9 LOT 317 n/f PAUL E. ANDERSON 2 ASHTON STREET BK 21267 PG 40

MAP 9 LOT 351 n/f LORA M. DENNESEN 62 BRIDGE STREET BK 32921 PG 433

MAP 9 LOT 350 n/f N/A LIVINGSTONE AVENUE

(1874 COUNTY LAYOUT)

FOR PROFILES: SEE SHEET NOS. 21-34

0 20 50 100

SCALE: 1" = 20'

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SIGNAL PLANS

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE DRAINAGE & UTILITY PLANS ON SHEET 44

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	80
PROJECT FILE NO.	608348		

CONSTRUCTION PLANS
SHEET 10 OF 13

608348_HD2(CONSTRUCTION PLANS).DWG Plotted on 4-Dec-2017 11:08 AM

N

LIVINGSTONE AVENUE (PUBLIC WAY - 50' WIDE)

GREGG STREET (PUBLIC WAY - 40' WIDE)

KERNWOOD HEIGHTS (PUBLIC WAY - 50' WIDE)

BRIDGE STREET (PUBLIC WAY - 60' WIDE)

KERNWOOD AVENUE (PUBLIC WAY - 50' WIDE)

LIVINGSTONE AVENUE (PUBLIC WAY - 50' WIDE)

LIMIT OF WORK STA 2+60 N3026191.9277 E819556.6426 PROP. SAWCUT

2+00 LIVINGSTONE AVENUE (N)= 60+00.00 BRIDGE STREET

LIMIT OF WORK STA 2+60 N3026156.7295 E819841.2442 PROP. SAWCUT

LIMIT OF WORK STA 2+60 N3026126.9747 E820065.7861 PROP. SAWCUT

2+00 KERNWOOD AVENUE= 64+74.99 BRIDGE STREET

2+00 LIVINGSTONE AVENUE (S)= 60+06.74 BRIDGE STREET

LIMIT OF WORK STA 2+60 N3026072.0391 E819548.3663 PROP. SAWCUT

2+00 GREGG STREET= 62+88.01 BRIDGE STREET

2+00 KERNWOOD HEIGHTS= 65+10.57 BRIDGE STREET

LIMIT OF WORK STA 2+75 N3026005.1529 E819992.1992 PROP. SAWCUT

PROP. LOAM & SEED (TYP.)

PROP. MILLING & OVERLAY (TYP.)

PROP. SAWCUT AT LIMITS OF FULL DEPTH RECLAMATION (TYP.)

PROP. GRANITE CURB TYPE VA-4

PROP. TREE PROTECTION (TYP.)

PROP. CEM. CONC. APRON (TYP.)

MEET EXIST. CURB (TYP.)

PROP. MINOR BOX WIDENING (TYP.)

PROP. WCR# 48

R&R GRANITE CURB (TYP.)

REM. EXIST. SIGNAL EQUIPMENT (TYP.)

PROP. CEM. CONC. WALK (TYP.)

PROP. HMA DRIVEWAY (TYP.)

PROP. WCR# 41

R&R UP (B.O.)

PROP. WCR# 35

PROP. WCR# 36

PROP. WCR# 39

PROP. WCR# 40

PROP. FULL DEPTH RECLAMATION (TYP.)

PROP. LOAM AND SEED (TYP.)

R&R PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

REM. EXIST. TREE

R&R UP (B.O.)

PROP. CEM. CONC. SIDEWALK (TYP.)

R&R UP (B.O.)

PC +56.18

R=10000.00'
L=97.08'

PT +53.26

PROP. WCR# 42

PROP. LOAM AND SEED (TYP.)

RET. UP (TYP.)

3" REVEAL

PROP. WCR# 43

PROP. WCR# 47

PROP. WCR# 49

S82°57'40"E 591.12'

S82°24'18"E 372.74'

PROP. HMA DRIVEWAY (TYP.)

PROP. CEM. CONC. APRON (TYP.)

RET. UP (TYP.)

R&R GRANITE CURB (TYP.)

PROP. HMA WALK

PROP. SIGNAL EQUIPMENT

PROP. GRANITE CURB TYPE VA-4

PROP. WCR #50

R&R UP (B.O.)

S7°35'42"W 24.74'

PC +24.74

R=50.00'
L=26.46'

PT +51.20

PROP. WCR# 38

PROP. WCR# 37

PROP. CEM. CONC. WALK

PROP. TEMP. EASEMENT (TYP.)

PROP. 3' CURB CORNER (TYP.)

PROP. CEM. CONC. SIDEWALK (TYP.)

PROP. WCR# 44

PROP. WCR# 45

PROP. WCR# 46

MEET EXIST. SIDEWALK (TYP.)

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

123.80'
S37°54'49"W

MAP 10 LOT 144 n/f N/A 59 BRIDGE STREET BK 23429 PG 353

MAP 10 LOT 145 n/f WHITNEY R. CARTER 57 BRIDGE STREET BK 15140 PG 248

MAP 10 LOT 146 n/f NELSON FAMILY TRUST FUND 53 BRIDGE STREET BK 26751 PG 72

MAP 10 LOT 147 n/f STEPHEN VARNEY 51 BRIDGE STREET BK 26342 PG 218

MAP 10 LOT 171 n/f PAUL G. BEDARD 49 BRIDGE STREET BK 6335 PG 354

MAP 10 LOT 172 n/f BRUCE MUENZER 47 BRIDGE STREET BK 6763 PG 797

MAP 10 LOT 172A n/f N/A 47R BRIDGE STREET BK 14781 PG 91

MAP 10 LOT 173 n/f N/A 45 BRIDGE STREET BK 32780 PG 19

MAP 10 LOT 174 n/f PATRICK F. MURPHY 6 KERNWOOD HEIGHTS BK 34500 PG 428

MAP 10 LOT 192 n/f N/A 41 BRIDGE STREET BK 14610 PG 36

MAP 10 LOT 27-58 n/f MICHAEL F. ABATE & KARA MCGARIGAL 56-58 BRIDGE STREET BK 30332 PG 417

MAP 10 LOT 28 n/f DAVID G. LAVERDIERE 60 BRIDGE STREET BK 14916 PG 291

MAP 10 LOT 29 n/f N/A 60 LIVINGSTONE AVENUE BK 26225 PG 46

MAP 10 LOT 26 n/f KEITH BEDROSSIAN 54 BRIDGE STREET BK 22216 PG 146

MAP 10 LOT 25 n/f N/A 52 BRIDGE STREET BK 14061 PG 480

MAP 10 LOT 24 n/f N/A 50 BRIDGE STREET BK 6917 PG 789

MAP 10 LOT 22 n/f N/A 5 KERNWOOD AVENUE BK 34222 PG 561

MAP 10 LOT 23 n/f CHARLES G. DODGE 46 BRIDGE STREET BK 6525 PG 21

MAP 10 LOT 47 n/f N/A 4 KERNWOOD AVENUE

MAP 10 LOT 48 n/f JOHN N. FISHER 6 KERNWOOD AVENUE BK 31977 PG 75

MAP 10 LOT 45 n/f N/A 42 BRIDGE STREET BK 10147 PG 543

MAP 10 LOT 49 n/f N/A 8 KERNWOOD AVENUE

MAP 10 LOT 46 n/f N/A 43 BRIDGE STREET BK 1421 PG 142

(1874 COUNTY LAYOUT)

CONTINUED ON SHEET NO. 16

CONTINUED ON SHEET NO. 18

FOR PROFILES: SEE SHEET NOS. 21-34

0 20 50 100

SCALE: 1" = 20'

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SIGNAL PLANS

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE DRAINAGE & UTILITY PLANS ON SHEET 45

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	18	80
PROJECT FILE NO.	608348		

CONSTRUCTION PLANS
SHEET 11 OF 13

608348_HD2(CONSTRUCTION PLANS).DWG Plotted on 4-Dec-2017 11:08 AM

N

KERNWOOD HEIGHTS
(PUBLIC WAY - 50' WIDE)

MAP 10 LOT 191
n/f
WILLIAM SULLIVAN
5 KERNWOOD HEIGHTS
BK 33097 PG 94

MAP 10 LOT 195
n/f
N/A
40 WOODLAND AVENUE
BK N/A PG N/A

MAP 10 LOT 192
n/f
N/A
41 BRIDGE STREET
BK 14610 PG 36

MAP 10 LOT 193
n/f
ALBERT BALA
39 BRIDGE STREET
BK 29085 PG 89

MAP 10 LOT 194
n/f
N/A
37 BRIDGE STREET
BK 7802 PG 105

MAP 10 LOT 196
n/f
N/A
33 BRIDGE STREET
BK 22851 PG 211

MAP 10 LOT 197
n/f
N/A
31 BRIDGE STREET
BK 29284 PG 517

MAP 10 LOT 198
n/f
N/A
29 BRIDGE STREET
BK 21886 PG 23

MAP 10 LOT 199
n/f
LESLIE E. MCGINNITY
27 BRIDGE STREET
BK 33202 PG 95

MAP 10 LOT 200
n/f
N/A
25 BRIDGE STREET
BK 24377 PG 300

MAP 10 LOT 201
n/f
N/A
23 BRIDGE STREET
BK 30475 PG 212

PROP. HMA WALK

PROP. MINOR BOX WIDENING

PROP. WCR# 48

PROP. WCR# 49

RET.

RET. UP (TYP.)

2+00 WINTHROP AVENUE= 67+35.27 BRIDGE STREET

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

PROP. LOAM AND SEED (TYP.)

(1874 COUNTY LAYOUT)

PROP. CEM. CONC. WALK

PROP. TREE PROTECTION (TYP.)

2+00 FOLGER AVENUE= 68+98.31 BRIDGE STREET

PROP. HMA WALK

PROP. TEMP. EASEMENT (TYP.)

PROP. CEM. CONC. SIDEWALK (TYP.)

R&R

PROP. CEM. CONC. WALK (TYP.)

PROP. LOAM AND SEED (TYP.)

PROP. HMA DRIVEWAY

PROP. WCR# 53

BRIDGE STREET
(PUBLIC WAY - 60' WIDE)

PROP. HMA DRIVEWAY (TYP.)

R&R GRANITE CURB (TYP.)

PROP. CEM. CONC. APRON (TYP.)

PROP. CEM. CONC. APRON (TYP.)

CONTINUED ON SHEET NO. 17

CONTINUED ON SHEET NO. 19

S82°24'18"E
372.74'

66

67

PC +26.00

2+00

R=10000.00'
L=86.01'

68

PT +12.01

69

2+00

S82°53'52"E
1000.68'

70

71

PROP. WCR# 50

PROP. FULL DEPTH RECLAMATION (TYP.)

S7°32'03"W
6.35'

R=250.00'
L=24.26'

PC +06.35

PROP. MINOR BOX WIDENING (TYP.)

PROP. AGED PINE BARK MULCH

PROP. WCR# 56

PROP. HMA DRIVEWAY (TYP.)

PROP. CEM. CONC. SIDEWALK AT DRIVEWAY (TYP.)

PROP. SIGNAL EQUIPMENT

(1874 COUNTY LAYOUT)

PROP. LOAM AND SEED (TYP.)

PROP. WCR# 51

PROP. WCR# 52

PROP. WCR# 54

PROP. CEM. CONC. SIDEWALK (TYP.)

MEET EXIST. CURB (TYP.)

PROP. WCR# 55

R&R GRANITE CURB (TYP.)

PROP. GRANITE CURB TYPE VA-4

PROP. EDGE OF PAVEMENT

PROP. CEM. CONC. WALK

PROP. 3' CURB CORNER (TYP.)

MEET EXIST. SIDEWALK (TYP.)

LIMIT OF WORK
STA 2+55
N3025984.2675
E820267.4977
PROP. SAWCUT

LIMIT OF WORK
STA 2+60
N3025958.2323
E820432.1545
PROP. SAWCUT

PROP. SAWCUT AT LIMITS OF FULL DEPTH RECLAMATION (TYP.)

PROP. MILLING & OVERLAY (TYP.)

WINTHROP AVENUE
(PUBLIC WAY - 50' WIDE)

119.39'
S13°05'41"W

FOLGER AVENUE
(PUBLIC WAY - 40' WIDE)

150.00'
S7°28'13"W

MAP 10 LOT 44
n/f
ROSALIND E. RIDEOUT NOMINEE TR
1 WINTHROP AVENUE
BK 16986 PG 508

MAP 10 LOT 45
n/f
N/A
42 BRIDGE STREET
BK 10147 PG 543

MAP 10 LOT 47
n/f
N/A
KERNWOOD AVENUE

MAP 10 LOT 43
n/f
KEVIN SOPP
3 WINTHROP AVENUE
BK 6221 PG 43

MAP 10 LOT 62
n/f
N/A
4 WINTHROP AVENUE
BK 11828 PG 29

MAP 10 LOT 61A
n/f
CHARLES D. DANFORTH
20 BRIDGE STREET
BK 10907 PG 231

MAP 10 LOT 61
n/f
N/A
5 FOGGLER AVENUE
BK 31410 PG 290

MAP 10 LOT 77
n/f
CHARLES D. DANFORTH
18 BRIDGE STREET
BK 14645 PG 131

MAP 10 LOT 76
n/f
MICHAEL D. PIZZI
16 BRIDGE STREET
BK 29981 PG 91

MAP 10 LOT 78
n/f
BLAINE C. BISEGNA
6 FOGGLER AVENUE
BK 31561 PG 49

MAP 10 LOT 75
n/f
N/A
14R BRIDGE STREET
BK 23462 PG 51

MAP 10 LOT 74
n/f
JEFFREY S. BOYER
12 BRIDGE STREET
BK 32271 PG 444

FOR PROFILES:
SEE SHEET NOS. 21-34

0 20 50 100

SCALE: 1" = 20'

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SIGNAL PLANS

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE DRAINAGE & UTILITY PLANS
ON SHEET 46

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	19	80
PROJECT FILE NO.		608348	

CONSTRUCTION PLANS
SHEET 12 OF 13

608348_HD2(CONSTRUCTION PLANS).DWG Plotted on 4-Dec-2017 11:08 AM

N

MAP 10 LOT 202
n/f
N/A
21 BRIDGE STREET
BK 12547 PG 320

MAP 10 LOT 201
n/f
N/A
BRIDGE STREET
30475 PG 212

MAP 10 LOT 202A
n/f
N/A
REAR BRIDGE STREET
BK 17365 PG 41

MAP 10 LOT 74
n/f
JEFFREY S. BOYER
12 BRIDGE STREET
BK 32271 PG 444

PROP. TEMP. EASEMENT (TYP.)
PROP. HMA DRIVEWAY
PROP. CEM. CONC. SIDEWALK AT DRIVEWAY
PROP. CONC. DRIVEWAY
PROP. 3' CURB CORNER (TYP.)
PROP. TREE PROTECTION (TYP.)
PROP. LOAM AND SEED (TYP.)
R&R GRANITE CURB (TYP.)
(1874 COUNTY LAYOUT)
PROP. CEM. CONC. SIDEWALK (TYP.)
RET. UP (TYP.)
REM. FENCE
PROP. EDGE OF PAVEMENT
CONC STEPS
RET. CRETW
BRICK STEPS
RET. CRETW
CONC WALK
3'WRF
6'CLF
RET.
4'IRF
CONC SW
RET. VCC
R&R VGC
PROP. CEM. CONC. WALK
PROP. BRICK WALK
PROP. CEM. CONC. APRON (TYP.)
PROP. FULL DEPTH RECLAMATION (TYP.)
BRIDGE STREET
(PUBLIC WAY - 60' WIDE)
S82°53'52"E
1000.68'
CONC BRIDGE JOINT
71
72
73
74
75
76
77
UPL 9
UPL 8
UPL 7
UPL 6
UPL 5
BIT SW
VCC
CONTINUED ON SHEET NO. 18
CONTINUED ON SHEET NO. 20
RET. UP (TYP.)
R&R UP (B.O.)
PROP. MINOR BOX WIDENING
R&R GRANITE CURB (TYP.)
PROP. CEM. CONC. SIDEWALK (TYP.)
MEET EXIST. SIDEWALK (TYP.)
PROP. EDGE OF PAVEMENT

FOR PROFILES:
SEE SHEET NOS. 21-34

0 20 50 100
SCALE: 1" = 20'

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SIGNAL PLANS

WATER SUPPLY ALTERATIONS

NONE

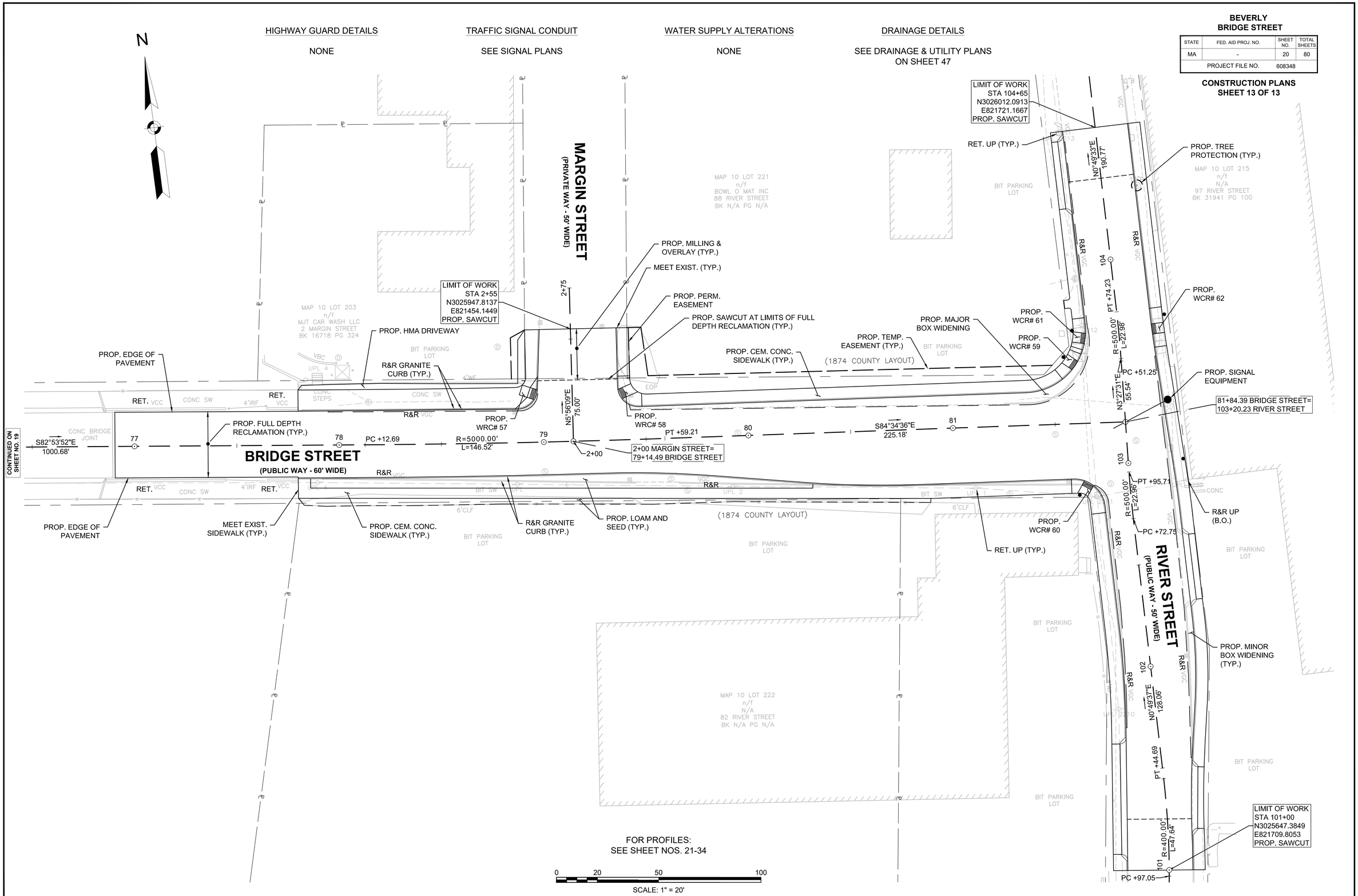
DRAINAGE DETAILS

SEE DRAINAGE & UTILITY PLANS ON SHEET 47

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	20	80
PROJECT FILE NO.	608348		

CONSTRUCTION PLANS
SHEET 13 OF 13



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BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	21	80
PROJECT FILE NO.	608348		

PROFILE - BRIDGE STREET
SHEET 1 OF 13

BRIDGE STREET

BEGIN PROJECT
MILLING AND OVERLAY
STA 11+00.00
N: 3028457.3743
E: 815427.5908

END PROPOSED
MILL AND OVERLAY
STA 11+50.00
N: 3028411.3678
E: 815447.1714

BEGIN PROPOSED
FULL DEPTH
RECLAMATION

GRADE BREAK STA = 11+00.00
ELEV = 66.93

PVC: 11+17.50
ELEV: 67.12

LOW POINT ELEV = 67.12
LOW POINT STA = 11+17.50
PVI STA = 11+70.00
PVI ELEV = 67.70
A.D. = 1.73%
K = 60.85
105' VC

PVT: 12+22.50
ELEV: 69.18

1.10%

2.82%

PVC: 12+77.50
ELEV: 70.73

HIGH POINT ELEV = 71.91
HIGH POINT STA = 13+60.47
PVI STA = 14+10.00
PVI ELEV = 74.48
A.D. = -9.02%
K = 29.38
265' VC
251.8' SSD

EXIST. GRADE

PROP. GRADE

PVT: 15+42.50
ELEV: 66.27

CONTINUED ON SHEET NO. 22

NAVD 88
BASE ELEV
50.00

10+00	11+00	12+00	13+00	14+00	15+00	16+00
66.2	66.9	67.5 **67.57**	68.6 **68.59**	69.9 **69.96**	71.2 **71.28**	71.9 **71.89**	71.8 **71.64**	70.7 **70.54**	68.6 **68.59**	65.7 **65.80**	62.8 **62.70**

Temp. Benchmark #1
Bonnet Bolt
Elevation = 69.25'
Sta. 11+13.97, 24.11' RT

Temp. Benchmark #2
Magnail
Elevation = 72.13'
Sta. 13+59.72, 20.71 RT

Temp. Benchmark #3
Bonnet Bolt
Elevation = 73.10'
Sta. 14+27.72, 23.82 RT

Temp. Benchmark #4
Magnail
Elevation = 64.52'
Sta. 15+68.95, 24.35 RT

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 8-20

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

608348_HD11(PROFILE).DWG Plotted on 4-Dec-2017 11:08 AM

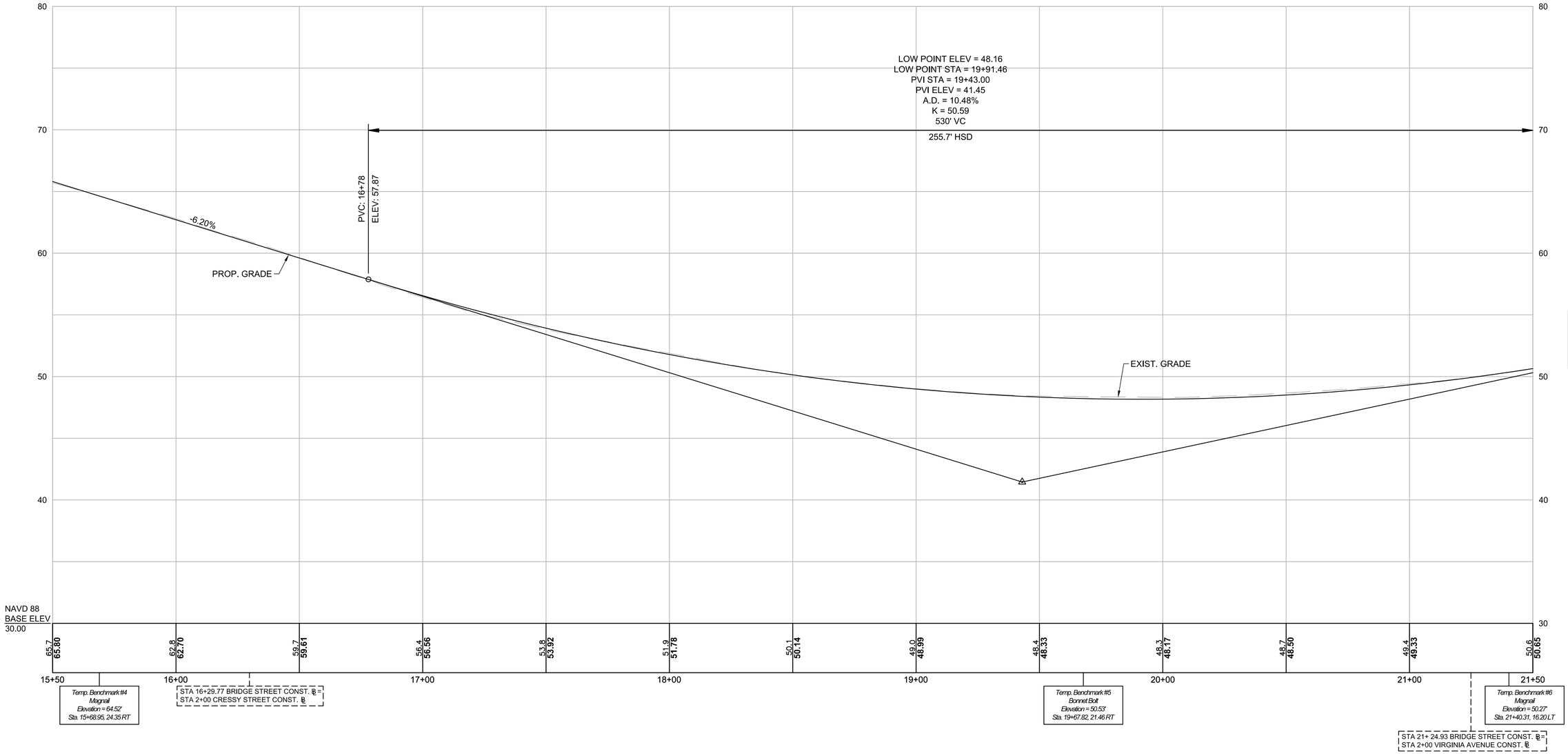
BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	22	80
PROJECT FILE NO.	608348		

PROFILE - BRIDGE STREET
SHEET 2 OF 13

608348_HD11(PROFILE).DWG Plotted on 4-Dec-2017 11:08 AM

BRIDGE STREET



FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 8-20

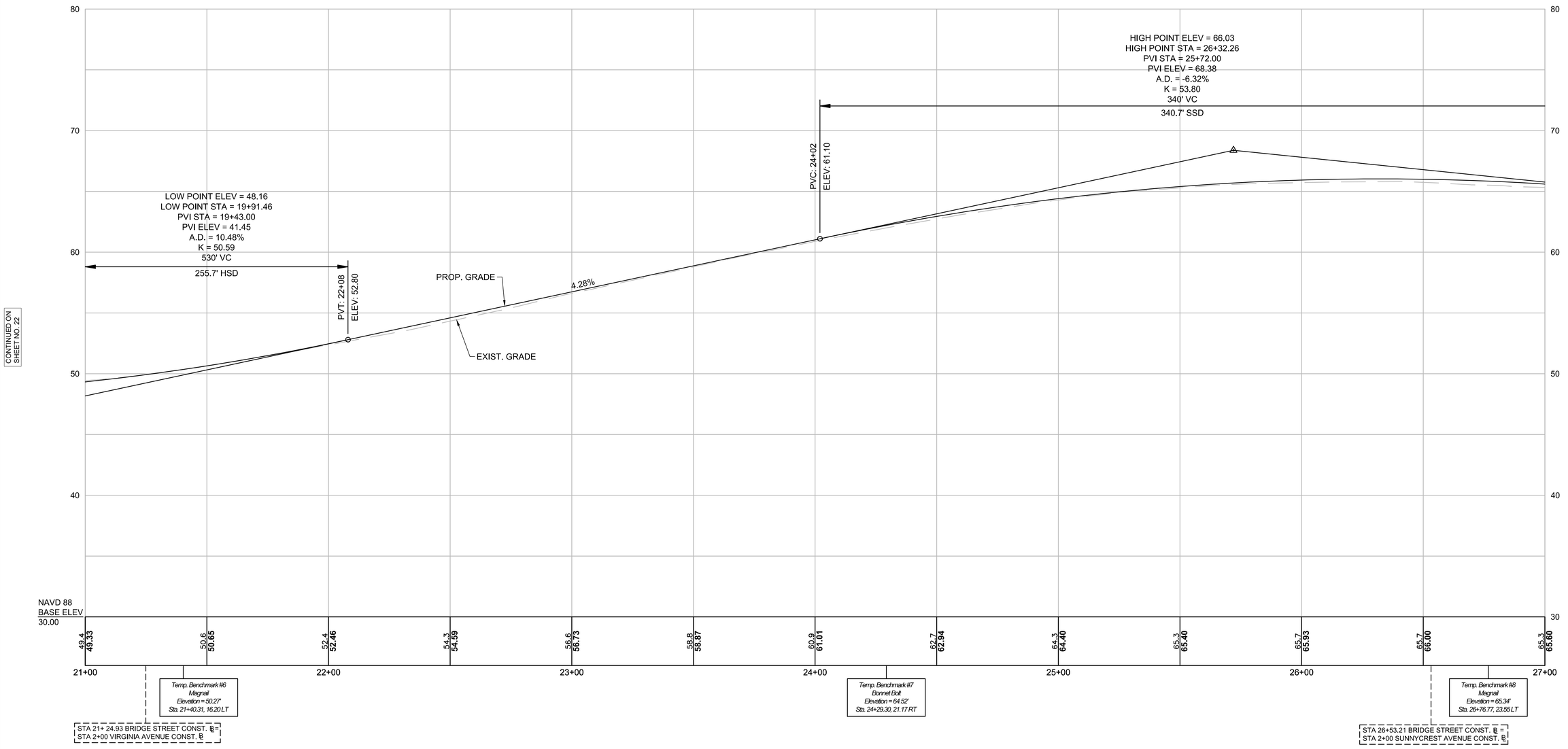
HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	23	80
PROJECT FILE NO.	608348		

PROFILE - BRIDGE STREET
SHEET 3 OF 13

BRIDGE STREET



CONTINUED ON SHEET NO. 22

CONTINUED ON SHEET NO. 24

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 8-20

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

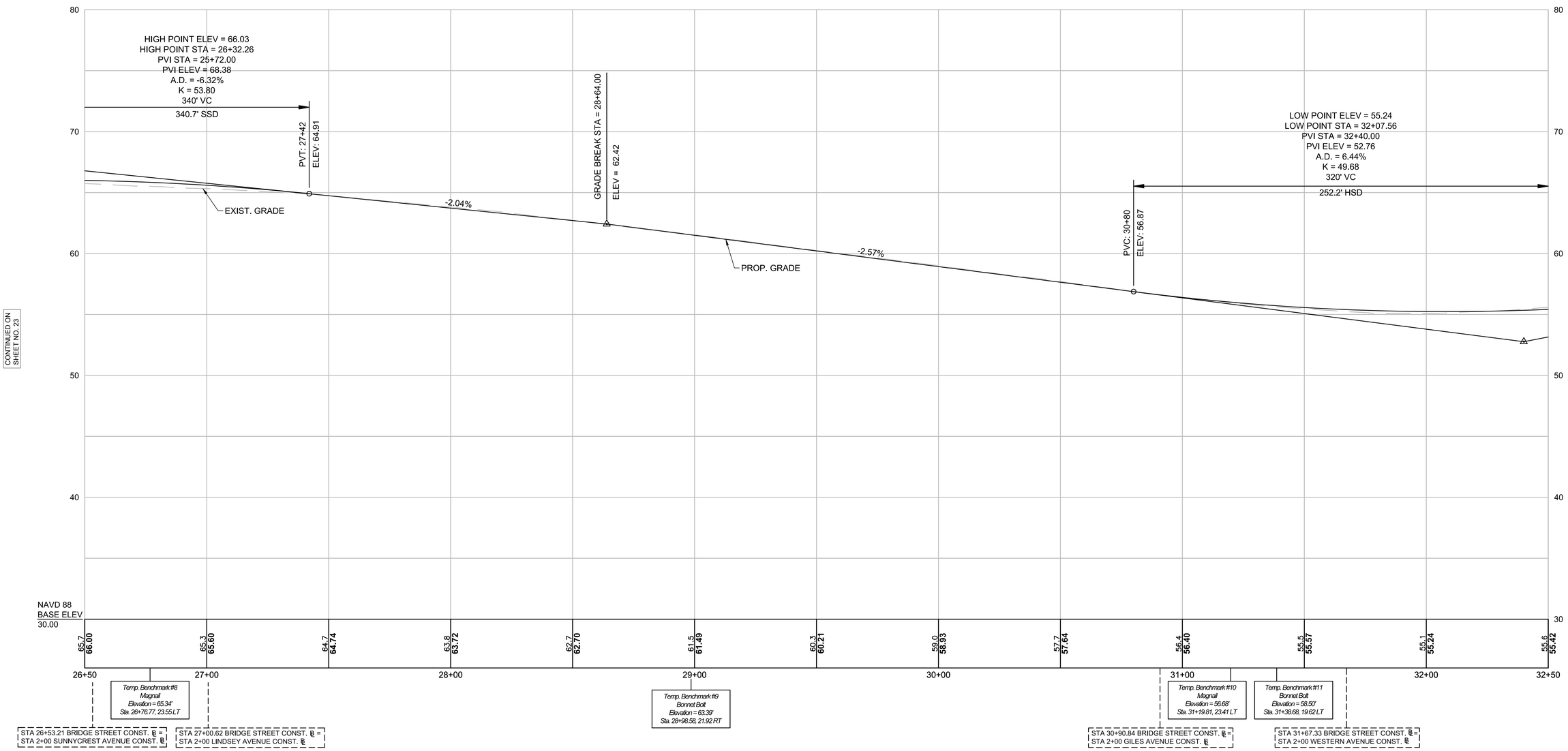
608348_HD11(PROFILE).DWG Plotted on 4-Dec-2017 11:08 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	24	80
PROJECT FILE NO.	608348		

PROFILE - BRIDGE STREET
SHEET 4 OF 13

BRIDGE STREET



FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 8-20

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

608348_HD11(PROFILE).DWG Plotted on 4-Dec-2017 11:08 AM

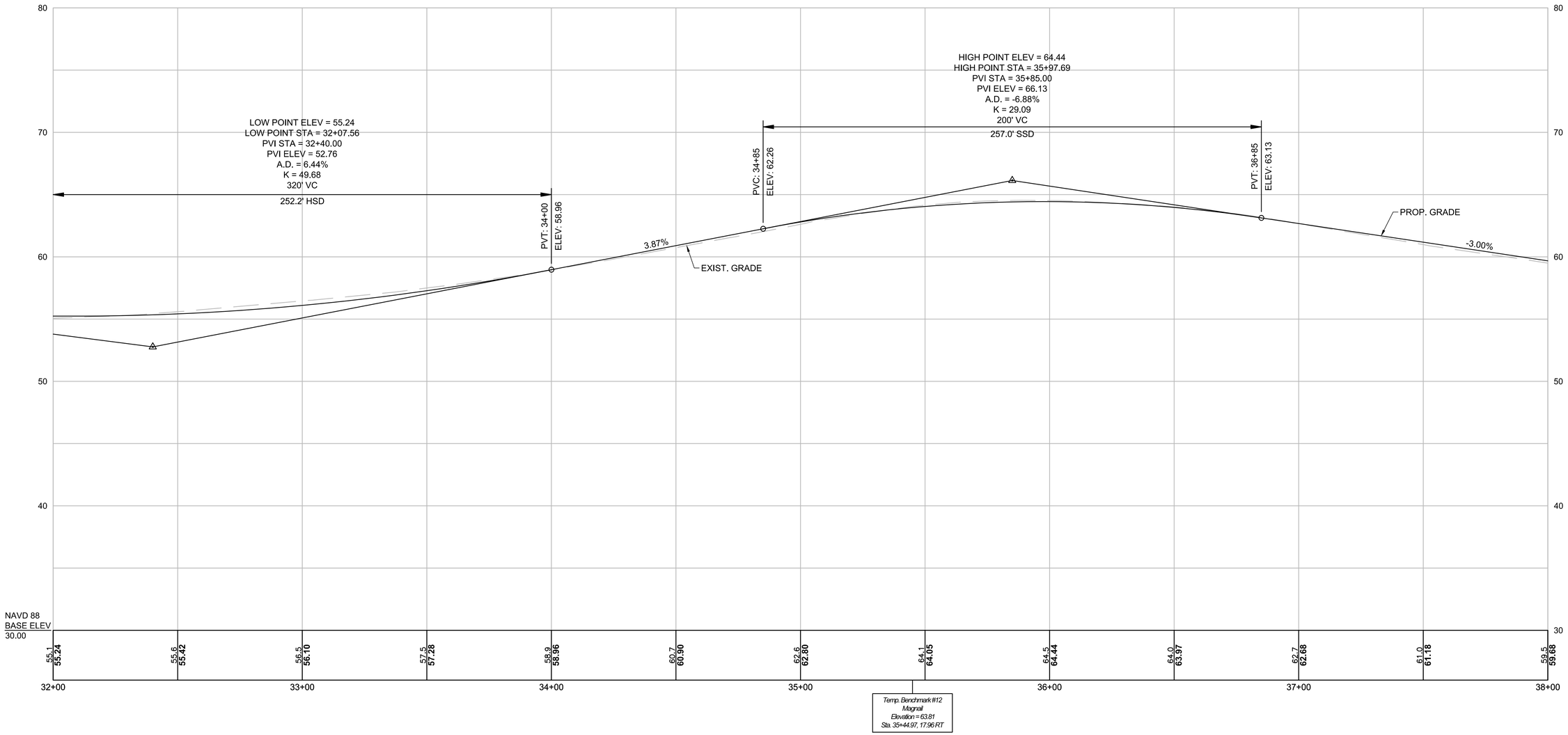
BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	25	80
PROJECT FILE NO.	608348		

PROFILE - BRIDGE STREET
SHEET 5 OF 13

608348_HD11(PROFILE).DWG Plotted on 4-Dec-2017 11:09 AM

BRIDGE STREET



CONTINUED ON SHEET NO. 24

CONTINUED ON SHEET NO. 26

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 8-20

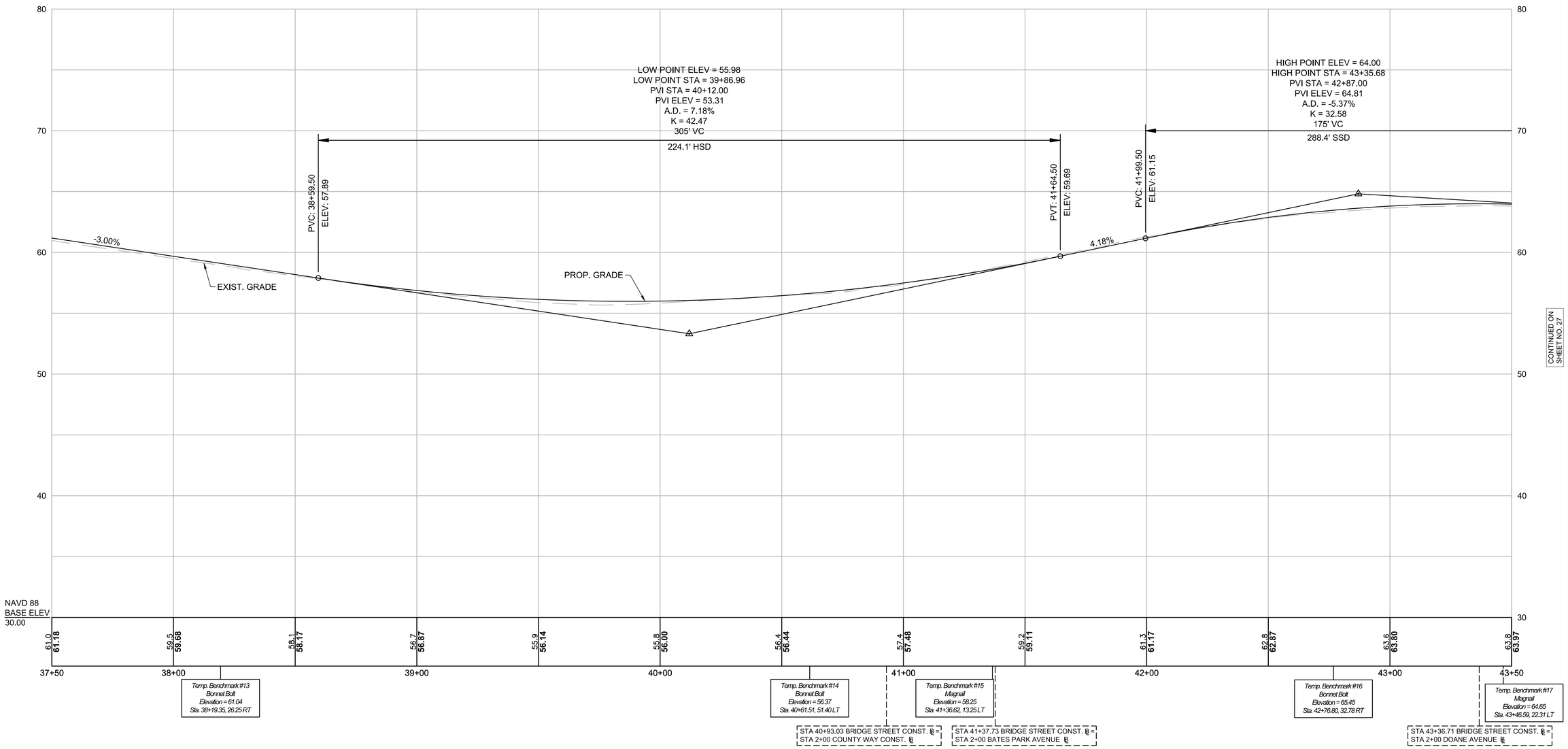
HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	26	80
PROJECT FILE NO.	608348		

PROFILE - BRIDGE STREET
SHEET 6 OF 13

BRIDGE STREET



CONTINUED ON SHEET NO. 25

CONTINUED ON SHEET NO. 27

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 8-20

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

608348_HD11(PROFILE).DWG Plotted on 4-Dec-2017 11:09 AM

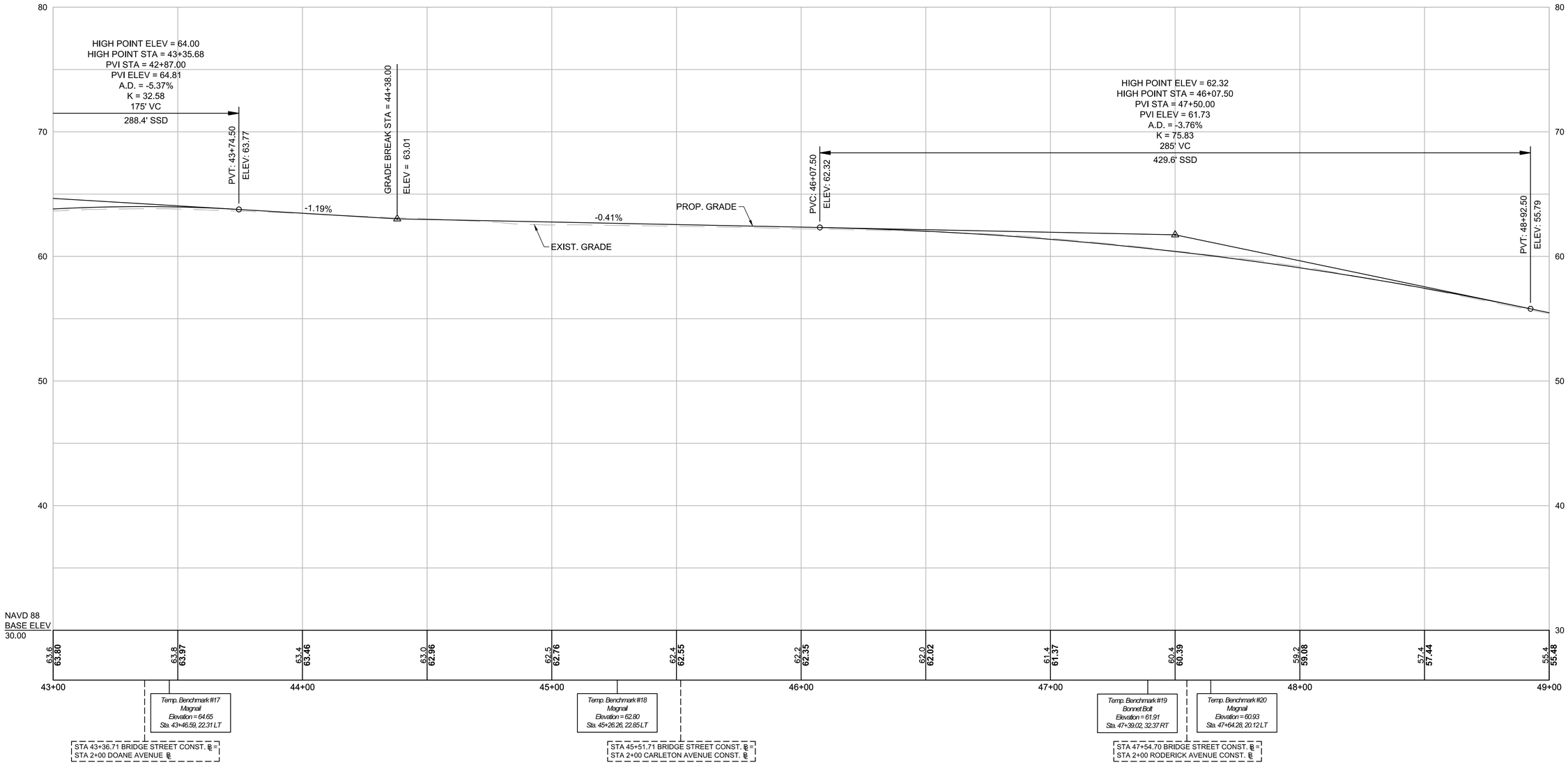
BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	27	80
PROJECT FILE NO.	608348		

PROFILE - BRIDGE STREET
SHEET 7 OF 13

608348_HD11(PROFILE).DWG Plotted on 4-Dec-2017 11:09 AM

BRIDGE STREET



CONTINUED ON SHEET NO. 26

CONTINUED ON SHEET NO. 28

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 8-20

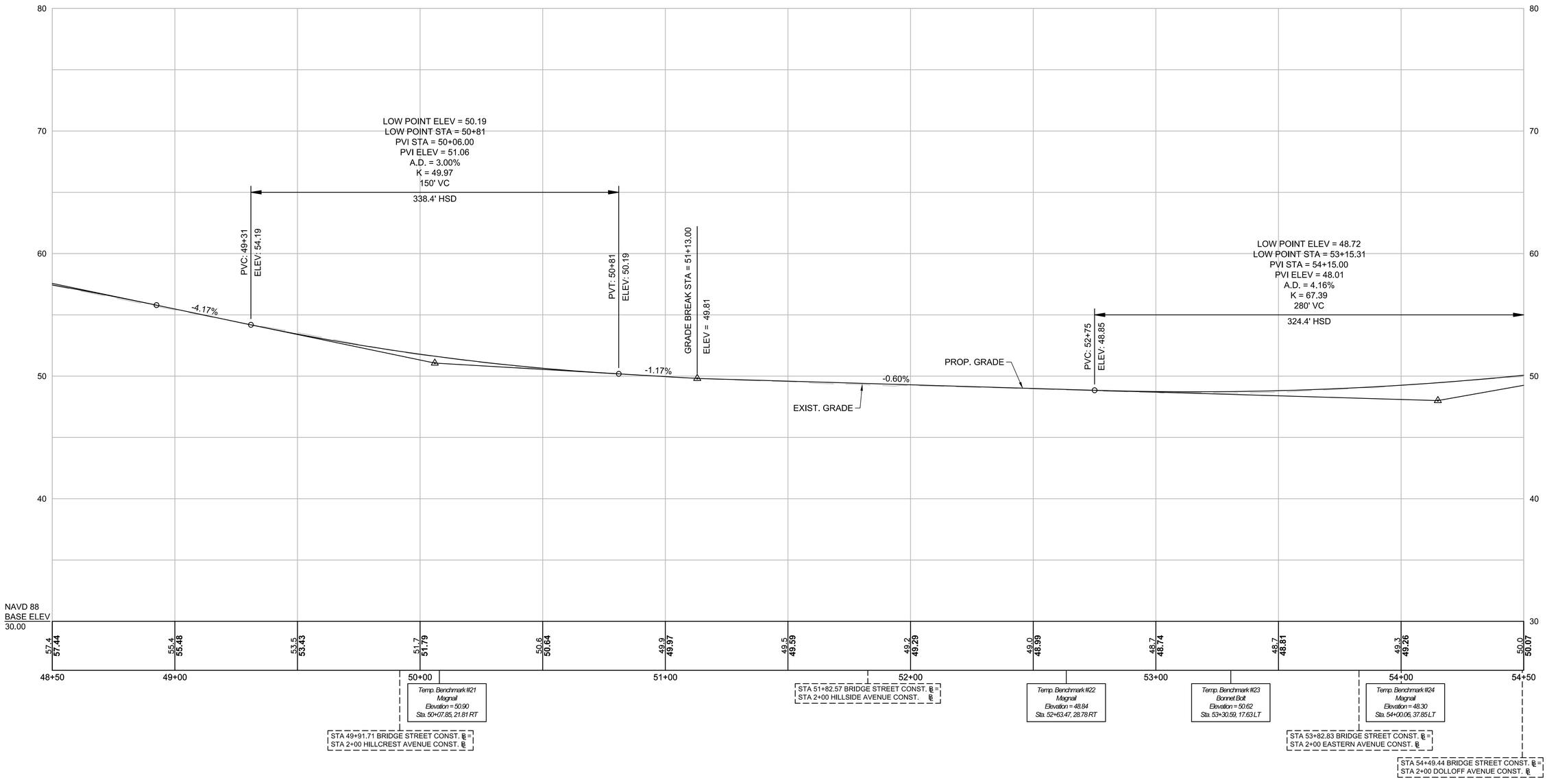
HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	28	80
PROJECT FILE NO.	608348		

PROFILE - BRIDGE STREET
SHEET 8 OF 13

BRIDGE STREET



FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 8-20

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

608348_HD11(PROFILE).DWG Plotted on 4-Dec-2017 11:09 AM

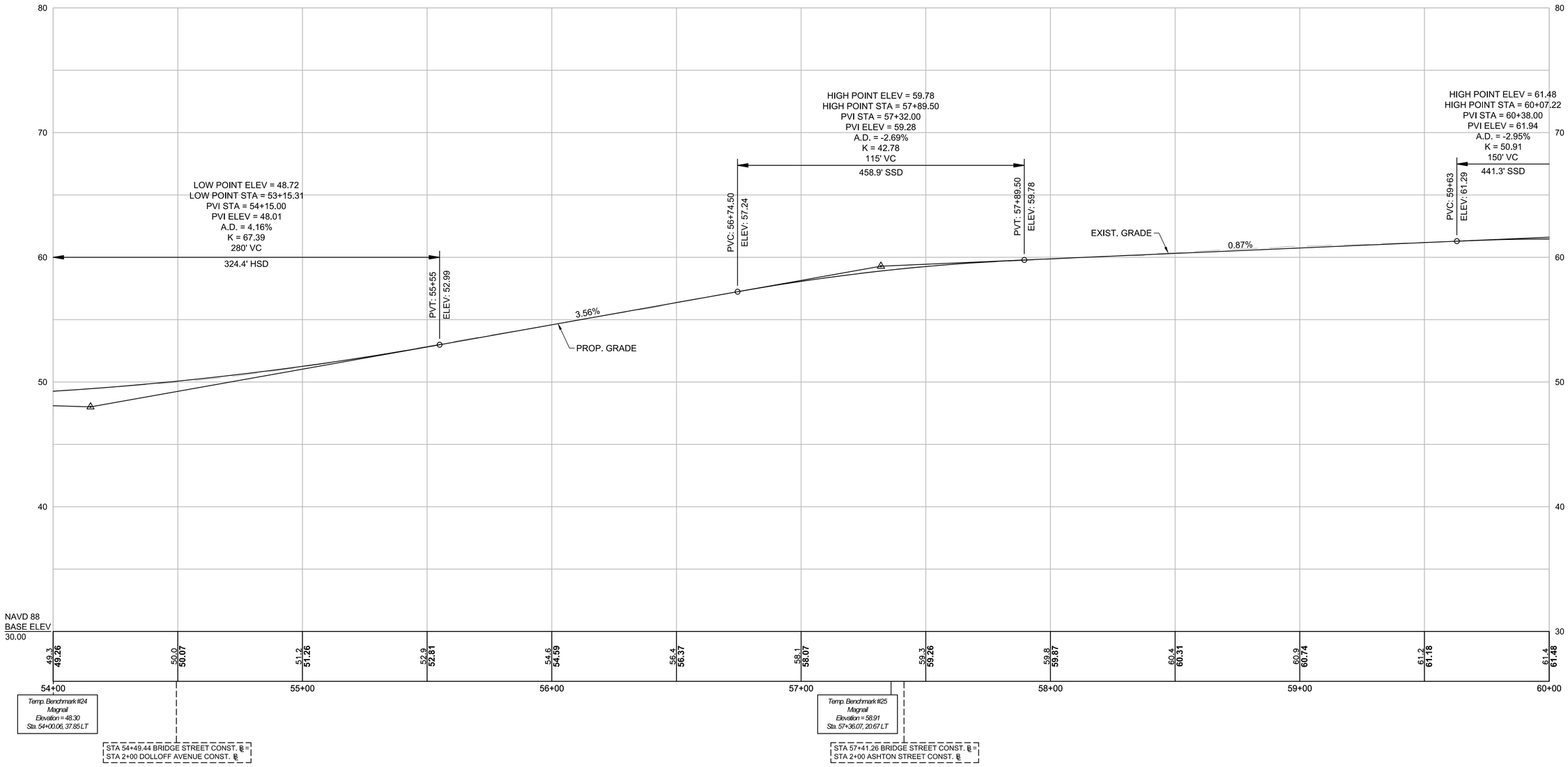
BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	29	80
PROJECT FILE NO.	608348		

PROFILE - BRIDGE STREET
SHEET 9 OF 13

608348_HD11(PROFILE).DWG Plotted on 4-Dec-2017 11:09 AM

BRIDGE STREET



CONTINUED ON SHEET NO. 28

CONTINUED ON SHEET NO. 30

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 8-20

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

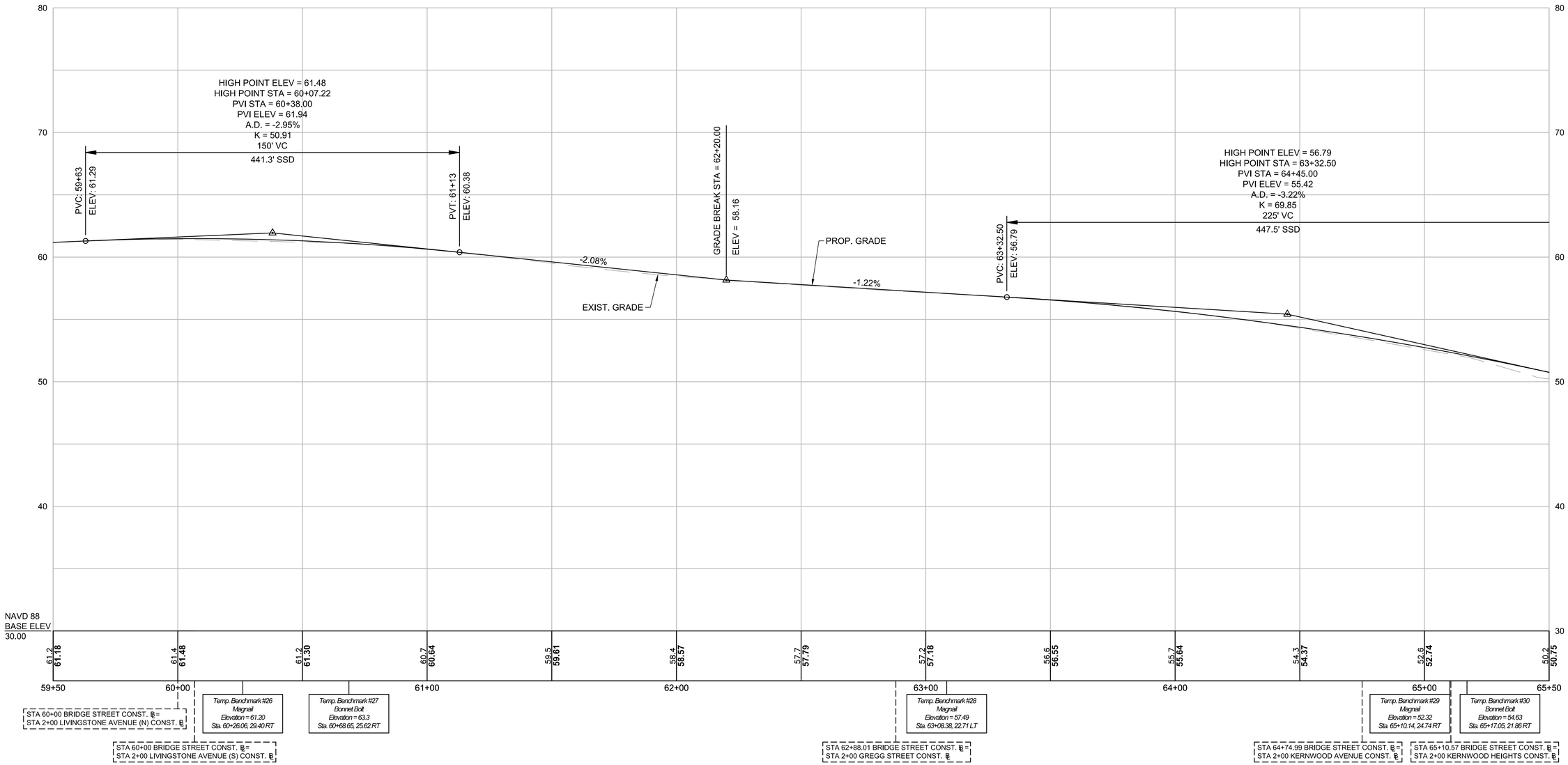
BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	30	80
PROJECT FILE NO.	608348		

PROFILE - BRIDGE STREET
SHEET 10 OF 13

608348_HD11(PROFILE).DWG Plotted on 4-Dec-2017 11:09 AM

BRIDGE STREET



CONTINUED ON SHEET NO. 29

CONTINUED ON SHEET NO. 31

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 8-20

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

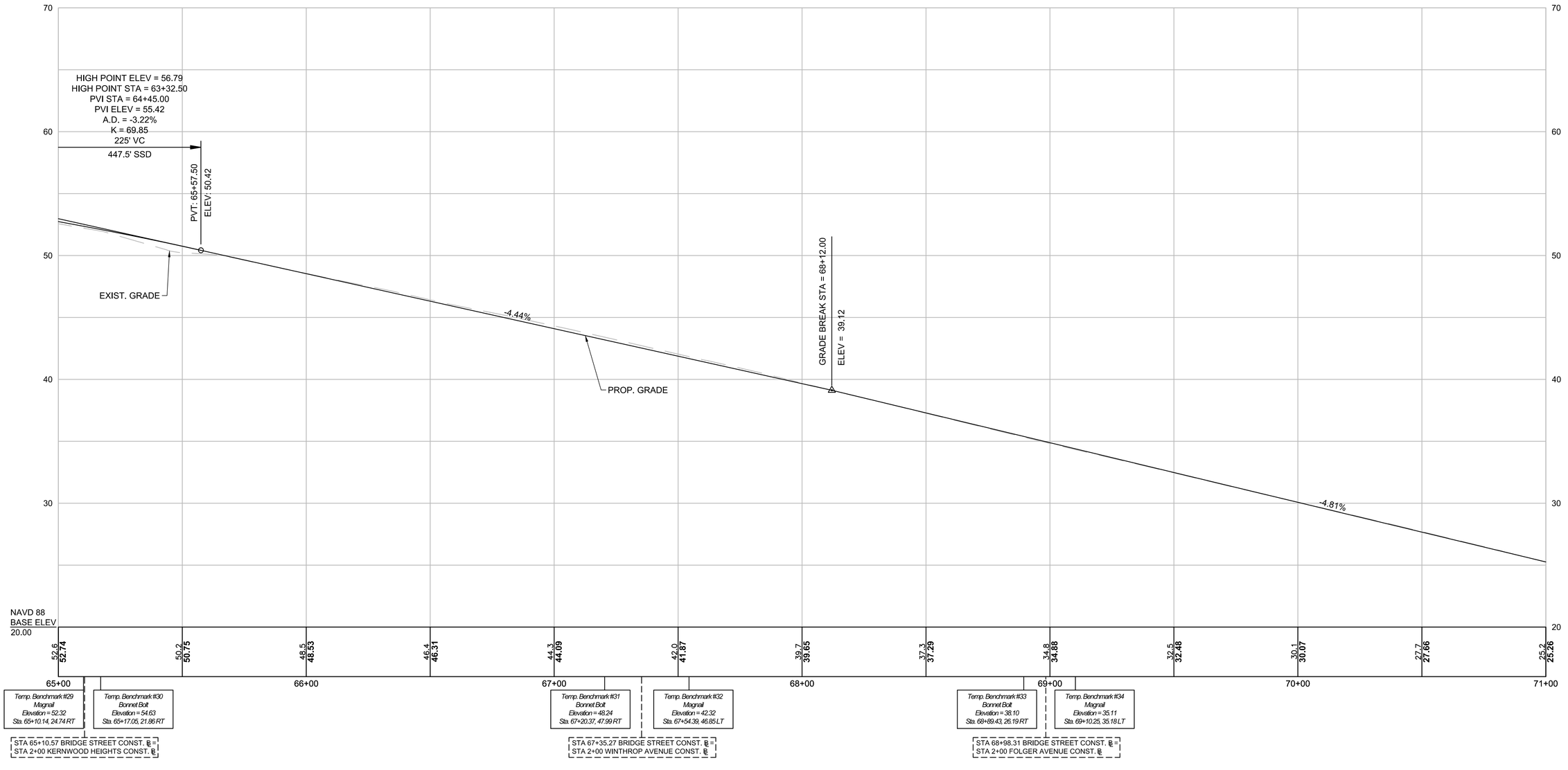
BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	31	80
PROJECT FILE NO.	608348		

PROFILE - BRIDGE STREET
SHEET 11 OF 13

608348_HD11(PROFILE).DWG Plotted on 4-Dec-2017 11:09 AM

BRIDGE STREET



FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 8-20

HOR. SCALE IN FEET
20 0 20 40

4 0 4 8
VER. SCALE IN FEET

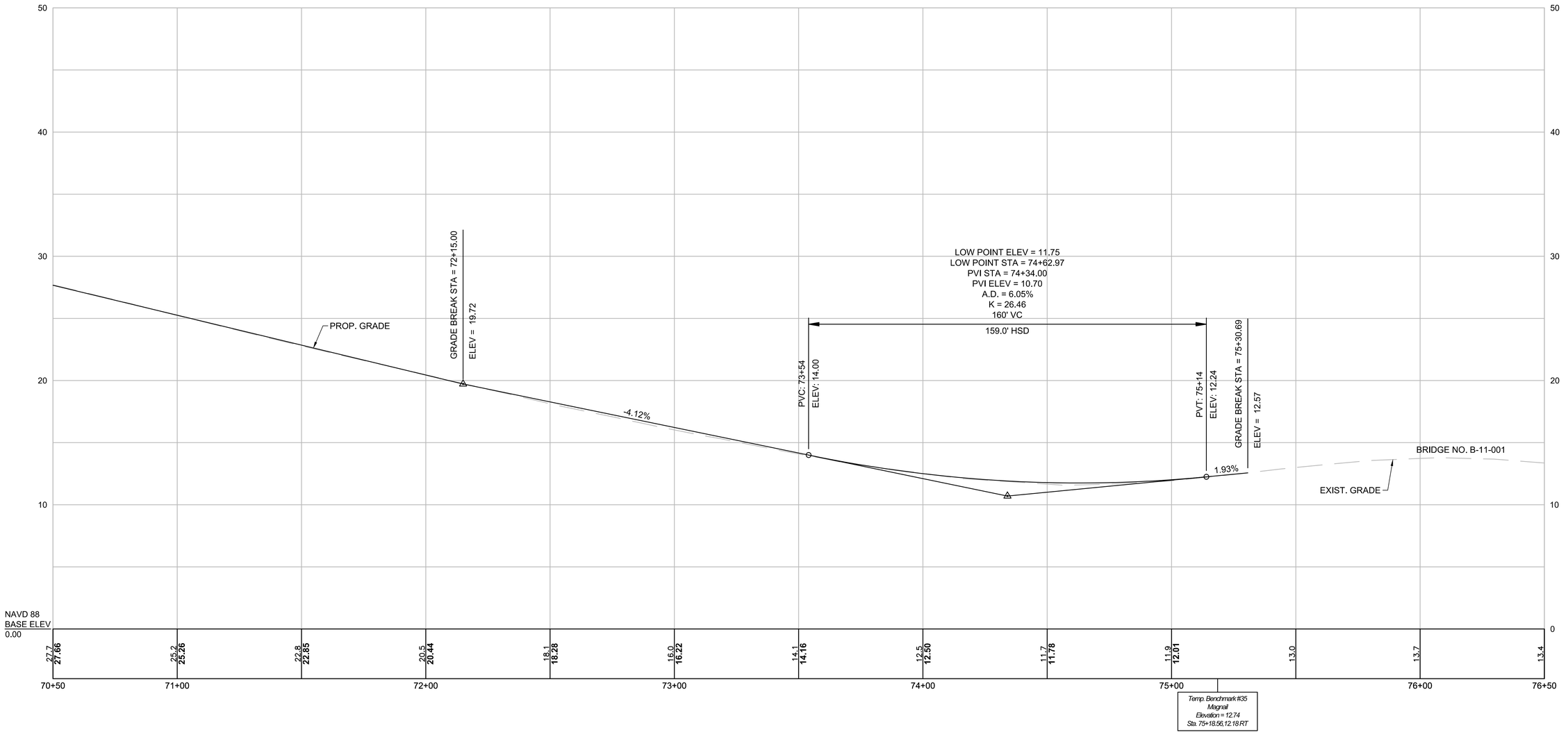
BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	32	80
PROJECT FILE NO.	608348		

PROFILE - BRIDGE STREET
SHEET 12 OF 13

608348_HD11(PROFILE).DWG Plotted on 4-Dec-2017 11:09 AM

BRIDGE STREET



FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 8-20

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

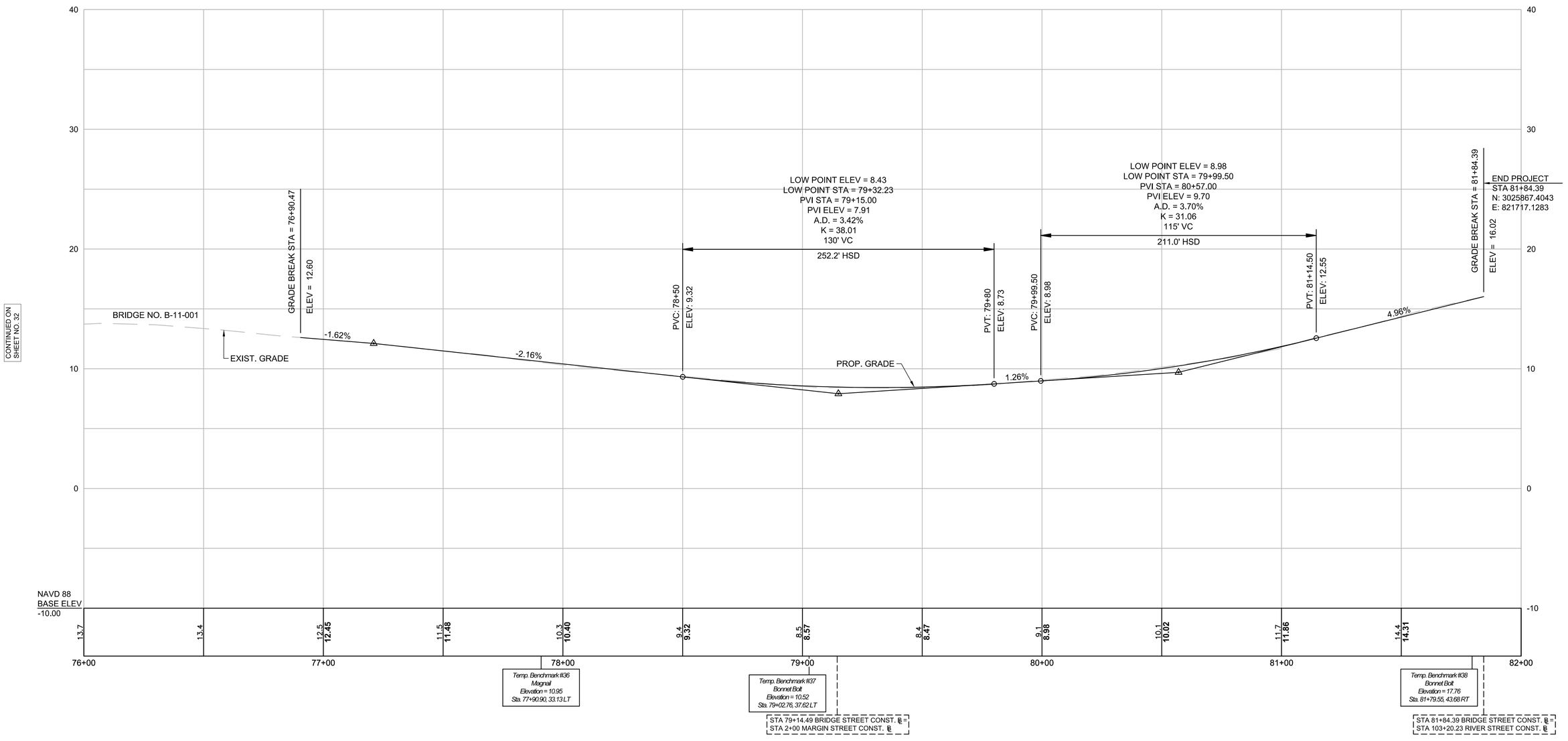
BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	33	80
PROJECT FILE NO.	608348		

PROFILE - BRIDGE STREET
SHEET 13 OF 13

608348_HD11(PROFILE).DWG Plotted on 4-Dec-2017 11:09 AM

BRIDGE STREET



FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 8-20

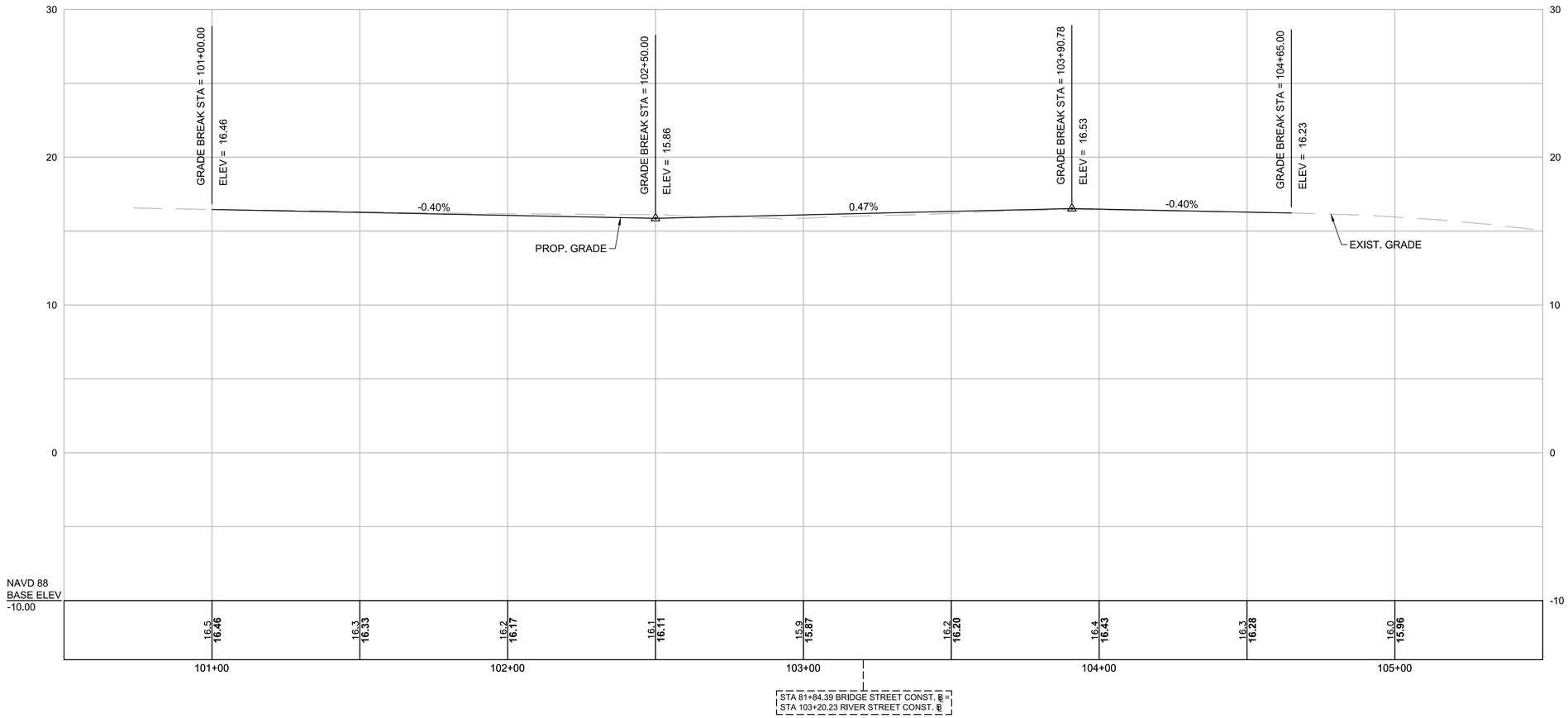
HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	34	80
PROJECT FILE NO.	608348		

PROFILE - RIVER STREET

RIVER STREET



FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 8-20

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

608348_HD11(PROFILE).DWG Plotted on 4-Dec-2017 11:09 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	35	80
PROJECT FILE NO.	608348		

DRAINAGE AND UTILITY PLANS
SHEET 1 OF 13

608348_HD4(DRAINAGE AND UTILITY PLANS).DWG Plotted on 4-Dec-2017 11:10 AM

N

BRIDGE STREET

CRESSY STREET

HIGH POINT
STA 13+60.47
EL = 71.91

LIMIT OF WORK
STA 11+00
N3028457.3743
E815427.5908
PROP. SAWCUT

LIMIT OF WORK
STA 3+00
N3028078.2815
E815813.0634
PROP. SAWCUT

REMODEL
ADJ.
RET.
ADJ. (B.O.)
R&R UP (B.O.)
R&R EXIST. HYDRANT
REM. EXIST CB
PROP. MASONRY PLUG
(1874 COUNTY LAYOUT)

SMH R=67.11' I1=58.11' (12"DIP) I2=58.41' (8"DIP) I3=58.31' (12"DIP)
SMH R=71.75' I1=57.55' (12"DIP) I2=57.65' (12"DIP)
SMH R=62.82' I1=50.62' (12"DIP) I2=51.22' (6"DIP) I3=57.72' (6"DIP) I4=57.72' (6"DIP) I5=51.12' (6"DIP) I6=50.72' (12"DIP)
OMH R=66.85' I1=63.85' (12"RCP)
CB R=66.46' I1=65.26' (DROP INLET)
SMH R=71.32' CAN NOT OPEN
SMH R=66.85' I1=56.85' (12"DIP) I2=56.85' (12"DIP) I3=57.35' (8"DIP) I4=60.85' (8"DIP)
CB R=67.44' I1=62.84' (12"RCP) I2=62.94' (12"RCP)

36' - 12" RCP
30' - 12" RCP
82' - 12" RCP 57' - 12" RCP

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 36

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	36	80
PROJECT FILE NO.	608348		

DRAINAGE AND UTILITY PLANS
SHEET 2 OF 13

608348_HD4(DRAINAGE AND UTILITY PLANS).DWG Plotted on 4-Dec-2017 11:10 AM

N

BRIDGE STREET

CRESSY STREET

VIRGINIA AVENUE

(1874 COUNTY LAYOUT)

LIMIT OF WORK
STA 3+00
N3028078.2815
E815813.0634
PROP. SAWCUT

LIMIT OF WORK
STA 2+60
N3027669.9720
E816064.7361
PROP. SAWCUT

LOW POINT
STA 19+91.46
EL = 48.16

CONTINUED ON SHEET NO. 35

CONTINUED ON SHEET NO. 37

36' - 12" RCP
30' - 12" RCP
82' - 12" RCP
57' - 12" RCP
57' - 12" RCP
27' - 12" RCP
92' - 12" RCP
152' - 12" RCP
27' - 12" RCP
27' - 12" RCP
38' - 12" RCP
209' - 12" RCP
32' - 12" RCP
181' - 12" RCP
23' - 12" RCP

REMODEL
ADJ.
ADJ. (B.O.)
RET.
REM. EXIST. CB (TYP.)
REM. EXIST. DMH (TYP.)
RET. EXIST. HYDRANT
R&R UP (B.O.)

SMH R=62.82' I1=50.62' (12"DIP) I2=51.22' (6"DIP) I3=57.72' (6"DIP) I4=57.72' (6"DIP) I5=51.12' (6"DIP) I6=50.72' (12"DIP)

CB R=56.55' I1=50.65' (12"DIP)

SMH R=50.76' I1=43.06' (12"DIP) I2=45.66' (6"DIP) I3=43.16' (12"DIP) I4=44.06' (6"DIP)

DMH R=47.93' I1=36.23' (24"DIP) I2=42.33' (12"RCP) I3=36.33' (24"DIP) I4=43.03' (12"RCP)

SMH R=48.34' I1=41.34' (12"DIP) I2=41.44' (12"DIP)

CB R=47.90' I1=44.70' (12"DIP)

SMH R=50.06' I1=40.56' (12"DIP) I2=40.66' (12"DIP) I3=41.86' (8"DIP) I4=43.26' (8"DIP) I5=40.76' (12"DIP)

DMH R=49.23' I1=44.43' (12"DIP) I2=44.43' (12"DIP) I3=44.93' (12"PVC)

CB R=55.94' I1=50.44' (12"DIP) I2=50.84' (12"DIP) I3=50.74' (12"DIP)

SMH R=57.68' I1=49.88' (12"DIP) I2=49.98' (12"DIP) I3=50.18' (12"DIP)

DMH R=50.51' I1=45.71' (12"DIP) I2=45.71' (12"DIP)

SMH R=66.85' I1=56.85' (12"DIP) I2=56.85' (12"DIP) I3=57.35' (8"DIP) I4=60.85' (8"DIP)

CB R=67.44' I1=62.84' (12"RCP) I2=62.94' (12"RCP)

CB R=47.62' I1=42.42' (12"DIP) I2=42.42' (12"DIP) I3=42.42' (12"DIP)

SMH RIM=48.25'

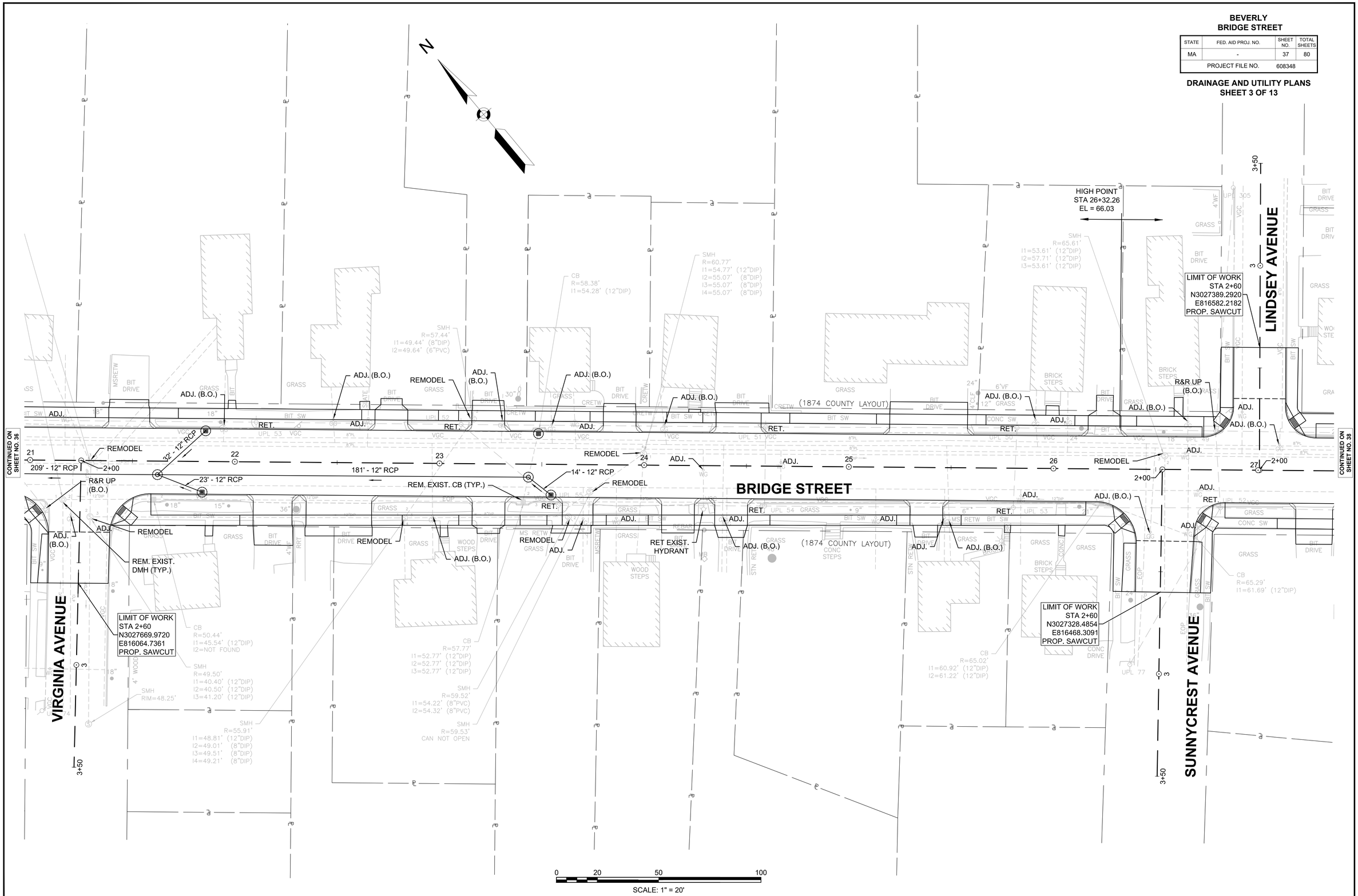
0 20 50 100

SCALE: 1" = 20'

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	37	80
PROJECT FILE NO.	608348		

DRAINAGE AND UTILITY PLANS
SHEET 3 OF 13



608348_HD4(DRAINAGE AND UTILITY PLANS).DWG Plotted on 4-Dec-2017 11:10 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	38	80
PROJECT FILE NO.	608348		

DRAINAGE AND UTILITY PLANS
SHEET 4 OF 13

608348_HD4(DRAINAGE AND UTILITY PLANS).DWG Plotted on 4-Dec-2017 11:10 AM

CONTINUED ON SHEET NO. 37

CONTINUED ON SHEET NO. 39

LINDSEY AVENUE

GILES AVENUE

SUNNYCREST AVENUE

WESTERN AVENUE

BRIDGE STREET

LIMIT OF WORK
STA 2+60
N3027389.2920
E816582.2182
PROP. SAWCUT

LIMIT OF WORK
STA 2+60
N3027140.1290
E816876.3256
PROP, SAWCUT

LIMIT OF WORK
STA 2+60
N3026988.9079
E816870.1196
PROP. SAWCUT

LOW POINT
STA 32+07.56
EL = 55.24

PROP, MASONRY PLUG (TYP.)

REM. EXIST. CB (TYP.)

RET. EXIST. HYDRANT

PROP. MASONRY PLUG

46' - 12" RCP

281' - 12" RCP

30' - 12" RCP

36' - 12" RCP

44' - 12" RCP

108' - 12" RCP

38' - 12" RCP

34' - 12" RCP

74' - 12" RCP

161' - 12" RCP

REMODEL

R&R UP (B.O.)

ADJ. (B.O.)

ADJ.

RET.

0 20 50 100

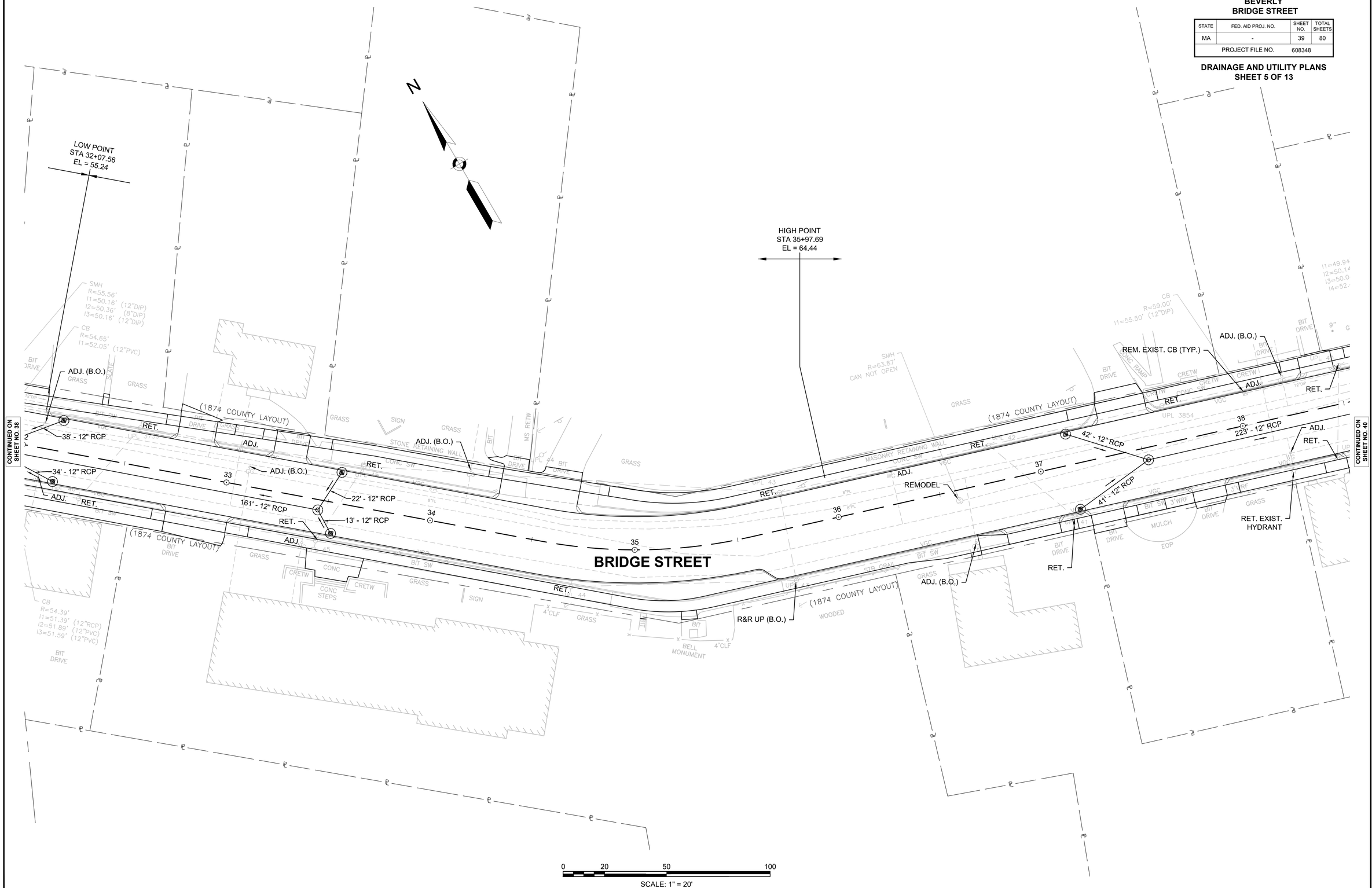
SCALE: 1" = 20'

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	39	80
PROJECT FILE NO.	608348		

DRAINAGE AND UTILITY PLANS
SHEET 5 OF 13

608348_HD4(DRAINAGE AND UTILITY PLANS).DWG Plotted on 4-Dec-2017 11:10 AM



0 20 50 100

SCALE: 1" = 20'

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	40	80
PROJECT FILE NO.	608348		

DRAINAGE AND UTILITY PLANS
SHEET 6 OF 13

608348_HD4(DRAINAGE AND UTILITY PLANS).DWG Plotted on 4-Dec-2017 11:10 AM

N

BRIDGE STREET

COUNTY WAY

BATES PARK AVENUE

DOANE AVENUE

LOW POINT
STA 39+96.96
EL = 55.98

HIGH POINT
STA 43+35.68
EL = 64.00

LIMIT OF WORK
STA 2+65
N3026705.3060
E817724.4178
PROP. SAWCUT

LIMIT OF WORK
STA 2+60
N3026574.3180
E817732.8125
PROP. SAWCUT

LIMIT OF WORK
STA 2+70
N3026500.9140
E817927.3772
PROP. SAWCUT

CONTINUED ON SHEET NO. 39

CONTINUED ON SHEET NO. 41

REM. EXIST. CB (TYP.)
RET. EXIST. HYDRANT
RET. EXIST. CB
R&R UP. (B.O.)
R&R UP (B.O.)
R&R (B.O.)
ADJ. (B.O.)
ADJ. (3) (B.O.)
ADJ.
RET.
REMODEL
42' - 12" RCP
41' - 12" RCP
223' - 12" RCP
165' - 12" RCP
23' - 12" RCP
19' - 12" RCP
37' - 12" RCP
CB R=59.00' I1=55.50' (12"DIP)
CB R=55.22' I1=51.72' (12"PVC) I2= NOT FOUND
SMH R=56.64' I1=49.94' (12"DIP) I2=50.14' (8"DIP) I3=50.04' (12"DIP) I4=52.44' (6"PVC)
CB R=55.14' I1=51.94' (12"PVC) I2=52.14' (12"PVC)
SMH R=57.85' I1=47.55' (12"DIP) I2=47.75' (12"DIP) I3=47.65' (12"DIP)
CB R=58.36' I1=53.76' (12"RCP)
SMH R=62.23' CAN NOT OPEN
SMH R=59.37' NO PIPES FOUND
SMH R=58.41' CAN NOT OPEN
SMH RIM=49.10
SMH RIM=54.35'
BIT PARKING LOT
(1874 COUNTY LAYOUT)

0 20 50 100
SCALE: 1" = 20'

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	41	80
PROJECT FILE NO.	608348		

DRAINAGE AND UTILITY PLANS
SHEET 7 OF 13

608348_HD4\DRAINAGE AND UTILITY PLANS\.DWG Plotted on 4-Dec-2017 11:10 AM

N

HIGH POINT
STA 43+35.68
EL = 64.00

HERSEY AVENUE

BRIDGE STREET

DOANE AVENUE

CARLETON AVENUE

RODERICK AVENUE

CONTINUED ON SHEET NO. 40

CONTINUED ON SHEET NO. 42

ADJ. (B.O.)
R&R UP (B.O.)
RET.
ADJ.
REMODEL
41' - 12" RCP
271' - 12" RCP
39' - 12" RCP
35' - 12" RCP
33' - 12" RCP
228' - 12" RCP
34' - 12" RCP
ADJ. (3)
REM. EXIST CB (TYP.)
REM
ADJ. (2)
R&S EXIST. HYDRANT
PROP. HYDRANT
PROP. WG
ADJ. (2) (B.O.)

LIMIT OF WORK
STA 2+70
N3026500.9140
E817927.3772
PROP. SAWCUT

LIMIT OF WORK
STA 2+60
N3026445.3057
E818135.3020
PROP. SAWCUT

LIMIT OF WORK
STA 2+60
N3026384.3263
E818327.1897
PROP. SAWCUT

CB
R=62.06'
I1=59.16' (12"DIP)

SMH
R=62.46'
I1=55.36' (12"DIP)
I2=55.46' (8"DIP)
I3=55.46' (12"DIP)
I4=56.26' (6"PVC)

SMH
R=60.55'
CAN NOT OPEN

SMH
R=61.75'
I1=56.35' (12"DIP)
I2=56.75' (8"DIP)
I3=56.55' (12"DIP PLUGGED)
I4=56.45' (6"PVC)

CB
R=60.15'
I1=56.15' (12"DIP)

CB
R=52.15'
I1=47.85' (12"DIP)

CB
R=61.95'
I1=57.75' (12"RCP)
I2=58.15' (12"DIP)

CB
R=60.33'
I1=55.13' (12"RCP)
I2=56.13' (12"DIP)

SMH
RIM=54.35'

SMH
R=58.87'
I1=51.17' (12"DIP)
I2=53.67' (8"DIP)
I3=51.47' (8"DIP)
I4=51.27' (12"DIP)

(1874 COUNTY LAYOUT)

0 20 50 100
SCALE: 1" = 20'

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	42	80
PROJECT FILE NO.	608348		

DRAINAGE AND UTILITY PLANS
SHEET 8 OF 13

608348_HD4(DRAINAGE AND UTILITY PLANS).DWG Plotted on 4-Dec-2017 11:10 AM

N

HILLSIDE AVENUE 3+50

EASTERN AVENUE 3+50

BRIDGE STREET

HILLCREST AVENUE 3+00

DOLLOF AVENUE 3+50

LIMIT OF WORK
STA 3+00
N3026405.0662
E818730.7660
PROP. SAWCUT

LIMIT OF WORK
STA 2+90
N3026338.0015
E818938.7262
PROP. SAWCUT

LIMIT OF WORK
STA 2+60
N3026311.9994
E818554.6222
PROP. SAWCUT

LIMIT OF WORK
STA 2+75
N3026157.2133
E819005.4877
PROP. SAWCUT

PROP. TEST PIT (TYP.)

LOW POINT
STA 53+15.31
EL = 48.72

REM. EXIST. CB (TYP.)

ADJ. EXIST. DMH

ADJ. EXIST. CB

R&R UP (B.O.)

(1874 COUNTY LAYOUT)

MASONRY RETAINING WALL

MS RETWALL

ADJ. (B.O.)

ADJ.

RET.

REMODEL

6' - 12" RCP

48' - 12" RCP

43' - 12" RCP

228' - 12" RCP

39' - 12" RCP

25' - 12" RCP

34' - 12" RCP

10' - 12" RCP

160' - 12" RCP

23' - 12" RCP

124' - 12" RCP

41' - 12" RCP

33' - 12" RCP

30' - 12" RCP

117' - 12" RCP

49 50 51 52 53 54 55

2+00

3+00

CB R=48.82' I1=45.02' (12"DIP)

DMH R=49.08' I1=44.58' (12"DIP) I2=45.18' (12"DIP) I3=45.08' (12"DIP)

SMH R=51.70' I1=38.50' (12"DIP) I2=43.40' (8"DIP) I3=38.50' (8"DIP) I4=38.50' (12"DIP)

CB R=52.15' I1=47.85' (12"DIP)

DMH R=52.82' I1=48.72' (12"DIP) I2=49.72' (12"DIP)

CB R=49.14' I1=45.14' (12"DIP)

DMH R=49.00' CAN NOT OPEN

CB R=48.22' I1=44.52' (12"DIP)

CB R=47.72' I1=44.52' (12"DIP)

DMH R=48.33' I1=42.43' (24"DIP) I2=42.73' (24"DIP) I3=43.23' (12"DIP)

CB R=48.10' I1=42.70' (12"DIP) I2=42.80' (12"DIP)

SMH R=48.23' I1=39.83' (12"DIP) I2=39.93' (12"DIP) I3=39.93' (12"DIP)

CB R=47.53' I1=45.03' (9"PVC)

CB R=49.03' I1=44.93' (12"DIP) I2=46.13' (12"DIP)

SMH R=49.75' I1=41.25' (12"DIP) I2=41.25' (12"DIP) I3=43.25' (12"DIP) I4=41.25' (12"DIP)

SMH R=48.78' I1=39.38' (12"DIP) I2=39.48' (12"DIP) I3=39.58' (12"DIP)

DMH RIM=48.86'

CB R=48.27' I1=42.77' (12"DIP) I2=42.77' (12"DIP)

SMH R=49.10' I1=38.90' (12"DIP) I2=39.20' (8"DIP) I3=39.00' (12"DIP)

CB R=50.37' NO PIPES FOUNI

UPL 29 UPL 28 UPL 2955

BIT DRIVE BIT PARKING LOT BIT SW BIT BERM CONC SW CONC STEPS 4'CLF CRETW WOOD STEPS GRASS VGC WGC WG GG EOP WRETW 6'CKF 12"DIP

CONTINUED ON SHEET NO. 41

CONTINUED ON SHEET NO. 43

0 20 50 100

SCALE: 1" = 20'

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	43	80
PROJECT FILE NO.	608348		

DRAINAGE AND UTILITY PLANS
SHEET 9 OF 13

608348_HD4(DRAINAGE AND UTILITY PLANS).DWG Plotted on 4-Dec-2017 11:10 AM

N

BRIDGE STREET

LIVINGSTONE AVENUE

DOLLOF AVENUE

ASHTON STREET

LIVINGSTONE AVENUE

HIGH POINT
STA 60+07.22
EL = 61.48

LIMIT OF WORK
STA 2+60
N3026191.9277
E819556.6426
PROP. SAWCUT

LIMIT OF WORK
STA 2+60
N3026072.0391
E819548.3663
PROP. SAWCUT

LIMIT OF WORK
STA 2+60
N3026105.0928
E819281.4649
PROP. SAWCUT

LIMIT OF WORK
STA 2+75
N3026157.2133
E819005.4877
PROP. SAWCUT

REM. EXIST. SIGNAL EQUIPMENT

REM. EXIST. DMH (TYP.)

REM. EXIST. CB (TYP.)

R&R UP (B.O.)

REMODEL

ADJ.

ADJ. (B.O.)

ADJ. (2) (B.O.)

ADJ. (5) (B.O.)

RET.

30' - 12" RCP

117' - 12" RCP

27' - 12" RCP

54' - 12" RCP

128' - 12" RCP

35' - 12" RCP

22' - 12" RCP

SMH R=48.23' I1=39.83' (12"DIP) I2=39.93' (12"DIP) I3=39.93' (12"DIP)

CB R=47.53' I1=45.03' (9"PVC)

CB R=49.03' I1=44.93' (12"DIP) I2=46.13' (12"DIP)

SMH R=49.75' I1=41.25' (12"DIP) I2=41.25' (12"DIP) I3=43.25' (12"DIP) I4=41.25' (12"DIP)

SMH R=55.53' I1=49.93' (12"DIP) I2=50.43' (12"DIP)

SMH R=55.33' I1=42.53' (12"DIP) I2=44.43' (8"DIP) I3=43.33' (12"DIP) I4=42.73' (12"DIP)

DMH R=56.64' I1=51.74' (12"DIP) I2=51.74' (12"DIP)

CB R=58.87' I1=54.17' (12"RCP) I2=56.07' (12"DIP)

SMH R=59.98' I1=53.78' (12"DIP) I2=53.88' (12"DIP) I3=54.08' (12"DIP)

SMH R=61.28' CAN NOT OPEN

CB R=50.37' NO PIPES FOUND

CB R=59.38' I1=55.68' (8"DIP)

SMH R=59.10' I1=43.40' (12"DIP) I2=43.50' (12"DIP) I3=50.90' (8"DIP)

(1874 COUNTY LAYOUT)

MS RETWALL

BIT PARKING LOT

WOOD STEPS

CONC STEPS

CONC PLANTER

BIT DRIVE

GRASS

CONC SW

BIT BERM

6"STKF

6"VNLF

4'CLF

4'WF

IRON PIPE

0 20 50 100

SCALE: 1" = 20'

CONTINUED ON SHEET NO. 42

CONTINUED ON SHEET NO. 44

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	44	80
PROJECT FILE NO.	608348		

DRAINAGE AND UTILITY PLANS
SHEET 10 OF 13

608348_HD4(DRAINAGE AND UTILITY PLANS).DWG Plotted on 4-Dec-2017 11:10 AM

N

LIVINGSTONE AVENUE

HIGH POINT
STA 60+07.22
EL = 61.48

LIMIT OF WORK
STA 2+60
N3026191.9277
E819556.6426
PROP. SAWCUT

LIMIT OF WORK
STA 2+60
N3026156.7295
E819841.2442
PROP. SAWCUT

GREGG STREET

KERNWOOD HEIGHTS

LIMIT OF WORK
STA 2+60
N3026126.9747
E820065.7861
PROP. SAWCUT

PROP. SIGNAL EQUIPMENT (SEE TRAFFIC SIGNAL PLANS)

BRIDGE STREET

(1874 COUNTY LAYOUT)

REMODEL

25' - 12" RCP

138' - 12" RCP

31' - 12" RCP

32' - 12" RCP

21' - 12" RCP

101' - 12" RCP

157' - 12" RCP

23' - 12" RCP

REM. EXIST. CB (TYP.)

REM. EXIST. SIGNAL EQUIPMENT

RET. EXIST HYDRANT

R&R UP (B.O.)

ADJ. (B.O.)

ADJ. (2)

ADJ. (5) (B.O.)

RET.

ADJ.

LIMIT OF WORK
STA 2+60
N3026072.0391
E819548.3663
PROP. SAWCUT

KERNWOOD AVENUE

LIMIT OF WORK
STA 2+75
N3026005.1529
E819992.1992
PROP. SAWCUT

SMH R=57.15' I1=49.25' (12"DIP) I2=49.25' (12"DIP) I5=49.45' (12"DIP)

SMH R=61.92' CAN NOT OPEN

SMH R=52.26' I1=43.76' (12"DIP) I2=43.96' (12"DIP) I3=43.76' (12"DIP) I4=43.86' (12"DIP)

CB R=52.69' I1=47.19' (12"DIP)

CB R=56.99' I1=52.39' (12"DIP)

CB R=57.14' I1=52.04' (12"DIP) I2=52.04' (12"DIP)

CB R=54.48' I1= (NOT FOUND) I2=49.68' (12"DIP)

DMH R=52.29' I1=46.59' (12"DIP) I2=46.69' (12"DIP) I3=46.79' (12"DIP) I4=46.69' (12"DIP)

CB RIM=51.70'

CB RIM=51.75'

SHED

0 20 50 100

SCALE: 1" = 20'

CONTINUED ON SHEET NO. 43

CONTINUED ON SHEET NO. 45

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	45	80
PROJECT FILE NO.	608348		

DRAINAGE AND UTILITY PLANS
SHEET 11 OF 13

608348_HD4(DRAINAGE AND UTILITY PLANS).DWG Plotted on 4-Dec-2017 11:10 AM

N

KERNWOOD HEIGHTS

LIMIT OF WORK
STA 2+60
N3026126.9747
E820065.7861
PROP. SAWCUT

SMH
R=61.92'
CAN NOT OPEN

SMH
R=52.26'
I1=43.76' (12"DIP)
I2=43.96' (12"DIP)
I3=43.76' (12"DIP)
I4=43.86' (12"DIP)

CB
R=41.78'
I1=38.88' (12"DIP)
I2=39.28' (12"DIP)

DMH
R=42.54'
I1=36.44' (8"DIP)
I2=36.74' (8"DIP)

SMH
R=42.43'
CAN NOT OPEN

CB
R=41.54'
I1=39.04' (12"DIP)

SMH
R=34.43'
I1=26.43' (12"DIP)
I2=26.73' (12"DIP)
I3=26.43' (12"DIP)

CB
R=36.25'
I1=33.15' (12"DIP)

DMH
R=26.24'
I1=21.54' (12"DIP)
I2=22.04' (12"DIP)

CB
R=25.21'
I1=20.61' (12"DIP
I2=20.61' (12"DIP

REMODEL
R&R RRFB
R&R UP (B.O)
REM. EXIST. CB (TYP.)
ADJ. (B.O.)
RET. UP
REMODEL
ADJ. (B.O.)
RET. EXIST. DMH
ADJ.
RET.
ADJ.
RET.
ADJ.
ADJ. (B.O.)
ADJ.
RET.
ADJ.
ADJ.
RET.
ADJ.
ADJ.
RET.

(1874 COUNTY LAYOUT)

101' - 12" RCP
157' - 12" RCP
23' - 12" RCP
29' - 12" RCP
21' - 12" RCP
51' - 12" RCP
24' - 12" RCP
212' - 12" RCP
16' - 12" RCP
110' - 12" RCP
17' - 12" RCP
24' - 12" RCP
35' - 12" RCP
31' - 12" RCP
25' - 12" RCP

66 67 2+00 68 69 2+00 70 71

BRIDGE STREET

ADJ. (2)
R&R RRFB
PROP. MASONRY PLUG (TYP.)
REM. EXIST. DMH (TYP.)
ADJ. (2) (B.O.)
RET.
RET.
RET.
RET. EXIST. HYDRANT
R&R EXIST. HYDRANT
ADJ.
ADJ.
ADJ.
ADJ.
ADJ.

32' - 12" RCP
15' - 12" RCP

(1874 COUNTY LAYOUT)

LIMIT OF WORK
STA 2+55
N3025984.2675
E820267.4977
PROP. SAWCUT

LIMIT OF WORK
STA 2+60
N3025958.2323
E820432.1545
PROP. SAWCUT

CB
R=43.87'
I1=40.17' (12"DIP)
I2=40.77' (12"DIP)

DMH
R=41.81'
I1=37.81' (12"DIP)
I2=38.01' (12"DIP)
I3=37.91' (12"DIP)
I4=37.91' (12"DIP)

CB
R=42.23'
I1=NOT FOUND
I2=38.23' (12"DIP)

CB
R=44.02'
I1=41.52' (12"DIP)

CB
R=35.70'
I1=31.30' (12"DIP)
I2=32.40' (12"DIP)
I3=NOT FOUND
I4=NOT FOUND

DMH
R=32.98'
I1=27.78' (12"DIP)
I2=30.08' (12"DIP)

DMH
RIM=37.43'

WINTHROP AVENUE

FOLGER AVENUE

BIT PARKING LOT

BRICK

3+50

3+50

CONTINUED ON SHEET NO. 44

CONTINUED ON SHEET NO. 46

0 20 50 100

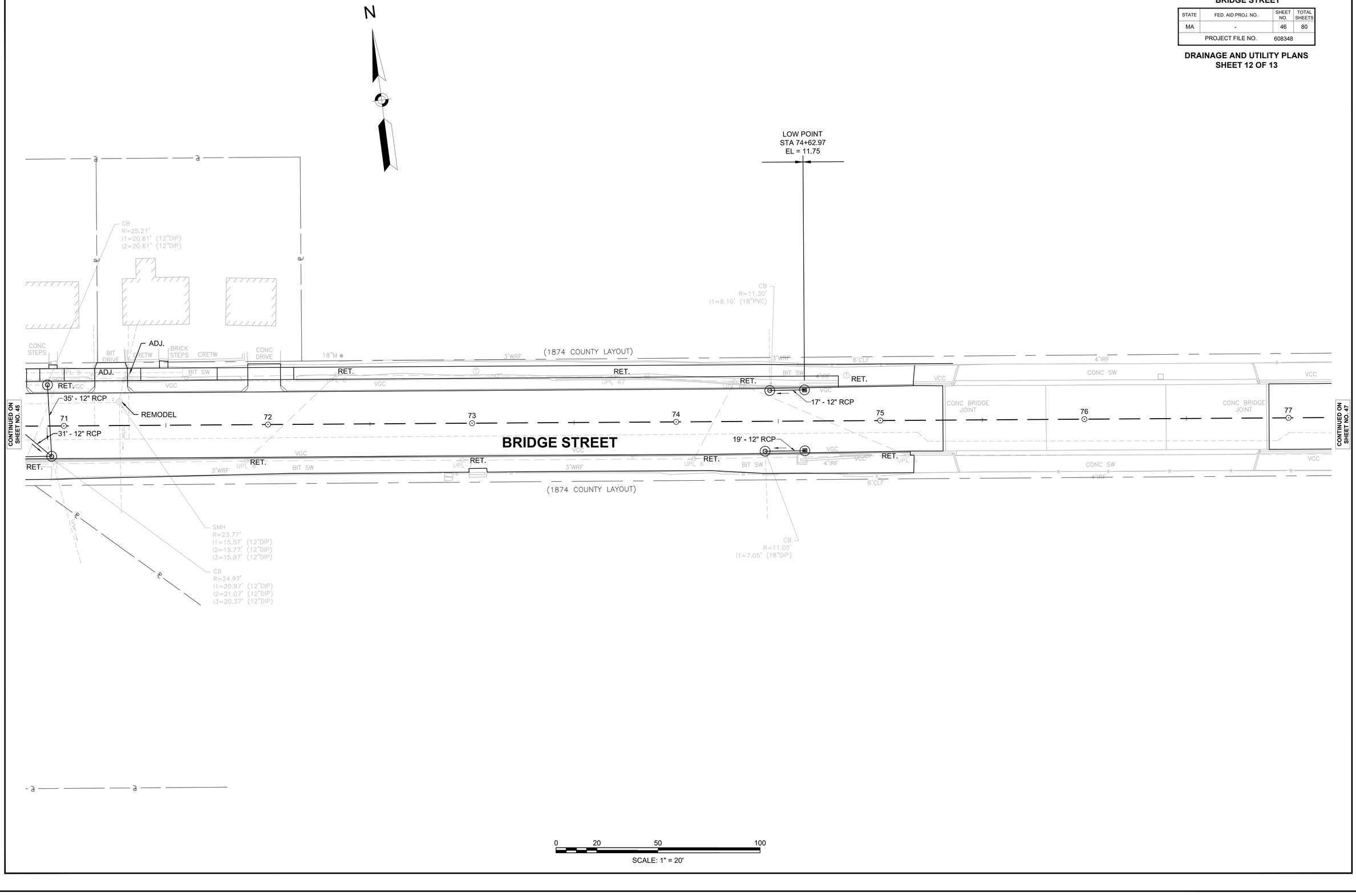
SCALE: 1" = 20'

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	46	80
PROJECT FILE NO.	608348		

DRAINAGE AND UTILITY PLANS
SHEET 12 OF 13

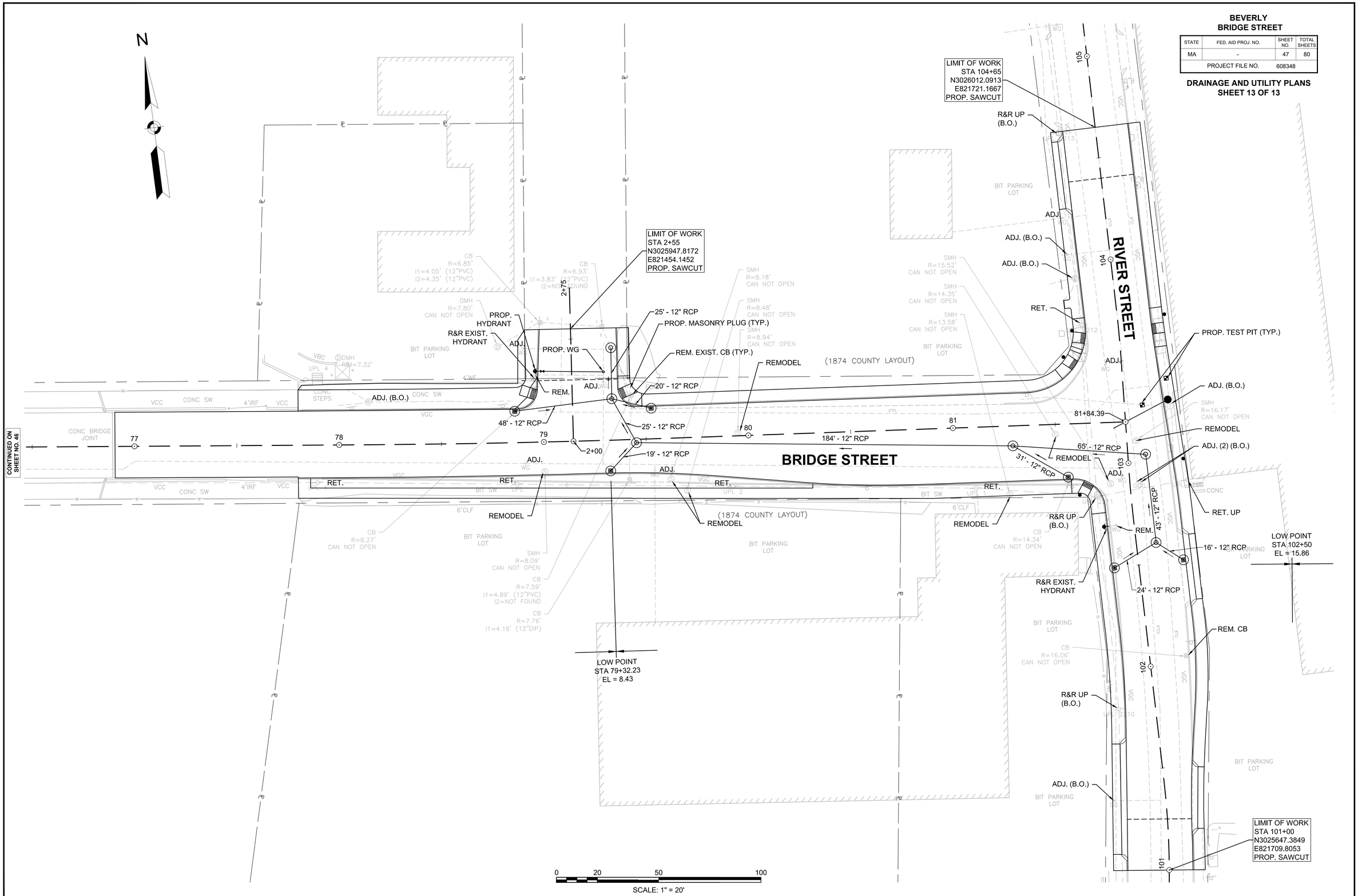
608348_HD4(DRAINAGE AND UTILITY PLANS).DWG Plotted on 4-Dec-2017 11:10 AM



BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	47	80
PROJECT FILE NO.	608348		

DRAINAGE AND UTILITY PLANS
SHEET 13 OF 13



608348_HD4(DRAINAGE AND UTILITY PLANS).DWG Plotted on 4-Dec-2017 11:11 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	48	80
PROJECT FILE NO.	608348		

SIGN AND PAVEMENT MARKING PLANS
SHEET 1 OF 13

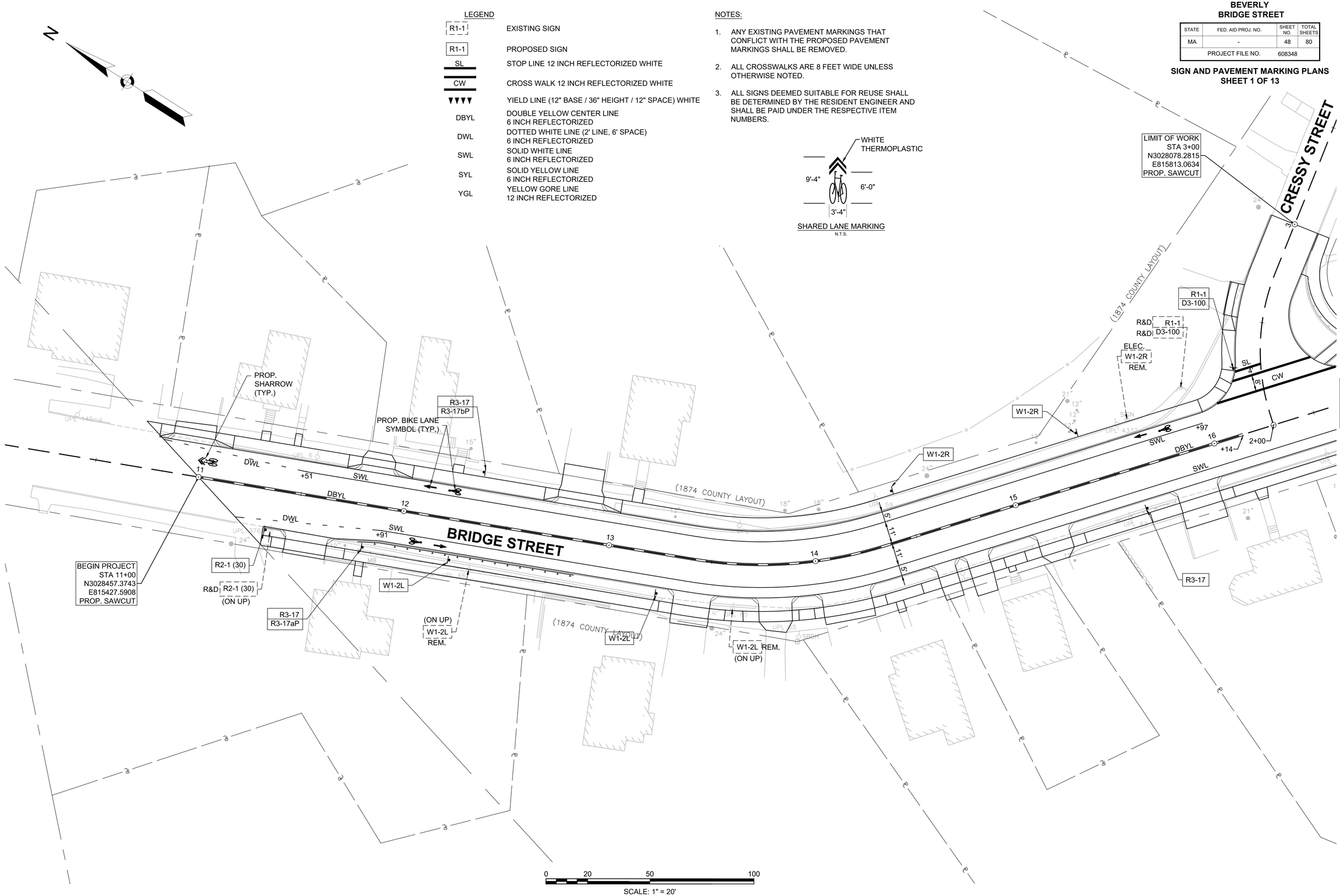
LEGEND

R1-1	EXISTING SIGN
R1-1	PROPOSED SIGN
SL	STOP LINE 12 INCH REFLECTORIZED WHITE
CW	CROSS WALK 12 INCH REFLECTORIZED WHITE
	YIELD LINE (12" BASE / 36" HEIGHT / 12" SPACE) WHITE
DBYL	DOUBLE YELLOW CENTER LINE 6 INCH REFLECTORIZED
DWL	DOTTED WHITE LINE (2' LINE, 6' SPACE) 6 INCH REFLECTORIZED
SWL	SOLID WHITE LINE 6 INCH REFLECTORIZED
SYL	SOLID YELLOW LINE 6 INCH REFLECTORIZED
YGL	YELLOW GORE LINE 12 INCH REFLECTORIZED

NOTES:

1. ANY EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THE PROPOSED PAVEMENT MARKINGS SHALL BE REMOVED.
2. ALL CROSSWALKS ARE 8 FEET WIDE UNLESS OTHERWISE NOTED.
3. ALL SIGNS DEEMED SUITABLE FOR REUSE SHALL BE DETERMINED BY THE RESIDENT ENGINEER AND SHALL BE PAID UNDER THE RESPECTIVE ITEM NUMBERS.

SHARED LANE MARKING
N.T.S.



0 20 50 100

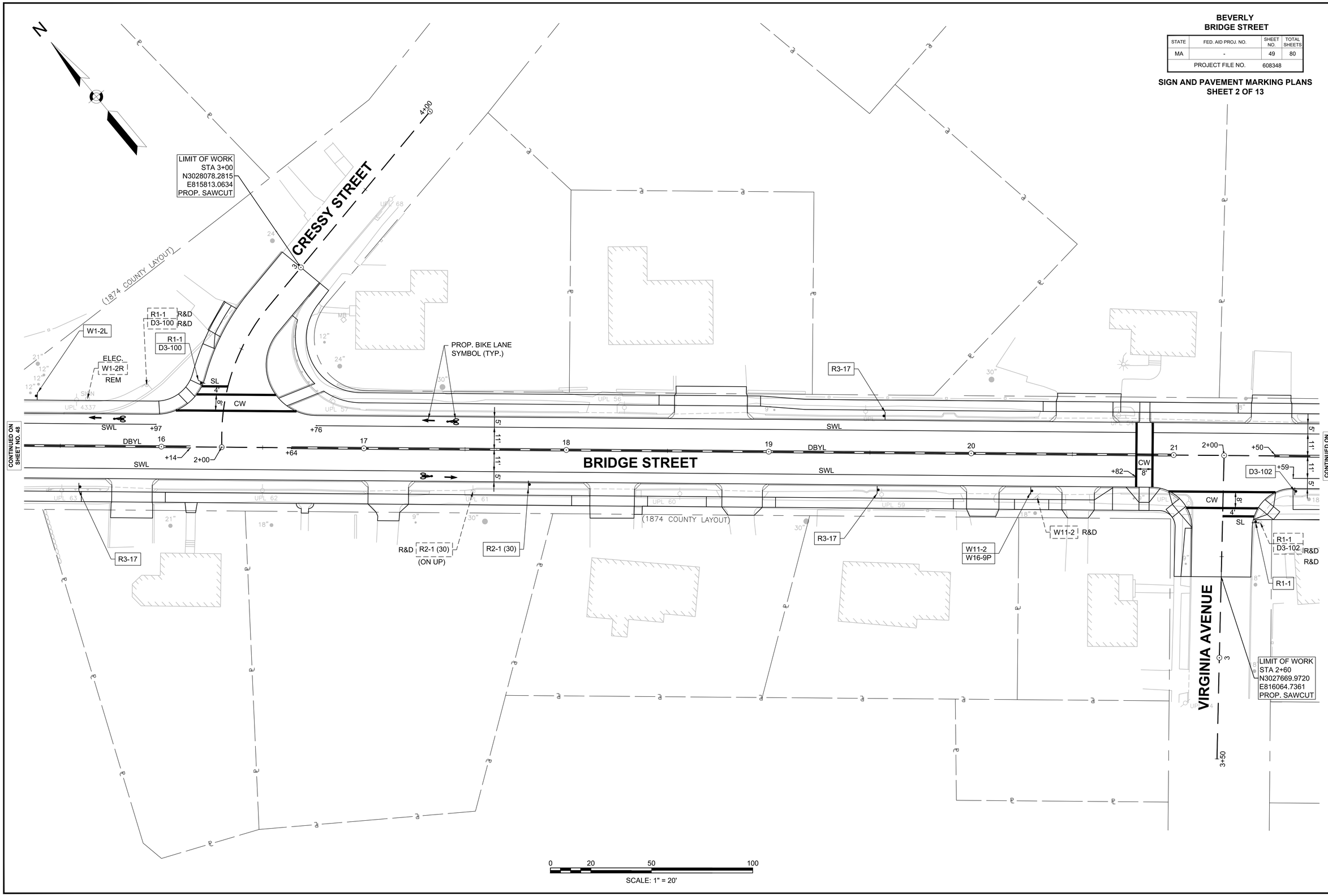
SCALE: 1" = 20'

608348_HD3\SIGN AND PAVEMENT MARKING PLANS).DWG Plotted on 4-Dec-2017 11:11 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	49	80
PROJECT FILE NO.	608348		

SIGN AND PAVEMENT MARKING PLANS
SHEET 2 OF 13

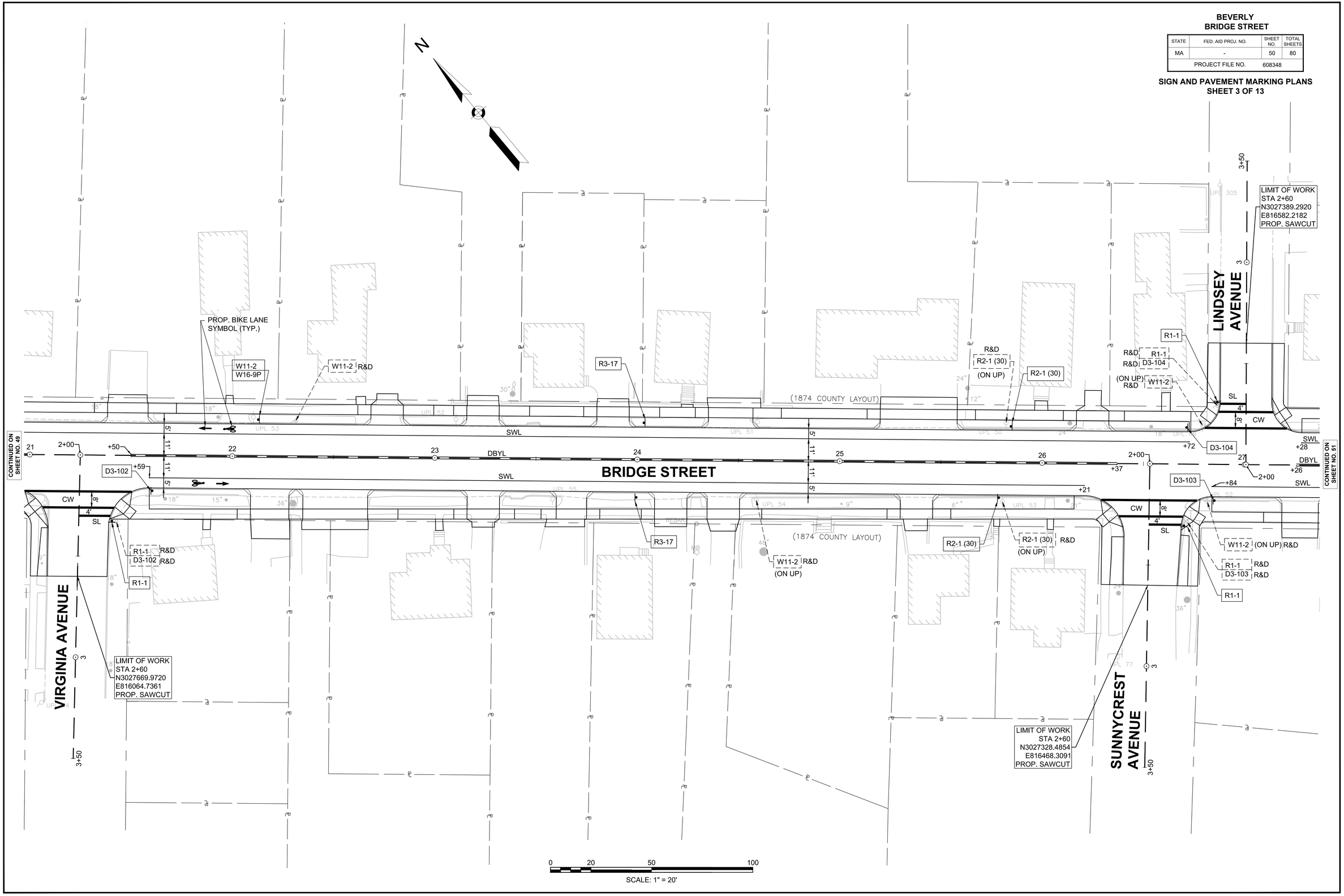


608348_HD3(SIGN AND PAVEMENT MARKING PLANS).DWG Plotted on 4-Dec-2017 11:11 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	50	80
PROJECT FILE NO.	608348		

SIGN AND PAVEMENT MARKING PLANS
SHEET 3 OF 13

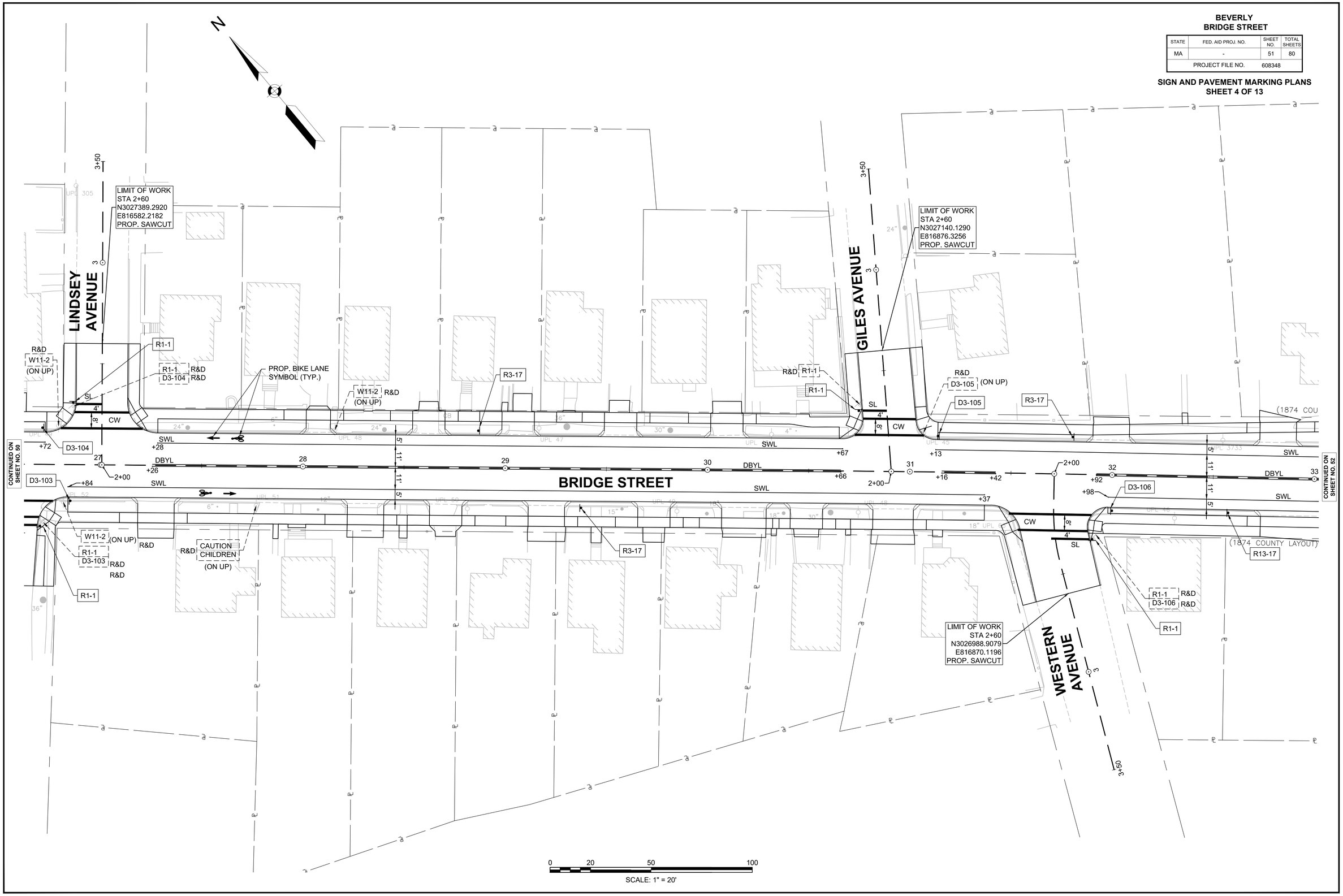


608348_HD3(SIGN AND PAVEMENT MARKING PLANS).DWG Plotted on 4-Dec-2017 11:11 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	51	80
PROJECT FILE NO.	608348		

SIGN AND PAVEMENT MARKING PLANS
SHEET 4 OF 13



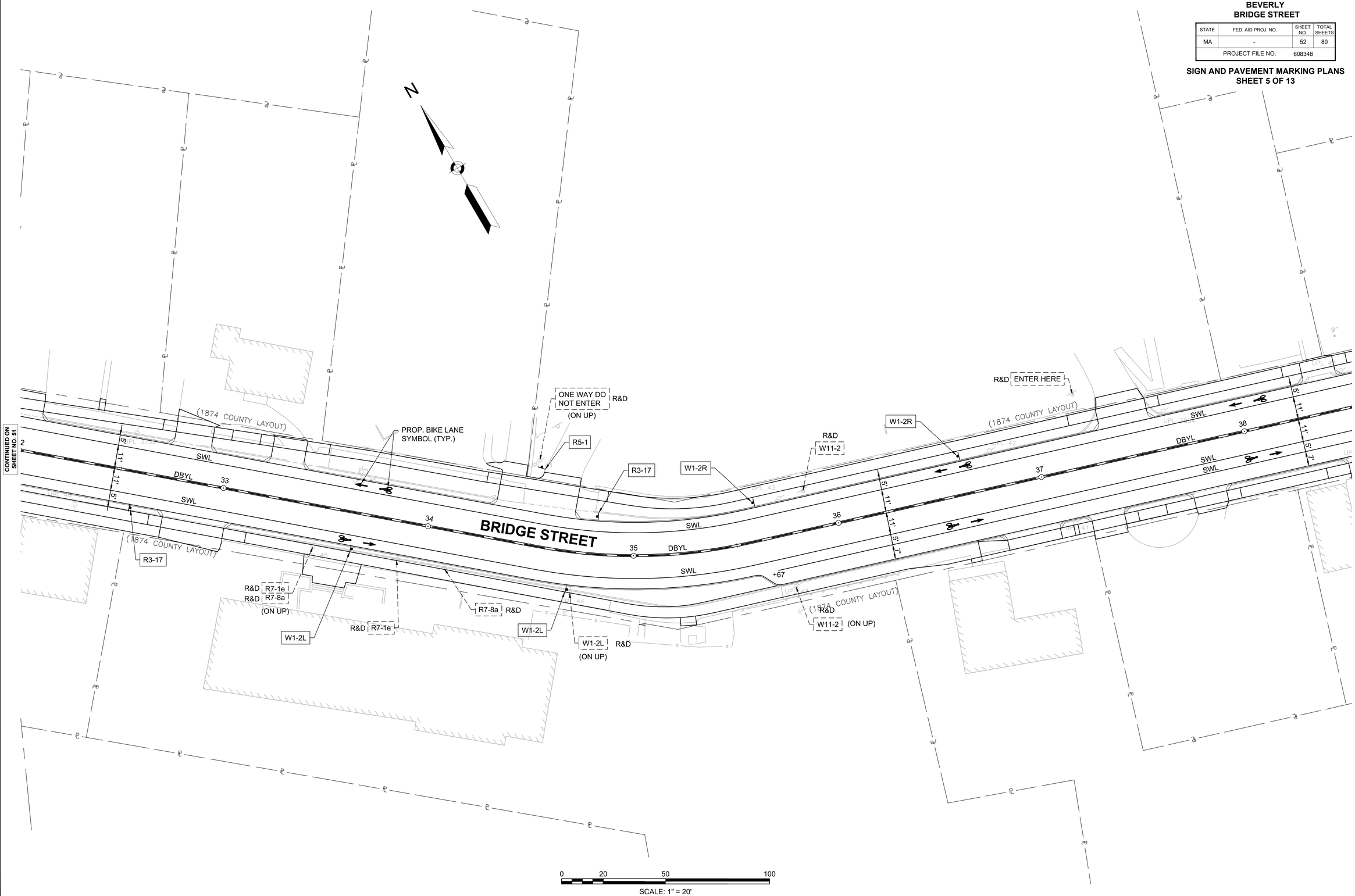
608348_HD3(SIGN AND PAVEMENT MARKING PLANS).DWG Plotted on 4-Dec-2017 11:11 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	52	80
PROJECT FILE NO.	608348		

SIGN AND PAVEMENT MARKING PLANS
SHEET 5 OF 13

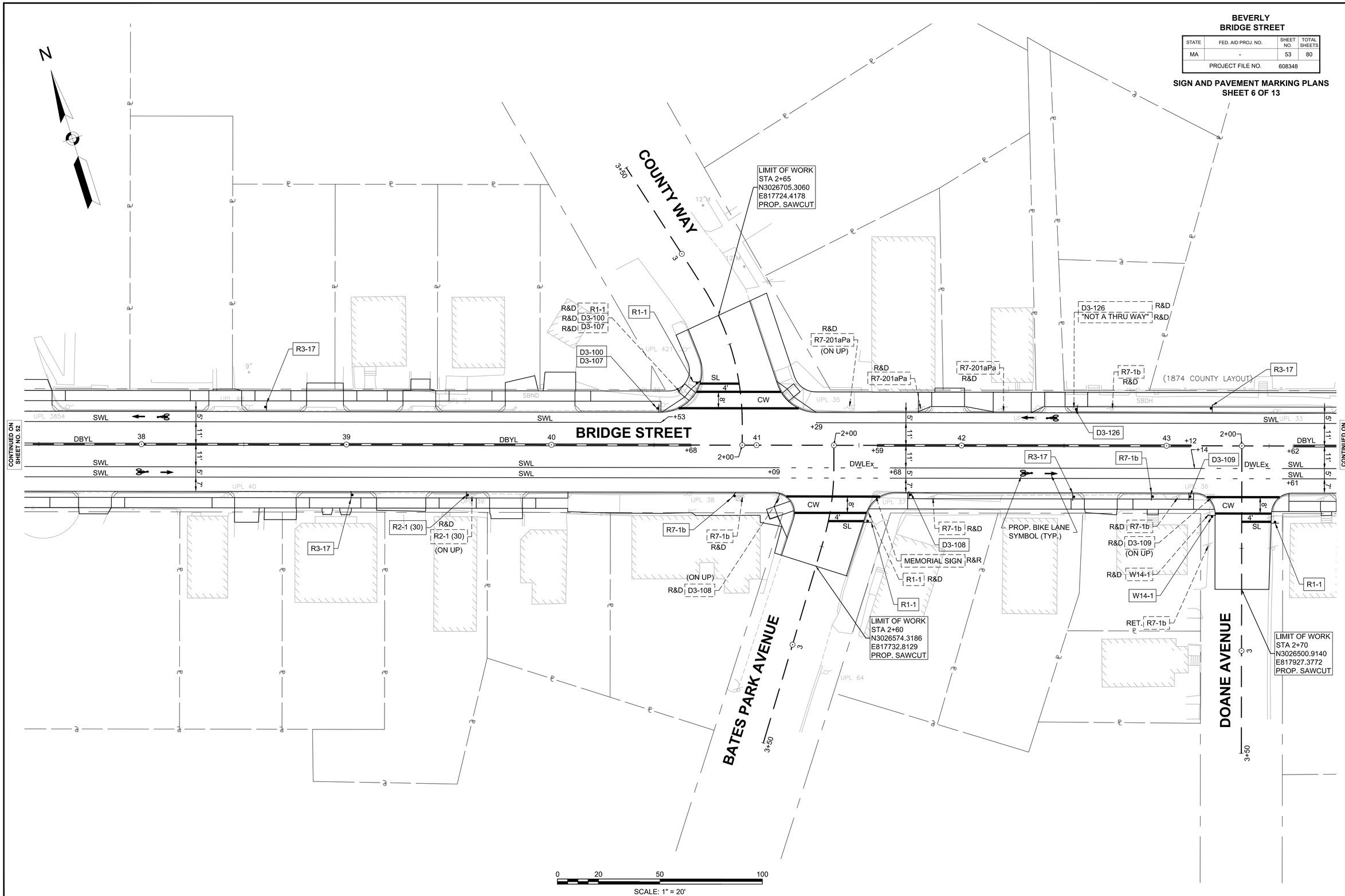
608348_HD3\SIGN AND PAVEMENT MARKING PLANS\.DWG Plotted on 4-Dec-2017 11:11 AM



BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	53	80
PROJECT FILE NO.	608348		

SIGN AND PAVEMENT MARKING PLANS
SHEET 6 OF 13

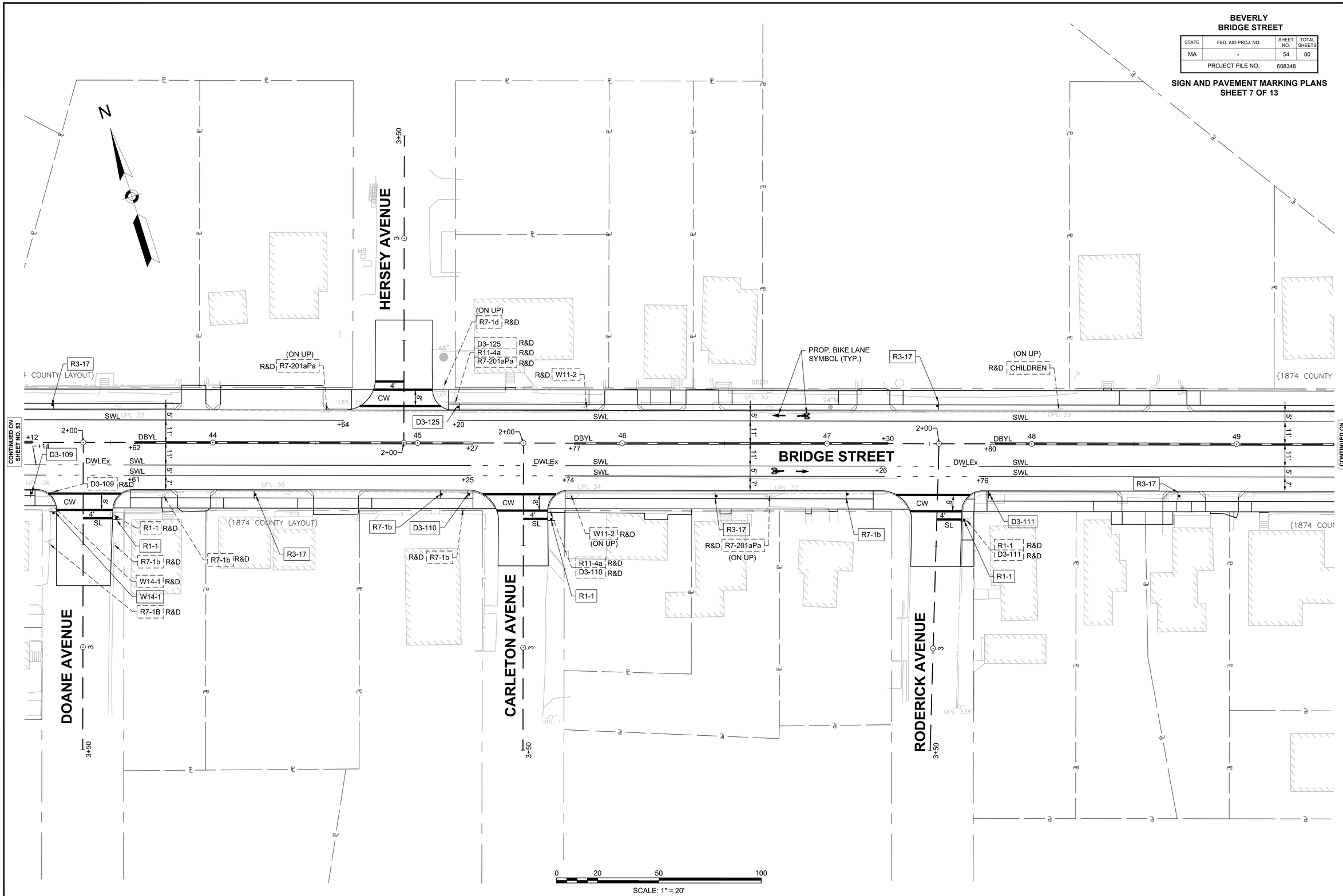


608348_HD3(SIGN AND PAVEMENT MARKING PLANS).DWG Plotted on 4-Dec-2017 11:11 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	54	80
PROJECT FILE NO.	608348		

SIGN AND PAVEMENT MARKING PLANS
SHEET 7 OF 13



608348_HD3(SIGN AND PAVEMENT MARKING PLANS).DWG Plotted on 4-Dec-2017 11:11 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	55	80
PROJECT FILE NO.	608348		

SIGN AND PAVEMENT MARKING PLANS
SHEET 8 OF 13

608348_HD3\SIGN AND PAVEMENT MARKING PLANS\.DWG Plotted on 4-Dec-2017 11:11 AM

N

HILLSIDE AVENUE 3+50

EASTERN AVENUE 3+50

BRIDGE STREET

HILLCREST AVENUE 3+00

DOLLOF AVENUE 3+50

LIMIT OF WORK
STA 3+00
N3026405.0662
E818730.7660
PROP. SAWCUT

LIMIT OF WORK
STA 2+90
N3026338.0015
E818938.7262
PROP. SAWCUT

LIMIT OF WORK
STA 2+60
N3026311.9994
E818554.6222
PROP. SAWCUT

LIMIT OF WORK
STA 2+75
N3026157.2133
E819005.4877
PROP. SAWCUT

RET.
(ON UP) W14-1

R&D R1-1
R&D D3-113

R3-17

R1-1

D3-113

R1-1
D3-114 R&D
R&D

D3-114

R&D R7-1c

R7-1b

DWLEx

D3-112

R1-1
D3-112 R&D
R&D

R3-17

PROP. BIKE LANE
SYMBOL (TYP.)

R&D W11-2
R&D R1-9a

D3-115

R1-1
D3-115 R&D
R&D

R1-1

(1874 COUNTY LAYOUT)

UPL 86
UPL 29
UPL 28
UPL 193
UPL 2955
UPL 177

SWL
SWL
CW
SL
4'
8'
5'
11'
7'

+67
+69
+48
+20
+42
+16
+17
+58
+08
+25
+74
+14
+22
+81

49
50
51
52
53
54
55

2+00

CONTINUED ON SHEET NO. 54

CONTINUED ON SHEET NO. 56

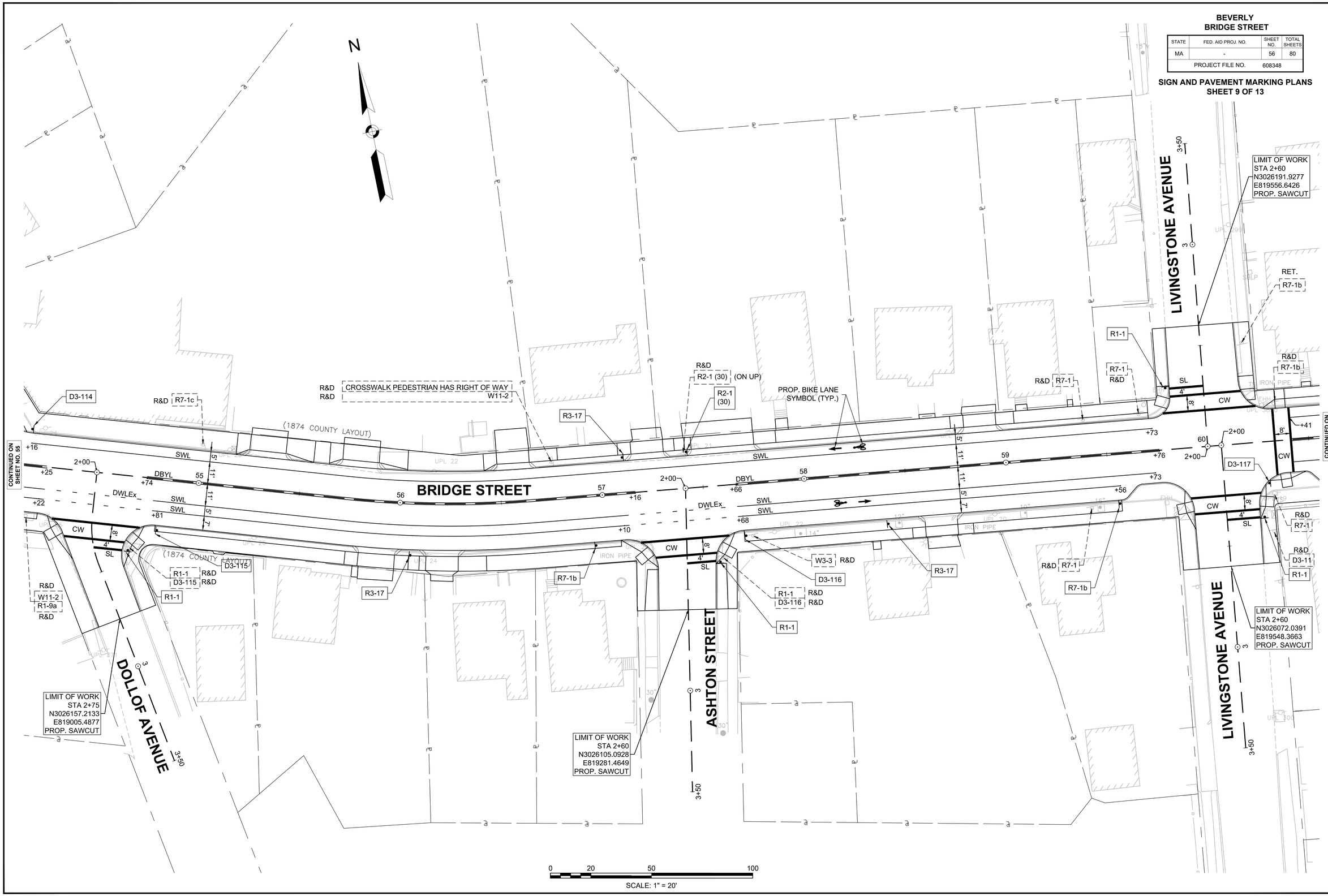
0 20 50 100

SCALE: 1" = 20'

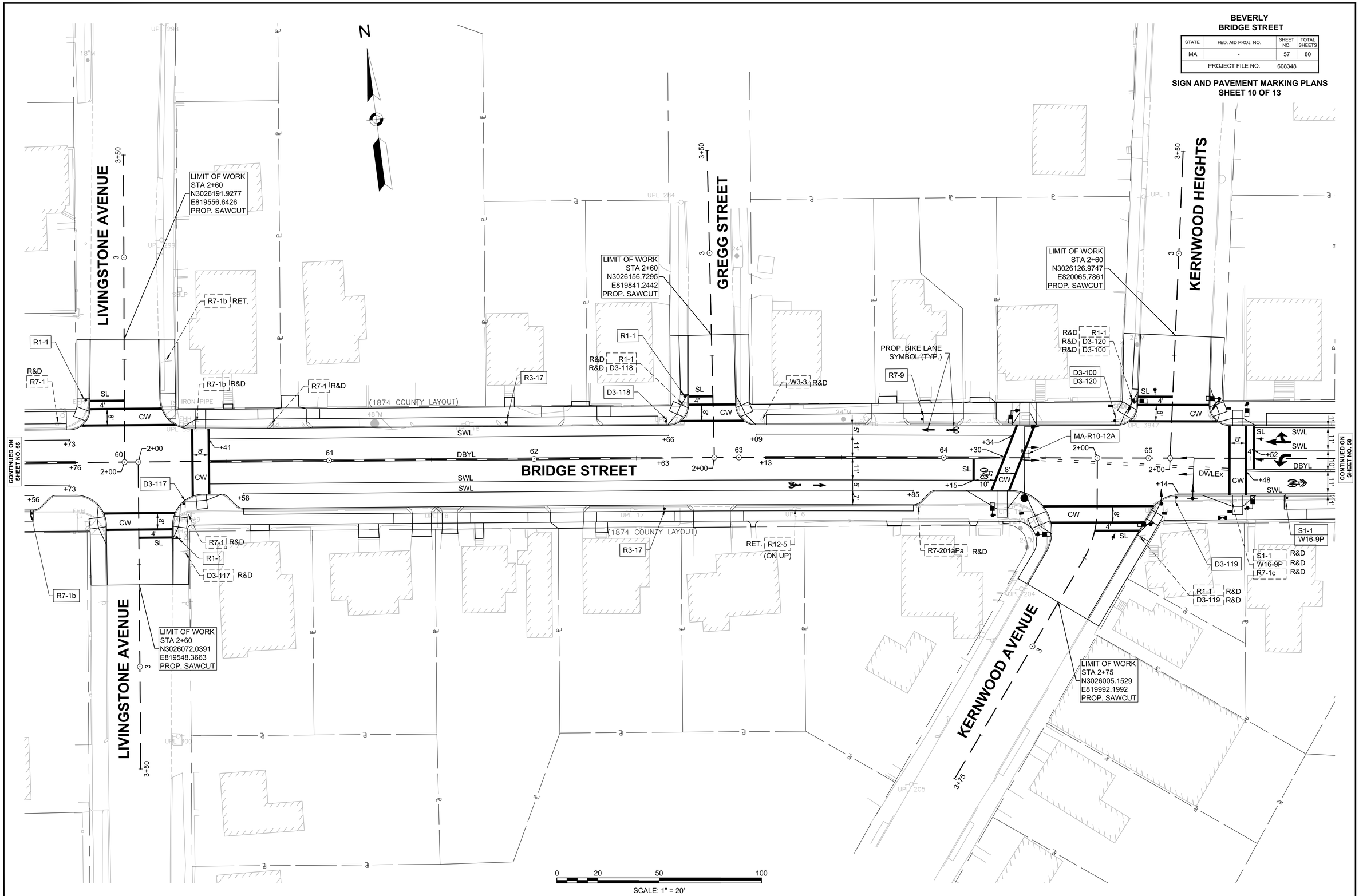
BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	56	80
PROJECT FILE NO.	608348		

SIGN AND PAVEMENT MARKING PLANS
SHEET 9 OF 13



608348_HD3(SIGN AND PAVEMENT MARKING PLANS).DWG Plotted on 4-Dec-2017 11:12 AM



BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	57	80
PROJECT FILE NO.	608348		

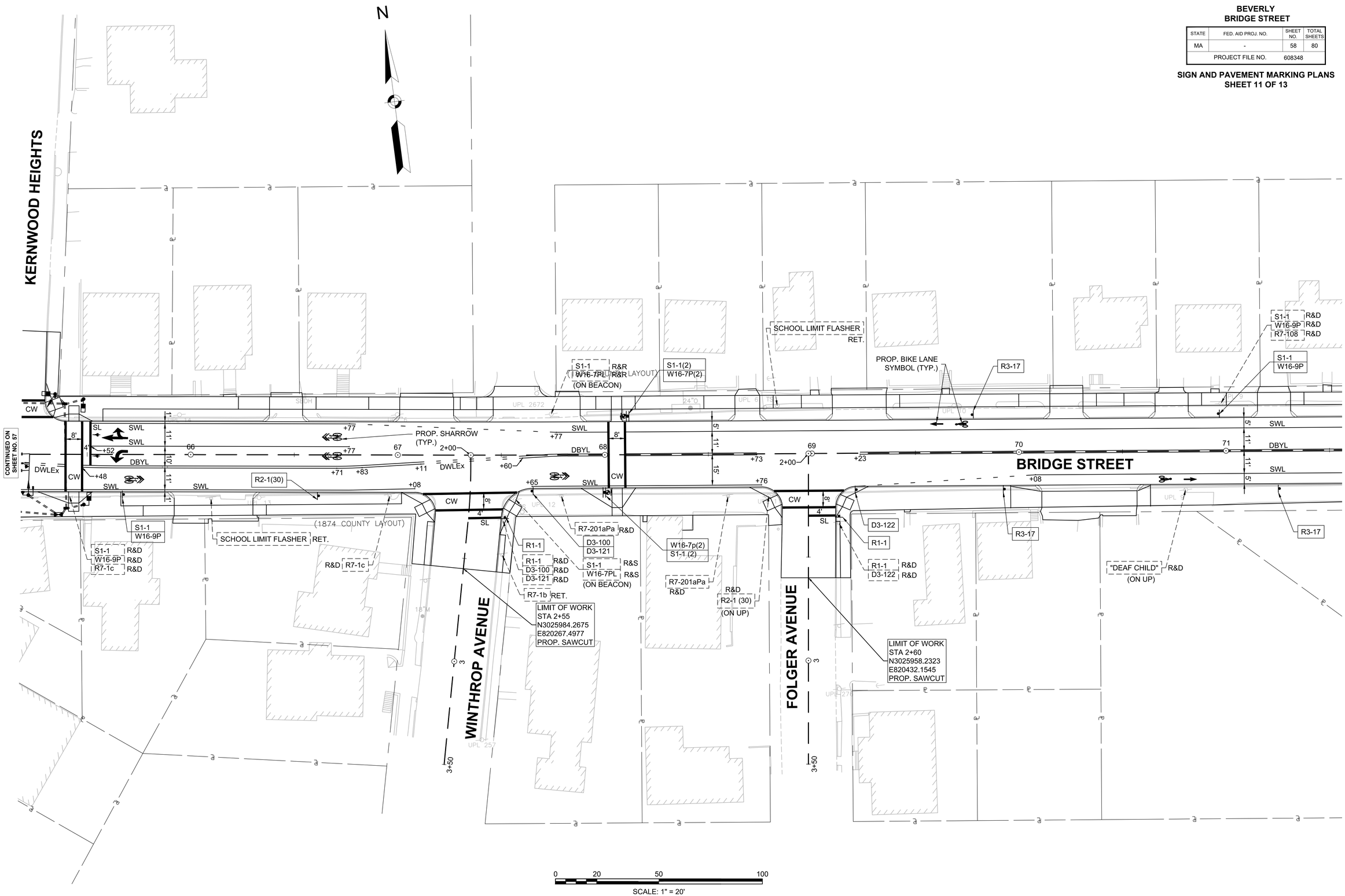
SIGN AND PAVEMENT MARKING PLANS
SHEET 10 OF 13

608348_HD3(SIGN AND PAVEMENT MARKING PLANS).DWG Plotted on 4-Dec-2017 11:12 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	58	80
PROJECT FILE NO.	608348		

SIGN AND PAVEMENT MARKING PLANS
SHEET 11 OF 13



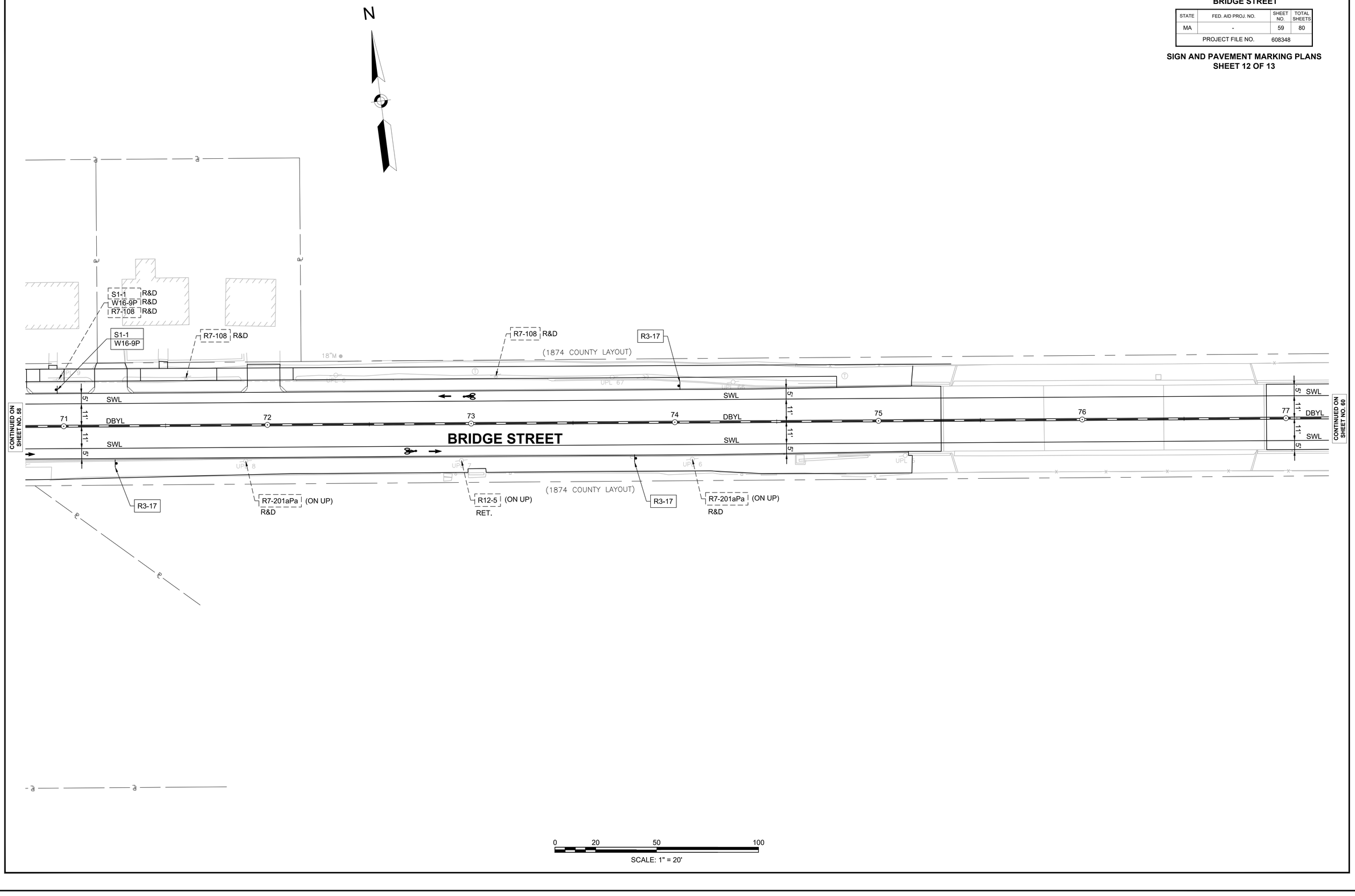
608348_HD3(SIGN AND PAVEMENT MARKING PLANS).DWG Plotted on 4-Dec-2017 11:12 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	59	80
PROJECT FILE NO.	608348		

SIGN AND PAVEMENT MARKING PLANS
SHEET 12 OF 13

608348_HD3\SIGN AND PAVEMENT MARKING PLANS\.DWG Plotted on 4-Dec-2017 11:12 AM



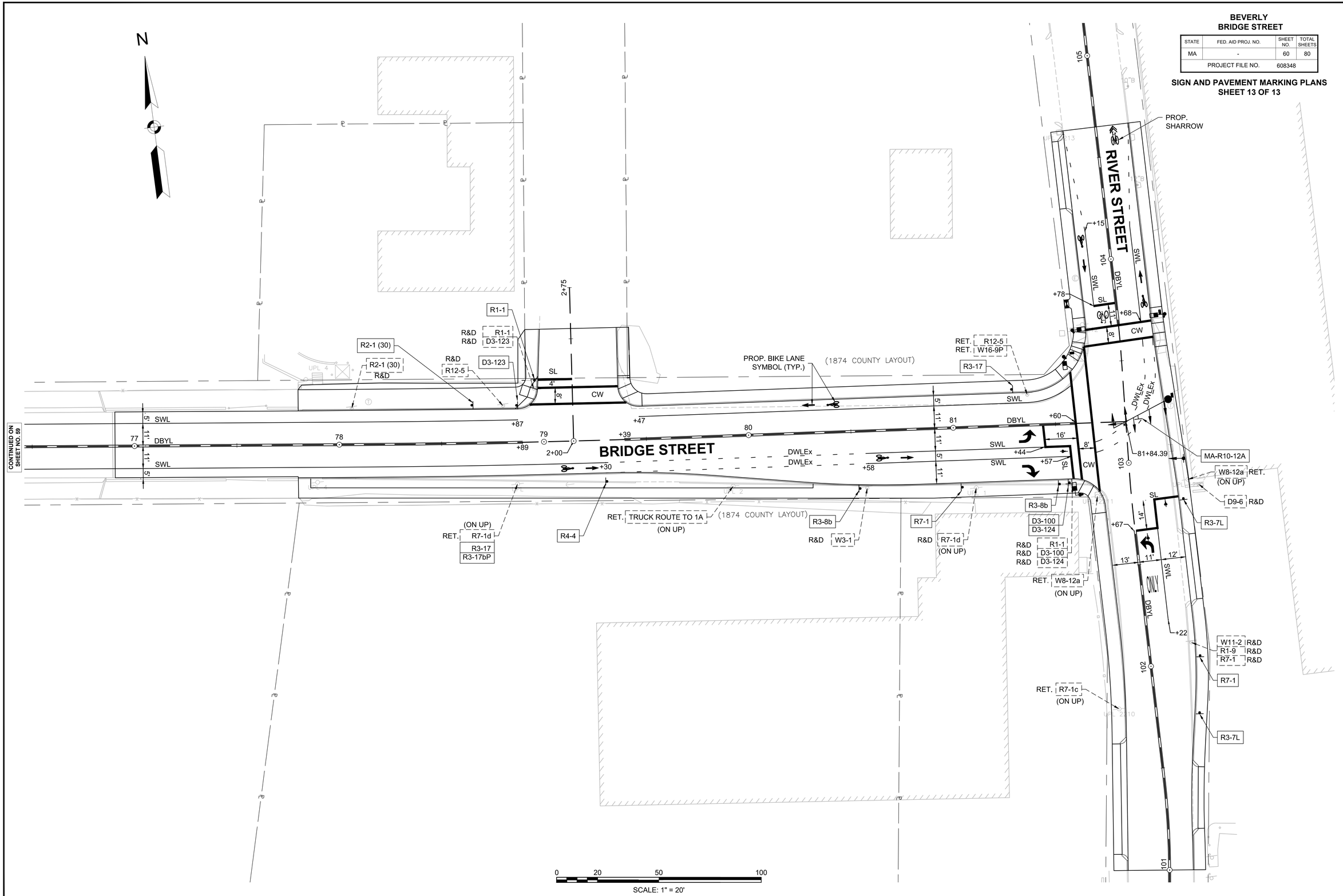
0 20 50 100

SCALE: 1" = 20'

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	60	80
PROJECT FILE NO.	608348		

SIGN AND PAVEMENT MARKING PLANS
SHEET 13 OF 13



608348_HD3(SIGN AND PAVEMENT MARKING PLANS).DWG Plotted on 4-Dec-2017 11:12 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	61	80
PROJECT FILE NO.	608348		

KERNWOOD AVENUE AND BRIDGE STREET
TRAFFIC SIGNAL PLANS
SHEET 1 OF 2

608348_HD9\TRAFFIC SIGNAL PLANS\.DWG Plotted on 4-Dec-2017 11:12 AM

N

BRIDGE STREET

KERNWOOD AVENUE

KERNWOOD HEIGHTS

PROP. 10' TS POST WITH 4' EXTENSION TO MOUNT CAMERA WITH
VEHICLE SIGNAL HEAD
PEDESTRIAN SIGNAL HEAD
APS PUSH BUTTON
R10-3e SIGN AND SADDLE
VIDEO DETECTOR
EMERGENCY PREEMPTION RECEIVER

PROP. 10' TS POST WITH
VEHICLE SIGNAL HEAD
PEDESTRIAN SIGNAL HEAD
APS PUSH BUTTON
R10-3e SIGN AND SADDLE

PROP. 8' TS POST WITH
PEDESTRIAN SIGNAL HEAD
APS PUSH BUTTON
R10-3e SIGN AND SADDLE

PROP. 8' TS POST WITH
PEDESTRIAN SIGNAL HEAD
APS PUSH BUTTON
R10-3e SIGN AND SADDLE

PROP. 35' MAST ARM WITH
VEHICLE SIGNAL HEADS
VIDEO DETECTOR
EMERGENCY PREEMPTION RECEIVER

PROP. 8' TS POST WITH
PEDESTRIAN SIGNAL HEAD
APS PUSH BUTTON
R10-3e SIGN AND SADDLE

PROP. 12" x 24"
PULL BOX (TYP.)

PROP. 10' TS POST WITH
VEHICLE SIGNAL HEAD

PROP. SERVICE CONNECTION

PROP. 8' TS POST WITH
PEDESTRIAN SIGNAL HEAD
APS PUSH BUTTON
R10-3e SIGN AND SADDLE

PROP. TRAFFIC
CONTROLLER

PROP. 20' MAST ARM WITH
3X VEHICLE SIGNAL HEADS
2X VIDEO DETECTOR
2X EMERGENCY PREEMPTION RECEIVER

PROP. 8' TS POST WITH
PEDESTRIAN SIGNAL HEAD
APS PUSH BUTTON
R10-3e SIGN AND SADDLE

CONFIRMATION
STROBE (WHITE)

R10-12a

35' MA

20' MA

OPT 1
OPT 2
OPT 3
OPT 4

V1
V2
V3
V4

P1
P2
P3
P4
P5
P6
P7
P8

A
B
C
D
E
F
G
H

PT=51.20

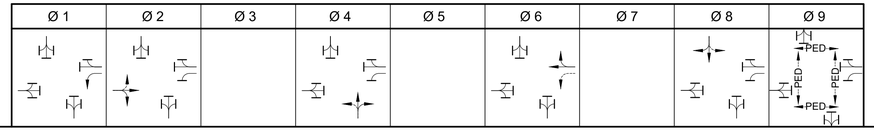
0 10 25 50
SCALE: 1" = 10'

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	62	80
PROJECT FILE NO.	608348		

KERNWOOD AVENUE AND BRIDGE STREET
TRAFFIC SIGNAL DATA
SHEET 2 OF 2

608348_HD9\TRAFFIC SIGNAL PLANS\.DWG Plotted on 4-Dec-2017 11:12 AM



SEQUENCE AND TIMING FOR ACTUATED CONTROL (ISOLATED)

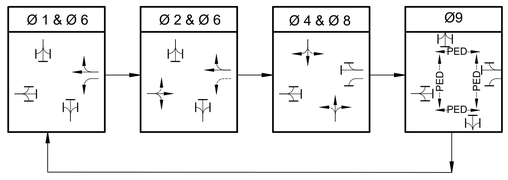
STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASHING OPERATION
BRIDGE ST	EB	A,B	R	R	R	R	R	R				R	R	R				G	Y	R				R	R	R	R	R	R	FY
BRIDGE ST	WB	C,D	R	R	R	G	Y	R				R	R	R				R	R	R				R	R	R	R	R	R	FY
BRIDGE ST	WB	E	GLA	YLA	RLA	RLA	RLA	RLA				RLA	RLA	RLA				FYLA	YLA	RLA				RLA	RLA	RLA	RLA	RLA	RLA	FRLA
KERNWOOD HTS	SB	F,G	R	R	R	R	R	R				G	Y	R				R	R	R				R	R	R	R	R	R	FR
KERNWOOD AVE	NB	H,I	R	R	R	R	R	R				R	R	R				R	R	R				G	Y	R	R	R	R	FR
PEDESTRIANS	ALL	P1 - P8	DW	DW	DW	DW	DW	DW				DW	DW	DW				DW	DW	DW				DW	DW	DW	W	FDW	DW	OUT
TIMING IN SECONDS																														
MINIMUM GREEN (INITIAL)			5			10						8						10						8						EMERGENCY ONLY
PASSAGE TIME (VEHICLE)			3			3						3						3						3						
MAXIMUM 1			10			41						20						41						20						
MAXIMUM 2			10			45						16						45						16						
YELLOW CLEARANCE				3.5			3.5						3.5						3.5						4.5					
RED CLEARANCE					2.5			2.5						2						2.5						2				
WALK (W)																											5			
PEDESTRIAN CLEARANCE																												10	4	
RECALL			NONE			SOFT						NONE						SOFT						NONE			NONE			
MEMORY			NON-LOCKING			NON-LOCKING						NON-LOCKING						NON-LOCKING						NON-LOCKING			LOCKING			

NOTES:
1. AUTOMATIC FLASHING OPERATION PER 2009 MUTCD, AS AMENDED.
2. MAXIMUM 2 SHALL OPERATE WEEKDAYS FROM 2PM TO 6PM.
3. MAXIMUM 1 SHALL OPERATE ALL OTHER TIMES.

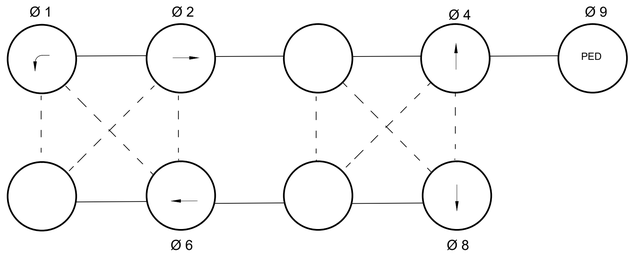
MAJOR ITEMS REQUIRED

PAY ITEM	QUANTITY	ITEM
816.02	1	CONTROLLER NEMA 8 PHASE TS2-TYPE 1, CAB.& FDN.
	5	8 FT TRAFFIC SIGNAL POST, BASE & FDN
	3	10 FT TRAFFIC SIGNAL POST, BASE & FDN
	1	20 FT MAST ARM ASSEMBLY, BASE & FDN
	1	35 FT MAST ARM ASSEMBLY, BASE & FDN
	8	1 WAY, 3 SECTION, SIGNAL HOUSING (12" L.E.D.)
	1	1 WAY, 4 SECTION, SIGNAL HOUSING (12" L.E.D.)
	8	PEDESTRIAN HOUSING (16" COUNTDOWN L.E.D.)
	8	APS PEDESTRIAN PUSH BUTTON, SIGN & SADDLES
	5	VIDEO DETECTOR CAMERA (1 SPARE)
	1	9" VIDEO MONITOR
	3	4 CHANNEL VIDEO INPUT PROCESSOR (1 SPARE)
	2	PRE-EMPTION RECEIVER-DUAL CHANNEL
	2	PRE-EMPTION RECEIVER-SINGLE CHANNEL
	1	PRE-EMPTION COMFIRMATION STROBE (WHITE)
	1	DETECTOR CARD RACK
804.3	365'	3 IN. ELECTRICAL CONDUIT TYPE NM - PLASTIC -(UL)
811.31	5	12" X 24" PULL BOX - SD.031
813.81	1	SERVICE CONNECTION, TYPE OVERHEAD

PREFERENTIAL PHASING 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.
4. 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 SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

EMERGENCY PRE-EMPTION DATA

APPROACH	PREEMPTION PHASE	DETECTOR
BRIDGE ST EB	Ø 2	OP1
BRIDGE ST WB	Ø 6	OP2
KERNWOOD HTS SB	Ø 8	OP3
KERNWOOD AVE NB	Ø 4	OP4

UPON COMPLETION OF EMERGENCY PREEMPTION TRAFFIC SIGNALS SHALL RETURN TO Ø2 & Ø6

EMERGENCY VEHICLE PREEMPTION OPERATION:

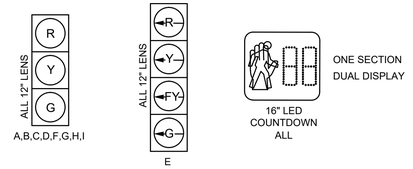
1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATED AT INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.
2. PREEMPTION SIGNALS FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.
3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR, THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLEARANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN THE ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.
4. PREEMPTION MINIMUM GREENS SHALL BE TEN SECONDS.
5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.
6. ACTUAL TIMING FOR PREEMPTION SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FIRE DEPARTMENT AND SHALL BE APPROVED BY CITY PRIOR TO OPERATION.

VIDEO DETECTOR DATA

DELAY TIME EFFECTIVE ONLY DURING CALLED ø RED TIME IN SEC.

DETECTOR NUMBER	CAMERA NUMBER	CHANNEL NUMBER	DETECTION ZONE	Ø CALLED	Ø EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
1	V1	1	1 @ 6'x50'	2	2	B	-	-
2	V2	1	1 @ 6'x50'	6	6	B	-	-
3	V3	1	1 @ 10'x50'	8	8	B	-	-
4	V4	1	1 @ 10'x50'	4	4	B	-	-
5	V2	2	1 @ 6'x50'	1	1	B	-	-
B1	V1	2	1 @ 10'x14'	2	2	B	-	-

SIGNAL IDENTIFICATION

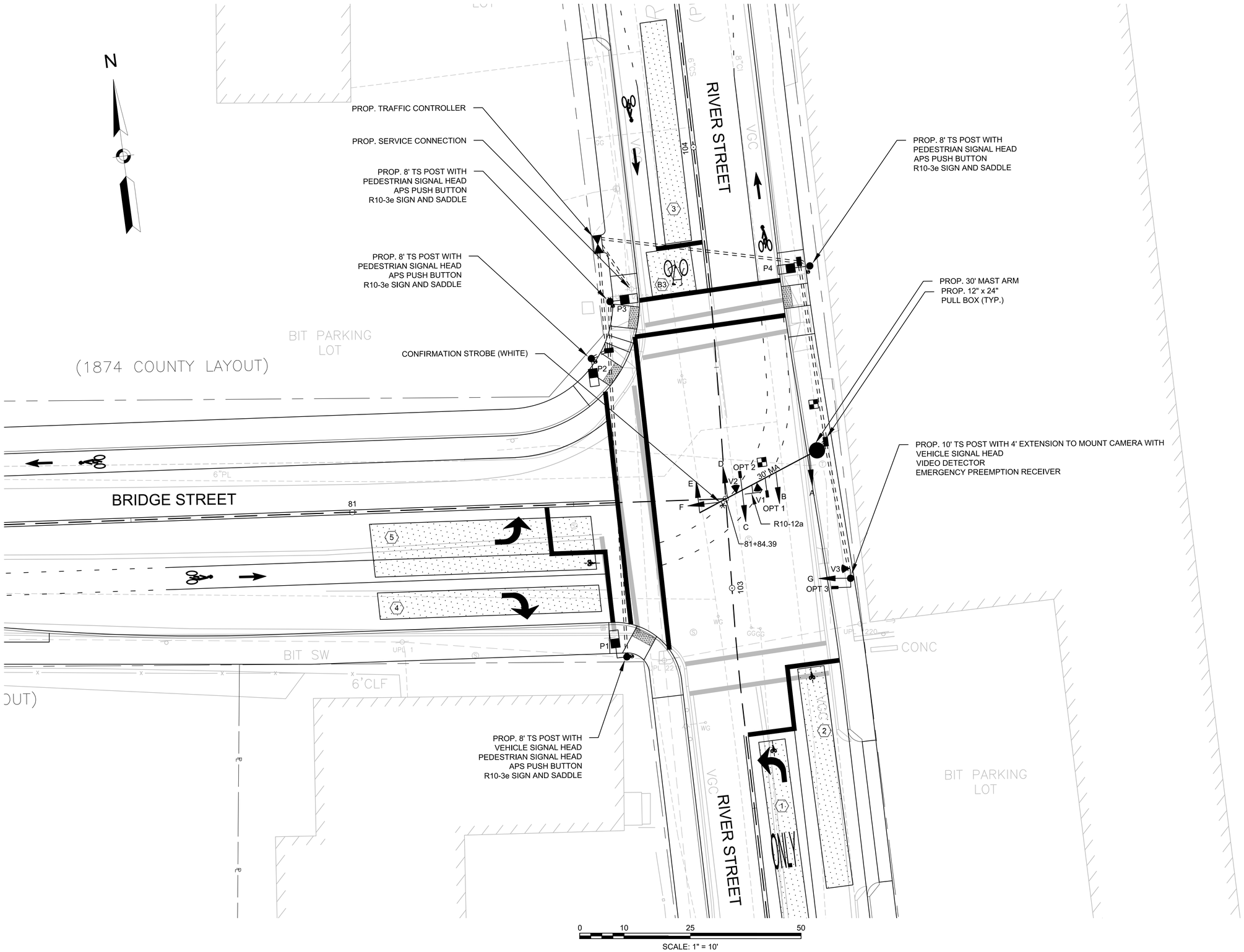


NOTES:
1. ALL SIGNALS SHALL HAVE TUNNEL VISORS.
2. ALL SIGNALS SHALL HAVE 12" LED WITH 5" LOUVERED BACK PLATES W/ 2" REFLECTIVE BORDER

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	63	80
PROJECT FILE NO.	608348		

RIVER STREET AND BRIDGE STREET
TRAFFIC SIGNAL PLANS
SHEET 1 OF 2



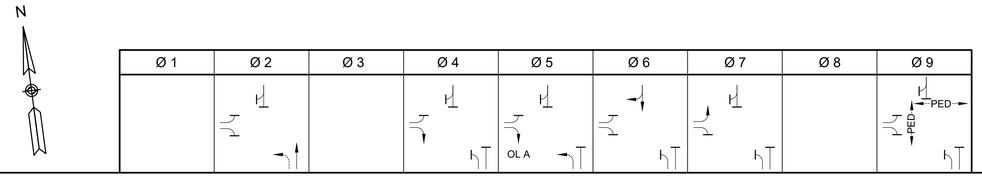
608348_HD9(TRAFFIC SIGNAL PLANS).DWG Plotted on 4-Dec-2017 11:12 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	64	80
PROJECT FILE NO.	608348		

RIVER STREET AND BRIDGE STREET
TRAFFIC SIGNAL DATA
SHEET 2 OF 2

608348_HD9\TRAFFIC SIGNAL PLANS\.DWG Plotted on 4-Dec-2017 11:12 AM



SEQUENCE AND TIMING FOR ACTUATED CONTROL (ISOLATED)

STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASHING OPERATION
RIVER ST	NB	A,B				G	Y	R				R	R	R	R	R	R	R	R	R	R	R	R				R	R	R	FY
RIVER ST	NB	C				FYLA	SYLA	RLA				RLA	RLA	RLA	GLA	YLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA				RLA	RLA	RLA	FRLA
RIVER ST	SB	D,E				R	R	R				R	R	R	R	R	R	G	Y	R	R	R	R				R	R	R	FY
BRIDGE ST	EB	F				R	R	R				R	R	R	R	R	R	R	R	R	G	Y	R				R	R	R	FR
BRIDGE ST	EB	G				R	R	R				G/GRA	Y/YRA	R	R/GRA	R/YRA	R	R	R	R	R	R	R				R	R	R	FR
PEDESTRIANS	ALL	P1 - P4				DW	DW	DW				DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW				W	FDW	DW	DW
TIMING IN SECONDS																														
MINIMUM GREEN (INITIAL)						10						8			8			10			8									EMERGENCY ONLY
PASSAGE TIME (VEHICLE)						3						3			3			3			3									
MAXIMUM 1						30						13			19			30			13									
MAXIMUM 2						47						17			22			47			17									
YELLOW CLEARANCE							3.5						3.5			3.5			3.5			3.5								
RED CLEARANCE								1.5						1.5			1.5			2.5			1.5							
WALK (W)																											5			
PEDESTRIAN CLEARANCE																												13	4	
RECALL						SOFT						NONE			NONE			SOFT			NONE						NONE			
MEMORY						NON-LOCKING						NON-LOCKING			NON-LOCKING			NON-LOCKING			NON-LOCKING						LOCKING			

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MAJOR ITEMS REQUIRED

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	1	10 FT TRAFFIC SIGNAL POST, BASE & FDN
	1	30 FT MAST ARM ASSEMBLY, BASE & FDN
	1	1 WAY, 5 SECTION, SIGNAL HOUSING (12" L.E.D.|
	2	1 WAY, 3 SECTION, SIGNAL HOUSING (12" L.E.D.)
	1	2 WAY, 3 SECTION, SIGNAL HOUSING (12" L.E.D.)
	1	1 WAY, 4 SECTION, SIGNAL HOUSING (12" L.E.D.)
	4	PEDESTRIAN HOUSING (16" COUNTDOWN L.E.D.)
	4	APS PEDESTRIAN PUSH BUTTON, SIGN & SADDLES
	4	VIDEO DETECTOR CAMERA (1 SPARE)
	1	9" VIDEO MONITOR
	2	4 CHANNEL VIDEO INPUT PROCESSOR (1 SPARE)
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804.3	240'	3 IN. ELECTRICAL CONDUIT TYPE NM - PLASTIC -(UL)
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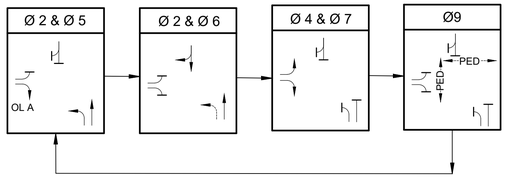
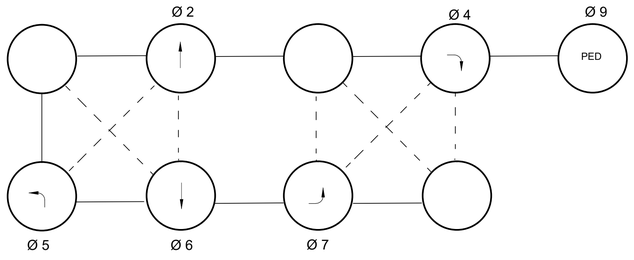


NEMA DUAL RING PHASING NOTES:



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EMERGENCY PRE-EMPTION DATA

APPROACH	PREEMPTION PHASE	DETECTOR
RIVER ST NB	Ø 2	OP1
RIVER ST SB	Ø 6	OP2
BRIDGE ST EB	Ø 4 & Ø 7	OP3

UPON COMPLETION OF EMERGENCY PREEMPTION TRAFFIC SIGNALS SHALL RETURN TO Ø2 & Ø6

EMERGENCY VEHICLE PREEMPTION OPERATION:

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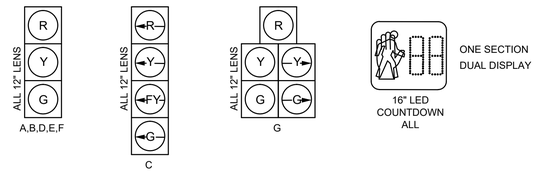
VIDEO DETECTOR DATA

DELAY TIME EFFECTIVE ONLY DURING CALLED ø RED TIME IN SEC.

DETECTOR NUMBER	CAMERA NUMBER	CHANNEL NUMBER	DETECTION ZONE	Ø CALLED	Ø EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
1	V1	1	1 @ 6'x50'	5	5	B	-	-
2	V1	2	1 @ 6'x50'	2	2	B	-	-
3	V2	1	1 @ 6'x50'	6	6	B	-	-
4	V3	1	1 @ 6'x50'	4	4	B	-	-
5	V3	2	1 @ 6'x50'	7	7	B	-	-
B3	V2	2	1 @ 10'x10'	6	6	B	-	-

SIGNAL IDENTIFICATION



NOTES:
1. ALL SIGNALS SHALL HAVE TUNNEL VISORS.
2. ALL SIGNALS SHALL HAVE 12" LED WITH 5" LOUVERED BACK PLATES W/ 2" REFLECTIVE BORDER

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	65	80
PROJECT FILE NO.	608348		

SIGN SUMMARY
SHEET 1 OF 2

TRAFFIC SIGN SUMMARY

SIGN ID NUMBER	SIZE		MESSAGE	DIMENSIONS (IN)			NUMBER REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	TOTAL AREA (S.F.)
	WIDTH (IN)	HEIGHT (IN)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
MA-D3-100	33	12	Bridge St	4D / 3D 3D / 2.25D	3" 3"	N/A	8	GREEN	WHITE	WHITE	P5 4 REQ'D	EACH	EACH
MA-D3-101	33	12	Cressy St	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-102	39	12	Virginia Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-103	48	12	Sunnycrest Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-104	39	12	Lindsey Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-105	33	12	Giles Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-106	39	12	Western Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-107	39	12	County Way	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	MOUNT WITH MA-D3-100	EACH	EACH
MA-D3-108	51	12	Bates Park Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-109	36	12	Doane Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-110	42	12	Carleton Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-111	42	12	Roderick Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-112	42	12	Hillcrest Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-113	39	12	Hillside Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-114	39	12	Eastern Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-115	36	12	Dolloff Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-116	36	12	Ashton St	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-117	51	12	Livingstone Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH

TRAFFIC SIGN SUMMARY (CONT.)

SIGN ID NUMBER	SIZE		MESSAGE	DIMENSIONS (IN)			NUMBER REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	TOTAL AREA (S.F.)
	WIDTH (IN)	HEIGHT (IN)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
MA-D3-118	33	12	Gregg St	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-119	45	12	Kernwood Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-120	51	12	Kernwood Heights	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-121	42	12	Winthrop Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-122	36	12	Folger Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-123	33	12	Margin St	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-124	30	12	River St	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-125	39	12	Hersey Ave	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
MA-D3-126	45	12	Winchester Ter	4D / 3D 3D / 2.25D	3" 3"	N/A	2	GREEN	WHITE	WHITE	P5 1 REQ'D	EACH	EACH
R1-1	30	30	STOP	(1)	(1)	(1)	22	RED	WHITE	WHITE	P5 22 REQ'D	6.25	137.50
R2-1(30)	24	30	SPEED LIMIT 30				8	WHITE	BLACK	BLACK	P5 8 REQ'D	5.00	40.00
R3-7L	30	30	LEFT LANE MUST TURN LEFT				2	WHITE	BLACK	BLACK	P5 2 REQ'D	6.25	12.50
R3-8b	48	30	ONLY BIKE ONLY	4D	4.75" 1.625" 3"	14.625 7.136 14.625	2	WHITE	BLACK	BLACK	P5 2 REQ'D	10.00	20.00
R3-17	24	18	BIKE LANE	(1)	(1)	(1)	33	BLACK WHITE	WHITE BLACK	WHITE BLACK	P5 35 REQ'D	3.00	99.00
R3-17aP	24	8	AHEAD				1	WHITE	BLACK	BLACK	MOUNT WITH R3-17	1.33	1.33
R3-17bP	24	8	ENDS				2	WHITE	BLACK	BLACK	MOUNT WITH R3-17	1.33	2.66

SIGN SUMMARY NOTES:

1. NUMERICAL LIMITS AND JUSTIFCATION FOR SPEED & ADVISORY EXIT SPEED SIGNS SHALL BE OBTAINED FROM THE SPEED ZONING UNIT OF THE TRAFFIC ENGINEERING SECTION, MASSDOT, BEFORE FABRICATION AND/OR ERECTION.
2. HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" 2009 EDITION, THE 1996 MASSDOT CONSTRUCTION AND TRAFFIC STANDARD DETAILS", AND ALL ADMENDMENTS WILL GOVERN.
3. (1) SEE MUTCD 2009 EDITION, 1979 STD. HWY. SIGNS AND SECTION M9.30.0 TYPE III OF THE MASSDOT STANDARD SPECIFICATION FOR TEXT DIMENSIONS AND COLOR.

   (2) SEE MASSDOT SIGN STANDARDS.

608348_TR1\TRAFFIC SIGN SUMMARY).DWG Plotted on 4-Dec-2017 11:12 AM

TRAFFIC SIGN SUMMARY (CONT.)

SIGN ID NUMBER	SIZE		MESSAGE	DIMENSIONS (IN)			NUMBER REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	TOTAL AREA (S.F.)
	WIDTH (IN)	HEIGHT (IN)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
R4-4	36	30	BEGIN RIGHT TURN LANE YIELD TO BIKES	(1)	(1)	(1)	1	WHITE	BLACK	BLACK	P5 1 REQ'D	7.50	7.50
R5-1	30	30	DO NOT ENTER				1	WHITE RED	WHITE	WHITE	P5 1 REQ'D	6.25	6.25
R7-1	12	18	NO PARKING ANY TIME				2	WHITE	RED	RED	P5 2 REQ'D	1.50	3.00
R7-1b	12	18	NO PARKING HERE TO CORNER				8	WHITE	RED	RED	P5 8 REQ'D	1.50	12.00
R7-9	12	18	NO PARKING BIKE LANE				1	RED WHITE	WHITE RED	WHITE RED	MOUNT WITH R3-17	1.50	1.50
MA-R10-12a	30	36	LEFT TURN YIELD ON FLASHING	(2)	(2)	(2)	1	WHITE	BLACK YELLOW	BLACK	P5 1 REQ'D	7.50	7.50
R10-25	9	12	PUSH BUTTON TO TURN ON WARNING LIGHTS	(1)	(1)	(1)	2	WHITE	BLACK	BLACK	P5 2 REQ'D	0.75	1.50
S1-1	36	36					6	FLUOR. YELLOW -GREEN	BLACK	BLACK	P5 2 REQ'D	9.00	54.00
W1-2L	30	30					4	YELLOW	BLACK	BLACK	P5 4 REQ'D	6.25	25.00
W1-2R	30	30					4	YELLOW	BLACK	BLACK	P5 4 REQ'D	6.25	25.00
W11-2	30	30					2	YELLOW	BLACK	BLACK	P5 2 REQ'D	6.25	12.50
W11-15	30	30					2	YELLOW	BLACK	BLACK	P5 2 REQ'D	6.25	12.50
W14-1	30	30	DEAD END				1	YELLOW	BLACK	BLACK	P5 1 REQ'D	6.25	6.25
W16-7pL	24	12					2	FLUOR. YELLOW -GREEN	BLACK	BLACK	MOUNT WITH S1-1	2.00	4.00
W16-7pR	24	12					2	FLUOR. YELLOW -GREEN	BLACK	BLACK	MOUNT WITH S1-1	2.00	4.00
W16-9p	24	12	AHEAD				2	FLUOR. YELLOW -GREEN	BLACK	BLACK	MOUNT WITH S1-1	2.00	4.00
W16-9p	24	12	AHEAD				2	YELLOW	BLACK	BLACK	MOUNT WITH W11-2	2.00	4.00

TEMPORARY CONSTRUCTION SIGN SUMMARY

SIGN ID NUMBER	SIZE		MESSAGE	DIMENSIONS (IN)			NUMBER REQUIRED	COLOR		
	WIDTH (IN)	HEIGHT (IN)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER
MA-R2-10a	30	24	WORK ZONE SPEEDING FINES DOUBLED	(2)	(2)	(2)	3	ORANGE WHITE	BLACK	BLACK
MA-R2-10e	24	30	END ROAD WORK DOUBLE FINES END				3	ORANGE WHITE	BLACK	BLACK
R9-9	24	12	SIDEWALK CLOSED	(1)	(1)	(1)	2	WHITE	BLACK	BLACK
R9-10	24	12	SIDEWALK CLOSED USE OTHER SIDE				2	WHITE	BLACK	BLACK
R9-11aL	24	12	SIDEWALK CLOSED CROSS HERE				1	WHITE	BLACK	BLACK
R9-11aR	24	12	SIDEWALK CLOSED CROSS HERE				1	WHITE	BLACK	BLACK
W5-1	36	36	ROAD NARROWS				1	ORANGE	BLACK	BLACK
W11-2	30	30					4	ORANGE	BLACK	BLACK
W13-1	18	18	XX MPH				2	ORANGE	BLACK	BLACK
W16-7pL	24	12					4	ORANGE	BLACK	BLACK
W16-9p	24	12	AHEAD				2	ORANGE	BLACK	BLACK
W20-1	36	36	ROAD WORK AHEAD				x	ORANGE	BLACK	BLACK
W20-4	36	36	ONE LANE ROAD 500 FT				4	ORANGE	BLACK	BLACK
MA-W20-7b	36	36	POLICE OFFICER AHEAD	(2)	(2)	(2)	4	ORANGE	BLACK	BLACK
W21-5a	36	36	RIGHT SHOULDER CLOSED	(1)	(1)	(1)	1	ORANGE	BLACK	BLACK

SIGN SUMMARY NOTES:

1. NUMERICAL LIMITS AND JUSTIFCATION FOR SPEED & ADVISORY EXIT SPEED SIGNS SHALL BE OBTAINED FROM THE SPEED ZONING UNIT OF THE TRAFFIC ENGINEERING SECTION, MASSDOT, BEFORE FABRICATION AND/OR ERECTION.
2. HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" 2009 EDITION, THE 1996 MASSDOT CONSTRUCTION AND TRAFFIC STANDARD DETAILS", AND ALL ADMENDMENTS WILL GOVERN.
3. (1) SEE MUTCD 2009 EDITION, 1979 STD. HWY. SIGNS AND SECTION M9.30.0 TYPE III OF THE MASSDOT STANDARD SPECIFICATION FOR TEXT DIMENSIONS AND COLOR.

   (2) SEE MASSDOT SIGN STANDARDS.

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	66	80
PROJECT FILE NO.	608348		

SIGN SUMMARY
SHEET 2 OF 2

608348_TR1(TRAFFIC SIGN SUMMARY).DWG Plotted on 4-Dec-2017 11:13 AM

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	67	80
PROJECT FILE NO.	608348		

TEMPORARY TRAFFIC CONTROL PLANS
SHEET 1 OF 3

608348_HD10(TTCP).DWG Plotted on 4-Dec-2017 11:13 AM

NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND THE MASSDOT STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TEMPORARY TRAFFIC CONTROL PLANS, UNLESS SUPERCEDED BY THESE PLANS.
2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
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, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
6. THE FIRST FIVE PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.
7. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
8. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
9. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
10. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES.
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. CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 48 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
14. A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION ON TWO WAY STREETS SHALL BE MAINTAINED AT ALL TIMES, EXCEPT DURING WORKING HOURS, TRAFFIC MAY BE REDUCED TO ONE LANE UNDER POLICE OR FLAGGER CONTROL FOR SHORT TIME PERIODS WHEN REQUIRED FOR THE WORK, AS SHOWN.
15. GRADE SEPARATIONS IN EXCESS OF 2" DURING NON-WORKING HOURS (SEE SPECIAL PROVISIONS) WILL REQUIRE DELINEATION BY USE OF DRUMS.
16. EXCAVATION EDGES IN EXCESS OF 4" DEEP SHALL BE PROTECTED DURING NON-WORKING HOURS (SEE SPECIAL PROVISIONS) BY BACKFILLING WITH A WEDGE OF GRAVEL OR SOIL TO COMPACTED 1:4 SLOPE.
17. CONSTRUCTION SIGNS ASSOCIATED WITH THE DAILY LANE CLOSURES AND SHOULDER WORK AREAS WILL NOT BE MEASURED FOR PAYMENT MORE THAN ONCE REGARDLESS OF THE NUMBER OF TIMES THE SIGNS ARE REUSED.

LEGEND:

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

THE IDEAL CAPACITY OF A MAJOR HIGHWAY IS GENERALLY CONSIDERED TO BE 1900 PASSENGER CARS PER HOUR PER LANE (PCPHPL). IN WORK ZONES ON A MULTI-LANE DIVIDED HIGHWAY, THE FOLLOWING VOLUME GUIDELINES HAVE BEEN SUGGESTED:

MEASURED AVERAGE WORK ZONE CAPACITIES

NUMBER OF LANES		NUMBER OF STUDIES	AVERAGE CAPACITY	
NORMAL (EXISTING)	OPEN (TO TRAFFIC)		VPH	VPHPL
3	1	7	1,170	1,170
2	1	8	1,340	1,340
5	2	8	2,740	1,370
4	2	4	2,960	1,480
3	2	9	2,980	1,490
4	3	4	4,560	1,520

Source: Dudek, C., Notes on Work Zone Capacity and Level of Service. Texas Transportation Institute, Texas A&M University, College Station, Texas (1984)

BY OBTAINING HOURLY TRAFFIC COUNTS FOR A PARTICULAR ROADWAY (WITH A MINIMUM OF A 48-HOUR AUTOMATIC TRAFFIC RECORDER (ATR) COUNT), THIS WILL HELP TO DETERMINE AT WHAT TIMES OF THE DAY OR NIGHT A CERTAIN NUMBER OF LANES MAY BE CLOSED.

SUGGESTED WORK ZONE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS **		
	A	B	C
LOCAL OR LOW VOLUME ROADWAYS*	350 (100)	350 (100)	350 (100)
MOST OTHER ROADWAYS*	500 (150)	500 (150)	500 (150)
FREEWAYS AND EXPRESSWAYS*	1,000 (300)	1,500 (450)	2,640 (800)

* ROAD TYPE TO BE DETERMINED BY MASSDOT OFFICE OF TRANSPORTATION PLANNING.

** DISTANCES ARE SHOWN IN FEET (METERS). THE COLUMN HEADINGS A, B, AND C ARE THE DIMENSIONS SHOWN IN THE DETAIL/ TYPICAL SETUP FIGURES. THE A DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN. THE B DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND SECOND SIGNS. THE C DIMENSION IS THE DISTANCE BETWEEN THE SECOND AND THIRD SIGNS. (THE "THIRD" SIGN IS THE FIRST ONE TYPICALLY ENCOUNTERED BY A DRIVER APPROACHING A TEMPORARY TRAFFIC CONTROL (TTC) ZONE.)

THE "THIRD" SIGN ABOVE IS TYPICALLY REFERRED TO AS AN "ADVANCE WARNING" SIGN ON THE TTCP SETUPS. THESE ADVANCE WARNING SIGNS ARE LOCATED PRIOR TO THE PROJECT LIMITS ON ALL APPROACHES (i.e. THE W20-1 SERIES (ROAD WORK XX FT) SIGNS), AND USUALLY REMAIN FOR THE DURATION OF THE PROJECT. ADDITIONAL SIGNS (i.e. "RIGHT LANE CLOSED 1 MILE" AND "LEFT LANE CLOSED 1 MILE") HAVE BEEN SHOWN IN SOME FIGURES AS EXAMPLES OF REINFORCEMENT SIGN PLACEMENT BUT ARE USED IN RARE OCCASIONS.

THE FIRST AND SECOND WARNING SIGNS ABOVE ARE REFERRED TO AS THE OPERATIONAL (DAY-TO-DAY) WORK ZONE SIGNS AND MAY BE MOVED DEPENDING ON WHERE THE SPECIFIC ROADWAY WORK FOR THAT DAY IS LOCATED.

R2-10a SIGNS SHALL BE PLACED BETWEEN THE SECOND AND THIRD SIGNS AS DESCRIBED ABOVE.

R2-10a, R2-10e, AND W20-1 SERIES SIGNS ARE TO BE INCLUDED ON ALL DETAILS/TYPICAL SETUPS.

Based on: Table 6C-1 MUTCD LATEST EDITION

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

SPEED* (km/h)	DISTANCE (m)
30	35
40	50
50	65
60	85
70	105
80	130
90	160
100	185
110	220
120	250

SPEED* (mph)	DISTANCE (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

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

THESE VALUES MAY BE USED TO DETERMINE THE LENGTH OF LONGITUDINAL BUFFER SPACES.

THE DISTANCES IN THE ABOVE CHART REPRESENT THE MINIMAL VALUES FOR BUFFER SPACING.

Source: Table 6C-2 MUTCD LATEST EDITION

CONVENTIONAL ROADWAY- A STREET OR HIGHWAY OTHER THAN A LOW-VOLUME ROAD, EXPRESSWAY, OR FREEWAY.

EXPRESSWAY- A DIVIDED HIGHWAY WITH PARTIAL CONTROL OF ACCESS.

FREEWAY- A DIVIDED HIGHWAY WITH FULL CONTROL OF ACCESS.

LOW-VOLUME ROAD- A FACILITY LYING OUTSIDE OF BUILT-UP AREAS OF CITIES, TOWNS, AND COMMUNITIES, AND IT SHALL HAVE A TRAFFIC VOLUME OF LESS THAN 400 AADT. IT SHALL NOT BE A FREEWAY, EXPRESSWAY, INTERCHANGE RAMP, FREEWAY SERVICE ROAD OR A ROAD ON A DESIGNATED STATE HIGHWAY SYSTEM.

Source: MUTCD LATEST EDITION

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

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

Source: Table 6C-3 MUTCD LATEST EDITION

FORMULAS FOR DETERMINING TAPER LENGTHS

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

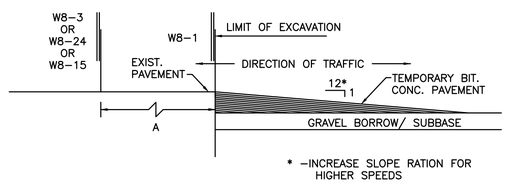
SPEED LIMIT (S)	TAPER LENGTH (L) Meters
60 KM/H OR LESS	$L = \frac{WS^2}{155}$
70 KM/H OR MORE	$L = \frac{WS}{1.6}$

WHERE: L = TAPER LENGTH IN FEET (METERS)

W = WIDTH OF OFFSET IN FEET (METERS)

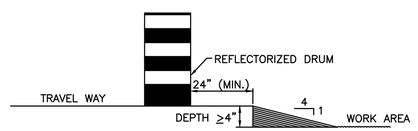
S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICAPATED OPERATING SPEED IN MPH (KM/H)

Source: Table 6C-4 MUTCD LATEST EDITION



LONGITUDINAL DROP-OFF DETAIL

NOT TO SCALE



LATERAL DROP-OFF DETAIL

NOT TO SCALE

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	68	80
PROJECT FILE NO.	608348		

TEMPORARY TRAFFIC CONTROL PLANS
SHEET 2 OF 3

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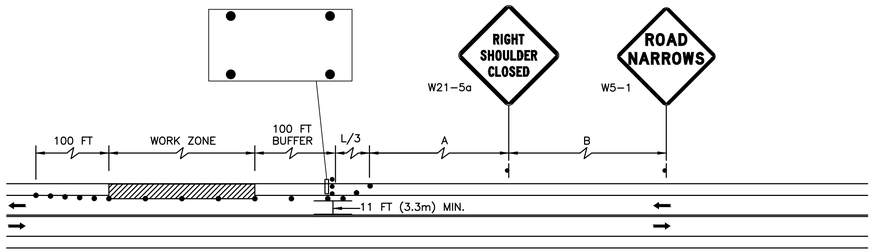
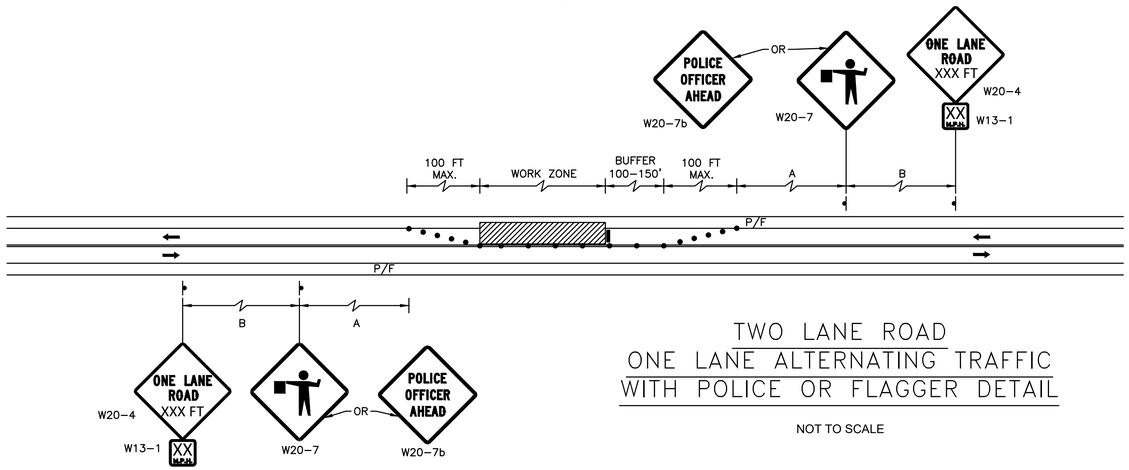


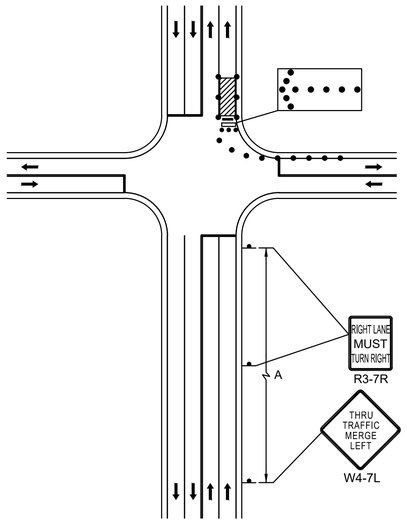
TYPICAL SHOULDER CLOSURE

NOT TO SCALE



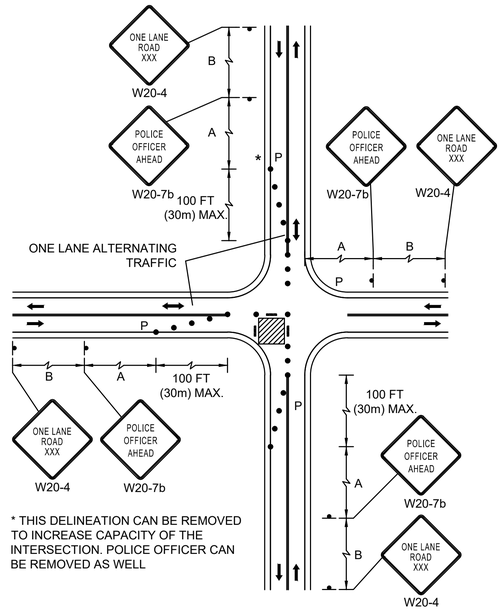
TWO LANE ROAD
ONE LANE ALTERNATING TRAFFIC
WITH POLICE OR FLAGGER DETAIL

NOT TO SCALE



DOUBLE LANE APPROACH FAR SIDE CLOSURE RIGHT LANE

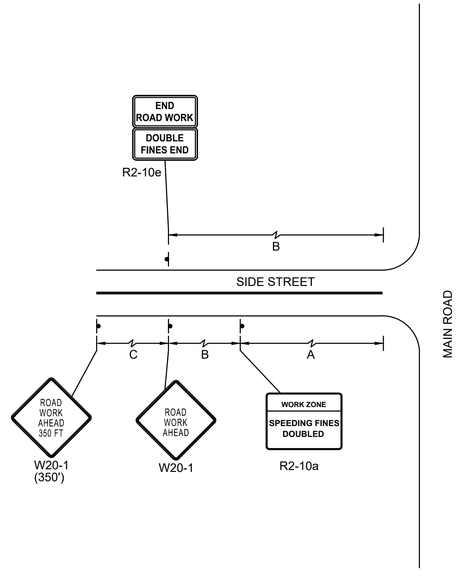
NOT TO SCALE



* THIS DELINEATION CAN BE REMOVED TO INCREASE CAPACITY OF THE INTERSECTION. POLICE OFFICER CAN BE REMOVED AS WELL

SINGLE LANE APPROACH
ONE QUADRANT CLOSURE

NOT TO SCALE



TYPICAL SIDE STREET ADVANCED WARNING SIGN DETAIL

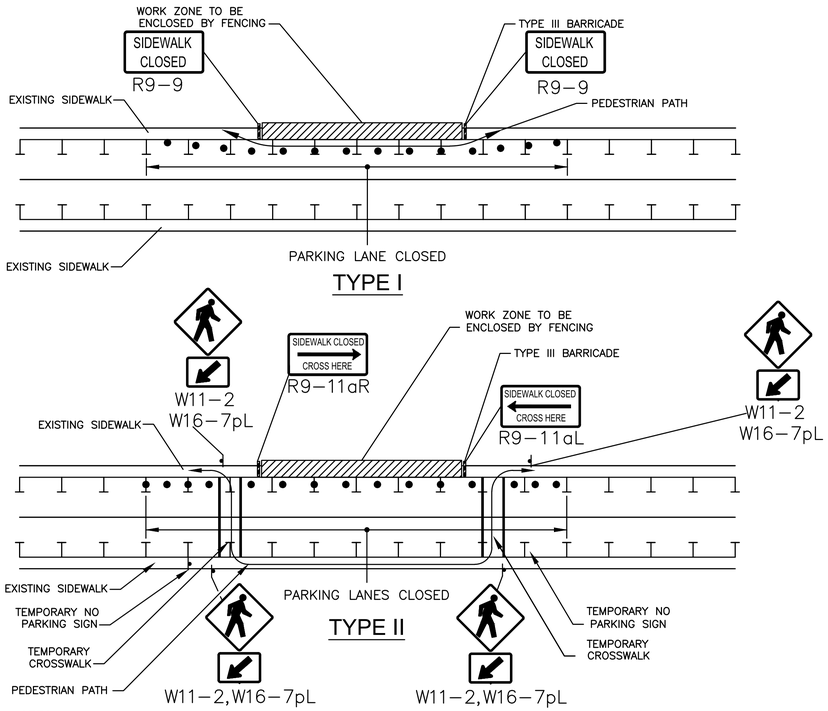
NOT TO SCALE

BEVERLY
BRIDGE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	69	80
PROJECT FILE NO.	608348		

TEMPORARY TRAFFIC CONTROL PLANS
SHEET 3 OF 3

608348_HD10(TTCP).DWG Plotted on 4-Dec-2017 11:13 AM

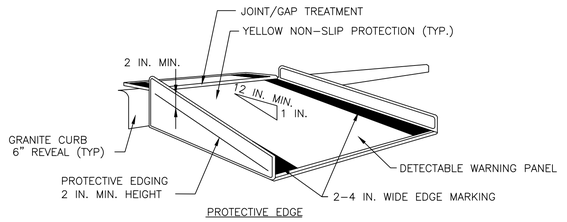


NOTES
1. ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.
2. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN. VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, TEMPORARY CROSSWALKS WITH APPROPRIATE SIGNS SHOULD BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AS SHOWN IN PEDESTRIAN BYPASS TYPE II, AND AS DIRECTED BY THE ENGINEER. 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. (FOR SHORT TERM SETUPS < 10 HOURS, THIS CONDITION MAY BE WAIVED. A NOTE WOULD NEED TO BE INCLUDED IN THE TTCP THAT STATES HOW THE CONTRACTOR SHOULD ADDRESS THIS ISSUE.)

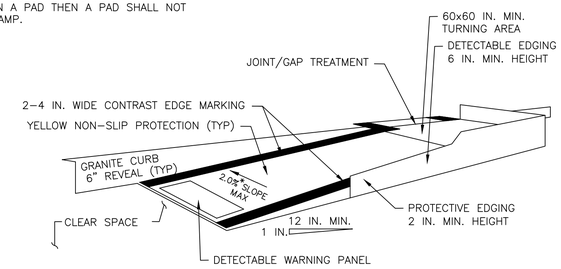
PEDESTRIAN BYPASS

NOT TO SCALE

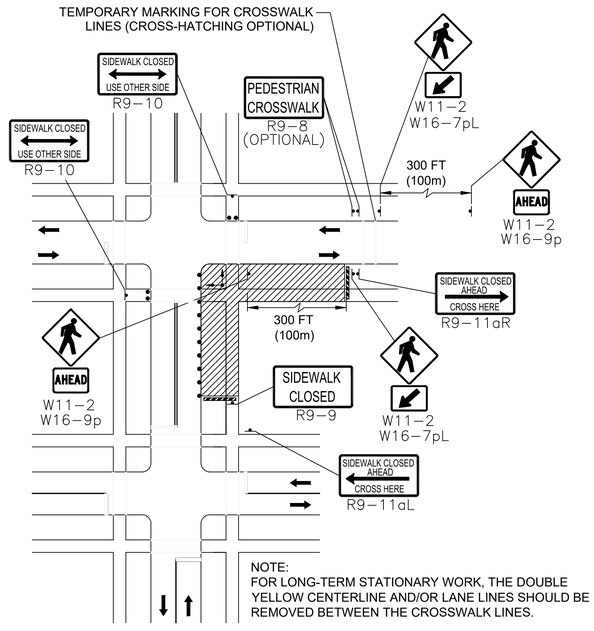
NOTES:
1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON–SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING 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 THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.



TEMPORARY CURB RAMP-PERPENDICULAR TO CURB



TEMPORARY CURB RAMP-PARALLEL TO CURB



PEDESTRIAN DETOUR

NOT TO SCALE