

# TRANSPORTATION IMPROVEMENT PROJECT

LAKEVILLE & MIDDLEBOROUGH  
HARDING STREET (ROUTE 44)  
TITLE SHEET & INDEX  
SHEET 1 OF 14

**PRELIMINARY ONLY  
NOT FOR CONSTRUCTION**

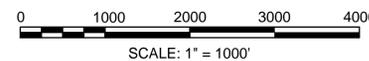
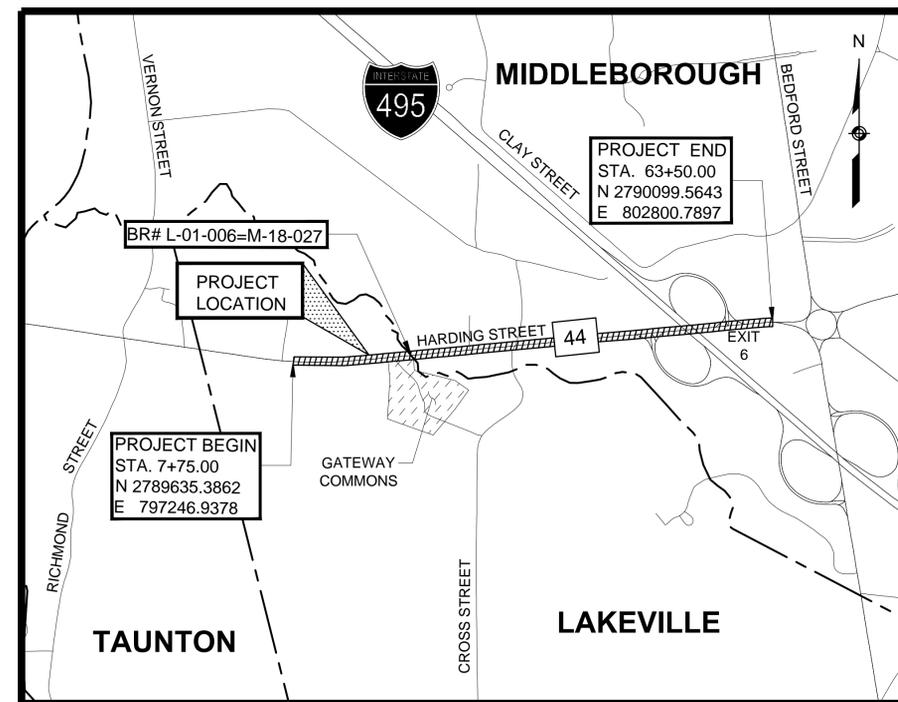
PLAN AND PROFILE OF  
**HARDING STREET (ROUTE 44)**  
**(BRIDGE NO. L-01-006 = M-18-027)**

IN THE TOWNS OF  
**LAKEVILLE & MIDDLEBOROUGH**  
**PLYMOUTH COUNTY**

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, THE SUPPLEMENTAL SPECIFICATIONS DATED JUNE 15, 2012, THE INTERIM SUPPLEMENTAL SPECIFICATIONS DATED JANUARY 25, 2013, THE 2012 CONSTRUCTION STANDARD DETAILS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS (AS RELATES TO TRAFFIC STANDARD DETAILS ONLY), THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) WITH MASSACHUSETTS AMENDMENTS AND THE STANDARD MUNICIPAL TRAFFIC CODE, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

### INDEX

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LENGTH OF PROJECT = 5575.00 FEET = 1.056 MILES

## CONSERVATION COMMISSION SUBMISSION

### DESIGN DESIGNATION (HARDING STREET - ROUTE 44)

DESIGN SPEED	55 MPH
ADT (2013)	24,775 VPD
ADT (2022)	33,670 VPD
K	7.5%
D	51.4% EB
T (PEAK HOUR)	1.5%
T (AVERAGE DAY)	3.4%
DHV	2,525 VPH
DDHV	1,300 VPH
FUNCTIONAL CLASSIFICATION	PRINCIPAL ARTERIAL

NO.	DESCRIPTION	DATE
1	NOTICE OF INTENT SUBMISSION	1/22/14



ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_



TEC, Inc.  
65 Glenn Street | 169 Ocean Blvd  
Lawrence, MA 01843 | Hampton, NH 03842

DESIGNED BY <b>SJM/DAS</b>	CHECKED BY <b>MCM/JPT</b>	DATE <b>JANUARY 22, 2014</b>
DRAWN BY <b>SJM/DAS</b>	APPROVED BY <b>KRD</b>	PROJECT NO. <b>T0300</b>

**GENERAL SYMBOLS**

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
		CATCH BASIN
		CATCH BASIN CURB INLET
		FLAG POLE
		GAS PUMP
		MAIL BOX
		POST SQUARE
		POST CIRCULAR
		WELL
		ELECTRIC HANDHOLE
		FENCE GATE POST
		GAS GATE
		BORING HOLE
		MONITORING WELL
		TEST PIT
		HYDRANT
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE W / 1 LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
		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
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		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
		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)
		RAILROAD SIGNAL
		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
		MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
-----		TRAFFIC SIGNAL CONDUIT

**PAVEMENT MARKINGS SYMBOLS**

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE
		STOP LINE
		CROSSWALK
		SOLID WHITE LINE
		SOLID YELLOW LINE
		BROKEN WHITE LINE
		BROKEN YELLOW LINE
		DOTTED WHITE LINE
		DOTTED YELLOW LINE
		DOTTED WHITE LINE EXTENSION
		DOTTED YELLOW LINE EXTENSION
		DOUBLE WHITE LINE
		DOUBLE YELLOW LINE

**ABBREVIATIONS**

GENERAL	
AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
PBS	PRINT BOTH SIDES
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

**ABBREVIATIONS (cont.)**

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

**TRAFFIC SIGNAL**

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FRL	FLASHING CIRCULAR RED
FRR	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

**LAKEVILLE & MIDDLEBOROUGH  
HARDING STREET (ROUTE 44)  
LEGEND & ABBREVIATIONS  
SHEET 2 OF 14**

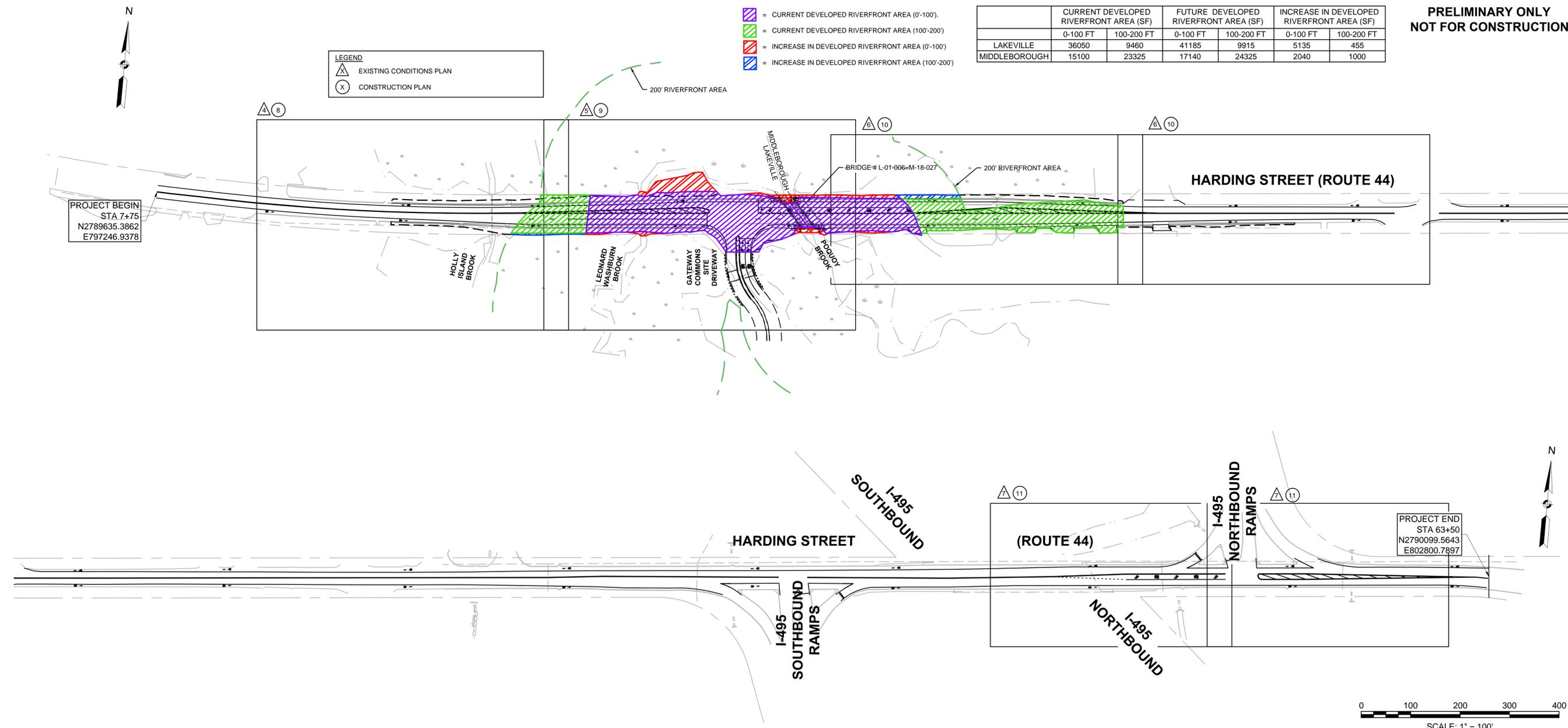
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	CURRENT DEVELOPED RIVERFRONT AREA (SF)		FUTURE DEVELOPED RIVERFRONT AREA (SF)		INCREASE IN DEVELOPED RIVERFRONT AREA (SF)	
	0-100 FT	100-200 FT	0-100 FT	100-200 FT	0-100 FT	100-200 FT
LAKEVILLE	36050	9460	41185	9915	5135	455
MIDDLEBOROUGH	15100	23325	17140	24325	2040	1000

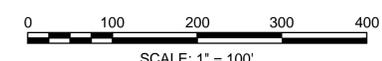
- = CURRENT DEVELOPED RIVERFRONT AREA (0'-100').
- = CURRENT DEVELOPED RIVERFRONT AREA (100'-200')
- = INCREASE IN DEVELOPED RIVERFRONT AREA (0'-100')
- = INCREASE IN DEVELOPED RIVERFRONT AREA (100'-200')

**LEGEND**  
 △ EXISTING CONDITIONS PLAN  
 ⊗ CONSTRUCTION PLAN



PROJECT BEGIN  
 STA 7+75  
 N2789635.3862  
 E797246.9378

PROJECT END  
 STA 63+50  
 N2790099.5643  
 E802800.7897



**CONSTRUCTION NOTES:**

1. EXISTING CONDITIONS INFORMATION FROM SURVEY AND PLAN BY HANCOCK ASSOCIATES, INC. DATED JUNE 13, 2013 AND SITEC, INC. DATED MARCH 20, 2009.  
 HORIZONTAL DATUM = NAD83 (MASSACHUSETTS STATE PLANE COORDINATES)  
 VERTICAL DATUM = NAVD88
2. THE DESIGNER SHALL PROVIDE ALL ELECTRONIC DESIGN FILES FOR LAYOUT PURPOSES AT THE REQUEST OF THE CONTRACTOR.
3. ALL EXISTING STATE, COUNTY, CITY, AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.
4. 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 CONTACT DIGSAFE (1-800-DIGSAFE) A MINIMUM OF 72 HOURS PRIOR TO ANY CONSTRUCTION TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
5. 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.
6. THE CONTRACTOR SHALL CLEAN ALL EXISTING DRAINAGE STRUCTURES AND PIPES WITHIN THE LIMITS OF ROADWAY WIDENING (STA 12+50 TO 30+50) PRIOR TO PROPOSED DRAINAGE INSTALLATION.
7. ALL PRIVATELY OWNED UTILITY STRUCTURES (GAS GATES, ELECTRIC/TELEPHONE MANHOLES, ETC.) SHALL BE ADJUSTED TO FINISHED GRADE BY THE PRIVATE UTILITY COMPANY, UNLESS DIRECTED OTHERWISE. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE ALTERATION AND ADJUSTMENT, AS NECESSARY.
8. CATCH BASIN FRAMES AND GRATES SHALL BE IN CONFORMANCE WITH MASSDOT STANDARDS.
9. PROPOSED LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 1.0% (MINIMUM) UNLESS OTHERWISE NOTED.
10. 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 CONTRACTORS EXPENSE.
11. ALL DISTURBED AREAS OUTSIDE THE CURBLINE SHALL BE STABILIZED WITH 4" LOAM AND SEED, UNLESS OTHERWISE NOTED.
12. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
13. THE TERM "MEET EXIST" MEANS TO MEET BOTH THE EXISTING ALIGNMENT AND ELEVATION.
14. THE CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS WITHIN THE TREELINE AND LIMITS OF GRADING IN CONFORMANCE WITH MASSDOT STANDARD SPECIFICATIONS.

PRELIMINARY ONLY  
NOT FOR CONSTRUCTION

T:\0300\_Lakeville\_NOI\_04\_EXCON\_Plans.dwg 07-Jan-2014



**HARDING STREET  
(ROUTE 44)**  
(1932 S.H.L.O. NO. 2942)

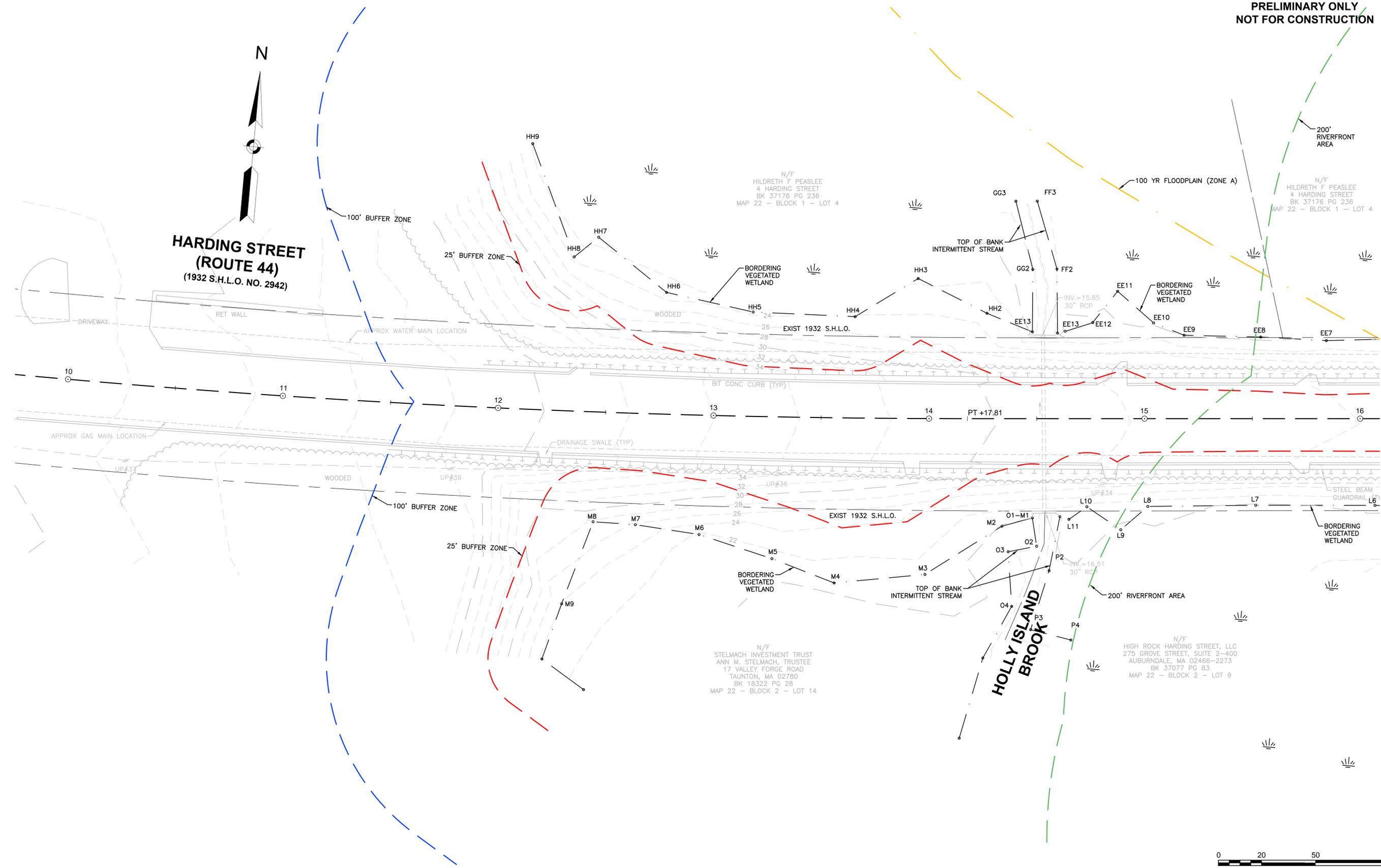
N/F  
HILDRETH F PEASLEE  
4 HARDING STREET  
BK 37176 PG 236  
MAP 22 - BLOCK 1 - LOT 4

N/F  
HILDRETH F PEASLEE  
4 HARDING STREET  
BK 37176 PG 236  
MAP 22 - BLOCK 1 - LOT 4

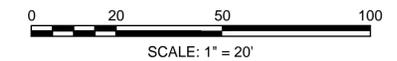
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STELMACH INVESTMENT TRUST  
ANN M. STELMACH, TRUSTEE  
17 VALLEY FORGE ROAD  
TAUNTON, MA 02780  
BK 18322 PG 28  
MAP 22 - BLOCK 2 - LOT 14

N/F  
HIGH ROCK HARDING STREET, LLC  
275 GROVE STREET, SUITE 2-400  
AUBURNDALE, MA 02466-2273  
BK 37077 PG 83  
MAP 22 - BLOCK 2 - LOT 9

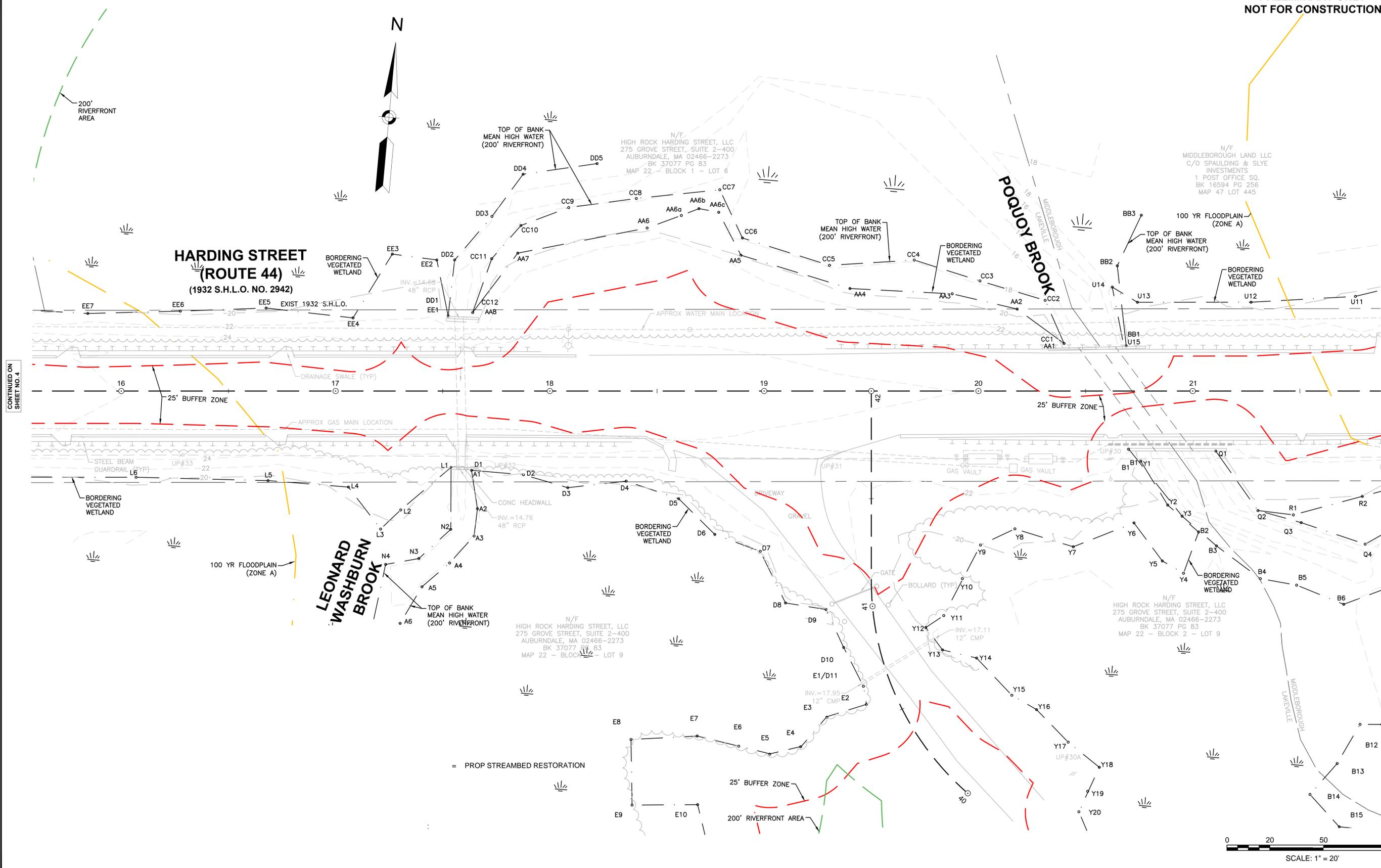
**HOLLY ISLAND  
BROOK**



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SHEET NO. 5



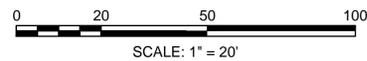
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CONTINUED ON  
SHEET NO. 4

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SHEET NO. 6

= PROP STREAMBED RESTORATION



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**NOT FOR CONSTRUCTION**

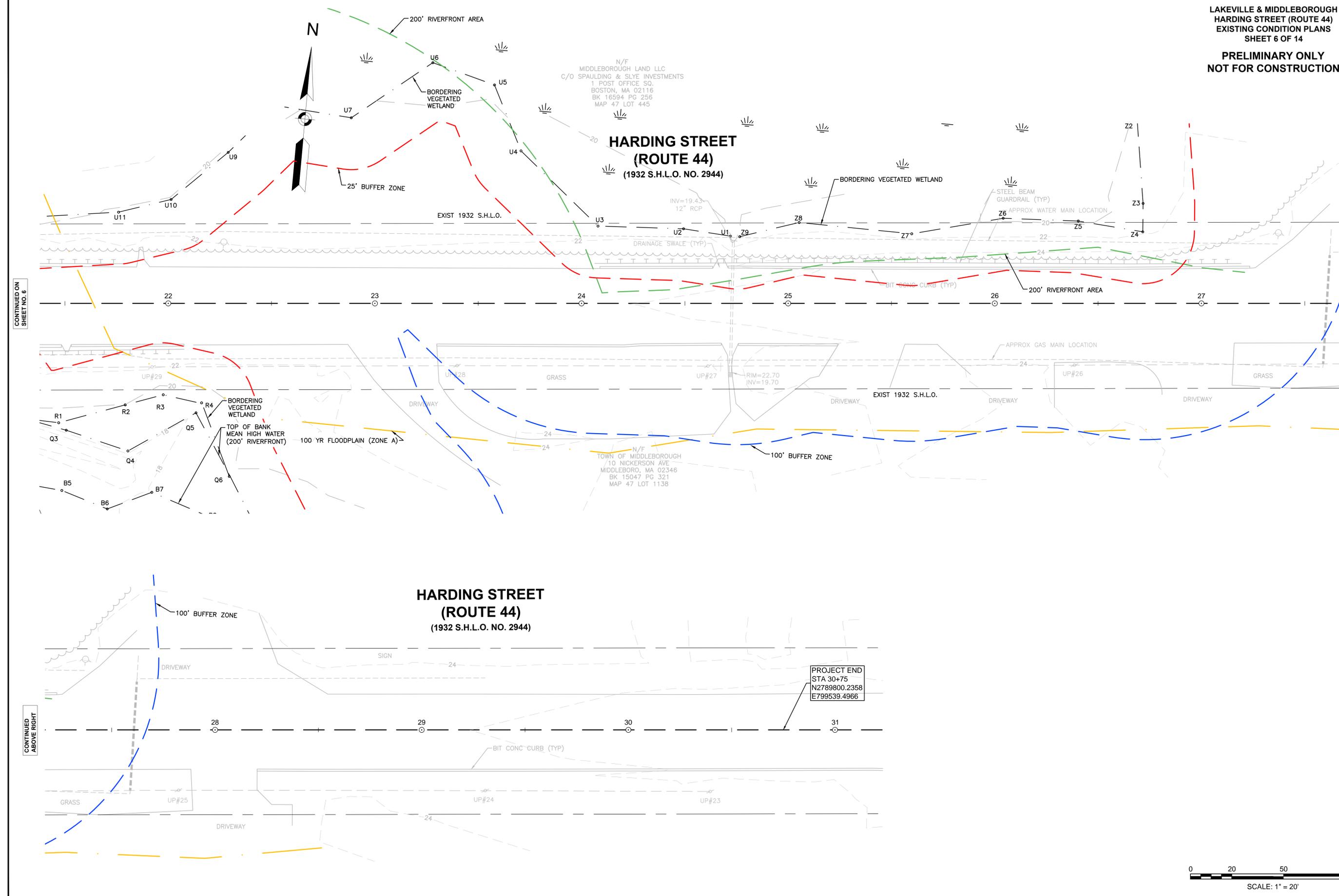
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N/F  
 MIDDLEBOROUGH LAND LLC  
 C/O SPAULDING & SLYE INVESTMENTS  
 1 POST OFFICE SQ.  
 BOSTON, MA 02116  
 BK 16594 PG 256  
 MAP 47 LOT 445

**HARDING STREET  
 (ROUTE 44)**  
 (1932 S.H.L.O. NO. 2944)

(1932 S.H.L.O. NO. 2944)



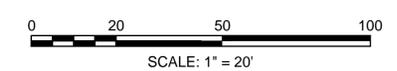
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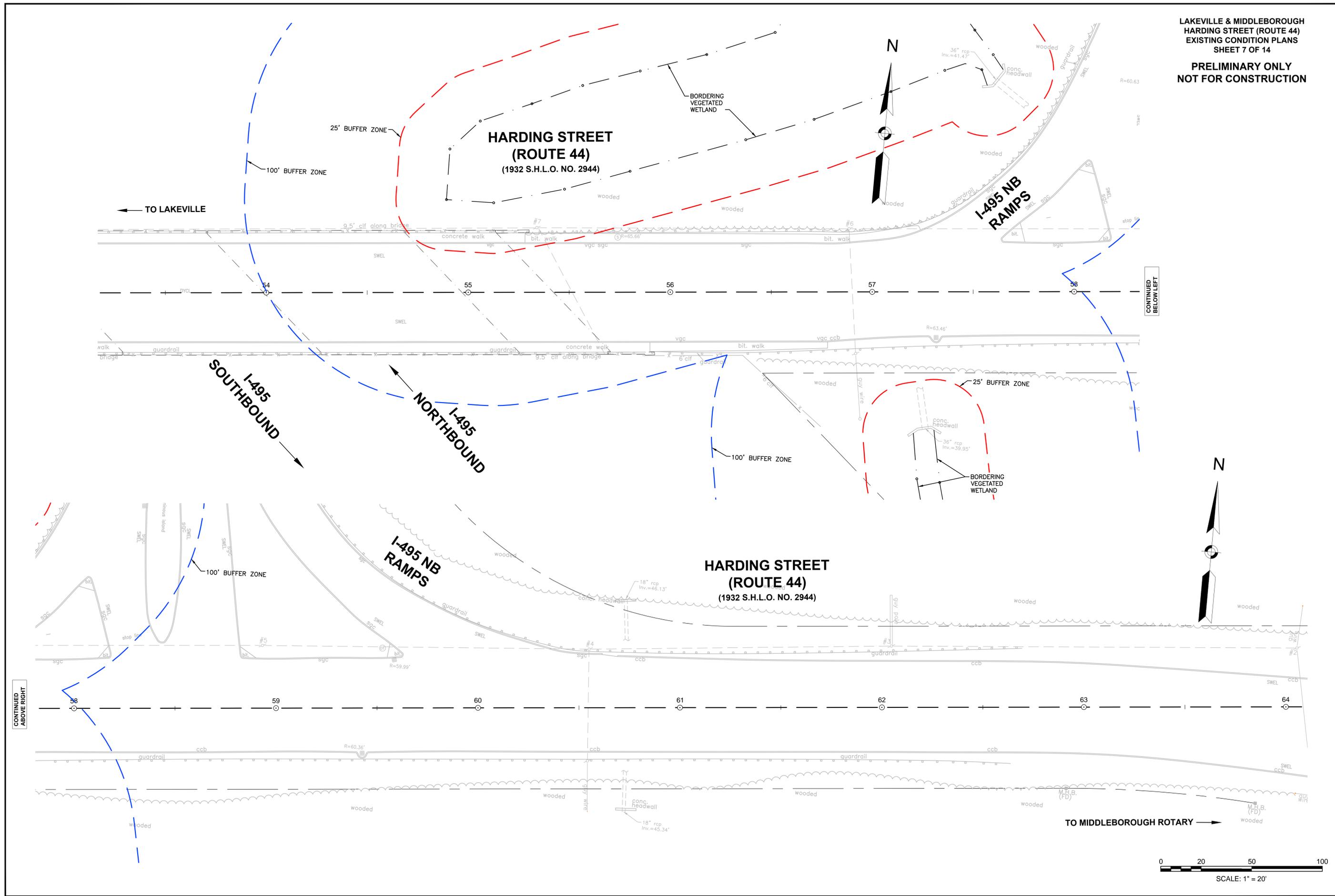
**HARDING STREET  
 (ROUTE 44)**  
 (1932 S.H.L.O. NO. 2944)

PROJECT END  
 STA 30+75  
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 E799539.4966



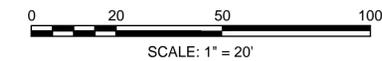
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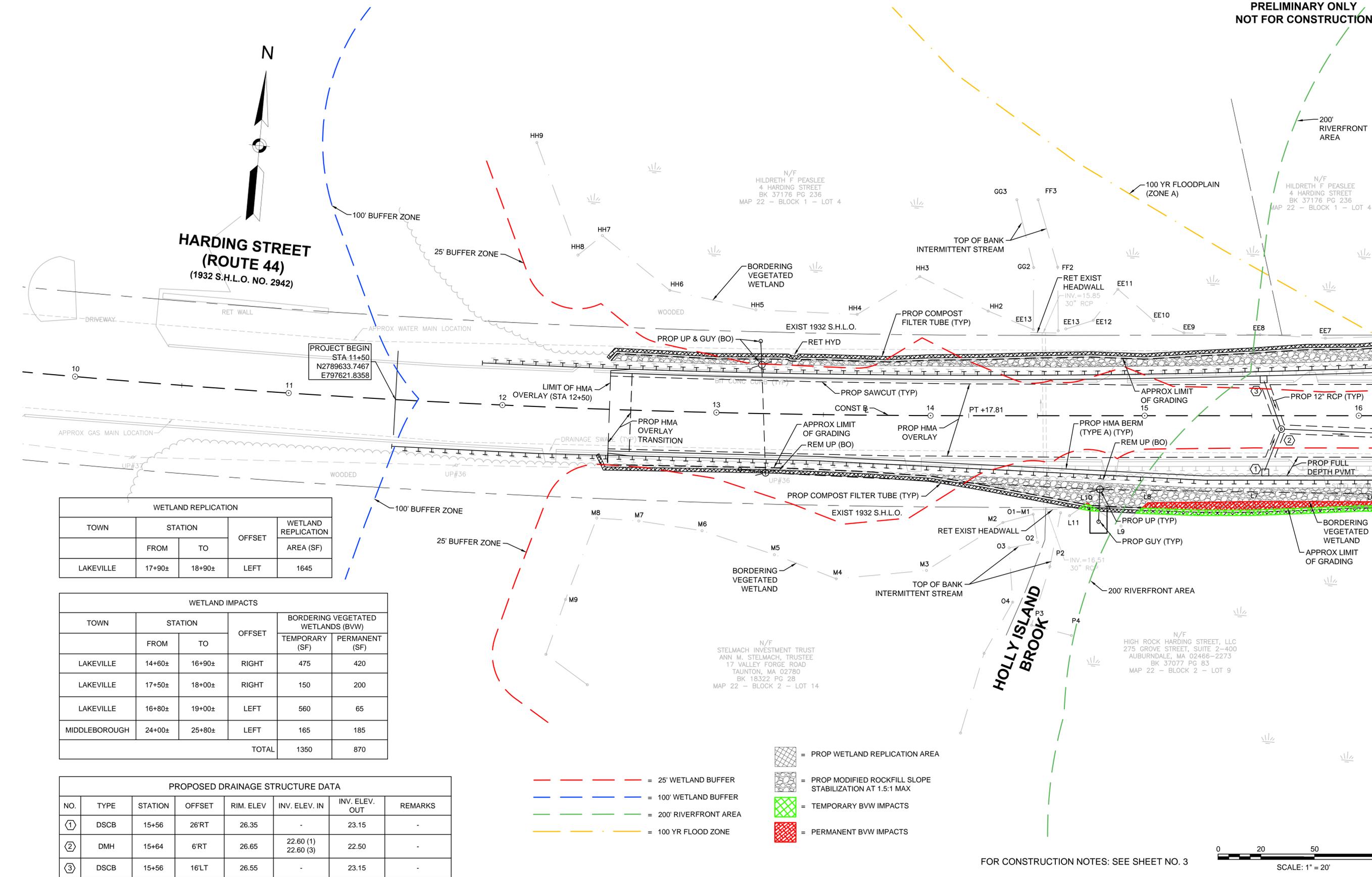
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T0300\_Lakeville\_NOI\_05\_Construction Plans.dwg 17-Jan-2014



WETLAND REPLICATION				
TOWN	STATION		OFFSET	WETLAND REPLICATION AREA (SF)
	FROM	TO		
LAKEVILLE	17+90±	18+90±	LEFT	1645

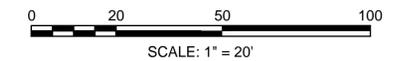
WETLAND IMPACTS					
TOWN	STATION		OFFSET	BORDERING VEGETATED WETLANDS (BVW)	
	FROM	TO		TEMPORARY (SF)	PERMANENT (SF)
LAKEVILLE	14+60±	16+90±	RIGHT	475	420
LAKEVILLE	17+50±	18+00±	RIGHT	150	200
LAKEVILLE	16+80±	19+00±	LEFT	560	65
MIDDLEBOROUGH	24+00±	25+80±	LEFT	165	185
TOTAL				1350	870

PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM. ELEV.	INV. ELEV. IN.	INV. ELEV. OUT.	REMARKS
①	DSCB	15+56	26'RT	26.35	-	23.15	-
②	DMH	15+64	6'RT	26.65	22.60 (1) 22.60 (3)	22.50	-
③	DSCB	15+56	16'LT	26.55	-	23.15	-

- = 25' WETLAND BUFFER
- = 100' WETLAND BUFFER
- = 200' RIVERFRONT AREA
- = 100 YR FLOOD ZONE

- = PROP WETLAND REPLICATION AREA
- = PROP MODIFIED ROCKFILL SLOPE STABILIZATION AT 1.5:1 MAX
- = TEMPORARY BVW IMPACTS
- = PERMANENT BVW IMPACTS

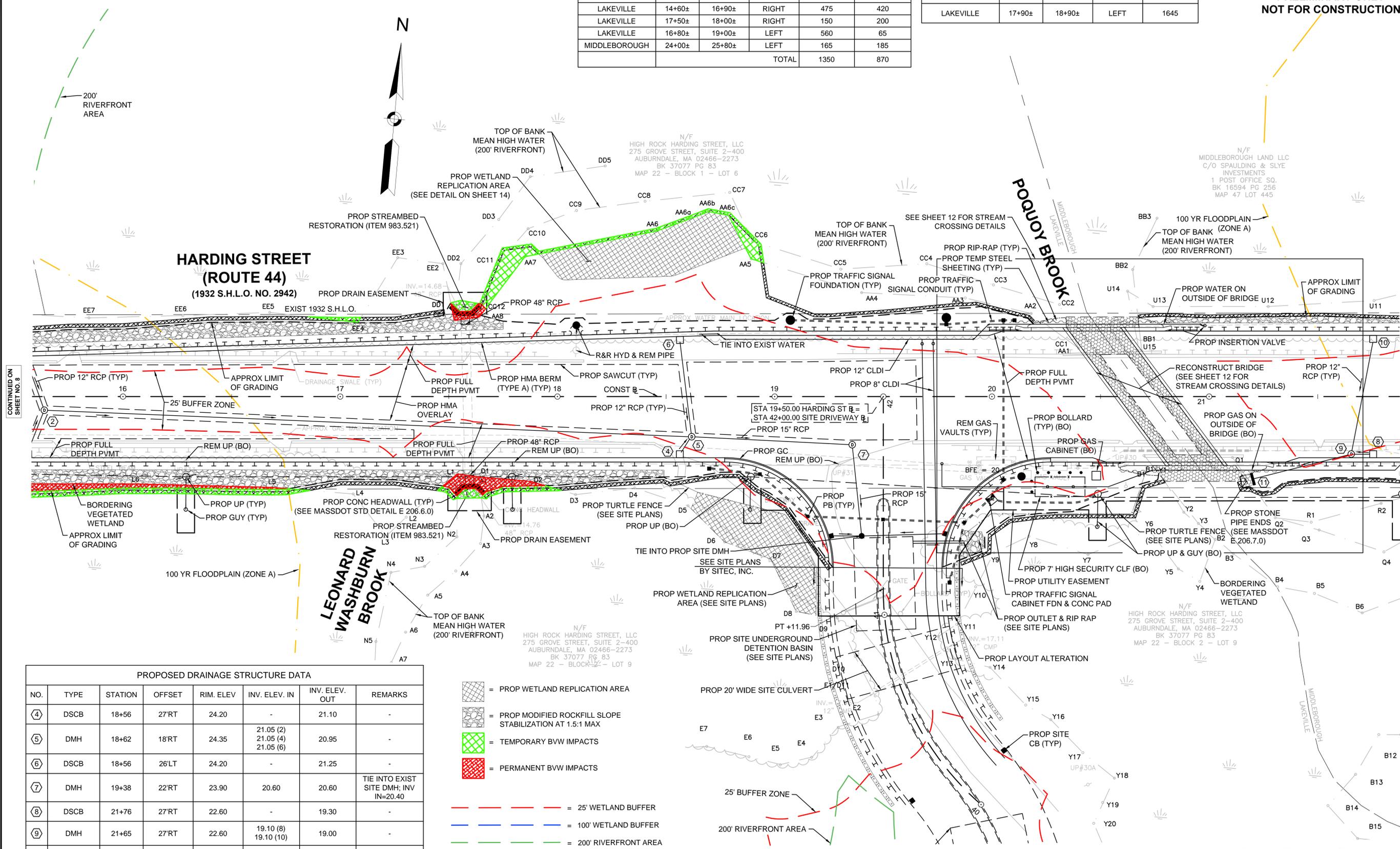
FOR CONSTRUCTION NOTES: SEE SHEET NO. 3



CONTINUED ON SHEET NO. 9

WETLAND IMPACTS					
TOWN	STATION		OFFSET	BORDERING VEGETATED WETLANDS (BVW)	
	FROM	TO		TEMPORARY (SF)	PERMANENT (SF)
LAKEVILLE	14+60±	16+90±	RIGHT	475	420
LAKEVILLE	17+50±	18+00±	RIGHT	150	200
LAKEVILLE	16+80±	19+00±	LEFT	560	65
MIDDLEBOROUGH	24+00±	25+80±	LEFT	165	185
TOTAL				1350	870

WETLAND REPLICATION				
TOWN	STATION		OFFSET	WETLAND REPLICATION AREA (SF)
	FROM	TO		
LAKEVILLE	17+90±	18+90±	LEFT	1645



**HARDING STREET  
(ROUTE 44)**  
(1932 S.H.L.O. NO. 2942)

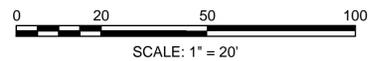
**LEONARD  
WASHBURN  
BROOK**

**POQUOY BROOK**

PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM. ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
④	DSCB	18+56	27'RT	24.20	-	21.10	-
⑤	DMH	18+62	18'RT	24.35	21.05 (2) 21.05 (4) 21.05 (6)	20.95	-
⑥	DSCB	18+56	26'LT	24.20	-	21.25	-
⑦	DMH	19+38	22'RT	23.90	20.60	20.60	TIE INTO EXIST SITE DMH; INV IN=20.40
⑧	DSCB	21+76	27'RT	22.60	-	19.30	-
⑨	DMH	21+65	27'RT	22.60	19.10 (8) 19.10 (10)	19.00	-
⑩	DSCB	21+76	27'LT	22.60	-	19.60	-
⑪	CONC HDW	21+20	38'RT	-	-	18.40	SEE MASSDOT E 206.4.0

- = PROP WETLAND REPLICATION AREA
- = PROP MODIFIED ROCKFILL SLOPE STABILIZATION AT 1.5:1 MAX
- = TEMPORARY BVW IMPACTS
- = PERMANENT BVW IMPACTS
- = 25' WETLAND BUFFER
- = 100' WETLAND BUFFER
- = 200' RIVERFRONT AREA
- = 100 YR FLOOD ZONE

FOR CONSTRUCTION NOTES: SEE SHEET NO. 3



CONTINUED ON SHEET NO. 8

CONTINUED ON SHEET NO. 10

**PRELIMINARY ONLY  
NOT FOR CONSTRUCTION**

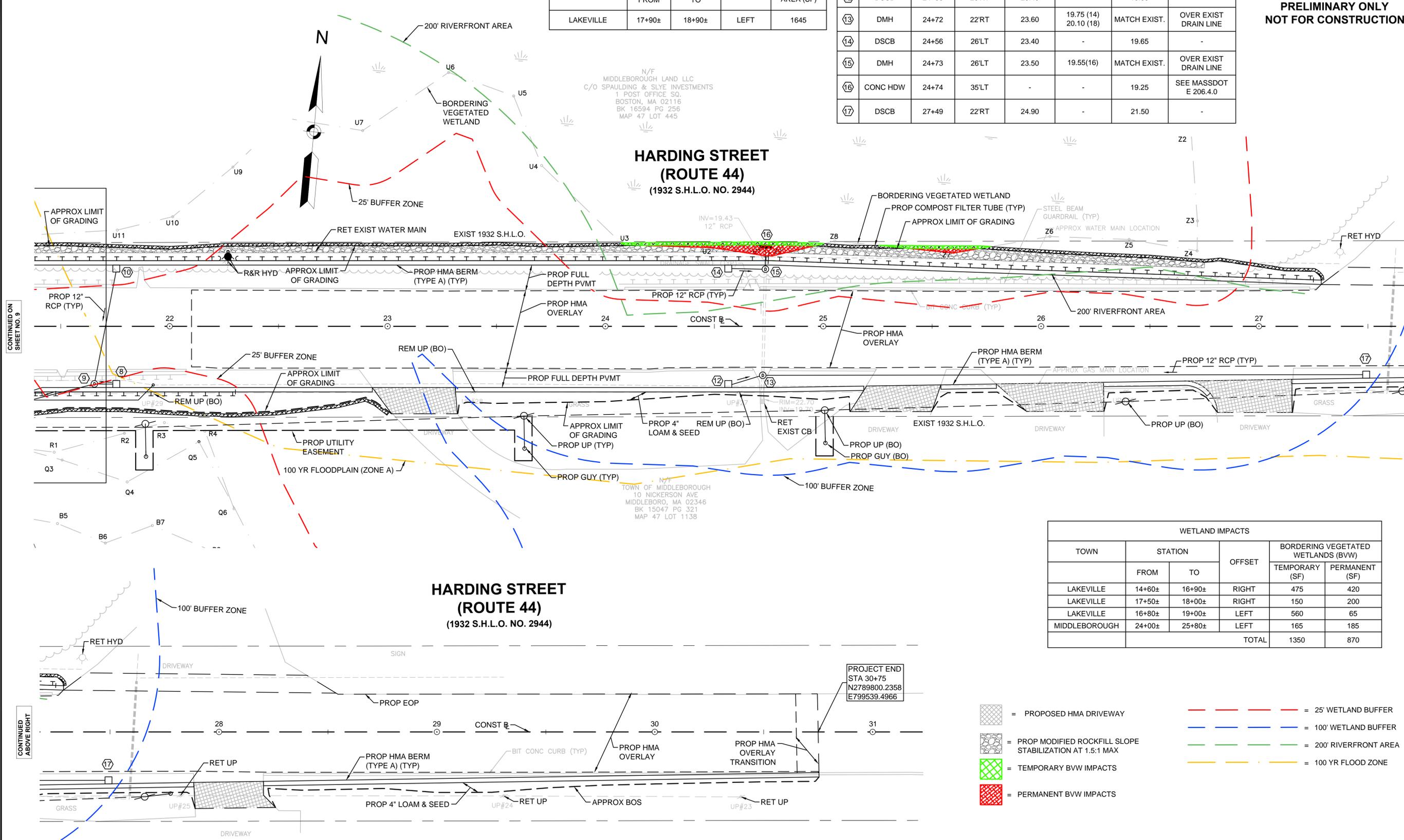
WETLAND REPLICATION				
TOWN	STATION		OFFSET	WETLAND REPLICATION AREA (SF)
	FROM	TO		
LAKEVILLE	17+90±	18+90±	LEFT	1645

PROPOSED DRAINAGE STRUCTURE DATA							
NO.	TYPE	STATION	OFFSET	RIM. ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
12	DSCB	24+56	26'RT	23.40	-	19.85	-
13	DMH	24+72	22'RT	23.60	19.75 (14) 20.10 (18)	MATCH EXIST.	OVER EXIST DRAIN LINE
14	DSCB	24+56	26'LT	23.40	-	19.65	-
15	DMH	24+73	26'LT	23.50	19.55(16)	MATCH EXIST.	OVER EXIST DRAIN LINE
16	CONC HDW	24+74	35'LT	-	-	19.25	SEE MASSDOT E 206.4.0
17	DSCB	27+49	22'RT	24.90	-	21.50	-

N/F  
MIDDLEBOROUGH LAND LLC  
C/O SPAULDING & SLYE INVESTMENTS  
1 POST OFFICE SQ.  
BOSTON, MA 02116  
BK 16594 PG 256  
MAP 47 LOT 445

**HARDING STREET  
(ROUTE 44)**  
(1932 S.H.L.O. NO. 2944)

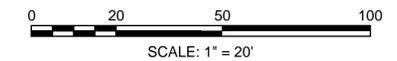
N/F  
TOWN OF MIDDLEBOROUGH  
10 NICKERSON AVE  
MIDDLEBORO, MA 02346  
BK 15047 PG 321  
MAP 47 LOT 1138



WETLAND IMPACTS					
TOWN	STATION		OFFSET	BORDERING VEGETATED WETLANDS (BVW)	
	FROM	TO		TEMPORARY (SF)	PERMANENT (SF)
LAKEVILLE	14+60±	16+90±	RIGHT	475	420
LAKEVILLE	17+50±	18+00±	RIGHT	150	200
LAKEVILLE	16+80±	19+00±	LEFT	560	65
MIDDLEBOROUGH	24+00±	25+80±	LEFT	165	185
TOTAL				1350	870

- = PROPOSED HMA DRIVEWAY
- = PROP MODIFIED ROCKFILL SLOPE STABILIZATION AT 1.5:1 MAX
- = TEMPORARY BVW IMPACTS
- = PERMANENT BVW IMPACTS
- = 25' WETLAND BUFFER
- = 100' WETLAND BUFFER
- = 200' RIVERFRONT AREA
- = 100 YR FLOOD ZONE

FOR CONSTRUCTION NOTES: SEE SHEET NO. 3



CONTINUED ON SHEET NO. 9

CONTINUED BELOW LEFT

CONTINUED ABOVE RIGHT



**PRELIMINARY ONLY  
NOT FOR CONSTRUCTION**

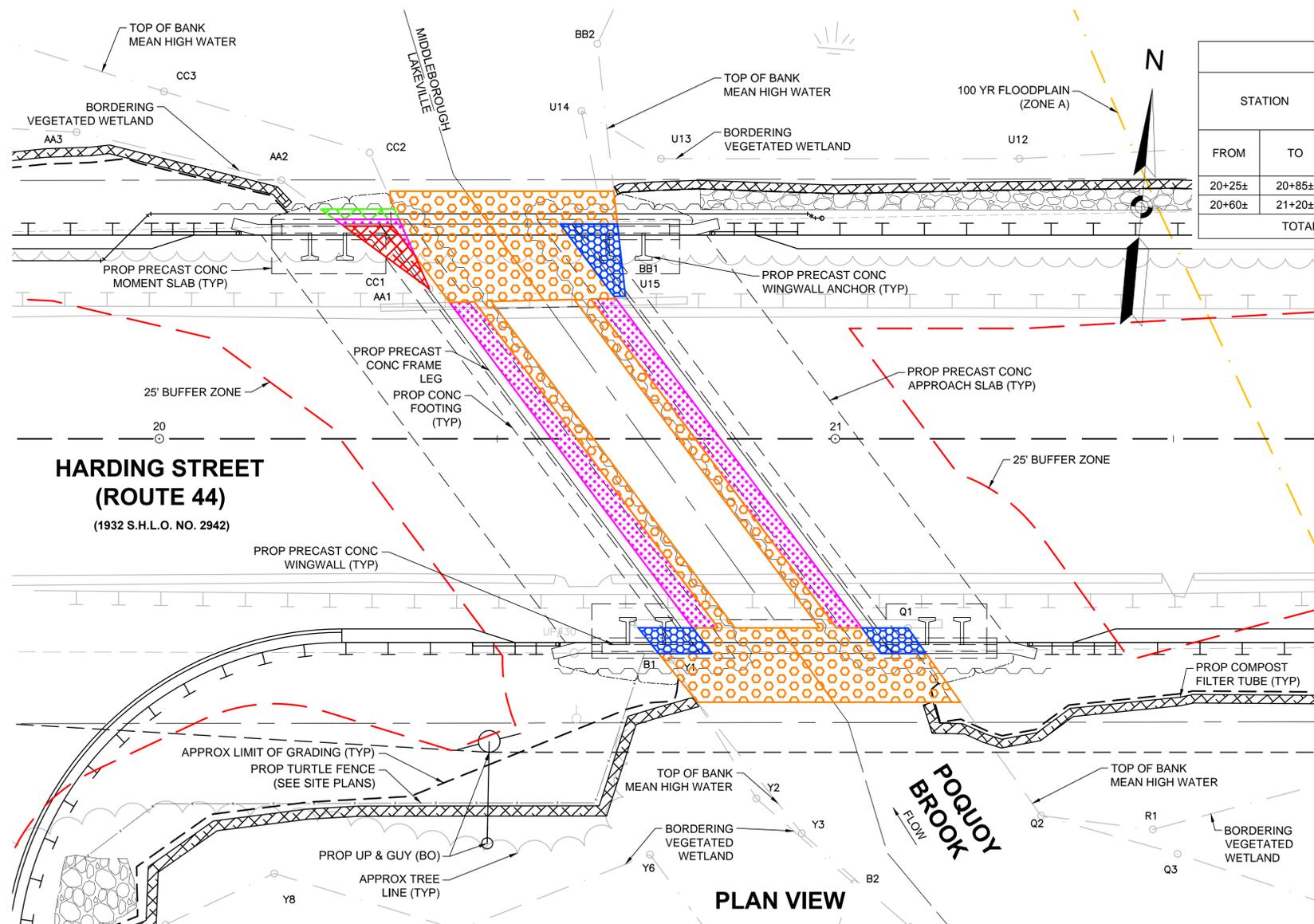
STATION		OFFSET	BORDERING VEGETATED WETLANDS (BVW) LAKEVILLE		BORDERING VEGETATED WETLANDS (BVW) MIDDLEBOROUGH		LAND UNDER WATER (LUW) LAKEVILLE			LAND UNDER WATER (LUW) MIDDLEBOROUGH		
FROM	TO		TEMPORARY (SF)	PERMANENT (SF)	TEMPORARY (SF)	PERMANENT (SF)	TEMPORARY (SF)	PERMANENT GAIN (SF)	PERMANENT LOSS (SF)	TEMPORARY (SF)	PERMANENT GAIN (SF)	PERMANENT LOSS (SF)
20+25±	20+85±	LEFT	15	40	-	-	270	90	0	270	80	55
20+60±	21+20±	RIGHT	-	-	-	-	265	105	30	250	105	30
TOTAL			15	40	0	0	535	195	30	520	185	85

BORDERING LAND SUBJECT TO FLOOD					
ELEVATION (FT)	DECREASE IN VOLUME (CF) LAKEVILLE	DECREASE IN VOLUME (CF) MIDDLEBOROUGH	INCREASE IN VOLUME (CF) LAKEVILLE	INCREASE IN VOLUME (CF) MIDDLEBOROUGH	NET GAIN FLOOD STORAGE (CF)
15-16	0	10	195	185	370
16-17	4	22	195	185	354
17-18	9	36	195	185	335
18-19	18	53	195	185	309
19-20	24	54	195	185	302

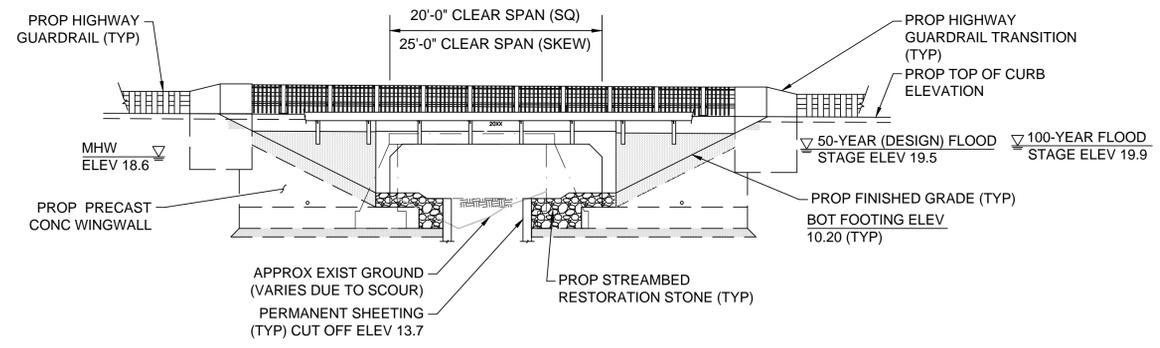
NOTE: PLEASE REFER TO HYDRAULIC REPORT PREPARED BY DUBOIS & KING DATED NOVEMBER 21, 2012. SECTION 5.1 INDICATES THAT THE PROPOSED CULVERT WILL NOT ADVERSELY AFFECT FLOOD STORAGE AREA.

-  = PROP MODIFIED ROCKFILL SLOPE STABILIZATION AT 1.5:1 MAX
  -  = TEMPORARY BVW IMPACTS
  -  = PERMANENT BVW IMPACTS (LOSS)
  -  = TEMPORARY LUW IMPACTS
  -  = PERMANENT LUW IMPACTS (GAIN)
  -  = PERMANENT LUW IMPACTS (LOSS)
- OPENNESS RATIO =  $\frac{\text{CROSS-SECTIONAL AREA}}{\text{CROSSING LENGTH}}$
- OPENNESS RATIO =  $\frac{11.25 \text{ m}^2}{24.4 \text{ m}} = \frac{121 \text{ FT}^2}{80 \text{ FT}}$
- OPENNESS RATIO =  $0.46 \text{ m} > 0.25 \text{ m (MIN.)}$   
 $1.5 \text{ FT} > 0.82 \text{ FT (MIN.)}$
-  = 25' WETLAND BUFFER
-  = 100 YR FLOOD ZONE

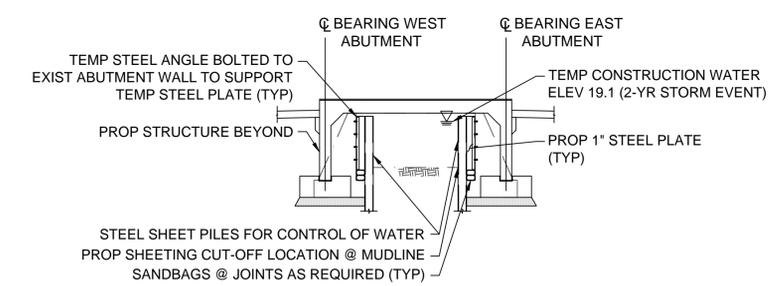
NOTE: 100' BUFFER & 200' RIVERFRONT DELINEATION IS OFF THE PAGE AND CAN BE VIEWED ON CONSTRUCTION PLANS SHEETS 8-11.



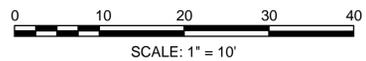
**PLAN VIEW**



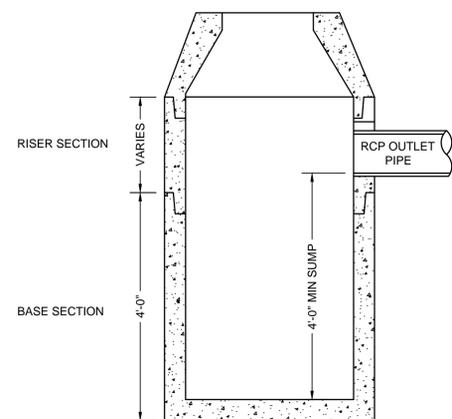
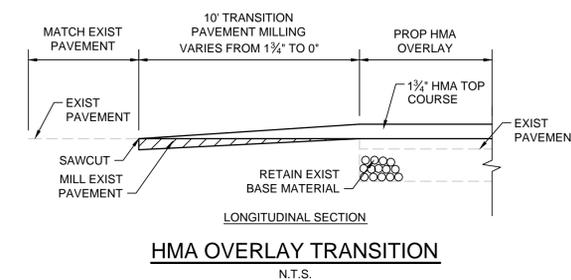
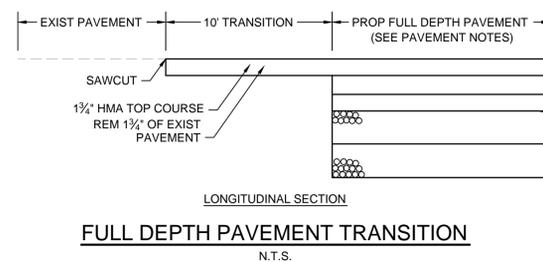
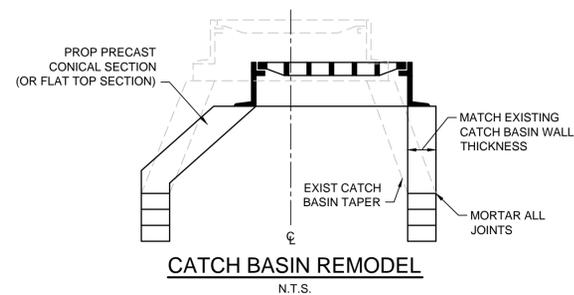
**ELEVATION VIEW  
(LOOKING NORTH)**



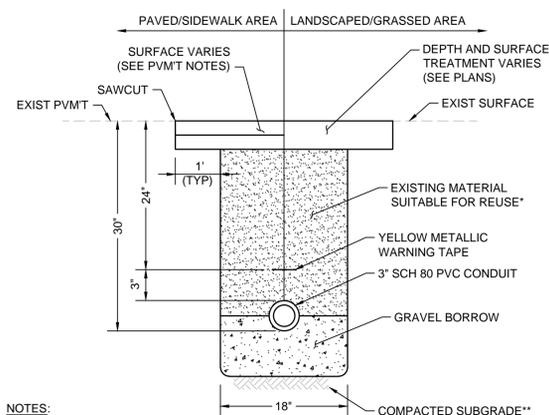
**TEMPORARY CONTROL OF WATER-  
STAGED CONSTRUCTION**



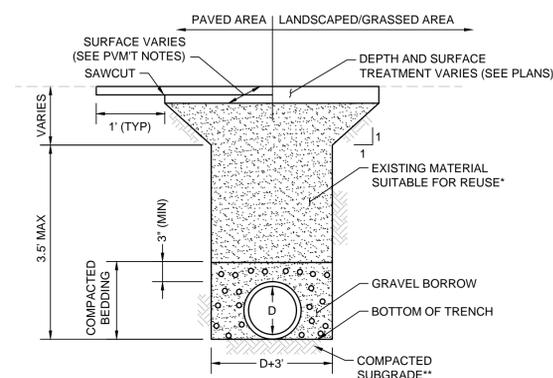
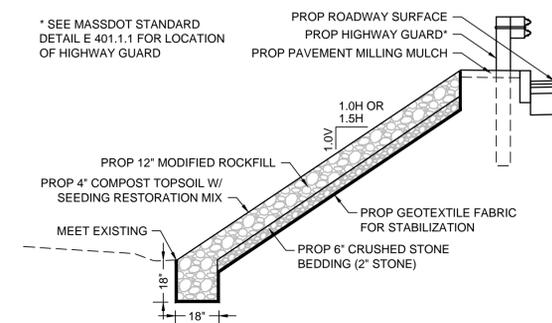
**PRELIMINARY ONLY  
NOT FOR CONSTRUCTION**



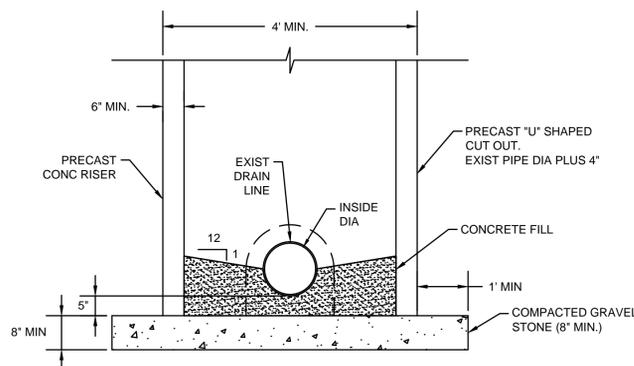
NOTE:  
ALL CATCH BASINS SHALL CONFORM TO MASSDOT CONSTRUCTION STANDARD E 201.4.0 EXCEPT FOR 4' SUMP DEPTH AS SHOWN



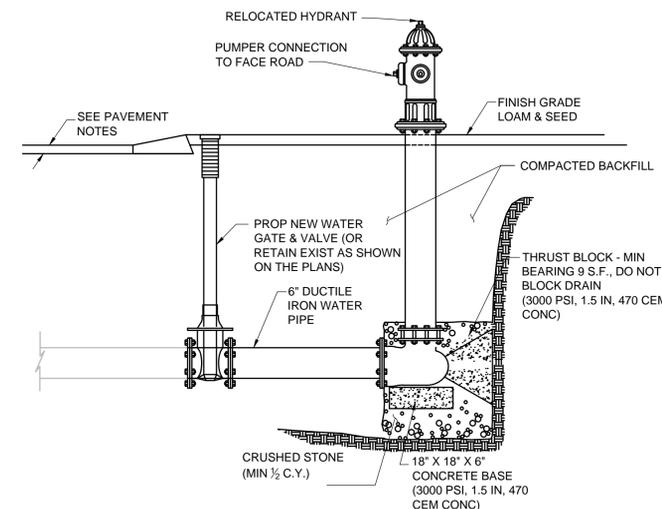
NOTES:  
\* EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE, AND APPROVED BY THE ENGINEER SHALL BE USED. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 6" IN DEPTH AND THOROUGHLY COMPACTED. BACKFILLING TO A POINT 2' OVER THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3".  
\*\*SOFT OR UNSUITABLE MATERIAL EXISTING BELOW THE REQUIRED BEDDING GRADE SHALL BE REMOVED AS DIRECTED AND REPLACED WITH SAND, GRAVEL, CRUSHED STONE OR OTHER SUITABLE MATERIAL AND THOROUGHLY COMPACTED.

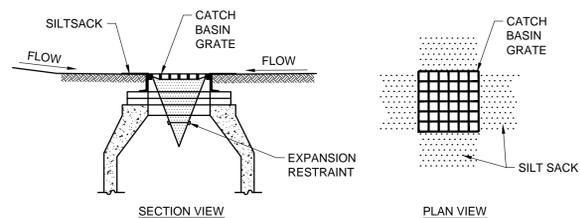


NOTES:  
\* EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE, AND APPROVED BY THE ENGINEER SHALL BE USED. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 6" IN DEPTH AND THOROUGHLY COMPACTED. BACKFILLING TO A POINT 2' OVER THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3".  
\*\*SOFT OR UNSUITABLE MATERIAL EXISTING BELOW THE REQUIRED BEDDING GRADE SHALL BE REMOVED AS DIRECTED AND REPLACED WITH SAND, GRAVEL, CRUSHED STONE OR OTHER SUITABLE MATERIAL AND THOROUGHLY COMPACTED.



NOTE:  
UTILIZE MASSDOT STANDARD DRAWING E202.4.0 FOR ALL OTHER DETAILED INFORMATION.





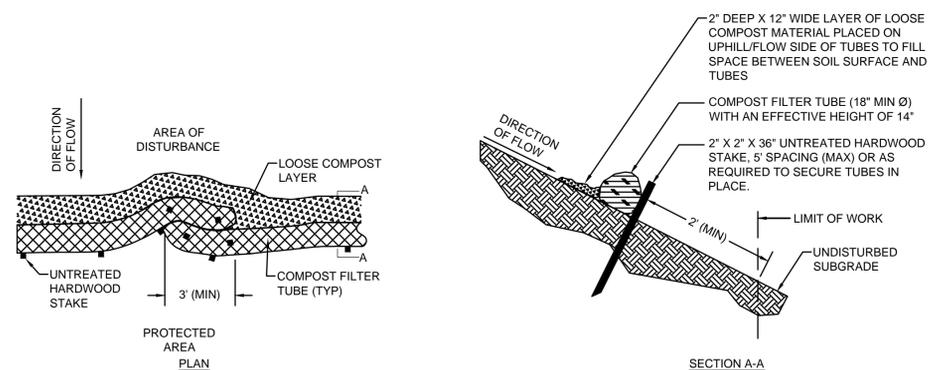
**NOTES:**

- INSTALL SILT SACK IN EXISTING CATCH BASINS BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
- GRATE TO BE PLACED OVER SILT SACK.
- SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
- REMOVE SILT SACK AT COMPLETION OF PROJECT.

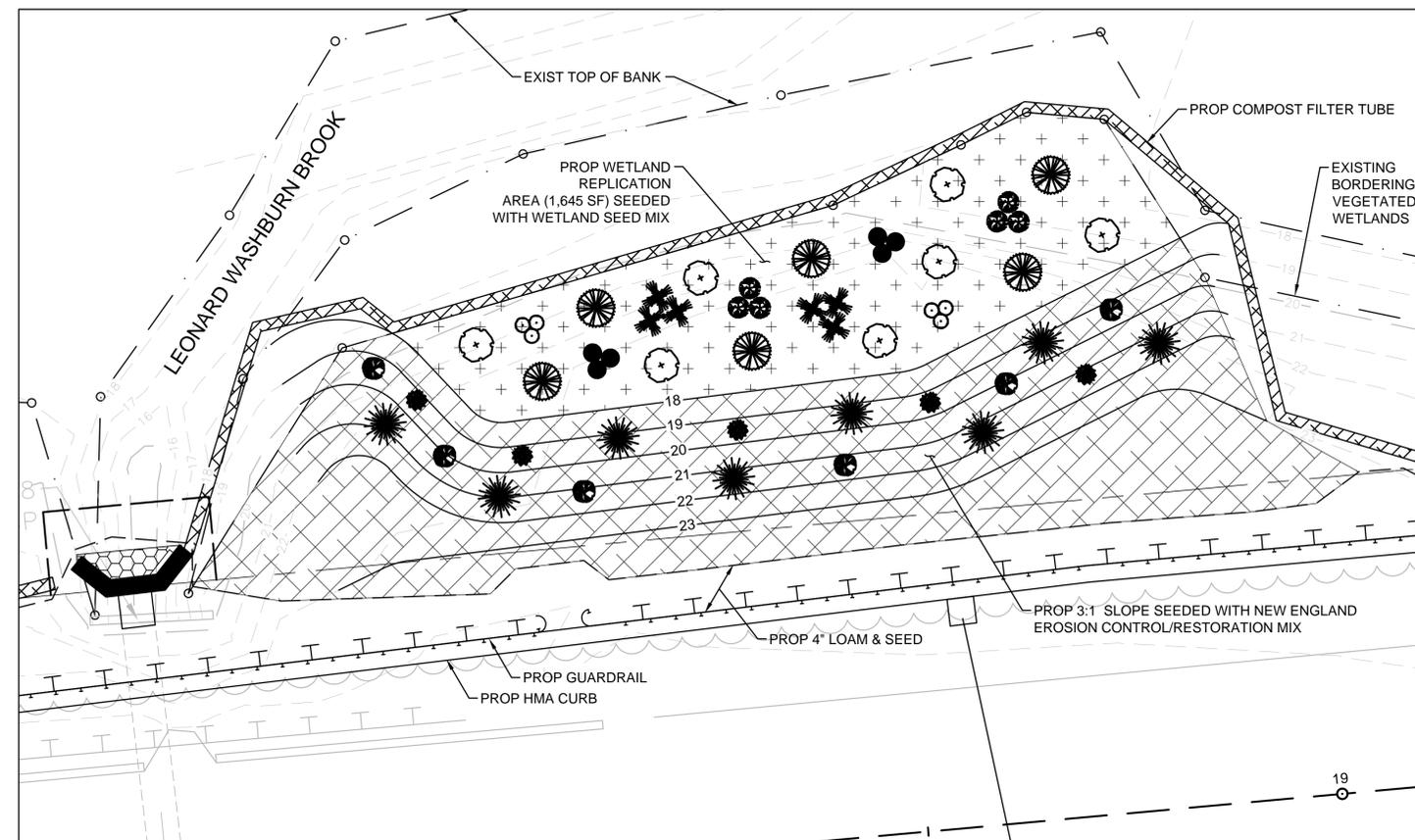
**INLET PROTECTION SILT SACK IN CATCH BASIN**  
N.T.S.

**NOTES:**

- PROVIDE A MINIMUM TUBE DIAMETER OF 18" FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY RE
- INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
- DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
- CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.
- TUBES FOR COMPOST FILTERS SHALL BE JUTE MESH OR APPROVED BIODEGRADABLE MATERIAL. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE EN
- TAMP TUBES IN PLACE TO ENSURE GOOD CONTACT WITH SOIL SURFACE. IT IS NOT NECESSARY TO TRENCH TUBES INTO EXISTING GRADE.
- WHEN STAKING IS NOT POSSIBLE, SUCH AS WHEN TUBES MUST BE PLACED ON PAVEMENT, HEAVY CONCRETE OR CINDER BLOCKS CAN BE USED BEHIND TUBES UP
- TUBES CAN BE PLACED DIRECTLY ON EXISTING PAVEMENT WHEN NECESSARY.
- PROVIDE A 3" MINIMUM OVERLAP AT ENDS OF TUBES TO JOIN IN A CONTINUOUS BARRIER AND MINIMIZE UNIMPEDED FLOW.
- STAKE JOINING TUBES SNUGLY AGAINST EACH OTHER TO PREVENT UNFILTERED FLOW BETWEEN THEM.
- SECURE ENDS OF TUBES WITH STAKES SPACED 18" APART THROUGH TOPS OF TUBES.
- UPON COMPLETION OF PROJECT, ALL TUBES USED FOR EROSION CONTROL SHALL BE REMOVED FROM PROJECT LIMITS.



**COMPOST FILTER TUBE**  
N.T.S.



**WETLAND REPLICATION AREA**

1" = 10'

**WETLAND REPLICATION CONSTRUCTION SEQUENCE:**

- SCHEDULE A SITE INSPECTION WITH THE LAKEVILLE CONSERVATION COMMISSION (LCC) AND WETLAND SCIENTIST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES TO REVIEW THE WETLAND REPLICATION PROGRAM AND THE ORDER OF CONDITIONS.
- INSTALL EROSION CONTROLS AS PER THE SITE PLAN LOCATION AND DETERMINE SOIL STOCKPILE AREA(S).
- CALL FOR AN INSPECTION OF EROSION CONTROLS BY THE LCC AS REQUIRED.
- SUBGRADE THE WETLAND REPLICATION AREA 12-INCHES BELOW GRADE OF EXISTING WETLAND AND CALL FOR AN INSPECTION BY THE LCC.
- INSTALL 12-INCHES CLEAN, SCREENED, HIGH ORGANIC CONTENT LOAM INTO THE PREVIOUSLY SUBGRADED WETLAND REPLICATION AREA TO MATCH EXISTING WETLAND GRADE.
- CONDUCT AN INSPECTION WITH THE LCC FOR THE FINAL GRADES ASSOCIATED WITH THE REPLICATION AREA.
- INSTALL EROSION CONTROLS ALONG THE NEWLY CREATED WETLAND BOUNDARY.
- INSTALL THE SPECIFIED SHRUBS AND TREES WITHIN THE WETLAND REPLICATION AREA.
- SOW WETLAND SEED MIX ON ALL EXPOSED WETLAND SOIL SURFACES IN THE BVW REPLICATION AREA.
- CONTACT THE LCC FOR AN INSPECTION OF THE WETLAND REPLICATION AREA ONCE FULL STABILIZATION OF SOIL SURFACE IS ATTAINED.

**PROPOSED PLANTING TABLE**

SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
	6	ACER RUBRUM	RED MAPLE	4' - 6'	PLANTED ON 12' CENTERS THROUGHOUT REPLICATION AREA
	6	QUERCUS BICOLOR	SWAMP WHITE OAK	4' - 6'	PLANTED ON 12' CENTERS THROUGHOUT REPLICATION AREA
	8	PINUS STROBUS	EASTERN WHITE PINE	4' - 6'	PLANTED ON 12' CENTERS THROUGHOUT REPLICATION AREA
	6	VIBURNUM DENTATUM	ARROWWOOD	18" - 24" STOCK	PLANTED ON 8' CENTERS IN CLUMPS OF 3 THROUGHOUT REPLICATION AREA
	6	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	18" - 24" STOCK	PLANTED ON 8' CENTERS IN CLUMPS OF 3 THROUGHOUT REPLICATION AREA
	6	CORNUS AMOMUM	SILKY DOGWOOD	18" - 24" STOCK	PLANTED ON 8' CENTERS IN CLUMPS OF 3 THROUGHOUT REPLICATION AREA
	6	ILEX VERTICILLATA	WINTERBERRY	18" - 24" STOCK	PLANTED ON 8' CENTERS IN CLUMPS OF 3 THROUGHOUT REPLICATION AREA
	5	HAMAMELIS VIRGINIANA	WITCH-HAZEL	18" - 24" STOCK	PLANTED ON 8' CENTERS THROUGHOUT SIDE SLOPE AREA
	5	CORYLUS CORNUTA	BEAKED HAZELNUT	18" - 24" STOCK	PLANTED ON 8' CENTERS THROUGHOUT SIDE SLOPE AREA

**PROPOSED SEEDING TABLE**

SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
	0.8 LB	N/A	WETLAND SEED MIX *	N/A	0.5 LB / 1,000 SQ. FT SOWN ON ALL EXPOSED SOILS
	1.5 LB	N/A	NEW ENGLAND EROSION CONTROL / RESTORATION SEED MIX *	N/A	1.0 LB / 1,250 SQ. FT SOWN ON ALL EXPOSED SOILS

\* SEE SPECIFICATIONS FOR SEED MIXTURE SPECIES