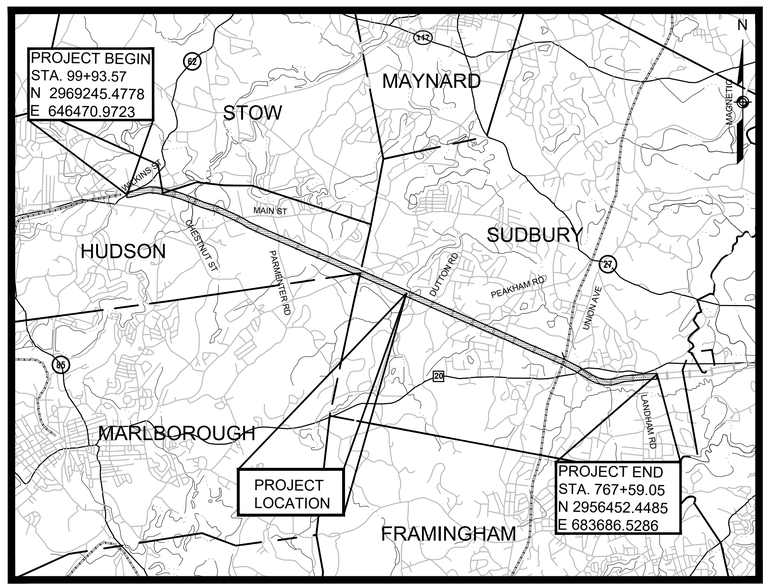
EVERSOURCE

SUDBURY-HUDSON
TRANSMISSION RELIABILITY PROJECT

INDEX



Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
Watertown, MA 02472
617.924.1770 FAX 617.924.2286

VANASSE HANGEN BRUSTLIN, INC.
WATERTOWN, MASSACHUSETTS

0 5000 10000 15000 20000
SCALE: 1" = 5000'

REFERENCE MANUALS
THESE PLANS ARE SUPPLEMENTED BY THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

COMMONWEALTH OF MASSACHUSETTS
JOSHUA C CONE-RODDY
CIVIL
No. 54514
REGISTERED PROFESSIONAL ENGINEER
Joshua Cone-Roddy 12-20-2021
ENGINEER DATE

COMMONWEALTH OF MASSACHUSETTS
MARK A COSTA
CIVIL
No. 49941
REGISTERED PROFESSIONAL ENGINEER
Mark Costa 12/21/2021
ENGINEER DATE
SHEETS 167-168

COMMONWEALTH OF MASSACHUSETTS
SHANTA B. KELLER
STRUCTURAL
No. 51381
REGISTERED PROFESSIONAL ENGINEER
12/20/21
ENGINEER DATE
SHEETS 164-166, 169-201

NO.	DESCRIPTION	BY	DATE	APPR.
1	HISTORIC FEATURE DISPOSITIONS		02/03/2022	

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TITLE SHEET & INDEX
PLAN 1 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=5000'	DEC 2021	MS	SK	MS	.	.

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		TRAFFIC SIGNAL
CB		CATCH BASIN / DROP INLET
		CATCH BASIN CURB INLET
GP		GAS PUMP
MB		MAIL BOX
		POST SQUARE
		POST CIRCULAR
GAS VENT		GAS VENT
EHH		ELECTRIC HANDHOLE
		FENCE GATE POST
GG		GAS GATE
BM		BENCHMARK
		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		MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SBDH		STONE BOUND
TB		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
TPL or GUY		TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB		UTILITY POLE W/ FIREBOX
UPDL		UTILITY POLE WITH DOUBLE LIGHT
ULT		UTILITY POLE W / 1 LIGHT
UPL		UTILITY POLE
		BUSH
SIZE & TYPE		TREE
		STUMP
		WATER GATE
		OVERHEAD CABLE/WIRE
		STEEL SHEETING
100 99	99	CONTOURS (ON-THE-GROUND SURVEY DATA)
100 99	99	CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
CATV		UNDERGROUND CATV CONDUIT
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
SEWER		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
X		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		CONSTRUCTION FENCE
		EROSION CONTROL BARRIER
		CHECK DAM
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		LIMIT OF NHESP PRIORITY & ESTIMATED HABITAT
AWL		APPROXIMATE WETLAND LINE
100'BZ		100 FT WETLAND BUFFER
100' BLSF BZ		100 FT BORDERING LAND SUBJECT TO FLOODING BUFFER
200'RA		200 FT RIVERFRONT AREA BUFFER
APX 200'RA		APPROX 200 FT RIVERFRONT AREA BUFFER
100'RA		100 FT RIVERFRONT AREA BUFFER
APX 100'RA		APPROX 100 FT RIVERFRONT AREA BUFFER
AURA		AURA BUFFER
100BZ~AURA		100 FT AURA BUFFER
100VPBZ		100 FT VERNAL POOL AREA BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		CONSTRUCTION BASELINE

GENERAL SYMBOLS (cont.)

EXISTING	PROPOSED	DESCRIPTION
		EXISTING WALKING TRAIL
		LIMIT OF GRADING
		TRAFFIC SIGNAL CONDUIT
		EASEMENT
		PERMANENT EASEMENT ON MBTA PROPERTY
		SUPPLEMENTAL PLANTING AREA
		FLOODWAY
		PERMANENT DISTURBANCE TO VEGETATED WETLAND
		TEMPORARY DISTURBANCE TO VEGETATED WETLAND
		100-YEAR FLOOD
		500-YEAR FLOOD

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		CROSSWALK - 12" WHITE
	CW	
		SOLID WHITE LINE - 4" (UNLESS OTHERWISE NOTED)
	SWL	
		DOUBLE YELLOW LINE - 4" (UNLESS OTHERWISE NOTED)
	DBYL	

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
	■	PULL BOX 12"x12"
		TRAFFIC SIGNAL CONDUIT

ABBREVIATIONS

GENERAL	
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
AURA	ADJACENT UPLAND RESOURCE AREA
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BLSF	BORDERING LAND SUBJECT TO FLOODING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
BVW	BORDERING VEGETATED WETLAND
BZ	BUFFER ZONE
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
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ECB	EROSION CONTROL BARRIER
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
FAC	FACULTATIVE
FACU	FACULTATIVE UPLAND
FACW	FACULTATIVE WETLAND
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GD	GROUND
GG	GAS GATE
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
ILSF	ISOLATED LAND SUBJECT TO FLOODING
IVW	ISOLATED VEGETATED WETLAND
JCT	JUNCTION

ABBREVIATIONS (cont.)

GENERAL	
L	LENGTH OF CURVE
LP	LIGHT POLE
LT	LEFT
LUW	LAND UNDER WATER
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
NTS	NOT TO SCALE
OBL	OBLIGATE WETLAND
PB	PULL BOX
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
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
R	RADIUS OF CURVATURE
RA	RIVERFRONT AREA
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
TYP	TYPICAL
UP	UTILITY POLE
UPL	OBLIGATE UPLAND
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
VP	VERNAL POOL
WCR	WHEEL CHAIR RAMP
WG	WATER GATE
WM	WATER METER/WATER MAIN

GENERAL NOTES:

1. THE PROPERTY LINES SHOWN ON THIS PLAN OF THE PARCELS AT 44 FOREST AVENUE IN HUDSON, 163 BOSTON POST ROAD IN SUDBURY AND THE FORMER RAILROAD RIGHT-OF-WAY ARE BASED UPON AN ACTUAL FIELD SURVEY CONDUCTED BY VHB, INC. IN 2015 AND FROM DEEDS AND PLANS OF RECORD.
2. THE EXISTING CONDITIONS SHOWN ON THIS PLAN WERE DEVELOPED FROM A COMBINED EFFORT OF AERIAL PHOTOGRAMMETRIC MAPPING BY EASTERN TOPOGRAPHICS, INC., BASED ON AERIAL PHOTOGRAPHS TAKEN ON FEBRUARY 22, 2013, AND AUGMENTED BY AN ON-THE-GROUND SURVEY PERFORMED BY VHB DURING 2015 AND 2017.
3. THE HORIZONTAL CONTROL IS BASED ON THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM AND THE NATIONAL GEODETIC SURVEY (NAD83). ALL ELEVATION IS US FEET, REFERENCED TO THE NORTH AMERICA VERTICAL DATUM OF 1988 (NAVD88).
4. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND GRADES IN THE FIELD BEFORE COMMENCING WORK AND PROMPTLY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
5. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS AND INFORMATION OF RECORD. THEY 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 SHALL 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.
6. THE DELINEATED WETLANDS SHOWN ON THIS PLAN WERE FLAGGED BY THE VHB ENVIRONMENTAL DEPARTMENT AND FIELD SURVEYED BY THE VHB SURVEY DEPARTMENT IN SEPTEMBER AND OCTOBER 2017 AND WERE UPDATED IN MAY 2018 (SUDBURY ONLY).
7. THE APPROXIMATE WETLANDS AND STREAMS, AND THEIR ASSOCIATED BUFFERS AND RIVERFRONT AREAS, WHERE APPLICABLE, WERE TAKEN FROM AVAILABLE MASSGIS DATA. THESE WERE NOT FIELD DELINEATED OR FIELD VERIFIED.
8. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES THAT MAY CONFLICT WITH PROPOSED TRANSMISSION LINE. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER.
9. 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.
10. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SEWER STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK.
11. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
12. EXISTING UTILITY POLES WILL BE RELOCATED BY OTHERS IF REQUIRED.
13. TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON APPROVAL OF THE ENGINEER.
14. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
15. 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).
16. ALL PROP LOAM AND SEED CALLED OUT ON THE CONSTRUCTION PLANS TO ADHERE TO PLANTING SCHEDULE A PROVIDED ON DETAIL SHEET 161 UNLESS NOTED OTHERWISE.
17. JOINTS BETWEEN NEW ASPHALT CONCRETE ROADWAY PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH BITUMEN AND BACKSANDED.
18. EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
19. IF SUITABLE, ALL EXISTING GRANITE CURB & EDGING SHALL BE RE-USED IN THE PROPOSED WORK, EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN PROPOSED CURB.
20. ALL PROPOSED HOT MIX ASPHALT CURB SHALL BE MASSDOT TYPE 2.
21. ALL EXISTING STATE, COUNTY, CITY, AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATIONS ARE NOT GUARANTEED.
22. ALL PROPOSED BOUNDS SHALL BE PLACED BY A LICENSED PROFESSIONAL SURVEYOR. THE CONTRACTOR SHALL EXERCISE DUE CARE WHEN WORKING AROUND ALL PROPERTY BOUNDS WHICH ARE TO REMAIN. SHOULD ANY DAMAGE TO A BOUND RESULT FROM THE ACTIONS OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE THE BOUND REPLACED AND/OR REALIGNED BY A LICENSED PROFESSIONAL SURVEYOR AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST.
23. DISPOSAL OF ALL SURPLUS MATERIAL SHALL BE AS APPROVED BY THE ENGINEER AND OWNER AND IN ACCORDANCE WITH ALL PERMITS AND LAWS REGULATING SOIL DISPOSAL.
24. LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 0.01 FOOT PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE PLANS.
25. WHERE DEWATERING IS REQUIRED, CONTRACTOR SHALL TREAT WATER WITH DEWATERING BASIN OR DEWATERING FILTER BAGS BASED ON INPUT FROM LOCAL CONSERVATION COMMISSIONS.
26. SYNCOPATED SILT FENCE TO BE USED AS AN EROSION CONTROL BARRIER WITHIN 450' OF VERNAL POOLS AND PRIORITY HABITAT AREAS.
27. THE LOCATIONS OF ALL EROSION CONTROL BARRIER SHALL BE ESTABLISHED BY SURVEY-GRADE EQUIPMENT AND ARE SUBJECT TO CHANGE BASED ON FIELD CONDITIONS.
28. ALL HISTORIC RAILROAD FEATURES LOCATED WITHIN THE LIMIT OF WORK AND OUTSIDE THE LIMITS OF THE 14' GRAVEL SUB-BASE SHALL BE RETAINED AND PROTECTED UNLESS OTHERWISE NOTED. CONSTRUCTION FENCING AND SIGNAGE SHALL BE INSTALLED AROUND THE FEATURE IN CONSULTATION WITH THE CULTURAL RESOURCES CONSULTANT. 24 HOURS ADVANCED NOTICE SHALL BE GIVEN TO THE CULTURAL RESOURCES CONSULTANT BEFORE ANY CONSTRUCTION WITHIN THE IMMEDIATE VICINITY OF THE FEATURE OCCURS. IF IT IS NOT POSSIBLE TO RETAIN THE FEATURE, IT SHALL BE CAREFULLY REMOVED AND RESET AS CLOSE AS POSSIBLE TO THE ORIGINAL LOCATION. THE REMOVAL AND RESETTING OF ANY HISTORIC RAILROAD FEATURE SHALL ONLY BE DONE WITH CONSULTATION OF THE CULTURAL RESOURCES CONSULTANT.

1

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			
1	HISTORIC FEATURE DISPOSITIONS		02/03/2022	

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LEGEND, ABBREVIATIONS, & GENERAL NOTES

PLAN 2 OF 349

Vanasse Hangen Brustlin, Inc.
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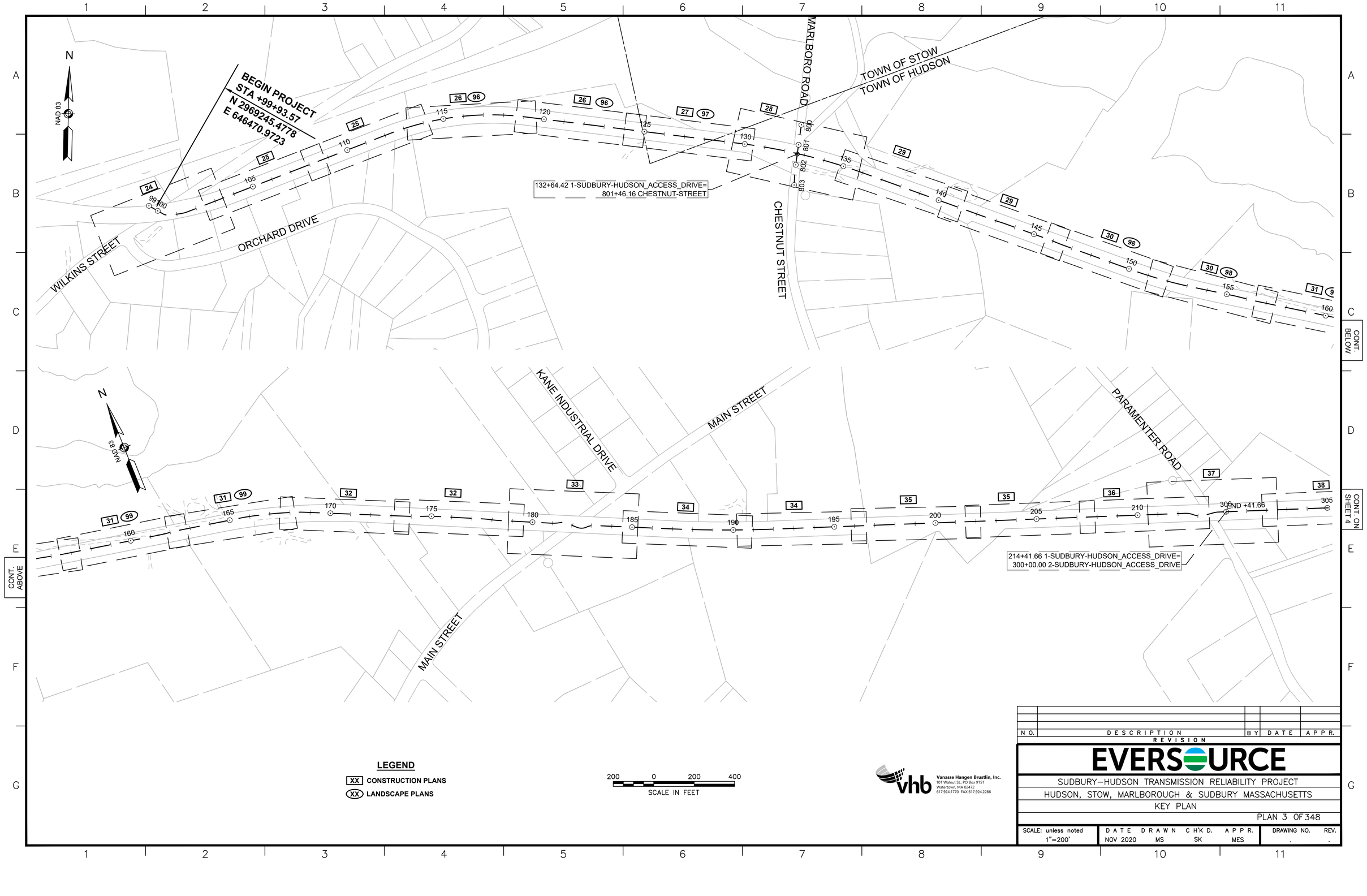
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	DEC 2021	MS	SK	MS	.	.



LEGEND

XX CONSTRUCTION PLANS

(XX) LANDSCAPE PLANS

200 0 200 400
SCALE IN FEET

Vanasse Hangen Brustlin, Inc.
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NO.	DESCRIPTION	BY	DATE	APP'R.

REVISION

EVERSOURCE

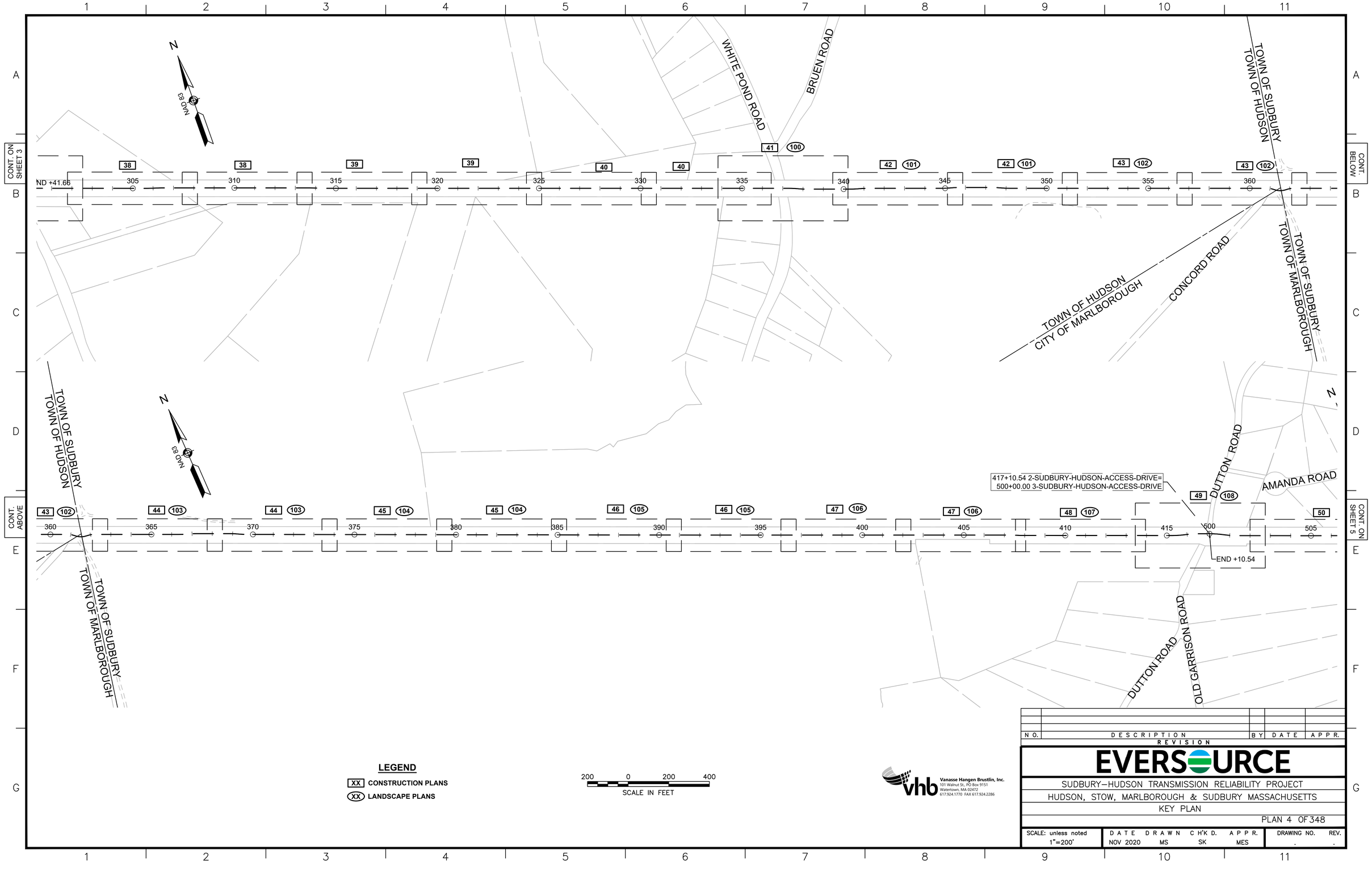
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

KEY PLAN

PLAN 3 OF 348

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=200'	NOV 2020	MS	SK	MES	.	.



LEGEND

XX CONSTRUCTION PLANS

XX LANDSCAPE PLANS

200 0 200 400
SCALE IN FEET

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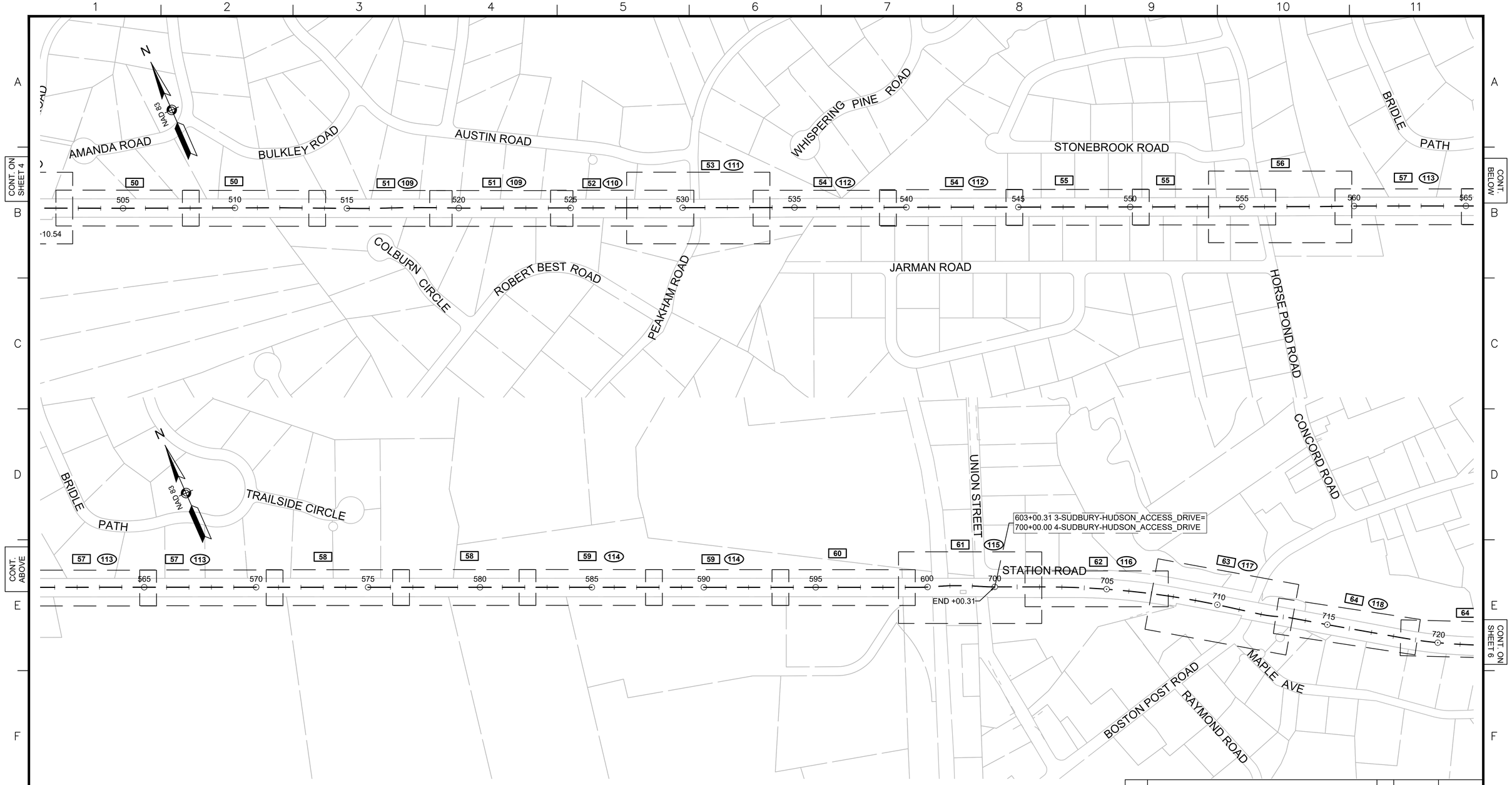
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

KEY PLAN

PLAN 4 OF 348

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=200'	NOV 2020	MS	SK	MES	.	.



LEGEND

XX CONSTRUCTION PLANS

(XX) LANDSCAPE PLANS

200 0 200 400
SCALE IN FEET

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NO.	DESCRIPTION	BY	DATE	APP'R.

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

KEY PLAN

PLAN 5 OF 348

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=200'	NOV 2020	MS	SK	MES	.	.

LEGEND

XX CONSTRUCTION PLANS

(XX) LANDSCAPE PLANS

200 0 200 400

SCALE IN FEET

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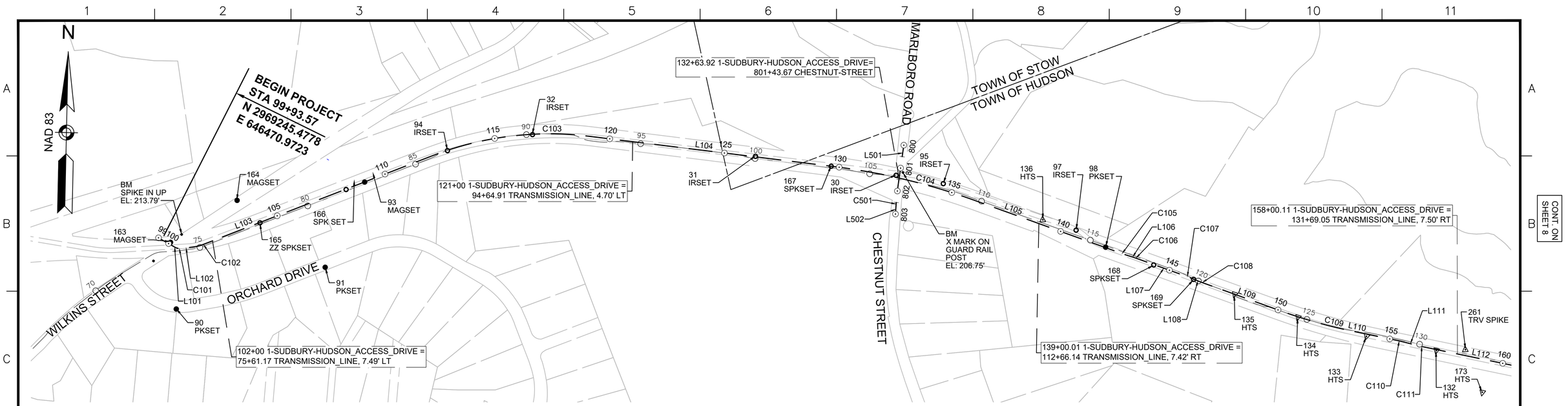
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

KEY PLAN

PLAN 6 OF 348

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=200'	NOV 2020	MS	SK	MES	.	.



1-SUDBURY-HUDSON_ACCESS_DRIVE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L101	99+50.00	2969274.969	646438.132		S57°19'07"E 81.72'	100+31.72	2969230.845	646506.912
C101	100+31.72	2969230.845	646506.912	R=40.00' Δ=35°52'18" L=25.04' T=12.95'		100+56.76	2969224.574	646530.737
L102	100+56.76	2969224.574	646530.737		N86°48'34"E 48.81'	101+05.57	2969227.291	646579.472
C102	101+05.57	2969227.291	646579.472	R=200.00' Δ=15°02'47" L=52.52' T=26.41'		101+58.09	2969237.027	646630.930
L103	101+58.09	2969237.027	646630.930		N71°45'47"E 1063.15'	112+21.25	2969569.737	647640.682
C103	112+21.25	2969569.737	647640.682	R=1400.00' Δ=28°11'56" L=689.03' T=351.64'		119+10.28	2969618.950	648321.003
L104	119+10.28	2969618.950	648321.003		S80°02'16"E 1065.88'	129+76.16	2969434.556	649370.812
C104	129+76.16	2969434.556	649370.812	R=2800.00' Δ=12°47'24" L=625.04' T=313.83'		136+01.20	2969258.894	649969.313
L105	136+01.20	2969258.894	649969.313		S67°14'52"E 680.66'	142+81.86	2968995.652	650597.005
C105	142+81.86	2968995.652	650597.005	R=500.00' Δ=2°17'26" L=19.99' T=10.00'		143+01.85	2968988.291	650615.589
L106	143+01.85	2968988.291	650615.589		S69°32'18"E 30.05'	143+31.90	2968977.787	650643.741
C106	143+31.90	2968977.787	650643.741	R=500.00' Δ=2°17'26" L=19.99' T=10.00'		143+51.89	2968970.427	650662.324
L107	143+51.89	2968970.427	650662.324		S67°14'52"E 230.01'	145+81.89	2968881.472	650874.434
C107	145+81.89	2968881.472	650874.434	R=500.00' Δ=2°17'26" L=19.99' T=10.00'		146+01.88	2968873.375	650892.709
L108	146+01.88	2968873.375	650892.709		S64°57'26"E 30.05'	146+31.93	2968860.656	650919.932
C108	146+31.93	2968860.656	650919.932	R=500.00' Δ=2°17'26" L=19.99' T=10.00'		146+51.92	2968852.559	650938.207
L109	146+51.92	2968852.559	650938.207		S67°14'52"E 358.25'	150+10.17	2968714.005	651268.583
C109	150+10.17	2968714.005	651268.583	R=2300.00' Δ=8°06'43" L=325.63' T=163.09'		153+35.80	2968609.711	651576.773
L110	153+35.80	2968609.711	651576.773		S75°21'35"E 196.11'	155+31.91	2968560.145	651766.511
C110	155+31.91	2968560.145	651766.511	R=500.00' Δ=2°17'05" L=19.94' T=9.97'		155+51.85	2968554.722	651785.695
L111	155+51.85	2968554.722	651785.695		S73°04'30"E 80.40'	156+32.25	2968531.316	651862.614
C111	156+32.25	2968531.316	651862.614	R=500.00' Δ=2°17'05" L=19.94' T=9.97'		156+52.19	2968525.894	651881.798
L112	156+52.19	2968525.894	651881.798		S75°21'35"E 494.94'	161+47.12	2968400.798	652360.665

CHESTNUT-STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L501	800+00.00	2969511.351	649678.545		S10°58'48"W 181.91'	801+81.91	2969332.767	649643.897
C501	801+81.91	2969332.767	649643.897	R=1000.00' Δ=4°22'21" L=76.32' T=38.18'		802+58.23	2969257.368	649632.233
L502	802+58.23	2969257.368	649632.233		S6°36'27"W 41.77'	803+00.00	2969215.874	649627.426

BENCHMARK TABLE			
NORTHING	EASTING	ELEV	DESCRIPTION
2969284.465	646538.668	213.79	SPIKE IN UP
2969393.797	649668.675	206.75	X MARK ON GUARD RAIL

SURVEY TRAVERSE TABLE						
POINT #	NORTHING	EASTING	ELEV	RAW DESCRIPTION	STATION CONSTR ℄	OFFSET CONSTR ℄
30	2969383.123	649638.659	207.19	IRSET	132+48.42	8.95 LT
31	2969495.867	649035.098	201.05	IRSET	126+34.90	2.31 LT
32	2969638.584	648076.375	210.48	IRSET	116+64.42	1.47 RT
90	2968963.680	646499.149	216.98	PKSET	100+50.64	262.26 RT
91	2969111.213	647151.661	215.67	PKSET	106+13.29	282.46 RT
93	2969470.486	647340.975	217.16	MAGSET	109+05.53	0.47 RT
94	2969587.905	647705.522	213.86	IRSET	112+88.61	1.42 RT
95	2969336.631	649840.683	190.48	IRSET	134+53.81	25.86 LT
97	2969106.552	650404.209	184.67	IRSET	140+61.17	27.71 LT
98	2969026.596	650528.120	186.44	PKSET	142+06.37	1.89 LT
132	2968507.785	651933.720	182.93	HTS	157+07.00	4.40 RT
133	2968584.874	651635.344	182.80	HTS	153+98.75	9.23 RT
134	2968682.452	651343.328	181.85	HTS	150+91.27	1.62 RT
135	2968795.126	651074.622	182.33	HTS	147+99.93	0.21 RT
136	2969158.609	650262.853	186.14	HTS	139+10.69	21.04 LT
138	2968498.335	646029.886	221.73	MAGSET	100+25.74	874.12 RT
163	2969252.795	646488.992	212.74	MAGSET	100+04.78	8.80 LT
164	2969419.359	646785.783	210.55	MAGSET	103+62.23	124.71 LT
165	2969317.327	646879.836	222.40	ZZ SPKSET	104+19.63	1.63 RT
166	2969442.345	647259.123	218.01	SPKSET	108+18.99	1.59 RT
167	2969436.517	649360.132	197.07	SPKSET	129+65.30	0.08 LT
168	2968939.346	650731.741	182.59	SPKSET	144+27.92	1.82 RT
169	2968868.325	650900.999	182.20	SPKSET	146+11.53	1.07 RT
172	2968243.951	652229.807	182.24	SPKSET	160+60.16	184.83 RT
173	2968317.552	652123.483	180.88	HTS	159+38.68	140.49 RT
261	2968504.964	652060.065	184.37	TRV SPIKE	158+29.95	24.81 LT

200 0 200 400
SCALE IN FEET

vhb Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
Watertown, MA 02472
617.924.1770 FAX 617.924.2286

NO.	DESCRIPTION	BY	DATE	APP'R.

REVISION

EVERSOURCE

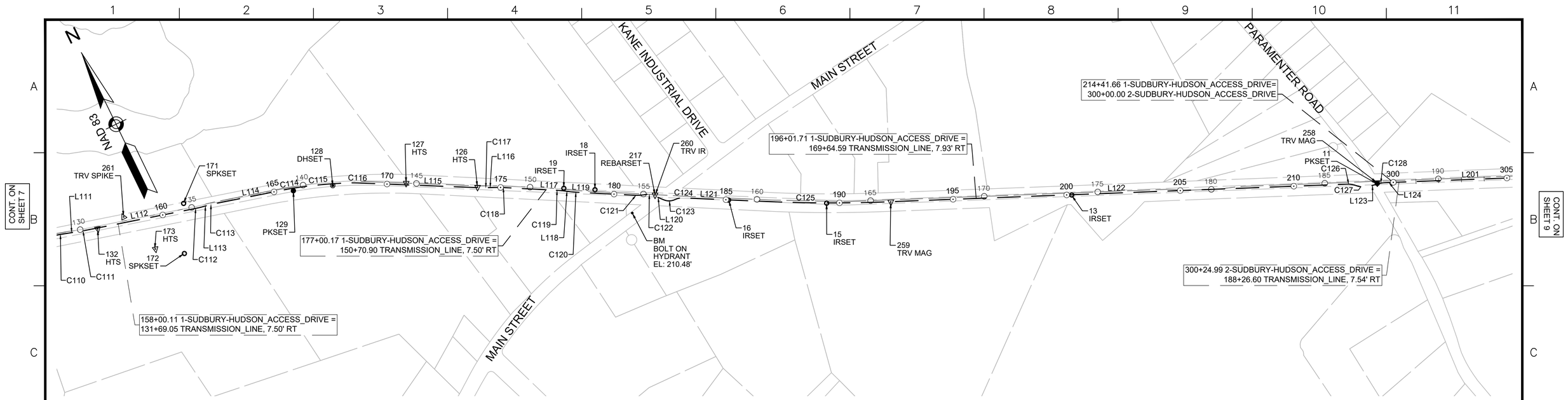
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

SURVEY TIE–IN PLANS

PLAN 7 OF 348

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=200'	FEB 2021	MS	SK	MES	.	.



1-SUDBURY-HUDSON_ACCESS_DRIVE CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C110	155+31.91	2968560.145	651766.511	R=500.00' Δ=2°17'05" L=19.94' T=9.97'		155+51.85	2968554.722	651785.695
L111	155+51.85	2968554.722	651785.695		S73°04'30"E 80.40'	156+32.25	2968531.316	651862.614
C111	156+32.25	2968531.316	651862.614	R=500.00' Δ=2°17'05" L=19.94' T=9.97'		156+52.19	2968525.894	651881.798
L112	156+52.19	2968525.894	651881.798		S75°21'35"E 494.94'	161+47.12	2968400.798	652360.665
C112	161+47.12	2968400.798	652360.665	R=500.00' Δ=4°34'26" L=39.91' T=19.97'		161+87.04	2968392.260	652399.645
L113	161+87.04	2968392.260	652399.645		S79°56'01"E 10.22'	161+97.26	2968390.473	652409.711
C113	161+97.26	2968390.473	652409.711	R=500.00' Δ=4°34'26" L=39.91' T=19.97'		162+37.18	2968381.936	652448.692
L114	162+37.18	2968381.936	652448.692		S75°21'35"E 325.80'	165+62.97	2968299.591	652763.911
C114	165+62.97	2968299.591	652763.911	R=500.00' Δ=2°17'07" L=19.94' T=9.97'		165+82.92	2968294.166	652783.101
C115	165+82.92	2968294.166	652783.101	R=2000.00' Δ=7°17'45" L=254.67' T=127.51'		168+37.59	2968204.731	653021.372
C116	168+37.59	2968204.731	653021.372	R=500.00' Δ=3°55'20" L=34.23' T=17.12'		168+71.82	2968189.631	653052.082
L115	168+71.82	2968189.631	653052.082		S61°51'22"E 529.98'	174+01.80	2967939.647	653519.398
C117	174+01.80	2967939.647	653519.398	R=500.00' Δ=3°54'19" L=34.08' T=17.05'		174+35.88	2967924.608	653549.974
L116	174+35.88	2967924.608	653549.974		S65°45'41"E 36.37'	174+72.25	2967909.677	653583.135
C118	174+72.25	2967909.677	653583.135	R=500.00' Δ=4°35'46" L=40.11' T=20.07'		175+12.35	2967891.763	653619.009
L117	175+12.35	2967891.763	653619.009		S61°09'55"E 234.86'	177+47.22	2967778.491	653824.754
C119	177+47.22	2967778.491	653824.754	R=500.00' Δ=4°34'29" L=39.92' T=19.97'		177+87.14	2967757.862	653858.921
L118	177+87.14	2967757.862	653858.921		S56°35'26"E 10.72'	177+97.86	2967751.962	653867.866
C120	177+97.86	2967751.962	653867.866	R=500.00' Δ=4°35'18" L=40.04' T=20.03'		178+37.90	2967731.276	653902.137
L119	178+37.90	2967731.276	653902.137		S61°10'44"E 255.16'	180+93.06	2967608.269	654125.690
C121	180+93.06	2967608.269	654125.690	R=200.00' Δ=13°48'39" L=48.21' T=24.22'		181+41.27	2967590.318	654170.307
C122	181+41.27	2967590.318	654170.307	R=50.00' Δ=33°35'20" L=29.31' T=15.09'		181+70.58	2967575.091	654194.862
L120	181+70.58	2967575.091	654194.862		S41°24'03"E 53.66'	182+24.24	2967534.839	654230.350

1-SUDBURY-HUDSON_ACCESS_DRIVE CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C123	182+24.24	2967534.839	654230.350	R=60.00' Δ=47°56'15" L=50.20' T=26.67'		182+74.44	2967514.523	654274.663
C124	182+74.44	2967514.523	654274.663	R=80.00' Δ=27°43'21" L=38.71' T=19.74'		183+13.15	2967504.910	654311.769
L121	183+13.15	2967504.910	654311.769		S61°36'57"E 368.60'	186+81.74	2967329.686	654636.052
C125	186+81.74	2967329.686	654636.052	R=6500.00' Δ=4°41'05" L=531.46' T=265.88'		192+13.21	2967096.424	655113.425
L122	192+13.21	2967096.424	655113.425		S66°18'02"E 2021.93'	212+35.14	2966283.729	656964.841
C126	212+35.14	2966283.729	656964.841	R=100.00' Δ=22°30'52" L=39.30' T=19.90'		212+74.44	2966261.359	656996.840
C127	212+74.44	2966261.359	656996.840	R=100.00' Δ=35°52'08" L=62.60' T=32.37'		213+37.04	2966232.181	657051.075
L123	213+37.04	2966232.181	657051.075		S79°39'18"E 42.56'	213+79.60	2966224.538	657092.945
C128	213+79.60	2966224.538	657092.945	R=100.00' Δ=13°22'03" L=23.33' T=11.72'		214+02.93	2966217.721	657115.202
L124	214+02.93	2966217.721	657115.202		S66°17'15"E 38.73'	214+41.66	2966202.144	657150.666

2-SUDBURY-HUDSON_ACCESS_DRIVE CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L201	300+00.00	2966202.144	657150.666		S66°17'15"E 569.94'	305+69.94	2965972.944	657672.488

SURVEY TRAVERSE TABLE

POINT #	NORTHING	EASTING	ELEV	RAW DESCRIPTION	STATION CONSTR ℄	OFFSET CONSTR ℄
11	2966228.778	657085.109	211.30	PKSET	213+69.42	8.35 RT
13	2966770.040	655853.843	210.87	IRSET	200+22.37	1.26 RT
15	2967208.662	654868.078	210.94	IRSET	189+43.42	1.44 RT
16	2967409.645	654485.745	208.26	IRSET	185+11.50	1.11 RT
18	2967707.243	653977.303	201.79	IRSET	179+15.34	15.18 LT
19	2967772.642	653856.653	200.61	IRSET	177+77.33	11.19 LT
126	2967942.886	653516.846	197.05	HTS	173+98.02	1.65 LT
127	2968096.028	653242.036	194.38	HTS	170+83.47	7.06 LT
128	2968227.438	652947.502	191.56	DHSET	167+60.58	8.12 RT
129	2968282.714	652781.651	190.10	PKSET	165+84.87	11.38 RT
132	2968507.785	651933.720	182.93	HTS	157+07.00	4.40 RT
171	2968443.448	652323.126	185.42	SPKSET	161+00.02	31.78 LT
172	2968243.951	652229.807	182.24	SPKSET	160+60.16	184.83 RT
173	2968317.552	652123.483	180.88	HTS	159+38.68	140.49 RT
217	2967571.162	654204.653	206.60	REBARSET	181+80.00	4.75 LT
258	2966231.436	657085.443	210.53	TRV MAG	213+69.97	5.73 RT
259	2967090.494	655124.057	211.25	TRV MAG	192+25.33	1.16 RT
260	2967571.196	654204.425	206.63	TRV IR	181+79.82	4.60 LT
261	2968504.964	652060.065	184.37	TRV SPIKE	158+29.95	24.81 LT

BENCHMARK TABLE

NORTHING	EASTING	ELEV	DESCRIPTION
2967543.215	654080.038	210.48	BOLT ON HYDRANT

200 0 200 400
SCALE IN FEET

Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
Watertown, MA 02472
617.924.1770 FAX 617.924.2286

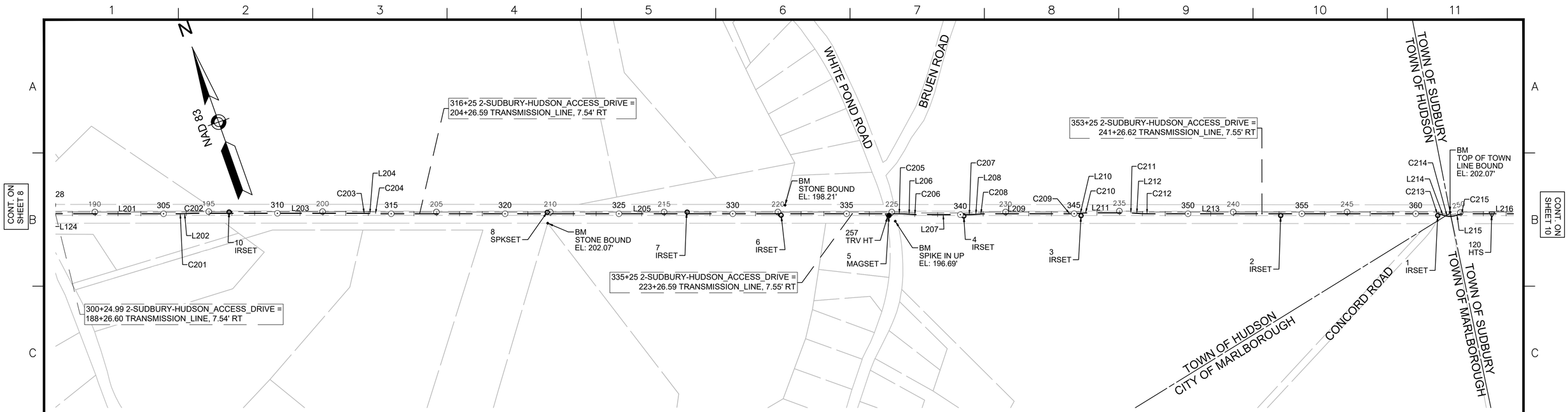
NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
SURVEY TIE–IN PLANS
PLAN 8 OF 348

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=200'	FEB 2021	MS	SK	MES	.	.



2-SUDBURY-HUDSON_ACCESS_DRIVE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L201	300+00.00	2966202.144	657150.666		S66°17'15"E 569.94'	305+69.94	2965972.944	657672.488
C201	305+69.94	2965972.944	657672.488	R=500.00' Δ=2°19'14" L=20.25' T=10.13'		305+90.19	2965965.177	657691.189
L202	305+90.19	2965965.177	657691.189		S68°36'29"E 31.19'	306+21.38	2965953.800	657720.233
C202	306+21.38	2965953.800	657720.233	R=500.00' Δ=2°17'26" L=19.99' T=10.00'		306+41.37	2965946.138	657738.695
L203	306+41.37	2965946.138	657738.695		S66°19'03"E 730.01'	313+71.38	2965652.916	658407.225
C203	313+71.38	2965652.916	658407.225	R=500.00' Δ=2°17'26" L=19.99' T=10.00'		313+91.37	2965644.523	658425.365
L204	313+91.37	2965644.523	658425.365		S64°01'36"E 29.68'	314+21.05	2965631.525	658452.047
C204	314+21.05	2965631.525	658452.047	R=500.00' Δ=2°17'04" L=19.94' T=9.97'		314+40.99	2965623.153	658470.139
L205	314+40.99	2965623.153	658470.139		S66°18'41"E 2288.82'	337+29.81	2964703.581	660566.109
C205	337+29.81	2964703.581	660566.109	R=500.00' Δ=4°31'29" L=39.49' T=19.75'		337+69.29	2964686.306	660601.604
L206	337+69.29	2964686.306	660601.604		S61°47'12"E 11.20'	337+80.49	2964681.012	660611.471
C206	337+80.49	2964681.012	660611.471	R=500.00' Δ=4°31'29" L=39.49' T=19.75'		338+19.98	2964663.738	660646.966
L207	338+19.98	2964663.738	660646.966		S66°18'41"E 209.72'	340+29.70	2964579.477	660839.020
C207	340+29.70	2964579.477	660839.020	R=500.00' Δ=4°17'58" L=37.52' T=18.77'		340+67.22	2964565.706	660873.911
L208	340+67.22	2964565.706	660873.911		S70°36'39"E 15.82'	340+83.04	2964560.454	660888.833
C208	340+83.04	2964560.454	660888.833	R=500.00' Δ=4°17'58" L=37.52' T=18.77'		341+20.56	2964546.683	660923.724
L209	341+20.56	2964546.683	660923.724		S66°18'41"E 359.47'	344+80.03	2964402.259	661252.908
C209	344+80.03	2964402.259	661252.908	R=500.00' Δ=4°34'26" L=39.91' T=19.97'		345+19.95	2964387.697	661290.061
L210	345+19.95	2964387.697	661290.061		S70°53'07"E 10.12'	345+30.07	2964384.383	661299.625
C210	345+30.07	2964384.383	661299.625	R=500.00' Δ=4°34'16" L=39.89' T=19.96'		345+69.96	2964369.832	661336.754
L211	345+69.96	2964369.832	661336.754		S66°18'51"E 159.98'	347+29.94	2964305.565	661483.256
C211	347+29.94	2964305.565	661483.256	R=500.00' Δ=4°23'59" L=38.39' T=19.21'		347+68.33	2964288.808	661517.789

2-SUDBURY-HUDSON_ACCESS_DRIVE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L212	347+68.33	2964288.808	661517.789		S61°54'53"E 13.79'	347+82.12	2964282.316	661529.955
C212	347+82.12	2964282.316	661529.955	R=500.00' Δ=4°23'48" L=38.37' T=19.19'		348+20.49	2964265.568	661564.465
L213	348+20.49	2964265.568	661564.465		S66°18'41"E 1267.77'	360+88.26	2963756.220	662725.416
C213	360+88.26	2963756.220	662725.416	R=80.00' Δ=16°41'57" L=23.32' T=11.74'		361+11.58	2963743.895	662745.111
L214	361+11.58	2963743.895	662745.111		S49°36'43"E 16.84'	361+28.41	2963732.985	662757.935
C214	361+28.41	2963732.985	662757.935	R=80.00' Δ=32°54'10" L=45.94' T=23.62'		361+74.35	2963714.601	662799.350
L215	361+74.35	2963714.601	662799.350		S82°30'53"E 18.74'	361+93.10	2963712.159	662817.933
C215	361+93.10	2963712.159	662817.933	R=80.00' Δ=16°12'13" L=22.62' T=11.39'		362+15.72	2963706.100	662839.653
L216	362+15.72	2963706.100	662839.653		S66°18'41"E 417.03'	366+32.74	2963538.553	663221.540

SURVEY TRAVERSE TABLE						
POINT #	NORTHING	EASTING	ELEV	RAW DESCRIPTION	STATION CONSTR ℄	OFFSET CONSTR ℄
1	2963745.726	662730.239	198.48	IRSET	360+96.89	7.67 RT
2	2964022.713	662098.499	192.67	IRSET	354+07.10	7.84 RT
3	2964374.403	661295.377	190.95	IRSET	345+29.32	10.82 RT
4	2964579.876	660823.257	192.72	IRSET	340+15.11	5.97 RT
5	2964714.175	660523.283	194.29	MAGSET	336+86.33	7.50 RT
6	2964905.564	660089.787	194.56	IRSET	332+12.47	6.41 RT
7	2965083.764	659717.177	195.49	IRSET	327+99.66	7.08 LT
8	2965329.485	659154.249	203.44	SPKSET	321+85.44	5.93 LT
10	2965892.249	657875.010	214.54	IRSET	307+87.85	5.40 LT
120	2963656.875	662950.210	197.18	HTS	363+34.03	0.66 RT
257	2964715.397	660518.603	194.24	TRV HT	336+81.56	8.27 RT

BENCHMARK TABLE			
NORTHING	EASTING	ELEV	DESCRIPTION
2965285.239	659136.888	202.07	STONE BOUND
2964938.646	660123.237	198.21	STONE BOUND
2964679.970	660538.355	196.69	SPIKE IN UP
2963737.068	662785.722	202.07	TOP OF TOWN LINE BOUND

200 0 200 400
SCALE IN FEET

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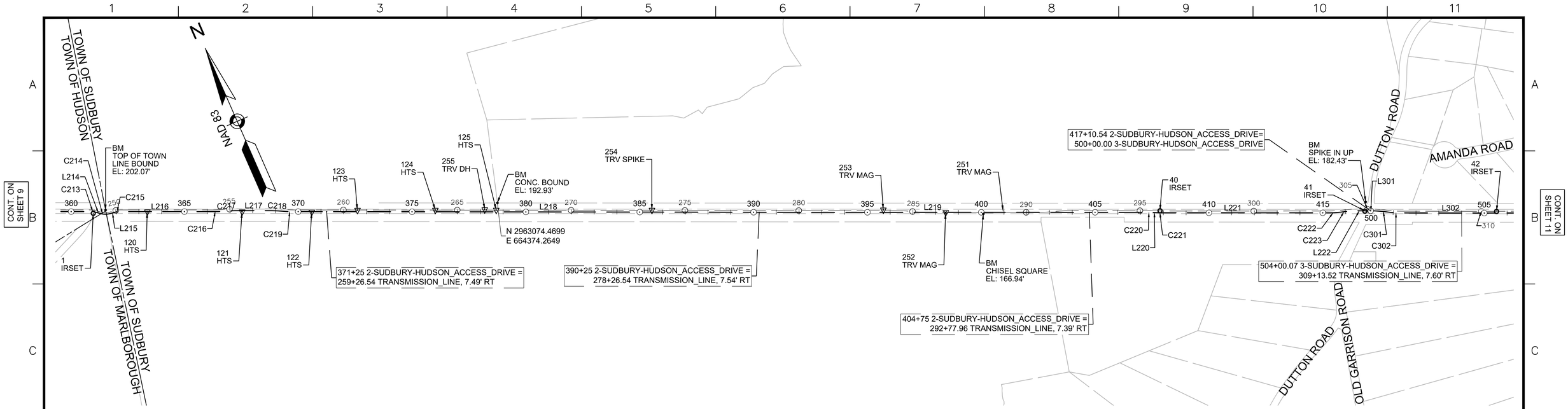
NO.	DESCRIPTION	BY	DATE	APP'R.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
SURVEY TIE–IN PLANS
PLAN 9 OF 348

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=200'	FEB 2021	MS	SK	MES	.	.



2-SUDBURY-HUDSON_ACCESS_DRIVE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C213	360+88.26	2963756.220	662725.416	R=80.00' Δ=16°41'57" L=23.32' T=11.74'		361+11.58	2963743.895	662745.111
L214	361+11.58	2963743.895	662745.111		S49°36'43"E 16.84'	361+28.41	2963732.985	662757.935
C214	361+28.41	2963732.985	662757.935	R=80.00' Δ=32°54'10" L=45.94' T=23.62'		361+74.35	2963714.601	662799.350
L215	361+74.35	2963714.601	662799.350		S82°30'53"E 18.74'	361+93.10	2963712.159	662817.933
C215	361+93.10	2963712.159	662817.933	R=80.00' Δ=16°12'13" L=22.62' T=11.39'		362+15.72	2963706.100	662839.653
L216	362+15.72	2963706.100	662839.653		S66°18'41"E 417.03'	366+32.74	2963538.553	663221.540
C216	366+32.74	2963538.553	663221.540	R=500.00' Δ=5°07'35" L=44.74' T=22.38'		366+77.48	2963522.435	663263.256
C217	366+77.48	2963522.435	663263.256	R=500.00' Δ=5°07'35" L=44.74' T=22.38'		367+22.22	2963506.317	663304.972
L217	367+22.22	2963506.317	663304.972		S66°18'41"E 162.17'	368+84.39	2963441.162	663453.479
C218	368+84.39	2963441.162	663453.479	R=500.00' Δ=5°03'10" L=44.09' T=22.06'		369+28.48	2963421.691	663493.024
C219	369+28.48	2963421.691	663493.024	R=500.00' Δ=4°58'12" L=43.37' T=21.70'		369+71.85	2963402.510	663531.908
L218	369+71.85	2963402.510	663531.908		S66°13'43"E 2255.15'	392+27.00	2962493.483	665595.730
L219	392+27.00	2962493.483	665595.730		S66°18'55"E 1499.60'	407+26.60	2961891.088	666969.015
C220	407+26.60	2961891.088	666969.015	R=500.00' Δ=2°19'04" L=20.23' T=10.11'		407+46.82	2961882.591	666987.368
L220	407+46.82	2961882.591	666987.368		S63°59'51"E 27.94'	407+74.76	2961870.342	667012.481
C221	407+74.76	2961870.342	667012.481	R=500.00' Δ=2°17'42" L=20.03' T=10.01'		407+94.79	2961861.924	667030.651
L221	407+94.79	2961861.924	667030.651		S66°17'33"E 730.94'	415+25.73	2961568.037	667699.907
C222	415+25.73	2961568.037	667699.907	R=499.59' Δ=7°40'18" L=66.89' T=33.50'		415+92.62	2961545.316	667762.771
C223	415+92.62	2961545.316	667762.771	R=500.00' Δ=7°45'40" L=67.73' T=33.92'		416+60.35	2961522.262	667826.400
L222	416+60.35	2961522.262	667826.400		S66°12'11"E 50.19'	417+10.54	2961502.012	667872.321

3-SUDBURY-HUDSON_ACCESS_DRIVE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L301	500+00.00	2961502.012	667872.321		S66°12'11"E 2.28'	500+02.28	2961501.092	667874.407
C301	500+02.28	2961501.092	667874.407	R=500.00' Δ=7°41'35" L=67.14' T=33.62'		500+69.41	2961469.967	667933.834
C302	500+69.41	2961469.967	667933.834	R=500.00' Δ=7°41'34" L=67.13' T=33.62'		501+36.55	2961438.842	667993.259
L302	501+36.55	2961438.842	667993.259		S66°12'10"E 352.24'	504+88.78	2961296.716	668315.548

BENCHMARK TABLE			
NORTHING	EASTING	ELEV	DESCRIPTION
2963737.068	662785.722	202.07	TOP OF TOWN LINE BOUND
2963074.470	664374.265	192.93	CONC. BOUND
2962172.866	666309.477	166.94	CHISEL SQUARE
2961546.450	667868.173	182.43	SPIKE IN UP

SURVEY TRAVERSE TABLE						
POINT #	NORTHING	EASTING	ELEV	RAW DESCRIPTION	STATION CONSTR ℄	OFFSET CONSTR ℄
1	2963745.726	662730.239	198.48	IRSET	360+96.89	7.67 RT
40	2961873.800	667025.482	171.31	IRSET	407+82.40	8.70 LT
41	2961510.586	667848.645	181.70	IRSET	416+82.29	7.29 LT
42	2961276.984	668377.806	188.16	IRSET	505+53.68	6.74 LT
120	2963656.875	662950.210	197.18	HTS	363+34.03	0.66 RT
121	2963489.402	663331.297	194.65	HTS	367+50.41	4.91 RT
122	2963365.831	663611.237	193.31	HTS	370+56.52	1.59 RT
123	2963292.393	663798.336	191.85	HTS	372+57.35	6.62 LT
124	2963155.264	664111.471	190.70	HTS	375+99.20	7.35 LT
125	2963048.085	664356.309	188.72	HTS	378+66.46	7.95 LT
252	2962245.033	666160.019	168.98	TRV MAG	398+40.85	0.85 RT
253	2962365.661	665913.641	171.64	TRV MAG	395+66.77	10.65 LT
254	2962773.106	664982.657	181.84	TRV SPIKE	385+50.51	8.78 LT
255	2963070.212	664310.860	189.64	TRV DH	378+15.95	9.88 LT
18000	2962245.042	666159.997	169.01	ZZ	398+40.83	0.85 RT
18044	2962245.028	666160.012	168.98	ZZ	398+40.85	0.85 RT
18045	2962245.041	666159.998	168.99	ZZ	398+40.83	0.85 RT
18115	2962244.993	666159.978	169.01	ZZ	398+40.83	0.90 RT

200 0 200 400
SCALE IN FEET

Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
Watertown, MA 02472
617.924.1770 FAX 617.924.2286

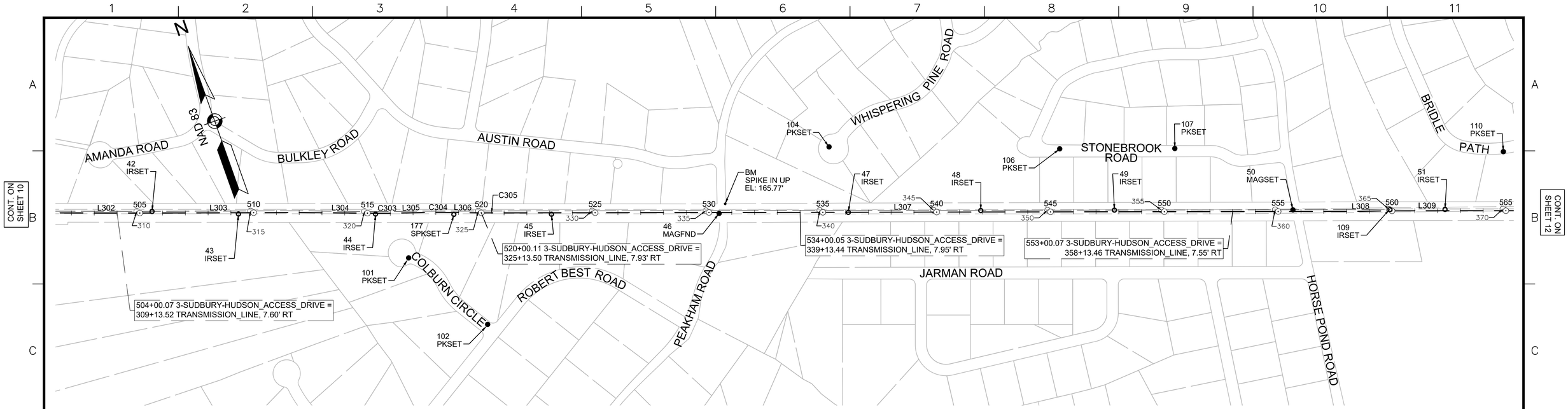
NO.	DESCRIPTION	BY	DATE	APP'R.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
SURVEY TIE–IN PLANS
PLAN 10 OF 348

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=200'	FEB 2021	MS	SK	MES	.	.



3-SUDBURY-HUDSON_ACCESS_DRIVE CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L302	501+36.55	2961438.842	667993.259		S66°12'10"E 352.24'	504+88.78	2961296.716	668315.548
L303	504+88.78	2961296.716	668315.548		S66°29'41"E 714.53'	512+03.31	2961011.736	668970.789
L304	512+03.31	2961011.736	668970.789		S65°47'36"E 355.56'	515+58.87	2960865.948	669295.083
C303	515+58.87	2960865.948	669295.083	R=2000.00' Δ=2°02'02" L=70.99' T=35.50'		516+29.86	2960837.994	669360.337
L305	516+29.86	2960837.994	669360.337		S67°49'38"E 62.53'	516+92.40	2960814.394	669418.247
C304	516+92.40	2960814.394	669418.247	R=5000.00' Δ=2°28'08" L=215.46' T=107.75'		519+07.86	2960728.805	669615.962
L306	519+07.86	2960728.805	669615.962		S65°21'30"E 56.37'	519+64.23	2960705.304	669667.194
C305	519+64.23	2960705.304	669667.194	R=5000.00' Δ=1°03'24" L=92.20' T=46.10'		520+56.43	2960667.637	669751.349
L307	520+56.43	2960667.637	669751.349		S66°24'53"E 3804.53'	558+60.96	2959145.398	673238.076
L308	558+60.96	2959145.398	673238.076		S67°25'05"E 114.60'	559+75.56	2959101.392	673343.887
L309	559+75.56	2959101.392	673343.887		S66°25'05"E 324.74'	563+00.30	2958971.476	673641.508

SURVEY TRAVERSE TABLE

POINT #	NORTHING	EASTING	ELEV	RAW DESCRIPTION	STATION CONSTR ℄	OFFSET CONSTR ℄
42	2961276.984	668377.806	188.16	IRSET	505+53.68	6.74 LT
43	2961114.242	668720.884	186.90	IRSET	509+33.20	5.67 RT
44	2960872.290	669272.068	179.54	IRSET	515+35.16	5.71 RT
45	2960561.109	669979.507	170.77	IRSET	523+08.08	6.11 RT
46	2960268.559	670655.156	164.98	MAGFND	530+44.34	3.24 RT
47	2960044.841	671176.622	158.38	IRSET	536+11.75	0.17 LT
48	2959818.439	671712.628	158.76	IRSET	541+93.58	6.87 LT
49	2959584.190	672250.787	164.97	IRSET	547+80.51	7.26 LT
50	2959270.319	672969.429	166.74	MAGSET	555+64.70	7.01 LT
51	2959003.971	673581.771	161.78	IRSET	562+32.47	5.88 LT
101	2960637.452	669327.889	173.64	PKSET	516+80.03	200.80 RT
102	2960230.460	669528.351	161.76	PKSET	520+29.54	489.96 RT
104	2960342.456	671214.805	164.66	PKSET	535+27.81	288.24 LT
106	2959927.516	672139.020	156.93	PKSET	545+40.82	277.29 LT
107	2959725.836	672602.609	167.23	PKSET	550+46.28	277.74 LT
109	2959100.366	673360.157	163.15	IRSET	559+90.81	5.57 LT
110	2959133.231	673918.507	165.88	PKSET	564+88.88	259.43 LT
177	2960732.743	669586.484	175.07	SPKSET	518+79.35	8.71 RT

BENCHMARK TABLE

NORTHING	EASTING	ELEV	DESCRIPTION
2960296.323	670696.507	165.77	SPIKE IN UP

200 0 200 400
SCALE IN FEET

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101 Walnut St., PO Box 9151
Watertown, MA 02472
617.924.1770 FAX 617.924.2286

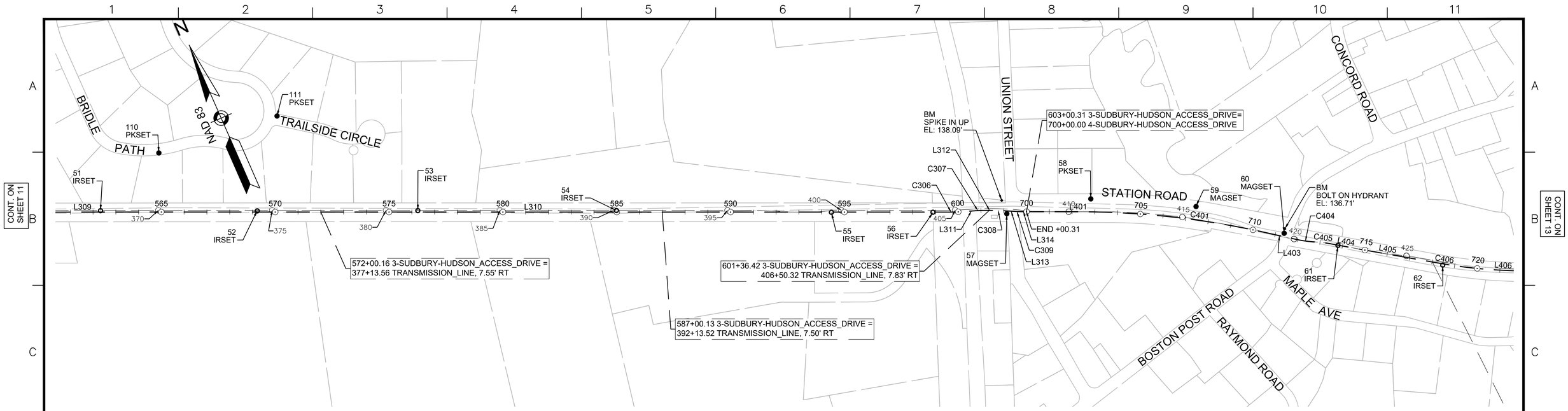
NO.	DESCRIPTION	BY	DATE	APP'R.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
SURVEY TIE–IN PLANS
PLAN 11 OF 348

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=200'	FEB 2021	MS	SK	MES	.	.



3-SUDBURY-HUDSON_ACCESS_DRIVE CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L309	559+75.56	2959101.392	673343.887		S66°25'05"E 324.74'	563+00.30	2958971.476	673641.508
L310	563+00.30	2958971.476	673641.508		S66°18'26"E 3665.57'	599+65.87	2957498.529	676998.123
C306	599+65.87	2957498.529	676998.123	R=500.00' Δ=3°38'00" L=31.71' T=15.86'		599+97.58	2957486.717	677027.541
L311	599+97.58	2957486.717	677027.541		S69°56'26"E 84.99'	600+82.57	2957457.567	677107.371
C307	600+82.57	2957457.567	677107.371	R=500.00' Δ=3°38'42" L=31.81' T=15.91'		601+14.37	2957445.714	677136.884
L312	601+14.37	2957445.714	677136.884		S66°17'43"E 47.14'	601+61.52	2957426.761	677180.049
C308	601+61.52	2957426.761	677180.049	R=500.00' Δ=3°13'05" L=28.08' T=14.05'		601+89.60	2957414.756	677205.432
L313	601+89.60	2957414.756	677205.432		S63°04'38"E 68.56'	602+58.16	2957383.711	677266.565
C309	602+58.16	2957383.711	677266.565	R=500.00' Δ=3°13'05" L=28.08' T=14.05'		602+86.25	2957371.705	677291.948
L314	602+86.25	2957371.705	677291.948		S66°17'43"E 14.06'	603+00.31	2957366.053	677304.821

4-SUDBURY-HUDSON_ACCESS_DRIVE CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L401	700+00.00	2957366.053	677304.821		S66°14'03"E 231.13'	702+31.13	2957272.909	677516.349
C401	702+31.13	2957272.909	677516.349	R=3750.00' Δ=12°25'19" L=813.02' T=408.11'		710+44.14	2956867.482	678219.228
L403	710+44.14	2956867.482	678219.228		S53°48'44"E 149.49'	711+93.63	2956779.221	678339.877
C404	711+93.63	2956779.221	678339.877	R=500.00' Δ=9°37'46" L=84.03' T=42.12'		712+77.66	2956735.524	678411.539
C405	712+77.66	2956735.524	678411.539	R=500.00' Δ=7°39'17" L=66.80' T=33.45'		713+44.46	2956701.760	678469.121
L404	713+44.46	2956701.760	678469.121		S55°47'13"E 137.37'	714+81.84	2956624.519	678582.722
L405	714+81.84	2956624.519	678582.722		S56°18'15"E 352.06'	718+33.90	2956429.201	678875.635
C406	718+33.90	2956429.201	678875.635	R=2150.00' Δ=7°27'00" L=279.56' T=139.98'		721+13.46	2956289.642	679117.643
L406	721+13.46	2956289.642	679117.643		S63°45'15"E 104.16'	722+17.62	2956243.579	679211.069

SURVEY TRAVERSE TABLE

POINT #	NORTHING	EASTING	ELEV	RAW DESCRIPTION	STATION CONSTR ℄	OFFSET CONSTR ℄
51	2959003.971	673581.771	161.78	IRSET	562+32.47	5.88 LT
52	2958726.419	674211.952	162.45	IRSET	569+21.06	4.82 LT
53	2958444.371	674858.194	159.51	IRSET	576+26.17	6.23 LT
54	2958094.408	675657.138	150.43	IRSET	584+98.40	6.80 LT
55	2957707.933	676518.674	141.46	IRSET	594+42.61	0.90 RT
56	2957528.922	676927.440	137.87	IRSET	598+88.86	0.57 RT
57	2957392.601	677221.786	136.73	MAGSET	602+14.14	12.35 RT
58	2957304.172	677585.894	133.06	PKSET	702+82.18	56.64 LT
59	2957087.530	677995.592	132.68	MAGSET	707+37.83	54.69 LT
60	2956824.551	678302.748	134.41	MAGSET	711+37.94	8.24 LT
61	2956680.926	678497.843	132.30	IRSET	713+80.00	1.09 RT
62	2956416.645	678884.311	130.43	IRSET	718+48.12	5.68 RT
110	2959133.231	673918.507	165.88	PKSET	564+88.88	259.43 LT
111	2959073.271	674459.148	167.27	PKSET	570+08.04	421.77 LT

BENCHMARK TABLE

NORTHING	EASTING	ELEV	DESCRIPTION
2957455.231	677224.797	138.09	SPIKE IN UP
2956841.239	678313.243	136.71	BOLT ON HYDRANT

200 0 200 400
SCALE IN FEET

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Watertown, MA 02472
617.924.1770 FAX 617.924.2286

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EVERSOURCE

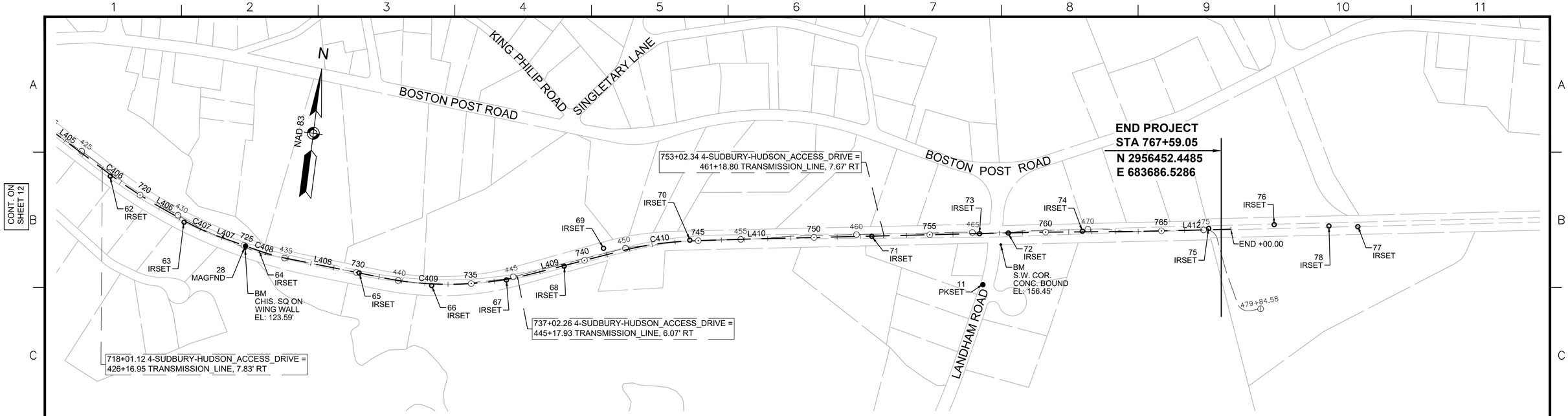
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

SURVEY TIE–IN PLANS

PLAN 12 OF 348

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=200'	FEB 2021	MS	SK	MES	.	.



4-SUDBURY-HUDSON_ACCESS_DRIVE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L405	714+81.84	2956624.519	678582.722		S56°18'15"E 352.06'	718+33.90	2956429.201	678875.635
C406	718+33.90	2956429.201	678875.635	R=2150.00' Δ=7°27'00" L=279.56' T=139.98'		721+13.46	2956289.642	679117.643
L406	721+13.46	2956289.642	679117.643		S63°45'15"E 104.16'	722+17.62	2956243.579	679211.069
C407	722+17.62	2956243.579	679211.069	R=1000.00' Δ=9°53'27" L=172.63' T=86.53'		723+90.25	2956180.949	679371.703
L407	723+90.25	2956180.949	679371.703		S73°38'42"E 171.77'	725+62.02	2956132.580	679536.524
C408	725+62.02	2956132.580	679536.524	R=975.00' Δ=8°08'34" L=138.56' T=69.40'		727+00.58	2956103.125	679671.802
L408	727+00.58	2956103.125	679671.802		S81°47'16"E 414.21'	731+14.79	2956043.959	680081.760
C409	731+14.79	2956043.959	680081.760	R=1450.00' Δ=25°44'54" L=651.62' T=331.41'		737+66.41	2956096.475	680725.774
L409	737+66.41	2956096.475	680725.774		N72°27'50"E 398.71'	741+65.12	2956216.609	681105.957
C410	741+65.12	2956216.609	681105.957	R=1400.00' Δ=12°28'35" L=304.86' T=153.03'		744+69.98	2956276.216	681404.316
L410	744+69.98	2956276.216	681404.316		N84°56'25"E 284.93'	747+54.91	2956301.344	681688.134
L412	763+88.36	2956423.284	683316.984		N85°29'15"E 411.64'	768+00.00	2956455.670	683727.352

SURVEY TRAVERSE TABLE						
POINT #	NORTHING	EASTING	ELEV	RAW DESCRIPTION	STATION CONSTR ℄	OFFSET CONSTR ℄
28	2956147.431	679484.162		MAGFND	725+07.67	0.49 RT
62	2956416.645	678884.311	130.43	IRSET	718+48.12	5.68 RT
63	2956235.685	679213.375	127.74	IRSET	722+23.22	6.08 RT
65	2956058.540	679980.234	127.40	IRSET	730+12.41	0.07 RT
66	2956021.600	680295.859	127.83	IRSET	733+29.75	7.51 RT
67	2956063.791	680616.525	128.45	IRSET	736+52.67	2.73 RT
68	2956136.912	680862.069	128.00	IRSET	739+08.74	2.51 RT
69	2956223.381	681027.685	126.87	IRSET	740+92.72	30.04 LT
70	2956279.196	681397.664	129.15	IRSET	744+63.82	3.57 LT
71	2956339.379	682181.246	134.16	IRSET	752+49.67	0.88 RT
72	2956386.005	682768.909	139.33	IRSET	758+39.18	0.63 RT
73	2956376.175	682645.008	138.67	IRSET	757+14.89	0.68 RT
74	2956411.369	683087.697	139.08	IRSET	761+58.97	0.43 RT
75	2956454.066	683631.453	134.33	IRSET	767+04.66	5.95 LT
76	2956485.859	683912.993	130.20	IRSET		
77	2956496.909	684274.024	126.21	IRSET		
78	2956493.088	684149.188	128.48	IRSET		
115	2956157.017	682671.760	146.93	PKSET	757+24.32	221.27 RT
18116	2956182.184	679384.347	126.53	ZZ		
18212	2956182.152	679384.358	126.52	ZZ		

BENCHMARK TABLE			
NORTHING	EASTING	ELEV	DESCRIPTION
2956134.680	679483.085	123.59	CHIS. SQ ON WING WALL
2956334.172	682739.230	156.45	S.W. COR. CONC. BOUND

200 0 200 400
SCALE IN FEET

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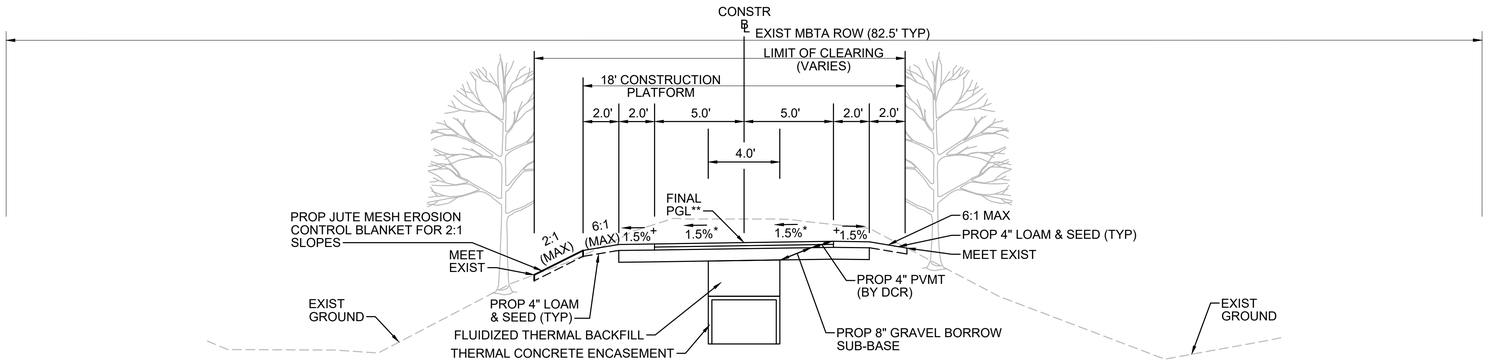
REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
SURVEY TIE–IN PLANS
PLAN 13 OF 348

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=200'	FEB 2021	MS	SK	MES	.	.



TYPICAL SECTION - CUT INTO EMBANKMENT - TRANSMISSION LINE IN CENTER

STA 112+50± TO STA 113+00±, STA 131+50± TO STA 131+75±, STA 145+75± TO STA 148+25±, STA 149+50± TO STA 153+00±, STA 397+25± TO STA 400+09±, STA 400+56± TO STA 402+50±, STA 592+00± TO STA 593+25±, STA 712+00± TO STA 715+75±, STA 723+25± TO STA 724+95±, STA 725+76± TO STA 730+00±, STA 732+00± TO STA 733+00±, STA 743+75± TO STA 747+16±, STA 747+50± TO STA 748+25±

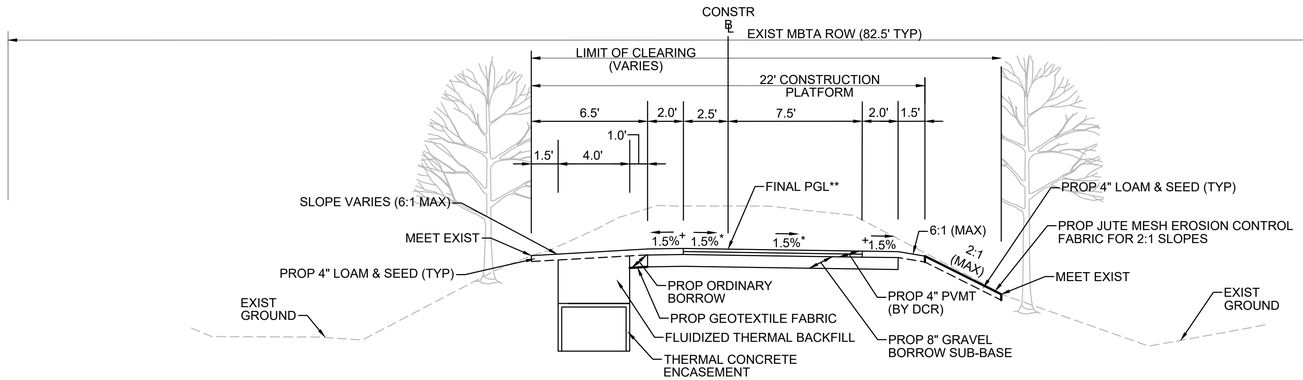
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

** CONTRACTOR TO BUILD TO INTERIM PGL, WHICH IS 4" BELOW FINAL PGL SHOWN HERE. FINAL GRADING TO BE PERFORMED UNDER SEPARATE CONTRACT. SEE DETAIL FOR INTERIM TYPICAL SECTION ON SHEET 157 FOR ADDITIONAL INFORMATION.

+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES

SEE CROSS SECTIONS FOR MORE INFORMATION



TYPICAL SECTION - CUT INTO EMBANKMENT - TRANSMISSION LINE ON LEFT

STA 142+25± TO STA 145+75±, STA 168+25± TO STA 171+00±, STA 350+25 TO STA 353+00±, STA 353+50± TO STA 357+00±, STA 368+00± TO STA 371+00±, STA 407+75± TO STA 409+25±, STA 409+75± TO STA 415+25±, STA 516+25± TO STA 519+75±, STA 520+25± TO STA 530+48±, STA 533+87± TO STA 534+00±, STA 534+00± TO STA 544+25±, STA 558+50± TO STA 563+75±, STA 576+75± TO STA 578+25±, STA 718+00± TO STA 721+25±, STA 748+25± TO STA 752+75±

NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

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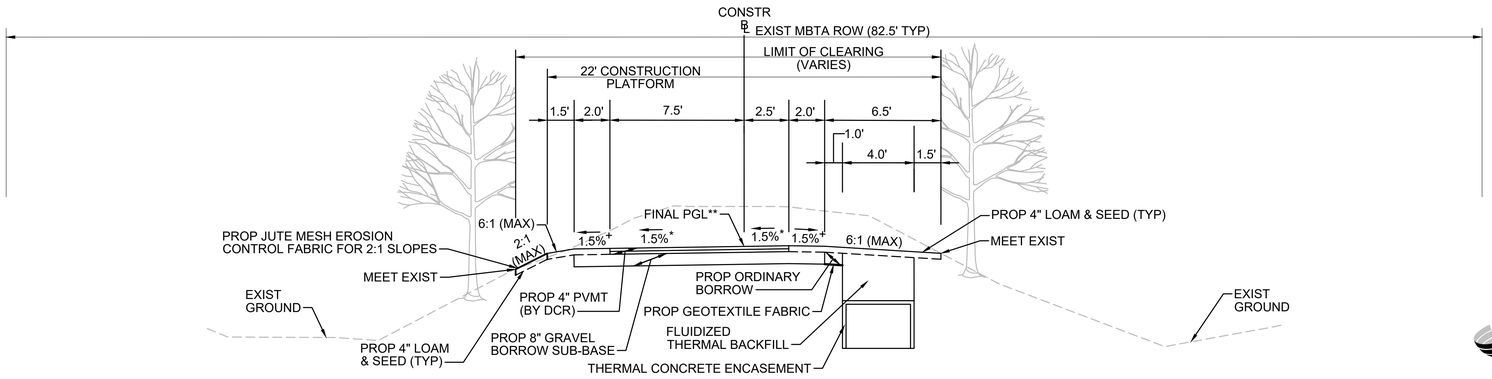
+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES

SEE CROSS SECTIONS FOR MORE INFORMATION



TYPICAL SECTION - CUT INTO EMBANKMENT - TRANSMISSION LINE ON RIGHT

STA 102+25± TO STA 112+50±, STA 128+50± TO STA 131+50±, STA 148+25± TO STA 148+43±, STA 149+20± TO STA 149+50±

NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

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+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES

SEE CROSS SECTIONS FOR MORE INFORMATION

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

vhb Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
Watertown, MA 02472
617.924.1770 FAX 617.924.2286

EVERSOURCE

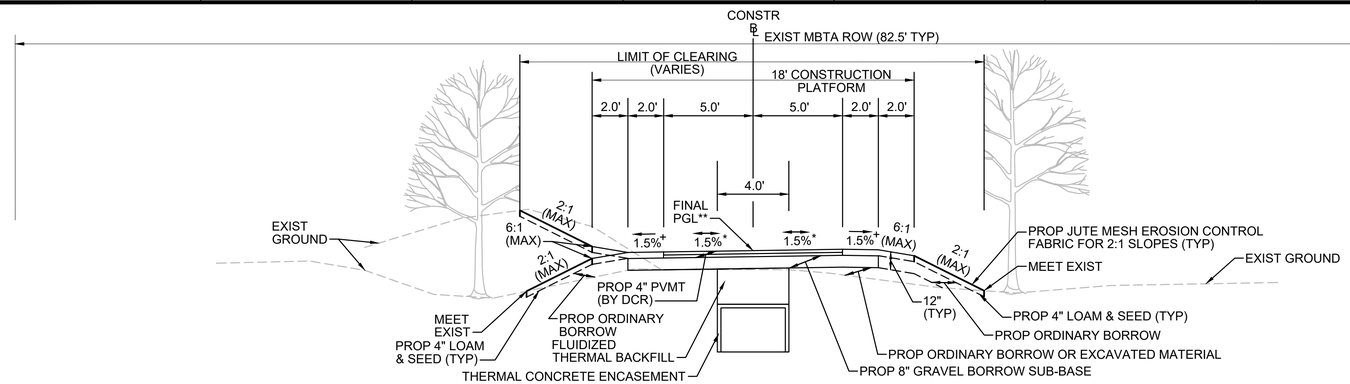
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TYPICAL SECTIONS

PLAN 14 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	FEB 2021	MS	SK	MES	.	.



TYPICAL SECTION - TRANSMISSION LINE IN CENTER

STA 131+75± TO STA 132+44±, STA 132+84± TO STA 134+25±, STA 153+00± TO STA 153+50±, STA 204+75± TO STA 207+25±, STA 213+68± TO STA 214+00±, STA 397+00± TO STA 397+25±, STA 402+50± TO STA 403+25±, STA 516+00± TO STA 516+25±, STA 593+25± TO STA 594+00±, STA 700+25± TO STA 711+41±, STA 711+67± TO STA 712+00±, STA 715+75± TO STA 717+75±, STA 742+25± TO STA 743+75±, STA 757+50± TO STA 758+13±, STA 763+20± TO STA 767+21±

NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

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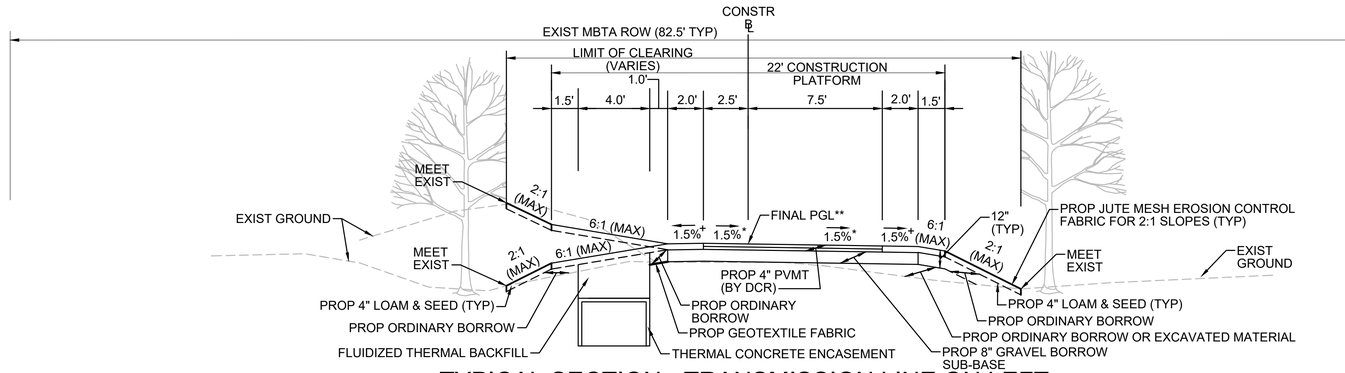
+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES

SEE CROSS SECTIONS FOR MORE INFORMATION



TYPICAL SECTION - TRANSMISSION LINE ON LEFT

STA 134+75± TO STA 142+25±, STA 153+50± TO STA 157+75±, STA 158+25± TO STA 168+25±, STA 171+00± TO STA 175+00±, STA 180+25± TO STA 181+86±, STA 182+19± TO STA 182+50±, STA 185+00± TO STA 195+75±, STA 196+25± TO STA 204+75±, STA 207+25± TO STA 213+49±, STA 214+00± TO STA 300+00±, STA 300+50± TO STA 304+00±, STA 316+50± TO STA 335+00±, STA 335+50± TO STA 336+86±, STA 337+08± TO STA 348+75±, STA 357+00± TO STA 360+25±, STA 365+00± TO STA 368+00, STA 371+50± TO STA 375+50±, STA 378+75± TO STA 390+00±, STA 390+50± TO STA 393+00±, STA 403+25± TO STA 404+50±, STA 407+50± TO STA 407+75±, STA 409+25± TO STA 409+75±, STA 415+25± TO STA 416+83±, STA 417+08± TO STA 500+21±, STA 533+00± TO STA 533+48±, STA 544+25± TO STA 552+75±, STA 553+25± TO STA 555+77±, STA 555+96± TO STA 558+50±, STA 563+75± TO STA 565+00±,STA 578+25± TO STA 579+00±, STA 588+25± TO STA 592+00±, STA 594+00± TO STA 601+09±, STA 601+59± TO STA 602+18±, STA 602+47± TO STA 700+25±, STA 722+25± TO STA 723+25±, STA 738+25± TO STA 742+25±, STA 753+00± TO STA 753+48±

NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

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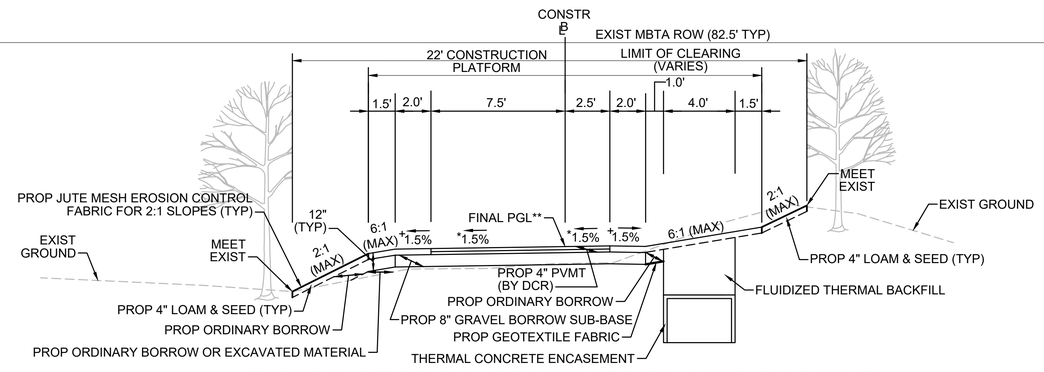

TYPICAL SECTION - TRANSMISSION LINE ON RIGHT

STA 100+31.46± TO STA 101+00±

NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

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SEE CROSS SECTIONS FOR MORE INFORMATION

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

vhb
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Watertown, MA 02472
617.924.1770 FAX 617.924.2286

EVERSOURCE

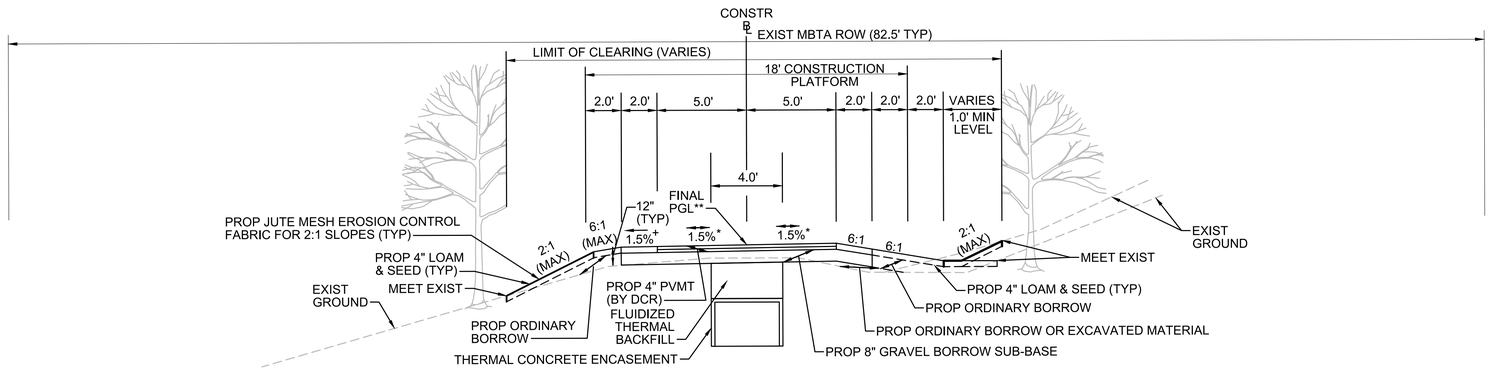
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TYPICAL SECTIONS

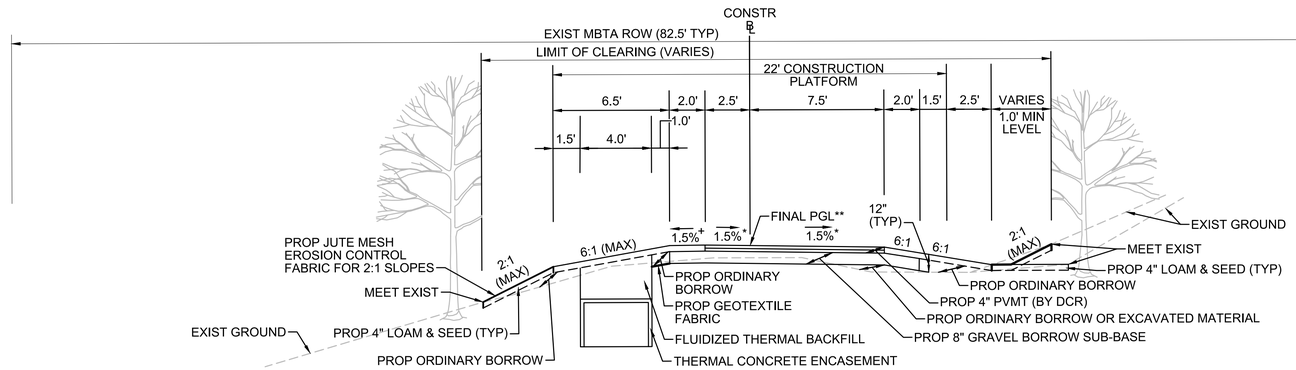
PLAN 15 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	FEB 2021	MS	SK	MES	.	.



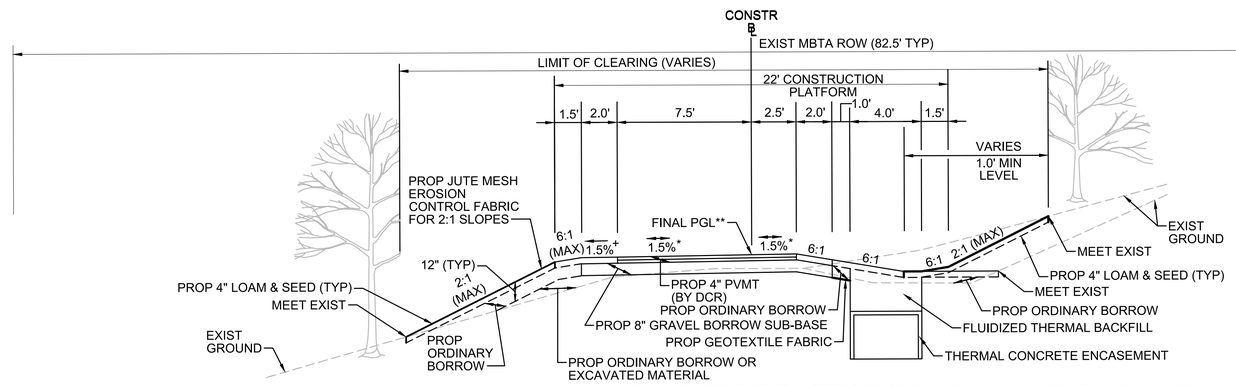
TYPICAL SECTION - SWALE RIGHT SIDE - TRANSMISSION LINE IN CENTER

STA 113+00± TO STA 118+50±, STA 121+50± TO STA 126+25±
NTS



TYPICAL SECTION - SWALE RIGHT SIDE - TRANSMISSION LINE ON LEFT

STA 134+25± TO STA 134+75±, STA 175+00± TO STA 175+50±, STA 304+00± TO STA 305+50±, STA 350+25± TO STA 350+50±,
STA 360+25± TO STA 362+50±, STA 405+00± TO STA 407+50±, STA 500+21± TO STA 500+25±, STA 512+50± TO STA 513+25±,
STA 533+48± TO STA 533+75±, STA 565+00± TO STA 569+00±, STA 579+00± TO STA 586+75±,
STA 587+25± TO STA 588+25±, STA 721+25± TO STA 722+25±
NTS



TYPICAL SECTION - SWALE RIGHT SIDE - TRANSMISSION LINE ON RIGHT

STA 118+50± TO STA 120+75±, STA 121+25± TO STA 121+50±, STA 126+25± TO STA 128+50±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

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\+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES

SEE CROSS SECTIONS FOR MORE INFORMATION

* TOLERANCE FOR CONSTRUCTION ±0.5%

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SEE CROSS SECTIONS FOR MORE INFORMATION

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SEE CROSS SECTIONS FOR MORE INFORMATION

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	REVISION			

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EVERSOURCE

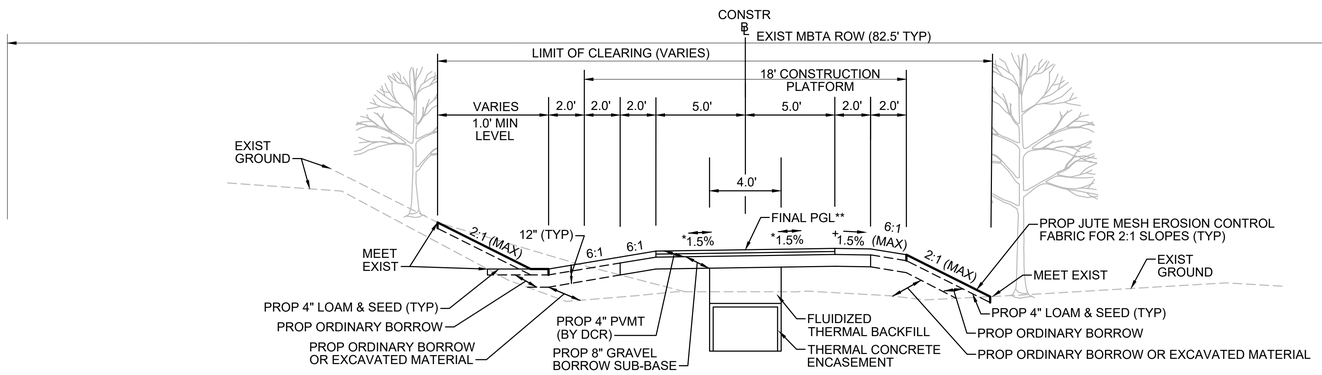
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TYPICAL SECTIONS

PLAN 16 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	FEB 2021	MS	SK	MES	.	.



TYPICAL SECTION - SWALE LEFT SIDE - TRANSMISSION LINE IN CENTER

STA 730+00± TO STA 732+00±, STA 733+00± TO STA 735+00±, STA 758+13± TO STA 558+50±, STA 762+75± TO STA 763+20±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

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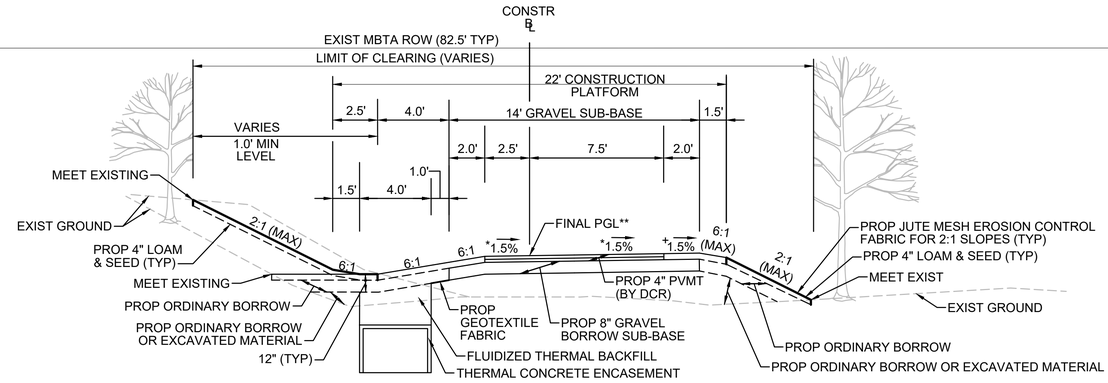

TYPICAL SECTION - SWALE LEFT SIDE - TRANSMISSION LINE ON LEFT

STA 179+75± TO STA 180+25±, STA 184+50± TO STA 185+00±, STA 315+75± TO STA 316+14±, STA 375+50± TO STA 378+75±, STA 395+50± TO STA 397+00±, STA 530+71± TO STA 533+00±, STA 576+50± TO STA 576+75±, STA 735+00± TO STA 736+90±, STA 737+13± TO STA 738+25±, STA 758+50± TO STA 762+75±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

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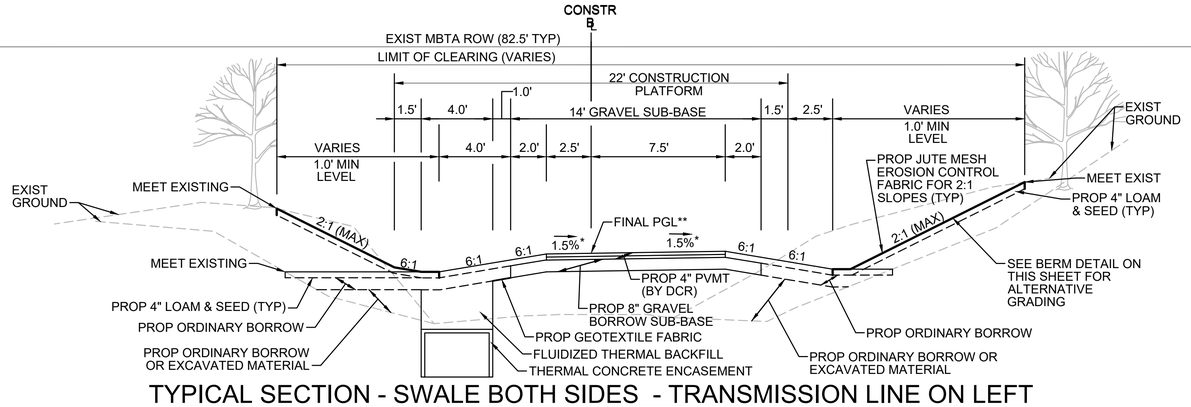
SEE CROSS SECTIONS FOR MORE INFORMATION



TYPICAL SECTION - SWALE BOTH SIDES - TRANSMISSION LINE ON LEFT

STA 175+50± TO STA 176+75±, STA 177+25± TO STA 179+75±, STA 182+50± TO STA 184+50±, STA 305+50± TO STA 315+75±, STA 348+75± TO STA 350+25±, STA 362+50± TO STA 365+00±, STA 393+00± TO STA 395+50±, STA 500+25± TO STA 503+75±, STA 504+25± TO STA 512+50±, STA 513+25± TO STA 516+00±, STA 569+00± TO STA 571+75±, STA 572+25± TO STA 576+50±, STA 753+48± TO STA 757+50±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

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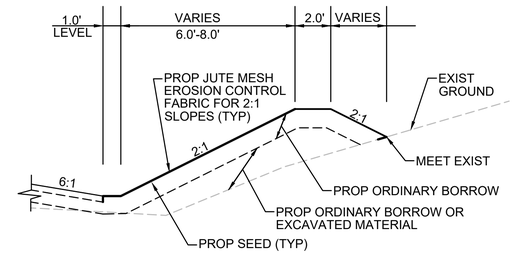


BERM DETAIL

STA 394+50 TO STA 395+50

vhb
Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
Watertown, MA 02472
617.924.1770 FAX 617.924.2286

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

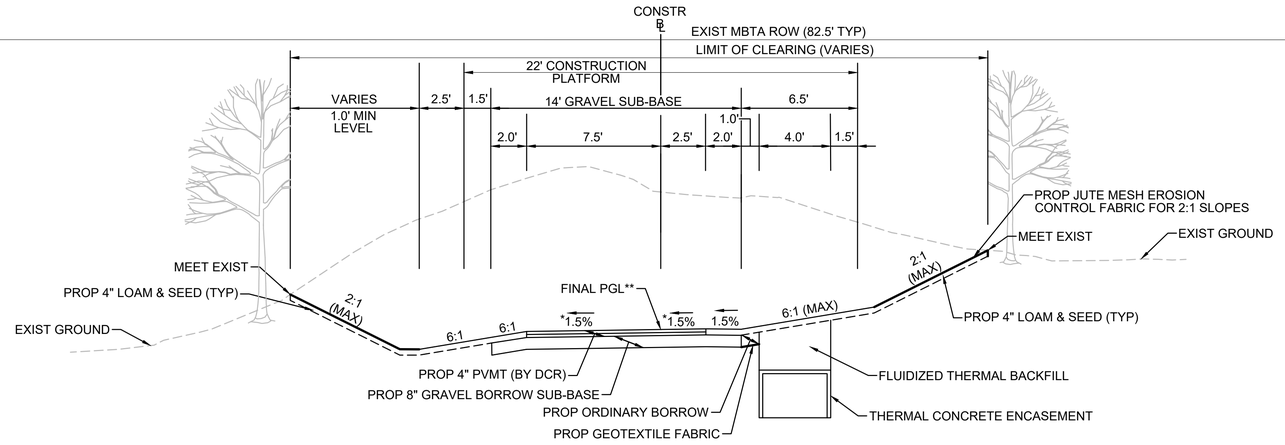
SUDBURY—HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TYPICAL SECTIONS

PLAN 17 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	FEB 2021	MS	SK	MES	.	.



TYPICAL SECTION - SWALE LEFT SIDE - TRANSMISSION LINE ON RIGHT

STA 101+00± TO STA 101+75±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

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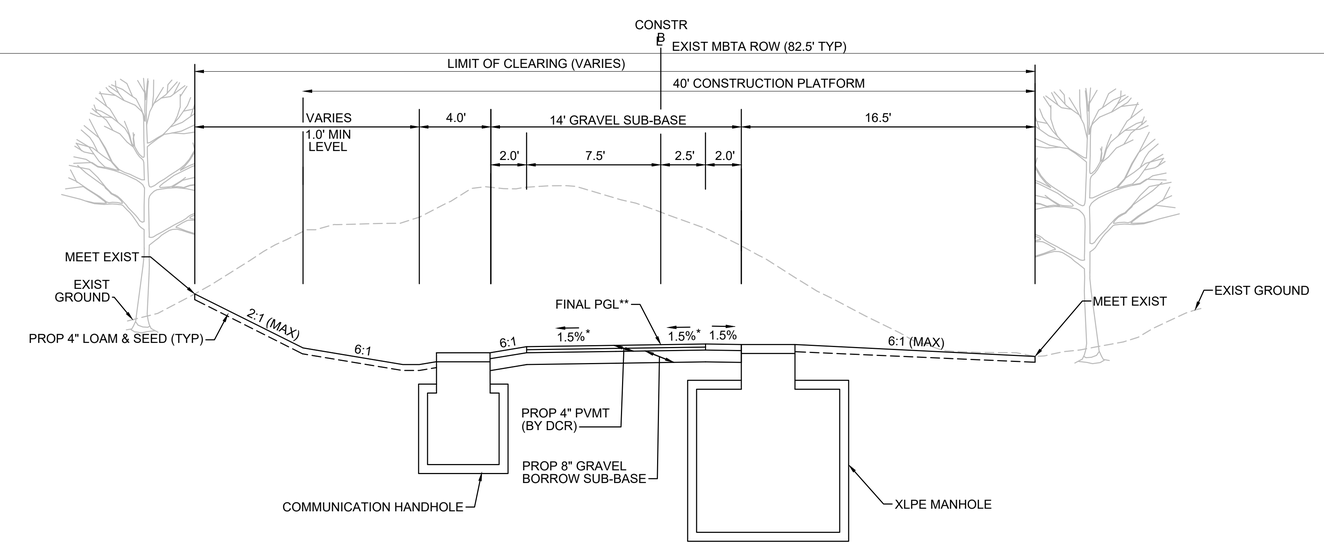
SEE CROSS SECTIONS FOR MORE INFORMATION



TYPICAL SECTION - SWALE LEFT SIDE - MANHOLE ON RIGHT

STA 101+75± TO STA 102+25±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

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SEE CROSS SECTIONS FOR MORE INFORMATION

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	REVISION			

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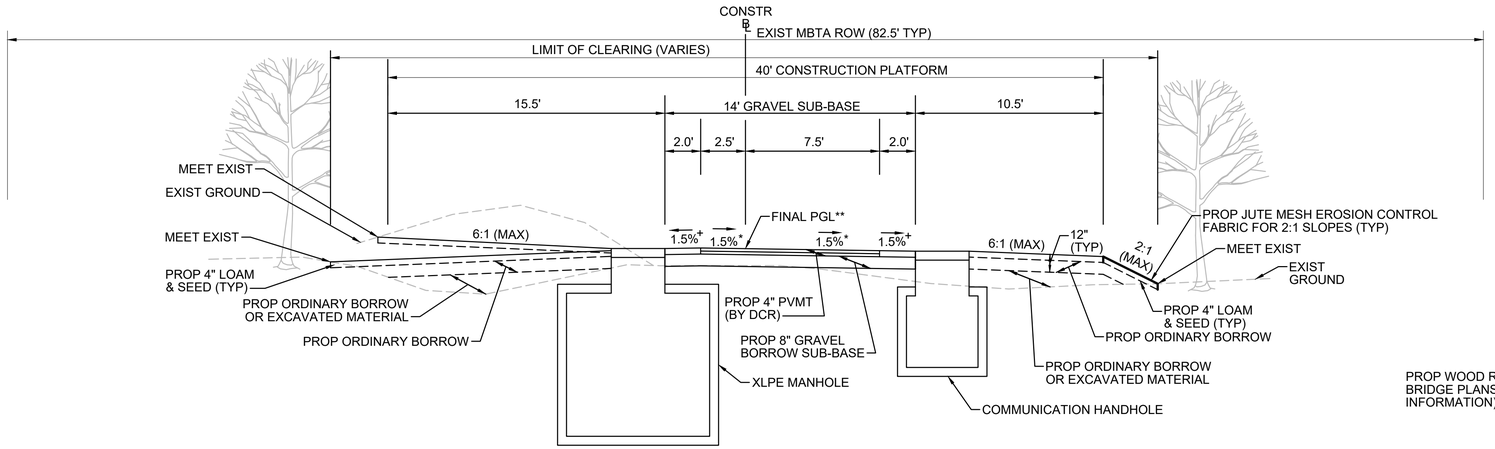
EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TYPICAL SECTIONS
PLAN 18 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	FEB 2021	MS	SK	MES	.	.



TYPICAL SECTION - MANHOLE ON LEFT

STA 157+75± TO STA 158+25±, STA 195+75± TO STA 196+25±, STA 300+00± TO STA 300+50±, STA 335+00± TO STA 335+50±, STA 353+00± TO STA 353+50±, STA 371+00± TO STA 371+50±, STA 390+00± TO STA 390+50±, STA 519+75± TO STA 520+25±, STA 533+75± TO STA 534+25±, STA 552+75± TO STA 553+25±, STA 717+75± TO STA 718+25±, STA 752+75± TO STA 753+25±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

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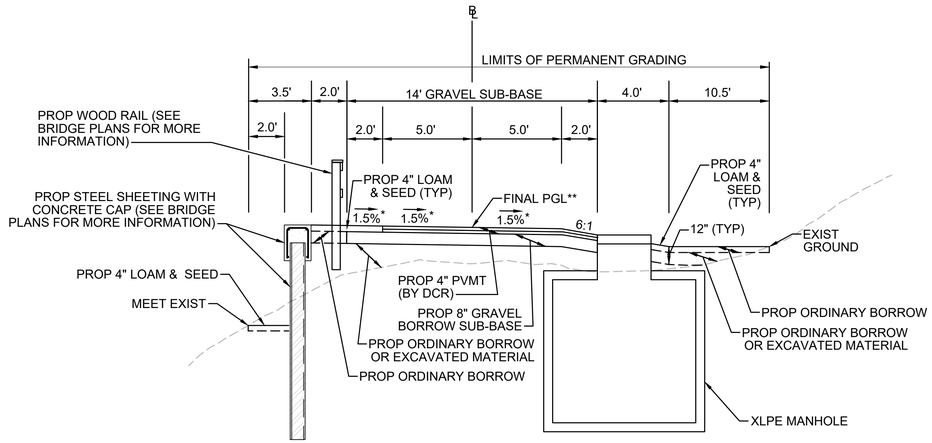
\+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES

SEE CROSS SECTIONS FOR MORE INFORMATION



* TOLERANCE FOR CONSTRUCTION ±0.5%

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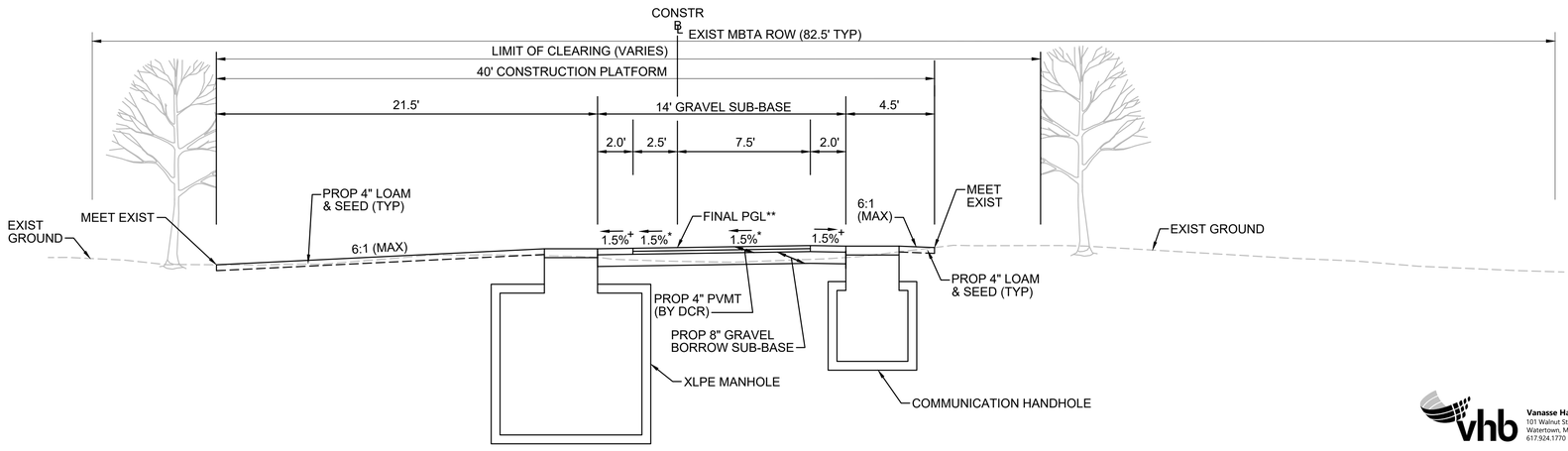
\+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES
SEE CROSS SECTIONS FOR MORE INFORMATION
SEE SHEET 157 FOR TEMPORARY GRADING CONSTRUCTION DETAIL

TYPICAL SECTION - SWALE RIGHT SIDE - MANHOLE ON RIGHT

STA 120+75± TO STA 121+25±
NTS



TYPICAL SECTION - MANHOLE ON LEFT - OFF-CENTER CONSTRUCTION PLATFORM

STA 601+09± TO STA 601+59±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

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\+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES

SEE CROSS SECTIONS FOR MORE INFORMATION

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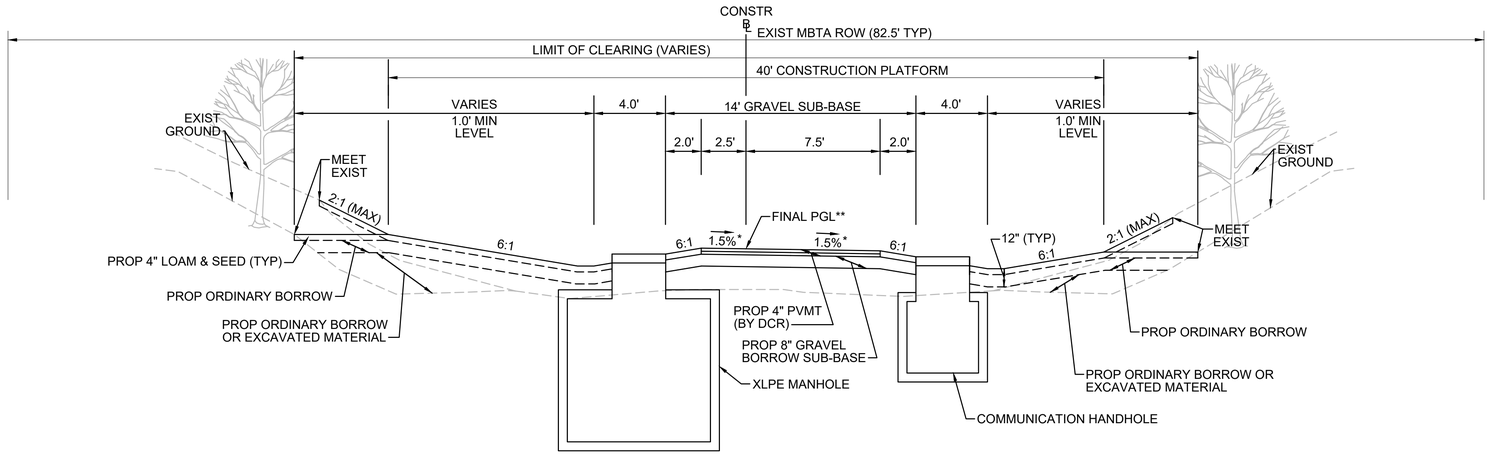
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TYPICAL SECTIONS
PLAN 19 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	FEB 2021	MS	SK	MES	.	.



TYPICAL SECTION - SWALE BOTH SIDES - MANHOLE ON LEFT

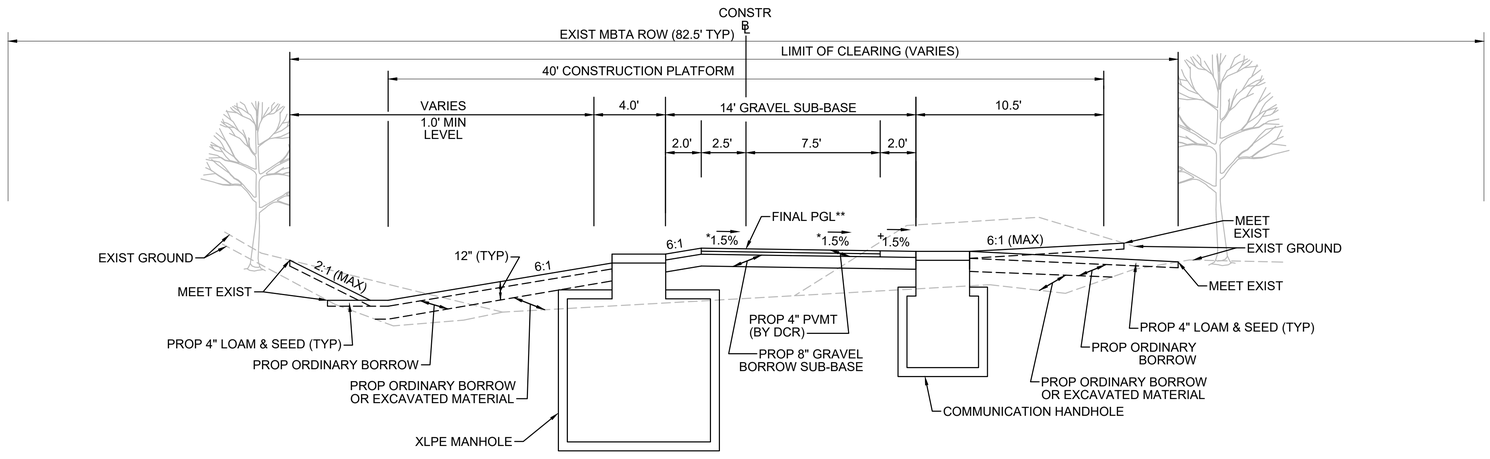
STA 176+75± TO STA 177+25±, STA 503+75± TO STA 504+25±, STA 571+75± TO STA 572+25±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

** CONTRACTOR TO BUILD TO INTERIM PGL, WHICH IS 4" BELOW FINAL PGL SHOWN HERE. FINAL GRADING TO BE PERFORMED UNDER SEPARATE CONTRACT. SEE DETAIL FOR INTERIM TYPICAL SECTION ON SHEET 157 FOR ADDITIONAL INFORMATION.

+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES

SEE CROSS SECTIONS FOR MORE INFORMATION



TYPICAL SECTION - SWALE LEFT SIDE - MANHOLE ON LEFT

STA 316+00± TO STA 316+50±, STA 736+75± TO STA 737+25±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

** CONTRACTOR TO BUILD TO INTERIM PGL, WHICH IS 4" BELOW FINAL PGL SHOWN HERE. FINAL GRADING TO BE PERFORMED UNDER SEPARATE CONTRACT. SEE DETAIL FOR INTERIM TYPICAL SECTION ON SHEET 157 FOR ADDITIONAL INFORMATION.

+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES

SEE CROSS SECTIONS FOR MORE INFORMATION

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY—HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TYPICAL SECTIONS
PLAN 20 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	FEB 2021	MS	SK	MES	.	.

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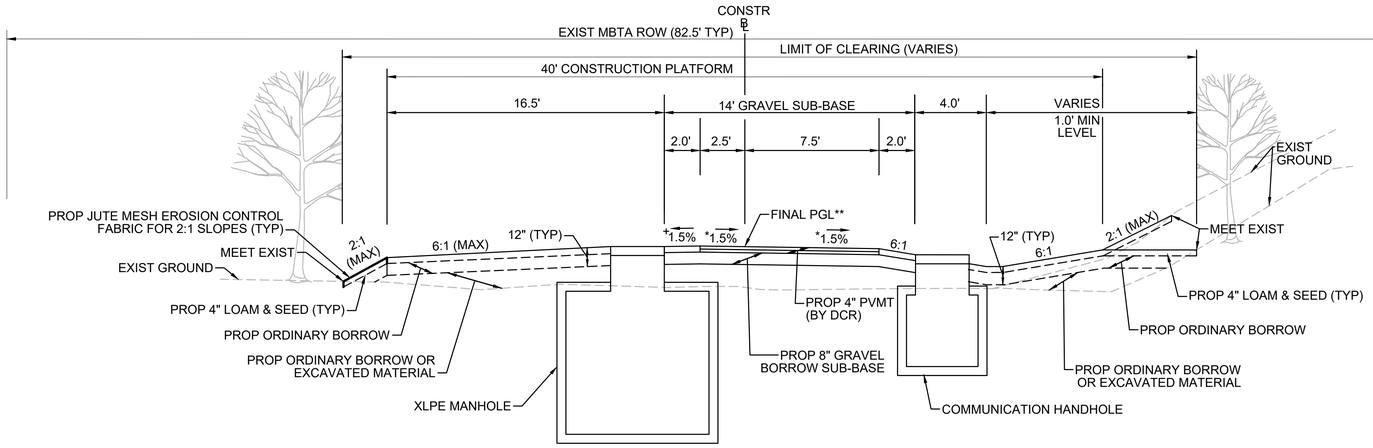


TYPICAL SECTION - SWALE RIGHT SIDE - MANHOLE ON LEFT

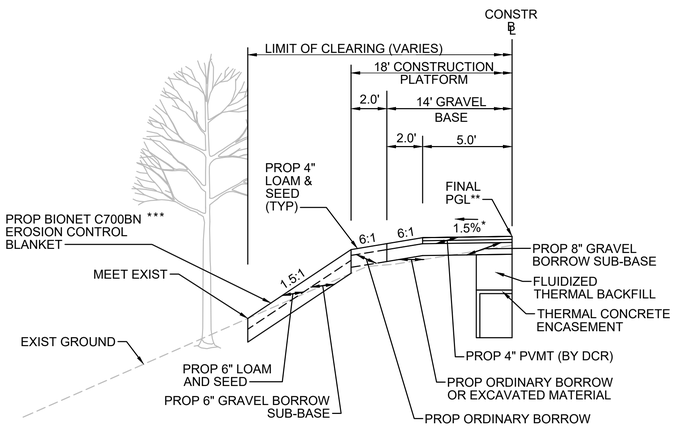
STA 404+50± TO STA 405+00±, STA 586+75± TO STA 587+25±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

** CONTRACTOR TO BUILD TO INTERIM PGL, WHICH IS 4" BELOW FINAL PGL SHOWN HERE. FINAL GRADING TO BE PERFORMED UNDER SEPARATE CONTRACT. SEE DETAIL FOR INTERIM TYPICAL SECTION ON SHEET 157 FOR ADDITIONAL INFORMATION.

+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES

SEE CROSS SECTIONS FOR MORE INFORMATION



STEEP SLOPE SECTION LT - TRANSMISSION LINE IN CENTER

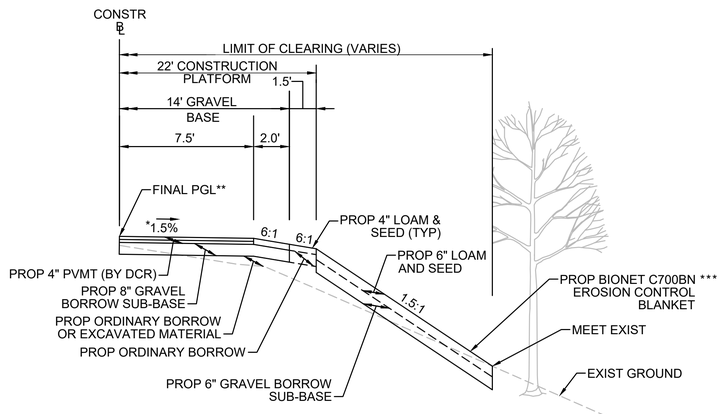
STA 142+37± TO STA 142+75±, STA 747+16± TO STA 747+50±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

** CONTRACTOR TO BUILD TO INTERIM PGL, WHICH IS 4" BELOW FINAL PGL SHOWN HERE. FINAL GRADING TO BE PERFORMED UNDER SEPARATE CONTRACT. SEE DETAIL FOR INTERIM TYPICAL SECTION ON SHEET 157 FOR ADDITIONAL INFORMATION.

*** ENGINEER TO VERIFY THAT INSTALLED EROSION CONTROL MEASURES ARE ADEQUATE FOR SLOPE STABILIZATION PRIOR TO PLACEMENT OF LOAM & SEED.

SEE CROSS SECTIONS FOR MORE INFORMATION



STEEP SLOPE SECTION RT - TRANSMISSION LINE ON LEFT

STA 135+50± TO STA 138+25±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

** CONTRACTOR TO BUILD TO INTERIM PGL, WHICH IS 4" BELOW FINAL PGL SHOWN HERE. FINAL GRADING TO BE PERFORMED UNDER SEPARATE CONTRACT. SEE DETAIL FOR INTERIM TYPICAL SECTION ON SHEET 157 FOR ADDITIONAL INFORMATION.

*** ENGINEER TO VERIFY THAT INSTALLED EROSION CONTROL MEASURES ARE ADEQUATE FOR SLOPE STABILIZATION PRIOR TO PLACEMENT OF LOAM & SEED.

SEE CROSS SECTIONS FOR MORE INFORMATION

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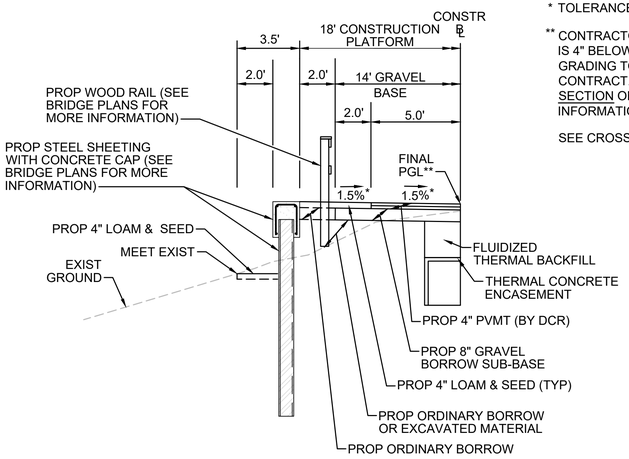
NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TYPICAL SECTIONS
PLAN 21 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	DEC 2021	MS	SK	MES	.	.



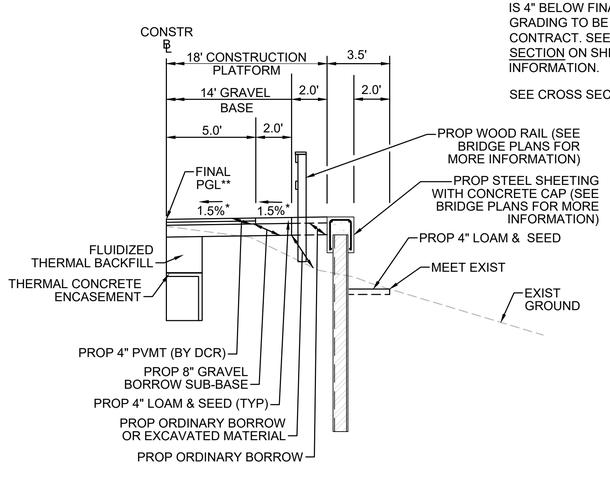
* TOLERANCE FOR CONSTRUCTION ±0.5%

** CONTRACTOR TO BUILD TO INTERIM PGL, WHICH IS 4" BELOW FINAL PGL SHOWN HERE. FINAL GRADING TO BE PERFORMED UNDER SEPARATE CONTRACT. SEE DETAIL FOR INTERIM TYPICAL SECTION ON SHEET 157 FOR ADDITIONAL INFORMATION.

SEE CROSS SECTIONS FOR MORE INFORMATION

SHEETING SECTION LT

STA 119+00± TO STA 119+38±, STA 119+52± TO STA 125+00±, STA 148+25± TO STA 148+49±, STA 149+13± TO STA 149+75±, STA 300+50± TO STA 400+07±, STA 400+58± TO STA 401+25±, STA 724+73± TO STA 725+03±, STA 725+59± TO STA 725+96±
NTS



* TOLERANCE FOR CONSTRUCTION ±0.5%

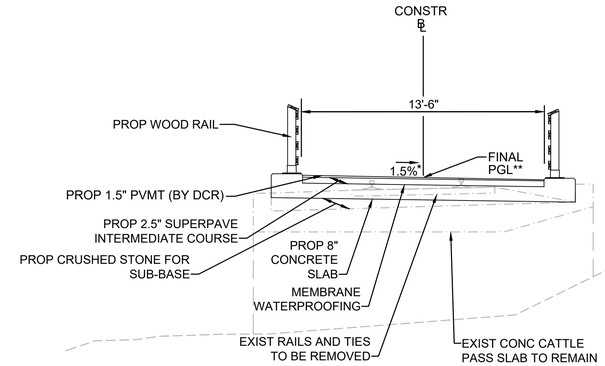
** CONTRACTOR TO BUILD TO INTERIM PGL, WHICH IS 4" BELOW FINAL PGL SHOWN HERE. FINAL GRADING TO BE PERFORMED UNDER SEPARATE CONTRACT. SEE DETAIL FOR INTERIM TYPICAL SECTION ON SHEET 157 FOR ADDITIONAL INFORMATION.

SEE CROSS SECTIONS FOR MORE INFORMATION

SHEETING SECTION RT

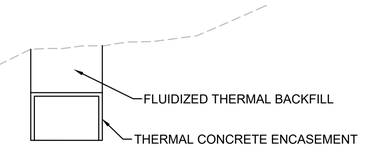
STA 148+25± TO STA 148+49±, STA 149+13± TO STA 149+75±, STA 399+91± TO STA 400+07±, STA 400+58± TO STA 401+25±, STA 724+73± TO STA 725+03±, STA 725+59± TO STA 725+96±, STA 731+00± TO STA 734+25±
NTS

*TOLERANCE FOR CONSTRUCTION ±0.5%



CATTLE CROSSING

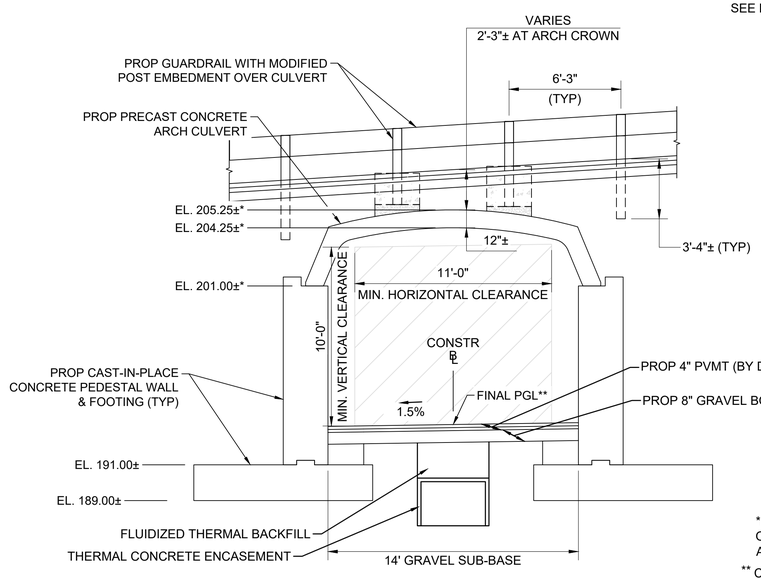
STA 119+38± TO STA 119+52±
NTS



*TOLERANCE FOR CONSTRUCTION ±0.5%

** CONTRACTOR TO BUILD TO INTERIM PGL, WHICH IS 1.5" BELOW FINAL PGL SHOWN HERE. FINAL GRADING TO BE PERFORMED UNDER SEPARATE CONTRACT. SEE DETAIL ON SHEET 158 FOR ADDITIONAL INFORMATION.

SEE BRIDGE PLANS FOR MORE INFORMATION



CHESTNUT STREET CULVERT

STA 132+44± TO STA 132+84±
NTS

*ELEVATIONS MAY VARY DEPENDING ON DESIGN OF PRECAST CONCRETE ARCH CULVERT BY OTHERS.

** CONTRACTOR TO BUILD TO INTERIM PGL, WHICH IS 4" BELOW FINAL PGL SHOWN HERE. FINAL GRADING TO BE PERFORMED UNDER SEPARATE CONTRACT. SEE DETAIL FOR INTERIM TYPICAL SECTION ON SHEET 157 FOR ADDITIONAL INFORMATION.

SEE BRIDGE PLANS FOR MORE INFORMATION

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TYPICAL SECTIONS
PLAN 22 OF 349

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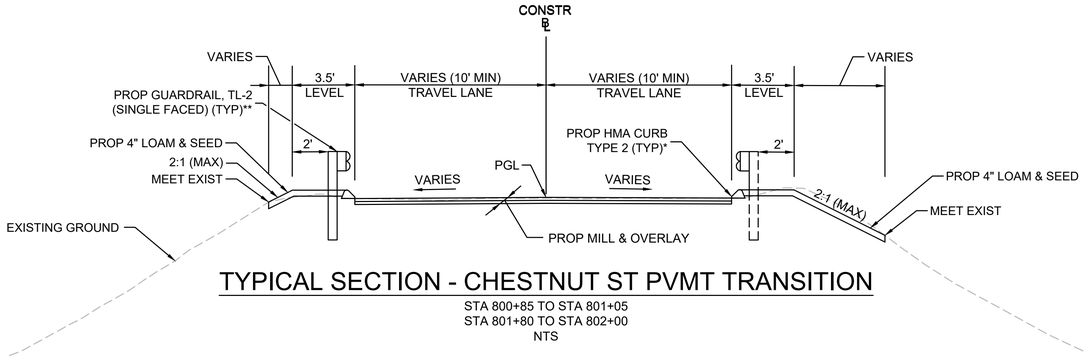
NTS	DEC 2021	MS	SK	MES	.	.

* FULL-DEPTH BERM PAD REQUIRED IF EXISTING PAVEMENT NOT SUITABLE

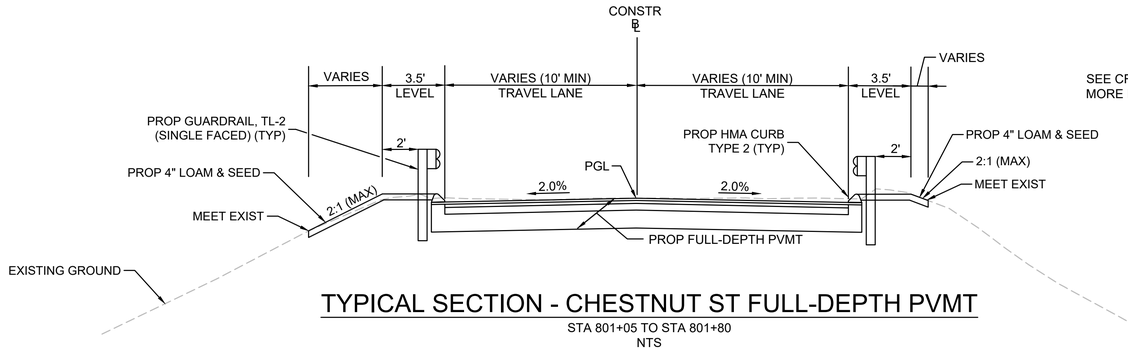
** TL-2 GUARDRAIL PROPOSED FROM STA 800+99 TO STA 802+12 (LT) AND STA 801+06 TO STA 802+24 (RT)

SEE CROSS SECTIONS FOR MORE INFORMATION



TYPICAL SECTION - CHESTNUT ST PVMT TRANSITION

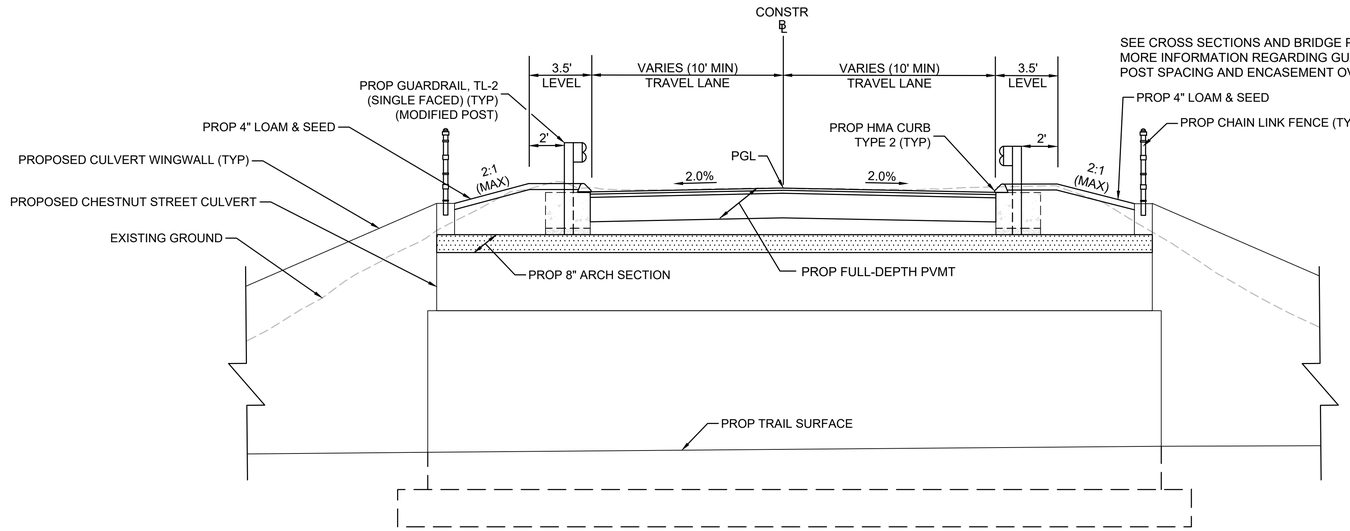
STA 800+85 TO STA 801+05
STA 801+80 TO STA 802+00
NTS



SEE CROSS SECTIONS FOR MORE INFORMATION

TYPICAL SECTION - CHESTNUT ST FULL-DEPTH PVMT

STA 801+05 TO STA 801+80
NTS



TYPICAL SECTION - CHESTNUT ST FULL-DEPTH PVMT OVER CHESTNUT STREET CULVERT

STA 801+28 TO STA 801+58
NTS

PAVEMENT NOTES

PROPOSED FULL-DEPTH PAVEMENT

SURFACE:		1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
BASE:	4.5"	SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
SUBBASE:	4" 8"	DENSE GRADED CRUSHED STONE OVER GRAVEL BORROW (TYPE b)

PROPOSED PAVEMENT MILLING & OVERLAY

SURFACE:		1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER 1.75" PAVEMENT MICROMILLING

PROPOSED HOT MIX ASPHALT WALK

SURFACE:		1.25" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
FOUNDATION:	8"	GRAVEL BORROW (TYPE b)

PROPOSED HOT MIX ASPHALT DRIVEWAY/WALK AT DRIVEWAY

SURFACE:		1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 2" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
FOUNDATION:	8"	GRAVEL BORROW (TYPE b)

PROPOSED CEMENT CONCRETE WALK

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

NOTES:

1. TACK COAT TO BE APPLIED AT 0.05 GAL/SY OVER SMOOTH PAVEMENT (BASE AND INTERMEDIATE COURSES) AND 0.07 GAL/SY OVER MILLED SURFACE.
2. ASPHALT EMULSION FOR TACK COAT SHALL BE (RS-1H) TO RESIST TRACKING BY HAUL VEHICLES AND BOND HMA LAYERS FOR FLEXURAL STRENGTH.
3. HMA WALKS AND DRIVEWAYS SHALL BE IN ACCORDANCE WITH SECTION 702. AND 703. AND SHALL BE 50 GYRATION MIXTURES.

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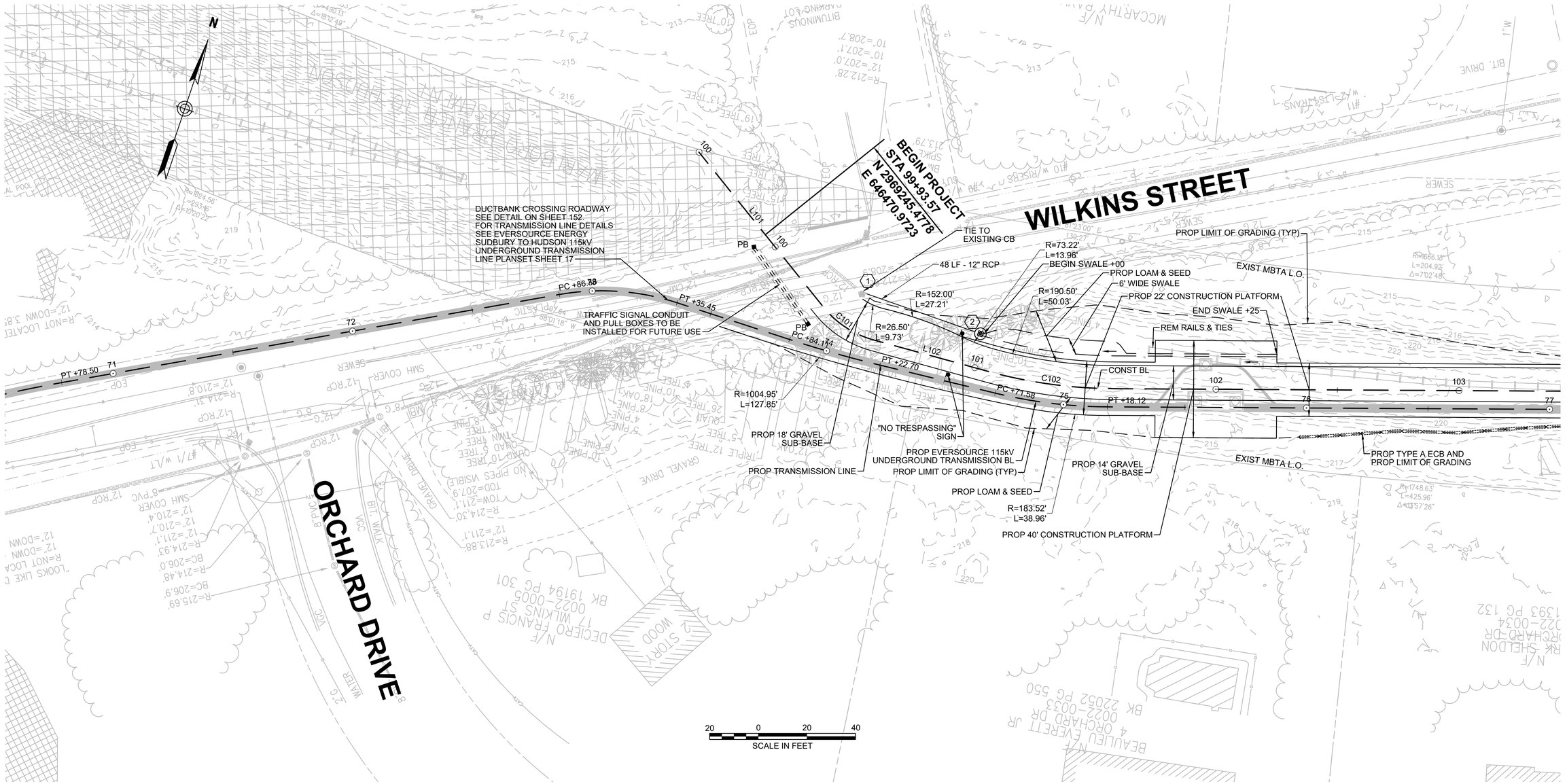
EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TYPICAL SECTIONS
PLAN 23 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	DEC 2021	MS	SK	MES	.	.



DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
1	EX CB	STA 100+39, 15.5' LT	212.68 (EX)	209.00' (2)	208.9' (EX)	
2	SHALLOW CB	STA 100+99, 14.1' LT	212.55		209.60'	SEE CONSTRUCTION DETAIL ON SHEET 156

NOTE:
1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

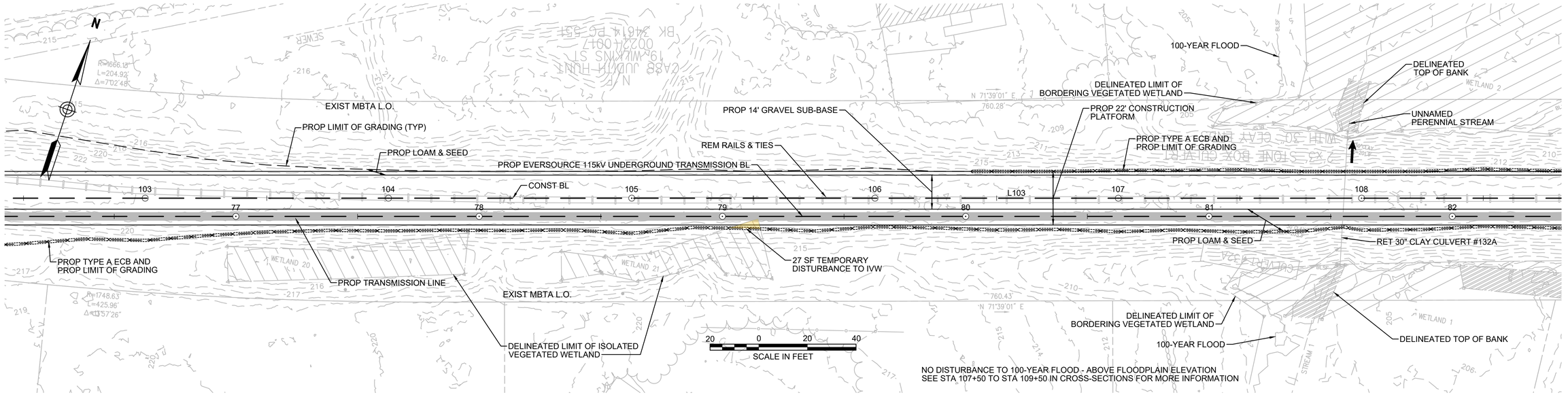
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

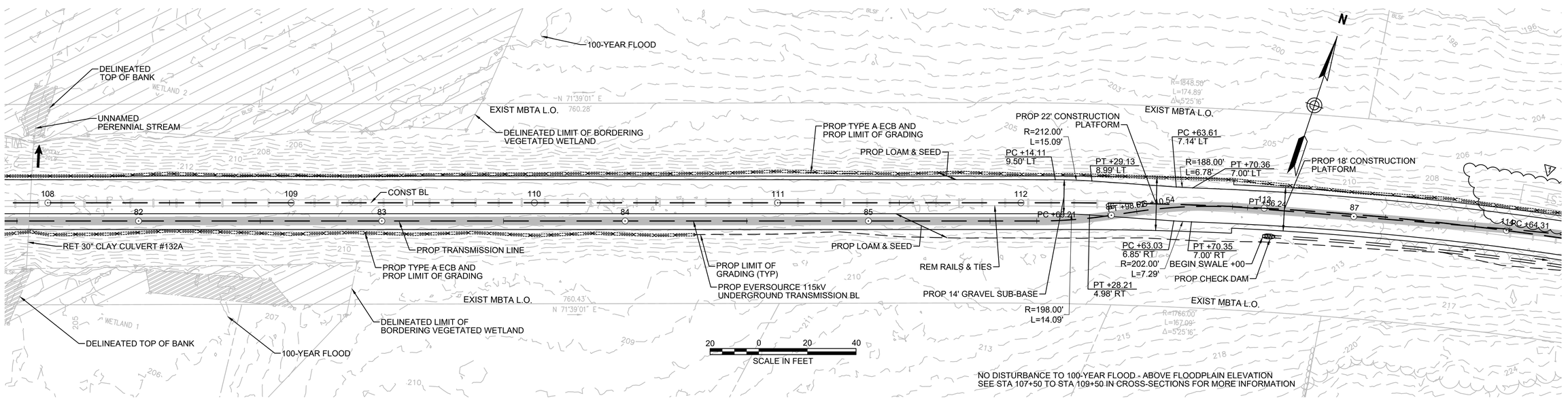
CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 24 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.





NOTE:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

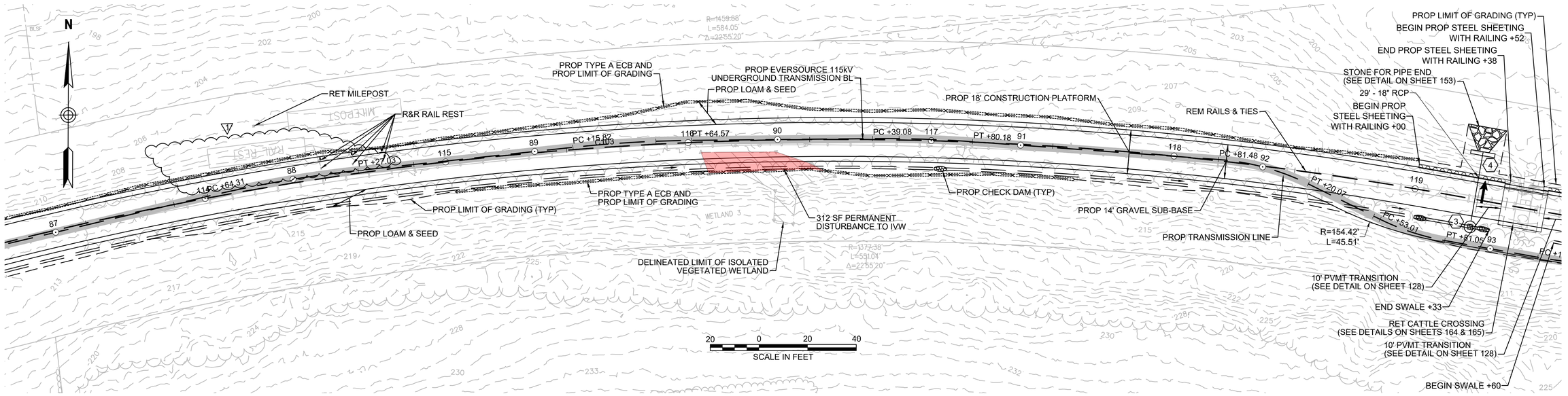
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

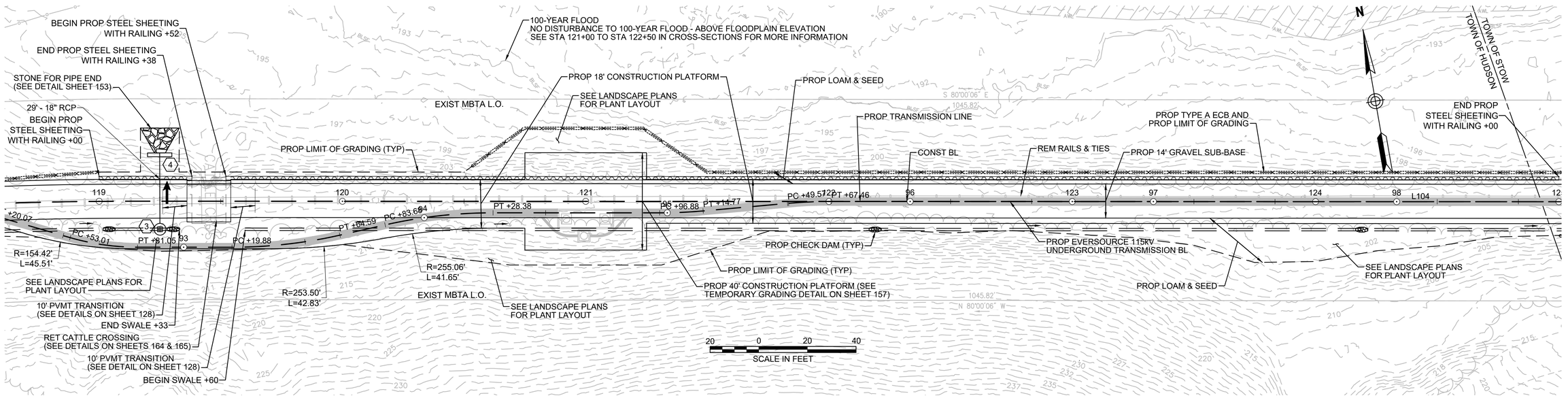
CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 25 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	SB	SK	MES	.	.





DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
3	Leaching Catch Basin	STA 119+25, 11.5' RT	207.24		199.17'	CONTRACTOR TO PROVIDE
4	Concrete Headwall	STA 119+25, 19.1' LT			197.91'	12" REVEAL

NOTE:
1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).

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NO.	DESCRIPTION	BY	DATE	APPR.
1	HISTORIC FEATURE DISPOSITIONS		02/03/2022	

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

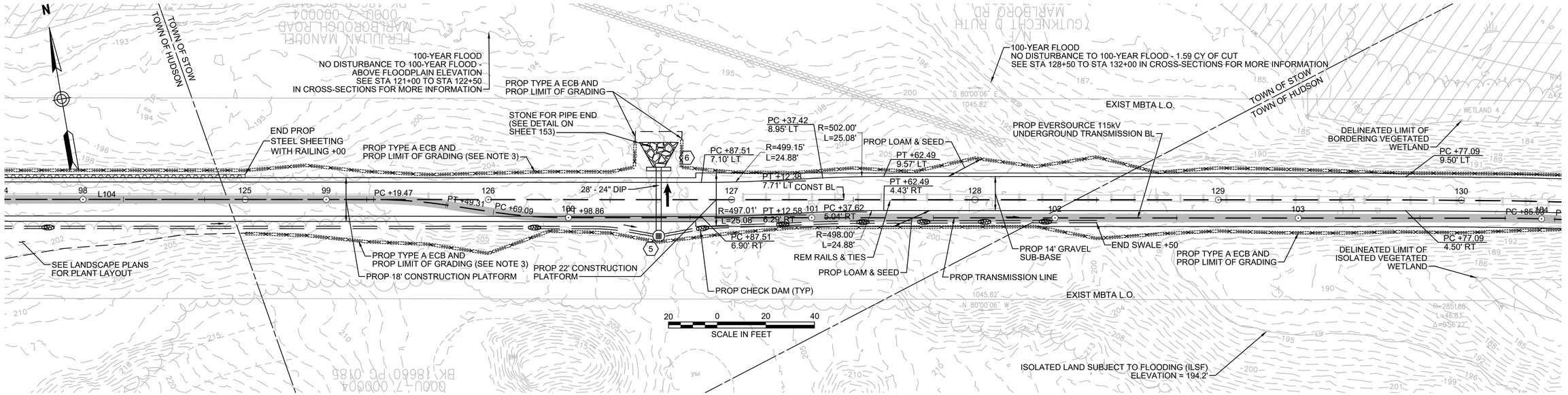
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 26 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP R.	DRAWING NO.	REV.
1"=20'	DEC 2021	SB	SK	MES	.	.



DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
5	SHALLOW CB	STA 126+70, 15.0' RT	201.58		198.10'	SEE CONSTRUCTION DETAIL ON SHEET 156
6	Concrete Headwall	STA 126+70, 13.3' LT			197.61'	12" REVEAL

NOTE:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).
2. NO SOIL STOCKPILES SHALL BE ALLOWED WITHIN THE TOWN OF STOW.
3. ALL LIMITS OF GRADING WITHIN THE TOWN OF STOW SHALL BE DEMARCATED BY TYPE A EROSION CONTROL BARRIER OR TEMPORARY CONSTRUCTION FENCING.
4. THE STOW CONSERVATION COMMISSION SHALL BE NOTIFIED IN THE EVENT THAT ANY DUST CONTROL BEYOND WATER SPRAYING IS REQUIRED WITHIN THE TOWN OF STOW.

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NO.	DESCRIPTION	BY	DATE	APPR.

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

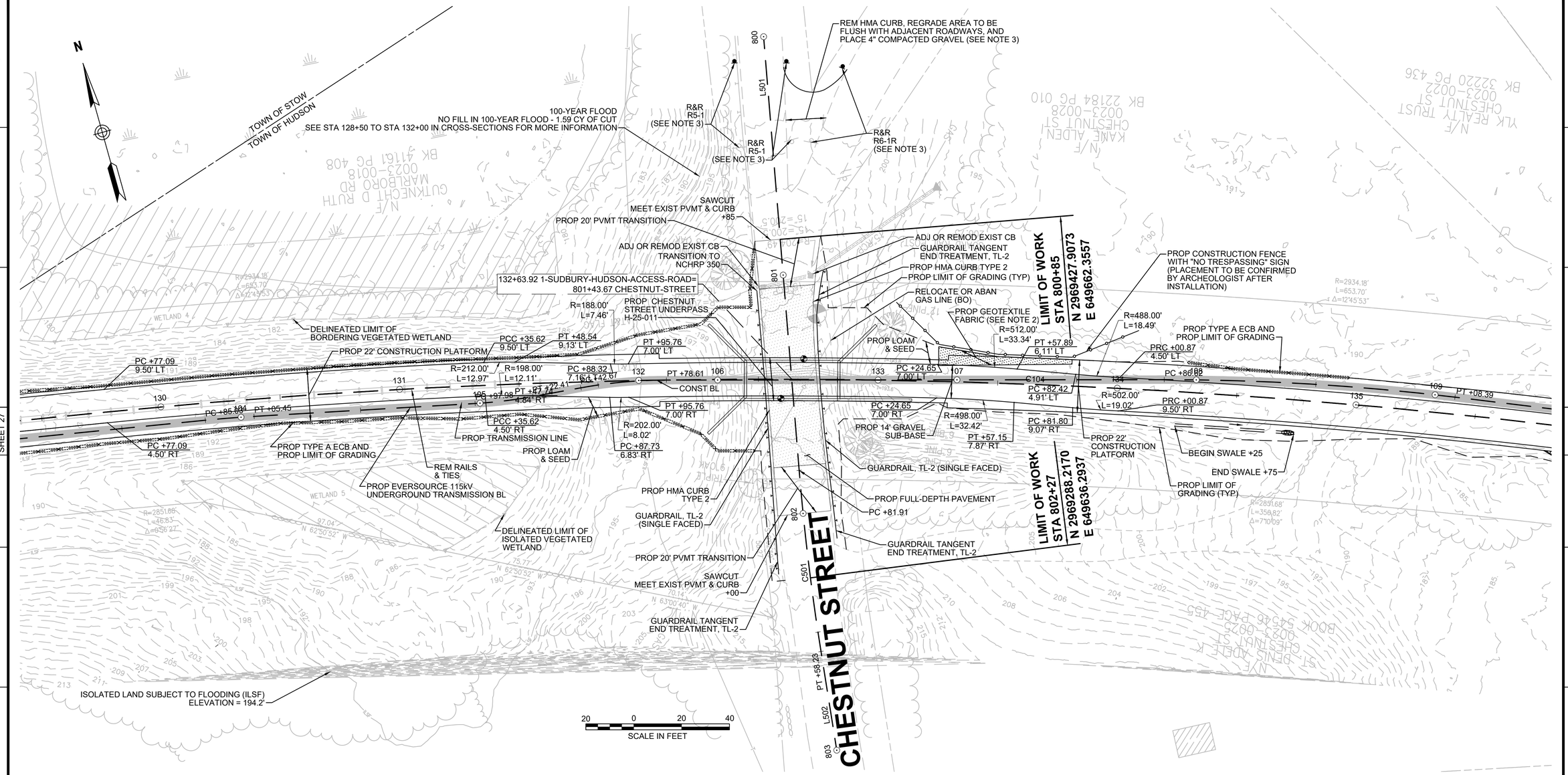
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 27 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	SB	SK	MES	.	.



NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO. 190-0611).
2. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 4" LOAM & SEED WITHIN LIMITS SHOWN.
3. CONTRACTOR TO HAVE COMPACTED GRAVEL IN PLACE AND SIGNS REMOVED AND RESET BEFORE CHESTNUT STREET IS CLOSED TO TRAFFIC. CONTRACTOR TO RESTORE AREA TO ORIGINAL CONDITIONS AFTER CHESTNUT STREET UNDERPASS IS CONSTRUCTED AND CHESTNUT STREET IS REOPENED TO TRAFFIC.
4. FOR CHESTNUT STREET PROFILE, SEE SHEET 95.

NO.	DESCRIPTION	BY	DATE	APPR.
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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

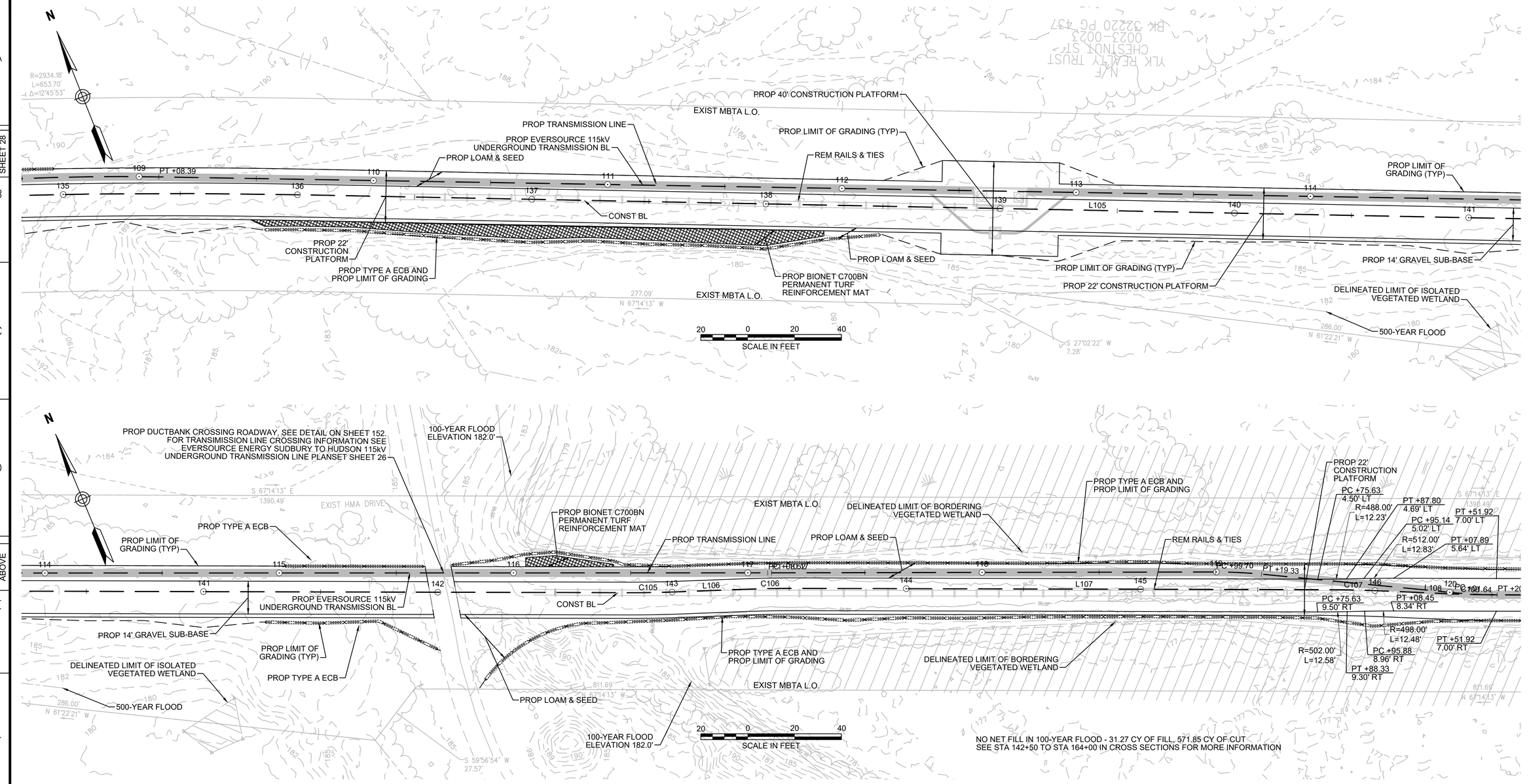
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 28 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



NOTE:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

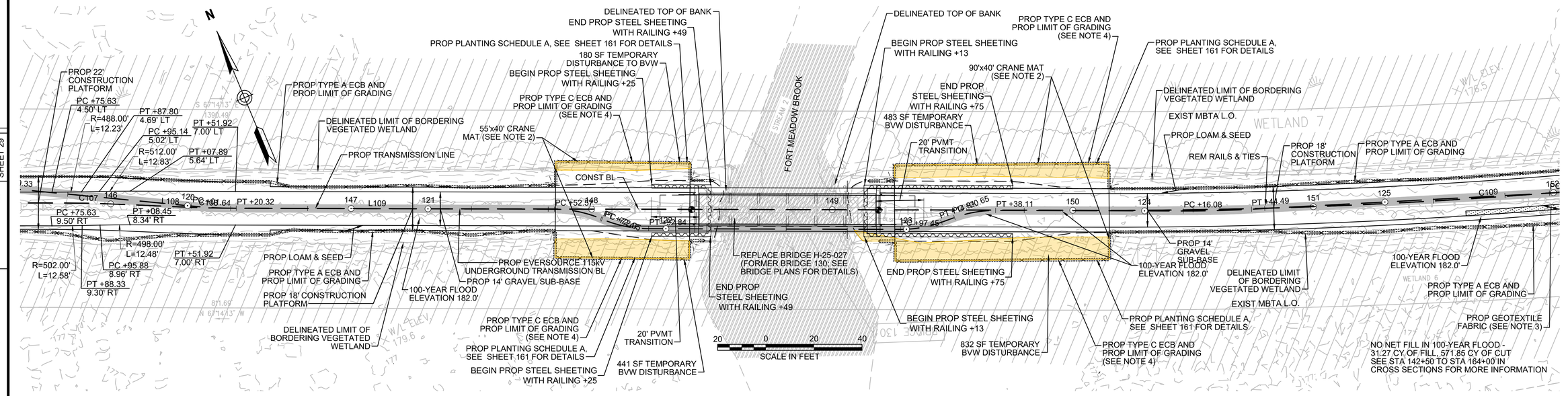
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 29 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).
2. MAXIMUM CRANE PAD DIMENSIONS OF 40'X40' ARE ALLOWED AT ANY GIVEN TIME. A LONGER CRANE MAT FOOTPRINT IS SHOWN HERE TO ALLOW THE CRANE MAT LOCATION TO BE SHIFTED DURING CONSTRUCTION OF THE STEEL SHEETING AND BRIDGE. SEE SHEET 160 FOR CRANE MAT RESTORATION DETAILS.
3. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 8" GRAVEL BORROW WITHIN LIMITS SHOWN.
4. TYPE C ECB SHALL CONSIST OF EITHER STAKED 4' HIGH SILT FENCE OR BOTTOM-ANCHORED TURBIDITY CURTAIN DEPENDING ON WATER LEVELS AT THE TIME OF CONSTRUCTION. THE APPROPRIATE ECB SHALL BE INSTALLED AT THE DIRECTION OF THE ENVIRONMENTAL MONITOR.

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

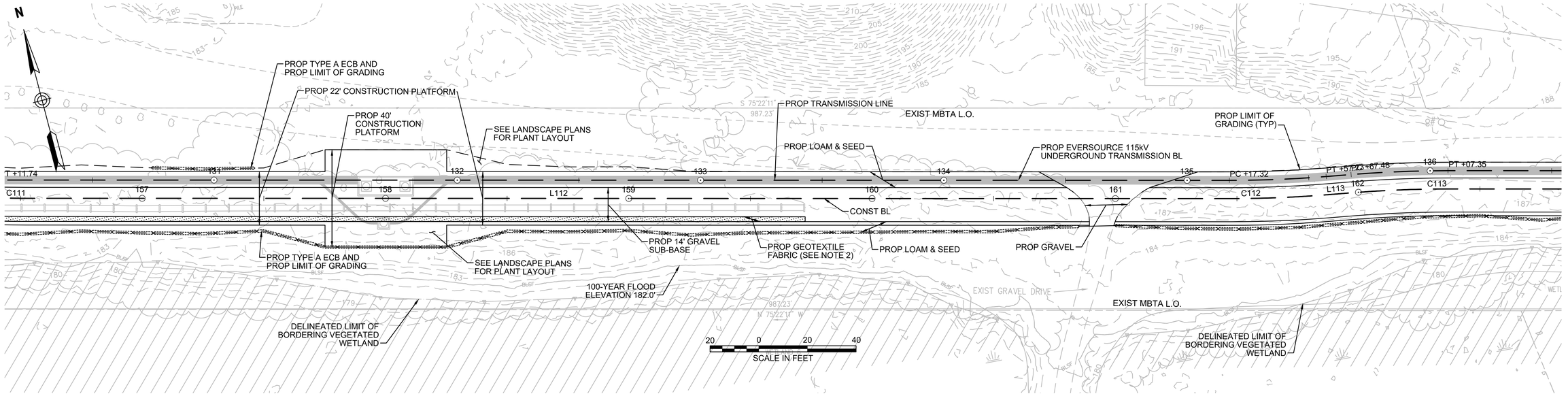
INFORMATIONAL SET, FOR REFERENCE ONLY

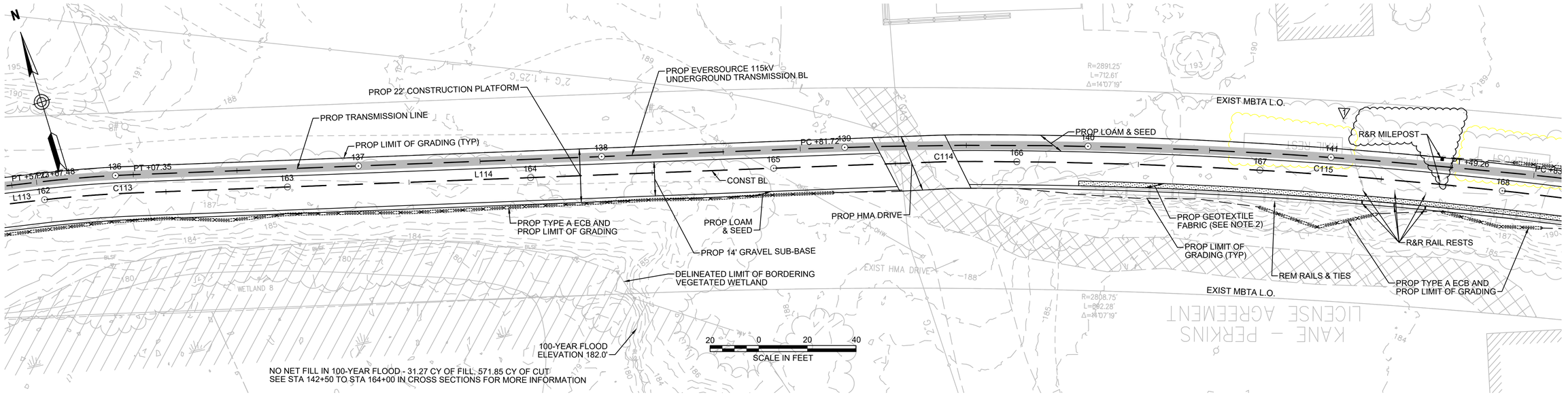
PLAN 30 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.

CONT. ON SHEET 30

CONT. BELOW





NO NET FILL IN 100-YEAR FLOOD - 31.27 CY OF FILL, 571.85 CY OF CUT
SEE STA 142+50 TO STA 164+00 IN CROSS SECTIONS FOR MORE INFORMATION

CONT. ON SHEET 32

NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).
2. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 8" GRAVEL BORROW WITHIN LIMITS SHOWN.

NO.	DESCRIPTION	BY	DATE	APPR.
1	HISTORIC FEATURE DISPOSITIONS		02/03/2022	

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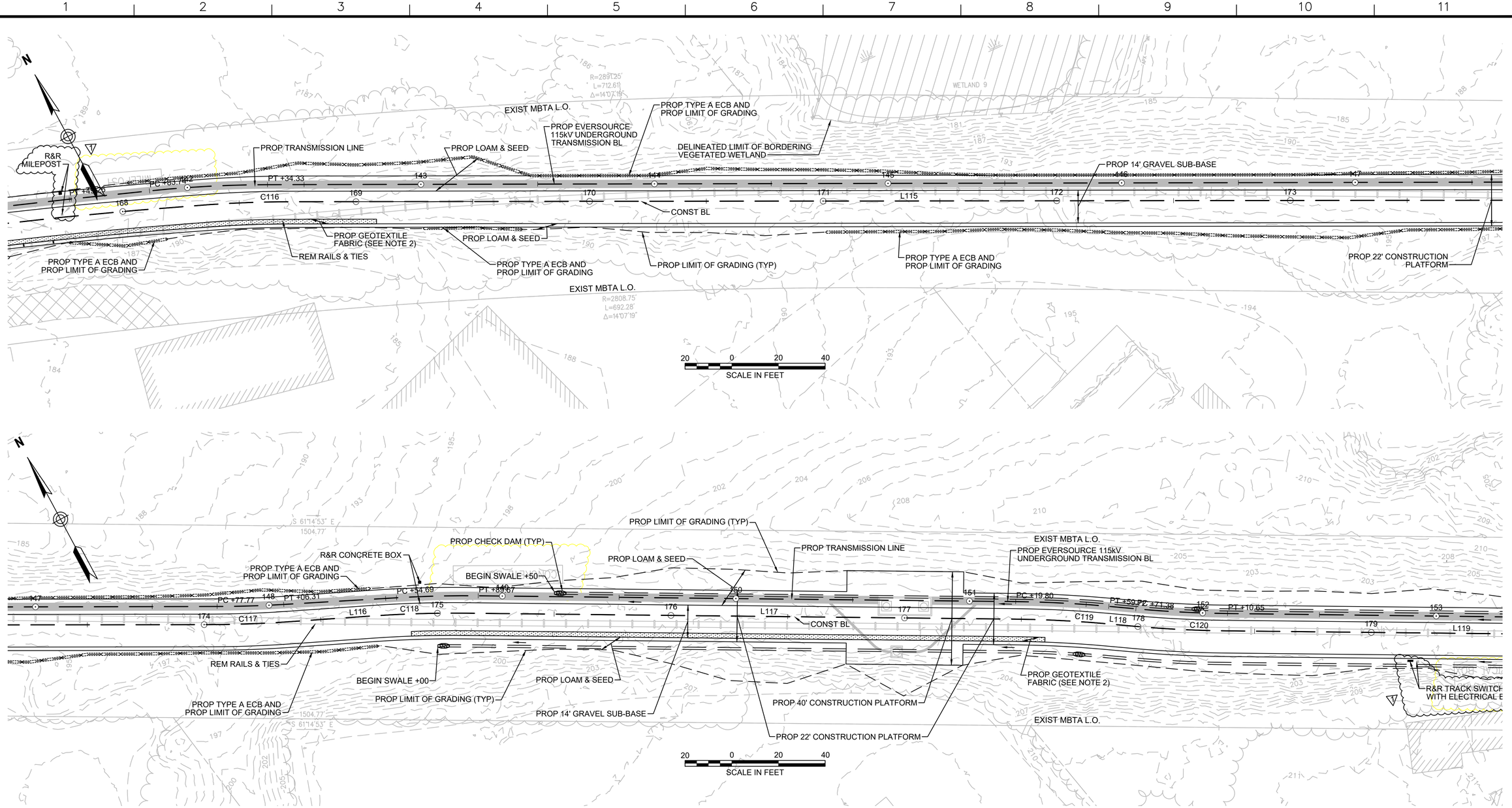
CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 31 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).
2. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 8" GRAVEL BORROW WITHIN LIMITS SHOWN.

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NO.	REVISION DESCRIPTION	BY	DATE	APPR.
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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 32 OF 349

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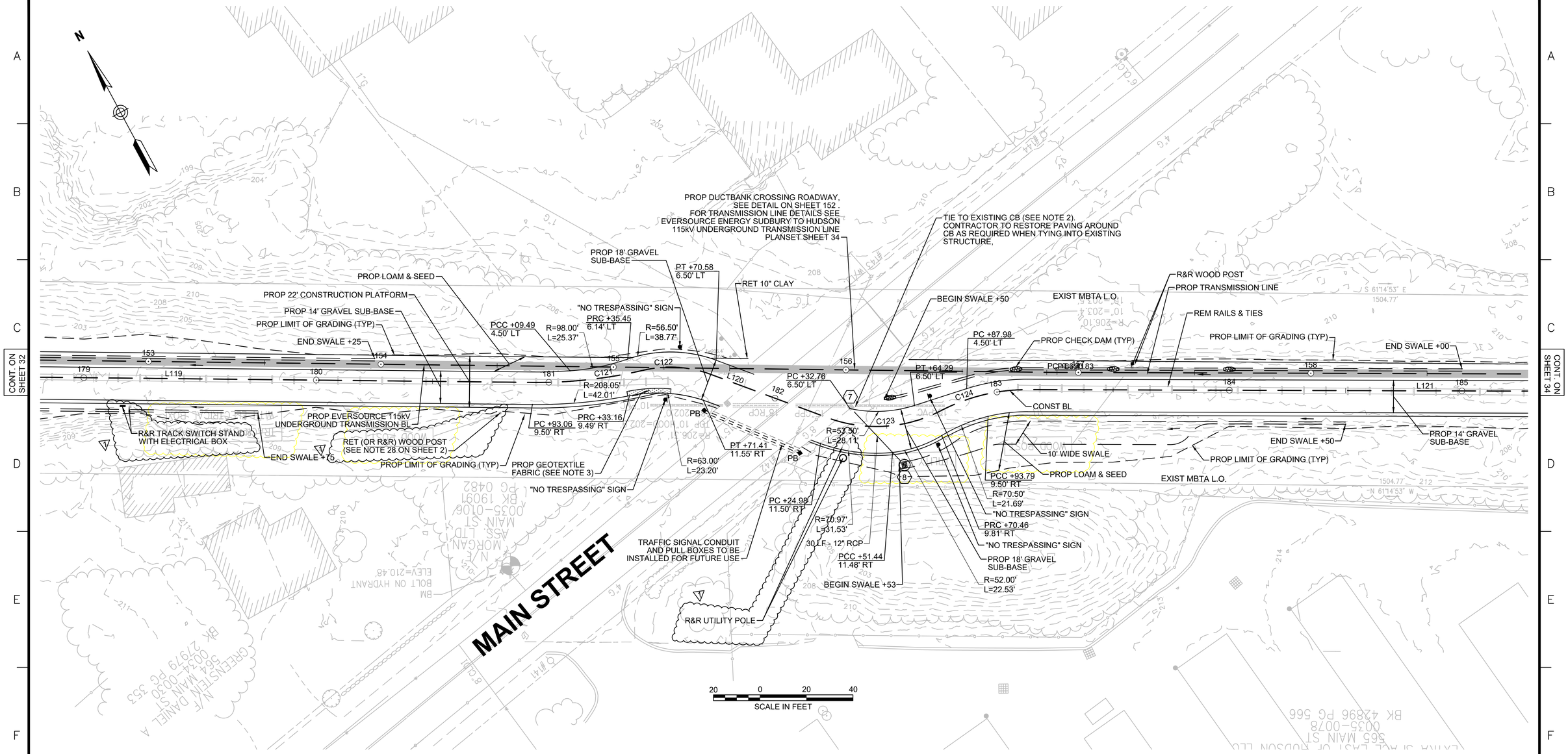

DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
7	EX CB	STA 182+32, 6.9' RT	206.10 (EX)	203.90' (8)	203.5 (EX)	
8	SHALLOW CB	STA 182+55, 15.3' RT	205.44		203.50'	SEE CONSTRUCTION DETAIL ON SHEET 156

NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).
2. CONTRACTOR TO VERIFY EXISTING DRAINAGE DISCHARGE PRIOR TO CONSTRUCTION.
3. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 8" GRAVEL BORROW WITHIN LIMITS SHOWN.

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

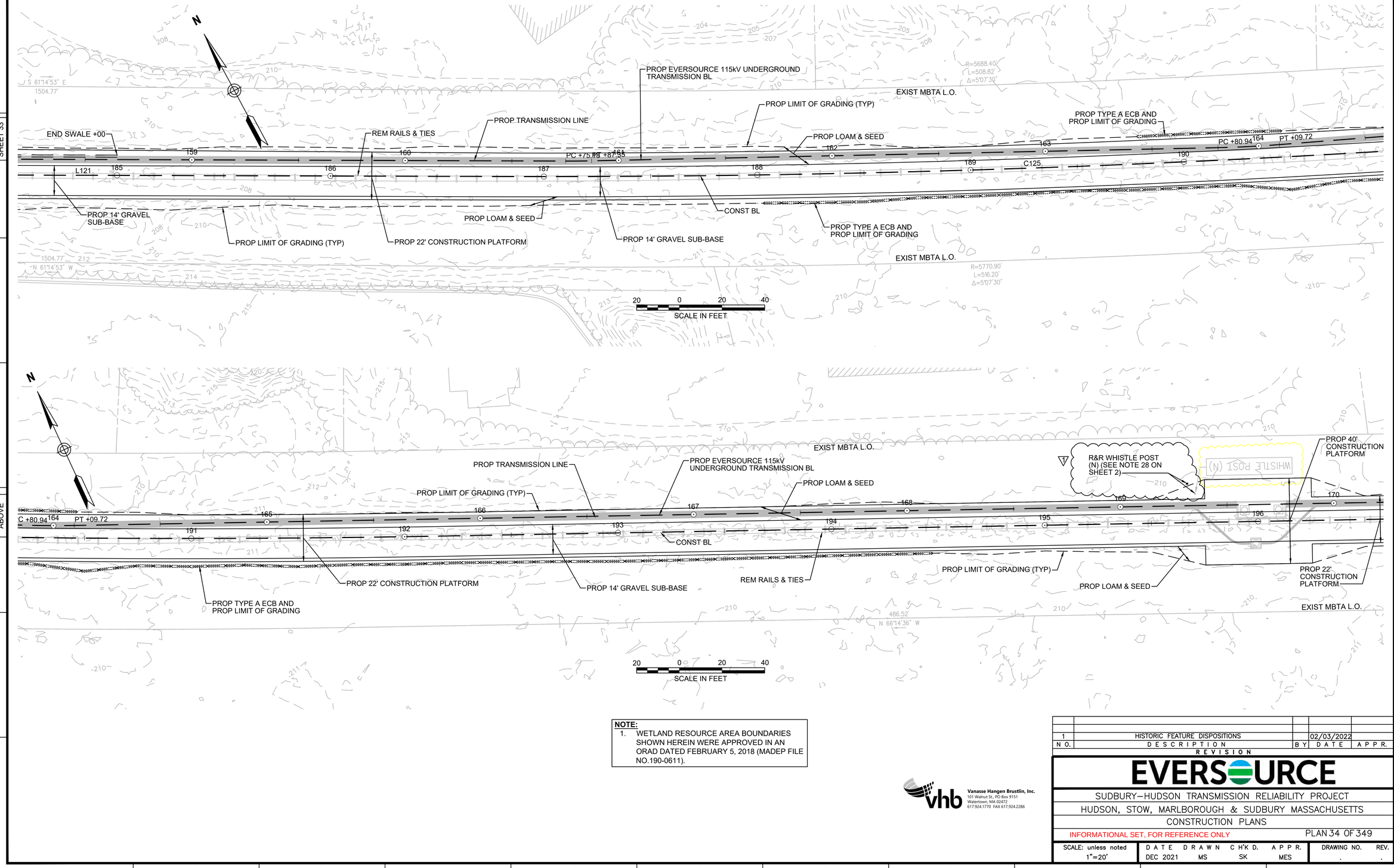
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 33 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 34 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.

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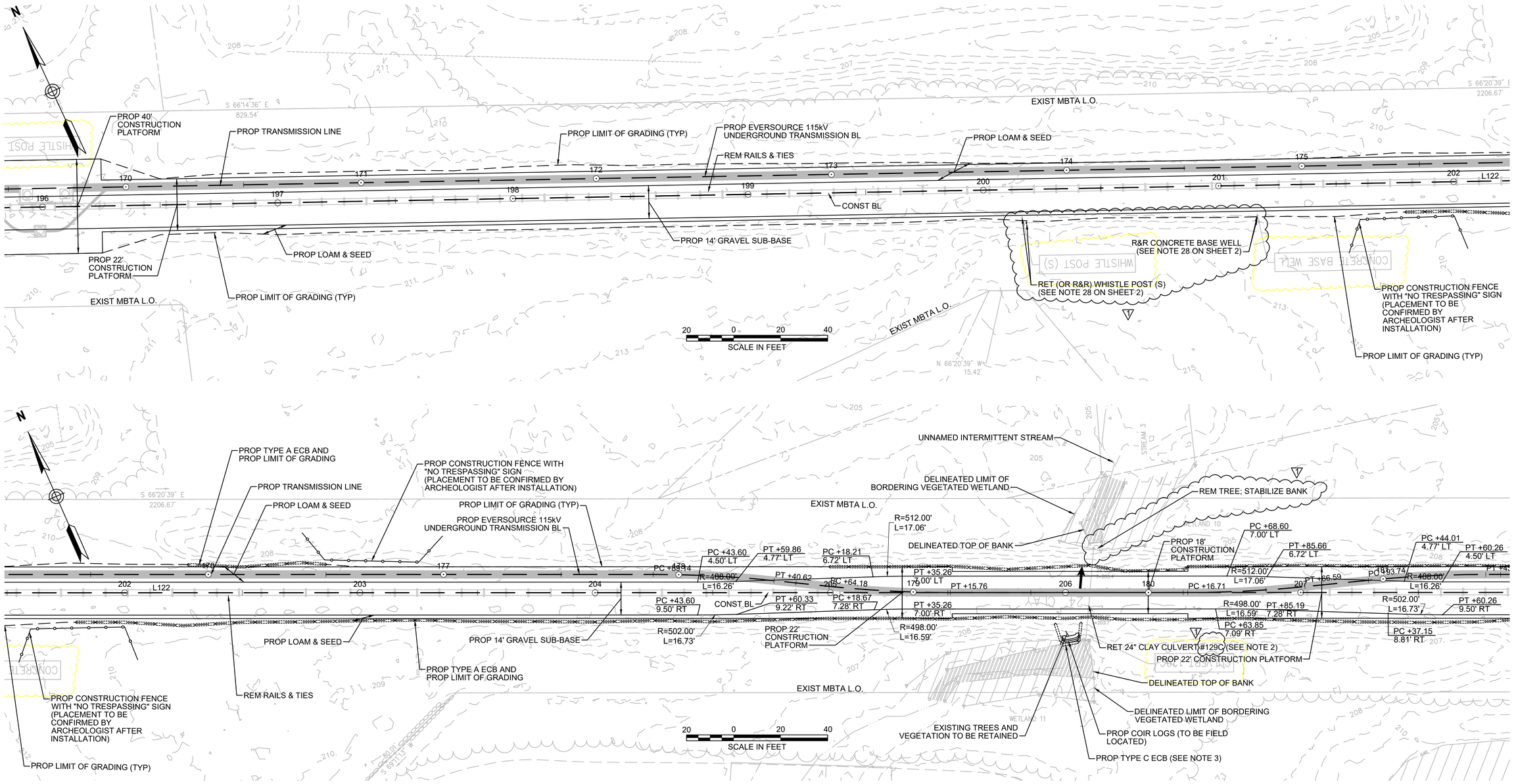
CONT. ON SHEET 34



CONT. ON SHEET 35

NOTE:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).
2. CONTRACTOR TO CUT TREE ON NORTHEAST CORNER OF PIPE. NO GRUBBING TO BE PERFORMED OUTSIDE OF LIMITS OF GRADING.
3. TYPE C ECB SHALL CONSIST OF EITHER STAKED 4' HIGH SILT FENCE OR BOTTOM-ANCHORED TURBIDITY CURTAIN DEPENDING ON WATER LEVELS AT THE TIME OF CONSTRUCTION. THE APPROPRIATE ECB SHALL BE INSTALLED AT THE DIRECTION OF THE ENVIRONMENTAL MONITOR.

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

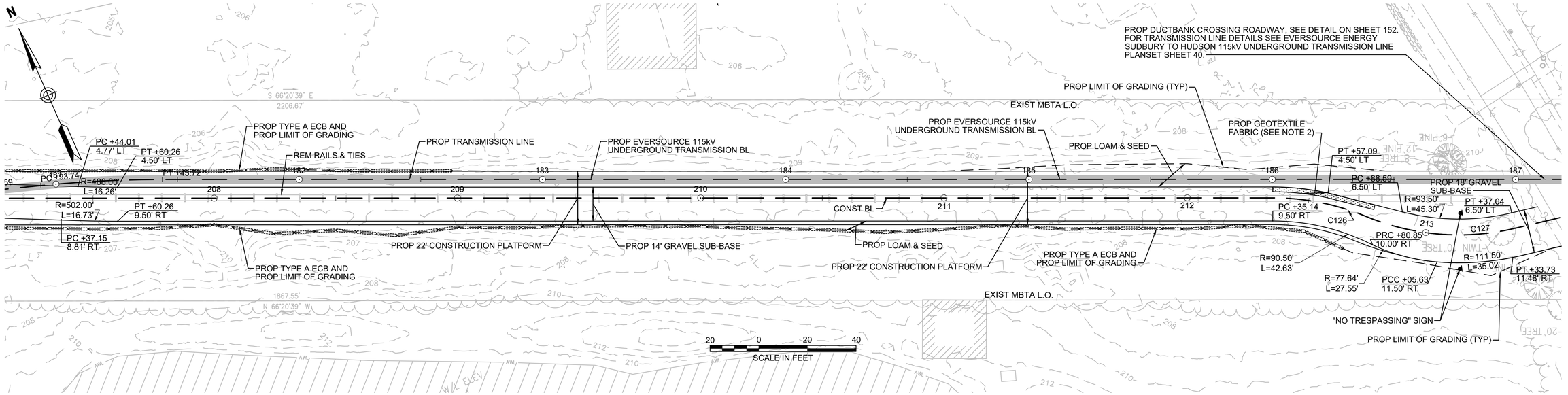
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 35 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).
2. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 8" GRAVEL BORROW WITHIN LIMITS SHOWN.

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 36 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.

PARMENTER ROAD

N

PROP DUCTBANK CROSSING ROADWAY, SEE DETAIL ON SHEET 152. FOR TRANSMISSION LINE DETAILS SEE EVERSOURCE ENERGY SUDBURY TO HUDSON 115kV UNDERGROUND TRANSMISSION LINE PLANSET SHEET 40.

PROP CONSTRUCTION FENCE WITH "NO TRESPASSING" SIGN (PLACEMENT TO BE CONFIRMED BY ARCHEOLOGIST AFTER INSTALLATION)

PROP LIMIT OF GRADING (TYP)

EXIST MBTA L.O.

PROP EVERSOURCE 115kV UNDERGROUND TRANSMISSION BL

PROP LOAM & SEED

PROP GEOTEXTILE FABRIC (SEE NOTE 2)

PROP 18" GRAVEL SUB-BASE

214+41.66 1-SUDBURY-HUDSON-ACCESS-ROAD= 300+00.00 2-SUDBURY-HUDSON-ACCESS-ROAD

PROP TRANSMISSION LINE

PROP 40' CONSTRUCTION PLATFORM

PROP TYPE A ECB AND PROP LIMIT OF GRADING

RET (OR R&R) RAILREST (SEE NOTE 28 ON SHEET 2)

CONT. ON SHEET 36

CONST BL

PROP LOAM & SEED

PROP 22' CONSTRUCTION PLATFORM

PROP TYPE A ECB AND PROP LIMIT OF GRADING

EXIST MBTA L.O.

"NO TRESPASSING" SIGN

PROP LIMIT OF GRADING (TYP)

"NO TRESPASSING" SIGN

REM RAILS & TIES

PROP 14' GRAVEL SUB-BASE

PROP 22' CONSTRUCTION PLATFORM

PROP TYPE A ECB AND PROP LIMIT OF GRADING

300+24.99 2-SUDBURY-HUDSON_ACCESS_DRIVE = 188+26.60 TRANSMISSION_LINE, 7.54' RT

CONT. ON SHEET 38

PT +57.09 4.50' LT

PC +88.59 6.50' LT

PC +35.14 9.50' RT

PT +37.04 6.50' LT

PRC +80.85 10.00' RT

PC +79.60 6.50' LT

R=106.50' L=40.76'

PRC +18.78 5.31' LT

R=73.00' L=10.91'

PT +29.65 4.50' LT

R=93.50' L=45.30'

R=90.50' L=42.63'

R=77.64' L=27.55'

PCC +05.63 11.50' RT

R=111.50' L=35.02'

PT +33.73 11.48' RT

R=88.50' L=22.52'

PC +79.42 11.50' RT

R=102.00' L=12.69'

R=88.50' L=22.52'

PRC +04.81 11.52' RT

R=98.03' L=14.02'

PRC +21.40 10.52' RT

PT +35.37 9.50' RT

20 0 20 40

SCALE IN FEET

NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).
2. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 8" GRAVEL BORROW WITHIN LIMITS SHOWN.

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NO.	DESCRIPTION	BY	DATE	APPR.
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1	HISTORIC FEATURE DISPOSITIONS		02/03/2022	

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

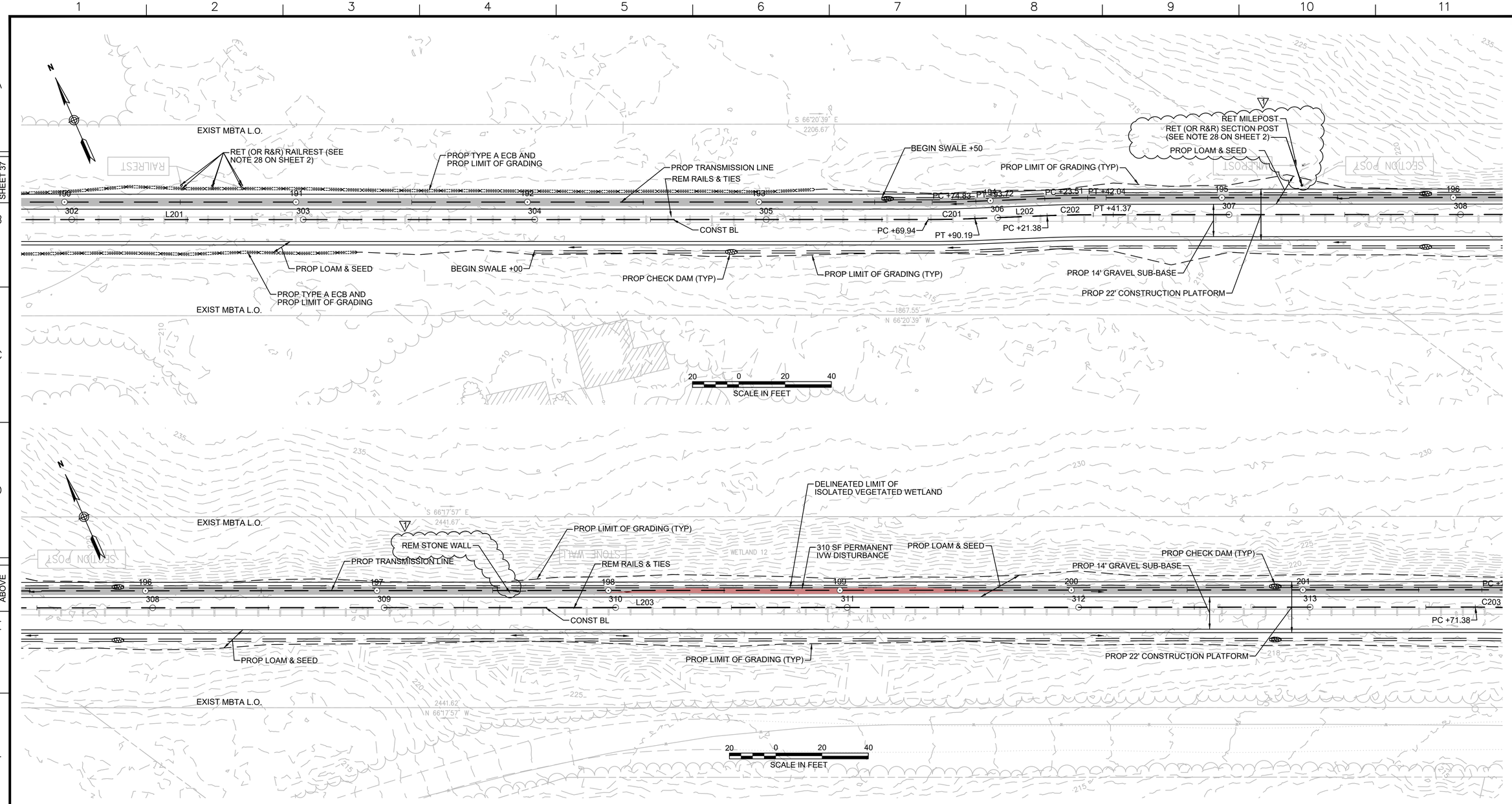
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 37 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



NOTE:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).

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NO.	REVISION DESCRIPTION	BY	DATE	APPR.
1	HISTORIC FEATURE DISPOSITIONS		02/03/2022	

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 38 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.

CONT. ON SHEET 38

CONT. BELOW

EXIST MBTA L.O.

PROP LIMIT OF GRADING (TYP)

PROP 22' CONSTRUCTION PLATFORM

PROP TRANSMISSION LINE

PROP LOAM & SEED

316+25 2-SUDBURY-HUDSON_ACCESS_DRIVE = 204+26.59 TRANSMISSION_LINE, 7.54' RT

END SWALE +25

PROP 22' CONSTRUCTION PLATFORM

PROP TYPE A ECB AND PROP LIMIT OF GRADING

PC +77.34 PT +93.38

PC +37.5 PT +53.45

C203

L204

C204

PT +40.99

PC +71.38

PT +91.37

PC +21.05

CONST BL

REM RAILS & TIES

END SWALE +75

PROP 40' CONSTRUCTION PLATFORM

PROP LOAM & SEED

PROP 14' GRAVEL SUB-BASE

PROP LIMIT OF GRADING (TYP)

PROP CHECK DAM (TYP)

EXIST MBTA L.O.

SCALE IN FEET

CONT. ABOVE

CONT. ON SHEET 40

EXIST MBTA L.O.

PROP TRANSMISSION LINE

PROP TYPE A ECB AND PROP LIMIT OF GRADING

REM RAILS & TIES

PROP LOAM & SEED

PROP 22' CONSTRUCTION PLATFORM

CONST BL

PROP LOAM & SEED

PROP 14' GRAVEL SUB-BASE

PROP LIMIT OF GRADING (TYP)

PROP TYPE A ECB AND PROP LIMIT OF GRADING

EXIST MBTA L.O.

S 66°17'57" E 2441.67

N 66°17'57" W 2441.62

BM STONE BOUND ELEV=202.07

100-YEAR FLOOD

SCALE IN FEET

NOTE:

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 39 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.

CONT. ON SHEET 39

NO IMPACTS TO 100-YEAR FLOOD - NO FILL IN FLOODPLAIN
SEE STA 326+00 TO STA 331+50 IN CROSS- SECTIONS FOR MORE INFORMATION

EXIST MBTA L.O.

100-YEAR FLOOD

PROP 22' CONSTRUCTION PLATFORM

PROP TYPE A ECB AND PROP LIMIT OF GRADING

PROP TRANSMISSION LINE

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

PROP LOAM & SEED

WETLAND 14

WETLAND 13

213 214 215 216 217 218
325 L205 326 327 328 329 330

CONST BL

REM RAILS & TIES

PROP LOAM & SEED

PROP TYPE A ECB AND PROP LIMIT OF GRADING

PROP 14' GRAVEL SUB-BASE

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

EXIST MBTA L.O.

100-YEAR FLOOD

S 66°17'57" E 2441.67'

2441.82' N 66°17'57" W

20 0 20 40
SCALE IN FEET

CONT. BELOW

CONT. ABOVE

100-YEAR FLOOD

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

EXIST MBTA L.O.

NO IMPACTS TO 100-YEAR FLOOD - NO FILL IN FLOODPLAIN
SEE STA 326+00 TO STA 331+50 IN CROSS- SECTIONS FOR MORE INFORMATION

PROP TYPE A ECB AND PROP LIMIT OF GRADING

PROP TRANSMISSION LINE

PROP TYPE B ECB AND PROP LIMIT OF GRADING

PROP 22' CONSTRUCTION PLATFORM

PROP LIMIT OF GRADING (TYP)

"NO TRESPASSING" SIGN

PROP LOAM & SEED

REM RAILS & TIES

PT +25.50 4.50' LT

219 220 221 222 223 224
331 332 333 334 335 336

CONST BL

PROP LOAM & SEED

PROP TYPE A ECB AND PROP LIMIT OF GRADING

PROP TYPE B ECB AND PROP LIMIT OF GRADING

PROP 14' GRAVEL SUB-BASE

PT +25.50 9.50' RT

PROP LIMIT OF GRADING (TYP)

PROP 40' CONSTRUCTION PLATFORM

EXIST MBTA L.O.

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

100-YEAR FLOOD

S 66°16'51" E 2172.27'

N 66°16'51" W 2172.26'

335+25 2-SUDBURY-HUDSON_ACCESS_DRIVE = 223+26.59 TRANSMISSION_LINE, 7.55' RT

20 0 20 40
SCALE IN FEET

CONT. ON SHEET 41

NOTE:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).
2. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND WITHIN 450' OF VERNAL POOLS. SEE DETAIL ON SHEET 154.

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 40 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
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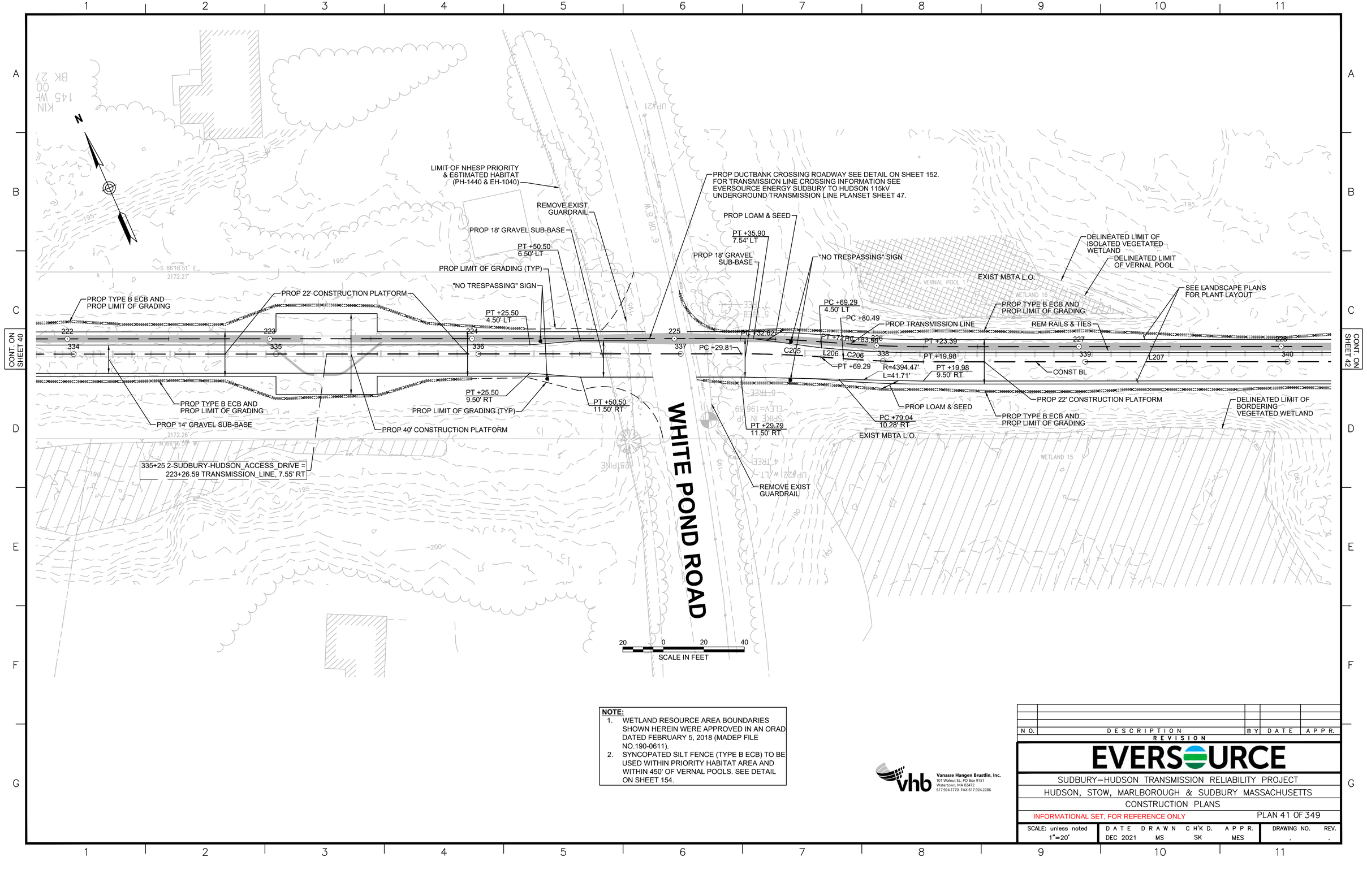

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NO.	DESCRIPTION	BY	DATE	APP'R.
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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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PLAN 41 OF 349

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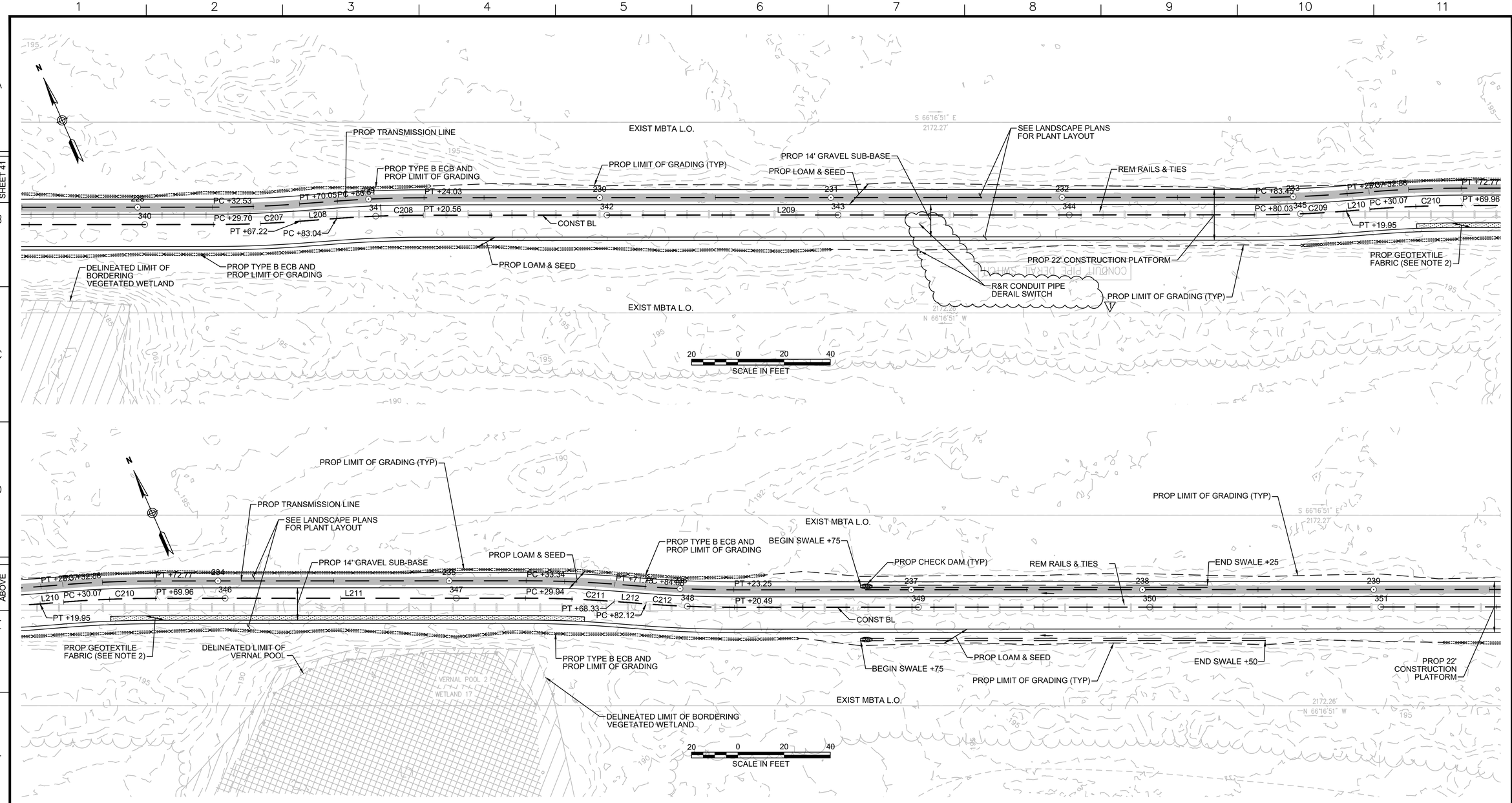

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2. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 8" GRAVEL BORROW WITHIN LIMITS SHOWN.
3. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 450' OF VERNAL POOLS. SEE DETAIL ON SHEET 154.

NO.	DESCRIPTION	BY	DATE	APPR.
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CONSTRUCTION PLANS

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PLAN 42 OF 349

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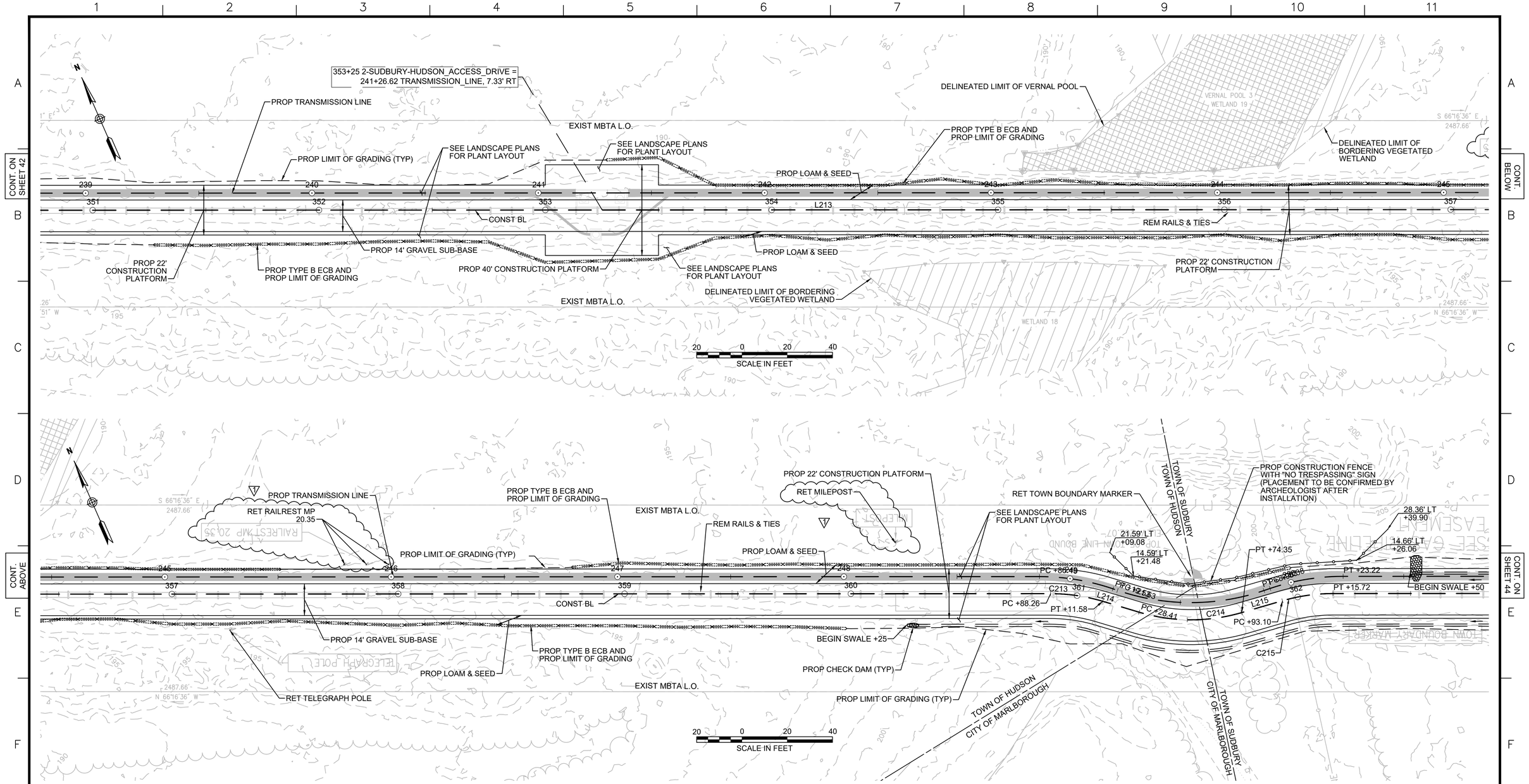

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NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			
1	HISTORIC FEATURE DISPOSITIONS		02/03/2022	

Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
Watertown, MA 02472
617.924.1770 FAX 617.924.2286

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

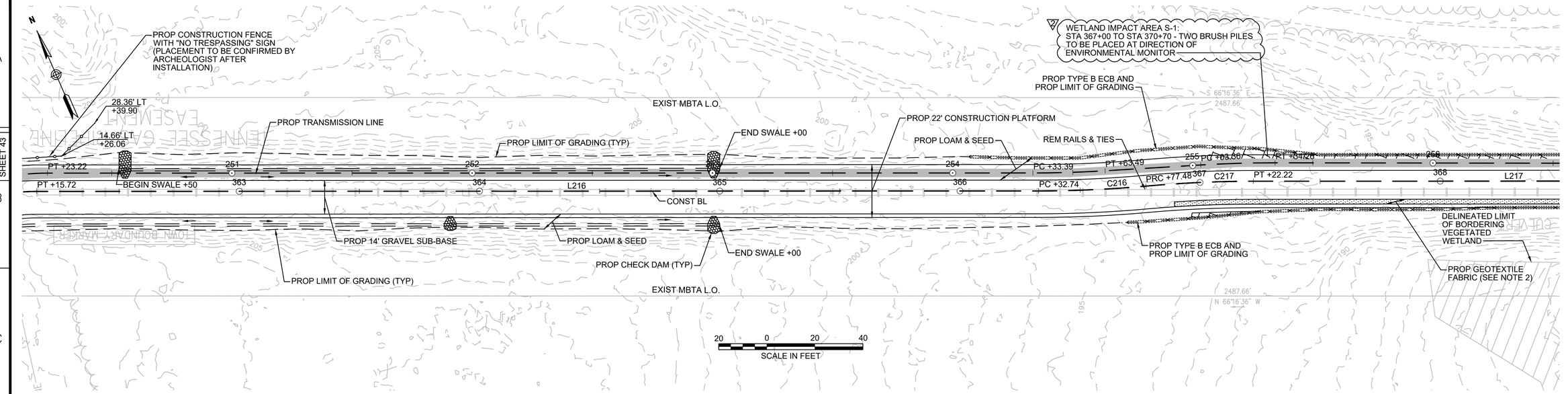
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 43 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO.301-1227).
2. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 8" GRAVEL BORROW WITHIN LIMITS SHOWN.
3. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 450' OF VERNAL POOLS. SEE DETAIL ON SHEET 154.

NO.	DESCRIPTION	BY	DATE	APPR.
2	ENVIRONMENTAL EDITS		03/28/2022	

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PLAN 44 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP R.	DRAWING NO.	REV.
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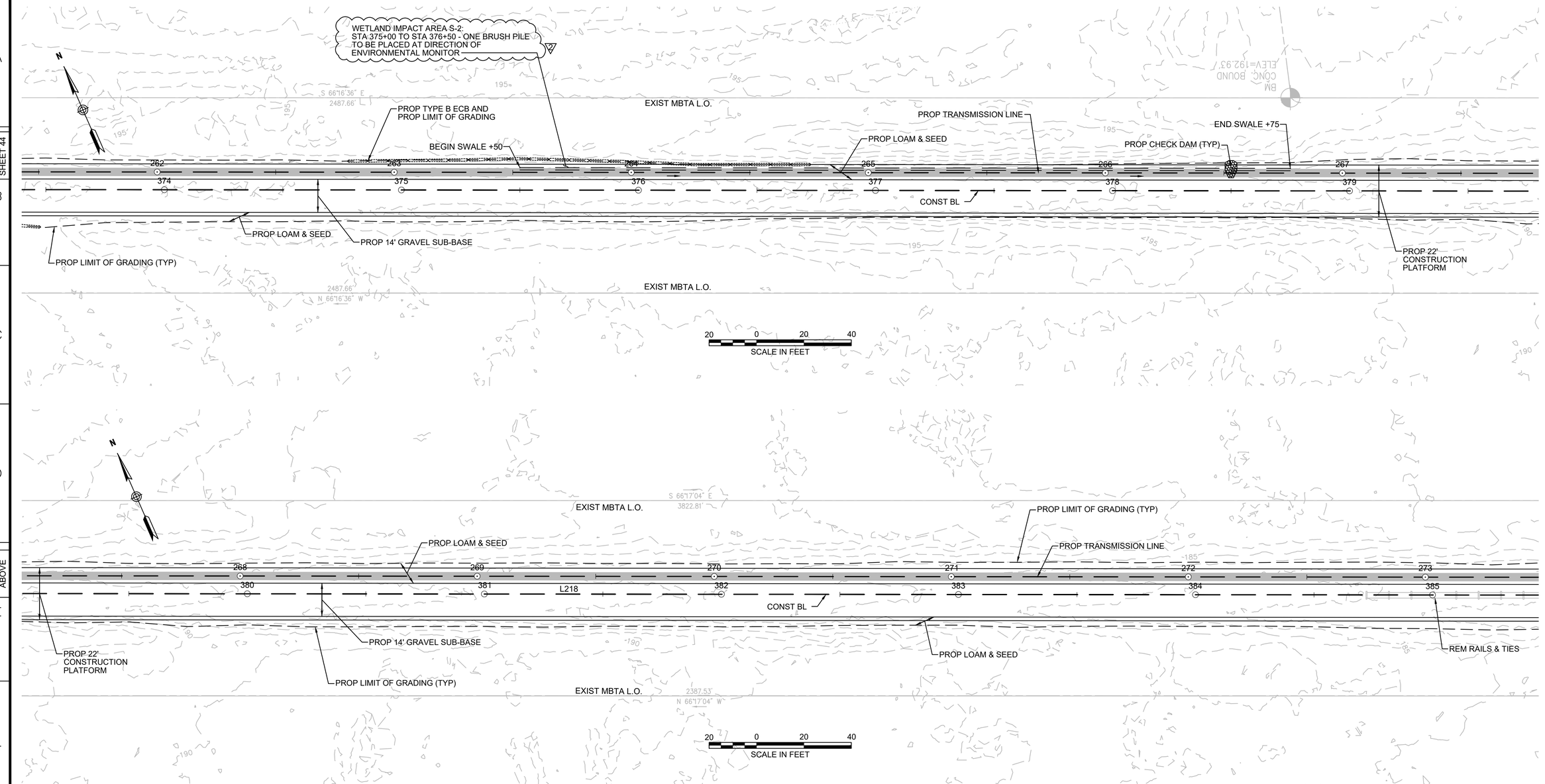

NOTE:

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

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PLAN 45 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.

CONT. ON SHEET 45

EXIST MBTA L.O.

PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

PROP TRANSMISSION LINE

273 385 274 386 275 387 276 388 277 389 278 390 279 391

CONST BL

REM RAILS & TIES

PROP 14' GRAVEL SUB-BASE

PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

PROP 22' CONSTRUCTION PLATFORM

PROP 22' CONSTRUCTION PLATFORM

PROP 22' CONSTRUCTION PLATFORM

EXIST MBTA L.O.

S 66°17'04" E 3822.81'

N 66°17'04" W 2387.53'

390+25 2-SUDBURY-HUDSON_ACCESS_DRIVE = 278+26.54 TRANSMISSION_LINE, 7.54' RT

20 0 20 40

SCALE IN FEET

CONT. BELOW

CONT. ABOVE

EXIST MBTA L.O.

PROP LIMIT OF GRADING (TYP)

REM RAILS & TIES

BEGIN SWALE +00

PROP LOAM & SEED

PROP TRANSMISSION LINE

PROP CHECK DAM (TYP)

279 391 280 392 281 393 282 394 283 395 284 396

PI +27.00

CONST BL

PROP 22' CONSTRUCTION PLATFORM

PROP 14' GRAVEL SUB-BASE

PROP LOAM & SEED

BEGIN SWALE +00

PROP LIMIT OF GRADING (TYP)

PROP TOP OF BERM (SEE TYPICAL SECTION ON SHEET 17)

END SWALE +50

PROP TYPE B ECB AND PROP LIMIT OF GRADING

EXIST MBTA L.O.

20 0 20 40

SCALE IN FEET

WETLAND IMPACT AREA S-3:
STA 395+75 TO STA 399+10 - FIVE BRUSH PILES TO BE PLACED AND REUSE TWO SIGNIFICANT SNAGS AS FALLEN LOGS AT DIRECTION OF ENVIRONMENTAL MONITOR

R=498.00'
L=24.88'

PROP TYPE B ECB AND PROP LIMIT OF GRADING

PC +65.92
4.50' LT

PC +41.82

R=512.00'
L=25.58'

PC +65.92
9.50' RT

CONT. ON SHEET 47

NOTE:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO.301-1227).
2. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 450' OF VERNAL POOLS. SEE DETAIL ON SHEET 154.

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

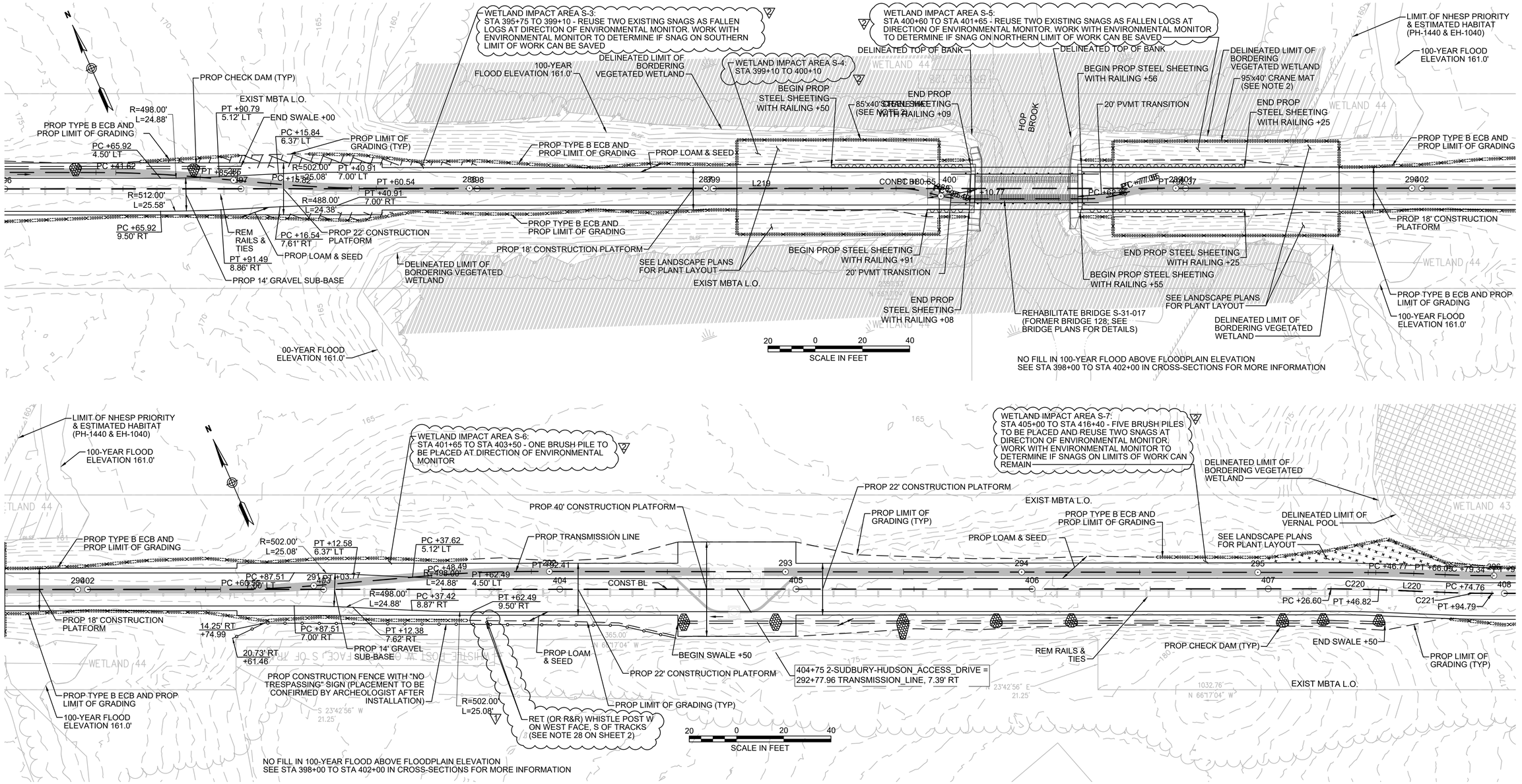
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 46 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO.301-1227).
2. MAXIMUM CRANE PAD DIMENSIONS OF 40'X40' ARE ALLOWED AT ANY GIVEN TIME. A LONGER CRANE MAT FOOTPRINT IS SHOWN HERE TO ALLOW THE CRANE MAT LOCATION TO BE SHIFTED DURING CONSTRUCTION OF THE STEEL SHEETING AND BRIDGE.
3. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 450' OF VERNAL POOLS. SEE DETAIL ON SHEET 154.

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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 47 OF 349

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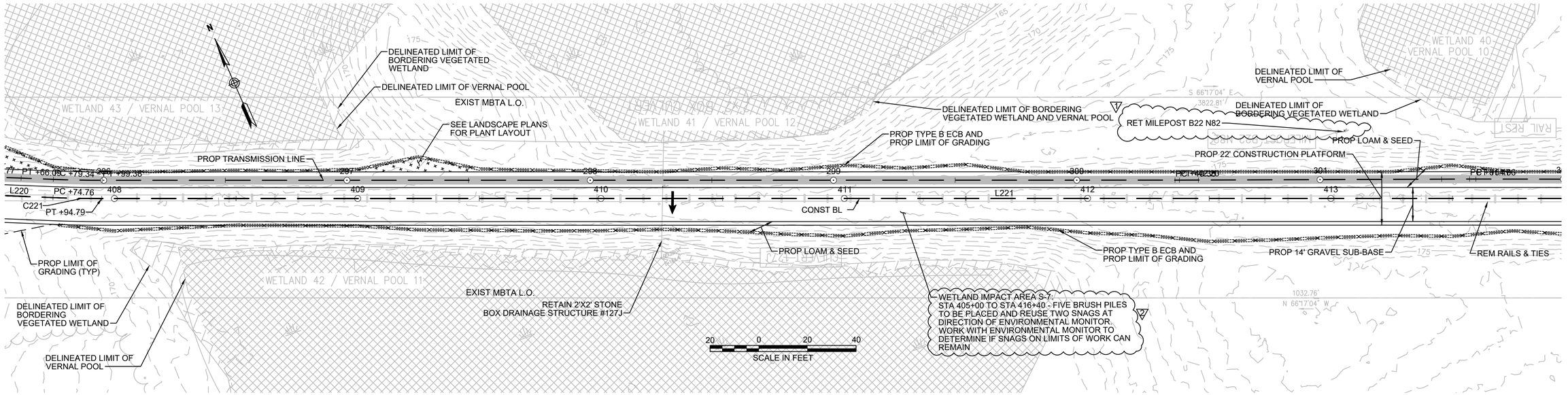
1"=20'	DEC 2021	MS	SK	MES	.	.



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REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 48 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.

NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO.301-1227).
2. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 12" GRAVEL BORROW WITHIN LIMITS SHOWN.
3. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 450' OF VERNAL POOLS. SEE DETAIL ON SHEET 154.

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NO.	DESCRIPTION	BY	DATE	APPR.

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

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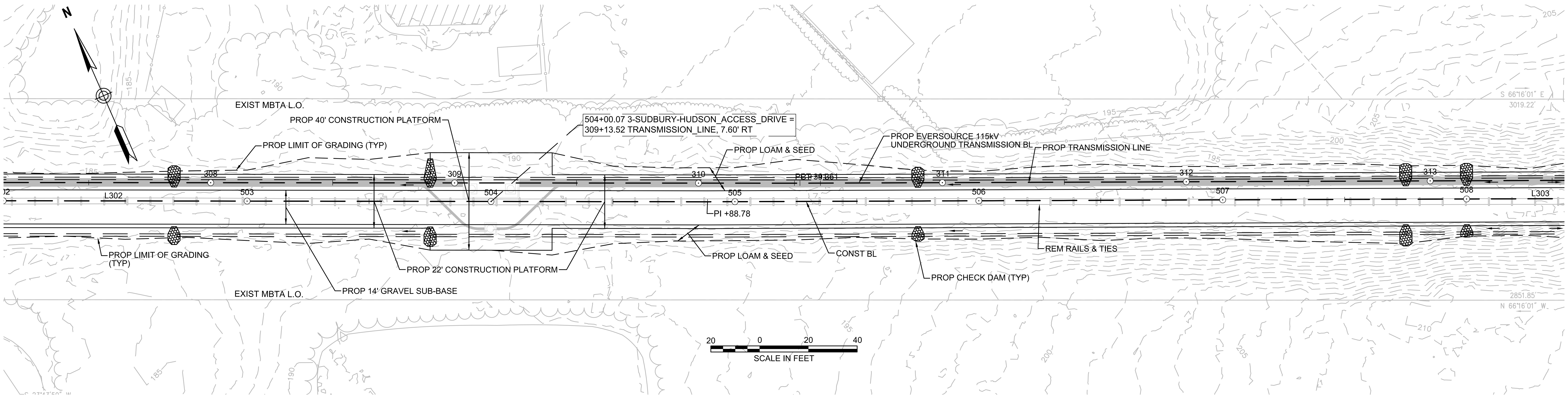
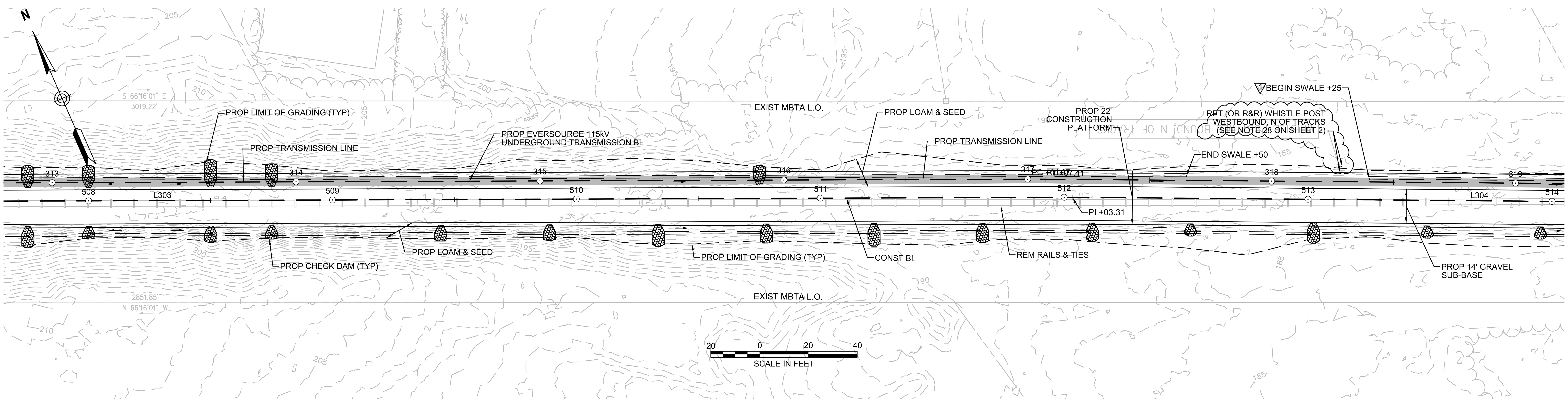
PLAN 49 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.





NOTE:
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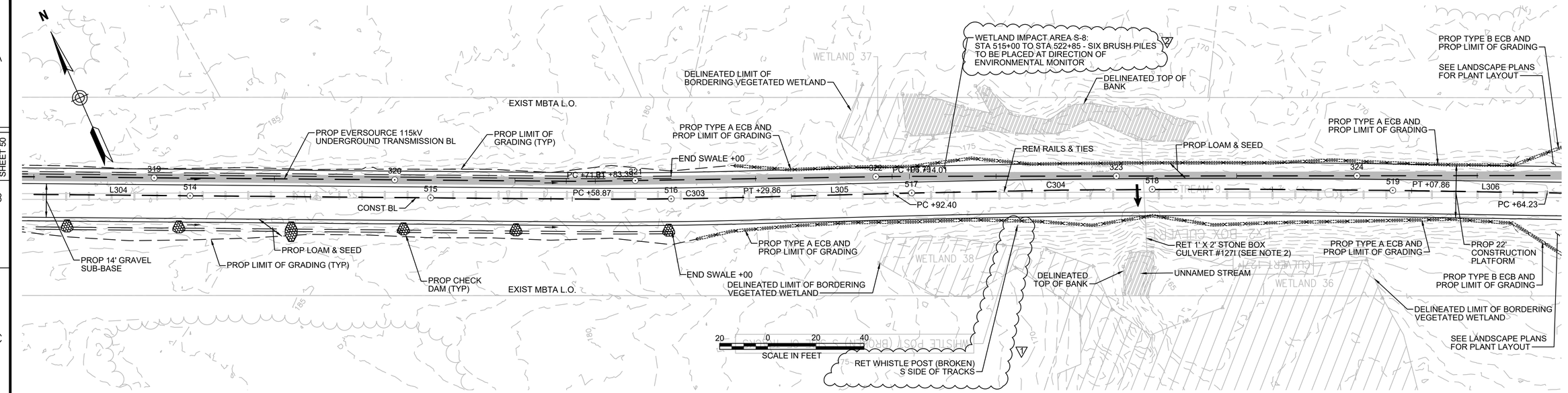
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 50 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).
2. CONTRACTOR TO CLEAR OUT DEBRIS IN NORTH END OF STONE BOX CULVERT BY HAND.
3. CONTRACTOR TO CUT TWO 12" TREES ON SOUTHWEST WINGWALL OF STONE BOX DRAINAGE STRUCTURE. NO GRUBBING TO BE PERFORMED OUTSIDE OF LIMITS OF GRADING.
4. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 450' OF VERNAL POOLS. SEE DETAIL ON SHEET 154.

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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

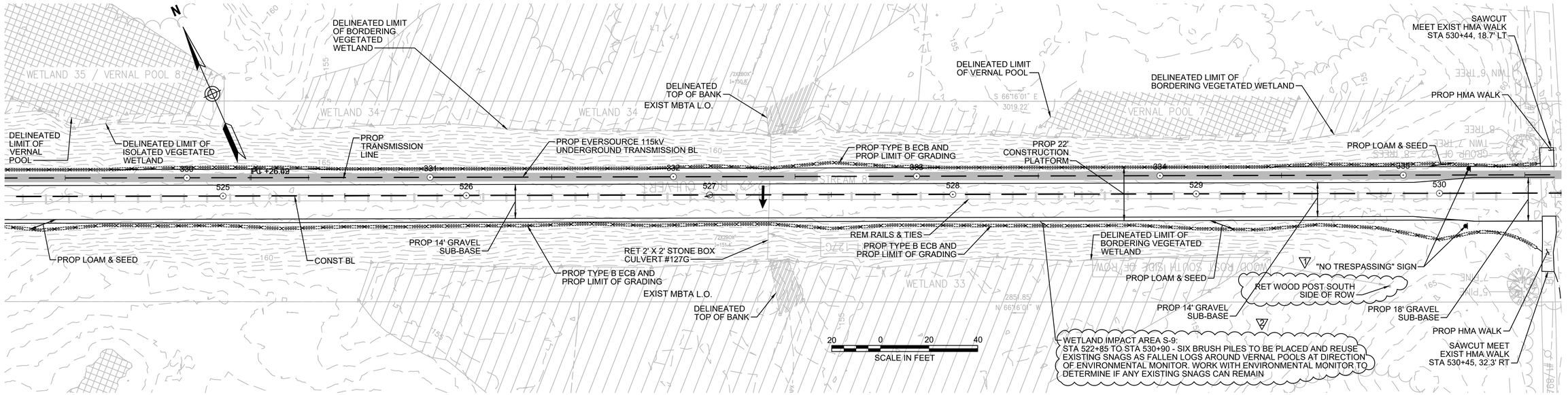
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 51 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K'D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

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PLAN 52 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.

PEAKHAM ROAD

DELINEATED LIMIT OF VERNAL POOL

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

PROP HMA WALK

SAWCUT MEET EXIST HMA WALK STA 530+44, 18.7' LT

PROP TYPE B ECB AND PROP LIMIT OF GRADING

PROP 22' CONSTRUCTION PLATFORM

PROP LOAM & SEED

REM RAILS & TIES

PROP TYPE B ECB AND PROP LIMIT OF GRADING

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

PROP LOAM & SEED

"NO TRESPASSING" SIGN

RET WOOD POST SOUTH SIDE OF ROW

PROP 14' GRAVEL SUB-BASE

PROP 18' GRAVEL SUB-BASE

PROP HMA WALK

SAWCUT MEET EXIST HMA WALK STA 530+45, 32.3' RT

WETLAND IMPACT AREA S-9:
STA 522+85 TO STA 530+90 - SIX BRUSH PILES TO BE PLACED AND REUSE EXISTING SNAGS AS FALLEN LOGS AROUND VERNAL POOLS AT DIRECTION OF ENVIRONMENTAL MONITOR. WORK WITH ENVIRONMENTAL MONITOR TO DETERMINE IF ANY EXISTING SNAGS CAN REMAIN

RET (OR R&R) AUTO HIGHWAY FLASHERS/SIGNAL RELAY CABINET (SEE NOTE 28 ON SHEET 2)

PROP 18' GRAVEL SUB-BASE

BEGIN SWALE +00

R&R WOOD POST NORTH SIDE OF ROW

PROP 14' GRAVEL SUB-BASE

"NO TRESPASSING" SIGN

PROP DUCTBANK CROSSING ROADWAY, SEE DETAIL ON SHEET 152. FOR TRANSMISSION LINE DETAILS SEE EVERSOURCE ENERGY SUDBURY TO HUDSON 115kV UNDERGROUND TRANSMISSION LINE PLANSET SHEET 70

PROP LIMIT OF GRADING (TYP)

PROP EVERSOURCE 115kV UNDERGROUND TRANSMISSION BL

PROP CHECK DAM (TYP)

PROP TRANSMISSION LINE

EXIST MBTA L.O.

PROP LOAM & SEED

END SWALE +00

PROP 40' CONSTRUCTION PLATFORM

PROP TYPE B ECB AND PROP LIMIT OF GRADING

PROP 22' CONSTRUCTION PLATFORM

PROP LOAM & SEED

CONST BL

PROP LIMIT OF GRADING (TYP)

265 LF - 12" RCP

EXIST MBTA L.O.

PROP STONE PROTECTION AT FLARED END (SEE DETAIL ON SHEET 153)

PROP 2' DEEP SURFACE BASIN (BOTTOM ELEV=159.5')

ELEV=160.5'

PROP OVERFLOW STONE SWALE ELEV=160.0' (SEE DETAIL ON SHEET 156)

PROP TYPE B ECB AND PROP LIMIT OF GRADING

CONT. ON SHEET 52

CONT. ON SHEET 54

20 0 20 40
SCALE IN FEET

DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
9	SHALLOW CB	STA 530+80, 10.4' RT	164.85		162.00'	SEE CONSTRUCTION DETAIL ON SHEET 156
10	FES	STA 533+46, 14.9' RT	161.68	160.50' (9)		

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CONSTRUCTION PLANS

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PLAN 53 OF 349

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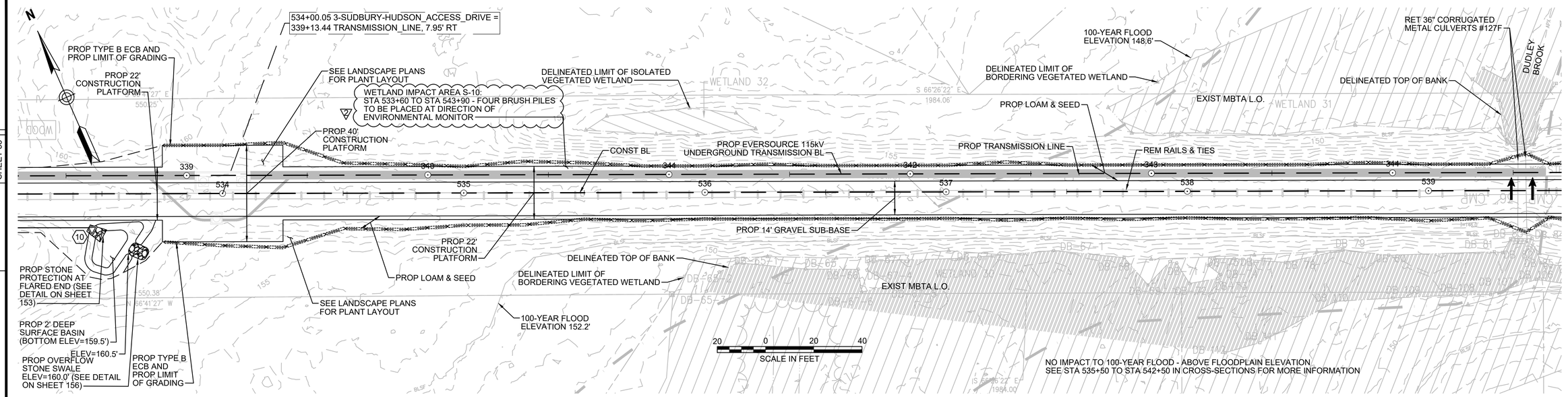

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

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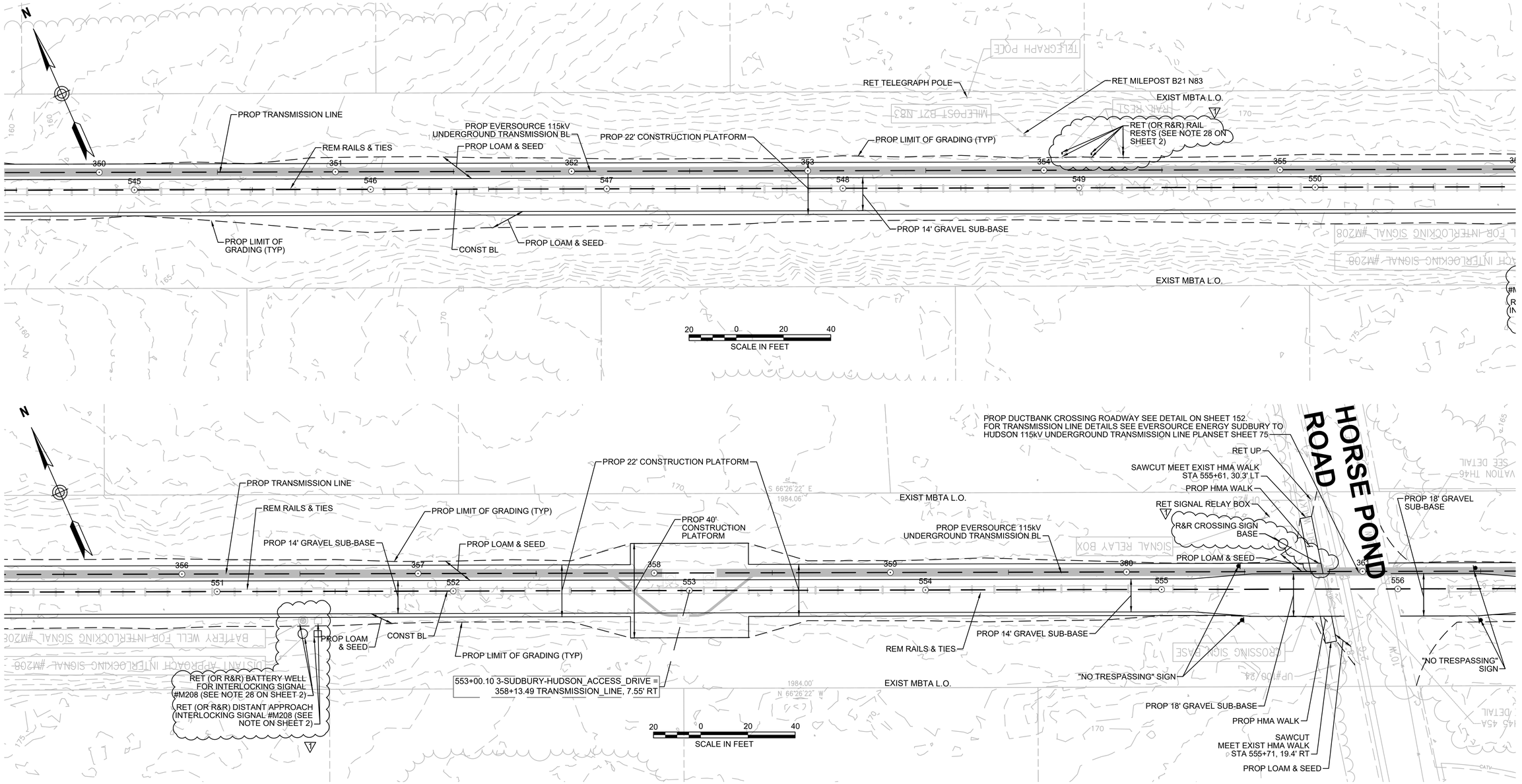
PLAN 54 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



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PLAN 55 OF 349

SCALE: unless noted	DATE DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021 MS	SK	MES	.	.

HORSE POND ROAD

PROP DUCTBANK CROSSING ROADWAY SEE DETAIL ON SHEET 152.
FOR TRANSMISSION LINE DETAILS SEE EVERSOURCE ENERGY SUDBURY TO HUDSON 115kV UNDERGROUND TRANSMISSION LINE PLANSET SHEET 75

RET UP

SAWCUT MEET EXIST HMA WALK
STA 555+61, 30.3' LT

PROP HMA WALK

RET SIGNAL RELAY BOX

R&R CROSSING SIGN BASE

EXIST MBTA L.O.

PROP EVERSOURCE 115kV UNDERGROUND TRANSMISSION BL

PROP 22' CONSTRUCTION PLATFORM

PROP LOAM & SEED

PROP 18' GRAVEL SUB-BASE

PROP LIMIT OF GRADING (TYP)

PROP TRANSMISSION LINE

RET TELEGRAPH POLE

PROP LOAM & SEED

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

WETLAND 29

PROP EVERSOURCE 115kV UNDERGROUND TRANSMISSION BL

RET TELEGRAPH POLE

PROP TYPE B ECB AND PROP LIMIT OF GRADING

PC H+50.70

PI +60.96

PI +75.56

L308

CONT. ON SHEET 55

CONT. ON SHEET 57

REM RAILS & TIES

PROP 14' GRAVEL SUB-BASE

"NO TRESPASSING" SIGN

CONST BL

PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

PROP 14' GRAVEL SUB-BASE

PROP TYPE B ECB AND PROP LIMIT OF GRADING

EXIST MBTA L.O.

"NO TRESPASSING" SIGN

PROP 18' GRAVEL SUB-BASE

PROP HMA WALK

SAWCUT
MEET EXIST HMA WALK
STA 555+71, 19.4' RT

PROP LOAM & SEED

2 WETLAND IMPACT AREA S-11:
STA 558+10 TO STA 564+20 - THREE BRUSH PILES TO BE PLACED AT DIRECTION OF ENVIRONMENTAL MONITOR. WORK WITH ENVIRONMENTAL MONITOR TO DETERMINE IF ANY SNAGS CAN REMAIN OR REUSE AS FALLEN LOGS AROUND VERNAL POOLS

20 0 20 40
SCALE IN FEET

NOTE:

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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 56 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
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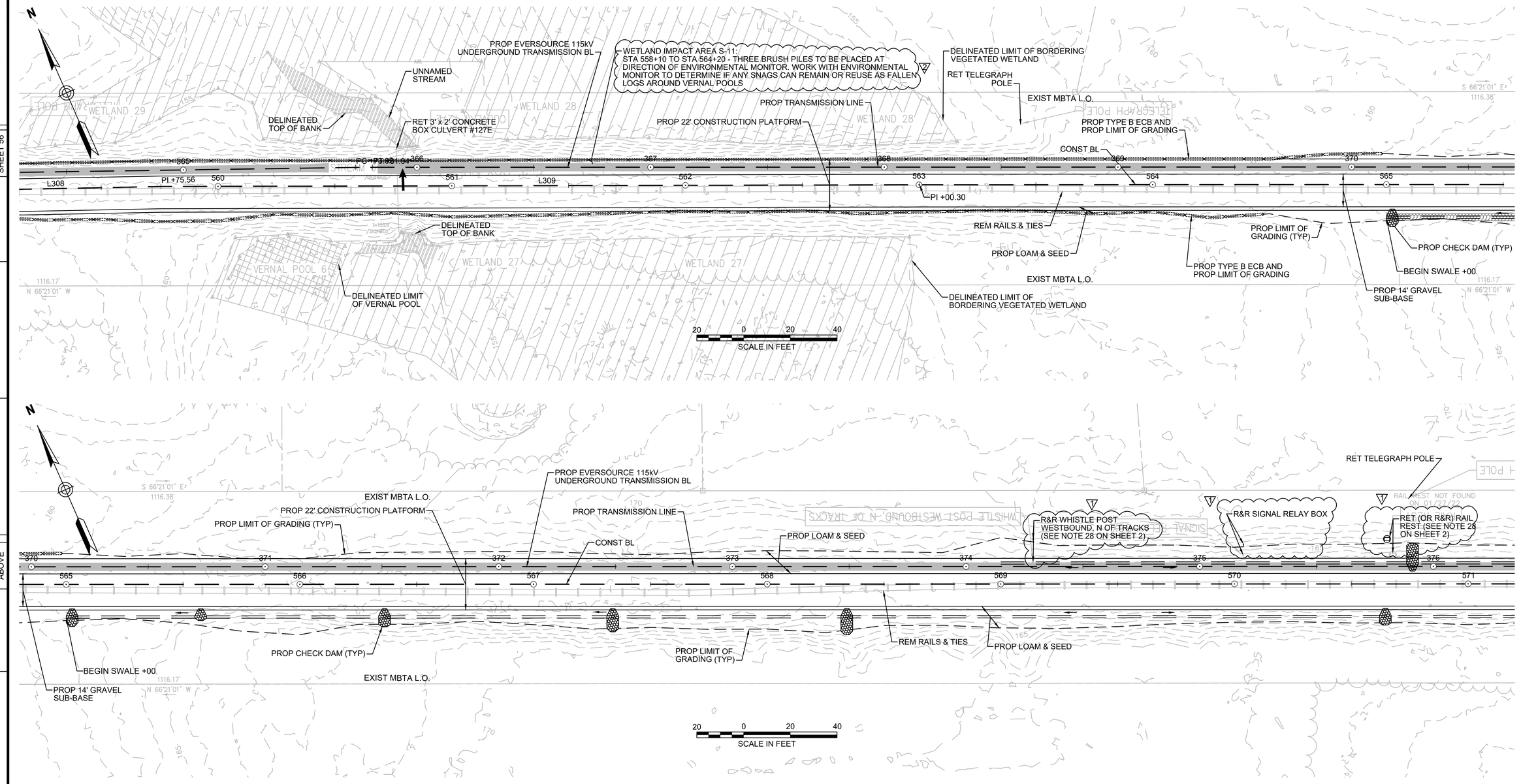

NOTE:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).
2. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 450' OF VERNAL POOLS. SEE DETAIL ON SHEET 154.

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			
2	ENVIRONMENTAL EDITS		03/28/2022	
1	HISTORIC FEATURE DISPOSITIONS		02/03/2022	

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101 Walnut St., PO Box 9151
Watertown, MA 02472
617.924.1770 FAX 617.924.2286

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

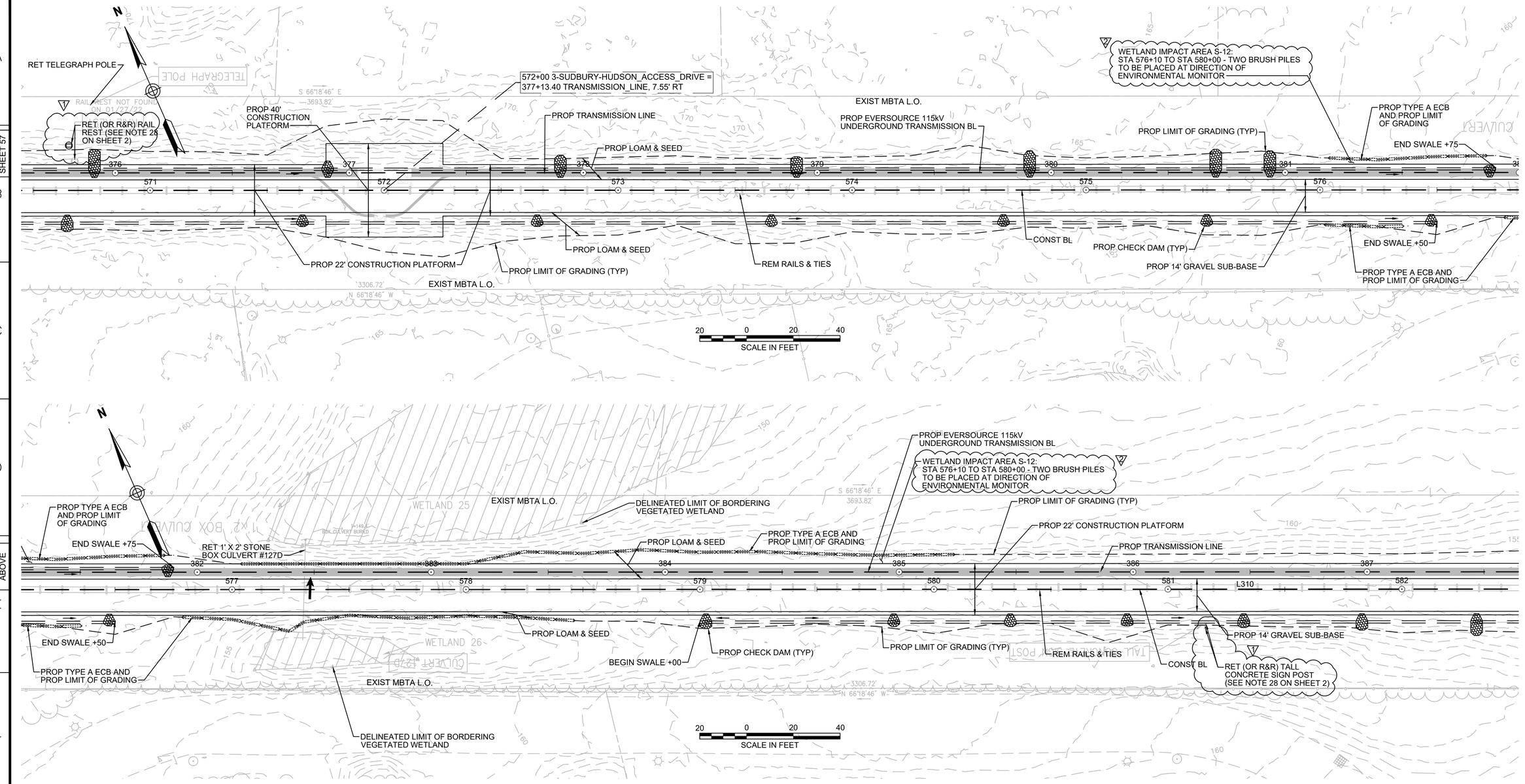
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 57 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



NOTE:

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PLAN 58 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.

CONT. ON SHEET 58

CONT. BELOW

N

EXIST MBTA L.O.

RET TELEGRAPH POLE

RET SIGNAL RELAY BOX

REM RAILS & TIES

PROP EVERSOURCE 115kV UNDERGROUND TRANSMISSION BL

PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

CONST BL

PROP 22' CONSTRUCTION PLATFORM

SEE LANDSCAPE PLANS FOR PLANT LAYOUT

WETLAND IMPACT AREA S-13:
STA 585+25 TO STA 599+75 - SEVEN BRUSH PILES TO BE PLACED AT DIRECTION OF ENVIRONMENTAL MONITOR

PROP TYPE A ECB AND PROP LIMIT OF GRADING

PROP CHECK DAM (TYP)

AREA OF INCREASED INFILTRATION

RET WOOD POST

WOOD POST NOT FOUND ON 01/27/22

PROP 40' CONSTRUCTION PLATFORM

PROP 14' GRAVEL SUB-BASE

DELINEATED TOP OF BANK

20 0 20 40
SCALE IN FEET

CONT. ABOVE

CONT. ON SHEET 60

PROP TRANSMISSION LINE

PROP TYPE B ECB AND PROP LIMIT OF GRADING

PROP TYPE A ECB AND PROP LIMIT OF GRADING

PROP 14' GRAVEL SUB-BASE

END SWALE +25

PROP CHECK DAM (TYP)

PROP 22' CONSTRUCTION PLATFORM

PROP 18' CONSTRUCTION PLATFORM

RET TELEGRAPH POLE

RET 2'X2' STONE BOX CULVERT #127C

UNNAMED STREAM

R=502.00' L=25.08'

R=498.00' L=24.88'

PC +70.81

PC +61.00

PT 592.02

S 66°18'46" E 3693.82'

20 0 20 40
SCALE IN FEET

NOTE:

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2. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 450' OF VERNAL POOLS. SEE DETAIL ON SHEET 154.

NO.	DESCRIPTION	BY	DATE	APPR.
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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

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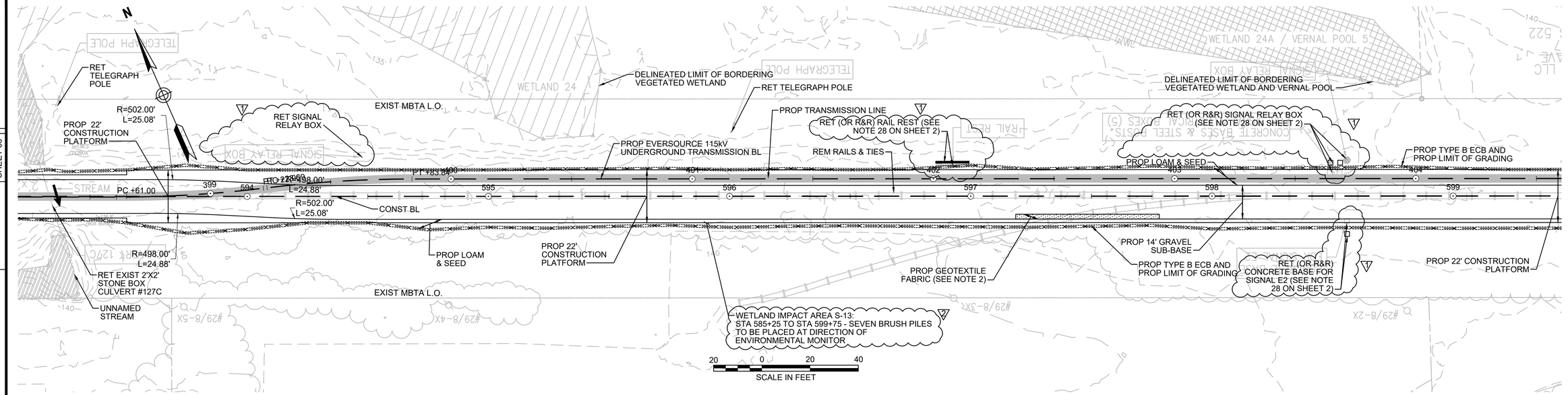
PLAN 59 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP R.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).
2. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 12" GRAVEL BORROW WITHIN LIMITS SHOWN.
3. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 450' OF VERNAL POOLS. SEE DETAIL ON SHEET 154.

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

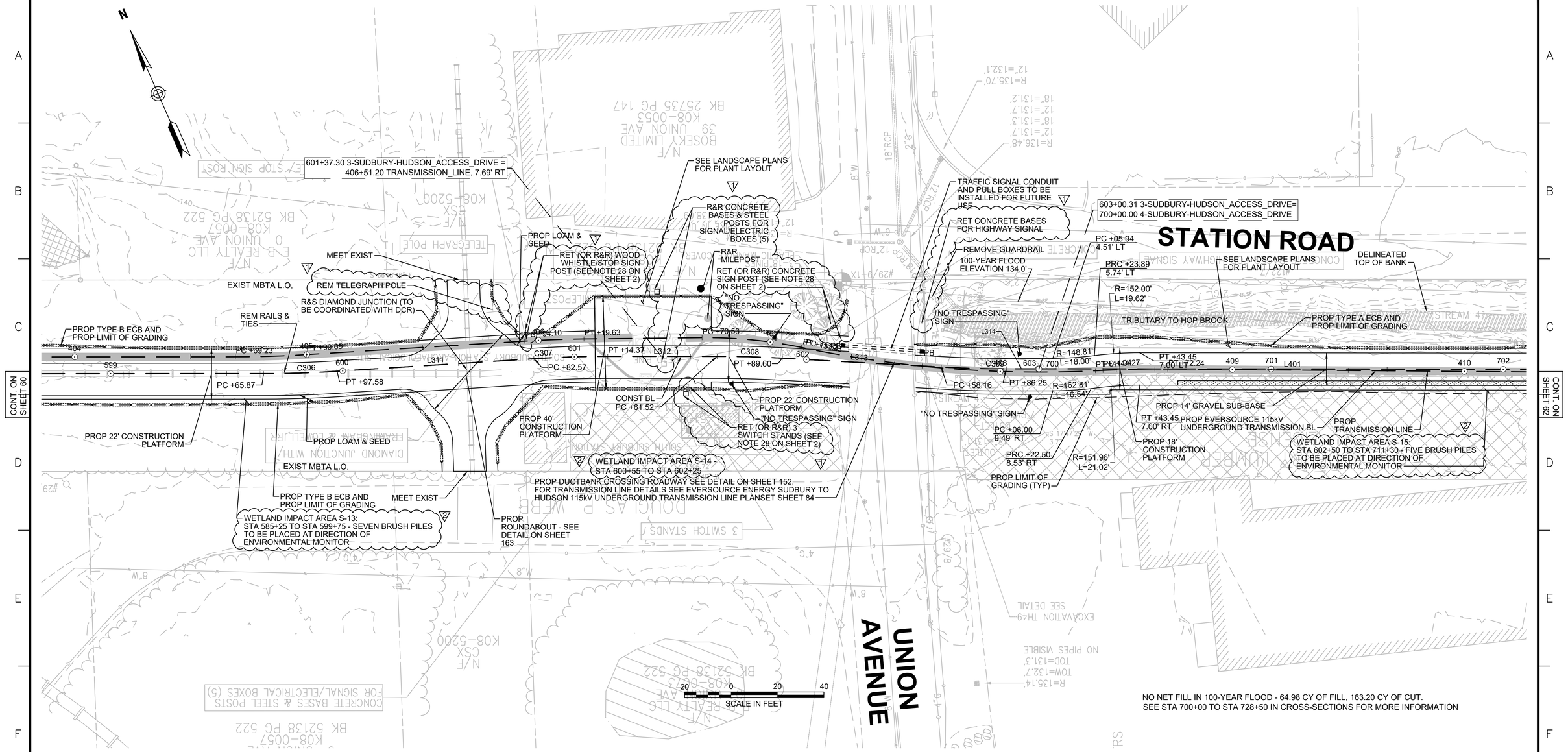
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 60 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



NOTES:

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3. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 450' OF VERNAL POOLS. SEE DETAIL ON SHEET 154.

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PLAN 61 OF 349

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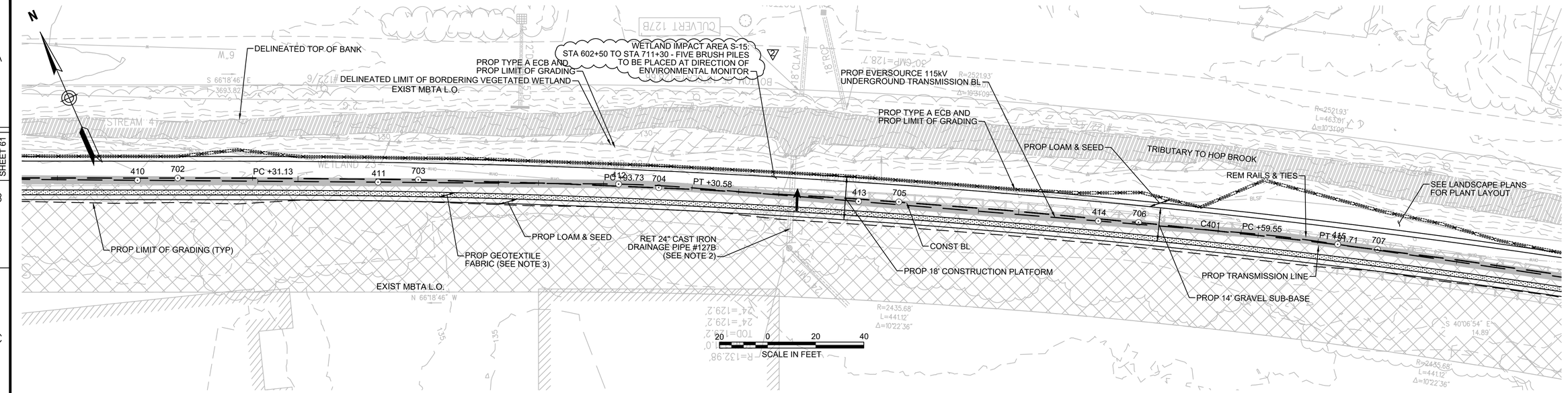

NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).
2. TRANSMISSION LINE TO RUN UNDERNEATH DRAINAGE PIPE (SEE DETAIL ON SHEET 157).
3. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 12" GRAVEL BORROW WITHIN LIMITS SHOWN.

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

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PLAN 62 OF 349

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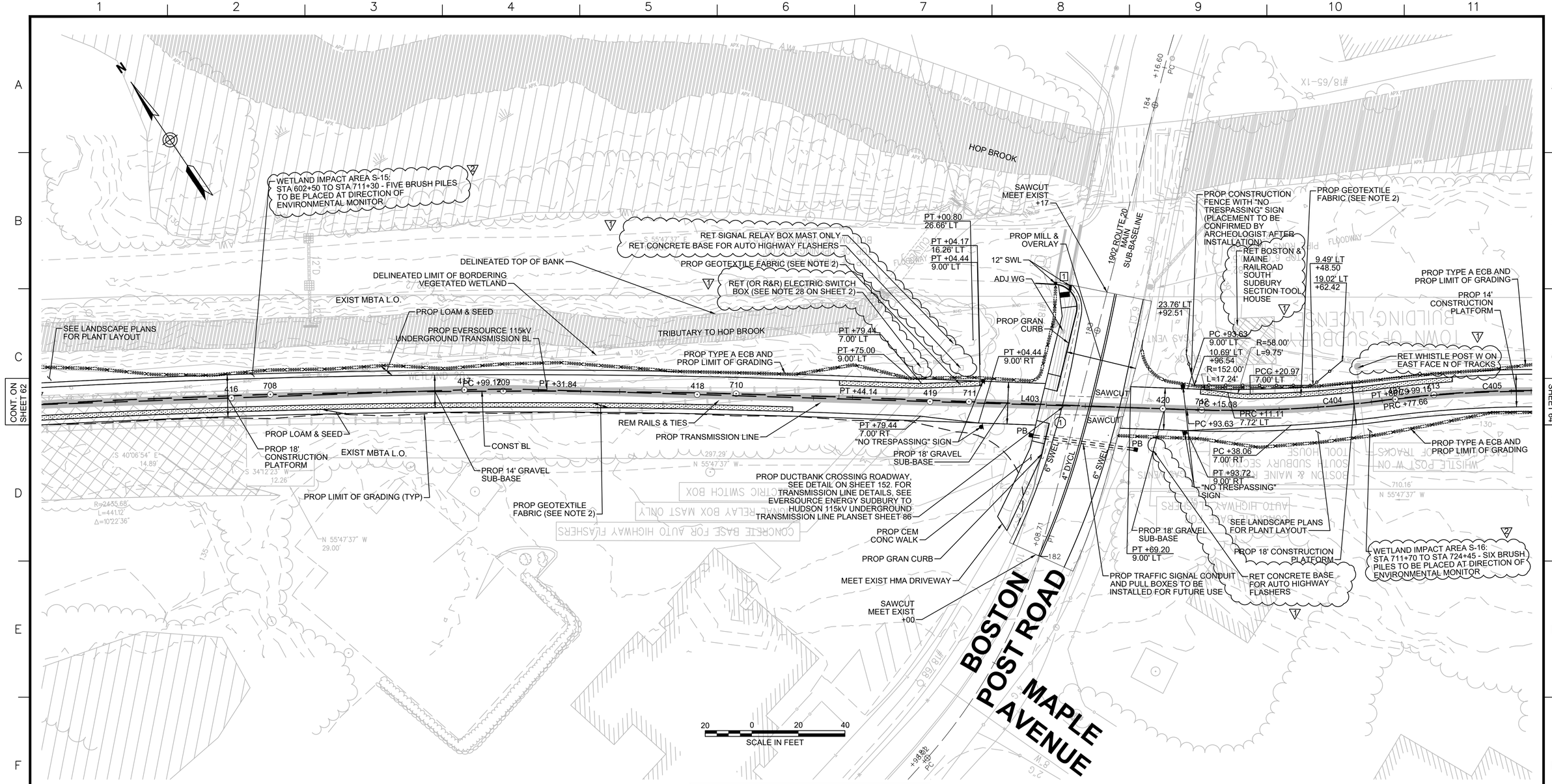

NOTES:

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2. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 12" GRAVEL BORROW WITHIN LIMITS SHOWN.
3. ALL PAVEMENT MARKINGS SHALL BE WET REFLECTIVE POLYUREA
4. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN THE PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
5. REMOVE ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

LEGEND:

(X) ACCESS ROAD CROSSING NUMBER

[X] WHEELCHAIR RAMP NUMBER

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

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PLAN 63 OF 349

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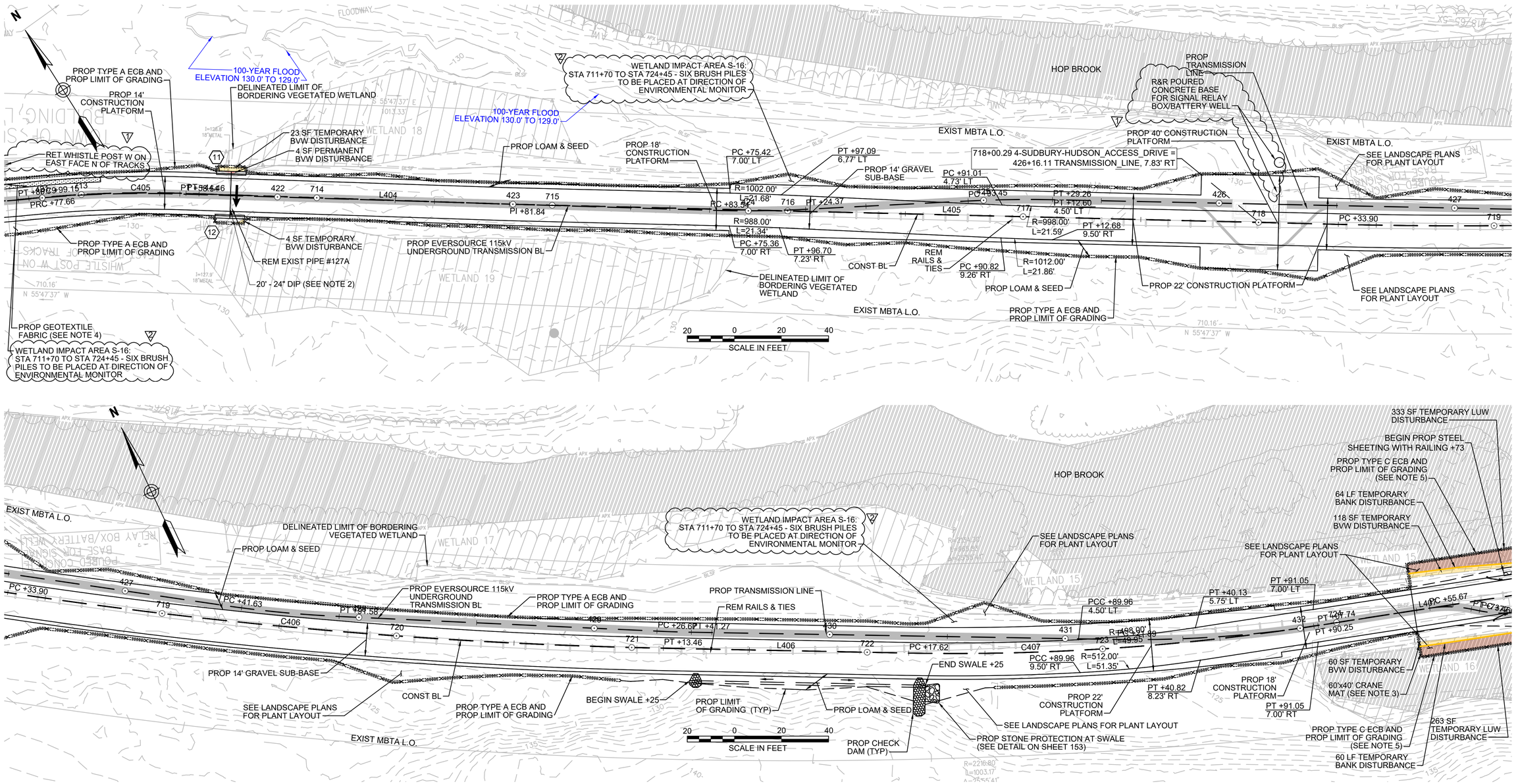

DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
11	Concrete Headwall	713+63, 10.0' LT		128.81'		18" REVEAL
12	Concrete Headwall	713+63, 10.0' RT			128.55'	18" REVEAL

NOTES:

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2. TRANSMISSION LINE TO RUN UNDERNEATH DRAINAGE PIPE.
3. MAXIMUM CRANE PAD DIMENSIONS OF 40'X40' ARE ALLOWED AT ANY GIVEN TIME. A LONGER CRANE MAT FOOTPRINT IS SHOWN HERE TO ALLOW THE CRANE MAT LOCATION TO BE SHIFTED DURING CONSTRUCTION OF THE STEEL SHEETING AND BRIDGE.
4. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 12" GRAVEL BORROW WITHIN LIMITS SHOWN.
5. TYPE C ECB SHALL CONSIST OF EITHER STAKED 4' HIGH SILT FENCE OR BOTTOM-ANCHORED TURBIDITY CURTAIN DEPENDING ON WATER LEVELS AT THE TIME OF CONSTRUCTION. THE APPROPRIATE ECB SHALL BE INSTALLED AT THE DIRECTION OF THE ENVIRONMENTAL MONITOR.

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

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PLAN 64 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
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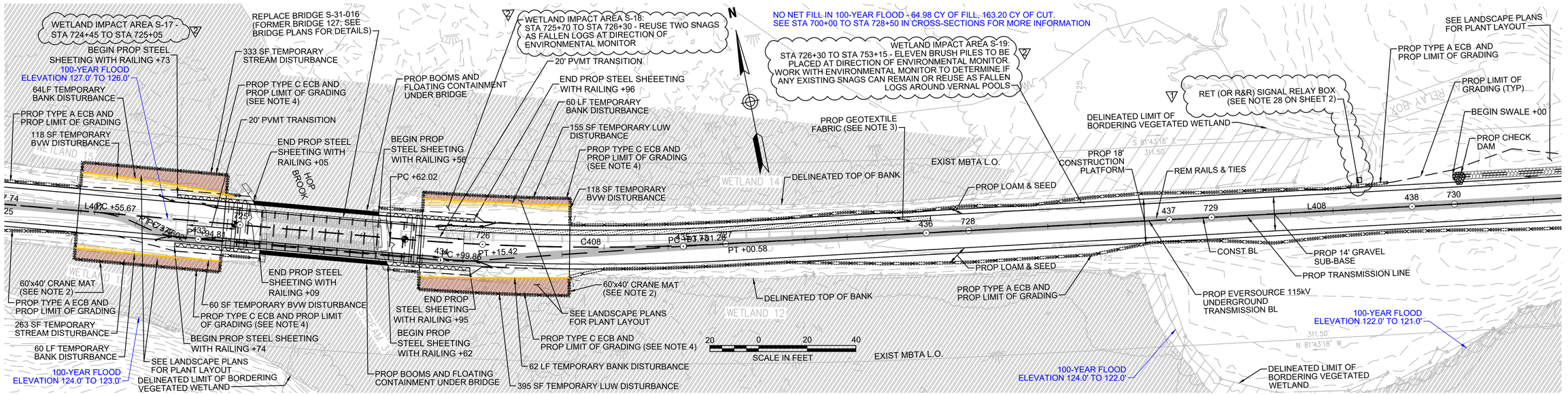

NOTES:

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2. MAXIMUM CRANE PAD DIMENSIONS OF 40'X40' ARE ALLOWED AT ANY GIVEN TIME. A LONGER CRANE MAT FOOTPRINT IS SHOWN HERE TO ALLOW THE CRANE MAT LOCATION TO BE SHIFTED DURING CONSTRUCTION OF THE STEEL SHEETING AND BRIDGE.
3. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 12" GRAVEL BORROW WITHIN LIMITS SHOWN.
4. TYPE C ECB SHALL CONSIST OF EITHER STAKE 4' HIGH SILT FENCE OR BOTTOM-ANCHORED TURBIDITY CURTAIN DEPENDING ON WATER LEVELS AT THE TIME OF CONSTRUCTION. THE APPROPRIATE ECB SHALL BE INSTALLE AT THE DIRECTION OF THE ENVIRONMENTAL MONITOR.

NO.	DESCRIPTION	BY	DATE	APPR.
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CONSTRUCTION PLANS

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PLAN 65 OF 349

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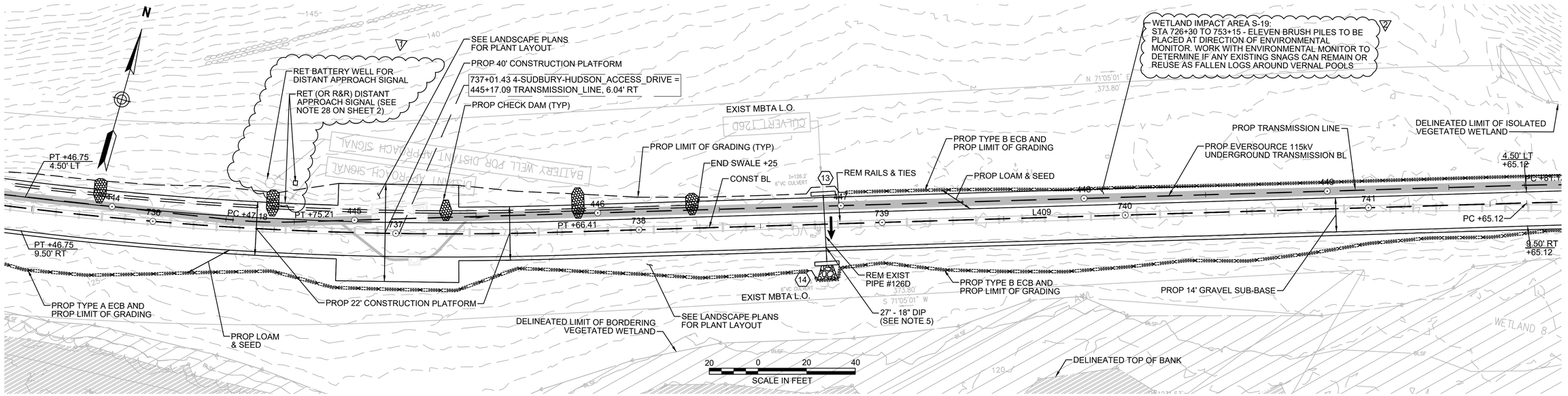

CONT. ON SHEET 65

CONT. BELOW

CONT. ABOVE

CONT. ON SHEET 67

DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
13	Concrete Headwall	738+77, 12.0' LT			127.10'	
14	Concrete Headwall	738+77, 15.4' RT		125.07'		

NOTES:

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2. CONTRACTOR TO CUT VEGETATION ON NORTHEAST WINGWALL OF STONE BOX CULVERT. NO GRUBBING SHALL BE PERFORMED OUTSIDE LIMITS OF GRADING.
3. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 12" GRAVEL BORROW WITHIN LIMITS SHOWN.
4. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 450' OF VERNAL POOLS. SEE DETAIL ON SHEET 154.
5. TRANSMISSION LINE TO RUN UNDERNEATH DRAINAGE PIPE. SEE DETAIL ON SHEET 157.

NO.	DESCRIPTION	BY	DATE	APPR.
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PLAN 66 OF 349

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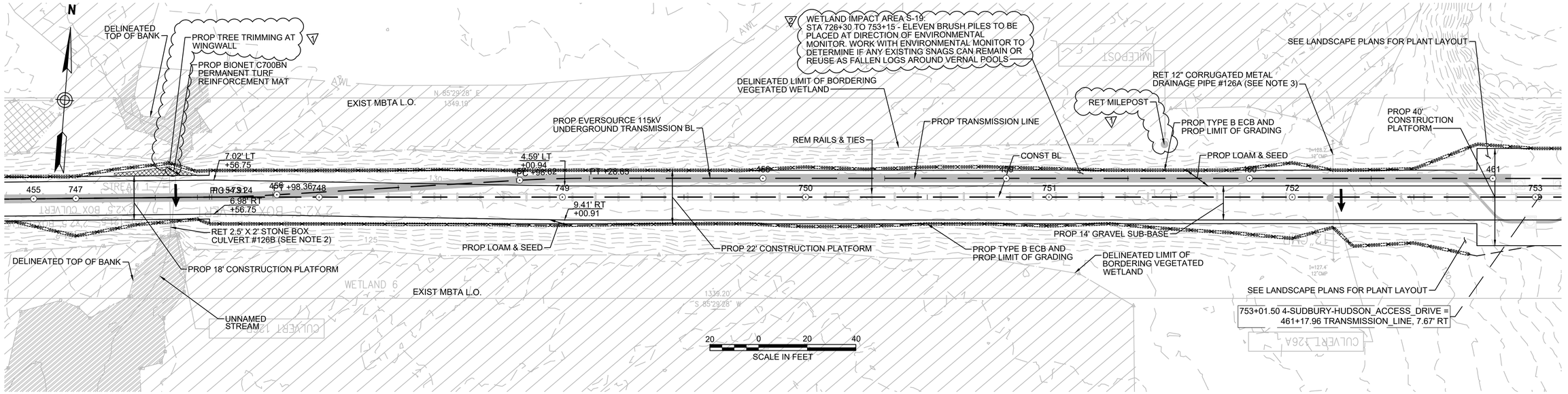

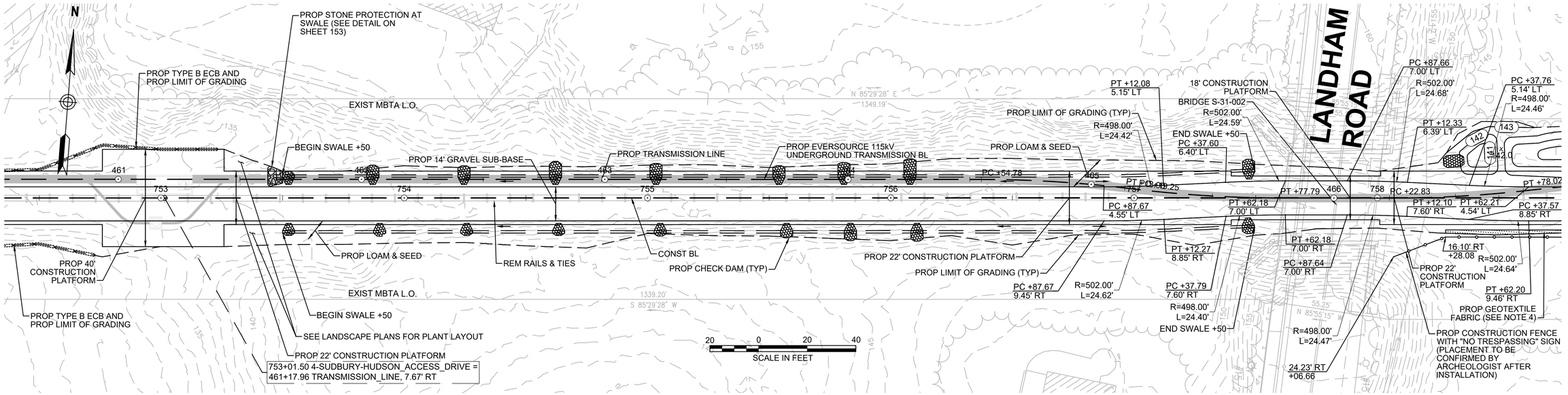

NOTES:

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2. CONTRACTOR TO CUT VEGETATION ON NORTHEAST WINGWALL OF STONE BOX CULVERT. NO GRUBBING SHALL BE PERFORMED OUTSIDE LIMITS OF GRADING.
3. CONTRACTOR TO CLEAR SEDIMENT IN DRAINAGE PIPE BY HAND.
4. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 450' OF VERNAL POOLS. SEE DETAIL ON SHEET 154.

NO.	DESCRIPTION	BY	DATE	APPR.
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PLAN 67 OF 349

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1"=20'	DEC 2021	MS	SK	MES	.	.

CONT. ON SHEET 67

R=502.00'
L=24.68'

PC +37.76
5.14' LT
R=498.00'
L=24.46'

PROP BASIN

PT +12.33
6.39' LT

EXIST MBTA L.O.

RET FARM CROSSING WOOD BOX

PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

SEE LANDSCAPE PLANS FOR PLANT LAYOUT

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND AND VERNAL POOL

PROP TYPE B ECB AND PROP LIMIT OF GRADING

END SWALE +20

PROP RIP RAP APRON
WIDTH = 8.5', LENGTH = 6', DEPTH = 1.2',
STONE DIA (D50) = 6.5", RIP RAP TO
MEET EXISTING OR PROPOSED GRADE

WETLAND 3 / VERNAL POOL 1

BEGIN SWALE +54

PT +56.09

PT +78.02

PC +22.83

PT +12.10
7.60' RT

PT +62.21
4.54' LT

PC +37.57
8.85' RT

PI +75.00

PC +49.82
4.50' LT
+31.51

PT +95.39

PC +42.36

PI +84.58

7.00' LT
+95.92

PROP GEOTEXTILE FABRIC (SEE NOTE 4)

9.50' RT
+31.62

CONST BL

PROP LOAM & SEED

REM RAILS & TIES

PROP TRANSMISSION LINE

PROP CHECK DAM (TYP)

PROP 14' GRAVEL SUB-BASE

PROP 18' CONSTRUCTION PLATFORM

7.00' RT
+96.35

16.10' RT
+28.08

R=502.00'
L=24.64'

PROP 22' CONSTRUCTION PLATFORM

PT +62.20
9.46' RT

16.15' RT
+79.50

24.15' RT
+98.91

PROP LIMIT OF GRADING (TYP)

PROP EVERSOURCE 115kV UNDERGROUND TRANSMISSION BL

PROP TYPE B ECB AND PROP LIMIT OF GRADING

WETLAND IMPACT AREA S-20:
STA 760+60 TO 766+45 - THREE BRUSH PILES TO BE PLACED AT DIRECTION OF ENVIRONMENTAL MONITOR. WORK WITH ENVIRONMENTAL MONITOR TO DETERMINE IF ANY SNAGS CAN REMAIN OR REUSE AS FALLEN LOGS AROUND VERNAL POOL

CONNECT TO EXISTING PIPE

PROP GEOTEXTILE FABRIC (SEE NOTE 4)

EXIST MBTA L.O.

PROP CONSTRUCTION FENCE WITH "NO TRESPASSING" SIGN (PLACEMENT TO BE CONFIRMED BY ARCHEOLOGIST AFTER INSTALLATION)

24.23' RT
+06.66

908.65'
S 85°29'28" W

20 0 20 40
SCALE IN FEET

CULVERT 125B

N 16°51'44" W
8.45'

N 85°29'28" E
880.13'

RET 12" REINFORCED CONCRETE DRAINAGE PIPE #125B (SEE NOTE 2)

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND AND VERNAL POOL

EVERSOURCE DRIVEWAY

PRESUMED VERNAL POOL HABITAT PER SUDBURY BYLAW

WETLAND 1

CONT. ABOVE

7.00' LT
+95.92

PROP GEOTEXTILE FABRIC (SEE NOTE 4)

REM RAILS & TIES

CONST BL

SEE LANDSCAPE PLANS FOR PLANT LAYOUT

PROP TYPE B ECB AND PROP LIMIT OF GRADING

PI +84.58

PC +69.71

PROP 18' CONSTRUCTION PLATFORM

7.00' RT
+96.35

PROP 14' GRAVEL SUB-BASE

PROP LOAM & SEED

PROP RIP RAP APRON
WIDTH = 6', LENGTH = 6',
DEPTH = 1.2', STONE DIA
(D50) = 6.5", RIP RAP TO
MEET EXISTING OR
PROPOSED GRADE

85 SF PERMANENT BVW DISTURBANCE

PROP EVERSOURCE 115kV UNDERGROUND TRANSMISSION BL

CONNECT TO EXISTING PIPE

EXIST MBTA L.O.

PROP TYPE B ECB AND PROP LIMIT OF GRADING

WETLAND IMPACT AREA S-20:
STA 760+60 TO 766+45 - THREE BRUSH PILES TO BE PLACED AT DIRECTION OF ENVIRONMENTAL MONITOR. WORK WITH ENVIRONMENTAL MONITOR TO DETERMINE IF ANY SNAGS CAN REMAIN OR REUSE AS FALLEN LOGS AROUND VERNAL POOL

END PROJECT
STA 767+59.05
N 2956452.4485
E 683686.5286

PROPOSED WETLAND REPLICATION SEE SHEETS 167-168 FOR DETAILS

PROP 12" RCP INV 132.4

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

201 SF TEMPORARY BVW DISTURBANCE

908.65'
S 85°29'28" W

CONT. ON SHEET 69

NOTE:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).
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3. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 450' OFF VERNAL POOLS. SEE DETAIL ON SHEET 154.
4. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 12" GRAVEL BORROW WITHIN LIMITS SHOWN.

NO.	DESCRIPTION	BY	DATE	APPR.
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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

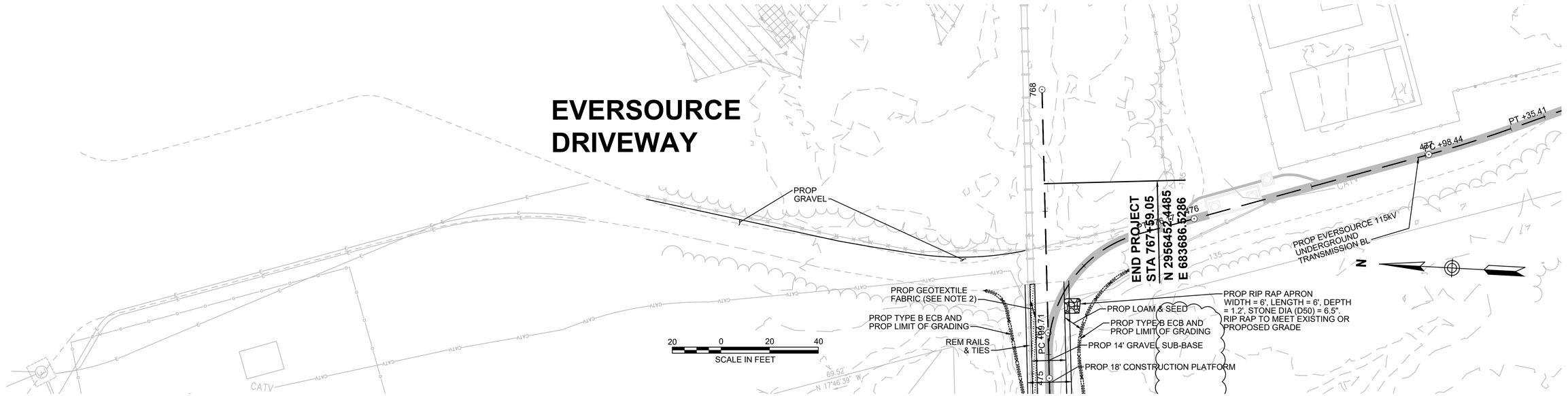
INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 68 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.

CONT. ON SHEET 68

EVERSOURCE DRIVEWAY



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CONT. ON SHEET 70

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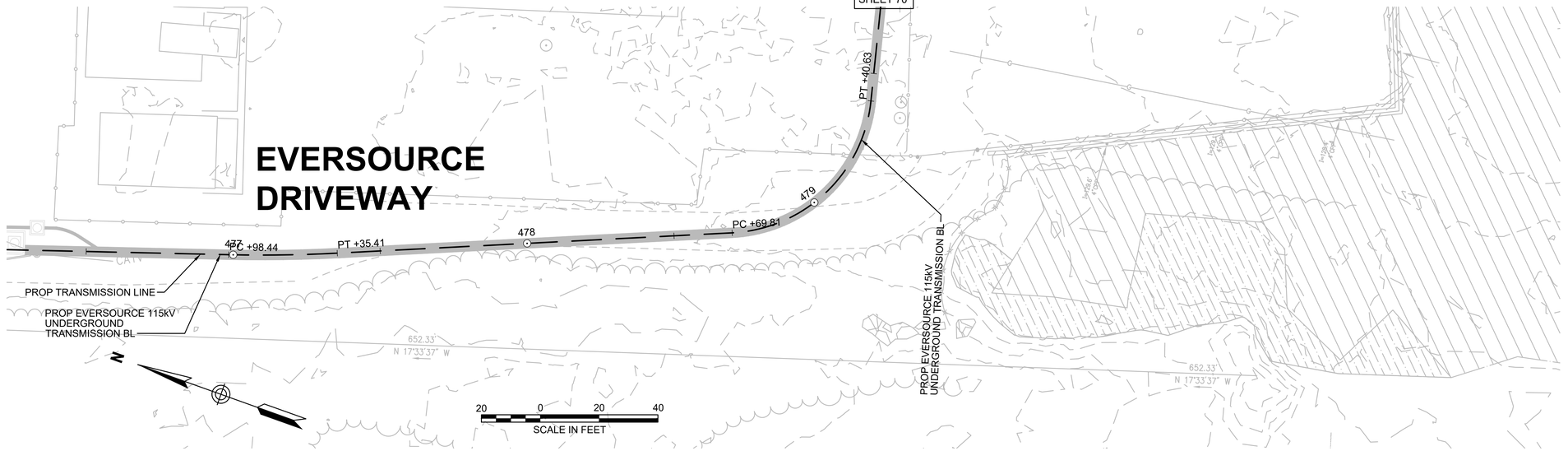
EVERSOURCE DRIVEWAY



NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).
2. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 12" GRAVEL BORROW WITHIN LIMITS SHOWN.
3. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 450' OF VERNAL POOL. SEE DETAIL ON SHEET 154.

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 69 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.

CONT. ON SHEET 69

EVERSOURCE DRIVEWAY

PC +69.81

PT +40.63

PROP TRANSMISSION LINE

PROP EVERSOURCE 115kV UNDERGROUND TRANSMISSION BL

Localized Dewatering

Safety Guard Posts See Det 0124.19

Erosion & Sediment Control Barrier

SCALE IN FEET

20 0 20 40

NOTES:

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

INFORMATIONAL SET, FOR REFERENCE ONLY

PLAN 70 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.

PLANT SCHEDULE 113+50 - 118+75

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	19	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	19	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
GB	23	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
MP	20	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	13	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

SEEDED AREA SHALL BE A MIX OF HERBACEOUS AND WOODY SPECIES, REFERENCE PLANTING SCHEDULE A ON SHEET 161

PROP LOAM & SEED

PROP LIMIT OF GRADING (TYP)

3' PLANTING BED SETBACK FROM GRAVEL BASE (TYP)

SHRUB PLANTING (TYP)

PROP 14' GRAVEL SUB-BASE

PROP TRANSMISSION LINE

DELINEATED LIMIT OF ISOLATED VEGETATED WETLAND

WETLAND 3

MATCHLINE

CONT. BELOW

SCALE IN FEET

100-YEAR FLOOD
NO DISTURBANCE TO 100-YEAR FLOOD - ABOVE FLOODPLAIN ELEVATION
SEE STA 121+00 TO STA 122+50 IN CROSS-SECTIONS FOR MORE INFORMATION

EXIST MBTA L.O.

CONST BL

CONT. ABOVE

CONT. ON SHEET 97

PLANT SCHEDULE 118+75 - 124+25

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	81	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	78	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
MP	68	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	81	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

TOWN OF STOW
TOWN OF HUDSON

NOTE:
1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED FEBRUARY 5, 2018 (MADEP FILE NO.190-0611).

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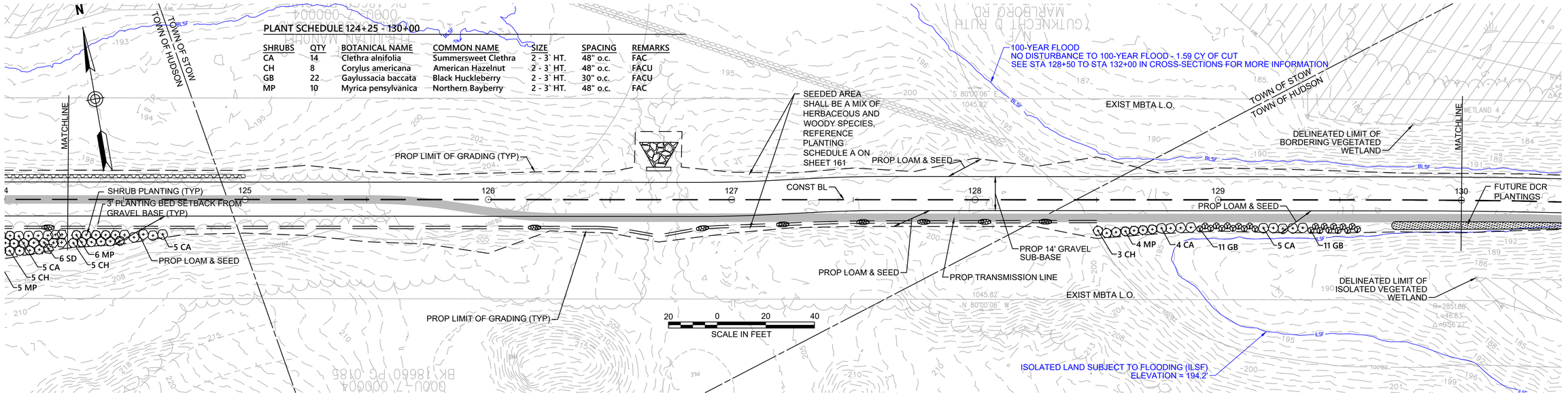
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
LANDSCAPE PLANS

PLAN 96 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.

PLANT SCHEDULE 124+25 - 130+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	14	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	8	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
GB	22	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
MP	10	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC



NOTE:

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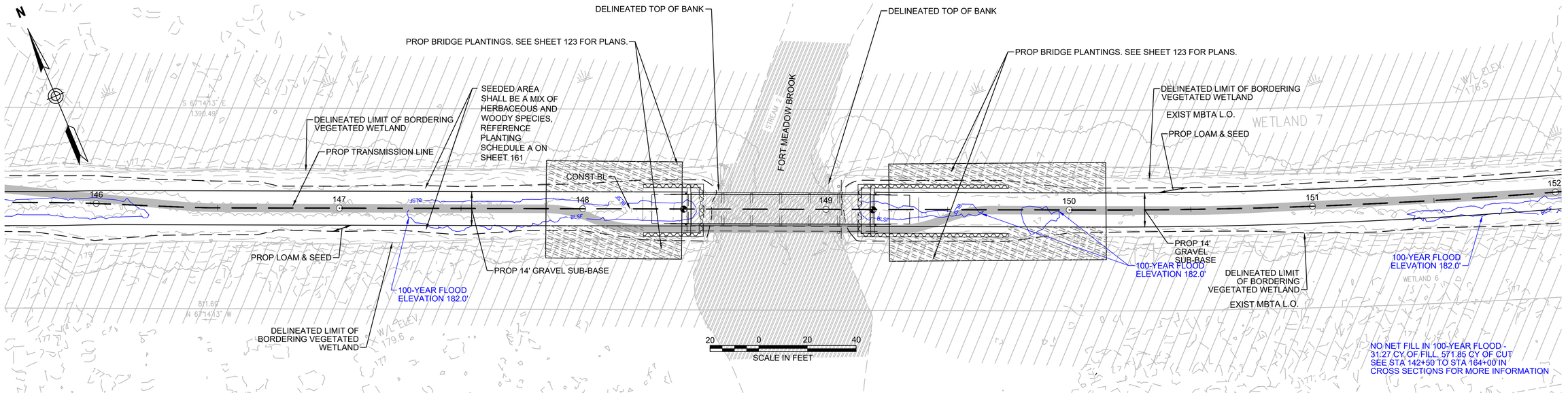
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 97 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.



NOTES:

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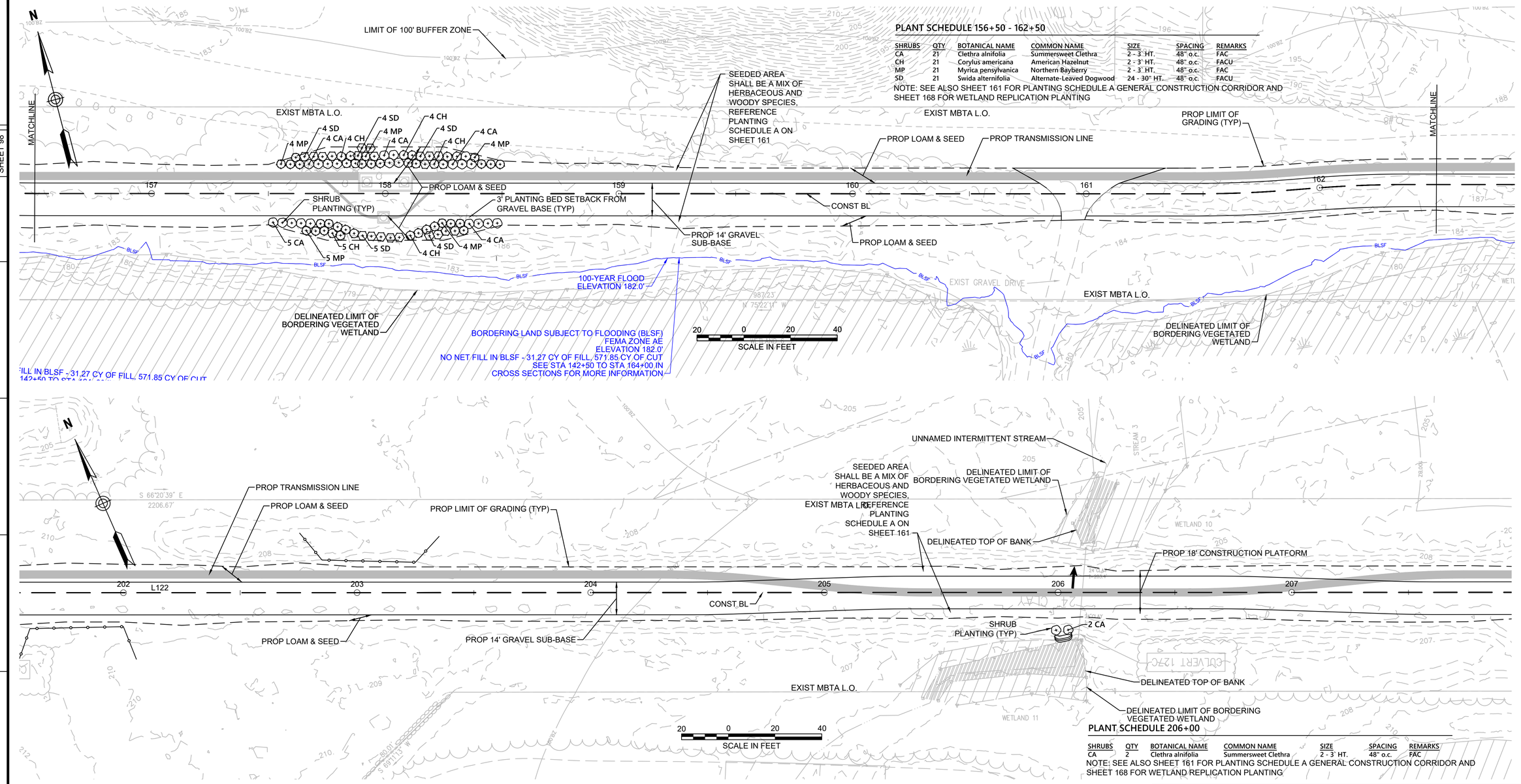
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 98 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.



PLANT SCHEDULE 156+50 - 162+50

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	21	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	21	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
MP	21	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	21	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

PLANT SCHEDULE 206+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	2	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

NOTES:

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

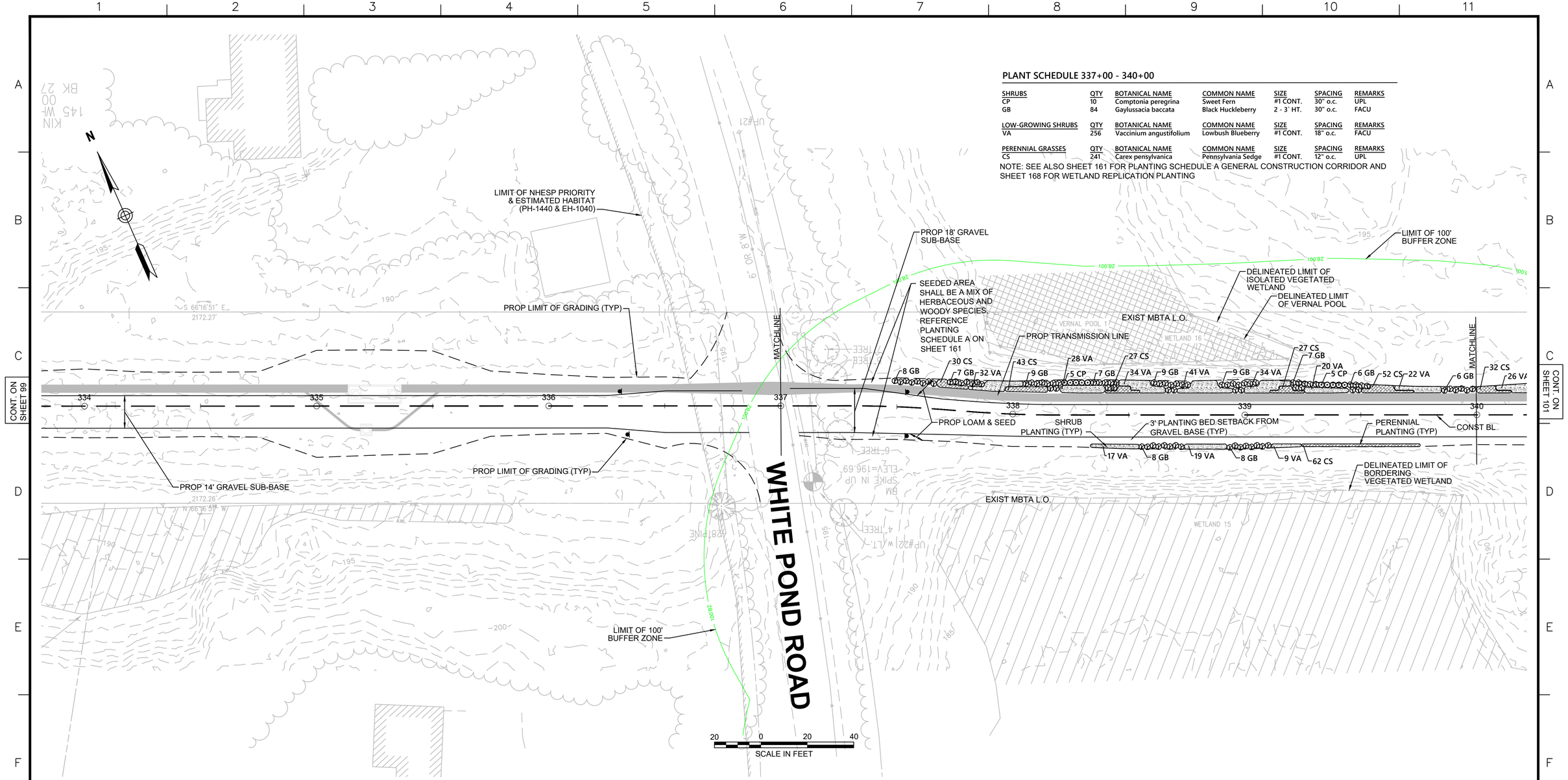
PLAN 99 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.

PLANT SCHEDULE 337+00 - 340+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	10	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	84	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	256	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	241	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING



NOTE:
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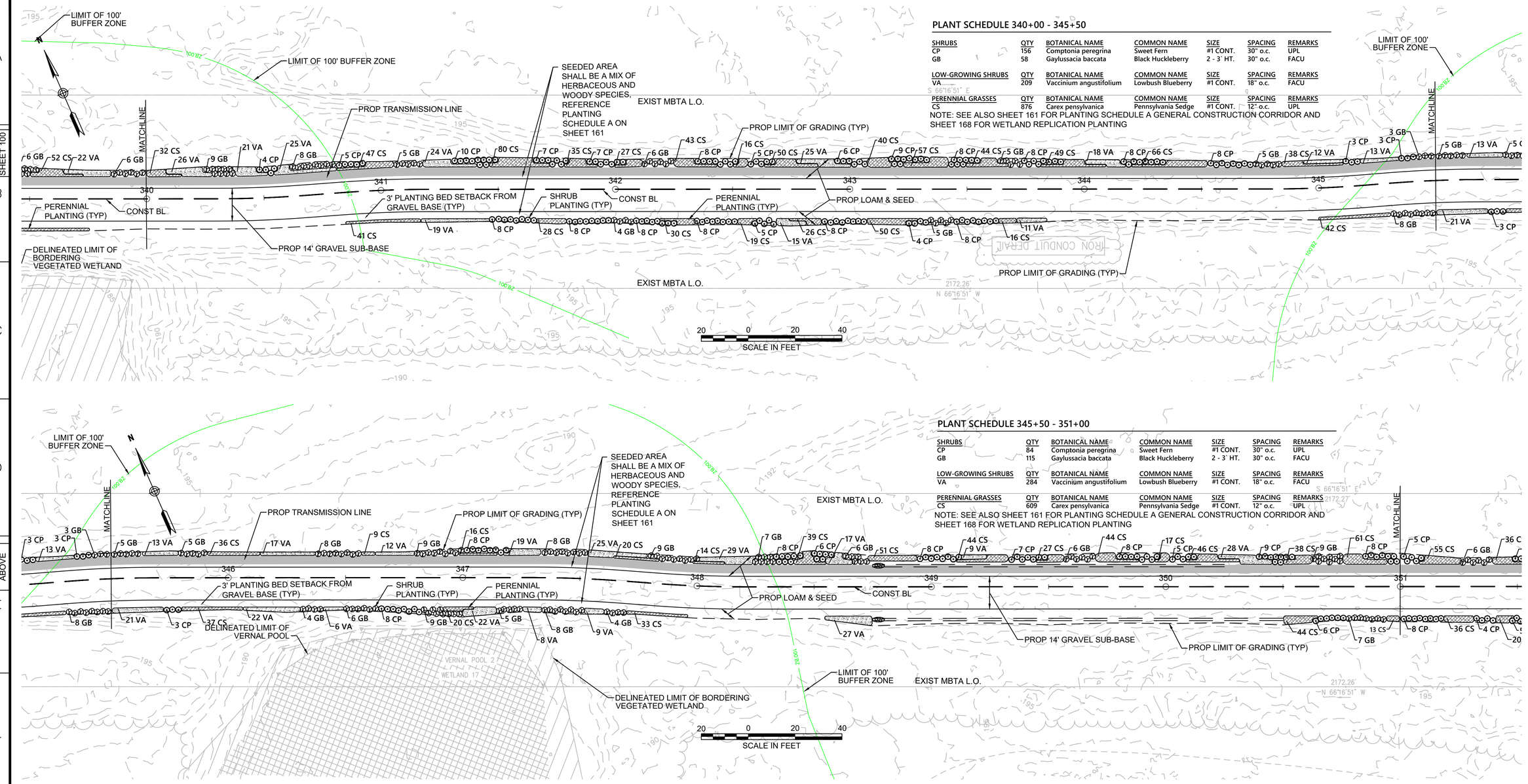
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
LANDSCAPE PLANS
PLAN100 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



PLANT SCHEDULE 340+00 - 345+50

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	156	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	58	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	209	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	876	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

PLANT SCHEDULE 345+50 - 351+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	84	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	115	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	284	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	609	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

NOTES:

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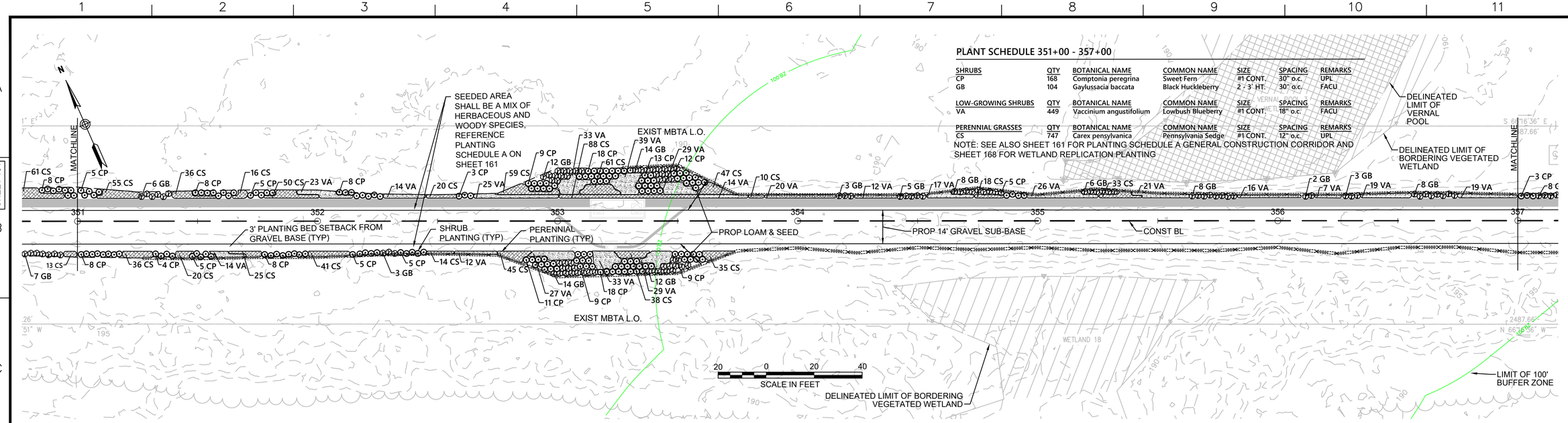
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN101OF349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MS	SK	MES	.	.



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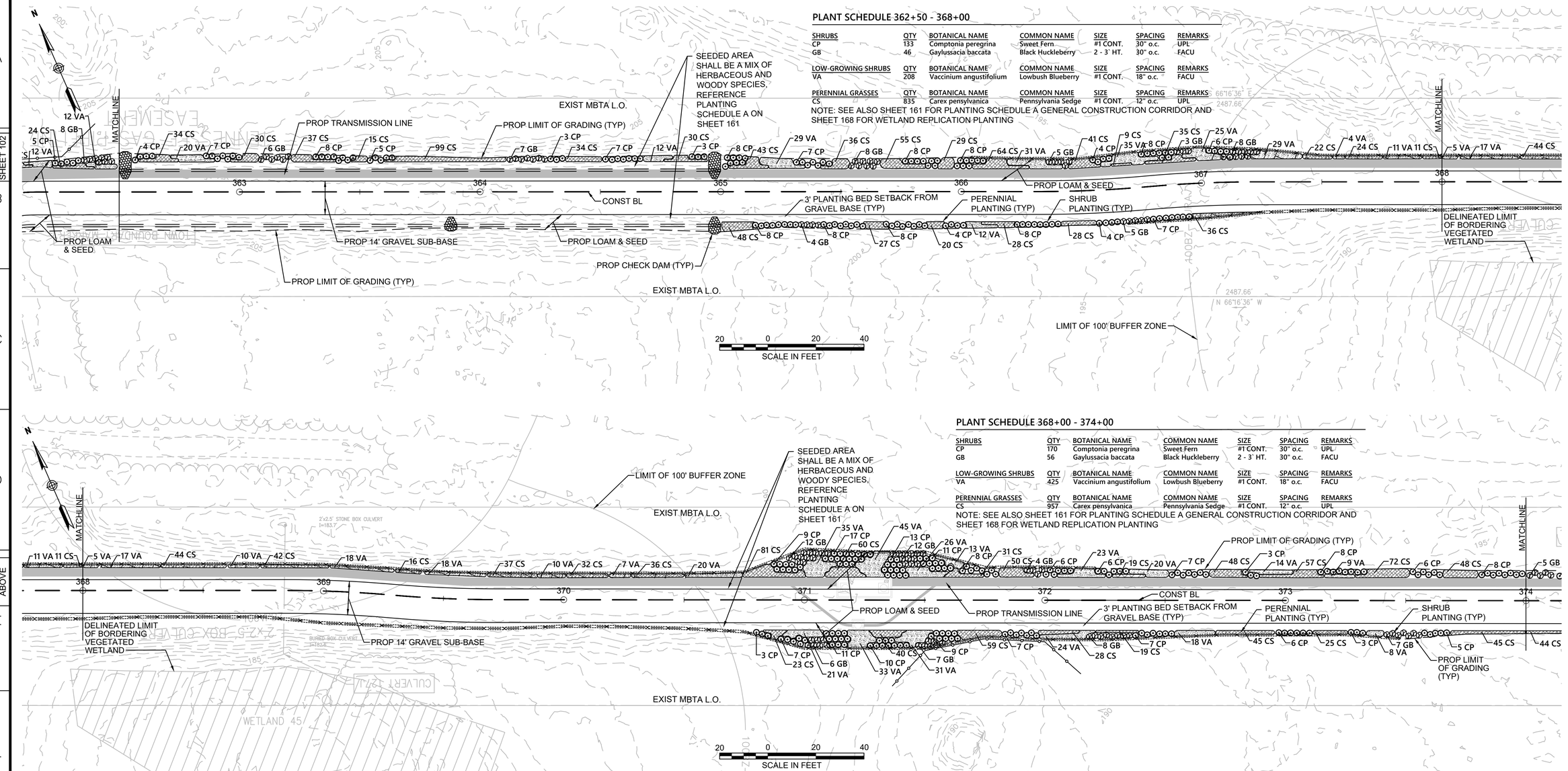
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 102 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.



NOTES:

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 103 OF 349

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1"=20'	DEC 2021	CW	JG	JG	.	.

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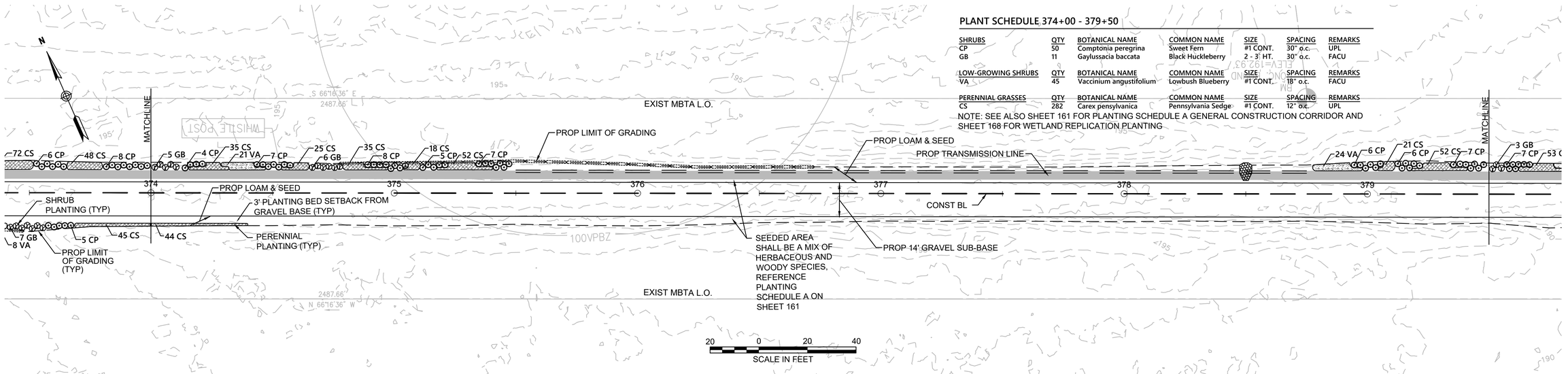

CONT. ON SHEET 103

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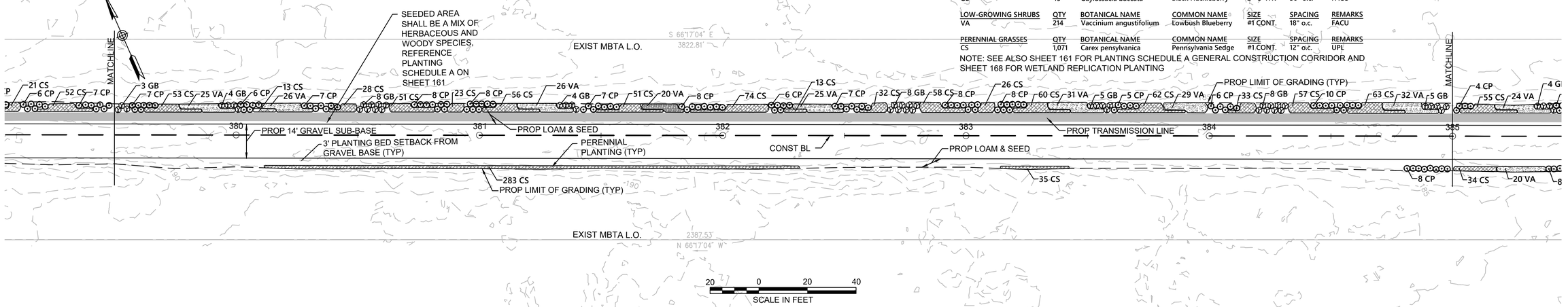
PLANT SCHEDULE 374+00 - 379+50

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	50	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	11	Gaylussacia baccata	Black Huckleberry	2 - 3' HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	45	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	282	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING



CONT. ABOVE

CONT. ON SHEET 105

PLANT SCHEDULE 379+50 - 385+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	109	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	45	Gaylussacia baccata	Black Huckleberry	2 - 3' HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	214	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	1,071	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

NOTE:
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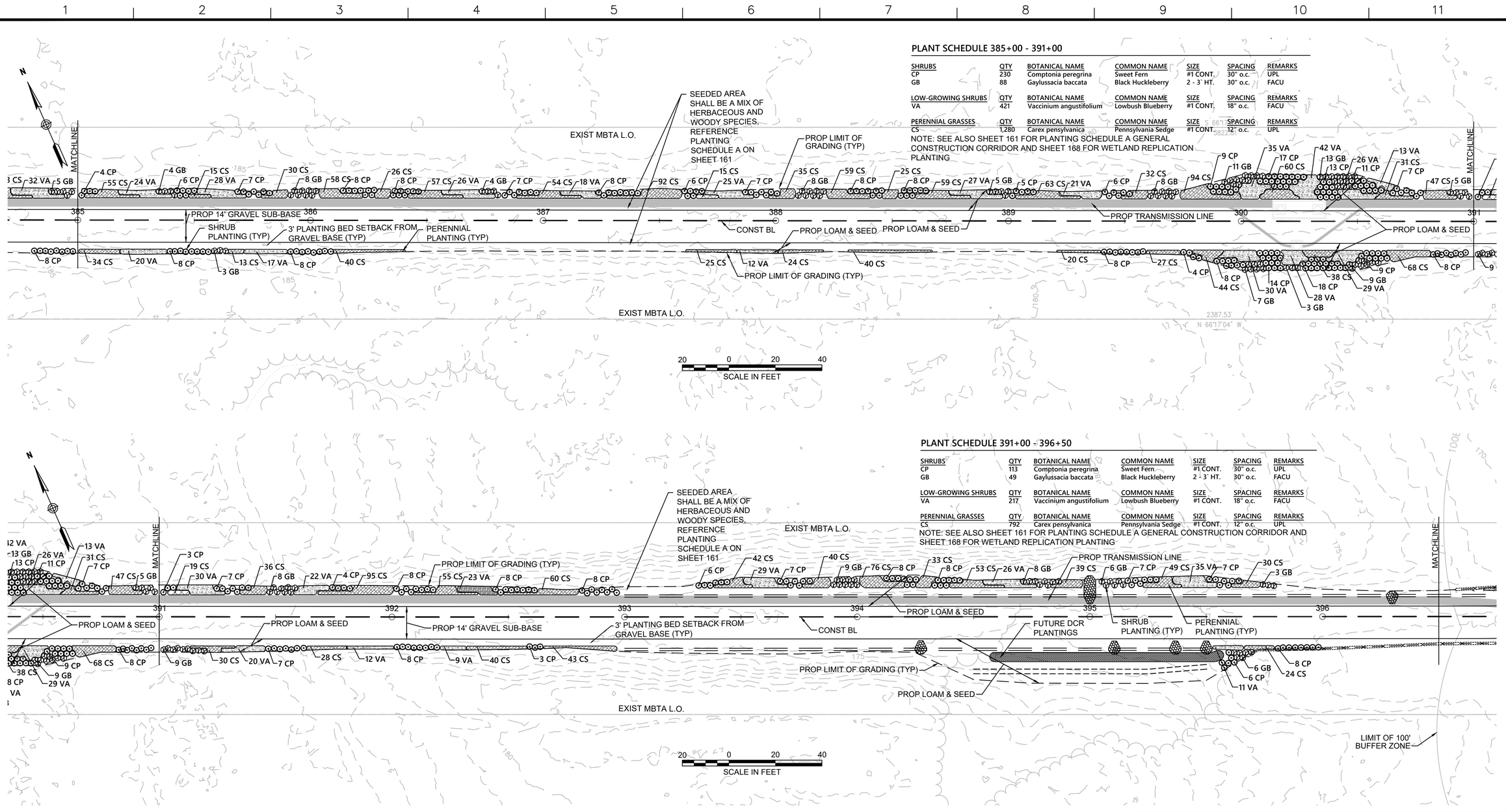
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN104 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.



PLANT SCHEDULE 385+00 - 391+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	230	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	88	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	421	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	1,280	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

PLANT SCHEDULE 391+00 - 396+50

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	113	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	49	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	217	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	792	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

NOTE:

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	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN105 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.

PLANT SCHEDULE 396+50 - 402+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	5	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	42	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	84	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	135	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

CONT. ON SHEET 105

CONT. BELOW

LIMIT OF NHESP PRIORITY & ESTIMATED HABITAT (PH-1440 & EH-1040)

100-YEAR FLOOD ELEVATION 161.0'

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

DELINEATED TOP OF BANK

EXIST MBTA L.O.

PROP BRIDGE PLANTINGS SEE SHEET 124 FOR PLANS.

HOP BROOK

MATCHLINE

WETLAND 44

BLSF

PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

CONST BL

2 GB, 28 CS, 5 GB, 12 VA, 13 VA, 27 CS, 41 CS, 34 VA, 7 GB, 5 CP, 9 GB, 13 VA, 5 GB

PROP 14' GRAVEL SUB-BASE

PERENNIAL PLANTING (TYP)

SHRUB PLANTING (TYP)

4 GB, 7 GB, 12 VA, 39 CS, 3 GB

3' PLANTING BED SETBACK FROM GRAVEL BASE (TYP)

SEEDED AREA SHALL BE A MIX OF HERBACEOUS AND WOODY SPECIES, REFERENCE PLANTING SCHEDULE A ON SHEET 161

LIMIT OF 100' BUFFER ZONE

FLOODWAY

397, 398, 399, 400, 401, 402

20 0 20 40
SCALE IN FEET

NO FILL IN 100-YEAR FLOOD ABOVE FLOODPLAIN ELEVATION
SEE STA 398+00 TO STA 402+00 IN CROSS-SECTIONS FOR MORE INFORMATION

PLANT SCHEDULE 402+00 - 408+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CH	10	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
MP	10	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	10	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU
VC	3	Vaccinium corymbosum	Highbush Blueberry	3 - 4` HT.	48" o.c.	FACW

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

CONT. ABOVE

CONT. ON SHEET 107

LIMIT OF NHESP PRIORITY & ESTIMATED HABITAT (PH-1440 & EH-1040)

100-YEAR FLOOD ELEVATION 161.0'

LIMIT OF 100' BUFFER ZONE

PROP TRANSMISSION LINE

SEEDED AREA SHALL BE A MIX OF HERBACEOUS AND WOODY SPECIES, REFERENCE PLANTING SCHEDULE A ON SHEET 161

PROP LIMIT OF GRADING (TYP)

EXIST MBTA L.O.

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

DELINEATED LIMIT OF VERNAL POOL

PROP LOAM & SEED

5 MP, 5 SD, 5 CH, 3 VC, 5 CH, 5 SD

SHRUB PLANTING (TYP)

MATCHLINE

WETLAND 44

BLSF

100VPBZ

PROP 14' GRAVEL SUB-BASE

PROP LOAM & SEED

PROP LIMIT OF GRADING (TYP)

CONST BL

402, 403, 404, 405, 406, 407, 408

20 0 20 40
SCALE IN FEET

NO FILL IN 100-YEAR FLOOD ABOVE FLOODPLAIN ELEVATION
SEE STA 398+00 TO STA 402+00 IN CROSS-SECTIONS FOR MORE INFORMATION

NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO.301-1227).

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

Vanasse Hangen Brustlin, Inc.
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Watertown, MA 02472
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EVERSOURCE

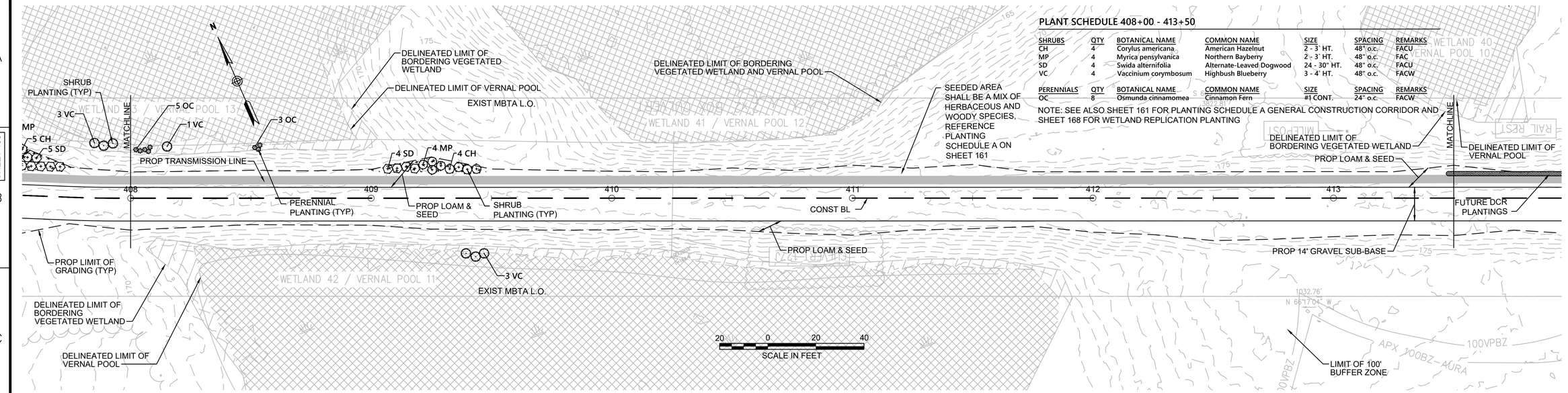
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 106 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.



PLANT SCHEDULE 408+00 - 413+50

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CH	4	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
MP	4	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	4	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU
VC	4	Vaccinium corymbosum	Highbush Blueberry	3 - 4` HT.	48" o.c.	FACW

PERENNIALS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
OC	8	Osmunda cinnamomea	Cinnamon Fern	#1 CONT.	24" o.c.	FACW

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

NOTE:

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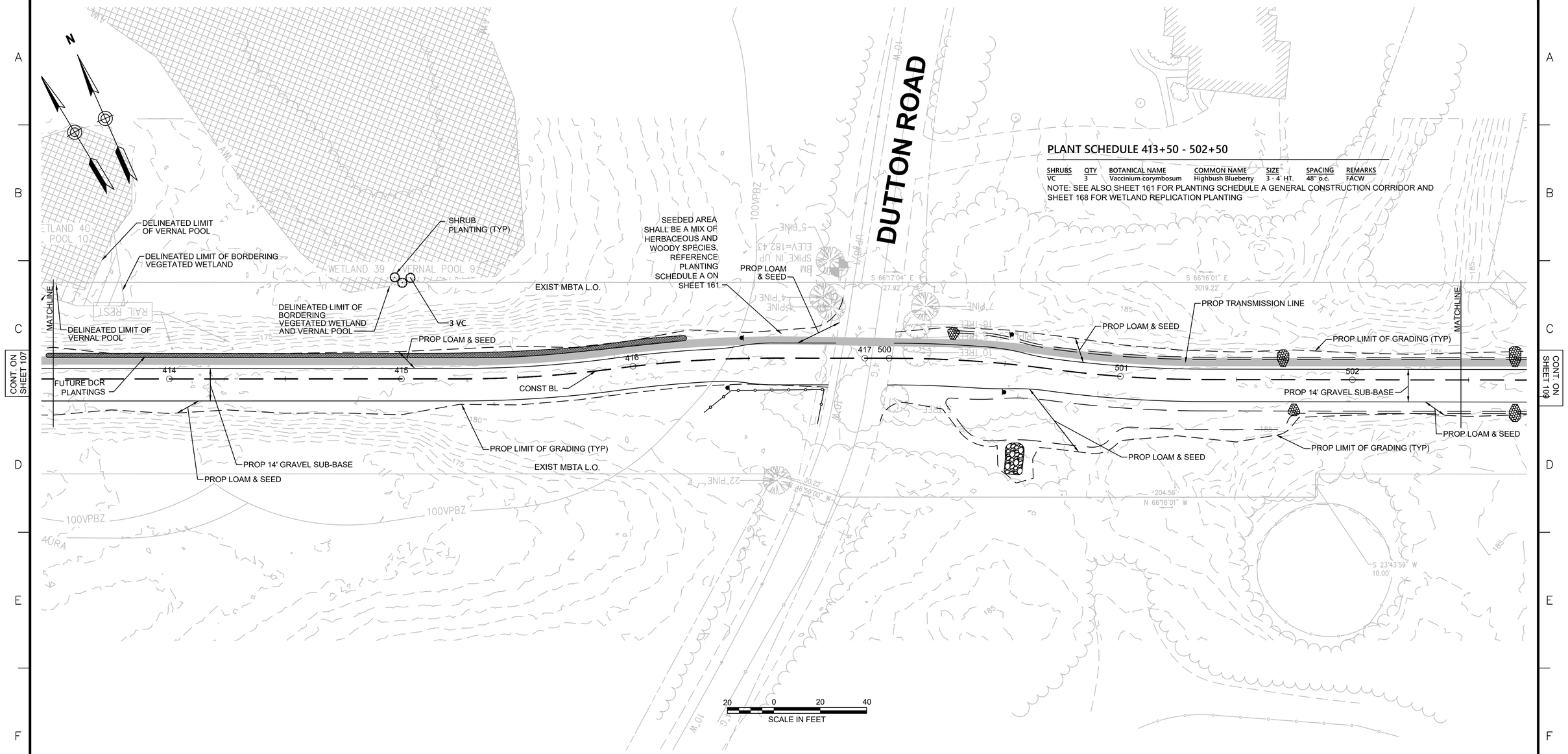
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 107 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.



NOTES:

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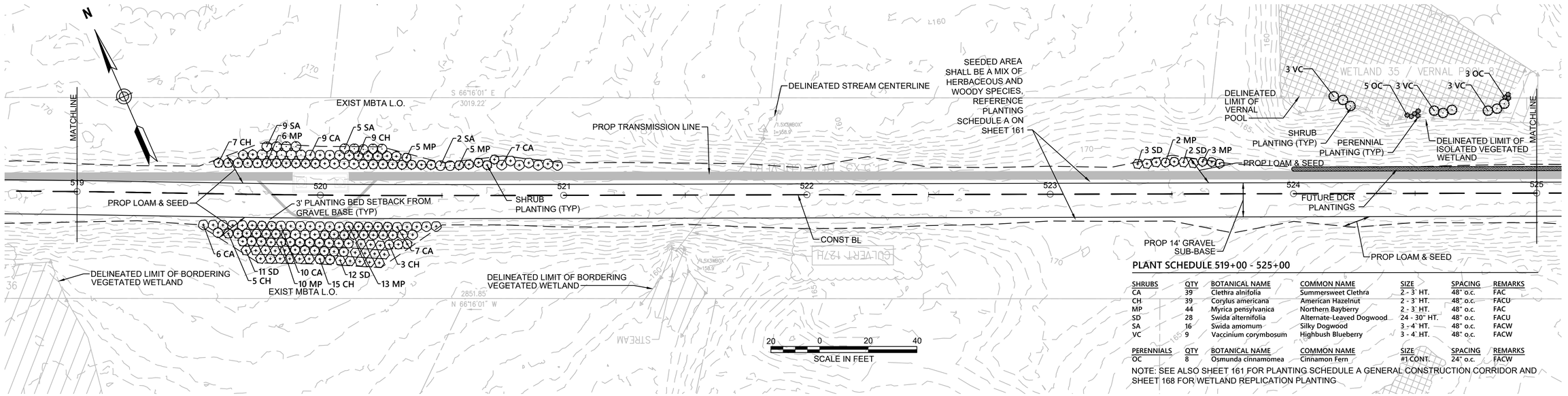
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 108 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.



PLANT SCHEDULE 519+00 - 525+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	39	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	39	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
MP	44	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	28	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU
SA	16	Swida amomum	Silky Dogwood	3 - 4` HT.	48" o.c.	FACW
VC	9	Vaccinium corymbosum	Highbush Blueberry	3 - 4` HT.	48" o.c.	FACW

PERENNIALS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
OC	8	Osmunda cinnamomea	Cinnamon Fern	#1 CONT.	24" o.c.	FACW

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).

NO.	DESCRIPTION	BY	DATE	APPR.

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EVERSOURCE

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 109 OF 349

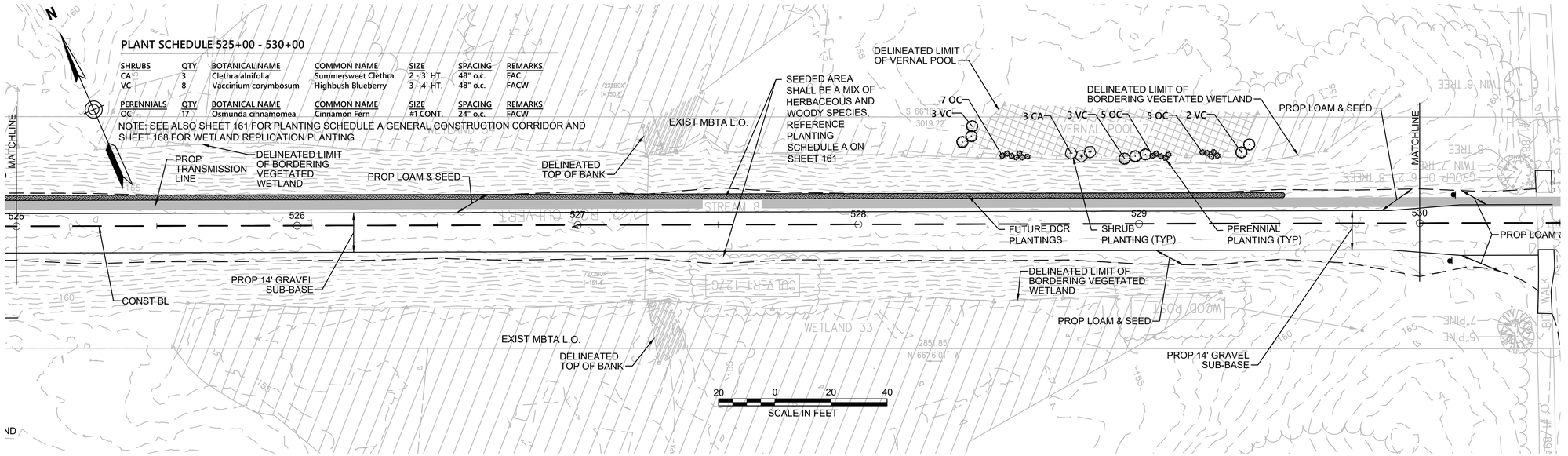
SCALE: unless noted	DATE DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021 CW	JG	JG	.	.

PLANT SCHEDULE 525+00 - 530+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	3	Clethra alnifolia	Summersweet Clethra	2 - 3' HT.	48" o.c.	FAC
VC	8	Vaccinium corymbosum	Highbush Blueberry	3 - 4' HT.	48" o.c.	FACW

PERENNIALS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
OC	17	Osmunda cinnamomea	Cinnamon Fern	#1 CONT.	24" o.c.	FACW

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING



CONT. ON SHEET 109

CONT. ON SHEET 111

NOTE:
1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).

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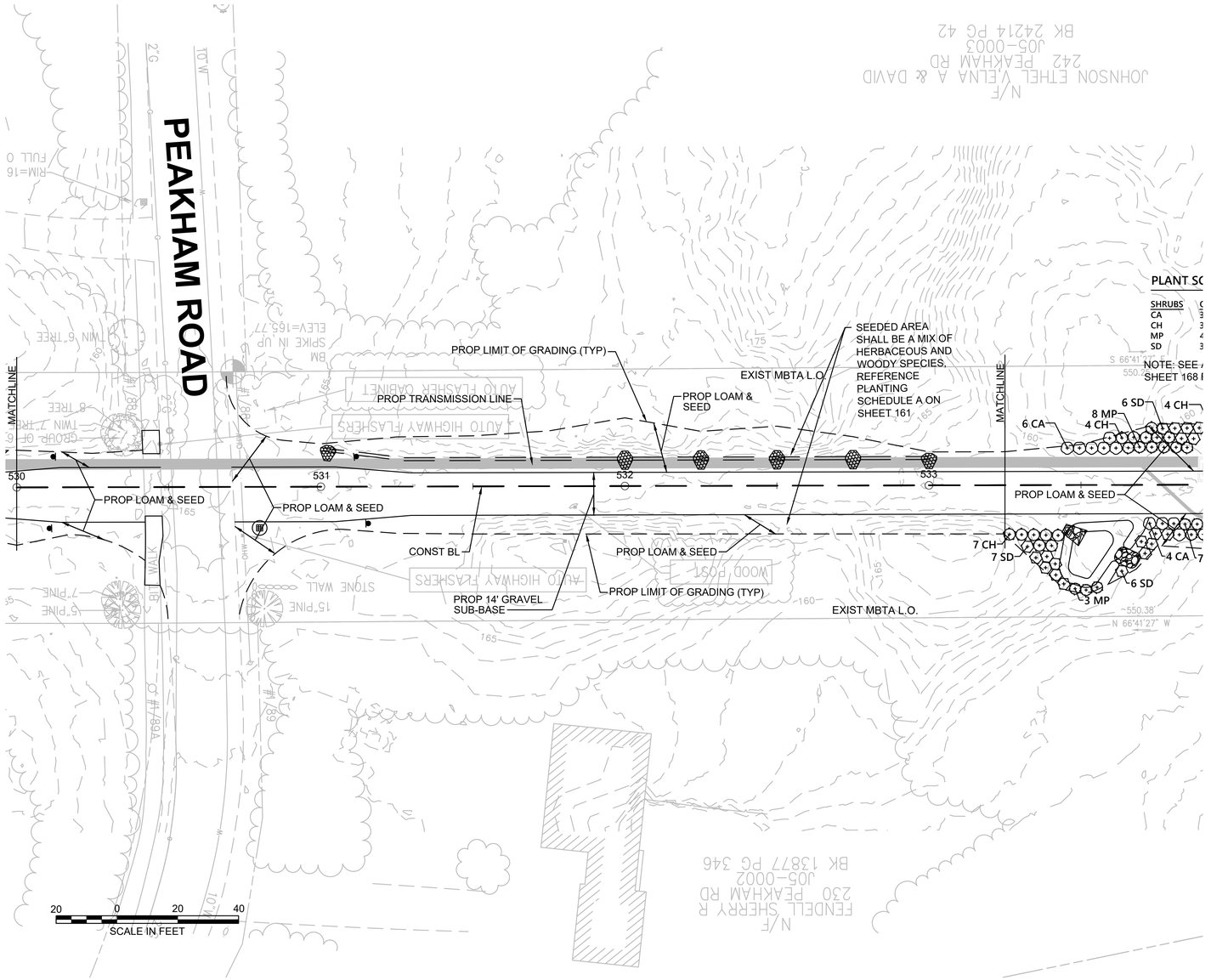
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 110 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.



NOTE:

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NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 11 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.

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PLANT SCHEDULE 533+25 - 539+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	35	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	34	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
MP	40	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	32	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

CONT. ON SHEET 111

MATCHLINE

PROP LOAM & SEED

SHRUB PLANTING (TYP)

3' PLANTING BED SETBACK FROM GRAVEL BASE (TYP)

CONST BL

DELINEATED LIMIT OF ISOLATED VEGETATED WETLAND

SEEDED AREA SHALL BE A MIX OF HERBACEOUS AND WOODY SPECIES, REFERENCE PLANTING SCHEDULE A ON SHEET 161

PROP 14' GRAVEL SUB-BASE

PROP TRANSMISSION LINE

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

DELINEATED TOP OF BANK

EXIST MBTA L.O.

100-YEAR FLOOD ELEVATION 152.2'

100-YEAR FLOOD ELEVATION 148.6'

FUTURE DCR PLANTINGS

DUDLEY BROOK

SCALE IN FEET: 20 0 20 40

NO IMPACT TO 100-YEAR FLOOD - ABOVE FLOODPLAIN ELEVATION
SEE STA 535+50 TO STA 542+50 IN CROSS-SECTIONS FOR MORE INFORMATION

CONT. ABOVE

CONT. BELOW

CONT. ON SHEET 113

PLANT SCHEDULE 539+00 - 545+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	8	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
GB	8	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

PROP LIMIT OF GRADING (TYP)

NOTE:
1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).

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EVERSOURCE

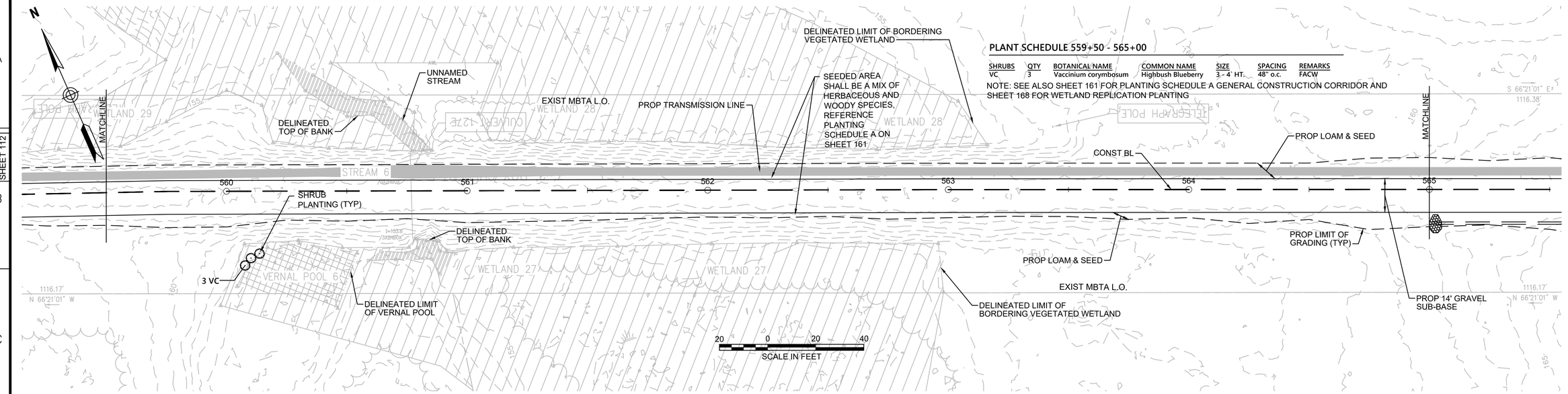
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 112 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.



PLANT SCHEDULE 559+50 - 565+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
VC	3	Vaccinium corymbosum	Highbush Blueberry	3 - 4' HT.	48" o.c.	FACW

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

NOTE:
1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).

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NO.	DESCRIPTION	BY	DATE	APPR.
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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

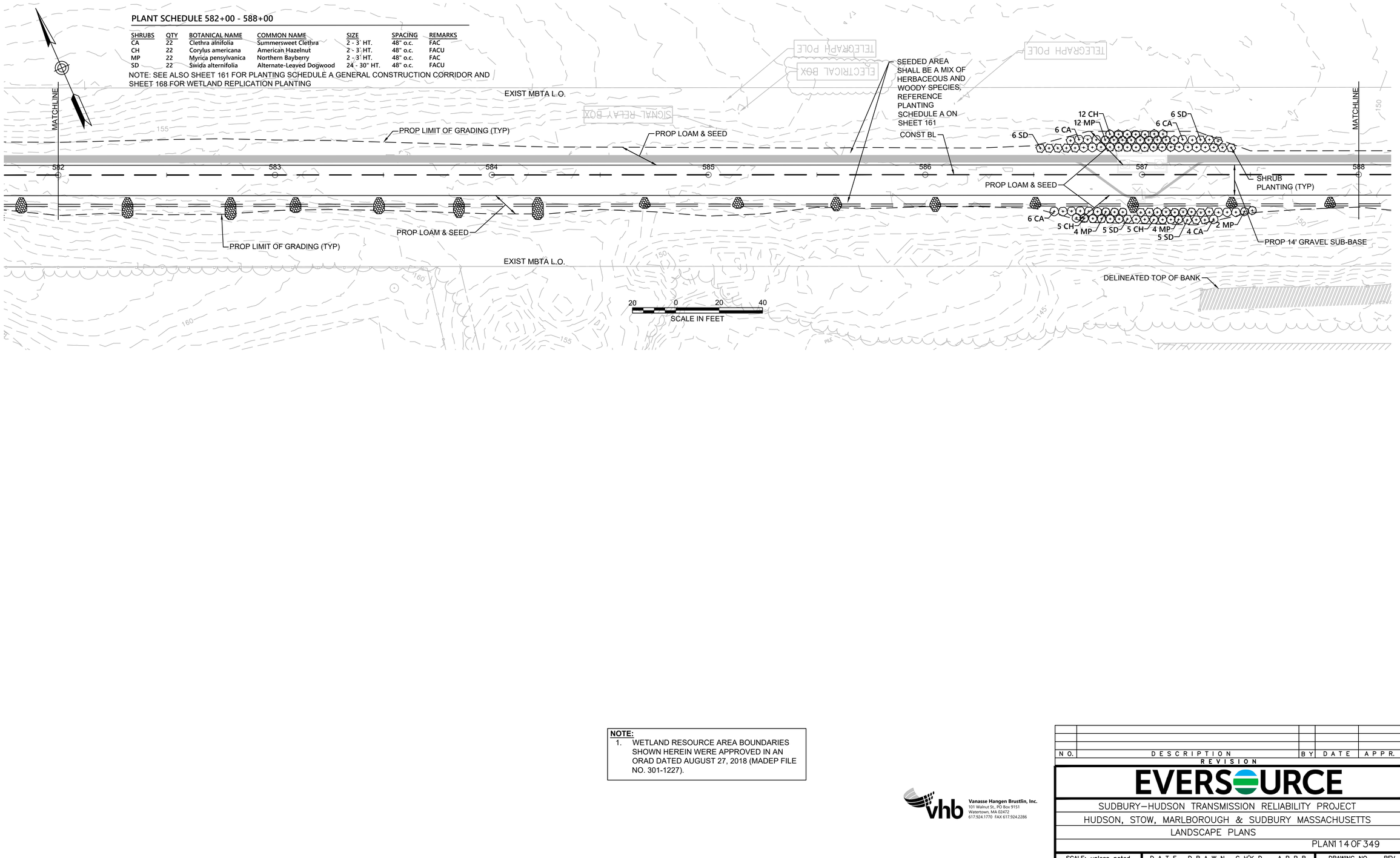
PLAN 113 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.

PLANT SCHEDULE 582+00 - 588+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	22	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	22	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
MP	22	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	22	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING



NOTE:
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NO.	DESCRIPTION	BY	DATE	APPR.
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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 114 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.

PLANT SCHEDULE 599+00 - 702+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	23	Clethra alnifolia	Summersweet Clethra	2 - 3' HT.	48" o.c.	FAC
CH	23	Corylus americana	American Hazelnut	2 - 3' HT.	48" o.c.	FACU
MP	23	Myrica pensylvanica	Northern Bayberry	2 - 3' HT.	48" o.c.	FAC
SD	23	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

STATION ROAD

SEEDED AREA SHALL BE A MIX OF HERBACEOUS AND WOODY SPECIES, REFERENCE PLANTING SCHEDULE A ON SHEET 161

EXIST MBTA L.O.

MATCHLINE

8 CA
6 SD
3 CH
7 MP
10 CA
6 SD
4 MP
9 CH
7 MP
6 SD
6 CH

CONST BL

PROP LOAM & SEED

599
600
601
602

PROP 14' GRAVEL SUB-BASE

PROP LOAM & SEED

EXIST MBTA L.O.

100-YEAR FLOOD ELEVATION 134.0'

DELINEATED TOP OF BANK

BLSF

3 CA
2 MP
3 CH
3 SD
3 MP
2 CH
2 CA
2 SD

TRIBUTARY TO HOP BROOK

STREAM 4

MATCHLINE

603
700
701
702

PROP LOAM & SEED

SHRUB PLANTING (TYP)

3' PLANTING BED SETBACK FROM GRAVEL BASE (TYP)

PROP LOAM & SEED

PROP TRANSMISSION LINE

PROP LIMIT OF GRADING (TYP)

CONT. ON SHEET 114

CONT. ON SHEET 116

SCALE IN FEET
20 0 20 40

UNION AVENUE

NO NET FILL IN 100-YEAR FLOOD - 64.98 CY OF FILL, 163.20 CY OF CUT.
SEE STA 700+00 TO STA 728+50 IN CROSS-SECTIONS FOR MORE INFORMATION

NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).

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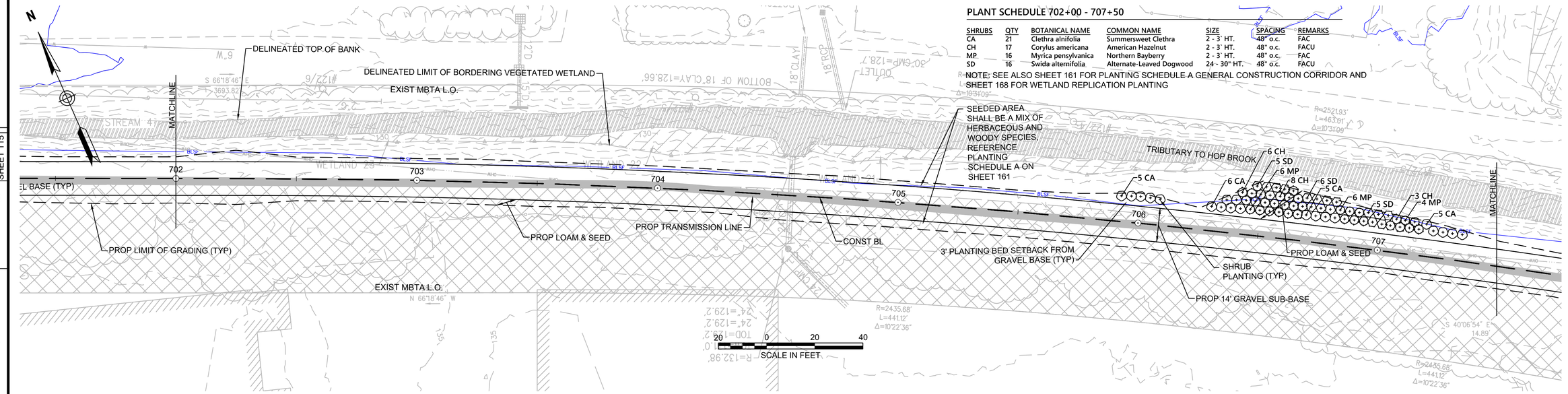
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
LANDSCAPE PLANS

PLAN 115 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.



PLANT SCHEDULE 702+00 - 707+50

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	21	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	17	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
MP	16	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	16	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).

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NO.	DESCRIPTION	BY	DATE	APPR.
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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

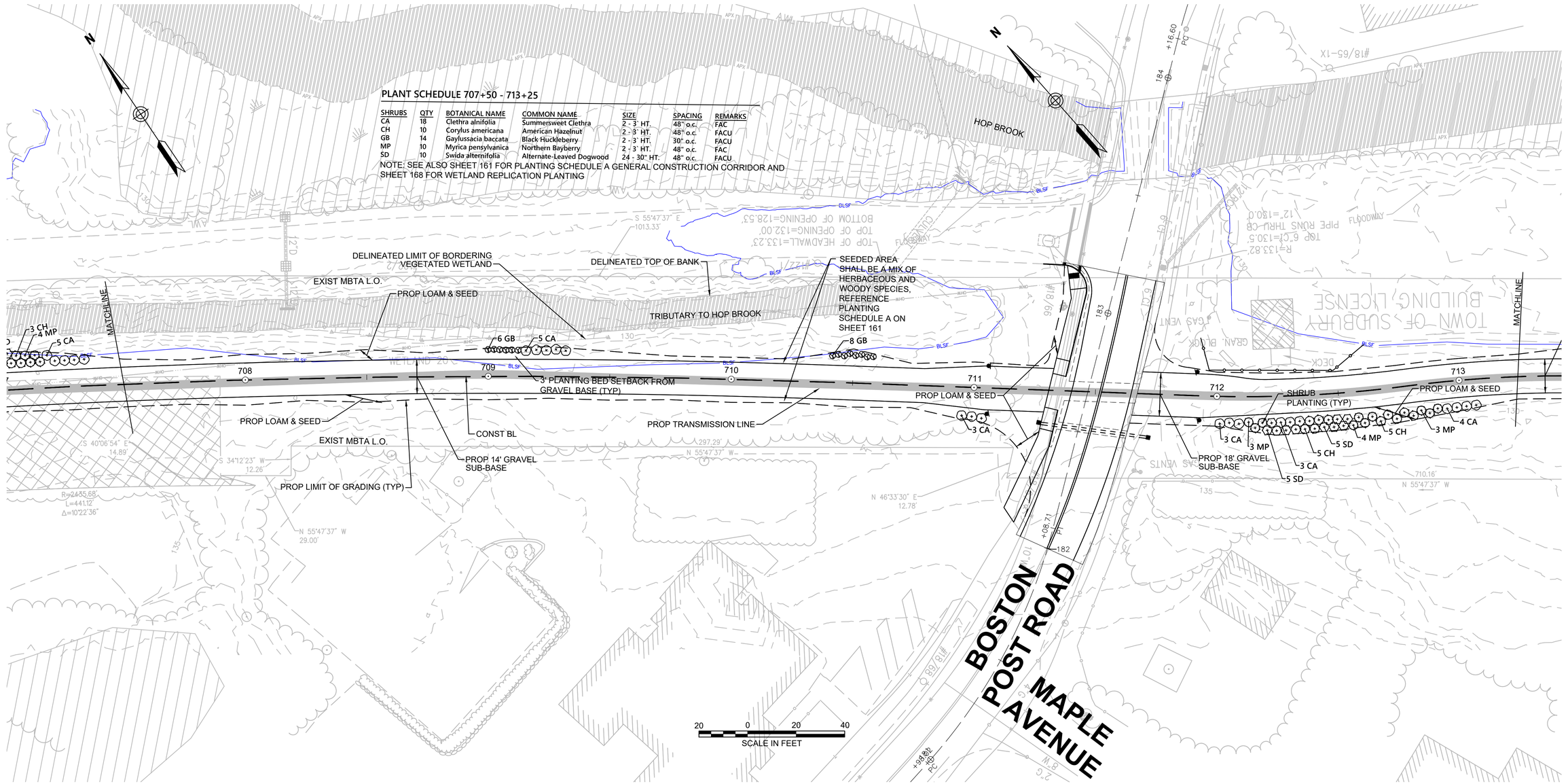
PLAN 116 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.

PLANT SCHEDULE 707+50 - 713+25

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	18	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	10	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
GB	14	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
MP	10	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	10	Svida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING



NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 117 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.

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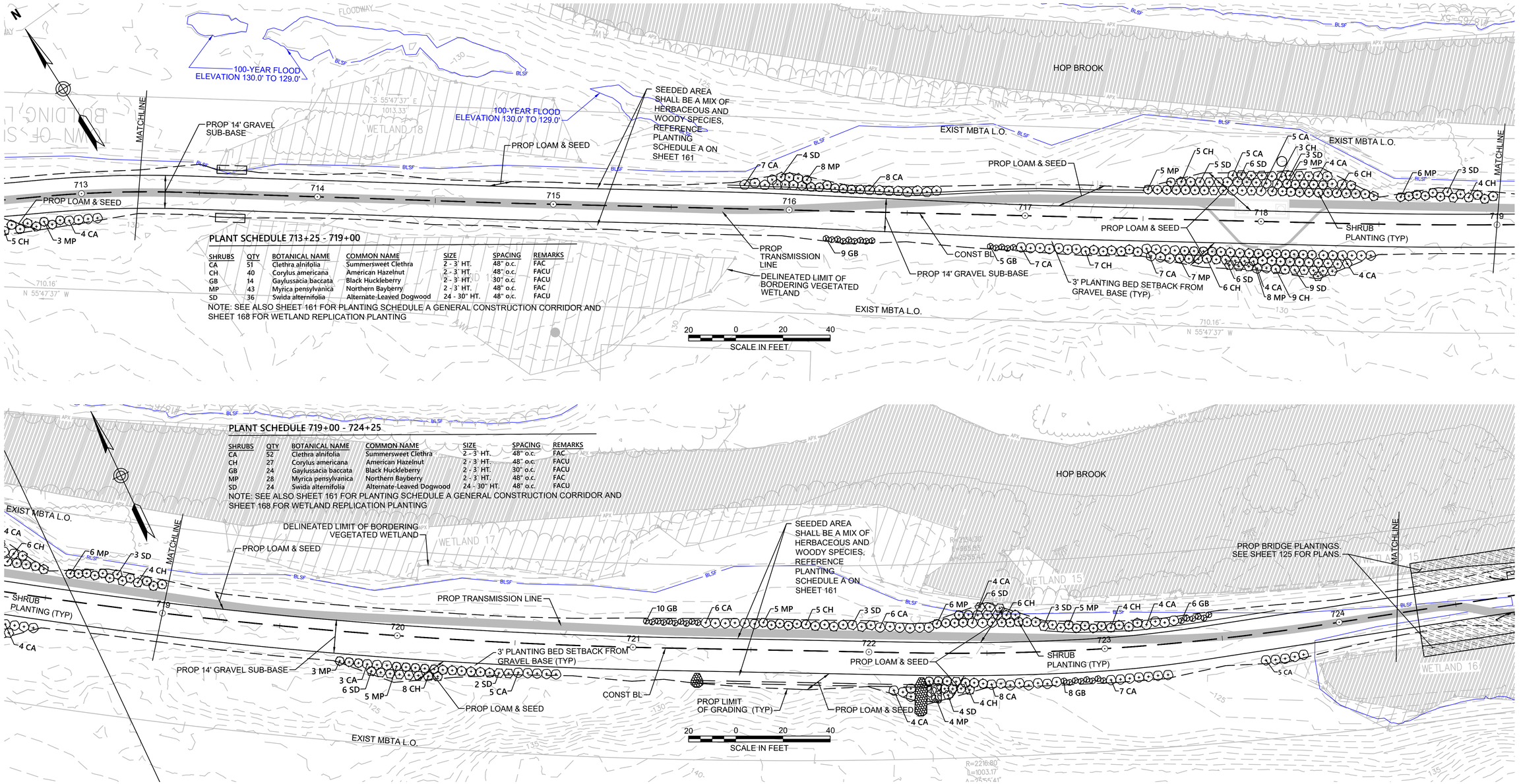

PLANT SCHEDULE 713+25 - 719+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	51	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	40	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
GB	14	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
MP	43	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	36	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

PLANT SCHEDULE 719+00 - 724+25

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	52	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	27	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
GB	24	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
MP	28	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	24	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).

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	REVISION			

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EVERSOURCE

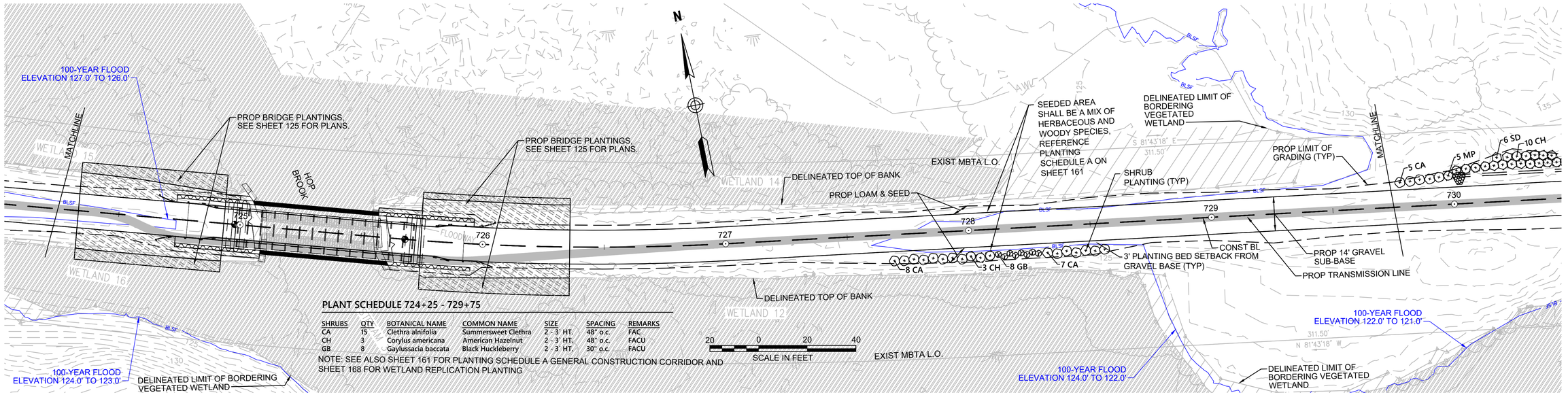
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 118 OF 349

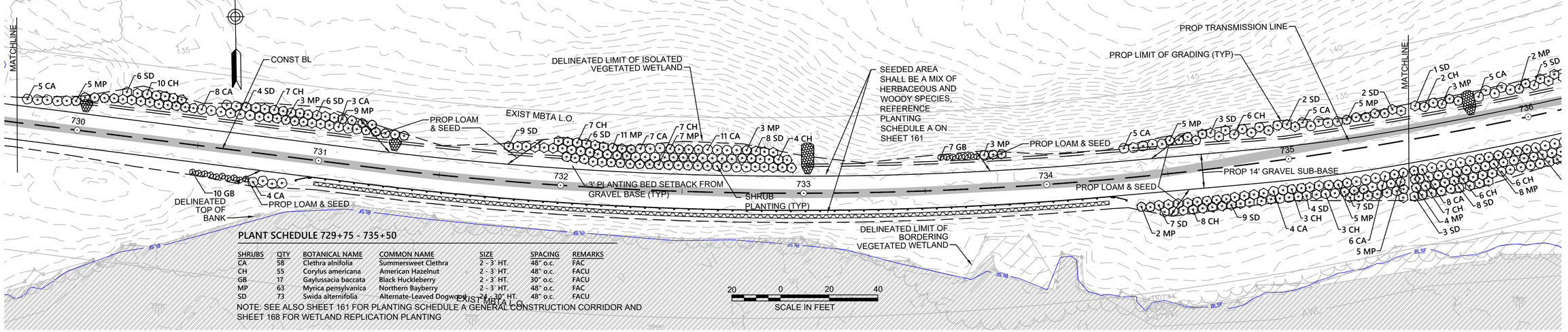
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.



PLANT SCHEDULE 724+25 - 729+75

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	15	Clethra alnifolia	Summersweet Clethra	2 - 3' HT.	48" o.c.	FAC
CH	3	Corylus americana	American Hazelnut	2 - 3' HT.	48" o.c.	FACU
GB	8	Gaylussacia baccata	Black Huckleberry	2 - 3' HT.	30" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING



PLANT SCHEDULE 729+75 - 735+50

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	58	Clethra alnifolia	Summersweet Clethra	2 - 3' HT.	48" o.c.	FAC
CH	55	Corylus americana	American Hazelnut	2 - 3' HT.	48" o.c.	FACU
GB	17	Gaylussacia baccata	Black Huckleberry	2 - 3' HT.	30" o.c.	FACU
MP	63	Myrica pensylvanica	Northern Bayberry	2 - 3' HT.	48" o.c.	FAC
SD	73	Swida alternifolia	Alternate-Leaved Dogwood	2 - 3' HT.	48" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING

NOTES:

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	REVISION			

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EVERSOURCE

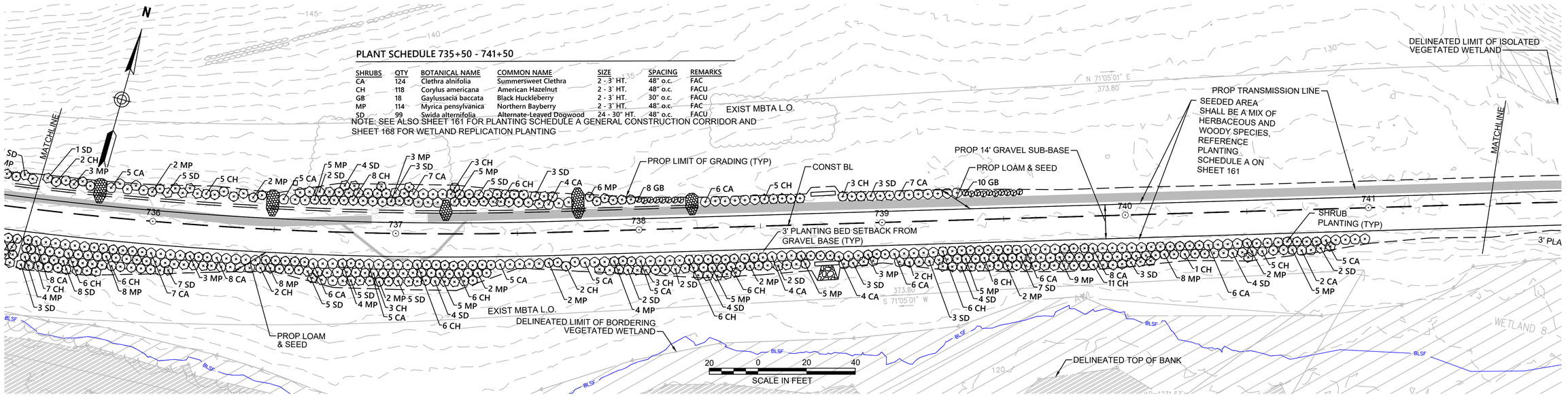
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 119 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.



NOTES:

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

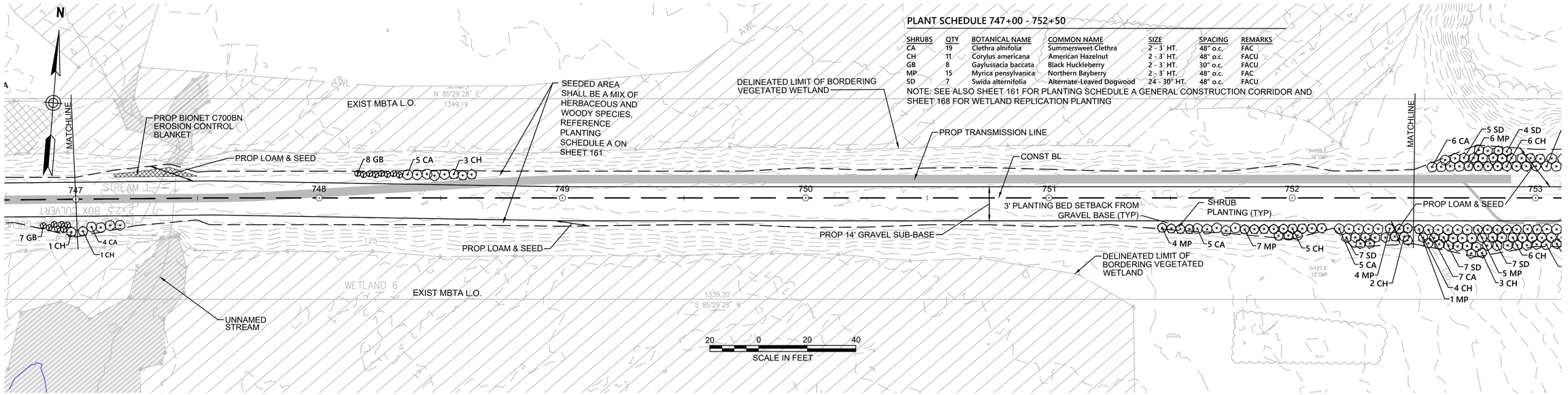
PLAN 120 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.

PLANT SCHEDULE 747+00 - 752+50

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	19	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	11	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
GB	8	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
MP	15	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	7	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

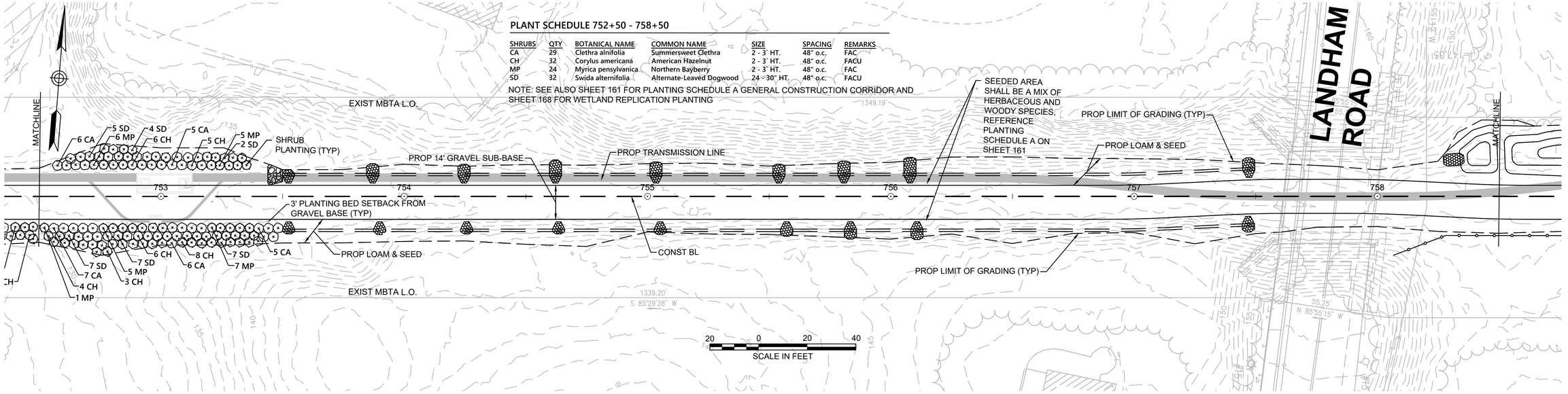
NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING



PLANT SCHEDULE 752+50 - 758+50

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	29	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	32	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
MP	24	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	32	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING



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	REVISION			

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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

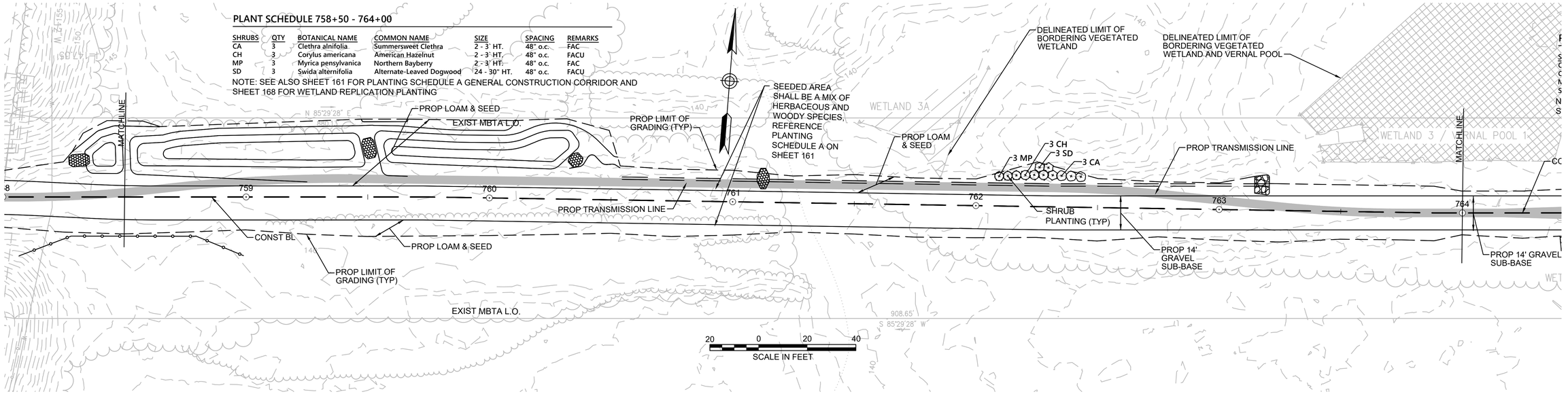
PLAN 121 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.

PLANT SCHEDULE 758+50 - 764+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	3	Clethra alnifolia	Summersweet Clethra	2 - 3' HT.	48" o.c.	FAC
CH	3	Corylus americana	American Hazelnut	2 - 3' HT.	48" o.c.	FACU
MP	3	Myrica pensylvanica	Northern Bayberry	2 - 3' HT.	48" o.c.	FAC
SD	3	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

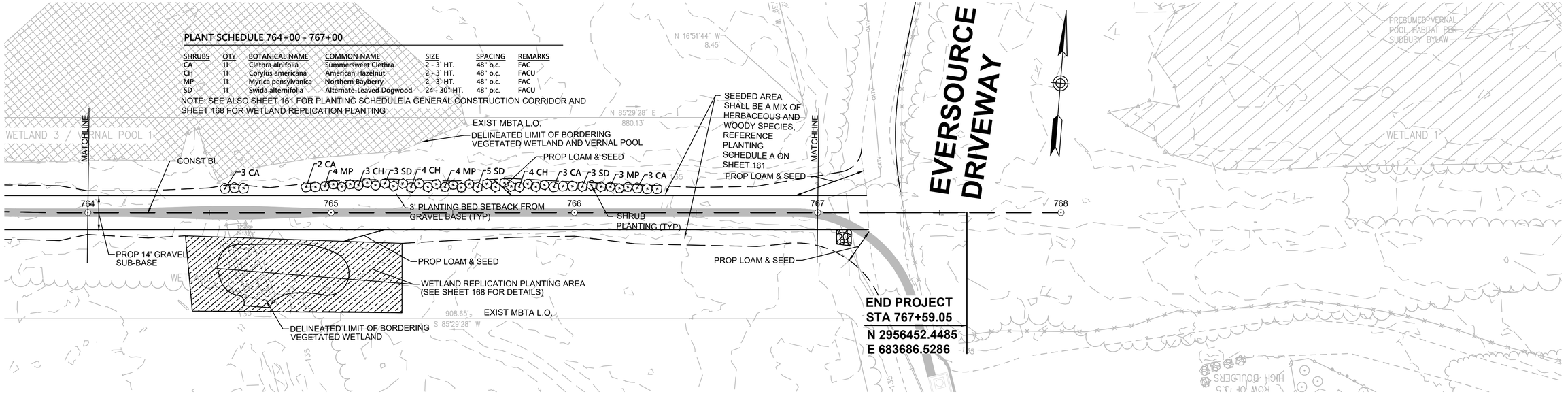
NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING



PLANT SCHEDULE 764+00 - 767+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CA	11	Clethra alnifolia	Summersweet Clethra	2 - 3' HT.	48" o.c.	FAC
CH	11	Corylus americana	American Hazelnut	2 - 3' HT.	48" o.c.	FACU
MP	11	Myrica pensylvanica	Northern Bayberry	2 - 3' HT.	48" o.c.	FAC
SD	11	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND SHEET 168 FOR WETLAND REPLICATION PLANTING



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NO.	DESCRIPTION	BY	DATE	APPR.

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EVERSOURCE

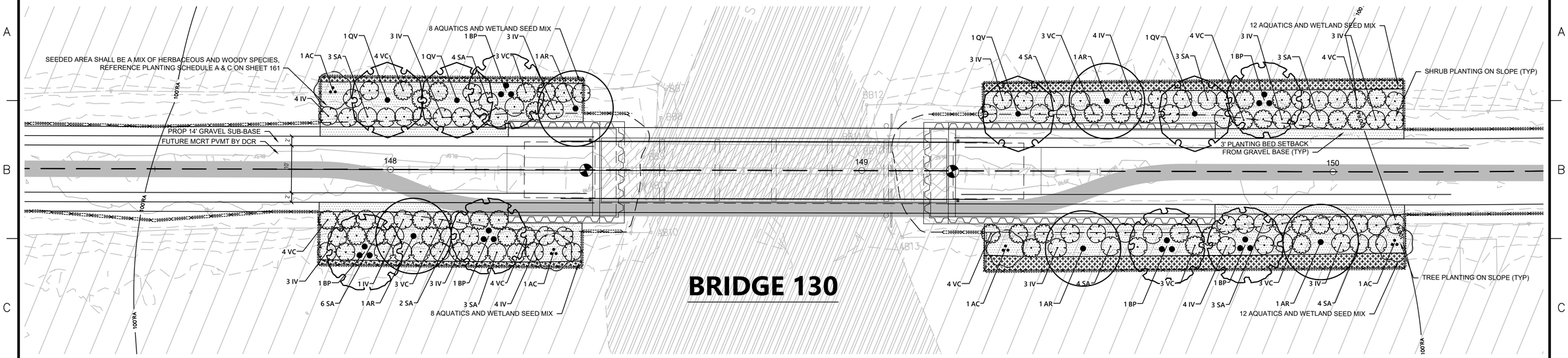
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN122 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	CW	JG	JG	.	.



LEGEND

AQUATIC PLANTS AND WETLAND SEED MIX

SEEDED AREA

PLANT SCHEDULE WEST SIDE

DECIDUOUS TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WETLAND STATUS
AR	2	Acer rubrum	Red Maple	1 1/2" CAL	FAC
AC	2	Amelanchier canadensis	Serviceberry	10 - 12` HT./Multi-Stem	FAC
BP	3	Betula populifolia	Gray Birch	10 - 12` HT./Multi-Stem	FAC
QV	2	Quercus velutina	Black Oak	1 1/2" CAL	UPL

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	
IV	21	Ilex verticillata	Winterberry	3` - 4`	48" o.c.	FACW
SA	18	Swida amomum	Silky Dogwood	3` - 4`	48" o.c.	FACW
VC	18	Vaccinium corymbosum	Highbush Blueberry	3` - 4`	48" o.c.	FACW

AQUATICS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	
	4	Alisma plantago-aquatica	Northern Water-Plantain	2" plug	OBL
	4	Peltandra virginica	Green Arrow-Arum	2" plug	OBL
	4	Pontederia cordata	Pickerelweed	2" plug	OBL
	4	Sagittaria latifolia	Common Arrowhead	2" plug	OBL

PLANT SCHEDULE EAST SIDE

DECIDUOUS TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WETLAND STATUS
AR	3	Acer rubrum	Red Maple	1 1/2" CAL	FAC
AC	2	Amelanchier canadensis	Serviceberry	10 - 12` HT./Multi-Stem	FAC
BP	3	Betula populifolia	Gray Birch	10 - 12` HT./Multi-Stem	FAC
QV	2	Quercus velutina	Black Oak	1 1/2" CAL	UPL

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	
IV	23	Ilex verticillata	Winterberry	3` - 4`	48" o.c.	FACW
SA	21	Swida amomum	Silky Dogwood	3` - 4`	48" o.c.	FACW
VC	21	Vaccinium corymbosum	Highbush Blueberry	3` - 4`	48" o.c.	FACW

AQUATICS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	
	6	Alisma plantago-aquatica	Northern Water-Plantain	2" plug	OBL
	6	Peltandra virginica	Green Arrow-Arum	2" plug	OBL
	6	Pontederia cordata	Pickerelweed	2" plug	OBL
	6	Sagittaria latifolia	Common Arrowhead	2" plug	OBL

WETLAND SEED MIX

WETLAND SEED MIX SHALL BE APPLIED AT A DENSITY OF 18LB./AC.

[1]Wetland seed mix "New England Wetmix" from New England Wetland Plants, Inc. or similar. Typical species: fox sedge (Carex vulpinoidea), sallow sedge (Carex lurida), broom sedge (Carex scoparia), sensitive fern (Onoclea sensibilis), blue vervain (Verbena hastata), hop sedge (Carex lupulina), dark-green bulrush (Scirpus atrovirens), nodding bur-marigold (Bidens cernua), bristly sedge (Carex comosa), fringed sedge (Carex crinita), tall mannagrass (Glyceria grandis), wool-grass (Scirpus cyperinus), soft rush (Juncus effusus), spotted Joe-Pye-weed (Eutrochium maculatum), boneset (Eupatorium perfoliatum), American water-plantain (Alisma subcordatum), New England aster (Symphyotrichum novae-angliae), rattlesnake mannagrass (Glyceria canadensis), purple-stem aster (Symphyotrichum puniceum), soft-stemmed bulrush (Schoenoplectus tabernaemontani), blueflag (Iris versicolor), swamp milkweed (Asclepias incarnata), and Allegheny monkey-flower (Mimulus ringens).

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NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

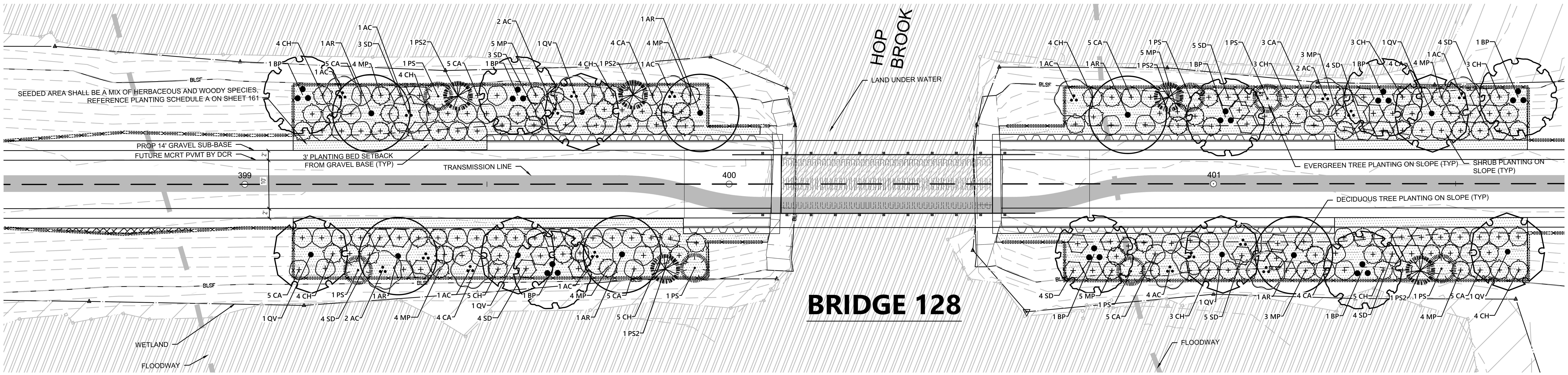
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION DETAILS

PLAN123OF349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=10'	DEC 2021	MS	SK	MES	.	.



LEGEND

SEEDED AREA

PLANT SCHEDULE WEST SIDE

DECIDUOUS TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE		WETLAND STATUS
AR	4	Acer rubrum	Red Maple	1 1/2" CAL		FAC
AC	9	Amelanchier canadensis	Serviceberry	10 - 12` HT./Multi-Stem		FAC
BP	3	Betula populifolia	Gray Birch	10 - 12` HT./Multi-Stem		FAC
QV	3	Quercus velutina	Black Oak	1 1/2" CAL		UPL
EVERGREEN TREES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**		
PS	3	Pinus strobus	White Pine	6 - 8` HT.		FACU
PS2	3	Pinus strobus	White Pine	8 - 10` HT.		FACU
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	
CA	28	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	26	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
MP	21	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	14	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

PLANT SCHEDULE EAST SIDE

DECIDUOUS TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE		WETLAND STATUS
AR	2	Acer rubrum	Red Maple	1 1/2" CAL		FAC
AC	8	Amelanchier canadensis	Serviceberry	10 - 12` HT./Multi-Stem		FAC
BP	5	Betula populifolia	Gray Birch	10 - 12` HT./Multi-Stem		FAC
QV	3	Quercus velutina	Black Oak	1 1/2" CAL		UPL
EVERGREEN TREES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**		
PS	4	Pinus strobus	White Pine	6 - 8` HT.		FACU
PS2	2	Pinus strobus	White Pine	8 - 10` HT.		FACU
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	
CA	26	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
CH	25	Corylus americana	American Hazelnut	2 - 3` HT.	48" o.c.	FACU
MP	24	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SD	26	Swida alternifolia	Alternate-Leaved Dogwood	24 - 30" HT.	48" o.c.	FACU

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NO.	DESCRIPTION	BY	DATE	APPR.

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EVERSOURCE

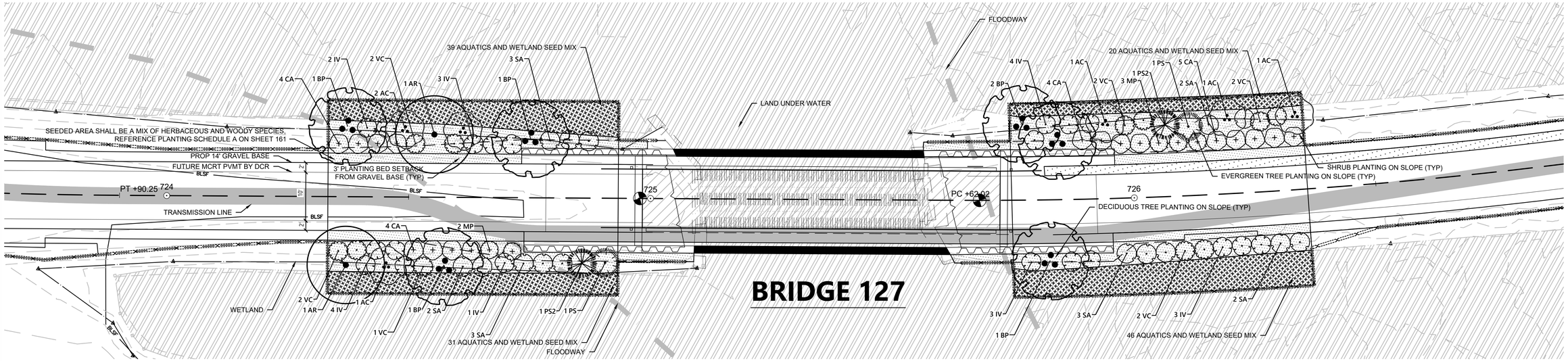
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 124 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=10'	DEC 2021	MS	SK	MES	.	.



LEGEND

AQUATIC PLANTS AND WETLAND SEED MIX

SEEDED AREA

PLANT SCHEDULE WEST SIDE

DECIDUOUS TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WETLAND STATUS
AR	2	Acer rubrum	Red Maple	1 1/2" CAL	FAC
AC	3	Amelanchier canadensis	Serviceberry	10 - 12` HT./Multi-Stem	FAC
BP	3	Betula populifolia	Gray Birch	10 - 12` HT./Multi-Stem	FAC

EVERGREEN TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WETLAND STATUS
PS	1	Pinus strobus	White Pine	6 - 8` HT.	FACU
PS2	1	Pinus strobus	White Pine	8 - 10` HT.	FACU

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	
CA	8	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
IV	10	Ilex verticillata	Winterberry	3 - 4` HT.	48" o.c.	FACW
MP	2	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SA	8	Swida amomum	Silky Dogwood	3 - 4` HT.	48" o.c.	FACW
VC	5	Vaccinium corymbosum	Highbush Blueberry	3 - 4` HT.	48" o.c.	FACW

AQUATICS	QTY	BOTANICAL NAME	COMMON NAME	SIZE		
	18	Alisma plantago-aquatica	Northern Water-Plantain	2" plug	36" o.c.	OBL
	18	Peltandra virginica	Green Arrow-Arum	2" plug	36" o.c.	OBL
	17	Pontederia cordata	Pickerelweed	2" plug	36" o.c.	OBL
	17	Sagittaria latifolia	Common Arrowhead	2" plug	36" o.c.	OBL

PLANT SCHEDULE EAST SIDE

DECIDUOUS TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WETLAND STATUS
AC	3	Amelanchier canadensis	Serviceberry	10 - 12` HT./Multi-Stem	FAC
BP	3	Betula populifolia	Gray Birch	10 - 12` HT./Multi-Stem	FAC

EVERGREEN TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WETLAND STATUS
PS	1	Pinus strobus	White Pine	6 - 8` HT.	FACU
PS2	1	Pinus strobus	White Pine	8 - 10` HT.	FACU

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	
CA	9	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
IV	10	Ilex verticillata	Winterberry	3 - 4` HT.	48" o.c.	FACW
MP	3	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c.	FAC
SA	7	Swida amomum	Silky Dogwood	3 - 4` HT.	48" o.c.	FACW
VC	6	Vaccinium corymbosum	Highbush Blueberry	3 - 4` HT.	48" o.c.	FACW

AQUATICS	QTY	BOTANICAL NAME	COMMON NAME	SIZE		
	17	Alisma plantago-aquatica	Northern Water-Plantain	2" plug	36" o.c.	OBL
	17	Peltandra virginica	Green Arrow-Arum	2" plug	36" o.c.	OBL
	16	Pontederia cordata	Pickerelweed	2" plug	36" o.c.	OBL
	16	Sagittaria latifolia	Common Arrowhead	2" plug	36" o.c.	OBL

WETLAND SEED MIX

WETLAND SEED MIX SHALL BE APPLIED AT A DENSITY OF 18LB./AC.

[1]Wetland seed mix "New England Wetmix" from New England Wetland Plants, Inc. or similar. Typical species: fox sedge (Carex vulpinoidea), sallow sedge (Carex lurida), broom sedge (Carex scoparia), sensitive fern (Onoclea sensibilis), blue vervain (Verbena hastata), hop sedge (Carex lupulina), dark-green bulrush (Scirpus atrovirens), nodding bur-marigold (Bidens cernua), bristly sedge (Carex comosa), fringed sedge (Carex crinita), tall mannagrass (Glyceria grandis), wool-grass (Scirpus cyperinus), soft rush (Juncus effusus), spotted Joe-Pye-weed (Eutrochium maculatum), boneset (Eupatorium perfoliatum), American water-plantain (Alisma subcordatum), New England aster (Symphyotrichum novae-angliae), rattlesnake mannagrass (Glyceria canadensis), purple-stem aster (Symphyotrichum puniceum), soft-stemmed bulrush (Schoenoplectus tabernaemontani), blueflag (Iris versicolor), swamp milkweed (Asclepias incarnata), and Allegheny monkey-flower (Mimulus ringens).

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REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 125 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=10'	DEC 2021	MS	SK	MES	.	.

GENERAL NOTES

1. ALL CONSTRUCTION SIGNING, TEMPORARY TRAFFIC CONTROL DEVICES, AND ROADSIDE ELEMENTS SHALL CONFORM WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED, THE MASSDOT STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TEMPORARY TRAFFIC CONTROL PLANS, THE LATEST REVISIONS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, (AASHTO) ROADSIDE DESIGN GUIDE, AASHTO POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, AND NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350 OR THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

2. THE ALLOWABLE WORK HOURS ARE IDENTIFIED IN THE ENERGY FACILITIES SITING BOARD FINAL DECISION. THE CONTRACTOR SHALL NOTE THAT THERE ARE FURTHER RESTRICTED WORKING HOURS WHILE WORKING IN MUNICIPAL AND MASSDOT RIGHTS OF WAY (ROWS) IN ACCORDANCE WITH THEIR RESPECTIVE PERMITS.

   WORK HOURS WITHIN THE ROADWAY SHALL BE AS STATED IN THE STATE/LOCAL PERMIT ISSUED BY MASSDOT OR THE MUNICIPALITY WITH JURISDICTION OF THE ROADWAY. AT A MINIMUM, THE CONTRACTOR SHALL NOTE THE FOLLOWING POTENTIAL RESTRICTIONS:
   - TYPICALLY, MASSDOT OR LOCAL MUNICIPALITY WILL NOT ALLOW WORK THAT IMPACTS THE TRAVEL WAY DURING PEAK TRAFFIC PERIODS. FOR EXAMPLE, PEAK PERIODS ARE COMMONLY DEFINED AS MONDAY THRU FRIDAY, 7:00 AM TO 9:00 AM AND 3:00 PM TO 7:00 PM.
   - IN ORDER TO MINIMIZE IMPACTS TO TRAFFIC DURING CONSTRUCTION, IT IS SUGGESTED THAT WORK AT THE INTERSECTIONS OF FOREST AVENUE AT MARLBORO STREET AND MAIN STREET AT FOREST AVENUE/ WILKINS STREET WILL REQUIRE NIGHT WORK.
   - WORK IN THE PROXIMITY OF FOREST AVENUE ELEMENTARY SCHOOL AND CHAPS CHILD CARE WILL ALSO REQUIRE COORDINATION WITH THE TOWN OF HUDSON.
   - ROAD CLOSURE AND DETOUR OF CHESTNUT STREET SHALL BE COORDINATED WITH THE TOWN OF HUDSON AND THE TOWN OF STOW AND ANY IMPACTS TO SCHOOL BUS ROUTES SHALL BE CLOSELY COORDINATED WITH THE APPROPRIATE AGENCY.

3. NO WORK SHALL OCCUR WITHIN THE PUBLIC WAY ON STATE RECOGNIZED HOLIDAYS UNLESS OTHERWISE APPROVED BY THE ENGINEER.

4. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (MAAB) AND AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) REQUIREMENTS AND PUBLIC RIGHTS-OF WAY ACCESSIBILITY GUIDELINES (PROWAG).

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

6. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN SAFE AND REASONABLE ABUTTER ACCESS. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS.

7. THE FIRST 10 DRUMS ON TAPERS SHALL BE REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS AND SHALL BE OPERATING, AT A MINIMUM, BETWEEN DUSK AND DAWN, WHEN TAPER IS DEPLOYED.

8. REFLECTORIZED CONES SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.

9. CONES MAY BE USED IN LIEU OF DRUMS OUTSIDE OF TAPER AREAS.

10. THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 2 WEEKS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OR RESTRICTION OF ACCESS.

11. FOR DROP-OFFS 3" OR LESS WITHIN THE CLEAR ZONE, CONDITION MAY BE MITIGATED WITH W8-9 (LOW SHOULDER) SIGN OR TEMPORARY CHANNELIZATION DEVICES.

12. CONTRACTOR SHALL STAGE WORK SUCH THAT A DROP-OFF OF NO MORE THAN 3" AT THE END OF EACH WORK DAY EXISTS WITHIN THE CLEAR ZONE AT ANY TIME AND ENSURE DROP-OFF IS MITIGATED WITHOUT BARRIER PER NOTE 11.

13. CONSTRUCTION CLEAR ZONE SHALL BE IN ACCORDANCE WITH MASSDOT BOSTON TRAFFIC GUIDELINES AS FOLLOWS:
    4' IF POSTED SPEED IS LESS THAN 35 MPH
    8' IF POSTED SPEED IS 35 MPH
    15' IF POSTED SPEED IS 40 MPH

14. 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED UNLESS OTHERWISE NOTED.

15. NON-ESSENTIAL TRAFFIC CONTROL DEVICES AND SIGNS SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS WHEN NOT IN USE.

16. SIGNS INSTALLED ON PORTABLE STANDS REQUIRE 12 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.

17. SIGNS INSTALLED ON PORTABLE STANDS PLACED AMONG CHANNELIZATION DEVICES REQUIRE A 36 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.

18. SIGNS MOUNTED ON POSTS REQUIRE A MINIMUM 84 INCH MOUNTING HEIGHT FROM THE ROADWAY OR SIDEWALK SURFACE TO THE BOTTOM OF THE SIGN.

19. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN NCHRP 350 AND/OR MASH CRASH TESTED SIGN SUPPORTS AND INSTALLED IN ACCORDANCE WITH THE MUTCD. SIGNS SHALL NOT BE MOUNTED TO OR LEANED AGAINST DRUMS OR CONES.

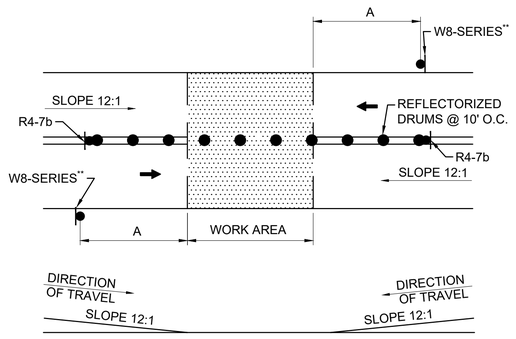
20. CONTRACTOR SHALL SECURE WORK AREAS BY APPROPRIATE MEANS, TO PREVENT UNAUTHORIZED ACCESS AT ALL TIMES.

21. THERE IS NO DESIGNATED BICYCLE LANE ON THE ROADWAY WITHIN THE PROJECT LIMITS. BICYCLES ARE EXPECTED TO SHARE THE ROAD WITH GENERAL VEHICULAR TRAFFIC.

22. TEMPORARY CONSTRUCTION FENCING IS TO BE USED WHEN WORKING ADJACENT TO PRIVATE PROPERTY TO DELINEATE WORK ZONE LIMITS AND PREVENT UNAUTHORIZED ACCESS.

23. WORK ZONE ACCESS POINTS ARE IDENTIFIED ON THE KEY PLAN AND WORK ZONE ACCESS PLAN ON SHEETS 127 - 129. CONTRACTOR SHALL SWEEP AREAS ADJACENT TO THE SITE ON A DAILY BASIS. CONTRACTOR SHALL REPAIR DAMAGED ROADWAYS AND SIDEWALKS AT THEIR OWN COST.

LANE TAPER LENGTH FORMULAS
L= TAPER LENGTH IN FEET
W= WIDTH OF ROADWAY TO BE SHIFTED OR REDIRECTED IN FEET
S= POSTED SPEED LIMIT IN MPH
POSTED SPEED
40 MPH OR LESS
$L = \frac{WS^2}{60}$

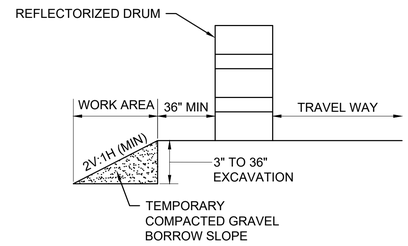


NOTES:
1. SQUARE OFF THE FULL WIDTH OF THE ROADWAY AT THE END OF WORK DAY
2. ** CONTRACTOR SHALL INSTALL W8-1 OR W8-8 SIGN, AS APPROPRIATE, ON ALL ROADWAYS IN ADVANCE OF THE TRANSITION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

TEMPORARY PAVEMENT TRANSITION

SCALE: NTS

LEGEND	
P	POLICE OFFICER
S	TRAFFIC SIGNAL
●	REFLECTORIZED DRUM
◉	REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS (SEE NOTE 7)
	TEMPORARY CONSTRUCTION SIGN
▲	TRAFFIC CONE
	TYPE III BARRICADE
	WORK AREA (PUBLIC ACCESS RESTRICTED)
	ROAD CLOSED, LOCAL ACCESS ONLY
	TRAFFIC FLOW
	PEDESTRIAN ROUTE
	CONSTRUCTION FENCE
	TEMPORARY PEDESTRIAN BARRICADE
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
NTS	NOT TO SCALE



NOTE:
1. CONTRACTOR SHALL INSTALL W8-9 SIGN ON ALL ROADWAYS 350 FT IN ADVANCE OF THE START OF DROP-OFF CONDITION.

TYPICAL ROADWAY DROP-OFF PROTECTION

SCALE: NTS

ADVANCE SIGN SPACING					
	DISTANCE BETWEEN SIGNS (FEET)				
ROADWAY	A	B	C	D
BOSTON POST RD (ROUTE 20), FOREST AVE, WILKINS ST, MAIN ST, CONCORD RD, DUTTON RD, PEAKHAM RD, HORSE POND RD, UNION AVE, LANDHAM RD	350	150	350	350
ALL OTHERS	100	50	100	100

BUFFER SPACING	
SPEED (MPH)	DISTANCE (FEET)
15	80
20	115
25	155
30	200
35	250
40	305

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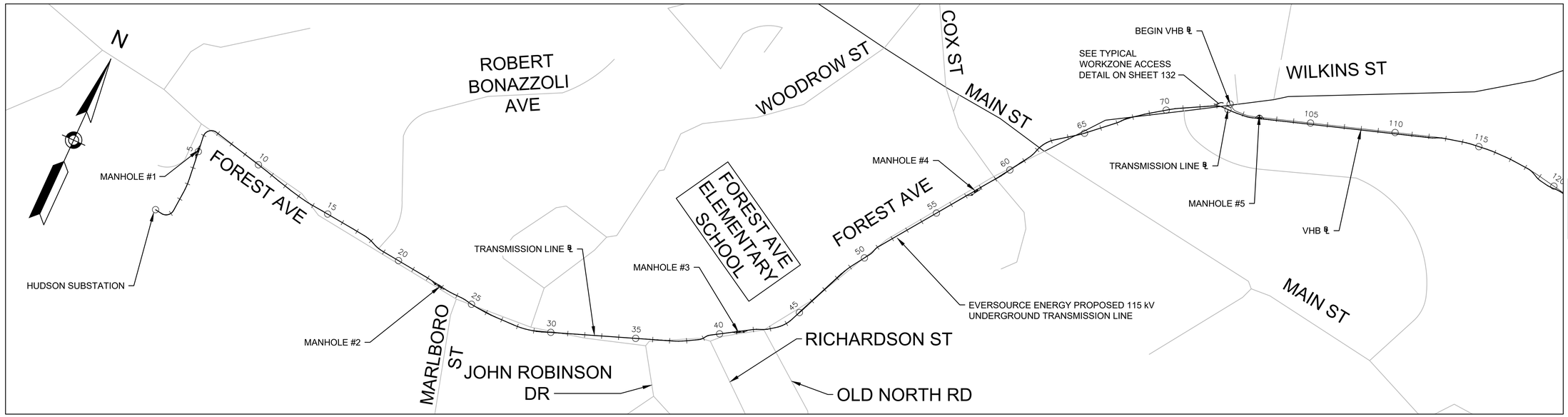
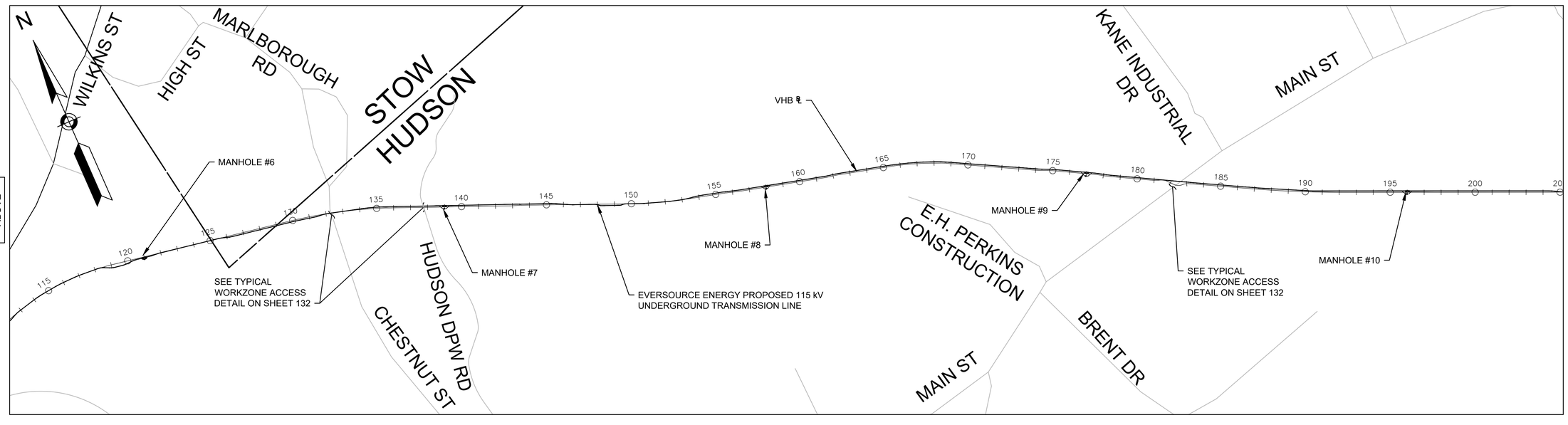
EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TEMPORARY TRAFFIC CONTROL PLANS
GENERAL NOTES AND LEGEND

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	DEC 2021	MM	KW	MES	126 OF 349	.





0 300 600 900 1200

SCALE: 1" = 300'

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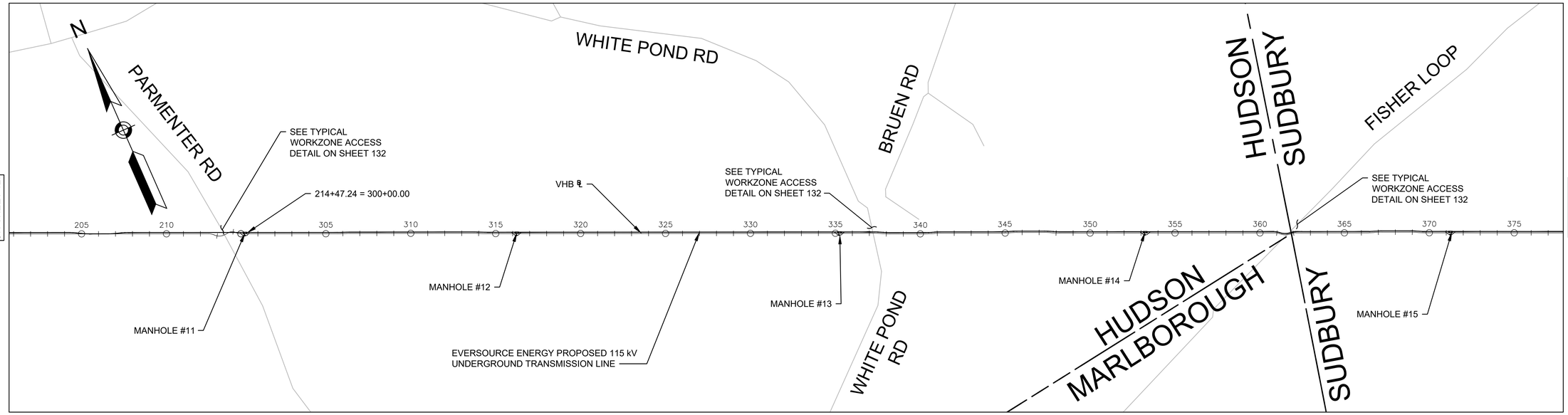
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

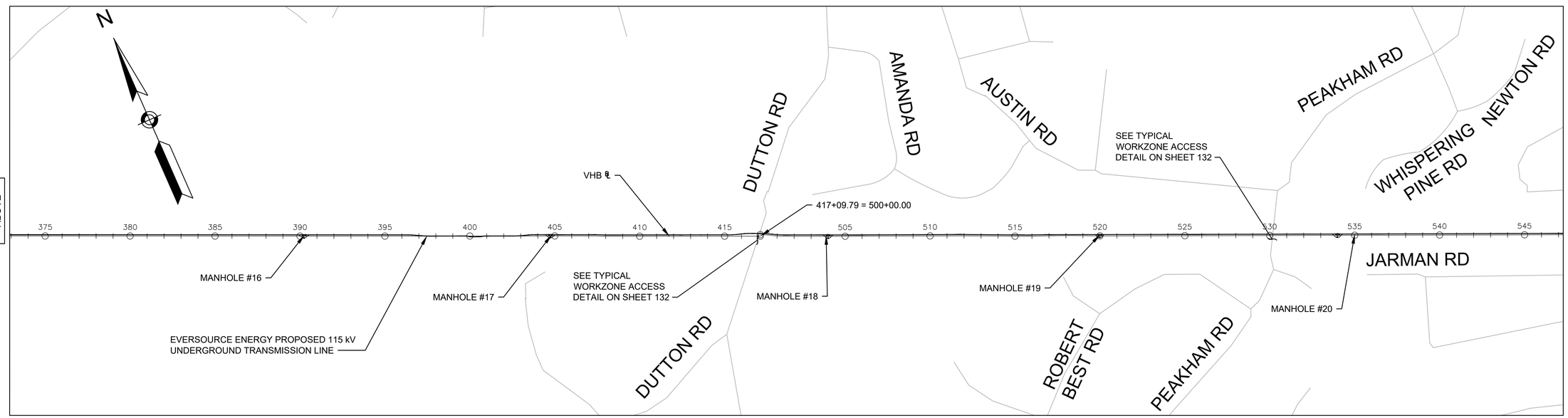
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

KEY PLAN AND WORKZONE ACCESS PLAN

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=300'	DEC 2021	MM	KW	MES	127 OF 349	.





0 300 600 900 1200

SCALE: 1" = 300'

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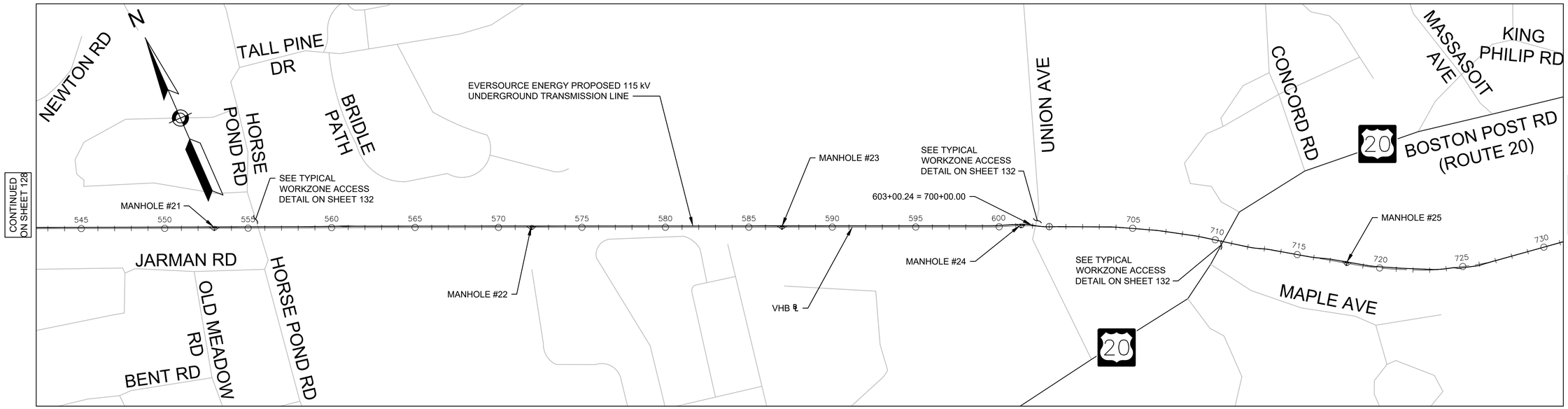
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

KEY PLAN AND WORKZONE ACCESS PLAN

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=300'	DEC 2021	MM	KW	MES	128 OF 349	.



0 300 600 900 1200

SCALE: 1" = 300'

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

KEY PLAN AND WORKZONE ACCESS PLAN

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=300'	DEC 2021	MM	KW	MES	129 OF 349	.

SUGGESTED TEMPORARY TRAFFIC CONTROL SETUP APPLICATION

TOWN	ROADWAY	TRANSMISSION ℄ STATION (SEE NOTE 1)	VHB ℄ STATION (SEE NOTE 2)	TEMPORARY TRAFFIC CONTROL SETUPS	SHEET NUMBER	NOTES
HUDSON	EVERSOURCE	0+00 ± TO 6+20 ± MANHOLE #1	--	OFF-ROAD	--	MANHOLE #4
	FOREST AVENUE	6+20 ± TO 6+40 ±	--	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC PEDESTRIAN BYPASS TYPE II DETAIL	SHEET 131 SHEET 132	--
		6+40 ± TO 22+20 ±	--	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC	SHEET 131	--
		22+20 ± TO 24+00 ± MANHOLE #2	--	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC	SHEET 131	MANHOLE #2
		24+00 ± TO 24+40 ±	--	SITE SPECIFIC FOREST AVE AT MARLBORO ST STAGE 1	SHEET 133	AT MARLBORO ST
		24+40 ± TO 24+80 ±	--	SITE SPECIFIC FOREST AVE AT MARLBORO ST STAGE 2	SHEET 134	AT MARLBORO ST
		24+80 ± TO 29+20 ±	--	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC	SHEET 131	--
		29+20 ± TO 30+20 ±	--	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC	SHEET 131	AT WOODROW ST
		30+20 ± TO 35+60 ±	--	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC	SHEET 131	--
		35+60 ± TO 37+00 ±	--	CLOSURE AND DETOUR PLAN - JOHN ROBINSON DR	SHEET 139	AT JOHN ROBINSON RD
		37+00 ± TO 39+00 ±	--	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC	SHEET 131	--
		39+00 ± TO 40+50 ±	--	ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS	SHEET 131	AT RICHARDSON ST
		40+50 ± TO 41+80 ± MANHOLE #3	--	CLOSURE AND DETOUR PLAN- FOREST AVENUE - MANHOLE #3	SHEET 140	MANHOLE #3
		41+80 ± TO 42+50 ±	--	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC	SHEET 131	--
		42+50 ± TO 44+00 ±	--	ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS	SHEET 131	AT OLD NORTH RD
		44+00 ± TO 56+80 ±	--	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC	SHEET 131	--
		56+80 ± TO 58+40 ± MANHOLE #4	--	CLOSURE AND DETOUR PLAN- FOREST AVENUE - MANHOLE #4	SHEET 141	MANHOLE #4
		58+40 ± TO 61+40 ±	--	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC	SHEET 131	--
	FOREST AVENUE / WILKINS ST	61+40 ± TO 62+00 ±	--	SITE SPECIFIC FOREST AVE AT MAIN ST STAGE 1 PCMS PLAN - FOREST AVE AT MAIN ST NIGHT WORK	SHEET 135 SHEET 149	AT MAIN / WILKINS ST
		62+00 ± TO 62+30 ±	--	SITE SPECIFIC FOREST AVE AT MAIN ST STAGE 2 CLOSURE AND DETOUR PLAN - FOREST AVENUE - MANHOLE #4	SHEET 136 SHEET 141	AT MAIN / WILKINS ST
		62+30 ± TO 62+40 ±	--	SITE SPECIFIC FOREST AVE AT MAIN ST STAGE 3 CLOSURE AND DETOUR PLAN - FOREST AVENUE - MANHOLE #4	SHEET 137 SHEET 141	AT MAIN / WILKINS ST
		62+40 ± TO 63+30 ±	--	SITE SPECIFIC FOREST AVE AT MAIN ST STAGE 4 PCMS PLAN - FOREST AVE AT MAIN ST NIGHT WORK	SHEET 138 SHEET 149	AT MAIN / WILKINS ST
	WILKINS ST	63+30 ± TO 73+60 ±	--	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC	SHEET 131	--
	MBTA ROW	--	100+31 ± TO 124+95 ±	OFF-ROAD	--	--
STOW	MBTA ROW	--	124+95 ± TO 128+30 ±	OFF-ROAD	--	--
HUDSON	MBTA ROW	--	128+30 ± TO 132+50 ±	OFF-ROAD	--	--
	CHESTNUT ST	--	132+50 ± TO 132+80 ±	CLOSURE AND DETOUR PLAN- CHESTNUT ST AND MARLBORO RD	SHEET 143	AT CHESTNUT ST
	MBTA ROW	--	132+80 ± TO 181+60 ±	OFF-ROAD	--	--
	MAIN ST	--	181+60 ± TO 182+30 ±	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC	SHEET 131	AT MAIN ST
	MBTA ROW	--	182+30 ± TO 213+50 ±	OFF-ROAD	--	--
	PARMENTER RD	--	213+50 ± TO 213+70 ±	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC	SHEET 131	AT PARMENTER RD
	MBTA ROW	--	213+70 ± TO 214+47 ± 214+47 ± = 300+00 ± 300+00 ± TO 336+90 ±	OFF-ROAD	--	--
	WHITE POND RD	--	336+90 ± TO 337+10 ±	CLOSURE AND DETOUR PLAN- WHITE POND RD	SHEET 144	AT WHITE POND RD
	MBTA ROW	--	337+10 ± TO 361+40 ±	OFF-ROAD	--	--
MARLBOROUGH	MBTA ROW	--	361+40 ± TO 361+55 ±	OFF-ROAD	--	--
SUDBURY	MBTA ROW	--	361+55 ± TO 416+85 ±	OFF-ROAD	--	--
	DUTTON RD	--	416+85 ± TO 417+10 ± 417+10 ± = 500+00 ±	CLOSURE AND DETOUR PLAN- DUTTON RD	SHEET 145	AT DUTTON RD
	MBTA ROW	--	500+00 ± TO 530+45 ±	OFF-ROAD	--	--
	PEAKHAM RD	--	530+45 ± TO 530+65 ±	PEDESTRIAN BYPASS TYPE I DETAIL CLOSURE AND DETOUR- PEAKHAM RD	SHEET 132 SHEET 146	AT PEAKHAM RD
	MBTA ROW	--	530+65 ± TO 555+75 ±	OFF-ROAD	--	--
	HORSE POND RD	--	555+75 ± TO 556+00 ±	PEDESTRIAN BYPASS TYPE I DETAIL CLOSURE AND DETOUR- HORSE POND RD	SHEET 132 SHEET 147	AT HORSE POND RD
	MBTA ROW	--	556+00 ± TO 602+35 ±	OFF-ROAD	--	--
	UNION AVE	--	602+35 ± TO 602+65 ±	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC	SHEET 131	AT UNION AVE
	MBTA ROW	--	602+65 ± TO 603+00 ± 603+00 ± = 700+00 ± 700+00 ± TO 711+35 ±	OFF-ROAD	--	--
	BOSTON POST RD (ROUTE 20)	--	711+35 ± TO 711+65 ±	SEE NOTE 4	--	AT BOSTON POST RD
	MBTA ROW	--	711+65 ± TO 757+65 ±	OFF-ROAD	--	--
	LANDHAM RD	--	757+65 ± TO 758+00 ±	OFF-ROAD	--	BELOW LANDHAM RD
	MBTA ROW	--	758+00 ± TO 767+30 ±	OFF-ROAD	--	--
SUDBURY	EVERSOURCE	475+40 ± TO 479+85	--	OFF-ROAD	--	--

NOTES:
1. REFER TO KEY PLAN AND WORKZONE ACCESS PLAN ON SHEETS 128 & 129 FOR OVERVIEW. SEE EVERSOURCE ENERGY 115kV UNDERGROUND TRANSMISSION LINE PLAN AND PROFILE FOR ADDITIONAL INFORMATION.
2. REFER TO VHB CONSTRUCTION PLANS ON SHEETS 24-74 FOR ADDITIONAL INFORMATION.
3. REFER TO GENERAL NOTE 2 ON SHEET 126 REGARDING WORK HOURS.
4. REFER TO APPROVED MASSDOT ACCESS PERMIT TTCP FOR WORK ALONG ROUTE 20.

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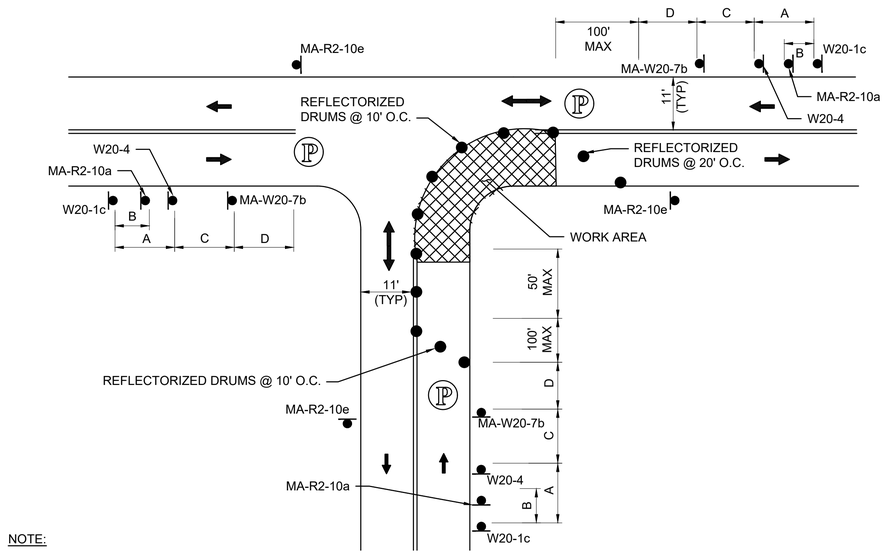
EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TEMPORARY TRAFFIC CONTROL PLANS
SUGGESTED TEMPORARY TRAFFIC CONTROL SETUP

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	DEC 2021	MM	KW	MES	130 OF 349	.

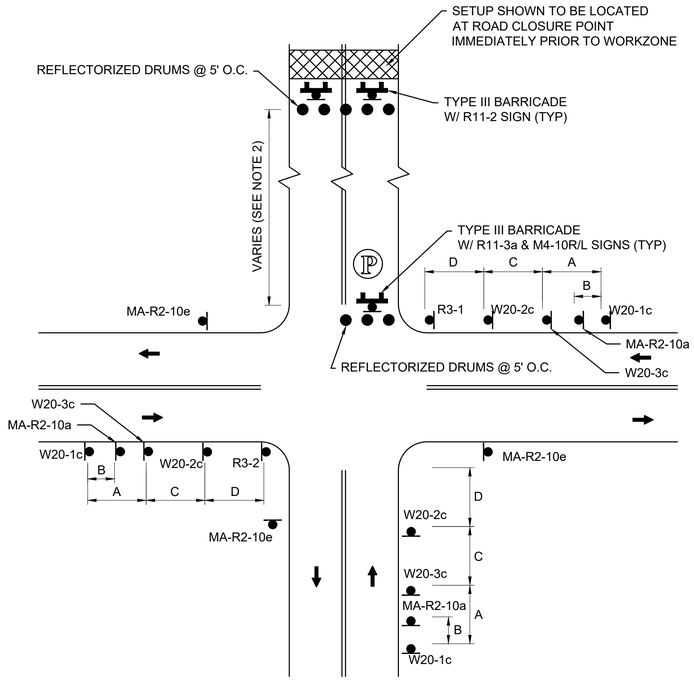


NOTE:

1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY.

ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS

SCALE: NTS

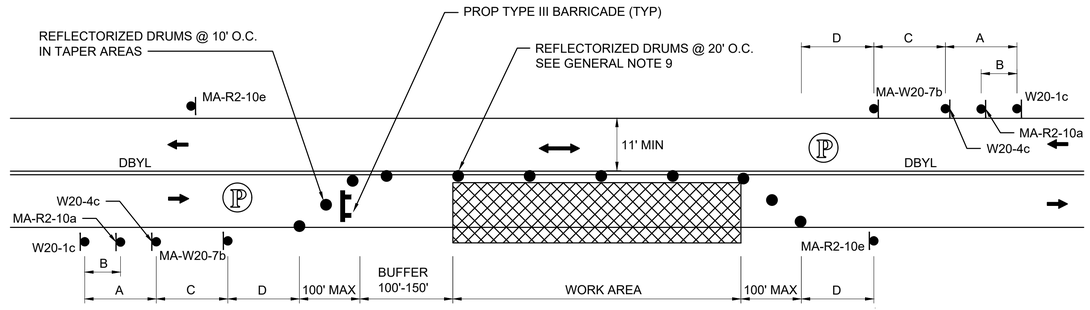


NOTE:

1. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.
2. SEE DETOUR PLAN FOR LOCATION OF ROAD CLOSURE WITH LOCAL ACCESS.

TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS

SCALE: NTS

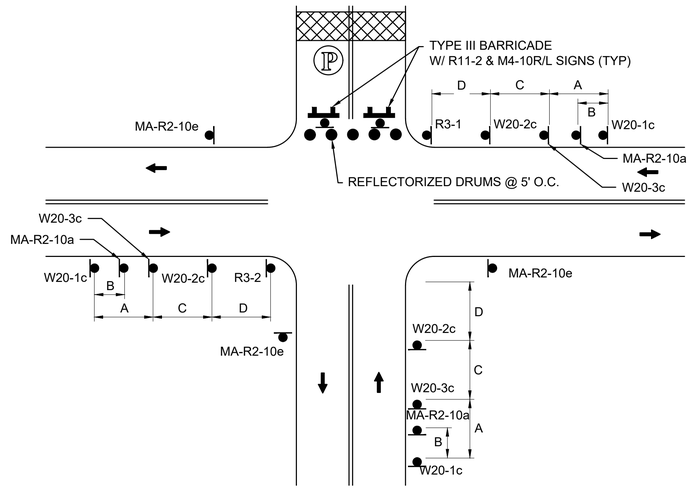


NOTE:

1. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.

TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC

SCALE: NTS



NOTE:

1. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.

TYPICAL LOCAL ROAD CLOSURE

SCALE: NTS

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

TYPICAL DETAILS

vhb Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
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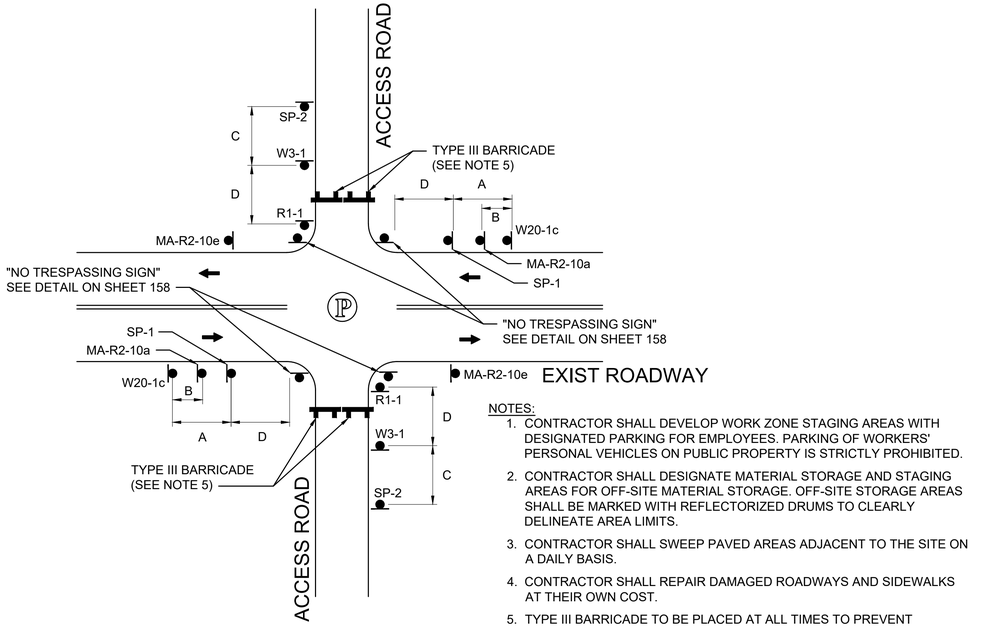
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	DEC 2021	MM	KW	MES	131 OF 349	.



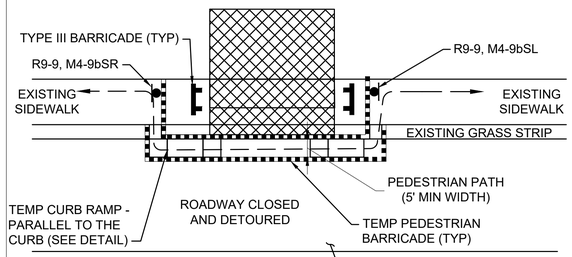
NOTES:

1. CONTRACTOR SHALL DEVELOP WORK ZONE STAGING AREAS WITH DESIGNATED PARKING FOR EMPLOYEES. PARKING OF WORKERS' PERSONAL VEHICLES ON PUBLIC PROPERTY IS STRICTLY PROHIBITED.
2. CONTRACTOR SHALL DESIGNATE MATERIAL STORAGE AND STAGING AREAS FOR OFF-SITE MATERIAL STORAGE. OFF-SITE STORAGE AREAS SHALL BE MARKED WITH REFLECTORIZED DRUMS TO CLEARLY DELINEATE AREA LIMITS.
3. CONTRACTOR SHALL SWEEP PAVED AREAS ADJACENT TO THE SITE ON A DAILY BASIS.
4. CONTRACTOR SHALL REPAIR DAMAGED ROADWAYS AND SIDEWALKS AT THEIR OWN COST.
5. TYPE III BARRICADE TO BE PLACED AT ALL TIMES TO PREVENT UNAUTHORIZED ACCESS.

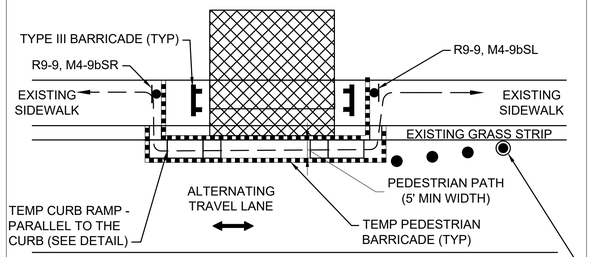
TYPICAL WORKZONE ACCESS

SCALE: NTS

PEDESTRIAN BYPASS TYPE I



PEDESTRIAN BYPASS TYPE II

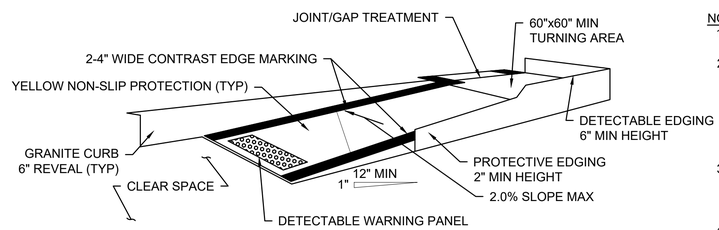


NOTES:

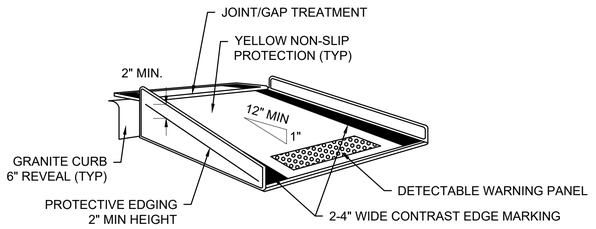
1. ADDITIONAL ADVANCE WARNING SIGNS MAY BE NECESSARY AS DETERMINED BY THE ENGINEER.
2. CONTROLS FOR PEDESTRIAN TRAFFIC ONLY, ARE SHOWN. VEHICULAR TRAFFIC SHALL BE MAINTAINED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. ◄— — ► INDICATES DIRECTION OF PEDESTRIAN TRAVEL.
5. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MAAB AND ADAAG REQUIREMENTS AND INCLUDE THE USE OF A COMPLIANT TEMPORARY PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM AT ALL TIMES.
6. CONTRACTOR SHALL MAINTAIN AS WIDE OF A PEDESTRIAN ACCESS AS POSSIBLE AT ALL TIMES. EXCEPT WHERE NECESSARY, THE CONTRACTOR MAY TEMPORARILY REDUCE PEDESTRIAN PATHWAYS TO 4 FEET IN WIDTH (EXCLUDING CURB) FOR NO MORE THAN 200 LINEAR FEET AT A TIME IN ACCORDANCE WITH ALL STANDARDS. A 5' x 5' PASSING AREA SHALL BE PROVIDED IN INTERVALS NOT EXCEEDING 200 FEET.
7. TEMPORARY WHEELCHAIR RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MASSDOT, MAAB, AND ADAAG REQUIREMENTS.

PEDESTRIAN BYPASS DETAIL

SCALE: NTS



TEMPORARY CURB RAMP-PARALLEL TO CURB



TEMPORARY CURB RAMP-PERPENDICULAR TO CURB

NOTES:

1. CURB RAMPS SHALL BE 60" MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2" MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
3. DETECTABLE EDGING WITH 6" 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 48"x48" 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" WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5" LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25" HIGH, AND BEVELED AT 1:2 BETWEEN 0.25" AND 0.5" HEIGHT.
10. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.

TEMPORARY CURB RAMPS

SCALE: NTS

NO.	DESCRIPTION	BY	DATE	APPR.

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EVERSOURCE

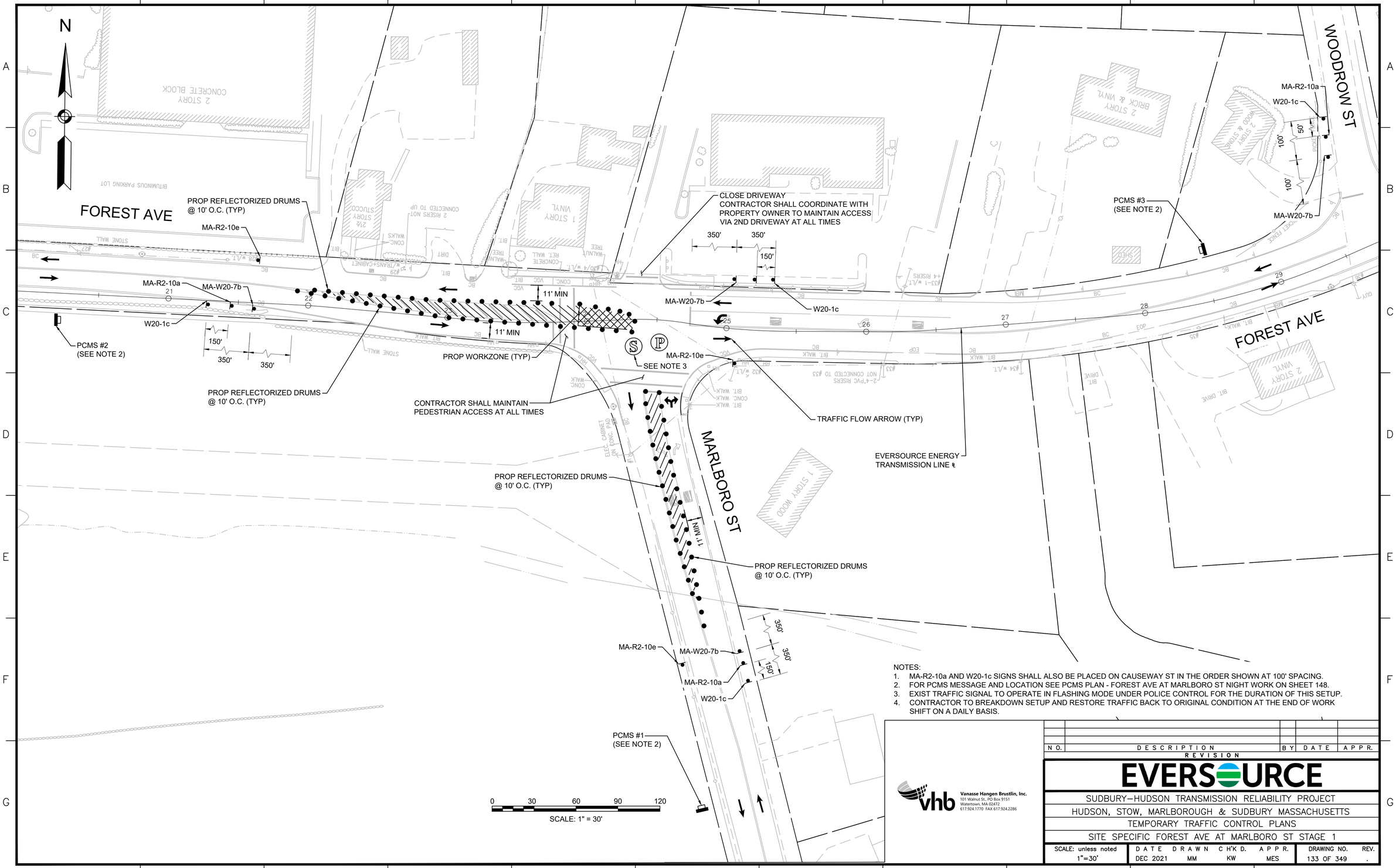
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

TYPICAL DETAILS

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	DEC 2021	MM	KW	MES	132 OF 349	.



NOTES:
1. MA-R2-10a AND W20-1c SIGNS SHALL ALSO BE PLACED ON CAUSEWAY ST IN THE ORDER SHOWN AT 100' SPACING.
2. FOR PCMS MESSAGE AND LOCATION SEE PCMS PLAN - FOREST AVE AT MARLBORO ST NIGHT WORK ON SHEET 148.
3. EXIST TRAFFIC SIGNAL TO OPERATE IN FLASHING MODE UNDER POLICE CONTROL FOR THE DURATION OF THIS SETUP.
4. CONTRACTOR TO BREAKDOWN SETUP AND RESTORE TRAFFIC BACK TO ORIGINAL CONDITION AT THE END OF WORK SHIFT ON A DAILY BASIS.

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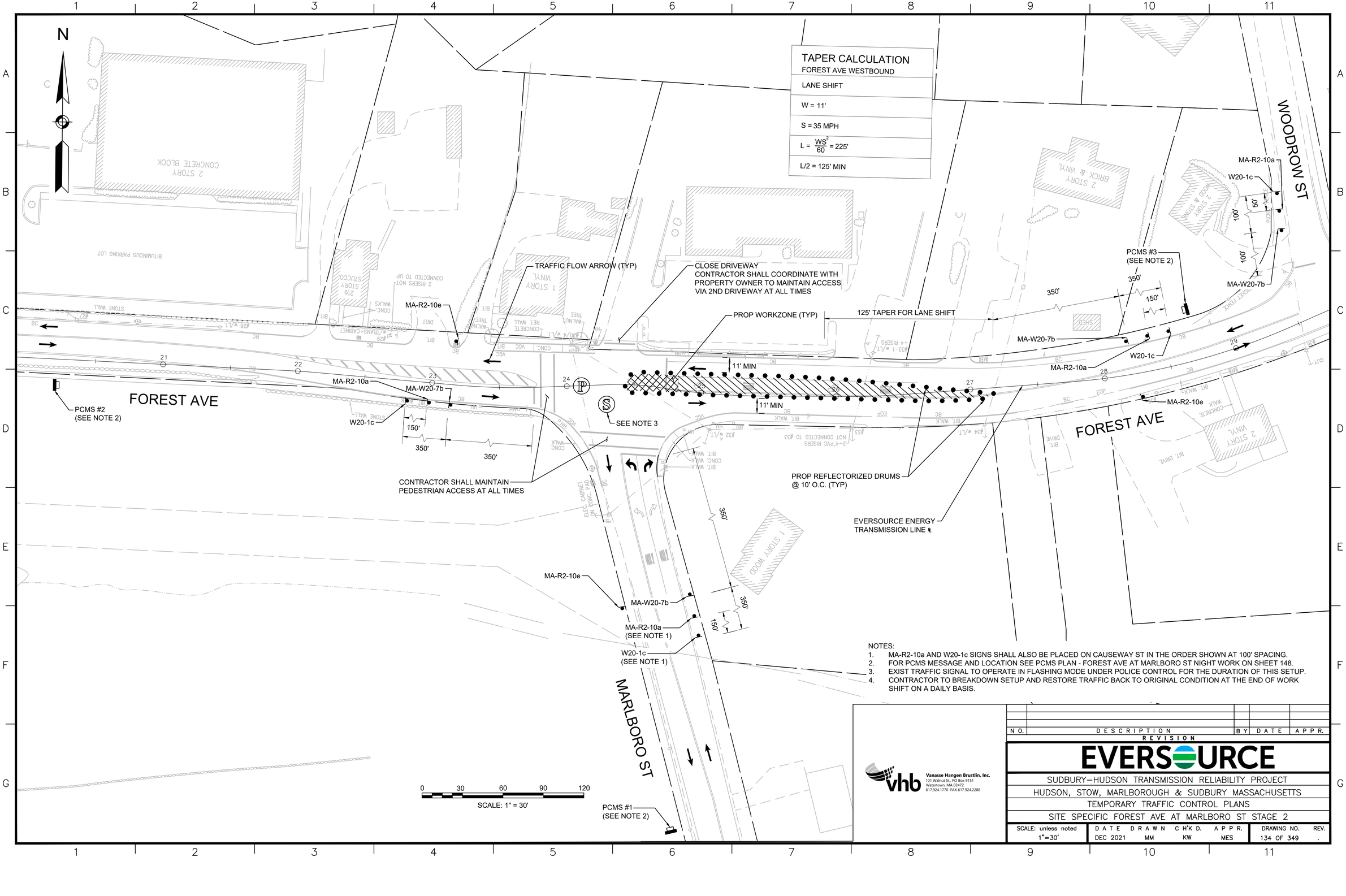
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

SITE SPECIFIC FOREST AVE AT MARLBORO ST STAGE 1

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=30'	DEC 2021	MM	KW	MES	133 OF 349	.



NOTES:

1. MA-R2-10a AND W20-1c SIGNS SHALL ALSO BE PLACED ON CAUSEWAY ST IN THE ORDER SHOWN AT 100' SPACING.
2. FOR PCMS MESSAGE AND LOCATION SEE PCMS PLAN - FOREST AVE AT MARLBORO ST NIGHT WORK ON SHEET 148.
3. EXIST TRAFFIC SIGNAL TO OPERATE IN FLASHING MODE UNDER POLICE CONTROL FOR THE DURATION OF THIS SETUP.
4. CONTRACTOR TO BREAKDOWN SETUP AND RESTORE TRAFFIC BACK TO ORIGINAL CONDITION AT THE END OF WORK SHIFT ON A DAILY BASIS.

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NO.	DESCRIPTION	BY	DATE	APP'R.
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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

SITE SPECIFIC FOREST AVE AT MARLBORO ST STAGE 2

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=30'	DEC 2021	MM	KW	MES	134 OF 349	.

N

WILKINS ST

SOLO RD

MAIN ST

GLENDALE RD

FOREST AVE

TRAFFIC FLOW ARROW (TYP)

PROP TRAFFIC CONES @ 10'O.C. (TYP)

PROP REFLECTORIZED DRUMS @ 10'O.C. (TYP)

MA-W24-2(MOD) (SEE NOTE 1)

MA-R2-10a (SEE NOTE 1)

W1-4L (SEE NOTE 1)

W20-1c (SEE NOTE 1)

MA-R2-10e

MA-W20-7b

PCMS #3 (SEE NOTE 2)

PCMS #4 (SEE NOTE 2)

PCMS #2 (SEE NOTE 2)

PCMS #1 (SEE NOTE 2)

350' 350' 350' 350' 150'

125' TAPER FOR LANE SHIFT

11' MIN

R4-7b

SEE NOTE 3

W1-4R

30' TAPER

50'

PROP WORKZONE (TYP)

EVERSOURCE ENERGY TRANSMISSION LINE

PROP TRAFFIC CONES @ 10'O.C. (TYP)

155' TAPER FOR LANE SHIFT

PROP REFLECTORIZED DRUMS @ 10'O.C. (TYP)

TAPER CALCULATION MAIN ST EASTBOUND	
LANE SHIFT	
W = 11'	
S = 35 MPH	
L = $\frac{WS^2}{60}$ = 225'	
L/2 = 125' MIN	

TAPER CALCULATION MAIN ST WESTBOUND	
LANE SHIFT	
W = 11'	
S = 35 MPH	
L = $\frac{WS^2}{60}$ = 225'	
L/2 = 125' MIN	

NOTES:
1. W1-4L, MA-W24-2(MOD), MA-R2-10a, W20-1c SIGNS SHALL ALSO BE PLACED ON COX STREET IN THE ORDER SHOWN AT 100' SPACING.
2. FOR PCMS MESSAGE AND LOCATION SEE PCMS PLAN - FOREST AVE AT MAIN ST NIGHT WORK ON SHEET 149.
3. EXIST TRAFFIC SIGNAL TO OPERATE IN FLASHING MODE UNDER POLICE CONTROL FOR THE DURATION OF THIS SETUP.
4. CONTRACTOR TO BREAKDOWN SETUP AND RESTORE TRAFFIC BACK TO ORIGINAL CONDITION AT THE END OF WORK SHIFT ON A DAILY BASIS.

SCALE: 1" = 30'

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

SITE SPECIFIC FOREST AVE AT MAIN ST STAGE 1

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=30'	DEC 2021	MM	KW	MES	135 OF 349	.

N

SOLO RD

MAIN ST

WILKINS ST

GLENDALE RD

FOREST AVE

TRAFFIC FLOW ARROW (TYP)

PROP TRAFFIC CONES @ 10'O.C. (TYP)

PROP REFLECTORIZED DRUMS @ 10'O.C. (TYP)

SEE NOTE 3

W24-2(MOD) (SEE NOTE 1)

MA-R2-10a (SEE NOTE 1)

W20-1c (SEE NOTE 1)

W1-4L (SEE NOTE 1)

MA-R2-10e

W20-3c SUPP(F)

W20-2c SUPP(F)

MA-W20-7b

11' MIN

R3-1

R4-7b

W1-4R

R3-2

125' TAPER FOR LANE SHIFT

155' TAPER FOR LANE SHIFT

350'

150'

100'

W20-1c

MA-R2-10a

W20-3c

W20-2c

MA-W20-7b

EVERSOURCE ENERGY TRANSMISSION LINE

PROP TRAFFIC CONES @ 10'O.C. (TYP)

PROP REFLECTORIZED DRUMS @ 10'O.C. (TYP)

PROP WORKZONE (TYP)

SEE CLOSURE AND DETOUR PLAN- FOREST AVENUE - MANHOLE #4 ON SHEET 141

SEE CLOSURE AND DETOUR PLAN- FOREST AVENUE - MANHOLE #4 ON SHEET 141

TAPER CALCULATION MAIN ST EASTBOUND
LANE SHIFT
W = 11'
S = 35 MPH
$L = \frac{WS^2}{60} = 225'$
L/2 = 125' MIN

TAPER CALCULATION MAIN ST WESTBOUND
LANE SHIFT
W = 11'
S = 35 MPH
$L = \frac{WS^2}{60} = 225'$
L/2 = 125' MIN

NOTES:
1. W1-4L, W24-2(MOD), MA-R2-10a, W20-1c SIGNS SHALL ALSO BE PLACED ON COX STREET IN THE ORDER SHOWN AT 100' SPACING.
2. SEE CLOSURE AND DETOUR PLAN- FOREST AVENUE - MANHOLE #4 ON SHEET 141.
3. EXIST TRAFFIC SIGNAL TO OPERATE IN FLASHING MODE UNDER POLICE CONTROL FOR THE DURATION OF THIS SETUP.
4. CONTRACTOR TO BREAKDOWN SETUP AND RESTORE TRAFFIC BACK TO ORIGINAL CONDITION AT THE END OF WORK SHIFT ON A DAILY BASIS.

0 30 60 90 120

SCALE: 1" = 30'

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

SITE SPECIFIC FOREST AVE AT MAIN ST STAGE 2

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=30'	DEC 2021	MM	KW	AA	136 OF 349	.

N

SOLO RD

MAIN ST

WILKINS ST

GLENDALE RD

FOREST AVE

TRAFFIC FLOW ARROW (TYP)

SEE NOTE 3

PROP REFLECTORIZED DRUMS @ 10'O.C. (TYP)

PROP REFLECTORIZED DRUMS @ 10'O.C. (TYP)

W20-4c (SEE NOTE 1)

MA-R2-10a (SEE NOTE 1)

W20-1c (SEE NOTE 1)

W20-3c SUPP(F) (SEE NOTE 1)

W20-2c SUPP(F)

MA-W20-7b

MA-R2-10e

R3-1

R3-2

11' MIN

11' MIN

150'

350'

350'

350'

350'

100'

50'

100'

100'

350'

350'

150'

W20-1c

MA-R2-10a

W20-3c

W20-2c

MA-W20-7b

MA-R2-10e

EVERSOURCE ENERGY TRANSMISSION LINE

155' TAPER FOR LANE SHIFT

MA-W20-7b

W20-2c SUPP(F)

W20-3c SUPP(F)

W20-2c

W24-2(MOD)

MA-R2-10a

W20-1c

MA-R2-10e

R4-7b

50'

PROP TRAFFIC CONES @ 10'O.C. (TYP)

PROP REFLECTORIZED DRUMS @ 10'O.C. (TYP)

PROP WORKZONE (TYP)

SEE CLOSURE AND DETOUR PLAN- FOREST AVENUE - MANHOLE #4 ON SHEET 141

SEE CLOSURE AND DETOUR PLAN- FOREST AVENUE - MANHOLE #4 ON SHEET 141

0 30 60 90 120

SCALE: 1" = 30'

TAPER CALCULATION
MAIN ST WESTBOUND
LANE SHIFT
W = 11'
S = 35 MPH
$L = \frac{WS^2}{60} = 225'$
L/2 = 125' MIN

NOTES:

1. W20-2c, W24-2(MOD), MA-R2-10a, W20-1c SIGNS SHALL ALSO BE PLACED ON COX STREET IN THE ORDER SHOWN AT 100' SPACING.
2. SEE CLOSURE AND DETOUR PLAN- FOREST AVENUE - MANHOLE #4 ON SHEET 141.
3. EXIST TRAFFIC SIGNAL TO OPERATE IN FLASHING MODE UNDER POLICE CONTROL FOR THE DURATION OF THIS SETUP.
4. CONTRACTOR TO BREAKDOWN SETUP AND RESTORE TRAFFIC BACK TO ORIGINAL CONDITION AT THE END OF WORK SHIFT ON A DAILY BASIS.

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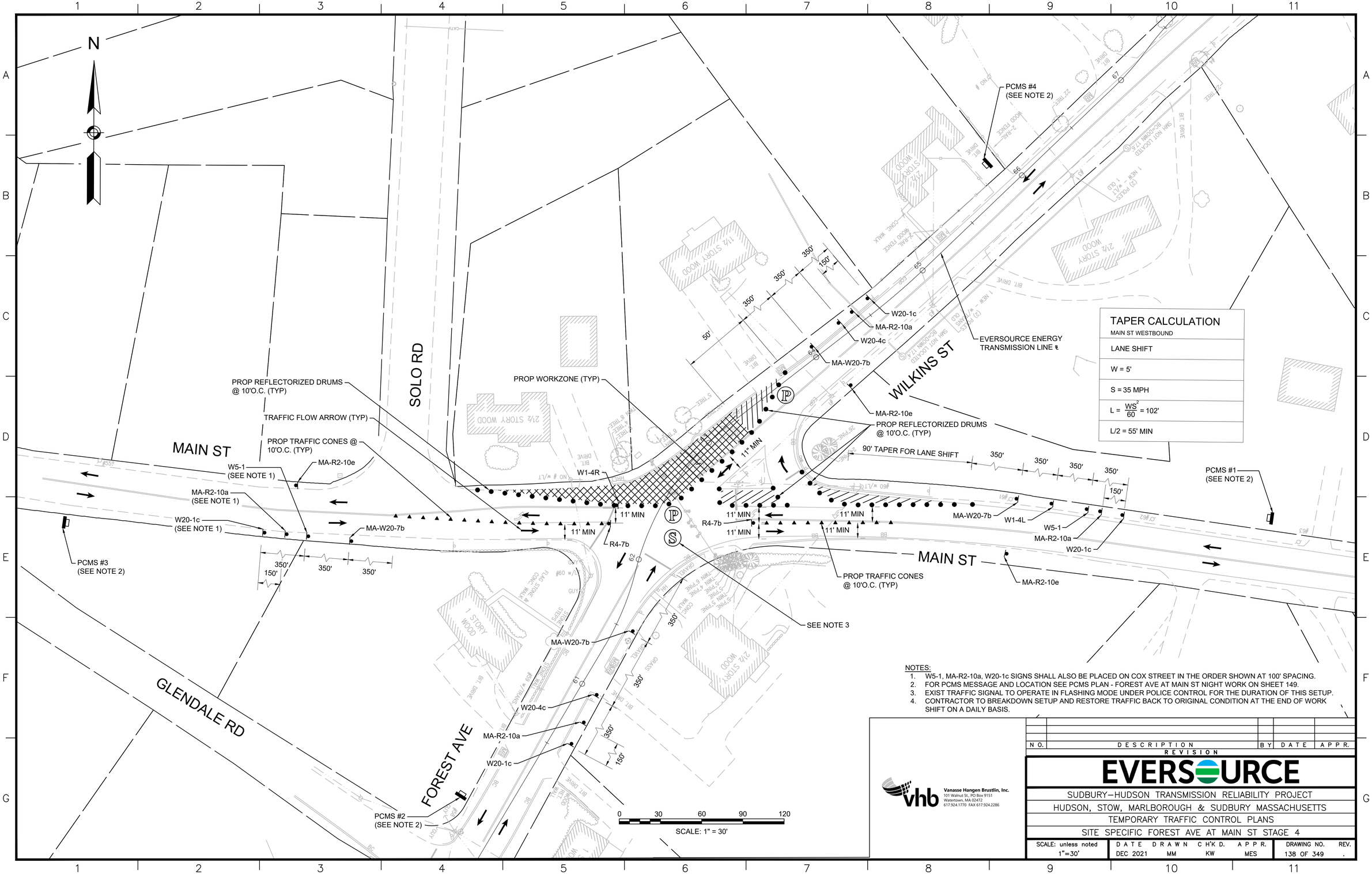
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

SITE SPECIFIC FOREST AVE AT MAIN ST STAGE 3

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=30'	DEC 2021	MM	KW	MES	137 OF 349	.



TAPER CALCULATION
MAIN ST WESTBOUND
LANE SHIFT
W = 5'
S = 35 MPH
$L = \frac{WS^2}{60} = 102'$
L/2 = 55' MIN

NOTES:

1. W5-1, MA-R2-10a, W20-1c SIGNS SHALL ALSO BE PLACED ON COX STREET IN THE ORDER SHOWN AT 100' SPACING.
2. FOR PCMS MESSAGE AND LOCATION SEE PCMS PLAN - FOREST AVE AT MAIN ST NIGHT WORK ON SHEET 149.
3. EXIST TRAFFIC SIGNAL TO OPERATE IN FLASHING MODE UNDER POLICE CONTROL FOR THE DURATION OF THIS SETUP.
4. CONTRACTOR TO BREAKDOWN SETUP AND RESTORE TRAFFIC BACK TO ORIGINAL CONDITION AT THE END OF WORK SHIFT ON A DAILY BASIS.

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NO.	DESCRIPTION	BY	DATE	APP'R.

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

SITE SPECIFIC FOREST AVE AT MAIN ST STAGE 4

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=30'	DEC 2021	MM	KW	MES	138 OF 349	.

N

FOREST AVE

MANHOLE #1

PROPOSED EVERSOURCE 115kV UNDERGROUND TRANSMISSION LINE

MANHOLE #2

ROBERT BONAZZOLI AVE

WOODROW ST

FOREST AVE ELEMENTARY SCHOOL

FOREST AVE

MANHOLE #4

MANHOLE #3

M4-9R SUPP(G)

SEE TYPICAL LOCAL ROAD CLOSURE DETAIL ON SHEET 131

M4-9L SUPP(G)

(SEE INSET A)

ROAD CLOSURE POINT FOR TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS DETAIL ON SHEET 131

OLD NORTH RD

JOHN ROBINSON DR

RICHARDSON ST

M4-9SL SUPP(G)

CAUSEWAY ST

MARLBORO ST

(SEE INSET B)

SEE TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS DETAIL ON SHEET 131

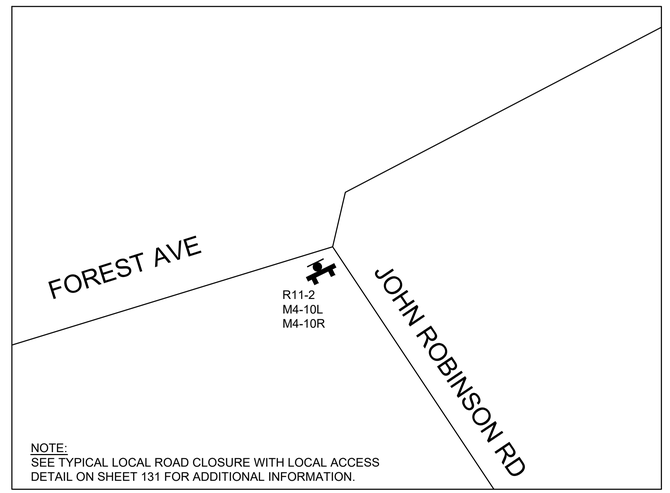
M4-9R SUPP(G)

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL COORDINATE WITH THE TOWN OF HUDSON REGARDING ON THE CLOSURE AND DETOUR IN ADVANCE OF IMPLEMENTATION.
2. CONTRACTOR TO MAINTAIN ABUTTER ACCESS AT ALL TIMES.
3. CONTRACTOR TO MAINTAIN EMERGENCY VEHICLE ACCESS AT ALL TIMES.
4. CONTRACTOR TO BREAKDOWN SETUP AND RESTORE TRAFFIC BACK TO ORIGINAL CONDITION AT THE END OF WORK SHIFT ON A DAILY BASIS.

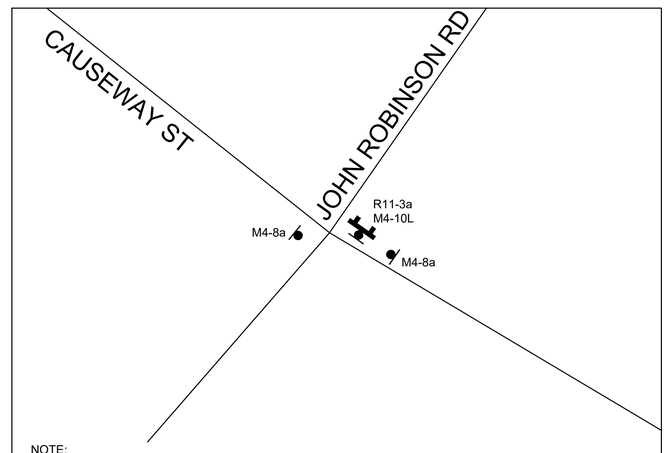
0 300 600 900 1200

SCALE: 1" = 300'



NOTE:
SEE TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS DETAIL ON SHEET 131 FOR ADDITIONAL INFORMATION.

INSET A



NOTE:
SEE TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS DETAIL ON SHEET 131 FOR ADDITIONAL INFORMATION.

INSET B

LEGEND	
	JOHN ROBINSON DR SB DETOUR FLOW ARROW
	JOHN ROBINSON DR SB DETOUR FLOW ARROW
	ROAD CLOSED, LOCAL ACCESS ONLY
	WORK AREA (PUBLIC ACCESS RESTRICTED)
S	TRAFFIC SIGNAL

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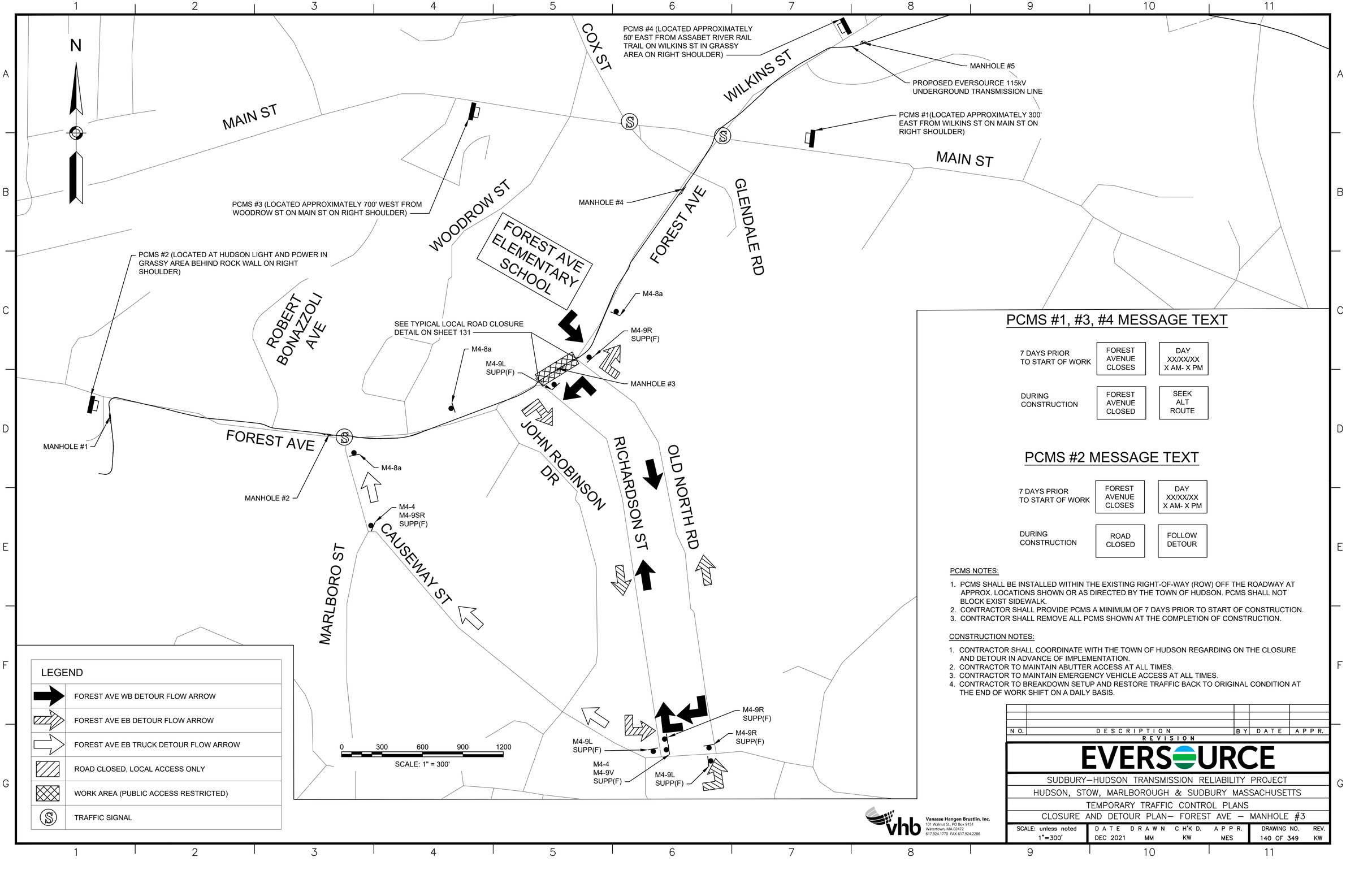
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

CLOSURE AND DETOUR PLAN– JOHN ROBINSON DR

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=300'	DEC 2021	MM	KW	MES	139 OF 349	.



PCMS #1, #3, #4 MESSAGE TEXT

7 DAYS PRIOR TO START OF WORK	FOREST AVENUE CLOSES	DAY XX/XX/XX X AM- X PM
DURING CONSTRUCTION	FOREST AVENUE CLOSED	SEEK ALT ROUTE

PCMS #2 MESSAGE TEXT

7 DAYS PRIOR TO START OF WORK	FOREST AVENUE CLOSES	DAY XX/XX/XX X AM- X PM
DURING CONSTRUCTION	ROAD CLOSED	FOLLOW DETOUR

LEGEND

- FOREST AVE WB DETOUR FLOW ARROW
- FOREST AVE EB DETOUR FLOW ARROW
- FOREST AVE EB TRUCK DETOUR FLOW ARROW
- ROAD CLOSED, LOCAL ACCESS ONLY
- WORK AREA (PUBLIC ACCESS RESTRICTED)
- TRAFFIC SIGNAL

PCMS NOTES:

1. PCMS SHALL BE INSTALLED WITHIN THE EXISTING RIGHT-OF-WAY (ROW) OFF THE ROADWAY AT APPROX. LOCATIONS SHOWN OR AS DIRECTED BY THE TOWN OF HUDSON. PCMS SHALL NOT BLOCK EXIST SIDEWALK.
2. CONTRACTOR SHALL PROVIDE PCMS A MINIMUM OF 7 DAYS PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR SHALL REMOVE ALL PCMS SHOWN AT THE COMPLETION OF CONSTRUCTION.

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL COORDINATE WITH THE TOWN OF HUDSON REGARDING ON THE CLOSURE AND DETOUR IN ADVANCE OF IMPLEMENTATION.
2. CONTRACTOR TO MAINTAIN ABUTTER ACCESS AT ALL TIMES.
3. CONTRACTOR TO MAINTAIN EMERGENCY VEHICLE ACCESS AT ALL TIMES.
4. CONTRACTOR TO BREAKDOWN SETUP AND RESTORE TRAFFIC BACK TO ORIGINAL CONDITION AT THE END OF WORK SHIFT ON A DAILY BASIS.

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

Vanasse Hangen Brustlin, Inc.
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EVERSOURCE

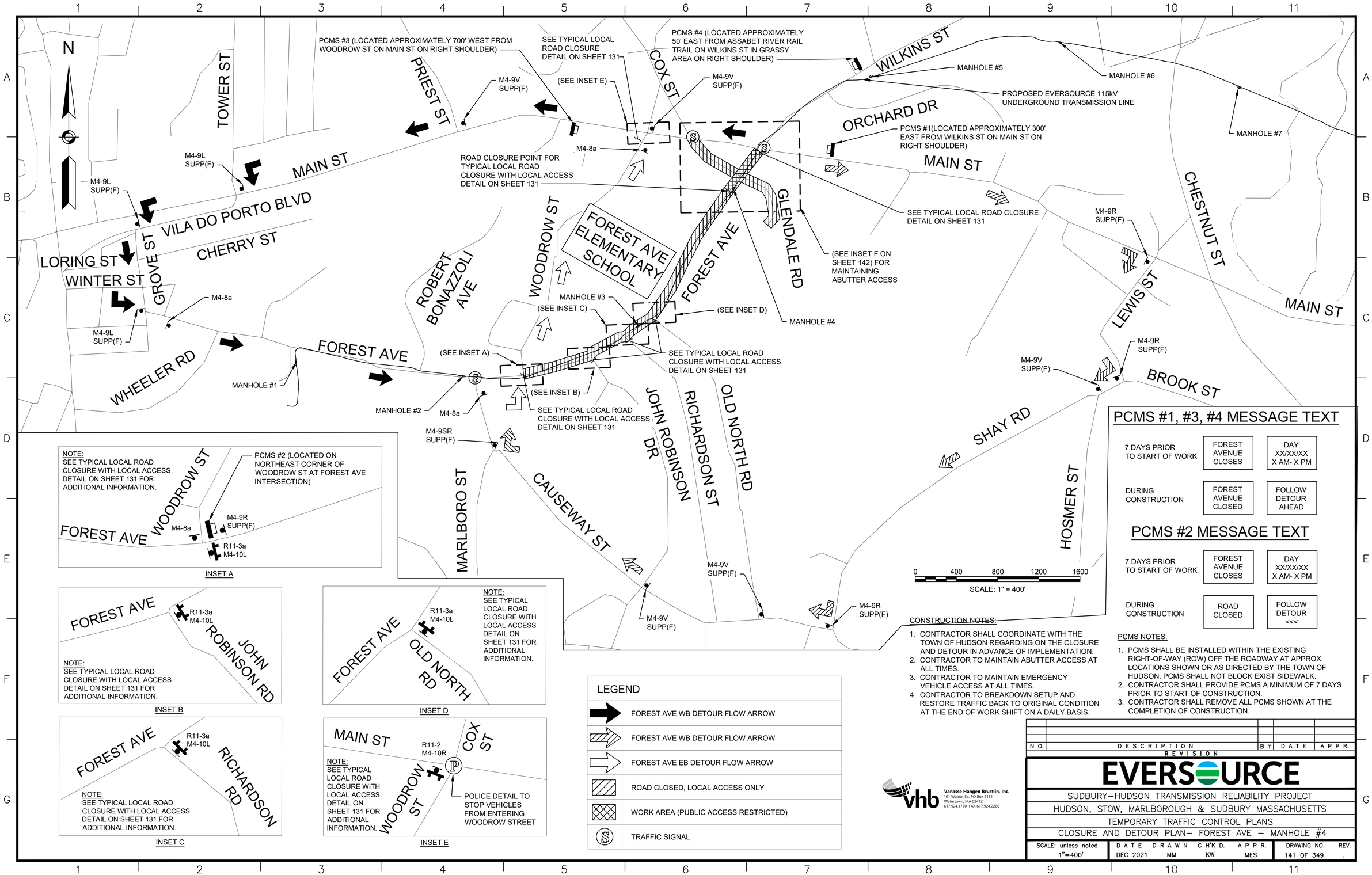
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

CLOSURE AND DETOUR PLAN– FOREST AVE – MANHOLE #3

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=300'	DEC 2021	MM	KW	MES	140 OF 349	KW



PCMS #1, #3, #4 MESSAGE TEXT

7 DAYS PRIOR TO START OF WORK	FOREST AVENUE CLOSES	DAY XX/XX/XX X AM- X PM
DURING CONSTRUCTION	FOREST AVENUE CLOSED	FOLLOW DETOUR AHEAD

PCMS #2 MESSAGE TEXT

7 DAYS PRIOR TO START OF WORK	FOREST AVENUE CLOSES	DAY XX/XX/XX X AM- X PM
DURING CONSTRUCTION	ROAD CLOSED	FOLLOW DETOUR <<<

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL COORDINATE WITH THE TOWN OF HUDSON REGARDING ON THE CLOSURE AND DETOUR IN ADVANCE OF IMPLEMENTATION.
2. CONTRACTOR TO MAINTAIN ABUTTER ACCESS AT ALL TIMES.
3. CONTRACTOR TO MAINTAIN EMERGENCY VEHICLE ACCESS AT ALL TIMES.
4. CONTRACTOR TO BREAKDOWN SETUP AND RESTORE TRAFFIC BACK TO ORIGINAL CONDITION AT THE END OF WORK SHIFT ON A DAILY BASIS.

PCMS NOTES:

1. PCMS SHALL BE INSTALLED WITHIN THE EXISTING RIGHT-OF-WAY (ROW) OFF THE ROADWAY AT APPROX. LOCATIONS SHOWN OR AS DIRECTED BY THE TOWN OF HUDSON. PCMS SHALL NOT BLOCK EXIST SIDEWALK.
2. CONTRACTOR SHALL PROVIDE PCMS A MINIMUM OF 7 DAYS PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR SHALL REMOVE ALL PCMS SHOWN AT THE COMPLETION OF CONSTRUCTION.

INSET A

INSET B

INSET C

INSET D

INSET E

LEGEND

	FOREST AVE WB DETOUR FLOW ARROW
	FOREST AVE WB DETOUR FLOW ARROW
	FOREST AVE EB DETOUR FLOW ARROW
	ROAD CLOSED, LOCAL ACCESS ONLY
	WORK AREA (PUBLIC ACCESS RESTRICTED)
S	TRAFFIC SIGNAL

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NO.	DESCRIPTION	BY	DATE	APPR.

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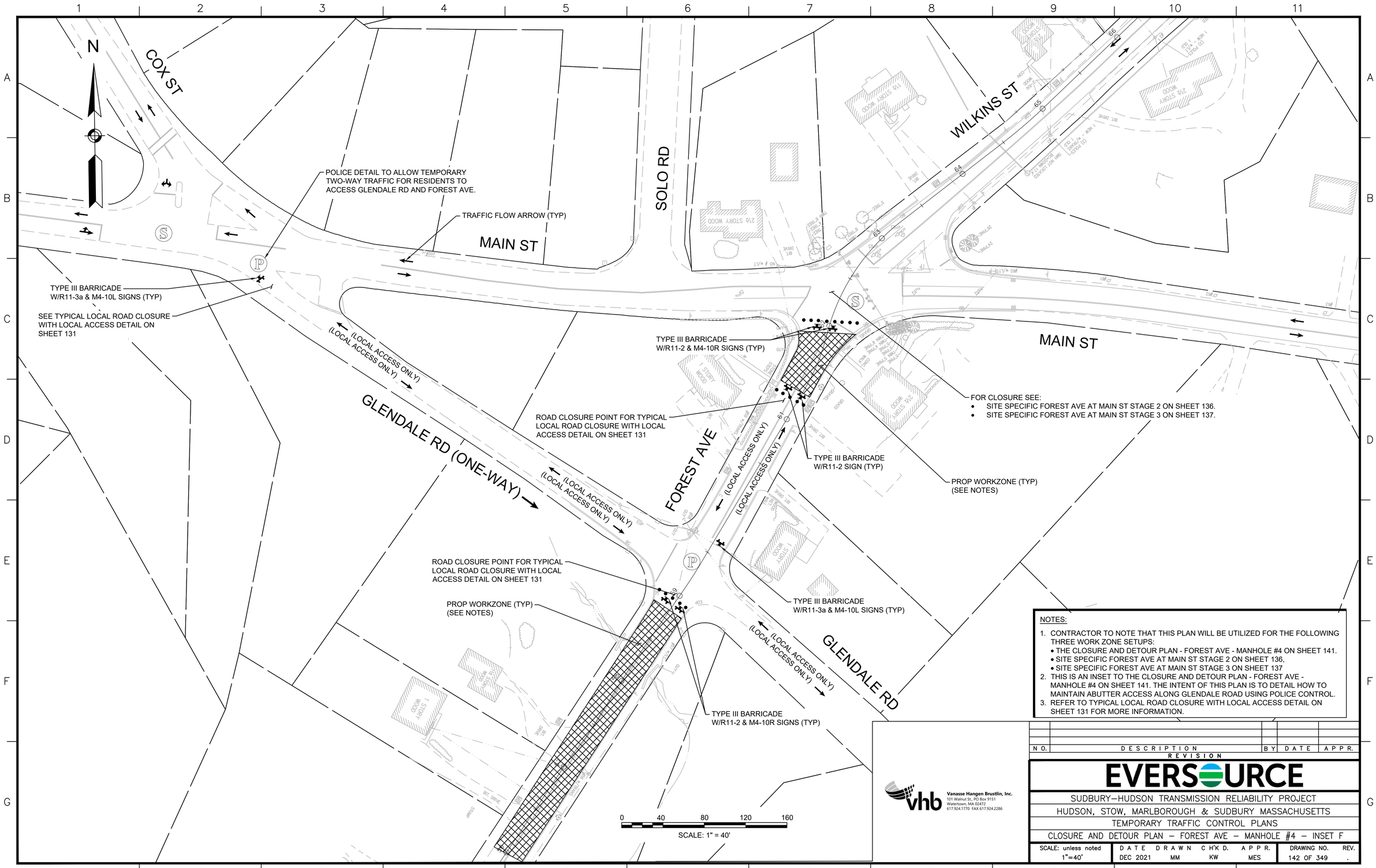
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

CLOSURE AND DETOUR PLAN– FOREST AVE – MANHOLE #4

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=400'	DEC 2021	MM	KW	MES	141 OF 349	.



NOTES:

1. CONTRACTOR TO NOTE THAT THIS PLAN WILL BE UTILIZED FOR THE FOLLOWING THREE WORK ZONE SETUPS:
   - THE CLOSURE AND DETOUR PLAN - FOREST AVE - MANHOLE #4 ON SHEET 141.
   - SITE SPECIFIC FOREST AVE AT MAIN ST STAGE 2 ON SHEET 136,
   - SITE SPECIFIC FOREST AVE AT MAIN ST STAGE 3 ON SHEET 137
2. THIS IS AN INSET TO THE CLOSURE AND DETOUR PLAN - FOREST AVE - MANHOLE #4 ON SHEET 141. THE INTENT OF THIS PLAN IS TO DETAIL HOW TO MAINTAIN ABUTTER ACCESS ALONG GLENDALE ROAD USING POLICE CONTROL.
3. REFER TO TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS DETAIL ON SHEET 131 FOR MORE INFORMATION.

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

CLOSURE AND DETOUR PLAN – FOREST AVE – MANHOLE #4 – INSET F

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=40'	DEC 2021	MM	KW	MES	142 OF 349	.

N

PCMS #2 (LOCATED APPROXIMATELY 300' NORTH OF ROCKBOTTOM RD ON GLEASONDALE RD IN GRASSY AREA ON LEFT)

M4-9SR SUPP(A) SUPP(B)

M4-9L SUPP(A) SUPP(B)

R11-3a

M4-9V SUPP(A) SUPP(B)

M4-8a

R11-3a

M4-9L SUPP(A) SUPP(B)

HIGH ST

WILKINS ST

MARLBORO RD

STOW

HUDSON

SEE TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS DETAIL ON SHEET 131

PROPOSED EVERSOURCE 115 kV UNDERGROUND TRANSMISSION LINE

ROAD CLOSURE POINT FOR TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS DETAIL ON SHEET 131

M4-9L SUPP(A) SUPP(B)

MANHOLE #5

MANHOLE #6

MANHOLE #7

MANHOLE #8

MANHOLE #9

M4-9R SUPP(A) SUPP(B)

MAIN ST

FOREST AVE

MANHOLE #4

SEE TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS DETAIL ON SHEET 131

CHESTNUT ST

M4-9R SUPP(A) SUPP(B)

M4-9R SUPP(A) SUPP(B)

M4-9V SUPP(A) SUPP(B)

PCMS #1 (LOCATED APPROXIMATELY 200' EAST OF MAIN ST AT CHESTNUT ST INTERSECTION IN GRASSY AREA ON RIGHT)

R11-3a

R11-3a

M4-8a

LEWIS ST

MAIN ST

0 300 600 900 1200

SCALE: 1" = 300'

PCMS #1 MESSAGE TEXT

7 DAYS PRIOR TO START OF WORK	CHESTNUT STREET CLOSES	DAY XX/XX/XX X AM- X PM
DURING CONSTRUCTION	CHESTNUT STREET CLOSED	FOLLOW DETOUR

PCMS #2 MESSAGE TEXT

7 DAYS PRIOR TO START OF WORK	MARLBORO ROAD CLOSES	DAY XX/XX/XX X AM- X PM
DURING CONSTRUCTION	MARLBORO ROAD CLOSED	FOLLOW DETOUR

PCMS NOTES:

1. PCMS SHALL BE INSTALLED WITHIN THE EXISTING RIGHT-OF-WAY (ROW) OFF THE ROADWAY AT APPROX. LOCATIONS SHOWN OR AS DIRECTED BY THE TOWN OF HUDSON. PCMS SHALL NOT BLOCK EXIST SIDEWALK.
2. CONTRACTOR SHALL PROVIDE PCMS A MINIMUM OF 7 DAYS PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR SHALL REMOVE ALL PCMS SHOWN AT THE COMPLETION OF CONSTRUCTION.

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL COORDINATE WITH THE TOWNS OF STOW AND HUDSON REGARDING ON THE CLOSURE AND DETOUR OF MARLBORO RD AND CHESTNUT STREET IN ADVANCE OF IMPLEMENTATION.
2. CONTRACTOR TO MAINTAIN ABUTTER ACCESS AT ALL TIMES.
3. CONTRACTOR TO MAINTAIN EMERGENCY VEHICLE ACCESS AT ALL TIMES.

LEGEND

	MARLBOROUGH RD SB DETOUR FLOW ARROW
	CHESTNUT ST NB DETOUR FLOW ARROW
	ROAD CLOSED, LOCAL ACCESS ONLY
	WORK AREA (PUBLIC ACCESS RESTRICTED)
S	TRAFFIC SIGNAL

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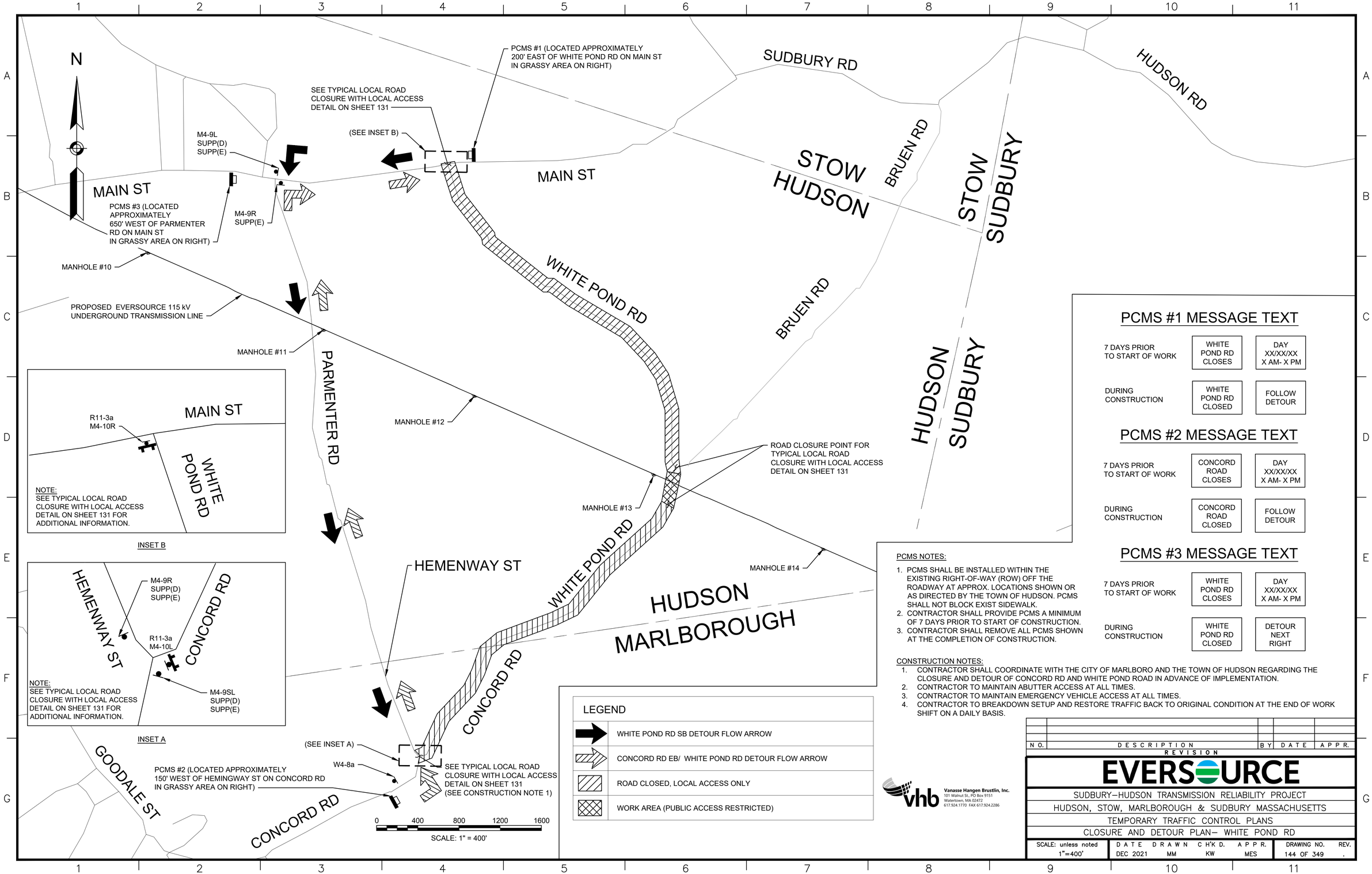
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

CLOSURE AND DETOUR PLAN– CHESTNUT ST AND MARLBORO RD

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=300'	DEC 2021	MM	KW	MES	143 OF 349	.



INSET B

INSET A

PCMS #1 MESSAGE TEXT

7 DAYS PRIOR TO START OF WORK	WHITE POND RD CLOSES	DAY XX/XX/XX X AM- X PM
DURING CONSTRUCTION	WHITE POND RD CLOSED	FOLLOW DETOUR

PCMS #2 MESSAGE TEXT

7 DAYS PRIOR TO START OF WORK	CONCORD ROAD CLOSES	DAY XX/XX/XX X AM- X PM
DURING CONSTRUCTION	CONCORD ROAD CLOSED	FOLLOW DETOUR

PCMS #3 MESSAGE TEXT

7 DAYS PRIOR TO START OF WORK	WHITE POND RD CLOSES	DAY XX/XX/XX X AM- X PM
DURING CONSTRUCTION	WHITE POND RD CLOSED	DETOUR NEXT RIGHT

PCMS NOTES:

1. PCMS SHALL BE INSTALLED WITHIN THE EXISTING RIGHT-OF-WAY (ROW) OFF THE ROADWAY AT APPROX. LOCATIONS SHOWN OR AS DIRECTED BY THE TOWN OF HUDSON. PCMS SHALL NOT BLOCK EXIST SIDEWALK.
2. CONTRACTOR SHALL PROVIDE PCMS A MINIMUM OF 7 DAYS PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR SHALL REMOVE ALL PCMS SHOWN AT THE COMPLETION OF CONSTRUCTION.

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL COORDINATE WITH THE CITY OF MARLBORO AND THE TOWN OF HUDSON REGARDING THE CLOSURE AND DETOUR OF CONCORD RD AND WHITE POND ROAD IN ADVANCE OF IMPLEMENTATION.
2. CONTRACTOR TO MAINTAIN ABUTTER ACCESS AT ALL TIMES.
3. CONTRACTOR TO MAINTAIN EMERGENCY VEHICLE ACCESS AT ALL TIMES.
4. CONTRACTOR TO BREAKDOWN SETUP AND RESTORE TRAFFIC BACK TO ORIGINAL CONDITION AT THE END OF WORK SHIFT ON A DAILY BASIS.

LEGEND

	WHITE POND RD SB DETOUR FLOW ARROW
	CONCORD RD EB/ WHITE POND RD DETOUR FLOW ARROW
	ROAD CLOSED, LOCAL ACCESS ONLY
	WORK AREA (PUBLIC ACCESS RESTRICTED)

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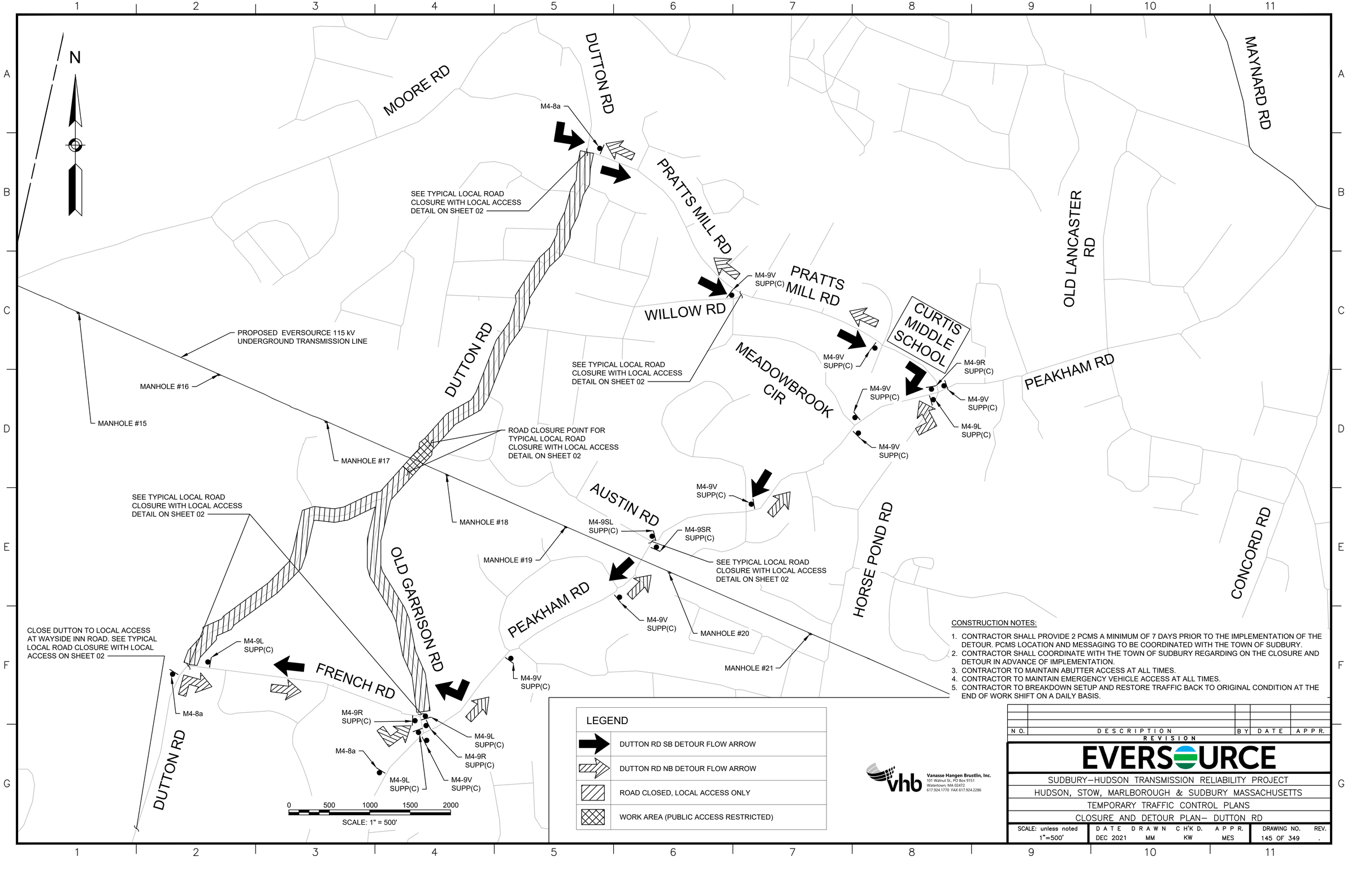
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

CLOSURE AND DETOUR PLAN– WHITE POND RD

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=400'	DEC 2021	MM	KW	MES	144 OF 349	.



CONSTRUCTION NOTES:

1. CONTRACTOR SHALL PROVIDE 2 PCMS A MINIMUM OF 7 DAYS PRIOR TO THE IMPLEMENTATION OF THE DETOUR. PCMS LOCATION AND MESSAGING TO BE COORDINATED WITH THE TOWN OF SUDBURY.
2. CONTRACTOR SHALL COORDINATE WITH THE TOWN OF SUDBURY REGARDING ON THE CLOSURE AND DETOUR IN ADVANCE OF IMPLEMENTATION.
3. CONTRACTOR TO MAINTAIN ABUTTER ACCESS AT ALL TIMES.
4. CONTRACTOR TO MAINTAIN EMERGENCY VEHICLE ACCESS AT ALL TIMES.
5. CONTRACTOR TO BREAKDOWN SETUP AND RESTORE TRAFFIC BACK TO ORIGINAL CONDITION AT THE END OF WORK SHIFT ON A DAILY BASIS.

LEGEND

	DUTTON RD SB DETOUR FLOW ARROW
	DUTTON RD NB DETOUR FLOW ARROW
	ROAD CLOSED, LOCAL ACCESS ONLY
	WORK AREA (PUBLIC ACCESS RESTRICTED)

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NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

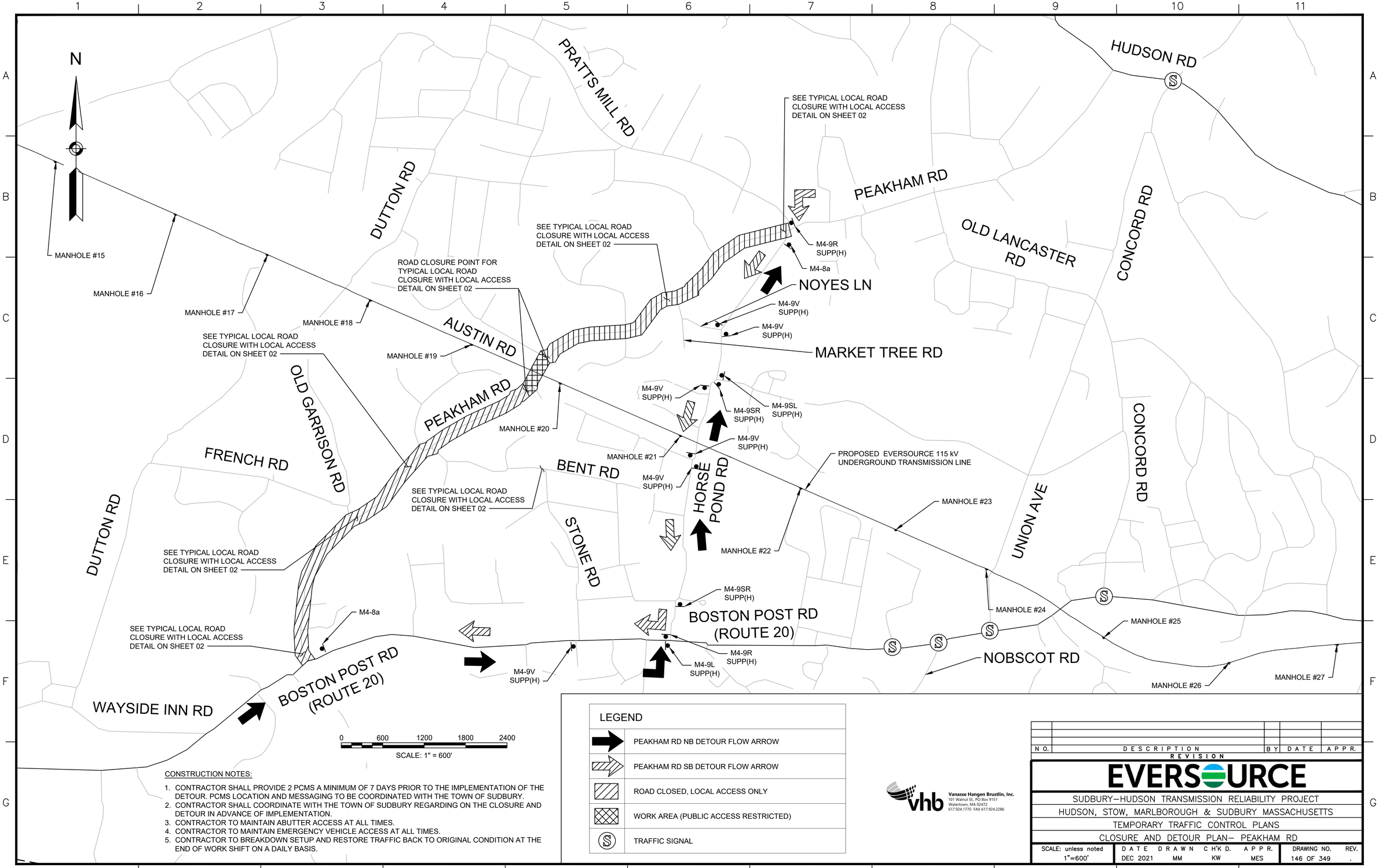
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

CLOSURE AND DETOUR PLAN– DUTTON RD

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP R.	DRAWING NO.	REV.
1"=500'	DEC 2021	MM	KW	MES	145 OF 349	.



CONSTRUCTION NOTES:

1. CONTRACTOR SHALL PROVIDE 2 PCMS A MINIMUM OF 7 DAYS PRIOR TO THE IMPLEMENTATION OF THE DETOUR. PCMS LOCATION AND MESSAGING TO BE COORDINATED WITH THE TOWN OF SUDBURY.
2. CONTRACTOR SHALL COORDINATE WITH THE TOWN OF SUDBURY REGARDING ON THE CLOSURE AND DETOUR IN ADVANCE OF IMPLEMENTATION.
3. CONTRACTOR TO MAINTAIN ABUTTER ACCESS AT ALL TIMES.
4. CONTRACTOR TO MAINTAIN EMERGENCY VEHICLE ACCESS AT ALL TIMES.
5. CONTRACTOR TO BREAKDOWN SETUP AND RESTORE TRAFFIC BACK TO ORIGINAL CONDITION AT THE END OF WORK SHIFT ON A DAILY BASIS.

LEGEND

	PEAKHAM RD NB DETOUR FLOW ARROW
	PEAKHAM RD SB DETOUR FLOW ARROW
	ROAD CLOSED, LOCAL ACCESS ONLY
	WORK AREA (PUBLIC ACCESS RESTRICTED)
S	TRAFFIC SIGNAL

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NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TEMPORARY TRAFFIC CONTROL PLANS
CLOSURE AND DETOUR PLAN– PEAKHAM RD

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=600'	DEC 2021	MM	KW	MES	146 OF 349	.

N

PRATTS MILL RD

PEAKHAM RD

OLD LANCASTER RD

CONCORD RD

HORSE POND RD

NOYES LN

OLD GARRISON RD

FRENCH RD

UNION AVE

BOSTON POST RD (ROUTE 20)

NOBSCOT RD

MANHOLE #16

MANHOLE #17

MANHOLE #18

MANHOLE #19

MANHOLE #20

MANHOLE #21

MANHOLE #22

MANHOLE #23

MANHOLE #24

MANHOLE #25

MANHOLE #26

PROPOSED EVERSOURCE 115 kV UNDERGROUND TRANSMISSION LINE

M4-8a

M4-9V SUPP(J)

M4-9SL SUPP(J)

M4-9SR SUPP(J)

SEE TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS DETAIL ON SHEET 02

ROAD CLOSURE POINT FOR TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS DETAIL ON SHEET 02

0 500 1000 1500 2000

SCALE: 1" = 500'

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL PROVIDE 2 PCMS A MINIMUM OF 7 DAYS PRIOR TO THE IMPLEMENTATION OF THE DETOUR. PCMS LOCATION AND MESSAGING TO BE COORDINATED WITH THE TOWN OF SUDBURY.
2. CONTRACTOR SHALL COORDINATE WITH THE TOWN OF SUDBURY REGARDING ON THE CLOSURE AND DETOUR IN ADVANCE OF IMPLEMENTATION.
3. CONTRACTOR TO MAINTAIN ABUTTER ACCESS AT ALL TIMES.
4. CONTRACTOR TO MAINTAIN EMERGENCY VEHICLE ACCESS AT ALL TIMES.
5. CONTRACTOR TO BREAKDOWN SETUP AND RESTORE TRAFFIC BACK TO ORIGINAL CONDITION AT THE END OF WORK SHIFT ON A DAILY BASIS.

LEGEND

	HORSE POND RD NB DETOUR FLOW ARROW
	HORSE POND RD SB DETOUR FLOW ARROW
	ROAD CLOSED, LOCAL ACCESS ONLY
	WORK AREA (PUBLIC ACCESS RESTRICTED)
S	TRAFFIC SIGNAL

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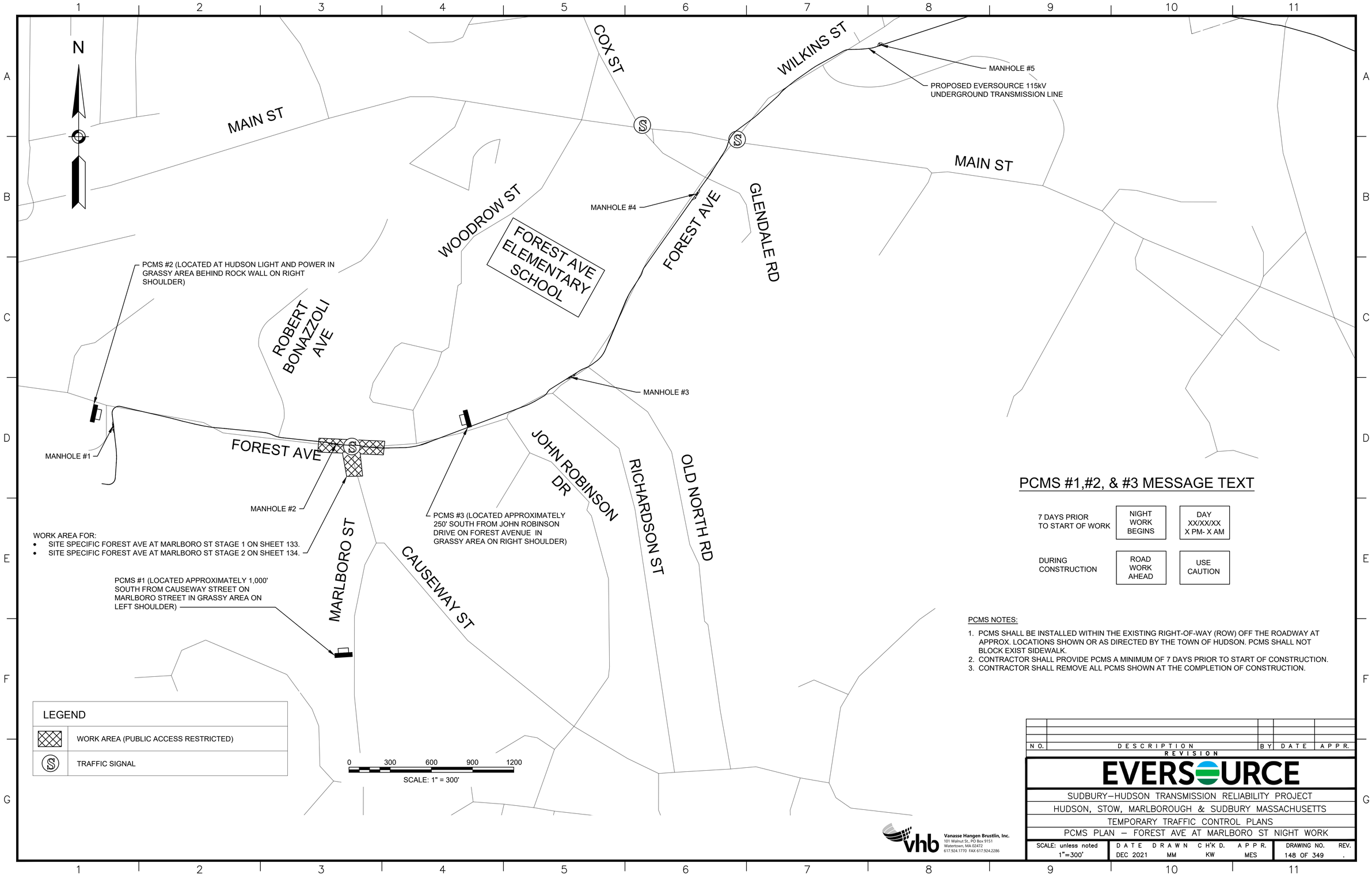
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

CLOSURE AND DETOUR PLAN– HORSE POND RD

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP R.	DRAWING NO.	REV.
1"=500'	DEC 2021	MM	KW	AA	147 OF 349	.



PCMS #1,#2, & #3 MESSAGE TEXT

7 DAYS PRIOR TO START OF WORK	NIGHT WORK BEGINS	DAY XX/XX/XX X PM- X AM
DURING CONSTRUCTION	ROAD WORK AHEAD	USE CAUTION

PCMS NOTES:

1. PCMS SHALL BE INSTALLED WITHIN THE EXISTING RIGHT-OF-WAY (ROW) OFF THE ROADWAY AT APPROX. LOCATIONS SHOWN OR AS DIRECTED BY THE TOWN OF HUDSON. PCMS SHALL NOT BLOCK EXIST SIDEWALK.
2. CONTRACTOR SHALL PROVIDE PCMS A MINIMUM OF 7 DAYS PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR SHALL REMOVE ALL PCMS SHOWN AT THE COMPLETION OF CONSTRUCTION.

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

PCMS PLAN – FOREST AVE AT MARLBORO ST NIGHT WORK

SCALE	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
unless noted 1"=300'	DEC 2021	MM	KW	MES	148 OF 349	.

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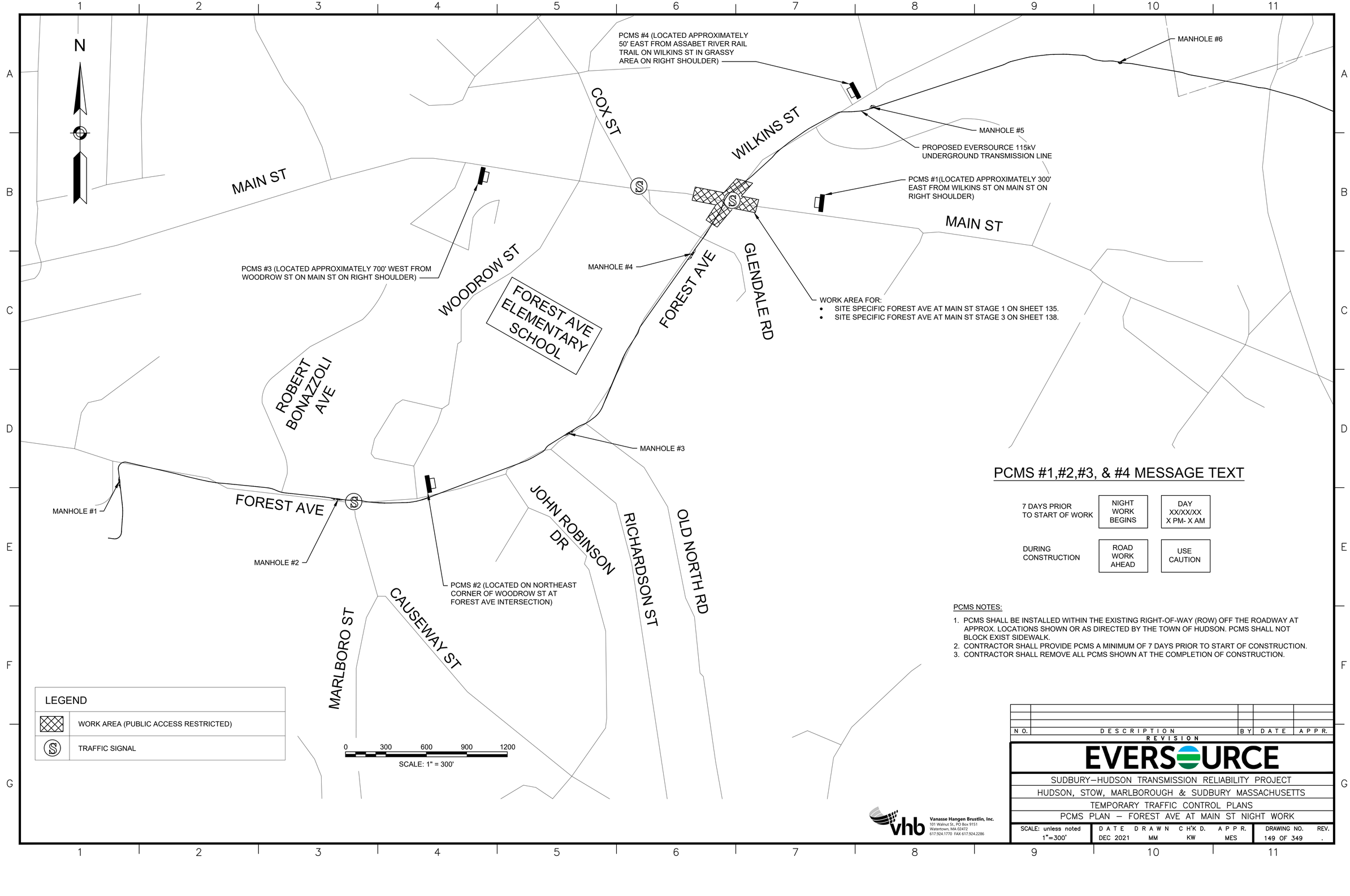

PCMS #1,#2,#3, & #4 MESSAGE TEXT

7 DAYS PRIOR TO START OF WORK	NIGHT WORK BEGINS	DAY XX/XX/XX X PM- X AM
DURING CONSTRUCTION	ROAD WORK AHEAD	USE CAUTION

PCMS NOTES:

1. PCMS SHALL BE INSTALLED WITHIN THE EXISTING RIGHT-OF-WAY (ROW) OFF THE ROADWAY AT APPROX. LOCATIONS SHOWN OR AS DIRECTED BY THE TOWN OF HUDSON. PCMS SHALL NOT BLOCK EXIST SIDEWALK.
2. CONTRACTOR SHALL PROVIDE PCMS A MINIMUM OF 7 DAYS PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR SHALL REMOVE ALL PCMS SHOWN AT THE COMPLETION OF CONSTRUCTION.

NO.	DESCRIPTION	BY	DATE	APPR.

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

PCMS PLAN – FOREST AVE AT MAIN ST NIGHT WORK

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=300'	DEC 2021	MM	KW	MES	149 OF 349	.

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TEMPORARY TRAFFIC CONTROL SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			COLOR		
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	BACK-GROUND	LEGEND	BORDER
R1-1	36"	36"	STOP	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			RED	WHITE	WHITE
MA-R2-10a	48"	36"	WORK ZONE / SPEEDING FINES DOUBLED	AS PER MASSDOT STANDARD			FLUOR-ESCENT ORANGE / WHITE	BLACK	BLACK
MA-R2-10e	36"	48"	END ROAD WORK / DOUBLE FINES END				FLUOR-ESCENT ORANGE / WHITE	BLACK	BLACK
R3-1	24"	24"		SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			WHITE	RED/ BLACK	BLACK
R3-2	24"	24"					WHITE	RED/ BLACK	BLACK
R4-7b	24"	30"	KEEP RIGHT				WHITE	BLACK	BLACK
R9-9	24"	12"	SIDEWALK CLOSED				WHITE	BLACK	BLACK
R11-2	48"	30"	ROAD CLOSED				WHITE	BLACK	BLACK
R11-3a	60"	30"	ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY				WHITE	BLACK	BLACK
W1-4L	36"	36"					FLUOR-ESCENT ORANGE	BLACK	BLACK
W1-4R	36"	36"					FLUOR-ESCENT ORANGE	BLACK	BLACK
W3-1	36"	36"					FLUOR-ESCENT ORANGE	BLACK / RED/ BLACK	BLACK
W5-1	36"	36"	ROAD NARROWS				FLUOR-ESCENT ORANGE	BLACK	BLACK
W8-1	36"	36"	BUMP				FLUOR-ESCENT ORANGE	BLACK	BLACK
W8-8	36"	36"	ROUGH ROAD				FLUOR-ESCENT ORANGE	BLACK	BLACK
W8-9	36"	36"	LOW SHOULDER				FLUOR-ESCENT ORANGE	BLACK	BLACK
W20-1c	36"	36"	ROAD WORK AHEAD				FLUOR-ESCENT ORANGE	BLACK	BLACK

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY (CONTINUED)

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)				COLOR	
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	BACK-GROUND	LEGEND	BORDER
W20-2c	36"	36"	DETOUR AHEAD	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			FLUOR-ESCENT ORANGE	BLACK	BLACK
W20-3c	36"	36"	ROAD CLOSED AHEAD				FLUOR-ESCENT ORANGE	BLACK	BLACK
W20-4c	36"	36"	ONE LANE ROAD AHEAD				FLUOR-ESCENT ORANGE	BLACK	BLACK
MA-W20-7b	36"	36"	POLICE OFFICER AHEAD	AS PER MASSDOT STANDARD			FLUOR-ESCENT ORANGE	BLACK	BLACK
W24-2 (MOD)	36"	36"	LANE SHIFT AHEAD	AS PER MASSDOT STANDARD			FLUOR-ESCENT ORANGE	BLACK	BLACK
M4-4	24"	12"	TRUCK	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			WHITE	BLACK	BLACK
M4-8a	24"	18"	END DETOUR				FLUOR-ESCENT ORANGE	BLACK	BLACK
M4-9L	30"	24"	DETOUR ←				FLUOR-ESCENT ORANGE	BLACK	BLACK
M4-9R	30"	24"	DETOUR →				FLUOR-ESCENT ORANGE	BLACK	BLACK
M4-9SL	30"	24"	DETOUR ↖				FLUOR-ESCENT ORANGE	BLACK	BLACK
M4-9SR	30"	24"	DETOUR ↗				FLUOR-ESCENT ORANGE	BLACK	BLACK
M4-9V	30"	24"	DETOUR ↑				FLUOR-ESCENT ORANGE	BLACK	BLACK
M4-10L	48"	18"	← DETOUR				FLUOR-ESCENT ORANGE	BLACK	---
M4-10R	48"	18"	DETOUR →				FLUOR-ESCENT ORANGE	BLACK	---

NOTES:
1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1977 MASSHIGHWAY DEPARTMENT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED, FOR SIGNS AND SUPPORTS; THE MASSHIGHWAY DEPARTMENT SIGN LISTINGS 1993 EDITION, AS AMENDED; THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR MOUNTING REQUIREMENTS; AND THE 2017 MassDOT STANDARD SIGNS BOOK, AS AMENDED.
2. ALL SIGNS SHOWN GRAPHICALLY FOR INFORMATION ONLY. SIGN VENDOR SHALL FABRICATE ALL SIGNS IN ACCORDANCE WITH THE APPLICABLE STANDARDS.

vhb
Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
Watertown, MA 02472
617.924.1770 FAX 617.924.2286

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TEMPORARY TRAFFIC CONTROL PLANS
SIGN SUMMARY

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	DEC 2021	MM	KW	MES	150 OF 349	.

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY (CONTINUED)

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)				COLOR	
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	BACK-GROUND	LEGEND	BORDER
SUPP(A)	48"	12"	MARLBORO RD	6"C	3" 3"	N/A	FLUOR-ESCENT ORANGE	BLACK	BLACK
SUPP(B)	48"	12"	CHESTNUT ST	6"C	3" 3"	N/A	FLUOR-ESCENT ORANGE	BLACK	BLACK
SUPP(C)	42"	12"	DUTTON RD	6"C	3" 3"	N/A	FLUOR-ESCENT ORANGE	BLACK	BLACK
SUPP(D)	36"	24"	WHITE POND RD	6"C 6"C	4" 4" 4"	N/A	FLUOR-ESCENT ORANGE	BLACK	BLACK
SUPP(E)	48"	12"	CONCORD RD	6"C	3" 3"	N/A	FLUOR-ESCENT ORANGE	BLACK	BLACK
SUPP(F)	42"	12"	FOREST AVE	6"C	3" 3"	N/A	FLUOR-ESCENT ORANGE	BLACK	BLACK
SUPP(G)	48"	24"	JOHN ROBINSON DR	6"C 6"C	4" 4" 4"	N/A	FLUOR-ESCENT ORANGE	BLACK	BLACK
SUPP(H)	48"	12"	PEAKHAM RD	6"C	3" 3"	N/A	FLUOR-ESCENT ORANGE	BLACK	BLACK
SUPP(J)	60"	12"	HORSE POND RD	6"C	3" 3"	N/A	FLUOR-ESCENT ORANGE	BLACK	BLACK
SP-1	36"	36"	CAUTION VEHICLES ENTERING	6"C 6"C 6"C	3.5" 3.5"	N/A	FLUOR-ESCENT ORANGE	BLACK	BLACK
SP-2	36"	36"	ROAD CROSSING AHEAD	6"C 6"C 6"C	3.5" 3.5"	N/A	FLUOR-ESCENT ORANGE	BLACK	BLACK

NOTES:
1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1977 MASSHIGHWAY DEPARTMENT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED, FOR SIGNS AND SUPPORTS; THE MASSHIGHWAY DEPARTMENT SIGN LISTINGS 1993 EDITION, AS AMENDED; THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR MOUNTING REQUIREMENTS; AND THE 2017 MassDOT STANDARD SIGNS BOOK, AS AMENDED.
2. ALL SIGNS SHOWN GRAPHICALLY FOR INFORMATION ONLY. SIGN VENDOR SHALL FABRICATE ALL SIGNS IN ACCORDANCE WITH THE APPLICABLE STANDARDS.

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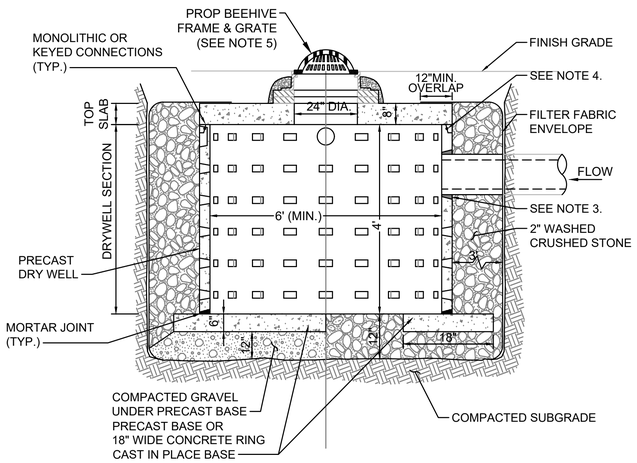
NTS	DEC 2021	MM	KW	MES	151 OF 349	.

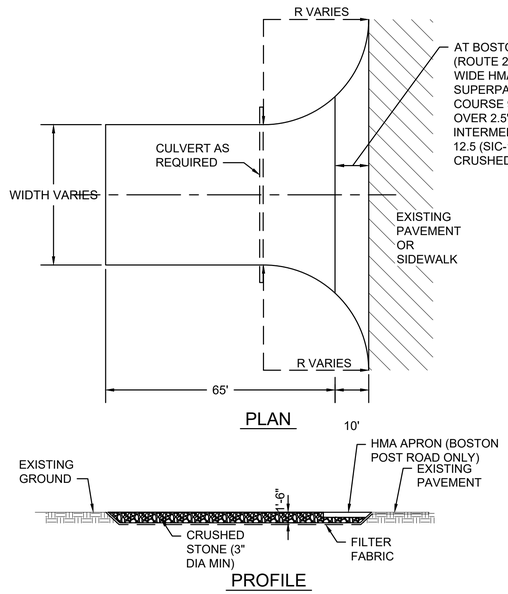


NOTES

1. BASE SECTION SHALL BE PRECAST CONCRETE WITH MORTARED JOINTS OR CAST IN PLACE.
2. ALL COMPONENTS SHALL BE DESIGNED FOR HS-20 LOADING.
3. PROVIDE PRECAST OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
5. BEEHIVE FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSE MINIMUM, 5 BRICK COURSE MAXIMUM)

LEACHING CATCH BASIN

SCALE: N.T.S.

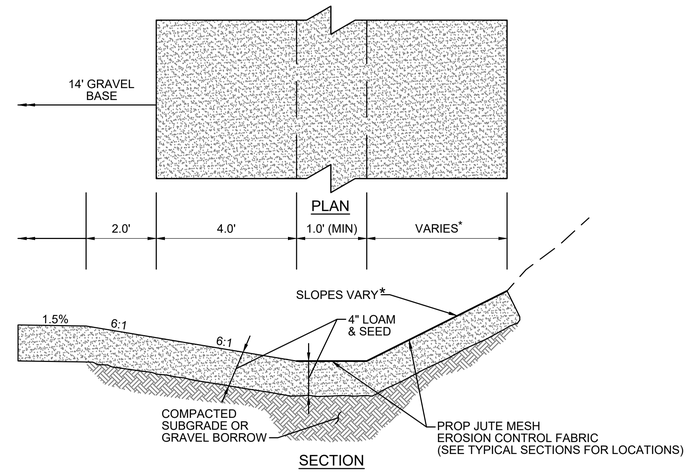


STABILIZED CONSTRUCTION ENTRANCE LOCATIONS
WILKINS STREET
MAIN STREET
PARMENTER ROAD
WHITE POND ROAD
DUTTON ROAD
PEAKHAM ROAD
HORSE POND ROAD
UNION AVENUE
BOSTON POST ROAD
SUDBURY SUBSTATION DRIVEWAY

NOTES:
1. ALL STABILIZED CONSTRUCTION ENTRANCES SHALL BE WITHIN LIMITS OF GRADING SHOWN ON CONSTRUCTION PLANS.
2. CONSTRUCTION ENTRANCES TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED AND DISTURBED AREA OUTSIDE OF 14' GRAVEL BASE TO BE LOAMED AND SEEDED AS SHOWN ON CONSTRUCTION PLANS.
3. CONTRACTOR SHALL SWEEP PAVED AREAS ADJACENT TO THE SITE ON A DAILY BASIS.
4. ALL PEDESTRIAN CROSSINGS MUST BE MAINTAINED AT ALL TIMES.
5. CONTRACTOR TO REPLACE CRUSHED STONE WITH CLEAN STONE AS REQUIRED.

STABILIZED CONSTRUCTION ENTRANCE

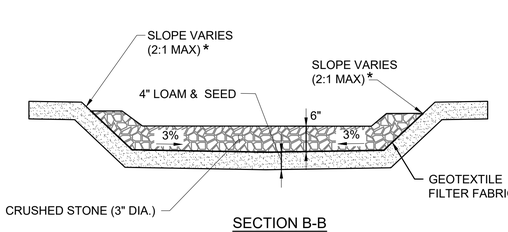
SCALE: N.T.S.

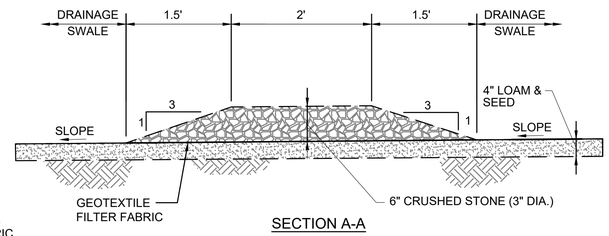


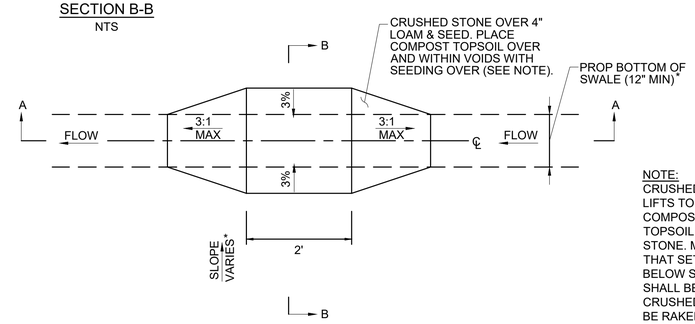
*SEE TYPICAL SECTIONS & CROSS SECTIONS FOR ADDITIONAL INFORMATION

SWALE/AREA OF INCREASED INFILTRATION

SCALE: N.T.S.





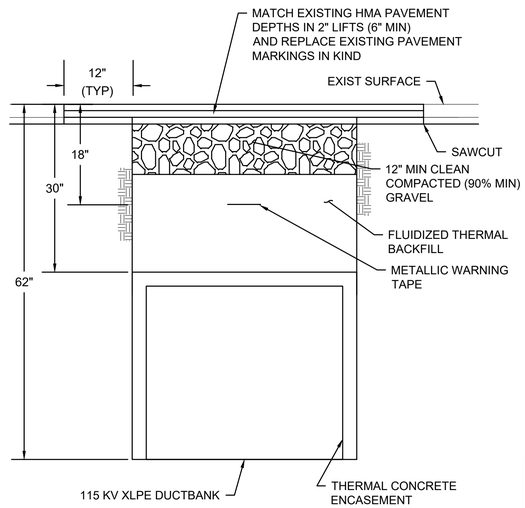


NOTE:
CRUSHED STONE TO BE PLACED IN TWO LIFTS TO ALLOW FOR THE APPLICATION OF COMPOST TOPSOIL. APPLY COMPOST TOPSOIL OVER AND WITHIN THE CRUSHED STONE. MATERIAL SHOULD BE PLACED SUCH THAT SETTLED MATERIAL IS AT OR SLIGHTLY BELOW SURFACE PLANE OF STONE AND SHALL BE WORKED INTO THE VOIDS OF THE CRUSHED STONE. COMPOST TOPSOIL SHALL BE RAKED BY HAND.

SEE CROSS SECTIONS FOR ADDITIONAL INFORMATION

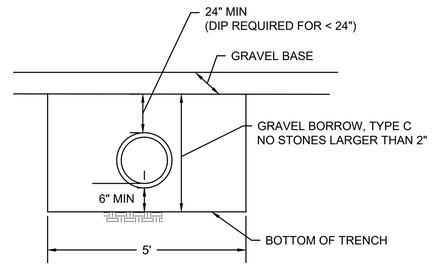
CHECK DAM

SCALE: N.T.S.



DUCTBANK CROSSING ROADWAY

SCALE: N.T.S.



NOTE:
1. GRAVEL BORROW FOR TRENCH BACKFILL MUST BE NEW MATERIAL. EXCESS FILL MATERIAL FROM SITE CANNOT BE USED.

TRENCH DETAIL

SCALE: N.T.S.

NO.	DESCRIPTION	BY	DATE	APPR.

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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

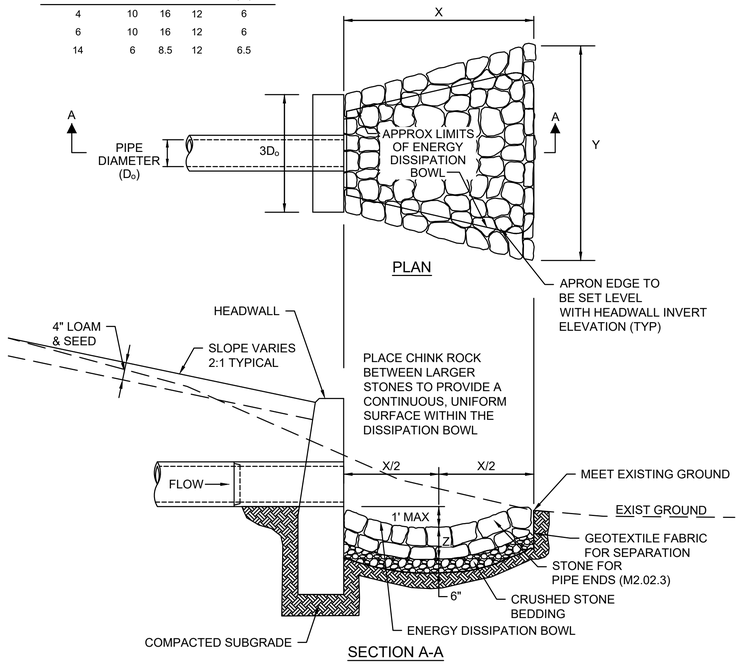
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION DETAILS

PLAN 152 OF 349

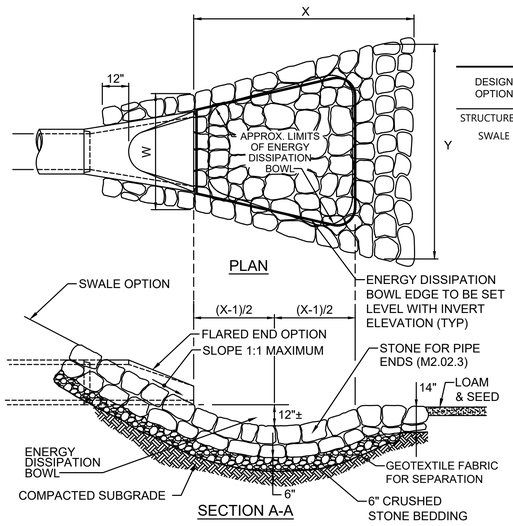
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	DEC 2021	MS	SK	MES	.	.

RIPRAP STONE				
STRUCTURE NUMBER	X (FT)	Y (FT)	Z (IN)	STONE DIA. (D_{50}) (IN)
4	10	16	12	6
6	10	16	12	6
14	6	8.5	12	6.5



STONE FOR PIPE ENDS

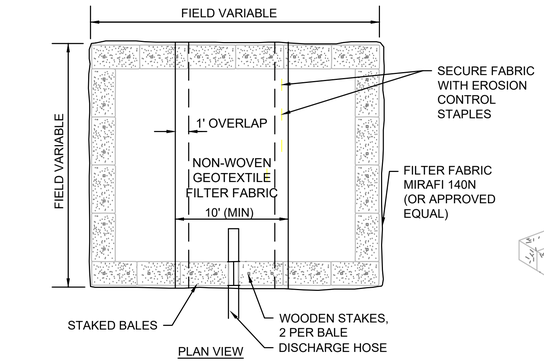
SCALE: N.T.S.

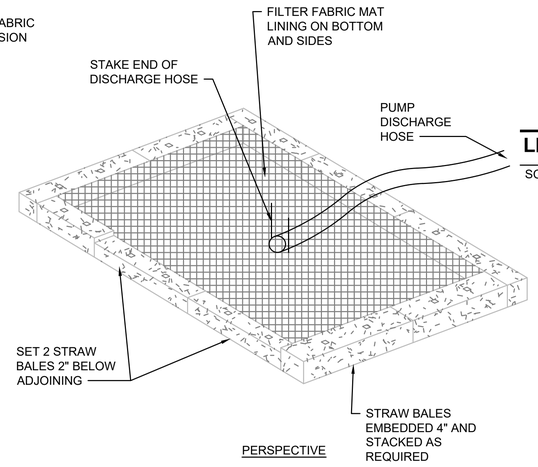


RIPRAP STONE				
DESIGN OPTION	W (FT)	X (FT)	Y (FT)	STONE DIA. (D_{50}) (IN)
STRUCTURE 10	3	4	5	6.5
SWALE	7	6	8	6.5

STONE PROTECTION AT SWALE/FLARED END (STRUCTURE NUMBER 10)

SCALE: N.T.S.

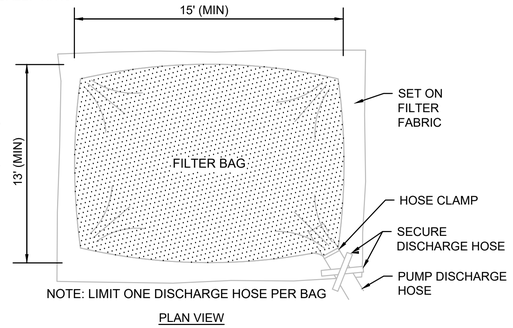


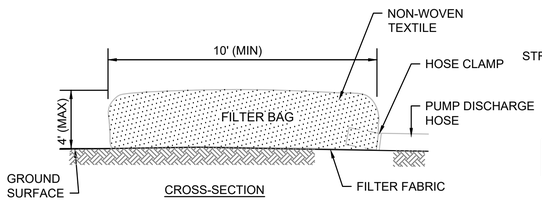


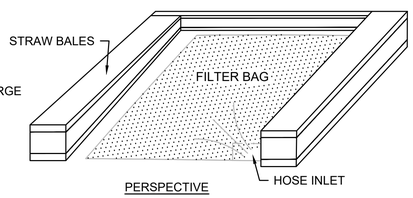
NOTES:
1. NUMBER OF BALES MAY VARY DEPENDING ON SITE CONDITIONS.
2. THE BASIN TO BE SIZED TO PREVENT DISCHARGE WATER FROM OVERTOPPING BASIN.
3. WITHIN THE TOWN OF HUDSON, STOW AND SUDBURY, THE CONTRACTOR SHALL NOTIFY THE PROPER TOWN'S CONSERVATION COMMISSION PRIOR TO ANY PLANNED DEWATERING AND THE CONSERVATION COMMISSION MUST APPROVE THIS WORK IN THE FIELD PRIOR TO COMMENCEMENT.

DEWATERING STRAW BALE BASIN

SCALE: N.T.S.



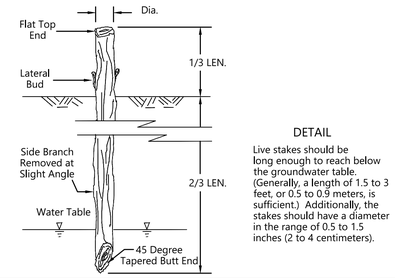




NOTE:
1. BAG TO BE USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. WITHIN THE TOWN OF HUDSON, STOW AND SUDBURY, THE CONTRACTOR SHALL NOTIFY THE PROPER TOWN'S CONSERVATION COMMISSION PRIOR TO ANY PLANNED DEWATERING AND THE CONSERVATION COMMISSION MUST APPROVE THIS WORK IN THE FIELD PRIOR TO COMMENCEMENT.

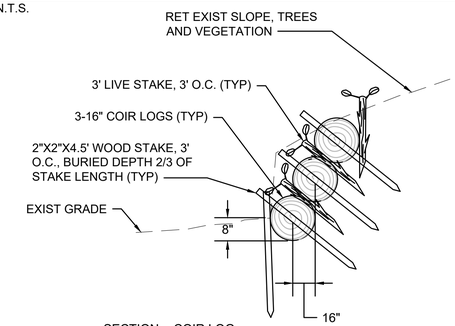
DEWATERING FILTER BAG

SCALE: N.T.S.



LIVE STAKE

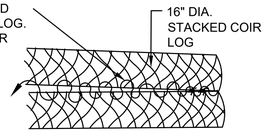
SCALE: N.T.S.



NOTE
FIELD VERIFY THE EXISTING SLOPE AND INSTALL THE COIR LOG AS REQUIRED BASED ON THE EXISTING SLOPE. CONTRACTOR TO VERIFY SLOPE STABILITY WITH COIR LOG MANUFACTURER PRIOR TO INSTALLATION.

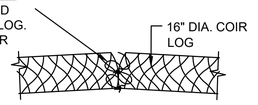
ELEVATION VIEW: LATERAL TYING

COCONUT FIBER CORD LACED THROUGH OUTER WRAP OF LOG. TIE 10 OVERHAND KNOTS PER COIR LOG, MIN.



PLAN VIEW: END-TO-END TYING

COCONUT FIBER CORD LACED THROUGH OUTER WRAP OF LOG. TIE 10 OVERHAND KNOTS PER COIR LOG, MIN.



COIR LOG NOTES:

1. DETAIL IS REPRESENTATIVE ONLY. PURPOSE IS TO SHOW DESIGN INTENT. PRIOR TO PLANT INSTALLATION PLANT LAYOUT SHALL BE STAKED OUT BY CONTRACTOR AND APPROVED BY OWNER'S REPRESENTATIVE.

COIR LOG

SCALE: N.T.S.

NO.	DESCRIPTION	BY	DATE	APPR.

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION DETAILS

PLAN 153 OF 349

SCALE: unless noted	DATE DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
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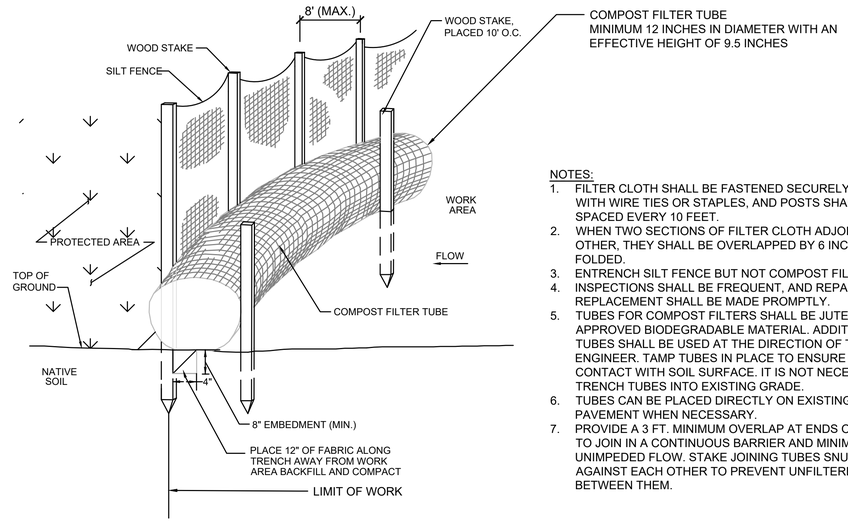
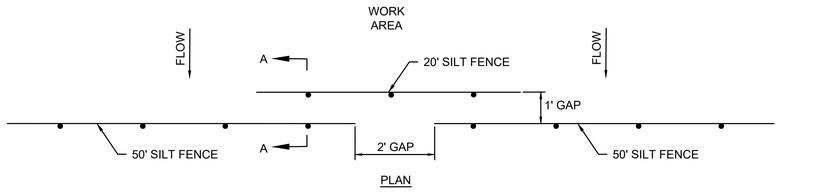


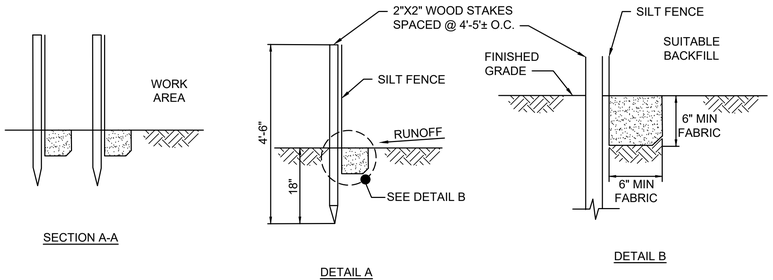
NOTES:
1. FILTER CLOTH SHALL BE FASTENED SECURELY TO POSTS WITH WIRE TIES OR STAPLES, AND POSTS SHALL BE SPACED EVERY 10 FEET.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES AND FOLDED.
3. ENTRENCH SILT FENCE BUT NOT COMPOST FILTER TUBE.
4. INSPECTIONS SHALL BE FREQUENT, AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY.
5. TUBES FOR COMPOST FILTERS SHALL BE JUTE MESH OR APPROVED BIODEGRADABLE MATERIAL. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER. TAMP TUBES IN PLACE TO ENSURE GOOD CONTACT WITH SOIL SURFACE. IT IS NOT NECESSARY TO TRENCH TUBES INTO EXISTING GRADE.
6. TUBES CAN BE PLACED DIRECTLY ON EXISTING PAVEMENT WHEN NECESSARY.
7. PROVIDE A 3 FT. 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.

COMPOST FILTER TUBE AND SILT FENCE DETAIL - TYPE A EROSION CONTROL BARRIER

SCALE: NTS



PLAN



SECTION A-A

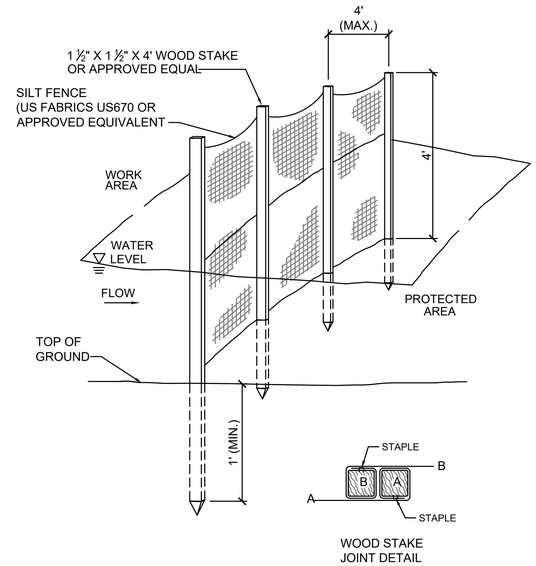
DETAIL A

DETAIL B

NOTES:
1. SYNCOPATED SILT FENCE SHALL BE USED WITHIN ALL PRIORITY HABITAT AREAS AND WITHIN 450' OF VERNAL POOLS.
2. INSTALL GAP AFTER EVERY 50' OF EROSION CONTROL BARRIER.

SYNCOPATED SILT FENCE DETAIL - TYPE B EROSION CONTROL BARRIER

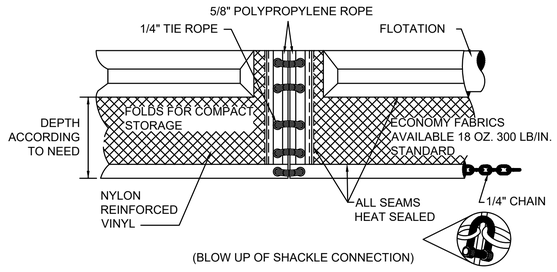
SCALE: N.T.S.



WOOD STAKE JOINT DETAIL

4' HIGH SILT FENCE BARRIER DETAIL - EROSION CONTROL BARRIER TYPE C (OPTION 1)

SCALE: N.T.S.



TURBIDITY CURTAIN DETAIL - EROSION CONTROL BARRIER TYPE C (OPTION 2)

SCALE: N.T.S.

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION DETAILS

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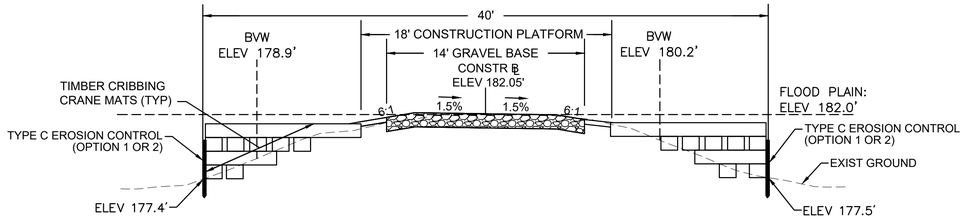
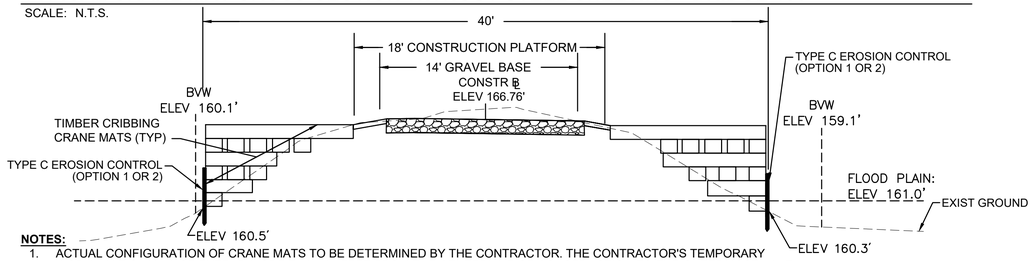


NOTES:
1. ACTUAL CONFIGURATION OF CRANE MATS TO BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR'S TEMPORARY WORK LIMIT SHALL NOT EXTEND MORE THAN 20 FEET FROM THE CENTERLINE OF CONSTRUCTION TO THE OUTERMOST LIMIT ON EACH SIDE WHERE CRANE MATTING IS PERMITTED.
2. AREA DISTURBED BY CRANE MATS OUTSIDE THE LIMITS OF THE 18' CONSTRUCTION PLATFORM TO BE RESTORED. SEE CRANE MAT RESTORATION DETAILS ON SHEET 130.
3. GEOTEXTILE FABRIC TO BE INSTALLED UNDERNEATH AND WRAPPED AROUND CRANE MATS. GEOTEXTILE FABRIC MUST OVERLAP AT THE EDGES AND BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS.
4. THE CROSS-SECTION FOR STATION 148+00 IS USED AS A REPRESENTATIVE AREA FOR THE PURPOSES OF THIS DETAIL.

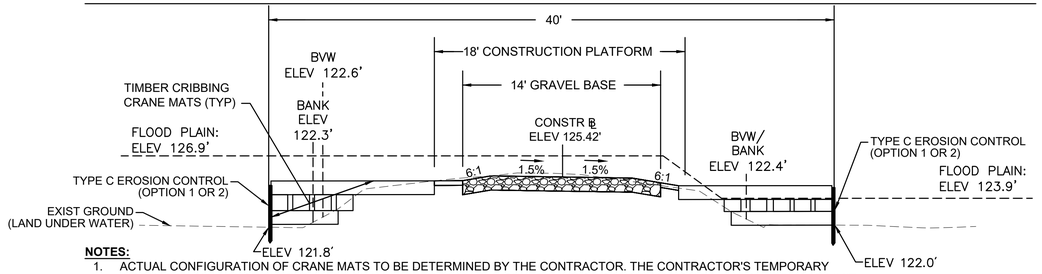
TYPICAL CRANE MAT CROSS-SECTION WITHOUT STEEL SHEETING - BRIDGE 130

SCALE: N.T.S.



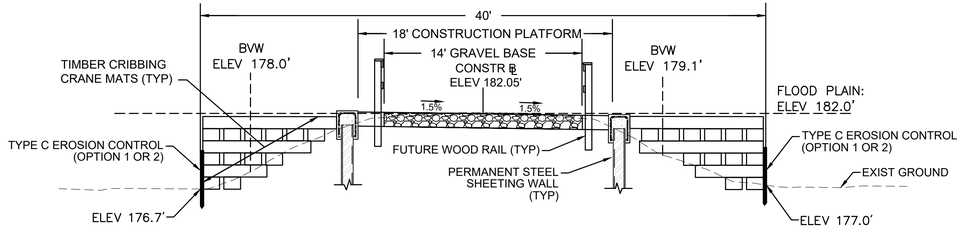
NOTES:
1. ACTUAL CONFIGURATION OF CRANE MATS TO BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR'S TEMPORARY WORK LIMIT SHALL NOT EXTEND MORE THAN 20 FEET FROM THE CENTERLINE OF CONSTRUCTION TO THE OUTERMOST LIMIT ON EACH SIDE WHERE CRANE MATTING IS PERMITTED.
2. AREA DISTURBED BY CRANE MATS OUTSIDE THE LIMITS OF THE 18' CONSTRUCTION PLATFORM TO BE RESTORED. SEE CRANE MAT RESTORATION DETAILS ON SHEET 130.
3. GEOTEXTILE FABRIC TO BE INSTALLED UNDERNEATH AND WRAPPED AROUND CRANE MATS. GEOTEXTILE FABRIC MUST OVERLAP AT THE EDGES AND BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS.
4. THE CROSS-SECTION FOR STATION 401+50 IS USED AS A REPRESENTATIVE AREA FOR THE PURPOSES OF THIS DETAIL.

TYPICAL CRANE MAT CROSS-SECTION WITHOUT STEEL SHEETING - BRIDGE 128



NOTES:
1. ACTUAL CONFIGURATION OF CRANE MATS TO BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR'S TEMPORARY WORK LIMIT SHALL NOT EXTEND MORE THAN 20 FEET FROM THE CENTERLINE OF CONSTRUCTION TO THE OUTERMOST LIMIT ON EACH SIDE WHERE CRANE MATTING IS PERMITTED.
2. AREA DISTURBED BY CRANE MATS OUTSIDE THE LIMITS OF THE 18' CONSTRUCTION PLATFORM TO BE RESTORED. SEE CRANE MAT RESTORATION DETAILS ON SHEET 130.
3. GEOTEXTILE FABRIC TO BE INSTALLED UNDERNEATH AND WRAPPED AROUND CRANE MATS. GEOTEXTILE FABRIC MUST OVERLAP AT THE EDGES AND BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS.
4. THE CROSS-SECTION FOR STATION 726+00 IS USED AS A REPRESENTATIVE AREA FOR THE PURPOSES OF THIS DETAIL.

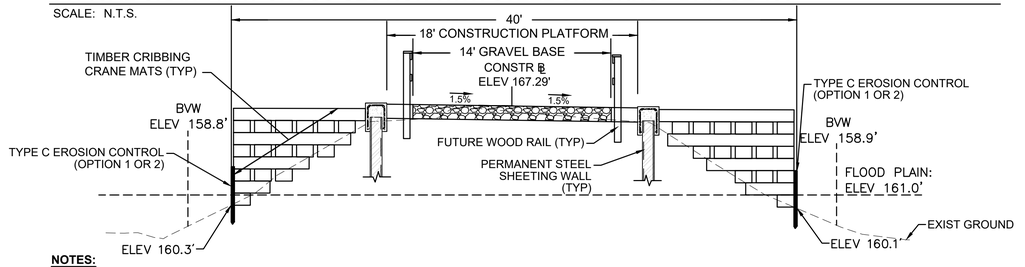
TYPICAL CRANE MAT CROSS-SECTION WITHOUT STEEL SHEETING - BRIDGE 127



NOTES:
1. ACTUAL CONFIGURATION OF CRANE MATS TO BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR'S TEMPORARY WORK LIMIT SHALL NOT EXTEND MORE THAN 20 FEET FROM THE CENTERLINE OF CONSTRUCTION TO THE OUTERMOST LIMIT ON EACH SIDE WHERE CRANE MATTING IS PERMITTED.
2. AREA DISTURBED BY CRANE MATS OUTSIDE THE LIMITS OF THE 18' CONSTRUCTION PLATFORM TO BE RESTORED. SEE CRANE MAT RESTORATION DETAILS ON SHEET 130.
3. GEOTEXTILE FABRIC TO BE INSTALLED UNDERNEATH AND WRAPPED AROUND CRANE MATS. GEOTEXTILE FABRIC MUST OVERLAP AT THE EDGES AND BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS.
4. THE CROSS-SECTION FOR STATION 148+25 IS USED AS A REPRESENTATIVE AREA FOR THE PURPOSES OF THIS DETAIL.

TYPICAL CRANE MAT CROSS-SECTION WITH STEEL SHEETING - BRIDGE 130

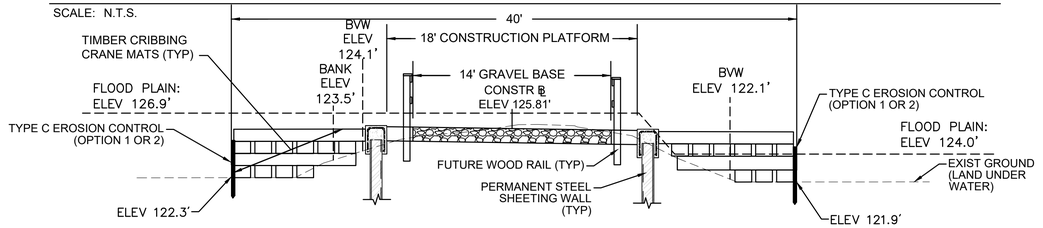
SCALE: N.T.S.



NOTES:
1. ACTUAL CONFIGURATION OF CRANE MATS TO BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR'S TEMPORARY WORK LIMIT SHALL NOT EXTEND MORE THAN 20 FEET FROM THE CENTERLINE OF CONSTRUCTION TO THE OUTERMOST LIMIT ON EACH SIDE WHERE CRANE MATTING IS PERMITTED.
2. AREA DISTURBED BY CRANE MATS OUTSIDE THE LIMITS OF THE 18' CONSTRUCTION PLATFORM TO BE RESTORED. SEE CRANE MAT RESTORATION DETAILS ON SHEET 130.
3. GEOTEXTILE FABRIC TO BE INSTALLED UNDERNEATH AND WRAPPED AROUND CRANE MATS. GEOTEXTILE FABRIC MUST OVERLAP AT THE EDGES AND BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS.
4. THE CROSS-SECTION FOR STATION 401+00 IS USED AS A REPRESENTATIVE AREA FOR THE PURPOSES OF THIS DETAIL.

TYPICAL CRANE MAT CROSS-SECTION WITH STEEL SHEETING - BRIDGE 128

SCALE: N.T.S.



NOTES:
1. ACTUAL CONFIGURATION OF CRANE MATS TO BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR'S TEMPORARY WORK LIMIT SHALL NOT EXTEND MORE THAN 20 FEET FROM THE CENTERLINE OF CONSTRUCTION TO THE OUTERMOST LIMIT ON EACH SIDE WHERE CRANE MATTING IS PERMITTED.
2. AREA DISTURBED BY CRANE MATS OUTSIDE THE LIMITS OF THE 18' CONSTRUCTION PLATFORM TO BE RESTORED. SEE CRANE MAT RESTORATION DETAILS ON SHEET 130.
3. GEOTEXTILE FABRIC TO BE INSTALLED UNDERNEATH AND WRAPPED AROUND CRANE MATS. GEOTEXTILE FABRIC MUST OVERLAP AT THE EDGES AND BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS.
4. THE CROSS-SECTION FOR STATION 724+90 IS USED AS A REPRESENTATIVE AREA FOR THE PURPOSES OF THIS DETAIL.

TYPICAL CRANE MAT CROSS-SECTION WITH STEEL SHEETING - BRIDGE 127

SCALE: N.T.S.

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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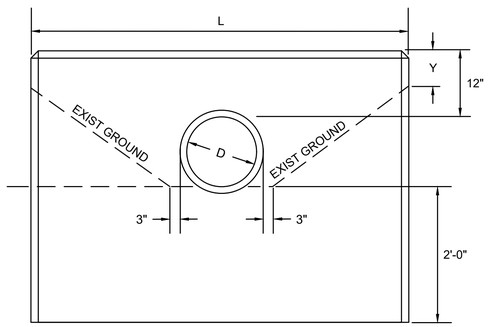
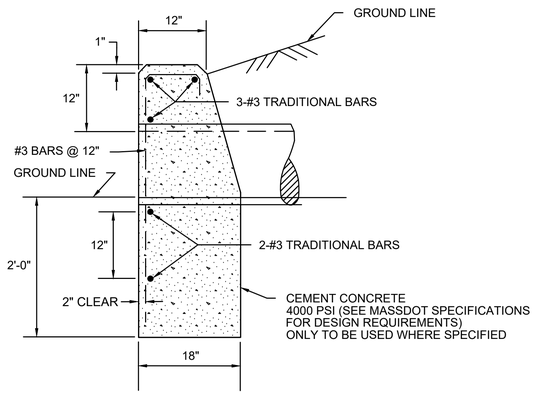
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	DEC 2021	MS	SK	MES	.	.



FRONT ELEVATION

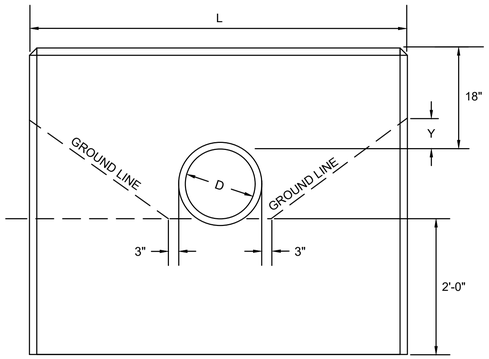


END ELEVATION

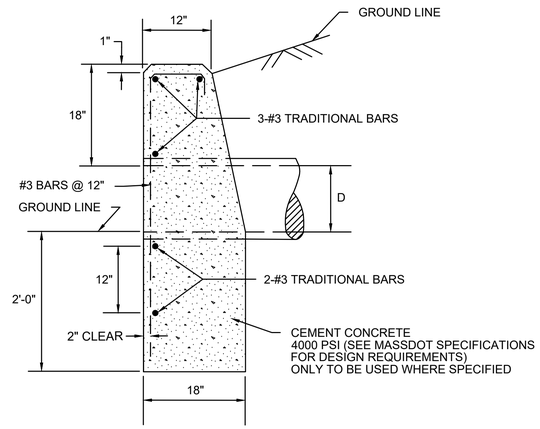
NOTES:
1. THIS DETAIL SHALL BE APPLIED TO THE PROPOSED 18" DRAINAGE PIPE AT STATION 738+77.
2. SEE MASSDOT CONST STD 206.4.1 FOR THE VALUES OF L AND Y FOR VARIOUS PIPE DIAMETERS.

HEADWALL WITH 12" REVEAL ABOVE PIPE

SCALE: N.T.S.



FRONT ELEVATION

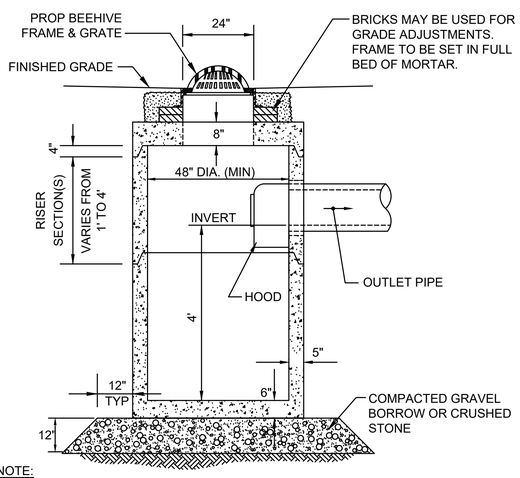


END ELEVATION

NOTES:
1. THIS DETAIL SHALL BE APPLIED TO THE PROPOSED 24" DRAINAGE PIPE AT STATION 713+63.
2. SEE MASSDOT CONST STD 206.4.1 FOR THE VALUES OF L AND Y FOR VARIOUS PIPE DIAMETERS.

HEADWALL WITH 18" REVEAL ABOVE PIPE

SCALE: N.T.S.

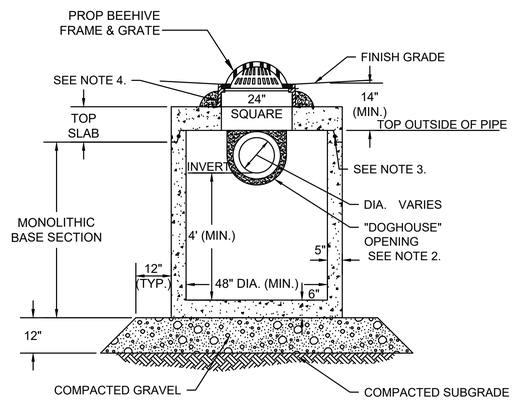


NOTE:

6" MINIMUM SPACE FROM TOP OF KNOCKOUT TO BOTTOM OF ROOF SLAB JOINT REQUIRED WHEN USING HOODS.

DEEP SUMP CATCH BASIN WITH HOOD (CB)

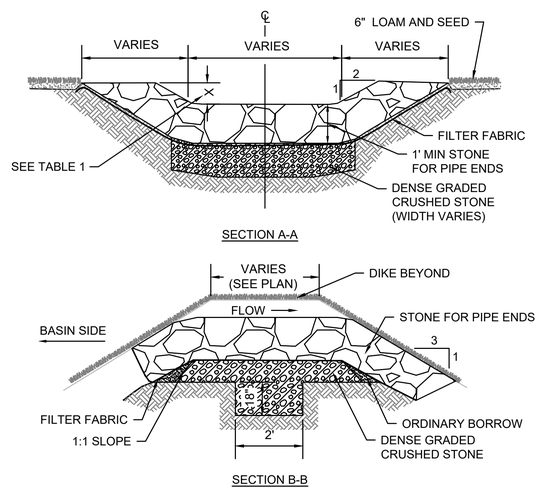
SCALE: N.T.S.



NOTES:
1. ALL SECTIONS SHALL BE DESIGNED FOR HS-10 LOADING.
2. PROVIDE DOGHOUSE OPENING FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. TOP SLAB SHALL NOT REST DIRECTLY ON PIPE. GROUT ALL PIPE CONNECTIONS (NON-SHRINK GROUT).
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME (4" DEPTH) SHALL BE SET IN FULL MORTAR BED.
5. ADJUST TO FINISH GRADE WITH CLAY BRICK AND MORTAR AS REQUIRED.

CATCH BASIN WITH SHALLOW COVER (SHALLOW CB)

SCALE: N.T.S.



SECTION A-A

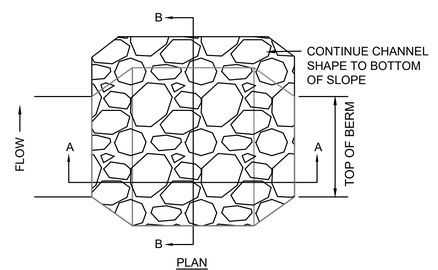
SECTION B-B

OVERFLOW STONE SWALE

SCALE: N.T.S.

TABLE 1

BMP NUMBER	X (FT)
P-6.2	0.2
P-7.1	0.5



PLAN

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

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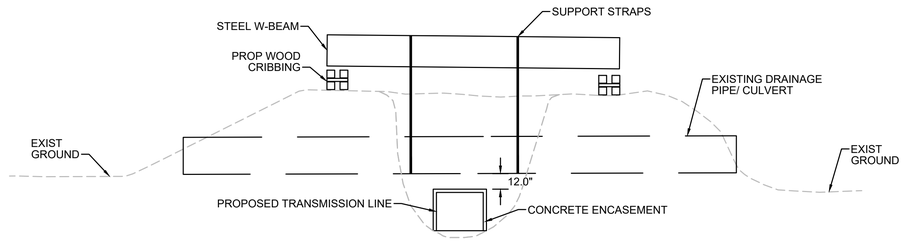
METHOD OF PIPE SUPPORT DURING CONSTRUCTION

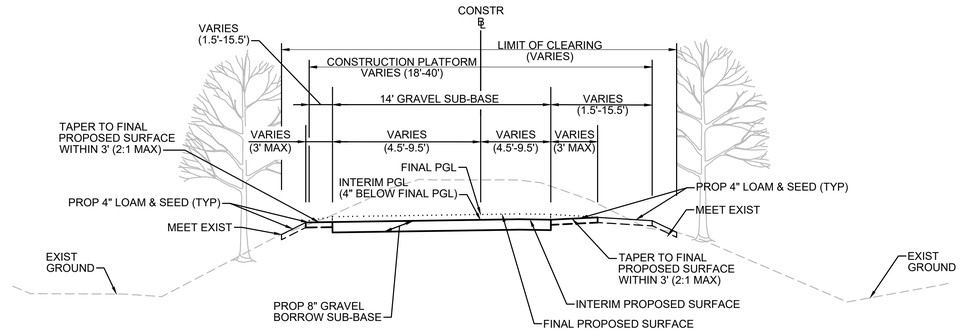
SCALE: N.T.S.



NOTES:
1. CONTRACTOR TO EXCAVATE GROUND SURROUNDING EXISTING PIPE SUCH THAT NO DAMAGE TO THE PIPE IS INCURRED.
2. EXISTING PIPE TO BE STABILIZED IN PLACE DURING CONSTRUCTION USING A STRAP SUPPORTED BY AN W-BEAM.
3. TRANSMISSION LINE TO BE INSTALLED UNDER EXISTING PIPE WITH A MINIMUM CLEARANCE OF 12".
4. AFTER INSTALLATION OF THE TRANSMISSION LINE IS COMPLETE, CONTRACTOR TO FILL IN THE EXCAVATED AREA WITH ORDINARY BORROW OR EXCAVATED MATERIAL AND CONSTRUCT ACCESS ROAD AS SHOWN ON THE PLANS AND CROSS-SECTIONS.

INTERIM TYPICAL SECTION

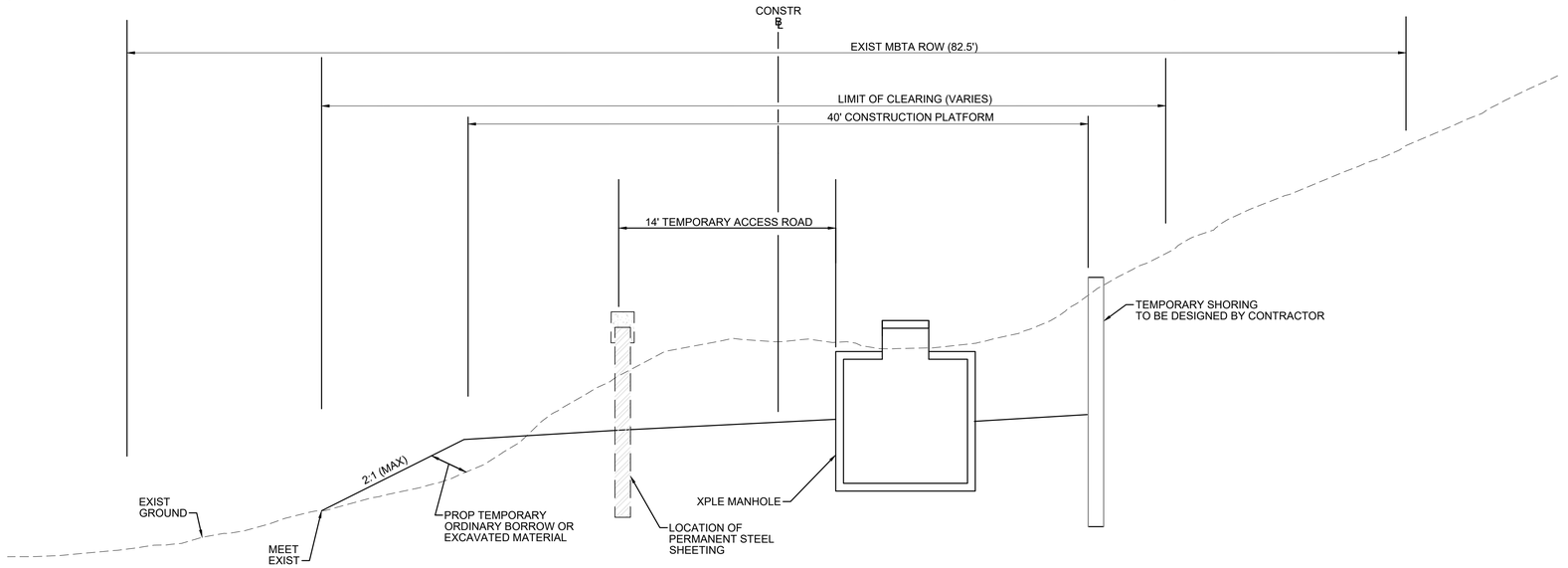
SCALE: N.T.S.



NOTES:
1. THIS INTERIM TYPICAL SECTION SHOWS THE TAPERING TO BE PERFORMED TO CONNECT THE GRAVEL ACCESS ROAD BEING CONSTRUCTED BY EVERSOURCE TO THE FINAL PROPOSED SURFACE FOR THE DCR MASS CENTRAL RAIL TRAIL.
2. AT ALL ROADWAY CROSSINGS AND VEHICLE ACCESS POINTS, THE CONTRACTOR SHALL TAPER FROM 8" UP TO 12" OF GRAVEL BORROW SUB-BASE OVER A LENGTH OF 50' SUCH THAT THE INTERIM PGL MATCHES THE FINAL PGL.

TEMPORARY GRADING AT STA 120+75 TO STA 121+25

SCALE: N.T.S.



NOTES:
1. THE LONGITUDINAL GRADIENT OF THE TEMPORARY ACCESS ROAD SHALL BE NO GREATER THAN 6%.
2. ALL TEMPORARY GRADING ACTIVITIES SHALL STAY WITHIN LIMITS OF GRADING SHOWN ON THE PLANS.
3. AFTER CONSTRUCTION OF THE TRANSMISSION LINE AND ACCESS ROAD IS COMPLETED, CONTRACTOR TO STOCKPILE ANY REMAINING TEMPORARY FILL MATERIAL AND REGRADE TO MATCH EXISTING CONDITIONS OUTSIDE OF THE PERMANENT LIMITS OF GRADING SHOWN ON THE PLANS AND CROSS-SECTIONS.
4. CONTRACTOR TO STABILIZE ANY EXPOSED SLOPES WITH JUTE MESH FABRIC UNTIL SUCH TIME THAT THEY CAN BE RESTORED.

NO.	DESCRIPTION	BY	DATE	APP'R.
	REVISION			

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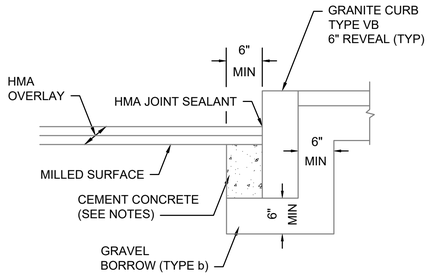
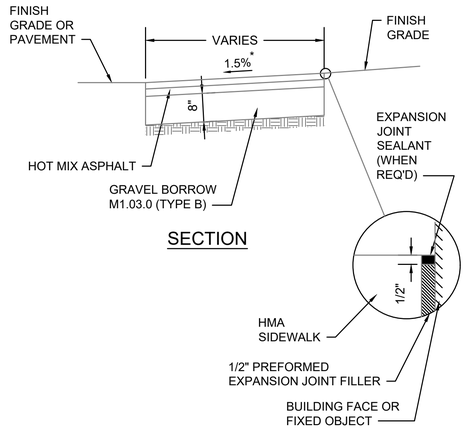
SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
NTS	DEC 2021	MS	SK	MES	.	.



NOTES:
1. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR GRANITE CURB.
2. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED. ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE.

GRANITE CURB IN MILL & OVERLAY

SCALE: N.T.S.

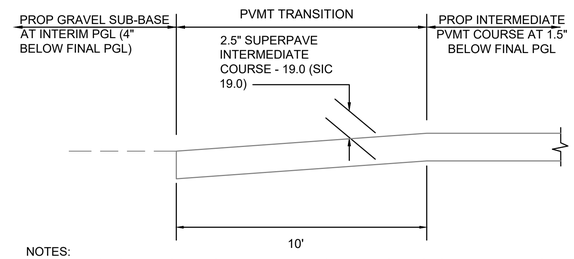


SECTION

* TOLERANCE FOR CONSTRUCTION ±0.5%

HOT MIX ASPHALT SIDEWALK

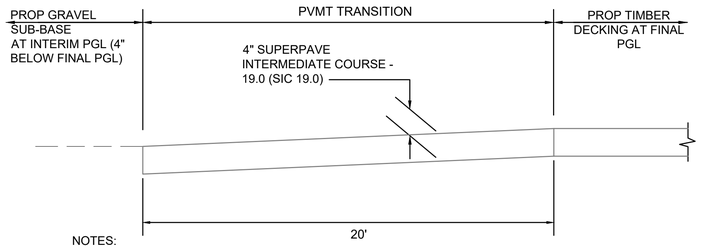
SCALE: N.T.S. DWG: WALK-01 DATE: MARCH 2013



NOTES:
1. DEPTH OF GRAVEL SUB-BASE UNDER PVMT TO BE ADJUSTED SUCH THAT DATUM SURFACE REMAINS AT 12" BELOW FINAL PGL THROUGH PVMT TRANSITION.

LONGITUDINAL SECTION OF PVMT TRANSITION AT CATTLE CROSSING

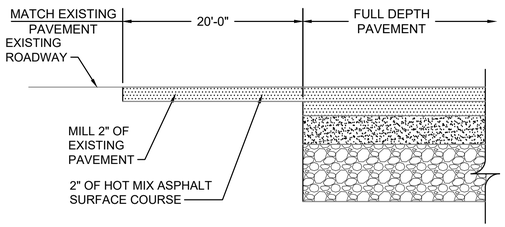
SCALE: N.T.S.



NOTES:
1. DEPTH OF GRAVEL SUB-BASE UNDER PVMT TO BE ADJUSTED SUCH THAT DATUM SURFACE REMAINS AT 12" BELOW FINAL PGL THROUGH PVMT TRANSITION.

LONGITUDINAL SECTION OF PVMT TRANSITION AT BRIDGES

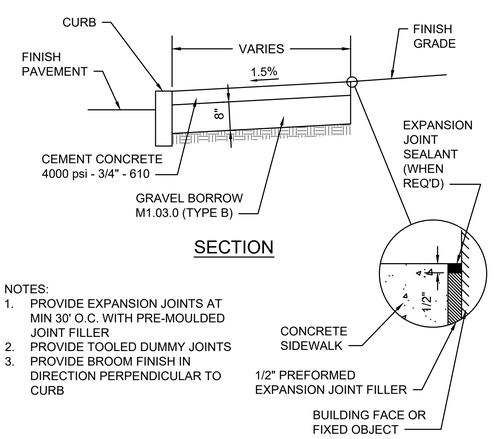
SCALE: N.T.S.



LONGITUDINAL SECTION

FULL DEPTH PAVEMENT TRANSITION

SCALE: N.T.S.

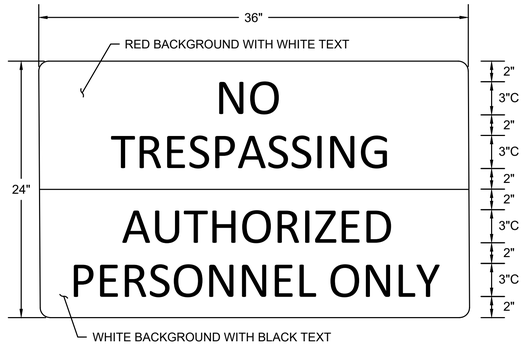


SECTION

NOTES:
1. PROVIDE EXPANSION JOINTS AT MIN 30' O.C. WITH PRE-MOULDED JOINT FILLER
2. PROVIDE TOOLED DUMMY JOINTS
3. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB

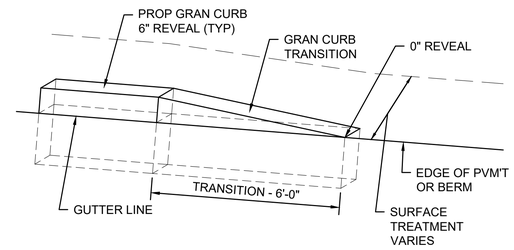
CEMENT CONCRETE SIDEWALK

SCALE: N.T.S.



- NO BORDER
- MATERIAL - FLAT SHEET ALUMINUM 0.08" INCHES THICK
- SIGN SHALL BE MOUNTED ON P5 POST AT ALL WORK ZONE ACCESS POINTS AND ON CONSTRUCTION FENCE FACING CONSTRUCTION PLATFORM AS NOTED ON THE PLANS.

NO TRESPASSING SIGN



GRANITE CURB TRANSITION PIECE

SCALE: N.T.S.

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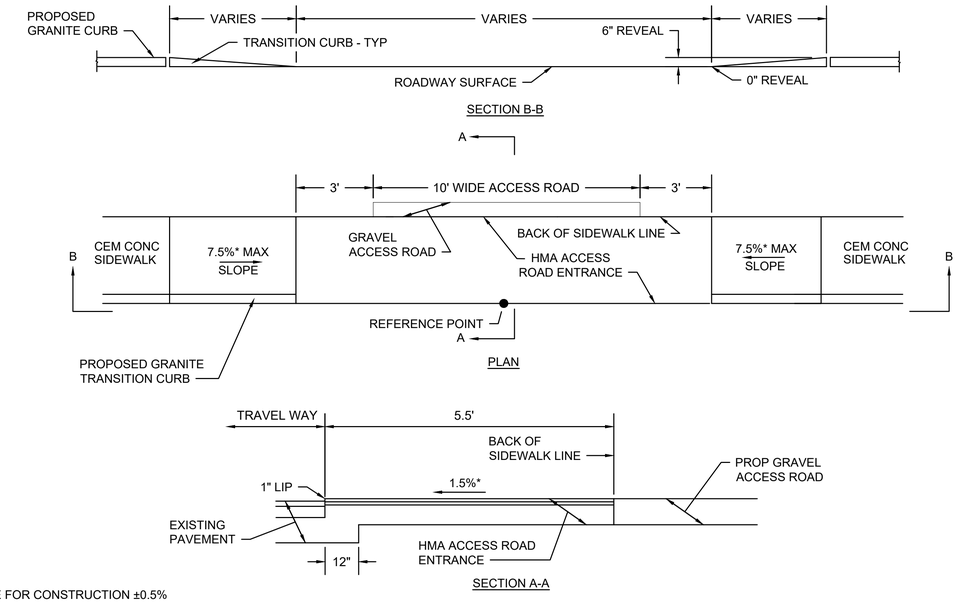
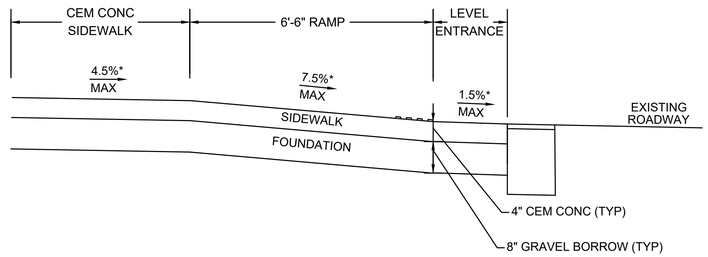
ACCESS ROAD CROSSING DATA									
NO.	LOCATION (REF POINT)	ROADWAY GUTTER	SIDEWALK WIDTH	LEFT SIDE		RIGHT SIDE		OPENING ELEVATION	COMMENTS
				REVEAL	TRANS	REVEAL	TRANS		
BOSTON POST ROAD (ROUTE 20) STATE HIGHWAY LAYOUT									
(1)	182+61.6, 9.6' LT	5.2%	5'-6"	6"	9'-0"	6"	7'-8"	134.31'	



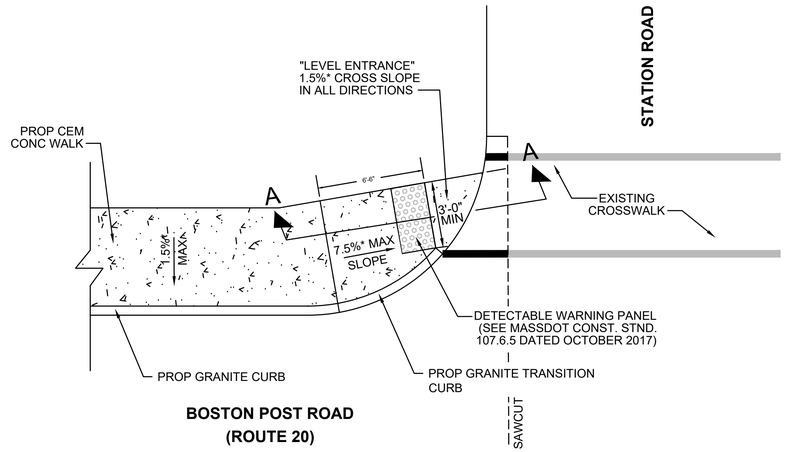
*TOLERANCE FOR CONSTRUCTION ±0.5%

TYPICAL ACCESS ROAD CROSSING WITH SIDEWALK AND WITHOUT CURB RETURNS

SCALE: N.T.S.



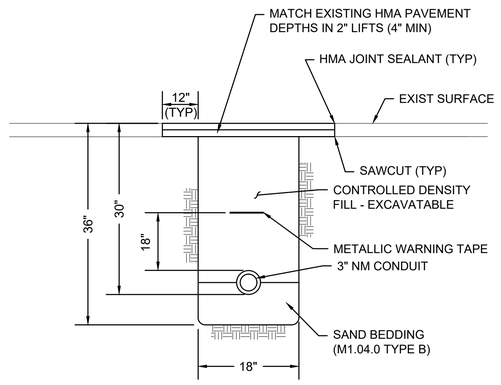
SECTION A-A



*TOLERANCE FOR CONSTRUCTION ±0.5%

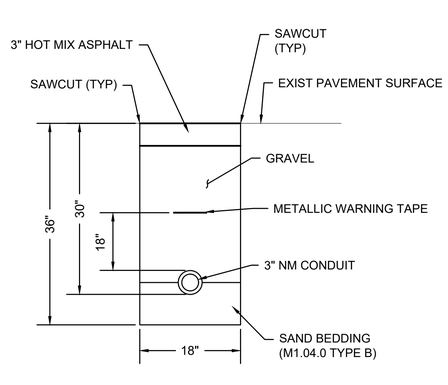
WHEELCHAIR RAMP #1

SCALE: N.T.S.



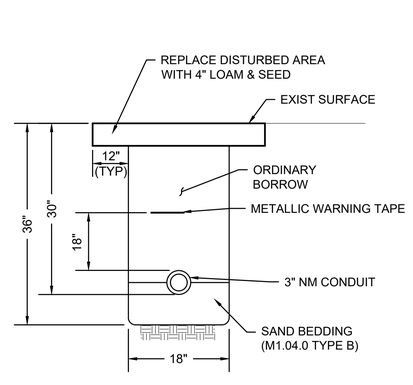
CONDUIT CROSSING ROADWAY/DRIVEWAY

SCALE: N.T.S.



CONDUIT IN SIDEWALK

SCALE: N.T.S.



CONDUIT IN GRASS

SCALE: N.T.S.

NO.	DESCRIPTION	BY	DATE	APPR.
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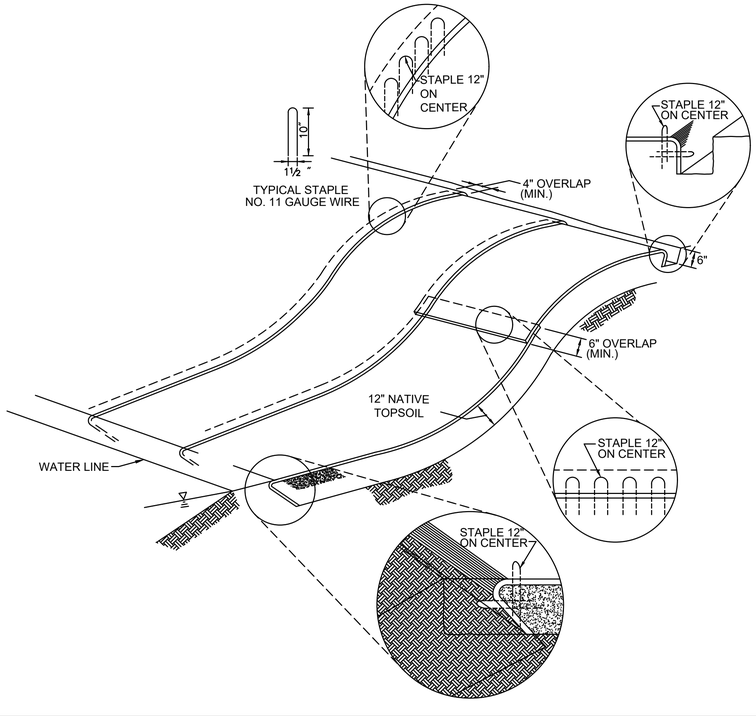
NOTES FOR BIONET C700BN EROSION CONTROL BLANKET:

1. METHOD OF INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS.

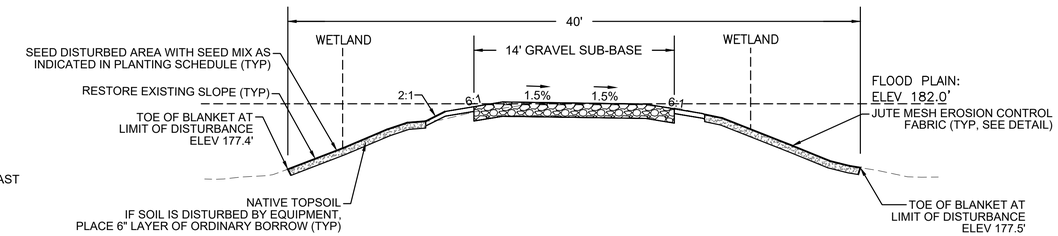
NOTES FOR JUTE MESH EROSION CONTROL FABRIC:

1. EROSION CONTROL FABRIC SHALL BE WESTERN EXCELSIOR CC-4 ALL-NATURAL OR SIMILAR. FABRIC MUST BE COMPOSED OF 100% BIODEGRADABLE MATERIAL, WITH NO SYNTHETIC NETTING OR STITCHING. NETTING SHALL BE JUTE, MATRIX FILLING SHALL BE EXCELSIOR, STRAW, OR COCONUT, AND STITCHING SHALL BE BIODEGRADABLE. FABRIC SHOULD BE RATED FOR SLOPES OF AT LEAST 2:1 AND LONGEVITY OF AT LEAST 12 MONTHS.
2. PREPARE SOIL BEFORE INSTALLING FABRIC, INCLUDING ANY NECESSARY APPLICATION OF LIME, AND SEED.
3. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE FABRIC IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF FABRIC EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE FABRIC WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF FABRIC BACK OVER SEED AND COMPACTED SOIL. SECURE FABRIC OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE FABRIC.
4. ROLL FABRIC FROM TOP OF SLOPE TO BOTTOM. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE.
5. INSTALL TREE, SHRUB, AND/OR PLUG PLANTINGS AT THE LOCATIONS INDICATED IN THE PLANTING SCHEDULE ON SHEET 161 OR AS DIRECTED BY THE WETLAND SCIENTIST AFTER UNROLLING FABRIC. LOCATE PLANTINGS AT ROLL SEAMS OR CUT SLIT IN BLANKET PERPENDICULAR TO ACCESS ROAD TO ACCOMMODATE PLANTING. PLANTING HOLES SHOULD BE HAND-DUG.
6. SECURE FABRIC AFTER PLANTINGS ARE INSTALLED. ALL FABRIC MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. DO NOT PLACE STAPLES OR STAKES WITHIN 2 FEET OF PLANTINGS. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
7. PLACE CONSECUTIVE FABRICS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE FABRIC.
8. FULL LENGTH EDGE OF FABRIC AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
9. ADJACENT FABRICS MUST BE OVERLAPPED APPROXIMATELY 2"-5" (DEPENDING ON FABRIC TYPE) AND STAPLED. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING FABRIC (FABRIC BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE FABRIC BEING OVERLAPPED.
10. FULL LENGTH EDGE OF FABRIC AT BOTTOM OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART. FABRIC SHALL HAVE A MINIMUM 6" RUNOUT LENGTH UNDER GEOWEB.
11. A MINIMUM OF 4 NOTCHED WOOD STAKES SHALL BE INSTALLED TO SECURE EACH FABRIC, ONE AT EACH CORNER.
12. THE TERMINAL END OF THE FABRIC MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.



JUTE MESH EROSION CONTROL FABRIC & BIONET C700BN EROSION CONTROL BLANKET

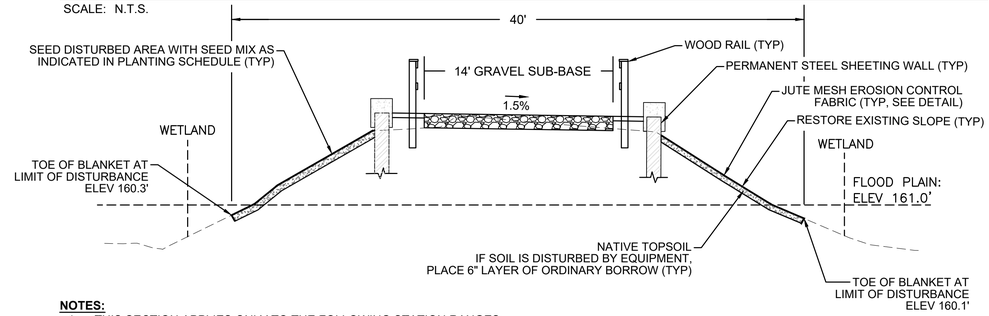
SCALE: N.T.S.



NOTES:
1. THIS SECTION APPLIES ONLY TO THE FOLLOWING STATION RANGES:
   STA 147+75 TO 148+50
   STA 149+00 TO 150+25
2. THE CROSS-SECTION FOR STATION 148+00 IS USED AS A REPRESENTATIVE AREA FOR THE PURPOSES OF THIS DETAIL.

TYPICAL CRANE MAT RESTORATION CROSS-SECTION - BRIDGE 130

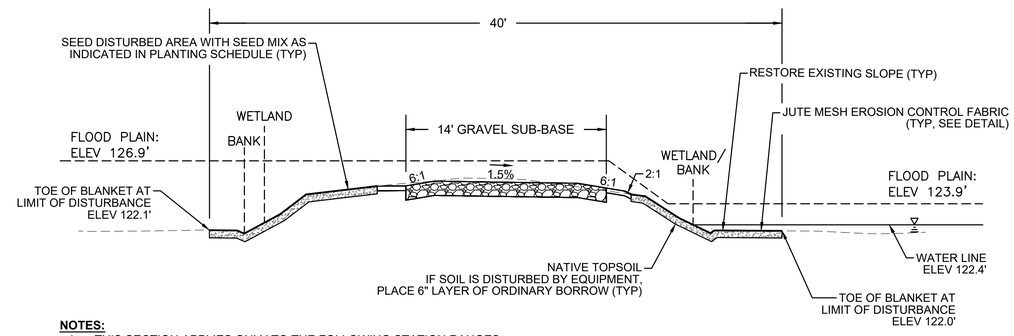
SCALE: N.T.S.



NOTES:
1. THIS SECTION APPLIES ONLY TO THE FOLLOWING STATION RANGES:
   STA 399+10 TO 400+20
   STA 400+75 TO 401+75
2. THE CROSS-SECTION FOR STATION 401+00 IS USED AS A REPRESENTATIVE AREA FOR THE PURPOSES OF THIS DETAIL.

TYPICAL CRANE MAT RESTORATION CROSS-SECTION - BRIDGE 128

SCALE: N.T.S.



NOTES:
1. THIS SECTION APPLIES ONLY TO THE FOLLOWING STATION RANGES:
   STA 724+40 TO 725+00
   STA 725+70 TO 726+40
2. THE CROSS-SECTION FOR STATION 726+00 IS USED AS A REPRESENTATIVE AREA FOR THE PURPOSES OF THIS DETAIL.

TYPICAL CRANE MAT RESTORATION CROSS-SECTION - BRIDGE 127

SCALE: N.T.S.

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CONSTRUCTION DETAILS
PLAN 160 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	DEC 2021	MS	SK	MES	.	.

PLANTING SCHEDULE A: GENERAL CONSTRUCTION CORRIDOR

HERBACEOUS SEED MIX		
SPECIES	WETLAND STATUS	%
VIRGINIA WILD RYE (*ELYMUS VIRGINICUS*)	FACW	25.00
CANADA WILD RYE (*ELYMUS CANADENSIS*)	FACU	25.00
LITTLE BLUESTEM (*SCHIZACHYRIUM SCOPARIUM*)	FACU	25.00
DEER-TONGUE GRASS (*DICHANTHELIUM CLANDESTINUM*)	FACW	8.00
UPLAND BENTGRASS (*AGROSTIS PERENNANS*)	FACU	8.00
FOX SEDGE (*CAREX VULPINOIDEA*)	OBL	2.00
PATH RUSH (*JUNCUS TENUIS*)	FAC	2.00
SOFT RUSH (*JUNCUS EFFUSUS*)	OBL	0.10
BEARD-TONGUE (*PENSTEMON DIGITALIS*)	FAC	2.00
NEW ENGLAND ASTER (*SYMPHYOTRICHUM NOVAE-ANGLIAE*)	FACW	1.00
WOODLAND GOLDENROD (*SOLIDAGO CAESIA*)	FACU	0.50
BLUE WOOD ASTER (*SYMPHYOTRICHUM CORDIFOLIUM*)	UPL	0.50
JOE-PYE WEED (*EUTROCHIUM MACULATUM*)	OBL	0.30
WHITE AVENS (*GEUM CANADENSE*)	FAC	0.30
RIGID GOLDENROD (*OLIGONEURON RIGIDUM*)	UPL	0.30

SHRUB SEED MIX		
SPECIES	WETLAND STATUS	LBS/AC
ALTERNATE-LEAVED DOGWOOD (*SWIDA ALTERNIFOLIA)*	FACU	2.00
AMERICAN HAZELNUT (*CORYLUS AMERICANA)*	FACU	2.00
ARROWWOOD (*VIBURNUM DENTATUM)*	FAC	2.00
NANNYBERRY (*VIBURNUM LENTAGO)*	FAC	2.00

NOTE: HERBACEOUS AND SHRUB SEED MIXES TO BE APPLIED AT AN APPLICATION RATE RECOMMENDED BY THE SUPPLIER

SOD SEED MIX	
SPECIES	%
KENTUCKY BLUEGRASS (*POA PRATENSIS)*	60-75
PERENNIAL RYEGRASS (*LOLIUM PERENNE)*	10-20
TALL FESCUE (*SCHEDONORUS ARUNDINACEUS)*	15

NOTE: SOD SEED MIX TO BE USED INSTEAD OF HERBACEOUS SEED MIX AND SHRUB SEED MIX FOR AREA OF INCREASED INFILTRATION P-10.13A (STA 753+50 TO STA 756+50)

PLANTING NOTES:

1. ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED AS SHOWN ON THE PLANS FOR FIELD REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT OR ENVIRONMENTAL MONITOR PRIOR TO INSTALLATION.
2. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE REVIEWED BY LANDSCAPE ARCHITECT AND APPROVED IN WRITING BY THE ENVIRONMENTAL MONITOR.
3. ONLY SPECIES ARE ALLOWED (NO HORTICULTURAL CULTIVARS OR VARIETIES).
4. SEED MIX AND PLANT STOCK SHALL BE OBTAINED FROM A NURSERY THAT SPECIALIZES IN NATIVE ECOLOGICAL PLANTINGS. PLANT STOCK SHALL BE SUPPLIED IN A PLANTING-READY CONDITION. ALL MATERIALS MUST BE INSPECTED AND APPROVED BY THE ENVIRONMENTAL MONITOR PRIOR TO BEING PLANTED. IF NOT PLANTED WITHIN 12 HOURS FROM WHEN THEY WERE COLLECTED, PLANTS SHALL BE STORED IN ACCORDANCE WITH RECOMMENDATIONS PROVIDED BY THE NURSERY.
5. PLANT STOCK WILL BE INSTALLED IN HAND-DUG HOLES IN LOCATIONS TO BE DETERMINED BY ENVIRONMENTAL MONITOR.
6. A 3-INCH DEEP MULCH PER SPECIFICATION SHALL BE INSTALLED UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTINGS BEDS, UNLESS OTHERWISE INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENVIRONMENTAL MONITOR.
7. NO FERTILIZERS SHALL BE APPLIED.
7. NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA. CONTRACTOR SHALL NOTIFY THE ENVIRONMENTAL MONITOR OF ANY CONFLICT.
8. ALL PLANT MATERIALS INSTALLED SHALL MEET THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND CONTRACT DOCUMENTS.
9. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE.
10. ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR SPECIFICATION, OR APPROVED BY THE ENVIRONMENTAL MONITOR.
11. FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS GRAPHICALLY SHOWN ON THE PLAN. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE NUMBER OF PLANS SHOWN ON THE PLANT LIST AND PLANT LABELS PRIOR TO BIDDING.
12. AREAS DESIGNATED AS "LOAM & SEED" SHALL RECEIVE MINIMUM 4" OF LOAM AND SPECIFIED SEED MIX.
13. THIS PLAN IS INTENDED FOR PLANTING PURPOSES. REFER TO SITE/CIVIL DRAWINGS FOR ALL OTHER SITE CONSTRUCTION INFORMATION.

PLANT MAINTENANCE NOTES:

1. CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE OF SEEDED AREAS AND PLANTINGS. NO IRRIGATION IS PROPOSED FOR THIS SITE. THE CONTRACTOR SHALL SUPPLY SUPPLEMENTAL WATERING FOR SEEDED AREAS AND PLANTINGS DURING THE ONE YEAR PLANT GUARANTEE PERIOD.
2. CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT FOR THE COMPLETE LANDSCAPE MAINTENANCE WORK. WATER SHALL BE PROVIDED BY THE CONTRACTOR.
3. WATERING SHALL BE REQUIRED DURING THE GROWING SEASON, WHEN NATURAL RAINFALL IS BELOW ONE INCH PER WEEK.
4. WATER SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY SATURATE THE SOIL IN THE ROOT ZONE OF EACH PLANT.
5. PROTECT PLANTING AREAS AND PLANTS AGAINST TRESPASSING AND DAMAGE OF ALL KINDS FOR THE DURATION OF THE MAINTENANCE PERIOD. IF ANY PLANTS BECOME DAMAGED OR INJURED, THEY SHALL BE TREATED OR REPLACED AS REQUIRED.
6. CONTRACTOR SHALL REPLACE DEAD OR DYING PLANTS AT THE END OF THE ONE YEAR GUARANTEE PERIOD. CONTRACTOR SHALL TURN OVER MAINTENANCE TO THE FACILITY MAINTENANCE STAFF AT THAT TIME.

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

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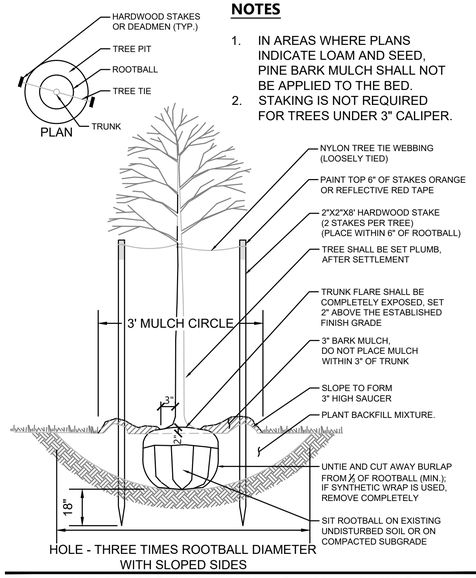
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION DETAILS

PLAN 161 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	DEC 2021	MS	SK	MES	.	.

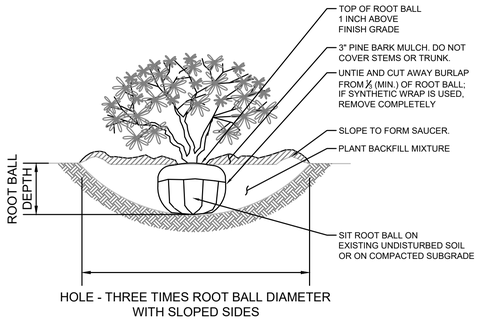


NOTES

1. IN AREAS WHERE PLANS INDICATE LOAM AND SEED, PINE BARK MULCH SHALL NOT BE APPLIED TO THE BED.
2. STAKING IS NOT REQUIRED FOR TREES UNDER 3" CALIPER.

TREE PLANTING (FOR TREES UNDER 4" CALIPER)

SCALE: NTS



NOTES

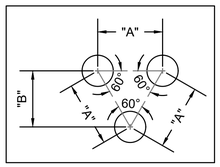
1. IN AREAS WHERE PLANS INDICATE LOAM AND SEED, PINE BARK MULCH SHALL NOT BE APPLIED TO THE BED.
2. LOOSEN ROOTS AT THE OUTER EDGE OF ROOTBALL OF CONTAINER GROWN SHRUBS.

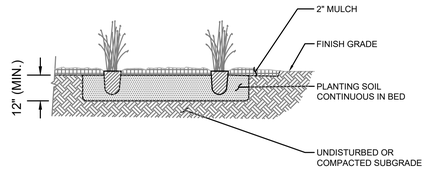
SHRUB PLANTING

SCALE: NTS

PLANT SPACING

PLANT SPACING("A")	ROW SPACING ("B")
6 IN. O.C.	5 IN. O.C.
8 IN. O.C.	7 IN. O.C.
10 IN. O.C.	8 ½ IN. O.C.
12 IN. O.C.	10 ½ IN. O.C.
15 IN. O.C.	13 IN. O.C.
18 IN. O.C.	16 IN. O.C.
24 IN. O.C.	21 IN. O.C.
30 IN. O.C.	26 IN. O.C.
36 IN. O.C.	30 IN. O.C.
48 IN. O.C.	42 IN. O.C.
54 IN. O.C.	48 IN. O.C.
60 IN. O.C.	54 IN. O.C.



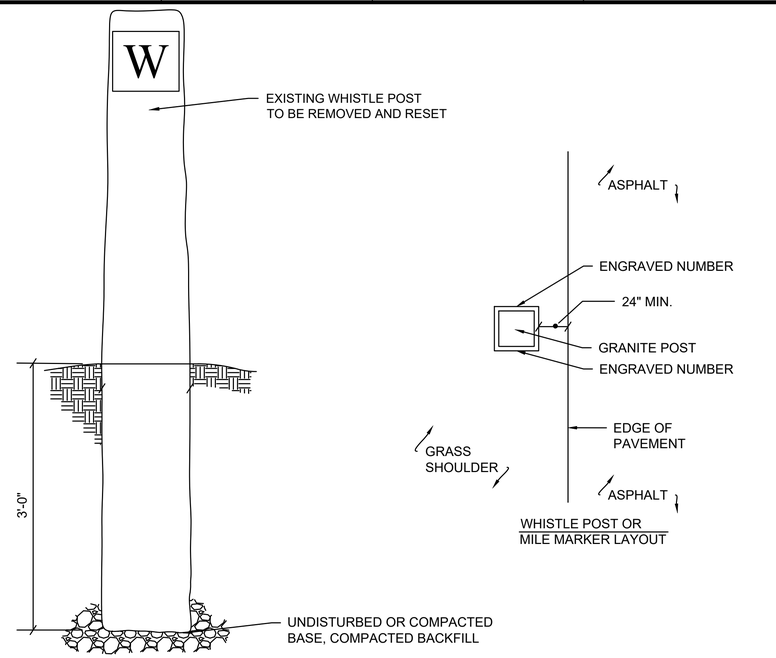


NOTES

1. IN AREAS WHERE PLANS INDICATE LOAM AND SEED, PINE BARK MULCH SHALL NOT BE APPLIED TO THE BED.

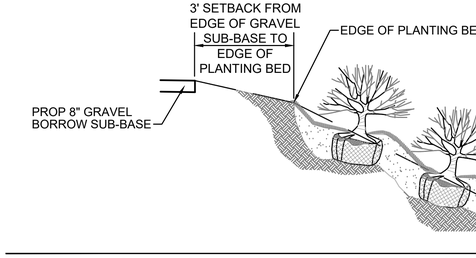
PERENNIAL PLANTING

SCALE: NTS



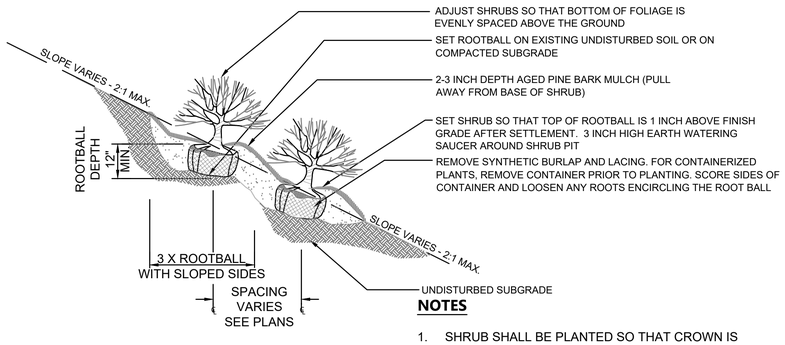
WHISTLE POST OR MILE MARKER DETAIL

SCALE: NTS



3' PLANTING BED SETBACK FROM GRAVEL SUB-BASE

SCALE: N.T.S.

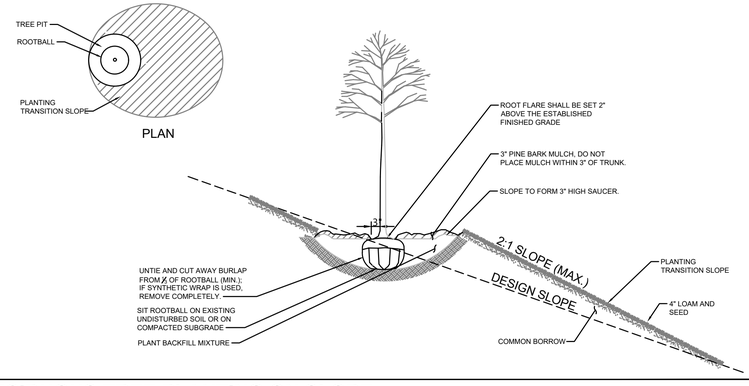


NOTES

1. SHRUB SHALL BE PLANTED SO THAT CROWN IS 2 INCHES ABOVE GRADE AFTER SETTLEMENT.

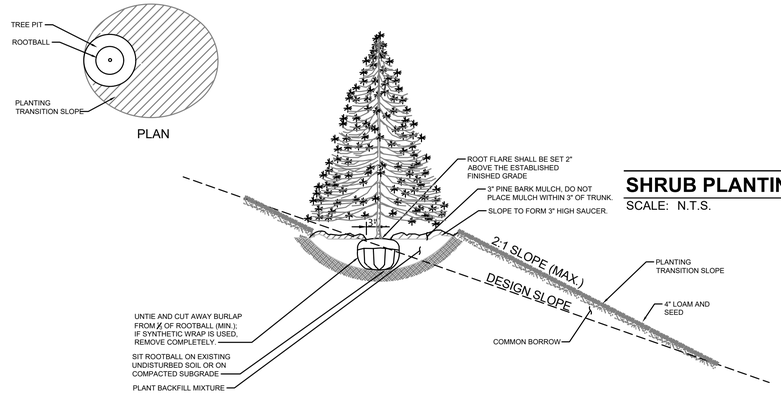
SHRUB PLANTING ON SLOPE

SCALE: N.T.S.



DECIDUOUS TREE PLANTING ON SLOPE

SCALE: N.T.S.



EVERGREEN TREE PLANTING ON SLOPE

SCALE: N.T.S.

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION DETAILS

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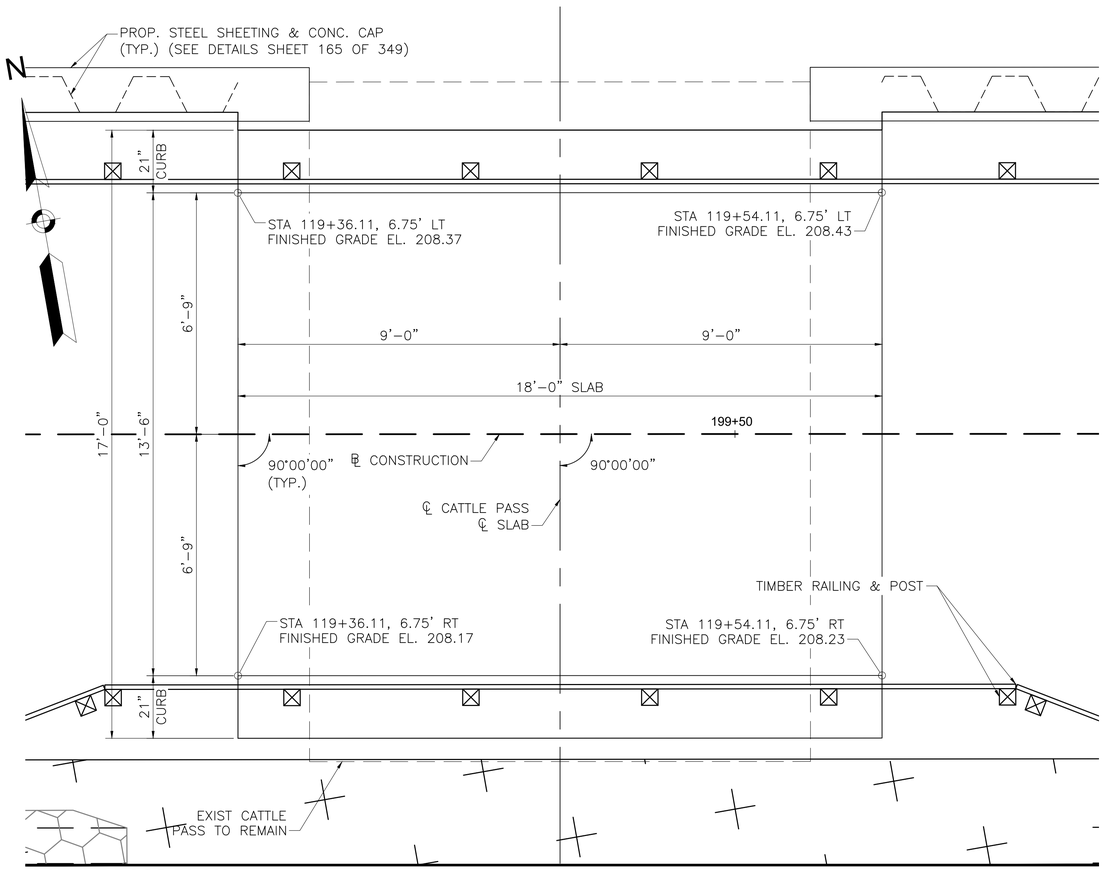
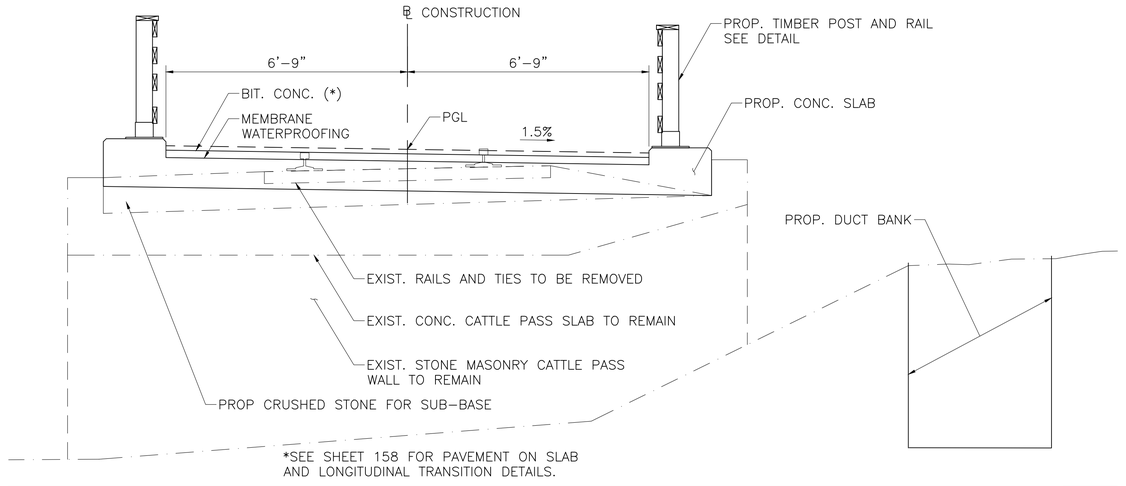
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	DEC 2021	MS	SK	MES	.	.



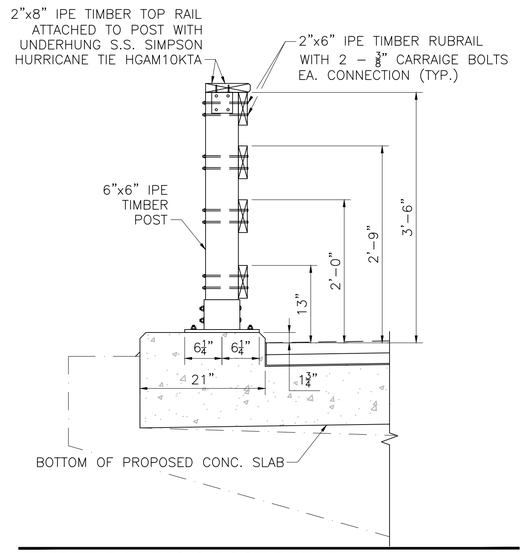
CATTLE PASS PLAN

SCALE: $\frac{1}{2}$"=1'-0"



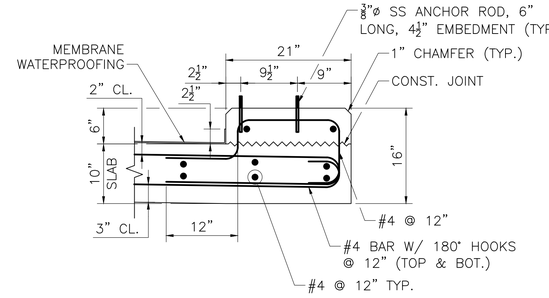
CATTLE PASS SECTION

SCALE: $\frac{1}{2}$"=1'-0"



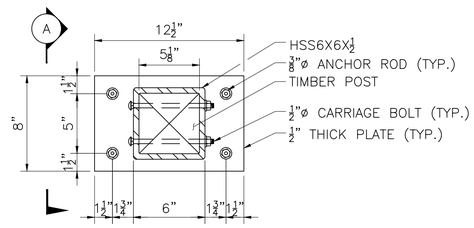
TIMBER RAILING & POST DETAIL

SCALE: $\frac{1}{2}$"=1'-0"



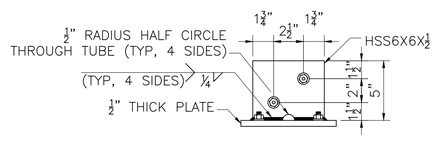
SLAB REINFORCING DETAIL

SCALE: $\frac{1}{2}$"=1'-0"



POST BASE DETAIL

SCALE: 1"=0'-6"



SECTION A

SCALE: 1"=0'-6"

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH, & SUDBURY MASSACHUSETTS

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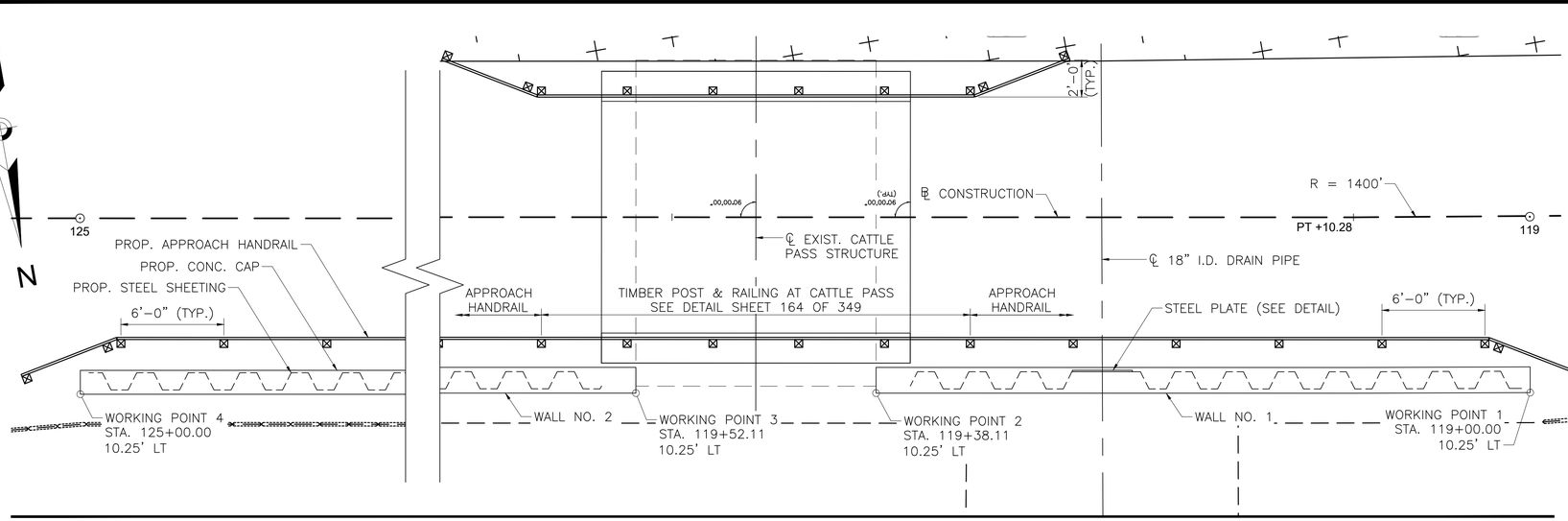
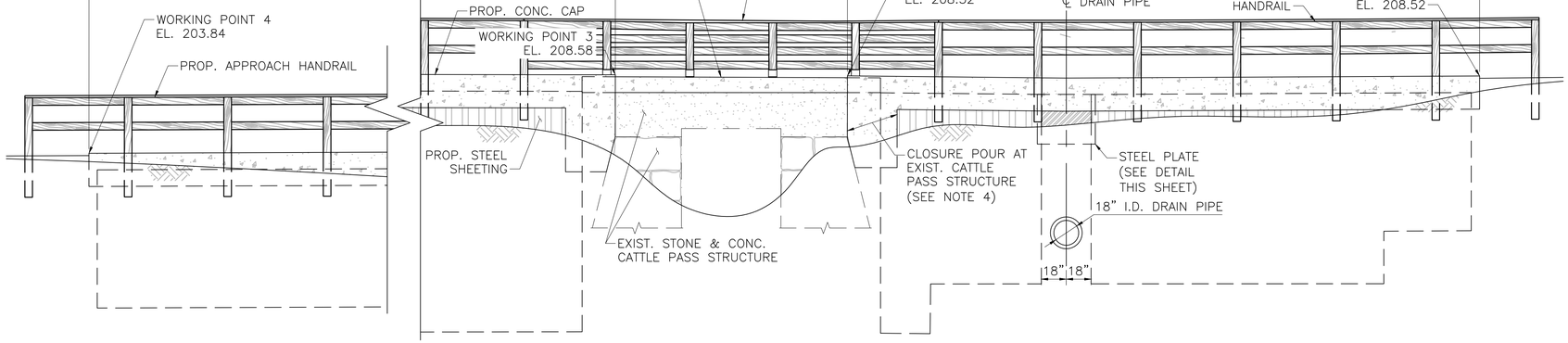
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	DEC 2021	AMS	SBK	KGK	.	.

vhb Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
Watertown, MA 02472
617.924.1770 FAX 617.924.2286



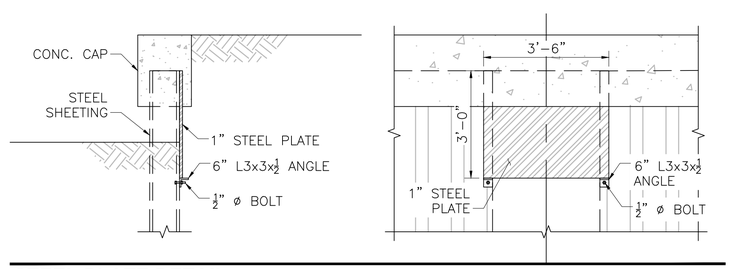
WALL 1 & 2 SHEETING PLAN (AT CATTLE PASS)

SCALE: $\frac{1}{4}$"=1'-0"



WALL 1 & 2 ELEVATION (AT CATTLE PASS)

SCALE: $\frac{1}{4}$"=1'-0"

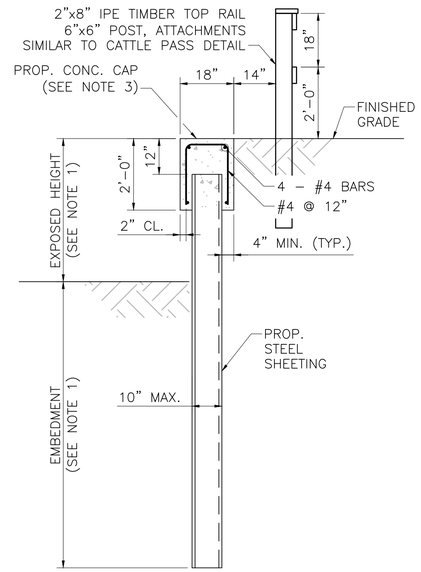


STEEL PLATE DETAIL

SCALE: $\frac{1}{2}$"=1'-0"

NOTES:

1. WALL EXPOSED HEIGHT TO BE VERIFIED IN FIELD. SHEETING EMBEDMENT DEPTH VARIES WITH WALL EXPOSED HEIGHT. SEE SHEETING EMBEDMENT TABLE BELOW.
2. SHEETING SECTION SHALL BE SELECTED BY CONTRACTOR. STEEL SHEETING SHALL BE GRADE 50 STEEL IN ACCORDANCE WITH ASTM A328 WITH A MINIMUM SECTION MODULUS (S_X) OF 7.08 IN^3 PER FOOT.
3. CONC. CAP SHALL BE 4000 PSI, $\frac{3}{4}$", 610 CEMENT CONCRETE. REINFORCING STEEL SHALL BE GRADE 60 EPOXY COATED STEEL IN ACCORDANCE WITH AASHTO M31. CONSTRUCTION JOINTS IN CAP SHALL BE SPACED AT 24'-0" MAX. CONTRACTOR SHALL SUBMIT JOINT LAYOUT PLAN TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINT.
4. CONTRACTOR SHALL DETERMINE LIMITS OF EXISTING STONE BLOCK CATTLE PASS STRUCTURE PRIOR TO DRIVING SHEETING. SHEETING SHALL BE DRIVEN AS CLOSE TO THE BACK OF THE EXISTING ABUTMENTS AS PRACTICAL. WORKING POINT STATION/OFFSET AT THESE LOCATIONS (3, 6, 7, AND 10) IS SUBJECT TO CHANGE BASED ON CONDITIONS ENCOUNTERED IN THE FIELD. CONCRETE CAP SHALL BE EXTENDED AS NEEDED TO FORM A CLOSURE POUR BETWEEN END OF SHEETING AND BACK OF EXISTING ABUTMENT. HEIGHT OF CAP SHALL BE INCREASED AT CLOSURE POUR AS NEEDED TO MAINTAIN REQUIRED GRADE SEPARATION.



TYPICAL SHEETING SECTION

SCALE: $\frac{1}{2}$"=1'-0"

SHEETING EMBEDMENT TABLE

EXPOSED HEIGHT	EMBEDMENT
2'-0" (MAX.)	7'-4" (MIN.)
3'-0" (MAX.)	9'-5" (MIN.)
4'-0" (MAX.)	11'-6" (MIN.)
5'-0" (MAX.)	13'-7" (MIN.)
6'-0" (MAX.)	15'-7" (MIN.)
7'-0" (MAX.)	17'-7" (MIN.)

NO.	DESCRIPTION	BY	DATE	APPR.

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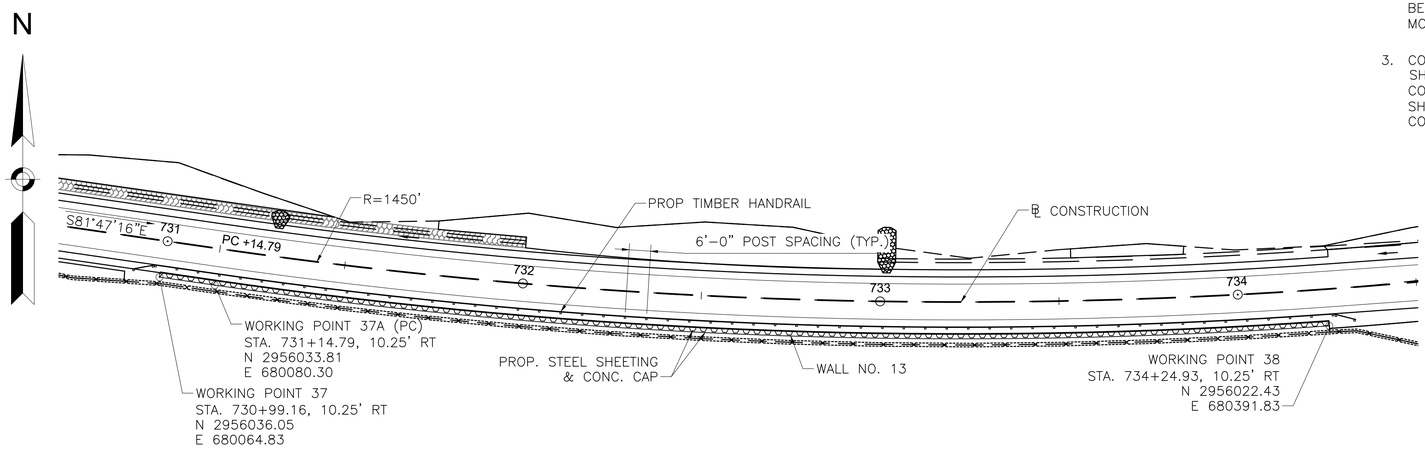
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH, & SUDBURY MASSACHUSETTS

CONSTRUCTION DETAILS

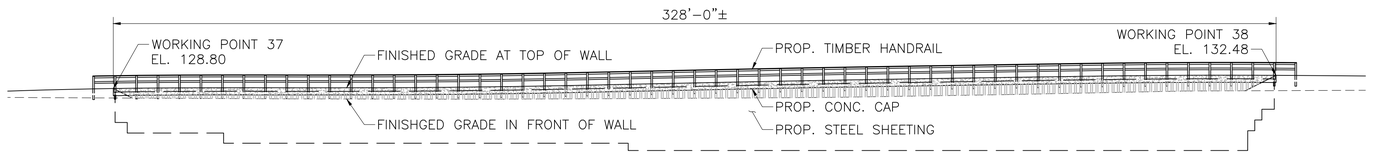
PLAN 165 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	DEC 2021	AMS	SBK	KGK	.	.



WALL 13 SHEETING PLAN

SCALE: 1"=20'-0"



WALL 13 ELEVATION

SCALE: $\frac{1}{4}$"=1'-0"

NOTES:

1. WALL EXPOSED HEIGHT TO BE VERIFIED IN FIELD. SHEETING EMBEDMENT DEPTH VARIES WITH WALL EXPOSED HEIGHT. SEE TYPICAL SHEETING SECTION AND SHEETING EMBEDMENT TABLE SHEET 165 OF 349.
2. SHEETING SECTION SHALL BE SELECTED BY CONTRACTOR. STEEL SHEETING SHALL BE GRADE 50 STEEL IN ACCORDANCE WITH ASTM A328 WITH A MINIMUM SECTION MODULUS (S_X) OF 7.08 IN^3 PER FOOT.
3. CONC. CAP SHALL BE 4000 PSI, $\frac{3}{4}$", 610 CEMENT CONCRETE. REINFORCING STEEL SHALL BE GRADE 60 EPOXY COATED STEEL IN ACCORDANCE WITH AASHTO M31. CONSTRUCTION JOINTS IN CAP SHALL BE SPACED AT 24'-0" MAX. CONTRACTOR SHALL SUBMIT JOINT LAYOUT PLAN TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINT.

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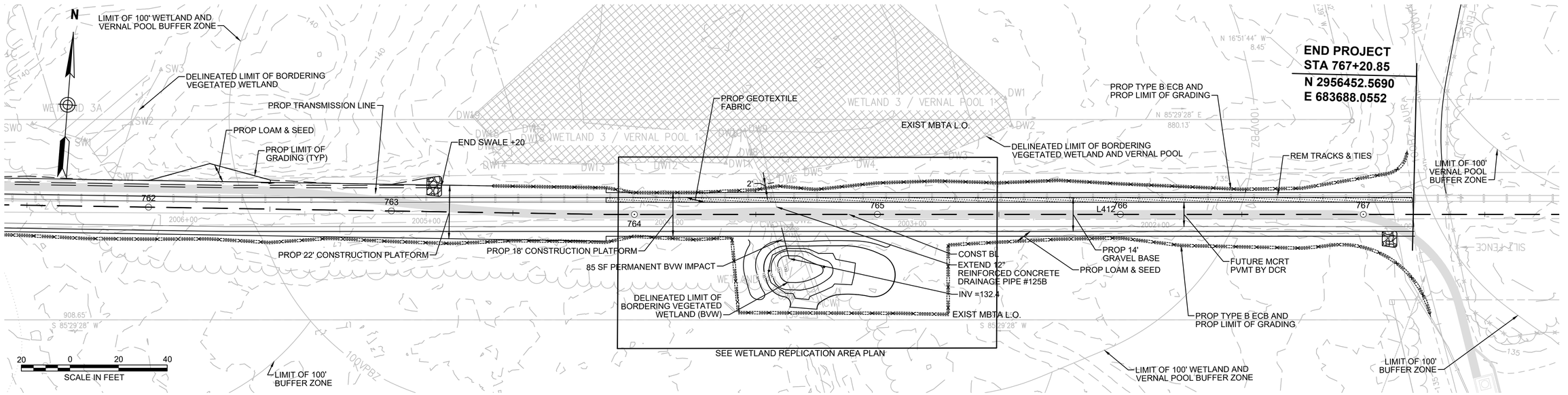
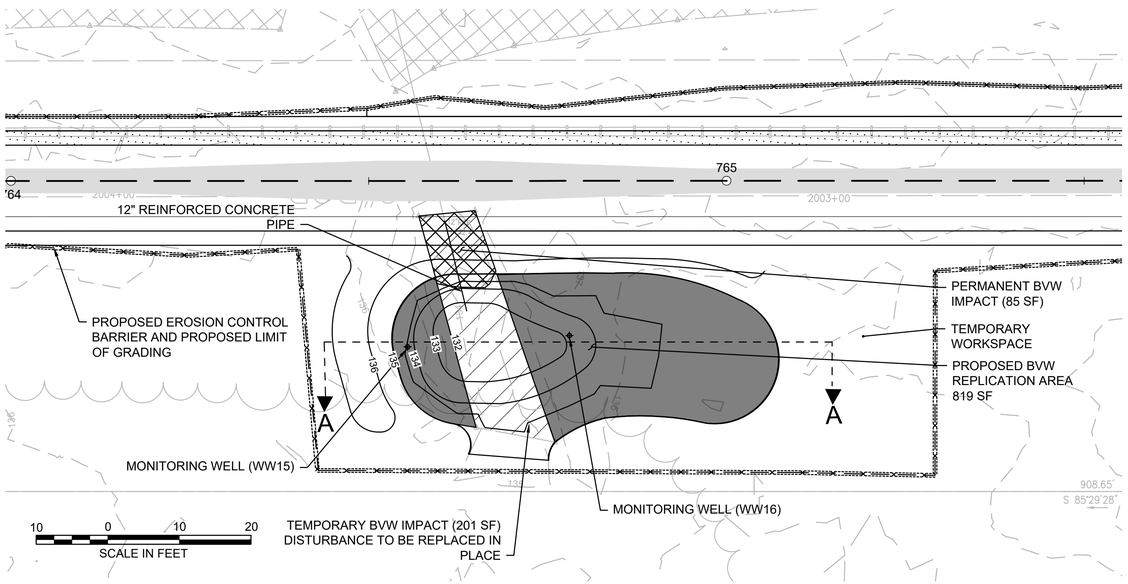
HUDSON, STOW, MARLBOROUGH, & SUDBURY MASSACHUSETTS

CONSTRUCTION DETAILS

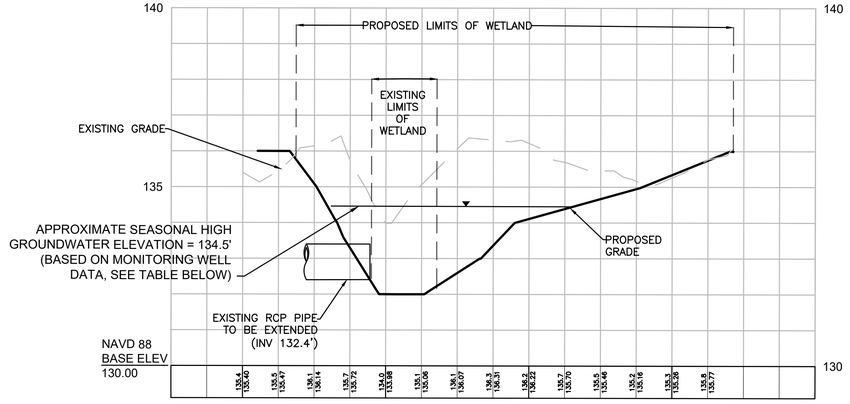
PLAN 166 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	DEC 2021	AMS	SBK	KGK	.	.





WETLAND REPLICATION AREA PLAN
SCALE 1"= 10'



SECTION A-A
VERTICAL SCALE 1"= 5'
HORIZONTAL SCALE 1"= 30'

LEGEND

TEMPORARY BVW IMPACTS (201 SF)

PERMANENT BVW IMPACTS (85 SF)

PROPOSED BVW REPLICATION AREA (819 SF)

GROUNDWATER DEPTH (FT)		
DATE	WW15*	WW16*
12/5/2018	1.50	1.46
1/10/2019	1.55	1.58
2/12/2019	1.60	N/A
3/27/2019	1.56	1.55
4/18/2019	1.57	1.54
4/25/2019	1.48	1.46
5/23/2019	1.58	1.62

*WW15 AND WW16 LOCATED AT APPROXIMATELY ELEV 136'

NOTES:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).
2. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 12" GRAVEL BORROW WITHIN LIMITS SHOWN.

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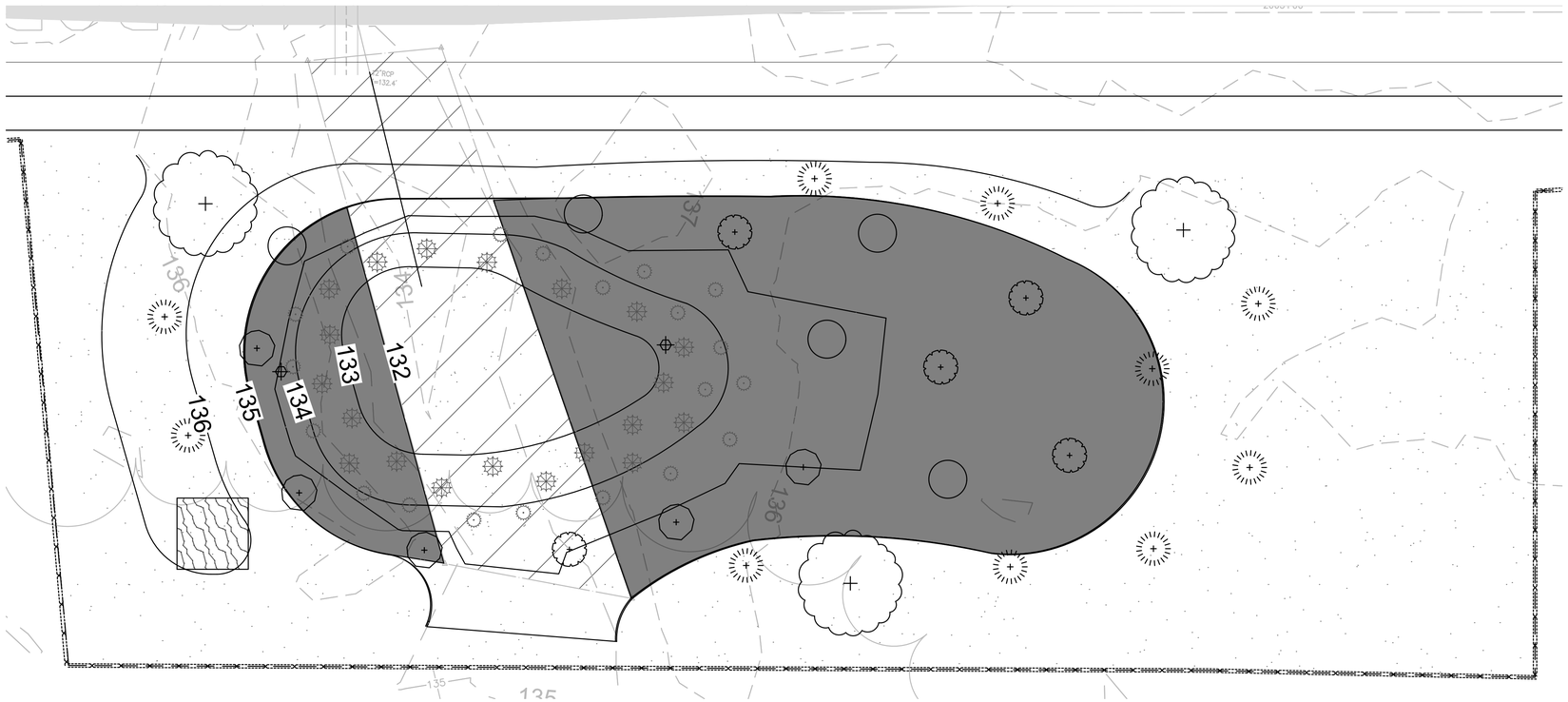
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
WETLAND REPLICATION GRADING PLAN
PLAN 167 OF 349

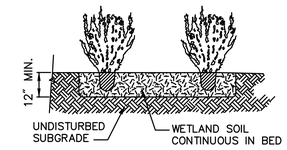
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	DEC 2021	MBB	EJM	MAC		



WETLAND REPLICATION PLANTING PLAN
SCALE 1"= 4'

Specimen	Wetland Status	Plant Type	Plant Size	Quantity	Density/Spacing
Basin Embankment:					
buttonbush (*Cephalanthus occidentalis*)	OBL	Shrub	18-24 inches	5	6-8 ft. on center
arrow arum (*Peltandra virginica*)	OBL	Herbaceous	2" plug	20	2-3 ft. on center
swamp rose	OBL	Shrub	18-24 inches	5	6 ft. on center
giant bur-reed (*Sparganium eurycarpum*)	OBL	Herbaceous	2" plug	20	2-3 ft. on center
silky dogwood (*Swida amomum*)	FACW	Shrub	18-24 inches	5	6 ft. on center
Wetland seed mix[1]	--	Herbaceous	--		18 lb./ac
Surrounding Buffer Zone:					
red maple (*Acer rubrum*)	FAC	Tree	1-2" caliper	3	15 ft. on center
sweet pepperbush (*Clethra alnifolia*)	FAC	Shrub	18-24 inches	10	6 ft. on center
Wetland seed mix[1]	--	Herbaceous	--		18 lb./ac

[1]Wetland seed mix: "New England Wetmix" from New England Wetland Plants, Inc. or similar. Typical species: fox sedge (Carex vulpinoidea), sallow sedge (Carex lurida), broom sedge (Carex scoparia), sensitive fern (Onoclea sensibilis), blue vervain (Verbena hastata), hop sedge (Carex lupulina), dark-green bulrush (Scirpus atrovirens), nodding bur-marigold (Bidens cernua), bristly sedge (Carex comosa), fringed sedge (Carex crinita), tall mannagrass (Glyceria grandis), wool-grass (Scirpus cyperinus), soft rush (Juncus effusus), spotted Joe-Pye-weed (Eutrochium maculatum), boneset (Eupatorium perfoliatum), American water-plantain (Alisma subcordatum), New England aster (Symphyotrichum novae-angliae), rattlesnake mannagrass (Glyceria canadensis), purple-stem aster (Symphyotrichum puniceum), soft-stemmed bulrush (Schoenoplectus tabernaemontani), blueflag (Iris versicolor), swamp milkweed (Asclepias incarnata), and Allegheny monkey-flower (Mimulus ringens).



Shrub Planting 6/08
N.T.S. Source: VHB LD_691

NOTES:

1. CONSTRUCTION OF THE WETLAND REPLICATION AREA WILL INCLUDE GRADING, SOILS PLACEMENT, AND PLANTING, AND ALL WORK SHALL BE PERFORMED UNDER THE SUPERVISION OF AN EXPERIENCED WETLAND SCIENTIST. ALL PLANTINGS SHALL BE PERFORMED IN SPRING (APRIL 15 TO JUNE 15) OR FALL (SEPTEMBER 1 TO OCTOBER 31).
2. AN EROSION CONTROL BARRIER WILL CONSIST OF SYNCOPATED SILT FENCE (TYPE B EROSION CONTROL BARRIER) AND SHALL BE INSTALLED ALONG THE ENTIRE PERIMETER OF THE REPLICATION AREA EXCEPT AT THE UPGRADIENT EDGE TO ALLOW ACCESS TO MACHINERY.
3. ALL AREAS TO BE PLANTED AS PART OF THE REPLICATION AREA SHALL BE CLEARED AND GRUBBED (AS NEEDED) AND SHALL BE EXCAVATED TO A DEPTH OF 12 INCHES BELOW THE FINAL DESIGN ELEVATIONS. MINOR MODIFICATIONS TO THE GRADING PLAN MAY BE MADE IN THE FIELD BY THE SUPERVISING WETLAND SCIENTIST IN RESPONSE TO HYDROLOGIC CONDITIONS. THE SUPERVISING WETLAND SCIENTIST WILL INSPECT THE FINAL SUB-GRADE OF THE REPLICATION AREA TO ENSURE THAT THE PROPER HYDROLOGY HAS BEEN ESTABLISHED.
4. THE TWELVE-INCH DBH SNAG THAT WILL BE REMOVED DURING CONSTRUCTION WILL BE REINSTALLED WITH A SIGNIFICANT PORTION OF THE ROOT MASS INTACT. THE SNAG WILL BE FIRMLY ENTRENCHED TO PREVENT FUTURE WINDTHROW.
5. THE REPLICATION AREA WILL THEN BE BACKFILLED WITH PREPARED WETLAND SOIL. PREPARED SOILS SHALL CONSIST OF A 1:1 MIXTURE (OR EQUAL VOLUMES) OF ORGANIC AND MINERAL MATERIALS (IN THE SILT LOAM, LOAM, OR LOAMY SAND RANGE) TO INCREASE THE ORGANIC CARBON CONTENT TO BETWEEN 4 AND 12 PERCENT BY WEIGHT. CLEAN LEAF OR COMMERCIALLY AVAILABLE COMPOST IS THE PREFERRED AMENDMENT TO ACHIEVE THIS STANDARD, ALTHOUGH OTHER MATERIALS MAY BE USED IF APPROVED BY THE SUPERVISING WETLAND SCIENTIST. AREAS TO BE PLANTED AS BVW SHOULD BE GRADED IN A SLIGHTLY IRREGULAR FASHION TO ALLOW FOR SMALL HUMMOCKS AND HOLLOWS APPROXIMATELY 6 INCHES ABOVE AND BELOW GRADE TO CREATE A PIT AND MOUND TOPOGRAPHY.
6. FALLEN LOGS, BRANCHES, AND OTHER NATURAL MATERIALS SHALL BE DISTRIBUTED IN THE REPLICATION AREA TO PROVIDE ADDITIONAL WILDLIFE HABITAT. THESE MATERIALS SHALL COVER 2 TO 4 PERCENT OF THE REPLICATION AREA'S SURFACE AND SHALL NOT INCLUDE ANY KNOWN INVASIVE SPECIES. WOODY MATERIAL SHOULD VARY IN SIZE AND DEGREE OF DECOMPOSITION.
7. ONCE WETLAND SOILS AND ANY NATURAL MATERIALS HAVE BEEN PLACED, ANY EQUIPMENT OR VEHICLES EXERTING A GROUND PRESSURE OF 3 PSI OR GREATER SHALL NO LONGER BE ALLOWED IN THE REPLICATION AREA TO AVOID COMPACTING THE WETLAND SOILS.
8. PLANTINGS WILL BE INSTALLED ONCE THE ABOVE TASKS HAVE BEEN COMPLETED. ALL SHRUB PLANTING WORK SHALL BE PERFORMED BY HAND USING HAND TOOLS ONLY. THE SPECIES, SIZE, AND QUANTITY OF PLANTINGS SHALL FOLLOW THE PLANTING SCHEDULE. ONLY PLANT MATERIALS NATIVE TO THE REGION SHALL BE USED. IN THE EVENT THAT PLANT SUBSTITUTIONS ARE NECESSARY, THE SUPERVISING WETLAND SCIENTIST OR ANOTHER QUALIFIED WETLAND SCIENTIST OR BOTANIST SHALL BE CONSULTED. ALL WOODY PLANT STOCK SHALL EITHER BE BARE-ROOT OR CONTAINER-GROWN. PLANTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE DESIGN SPECIFIED ON THE PLAN, ALTHOUGH THE SUPERVISING WETLAND SCIENTIST MAY DIRECT THE PROJECT CONTRACTOR TO RELOCATE PLANTINGS BASED ON FIELD CONDITIONS.
9. FOLLOWING SHRUB PLANTINGS, THE AREA WILL BE SEEDED WITH A NATIVE WETLAND SEED MIX AS SPECIFIED IN THE PLANTING SCHEDULE OR A SIMILAR MIX. THE SEED MIX SHALL BE APPLIED AT A RATE AND IN A MANNER ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.
10. FOLLOWING COMPLETION OF PLANTING AND SEEDING, A LINE OF EROSION CONTROLS WILL BE INSTALLED ALONG THE UPGRADIENT EDGE OF THE REPLICATION AREA. ALL EROSION CONTROLS AROUND THE REPLICATION AREA SHALL REMAIN IN PLACE UNTIL VEGETATION IS WELL-ESTABLISHED AND SOILS HAVE STABILIZED. EROSION CONTROLS WILL REMAIN IN PLACE UNTIL REMOVAL HAS BEEN APPROVED BY THE ENVIRONMENTAL MONITOR.
11. THE REPLICATION AREA WILL BE MONITORED FOR TWO FULL GROWING SEASONS AFTER PLANTING. THE AREA WILL BE INSPECTED TWICE PER YEAR TO ASSESS WHETHER THE AREA HAS ACHIEVED 75 PERCENT COVER BY REGIONAL INDIGENOUS WETLAND SPECIES. CONSIDERATION WILL BE GIVEN TO OTHER NATIVE WETLAND PLANT SPECIES THAT BECOME ESTABLISHED IN THE REPLICATION.
12. INVASIVE SPECIES WITHIN THE REPLICATION AREA SHALL BE REMOVED BY HAND FOR TWO GROWING SEASONS AFTER PLANTING. IF NECESSARY ANY AREAS WHERE INVASIVE SPECIES HAVE BEEN REMOVED WILL BE RESEEDED WITH A SUITABLE WETLAND SEED MIX.
13. SHRUBS AND SEED MIX ARE SUBJECT TO CHANGE OR SUBSTITUTION PENDING AVAILABILITY AND ACTUAL SITE CONDITIONS.

LEGEND

WETLAND SEED MIX
REPLICATION AREA/WETLAND SEED MIX
RED MAPLE
BUTTONBUSH
SWEET PEPPERBUSH
SILKY DOGWOOD
SWAMP ROSE
GIANT BUR-REED
ARROW ARUM
TREE SNAG

NO.	DESCRIPTION	BY	DATE	APPR.

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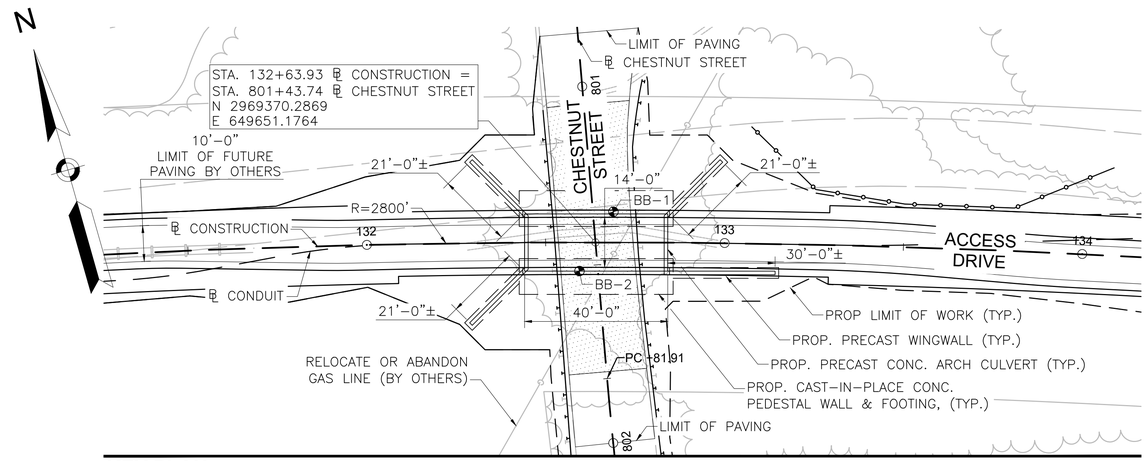
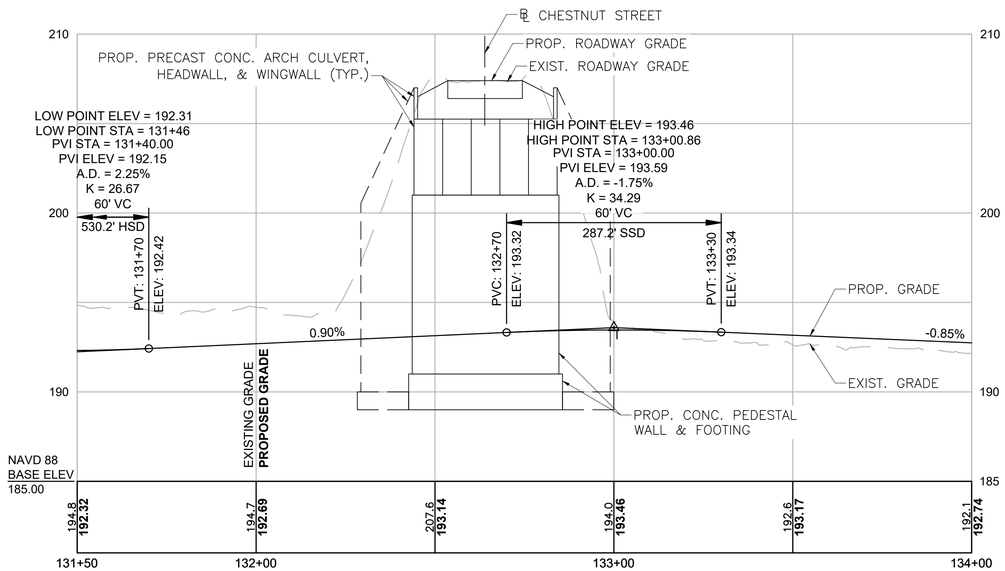
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
WETLAND REPLICATION PLANTING PLAN
PLAN 168 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=4'	DEC 2021	MBB	EJM	MAC		



KEY PLAN

SCALE: 1"=20'



PROFILE - ACCESS DRIVE

HORIZONTAL SCALE: 1"=20'

VERTICAL SCALE: $\frac{1}{4}$"=1'-0"

GENERAL NOTES: CHESTNUT STREET

DESIGN:
IN ACCORDANCE WITH 2020 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR HL-93 LOADING.

CONCRETE:
ALL CAST IN PLACE CONCRETE SHALL BE 4000 PSI $\frac{3}{4}$", 610 CEMENT CONCRETE.
ALL PRECAST CONCRETE SHALL BE 5000 PSI, $\frac{3}{4}$", 705 CEMENT CONCRETE.

REINFORCEMENT:
REINFORCING STEEL SHALL BE EPOXY COATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31 GRADE 60.

SUBSTRUCTURE DESIGN:
PROPOSED BRIDGE SUBSTRUCTURES INCLUDING FOOTINGS AND PEDESTAL WALLS ARE SHOWN AS PRELIMINARY ONLY. FINAL FOOTING DESIGN BY CULVERT MANUFACTURER. SEE GEOTECH RECOMMENDATIONS.

SURVEY AND EXISTING CONDITIONS:
THE EXISTING CONDITIONS SHOWN ON THIS PLAN WERE DEVELOPED FROM A COMBINED EFFORT OF AERIAL PHOTOGRAMMETRIC MAPPING BY EASTERN TOPOGRAPHICS, INC., BASED ON AERIAL PHOTOGRAPHS TAKEN ON FEBRUARY 22, 2013, AND AUGMENTED BY AN ON-THE-GROUND SURVEY PERFORMED BY VHB DURING 2015 AND 2017.
THE HORIZONTAL CONTROL IS BASED ON THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM AND THE NATIONAL GEODETIC SURVEY (NAD83). ALL ELEVATION IS US FEET, REFERENCED TO THE NORTH AMERICA VERTICAL DATUM OF 1988 (NAVD88).

DEMOLITION AND CONSTRUCTION:
ALL EXISTING MATERIALS REMOVED AND NOT REUSED AND ALL WASTE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. CONTAMINATED WASTE SHALL BE DISPOSED OF OFF SITE AT AN APPROVED FACILITY.
ALL UNSUITABLE MATERIALS SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE RESIDENT ENGINEER. BACKFILL WITH GRAVEL BORROW FOR BRIDGE FOUNDATIONS.
BURIED EXISTING BRIDGE COMPONENTS MAY BE ENCOUNTERED DURING EXCAVATION AND SHALL BE REMOVED AS UNCLASSIFIED EXCAVATION.
TEMPORARY SHEETING MAY BE REQUIRED AT THE OPTION OF THE CONTRACTOR.
BACKFILL AROUND PROPOSED SUBSTRUCTURE SHALL BE GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES.
THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO ENSURE THE STABILITY AND SAFE PERFORMANCE OF ALL STRUCTURAL ELEMENTS DURING DEMOLITION AND CONSTRUCTION.
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ADEQUATE SHIELDING DURING DEMOLITION AND CONSTRUCTION TO ADEQUATELY PROTECT WORKERS.
ANY DAMAGE TO REMAINING EXISTING COMPONENTS THAT IS CAUSED BY THE CONTRACTOR'S ACTIVITY SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR, AT NO ADDITIONAL EXPENSE.

HEADWALL TEXT:
THE TEXT "MASS CENTRAL RAIL TRAIL" SHALL BE EMBEDDED INTO THE OUTSIDE FACE OF BOTH CONCRETE HEADWALLS OF THE CULVERT STRUCTURE, CENTERED BOTH WAYS. THE SIZE AND STYLE OF THE TEXT SHALL MATCH THAT OF THE STRUCTURE CARRYING CONANT STREET OVER THE MCRT IN WESTON.

CHESTNUT STREET:
SEE SHEET 95 FOR PROFILE OF CHESTNUT STREET.

NO.	DESCRIPTION	BY	DATE	APPR.
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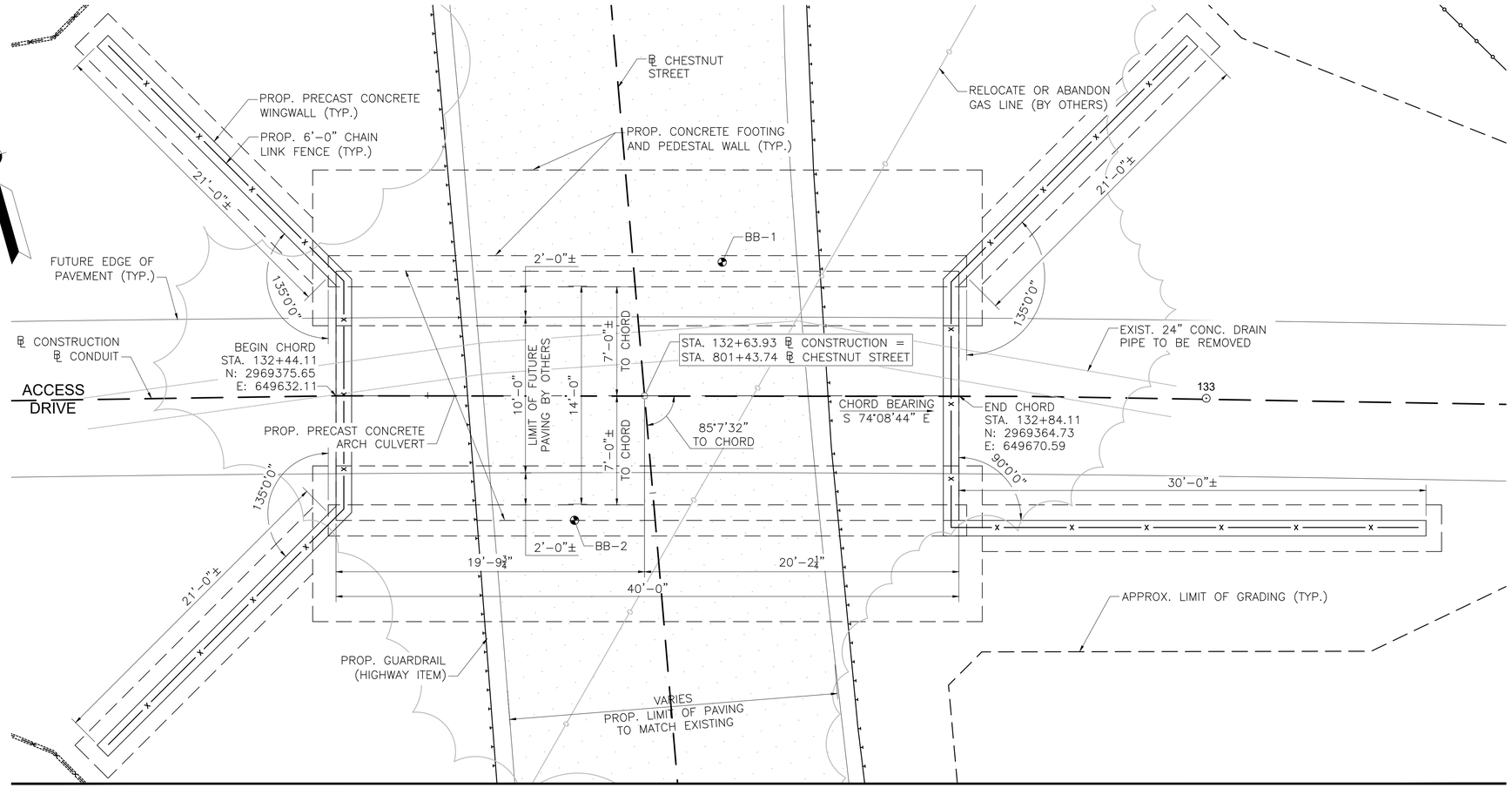
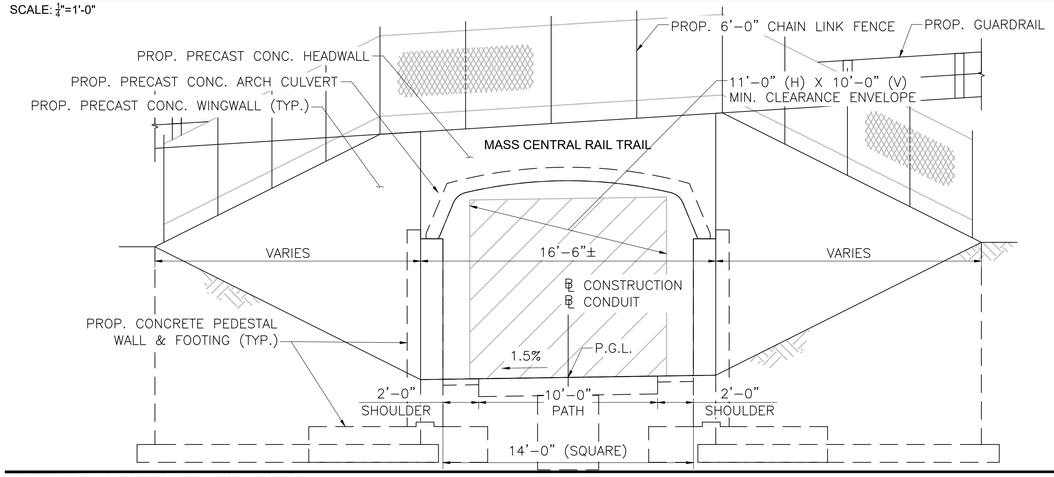
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
BRIDGE NO. H-25-011 (CHESTNUT STREET) – KEY PLAN & PROFILE
PLAN 169 OF 349

SCALE: unless noted	DATE	DRAWN	CH'KD.	APPR.	DRAWING NO.	REV.
H: 1"=20' V: 1"=4'	DEC 2021	AMS	SBK	KGK	.	.



CULVERT PLAN

SCALE: ¼"=1'-0"



TYPICAL PORTAL ELEVATION

SCALE: ¼"=1'-0"

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE NO. H–25–011 (CHESTNUT STREET) – PLAN & ELEVATION

PLAN 72 OF 349

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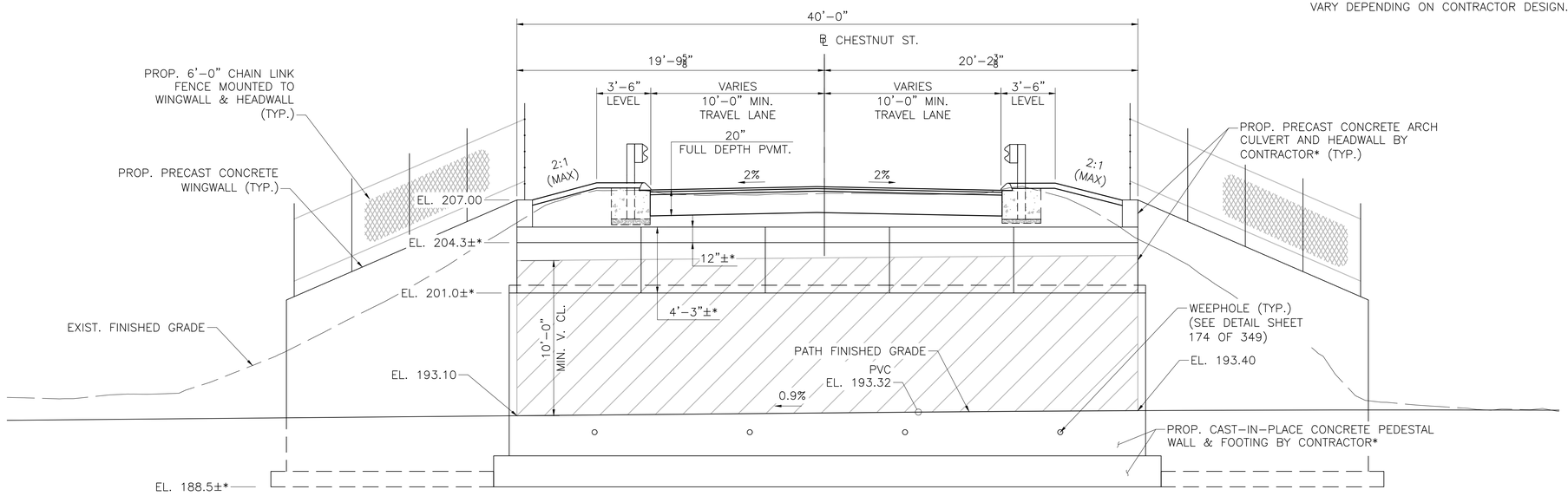
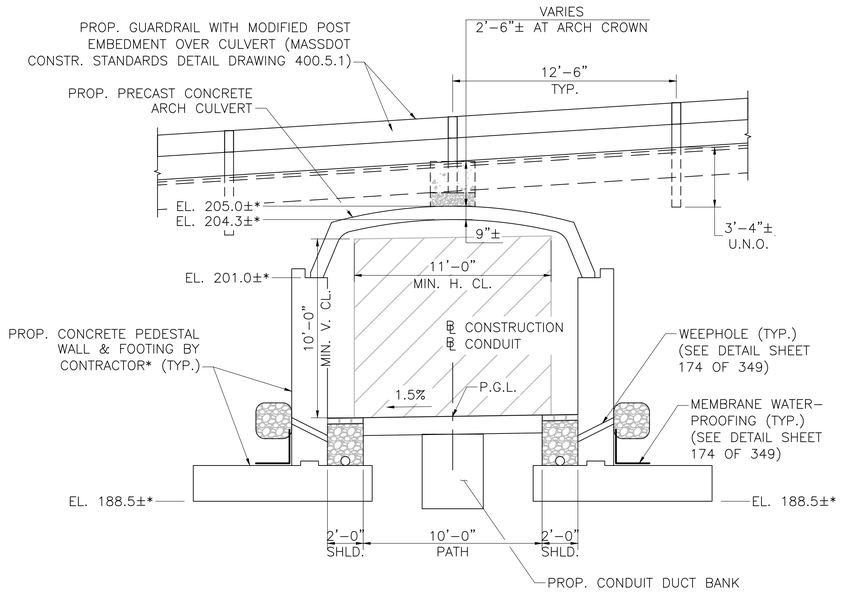
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=4'	DEC 2021	AMS	SBK	KGK	.	.

*NOTE: PRECAST CONCRETE ARCH CULVERT, PEDESTAL WALLS, AND FOOTINGS TO BE DESIGNED BY CONTRACTOR. ELEVATIONS MAY VARY DEPENDING ON CONTRACTOR DESIGN.



CULVERT LONGITUDINAL SECTION

SCALE: $\frac{1}{4}$"=1'-0"



CULVERT TRANSVERSE SECTION

SCALE: $\frac{1}{4}$"=1'-0"

*NOTE: PRECAST CONCRETE ARCH CULVERT, PEDESTAL WALLS, AND FOOTINGS TO BE DESIGNED BY CONTRACTOR. ELEVATIONS MAY VARY DEPENDING ON CONTRACTOR DESIGN.

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NO.	DESCRIPTION	BY	DATE	APP'R.
	REVISION			

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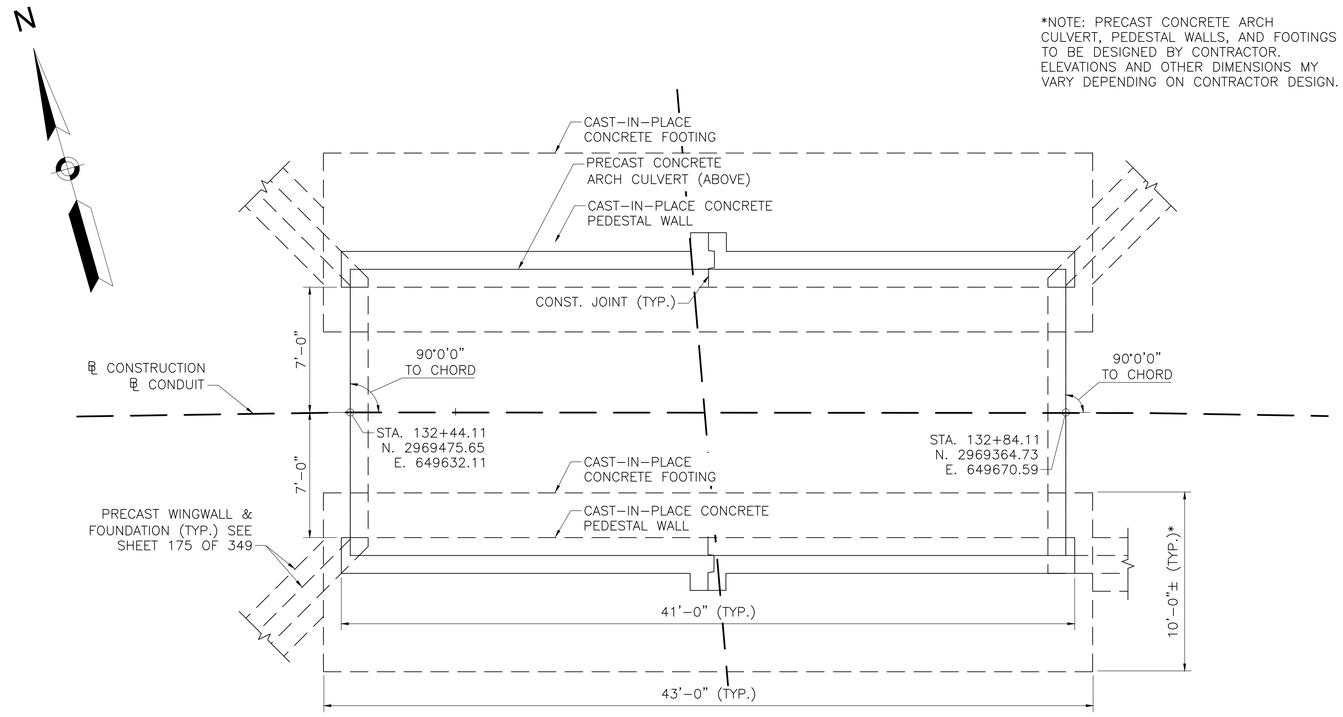
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
BRIDGE NO. H–25–011 (CHESTNUT STREET) – SECTIONS
PLAN 173 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=4'	DEC 2021	AMS	SBK	KGK	.	.

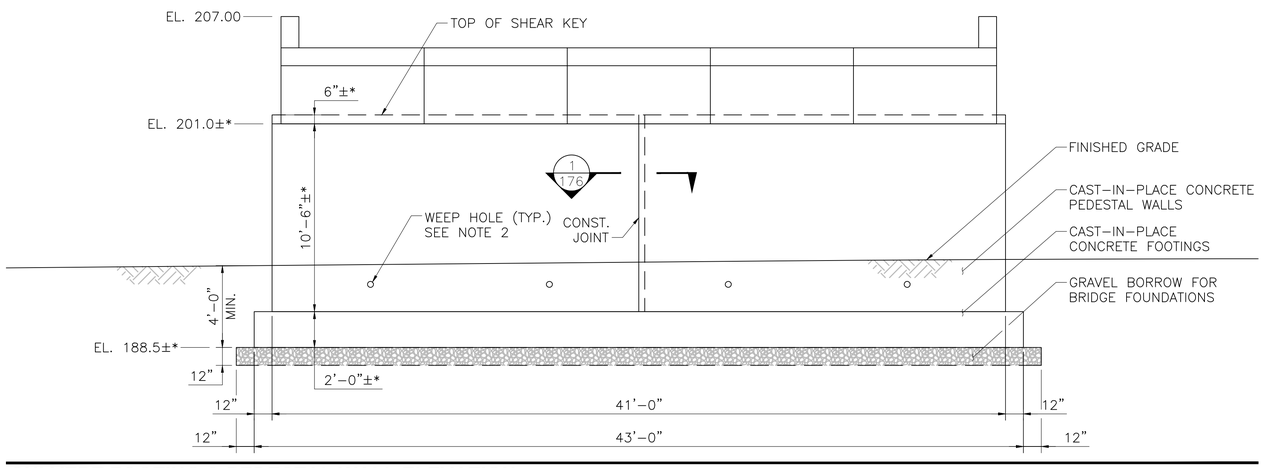
*NOTE: PRECAST CONCRETE ARCH CULVERT, PEDESTAL WALLS, AND FOOTINGS TO BE DESIGNED BY CONTRACTOR. ELEVATIONS AND OTHER DIMENSIONS MY VARY DEPENDING ON CONTRACTOR DESIGN.



CULVERT FOOTING & PEDESTAL WALL PLAN

SCALE: $\frac{1}{4}$"=1'-0"

*NOTE: PRECAST CONCRETE ARCH CULVERT, PEDESTAL WALLS, AND FOOTINGS TO BE DESIGNED BY CONTRACTOR. ELEVATIONS AND OTHER DIMENSIONS MY VARY DEPENDING ON CONTRACTOR DESIGN.



CULVERT FOOTING & PEDESTAL WALL ELEVATION

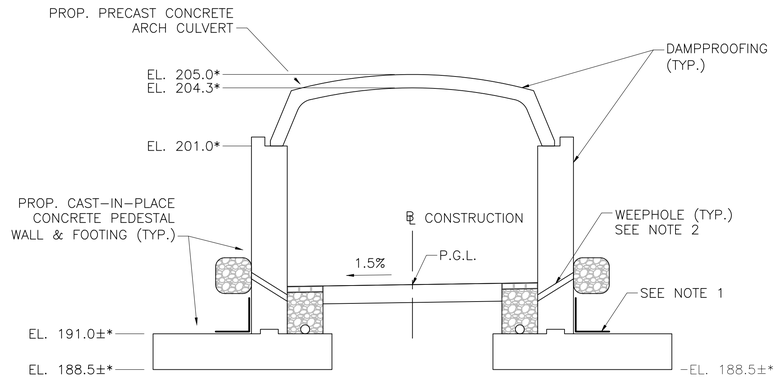
SCALE: $\frac{1}{4}$"=1'-0"

NOTES:

1. MEMBRANE WATERPROOFING AND 8"x16"x2", 4000 PSI, ¾ IN, 610 CEMENT CONCRETE BLOCKS LAID IN MORTAR OR OTHER WATERPROOFING PROTECTIVE COURSE, MIN. 2" THICK AS SPECIFIED IN MASSDOT STANDARD SPECIFICATIONS.
2. 4" ø WEEP HOLES 10'-0" O.C. (JUST ABOVE PROTECTIVE COURSE). PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
3. ALL CAST-IN-PLACE CONCRETE SHALL BE 4000 PSI, ¾ IN, 610 CEMENT CONCRETE. ALL PRECAST CONCRETE SHALL BE 4000 PSI, ¾ IN, 610 CEMENT CONCRETE.
4. THE FACTORED BEARING PRESSURE SHALL BE DETERMINED BY THE CONTRACTOR PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

   THE FACTORED BEARING RESISTANCE SHALL BE CALCULATED AS A FUNCTION OF THE WIDTH OF THE FOOTING AS DESCRIBED IN THE GEOTECHNICAL REPORT DATED SEPTEMBER 12, 2018. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.

*NOTE: PRECAST CONCRETE ARCH CULVERT, PEDESTAL WALLS, AND FOOTINGS TO BE DESIGNED BY CONTRACTOR. ELEVATIONS AND OTHER DIMENSIONS MY VARY DEPENDING ON CONTRACTOR DESIGN.



CULVERT FOOTING & PEDESTAL WALL SECTION

SCALE: $\frac{1}{4}$"=1'-0"

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

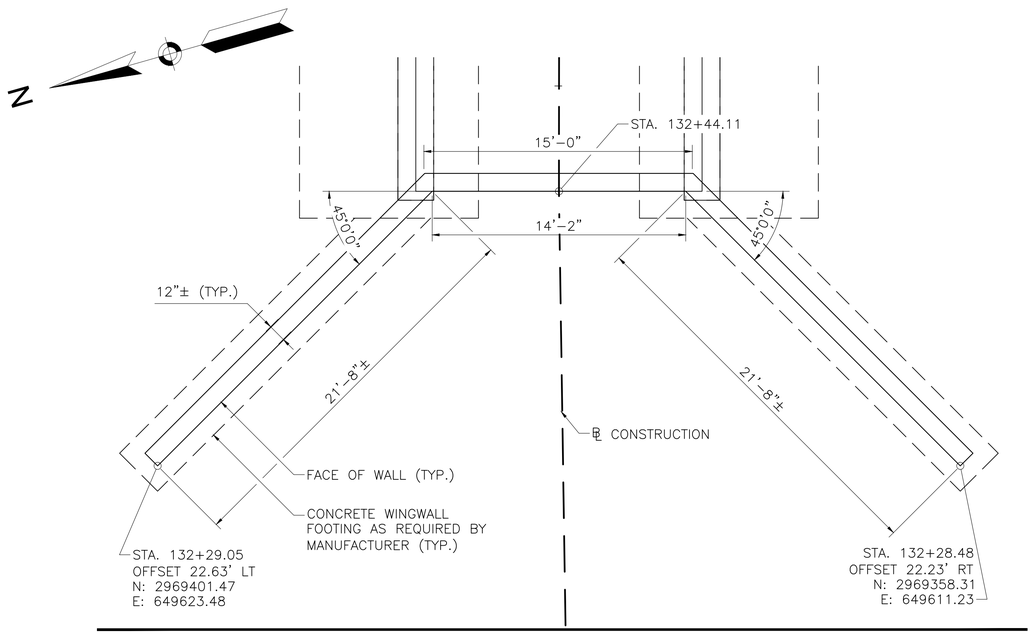
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE NO. H-25-011 (CHESTNUT STREET) – SUBSTRUCTURE DETAILS

PLAN 174 OF 349

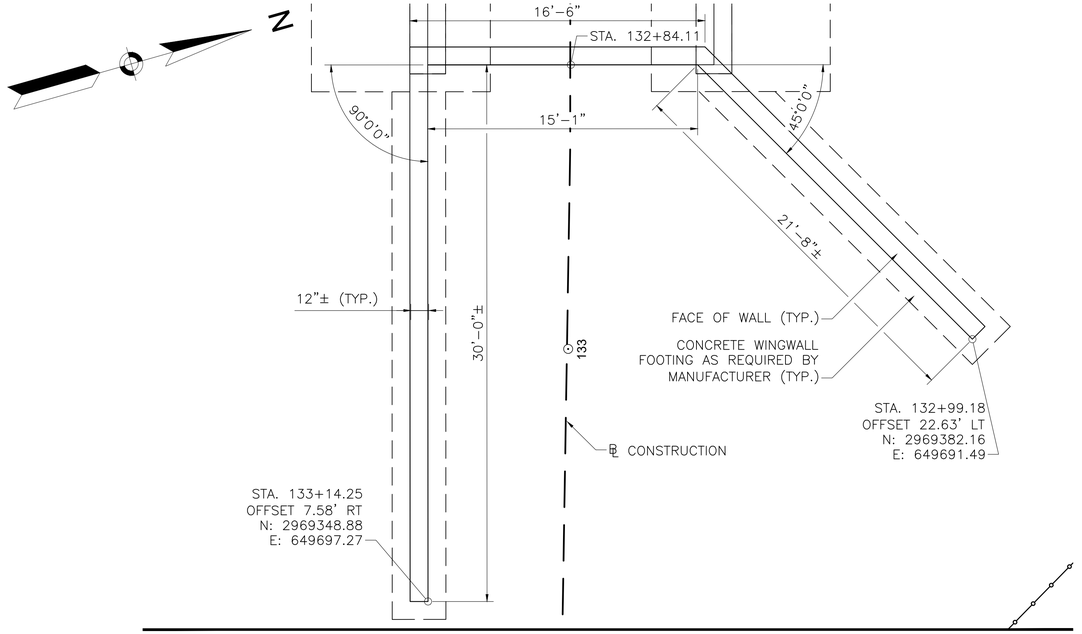
vhb Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
Watertown, MA 02472
617.924.1770 FAX 617.924.2286

SCALE: unless noted	DATE	DRAWN	CH'KD.	APPR.	DRAWING NO.	REV.
1"=4'	DEC 2021	AMS	SBK	KGK	.	.



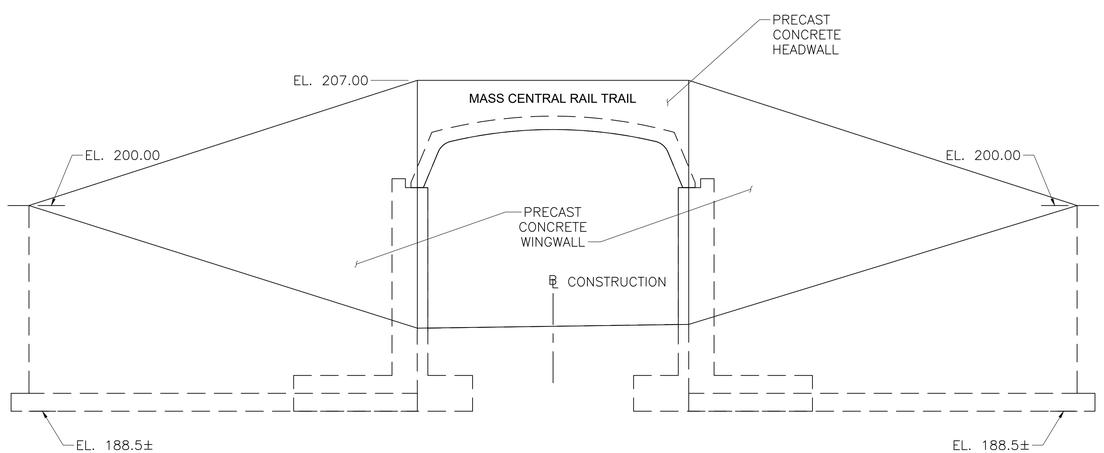
WINGWALL PLAN AT WEST PORTAL

SCALE: 1/4"=1'-0"



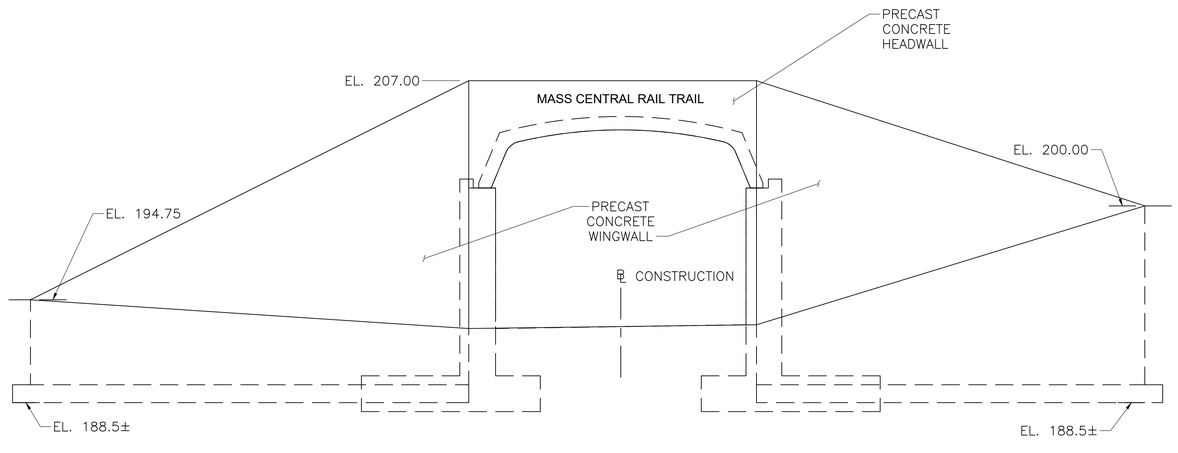
WINGWALL PLAN AT EAST PORTAL

SCALE: 1/4"=1'-0"



WINGWALL DEVELOPED ELEVATION AT WEST PORTAL

SCALE: 1/4"=1'-0"



WINGWALL DEVELOPED ELEVATION AT EAST PORTAL

SCALE: 1/4"=1'-0"

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

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EVERSOURCE

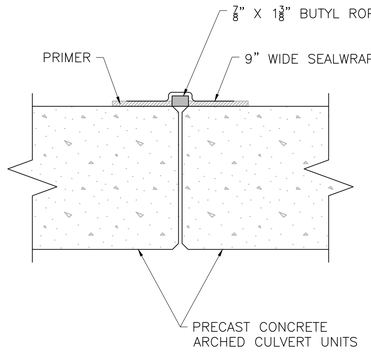
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE NO. H–25–011 (CHESTNUT STREET) – WINGWALL DETAILS

PLAN 75 OF 349

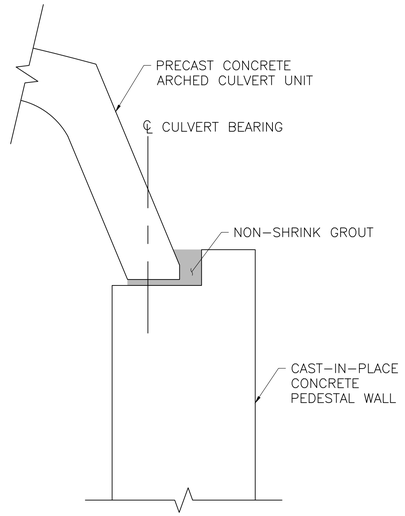
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=4'	DEC 2021	AMS	SBK	KGK	.	.



CULVERT JOINT DETAIL

SCALE: 1"=0'-6"

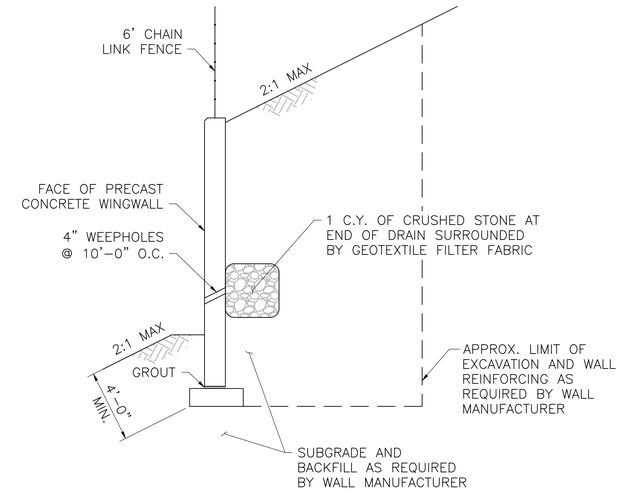
NOTE: CULVERT BEARING DETAIL SHOWN IS PRELIMINARY ONLY. ALTERNATE DETAILS SHALL REQUIRE APPROVAL BY THE ENGINEER.



CULVERT BEARING DETAIL

SCALE: 1"=1'-0"

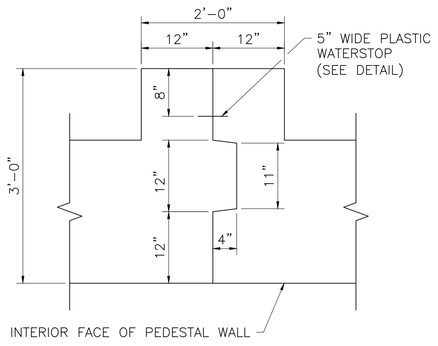
NOTE: RET. WALL TYPE SHOWN IS PRELIMINARY ONLY. ALTERNATE PREFABRICATED WALL TYPES SHALL REQUIRE APPROVAL BY THE ENGINEER.



TYPICAL WINGWALL SECTION

SCALE: 1/4"=1'-0"

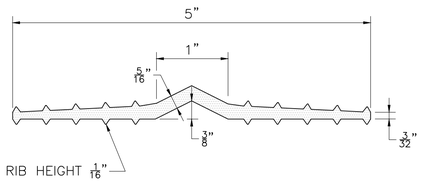
NOTE: CONSTRUCTION JOINT DETAIL SHOWN IS DIMENSIONED IN ACCORDANCE WITH MASSDOT STANDARD DETAILS. ALTERNATE DETAILS SHALL REQUIRE APPROVAL BY THE ENGINEER.



SECTION 1 - CONSTRUCTION JOINT DETAIL

SCALE: 1"=0'-6"

NOTE: PLASTIC WATERSTOP DETAIL SHOWN IS DIMENSIONED IN ACCORDANCE WITH MASSDOT STANDARD DETAILS. ALTERNATE DETAILS SHALL REQUIRE APPROVAL BY THE ENGINEER.



PLASTIC WATERSTOP DETAIL

SCALE: 1"=1'-0"

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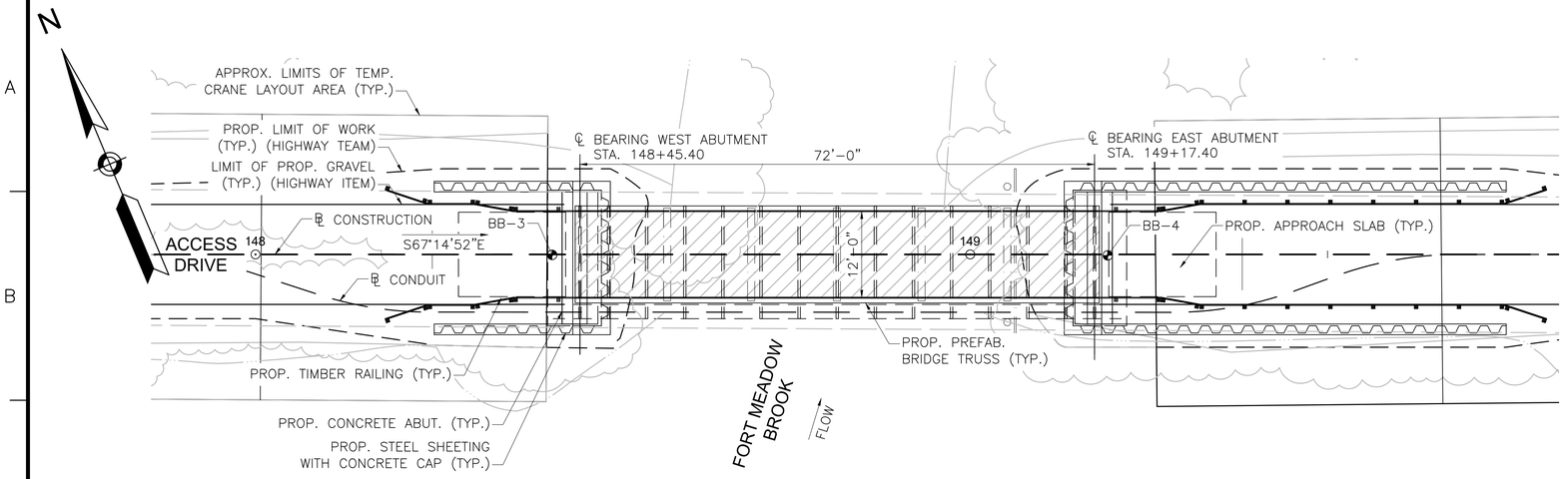
NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

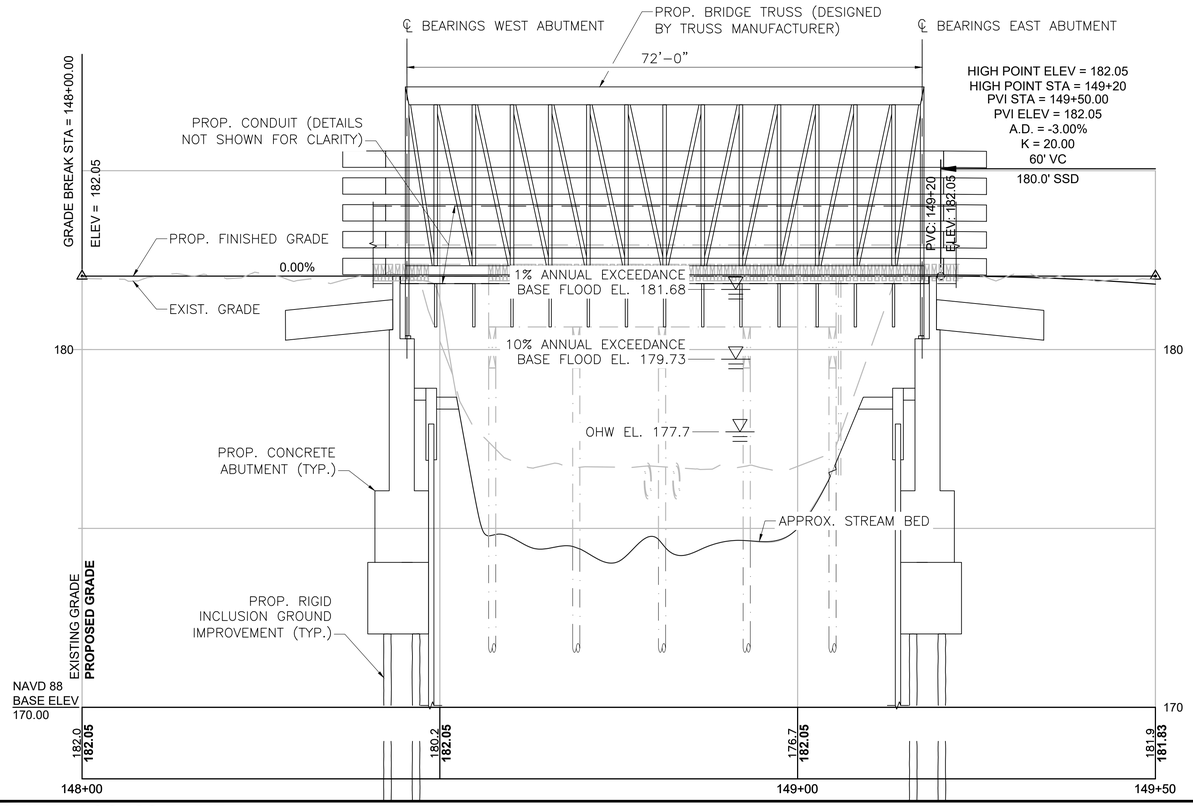
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
BRIDGE NO. H–25–011 (CHESTNUT STREET) – DETAILS
PLAN 176 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	DEC 2021	AMS	SBK	KGK	.	.



BRIDGE KEY PLAN

SCALE: 1"=10'-0"



PROFILE - ACCESS DRIVE

HORIZONTAL SCALE: 1"=10'-0"
VERTICAL SCALE: 1"=2'-0"

GENERAL NOTES: BRIDGE 130

DESIGN:
IN ACCORDANCE WITH THE 2009 AASHTO GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES (WITH 2015 INTERIM REVISIONS) FOR H10 LOADING WITHOUT IMPACT AND 90 PSF PEDESTRIAN LOADING, WHICHEVER CONTROLS. DESIGNED FOR TEMPORARY H20 LOADING DURING CONSTRUCTION ONLY. RAILING DESIGNED FOR PEDESTRIAN LOADING ONLY.

CONCRETE:
ALL CAST IN PLACE CONCRETE SHALL BE 4000 PSI, ¾", 610 CEMENT CONCRETE.
GROUT TO BE USED FOR DRILLING AND GROUTING DOWELS INTO EXISTING SUBSTRUCTURES SHALL BE A CEMENTITIOUS GROUT LISTED ON THE MASSDOT QUALIFIED CONSTRUCTION MATERIALS LIST.

REINFORCEMENT:
REINFORCING STEEL SHALL BE EPOXY COATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31 GRADE 60.

FOUNDATION DESIGN:
GROUND IMPROVEMENT SHALL BE DESIGNED BY CONTRACTOR. SEE GEOTECHNICAL REPORT.

STEEL:
ALL STRUCTURAL STEEL OTHER THAN STRUCTURAL TUBING SHALL BE AASHTO M270 GRADE 50 GALVANIZED AND PAINTED. STRUCTURAL TUBING SHALL BE HEAT TREATED ASTM A1085 GRADE A, WITH THE SUPPLEMENTAL REQUIREMENTS S1, GALVANIZED AND PAINTED.
BOLTS THAT FASTEN TO STEEL ONLY SHALL BE AASHTO M1644 (ASTM 325) HIGH STRENGTH BOLTS, GALVANIZED.

TIMBER:
DECK PLANKING AND RAILINGS: IPE, F_b min = 22,000 psi.
ALL NAILS, SCREWS, BOLTS, WASHERS, CONNECTORS, FASTENERS AND HARDWARE FOR WOOD CONNECTIONS SHALL BE STAINLESS STEEL TYPE 304 OR TYPE 316.
WHERE TREATED TIMBER MEMBERS ARE IN DIRECT CONTACT WITH STEEL PROVIDE VYCOR DECK PROTECTOR BARRIER MEMBRANE BY W.R. GRACE & CO. OR APPROVED EQUAL.

SURVEY AND EXISTING CONDITIONS:
THE EXISTING CONDITIONS SHOWN ON THIS PLAN WERE DEVELOPED FROM A COMBINED EFFORT OF AERIAL PHOTOGRAMMETRIC MAPPING BY EASTERN TOPOGRAPHICS, INC., BASED ON AERIAL PHOTOGRAPHS TAKEN ON FEBRUARY 22, 2013, AND AUGMENTED BY AN ON-THE-GROUND SURVEY PERFORMED BY VHB DURING 2015 AND 2017.
THE HORIZONTAL CONTROL IS BASED ON THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM AND THE NATIONAL GEODETIC SURVEY (NAD83). ALL ELEVATION IS US FEET, REFERENCED TO THE NORTH AMERICA VERTICAL DATUM OF 1988 (NAVD88).

DEMOLITION AND CONSTRUCTION:
ALL EXISTING MATERIALS REMOVED AND NOT REUSED AND ALL WASTE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
TREATED TIMBER AND CONTAMINATED WASTE SHALL BE DISPOSED OF OFF SITE AT AN APPROVED FACILITY.
ALL UNSUITABLE MATERIALS SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE RESIDENT ENGINEER. BACKFILL WITH GRAVEL BORROW FOR BRIDGE FOUNDATIONS.
BACKFILL AROUND PROPOSED SUBSTRUCTURE SHALL BE GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES.
THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO ENSURE THE STABILITY AND SAFE PERFORMANCE OF ALL STRUCTURAL ELEMENTS DURING DEMOLITION AND CONSTRUCTION.
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ADEQUATE SHIELDING OR NETTING DURING DEMOLITION AND CONSTRUCTION TO ADEQUATELY PROTECT WORKERS AND TO PREVENT DEBRIS AND MATERIALS FROM ENTERING THE WATERWAY.
ANY DAMAGE TO REMAINING EXISTING COMPONENTS THAT IS CAUSED BY THE CONTRACTOR'S ACTIVITY SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR, AT NO ADDITIONAL EXPENSE.

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

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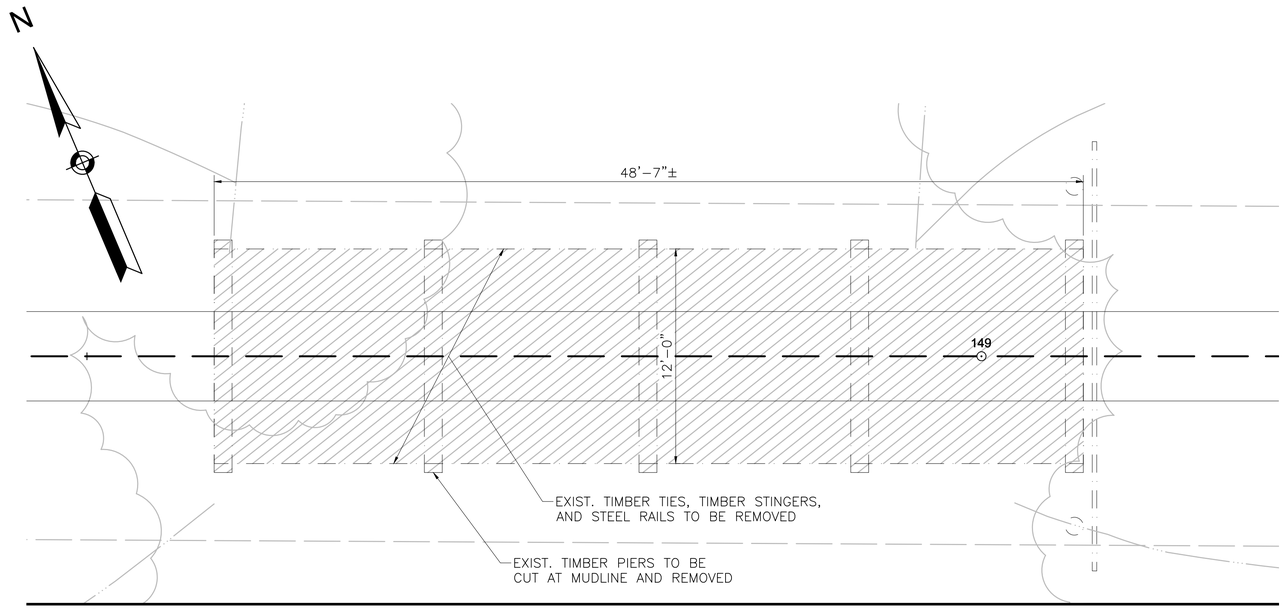
EVERSOURCE

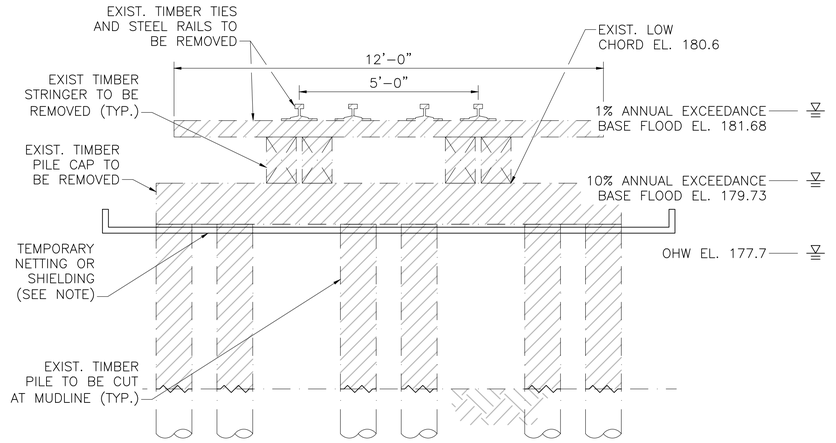
SUDBURY-HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
BRIDGE H-25-027 (BRIDGE 130) - KEY PLAN & PROFILE
PLAN177 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
H: 1"=10' V: 1"=2'	DEC 2021	AMS	SBK	KGK	.	.



BRIDGE PLAN

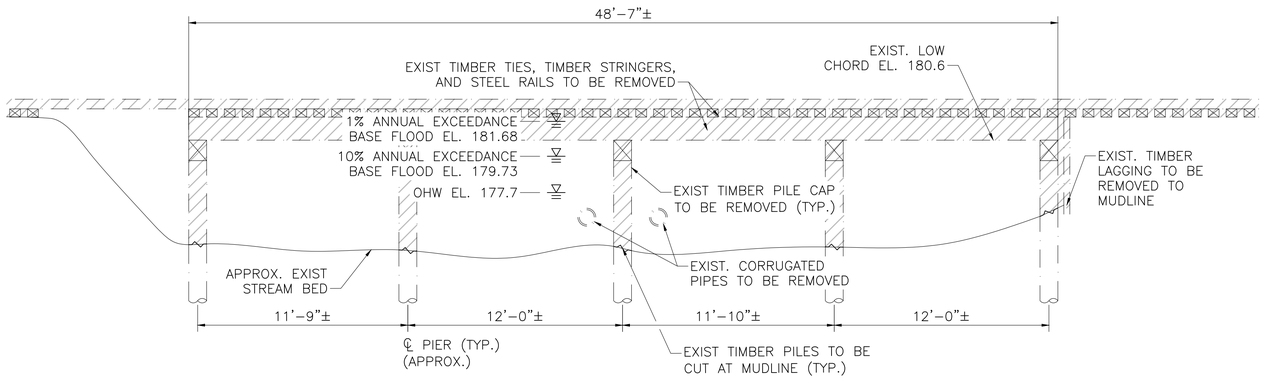
SCALE: $\frac{1}{4}$"=1'-0"



BRIDGE SECTION

SCALE: $\frac{1}{2}$"=1'-0"

NOTE: CONTRACTOR SHALL DESIGN AND INSTALL TEMPORARY PROTECTIVE SHIELDING OR NETTING DURING DEMOLITION OF BRIDGE AND AS NEEDED DURING CONSTRUCTION OF NEW BRIDGE TO PREVENT CONSTRUCTION DEBRIS FROM FALLING INTO THE WATER BODIES BELOW. SEE PROJECT SPECIFICATIONS AND PERMITTING DOCUMENTS FOR ADDITIONAL REQUIREMENTS AND INFORMATION.



BRIDGE ELEVATION

SCALE: $\frac{1}{4}$"=1'-0"

NO.	DESCRIPTION	BY	DATE	APPR.

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EVERSOURCE

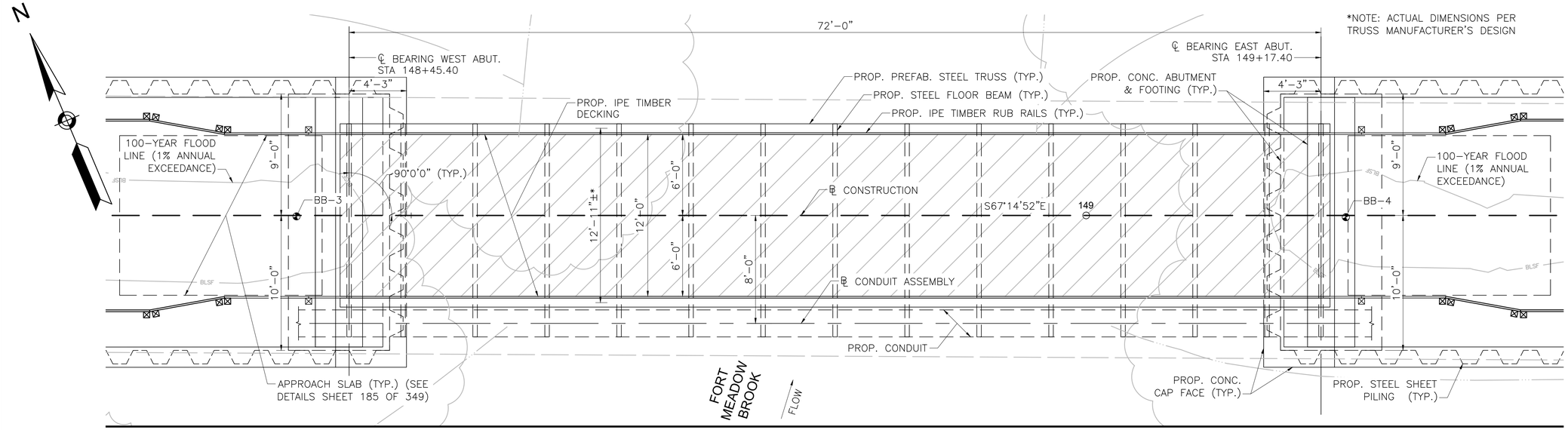
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE H–25–027 (BRIDGE 130) – DEMOLITION PLAN

PLAN 182 OF 349

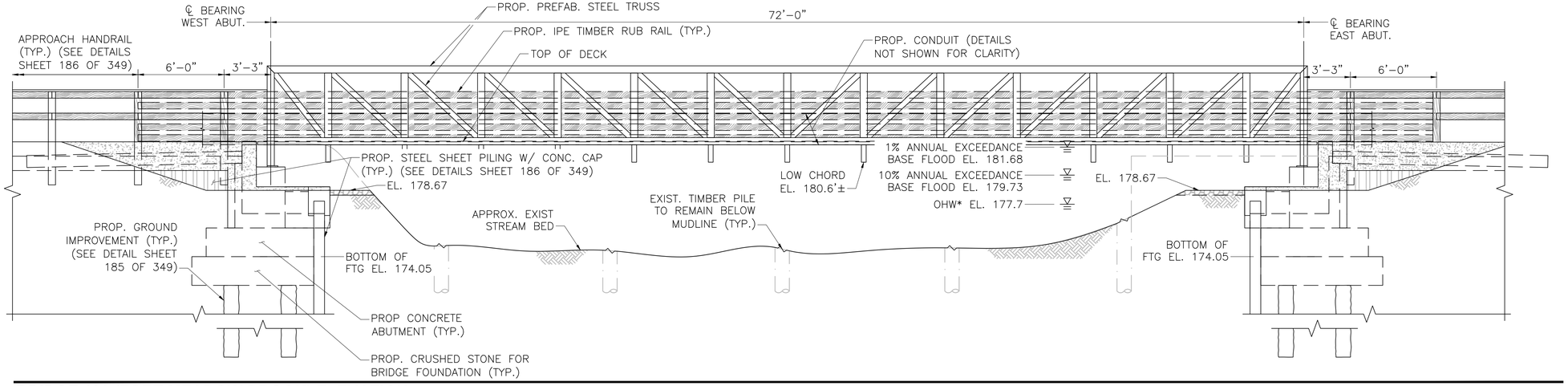
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	DEC 2021	AMS	SBK	KGK	.	.



BRIDGE 130 (FORT MEADOW BROOK) PLAN

SCALE: $\frac{1}{4}$"=1'-0"

*NOTE: OHW = ESTIMATED ORDINARY HIGH WATER



BRIDGE 130 (FORT MEADOW BROOK) ELEVATION

SCALE: $\frac{1}{4}$"=1'-0"

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE H–25–027 (BRIDGE 130) – PLAN & ELEVATION

PLAN183 OF 349

Vanasse Hangen Brustlin, Inc.
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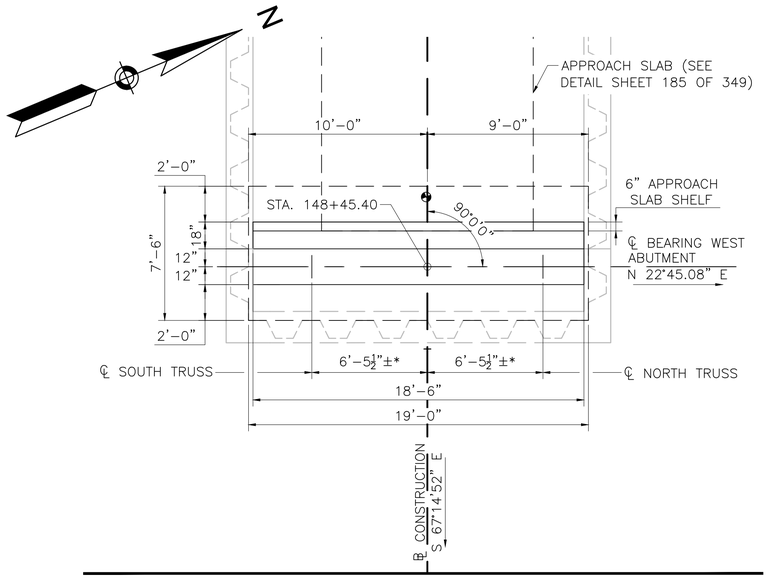
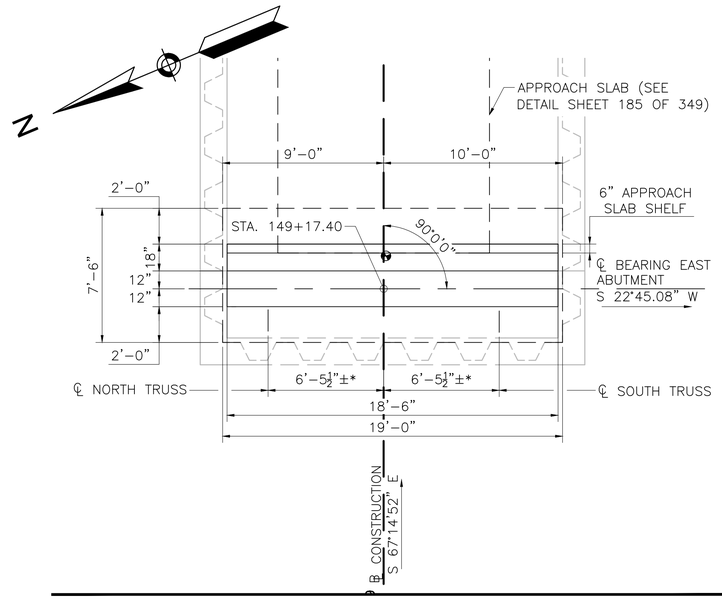
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=4'	DEC 2021	AMS	SBK	KGK	.	.



WEST ABUTMENT PLAN

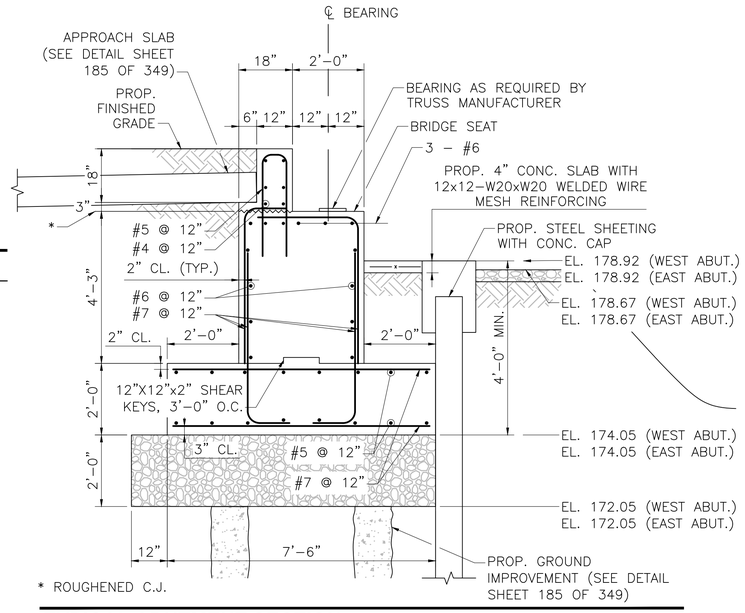
SCALE: $\frac{1}{4}$"=1'-0"



EAST ABUTMENT PLAN

SCALE: $\frac{1}{4}$"=1'-0"

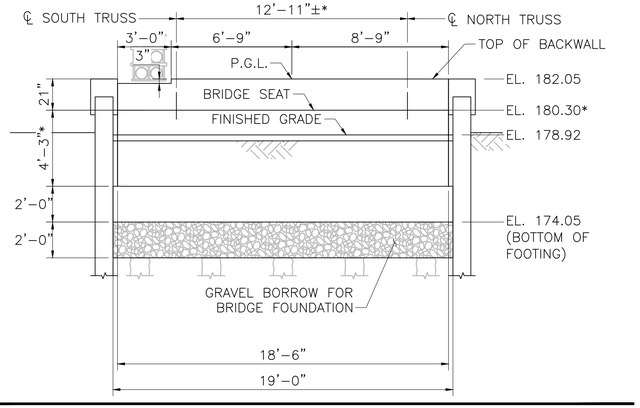
*NOTE: ACTUAL DIMENSIONS PER TRUSS MANUFACTURER'S DESIGN



* ROUGHENED C.J.

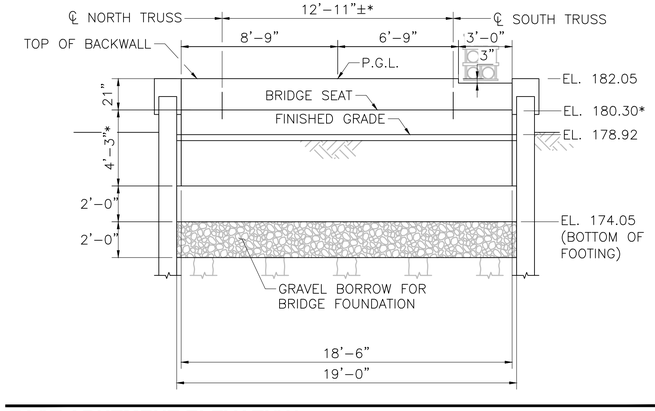
TYPICAL ABUTMENT SECTION

SCALE: $\frac{1}{2}$"=1'-0"



WEST ABUTMENT ELEVATION

SCALE: $\frac{1}{4}$"=1'-0"



EAST ABUTMENT ELEVATION

SCALE: $\frac{1}{4}$"=1'-0"

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE H–25–027 (BRIDGE 130) – SUBSTRUCTURE DETAILS

PLAN 184 OF 349

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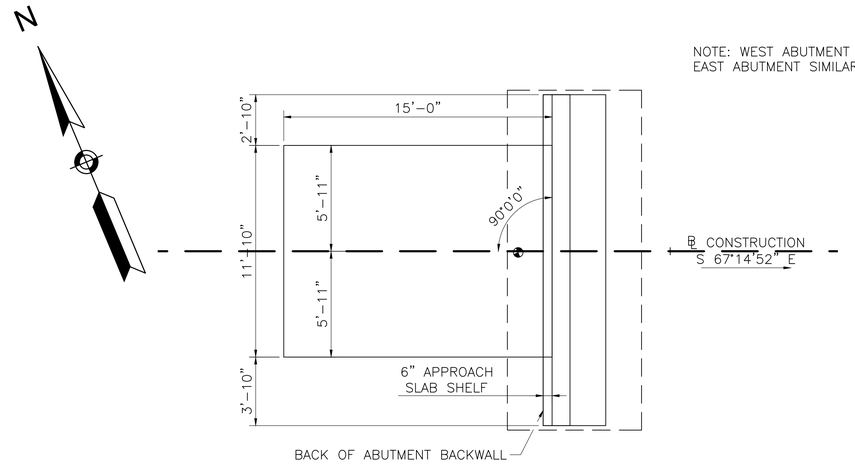
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	DEC 2021	AMS	SBK	KGK	.	.

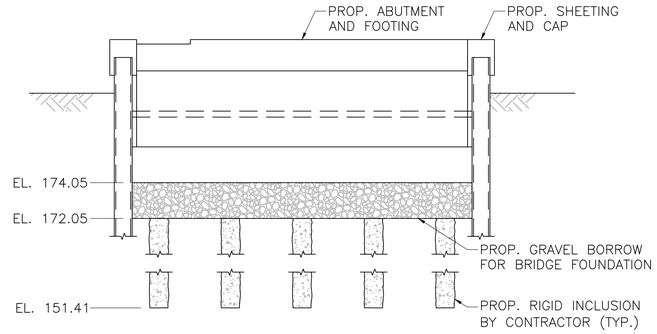
NOTE: WEST ABUTMENT SHOWN.
EAST ABUTMENT SIMILAR



APPROACH SLAB PLAN

SCALE: $\frac{1}{4}$"=1'-0"

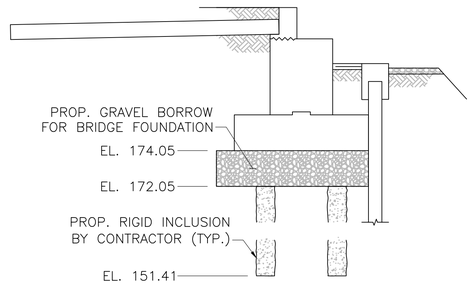
NOTE: WEST ABUTMENT SHOWN.
EAST ABUTMENT SIMILAR



GROUND IMPROVEMENT ELEVATION

SCALE: $\frac{1}{4}$"=1'-0"

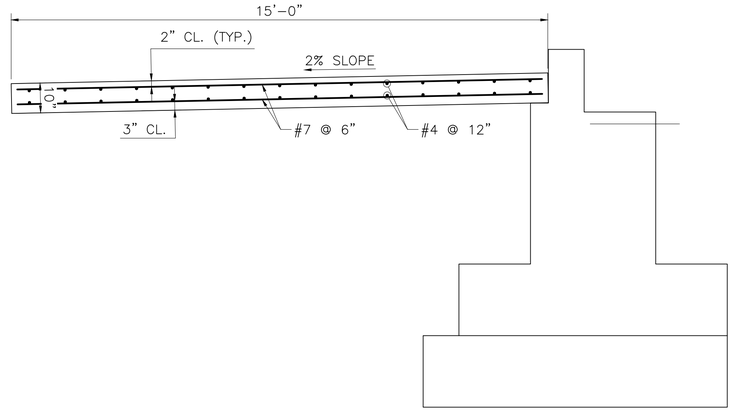
NOTE: WEST ABUTMENT SHOWN.
EAST ABUTMENT SIMILAR



GROUND IMPROVEMENT SECTION

SCALE: $\frac{1}{4}$"=1'-0"

NOTE: WEST ABUTMENT SHOWN.
EAST ABUTMENT SIMILAR



APPROACH SLAB DETAIL

SCALE: $\frac{1}{2}$"=1'-0"

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
BRIDGE H–25–027 (BRIDGE 130) – SUBSTRUCTURE DETAILS
PLAN 85 OF 349

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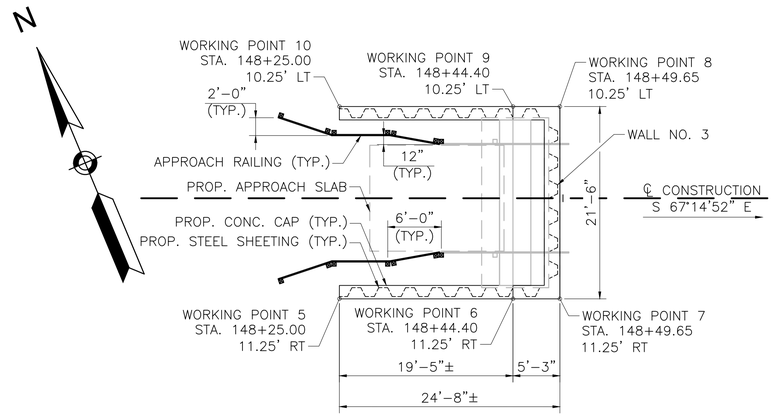
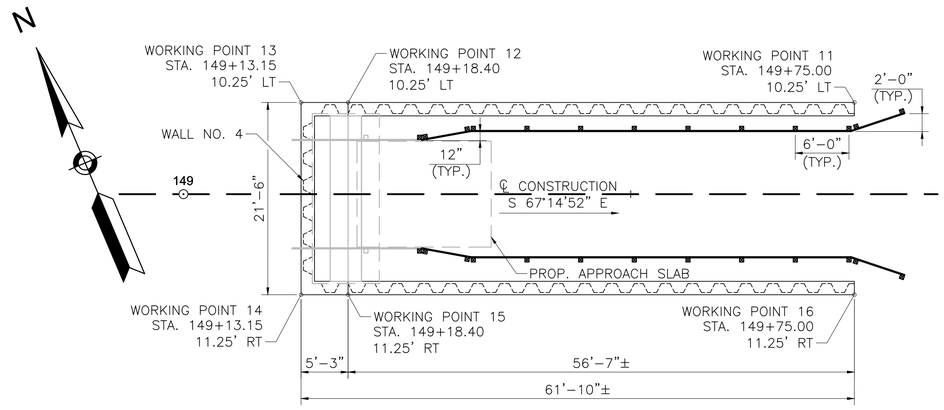
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	DEC 2021	AMS	SBK	KGK	.	.



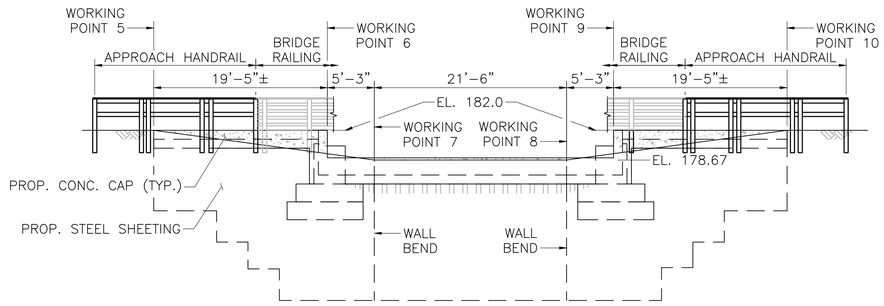
WALL 3 SHEETING PLAN (WEST APPROACH)

SCALE: $\frac{1}{8}$"=1'-0"



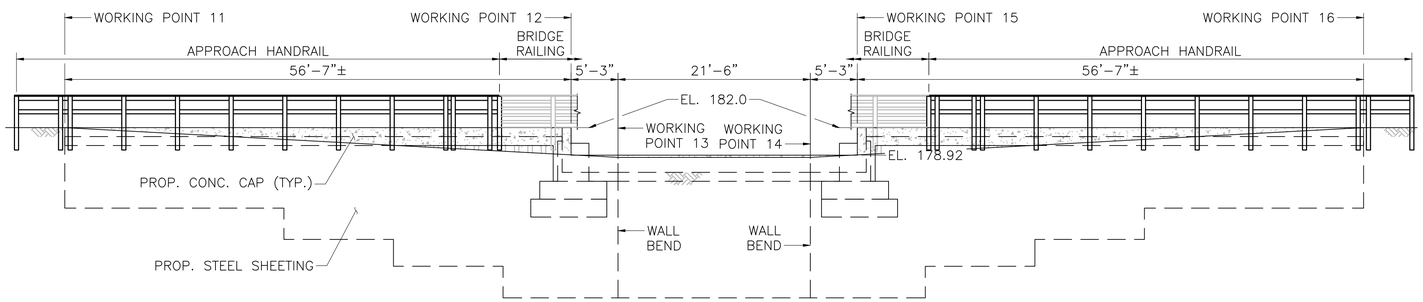
WALL 4 SHEETING PLAN (EAST APPROACH)

SCALE: $\frac{1}{8}$"=1'-0"



WALL 3 DEVELOPED ELEVATION (WEST APPROACH SHEETING WALL) (ALONG FACE OF COPING)

SCALE: $\frac{1}{8}$"=1'-0"

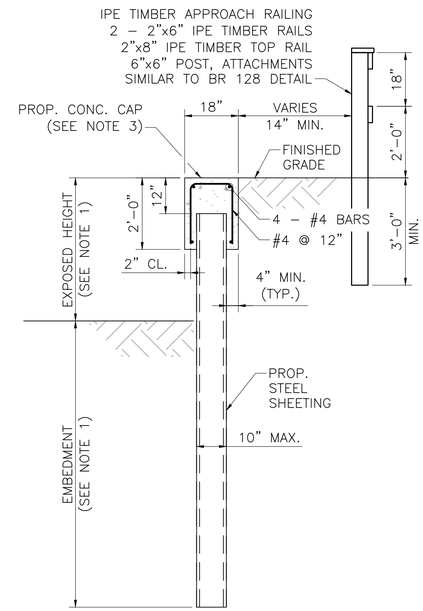


WALL 4 DEVELOPED ELEVATION (EAST APPROACH SHEETING WALL) (ALONG FACE OF COPING)

SCALE: $\frac{1}{8}$"=1'-0"

NOTES:

1. WALL EXPOSED HEIGHT TO BE VERIFIED IN FIELD. SHEETING EMBEDMENT DEPTH VARIES WITH WALL EXPOSED HEIGHT. SEE SHEETING EMBEDMENT TABLE BELOW.
2. SHEETING SECTION SHALL BE SELECTED BY CONTRACTOR. STEEL SHEETING SHALL BE GRADE 50 STEEL IN ACCORDANCE WITH ASTM A328 WITH A SECTION MODULUS (S_X) OF 7.08 IN^3 PER FOOT.
3. CONC. CAP SHALL BE 4000 PSI, $\frac{3}{4}$", 610 CEMENT CONCRETE. REINFORCING STEEL SHALL BE GRADE 60 EPOXY COATED STEEL IN ACCORDANCE WITH AASHTO M31. CONSTRUCTION JOINTS IN CAP SHALL BE SPACED AT 24'-0" MAX. CONTRACTOR SHALL SUBMIT JOINT LAYOUT PLAN TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINT.



TYPICAL SHEETING SECTION

SCALE: $\frac{1}{2}$"=1'-0"

SHEETING EMBEDMENT TABLE	
EXPOSED HEIGHT	EMBEDMENT
2'–0" (MAX.)	7'–4" (MIN.)
3'–0" (MAX.)	9'–5" (MIN.)
4'–0" (MAX.)	11'–6" (MIN.)
5'–0" (MAX.)	13'–7" (MIN.)
6'–0" (MAX.)	15'–7" (MIN.)
7'–0" (MAX.)	17'–7" (MIN.)

NO.	DESCRIPTION	BY	DATE	APPR.
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EVERSOURCE

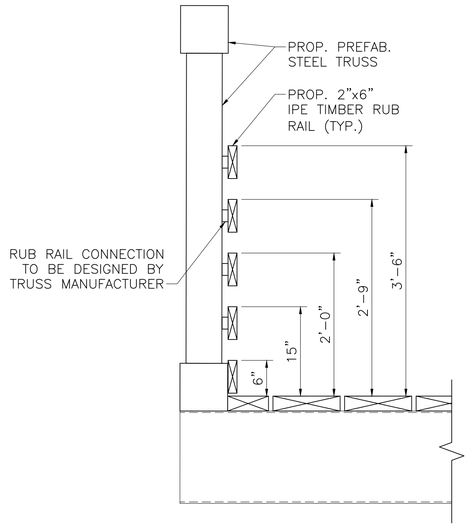
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE H–25–027 (BRIDGE 130) SHEETING PLAN

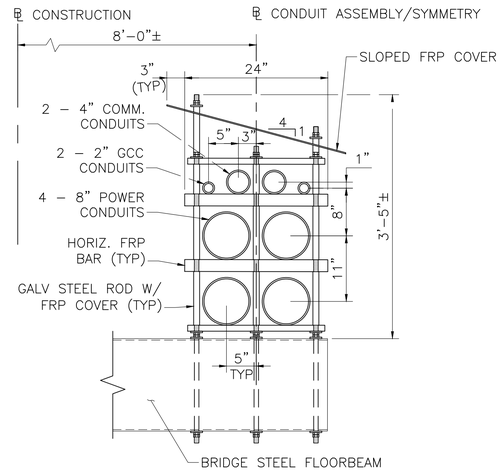
PLAN 186 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	DEC 2021	AMS	SBK	KGK	.	.



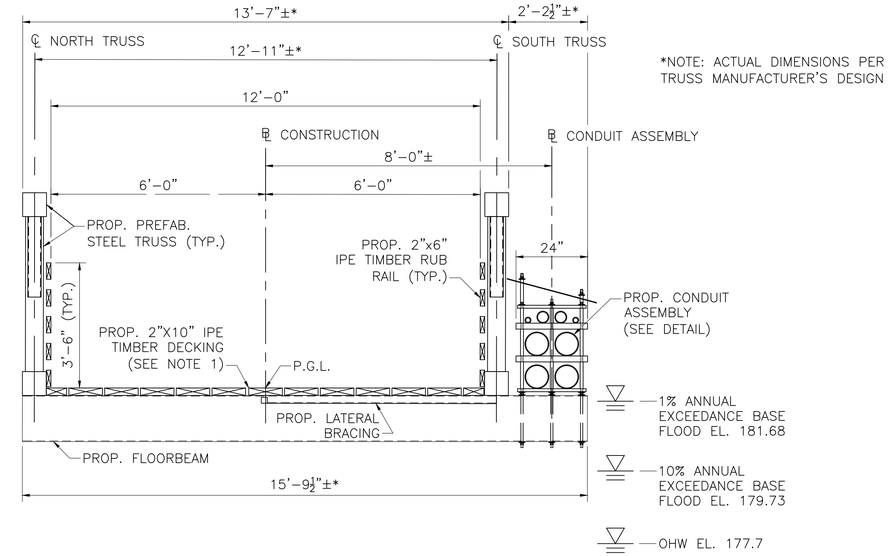
RAILING CONNECTION DETAIL

SCALE: 1"=1'-0"

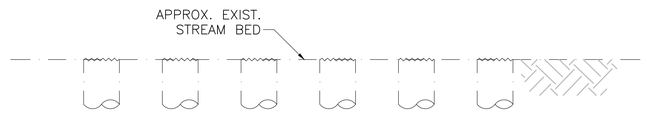


CONDUIT ASSEMBLY DETAIL

SCALE: 1"=1'-0"



*NOTE: ACTUAL DIMENSIONS PER TRUSS MANUFACTURER'S DESIGN



BRIDGE TRANSVERSE SECTION

SCALE: ¾"=1'-0"

NOTES:

1. TRUSS SHALL BE DESIGNED FOR TEMPORARY H20 LOADING DURING CONSTRUCTION. TIMBER DECKING IS DESIGNED FOR H10 LOADING WITHOUT IMPACT AND 90 PSF PEDESTRIAN LOADING, WHICHEVER CONTROLS. CONTRACTOR SHALL DESIGN TEMPORARY DECKING IF BRIDGE IS INTENDED TO BE USED FOR CONSTRUCTION VEHICLES.

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE H–25–027 (BRIDGE 130) – SECTION & DETAILS

PLAN 87 OF 349

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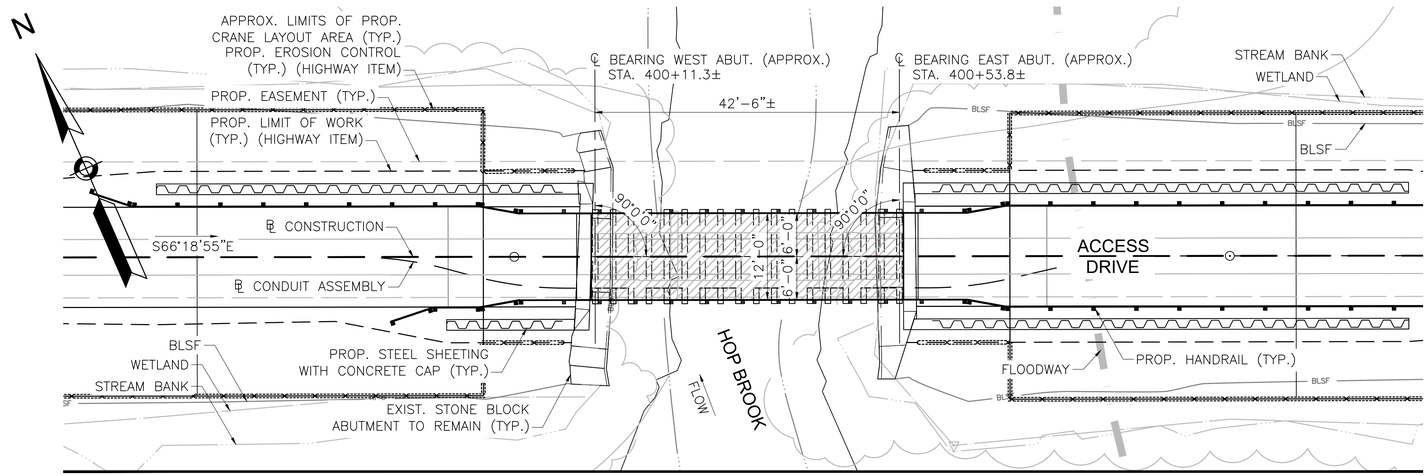
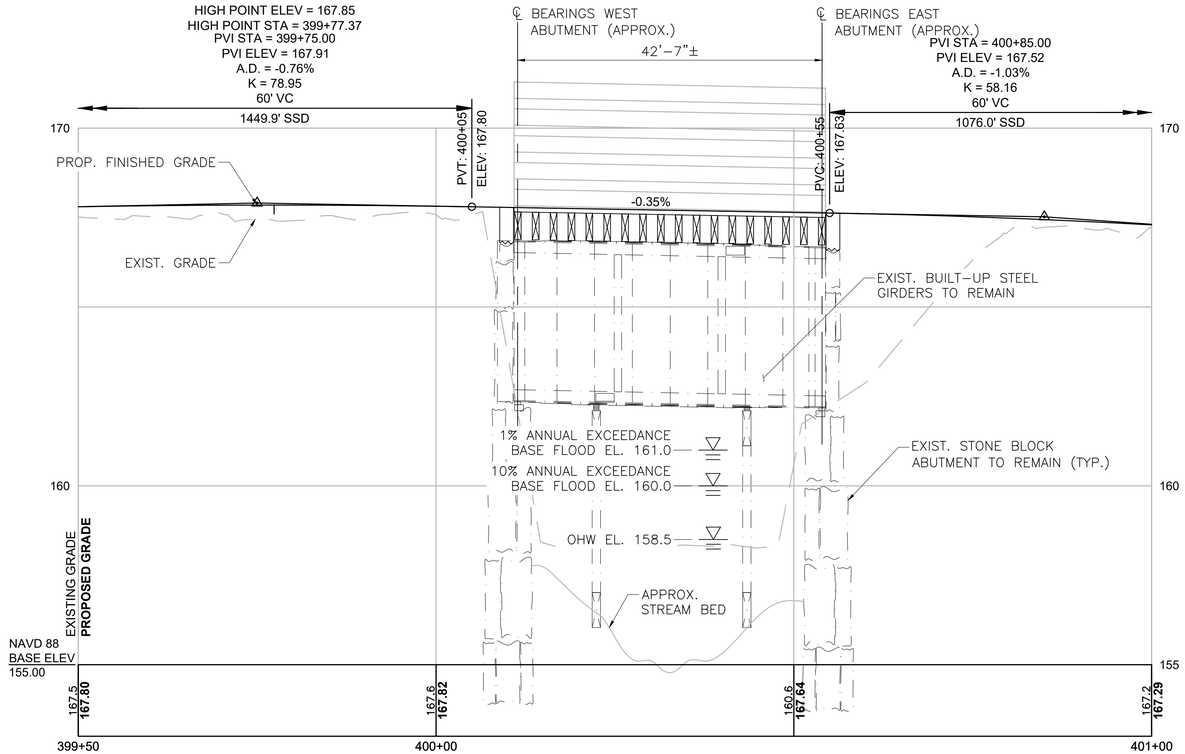
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	DEC 2021	AMS	SBK	KGK	.	.



BRIDGE KEY PLAN

SCALE: 1"=10'



PROFILE - ACCESS DRIVE

HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: ½"=1'-0"

GENERAL NOTES: BRIDGE 128

DESIGN:
IN ACCORDANCE WITH THE 2009 AASHTO GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES (WITH 2015 INTERIM REVISIONS) FOR H10 LOADING WITHOUT IMPACT AND 90 PSF PEDESTRIAN LOADING, WHICHEVER CONTROLS. DESIGNED FOR TEMPORARY H20 LOADING DURING CONSTRUCTION ONLY. RAILING DESIGNED FOR PEDESTRIAN LOADING ONLY.

CONCRETE:
ALL CAST IN PLACE CONCRETE SHALL BE 4000 PSI, ⅜", 660 CEMENT CONCRETE.
GROUT TO BE USED FOR DRILLING AND GROUTING DOWELS INTO EXISTING SUBSTRUCTURES SHALL BE A CEMENTITIOUS GROUT LISTED ON THE MASSDOT QUALIFIED CONSTRUCTION MATERIALS LIST.

REINFORCEMENT:
REINFORCING STEEL SHALL BE EPOXY COATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31 GRADE 60.

STEEL:
NEW STEEL PLATES AND SHAPES SHALL BE NEW MATERIAL MEETING THE REQUIREMENTS OF AASHTO M270 GRADE 50, PAINTED.
BOLTS THAT FASTEN TO STEEL ONLY SHALL BE AASHTO M1644 (ASTM 325) HIGH STRENGTH BOLTS, GALVANIZED.

TIMBER:
DECK PLANKING AND RAILINGS: IPE, F_b min = 22,000 psi.
FLOOR BEAMS: SYP NO. 1 OR BETTER, F_b min = 1,050 psi.
SYP TIMBER SHALL BE TREATED WITH ACQ-D WITH 0.60 PCF RETENTION.
ALL NAILS, SCREWS, BOLTS, WASHERS, CONNECTORS, FASTENERS AND HARDWARE FOR WOOD CONNECTIONS SHALL BE STAINLESS STEEL TYPE 304 OR TYPE 316.
WHERE TREATED TIMBER MEMBERS ARE IN DIRECT CONTACT WITH STEEL PROVIDE VYCOR DECK PROTECTOR BARRIER MEMBRANE BY W.R. GRACE & CO. OR APPROVED EQUAL.
BETWEEN THE TIMBER TRANSVERSE FLOOR BEAMS AND THE DECK PLANKING, PROVIDE A LAYER OF GRACE ICE & WATER SHIELD BY W.R. GRACE & CO. OR APPROVED EQUAL.

SURVEY AND EXISTING CONDITIONS:
THE EXISTING CONDITIONS SHOWN ON THIS PLAN WERE DEVELOPED FROM A COMBINED EFFORT OF AERIAL PHOTOGRAMMETRIC MAPPING BY EASTERN TOPOGRAPHICS, INC., BASED ON AERIAL PHOTOGRAPHS TAKEN ON FEBRUARY 22, 2013, AND AUGMENTED BY AN ON-THE-GROUND SURVEY PERFORMED BY VHB DURING 2015 AND 2017.
THE HORIZONTAL CONTROL IS BASED ON THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM AND THE NATIONAL GEODETIC SURVEY (NAD83). ALL ELEVATION IS US FEET, REFERENCED TO THE NORTH AMERICA VERTICAL DATUM OF 1988 (NAVD88).

DEMOLITION AND CONSTRUCTION:
ALL EXISTING MATERIALS REMOVED AND NOT REUSED AND ALL WASTE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
TREATED TIMBER AND CONTAMINATED WASTE SHALL BE DISPOSED OF OFF SITE AT AN APPROVED FACILITY.
BACKFILL AROUND ABUTMENTS SHALL BE GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES.
THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO ENSURE THE STABILITY AND SAFE PERFORMANCE OF ALL STRUCTURAL ELEMENTS DURING DEMOLITION AND CONSTRUCTION.
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ADEQUATE SHIELDING OR NETTING DURING DEMOLITION AND CONSTRUCTION TO ADEQUATELY PROTECT WORKERS AND TO PREVENT DEBRIS AND MATERIALS FROM ENTERING THE WATERWAY.
ANY DAMAGE TO REMAINING EXISTING COMPONENTS THAT IS CAUSED BY THE CONTRACTOR'S ACTIVITY SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR, AT NO ADDITIONAL EXPENSE.

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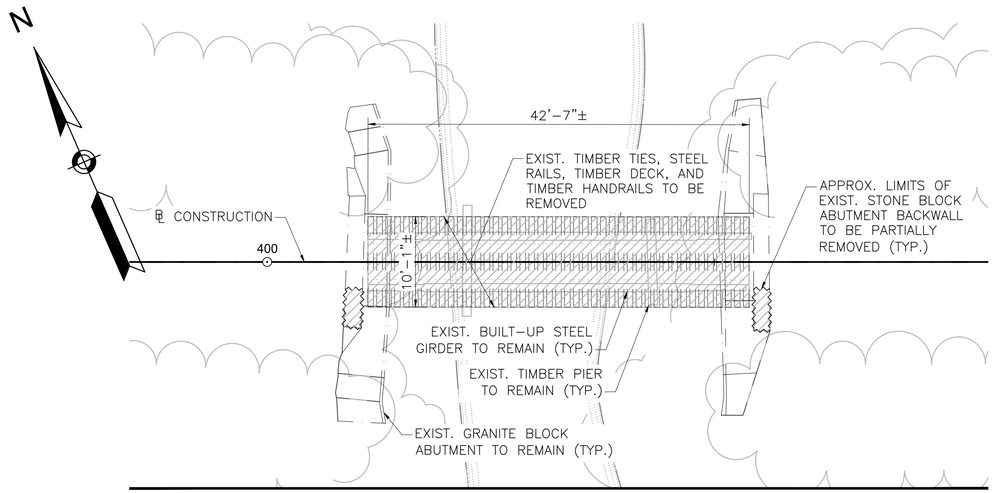
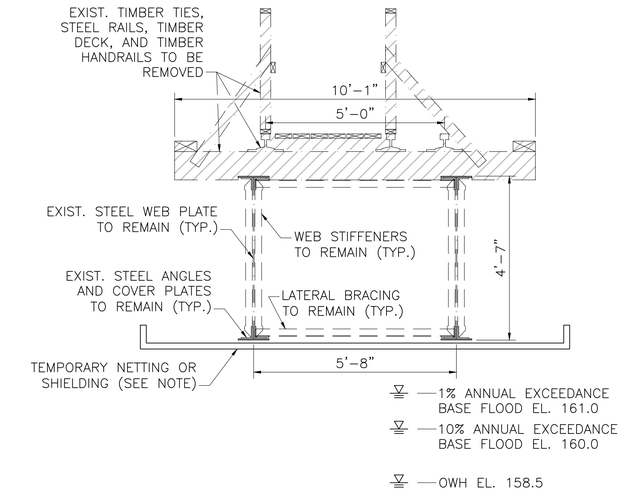
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
BRIDGE S-31-017 (BRIDGE 128) – KEY PLAN & PROFILE
PLAN 188 OF 349

SCALE: unless noted	DATE	DRAWN	CH'KD.	APPR.	DRAWING NO.	REV.
H: 1"=10' V: 1"=2'	DEC 2021	AMS	SBK	KGK	.	.



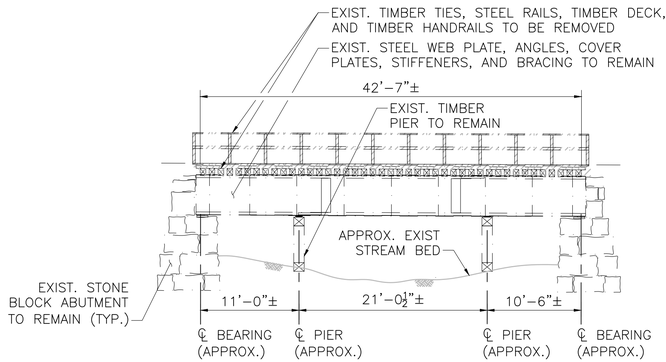
BRIDGE PLAN

SCALE: $\frac{3}{8}$"=1'-0"



BRIDGE TRANSVERSE SECTION

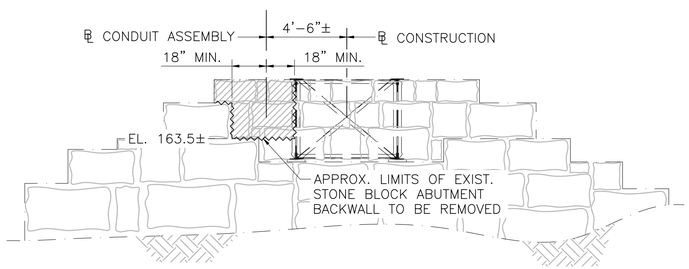
SCALE: $\frac{1}{2}$"=1'-0"



BRIDGE ELEVATION

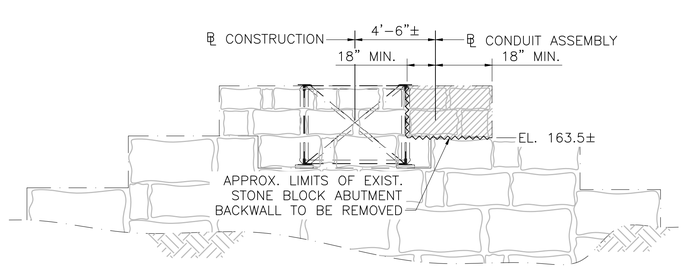
SCALE: $\frac{3}{8}$"=1'-0"

NOTE: CONTRACTOR SHALL DESIGN AND INSTALL TEMPORARY PROTECTIVE SHIELDING OR NETTING DURING DEMOLITION OF BRIDGE AND AS NEEDED DURING CONSTRUCTION OF NEW BRIDGE TO PREVENT CONSTRUCTION DEBRIS FROM FALLING INTO THE WATER BODIES BELOW. SEE PROJECT SPECIFICATIONS AND PERMITTING DOCUMENTS FOR ADDITIONAL REQUIREMENTS AND INFORMATION.



WEST ABUTMENT ELEVATION

SCALE: $\frac{1}{4}$"=1'-0"



EAST ABUTMENT ELEVATION

SCALE: $\frac{1}{4}$"=1'-0"

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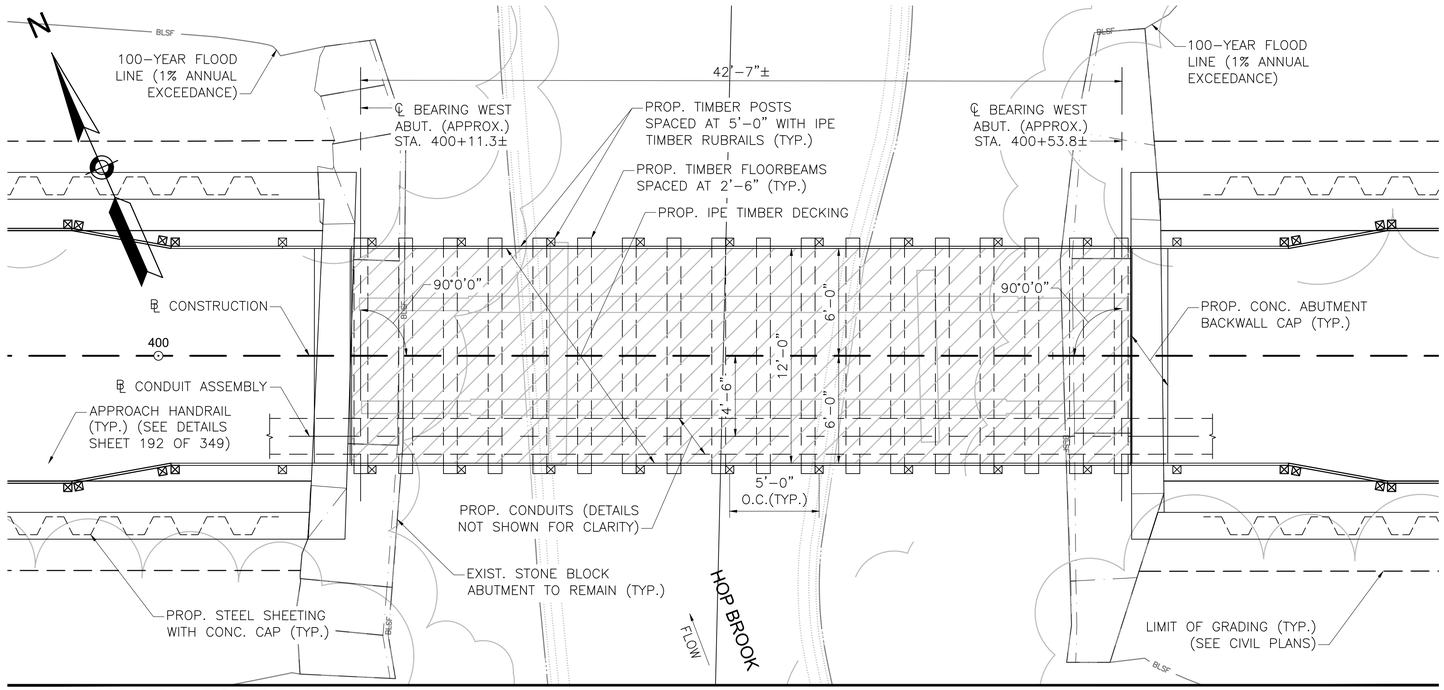
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE S–31–017 (BRIDGE 128) – DEMOLITION PLAN

PLAN 189 OF 349

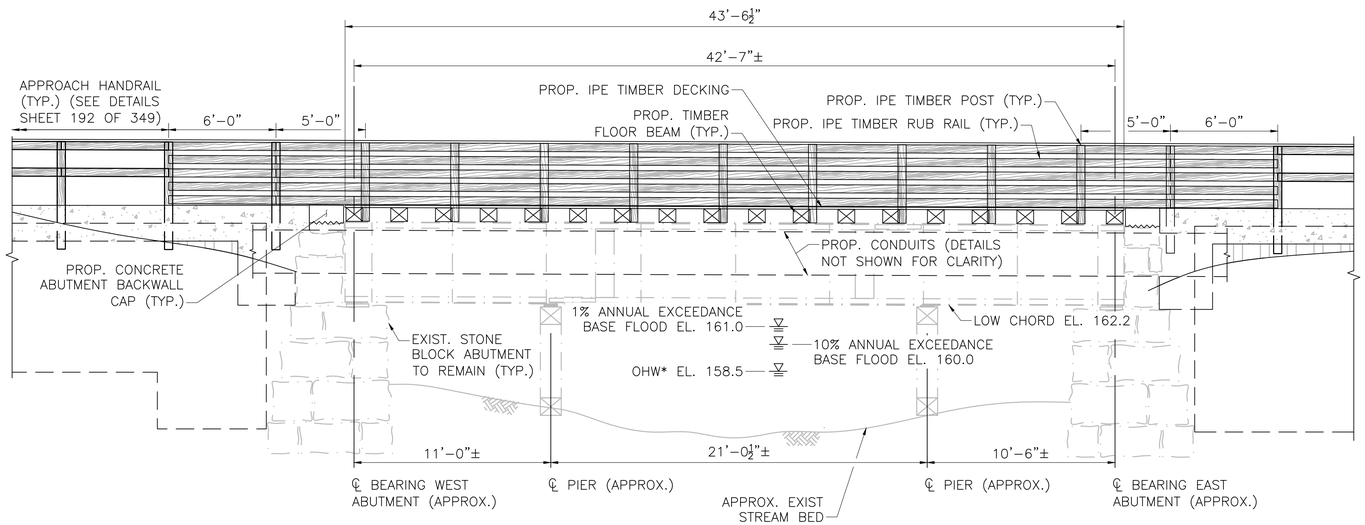
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	DEC 2021	AMS	SBK	KGK	.	.



BRIDGE 128 (HOP BROOK) PLAN

SCALE: $\frac{1}{4}$"=1'-0"

*NOTE: OHW = ESTIMATED ORDINARY HIGH WATER



BRIDGE 128 (HOP BROOK) ELEVATION

SCALE: $\frac{1}{4}$"=1'-0"

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NO.	DESCRIPTION	BY	DATE	APPR.

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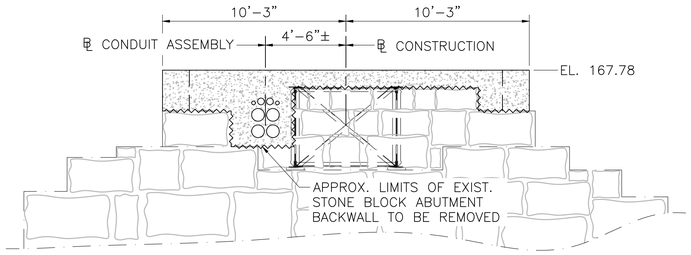
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE S–31–017 (BRIDGE 128) – PLAN & ELEVATION

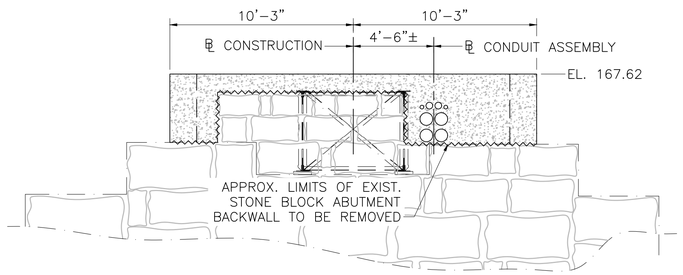
PLAN190 OF 349

SCALE: unless noted	DATE	DRAWN	CHK'D.	APPR.	DRAWING NO.	REV.
1"=4'	DEC 2021	AMS	SBK	KGK	.	.



WEST ABUTMENT ELEVATION

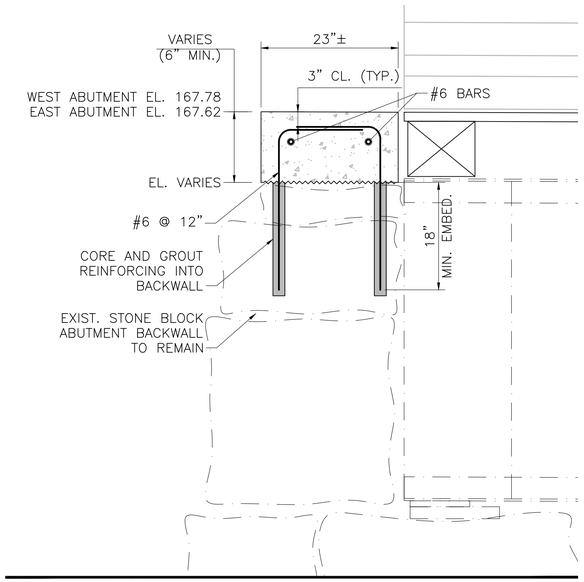
SCALE: $\frac{1}{4}$"=1'-0"



EAST ABUTMENT ELEVATION

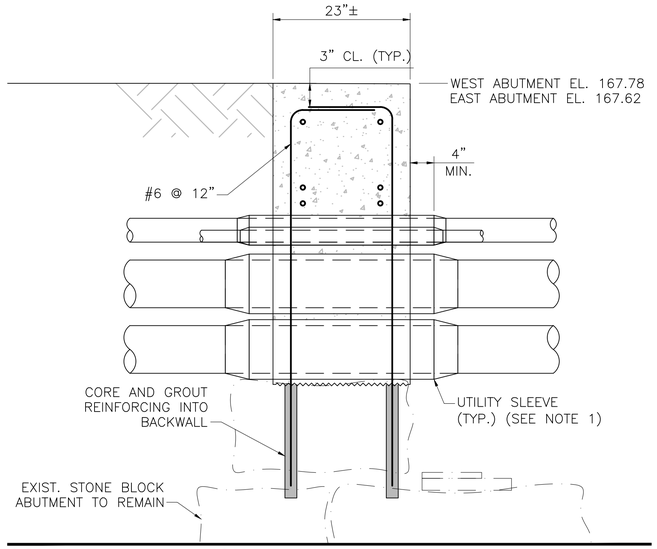
SCALE: $\frac{1}{4}$"=1'-0"

NOTES:
1. UTILITY SLEEVES SHALL BE STEEL PIPE CONFORMING TO ASTM A-53, TYPE S, GRADE B, STANDARD WEIGHT, PLAIN ENDS, HOT-DIP GALVANIZED AND SHALL BE SET IN THE FORMS PRIOR TO PLACING CONCRETE.



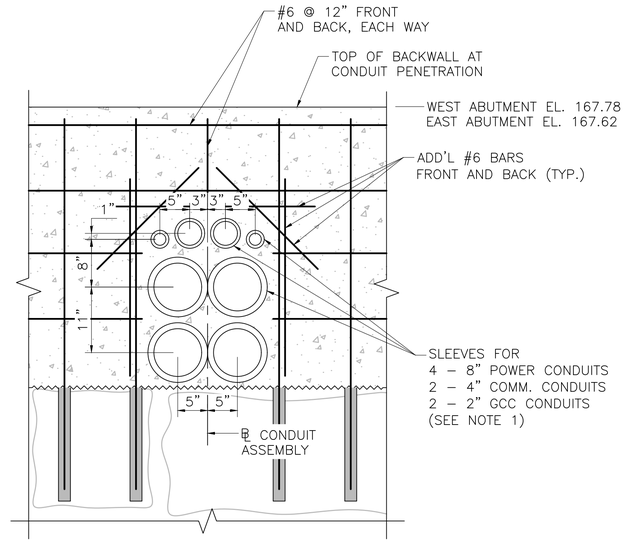
BACKWALL CAP DETAIL

SCALE: 1"=1'-0"



CONDUIT PENETRATION DETAIL

SCALE: 1"=1'-0"



CONDUIT PENETRATION SECTION

SCALE: 1"=1'-0"

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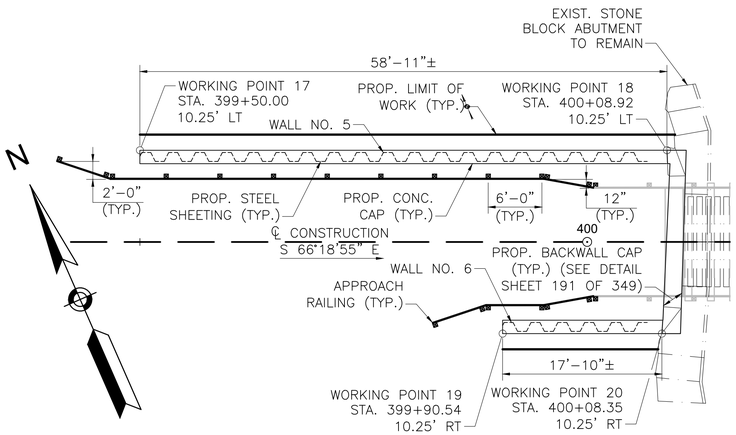
SUDBURY-HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE S-31-017 (BRIDGE 128) - ABUTMENT DETAILS

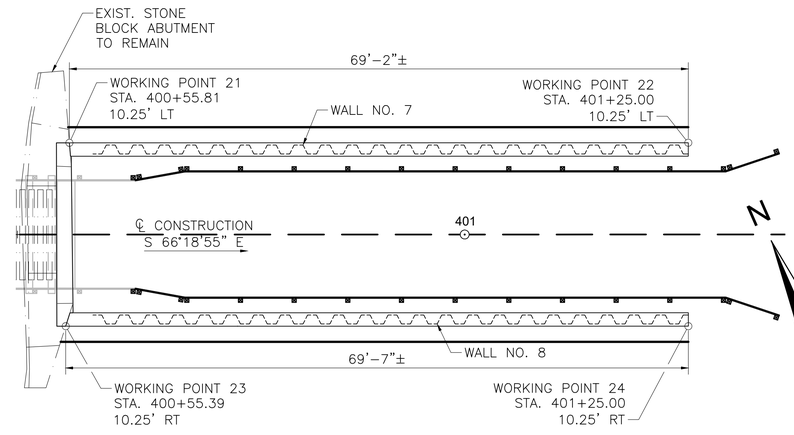
PLAN 1910F 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	DEC 2021	AMS	SBK	KGK	.	.



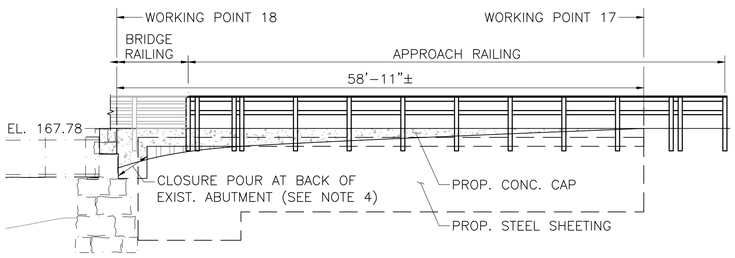
WALL 5 & 6 SHEETING PLAN (WEST APPROACH)

SCALE: $\frac{1}{8}$"=1'-0"



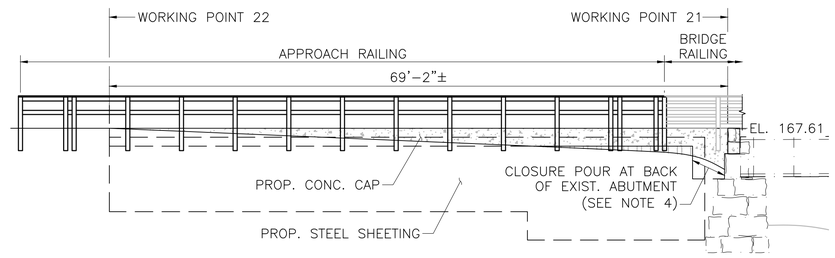
WALL 7 & 8 SHEETING PLAN (EAST APPROACH)

SCALE: $\frac{1}{8}$"=1'-0"



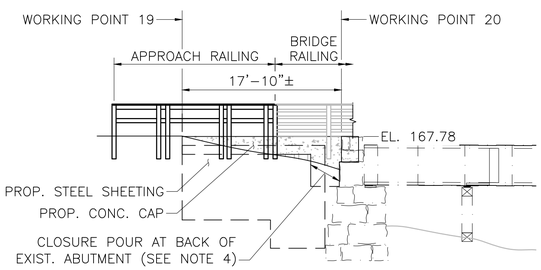
WALL 5 ELEVATION (WEST APPROACH NORTH SHEETING WALL)

SCALE: $\frac{1}{8}$"=1'-0"



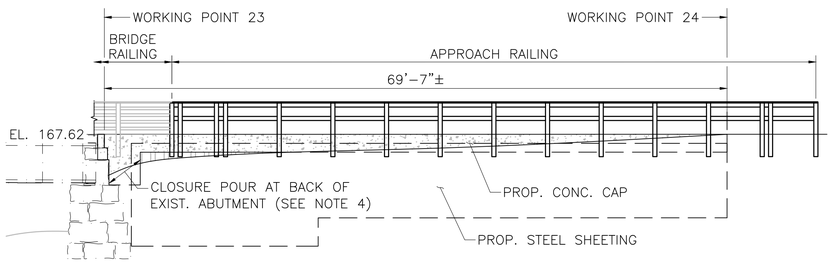
WALL 7 (EAST APPROACH NORTH SHEETING WALL)

SCALE: $\frac{1}{8}$"=1'-0"



WALL 6 ELEVATION (WEST APPROACH SOUTH SHEETING WALL)

SCALE: $\frac{1}{8}$"=1'-0"

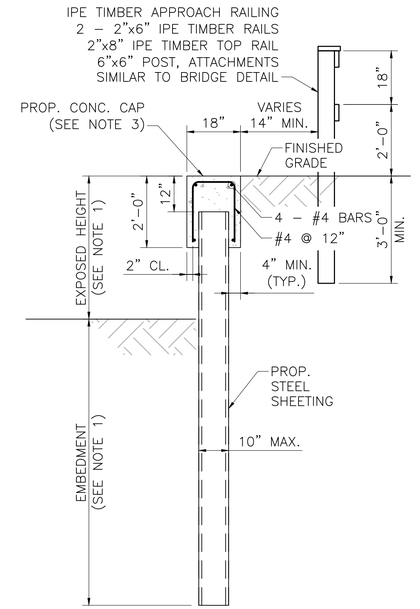


WALL 8 ELEVATION (EAST APPROACH SOUTH SHEETING WALL)

SCALE: $\frac{1}{8}$"=1'-0"

NOTES:

1. WALL EXPOSED HEIGHT TO BE VERIFIED IN FIELD. SHEETING EMBEDMENT DEPTH VARIES WITH WALL EXPOSED HEIGHT. SEE SHEETING EMBEDMENT TABLE BELOW.
2. SHEETING SECTION SHALL BE SELECTED BY CONTRACTOR. STEEL SHEETING SHALL BE GRADE 50 STEEL IN ACCORDANCE WITH ASTM A328 WITH A SECTION MODULUS (S_X) OF 7.08 IN^3 PER FOOT.
3. CONC. CAP SHALL BE 4000 PSI, $\frac{3}{4}$", 610 CEMENT CONCRETE. REINFORCING STEEL SHALL BE GRADE 60 EPOXY COATED STEEL IN ACCORDANCE WITH AASHTO M31. CONSTRUCTION JOINTS IN CAP SHALL BE SPACED AT 24'–0" MAX. CONTRACTOR SHALL SUBMIT JOINT LAYOUT PLAN TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINT.
4. CONTRACTOR SHALL DETERMINE LIMITS OF EXISTING STONE BLOCK ABUTMENTS PRIOR TO DRIVING SHEETING. SHEETING SHALL BE DRIVEN AS CLOSE TO THE BACK OF THE EXISTING ABUTMENTS AS PRACTICAL. WORKING POINT STATION/OFFSET AT THESE LOCATIONS (3, 6, 7, AND 10) IS SUBJECT TO CHANGE BASED ON CONDITIONS ENCOUNTERED IN THE FIELD. CONCRETE CAP SHALL BE EXTENDED AS NEEDED TO FORM A CLOSURE POUR BETWEEN END OF SHEETING AND BACK OF EXISTING ABUTMENT. HEIGHT OF CAP SHALL BE INCREASED AT CLOSURE POUR AS NEEDED TO MAINTAIN REQUIRED GRADE SEPARATION.



TYPICAL SHEETING SECTION

SCALE: $\frac{1}{2}$"=1'-0"

SHEETING EMBEDMENT TABLE

EXPOSED HEIGHT	EMBEDMENT
2'–0" (MAX.)	7'–4" (MIN.)
3'–0" (MAX.)	9'–5" (MIN.)
4'–0" (MAX.)	13'–8" (MIN.)
6'–0" (MAX.)	15'–7" (MIN.)
7'–0" (MAX.)	17'–7" (MIN.)

NO.	DESCRIPTION	BY	DATE	APPR.
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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

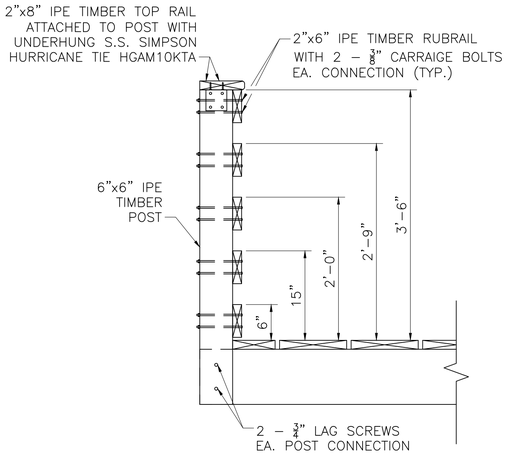
BRIDGE H–25–017 (BRIDGE 128) – SHEETING PLAN

PLAN192 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	DEC 2021	AMS	SBK	KGK	.	.

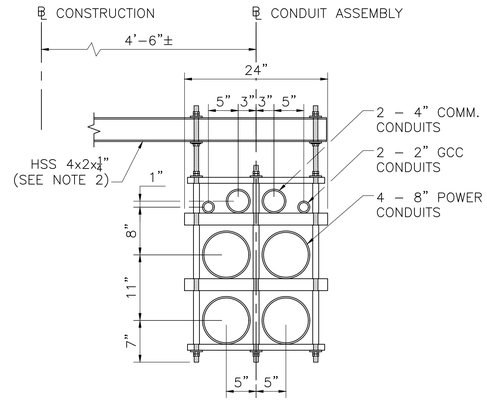
NOTES:

1. EXIST. STEEL GIRDERS CAN SUPPORT TEMPORARY H20 LOADING DURING CONSTRUCTION. TIMBER DECKING IS DESIGNED FOR H10 LOADING WITHOUT IMPACT AND 90 PSF PEDESTRIAN LOADING, WHICHEVER CONTROLS. CONTRACTOR SHALL DESIGN TEMPORARY DECKING IF BRIDGE IS INTENDED TO BE USED FOR CONSTRUCTION VEHICLES.
2. HSS CONDUIT SUPPORT MEMBERS SHALL BE STRUCTURAL STEEL IN ACCORDANCE WITH MASSDOT STANDARD SPECIFICATIONS SECTION M8.05.0 AND SHALL BE PAINTED IN ACCORDANCE WITH MASSDOT STANDARD SPECIFICATIONS SECTION M7.02. PAINT COLOR FOR HSS SUPPORT MEMBER SHALL MATCH COLOR OF CONDUIT HANGER ASSEMBLY.



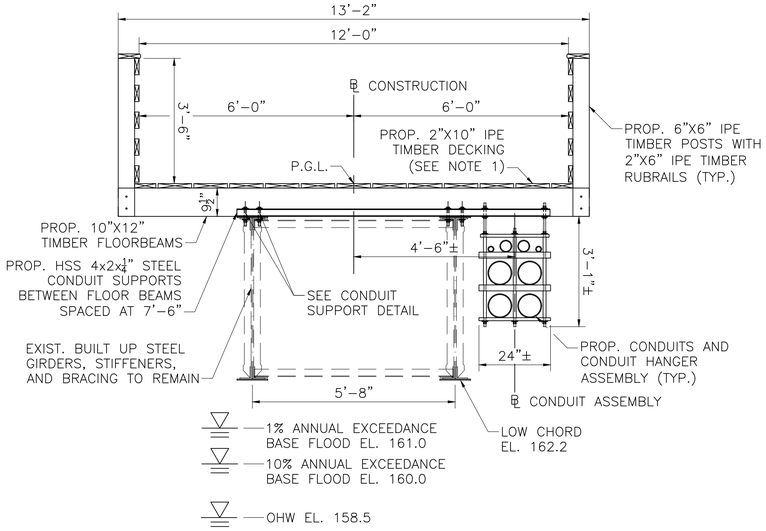
RAILING CONNECTION DETAIL

SCALE: 1"=1'-0"



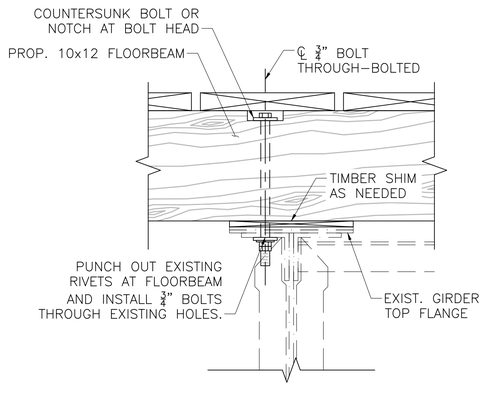
CONDUIT ASSEMBLY DETAIL

SCALE: 1"=1'-0"

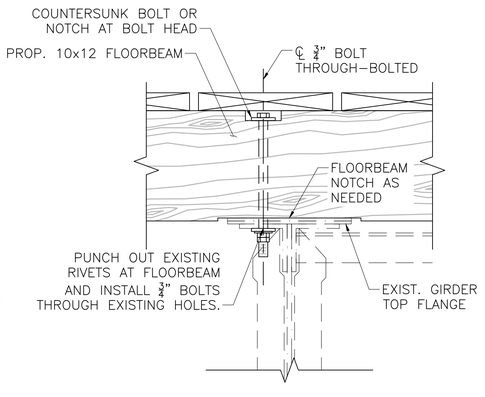


BRIDGE TRANSVERSE SECTION

SCALE: ½"=1'-0"



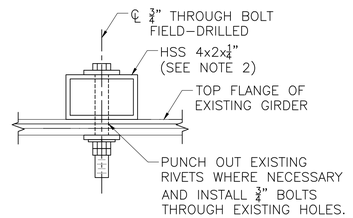
AT BUILD-UP



AT CUT-OUT

FLOORBREAM CONNECTION DETAIL

SCALE: 2"=1'-0"



CONDUIT SUPPORT DETAIL

SCALE: 3"=1'-0"

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

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EVERSOURCE

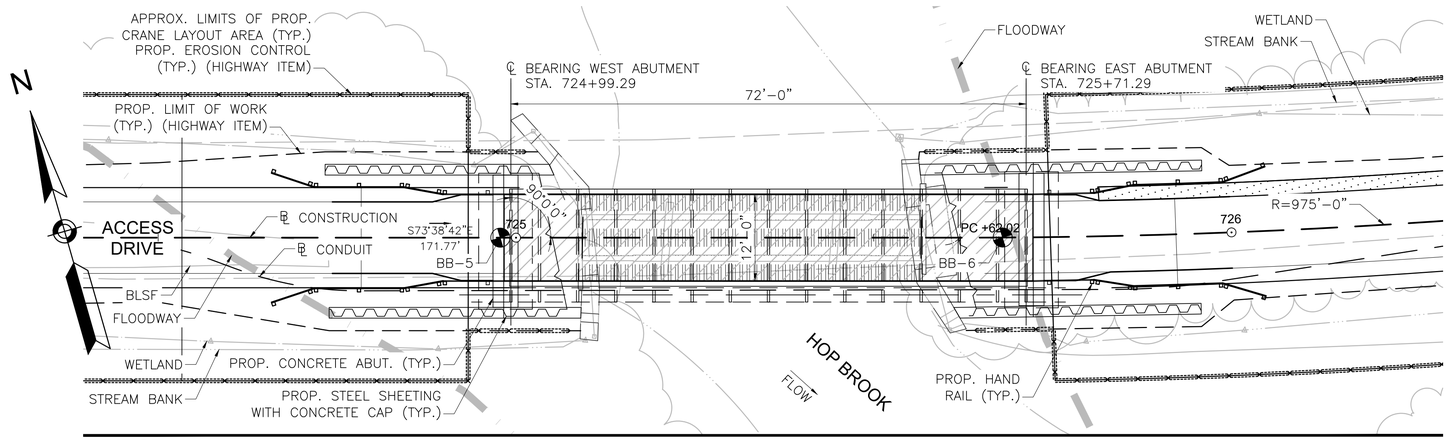
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE S–31–017 (BRIDGE 128) – SECTION & DETAILS

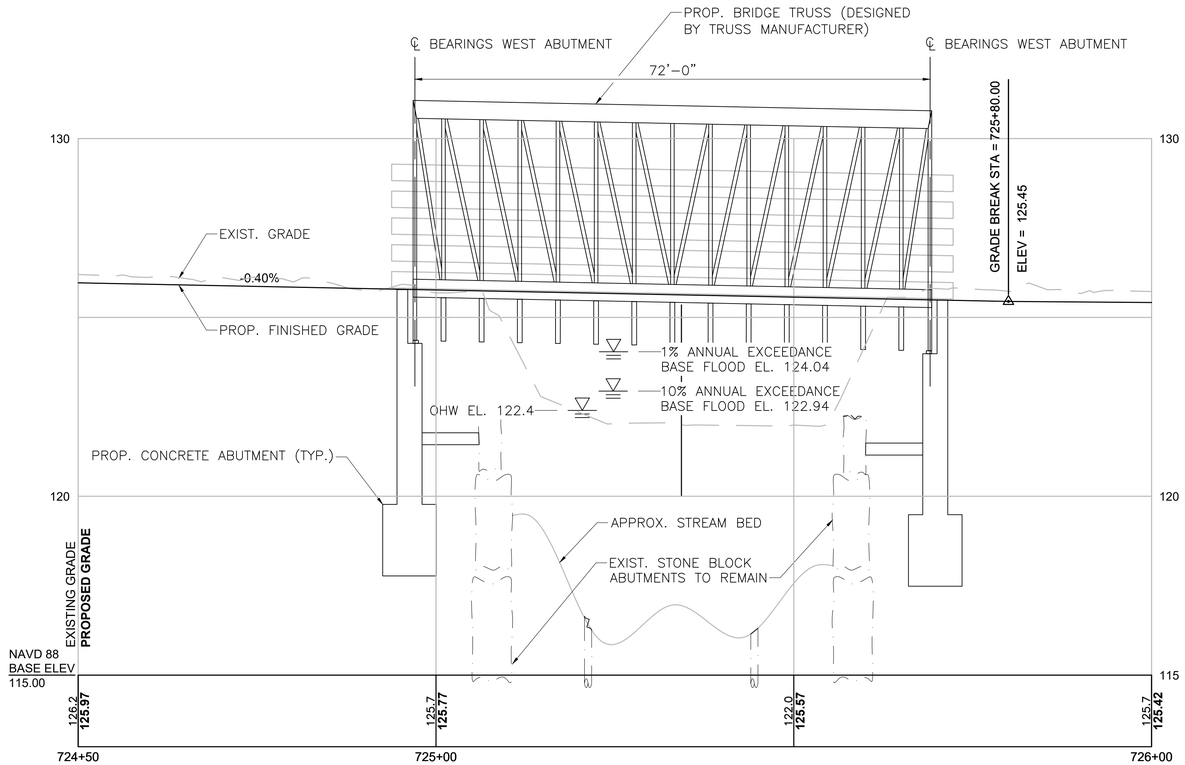
PLAN 193OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	DEC 2021	AMS	SBK	KGK	.	.



BRIDGE KEY PLAN

SCALE: 1"=10'-0"



PROFILE - ACCESS DRIVE

HORIZONTAL SCALE: 1"=10'-0"
VERTICAL SCALE: 1"=2'-0"

GENERAL NOTES: BRIDGE 127

DESIGN:
IN ACCORDANCE WITH THE 2009 AASHTO GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES (WITH 2015 INTERIM REVISIONS) FOR H10 LOADING WITHOUT IMPACT AND 90 PSF PEDESTRIAN LOADING, WHICHEVER CONTROLS. DESIGNED FOR TEMPORARY H20 LOADING DURING CONSTRUCTION ONLY. RAILING DESIGNED FOR PEDESTRIAN LOADING ONLY.

CONCRETE:
ALL CAST IN PLACE CONCRETE SHALL BE 4000 PSI, $1\frac{1}{2}$", 565 CEMENT CONCRETE.
GROUT TO BE USED FOR DRILLING AND GROUTING DOWELS INTO EXISTING SUBSTRUCTURES SHALL BE A CEMENTITIOUS GROUT LISTED ON THE MASSDOT QUALIFIED CONSTRUCTION MATERIALS LIST.

REINFORCEMENT:
REINFORCING STEEL SHALL BE EPOXY COATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31 GRADE 60.

STEEL:
ALL STRUCTURAL STEEL OTHER THAN STRUCTURAL TUBING SHALL BE AASHTO M270 GRADE 50 GALVANIZED AND PAINTED. STRUCTURAL TUBING SHALL BE HEAT TREATED ASTM A1085 GRADE A, WITH THE SUPPLEMENTAL REQUIREMENTS S1, GALVANIZED AND PAINTED.
BOLTS THAT FASTEN TO STEEL ONLY SHALL BE AASHTO M1644 (ASTM 325) HIGH STRENGTH BOLTS, GALVANIZED.

TIMBER:
DECK PLANKING AND RAILINGS: IPE, F_b min = 22,000 psi.
ALL NAILS, SCREWS, BOLTS, WASHERS, CONNECTORS, FASTENERS AND HARDWARE FOR WOOD CONNECTIONS SHALL BE STAINLESS STEEL TYPE 304 OR TYPE 316.
WHERE TREATED TIMBER MEMBERS ARE IN DIRECT CONTACT WITH STEEL PROVIDE VYCOR DECK PROTECTOR BARRIER MEMBRANE BY W.R. GRACE & CO. OR APPROVED EQUAL.

SURVEY AND EXISTING CONDITIONS:
THE EXISTING CONDITIONS SHOWN ON THIS PLAN WERE DEVELOPED FROM A COMBINED EFFORT OF AERIAL PHOTOGRAMMETRIC MAPPING BY EASTERN TOPOGRAPHICS, INC., BASED ON AERIAL PHOTOGRAPHS TAKEN ON FEBRUARY 22, 2013, AND AUGMENTED BY AN ON-THE-GROUND SURVEY PERFORMED BY VHB DURING 2015 AND 2017.
THE HORIZONTAL CONTROL IS BASED ON THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM AND THE NATIONAL GEODETIC SURVEY (NAD83). ALL ELEVATION IS US FEET, REFERENCED TO THE NORTH AMERICA VERTICAL DATUM OF 1988 (NAVD88).

DEMOLITION AND CONSTRUCTION:
ALL EXISTING MATERIALS REMOVED AND NOT REUSED AND ALL WASTE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
TREATED TIMBER AND CONTAMINATED WASTE SHALL BE DISPOSED OF OFF SITE AT AN APPROVED FACILITY.
ALL UNSUITABLE MATERIALS SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE RESIDENT ENGINEER. BACKFILL WITH GRAVEL BORROW FOR BRIDGE FOUNDATIONS.
BACKFILL AROUND PROPOSED SUBSTRUCTURE SHALL BE GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES.
THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO ENSURE THE STABILITY AND SAFE PERFORMANCE OF ALL STRUCTURAL ELEMENTS DURING DEMOLITION AND CONSTRUCTION.
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ADEQUATE SHIELDING OR NETTING DURING DEMOLITION AND CONSTRUCTION TO ADEQUATELY PROTECT WORKERS AND TO PREVENT DEBRIS AND MATERIALS FROM ENTERING THE WATERWAY.
ANY DAMAGE TO REMAINING EXISTING COMPONENTS THAT IS CAUSED BY THE CONTRACTOR'S ACTIVITY SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR, AT NO ADDITIONAL EXPENSE.

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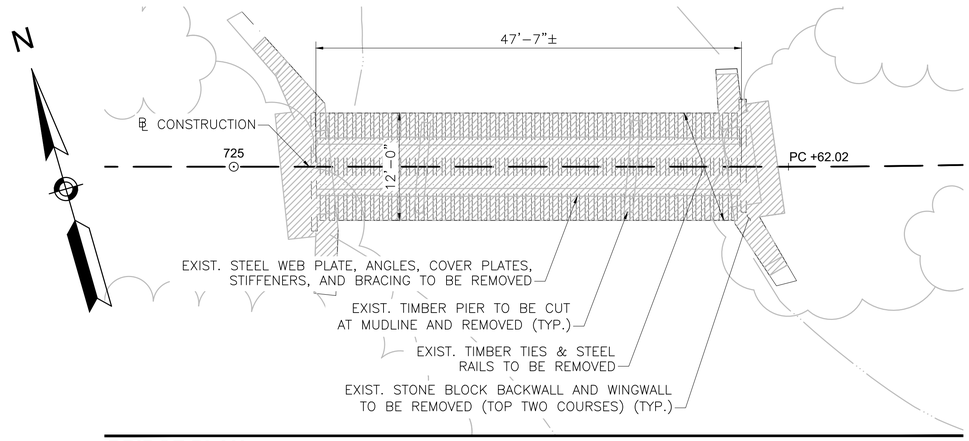
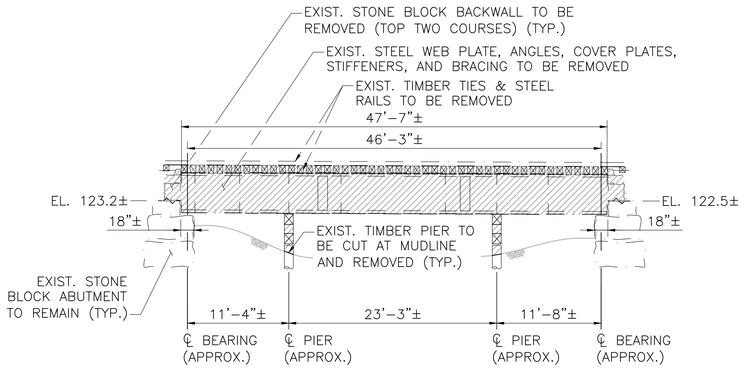
SUDBURY-HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
BRIDGE S-31-016 (BRIDGE 127) - KEY PLAN & PROFILE
PLAN 194 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP R.	DRAWING NO.	REV.
H: 1"=10' V: 1"=2'	DEC 2021	AMS	SBK	KGK	.	.



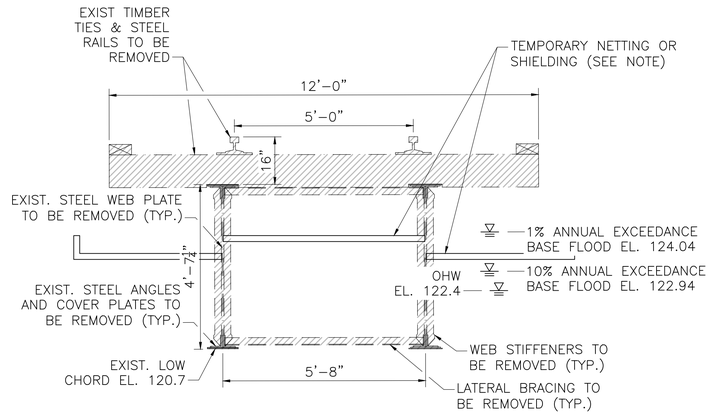
BRIDGE PLAN

SCALE: $\frac{1}{8}$"=1'-0"



BRIDGE ELEVATION

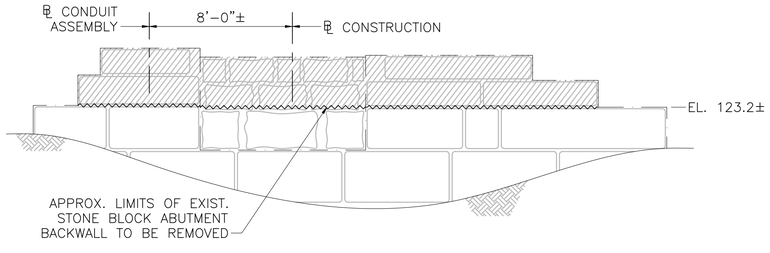
SCALE: $\frac{1}{8}$"=1'-0"



BRIDGE TRANSVERSE SECTION

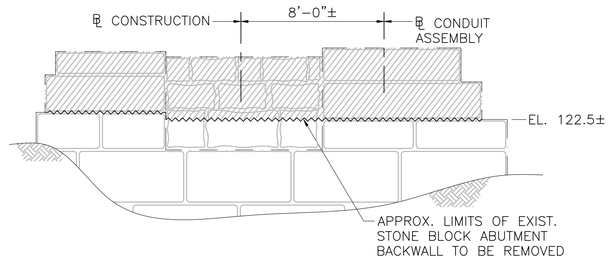
SCALE: $\frac{1}{2}$"=1'-0"

NOTE: CONTRACTOR SHALL DESIGN AND INSTALL TEMPORARY PROTECTIVE SHIELDING OR NETTING DURING DEMOLITION OF BRIDGE AND AS NEEDED DURING CONSTRUCTION OF NEW BRIDGE TO PREVENT CONSTRUCTION DEBRIS FROM FALLING INTO THE WATER BODIES BELOW. SEE PROJECT SPECIFICATIONS AND PERMITTING DOCUMENTS FOR ADDITIONAL REQUIREMENTS AND INFORMATION.



WEST ABUTMENT ELEVATION

SCALE: $\frac{1}{4}$"=1'-0"



EAST ABUTMENT ELEVATION

SCALE: $\frac{1}{4}$"=1'-0"

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EVERSOURCE

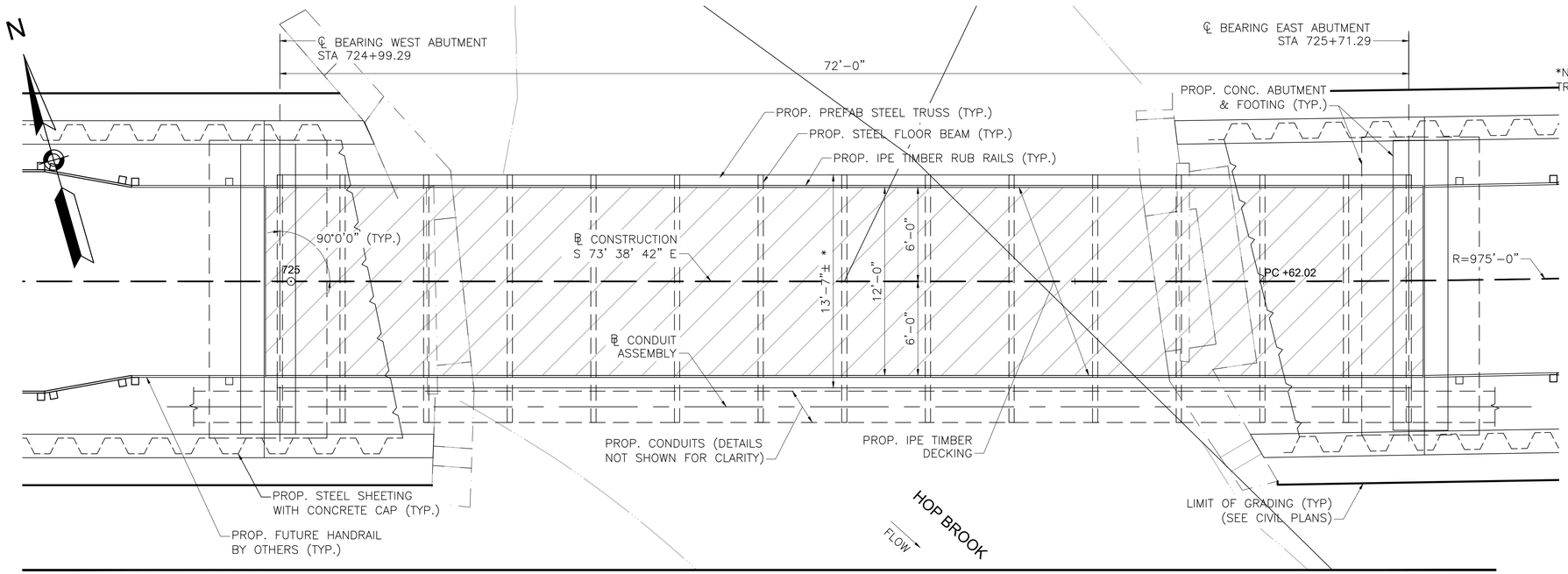
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE S–31–016 (BRIDGE 127) – DEMOLITION PLAN

PLAN 197 OF 349

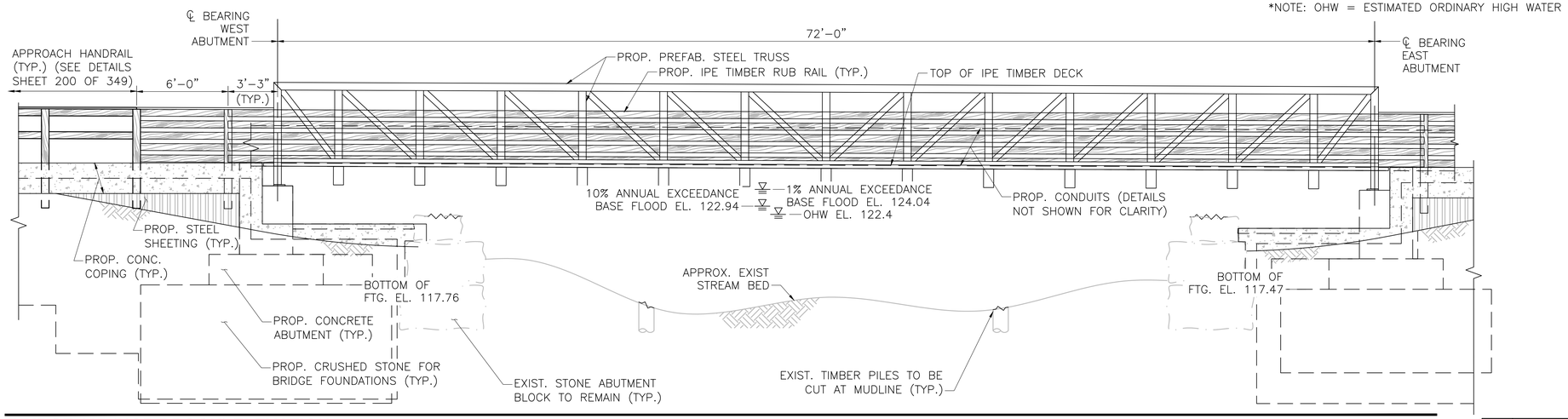
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	DEC 2021	AMS	SBK	KGK	.	.



BRIDGE 127 (HOP BROOK) PLAN

SCALE: $\frac{1}{4}$"=1'-0"

*NOTE: OHW = ESTIMATED ORDINARY HIGH WATER



BRIDGE 127 (HOP BROOK) ELEVATION

SCALE: $\frac{1}{4}$"=1'-0"

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE S–31–016 (BRIDGE 127, HOP BROOK) – PLAN & EL.

PLAN 198 OF 349

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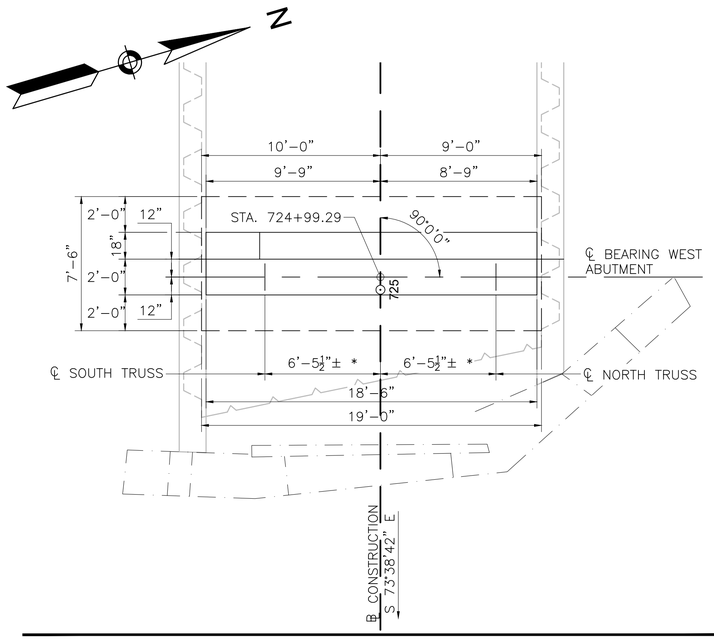
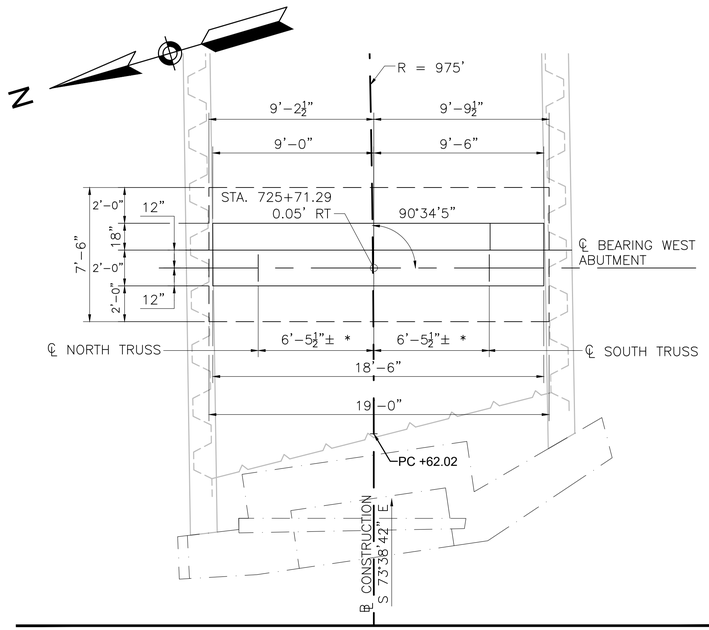
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=4'	DEC 2021	AMS	SBK	KGK	.	.



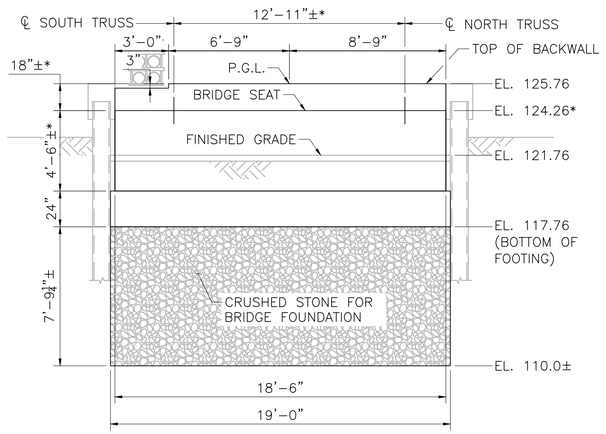
WEST ABUTMENT PLAN

SCALE: ¼"=1'-0"



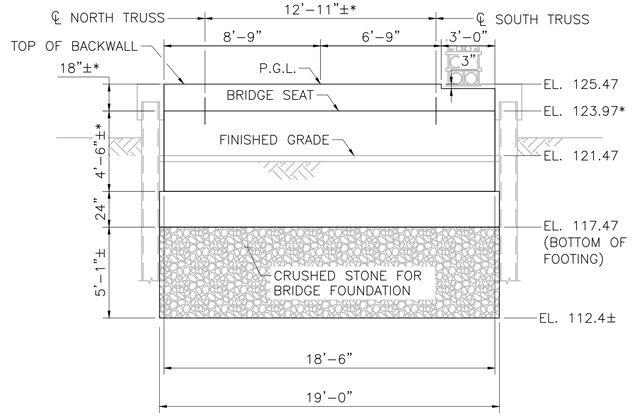
EAST ABUTMENT PLAN

SCALE: ¼"=1'-0"



WEST ABUTMENT ELEVATION

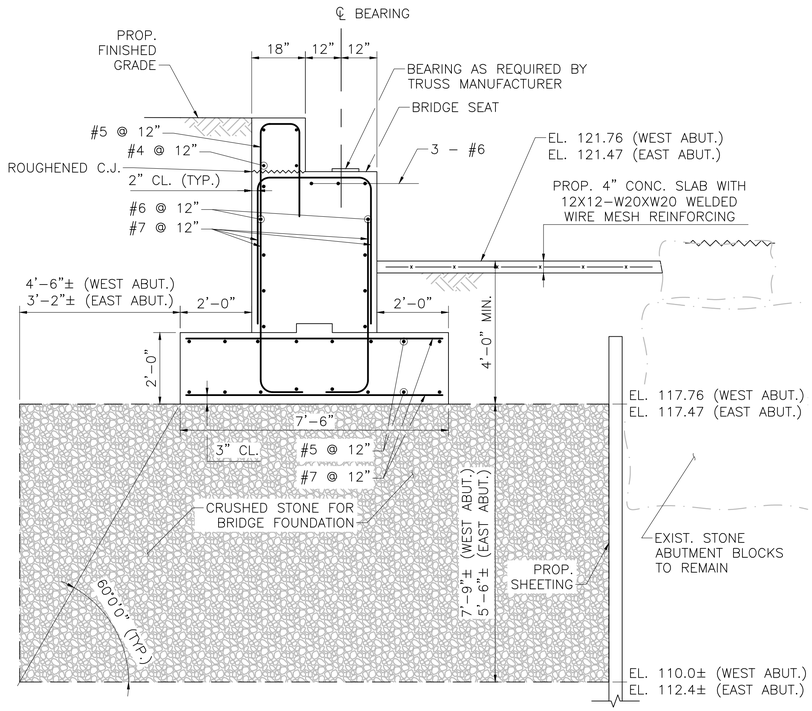
SCALE: ¼"=1'-0"



EAST ABUTMENT ELEVATION

SCALE: ¼"=1'-0"

*NOTE: ACTUAL DIMENSIONS PER TRUSS MANUFACTURER'S DESIGN



TYPICAL ABUTMENT SECTION

SCALE: ½"=1'-0"

NO.	DESCRIPTION	BY	DATE	APPR.

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EVERSOURCE

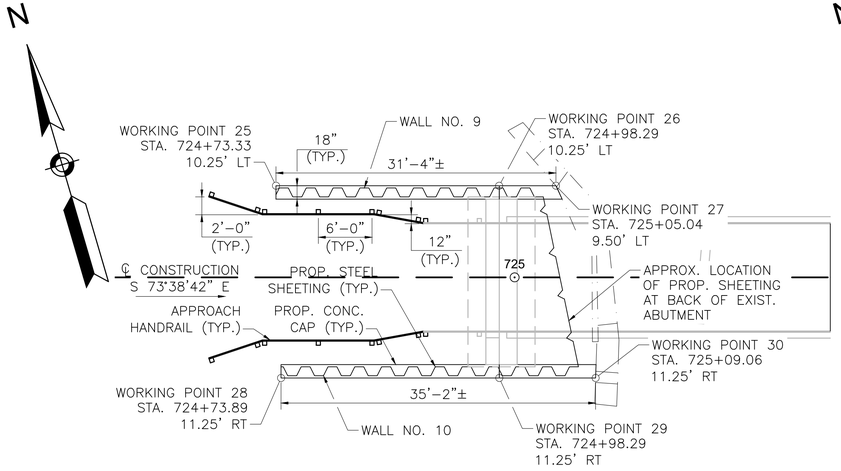
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE S–31–016 (BRIDGE 127) – SUBSTRUCTURE DETAILS

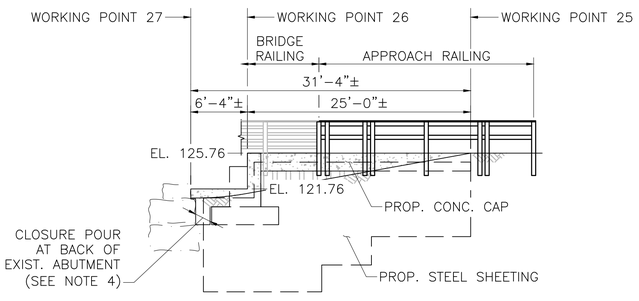
PLAN 99 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=4'	DEC 2021	AMS	SBK	KGK	.	



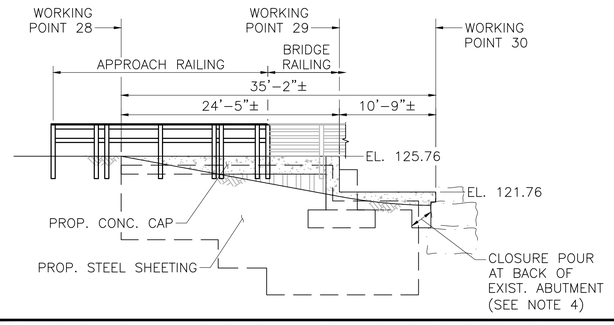
WALL 9 & 10 SHEETING PLAN (WEST APPROACH)

SCALE: $\frac{1}{4}$"=1'-0"



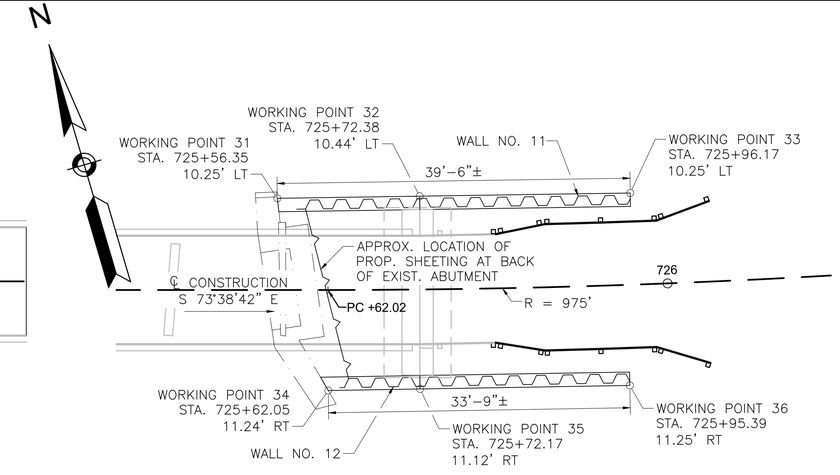
WALL 9 ELEVATION (WEST APPROACH NORTH SHEETING WALL)

SCALE: $\frac{1}{4}$"=1'-0"



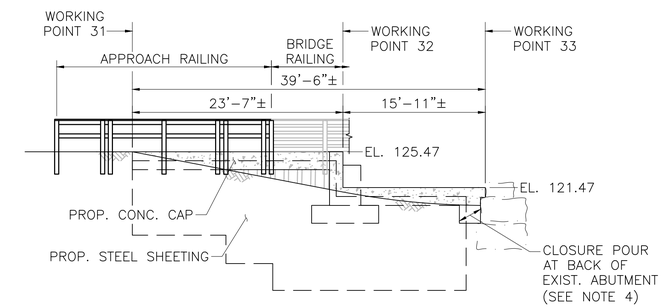
WALL 10 ELEVATION (WEST APPROACH SOUTH SHEETING WALL)

SCALE: $\frac{1}{4}$"=1'-0"



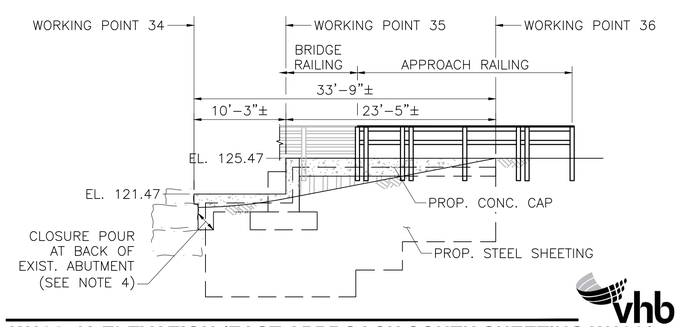
WALL 11 & 12 SHEETING PLAN (EAST APPROACH)

SCALE: $\frac{1}{4}$"=1'-0"



WALL 11 ELEVATION (EAST APPROACH NORTH SHEETING WALL)

SCALE: $\frac{1}{4}$"=1'-0"

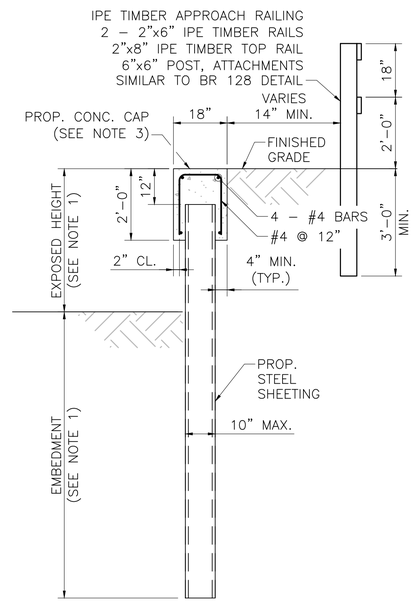


WALL 12 ELEVATION (EAST APPROACH SOUTH SHEETING WALL)

SCALE: $\frac{1}{4}$"=1'-0"

NOTES:

1. WALL EXPOSED HEIGHT TO BE VERIFIED IN FIELD. SHEETING EMBEDMENT DEPTH VARIES WITH WALL EXPOSED HEIGHT. SEE SHEETING EMBEDMENT TABLE BELOW.
2. SHEETING SECTION SHALL BE SELECTED BY CONTRACTOR. STEEL SHEETING SHALL BE GRADE 50 STEEL IN ACCORDANCE WITH ASTM A328 WITH A SECTION MODULUS (S_x) OF 7.08 IN^3 PER FOOT.
3. CONC. CAP SHALL BE 4000 PSI, $\frac{3}{4}$", 610 CEMENT CONCRETE. REINFORCING STEEL SHALL BE GRADE 60 EPOXY COATED STEEL IN ACCORDANCE WITH AASHTO M31. CONSTRUCTION JOINTS IN CAP SHALL BE SPACED AT 24'-0" MAX. CONTRACTOR SHALL SUBMIT JOINT LAYOUT PLAN TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINT.
4. CONTRACTOR SHALL DETERMINE LIMITS OF EXISTING STONE BLOCK ABUTMENTS PRIOR TO DRIVING SHEETING. SHEETING SHALL BE DRIVEN AS CLOSE TO THE BACK OF THE EXISTING ABUTMENTS AS PRACTICAL. WORKING POINT STATION/OFFSET AT THESE LOCATIONS (3, 6, 7, AND 10) IS SUBJECT TO CHANGE BASED ON CONDITIONS ENCOUNTERED IN THE FIELD. CONCRETE CAP SHALL BE EXTENDED AS NEEDED TO FORM A CLOSURE POUR BETWEEN END OF SHEETING AND BACK OF EXISTING ABUTMENT. HEIGHT OF CAP SHALL BE INCREASED AT CLOSURE POUR TO A DEPTH 2'-0" BELOW FINISHED GRADE TO MAINTAIN REQUIRED GRADE SEPARATION.



TYPICAL SHEETING SECTION

SCALE: $\frac{1}{2}$"=1'-0"

SHEETING EMBEDMENT TABLE

EXPOSED HEIGHT	EMBEDMENT
2'–0" (MAX.)	7'–4" (MIN.)
3'–0" (MAX.)	9'–5" (MIN.)
4'–0" (MAX.)	11'–6" (MIN.)
5'–0" (MAX.)	13'–7" (MIN.)
6'–0" (MAX.)	15'–7" (MIN.)
7'–0" (MAX.)	17'–7" (MIN.)

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
BRIDGE S–31–016 (BRIDGE 127) – SHEETING PLAN
PLAN 200 OF 349

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=4'	DEC 2021	AMS	SBK	KGK	.	.

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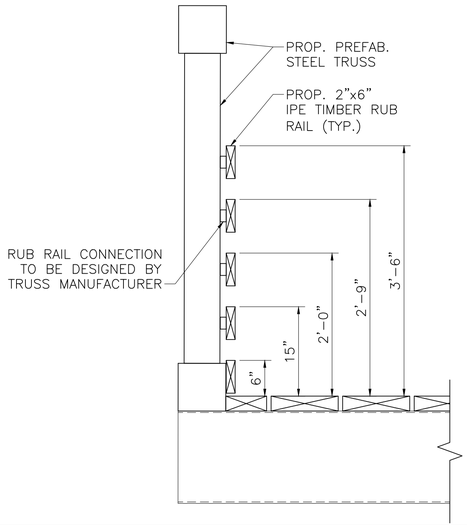
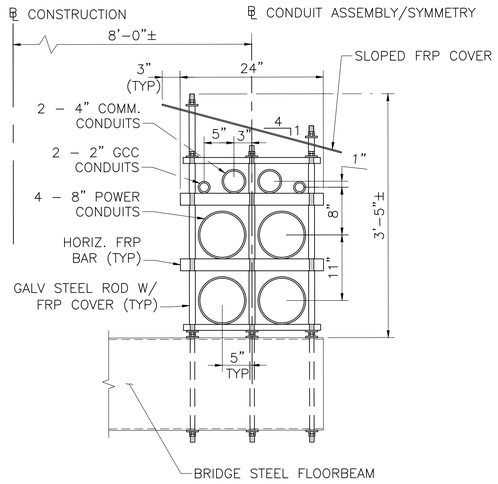


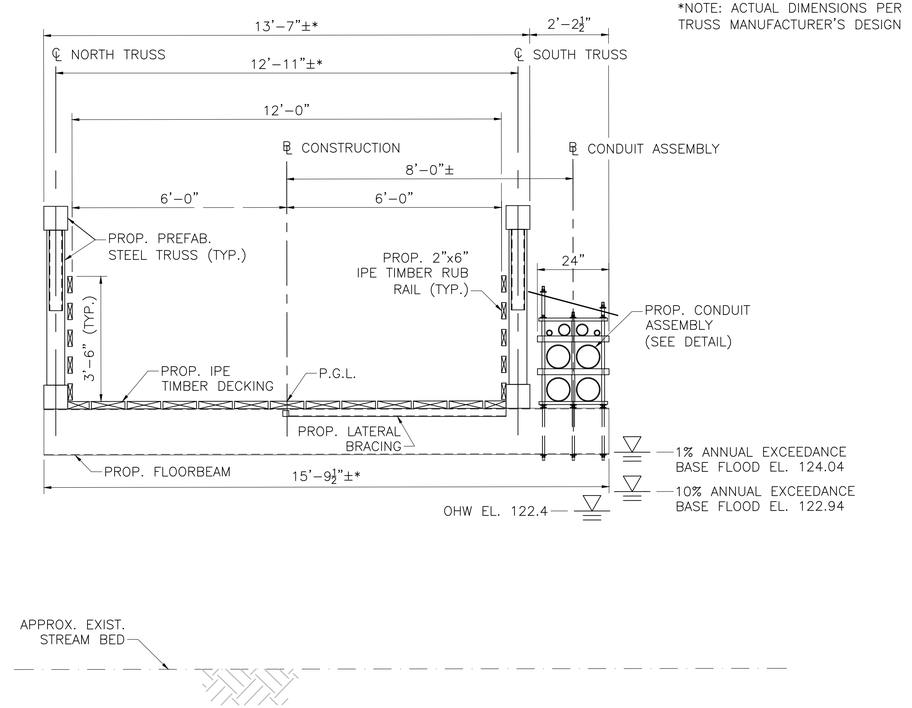
RAILING CONNECTION DETAIL

SCALE: 1"=1'-0"



CONDUIT ASSEMBLY DETAIL

SCALE: 1"=1'-0"



BRIDGE TRANSVERSE SECTION

SCALE: ½"=1'-0"

NOTES:

1. TRUSS SHALL BE DESIGNED FOR TEMPORARY H20 LOADING DURING CONSTRUCTION. TIMBER DECKING IS DESIGNED FOR H10 LOADING WITHOUT IMPACT AND 90 PSF PEDESTRIAN LOADING, WHICHEVER CONTROLS. CONTRACTOR SHALL DESIGN TEMPORARY DECKING IF BRIDGE IS INTENDED TO BE USED FOR CONSTRUCTION VEHICLES.

NO.	DESCRIPTION	BY	DATE	APPR.
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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE S–31–016 (BRIDGE 127) – SECTION OF DETAILS

PLAN 201OF 349

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SCALE: unless noted	DATE	DRAWN	CH'KD.	APPR.	DRAWING NO.	REV.
VARIES	JAN 2020	AMS	SBK	KGK	.	#