EVERSOURCE

SUDBURY-HUDSON
TRANSMISSION RELIABILITY PROJECT
SUDBURY NOTICE OF INTENT PLANS

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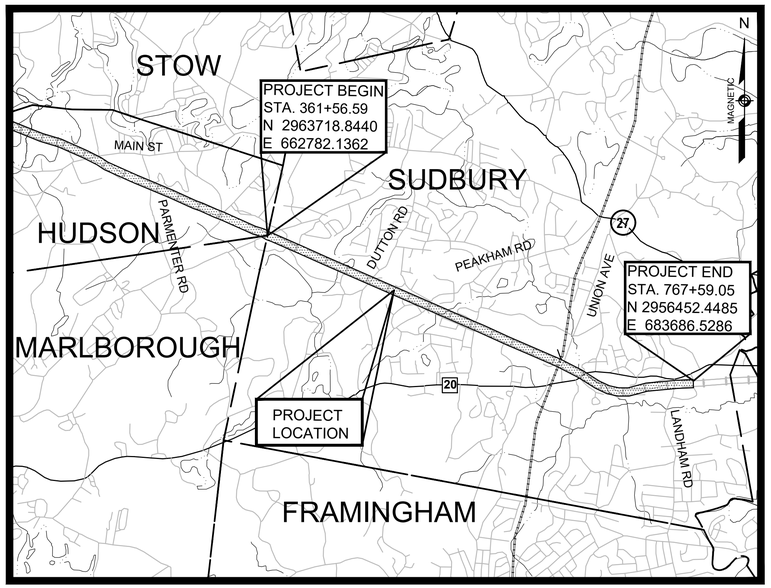

REFERENCE MANUALS
THESE PLANS ARE SUPPLEMENTED BY THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR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

COMMONWEALTH OF MASSACHUSETTS
MARGOT E. SCHOENFELDER
CIVIL
No. 53582
REGISTERED PROFESSIONAL ENGINEER

10/15/2020
ENGINEER DATE

COMMONWEALTH OF MASSACHUSETTS
MARK A COSTA
CIVIL
No. 49941
REGISTERED PROFESSIONAL ENGINEER

10-15-2020
ENGINEER DATE
SHEETS 166-167

COMMONWEALTH OF MASSACHUSETTS
SHANTA B. KELLER
STRUCTURAL
No. 51381
REGISTERED PROFESSIONAL ENGINEER

10/15/2020
ENGINEER DATE
SHEETS 187-199

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VANASSE HANGEN BRUSTLIN, INC.
WATERTOWN, MASSACHUSETTS

ORIGINALLY SUBMITTED MARCH 5, 2020
REVISED JULY 30, 2020
REVISED OCTOBER 15, 2020

0 3500 7000 10500 14000
SCALE: 1" = 3500'

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TITLE SHEET & INDEX
PLAN 1 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=3500'	OCT 2020	MS	SK	MES	.	.

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
C		CABLE MANHOLE
D		DRAINAGE MANHOLE
E		ELECTRIC MANHOLE
G		GAS MANHOLE
M		MISC MANHOLE
S		SEWER MANHOLE
T		TELEPHONE MANHOLE
W		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' BLDF 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
100'BZ~AURA		100 FT AURA BUFFER
100'VPBZ		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
	CW	CROSSWALK - 12" WHITE
	SWL	SOLID WHITE LINE - 4" (UNLESS OTHERWISE NOTED)
	DBYL	DOUBLE YELLOW LINE - 4" (UNLESS OTHERWISE NOTED)

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 WITH CONSTRUCTION FENCING AND SIGNAGE THAT SHALL BE INSTALLED IN CONSULTATION WITH APPROVED BY THE CULTURAL RESOURCES CONSULTANT GIVEN 24 HOURS ADVANCED NOTICE 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 AFTER CONSULTATION WITH THE CULTURAL RESOURCES CONSULTANT, WHO SHALL SPECIFY THE METHODOLOGY USED TO REMOVE, PRESERVE, AND RESET THE FEATURE.

NO.	DESCRIPTION	BY	DATE	APP'R.

REVISION

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EVERSOURCE

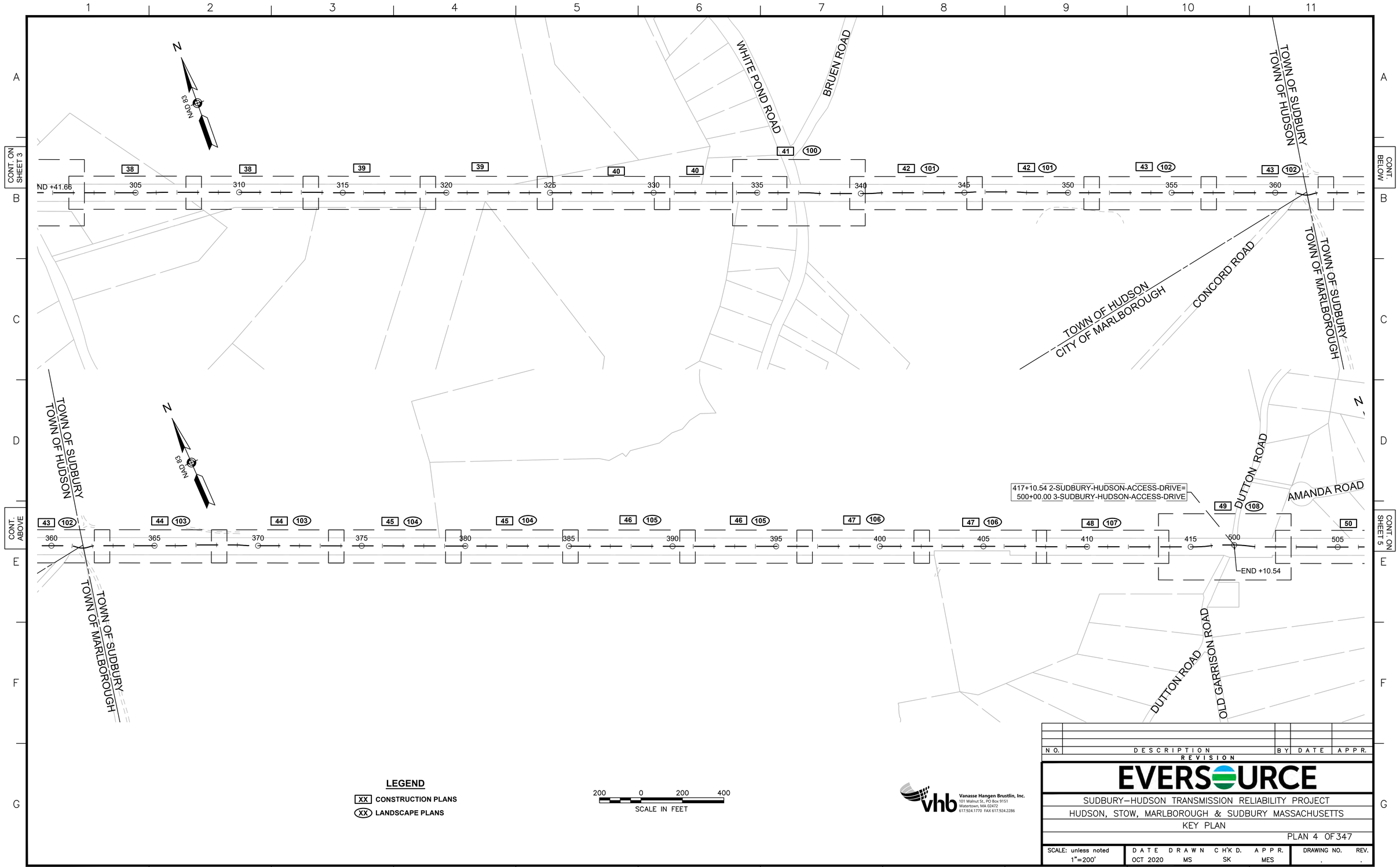
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LEGEND, ABBREVIATIONS, & GENERAL NOTES

PLAN 2 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
NTS	OCT 2020	MS	SK	MS	.	.



LEGEND

XX CONSTRUCTION PLANS

(XX) LANDSCAPE PLANS

200 0 200 400

SCALE IN FEET

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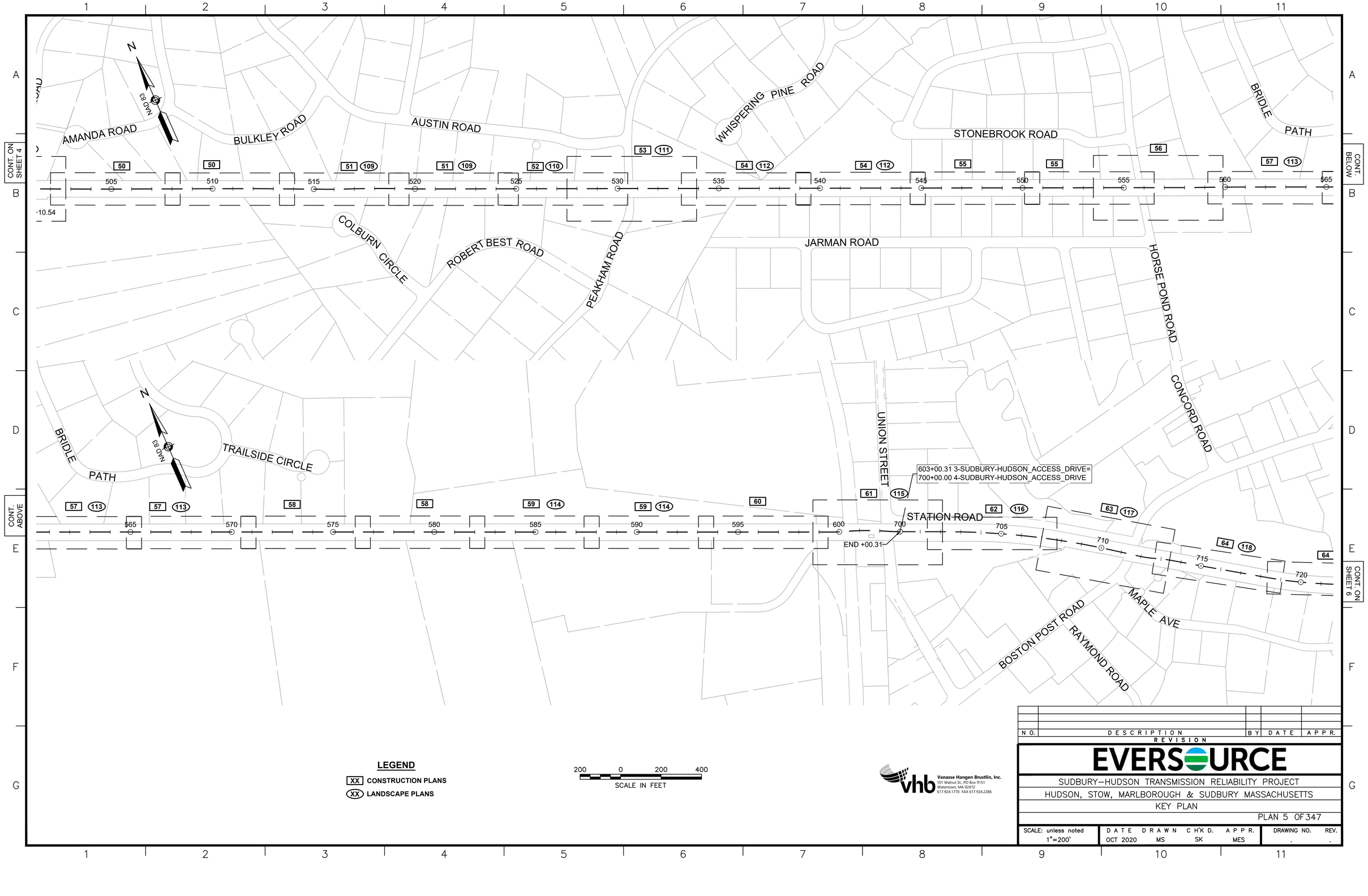
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

KEY PLAN

PLAN 4 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=200'	OCT 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 5 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=200'	OCT 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 347

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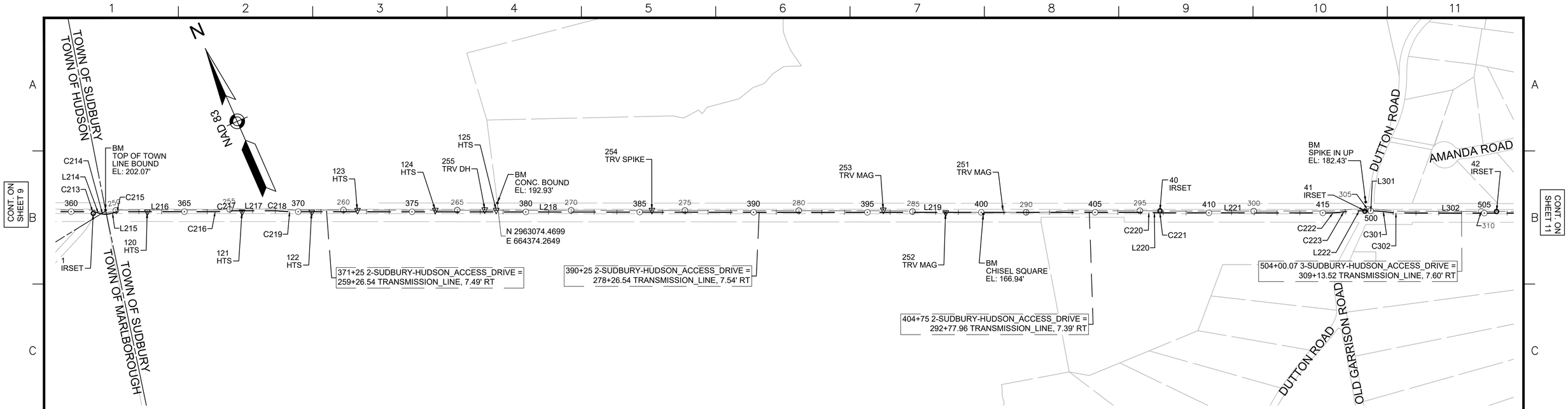


2-SUDBURY-HUDSON_ACCESS_DRIVE CONSTRUCTION BASELINE DATA

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

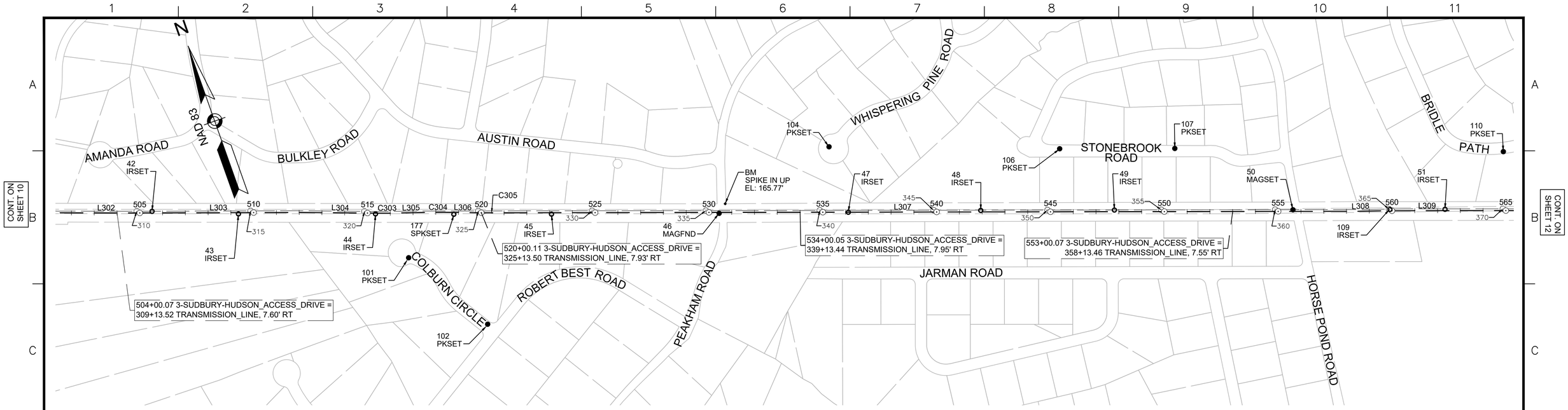
NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
SURVEY TIE–IN PLANS
PLAN 10 OF 347

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

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

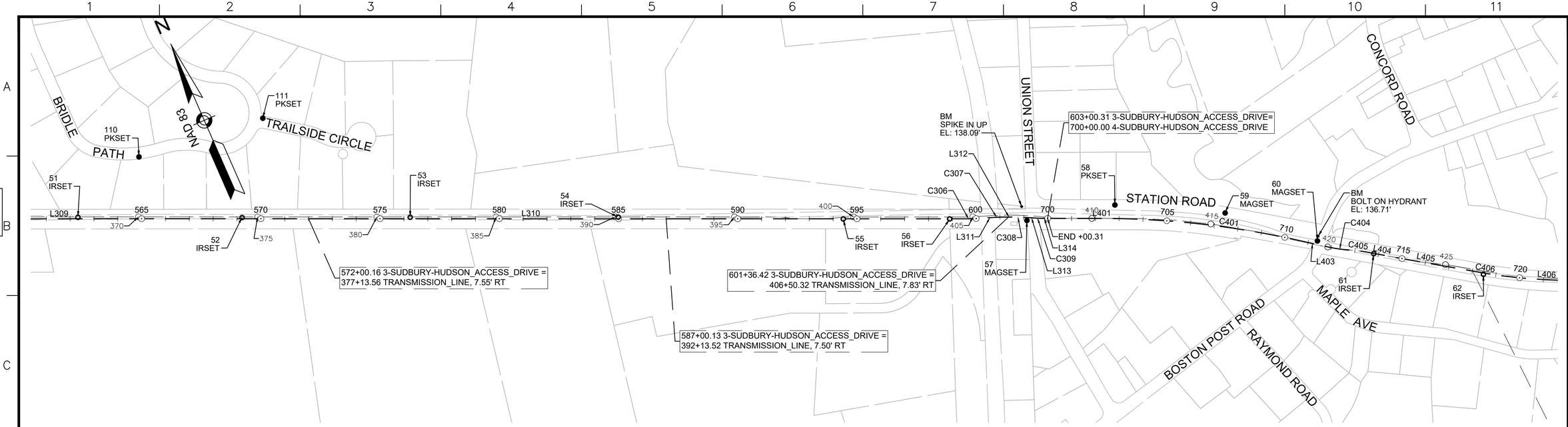
NO.	DESCRIPTION	BY	DATE	APP'R.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
SURVEY TIE–IN PLANS
PLAN 11 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=200'	OCT 2020	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+14.13	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

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

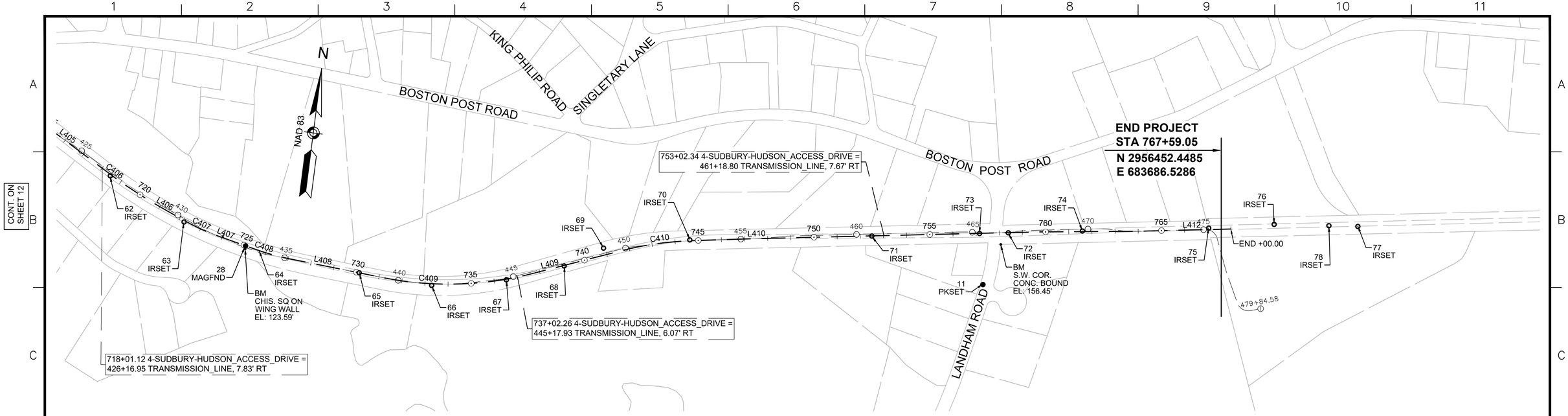
NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
SURVEY TIE–IN PLANS
PLAN 12 OF 347

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

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

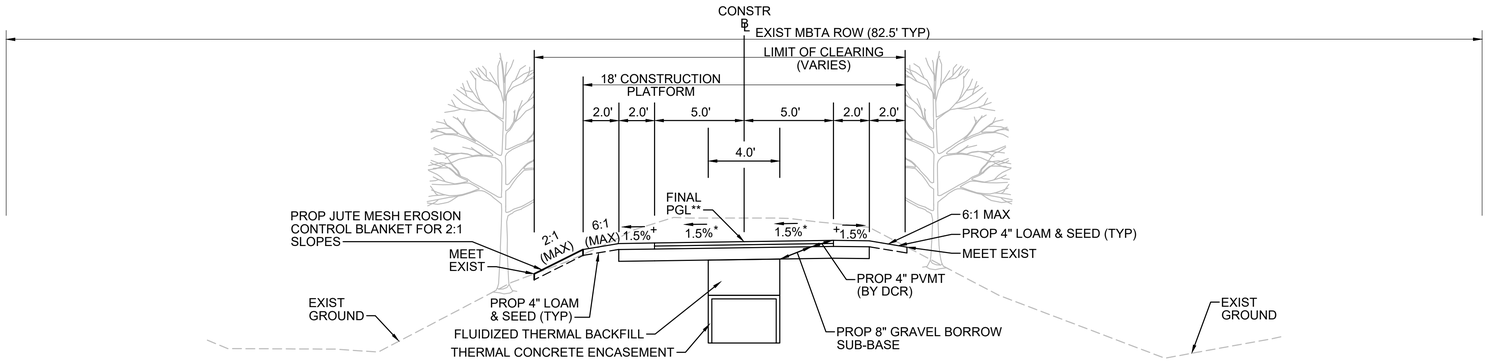
NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
SURVEY TIE–IN PLANS
PLAN 13 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=200'	OCT 2020	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±

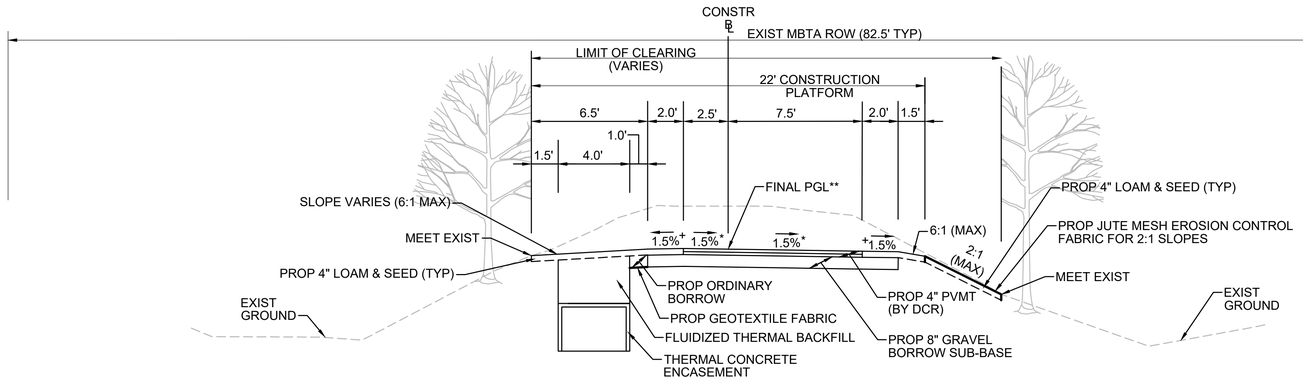
NTS

* 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±

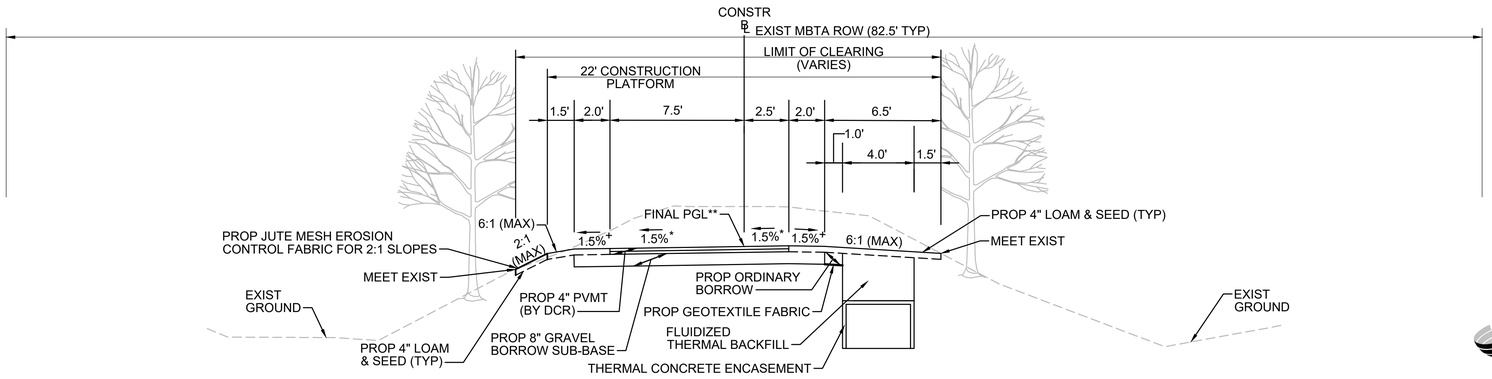
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

** 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 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%

** 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

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

EVERSOURCE

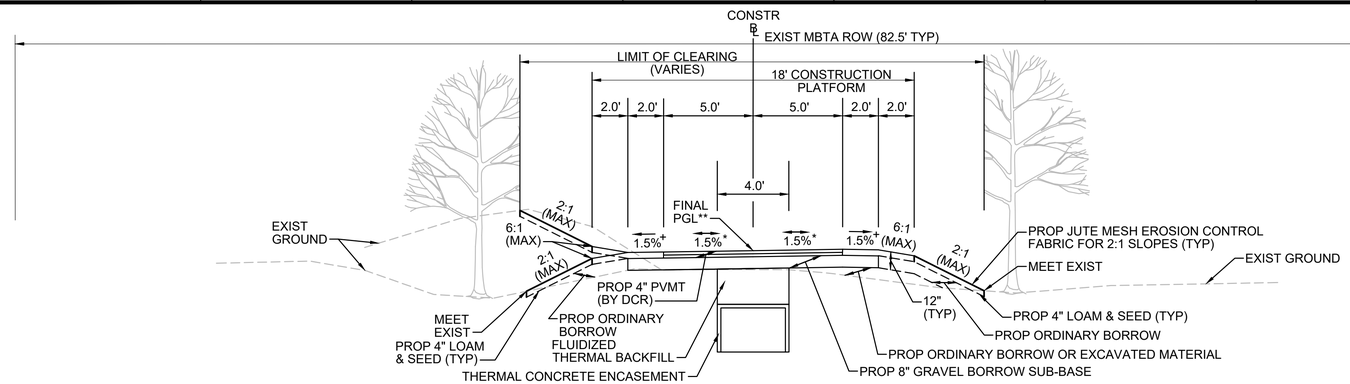
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TYPICAL SECTIONS

PLAN 14 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	OCT 2020	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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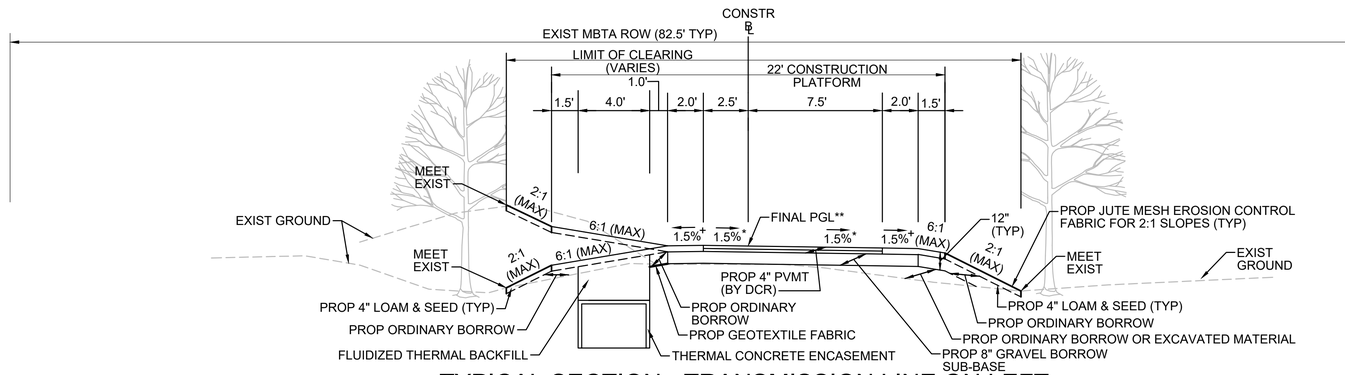
\+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES

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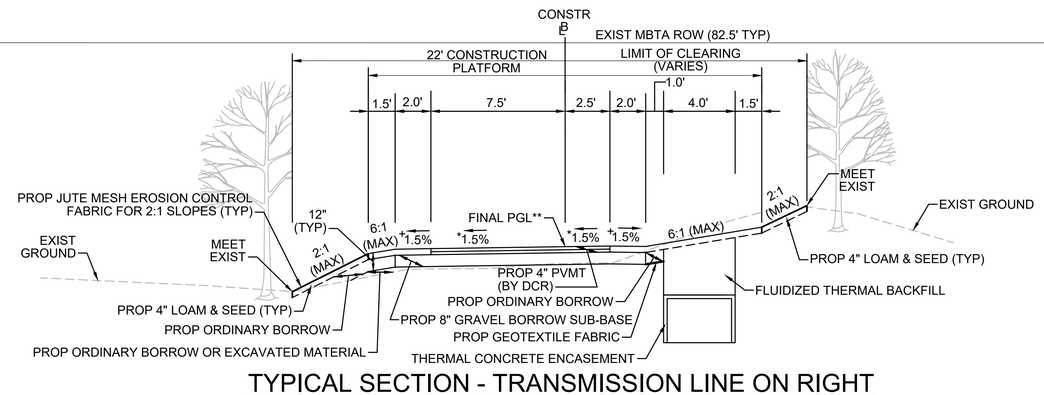
\+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES

SEE CROSS SECTIONS FOR MORE INFORMATION



TYPICAL SECTION - TRANSMISSION LINE ON RIGHT

STA 100+31.46± TO STA 101+00±

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			

vhb
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EVERSOURCE

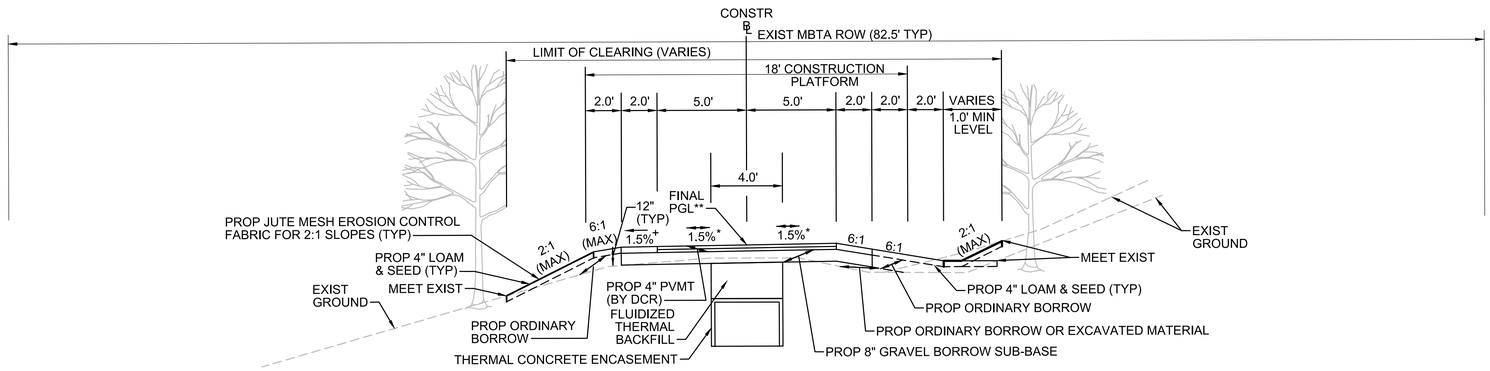
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TYPICAL SECTIONS

PLAN 15 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	OCT 2020	MS	SK	MES	.	.



TYPICAL SECTION - SWALE RIGHT SIDE - TRANSMISSION LINE IN CENTER

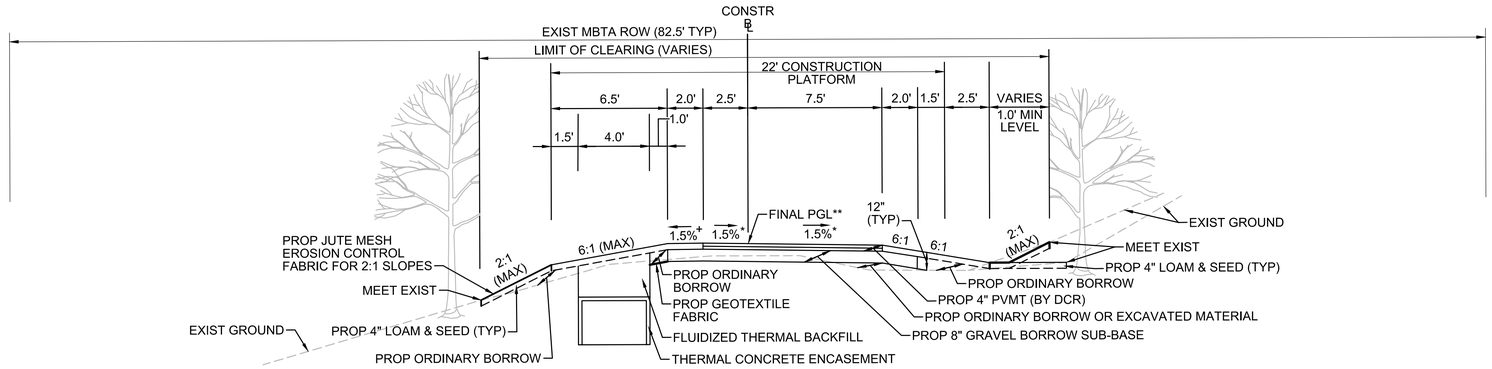
STA 113+00± TO STA 118+50±, STA 121+50± TO STA 126+25±
NTS

* 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 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

* 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.

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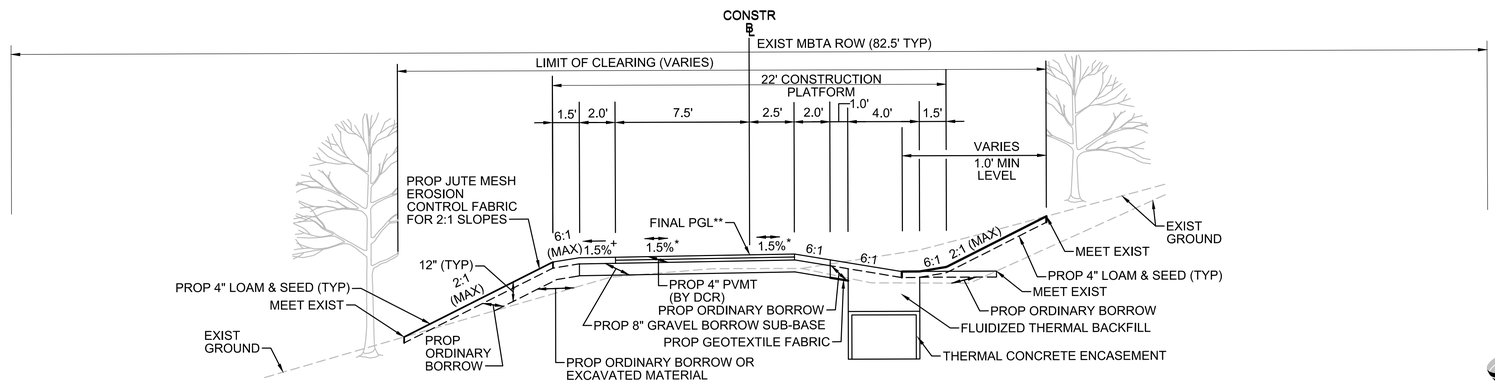
SEE CROSS SECTIONS FOR MORE INFORMATION



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

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

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EVERSOURCE

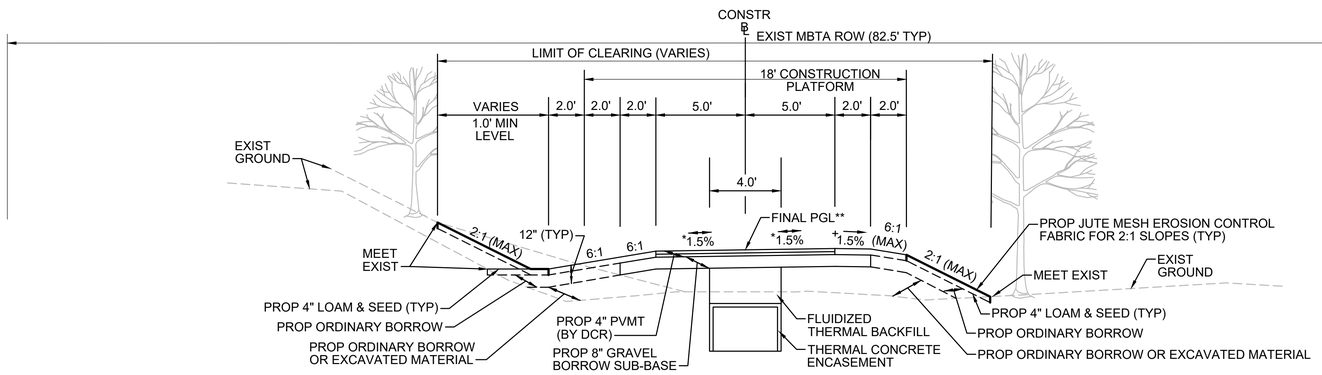
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TYPICAL SECTIONS

PLAN 16 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	OCT 2020	MS	SK	MES	.	.



TYPICAL SECTION - SWALE LEFT SIDE - TRANSMISSION LINE IN CENTER

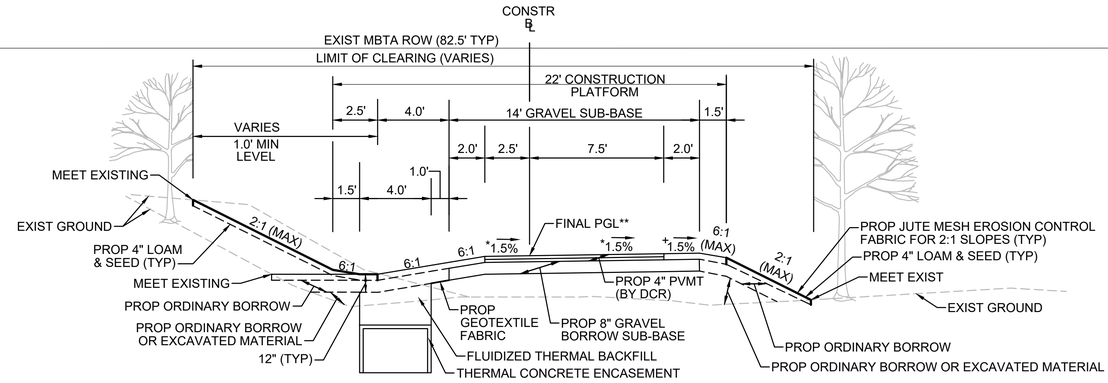
STA 730+00± TO STA 732+00±, STA 733+00± TO STA 735+00±, STA 758+13± TO STA 558+50±, STA 762+75± TO STA 763+20±
NTS

* TOLERANCE FOR CONSTRUCTION ±0.5%

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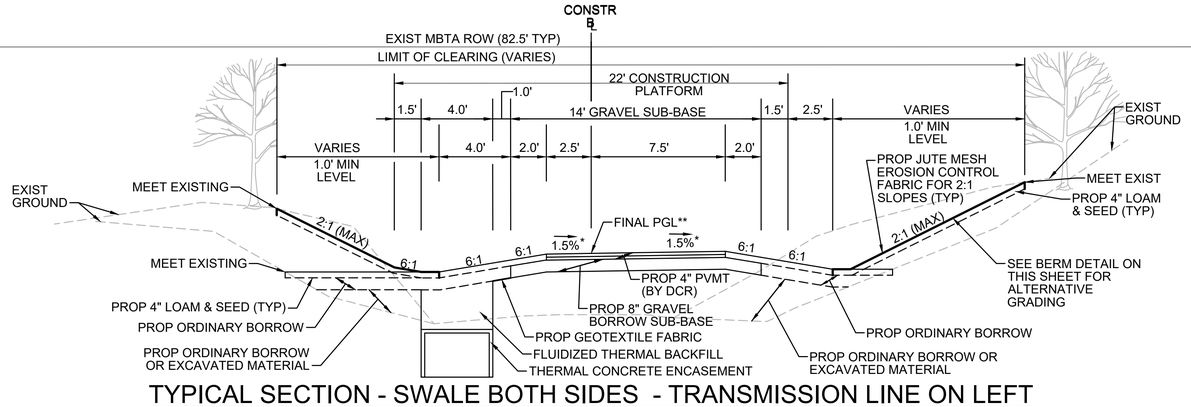
\+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES

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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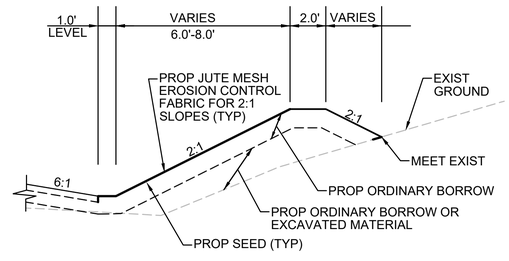
SEE CROSS SECTIONS FOR MORE INFORMATION



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

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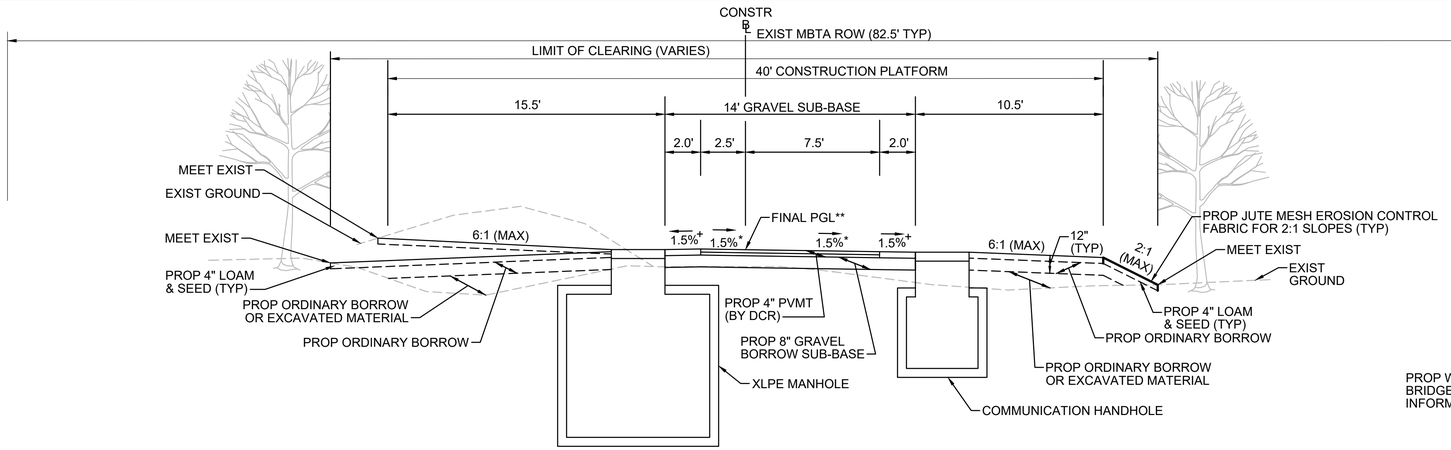
	REVISION			

EVERSOURCE

SUDBURY—HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TYPICAL SECTIONS
PLAN 17 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	OCT 2020	MS	SK	MES	.	.



TYPICAL SECTION - MANHOLE ON LEFT

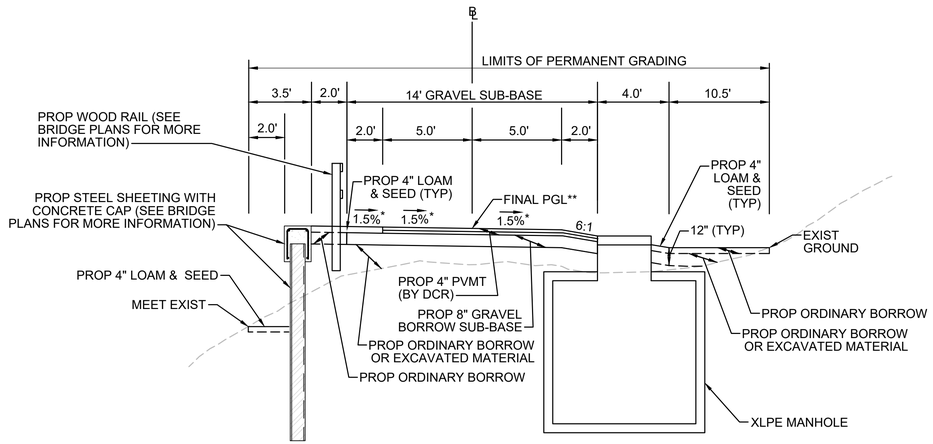
STA 157+75± TO STA 158+25±, STA 195+75± TO STA 196+25±, STA 300+00± TO STA 300+50±, STA 335+00± TO STA 335+50±, STA 353+00± TO STA 353+50±, STA 371+00± TO STA 371+50±, STA 390+00± TO STA 390+50±, STA 519+75± TO STA 520+25±, STA 533+75± TO STA 534+25±, STA 552+75± TO STA 553+25±, STA 717+75± TO STA 718+25±,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

* TOLERANCE FOR CONSTRUCTION ±0.5%

** 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



* TOLERANCE FOR CONSTRUCTION ±0.5%

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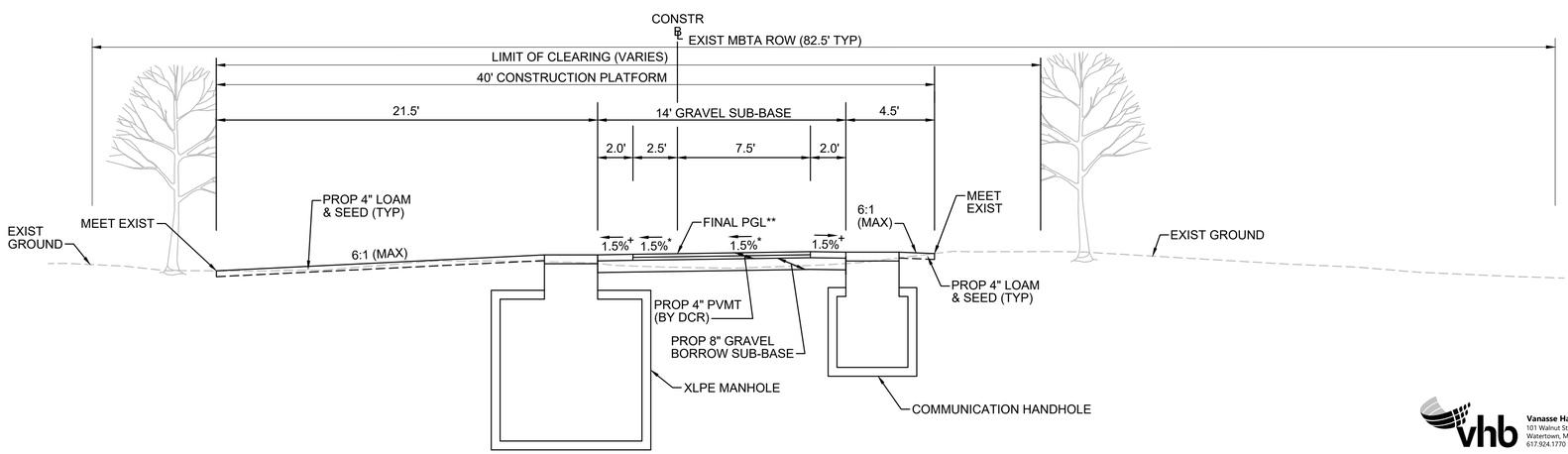
\+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES
SEE CROSS SECTIONS FOR MORE INFORMATION
SEE SHEET 157 FOR TEMPORARY GRADING CONSTRUCTION DETAIL

TYPICAL SECTION - SWALE RIGHT SIDE - MANHOLE ON RIGHT

STA 120+75± TO STA 121+25±
NTS



* 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 - MANHOLE ON LEFT - OFF-CENTER CONSTRUCTION PLATFORM

STA 601+09± TO STA 601+59±
NTS

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

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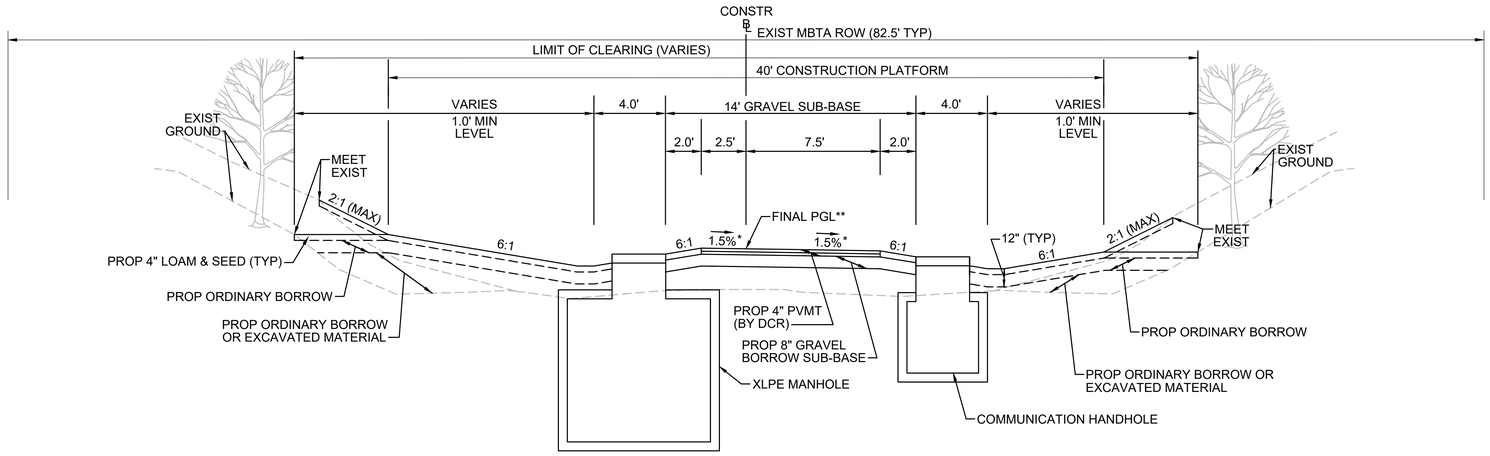
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TYPICAL SECTIONS
PLAN 19 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	OCT 2020	MS	SK	MES	.	.



TYPICAL SECTION - SWALE BOTH SIDES - MANHOLE ON LEFT

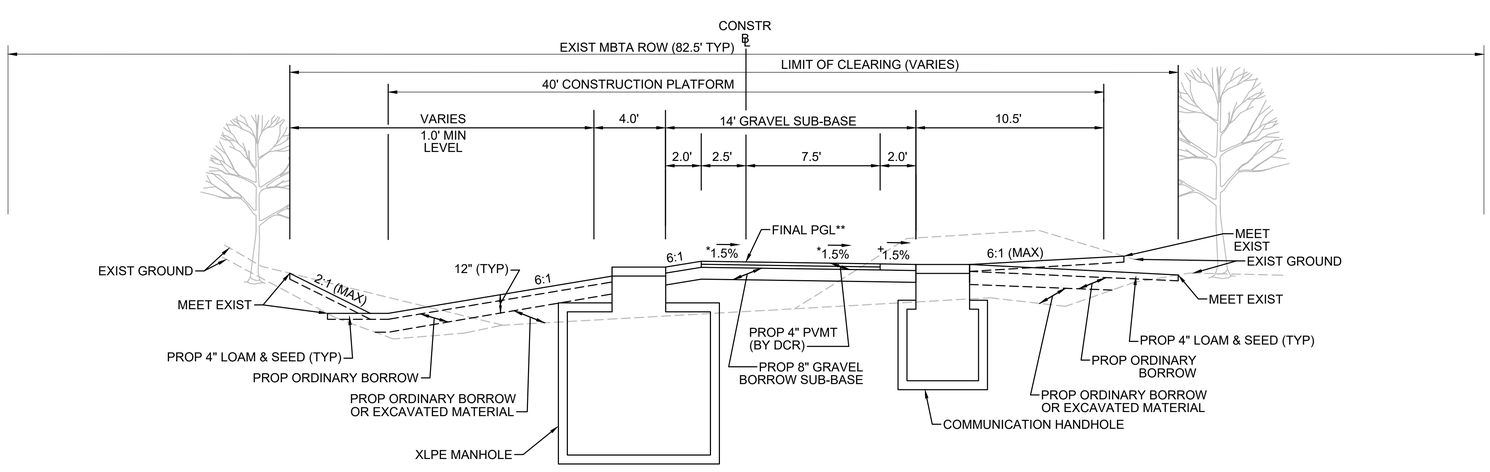
STA 176+75± TO STA 177+25±, STA 503+75± TO STA 504+25±, STA 571+75± TO STA 572+25±
NTS

* 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 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	OCT 2020	MS	SK	MES	.	.

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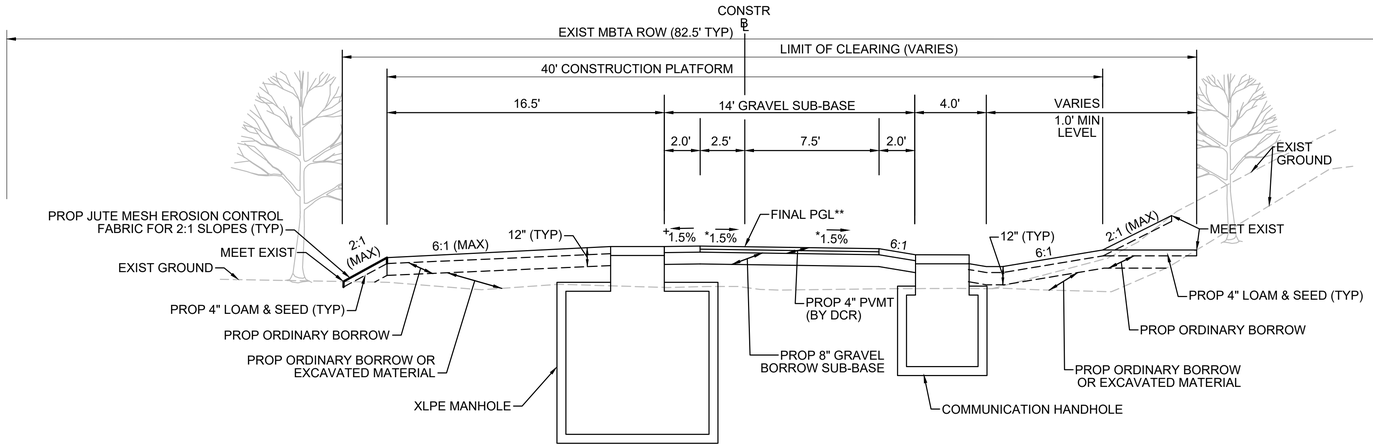


TYPICAL SECTION - SWALE RIGHT SIDE - MANHOLE ON LEFT

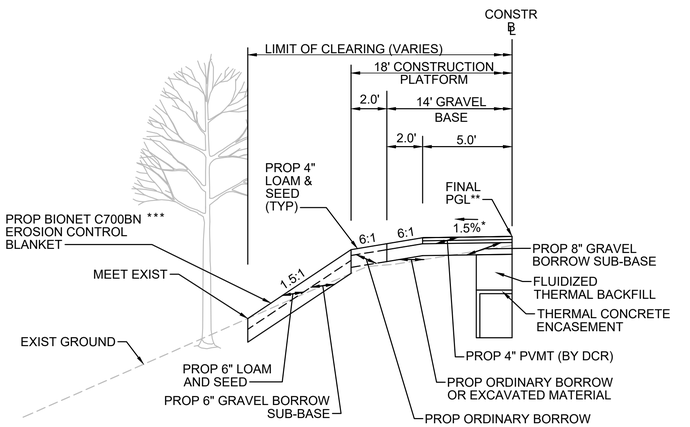
STA 404+50± TO STA 405+00±, STA 586+75± TO STA 587+25±
NTS

* 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

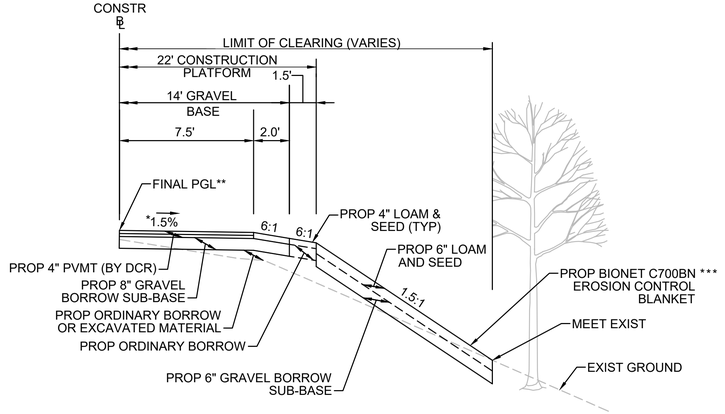
STA 142+37± TO STA 142+75±, STA 747+16± TO STA 747+50±
NTS

* 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

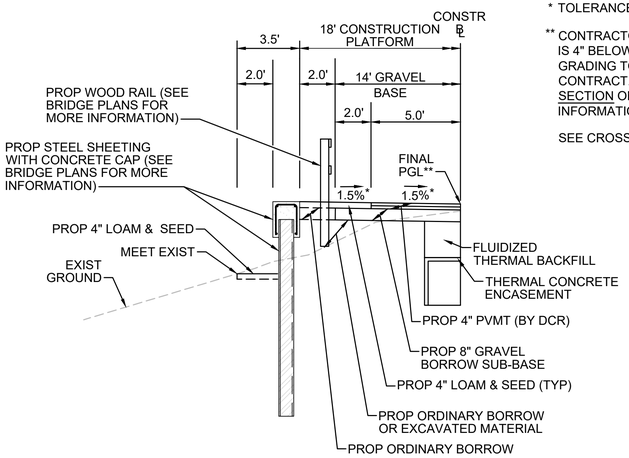
Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
Watertown, MA 02472
617.924.1770 FAX 617.924.2286

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TYPICAL SECTIONS
PLAN 21 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	OCT 2020	MS	SK	MES	.	.



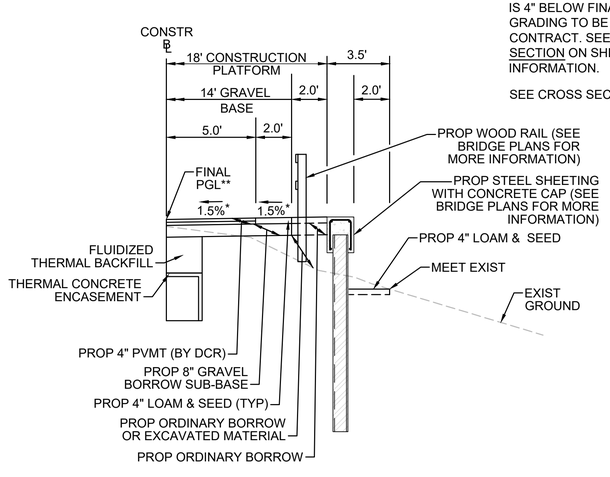
* TOLERANCE FOR CONSTRUCTION ±0.5%

** 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%

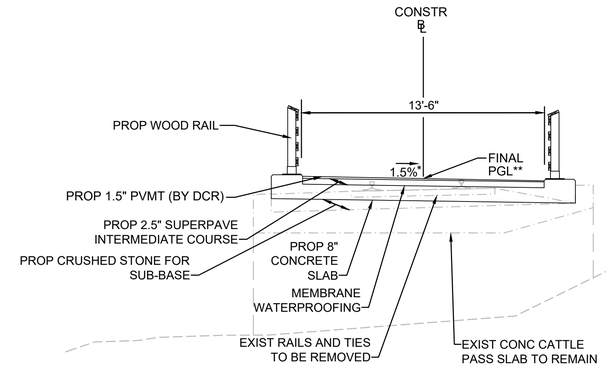
** CONTRACTOR TO BUILD TO INTERIM PGL, WHICH IS 4" BELOW FINAL PGL SHOWN HERE. FINAL GRADING TO BE PERFORMED UNDER SEPARATE CONTRACT. SEE DETAIL FOR INTERIM TYPICAL SECTION ON SHEET 157 FOR ADDITIONAL INFORMATION.

SEE CROSS SECTIONS FOR MORE INFORMATION

SHEETING SECTION RT

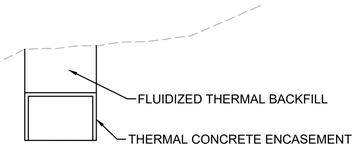
STA 148+25± TO STA 148+49±, STA 149+13± TO STA 149+75±, STA 399+91± TO STA 400+07±, STA 400+58± TO STA 401+25±, STA 724+73± TO STA 725+03±, STA 725+59± TO STA 725+96±, STA 731+00± TO STA 734+25±
NTS

*TOLERANCE FOR CONSTRUCTION ±0.5%



CATTLE CROSSING

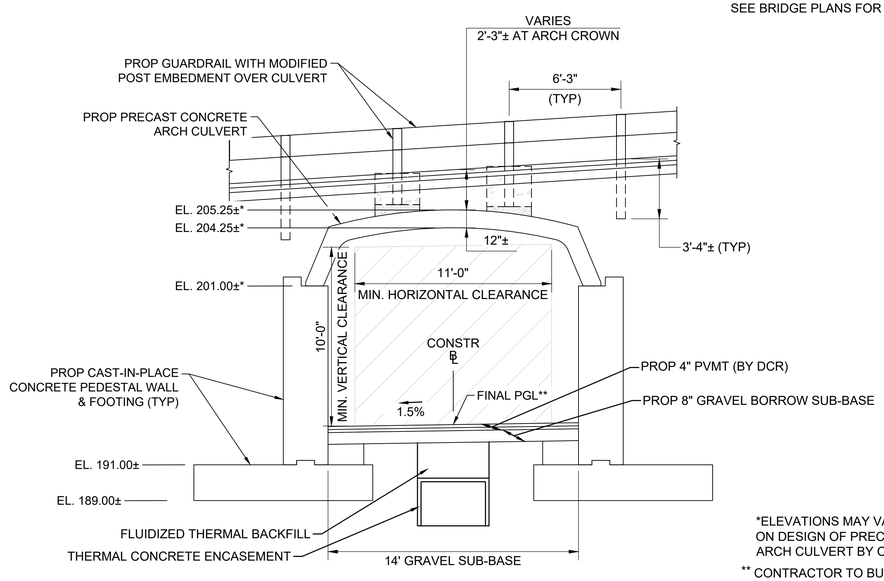
STA 119+38± TO STA 119+52±
NTS



*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 347

Vanasse Hangen Brustlin, Inc.
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NTS	OCT 2020	MS	SK	MES	.	.

CONT. ON SHEET 42

CONT. BELOW

353+25 2-SUDBURY-HUDSON_ACCESS_DRIVE = 241+26.62 TRANSMISSION_LINE, 7.33' RT

PROP TRANSMISSION LINE

PROP LIMIT OF GRADING (TYP)

LIMIT OF 100' BZ

SEE LANDSCAPE PLANS FOR PLANT LAYOUT

PROP TYPE B ECB AND PROP LIMIT OF GRADING

EXIST MBTA L.O.

VERNAL POOL 3
WETLAND 19

PROP LOAM & SEED

CONST BL

REM TRACKS & TIES

PROP 14' GRAVEL BASE

PROP LOAM & SEED

PROP 22' CONSTRUCTION PLATFORM STA 337+06 TO 353+00

FUTURE MCRT PVMT BY DCR

PROP 40' CONSTRUCTION PLATFORM STA 353+00 TO 353+50

EXIST MBTA L.O.

PROP 22' CONSTRUCTION PLATFORM STA 353+50 TO 361+33

PROP TYPE B ECB AND PROP LIMIT OF GRADING

WETLAND 18

LIMIT OF 100' BZ

20 0 20 40
SCALE IN FEET

CONT. ABOVE

CONT. ON SHEET 44

PROP TYPE B ECB AND PROP LIMIT OF GRADING

PROP 22' CONSTRUCTION PLATFORM STA 353+50 TO 371+00

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

TOWN OF SUDBURY
TOWN OF HUDSON

BEGIN PROJECT
STA 361+56.59
N 2963718.8440
E 662782.1362

BEGIN SWALE +50

PROP TYPE B ECB AND PROP LIMIT OF GRADING

EXIST MBTA L.O.

REM TRACKS & TIES

PROP TRANSMISSION LINE

PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

PT +74.35

PT +15.72

CONST BL

PC +88.26

PT +11.58

PC +28.41

PROP 14' GRAVEL BASE

PROP TYPE B ECB AND PROP LIMIT OF GRADING

BEGIN SWALE +25

PROP CHECK DAM (TYP)

PC +93.10

FUTURE MCRT PVMT BY DCR

PROP LOAM & SEED

SEE LANDSCAPE PLANS FOR PLANT LAYOUT

EXIST MBTA L.O.

PROP LIMIT OF GRADING (TYP)

TOWN OF HUDSON
CITY OF MARLBOROUGH

TOWN OF SUDBURY
CITY OF MARLBOROUGH

LIMIT OF 100' BZ

20 0 20 40
SCALE IN FEET

NOTES:

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 100' VP BZ. SEE DETAIL ON SHEET 154.

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)

HATCH	DESCRIPTION
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100'RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

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Watertown, MA 02472
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NO.	DESCRIPTION	BY	DATE	APPR.

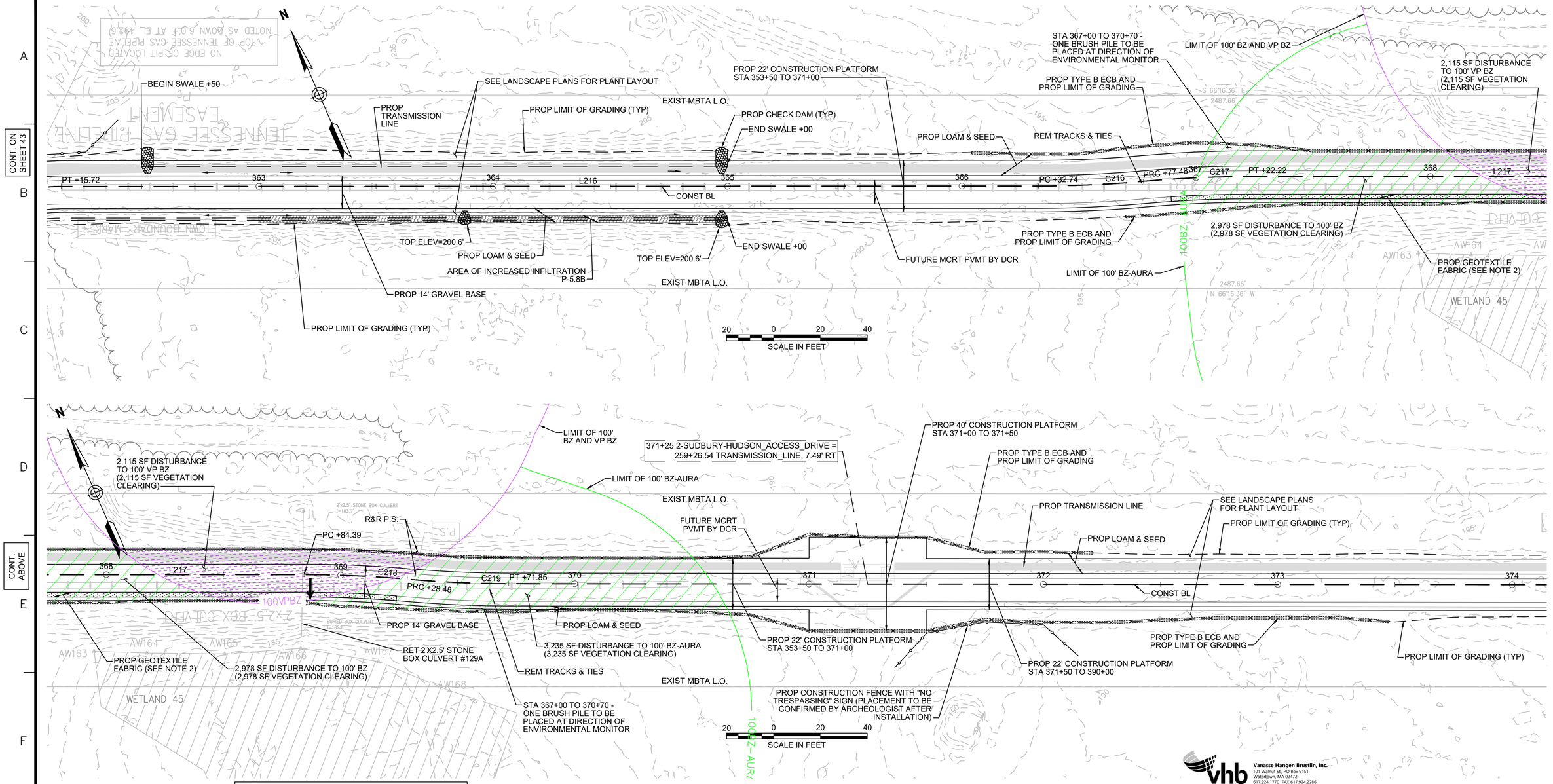
REVISION

EVERSOURCE

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

PLAN 43 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MS	.	.



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.
2. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 100' VP BZ. SEE DETAIL ON SHEET 154.

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)

HATCH	DESCRIPTION
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100'RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

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

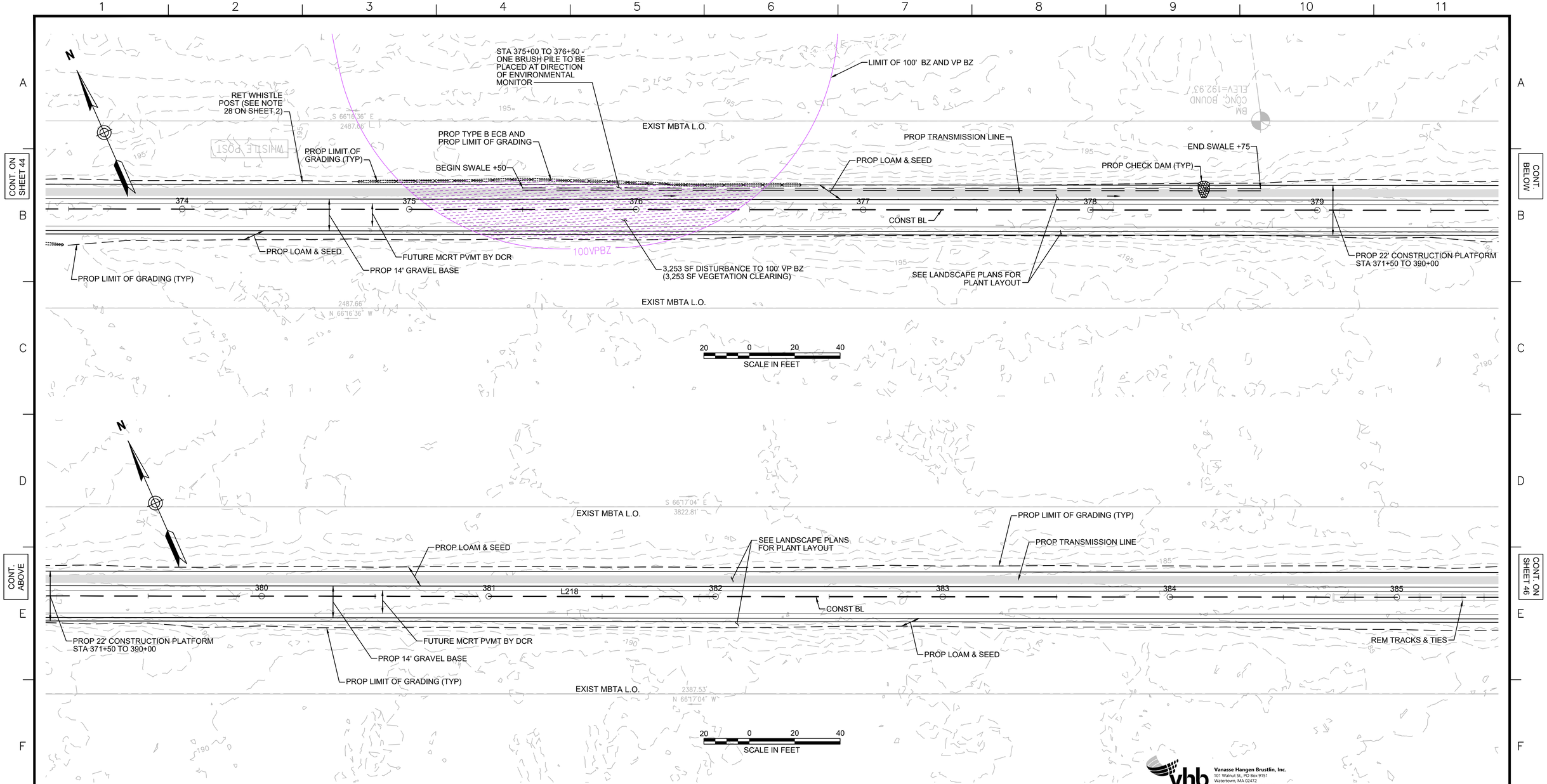
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 44 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MS	.	.



NOTES:

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 100' VP BZ. SEE DETAIL ON SHEET 154.

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION	HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND		DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	BORDERING VEGETATED WETLAND		DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	LAND UNDER WATER		DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	VERNAL POOL		DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100'RA)
	PERMANENT DISTURBANCE TO VEGETATED WETLAND		DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND		DISTURBANCE TO BLSF
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)		EXISTING TREE LINE
	TEMPORARY DISTURBANCE TO BANK		LIMIT OF GRADING
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)		

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101 Walnut St., PO Box 9151
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617.924.1770 FAX 617.924.2286

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

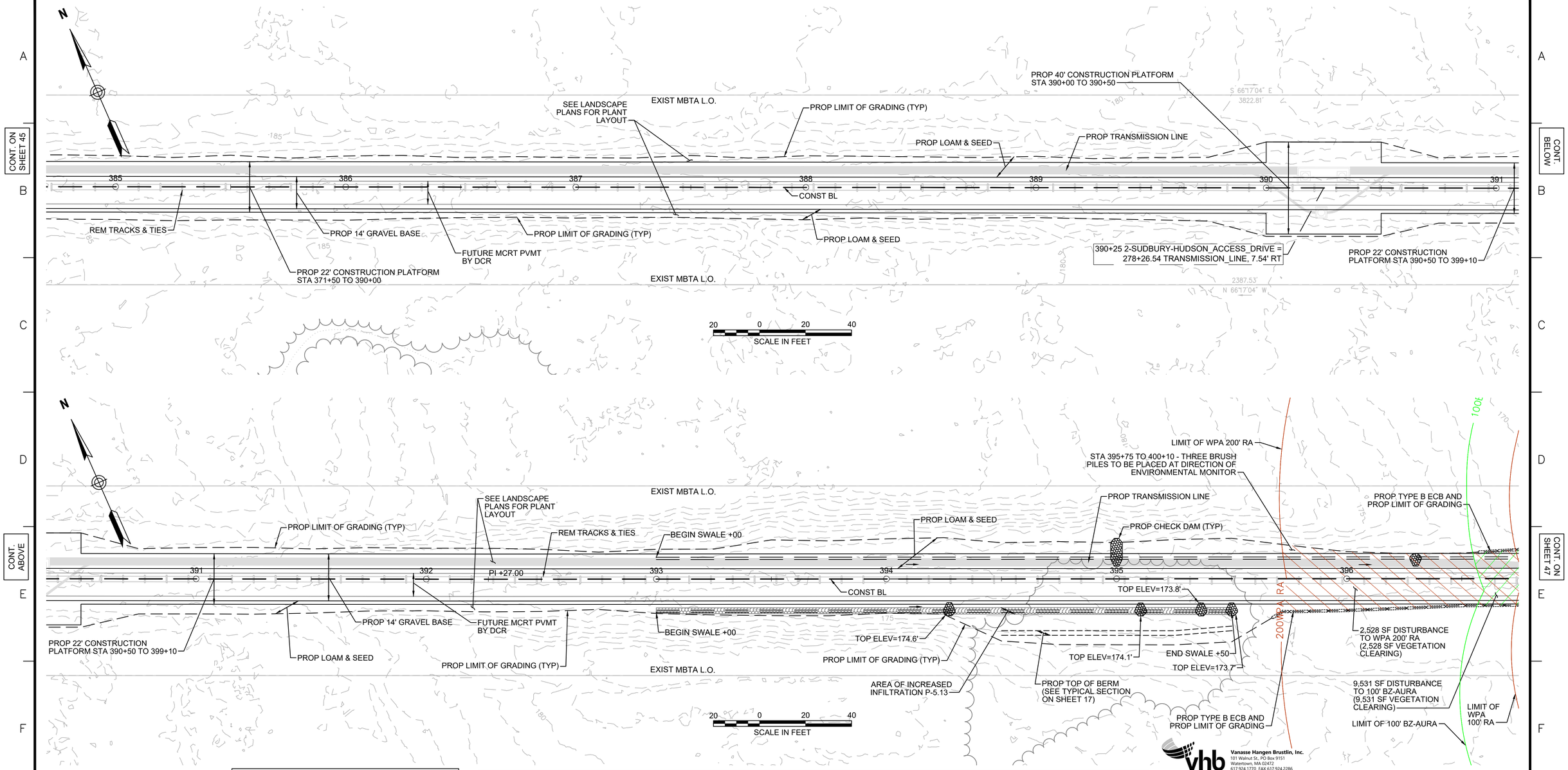
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 45 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MS	.	.



NOTES:

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 100' VP BZ. SEE DETAIL ON SHEET 154.

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)

HATCH	DESCRIPTION
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100'RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
— — —	LIMIT OF GRADING

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NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

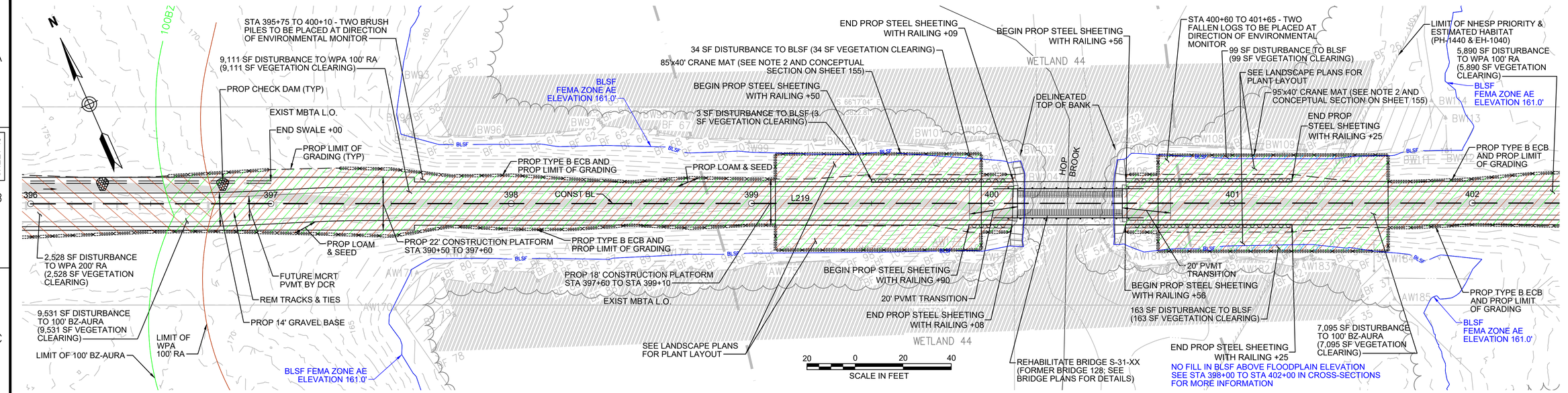
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 46 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MS	.	.



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.
2. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 100' VP BZ. SEE DETAIL ON SHEET 154.

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)

HATCH	DESCRIPTION
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100'RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

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Vanasse Hangen Brustlin, Inc.
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NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

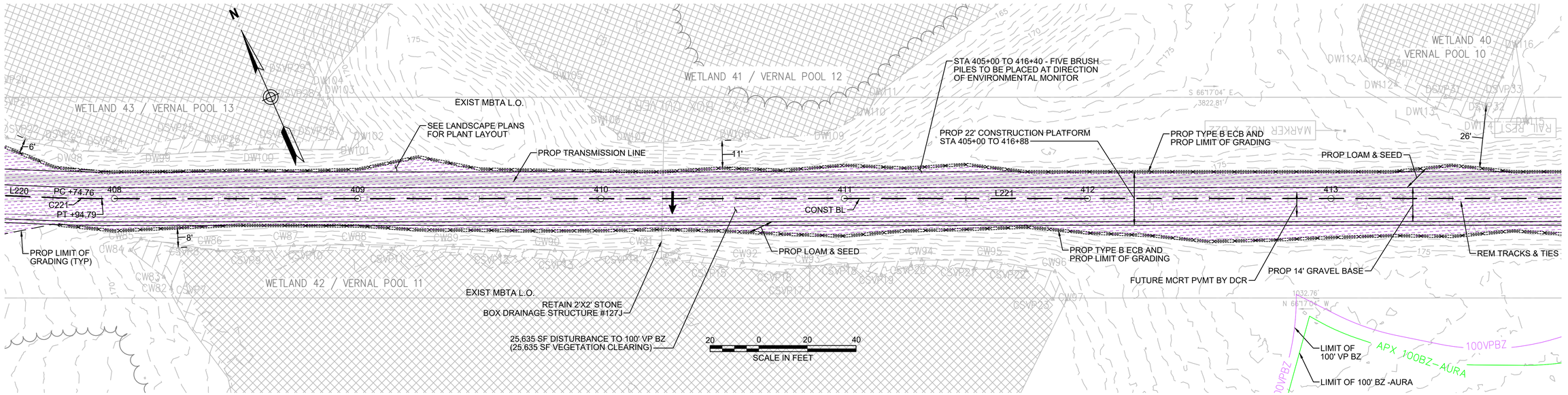
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 47 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MS	.	.



NOTES:

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 100' VP BZ. SEE DETAIL ON SHEET 154.

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)

HATCH	DESCRIPTION
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100'RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

vhb
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NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

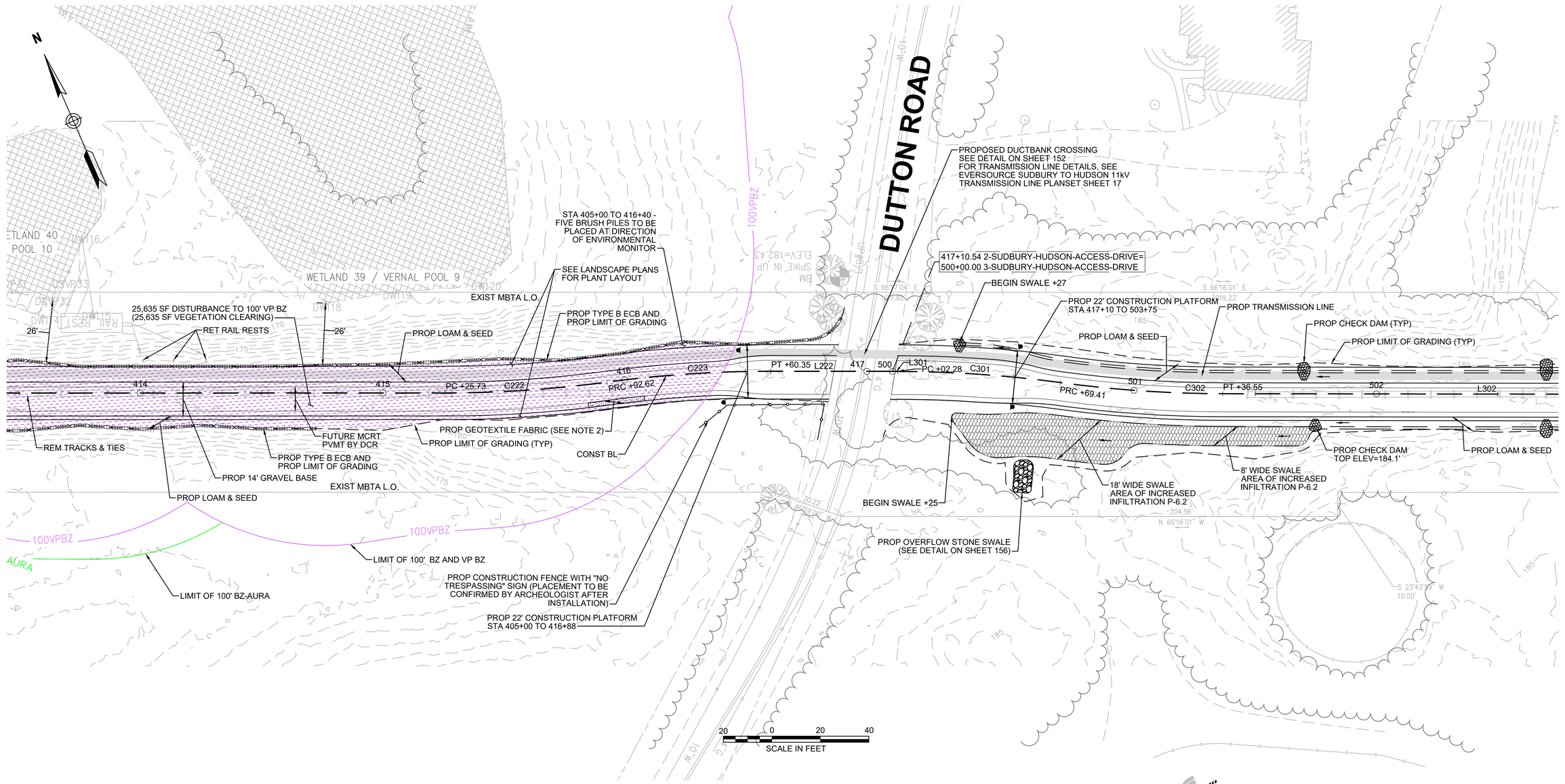
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 48 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MS	.	.



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.
2. SYNCOPATED SILT FENCE (TYPE B ECB) TO BE USED WITHIN PRIORITY HABITAT AREA AND 100' VP BZ. SEE DETAIL ON SHEET 154.

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100'RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

vhb Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
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NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

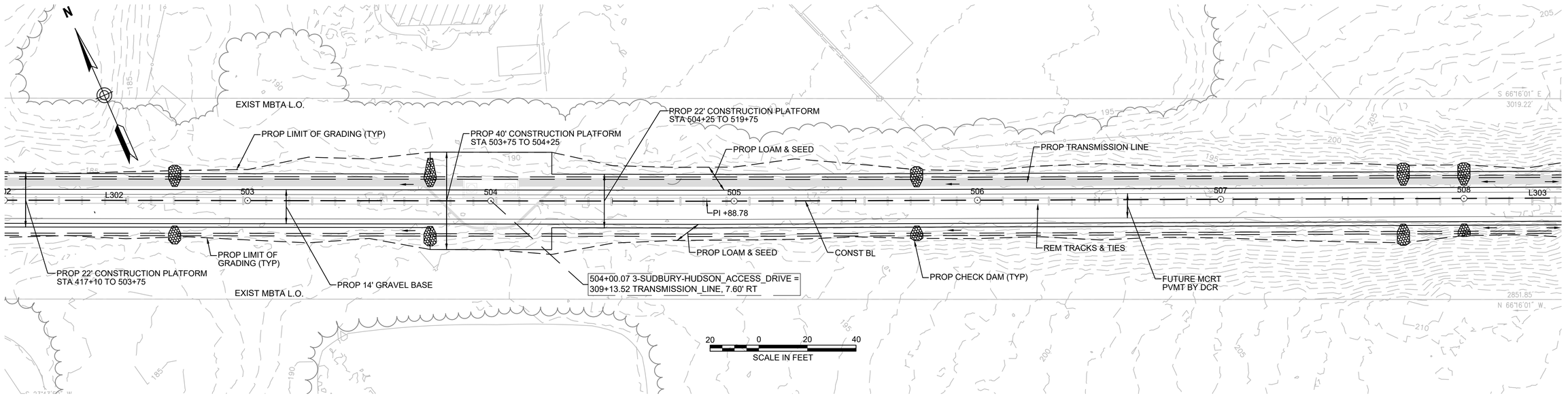
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 49 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MS	.	.

CONT. ON SHEET 49



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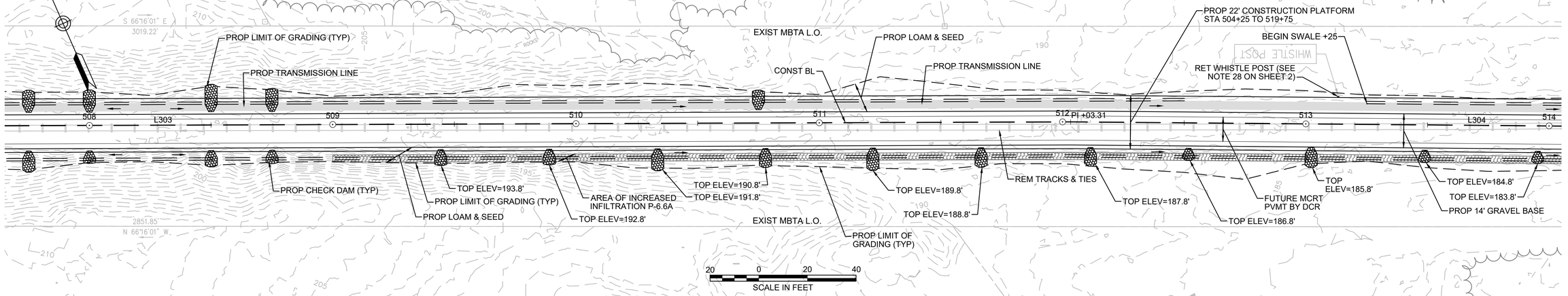

CONT. ON SHEET 51

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

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)

HATCH	DESCRIPTION
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100'RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

vhb
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101 Walnut St., PO Box 9151
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NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 50 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MES	.	.

CONT. ON SHEET 50

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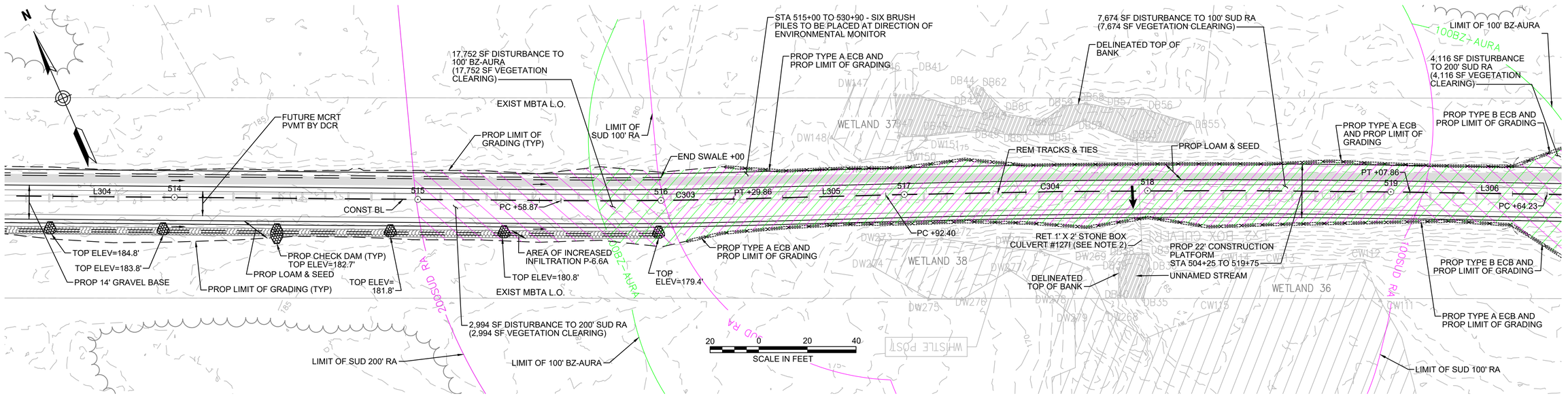

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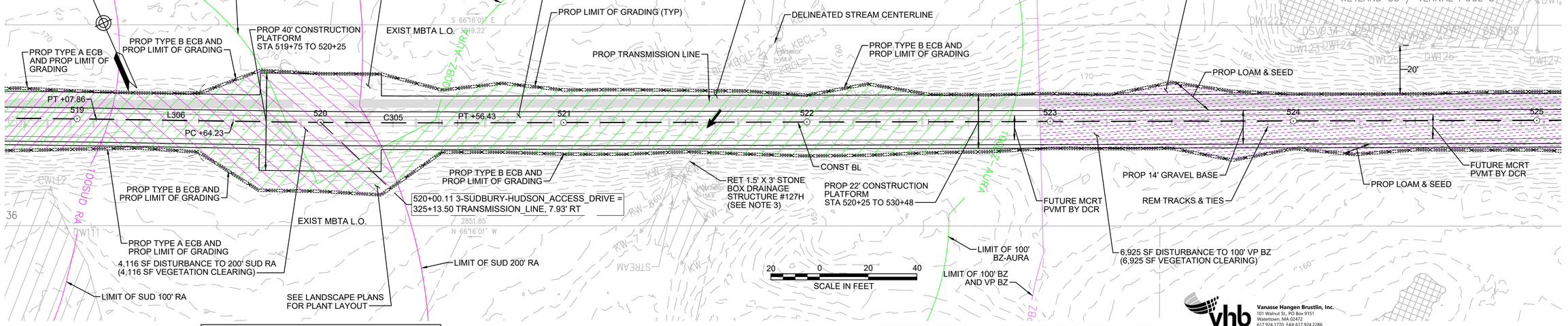

NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).
2. 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 100' VP BZ. SEE DETAIL ON SHEET 154.

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION	HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND		DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	BORDERING VEGETATED WETLAND		DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	LAND UNDER WATER		DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	VERNAL POOL		DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100'RA)
	PERMANENT DISTURBANCE TO VEGETATED WETLAND		DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND		DISTURBANCE TO BLSF
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)		EXISTING TREE LINE
	TEMPORARY DISTURBANCE TO BANK		LIMIT OF GRADING
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)		

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 51 OF 347

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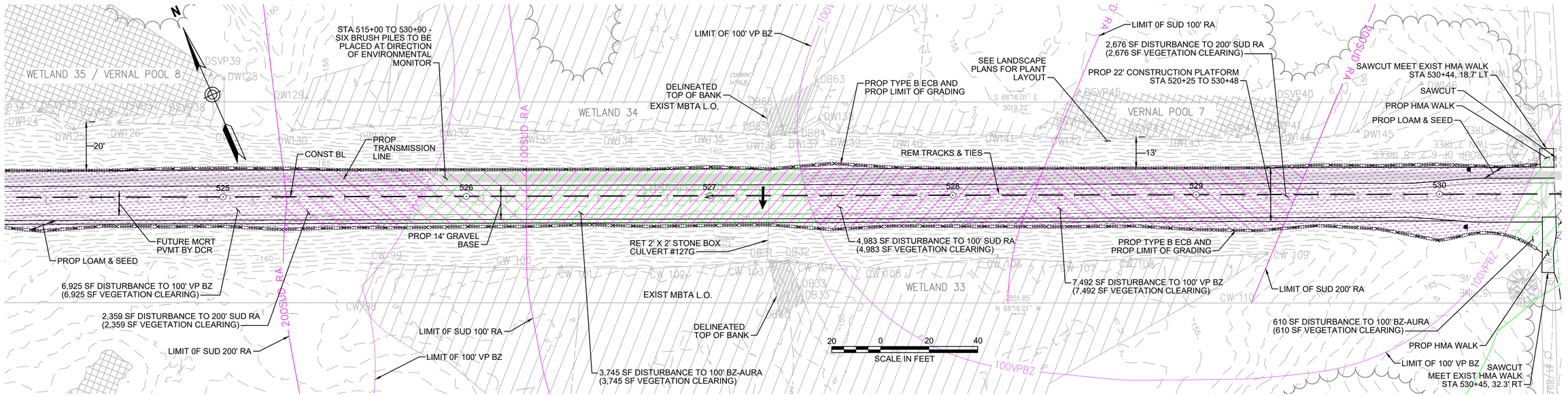

CONT. ON SHEET 51

CONT. ON SHEET 53

NOTES:

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ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
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	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
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	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

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PLAN 52 OF 347

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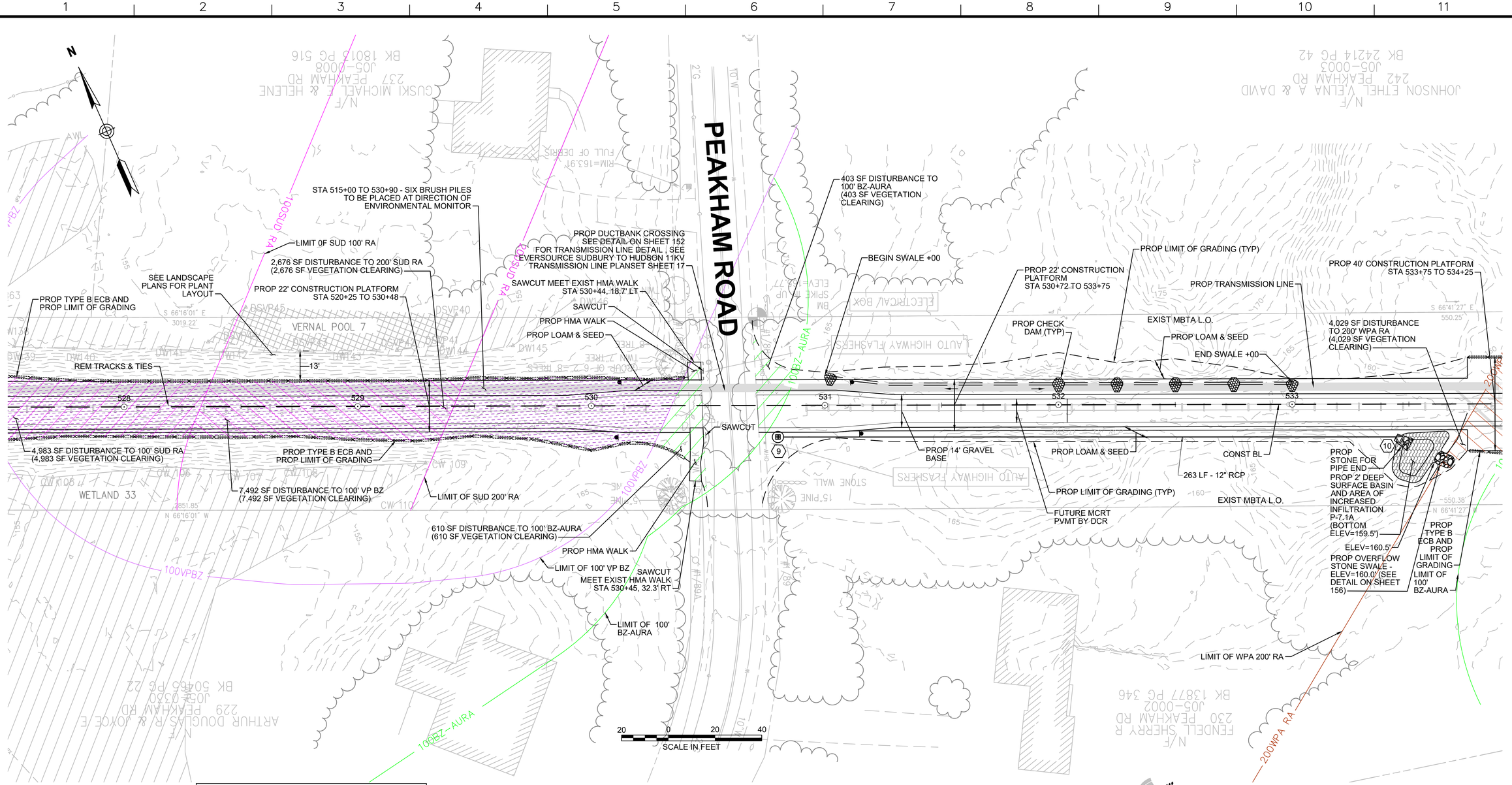

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DRAINAGE STRUCTURE TABLE

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)		

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)
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	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

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CONSTRUCTION PLANS

PLAN 53 OF 347

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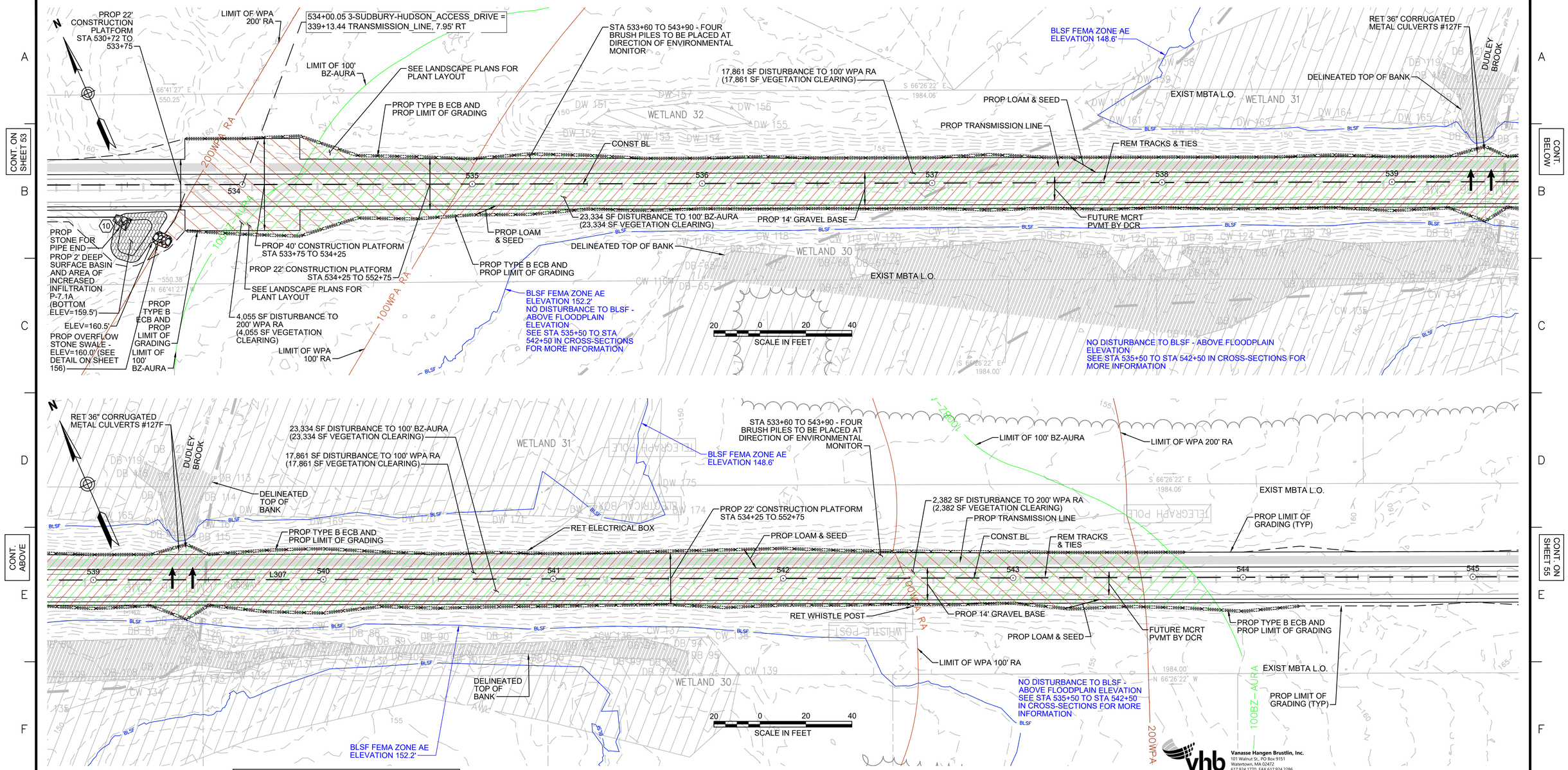

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ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
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	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100'RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
— — —	LIMIT OF GRADING

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CONSTRUCTION PLANS

PLAN 54 OF 347

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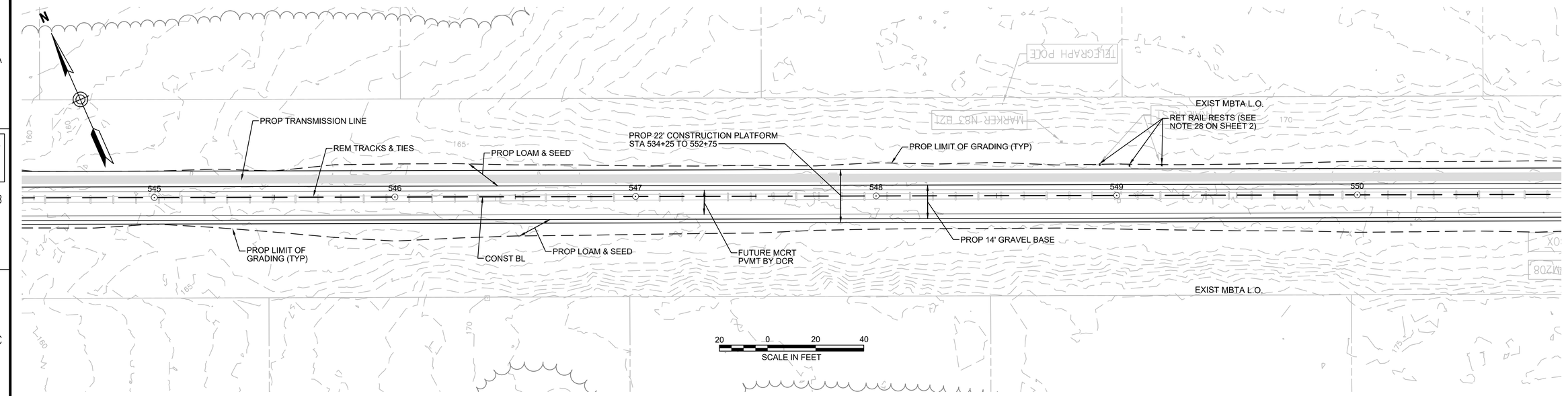

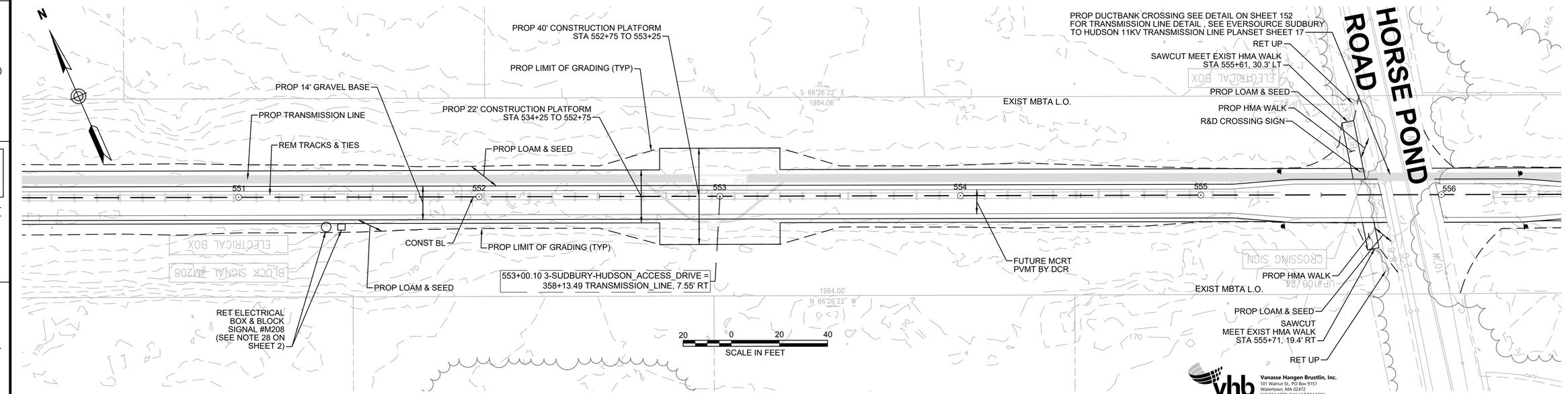

CONT. ON SHEET 54

CONT. BELOW

CONT. ABOVE

CONT. ON SHEET 56

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

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
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HATCH	DESCRIPTION
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	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
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	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 55 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MES	.	.

HORSE POND ROAD

PROP DUCTBANK CROSSING SEE DETAIL ON SHEET 152
FOR TRANSMISSION LINE DETAIL , SEE EVERSOURCE SUDBURY
TO HUDSON 11KV TRANSMISSION LINE PLANSET SHEET 17

RET UP

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

PROP LOAM & SEED

PROP HMA WALK

R&D CROSSING SIGN

EXIST MBTA L.O.

PROP 22' CONSTRUCTION PLATFORM
STA 553+25 TO 555+77

554

555

556

557

558

PI +60.96

559

L308

PI +75.56

REM TRACKS & TIES

PROP 14' GRAVEL BASE

PROP HMA WALK

EXIST MBTA L.O.

PROP LOAM & SEED

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

RET UP

LIMIT OF SUD 200' RA

PROP 22' CONSTRUCTION PLATFORM
STA 555+96 TO 571+75

PROP TRANSMISSION LINE

PROP LOAM & SEED

PROP LIMIT OF GRADING (TYP)

CONST BL

FUTURE MCRT
PVMT BY DCR

PROP LIMIT OF
GRADING (TYP)

PROP LOAM & SEED

2,388 SF DISTURBANCE TO 100' BZ
(2,388 SF VEGETATION CLEARING)

2,959 SF DISTURBANCE TO 200' SUD RA
(2,959 SF VEGETATION CLEARING)

LIMIT OF 100' BZ-AURA

LIMIT OF SUD 100' RA

STA 558+10 TO 564+20 - THREE
BRUSH PILES TO BE PLACED AT
DIRECTION OF ENVIRONMENTAL
MONITOR

PROP TYPE B ECB AND
PROP LIMIT OF GRADING

5,782 SF DISTURBANCE TO 100' VPBZ
(5,782 SF VEGETATION CLEARING)

WETLAND 29

PROP TYPE B ECB AND
PROP LIMIT OF GRADING

6,023 SF DISTURBANCE
TO 100' SUD RA
(6,023 SF VEGETATION
CLEARING)

100BZ-AURA

LIMIT OF 100' VP BZ

100SUD RA

100VPBZ

CONT. ON SHEET 55

CONT. ON SHEET 57

20 0 20 40
SCALE IN FEET

NOTES:

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ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
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CONSTRUCTION PLANS

PLAN 56 OF 347

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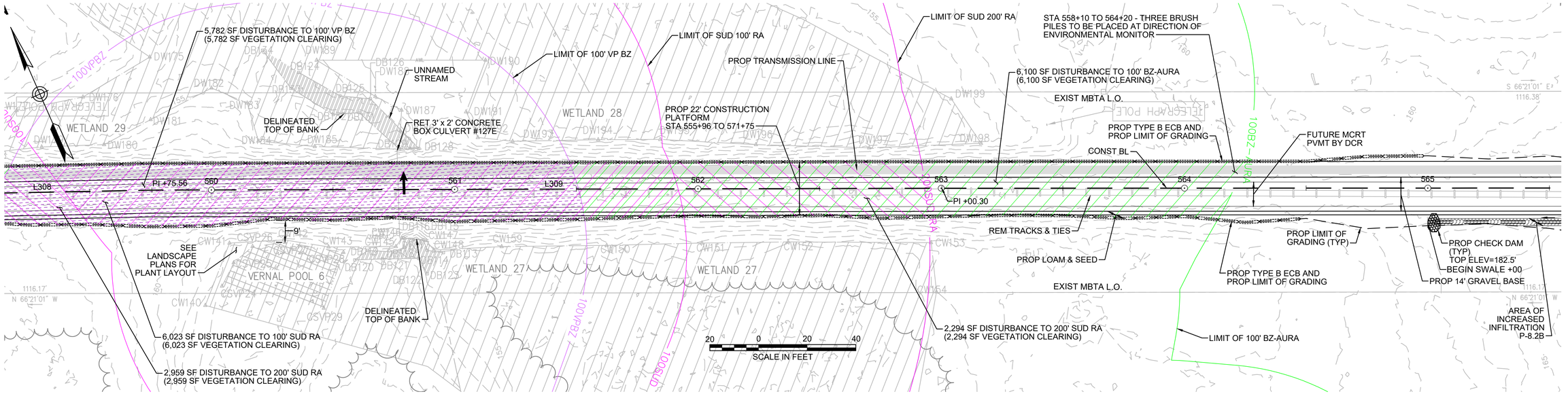

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HATCH	DESCRIPTION
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PLAN 57 OF 347

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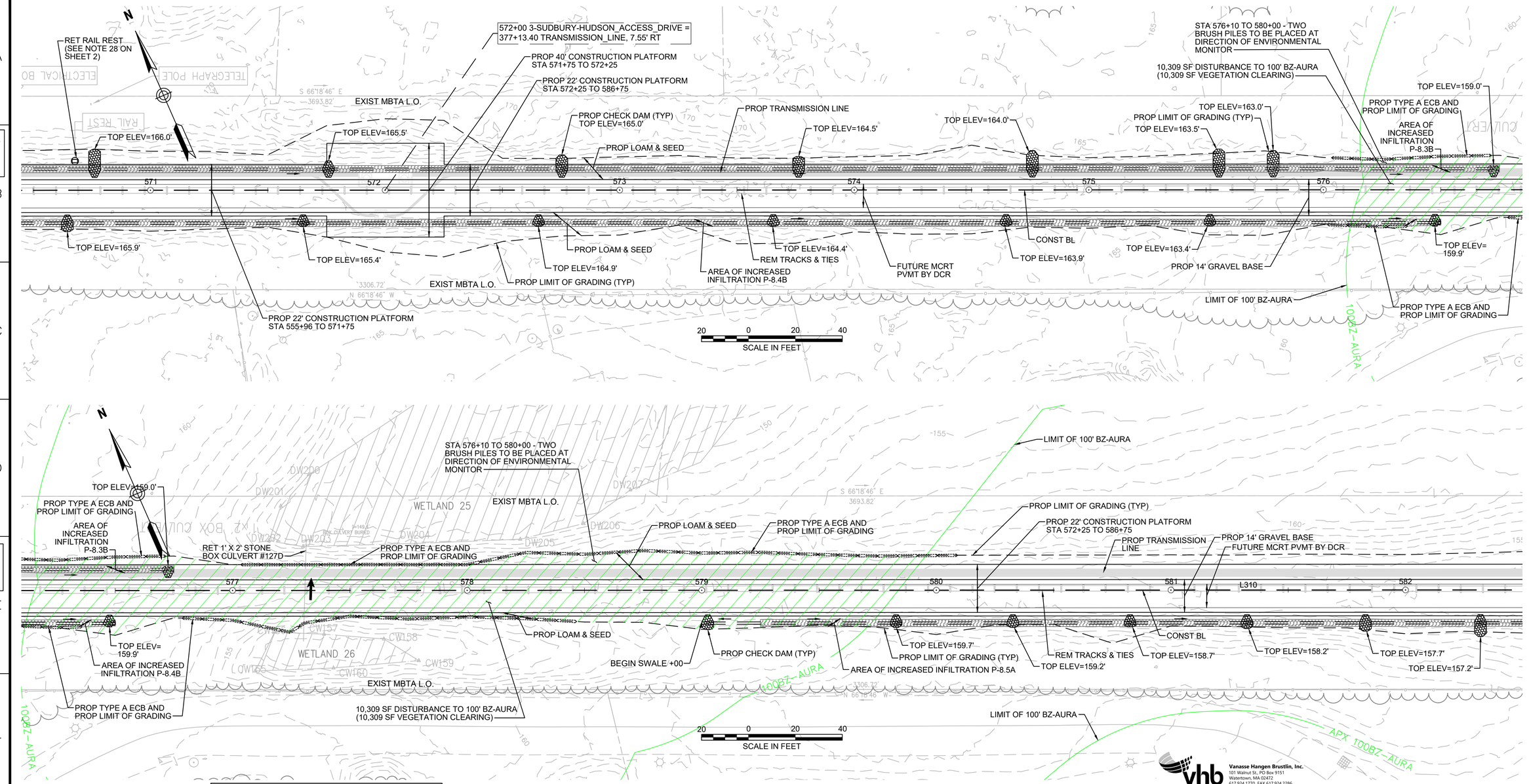

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PLAN 58 OF 347

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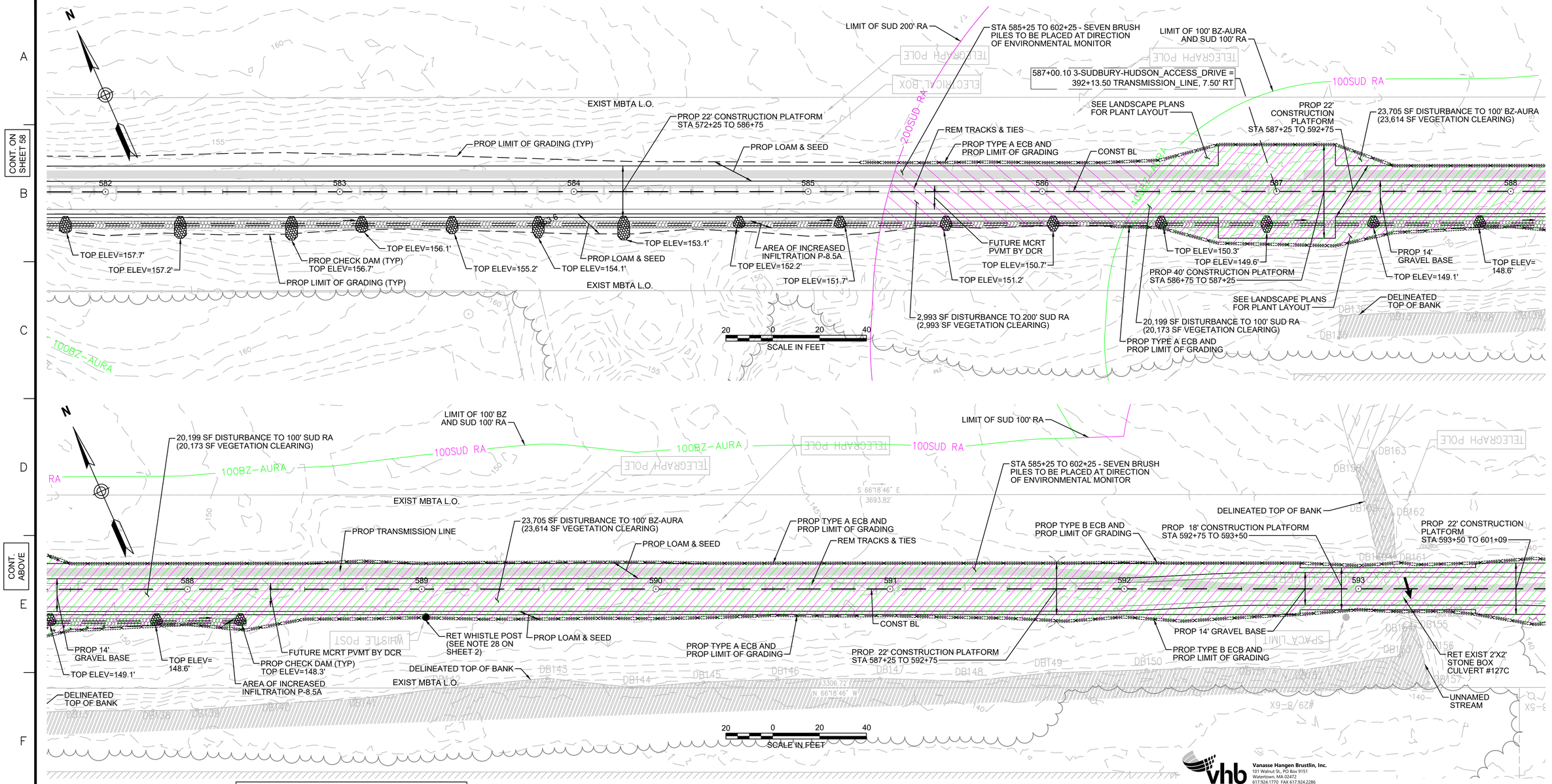

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PLAN 59 OF 347

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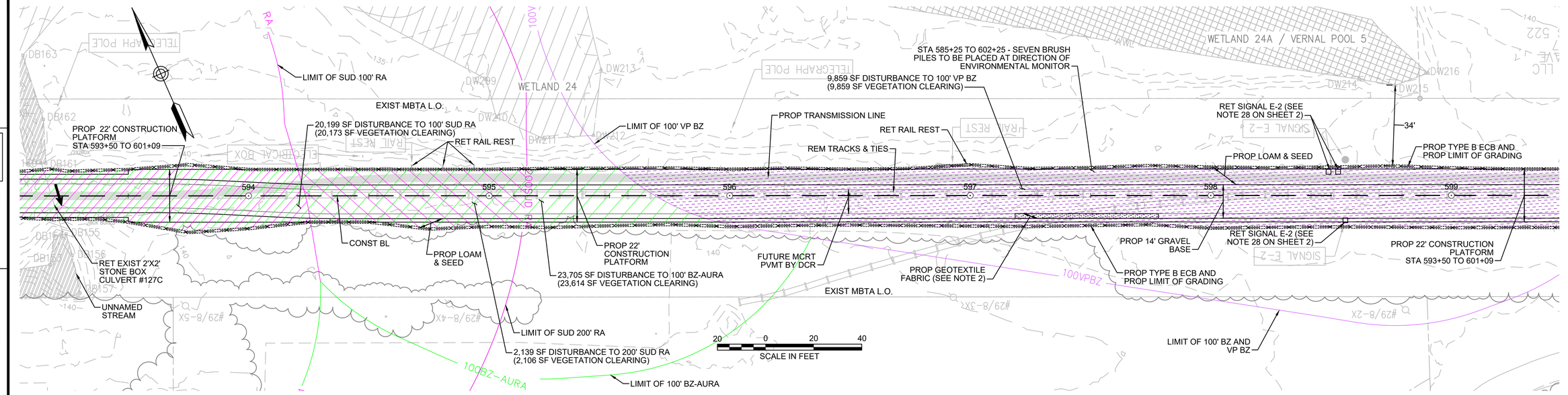


NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).
2. 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 100' VP BZ. SEE DETAIL ON SHEET 154.

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)

HATCH	DESCRIPTION
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100'RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

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

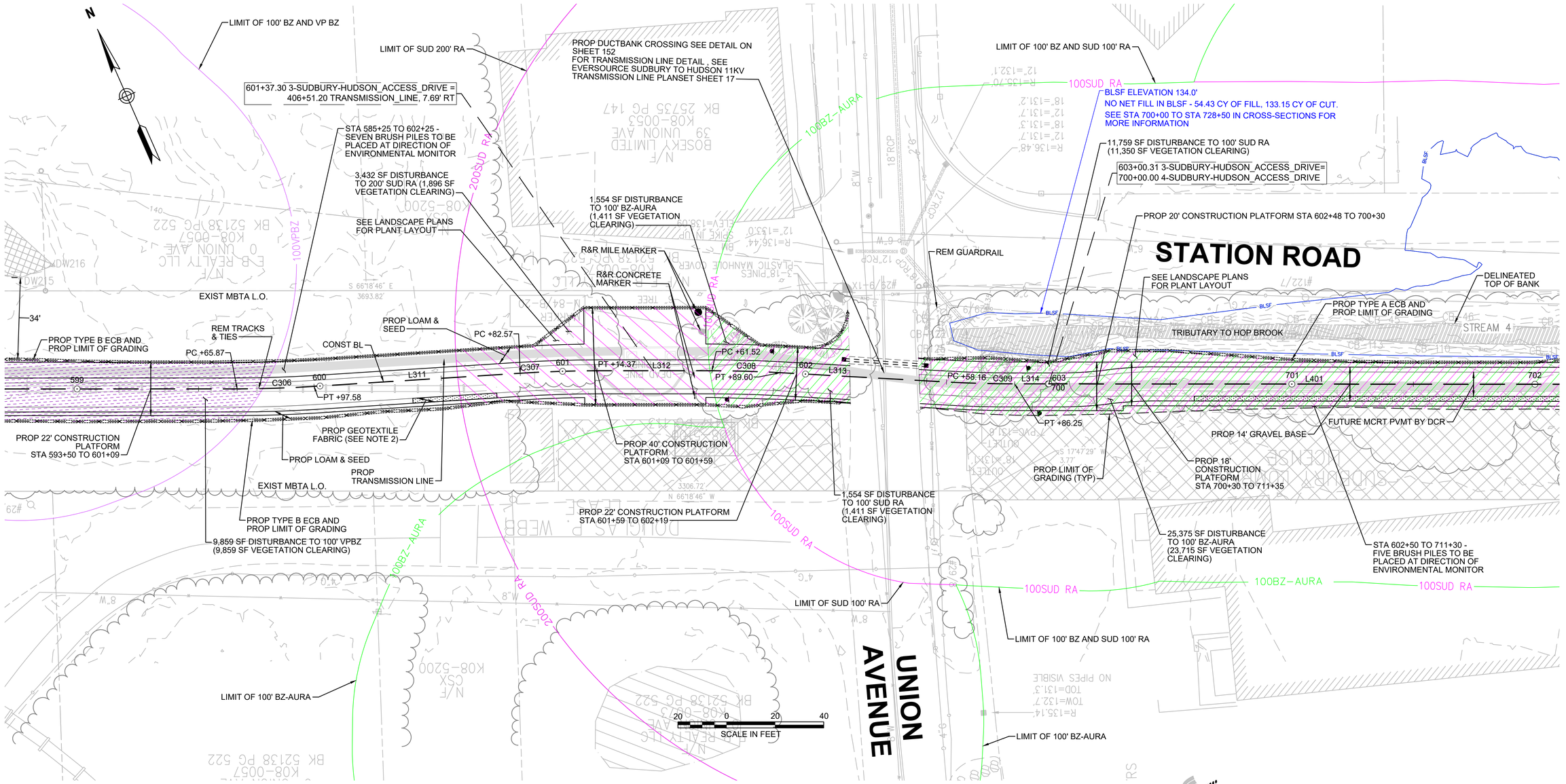
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 60 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	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 100' VP BZ. SEE DETAIL ON SHEET 154.

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100'RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 61 OF 347

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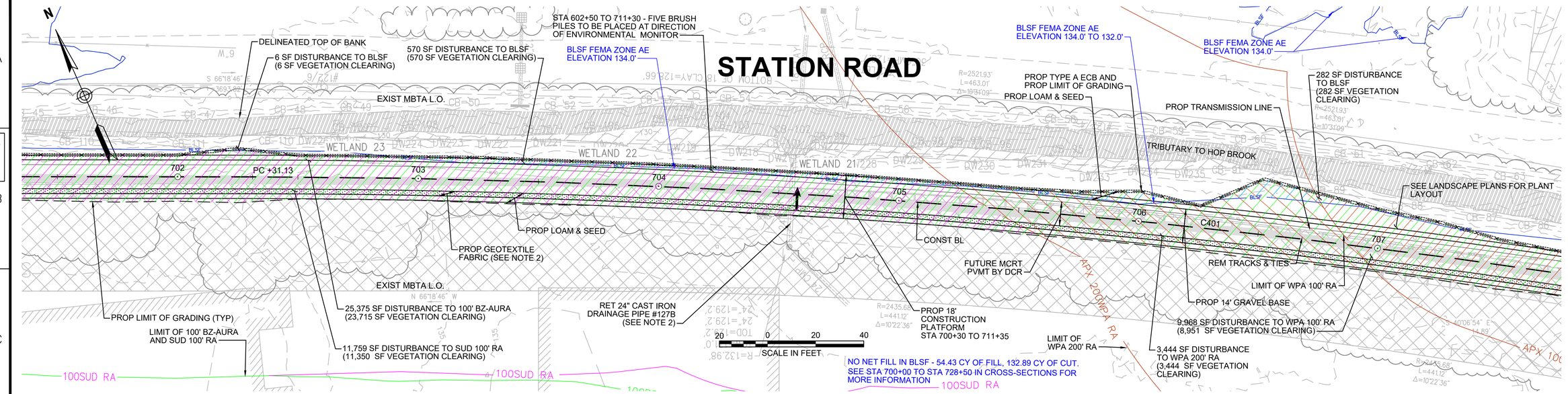

NOTES:

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).

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)

HATCH	DESCRIPTION
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100' RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
— — —	LIMIT OF GRADING

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 62 OF 347

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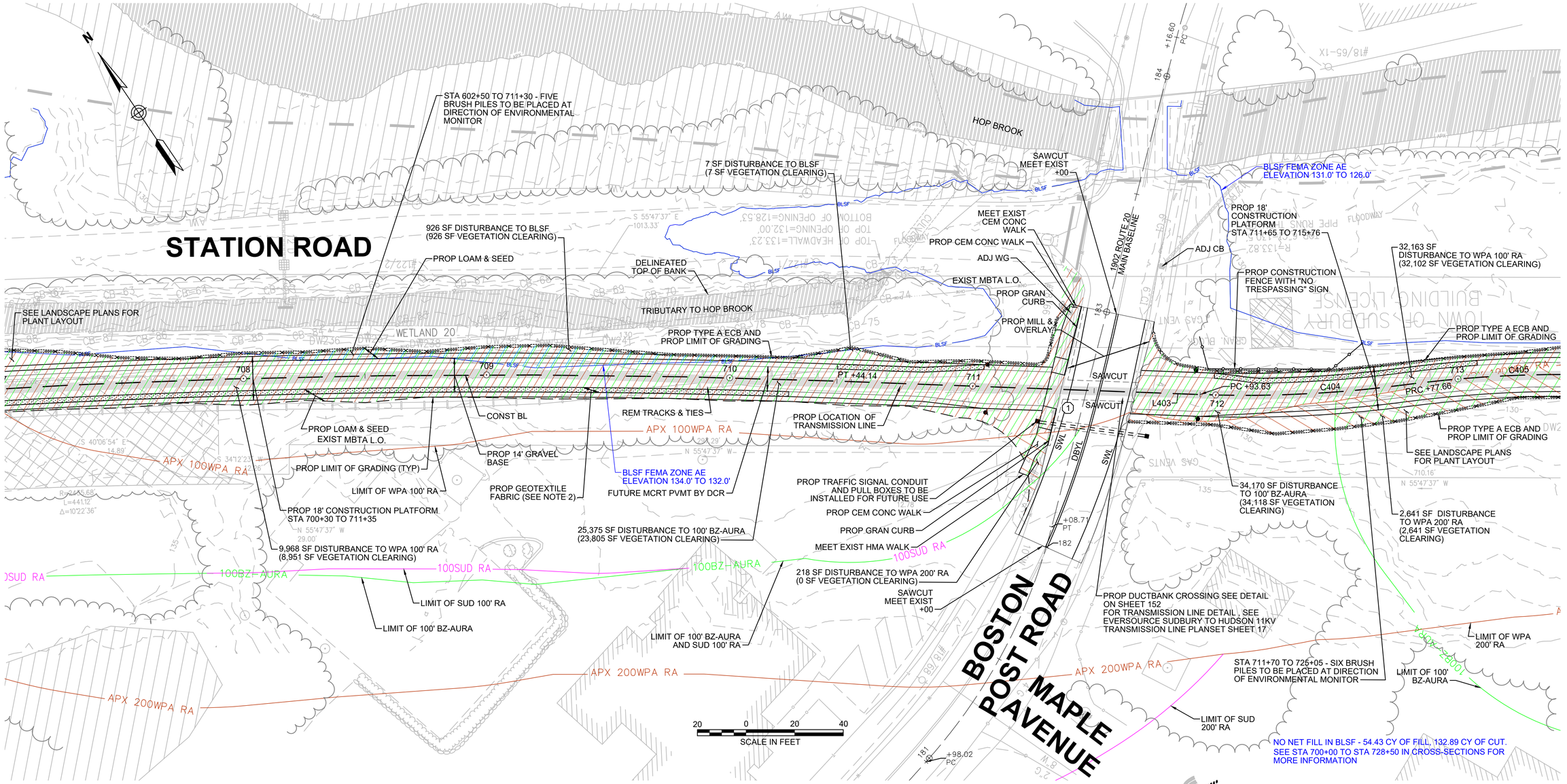

NOTES:

1. WETLAND RESOURCE AREA BOUNDARIES SHOWN HEREIN WERE APPROVED IN AN ORAD DATED AUGUST 27, 2018 (MADEP FILE NO. 301-1227).
2. CONTRACTOR TO INSTALL GEOTEXTILE FABRIC UNDERNEATH 12" GRAVEL BORROW WITHIN LIMITS SHOWN.

LEGEND:

(X) ACCESS ROAD CROSSING NUMBER

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)

HATCH	DESCRIPTION
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100' RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 63 OF 347

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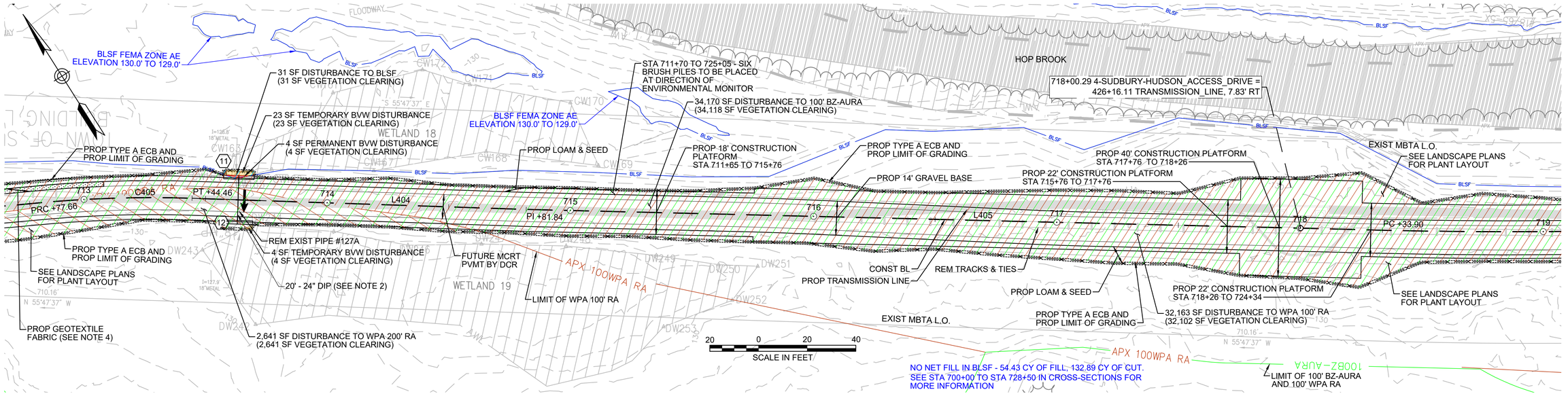

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)

HATCH	DESCRIPTION
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100' RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

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:

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.
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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NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

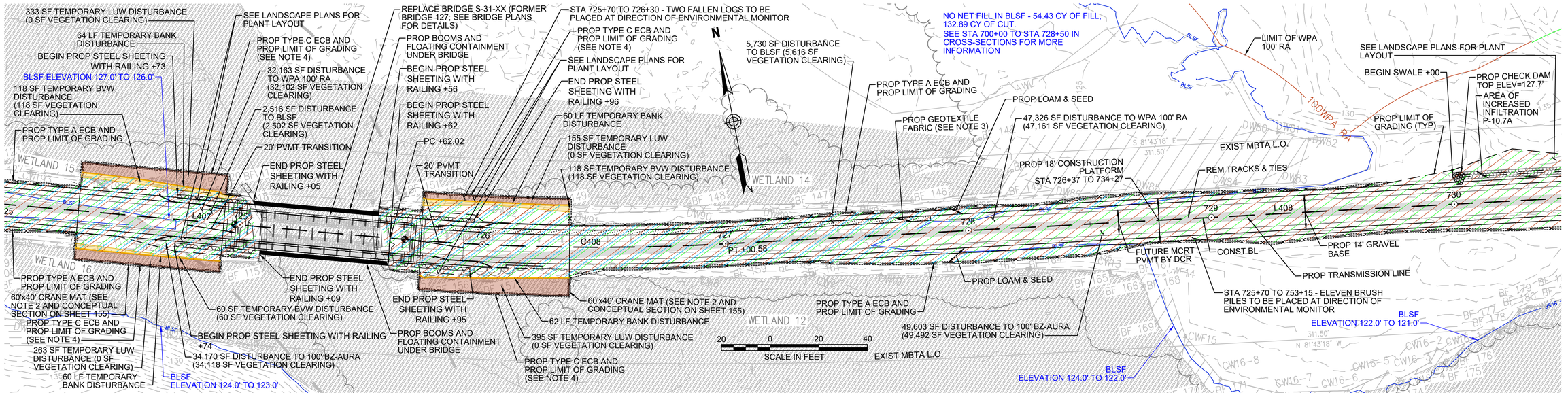
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 64 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MS	.	.



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 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.

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)

HATCH	DESCRIPTION
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100' RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 65 OF 347

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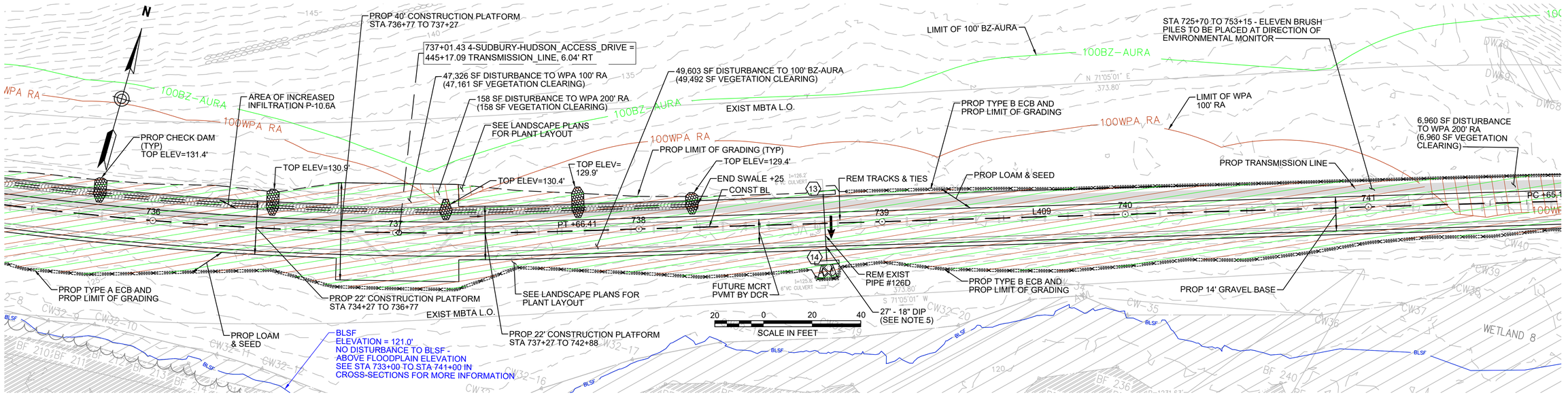

DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
13	Concrete Headwall	738+77, 12.0' LT			127.10'	12" REVEAL
14	Concrete Headwall	738+77, 15.4' RT		125.07'		12" REVEAL

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 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 100' VP BZ. SEE DETAIL ON SHEET 154.
5. TRANSMISSION LINE TO RUN UNDERNEATH DRAINAGE PIPE (SEE DETAIL ON SHEET 157).

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100' RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 66 OF 347

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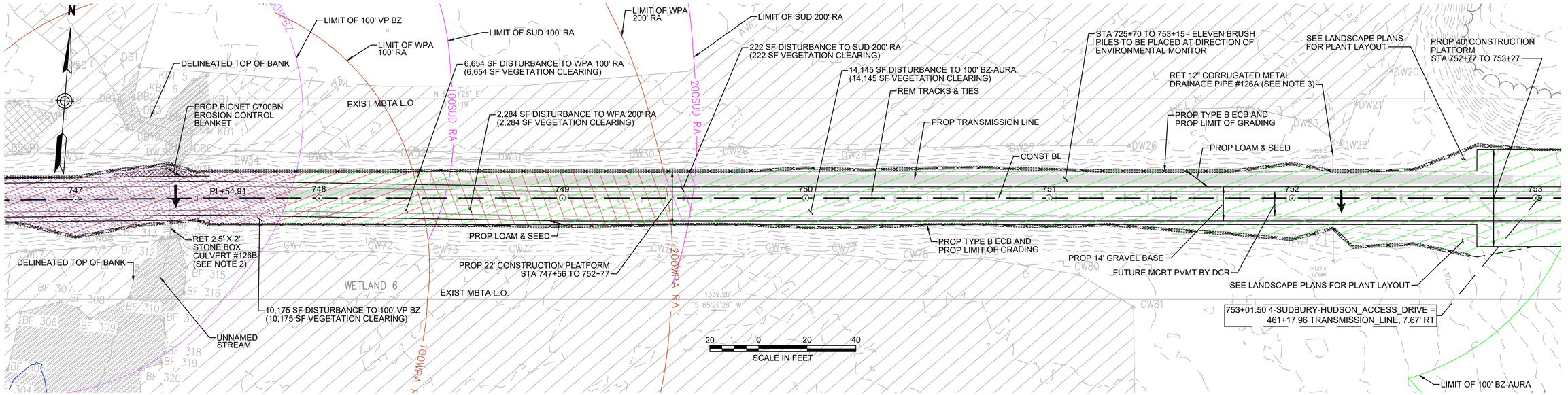

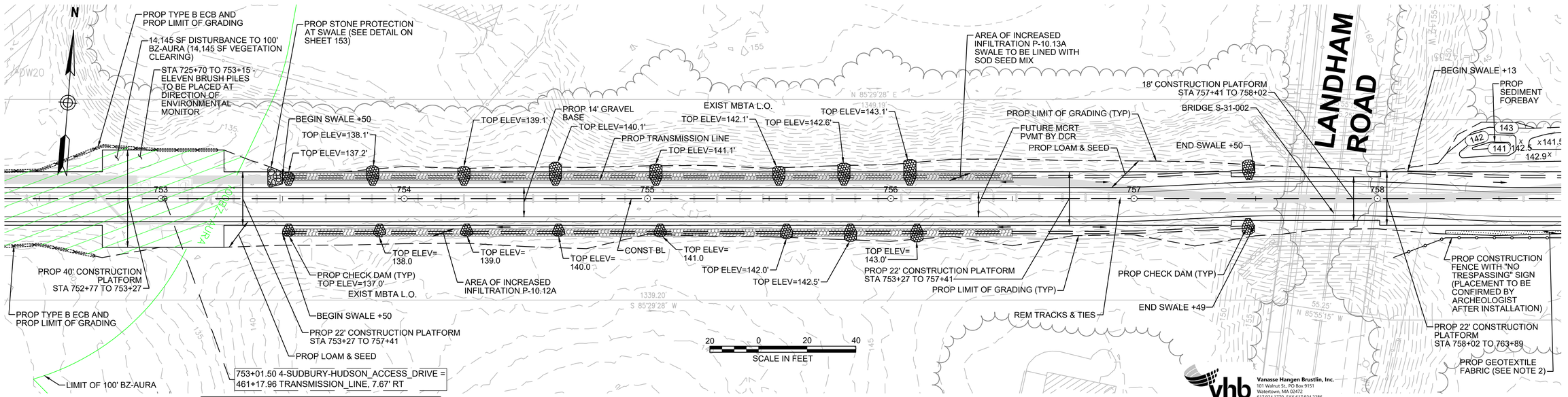

NOTES:

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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 100' VP BZ. SEE DETAIL ON SHEET 154.

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION	HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND		DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	BORDERING VEGETATED WETLAND		DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	LAND UNDER WATER		DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	VERNAL POOL		DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100' RA)
	PERMANENT DISTURBANCE TO VEGETATED WETLAND		DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND		DISTURBANCE TO BLSF
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)		EXISTING TREE LINE
	TEMPORARY DISTURBANCE TO BANK		LIMIT OF GRADING
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)		

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 67 OF 347

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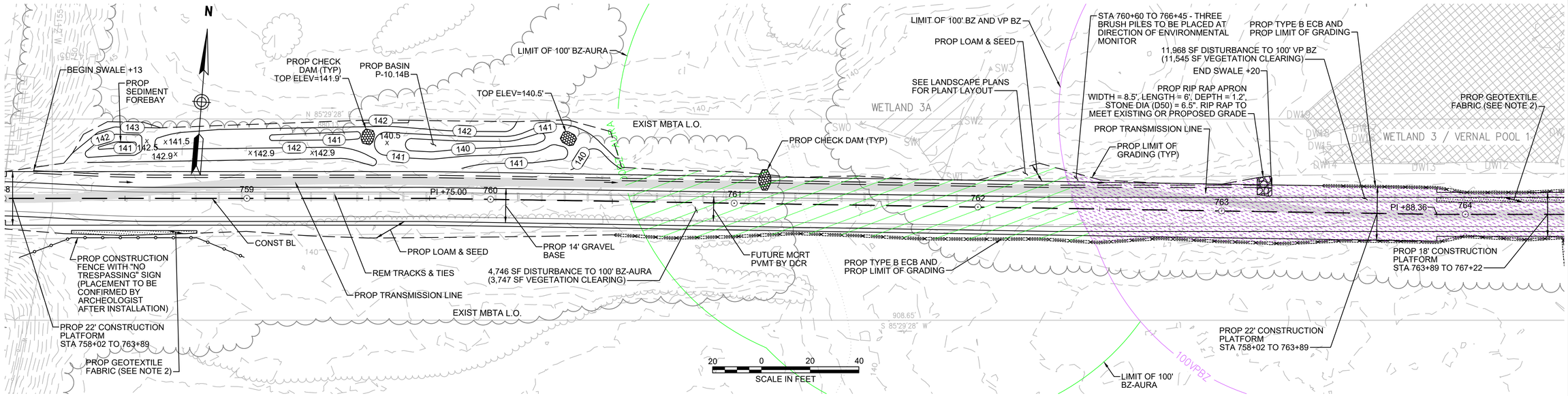

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ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)

HATCH	DESCRIPTION
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100' RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

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CONSTRUCTION PLANS

PLAN 68 OF 347

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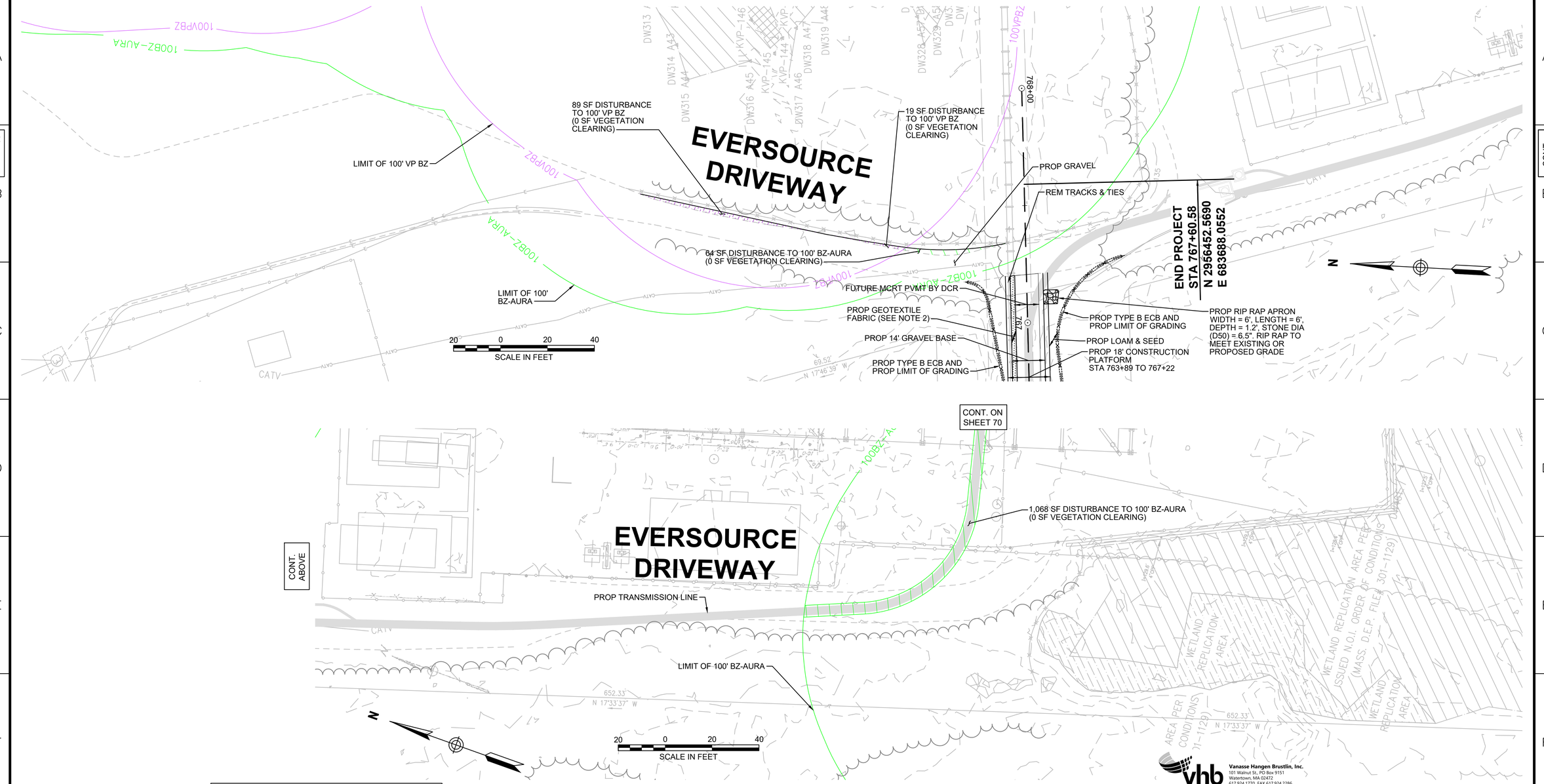

NOTES:

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ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND
	BORDERING VEGETATED WETLAND
	LAND UNDER WATER
	VERNAL POOL
	PERMANENT DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)
	TEMPORARY DISTURBANCE TO BANK
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)

HATCH	DESCRIPTION
	DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100' RA)
	DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	DISTURBANCE TO BLSF
	EXISTING TREE LINE
	LIMIT OF GRADING

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

CONSTRUCTION PLANS

PLAN 69 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MS	.	.

CONT. ON SHEET 69

EVERSOURCE DRIVEWAY

1,089 SF DISTURBANCE TO 100' BZ-AURA
(0 SF VEGETATION CLEARING)

100BZ-AURA

1,068 SF DISTURBANCE TO 100' BZ-AURA
(0 SF VEGETATION CLEARING)

PROP TRANSMISSION LINE

LIMIT OF 100' BZ-AURA

1,240 SF DISTURBANCE TO 100' BZ-AURA
(0 SF VEGETATION CLEARING)

LIMIT OF 100' BZ-AURA

WETLAND REPLICATION AREA PER I.O.I. ORDER OF CONDITIONS D.E.P. FILE# 301-1129)

WETLAND REPLICATION AREA

N 17°33'37" W 652.33'

20 0 20 40
SCALE IN FEET

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

ENVIRONMENTAL IMPACTS LEGEND

HATCH	DESCRIPTION	HATCH	DESCRIPTION
	ISOLATED VEGETATED WETLAND		DISTURBANCE TO WPA 200' RIVERFRONT AREA (WPA 200' RA)
	BORDERING VEGETATED WETLAND		DISTURBANCE TO SUDBURY 200' RIVERFRONT AREA (SUD 200' RA)
	LAND UNDER WATER		DISTURBANCE TO WPA 100' RIVERFRONT AREA (WPA 100' RA)
	VERNAL POOL		DISTURBANCE TO SUDBURY 100' RIVERFRONT AREA (SUD 100' RA)
	PERMANENT DISTURBANCE TO VEGETATED WETLAND		DISTURBANCE TO 100' BUFFER ZONE (100' BZ-AURA)
	TEMPORARY DISTURBANCE TO VEGETATED WETLAND		DISTURBANCE TO BLSF
	TEMPORARY DISTURBANCE TO LAND UNDER WATER (LUW)		EXISTING TREE LINE
	TEMPORARY DISTURBANCE TO BANK	— — —	LIMIT OF GRADING
	DISTURBANCE TO 100' VERNAL POOL BUFFER ZONE (100' VP BZ)		

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

PLAN 70 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MS	.	.

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	2966202.1444	657150.6659		S66°17'15"E 569.94'	305+69.94	2965972.9435	657672.4880
C201	305+69.94	2965972.9435	657672.4880	R=500.00' Δ=2°19'14" L=20.25' T=10.13'		305+90.19	2965965.1773	657691.1890
L202	305+90.19	2965965.1773	657691.1890		S68°36'29"E 31.19'	306+21.38	2965953.7996	657720.2333
C202	306+21.38	2965953.7996	657720.2333	R=500.00' Δ=2°17'26" L=19.99' T=10.00'		306+41.37	2965946.1385	657738.6949
L203	306+41.37	2965946.1385	657738.6949		S66°19'03"E 730.01'	313+71.38	2965652.9160	658407.2248
C203	313+71.38	2965652.9160	658407.2248	R=500.00' Δ=2°17'26" L=19.99' T=10.00'		313+91.37	2965644.5231	658425.3653
L204	313+91.37	2965644.5231	658425.3653		S64°01'36"E 29.68'	314+21.05	2965631.5251	658452.0469
C204	314+21.05	2965631.5251	658452.0469	R=500.00' Δ=2°17'04" L=19.94' T=9.97'		314+40.99	2965623.1534	658470.1391
L205	314+40.99	2965623.1534	658470.1391		S66°18'41"E 2288.82'	337+29.81	2964703.5807	660566.1091
C205	337+29.81	2964703.5807	660566.1091	R=500.00' Δ=4°31'29" L=39.49' T=19.75'		337+69.29	2964686.3060	660601.6044
L206	337+69.29	2964686.3060	660601.6044		S61°47'12"E 11.20'	337+80.49	2964681.0125	660611.4712
C206	337+80.49	2964681.0125	660611.4712	R=500.00' Δ=4°31'29" L=39.49' T=19.75'		338+19.98	2964663.7378	660646.9665
L207	338+19.98	2964663.7378	660646.9665		S66°18'41"E 209.72'	340+29.70	2964579.4775	660839.0199
C207	340+29.70	2964579.4775	660839.0199	R=500.00' Δ=4°17'58" L=37.52' T=18.77'		340+67.22	2964565.7061	660873.9108
L208	340+67.22	2964565.7061	660873.9108		S70°36'39"E 15.82'	340+83.04	2964560.4544	660888.8329
C208	340+83.04	2964560.4544	660888.8329	R=500.00' Δ=4°17'58" L=37.52' T=18.77'		341+20.56	2964546.6830	660923.7239
L209	341+20.56	2964546.6830	660923.7239		S66°18'41"E 359.47'	344+80.03	2964402.2587	661252.9083
C209	344+80.03	2964402.2587	661252.9083	R=500.00' Δ=4°34'26" L=39.91' T=19.97'		345+19.95	2964387.6974	661290.0610
L210	345+19.95	2964387.6974	661290.0610		S70°53'07"E 10.12'	345+30.07	2964384.3829	661299.6249
C210	345+30.07	2964384.3829	661299.6249	R=500.00' Δ=4°34'16" L=39.89' T=19.96'		345+69.96	2964369.8317	661336.7545
L211	345+69.96	2964369.8317	661336.7545		S66°18'51"E 159.98'	347+29.94	2964305.5655	661483.2559
C211	347+29.94	2964305.5655	661483.2559	R=500.00' Δ=4°23'59" L=38.39' T=19.21'		347+68.33	2964288.8077	661517.7892
L212	347+68.33	2964288.8077	661517.7892		S61°54'53"E 13.79'	347+82.12	2964282.3158	661529.9549

2-SUDBURY-HUDSON-ACCESS-DRIVE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C212	347+82.12	2964282.3158	661529.9549	R=500.00' Δ=4°23'48" L=38.37' T=19.19'		348+20.49	2964265.5682	661564.4651
L213	348+20.49	2964265.5682	661564.4651		S66°18'41"E 1267.77'	360+88.26	2963756.2200	662725.4156
C213	360+88.26	2963756.2200	662725.4156	R=80.00' Δ=16°41'57" L=23.32' T=11.74'		361+11.58	2963743.8947	662745.1110
L214	361+11.58	2963743.8947	662745.1110		S49°36'43"E 16.84'	361+28.41	2963732.9851	662757.9352
C214	361+28.41	2963732.9851	662757.9352	R=80.00' Δ=32°54'10" L=45.94' T=23.62'		361+74.35	2963714.6008	662799.3503
L215	361+74.35	2963714.6008	662799.3503		S82°30'53"E 18.74'	361+93.10	2963712.1592	662817.9331
C215	361+93.10	2963712.1592	662817.9331	R=80.00' Δ=16°12'13" L=22.62' T=11.39'		362+15.72	2963706.1003	662839.6528
L216	362+15.72	2963706.1003	662839.6528		S66°18'41"E 417.03'	366+32.74	2963538.5534	663221.5402
C216	366+32.74	2963538.5534	663221.5402	R=500.00' Δ=5°07'35" L=44.74' T=22.38'		366+77.48	2963522.4353	663263.2560
C217	366+77.48	2963522.4353	663263.2560	R=500.00' Δ=5°07'35" L=44.74' T=22.38'		367+22.22	2963506.3172	663304.9718
L217	367+22.22	2963506.3172	663304.9718		S66°18'41"E 162.17'	368+84.39	2963441.1621	663453.4789
C218	368+84.39	2963441.1621	663453.4789	R=500.00' Δ=5°03'10" L=44.09' T=22.06'		369+28.48	2963421.6905	663493.0242
C219	369+28.48	2963421.6905	663493.0242	R=500.00' Δ=4°58'12" L=43.37' T=21.70'		369+71.85	2963402.5097	663531.9080
L218	369+71.85	2963402.5097	663531.9080		S66°13'43"E 2255.15'	392+27.00	2962493.4828	665595.7301
L219	392+27.00	2962493.4828	665595.7301		S66°18'55"E 1499.60'	407+26.60	2961891.0882	666969.0153
C220	407+26.60	2961891.0882	666969.0153	R=500.00' Δ=2°19'04" L=20.23' T=10.11'		407+46.82	2961882.5913	666987.3676
L220	407+46.82	2961882.5913	666987.3676		S63°59'51"E 27.94'	407+74.76	2961870.3416	667012.4806
C221	407+74.76	2961870.3416	667012.4806	R=500.00' Δ=2°17'42" L=20.03' T=10.01'		407+94.79	2961861.9243	667030.6513
L221	407+94.79	2961861.9243	667030.6513		S66°17'33"E 730.94'	415+25.73	2961568.0374	667699.9070
C222	415+25.73	2961568.0374	667699.9070	R=499.59' Δ=7°40'18" L=66.89' T=33.50'		415+92.62	2961545.3163	667762.7705
C223	415+92.62	2961545.3163	667762.7705	R=500.00' Δ=7°45'40" L=67.73' T=33.92'		416+60.35	2961522.2623	667826.3998
L222	416+60.35	2961522.2623	667826.3998		S66°12'11"E 50.19'	417+10.54	2961502.0115	667872.3213

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION BASELINE DATA

PLAN 72 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MES	.	.

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
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
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

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION BASELINE DATA

PLAN 73 OF 347

SCALE: unless noted	DATE	DRAWN	CHK'D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MES	.	.

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	2957366.0527	677304.8213		S66°14'03"E 231.13'	702+31.13	2957272.9091	677516.3488
C401	702+31.13	2957272.9091	677516.3488	R=3750.00' Δ=12°25'19" L=813.02' T=408.11'		710+44.14	2956867.4824	678219.2284
L403	710+44.14	2956867.4824	678219.2284		S53°48'44"E 149.49'	711+93.63	2956779.2208	678339.8770
C404	711+93.63	2956779.2208	678339.8770	R=500.00' Δ=9°37'46" L=84.03' T=42.12'		712+77.66	2956735.5245	678411.5389
C405	712+77.66	2956735.5245	678411.5389	R=500.00' Δ=7°39'17" L=66.80' T=33.45'		713+44.46	2956701.7603	678469.1214
L404	713+44.46	2956701.7603	678469.1214		S55°47'13"E 137.37'	714+81.84	2956624.5189	678582.7225
L405	714+81.84	2956624.5189	678582.7225		S56°18'15"E 352.06'	718+33.90	2956429.2013	678875.6350
C406	718+33.90	2956429.2013	678875.6350	R=2150.00' Δ=7°27'00" L=279.56' T=139.98'		721+13.46	2956289.6424	679117.6429
L406	721+13.46	2956289.6424	679117.6429		S63°45'15"E 104.16'	722+17.62	2956243.5785	679211.0686
C407	722+17.62	2956243.5785	679211.0686	R=1000.00' Δ=9°53'27" L=172.63' T=86.53'		723+90.25	2956180.9486	679371.7031
L407	723+90.25	2956180.9486	679371.7031		S73°38'42"E 171.77'	725+62.02	2956132.5797	679536.5242
C408	725+62.02	2956132.5797	679536.5242	R=975.00' Δ=8°08'34" L=138.56' T=69.40'		727+00.58	2956103.1249	679671.8017
L408	727+00.58	2956103.1249	679671.8017		S81°47'16"E 414.21'	731+14.79	2956043.9591	680081.7601
C409	731+14.79	2956043.9591	680081.7601	R=1450.00' Δ=25°44'54" L=651.62' T=331.41'		737+66.41	2956096.4751	680725.7736
L409	737+66.41	2956096.4751	680725.7736		N72°27'50"E 398.71'	741+65.12	2956216.6094	681105.9571
C410	741+65.12	2956216.6094	681105.9571	R=1400.00' Δ=12°28'35" L=304.86' T=153.03'		744+69.98	2956276.2156	681404.3155
L410	744+69.98	2956276.2156	681404.3155		N84°56'25"E 284.93'	747+54.91	2956301.3441	681688.1339
L412	763+88.36	2956423.2838	683316.9838		N85°29'15"E 411.64'	768+00.00	2956455.6704	683727.3522

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EVERSOURCE

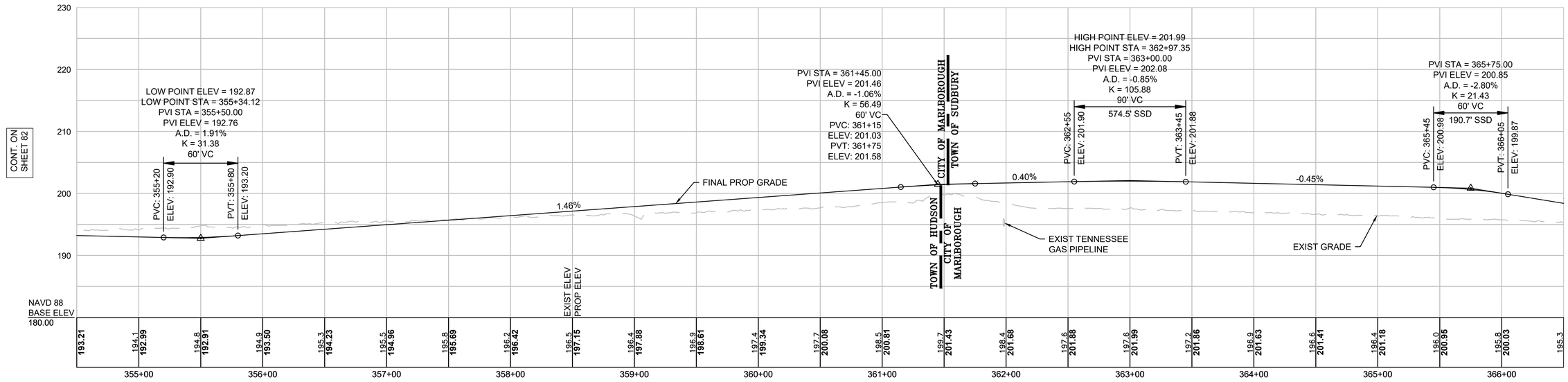
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

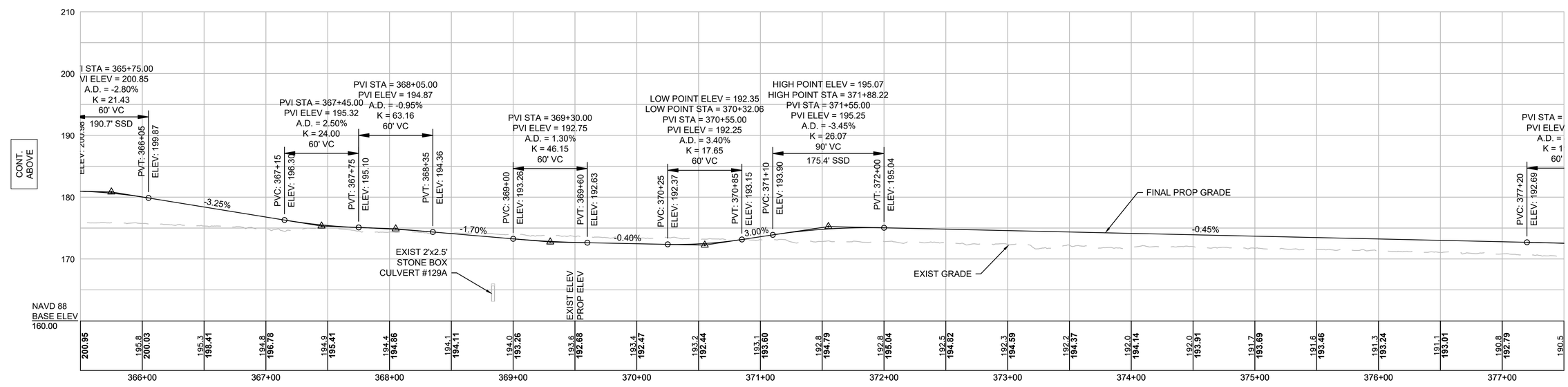
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION BASELINE DATA

PLAN 74 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MS	SK	MES	.	.





NOTE:
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.

HORIZONTAL
40 0 40 80
8 0 8 16
VERTICAL
SCALE IN FEET

Vanasse Hangen Brustlin, Inc.
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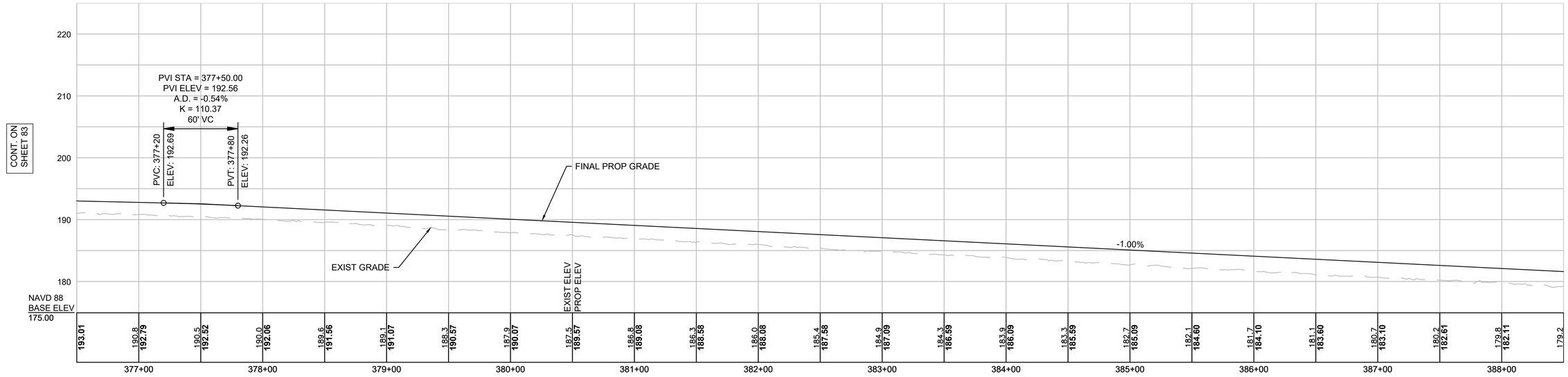
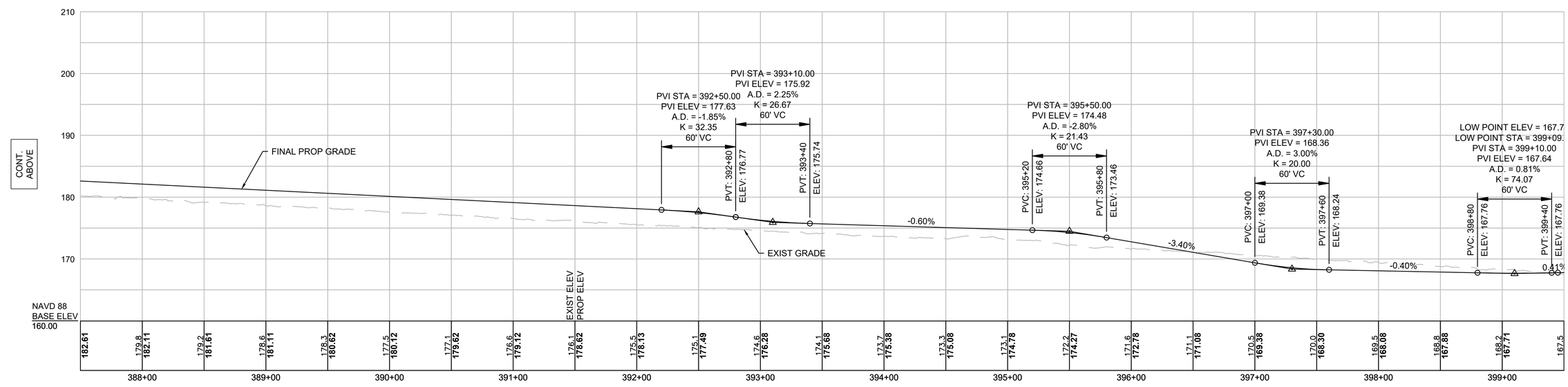
NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
PROFILE
PLAN 83 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
H: 1"=40' V: 1"=8'	OCT 2020	MS	SK	MES	.	.





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HORIZONTAL
40 0 40 80
8 0 8 16
VERTICAL
SCALE IN FEET

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

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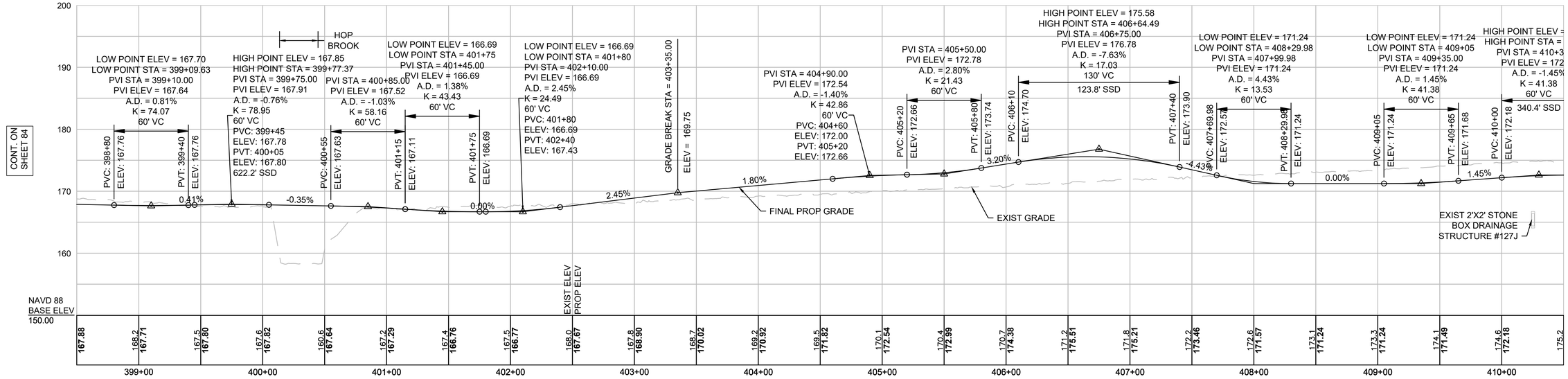
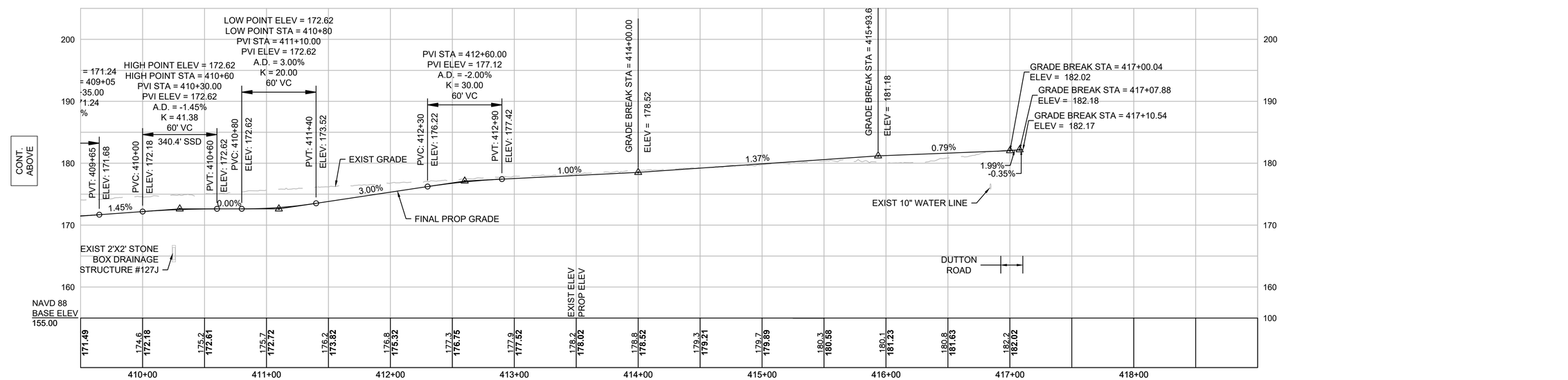
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
PROFILE
PLAN 84 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
H: 1"=40' V: 1"=8'	OCT 2020	MS	SK	MES	.	.





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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
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PROFILE
PLAN 85 OF 347

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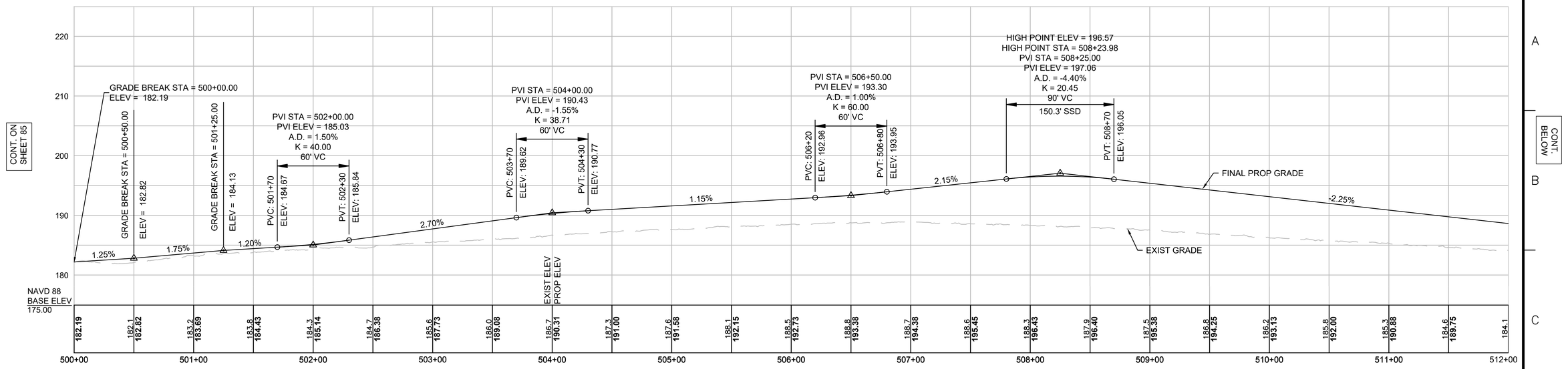

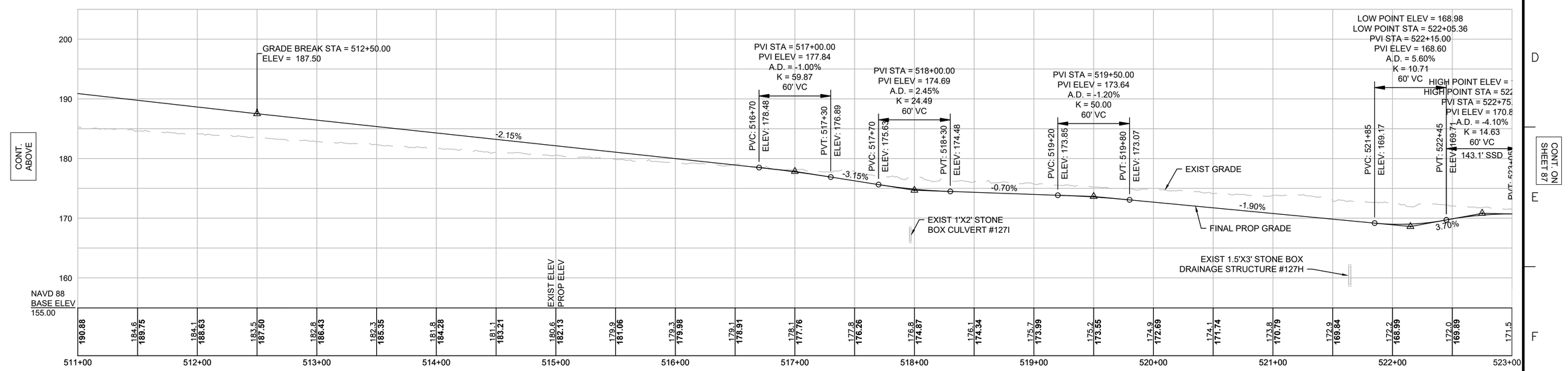

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
PROFILE
PLAN 86 OF 347

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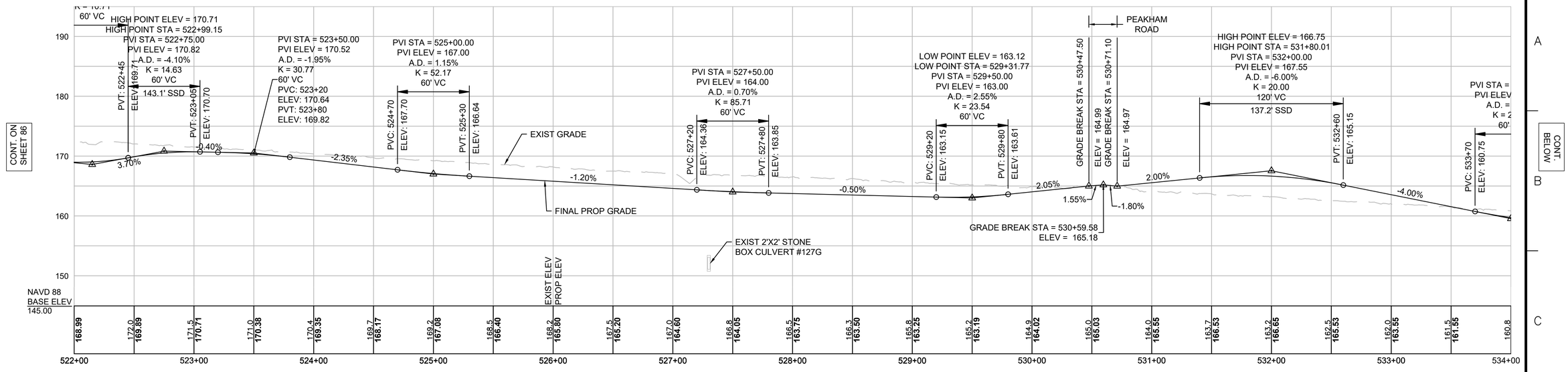

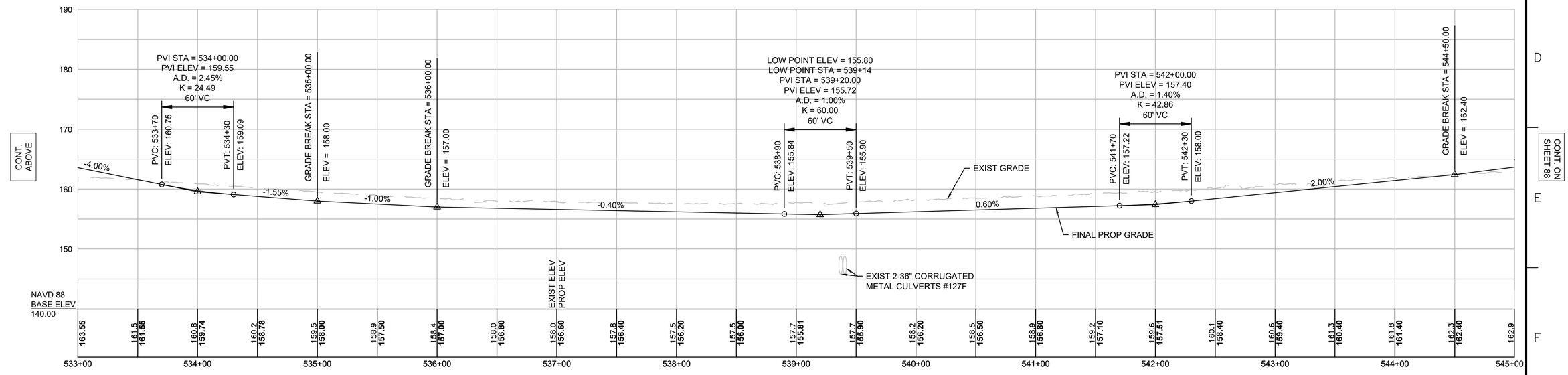

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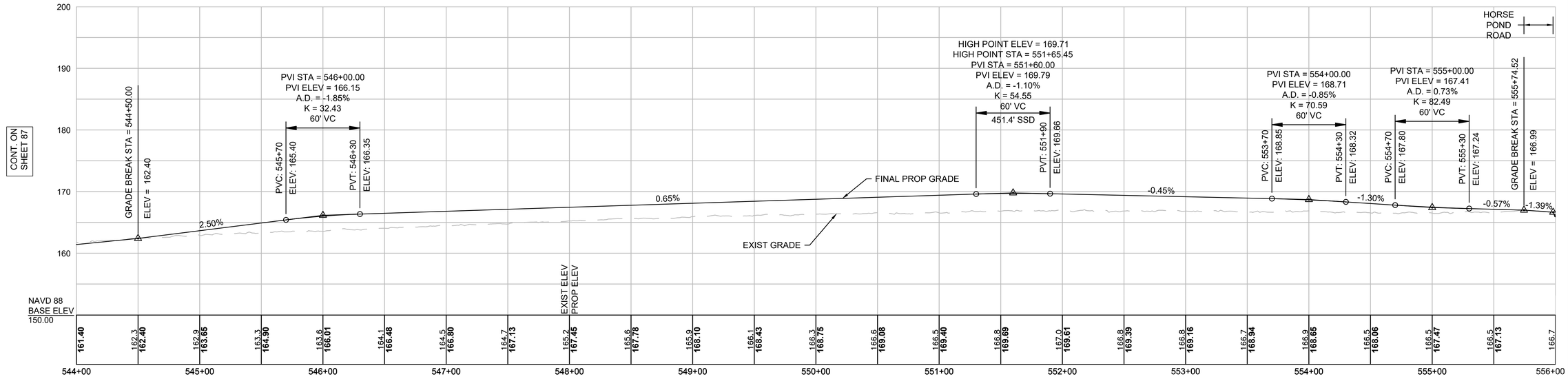
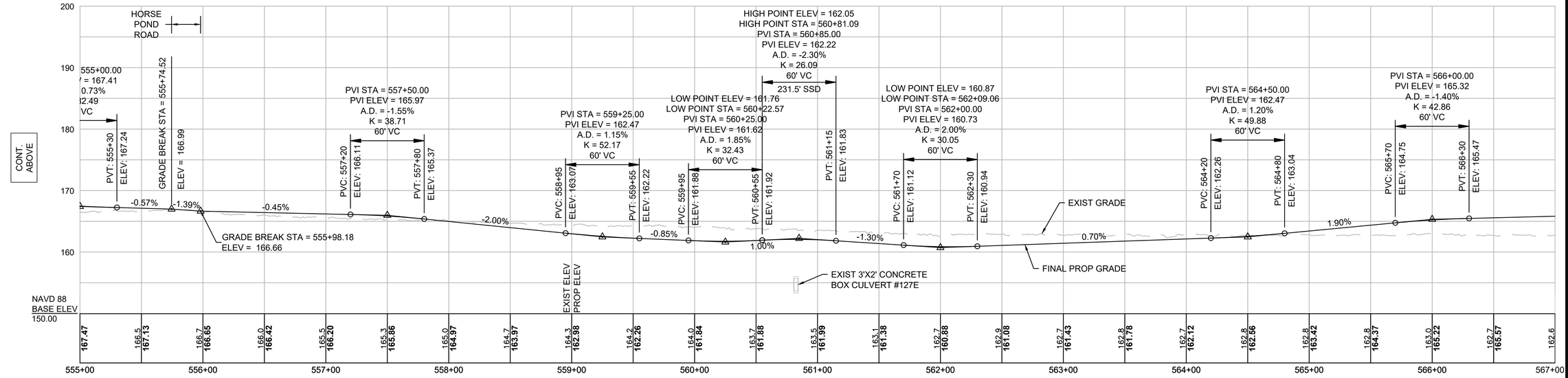
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
PROFILE
PLAN 87 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
H: 1"=40' V: 1"=8'	OCT 2020	MS	SK	MES	.	.





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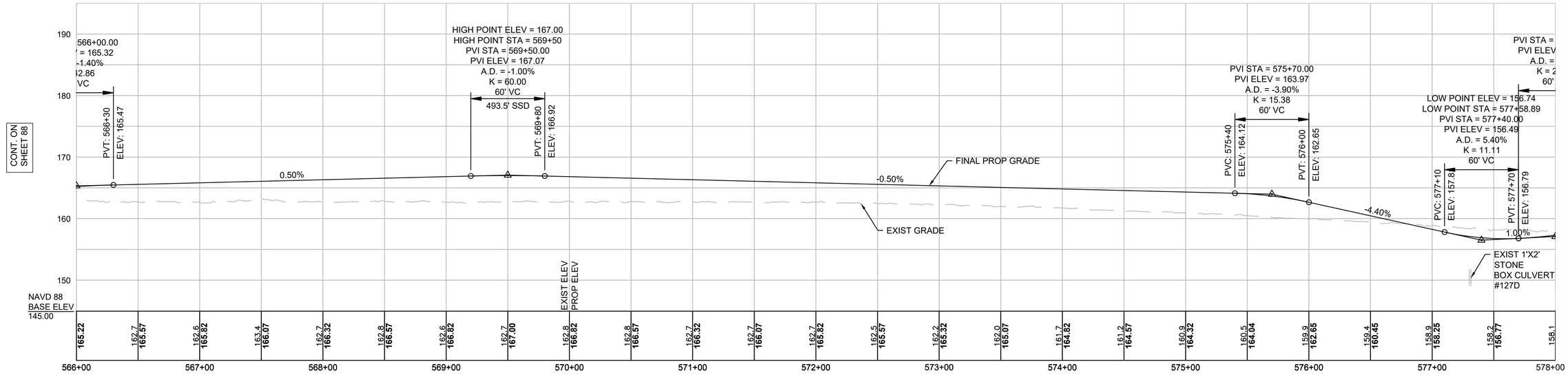
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

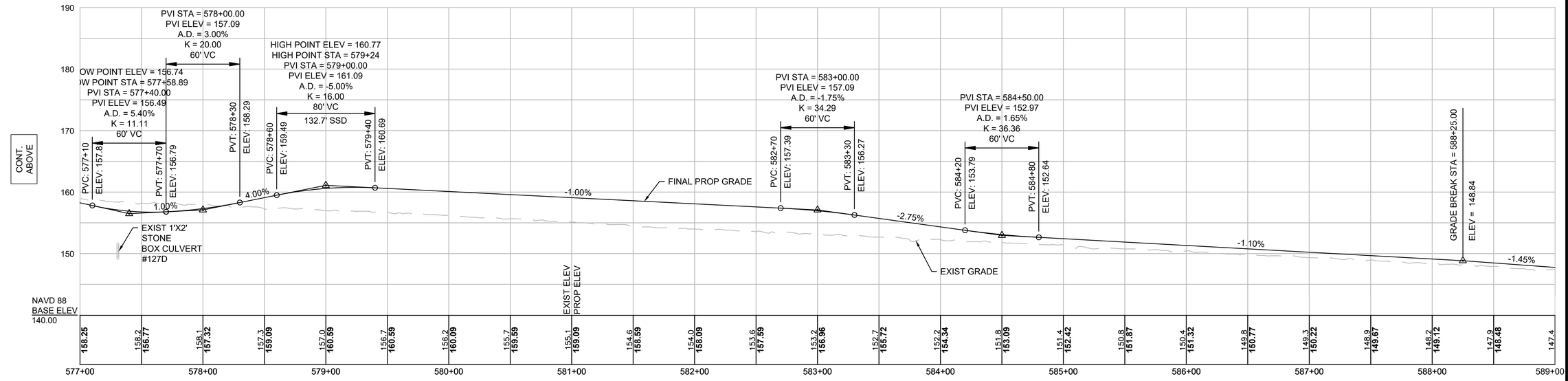
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

PROFILE

PLAN 88 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
H: 1"=40' V: 1"=8'	OCT 2020	MS	SK	MES	.	.





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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
PROFILE
PLAN 89 OF 347

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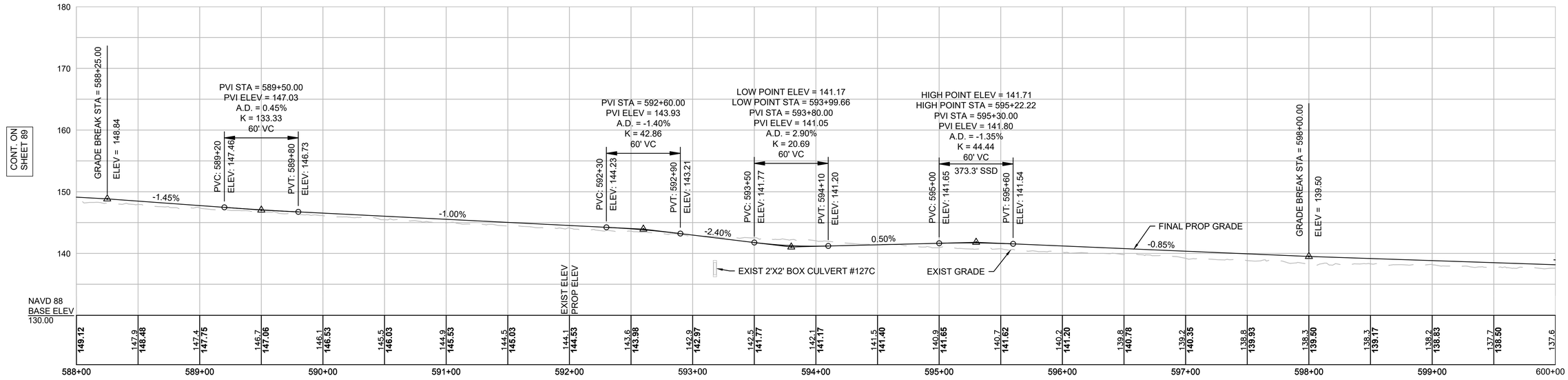

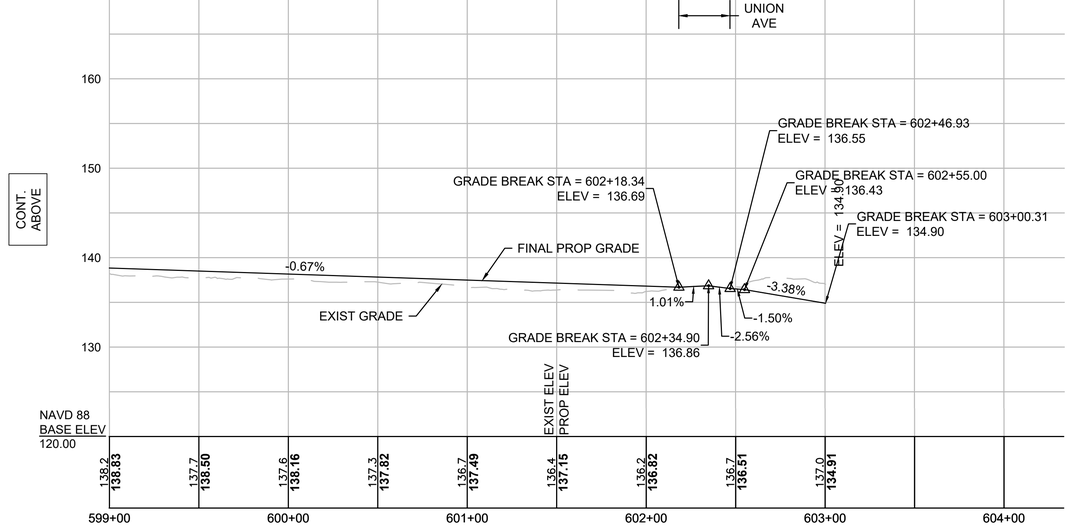

CONT. ON SHEET 91

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PROFILE
PLAN 90 OF 347

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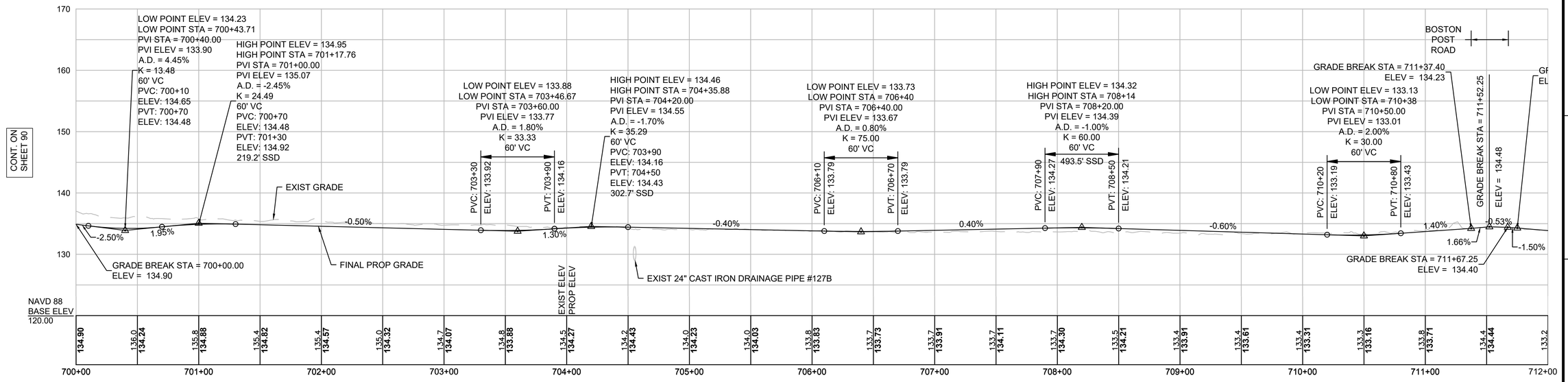

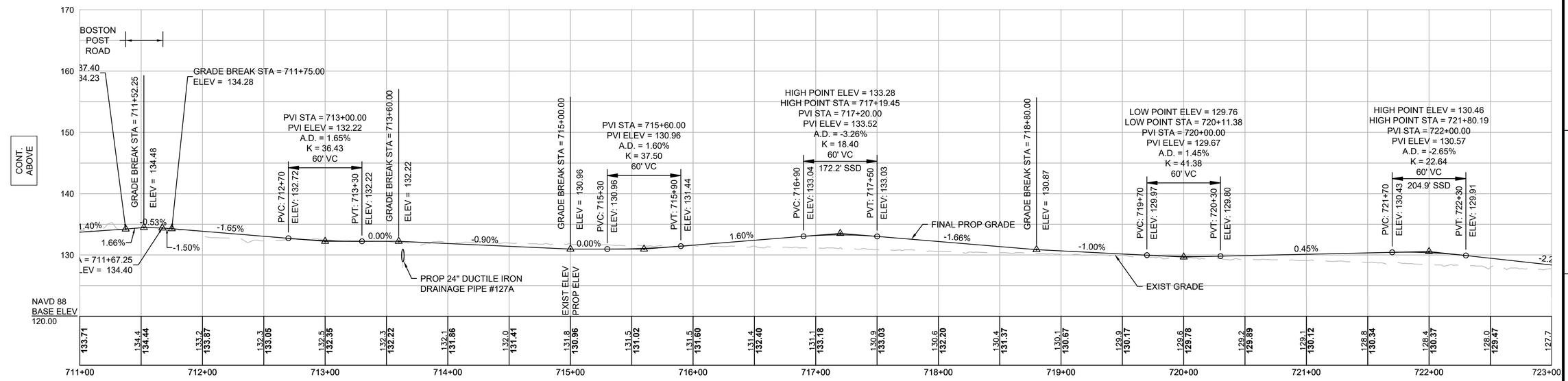

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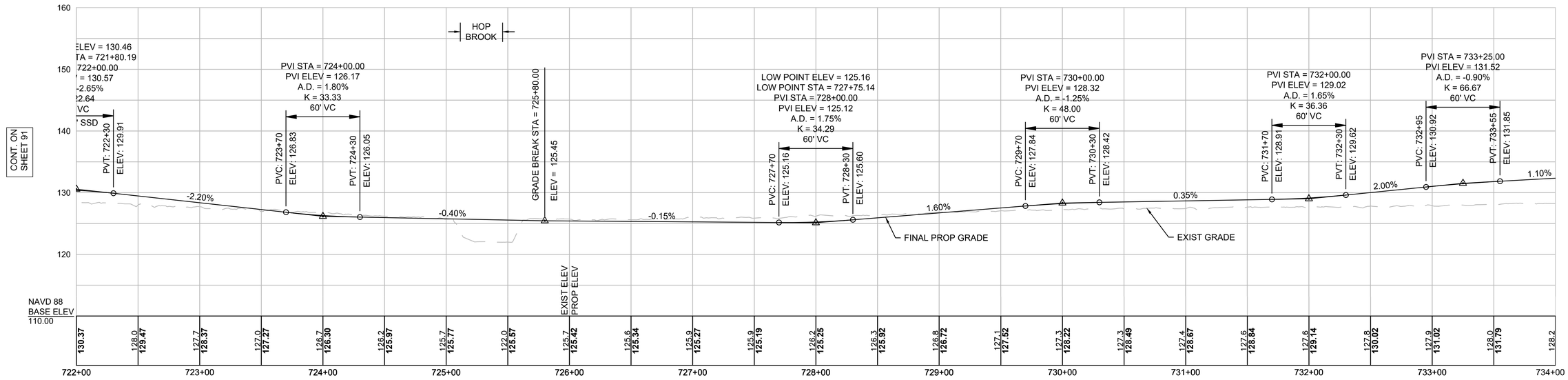
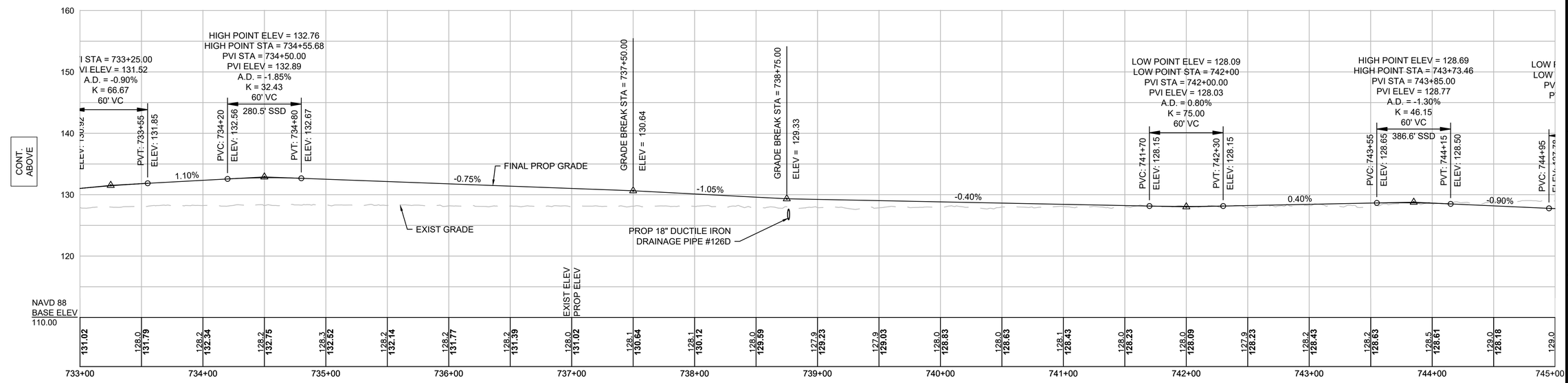
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
PROFILE
PLAN 91 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
H: 1"=40' V: 1"=8'	OCT 2020	MS	SK	MES	.	.





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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
PROFILE
PLAN 92 OF 347

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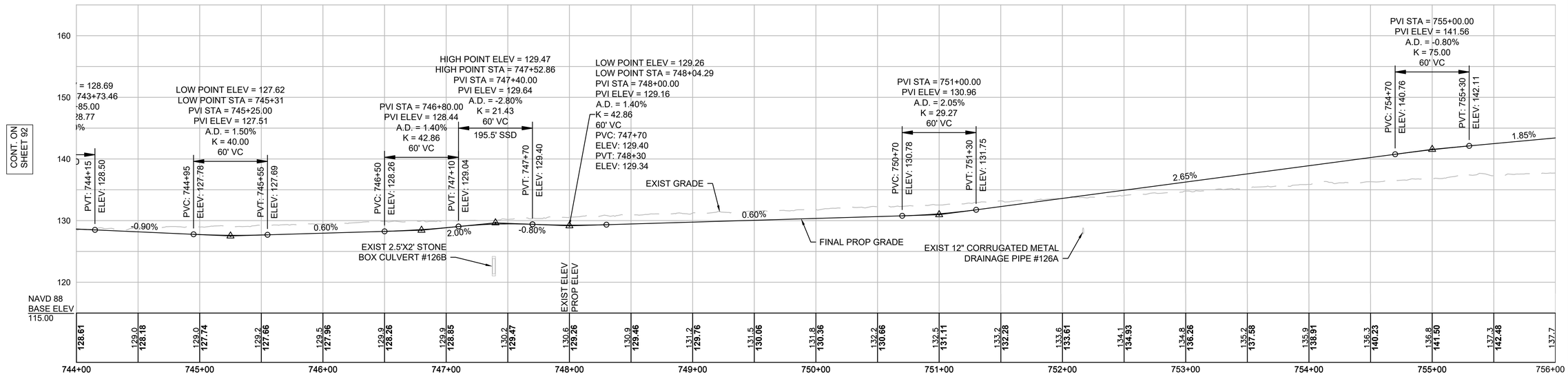

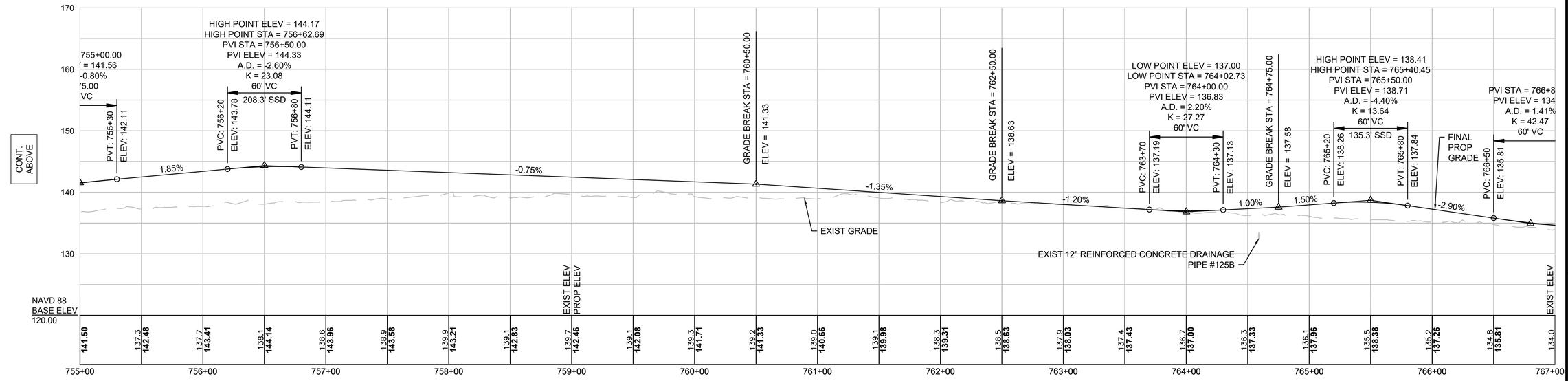

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
PROFILE
PLAN 93 OF 347

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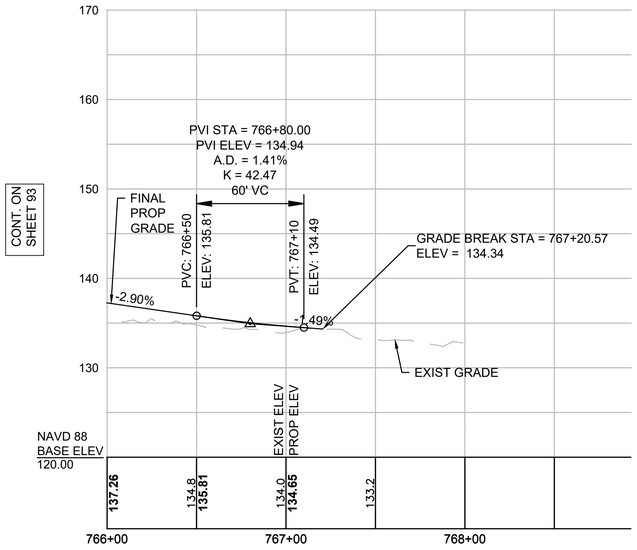

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

PROFILE

PLAN 94 OF 347

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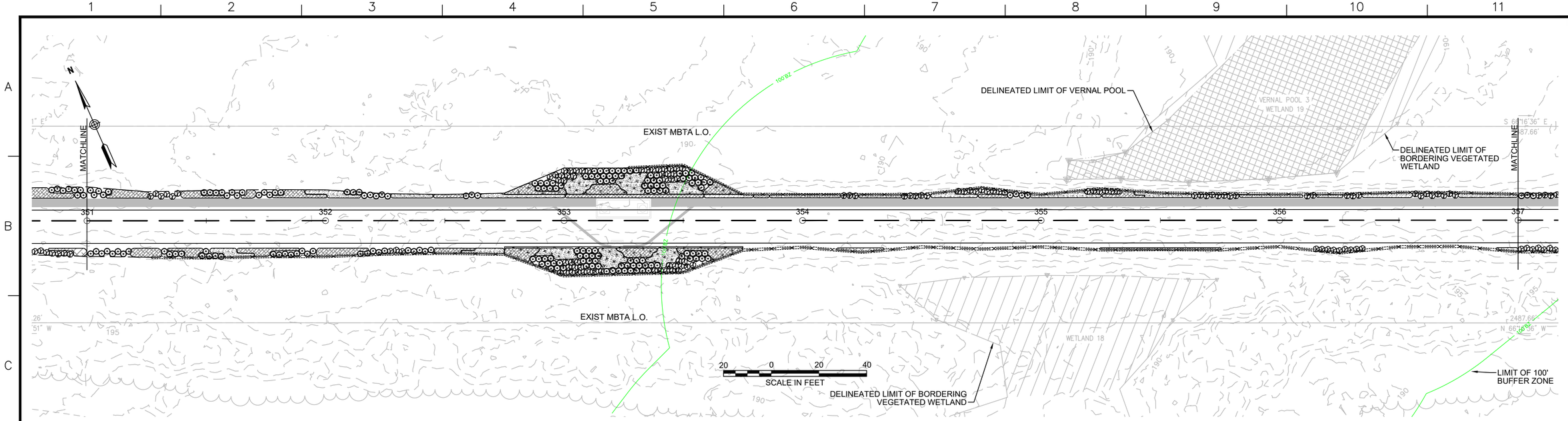
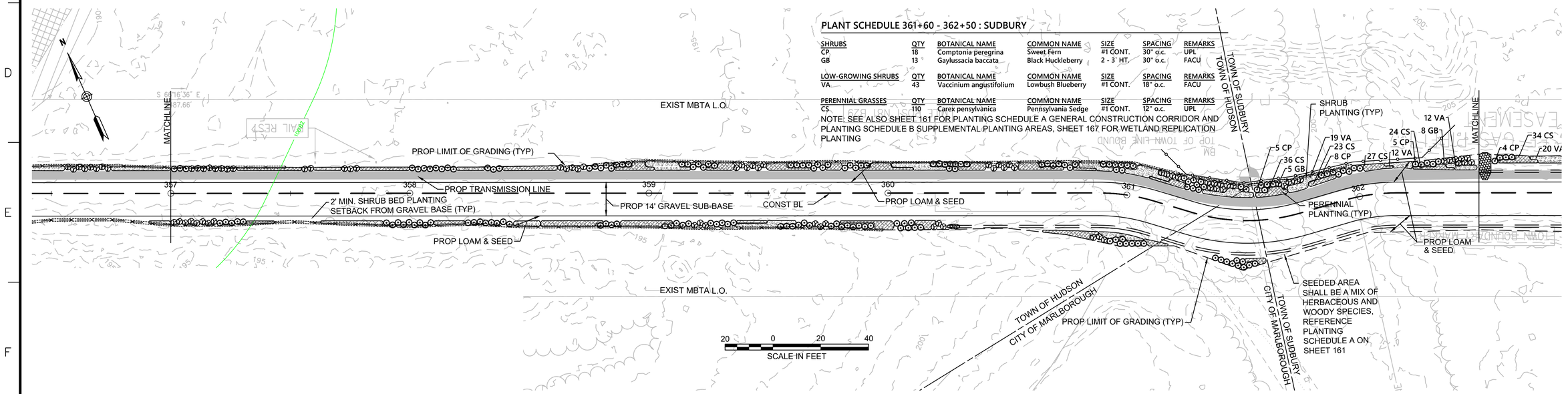
H: 1"=40' V: 1"=8'	OCT 2020	MS	SK	MES	.	.





PLANT SCHEDULE 361+60 - 362+50 : SUDBURY

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	18	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	13	Gaylussacia baccata	Black Huckleberry	2 - 3' HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	43	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	110	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND PLANTING SCHEDULE B SUPPLEMENTAL PLANTING AREAS, SHEET 167 FOR WETLAND REPLICATION PLANTING

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.
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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

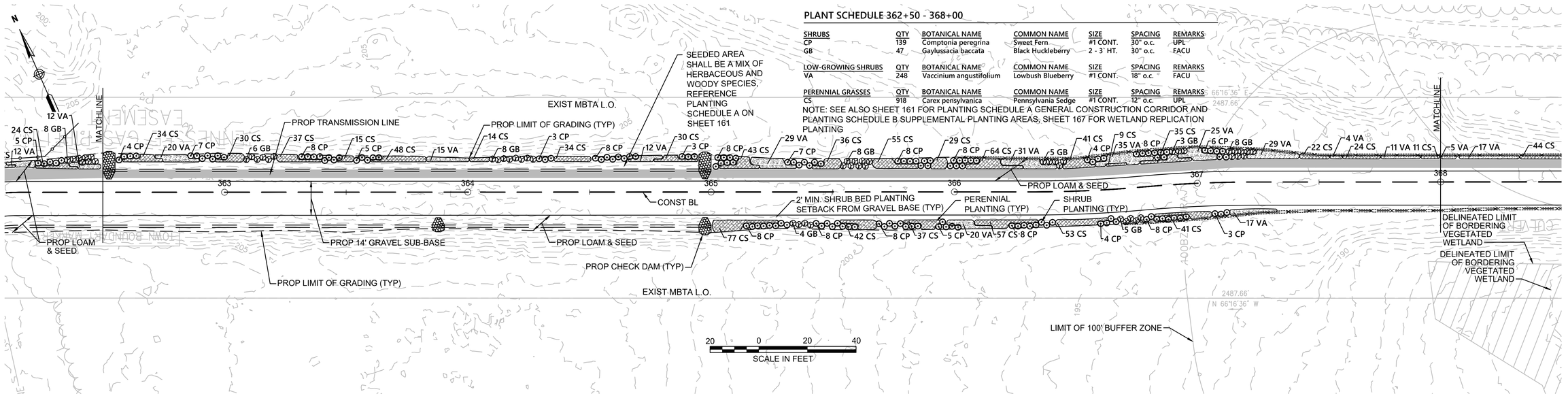
PLAN 102 OF 347

SCALE: unless noted	DATE	DRAWN	CH'KD.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	CW	JG	JG	.	.

PLANT SCHEDULE 362+50 - 368+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	139	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	47	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	248	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	918	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

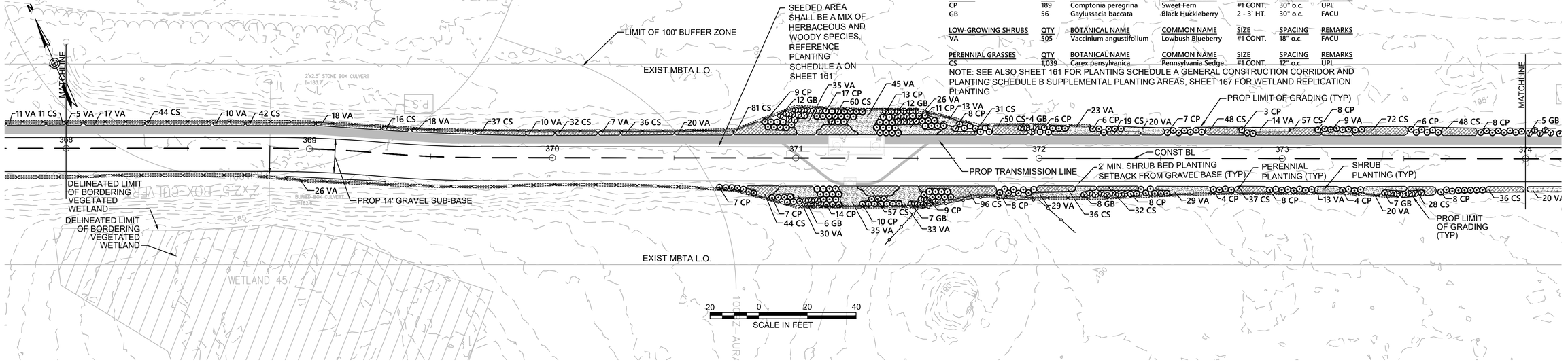
NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND PLANTING SCHEDULE B SUPPLEMENTAL PLANTING AREAS, SHEET 167 FOR WETLAND REPLICATION PLANTING



PLANT SCHEDULE 368+00 - 374+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	189	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	56	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	505	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	1,039	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND PLANTING SCHEDULE B SUPPLEMENTAL PLANTING AREAS, SHEET 167 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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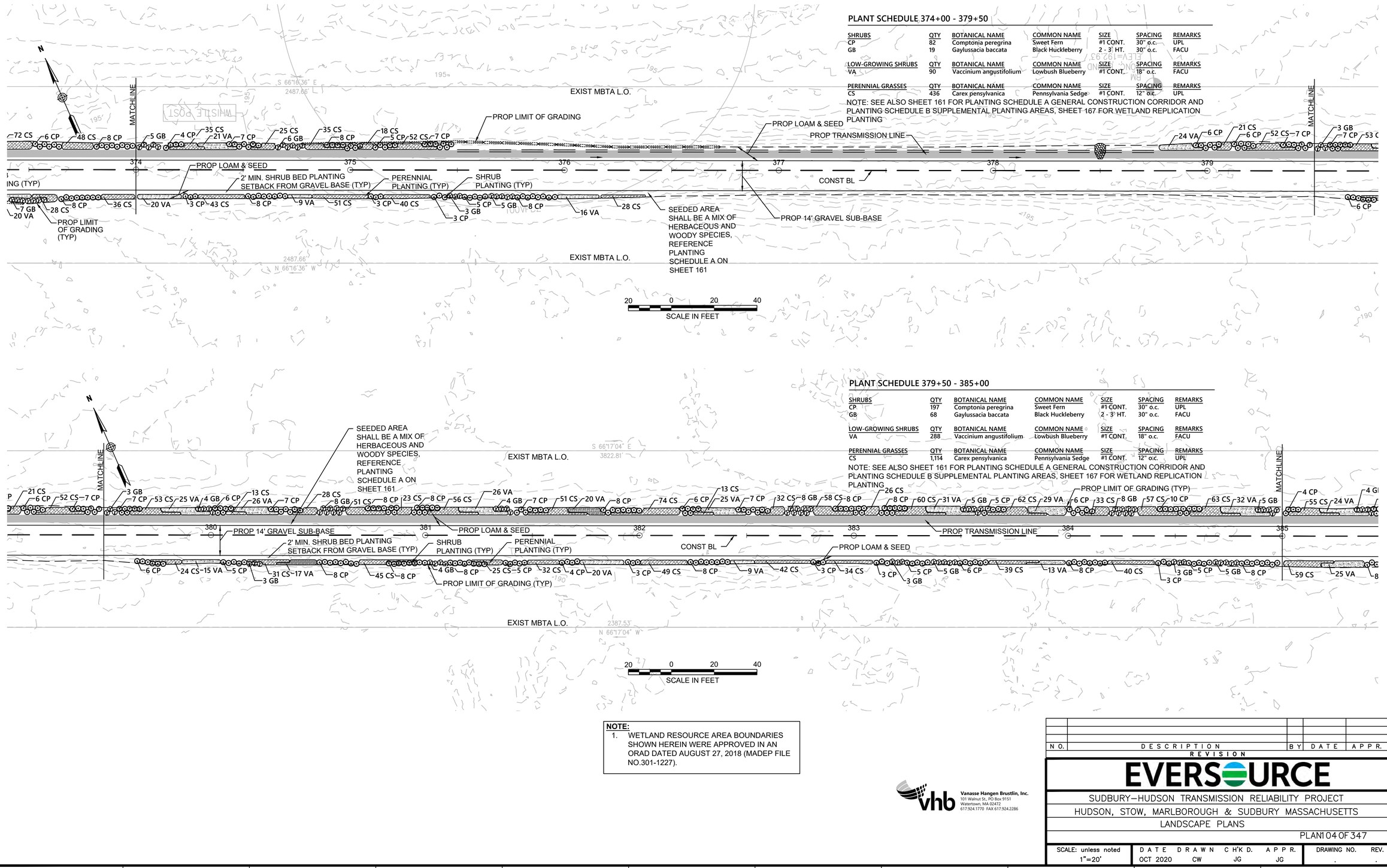
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 103 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	CW	JG	JG	.	.



PLANT SCHEDULE 374+00 - 379+50

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	82	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	19	Gaylussacia baccata	Black Huckleberry	2 - 3' HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	90	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	436	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND PLANTING SCHEDULE B SUPPLEMENTAL PLANTING AREAS, SHEET 167 FOR WETLAND REPLICATION PLANTING

PLANT SCHEDULE 379+50 - 385+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	197	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	68	Gaylussacia baccata	Black Huckleberry	2 - 3' HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	288	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	1,114	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND PLANTING SCHEDULE B SUPPLEMENTAL PLANTING AREAS, SHEET 167 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).

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

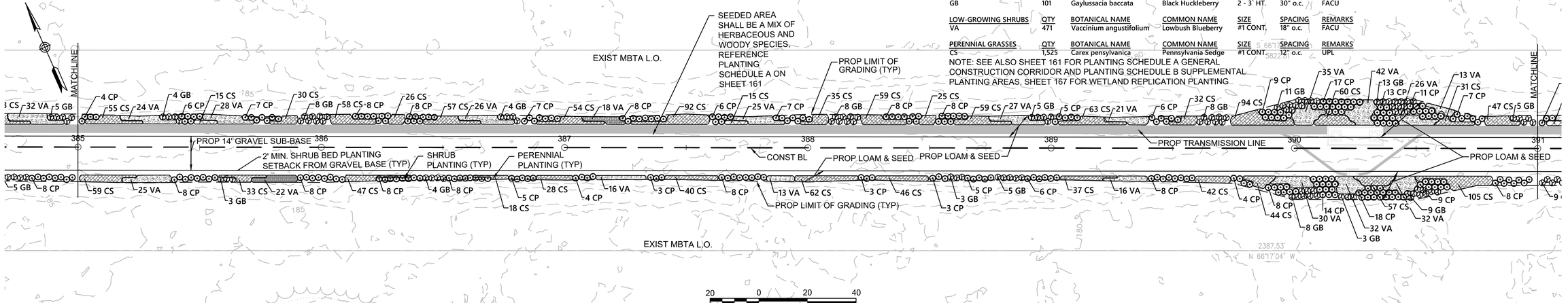
PLAN104 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	CW	JG	JG	.	.

PLANT SCHEDULE 385+00 - 391+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	283	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	101	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	471	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	1,525	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

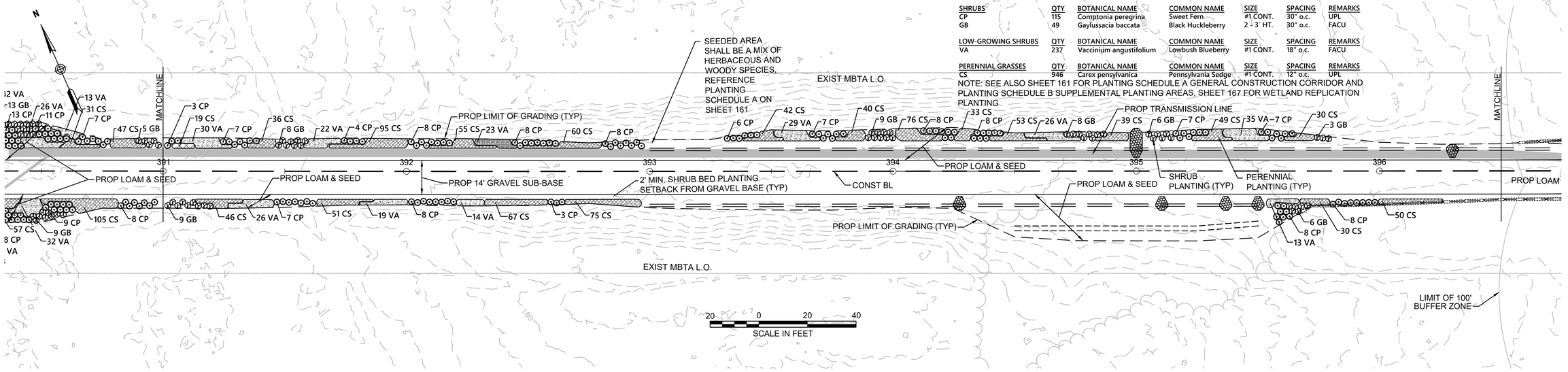
NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND PLANTING SCHEDULE B SUPPLEMENTAL PLANTING AREAS, SHEET 167 FOR WETLAND REPLICATION PLANTING



PLANT SCHEDULE 391+00 - 396+50

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	115	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	237	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	946	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND PLANTING SCHEDULE B SUPPLEMENTAL PLANTING AREAS, SHEET 167 FOR WETLAND REPLICATION PLANTING



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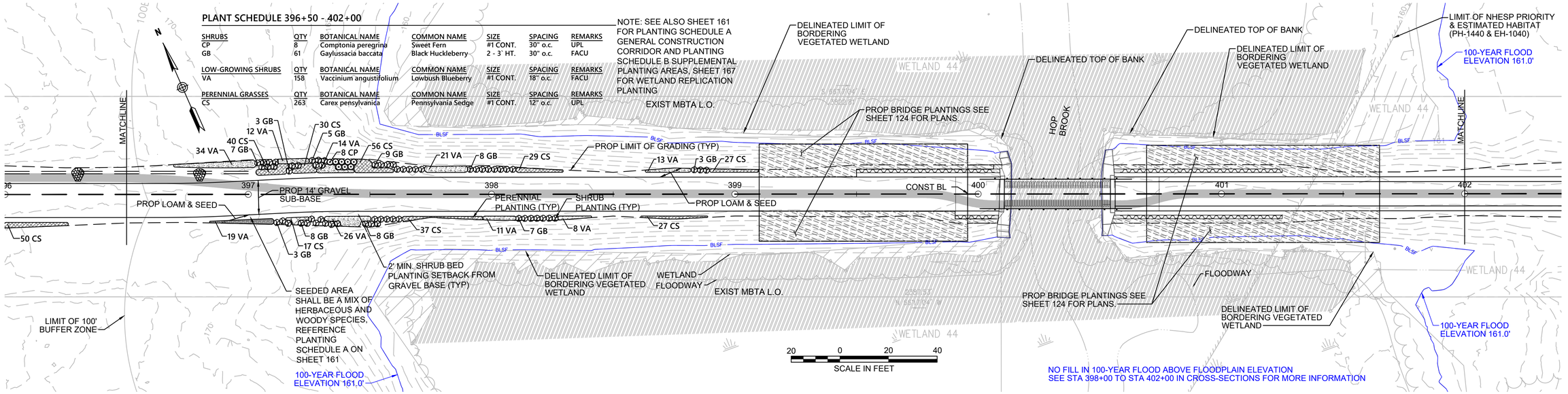
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
LANDSCAPE PLANS
PLAN 105 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=20'	OCT 2020	CW	JG	JG	.	.

PLANT SCHEDULE 396+50 - 402+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CP	8	Comptonia peregrina	Sweet Fern	#1 CONT.	30" o.c.	UPL
GB	61	Gaylussacia baccata	Black Huckleberry	2 - 3` HT.	30" o.c.	FACU
LOW-GROWING SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
VA	158	Vaccinium angustifolium	Lowbush Blueberry	#1 CONT.	18" o.c.	FACU
PERENNIAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CS	263	Carex pensylvanica	Pennsylvania Sedge	#1 CONT.	12" o.c.	UPL

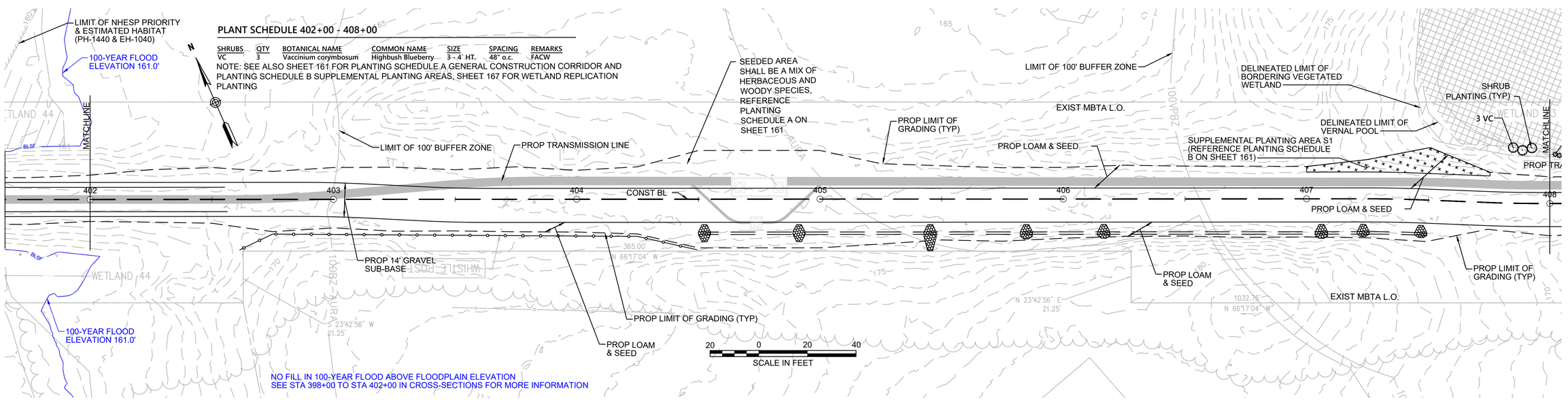
NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND PLANTING SCHEDULE B SUPPLEMENTAL PLANTING AREAS, SHEET 167 FOR WETLAND REPLICATION PLANTING



PLANT SCHEDULE 402+00 - 408+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 PLANTING SCHEDULE B SUPPLEMENTAL PLANTING AREAS, SHEET 167 FOR WETLAND REPLICATION PLANTING



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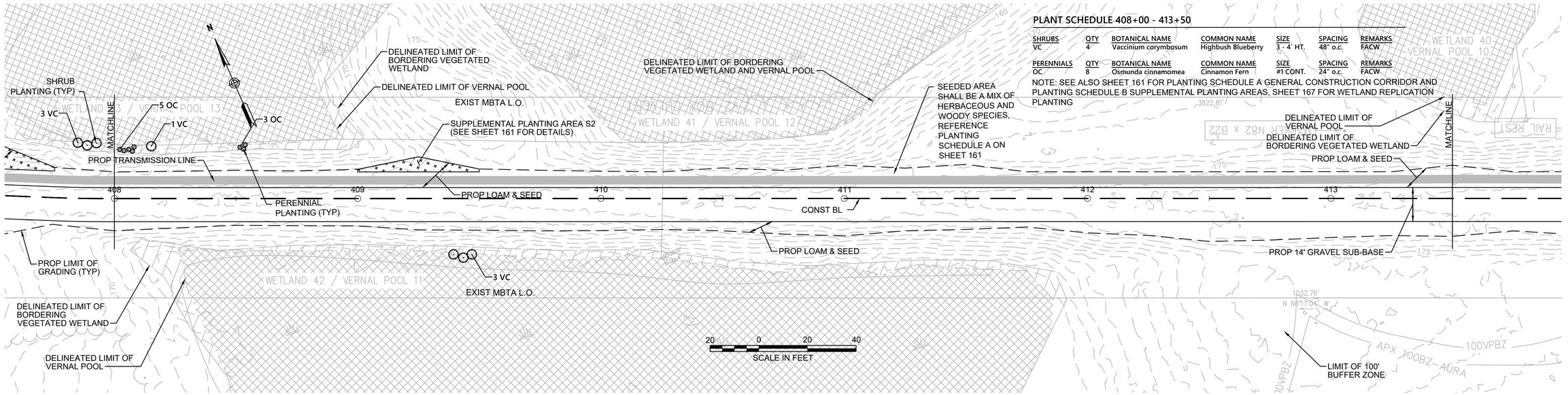
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN106 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	CW	JG	JG	.	.



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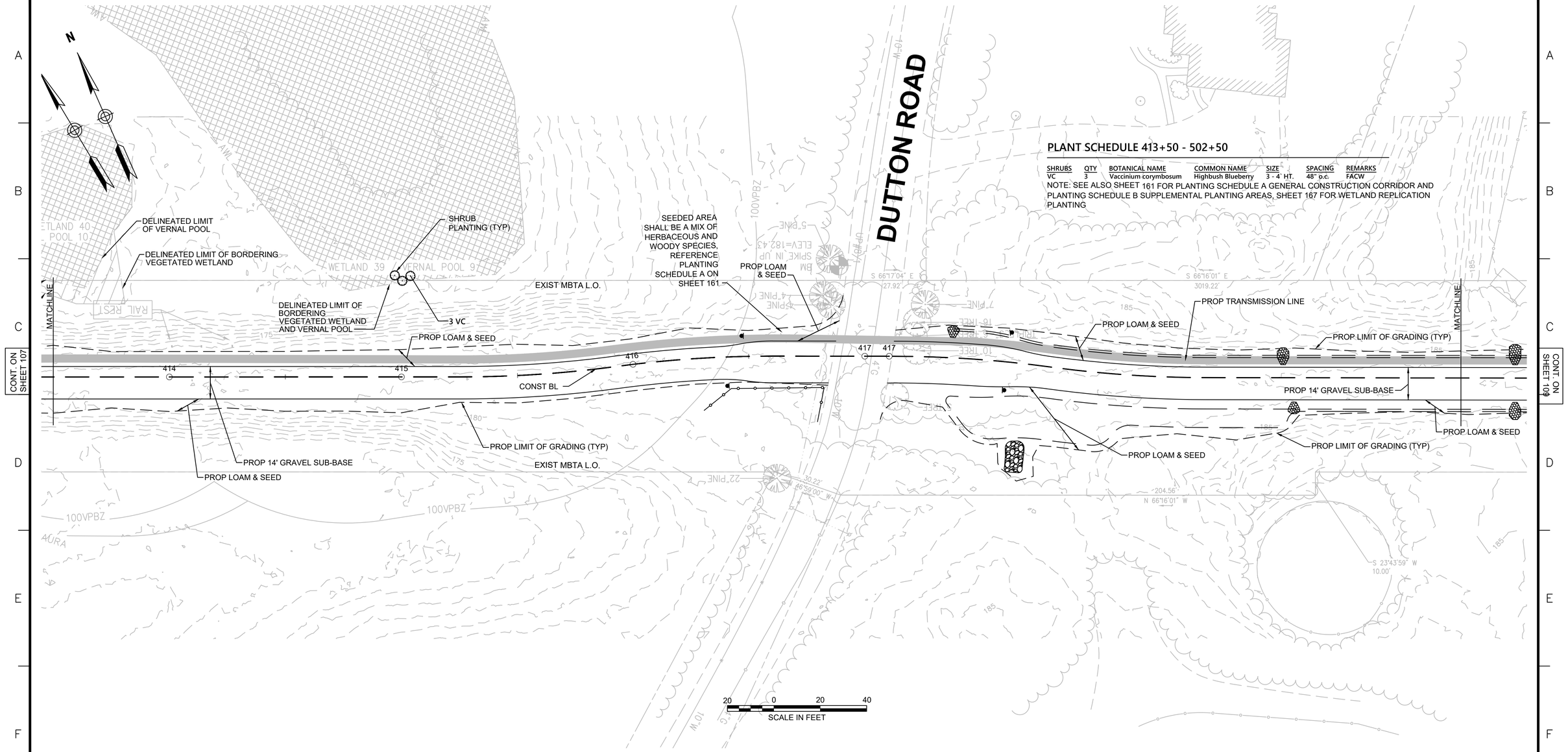
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 107 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	CW	JG	JG	.	.



PLANT SCHEDULE 413+50 - 502+50

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 PLANTING SCHEDULE B SUPPLEMENTAL PLANTING AREAS, SHEET 167 FOR WETLAND REPLICATION PLANTING

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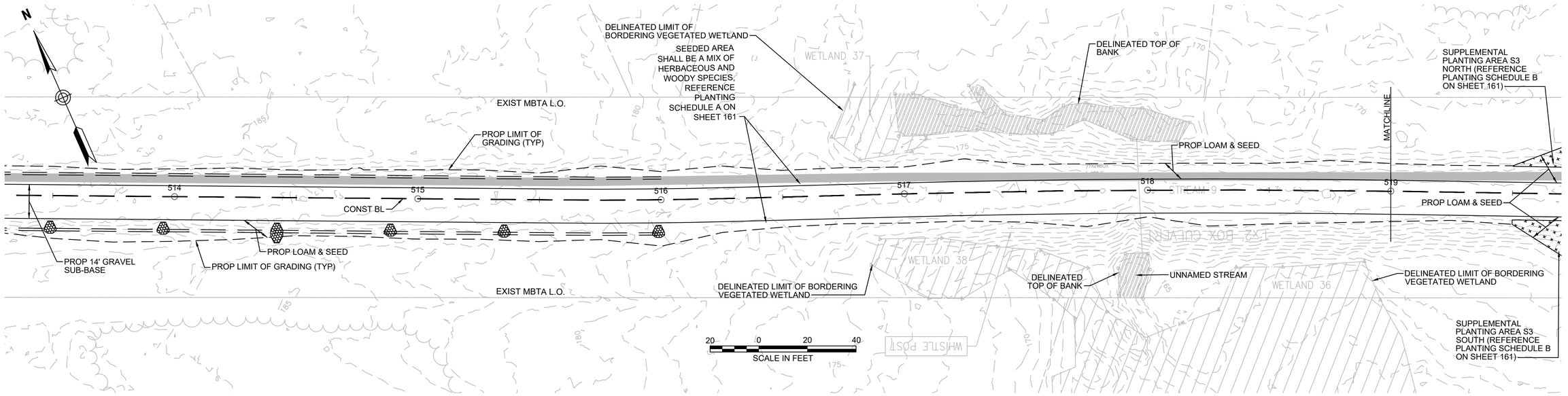
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 108 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	CW	JG	JG	.	.



PLANT SCHEDULE 519+00 - 525+00

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
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 PLANTING SCHEDULE B SUPPLEMENTAL PLANTING AREAS, SHEET 167 FOR WETLAND REPLICATION PLANTING

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 109 OF 347

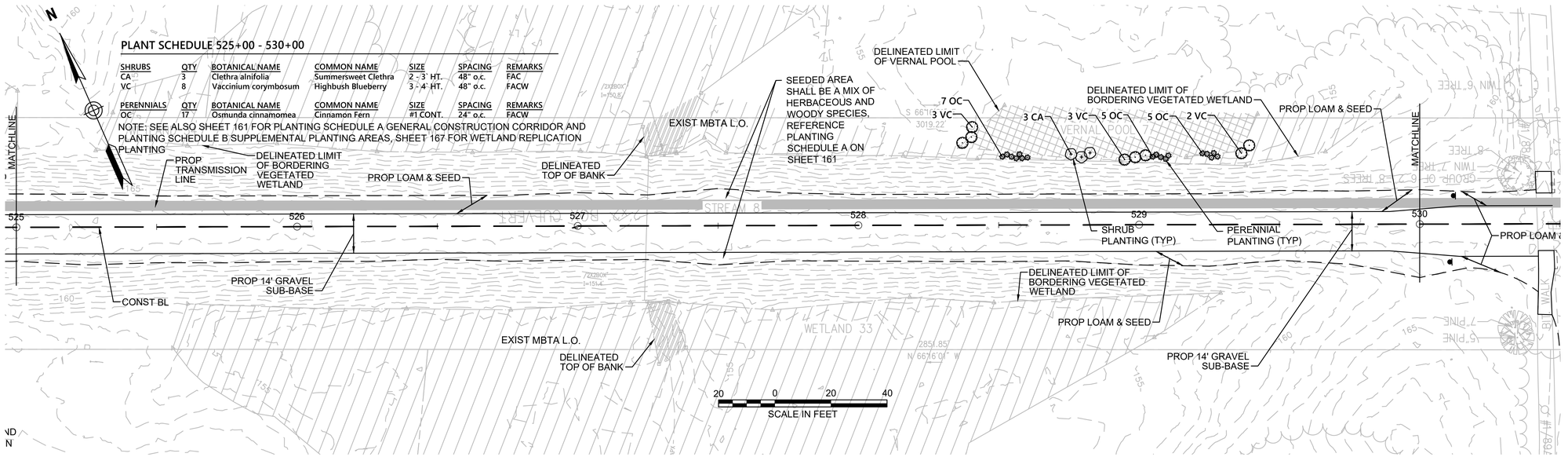
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	CW	JG	JG	.	.

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 PLANTING SCHEDULE B SUPPLEMENTAL PLANTING AREAS, SHEET 167 FOR WETLAND REPLICATION PLANTING



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LANDSCAPE PLANS
PLAN 110 OF 347

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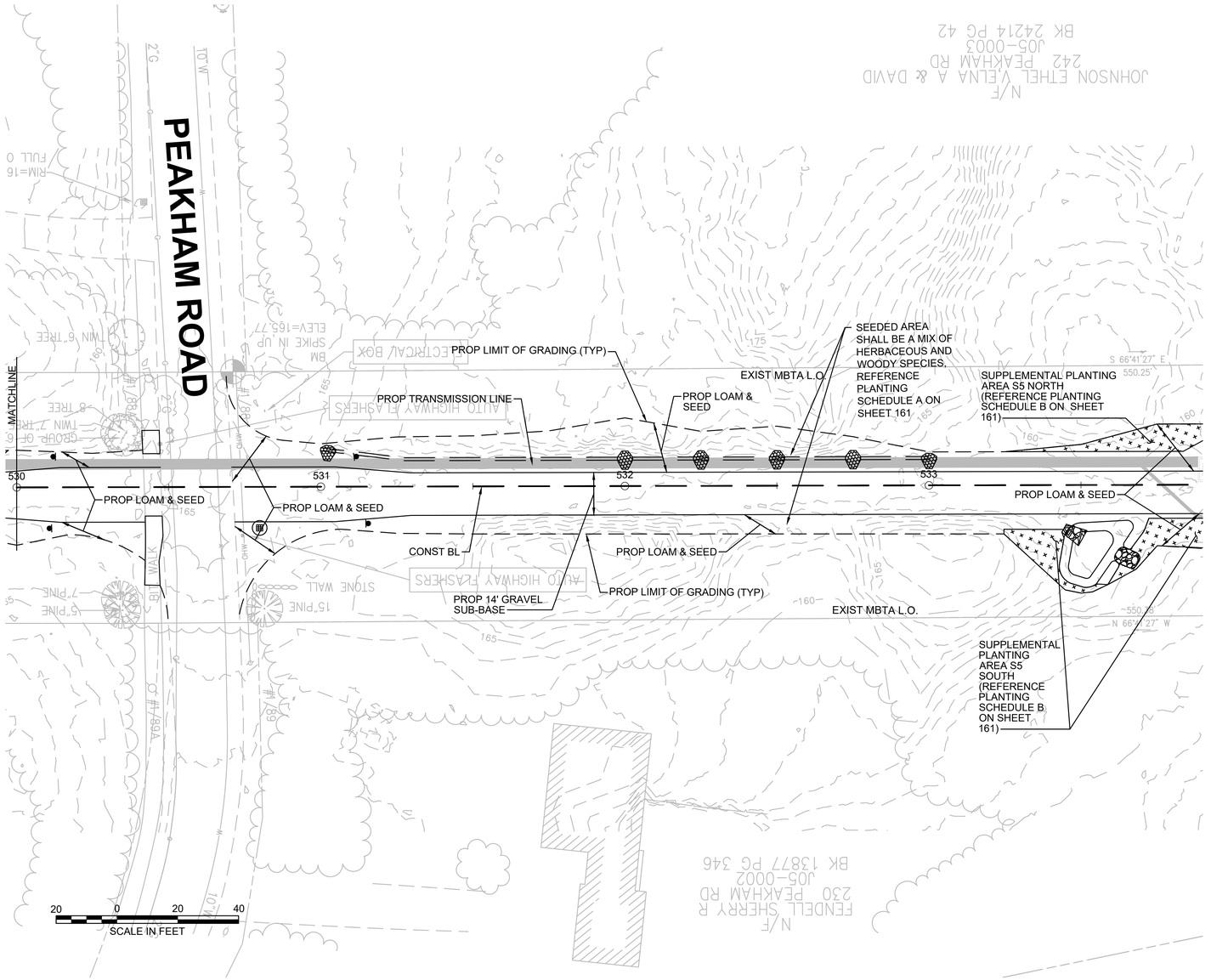

CONT. ON SHEET 110

CONT. ON SHEET 112

NOTE:

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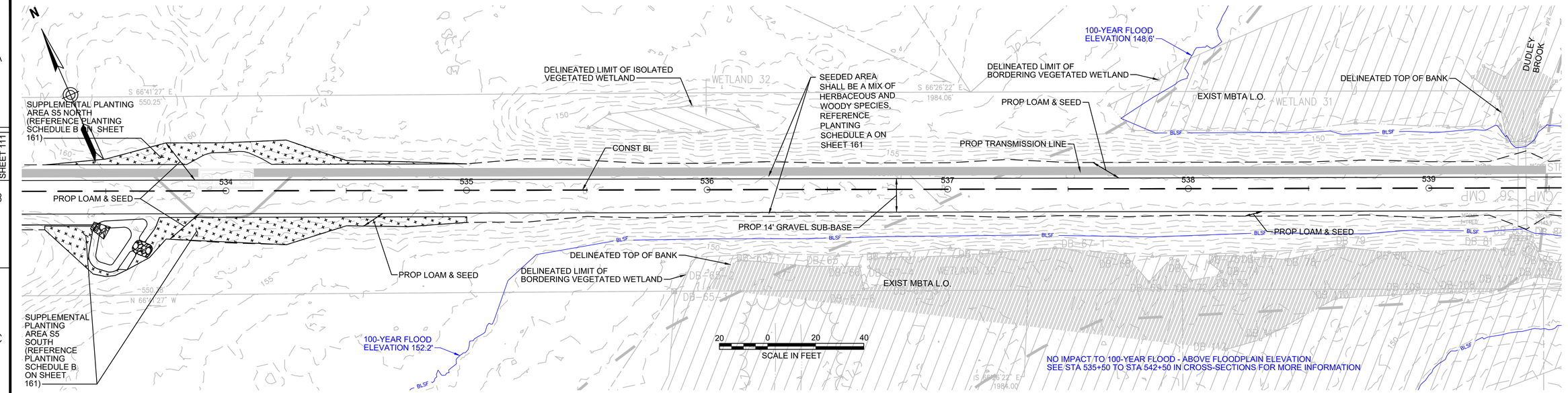
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 11 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	CW	JG	JG	.	.



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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 112 OF 347

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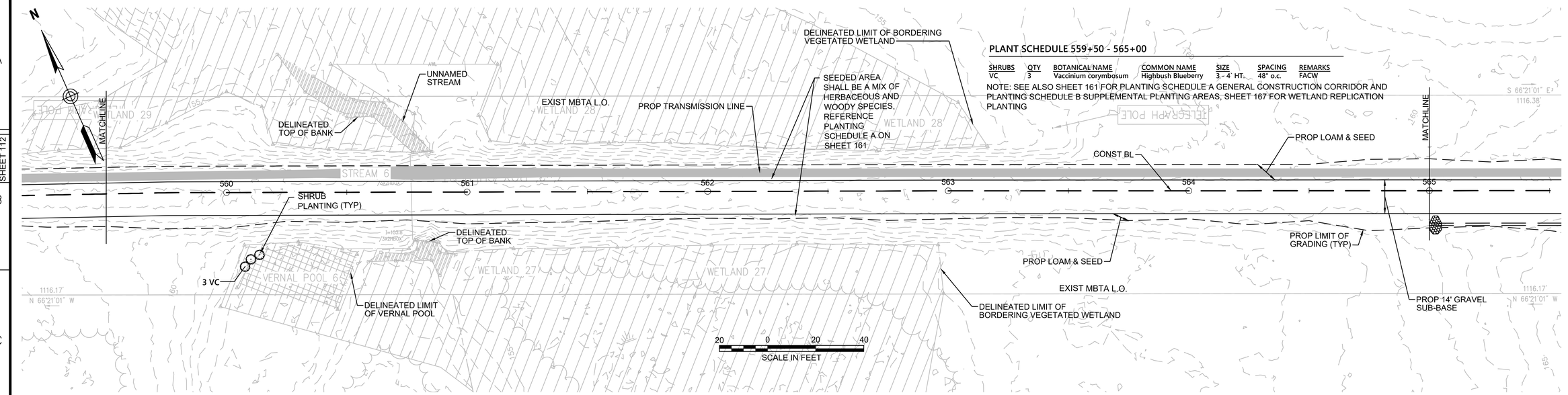

PLANT SCHEDULE 559+50 - 565+00

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 PLANTING SCHEDULE B SUPPLEMENTAL PLANTING AREAS, SHEET 167 FOR WETLAND REPLICATION PLANTING

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LANDSCAPE PLANS
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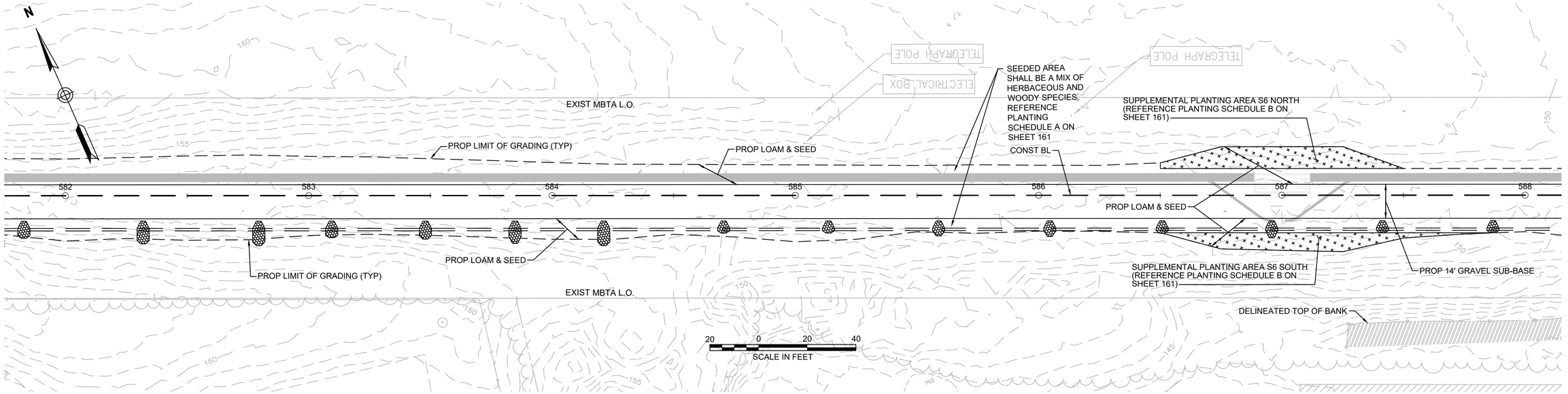

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 114 OF 347

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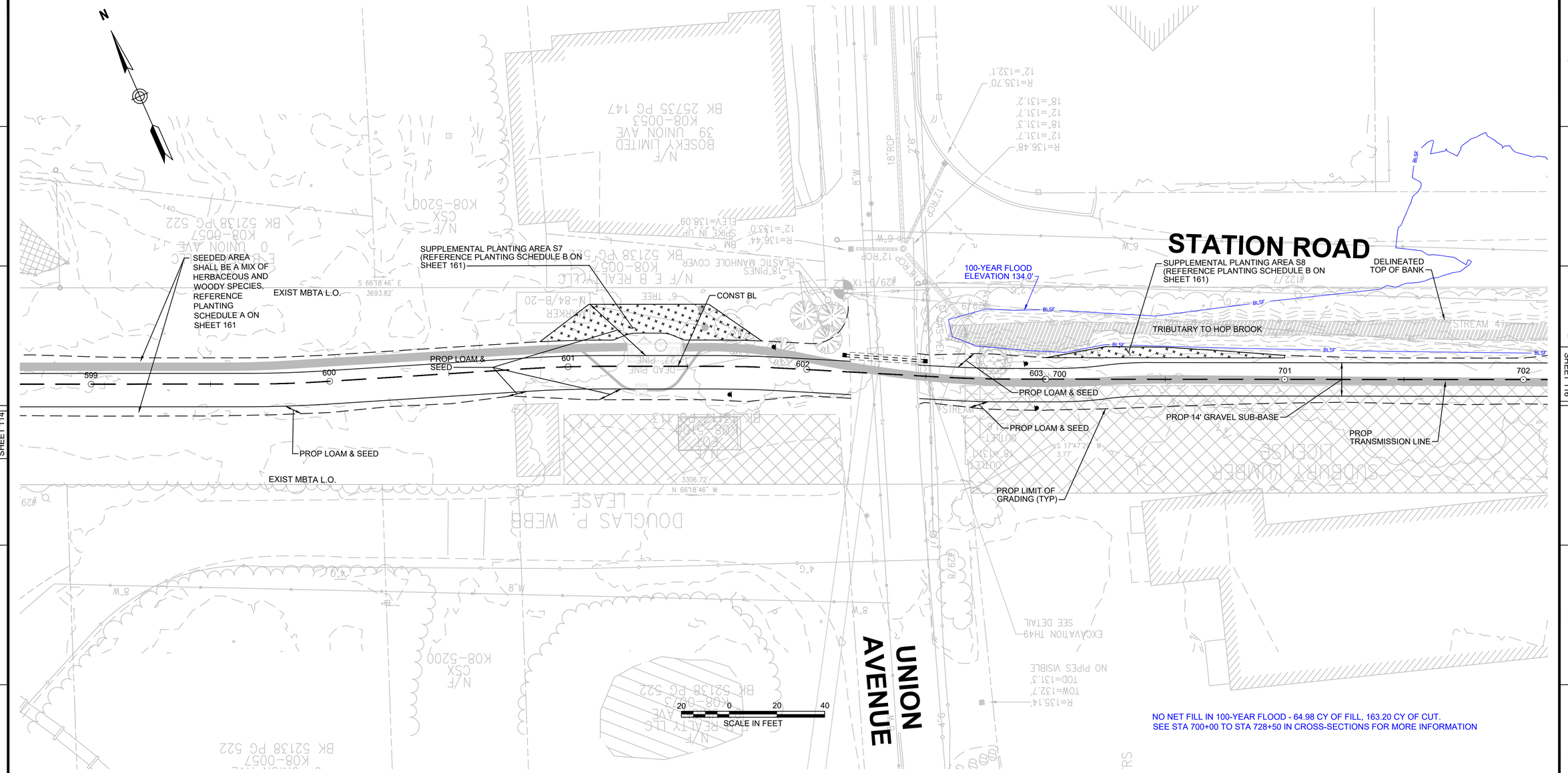

NO NET FILL IN 100-YEAR FLOOD - 64.98 CY OF FILL, 163.20 CY OF CUT.
SEE STA 700+00 TO STA 728+50 IN CROSS-SECTIONS FOR MORE INFORMATION

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 115 OF 347

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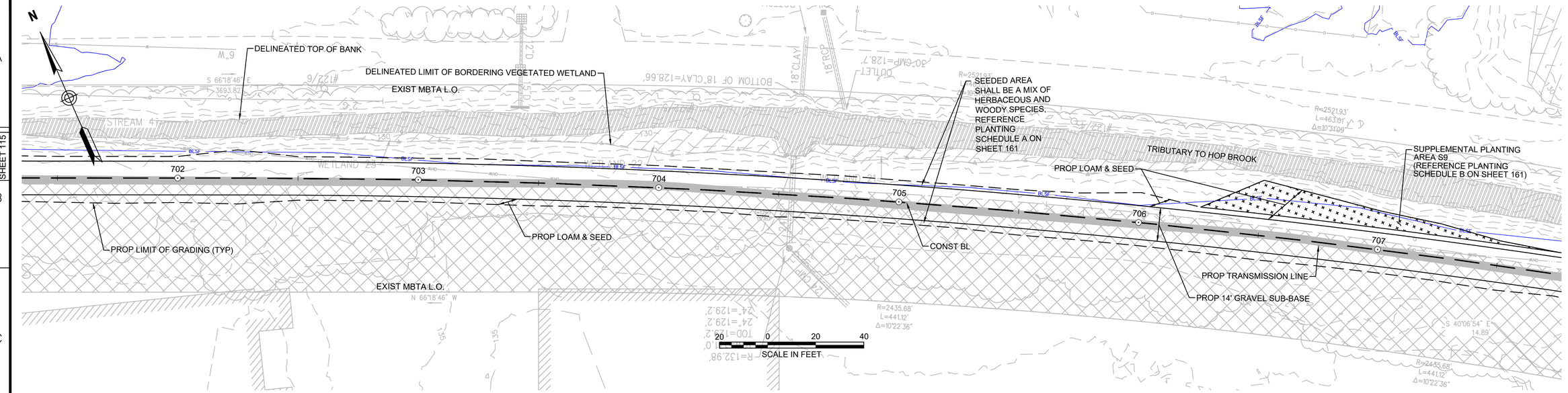

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 116 OF 347

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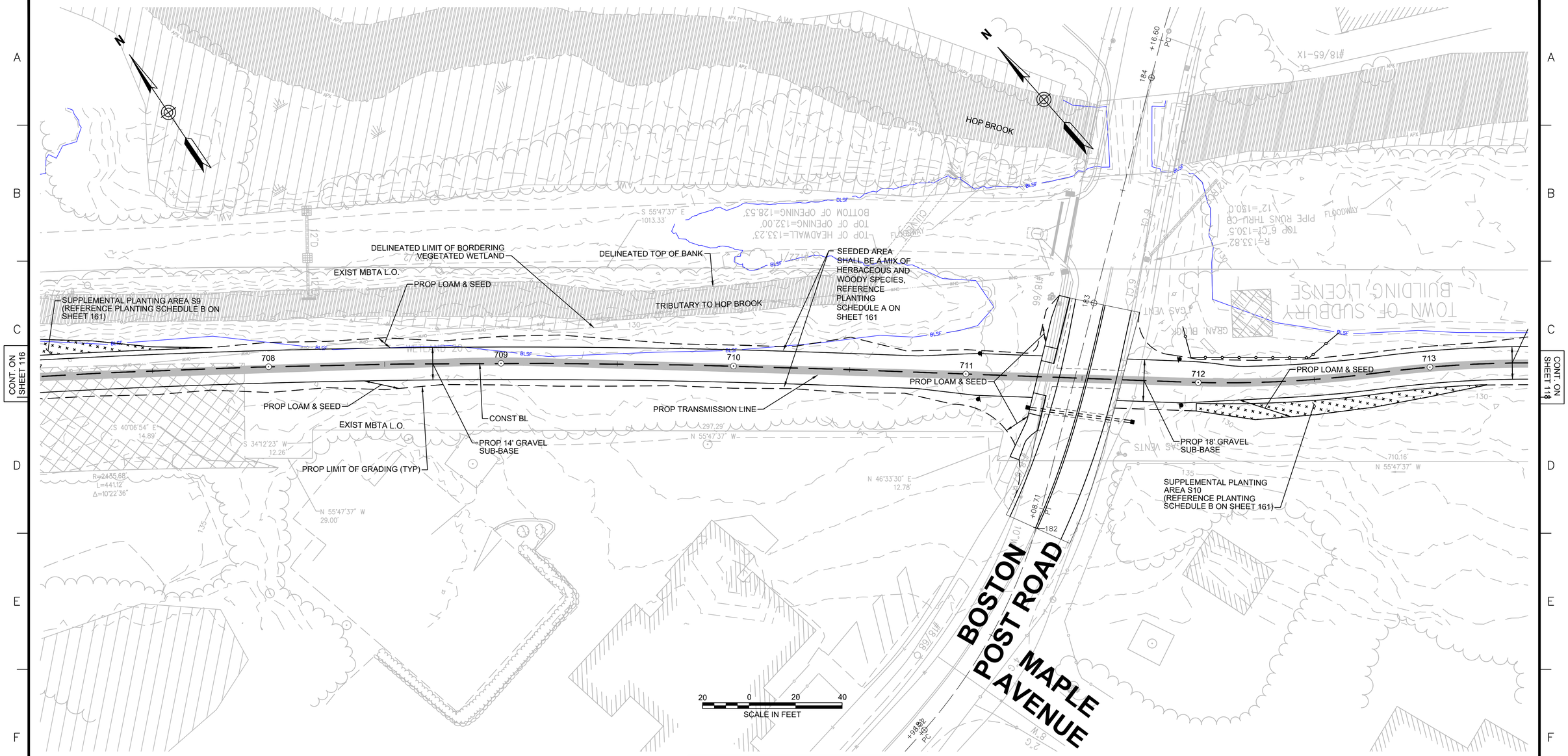
1"=20'	OCT 2020	CW	JG	JG	.	.



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LANDSCAPE PLANS

PLAN 117 OF 347

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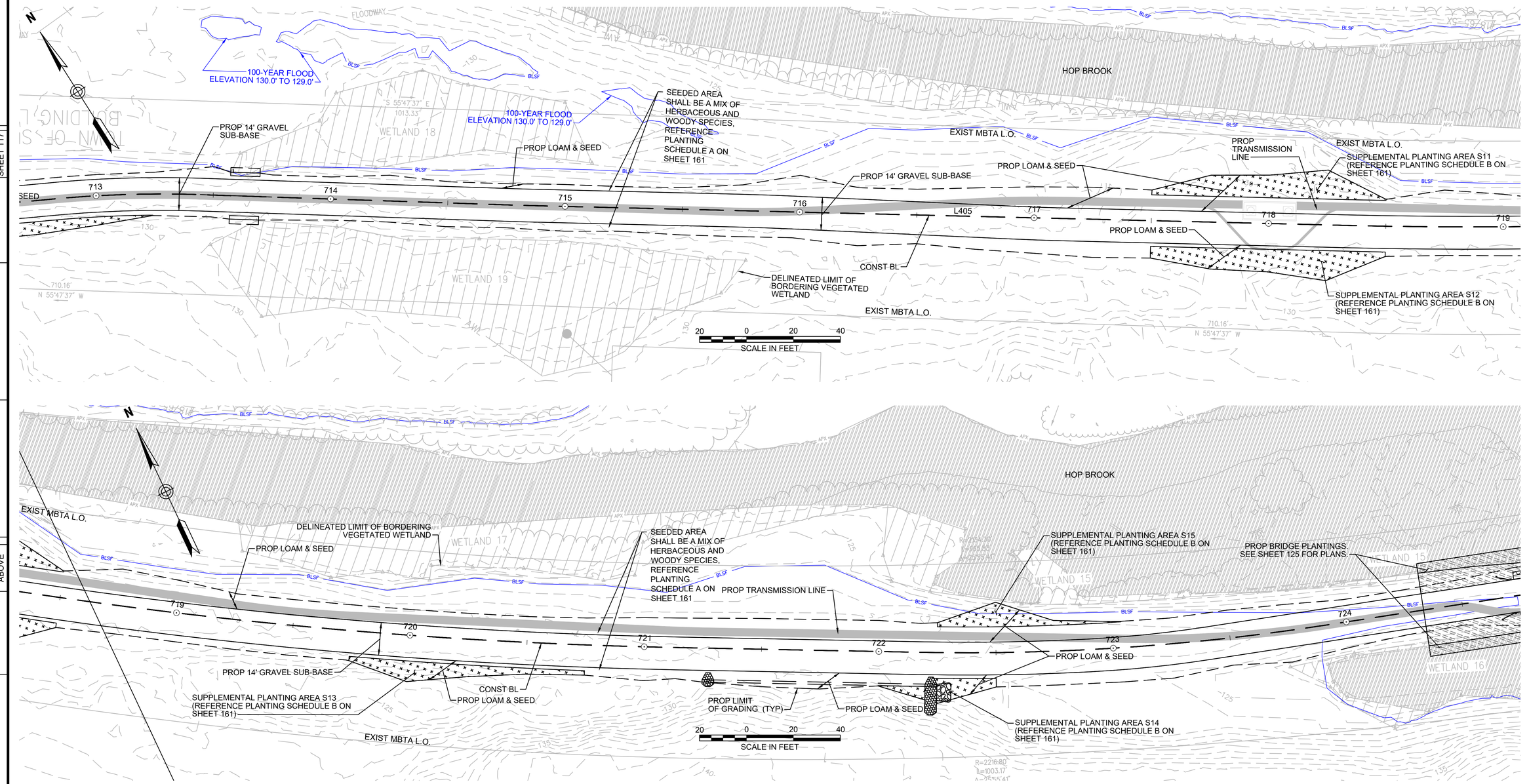

NOTES:

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

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

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617.924.1770 FAX 617.924.2286

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 118 OF 347

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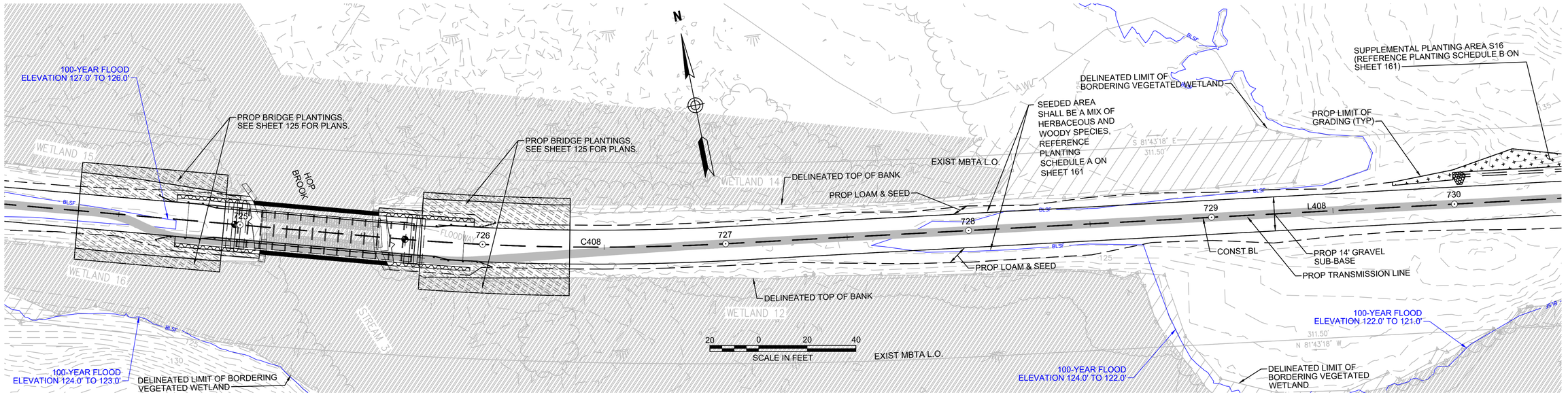

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LANDSCAPE PLANS

PLAN 119 OF 347

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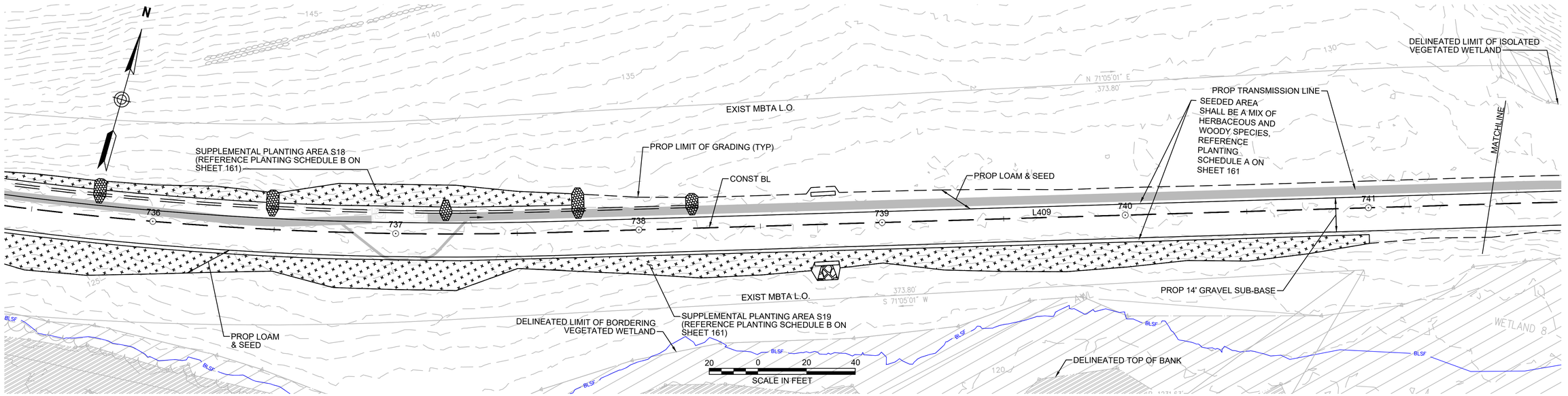

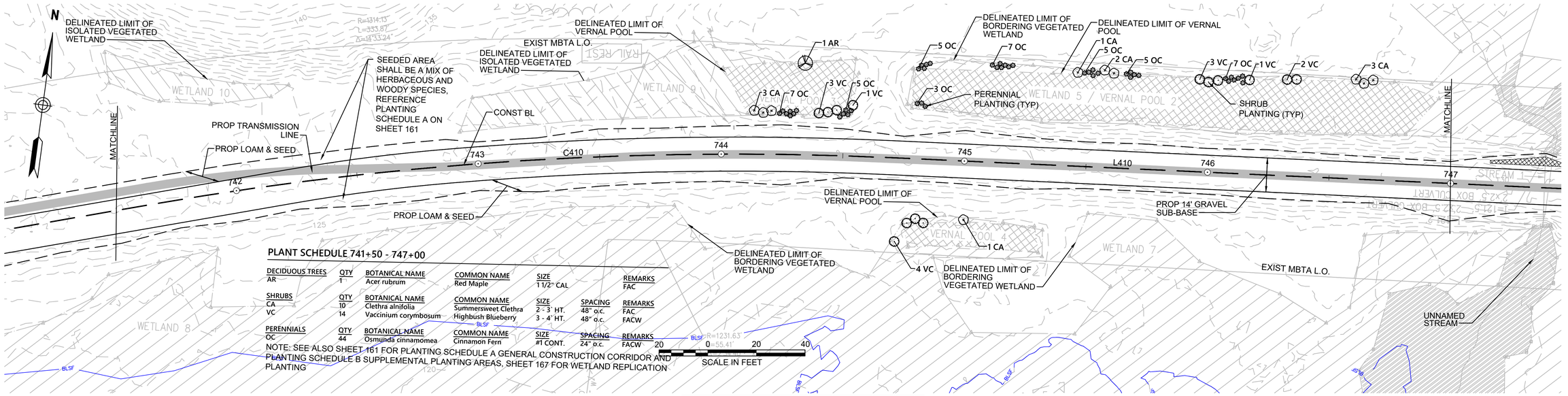

PLANT SCHEDULE 741+50 - 747+00

DECIDUOUS TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE		REMARKS
AR	1	Acer rubrum	Red Maple	1 1/2" CAL		FAC
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CA	10	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c.	FAC
VC	14	Vaccinium corymbosum	Highbush Blueberry	3 - 4` HT.	48" o.c.	FACW
PERENNIALS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
OC	44	Osmunda cinnamomea	Cinnamon Fern	#1 CONT.	24" o.c.	FACW

NOTE: SEE ALSO SHEET 161 FOR PLANTING SCHEDULE A GENERAL CONSTRUCTION CORRIDOR AND PLANTING SCHEDULE B SUPPLEMENTAL PLANTING AREAS, SHEET 167 FOR WETLAND REPLICATION

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 120 OF 347

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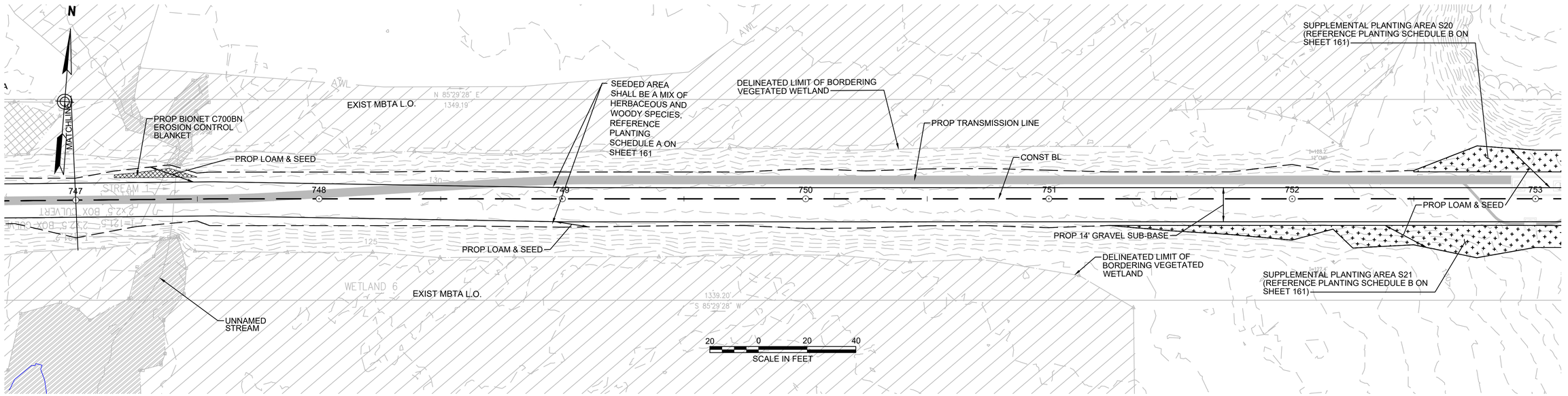

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LANDSCAPE PLANS

PLAN 121 OF 347

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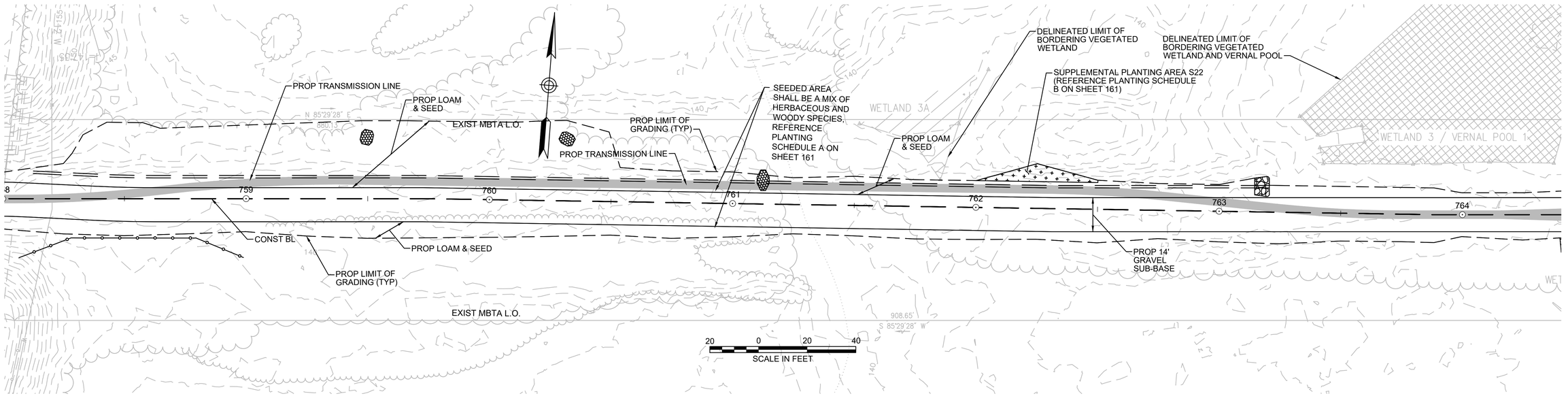

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LANDSCAPE PLANS

PLAN 122 OF 347

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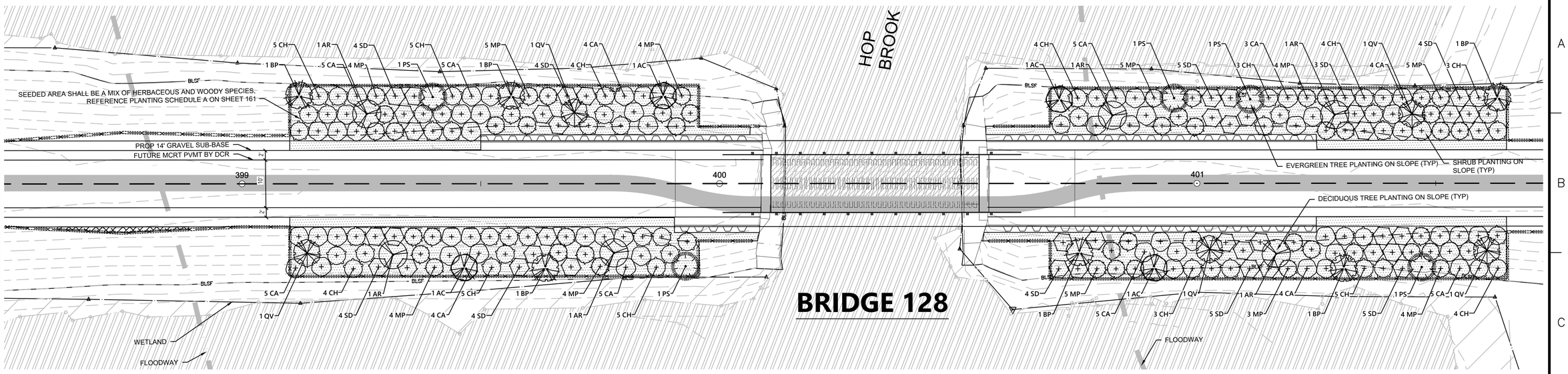

LEGEND

SEEDED AREA

PLANT SCHEDULE WEST 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
EVERGREEN TREES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	
PS	2	Pinus strobus	White Pine	7 - 8` HT.	FACU
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**
CA	28	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c. FAC
CH	28	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	16	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	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	3	Quercus velutina	Black Oak	1 1/2" CAL	UPL
EVERGREEN TREES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	
PS	3	Pinus strobus	White Pine	7 - 8` HT.	FACU
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**
CA	26	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	26	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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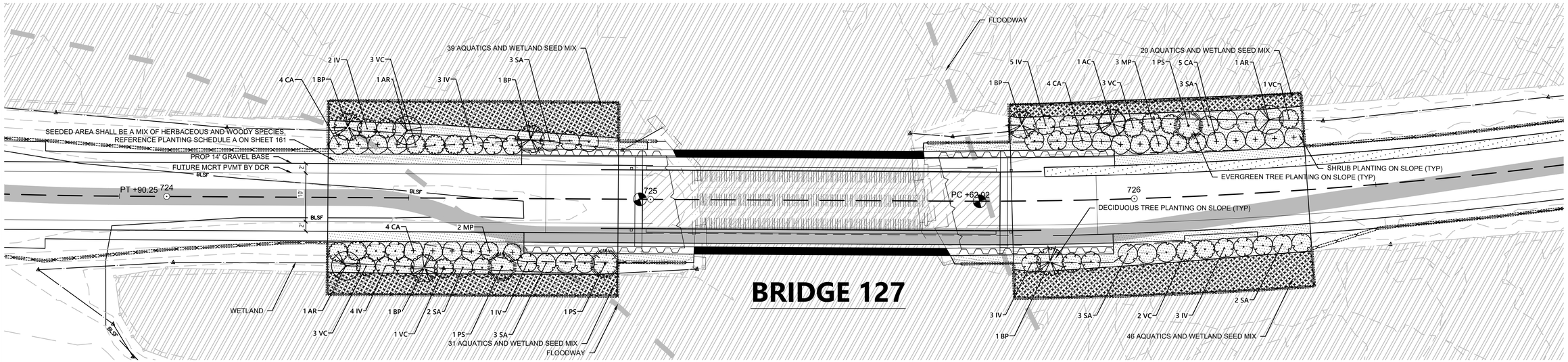
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN 124 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=10'	OCT 2020	MS	SK	MES	.	.



BRIDGE 127

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
BP	3	Betula populifolia	Gray Birch	10 - 12` HT./Multi-Stem	FAC
EVERGREEN TREES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	
PS	2	Pinus strobus	White Pine	7 - 8` 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`	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`	48" o.c. FACW
VC	7	Vaccinium corymbosum	Highbush Blueberry	3` - 4`	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
AR	1	Acer rubrum	Red Maple	1 1/2" CAL	FAC
AC	1	Amelanchier canadensis	Serviceberry	10 - 12` HT./Multi-Stem	FAC
BP	2	Betula populifolia	Gray Birch	10 - 12` HT./Multi-Stem	FAC
EVERGREEN TREES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	
PS	1	Pinus strobus	White Pine	7 - 8` HT.	FACU
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**
CA	9	Clethra alnifolia	Summersweet Clethra	2 - 3` HT.	48" o.c. FAC
IV	11	Ilex verticillata	Winterberry	3` - 4`	48" o.c. FACW
MP	3	Myrica pensylvanica	Northern Bayberry	2 - 3` HT.	48" o.c. FAC
SA	8	Swida amomum	Silky Dogwood	3` - 4`	48" o.c. FACW
VC	6	Vaccinium corymbosum	Highbush Blueberry	3` - 4`	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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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

LANDSCAPE PLANS

PLAN125 OF 347

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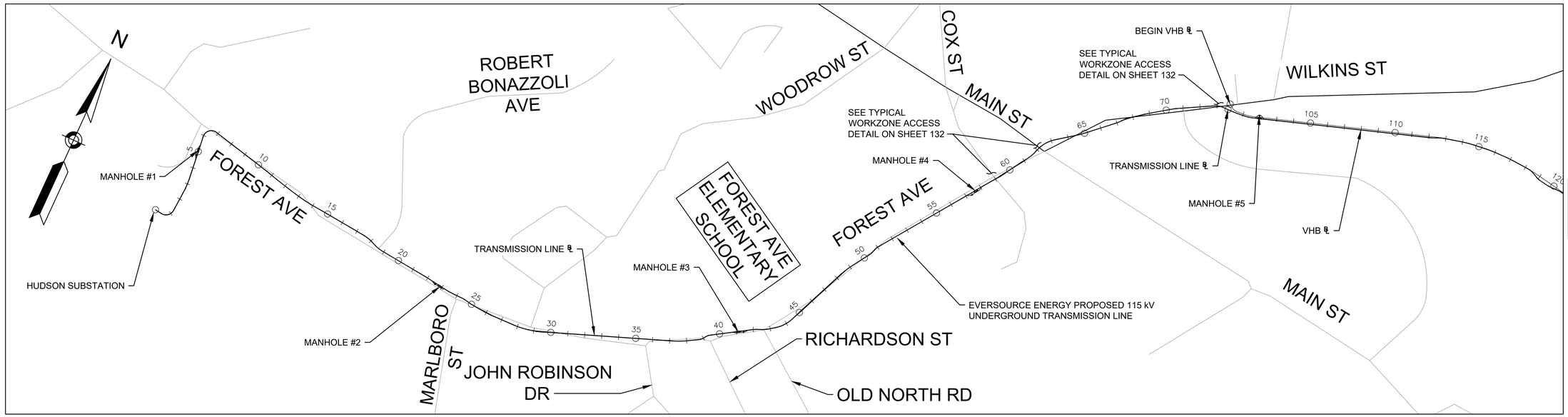
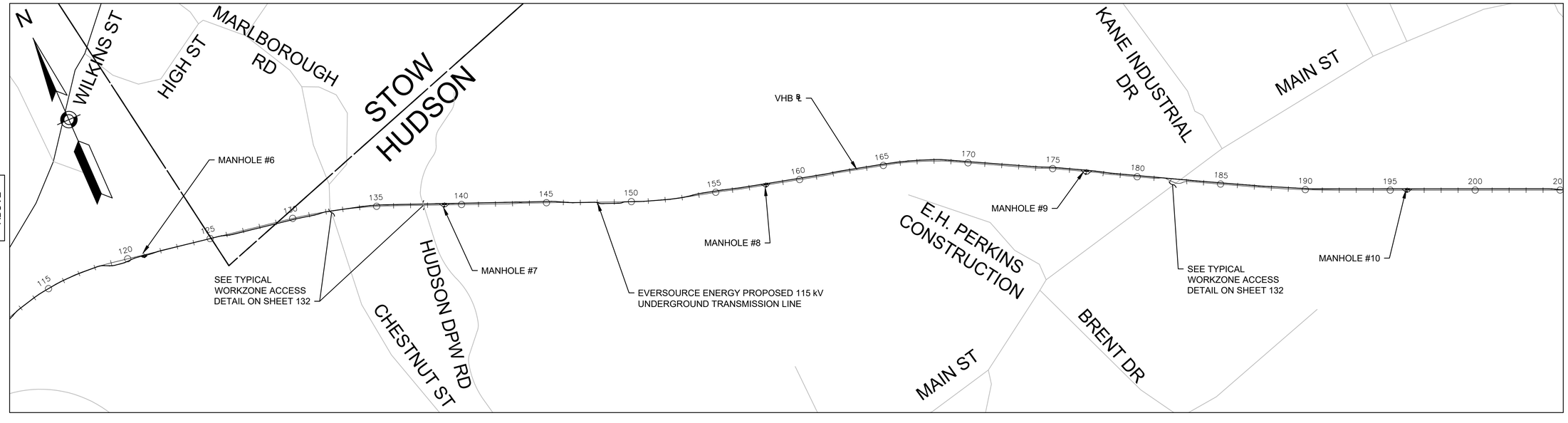
1"=10'	OCT 2020	MS	SK	MES	.	.





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.
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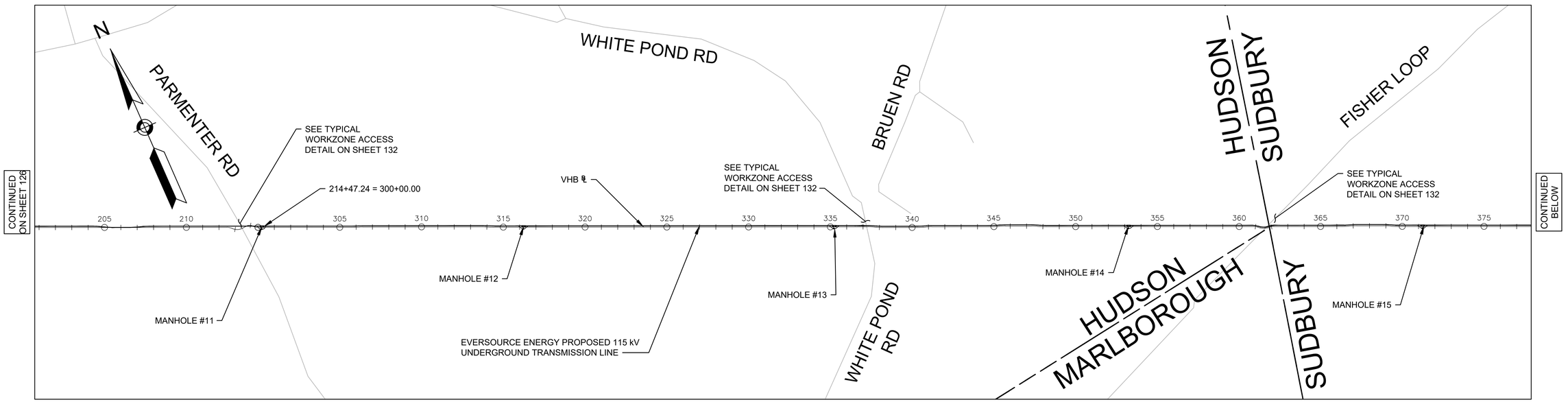

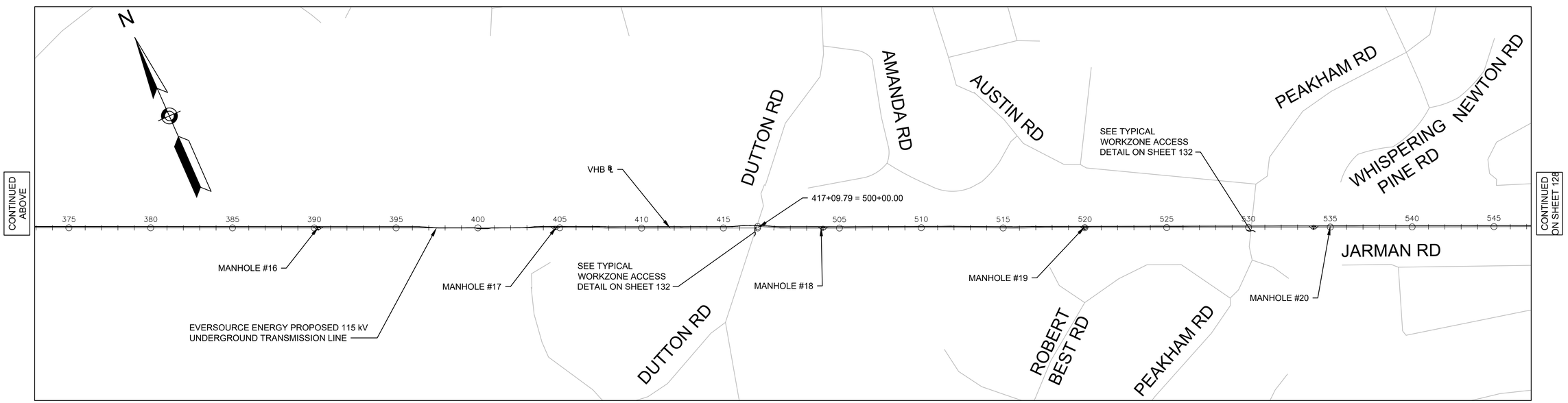

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

KEY PLAN AND WORKZONE ACCESS PLAN

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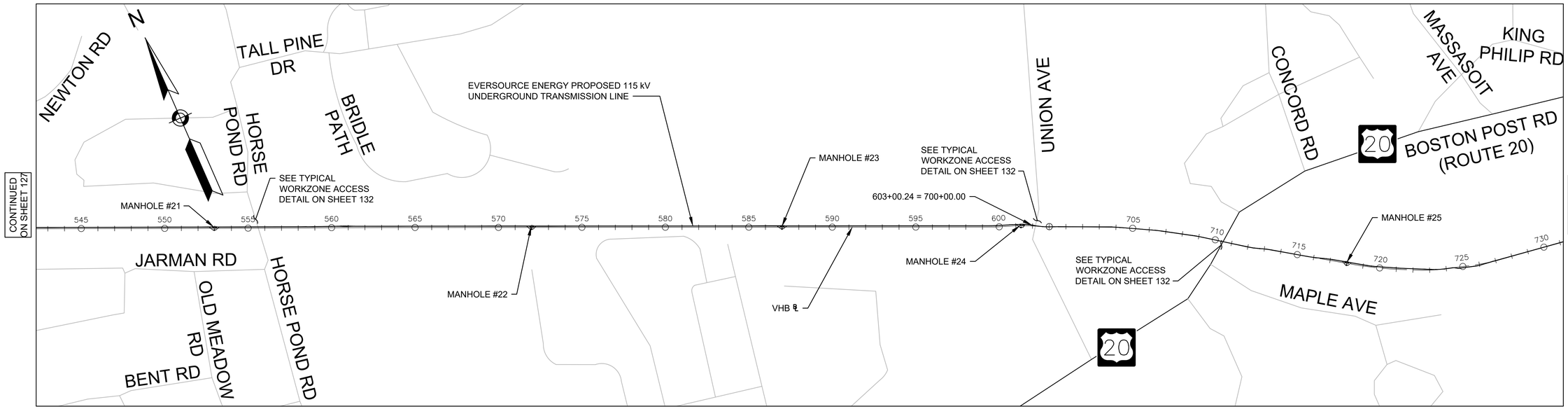

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TEMPORARY TRAFFIC CONTROL PLANS
KEY PLAN AND WORKZONE ACCESS PLAN

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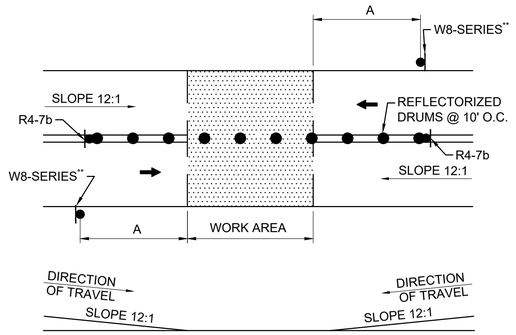
GENERAL NOTES

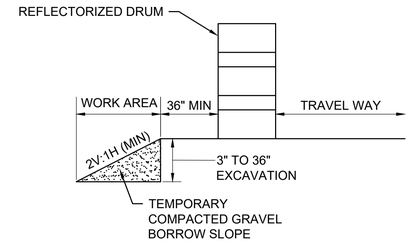
1. ALL CONSTRUCTION SIGNING, TEMPORARY TRAFFIC CONTROL DEVICES, AND ROADSIDE ELEMENTS SHALL CONFORM WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED, THE MASSDOT STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TEMPORARY TRAFFIC CONTROL PLANS, THE LATEST REVISIONS OF THE 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. WORK HOURS SHALL BE AS STIPULATED BY THE ENERGY FACILITIES SITING BOARD (EFSB) AND AS APPROVED BY AGENCY OR MUNICIPALITY WITH JURISDICTION OF THE ROADWAY. IT IS ASSUMED WORK AT THE INTERSECTIONS OF FOREST AVENUE AT MARLBORO STREET AND MAIN STREET AT FOREST AVENUE/ WILKINS ST WILL REQUIRE NIGHT WORK. WORK IN THE PROXIMITY OF FOREST AVENUE ELEMENTARY AND CHAPS CHILD CARE WILL ALSO REQUIRE COORDINATION WITH THE TOWN OF HUDSON. THE 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 SHOULD BE CONSIDERED.
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 AS NEEDED 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 126 - 128. CONTRACTOR SHALL SWEEP AREAS ADJACENT TO THE SIDE ON A DAILY BASIS. CONTRACTOR SHALL REPAIR DAMAGED ROADWAYS AND SIDEWALKS AT THEIR OWN COST.



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



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

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 PORTABLE PEDESTRIAN BARRICADE
NTS	NOT TO SCALE

ADVANCE SIGN SPACING

ROADWAY	DISTANCE BETWEEN SIGNS (FEET) 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

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	FORMULA
40 MPH OR LESS	$L = \frac{WS^2}{60}$

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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.
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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 ±	--	OFF-ROAD	--	--
	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 23+80 ±	--	TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC	SHEET 131	MANHOLE #2
		23+80 ± TO 24+40 ±	--	SITE SPECIFIC FOREST AVE AT MARLBORO ST STAGE 1	SHEET 133	AT MARLBORO ST
		24+40 ± TO 26+00 ±	--	SITE SPECIFIC FOREST AVE AT MARLBORO ST STAGE 2	SHEET 134	AT MARLBORO ST
		26+00 ± 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 127 & 128 FOR OVERVIEW. SEE EVERSOURCE ENERGY 115Kv UNDERGROUND TRANSMISSION LINE PLAN AND PROFILE FOR ADDITIONAL INFORMATION.
2. REFER TO VHB CONSTRUCTION PLANS ON SHEETS 17-39 FOR ADDITIONAL INFORMATION.
3. REFER TO GENERAL NOTE 2 ON SHEET 129 REGARDING WORK HOURS.
4. REFER TO APPROVED MASSDOT ACCESS PERMIT TTCP FOR WORK ALONG ROUTE 20.

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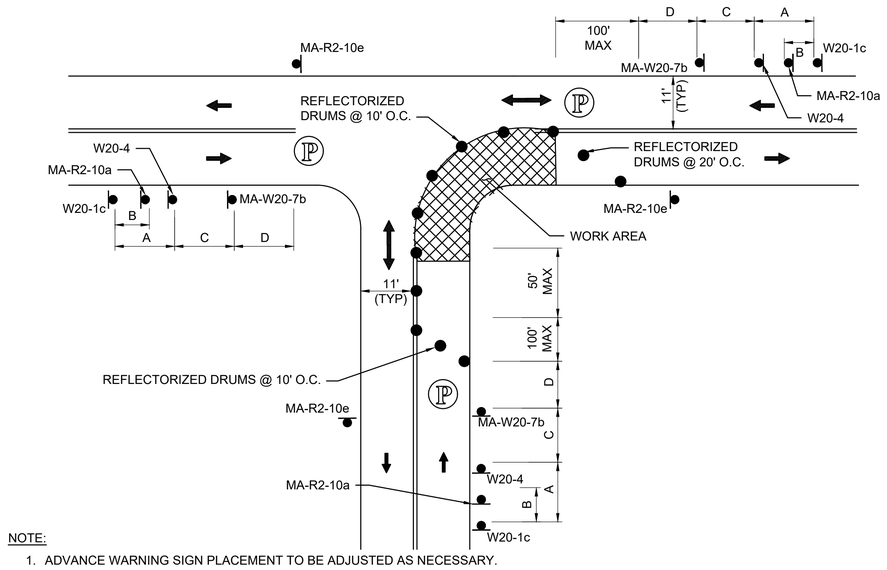
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TEMPORARY TRAFFIC CONTROL PLANS
SUGGESTED TEMPORARY TRAFFIC CONTROL

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	OCT 2020	MM	KW	MES	130 OF 347	.

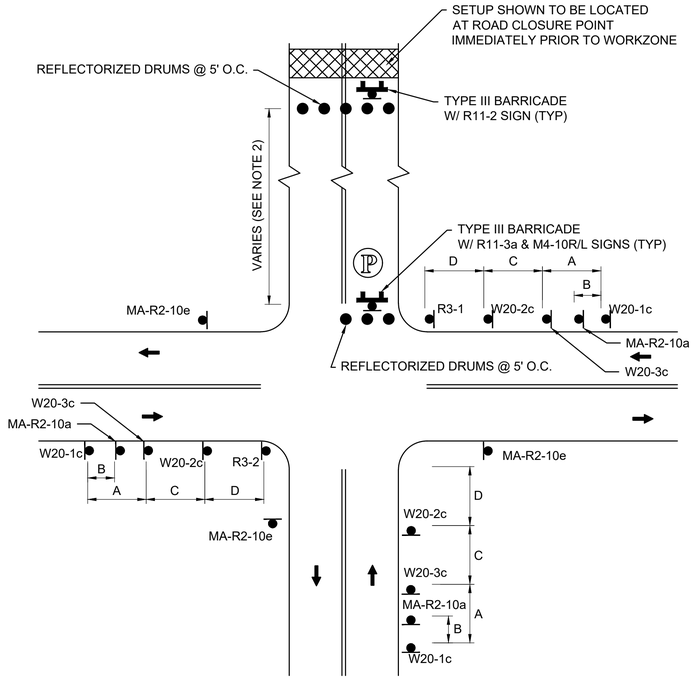


NOTE:

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

ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS

SCALE: NTS

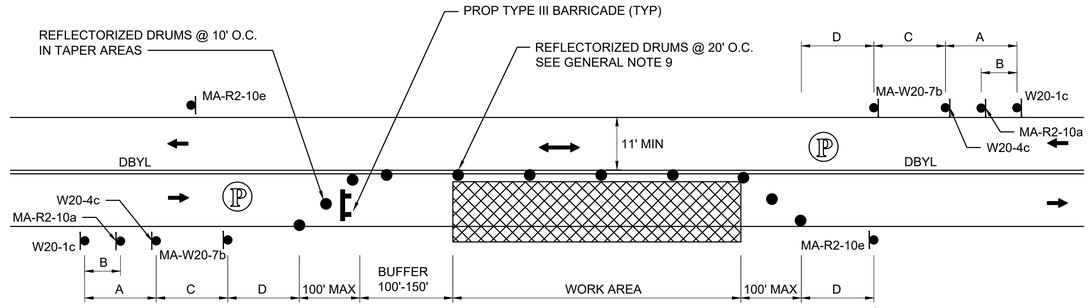


NOTE:

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

TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS

SCALE: NTS

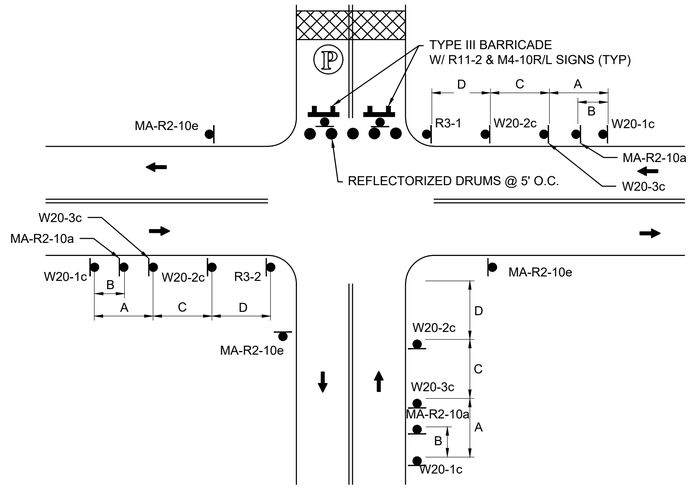


NOTE:

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

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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.
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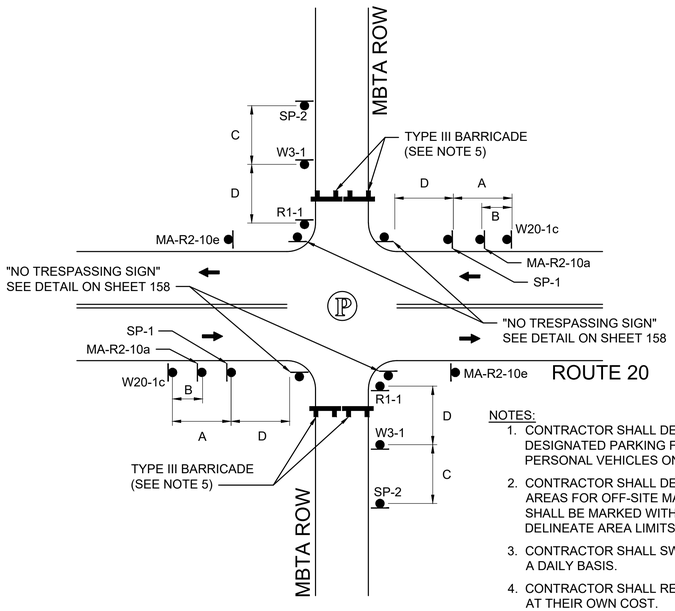


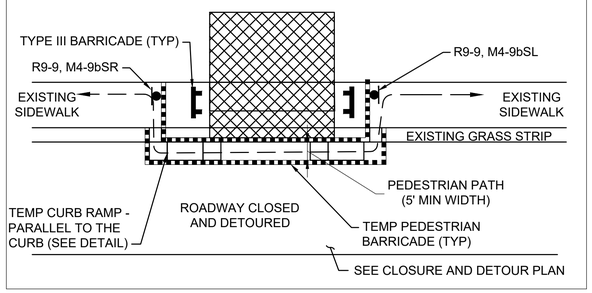
NOTES:

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 DURING NON-WORKING HOURS.

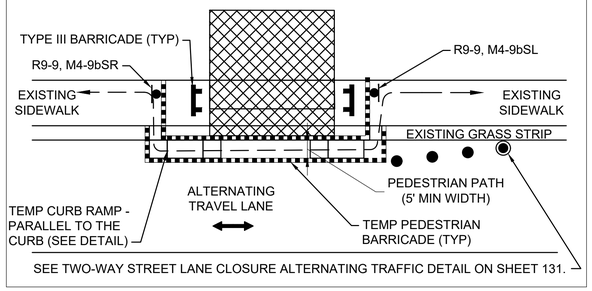
TYPICAL WORKZONE ACCESS

SCALE: NTS

PEDESTRIAN BYPASS TYPE I



PEDESTRIAN BYPASS TYPE II

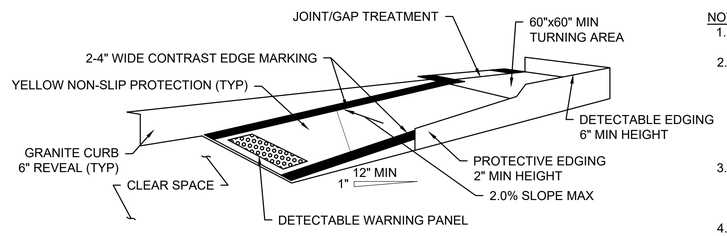


NOTES:

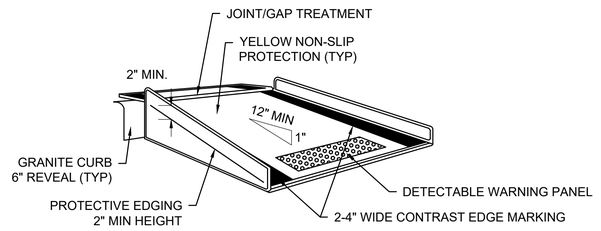
1. ADDITIONAL ADVANCE WARNING SIGNS MAY BE NECESSARY AS DETERMINED BY THE ENGINEER.
2. CONTROLS FOR PEDESTRIAN TRAFFIC ONLY, ARE SHOWN. VEHICULAR TRAFFIC SHALL BE MAINTAINED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. ◄ — ► INDICATES DIRECTION OF PEDESTRIAN 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

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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.
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N

MOORE RD

DUTTON RD

MAYNARD RD

M4-8a

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

PRATTS MILL RD

M4-9V SUPP(C)

PRATTS MILL RD

WILLOW RD

OLD LANCASTER RD

CURTIS MIDDLE SCHOOL

PROPOSED EVERSOURCE 115 kV UNDERGROUND TRANSMISSION LINE

MANHOLE #16

DUTTON RD

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

MEADOWBROOK CIR

M4-9V SUPP(C)

M4-9R SUPP(C)

PEAKHAM RD

M4-9V SUPP(C)

M4-9V SUPP(C)

M4-9L SUPP(C)

M4-9V SUPP(C)

MANHOLE #15

MANHOLE #17

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

AUSTIN RD

M4-9V SUPP(C)

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

MANHOLE #18

M4-9SL SUPP(C)

M4-9SR SUPP(C)

MANHOLE #19

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

OLD GARRISON RD

HORSE POND RD

CONCORD RD

PEAKHAM RD

M4-9V SUPP(C)

MANHOLE #20

MANHOLE #21

CLOSE DUTTON TO LOCAL ACCESS AT WAYSIDE INN ROAD. SEE TYPICAL LOCAL ROAD CLOSURE WITH LOCAL ACCESS ON SHEET 02

M4-9L SUPP(C)

FRENCH RD

M4-9V SUPP(C)

M4-8a

M4-9R SUPP(C)

M4-9L SUPP(C)

M4-8a

M4-9R SUPP(C)

M4-9L SUPP(C)

M4-9V SUPP(C)

DUTTON RD

0 500 1000 1500 2000

SCALE: 1" = 500'

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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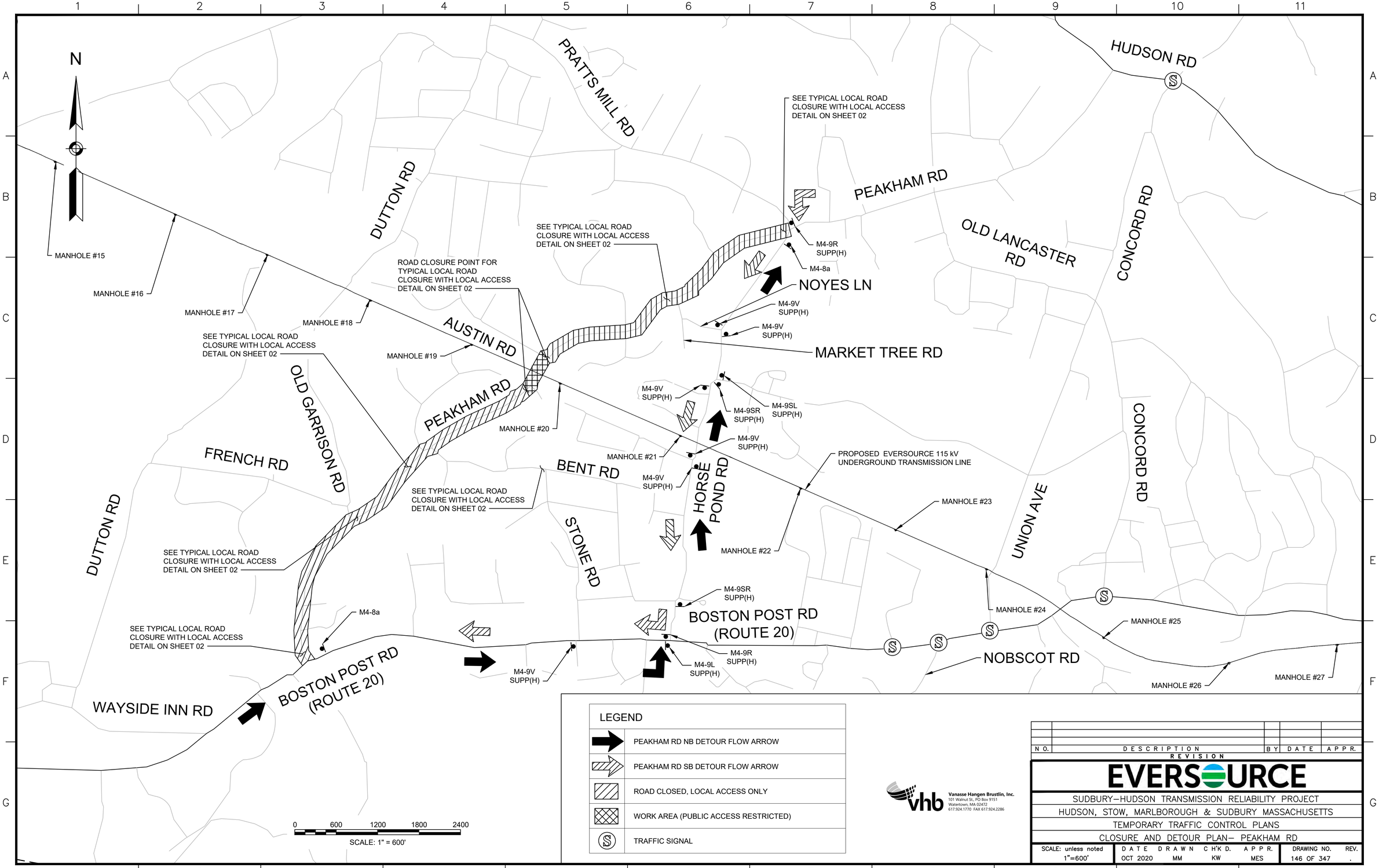
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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'	OCT 2020	MM	KW	MES	145 OF 347	.



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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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'	OCT 2020	MM	KW	MES	146 OF 347	.

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'

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

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

REVISION

NO.	DESCRIPTION	BY	DATE	APPR.

EVERSOURCE

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

TEMPORARY TRAFFIC CONTROL PLANS

CLOSURE AND DETOUR PLAN– HORSE POND RD

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=500'	OCT 2020	MM	KW	AA	147 OF 347	.

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	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.

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	REVISION			

EVERSOURCE

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NTS	OCT 2020	MM	KW	MES	150 OF 347	.

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.
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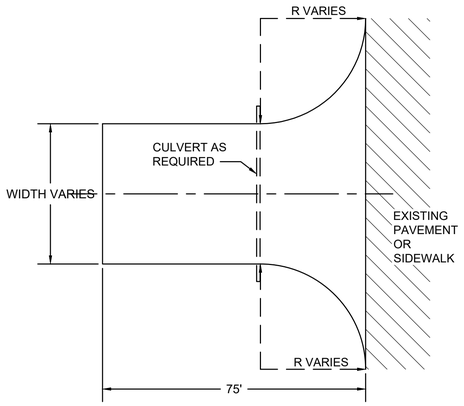
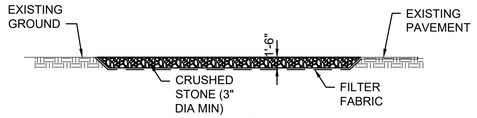


PLAN



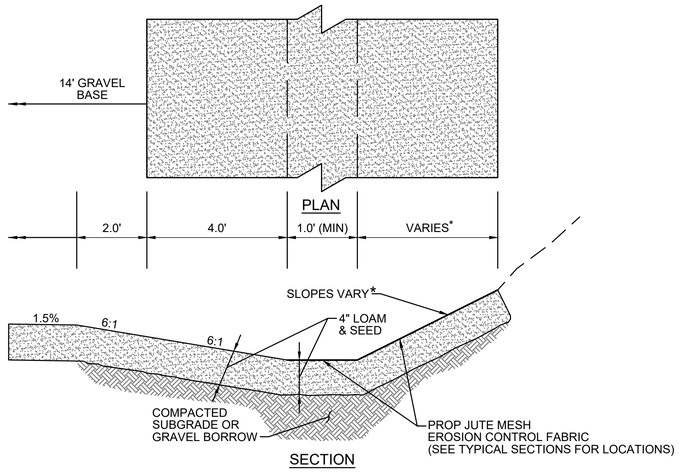
PROFILE

STABILIZED CONSTRUCTION ENTRANCE

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.

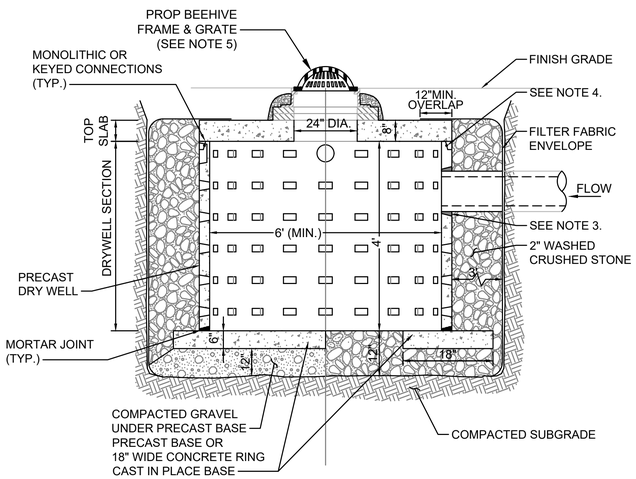


SECTION

*SEE TYPICAL SECTIONS & CROSS SECTIONS FOR ADDITIONAL INFORMATION

SWALE/AREA OF INCREASED INFILTRATION

SCALE: N.T.S.

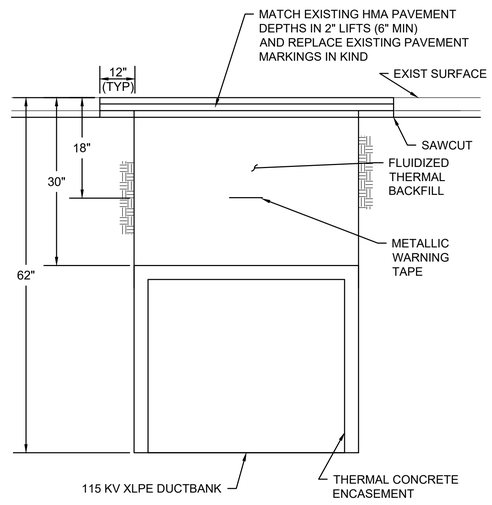


NOTES

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)

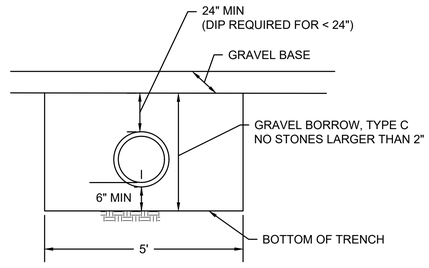
LEACHING CATCH BASIN

SCALE: N.T.S.



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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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

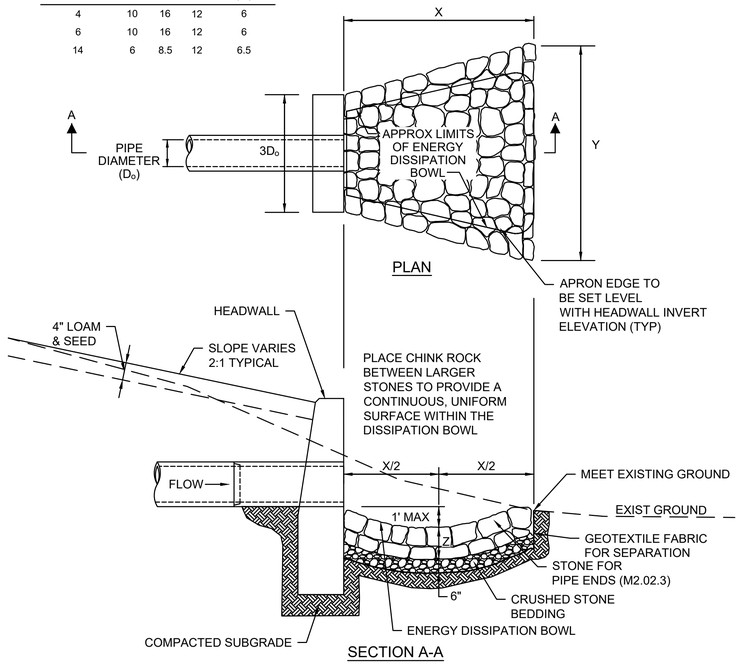
CONSTRUCTION DETAILS

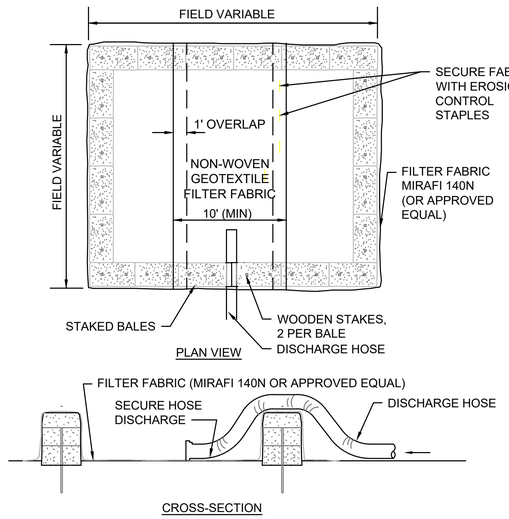
PLAN 152 OF 347

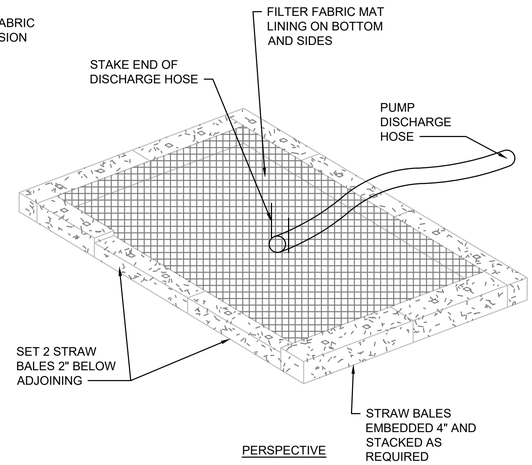
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	OCT 2020	MS	SK	MES	.	.

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







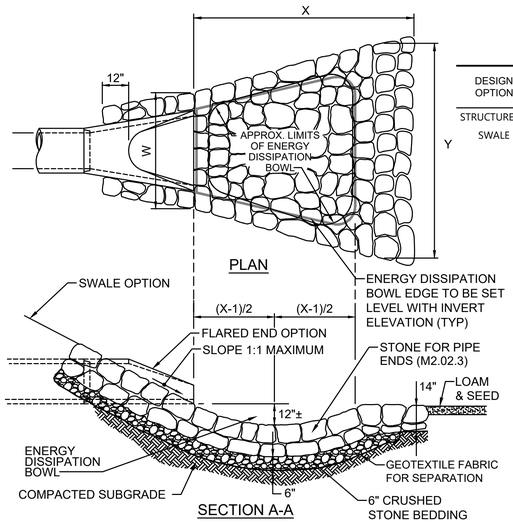
NOTES:
1. NUMBER OF BALES MAY VARY DEPENDING ON SITE CONDITIONS.
2. THE BASIN TO BE SIZED TO PREVENT DISCHARGE WATER FROM OVERTOPPING BASIN.

DEWATERING STRAW BALE BASIN

SCALE: N.T.S.

STONE FOR PIPE ENDS

SCALE: N.T.S.

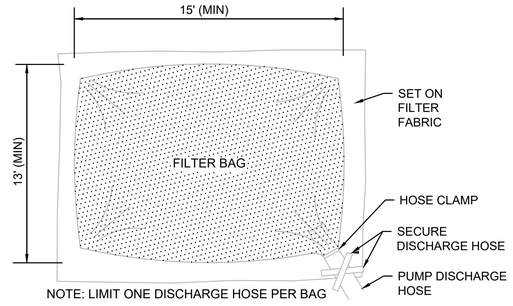


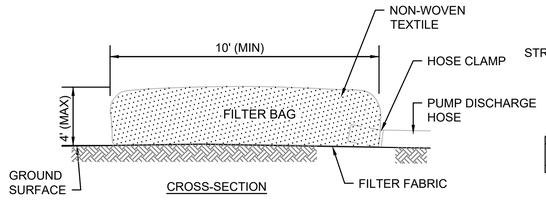
RIPRAP STONE

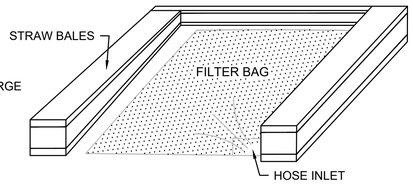
DESIGN OPTION	W (FT)	X (FT)	Y (FT)	STONE DIA. (D_{50}) (IN)
STRUCTURE 10	3	4	5	6.5
SWALE	7	6	8	6.5

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

SCALE: N.T.S.







NOTE:
1. BAG TO BE USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

DEWATERING FILTER BAG

SCALE: N.T.S.

NO.	DESCRIPTION	BY	DATE	APPR.
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CONSTRUCTION DETAILS

PLAN 153 OF 347

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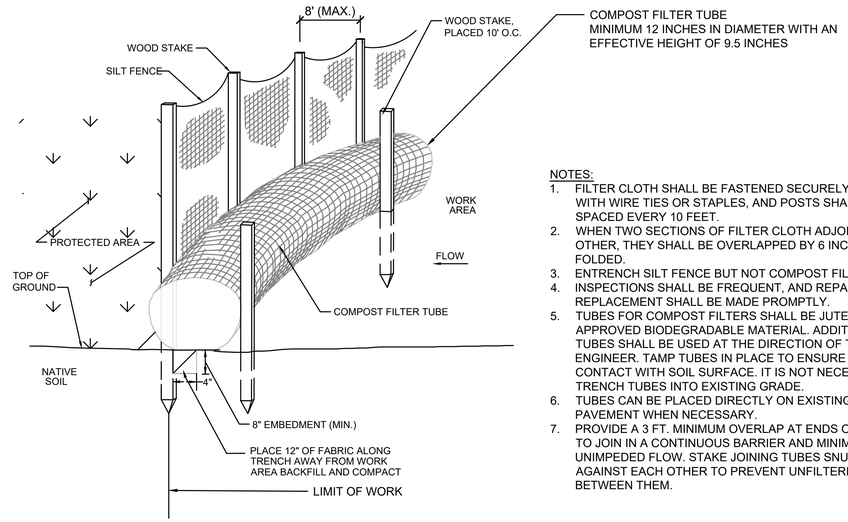
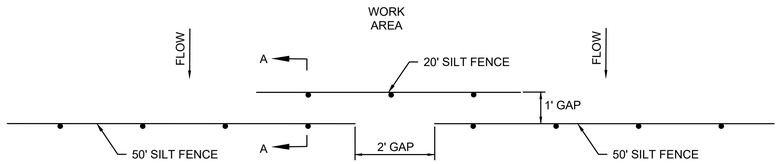


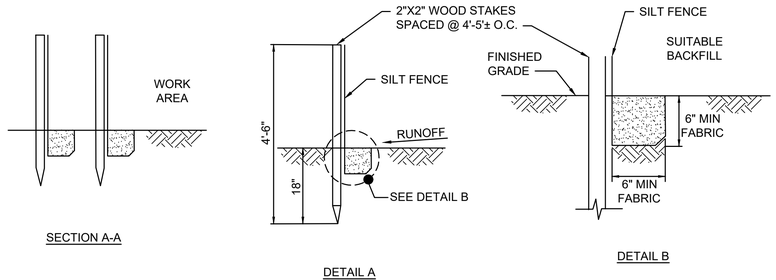
NOTES:
1. FILTER CLOTH SHALL BE FASTENED SECURELY TO POSTS WITH WIRE TIES OR STAPLES, AND POSTS SHALL BE SPACED EVERY 10 FEET.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES AND FOLDED.
3. ENTRENCH SILT FENCE BUT NOT COMPOST FILTER TUBE.
4. INSPECTIONS SHALL 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

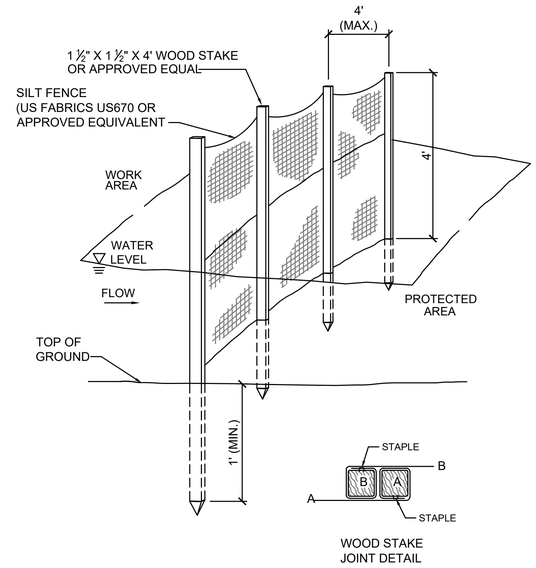
DETAIL A

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

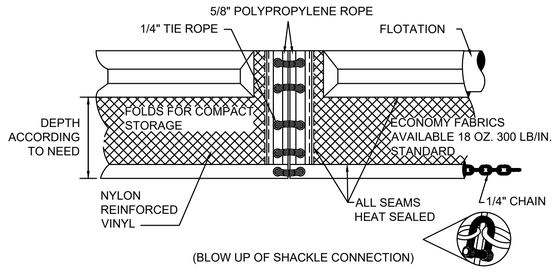
SCALE: N.T.S.



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.
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CONSTRUCTION DETAILS

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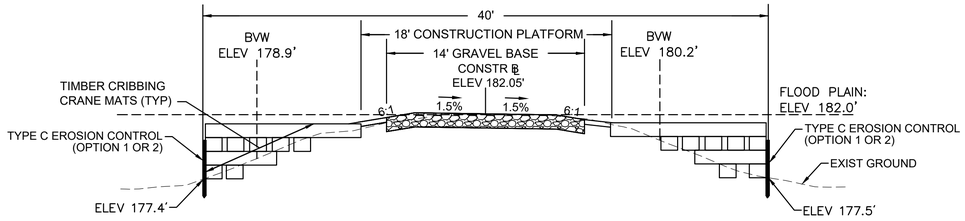
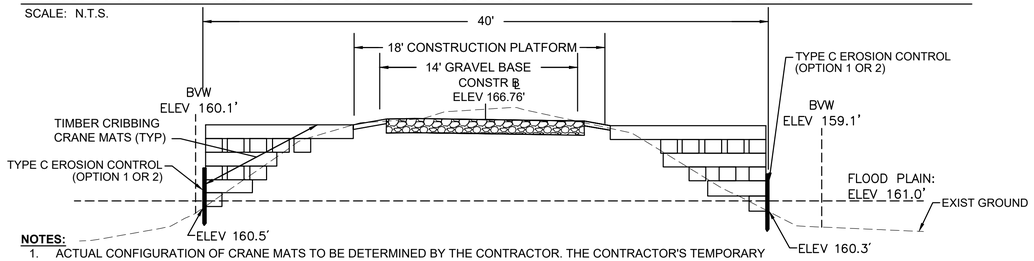


NOTES:
1. ACTUAL CONFIGURATION OF CRANE MATS TO BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR'S TEMPORARY WORK LIMIT SHALL NOT EXTEND MORE THAN 20 FEET FROM THE CENTERLINE OF CONSTRUCTION TO THE OUTERMOST LIMIT ON EACH SIDE WHERE CRANE MATTING IS PERMITTED.
2. AREA DISTURBED BY CRANE MATS OUTSIDE THE 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.

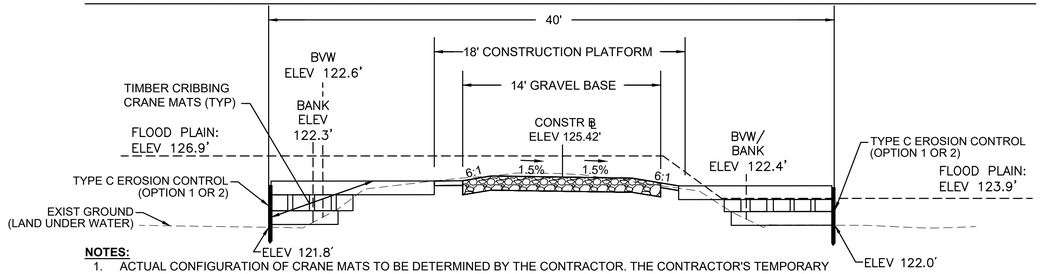
TYPICAL CRANE MAT CROSS-SECTION WITHOUT STEEL SHEETING - BRIDGE 130

SCALE: N.T.S.



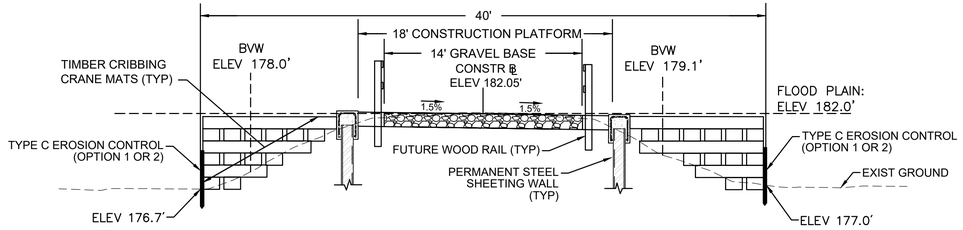
NOTES:
1. ACTUAL CONFIGURATION OF CRANE MATS TO BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR'S TEMPORARY WORK LIMIT SHALL NOT EXTEND MORE THAN 20 FEET FROM THE CENTERLINE OF CONSTRUCTION TO THE OUTERMOST LIMIT ON EACH SIDE WHERE CRANE MATTING IS PERMITTED.
2. AREA DISTURBED BY CRANE MATS OUTSIDE THE 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.

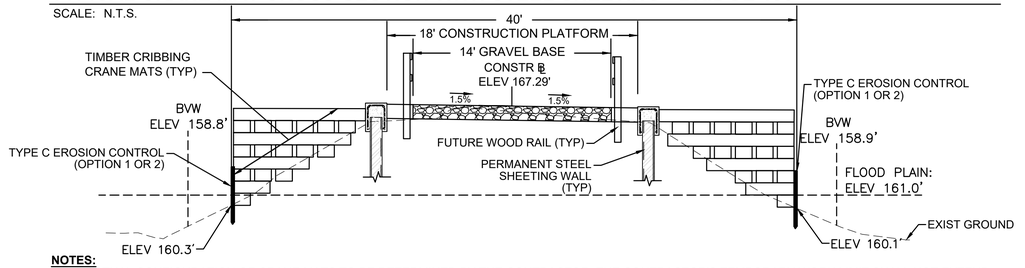
TYPICAL CRANE MAT CROSS-SECTION WITHOUT STEEL SHEETING - BRIDGE 127



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

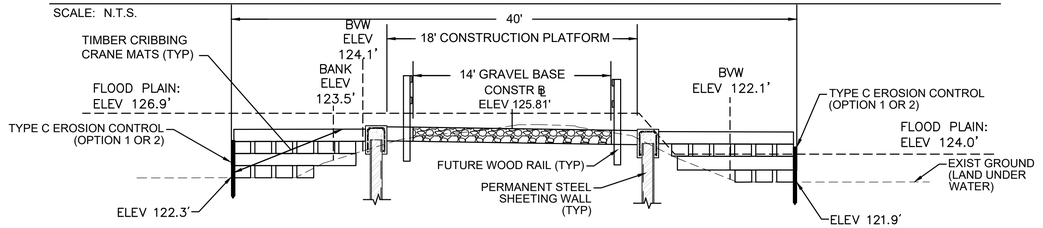
SCALE: N.T.S.



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.
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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

EVERSOURCE

SUDBURY—HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION DETAILS

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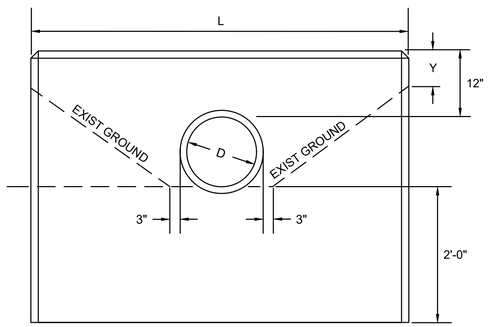
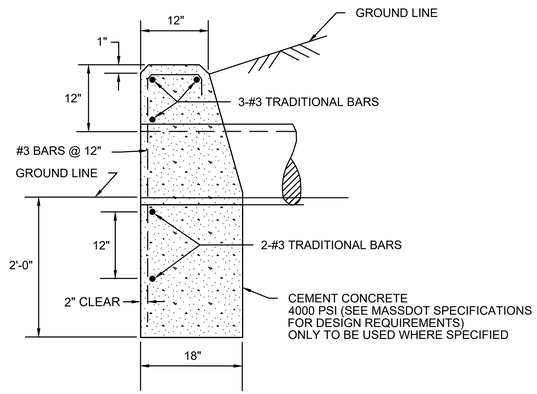
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	OCT 2020	MS	SK	MES	.	.



FRONT ELEVATION

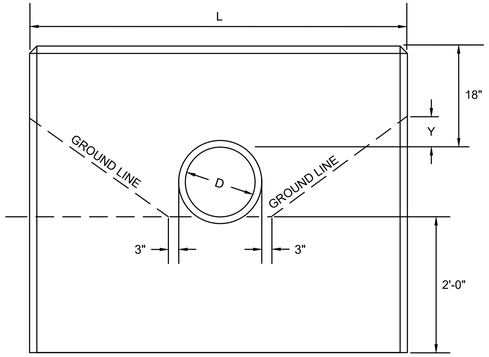


END ELEVATION

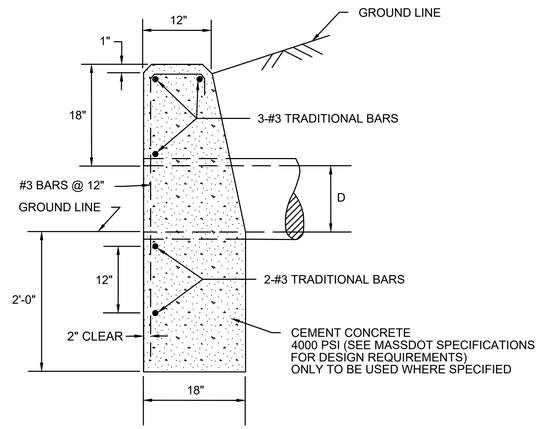
NOTES:
1. THIS DETAIL SHALL BE APPLIED TO THE PROPOSED 18" DRAINAGE PIPE AT STATION 738+77.
2. SEE MASSDOT CONST STD 206.4.1 FOR THE VALUES OF L AND Y FOR VARIOUS PIPE DIAMETERS.

HEADWALL WITH 12" REVEAL ABOVE PIPE

SCALE: N.T.S.



FRONT ELEVATION

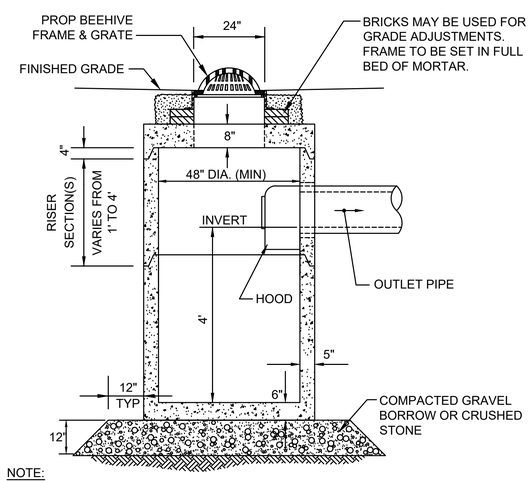


END ELEVATION

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.

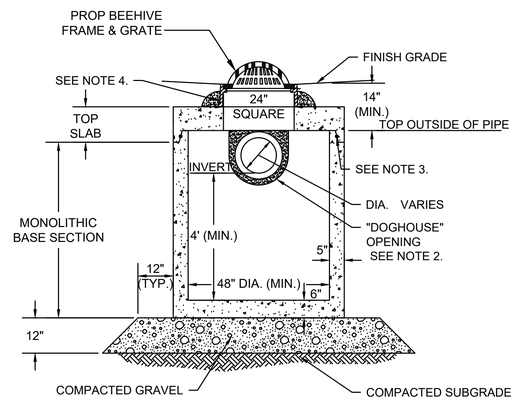


NOTE:

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

DEEP SUMP CATCH BASIN WITH HOOD (CB)

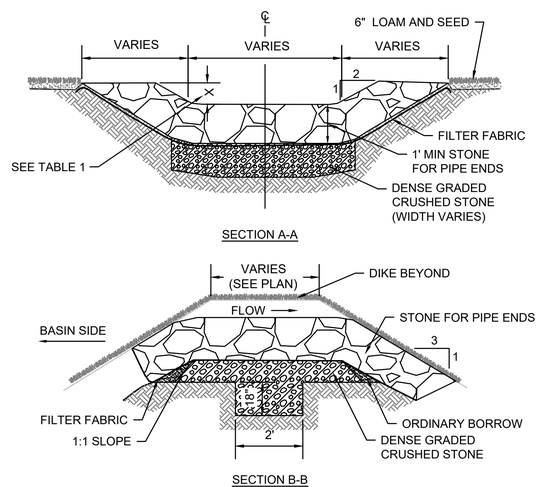
SCALE: N.T.S.



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

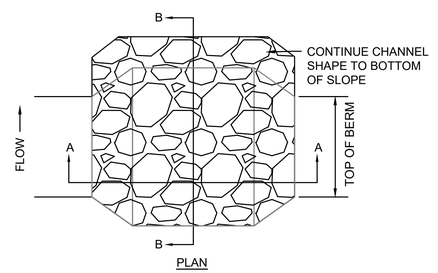
SECTION B-B

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

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION DETAILS

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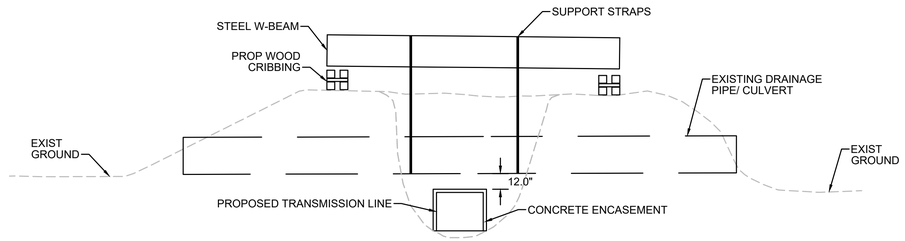
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
NTS	OCT 2020	MS	SK	MES	.	.

METHOD OF PIPE SUPPORT DURING CONSTRUCTION

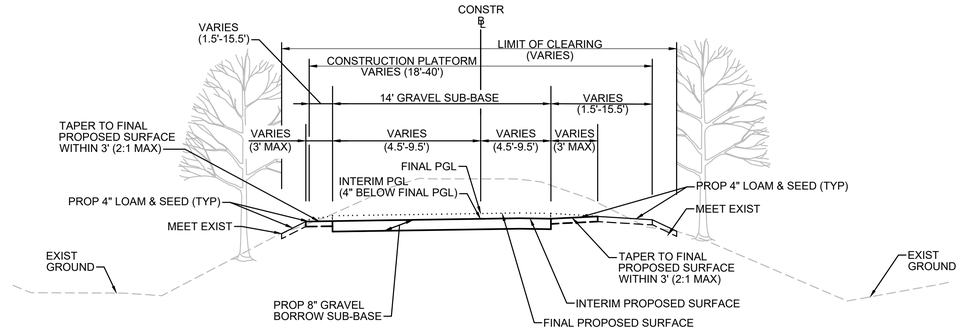
SCALE: N.T.S.



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

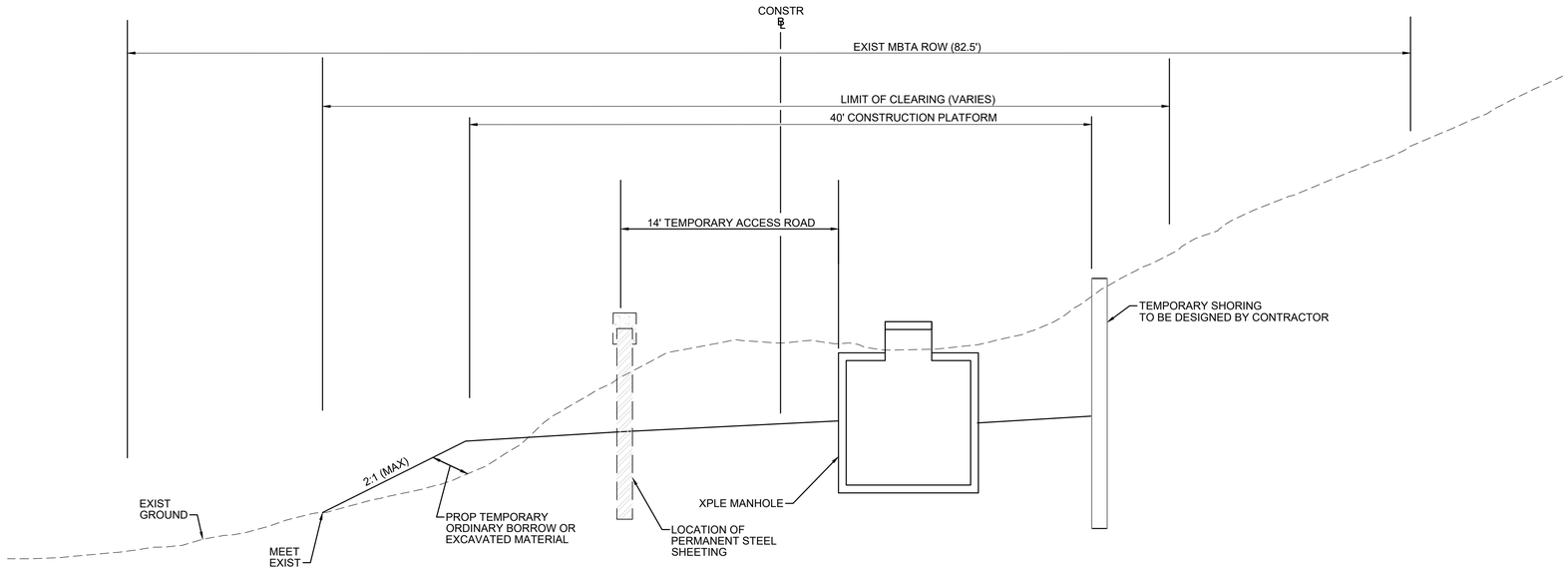
SCALE: N.T.S.



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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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

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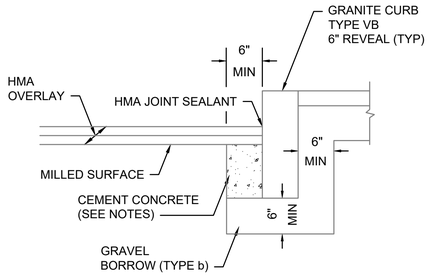
PLAN 157 OF 347

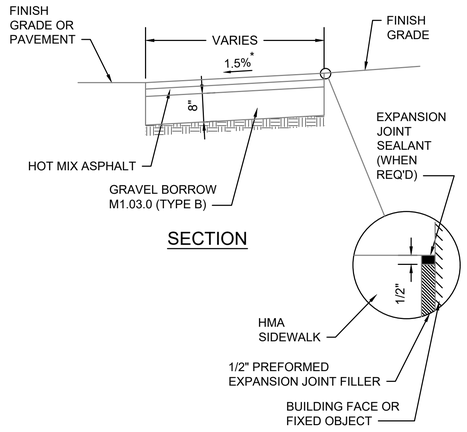
SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
NTS	OCT 2020	MS	SK	MES	.	.



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.

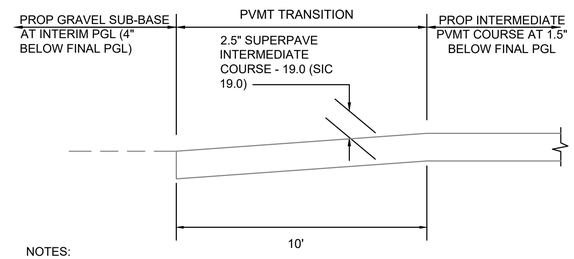


SECTION

* TOLERANCE FOR CONSTRUCTION ±0.5%

HOT MIX ASPHALT SIDEWALK

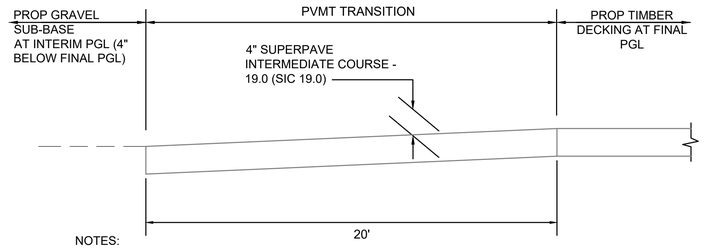
SCALE: N.T.S. DWG: WALK-01 DATE: MARCH 2013



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

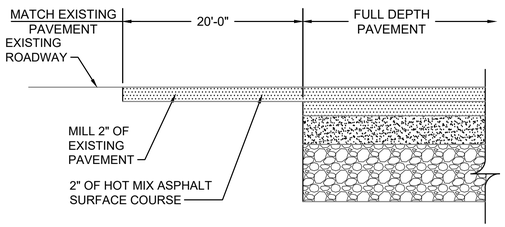
SCALE: N.T.S.



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

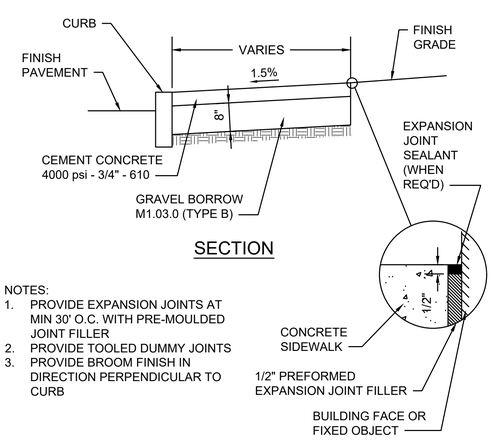
SCALE: N.T.S.



LONGITUDINAL SECTION

FULL DEPTH PAVEMENT TRANSITION

SCALE: N.T.S.

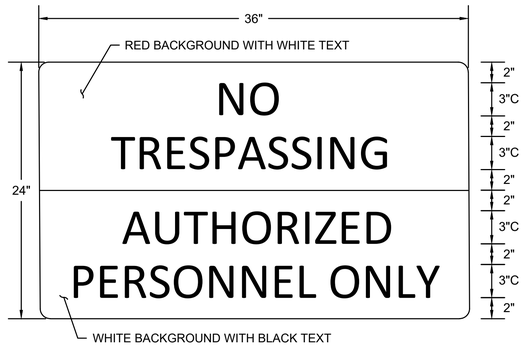


SECTION

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

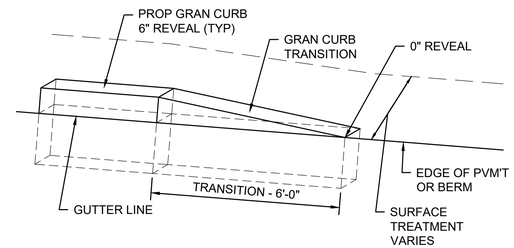
CEMENT CONCRETE SIDEWALK

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.

NO.	DESCRIPTION	BY	DATE	APPR.

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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
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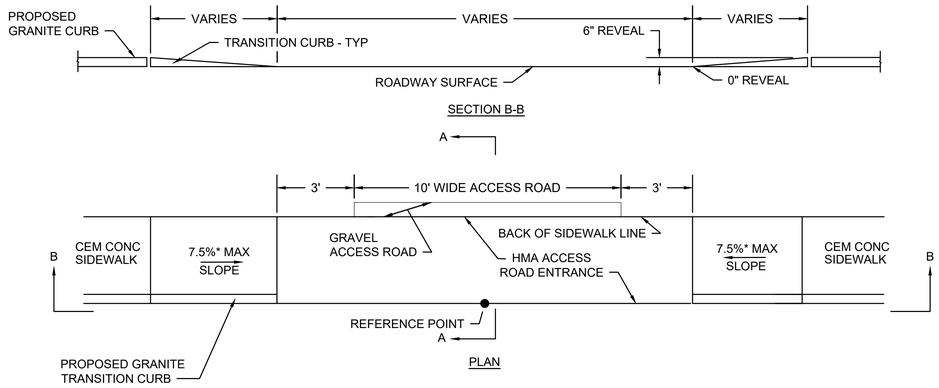
NTS	OCT 2020	MS	SK	MES	.	.

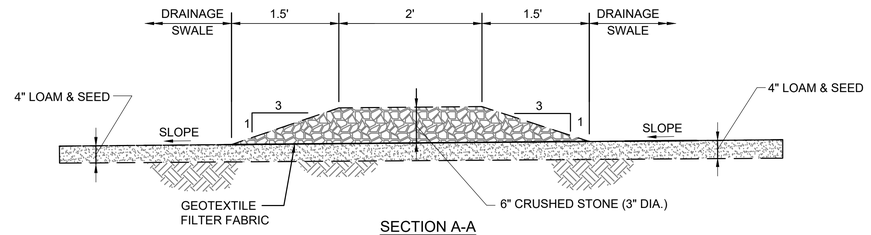
ACCESS ROAD CROSSING DATA									
NO.	LOCATION (REF POINT)	ROADWAY GUTTER	SIDEWALK WIDTH	LEFT SIDE		RIGHT SIDE		OPENING ELEVATION	COMMENTS
				REVEAL	TRANS	REVEAL	TRANS		
BOSTON POST ROAD (ROUTE 20) STATE HIGHWAY LAYOUT									
(1)	182+61.6, 9.6' LT	5.2%	5'-6"	6"	9'-0"	6"	7'-8"	134.31'	



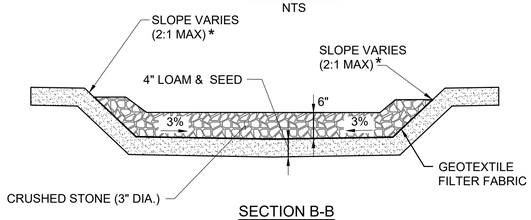
*TOLERANCE FOR CONSTRUCTION ±0.5%

TYPICAL ACCESS ROAD CROSSING WITH SIDEWALK AND WITHOUT CURB RETURNS

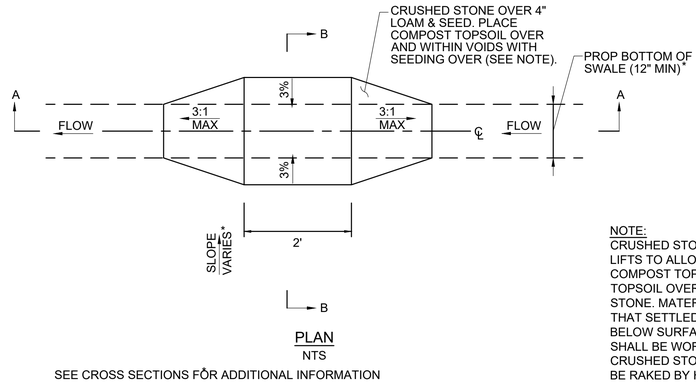
SCALE: N.T.S.



SECTION A-A
NTS



SECTION B-B
NTS



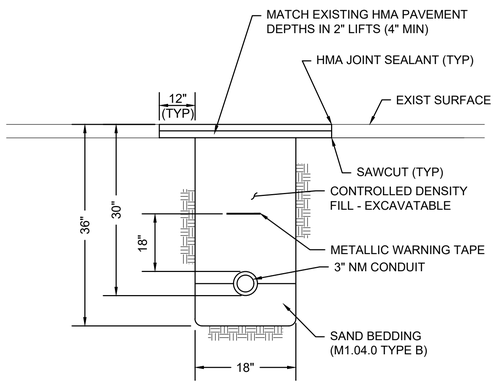
PLAN
NTS

SEE CROSS SECTIONS FOR ADDITIONAL INFORMATION

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.

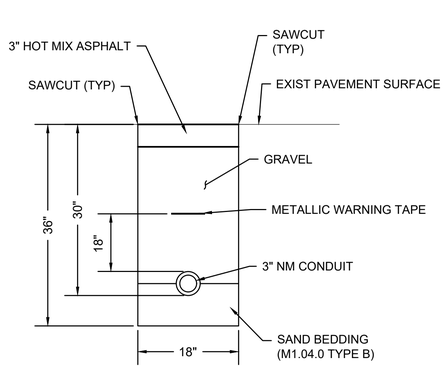
CHECK DAM

SCALE: N.T.S.



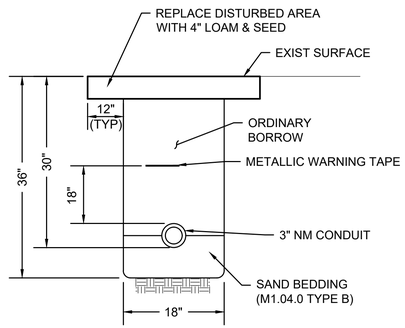
CONDUIT CROSSING ROADWAY/DRIVEWAY

SCALE: N.T.S.



CONDUIT IN SIDEWALK

SCALE: N.T.S.



CONDUIT IN GRASS

SCALE: N.T.S.

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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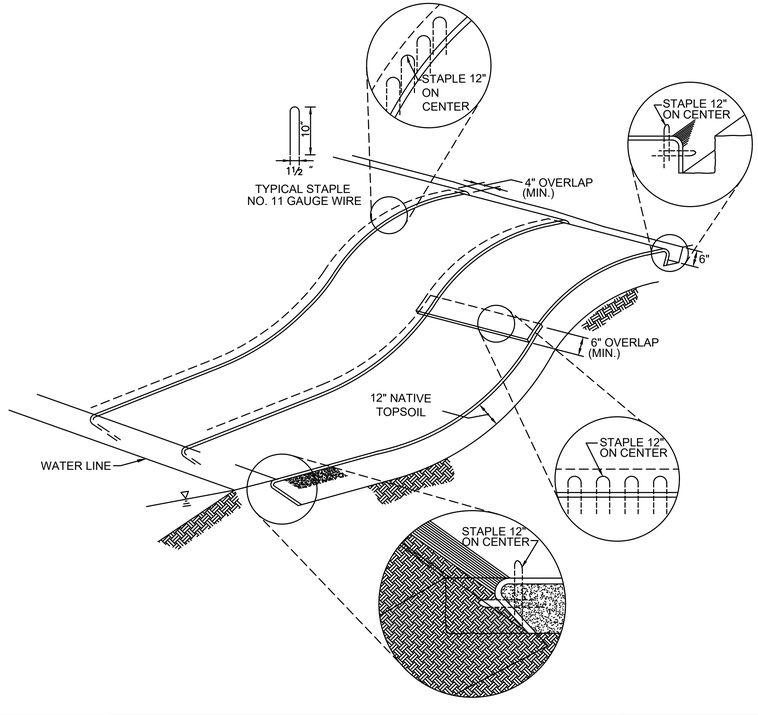
NOTES FOR BIONET C700BN EROSION CONTROL BLANKET:

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

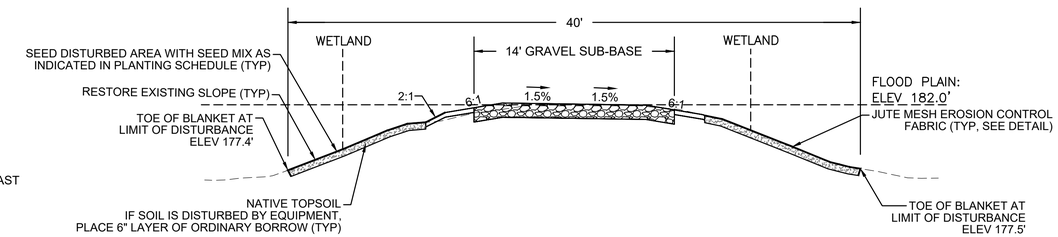
NOTES FOR JUTE MESH EROSION CONTROL FABRIC:

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

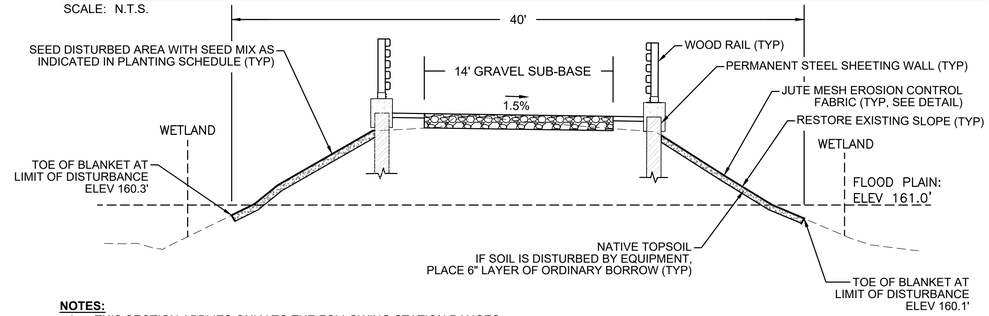
SCALE: N.T.S.



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

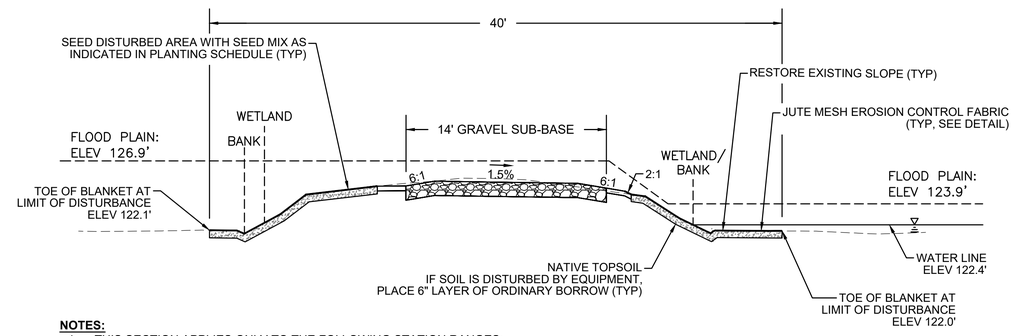
SCALE: N.T.S.



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.
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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CONSTRUCTION DETAILS
PLAN 160 OF 347

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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 SCHEDULE B: SUPPLEMENTAL PLANTING AREAS

SUPPLEMENTAL PLANTINGS																																
SPECIES	WETLAND STATUS	SPACING	PLANT SIZE																													
				H1	H2	H3	H4 NORTH	H4 SOUTH	S1	S2	S3 NORTH	S3 SOUTH	S4	S5 NORTH	S5 SOUTH	S6 NORTH	S6 SOUTH	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21	S22	S23
SUMMERSWEET CLETHRA (*CLETHRA ALNIFOLIA*)	FAC	48" O.C.	2' - 3'	58	26	30	12	9			16	23		12	20	12	10	18	5	16	10	14	15	8	6	4	15	18	30	100	11	27	3	11
ALTERNATE-LEAVED DOGWOOD (*SWIDA ALTERNIFOLIA*)	FACU	48" O.C.	24" - 30"	58	26	30	12	9	10	4	16	23	5	12	20	12	10	18	5	16	10	14	15	8	6	4	15	18	30	100	11	27	3	11
NORTHERN BAYBERRY (*MYRICA PENSYLVANICA*)	FAC	48" O.C.	2' - 3'	58	26	30	12	9	10	4	16	23	5	12	20	12	10	18	5	16	10	14	15	8	6	4	15	18	30	100	11	27	3	11
AMERICAN HAZELNUT (*CORYLUS AMERICANA*)	FACU	48" O.C.	2' - 3'	58	26	30	12	9	10	4	16	23		12	20	12	10	18	5	16	10	14	15	8	6	4	15	18	30	100	11	27	3	11

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 347

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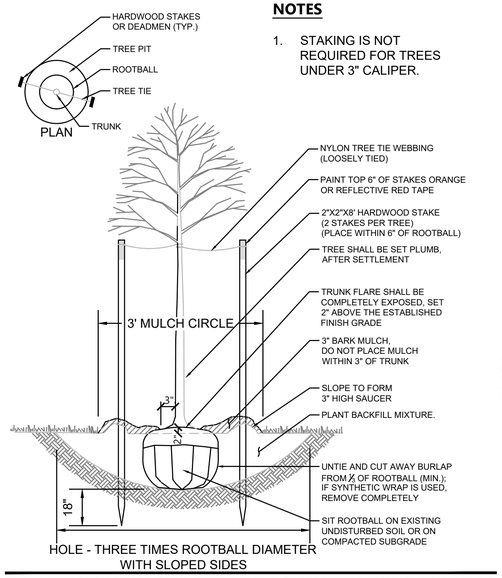
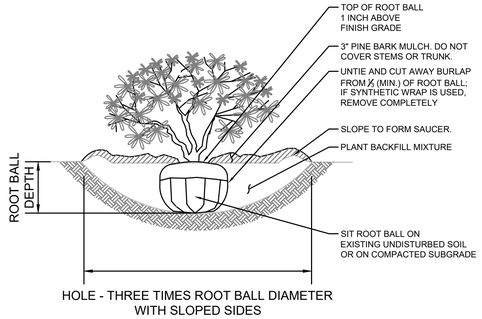


NOTES

1. STAKING IS NOT REQUIRED FOR TREES UNDER 3" CALIPER.

TREE PLANTING (FOR TREES UNDER 4" CALIPER)

SCALE: NTS



NOTES

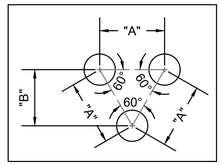
1. LOOSEN ROOTS AT THE OUTER EDGE OF ROOTBALL OF CONTAINER GROWN SHRUBS.

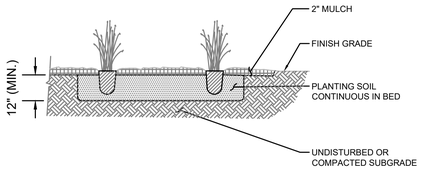
SHRUB PLANTING

SCALE: NTS

PLANT SPACING

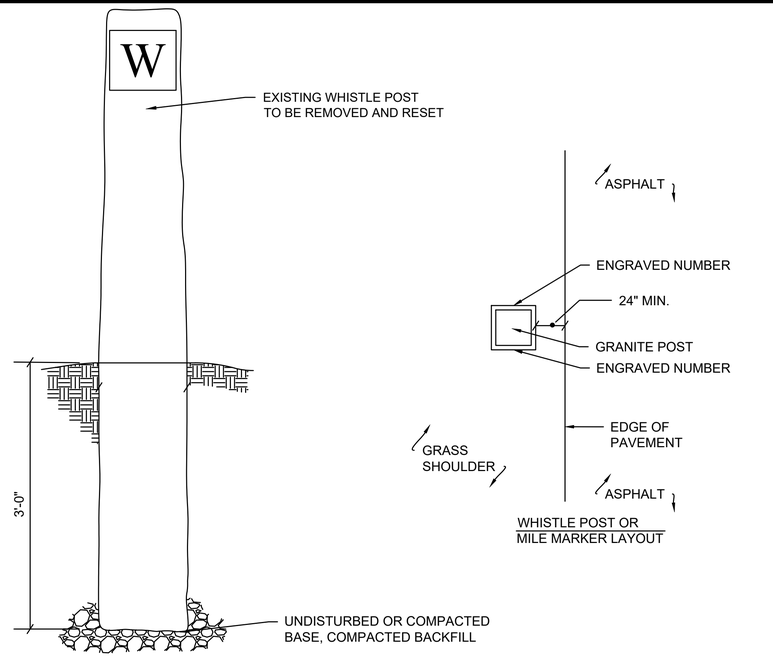
PLANT SPACING("A")	ROW SPACING ("B")
6 IN. O.C.	5 IN. O.C.
8 IN. O.C.	7 IN. O.C.
10 IN. O.C.	8 ⅔ IN. O.C.
12 IN. O.C.	10 ⅓ IN. O.C.
15 IN. O.C.	13 IN. O.C.
18 IN. O.C.	16 IN. O.C.
24 IN. O.C.	21 IN. O.C.
30 IN. O.C.	26 IN. O.C.
36 IN. O.C.	30 IN. O.C.
48 IN. O.C.	42 IN. O.C.
54 IN. O.C.	48 IN. O.C.
60 IN. O.C.	54 IN. O.C.





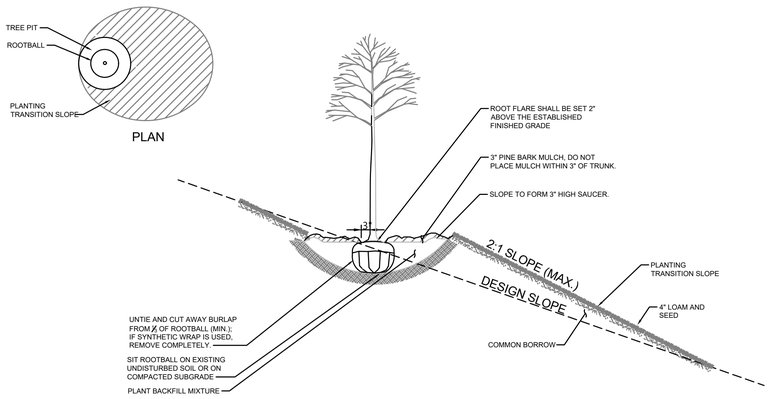
PERENNIAL PLANTING

SCALE: NTS



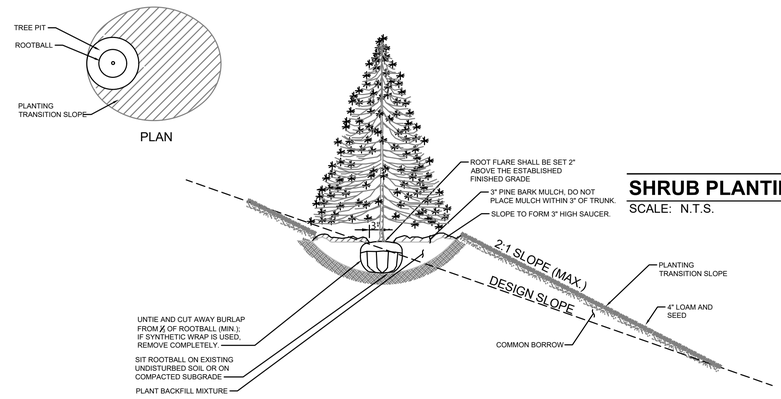
WHISTLE POST OR MILE MARKER DETAIL

SCALE: NTS



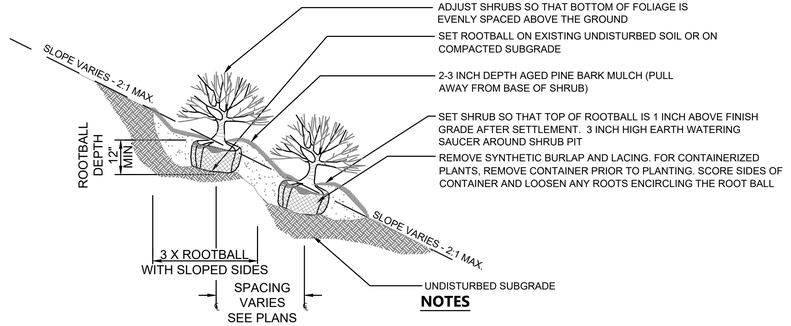
DECIDUOUS TREE PLANTING ON SLOPE

SCALE: N.T.S.



EVERGREEN TREE PLANTING ON SLOPE

SCALE: N.T.S.



SHRUB PLANTING ON SLOPE

SCALE: N.T.S.

NOTES

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

NO.	DESCRIPTION	BY	DATE	APPR.

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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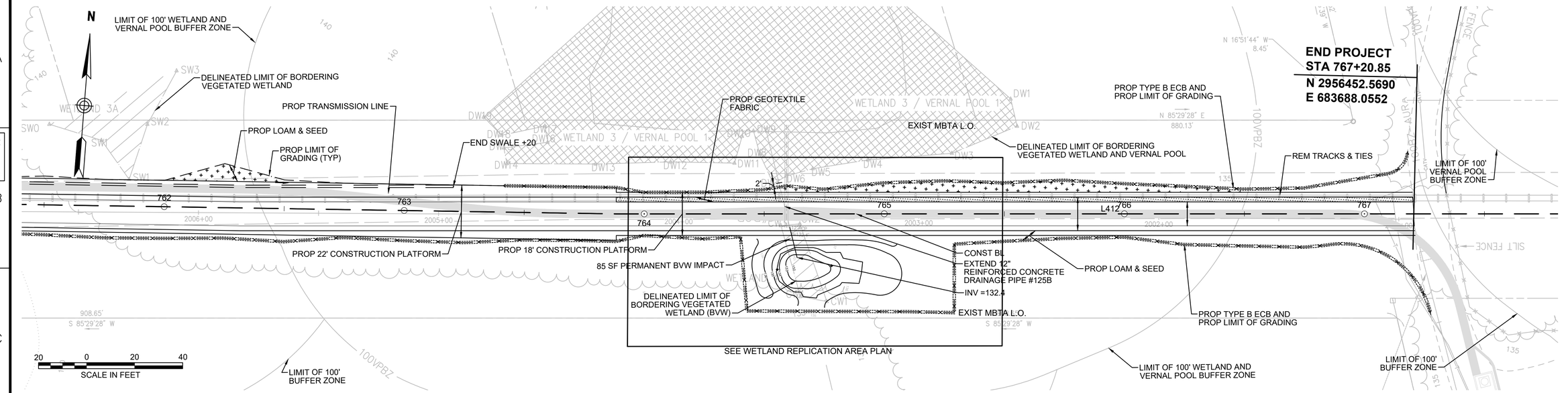

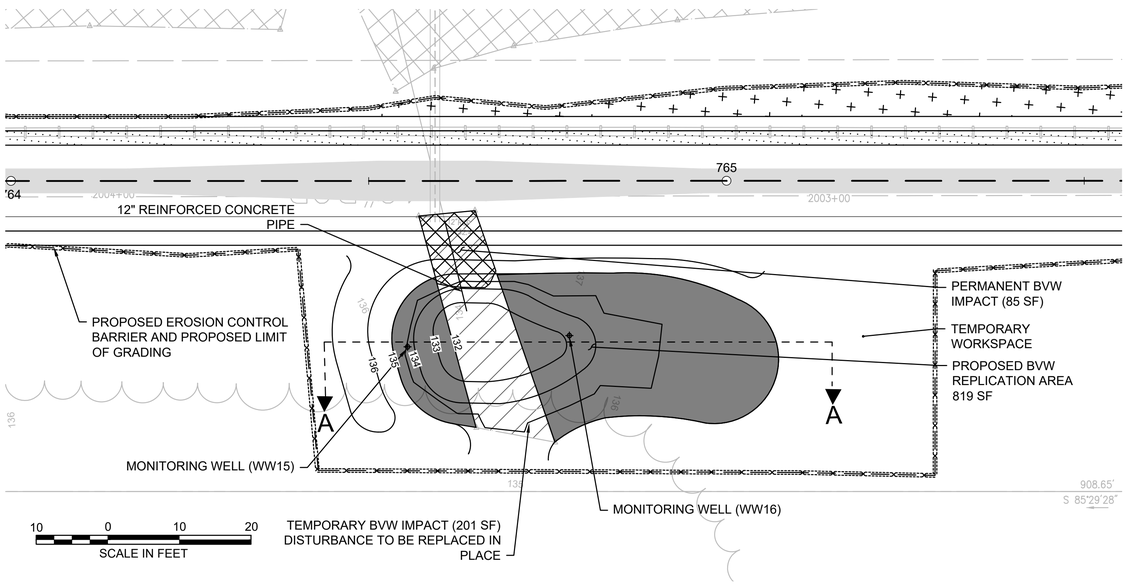

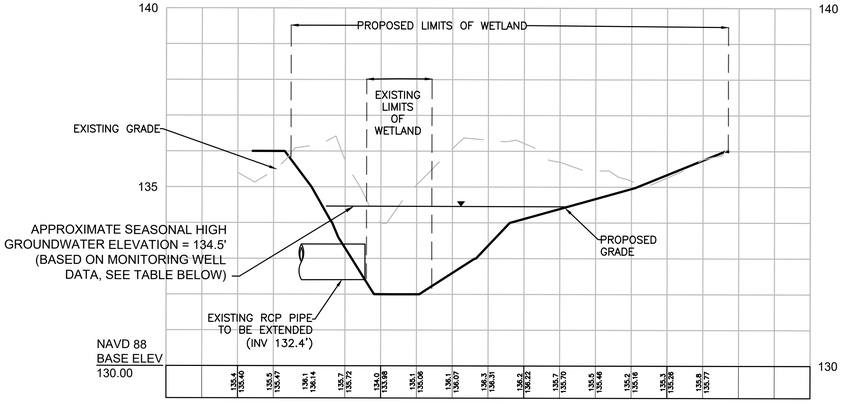

LEGEND

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.

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

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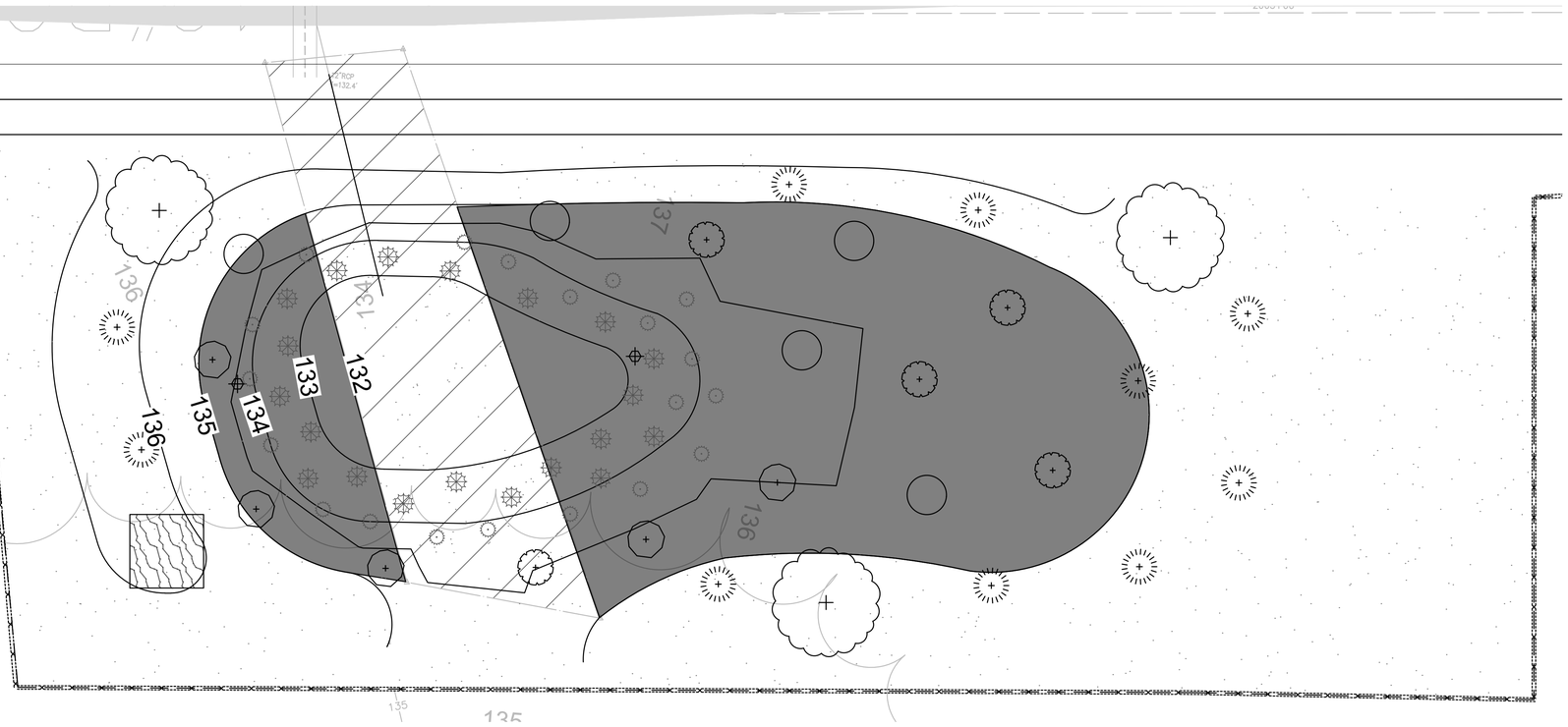
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

WETLAND REPLICATION GRADING PLAN

PLAN 166 OF 347

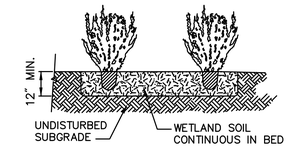
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	OCT 2020	MBB	EJM	MAC		



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.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
WETLAND REPLICATION PLANTING PLAN
PLAN 167 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=4'	OCT 2020	MBB	EJM	MAC		

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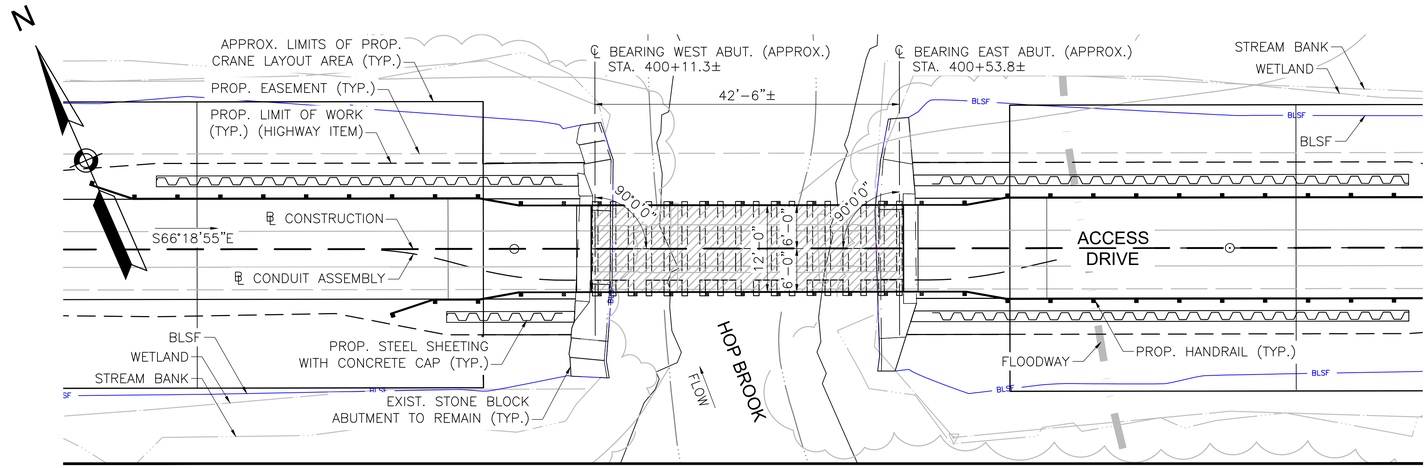
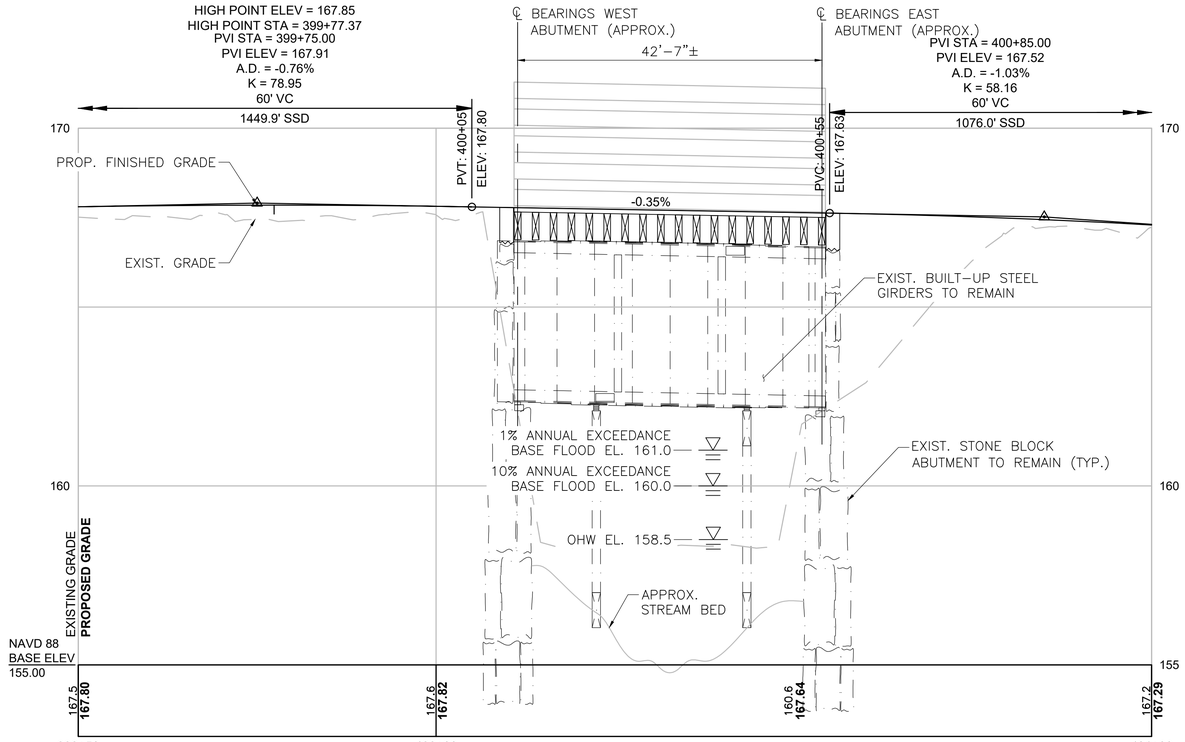


BRIDGE KEY PLAN

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 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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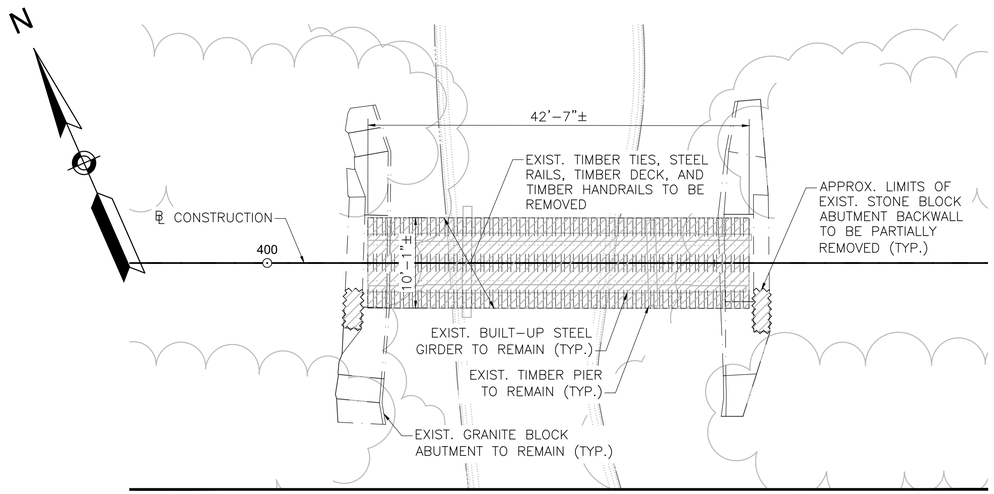
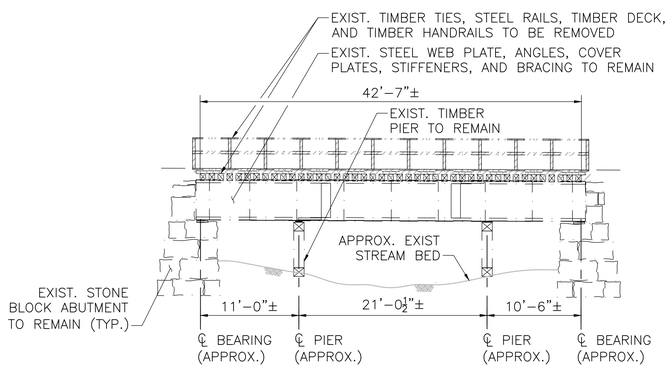
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
BRIDGE S-31-017 (BRIDGE 128) – KEY PLAN & PROFILE
PLAN 187 OF 347

SCALE: unless noted	DATE	DRAWN	CH'KD.	APPR.	DRAWING NO.	REV.
H: 1"=10' V: 1"=2'	OCT 2020	AMS	SBK	KGK	.	.



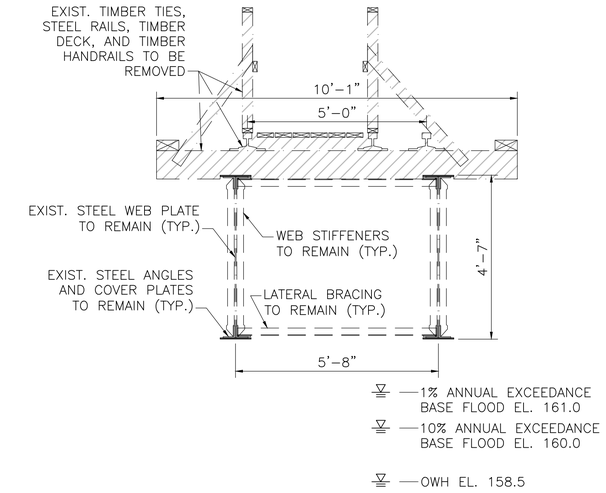
BRIDGE PLAN

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



BRIDGE ELEVATION

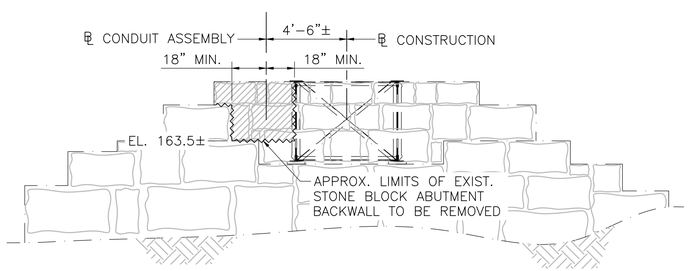
SCALE: $\frac{3}{8}$"=1'-0"



BRIDGE TRANSVERSE SECTION

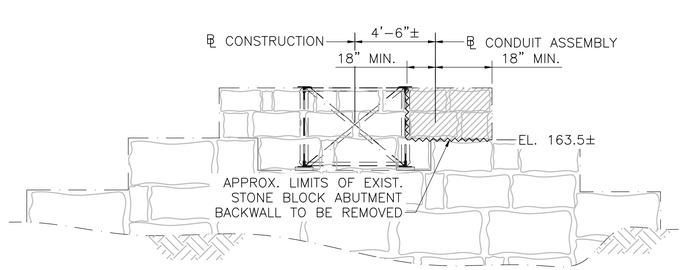
SCALE: $\frac{1}{2}$"=1'-0"

NOTE: CONTRACTOR SHALL DESIGN AND INSTALL TEMPORARY PROTECTIVE SHIELDING 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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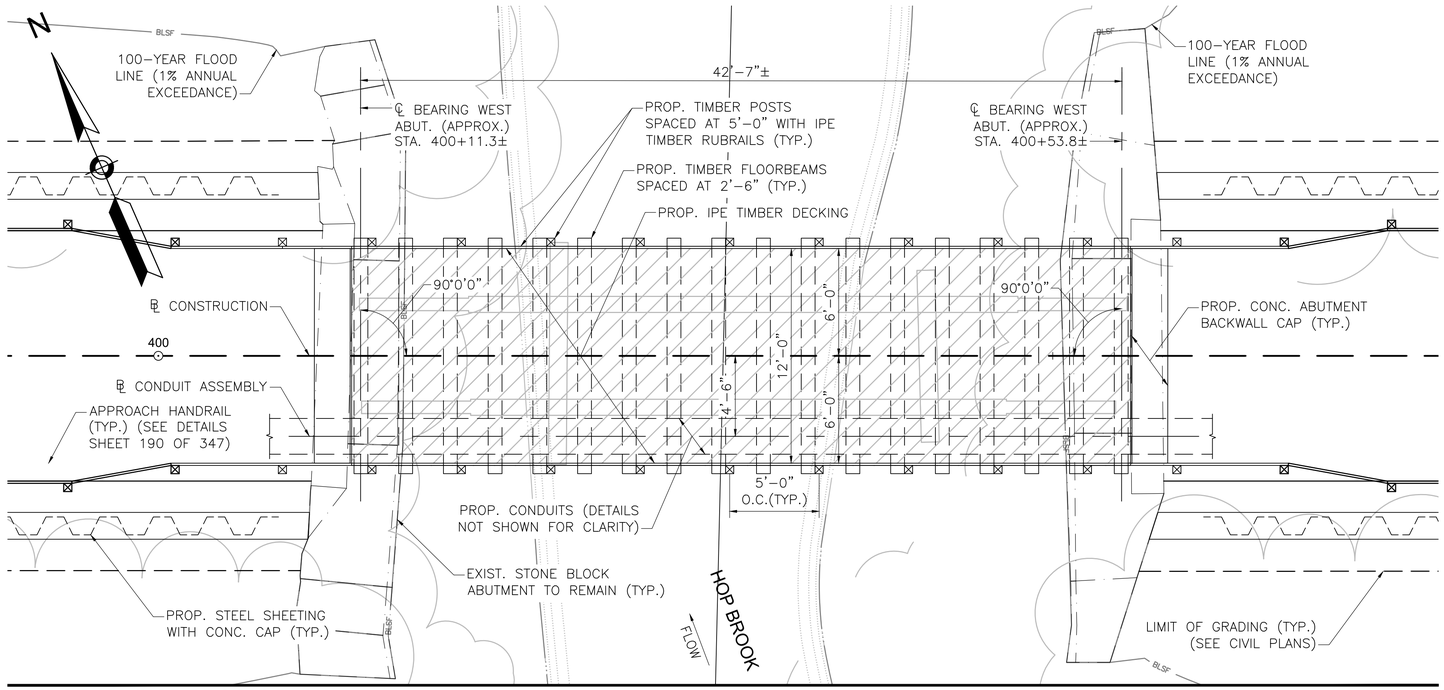
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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

PLAN 188 OF 347

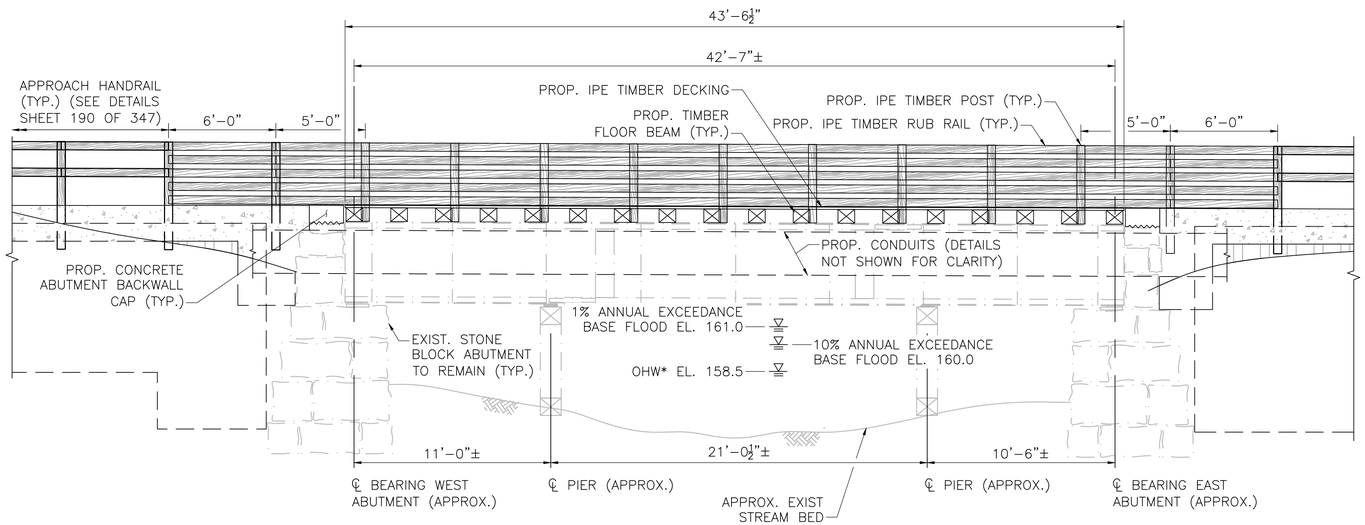
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	OCT 2020	AMS	SBK	KGK	.	.



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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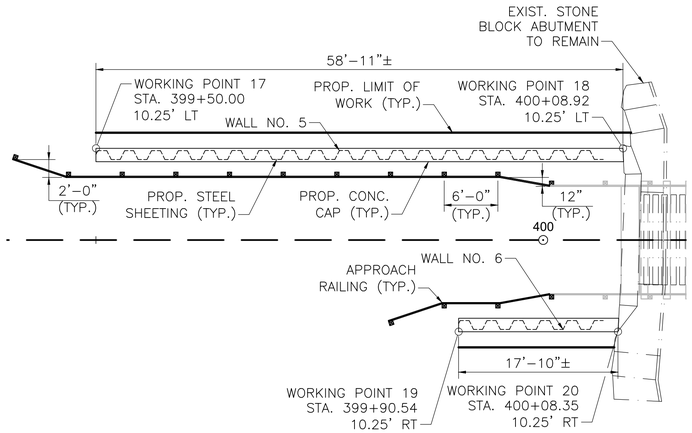
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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

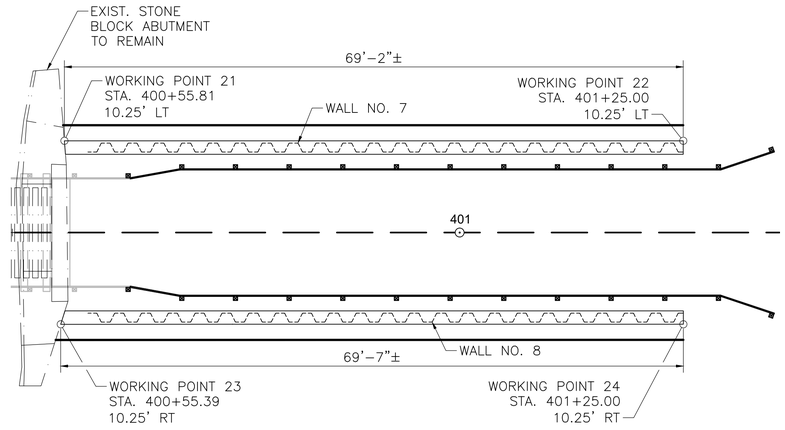
PLAN 189 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=4'	OCT 2020	AMS	SBK	KGK	.	.



WALL 5 & 6 SHEETING PLAN (WEST APPROACH)

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

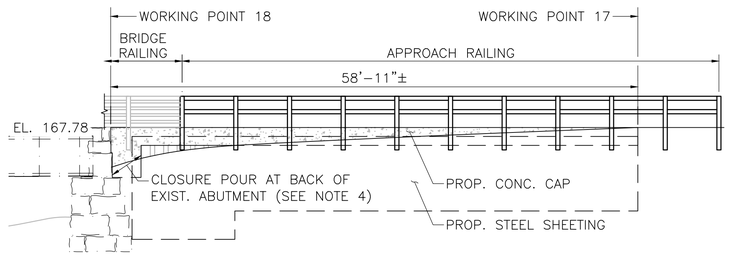


WALL 7 & 8 SHEETING PLAN (EAST APPROACH)

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

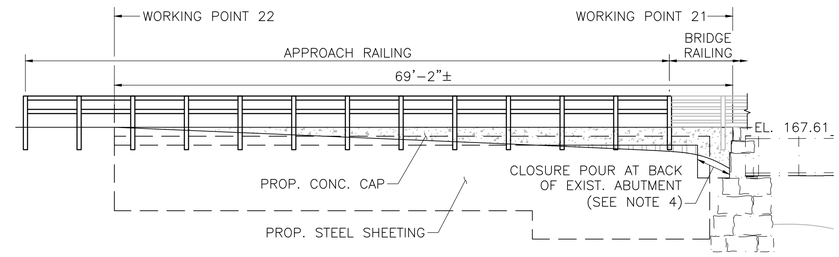
NOTES:

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 EXISTING ABUTMENT. HEIGHT OF CAP SHALL BE INCREASED AT CLOSURE POUR AS NEEDED TO MAINTAIN REQUIRED GRADE SEPARATION.



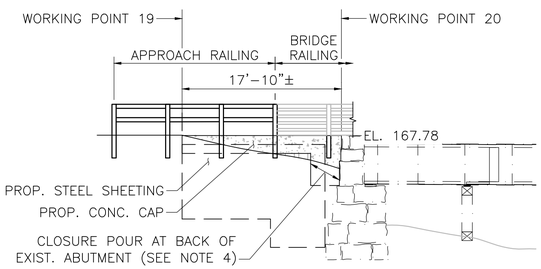
WALL 5 ELEVATION (WEST APPROACH NORTH SHEETING WALL)

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



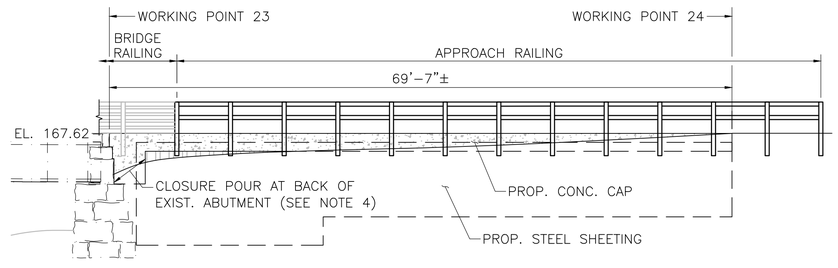
WALL 7 (EAST APPROACH NORTH SHEETING WALL)

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



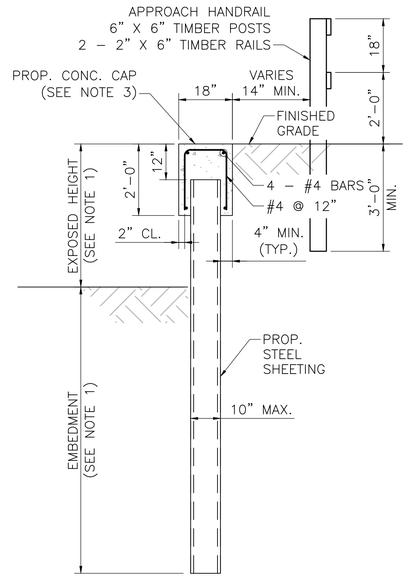
WALL 6 ELEVATION (WEST APPROACH SOUTH SHEETING WALL)

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



WALL 8 ELEVATION (EAST APPROACH SOUTH SHEETING WALL)

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



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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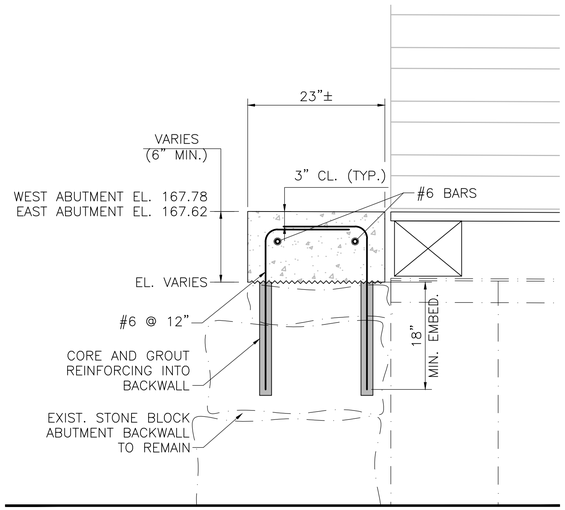
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE H–25–017 (BRIDGE 128) – SHEETING PLAN

PLAN 190 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	AMS	SBK	KGK	.	.

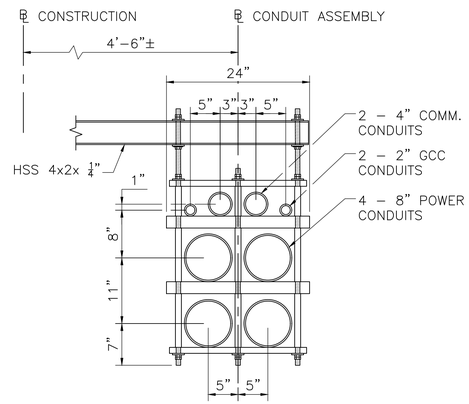


BACKWALL CAP DETAIL

SCALE: 1"=1'-0"

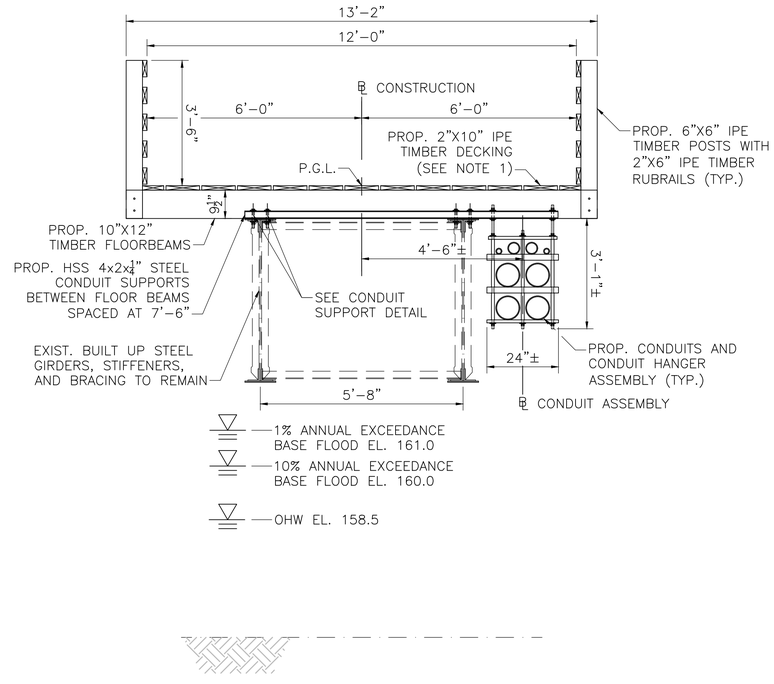
NOTES:

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.



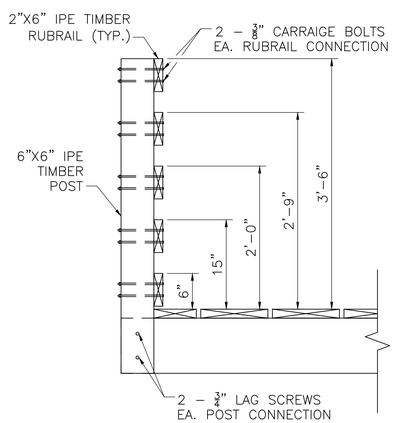
CONDUIT ASSEMBLY DETAIL

SCALE: 1"=1'-0"



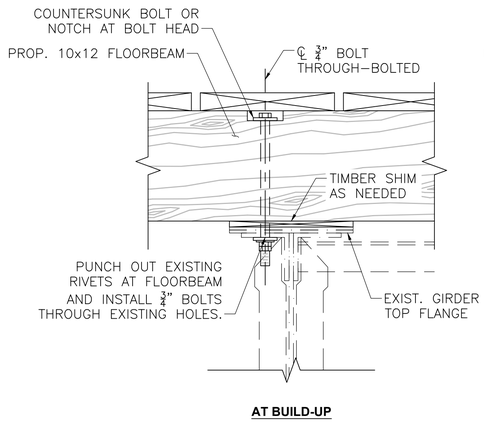
BRIDGE TRANSVERSE SECTION

SCALE: ½"=1'-0"

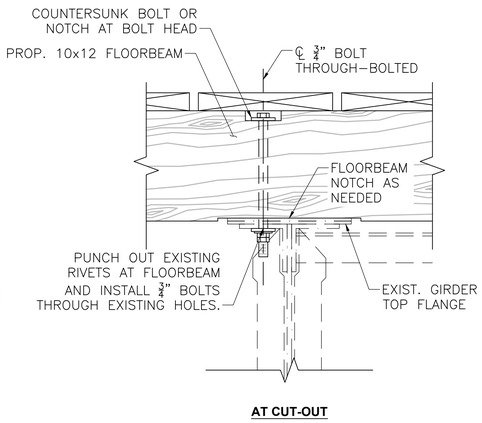


RAILING CONNECTION DETAIL

SCALE: 1"=1'-0"



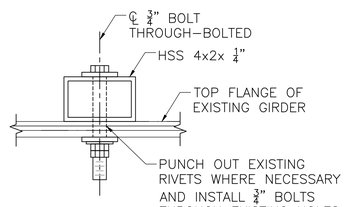
AT BUILD-UP



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

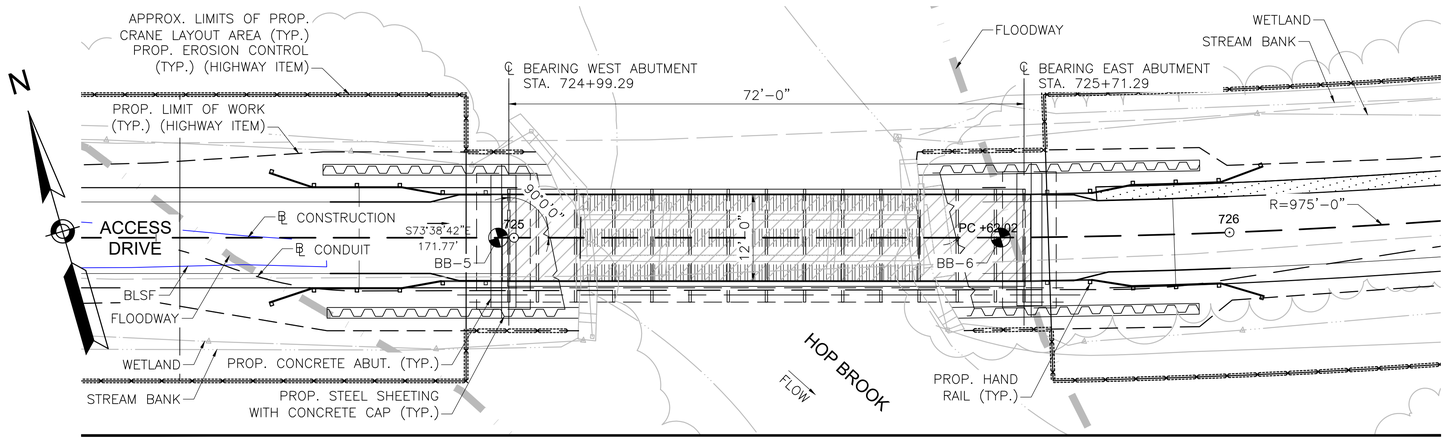
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE S–31–017 (BRIDGE 128) – SECTION & DETAILS

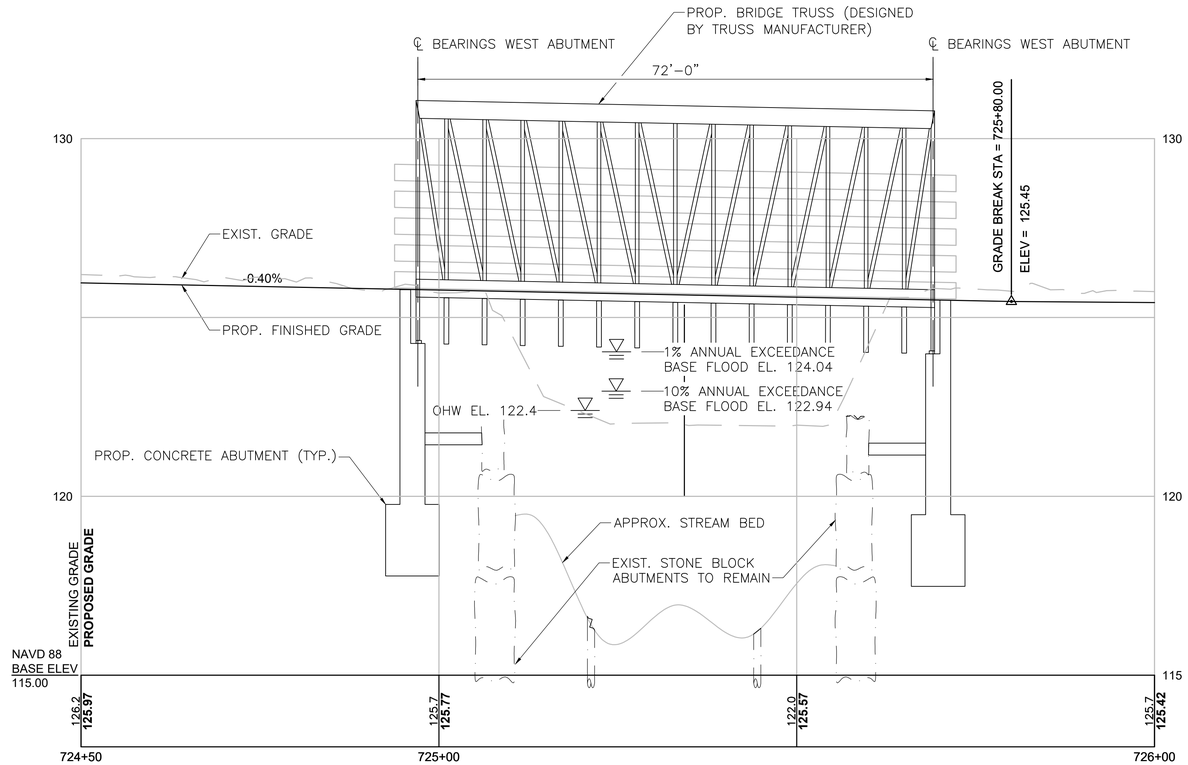
PLAN 191OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	OCT 2020	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 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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NO.	DESCRIPTION	BY	DATE	APP'R.
	REVISION			

EVERSOURCE

SUDBURY-HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
BRIDGE S-31-016 (BRIDGE 127) - KEY PLAN & PROFILE
PLAN192 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
H: 1"=10' V: 1"=2'	OCT 2020	AMS	SBK	KGK	.	.

BORING BB–5
STATION: 724+98
OFFSET: 0.0' LT
N: 2956151.0
E: 679475.0
GROUND ELEVATION: 125.0'
(SEE NOTE 10)

LGCI Lahlaf Geotechnical Consulting, Inc.
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Fax: (978) 330-5056

BORING LOG **B-BB-5**
PAGE 1 OF 2

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Hop Brook Bridge
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 10/08/18 **DATE COMPLETED:** 10/10/18
BORING LOCATION: Western side of Hop Brook Bridge
COORDINATES: NA
SURFACE EI.: 125 ft. (see note 1) **TOTAL DEPTH:** 54 ft.
WEATHER: 70s / Partly Cloudy
GROUNDWATER LEVELS:
▽ **DURING DRILLING:** 4.0 ft. / El. 121.0 ft. measured on 10/9/18
▼ **AT END OF DRILLING:** 3.5 ft. / El. 121.5 ft.
▼ **OTHER:** 3.2 ft. / El. 121.8 ft. measured on 10/10/18

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Drive and wash with 4-inch casing, then 3" casing
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: TS / KD **CHECKED BY:** NB

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remarks	Strata	Depth (ft.) / (EL.)	Material Description
		0	S1	4-3-5-4 (8)	24/24		Forest Mat / Fill	2 / 123.0	S1 - Top 2": Forest material Bot. 22": Silty SAND (SM), fine to medium, trace coarse, ~20% fines, 5-10% fine subangular gravel, trace organic fines, trace roots, brown, moist
		2	S2	3-1-1-1 (2)	24/13				S2 - Silty SAND (SM), fine, trace medium, 25-30% fines, trace fine subangular gravel, trace organic fines, trace roots, trace wood, dark brown, wet
5	120.0	4	S3	3-1-3-3 (4)	24/14				S3 - Similar to S2, ~35% fines
		6	S4	3-2-4-4 (6)	24/11		Swamp Deposits		S4 - Similar to S2, 35-40% fines
		8	S5	4-2-5-5 (7)	24/15				S5 - Similar to S2, ~25% fines
10	115.0	10	S6	3-3-6-7 (9)	24/15				S6 - Top 12": Silty SAND (SM), fine to medium, trace coarse, ~15% fines, trace fine subangular gravel, trace organic fines, trace roots, dark brown, wet Bot. 3": Well Graded SAND with Silt (SW-SM), fine to medium, trace coarse, 5-10% fines, light brown to gray, wet
		12							
		13	S7	3-1-1-3 (2)	24/11				S7 - Silty SAND (SM), fine to medium, trace coarse, 20-25% fines, trace fine angular gravel, trace roots, orange to brown, wet
15	110.0	15	S8	0-3-6-16 (9)	24/13			15.0 / 110.0	S8 - Silty GRAVEL with Sand (GM), coarse, subangular, 15-20% fines, 20-25% fine to medium sand, brown to orange, wet
		17	S9	16-16-15-17 (31)	24/16		Sand		S9 - Silty SAND (SM), fine, ~20% fines, light brown, wet
		19	S10	12-8-10-14 (18)	24/18				S10 - Similar to S9
20	105.0	21							
		24		68-33-33-38					S11 - Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, ~20% fine to coarse subangular gravel, light brown to gray, wet
25	100.0								

BOTTOM OF FOOTING EL. 117.76

GENERAL NOTES:
1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

BORING BB–5 (CONTINUED)

LGCI Lahlaf Geotechnical Consulting, Inc.
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BORING LOG **B-BB-5**
PAGE 2 OF 2

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Hop Brook Bridge
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remarks	Strata	Depth (ft.) / (EL.)	Material Description
		24	S11	(66)	24/9		Sand	14.0 / 111.0	
		26							
		29	S12	60-120/4"	10/5	1			REMARK 1: Switched to 3-inch casing at 29 feet. S12 - Silty GRAVEL with Sand (GM), fine to coarse, subangular to rounded, ~15% fines, ~15% fine to coarse sand, light brown to gray, wet
30	95.0	29.8							
		34	S13	23-46-32-22 (78)	24/10				S13 - Similar to S12
35	90.0	36							
		39	S14	20-60-50-38 (110)	24/23				S14 - Top 17": Poorly Graded SAND with Silt (SP-SM), fine to medium, 10-15% fines, trace fine subangular gravel, light brown, wet Bot. 6": Silty GRAVEL with Sand (GM), fine to coarse, 15-20% fines, 15-20% fine to coarse sand, light brown, wet
40	85.0	41							
		44	S15	8-20-100/3"	15/7				S15 - Silty SAND with Gravel (SM), fine to coarse, ~25% fines, 15-20% fine subrounded gravel, light brown to gray, wet
45	80.0	45.3				2			REMARK 2: Open hole drive and wash technique used at 47 feet.
		49	S16	120/0"	0/0	3			REMARK 3: Attempted to obtain a core sample at 49 feet. Core barrel advanced ~5 feet in ~10 seconds, indicating that the material was not rock. S16 - No recovery
50	75.0	49							
		54	S17	120/0"	0/0			54.0 / 71.0	S17 - No recovery Bottom of borehole at 54.0 feet. Backfilled borehole with drill cuttings.
55	70.0								
60	65.0								

BORING NOTES:

1. LOCATION OF BORINGS SHOWN ON THE KEY PLAN THUS: ◔ .
2. BORINGS ARE TAKEN FOR PURPOSE OF DESIGN AND SHOW CONDITIONS AT BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW THE NATURE OF THE MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
3. WATER LEVELS SHOWN ON THE BORING LOGS ARE ASSUMED BASED ON BORINGS PERFORMED FOR THE EXISTING BRIDGE, AS NOTED IN THE GEOTECHNICAL REPORT DATED DECEMBER 2018.
4. FIGURES IN COLUMNS INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A 1⅜" I.D. SPLIT SPOON SAMPLER 6" USING A 140 POUND WEIGHT FALLING 30".
5. ALL BORINGS WERE MADE IN OCTOBER OF 2018.
6. BORINGS WERE MADE BY GEOLOGIC EARTH EXPLORATION, INC., 7 SHERWOOD DR., NORFOLK, MA 02056.
7. THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.
8. BORING LOCATIONS AND ELEVATIONS ARE APPROXIMATE ONLY.

vhb Vanasse Hangen Brustlin, Inc.
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NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH, & SUDBURY MASSACHUSETTS
BRIDGE S–31–016 (BRIDGE 127) – BORING LOGS
PLAN 193 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
N/A	OCT 2020	AMS	SBK	KGK	.	.

BORING BB-6
STATION: 725+68.0
OFFSET: 0.0' LT
N: 2956131.0
E: 679542.0
GROUND ELEVATION: 124.0'
(SEE NOTE 10, SHEET 193 OF 347)

BOTTOM OF FOOTING EL. 117.47

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BORING LOG

B-BB-6
PAGE 1 OF 2

CLIENT: Vanasse Hangen Brustlin, Inc.
LGCI PROJECT NUMBER: 1836
PROJECT NAME: Proposed Hop Brook Bridge
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 10/15/18 **DATE COMPLETED:** 10/17/18
BORING LOCATION: Eastern side of Hop Brook Bridge
COORDINATES: NA
SURFACE El.: 124 ft. (see note 1) **TOTAL DEPTH:** 51 ft.
WEATHER: 60s / Sunny
GROUNDWATER LEVELS:
- **DURING DRILLING:** 4.0 ft. / El. 120.0 ft. measured on 10/16/18
- **AT END OF DRILLING:** 6.8 ft. / El. 117.2 ft.
- **OTHER:** 3.3 ft. / El. 120.7 ft. measured on 10/17/18

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Drive and wash with 4-inch casing, then 3" casing
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** NB

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth (ft.)	Material Description
0	124.0	0	S1	2-2-2-2 (4)	24/16		Forest Mat	0.2	S1 - Top 2": Forest Material
2							Fill		Mid. 4": Silty SAND (SM), fine, ~25% fines, trace fine subangular gravel, trace organic fines, trace roots, dark brown, moist Bot. 10": Silty SAND (SM), fine, trace medium, ~20% fines, trace organic fines, trace roots, brown, moist
4			S2	2-2-3-3 (5)	24/13				S2 - Silty SAND (SM), fine, trace medium, ~45% fines, trace fine angular gravel, trace organic fines, trace roots, brown, wet
5	120.0		S3	3-2-2-3 (4)	24/15				S3 - Top 6": Silty SAND (SM), fine, trace medium, 25-30% fines, trace organic fines, trace roots, light brown, wet Bot. 9": Silty SAND (SM), fine, ~35% fines, trace organic fines, trace roots, light brown, wet
6								6.0	
8			S4	2-3-2-3 (5)	24/24		Swamp Deposits		S4 - Silty SAND (SM), fine, 35-40% fines, trace organic fines, trace roots, trace peat fibers, trace wood, dark brown, wet
10	115.0		S5	2-2-1-2 (3)	24/17				S5 - Similar to S4
			S6	0-2-5-7 (7)	24/19				S6 - Top 14": Similar to S4
12								11.6	Bot. 5": Poorly Graded SAND with Silt (SP-SM), fine, 10-15% fines, trace roots, gray, wet
14	110.0		S7	3-5-4-5 (9)	24/12				S7 - Poorly Graded SAND with Silt (SP-SM), fine, trace medium, 5-10% fines, light brown to gray, wet
15									
19	105.0		S8	120/0"	0/0	1	Sand		REMARK 1: Open hole drive and wash technique used at 19 feet. S8 - No recovery
20			S9	120/5"	5/5				S9 - Silty SAND with Gravel (SM), fine to coarse, ~30% fines, ~20% fine to coarse subangular gravel, brown, wet
25	100.0		S10	13-11-13-14					S10 - Similar to S9

GENERAL NOTES:
1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

BORING BB-6 (CONTINUED)

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BORING LOG

B-BB-6
PAGE 2 OF 2

CLIENT: Vanasse Hangen Brustlin, Inc.
LGCI PROJECT NUMBER: 1836
PROJECT NAME: Proposed Hop Brook Bridge
PROJECT LOCATION: Sudbury, Massachusetts

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth (ft.)	Material Description
24			S10	(24)	24/6				
26									
29	95.0	2	S11	11-10-13-13 (23)	24/13				REMARK 2: Switched to 3-inch casing at 29 feet. S11 - Top 9": Silty SAND (SM), fine, 15-20% fines, light brown, wet Bot. 4": Similar to Top 9", ~35% fines
30									
31									
34	90.0		S12	15-17-18-22 (35)	24/24				S12 - Top 13": Silty SAND (SM), fine to medium, trace coarse, 30-35% fines, 5-10% fine subangular gravel, light brown, wet Mid. 4": Silty SAND (SM), fine to medium, ~20% fines, light brown to orange, wet Bot. 7": Silty SAND (SM), fine, ~35% fines, light brown, wet
35									
36									
39	85.0		S13	10-15-14-14 (29)	24/24		Sand		S13 - Top 19": Silty SAND (SM), fine to medium, 15-20% fines, ~5% fine to coarse subangular gravel, brown, wet
40									
41									Bot. 5": Silty SAND (SM), fine, ~20% fines, brown, wet
44	80.0	3	S14	120/4"	4/4				REMARK 3: Open hole drive and wash technique used at 44 feet. S14 - Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, ~5% fine subangular gravel, brown, wet
44.3									
45									
49	75.0		S15	16-17-26-26 (43)	24/18				S15 - Top 12": Silty SAND with Gravel (SM), fine to coarse, ~20% fines, 15-20% fine to coarse subangular gravel, light brown, wet Bot. 6": Similar to Top 12", 20-25% fine to coarse subangular gravel
50									
51								51.0	Bottom of borehole at 51.0 feet. Backfilled borehole with drill cuttings.
70.0									
55									
65.0									
60									

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH, & SUDBURY MASSACHUSETTS
BRIDGE S–31–016 (BRIDGE 127) – BORING LOGS
PLAN 194 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
N/A	OCT 2020	AMS	SBK	KGK	.	.

vhb
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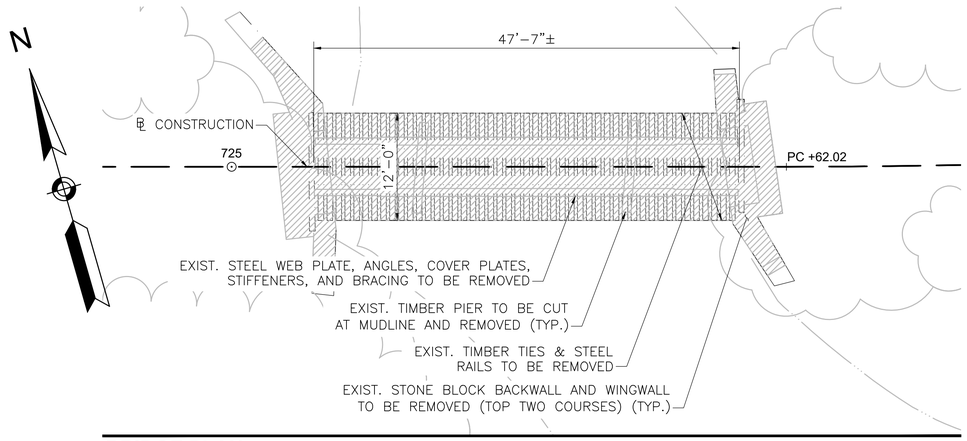
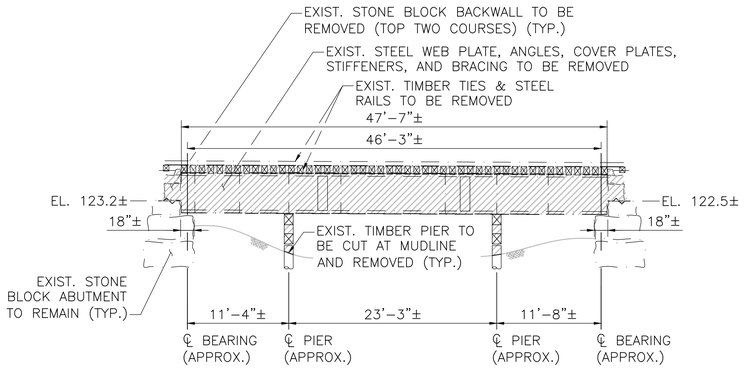


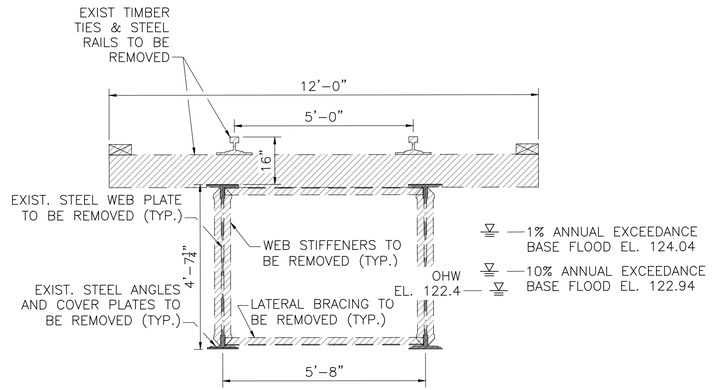
BRIDGE PLAN

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



BRIDGE ELEVATION

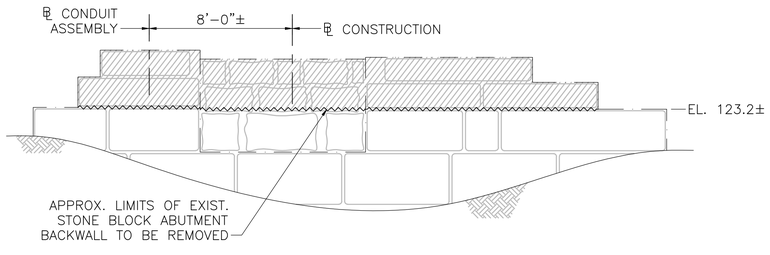
SCALE: $\frac{1}{8}$"=1'-0"



BRIDGE TRANSVERSE SECTION

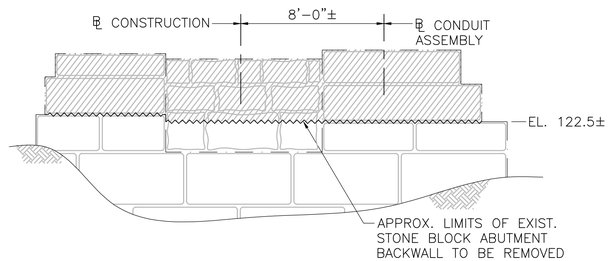
SCALE: $\frac{1}{2}$"=1'-0"

NOTE: CONTRACTOR SHALL DESIGN AND INSTALL TEMPORARY PROTECTIVE SHIELDING 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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NO.	DESCRIPTION	BY	DATE	APPR.
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EVERSOURCE

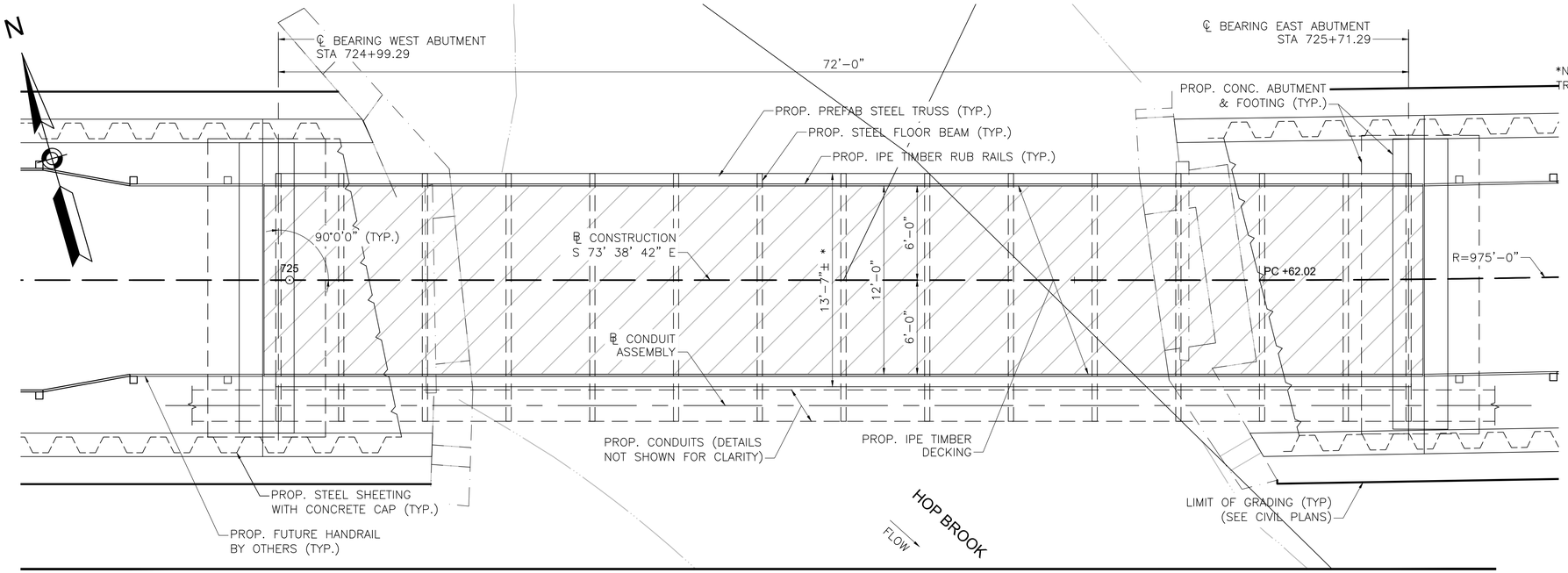
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE S–31–016 (BRIDGE 127) – DEMOLITION PLAN

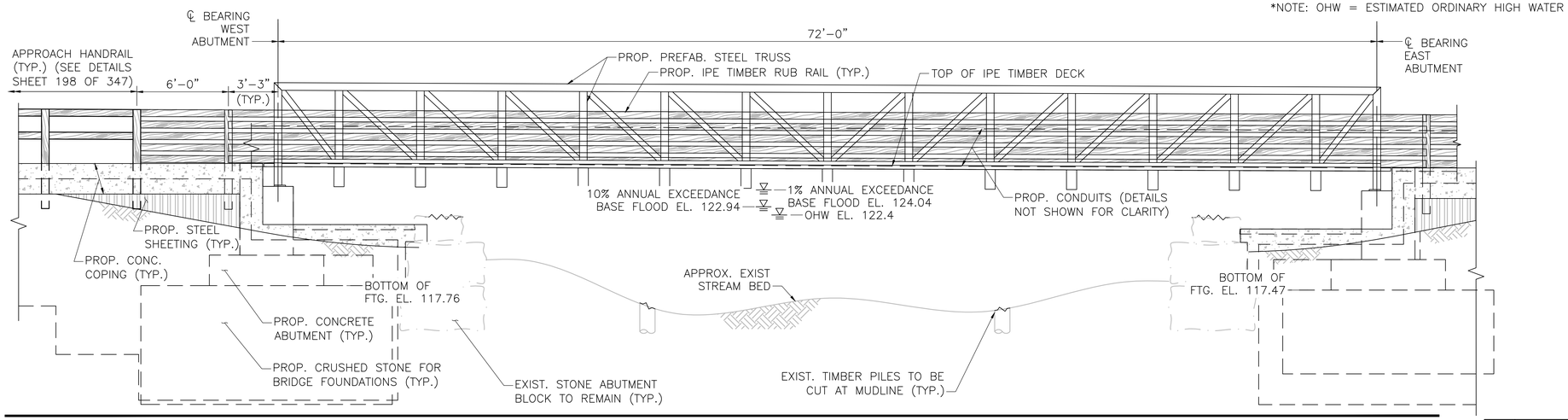
PLAN 195 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
VARIES	OCT 2020	AMS	SBK	KGK	.	.



BRIDGE 127 (HOP BROOK) PLAN

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



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 196 OF 347

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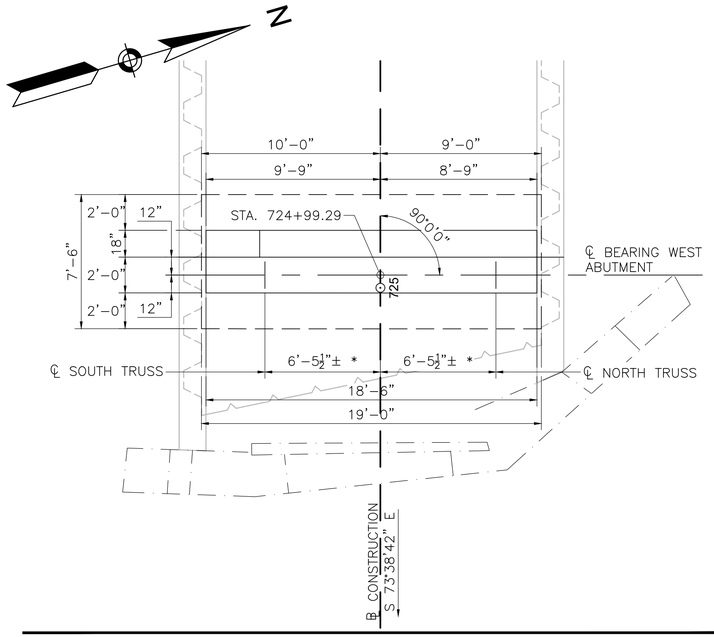
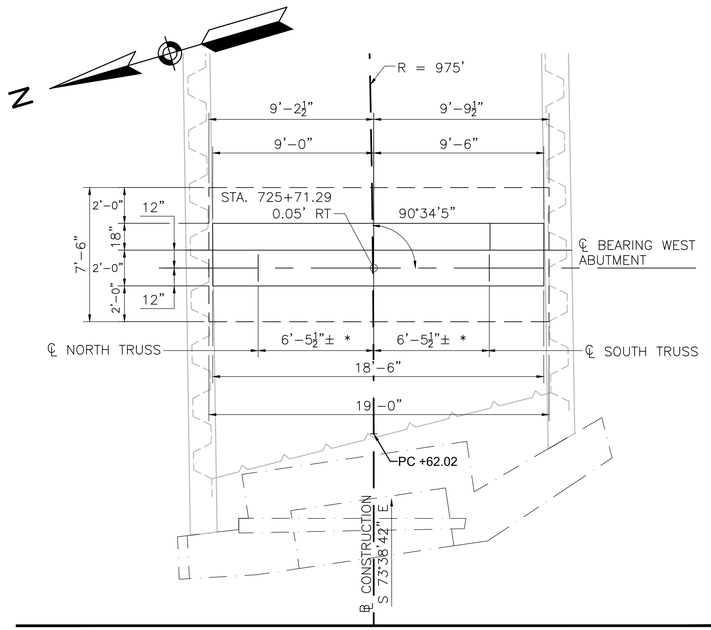
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=4'	OCT 2020	AMS	SBK	KGK	.	.



WEST ABUTMENT PLAN

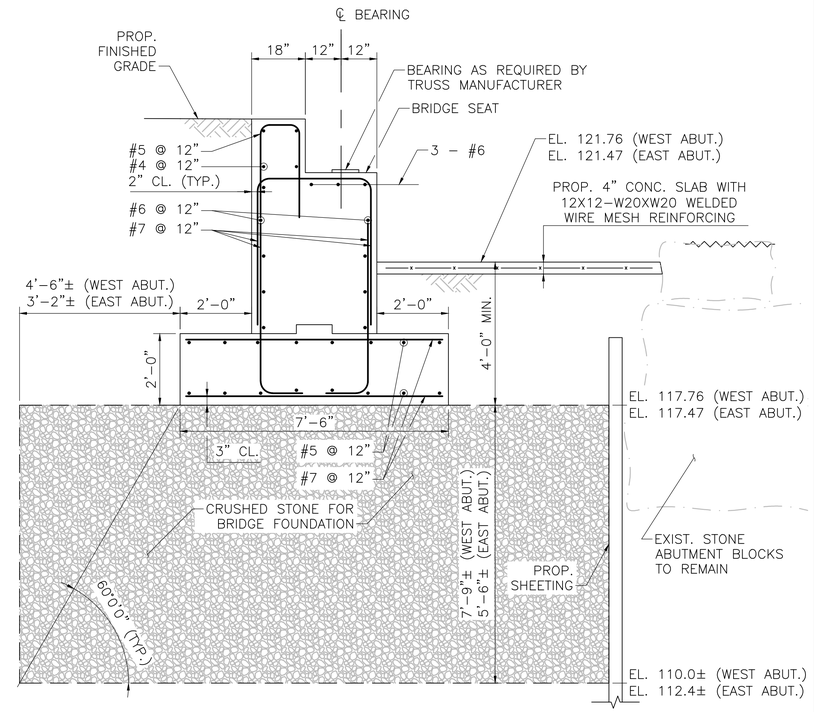
SCALE: ¼"=1'-0"



EAST ABUTMENT PLAN

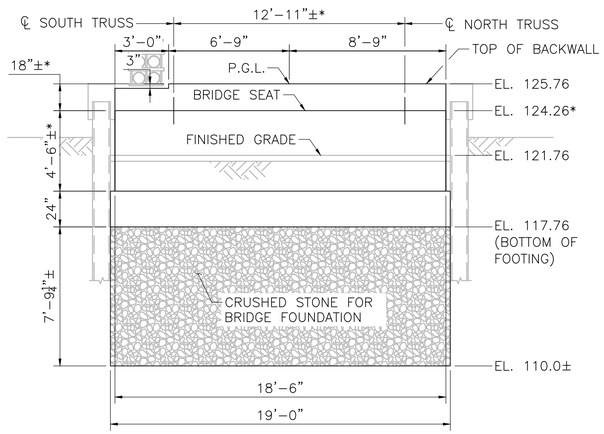
SCALE: ¼"=1'-0"

*NOTE: ACTUAL DIMENSIONS PER TRUSS MANUFACTURER'S DESIGN



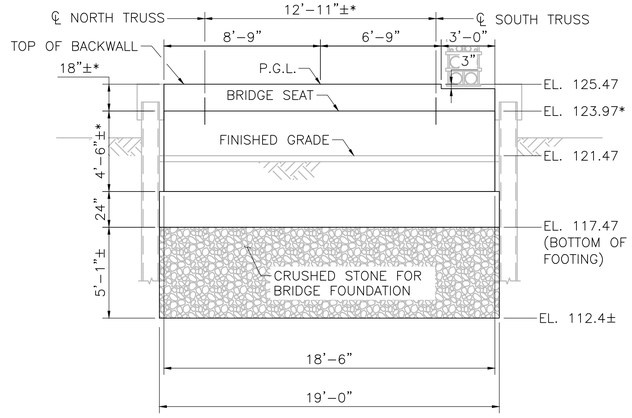
TYPICAL ABUTMENT SECTION

SCALE: ½"=1'-0"



WEST ABUTMENT ELEVATION

SCALE: ¼"=1'-0"



EAST ABUTMENT ELEVATION

SCALE: ¼"=1'-0"

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) – SUBSTRUCTURE DETAILS

PLAN 197 OF 347

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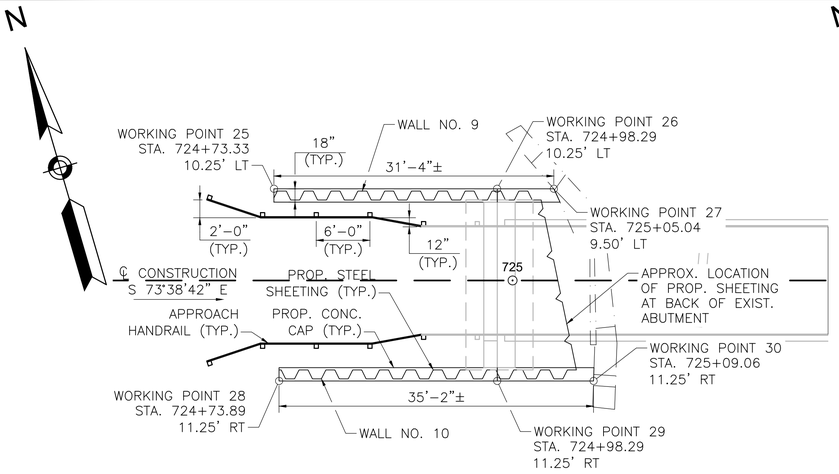
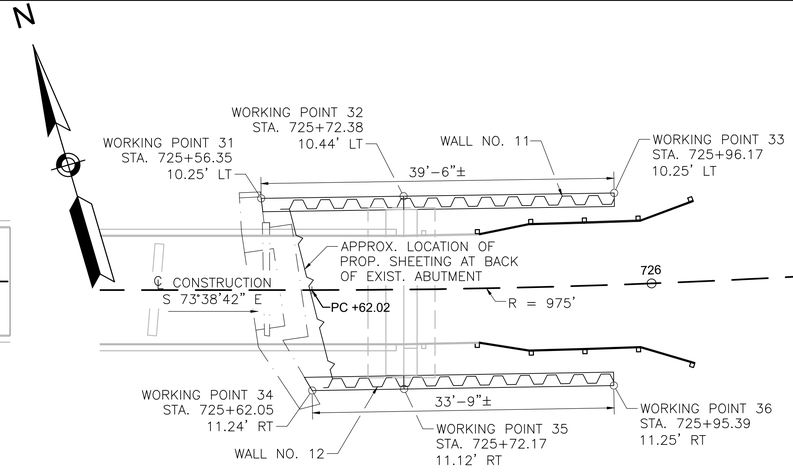


WALL 9 & 10 SHEETING PLAN (WEST APPROACH)

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

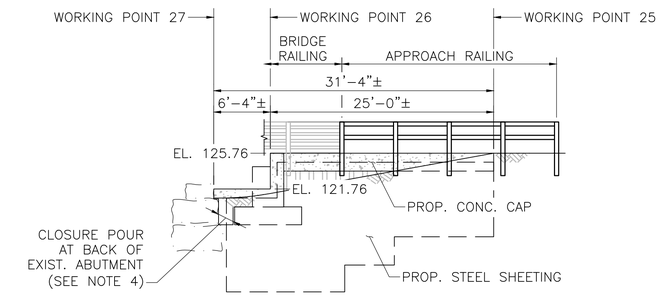


WALL 11 & 12 SHEETING PLAN (EAST APPROACH)

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

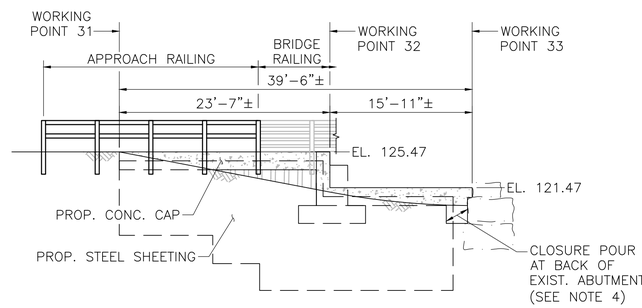
NOTES:

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, 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.



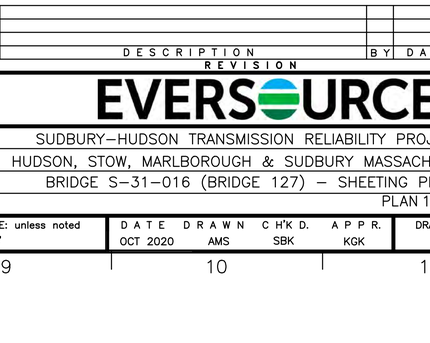
WALL 9 ELEVATION (WEST APPROACH NORTH SHEETING WALL)

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



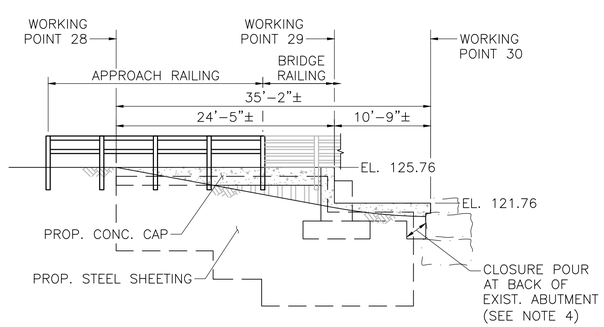
WALL 11 ELEVATION (EAST APPROACH NORTH SHEETING WALL)

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



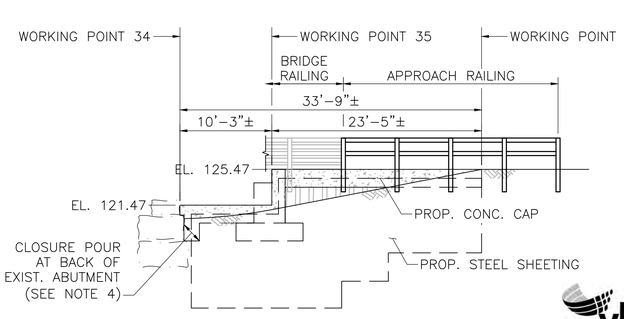
TYPICAL SHEETING SECTION

SCALE: 1/2"=1'-0"



WALL 10 ELEVATION (WEST APPROACH SOUTH SHEETING WALL)

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



WALL 12 ELEVATION (EAST APPROACH SOUTH SHEETING WALL)

SCALE: 1/4"=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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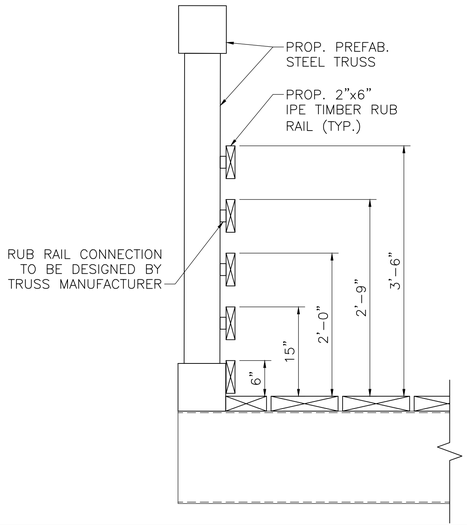
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

BRIDGE S–31–016 (BRIDGE 127) – SHEETING PLAN

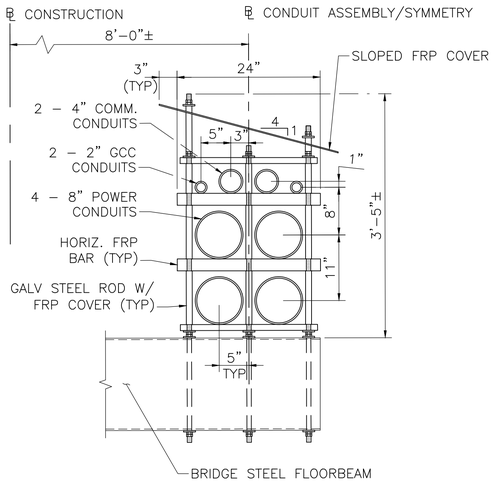
PLAN 198 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=4'	OCT 2020	AMS	SBK	KGK	.	.



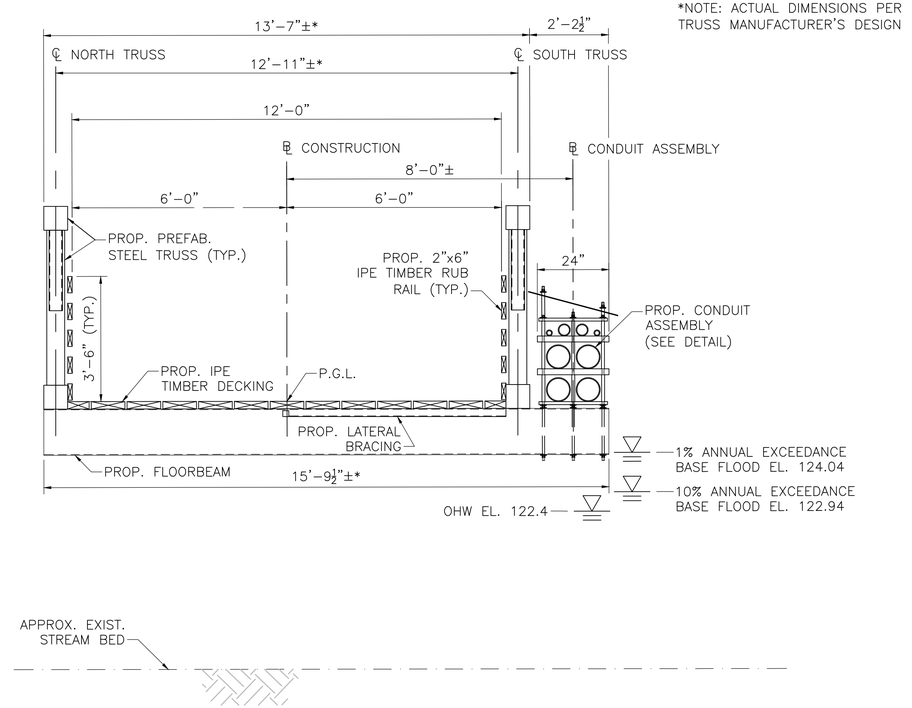
RAILING CONNECTION DETAIL

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 199 OF 347

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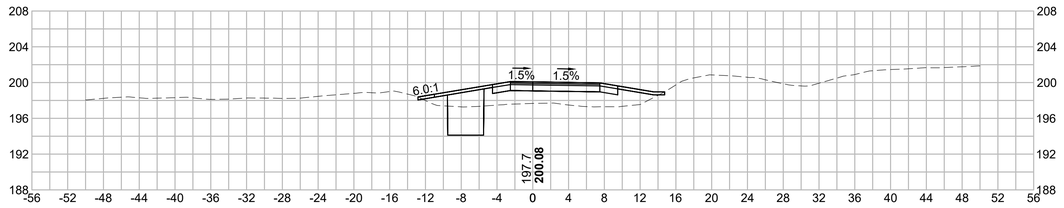
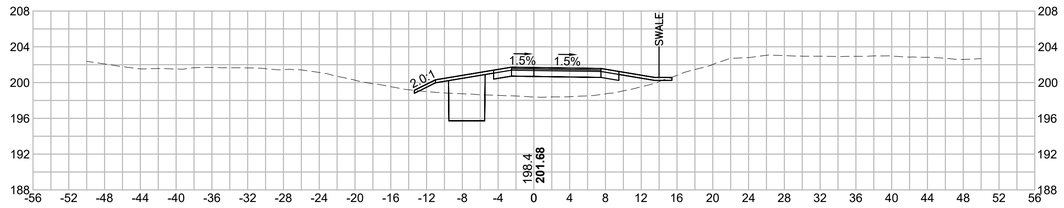
SCALE: unless noted	DATE	DRAWN	CH'KD.	APPR.	DRAWING NO.	REV.
VARIES	OCT 2020	AMS	SBK	KGK	.	#

360+50



362+00



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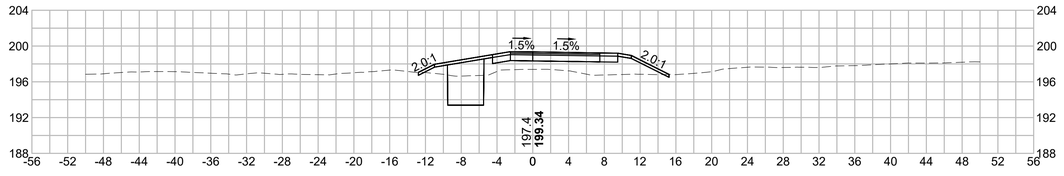

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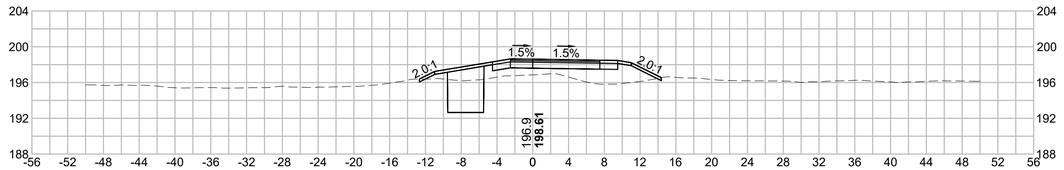
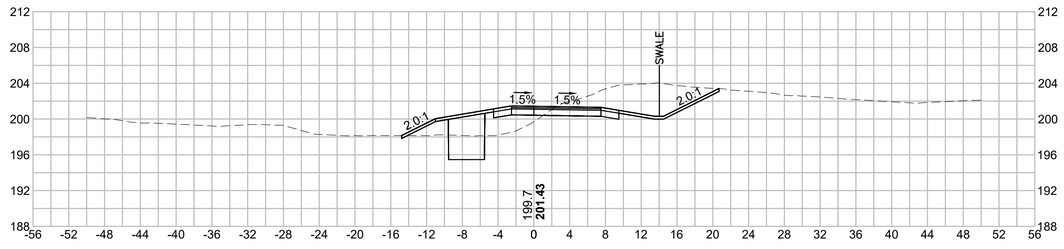


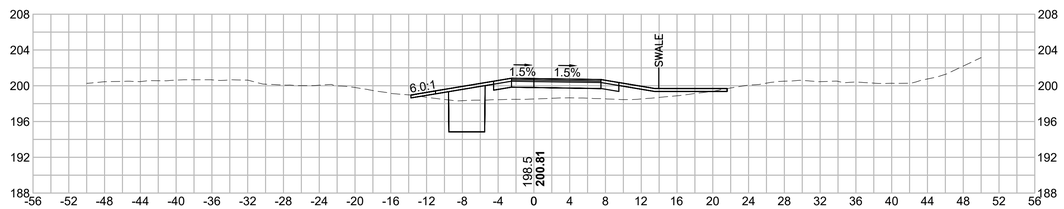
TOWN OF SUDBURY

361+50



CITY OF MARLBOROUGH
TOWN OF HUDSON

361+00



8 0 8 16
SCALE IN FEET

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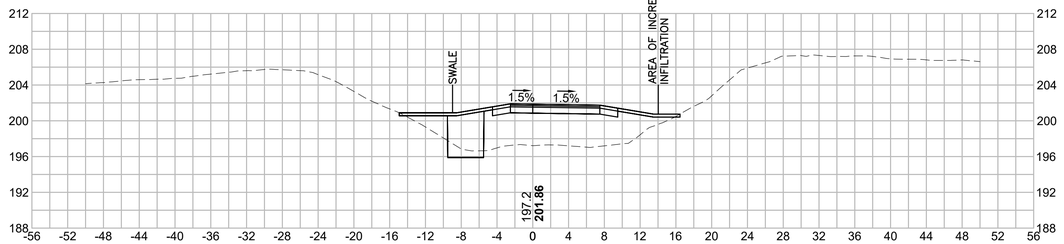
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 264 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

363+50



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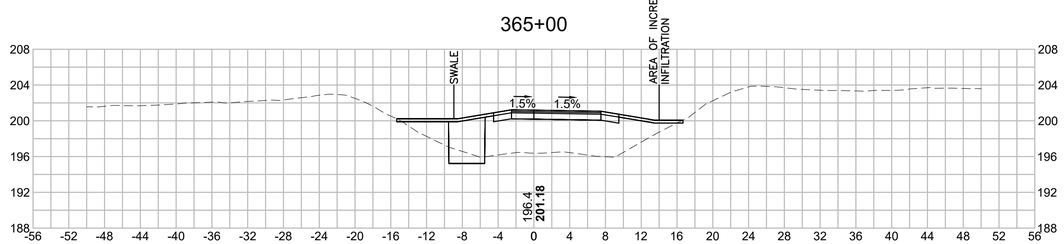

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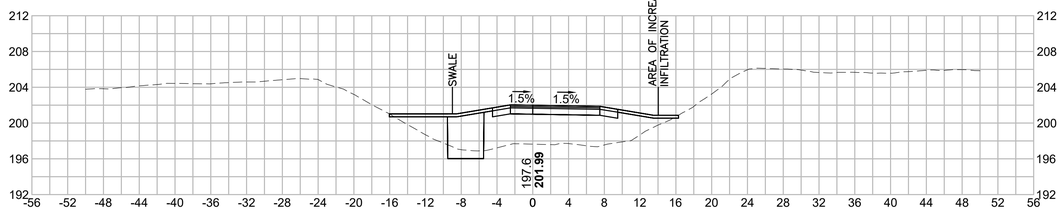

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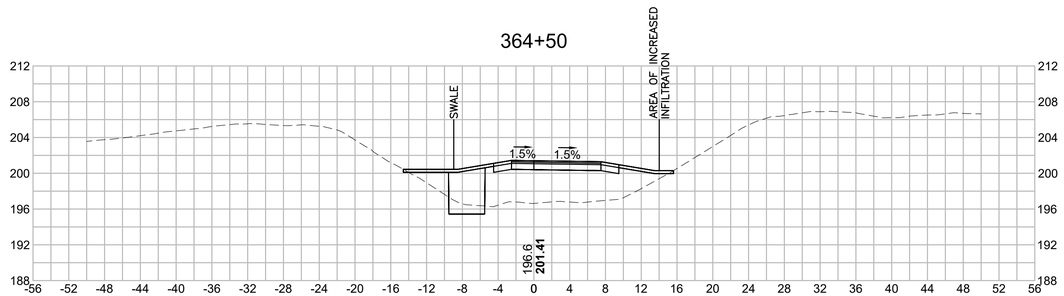

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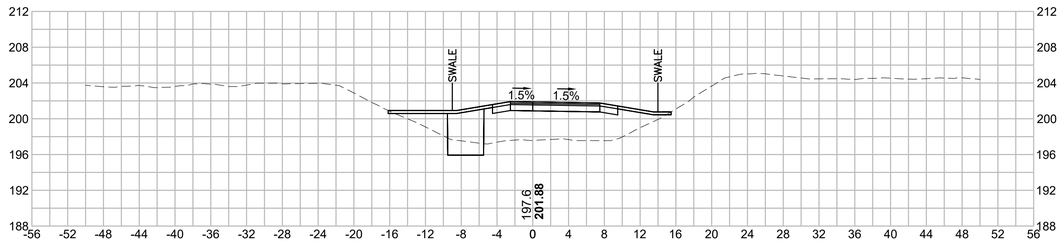

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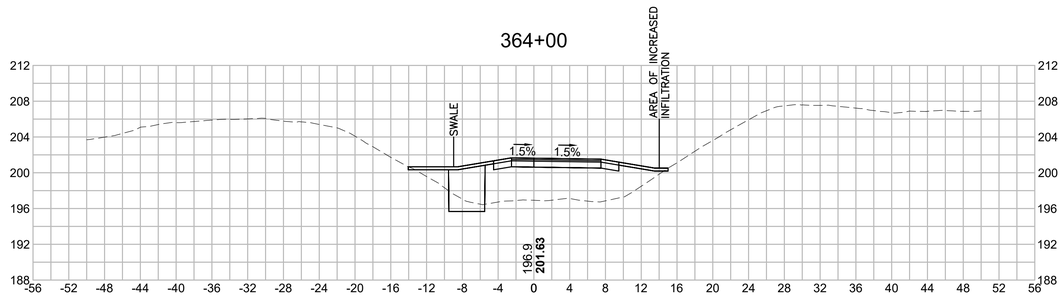

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SCALE IN FEET

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

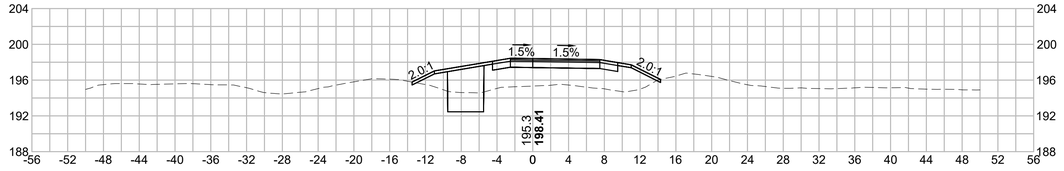
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

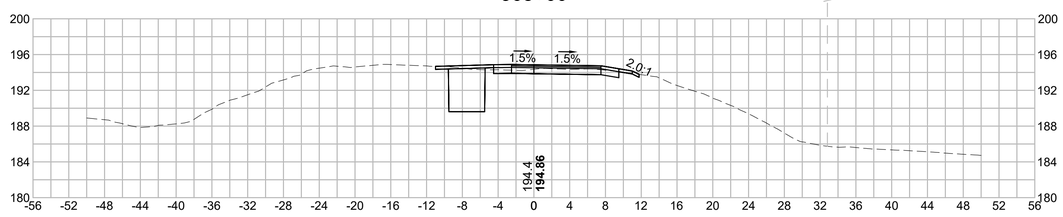
PLAN 265OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MS	.	.

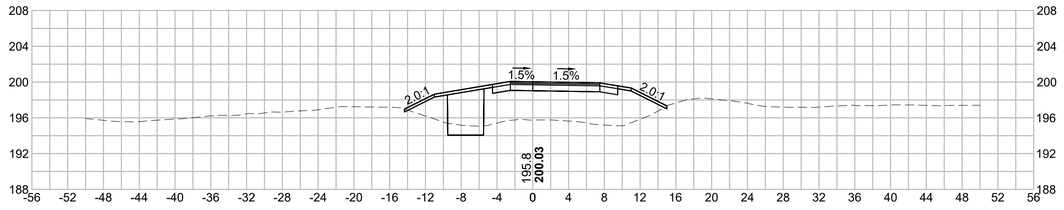
366+50



368+00



366+00



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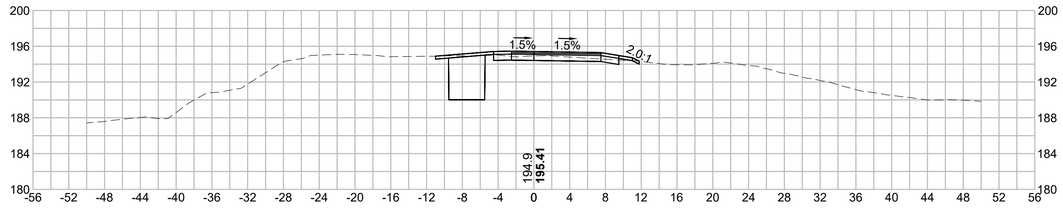

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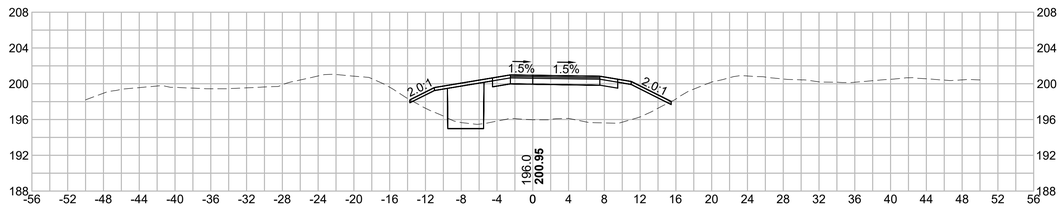

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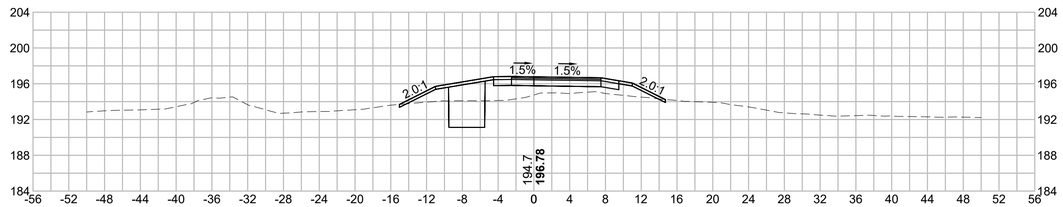

8 0 8 16
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NO.	DESCRIPTION	BY	DATE	APPR.
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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

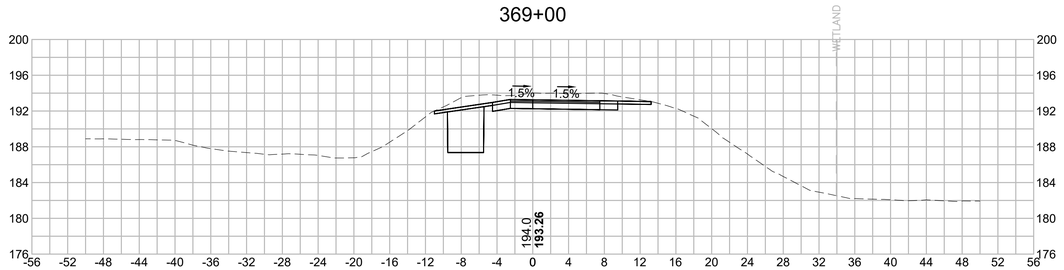
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

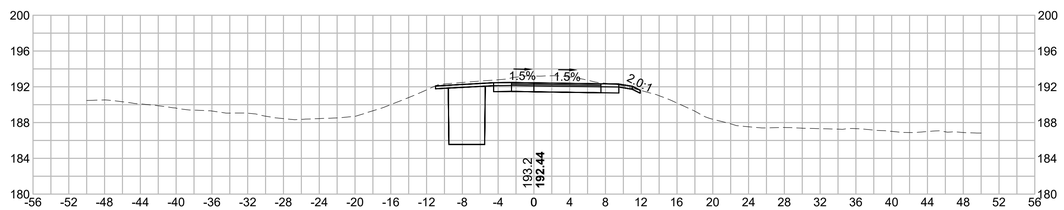
PLAN 266OF347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

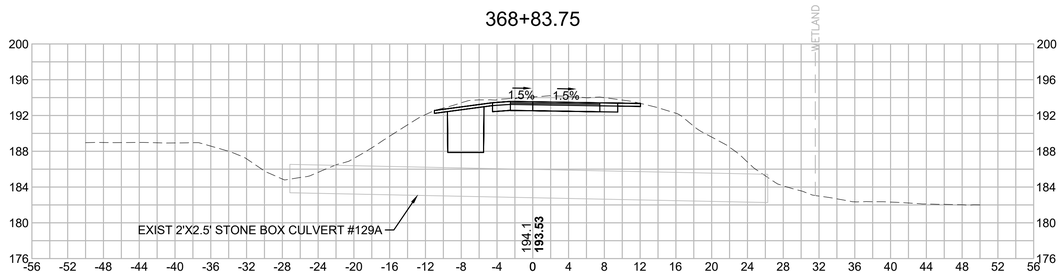
369+00



370+50



368+83.75



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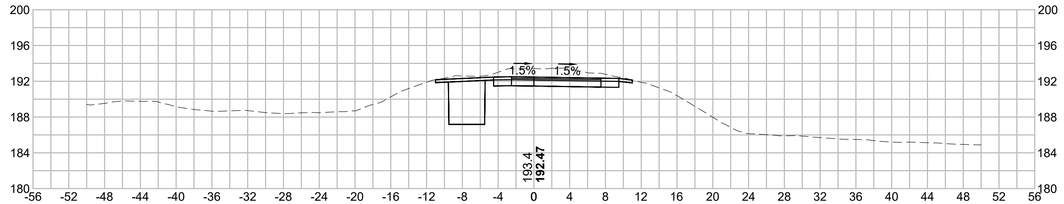
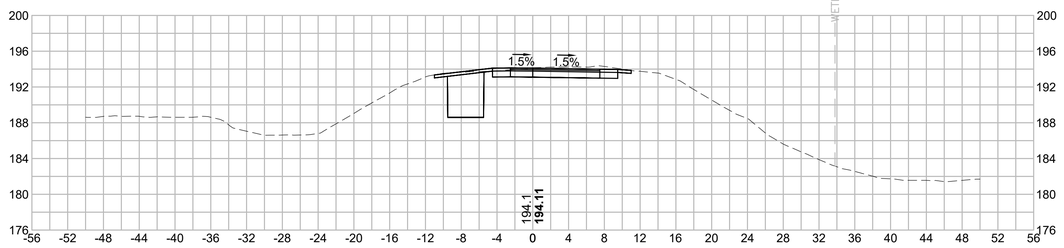


368+50



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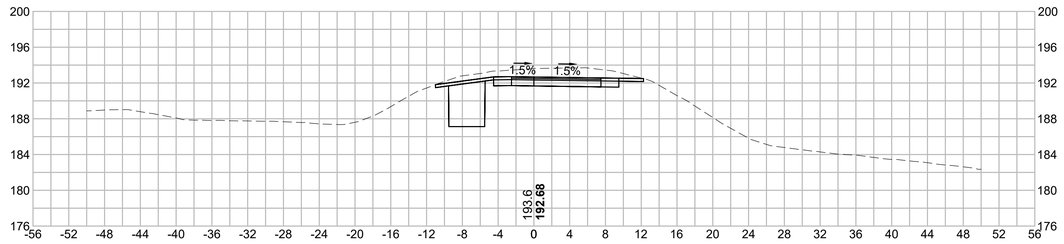

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

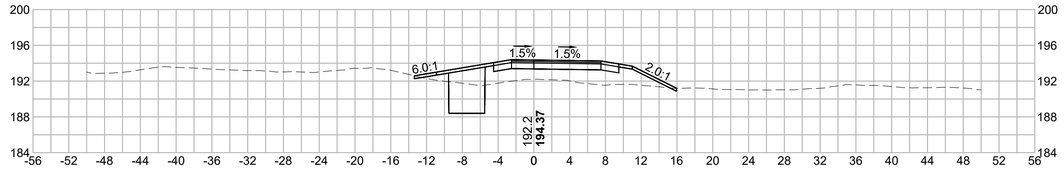
PLAN 267 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

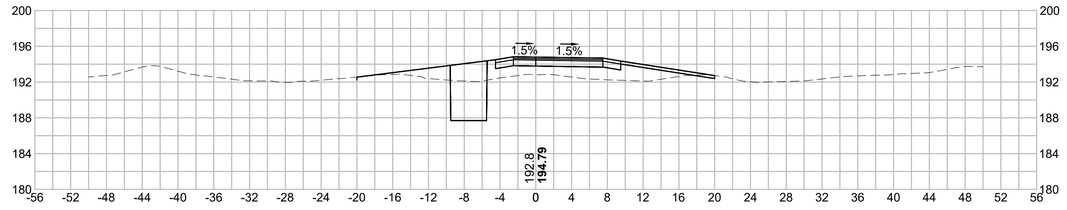
372+00



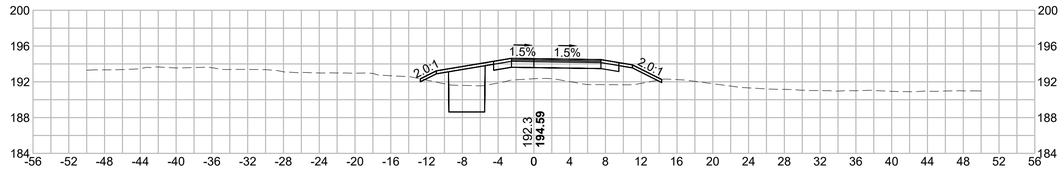
373+50



371+50



373+00



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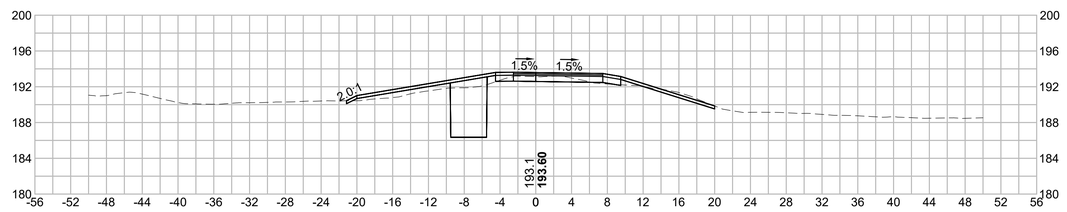
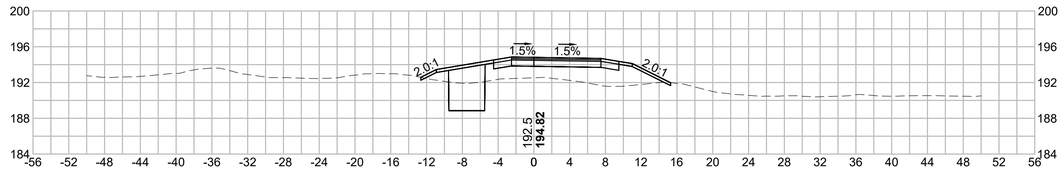


372+50



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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

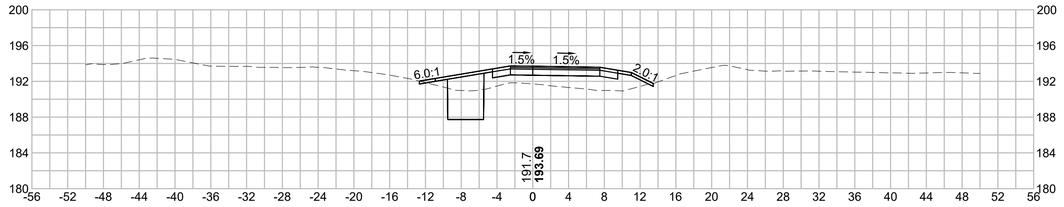
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

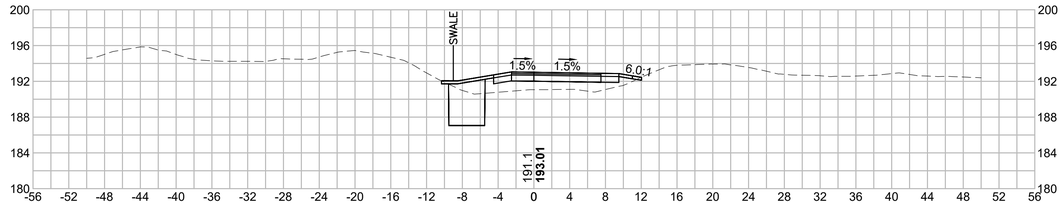
PLAN 268OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

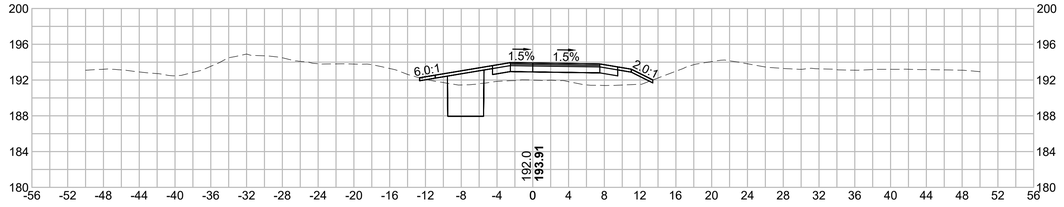
375+00



376+50



374+50



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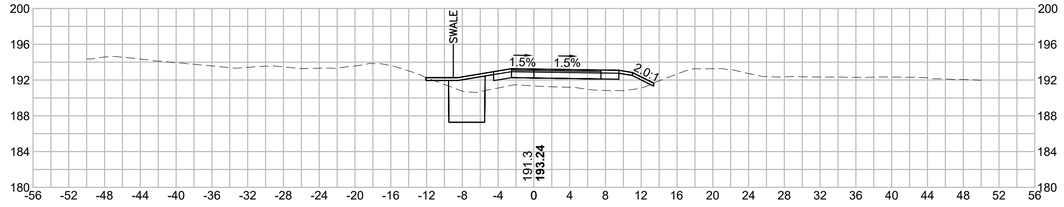

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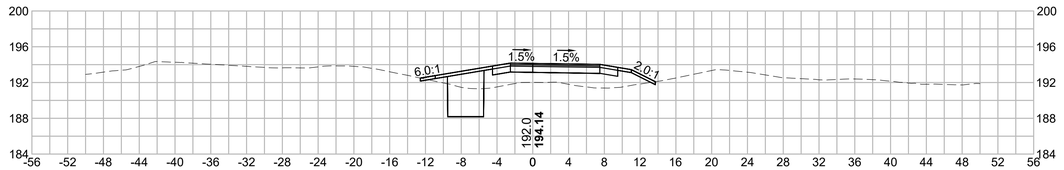

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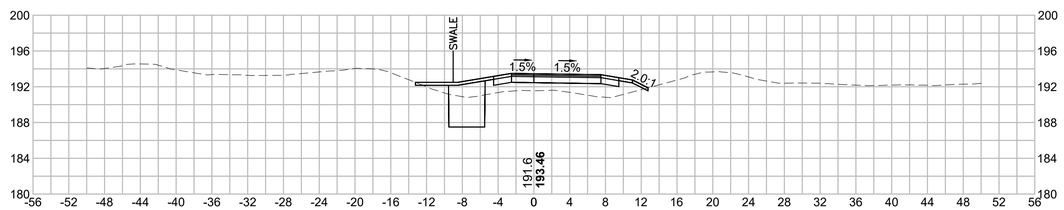

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

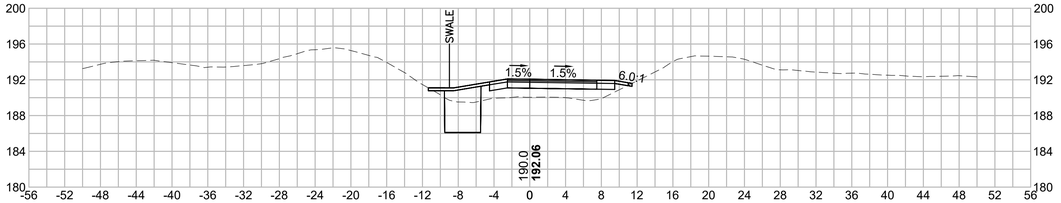
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

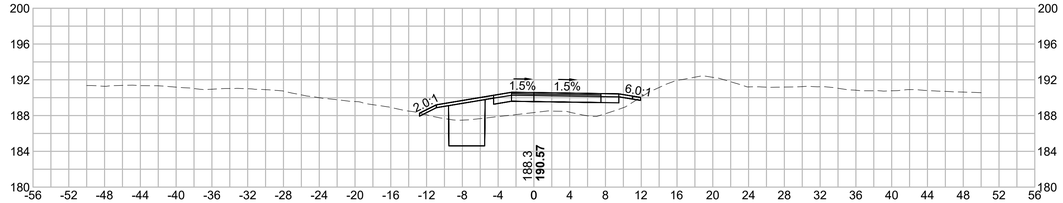
PLAN 269 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

378+00



379+50



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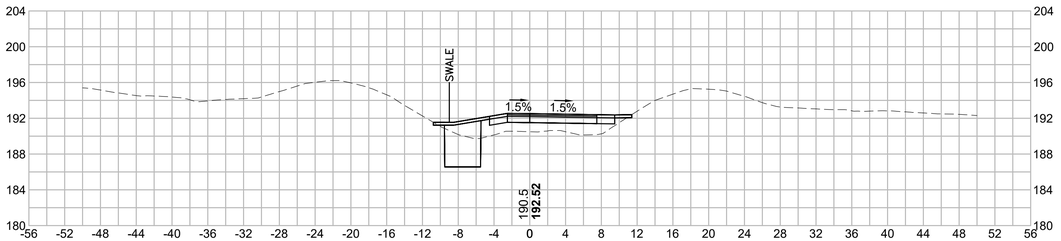

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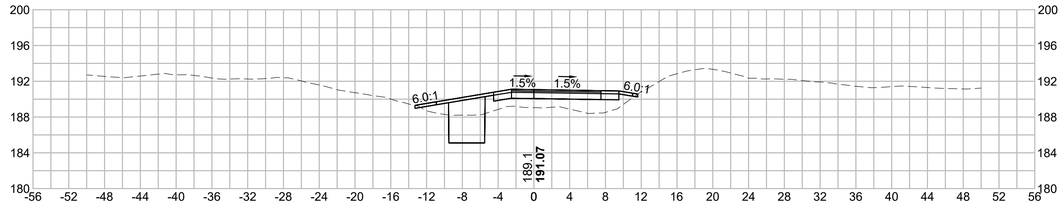

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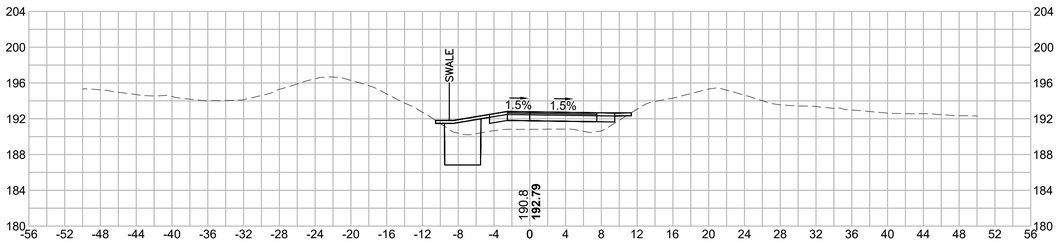

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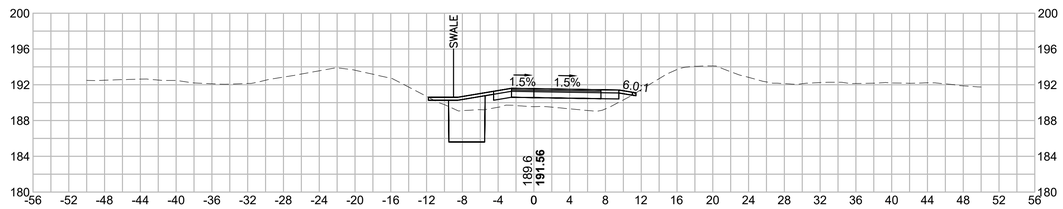

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

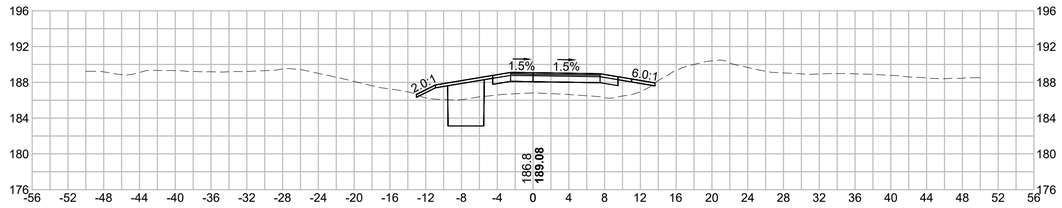
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

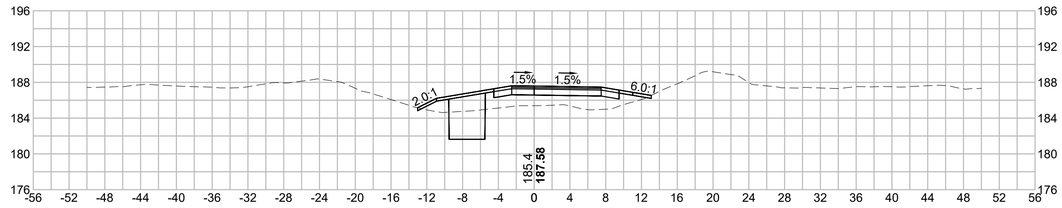
PLAN 270F 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

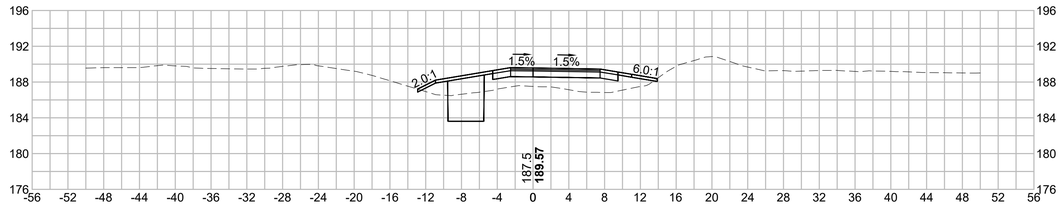
381+00



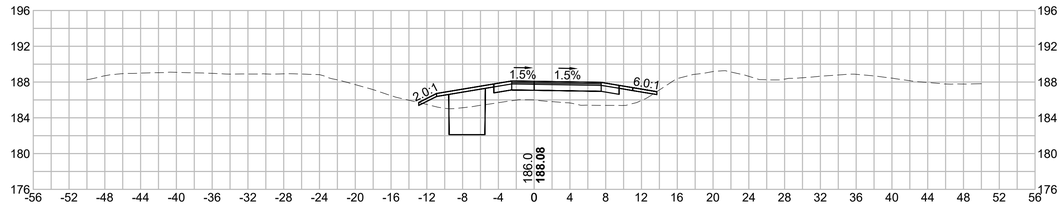
382+50



380+50



382+00



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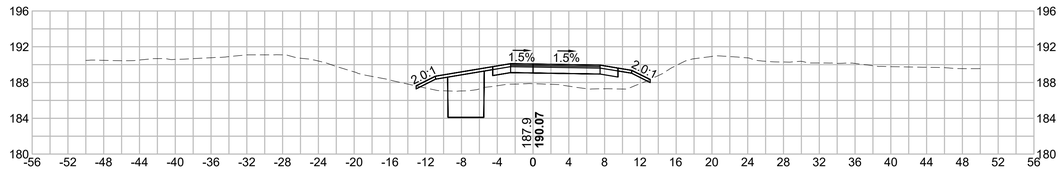

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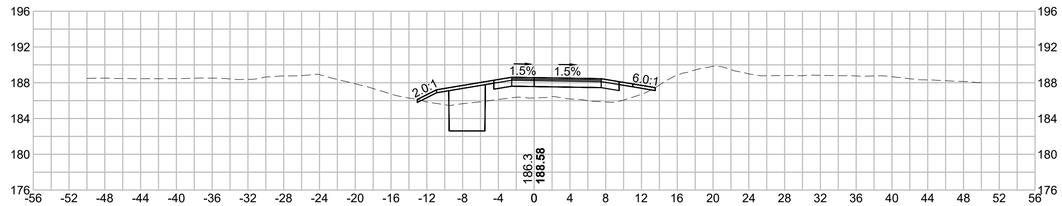

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

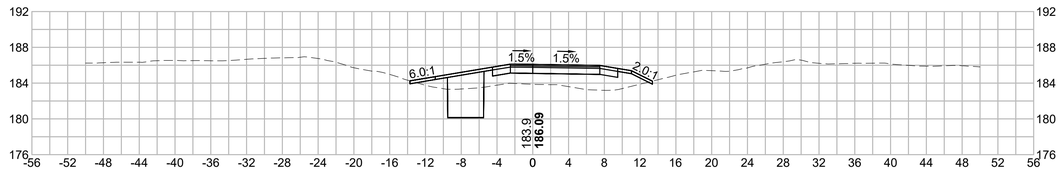
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

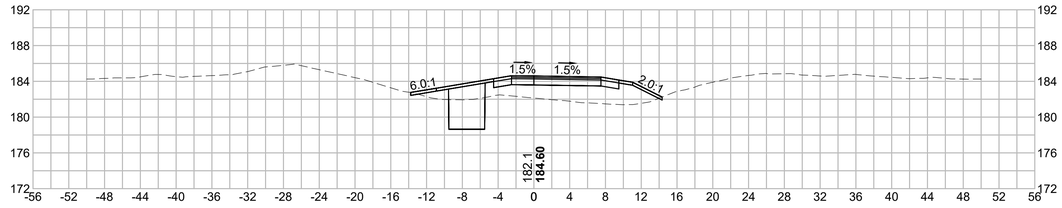
PLAN 2710F347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

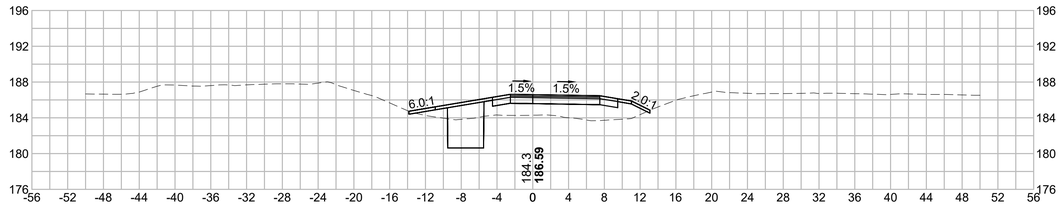
384+00



385+50



383+50



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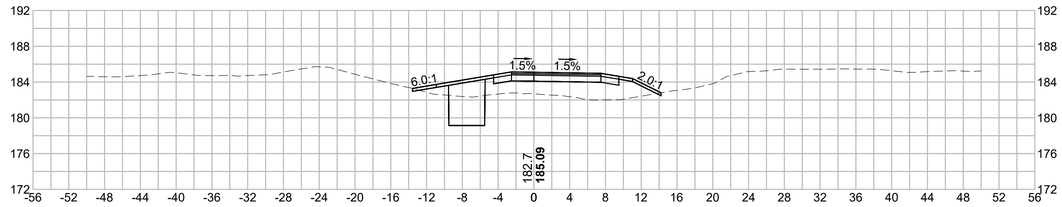

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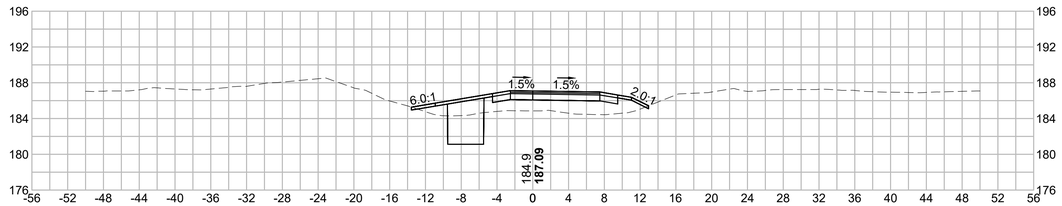

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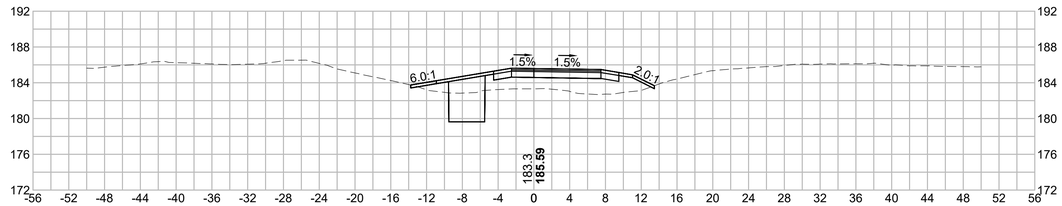

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

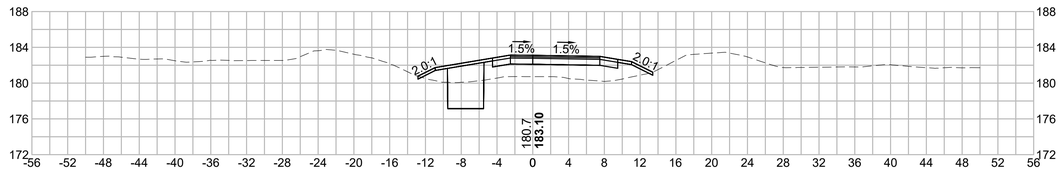
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

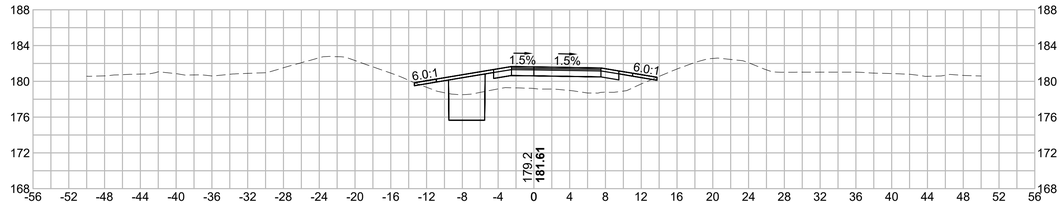
PLAN 272 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

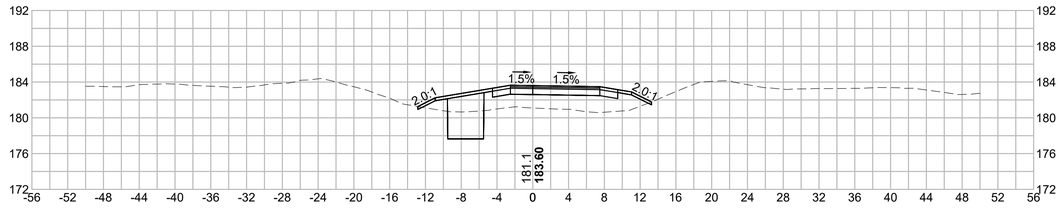
387+00



388+50



386+50



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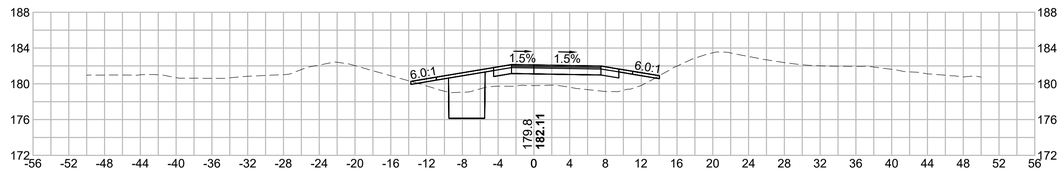

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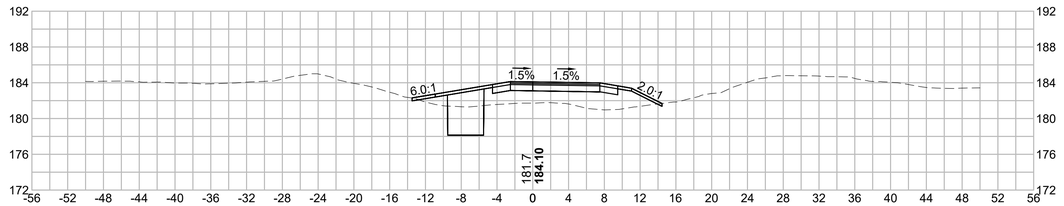

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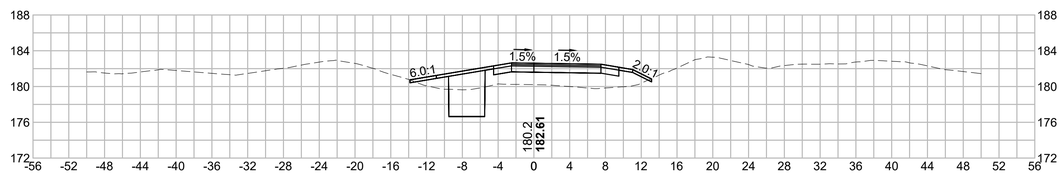

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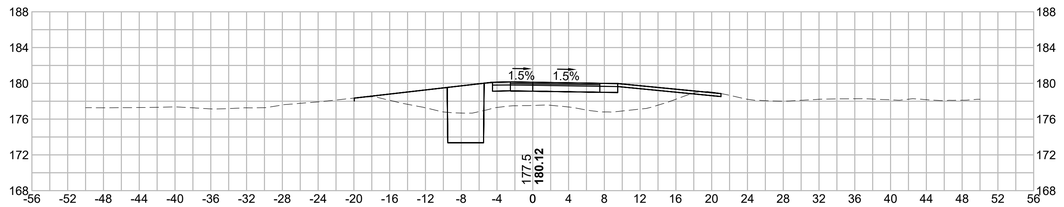
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 2730F347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

390+00



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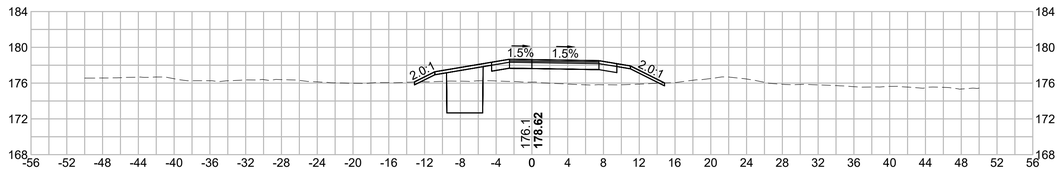
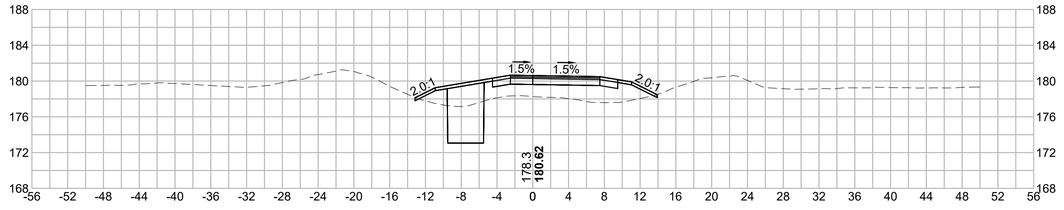
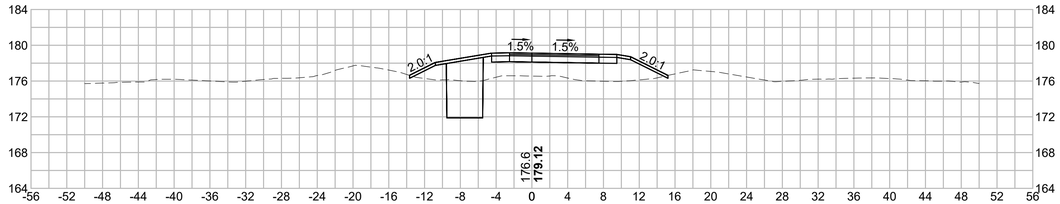


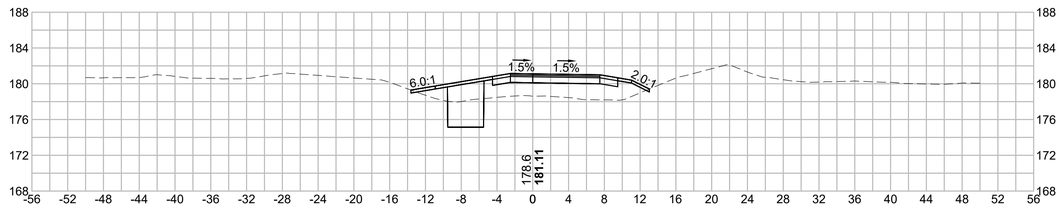
389+50



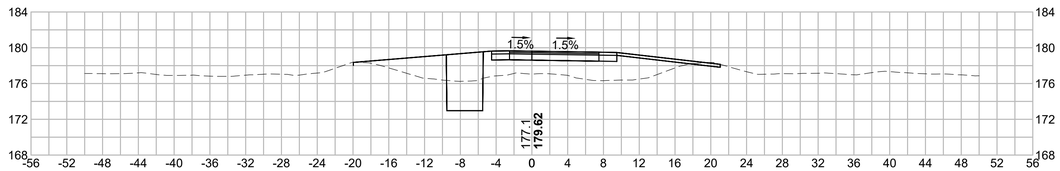
391+00



389+00



390+50



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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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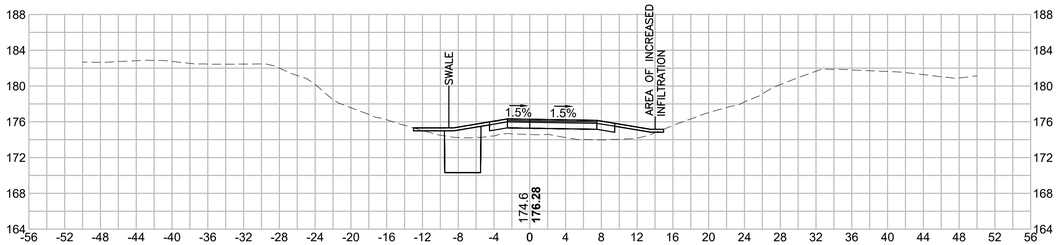
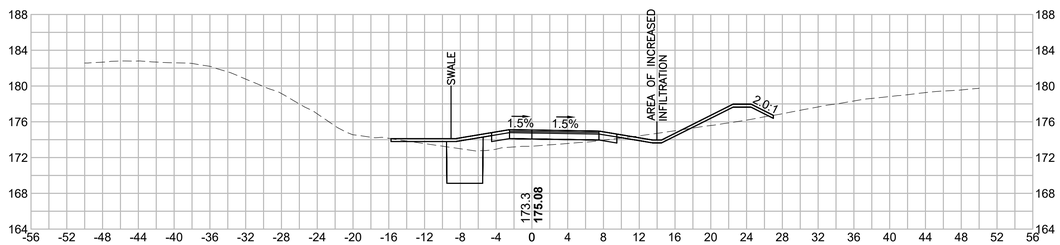
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

393+00



394+50



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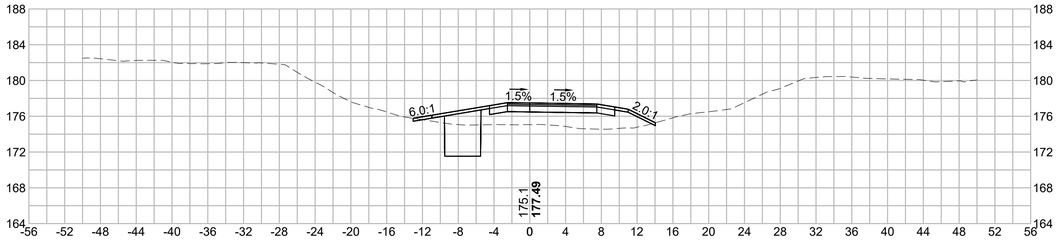

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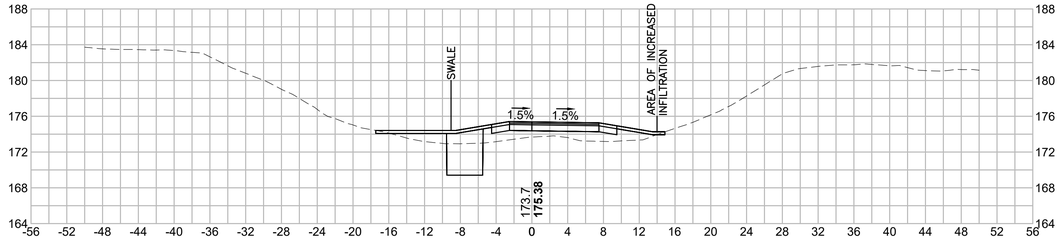

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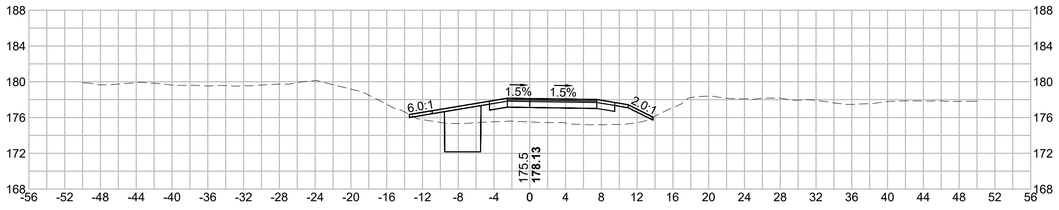

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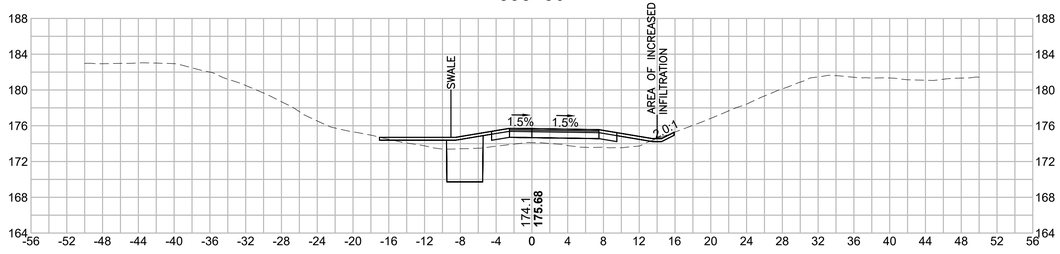

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

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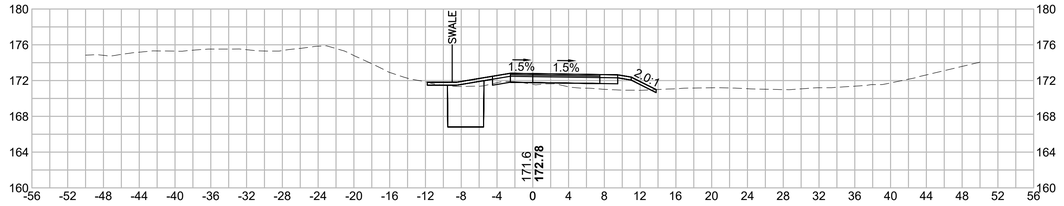
1"=8'	OCT 2020	MS	SK	MES	.	.

396+00



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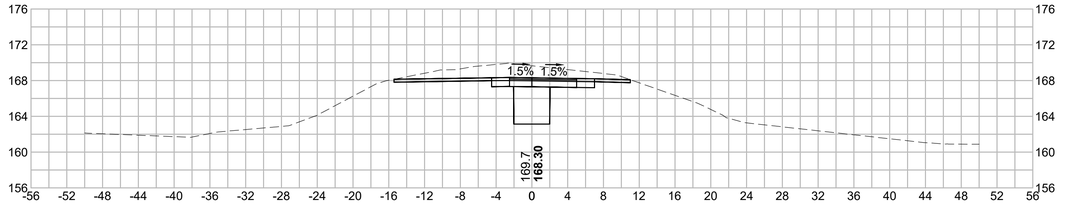

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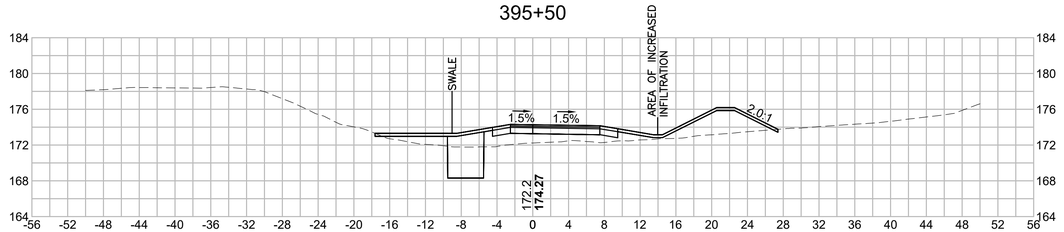

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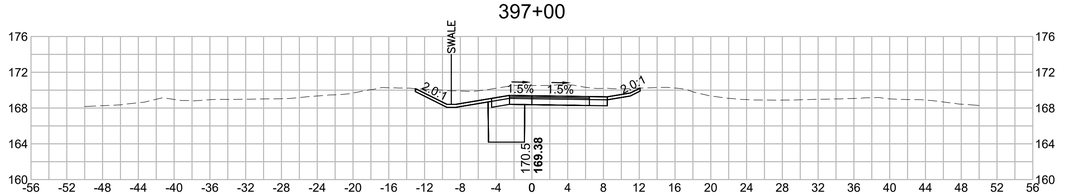

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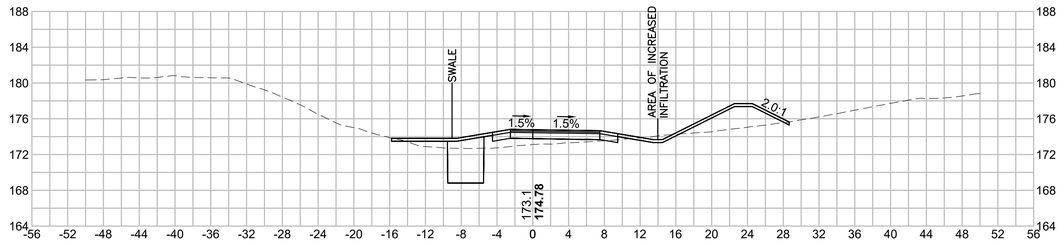

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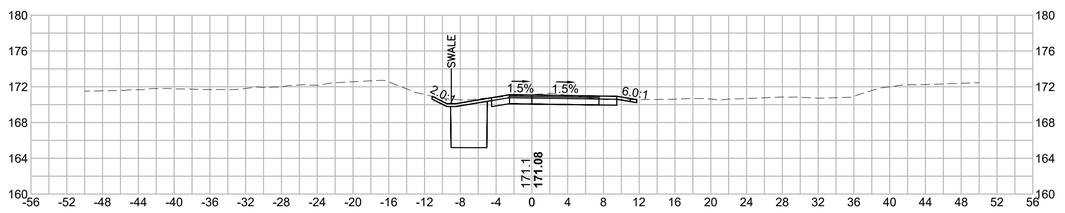

BLSF CROSSING STA 398 TO STA 403 - FEMA ZONE AE - HOP BROOK
FEMA ELEVATION: 161.0'
FILL:
160'-161': 0.95 CY
159'-160': 0.33 CY
CUT:
160'-161': 4.04 CY
159'-160': 1.17 CY

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 276 OF 347

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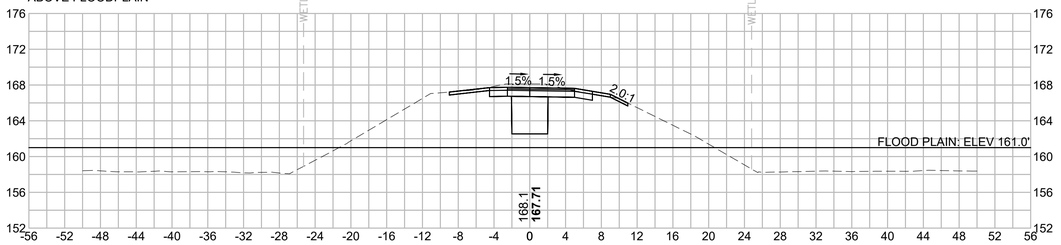
1"=8'	OCT 2020	MS	SK	MES	.	.

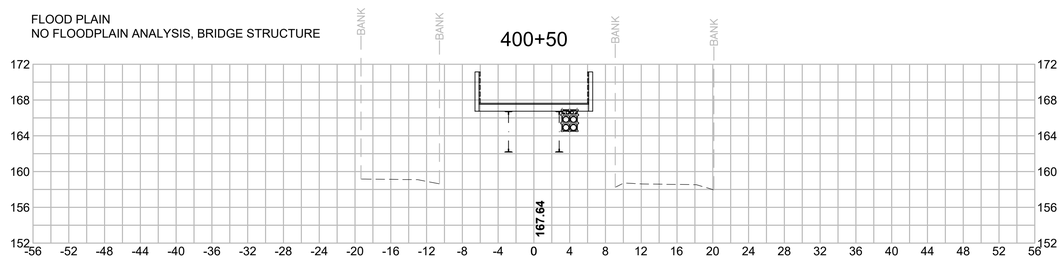
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

399+00



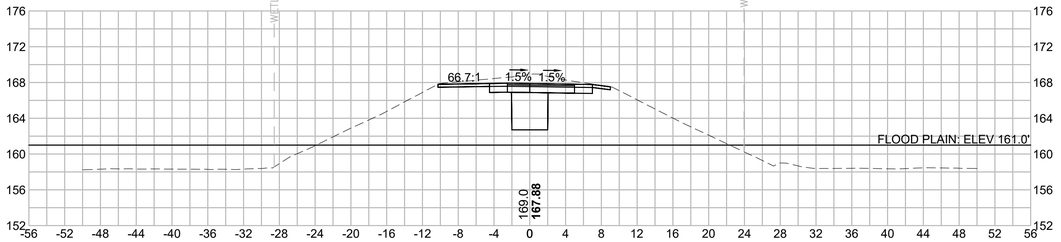
FLOOD PLAIN
NO FLOODPLAIN ANALYSIS, BRIDGE STRUCTURE

400+50



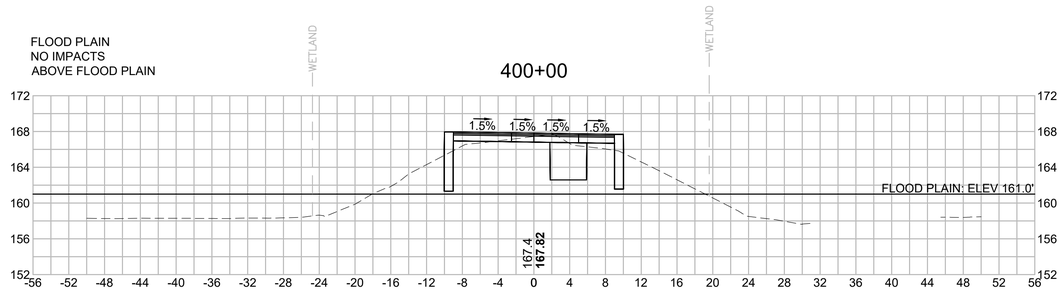
FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

398+50



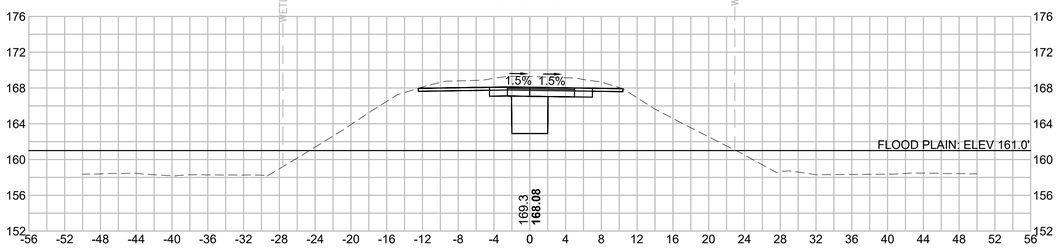
FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

400+00



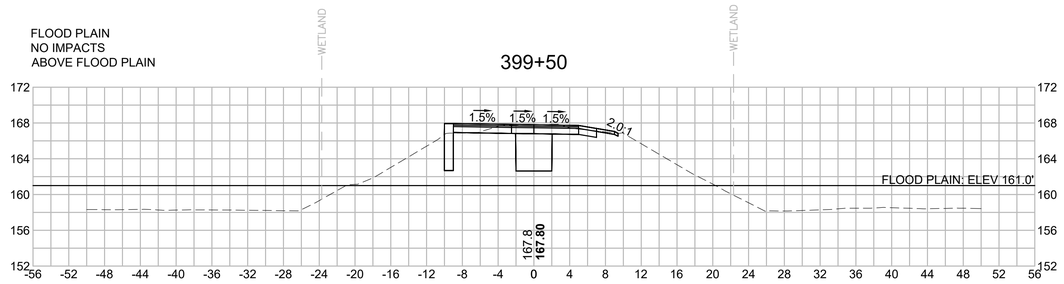
FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

398+00



FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

399+50



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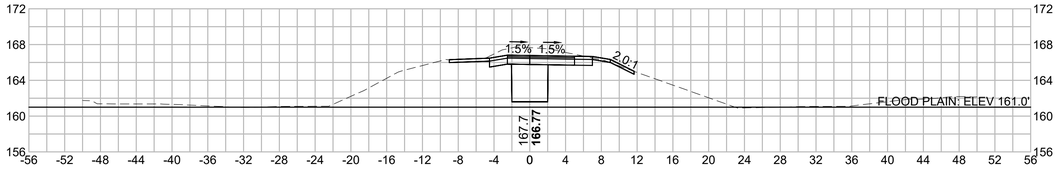
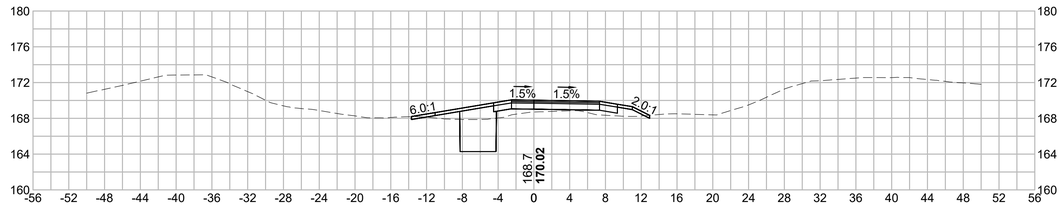
1"=8'	OCT 2020	MS	SK	MES	.	.

FLOOD PLAIN
ABOVE FLOODPLAIN
NO IMPACTS

402+00

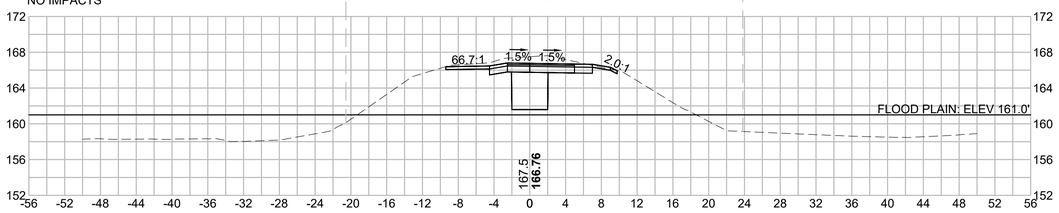


403+50

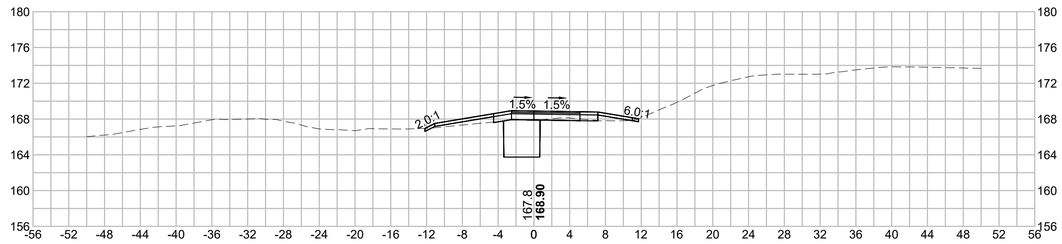


FLOOD PLAIN
ABOVE FLOODPLAIN
NO IMPACTS

401+50

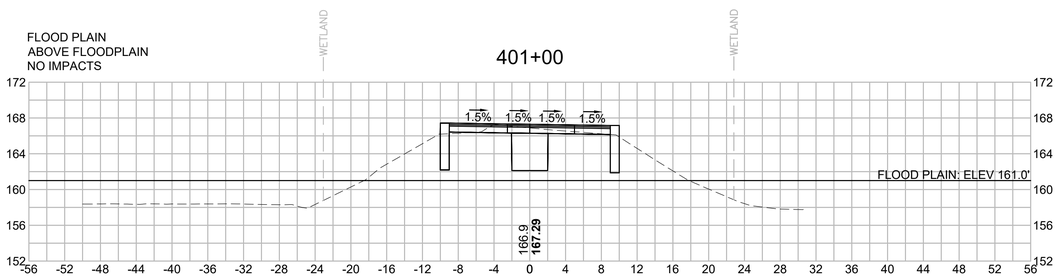


403+00



FLOOD PLAIN
ABOVE FLOODPLAIN
NO IMPACTS

401+00



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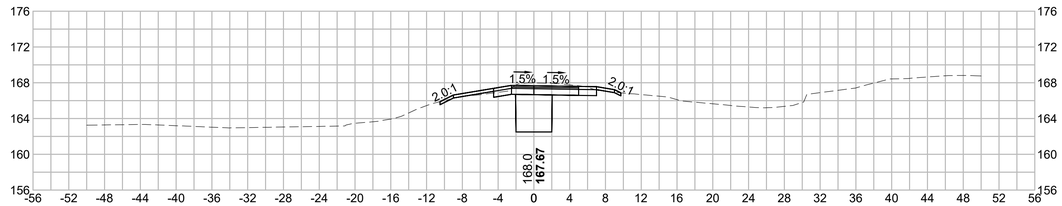

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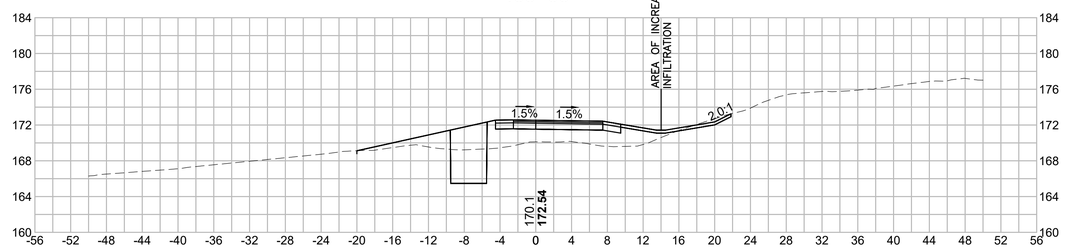
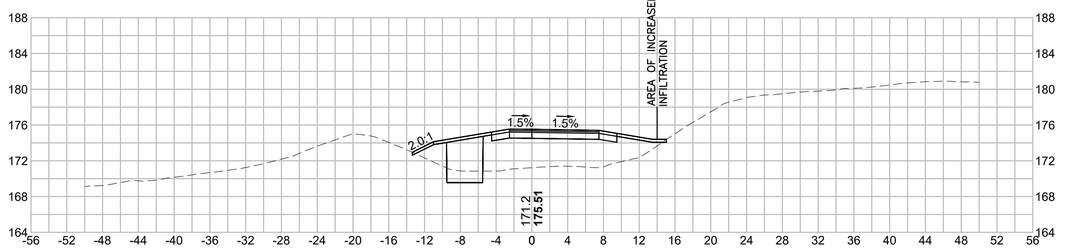
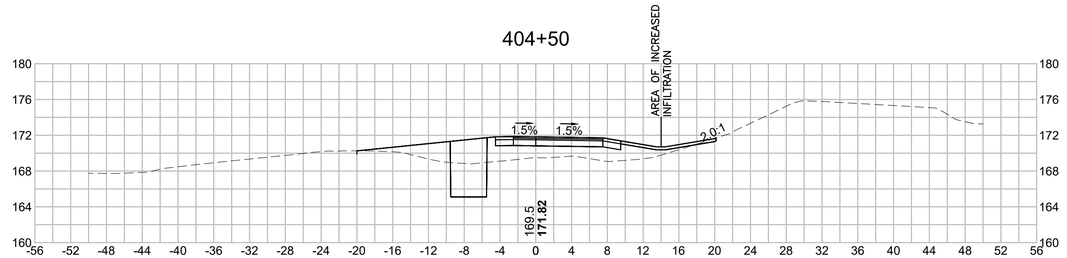
405+00



406+50



404+50



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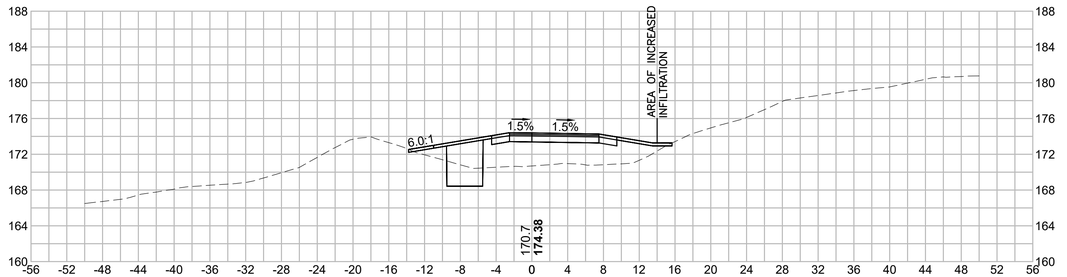

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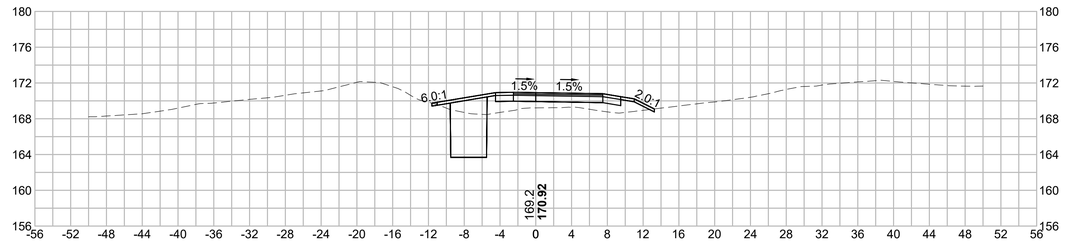

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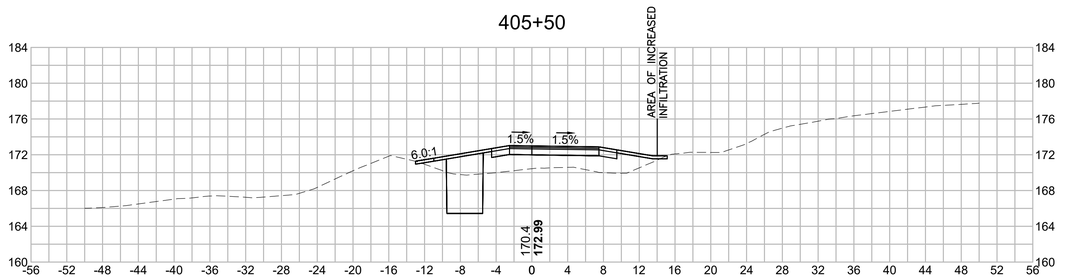

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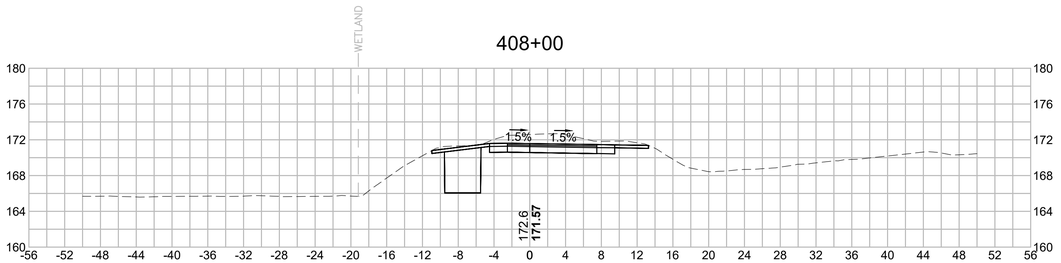
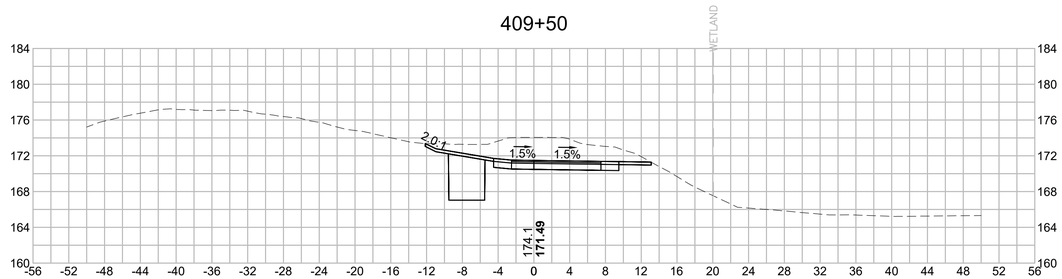
408+00



409+50



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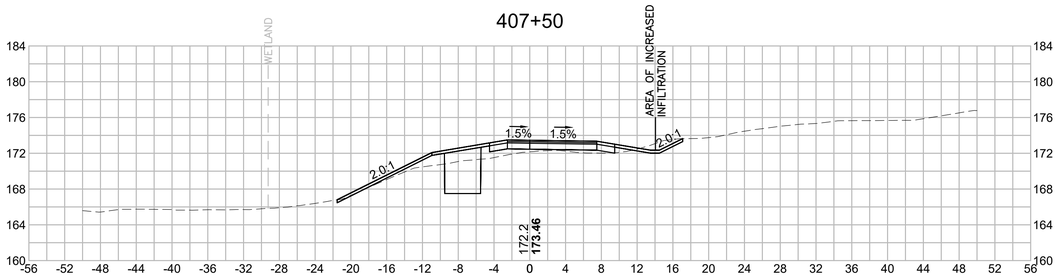

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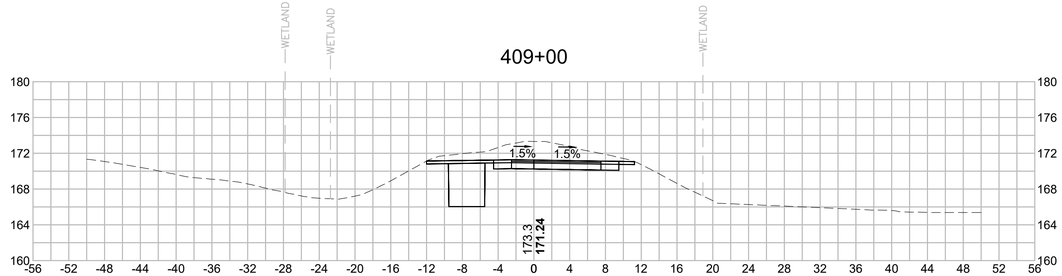

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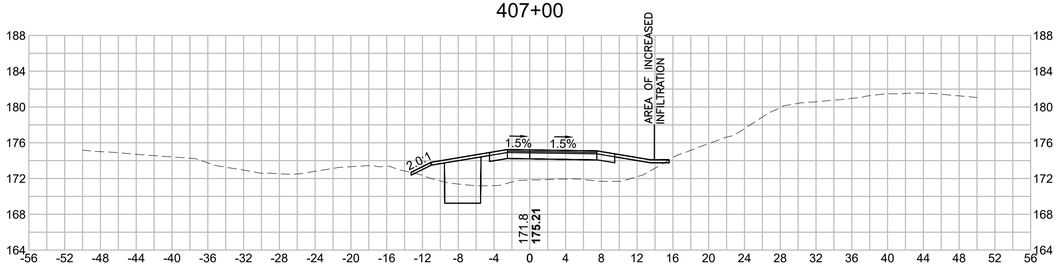

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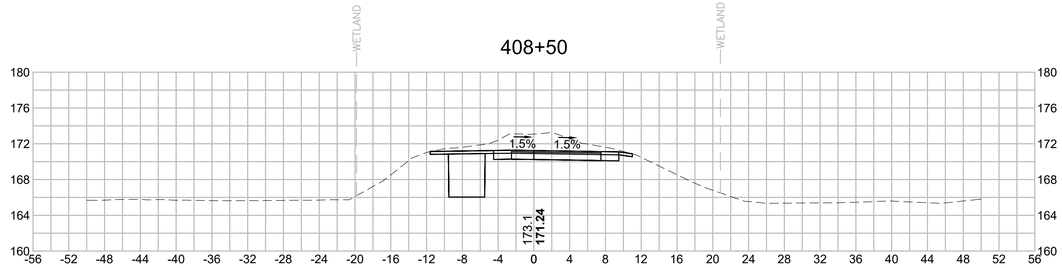

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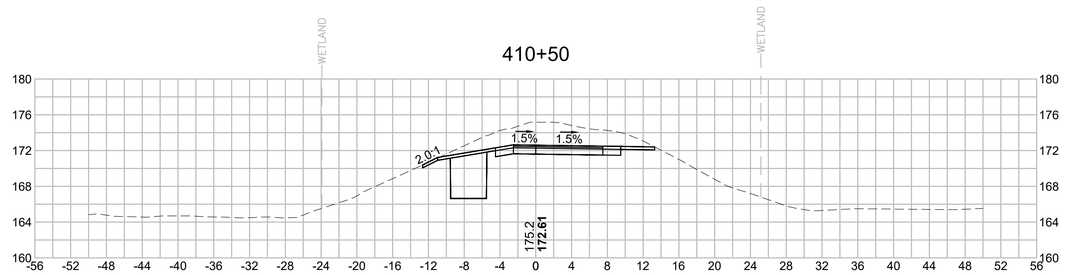
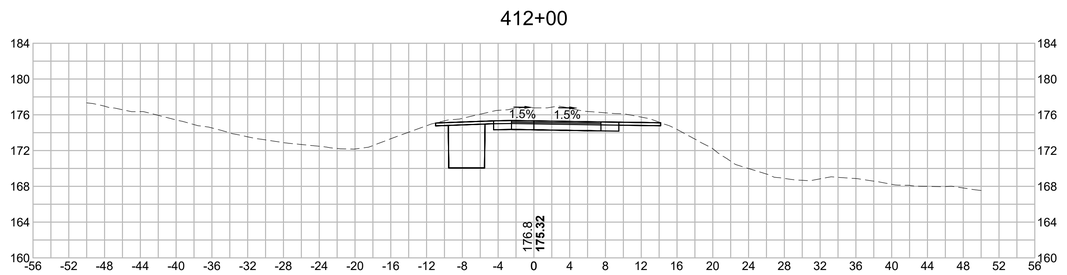
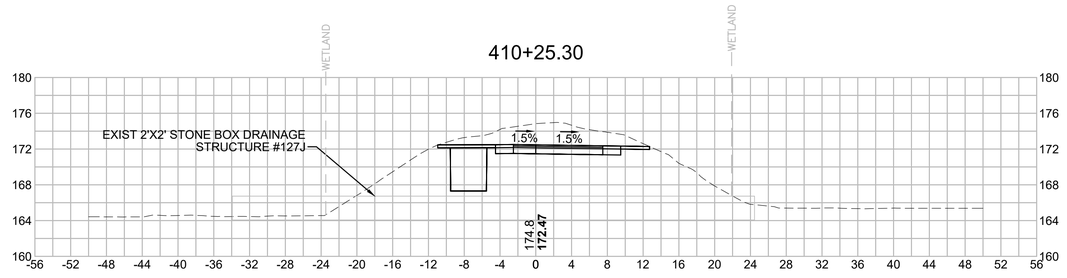
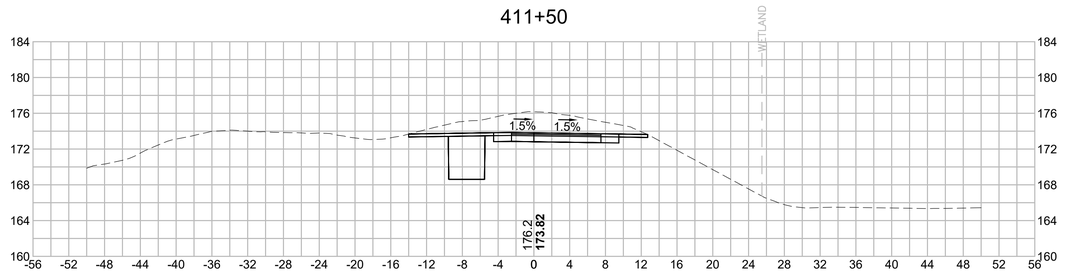
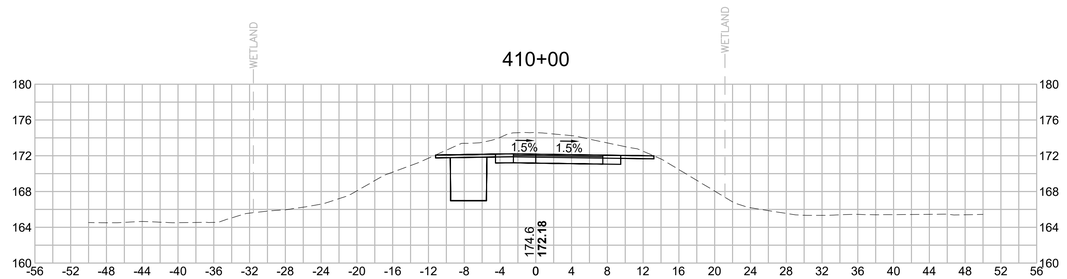
1"=8'	OCT 2020	MS	SK	MES	.	.

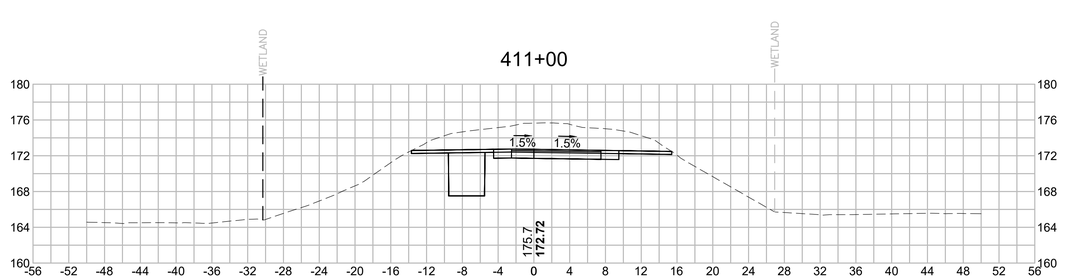












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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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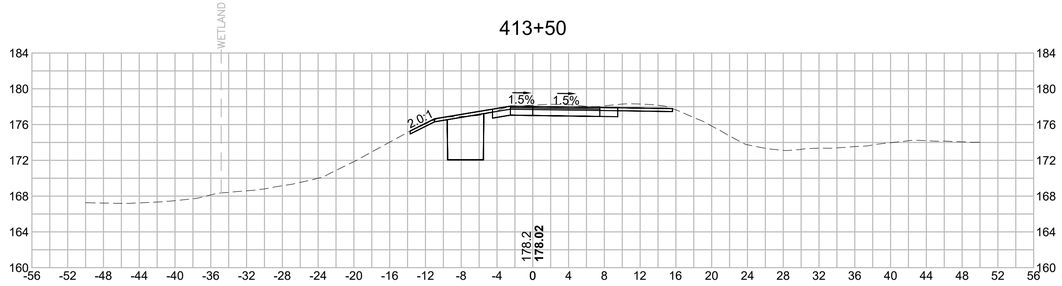
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

413+50



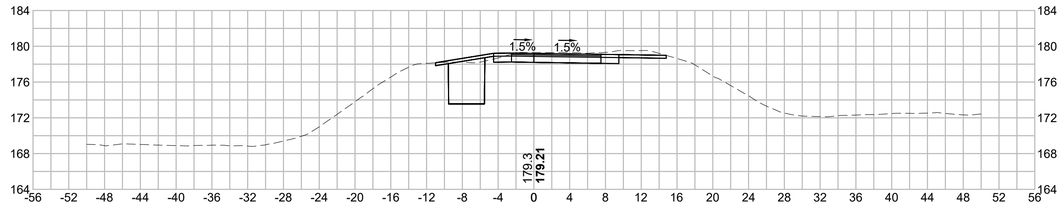
415+00



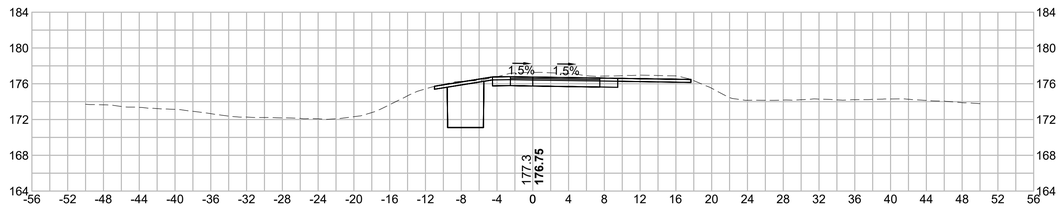
413+00



414+50



412+50



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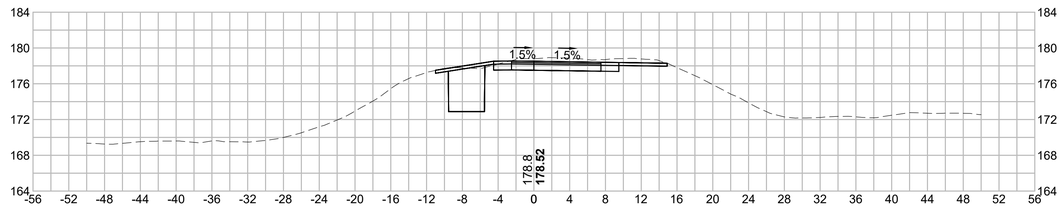

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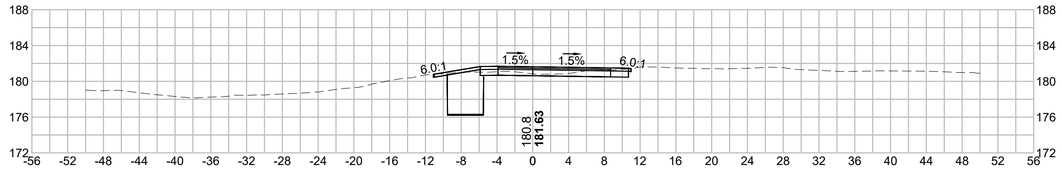
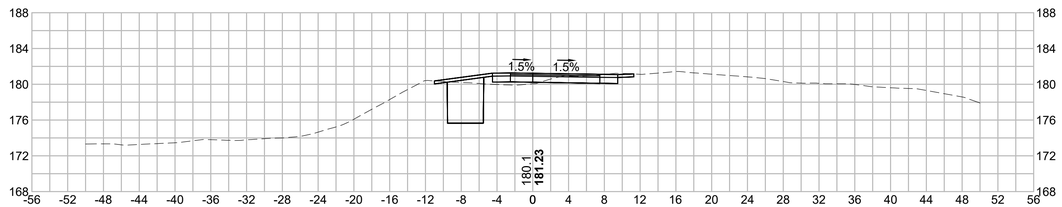
1"=8'	OCT 2020	MS	SK	MES	.	.

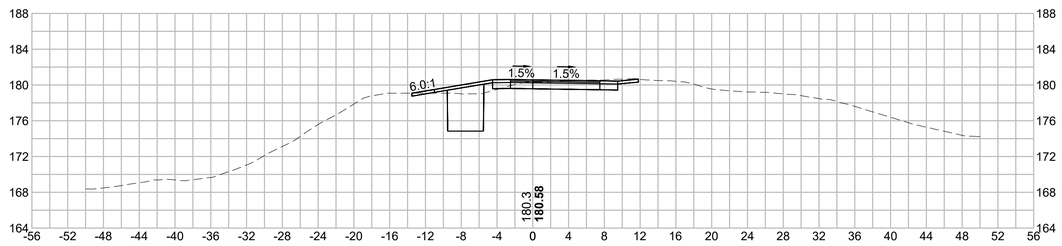
416+50



416+00



415+50



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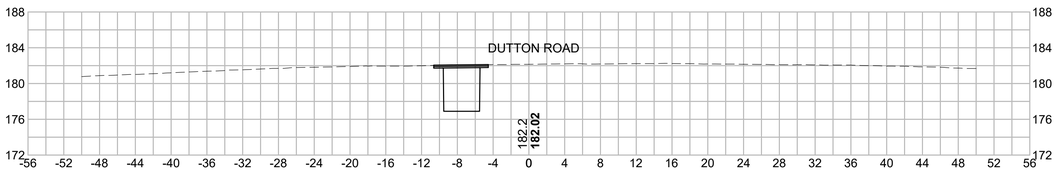

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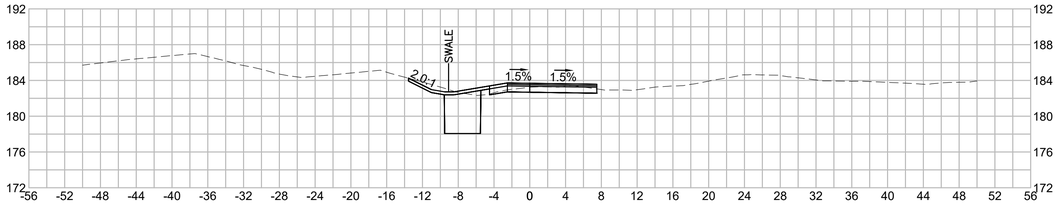
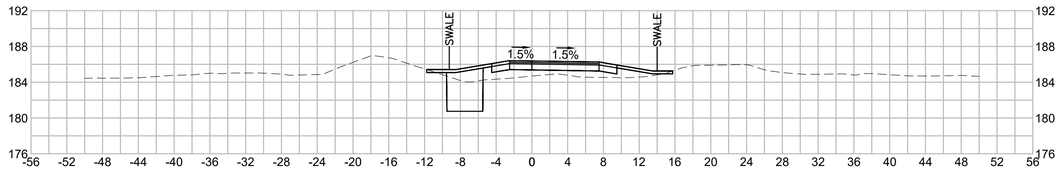
1"=8'	OCT 2020	MS	SK	MES	.	.

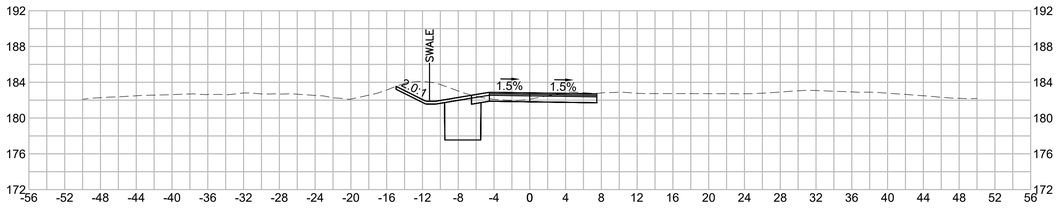
501+00



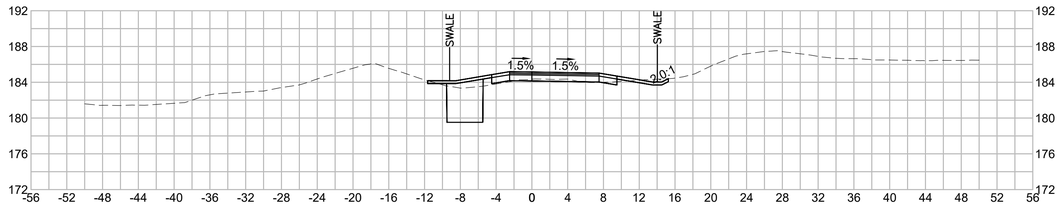
502+50



500+50



502+00



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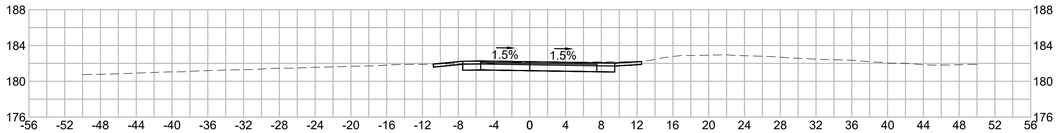

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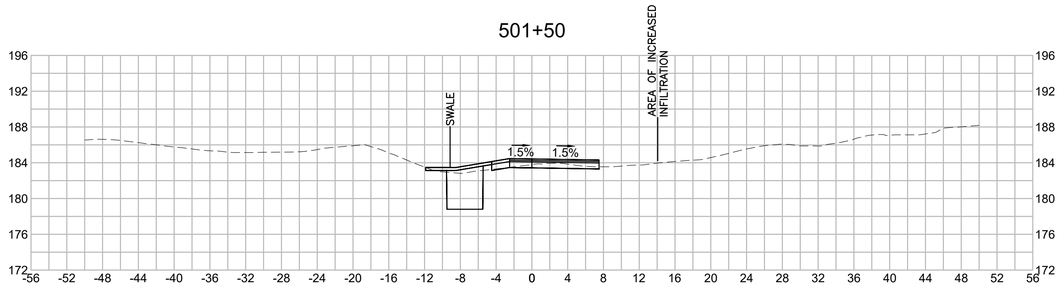

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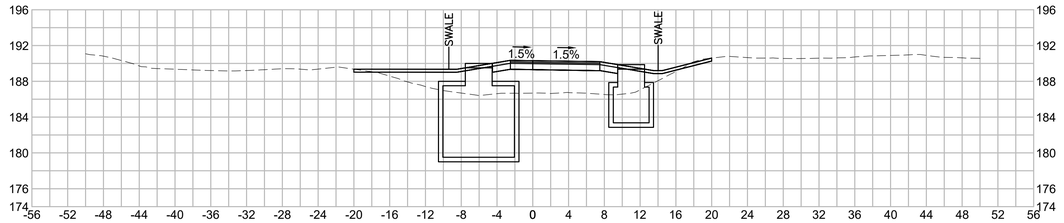
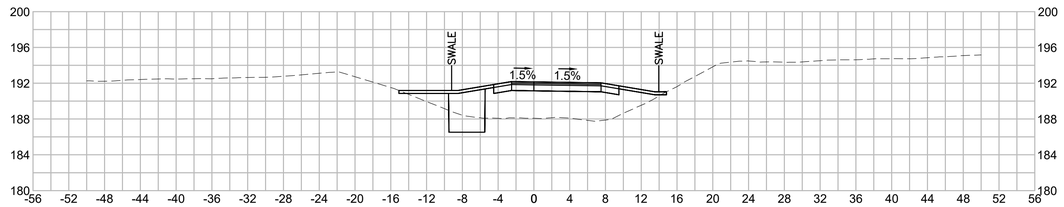
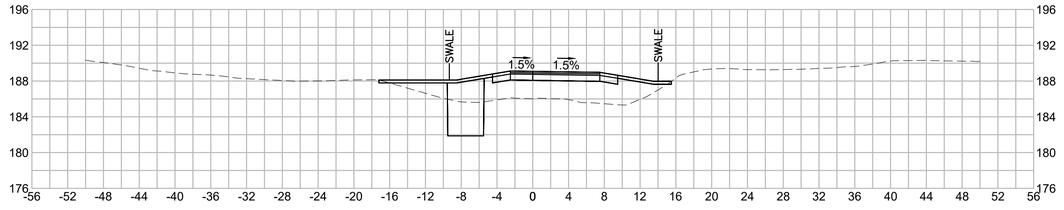
504+00



505+50



503+50



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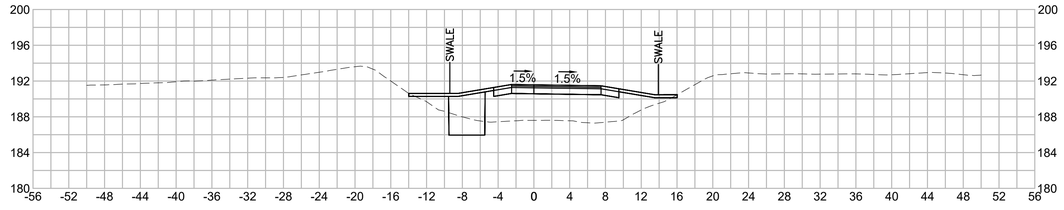

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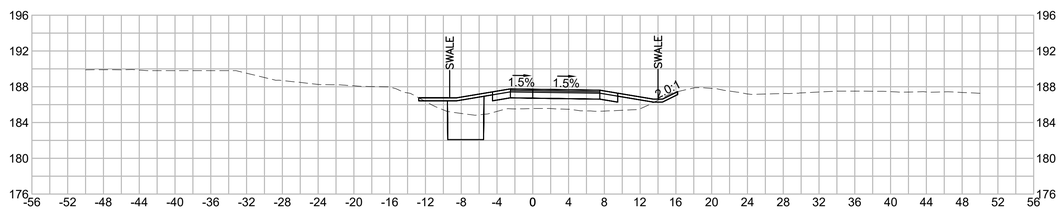

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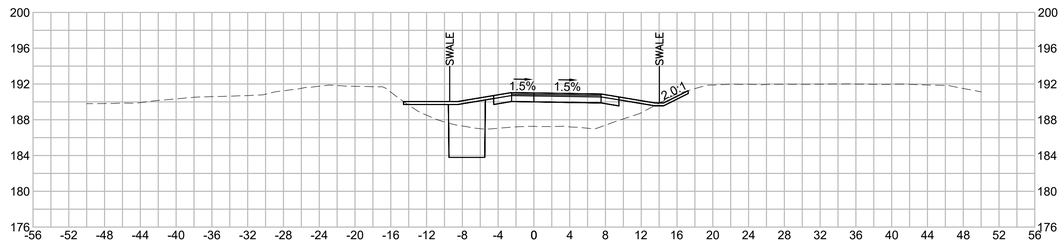

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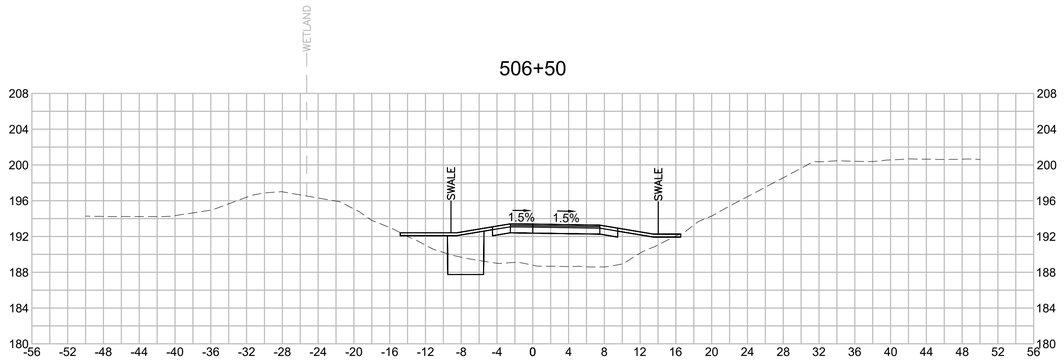

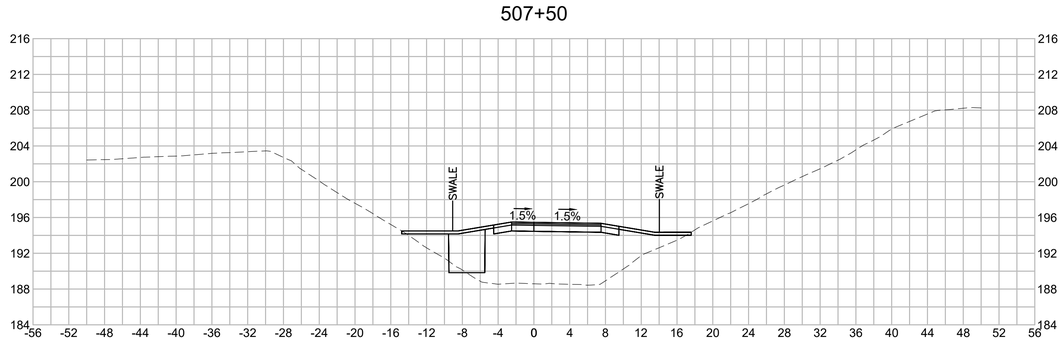

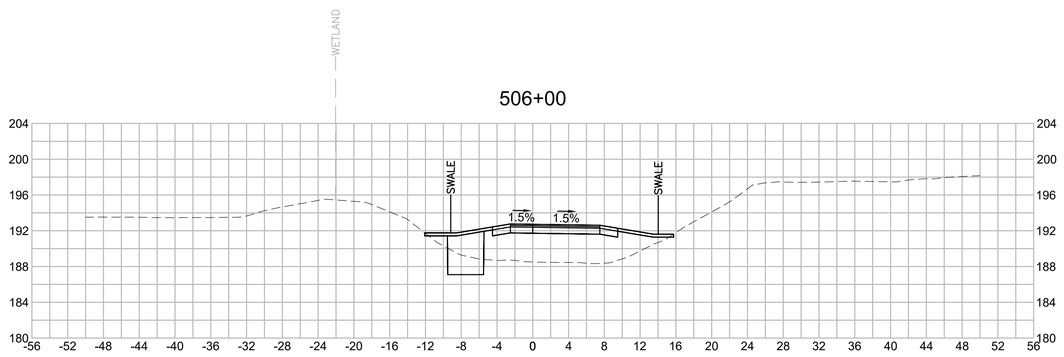

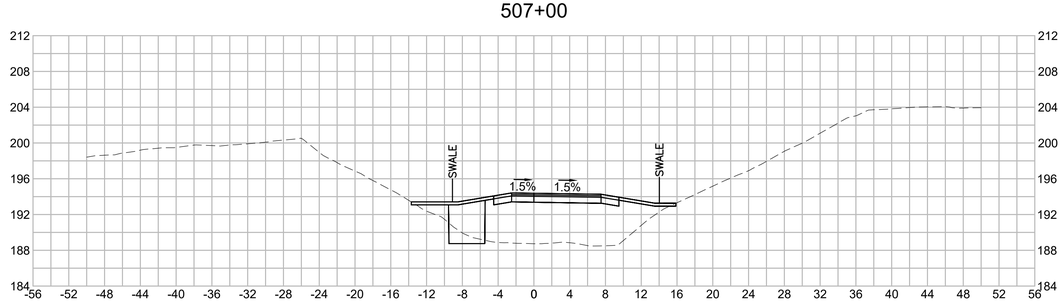

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
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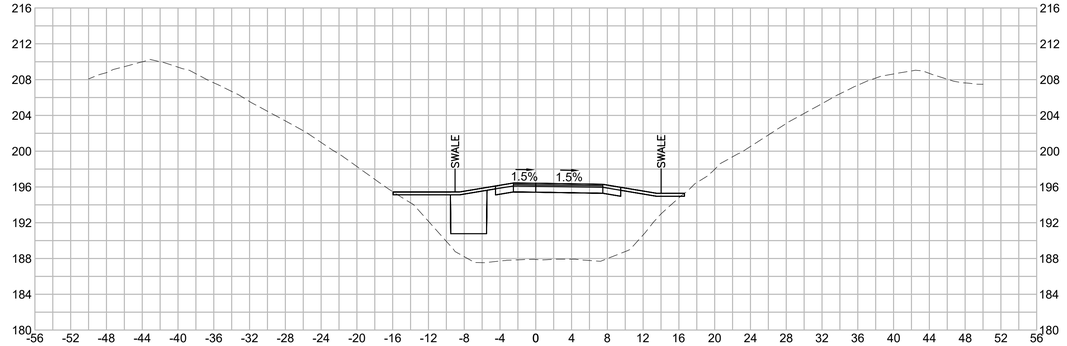
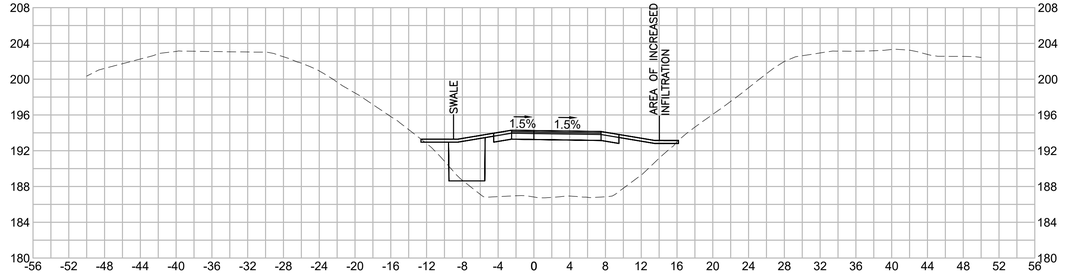
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

508+50



509+50



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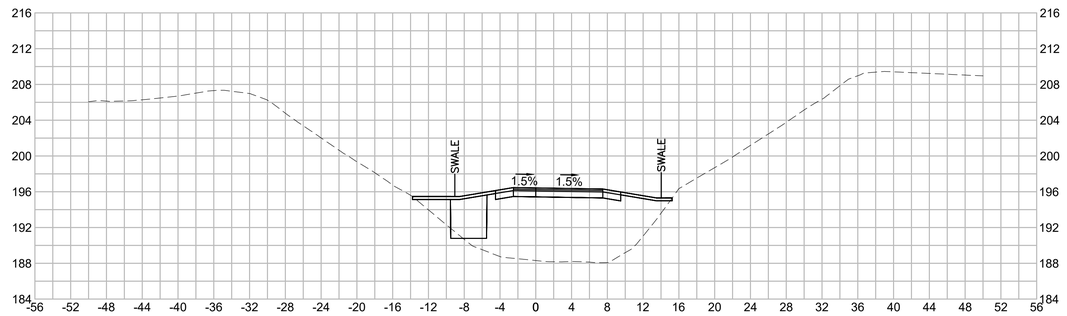

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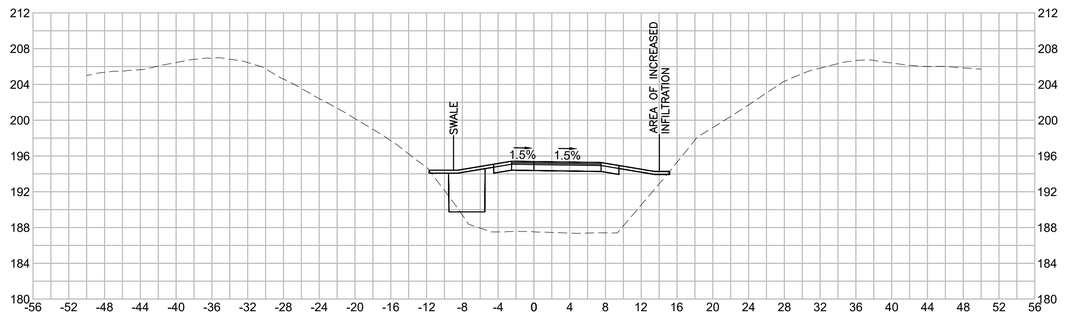

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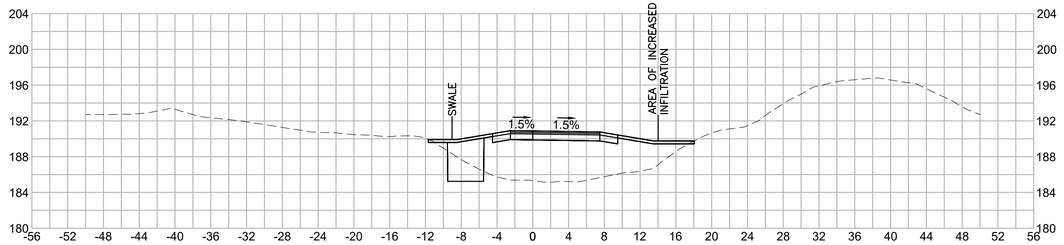
511+00



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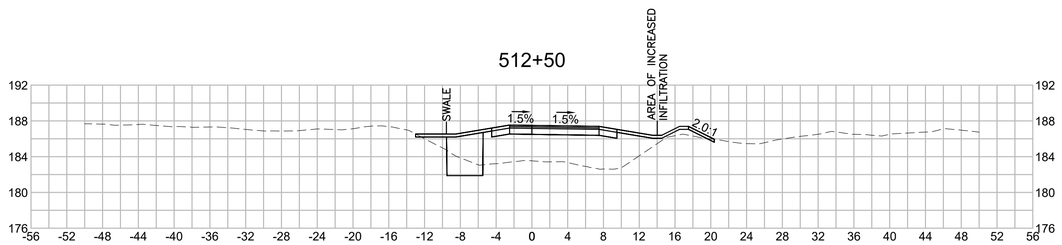

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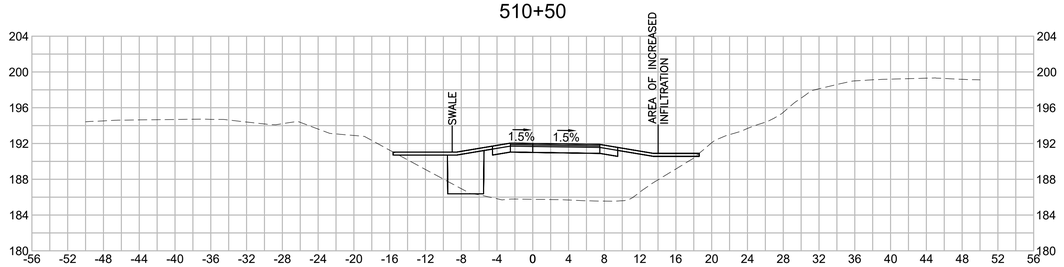

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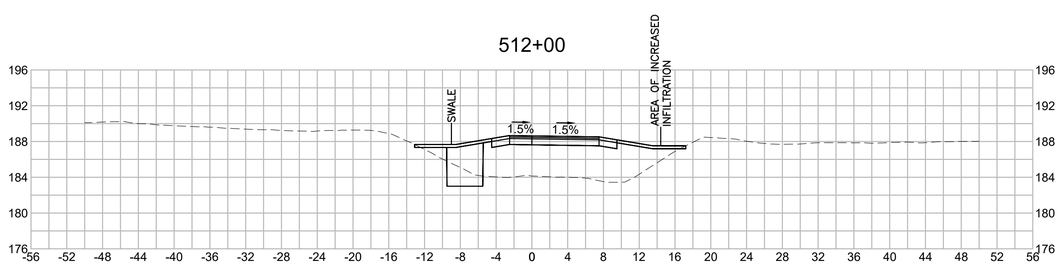

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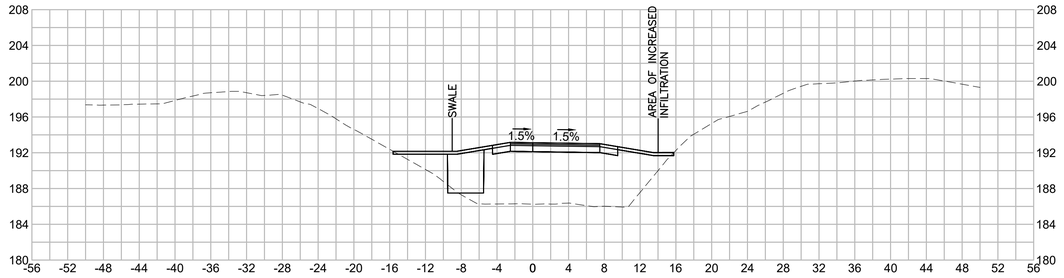

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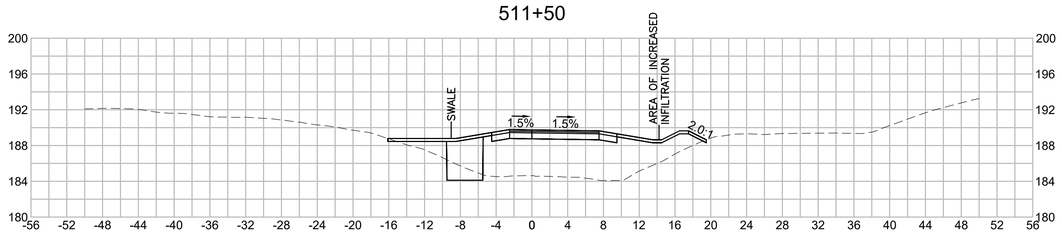

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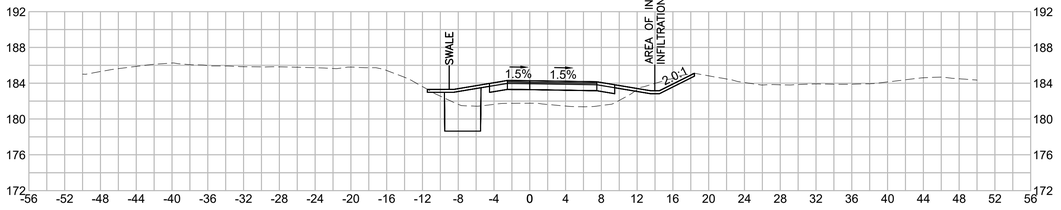
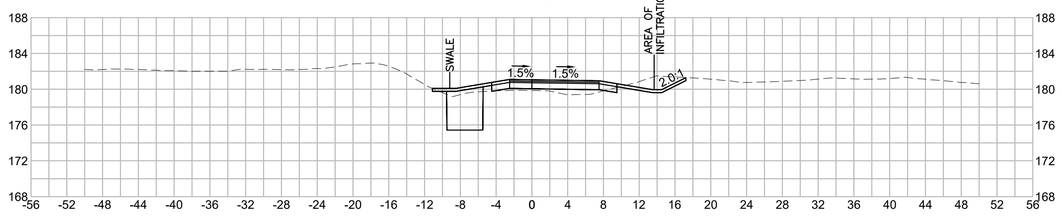
514+00



515+50



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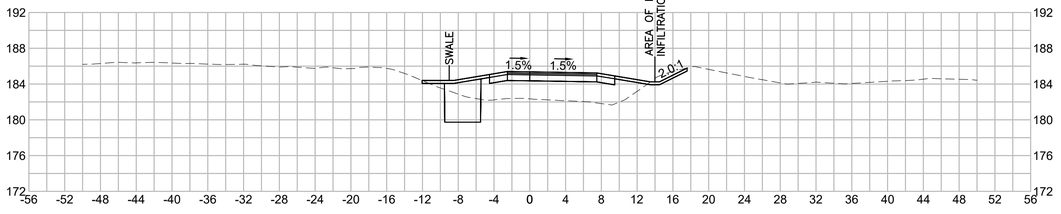

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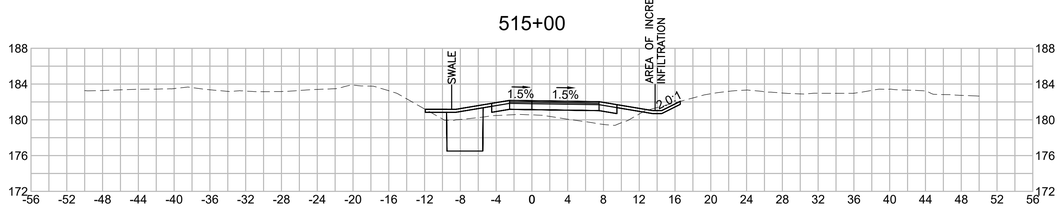

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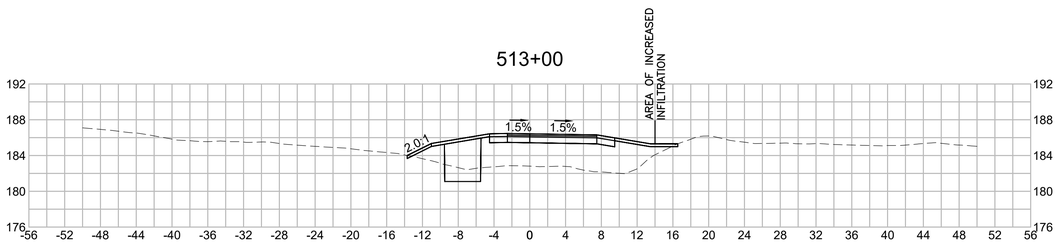
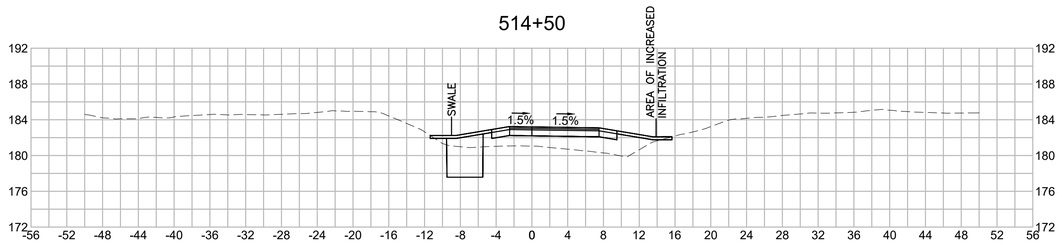


514+50



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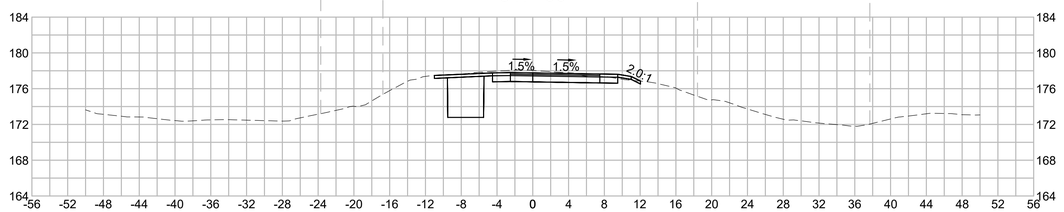
517+00



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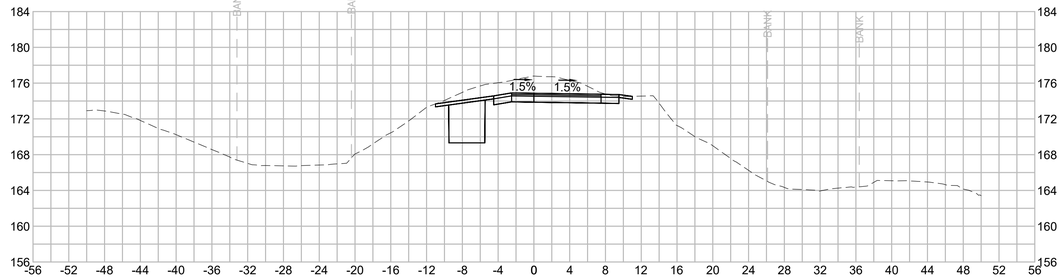
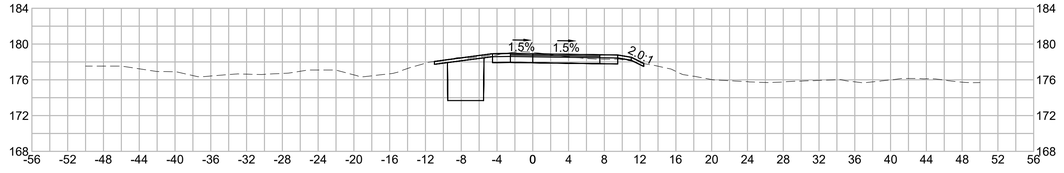
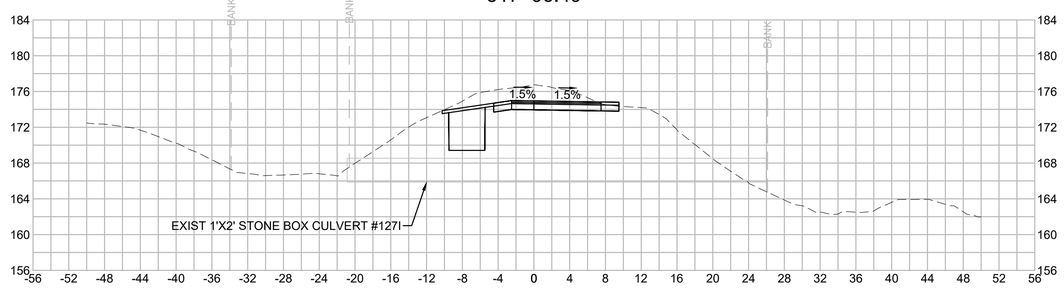


516+50



517+96.49



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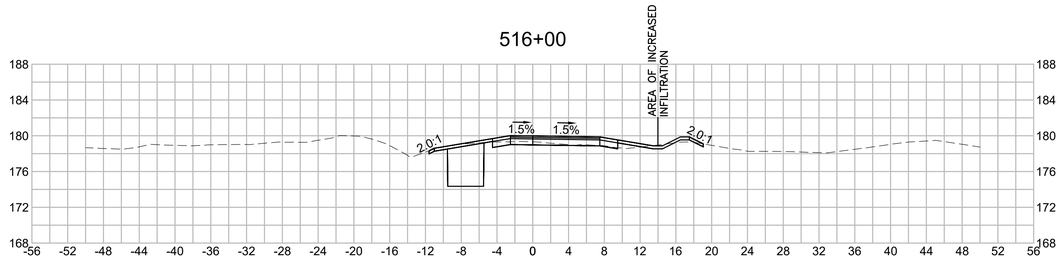
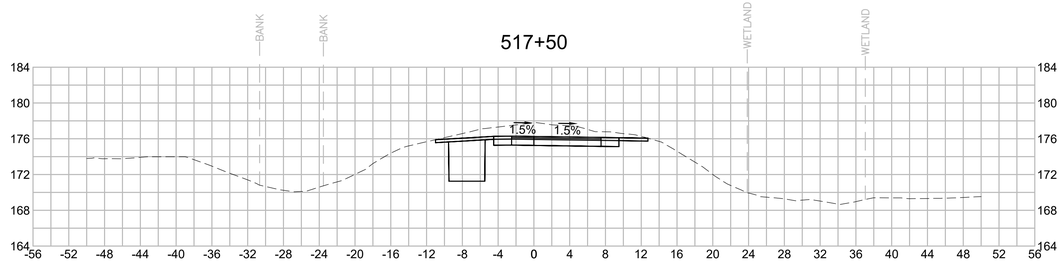


517+50



8 0 8 16
SCALE IN FEET

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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

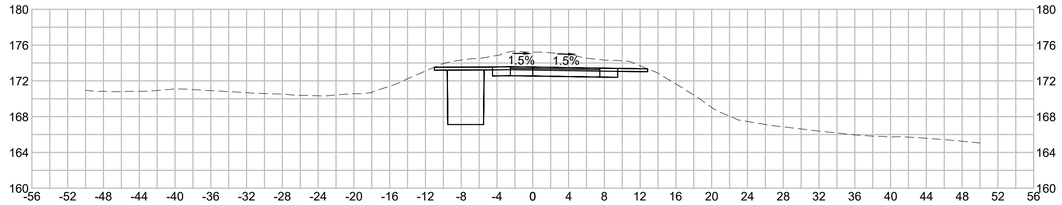
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

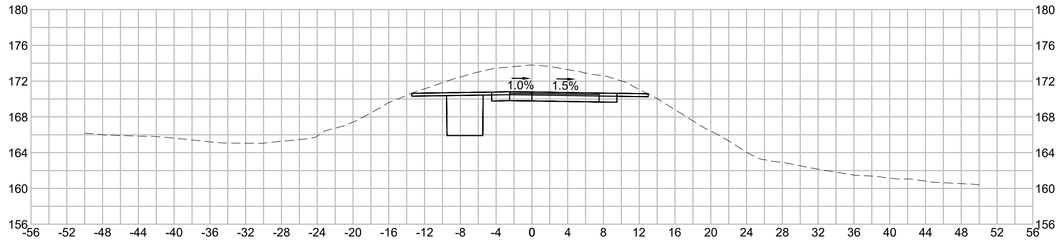
PLAN 290 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

519+50



521+00



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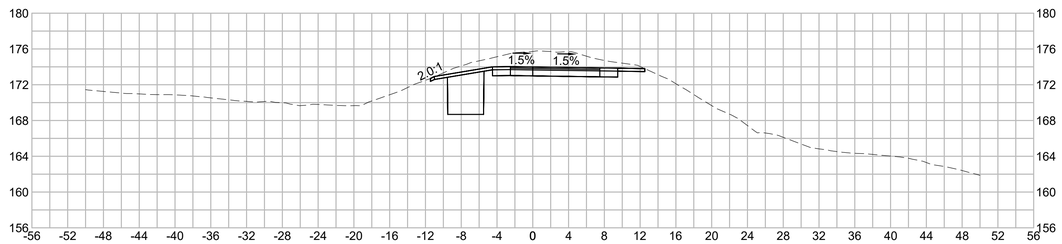
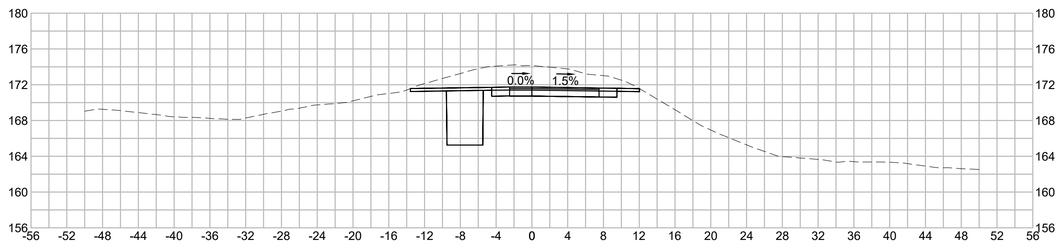


520+50



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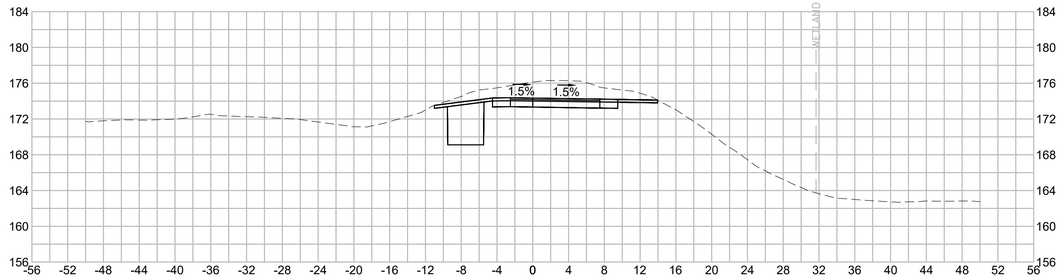
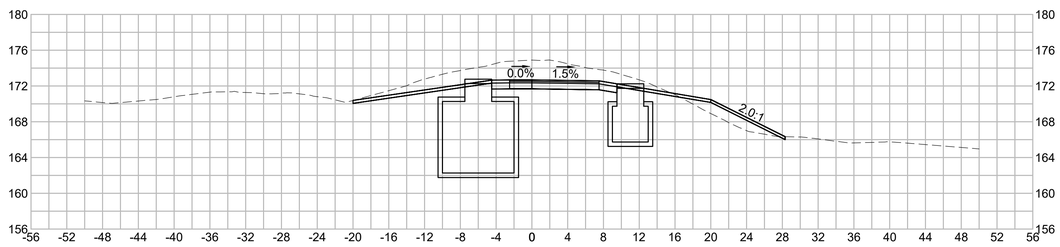


520+00



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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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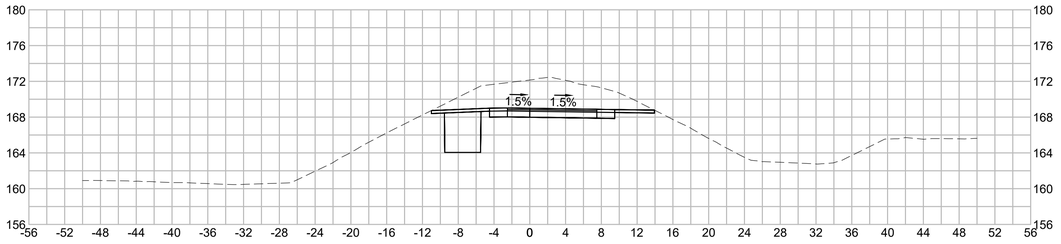
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

522+00



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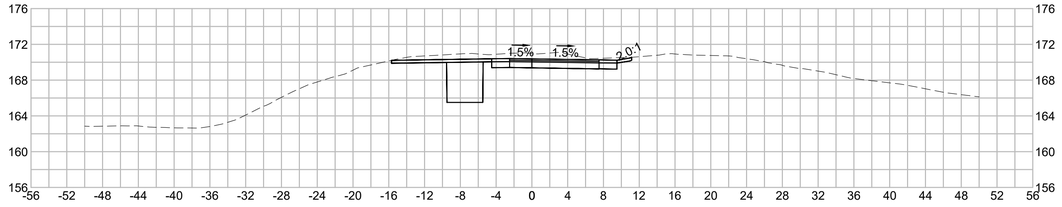

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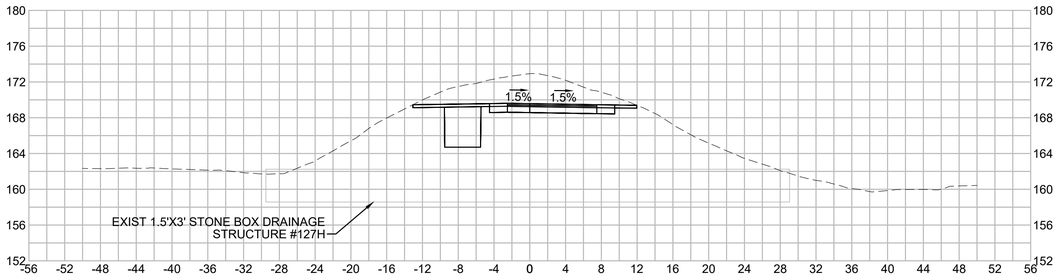
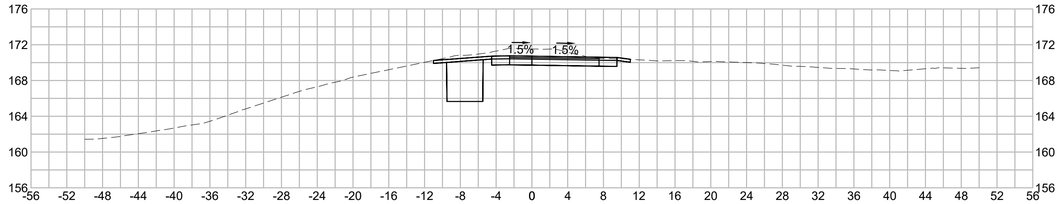


523+00



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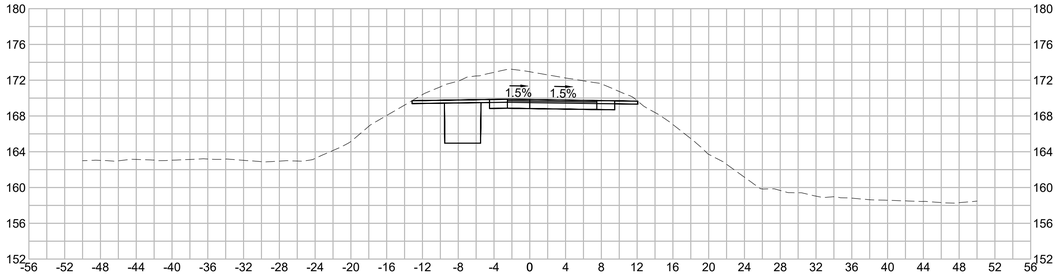
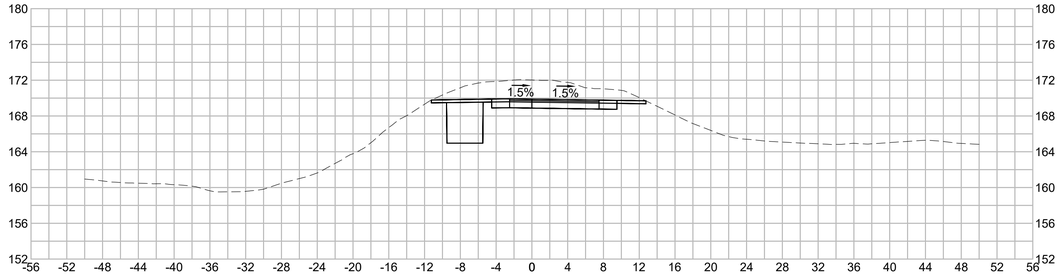


522+50



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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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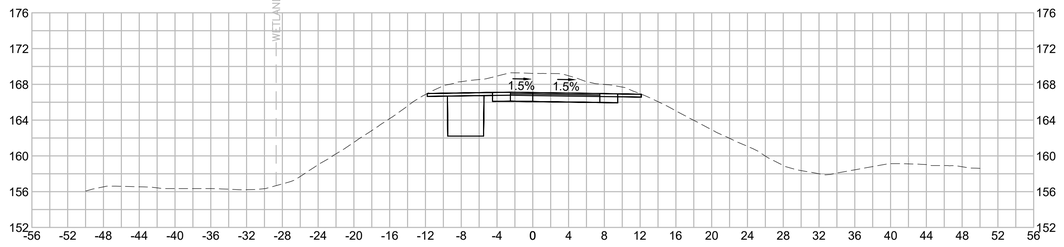
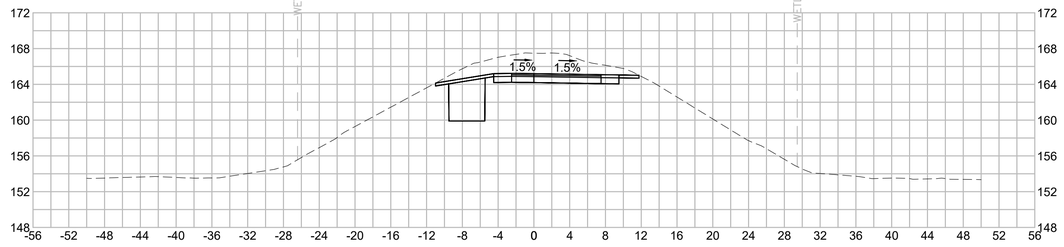
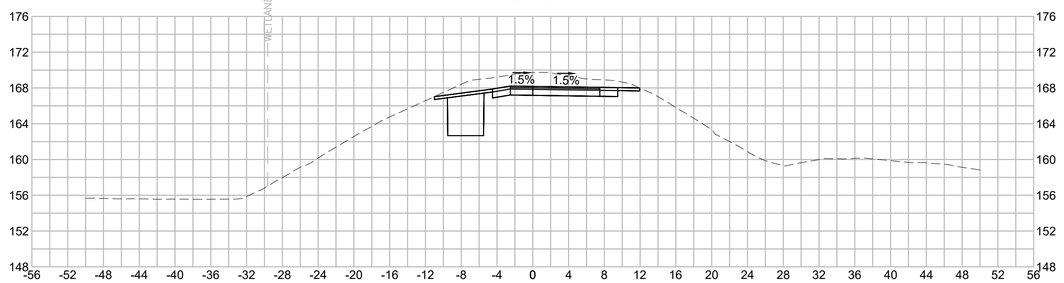
525+00



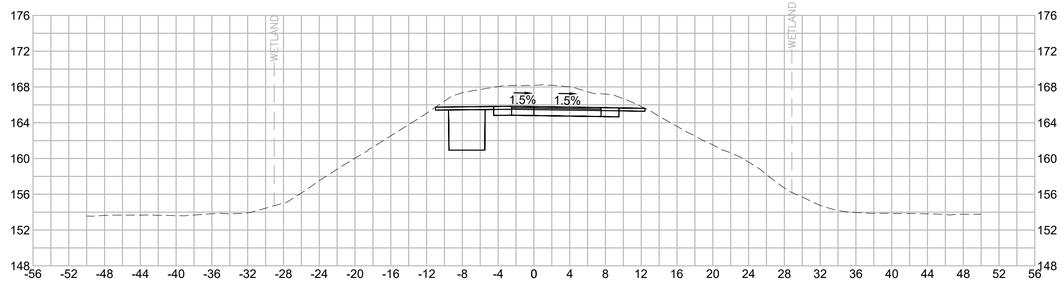
526+50



524+50



526+00



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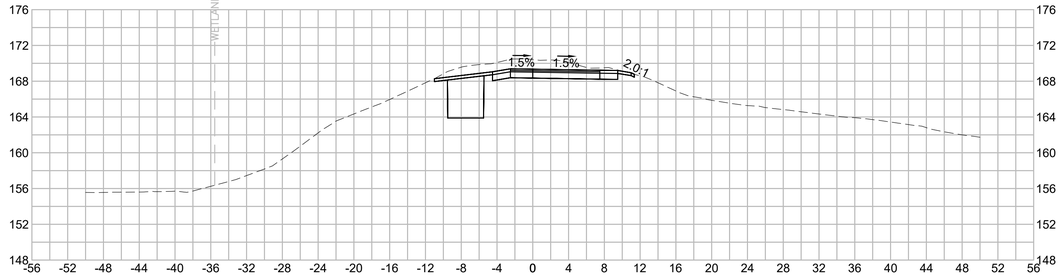

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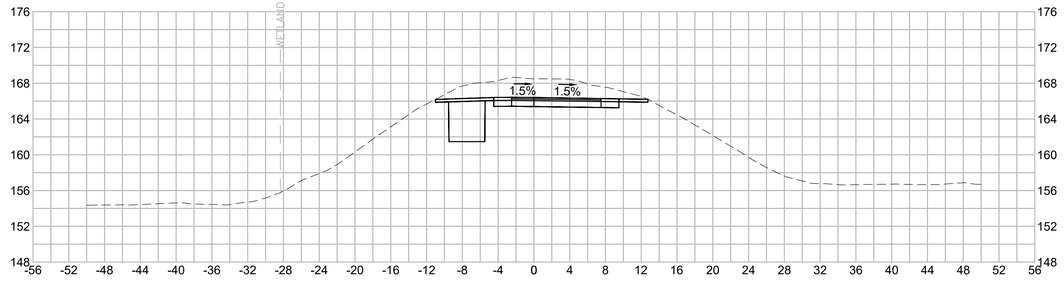

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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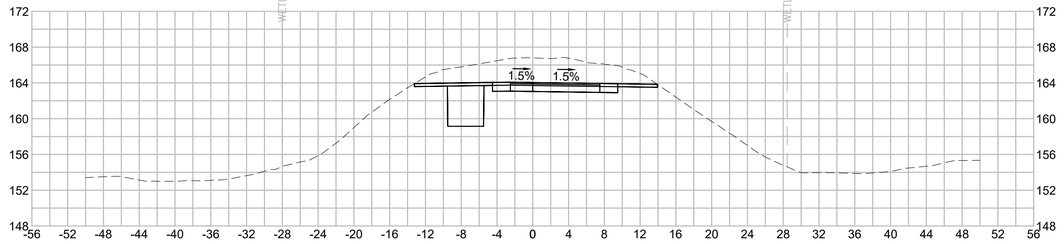
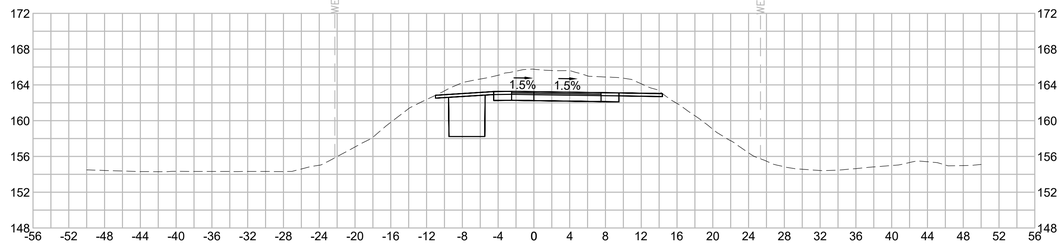
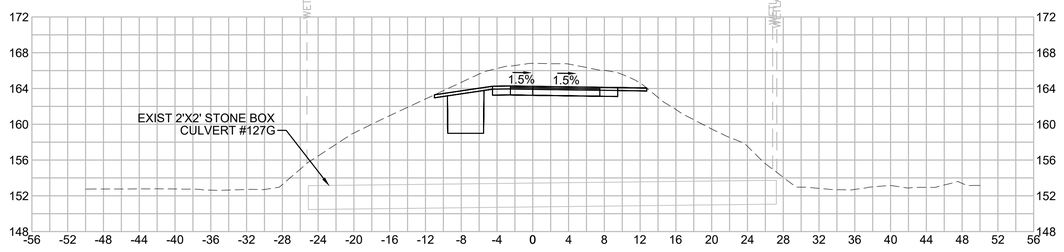
527+50



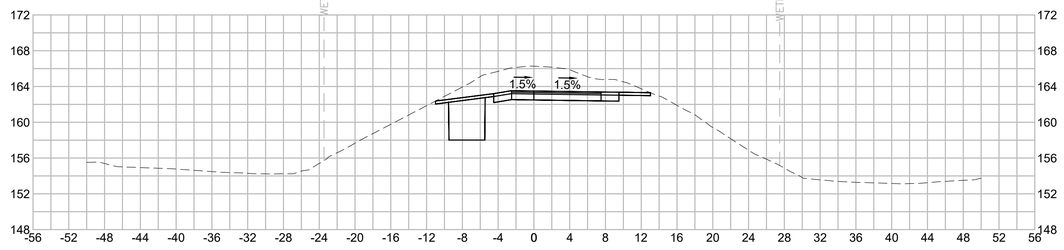
529+00



527+30



528+50



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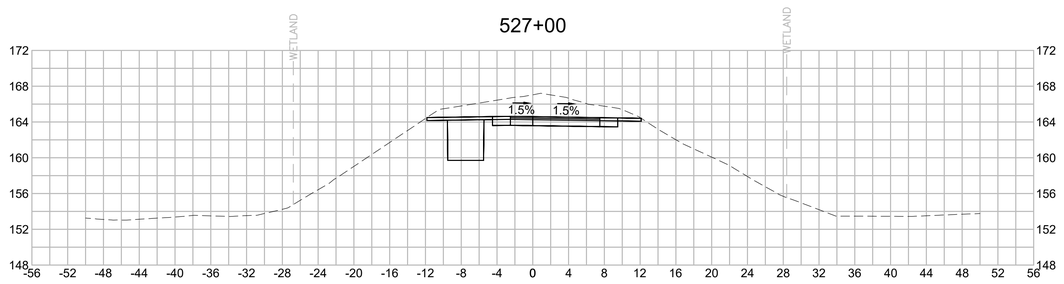

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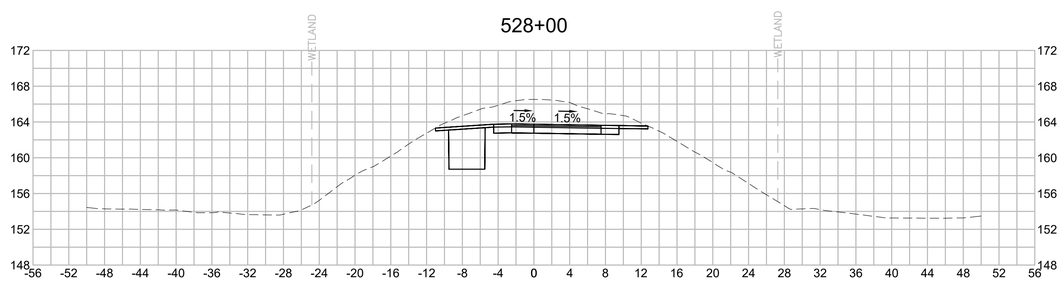

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

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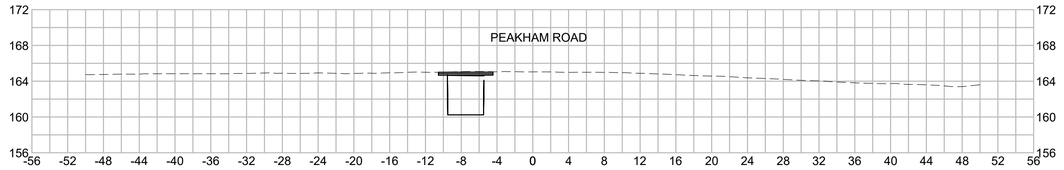
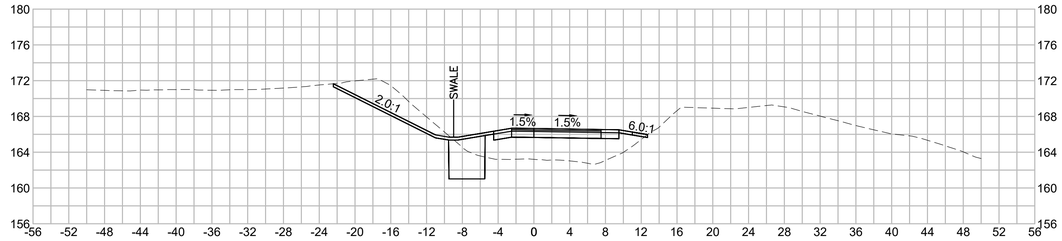
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

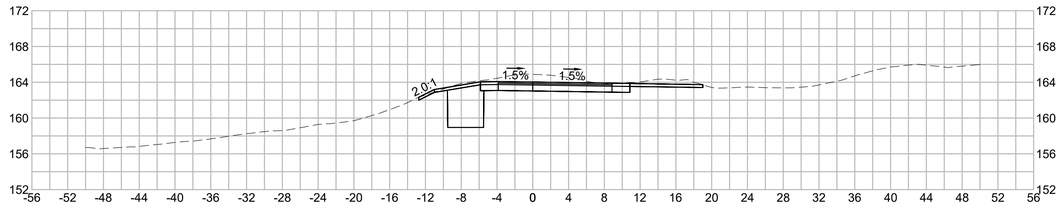
530+50



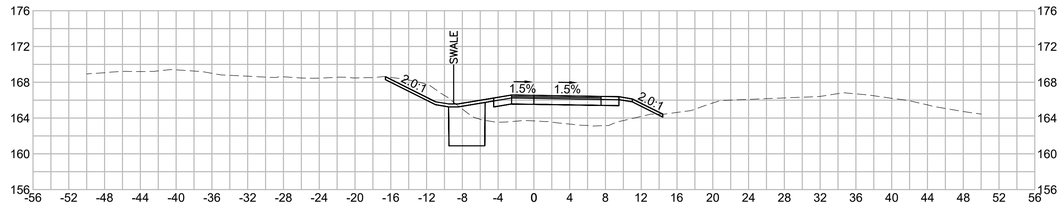
532+00



530+00



531+50



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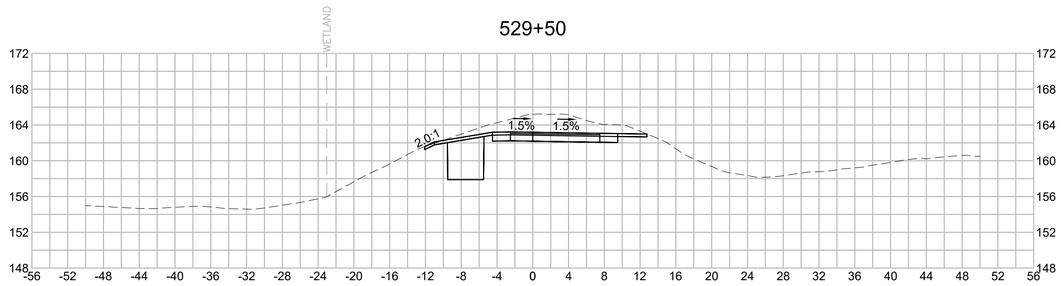

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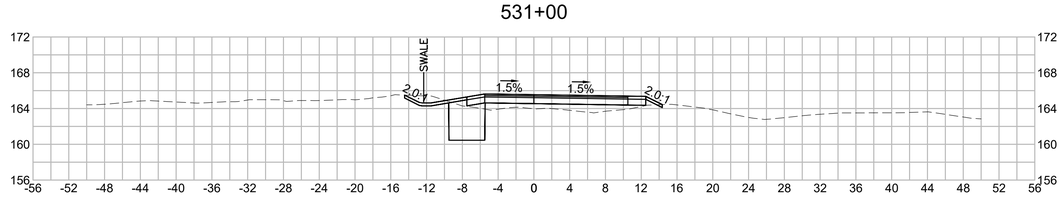

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

PLAN 295 OF 347

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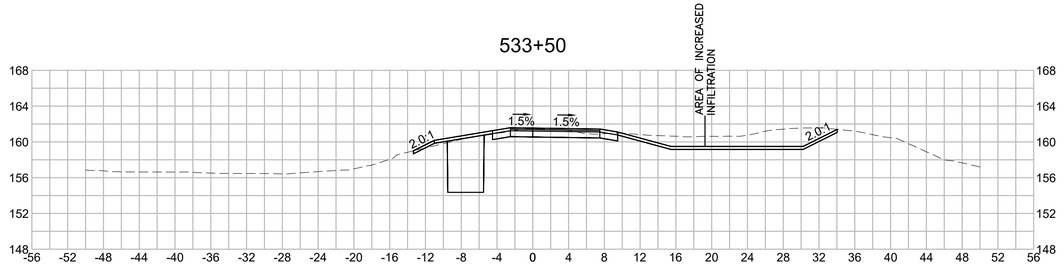
1"=8'	OCT 2020	MS	SK	MES	.	.

533+50



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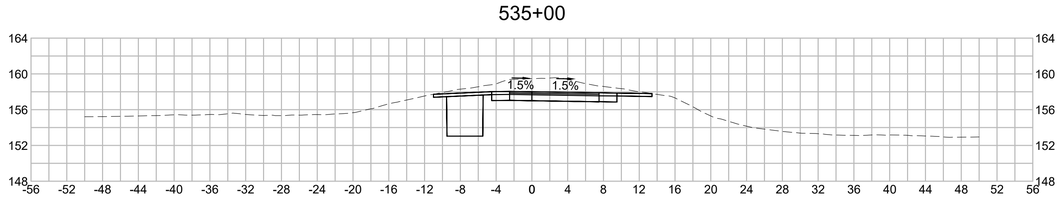

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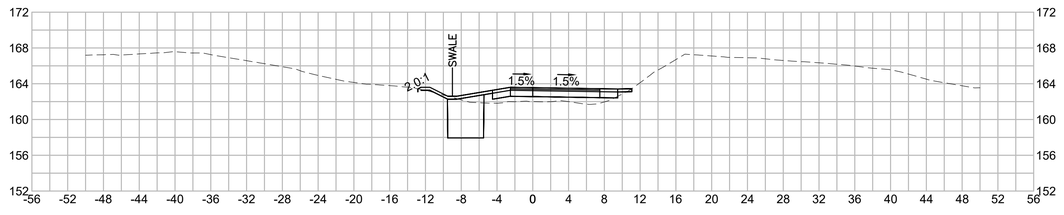

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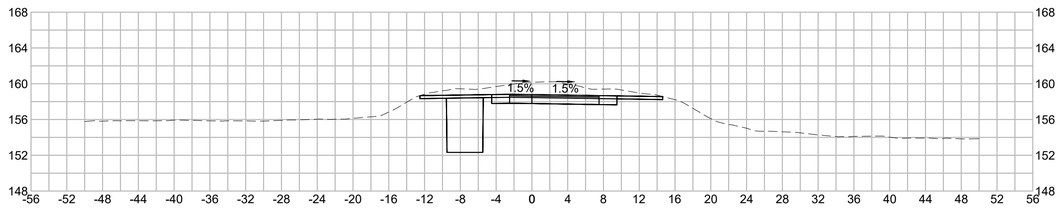

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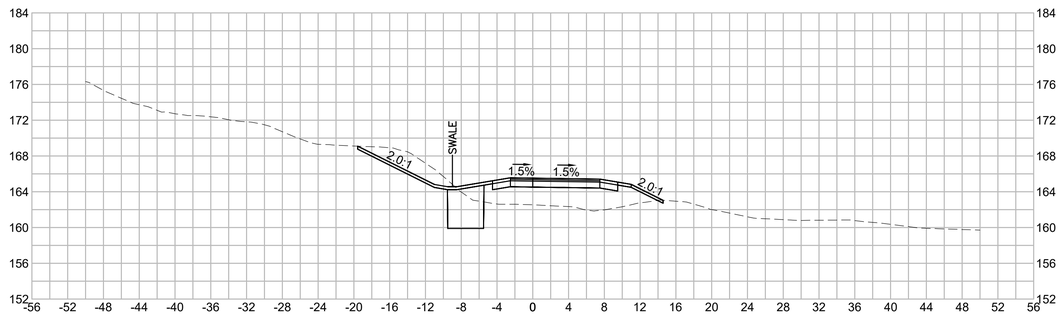

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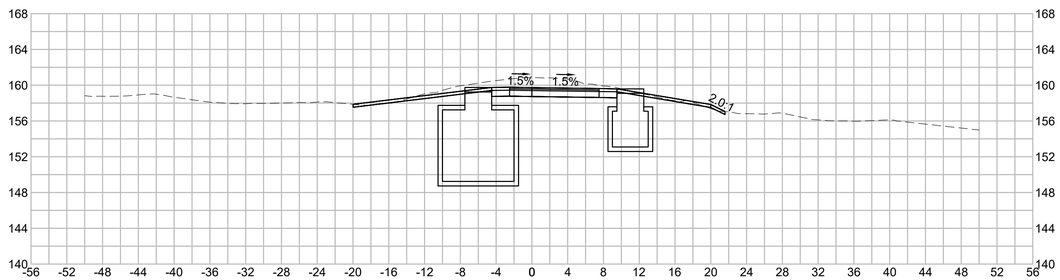

BLSF CROSSING STA 535 TO STA 542 - FEMA ZONE AE - DUDLEY BROOK
FEMA ELEVATION: UPSTREAM PORTION (152.2) AND DOWNSTREAM PORTION (148.6)
NO IMPACTS

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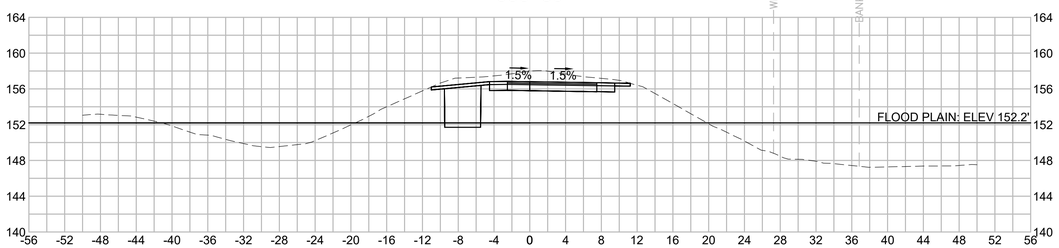
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 296 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

536+50



FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

538+00



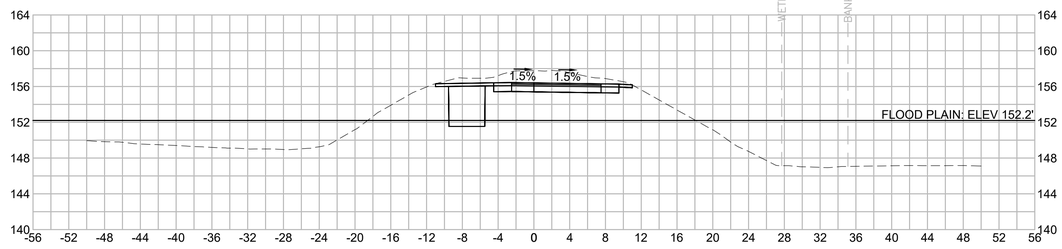
FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

536+00



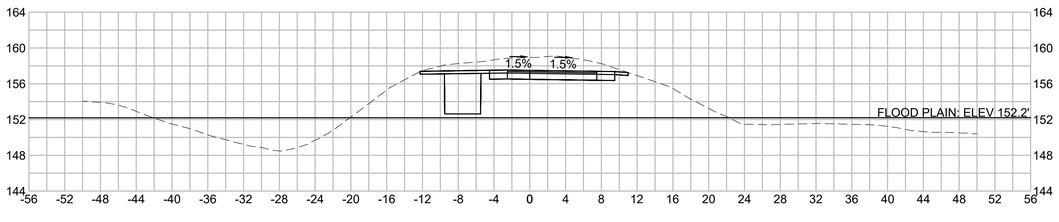
FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

537+50



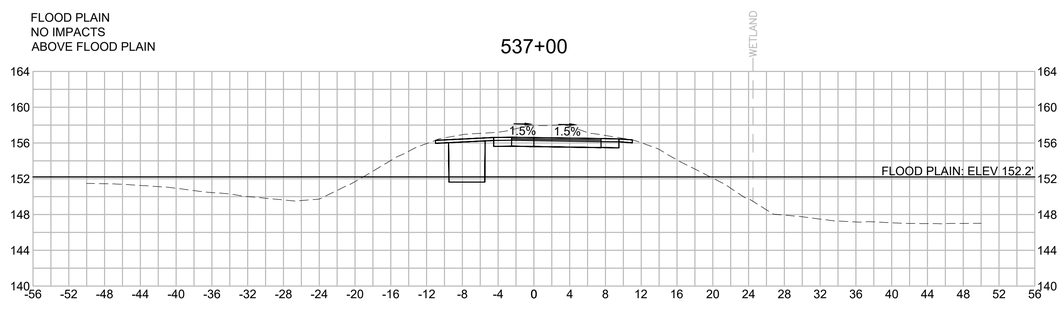
FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

535+50



FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

537+00



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CROSS SECTIONS
PLAN 297 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

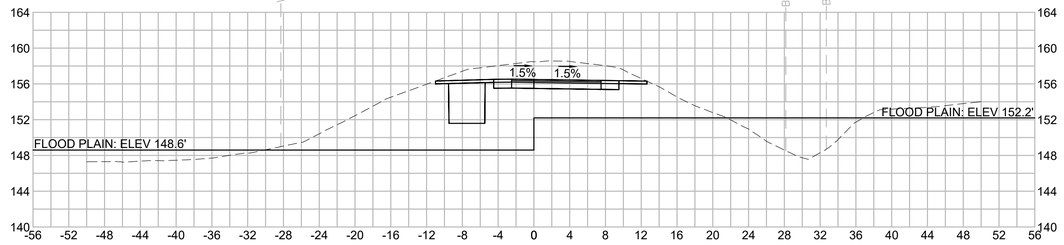
FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

539+40.44



FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

540+50



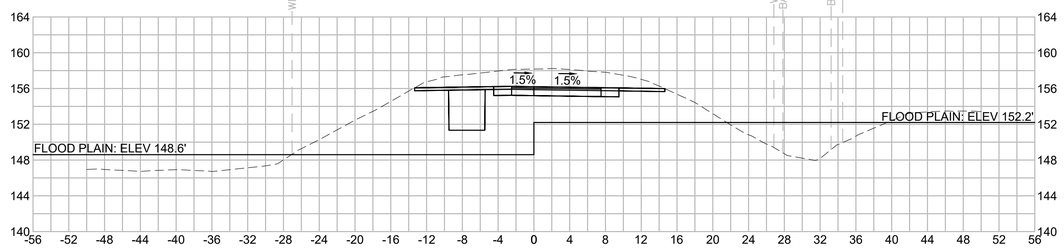
FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

539+00



FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

540+00



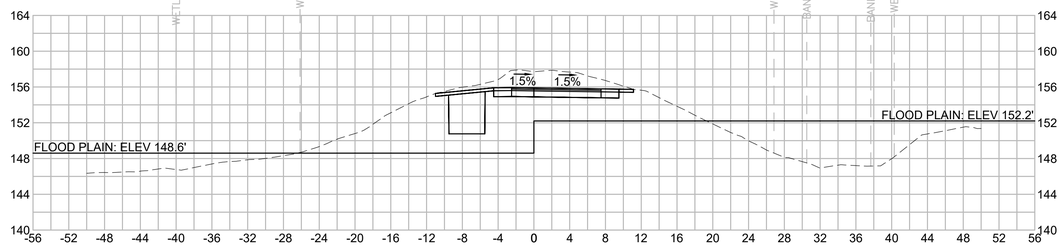
FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

538+50



FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

539+50



8 0 8 16
SCALE IN FEET

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101 Walnut St, PO Box 9151
Watertown, MA 02472
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NO.	DESCRIPTION	BY	DATE	APPR.
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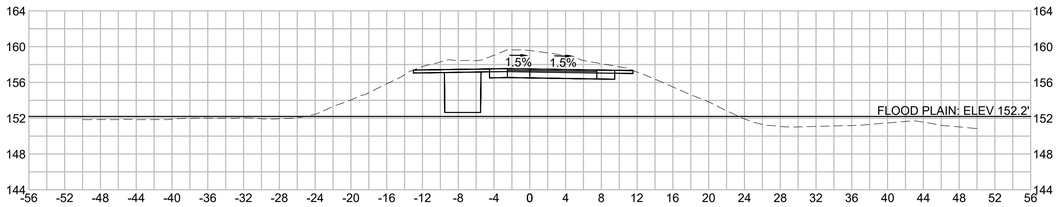
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 298 OF 347

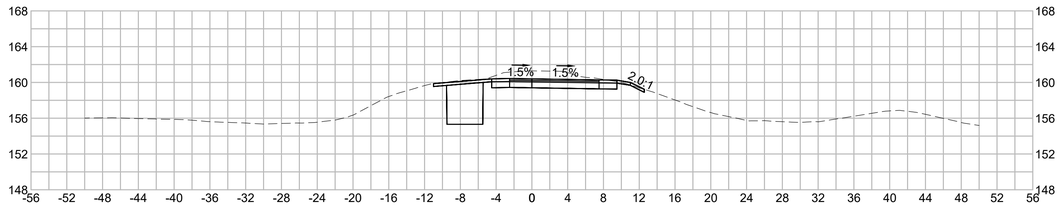
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

542+00

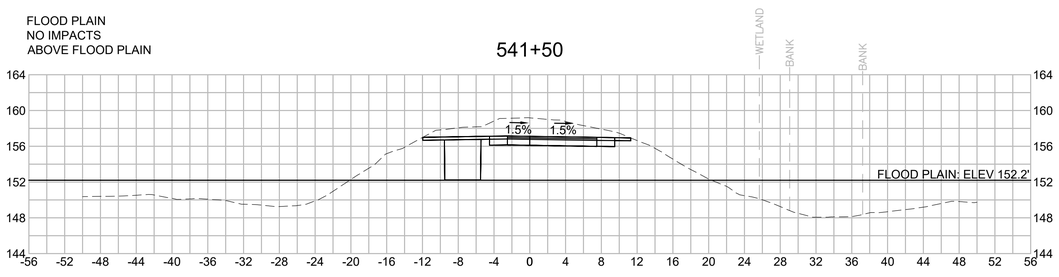


543+50

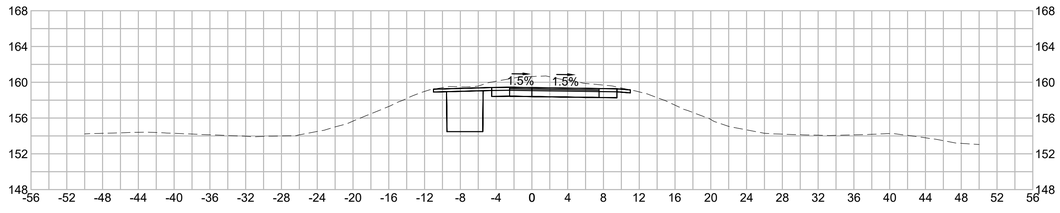


FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

541+50

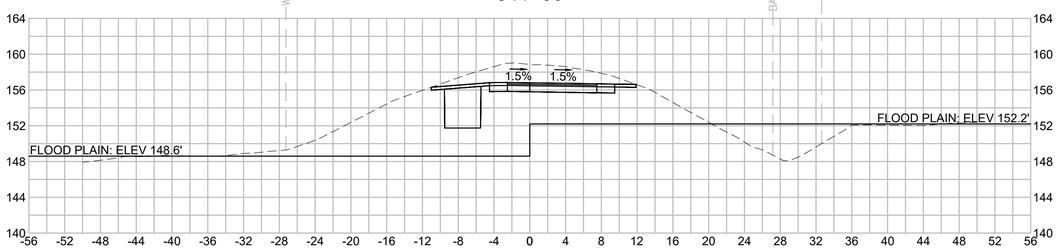


543+00



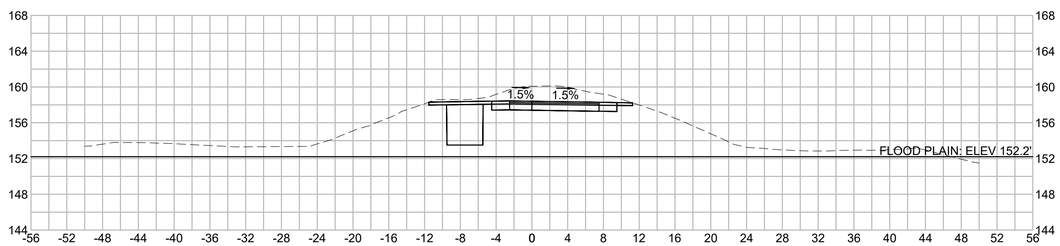
FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

541+00



FLOOD PLAIN
NO IMPACTS
ABOVE FLOOD PLAIN

542+50



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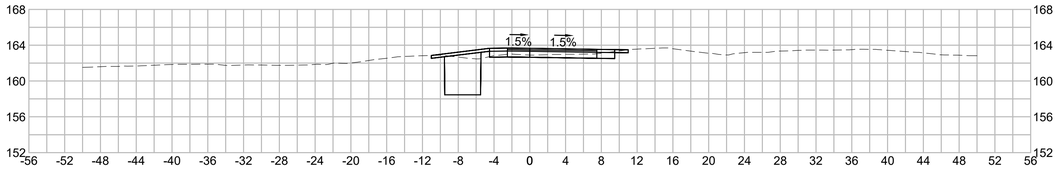
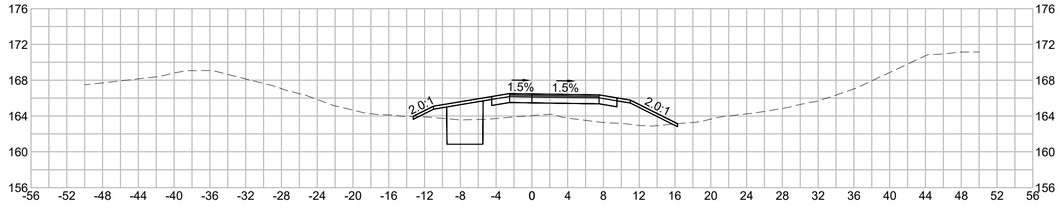
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 299 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

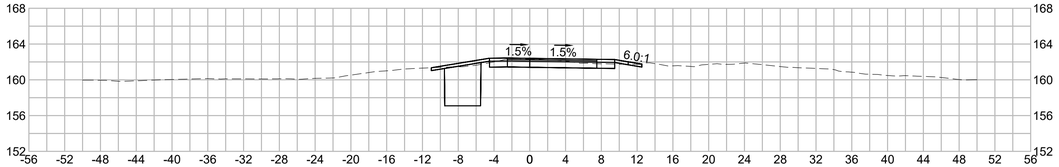
545+00



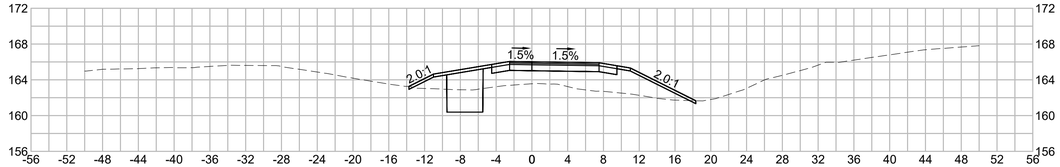
546+50



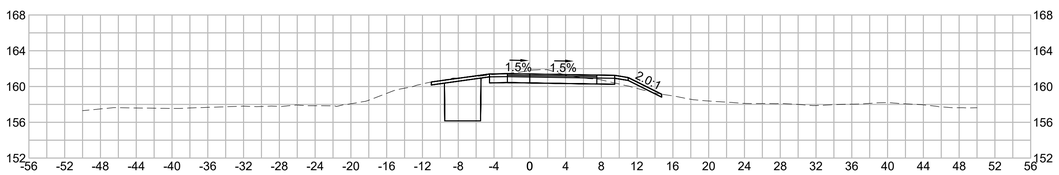
544+50



546+00



544+00



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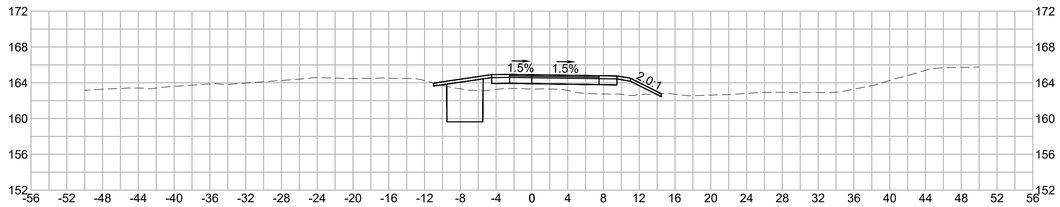

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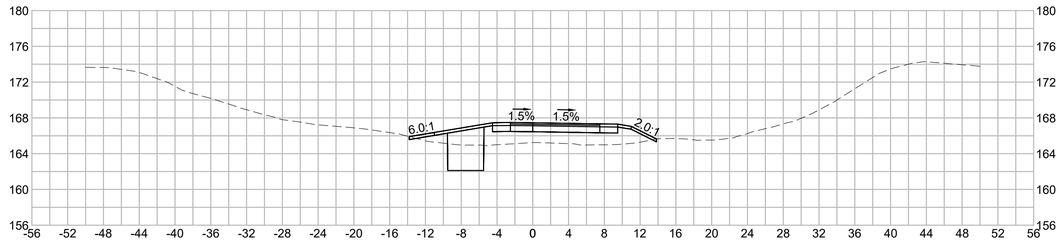
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 300 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

548+00



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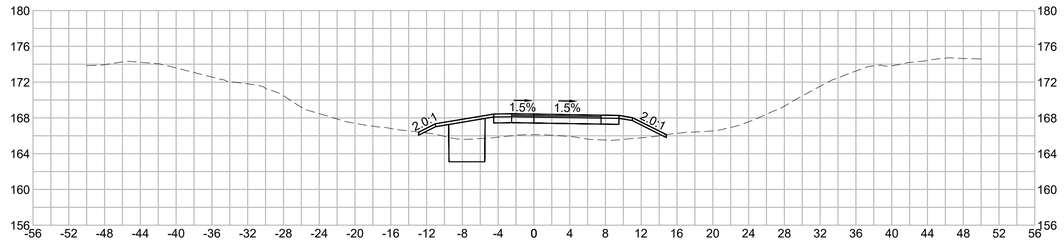

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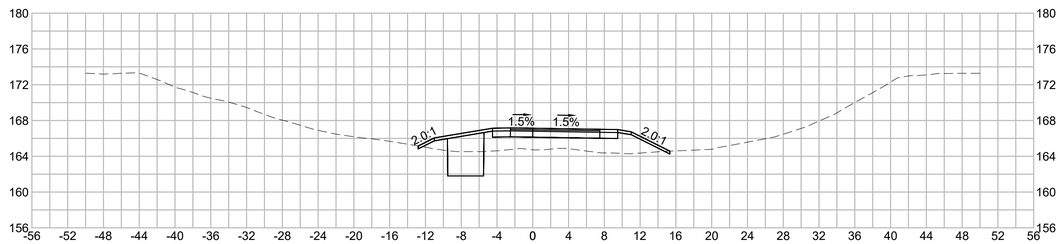

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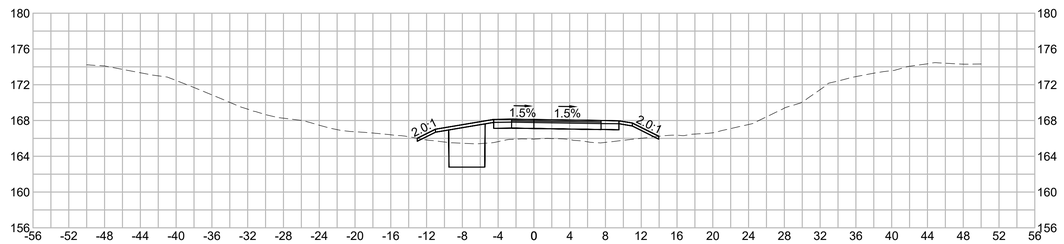

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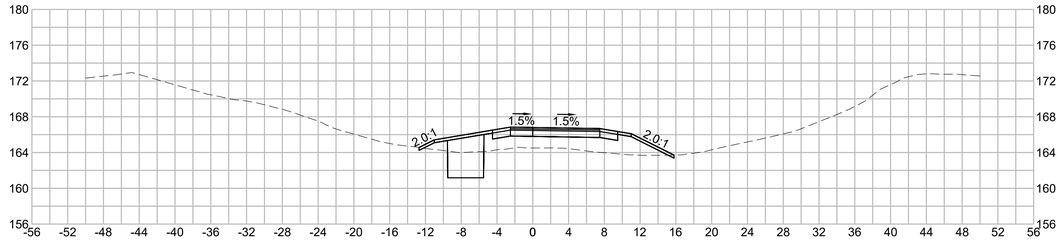

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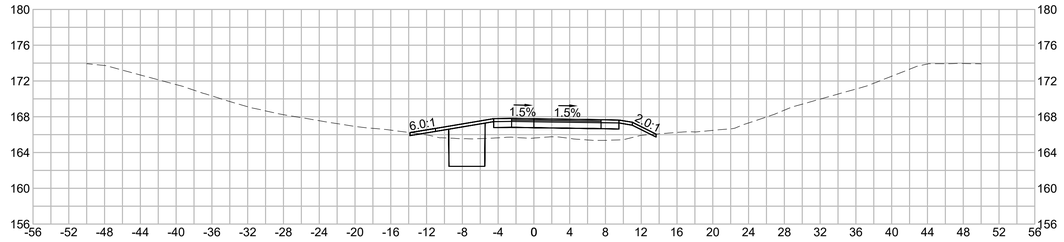

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

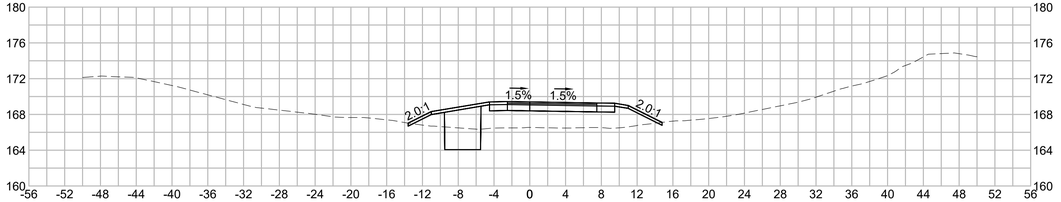
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

PLAN 301OF347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

551+00



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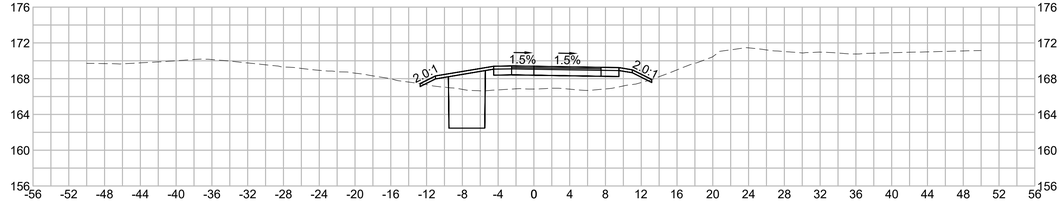

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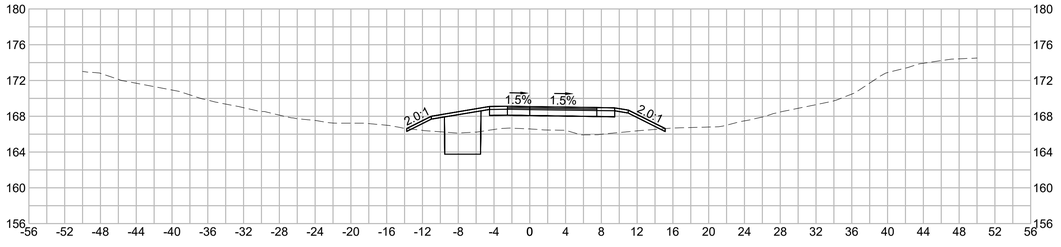

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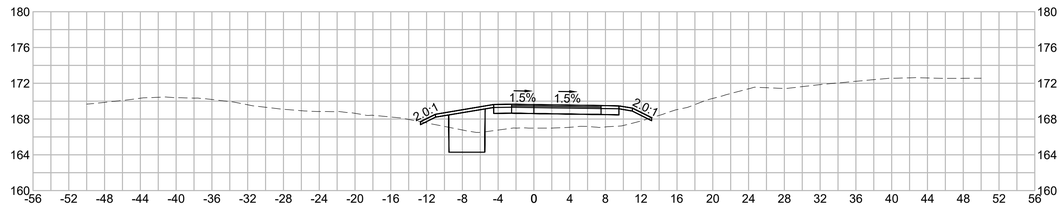

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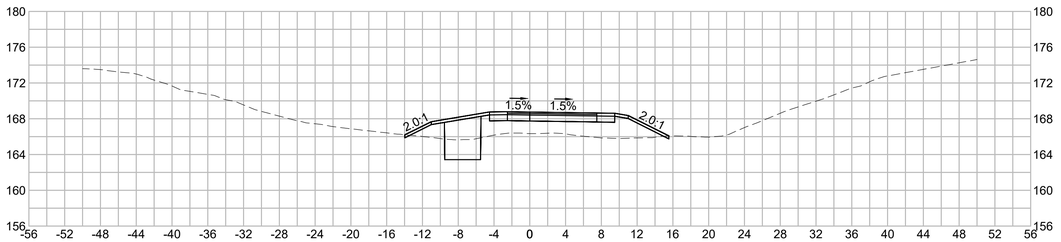

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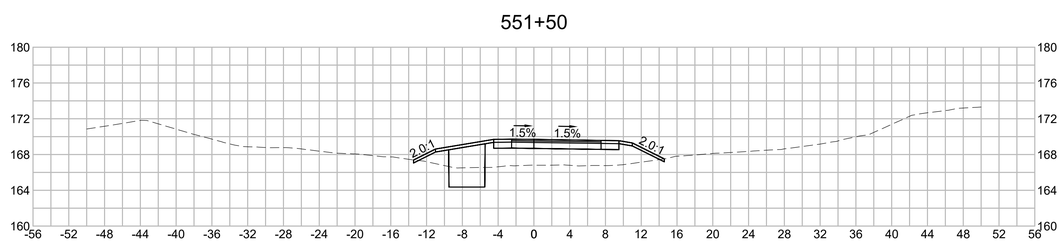

8 0 8 16
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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

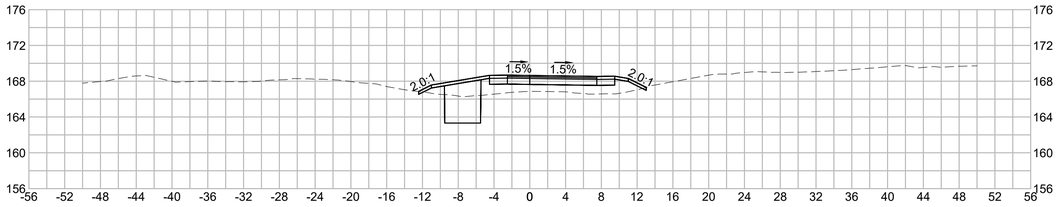
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

PLAN 302 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

554+00



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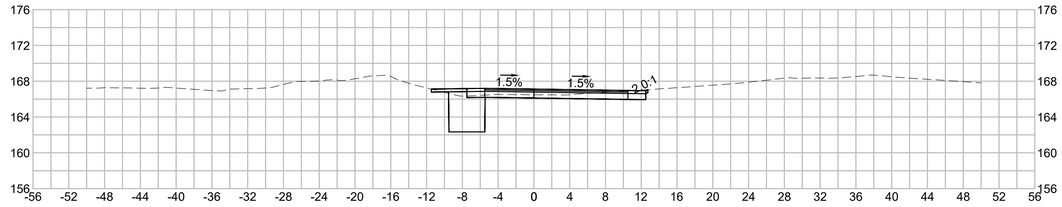

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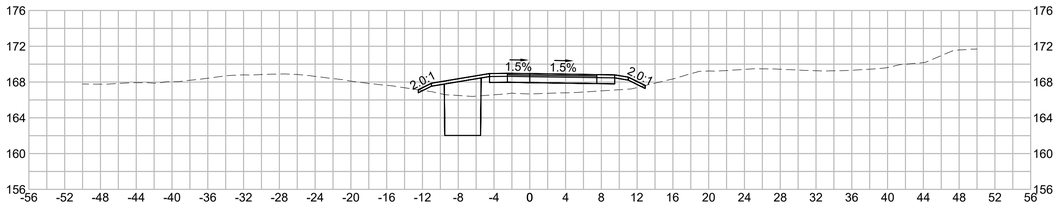

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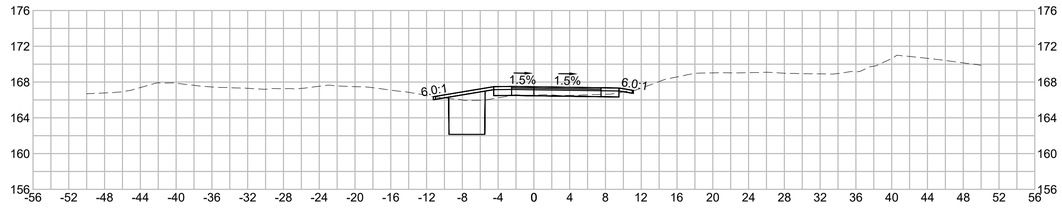

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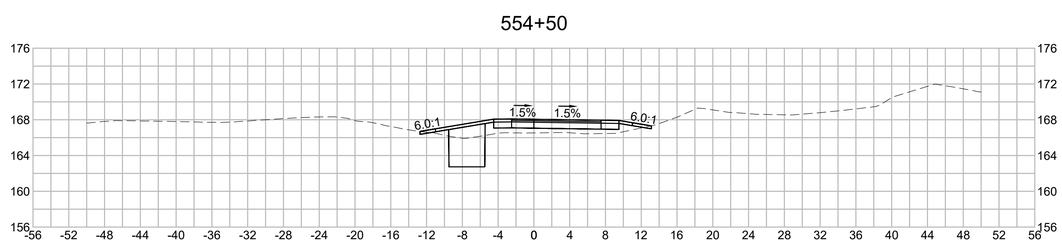
554+50



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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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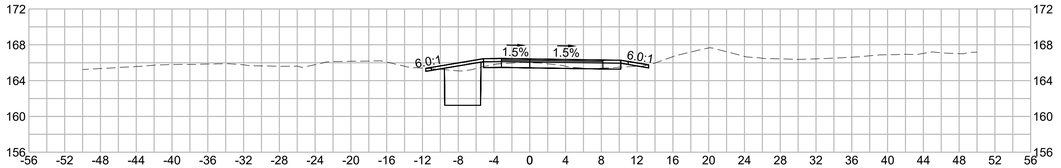
1"=8'	OCT 2020	MS	SK	MES	.	.

556+50



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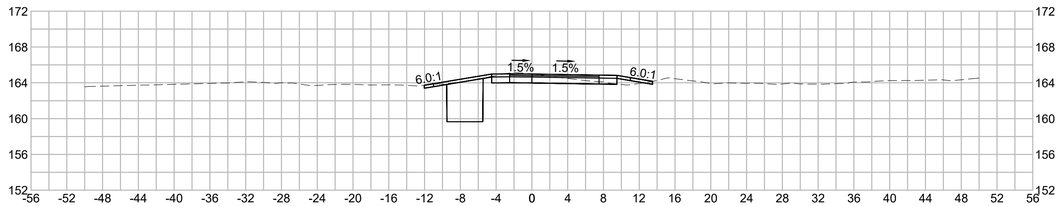

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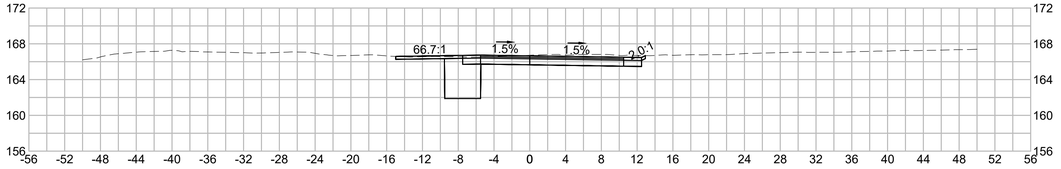
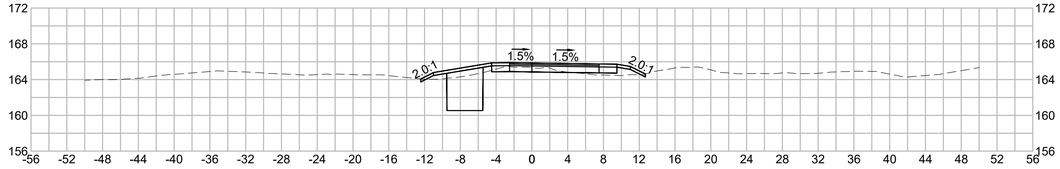


557+50



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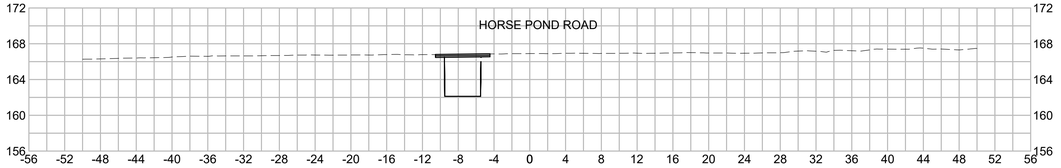

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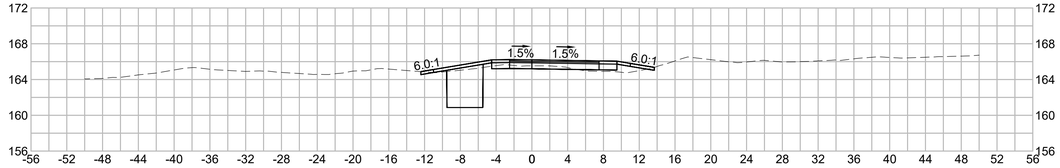

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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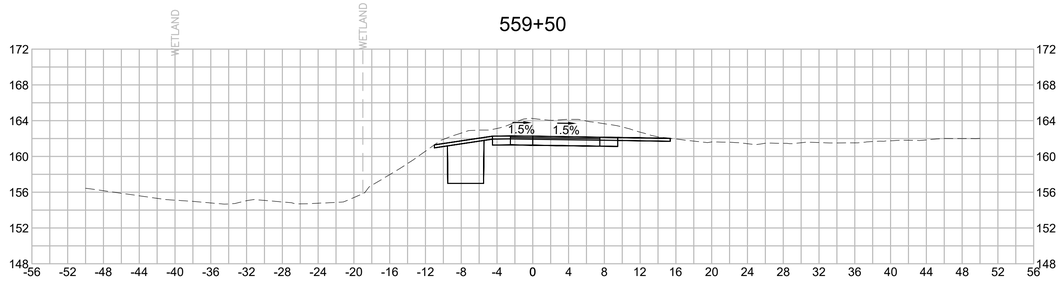
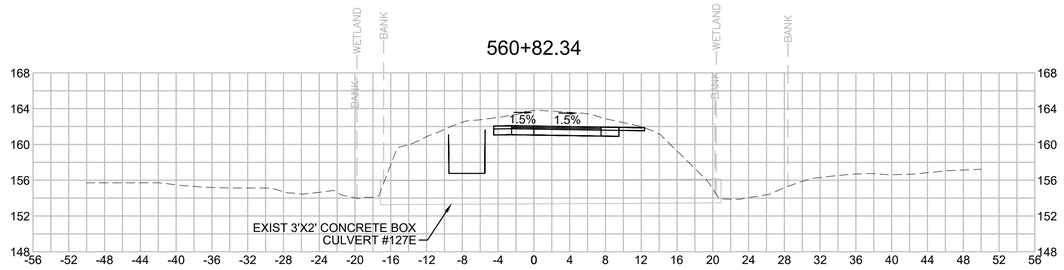
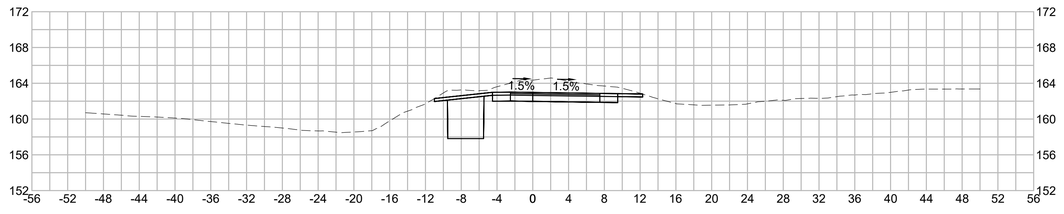
559+50



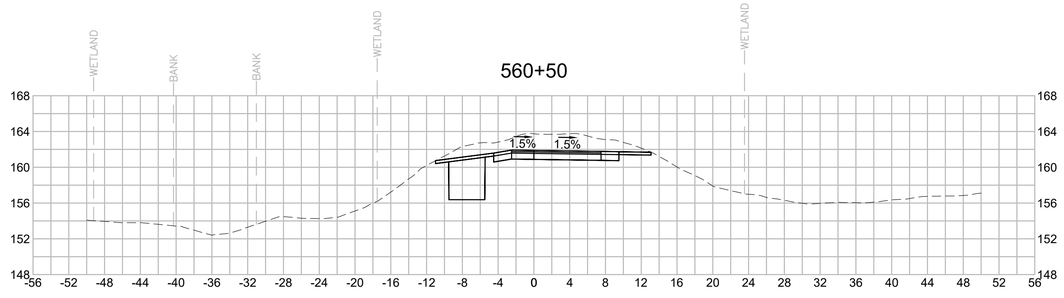
560+82.34



559+00



560+50



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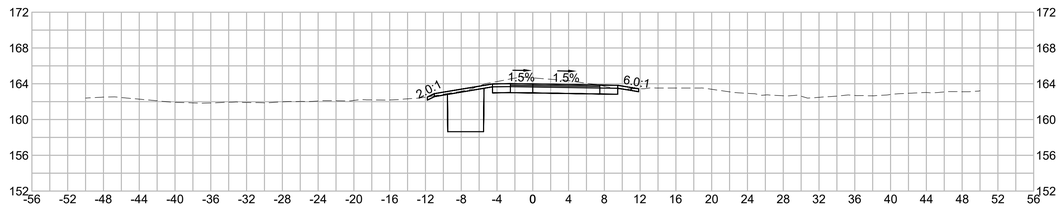

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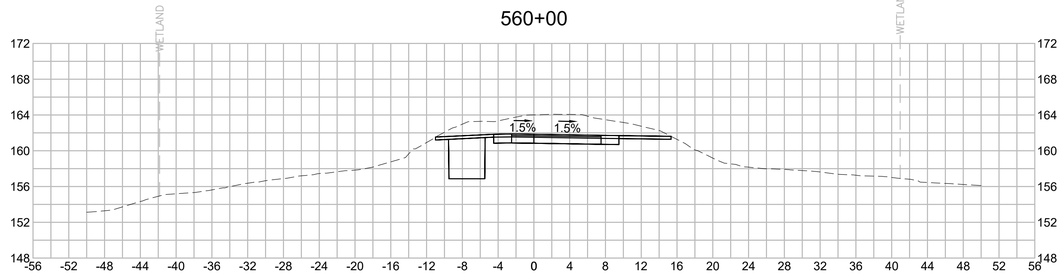

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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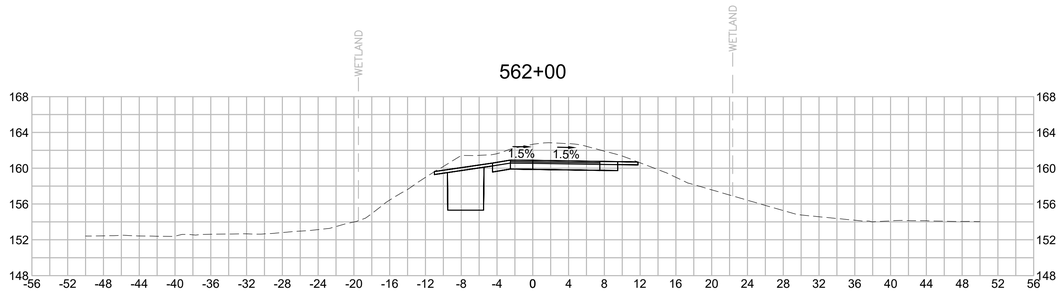
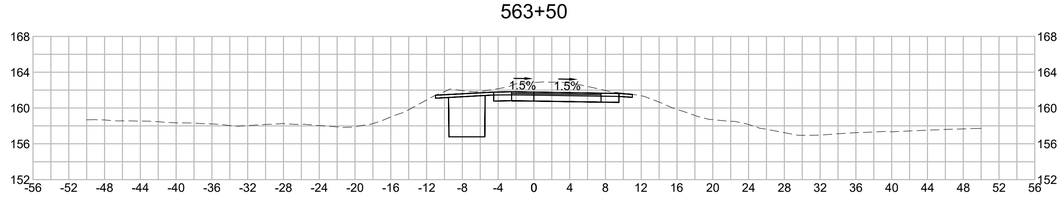
1"=8'	OCT 2020	MS	SK	MES	.	.

562+00



563+50



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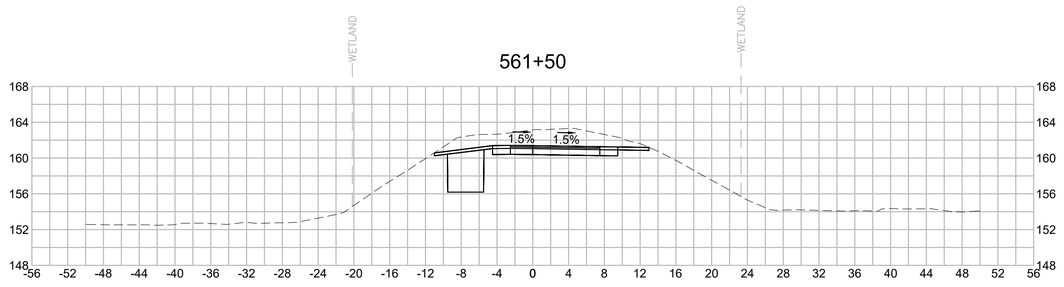

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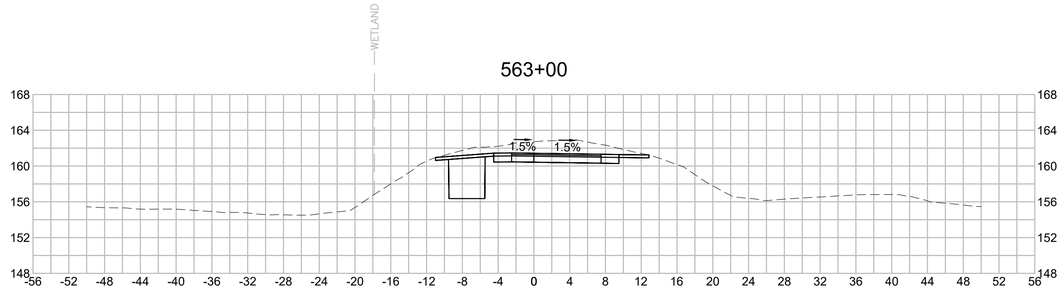

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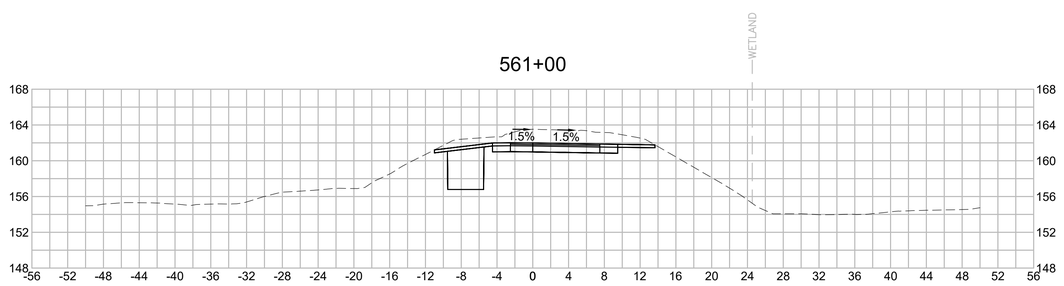

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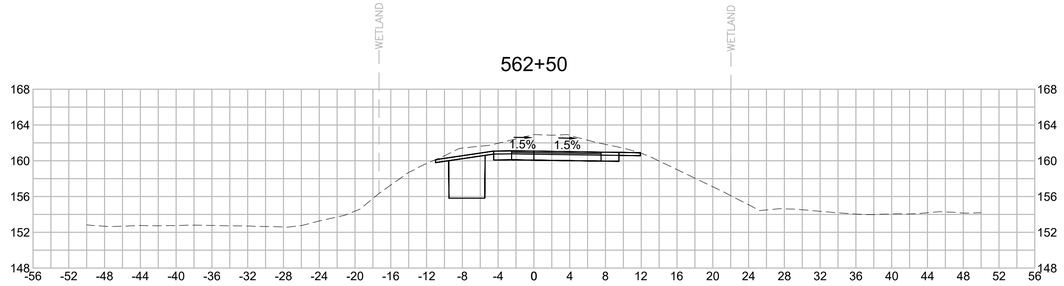

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

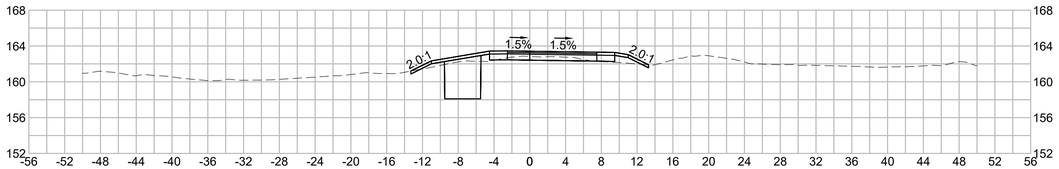
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

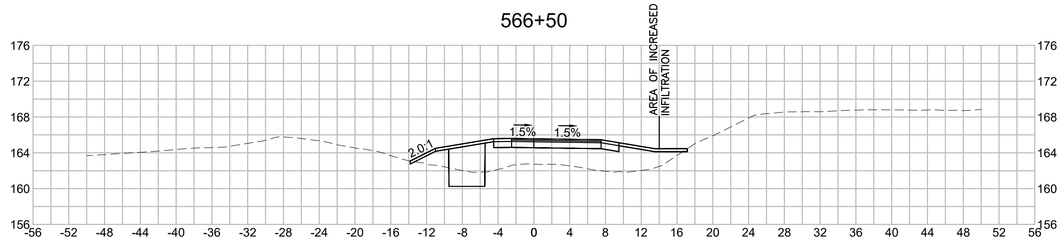
PLAN 306 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

565+00



566+50



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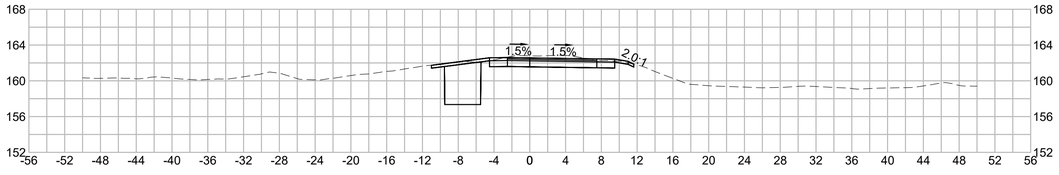

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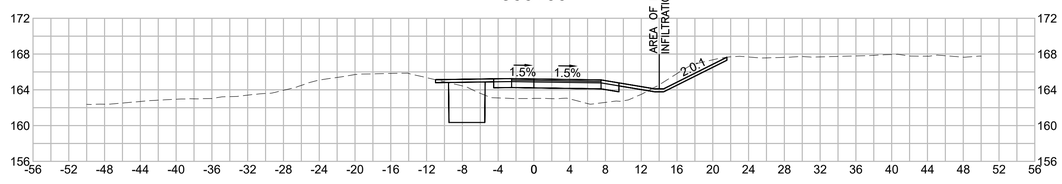

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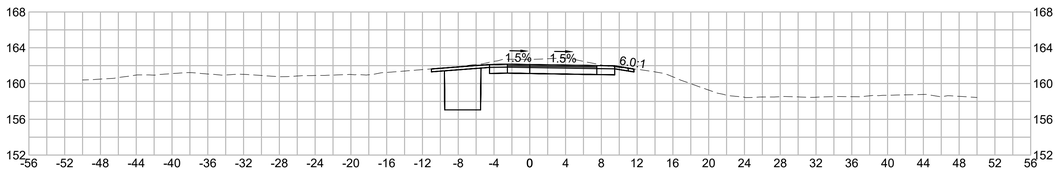

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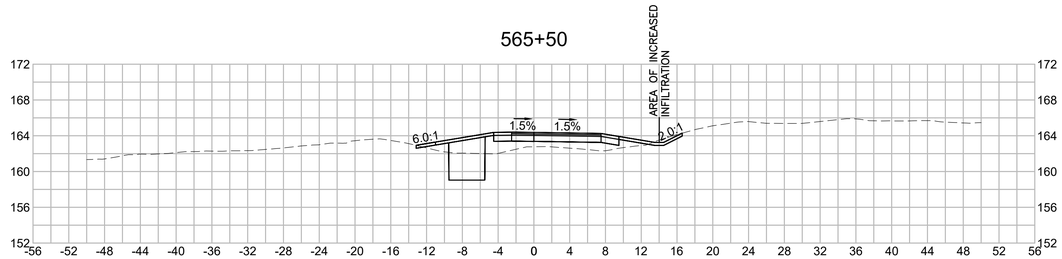

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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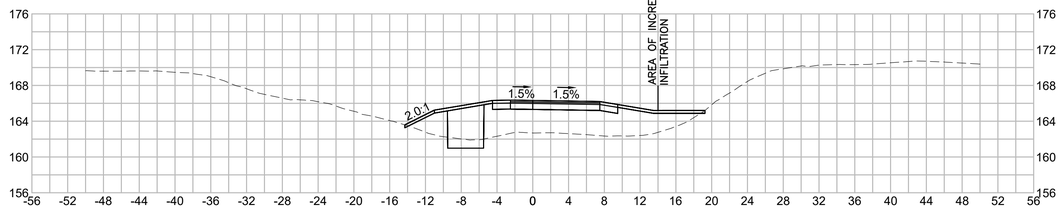
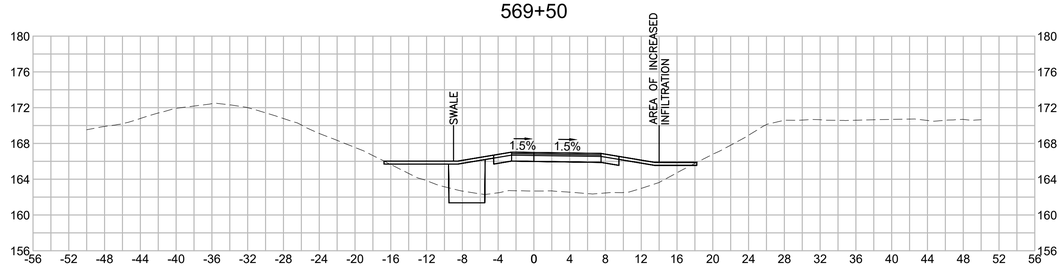
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

568+00



569+50



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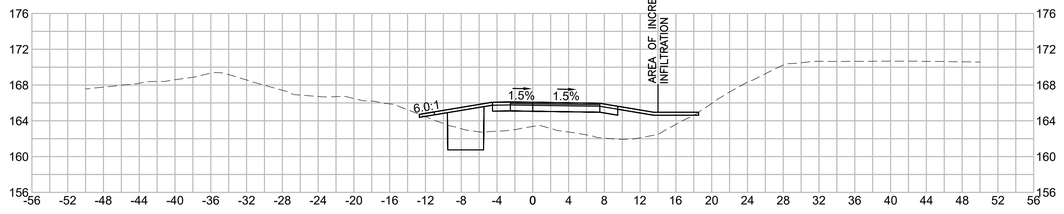

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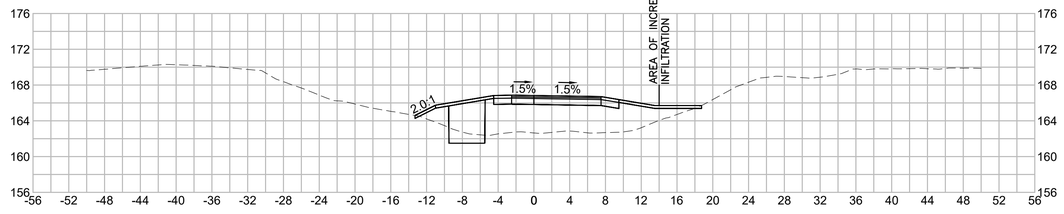

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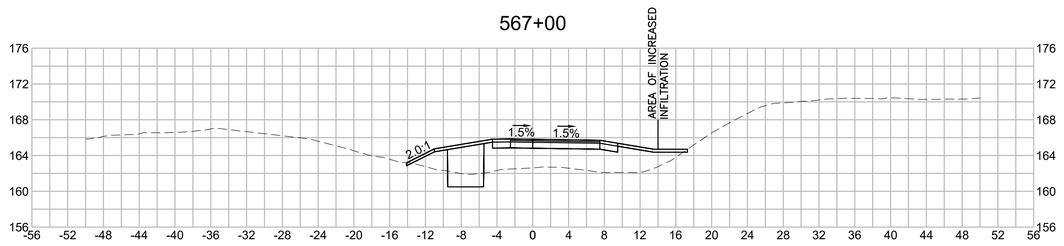

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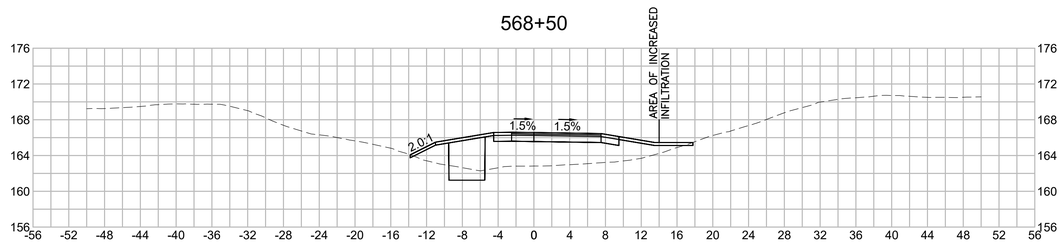

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

PLAN 308 OF 347

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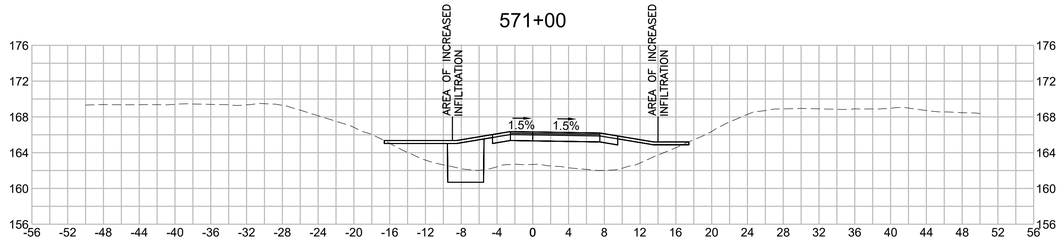
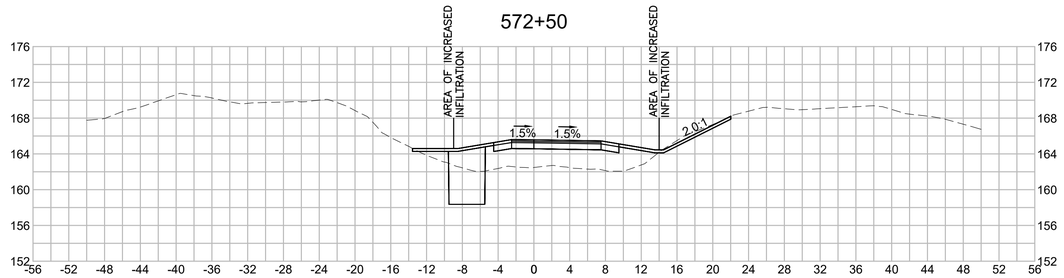
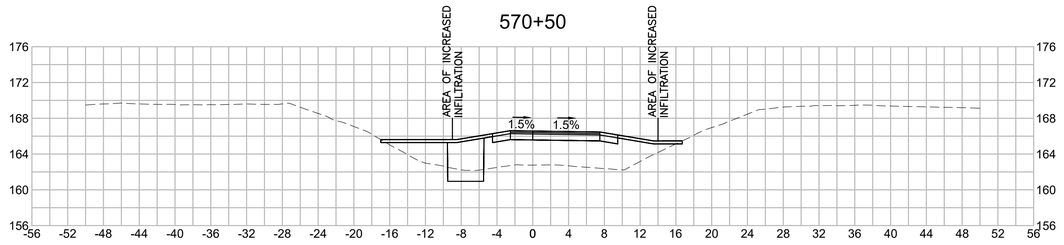
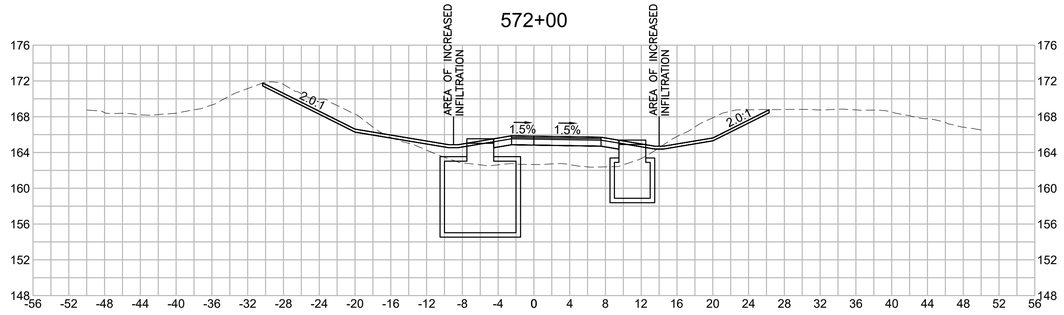
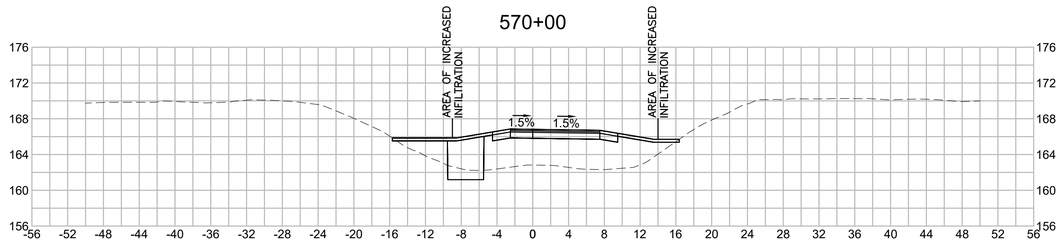
1"=8'	OCT 2020	MS	SK	MES	.	.

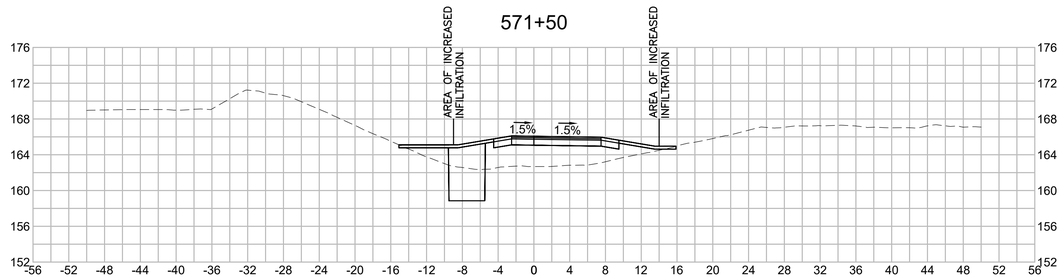












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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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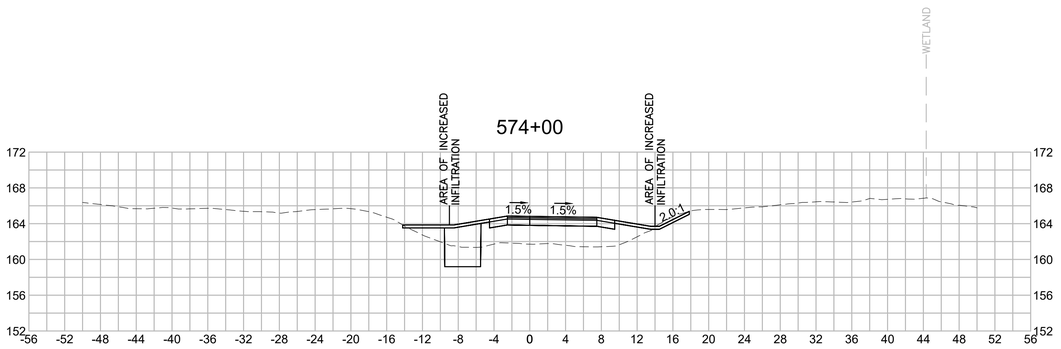
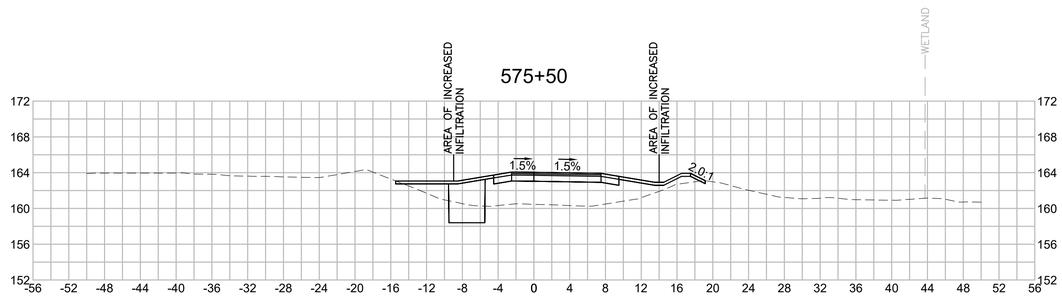
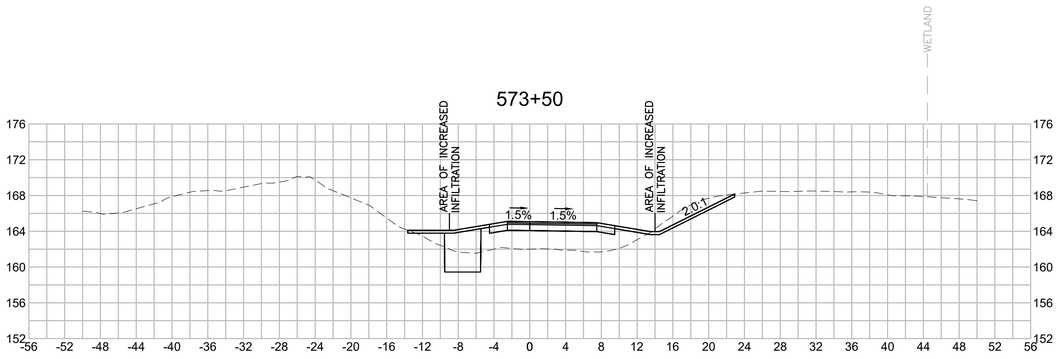
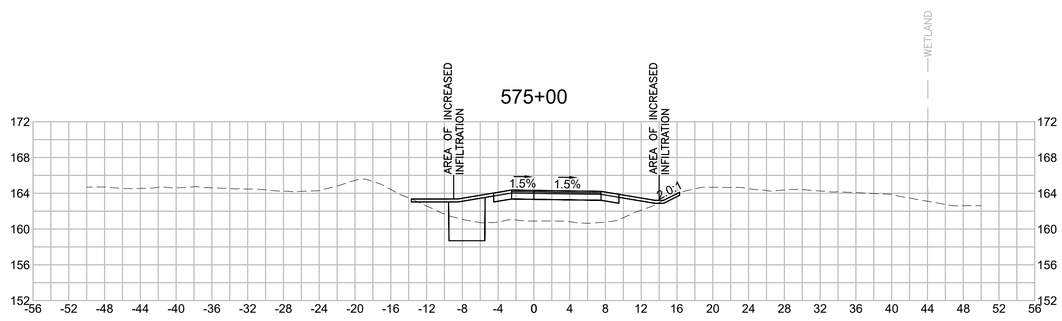
PLAN 309 OF 347

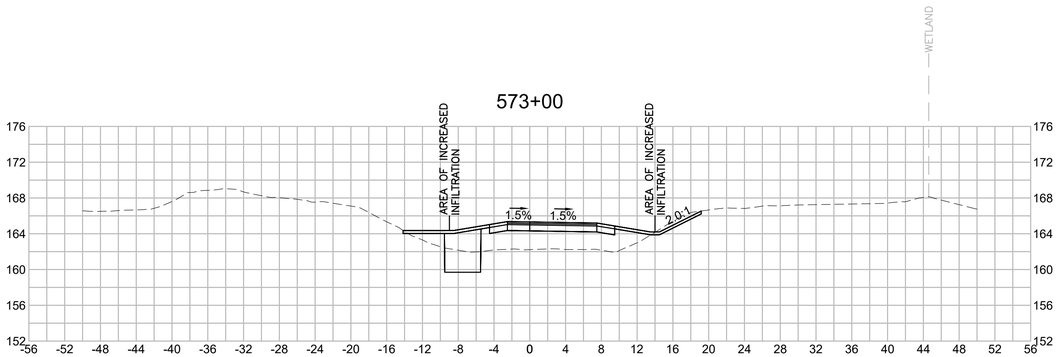
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

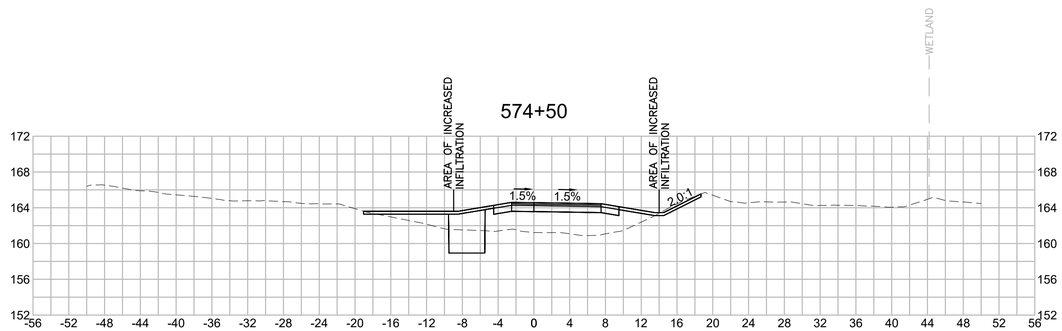












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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

PLAN 3100F347

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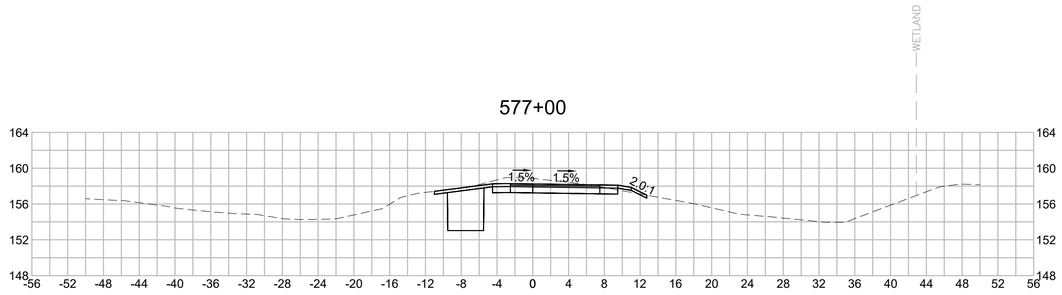
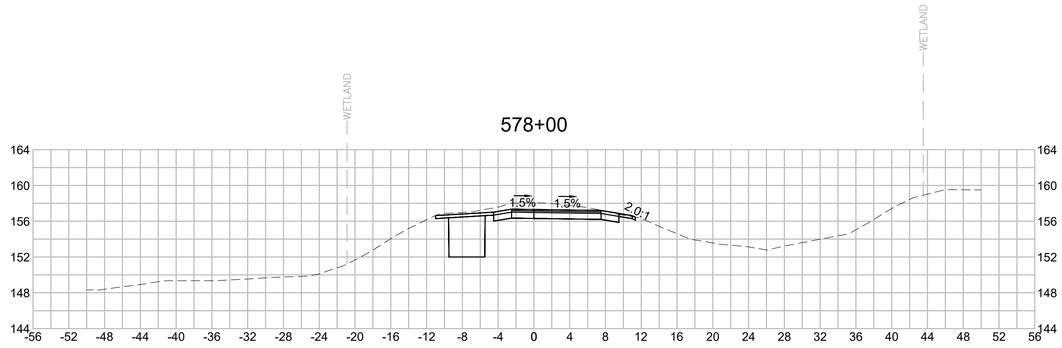
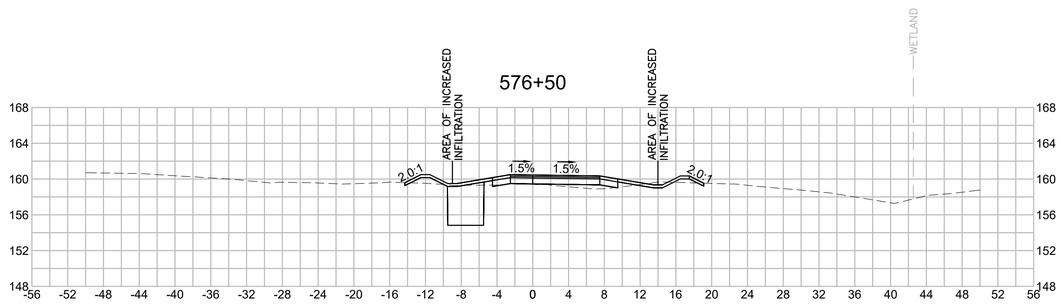
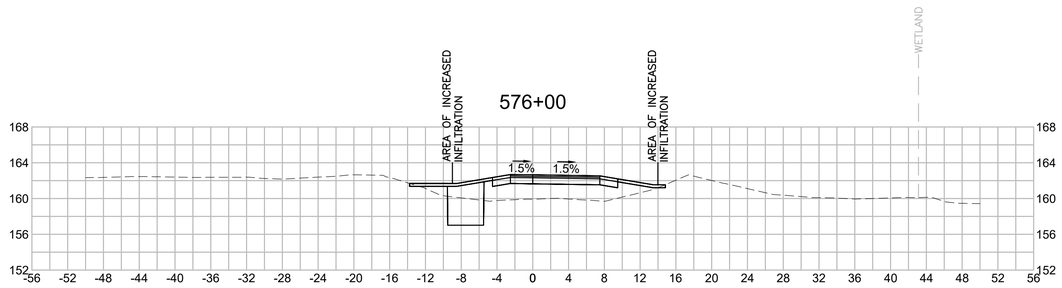
1"=8'	OCT 2020	MS	SK	MES	.	.

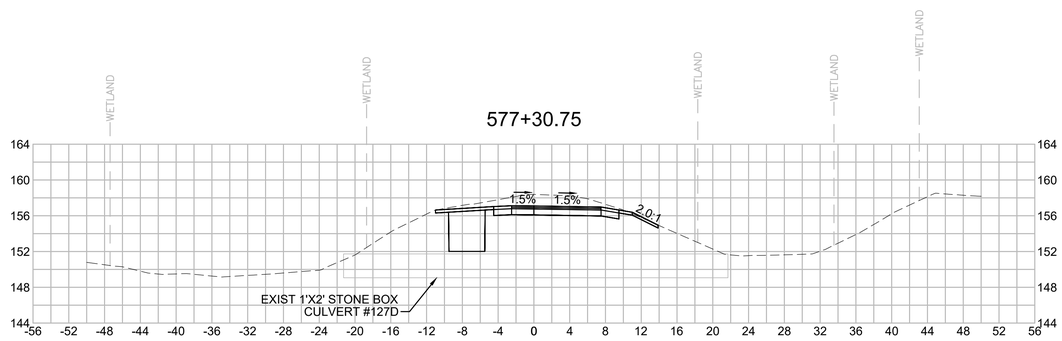












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CROSS SECTIONS

PLAN 3110F347

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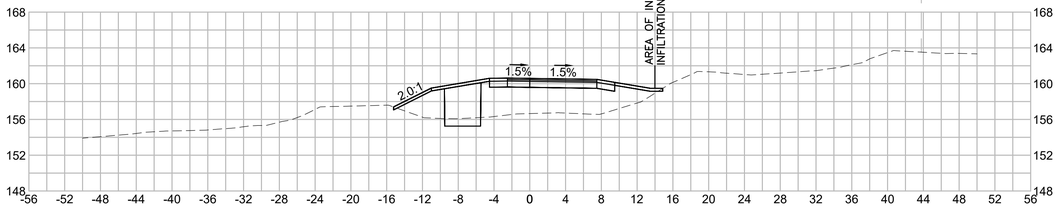
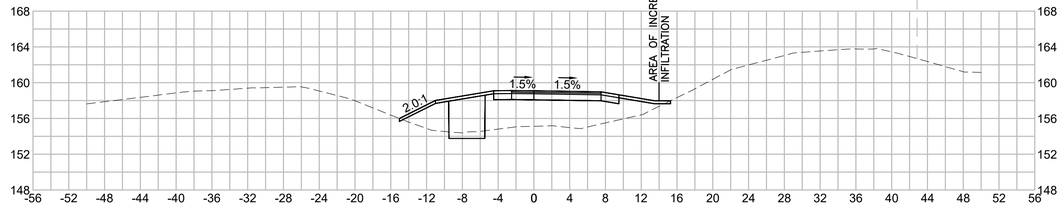
1"=8'	OCT 2020	MS	SK	MES	.	.

579+50



581+00



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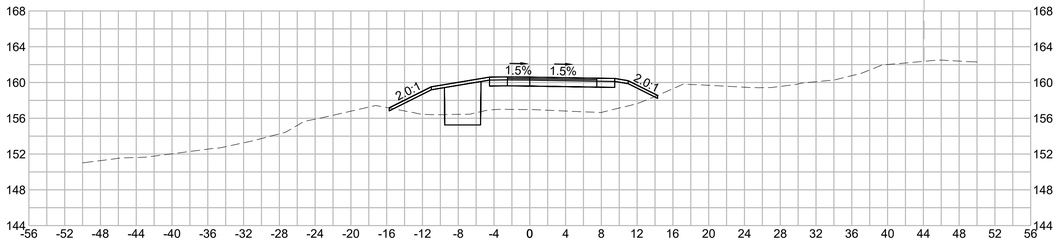

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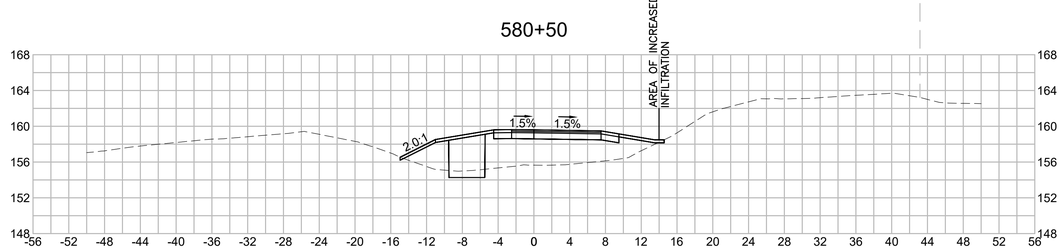

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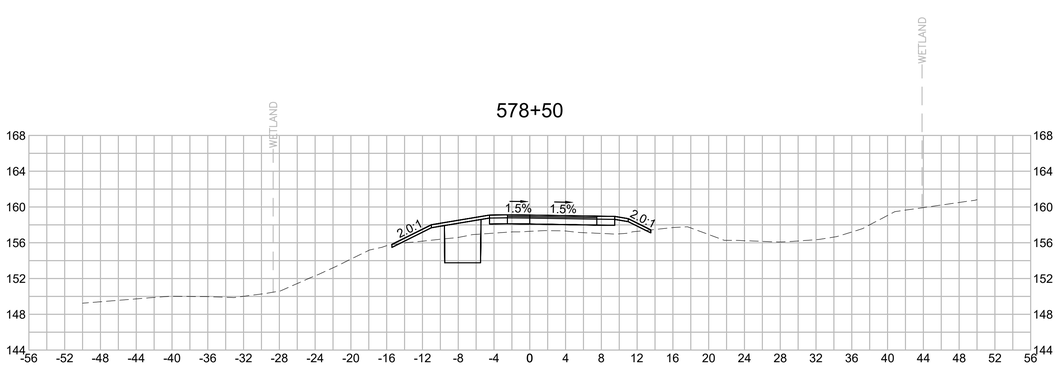

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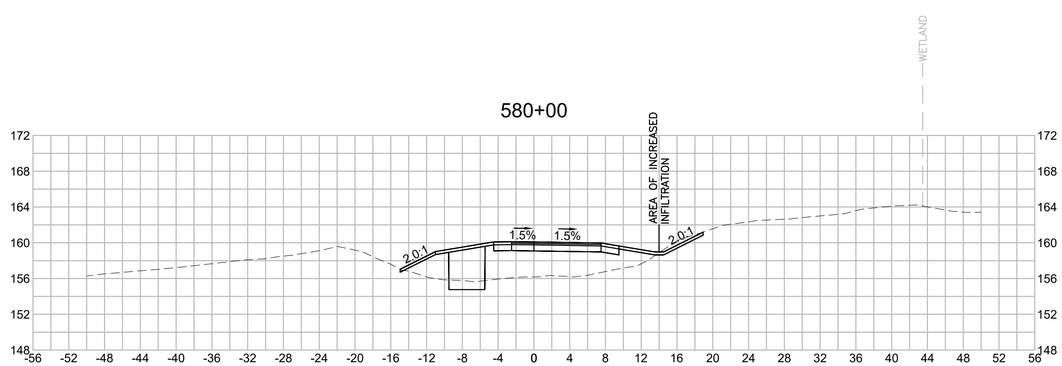

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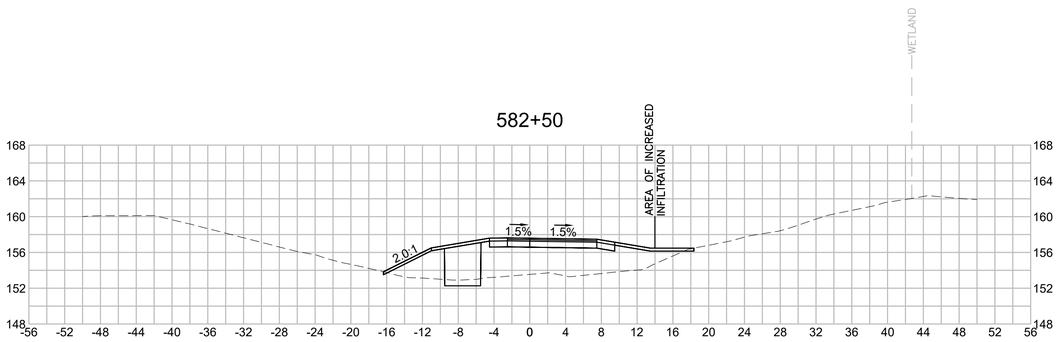

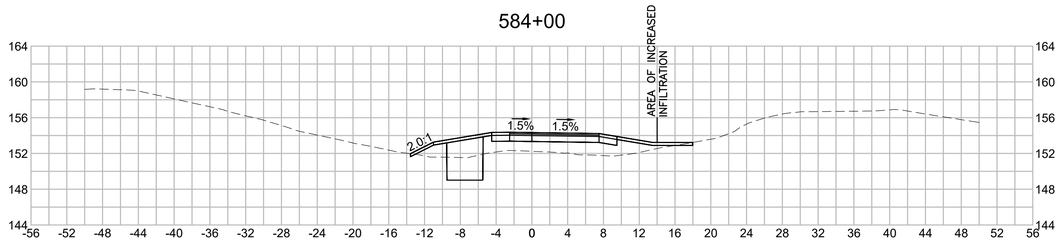

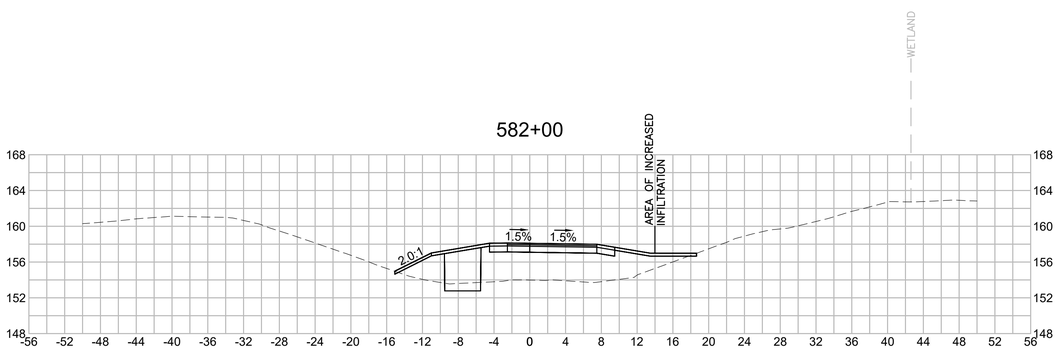

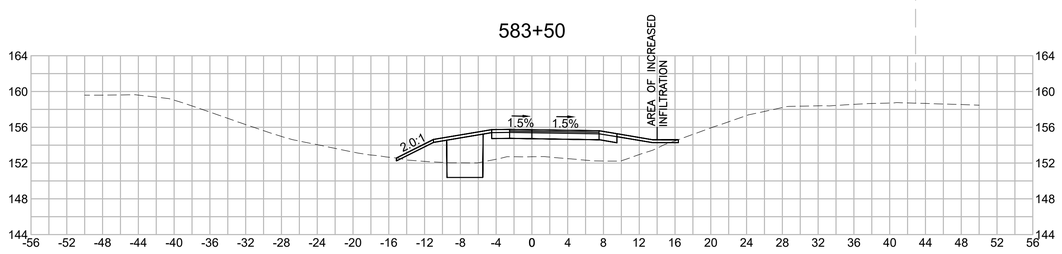

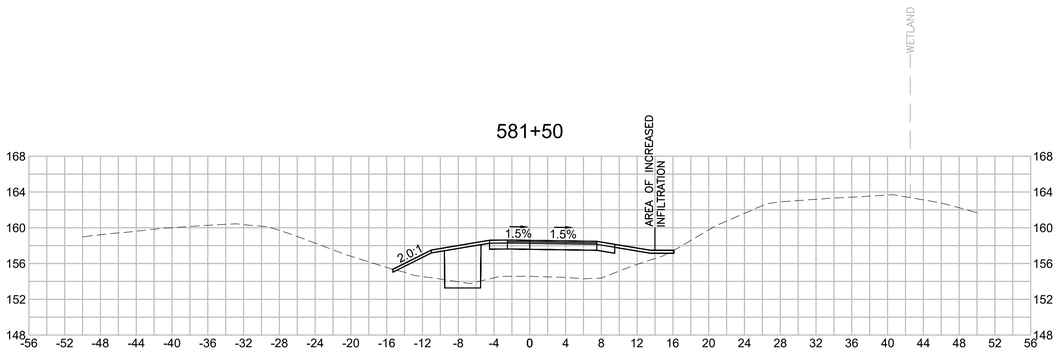

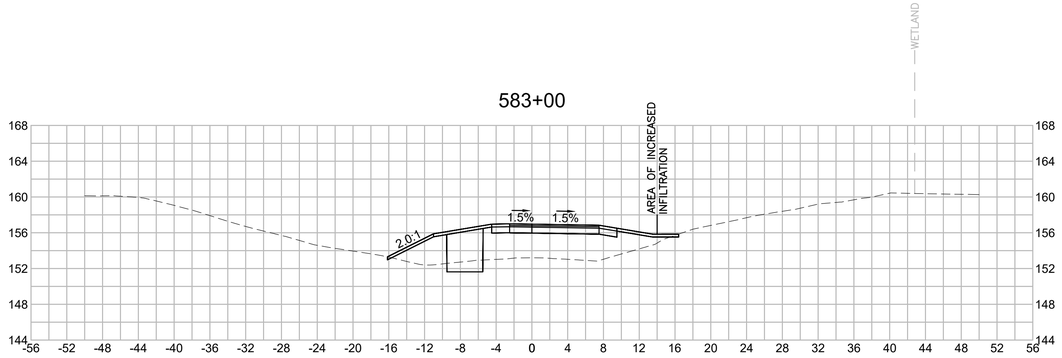

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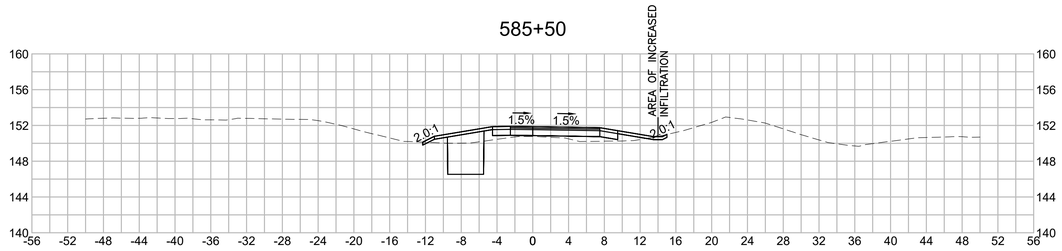
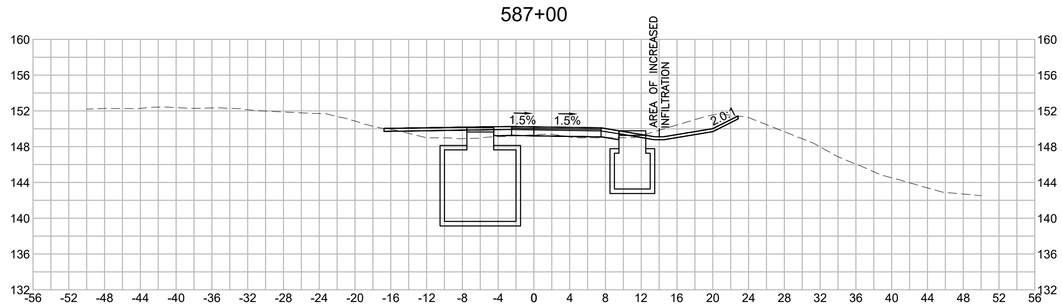
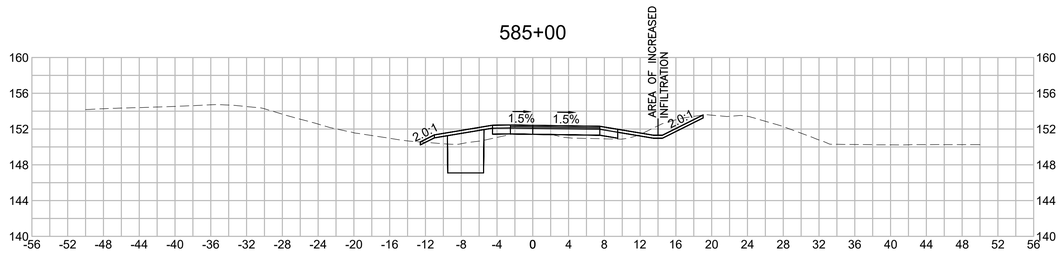
CROSS SECTIONS

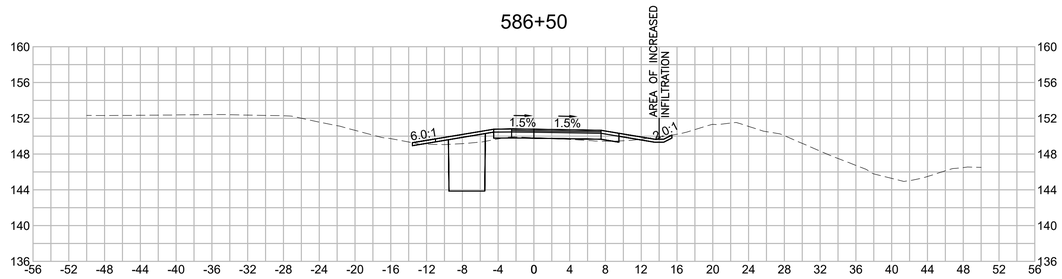
PLAN 313OF347

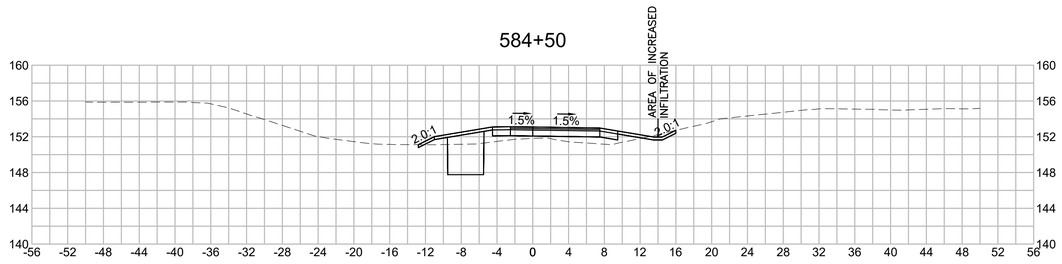
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

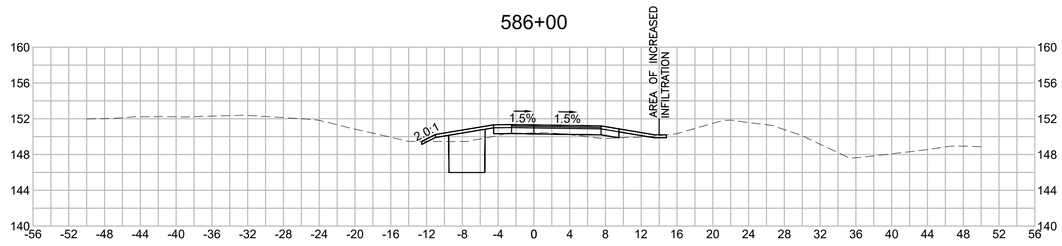












8 0 8 16
SCALE IN FEET

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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

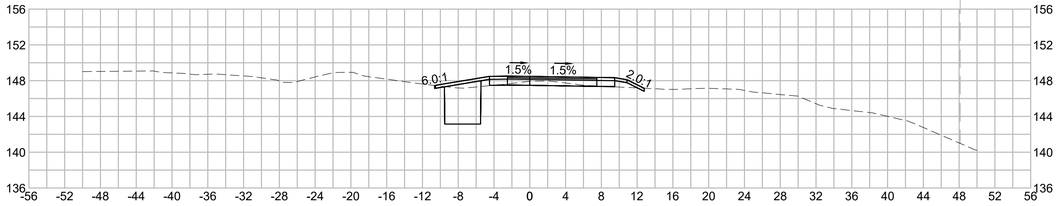
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

PLAN 314 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

588+50



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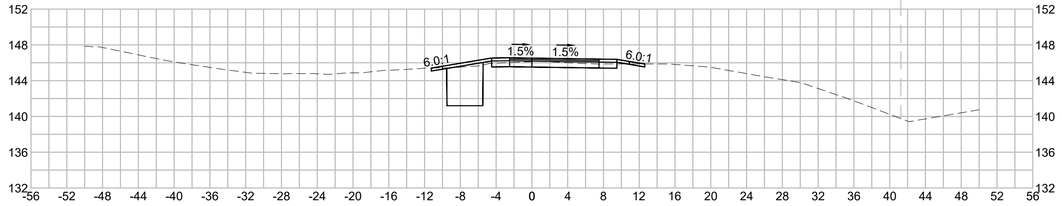

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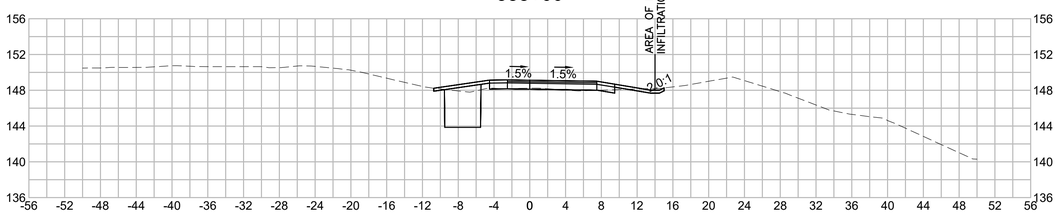

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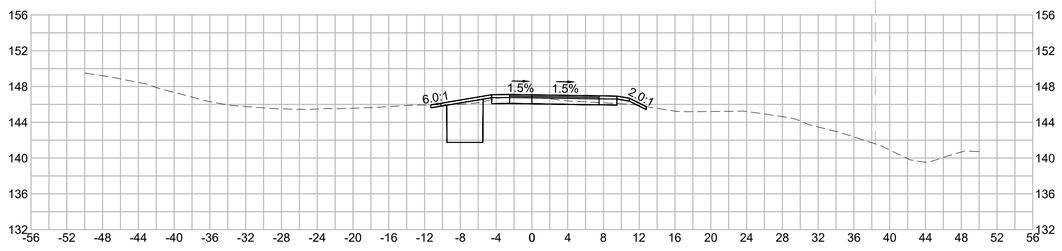

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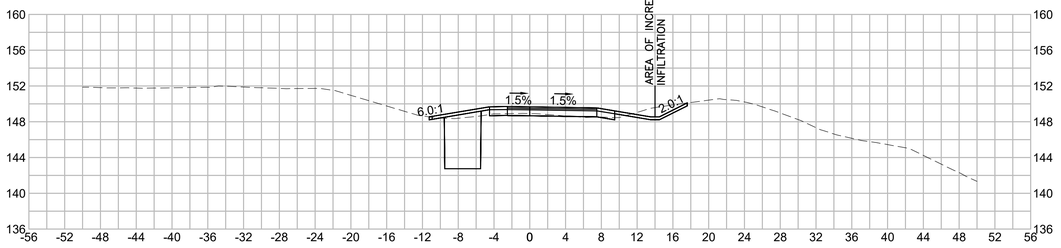

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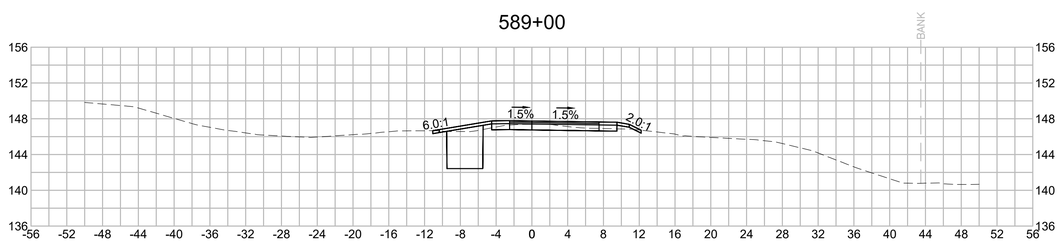

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

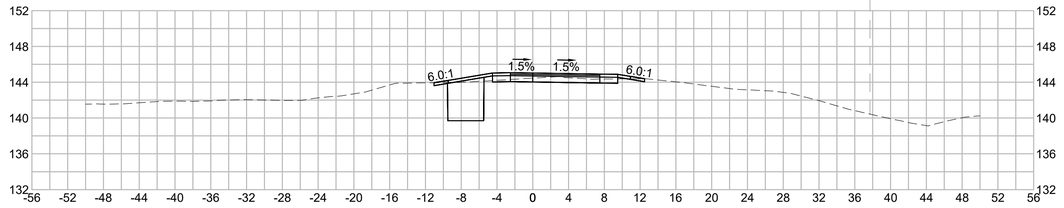
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

PLAN 315OF347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

591+50



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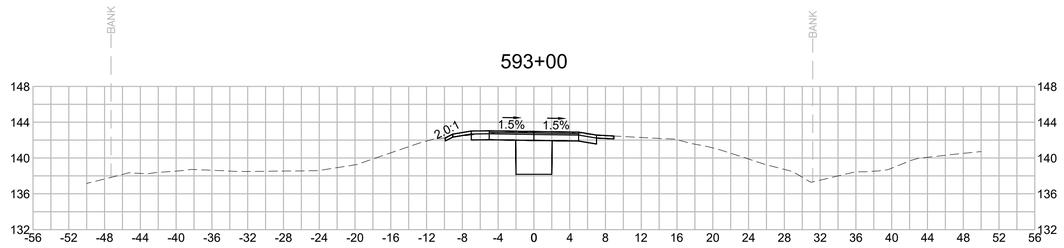

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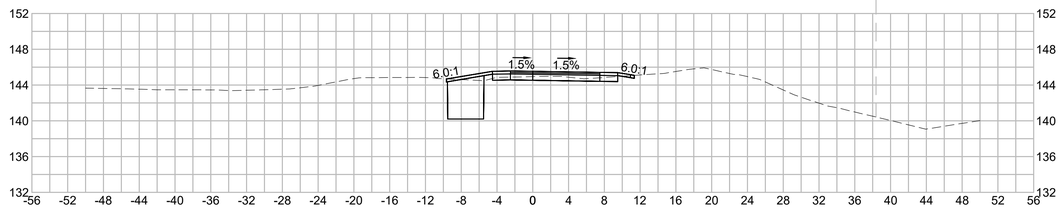

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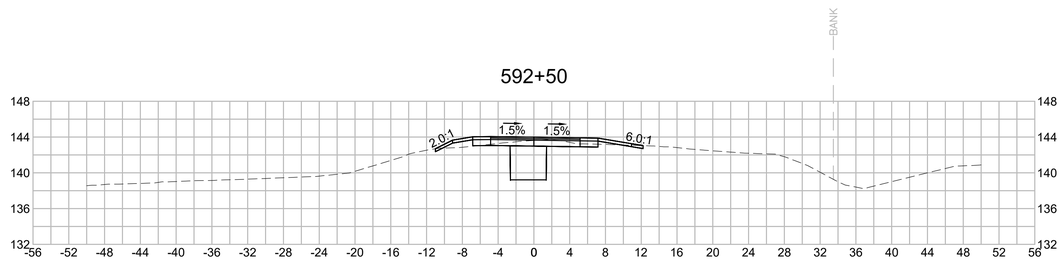

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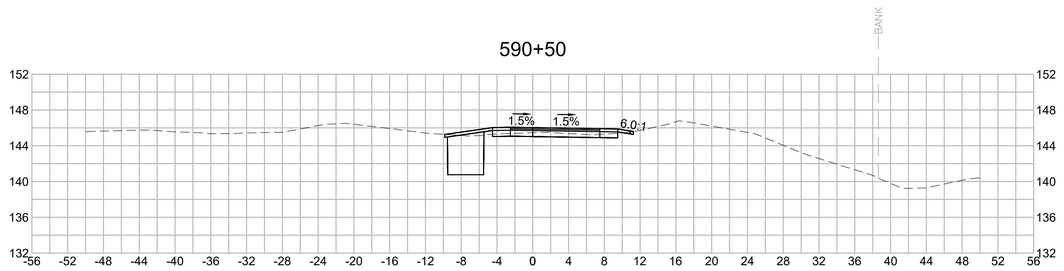

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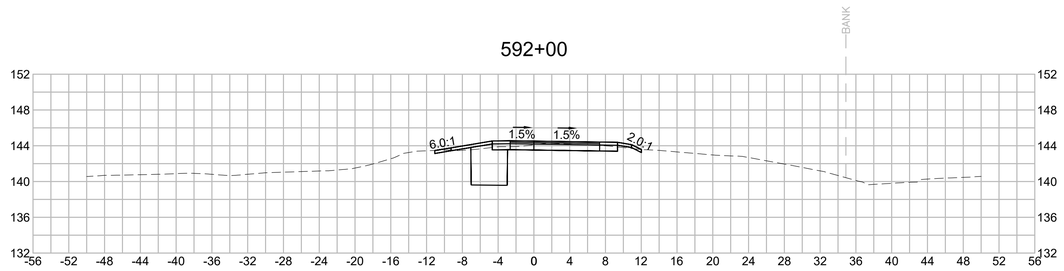

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

PLAN 316 OF 347

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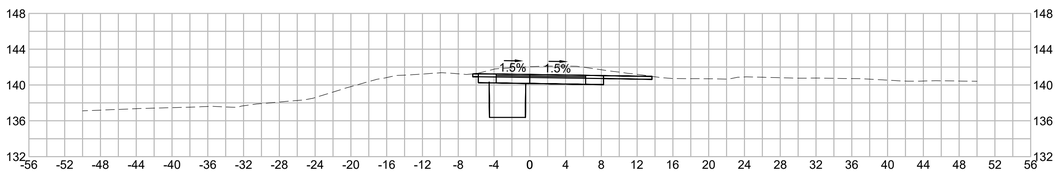
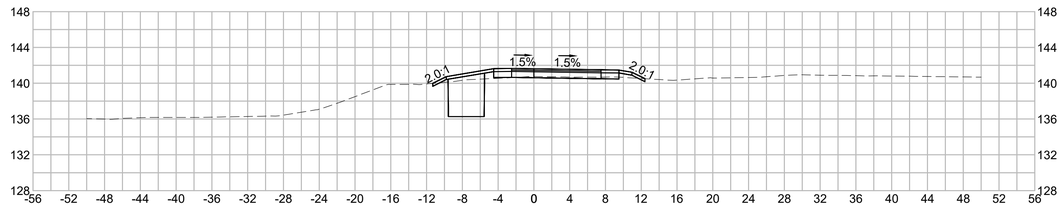
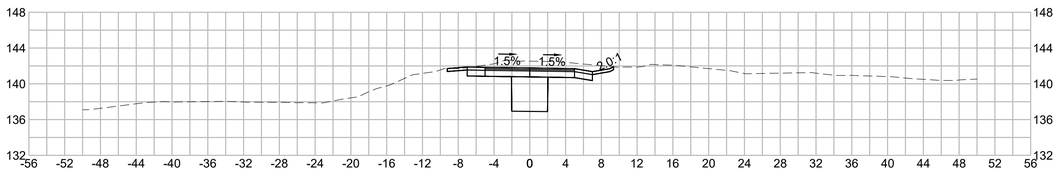
594+00



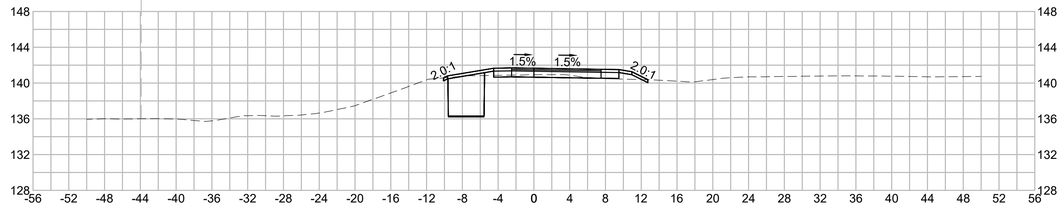
595+50



593+50



595+00



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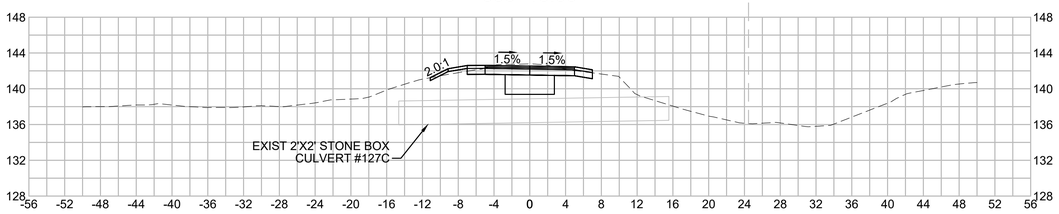

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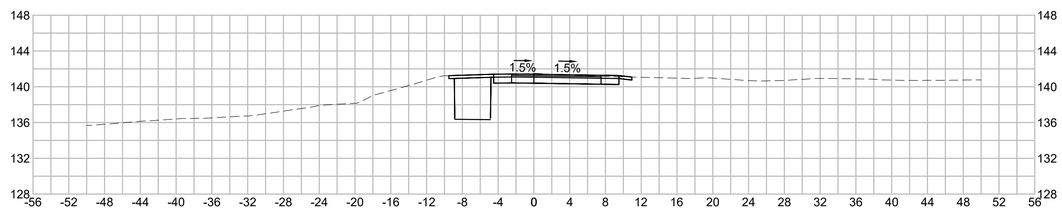

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

PLAN 317 OF 347

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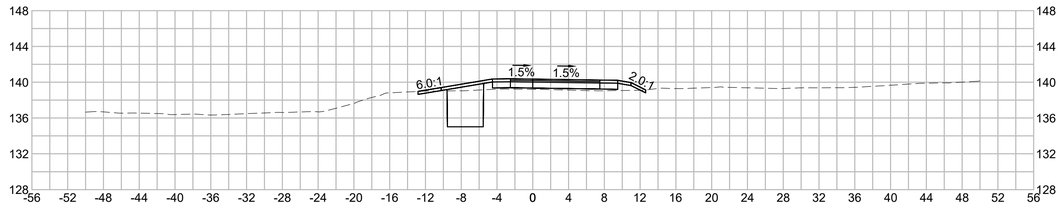
1"=8'	OCT 2020	MS	SK	MES	.	.

597+00



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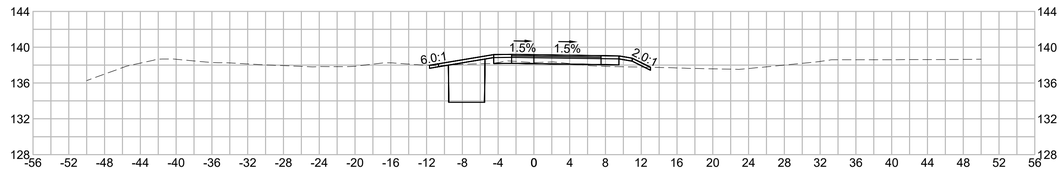

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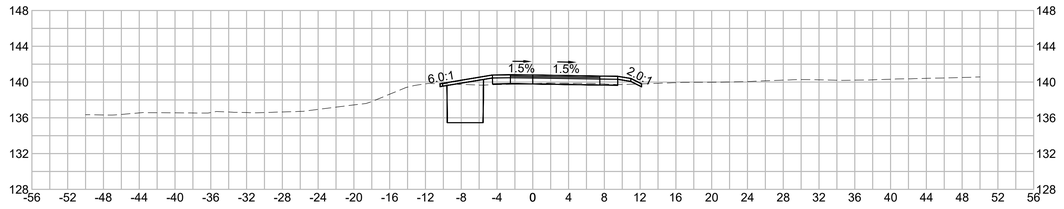

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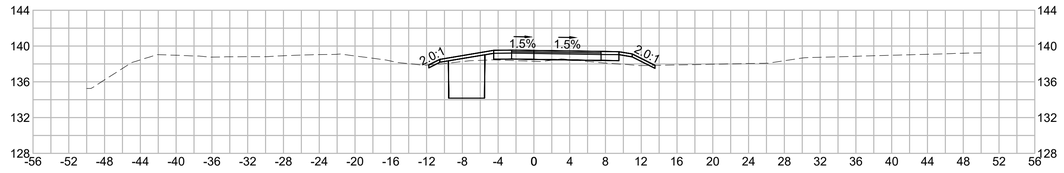

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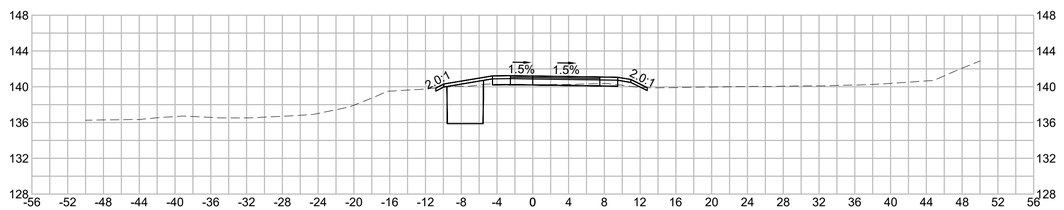

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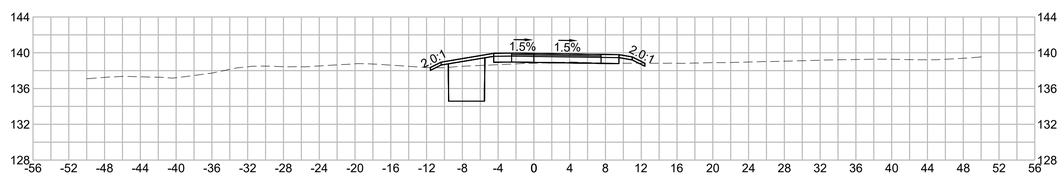

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

PLAN 318 OF 347

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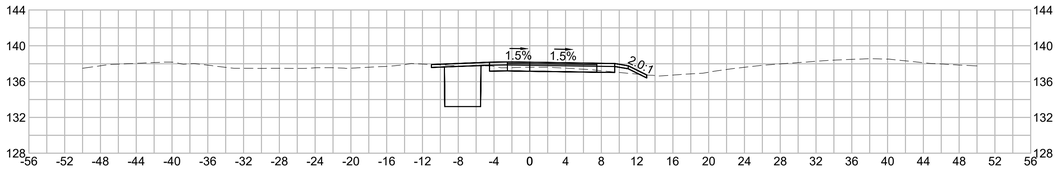
600+00



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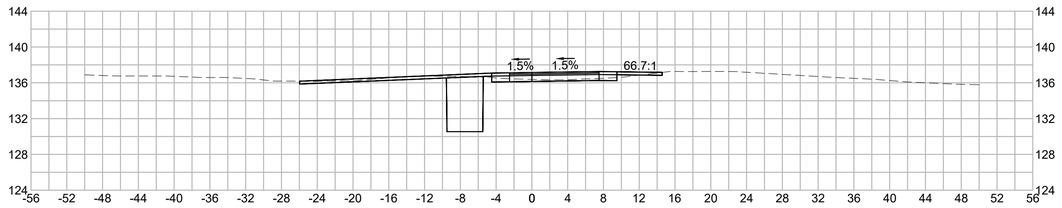

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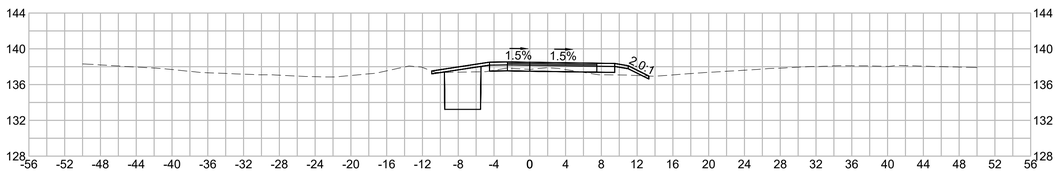

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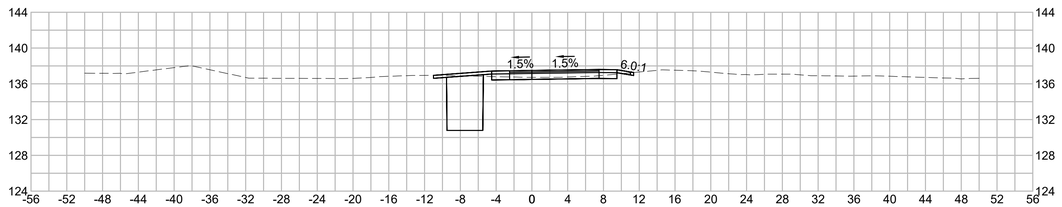

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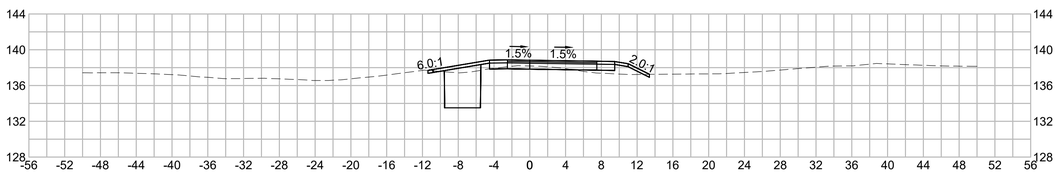

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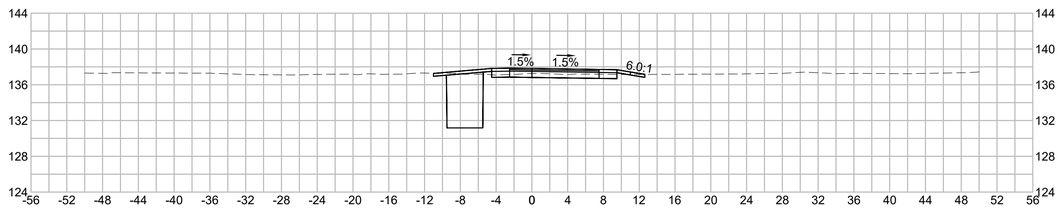

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101 Walnut St., PO Box 9151
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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

PLAN 319 OF 347

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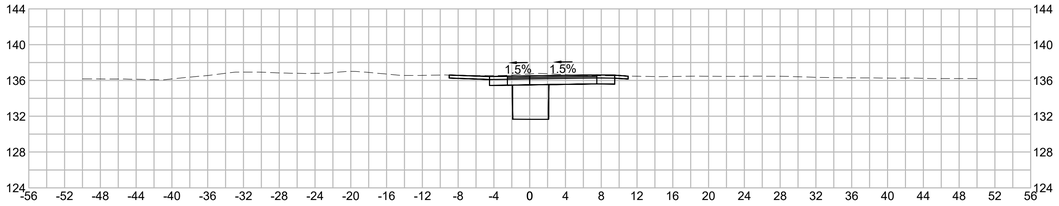
602+50



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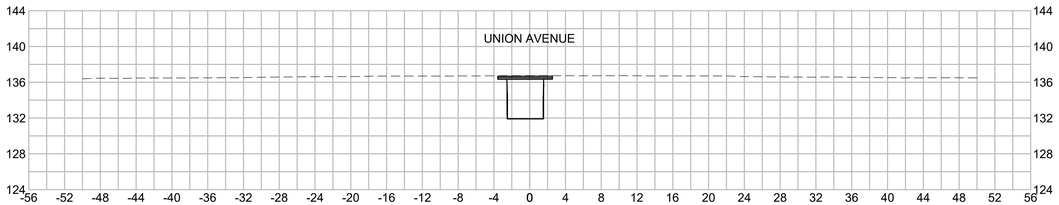

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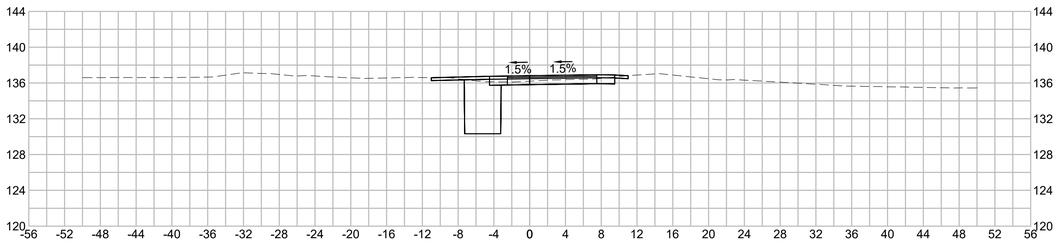

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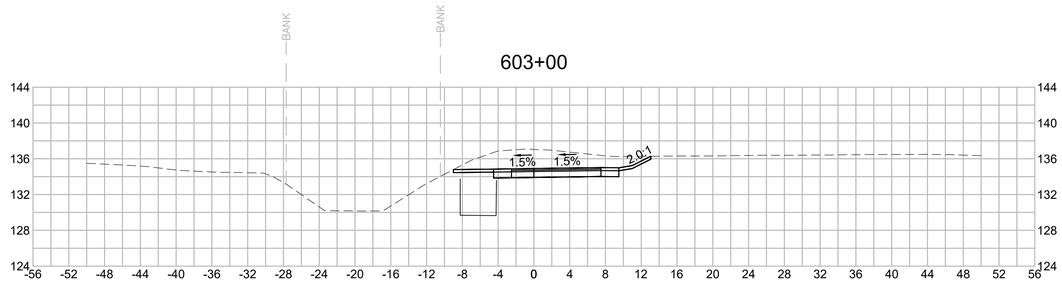

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PLAN 320 OF 347

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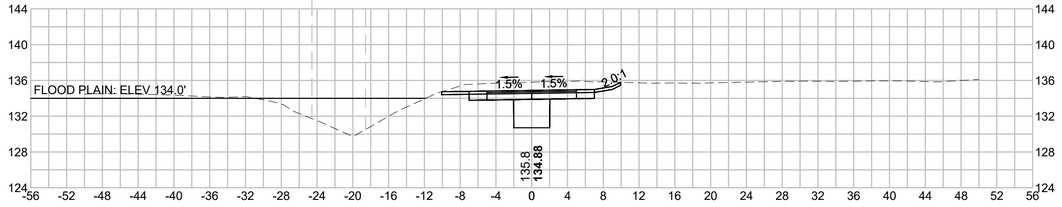
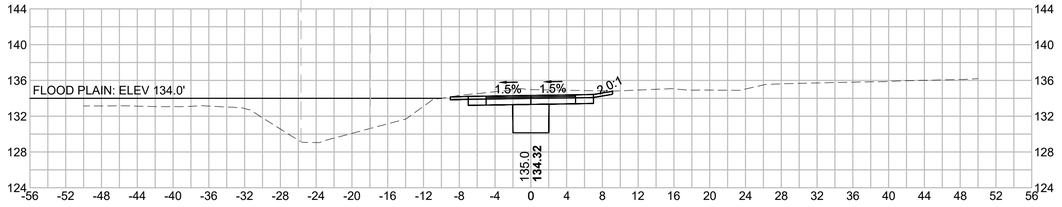
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

701+00



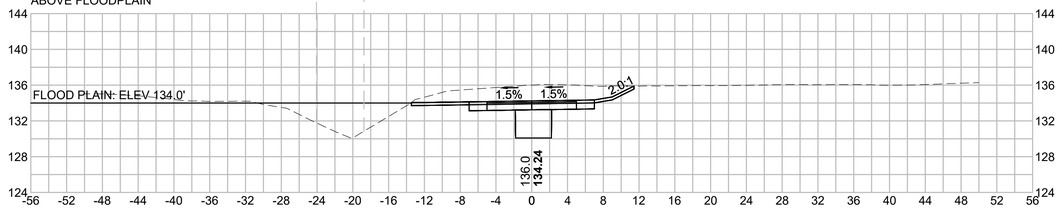
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

702+50



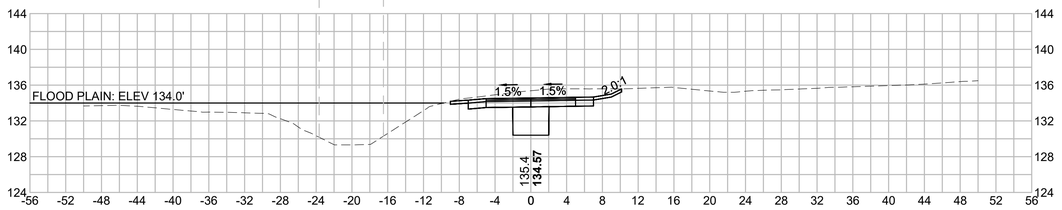
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

700+50



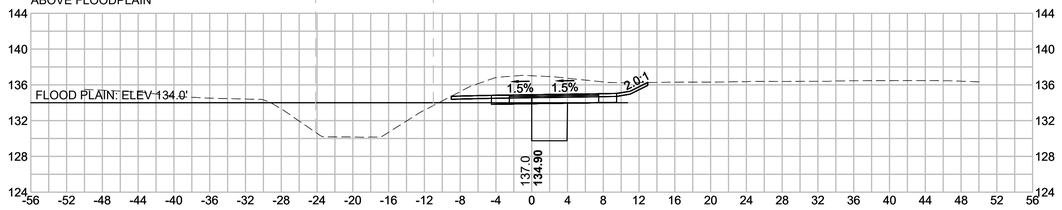
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

702+00



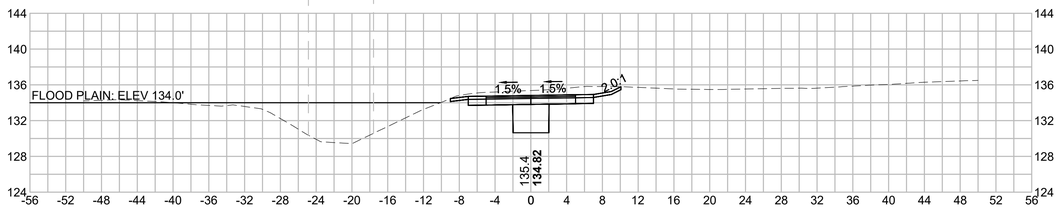
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

700+00



FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

701+50



BLSF CROSSING STA 700 TO STA 740 - FEMA ZONE AE - TRIBUTARY TO HOP BROOK AND HOP BROOK
FEMA ELEVATION VARIES

FILL:	CUT:
133'-134': 17.00 CY	133'-134': 46.91 CY
132'-133': 16.13 CY	132'-133': 20.22 CY
131'-132': 1.70 CY	131'-132': 5.50 CY
126'-127': 14.96 CY	126'-127': 17.00 CY
125'-126': 13.81 CY	125'-126': 67.04 CY
124'-125': 1.37 CY	124'-125': 6.11 CY
123'-124': 0.00 CY	123'-124': 0.43 CY

8 0 8 16
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			

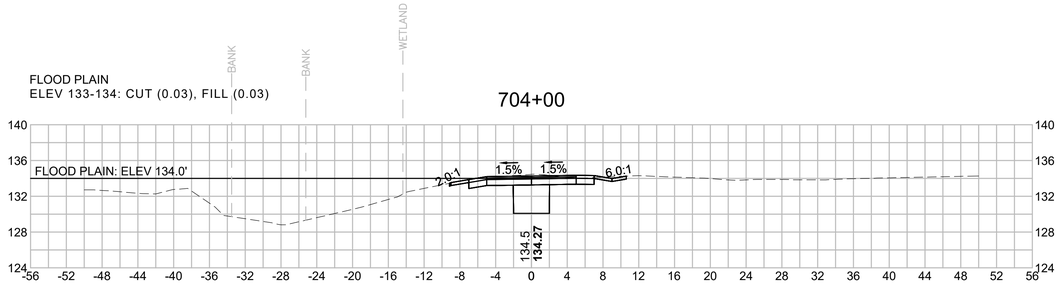
EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 3210F347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

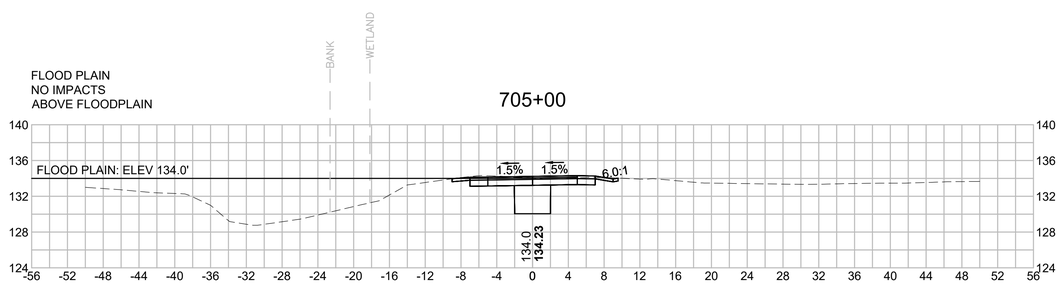
FLOOD PLAIN
ELEV 133-134: CUT (0.03), FILL (0.03)

704+00



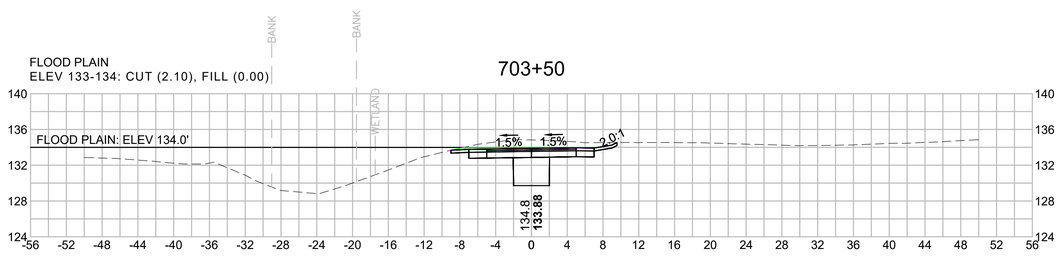
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

705+00

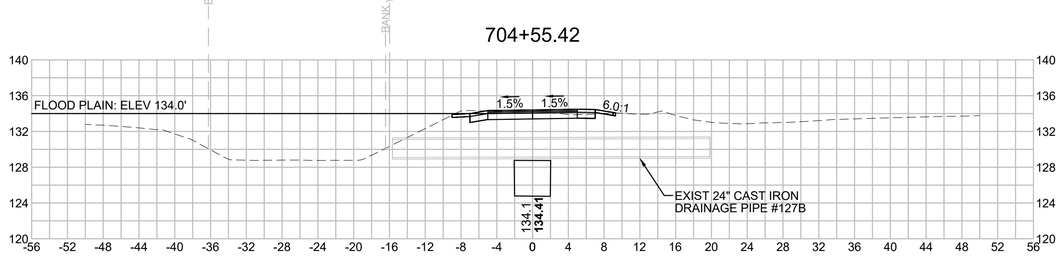


FLOOD PLAIN
ELEV 133-134: CUT (2.10), FILL (0.00)

703+50

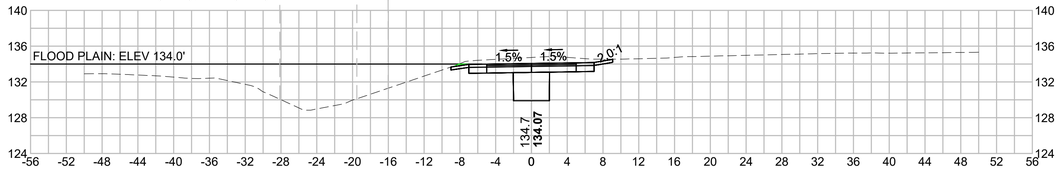


704+55.42



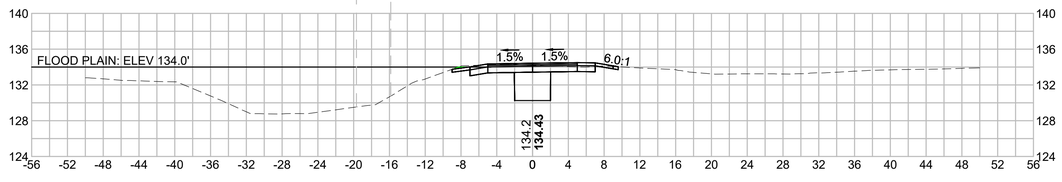
FLOOD PLAIN
ELEV 133-134: CUT (0.24), FILL (0.00)

703+00



FLOOD PLAIN
ELEV 133-134: CUT (0.15), FILL (0.00)

704+50



8 0 8 16
SCALE IN FEET

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

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101 Walnut St, PO Box 9151
Watertown, MA 02472
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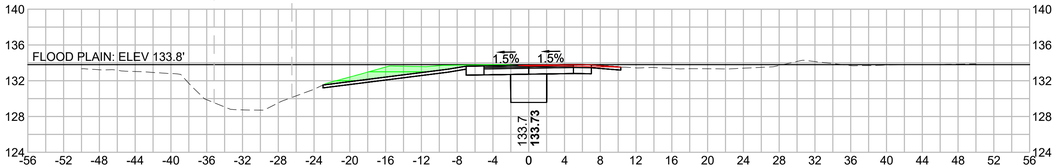
EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 322 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

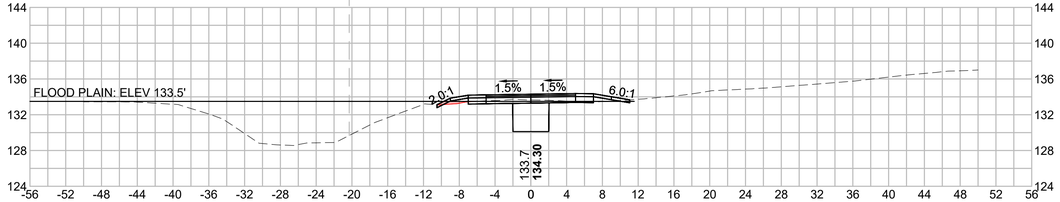
FLOOD PLAIN
ELEV 133-133.8: CUT (5.79), FILL (1.30)
ELEV 132-133: CUT (4.39), FILL (0.00)
ELEV 131-132: CUT (0.58), FILL (0.00)

706+50



FLOOD PLAIN
ELEV 133-133.6: CUT (0.00), FILL (0.81)

708+00



FLOOD PLAIN
ELEV 133-133.9: CUT (1.26), FILL (1.30)

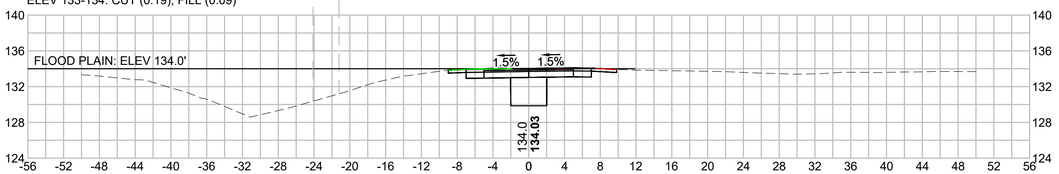
706+00

FLOOD PLAIN
ELEV 133-133.6: CUT (0.00), FILL (1.05)

707+50

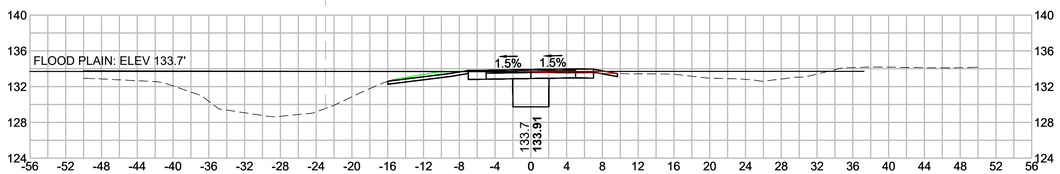
FLOOD PLAIN
ELEV 133-134: CUT (0.19), FILL (0.09)

705+50



FLOOD PLAIN
ELEV 133-133.7: CUT (1.48), FILL (1.61)
ELEV 132-133: CUT (0.34), FILL (0.00)

707+00



8 0 8 16
SCALE IN FEET

Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
Watertown, MA 02472
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NO.	DESCRIPTION	BY	DATE	APP'R.
	REVISION			

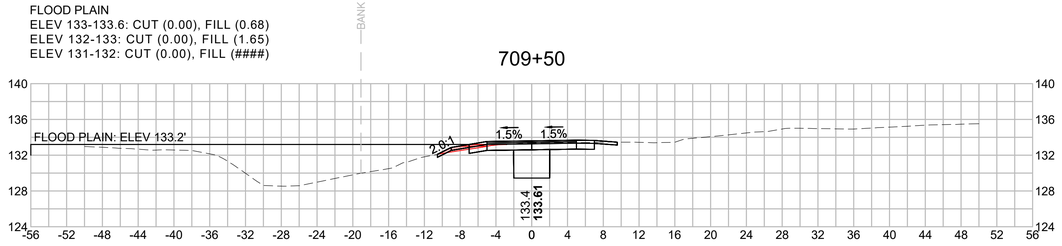
EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 323 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

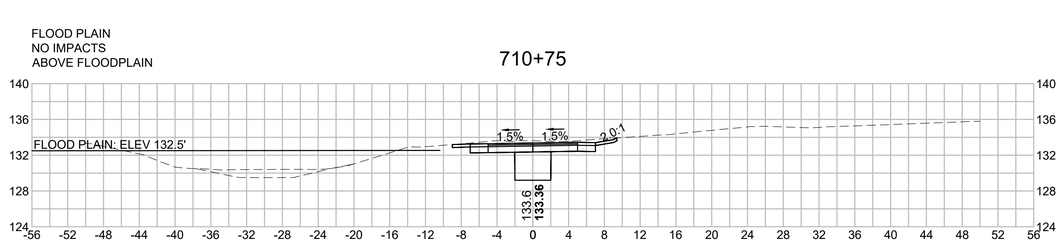
FLOOD PLAIN
ELEV 133-133.6: CUT (0.00), FILL (0.68)
ELEV 132-133: CUT (0.00), FILL (1.65)
ELEV 131-132: CUT (0.00), FILL (####)

709+50



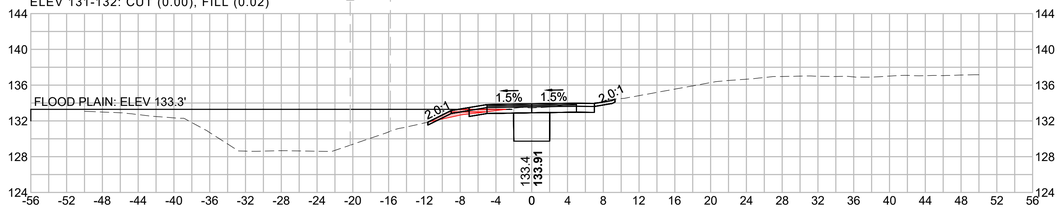
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

710+75



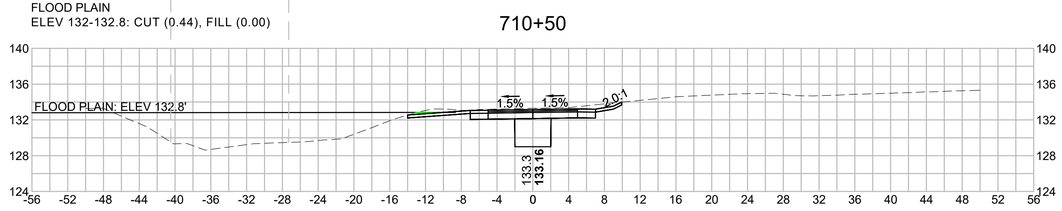
FLOOD PLAIN
ELEV 133-133.6: CUT (0.00), FILL (1.47)
ELEV 132-133: CUT (0.00), FILL (1.85)
ELEV 131-132: CUT (0.00), FILL (0.02)

709+00



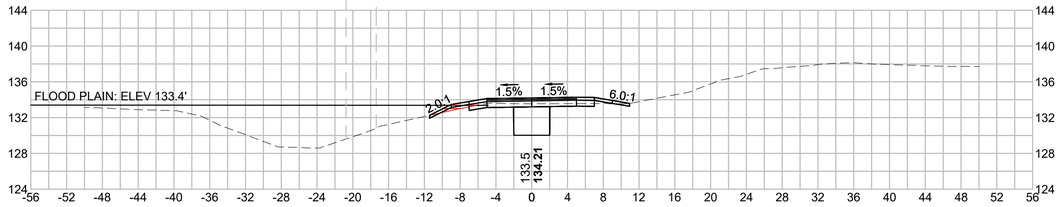
FLOOD PLAIN
ELEV 132-132.8: CUT (0.44), FILL (0.00)

710+50



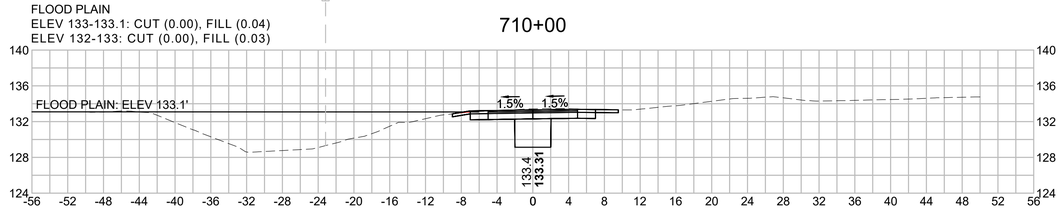
FLOOD PLAIN
ELEV 133-133.6: CUT (0.00), FILL (0.96)
ELEV 132-133: CUT (0.00), FILL (0.68)

708+50



FLOOD PLAIN
ELEV 133-133.1: CUT (0.00), FILL (0.04)
ELEV 132-133: CUT (0.00), FILL (0.03)

710+00



8 0 8 16
SCALE IN FEET

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Watertown, MA 02472
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NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

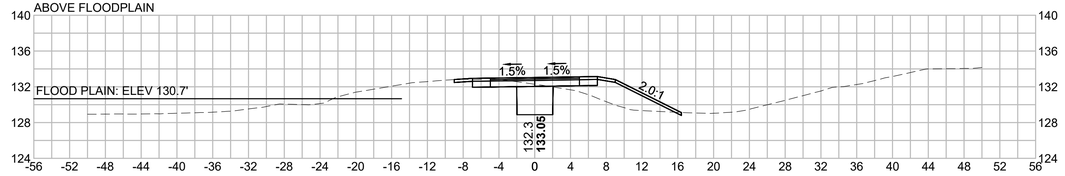
EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 324 OF 347

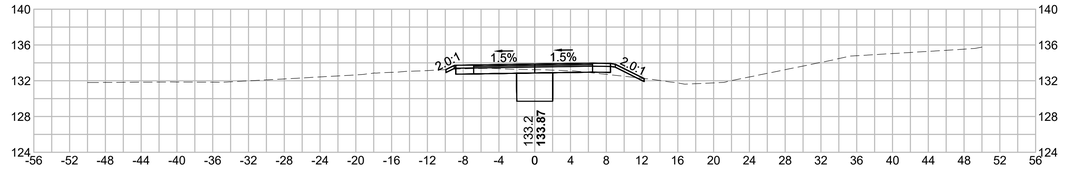
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

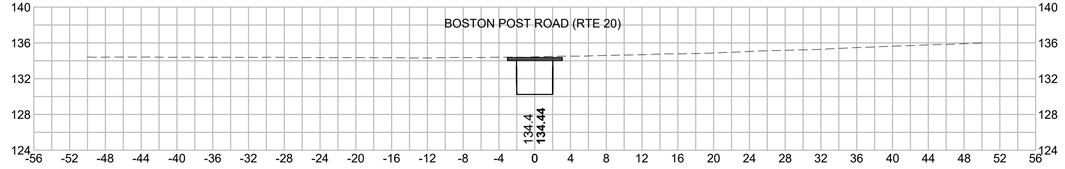
712+50



712+00

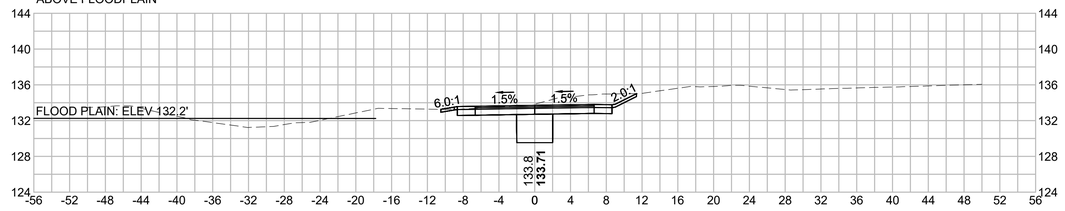


711+50



FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

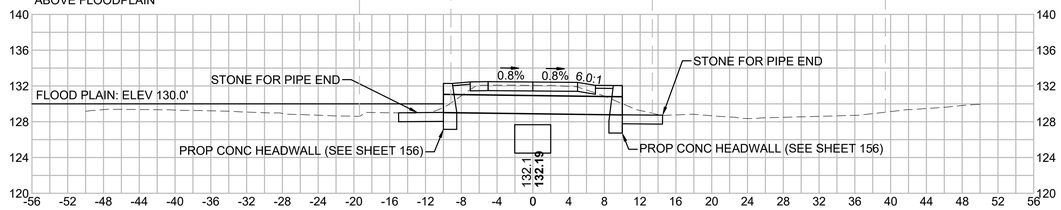
711+00



WETLAND

FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

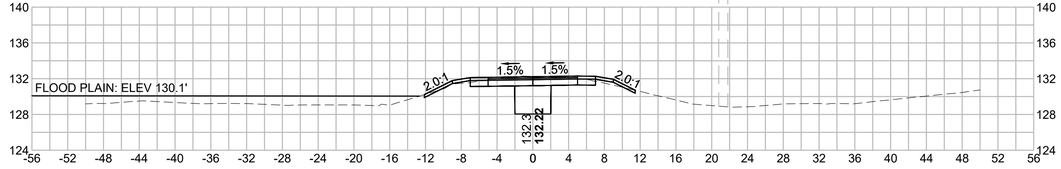
713+63.46



WETLAND
WETLAND

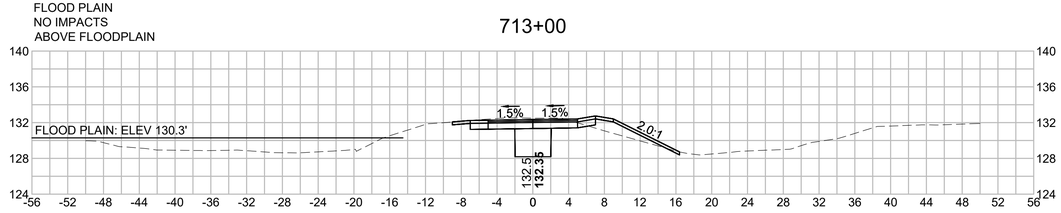
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

713+50



FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

713+00



8 0 8 16
SCALE IN FEET

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

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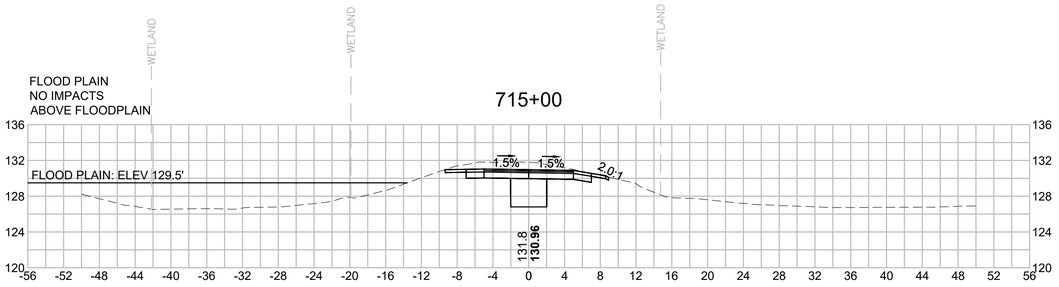
EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 325 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

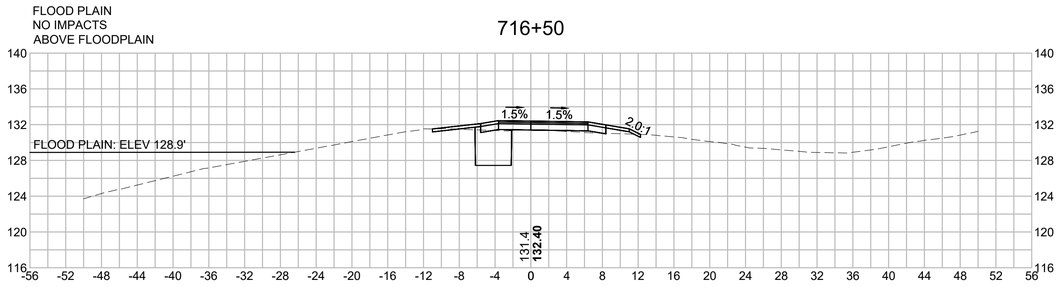
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

715+00



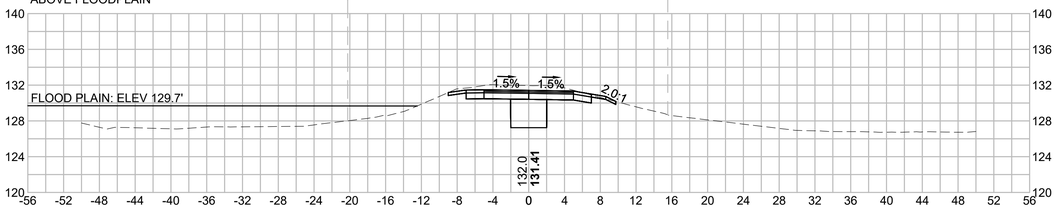
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

716+50



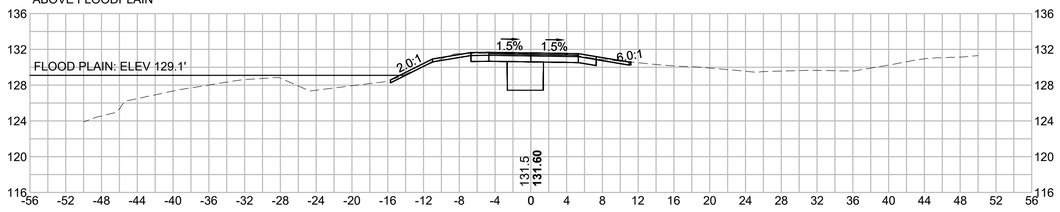
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

714+50



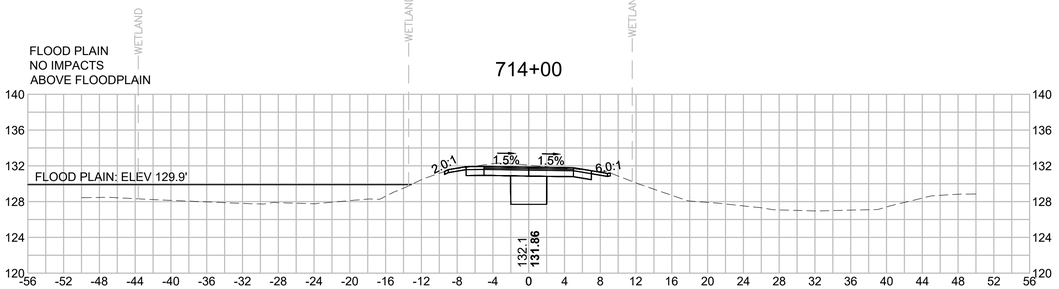
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

716+00



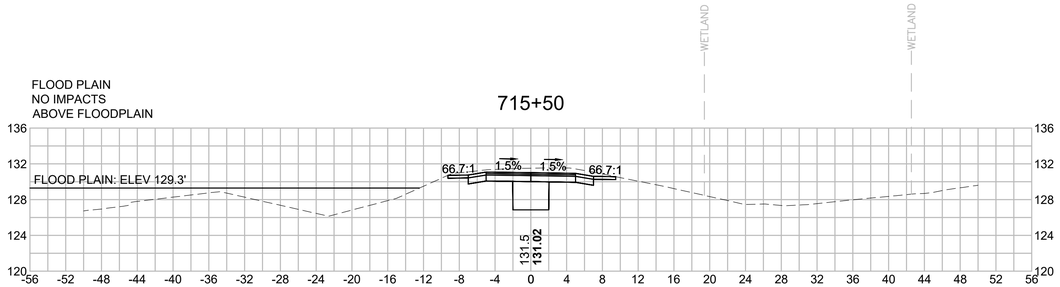
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

714+00



FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

715+50



8 0 8 16
SCALE IN FEET

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NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

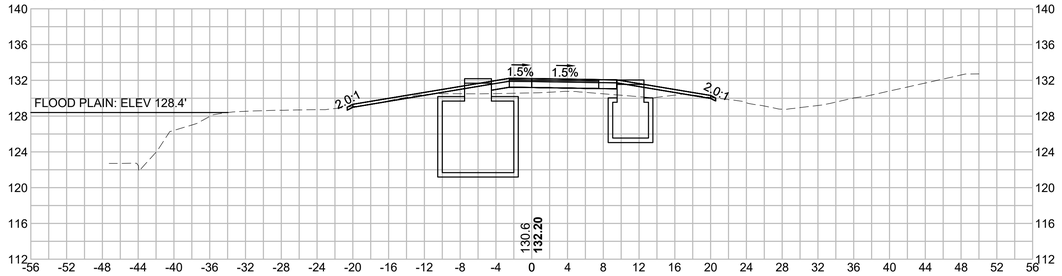
EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 326 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

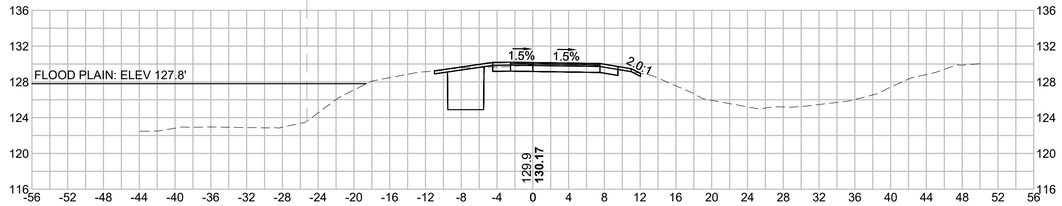
718+00



FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

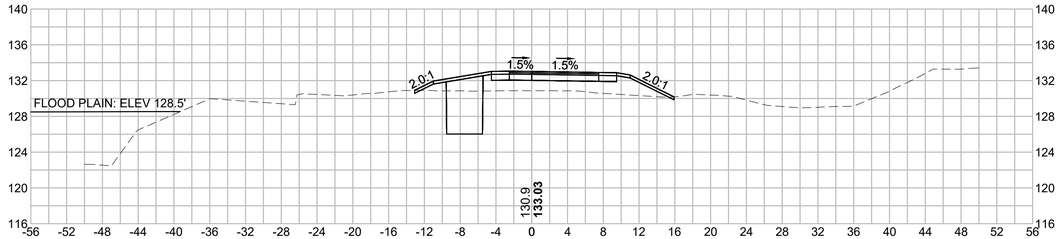
WETLAND

719+50



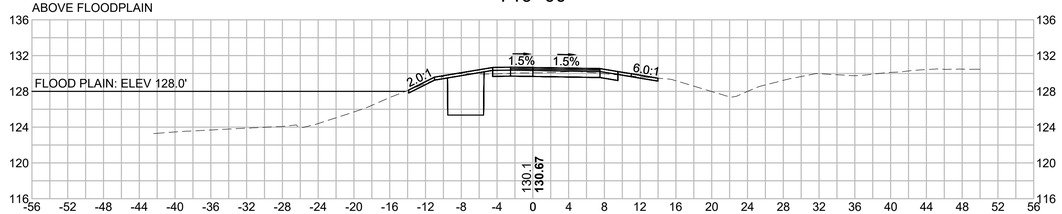
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

717+50



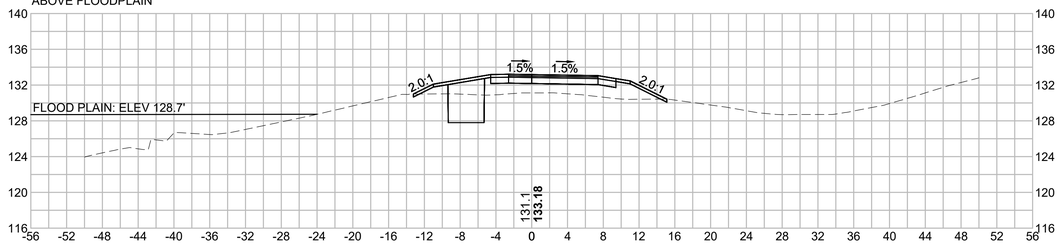
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

719+00



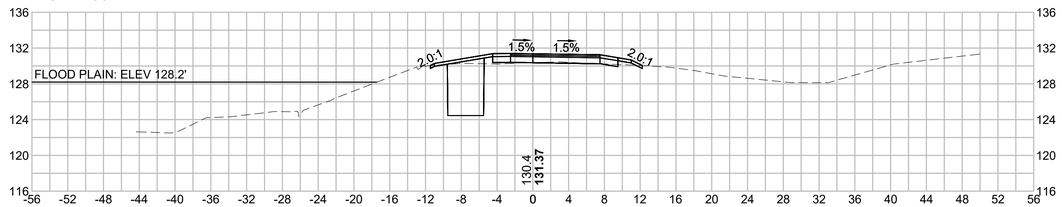
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

717+00



FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

718+50



8 0 8 16
SCALE IN FEET

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Watertown, MA 02472
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NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

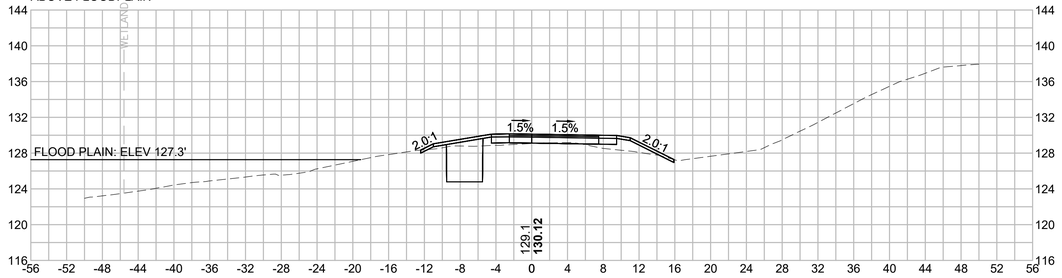
EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 327 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

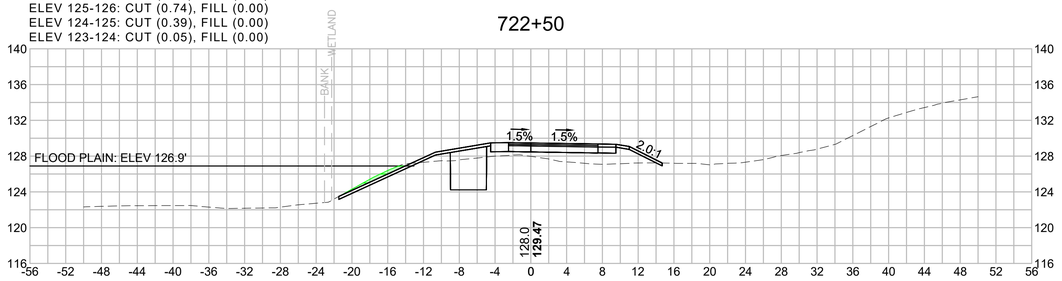
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

721+00



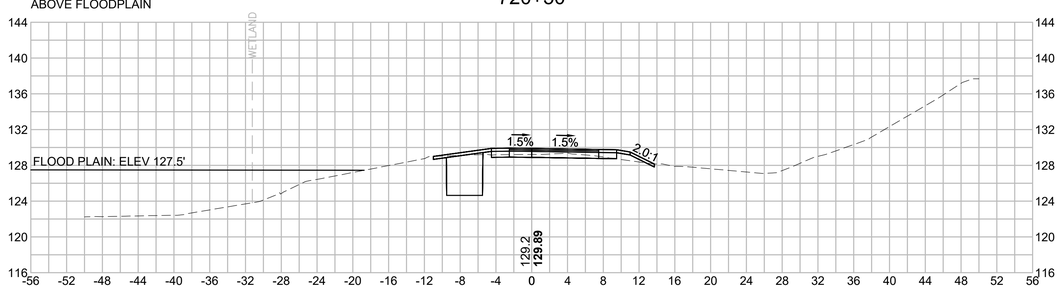
FLOOD PLAIN
ELEV 126-127: CUT (0.75), FILL (0.00)
ELEV 125-126: CUT (0.74), FILL (0.00)
ELEV 124-125: CUT (0.39), FILL (0.00)
ELEV 123-124: CUT (0.05), FILL (0.00)

722+50



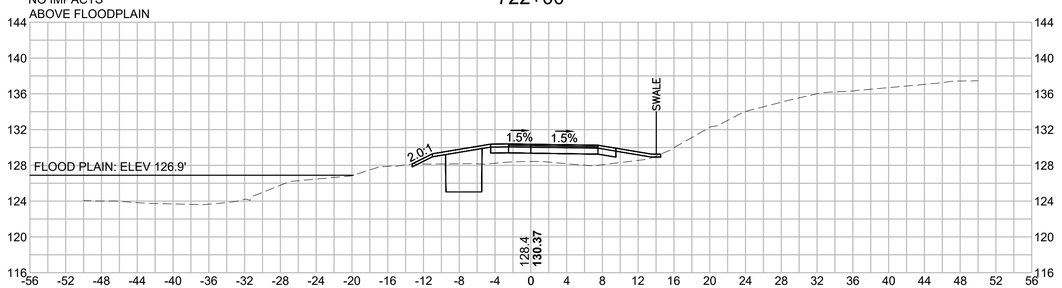
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

720+50



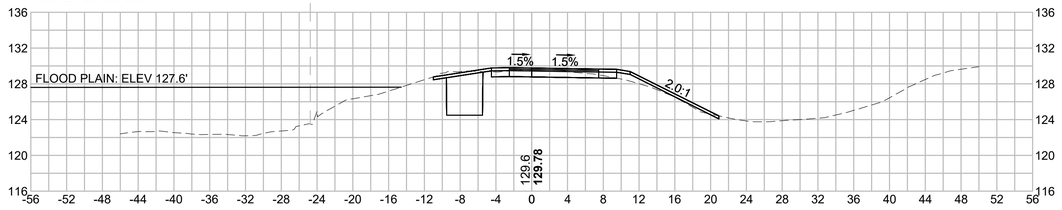
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

722+00



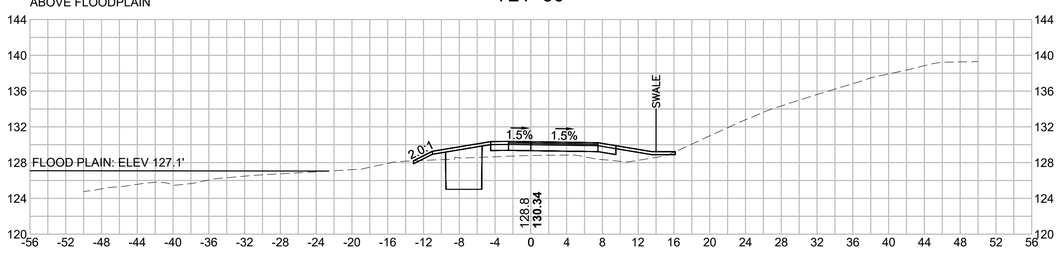
FLOODPLAIN
NO IMPACTS
ABOVE FLOODPLAIN

720+00



FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

721+50



8 0 8 16
SCALE IN FEET

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

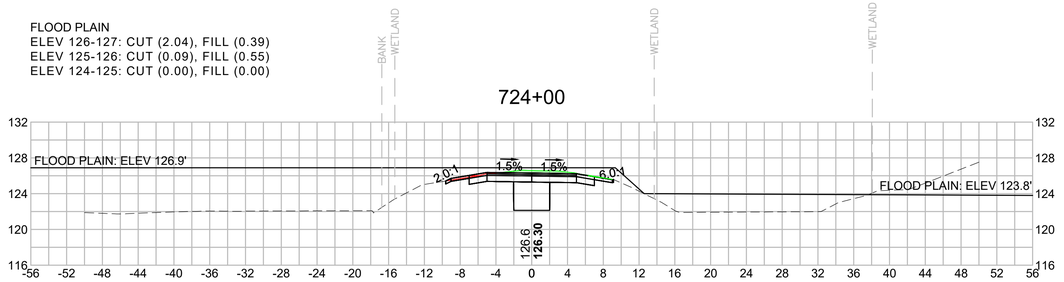
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 328 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

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

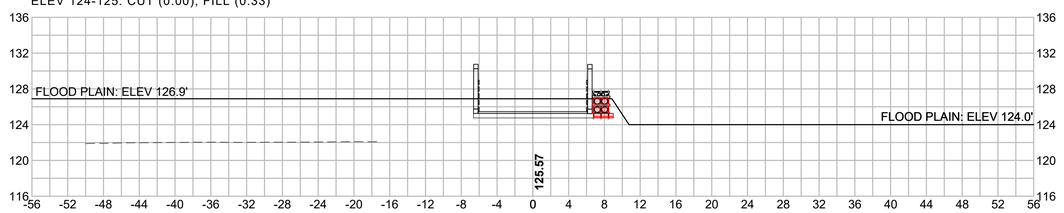
FLOOD PLAIN
ELEV 126-127: CUT (2.04), FILL (0.39)
ELEV 125-126: CUT (0.09), FILL (0.55)
ELEV 124-125: CUT (0.00), FILL (0.00)

724+00



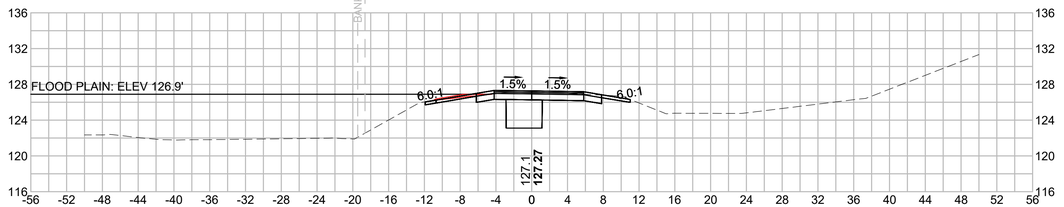
FLOOD PLAIN
ELEV 126-127: CUT (0.00), FILL (1.79)
ELEV 125-126: CUT (0.00), FILL (1.94)
ELEV 124-125: CUT (0.00), FILL (0.33)

725+50



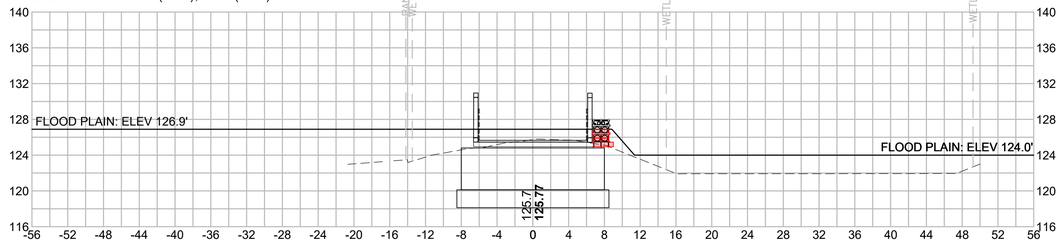
FLOOD PLAIN
ELEV 126-127: CUT (0.00), FILL (1.31)

723+50



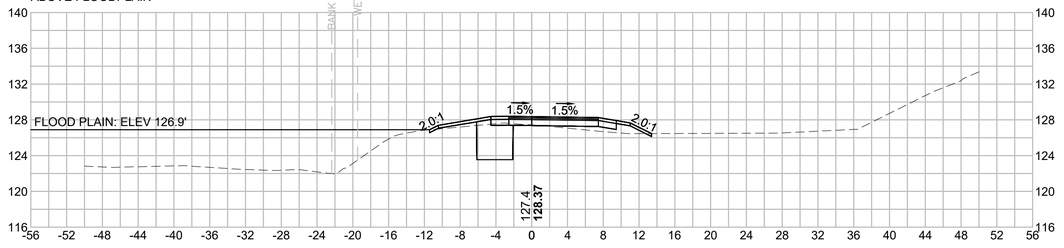
FLOOD PLAIN
ELEV 126-127: CUT (0.00), FILL (1.79)
ELEV 125-126: CUT (0.00), FILL (1.91)
ELEV 124-125: CUT (0.00), FILL (0.00)

725+00



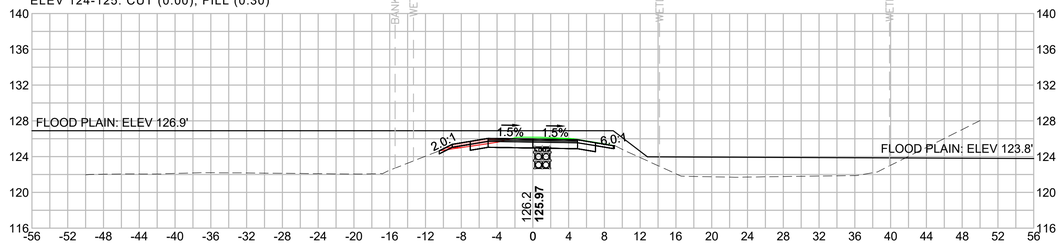
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

723+00



FLOOD PLAIN
ELEV 126-127: CUT (0.89), FILL (0.04)
ELEV 125-126: CUT (0.59), FILL (3.05)
ELEV 124-125: CUT (0.00), FILL (0.30)

724+50



8 0 8 16
SCALE IN FEET

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

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

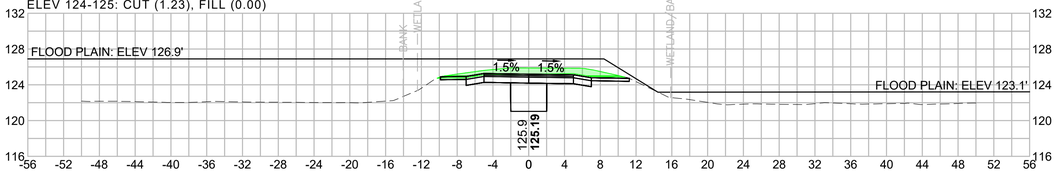
EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 329 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APP R.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

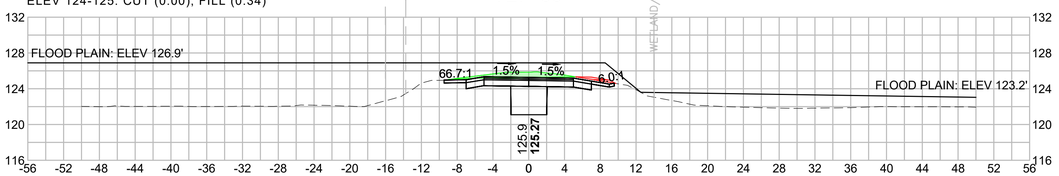
FLOOD PLAIN
ELEV 125-126: CUT (10.37), FILL (0.00)
ELEV 124-125: CUT (1.23), FILL (0.00)

727+50



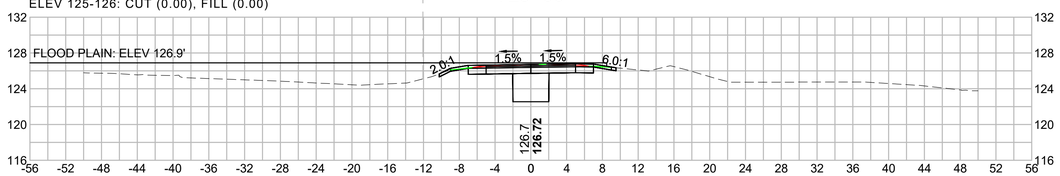
FLOOD PLAIN
ELEV 126-127: CUT (0.00), FILL (0.00)
ELEV 125-126: CUT (5.41), FILL (0.50)
ELEV 124-125: CUT (0.00), FILL (0.34)

727+00



FLOOD PLAIN
ELEV 126-127: CUT (0.17), FILL (0.88)
ELEV 125-126: CUT (0.00), FILL (0.00)

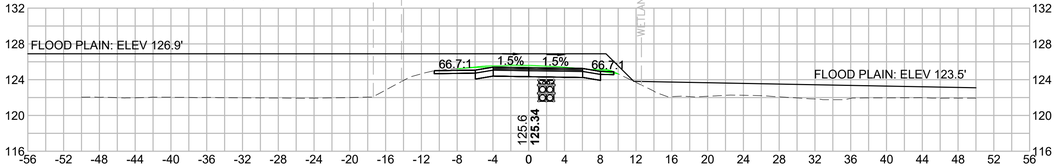
729+00



512+00

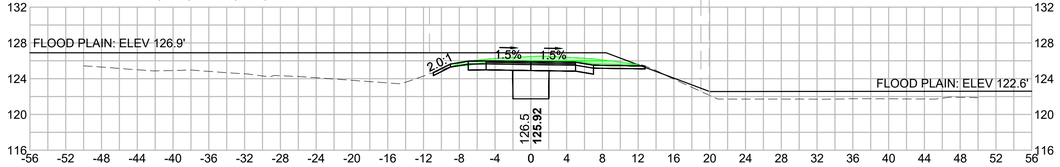
FLOOD PLAIN
ELEV 126-127: CUT (0.00), FILL (0.00)
ELEV 125-126: CUT (2.54), FILL (0.00)
ELEV 124-125: CUT (0.33), FILL (0.00)

726+50



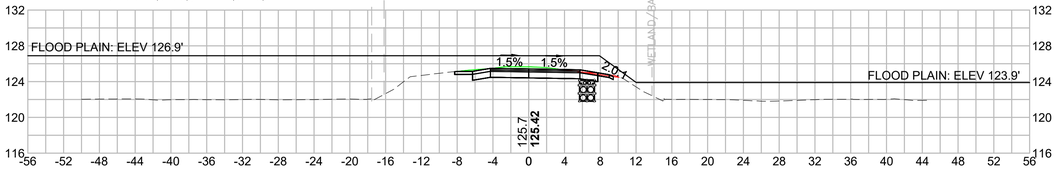
FLOOD PLAIN
ELEV 126-127: CUT (4.93), FILL (0.00)
ELEV 125-126: CUT (3.74), FILL (0.00)

728+50



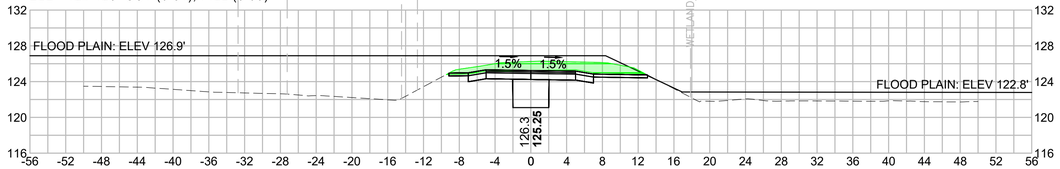
FLOOD PLAIN
ELEV 126-127: CUT (0.00), FILL (0.00)
ELEV 125-126: CUT (1.90), FILL (0.53)
ELEV 124-125: CUT (0.00), FILL (0.49)

726+00



FLOOD PLAIN
ELEV 126-127: CUT (2.57), FILL (0.00)
ELEV 125-126: CUT (15.34), FILL (0.00)
ELEV 124-125: CUT (0.81), FILL (0.00)

728+00



8 0 8 16
SCALE IN FEET

Vanasse Hangen Brustlin, Inc.
101 Walnut St., PO Box 9151
Watertown, MA 02472
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NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

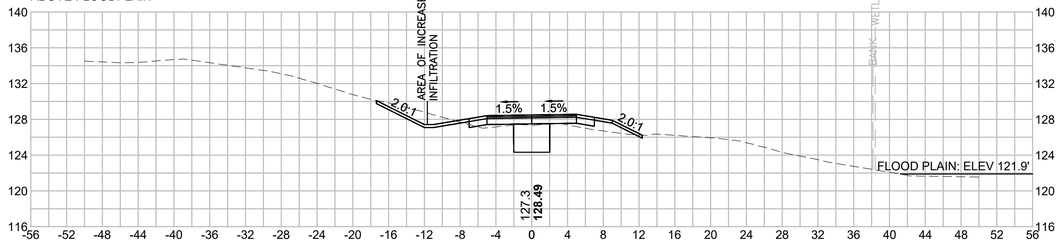
EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 330 OF 347

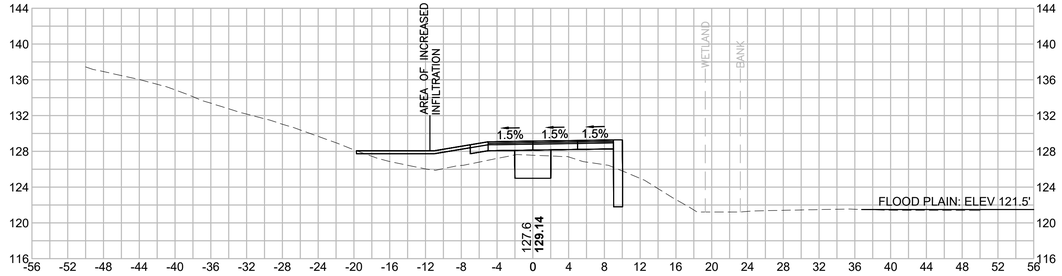
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

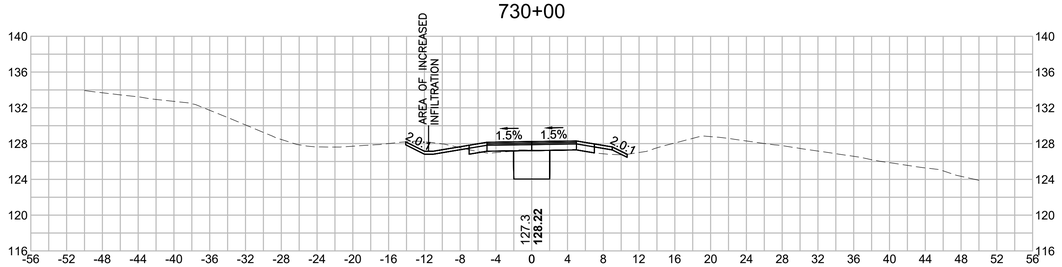
730+50



732+00

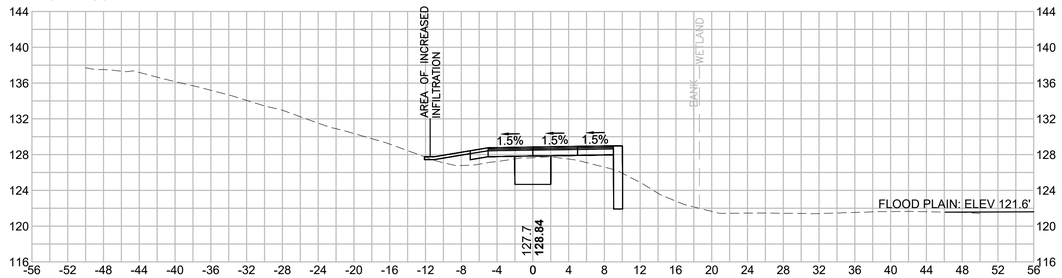


730+00



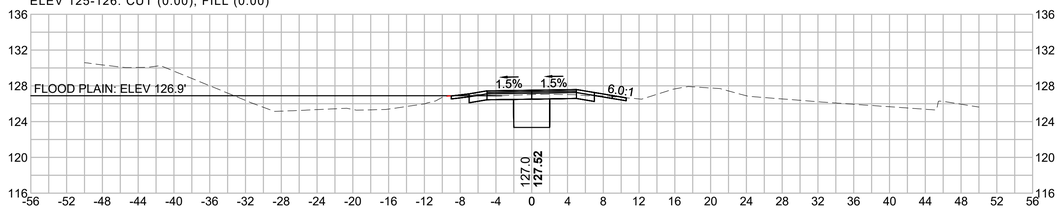
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

731+50



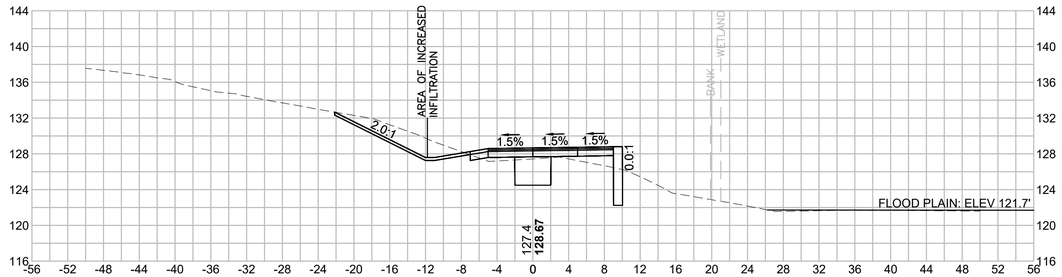
FLOOD PLAIN
ELEV 126-127: CUT (0.00), FILL (0.02)
ELEV 125-126: CUT (0.00), FILL (0.00)

729+50



FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

731+00



8 0 8 16
SCALE IN FEET

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 331OF347

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'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

733+00



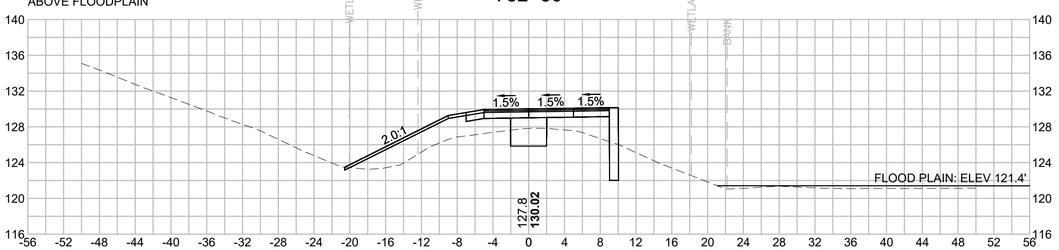
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

734+00



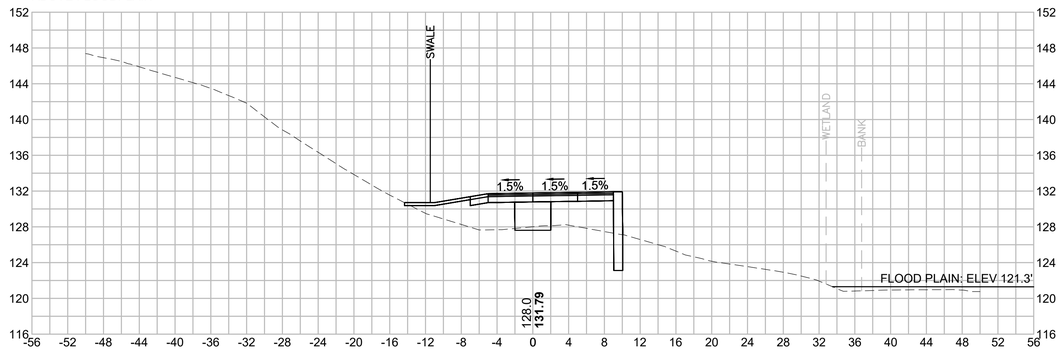
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

732+50



FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

733+50



8 0 8 16
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	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

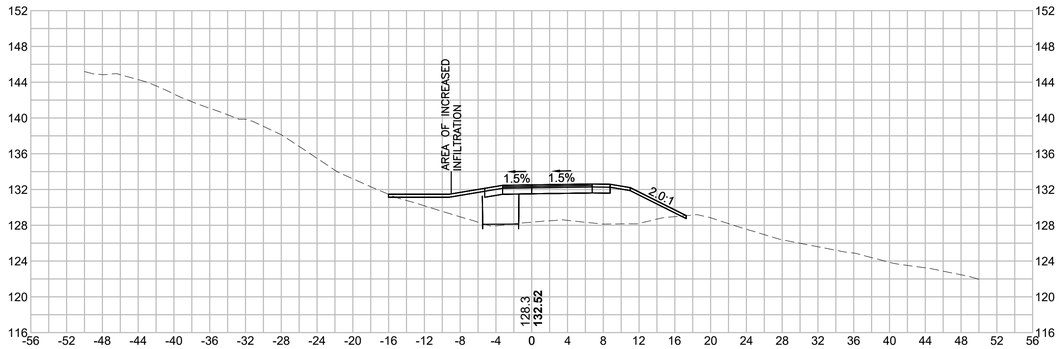
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

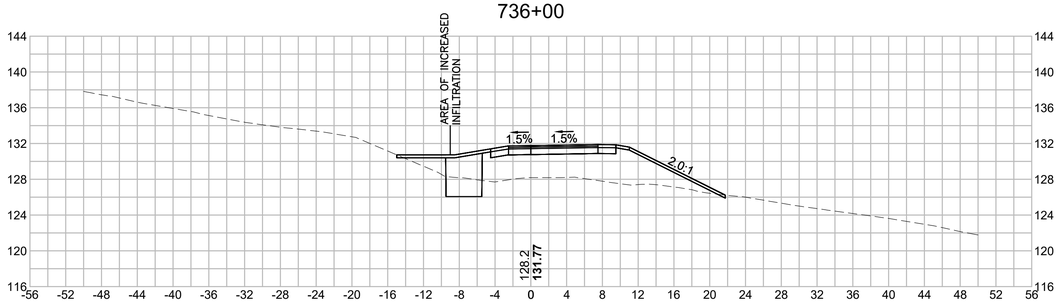
PLAN 332 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

735+00



736+00



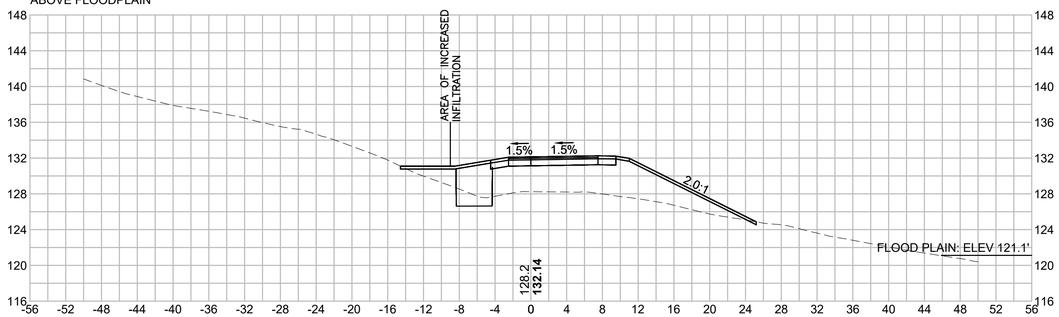
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

734+50



FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

735+50



8 0 8 16
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NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

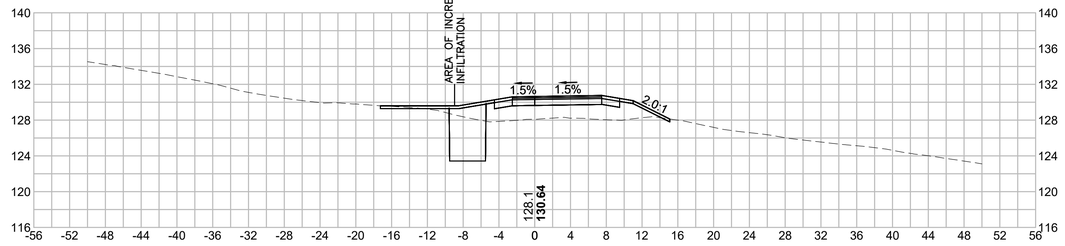
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

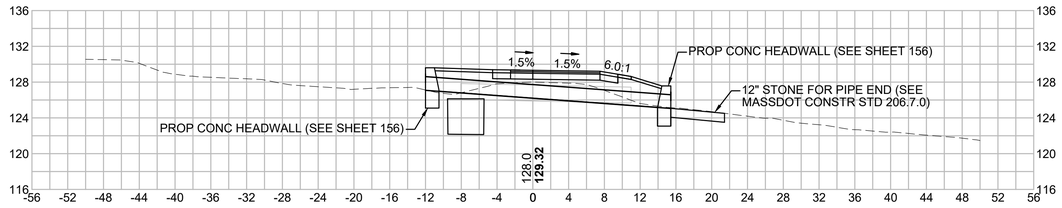
PLAN 333 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

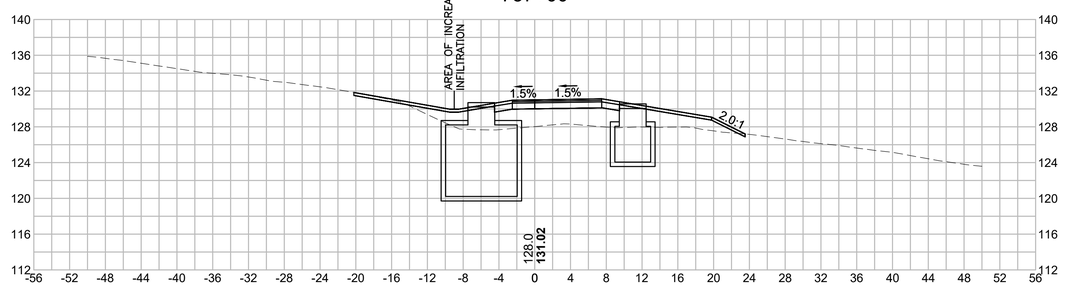
737+50



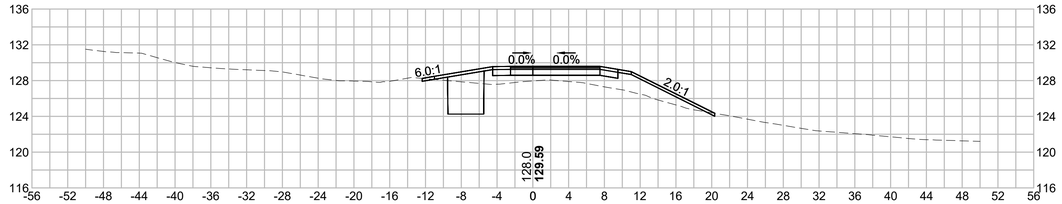
738+76.53



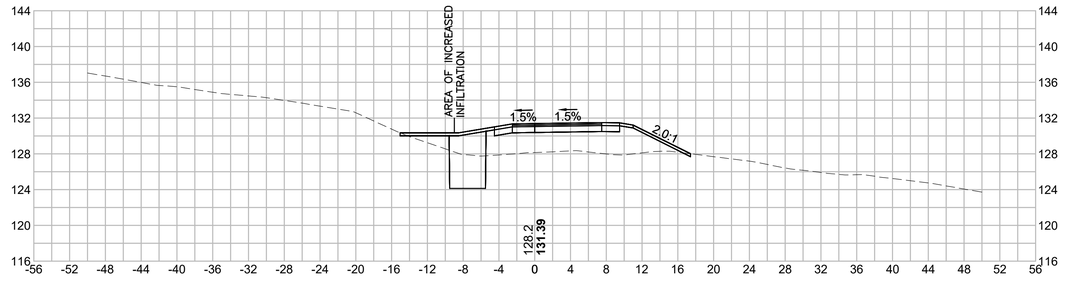
737+00



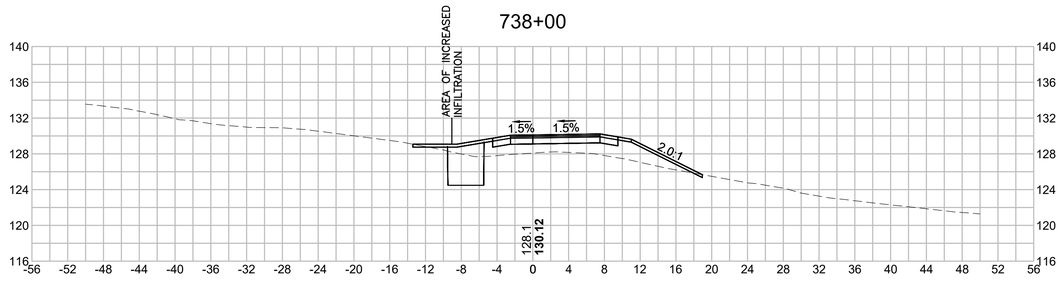
738+50



736+50



738+00



8 0 8 16
SCALE IN FEET

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NO.	DESCRIPTION	BY	DATE	APPR.
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EVERSOURCE

SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

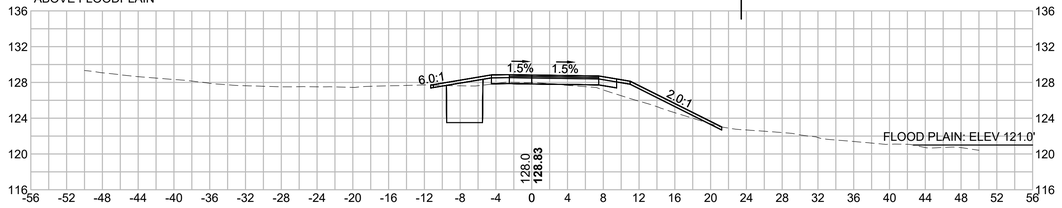
CROSS SECTIONS

PLAN 334 OF 347

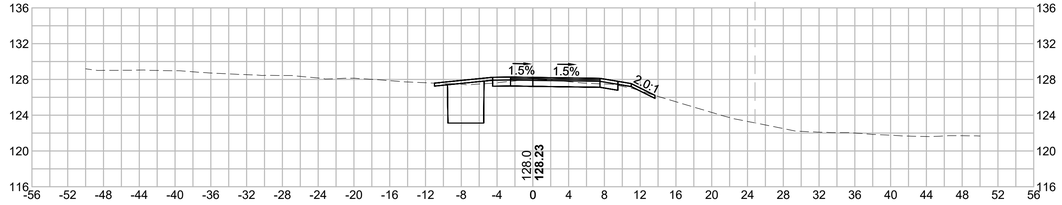
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

740+00

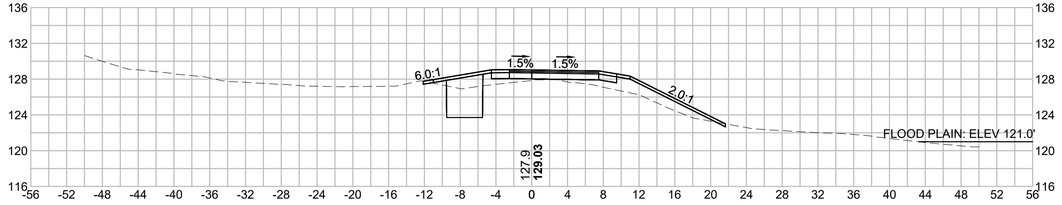


741+50



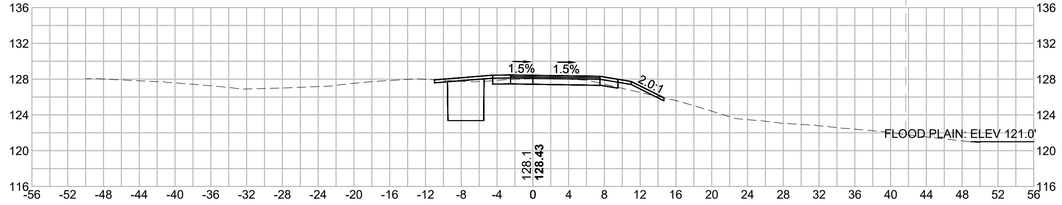
FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

739+50

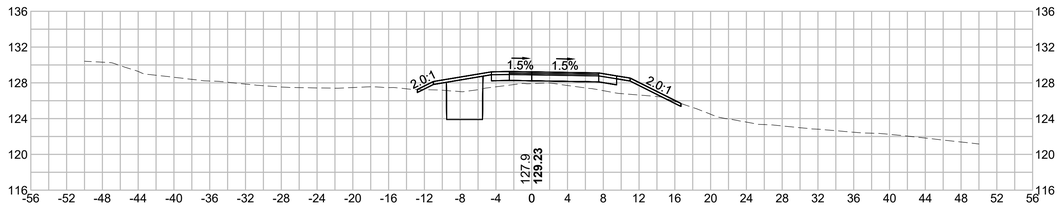


FLOOD PLAIN
NO IMPACTS
ABOVE FLOODPLAIN

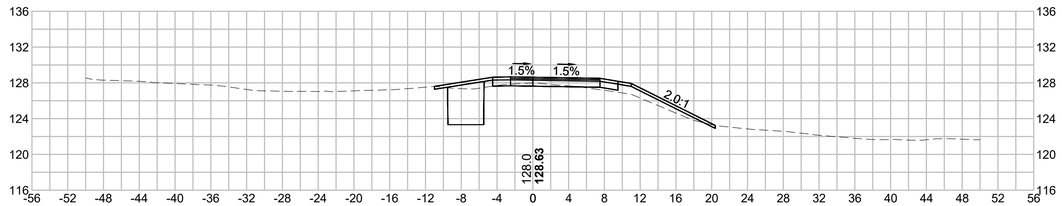
741+00



739+00



740+50



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NO.	DESCRIPTION	BY	DATE	APPR.
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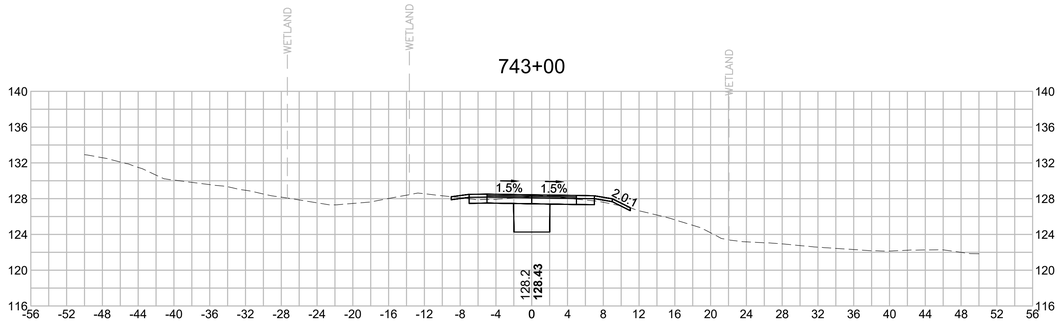
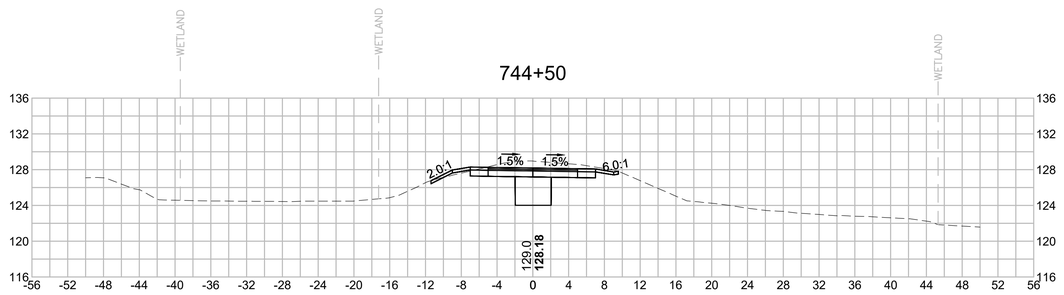
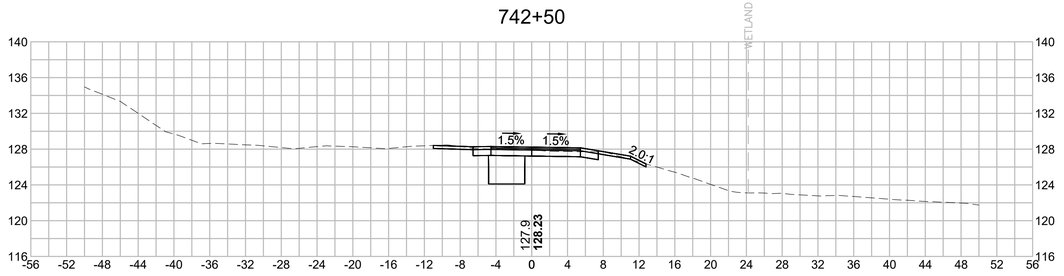
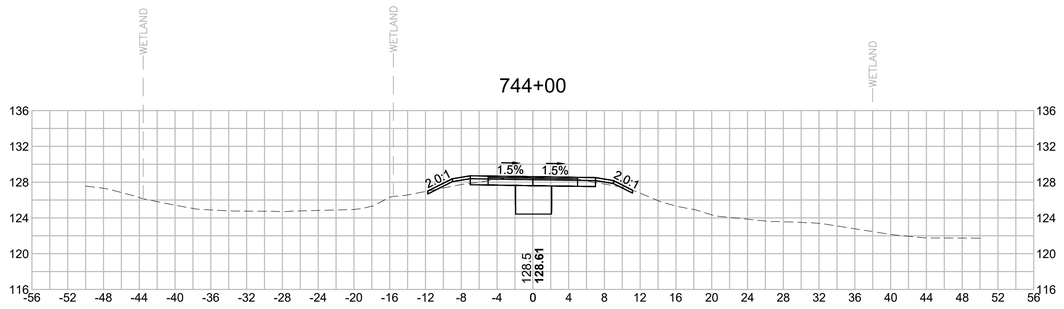
SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CROSS SECTIONS
PLAN 335 OF 347

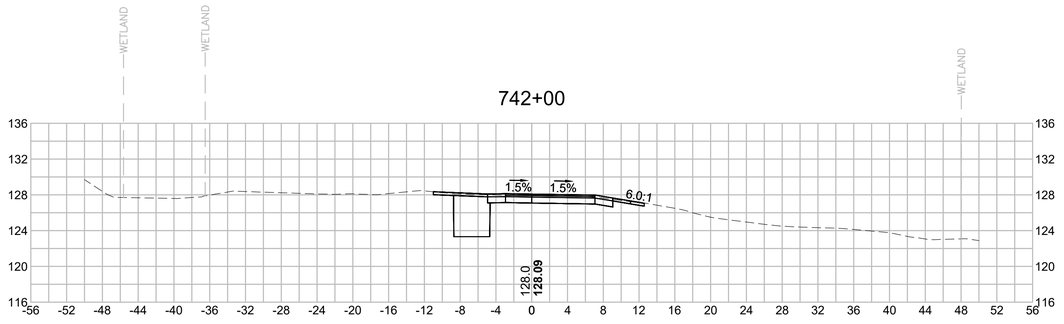
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

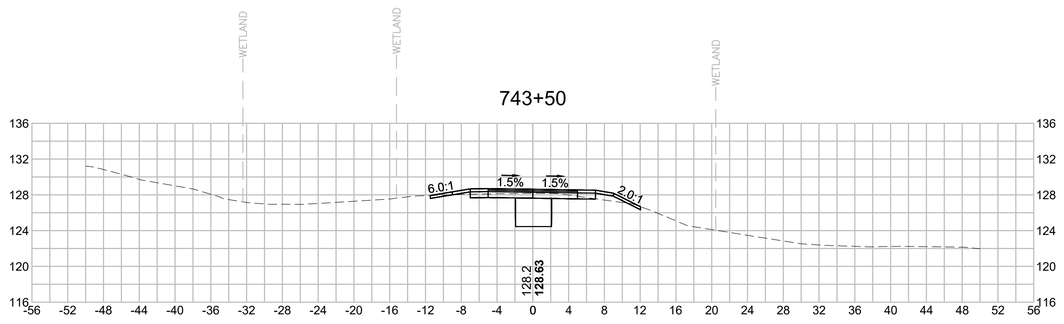












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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
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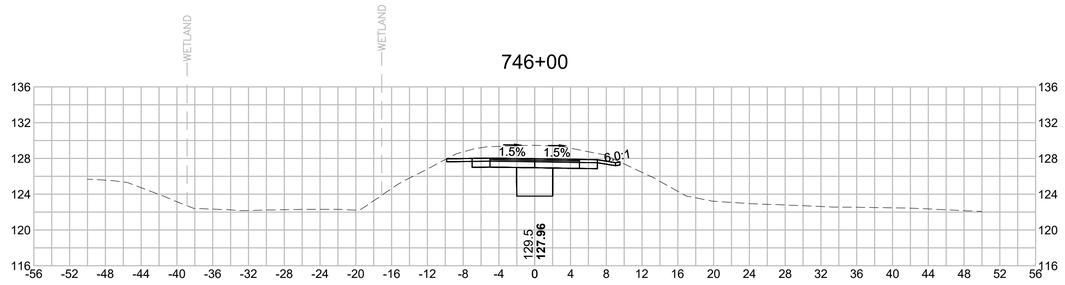
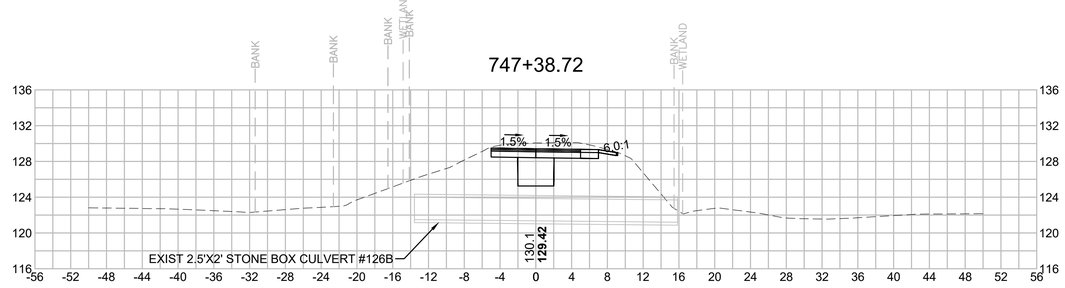
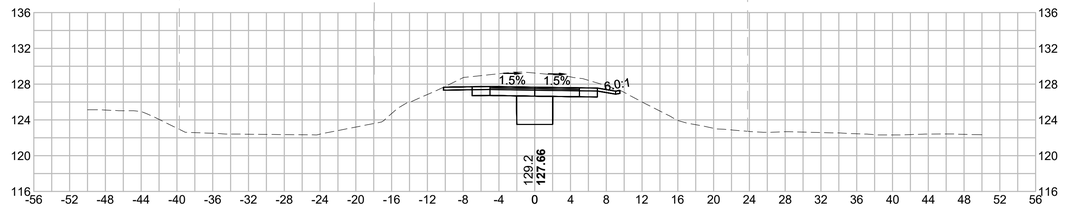
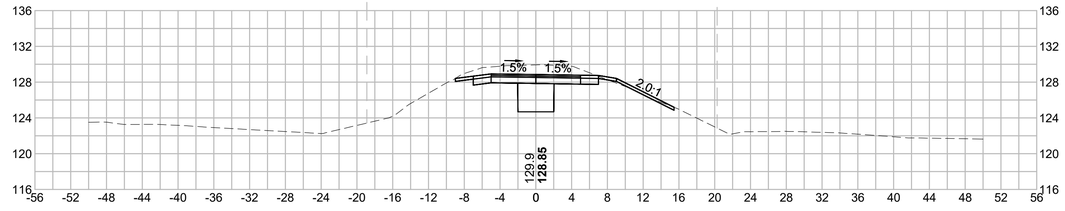
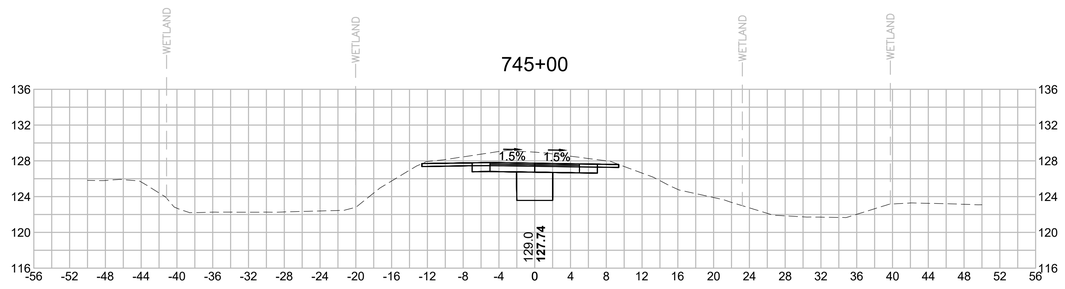
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

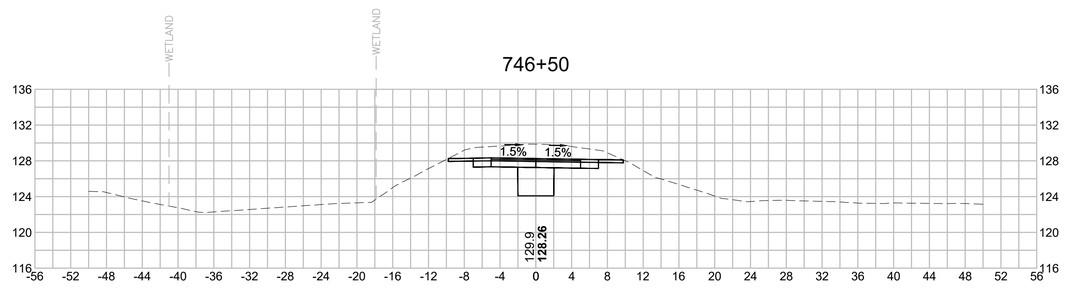












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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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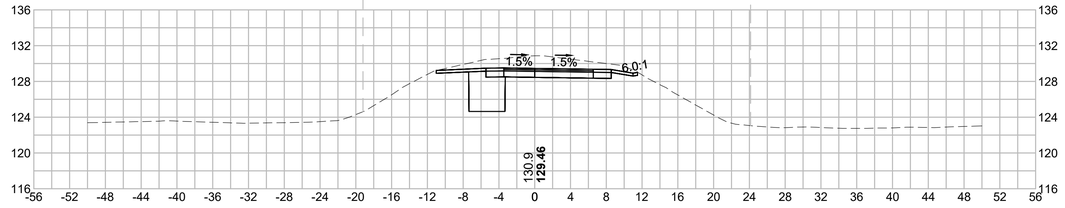
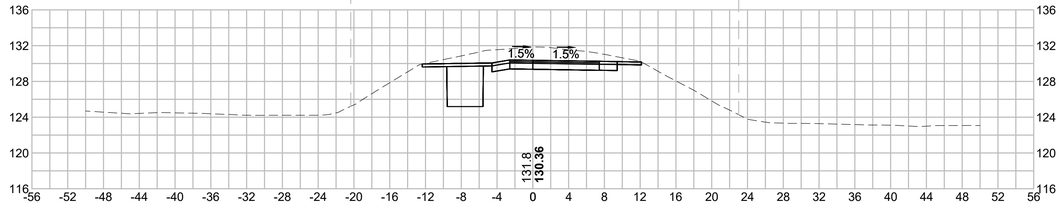
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

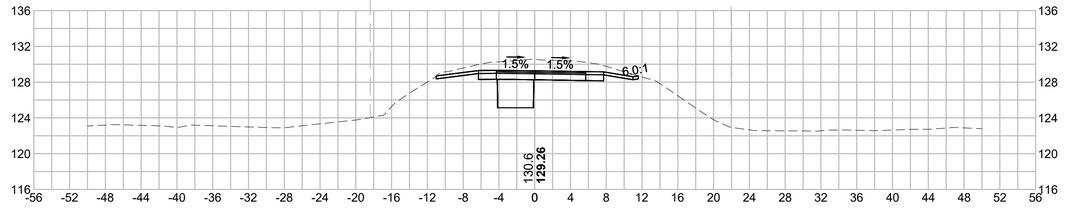
748+50



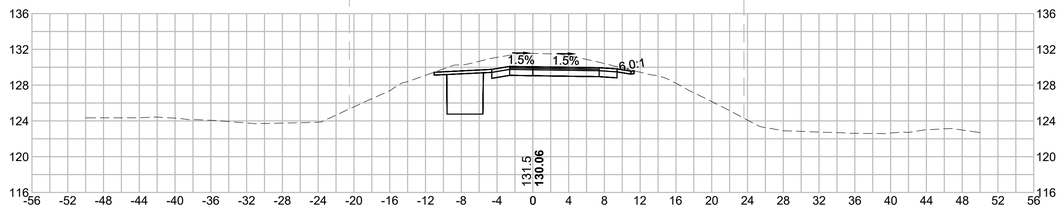
750+00



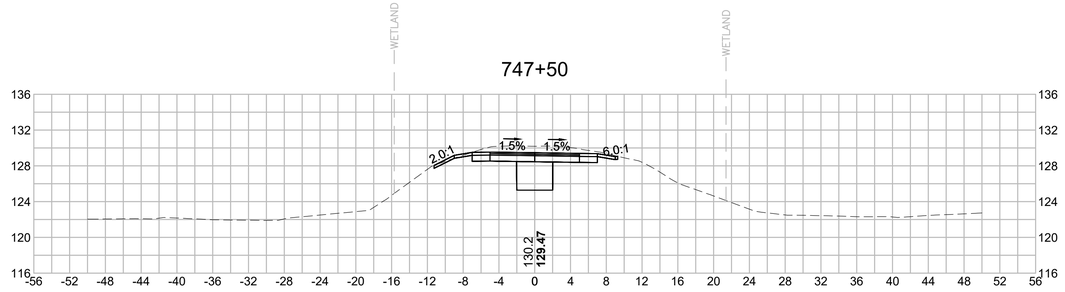
748+00



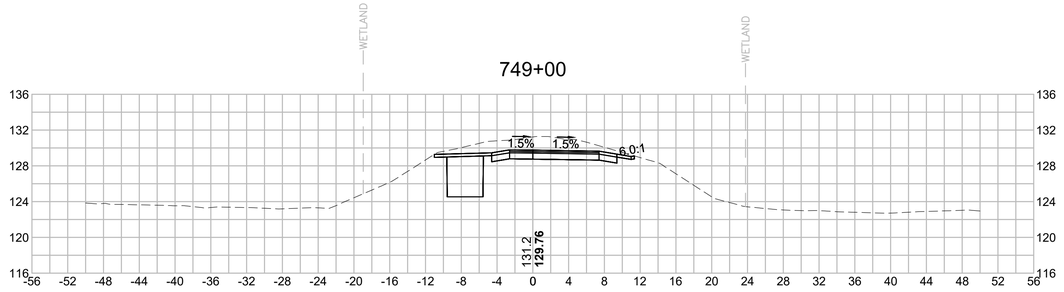
749+50



747+50



749+00



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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

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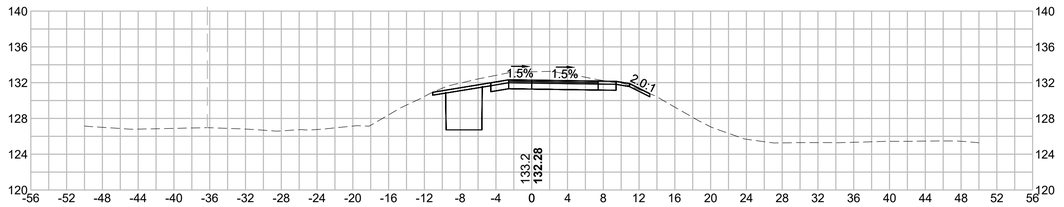
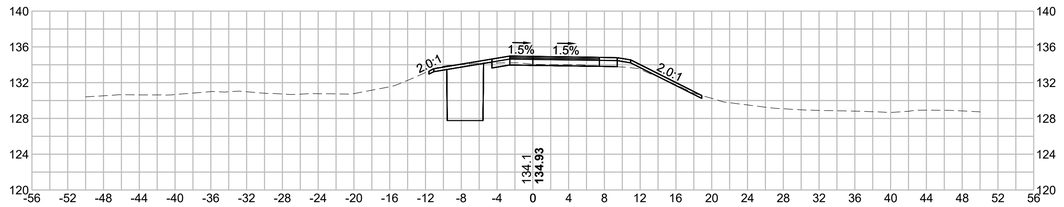
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

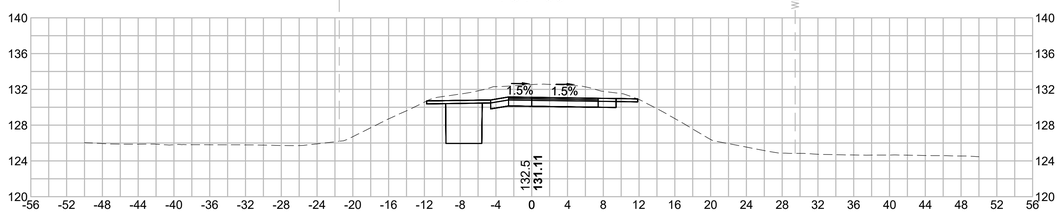
751+50



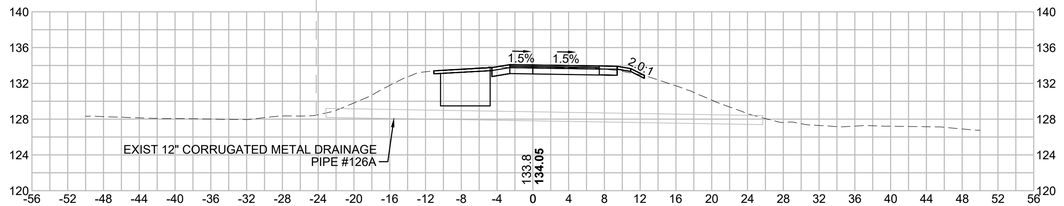
752+50



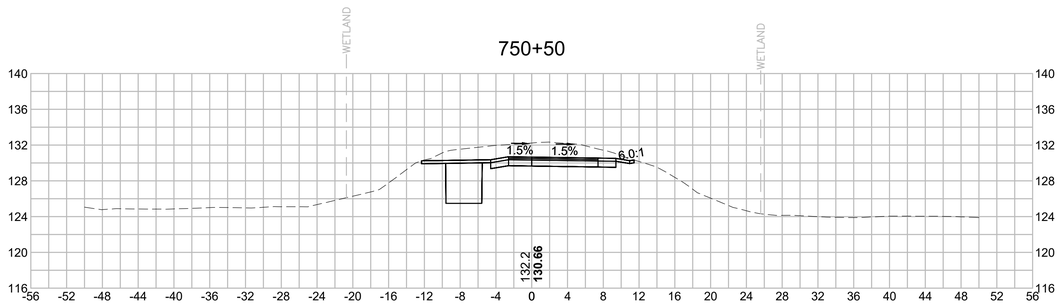
751+00



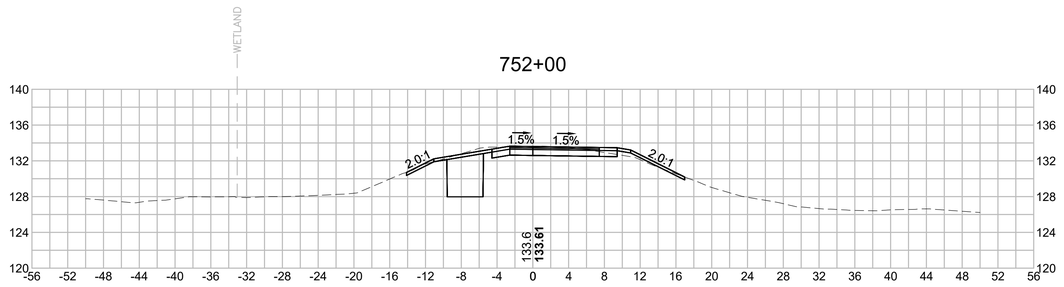
752+16.80



750+50



752+00



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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CROSS SECTIONS

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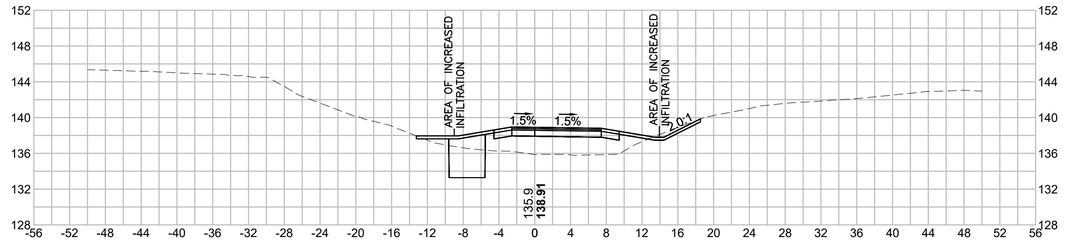
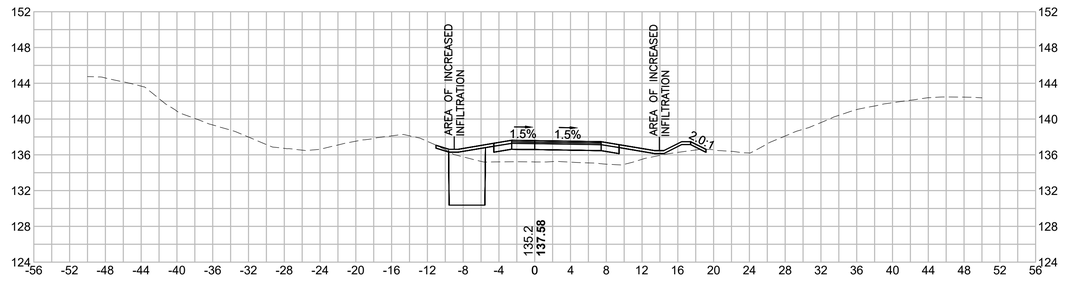
SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MS	.	.

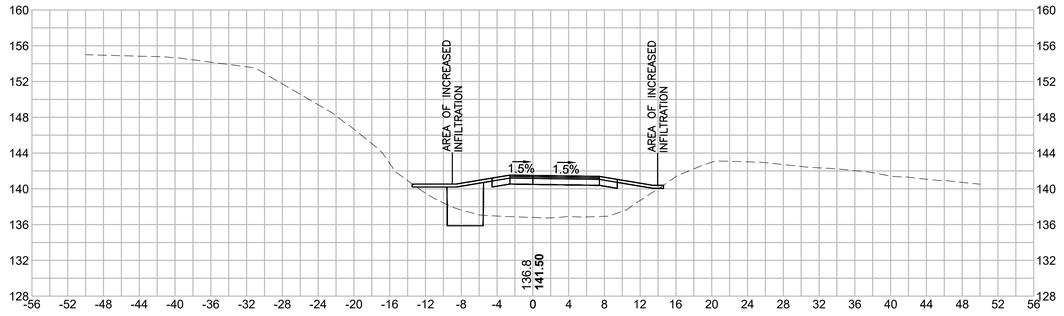
754+00



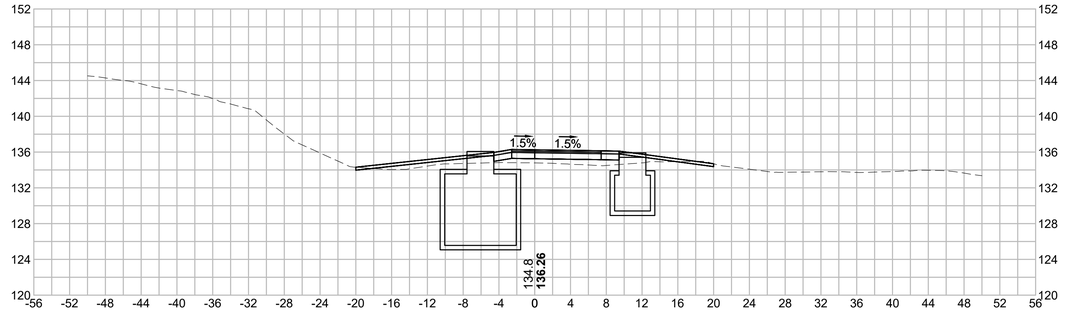
753+50



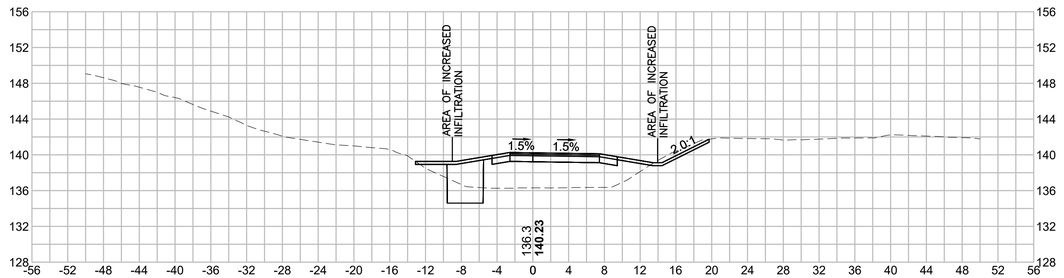
755+00



753+00



754+50



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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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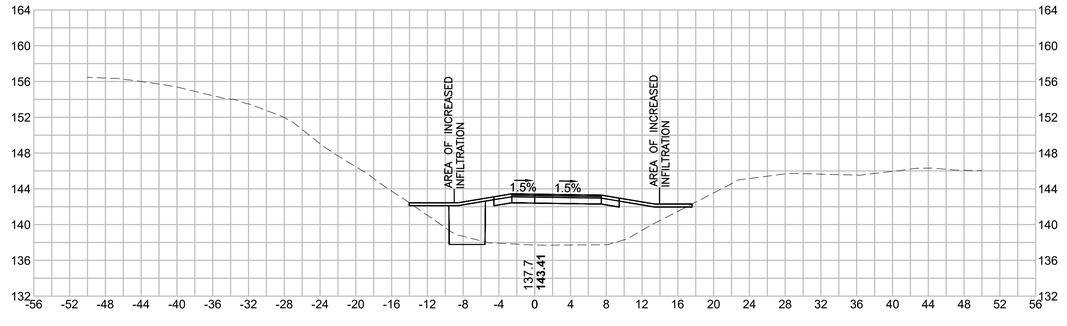
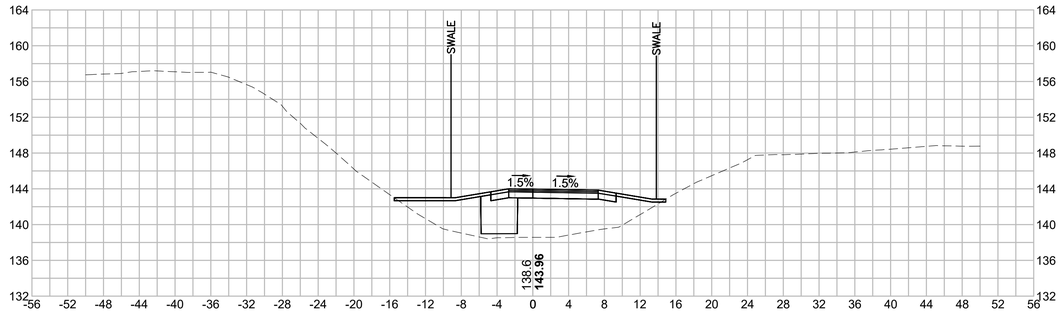
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

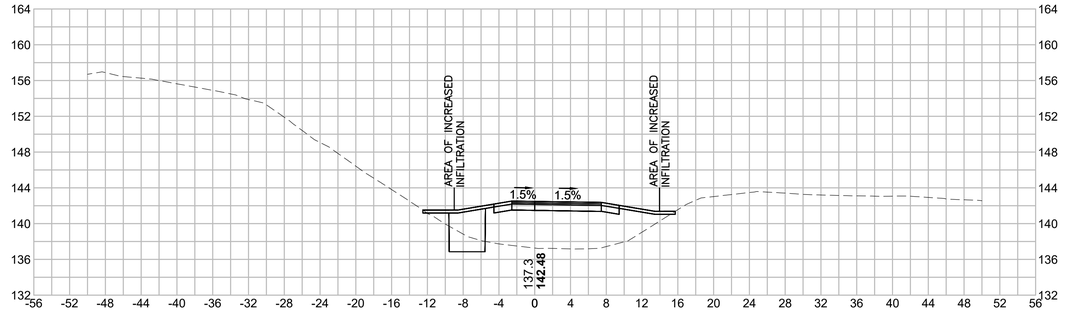
756+00



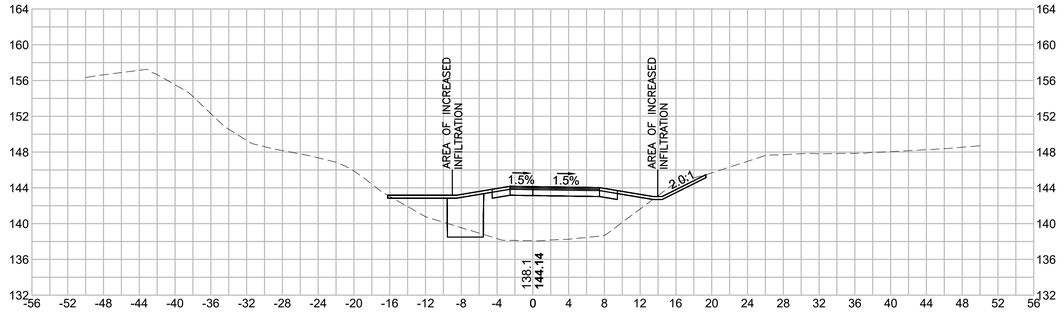
757+00



755+50



756+50



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SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
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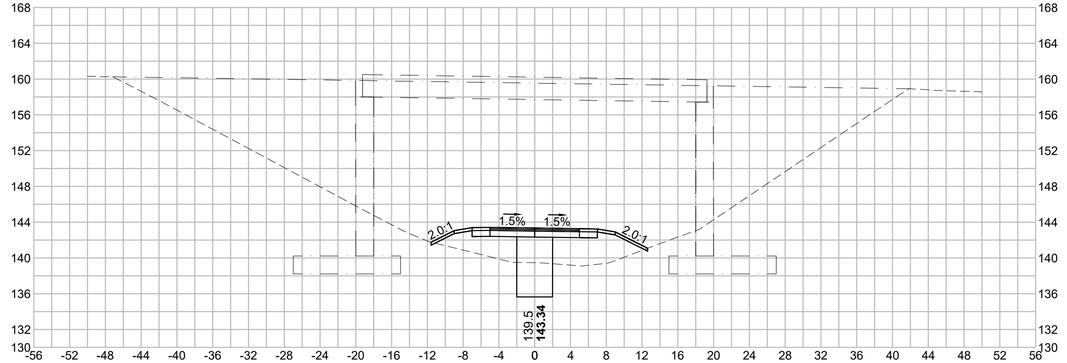
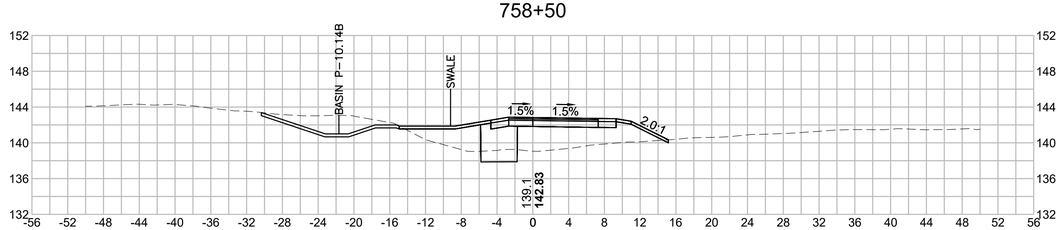
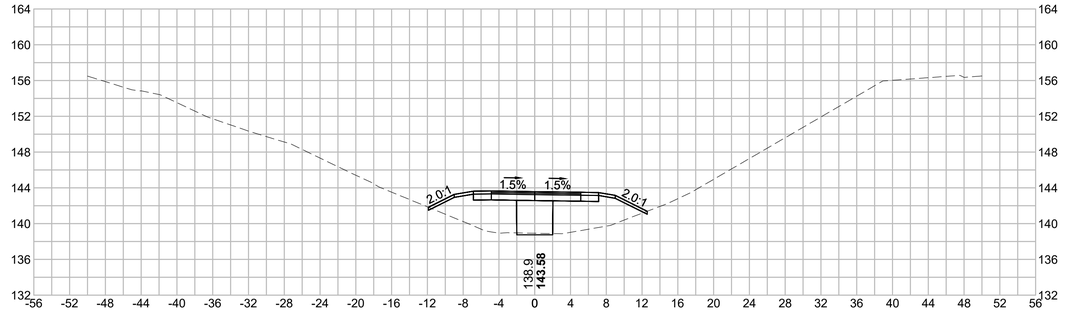
757+82.17



758+50



757+50



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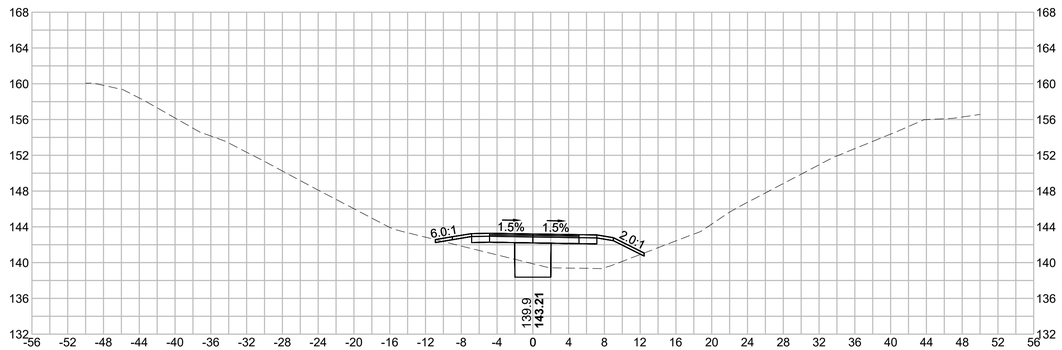

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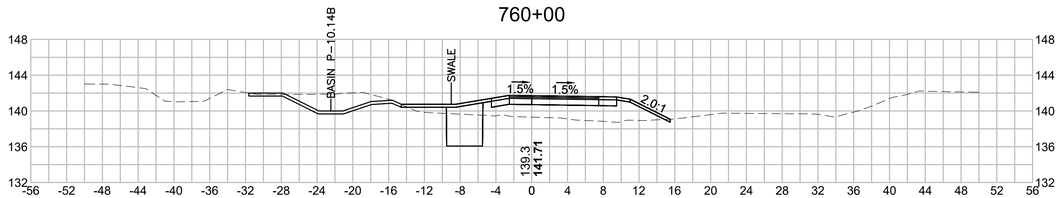
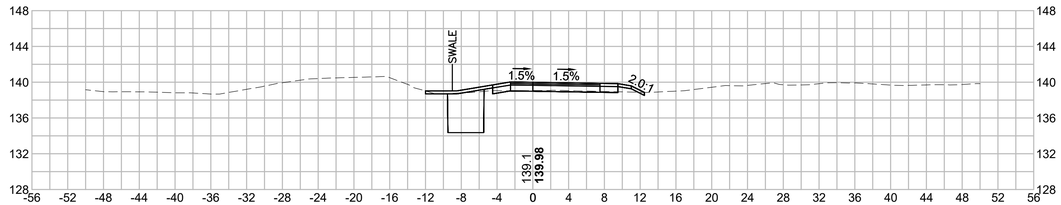
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

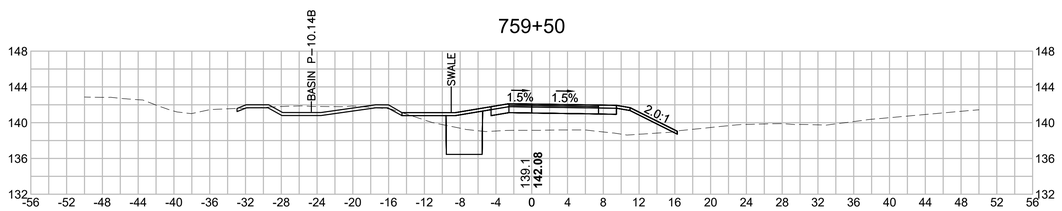
760+00



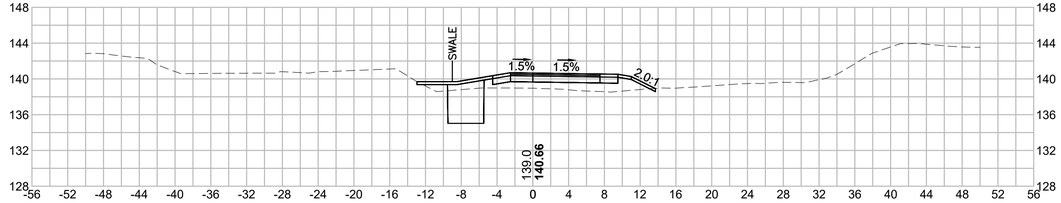
761+50



759+50



761+00



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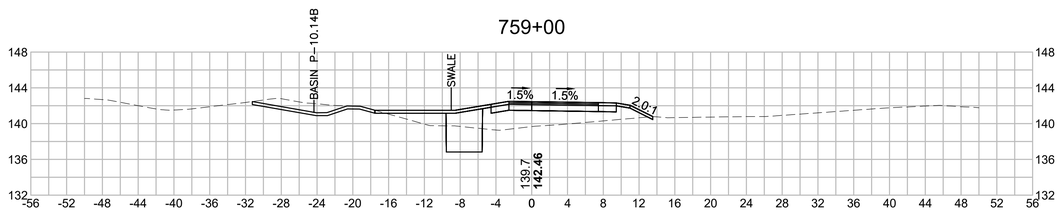

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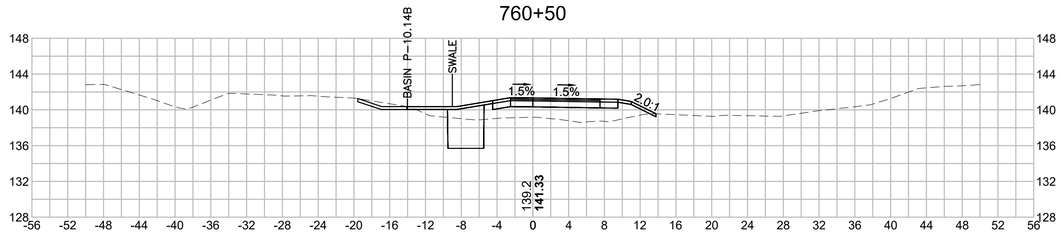

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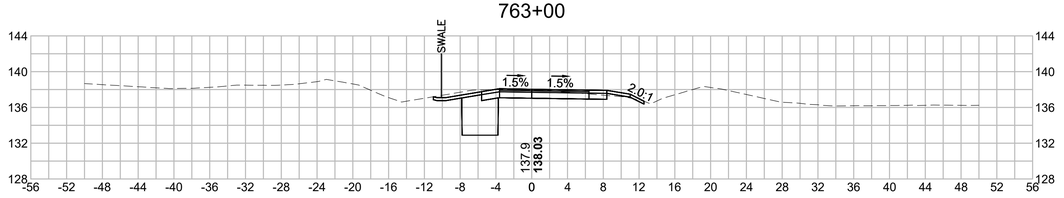
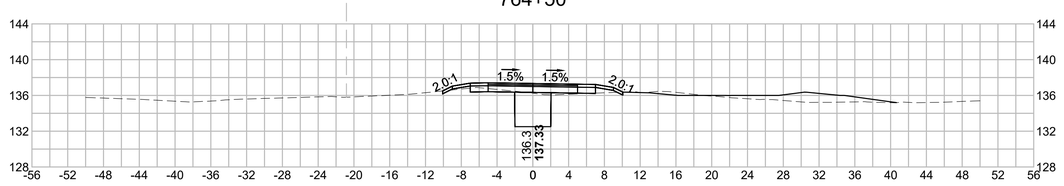
1"=8'	OCT 2020	MS	SK	MES	.	.

763+00



764+50



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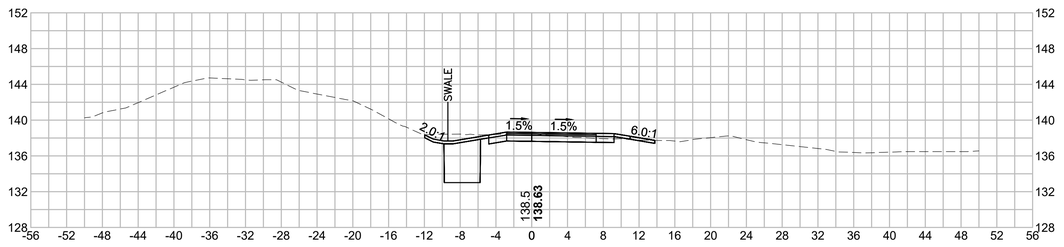

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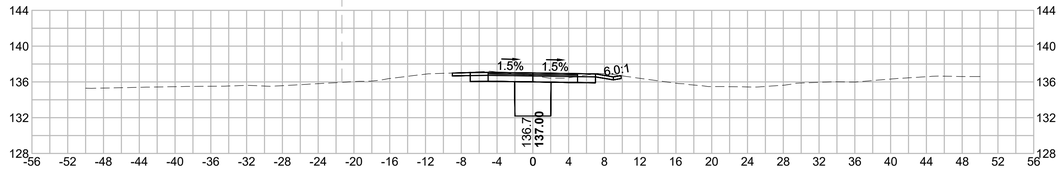

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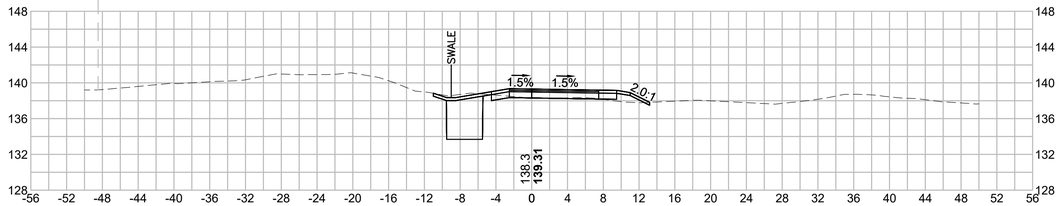

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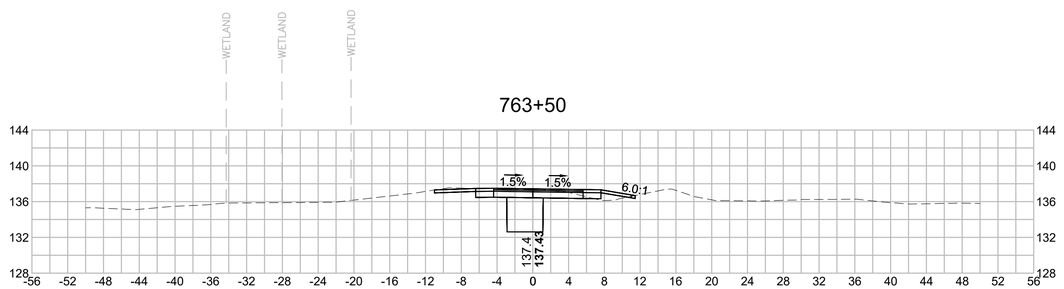

8 0 8 16
SCALE IN FEET

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

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SUDBURY–HUDSON TRANSMISSION RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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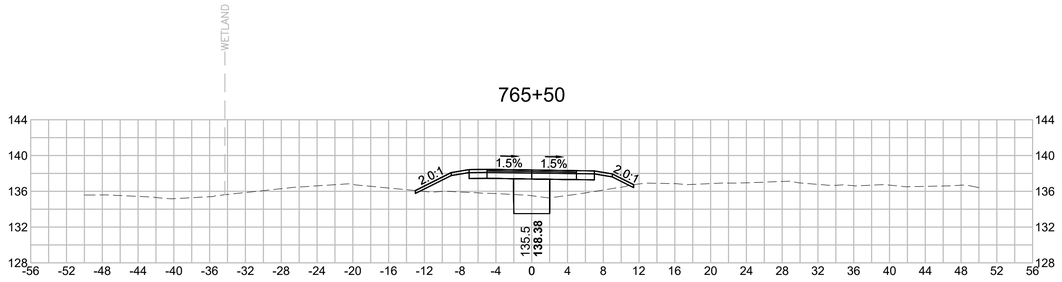
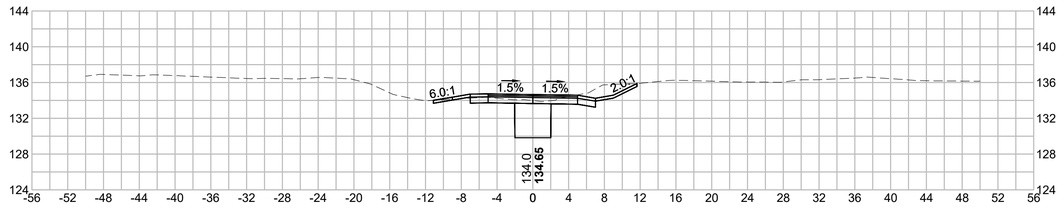
PLAN 344 OF 347

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

765+50



767+00



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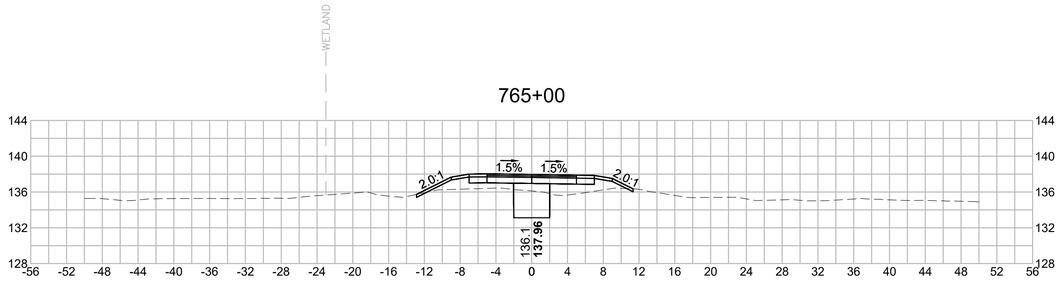

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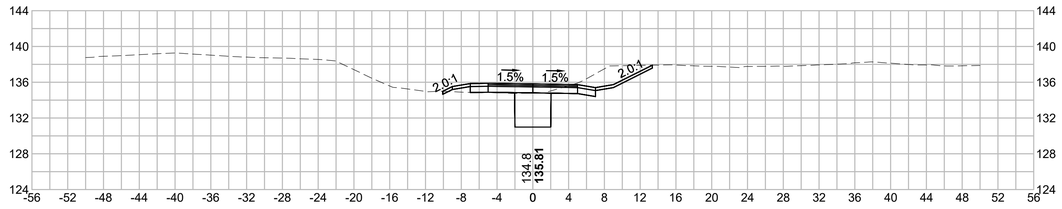

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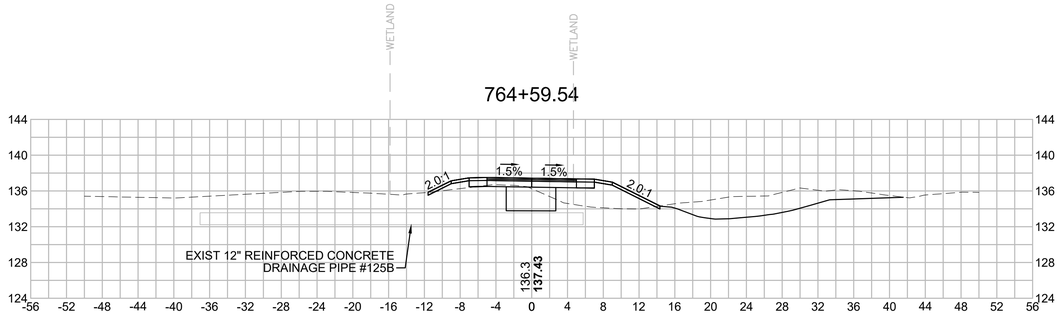

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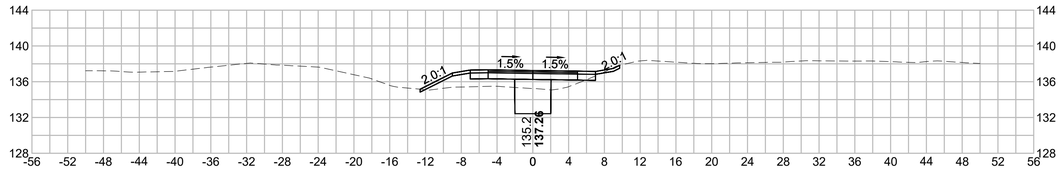



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CROSS SECTIONS

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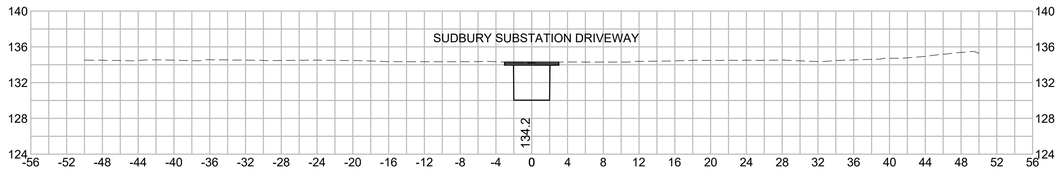
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MES	.	.

767+20.85



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CROSS SECTIONS

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SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=8'	OCT 2020	MS	SK	MS	.	.