

STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT

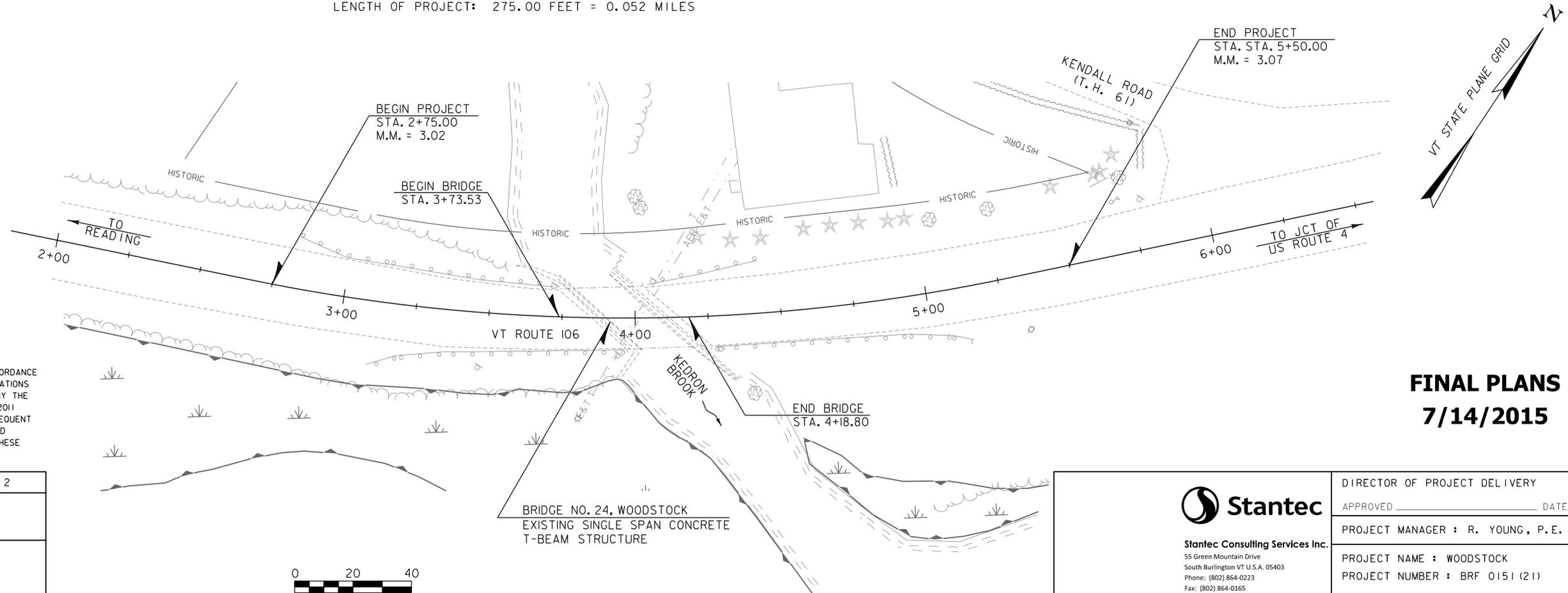
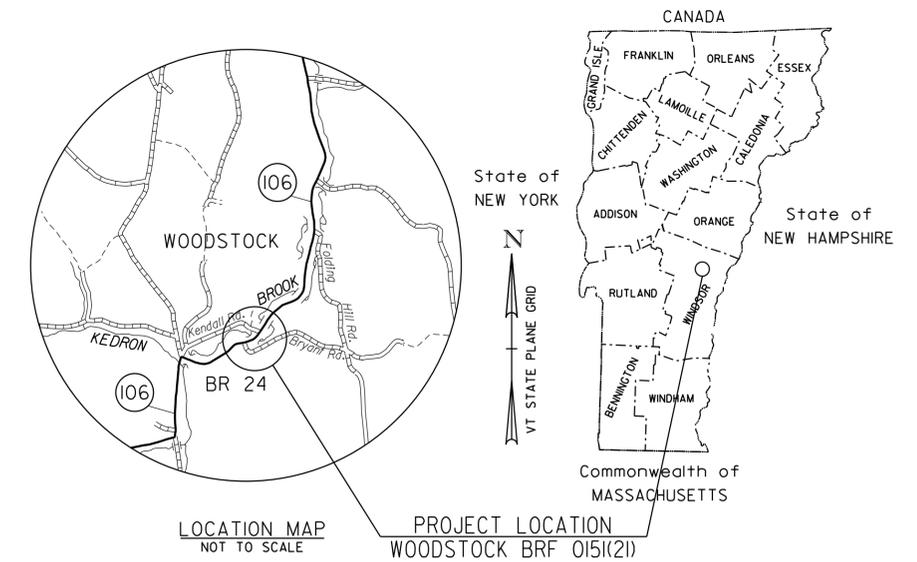
BRIDGE PROJECT TOWN OF WOODSTOCK COUNTY OF WINDSOR

VERMONT ROUTE 106 (MAJOR COLLECTOR RURAL) BRIDGE NO. 24

PROJECT LOCATION: IN THE TOWN OF WOODSTOCK, VERMONT ROUTE 106 APPROXIMATELY 200 FT SOUTH OF THE INTERSECTION WITH T.H. 61 (KENDALL ROAD) AT MILE MARKER 3.04.

PROJECT DESCRIPTION: REPLACEMENT OF EXISTING BRIDGE WITH A PRECAST CONCRETE STRUCTURE ALONG WITH RELATED ROADWAY AND CHANNEL WORK.

LENGTH OF BRIDGE: 45.27 FEET = 0.008 MILES
LENGTH OF ROADWAY: 229.73 FEET = 0.044 MILES
LENGTH OF PROJECT: 275.00 FEET = 0.052 MILES



CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

QUALITY ASSURANCE PROGRAM : LEVEL 2	
SURVEYED BY :	VTRANS
SURVEYED DATE :	04/28/2011
DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (92)



FINAL PLANS
7/14/2015

Stantec
Stantec Consulting Services Inc.
55 Green Mountain Drive
South Burlington VT U.S.A. 05403
Phone: (802) 864-0223
Fax: (802) 864-0165
www.stantec.com

DIRECTOR OF PROJECT DELIVERY	APPROVED _____ DATE _____
PROJECT MANAGER : R. YOUNG, P.E.	
PROJECT NAME : WOODSTOCK	
PROJECT NUMBER : BR# 0151 (21)	
SHEET 1 OF 50 SHEETS	

INDEX OF SHEETS

FINAL HYDRAULIC REPORT

PLAN SHEETS

1	TITLE SHEET
2	PRELIMINARY INFORMATION SHEET
3	TYPICAL SECTIONS - TYP 1
4	TYPICAL SECTIONS - TYP 2
5	PROJECT NOTES
6 - 7	QUANTITY SHEETS 1-2
8	CONVENTIONAL SYMBOLOLOGY LEGEND
9	SURVEY CONTROL AND TIES
10	LAYOUT PLAN - LP 1
11	PROFILE SHEET - RP 1
12 - 13	TRAFFIC CONTROL PLANS TC 1-2
14	DETOUR PLAN - DP 1
15	DETOUR DETAILS - DD 1
16	DETOUR DETAILS - DD 2
17	DETOUR DETAILS - DD 3
18	UTILITY LAYOUT SHEET - UTL 1
19	TRAFFIC SIGNS AND LINES LAYOUT - TSL 1
20	TRAFFIC SIGN SUMMARY SHEET - TSS 1
21	BORING PLAN
22	BORING LOG 1
23	BORING LOG 2
24	PLAN AND ELEVATION
25	STRUCTURAL PLAN
26	APPROACH SLAB DETAILS 1
27	APPROACH SLAB DETAILS 2
28	PEDESTAL FRAME 1 PLAN AND ELEVATION
29	PEDESTAL 1 FOOTING PLAN & PILE LAYOUT
30	PEDESTAL FRAME 2 PLAN AND ELEVATION
31	PEDESTAL 2 FOOTING PLAN & PILE LAYOUT
32	STRUCTURE DETAILS
33	BRIDGE RAIL LAYOUT
34 - 36	ROADWAY CROSS SECTIONS - RXS 1-3
37 - 40	CHANNEL CROSS SECTIONS - CXS 1-4
41	EROSION CONTROL NARRATIVE - ECN 1
42	EPSC EXISTING SITE PLAN
43	EPSC CONSTRUCTION SITE PLAN
44	EPSC PLAN - ECP 1
45	EROSION CONTROL DETAILS - ECD 1
46	EROSION CONTROL DETAILS - ECD 2
47	EROSION CONTROL DETAILS - ECD 3
48	STREAM PHASING SUMMARY
49	R.O.W. DETAIL SHEET #1
50	R.O.W. LAYOUT SHEET 1 OF 1

STANDARDS LIST

E-119	UTILITY WORK ZONE	03-01-2004
E-121	STANDARD PLACEMENT - CONVENTIONAL ROAD	08-08-1995
E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-1BM	BOX BEAM GUARDRAIL	06-13-1997
S-364A	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	02-10-2014
S-364B	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	02-10-2014
S-364C	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	02-10-2014
S-364D	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	02-10-2014
T-1	TRAFFIC CONTROL GENERAL NOTES	08-06-2012
T-10	CONVENTIONAL ROADS AND CONSTRUCTION APPROACH SIGNING	08-06-2012
T-28	CONSTRUCTION SIGN DETAILS	08-06-2012
T-42	BRIDGE NUMBER PLAQUE	04-09-2014
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013

STRUCTURES DETAILS

SD-501.00	CONCRETE DETAILS AND NOTES	02-09-2012
SD-502.00	CONCRETE DETAILS AND NOTES	10-10-2012
SD-516.10	BRIDGE JOINT ASPHALTIC PLUG	08-29-2011

HYDROLOGIC DATA

Date: March 2015

DRAINAGE AREA : 8.4 sq. mi.
 CHARACTER OF TERRAIN : Hilly to mountainous, 80% forested and 20% open
 STREAM CHARACTERISTICS : Straight to sinuous, steep river. Probably incised and alluvial.
 NATURE OF STREAMBED : Gravel, cobbles, some boulders and sand

PEAK FLOW DATA

Q 2.33 =	500 cfs	Q 50 =	1700 cfs
Q 10 =	950 cfs	Q 100 =	2075 cfs
Q 25 =	1350 cfs	Q 500 =	3400 cfs

DATE OF FLOOD OF RECORD : Unknown
 ESTIMATED DISCHARGE : Unknown
 WATER SURFACE ELEV. : Unknown
 NATURAL STREAM VELOCITY : @ Q50 = 6.1 fps
 ICE CONDITIONS : Moderate
 DEBRIS : Moderate
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes
 IS ORDINARY RISE RAPID? Yes
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
 IF YES, DESCRIBE :

WATERSHED STORAGE: 1% HEADWATERS:
 UNIFORM: X
 IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Concrete T-Beam bridge
 YEAR BUILT: 1924
 CLEAR SPAN(NORMAL TO STREAM): 14'
 VERTICAL CLEARANCE ABOVE STREAMBED: 8' (Ave. low beam elev. 980.6')
 WATERWAY OF FULL OPENING: 110 sq. ft.
 DISPOSITION OF STRUCTURE: Remove and replace
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: See boring logs.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	978.3'	VELOCITY =	10.9 fps
Q10 =	981.3'	"	15.9 fps
Q25 =	983.6'	"	18.4 fps
Q50 =	985.5'	"	20.2 fps
Q100 =	988.0'	"	20.8 fps

LONG TERM STREAMBED CHANGES: There is a scour hole through the bridge area.
 The bridge footings have been undermined due to scour and/or channel degradation.

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: Above Q100
 RELIEF ELEVATION: 983.3'
 DISCHARGE OVER ROAD @Q100: 0 cfs

UPSTREAM STRUCTURE

TOWN: Woodstock DISTANCE: 3,900'
 HIGHWAY #: VT 106 STRUCTURE #: 23
 CLEAR SPAN: 30' CLEAR HEIGHT: 13'
 YEAR BUILT: 1950 FULL WATERWAY: 260 sq. ft.
 STRUCTURE TYPE: Concrete rigid frame

DOWNSTREAM STRUCTURE

TOWN: Woodstock DISTANCE: 500'
 HIGHWAY #: VT 106 STRUCTURE #: 25
 CLEAR SPAN: 18' CLEAR HEIGHT: 10'
 YEAR BUILT: 1934 FULL WATERWAY: 180 sq. ft.
 STRUCTURE TYPE: Concrete slab bridge

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEM
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY							
POSTING							
OPERATING							
COMMENTS:							

AS BUILT "REBAR" DETAIL		
LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	
2014	1500	170	66	5.1	90	20 year ESAL for flexible pavement from 2014 to 2034 : 382000
2034	1600	180	66	7.7	150	40 year ESAL for flexible pavement from 2014 to 2054 : 874000
Design Speed : 40 mph						

PROPOSED STRUCTURE

STRUCTURE TYPE: Rigid Frame Bridge
 CLEAR SPAN(NORMAL TO STREAM): 30'
 VERTICAL CLEARANCE ABOVE STREAMBED: 9'
 WATERWAY OF FULL OPENING: 246 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	977.0'	VELOCITY=	8.0 fps
Q10 =	978.7'	"	9.4 fps
Q25 =	980.2'	"	11.4 fps
Q50 =	981.3'	"	11.5 fps
Q100 =	982.5'	"	13.8 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: Above Q100
 RELIEF ELEVATION: 983.3'
 DISCHARGE OVER ROAD @Q100: 0 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 982.3'
 VERTICAL CLEARANCE: @ Q50 = 1.0'

SCOUR: Long term and contraction scour up to Q200 (scour design check flood) = 5'.
 Piles should be designed to be freestanding to elevation 964.0'.
 REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW: 20 cfs DEPTH OR ELEVATION:
 ORDINARY LOW WATER: 10 cfs Depth = 1'
 ORDINARY HIGH WATER: 225 cfs Depth = 2'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Temporary bridge not required.
 CLEAR SPAN (NORMAL TO STREAM):
 VERTICAL CLEARANCE ABOVE STREAMBED:
 WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

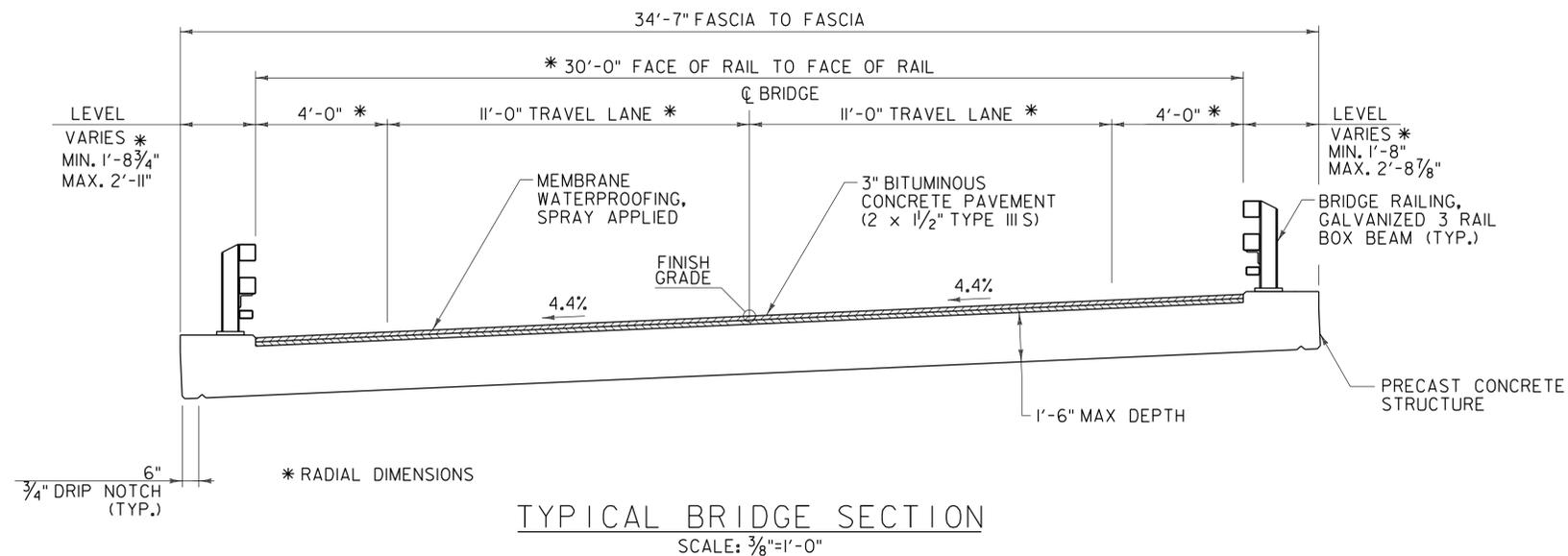
TRAFFIC MAINTENANCE NOTES

1. MAINTAIN ONE WAY TRAFFIC DURING PHASE I.
2. OFFSITE DETOUR DURING PHASE II.
3. TEMPORARY SIGNALS ARE NOT NECESSARY.
4. SIDEWALKS ARE NOT NECESSARY.

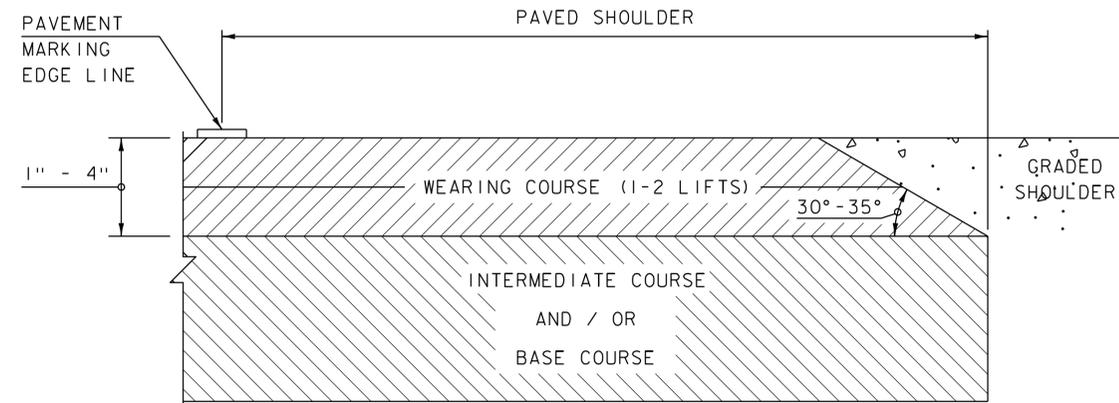
DESIGN VALUES

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	d _p : 0.0 INCH
3. DESIGN SPAN	L: 42'-5" FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: ---
5. PRESTRESSING STRAND	f _y : ---
6. PRESTRESSED CONCRETE STRENGTH	f' _c : ---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f' _{cr} : ---
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f' _c : 4.0 KSI
9. CONCRETE, HIGH PERFORMANCE CLASS A	f' _c : 4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B	f' _c : 3.5 KSI
11. CONCRETE, CLASS C	f' _c : 3.0 KSI
12. REINFORCING STEEL	f _y : 60 KSI
13. STRUCTURAL STEEL AASHTO M270	f _y : ---
14. SOIL UNIT WEIGHT	γ: 0.140 KCF
15. NOMINAL BEARING RESISTANCE OF SOIL	q _n : ---
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
17. NOMINAL BEARING RESISTANCE OF ROCK	q _n : ---
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
19. NOMINAL AXIAL PILE RESISTANCE	q _p : ---
20. PILE YIELD STRENGTH ASTM A572	f _y : ---
21. PILE SIZE	L _p : *
22. EST. PILE LENGTH	L _p : *
23. PILE RESISTANCE FACTOR	φ: ---
24. LATERAL PILE DEFLECTION	Δ: ---
25. BASIC WIND SPEED	V _{3s} : ---
26. MINIMUM GROUND SNOW LOAD	p _g : ---
27. SEISMIC DATA	PGA: --- S _s : --- S ₁ : ---

PROJECT NAME: **WOODSTOCK**
 PROJECT NUMBER: **BRF 0151(21)**
 FILE NAME: z10c426_pi.xls PLOT DATE: 3/29/2015
 PROJECT LEADER: G. BOGUE DRAWN BY: L. BUXTON
 DESIGNED BY: G. BOGUE CHECKED BY: J. HUNGERFORD
PRELIMINARY INFORMATION SHEET SHEET 2 OF 50



TYPICAL BRIDGE SECTION
SCALE: 3/8"=1'-0"

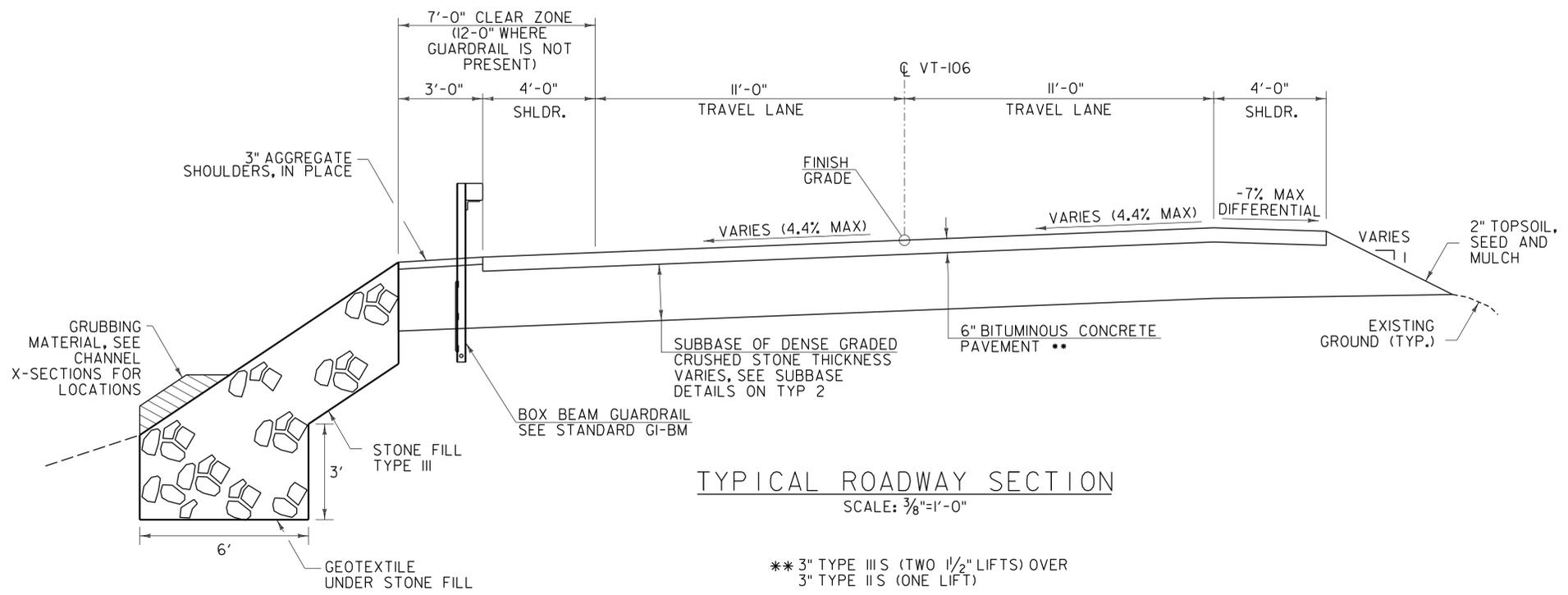


SAFETY EDGE DETAIL
NOT TO SCALE

EMULSIFIED ASPHALT SHALL BE APPLIED ON EXISTING PAVEMENT SURFACES, COLD PLANED SURFACES, BETWEEN ALL COURSES OF PAVEMENT AND ON THE FACE OF CURB. EMULSIFIED ASPHALT SHALL MEET THE REQUIREMENTS OF SECTION 404. EMULSIFIED ASPHALT SHALL BE APPLIED TO ALL COLD PLANED SURFACES AT A RATE OF 0.08 GAL/SY. EMULSIFIED ASPHALT SHALL BE APPLIED TO ALL OTHER PAVED SURFACES AT A RATE BETWEEN 0.025 AND 0.04 GAL/SY, AS DIRECTED BY THE ENGINEER. EMULSIFIED ASPHALT WILL BE PAID UNDER ITEM 900.683 SPECIAL PROVISION (EMULSIFIED ASPHALT) (RS-1H OR CRS-1H).

NOTE:

- THE EDGE OF PAVEMENT SHALL BE FORMED IN SUCH A WAY THAT THE BITUMINOUS CONCRETE PAVEMENT IS EXTRUDED OR COMPRESSED TO FORM THE 30 TO 35 DEGREE ANGLE. DEVICES THAT SIMPLY STRIKE-OFF THE MIX WITHOUT PROVIDING ANY COMPACTIVE EFFORT WILL NOT BE ALLOWED.



TYPICAL ROADWAY SECTION
SCALE: 3/8"=1'-0"

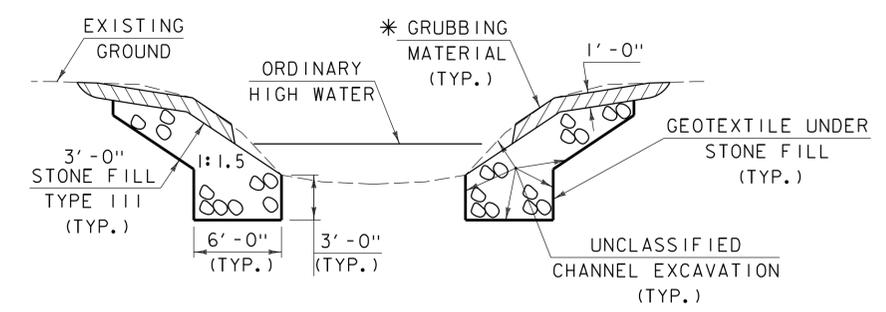
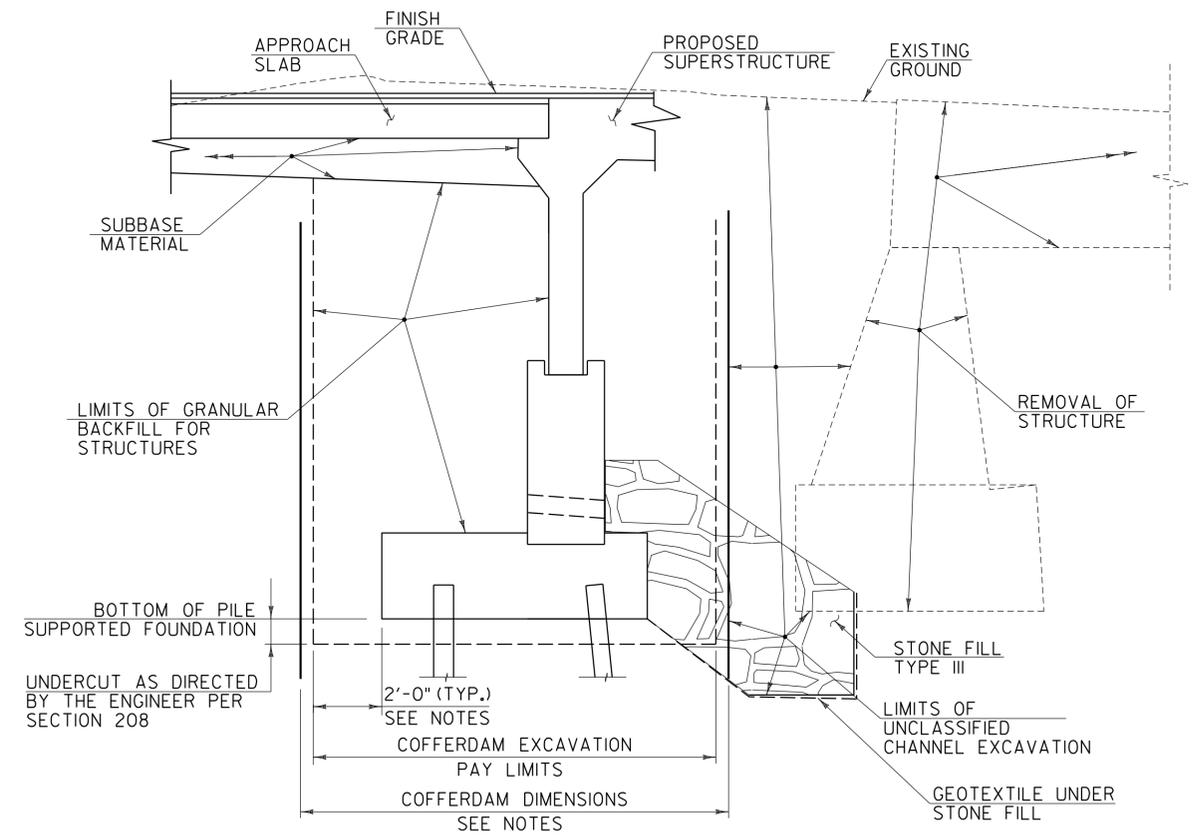
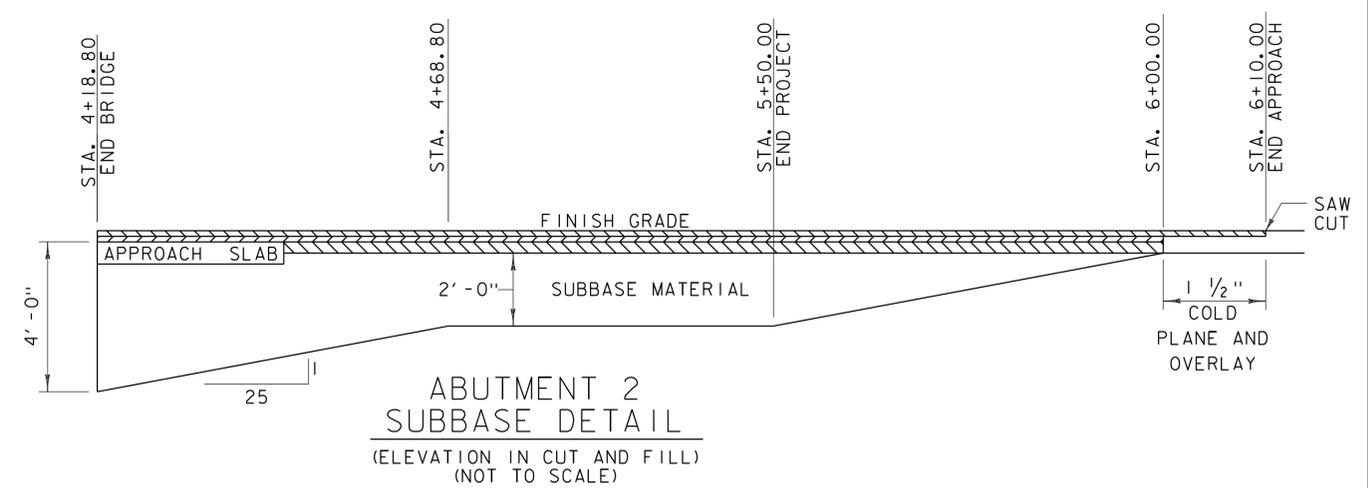
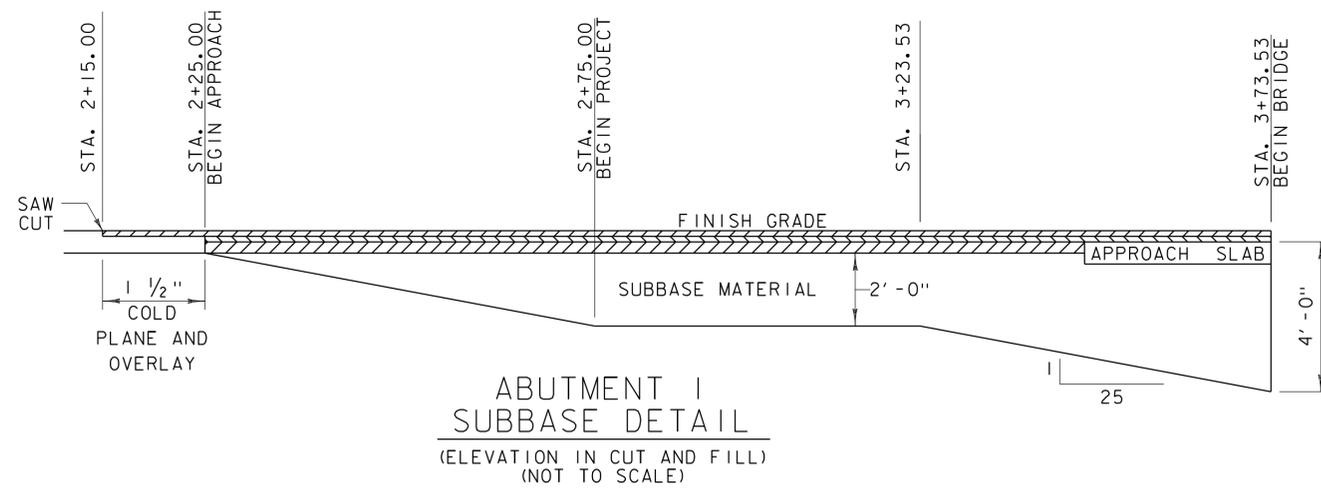
** 3" TYPE III S (TWO 1 1/2" LIFTS) OVER 3" TYPE II S (ONE LIFT)

MATERIAL TOLERANCES
(IF USED ON PROJECT)

SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"



PROJECT NAME: WOODSTOCK	PLOT DATE: 7/14/2015
PROJECT NUMBER: BRF 0151(21)	DRAWN BY: L. BUXTON
FILE NAME: z10c426typ.dgn	DESIGNED BY: J. HUNGERFORD
PROJECT LEADER: G. BOGUE	CHECKED BY: J. HUNGERFORD
TYPICAL SECTIONS - TYP 1	SHEET 3 OF 50



COFFERDAM AND EARTHWORK SECTION
NOT TO SCALE

CHANNEL TYPICAL SECTION
NOT TO SCALE

COFFERDAM NOTES

1. DUE TO THE ANTICIPATED PRESENCE OF LARGE COBBLES AND BOULDERS, THE USE OF A SHALLOW COFFERDAM IS ANTICIPATED. COFFERDAM TYPE AND DIMENSIONS ARE TO BE DETERMINED BY THE CONTRACTOR.
2. THE PAY LIMITS OF "COFFERDAM EXCAVATION, EARTH" AND "COFFERDAM EXCAVATION, ROCK" SHALL BE 2'-0" OUTSIDE THE PERIMETER OF THE FOOTING AND FROM BOTTOM OF EXCAVATION UP TO THE EXISTING GROUND OR BOTTOM OF SUBBASE, WHICHEVER IS LOWER.
3. IF A COFFERDAM IS CONSTRUCTED WHICH IS LARGER THAN THE INDICATED COFFERDAM EXCAVATION PAY LIMITS, PAYMENT FOR ALL UNCLASSIFIED CHANNEL EXCAVATION, INCLUDING THAT PORTION WHICH IS INSIDE THE COFFERDAM BUT OUTSIDE THE COFFERDAM PAY LIMITS, WILL BE MADE AT THE CONTRACT UNIT PRICE FOR UNCLASSIFIED CHANNEL EXCAVATION. NO MEASUREMENT AND PAYMENT WILL BE MADE FOR COFFERDAM EXCAVATION AND GRANULAR BACKFILL FOR STRUCTURES OUTSIDE THE PAY LIMITS DEFINED IN NOTE 2.

* GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.

PROJECT NAME: WOODSTOCK	
PROJECT NUMBER: BRF 0151(21)	
FILE NAME: z10c426typ.dgn	PLOT DATE: 7/14/2015
PROJECT LEADER: G. BOGUE	DRAWN BY: L. BUXTON
DESIGNED BY: J. HUNGERFORD	CHECKED BY: J. HUNGERFORD
TYPICAL SECTIONS - TYP 2	SHEET 4 OF 50



PROJECT NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AND ITS LATEST REVISIONS, THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SEVENTH EDITION, DATED 2014, AND ITS LATEST REVISIONS.
2. THE FOLLOWING WILL BE PAID FOR UNDER ITEM 529.15 "REMOVAL OF STRUCTURE": REMOVAL AND DISPOSAL OF THE EXISTING CONCRETE T-BEAM BRIDGE INCLUDING ABUTMENTS, WINGWALLS, BRIDGE PAVEMENT AND BRIDGE RAILING.
3. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
4. PAYMENT FOR DEWATERING SHALL BE INCLUDED IN PAY ITEM 208.40, "COFFERDAM". A STREAM PHASING SEQUENCE IS SHOWN ON SHEET 48. THIS SEQUENCE OF CONSTRUCTION WAS USED TO DEFINE THE LIMITS OF STREAM DISTURBANCE AND RELOCATION FOR PERMITTING THE PROJECT. THE SEQUENCE REQUIRES THE COFFERDAM FOR ABUTMENT 1 TO BE REMOVED PRIOR TO INSTALLING THE COFFERDAM FOR ABUTMENT 2. IF THE CONTRACTOR PROPOSES A DIFFERENT SEQUENCE OF CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE APPROPRIATE REGULATORY AGENCIES PRIOR TO PERFORMING THE WORK.
5. ALL PRECAUTIONS SHALL BE TAKEN TO PREVENT SEDIMENT OR POLLUTION FROM ENTERING INTO KEDRON BROOK. ALL WATER PUMPED FROM EXCAVATION AREAS SHALL BE CLARIFIED PRIOR TO BEING ALLOWED TO MIX WITH THE STREAM FLOW. STATE WATER QUALITY STANDARDS SHALL BE MAINTAINED AT ALL TIMES. PAYMENT SHALL BE MADE UNDER SPECIAL PROVISION (IN-STREAM SEDIMENT ISOLATION DEVICE).
6. ONE TREE AT STATION 4+22 LT SHALL BE REMOVED. ALL REMAINING TREES SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 656.10. SEE SHEET 10.

MICROPILE FOUNDATIONS

7. THE MICROPILES ARE DESIGNED TO SUPPORT A MAXIMUM STRENGTH LIMIT STATE AXIAL LOAD OF 230 kips PER PILE IN COMPRESSION. THE REQUIRED NOMINAL AXIAL RESISTANCES ARE 322 kips PER PILE (COMPRESSION) AND 168 kips PER PILE (TENSION).
8. MINIMUM MICROPILE STEEL CASING THICKNESS = 0.545 INCHES
MINIMUM OUTSIDE DIAMETER OF MICROPILE CASING = 9.625 INCHES
MINIMUM UNCASSED DIAMETER = 8.535 INCHES
9. EXTEND CASING A MINIMUM OF 1 (ONE) FOOT BELOW TOP OF COMPETENT LEDGE; EXTEND UNCASSED PORTION OF MICROPILE A MINIMUM OF 6 (SIX) FEET BELOW THE BOTTOM CASING FOR THE FRONT, BATTERED PILES AND 4 (FOUR) FEET FOR THE PLUMB BACK PILES.
10. TOP OF THE PILES SHALL BE CUT OFF AT ELEVATION 971.50'. ESTIMATED IN PLACE CASING LENGTH VARIES 23 FEET TO 28 FEET. ACTUAL LENGTHS MAY VARY SLIGHTLY DEPENDING ON LEDGE ELEVATION.
11. THE CONTRACTOR IS ADVISED THAT DIFFICULT DRILLING CONDITIONS ARE ANTICIPATED. THE CONTRACTOR SHALL MAKE PROVISIONS TO MAINTAIN THE TOLERANCES FOR LOCATION AND BATTER OF THE MICROPILES ESTABLISHED IN THE SPECIAL PROVISIONS AND AS NECESSARY TO ASSURE COMPATIBILITY WITH THE LOCATION OF THE PRECAST FOOTINGS.

PRE-CAST CONCRETE

12. THE MICROPILE FOUNDATION AND PEDESTAL WALLS ARE DESIGNED FOR THE REACTIONS AND BEHAVIOR SUMMARIZED BELOW. IF THE PROPOSED FRAME REACTIONS AND GEOMETRY VARY BEYOND THE LIMITS DEFINED BELOW, THE FABRICATOR SHALL ASSUME DESIGN RESPONSIBILITY OF THE FOUNDATION, DESIGN THE NECESSARY REVISIONS TO THE FOUNDATION AND SUBMIT STRUCTURAL CALCULATIONS FOR THE REVISED DESIGN IN ACCORDANCE WITH SECTION 540.04.
 - A. FRAME STIFFNESS: WHEN MODELING THE STIFFNESS OF THE FRAME FOR PURPOSES OF DESIGNING THE FOUNDATION, THE FRAME LEG WAS ASSUMED TO HAVE A MINIMUM THICKNESS OF 12 INCHES. IF THE FABRICATOR'S PROPOSED FRAME LEG THICKNESS IS LESS THAN 12 INCHES, THE FABRICATOR SHALL ASSUME DESIGN RESPONSIBILITY OF THE FOUNDATION.
 - B. FRAME REACTIONS AT TOP OF PEDESTAL: THE FOUNDATION WAS DESIGNED FOR A MAXIMUM UN-FACTORED REACTIONS OF:
 - DEAD LOAD - 8.6 KIPS PER FOOT OF FRAME
 - LIVE LOAD - 5.5 KIPS PER FOOT OF FRAME
 - C. TOP OF PEDESTAL: THE PEDESTAL IS DESIGNED FOR A MAXIMUM ELEVATION 977.66 FEET. IF THE PROPOSED FABRICATOR'S DESIGN REQUIRES A HIGHER PEDESTAL ELEVATION, THE FABRICATOR SHALL ASSUME DESIGN RESPONSIBILITY OF THE FOUNDATION.
13. THE PRECAST FRAME AND WINGWALLS SHALL BE DESIGNED BY THE PRECAST FABRICATOR, INCLUDING THE ANCHORAGE AND CONNECTIONS BETWEEN ELEMENTS. ALL ELEMENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE FABRICATOR'S RECOMMENDATIONS. THE CONTRACTOR SHALL SUBMIT FABRICATION DRAWINGS AND CALCULATIONS IN ACCORDANCE WITH SECTION 105.

DESIGN CRITERIA:

- LIVE LOAD = HL-93
- UNIT WEIGHT OF BACKFILL = 140 LBS/CF
- ACTIVE EARTH PRESSURE COEFFICIENT FOR BACKFILL $K_a = 0.27$
- AT REST EARTH PRESSURE COEFFICIENT FOR BACKFILL $K_0 = 0.43$
- PASSIVE EARTH PRESSURE COEFFICIENT FOR BACKFILL $K_p = 3.69$
(DIRECTION TOWARD THE BACKFILL)
- LATERAL STIFFNESS OF PILE SUPPORTED FOUNDATION $K_{fnd} = 8$ kips/INCH PER FOOT OF FRAME (HORIZONTAL DIRECTION AWAY FROM BACKFILL)

14. THE FABRICATOR SHALL BE RESPONSIBLE FOR SUPPLYING THE STATE WITH THE LRFR LOAD RATING FACTOR FOR THE FRAME TO COMPLETE THE CHART SHOWN ON THE PRELIMINARY INFORMATION SHEET.
15. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1".
16. CLEAR COVER ON REINFORCING STEEL SHALL BE PER THE FOLLOWING TABLE UNLESS NOTED OTHERWISE.

LOCATION	CLEAR COVER (INCHES)
UNDERSIDE OF FRAME ROOF	1.5
EXPOSED TO EARTH OR WEATHER	2
TOP OF FRAME AND APPROACH SLABS	2.5
DIRECT EXPOSURE TO DEICING SALTS (RAILING SEAT AND FRAME FASCIA)	3
CAST AGAINST EARTH	3

17. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:
 - SPACING: +/- 1 INCH
 - CLEARANCE: +/- 1/4 INCH
18. THE LUMP SUM COST FOR ITEM 540.10 "PRECAST CONCRETE STRUCTURE" (SUPERSTRUCTURE FRAME AND WINGWALLS) SHALL INCLUDE THE PRECAST RIGID FRAME, WINGWALLS AND MECHANICAL CONNECTIONS INCLUDING ALL REINFORCING IN JOINTS AND BLOCKOUTS.
19. PRECAST TOLERANCES SHALL BE SHOWN ON THE FABRICATION PLANS AND SHALL BE IN ACCORDANCE WITH PCI MANUAL 135-00.
20. ALL REINFORCING STEEL IN THE PRECAST PEDESTAL WALLS AND FOUNDATION SHALL BE LEVEL 1.
21. ALL REINFORCING STEEL IN THE PRECAST RIGID FRAME, APPROACH SLABS AND WINGWALLS SHALL BE LEVEL 11.
22. THE PRECAST STRUCTURE DETAILS ARE SHOWN FOR REFERENCE ONLY. THE ACTUAL DIMENSIONS AND CONFIGURATION WILL BE DEPENDENT ON THE FABRICATOR. THE INSIDE CLEAR DIMENSION OF THE FRAME SHALL BE 30'-0" AND THE THICKNESS OF THE ROOF SLAB SHALL BE NO MORE THAN 1'-6" THICK.
23. NO HOLES SHALL BE DRILLED IN THE RIGID FRAME WITHOUT THE APPROVAL OF THE FABRICATOR AND THE AGENCY, UNLESS NOTED OTHERWISE.
24. THE USE OF EQUIPMENT AND THE METHOD OF BACKFILLING AROUND THE BURIED STRUCTURE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. CARE SHALL BE TAKEN WHEN BACKFILLING AGAINST JOINT SEALING MATERIALS.
25. JOINTS BETWEEN ALL ABUTTING PRECAST UNITS SHALL BE WATERTIGHT AND MECHANICALLY CONNECTED.
26. WATER REPELLENT SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT FOR THE INTERIOR OF THE NEW STRUCTURE.

TRAFFIC CONTROL

27. THE INCLUDED TRAFFIC CONTROL PLANS AND DETAILS ARE SCHEMATIC ONLY AND SHOULD BE USED AS A REFERENCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION AND IMPLEMENTATION OF A SITE SPECIFIC TRAFFIC CONTROL PLAN FOR ALL STAGES OF CONSTRUCTION. THE PLAN SHALL CLEARLY DETAIL HOW TRAFFIC WILL BE MAINTAINED PRIOR TO, DURING AND AFTER THE CLOSURE PERIOD FOR THE DETOUR. THE CONTRACTOR SHALL SUBMIT DETAILED TRAFFIC CONTROL PLANS TO THE ENGINEER FOR APPROVAL PER SUBSECTION 105.03. ALL COSTS SHALL BE INCLUDED IN ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).
28. IT IS ANTICIPATED THAT THE TRAFFIC CONTROL WILL FALL UNDER TWO PHASES. DURING PHASE 1, ALTERNATING 1-WAY TRAFFIC SHALL BE MAINTAINED THROUGH THE WORK ZONE AT ALL TIMES. LANE WIDTH MUST BE A MINIMUM OF 10' DURING 1-WAY TRAFFIC OPERATIONS. FOR PHASE TWO, THE BRIDGE WILL BE CLOSED AND A REGIONAL DETOUR WILL BE USED. SEE SHEETS TC-1 AND TC-2 FOR DETAILS.
29. CONTRACTOR IS RESPONSIBLE FOR CLOSURE OF VT ROUTE 106 IN THE AREA SURROUNDING BRIDGE 24 AND THE REGIONAL DETOUR SHOWN ON SHEET DP 1 DURING PHASE 2. CONTRACTOR TO COORDINATE WITH TOWN HIGHWAY OFFICIALS AT LEAST FOUR WEEKS PRIOR TO ROAD CLOSURE.
30. ALL TRAFFIC SIGNS SHALL CONFORM TO THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

PROJECT NAME: WOODSTOCK
PROJECT NUMBER: BRF 0151(21)

FILE NAME: z10c426gen notes.dgn PLOT DATE: 7/14/2015
PROJECT LEADER: G. BOGUE DRAWN BY: L. BUXTON
DESIGNED BY: T. KNIGHT CHECKED BY: G. BOGUE
PROJECT NOTES SHEET 5 OF 50



QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							1				1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10		8 CY	FILL REQUIRED	
							1050				1050		CY	COMMON EXCAVATION	203.15		CY	MEASURED AREA FILL [= A]	
							55				55		CY	SOLID ROCK EXCAVATION	203.16		CY	LESS FACTORED SOLID ROCK EXCAVATION [= B1]	
									250		250		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27		CY	COFFERDAM EXCAVATION OF ROCK [= B2]	
							1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22		8 CY	NET MEASURED AREA FILL [A+B1+B2 = D]	
									580		580		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30		9 CY	1.15 X NET MEASURED AREA FILL = FACTORED FILL [1.15 X D = E]	
									985		985		CY	COFFERDAM EXCAVATION, EARTH	208.30			MEASURED AREA MATERIAL AVAILABLE FOR FILL	
									55		55		CY	COFFERDAM EXCAVATION, ROCK	208.35		1050 CY	1.0 X EARTH EXCAVATION [= F]	
									1		1		LS	COFFERDAM (ABUTMENT #1 PEDESTAL WALL)	208.40		75 CY	0.3 X UNCLASSIFIED CHANNEL EXCAVATION [= G]	
									1		1		LS	COFFERDAM (ABUTMENT #2 PEDESTAL WALL)	208.40		296 CY	0.3 X COFFERDAM EXCAVATION [= H]	
							65				65		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10		1421 CY	TOTAL MATERIAL AVAILABLE FOR FILL [F+G+H = I]	
							800				800		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35			WASTE [E-I]	
							7				7		CY	AGGREGATE SHOULDERS, IN PLACE	402.10				
							1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
									15		15		GAL	WATER REPELLENT, SILANE	514.10				
									85		85		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
									142		142		SY	MEMBRANE WATERPROOFING, SPRAY APPLIED	520.10				
									85		85		LF	JOINT SEALER, HOT POURED	524.11				
									96		96		LF	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	525.335				
									1		1		EACH	REMOVAL OF STRUCTURE (REMOVE EXISTING BRIDGE)(725 SF)	529.15				
									1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #1 PEDESTAL WALL)	540.10				
									1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #2 PEDESTAL WALL)	540.10				
									1		1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB #1)	540.10				
									1		1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB #2)	540.10				
									1		1		LS	PRECAST CONCRETE STRUCTURE (SUPERSTRUCTURE FRAME AND WINGWALLS)	540.10				
							20				20		MGAL	DUST CONTROL WITH WATER	609.10				
									400		400		CY	STONE FILL, TYPE III	613.12				
							44				44		LF	BOX BEAM GUARDRAIL	621.30				
							2				2		EACH	MANUFACTURED TERMINAL SECTION, TANGENT (BEAT)	621.51				
									4		4		EACH	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	621.725				
							280				280		HR	FLAGGERS	630.15				
										1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
										1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
										1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
										3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
							1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
							780				780		LF	DURABLE 4 INCH WHITE LINE, POLYUREA	646.404				
							780				780		LF	DURABLE 4 INCH YELLOW LINE, POLYUREA	646.414				
									370		370		SY	GEOTEXTILE UNDER STONE FILL	649.31				
								15			15		SY	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515				

PROJECT NAME: WOODSTOCK
 PROJECT NUMBER: BRF 15I(2I)
 FILE NAME: z10c426frm.dgn
 PROJECT LEADER: G. BOGUE
 DESIGNED BY: E. ALLING
 QUANTITY SHEET 1
 PLOT DATE: 7/14/2015
 DRAWN BY: E. ALLING
 CHECKED BY: G. BOGUE
 SHEET 6 OF 50



QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
								10			10		LB	SEED	651.15				
								10			10		LB	SEED, WINTER RYE	651.17				
								50			50		LB	FERTILIZER	651.18				
								0.3			0.3		TON	AGRICULTURAL LIMESTONE	651.20				
								0.3			0.3		TON	HAY MULCH	651.25				
								50			50		CY	TOPSOIL	651.35				
									90		90		SY	GRUBBING MATERIAL	651.40				
								1			1		LS	EPSC PLAN	652.10				
								80			80		HR	MONITORING EPSC PLAN	652.20				
								1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30				
								390			390		SY	TEMPORARY EROSION MATTING	653.20				
								40			40		CY	VEHICLE TRACKING PAD	653.35				
								2			2		EACH	FILTER BAG	653.45				
								230			230		LF	BARRIER FENCE	653.50				
								310			310		LF	PROJECT DEMARCATION FENCE	653.55				
								1			1		LS	TREE PROTECTION	656.85				
							46				46		SF	TRAFFIC SIGNS, TYPE A	675.20				
							170				170		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
							9				9		EACH	REMOVING SIGNS	675.50				
									82		82		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPQ)	900.608				
							1				1		EACH	SPECIAL PROVISION (CPM SCHEDULE)	900.620				
									10		10		HR	SPECIAL PROVISION (UNEXPECTED OBSTRUCTION DRILLING)	900.630				
									850		850		LF	SPECIAL PROVISION (MICROPILE, CASED)(9.625 IN)	900.640				
									160		160		LF	SPECIAL PROVISION (MICROPILE, UNCASED)(8.535 IN)	900.640				
									1		1		LS	SPECIAL PROVISION (FURNISHING EQUIPMENT FOR INSTALLING MICROPILES)	900.645				
									1		1		LS	SPECIAL PROVISION (IN-WATER SEDIMENT ISOLATION DEVICE)	900.645				
							1				1		LS	SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)	900.645				
							1				1		LU	SPECIAL PROVISION (INCENTIVE/DISINCENTIVE)	900.650				
							1				1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY)(N.A.B.I.)	900.650				
							1				1		LU	SPECIAL PROVISION (MIXTURE PAY AJUSTMENT)(SMALL QUANTITY)	900.650				
							335		55		390		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				
							8		2		10		CWT	SPECIAL PROVISION (EMULSIFIED ASPHALT)(RS-1H OR CRS-1H)	900.683				

PROJECT NAME: WOODSTOCK
PROJECT NUMBER: BRF 151(21)

FILE NAME: z10c426frm.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: E. ALLING
QUANTITY SHEET 2

PLOT DATE: 7/14/2015
DRAWN BY: E. ALLING
CHECKED BY: G. BOGUE
SHEET 7 OF 50



GENERAL INFORMATION

SYMBOLGY LEGEND NOTE

THE SYMBOLGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLGY. THE SYMBOLGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R. O. W. ABBREVIATIONS (CODES) & SYMBOLS

POINT CODE	DESCRIPTION
CH	CHANNEL EASEMENT
CONST	CONSTRUCTION EASEMENT
CUL	CULVERT EASEMENT
D&C	DISCONNECT & CONNECT
DIT	DITCH EASEMENT
DR	DRAINAGE EASEMENT
DRIVE	DRIVEWAY EASEMENT
EC	EROSION CONTROL
HWY	HIGHWAY EASEMENT
I&M	INSTALL & MAINTAIN EASEMENT
LAND	LANDSCAPE EASEMENT
R&RES	REMOVE & RESET
R&REP	REMOVE & REPLACE
SR	SLOPE RIGHT
UE	UTILITY EASEMENT
(P)	PERMANENT EASEMENT
(T)	TEMPORARY EASEMENT
■	BNDNS BOUND SET
□	BNDNS BOUND TO BE SET
●	IPNS IRON PIN SET
⊙	IPNS IRON PIN TO BE SET
⊠	CALC EXISTING ROW POINT
○	PROW PROPOSED ROW POINT
[LENGTH]	LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT CODE	DESCRIPTION
⊕	APL BOUND APPARENT LOCATION
□	BM BENCH MARK
□	BND BOUND
⊕	CB CATCH BASIN
⊕	COMB COMBINATION POLE
⊕	DITHR DROP INLET THROATED DNC
⊕	EL ELECTRIC POWER POLE
○	FPOLE FLAGPOLE
○	GASFIL GAS FILLER
○	GP GUIDE POST
×	GSO GAS SHUT OFF
○	GUY GUY POLE
○	GUYW GUY WIRE
×	GV GATE VALUE
⊕	H TREE HARDWOOD
△	HCTRL CONTROL HORIZONTAL
△	HVCTRL CONTROL HORIZ. & VERTICAL
⊕	HYD HYDRANT
○	IP IRON PIN
○	IPIPE IRON PIPE
⊕	LI LIGHT - STREET OR YARD
⊕	MB MAILBOX
○	MH MANHOLE (MH)
□	MM MILE MARKER
○	PM PARKING METER
□	PMK PROJECT MARKER
POST	POST STONE/WOOD
RRSIG	RAILROAD SIGNAL
RRSL	RAILROAD SWITCH LEVER
S	TREE SOFTWOOD
SAT	SATELLITE DISH
⊕	SHRUB SHRUB
SIGN	SIGN
STUMP	STUMP
TEL	TELEPHONE POLE
TIE	TIE
TSIGN	SIGN W/DOUBLE POST
VCTRL	CONTROL VERTICAL
WELL	WELL
WSO	WATER SHUT OFF

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADUIS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

UTILITY SYMBOLGY

UNDERGROUND UTILITIES

— UT —	TELEPHONE
— UE —	ELECTRIC
— UC —	CABLE (TV)
— UEC —	ELECTRIC+CABLE
— UET —	ELECTRIC+TELEPHONE
— UCT —	CABLE+TELEPHONE
— UECT —	ELECTRIC+CABLE+TELEP.
— G —	GAS LINE
— W —	WATER LINE
— S —	SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

— T —	TELEPHONE
— E —	ELECTRIC
— C —	CABLE (TV)
— EC —	ELECTRIC+CABLE
— ET —	ELECTRIC+TELEPHONE
— AER E&T —	ELECTRIC+TELEPHONE
— CT —	CABLE+TELEPHONE
— ECT —	ELECTRIC+CABLE+TELEP.
—	UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLGY

PROJECT DESIGN & LAYOUT SYMBOLGY

—	CLEAR ZONE
—	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

△	TOP OF CUT SLOPE
○	TOE OF FILL SLOPE
⊗	STONE FILL
---	BOTTOM OF DITCH L
---	CULVERT PROPOSED
---	STRUCTURE SUBSURFACE
PDF	PROJECT DEMARCATION FENCE
BF	BARRIER FENCE
XXXXXX	TREE PROTECTION ZONE (TPZ)
////	STRIPING LINE REMOVAL
~~~~	SHEET PILES

**CONVENTIONAL BOUNDARY SYMBOLGY**

**BOUNDARY LINES**

—	TOWN BOUNDARY LINE
—	COUNTY BOUNDARY LINE
—	STATE BOUNDARY LINE
---	PROPOSED STATE R.O.W. (LIMITED ACCESS)
---	PROPOSED STATE R.O.W.
---	STATE ROW (LIMITED ACCESS)
---	STATE ROW
---	TOWN ROW
---	PERMANENT EASEMENT LINE (P)
---	TEMPORARY EASEMENT LINE (T)
---	SURVEY LINE
---	PROPERTY LINE (P/L)
SR	SLOPE RIGHTS
6f	6F PROPERTY BOUNDARY
4f	4F PROPERTY BOUNDARY
HAZ	HAZARDOUS WASTE

**EPSC LAYOUT PLAN SYMBOLGY**

**EPSC MEASURES**

ONNOONNOONNO	FILTER CURTAIN
—	SILT FENCE
—	SILT FENCE WOVEN WIRE
—	CHECK DAM
■	DISTURBED AREAS REQUIRING RE-VEGETATION
⊗	EROSION MATTING

**ENVIRONMENTAL RESOURCES**

—	WETLAND BOUNDARY
---	RIPARIAN BUFFER ZONE
---	WETLAND BUFFER ZONE
---	SOIL TYPE BOUNDARY
---	THREATENED & ENDANGERED SPECIES
HAZ	HAZARDOUS WASTE AREA
---	AGRICULTURAL LAND
---	FISH & WILDLIFE HABITAT
---	FLOOD PLAIN
---	ORDINARY HIGH WATER (OHW)
---	STORM WATER
---	USDA FOREST SERVICE LANDS
---	WILDLIFE HABITAT SUIT/CONN

**ARCHEOLOGICAL & HISTORIC**

---	ARCHEOLOGICAL BOUNDARY
---	HISTORIC DISTRICT BOUNDARY
---	HISTORIC AREA
Ⓜ	HISTORIC STRUCTURE

**CONVENTIONAL TOPOGRAPHIC SYMBOLGY**

**EXISTING FEATURES**

---	ROAD EDGE PAVEMENT
---	ROAD EDGE GRAVEL
---	DRIVEWAY EDGE
---	DITCH
---	FOUNDATION
×	FENCE (EXISTING)
□	FENCE WOOD POST
○	FENCE STEEL POST
---	GARDEN
---	ROAD GUARDRAIL
---	RAILROAD TRACKS
---	CULVERT (EXISTING)
---	STONE WALL
---	WALL
---	WOOD LINE
---	BRUSH LINE
---	HEDGE
---	BODY OF WATER EDGE
---	LEDGE EXPOSED

PROJECT NAME: WOODSTOCK

PROJECT NUMBER: BRF 0151(21)

FILE NAME: z10c426 frm.dgn

PROJECT LEADER: G. BOGUE

DESIGNED BY: VTRANS

CONVENTIONAL SYMBOLGY LEGEND SHEET

PLOT DATE: 7/14/2015

DRAWN BY: VTRANS

CHECKED BY: VTRANS

SHEET 8 OF 50



GPS CONTROL POINTS

HVCTRL #1

KEDRON AZ MK  
 NORTH = 392626.055  
 EAST = 1636526.218  
 ELEV. = 855.969

HVCTRL #2

KEDRON  
 NORTH = 390970.727  
 EAST = 1636074.631  
 ELEV. = 902.557

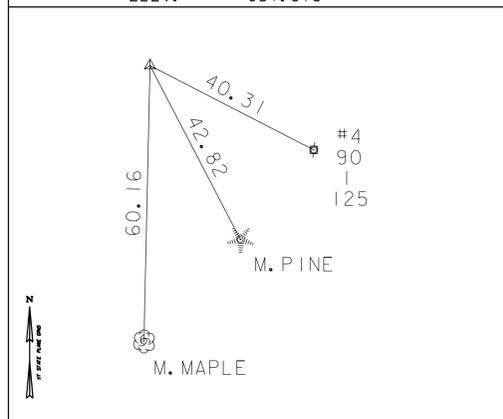
GENERAL LOCATION, WOODSTOCK, VT. TO REACH FROM THE INTERSECTION OF VT ROUTE 106 AND U.S. ROUTE 4 IN WOODSTOCK, GO SOUTH ALONG ROUTE 106 FOR 3.35 MILES (5.39 KM) TO THE MARK ON THE LEFT, SET IN THE TOP OF THE COCRETE ABUTMENT AT THE SOUTHEAST CORNER OF THE BRIDGE OVER THE KEDRON BROOK. THE MARK IS 5.55 M (18.21 FT) EAST OF THE CENTERLINE OF ROUTE 106, 3.5 M (11.5 FT) SOUTHWEST OF THE END OF THE WINGWALL, 0.45 M (1.48 FT) NORTHWEST OF THE SOUTHEAST FACE OF THE ABUTMENT, 0.2 M (0.7 FT) SOUTHEAST OF THE NORTHWEST FACE OF THE ABUTMENT, AND 0.85 M (2.79 FT) NORTH OF A FIBERGLASS WITNESS POST.

GENERAL LOCATION, WOODSTOCK, VT. TO REACH FROM THE INTERSECTION OF VT ROUTE 106 AND U.S. ROUTE 4 IN WOODSTOCK, GO SOUTH ALONG ROUTE 106 FOR 3.6 MILES (5.8 KM) TO THE MARK ON THE RIGHT. THE MARK IS A FENO MONUMENT SET FLUSH WITH GROUND SURFACE. IT IS 37.8 M (124.0 FT) SOUTH OF POLE NO. 81/116, 15.3 M (50.2 FT) NORTH OF POLE NO. 117/82, 0.8 M (2.6 FT) WEST OF AND ABOUT 0.4 M (1.3 FT) LOWER THAN THE WEST EDGE OF PAVEMENT OF ROUTE 106, AND 0.6 M (2.0 FT) EAST OF THE NORTHEAST CORNER OF A CONCRETE HEADWALL AND A FIBERGLASS WITNESS POST.

TRAVERSE TIES

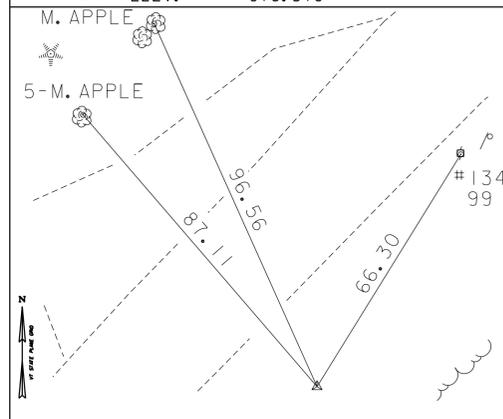
HVCTRL #5

NORTH = 390097.344  
 EAST = 1635324.900  
 ELEV. = 951.878



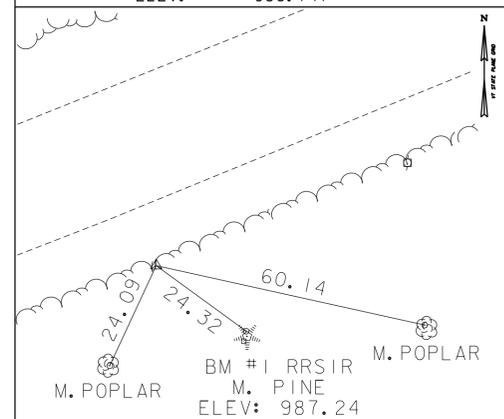
HVCTRL #6

NORTH = 389092.486  
 EAST = 1634665.785  
 ELEV. = 976.310



HVCTRL #7

NORTH = 388828.433  
 EAST = 1634244.498  
 ELEV. = 986.747



NORTH =  
 EAST =  
 ELEV. =

NORTH =  
 EAST =  
 ELEV. =

* MAIN TRAVERSE COMPLETED 12/30/1998 BY R. GILMAN P.C. & T. COMPANION

ALIGNMENT TIES

POB STA. 1+00

NORTH = 388841.126  
 EAST = 1634205.250

PI STA. 3+98.06

NORTH = 388954.080  
 EAST = 1634483.054

POE STA. 7+00

NORTH = 389170.731  
 EAST = 1634695.984

PC STA. 2+68.23

NORTH = 388904.489  
 EAST = 1634361.086

PT STA. 5+27.89

NORTH = 389047.983  
 EAST = 1634575.344

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (92)
ADJUSTMENT	COMPASS



PROJECT NAME:	WOODSTOCK
PROJECT NUMBER:	BRF 0151(21)
FILE NAME:	z10c426tie.dgn
PROJECT LEADER:	G. BOGUE
DESIGNED BY:	VTRANS
SURVEY CONTROL AND TIES	
PLOT DATE:	7/14/2015
DRAWN BY:	VTRANS
CHECKED BY:	VTRANS
SHEET	9 OF 50

HVCTRL #1  
389174.4977 N  
1634481.8006 E  
ELEV: 1005.44'

HVCTRL #2  
388828.4329 N  
1634244.4975 E  
ELEV: 986.75'

HVCTRL #3  
388900.4009 N  
1634403.6064 E  
ELEV: 986.32'

ITEM 656.85 - TREE PROTECTION  
STA. 4+26 LT. - 5+40, LT.

ITEM 621.51 - MANUFACTURED TERMINAL  
SECTION, TANGENT (BEAT)

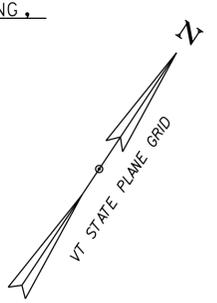
STA. 3+27 - 3+41, RT.  
STA. 4+55 - 4+69, LT.

ITEM 621.725 - GUARDRAIL APPROACH  
SECTION, GALVANIZED 3 RAIL BOX BEAM

STA. 3+22 - 3+54, LT.  
STA. 3+58 - 3+89, RT.  
STA. 4+04 - 4+37, LT.  
STA. 4+35 - 4+66, RT.

ITEM 210.10 - COLD PLANING,  
BITUMINOUS PAVEMENT

STA. 2+15 - 2+25  
STA. 6+00 - 6+10

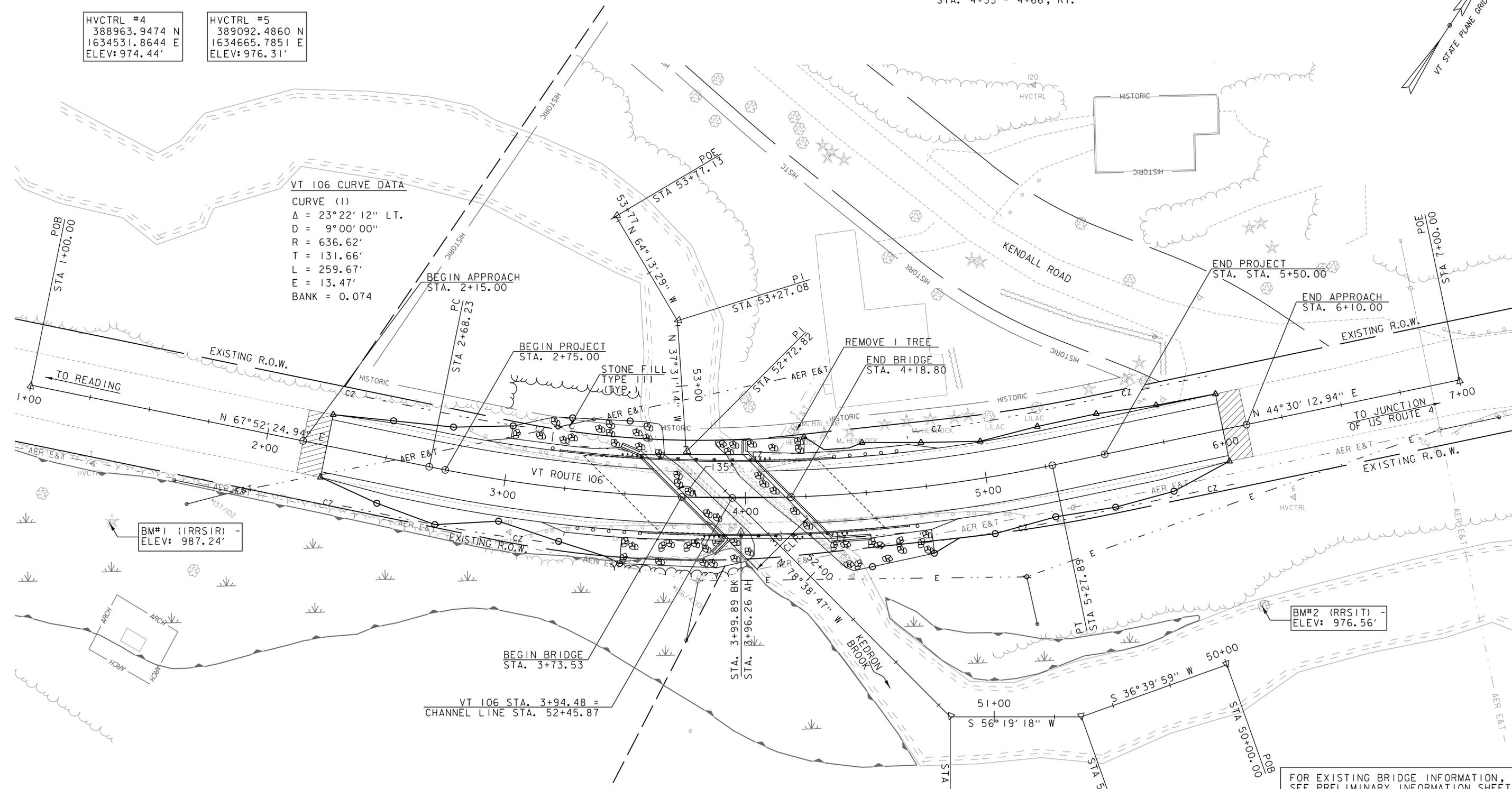


HVCTRL #4  
388963.9474 N  
1634531.8644 E  
ELEV: 974.44'

HVCTRL #5  
389092.4860 N  
1634665.7851 E  
ELEV: 976.31'

**VT 106 CURVE DATA**

CURVE (1)  
Δ = 23°22'12" LT.  
D = 9°00'00"  
R = 636.62'  
T = 131.66'  
L = 259.67'  
E = 13.47'  
BANK = 0.074



BM#1 (IRRSIR) -  
ELEV: 987.24'

BM#2 (RRSIT) -  
ELEV: 976.56'

FOR EXISTING BRIDGE INFORMATION,  
SEE PRELIMINARY INFORMATION SHEET 2

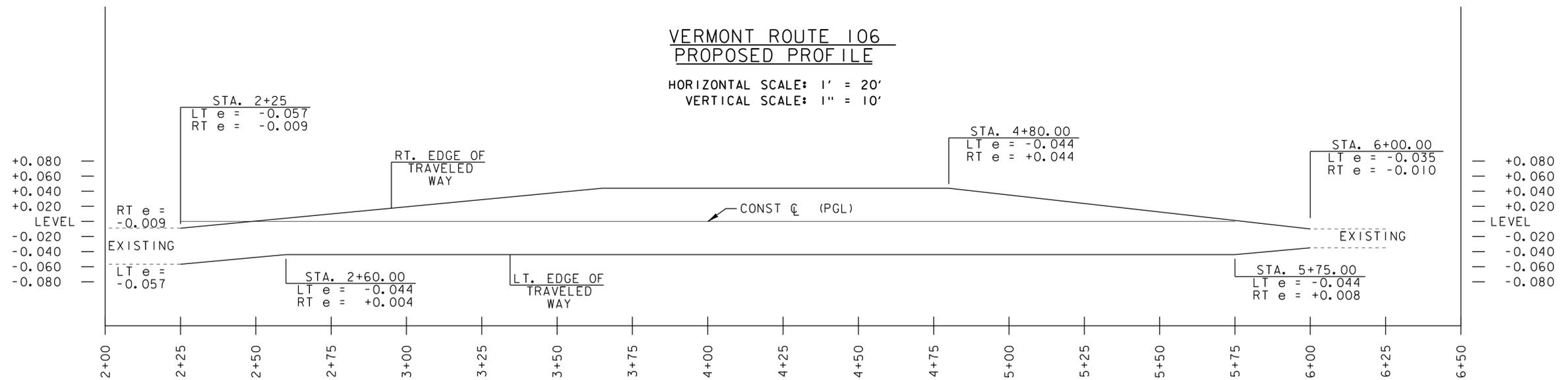
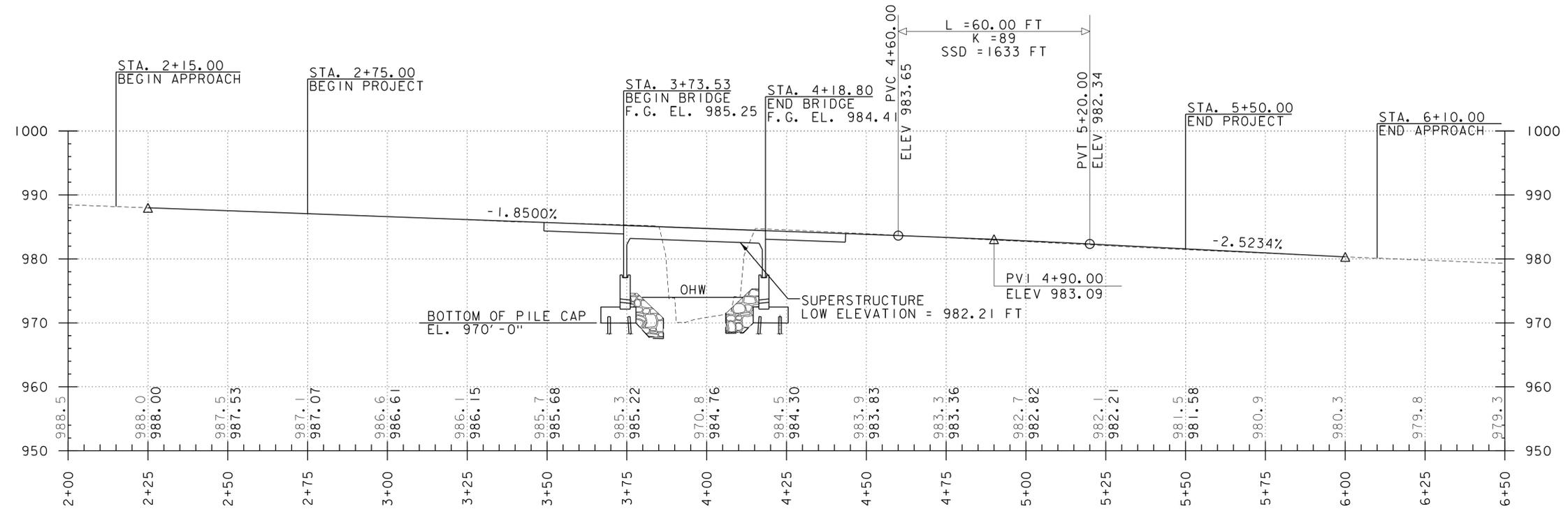
ITEM 621.30 - BOX BEAM GUARDRAIL  
STA. 3+18 - 3+22, LT.  
STA. 3+26 - 3+58, RT.  
STA. 4+37 - 4+55, LT.  
STA. 4+66 - 4+70, RT.

ITEM 621.80 - REMOVAL AND DISPOSAL  
OF GUARDRAIL  
STA. 2+82 - 3+72, LT.  
STA. 3+11 - 3+97, RT.  
STA. 4+04 - 4+43, LT.  
STA. 4+27 - 5+13, RT.

**LAYOUT PLAN**  
SCALE: 1" = 20'-0" @ FULL SIZE  
0 20 40

PROJECT NAME:	WOODSTOCK	FILE NAME:	z10c426bdr.dgn	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	PROJECT LEADER:	G. BOGUE	DRAWN BY:	E. ALLING
		DESIGNED BY:	J. HUNGERFORD	CHECKED BY:	I. MAYNARD
		LAYOUT PLAN - LPI			SHEET 10 OF 50





VERMONT ROUTE 106  
 BANKING DIAGRAM

HORIZONTAL SCALE: 1' = 20'  
 VERTICAL SCALE: N. T. S.

PROJECT NAME: WOODSTOCK  
 PROJECT NUMBER: BRF 0151(21)

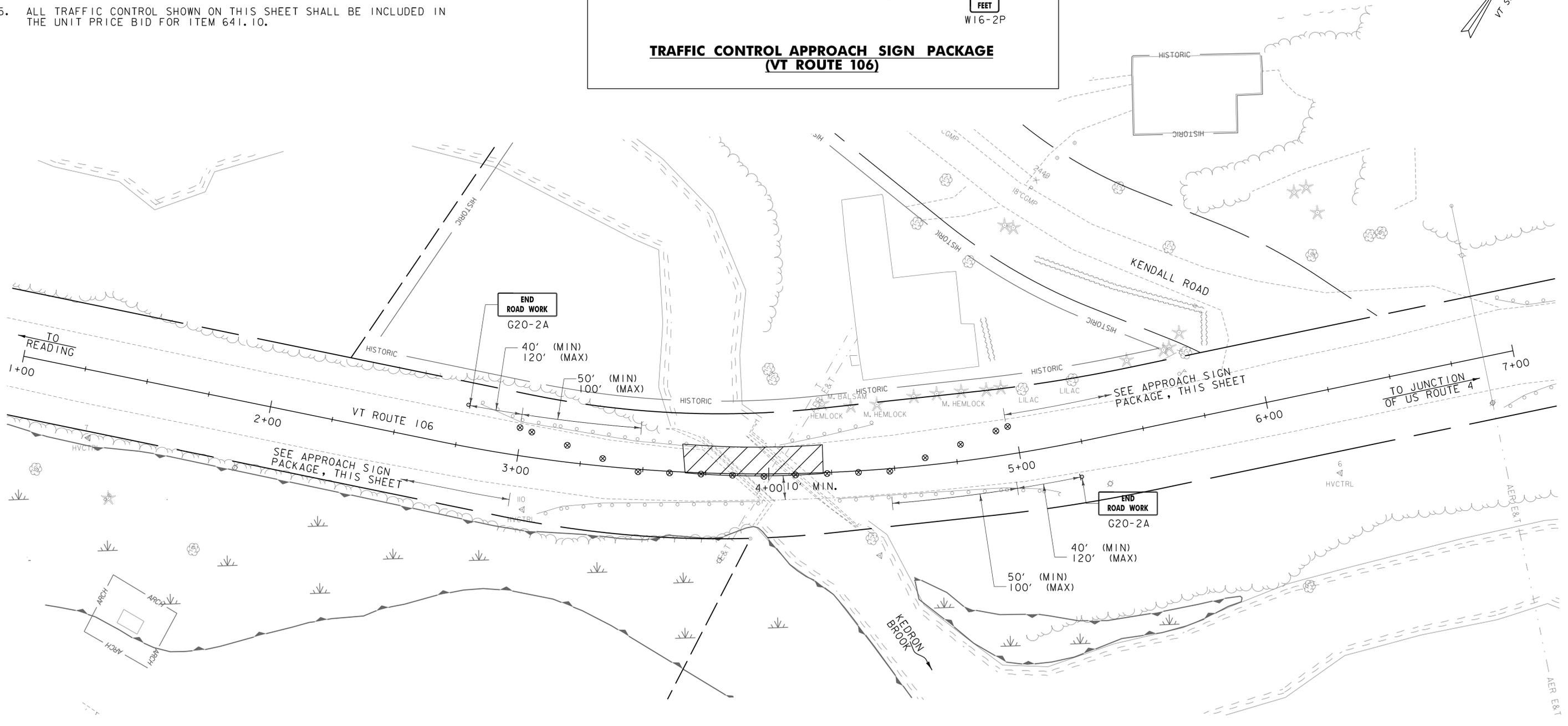
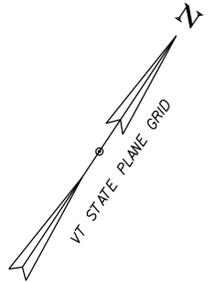
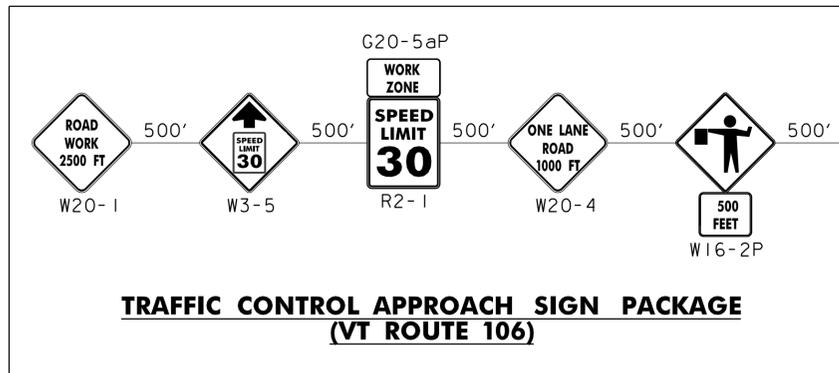
FILE NAME: z10c426xs.dgn  
 PROJECT LEADER: G. BOGUE  
 DESIGNED BY: J. HUNGERFORD  
 PROFILE SHEET - RP 1

PLOT DATE: 7/14/2015  
 DRAWN BY: E. ALLING  
 CHECKED BY: I. MAYNARD  
 SHEET II OF 50



NOTES:

1. SEE GENERAL NOTES SHEET FOR ADDITIONAL TRAFFIC CONTROL NOTES.
2. CHANNELIZING DEVICE SPACING:  
TANGENT SECTIONS: 60 FT.  
TAPER SECTIONS: 30 FT.
3. ACCESS TO ALL EXISTING SIDE ROADS, DRIVES, AND PARKING AREAS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
4. SEE STANDARD DRAWING T-10 FOR SIDE ROAD SIGNING LAYOUT.
5. ALL TRAFFIC CONTROL SHOWN ON THIS SHEET SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 641.10.

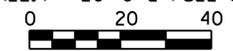


**PHASE 1 TRAFFIC CONTROL PLAN - ALTERNATING  
ONE WAY TRAFFIC, LEFT LANE CLOSED  
(RIGHT LANE CLOSURE SIMILAR)**

LEGEND	
⊗	RETROREFLECTIVE PLASTIC DRUM
⊘	TEMPORARY CONSTRUCTION SIGN
▨	WORK ZONE

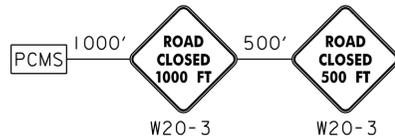
**TRAFFIC CONTROL PLAN**

SCALE: 1" = 20'-0" @ FULL SIZE



PROJECT NAME:	WOODSTOCK	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 015(21)	DRAWN BY:	T. MANAHAN
FILE NAME:	z10c426bdr_tcplan.dgn	CHECKED BY:	E. ALLING
PROJECT LEADER:	G. BOGUE	SHEET	12 OF 50
DESIGNED BY:	T. MANAHAN		
TRAFFIC CONTROL PLAN - TC 1			

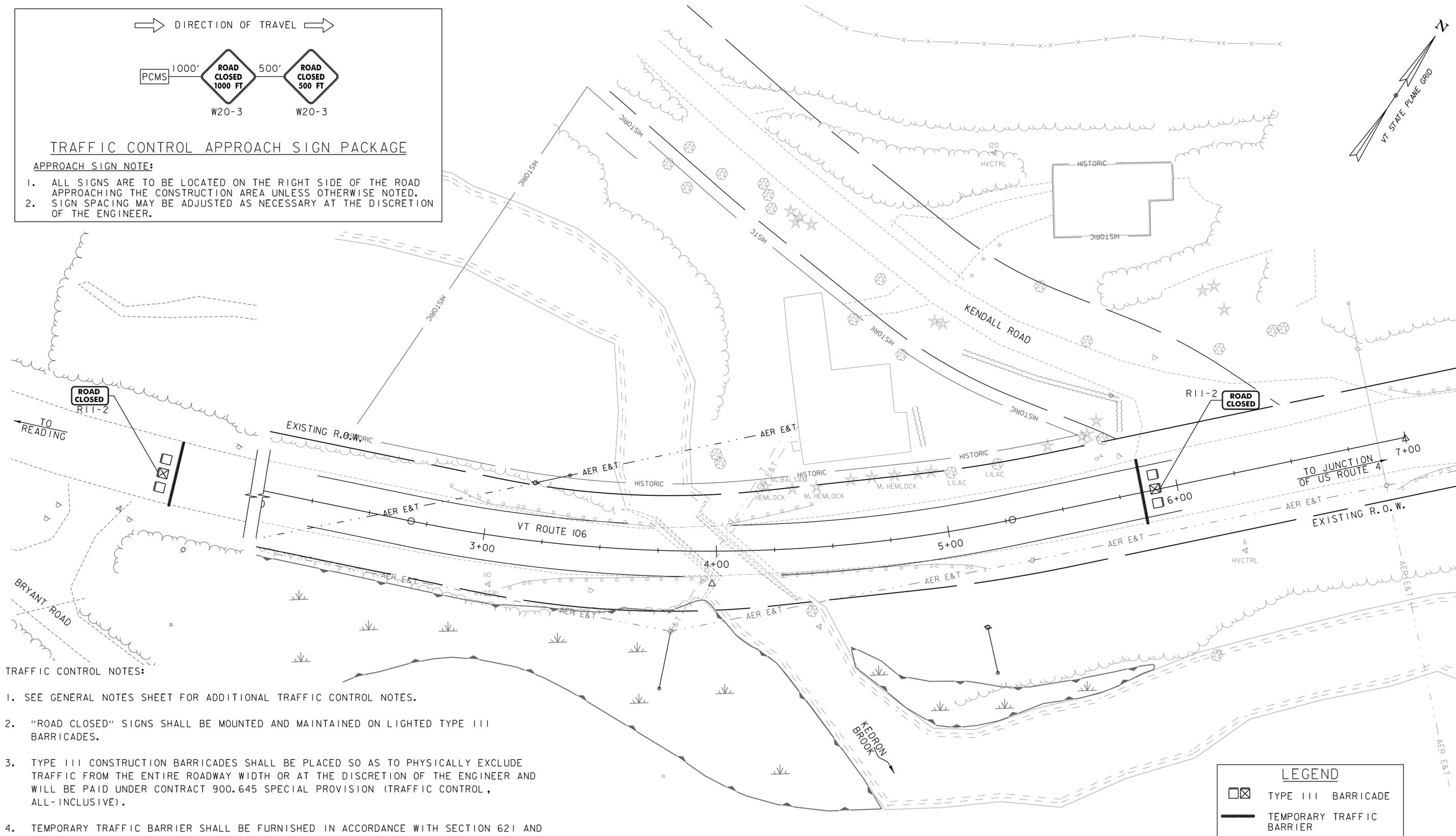
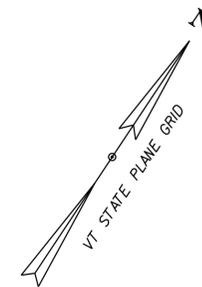
→ DIRECTION OF TRAVEL →



**TRAFFIC CONTROL APPROACH SIGN PACKAGE**

**APPROACH SIGN NOTE:**

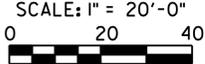
1. ALL SIGNS ARE TO BE LOCATED ON THE RIGHT SIDE OF THE ROAD APPROACHING THE CONSTRUCTION AREA UNLESS OTHERWISE NOTED.
2. SIGN SPACING MAY BE ADJUSTED AS NECESSARY AT THE DISCRETION OF THE ENGINEER.



**TRAFFIC CONTROL NOTES:**

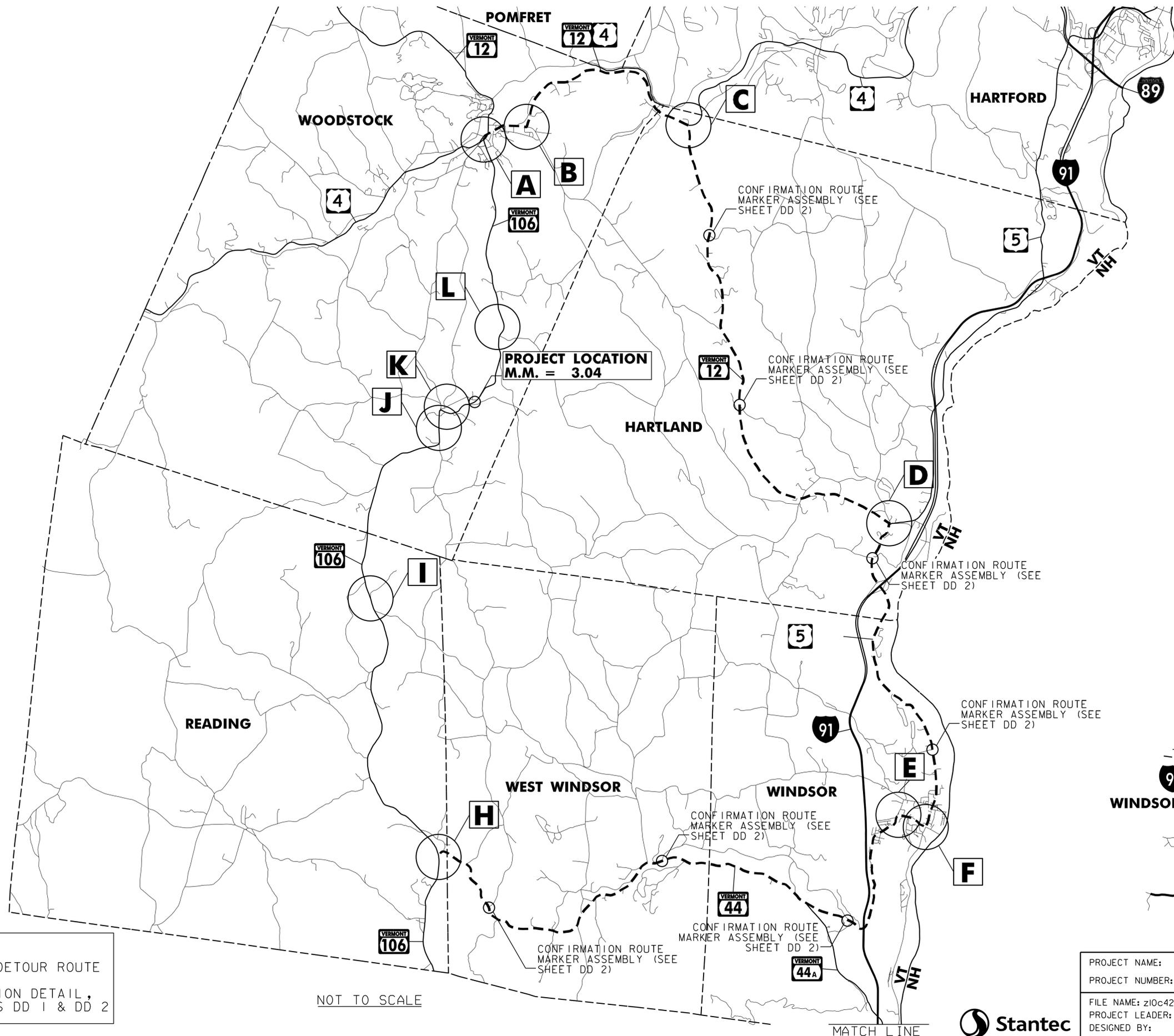
1. SEE GENERAL NOTES SHEET FOR ADDITIONAL TRAFFIC CONTROL NOTES.
2. "ROAD CLOSED" SIGNS SHALL BE MOUNTED AND MAINTAINED ON LIGHTED TYPE III BARRICADES.
3. TYPE III CONSTRUCTION BARRICADES SHALL BE PLACED SO AS TO PHYSICALLY EXCLUDE TRAFFIC FROM THE ENTIRE ROADWAY WIDTH OR AT THE DISCRETION OF THE ENGINEER AND WILL BE PAID UNDER CONTRACT 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).
4. TEMPORARY TRAFFIC BARRIER SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 621 AND WILL BE PAID UNDER CONTRACT 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).

**PHASE 2 TRAFFIC CONTROL PLAN - BRIDGE CLOSED**



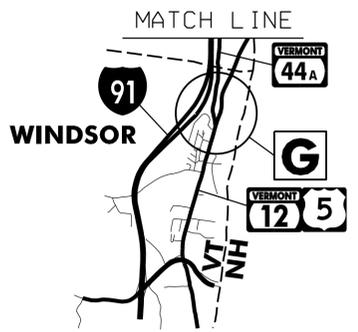
PROJECT NAME:	WOODSTOCK	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	DRAWN BY:	E. ALLING
FILE NAME:	z10c426bdr_ttc.dgn	CHECKED BY:	I. MAYNARD
PROJECT LEADER:	G. BOGUE	TRAFFIC CONTROL PLAN - TC 2	SHEET 13 OF 50
DESIGNED BY:	E. ALLING		





**PROJECT LOCATION**  
M.M. = 3.04

CONFIRMATION ROUTE  
MARKER ASSEMBLY (SEE  
SHEET DD 2)



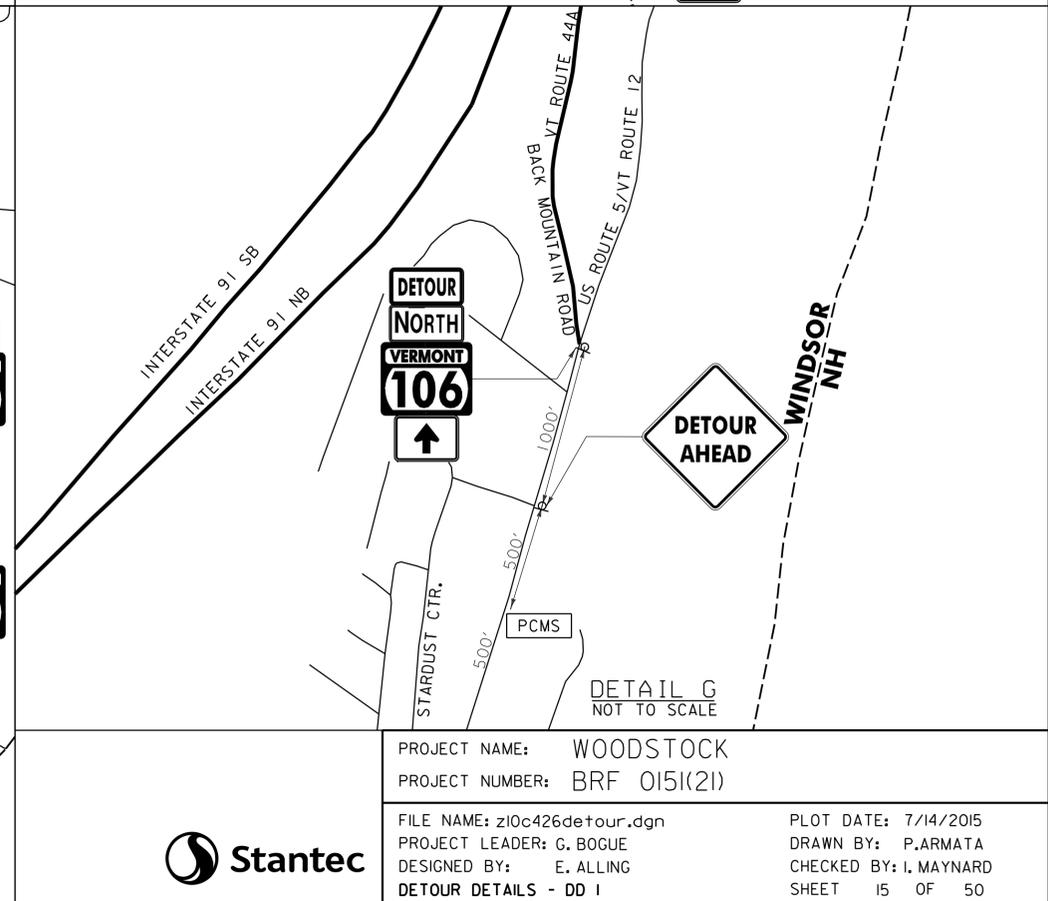
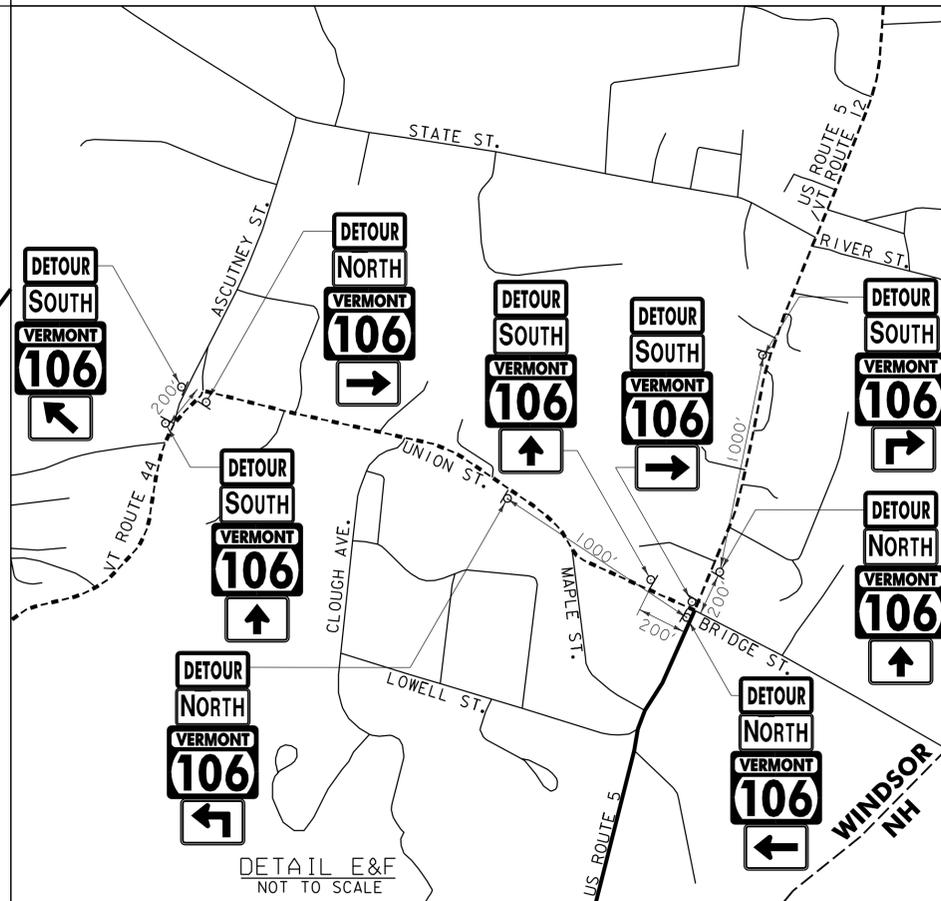
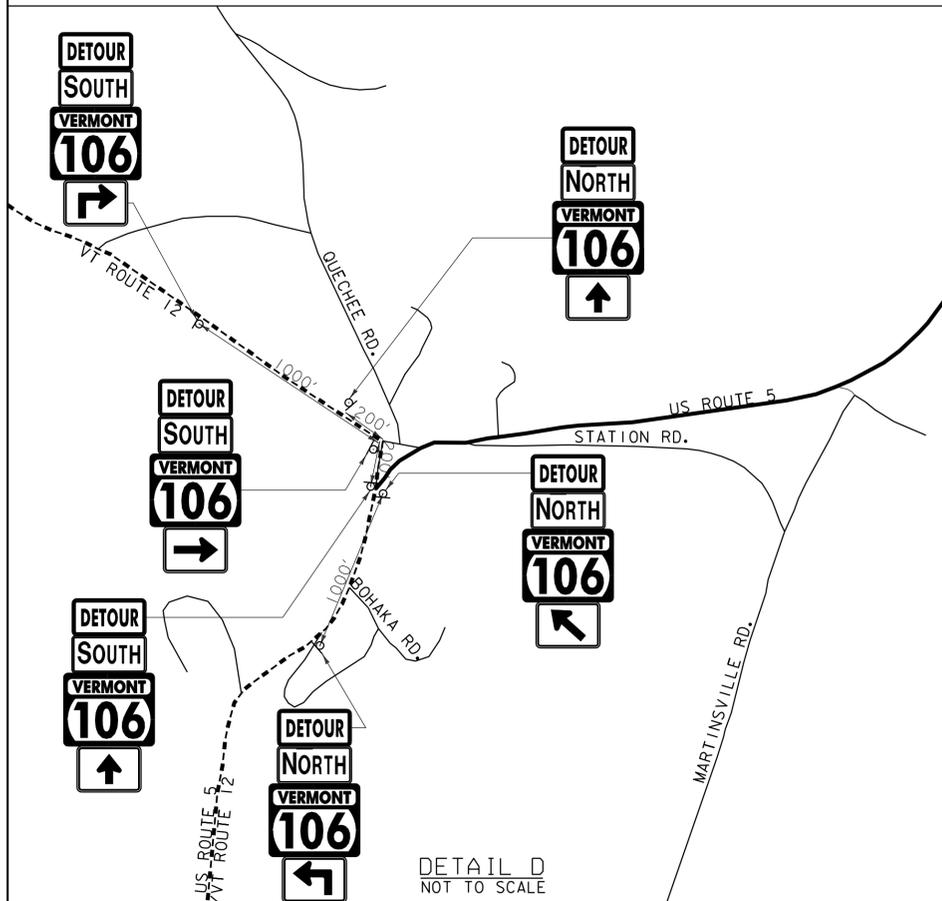
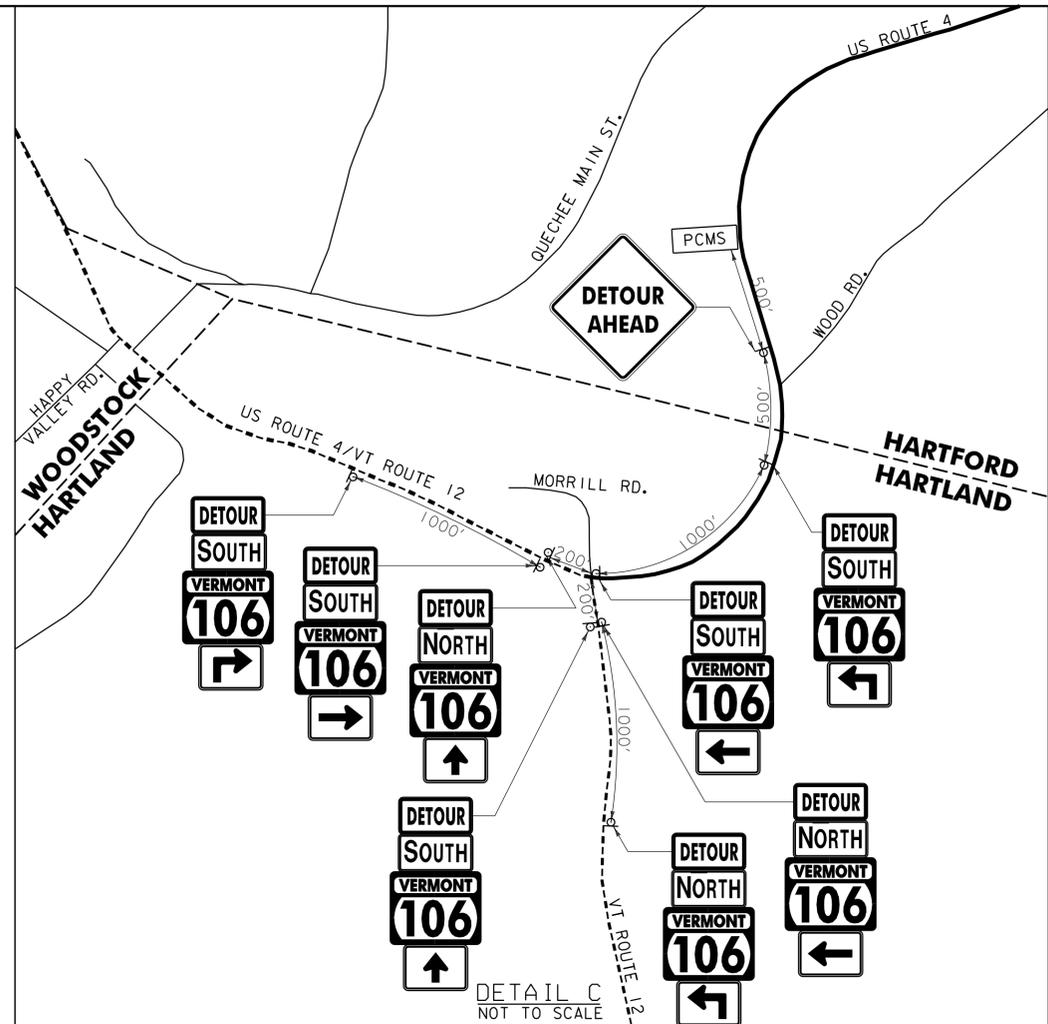
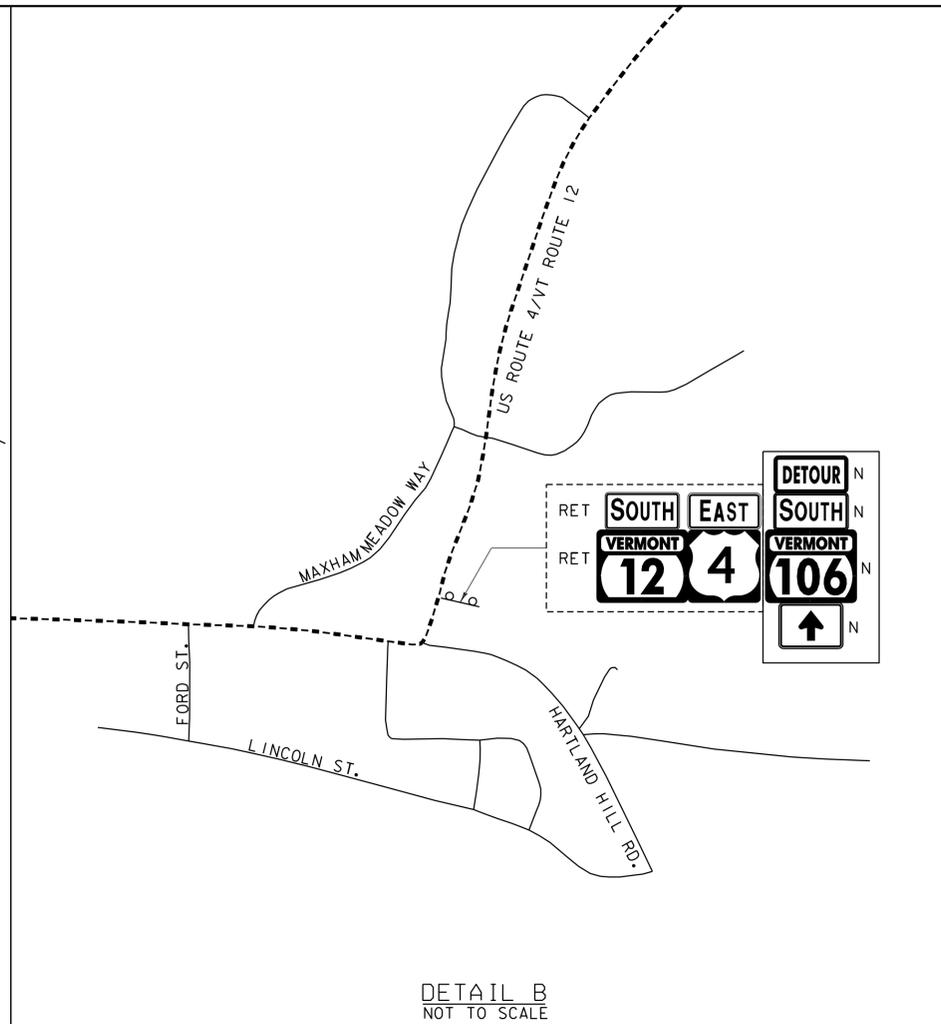
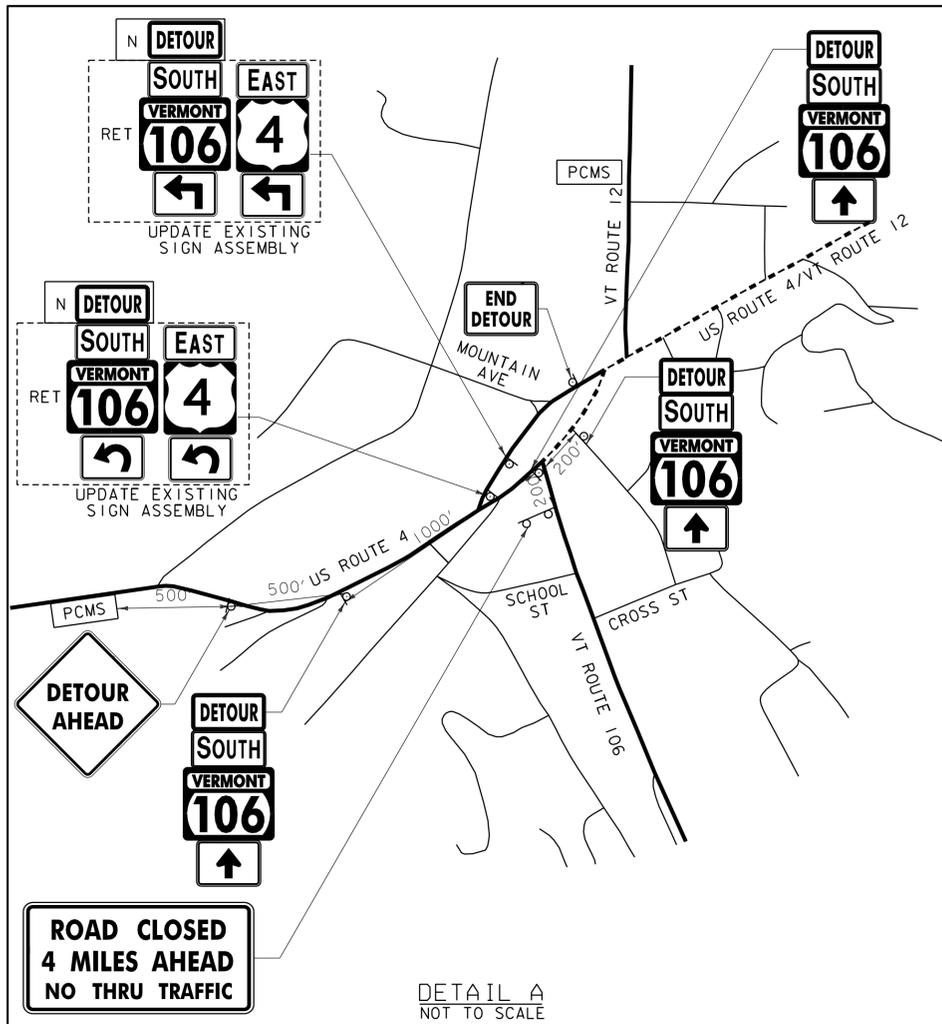
**LEGEND:**  
--- PROPOSED DETOUR ROUTE  
**A** INTERSECTION DETAIL,  
SEE SHEETS DD 1 & DD 2

NOT TO SCALE

MATCH LINE



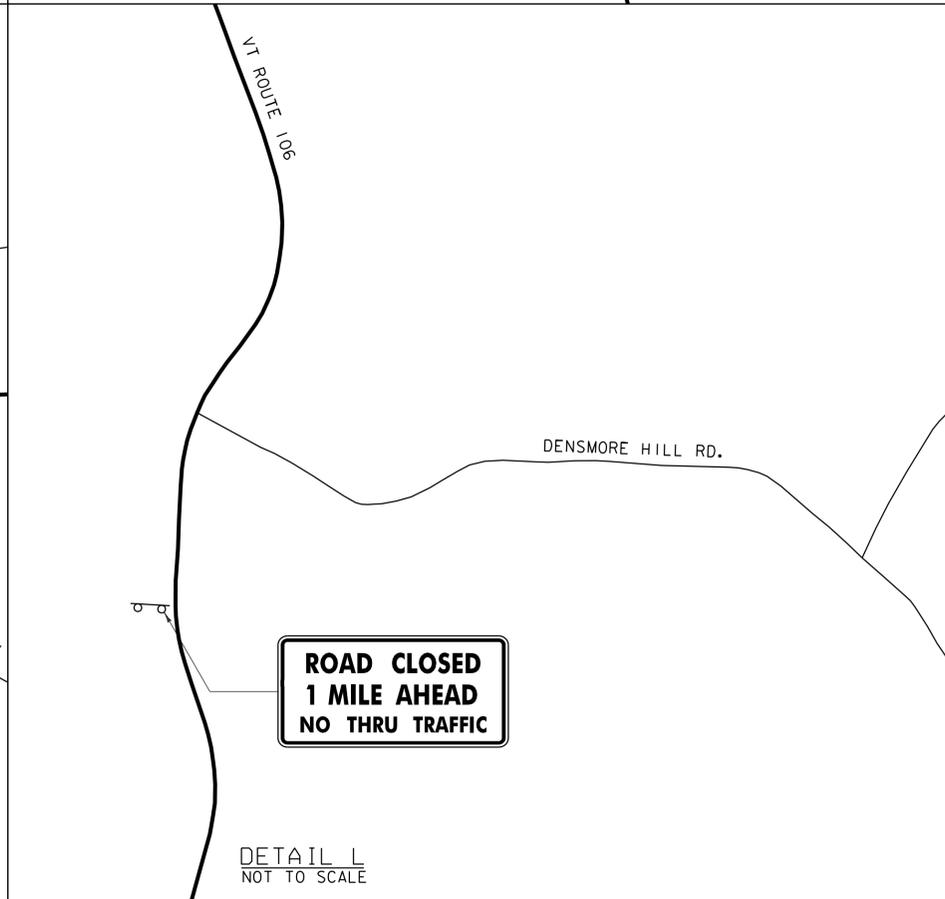
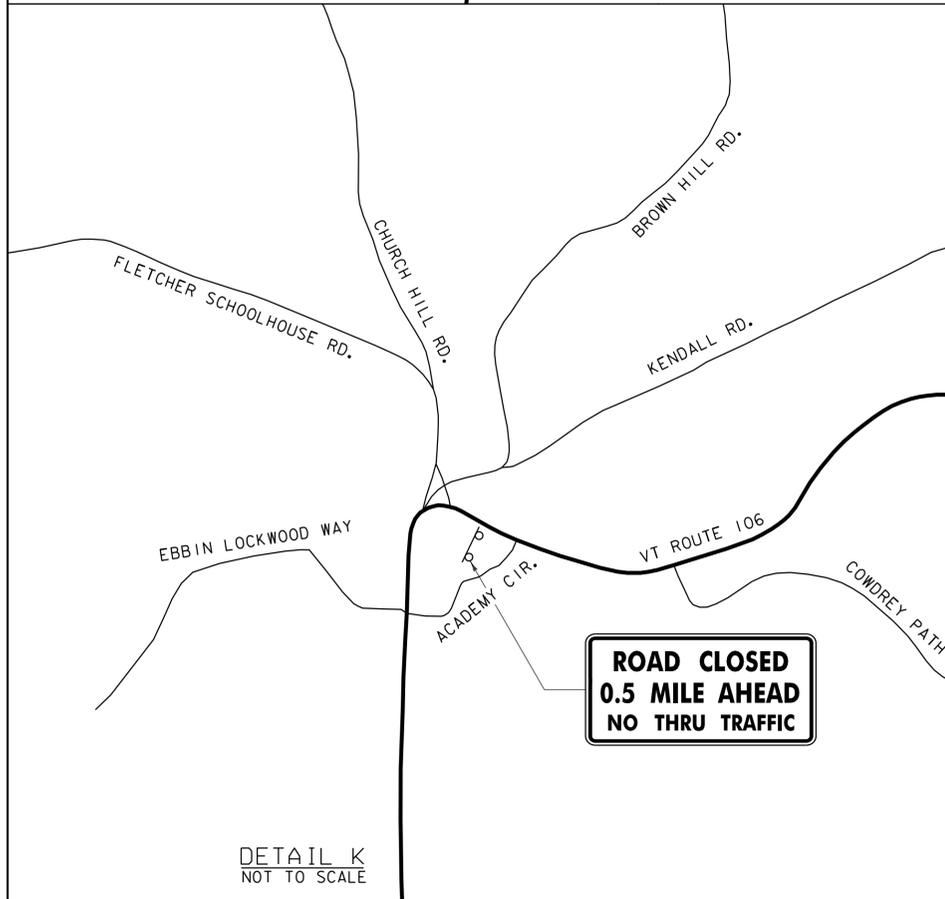
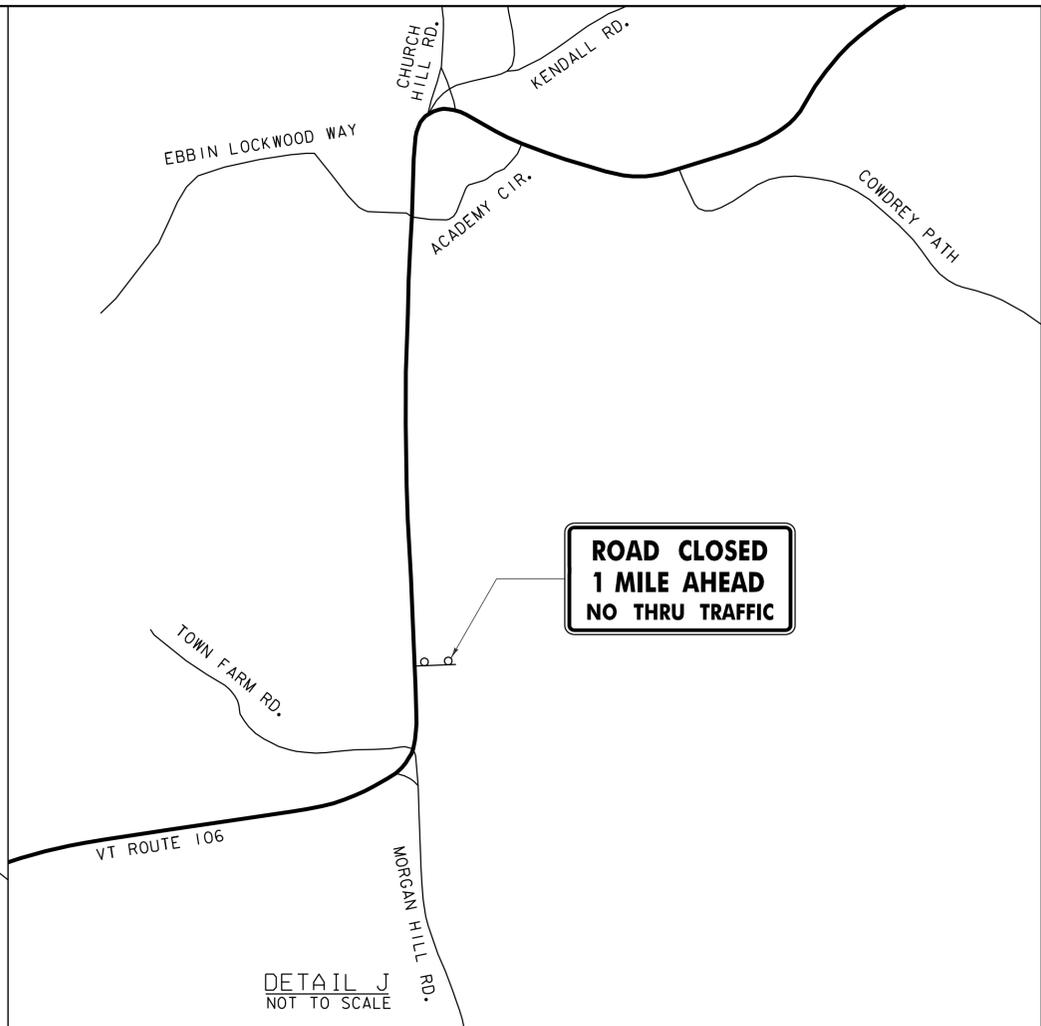
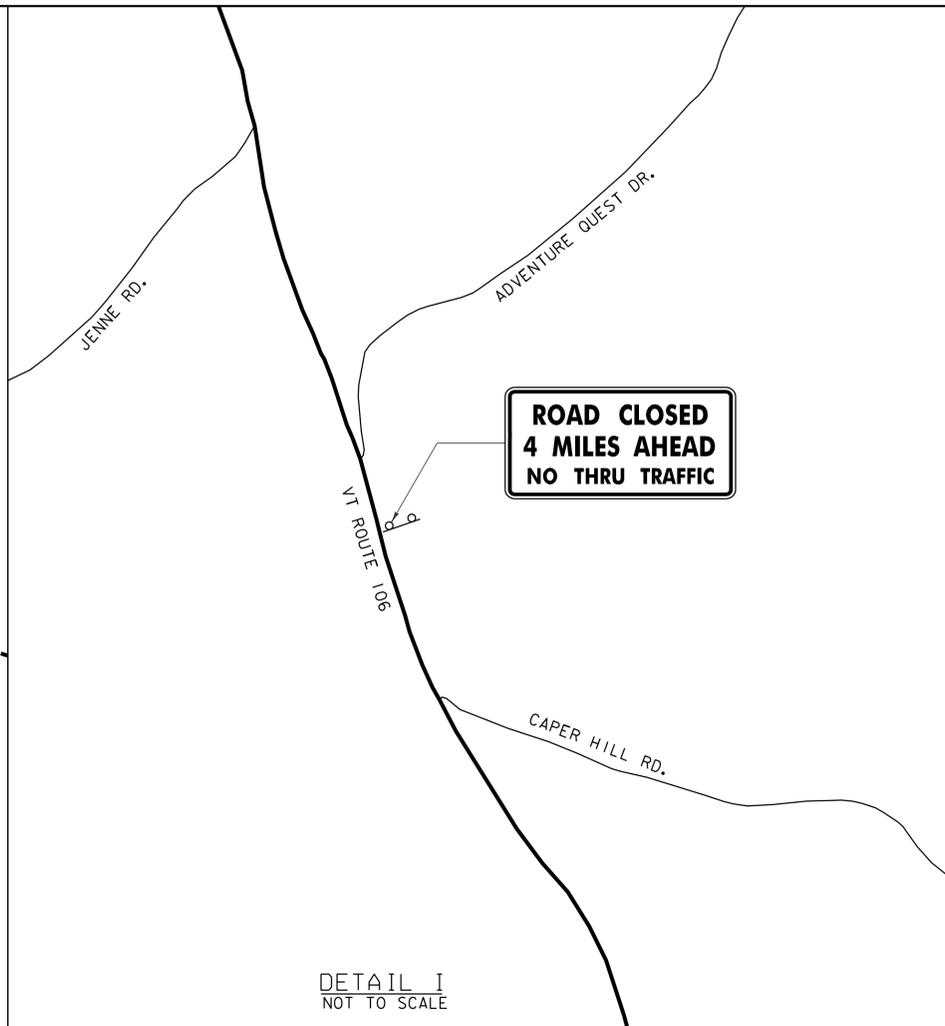
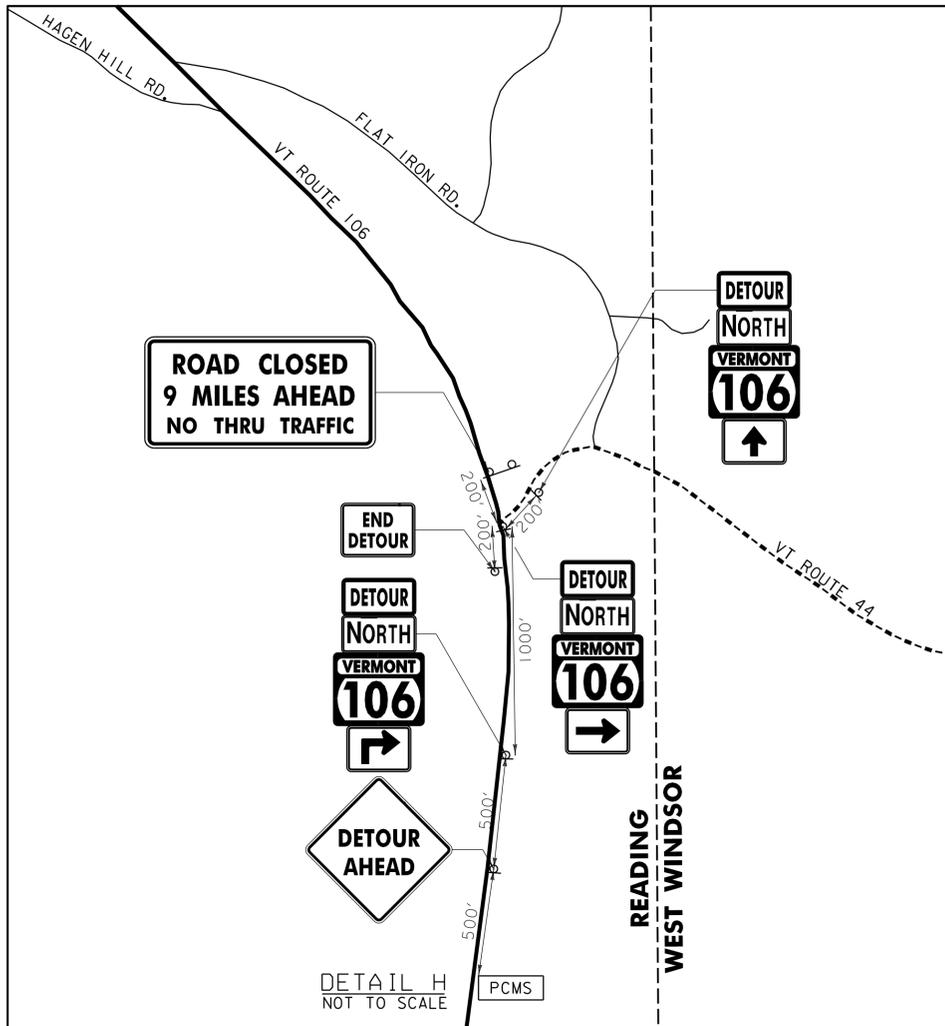
PROJECT NAME: WOODSTOCK	PLOT DATE: 7/14/2015
PROJECT NUMBER: BRF 0151(21)	DRAWN BY: E. ALLING
FILE NAME: z10c426detour.dgn	DESIGNED BY: E. ALLING
PROJECT LEADER: G. BOGUE	CHECKED BY: I. MAYNARD
DETOUR PLAN - DP 1	SHEET 14 OF 50



PROJECT NAME: WOODSTOCK  
 PROJECT NUMBER: BRF 0151(21)  
 FILE NAME: z10c426detour.dgn  
 PROJECT LEADER: G. BOGUE  
 DESIGNED BY: E. ALLING  
 DETOUR DETAILS - DD 1

PLOT DATE: 7/14/2015  
 DRAWN BY: P. ARMATA  
 CHECKED BY: I. MAYNARD  
 SHEET 15 OF 50





PROJECT NAME: WOODSTOCK	
PROJECT NUMBER: BRF 0151(21)	
FILE NAME: z10c426detour.dgn	PLOT DATE: 7/14/2015
PROJECT LEADER: G. BOGUE	DRAWN BY: P. ARMATA
DESIGNED BY: E. ALLING	CHECKED BY: I. MAYNARD
DETOUR DETAILS - DD 2	SHEET 16 OF 50

Stantec

MESSAGES FOR PORTABLE CHANGEABLE  
MESSAGE SIGNS (PCMS) - REGIONAL DETOUR

STARTING 2 WEEKS PRIOR TO CLOSURE

	MESSAGE 1	MESSAGE 3***	
(ROUTE) **	<b>VT 106</b>	<b>MMMM DD</b>	(DATE) *
	<b>ROAD</b>	<b>TO</b>	
	<b>CLOSED</b>	<b>MMMM DD</b>	(DATE) *

DURING CLOSURE

	MESSAGE 1	MESSAGE 2
(ROUTE) **	<b>VT 106</b>	<b>WOODSTOCK</b>
	<b>ROAD</b>	<b>AT</b>
	<b>CLOSED</b>	<b>KENDALL RD</b> ***

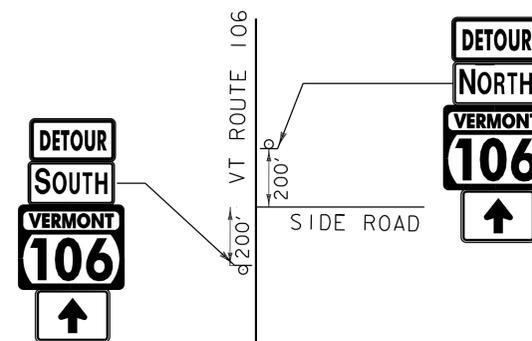
- * - DATE SHALL BE SPELLED OUT (I.E. JUNE 10 NOT 6/10)
- ** - ROUTE 106 SHALL SPECIFY N (NORTH) OR S (SOUTH) AS APPROPRIATE FOR THE DETOUR.
- *** - DISPLAY 'BRYANT RD' FOR NORTHBOUND DETOUR APPROACHES
- **** - PCMS WILL DISPLAY THAT THE ROAD HAS REOPENED UPON COMPLETION OF THE PROJECT

PCMS = PORTABLE CHANGEABLE MESSAGE SIGN

ID NUMBER	SIGN TEXT	SIZE OF SIGN		NUMBER OF SIGNS REQ'D.	AREA OF EACH SIGN (SF)	COLOR	REMARKS
		WIDTH	HEIGHT				
W20-2		48"	48"	4	16.00	B/F0	INSTALL ON 2 POSTS
M6-3		21"	15"	27*	2.19	B/F0	MOUNT BELOW MI-6A
M6-1R		21"	15"	5	2.19	B/F0	MOUNT BELOW MI-6A
M6-1L		21"	15"	3	2.19	B/F0	MOUNT BELOW MI-6A
M5-1L		21"	15"	4	2.19	B/F0	MOUNT BELOW MI-6A
M5-1R		21"	15"	4	2.19	B/F0	MOUNT BELOW MI-6A
M6-2L		21"	15"	2	2.19	B/F0	MOUNT BELOW MI-6A
M4-8		24'	12"	47*	2.00	B/F0	MOUNT ABOVE M3-1 OR M3-3
M4-8a		24'	18"	2	3.00	B/F0	MOUNT ABOVE M3-1 OR M3-3
M3-1		24'	12"	21*	2.00	W/G	MOUNT ABOVE MI-6A
M3-3		24'	12"	24*	2.00	W/G	MOUNT ABOVE MI-6A
		30'	24"	45*	5.00	W/G	SEE DETAIL E-136B
R11-3B		60"	30"	6	12.50	B/W	INSTALL ON 2 POSTS

B/F0 = BLACK ON RETROREFLECTIVE ORANGE BACKGROUND  
W/G = RETROREFLECTIVE WHITE ON RETROREFLECTIVE GREEN BACKGROUND  
B/W = BLACK ON RETROREFLECTIVE WHITE BACKGROUND

* ACTUAL NUMBER MAY BE GREATER BASED ON EXISTING ROUTE MARKER ASSEMBLIES, SEE NOTE 4 ON THIS SHEET.



CONFIRMATION ROUTE MARKER ASSEMBLY  
NOT TO SCALE

NOTES:

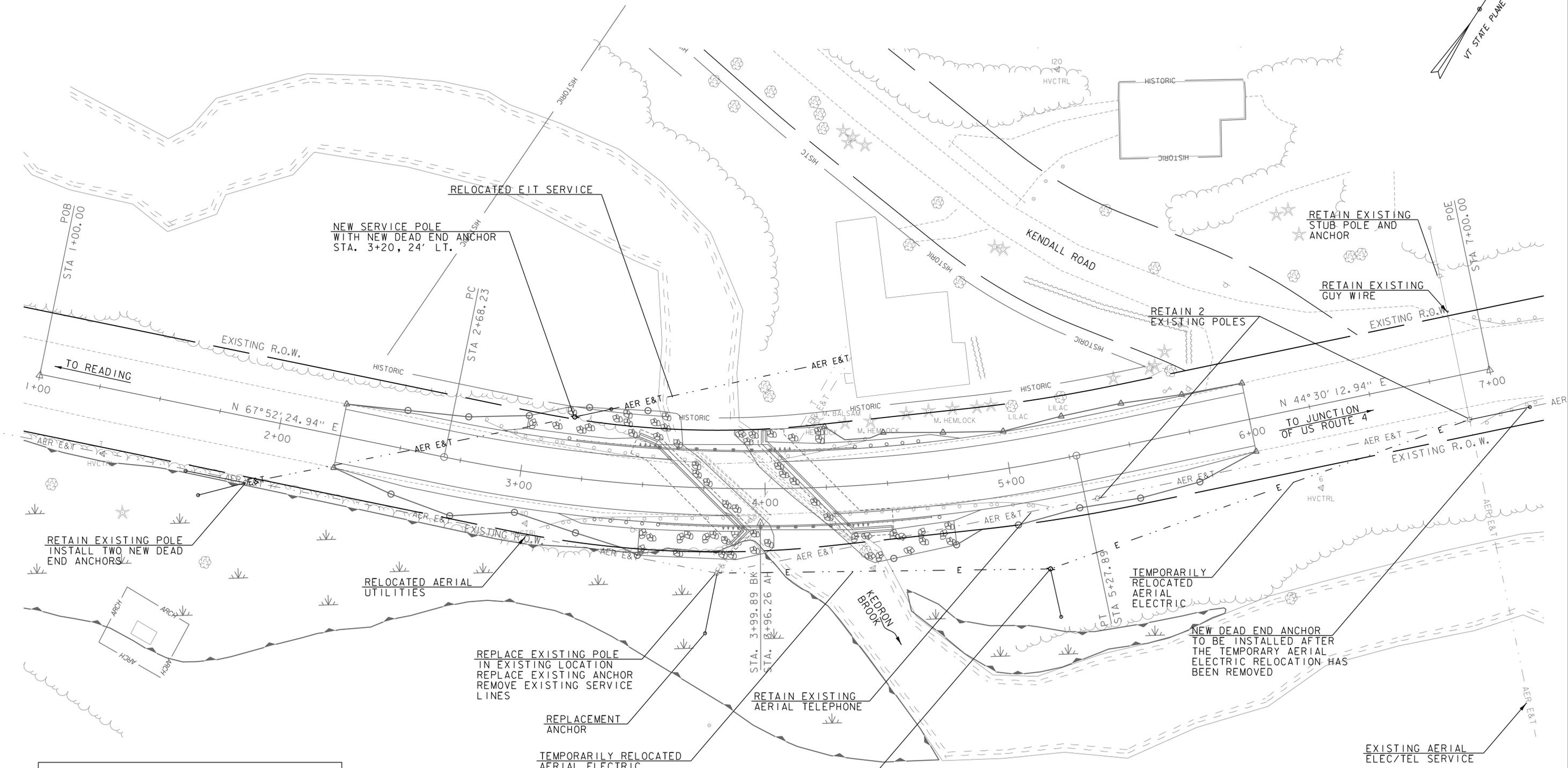
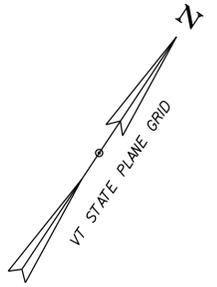
1. THE PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE FULLY OPERATIONAL A MINIMUM OF TWO WEEKS PRIOR TO THE CLOSURE OF VT 106.
2. DETOUR SIGNS SHALL BE LOCATED ADJACENT TO EXISTING INTERSECTION ROUTE MARKER ASSEMBLIES WHERE APPLICABLE.
3. COVER ANY CONFLICTING EXISTING SIGNS AS DIRECTED BY THE ENGINEER.
4. CONFIRMATION ROUTE MARKER ASSEMBLIES (SEE DETAIL, THIS SHEET) SHALL BE INSTALLED AT ALL LOCATIONS SHOWN ON THE DETOUR PLAN AND DETOUR DETAILS AND AT ALL LOCATIONS ALONG DETOUR WHERE ROUTE MARKERS EXIST FOR THE PARENT ROUTE.
7. SIGN SPACING IS FOR REFERENCE ONLY. FIELD ADJUSTMENTS WILL LIKELY BE NECESSARY, AS APPROVED BY THE ENGINEER.
8. DETOUR SIGNING IS THE RESPONSIBILITY OF THE CONTRACTOR. PAYMENT FOR ALL TEMPORARY TRAFFIC CONTROL DEVICES FOR IMPLEMENTING THE DETOUR, INCLUDING BUT NOT LIMITED TO SIGNS, BARRICADES AND MESSAGE BOARDS, WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).

PROJECT NAME: WOODSTOCK  
PROJECT NUMBER: BRF 015(21)

FILE NAME: z10c426detour.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: E. ALLING  
DETOUR DETAILS - DD 3

PLOT DATE: 7/14/2015  
DRAWN BY: P.ARMATA  
CHECKED BY: I. MAYNARD  
SHEET 17 OF 50





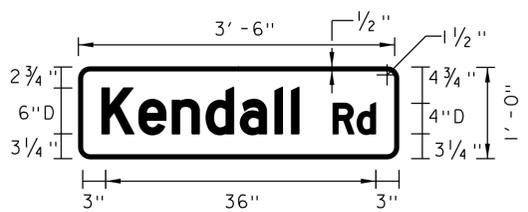
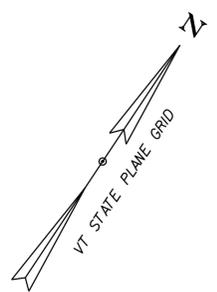
**NOTES:**  
 1. ALL UTILITY WORK SHOWN ON THIS SHEET TO BE CONSTRUCTED BY OTHERS.  
 2. ELECTRIC LINE TO BE TEMPORARILY RELOCATED TO ELIMINATE CONFLICTS BETWEEN CONSTRUCTION EQUIPMENT AND ENERGIZED ELECTRIC LINES. CONTRACTOR SHALL OBTAIN RELOCATION SCHEDULE DIRECTLY FROM UTILITY COMPANY AND ACCOUNT FOR RELOCATION SCHEDULE IN THE OVERALL PROJECT SCHEDULE.

**UTILITY LAYOUT SHEET**

SCALE: 1" = 20'-0" @ FULL SIZE  
 0 20 40

PROJECT NAME:	WOODSTOCK	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	DRAWN BY:	L. BUXTON
FILE NAME:	z10c426bdr_util.dgn	DESIGNED BY:	VTRANS
PROJECT LEADER:	G. BOGUE	CHECKED BY:	E. ALLING
UTILITY LAYOUT SHEET - UTL 1			SHEET 18 OF 50





ITEM 646.404 - DURABLE 4 INCH  
WHITE LINE, POLYUREA

STA. 2+15 - 5+83, LT.  
STA. 2+15 - 6+25, RT.

ITEM 646.414 - DURABLE 4 INCH YELLOW  
LINE, POLYUREA

STA. 2+15 - 6+10 (DOUBLE YELLOW C)

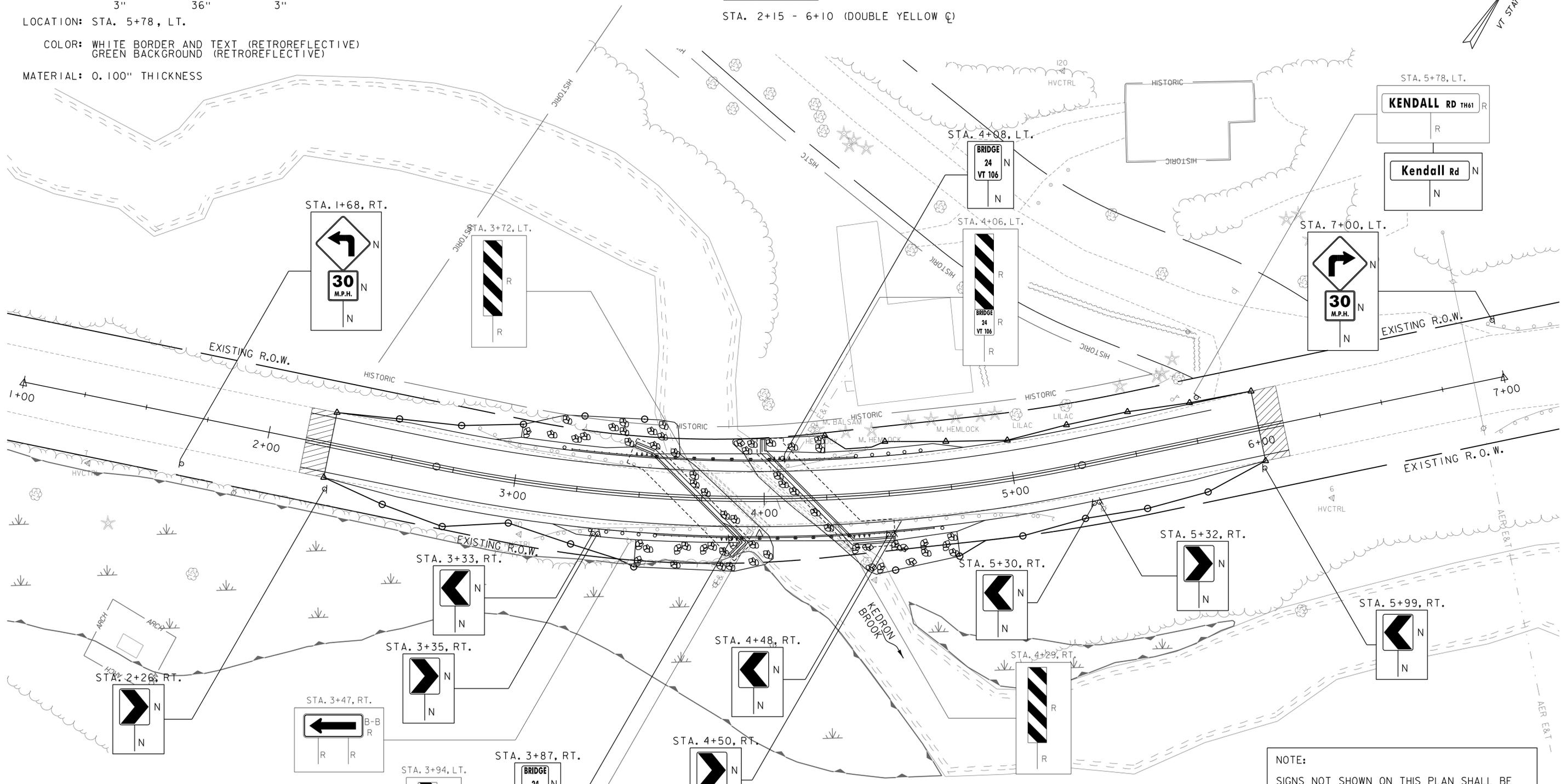
ITEM 675.50 - REMOVING SIGNS

AS SHOWN - 9

LOCATION: STA. 5+78, LT.

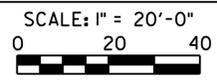
COLOR: WHITE BORDER AND TEXT (RETROREFLECTIVE)  
GREEN BACKGROUND (RETROREFLECTIVE)

MATERIAL: 0.100" THICKNESS



SIGN LEGEND	
N	= NEW
R	= REMOVE
R&S	= REMOVE & SALVAGE
S	= SALVAGE SIGN
RET	= RETAIN
B-B	= BACK TO BACK

TRAFFIC SIGNS AND LINES LAYOUT



NOTE:  
SIGNS NOT SHOWN ON THIS PLAN SHALL BE  
RETAINED UNLESS DIRECTED BY THE ENGINEER.

PROJECT NAME:	WOODSTOCK	FILE NAME:	z10c426bdr_spm.dgn	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	PROJECT LEADER:	G. BOGUE	DRAWN BY:	E. ALLING
		DESIGNED BY:	E. ALLING	CHECKED BY:	I. MAYNARD
		TRAFFIC SIGNS AND LINES LAYOUT - TSL 1		SHEET	19 OF 50





**SOIL CLASSIFICATION**

AASHTO

A1	Gravel and Sand
A3	Fine Sand
A2	Silty or Clayey Gravel and Sand
A4	Silty Soil - Low Compressibility
A5	Silty Soil - Highly Compressible
A6	Clayey Soil - Low Compressibility
A7	Clayey Soil - Highly Compressible

**ROCK QUALITY DESIGNATION**

R.O.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

**SHEAR STRENGTH**

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard

**CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY**

DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

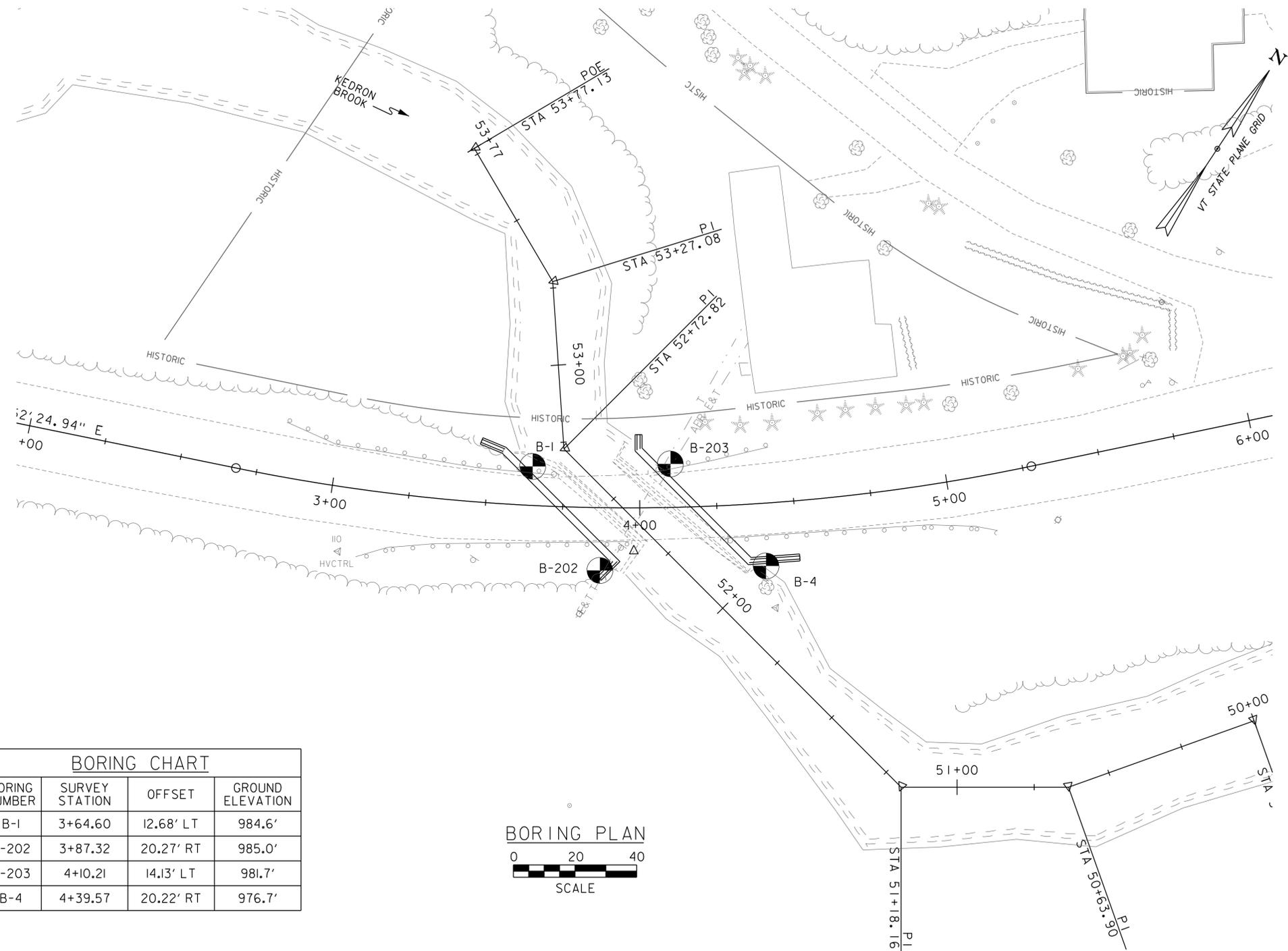
**COMMONLY USED SYMBOLS**

- ▼ Water Elevation
- ⊕ Standard Penetration Boring
- ⊕ Auger Boring
- ⊕ Rod Sounding
- ⊕ Sample
- N Standard Penetration Test
- Blow Count Per Foot For:  
2" O.D. Sampler  
1 3/8" I.D. Sampler  
Hammer Weight Of 140 Lbs.  
Hammer Fall Of 30"
- VS Field Vane Shear Test
- US Undisturbed Soil Sample
- B Blast
- DC Diamond Core
- MD Mud Drill
- WA Wash Ahead
- HSA Hollow Stem Auger
- AX Core Size 1 1/8"
- BX Core Size 1 5/8"
- NX Core Size 2 1/8"
- M Double Tube Core Barrel Used
- LL Liquid Limit
- PL Plastic Limit
- PI Plasticity Index
- NP Non Plastic
- w Moisture Content (Dry Wgt. Basis)
- D Dry
- M Moist
- MTW Moist To Wet
- W Wet
- Sat Saturated
- Bo Boulder
- Gr Gravel
- Sa Sand
- SI Silt
- Cl Clay
- HP Hardpan
- Le Ledge
- NLTD No Ledge To Depth
- CNPF Can Not Penetrate Further
- TLOB To Ledge Or Boulder
- NR No Recovery
- Rec. Recovery
- 1/2 Rec. Percent Recovery
- RQD Rock Quality Designation
- CBR California Bearing Ratio
- < Less Than
- > Greater Than
- R Refusal (N > 100)

COLOR			
blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gry	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		

**DEFINITIONS (AASHTO)**

- BEDROCK (LEDGE)** - Rock in its native location of indefinite thickness.
- BOULDER** - A rock fragment with an average dimension > 12 inches.
- COBBLE** - Rock fragments with an average dimension between 3 and 12 inches.
- GRAVEL** - Rounded particles of rock < 3" and > 0.075" (#10 sieve).
- SAND** - Particles of rock < 0.075" (#10 sieve) and > 0.0025" (#200 sieve).
- SILT** - Soil < 0.0025" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.
- CLAY** - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.
- VARVED** - Alternate layers of silt and clay.
- HARDPAN** - Extremely dense soil, cemented layer, not softened when wet.
- MUCK** - Soft organic soil (containing > 10% organic material).
- MOISTURE CONTENT** - Weight of water divided by dry weight of soil.
- FLOWING SAND** - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
- STRIKE** - Angle from magnetic north to line of intersection of bed with a horizontal plane.
- DIP** - Inclination of bed with a horizontal plane.



BORING CHART			
BORING NUMBER	SURVEY STATION	OFFSET	GROUND ELEVATION
B-1	3+64.60	12.68' LT	984.6'
B-202	3+87.32	20.27' RT	985.0'
B-203	4+10.21	14.13' LT	981.7'
B-4	4+39.57	20.22' RT	976.7'

**BORING PLAN**  
0 20 40  
SCALE

**GENERAL NOTES**

- The subsurface explorations shown herein were made in July 1986, and Nov-Dec 2004 by VTRANS.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
- Engineering judgement was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgement by the Contractor.
- Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
- Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

**LEGEND:**  
⊕ BRIDGE BORING

PROJECT NAME: WOODSTOCK  
PROJECT NUMBER: BRF 0151(21)  
FILE NAME: z10c426bdr_bor_pl.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: J. HUNGERFORD  
BORING PLAN

PLOT DATE: 7/14/2015  
DRAWN BY: L. BUXTON  
CHECKED BY: J. HUNGERFORD  
SHEET 21 OF 50



STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: B-1 SHEET 1 of 1 DATE STARTED: 7/18/86 DATE COMPLETED:					
PROJECT NAME: WOODSTOCK SITE NAME: BR 24 STATION: 3+64.60 OFFSET: 12.68' LT		PROJECT NUMBER: BRS 0151(8)S SITE NUMBER: VT 106 GROUND ELEVATION: 984.61 ft GROUNDWATER DEPTH:					
BORING CREW CREW CHIEF: WILLIS DRILLER: WILLIS LOGGER: UNKNOWN		BORING RIG: UNKNOWN BORING TYPE: WASH BORE SAMPLE TYPE: SPLIT BARREL CHECKED BY: CAA					
DEPTH ft	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER foot	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
		No Sample, 5 ft- 6.9 ft					
10		A-2-4, SiSa, brn, Moist	R				
		A-4, Si HP, gry, Moist	R	8.7			
20		A-4, SaSi, gry, Moist	R	8.7			
		A-4, SaSi, gry, Moist	R	10.6			
30		A-4, SaSi, gry, Moist	R	10.1			
		Hole stopped @ 30.8 ft					
		DRILLER'S NOTES: Hole stopped in Sandy Silt, HP.					

LOC. OF BORING WOODSTOCK BRS0151(8)S.GPJ VT.ADT.GBT 2/16/05

BOTTOM OF FOOTING  
EL. 970.0

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: B-202 SHEET 1 of 1 DATE STARTED: 11/23/04 DATE COMPLETED: 11/30/04					
PROJECT NAME: WOODSTOCK SITE NAME: BR 24 STATION: 3+87.32 OFFSET: 20.27' RT		PROJECT NUMBER: BRS 0151(8)S SITE NUMBER: VT 106 GROUND ELEVATION: 985.01 ft GROUNDWATER DEPTH:					
BORING CREW CREW CHIEF: GARROW DRILLER: GARROW LOGGER: PUALWAN		BORING RIG: SMALL SKID RIG BORING TYPE: WASH BORE SAMPLE TYPE: SPLIT BARREL CHECKED BY: CAA					
DEPTH ft	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER foot	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
		A-2-4, SiSa, Dk/brn, Moist, Rec. = .7 ft	3	22.7	15.8	51.5	32.7
10		A-4, SaSi, gry-brn, Moist, Rec. = .3'	19	13.3	17.1	36.6	46.3
		A-1-b, SaGr, gry-brn, Moist, Rec. = .8 ft		22.0	48.3	41.9	9.8
		13.8 ft - 16.3 ft, BXDC, Boulder, Cleaned out casing.					
		16.4 ft - 19.5 ft, BXMDC, Boulder, Cored ahead & advanced casing.					
20		A-4, GrSaSi HP, gry, Moist, Rec. = .8 ft	R	8.6	27.8	31.6	40.6
		A-4, SaSi HP, gry, Moist, Rec. = .9 ft	R	9.3	16.5	32.4	51.1
30		A-2-4, SaSiGr, gry, Moist, Rec. = .5 ft	R	8.1	45.3	24.2	32.5
		A-1-b, SiSaGr, gry, Moist, Rec. = .4 ft	R	10.9	44.8	31.0	24.2
		Gray, Quartz-biotite schist, Competent, RQD value may be affected by mechanical breakage during drilling., Moderately hard, Unweathered, BXDC, 37 ft - 39.5 ft, Rec. = 2.1 ft	1	86	0	10	
		Gray, Quartz-biotite schist, Competent., Moderately hard, Unweathered, BXMDC, 39.5 ft - 44.4 ft, Rec. = 5 ft	2	100	80	10	
		Gray, Quartz-biotite schist, Competent., Moderately hard, Unweathered, BXMDC, 44.4 ft - 47.5 ft, Rec. = 3.1 ft	3	100	80	10	
		Hole stopped @ 47.5 ft					
		DRILLER'S NOTES: No Groundwater Depth. Hole caved in @ 11.8 ft					

LOC. OF BORING WOODSTOCK BRS0151(8)S.GPJ VT.ADT.GBT 2/16/05

APPROX. BOTTOM OF CASING  
EL. 947.50

APPROX. BOTTOM OF PILE  
EL. 943.50 PLUMB PILE  
EL. 941.50 BATTERED PILE

1' - 0"

4' - PLUMB PILES  
6' - BATTERED PILES

PROJECT NAME: WOODSTOCK  
PROJECT NUMBER: BRF 0151(21)

FILE NAME: z10c426bor_log.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: VTRANS  
BORING LOG 1

PLOT DATE: 7/14/2015  
DRAWN BY: L. BUXTON  
CHECKED BY: J. HUNGERFORD  
SHEET 22 OF 50



STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: B-203 SHEET 1 of 1 DATE STARTED: 12/07/04 DATE COMPLETED: 12/13/04					
PROJECT NAME: WOODSTOCK SITE NAME: BR 24 STATION: 4+10.21 OFFSET: 14.13' LT		PROJECT NUMBER: BRS 0151(8)S SITE NUMBER: VT 106 GROUND ELEVATION: 981.66 ft GROUNDWATER DEPTH:					
BORING CREW CREW CHIEF: GARROW DRILLER: GARROW LOGGER: PUALWAN		BORING RIG: SMALL SKID RIG BORING TYPE: WASH BORE SAMPLE TYPE: SPLIT BARREL CHECKED BY: CAA					
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER foot	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
			RUN	REC (%)	ROD (%)	Dip (deg)	Drill Rate (min/1 ft)
		A-2-4, SiSa, gry-brn, Moist, Rec. = .5 ft	16	17.7	17.7	54.8	27.5
		6.9 ft - 10 ft, BXDC, Cleaned out casing					
10		A-2-4, SiSaGr HP, gry, Moist, Rec. = .4 ft	R	7.2	36.8	33.8	29.4
		13.5 ft - 14.8 ft, BXDC, Cleaned out casing					
		A-4, GrSaSi HP, gry, Moist, Rec. = 1 ft	R	8.6	24.6	30.5	44.9
		18.7 ft - 19.7 ft, BXDC, Cleaned out casing					
20		A-4, SaSi HP, gry, Moist, Rec. = 1.4 ft	R	9.6	16.4	39.9	43.7
		23.4 ft - 24.6 ft, BXDC, Cleaned out casing					
		A-4, SaSi HP, gry, Moist, Rec. = 1.8 ft	R	9.3	14.3	34.4	51.3
		28.3 ft - 29.5 ft, BXDC, Cleaned out casing					
30		A-4, SaSi HP, gry, Moist, Rec. = .5 ft	R	9.4	14.5	35.9	49.6
		33.2 ft - 34.5 ft, BXDC, Cored ahead & broke through					
		A-4, SaSi HP, gry, Moist, Rec. = 1.5 ft	R	9.3	12.3	35.2	52.5
		Top of Bedrock @ 38.5 ft					
40		Gray, Phyllitic quartz-biotite schist, Competency fair, Moderately hard, Slightly weathered, BXDC, 38.5 ft - 40.4 ft, Rec. = 1.1 ft	1	55	0	20	12
		Gray, Phyllitic quartz-biotite schist, Competent., Moderately hard, Unweathered, BXMDC, 40.4 ft - 45.4 ft, Rec. = 4.6 ft	2	94	46	20	5
							6
							9
							7
							8
50		Gray, Phyllitic quartz-biotite schist, Competent., Moderately hard, Unweathered, BXMDC, 45.4 ft - 49.4 ft, Rec. = 3 ft	3	73	69	20	12
		Hole stopped @ 49.4 ft					11
							15
							22
		DRILLER'S NOTES: Hole was moved 11.5 ft left, because of power pole obstruction. No Groundwater Depth. Hole caved in.					

BOTTOM OF FOOTING  
EL. 970.0

APPROX. BOTTOM  
OF CASING  
EL. 942.2

APPROX. BOTTOM  
OF PILE  
EL. 938.2 PLUMB PILE  
EL. 936.2 BATTERED PILE

LOG OF BORING WOODSTOCK BR50151(8)S.GPJ, VT. AOT.GDT, 2/16/05  
4' - PLUMB PILES  
6' - BATTERED PILES

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: B-4 SHEET 1 of 1 DATE STARTED: 7/16/86 DATE COMPLETED:					
PROJECT NAME: WOODSTOCK SITE NAME: BR 24 STATION: 4+39.57 OFFSET: 20.22' RT		PROJECT NUMBER: BRS 0151(8)S SITE NUMBER: VT 106 GROUND ELEVATION: 976.71 ft GROUNDWATER DEPTH:					
BORING CREW CREW CHIEF: WILLIS DRILLER: WILLIS LOGGER: UNKNOWN		BORING RIG: UNKNOWN BORING TYPE: WASH BORE SAMPLE TYPE: SPLIT BARREL CHECKED BY: CAA					
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER foot	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
		A-2-4, SiGr HP, gry, Moist	R	11.1			
10		A-4, SaSi HP, gry, Moist, Hit Boulder	R	10.2			
		AXMDC, HP & Boulder, 12.5 ft - 17.4 ft					
20		A-4, SaSi HP, gry, Moist BX, Boulder, 20.3 ft - 21.3 ft AXMDC, HP & Boulder, 21.3 ft - 26.2 ft	R	5.7			
		Hole stopped @ 26.2 ft					
		DRILLER'S NOTES: Hole stopped in HP & Boulders.					
30							

BOTTOM OF FOOTING  
EL. 970.0

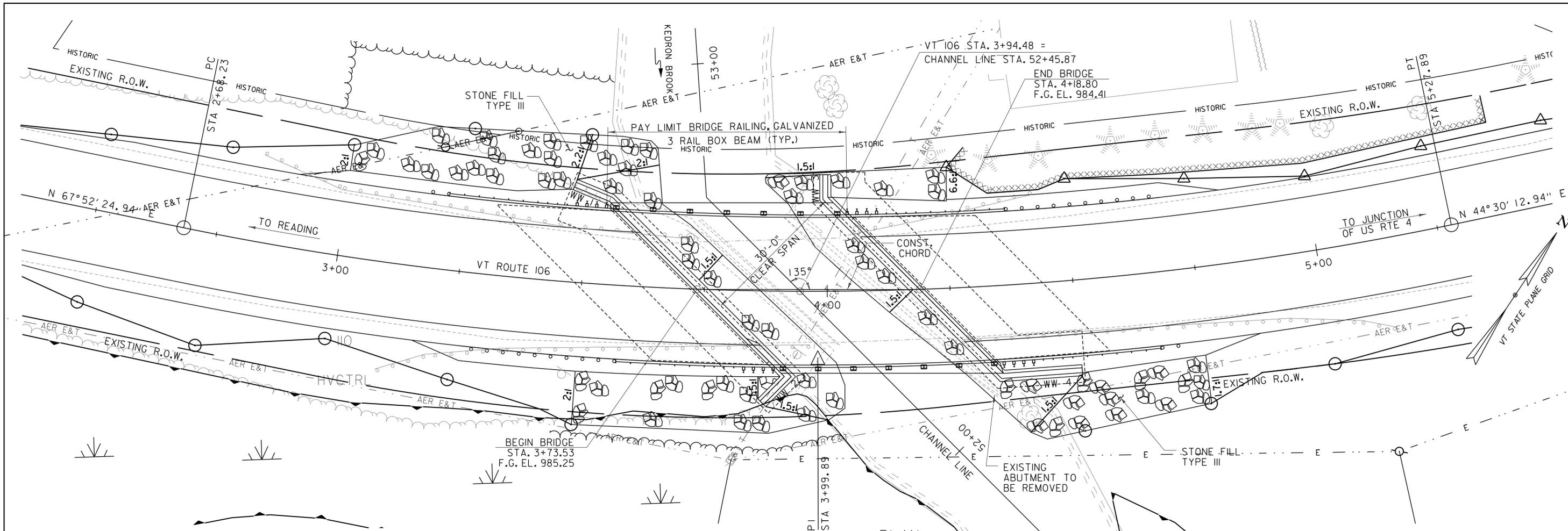
LOG OF BORING WOODSTOCK BR50151(8)S.GPJ, VT. AOT.GDT, 2/16/05

PROJECT NAME: WOODSTOCK  
PROJECT NUMBER: BRF 0151(21)

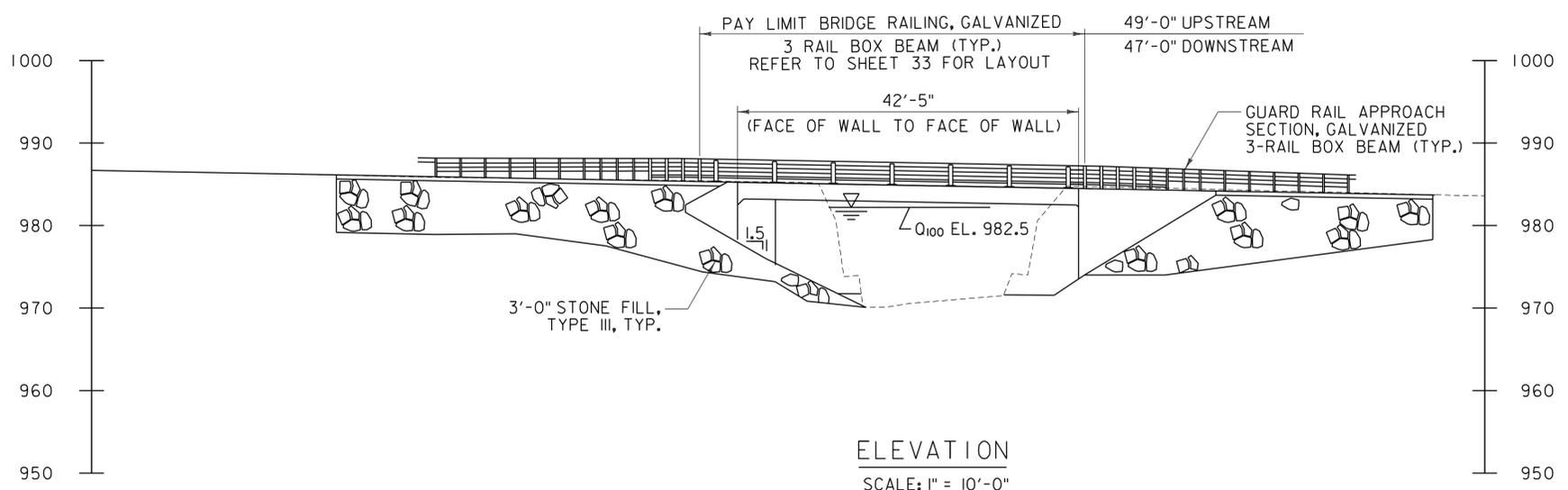
FILE NAME: z10c426bor_log.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: VTRANS  
BORING LOG 2

PLOT DATE: 7/14/2015  
DRAWN BY: L. BUXTON  
CHECKED BY: J. HUNGERFORD  
SHEET 23 OF 50





PLAN  
SCALE: 1" = 10'-0"  
0 10 20

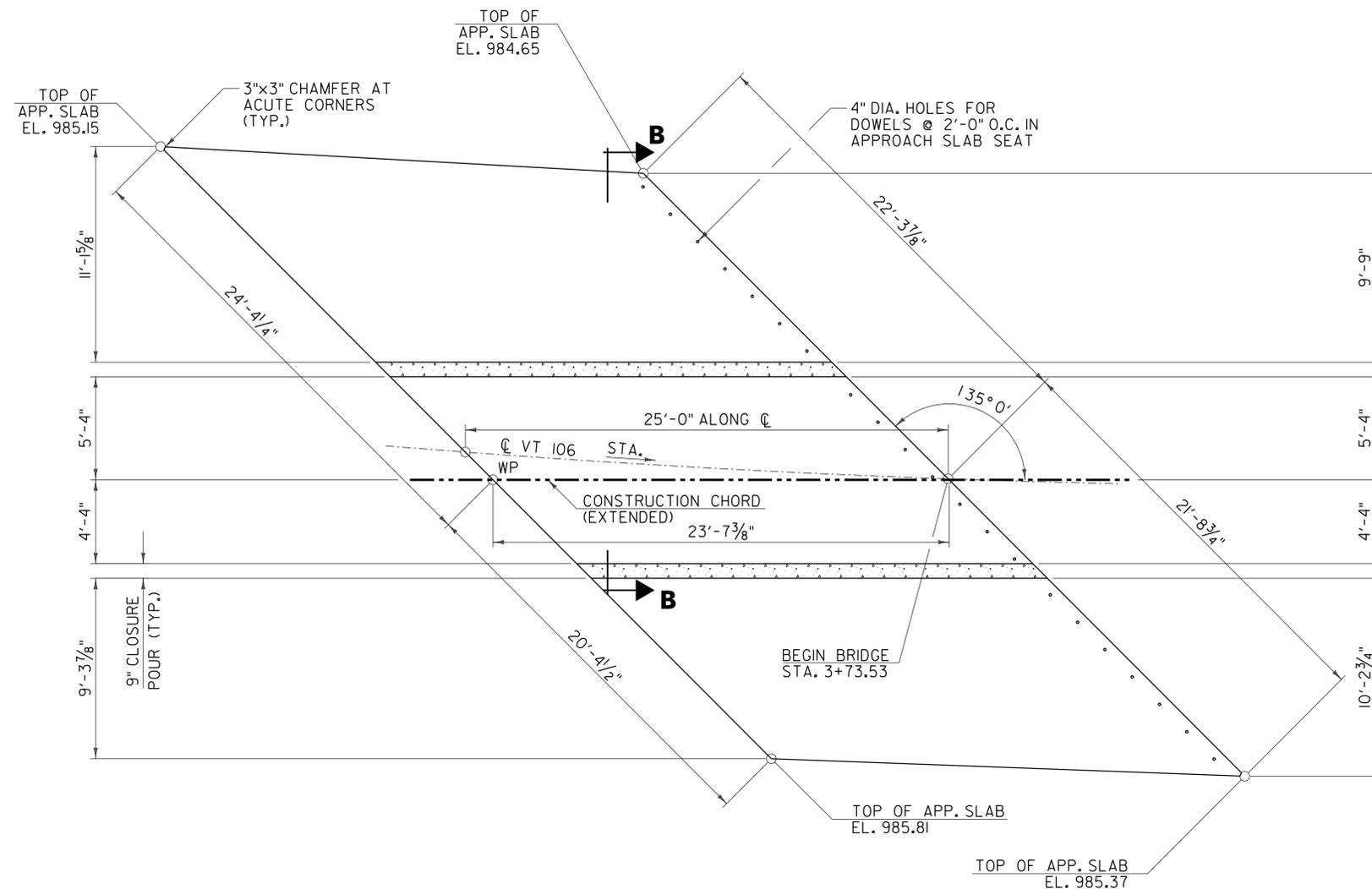
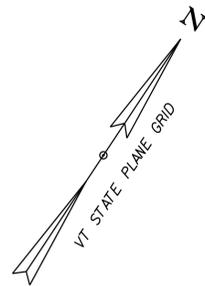


ELEVATION  
SCALE: 1" = 10'-0"  
0 10 20

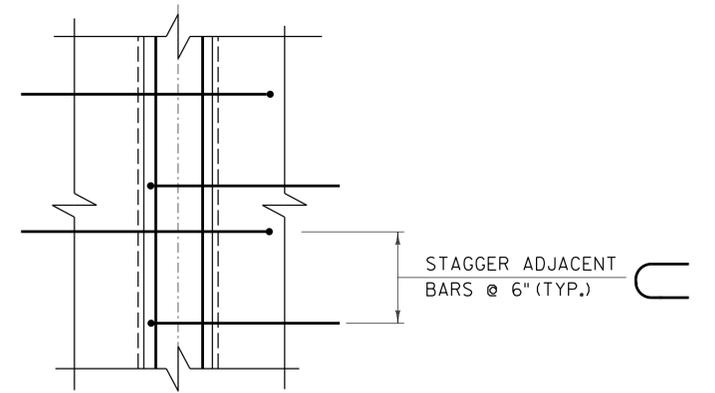
PROJECT NAME:	WOODSTOCK	FILE NAME:	z10c426bdr_pe.dgn	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	PROJECT LEADER:	G. BOGUE	DRAWN BY:	L. BUXTON
		DESIGNED BY:	T. KNIGHT	CHECKED BY:	J. HUNGERFORD
		PLAN AND ELEVATION			SHEET 24 OF 50



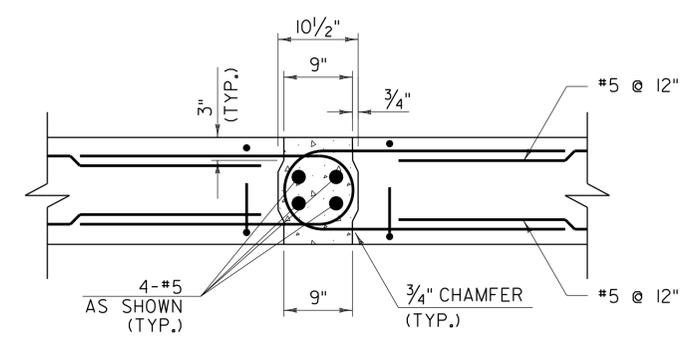




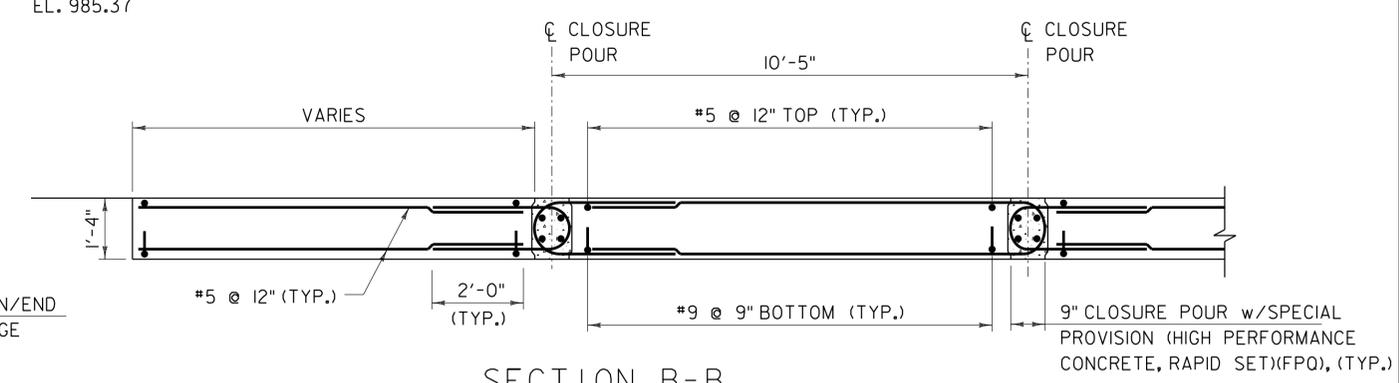
APPROACH SLAB I - PLAN  
SCALE: 1/4" = 1'-0"



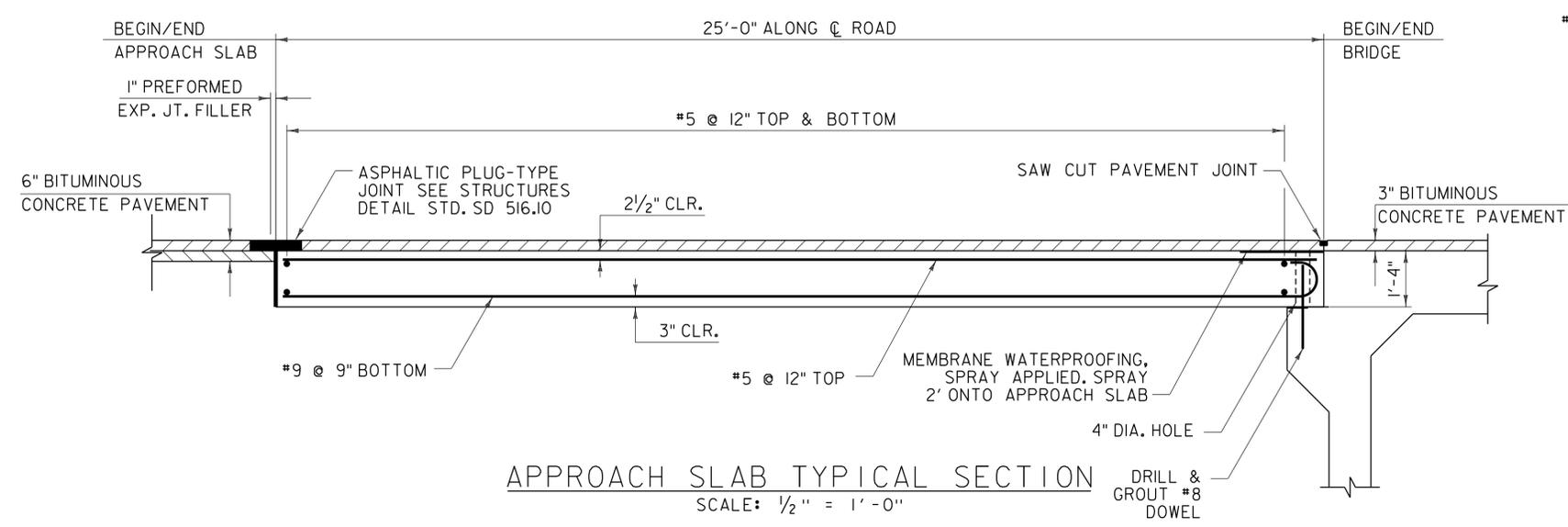
CONNECTION DETAIL PLAN  
SCALE: 1" = 1'-0"



CONNECTION DETAIL SECTION  
SCALE: 1" = 1'-0"



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

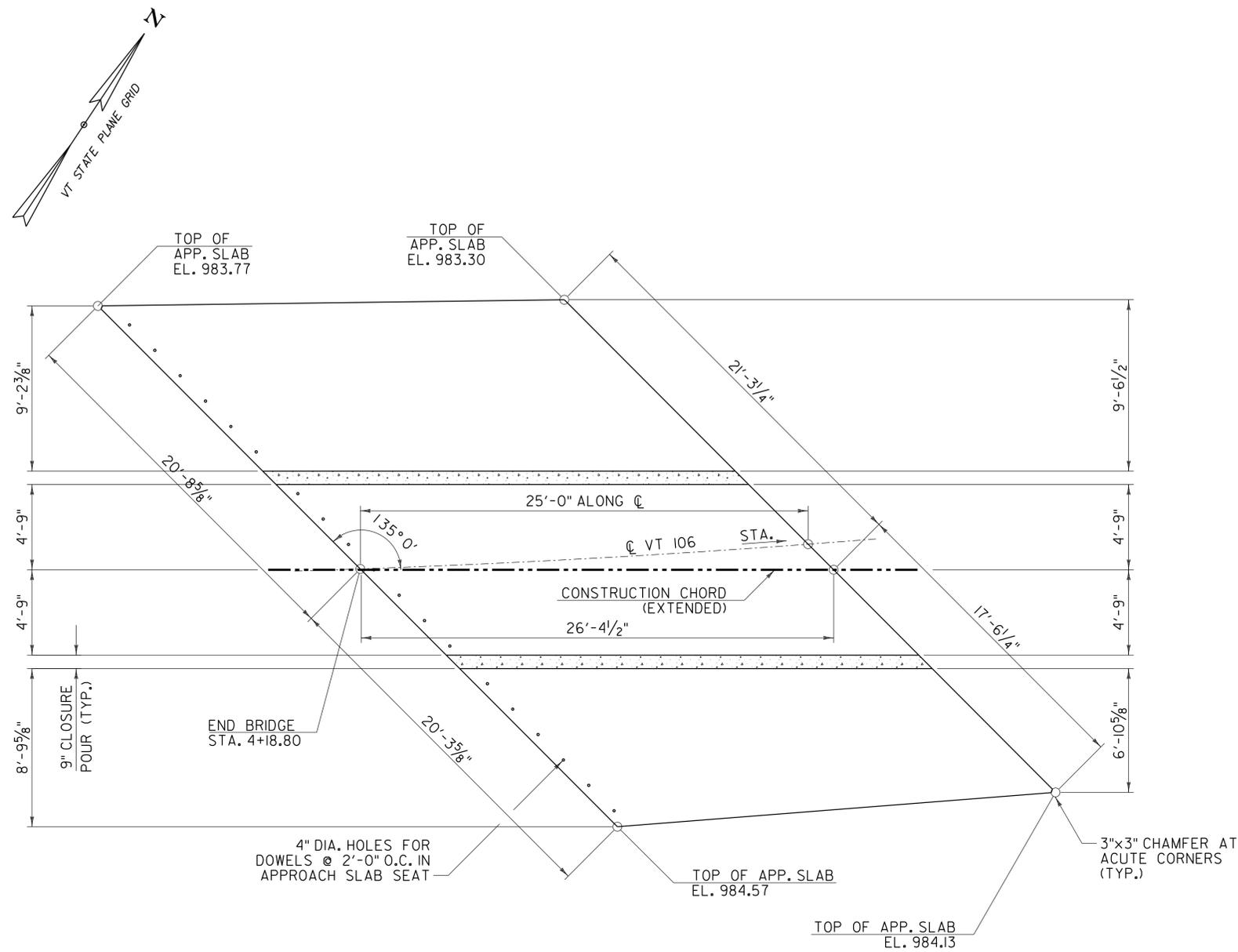


APPROACH SLAB TYPICAL SECTION  
SCALE: 1/2" = 1'-0"

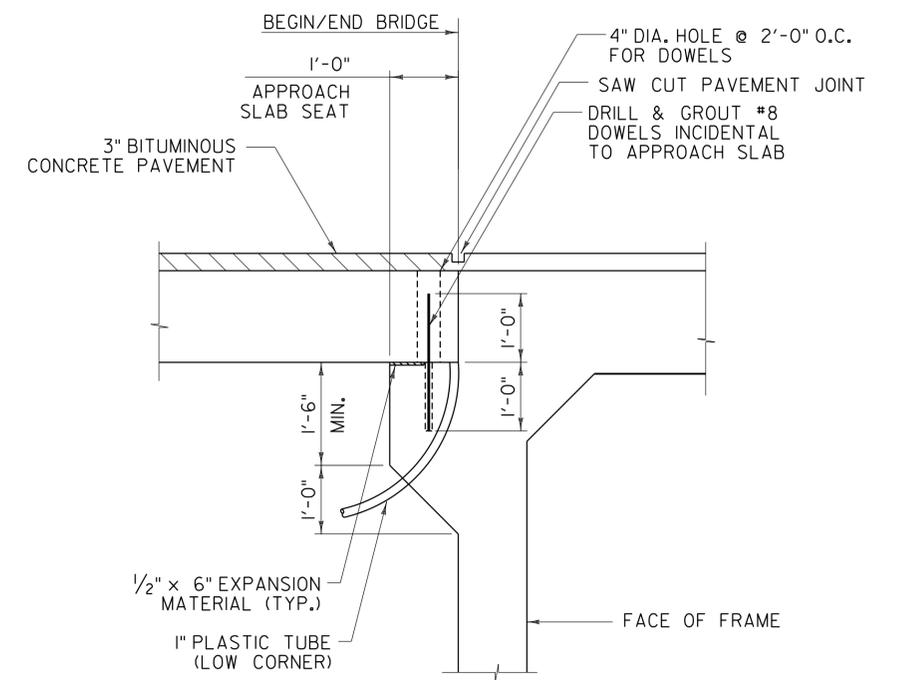
NOTE:  
ALL REINFORCEMENT IN JOINTS SHALL BE INCIDENTAL TO PRECAST CONCRETE.

PROJECT NAME:	WOODSTOCK	FILE NAME:	z10c426apps\slab.dgn	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	PROJECT LEADER:	G. BOGUE	DRAWN BY:	J. SOTER
		DESIGNED BY:	N. TIRK	CHECKED BY:	T. KNIGHT
		APPROACH SLAB DETAILS I			SHEET 26 OF 50





APPROACH SLAB 2 - PLAN  
SCALE: 1/4" = 1'-0"



REINFORCEMENT NOT SHOWN

BRIDGE END DETAIL

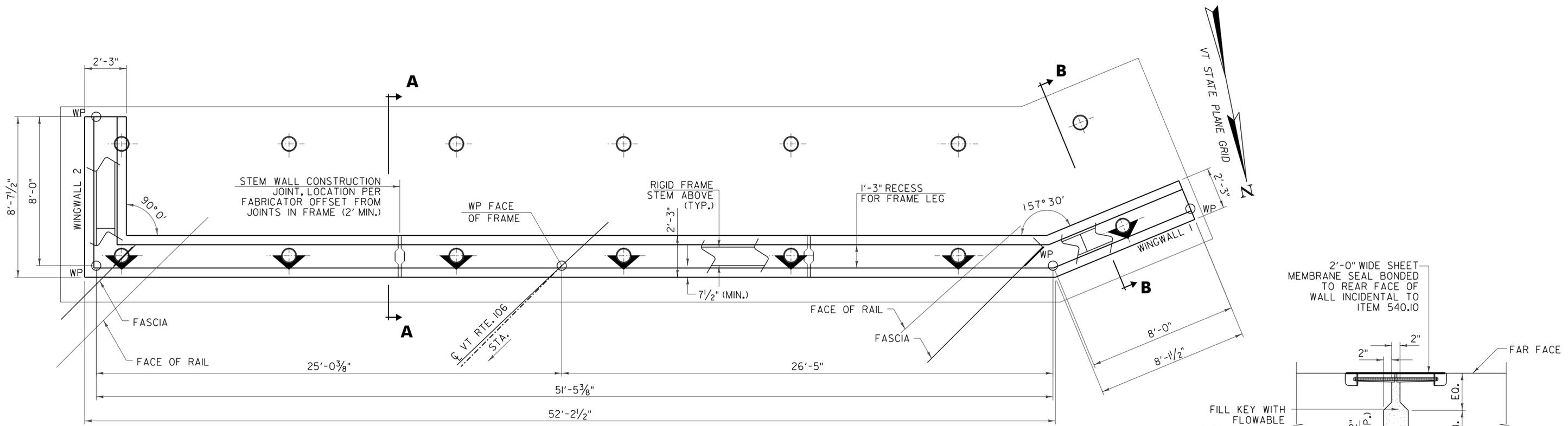
SCALE 3/4" = 1'-0"

PROJECT NAME: WOODSTOCK  
PROJECT NUMBER: BRF 0151(21)

FILE NAME: z10c426appslab.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: N. TIRK  
APPROACH SLAB DETAILS 2

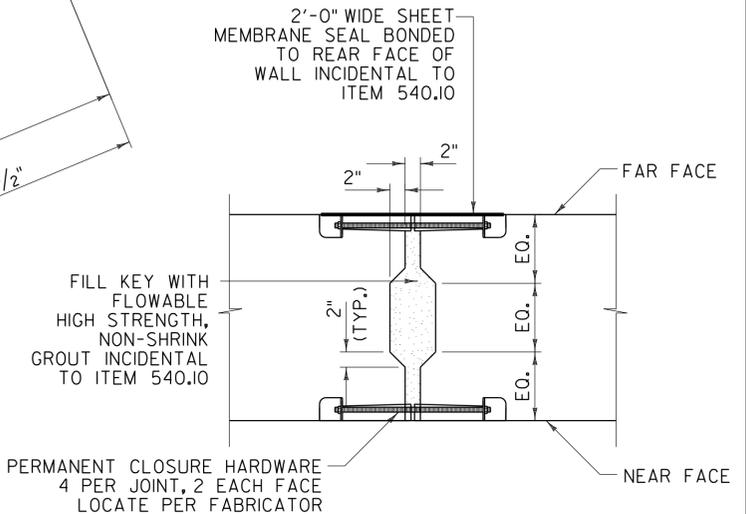
PLOT DATE: 7/14/2015  
DRAWN BY: J. SOTER  
CHECKED BY: T. KNIGHT  
SHEET 27 OF 50



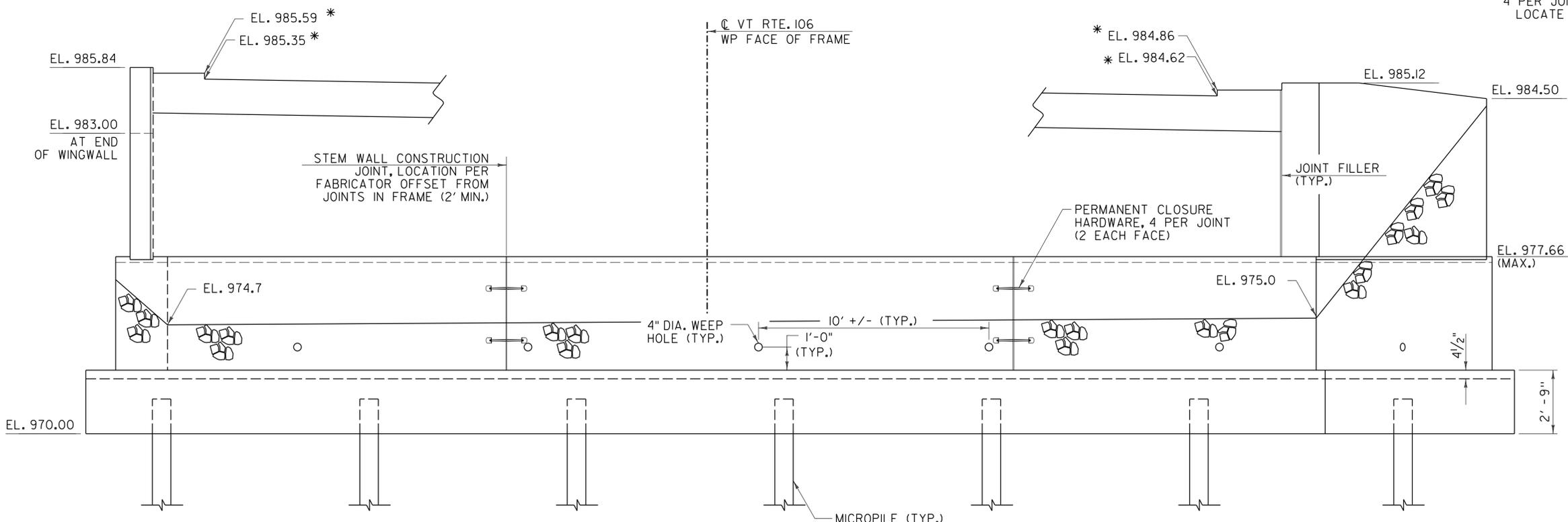


**PEDESTAL I PLAN**  
SCALE 3/8" = 1'-0"

**LEGEND**  
 ○ VERTICAL MICROPILE  
 ⊙ MICROPILE BATTERED 1 HORIZ. TO 10 VERT.

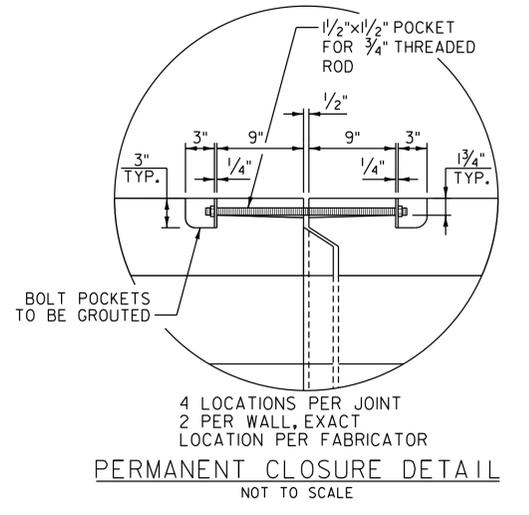


**STEM WALL CONSTRUCTION JOINT DETAIL**  
SCALE 1" = 1'-0"



**PEDESTAL I ELEVATION**  
SCALE 3/8" = 1'-0"

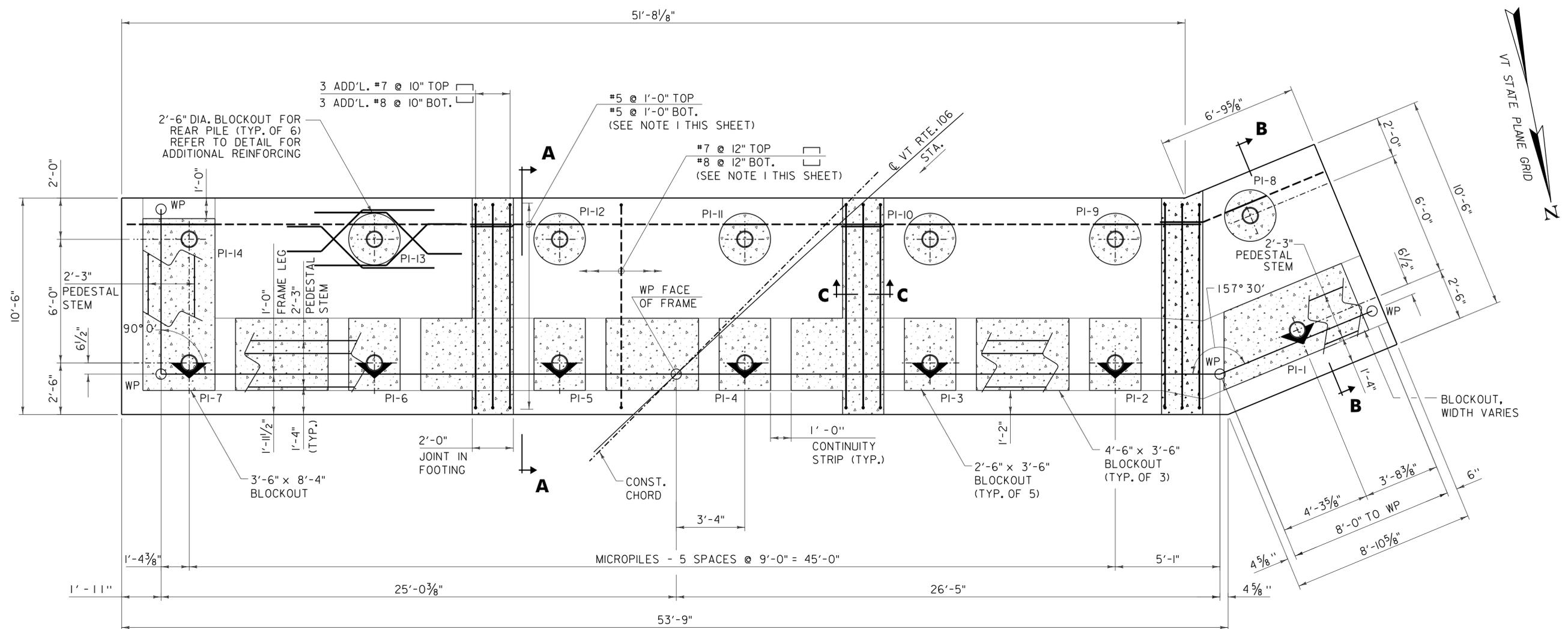
**NOTES:**  
 1. * ELEVATION AT FACE OF FRAME LEG.  
 2. FOR SECTIONS A-A, B-B AND STEM WALL CONSTRUCTION JOINT DETAIL REFER TO SHEET 32.



**PERMANENT CLOSURE DETAIL**  
NOT TO SCALE

PROJECT NAME:	WOODSTOCK
PROJECT NUMBER:	BRF 0151(21)
FILE NAME:	z10c426obut_1.pl.elev.dgn
PROJECT LEADER:	G. BOGUE
DESIGNED BY:	N. TIRK
PEDESTAL FRAME I PLAN AND ELEVATION	
PLOT DATE:	7/14/2015
DRAWN BY:	L. BUXTON
CHECKED BY:	T. KNIGHT
SHEET	28 OF 50



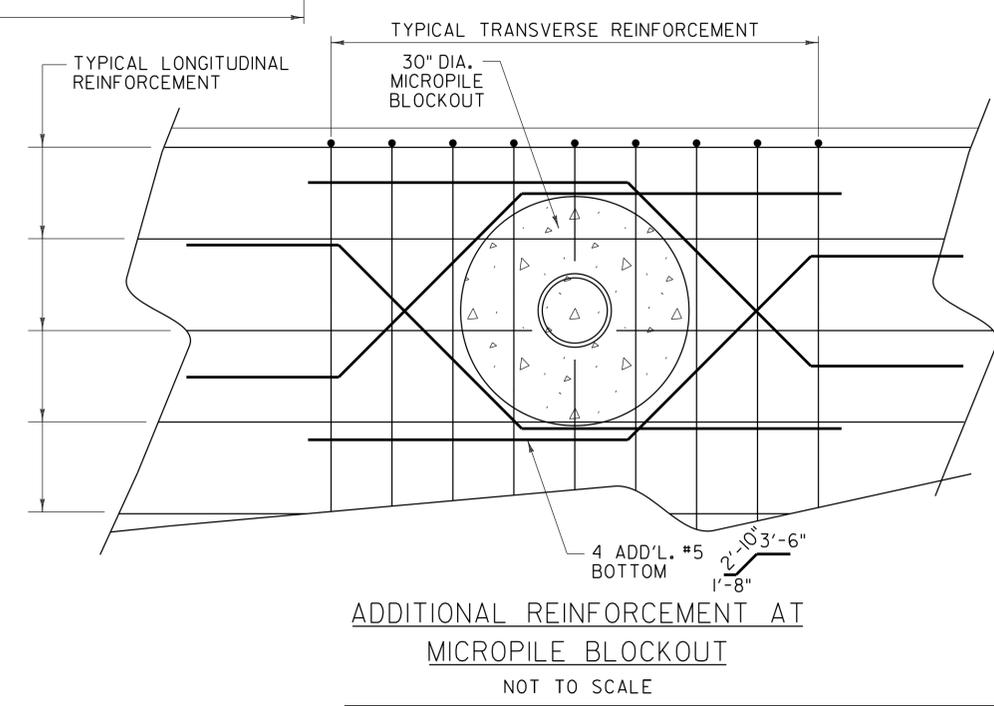
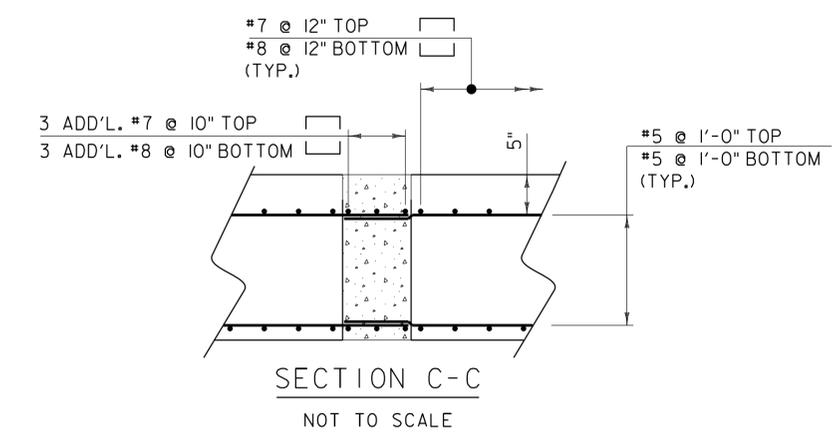


PEDESTAL I FOUNDATION PLAN & PILE LAYOUT

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

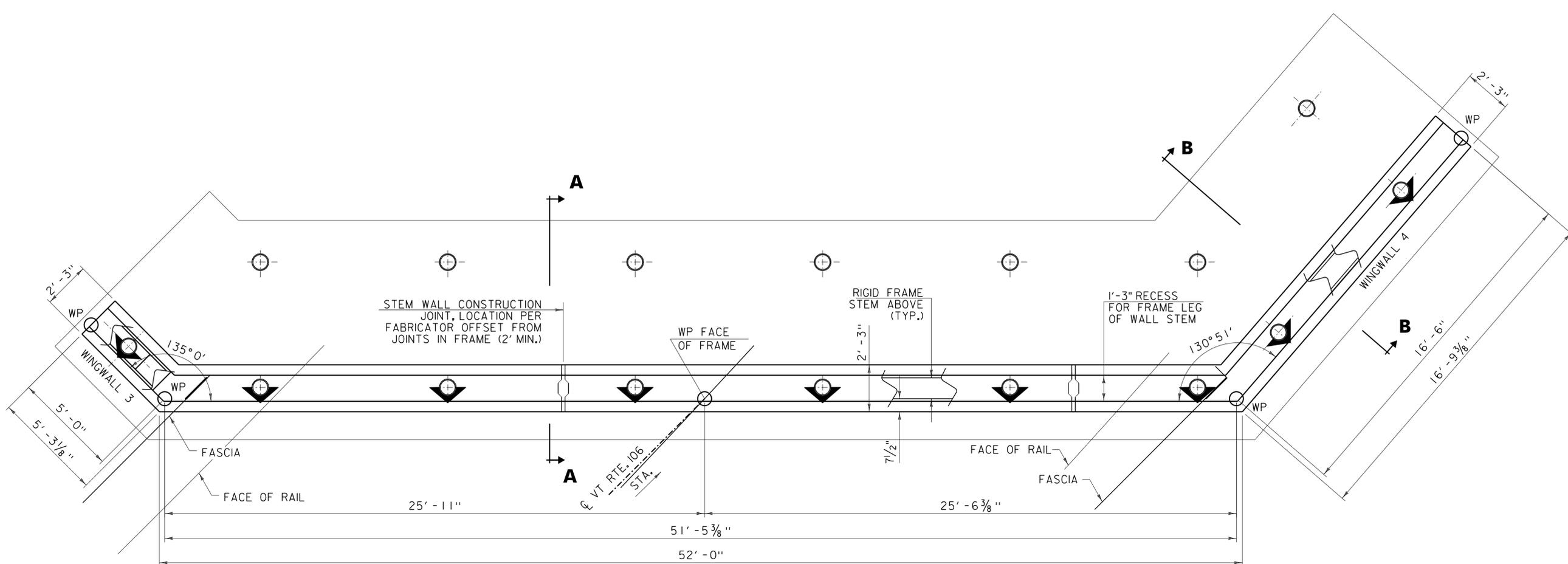
- LEGEND
- PI-XX VERTICAL MICROPILE
  - ◐ PI-XX MICROPILE BATTERED I HORIZ. TO 10 VERT.
  - ▨ SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPO)

- NOTES:
1. REINFORCEMENT IS TO BE CONTINUOUS THROUGH THE BLOCKOUTS. THE DESIGN ALLOWS FOR ONE BAR IN EACH DIRECTION OF THE BOTTOM MAT OF REINFORCEMENT TO BE CUT IN THE FIELD IF THE BAR INTERFERES WITH THE PILE HEAD.
  2. CENTER OF PILES GIVEN AT BOTTOM OF FOOTING.
  3. ALL REINFORCEMENT IN JOINTS AND BLOCKOUTS WILL BE INCIDENTAL TO PRECAST CONCRETE.
  4. FOR SECTIONS A-A AND B-B REFER TO SHEET 32.



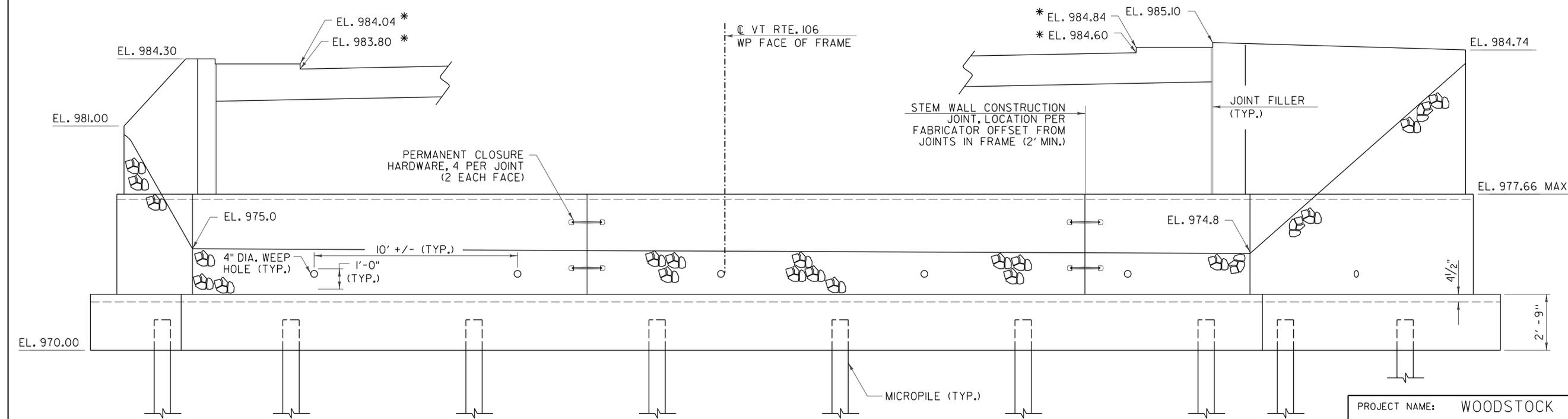
PROJECT NAME:	WOODSTOCK
PROJECT NUMBER:	BRF 0151(21)
FILE NAME:	z10c426pedl.ftg pl.dgn
PROJECT LEADER:	G. BOGUE
DESIGNED BY:	N. TIRK
PEDESTAL I FOOTING PLAN & PILE LAYOUT	
PLOT DATE:	7/14/2015
DRAWN BY:	L. BUXTON
CHECKED BY:	T. KNIGHT
SHEET	29 OF 50





PEDESTAL 2 PLAN  
SCALE 3/8" = 1'-0"

- LEGEND
- VERTICAL MICROPILE
  - ⊙ MICROPILE BATTERED 1 HORIZ. TO 10 VERT.

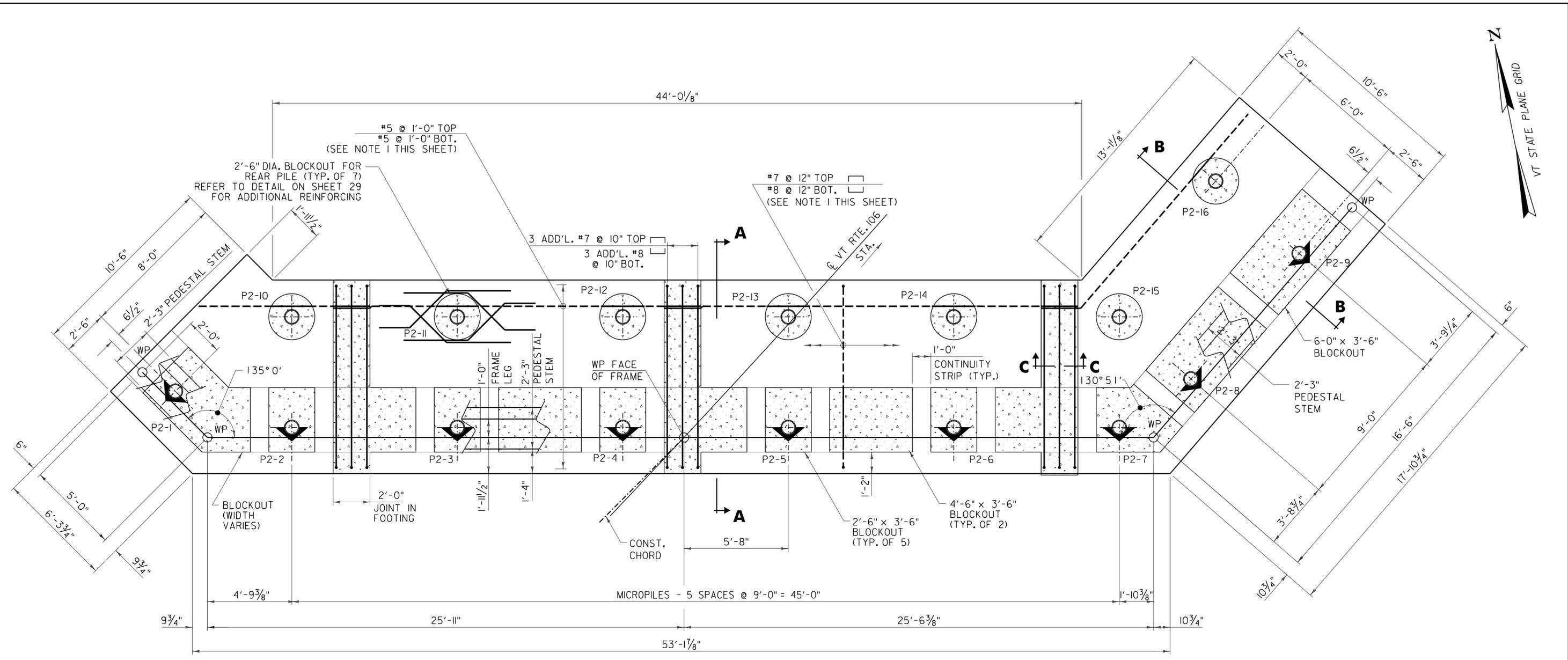


PEDESTAL 2 ELEVATION  
SCALE 3/8" = 1'-0"

- NOTES:
1. * ELEVATION AT FACE OF FRAME LEG.
  2. FOR SECTIONS A-A, B-B AND STEM WALL CONSTRUCTION JOINT DETAIL REFER TO SHEET 32.

PROJECT NAME:	WOODSTOCK	FILE NAME:	z10c426abut_2.pl.elev.dgn	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	PROJECT LEADER:	G. BOGUE	DRAWN BY:	L. BUXTON
		DESIGNED BY:	N. TIRK	CHECKED BY:	T. KNIGHT
PEDESTAL FRAME 2 PLAN AND ELEVATION				SHEET 30 OF 50	





PEDESTAL 2 FOUNDATION PLAN & PILE LAYOUT

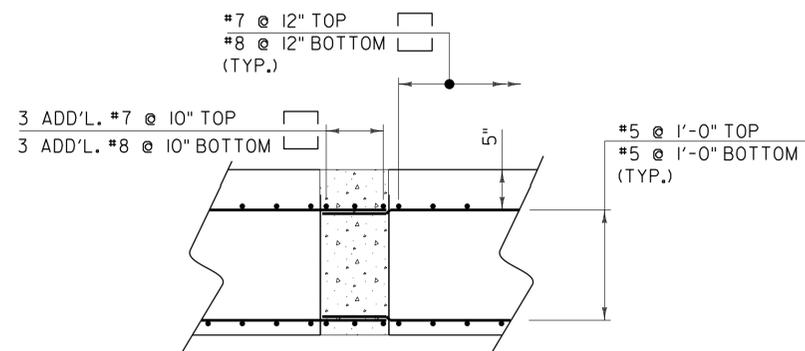
SCALE 3/8" = 1'-0"

LEGEND

- P2-XX VERTICAL MICROPILE
- ◐ P2-XX MICROPILE BATTERED 1 HORIZ. TO 10 VERT.
- ▨ SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPO)

NOTES:

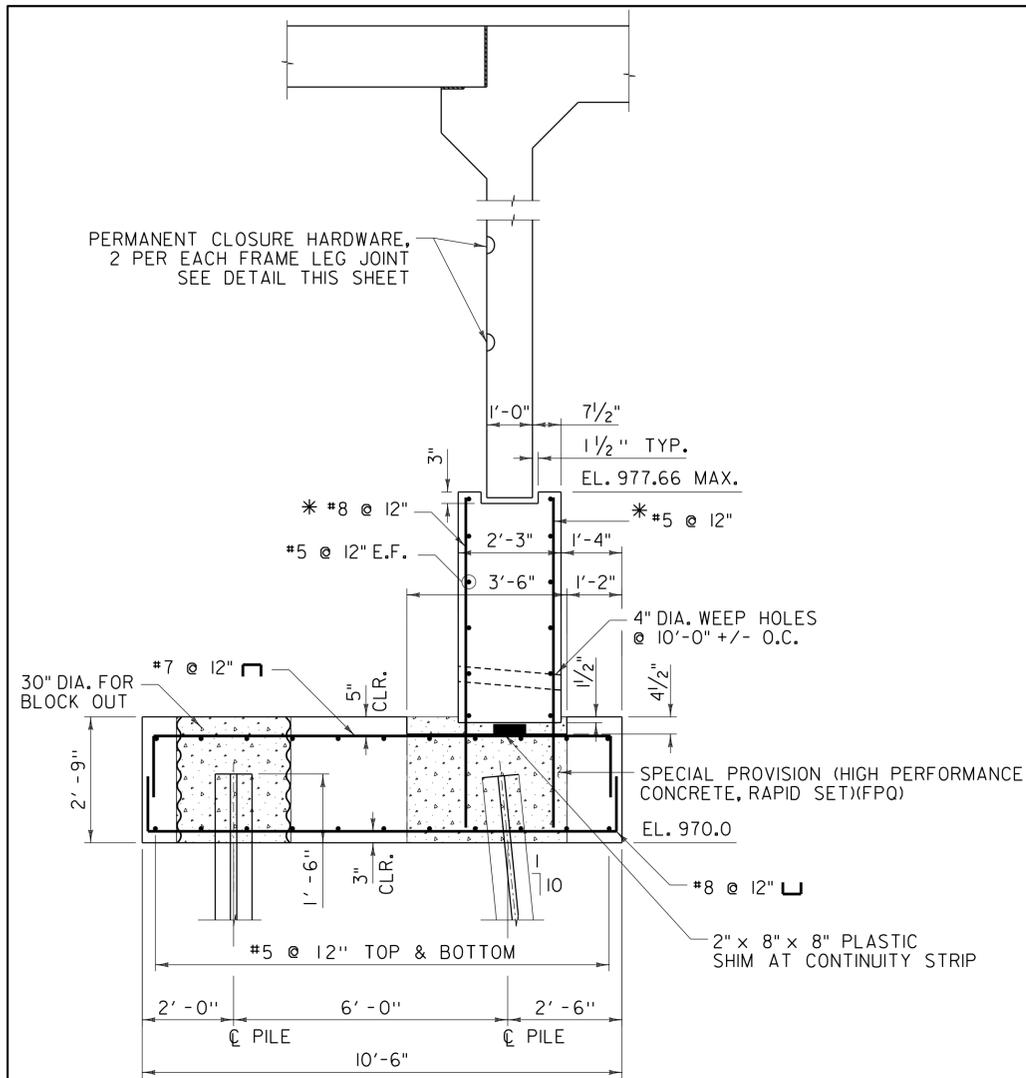
1. REINFORCEMENT IS TO BE CONTINUOUS THROUGH THE BLOCKOUTS. THE DESIGN ALLOWS FOR ONE BAR IN EACH DIRECTION OF THE BOTTOM MAT OF REINFORCEMENT TO BE CUT IN THE FIELD IF THE BAR INTERFERES WITH THE PILE HEAD.
2. CENTER OF PILES GIVEN AT BOTTOM OF FOOTING.
3. ALL REINFORCEMENT IN JOINTS AND BLOCKOUTS WILL BE INCIDENTAL TO PRECAST CONCRETE.
4. FOR SECTIONS A-A AND B-B, REFER TO SHEET 32.



SECTION C-C  
NOT TO SCALE

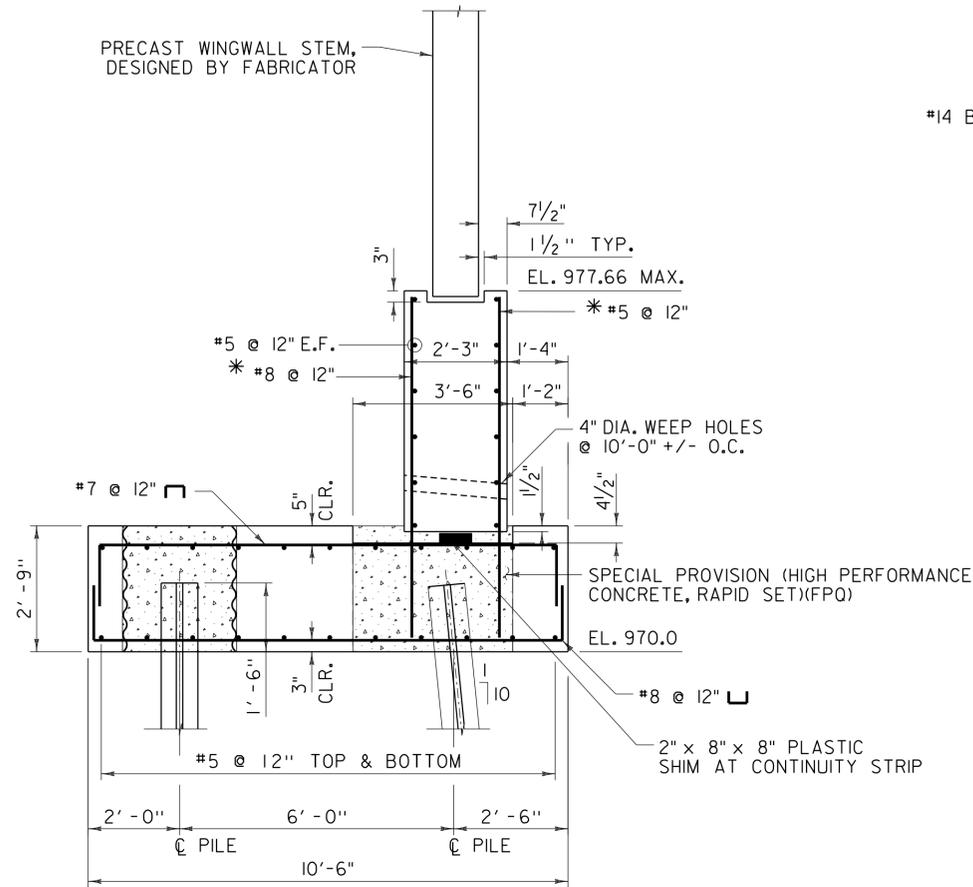
PROJECT NAME:	WOODSTOCK
PROJECT NUMBER:	BRF 0151(21)
FILE NAME:	z10c426ped2.ftg pl.dgn
PROJECT LEADER:	G. BOGUE
DESIGNED BY:	N. TIRK
PEDESTAL 2 FOOTING PLAN & PILE LAYOUT	SHEET 31 OF 50
PLOT DATE:	7/14/2015
DRAWN BY:	L. BUXTON
CHECKED BY:	T. KNIGHT





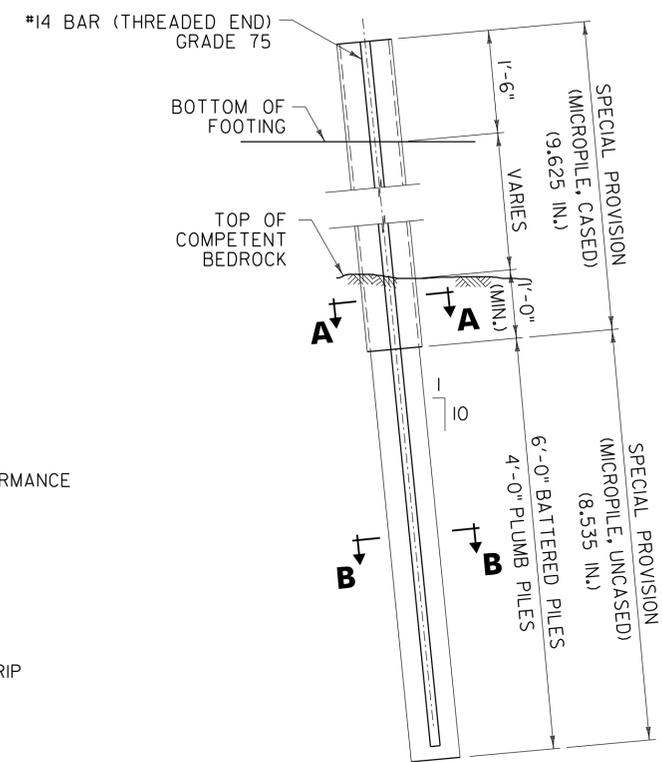
SECTION A-A  
SCALE: 1/2" = 1'-0"  
PEDESTAL WALL AT FRAME

* OMIT BAR AT CONTINUITY STRIP



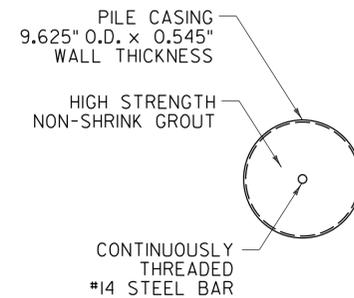
SECTION B-B  
SCALE: 1/2" = 1'-0"  
PEDESTAL WALL AT WINGWALL

* OMIT BAR AT CONTINUITY STRIP

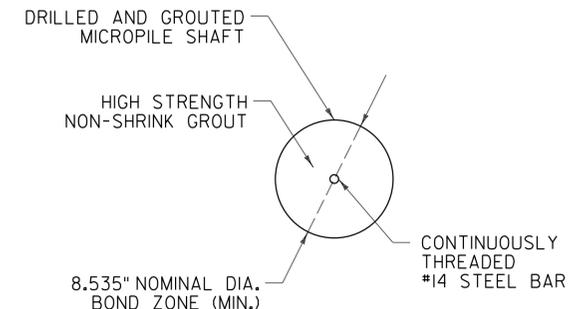


NOTE:  
BATTERED PILE SHOWN,  
PLUMB PILE SIMILAR.

MICROPILE DETAIL AND PAY LIMITS  
NOT TO SCALE



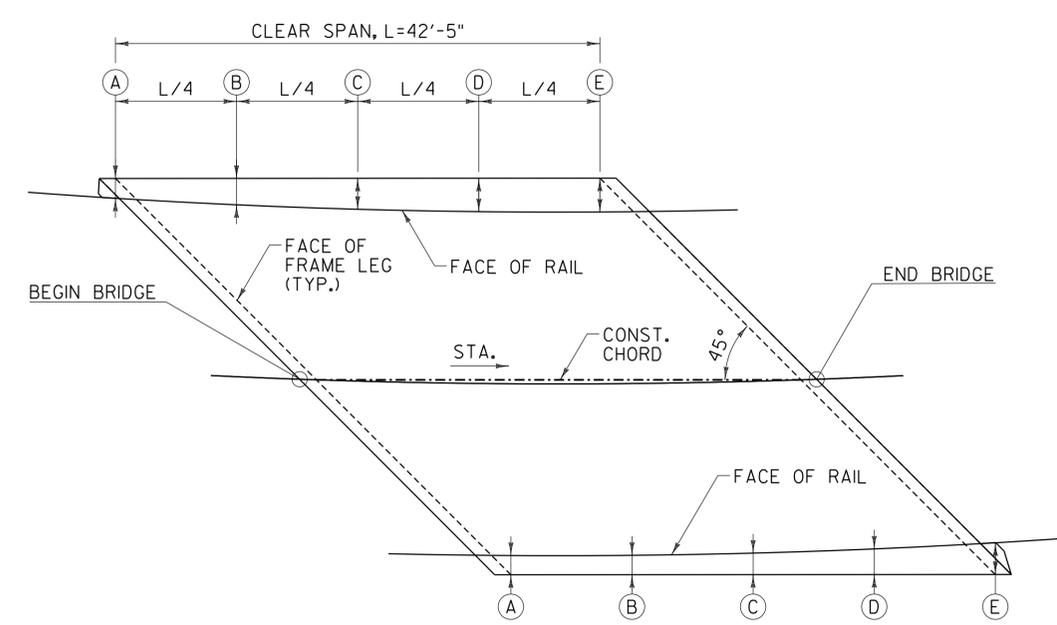
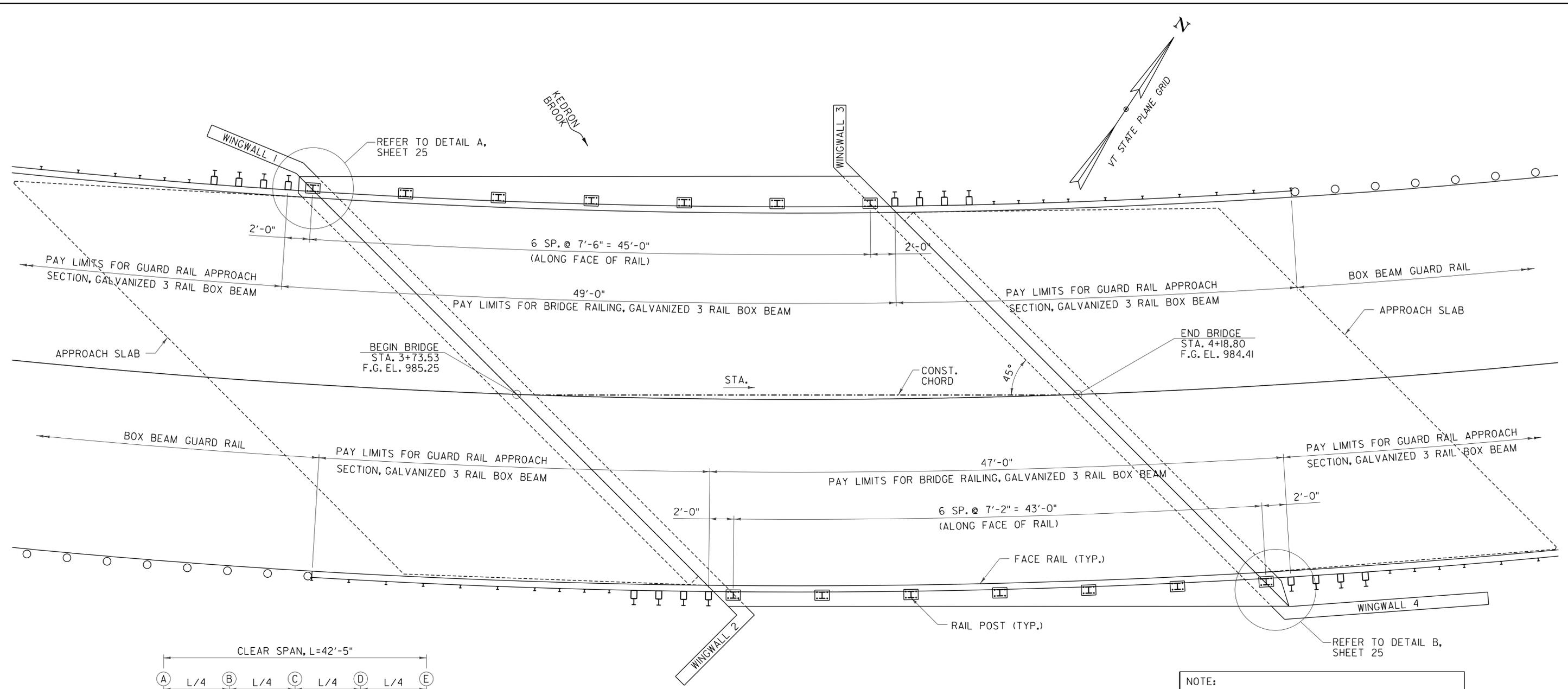
CASED MICROPILE  
SECTION A  
NOT TO SCALE



UNCASED MICROPILE  
SECTION B  
NOT TO SCALE



PROJECT NAME:	WOODSTOCK	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	DRAWN BY:	L. BUXTON
FILE NAME:	z10c426struct.pl.dgn	DESIGNED BY:	N. TIRK
PROJECT LEADER:	G. BOGUE	CHECKED BY:	T. KNIGHT
STRUCTURE DETAILS		SHEET	32 OF 50



**BRIDGE RAIL LAYOUT**  
SCALE: 1/4" = 1'-0"

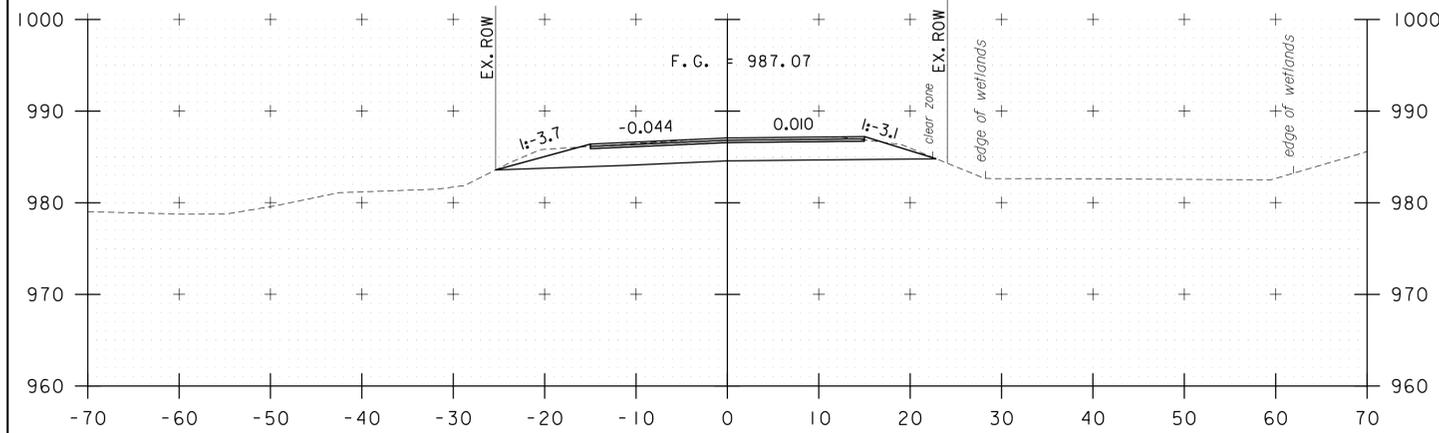
**NOTE:**  
RAIL POST SPACING IS BASED ON ASSUMED FRAME LEG THICKNESS OF 1'-0". THE FABRICATOR SHALL ADJUST DIMENSIONS AS NECESSARY BASED ON ACTUAL FRAME LEG THICKNESS USED.

TABLE OF OFFSETS FROM FACE OF RAIL TO FASCIA		
POINT	OFFSET TO LEFT FASCIA (FT)	OFFSET TO RIGHT FASCIA (FT)
A	1.73	1.68
B	2.31	1.69
C	2.7	1.88
D	2.92	2.23
E	2.96	2.76

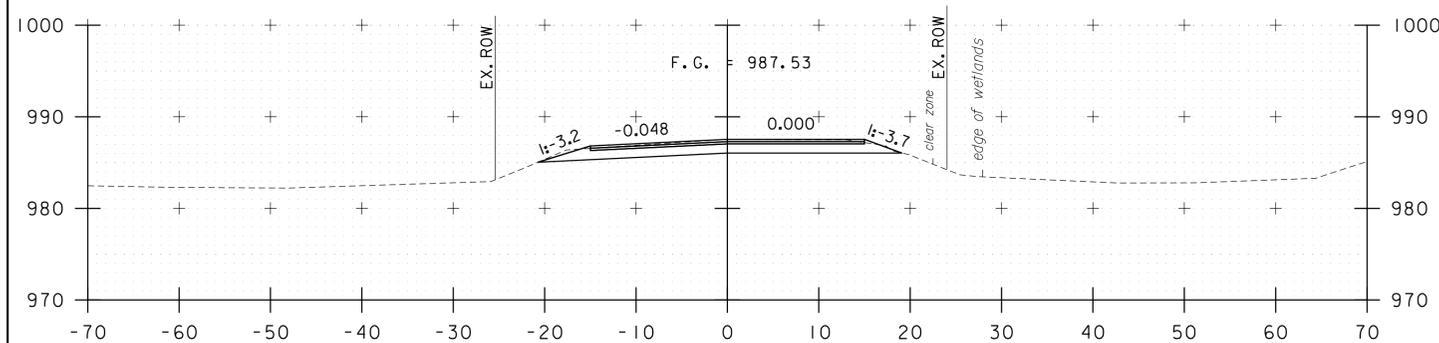
**FACE OF RAIL TO FASCIA OFFSET**  
NOT TO SCALE



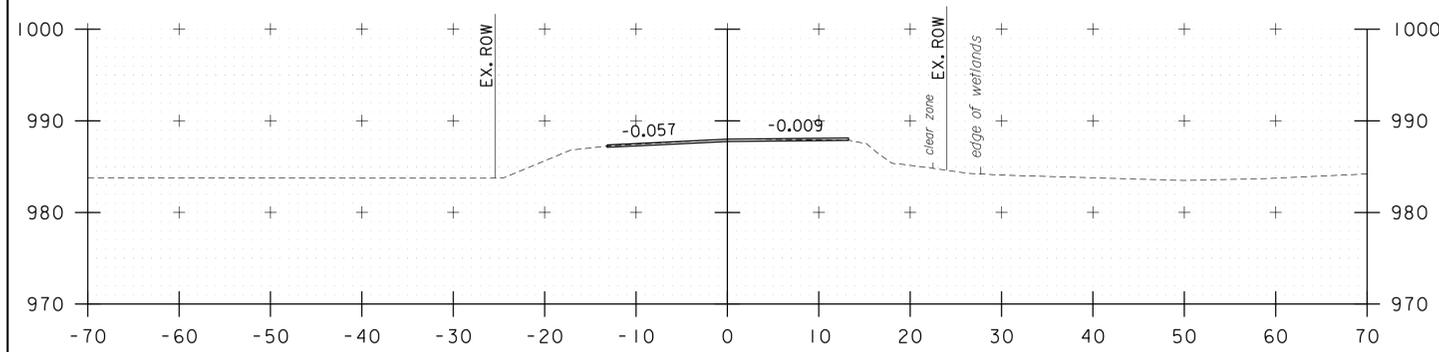
PROJECT NAME: WOODSTOCK  
PROJECT NUMBER: BRF 0151(21)  
FILE NAME: z10c426brail.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: N. TIRK  
BRIDGE RAIL LAYOUT  
PLOT DATE: 7/14/2015  
DRAWN BY: J. SOTER  
CHECKED BY: T. KNIGHT  
SHEET 33 OF 50



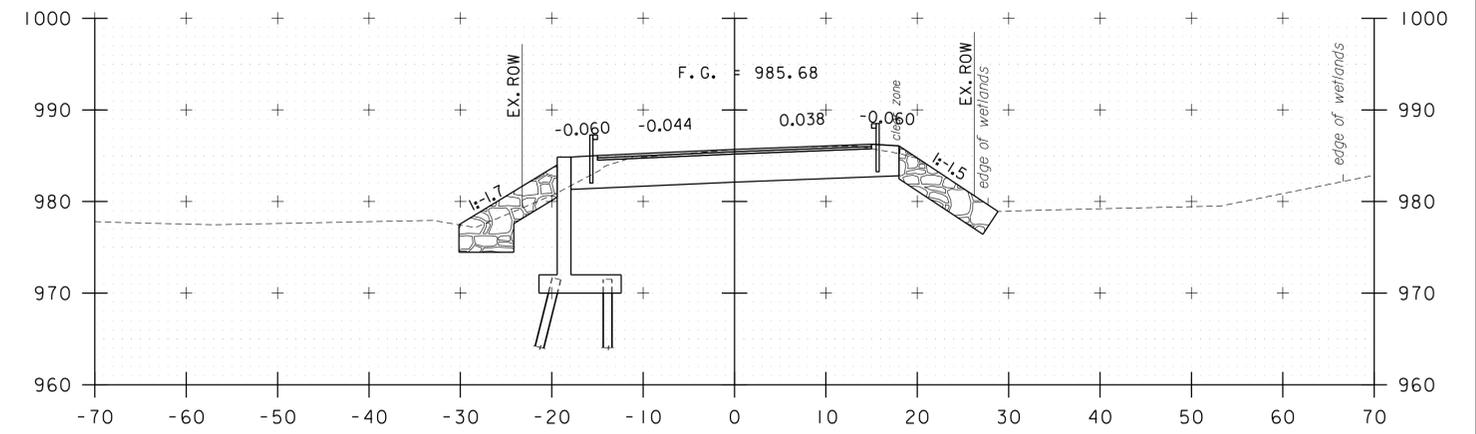
2+75  
BEGIN PROJECT



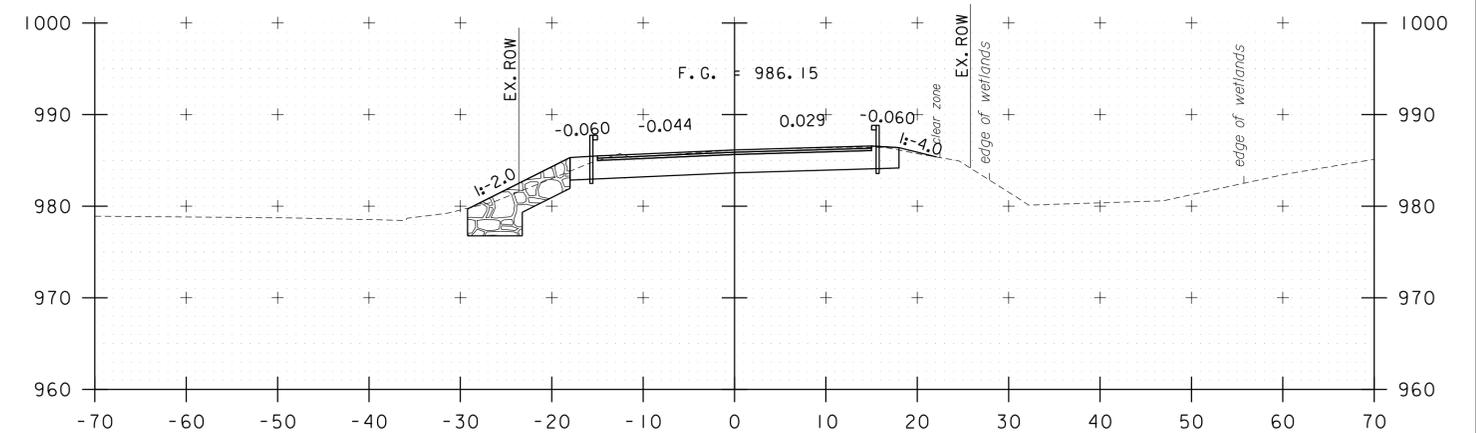
2+50



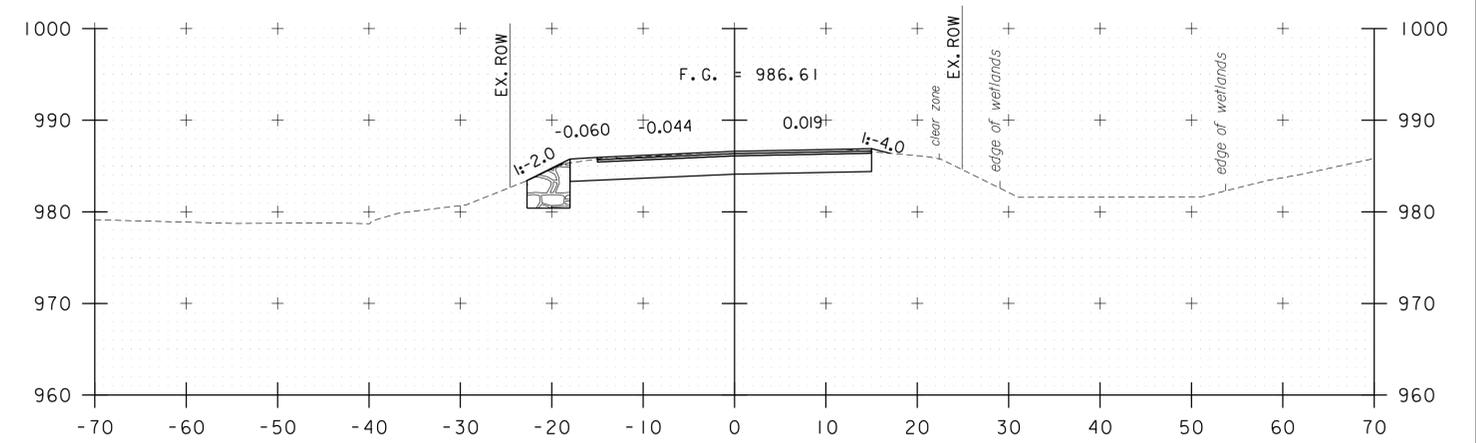
2+25  
2+15  
BEGIN APPROACH



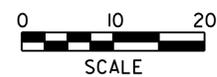
3+50



3+25



3+00

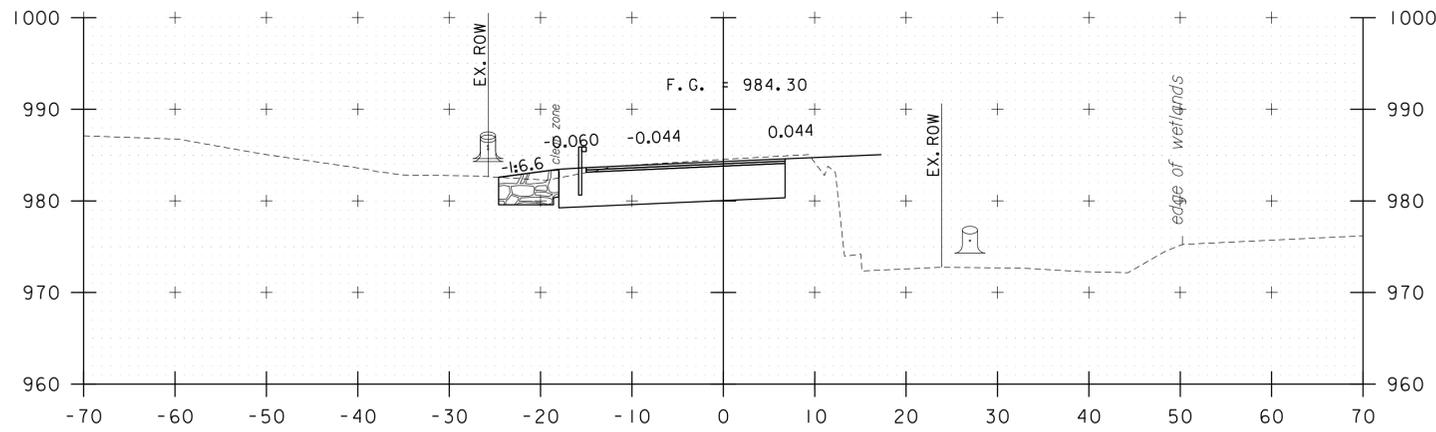


STA. 2+25 TO STA. 3+50

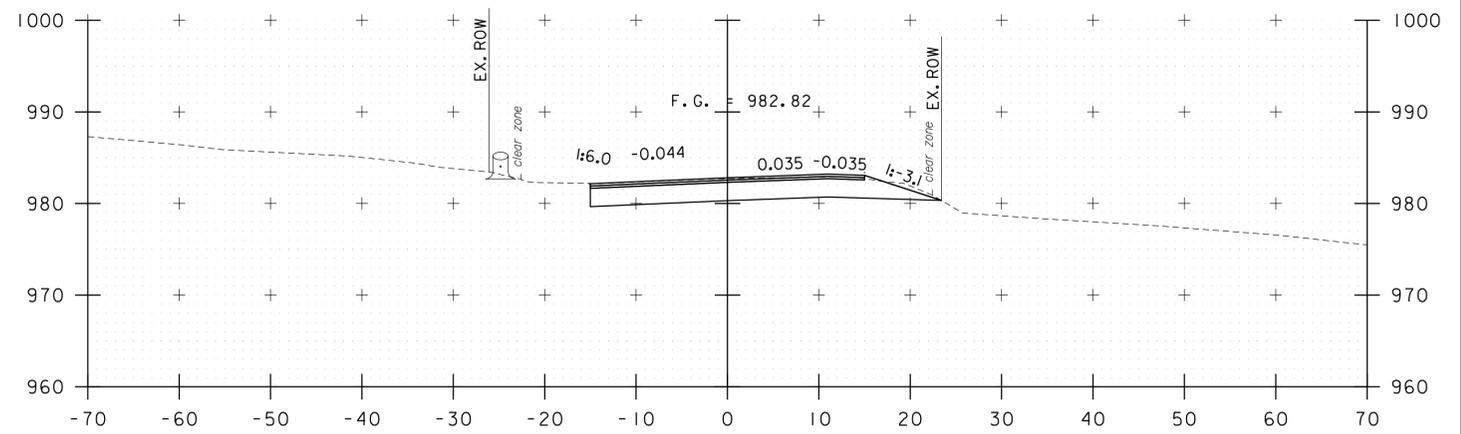


PROJECT NAME: WOODSTOCK  
 PROJECT NUMBER: BRF 0151(21)  
 FILE NAME: z10c426xs.dgn  
 PROJECT LEADER: G. BOGUE  
 DESIGNED BY: E. ALLING  
 ROADWAY CROSS SECTIONS - RXS 1

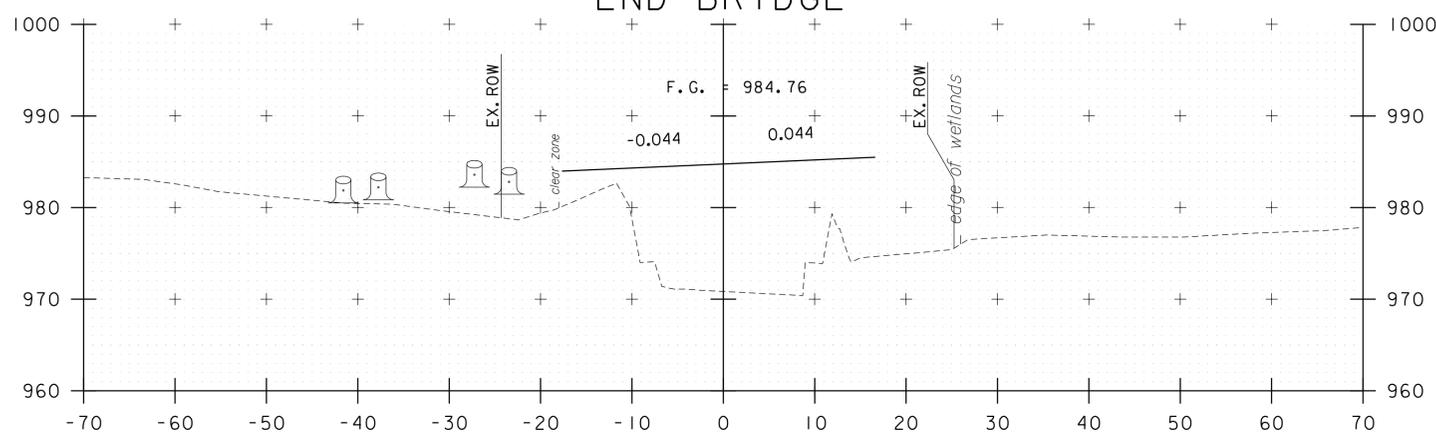
PLOT DATE: 7/14/2015  
 DRAWN BY: E. ALLING  
 CHECKED BY: I. MAYNARD  
 SHEET 34 OF 50



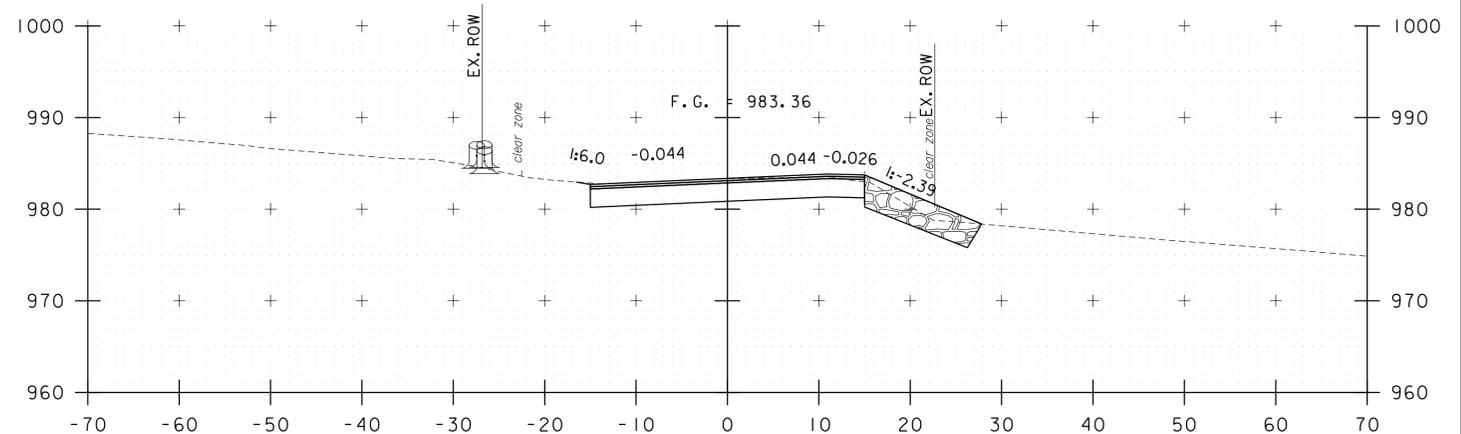
4+25  
4+18.80  
END BRIDGE



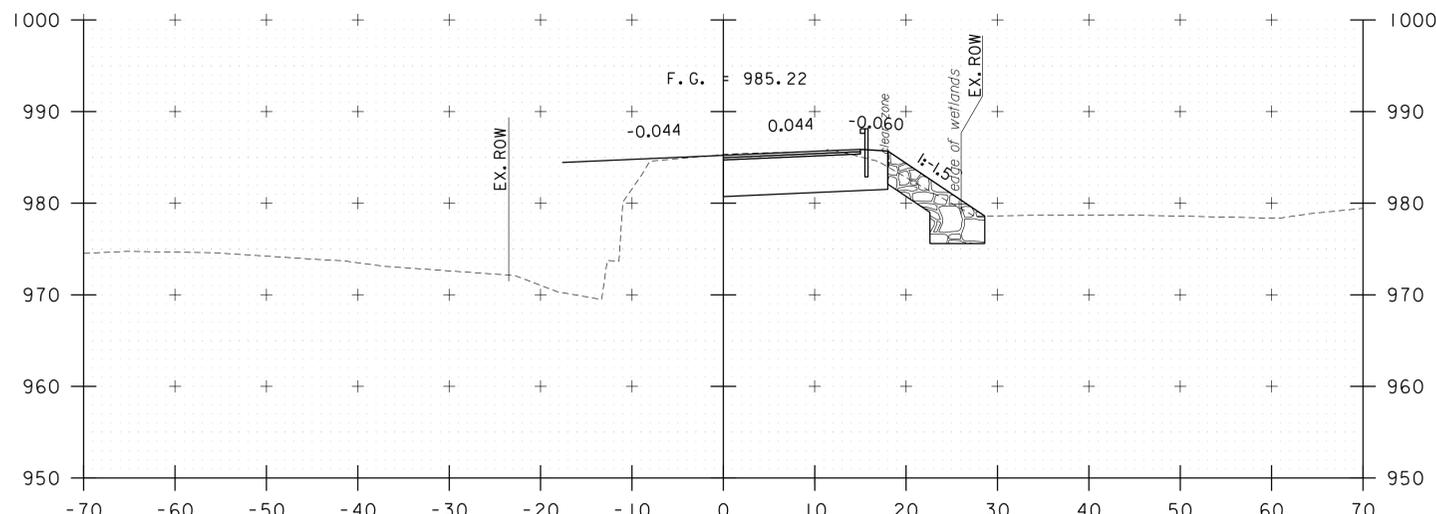
5+00



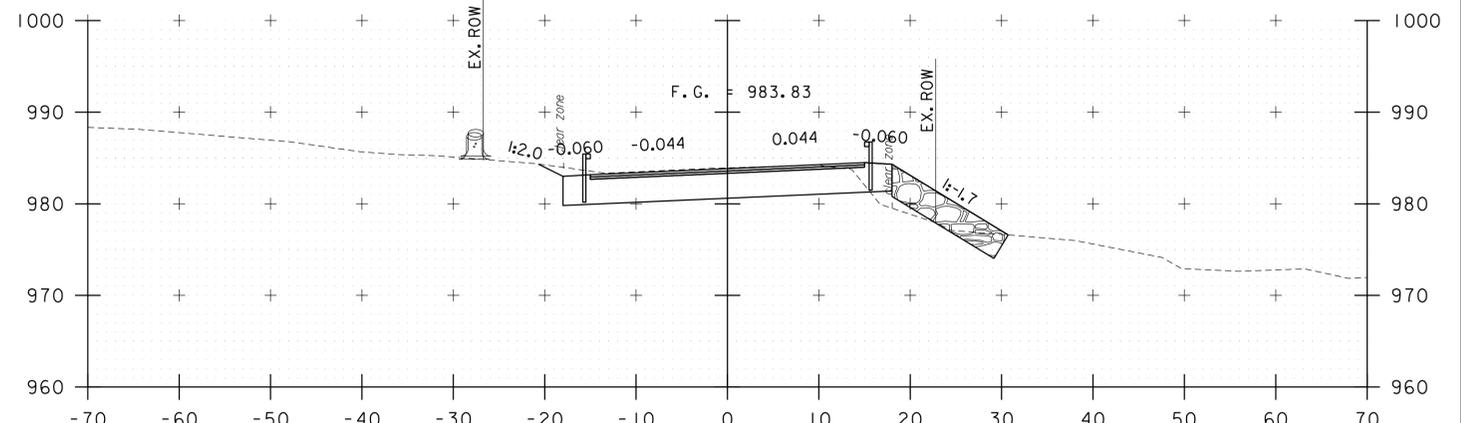
4+00



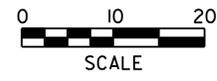
4+75



3+75  
3+73.53  
BEGIN BRIDGE



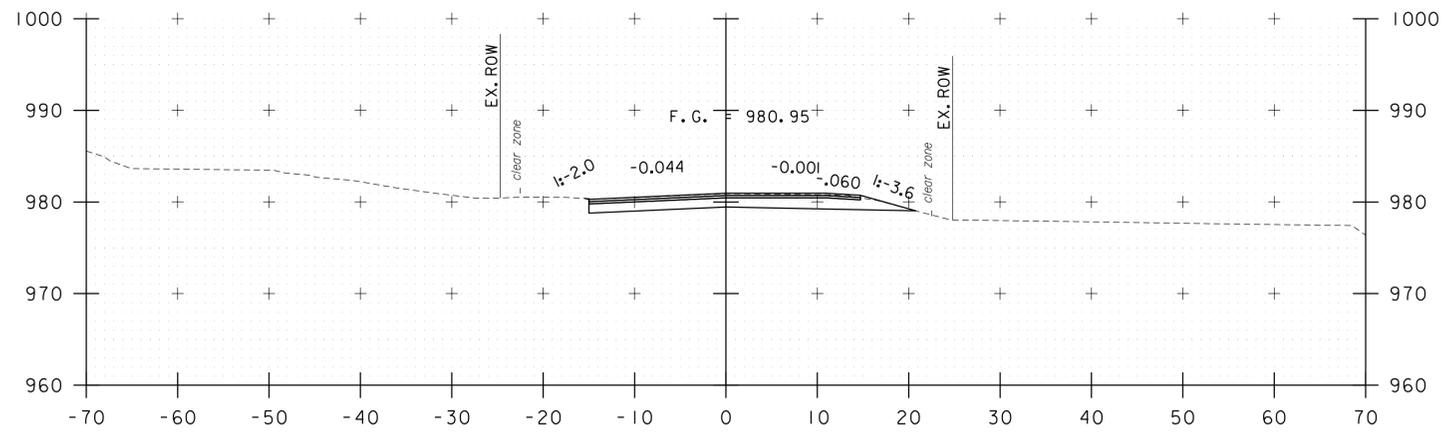
4+50



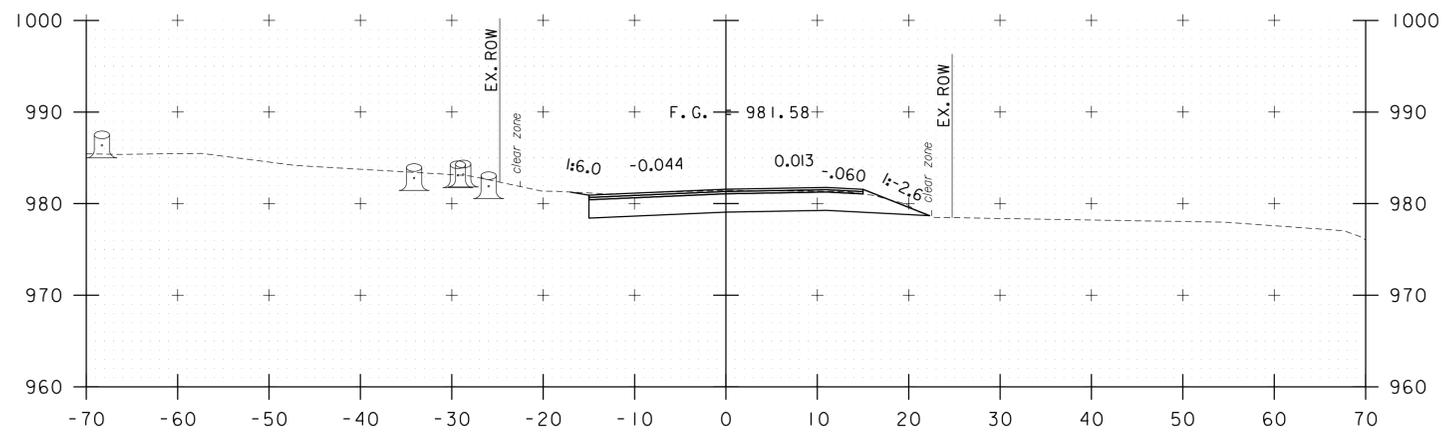
STA. 3+75 TO STA. 5+00

PROJECT NAME:	WOODSTOCK	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	DRAWN BY:	E. ALLING
FILE NAME:	z10c426xs.dgn	CHECKED BY:	I. MAYNARD
PROJECT LEADER:	G. BOGUE	SHEET	35 OF 50
DESIGNED BY:	E. ALLING		
ROADWAY CROSS SECTIONS - RXS 2			

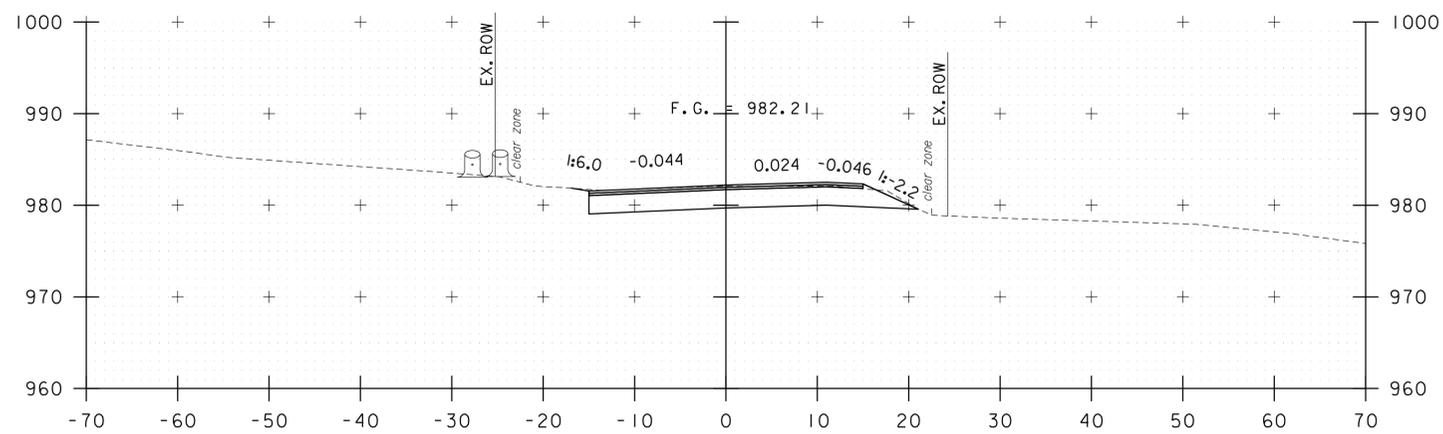




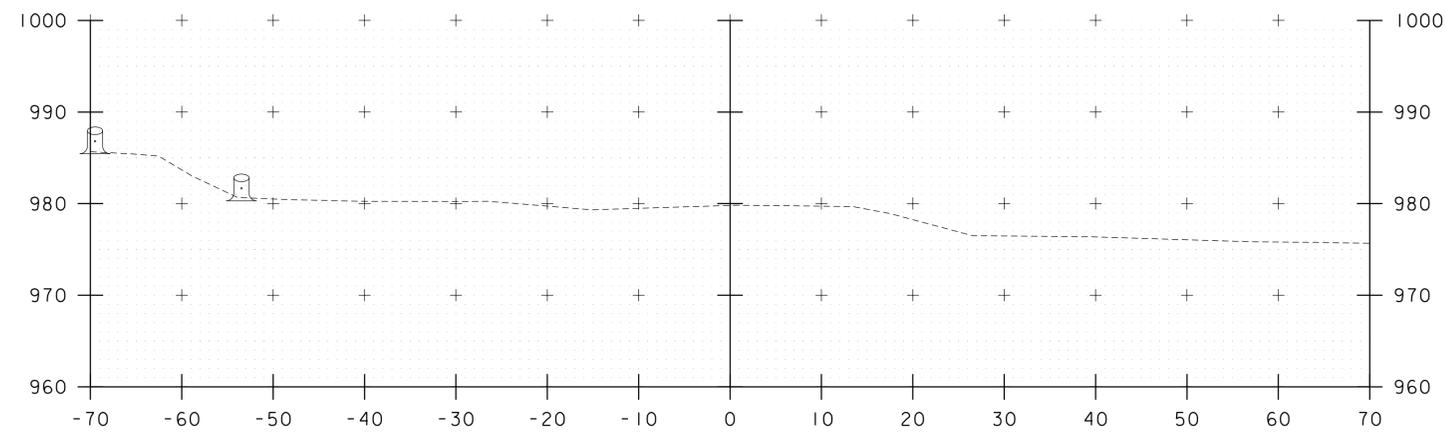
5+75



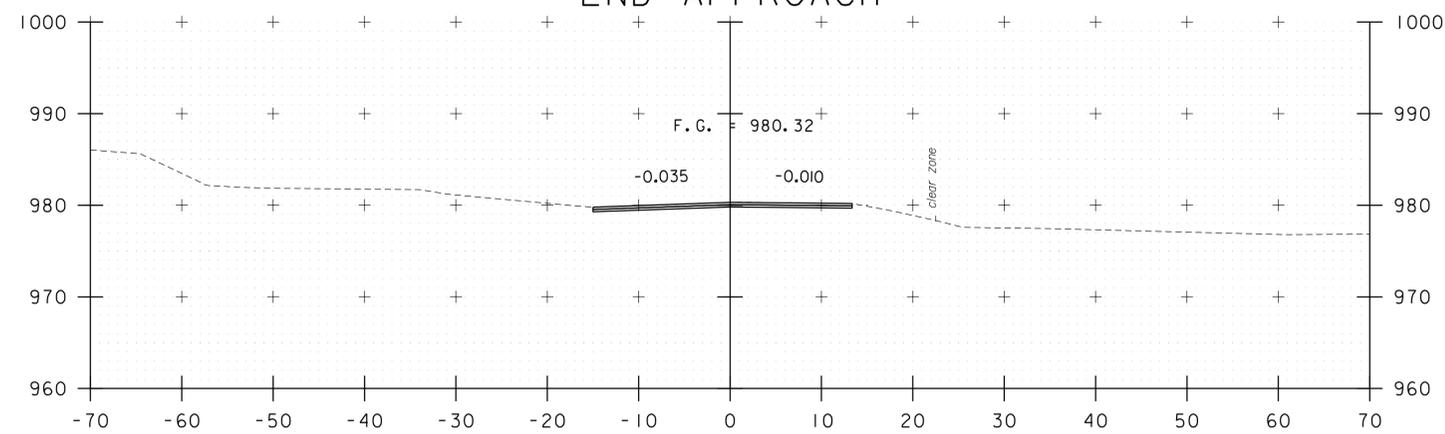
5+50  
END PROJECT



5+25

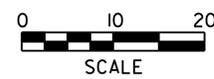


6+25  
6+10  
END APPROACH

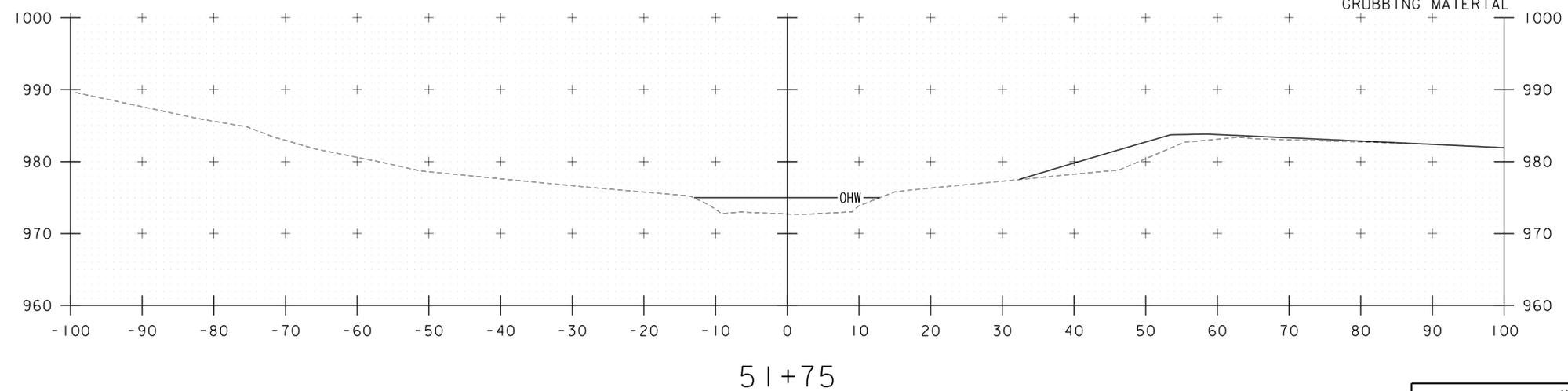
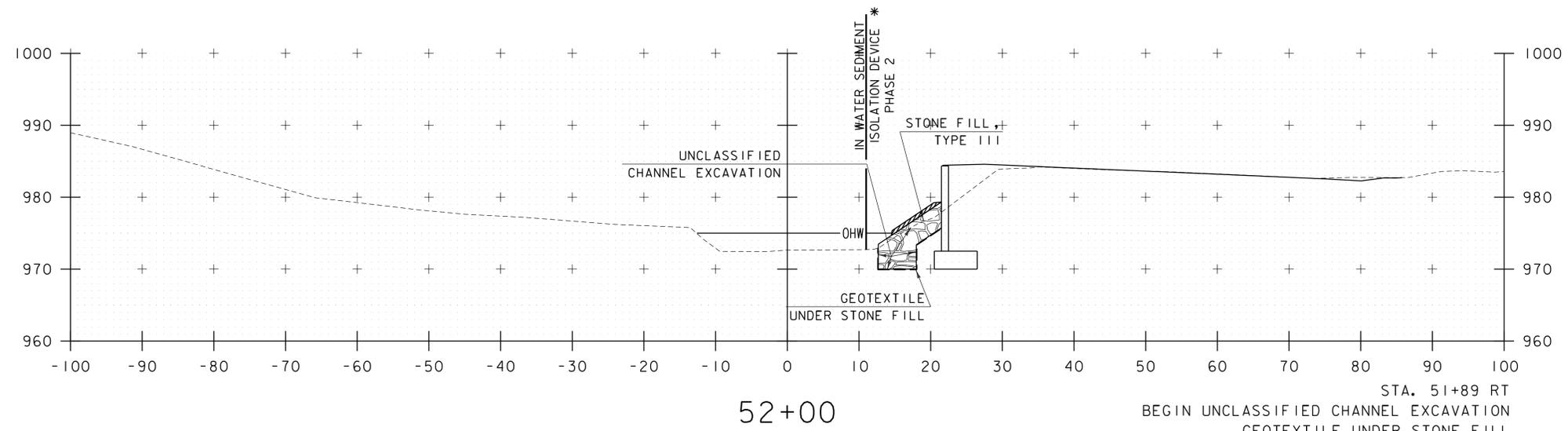
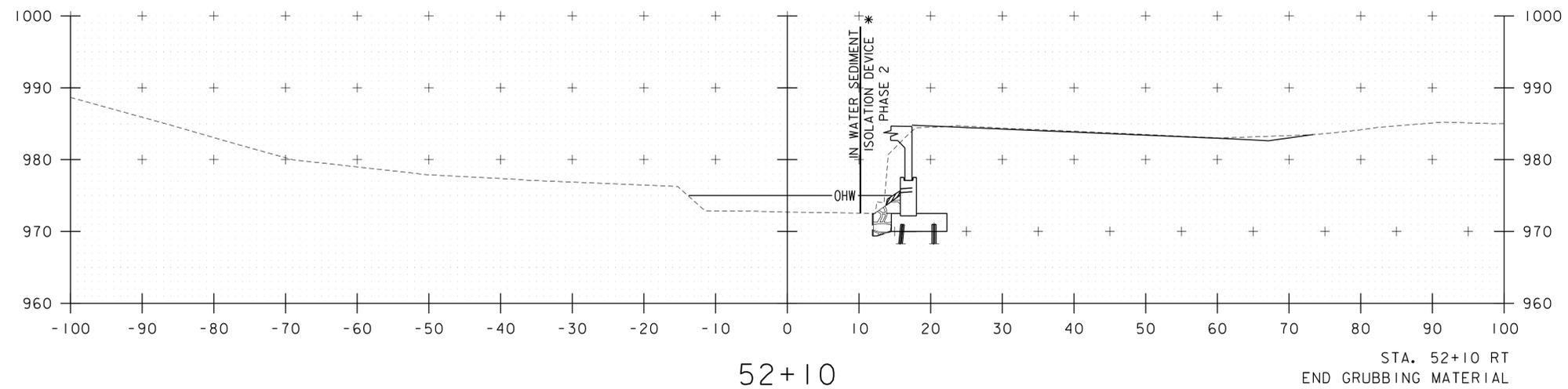


6+00

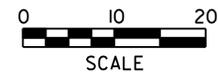
STA. 5+25 TO STA. 6+25



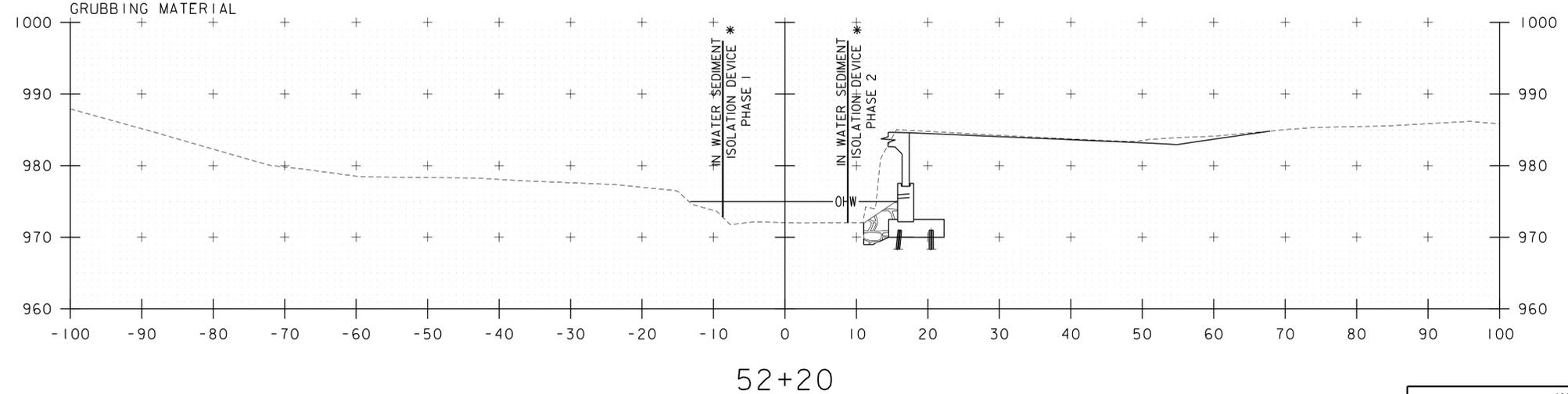
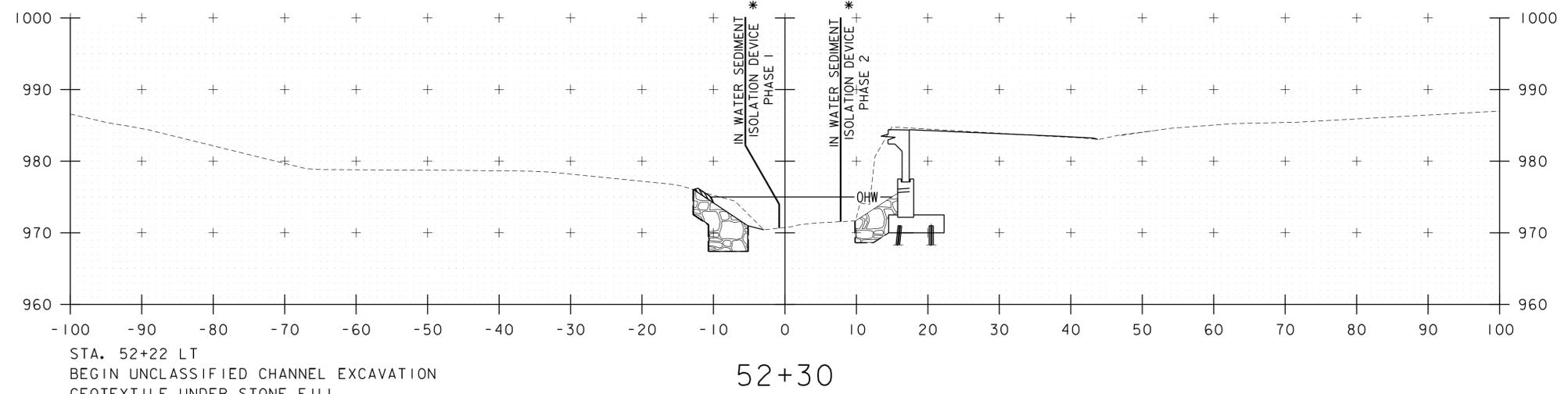
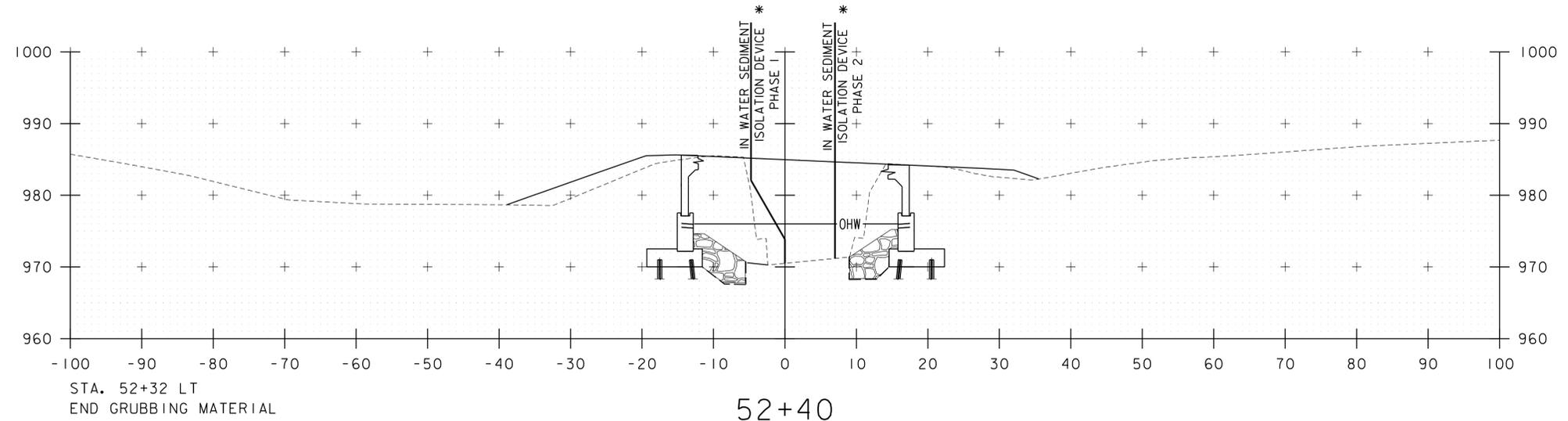
PROJECT NAME:	WOODSTOCK	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	DRAWN BY:	E. ALLING
FILE NAME:	z10c426xs.dgn	CHECKED BY:	I. MAYNARD
PROJECT LEADER:	G. BOGUE		
DESIGNED BY:	E. ALLING		
ROADWAY CROSS SECTIONS - RXS 3		SHEET	36 OF 50



* SEE NOTE 2 ON SHEET 48  
FOR STREAM PHASING REQUIREMENTS



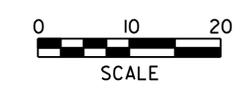
PROJECT NAME:	WOODSTOCK	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	DRAWN BY:	L. BUXTON
FILE NAME:	z10c426xs.dgn	DESIGNED BY:	T. KNIGHT
PROJECT LEADER:	G. BOGUE	CHECKED BY:	J. HUNGERFORD
CHANNEL CROSS SECTIONS - CXS 1		SHEET	37 OF 50

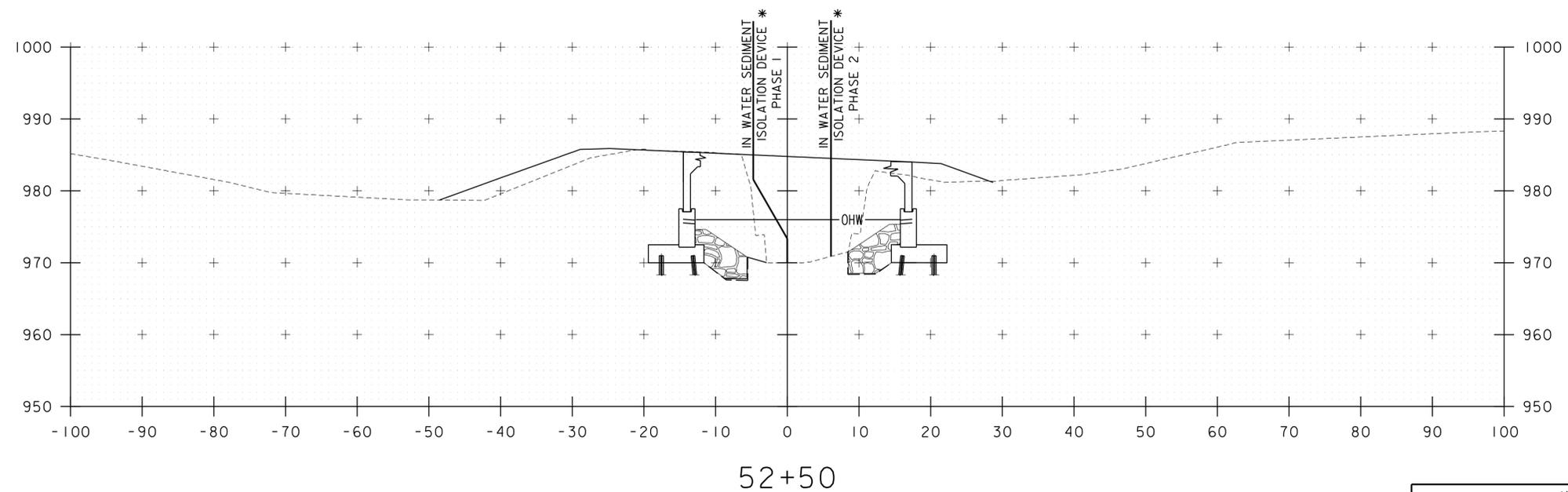
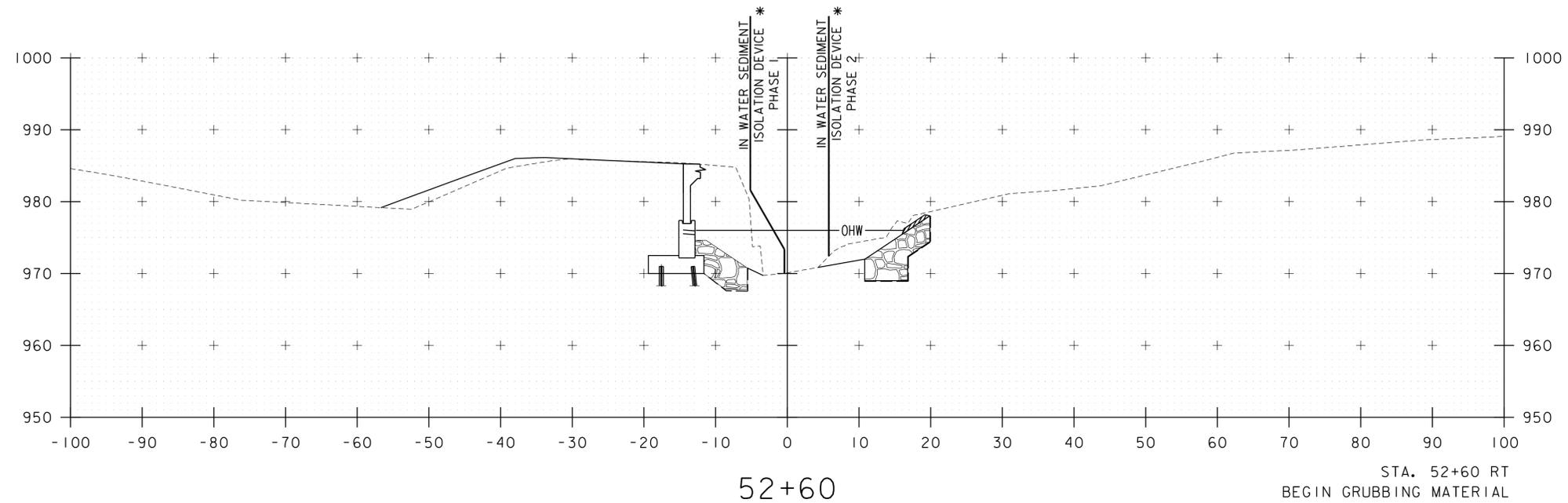


* SEE NOTE 2 ON SHEET 48 FOR STREAM PHASING REQUIREMENTS

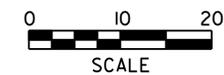
STA. 52+20 TO STA. 52+40

PROJECT NAME:	WOODSTOCK	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	DRAWN BY:	L. BUXTON
FILE NAME:	z10c426xs.dgn	DESIGNED BY:	T. KNIGHT
PROJECT LEADER:	G. BOGUE	CHECKED BY:	J. HUNGERFORD
CHANNEL CROSS SECTIONS - CXS 2		SHEET	38 OF 50

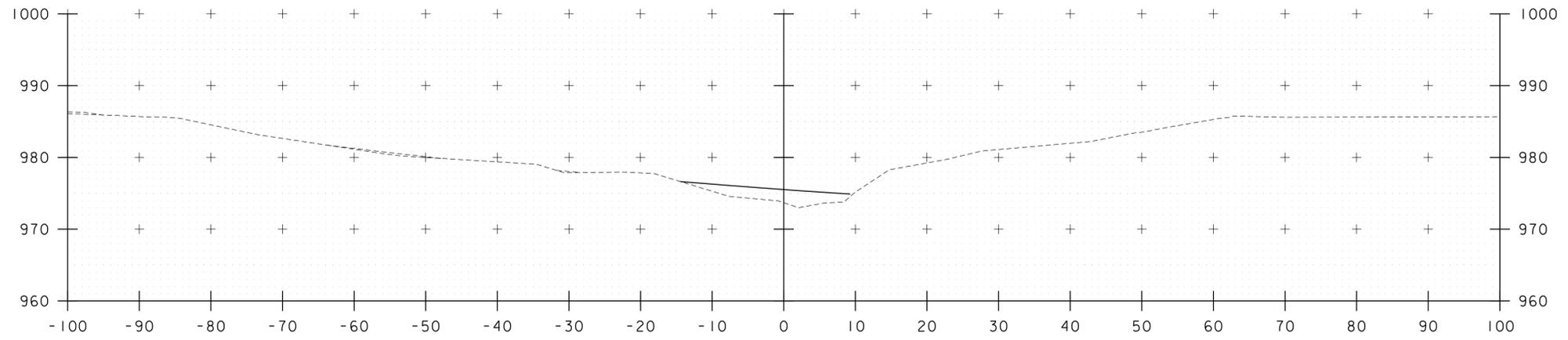




* SEE NOTE 2 ON SHEET 48  
FOR STREAM PHASING REQUIREMENTS

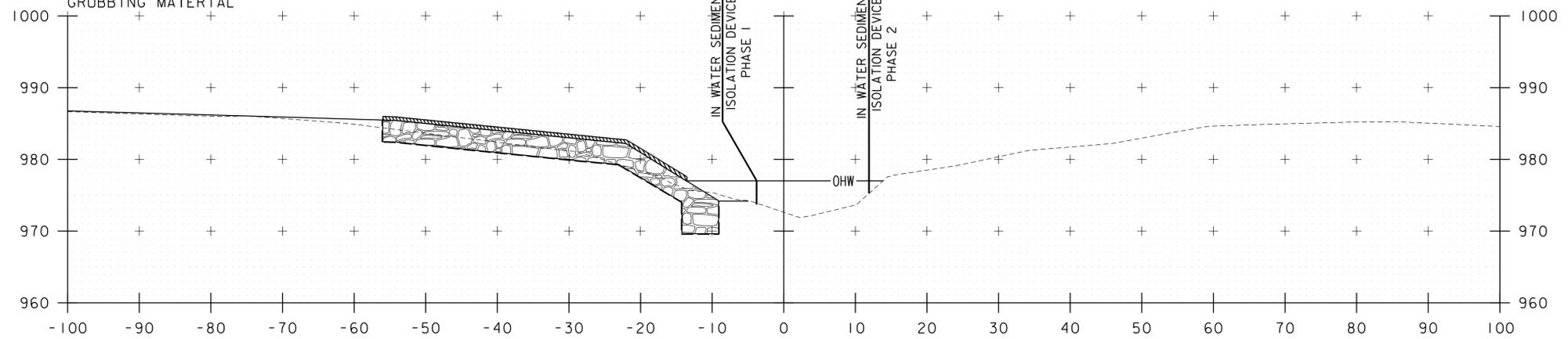


PROJECT NAME:	WOODSTOCK	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	DRAWN BY:	L. BUXTON
FILE NAME:	z10c426xs.dgn	DESIGNED BY:	T. KNIGHT
PROJECT LEADER:	G. BOGUE	CHECKED BY:	J. HUNGERFORD
CHANNEL CROSS SECTIONS - CXS 3		SHEET	39 OF 50



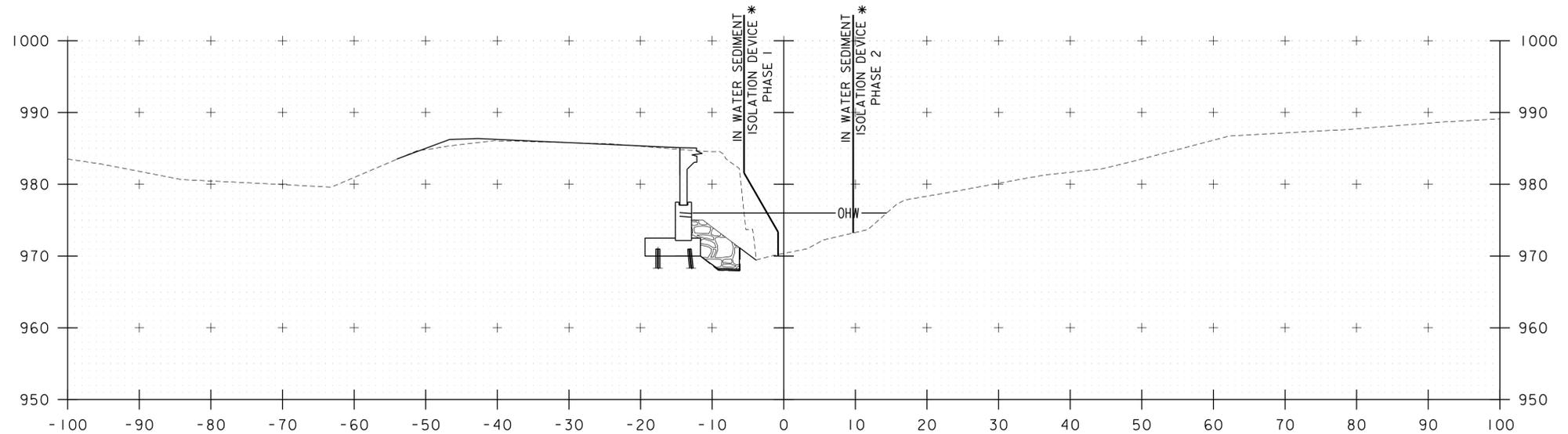
STA. 52+85 LT  
 END UNCLASSIFIED CHANNEL EXCAVATION  
 GEOTEXTILE UNDER STONE FILL  
 STONE FILL, TYPE III  
 GRUBBING MATERIAL

52+90



STA. 52+74 LT  
 BEGIN GRUBBING MATERIAL

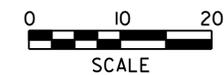
52+80



STA. 52+68 RT  
 END UNCLASSIFIED CHANNEL EXCAVATION  
 GEOTEXTILE UNDER STONE FILL  
 STONE FILL, TYPE III  
 GRUBBING MATERIAL

52+70

* SEE NOTE 2 ON SHEET 48  
 FOR STREAM PHASING REQUIREMENTS



PROJECT NAME: WOODSTOCK  
 PROJECT NUMBER: BRF 0151(21)

FILE NAME: z10c426xs.dgn  
 PROJECT LEADER: G. BOGUE  
 DESIGNED BY: T. KNIGHT  
 CHANNEL CROSS SECTIONS - CXS 4

PLOT DATE: 7/14/2015  
 DRAWN BY: L. BUXTON  
 CHECKED BY: J. HUNGERFORD  
 SHEET 40 OF 50

STA. 52+70 TO STA. 52+90

## EPSC PLAN NARRATIVE

### 1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL OF BRIDGE 24 AND ITS ABUTMENTS. BRIDGE 24 WILL BE REPLACED WITH A PRECAST 3 SIDED FRAME SPANNING 45.27 FEET WITH A 45° SKEW OVER KEDRON BROOK, ON NEW PILES ALONG THE SAME ALIGNMENT. BRIDGE 24 IS LOCATED IN THE TOWN OF WOODSTOCK, ON VT ROUTE 106, APPROXIMATELY AT THE INTERSECTIONS OF VT ROUTE 106, BRYANT ROAD AND KENDALL ROAD.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.40 ACRES. IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

### 1.2 SITE INVENTORY

#### 1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS A STREAM VALLEY THAT IS MOSTLY WELL ESTABLISHED FOREST WITH OCCASIONAL OPEN AREAS. VT ROUTE 106 AND KENDALL ROAD (TH 61) ARE WITHIN THE PROJECT SITE. THERE IS A RESIDENCE ON THE NORTHWEST QUADRANT OF THE PROJECT.

#### 1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

KEDRON BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROOK IS CLASSIFIED AS HILLY TO MOUNTAINOUS, STRAIGHT TO SINUOUS, STEEP RIVER. THE STREAM BED CONSISTS OF GRAVEL, COBBLES, BOULDERS AND SAND. THE TRIBUTARY AREA AT THE CULVERT CROSSING IS 8.4 MILES². DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE COULD RECEIVE RUNOFF WATER FROM A FEW NEARBY SLOPES.

#### 1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD AND DECIDUOUS TREES, LAWN AREAS, WETLAND AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING BRIDGE. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE III AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

#### 1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF WINDSOR, VERMONT. SOILS ON THE PROJECT SITE ARE NINIGRET FINE SANDY LOAM, 0 TO 8% SLOPES, "K FACTOR" = 0.32. THE SOIL IS CONSIDERED MODERATELY ERODIBLE DUE TO K-VALUE.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:

0.0-0.23 = LOW EROSION POTENTIAL

0.24-0.36 = MODERATE EROSION POTENTIAL

0.37 AND HIGHER = HIGH EROSION POTENTIAL

#### 1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO

HISTORICAL OR ARCHEOLOGICAL AREAS: HISTORIC HOUSE AND TREES IN NORTHWEST PROJECT QUADRANT.

PRIME AGRICULTURAL LAND: NO

THREATENED AND ENDANGERED SPECIES: NO

WATER RESOURCE: KEDRON BROOK

WETLANDS: SEVERAL CLASS III WETLANDS SURROUND THE PROJECT SITE

### 1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

### 1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFIC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

#### 1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

BECAUSE OF THE SITE'S PROXIMITY TO CLASS III WETLANDS, BARRIER FENCING SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

#### 1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

#### 1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTORS PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

#### 1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN. GIVEN THE PROJECT'S PROXIMITY TO CLASS III WETLANDS AND KEDRON BROOK, WOVEN WIRE REINFORCED SILT FENCE SHALL BE USED INSTEAD OF SILT FENCE.

SEDIMENT ISOLATION DEVICE WILL BE INSTALLED OUTSIDE OF THE COFFERDAMS. SEE SPECIAL PROVISIONS FOR SEDIMENT ISOLATION DEVICE CONSTRUCTION AND MAINTENANCE REQUIREMENTS.

A STREAM PHASING SEQUENCE IS SHOWN ON SHEET 48. THIS SEQUENCE OF CONSTRUCTION WAS USED TO DEFINE THE LIMITS OF STREAM DISTURBANCE AND RELOCATION FOR PERMITTING THE PROJECT. THE SEQUENCE REQUIRES THE COFFERDAM FOR ABUTMENT 1 TO BE REMOVED PRIOR TO INSTALLING THE COFFERDAM FOR ABUTMENT 2. IF THE CONTRACTOR PROPOSES A DIFFERENT SEQUENCE OF CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE APPROPRIATE REGULATORY AGENCIES PRIOR TO PERFORMING THE WORK.

DUE TO STREAM VELOCITIES EXCEEDING THE MAXIMUM ALLOWABLE, FILTER CURTAINS SHALL NOT BE USED.

#### 1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

THE PROJECT AREA IS RELATIVELY FLAT. THEREFORE IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

#### 1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSION POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

IT IS NOT ANTICIPATED THAT STONE CHECK DAMS WILL BE NECESSARY.

#### 1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES ARE NOT NECESSARY AS PART OF THIS PROJECT.

#### 1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE.

BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

#### 1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

IT IS NOT ANTICIPATED THAT THIS PROJECT WILL BE UNDER CONSTRUCTION FROM OCTOBER 15 THROUGH APRIL 15.

#### 1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

#### 1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

TREATMENT OF DEWATERING COFFERDAM IS ANTICIPATED. A LOCATION FOR TREATMENT HAS BEEN PROPOSED AND IS SHOWN ON THE PLANS. HOWEVER THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR.

#### 1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

### 1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

#### 1.5.1 CONSTRUCTION SEQUENCE

#### 1.5.2 OFF-SITE ACTIVITIES

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SPECIFICATION 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

PROJECT NAME: WOODSTOCK

PROJECT NUMBER: BRF 151(21)

FILE NAME: z10c426frm.dgn

PROJECT LEADER: G. BOGUE

DESIGNED BY: E. ALLING

EROSION CONTROL NARRATIVE - ECN 1

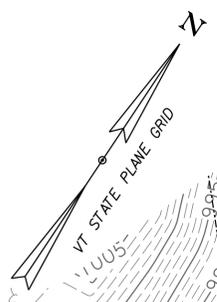
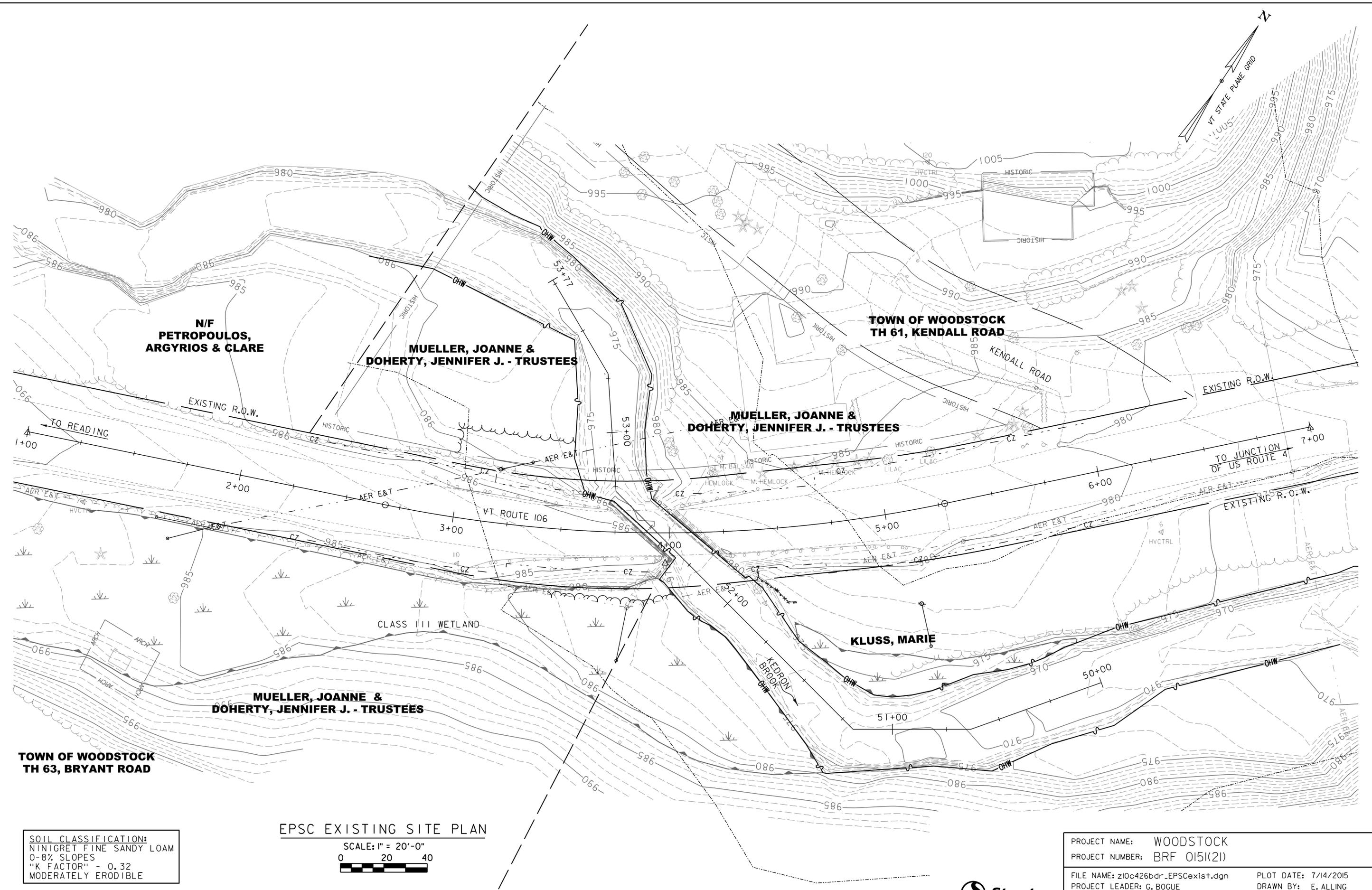
PLOT DATE: 7/14/2015

DRAWN BY: E. ALLING

CHECKED BY: I. MAYNARD

SHEET 41 OF 50





**N/F  
PETROPOULOS,  
ARGYRIOS & CLARE**

**MUELLER, JOANNE &  
DOHERTY, JENNIFER J. - TRUSTEES**

**TOWN OF WOODSTOCK  
TH 61, KENDALL ROAD**

**MUELLER, JOANNE &  
DOHERTY, JENNIFER J. - TRUSTEES**

**KLUSS, MARIE**

**MUELLER, JOANNE &  
DOHERTY, JENNIFER J. - TRUSTEES**

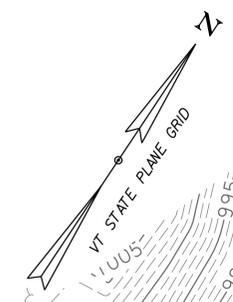
**TOWN OF WOODSTOCK  
TH 63, BRYANT ROAD**

SOIL CLASSIFICATION:  
NINIGRET FINE SANDY LOAM  
0-8% SLOPES  
"K FACTOR" - 0.32  
MODERATELY ERODIBLE

EPSC EXISTING SITE PLAN  
SCALE: 1" = 20'-0"  
0 20 40

PROJECT NAME:	WOODSTOCK	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	DRAWN BY:	E. ALLING
FILE NAME:	z10c426bdr_EPSCexist.dgn	DESIGNED BY:	T. KNIGHT
PROJECT LEADER:	G. BOGUE	CHECKED BY:	X. XXXX
EPSC EXISTING SITE PLAN - ESP 1		SHEET	42 OF 50

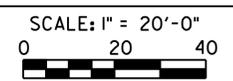




LEGEND	
	VEHICLE TRACKING PAD
	FILTER BAG
	IN WATER SEDIMENT ISOLATION DEVICE
	TREE PROTECTION ZONE

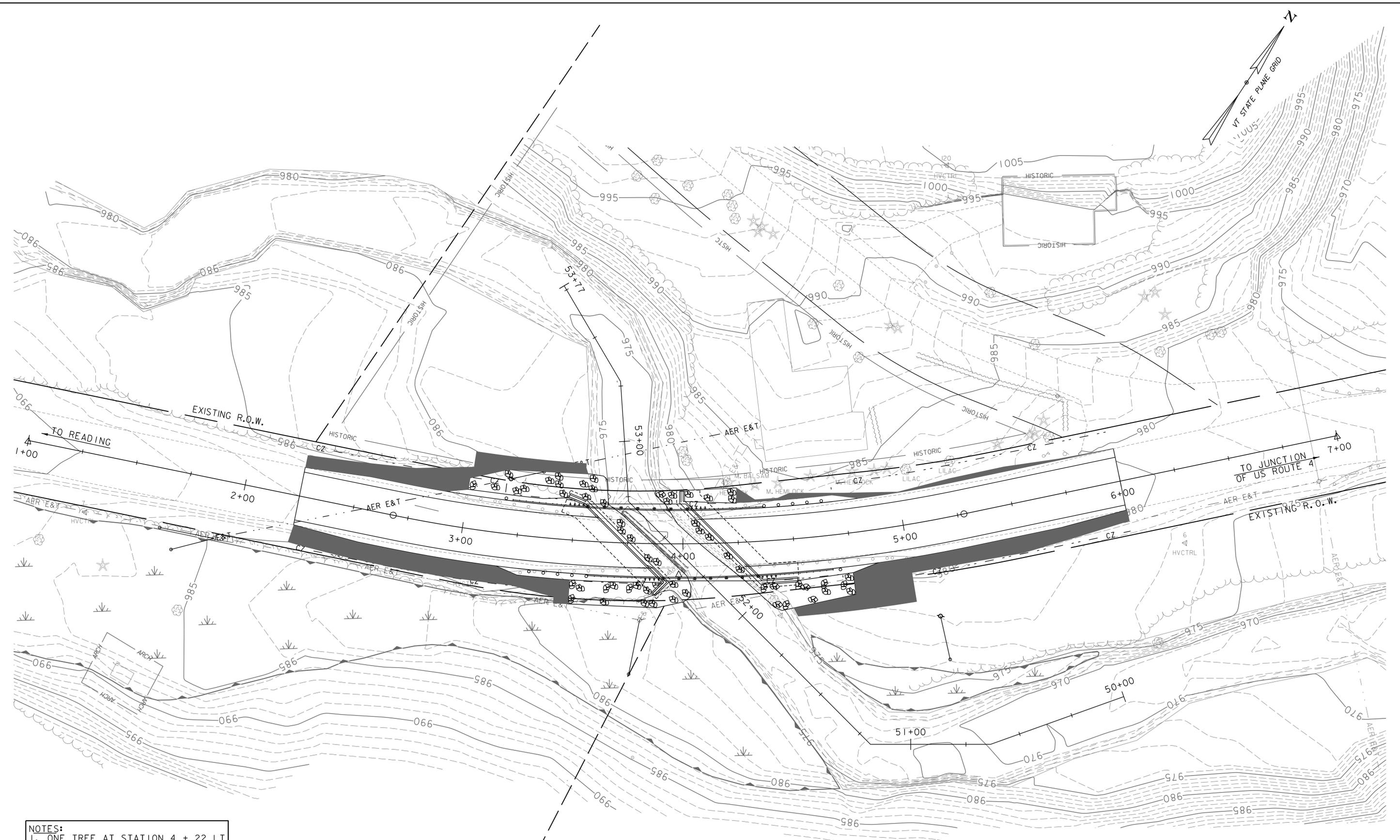
- NOTES:**
- ONE TREE AT STATION 4+22 LT SHALL BE REMOVED. ALL REMAINING TREES SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 656.10.
  - TREE PROTECTION ZONE SHALL EXTEND A MINIMUM OF 7 FEET FROM THE TREES AT STATIONS 4+34 & 4+45.
  - SEE STREAM PHASING SUMMARY SHEET FOR STREAM PHASING REQUIREMENTS.

**EPSC CONSTRUCTION SITE PLAN**



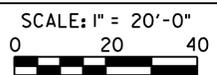
PROJECT NAME:	WOODSTOCK	FILE NAME:	z10c426bdr_EPSCconst.dgn	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	PROJECT LEADER:	G. BOGUE	DRAWN BY:	E. ALLING
		DESIGNED BY:	E. ALLING	CHECKED BY:	I. MAYNARD
		EPSC CONSTRUCTION SITE PLAN - CSP 2		SHEET	43 OF 50





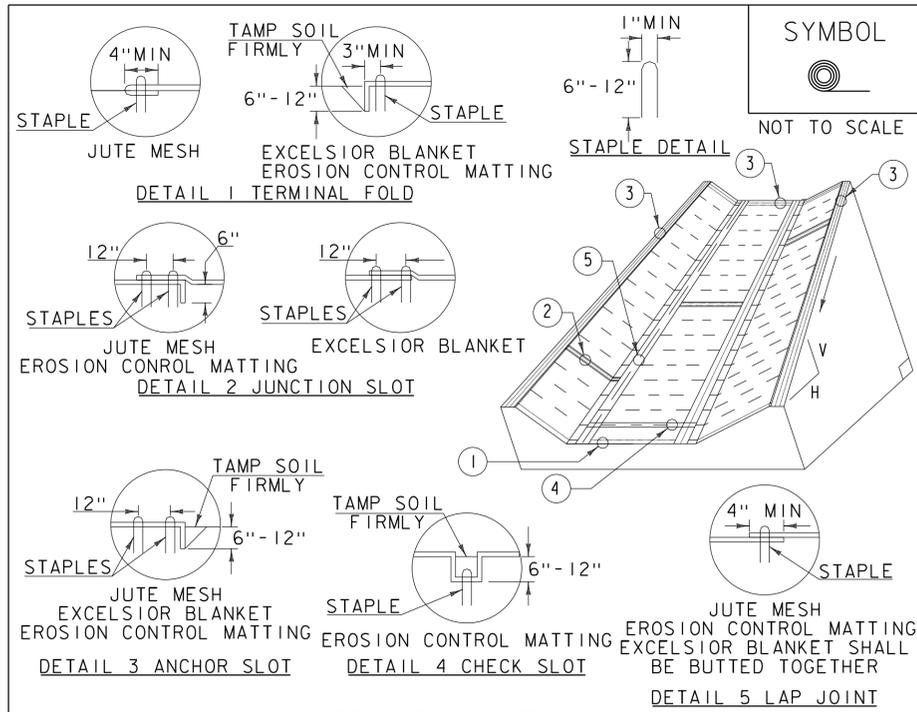
**NOTES:**  
 1. ONE TREE AT STATION 4 + 22 LT SHALL BE REMOVED. ALL REMAINING TREES SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 656.10.  
 2. REFER TO CROSS SECTIONS FOR FINAL GRADE.

**EPSC FINAL CONDITIONS PLAN**



PROJECT NAME:	WOODSTOCK	FILE NAME:	z10c426bdr_EPSCfinal.dgn	PLOT DATE:	7/14/2015
PROJECT NUMBER:	BRF 0151(21)	PROJECT LEADER:	G. BOGUE	DRAWN BY:	E. ALLING
		DESIGNED BY:	E. ALLING	CHECKED BY:	I. MAYNARD
		EPSC FINAL CONDITIONS PLAN - FCP 1		SHEET	44 OF 50





**CONSTRUCTION SPECIFICATIONS**

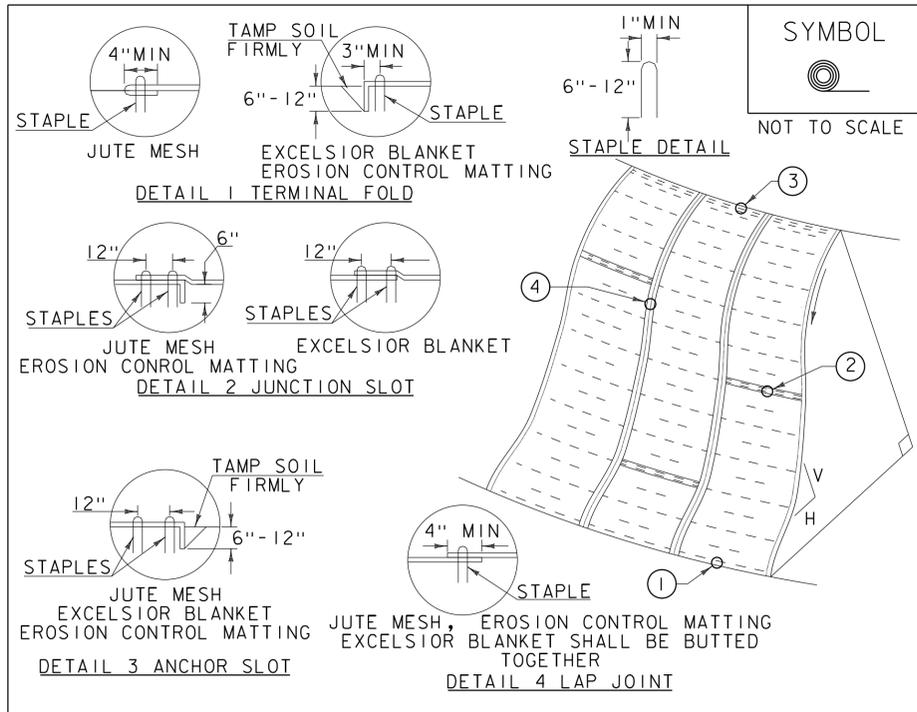
1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**ROLLED EROSION CONTROL PRODUCT (RECP) DITCH**

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.  
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

REVISIONS		
MARCH 8, 2007	JMF	
APRIL 16, 2007	WHF	
JANUARY 13, 2009	WHF	



**CONSTRUCTION SPECIFICATIONS**

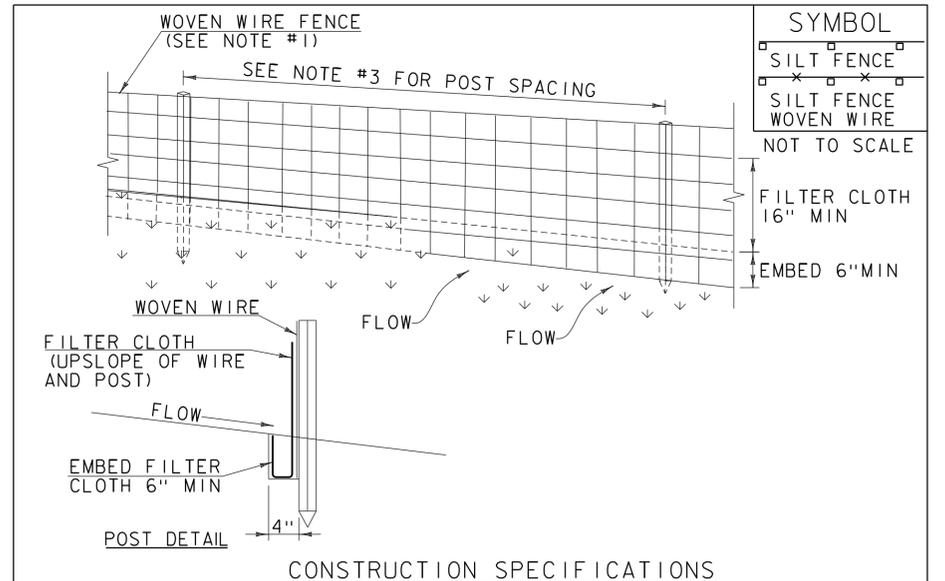
1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE**

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.  
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

REVISIONS		
APRIL 16, 2007	JMF	
JANUARY 13, 2009	WHF	



**CONSTRUCTION SPECIFICATIONS**

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAF1100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**SILT FENCE**

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

REVISIONS		
MARCH 21, 2008	WHF	
DECEMBER 11, 2008	WHF	
JANUARY 13, 2009	WHF	

PROJECT NAME: WOODSTOCK  
PROJECT NUMBER: BRF 0151(21)

FILE NAME: z10c426frm.dgn PLOT DATE: 7/14/2015  
PROJECT LEADER: G. BOGUE DRAWN BY: VTRANS  
DESIGNED BY: VTRANS CHECKED BY: VTRANS  
EROSION CONTROL DETAILS - ECD 1 SHEET 45 OF 50

VAOT RURAL AREA MIX					
% WEIGHT	LBS/AC		NAME	GERM %	PURITY %
	BROADCAST	HYDROSEED			
37.5%	22.5	45	CREEPING RED FESCUE	85%	98%
37.5%	22.5	45	TALL FESCUE	90%	95%
5.0%	3	6	RED TOP	90%	95%
15.0%	9	18	WHITE CLOVER	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	85%	95%
100%	60	120			

VAOT URBAN AREA MIX					
% WEIGHT	LBS/AC		NAME	GERM %	PURITY %
	BROADCAST	HYDROSEED			
42.5%	34	68	CREEPING RED FESCUE	85%	98%
10.0%	8	16	PERENNIAL RYE GRASS	90%	95%
42.5%	34	68	KENTUCKY BLUE GRASS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	85%	95%
100%	80	160			

SOIL AMENDMENT GUIDANCE			
FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	FOLLOW	PELLETIZED	FOLLOW
500 LBS/AC	MANUFACTURER	2 TONS/AC	MANUFACTURER

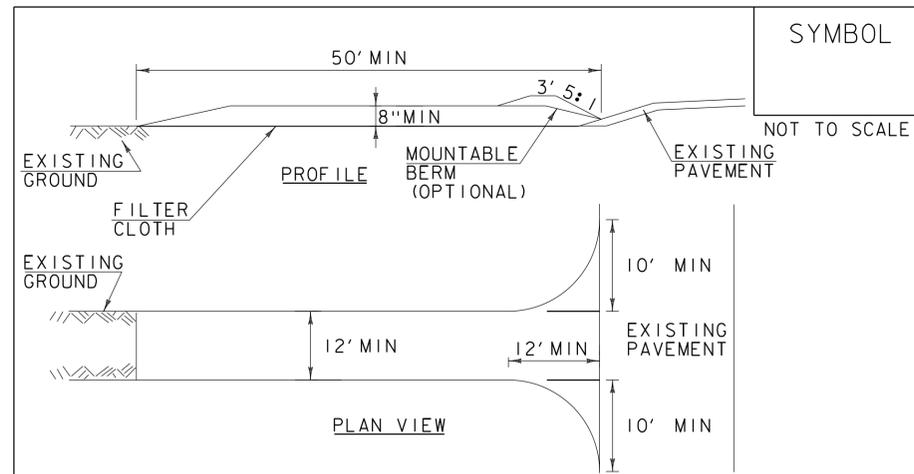
**CONSTRUCTION GUIDANCE**

- RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
- URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
- ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
- FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
- HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
- TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
- HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED
- TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

**TURF ESTABLISHMENT**

REVISIONS	
JUNE 23, 2009	WHF
JANUARY 15, 2010	WHF
FEBRUARY 16, 2011	WHF



**CONSTRUCTION SPECIFICATIONS**

- STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
- THICKNESS- NOT LESS THAN 8".
- WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
- GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
- SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
- MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**STABILIZED CONSTRUCTION ENTRANCE**

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

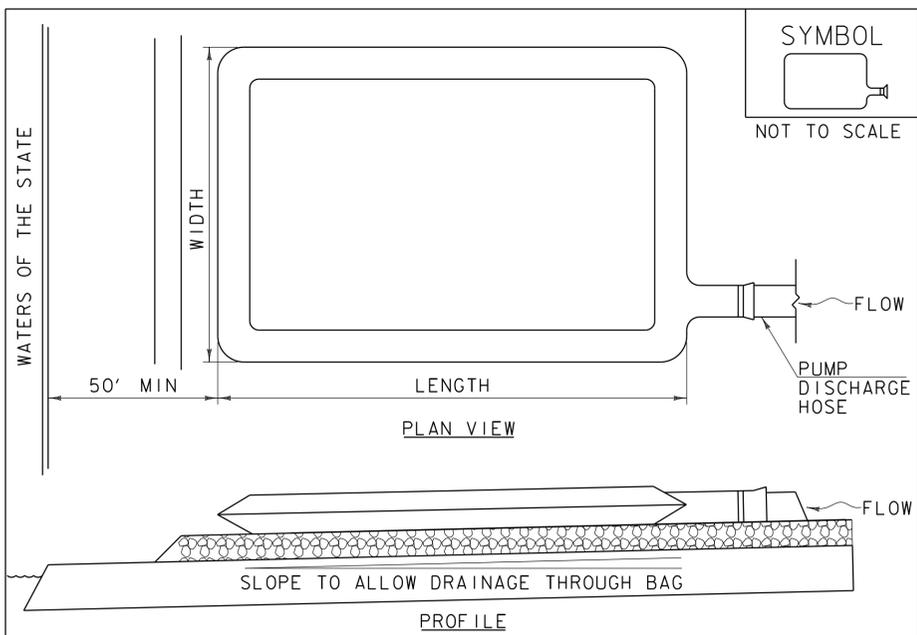
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: WOODSTOCK  
PROJECT NUMBER: BRF 0151(21)

FILE NAME: z10c426frm.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: VTRANS  
EROSION CONTROL DETAILS - ECD 2

PLOT DATE: 7/14/2015  
DRAWN BY: VTRANS  
CHECKED BY: VTRANS  
SHEET 46 OF 50



CONSTRUCTION SPECIFICATIONS

1. THE PRIMARY PURPOSE OF FILTER BAG IS TO RETAIN SILT, SAND, AND FINES DURING DEWATERING OPERATIONS.
2. FILTER BAGS SHALL BE INSTALLED ON A VEGETATED SLOPE GRADED TO ALLOW INCOMING WATER TO FLOW THROUGH THE BAG.
3. FILTER BAGS MAY ALSO BE PLACED ON COARSE AGGREGATE, STONE, OR HAYBALES TO INCREASE FILTRATION EFFICIENCY.
4. FILTER BAGS SHALL BE LOCATED A MINIMUM OF 50' FROM WATERS OF THE STATE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. THE NECK OF THE FILTER BAG SHALL BE STRAPPED TIGHTLY TO THE DISCHARGE HOSE.
6. A FILTER BAG IS FULL WHEN IT NO LONGER CAN EFFICIENTLY FILTER SEDIMENT OR ALLOW WATER TO PASS AT A REASONABLE RATE.
7. FILTER BAG SHALL BE DISPOSED OF AS APPROVED IN THE EPSC PLAN OR AS DIRECTED BY THE ENGINEER.

FILTER BAG

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR FILTER BAG (PAY ITEM 653.45) AND AS SPECIFIED IN THE CONTRACT.

PROJECT NAME: WOODSTOCK	PLOT DATE: 7/14/2015
PROJECT NUMBER: BRF 0151(21)	DRAWN BY: VTRANS
FILE NAME: z10c426frm.dgn	CHECKED BY: VTRANS
PROJECT LEADER: G. BOGUE	SHEET 47 OF 50
DESIGNED BY: VTRANS	EROSION CONTROL DETAILS - ECD 3

## TEMPORARY STREAM DIVERSION PHASING

1. KEDRON BROOK IN THE VICINITY OF THE PROJECT IS CONSIDERED A SIGNIFICANT FISH HABITAT. IN ORDER TO LIMIT THE IMPACTS TO THE HABITAT, A MINIMUM 9 FOOT WIDE OPEN CHANNEL IS TO BE MAINTAINED THROUGHOUT CONSTRUCTION.
2. THE FOLLOWING SEQUENCE OF CONSTRUCTION WAS USED FOR DEVELOPING THE ANTICIPATED LIMITS OF STREAM DISTURBANCE AND RELOCATION FOR PERMITTING. THE SEQUENCE ASSUMES THE COFFERDAM FOR CONSTRUCTION OF ABUTMENT 1 IS TO BE REMOVED PRIOR TO INSTALLING THE COFFERDAM FOR CONSTRUCTION OF ABUTMENT 2. IF THE CONTRACTOR PROPOSES TO PERFORM THE WORK DIFFERENTLY THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE APPROPRIATE REGULATING ENTITIES PRIOR TO PERFORMING THE WORK.

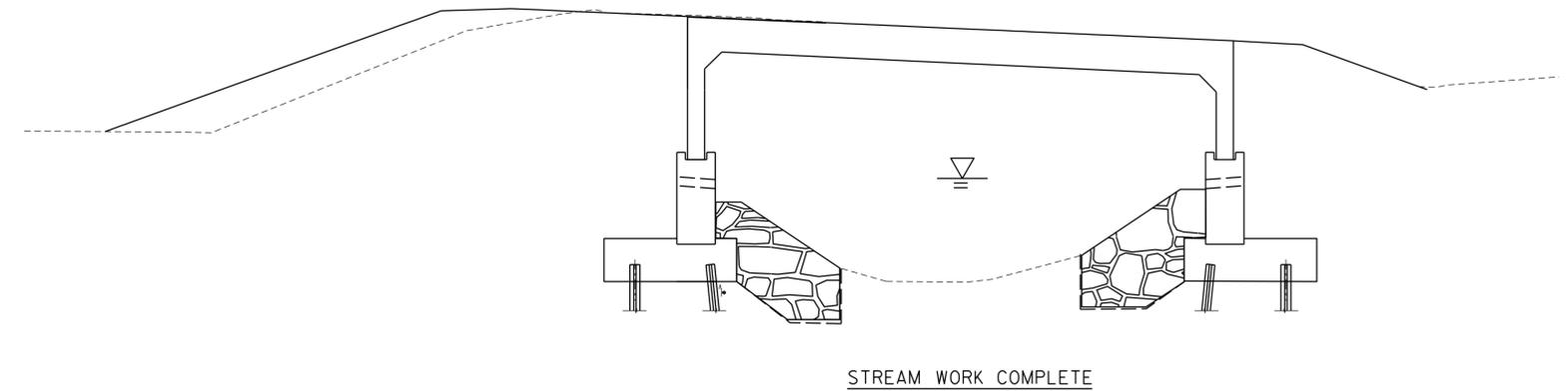
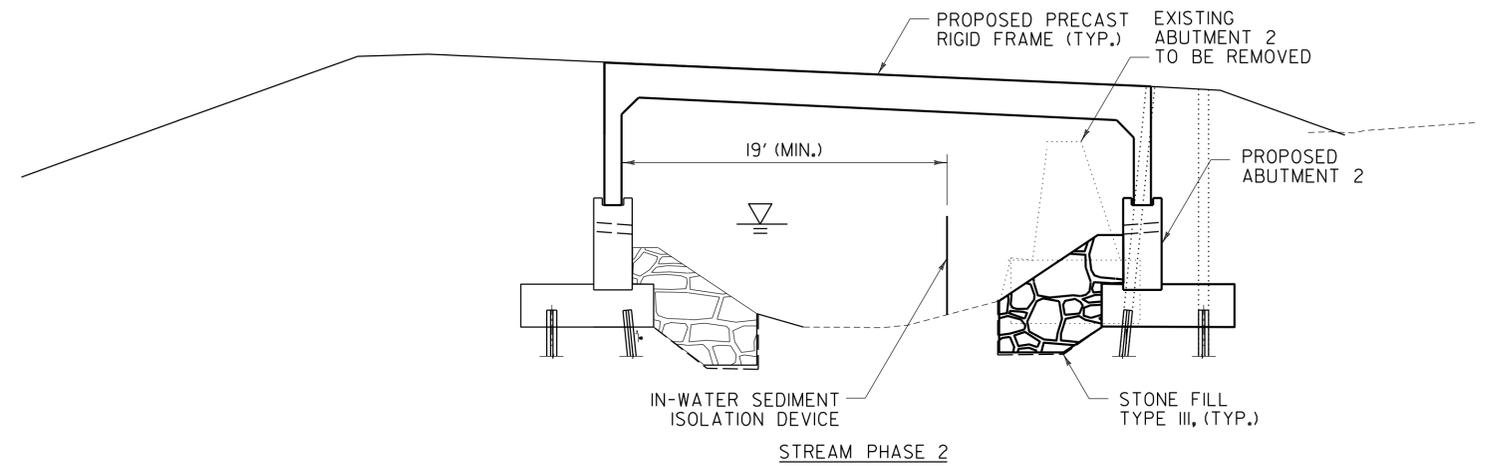
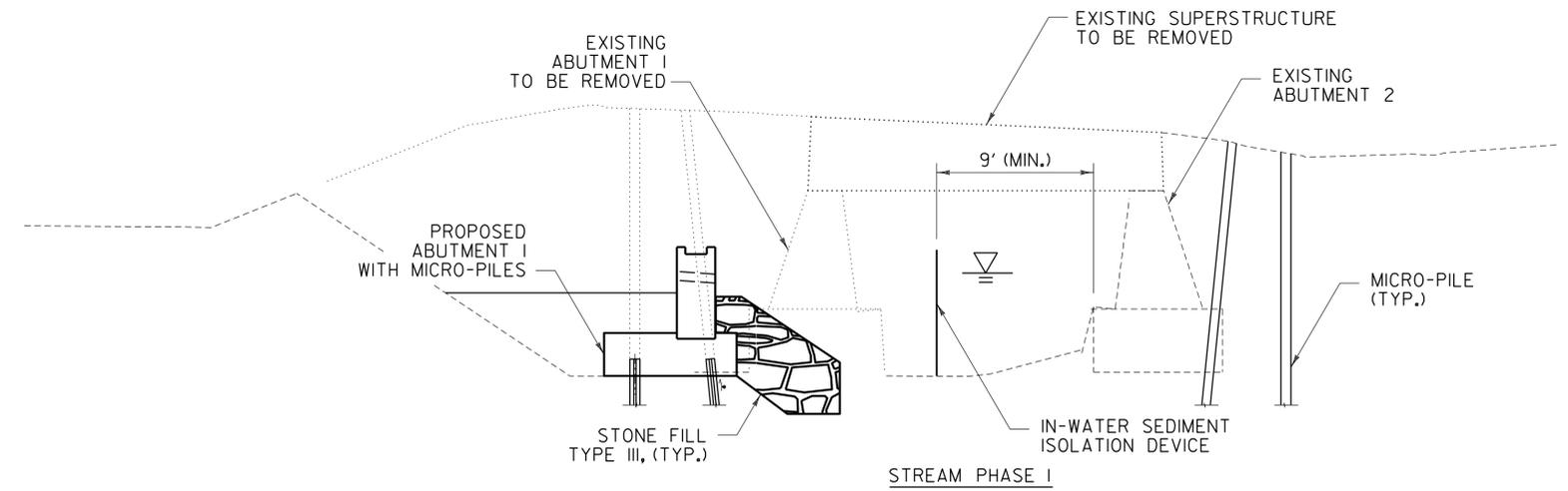
## SUMMARY OF STREAM PHASING SEQUENCE

### PHASE 1:

- A. INSTALL SEDIMENT ISOLATION DEVICE AND COFFERDAM AT ABUTMENT 1.
- B. REMOVE STRUCTURE  
REMOVE EXISTING ABUTMENT 1 AND EXCAVATE FOR ABUTMENT 1 FOUNDATION, CUT OFF PILES, INSTALL FOUNDATION AND STEM-WALL, GROUT CONNECTION TO PILES.
- C. REMOVE COFFERDAM IN FRONT OF ABUTMENT 1, RETAIN COFFERDAM IN FRONT OF PROPOSED WINGWALLS, REALIGN AS NECESSARY TO MAINTAIN MINIMUM CHANNEL WIDTH.
- D. INSTALL STONE FILL AT ABUTMENT 1 (BEHIND SEDIMENT ISOLATION DEVICE).

### PHASE 2:

- A. INSTALL SEDIMENT ISOLATION DEVICE AT ABUTMENT 2.
- B. INSTALL ABUTMENT 2 COFFERDAM (DIVERT STREAM TOWARDS NEW ABUTMENT 1).
- C. EXCAVATE FOR ABUTMENT 2 FOUNDATION AND REMOVE EXISTING ABUTMENT 2, CUT OFF PILES, INSTALL FOUNDATION AND STEM-WALL, GROUT CONNECTION TO PILES.
- D. REMOVE COFFERDAM AT ABUTMENT 2 (RETAIN IN FRONT OF PROPOSED WINGWALLS).
- E. INSTALL STONE FILL AT ABUTMENT 2 (BEHIND SEDIMENT ISOLATION DEVICE).
- F. SET FRAME/GROUT AND CURE FRAME JOINTS, MEMBRANE VERTICAL JOINTS, BACKFILL FRAME LEGS. SET WINGWALLS AND BACKFILL.
- G. REMOVE COFFERDAM IN FRONT OF WINGS.
- H. INSTALL STONE FILL IN FRONT OF WINGWALL (BEHIND SEDIMENT ISOLATION DEVICE).
- I. INSTALL GRUBBING.
- J. REMOVE SEDIMENT ISOLATION DEVICE.



## STREAM PHASING SEQUENCE

SCALE 3/8" = 1'-0"

PROJECT NAME: WOODSTOCK

PROJECT NUMBER: BRF 0151(21)

FILE NAME: z10c426stream_phasing.dgn

PROJECT LEADER: G. BOGUE

DESIGNED BY: T. KNIGHT

STREAM PHASING SUMMARY

PLOT DATE: 7/14/2015

DRAWN BY: L. BUXTON

CHECKED BY: X. XXXX

SHEET 48 OF 50





HVCTRL #1  
389174.4977 N  
1634481.8006 E  
ELEV: 1005.44'

HVCTRL #2  
388828.4329 N  
1634244.4975 E  
ELEV: 986.75'

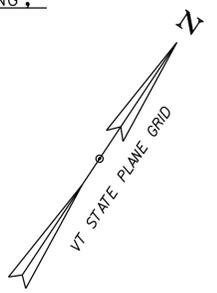
HVCTRL #3  
388900.4009 N  
1634403.6064 E  
ELEV: 986.32'

ITEM 621.30 - BOX BEAM GUARDRAIL  
STA. 2+99 - 3+22, LT.  
STA. 3+32 - 3+58, RT.  
STA. 4+37 - 4+62, LT.  
STA. 4+66 - 4+75, RT.

ITEM 621.51 - MANUFACTURED TERMINAL SECTION, TANGENT (BOX BEAM)  
STA. 3+18 - 3+32, RT.  
STA. 4+62 - 4+76, LT.

ITEM 621.725 - GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM  
STA. 3+22 - 3+54, LT.  
STA. 3+58 - 3+89, RT.  
STA. 4+04 - 4+37, LT.  
STA. 4+35 - 4+66, RT.

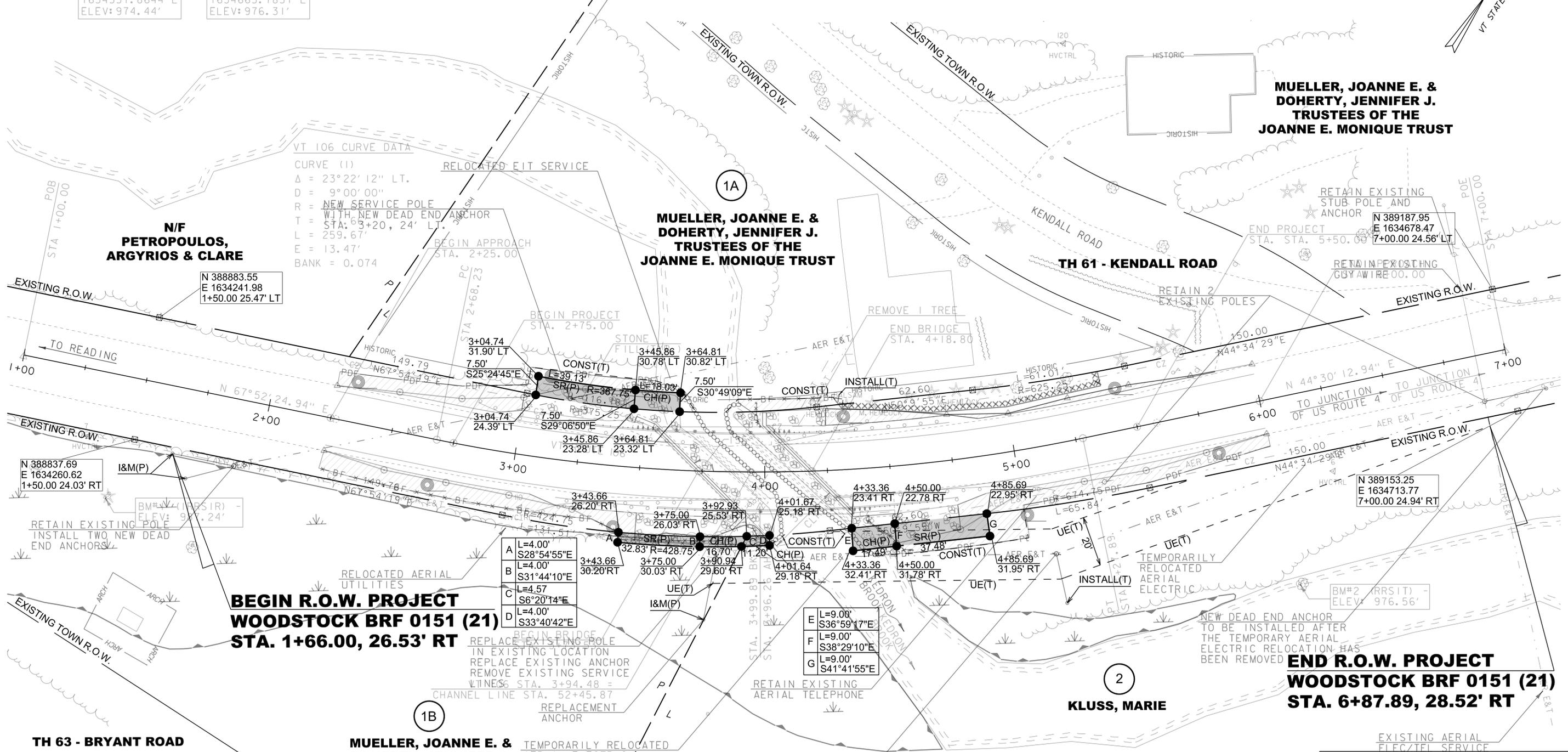
ITEM 210.10 - COLD PLANING, BITUMINOUS PAVEMENT  
STA. 2+15 - 2+25  
STA. 6+00 - 6+10



HVCTRL #4  
388963.9474 N  
1634531.8644 E  
ELEV: 974.44'

HVCTRL #5  
389092.4860 N  
1634665.7851 E  
ELEV: 976.31'

ITEM 656.85 - TREE PROTECTION  
STA. 4+26 LT. - 5+40, LT.



VT 106 CURVE DATA  
CURVE (1)  
Δ = 23°22'12" LT.  
D = 9°00'00"  
R = NEW SERVICE POLE WITH NEW DEAD END ANCHOR  
T = STA. 2+20, 24' LT.  
L = 259.67'  
E = 13.47'  
BANK = 0.074

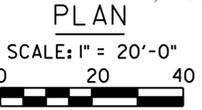
A L=4.00' S28°54'55"E  
B L=4.00' S31°44'10"E  
C L=4.57' S6°20'14"E  
D L=4.00' S33°40'42"E

E L=9.00' S36°59'17"E  
F L=9.00' S38°29'10"E  
G L=9.00' S41°41'55"E

**BEGIN R.O.W. PROJECT  
WOODSTOCK BR# 0151 (21)  
STA. 1+66.00, 26.53' RT**

**END R.O.W. PROJECT  
WOODSTOCK BR# 0151 (21)  
STA. 6+87.89, 28.52' RT**

INSTALL TEMPORARY NEW POLE WITH NEW BI-SECT ANCHOR  
STA. 5+10, 43.5' RT.



**FOR R.O.W. USE ONLY**

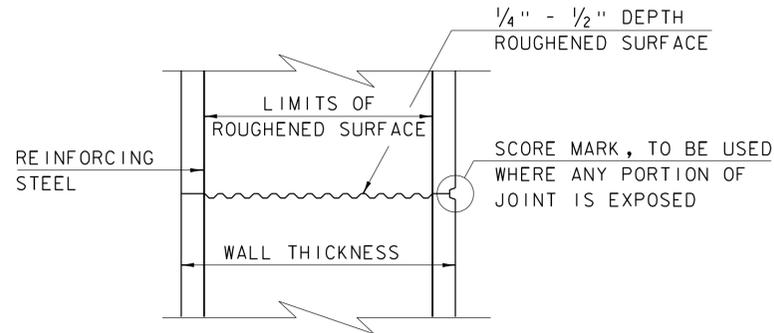
LINES SHOWN ON THIS PLAN AS EXISTING PROPERTY LINES P/L ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO THE STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

PROJECT NAME: WOODSTOCK	PLOT DATE: 08-OCT-2014
PROJECT NUMBER: BR# 0151(21)	DRAWN BY: A. EGZI
FILE NAME: r10c426lay.dgn	CHECKED BY: R. CLOUTIER
PROJECT LEADER: R. YOUNG	SHEET 50 OF 50
DESIGNED BY: STANTEC	
R.O.W. LAYOUT SHEET 1 OF 1	

FOR EXISTING BRIDGE INFORMATION, SEE PRELIMINARY INFORMATION SHEET 2

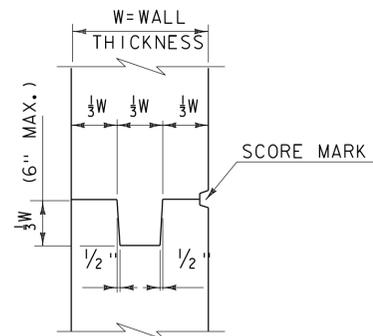
**CONCRETE GENERAL NOTES**

1. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1"
2. REINFORCING STEEL SIZE AND SPACING SHOWN IN THE PLANS IS BASED ON 60 KSI STEEL, UNLESS NOTED OTHERWISE. WITH THE ENGINEER'S PERMISSION, BAR SIZE AND SPACING MAY BE MODIFIED ACCORDING TO THE LATEST AASHTO LRFD BRIDGE DESIGN SPECIFICATION AND STRUCTURES DESIGN MANUAL WHEN USING HIGHER STRENGTH STEEL.

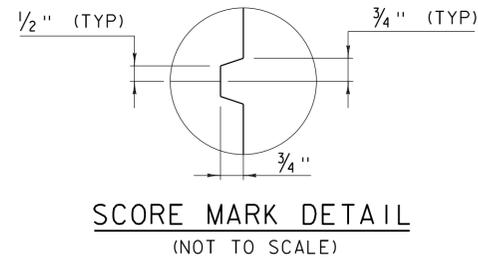


**TYPICAL HORIZONTAL CONSTRUCTION JOINT**  
(NOT TO SCALE)

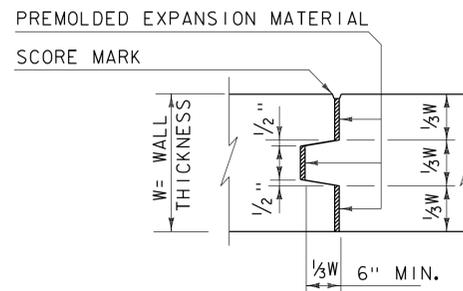
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



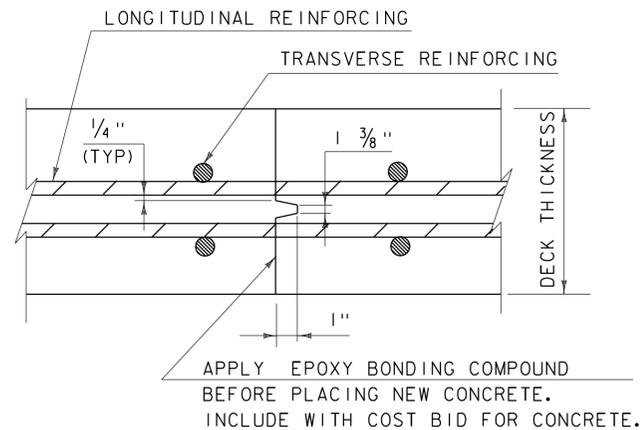
**TYPICAL CONCRETE CONSTRUCTION JOINT**  
(NOT TO SCALE)



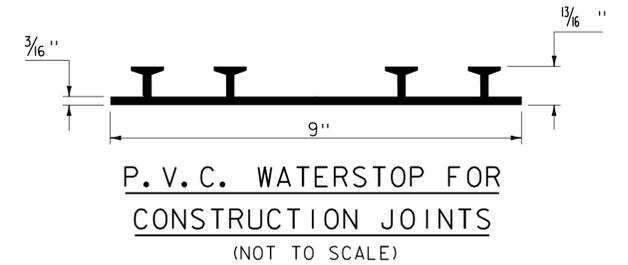
**SCORE MARK DETAIL**  
(NOT TO SCALE)



**TYPICAL CONCRETE EXPANSION JOINT**  
(NOT TO SCALE)

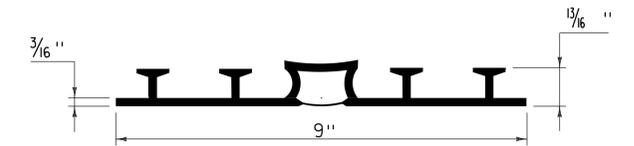


**TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS**  
(NOT TO SCALE)



PAYMENT FOR THE P.V.C. WATERSTOP SHALL BE INCIDENTAL TO THE UNIT BID PRICE FOR THE ADJACENT CONCRETE.

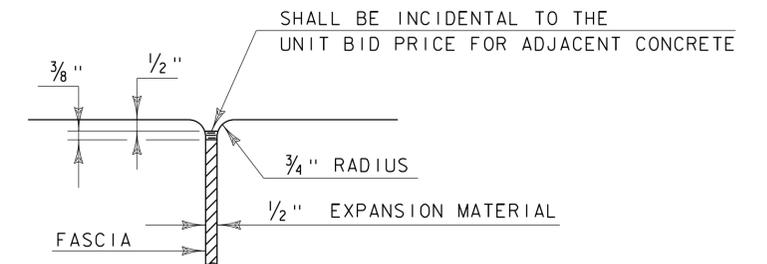
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



**P.V.C. WATERSTOP FOR EXPANSION JOINTS**  
(NOT TO SCALE)

PAYMENT FOR THE P.V.C. WATERSTOP SHALL BE INCIDENTAL TO THE UNIT BID PRICE FOR THE ADJACENT CONCRETE.

OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



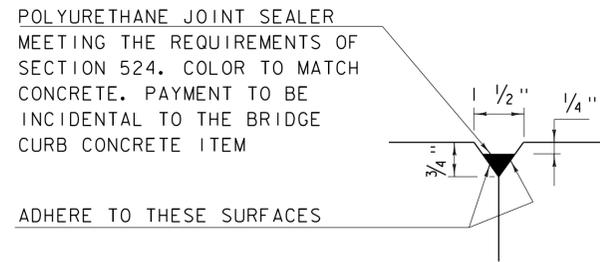
**JOINT BETWEEN FASCIA AND WINGWALL**  
(NOT TO SCALE)

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
FEBRUARY 9, 2012	REBAR SUBSTITUTION ALLOWANCE ADDED TO CONCRETE GENERAL NOTES.

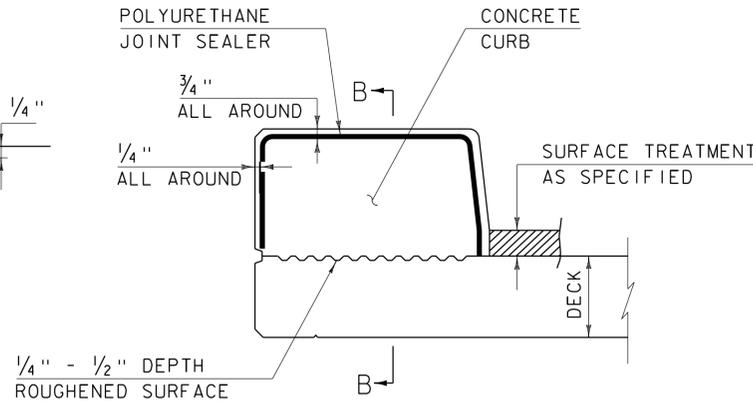
**CONCRETE  
DETAILS AND NOTES**



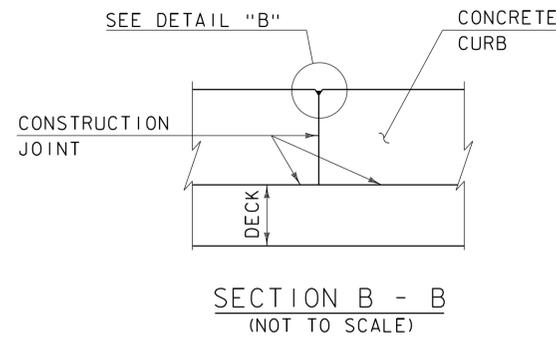
**STRUCTURES  
DETAIL  
SD-501.00**



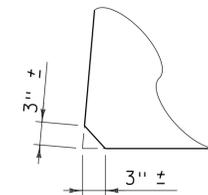
DETAIL "B"  
(NOT TO SCALE)



CONCRETE CURB JOINT SECTION  
(NOT TO SCALE)



SECTION B - B  
(NOT TO SCALE)

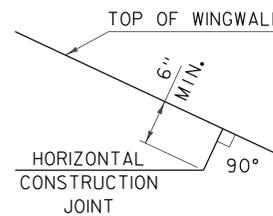


ACUTE ANGLE  
CLIP DETAIL  
(NOT TO SCALE)

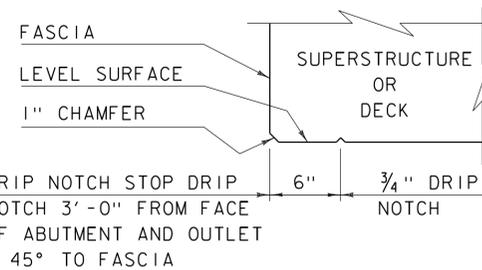
1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION

CONCRETE CURB JOINT NOTES

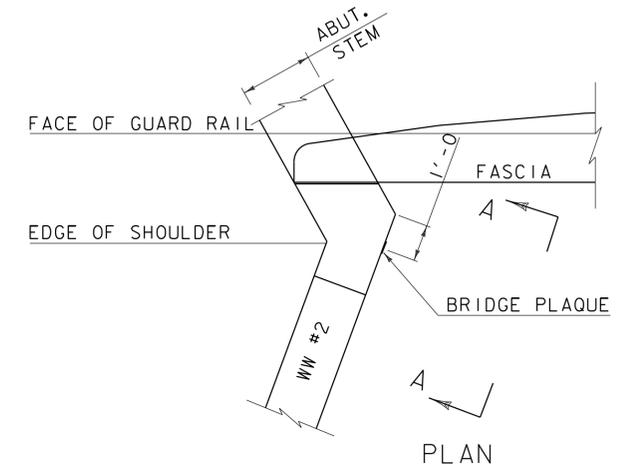
1. CONCRETE CURBS MAY BE PLACED IN ONE CONTINUOUS OPERATION IF AN APPROVED SHRINKAGE REDUCING ADMIXTURE LISTED IN THE SPECIAL PROVISIONS IS USED WITH THE CONCRETE MIX DESIGN. PAYMENT FOR THE SHRINKAGE REDUCING ADMIXTURE WILL BE INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM.
2. IF THE CONTRACTOR CHOOSES NOT TO USE AN APPROVED SHRINKAGE REDUCING ADMIXTURE, THE CURBS SHALL BE CONSTRUCTED WITH CONSTRUCTION JOINTS SPACED AT A MAXIMUM OF 15'-0" CENTER TO CENTER AND 2'-0" MINIMUM FROM THE CENTER OF NEAREST BRIDGE RAILING POST.
3. ON MULTI-SPAN CONTINUOUS SUPERSTRUCTURES, REGARDLESS OF WHETHER APPROVED SHRINKAGE REDUCING ADMIXTURE IS USED, CURB JOINTS SHALL BE LOCATED OVER THE CENTERLINE OF PIERS AND 7'-0" EACH SIDE OF THE CENTERLINE OF EACH PIER.
4. WHEN CURB JOINTS ARE USED THE CURBS SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOUR DELAY BETWEEN ADJACENT PLACEMENTS.
5. LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THROUGH CURB CONSTRUCTION JOINTS. CURB STIRRUP BARS SHALL BE TURNED AS NECESSARY TO MAINTAIN COVER IN THE FLARED CURB ENDS.
6. THE JOINT SPACING AND DETAILS SHOWN SHALL APPLY TO SIDEWALKS WHEN SHOWN IN THE PLANS.



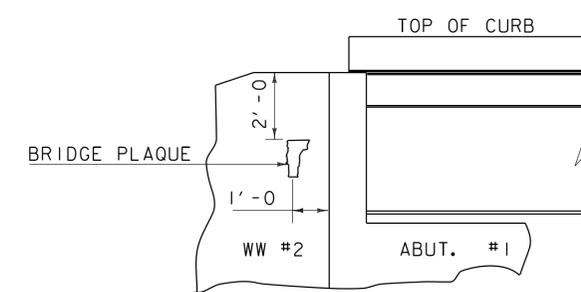
HORIZONTAL WINGWALL  
CONSTRUCTION JOINT  
(NOT TO SCALE)



DRIP NOTCH DETAIL  
(NOT TO SCALE)



PLAN



VIEW "A - A"

BRIDGE PLAQUE  
(NOT TO SCALE)

THE BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AT ABUTMENT #1 ON THE RIGHT SIDE AS SHOWN OR AS DIRECTED BY THE ENGINEER.

PAYMENT FOR INSTALLATION OF THE BRIDGE PLAQUE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

REVISIONS

MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
JUNE 4, 2010	MODIFIED AND ADDED TWO DETAILS
OCTOBER 10, 2012	MODIFIED HORZ. JOINT WINGWALL ADD 6" MIN. DIMENSION

CONCRETE  
DETAILS AND NOTES



STRUCTURES  
DETAIL  
SD-502.00

ASPHALTIC PLUG JOINT NOTES

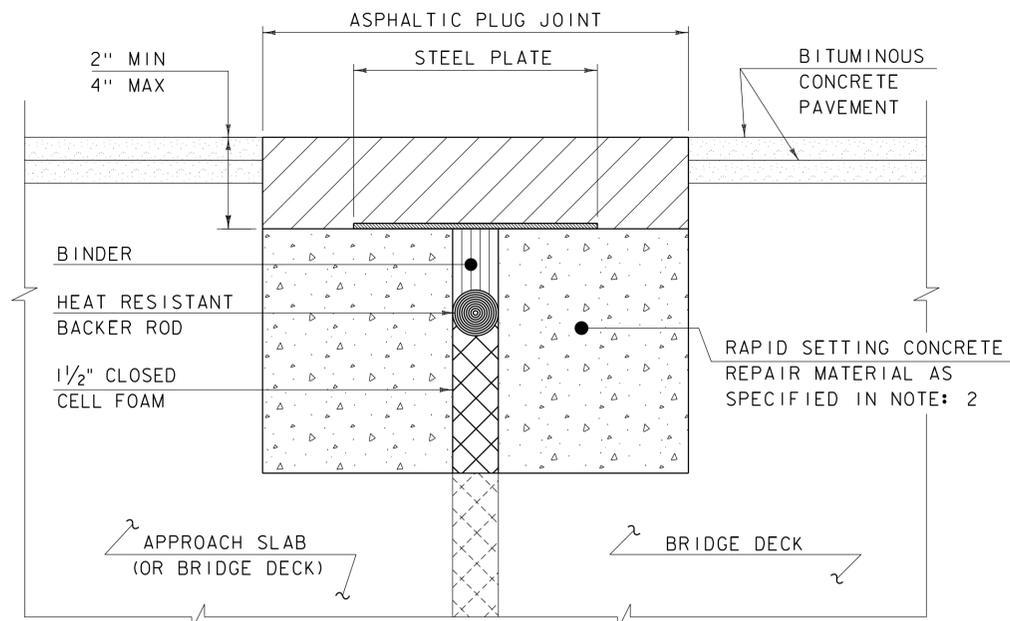
INSTALLATION:

1. LOCATE THE JOINT CENTRALLY OVER THE DECK OVERLAY EXPANSION GAP OR FIXED JOINT, MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.
2. REMOVE THE BITUMINOUS CONCRETE PAVEMENT FULL DEPTH AS SHOWN ON THE PLANS. THE PAVEMENT SHALL BE DRY AND SAW CUT TO THE LIMITS REQUIRED TO PLACE THE JOINT. A PNEUMATIC HAMMER AND CHISEL MAY BE USED ADJACENT TO THE CURB ONLY WHEN SAW CUTTING IS NOT POSSIBLE.
3. BLAST CLEAN THE JOINT AREA OF DEBRIS, ASPHALT AND SHEET MEMBRANE. THOROUGHLY DRY THE JOINT AREA WITH COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.
4. PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 1" +/- OF BINDER ABOVE THE ROD.
5. HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.
6. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.

WEATHER LIMITATIONS

APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL OR AS RECOMMENDED BY THE MANUFACTURER:

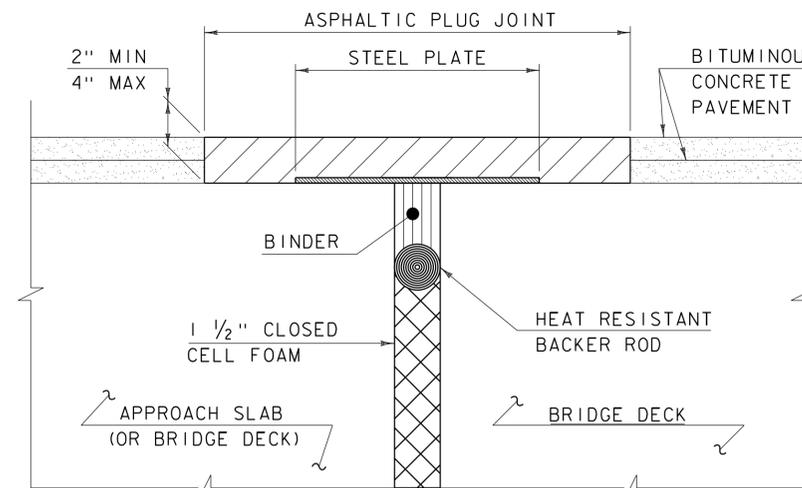
1. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.
2. THE ROAD SURFACE IS DRY.
3. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.



ASPHALTIC PLUG JOINT DETAIL - REHAB

NOTES:

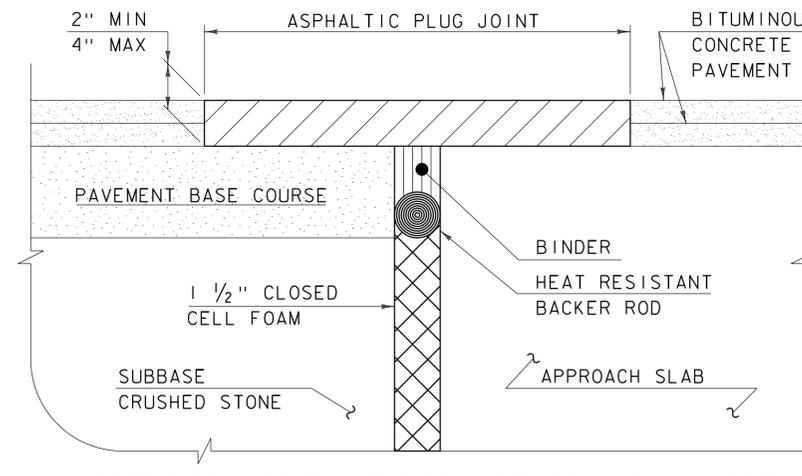
1. THE CONTRACTOR SHALL REMOVE ALL ASPHALTIC PLUG JOINT MATERIAL AND DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER. REMOVAL OF THE FIRST 4 INCHES OF MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG. ANY REMOVAL OF MATERIAL GREATER THAN 4 INCHES SHALL BE INCLUDED IN THE BID PRICE OF ITEM 580.20 RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.
2. THE CONTRACTOR SHALL REPLACE REMOVED MATERIAL THAT IS LESS THAN 4" FROM FINISHED GRADE WITH ASPHALTIC PLUG JOINT MATERIAL MEETING THE REQUIREMENTS OF SUBSECTION 707.15. ALL REMOVED MATERIAL THAT IS GREATER THAN 4 INCHES FROM FINISHED GRADE SHALL BE REPLACED WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.
4. PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER. THE STEEL PLATES MAY BE OMITTED WHERE THE ENGINEER DETERMINES THAT THE APPROACH SLAB OR BRIDGE DECK WILL PROVIDE INADEQUATE SUPPORT AND WHERE VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.



ASPHALTIC PLUG JOINT DETAIL "A" - NEW

NOTE:

PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER.



ASPHALTIC PLUG JOINT DETAIL "B" - NEW

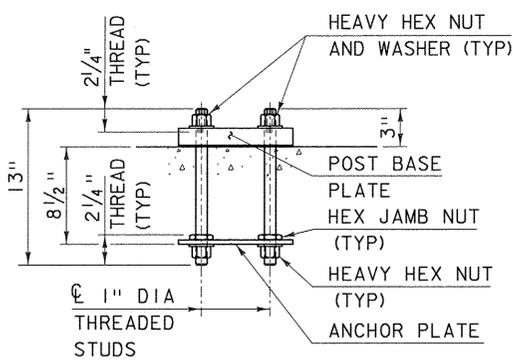
DETAILS ON THIS SHEET ARE NOT TO SCALE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
AUGUST 29, 2011	ADD DETAIL "B" AND REV. NOTES

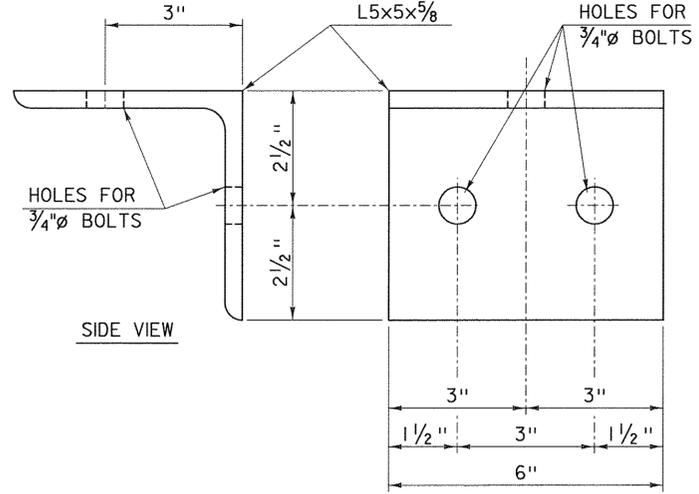
BRIDGE JOINT  
ASPHALTIC PLUG



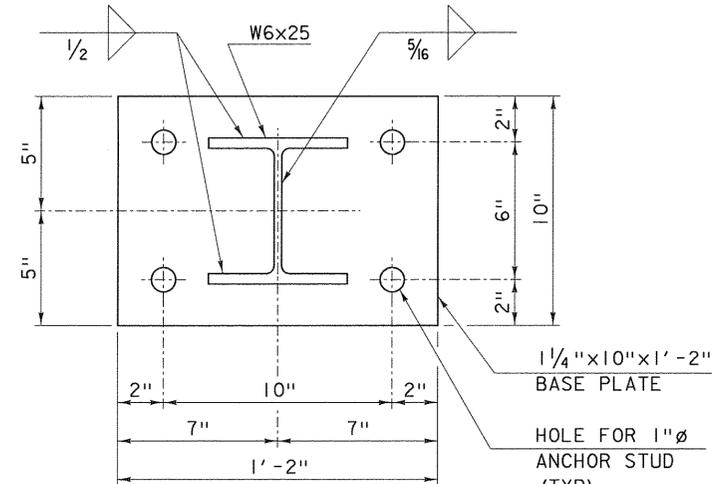
STRUCTURES  
DETAIL  
SD-516.10



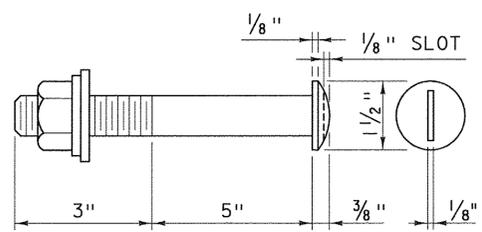
RAILING POST ANCHORAGE



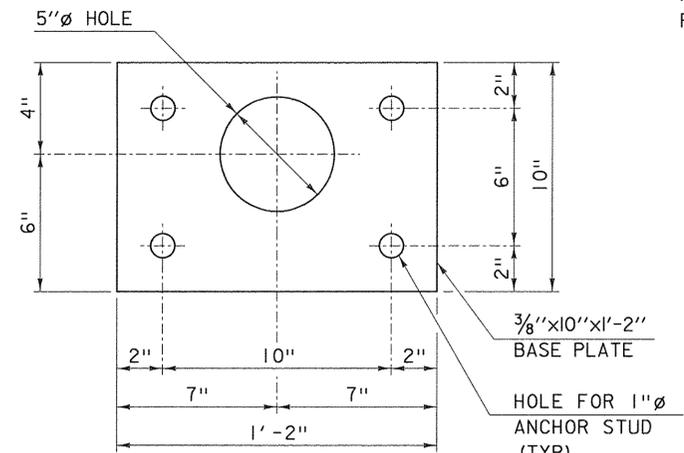
ELEVATION VIEW  
RAILING ANGLE DETAILS



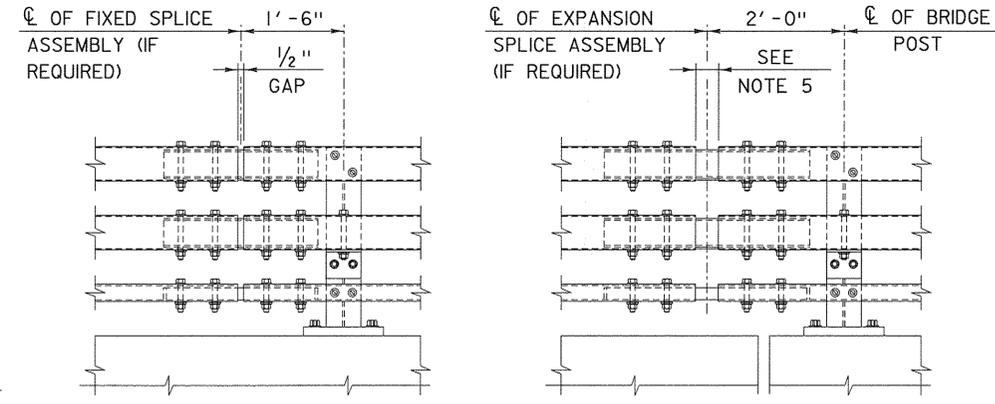
BASE PLATE DETAIL



ROUND HEAD BOLT DETAIL  
A449 (TYPE 1)

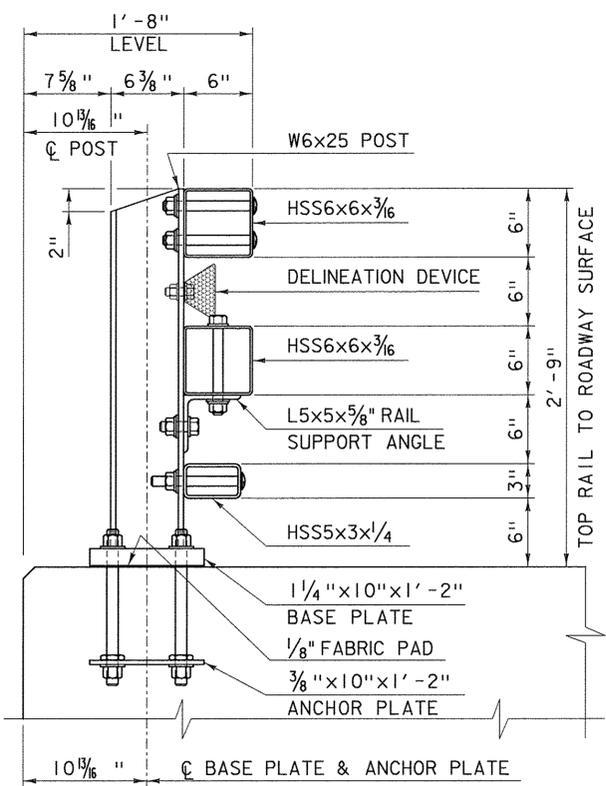


ANCHOR PLATE DETAIL

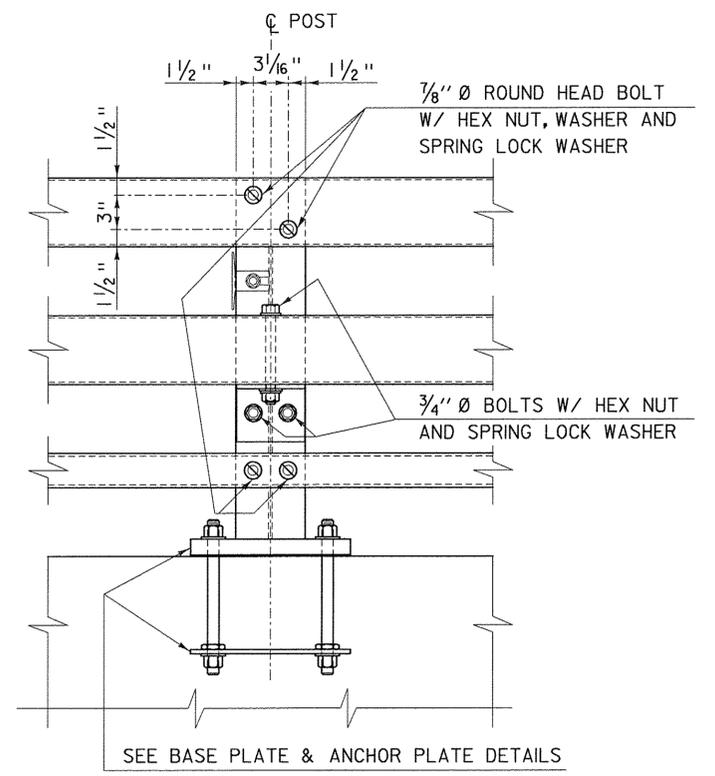


RAILING SPLICE DETAIL ELEVATION

A RAILING EXPANSION SPLICE IS REQUIRED IN ANY POST SPACING THAT CONTAINS A SUPERSTRUCTURE EXPANSION JOINT



RAILING SECTION



RAILING ELEVATION

- NOTES:
- ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.
  - PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/16".
  - ALL POSTS SHALL BE SET NORMAL TO GRADE. THE MAXIMUM CENTER TO CENTER SPACING OF BRIDGE RAIL POSTS IS 8'-3".
  - SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO BRIDGE POSTS AND PREFERABLY TO AT LEAST 4 POSTS.
  - RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING THE END OF AN INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPERSTRUCTURE EXPANSION JOINTS. EXPANSION JOINT WIDTH SHALL BE 4" @ 68°F AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
  - HOLES IN RAILS FOR TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
  - BOLTS SHALL BE TORQUED SNUG TIGHT (APPROXIMATELY 100 FT-LB).
  - SEE STANDARD DRAWING G-1B FOR DETAILS OF DELINEATORS. A DELINEATOR SHALL BE INSTALLED AT 30 FOOT SPACING OR THE NEAREST POST. WHITE IS TO BE INSTALLED ON THE DRIVER'S RIGHT. FOR ONE WAY BRIDGES, YELLOW IS TO BE INSTALLED ON THE DRIVER'S LEFT. PAYMENT SHALL BE INCIDENTAL TO OTHER ITEMS.
  - ANY BENDING OF RAIL SHALL BE DONE AT THE FABRICATION PLANT ACCORDING TO A PROCEDURE PROVIDED BY THE FABRICATOR.
  - THE MINIMUM DISTANCE FROM THE POST TO AN EXPANSION JOINT SHALL BE DETERMINED BY THE MINIMUM EDGE DISTANCE OF 5" FROM ANY ANCHOR STUD TO THE END OF THE SLAB, OR TO THE EXPANSION JOINT RECESS POUR, IF ONE IS USED.
  - THIS RAILING MEETS THE REQUIREMENTS FOR A TL-4 SERVICE LEVEL.

OTHER STDS. REQUIRED: **G-1B, S-364C**

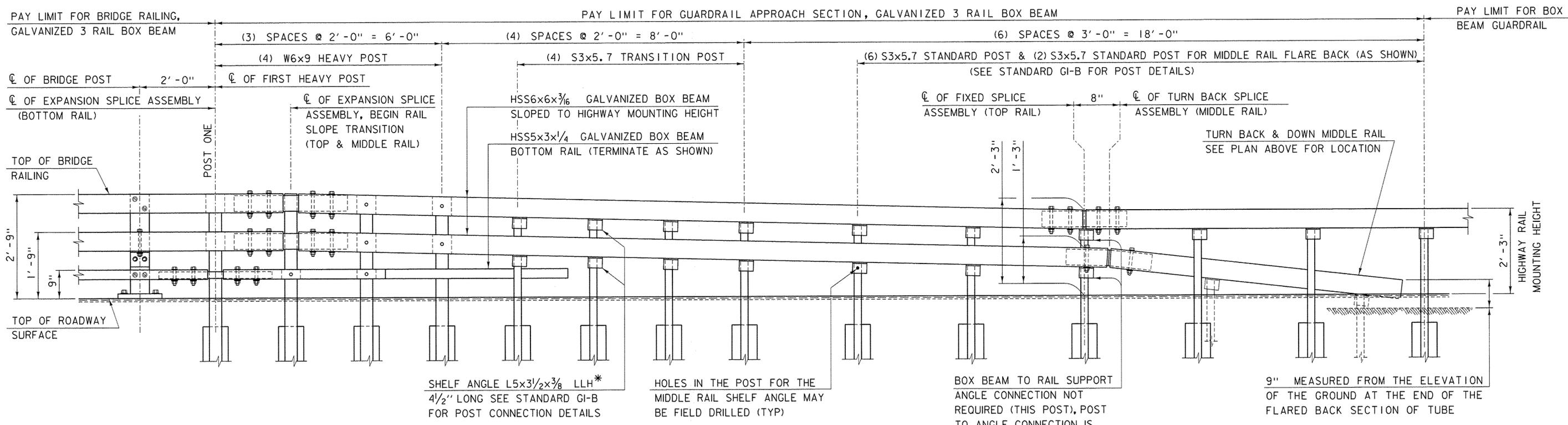
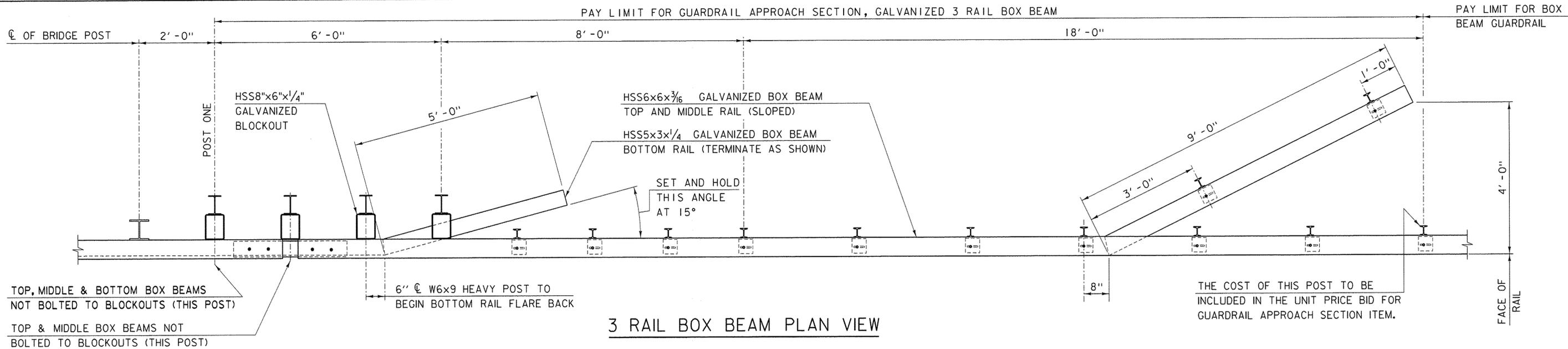
REVISIONS AND CORRECTIONS  
AUGUST 9, 2010 - ORIGINAL APPROVAL  
APRIL 23, 2012 - GENERAL UPDATE 2012

APPROVED  
*Wm. Michael Hedger*  
STRUCTURES PROGRAM MANAGER  
*Richard F. Schaub*  
DIRECTOR OF PROGRAM DEVELOPMENT  
*Mark D. Richter*  
FEDERAL HIGHWAY ADMINISTRATION

# BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM



# STANDARD S-364A



**3 RAIL BOX BEAM ELEVATION**

* LONG LEG HORIZONTAL

NOTES:

1. BOX BEAM TUBE AND STEEL POST MATERIALS, DIMENSION SIZES AND NOTES SHALL BE THE SAME AS THOSE OF THE BRIDGE RAIL, UNLESS OTHERWISE NOTED.

OTHER STDS. REQUIRED: **G-1B, S-364A**

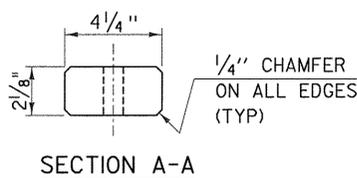
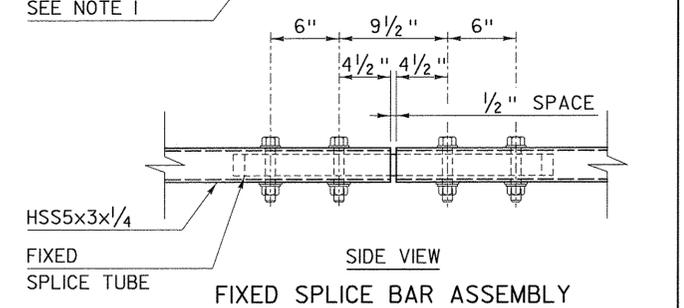
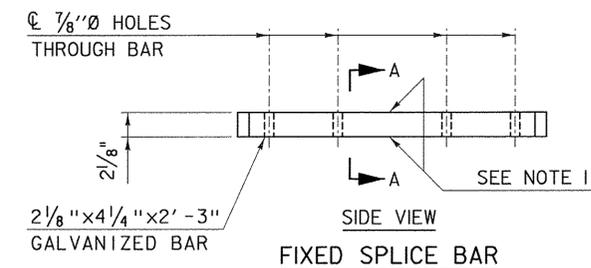
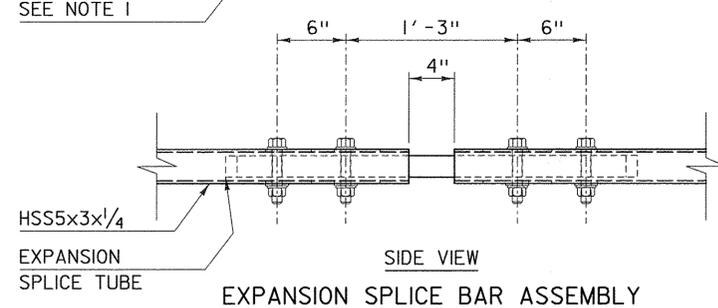
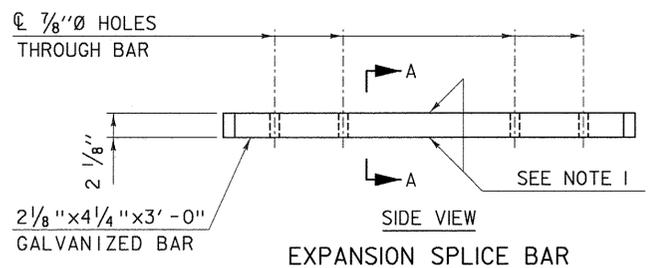
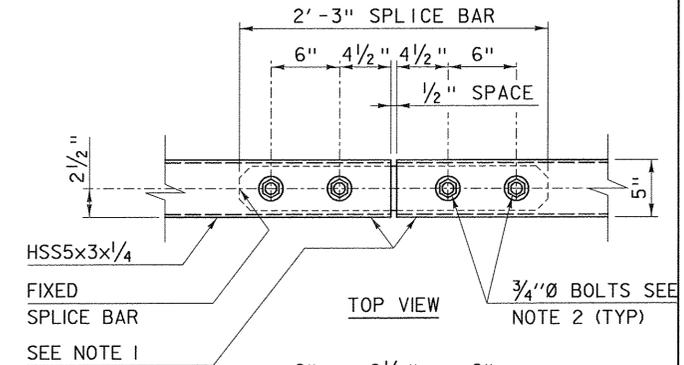
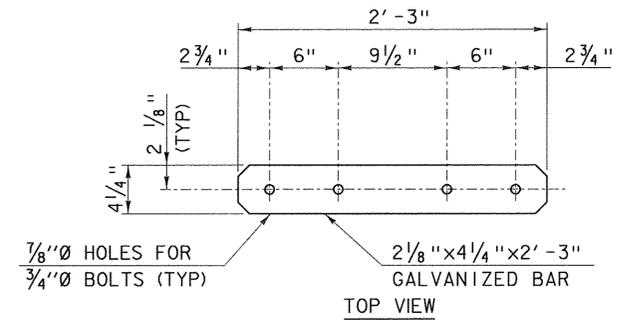
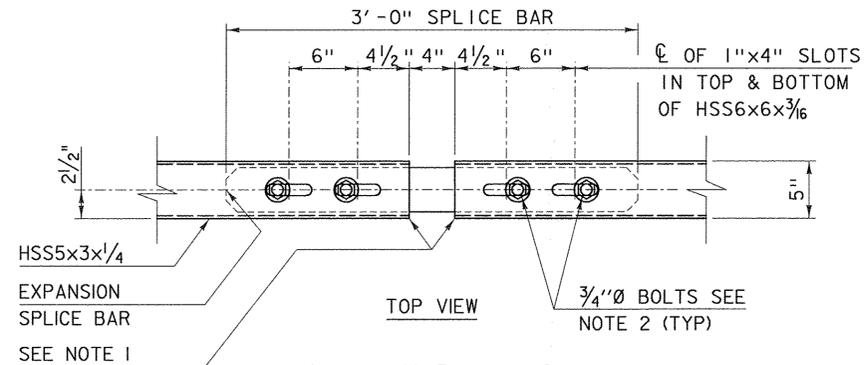
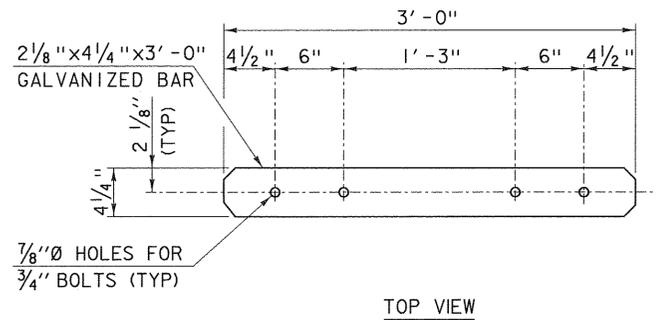
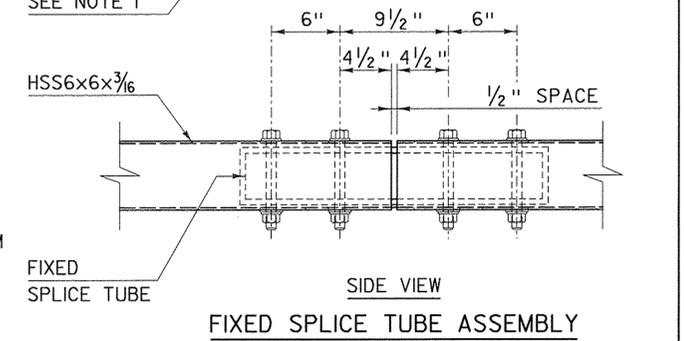
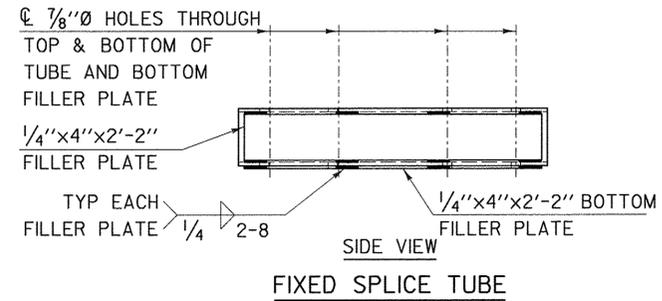
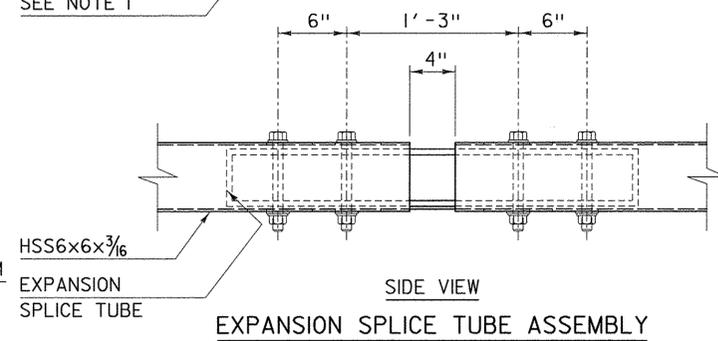
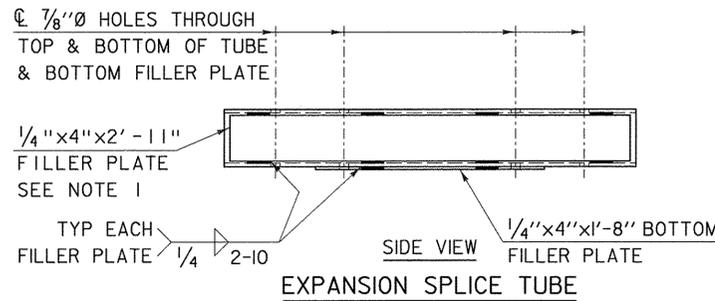
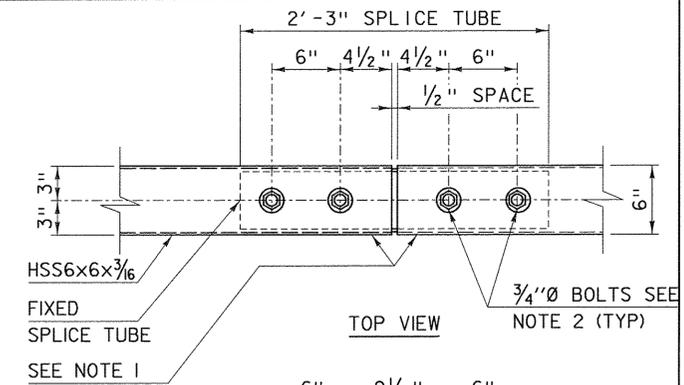
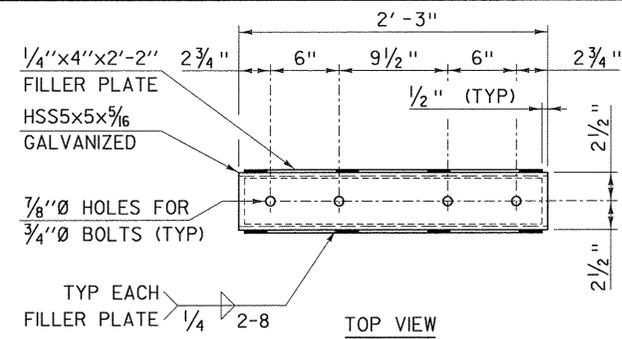
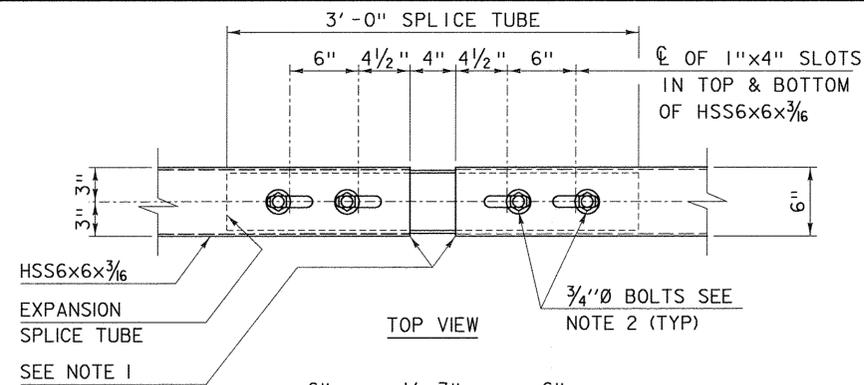
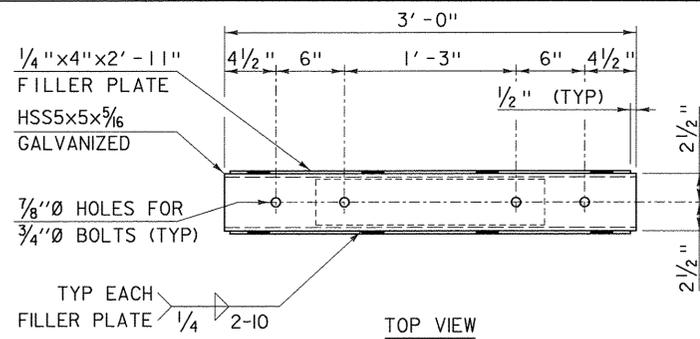
REVISIONS AND CORRECTIONS  
 AUGUST 9, 2010 - ORIGINAL APPROVAL  
 APRIL 23, 2012 - GENERAL UPDATE 2012

APPROVED  
*Chris Michel Hodges*  
 STRUCTURES PROGRAM MANAGER  
*Richard Johnson*  
 DIRECTOR OF PROGRAM DEVELOPMENT  
*Mark D. Richter*  
 FEDERAL HIGHWAY ADMINISTRATION

**GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM**



**STANDARD S-364B**



NOTES:

1. PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE BOX BEAM RAILS, SPLICE TUBES AND FILL PLATES.
2. FOUR (4) 3/4" DIAMETER FULLY THREADED BOLTS, 7 1/2" LONG WITH TWO (2) WASHERS AND A HEAVY HEX NUT ON EACH BOLT. NUT TO BE FINGER TIGHT AND THE FIRST THREAD BELOW THE NUT TO BE BURRED TO PREVENT DISLODGING. FOUR (4) BOLTS AT EACH SPLICE.

OTHER STDS. REQUIRED:

REVISIONS AND CORRECTIONS  
AUGUST 9, 2010 - ORIGINAL APPROVAL  
APRIL 23, 2012 - GENERAL UPDATE 2012

APPROVED

*Wm. Michael Hedger*  
STRUCTURES PROGRAM MANAGER

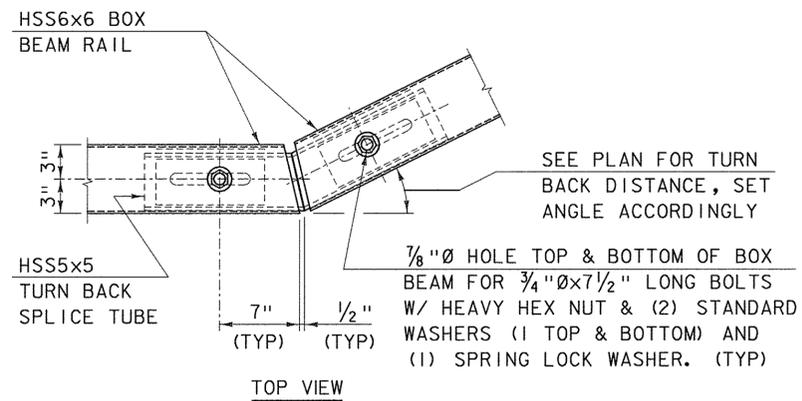
*Richard J. Farnsworth*  
DIRECTOR OF PROGRAM DEVELOPMENT

*Mark D. Richter*  
FEDERAL HIGHWAY ADMINISTRATION

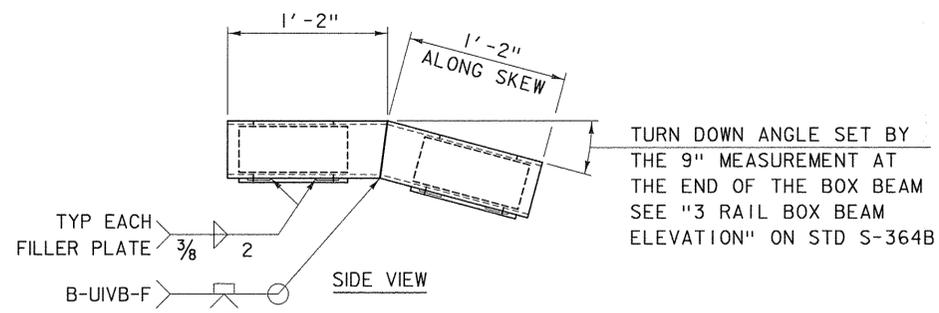
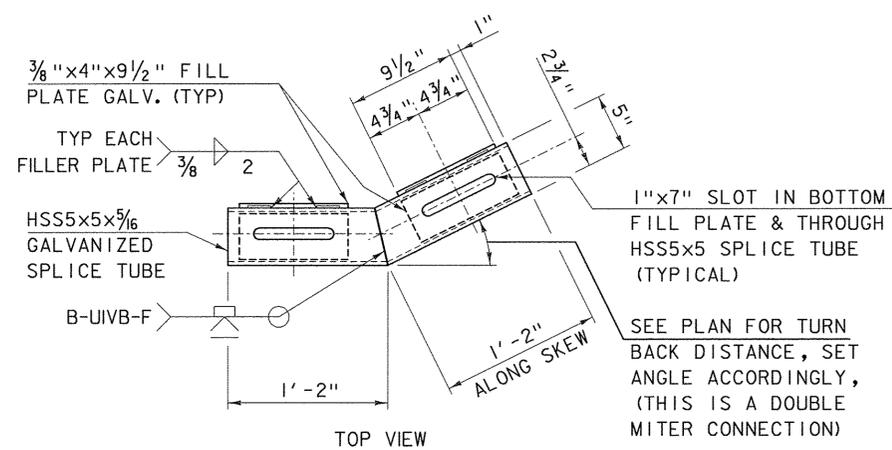
GUARDRAIL APPROACH  
SECTION, GALVANIZED  
3 RAIL BOX BEAM



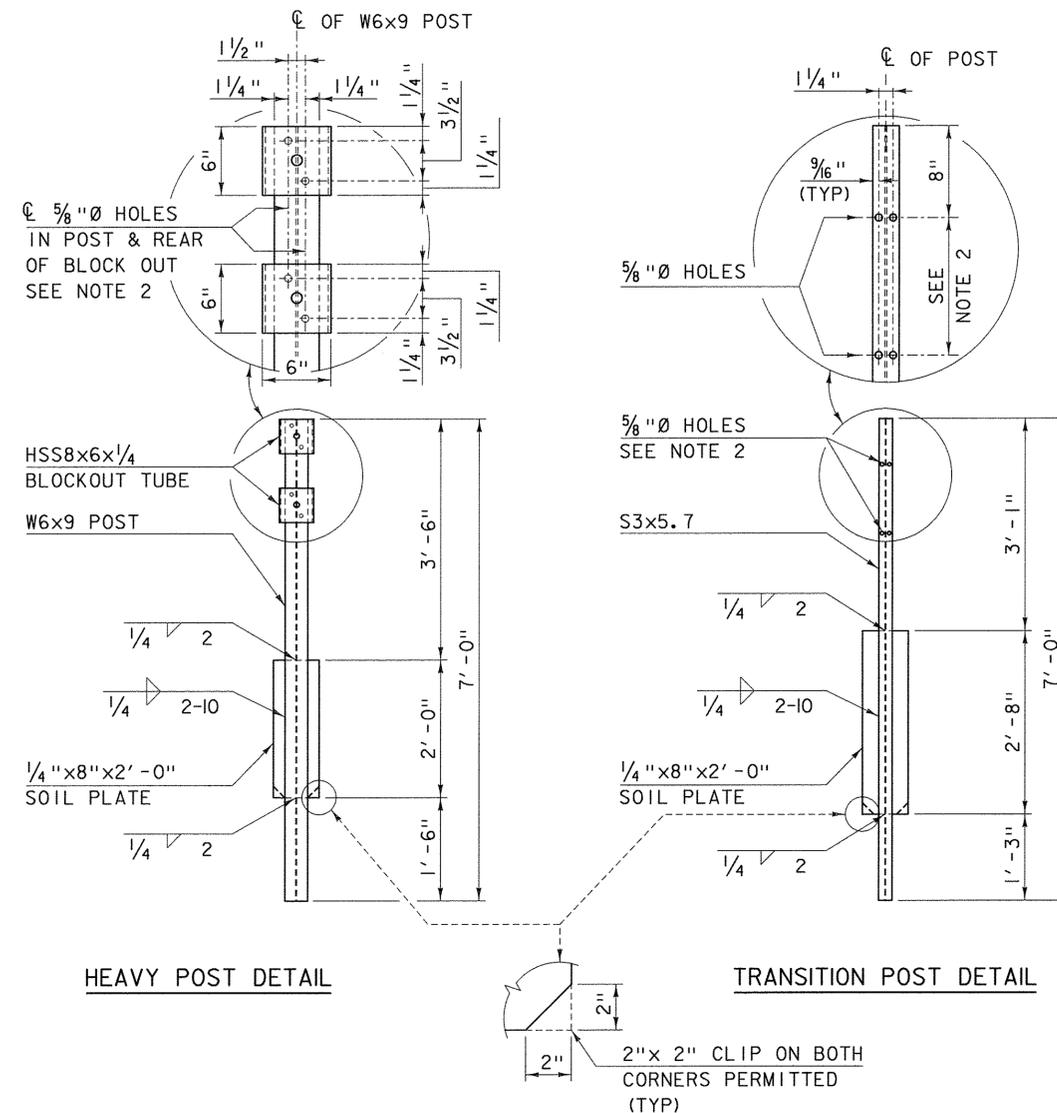
STANDARD  
S-364C



TURN BACK SPLICE TUBE ASSEMBLY



TURN BACK SPLICE TUBE DETAIL  
TURN BACK & TURN DOWN TUBE JOINT



NOTES:

- PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE BOX BEAM RAILS, SPLICE TUBES AND FILL PLATES.
- HOLES IN THE POST FOR THE LOWER RAIL MAY BE LOCATED AND DRILLED IN THE FIELD. IF SO, THE GALVANIZING SHALL BE REPAIRED IN ACCORDANCE WITH SPECIFICATION SECTION 525.

OTHER STDS. REQUIRED:

REVISIONS AND CORRECTIONS  
AUGUST 9, 2010 - ORIGINAL APPROVAL  
APRIL 23, 2012 - GENERAL UPDATE 2012

APPROVED

*Wm. Michael Hedger*  
STRUCTURES PROGRAM MANAGER

*Richard Fetsch*  
DIRECTOR OF PROGRAM DEVELOPMENT

*Mark D. Richter*  
FEDERAL HIGHWAY ADMINISTRATION

GUARDRAIL APPROACH  
SECTION, GALVANIZED  
3 RAIL BOX BEAM



STANDARD  
S - 364D