

PROJECT REVIEWER NOTES:

1. THIS IS AN ACCELERATED BRIDGE CONSTRUCTION PROJECT WITH A MAXIMUM 21 DAY ROAD CLOSURE. ALL SUBSTRUCTURE UNITS WILL BE PRECAST.
2. TO AVOID ROW IMPACTS, WE ARE PROPOSING USING A "BURSTING ENERGY ABSORBING TERMINAL" (BEAT).
3. THE ROADWAY IS IN A HORIZONTAL CURVE BUT THE PRECAST CONCRETE FRAME WILL BE SQUARE WITH VARYING CURB WIDTHS FROM FACE OF RAIL TO FASCIA.

STATE OF VERMONT AGENCY OF TRANSPORTATION



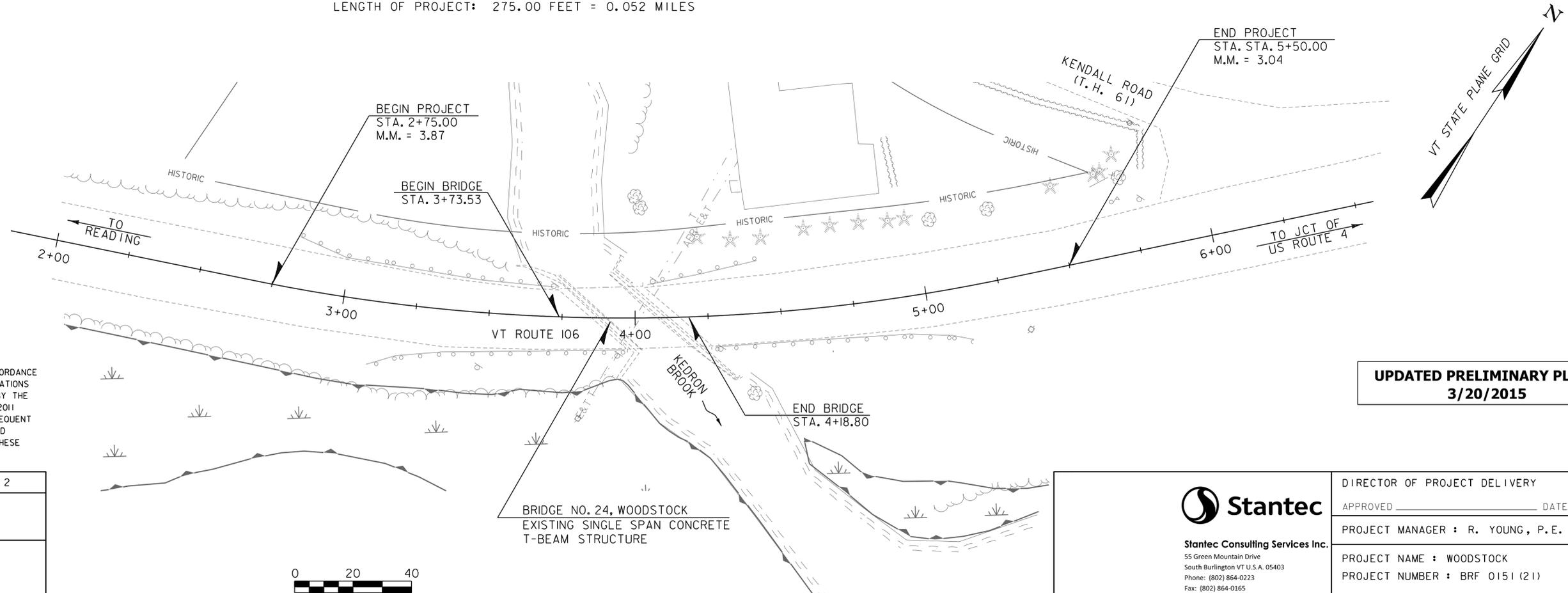
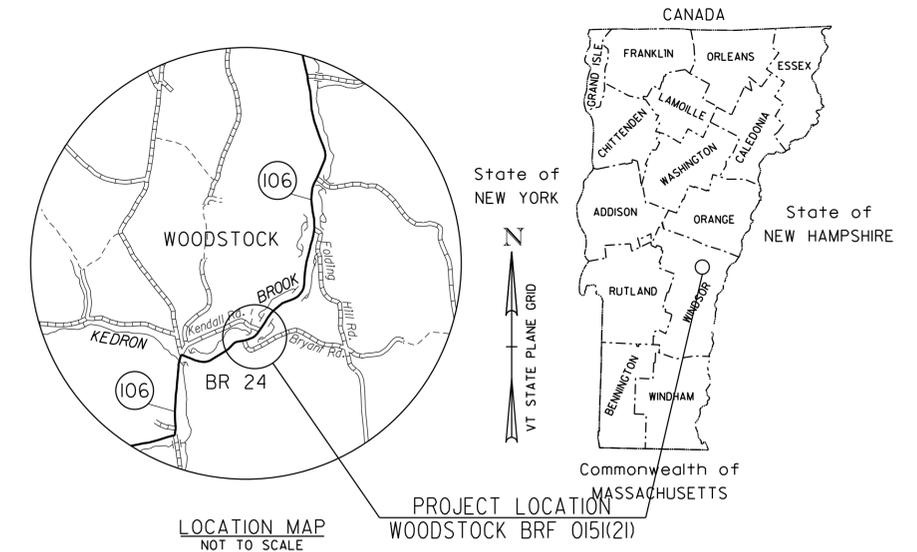
PROPOSED IMPROVEMENT BRIDGE PROJECT TOWN OF WOODSTOCK COUNTY OF WINDSOR

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 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)



**UPDATED PRELIMINARY PLANS
3/20/2015**

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 33 SHEETS	

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FINAL HYDRAULIC REPORT

PLAN SHEETS

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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:

PROPOSED STRUCTURE

STRUCTURE TYPE: Precast concrete structure

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

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:							

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 TRAFFIC ON AN OFF SITE DETOUR.
 2. TRAFFIC SIGNALS ARE NOT NECESSARY.
 3. 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 : 4.0 KSF
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
17. NOMINAL BEARING RESISTANCE OF ROCK	q _n : 10.0 KSF
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	φ: ---
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: 3/19/2015

PROJECT LEADER: G. BOGUE DRAWN BY: L. BUXTON

DESIGNED BY: G. BOGUE CHECKED BY: J. HUNGERFORD

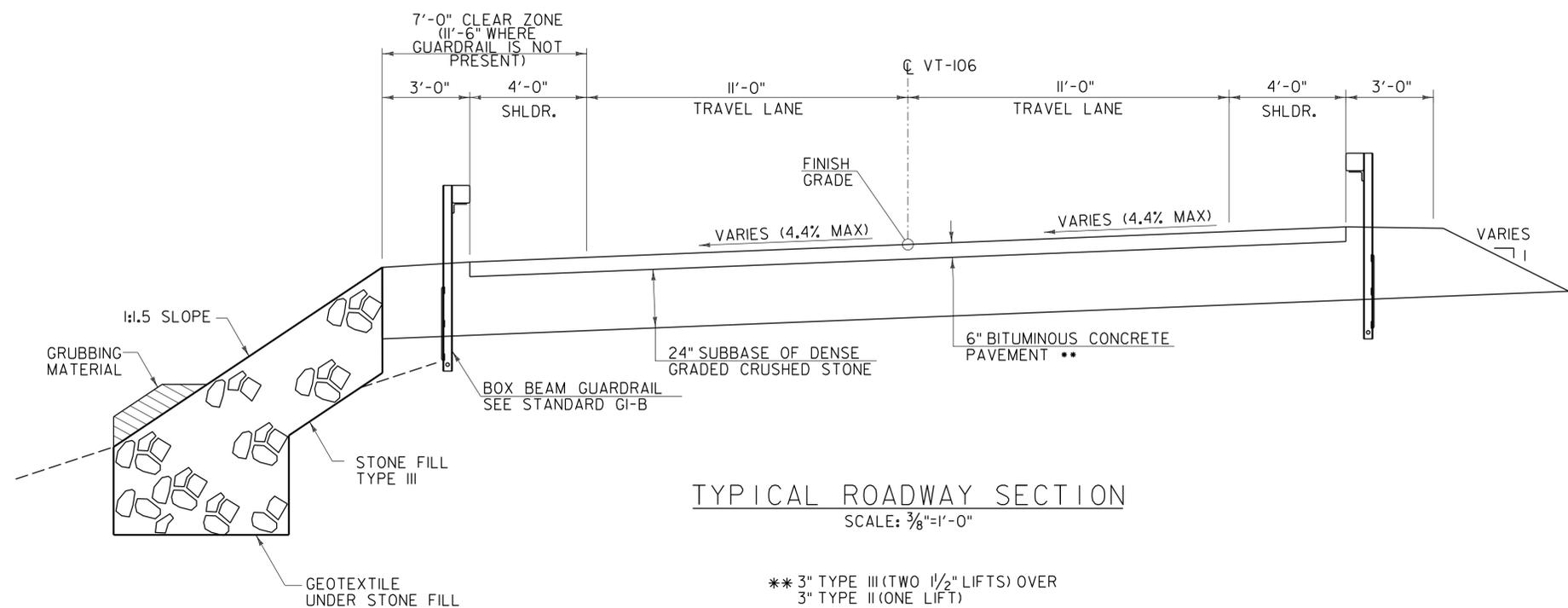
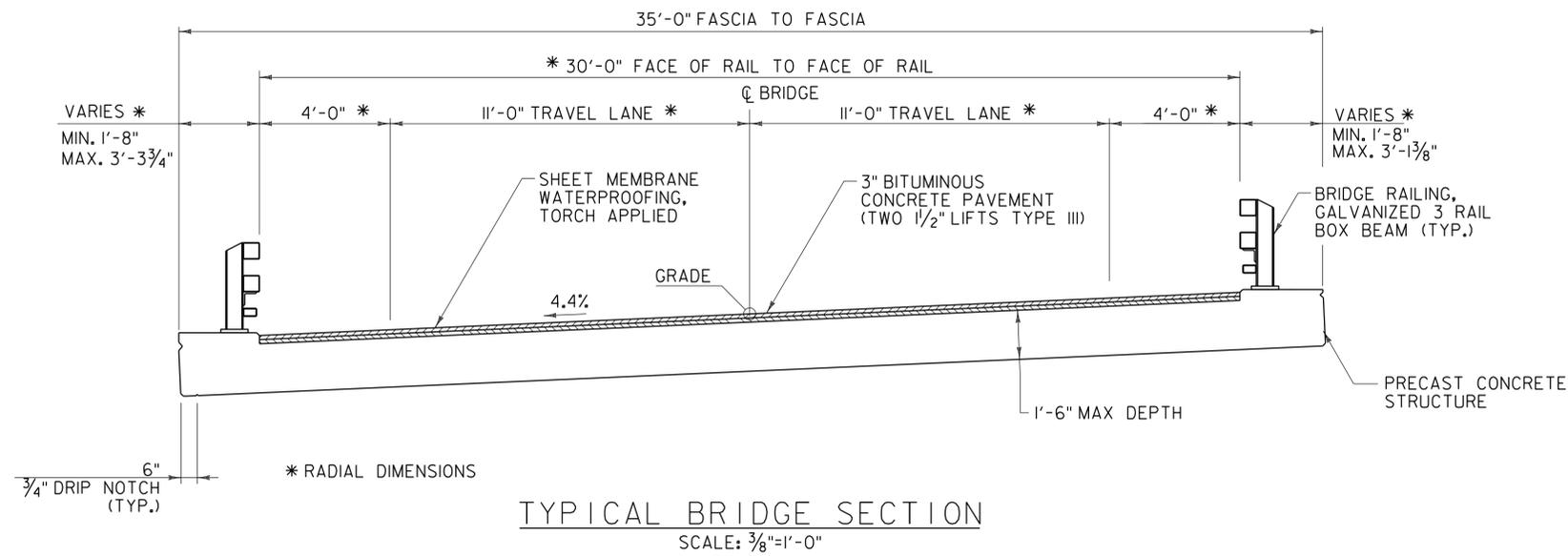
PRELIMINARY INFORMATION SHEET SHEET 2 OF 32

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

AS BUILT "REBAR" DETAIL

LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

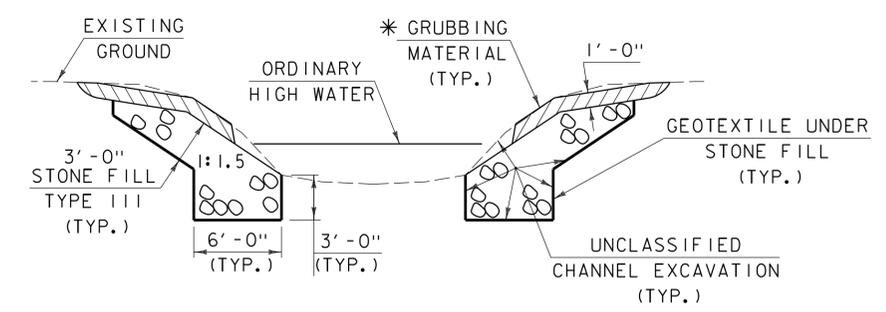
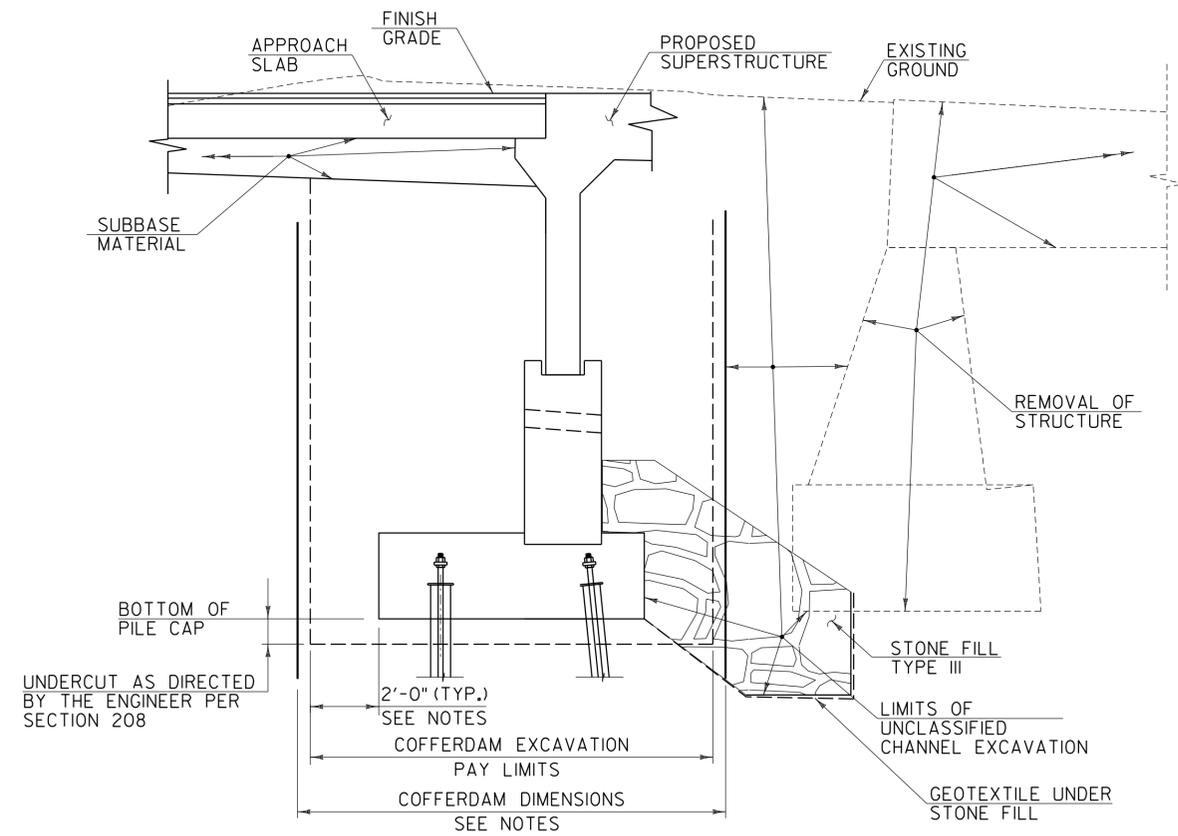
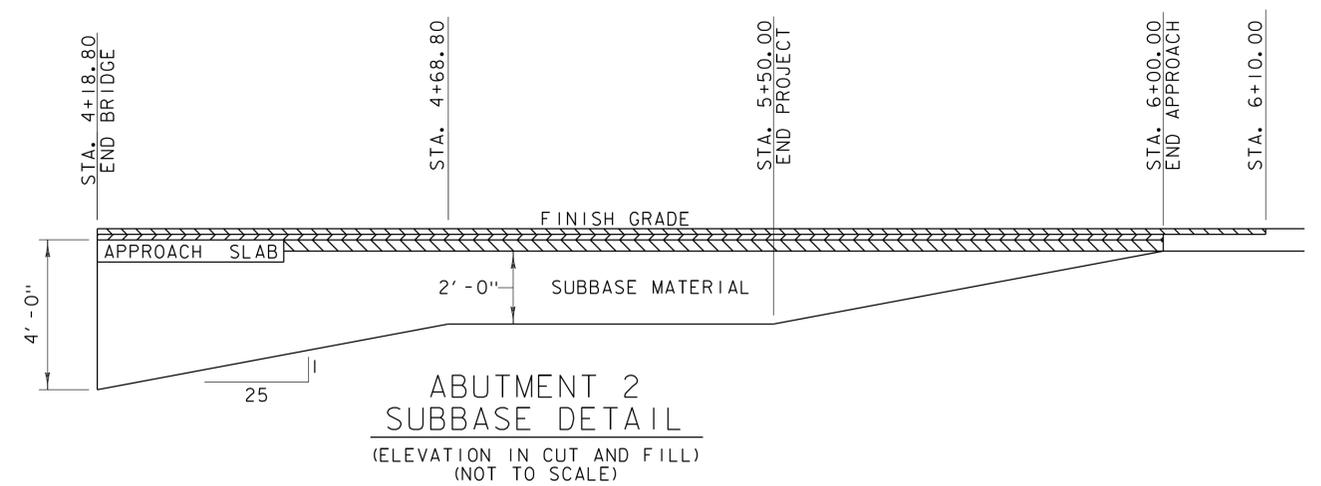
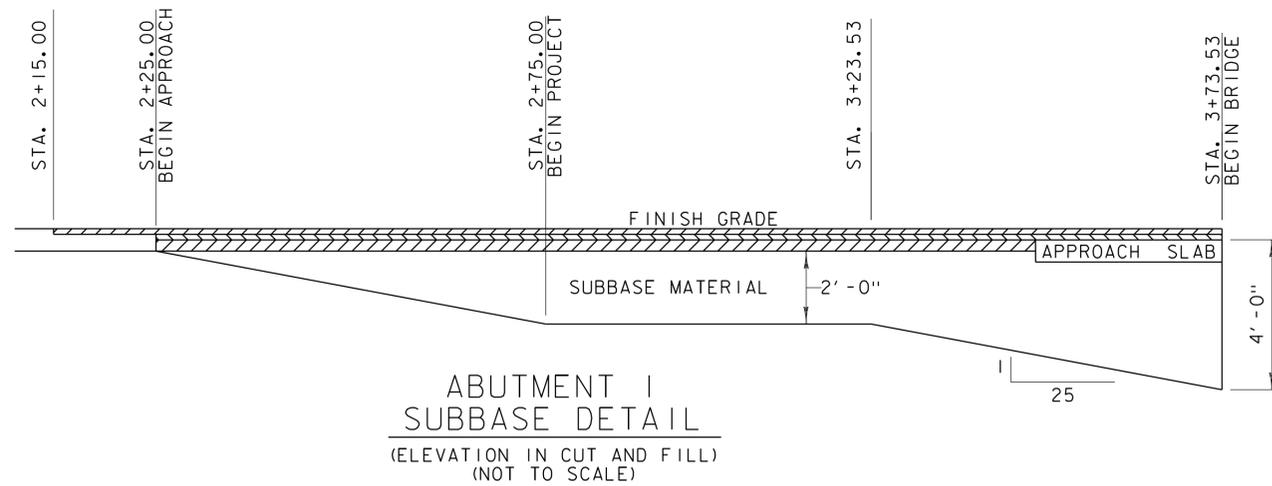


MATERIAL TOLERANCES
(IF USED ON PROJECT)

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

PROJECT NAME:	WOODSTOCK	PLOT DATE:	3/20/2015
PROJECT NUMBER:	BRF 0151(21)	DRAWN BY:	L. BUXTON
FILE NAME:	z10c426+yp.dgn	DESIGNED BY:	J. HUNGERFORD
PROJECT LEADER:	G. BOGUE	CHECKED BY:	J. HUNGERFORD
TYPICAL SECTIONS - TYP I		SHEET	3 OF 33





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	FILE NAME:	z10c426typ.dgn	PLOT DATE:	3/20/2015
PROJECT NUMBER:	BRF 0151(21)	PROJECT LEADER:	G. BOGUE	DRAWN BY:	L. BUXTON
		DESIGNED BY:	J. HUNGERFORD	CHECKED BY:	J. HUNGERFORD
		TYPICAL SECTIONS - TYP 2		SHEET	4 OF 33

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: z10c426frm.dgn PLOT DATE: 3/20/2015  
PROJECT LEADER: G. BOGUE DRAWN BY: VTRANS  
DESIGNED BY: VTRANS CHECKED BY: VTRANS  
CONVENTIONAL SYMBOLGY LEGEND SHEET SHEET 5 OF 33



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

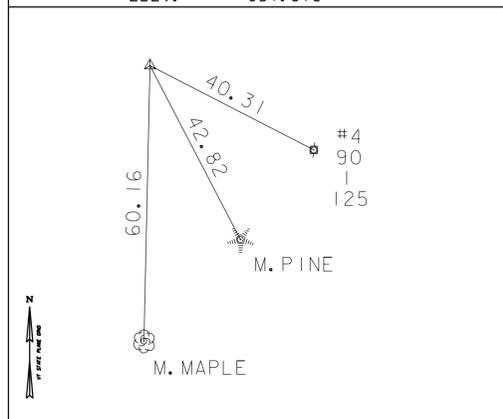
GENERAL LOCATION, WOODSTOCK, VT. TO REACH FROM THE INTERSECTION OF VT ROUTE 106 AND U.S. ROUTE 4 IN WOODSTOCK, GO SOUTH ALONG ROUTE 106 FOR 3.35 MILES (5.39 KM) TO THE MARK ON THE LEFT, SET IN THE TOP OF THE COCRETE ABUTMENT AT THE SOUTHEAST CORNER OF THE BRIDGE OVER THE KEDRON BROOK. THE MARK IS 5.55 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

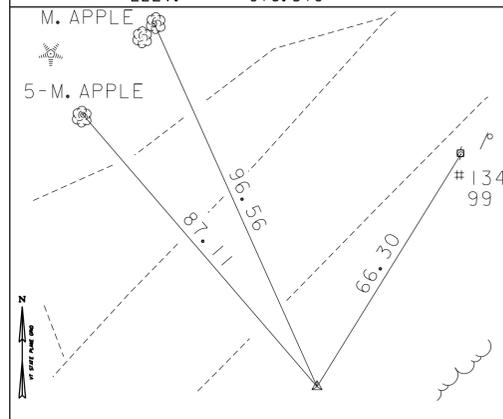
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 ELEV. = 951.878



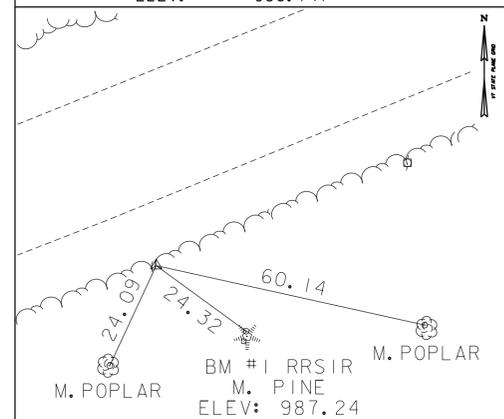
HVCTRL #6

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

NORTH = 388841.126  
 EAST = 1634205.250

NORTH =  
 EAST =  
 ELEV. =

PI

NORTH = 388954.080  
 EAST = 1634483.054

NORTH =  
 EAST =  
 ELEV. =

POE

NORTH = 389170.731  
 EAST = 1634695.984

NORTH =  
 EAST =  
 ELEV. =

NORTH =  
 EAST =  
 ELEV. =

NORTH =  
 EAST =  
 ELEV. =

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

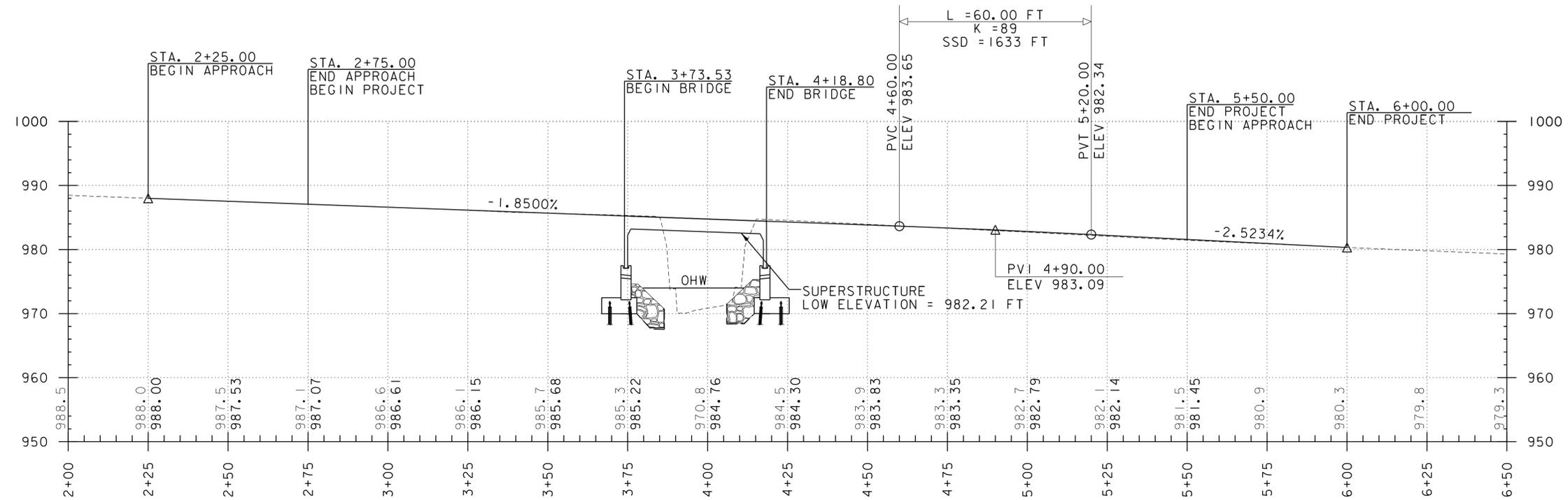


PROJECT NAME: WOODSTOCK  
 PROJECT NUMBER: BRF 0151(21)

FILE NAME: z10c426tie.dgn  
 PROJECT LEADER: G. BOGUE  
 DESIGNED BY: VTRANS  
 SURVEY CONTROL AND TIES

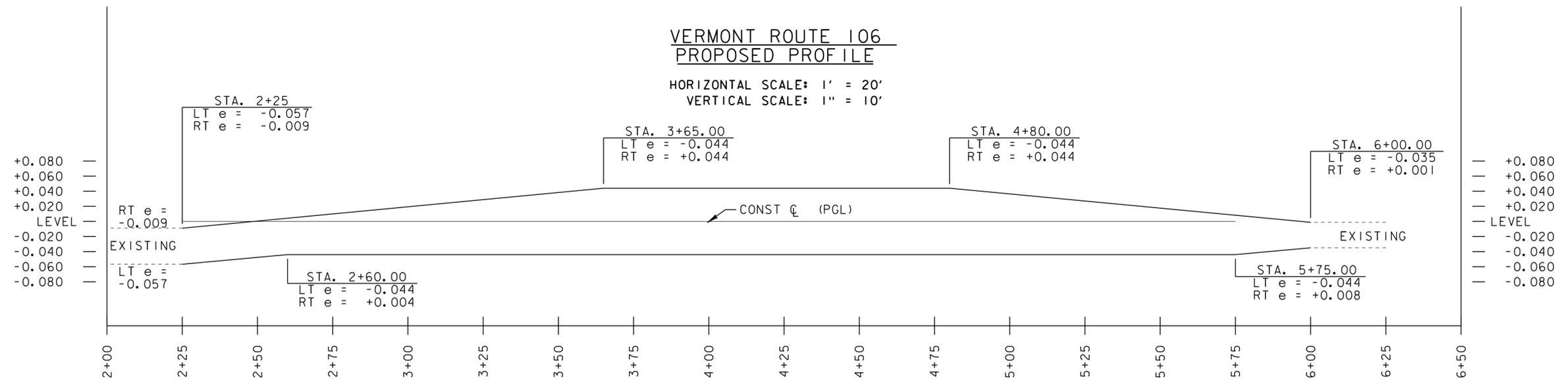
PLOT DATE: 3/20/2015  
 DRAWN BY: VTRANS  
 CHECKED BY: VTRANS  
 SHEET 6 OF 33





**VERMONT ROUTE 106  
PROPOSED PROFILE**

HORIZONTAL SCALE: 1' = 20'  
VERTICAL SCALE: 1" = 10'



**VERMONT ROUTE 106  
BANKING DIAGRAM**

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

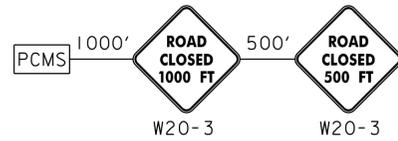
PROJECT NAME: WOODSTOCK  
PROJECT NUMBER: BRF 0151(21)

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

PLOT DATE: 3/20/2015  
DRAWN BY: E. ALLING  
CHECKED BY: I. MAYNARD  
SHEET 8 OF 33



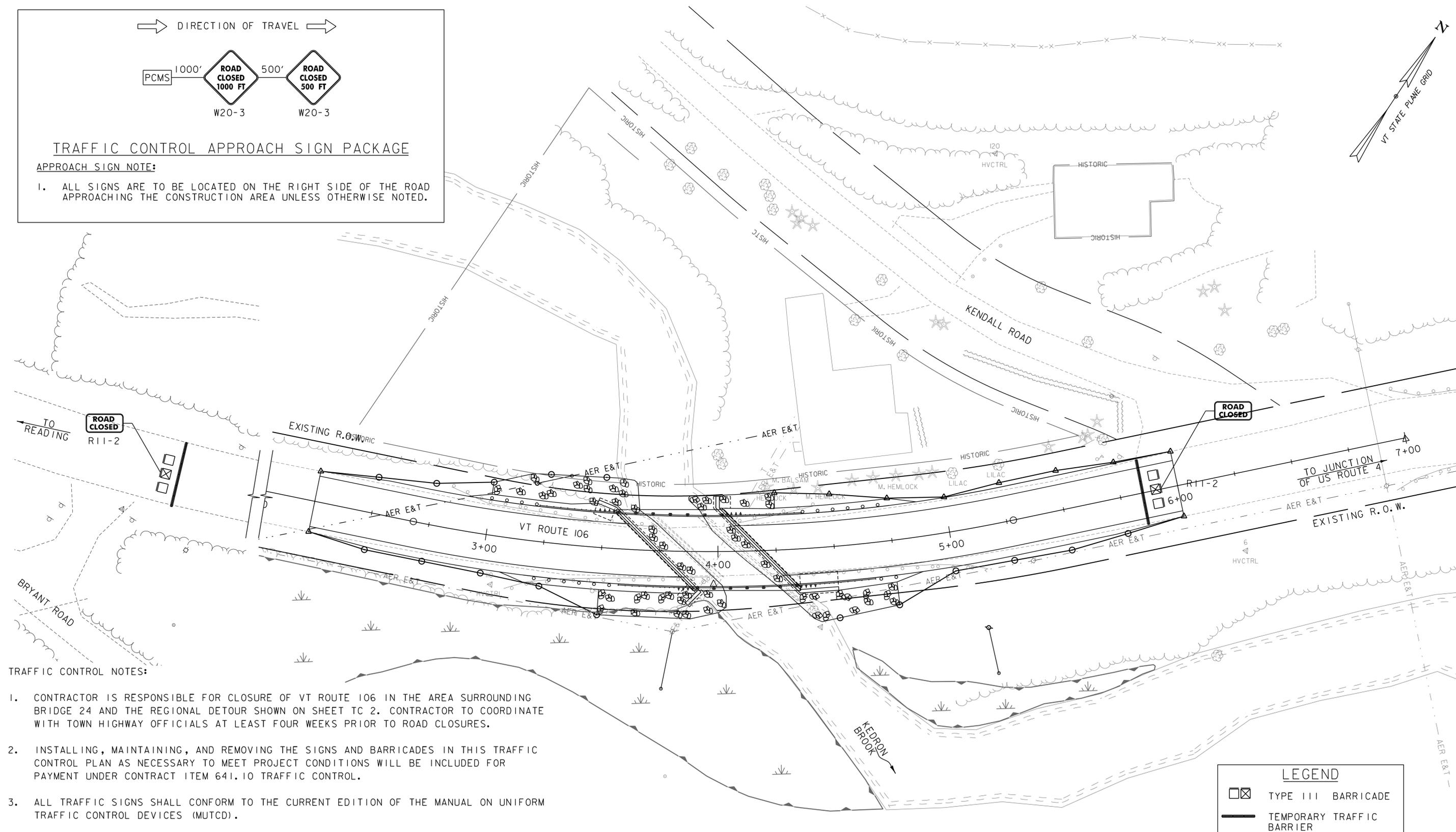
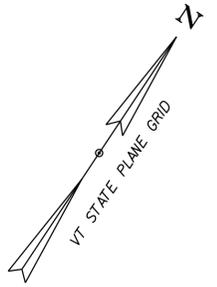
→ DIRECTION OF TRAVEL →



**TRAFFIC CONTROL APPROACH SIGN PACKAGE**

**APPROACH SIGN NOTE:**

- ALL SIGNS ARE TO BE LOCATED ON THE RIGHT SIDE OF THE ROAD APPROACHING THE CONSTRUCTION AREA UNLESS OTHERWISE NOTED.



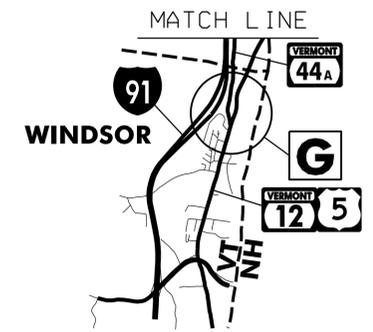
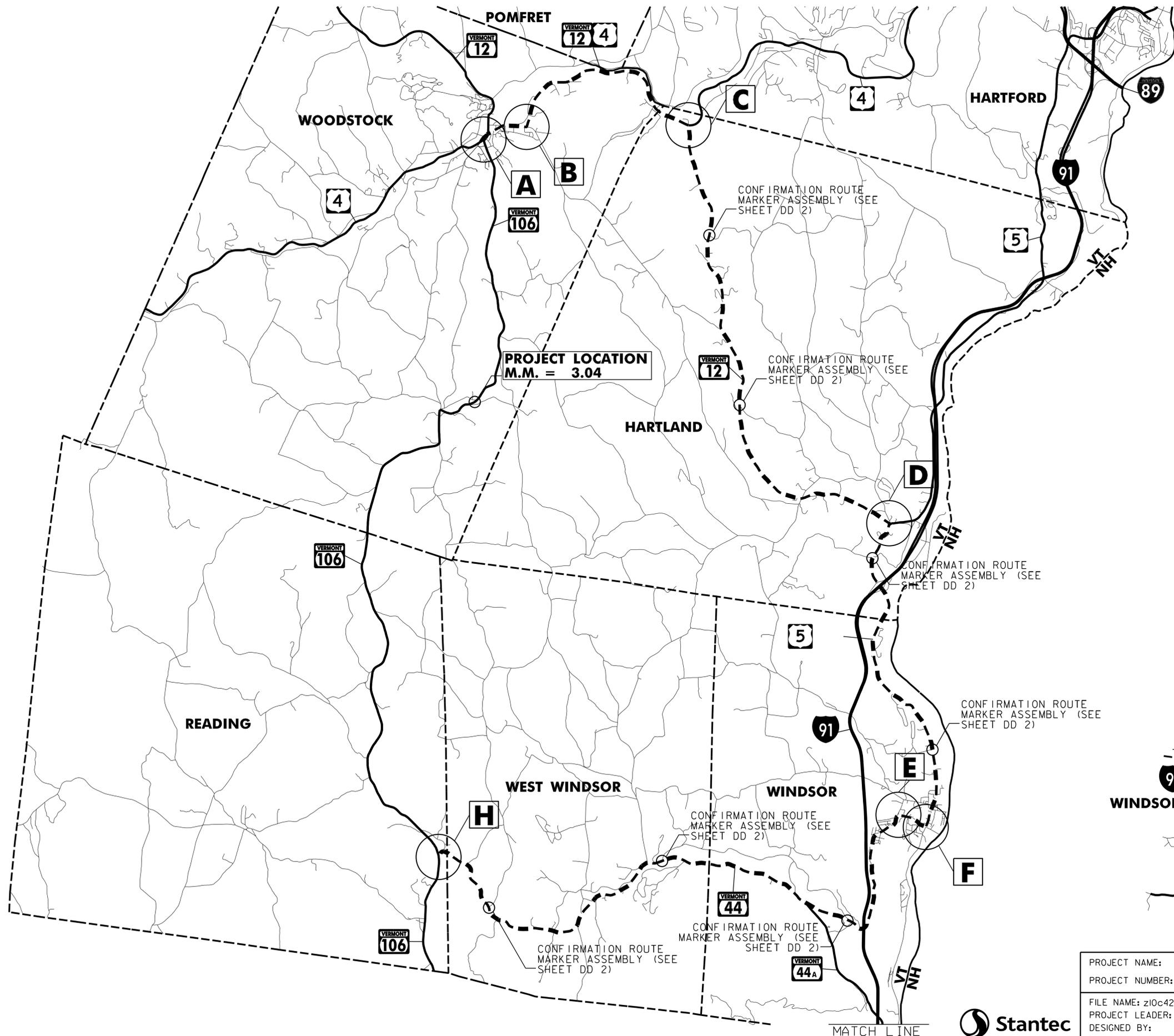
**TRAFFIC CONTROL NOTES:**

- CONTRACTOR IS RESPONSIBLE FOR CLOSURE OF VT ROUTE 106 IN THE AREA SURROUNDING BRIDGE 24 AND THE REGIONAL DETOUR SHOWN ON SHEET TC 2. CONTRACTOR TO COORDINATE WITH TOWN HIGHWAY OFFICIALS AT LEAST FOUR WEEKS PRIOR TO ROAD CLOSURES.
- INSTALLING, MAINTAINING, AND REMOVING THE SIGNS AND BARRICADES IN THIS TRAFFIC CONTROL PLAN AS NECESSARY TO MEET PROJECT CONDITIONS WILL BE INCLUDED FOR PAYMENT UNDER CONTRACT ITEM 641.10 TRAFFIC CONTROL.
- ALL TRAFFIC SIGNS SHALL CONFORM TO THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- "ROAD CLOSED" SIGNS SHALL BE MOUNTED AND MAINTAINED ON LIGHTED TYPE III BARRICADES.
- 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.
- TEMPORARY TRAFFIC BARRIER SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 621 AND WILL BE PAID UNDER CONTRACT ITEM 641.10.



PROJECT NAME:	WOODSTOCK	PLOT DATE:	3/20/2015
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 1	SHEET 9 OF 33
DESIGNED BY:	J. HUNGERFORD		



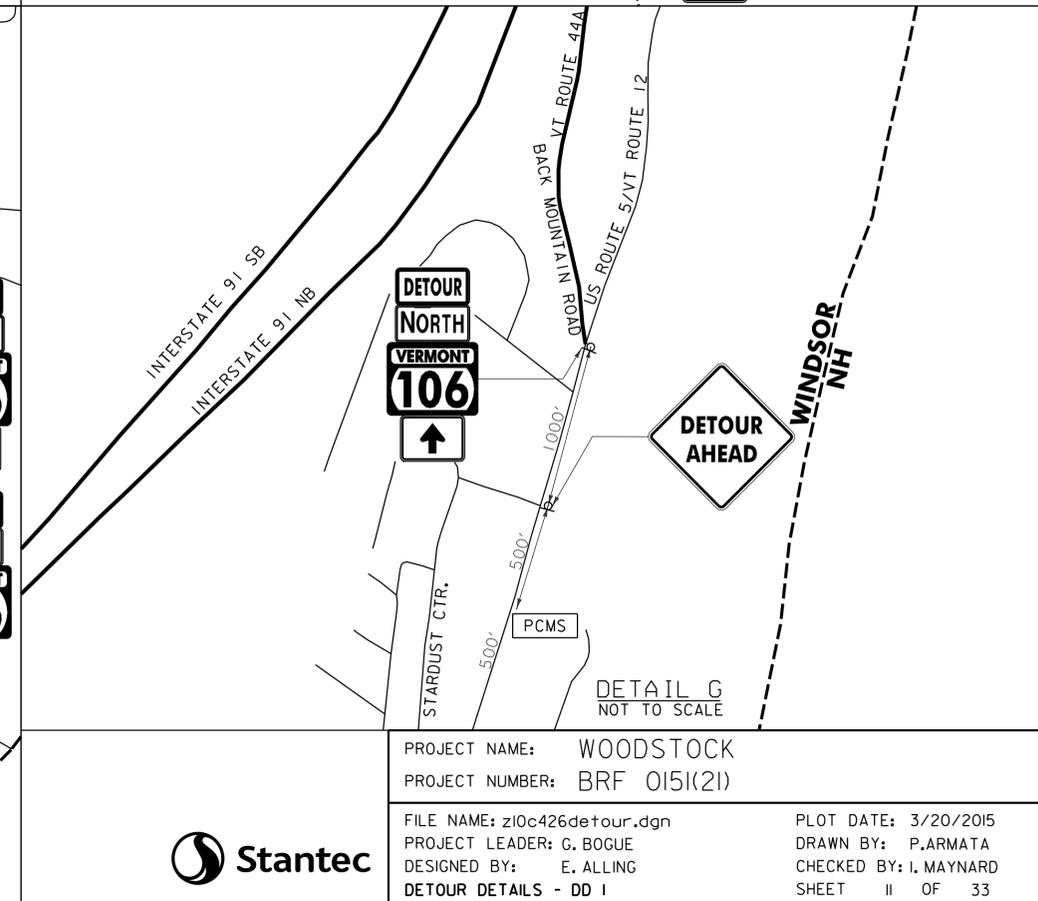
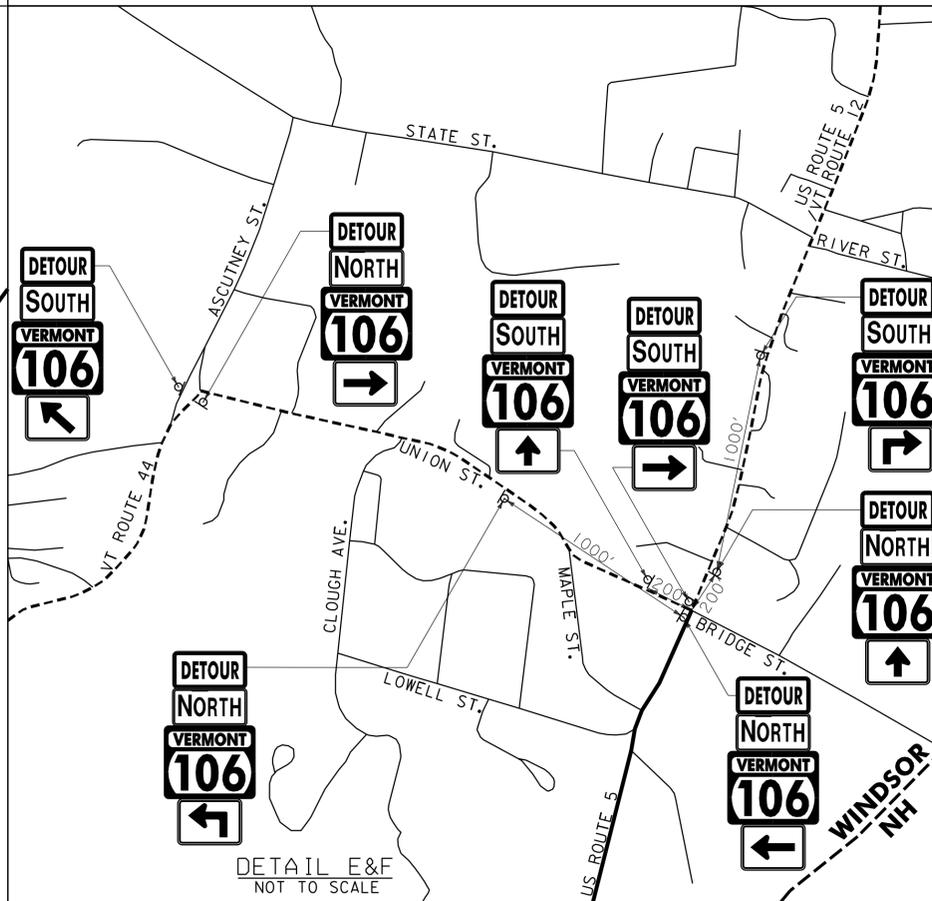
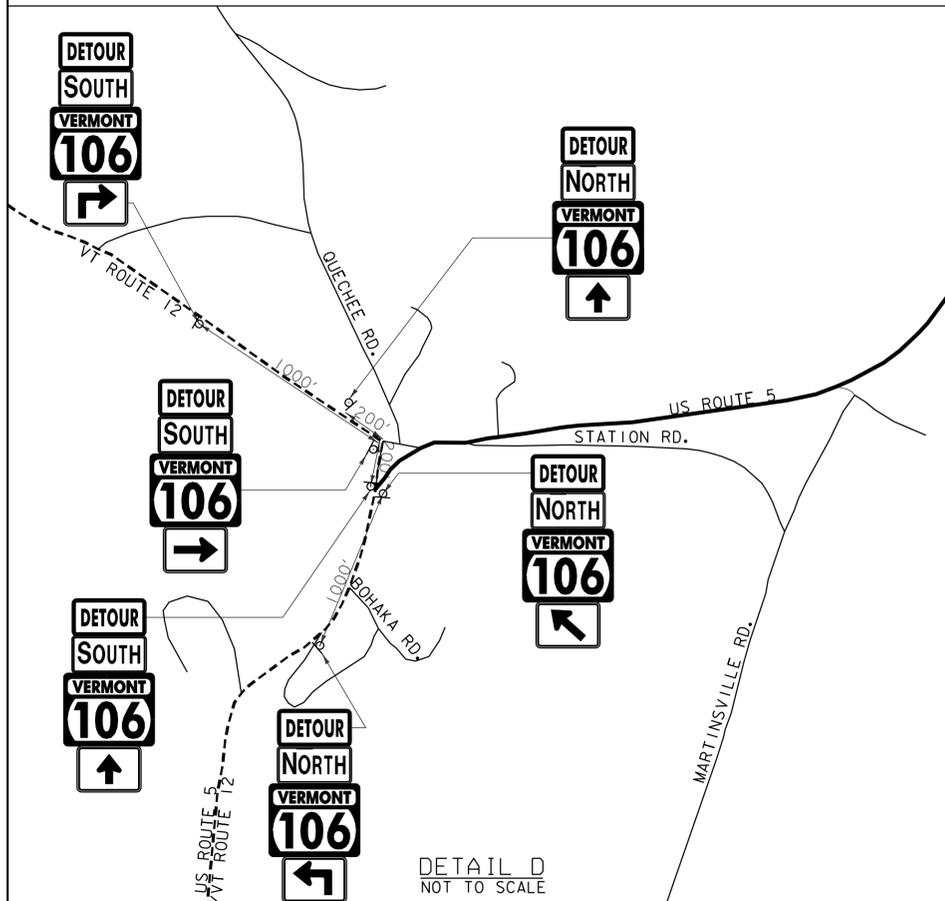
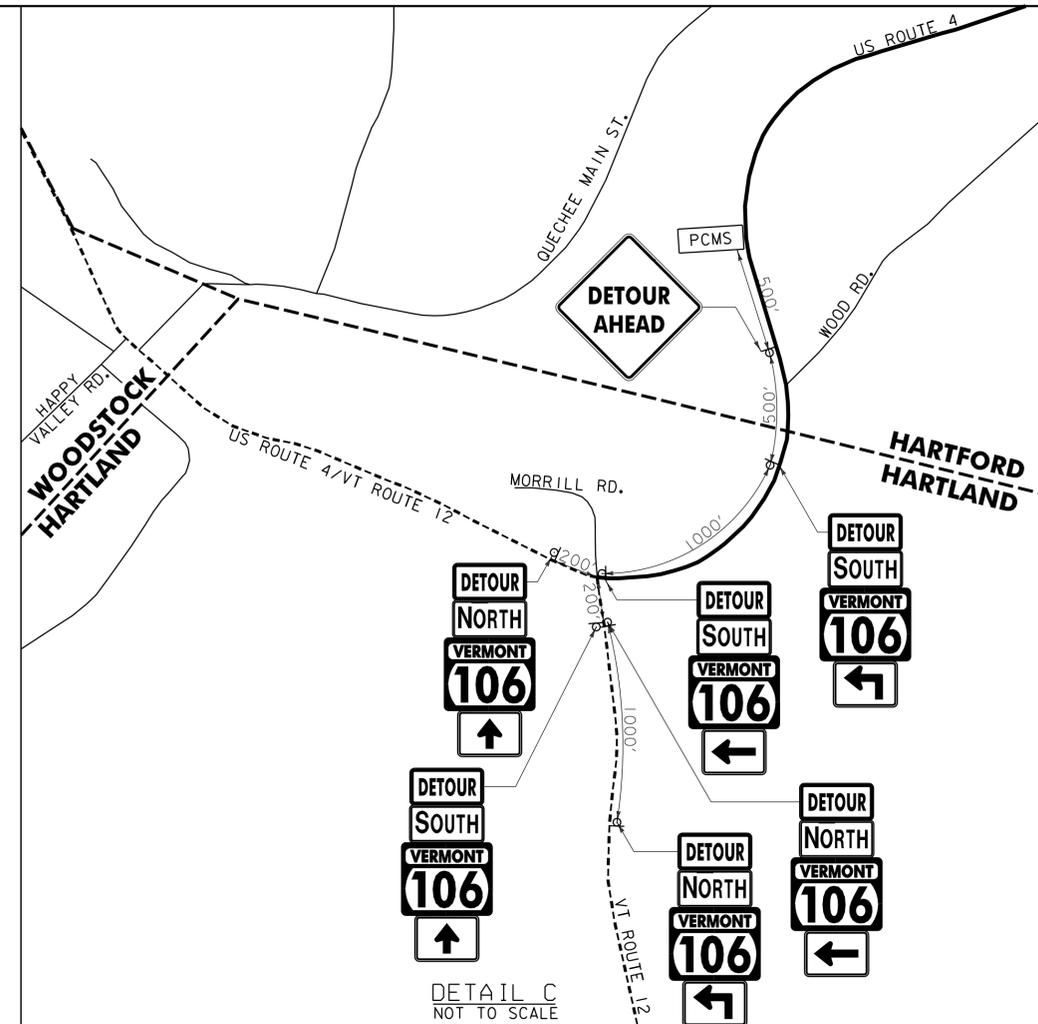
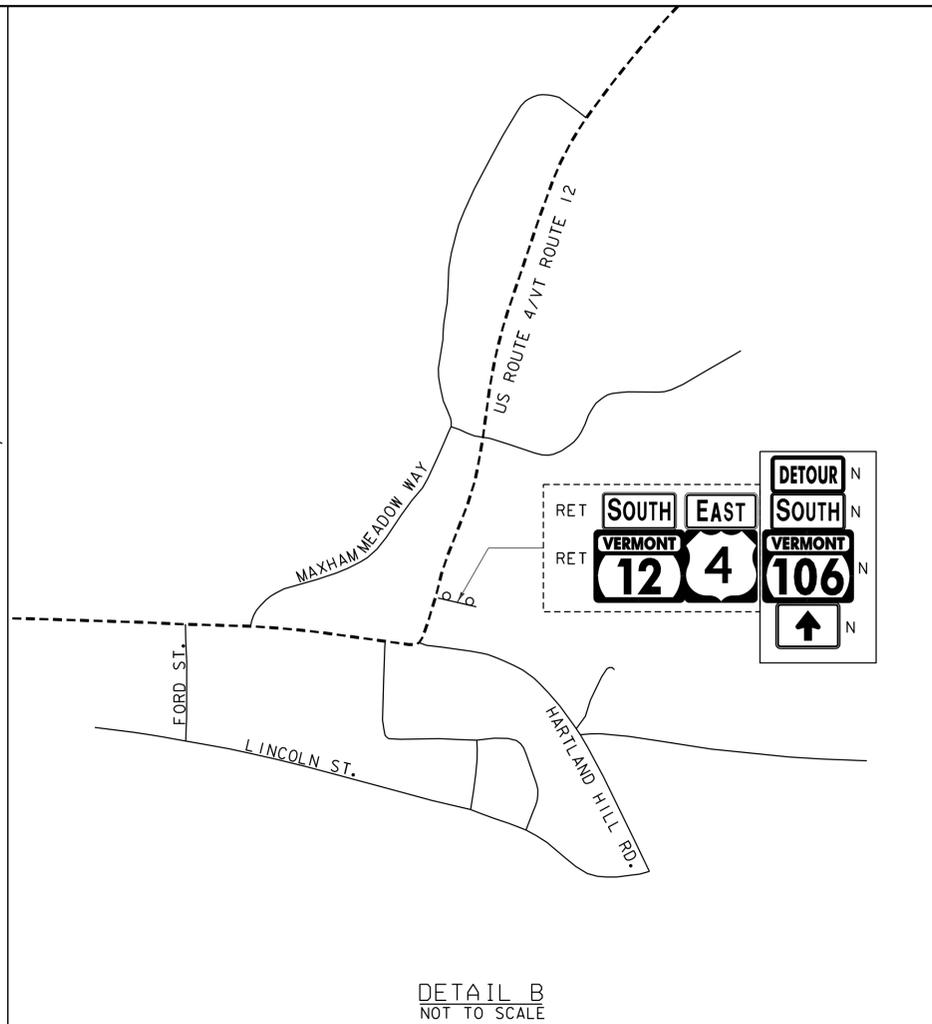
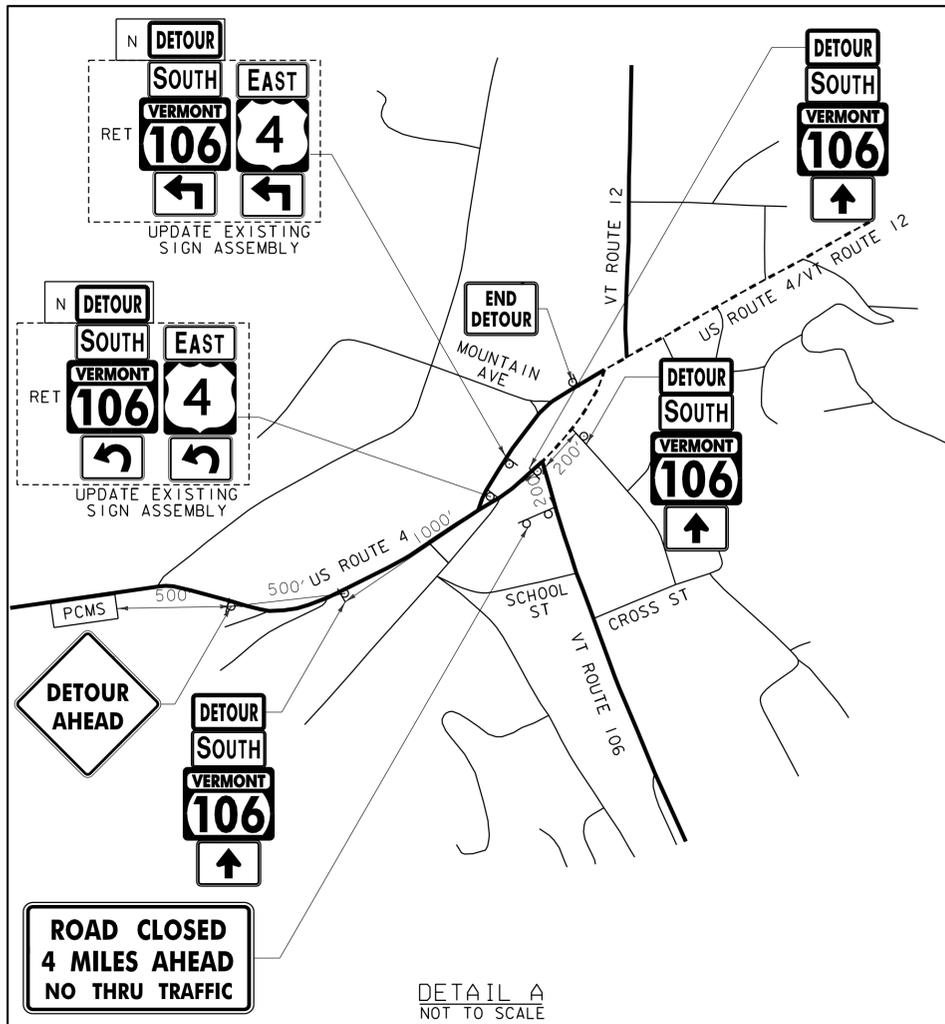


PROJECT NAME: WOODSTOCK  
 PROJECT NUMBER: BRF 0151(21)

FILE NAME: z10c426detour.dgn  
 PROJECT LEADER: G. BOGUE  
 DESIGNED BY: E. ALLING  
 DETOUR PLAN - DP 1

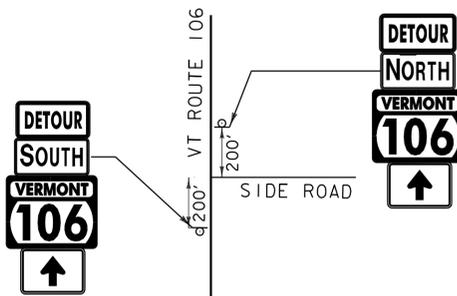
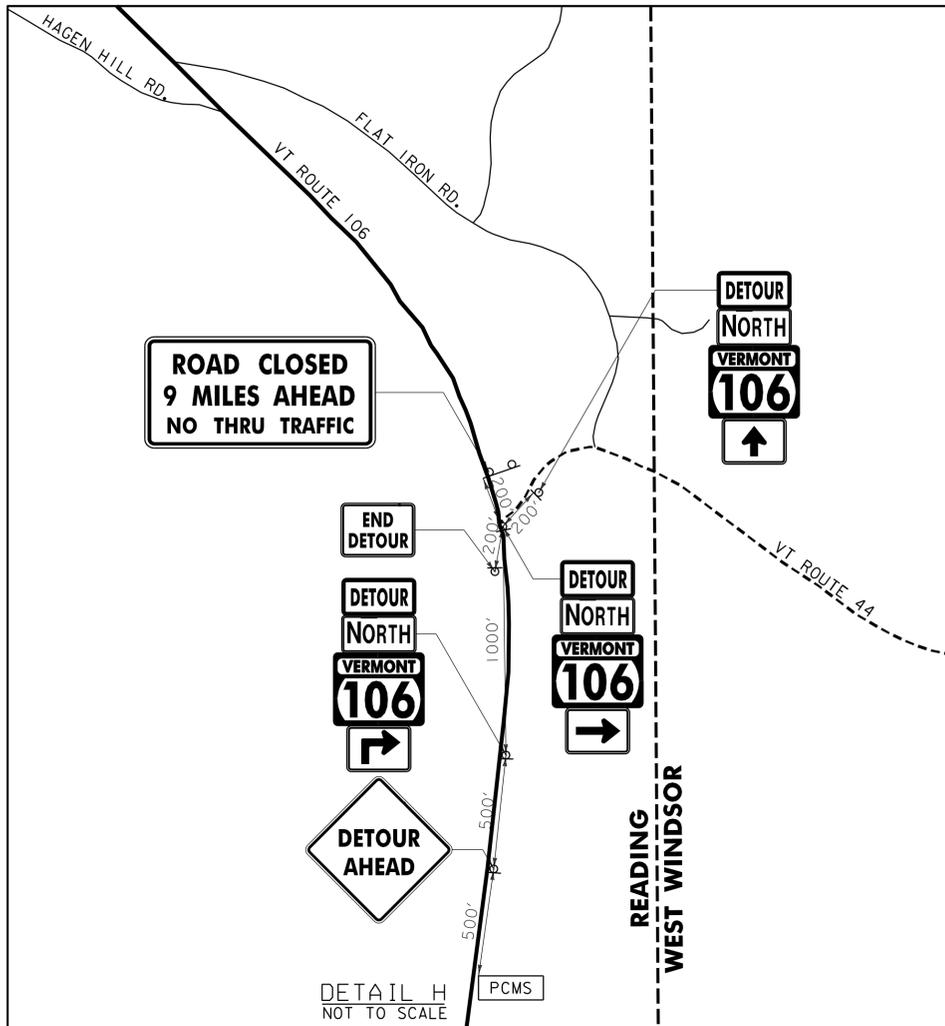
PLOT DATE: 3/20/2015  
 DRAWN BY: E. ALLING  
 CHECKED BY: I. MAYNARD  
 SHEET 10 OF 33





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: 3/20/2015  
 DRAWN BY: P. ARMATA  
 CHECKED BY: I. MAYNARD  
 SHEET 11 OF 33



CONFIRMATION ROUTE MARKER ASSEMBLY  
NOT TO SCALE

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

NOTES:

1. ALL COSTS OF INSTALLING, MAINTAINING, AND REMOVING THE SIGNS AND BARRICADES IN THIS TRAFFIC CONTROL PLAN AS NECESSARY TO MEET PROJECT CONDITIONS WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 64110 TRAFFIC CONTROL.
2. ALL TRAFFIC SIGNS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) 2009 EDITION.
3. "ROAD CLOSED" SIGNS SHALL BE MOUNTED AND MAINTAINED ON LIGHTED TYPE III BARRICADES.
4. 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.
5. WHEN POSSIBLE LOCATE THE "ROAD CLOSED 1000 FT" SIGN NEAR A LOCATION WHERE DRIVERS CAN TURN AROUND.
6. THE M1-6A, THE M3-1 AND THE M3-3 SIGNS SHALL BECOME THE PROPERTY OF THE STATE AFTER THEY ARE REMOVED FROM THE DETOUR. THE CONTRACTOR SHALL DELIVER THE SIGNS TO THE TOWN AT THE TOWN GARAGE.
7. WHERE POSSIBLE LOCATE DETOUR ROUTE MARKER ASSEMBLIES ADJACENT TO EXISTING ROUTE MARKER ASSEMBLIES.
8. SIGN SPACING IS FOR REFERENCE ONLY. FIELD ADJUSTMENTS WILL LIKELY BE NECESSARY, AS APPROVED BY THE ENGINEER.
9. EXISTING SIGNS IN CONFLICT WITH THIS DETOUR PLAN SHOULD BE COVERED WHEN NECESSARY, AS APPROVED BY THE ENGINEER.
10. ALL SIGNS SHOWN ON INTERSECTION DETAILS ARE NEW TEMPORARY SIGNS EXCEPT WHERE SHOWN AS "RET" (RETAIN).

ADDITIONAL "ROAD CLOSED, XX MILES AHEAD" SIGNS TO BE ADDED AT EACH MAJOR SIDE ROAD INTERSECTION ALONG VT 106 BETWEEN U.S. 4 AND VT 44 FOR FINAL PLANS SUBMITTAL.

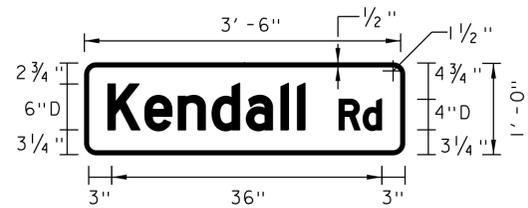
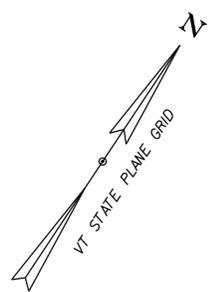
PROJECT NAME: WOODSTOCK  
PROJECT NUMBER: BRF 0151(21)

FILE NAME: z10c426detour.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: E. ALLING  
DETOUR DETAILS - DD 2

PLOT DATE: 3/20/2015  
DRAWN BY: P. ARMATA  
CHECKED BY: I. MAYNARD  
SHEET 12 OF 33







LOCATION: STA. 5+78, LT.

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

MATERIAL: 0.100" THICKNESS

ITEM 646.404 - DURABLE 4 INCH  
WHITE LINE, POLYUREA

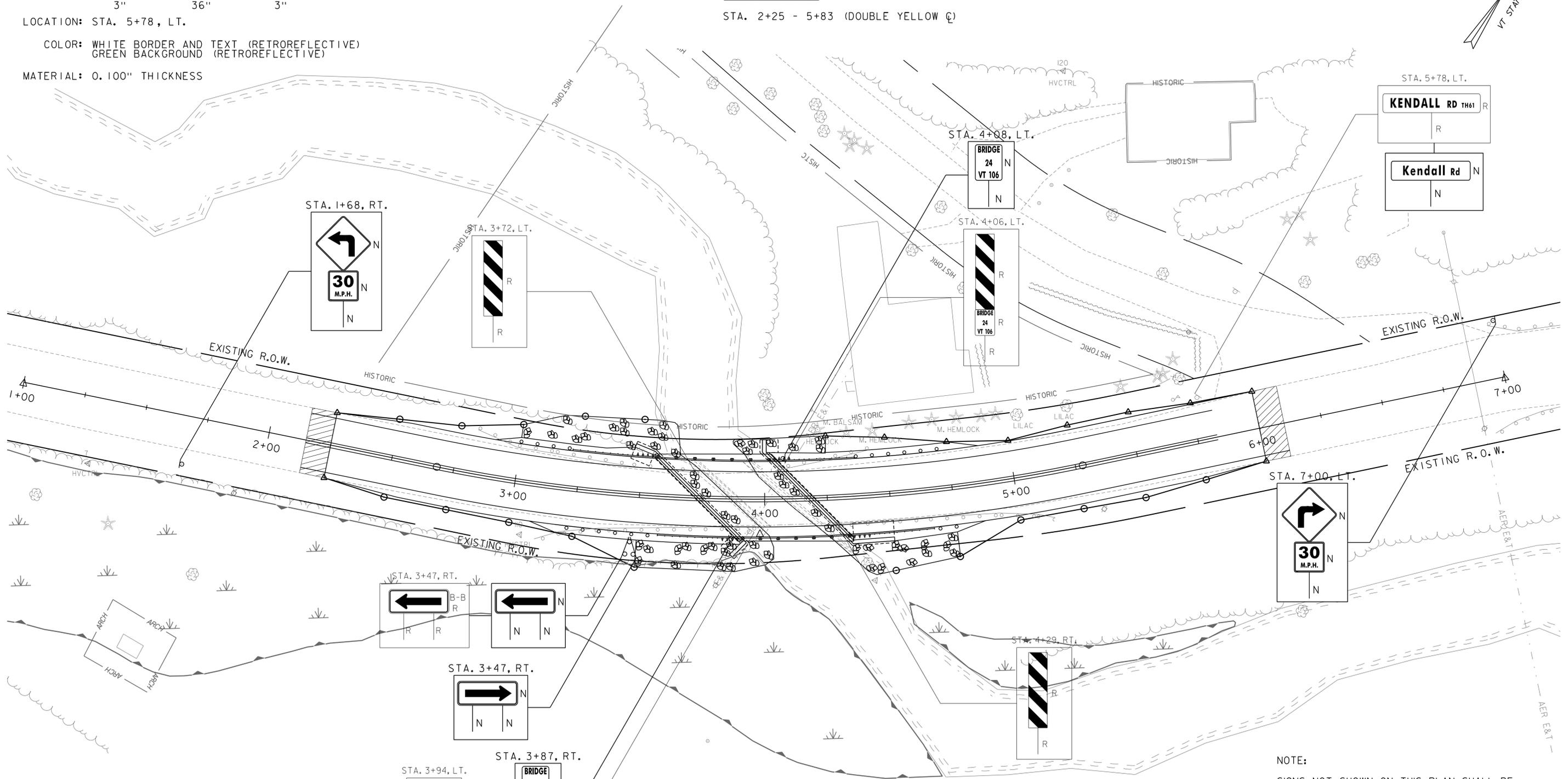
STA. 2+25 - 5+83, LT.  
STA. 2+25 - 6+00, RT.

ITEM 646.414 - DURABLE 4 INCH YELLOW  
LINE, POLYUREA

STA. 2+25 - 5+83 (DOUBLE YELLOW C)

ITEM 675.50 - REMOVING SIGNS

AS SHOWN - 9



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



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:	3/20/2015
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	14 OF 33





**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

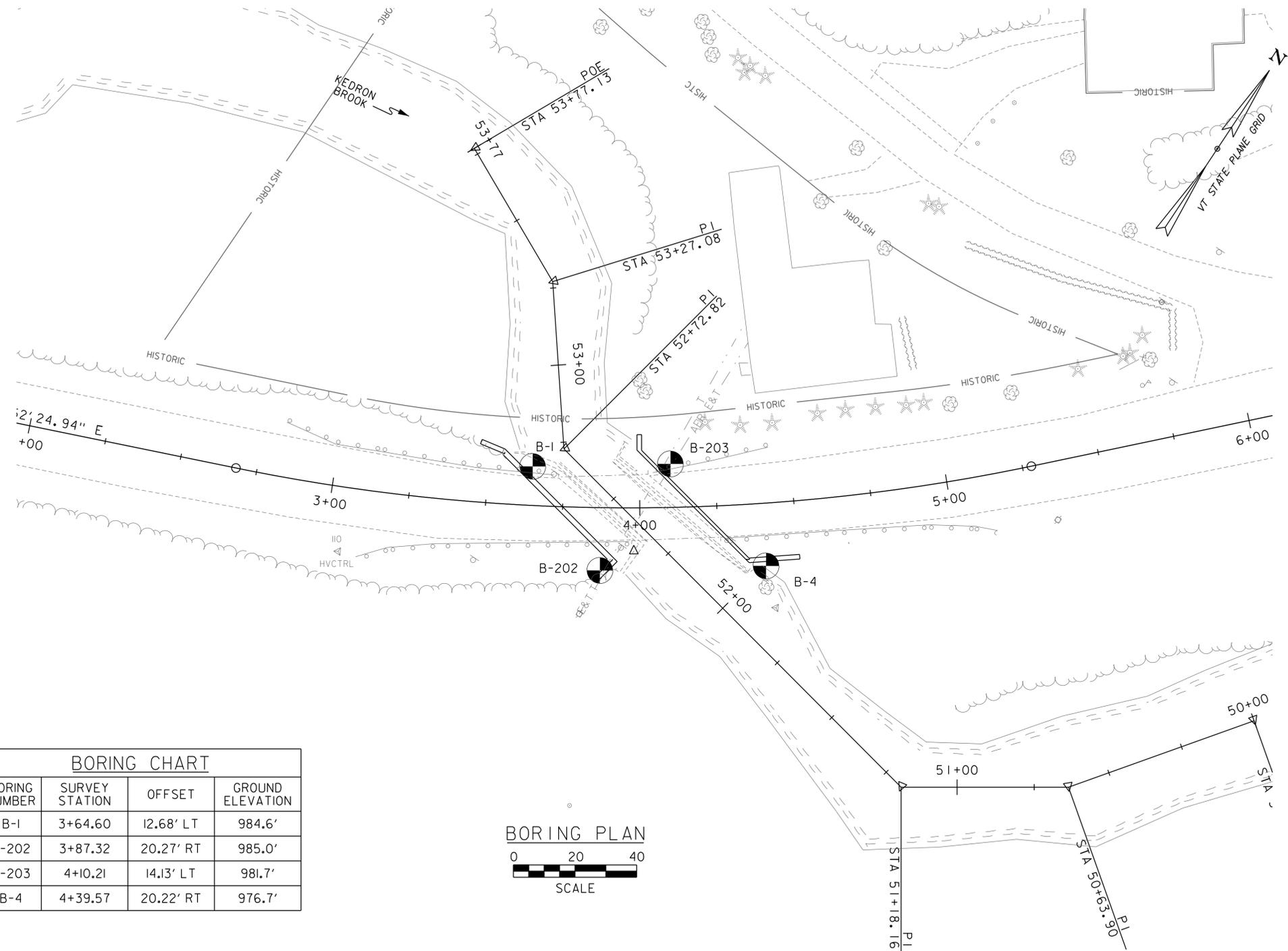
**COMMONLY USED SYMBOLS**

- ▼ 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)

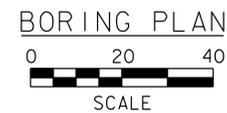
COLOR			
blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gry	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		

**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 > 0.0787" (#10 sieve).
- SAND** - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).
- SILT** - Soil < 0.0029" (#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'



**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:**



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: 3/20/2015  
 DRAWN BY: L. BUXTON  
 CHECKED BY: J. HUNGERFORD  
 SHEET 16 OF 33



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.					

BOTTOM OF FOOTING  
APPROX. EL. 970.0

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

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	43.3	24.2	32.5
		A-1-b, SiSaGr, gry, Moist, Rec. = .4 ft	R	10.9	44.8	31.0	24.2
		Top of Bedrock @ 37.0 ft					
		Gray, Quartz-biotite schist, Competent, ROD 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	
40		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					
50		DRILLER'S NOTES: No Groundwater Depth. Hole coved in @ 11.8 ft					

BOTTOM OF FOOTING  
APPROX. 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 I

PLOT DATE: 3/20/2015  
DRAWN BY: L. BUXTON  
CHECKED BY: J. HUNGERFORD  
SHEET 17 OF 33

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, CrSaSi 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 13
		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
		Gray, Phyllitic quartz-biotite schist, Competent., Moderately hard, Unweathered, BXMDC, 45.4 ft - 49.4 ft, Rec. = 3 ft	3	73	69	20	12 11 15 22
50		Hole stopped @ 49.4 ft					
		DRILLER'S NOTES: Hole was moved 11.5 ft left, because of power pole obstruction. No Groundwater Depth. Hole caved in.					

BOTTOM OF FOOTING  
APPROX. EL. 970.0

LOC. OF BORING: WOODSTOCK BR0151(8)S.GPJ, VT, AUT.GDT, 2/16/05

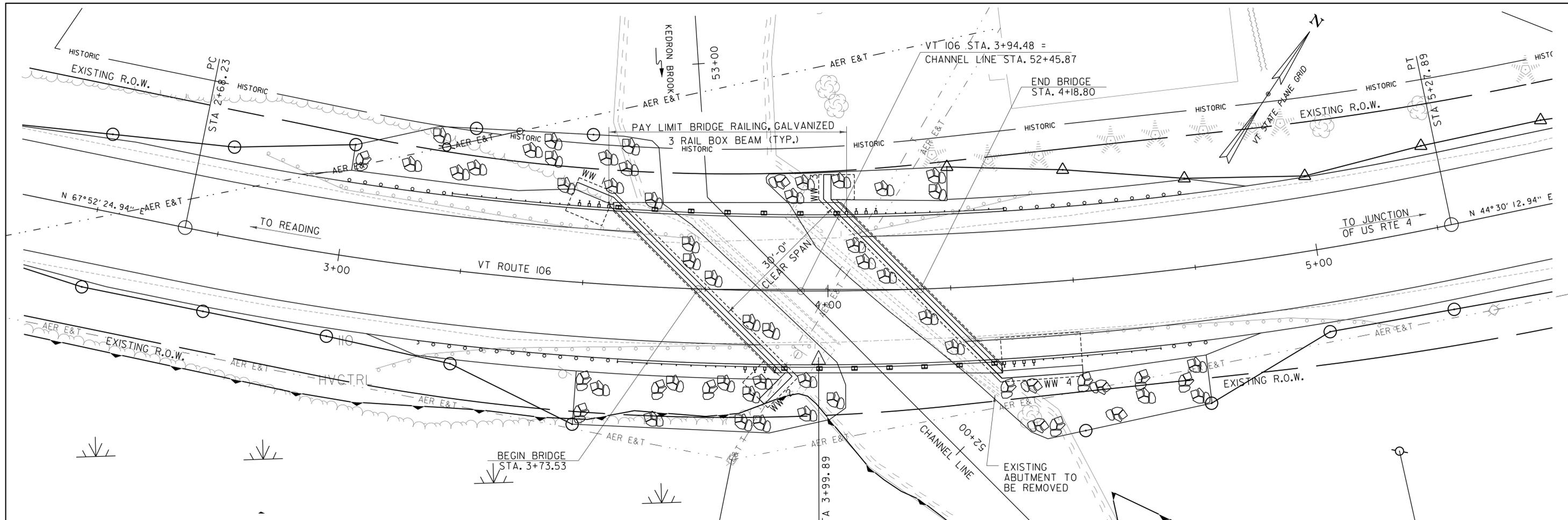
STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION			BORING NUMBER: B-4 SHEET 1 of 1 DATE STARTED: 7/16/86 DATE COMPLETED:				
PROJECT NAME: WOODSTOCK SITE NAME: BR 24 STATION: 4+39.57 OFFSET: 20.22' RT		PROJECT NUMBER: BRS 0151(8)S SITE NUMBER: VT 106 GROUND 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 (%)
			RUN	REC (%)	ROD (%)	Dip (deg)	Drill Rate (min/1 ft)
		A-2-4, SiGr HP, gry, Moist	R	11.1			
		13.5 ft - 14.8 ft, BXDC, Cleaned out casing					
10		A-4, SaSi HP, gry, Moist, Hit Boulder	R	10.2			
		AXMDC, HP & Boulder, 12.5 ft - 17.4 ft					
		28.3 ft - 29.5 ft, BXDC, Cleaned out casing					
20		A-4, SaSi HP, gry, Moist	R	5.7			
		BX, Boulder, 20.3 ft - 21.3 ft					
		AXMDC, HP & Boulder, 21.3 ft - 26.2 ft					
		Hole stopped @ 26.2 ft					
30		DRILLER'S NOTES: Hole stopped in HP & Boulders.					

BOTTOM OF FOOTING  
APPROX. EL. 970.0

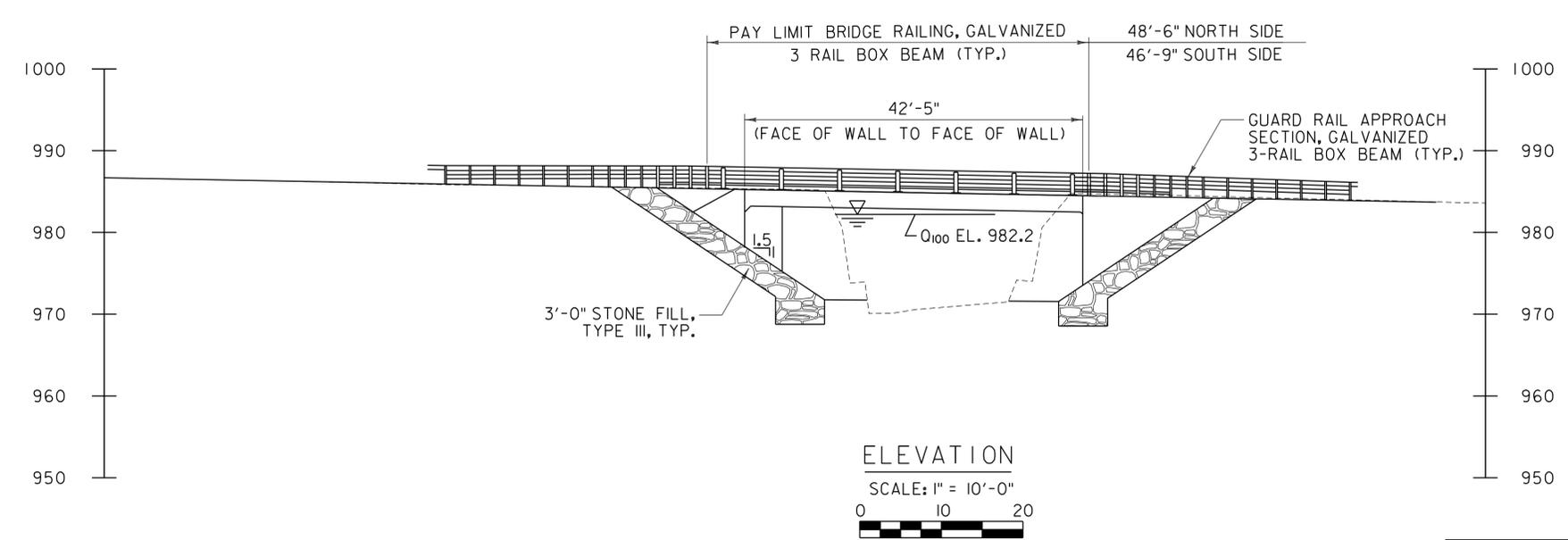
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PROJECT NAME: WOODSTOCK	PLOT DATE: 3/20/2015
PROJECT NUMBER: BRF 0151(21)	DRAWN BY: L. BUXTON
FILE NAME: z10c426bor_log.dgn	CHECKED BY: J. HUNGERFORD
PROJECT LEADER: G. BOGUE	SHEET 18 OF 33
DESIGNED BY: VTRANS	
BORING LOG 2	





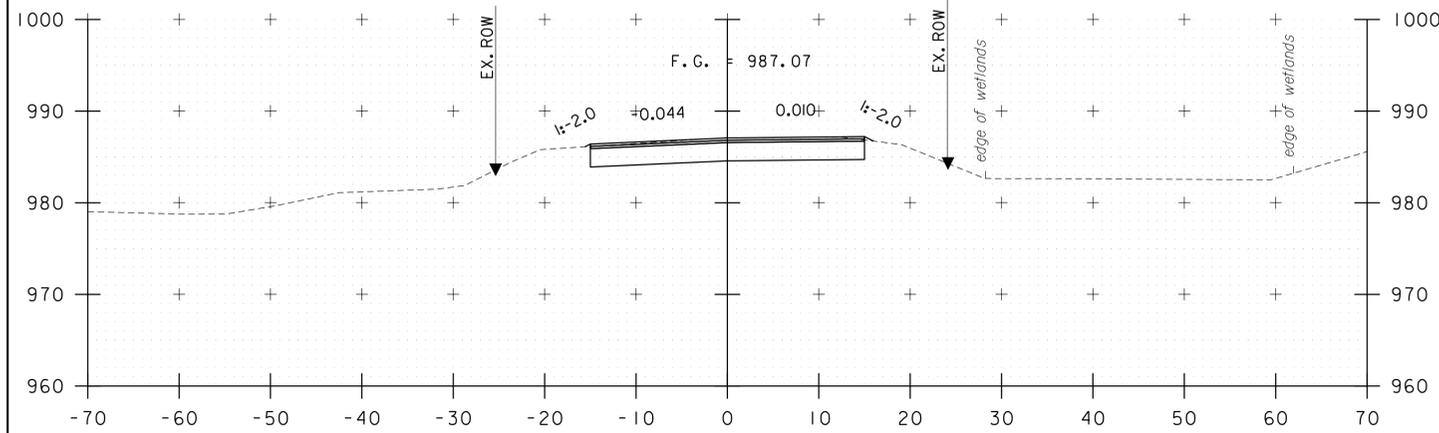
PLAN  
SCALE: 1" = 10'-0"  
0 10 20



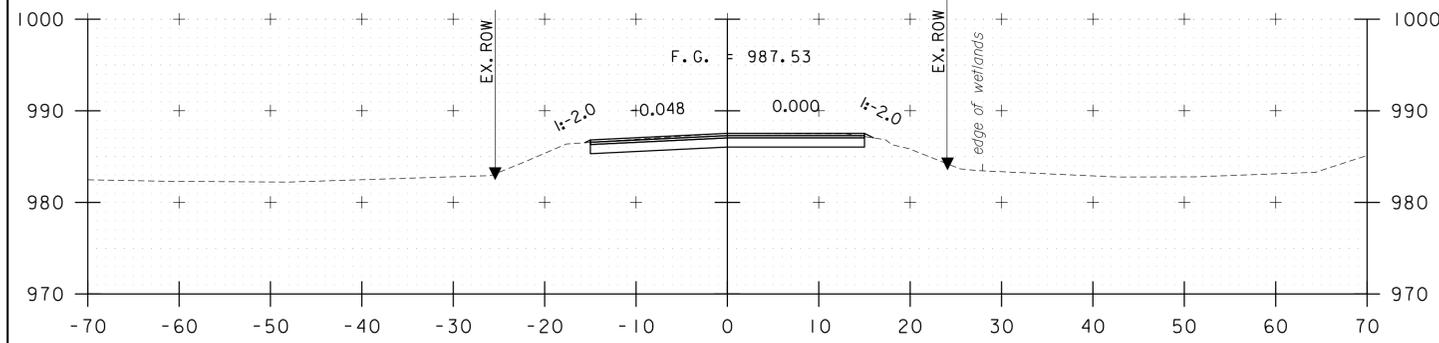
ELEVATION  
SCALE: 1" = 10'-0"  
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PROJECT NAME:	WOODSTOCK	FILE NAME:	z10c426bdr_pe.dgn	PLOT DATE:	3/20/2015
PROJECT NUMBER:	BRF 0151(21)	PROJECT LEADER:	G. BOGUE	DRAWN BY:	L. BUXTON
		DESIGNED BY:	T. KNIGHT	CHECKED BY:	J. HUNGERFORD
		PLAN AND ELEVATION			SHEET 19 OF 33

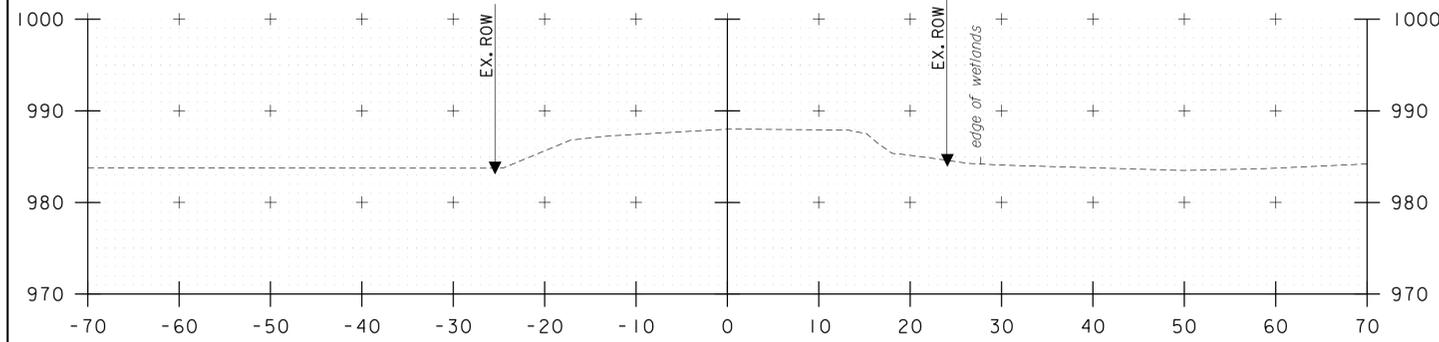




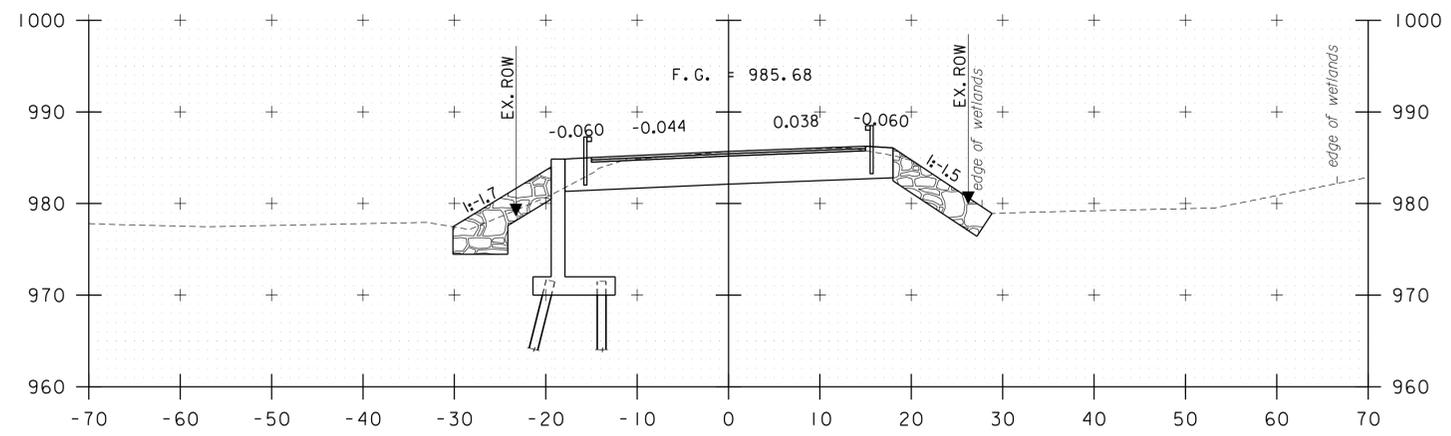
2+75  
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BEGIN PROJECT



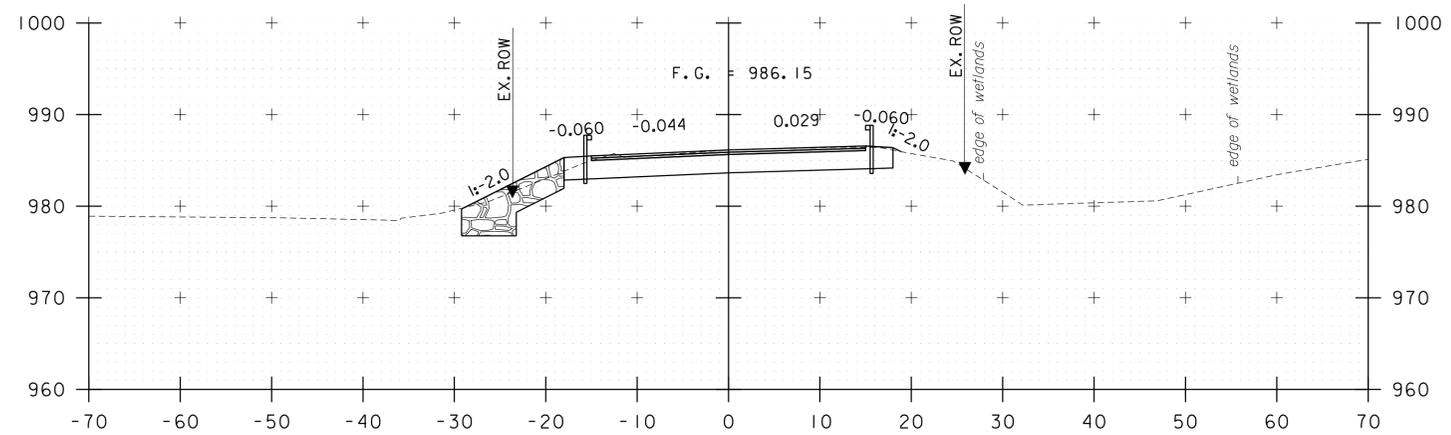
2+50



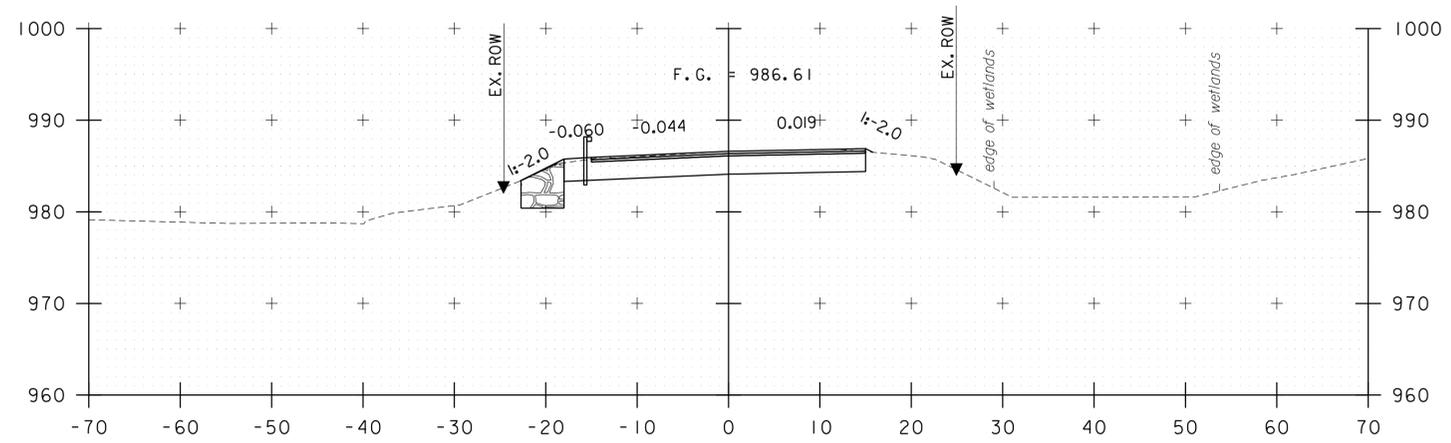
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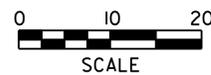
3+50



3+25



3+00



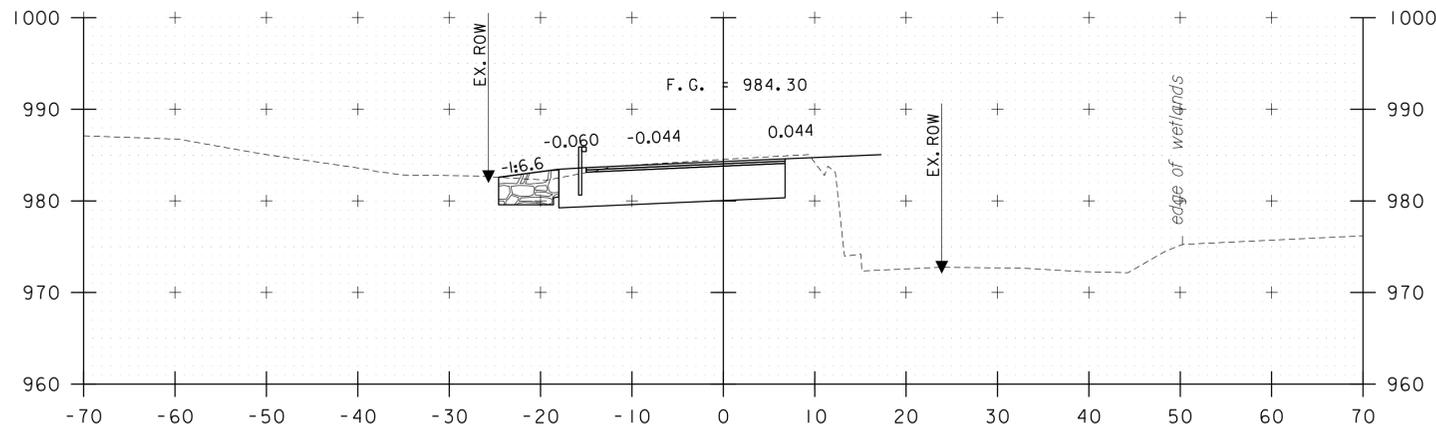
STA. 2+25 TO STA. 3+50



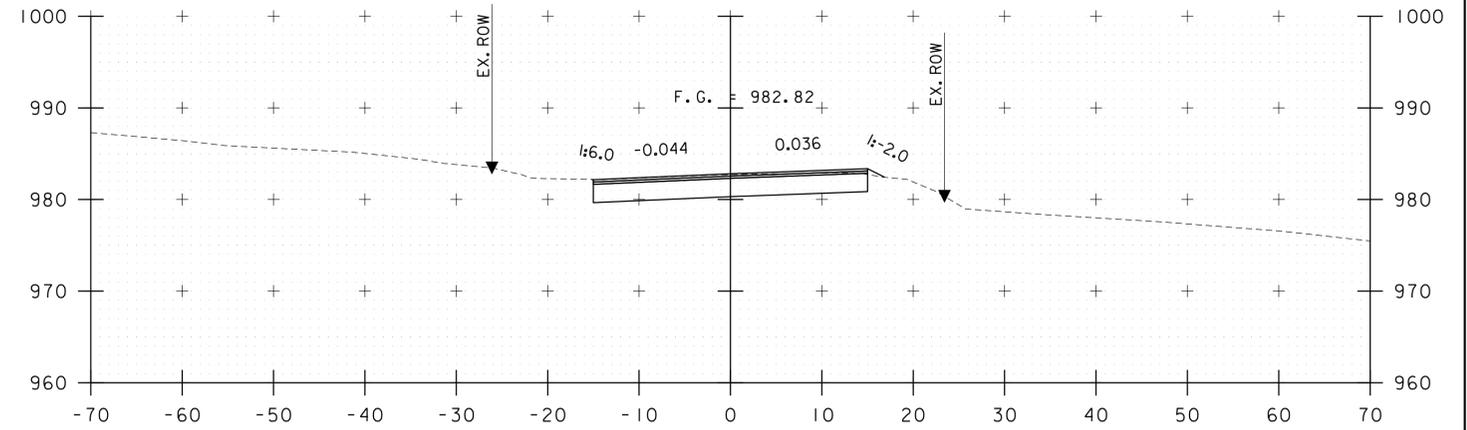
PROJECT NAME: WOODSTOCK  
PROJECT NUMBER: BRF 0151(21)

FILE NAME: z10c426xs.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: E. ALLING  
ROADWAY CROSS SECTIONS - RXS 1

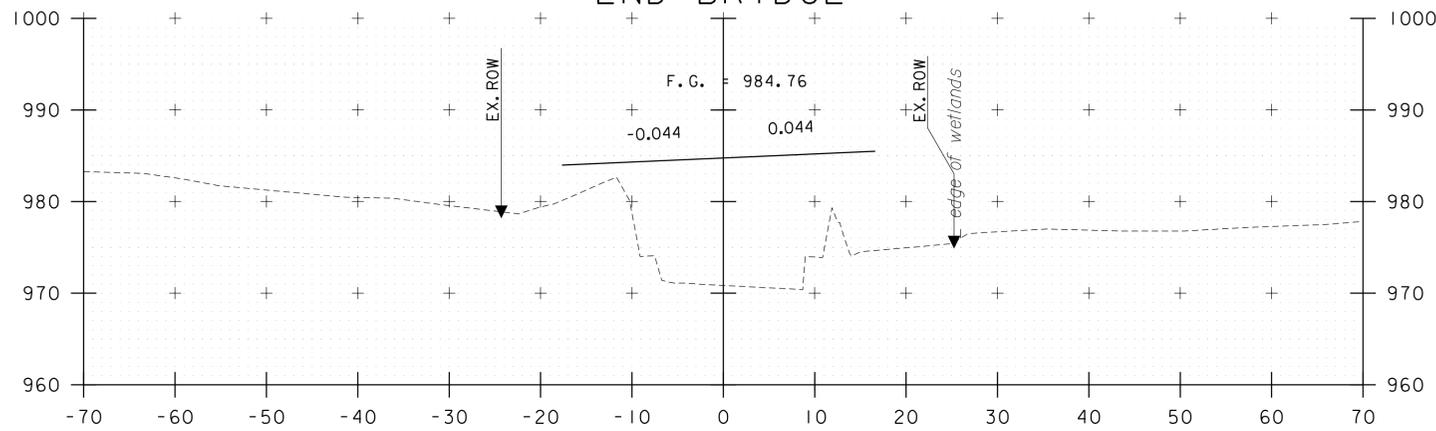
PLOT DATE: 3/20/2015  
DRAWN BY: E. ALLING  
CHECKED BY: I. MAYNARD  
SHEET 20 OF 33



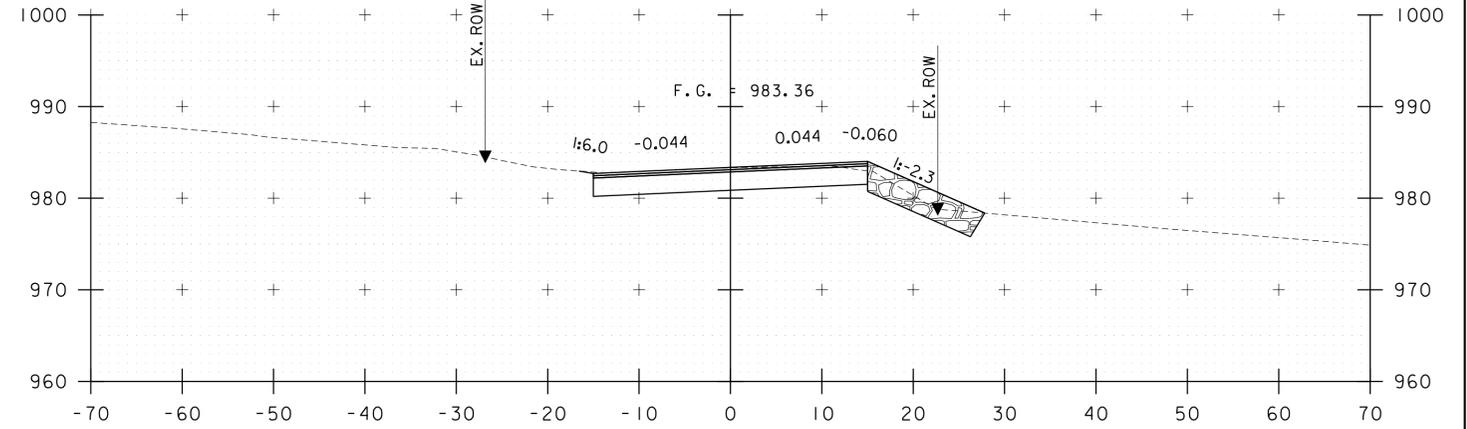
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4+18.80  
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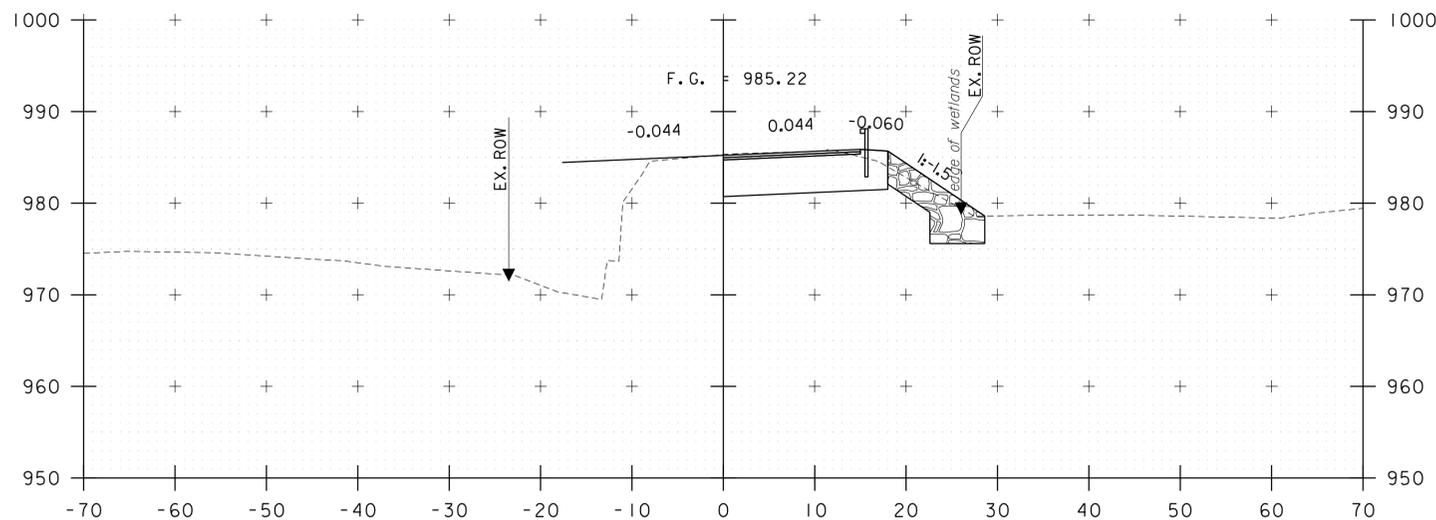
5+00



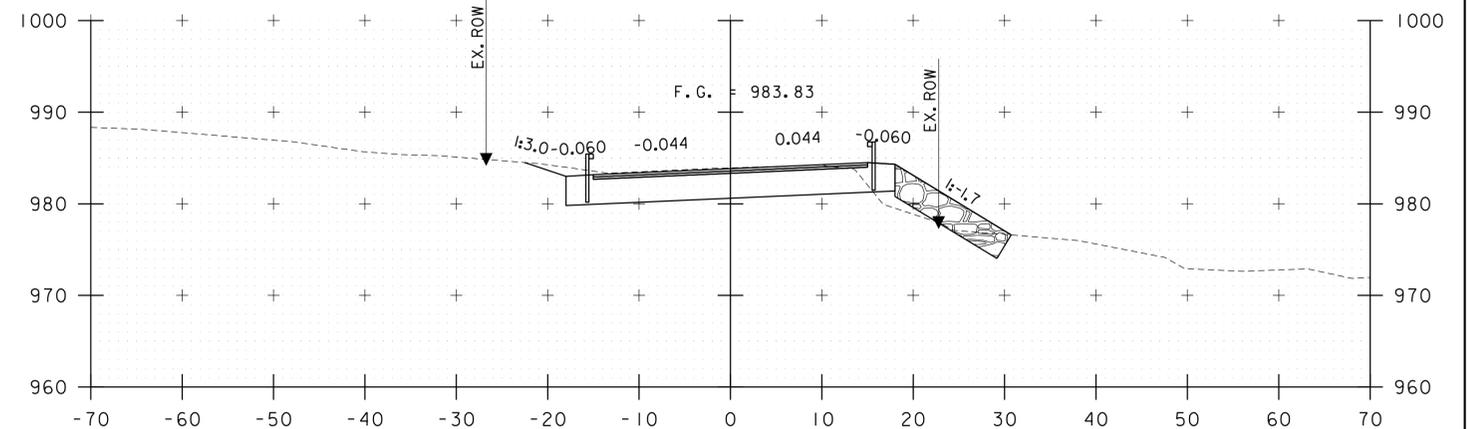
4+00



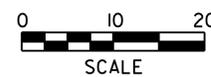
4+75



3+75  
3+73.53  
BEGIN BRIDGE



4+50



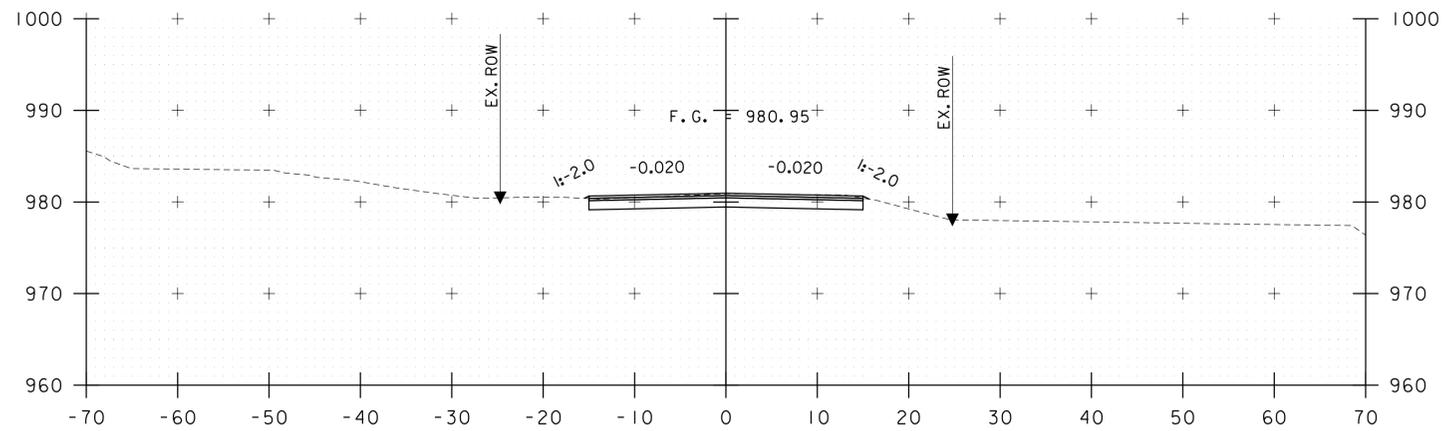
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PROJECT NUMBER: BRF 0151(21)

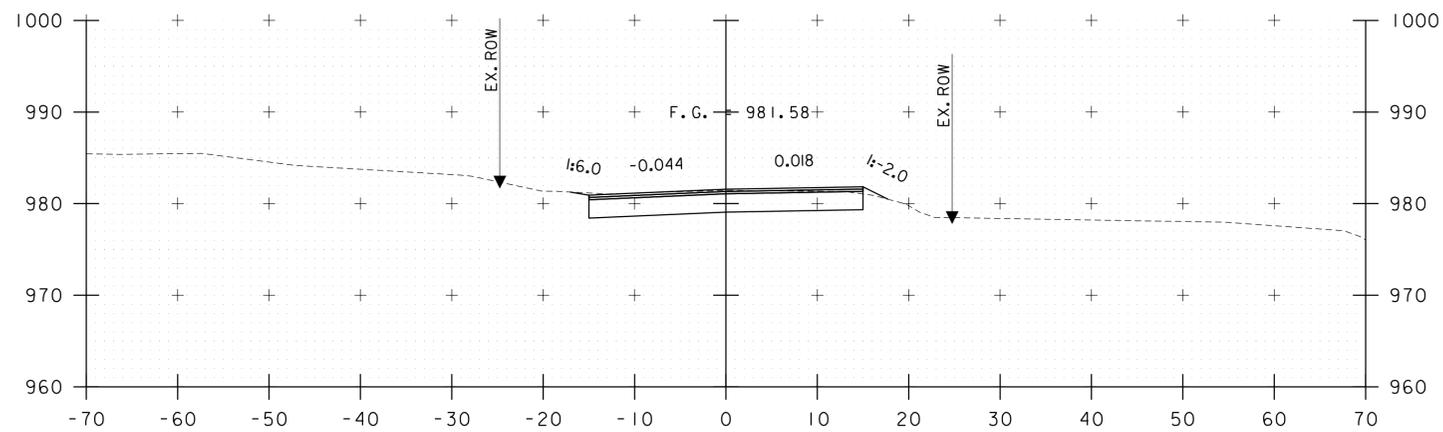
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PROJECT LEADER: G. BOGUE  
DESIGNED BY: E. ALLING  
ROADWAY CROSS SECTIONS - RXS 2

PLOT DATE: 3/20/2015  
DRAWN BY: E. ALLING  
CHECKED BY: I. MAYNARD  
SHEET 21 OF 33

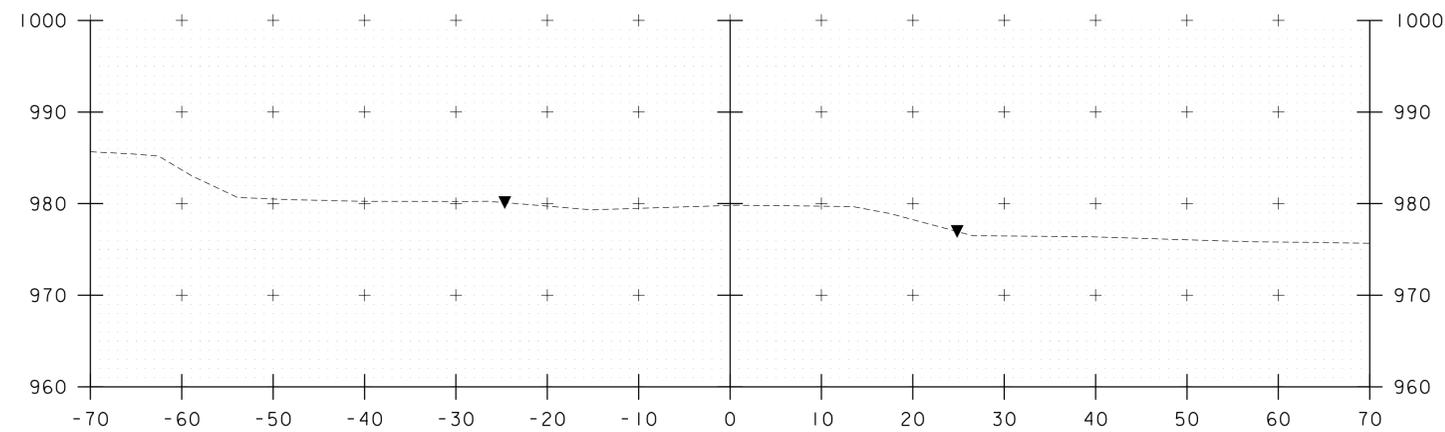




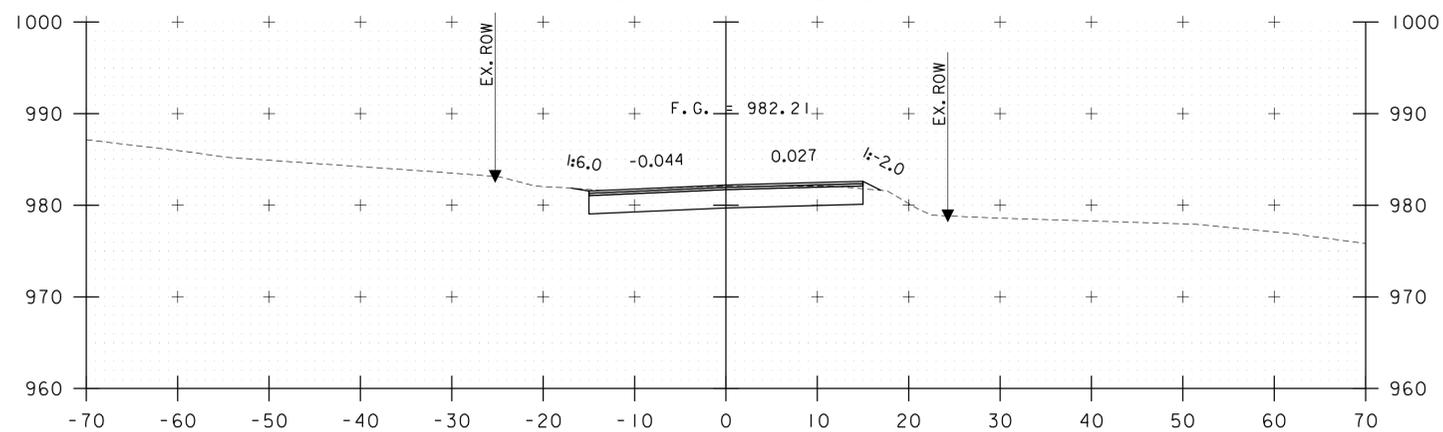
5+75



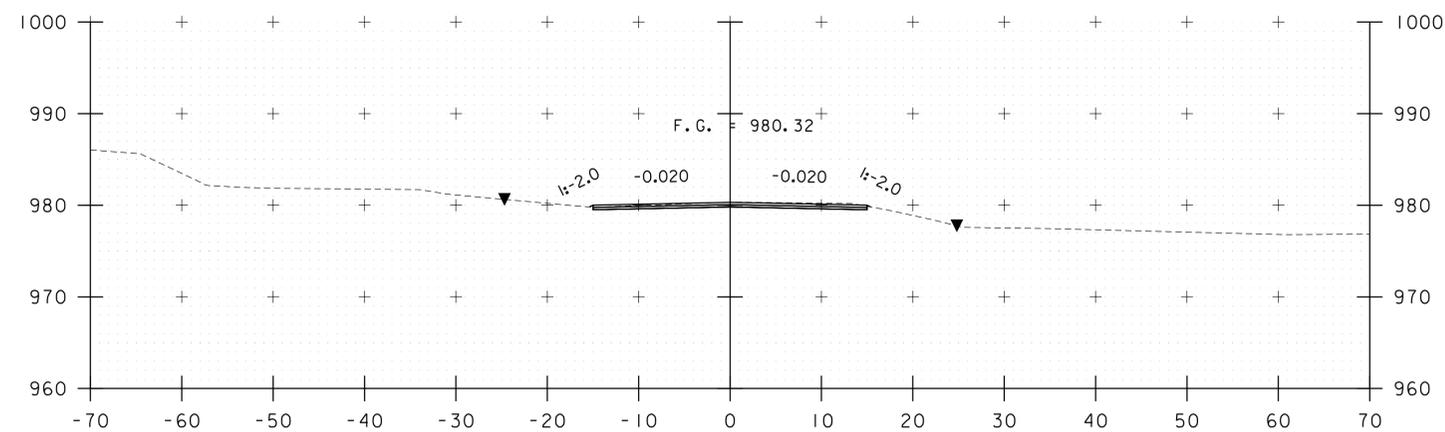
5+50  
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BEGIN APPROACH



6+25

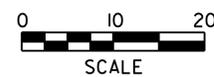


5+25



6+00  
END PROJECT

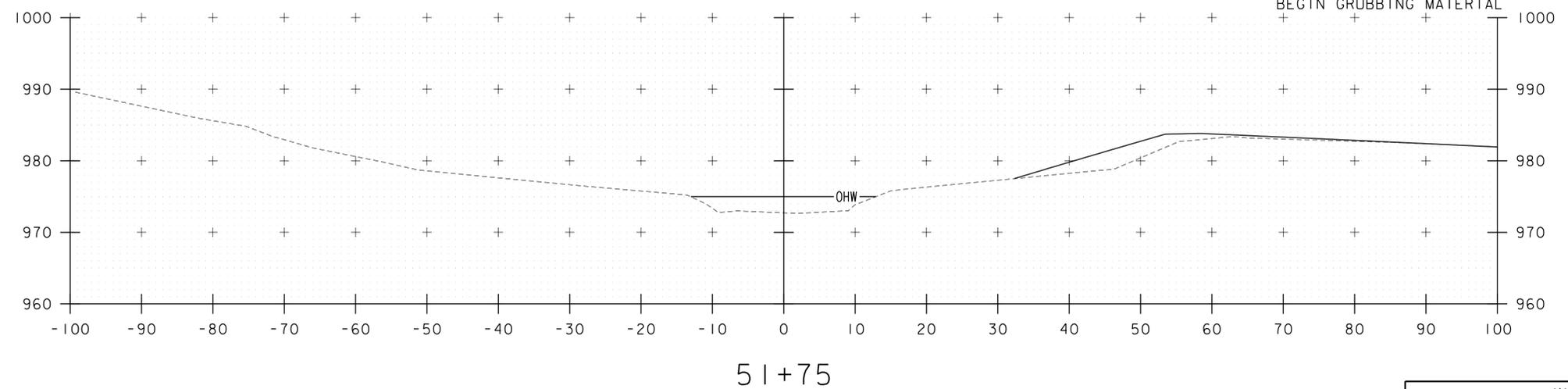
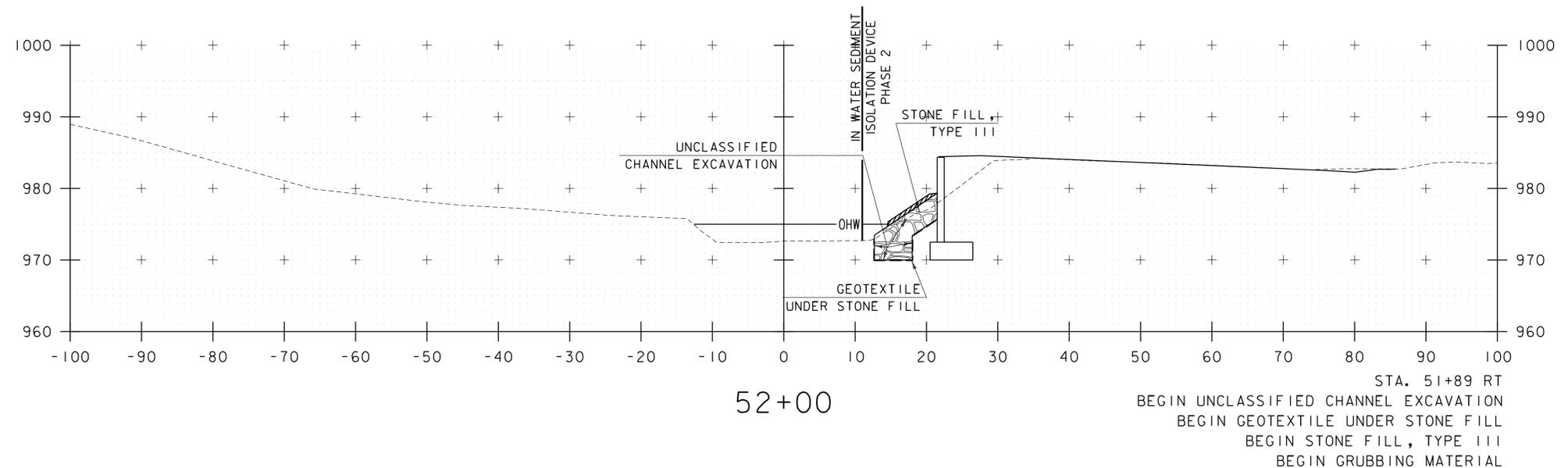
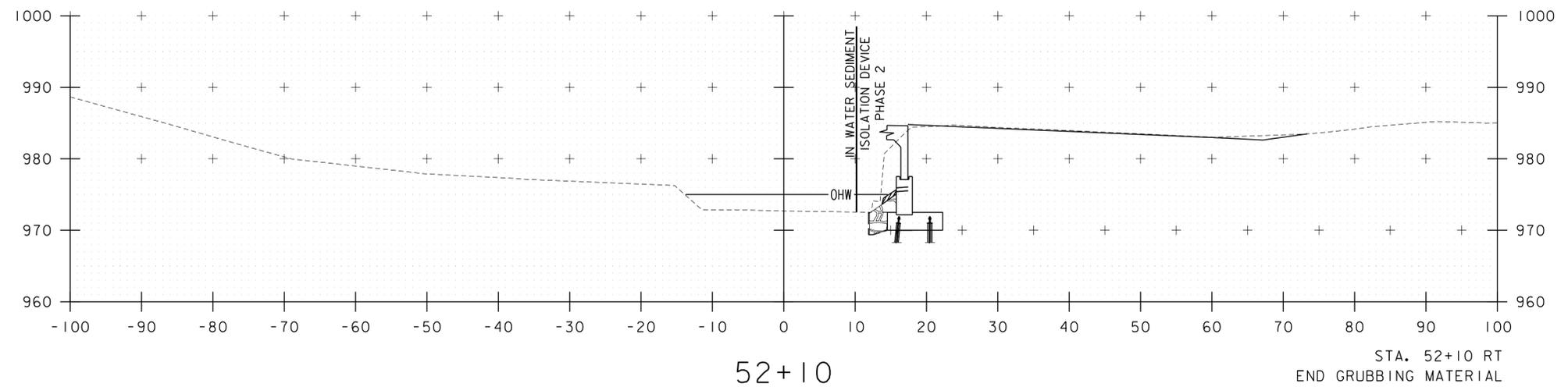
STA. 5+25 TO STA. 6+25



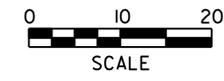
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PROJECT NUMBER: BRF 0151(21)

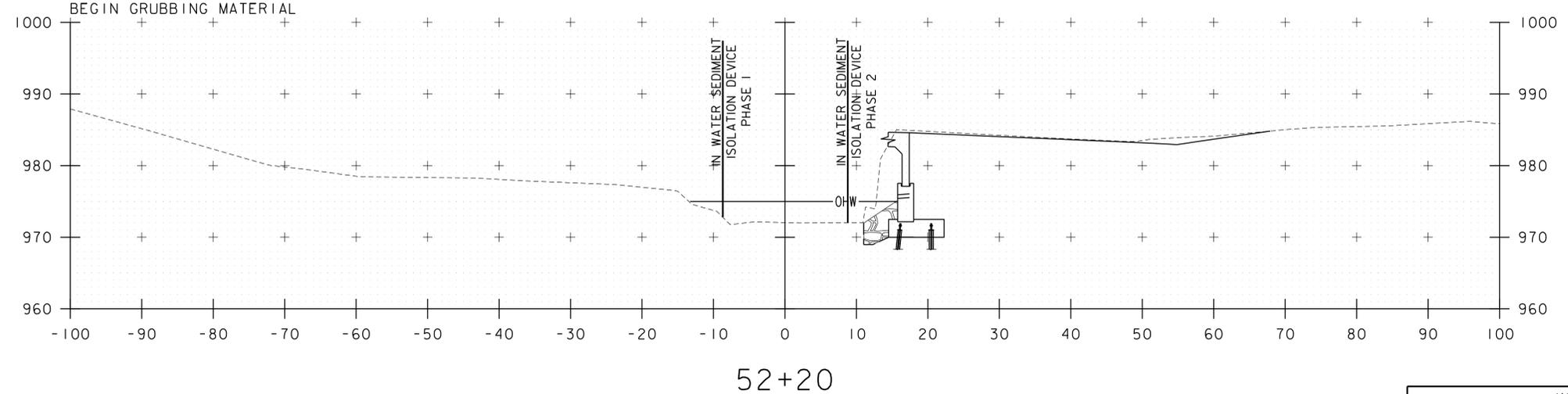
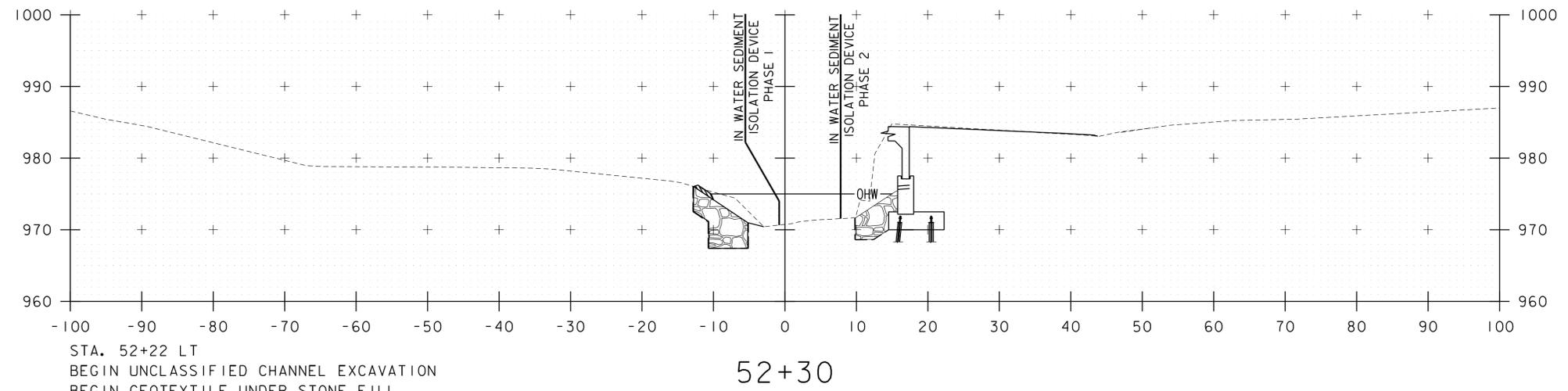
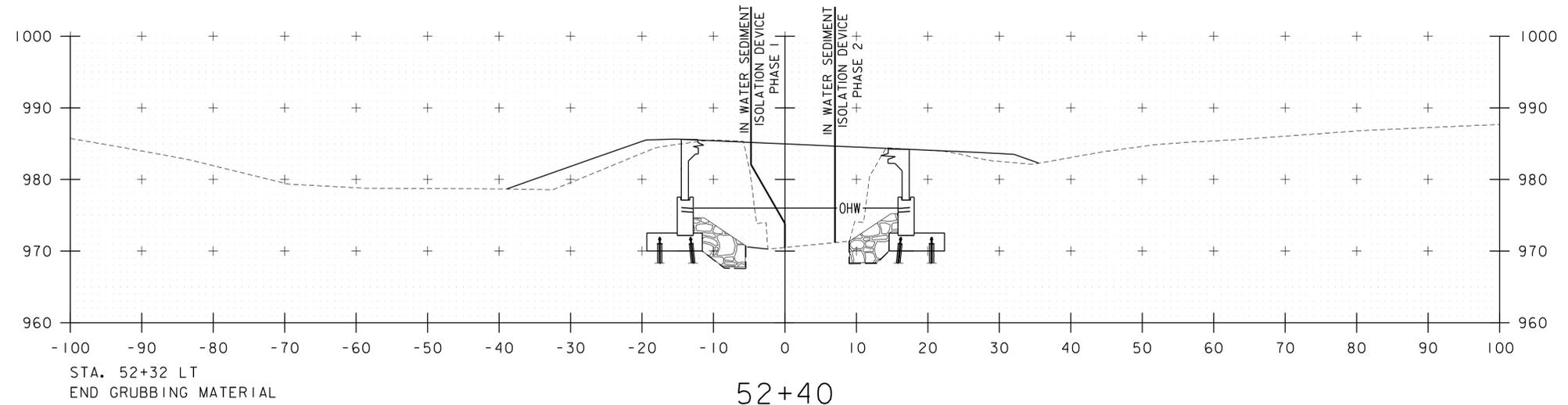
FILE NAME: z10c426xs.dgn  
PROJECT LEADER: G. BOGUE  
DESIGNED BY: E. ALLING  
ROADWAY CROSS SECTIONS - RXS 3

PLOT DATE: 3/20/2015  
DRAWN BY: E. ALLING  
CHECKED BY: I. MAYNARD  
SHEET 22 OF 33



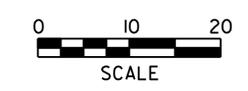
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PROJECT NUMBER:	BRF 0151(21)	DRAWN BY:	L. BUXTON
FILE NAME:	z10c426xs.dgn	DESIGNED BY:	T. KNIGHT
PROJECT LEADER:	G. BOGUE	CHECKED BY:	J. HUNGERFORD
CHANNEL CROSS SECTIONS - CXS 1		SHEET	23 OF 33

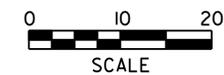
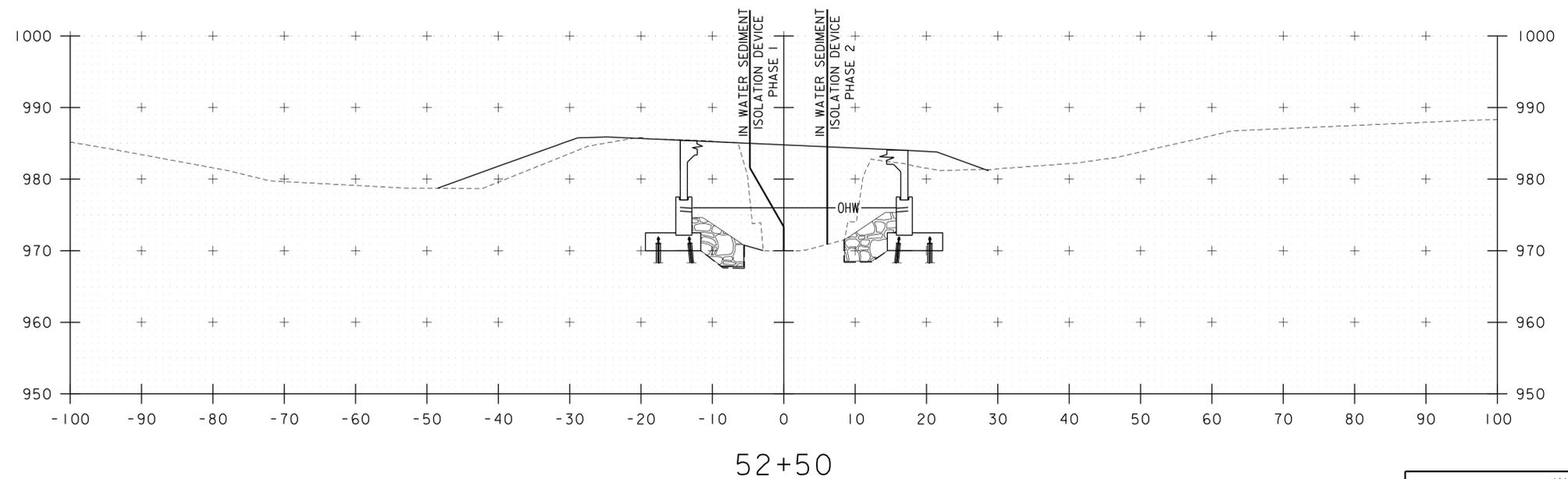
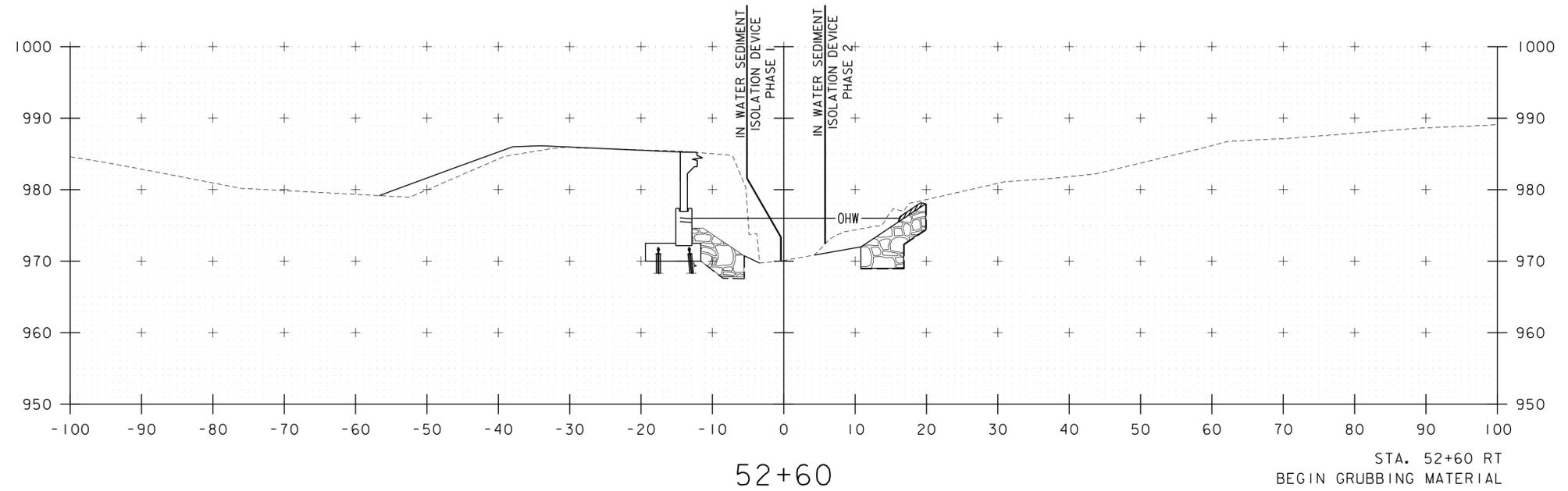




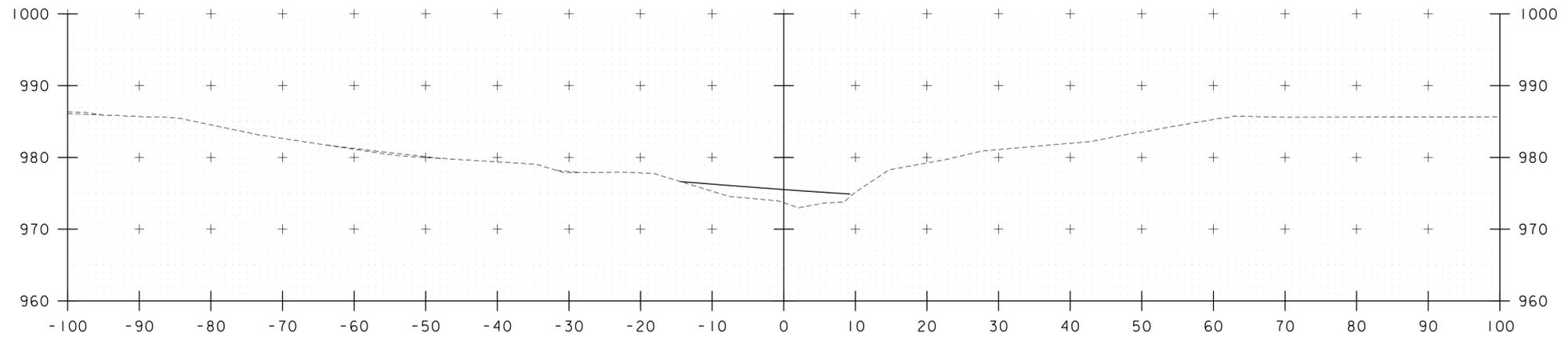
STA. 52+20 TO STA. 52+40

PROJECT NAME:	WOODSTOCK	PLOT DATE:	3/20/2015
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	24 OF 33



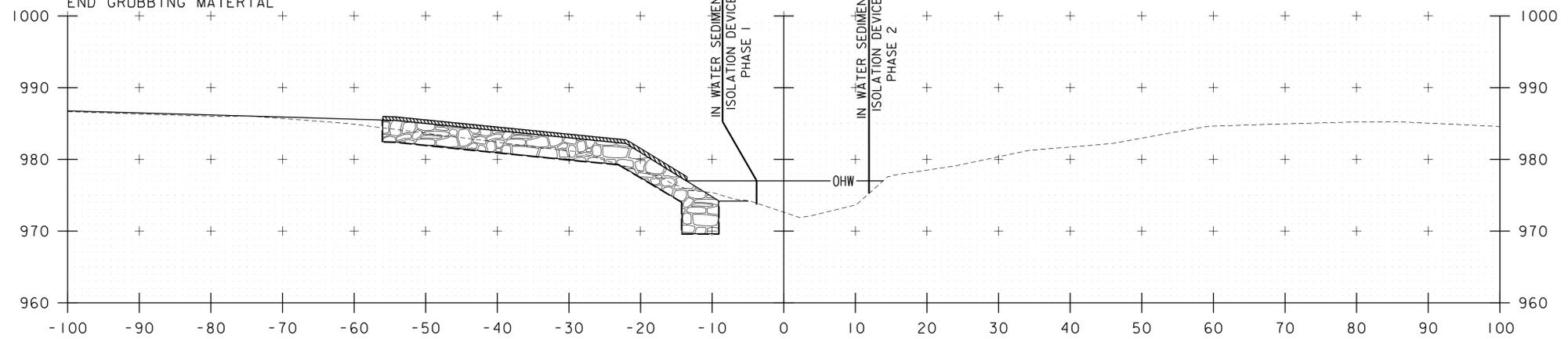


PROJECT NAME:	WOODSTOCK	PLOT DATE:	3/20/2015
PROJECT NUMBER:	BRF 0151(21)	DRAWN BY:	L. BUXTON
FILE NAME:	z10c426xs.dgn	DESIGNED BY:	T. KNIGHT
PROJECT LEADER:	G. BOGUE	CHECKED BY:	J. HUNGERFORD
CHANNEL CROSS SECTIONS - CXS 3		SHEET	25 OF 33



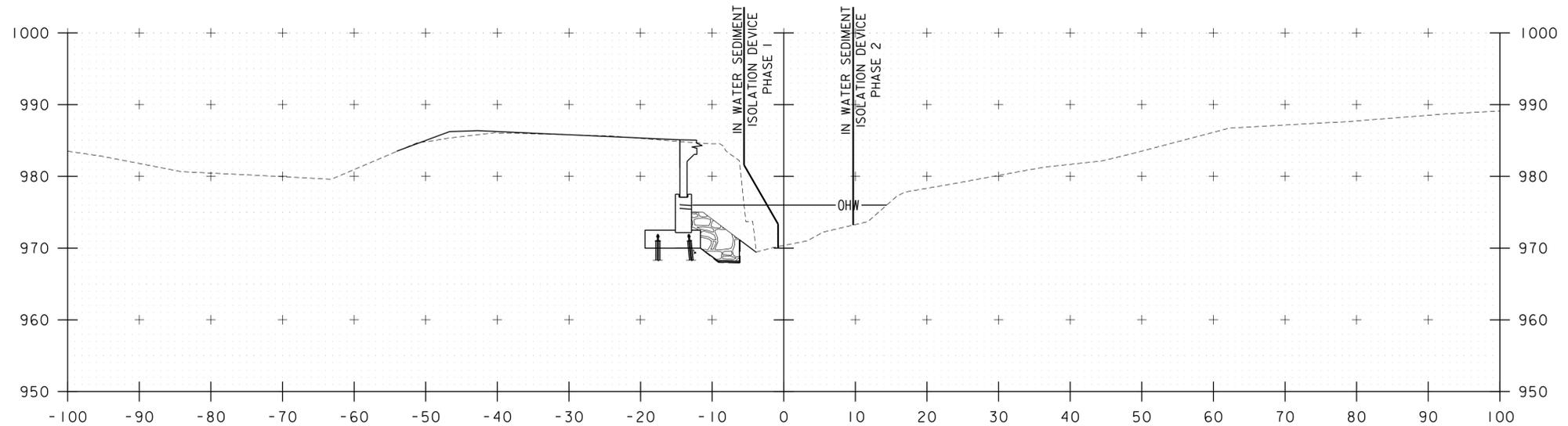
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 END GEOTEXTILE UNDER STONE FILL  
 END STONE FILL, TYPE III  
 END GRUBBING MATERIAL

52+90



STA. 52+74 LT  
 BEGIN GRUBBING MATERIAL

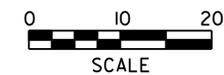
52+80



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

52+70

STA. 52+70 TO STA. 52+90



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: 3/20/2015  
 DRAWN BY: L. BUXTON  
 CHECKED BY: J. HUNGERFORD  
 SHEET 26 OF 33

## 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.

#### 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.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. 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.

#### 1.5.3 UPDATES

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

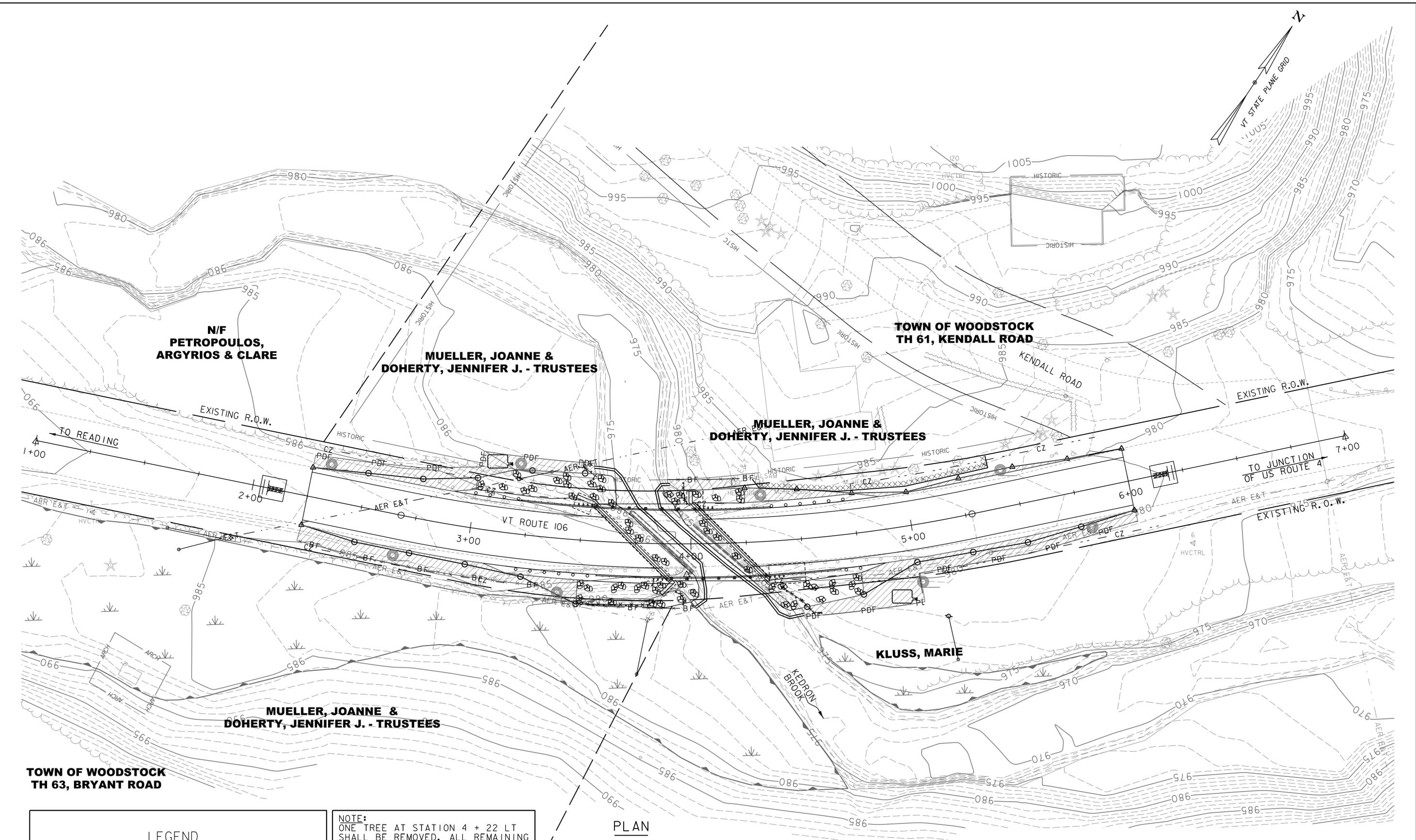
PLOT DATE: 3/20/2015

DRAWN BY: E. ALLING

CHECKED BY: I. MAYNARD

SHEET 27 OF 33





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

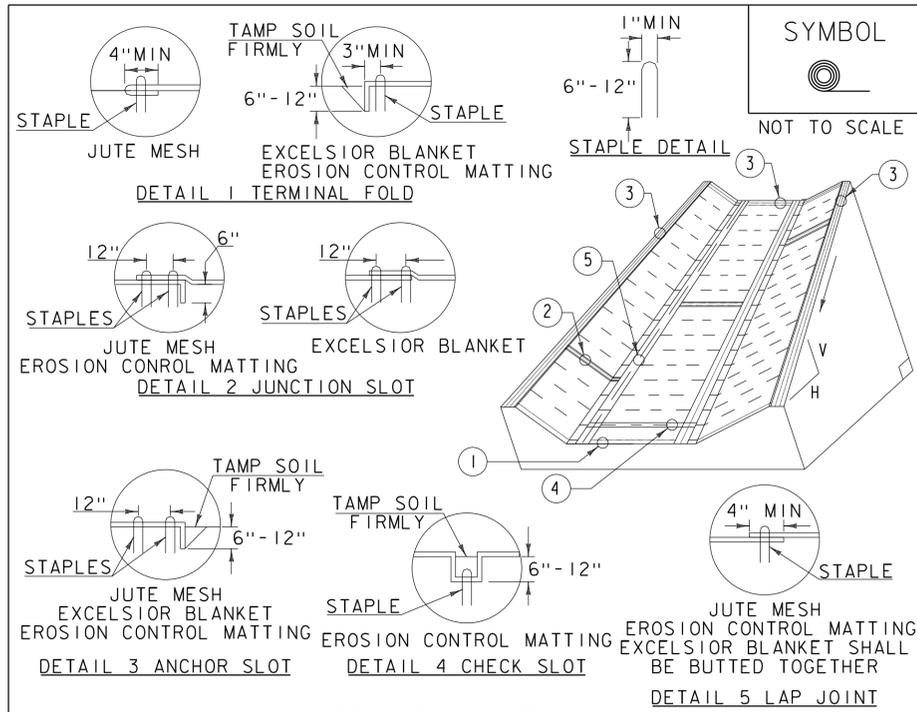
LEGEND	
	VEHICLE TRACKING PAD
	FILTER BAG
	IN WATER SEDIMENT ISOLATION DEVICE

**NOTE:**  
ONE TREE AT STATION 4 + 22 LT  
SHALL BE REMOVED. ALL REMAINING  
TREES SHALL BE PROTECTED IN  
ACCORDANCE WITH SECTION 656.10.



PROJECT NAME: WOODSTOCK	PLOT DATE: 3/20/2015
PROJECT NUMBER: BRF 0151(21)	DRAWN BY: E. ALLING
FILE NAME: z10c426bdr_ero.dgn	CHECKED BY: I. MAYNARD
PROJECT LEADER: G. BOGUE	SHEET 28 OF 33
DESIGNED BY: E. ALLING	
EPSC PLAN - ECP 1	





**CONSTRUCTION SPECIFICATIONS**

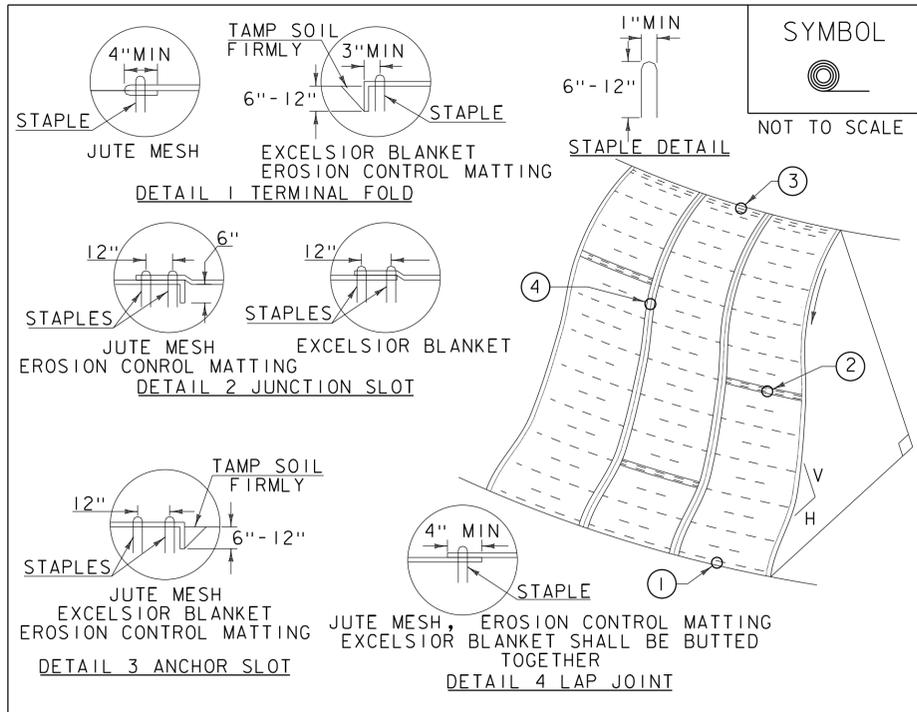
1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO 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**

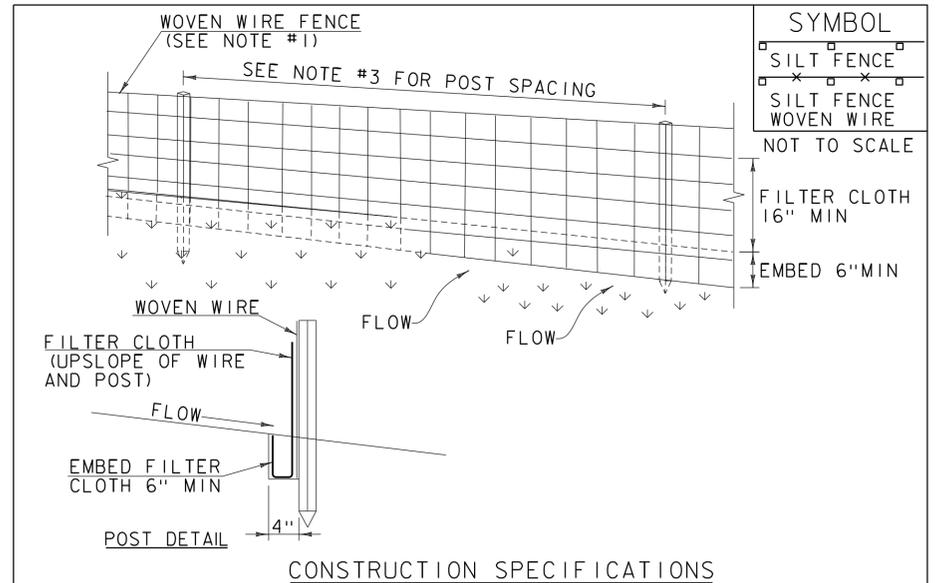
1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 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: 3/20/2015  
PROJECT LEADER: G. BOGUE DRAWN BY: VTRANS  
DESIGNED BY: VTRANS CHECKED BY: VTRANS  
EROSION CONTROL DETAILS - ECD 1 SHEET 29 OF 33

VAOT RURAL AREA MIX					
		LBS/AC			
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
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					
		LBS/AC			
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
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

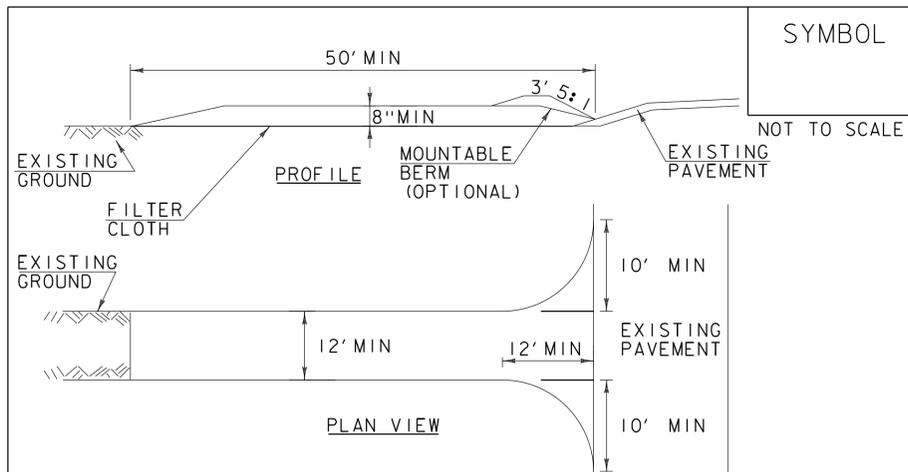
**CONSTRUCTION GUIDANCE**

- 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.

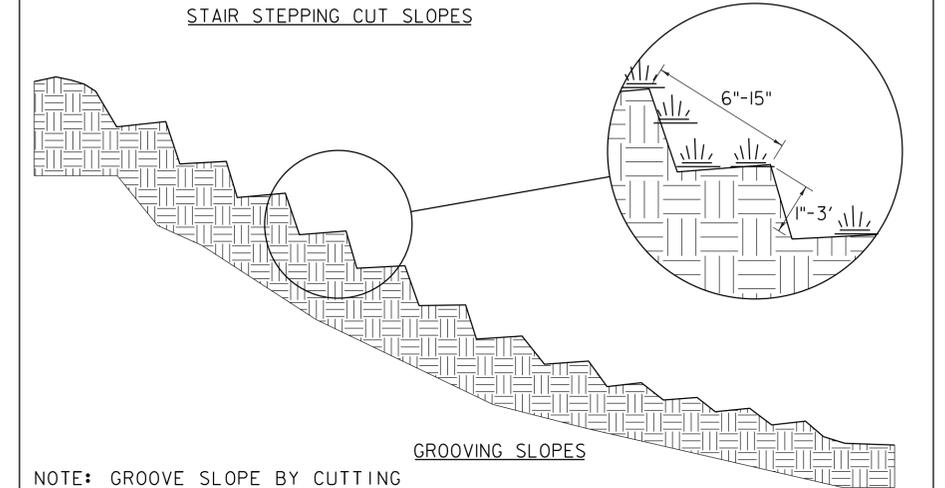
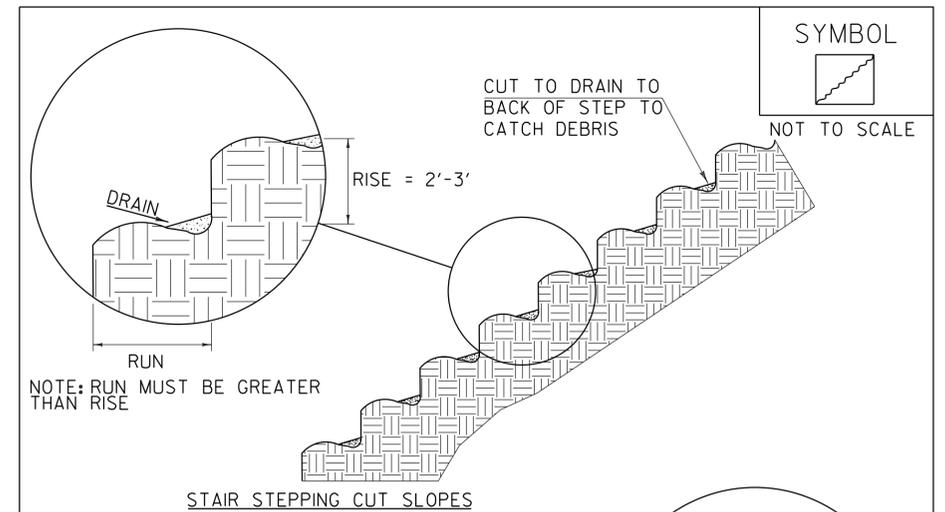
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**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



NOTE: GROOVE SLOPE BY CUTTING FURROWS ALONG THE CONTOUR. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND RETAIN LIME, FERTILIZER AND SEED.

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

**SURFACE ROUGHENING**

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

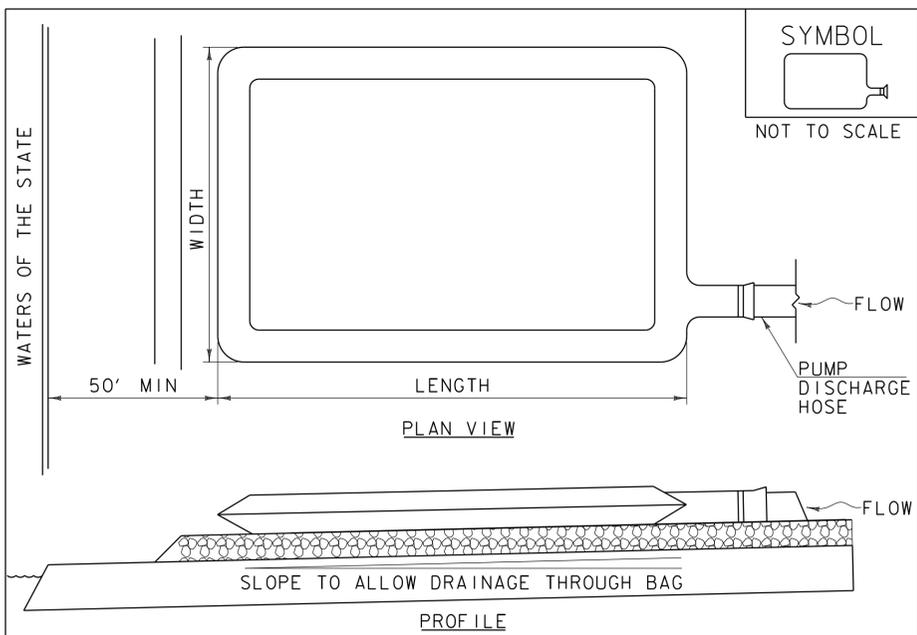
THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT

REVISIONS	
APRIL 1, 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: 3/20/2015  
DRAWN BY: VTRANS  
CHECKED BY: VTRANS  
SHEET 30 OF 33



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.

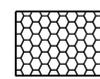
PROJECT NAME: WOODSTOCK	PLOT DATE: 3/20/2015
PROJECT NUMBER: BRF 0151(21)	DRAWN BY: VTRANS
FILE NAME: z10c426frm.dgn	CHECKED BY: VTRANS
PROJECT LEADER: G. BOGUE	SHEET 31 OF 33
DESIGNED BY: VTRANS	EROSION CONTROL DETAILS - ECD 3

IMPACTS BELOW ORDINARY HIGH WATER

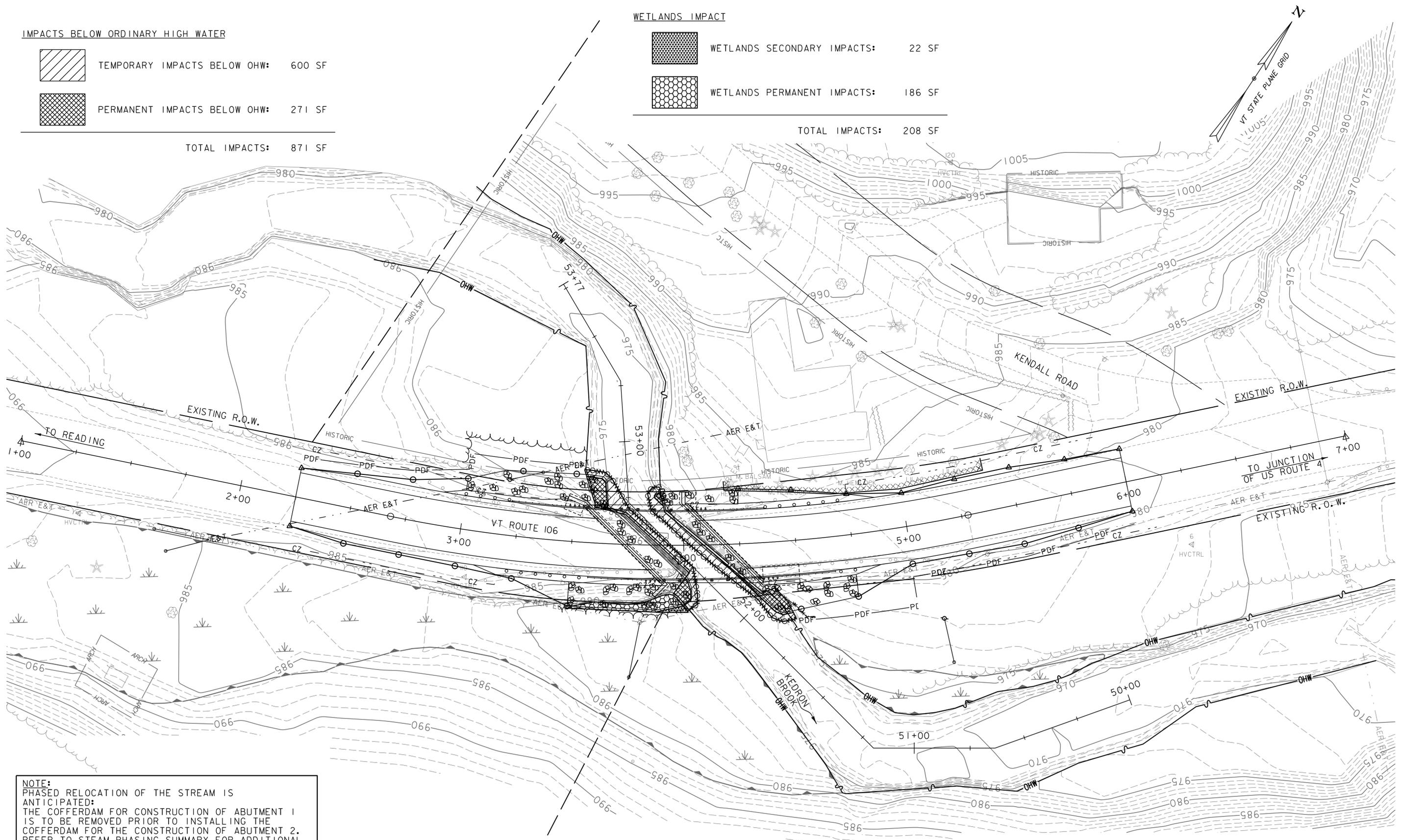
	TEMPORARY IMPACTS BELOW OHW:	600 SF
	PERMANENT IMPACTS BELOW OHW:	271 SF

TOTAL IMPACTS: 871 SF

WETLANDS IMPACT

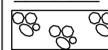
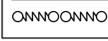
	WETLANDS SECONDARY IMPACTS:	22 SF
	WETLANDS PERMANENT IMPACTS:	186 SF

TOTAL IMPACTS: 208 SF



**NOTE:**  
 PHASED RELOCATION OF THE STREAM IS ANTICIPATED:  
 THE COFFERDAM FOR CONSTRUCTION OF ABUTMENT 1 IS TO BE REMOVED PRIOR TO INSTALLING THE COFFERDAM FOR THE CONSTRUCTION OF ABUTMENT 2. REFER TO STEAM PHASING SUMMARY FOR ADDITIONAL INFORMATION.

**LEGEND**

	STONE FILL, TYPE III
	IN WATER SEDIMENT ISOLATION DEVICE



PROJECT NAME:	WOODSTOCK	PLOT DATE:	3/20/2015
PROJECT NUMBER:	BRF 0151(21)	DRAWN BY:	E. ALLING
FILE NAME:	z10c426bdr_impacts.dgn	CHECKED BY:	X. XXXX
PROJECT LEADER:	G. BOGUE	SHEET	32 OF 33
DESIGNED BY:	T. KNIGHT		
IMPACTS PLAN			



## 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.

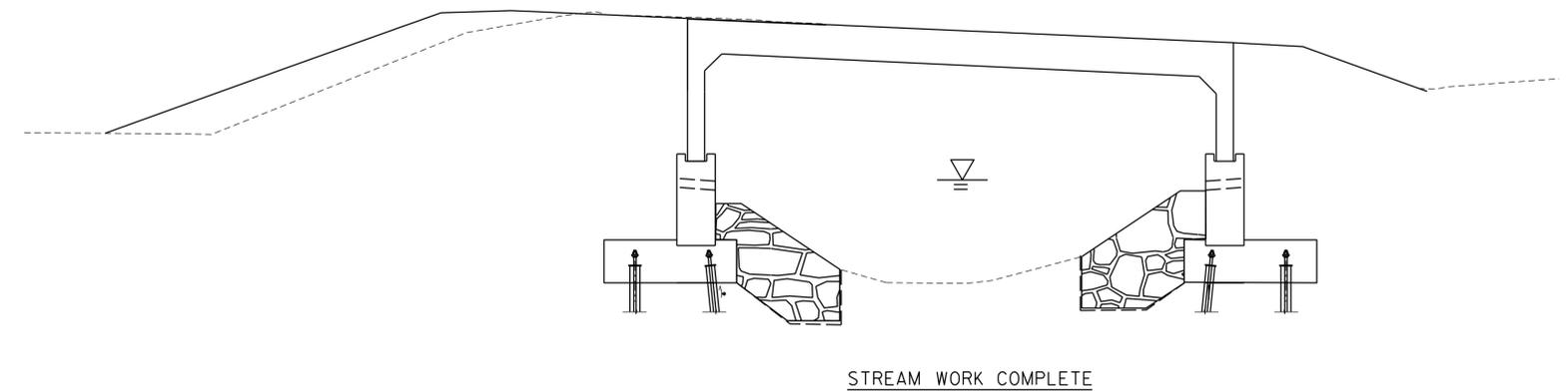
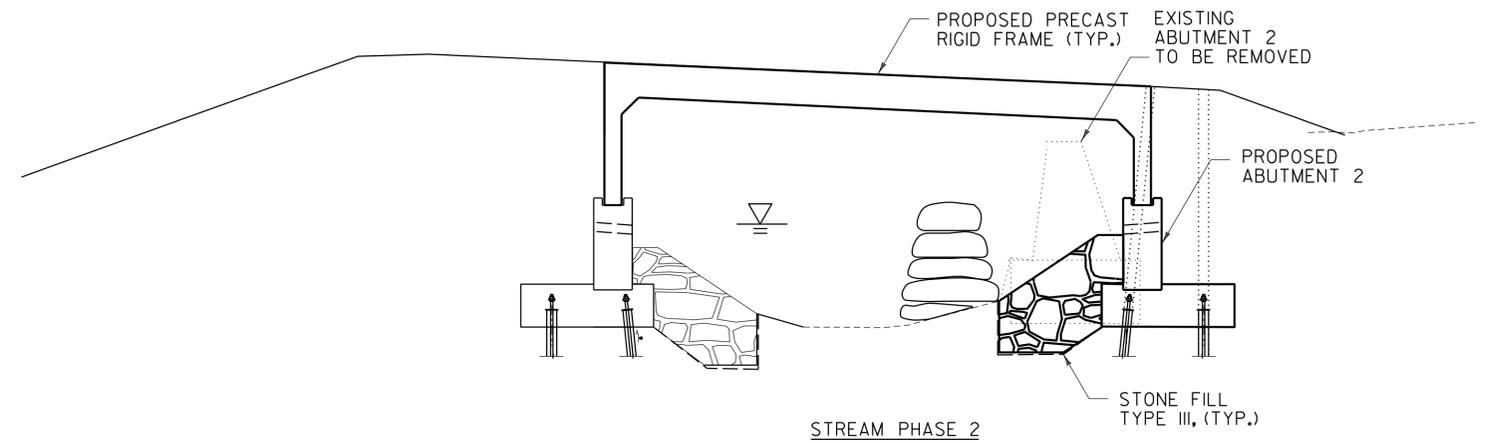
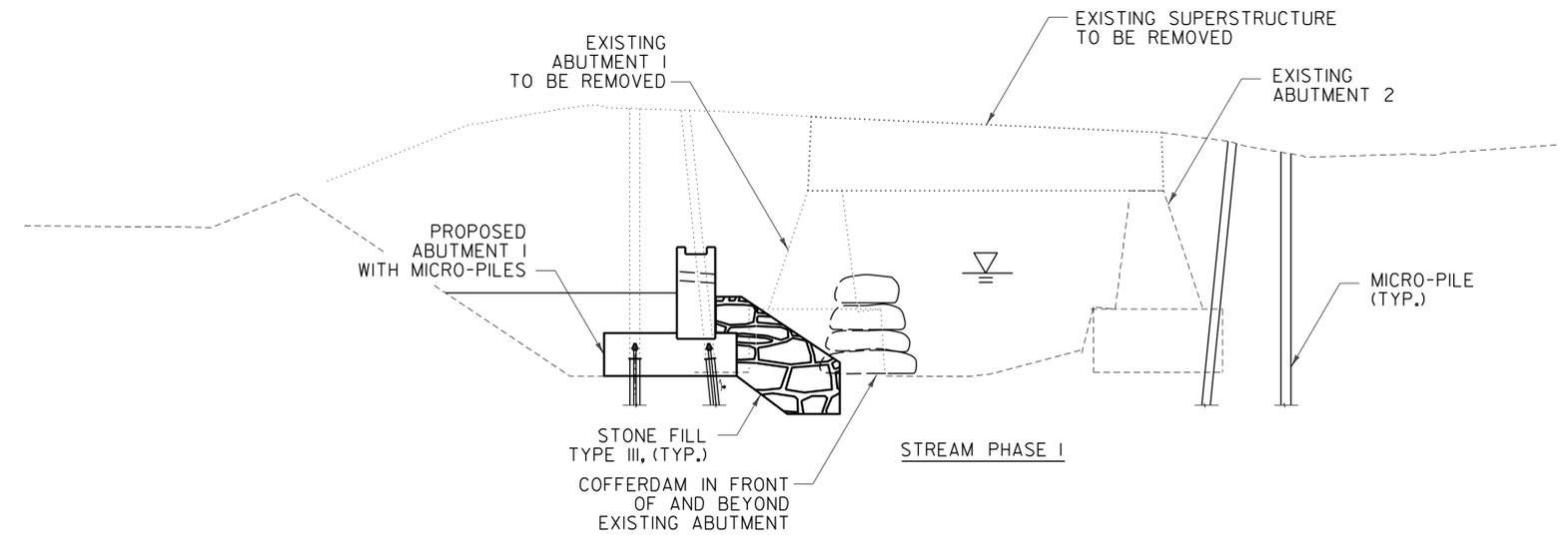
## SUMMARY OF STREAM PHASING SEQUENCE

### 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: 3/20/2015

DRAWN BY: L. BUXTON

CHECKED BY: X. XXXX

SHEET 33 OF 33

