

R.O.W. PLANS

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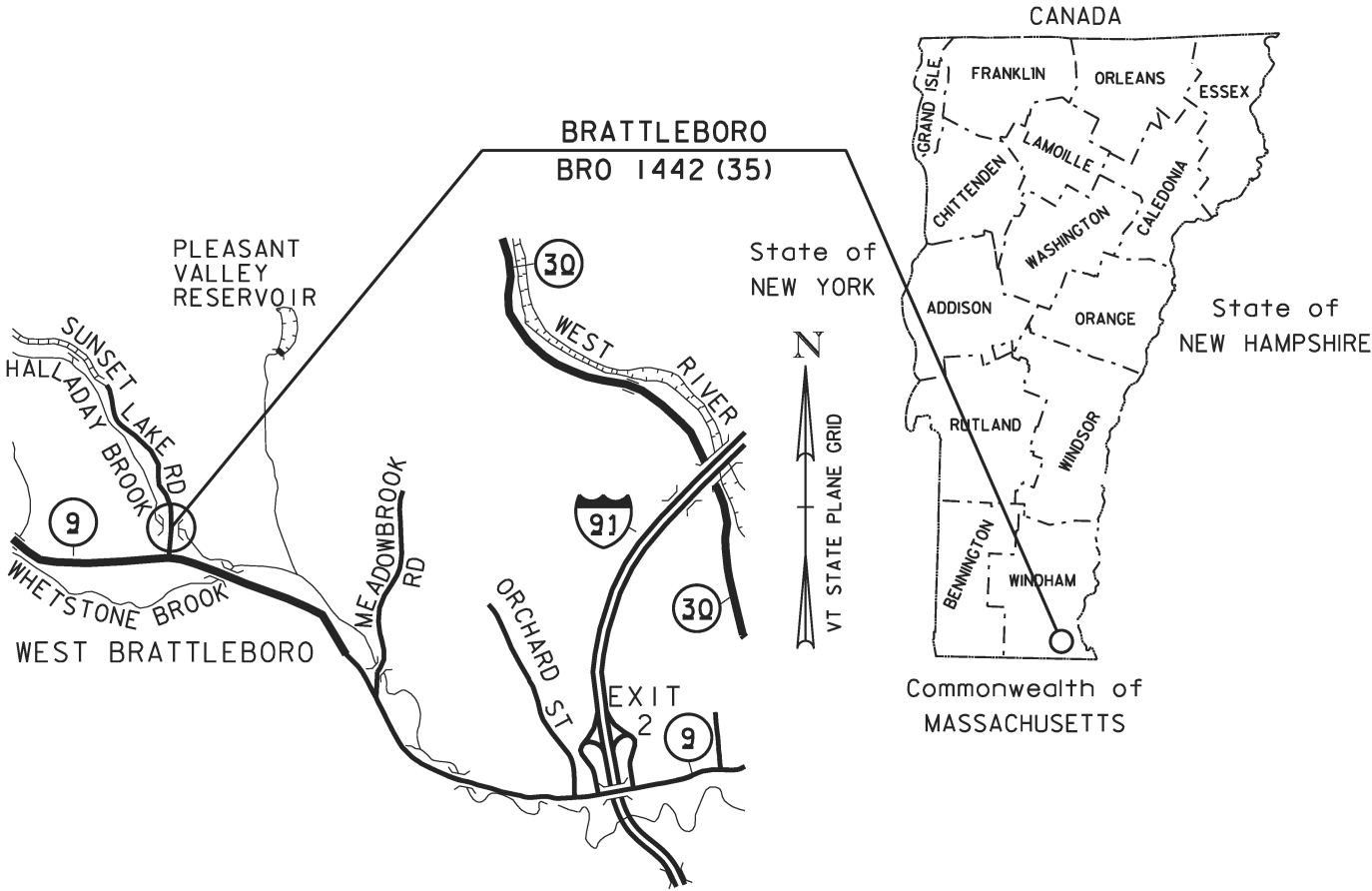
STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF BRATTLEBORO
COUNTY OF WINDHAM

TH 12, CLASS III (LOCAL ROAD), BRIDGE NO. 7



LOCATION MAP
NOT TO SCALE

PROJECT LOCATION: LOCATED IN THE COUNTY OF WINDHAM, TOWN OF BRATTLEBORO, ON SUNSET LAKE ROAD (TH 12); BRIDGE NO. 7 OVER HALLADAY BROOK, APPROXIMATELY 0.20 MILES NORTH OF THE INTERSECTION OF VT 9 AND SUNSET LAKE RD (TH 12)

PROJECT DESCRIPTION: WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES REMOVAL AND REPLACEMENT OF BRIDGE NO. 7, ON THE EXISTING ALIGNMENT, WITH ASSOCIATED ROADWAY AND CHANNEL WORK.

LENGTH OF ROADWAY: 272.17 FEET
LENGTH OF BRIDGE: 47.83 FEET
LENGTH OF PROJECT: 320.00 FEET
LENGTH OF ROW PROJECT: 393.00 FEET

BEGIN R.O.W. PROJECT
STA. 100+96.02 24.75' RT

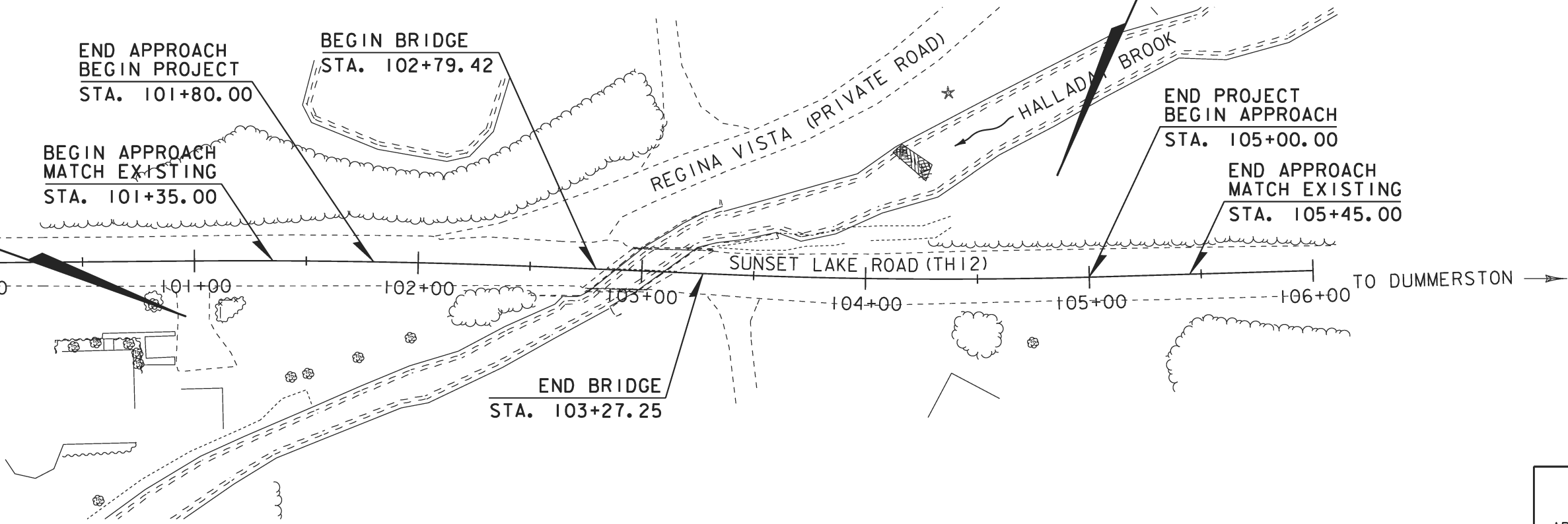
END R.O.W. PROJECT
STA. 104+89.02 25.83' RT

CONVENTIONAL SYMBOLS	
COUNTY LINE	
TOWN LINE	
LIMITS OF ACCESS	
POINT OF ACCESS	
FENCE LINE	
STONE WALL	
TRAVELED WAY	
GUARD RAIL	
RAILROAD	
SURVEY LINE	
CULVERT	
POWER POLE	
TELEPHONE POLE	
TREES	
CONTROL OF ACCESS	
PROPERTY LINE	
R.O.W. TAKING LINE	
SLOPE RIGHTS	
TOP OF CUT	
TOE OF SLOPE	

ALL DRIVES AS INDICATED ON PLANS
ARE SUBJECT TO PERMITS PURSUANT
TO TITLE 19 V.S.A. § 1111.

SURVEYED BY : VHB
SURVEYED DATE : NOV 2010

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (07)



SCALE 1" = 40'-0"
40 0 40

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING
CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY
ADMINISTRATION OR THE DIRECTOR OF PROGRAM
DEVELOPMENT.
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.

APPROVED RICHARD TETREAU DATE 02-26-13
Director of Program Development

APPROVED ROBERT M. WHITE DATE 02-26-13
Chief of Right of Way

BRATTLEBORO
BRO 1442(35)
ROW SHEET 1 OF 15 SHEETS

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
	I&M	INSTALL & MAINTAIN EASEMENT
	LAND	LANDSCAPE EASEMENT
	SR	SLOPE RIGHT
	UE	UTILITY EASEMENT
	(P)	PERMANENT EASEMENT
	(T)	TEMPORARY EASEMENT
	■	BNDNS
	▣	BNDNS
	●	IPNS
	⊙	IPNS
	⊠	CALC
	[DISTANCE]	DISTANCE 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

— · · —	CZ	— · · —	CLEAR ZONE
————		————	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

△	△	△	△	TOP OF CUT SLOPE
⊙	⊙	⊙	⊙	TOE OF FILL SLOPE
⊕	⊕	⊕	⊕	STONE FILL
— · · —				BOTTOM OF DITCH
— · · —				CULVERT PROPOSED
— · · —				STRUCTURE SUBSURFACE
PDF	PDF			PROJECT DEMARCATION FENCE
BF	BF			BARRIER FENCE
XXXXXXXXXXXXXXXXXXXX				TREE PROTECTION ZONE (TPZ)
////////				STRIPING LINE REMOVAL
~~~~~				SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLGY

BOUNDARY LINES

————	TOWN LINE	————	TOWN BOUNDARY LINE
————	COUNTY LINE	————	COUNTY BOUNDARY LINE
————	STATE 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
— P —		— P —	PROPERTY LINE (P/L)
— L —		— L —	
△	SR	△	SR
△	SR	△	SR
△	SR	△	SR
6f		6f	6F PROPERTY BOUNDARY
4f		4f	4F PROPERTY BOUNDARY
HAZ		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
— T&E —	THREATENED & ENDANGERED SPECIES
— HAZ —	HAZARDOUS WASTE AREA
— AG —	AGRICULTURAL LAND
— HABITAT —	FISH & WILDLIFE HABITAT
— FLOOD PLAIN —	FLOOD PLAIN
— OHW —	ORDINARY HIGH WATER (OHW)
— · · —	STORM WATER
— · · —	USDA FOREST SERVICE LANDS
— · · —	WILDLIFE HABITAT SUIT/CONN

ARCHEOLOGICAL & HISTORIC

— ARCH —	ARCHEOLOGICAL BOUNDARY
— HISTORIC DIST —	HISTORIC DISTRICT BOUNDARY
— HISTORIC —	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: BRATTLEBORO  
PROJECT NUMBER: BRO 1442(35)

FILE NAME: r10J062.legend.dgn  
PROJECT LEADER: M. CHANETTE  
DESIGNED BY: M. LONGSTREET  
LEGEND SHEET

PLOT DATE: 26-FEB-2013  
DRAWN BY: M. LONGSTREET  
CHECKED BY: M. LONGSTREET  
SHEET 2 OF 15



PARCEL NO.	PROPERTY OWNER	ROW LAYOUT NO.	BEGINNING STATION	ENDING STATION	TAKE	REMAINDER	RIGHT			RECORDING DATA					REMARKS
					AREA±	AREA±	TYPE	T / P	AREA ±	TITLE	DATE	TOWN / CITY	BOOK	PAGE	
1	REDHILLS LLC	1	102+31 LT	104+09 LT			DETOUR	T	5,218 SF	WDOE	01/06/14	BRATTLEBORO	418	36	INCL. PDF, EC, TRAFFIC CONTROL DEVICES, SIGNS
			102+92 LT	103+34 LT			INSTALL	T							GUARD RAIL
			102+94 LT	103+38 LT			CHANNEL	P	308 SF						INCL. STONE FILL
			102+96 LT	103+04 LT			INSTALL & MAINTAIN	P	13 SF						BRIDGE FOOTING
			103+02 LT				REMOVE & RESET	T							STONE BOULDER
			103+04 LT	103+07 LT			INSTALL	T							COFFER DAM
			103+05 LT				INSTALL	T							TRAFFIC CONTROL DEVICES
			103+38 LT	104+01 LT			LANDSCAPE	T	680 SF						PLANT TREES & SHRUBS
			103+52 LT	103+85 LT			INSTALL	T							SIGNS
			103+69 LT				INSTALL	T							TRAFFIC CONTROL DEVICES
2	YANDOW, VALERY W.	1	100+95 LT	101+02 LT			INSTALL	T		GTR	09/03/13	BRATTLEBORO	415	6	GUY WIRE & ANCHOR
			103+00 LT				INSTALL	T							SIGN
			103+05 LT				INSTALL	T							TRAFFIC CONTROL DEVICES
3	ANGELL, SAMUEL H. & ANGELL, NANCIE SCHWARTZ	1	100+96 RT	101+82 RT			UTILITY	T		GTR	09/30/13	BRATTLEBORO	415	922	W-1 MONITOR WELL
			101+34 RT												INCLUDES PDF & EC
			101+81 RT	102+40 RT			CONST.	T	201 SF						
			101+90 RT	102+17 RT			SLOPE	T	68 SF						
			102+41 RT	102+58 RT			INSTALL	T							EC
			102+43 RT	102+45 RT			SLOPE	T	1 SF						
			102+52 RT	102+69 RT			INSTALL	T							EC
4	BELL, DAVID F. & JEWETT-BELL, LYNDA F.	1	101+82 RT	104+53 RT			UTILITY	T		WDOE	09/03/13	BRATTLEBORO	414	991	
			102+51 RT	103+08 RT			CONST.	T	154 SF						INCLUDES PDF & EC
			102+57 RT	102+80 RT			SLOPE	T	158 SF						
			102+73 RT	102+99 RT			CHANNEL	P	203 SF						INCLUDES STONE FILL
			102+80 RT	103+05 RT			SLOPE	T	110 SF						
			103+33 RT	103+46 RT			CONST.	T	155 SF						INCLUDES PDF & EC
			103+38 RT	103+88 RT			DRIVE	T	1370 SF						12' PAVED
			103+46 RT	104+66 RT			ACCESS	T							
			103+56 RT	104+36 RT			CONST.	T	267 SF						INCLUDES PDF & EC
5	YANDOW, VALERY W.	1	103+33 LT	104+08 LT			LANDSCAPE	T	108 SF	GTR	09/03/13	BRATTLEBORO	415	9-Aug	PLANT TREES & SHRUBS
			103+25 LT	104+80 LT			DETOUR	T	2,090 SF						INCL. PDF, EC & TRAFFIC DEVICES
			103+97 LT	104+27 LT			SLOPE	T	25 SF						
			103+97 LT	104+64 LT			LANDSCAPE	T	473 SF						PLANT TREES & SHRUBS
			104+72 LT	104+77 LT			SLOPE	T	3 SF						
			104+87 LT	104+89.02 LT			INSTALL	T							GUY WIRE, ANCHOR & POLE
6	GREEN MOUNTAIN POWER CORPORATION	1	100+96.02 RT	104+86.57 RT											UTILITY EASEMENTS
7	TELEPHONE OPERATING COMPANY OF VERMONT LLC	1	100+96.02 RT	104+86.57 RT											UTILITY EASEMENTS

[illegible]



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.

**NOTE:**

1. EXISTING BOULDER ALONG REGINA VISTA (T.H. 12 STA. 103+02, 23.83' LT) SHALL BE REMOVED AND RESET. BOULDER SHALL BE LOCATED BEHIND THE GUARDRAIL SO AS TO PROVIDE A MINIMUM OF 4'-0" CLEAR ZONE BETWEEN THE BOULDER AND THE FRONT OF GUARDRAIL. ALL COST FOR PROPERLY REMOVING, STORING AND RESETTING THE BOULDER WILL BE INCIDENTAL TO ALL CONTRACT ITEMS.

PROJECT NAME: BRATTLEBORO  
PROJECT NUMBER: BRO 1442(35)

FILE NAME: r10j062_layout.dgn  
PROJECT LEADER: M. CHANETTE  
DESIGNED BY: S.E. BURBANK  
ROW LAYOUT SHEET 1 OF 1

PLOT DATE: 19-JUL-2013  
DRAWN BY: B. FERLAZO  
CHECKED BY: H. PETROVS  
SHEET 4 OF 15



PRELIMINARY INFORMATION SHEET (BRIDGE)

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: N/A

DRAINAGE AREA : Approximately 5.5 sq. mi.

CHARACTER OF TERRAIN : Hilly and mountainous, mostly forested

STREAM CHARACTERISTICS : Sinuous, slightly incised with minimal floodplain

NATURE OF STREAMBED : Gravel, cobbles, boulders and ledge

PEAK FLOW DATA

Q 2.33 = 300 cfs

Q 10 = 650 cfs

Q 25 = 900 cfs

Q 50 = 1100 cfs

Q 100 = 1275 cfs

Q 500 = Unknown

DATE OF FLOOD OF RECORD 1927

ESTIMATED DISCHARGE: Unknown

WATER SURFACE ELEV.: Unknown

NATURAL STREAM VELOCITY: @ Q25 = 5.8 fps

ICE CONDITIONS : Moderate

DEBRIS: Moderate

DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Unknown

IS ORDINARY RISE RAPID? Unknown

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: Single span concrete encased steel beam bridge

YEAR BUILT: 1920

CLEAR SPAN(NORMAL TO STREAM): 12'-4"

VERTICAL CLEARANCE ABOVE STREAMBED: 5'-6"

WATERWAY OF FULL OPENING: 68 sq. ft.

DISPOSITION OF STRUCTURE: Remove and replace structure

TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings

WATER SURFACE ELEVATIONS AT:

Q2.33 = 536.61 feet

Q10 = 539.60 feet

Q25 = 541.54 feet

Q50 = 543.00 feet

Q100 = 542.35 feet

VELOCITY = 7.13 fps

" 11.81 fps

" 6.99 fps

" 3.63 fps

" 5.77 fps

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes

FREQUENCY: Q25

RELIEF ELEVATION: 541.3 feet

DISCHARGE OVER ROAD @Q100: 1.05 feet

UPSTREAM STRUCTURE

TOWN: Brattleboro

DISTANCE: 1.6 miles

HIGHWAY #: TH 4 (Halladay Brook Road)

STRUCTURE #: D16

CLEAR SPAN: 20'

CLEAR HEIGHT: 9'

YEAR BUILT: 2005

FULL WATERWAY:

STRUCTURE TYPE: Single Span Concrete Slab

DOWNSTREAM STRUCTURE

TOWN: Brattleboro

DISTANCE: 1340'

HIGHWAY #: Private Road (Winding Hill Road)

STRUCTURE #: Private

CLEAR SPAN:

CLEAR HEIGHT:

YEAR BUILT:

FULL WATERWAY:

STRUCTURE TYPE:

LRFR LOAD RATING FACTORS							
LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A STR	4A STR	5A SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY							
POSTING							
OPERATING							
COMMENTS:							

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span

CLEAR SPAN(NORMAL TO STREAM):

VERTICAL CLEARANCE ABOVE STREAMBED:

WATERWAY OF FULL OPENING:

WATER SURFACE ELEVATIONS AT:

Q2.33 = 536.04 feet

Q10 = 537.56 feet

Q25 = 538.24 feet

Q50 = 538.9 feet

Q100 = 539.2 feet

IS THE ROADWAY OVERTOPPED BELOW Q100: Above Q100

FREQUENCY: Above Q100

RELIEF ELEVATION: 541.1 feet

DISCHARGE OVER ROAD @Q100:

AVERAGE LOW ELEVATION OF STREAMBED:

VERTICAL CLEARANCE: @

SCOUR: Footings are bearing

REQUIRED CHANNEL PROTECTION:

PERMIT INFORMATION

AVERAGE DAILY FLOW: 2.5

ORDINARY LOW WATER: 8.7

ORDINARY HIGH WATER: 77

TEMPORARY BRIDGE

STRUCTURE TYPE: Single span

CLEAR SPAN (NORMAL TO STREAM):

VERTICAL CLEARANCE ABOVE STREAMBED:

WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

* Temporary bridge designed to be removed

TRAFFIC DATA

1. MAINTAIN TRAFFIC ON A TEMPORARY BRIDGE
2. TRAFFIC SIGNALS ARE NEEDED
3. SIDEWALKS ARE NOT NEEDED

1. DESIGN LIVE LOAD
2. FUTURE PAVEMENT
3. DESIGN SPAN

4. MIN. MID-SPAN POS. CAMBER (%)
5. PRESTRESSING STRAND
6. PRESTRESSED CONCRETE STRAND
7. PRESTRESSED CONCRETE REINFORCING
8. CONCRETE, HIGH PERFORMANCE
9. CONCRETE, HIGH PERFORMANCE
10. CONCRETE, HIGH PERFORMANCE
11. CONCRETE, CLASS C
12. REINFORCING STEEL
13. STRUCTURAL STEEL AASHTO
14. SOIL UNIT WEIGHT
15. NOMINAL BEARING RESISTANCE
16. SOIL BEARING RESISTANCE FACTOR
17. NOMINAL BEARING RESISTANCE
18. ROCK BEARING RESISTANCE FACTOR
19. NOMINAL AXIAL PILE RESISTANCE
20. PILE YIELD STRENGTH ASTM A
21. PILE SIZE
22. EST. PILE LENGTH
23. PILE RESISTANCE FACTOR
24. LATERAL PILE DEFLECTION
25. BASIC WIND SPEED
26. MINIMUM GROUND SNOW LOAD
27. SEISMIC DATA

PROJECT NAME: BRATTLEBORO

PROJECT NUMBER: BRO

FILE NAME: r10j062.p1.dgn

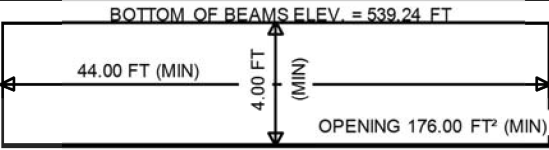
PROJECT LEADER: M. CHANET

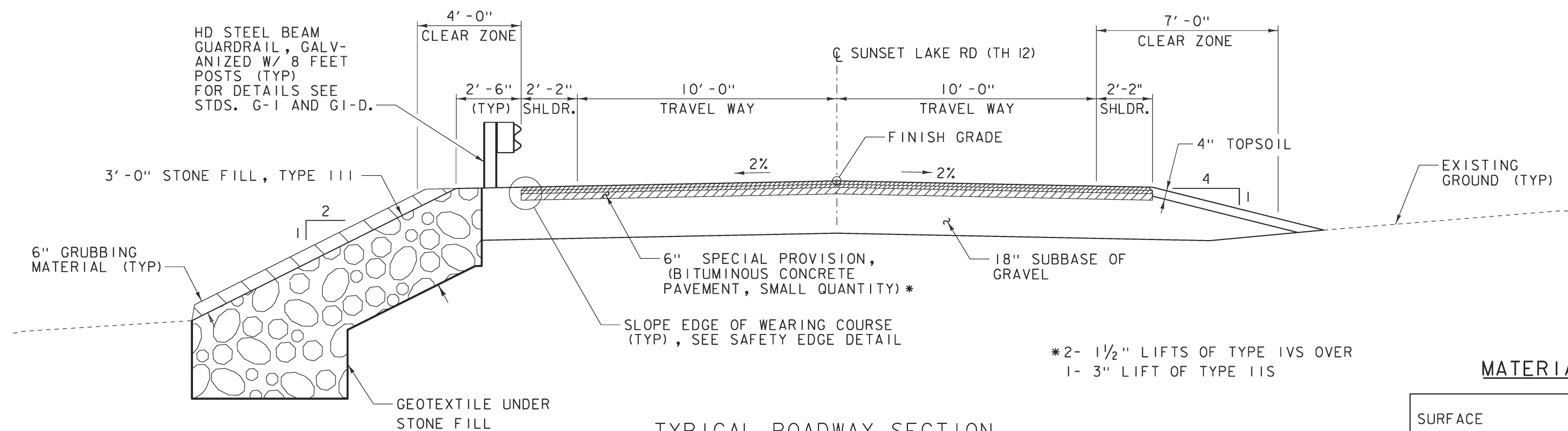
DESIGNED BY: VHB

PRELIMINARY INFORMATION SHEET

TRAFFIC DATA									
YEAR	ADT	DHV	% D	% T	ADTT	20 year ESAL for flexible pavement from 2012 to 2032 : 40000			
2012	460	50	76	2.1	10	40 year ESAL for flexible pavement from 2012 to 2052 : 93000			
2032	490	55	76	3.6	20	Design Speed : 25 mph			

TEMPORARY BRIDGE PROFILE ALONG TEMP CL



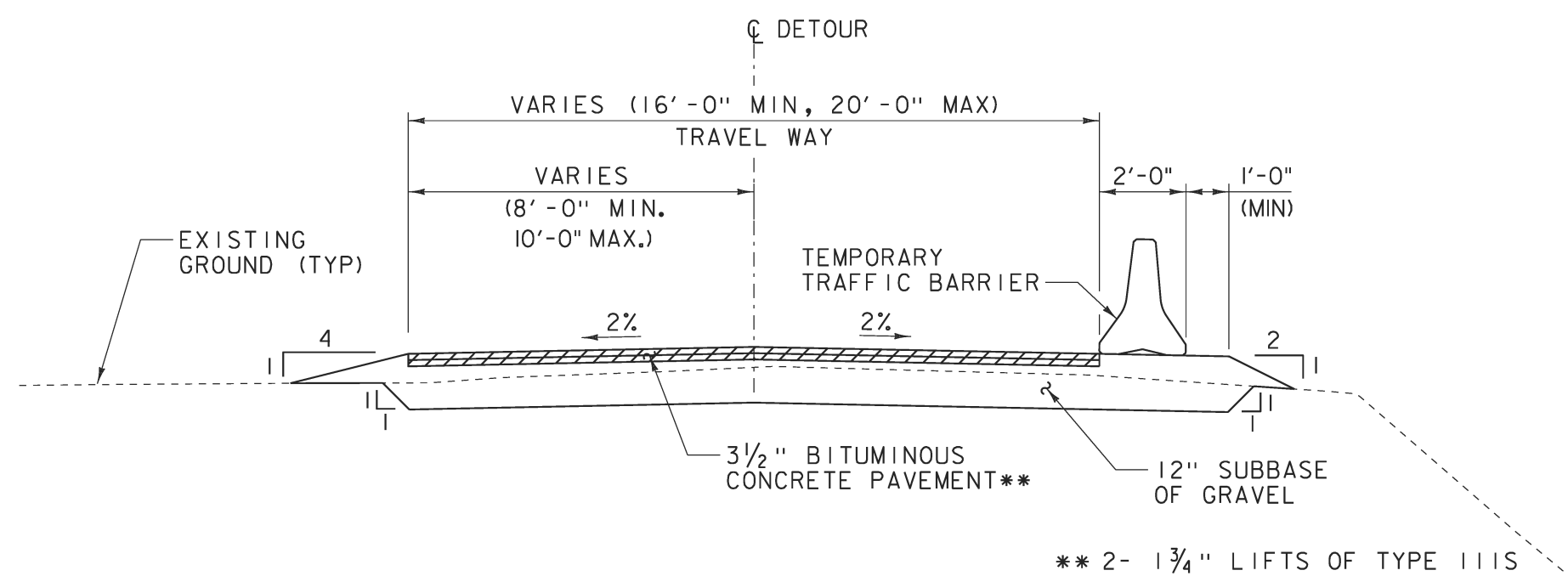


TYPICAL ROADWAY SECTION  
SCALE  $\frac{3}{8}$ " = 1'-0"

MATERIAL TOLERANCES

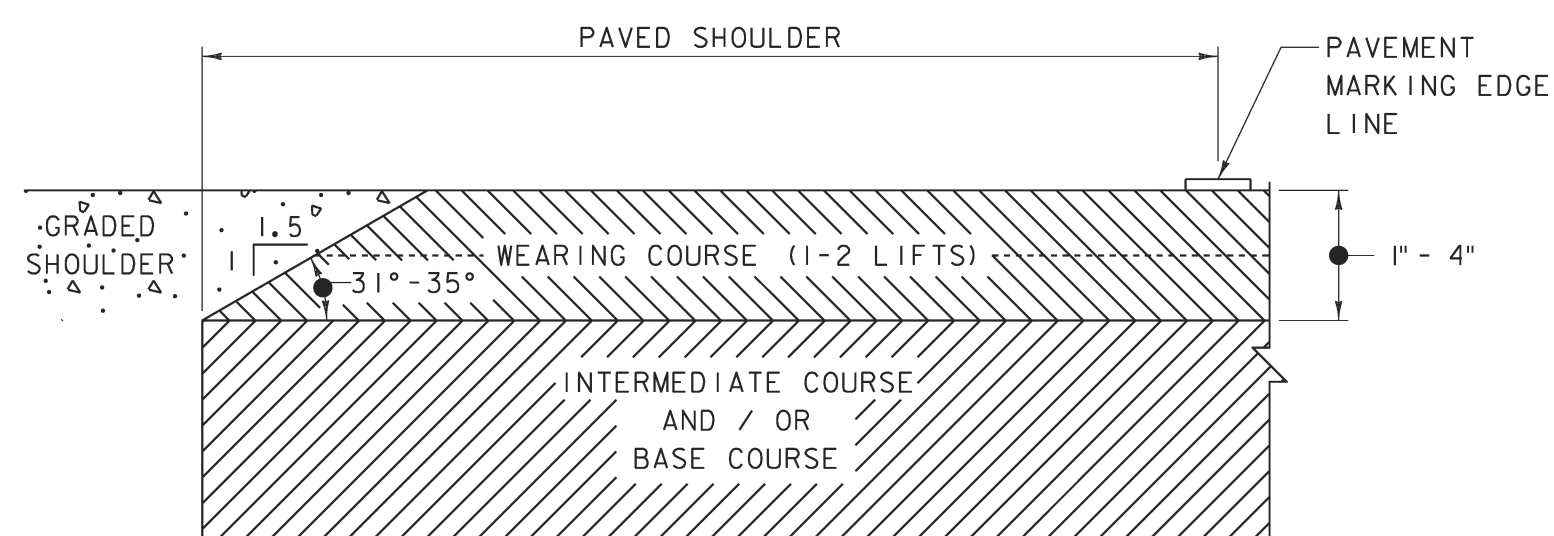
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- $\frac{1}{4}$ "
- SUBBASE	+/- 1"

*2-  $1\frac{1}{2}$ " LIFTS OF TYPE IVS OVER  
1- 3" LIFT OF TYPE IIS



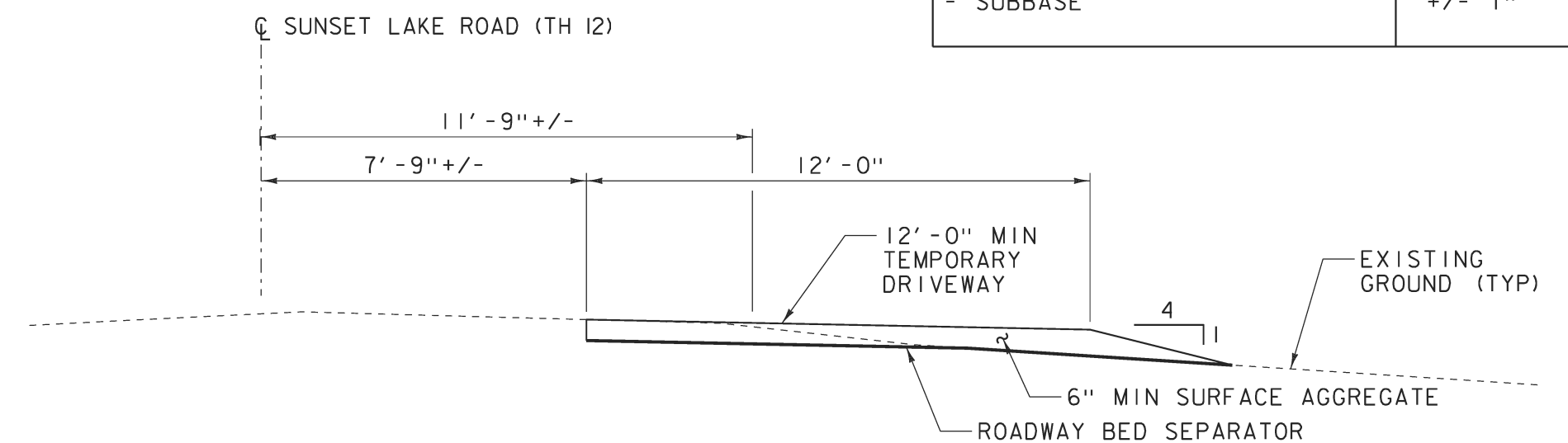
NOTE: ALL WORK ASSOCIATED WITH THE INSTALLATION AND REMOVAL OF THE DETOUR WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 528.10.

TYPICAL ONE-WAY DETOUR ROADWAY SECTION  
SCALE  $\frac{3}{8}$ " = 1'-0"



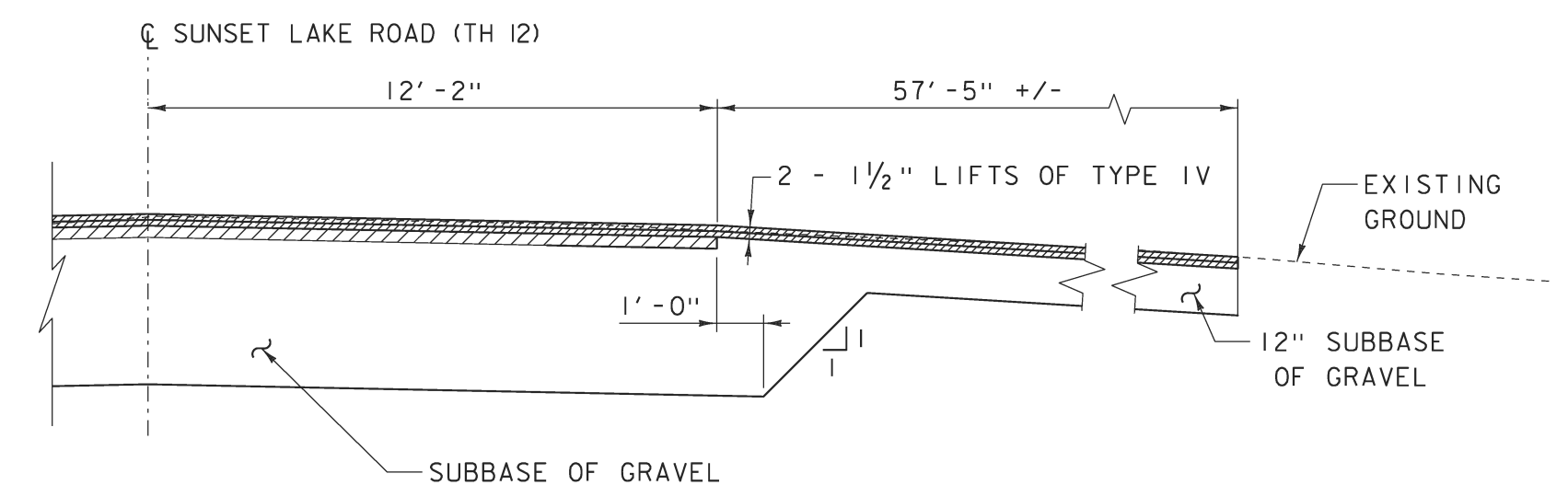
NOTE: COST FOR FORMING AND COMPACTING SAFETY EDGE SHALL BE INCIDENTAL TO ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".

SAFETY EDGE DETAIL  
NOT TO SCALE



NOTE: ALL WORK ASSOCIATED WITH THE INSTALLATION AND REMOVAL OF THE TEMPORARY DRIVEWAY WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 528.10.

TYPICAL TEMPORARY DRIVEWAY SECTION  
SCALE  $\frac{3}{8}$ " = 1'-0"



NOTE: SEE TYPICAL ROADWAY SECTION FOR INFORMATION NOT SHOWN.

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

PROJECT NAME:	BRATTLEBORO
PROJECT NUMBER:	BRO 1442(35)
FILE NAME:	r10j062.typ.dgn
PROJECT LEADER:	M. CHANETTE
DESIGNED BY:	VHB
TYPICAL SHEET	
PLOT DATE:	26-FEB-2013
DRAWN BY:	VHB
CHECKED BY:	VHB
SHEET	6 OF 15



GPS CONTROL POINTS

HVCTRL #2

MAG NAIL SET  
NORTH = 135124.4650  
EAST = 1607422.7270  
ELEV. = 541.0500

GENERAL LOCATION, WEST BRATTLEBORO, VT. FROM THE INTERSECTION OF VT ROUTE 9 AND SUNSET LAKE ROAD (T.H.12), PROCEED NORTH ON SUNSET LAKE ROAD (T.H.12) FOR 0.2 MI (0.3 KM) TO THE SOUTHWEST CORNER OF BRIDGE 7 OVER HALLADAY BROOK AND THE MARK ON THE LEFT. THE MARK IS SET IN THE PAVEMENT. SEE TRAVERSE TIES BELOW FOR TIE DISTANCES.

VCTRL #106

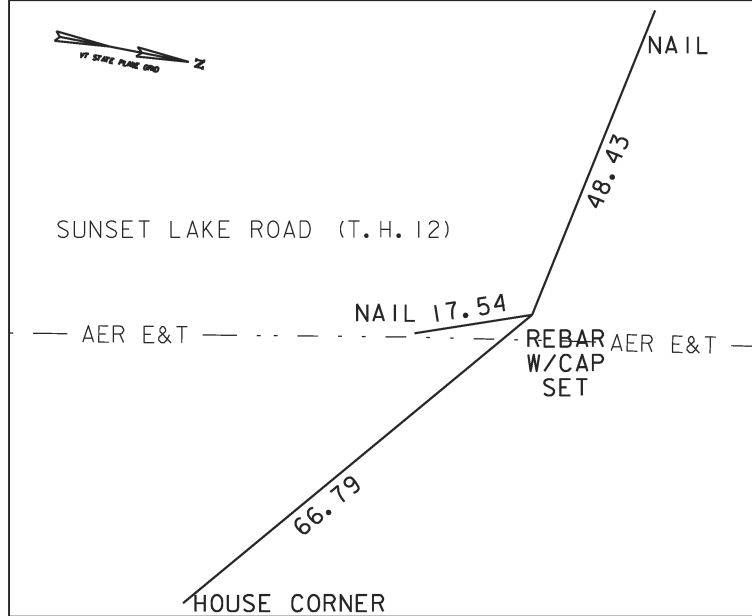
B 14 RESET 1988  
NORTH = 134276.6160  
EAST = 1608361.3210  
ELEV. = 522.7390

GENERAL LOCATION, BRATTLEBORO, VT., ABOUT 3.5 MI (5.6 KM) WEST OF BRATTLEBORO, ABOUT 13 MI (20.9 KM) EAST OF WILMINGTON, AND ABOUT 9.5 MI (15.3 KM) NORTH OF THE MASSACHUSETTS/VERMONT STATE LINE. TO REACH FROM THE EAST END OF THE VT ROUTE 9 BRIDGE OVER I-91 IN BRATTLEBORO GO WEST ALONG VT ROUTE 9 FOR 2.6 MI (4.2 KM) TO THE INTERSECTION OF WESTGATE DRIVE LEFT AND WINDING HILL ROAD RIGHT. TURN RIGHT AND GO NORTH ALONG WINDING HILL ROAD FOR 0.1 MI (0.2 KM) TO THE SOUTH END OF THE BRIDGE OVER HALLADAY BROOK AND THE MARK ON THE LEFT, SET IN THE TOP OF THE WINGWALL AT THE SOUTHWEST CORNER OF THE BRIDGE. THE MARK IS A STATE OF VERMONT SURVEY MARK AND IS 18.4 FT (5.6 M) WEST OF AND ABOUT 1.6 FT (0.5 M) LOWER THAN THE CENTERLINE OF WINDING HILL ROAD, 78.1 FT (23.8 M) EAST OF POLE NO.7-0-27/7-0/3/3, 99.1 FT (30.2 M) NORTH OF POLE NO.2A (WITH LUMEN), AND 18.0 FT (5.5 M) NORTHEAST OF A WATER METER MANHOLE.

TRAVERSE TIES

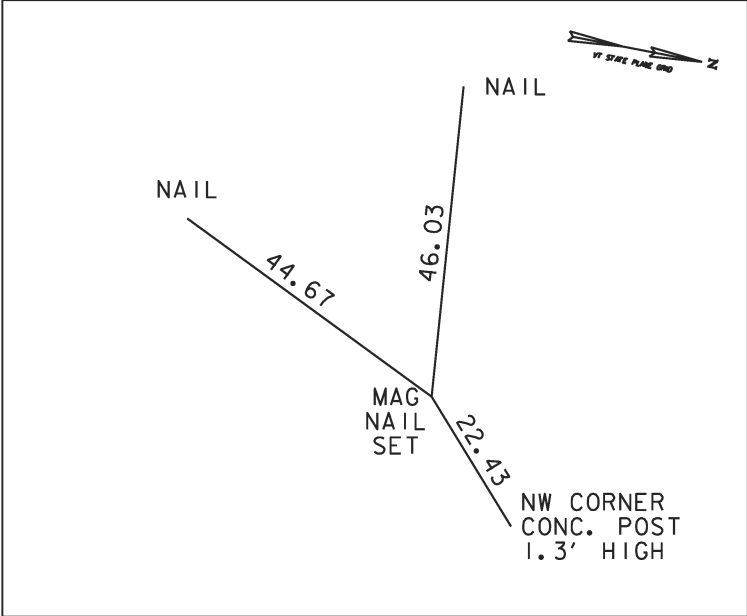
HVCTRL #1

NORTH = 135346.2320  
EAST = 1607405.2530  
ELEV. = 544.4800



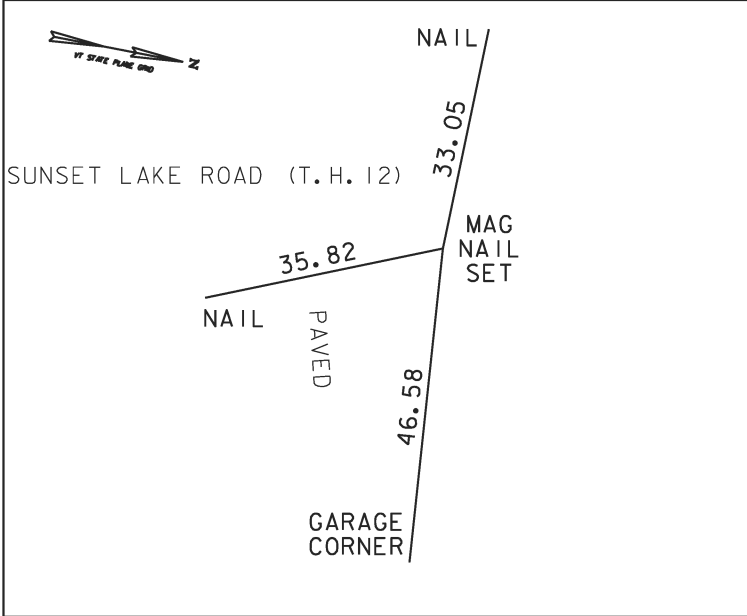
HVCTRL #2

NORTH = 135124.4650  
EAST = 1607422.7270  
ELEV. = 541.0500



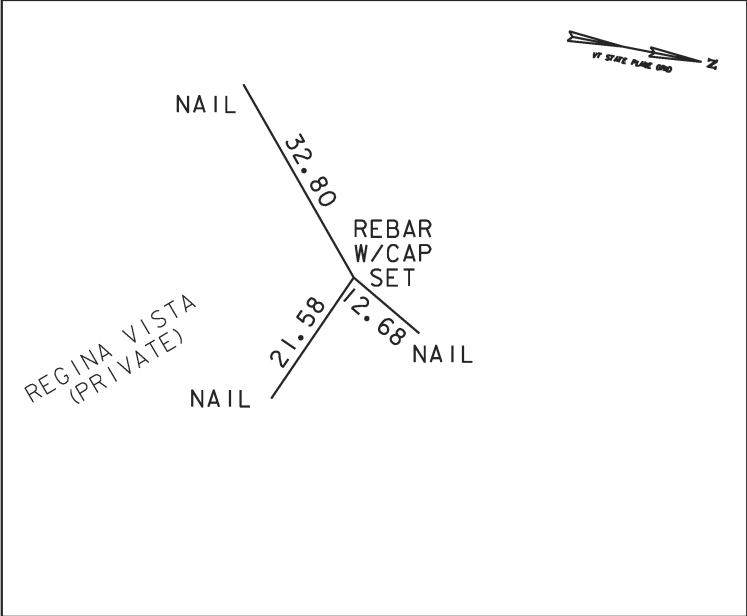
HVCTRL #3

NORTH = 134957.9520  
EAST = 1607472.1130  
ELEV. = 538.8600



HVCTRL #4

NORTH = 135243.2470  
EAST = 1607321.9680  
ELEV. = 546.6300

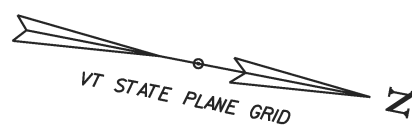


* Main Traverse Completed 11/15/10 by T.J.Gaudet and B.M.Klinefelter

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (07)

PROJECT NAME:	BRATTLEBORO
PROJECT NUMBER:	BRO 1442(35)
FILE NAME:	r10j062-11e.dgn
PROJECT LEADER:	M. CHANETTE
DESIGNED BY:	VHB
TIE SHEET	
PLOT DATE:	26-FEB-2013
DRAWN BY:	VHB
CHECKED BY:	VHB
SHEET	7 OF 15





DETOUR (T.H. 12)  
CURVE NO. 1 DATA

$\Delta$  = 19°05'20.51"  
D = 43°04'46.32"  
R = 133.00'  
T = 22.36'  
L = 44.31'  
E = 1.87'  
BANK = NONE

DETOUR (T.H. 12)  
CURVE NO. 2 DATA

$\Delta$  = 60°21'44.73"  
D = 127°19'26.24"  
R = 45.00'  
T = 26.17'  
L = 47.41'  
E = 7.06'  
BANK = NONE

DETOUR (T.H. 12)  
CURVE NO. 3 DATA

$\Delta$  = 38°31'27.38"  
D = 57°17'44.81"  
R = 100.00'  
T = 34.95'  
L = 67.24'  
E = 5.93'  
BANK = NONE

TH 12 STA. 101+90.25 =  
DETOUR POB STA. 1+00.00

DETOUR STA. 3+28.78 =  
CHANNEL STA. 10+53.76

REGINA VISTA  
(PRIVATE ROAD)

HALLADAY BROOK

SUNSET LAKE ROAD (T.H. 12)  
CURVE NO. 1 DATA

$\Delta$  = 2°55'41.70"  
D = 1°46'06.20"  
R = 3240.00'  
T = 82.81'  
L = 165.59'  
E = 1.06'  
BANK = NONE

SCALE 1" = 30'-0"  
30 0 30

SUNSET LAKE ROAD (T.H. 12)  
CURVE NO. 2 DATA

$\Delta$  = 4°07'28.14"  
D = 2°25'03.16"  
R = 2370.00'  
T = 85.34'  
L = 170.61'  
E = 1.54'  
BANK = NONE

MAINLINE ALIGNMENT

Horizontal Alignment Name: TH 12 Proposed

STATION	NORTHING	EASTING
Element: Linear		
POB (24)	100+00.00	134840.8468 1607485.0762
PC (25)	100+95.56	134934.4914 1607466.0249
Tangent Direction:	N 11°29'58.03" W	
Tangent Length:	95.56	

Element: Circular

PC (25)	100+95.56	134934.4914	1607466.0249
PI	101+78.38	135015.6414	1607449.5155
CC (26)		135580.4132	1610640.9871
PT (27)	102+61.15	135097.5289	1607437.1733

Radius: 3240.00

Delta: 2°55'41.70" Right

Degree of Curvature(Arc): 1°46'06.20"

Length: 165.59

Tangent: 82.81

Chord: 165.57

Middle Ordinate: 1.06

External: 1.06

Tangent Direction: N 11°29'58.03" W

Radial Direction: N 78°30'01.97" E

Chord Direction: N 10°02'07.18" W

Radial Direction: N 81°25'43.67" E

Tangent Direction: N 8°34'16.33" W

Element: Linear

PT (27)	102+61.15	135097.5289	1607437.1733
PC (28)	103+35.54	135171.0912	1607426.0859
Tangent Direction:	N 8°34'16.33" W		
Tangent Length:	74.39		

Element: Circular

PC (28)	103+35.54	135171.0912	1607426.0859
PI	104+20.88	135255.4781	1607413.3669
CC (30)		134817.8702	1605082.5554
PT (31)	105+06.15	135338.7317	1607394.6115

Radius: 2370.00

Delta: 4°07'28.14" Left

Degree of Curvature(Arc): 2°25'03.16"

Length: 170.61

Tangent: 85.34

Chord: 170.57

Middle Ordinate: 1.53

External: 1.54

Tangent Direction: N 8°34'16.33" W

Radial Direction: N 81°25'43.67" E

Chord Direction: N 10°38'00.40" W

Radial Direction: N 77°18'15.52" E

Tangent Direction: N 12°41'44.48" W

Element: Linear

PT (31)	105+06.15	135338.7317	1607394.6115
POE (29)	106+00.00	135430.2829	1607373.9868
Tangent Direction:	N 12°41'44.48" W		
Tangent Length:	93.85		

DETOUR ALIGNMENT

Horizontal Alignment Name: Detour

STATION	NORTHING	EASTING
Element: Linear		
POB(13)	1+00.00	135027.5412 1607448.5065
PC (14)	1+12.42	135039.5643 1607445.3982
Tangent Direction:	N 14°29'41.61" W	
Tangent Length:	12.42	

Element: Circular

PC (14)	1+12.42	135039.5643	1607445.3982
PI	1+34.78	135061.2153	1607439.8010
CC (15)		135006.2752	1607316.6316
PT (39)	1+56.73	135079.8452	1607427.4308

Radius: 133.00

Delta: 19°05'20.51" Left

Degree of Curvature(Arc): 43°04'46.32"

Length: 44.31

Tangent: 22.36

Chord: 44.11

Middle Ordinate: 1.84

External: 1.87

Tangent Direction: N 14°29'41.61" W

Radial Direction: N 75°30'18.39" E

Chord Direction: N 24°02'21.87" W

Radial Direction: N 56°24'57.88" E

Tangent Direction: N 33°35'02.12" W

Horizontal Alignment Name: Detour Proposed (Continued)

STATION	NORTHING	EASTING
Element: Linear		
PT (39)	1+56.73	135079.8452 1607427.4308
PC (36)	2+63.79	135169.0338 1607368.2101
Tangent Direction:	N 33°35'02.12" W	
Tangent Length:	107.06	

Element: Circular

PC (36)	2+63.79	135169.0338	1607368.2101
PI	2+89.96	135190.8362	1607353.7335
CC (37)		135193.9259	1607405.6985
PT (38)	3+11.20	135214.2004	1607365.5246

Radius: 45.00

Delta: 60°21'44.73" Right

Degree of Curvature(Arc): 127°19'26.24"

Length: 47.41

Tangent: 26.17

Chord: 45.25

Middle Ordinate: 6.10

External: 7.06

Tangent Direction: N 33°35'02.12" W

Radial Direction: N 56°24'57.88" E

Chord Direction: N 3°24'09.76" W

Radial Direction: S 63°13'17.40" E

Tangent Direction: N 26°46'42.60" E

Element: Linear

PT (38)	3+11.20	135214.2004	1607365.5246
PC (21)	3+62.83	135260.2927	1607388.7858
Tangent Direction:	N 26°46'42.60" E		
Tangent Length:	51.63		

Horizontal Alignment Name: Detour Proposed (Continued)

STATION	NORTHING	EASTING
Element: Circular		
PC (21)	3+62.83	135260.2927 1607388.7858
PI	3+97.77	135291.4903 1607404.5301
CC (22)		135305.3469 1607299.5103
PT (23)	4+30.06	135325.7039 1607397.4163

Radius: 100.00

Delta: 38°31'27.38" Left

Degree of Curvature(Arc): 57°17'44.81"

Length: 67.24

Tangent: 34.95

Chord: 65.98

Middle Ordinate: 5.60

External: 5.93

Tangent Direction: N 26°46'42.60" E

Radial Direction: S 63°13'17.40" E

Chord Direction: N 7°30'58.91" E

Radial Direction: N 78°15'15.22" E

Tangent Direction: N 11°44'44.78" W

Element: Linear

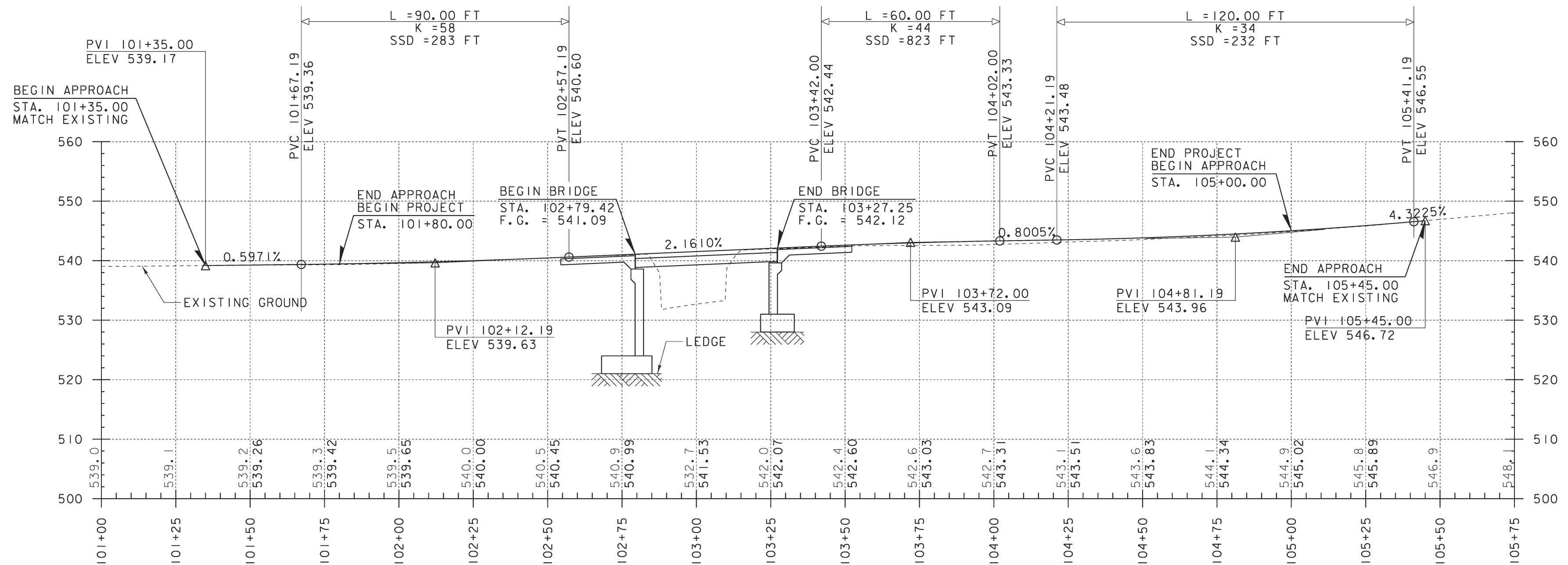
PT (23)	4+30.06	135325.7039	1607397.4163
POE(35)	4+37.24	135332.7293	1607395.9556
Tangent Direction:	N 11°44'44.78" W		
Tangent Length:	7.18		

PROJECT NAME: BRATTLEBORO

PROJECT NUMBER: BRO 1442(35)

FILE NAME: r10j062.dwg.dgn  
PROJECT LEADER: M. CHANETTE  
DESIGNED BY: VHB  
ALIGNMENT SHEET

PLOT DATE: 26-FEB-2013  
DRAWN BY: VHB  
CHECKED BY: VHB  
SHEET 8 OF 15



THE GRADES SHOWN TO THE NEAREST HUNDREDTH ARE THE ORIGINAL GROUND ELEVATIONS ALONG THE PROPOSED ALIGNMENT. THE GRADES SHOWN TO THE NEAREST THOUSANDTH ARE THE PROPOSED GRADES FOR THE NEW ALIGNMENT.

PROJECT NAME: BRATTLEBORO	
PROJECT NUMBER: BRO 1442(35)	
FILE NAME: r10j062.pro.dgn	PLOT DATE: 26-FEB-2013
PROJECT LEADER: M. CHANETTE	DRAWN BY: VHB
DESIGNED BY: VHB	CHECKED BY: VHB
PROFILE SHEET	SHEET 9 OF 15





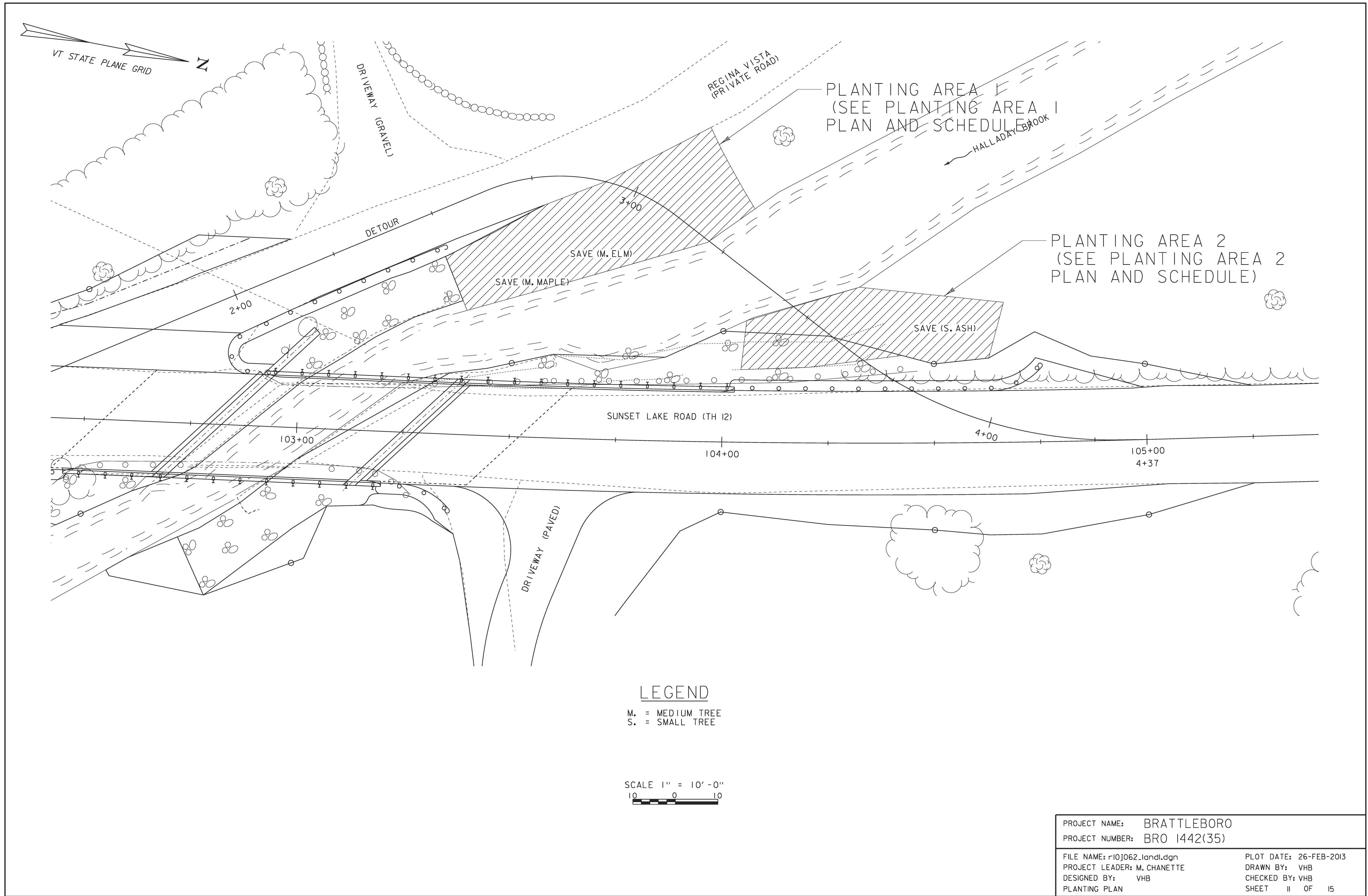
1. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN, THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION CONTROL PLAN FOR APPROVAL.
2. TEMPORARY EROSION CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON SITE COORDINATOR.
4. REFER TO TEMPORARY EROSION CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.



PROJECT NAME:	BRATTLEBORO
PROJECT NUMBER:	BRO 1442(35)

FILE NAME: r10j062_ero.dgn  
PROJECT LEADER: M. CHANETTE  
DESIGNED BY: VHB  
EPSC CONSTRUCTION CONDITIONS

PLOT DATE: 26-FEB-2013  
DRAWN BY: VHB  
CHECKED BY: VHB  
SHEET 10 OF 15



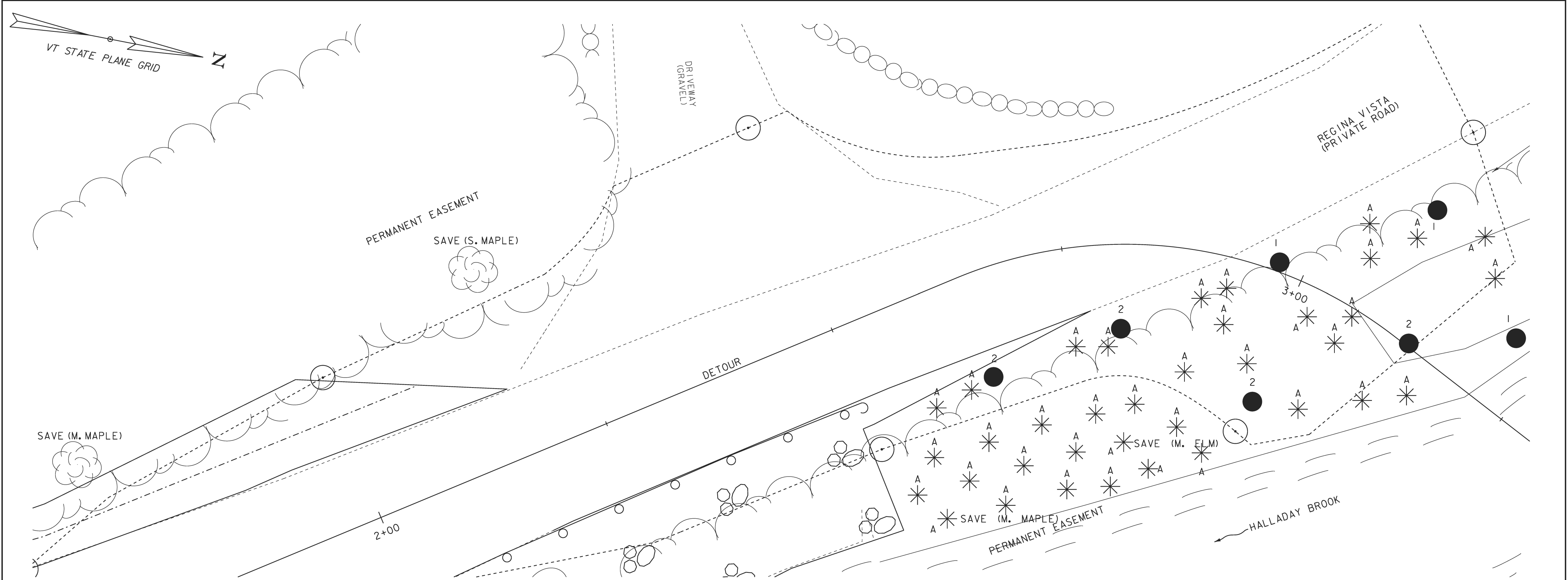
LEGEND

M. = MEDIUM TREE  
S. = SMALL TREE

SCALE 1" = 10' - 0"  
10 0 10

PROJECT NAME: BRATTLEBORO	
PROJECT NUMBER: BRO 1442(35)	
FILE NAME: r10j062_landl.dgn	PLOT DATE: 26-FEB-2013
PROJECT LEADER: M. CHANETTE	DRAWN BY: VHB
DESIGNED BY: VHB	CHECKED BY: VHB
PLANTING PLAN	SHEET 11 OF 15





Trees				
Planting Plan Code	Common Name	Scientific Name	Total Number of Trees 	Planting Stock Size
1	Red Maple	<i>Acer rubrum</i>	3	2.5"-3" (dia)
2	Silver Maple	<i>Acer saccharinum</i>	4	2"-2.5" (dia)

 - TOTAL NUMBER OF TREES IN PLANTING AREA I

Shrubs				
Planting Plan Code	Common Name	Scientific Name	Total Number of Shrubs  	Size of Stock (Height)
A	Red-Osier Dogwood	<i>Cornus Sericea</i>	37	36"-48"

  - TOTAL NUMBER OF SHRUBS IN PLANTING AREA I

LEGEND

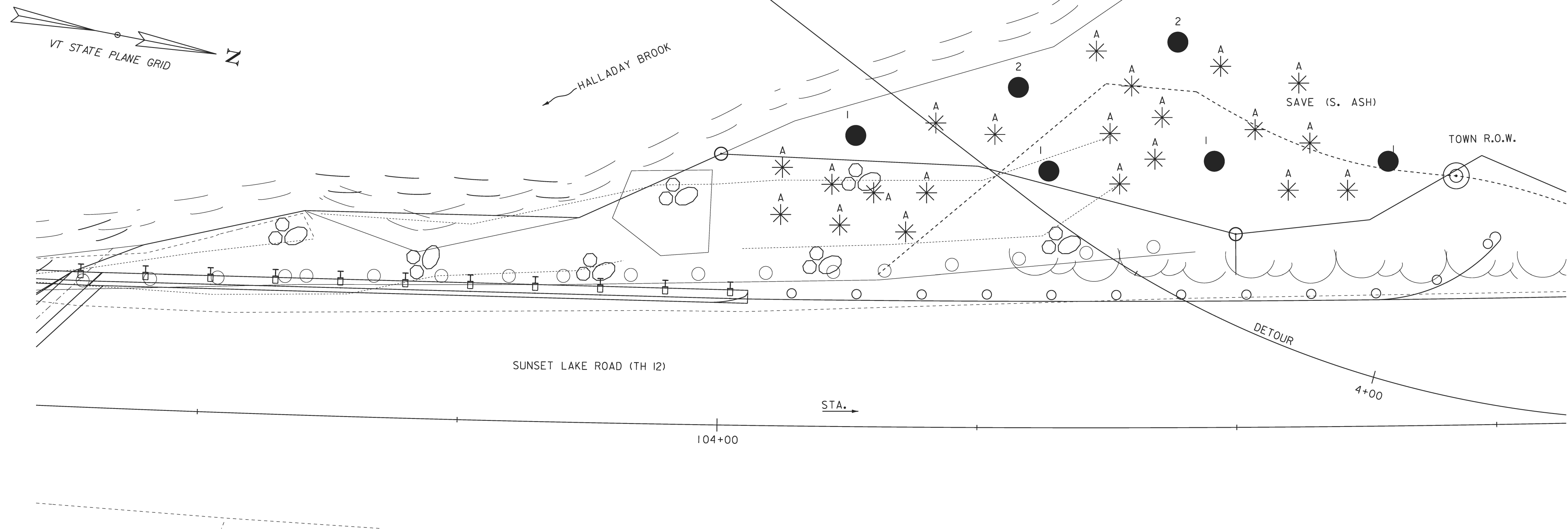
 - TREE

 - SHRUB

SCALE 1" = 5' - 0"  


PROJECT NAME:	BRATTLEBORO
PROJECT NUMBER:	BRO 1442(35)
FILE NAME: r10j062_land2.dgn	PLOT DATE: 19-JUL-2013
PROJECT LEADER: M. CHANETTE	DRAWN BY: VHB
DESIGNED BY: VHB	CHECKED BY: VHB
PLANTING AREA I PLAN AND SCHEDULE	SHEET 12 OF 15





Trees				
Planting Plan Code	Common Name	Scientific Name	Total Number of Trees 	Planting Stock Size
1	Red Maple	<i>Acer rubrum</i>	4	2.5"-3" (dia)
2	Silver Maple	<i>Acer saccharinum</i>	2	2"-2.5" (dia)

 - TOTAL NUMBER OF TREES IN PLANTING AREA 2

Shrubs				
Planting Plan Code	Common Name	Scientific Name	Total Number of Shrubs 	Size of Stock (Height)
A	Red-Osier Dogwood	<i>Cornus Sericea</i>	21	36"-48"

 - TOTAL NUMBER OF SHRUBS IN PLANTING AREA 2

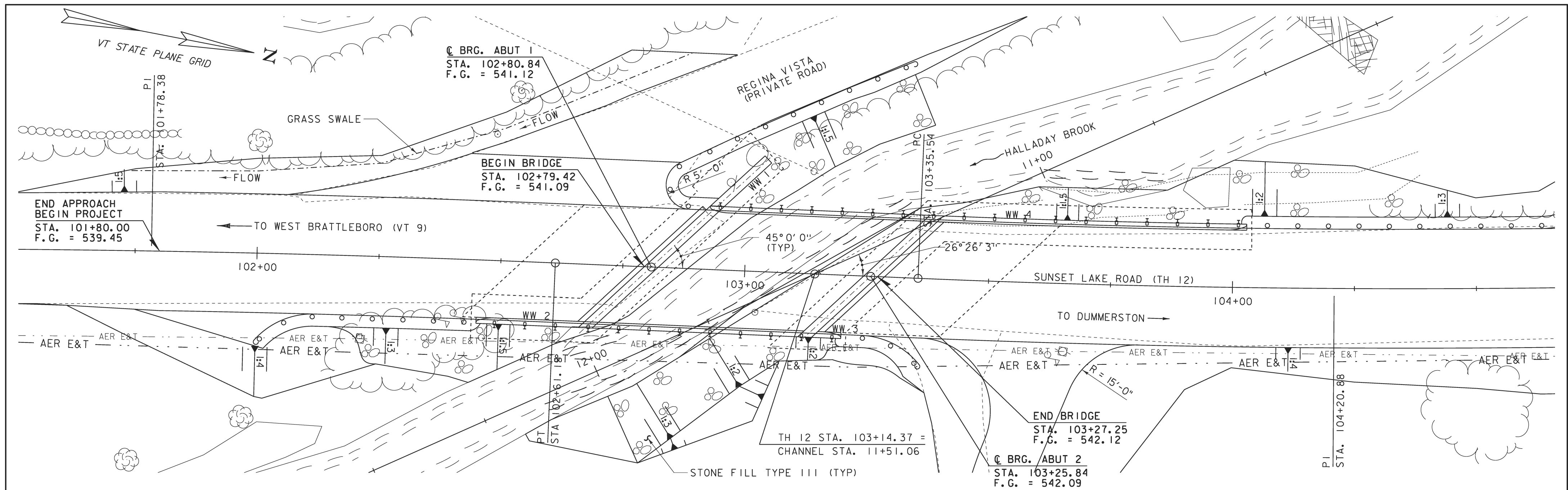
LEGEND

 - TREE

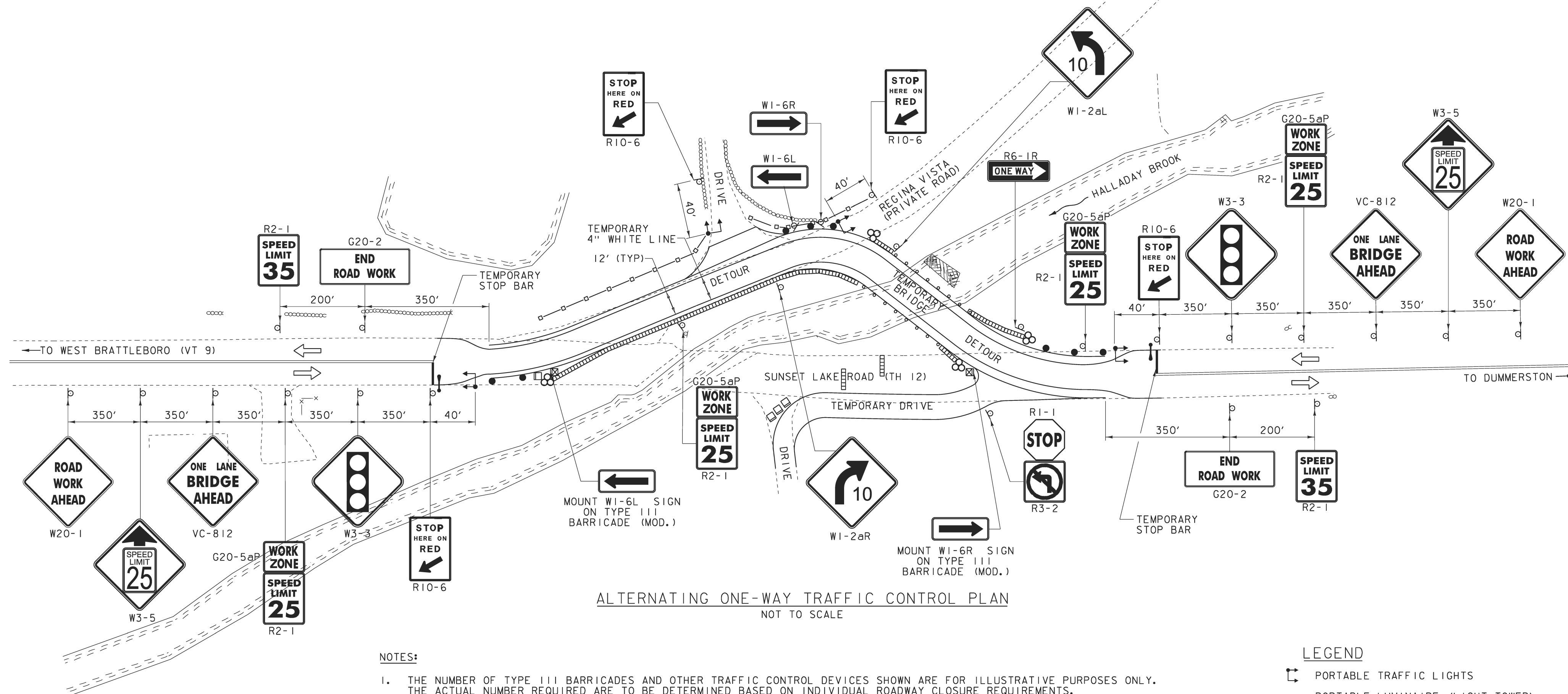
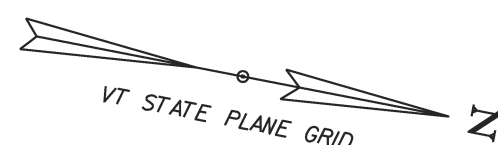
 - SHRUB

SCALE 1" = 5' - 0"  


PROJECT NAME: BRATTLEBORO	
PROJECT NUMBER: BRO 1442(35)	
FILE NAME: r10j062_land3.dgn	PLOT DATE: 19-JUL-2013
PROJECT LEADER: M. CHANETTE	DRAWN BY: VHB
DESIGNED BY: VHB	CHECKED BY: VHB
PLANTING AREA 2 PLAN & SCHEDULE	SHEET 13 OF 15







ALTERNATING ONE-WAY TRAFFIC CONTROL PLAN  
NOT TO SCALE

NOTES:

1. THE NUMBER OF TYPE III BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED ARE TO BE DETERMINED BASED ON INDIVIDUAL ROADWAY CLOSURE REQUIREMENTS.
2. THE EXISTING SPEED LIMIT IS 35 MPH. THE SPEED LIMIT WILL BE REDUCED TO 25 MPH THROUGH THE DETOUR FOR THIS PROJECT.
3. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND THE "STANDARD HIGHWAY SIGNS" BOOK (SHS) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).
4. SOLID SUBSTRATE CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) TYPE VII, VIII, OR IX REQUIREMENTS, UNLESS OTHERWISE NOTED. SOLID SUBSTRATE REGULATORY SIGNS (WHITE BACKGROUND) SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING ASTM TYPE III.
5. SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES. DURING PERIODS OF INACTIVITY OR UPON COMPLETION OF THE WORK, EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER. SIGNS SHALL BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER.
6. FIXED SIGNS SHALL BE SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST SEVEN FEET ABOVE THE EDGE OF PAVEMENT.
7. DURING NON-WORK PERIODS, ALL EQUIPMENT SHALL BE MOVED TO A LOCATION OFF PAVED SHOULDERS AND OUTSIDE THE CLEAR ZONE, OR PROTECTED BY TRAFFIC BARRIER OR GUARDRAIL.
8. AN ENERGY ABSORPTION ATTENUATOR SHALL BE LOCATED AT THE END OF THE BARRIER.

LEGEND

- PORTABLE TRAFFIC LIGHTS
- PORTABLE LUMINAIRE (LIGHT TOWER)
- REFLECTIVE PLASTIC DRUM
- FLOW OF TRAFFIC
- TYPE III BARRICADE
- TYPE III BARRICADE (MOD.)
- ENERGY ABSORPTION ATTENUATOR
- CONCRETE MEDIAN BARRIER
- FABRIC SCREENING FENCE (SEE TCP 3 OF 3)

PROJECT NAME: BRATTLEBORO	
PROJECT NUMBER: BRO 1442(35)	
FILE NAME: r10j062.tcdgn	PLOT DATE: 26-FEB-2013
PROJECT LEADER: M. CHENETTE	DRAWN BY: VHB
DESIGNED BY: VHB	CHECKED BY: VHB
TRAFFIC CONTROL	SHEET 15 OF 15