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STATE OF VERMONT AGENCY OF TRANSPORTATION



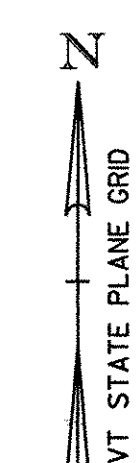
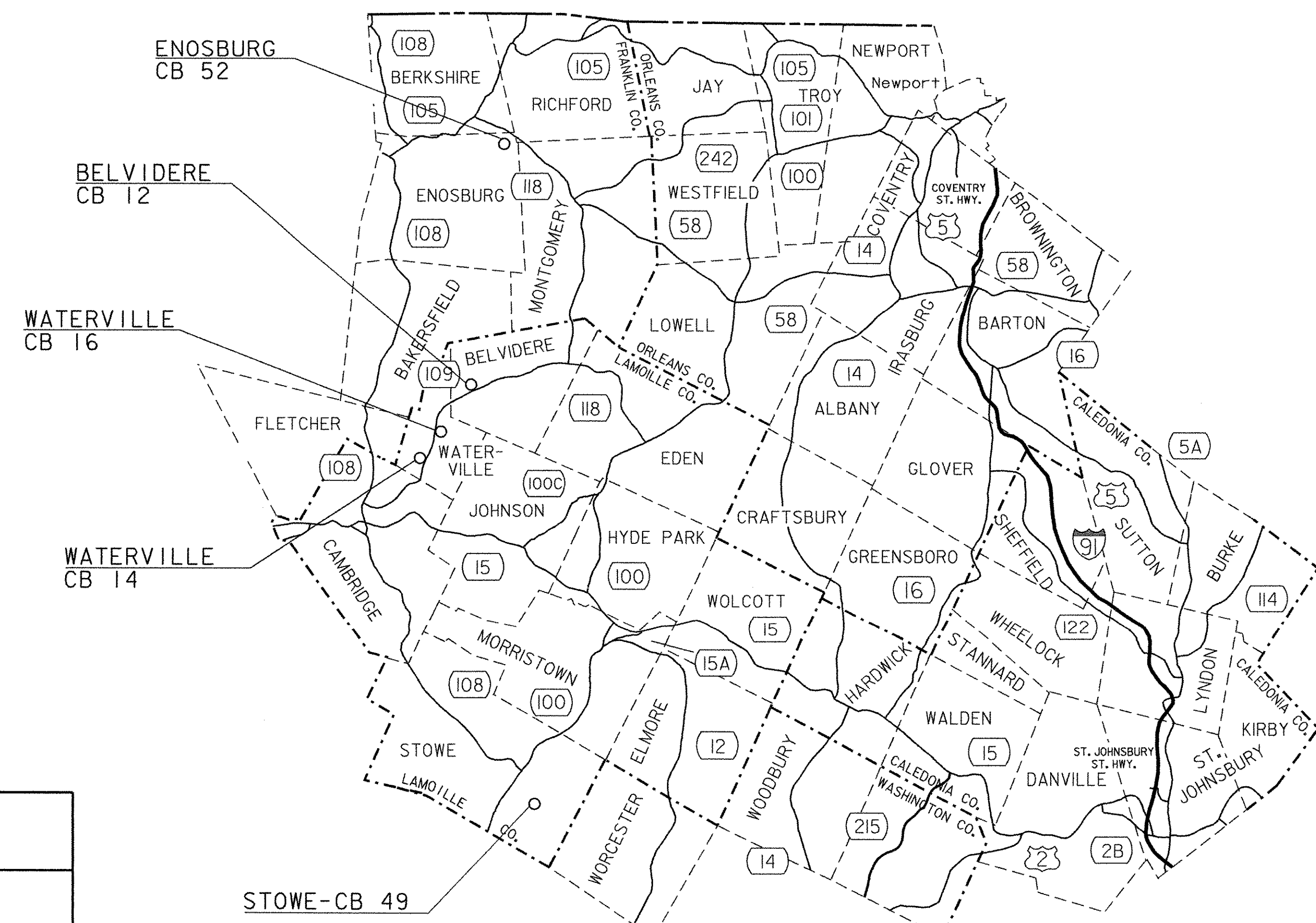
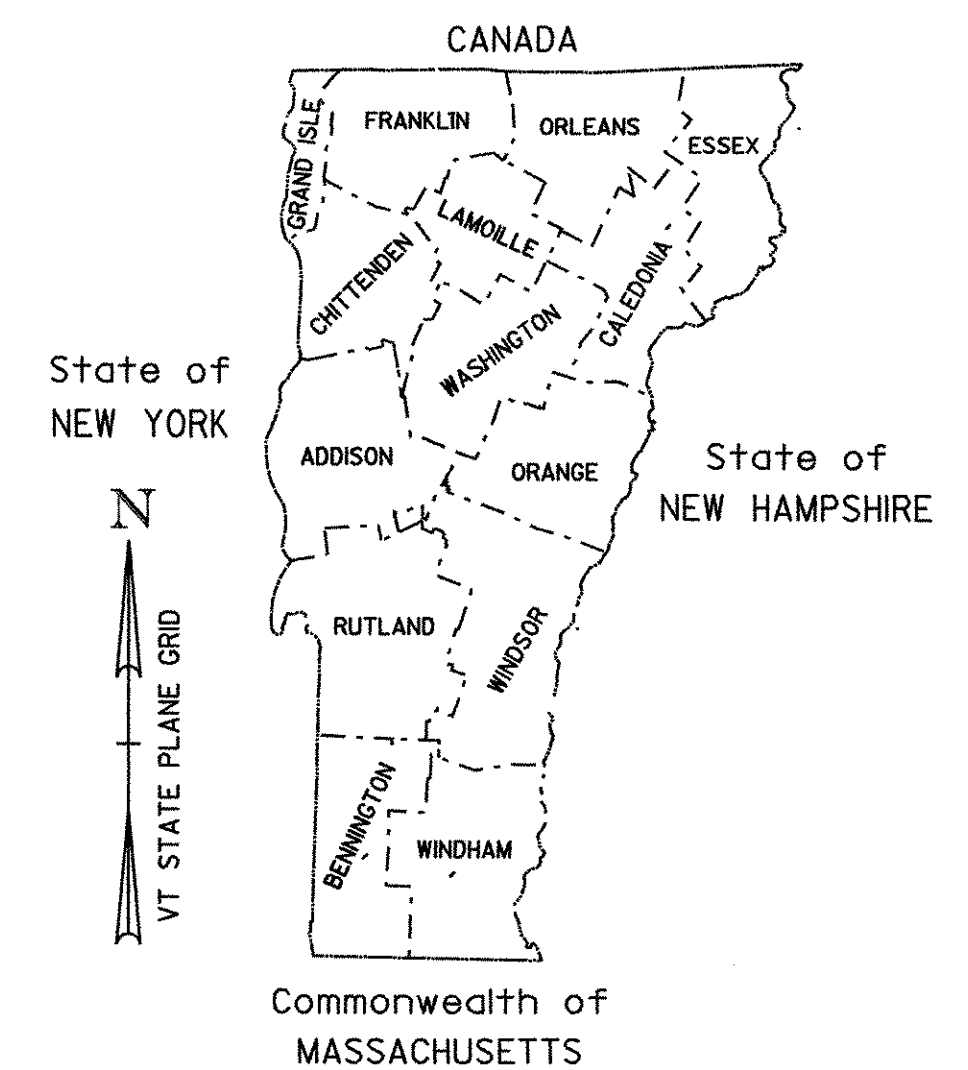
PROPOSED IMPROVEMENT BRIDGE PROJECTS

NORTHERN REGION

- STOWE BHO 1446 (32)
- WATERVILLE BHO 1448 (33)
- WATERVILLE BHO 1448 (34)
- BELVIDERE BHO 1448 (35)
- ENOSBURG BHO 1448 (36)

PROJECT DESCRIPTION

REHABILITATING EXISTING STONE ABUTMENTS AND WINGWALLS, CUTTING/TRIMMING, PROVIDING APPROACH RAILINGS, SIGNS, AND FIRE RETARDANT. OTHER MISCELLANEOUS WORK.



RECORD PLANS	
CONTRACTOR:	BLOW & COTE - MORRISVILLE, VT
RESIDENT ENGINEER:	JEFF COTA
CONSTRUCTION BEGAN:	JUNE 3, 2005
CONSTRUCTION COMPLETE:	SEPTEMBER 30, 2005
RECORD PLANS BY:	JEFF COTA
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.	
BY:	RESIDENT ENGINEER
DATE:	2/27/08
NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.	

CONVENTIONAL SYMBOLS	
COUNTY LINE	
TOWN LINE	
LIMITS OF ACCESS	
POINT OF ACCESS	X
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	

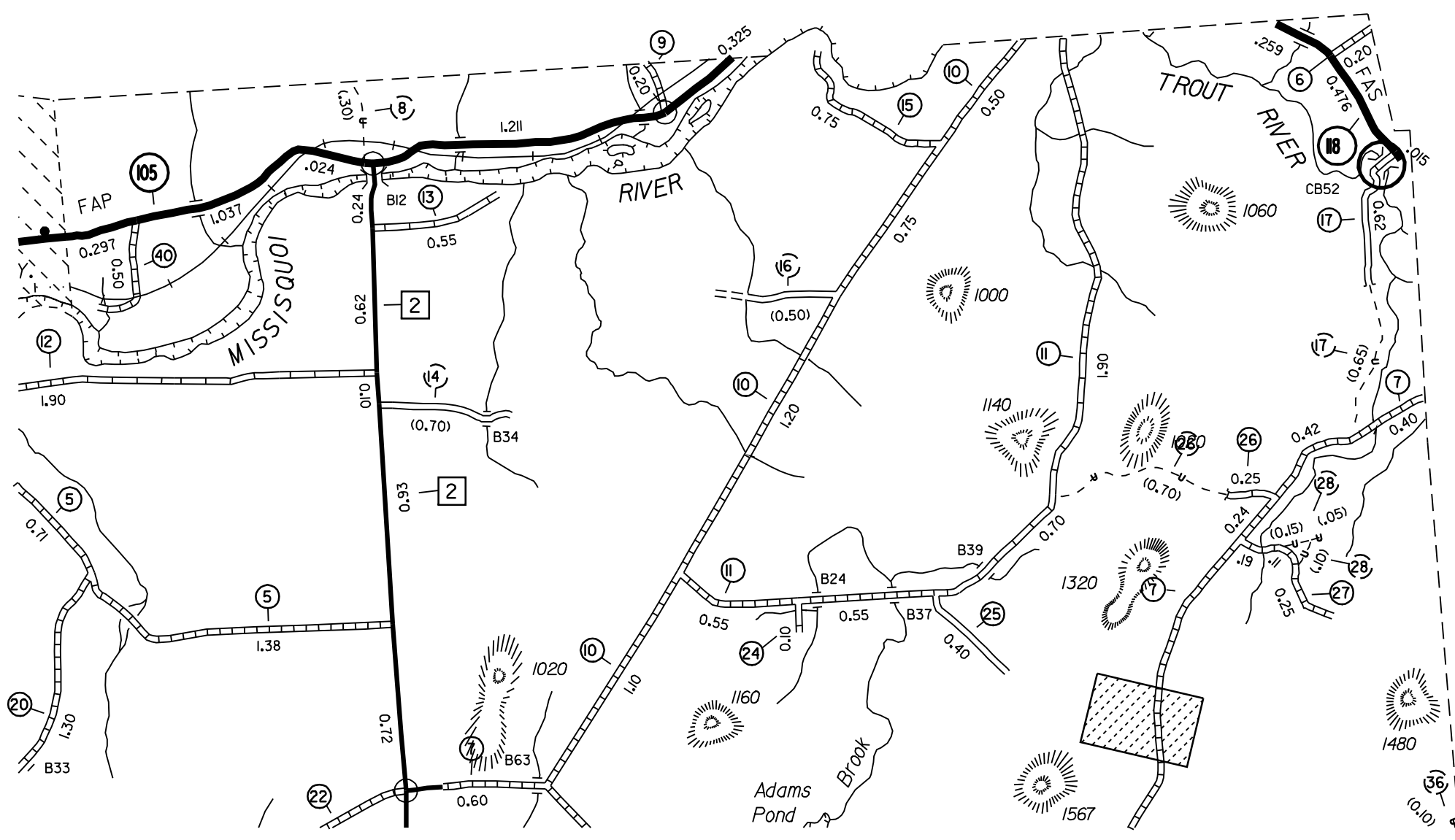
SURVEYED BY :
SURVEYED DATE :

DATUM
VERTICAL
HORIZONTAL

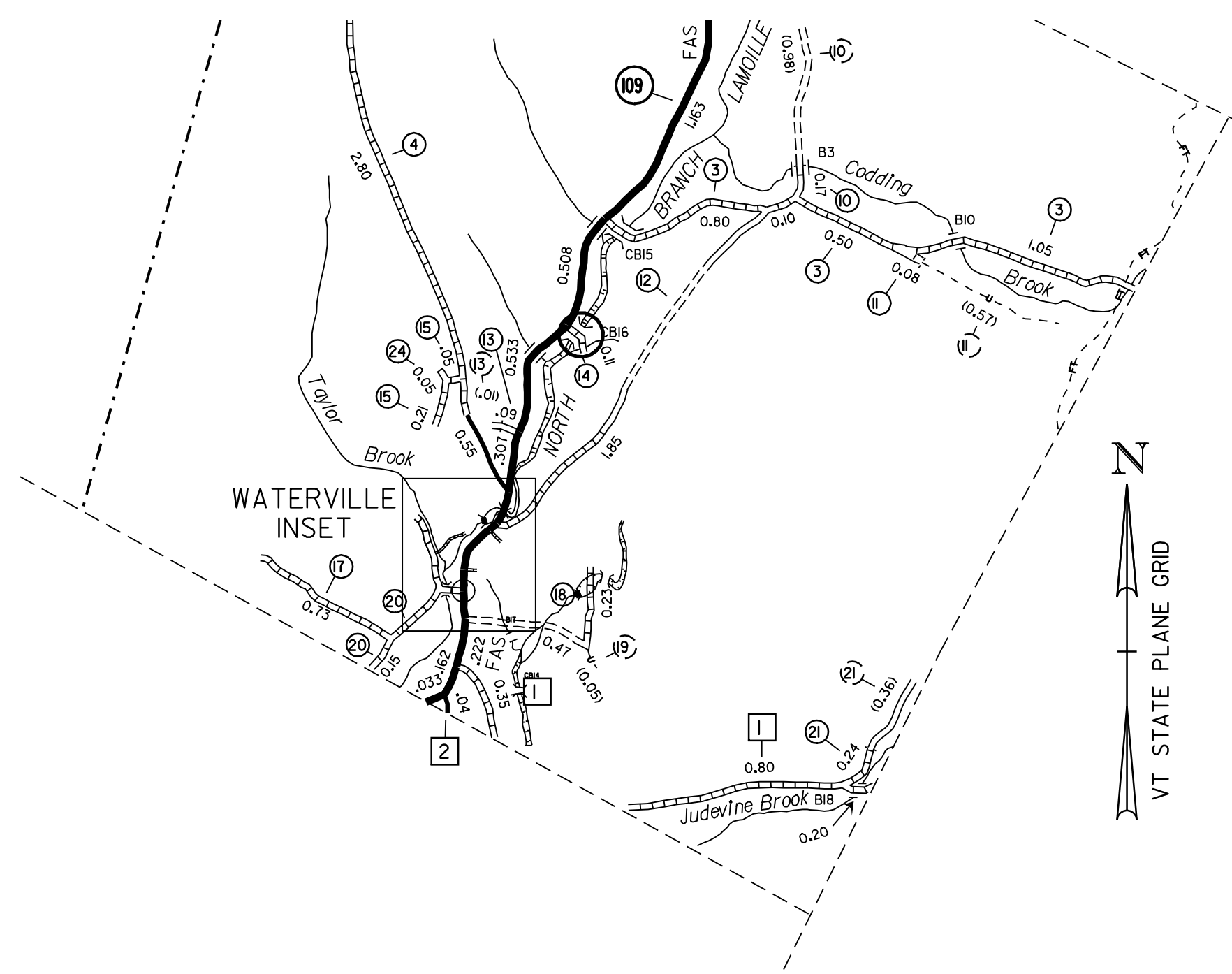
BUILT AS DESIGNED

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 2001, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2001 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

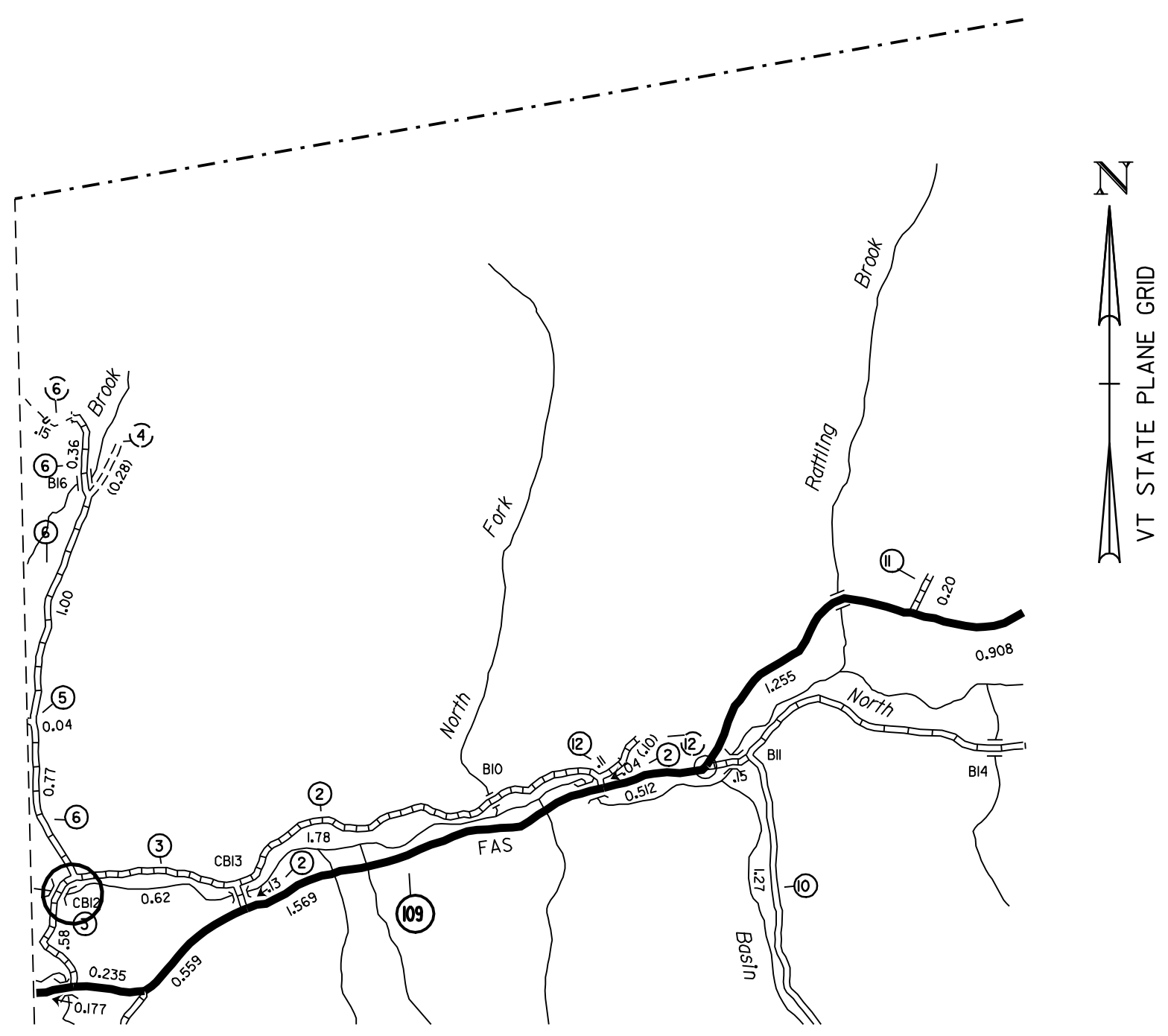
DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATOR
APPROVED _____ DATE _____
DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED _____ DATE _____
PROJECT MANAGER : J. WEAVER
PROJECTS : NORTHERN REGION
SHEET 1 OF 9 SHEETS



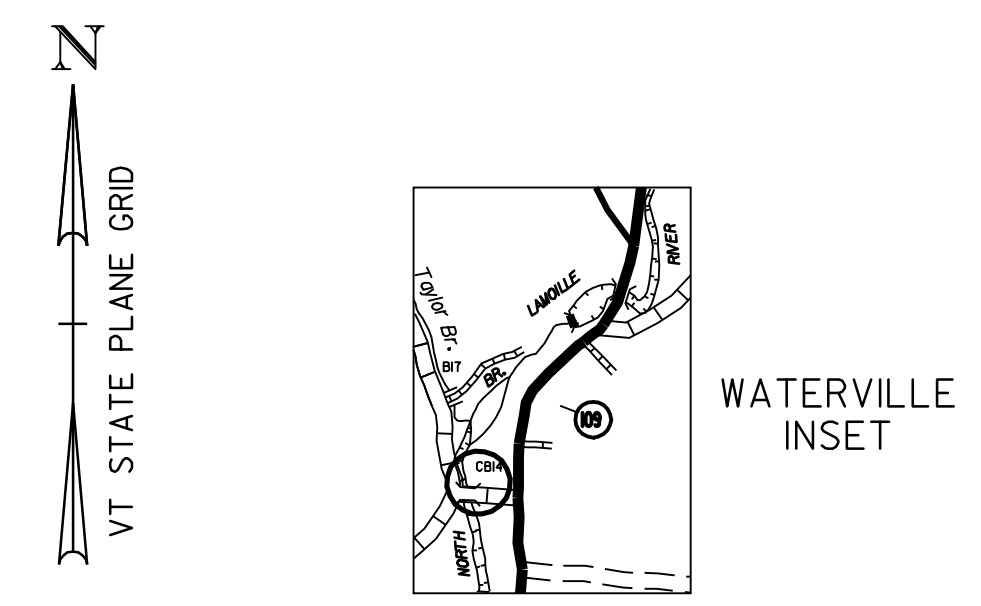
ENOSBURG BHO 1448 (36)
HOPKINS COVERED BRIDGE C.B.52



WATERVILLE BHO 1448 (34)
MONTGOMERY COVERED BRIDGE C.B.16

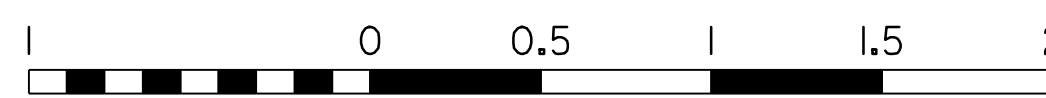


BELVIDERE BHO 1448 (35)
MILL COVERED BRIDGE C.B.12



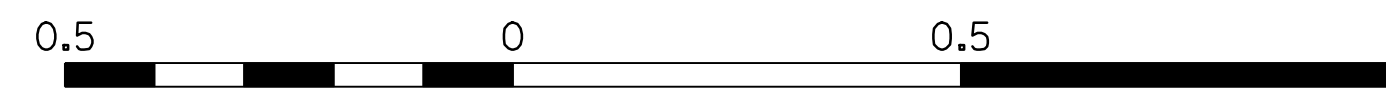
WATERVILLE BHO 1448 (33)
VILLAGE COVERED BRIDGE C.B.14

SCALE 1: 31680

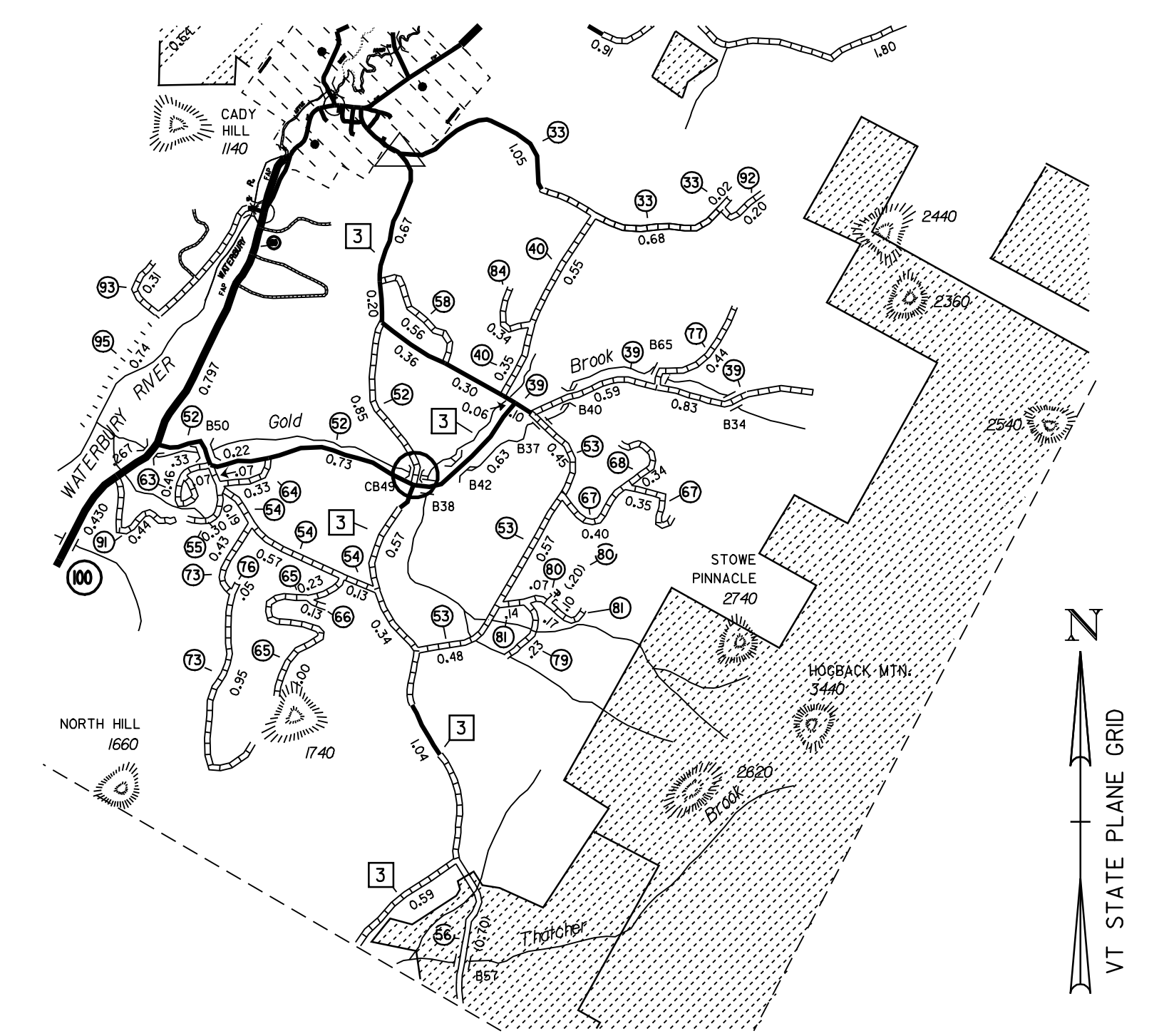


MILES

SCALE 1: 12000



MILES
(SCALE FOR INSET)



STOWE BHO 1446 (32)
GOLD BROOK COVER BRIDGE
CB 49

PROJECTS: NORTHERN REGION	
DESIGN FILE NAME:	PLOT DATE: 06-MAY-2008
IPARM FILE NAME:	DRAWN BY: J. WHITE
DESIGNED BY: J. WEAVER	CHECKED BY: J. WEAVER
LOCATION MAPS SHEET	SHEET: 2 OF 9

GENERAL NOTES:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 2002, AND ITS LATEST REVISIONS.
2. ALL INFORMATION PROVIDED IN THE PLANS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING THE WORK.
3. FOUNDATION WORK AND OTHER WORK SHALL BE AS SPECIFIED WITHIN THE PROJECT SPECIAL PROVISIONS AND OTHER CONTRACT DOCUMENTS.
4. THE ITEM STRUCTURAL LUMBER AND TIMBER UNTREATED (522.20) SHALL BE USED TO REPLACE ROTTEN OR DAMAGED ROOF SHEATHING. THE QUANTITY FOR ITEM 522.20 SHOWN ON SHEET 5 IS AN ESTIMATE BASED ON VISUAL INSPECTION. THE LUMBER USED SHALL BE STRESS GRADED BOARDS SPECIES = EASTERN SPRUCE, GRADE NO. 1 OR BETTER. THE MATERIAL USED SHALL BE DRESSED AND CLOSELY RESEMBLE THE DIMENSIONS (WIDTH AND THICKNESS) OF MATERIAL BEING REPLACED. GALVANIZED WOOD SCREWS SHALL BE USED; PAYMENT TO BE INCIDENTAL TO ITEM 522.20.
5. THE ITEM 665.15 "REMOVING EXISTING ROOF" INCLUDES THE COST OF REMOVING THE METAL ROOF AS WELL AS ANY UNSUITABLE SHEATHING, OR OTHER DECAYED ROOF MEMBERS AS ORDERED BY THE ENGINEER.
6. THE ROOFING COLOR FOR THE WATERVILLE C.B. 16 IS GREEN AND THE ESTIMATED ROOF AREA IS 1400 SQ. FT.
7. BRIDGES THAT WILL BE CLOSED DURING CONSTRUCTION WORK MAY BE CLOSED TO ALL PEDESTRIAN AND VEHICULAR TRAFFIC. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND PROVIDE THE TOWNS WRITTEN NOTICE A MINIMUM OF 3 WEEKS PRIOR TO THE ANTICIPATED BRIDGE CLOSURE. THE CONTACT INFORMATION FOR EACH TOWN AND OTHER PERTINENT INFORMATION ARE PROVIDED ON SHEET 4. ONCE A BRIDGE IS CLOSED ALL WORK SHALL BE PERFORMED CONTINUOUSLY TO MINIMIZE THE DURATION OF BRIDGE CLOSURE TIME.
8. ALL WORK IS TO BE COMPLETED WITHIN THE AVAILABLE TOWN-OWNED RIGHT-OF-WAY AS DETAILED ON SHEET 4. THE R.O.W. IS ASSUMED TO BE CENTERED ABOUT THE CENTER LINE OF THE BRIDGE OR ROADWAY. NO PROVISIONS HAVE BEEN MADE TO GO OUTSIDE THE EXISTING RIGHT-OF-WAY AND NO CONTRACT WORK SHALL BE PERFORMED OR PAID FOR OUTSIDE OF EXISTING TOWN-OWNED RIGHT-OF-WAY LIMITS. SHOULD THE CONTRACTOR REQUIRE ANY ADDITIONAL R.O.W. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL EASEMENTS.
9. IT IS ANTICIPATED THAT NO WORK WILL TAKE PLACE WITHIN THE STREAMBEDS. FURTHERMORE, NO CONTRACTOR OFF-ROAD VEHICLES WILL BE ALLOWED IN THE STREAMBED AREAS. FOR ANY CONTRACTOR'S REQUIRED OPERATIONS IN THE STREAM, AND ERECTING STAGING, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL PERMITS.
10. GREAT CARE SHALL BE TAKEN BY THE CONTRACTOR TO PREVENT ANY MATERIAL FROM ENTERING THE STREAMBEDS PER SECTION 105 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. ANY MATERIAL THAT DOES ESCAPE THE CONTRACTOR'S CONTAINMENT SYSTEM WILL BE RECOVERED IMMEDIATELY.
11. IT IS NOT ANTICIPATED THAT ANY UTILITIES WILL REQUIRE ADJUSTMENT. THE CONTRACTOR IS CAUTIONED TO PROTECT THESE FACILITIES FROM DAMAGE. ALL DAMAGE TO UTILITIES AS RESULT OF THE CONTRACTOR'S OPERATIONS WILL BE REPAIRED AT NO COST TO THE STATE. SHOULD THE CONTRACTOR DESIRE UTILITY RELOCATIONS FOR ITS OWN BENEFIT, ALL COSTS WILL BE THE CONTRACTOR'S RESPONSIBILITY.
12. ALL WORK SHALL PROCEED IN A CAREFUL, ORDERLY MANNER SO THAT AFFECTED HISTORIC STRUCTURES ARE NOT DAMAGED IN ANY WAY. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL DAMAGE TO THE STRUCTURE AS A RESULT OF ITS OPERATIONS AT NO COST TO THE STATE. ALL DAMAGE WILL BE REPORTED TO THE PROJECT MANAGER IMMEDIATELY AND NO REPAIRS WILL BE MADE UNTIL APPROVED BY THE AGENCY.
13. ALL TRAFFIC CONTROL DEVICES, INCLUDING BUT NOT LIMITED TO SIGNS, BARRELS, BARRICADES, CONES, BARRIERS, NECESSARY FOR MAINTENANCE OF TRAFFIC DURING CONSTRUCTION WILL BE PAID UNDER ITEM 641.10 TRAFFIC CONTROL. WHILE DETOURS AS DETAILED IN STANDARD 107 WILL NOT BE ENCOUNTERED, GENERAL PLACEMENT OF APPROACH SIGNING AND "ROAD CLOSED" SIGNS WILL BE AS SHOWN ON STANDARD 107. AS CONDITIONS AT EACH SITE VARY, THE CONTRACTOR MAY CHOOSE TO SUBMIT INDIVIDUAL TRAFFIC CONTROL PLANS FOR REVIEW.
14. ALL REMOVED MATERIAL WILL BECOME THE PROPERTY OF THE CONTRACTOR.
15. AT WATERVILLE C.B. 16 THE REMOVAL OF THE ROOF, REPAIR OF SHEATHING AND REPLACEMENT OF THE NEW ROOF WILL PROGRESS ON A CONTINUOUS BASIS. THE BRIDGE WILL BE PROTECTED AGAINST THE ELEMENTS AT ALL TIMES. ONCE THE ROOF REMOVAL BEGINS, THE CONTRACTOR SHALL KEEP THE ROOF COVERED WITH WATERPROOF TARPS UNTIL SUCH TIME AS THE NEW ROOF IS INSTALLED. PAYMENT FOR THE PROTECTIVE COVERING IS INCLUDED IN THE ITEM 665.18 METAL ROOFING.
16. FOR WATERVILLE C.B. 16 WORK INCLUDES REPLACING THE DEFICIENT ROOF. THIS WORK SHOULD BE ACCOMPLISHED WITHOUT HAVING TO PERFORM STRUCTURAL REPAIRS TO THE ROOF SYSTEM. IN THE EVENT THAT THE CONTRACTOR ENCOUNTERS A ROOF RAFTER OR OTHER ELEMENT THAT MUST BE REPLACED, FULL SAWN STRUCTURAL LUMBER AND TIMBER-UNTREATED SHALL BE USED AND PAID FOR PER ITEM 522.20-SPECIES TO BE EASTERN SPRUCE, GRADE 1 OR BETTER. A QUANTITY HAS BEEN INCLUDED AS AN ESTIMATE ONLY. THIS WORK REQUIRES APPROVAL FROM THE PROJECT MANAGER PRIOR TO BEING PERFORMED.
17. ESTIMATED QUANTITIES OF AGGREGATE SURFACE COURSE AND STONE FILL, TYPE II HAVE BEEN INCLUDED FOR SHOULDER AND SLOPE REPAIRS AT STOWE C.B. 49 BRIDGE APPROACHES.
18. WORK FOR REMOVING AND RESET GUARD RAIL SHALL ALSO INCLUDE FURNISHING NEW (ADDITIONAL) RAIL POSTS AND OTHER PARTS AS NECESSARY.
19. ESTIMATED QUANTITIES OF STRUCTURE EXCAVATION AND GRANULAR BACKFILL FOR STRUCTURES HAVE BEEN INCLUDED FOR EARTH WORK ADJACENT TO WORK REQUIRED FOR DRY RUBBLE MASONRY (MOD.) AT WATERVILLE C.B. 16, ABUTMENT #2, UPSTREAM WINGWALL.
20. AN ESTIMATED QUANTITY OF REPLACE GUARD RAIL POST ASSEMBLY HAS BEEN INCLUDED FOR PROVIDING AND INSTALLING A NEW POST AT THE END OF THE REMAINING DOWNSTREAM EXISTING RAILING AT WATERVILLE C.B. 14, ABUTMENT #1.
21. AN ESTIMATED QUANTITY OF STONE FILL, TYPE II HAS BEEN INCLUDED FOR FILLING CAVITIES IN FRONT OF THE DOWNSTREAM WINGWALL AT BELVIDERE C.B. 12, ABUTMENT #2.
22. WITHIN EXISTING ROW LIMITS, THINNING AND TRIMMING SHALL INCLUDE ALL WORK REQUIRED TO CUT AND TRIM TREES, STUMPS, AND VEGETATION UP TO 6 FEET FROM EXISTING ABUTMENT AND WINGWALL FACES AND IN OTHER AREAS, AS DETERMINED BY THE ENGINEER.
23. NEW HEIGHT AND WEIGHT LIMIT SIGNS SHALL BE PLACED WITHIN 100 FEET OF THE BRIDGE PORTALS, AS DIRECTED BY THE ENGINEER. ALSO, NEW ONE LANE BRIDGE SIGNS SHALL BE PLACED AT LEAST 100 FEET FROM BRIDGE PORTALS, AS DIRECTED BY THE ENGINEER.

PROJECTS:	
NORTHERN REGION	
DESIGN FILE NAME:	
IPARM FILE NAME:	
DESIGNED BY: J. WEAVER	PLOT DATE: 06-MAY-2008
	DRAWN BY: J. WHITE
	CHECKED BY: J. WEAVER
GENERAL NOTES SHEET	SHEET: 3 OF 9

PROJECT INFORMATION

	TOWN/ PROJECT. #	COUNTY	BRIDGE NAME	BRIDGE NUMBER	ROUTE NUMBER	END TO END BRIDGE LENGTH	ESTIMATED STONE AREA **	AVAILABLE ROW	FIRE RETARDANT TO BE APPLIED TO BRIDGE	CONSTRUCTION WORK ADVANCE WARNING TO TOWN *	MUNICIPAL CONTACT FOR NOTIFICATION
1	STOWE BHO 1446(32)	LAMOILLE	GOLD BROOK COVERED BRIDGE	CB 49	TH 52	49'	67 Sq. Yrds.	50 FEET	YES	7 DAYS ADVANCE WARNING OF BEGIN CONSTRUCTION REQUIRED	Clifford W. Johnson, PE, Town of Stowe PO Box 730, Stowe, VT 05672 Tel. (802) 253-8770
2	WATERVILLE BHO 1448(33)	LAMOILLE	VILLAGE COVERED BRIDGE	CB 14	TH 20	61'	74 Sq. Yrds.	3 ROD	YES	30 DAYS ADVANCE WARNING OF BEGIN CONSTRUCTION REQUIRED	Nancy LaRose, PO Box 31, Waterville, VT 05492 Tel. (802) 644- 8865
3	WATERVILLE BHO 1448(34)	LAMOILLE	MONTGOMERY COVERED BRIDGE	CB 16	TH 14	70'	64 Sq. Yrds.	3 ROD	YES	30 DAYS ADVANCE WARNING OF BEGIN CONSTRUCTION REQUIRED	Nancy LaRose, PO Box 31, Waterville, VT 05492 Tel. (802) 644- 8865
4	BELVIDERE BHO 1448(35)	LAMOILLE	MILL COVERED BRIDGE	CB 12	TH 3	71'	30 Sq. Yrds.	3 ROD	YES	7 DAYS ADVANCE WARNING OF BEGIN CONSTRUCTION REQUIRED	Hugh Tallman, Road Commissioner PO Box 122, Belvidere, VT 05492 Tel. (802) 644-2751
5	ENOSBURG BHO 1448(36)	FRANKLIN	HOPKINS COVERED BRIDGE	CB 52	TH 17	91'	69 Sq. Yrds.	3 ROD	NO	7 DAYS ADVANCE WARNING OF BEGIN CONSTRUCTION REQUIRED	Joey Clark, Road Foreman, Tel. (802) 933-7761

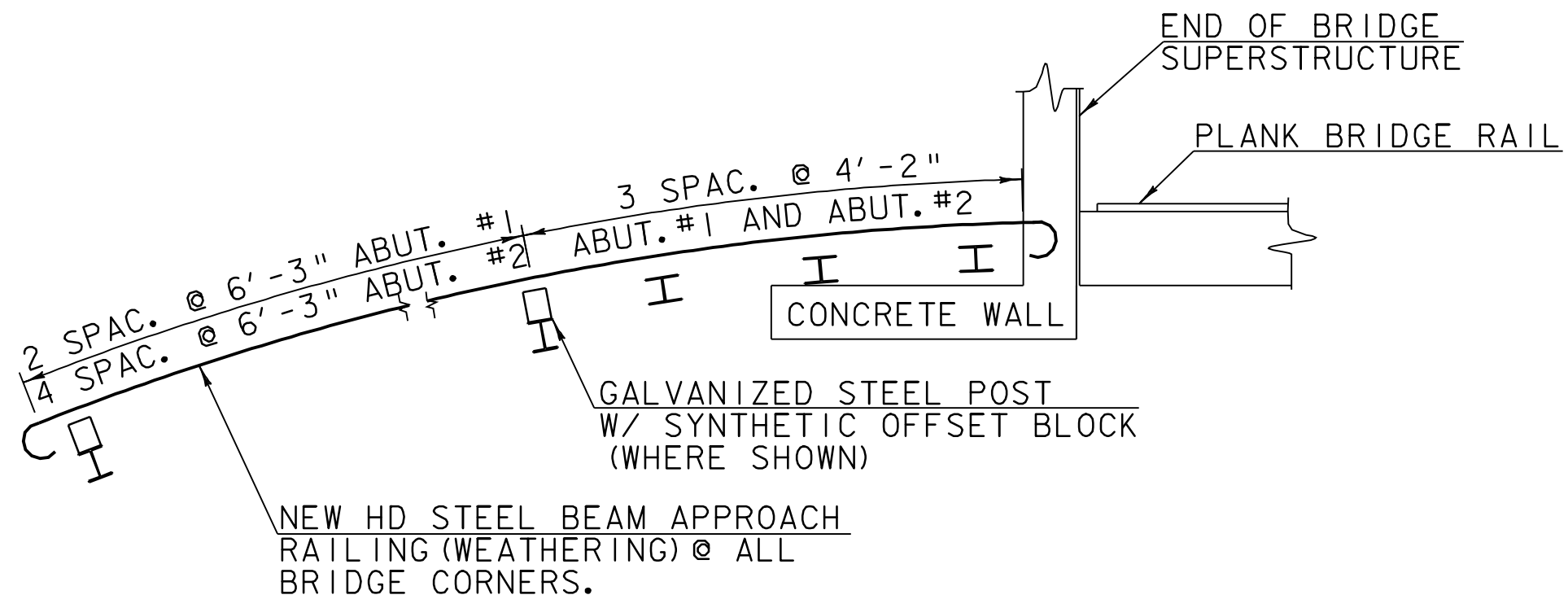
* SEE GENERAL NOTE 6

** INCLUDES AREA WHERE DRY RUBBLE
MASONRY IS TO BE RECONSTRUCTED.

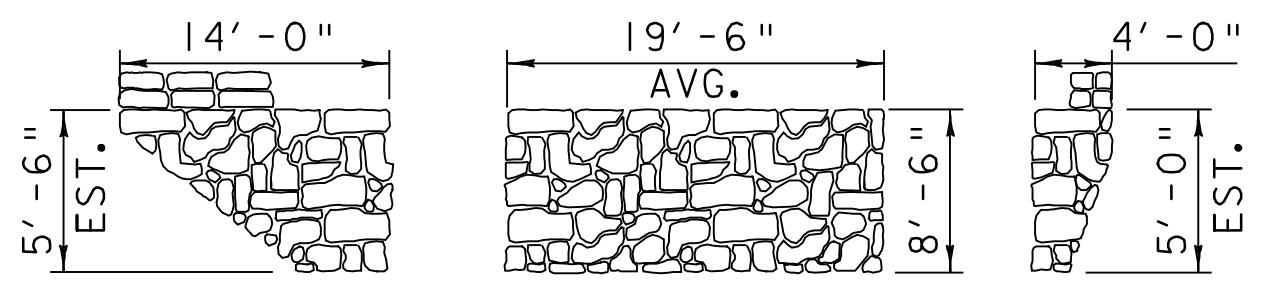
PROJECTS: NORTHERN REGION	
DESIGN FILE NAME: IPARM FILE NAME: DESIGNED BY: J. WEAVER	PLOT DATE: 06-MAY-2008 DRAWN BY: J. WHITE CHECKED BY: J. WEAVER
BRIDGE INFORMATION SHEET	SHEET: 4 OF 9

QUANTITY SHEET

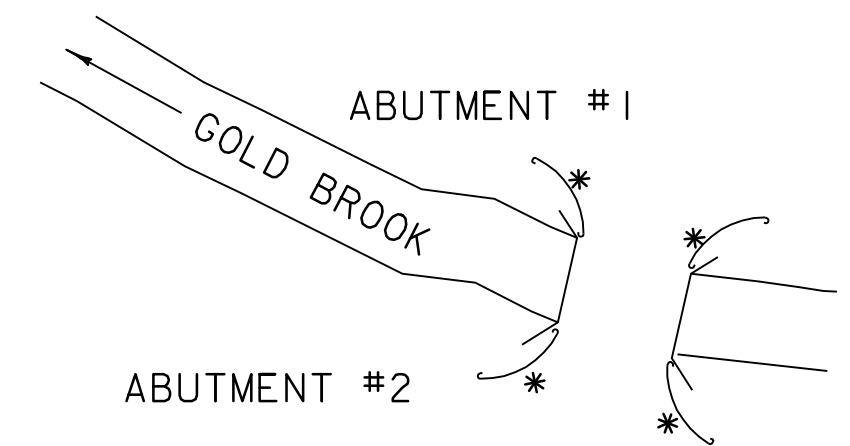
SUMMARY OF ESTIMATED QUANTITIES														TOTALS				DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES		
STOWE BHO 1448(32)		WATERVILLE BHO 1448(33)		WATERVILLE BHO 1448(34)		BELVIDERE BHO 1448(35)		ENOSBURG BHO 1448(36)						BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS
0.01		0.01		0.01		0.01		0.01						0.05		0.05		ACRE	THINNING AND TRIMMING	201.30			
-		-		6		-		-						6		6		CY	STRUCTURE EXCAVATION	204.25			
-		-		6		-		-						6		6		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30			
5		-		-		-		-						5		5		CY	AGGREGATE SURFACE COURSE	401.10			
0.25		0.25		0.25		0.25		-						1		1		LS	STRUCTURAL PAINTING, FIELD APPLIED (MOD.- FIRE RETARDANT)	513.30			
0.25		0.25		0.25		0.25		-						1		1		LS	CONTANMENT & ENVIRONMENTAL PROTECTION, FIELD (MOD.- FIRE RETARDANT)	513.36			
-		-		0.200		-		-						0.200		0.200		MFBM	STRUCTURAL LUMBER AND TIMBER - UNTREATED	522.20			
-		-		9		-		-						9		9		CY	DRY RUBBLE MASONRY (MOD.)	602.20			
67		74		55		30		69						295		295		SY	REPORTNG MASONRY (MOD.)	602.30			
3		-		-		5		-						8		8		CY	STONE FILL, TYPE II	613.11			
-		116.80		-		-		-						116.8		116.8		LF	PLANK RAIL (MOD.)	621.15			
151		-		71		-		-						222		222		LF	HEAVY DUTY STEEL BEAM GUARD RAIL (WEATHERING) (MOD.- 8FT. POSTS)	621.21			
-		-		-		111		-						111		111		LF	REMOVING AND RESET GUARD RAIL	621.75			
-		1		-		-		-						1		1		EA	REPLACE GUARD RAIL POST ASSEMBLY	621.76			
40		100		44		-		-						184		184		LF	REMOVAL AND DISPOSAL OF GUARD RAIL	621.80			
5		5		5		5		5						25		25		HR	FLAGGERS	630.15			
0.20		0.20		0.20		0.20		0.20						1		1		LS	MOBILIZATION/DEMOBILIZATION	635.11			
0.20		0.20		0.20		0.20		0.20						1		1		LS	TRAFFIC CONTROL	641.10			
14		-		36		10		-						60		60		SY	GEOTEXTILE FOR SILT FENCE	649.51			
-		-		5		-		-						5		5		LB	SEED	651.15			
-		-		5		-		-						5		5		LB	FERTILIZER	651.18			
5		-		5		3		-						13		13		EACH	HAY BALES FOR EROSION CONTROL	651.26			
-		-		2		-		-						2		2		CY	TOPSOIL	651.35			
0.20		0.20		0.20		0.20		0.20						1		1		LU	MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN (N.A.B.I.)	652.30			
-		-		1400		-		-						1400		1400		SF	REMOVING EXISTING ROOF	665.15			
-		-		1400		-		-						1400		1400		SF	METAL ROOFING	665.18			
30.0		22.5		23.8		22.5		25.0						123.80		123.80		SF	TRAFFIC SIGNS, TYPE A	675.20			
44		44		33		44		22						187		187		LF	FLANGED CHANNEL SIGN POST	675.301			



RAILING PLAN
N. T. S.

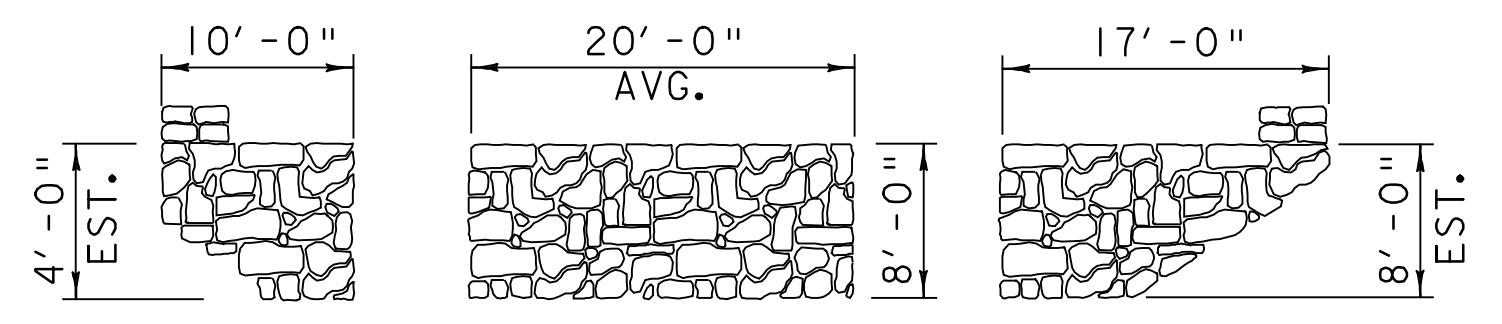


ABUTMENT #2 ELEVATIONS



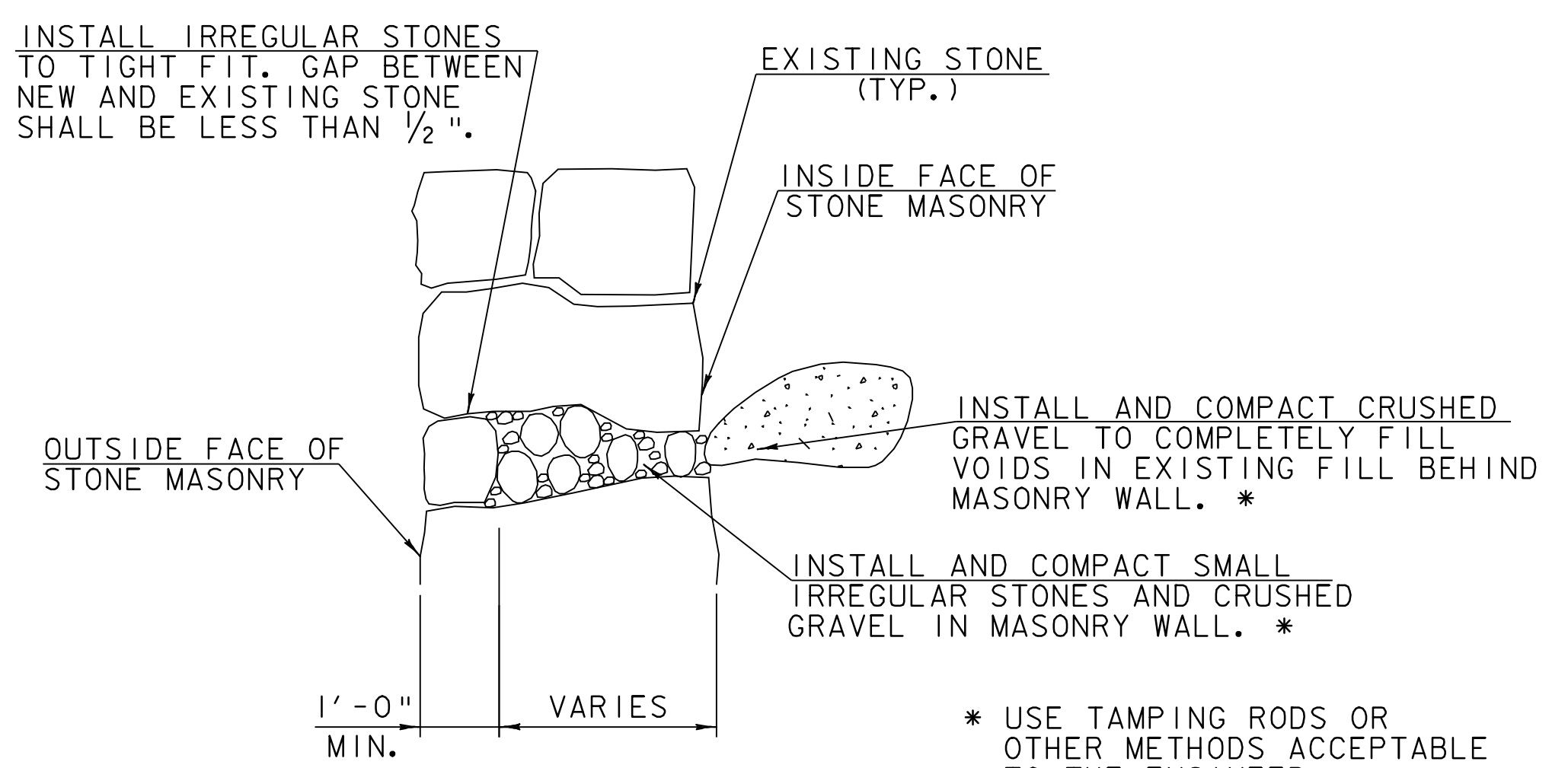
* LIMITS OF HD STEEL BEAM GUARD RAIL (WEATHERING) (MOD. - 8 FOOT POSTS)

SCHEMATIC PLAN



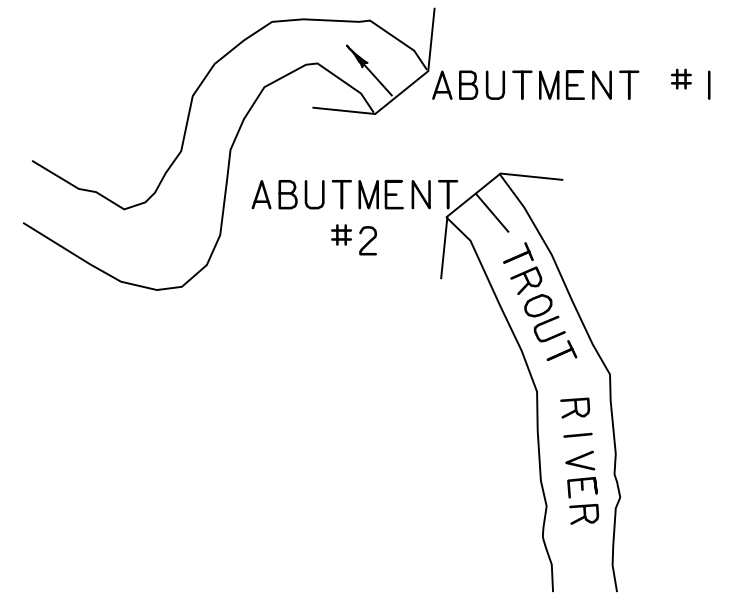
ABUTMENT #1 ELEVATIONS

STOWE BHO 1446 (32)
C.B. 49 DETAILS

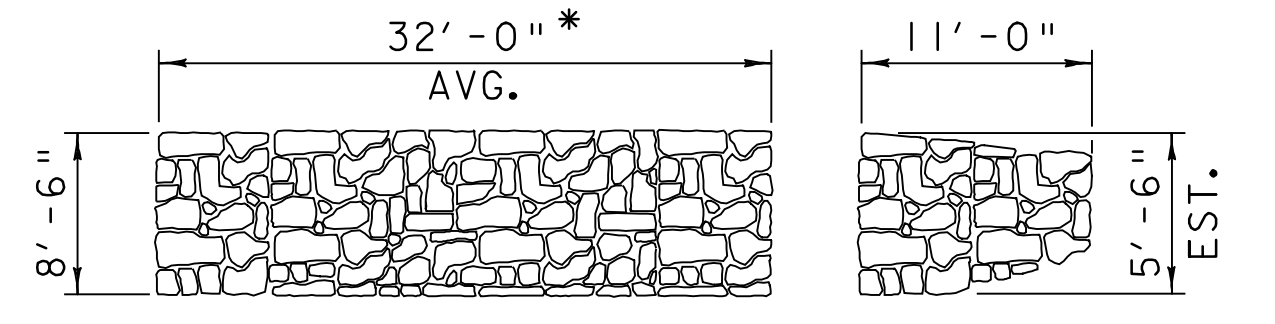


CHINKING DETAIL **
N. T. S.

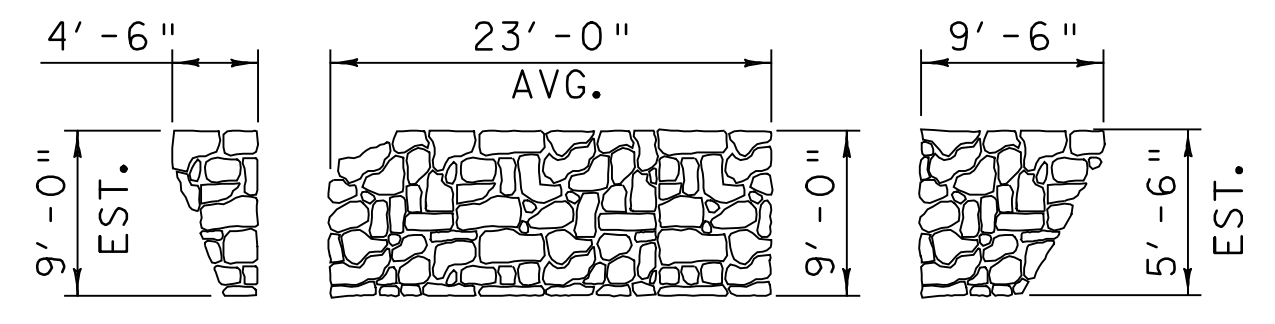
* USE TAMPING RODS OR OTHER METHODS ACCEPTABLE TO THE ENGINEER.
** FOR FURTHER INFORMATION SEE SECTION 602 OF THE PROJECT SPECIAL PROVISIONS.



SCHEMATIC PLAN

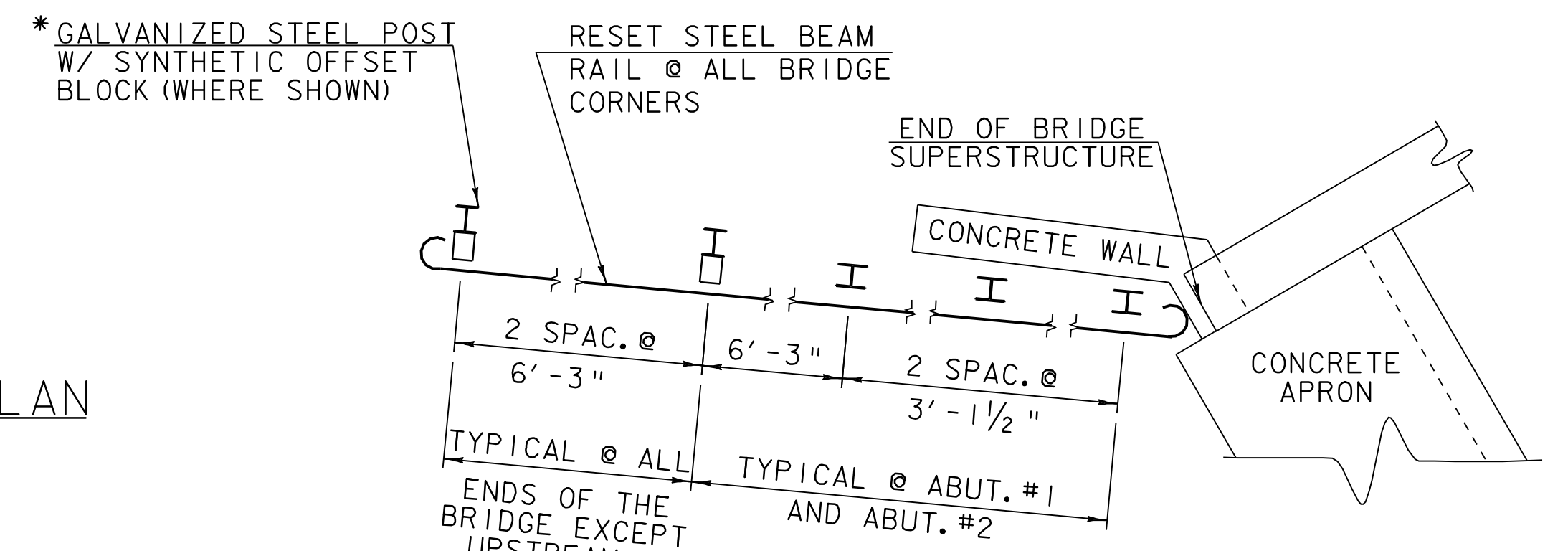


ABUTMENT #2 ELEVATIONS



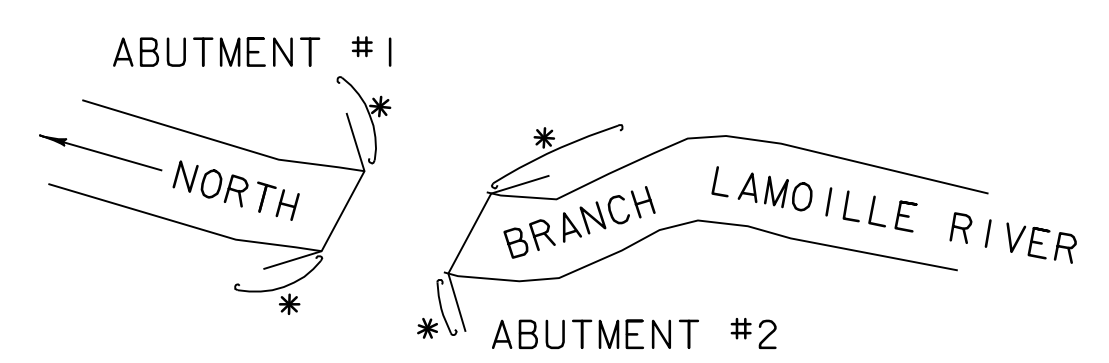
ABUTMENT #1 ELEVATIONS

ENOSBURG BHO 1448 (36)
C.B. 52 DETAILS



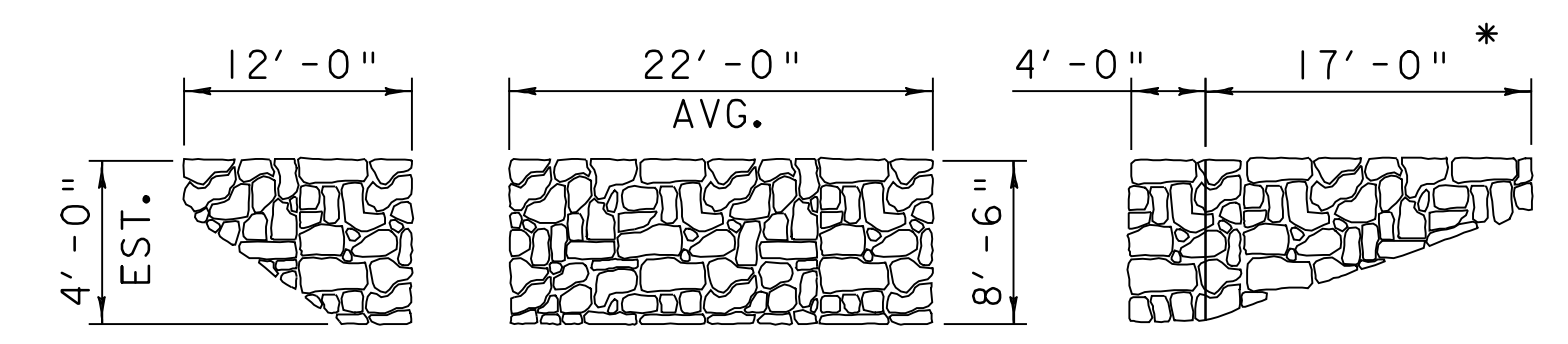
RAILING PLAN
N. T. S.

* STEEL POSTS AND OFFSET BLOCKS PROVIDED @ NEW LOCATIONS SHALL COMPLY WITH ALL REQUIREMENTS OF SECTIONS 621 AND 728 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION AND THE DETAILS OF STANDARD SHEET G-1.



SCHEMATIC PLAN

* LIMITS OF REMOVING AND RESET GUARD RAIL



ABUTMENT #2 ELEVATIONS

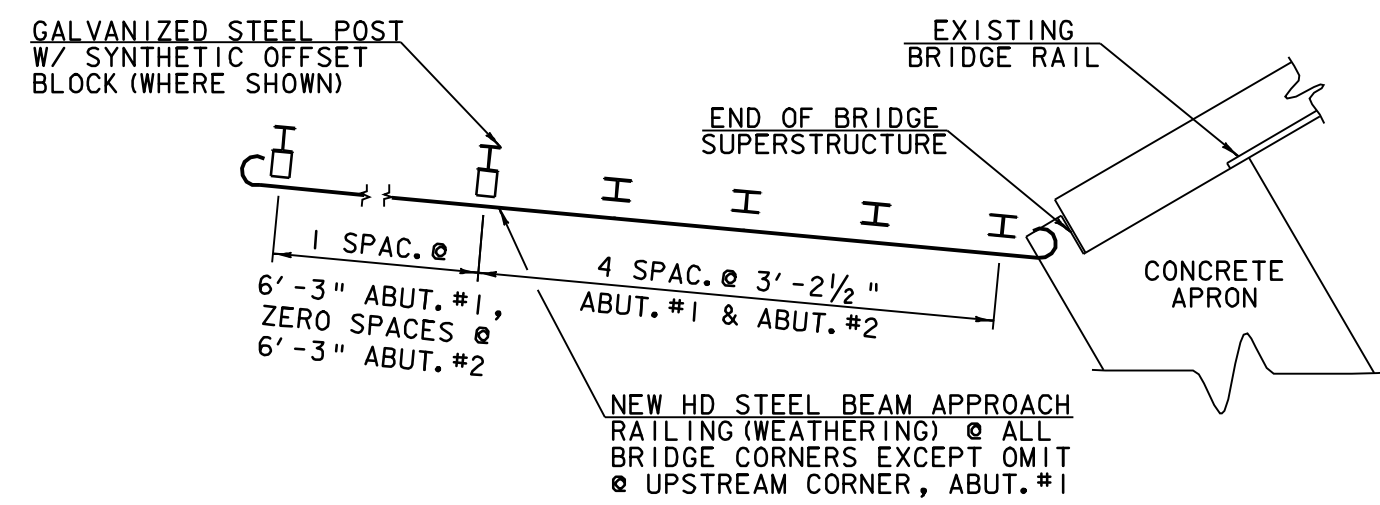
* NO CHINKING WORK IN THIS AREA DUE TO POOR CONDITION OF WINGWALL. PLACE STONE FILL, TYPE II IN FRONT OF WALL.

BELVIDERE BHO 1448 (35)
C.B. 12 DETAILS

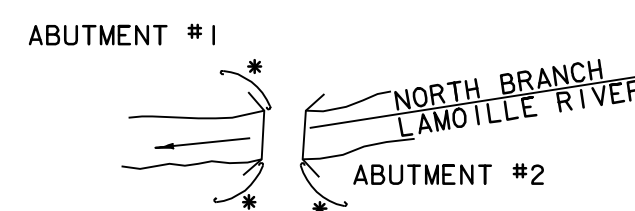
NOTES:

1. ALL DETAILS ARE SCHEMATIC AND NOT TO SCALE.
2. ABUTMENT #2 IS LOCATED ON THE FAR SIDE OF THE STRUCTURE, WITH UPSTREAM TO THE LEFT OF THE VIEWER.
3. ALL DIMENSIONS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR.

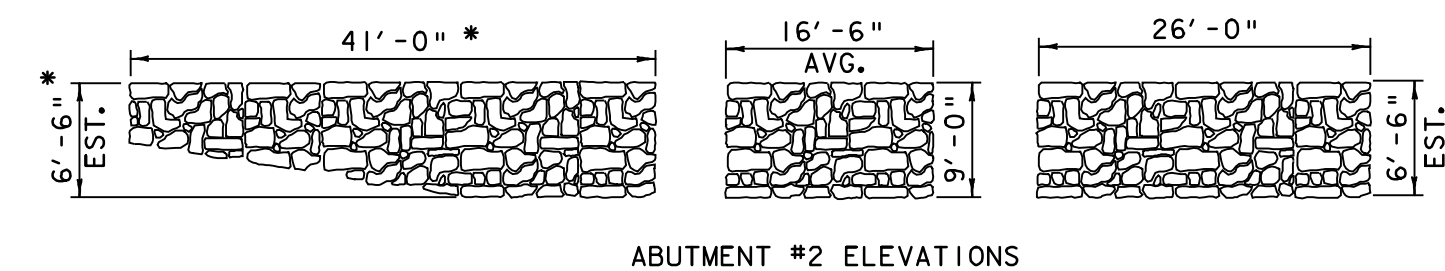
PROJECTS: NORTHERN REGION	
DESIGN FILE NAME: 04j150/Structures/04j150det.dgn	PLOT DATE: 06-MAY-2008
IPARM FILE NAME: 04j150det1.i	DRAWN BY: J. WHITE
DESIGNED BY: J. WEAVER	CHECKED BY: J. WEAVER
DETAIL SHEET 1	SHEET: 6 OF 9



RAILING PLAN
N. T. S.



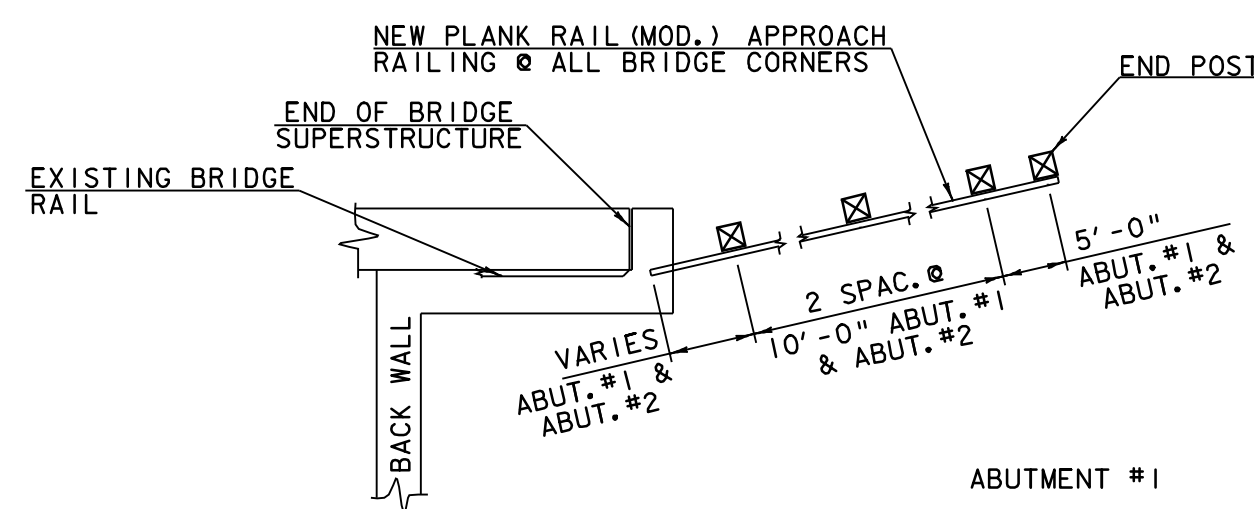
SCHEMATIC PLAN



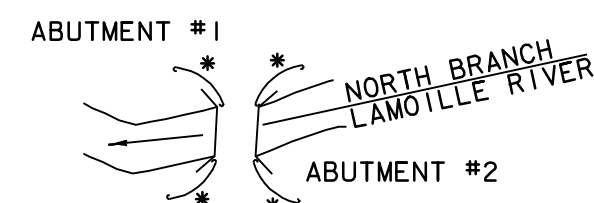
ABUTMENT #2 ELEVATIONS

* NOTE: RE-BUILD AREA @ END OF WINGWALL ESTIMATE 16'-0" x 5'-0"

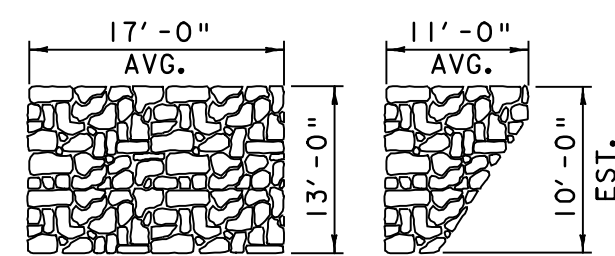
WATERVILLE BHO 1448 (34)
C. B. 16 DETAILS



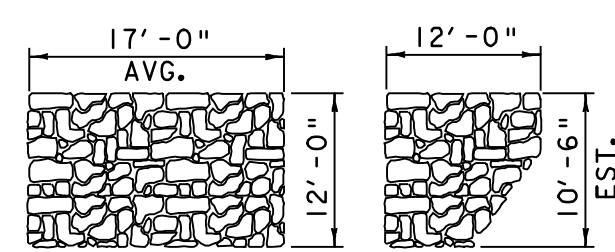
RAILING PLAN
N. T. S.



SCHEMATIC PLAN

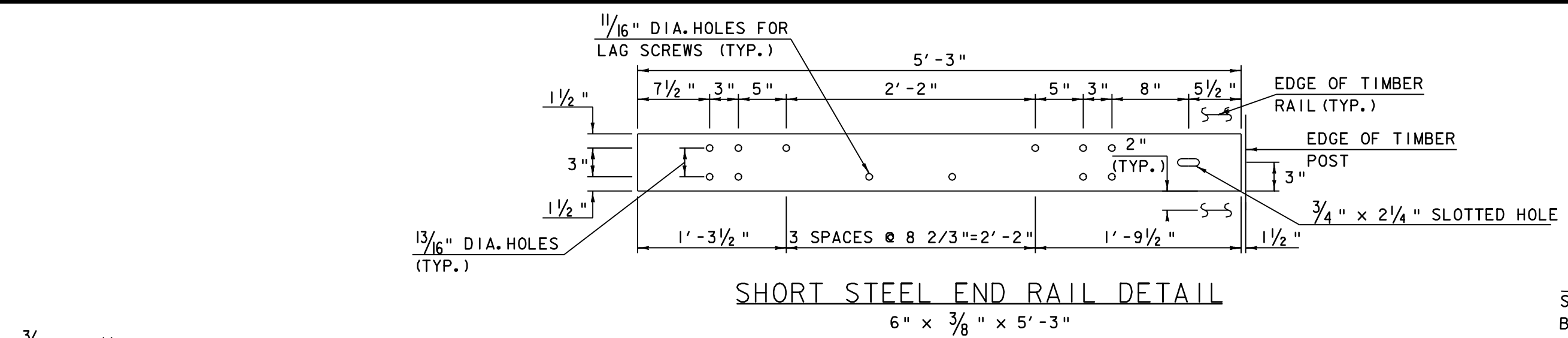


ABUTMENT #2 ELEVATIONS

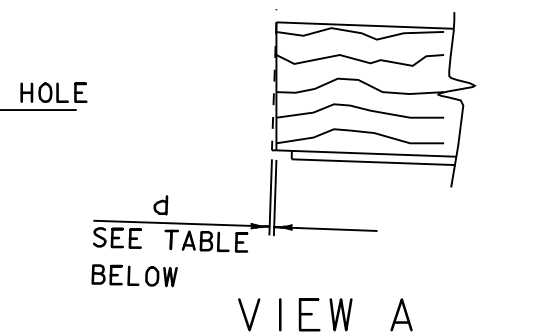


ABUTMENT #1 ELEVATIONS

WATERVILLE BHO 1448 (33)
C. B. 14 DETAILS



SHORT STEEL END RAIL DETAIL



SIDE VIEW

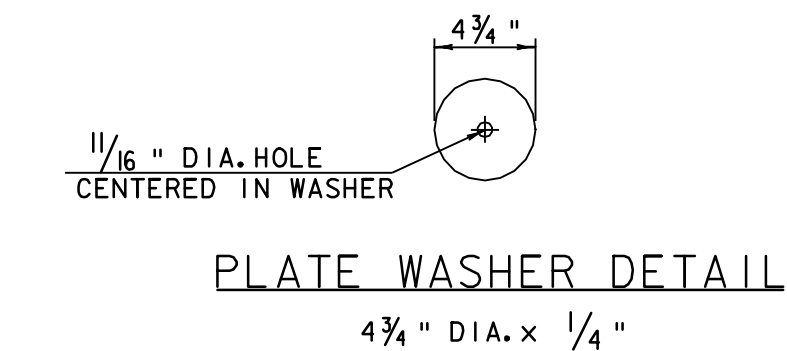
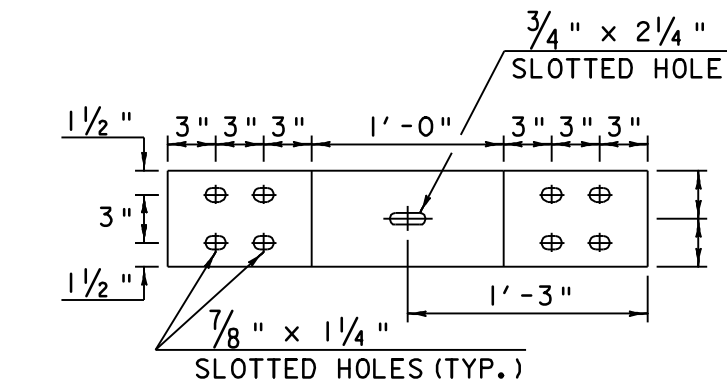


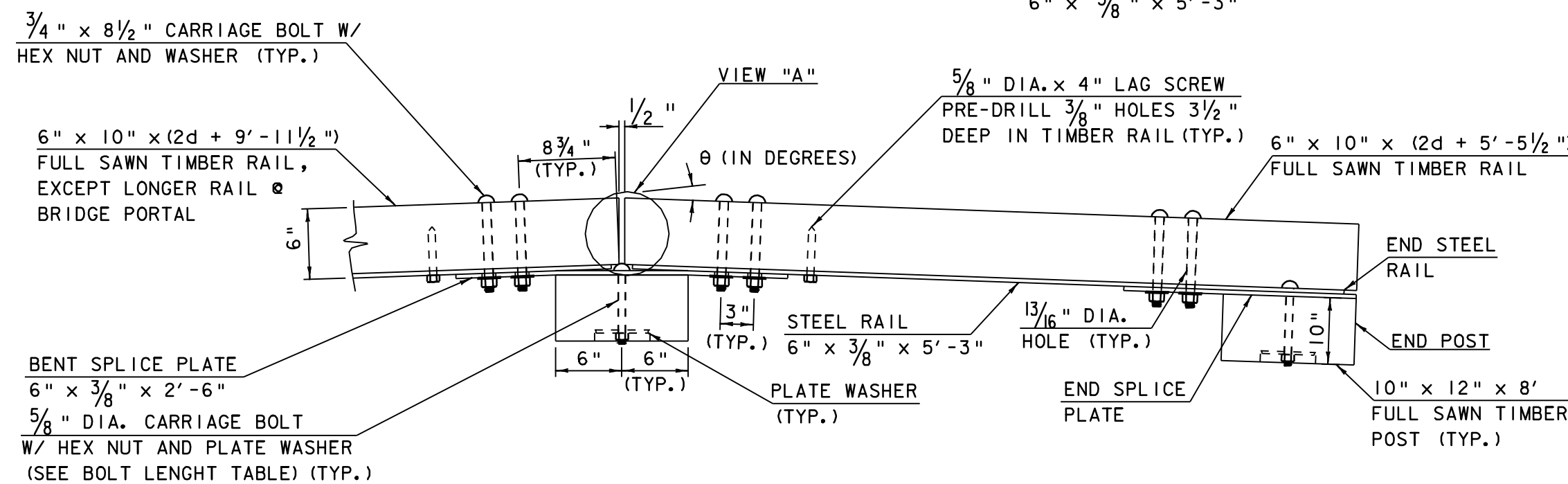
PLATE WASHER DETAIL



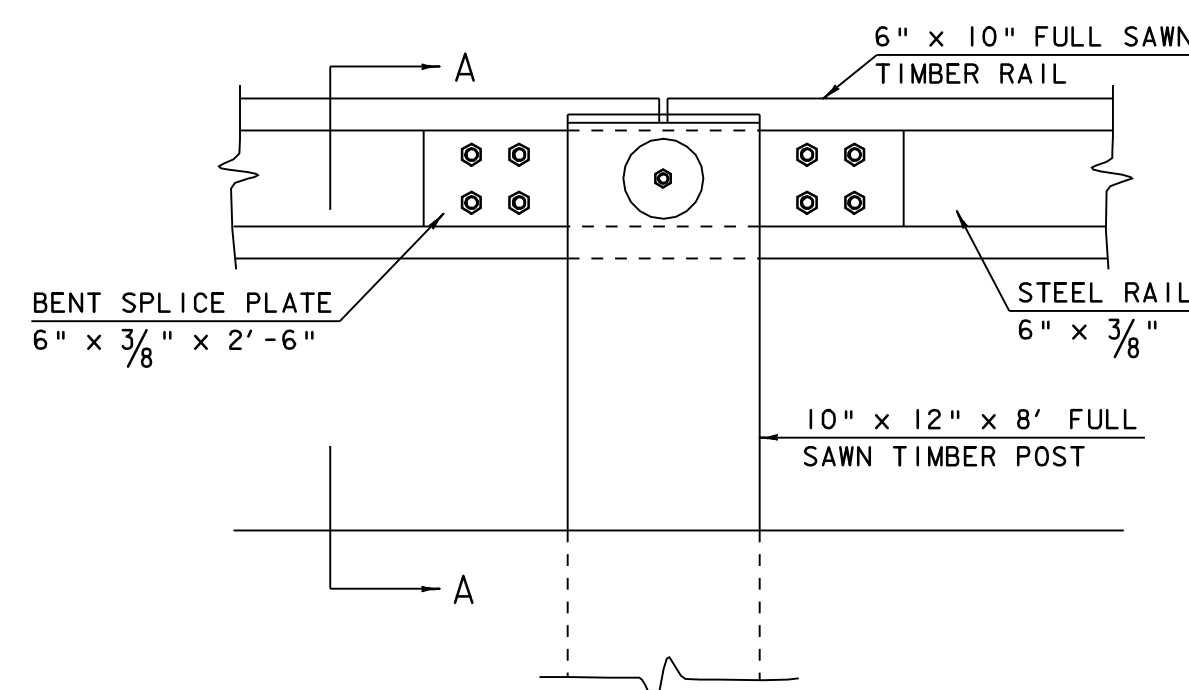
BENT SPLICE PLATE DETAIL

NOTES

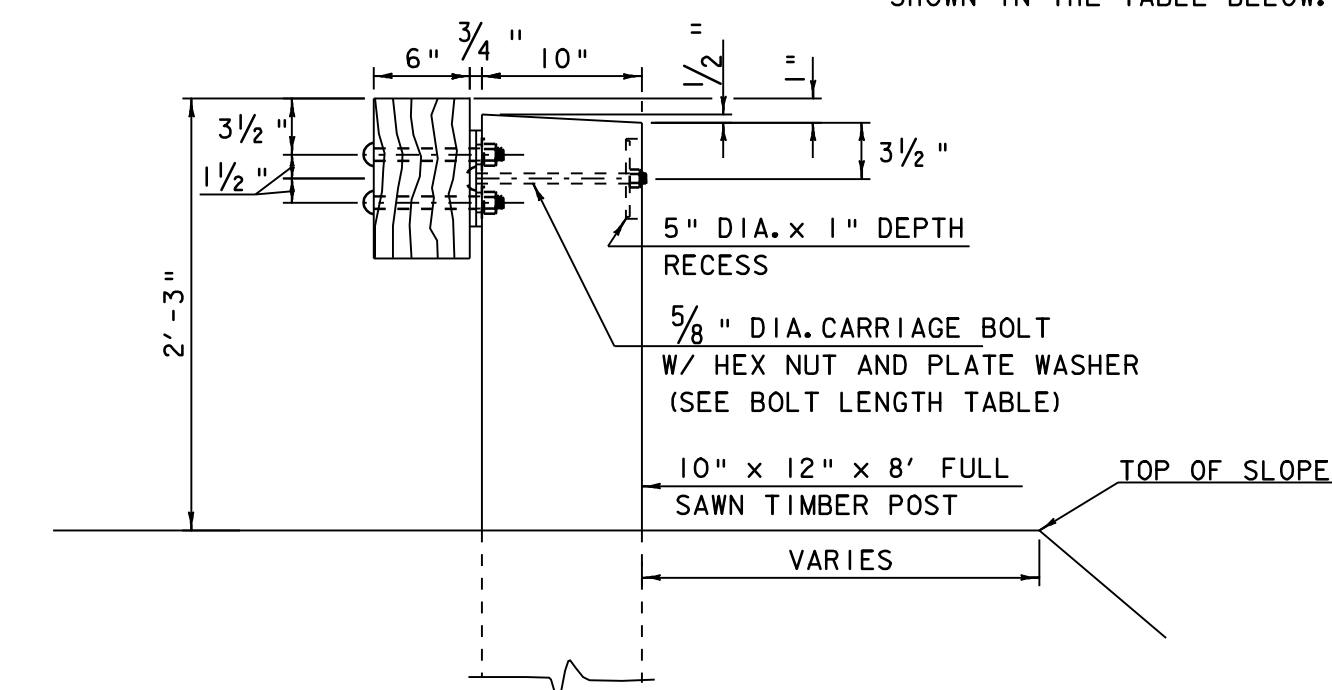
1. FURNISH SHOP BENT SPLICE PLATES. USE THE MINIMUM BEND ANGLE SHOWN IN THE TABLE BELOW.



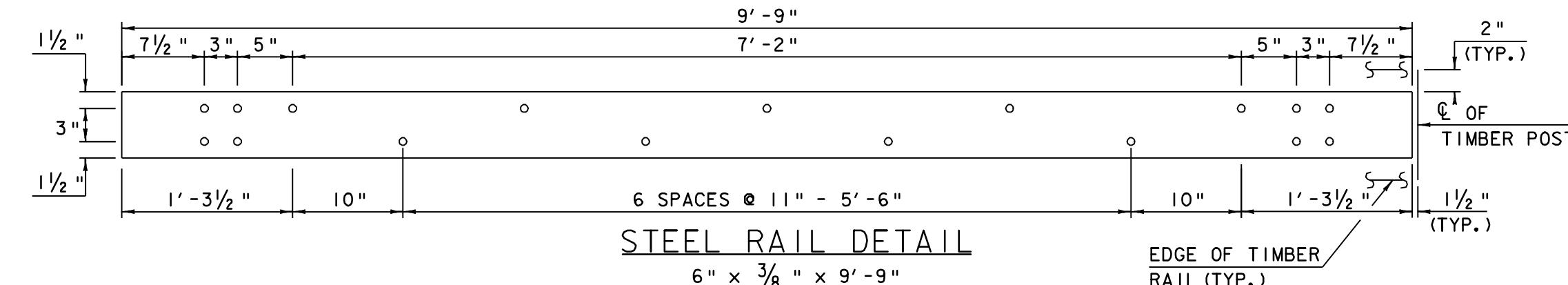
POST CONNECTION PLAN



POST CONNECTION ELEVATION
(TYPICAL INTERIOR CONNECTION)



SECTION A-A

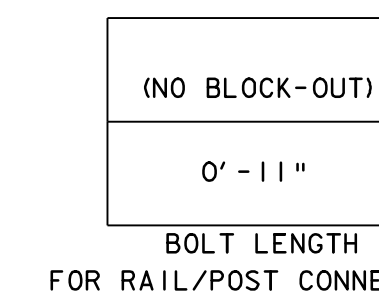


STEEL RAIL DETAIL

STEEL-BACKED TIMBER GUARDRAIL NOTES

1. THE STEEL-BACKED TIMBER GUARD RAIL SHALL BE PAID FOR UNDER ITEM 621.15, PLANK RAIL (MOD.). THE QUANTITY MEASURED FOR PAYMENT SHALL BE ALONG THE FACE OF RAIL, INCLUDING TERMINAL SECTIONS. THE ORDINARY POST SPACING SHALL BE 10 FEET. IN LOCATIONS WHERE POST SPACING IS DETAILED AT 5 FEET, THE QUANTITY FOR PAYMENT WILL BE FACTORED BY 1.4.
2. THE POSTS AND THE TIMBER RAIL ELEMENTS SHALL CONFORM TO VAOT STANDARD SPECIFICATIONS SECTION 728.01 AND 728.02. IN ADDITION, ALL TIMBER USED IN THE RAIL SHALL HAVE A MINIMUM ALLOWABLE BENDING STRESS OF 1450 PSI.
3. THE STEEL RAILS AND SPLICE PLATES SHALL CONFORM TO AASHTO M270 M/M 270 GRADE 50 STEEL AND BE GALVANIZED PER AASHTO M111/M111 SPECIFICATIONS.
4. ALL BOLTS AND LAG SCREWS SHALL CONFORM TO ASTM A307 GRADE A. ALL WASHERS SHALL CONFORM TO ASTM F844. ALL NUTS SHALL CONFORM TO AASHTO M291. ALL FASTENER HARDWARE SHALL BE GALVANIZED ACCORDING TO AASHTO M232.
5. DRIVE POSTS INTO PILOT HOLES THAT ARE PUNCHED OR DRILLED. THE DIMENSIONS OF THE PILOT HOLE SHALL NOT EXCEED THE DIMENSIONS OF THE POST BY MORE THAN 1 INCH. SET THE POSTS PLUMB, BACKFILL AND COMPACT.
6. IF AN IMPENETRABLE HOLE IS ENCOUNTERED WHILE PLACING POSTS, ENLARGE THE HOLE TO PROVIDE NOT LESS THAN 6 INCHES CLEARANCE ON ALL SIDES, AND TO A MINIMUM DEPTH OF 2.5 FEET. SET THE POST IN CONCRETE TO WITHIN 6 INCHES OF THE TOP OF THE HOLE. BACKFILL AND COMPACT THE REMAINING 6 INCHES WITH AN ACCEPTABLE MATERIAL.
7. FIELD CUT TIMBER RAILS TO PRODUCE A CLOSE FIT AT ALL JOINTS. TREAT FIELD CUTS WITH APPROVED TREATMENT AS DETERMINED BY THE RESIDENT ENGINEER.

LAYOUT RADIUS R @ FACE OF RAIL (FT.)	θ/2 (DEGREES)	d (INCHES)
25	5.74	5/8"
30	4.78	1/2"
35	4.10	5/16"
38	3.77	3/8"
40	3.58	3/8"
45	3.18	5/16"
50	2.86	5/16"
55	2.60	1/4"
60	2.40	1/4"
65	2.20	1/4"
70	2.05	1/4"
OVER 70	FLAT	0

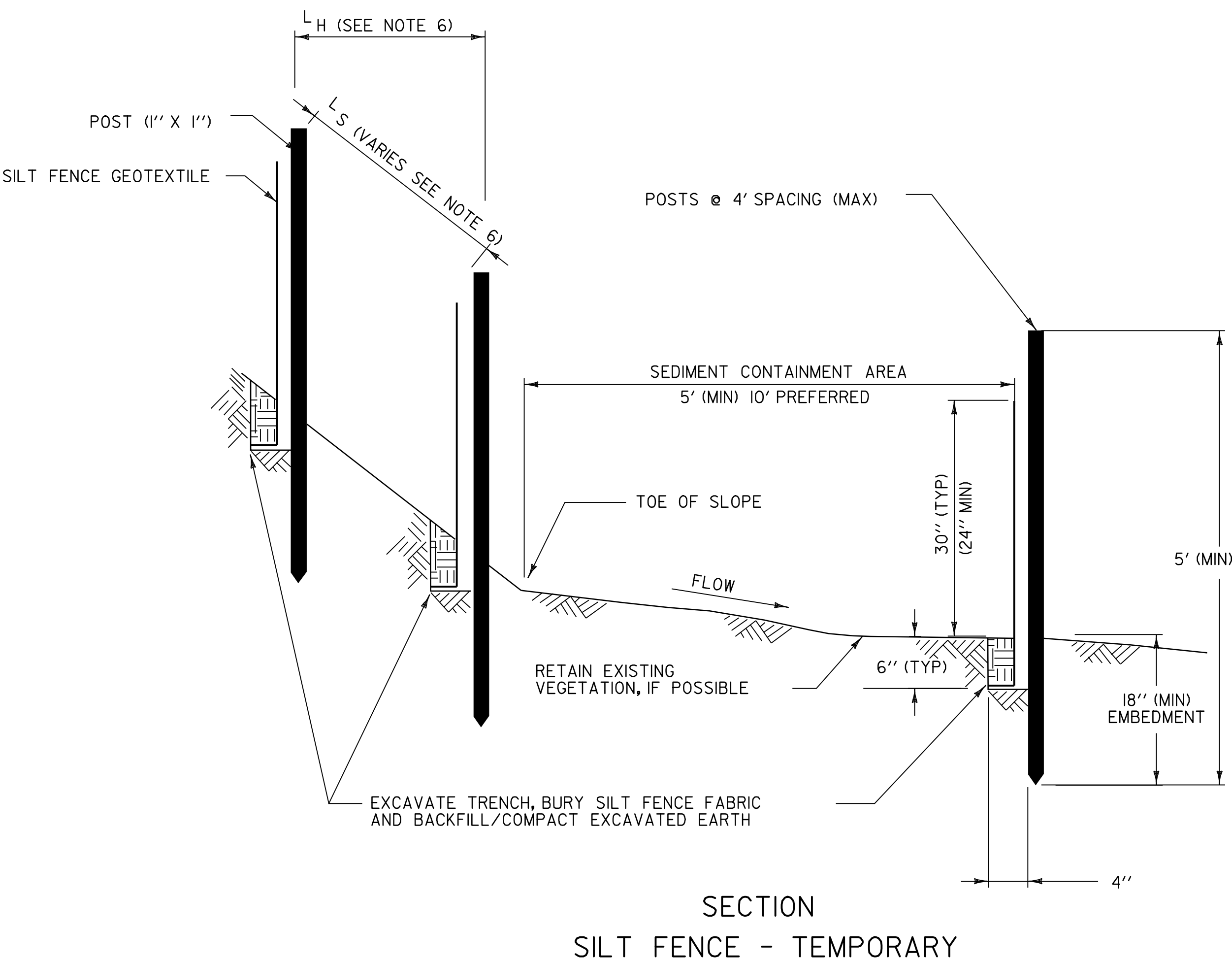
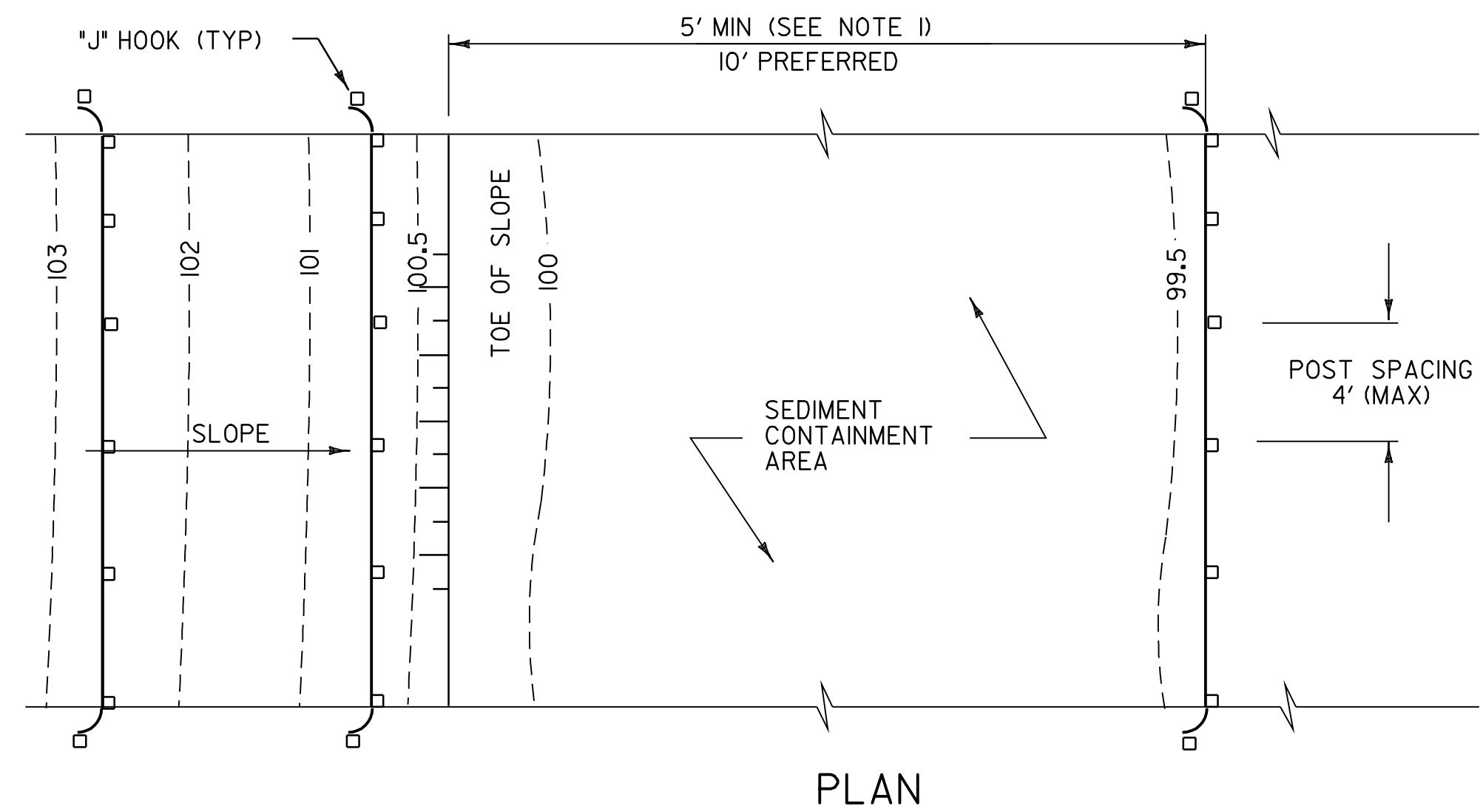


WATERVILLE BHO 1448 (33)
C. B. 14 DETAILS

(CONTINUED)

PROJECTS: NORTHERN REGION	
DESIGN FILE NAME: 04j150/Structures/04j150det.dgn	PLOT DATE: 06-MAY-2008
IPARM FILE NAME: 04j150det2.i	DRAWN BY: J. WHITE
DESIGNED BY: J. WEAVER	CHECKED BY: J. WEAVER
DETAIL SHEET 2	SHEET: 7 OF 9

SILT FENCE



CONSTRUCTED SLOPE	SLOPE LENGTH (LS) FT	HORIZONTAL LENGTH (LH) FT
3 : 1	80	75
4 : 1	130	125
5 : 1	200	200
> 5 : 1	250	250

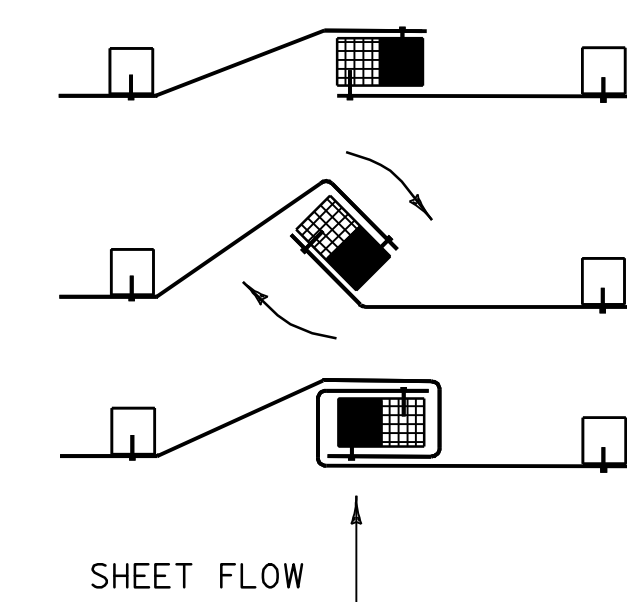
APPLICATION NOTES:

- THE PRIMARY PURPOSE OF SILT FENCE IS TO REDUCE RUNOFF VELOCITY AND TRAP SEDIMENT. VELOCITY IS REDUCED, WATER IS IMPOUNDED BEHIND THE MEASURE, AND SEDIMENT FALLS OUT OF SUSPENSION.
- SILT FENCE SHALL BE INSTALLED ON A LINE OF EQUAL ELEVATION (CONTOUR). IT MAY BE INSTALLED AT INTERMEDIATE POINTS UP SLOPES AS WELL AS AT THE BOTTOM, AS SHOWN IN THE DETAIL.
- SILT FENCE SHALL NOT BE USED ACROSS CONCENTRATED FLOW.

GENERAL NOTES:

- SILT FENCE SHALL GENERALLY BE PLACED A MINIMUM OF 5 FEET BEYOND TOE OF SLOPE, 10 FEET PREFERRED, TO PROVIDE ADEQUATE AREA FOR SEDIMENT STORAGE AND FACILITATE MAINTENANCE OF SEDIMENT CONTAINMENT AREA.
- ALL ENDS SHALL BE "J" HOOKED TO TRAP SEDIMENT.
- IN AREAS WITH TWO SLOPES, SILT FENCE SHALL BE USED TO ERECT A DAM AND TRAP SEDIMENT AT THE BASE OF THE STEEPER SLOPE.
- THE BOTTOM EDGE OF SILT FENCE SHALL BE BURIED A MINIMUM OF 6 INCHES BELOW GROUND, AND KEYED IN 4 INCHES. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC.
- MAXIMUM DRAINAGE AREA TRIBUTARY TO 100 FEET OF SILT FENCE SHALL BE 0.25 ACRES.
- THE FOLLOWING ARE MAXIMUM SLOPE LENGTHS FOR THESE MEASURES:

- MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
- MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
- SILT FENCE SHALL BE REMOVED WHEN THE AREA HAS BEEN STABILIZED. AT TIME OF REMOVAL OF THE SILT FENCE, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
- PAYMENT FOR INSTALLATION AND REMOVAL OF SILT FENCE SHALL BE MADE UNDER THE GEOTEXTILE FOR SILT FENCE ITEM.
- PAYMENT FOR MONITORING AND MAINTAINING SILT FENCE SHALL BE MADE UNDER THE MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN (N.A.B.I.) ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



- PLACE THE END POST OF ONE FENCE INSIDE THE END POST OF THE OTHER FENCE.
- ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.
- DRIVE BOTH POSTS 18 INCHES INTO THE GROUND AND BURY THE FLAP IN THE TRENCH.

SPlicing DETAIL

EROSION PREVENTION & SEDIMENT CONTROL DETAILS

SILT FENCE

EPSC-1

PROJECTS: NORTHERN REGION	
DESIGN FILE NAME: IPARM FILE NAME: DESIGNED BY: J. WEAVER	PLOT DATE: 06-MAY-2008 DRAWN BY: J. WHITE CHECKED BY: J. WEAVER
SILT FENCE	SHEET: 9 OF 9