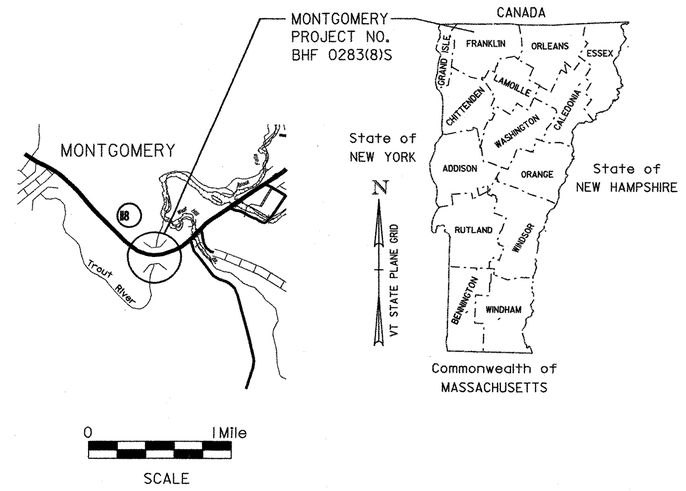
SEE SHEET 2 FOR LIST OF SHEETS AND STANDARDS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF MONTGOMERY
COUNTY OF FRANKLIN
VT. ROUTE 118 - MAJOR COLLECTOR
BRIDGE NO. 21



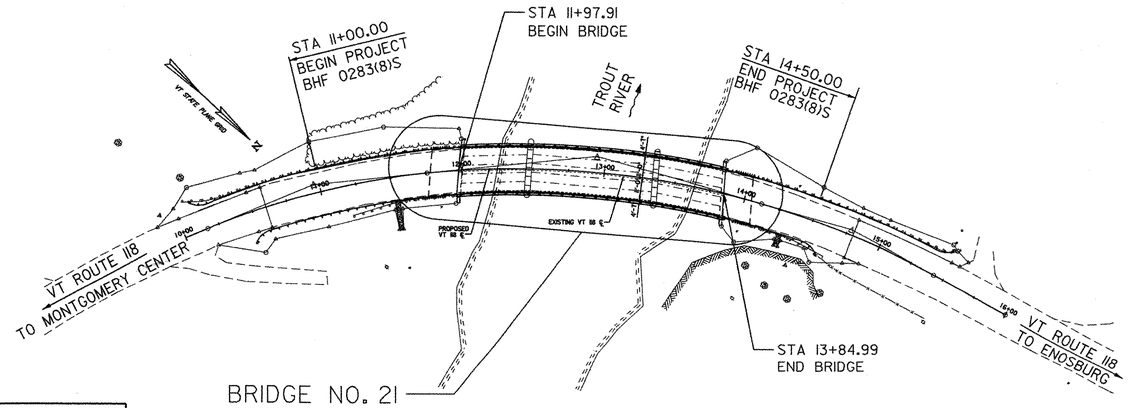
PROJECT LOCATION

BEGINNING AT A POINT APPROXIMATELY 2.94 MILES NORTHERLY OF THE JUNCTION VT 242 AND EXTENDING NORTHERLY ALONG VT ROUTE 118 FOR A DISTANCE OF 0.066 MILES.

STRUCTURE LENGTH:	187 FEET
ROADWAY LENGTH:	163 FEET
PROJECT LENGTH:	350 FEET

PROJECT DESCRIPTION

INSTALL TRAFFIC CONTROL, RECONSTRUCT APPROACHES, REHABILITATE BRIDGE, PAINT BRIDGE AND REMOVE TRAFFIC CONTROL.



SCALE 1" = 50'-0

100 0 100

CONVENTIONAL SYMBOLS

COUNTY LINE	COUNTY LINE
TOWN LINE	TOWN LINE
LIMITS OF ACCESS	
POINT OF ACCESS	X
FENCE LINE	X — X — X
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	SR SR SR
TOP OF CUT	
TOE OF SLOPE	

SURVEYED BY : R. GILMAN
SURVEYED DATE : JUNE 24, 2000

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83

RECORD PLANS

CONTRACTOR: AL ST. ONGE CONSTRUCTION, INC - MONTGOMERY, VT.
RESIDENT ENGINEER: CARL GLEASON
CONSTRUCTION BEGAN: APRIL 12, 2006
CONSTRUCTION COMPLETE: SEPTEMBER 21, 2007
RECORD PLANS BY: CARL GLEASON & CHIP PIERCE

I HEREBY CERTIFY THAT ALL THE CONSTUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY Carl W Gleason RESIDENT ENGINEER
DATE 5/22/06

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.

STATE OF VERMONT
RICHARD M. HEBERT
NO. 7719
STRUCTURAL I
LICENSED
PROFESSIONAL ENGINEER

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

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED Richard Tetreault DATE 9/21/05

PROJECT MANAGER : ROGER WHITCOMB

PROJECT NAME : MONTGOMERY
PROJECT NUMBER : BHF 0283 (8) S

SHEET 1 OF 45 SHEETS

zc316T11.dgn zc316t11.i PLOTTED 19-SEP-2005

T.Y. LIN INTERNATIONAL

FILENAME: $FILE$
DATE: $DATE$

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET

INDEX OF SHEETS

1.	Title Sheet
2.	Index of Sheets
3-4.	Quantity Sheets
5.	General Notes
6.	Plan
7.	Profile, Ties and Details
8.	Traffic Sign Summary
9.	Bridge Construction Staging
10.	Traffic Control Plan
11.	Traffic Control Notes
12.	General Plan and Elevation
13.	Erosion Control Narrative
14.	Existing Conditions Site Plan
15.	Erosion and Sediment Control Plan
16.	Final Conditions Site Plan
17.	Erosion Control Details
18.	Typical Sections
19.	Steel Details
20.	Bearing Details(1)
21.	Bearing Details(2)
22.	Deck Reinforcing Plan(1)
23.	Deck Reinforcing plan(2)
24.	Superstructure Details
25.	End Diaphragm Details
26.	Scupper Details
27.	Expansion Joint Plan
28.	Expansion Joint Details
29.	Downspout details
30.	Approach Slab Details
31.	Concrete Repair Notes and Details
32.	Bridge Railing - NETC 2 Rail
33.	Guardrail Approach Section - NETC 2 Rail
34.	Reinforcing Steel Schedule
35-40.	Cross Section Sheets
41-45.	Existing Montgomery Bridge No. 19 Plans (Information Sheets)

LIST OF STANDARDS

C-1	Curbs, Bituminous Concrete Sidewalks, Granite Slope Edging, Vertical Granite Curb Precast Reinforced Concrete Curb, Cast in Place Concrete Curb, Bituminous Concrete Curb, Treated Timber	1/3/2000
E-100	Construction Approach Signs	1/2/2004
E-101	Construction Sign Details	5/30/2003
E-102A	Construction Sign Details	5/1/2004
E-102	Construction Sign Details	6/30/2003
E-106	Traffic Control Miscellaneous Details	3/1/2004
E-107A	Breakaway Barricade Details	8/8/1995
E-107	Delineation, Barricades and Detours for Construction Areas	6/30/2003
E-108	Construction Zone Longitudinal Drop Offs	8/18/1995
E-121	Standard sign placement Conventional Road	8/8/1995
E-140	Regulatory Sign Details	8/30/1996
E-150	Warning Sign Details	5/1/2004
E-151	Warning Sign Details	5/1/2004
E-152	Warning Sign Details	5/1/2004
E-155	Warning Sign Details	5/1/2004
E-160	Flanged Channel Steel Sign Post	5/20/1999
E-164	Square Steel Sign Post	5/20/1999
E-171A	Traffic Control Signals - General Notes and Details	8/9/1995
E-171B	Traffic Control Signals - Misc. Details	8/9/1995
E-171C	Traffic Control Signals - Cantilever Mounting Details	8/9/1995
E-172	Vehicle Detector Loop Details	8/9/1995
E-175	Power Drop Stanchions	11/17/1993
E-193	Pavement Marking Details	8/18/1995
G-1D	Steel Beam Guardrail Approach End Terminal, Steel Beam Guardrail Trailing End Terminal, Anchor for Steel Beam Guardrail, Steel Beam Median Barrier	1/3/2000
G-1	Steel Beam Guardrail with Steel Posts, Steel Beam Guardrail with Wood Posts	1/3/2000
G-18	Precast Concrete Temporary Traffic Barrier	6/1/1994

EXISTING STRUCTURE

STRUCTURE TYPE: THREE SIMPLE SPANS - STEEL BEAM
YEAR BUILT: 1953

CLEAR SPAN (NORMAL TO STREAM): 185'-0" +/-

VERTICAL CLEARANCE ABOVE STREAMBED: 14'-0" +/-

DISPOSITION OF STRUCTURE: REMOVE BRIDGE RAIL AND CONCRETE DECK

TYPE OF MATERIAL UNDER SUBSTRUCTURE: ABUT. #1 & PIER #1, FOUNDED ON PILES - GRAVEL AND CLAY
ABUT. #2 & PIER #2 - LEDGE

PROPOSED BRIDGE REHABILITATION WILL NOT AFFECT HYDRAULICS AND NO STUDY HASS BEEN DONE FOR THIS PROJECT.

LOAD FACTOR - LOAD RATING (TONS)

LOADING LEVELS	TRUCK						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY	27	48					
POSTED	37	68	86		56	61	80
OPERATING		81	103	116	69	72	

COMMENTS:

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2000	1200	170			

20 year ESAL for flexible pavement from to :
40 year ESAL for flexible pavement from to :
Design Speed : 40 mph

DESIGN CRITERIA

1. DESIGN LIVE LOAD AASHTO HS-25
2. DESIGN SPAN 49 - 89 - 49
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A
   ON LEDGE N/A
4. ALLOWABLE LOAD FOR PILING N/A
   TYPE N/A
   ESTIMATED LENGTH N/A
5. STRUCTURAL STEEL AASHTO M270M/M270 GRADE **SEE NOTE**
6. REINFORCING STEEL GRADE 60
7. CONCRETE, HIGH PERFORMANCE CLASS A f'c: 4000 psi
   CONCRETE, HIGH PERFORMANCE CLASS B f'c: 3500 psi

** NOTE: EXISTING ASTM, A7-49T PAINTED, Fy = 33ksi, NEW M270, GRADE 50 PAINTED

8. DESIGN SOIL UNIT WEIGHT N/A
9. DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL N/A

TRAFFIC MAINTENANCE

1. IS TRAFFIC TO BE MAINTAINED? YES
   IF YES, ON EXISTING STRUCTURE? YES
   OR ON TEMPORARY BRIDGE? NO
   ONE OR TWO-WAY TRAVEL? N/A
2. TRAFFIC CONTROL SIGNALS REQUIRED? YES
3. ARE SIDEWALKS REQUIRED? N/A
   IF SO, ON WHAT SIDE? N/A

LOAD RATING EQUATION:

STRENGTH RF = $\frac{\phi M_n - 1.3\ M_{DL}}{A \times M_{LL+I}}$ SERVICEABILITY RF = $\frac{B\left[.95\ Fy \times S_{LL+I} - M_{DL} \times \frac{S_{LL+I}}{S_{DL}} - M_{SDL} \times \frac{S_{LL+I}}{S_{SDL}}\right]}{1.67\ M_{LL+I}}$

PROJECT NAME: **MONTGOMERY**
PROJECT NUMBER: **BHF 0283(8)S**

FILE NAME: **/PW/98c316/sc316pi.xls** PLOT DATE: **11/14/2005**
PROJECT MANAGER: **R. WHITCOMB** DRAWN BY: **J. GILMORE**
DESIGNED BY: **J. HOWE** CHECKED BY: **C. MEUNIER**
PRELIMINARY INFORMATION SHEET SHEET **2** OF **45**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES

ROADWAY	TRAINING	SUPER-STURCTURE	SUB-STRUCTURE	APPROACH SLABS	EROSION CONTROL	FULL C.E. ITEMS	BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER
1									1		LS	CLEARING AND GRUBBING (INC. INDV. TREES & STUMPS)	201.10
80									80		CY	COMMON EXCAVATION	203.15
					10				10		CY	TRENCH EXCAVATION OF EARTH	204.20
		25		120			145		145		CY	STRUCTURE EXCAVATION	204.25
		20		70			90		90		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30
325									325		SY	COLD PLANING-BIT.PAVEMENT	210.10
90					10				100		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35
3									3		CWT	EMULSIFIED ASPHALT	404.65
174		100		22			122		296		TON	BITUMINOUS CONCRETE PAVEMENT (PG 58-34)	406.25
		220					220		220		CY	CONCRETE, HIGH PERFORMANCE CLASS A	501.33
				58			58		58		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34
		36					36		36		EACH	SHORING SUPERSTRUCTURE BEARINGS	502.11
		130					130		130		SF	TEMPORARY STEEL SHEET PILING	505.36
		6450					6450		6450		LB	STRUCTURAL STEEL	506.60
		50860	2010	6770			59640		59640		LB	EPOXY COATED REINFORCING STEEL	507.17
		778		40			818		818		EACH	MECHANICAL BAR CONNECTOR (#5 BAR) (EPOXY COATED)	507.19
		1					1		1		LS	SHEAR CONNECTORS (2484 - 7/8" X 7")	508.15
		1					1		1		LS	STRUCTURAL PAINTING,SHOP APPLIED (3.2 TONS)	513.25
		1					1		1		LS	STRUCTURAL PAINTING,FIELD APPLIED (124 TONS)	513.30
		1					1		1		LS	CONTAINMENT & ENVIRON. PROTECTION,FIELD (124 TONS)	513.36
		1					1		1		LS	SURFACE PREPARATION,SHOP (3.2 TONS)	513.40
		1					1		1		LS	SURFACE PREPARATION, FIELD (124 TONS)	513.41
		17					17		17		GAL	WATER REPELLENT (MOD. - SILANE)	514.10
		63					63		63		LF	BRIDGE EXPANSION JOINT (ASPHALTIC PLUG)	516.10
		36					36		36		LF	BRIDGE EXPANSION JOINT (VERMONT)	516.10
		650		10			660		660		SY	SHEET MEMBRANE WATERPROOFING (MOD. - TORCH APPLIED)	519.20
		407					407		407		LF	BRIDGE RAILING-NETC 2 RAIL	525.33
		1					1		1		LS	MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS (MOD.)	527.10
		625					625		625		SY	REMOVAL OF BRIDGE PAVEMENT	529.10
		1					1		1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20
		36					36		36		EACH	BEARING DEVICE ASSEMBLY (FABRIC)	531.10
			5				5		5		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS I	580.13
			3				3		3		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS II	580.14
			2				2		2		CY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS III	580.15
					20				20		CY	STONE FILL, TYPE I	613.10
					10				10		CY	STONE FILL, TYPE I (MOD. - CHECK DAMS)	613.10
					10				10		CY	STONE FILL, TYPE I (MOD. - CONSTRUCTION ENTRANCE)	613.10
					10				10		CY	STONE FILL, TYPE II	613.11

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
		TEMPORARY EROSION CONTROL ITEMS
		(INCLUDED UNDER EROSION CONTROL ITEMS)
10	CY	204.20 TRENCH EXCAVATION OF EARTH
10	CY	301.35 SUBBASE OF DENSE GRADED CRUSHED STONE
20	CY	613.10 STONE FILL, TYPE I
10	CY	613.10 STONE FILL, TYPE I (MOD. 1 - CHECK DAMS)
10	CY	613.10 STONE FILL, TYPE I (MOD. 2 - CONSTR. ENTRANCE)
390	SY	649.51 GEOTEXTILE FOR SILT FENCE
10	LB	651.17 SEED - WINTER RYE
0.25	TON	651.25 HAY MULCH
15	SY	654.10 EROSION MATTING
		EARTHWORKS SUMMARY
		FILL REQUIRED :
		FILL = 83 CY
		FILL FACTOR (X 0.15): (83 X 0.15) = 12 CY
		TOTAL FILL PLUS FACTOR = 95 CY
		COMMON EXCAVATION (76 CY X 1.00) = 76 CY
		STRUCTURE EXCAVATION (145 CY X 0.60) = 87 CY
		TOTAL MATERIAL AVAILABLE FOR RILL 163 CY
		EXCESS MATERIAL 68 CY
		N.A.B.I. = NOT A BID ITEM

PROJECT NAME: **MONTGOMERY**
PROJECT NUMBER: **BHF 0283(8)S**

FILE NAME: /98c316/sc316qnt.xls
PROJECT LEADER: **R. WHITCOMB**
DESIGNED BY: **STRUCTURES**
QUANTITY SHEET #1

PLOT DATE: **5/25/2004**
DRAWN BY: **J. GILMORE**
CHECKED BY: **C. CARLSON**
SHEET **3** OF **45**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES											TOTALS				DESCRIPTIONS			QUANTITIES	UNIT	ITEMS
	ROADWAY	TRAINING	SUPER-STURCTURE		SUB-STRUCTURE		APPROACH SLABS		EROSION CONTROL		FULL C.E. ITEMS		BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER			
	50														50		LF	REMOVING AND RESETTING FENCE	620.50			
	640														640		LF	SNOW FENCE (MOD. - PDF)	620.70			
	458														458		LF	HEAVY DUTY STEEL BEAM GUARD RAIL (GALVANIZED)	621.21			
	4														4		EACH	ENERGY ABSORPTION ATTENUATOR (MOD. - SAND-FILLED PLASTIC BARREL)	621.56			
	4														4		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60			
	4														4		EACH	GUARD RAIL APPR. SECTION,NETC 2 RAIL	621.72			
	530														530		LF	REMOVL AND DISP OF GUARD RAIL	621.80			
	860														860		LF	TEMPORARY TRAFFIC BARRIER	621.90			
	80														80		HR	UNIFORMED TRAFFIC OFFICERS	630.10			
	240														240		HR	FLAGGERS	630.15			
											1				1		LS	FIELD OFFICE-ENGINEERS	631.10			
											1				1		LS	TESTING EQUIPMENT - CONCRETE	631.16			
											1				1		LS	TESTING EQUIPMENT - BITUMINOUS	631.17			
											1				1		LS	TESTING EQUIPMENT - PROTECTIVE COATINGS	631.18			
											1				1		LU	FIELD OFFICE - TELEPHONE (N.A.B.I.)	631.25			
		520													520		HR	EMPLOYEE TRAINEESHIP	634.10			
	1														1		LS	MOBILIZATION / DEMOBILIZATION	635.11			
	1														1		LS	TRAFFIC CONTROL	641.10			
	1100														1100		LF	DURABLE 4" WHITE LINE (THERMOPLASTIC)	646.40			
	1100														1100		LF	DURABLE 4" YELLOW LINE (THERMOPLASTIC)	646.41			
	475														475		LF	TEMPORARY 4" WHITE LINE (TAPE, TYPE II)	646.60			
	25														25		LF	TEMPORARY 24" STOP BAR (TAPE, TYPE II)	646.66			
	410														410		SF	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85			
									20						20		SY	GEOTEXTILE UNDER STONE FILL	649.31			
									390						390		SY	GEOTEXTILE FOR SILT FENCE	649.51			
									10						10		LB	SEED	651.15			
									10						10		LB	SEED-WINTER RYE	651.17			
									50						50		LB	FERTILIZER	651.18			
									0.25						0.25		TON	AGRICULTURAL LIMESTONE	651.20			
									0.25						0.25		TON	HAY MULCH	651.25			
									40						40		CY	TOPSOIL	651.35			
									1						1		LS	EROSION PREVENTION AND SEDIMENT CONTROL PLAN	652.10			
									50						50		HR	MONITORING EROSION PREVENTION AND SEDIMENT CONTROL PLAN	652.20			
									1						1		LU	MAINTENANCE OF EROSION PREVENTION AND SEDIMENT CONTROL PLAN (N.A.B.I.)	652.30			
									15						15		SY	EROSION MATTING	654.10			
	18														18		SF	TRAFFIC SIGNS, TYPE A	675.20			
																		*** BEGIN SIGN POST OPTIONS ***				
	26														26		LF	FLANGED CHANNEL SIGN POST	675.301			
	26														26		LF	SQUARE TUBE SIGN POSTS AND ANCHOR	675.341			
																		*** END SIGN POST OPTIONS ***				
	3														3		EACH	REMOVING SIGNS	675.50			
	1														1		EACH	TEMPORARY TRAFFIC SIGNAL SYSTEM	678.40			
	1														1		EACH	TEMPORARY DETECTOR	678.42			

PROJECT NAME: **MONTGOMERY**
PROJECT NUMBER: **BHF 0283(8)S**

FILE NAME: /98c316/sc316qnt.xls
PROJECT LEADER: **R. WHITCOMB**
DESIGNED BY: **STRUCTURES**
QUANTITY SHEET #2

PLOT DATE: **5/25/2004**
DRAWN BY: **J. GILMORE**
CHECKED BY: **C. CARLSON**
SHEET **4** OF **45**

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, SEVENTEENTH EDITION.

2. DESIGN CRITERIA:

   - DESIGN LIVE LOAD FOR EXISTING SUBSTRUCTURES: H 20
   - DESIGN LIVE LOAD FOR PROPOSED SUPERSTRUCTURE REHABILITATION: HS 25
   - SEISMIC PERFORMANCE CATEGORY: A

3. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68° F.

4. THE CONTRACTOR IS RESPONSIBLE FOR FIELD CHECKING ANY AND ALL DIMENSIONS AND ELEVATIONS APPLICABLE TO THIS WORK PRIOR TO COMMENCING WORK OR ORDERING MATERIAL.

5. ALL WORK SHALL TAKE PLACE WITHIN THE EXISTING RIGHT-OF-WAY. NO PROVISIONS HAVE BEEN MADE FOR THE CONTRACTOR TO PERFORM WORK. OR SET UP STAGING OUTSIDE THE EXISTING RIGHT-OF-WAY.

6. ONE-WAY TRAFFIC WILL BE MAINTAINED WITH TEMPORARY TRAFFIC SIGNAL.

7. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION, ESPECIALLY THE DISCHARGE OF RAW CONCRETE INTO THE TROUT RIVER AS DIRECTED BY THE RESIDENT ENGINEER AND STANDARD SPECIFICATIONS SECTION 105.

8. FLEMING BRACKETS OR SIMILAR FALSEWORK SHALL BE SPACED AS REQUIRED BY DESIGN UP TO A MAXIMUM OF 4 FEET.

9. EXISTING GUARDRAIL SHALL BE REMOVED UNDER ITEM 621.80, "REMOVAL AND DISPOSAL OF GUARDRAIL".

10. NOT USED.

11. THE EXISTING PAVEMENT ON THE BRIDGE DECK SHALL BE REMOVED USING ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT".

12. ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE" SHALL INCLUDE: REMOVAL OF BRIDGE RAILING AND OF THE EXISTING CONCRETE BRIDGE DECK, CURBS, UTILITY CONDUITS & SUPPORTS, DIAPHRAGMS AT PIERS, AND CURTAIN WALLS AT ABUTMENTS, PARTIAL REMOVAL OF EXISTING INTERMEDIATE STEEL DIAPHRAGMS, AND REMOVAL OF EXISTING BEARING PLATES AS INDICATED BY THIS PLAN SET. CARE SHALL BE TAKEN NOT TO DAMAGE THE EXISTING GIRDERS. ANY DAMAGE TO THE GIRDERS DUE TO THE REMOVAL OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR'S METHODS FOR PARTIAL REMOVAL OF THE EXISTING STRUCTURE SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY REMOVAL WORK.

13. ITEM 613.10, "STONE FILL, TYPE I" AND ITEM 613.11, "STONE FILL, TYPE II" SHALL BE USED TO REPAIR AREAS OF EMBANKMENT AND SLOPE EROSION AS ORDERED BY THE ENGINEER.

14. AFTER SUPERSTRUCTURE DECK CONCRETE HAS BEEN REMOVED AND BEARINGS HAVE BEEN REPLACED, ELEVATIONS ALONG THE TOP OF THE GIRDERS SHALL BE TAKEN AS DIRECTED BY THE ENGINEER, FOR USE IN DETERMINING CONCRETE HAUNCH DEPTHS AND FINAL GRADES.

15. BECAUSE THE PROPOSED STRUCTURE DEPTH IS THICKER THAN THE EXISTING STRUCTURE DEPTH, THE PROPOSED FINISH GRADE WILL BE ABOUT 6" HIGHER THAN THE EXISTING. CONSEQUENTLY, IT IS NECESSARY TO TRANSITION THE NEW BRIDGE PAVEMENT INTO THE EXISTING APPROACH PAVEMENT. THE COLD PLANING NECESSARY FOR SHAPING BRIDGE APPROACHES FOR FINAL PAVING SHALL BE PAID UNDER ITEM 210.10. "COLD PLANING BITUMINOUS PAVEMENT". A BUTT PAVEMENT JOINT IS REQUIRED. FEATHERING NEW PAVEMENT INTO EXISTING WILL NOT BE ALLOWED. EMULSIFIED ASPHALT SHALL BE APPLIED TO THE COLD PLANED BITUMINOUS CONCRETE PAVEMENT SUFACE AT THE RATE OF 0.015 GAL/S.Y. OR AS DIRECTED BY THE ENGINEER. EMULSIFIED ASPHALT SHALL ALSO BE APPLIED BETWEEN ALL LIFTS OF PAVEMENT, NOT JUST ON COLD PLANED AREAS. THE COST SHALL BE PAID UNDER ITEM 404.65, "EMULSIFIED ASPHALT".

16. ALL CONCRETE SHALL BE CONCRETE HIGH PERFORMANCE, CLASS A, UNLESS OTHERWISE SPECIFIED.

    CONCRETE HIGH PERFORMANCE, CLASS A f'_c= 4000 psi
    CONCRETE HIGH PERFORMANCE, CLASS B f'_c= 3500 psi

17. REINFORCING STEEL SHALL CONFORM TO AASHTO M 31M/M 31, GRADE 420 (GRADE 60) AND SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).

18. ALL REINFORCING STEEL SHALL BE EPOXY COATED AND PAID FOR UNDER ITEM 507.17. WHEN EPOXY COATED REBAR IS CUT, THE UNCOATED ENDS SHALL BE REPAIRED WITH MATERIALS AND PROCEDURES APPROVED BY THE COATING MANUFACTURER. FLAME CUTTING OF EPOXY COATED REBAR WILL NOT BE PERMITTED.

19. MINIMUM COVER FOR REINFORCING STEEL (EXCEPT IN THE DECK) SHALL BE 2 INCHES ALONG BACK FACES OF WALLS AGAINST EARTH, AND 3 INCHES ELSEWHERE.

20. REINFORCING PLACEMENT TOLERANCES SHALL BE:
    SPACING: +/- 1 INCH
    CLEARANCE: +/- 1/4 INCH

21. WHEN POURING THE DECK, THE CONCRETE SHALL BE DEPOSITED PARALLEL TO THE CENTERLINE OF BEARING SO AS TO LOAD THE GIRDERS EQUALLY. SEE THE DECK REINFORCING PLAN (I) FOR CONCRETE SLAB PLACING SEQUENCE.

22. THE KEY IN CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT.

23. CURB JOINTS SHALL BE SPACED AT 15'-0" MAXIMUM. CURB POUR SEQUENCE WILL BE IN ALTERNATING SECTIONS.

24. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

25. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1".

26. WATER REPELLENT (MOD. - SILANE) SHALL BE APPLIED TO ALL NEW EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP BEADS AND ALL EXISTING EXPOSED CONCRETE SUBSTUCTURE SURFACES.

27. 100% OF ALL EXISTING STRUCTURAL STEEL PAINT COATING IS TO BE REMOVED AND THE STRUCTURAL STEEL SURFACES SHALL BE FIELD PREPARED FOR PAINTING PER SUPPLEMENTAL SPECIFICATION SECTION 513. PAYMENT FOR REMOVAL OF EXISTING PAINT COATING SHALL BE PAID UNDER ITEM 513.41, "SURFACE PREPARATION, FIELD".

28. THE EXISTING STRUCTURAL STEEL AND BEARINGS TO BE REMOVED ON THIS PROJECT ARE PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. THE EXISTING STRUCTURAL STEEL NOT REUSED IS TO BECOME THE PROPERTY OF THE CONTRACTOR AND THE CONTRACTOR MAY DISPOSE OF OR RETAIN IT FOR FUTURE USE. THE CONTRACTOR WILL INFORM THE ENGINEER OF THEIR PLANS TO DISPOSE OF OR RETAIN THE STRUCTURAL STEEL PRIOR TO ITS REMOVAL.

29. ALL STEEL PAID UNDER THE ITEM 506.60 "STRUCTURAL STEEL" SHALL CONFORM TO AASHTO M 270M/M 270 GRADE 345 (GRADE 50) PAINTED UNLESS NOTED OTHERWISE ON THE PLANS. COST OF PAINTING THE NEW STEEL SHALL BE INCLUDED IN FIELD PAINTING ITEMS.

30. ALL EXISTING STRUCTURAL STEEL THAT IS TO REMAIN SHALL BE PAINTED PER SUPPLEMENTAL SPECIFICATION SECTION 513, AND GREASED PER SECTION 513.06(D). FINAL COAT PAINT COLOR SHALL BE GREEN, FEDERAL STANDARD (NO. 595) COLOR CHIP NO. 14062. GREASE COATING SHALL BE APPLIED TO BEAM ENDS AT EXPANSION JOINT AND TO AREAS EXTENDING 3 FEET TO EACH SIDE OF SCUPPER LOCATIONS. THE GREASE COATING AS REQUIRED BY SECTION 513, PROTECTIVE COATINGS, SHALL BE INCIDENTAL TO THE ITEM 513.30, "STRUCTURAL PAINTING, FIELD APPLIED". PAYMENT FOR FIELD PAINTING SHALL BE UNDER ITEM 513.30 "STRUCTURAL PAINTING, FIELD APPLIED.

31. THE CONTRACTOR SHALL PROVIDE CONTAINMENT AND ENVIRONMENTAL PROTECTION FOR FIELD PAINTING AND SURFACE PREPARATION PER THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATIONS SECTION 513. PAYMENT FOR THIS WORK SHALL BE UNDER ITEM 513.36 "CONTAINMENT & ENVIRONMENTAL PROTECTION, FIELD".

32. ALL FIELD CONNECTIONS SHALL BE MADE USING 7/8 INCH DIAMETER, AASHTO M 164M/M 164 TYPE I GALVANIZED BOLTS. HOLES SHALL BE 15/16 INCH DIAMETER, UNLESS OTHERWISE NOTED. ANY CONNECTIONS NOT DESIGNATED SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURE ENGINEER FOR APPROVAL. FASTENERS SHALL BE FIELD PAINTED AFTER INSTALLATION.

33. ANY BOLT HOLES IN THE WEB OF THE FASCIA GIRDERS NOT OTHERWISE FILLED SHALL BE FILLED WITH AASHTO M 164M/M 164 TYPE I GALVANIZED BOLTS. THE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19. FASTENERS SHALL BE FIELD PAINTED AFTER INSTALLATION.

34. SHEAR STUDS SHALL BE INSTALLED ON ALL GIRDERS AS INDICATED.

35. ALL AREAS TO RECIEVE TOPSOIL SHALL RECEIVE SEED, FERTILIZER, AGRICULTURAL LIMESTONE, AND HAY MULCH AS SPECIFIED IN STANDARD SPECIFICATION SECTION 651 OR AS DIRECTED BY THE ENGINEER.

36. NOT USED.

37. EXISTING FIBER OPTIC CABLE SHALL BE REMOVED AND PERMANENTLY RELOCATED OFF THE BRIDGE BY OTHERS. CONTRACTOR SHALL COORDINATE ALL BRIDGE REHABILITATION AND APPROACH RECONSTRUCTION WORK WITH UTILITY RELOCATION WORK AS REQUIRED. SEE UTILITY SPECIAL PROVISIONS.

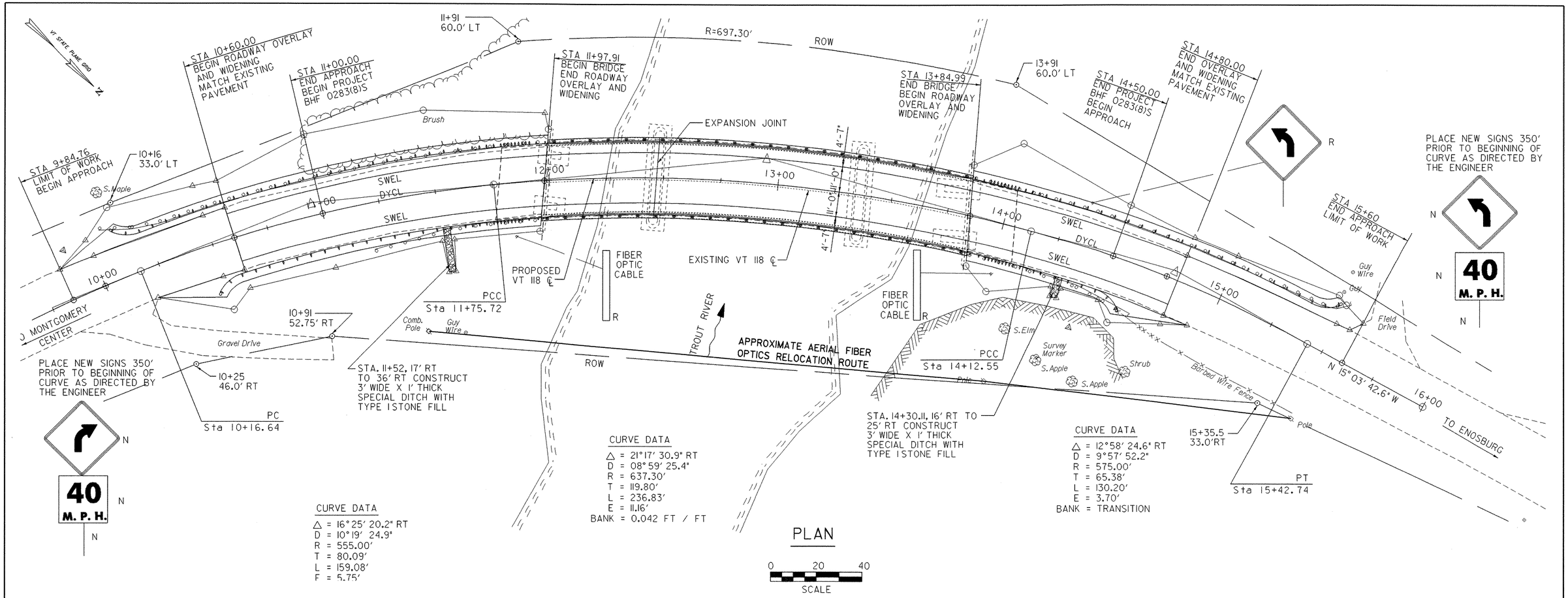
38. ABUTMENT CONCRETE REPAIRS SHALL BE PERFORMED. A THROUGH INSPECTION BY THE ENGINEER WILL BE MADE OF ALL SUBSTRUCTURE AREAS PRIOR TO COMMENCING ANY WORK AND THOSE AREAS FOUND TO HAVE SPALLED, DELAMINATED OR OTHERWISE UNSOUND CONCRETE WILL BE REPAIRED. THE CONTRACTOR SHALL SUPPLY ANY STAGING REQUIRED FOR THIS INSPECTION. THE COST FOR WHICH SHALL BE INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.

DATE: $DATE$ FILENAME: $FILE$

T.Y.LIN INTERNATIONAL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
GENERAL NOTES	
Designed By J Howe	Drawn By J Davis
Checked By Date 9/4/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC316GNI.DGN
Bridge Sheet No.	Sheet 5 of 45



PLAN

0 20 40
SCALE

N = NEW
R = REMOVE

NOTES:

1. TEMPORARY EROSION CONTROL METHODS AS PER SHEETS 13 - 17 ARE TO BE USED ON THIS PROJECT AS APPROVED AND DIRECTED BY THE ENGINEER.

DURABLE 4" WHITE LINE

10+00.00 LT TO 15+50.00 LT - SOLID (11'LT)
10+00.00 RT TO 15+50.00 RT - SOLID (11'RT)

DURABLE 4" YELLOW LINE

10+00.00 ℄ TO 15+50.00 ℄ - SOLID DBL LINE

HEAVY DUTY STEEL BEAM GUARDRAIL (GALVANIZED) W/ STEEL POSTS

STA 10+45.66 - RT TO STA 11+61.24 - RT
STA 10+10.67 - LT TO STA 11+68.18 - LT
STA 14+14.74 - LT TO STA 15+48.19 - LT
STA 14+21.75 - RT TO STA 14+60.04 - RT

GUARDRAIL APPROACH SECTION NETC 2 RAIL

STA 11+61.24 - RT TO STA 11+86.94 - RT
STA 11+68.18 - LT TO STA 11+92.54 - LT
STA 13+95.96 - RT TO STA 14+21.75 - RT
STA 13+90.36 - LT TO STA 14+14.74 - LT

ANCHOR FOR STEEL BEAM RAIL

STA 10+51.96 - RT
STA 10+16.50 - LT
STA 15+42.24- LT
STA 14+53.75 - RT

REMOVING AND DISPOSAL OF GUARDRAIL

STA 11+19± RT TO STA 11+95± RT
STA 10+04± LT TO STA 12+00± LT
STA 13+83± LT TO STA 15+54± LT
STA 13+87± RT TO STA 14+64± RT

REMOVE AND RESET FENCE (BARBED WIRE)

STA 14+50 RT TO 15+00 RT

BRIDGE RAILING - NETC 2 RAIL

STA 11+86.94 - RT TO STA 13+95.96 - RT
STA 11+92.54 - LT TO STA 13+90.36 - LT

T.Y.LIN INTERNATIONAL

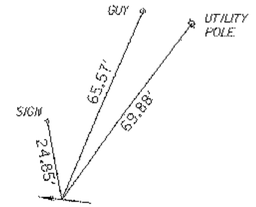
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
PLAN	
Designed By D Bryant	Drawn By J Davis
Checked By J Andrews Date 08/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC3I6PLI.DGN
Bridge Sheet No.	Sheet 6 of 45

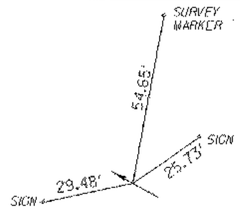
DATE: RUN: FILENAME: STYLE:

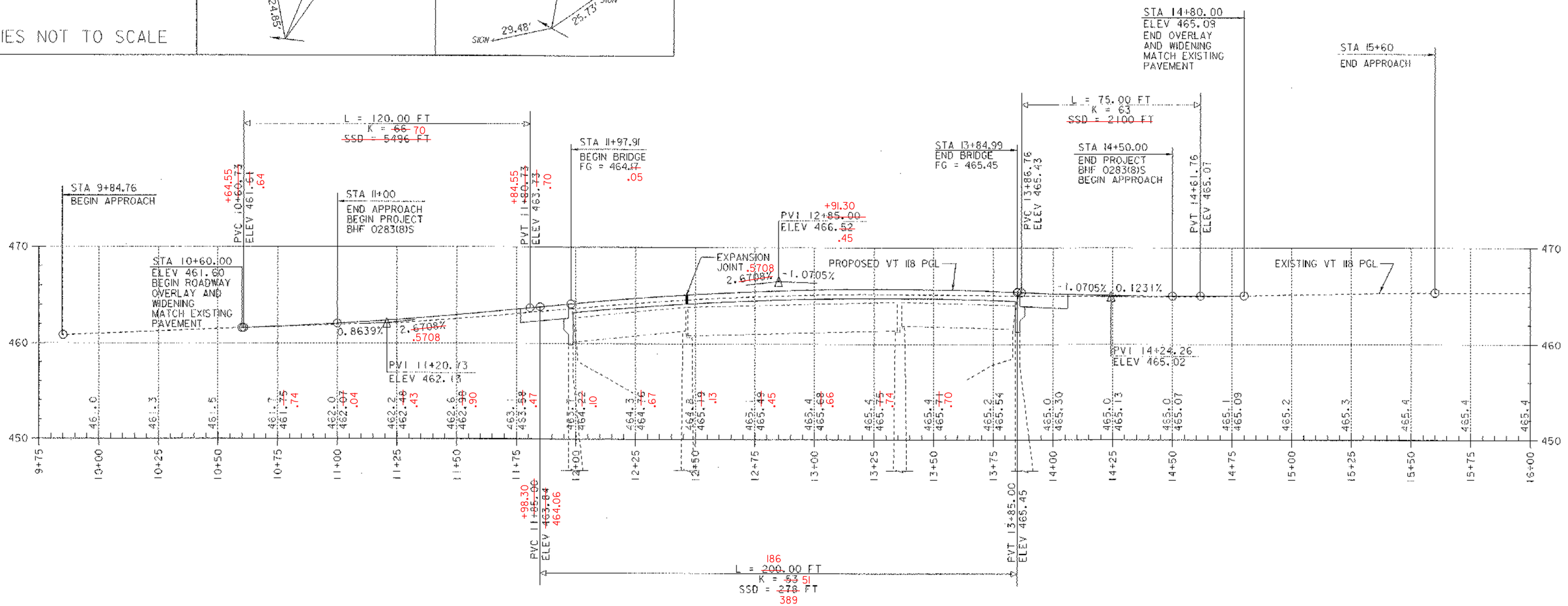
TIES NOT TO SCALE

PCC STA 11+75.72

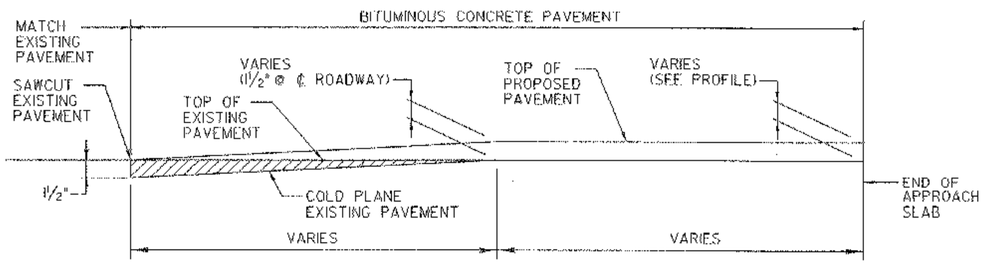


PCC STA 14+12.55



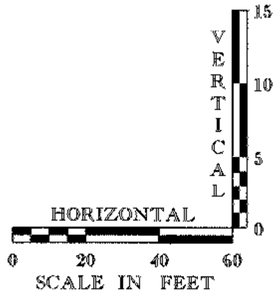


VT 118 PROFILE



APPROACH PAVEMENT TRANSITION DETAIL

NOT TO SCALE



REVISED VERTICAL ALIGNMENT 3/13/06

T-Y LIN INTERNATIONAL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Leg Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
PROFILE, TIES AND DETAILS	
Designed By D Bryant	Drawn By J Davis
Checked By J Andrews	Date 05/31/01
Bridge Design Supervisor R.WHITCOMB	Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.C.C. Info.	7C316PRI.DGN
Bridge Sheet No.	Sheet 7 of 45

DATE: #DATE# FILENAME: #FILE#

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS EA	WIDTH (in)	HEIGHT (in)	NEW & SALVAGED SIGNS "A"	"B"	SALV SIGN	SALV TIS	EXIST POST RETAIN	SALVAGE	NO. OF POSTS	NEW SIGN POSTS: FLANGED CHANNEL lb/ft 1.12	2.0	3.0	SQUARE STEEL (in) lb/ft 1.75 (1.88)	2.0 (2.16)	2.5 (3.35)	ANCHOR	SLEEVE	TUBULAR ALUMINUM Ø (in) lb/ft 3.0 (1.3)	4.0 (1.7)	4.0 MOD (1.7)	TUBULAR STEEL Ø (in) FOUNDATION	lb/ft 3.0 (7.6)	3.5 (9.0)	4.0 (10.8)	5.0 (14.6)	W-SHAPE STEEL FTG. SIZE 24"	30"	WEIGHT	POST SIZE	SIGN FRAME REQUIRED	REMARKS	SIGN DETAIL: DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
												OPTION ITEMS																									
6+66.64, RT.		1	30	30	6.25						1			X			X	X															[SIGN ID CODE WI-2R]		E-151
6+66.64, RT.		1	18	18	2.25																												[SIGN ID CODE WI3-1] MOUNT WITH WI-2R		E-155
18+92.74, LT.		1	30	30	6.25						1			X			X	X															[SIGN ID CODE WI-2L]		E-151
18+92.74, LT.		1	18	18	2.25																												[SIGN ID CODE WI3-1] MOUNT WITH WI-2L		E-155
												FT	FT	FT 26	FT	FT	FT 26		EA	LB	LB	LB		LB	LB	LB	LB								
TOTALS					SF 17	SF	EA.	SF				FT 26			FT 26					LB			EA.	LB				EA.	EA.	LB					

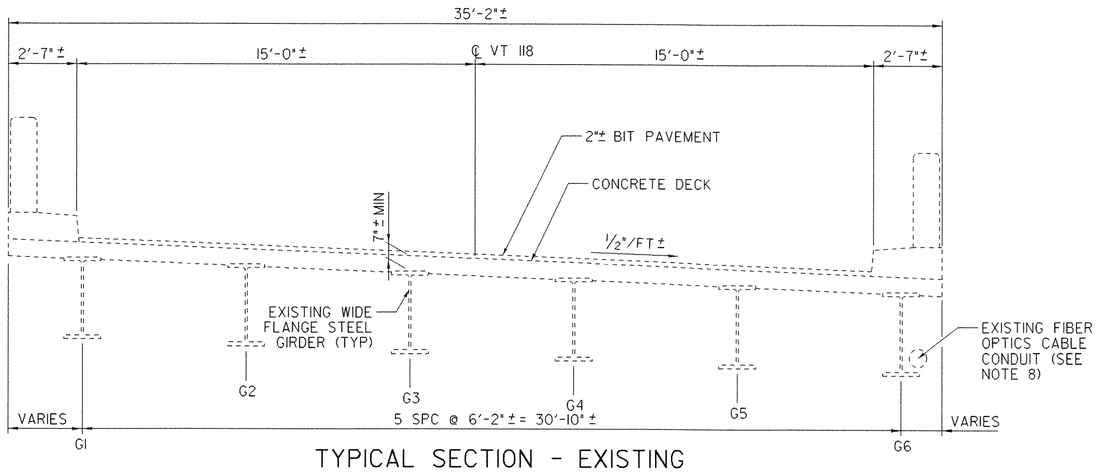
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S "SIGN POST DESIGN GUIDELINE."

DATE: $DATE$ FILENAME: $FILE$

T·Y·LIN INTERNATIONAL

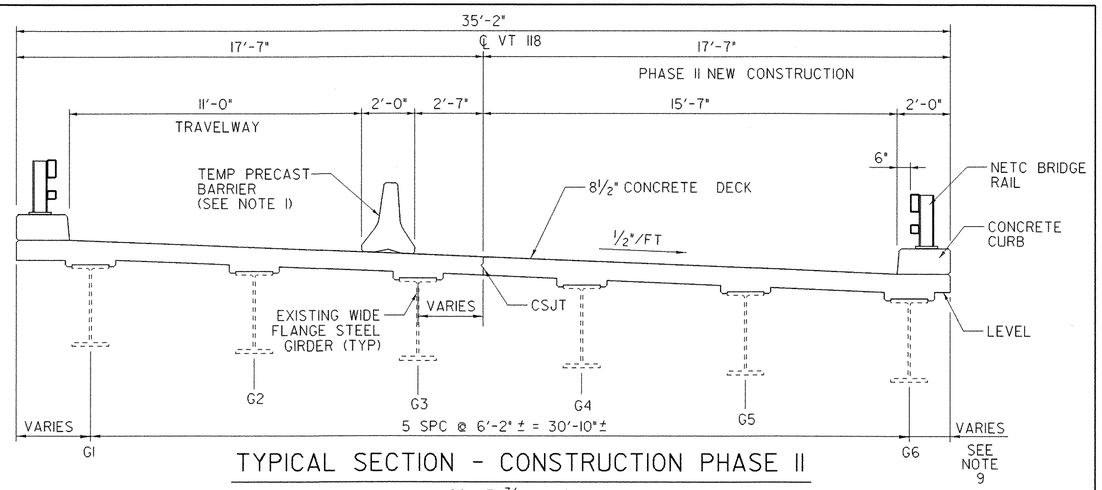
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
TRAFFIC SIGN SUMMARY	
Designed By J Howe	Drawn By P Donovan
Checked By D BURHANS Date 08/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC316SSIDGN
Bridge Sheet No.	Sheet 8 of 45



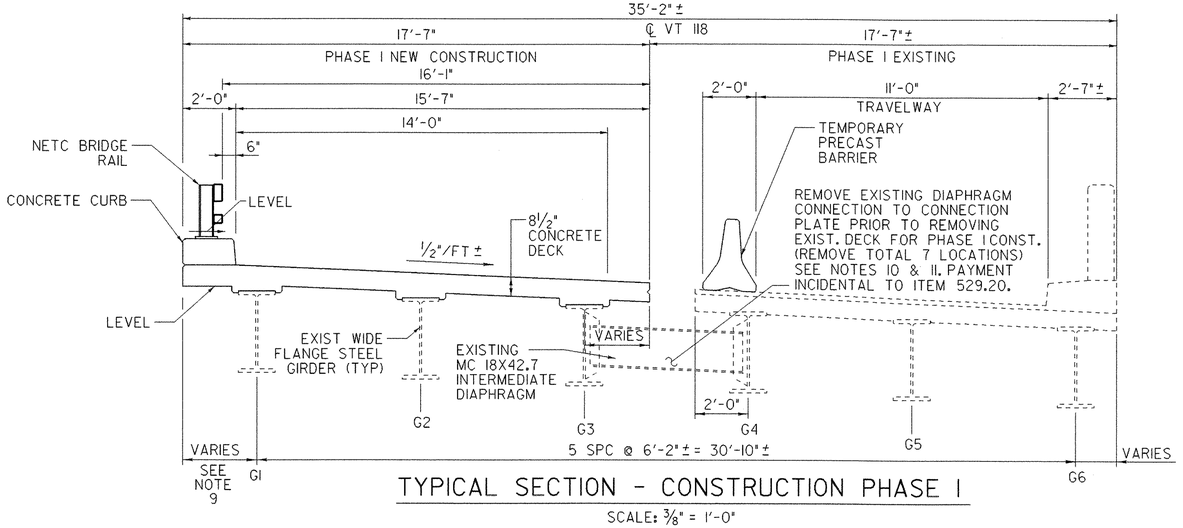
TYPICAL SECTION - EXISTING

SCALE: ⅜" = 1'-0"



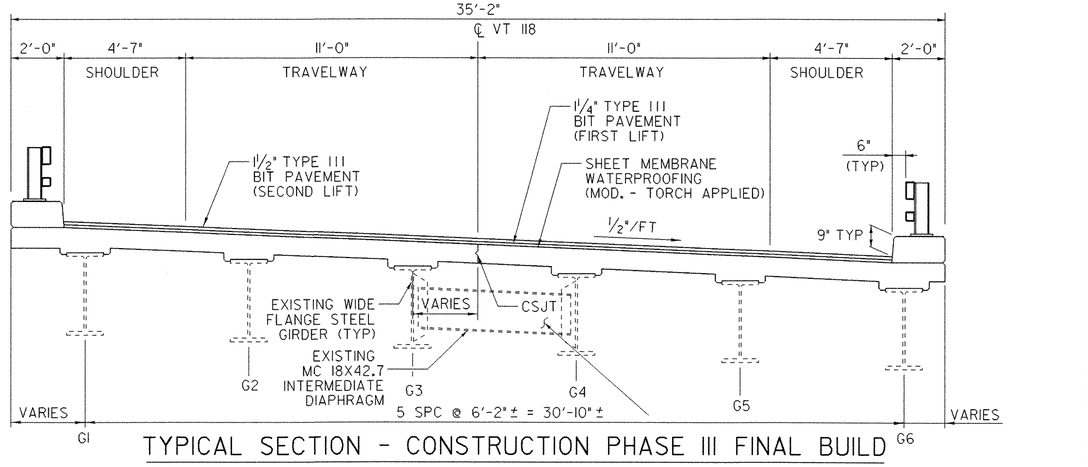
TYPICAL SECTION - CONSTRUCTION PHASE II

SCALE: ⅜" = 1'-0"



TYPICAL SECTION - CONSTRUCTION PHASE I

SCALE: ⅜" = 1'-0"

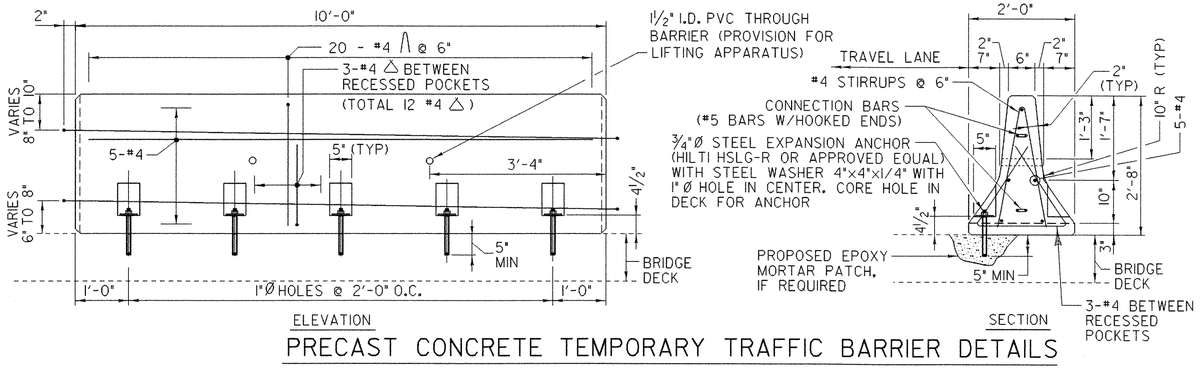


TYPICAL SECTION - CONSTRUCTION PHASE III FINAL BUILD

SCALE: ⅜" = 1'-0"

NOTES:

1. NO DRILLING OF ANCHORS WILL BE ALLOWED FOR THE ATTACHMENT OF THE TEMPORARY PRECAST BARRIER TO THE NEW CONCRETE DECK.
2. ANCHOR BOLTS INSTALLED ON EXISTING DECK ARE TO BE OF STEEL CONFORMING TO ASTM A307.
3. NUTS SHALL CONFORM TO ASTM A307.
4. ANCHOR PRECAST CONCRETE TEMPORARY BARRIER ON BRIDGE DECK TO EXISTING DECK (5 ANCHORS SPACED @ 2'-0" O.C. IN 10' SECTIONS).
5. FOR ADDITIONAL DETAILS REFER TO STANDARD SHEET G-18.
6. ALL MODIFICATIONS OF STANDARD PRECAST CONCRETE TEMPORARY TRAFFIC BARRIER FOR ATTACHMENT TO BRIDGE DECK, INCLUDING REINFORCING, BRIDGE DECK REPAIRS, ANCHORS AND EPOXY OR CONCRETE MORTAR ARE INCIDENTAL TO ITEM 621.90. ANCHOR DETAIL SHOWN ONLY APPLIES TO ANCHORAGE TO EXISTING CONCRETE DECK (PHASE I ONLY).
7. PHASE TWO ANCHOR DETAILS TO BE SUBMITTED FOR REVIEW.
8. EXISTING FIBER OPTICS CABLE SHALL BE REMOVED AND PERMANENTLY RELOCATED OFF THE BRIDGE BY OTHERS. CONTRACTOR SHALL COORDINATE ALL BRIDGE REHABILITATION WORK WITH UTILITY RELOCATION WORK AS REQUIRED.
9. FOR OVERHANG DIMENSIONS SEE FASCIA OFFSET PLAN, SHEET 24.
10. CONTRACTOR MAY PARTIALLY REMOVE THE DECK SLAB BETWEEN G3 AND G4 TO GAIN ACCESS TO THE DIAPHRAGMS.
11. EXISTING WELDS SHALL BE REMOVED USING AIR ARC METHOD. WELD REMOVAL METHOD SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL.



PRECAST CONCRETE TEMPORARY TRAFFIC BARRIER DETAILS

SCALE: ¾" = 1'-0"

TYLIN INTERNATIONAL

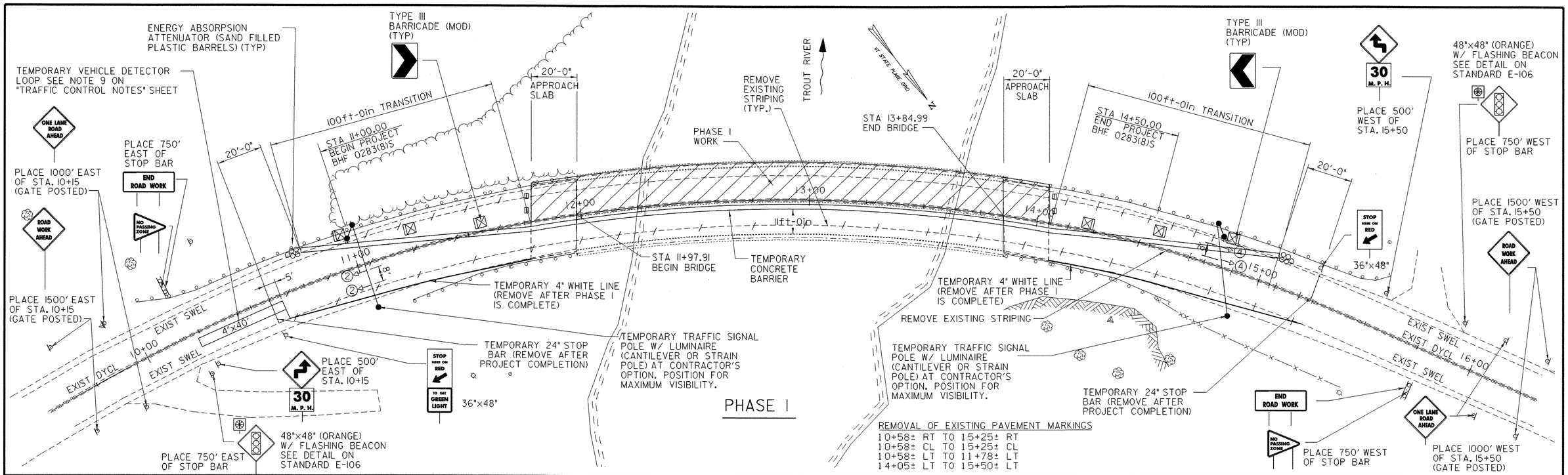
STATE OF VERMONT
AGENCY OF TRANSPORTATION

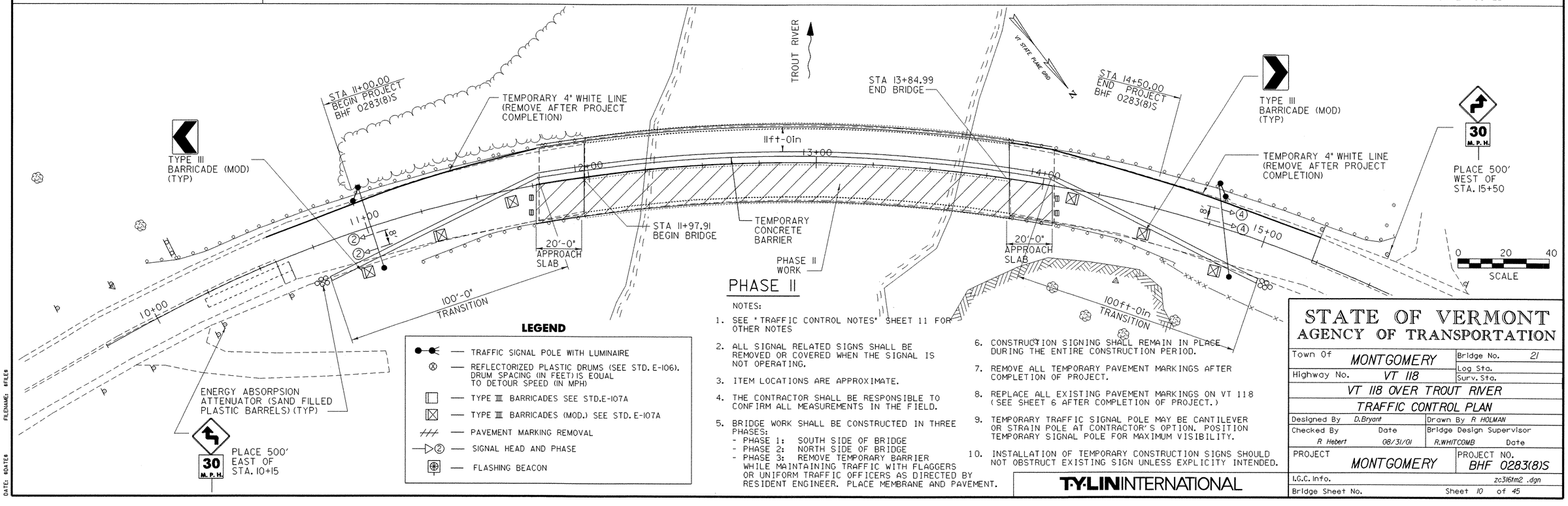
Town Of	MONTGOMERY	Bridge No.	21
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	

VT 118 OVER TROUT RIVER

BRIDGE CONSTRUCTION STAGING

Designed By	J Howe	Drawn By	J Davis
Checked By	Date	Bridge Design Supervisor	
R Hebert	08/31/01	R.WHITCOMB	Date
PROJECT	MONTGOMERY	PROJECT NO.	BHF 0283(8)S
I.G.C. Info.			ZC316CS1.DGN
Bridge Sheet No.		Sheet 9 of 45	





PHASE II

NOTES:

1. SEE "TRAFFIC CONTROL NOTES" SHEET 11 FOR OTHER NOTES
2. ALL SIGNAL RELATED SIGNS SHALL BE REMOVED OR COVERED WHEN THE SIGNAL IS NOT OPERATING.
3. ITEM LOCATIONS ARE APPROXIMATE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONFIRM ALL MEASUREMENTS IN THE FIELD.
5. BRIDGE WORK SHALL BE CONSTRUCTED IN THREE PHASES:
   - PHASE 1: SOUTH SIDE OF BRIDGE
   - PHASE 2: NORTH SIDE OF BRIDGE
   - PHASE 3: REMOVE TEMPORARY BARRIER WHILE MAINTAINING TRAFFIC WITH FLAGGERS OR UNIFORM TRAFFIC OFFICERS AS DIRECTED BY RESIDENT ENGINEER. PLACE MEMBRANE AND PAVEMENT.
6. CONSTRUCTION SIGNING SHALL REMAIN IN PLACE DURING THE ENTIRE CONSTRUCTION PERIOD.
7. REMOVE ALL TEMPORARY PAVEMENT MARKINGS AFTER COMPLETION OF PROJECT.
8. REPLACE ALL EXISTING PAVEMENT MARKINGS ON VT 118 (SEE SHEET 6 AFTER COMPLETION OF PROJECT.)
9. TEMPORARY TRAFFIC SIGNAL POLE MAY BE CANTILEVER OR STRAIN POLE AT CONTRACTOR'S OPTION. POSITION TEMPORARY SIGNAL POLE FOR MAXIMUM VISIBILITY.
10. INSTALLATION OF TEMPORARY CONSTRUCTION SIGNS SHOULD NOT OBSTRUCT EXISTING SIGN UNLESS EXPLICITY INTENDED.

LEGEND

- TRAFFIC SIGNAL POLE WITH LUMINAIRE
- REFLECTORIZED PLASTIC DRUMS (SEE STD. E-106). DRUM SPACING (IN FEET) IS EQUAL TO DETOUR SPEED (IN MPH)
- TYPE III BARRICADES SEE STD.E-107A
- TYPE III BARRICADES (MOD.) SEE STD. E-107A
- PAVEMENT MARKING REMOVAL
- SIGNAL HEAD AND PHASE
- FLASHING BEACON

T.Y.LIN INTERNATIONAL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
TRAFFIC CONTROL PLAN	
Designed By D.Bryant	Drawn By R HOLMAN
Checked By R Hebert Date 08/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	zc316fm2 .dgn
Bridge Sheet No.	Sheet 10 of 45

FILENAME: $FILE$
DATE: $DATE$

COLORS: BLACK TEXT & BORDER
WHITE REFL. BACKGROUND
MATERIALS: PER STD. E-142

PHASING DIAGRAM AND SPECIAL NOTES FOR EACH LOCATION

PHASE	2			6			4		
MINIMUM	12	4	17				12	4	17
EXTENSION	2						2		
MAXIMUM	16						16		
HEAD 2	G	Y	R				R	R	R
HEAD 4	R	R	R				G	Y	R

SPECIAL REQUIREMENTS

APPROACH	TEMPORARY VEHICLE DETECTOR	FLASHING BEACON ON ADVANCED WARNING SIGN
2	X	X
4		X

ENTER CHECK MARK IN APPROPRIATE BOX WHEN REQUIRED ON THIS PROJECT

SEE TRAFFIC CONTROL PLAN FOR PHASED CONSTRUCTION PLANS.

ATTENUATOR NOTES

ENERGY ABSORPTION ATTENUATORS WILL BE PLACED AS SHOWN ON THE TRAFFIC CONTROL PLAN SHEETS TO ALLOW THE CONTRACTOR ACCESS TO THE WORK AREAS. THE ENERGY ABSORPTION ATTENUATORS FOR THIS PROJECT SHALL BE SUITABLE FOR A NARROW WIDTH APPLICATION AND SHALL BE INSTALLED AS SHOWN ON THE TRAFFIC CONTROL PLAN SHEETS. THESE ATTENUATORS WILL BE PAID FOR UNDER THE ITEM 621.57 "ENERGY ABSORPTION ATTENUATOR" (SAND FILLED PLASTIC BARRELS).

THE ATTENUATORS SHALL MEET THE REQUIREMENTS OF THE LATEST VERSION OF THE AASHTO "ROADSIDE DESIGN GUIDE," AND SHALL BE DESIGNED FOR A 4500 LB VEHICLE TRAVELING AT 35 MPH.

IF THE ATTENUATORS ARE DAMAGED BY AN ERRANT VEHICLE, ANY COST TO THE CONTRACTOR FOR REPLACEMENT OF ANY PART OR ALL OF THE ATTENUATOR SHALL BE PAID AS "EXTRA WORK" PER SECTION 109.06.

THE CONTRACTOR SHALL PROVIDE A SPARE ATTENUATOR ON THIS PROJECT, FOR THE PURPOSE OF IMMEDIATE REPLACEMENT OF A DAMAGED ATTENUATOR. THE COST OF ON-SITE STORAGE OF EXTRA ATTENUATOR SHALL BE PAID AS SPECIFIED IN THE SPECIAL PROVISIONS.

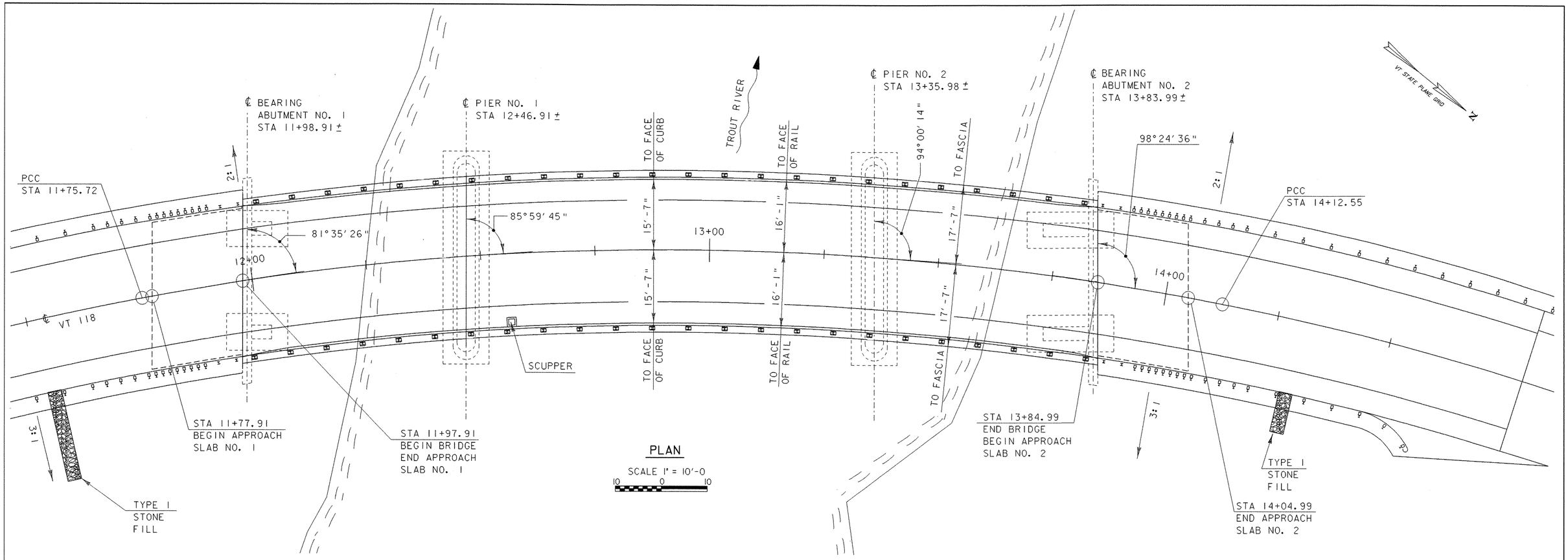
1. DESIGN OF THE SIGNAL SUPPORT(S) AND ANY REQUIRED GUYING IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. SIGNAL TIMING/TIMING ADJUSTMENTS REQUESTED BY THE RESIDENT ENGINEER SHALL BE ACCOMPLISHED WITHIN A 48 HOUR PERIOD AND PAYMENT SHALL BE SUBSIDIARY TO THE TRAFFIC SIGNAL ITEM. THE ALL-RED CLEARANCE INTERVAL IS BASED ON AN ASSUMED SPEED OF 10-20 MPH, THE RESIDENT ENGINEER SHALL MAKE SEVERAL TRIAL 10-20 MPH, THE RESIDENT ENGINEER SHALL MAKE SEVERAL TRIAL RUNS TO DETERMINE THE PROPER ALL-RED CLEARANCE INTERVAL.
3. SIGNAL FACES SHALL CONSIST OF 12" LENSES. (RED, YELLOW, AND GREEN)
4. THE BOTTOM OF THE HOUSING OF A SIGNAL FACE SUSPENDED OVER A ROADWAY SHALL NOT BE LESS THAN 16½ FEET NOR MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY. THE BOTTOM OF A SIGNAL FACE NOT MOUNTED OVER A ROADWAY, SHALL NOT BE LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE GROUND. CAUTION SHOULD BE USED TO INSURE COMPLIANCE WITH THE HEIGHT REQUIREMENTS IN THE EVENT THE NEW APPROACH GRADES DIFFER SIGNIFICANTLY FROM THE OLD ROAD GRADE.
5. SIGNAL FACES FOR ANY ONE APPROACH SHALL NOT BE LESS THAN 8 FEET APART MEASURED HORIZONTALLY BETWEEN CENTER OF FACES.
6. SIGNAL HEADS MAY BE HUNG ON A SPAN WIRE OR ON A CANTILEVER MAST ARM. AT LEAST ONE SIGNAL HEAD SHALL BE UNMISTAKABLY IN LINE WITH THE CENTER OF APPROACHING TRAFFIC AT ALL TIMES. THE SECOND SIGNAL HEAD MAY BE POST MOUNTED, LOCATED AT A DISTANCE NO GREATER THAN 14½FEET FROM THE CENTER OF THE APPROACH LANE WHEN THE STOP BAR IS 40 FEET FROM THE SIGNAL HEAD. CONSULT THE M.U.T.C.D. FOR ADDITIONAL INFORMATION CONCERNING SIGNAL PLACEMENT.
7. SIGNAL HEAD PLACEMENT IS CRITICAL. HEADS SHALL BE ADJUSTED TO REFLECT LANE LOCATION CHANGES.
8. THE SIGNAL SYSTEM SHALL CONSIST OF POLES, SIGNS AND POSTS, WARNING SIGN, LUMINAIRES, FLASHING BEACONS, AND SIGNAL EQUIPMENT TO PROVIDE FOR AN ADEQUATE DESIGN. IT ALSO INCLUDES PERMITS AND COST ASSOCIATED WITH PROVIDING ELECTRICAL POWER.
9. THE CONTRACTOR SHALL PROVIDE AN ACTUATED CONTROLLER. THE APPROACHES NOTED SHALL HAVE A TEMPORARY VEHICLE DETECTOR. THE TYPE OF DETECTION SHALL BE AT THE OPTION OF THE CONTRACTOR. LOOPS ARE SHOWN FOR PLACEMENT PURPOSES ONLY. THE CONTROLLER, DETECTOR AND ALL OTHER SIGNAL EQUIPMENT SHALL MEET OR EXCEED ALL NEMA STANDARDS.
10. WHEN USED, VEHICLE DETECTOR LOOPS SHALL BE 4' × 40' FOR PRESENCE DETECTION AT THE STOP BAR WITH THE NEAR PORTION LOCATED 5 FEET BEYOND THE STOP BAR.
11. ON SEMI-ACTUATED SIGNAL, PARTICULARLY WITH LONG BRIDGES, THE CONTROLLER SHOULD BE LOCATED ON THE SAME SIDE OF THE BRIDGE AS THE DETECTOR.
12. INTERVAL TIMING SHOWN IN SECONDS.
13. INTERCONNECT BETWEEN SIGNAL POLES BY WHATEVER MEANS POSSIBLE OR CONVENIENT TO PROVIDE FOR A SAFE INSTALLATION.
14. PLACE TEMPORARY POLES BEHIND GUARDRAIL WHERE POSSIBLE.
15. POLES SUPPORTING SPAN WIRES AND/OR MAST ARMS SHALL BE ADEQUATELY BRACED OR GUYED AND SHALL NOT BE PLACED SO AS TO CREATE A HAZARD TO THE TRAVELLING PUBLIC.
16. ALL TEMPORARY SIGNAL EQUIPMENT, SIGNS, ETC., SHALL BELONG TO THE CONTRACTOR AT THE END OF THE PROJECT AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL, INCLUDING ANY TEMPORARY PAVEMENT MARKINGS, UTILITY POLES, WIRES, ETC.
17. A 250 WATT MER/150 WATT HPS LUMINAIRE AND MAST ARM SHALL BE PROVIDED ON A POLE ON EACH APPROACH AT A MOUNTING HEIGHT OF 30' ABOVE ROADWAY CENTERLINE. THE INTENT IS TO LIGHT UP THE AREA AROUND THE SIGNAL HEADS AND STOP BAR FOR INCREASED VISIBILITY. THE RESIDENT ENGINEER SHALL DETERMINE THE ADEQUACY OF THE LIGHTING AND DIRECT CHANGES IF THE LIGHTING IS INSUFFICIENT.
18. STOP BARS SHALL BE LOCATED A MINIMUM OF 40' AND A MAXIMUM OF 120' FROM THE NEAREST SIGNAL HEAD.
19. PAYMENT FOR THE VEHICLE DETECTORS SHALL BE FOR EACH UNIT INSTALLED.
20. SIGNS AND POSTS AS SHOWN ON THE TRAFFIC CONTROL PLAN AND NOTED BELOW ARE INCIDENTAL TO THE TRAFFIC CONTROL SIGNAL ITEMS ("STOP HERE ON RED," "SIGNAL AHEAD," "NO PASSING ZONE", AND "TO GET GREEN LIGHT" ETC.) THE TEMPORARY STOP BARS SHOULD BE PAID UNDER THE TEMPORARY 24" STOP BAR ITEM.
21. SEE STD. E-140 FOR "STOP HERE ON RED" SIGN DETAIL AND E-101 FOR "SIGNAL AHEAD" SYMBOL SIGN. SEE STANDARD E-121 FOR SIGN PLACEMENT. SEE STANDARD E-171A AND E-172 FOR ADDITIONAL INFORMATION ON SIGNALS AND DETECTORS.
22. A "SIGNAL AHEAD" SIGN SHALL BE PLACED AT LEAST 750' FROM THE SIGNAL OR AT A POSITION TO BE DETERMINED BY THE ENGINEER.
23. THE "NO PASSING" SIGN SHALL BE USED TO PREVENT PASSING FOR 750' IN ADVANCE OF THE STOP BAR. THE SIGN SHALL BE PER STANDARD E-102.
24. ALL ELECTRICAL WORK SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND STATE INSPECTOR.
25. NOT USED.
26. APPROACH WIDTHS SHALL BE AS DETAILED IN SECTION 528.04(b)2 TO MINIMIZE VEHICLE DELAY.
27. TRAFFIC CONTROL WARNING SIGNS SHALL BE PROVIDED ON EACH APPROACH PER STANDARD E-107. ADDITIONAL PROJECT CONSTRUCTION SIGNS SHALL BE INSTALLED AS REQUIRED BY THE RESIDENT ENGINEER PER STANDARD E-100, E-101, E-102 & E-102A. PAYMENT FOR THESE SIGNS, THE REFLECTORIZED PLASTIC DRUMS, ETC, SHALL BE PAID AS PART OF ITEM 641.10, "TRAFFIC CONTROL".
28. THE "TO GET GREEN LIGHT" SIGN IS TO BE USED ONLY ON APPROACHES WITH VEHICLE DETECTORS.
29. THE PAVEMENT MARKING REMOVALS AND TEMPORARY EDGELINES AS NOTED ON SHEETS 10 AND 11 SHALL BE PAID SEPARATELY UNDER THE APPROPRIATE BID ITEMS.
30. IN SITUATIONS WHERE EXISTING PASSING ZONES EXTEND THROUGH THE AREA BETWEEN THE STOP BAR AND THE "NO PASSING ZONE" SIGN, THEN TEMPORARY DOUBLE YELLOW LINES SHALL BE INSTALLED FROM THE STOP BAR TO THE "NO PASSING ZONE" SIGN. THESE MARKINGS SHALL BE PAID UNDER THE "TEMPORARY 4" YELLOW LINE" ITEM.
31. TEMPORARY TRAFFIC BARRIER SHOULD BE SUBSTITUTED FOR THE CHANNELIZING DEVICES SHOWN WHEN ANY OF THE FOLLOWING ARE MET:
    A.) THE BRIDGE DECK IS REMOVED
    B.) THE BRIDGE RAIL IS REMOVED, OR
    C.) IN THE JUDGEMENT OF THE RESIDENT ENGINEER TEMPORARY BARRIER IS NEEDED.
32. WHEN TEMPORARY BARRIER IS USED, BARRIER ENDS FACING ONCOMING TRAFFIC SHALL BE TAPERED BEYOND THE CLEAR ZONE, OR PROTECTED WITH AN APPROVED END TREATMENT DESIGNED FOR THE 85TH PERCENTILE SPEED OR THE POSTED SPEED LIMIT OF THE ROAD WAY.
33. PAYMENT FOR TEMPORARY BARRIER USED SHALL BE MADE UNDER ITEM 621.90

T.Y.LIN INTERNATIONAL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
TRAFFIC CONTROL NOTES	
Designed By D.Bryant	Drawn By R Holman
Checked By R HEBERT Date 8/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC3167MI.DGN
Bridge Sheet No.	Sheet 11 of 45

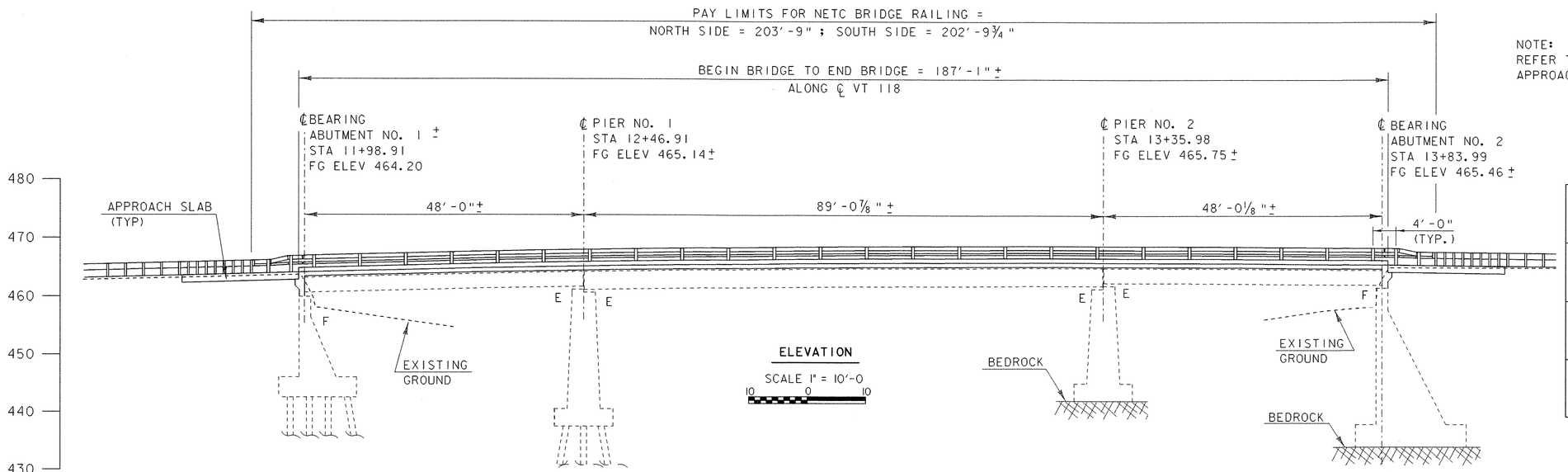
FILENAME: &FILE&
DATE: &DATE&



PAY LIMITS FOR NETC BRIDGE RAILING =
NORTH SIDE = 203'-9" ; SOUTH SIDE = 202'-9¾"

BEGIN BRIDGE TO END BRIDGE = 187'-1" ±
ALONG ℄ VT 118

NOTE:
REFER TO SHEETS 32 AND 33 FOR BRIDGE RAIL AND APPROACH RAIL LAYOUT AND DETAILS.



STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
GENERAL PLAN AND ELEVATION	
Designed By J Howe	Drawn By J Davis
Checked By R Hebert Date 08/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC316PELDGN
Bridge Sheet No.	Sheet 12 of 45

T·Y LIN INTERNATIONAL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

EROSION CONTROL NARRATIVE

DESCRIPTION OF PROJECT

This project involves the reconstruction of a bridge over the Trout River. The project is on VT Route 118, classified as a major collector, in the Town of Montgomery. The scope of work includes replacing the superstructure of a two-lane, three span bridge and minimal approach roadway work, including new guardrail. Phased construction, building one lane at a time, will avoid the need for a temporary bridge. Traffic will be maintained on the existing bridge. Total roadway approach work, including both approaches, is approximately 380 feet. The limits of construction do not approach any buildings or other structures. No 'Threatened & Endangered Species,' Wetlands, or Historic Resources have been identified in the project area. The the site is located at: Latitude 44°54'96," Longitude 72°39'07." It is anticipated that this project will last one construction season. Total disturbed area (including estimated staging area): 0.70 acres

SITE INVENTORY & ANALYSIS

OFF SITE DRAINAGE CHARACTERISTICS:
Off site drainage characteristics for this site consists of moderate, grass & shrub covered slopes receiving runoff water primarily from the built-up, paved roadway. High banks and steep slopes generating concentrated runoff is not typical of this site.

DRAINAGE, WATERWAYS, BODIES OF WATER:
Trout River is located in the project area. There are no other water bodies or wetlands within the project area.

TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES:
The surrounding topography of this bridge crossing is primarily low lying, rolling terrain with agricultural uses predominating. A residence and field access drives exist near the project limits and there is a utility service attached to the bridge.

VEGETATION:
Vegetation existing at the site consists of grasses and low shrubs typical of state maintained roadways where roadside mowing takes place in the summer months.

SOILS:
The Soil Conservation Service has mapped the soils throughout Franklin County. The soil type identified for this project site is Od (Ondawa Variant silt loam). This soil type is described as '...level, well drained, deep soil is on the highest position on flood plains...subject to flash floods after heavy, brief rains and prolonged flooding during and after intensive, extended rains...surface layer is dark grayish brown silt loam 7 inches thick. The subsoil is 20 inches thick. It is a friable, dark grayish brown silt loam in the upper 12 inches and friable, dark brown silt loam in the lower 8 inches. The underlying material is dark brown gravelly fine sand to a depth of 60 inches. Permeability is moderate in the surface layer and subsoil and moderately rapid to rapid in the underlying material...'

There is no listed soil erodibility coefficient (K-value) for this soil type.

SENSITIVE RESOURCE AREAS:
There are no identified sensitive resource areas associated with this project.

PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES:
Other than the crossing of the Trout river, no other natural or manmade water features exist on the project site. As the project does not involve any substructure work at the stream level, and no additional stone lining of the river banks is proposed, there is limited exposure potential associated with this project.

TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL

Temporary erosion prevention measures to be utilized include:

"Project Demarcation Fencing," denoted -PDF- on the plans, to delineate the limits the contractor can access with construction equipment. This measure limits the area that can be disturbed and exposed to erosion.

Seeding, mulching and biodegradable erosion control matting, or an equivalent product, will be utilized on all slopes steeper than 3:1 that are not lined with stone fill. An area from stations 10+80 LT - 11+22 LT will require this technique. These slopes shall be stabilized within 48 hours of reaching final grade or during intermittent phases of construction activity.

Tracking of all exposed slopes, combined with temporary mulching, will also be utilized on a regular basis. Any slopes to be exposed for several days prior to final grading shall be tracked and mulched. The forecast of rainfall events shall also trigger protection of exposed slopes.

Temporary measures to control sediment transport include:

Silt fence will be installed a distance of 5'-0" to 10'-0" from the toe of slopes to prevent sediment transport to down gradient areas. Each line of silt fence will be placed along the contour with ends turned slightly uphill to create a ponding effect should water try to run along the fencing and around the ends. The maximum slope length between separate runs of silt fence is 100'-0". Silt fence shall be installed prior to any upslope earthwork.

Silt fence shall be checked regularly for accumulation of sediment. Sediment build-up shall be removed when the level of sediment reaches one-half the height of the silt fence. Sediments shall be disposed of in an approved area such that it will not be subject to erosion.

Stabilized construction entrances to the project site, staging areas, as well as to waste and borrow areas shall be established. The minimum size of a stabilized construction entrance is 12-0"' x 50'-0". All surface water flowing to or diverted towards a construction entrance shall be piped under the stone. Pipes shall be appropriately sized for the contributing area, however, no pipes smaller than 150mm diameter shall be used. See typical detail on 'Erosion & Sediment Control Plan' sheet for materials and construction method to be utilized when constructing a stabilized entrance.

PERMANENT EROSION CONTROL MEASURES

Several permanent erosion control measures will be utilized:

Stone lining of roadway drain ditches with clean, angular Stone Fill, Type I, will be used to protect slopes from concentrated runoff exiting the highway.

Stone lining of the stream banks with Stone Fill exists at the site and will remain in place.

Grass, or other suitable ground cover will be established outside of the roadway limits where stone lining has not been specified.

GENERAL EROSION & SEDIMENT CONTROL GUIDELINES

The Erosion Control Plans are meant as a guideline for preventing erosion and controlling sediment transport. The work outlined in this narrative consists of applying measures throughout the life of the project to control erosion and minimize the sedimentation of receiving waters. The measures include stabilization and structural practices, storm water controls and other pollution prevention controls.

Coordinate the installation, use, and removal of erosion and sediment control measures with construction activities to ensure economical, effective and continuous erosion and sediment control. Employ temporary stabilization practices in incremental stages as construction proceeds. The contractor will use additional erosion control measures as necessitated by the sequence of construction and as directed by the Engineer. See section 105.23 of the Vermont AOT Standard Specifications for Construction, dated 2001.

Install all erosion and sediment control measures as shown in the Erosion Control Plan or as directed by the Engineer. Do not modify the type, size or location of any control or practice without approval of the Engineer. Any changes shall be noted on the plans, in the weekly inspection report, and reported to the appropriate authority in a timely manner. Inspect all control measures weekly and after each rainfall event. Repair measures promptly upon discovery of any damage.

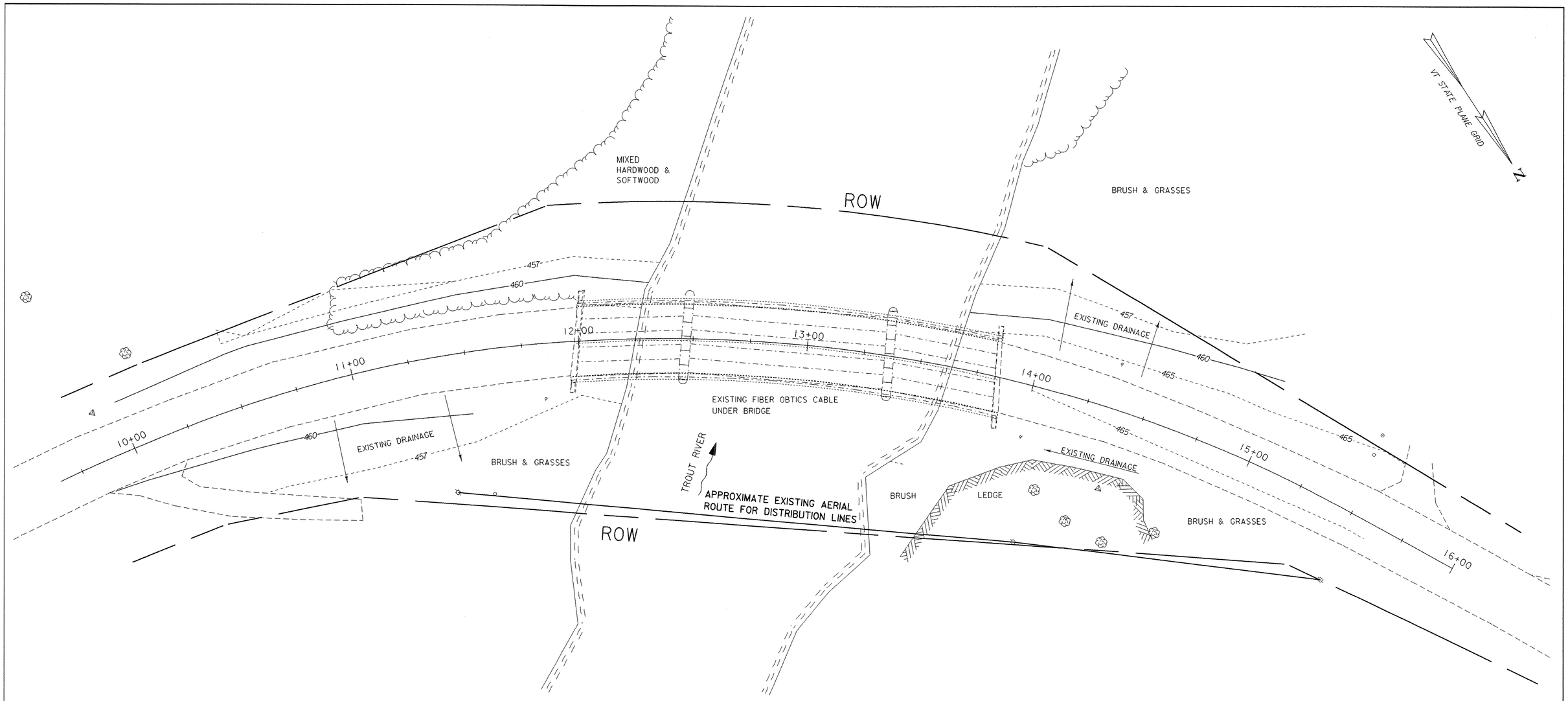
Preventing initial soil erosion is much more effective than treating eroded sediment. Therefore, stabilize all disturbed areas promptly after construction activity has temporarily or permanently ceased. Temporary vegetation shall be established if the area is to be without construction activity for a period of 14 days. Perimeter control measures shall be installed following clearing, but prior to the start of any grubbing or grading activity, install other temporary controls in incremental stages as construction proceeds.

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.

Control only sediment-laden runoff generated by the project site. Collect and route clean offsite runoff around or through the project site using diversion berms, diversion channels, culverts and/or temporary pipes.

Do not allow construction equipment to operate on the down slope side of perimeter control measures.

PROJECT NAME:	MONTGOMERY		
PROJECT NUMBER:	BHF 0283(8)S		
FILE NAME:	/98c316/sc316ecn.xls	PLOT DATE:	5/25/2004
PROJECT LEADER:	R. WHITCOMB	DRAWN BY:	J. GILMORE
DESIGNED BY:	STRUCTURES	CHECKED BY:	C. CARLSON
EROSION CONTROL NARRATIVE		SHEET	13 OF 45



SCALE 1" = 20'-0
20 0 20

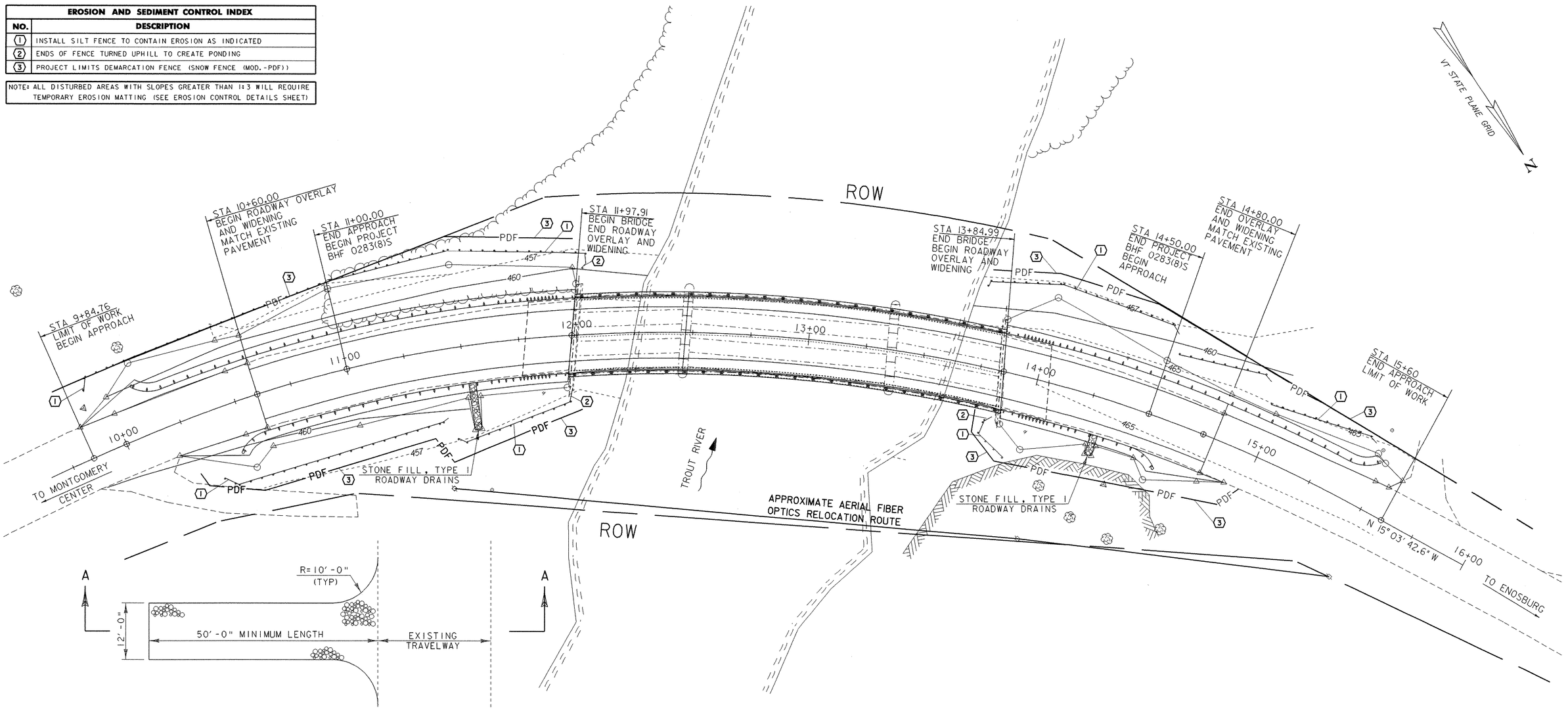
LEGEND	
	EXPOSED LEDGE

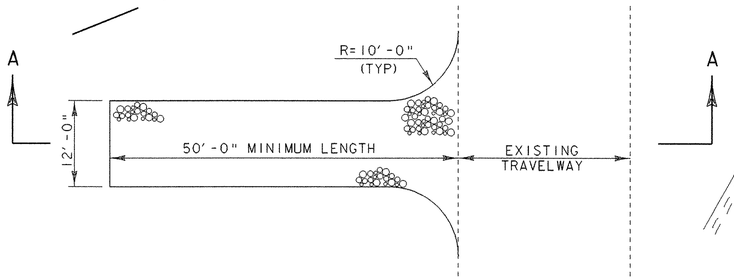
DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83

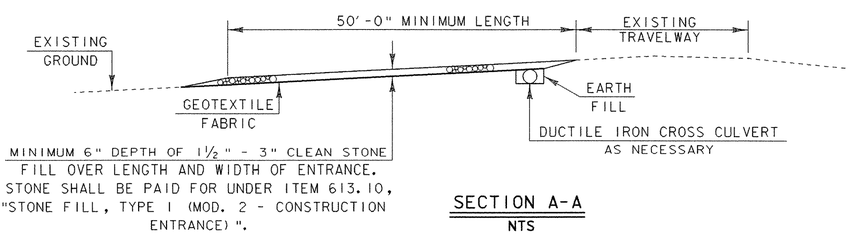
SHEET NAME:	EXISTING CONDITIONS SITE PLAN		
PROJECT NAME:	MONTGOMERY	HIGHWAY NO.:	VT 118
PROJECT NUMBER:	BHF 0283(8)	BRIDGE NO.:	21
		OVER:	TROUT RIVER
FILE NAME: /PW/98c316/sc316ec.dgn		PLOT DATE:	20-DEC-2005
PROJECT MANAGER: R. WHITCOMB		DRAWN BY:	J. GILMORE
DESIGNED BY: STRI		IPARM NAME:	se045ec2.i
		SHEET 14 OF 45	

EROSION AND SEDIMENT CONTROL INDEX	
NO.	DESCRIPTION
(1)	INSTALL SILT FENCE TO CONTAIN EROSION AS INDICATED
(2)	ENDS OF FENCE TURNED UPHILL TO CREATE PONDING
(3)	PROJECT LIMITS DEMARCATION FENCE (SNOW FENCE (MOD.-PDF))

NOTE: ALL DISTURBED AREAS WITH SLOPES GREATER THAN 1:3 WILL REQUIRE TEMPORARY EROSION MATTING (SEE EROSION CONTROL DETAILS SHEET)







SECTION A-A
NTS

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83

STABILIZED CONSTRUCTION ENTRANCE
NTS

NOTES:

SILT FENCE INSTALLATION MAY REQUIRE PHASING TO MAXIMIZE EFFECTIVENESS. INSTALL AND/OR MOVE SILT FENCE AS CONSTRUCTION PROGRESSES TO OBTAIN THE GREATEST PREVENTION OF SEDIMENT TRANSPORT. ALL SILT FENCE INSTALLATION SHALL BE PROPERLY KEYED INTO THE GROUND AND SUPPORTED AS DETAILED ON THE 'EROSION CONTROL DETAILS' SHEET. SILT FENCE SHOULD BE INSTALLED ALONG THE CONTOURS TO PREVENT CONCENTRATION OF RUNOFF. THE ENDS OF EACH RUN OF SILT FENCE SHOULD BE TURNED UPHILL TO PROVIDE A SMALL POOL FOR SILT SHOULD WATER TRY TO RUN AROUND THE END OF THE SILT FENCE.

SURFACE ROUGHENING HELPS REDUCE RUNOFF VELOCITIES AND INCREASES INFILTRATION RATES. ROUGHENING MAY BE ACCOMPLISHED BY A NUMBER OF METHODS SUCH AS TRACKING UP AND DOWN THE SLOPE WITH A BULLDOZER, TRACKING ACROSS THE SLOPE WITH A WHEELED VEHICLE OR ANY METHOD OF SCARIFYING THE SLOPE SUCH THAT THE GROOVES CREATED RUN PERPENDICULAR TO THE DIRECTION OF WATER RUNOFF.

ALL NEW FILL SLOPES AND AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE SEEDED AND MULCHED.

LEGEND

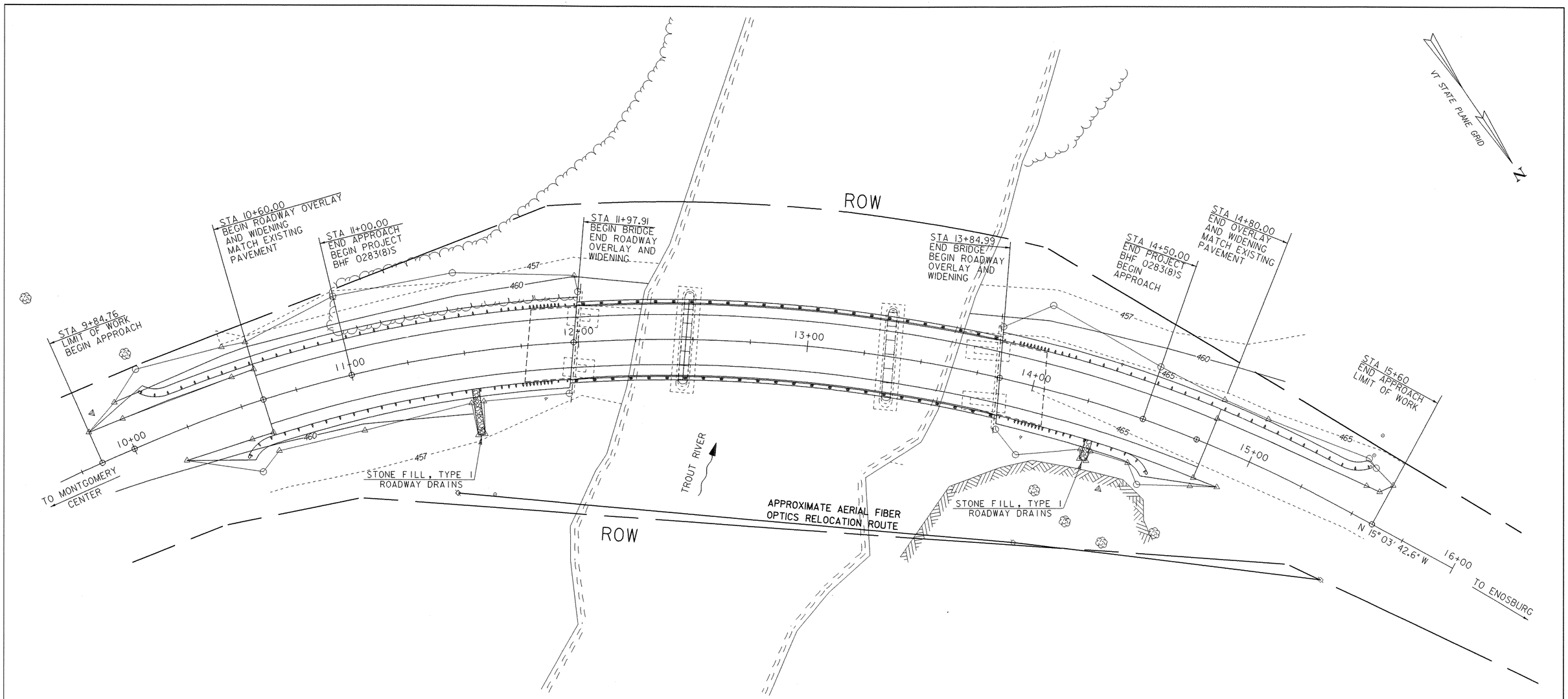
- SILT FENCE
- PDF — PROJECT DEMARCATION FENCE DEFINING LIMITS OF DISTURBANCE (SNOW FENCE (MOD.-PDF))
- EXPOSED LEDGE

SCALE 1" = 20'-0
20 0 20

SHEET NAME: EROSION & SEDIMENT CONTROL PLAN

PROJECT NAME: MONTGOMERY
PROJECT NUMBER: BHF 0283(8)
HIGHWAY NO.: VT 118
BRIDGE NO.: 21
OVER: TROUT RIVER

FILE NAME: /PW/98c316/sc316ec.dgn
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: STRI
PLOT DATE: 20-DEC-2005
DRAWN BY: J. GILMORE
IPARM NAME: se045ec3.i
SHEET 15 OF 45



SCALE 1" = 20'-0
20 0 20

LEGEND	
	EXPOSED LEDGE

SEE CROSS SECTION SHEETS FOR FINAL GRADING

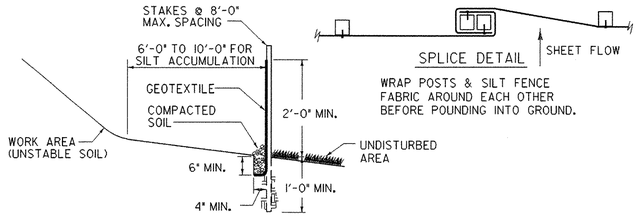
DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83

SHEET NAME: FINAL CONDITIONS SITE PLAN

PROJECT NAME:	MONTGOMERY	HIGHWAY NO.:	VT 118
PROJECT NUMBER:	BHF 0283(8)	BRIDGE NO.:	21
		OVER:	TROUT RIVER
FILE NAME: /PW/98c316/sc316ec.dgn		PLOT DATE:	20-DEC-2005
PROJECT MANAGER: R. WHITCOMB		DRAWN BY:	J. GILMORE
DESIGNED BY: STRI		IPARM NAME:	se045ec4.i
		SHEET	16 OF 45

NOTE: REFER TO THE "VERMONT HANDBOOK FOR SOIL EROSION AND SEDIMENT CONTROL FOR CONSTRUCTION SITES" FOR ADDITIONAL EROSION CONTROL MEASURES.

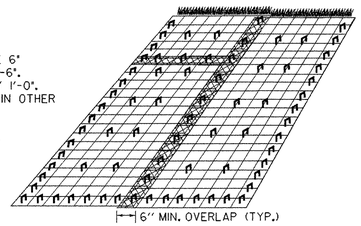
HAY BALES AND SILT FENCE ARE NOT TO BE USED ACROSS AREAS OF CONCENTRATED FLOW.



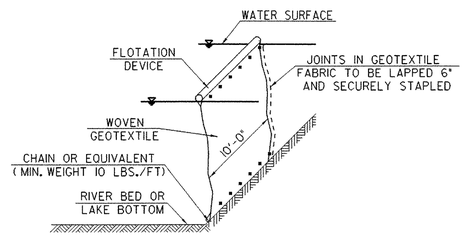
DETAIL "A"
SILT FENCE

NOTES :
1. DO NOT USE SILT FENCE IN STREAMS, DRAINAGE DITCHES, OR AREAS OF CONCENTRATED FLOW.
2. BACK WITH STAKED-IN-PLACE HAY BALES OR WIRE FENCE IF ADDITIONAL SUPPORT IS NEEDED.
3. MUST BE REMOVED WHEN SOIL IS STABILIZED.

NOTES:
1. ALL FABRIC OVERLAPS SHALL BE 6" MINIMUM WITH STAPLES EVERY 1'-6".
2. STAPLE EDGES OF FABRIC EVERY 1'-0".
3. USE 3'-0" MAX. STAPLE SPACING IN OTHER AREAS.
4. SEE "EROSION MATTING FOR DITCHES" DETAIL FOR ANCHORING AT TOPS OF SLOPES.

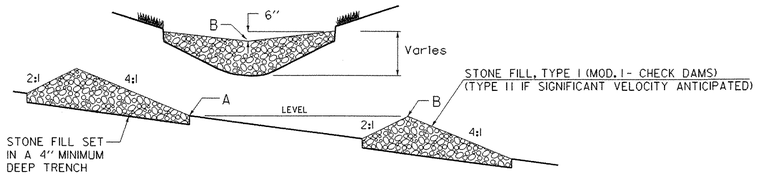


DETAIL "C"
EROSION MATTING FOR SLOPES STEEPER THAN 1:3



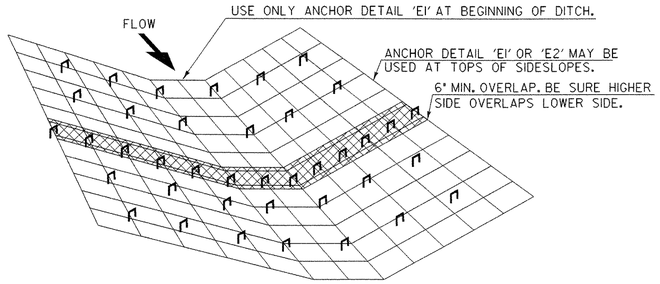
DETAIL "F"
FILTER CURTAIN

1. NOT TO BE USED ACROSS THE FLOW OF WATER
2. HEIGHT SHOULD BE SUFFICIENT TO ALLOW FOR VARIATIONS IN THE BOTTOM AND RISING WATER
3. ANCHOR FIRMLY IN PLACE AS NEEDED
4. INSTALL PRIOR TO EARTH DISTURBING ACTIVITIES AND/OR INSTALLATION OF COFFERDAM WHERE APPLICABLE
5. LEAVE IN PLACE UNTIL UP-SLOPE AREAS ARE STABLE AND COFFERDAM IS REMOVED
6. USE CARE DURING REMOVAL TO PREVENT THE RELEASE OF CAPTURED SEDIMENT AS MUCH AS POSSIBLE
7. SOME DETAILS SHOWN ON THIS SHEET MAY NOT BE UTILIZED ON THIS PROJECT



DETAIL "B"
TEMPORARY STONE CHECK DAM

NOTES :
1. CHECK DAMS TO BE USED DURING ESTABLISHMENT OF GRASS LINED DRAINAGE DITCHES
2. LOCATE DOWNSTREAM STRUCTURE SUCH THAT POINT "B" IS APPROXIMATELY LEVEL WITH THE LOWEST GROUND ELEVATION "A" OF THE UPSTREAM STRUCTURE.
3. PAYMENT FOR THE STONE CHECK DAMS WILL BE MADE FOR THE QUANTITY OF STONE FILL USED. REMOVAL OF STONE CHECK DAMS WILL BE INCIDENTAL TO THE STONE FILL ITEM USED.



DETAIL "D"
EROSION MATTING FOR DITCHES

1. TO BE USED WHERE SLOPE OF DITCHLINE RANGES FROM 1% - 2.5%. SLOPES EXCEEDING 2.5% SHALL BE LINED WITH STONE FILL, TYPE I.
2. OVERLAPS SHALL BE 6" MINIMUM IN THE DIRECTION OF FLOW AND STAPLED EVERY 20" MIN. THROUGH BOTH FABRICS.
3. USE 36" MAX STAPLE SPACING IN OTHER AREAS.

SEEDING FORMULA
RURAL AREAS

% WT.	LBS./A.	NAME	PUR %	GERM %
37.5	22.5	CREEPING RED FESCUE	98	85
37.5	22.5	TALL FESCUE	95	90
5.0	3.0	RED TOP	95	90
15.0	9.0	BIRDSFOOT TREFOIL	98	85
5.0	3.0	ANNUAL RYEGRASS	95	85
100.0	60.0			

GENERAL NOTES

SEED MIXTURE: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.

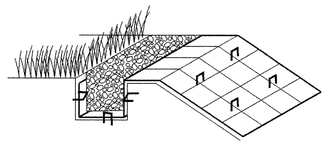
SEED: TO BE APPLIED PER SEEDING FORMULAS OR AS DIRECTED BY THE ENGINEER.

FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED, APPLIED AT THE RATE OF 500 LBS./ACRE. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).

AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

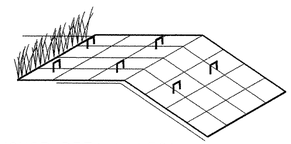
HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.



ANCHOR DETAIL 'E1'

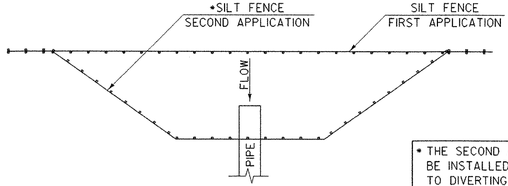
INSERT & STAPLE FABRIC INTO 6" X 6" TRENCH PRIOR TO BACKFILLING & COMPACTING SOIL. USE 3 STAPLE PATTERN EVERY 20".



ANCHOR DETAIL 'E2'

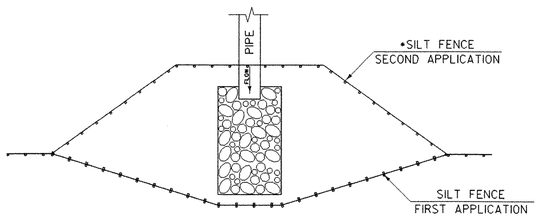
IF THE TOP OF SLOPE IS RELATIVELY FLAT EXTEND MATERIAL APPROXIMATELY 24" AND STAPLE EVERY 20" MINIMUM.

DETAIL "E"
ANCHOR DETAILS FOR EROSION MATTING



* THE SECOND APPLICATION OF SILT FENCE IS TO BE INSTALLED (REMOVE FIRST APPLICATION) PRIOR TO DIVERTING FLOW INTO NEW PIPE FOR BOTH PROPOSED INLET AND OUTLET CONTROLS

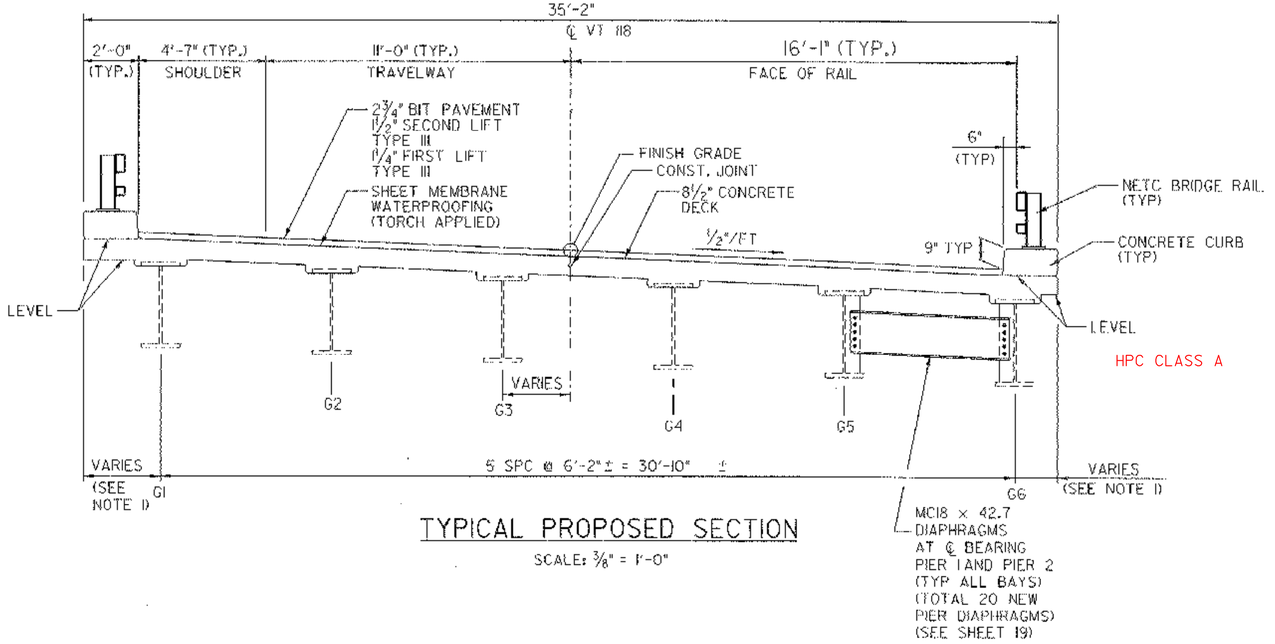
DETAIL "I"
PROPOSED PIPE INLET CONTROL



DETAIL "J"
PROPOSED PIPE OUTLET CONTROL

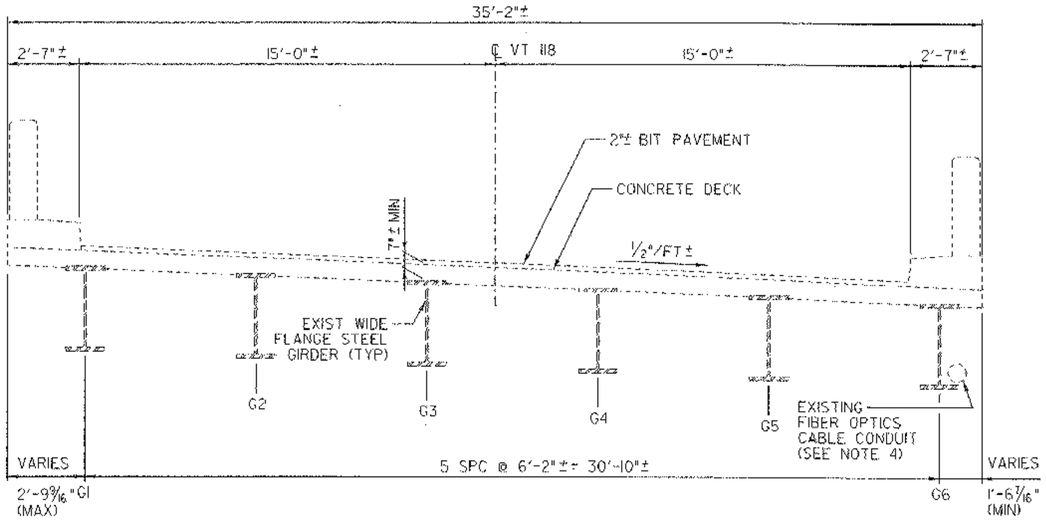
NOTE: DETAILS NOT TO SCALE

SHEET NAME: EROSION CONTROL DETAILS			
PROJECT NAME:	MONTGOMERY	HIGHWAY NO.:	VT 118
PROJECT NUMBER:	BHF 0283(8)	BRIDGE NO.:	21
		OVER:	TROUT RIVER
FILE NAME: /PW/98c316/sc316ec.dgn		PLOT DATE:	20-DEC-2005
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	STRI
DESIGNED BY:	D. BONNEAU	IPARM NAME:	se045ec5.i
		SHEET	17 OF 45



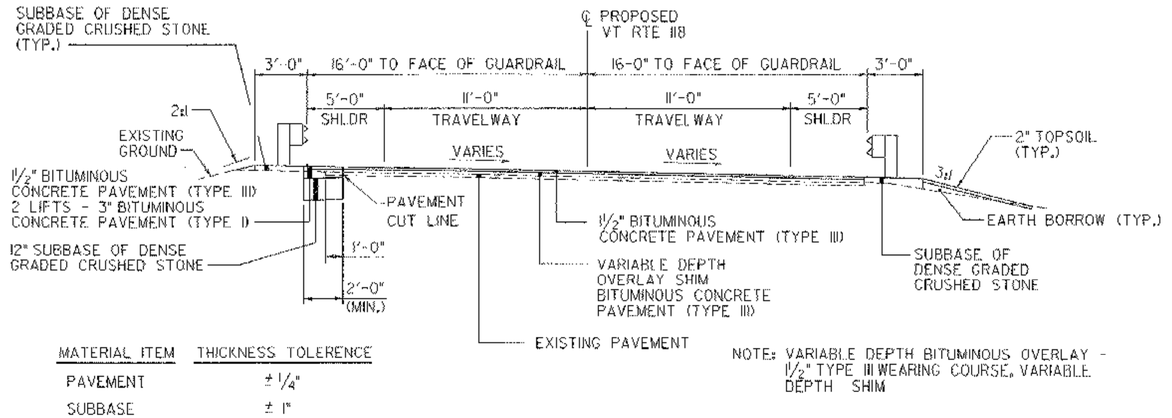
TYPICAL PROPOSED SECTION

SCALE: ⅜" = 1'-0"



TYPICAL EXISTING SECTION

SCALE: ⅜" = 1'-0"



MATERIAL ITEM	THICKNESS TOLERENCE
PAVEMENT	± ¼"
SUBBASE	± 1"

NOTE: VARIABLE DEPTH BITUMINOUS OVERLAY - 1½" TYPE III WEARING COURSE, VARIABLE DEPTH SHIM

VT ROUTE 118 - TYPICAL SECTION

NOT TO SCALE

NOTES:

1. FOR OVERHANG DIMENSIONS SEE FASCIA OFFSET PLAN, SHEET 24.
2. NEW DIAPHRAGM AND CONNECTION PLATE STEEL SHALL BE AASHTO M270 GRADE 50 (PAINTED).
3. HIGH STRENGTH BOLTS, NUTS, AND WASHERS SHALL CONFORM TO AASHTO M164.
4. EXISTING FIBER OPTICS CABLE SHALL BE REMOVED AND PERMANENTLY RELOCATED OFF THE BRIDGE BY OTHERS. CONTRACTOR SHALL COORDINATE ALL BRIDGE REHABILITATION WORK WITH UTILITY RELOCATION WORK AS REQUIRED.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

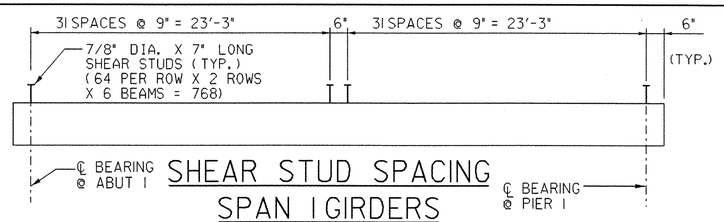
Town Of	MONTGOMERY	Bridge No.	21
Highway No.	VT 118	Log Sta. / Surv. Sta.	

VT 118 OVER TROUT RIVER

TYPICAL SECTIONS

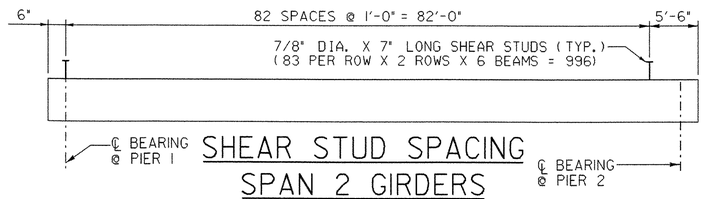
Designed By	J. Howe	Drawn By	J. Bovis
Checked By	Date	Bridge Design Supervisor	
R. Hebert	08/31/01	R. WHITCOMB	Date
PROJECT	MONTGOMERY	PROJECT NO.	BHF 0283(8)S
I.G.C. Info.			ZC316lyl.DGN
Bridge Sheet No.		Sheet 18 of 45	

TY·LIN INTERNATIONAL



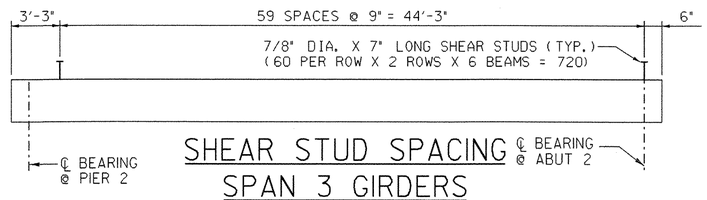
SHEAR STUD SPACING SPAN 1 GIRDERS

NTS



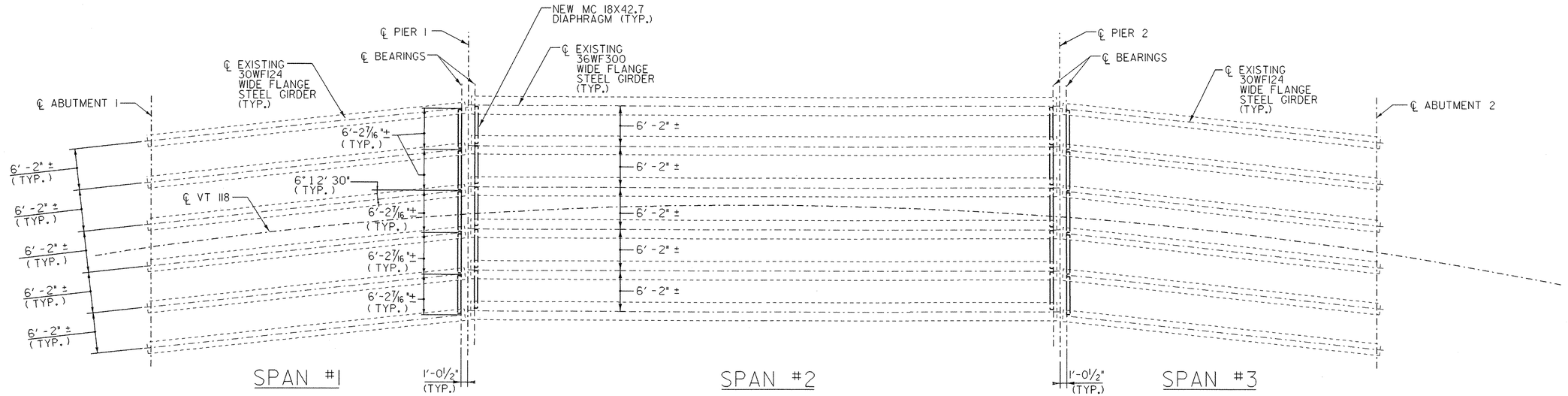
SHEAR STUD SPACING SPAN 2 GIRDERS

NTS



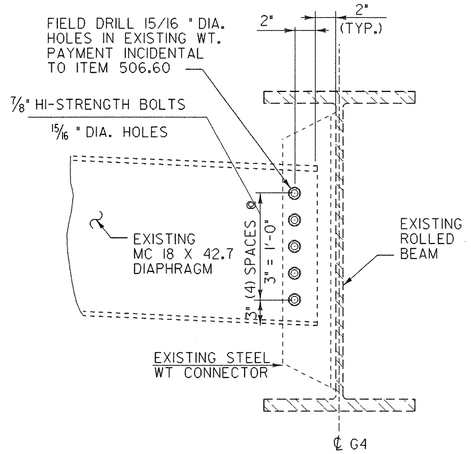
SHEAR STUD SPACING SPAN 3 GIRDERS

NTS



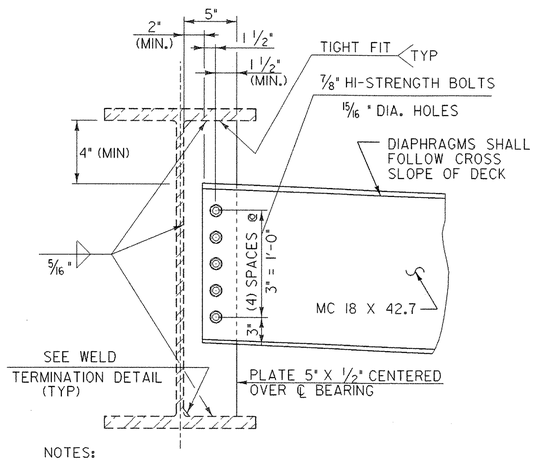
FRAMING PLAN

SCALE: 1/8" = 1'-0"



TYPICAL INTERMEDIATE DIAPHRAGM CONNECTION RECONSTRUCTION DETAIL

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

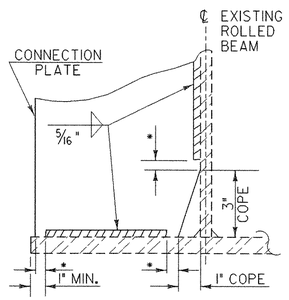


NOTES:

1. HI-STRENGTH BOLTS, NUTS AND WASHERS SHALL CONFORM TO AASHTO DESIGNATION M164.
2. TOTAL 20 NEW MCI8X42.7 DIAPHRAGMS AND 40 NEW 5" X 1/2" CONNECTION PLATES.

TYPICAL PIER DIAPHRAGM DETAIL

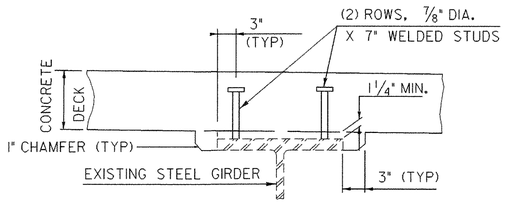
SCALE: 1/2" = 1'-0"



* NO WELD FOR 1/4" MIN. 1/2" MAX. (EXCEPT MUST MAINTAIN 1" MINIMUM FROM EDGE OF FLANGE)

WELD TERMINATION DETAIL

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



BEAM HAUNCH AND SHEAR CONNECTOR DETAILS

NTS

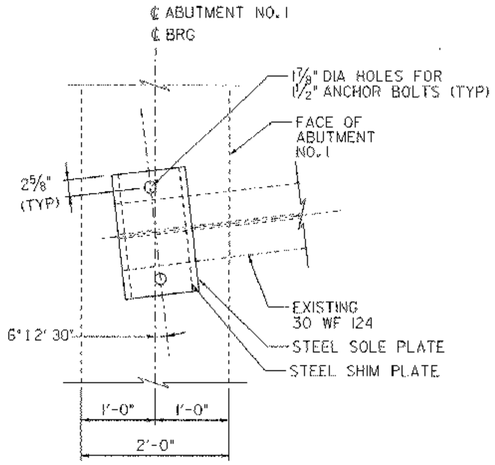
NOTE: 3" HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES IF APPROVED BY THE STRUCTURES ENGINEER

NOTE:
1. FOR NOTES SEE SHEET 18

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	MONTGOMERY	Bridge No.	21
		Log Sta.	
Highway No.	VT 118	Surv. Sta.	
VT 118 OVER TROUT RIVER			
STEEL DETAILS			
Designed By	J Howe	Drawn By	J Davis
Checked By	Date	Bridge Design Supervisor	
R Hebert	08/31/01	R.WHITCOMB	Date
PROJECT	MONTGOMERY	PROJECT NO.	BHF 0283(8)S
I.G.C. Info.			ZC316SDI.DGN
Bridge Sheet No.		Sheet 19 of 45	

T·Y LIN INTERNATIONAL

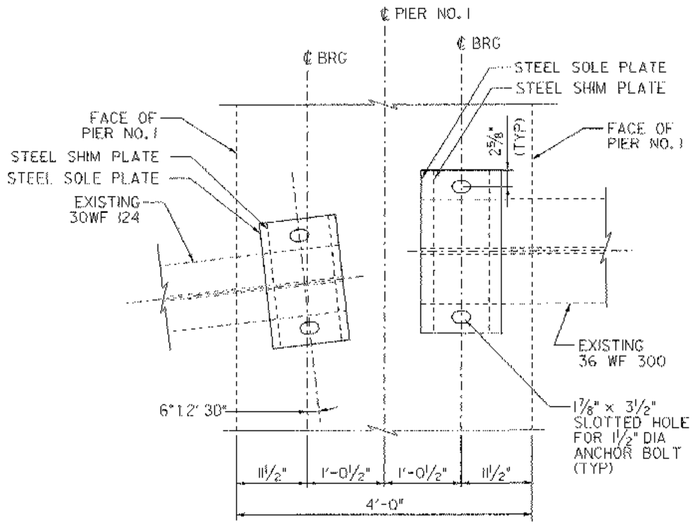


FIXED BEARING PAD @ ABUTMENT NO. 1

SCALE: 1" = 1'-0"

MINIMUM ANCHOR BOLT LENGTH (IN)

	SPAN 1		SPAN 2		SPAN 3	
	ABUT #1	PIER #1	PIER #1	PIER #2	PIER #2	ABUT #2
GI-G6	25	25	22	25	22	22



EXPANSION BEARINGS @ PIER NO. 1

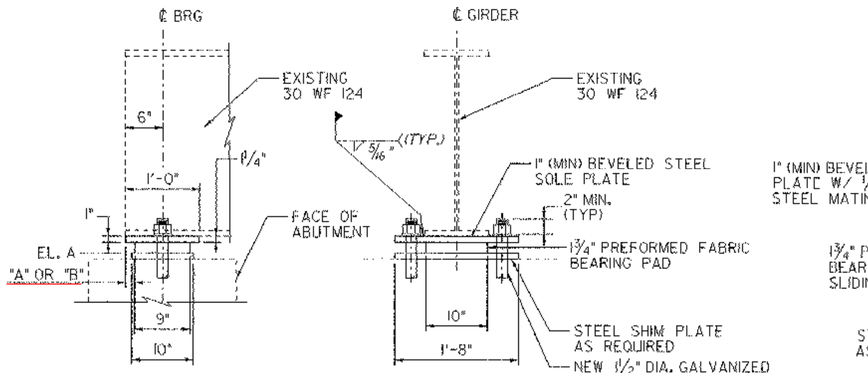
SCALE: 1" = 1'-0"

"A" OR "B" TABLE

TEMP.	"A" DIST.	"B" DIST.
-30°F	2 7/16"	2 3/16"
-15°F	2 3/8"	2 1/4"
0°F	2 5/16"	2 3/16"
15°F	2 1/4"	2 1/8"
30°F	2 3/16"	2 1/16"
45°F	2 1/8"	2"
60°F	2 1/16"	1 15/16"
75°F	2"	1 7/8"
90°F	1 15/16"	1 13/16"
105°F	1 7/8"	1 3/4"
120°F	1 13/16"	1 11/16"

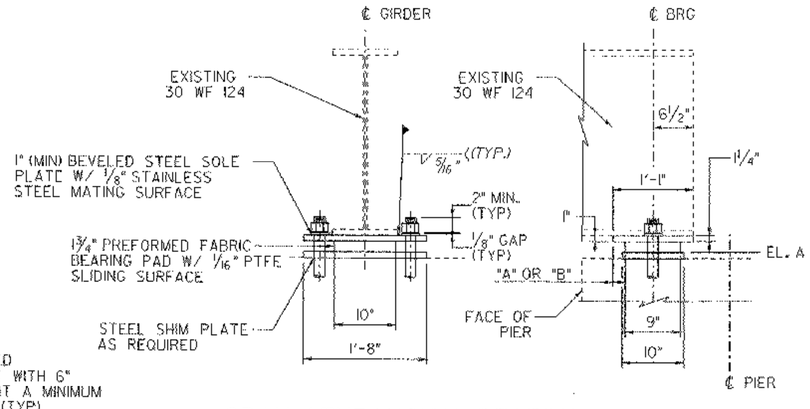
(FOR SPAN 1 AND 3 ONLY)

"B" DISTANCE IS THE FINAL SETTING FOR THE BEARING PAD AFTER THE CONCRETE SLAB, CURB, PAVEMENT AND BRIDGE RAIL ARE PLACED. "A" DISTANCE IS LISTED FOR SETTING THE BEARING BEFORE THE CONCRETE DECK AND CURBS HAVE BEEN PLACED. THE DIFFERENCE IS THE THEORECTICAL ELONGATION OF THE BOTTOM FLANGE DUE TO DEAD LOAD DEFLECTION. THE FINAL "B" DISTANCE, AS SHOWN IN THE TABLE, MUST BE ATTAINED WITHIN 1/16 OF AN INCH.



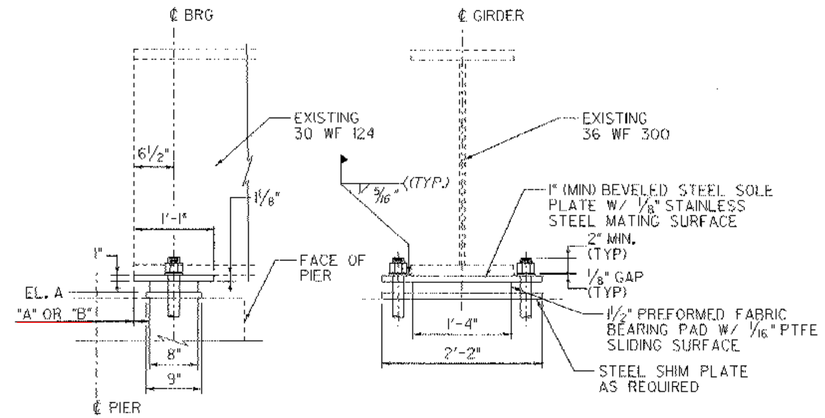
SPAN 1 FIXED BEARING @ ABUTMENT NO. 1

SCALE: 1" = 1'-0"



SPAN 1 EXPANSION BEARING @ PIER NO. 1

SCALE: 1" = 1'-0"



SPAN 2 EXPANSION BEARING @ PIER NO. 1

SCALE: 1" = 1'-0"

BEARING NOTES:

1. BRIDGE SEAT ELEVATIONS SHALL BE FIELD VERIFIED PRIOR TO DETERMINING REQUIRED SHIM PLATE THICKNESSES.
2. BEARING HEIGHTS SHALL BE SET TO MAINTAIN EXISTING GIRDER CROSSFALL.
3. SOLE PLATES AND SHIM PLATES SHALL BE AASHTO M270, GRADE 36 STEEL AND SHALL BE GALVANIZED OR METALIZED AS PER SUBSECTION 531.04 (B), 506.14, AND 506.15 OF THE STANDARD SPECIFICATIONS FOR ALL PROJECTS. IF THE BEARINGS ARE METALIZED, THEY SHALL BE SEALED WITH AN APPROVED SEALANT (NOT PRIMER) PER 531.04 (B) OF THE STANDARD SPECIFICATIONS. AREAS OF GALVANIZING OR METALIZING DAMAGED BY FIELD WELDING OR HANDLING SHALL BE REPAIRED IN ACCORDANCE WITH SUBSECTION 513 OF THE SUPPLEMENTAL SPECIFICATIONS.
4. STAINLESS STEEL MATING SURFACES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 240, TYPE 304.
5. ANCHOR BOLTS, NUTS, AND WASHERS SHALL MEET THE REQUIREMENTS OF SECTION 714.08. ANCHOR BOLTS ARE TO BE PAID FOR UNDER ITEM 531.10, "BEARING DEVICE ASSEMBLY (FABRIC)".
6. ANCHOR BOLTS SHALL BE GROUTED IN HOLES DRILLED IN EXISTING SEAT WITH A MINIMUM EMBEDMENT OF 1'-3". DRILLING AND GROUTING SHALL BE PAID FOR UNDER ITEM 531.10 "BEARING DEVICE ASSEMBLY (FABRIC)".
7. AT THE EXPANSION BEARING ANCHOR BOLTS, LEAVE 1/8" GAP BELOW NUT.
8. AFTER BEARING INSTALLATION THREADS ABOVE NUT SHALL BE BURRED.
9. BLOCKING SHALL BE PROVIDED DURING REPLACEMENT OF BEARINGS. PAYMENT FOR BLOCKING SHALL BE MADE UNDER ITEM 502.11, "SHORING SUPERSTRUCTURE BEARINGS".
10. FOR ADDITIONAL BEARING DETAILS SEE SHEETS 21 AND 25.
11. SHOP DRAWINGS CONFORMING TO SUBSECTION 531.03 SHALL BE SUBMITTED TO INCLUDE WELDING AND BONDING PROCEDURES.

ESTIMATED SHIM PLATE THICKNESS (IN)

	SPAN 1		SPAN 2		SPAN 3	
	ABUT #1	PIER #1	PIER #1	PIER #2	PIER #2	ABUT #2
GI	2 1/4	5/8	1	1 3/8	1/8	0
G2	1 5/8	1/4	1	1 3/8	7/8	3/8
G3	2 3/8	5/8	7/8	1 1/8	1/4	5/8
G4	2 1/8	5/8	1 1/4	1 3/4	1/8	3/8
G5	2 1/4	1 1/4	7/8	1 1/4	1/8	1/2
G6	2 5/8	1	1	1 1/2	1/4	3/8

TOP OF SHIM PLATE ELEVATIONS (ELEVATION A)

	SPAN 1		SPAN 2		SPAN 3	
	ABUT #1	PIER #1	PIER #1	PIER #2	PIER #2	ABUT #2
GI	461.01	461.93	461.44	462.01	462.56	462.27
G2	460.74	461.62	461.18	461.74	462.31	462.02
G3	460.49	461.37	460.89	461.48	462.01	461.75
G4	460.19	461.10	460.64	461.25	461.76	461.47
G5	459.94	460.84	460.38	460.99	461.51	461.22
G6	459.66	460.59	460.12	460.72	461.29	460.95

NO SHIM PLATES REVISED 3/13/06

TYLIN INTERNATIONAL

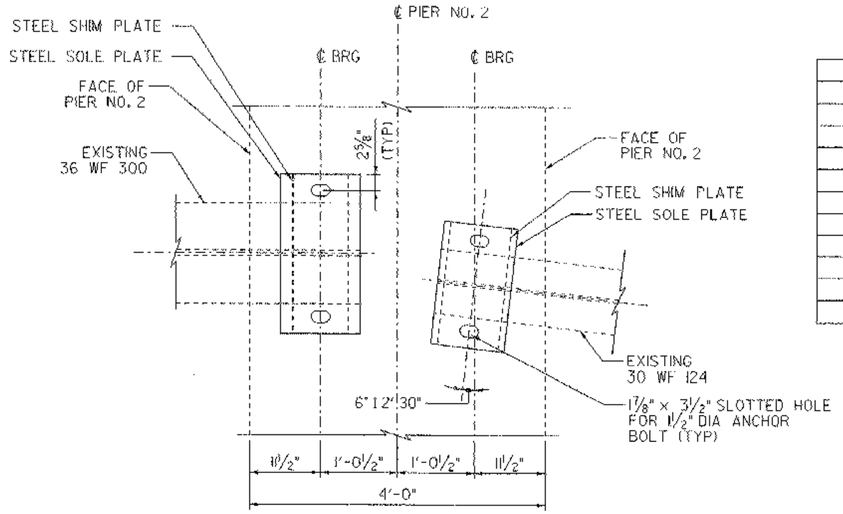
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.

VT 118 OVER TROUT RIVER

BEARING DETAILS (1)

Designed By J Howe	Drawn By J Davis
Checked By R Hebert Date 08/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC316bdl.dgn
Bridge Sheet No.	Sheet 20 of 45



EXPANSION BEARINGS @ PIER NO. 2

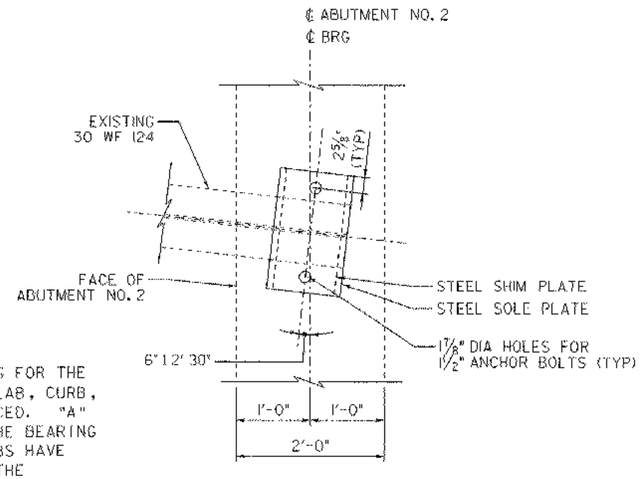
SCALE: 1" = 1'-0"

"A" OR "B" TABLE

TEMP.	"A" DIST.	"B" DIST.
-30°F	2⅞"	2¾"
-15°F	2⅝"	2⅝"
0°F	2⅜"	2½"
15°F	2¼"	2⅜"
30°F	2⅛"	2⅜"
45°F	2⅛"	2¼"
60°F	2"	2⅛"
75°F	1⅞"	2"
90°F	1¾"	1⅞"
105°F	1⅝"	1¾"
120°F	1½"	1⅝"

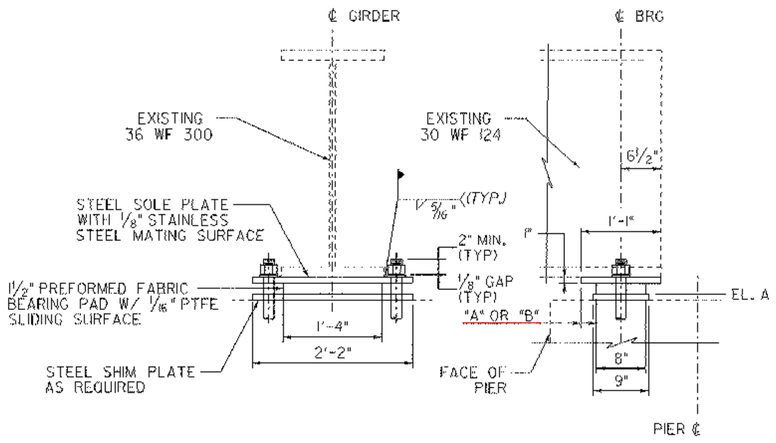
(FOR SPAN 2 BOTH SIDES ONLY)

"B" DISTANCE IS THE FINAL SETTING FOR THE BEARING PAD AFTER THE CONCRETE SLAB, CURB, PAVEMENT AND BRIDGE RAIL ARE PLACED. "A" DISTANCE IS LISTED FOR SETTING THE BEARING BEFORE THE CONCRETE DECK AND CURBS HAVE BEEN PLACED. THE DIFFERENCE IS THE THEORECTICAL ELONGATION OF THE BOTTOM FLANGE DUE TO DEAD LOAD DEFLECTION. THE FINAL "B" DISTANCE, AS SHOWN IN THE TABLE, MUST BE ATTAINED WITHIN 1/16 OF AN INCH.



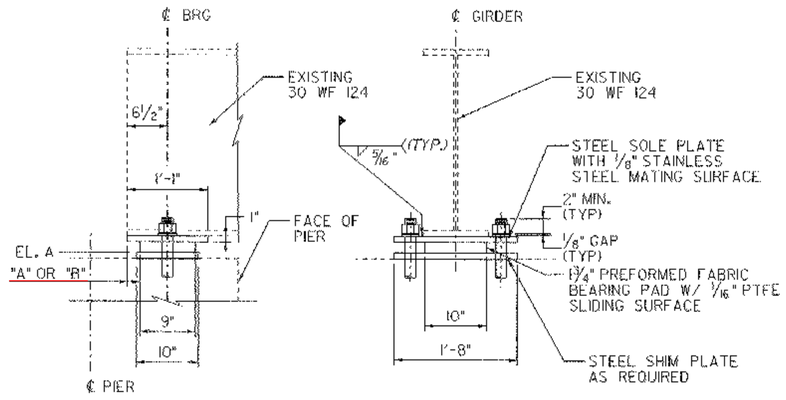
FIXED BEARING PAD @ ABUTMENT NO. 2

SCALE: 1" = 1'-0"



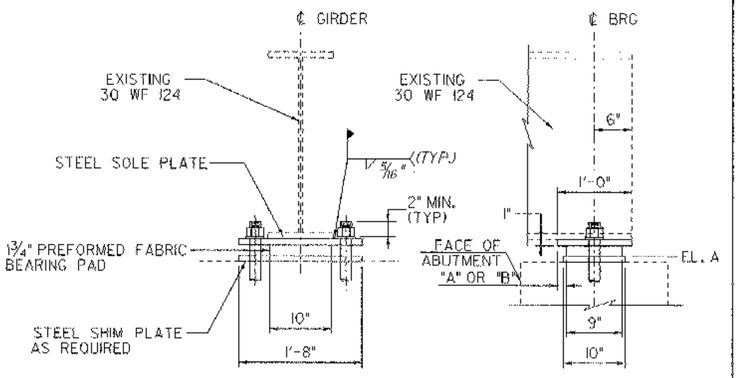
SPAN 2 EXPANSION BEARING @ PIER NO. 2

SCALE: 1" = 1'-0"



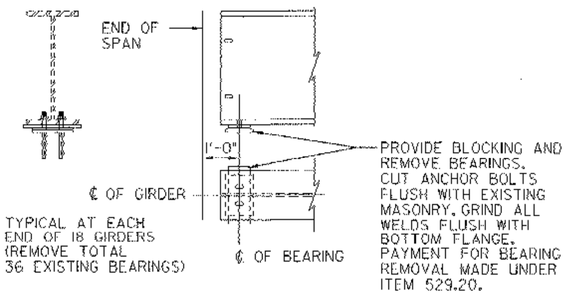
SPAN 3 EXPANSION BEARING @ PIER NO. 2

SCALE: 1" = 1'-0"



SPAN 3 FIXED BEARING @ ABUTMENT NO. 2

SCALE: 1" = 1'-0"



EXISTING BEARING PLATE DETAIL

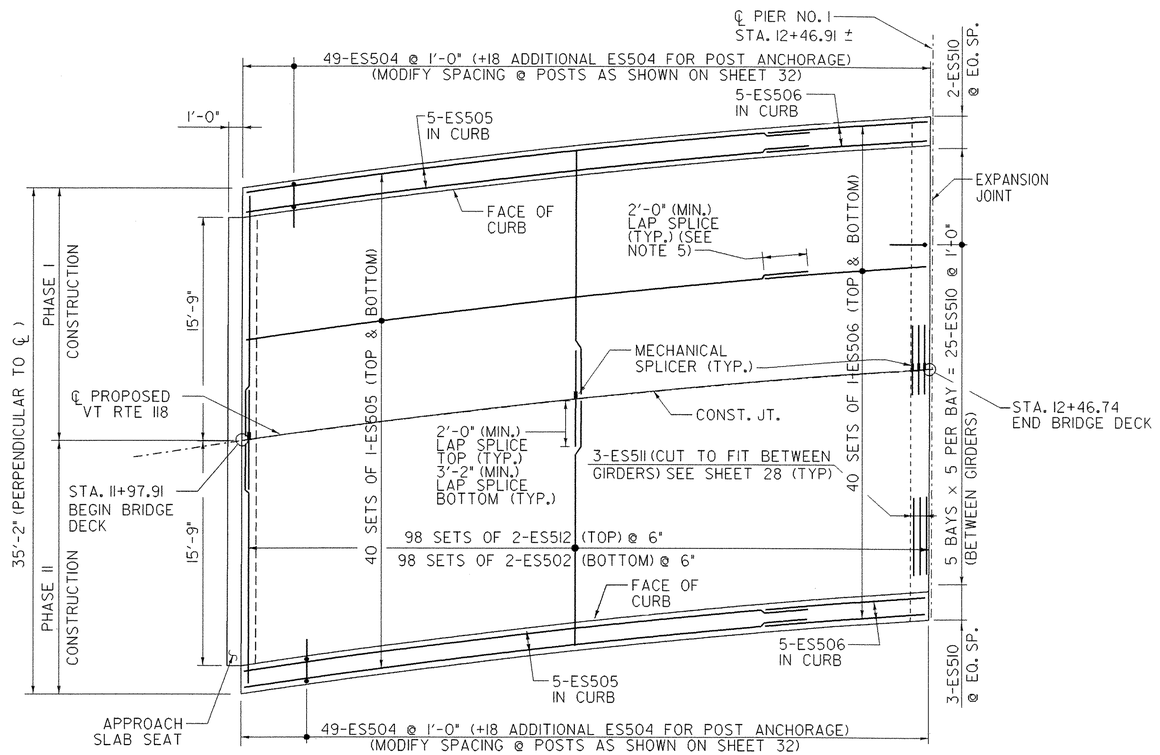
NOT TO SCALE

NO SHIM PLATES REVISED 3/13/06

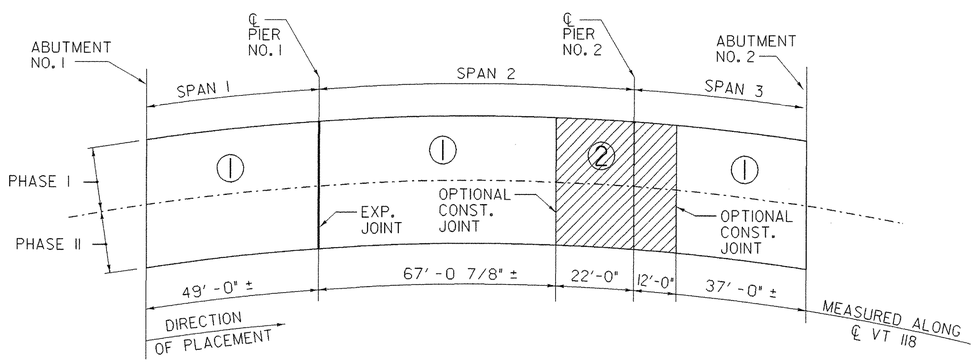
TY·LIN INTERNATIONAL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
BEARING DETAILS (2)	
Designed By J Howe	Drawn By J Davis
Checked By R Hebert Date 08/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC316bd1.dgn
Bridge Sheet No.	Sheet 21 of 45



SPAN 1
DECK PLAN
SCALE: 3/16" = 1'-0"

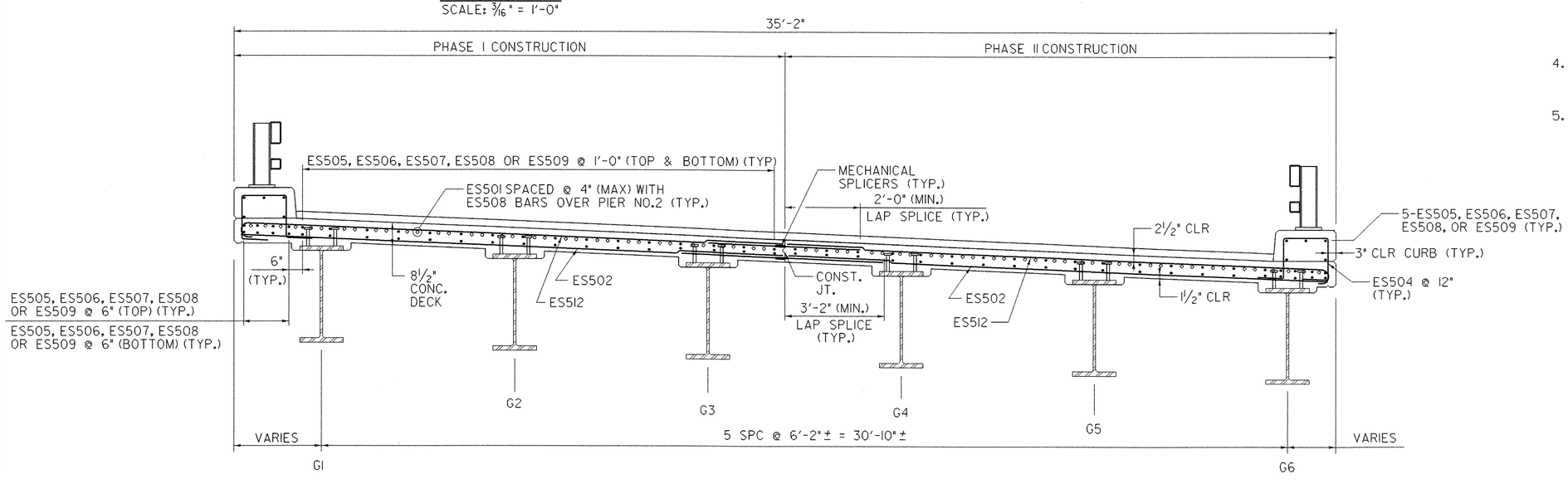


1. PLACE CONCRETE IN NUMERICAL SEQUENCE SHOWN. PLACEMENTS DO NOT HAVE TO BE MADE SIMULTANEOUSLY.
2. CONCRETE MAY BE PLACED CONTINUOUSLY IN SPANS 2 AND 3 WITHOUT CONSTRUCTION JOINTS IN ONE OPERATION.

OPTIONAL CONCRETE SLAB PLACING SEQUENCE DIAGRAM
SCALE: 3/16" = 1'-0"

DECK NOTES:

1. CONSTRUCTION JOINTS, AS SHOWN ON SHEET 24, SHALL BE USED BETWEEN ADJACENT DECK POURS.
2. INDIVIDUAL DECK POURS SHALL START FROM THE LOW END, RELATIVE TO GRADE.
3. THE DECK SLAB CONCRETE OF SPANS 2 AND 3 MAY BE PLACED CONTINUOUSLY AND SHALL BE KEPT PLASTIC UNTIL THE ENTIRE TWO SPAN SEGMENT HAS BEEN PLACED. ALTERNATIVELY, THE DECK SLAB CONCRETE MAY BE PLACED IN ACCORDANCE WITH THE "OPTIONAL CONCRETE SLAB PLACING SEQUENCE DIAGRAM".
4. PROVIDE 3 ADDITIONAL ES504 BARS AT EACH RAIL POST. SEE SHEET 32 FOR DETAIL.
5. ALTERNATE LAP SPLICE LOCATIONS EACH END.

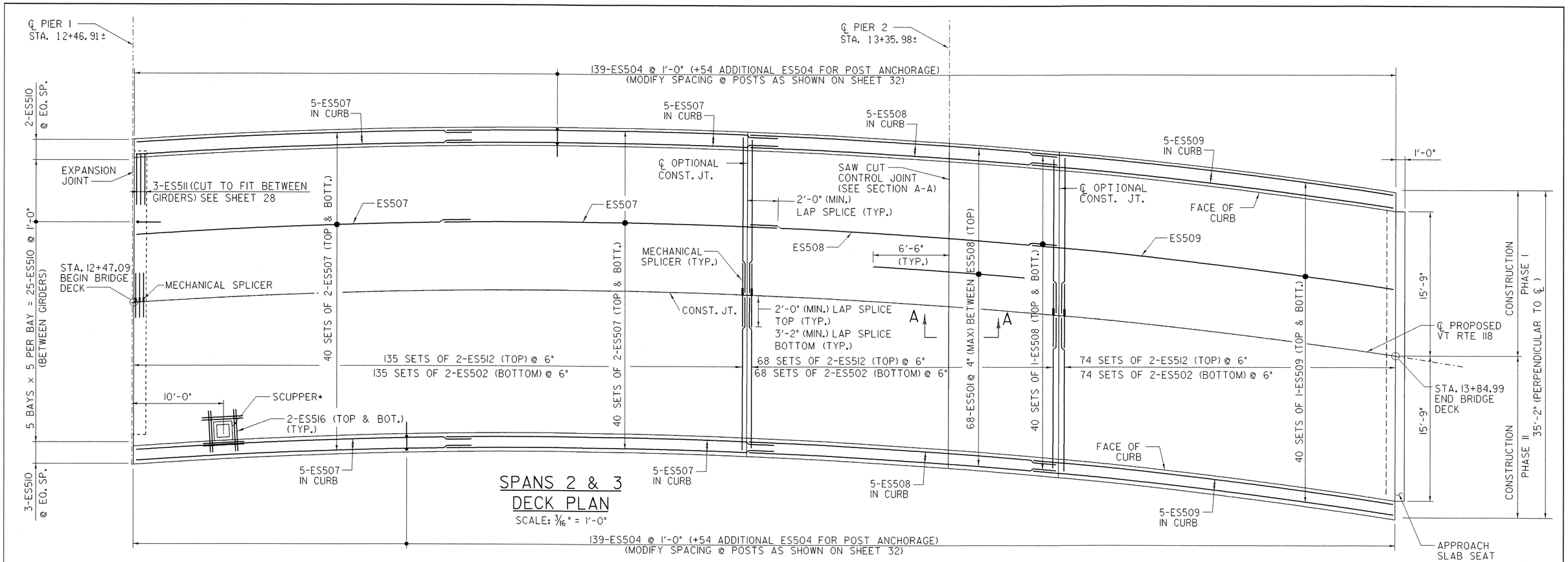


DECK SECTION
SCALE: 1/2" = 1'-0"

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
DECK REINFORCING PLAN (1)	
Designed By J Howe	Drawn By J Davis
Checked By R Hebert Date 08/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC316DP1.DGN
Bridge Sheet No.	Sheet 22 of 45

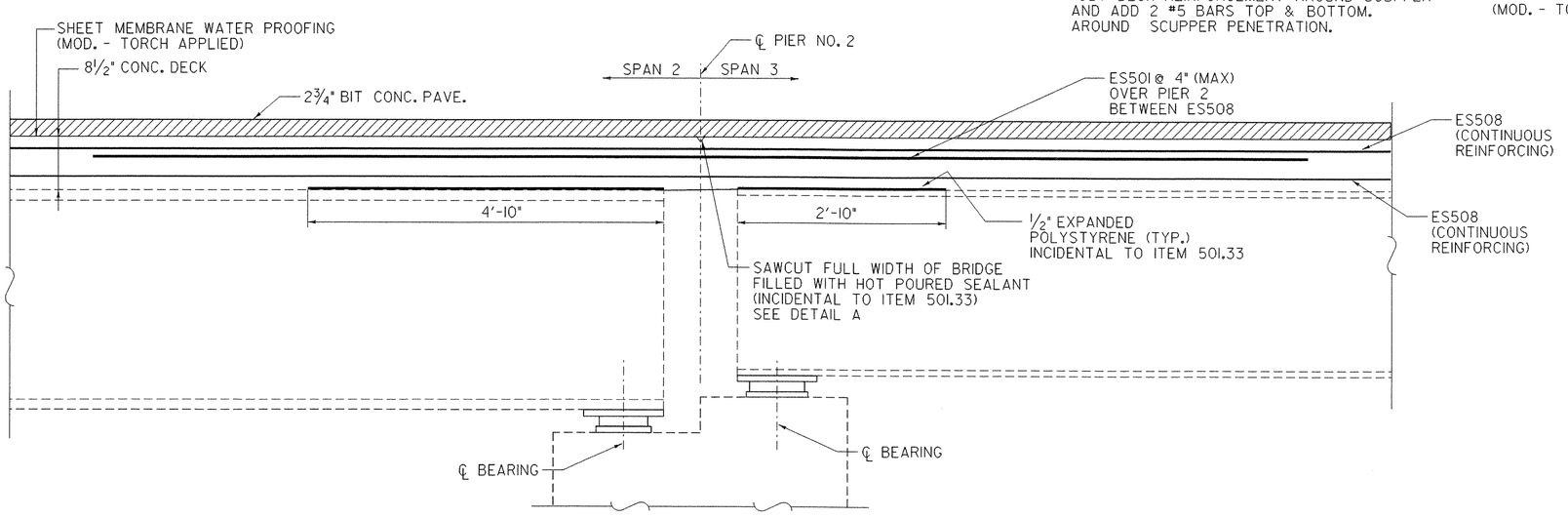
T·Y·LIN INTERNATIONAL



SPANS 2 & 3 DECK PLAN

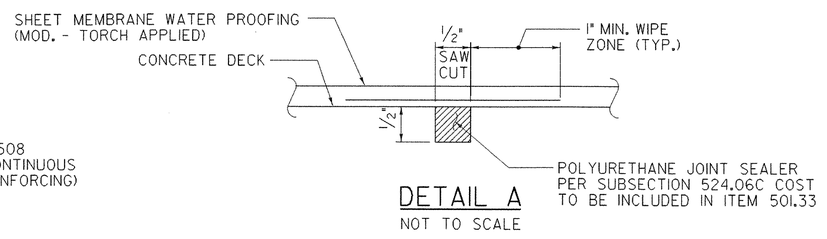
SCALE: 3/16" = 1'-0"

* CUT DECK REINFORCEMENT AROUND SCUPPER AND ADD 2 #5 BARS TOP & BOTTOM. AROUND SCUPPER PENETRATION.



SECTION A-A

SCALE: 1" = 1'-0"



DETAIL A

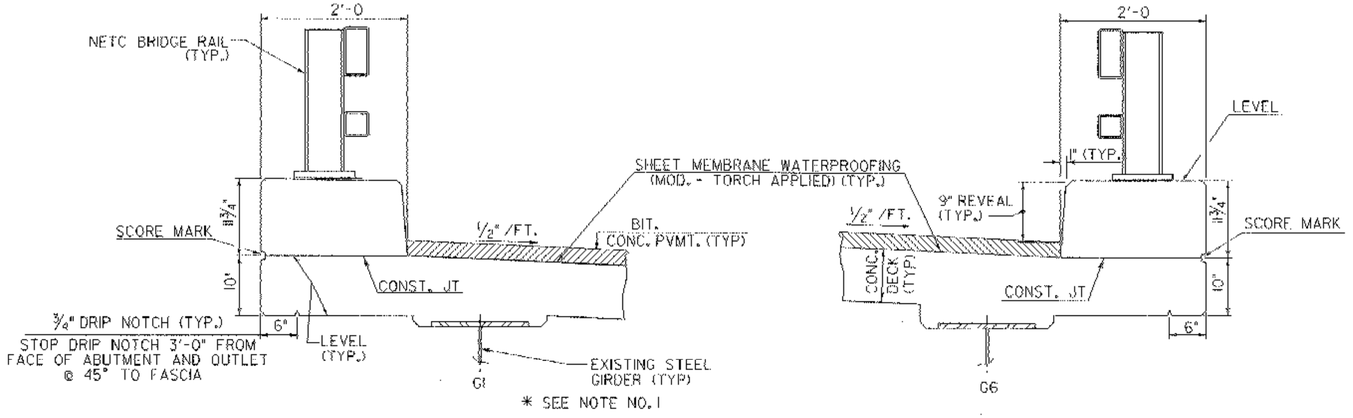
NOT TO SCALE

NOTE: JOINT SEALER SHALL BE SLIGHTLY OVER FILLED THEN WIPED FLUSH WITH A "V" OR "U" SHAPED SQUEEGEE TO PROVIDE A 1" WIPE ZONE EACH SIDE OF JOINT.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
DECK REINFORCING PLAN (2)	
Designed By J Howe	Drawn By J Davis
Checked By R Hebert Date 08/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC316DPI.DGN
Bridge Sheet No.	Sheet 23 of 45

T·Y·LIN INTERNATIONAL

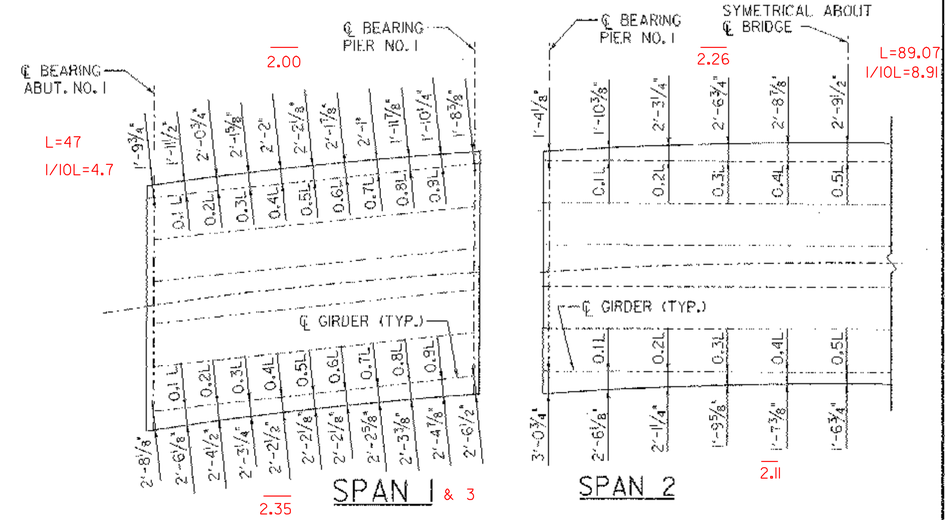


LEFT SIDE

RIGHT SIDE

CURB AND RAIL SECTION

SCALE: 1" = 1'- 0"



FASCIA OFFSET PLAN

SCALE: 3/32 " = 1'-0"

TYPICAL SECTION THROUGH CONCRETE CURB CONSTRUCTION JOINT

NTS

TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS

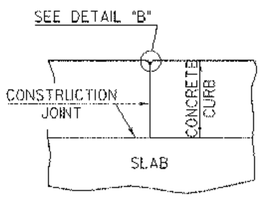
NTS

LONGITUDINAL BRIDGE SLAB CONSTRUCTION JOINT DETAILS

NTS

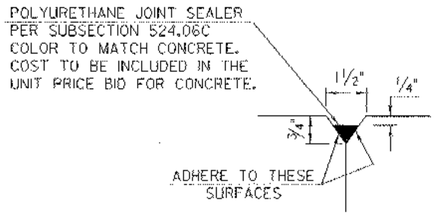
NOTES:

1. POLYURETHANE MEMBRANE AND BLAST CLEANING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SHEET MEMBRANE WATERPROOFING.
2. CONSTRUCTION JOINTS THROUGH CONCRETE CURBS SHALL BE SPACED A MAXIMUM OF 15'-0" CENTER TO CENTER AND SHALL BE 1'-6" MINIMUM FROM THE CENTER OF THE NEAREST BRIDGE RAIL POST. CONCRETE SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOURS DELAY BETWEEN ADJACENT POURS.
3. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CONSTRUCTION JOINTS.



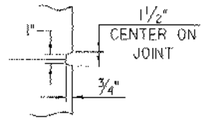
SECTION B-B

NTS



DETAIL "B"

NTS



SCORE MARK DETAIL

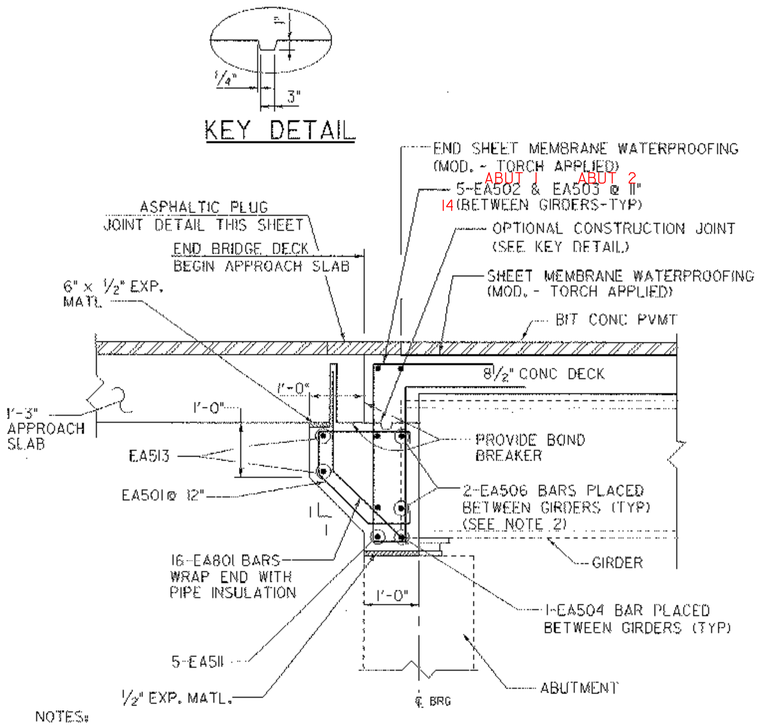
NTS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log. Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
SUPERSTRUCTURE DETAILS	
Designed By J Howe	Drawn By J Davis
Checked By R Hebert Date 8/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
LG.C. Info.	2C316CRD.DGN
Bridge Sheet No.	Sheet 24 of 45

TY·LIN INTERNATIONAL

DATE: 8/31/01 FILENAME: SHEET

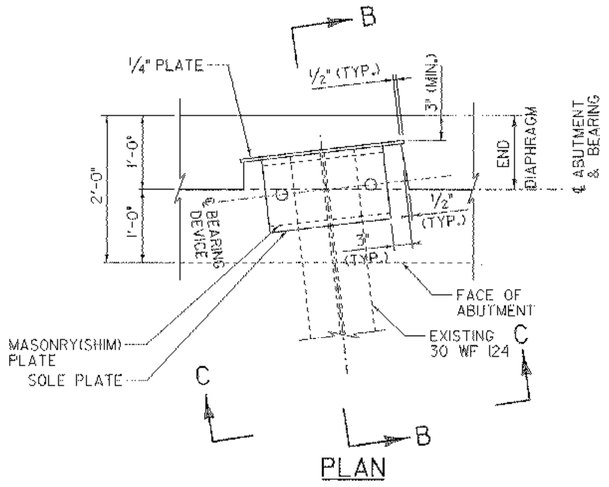


NOTES:

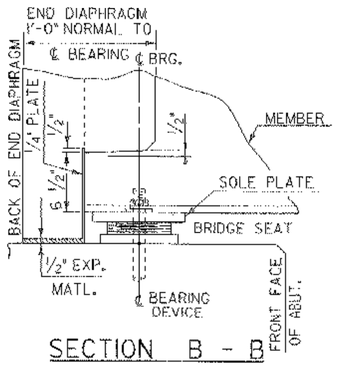
1. DECK AND APPROACH SLAB REINFORCING NOT SHOWN FOR CLARITY.
2. PLACE 2-EA505 BAR DOWELS THROUGH EXISTING HOLES IN BEAM ENDS. CENTER #5 BAR DOWEL ON GIRDER.

SECTION A-A

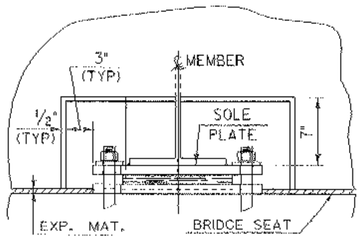
SCALE: 3/4" = 1'-0"



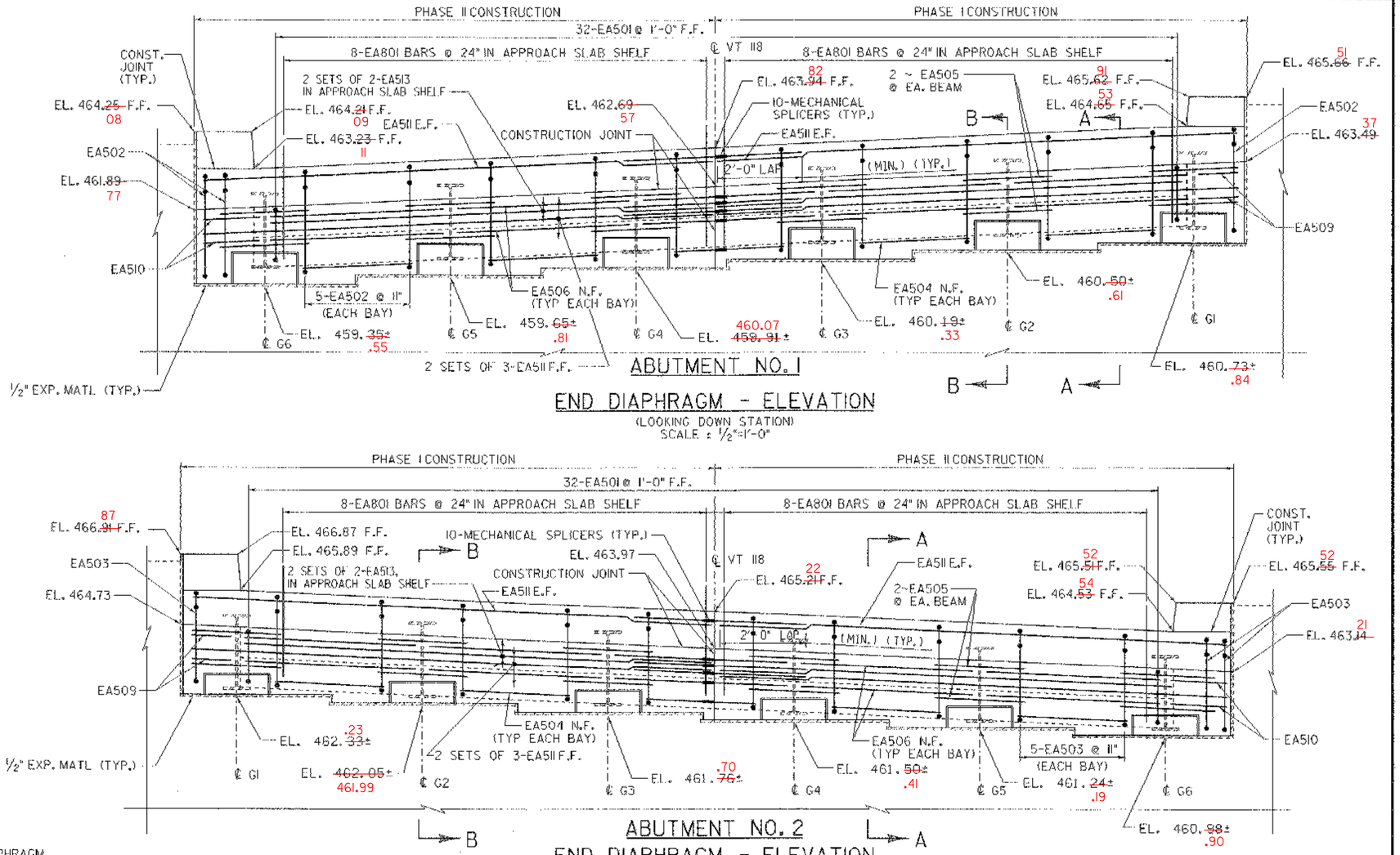
PLAN



SECTION B - B



VIEW C-C



ABUTMENT NO. 1

END DIAPHRAGM - ELEVATION

(LOOKING DOWN STATION)
SCALE : 1/2"=1'-0"

ABUTMENT NO. 2

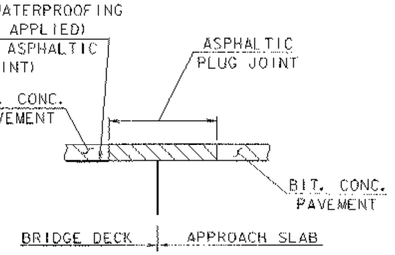
END DIAPHRAGM - ELEVATION

(LOOKING UP STATION)
SCALE : 1/2"=1'-0"

LEGEND

E.F. = EACH FACE
F.F. = FAR FACE
N.F. = NEAR FACE

SHEET MEMBRANE WATERPROOFING
(MOD. - TORCH APPLIED)
(EXCEPT UNDER ASPHALTIC PLUG JOINT)



ASPHALTIC PLUG JOINT DETAIL

NOT TO SCALE

CONCRETE END DIAPHRAGM AROUND BEARING DEVICE

SCALE: 1" = 1'-0"

REVISED 3/13/06

TY LIN INTERNATIONAL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

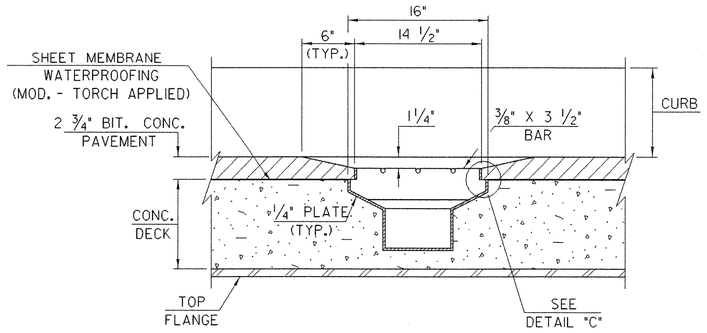
Town Of	MONTGOMERY	Bridge No.	21
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	

VT 118 OVER TROUT RIVER

END DIAPHRAGM DETAILS

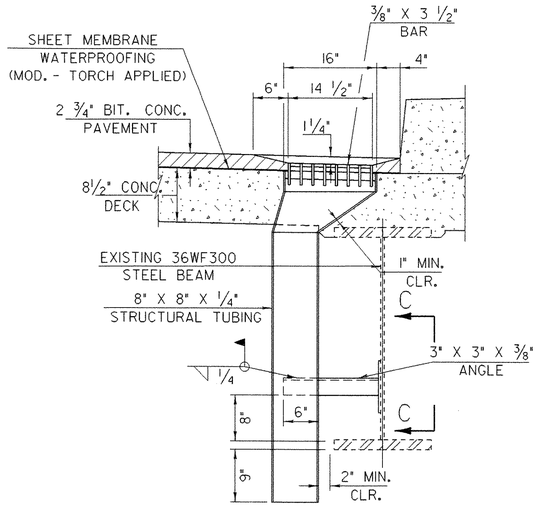
Designed By	J HOWE	Drawn By	P Donovan
Checked By	Date	Bridge Design Supervisor	
R Hebert	08/31/01	R.WHITCOMB	Date
PROJECT	MONTGOMERY	PROJECT NO.	BHF 0283(8)S
I.C.C. Info.			2C3I6EDI.DGN
Bridge Sheet No.		Sheet 25 of 45	

FILENAME: #FILE#
DATE: #DATE#



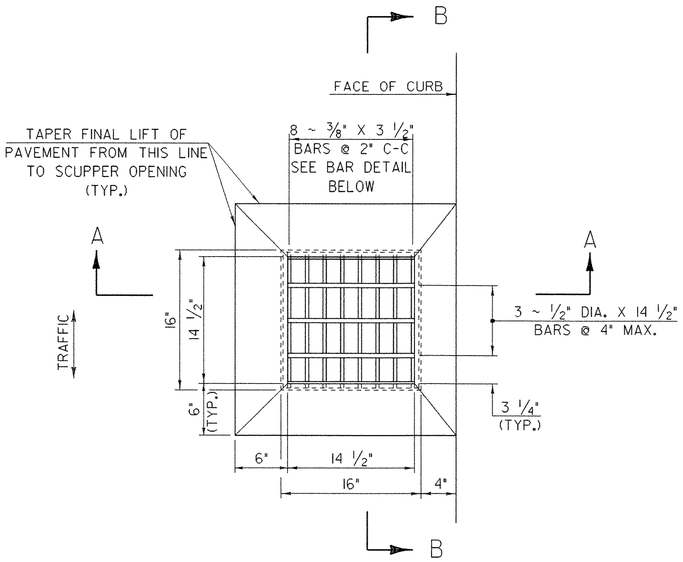
SECTION B - B

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



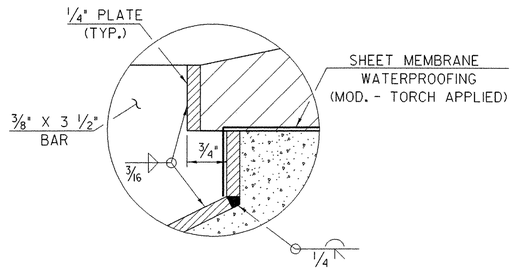
SECTION A - A

SCALE: 1" = 1'- 0"



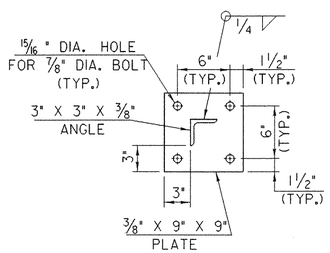
PLAN

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



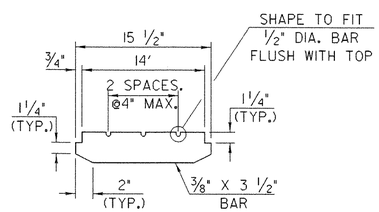
DETAIL "C"

NTS



SECTION C - C

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



BAR DETAIL FOR GRATE

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

NOTES:

1. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A-500 GR. B OR A-501.
2. ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO AASHTO M 270 GR. 36.
3. ALL SCUPPERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M IIIM/MIII AFTER FABRICATION.
4. THE TOP SURFACE OF SCUPPER SHALL BE SLOPED TO MATCH ROADWAY SLOPE AND GRADE.
5. THE BAR AND GRATE SECTION MAY BE PREFABRICATED PROVIDING THE GEOMETRY AND SECTION PROPERTIES ARE EQUIVALENT TO THE DETAILS SHOWN.
6. SCUPPERS SHALL BE PAID FOR UNDER ITEM 506.60 "STRUCTURAL STEEL".
7. ALL BOLTS AND RELATED HARDWARE SHALL BE ASTM A-307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 (AASHTO M 232M/M 232).

SCUPPER LOCATION

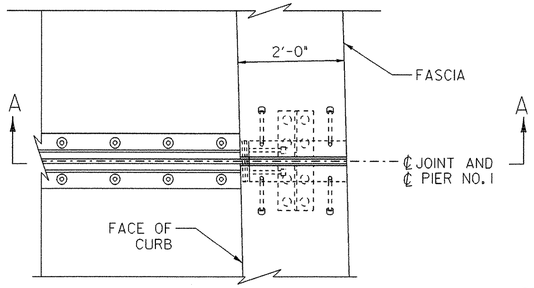
STA. 12+56 RT
(SEE PLAN
ON SHEET 23)

T.Y.LIN INTERNATIONAL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

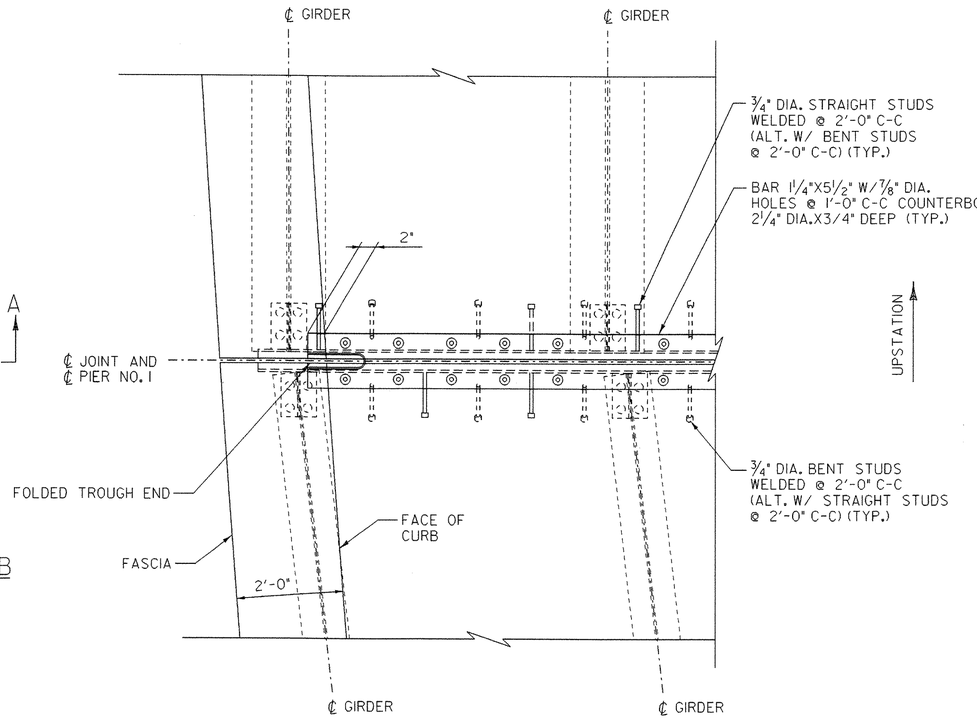
Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
SCUPPER DETAILS	
Designed By J Howe	Drawn By J Davis
Checked By R Hebert Date 8/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC3I6SCULDGN
Bridge Sheet No.	Sheet 26 of 45

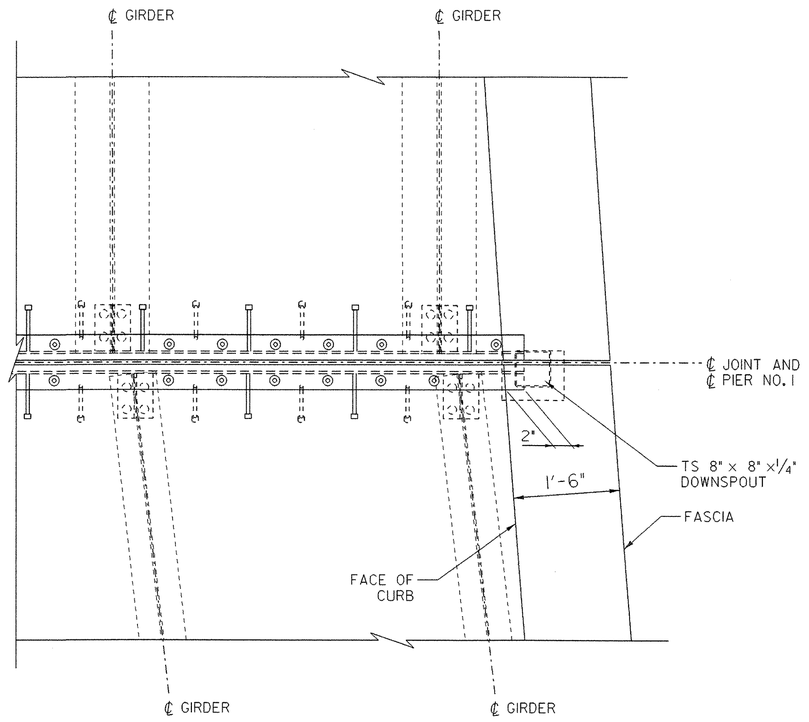
DATE: $DATE$ FILENAME: $FILE$



EXPANSION JOINT PLAN AT CURB

SCALE: 3/4" = 1'-0"

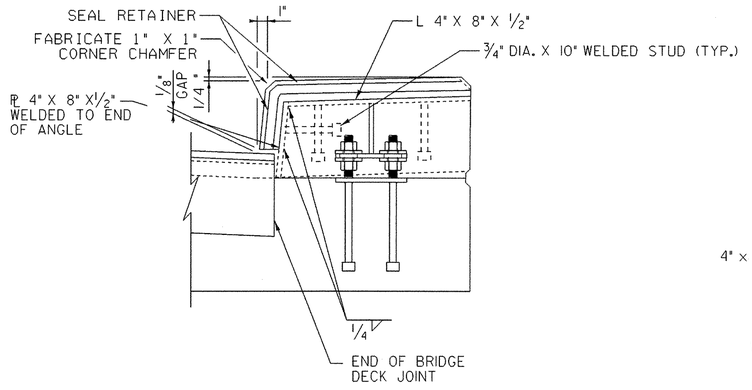




EXPANSION JOINT PLAN DETAIL

SCALE: 3/4" = 1'-0"

NOTE: CURB JOINT NOT SHOWN FOR CLARITY. SEE "EXPANSION JOINT PLAN AT CURB" FOR DETAILS AT CURBS.

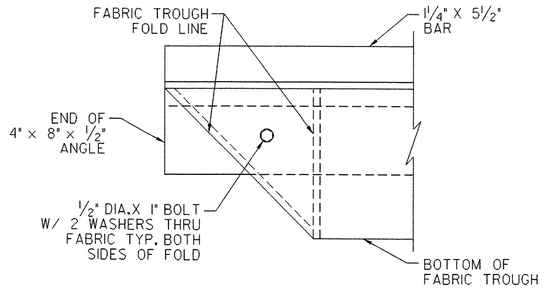


SECTION A-A

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

NOTES:

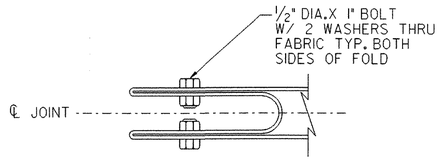
1. EXPANSION JOINT ARMOR AT CURB JOINT SHALL BE FABRICATED AS A SINGLE UNIT EACH SIDE OF JOINT.
2. REFERENCE SHEET 24 FOR ADDITIONAL CURB DETAILS.
3. MOVEMENT RATING OF SEAL SHALL BE 2 1/2"
4. PREFORMED NEOPRENE JOINT SEALER SHALL BE FABRICATED AS ONE CONTINUOUS UNIT. DIRECTIONAL CHANGE IN SEAL MAY BE FABRICATED USING A FACTORY MOLDED UNIT OR A VULCANIZED SPLICE.



FOLDED TROUGH END DETAILS

NOT TO SCALE

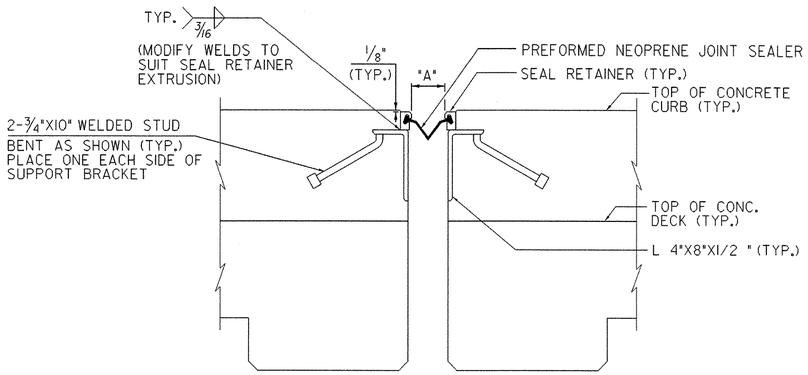
NOTE: ALL BOLTS AND RELATED HARDWARE SHALL BE ASTM A-307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 (AASHTO M 232M/M 232).



T·Y·LIN INTERNATIONAL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
EXPANSION JOINT PLAN	
Designed By J Howe	Drawn By J Davis
Checked By R Hebert Date 9/4/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
lparm zc316ej1.1	ZC316ej1.dgn
Bridge Sheet No.	Sheet 27 of 45

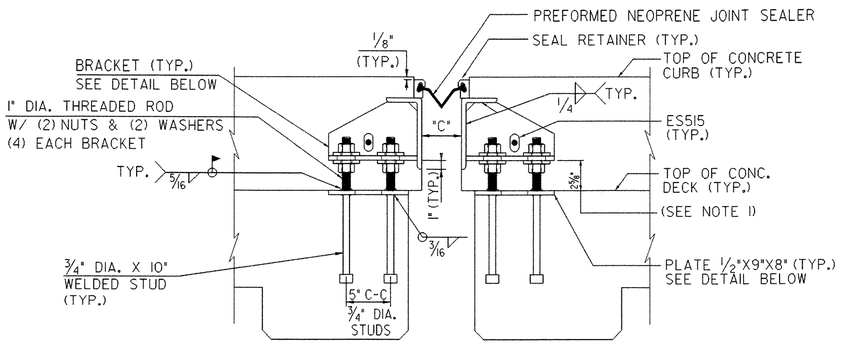


TYPICAL CURB SECTION

SCALE: 1 1/2"=1'-0"
(NORMAL TO ℄ BEARING)

NOTES:

1. DECK AND CURB REINFORCEMENT NOT SHOWN FOR CLARITY.
2. VERTICAL CURB FACE AT GUTTERLINE SIMILAR. PROVIDE ONE (1) BENT WELDED STUD AND ONE (1) STRAIGHT WELDED STUD TO ANCHOR THE VERTICAL ANGLE AT THE CURB.



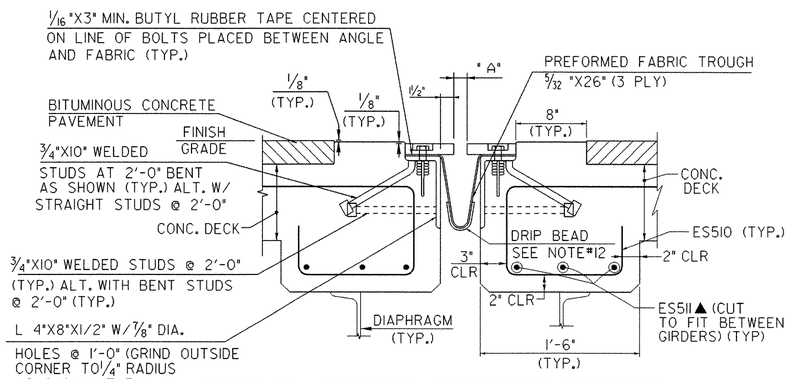
TYPICAL CURB SECTION AT SUPPORT BRACKET

SCALE: 1 1/2"=1'-0"
(NORMAL TO ℄ BEARING)

NOTES:

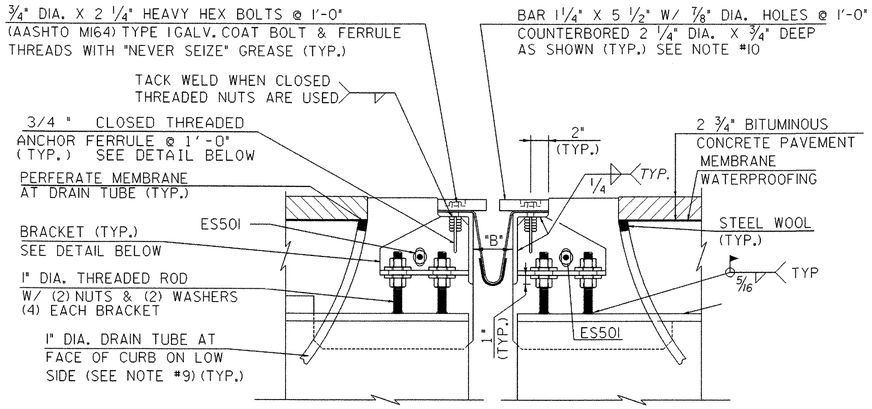
1. DIMENSION IS THEORETICAL AND MAY CHANGE DEPENDING ON THE SEAL RETAINER SUPPLIED.
2. DECK AND CURB REINFORCEMENT NOT SHOWN FOR CLARITY.

1. DETAILS ON THIS SHEET ARE FOR ITEM 516. 10 "BRIDGE EXPANSION JOINT (VERMONT)".
2. PREFORMED FABRIC MATERIAL SHALL BE CONTINUOUS AND SHALL CONFORM TO SUBSECTION 707. 07.
3. BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO SPECIFICATION M-198, TYPE B.
4. THE FINAL FINISH OF THE EXPANSION DEVICE SHALL BE COVERED DURING THE PLACING OF BRIDGE DECK CONCRETE.
5. ALL STEEL COMPONENTS SHALL BE AASHTO M270 GRADE 36 GALVANIZED OR METALIZED AS PER SUBSECTION 516.04 UNLESS OTHERWISE SPECIFIED, EXCEPT FOR THREADED RODS AND NUTS WHICH WILL BE ASTM A307.
6. THE ITEM "BRIDGE EXPANSION JOINT (VERMONT)" SHALL INCLUDE THE FABRICATION AND ERECTION OF THE COMPLETE JOINT ASSEMBLIES INCLUDING ALL STEEL PLATES, BRACKETS, ANGLES, WELDED STUDS OR RODS, PREFORMED FABRIC DRAIN TROUGH MATERIAL AND PLASTIC DRAIN TUBES, BUTYL RUBBER TAPE, SEAL RETAINERS, PREFORMED NEOPRENE JOINT SEALER, AND ANY OTHER MISCELLANEOUS MATERIAL NECESSARY TO INSTALL JOINT.
7. THE 4" X 8" X 1/2 " ANGLES SHALL BE FURNISHED AS ONE CONTINUOUS PIECE FOR EACH CONSTRUCTION PHASE. THE 1 1/4 " X 5 1/2 " BARS EACH SIDE OF THE JOINT SHALL BE PROVIDED IN TWO EQUAL LENGTHS.
8. COAT CONCRETE CONTACT SURFACES WITH EPOXY BONDING COMPOUND MEETING THE REQUIREMENTS OF SUBSECTION 719. 02. PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 516. 10 "BRIDGE EXPANSION JOINT (VERMONT)".
9. A 1" DIAMETER PLASTIC DRAIN TUBE (PER STD. SPEC. 740. 01) SHALL BE INSTALLED AS SHOWN AT THE FACE OF CURB. THE UPPER END IS TO BE PLUGGED WITH STEEL WOOL AND THE LOWER END IS TO EXTEND BELOW THE BOTTOM OF THE ADJACENT GIRDER. THE DRAIN TUBES SHALL BE FASTENED TO THE GIRDERS USING A METHOD APPROVED BY THE ENGINEER.
10. FILL COUNTERBORED HOLES WITH HOT POURED JOINT SEALER AFTER BOLT INSTALLATION. PAYMENT FOR THE WORK SHALL BE INCIDENTAL TO ITEM 516. 10.
11. A DRIP BEAD OF 1/4 " X 7" STRIP OF PREFORMED MATERIAL SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH USING AN ADHESIVE APPROVED BY THE MANUFACTURER. THE DRIP BEAD SHALL BE APPLIED 1" FROM THE DOWNSPOUT END OF THE TROUGH.
12. FABRIC TROUGH SHALL BE THOROUGHLY CLEANED AND FLUSHED AFTER PAVING OPERATION.
13. FABRIC TROUGH SHALL BE ONE CONTINUOUS UNIT AND SHALL BE INSTALLED AFTER COMPLETION OF PHASE II CONSTRUCTION.
14. THE EXPANSION JOINT SHALL BE SHOP ASSEMBLED AND SHIPPED AS TWO UNITS, CORRESPONDING TO PHASE I AND PHASE II CONSTRUCTION.



TYPICAL SECTION BETWEEN GIRDERS

SCALE: 1 1/2"=1'-0"
(NORMAL TO ℄ BEARING)



TYPICAL SECTION AT GIRDERS

SCALE: 1 1/2"=1'-0"
(NORMAL TO ℄ BEARING)

TEMP °F	"A" DIST INCHES	"B" DIST INCHES	"C" DIST INCHES
-30	2 9/16	5 9/16	3 1/16
-15	2 3/8	5 3/8	2 7/8
0	2 1/8	5 1/8	2 5/8
15	1 15/16	4 15/16	2 7/16
30	1 11/16	4 11/16	2 3/16
45	1 1/2	4 1/2	2
60	1 5/16	4 5/16	1 13/16
75	1 1/16	4 1/16	1 9/16
90	7/8	3 7/8	1 3/8
105	5/8	3 5/8	1 1/8

"A" AND "B" ARE THE SETTINGS BEFORE DEAD LOADS ARE IN PLACE.

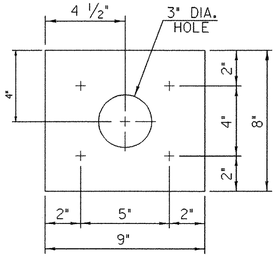
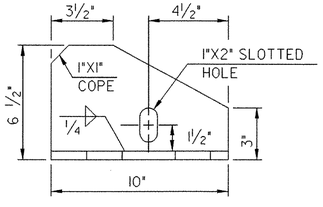


PLATE PLAN

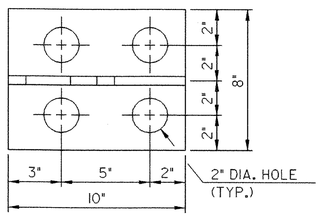
SCALE: 3" = 1'- 0"



BRACKET - ELEVATION

SCALE: 3"=1'-0"

NOTE: ALL PLATES 1/2" UNLESS NOTED OTHERWISE.



BRACKET - PLAN

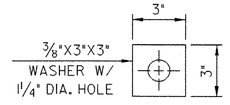
SCALE: 3"=1'-0"

ANCHOR FERRULE DETAIL

SCALE: 3"=1'-0"

NOTE:

CLOSED THREADED FERRULE NUTS WITHOUT ANCHOR LOOPS MAY BE USED.



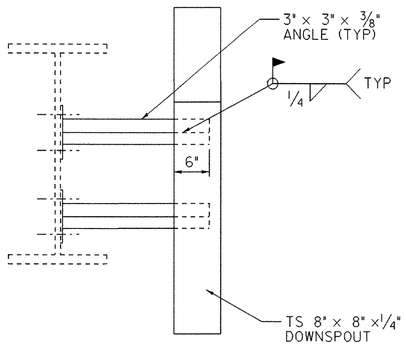
WASHER FOR BRACKET

SCALE: 3"=1'-0"

T.Y. LIN INTERNATIONAL

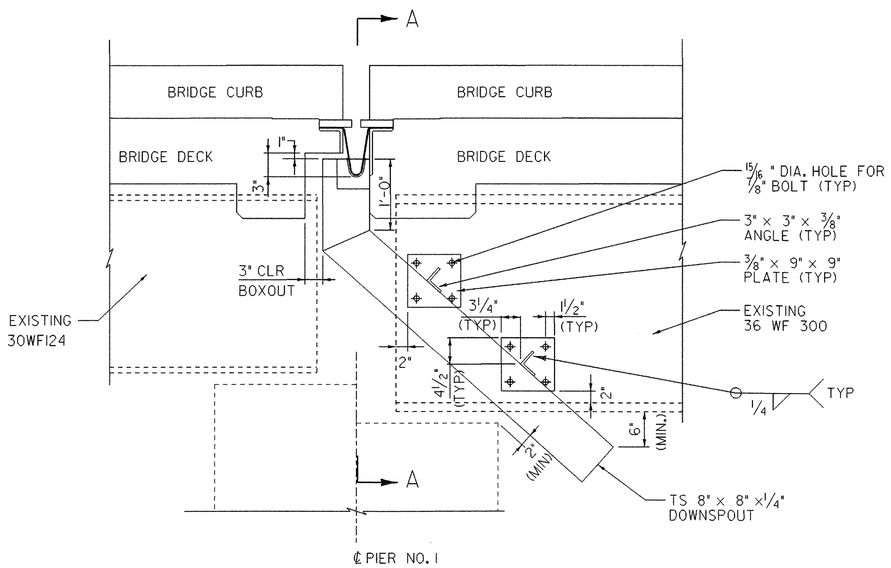
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
EXPANSION JOINT DETAILS	
Designed By J Howe	Drawn By J Davis
Checked By R. Hebert Date 9/4/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
Iparm zc316ej2.1	ZC316ej1.dgn
Bridge Sheet No.	Sheet 28 of 45



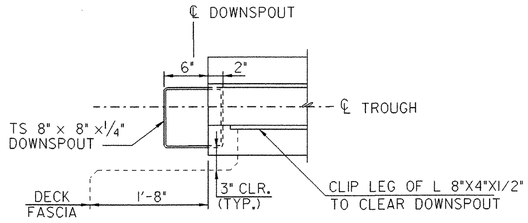
SECTION A-A

SCALE: 1" = 1'-0"



DOWNSPOUT ELEVATION

SCALE: 1" = 1'-0"

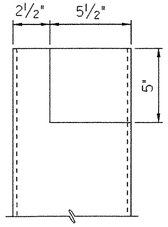


NOTES:

1. BOTTOM OF DECK TO BE BOXED OUT AS SHOWN TO ALLOW DOWNSPOUT TO COME UP UNDERNEATH THE DRAIN TROUGH.
2. DECK REINFORCING STEEL TO BE CUT AS REQUIRED TO MAINTAIN 3" CLEARANCE FROM BOXOUT.

PLAN VIEW OF DECK BOXOUT FOR DOWNSPOUT

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



DOWNSPOUT CUTOUT FOR TROUGH

SCALE: 3" = 1'-0"

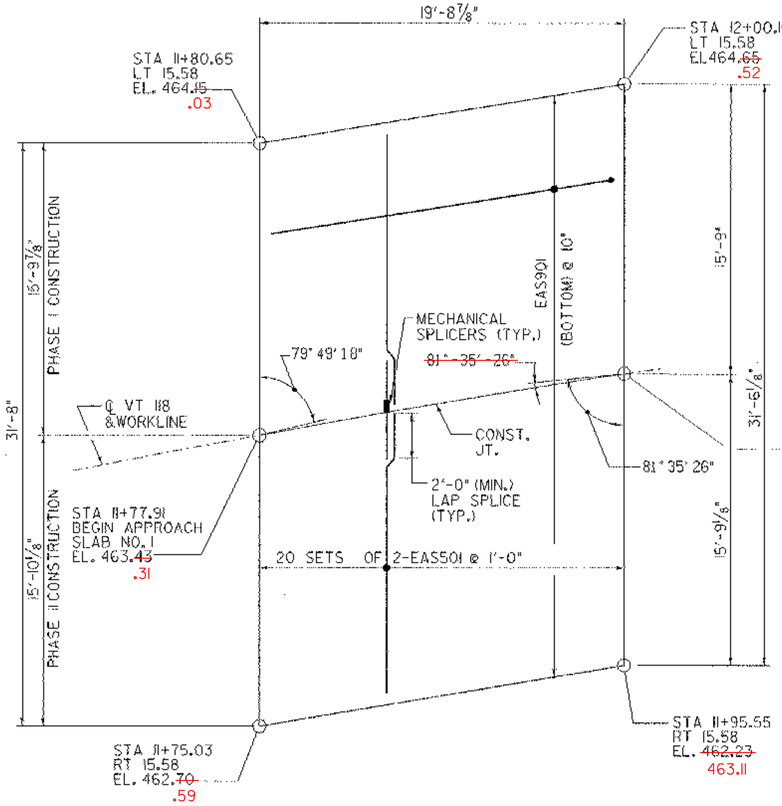
DOWNSPOUT NOTES:

1. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO A-500 OR A-501.
2. ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO AASHTO M270 GR. 36.
3. DOWNSPOUT SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111M/M111 AFTER FABRICATION.
4. ALL BOLTS AND RELATED HARDWARE SHALL BE ASTM A-307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 (AASHTO M 232M/M 232).
5. ANY PLACE WHERE THE GALVANIZING HAS BEEN REMOVED FROM THE DOWNSPOUT EITHER BY CUTTING, BURNING, WELDING, PLACING, OR ANY OTHER MEANS, IT SHALL BE REPAIRED IN ACCORDANCE WITH THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 513.
6. DOWNSPOUT AND ALL ANCHOR BOLTS WITH RELATED HARDWARE SHALL BE PAID FOR UNDER THE ITEM 506.60 "STRUCTURAL STEEL".

T.Y.LIN INTERNATIONAL

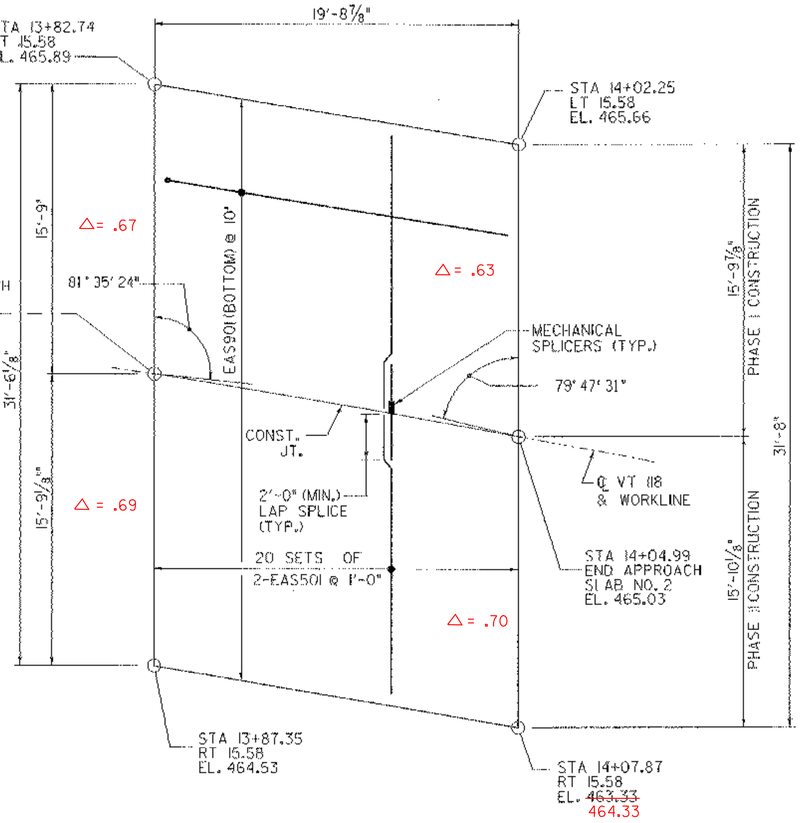
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
DOWNSPOUT DETAILS	
Designed By J Howe	Drawn By J Davis
Checked By R Hebert Date 9/4/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
lparm zc3l6ej3.1	ZC3l6ej1.dgn
Bridge Sheet No.	Sheet 29 of 45



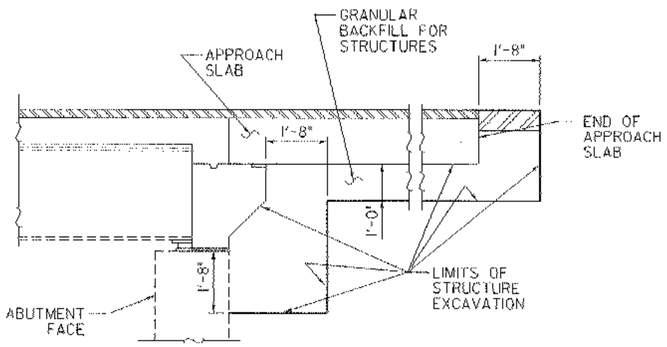
APPROACH SLAB NO. 1 PLAN

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



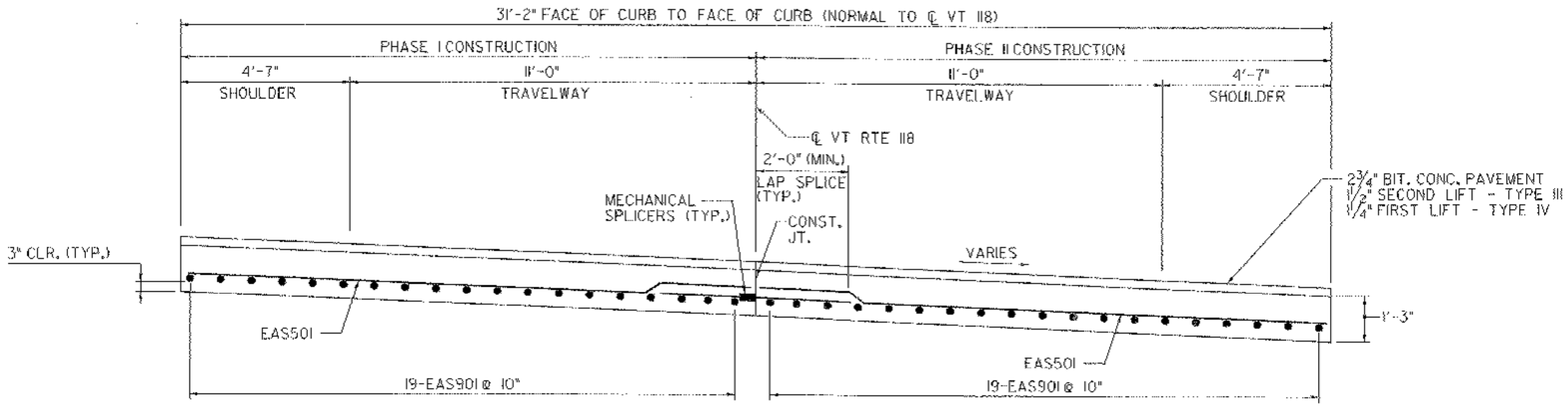
APPROACH SLAB NO. 2 PLAN

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



LIMITS OF EXCAVATION DETAILS

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



TYPICAL APPROACH SLAB SECTION

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

HPC
CLASS B

NOTE:

1. ELEVATIONS ARE PROVIDED AT TOP OF PROPOSED APPROACH SLAB CONCRETE.
2. APPROACH SLAB CONCRETE SHALL BE CONCRETE, HIGH PERFORMANCE CLASS B, f'c 3500 psi
3. FOR MORE INFORMATION SEE SHEET 25.

REVISED 3/13/06

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	MONTGOMERY	Bridge No.	21
Highway No.	VT 118	Log Sta.	
		Surv. Sta.	

VT 118 OVER TROUT RIVER

APPROACH SLAB DETAILS

Designed By	J Howe	Drawn By	P Donovan
Checked By	Date	Bridge Design Supervisor	
R Hebert	08/31/01	R.WHITCOMB	Date
PROJECT	MONTGOMERY	PROJECT NO.	BHF 0283(8)S
I.G.C. Info.			ZC36asl.DGN
Bridge Sheet No.		Sheet 30	of 45

TY·LIN INTERNATIONAL

EXISTING SUBSTRUCTURE CONCRETE REPAIR NOTES:

1. THIS WORK SHALL INCLUDE REMOVAL AND DISPOSAL OF UNSOUND AND DELAMINATED CONCRETE FROM ALL ABUTMENTS AND PIERS AS DIRECTED BY THE ENGINEER. THE PREPARED SURFACES SHALL BE THOROUGHLY SANDBLASTED TO REMOVE ALL LOOSE MATERIAL AND ANY CONTAMINANTS OR EFFLORESCENCE. THE REINFORCING STEEL (IF EXPOSED), SHALL BE SANDBLASTED. THE MATERIAL USED TO FILL A PATCH SHALL BE PLACED AND FINISHED OR FORMED SO THAT THE FINAL SURFACE WILL HAVE THE SAME SCORE MARKS AND EXTERIOR FACE APPEARANCE AS THE ORIGINAL SURFACES BEING REPAIRED. THE SURFACE SHALL BE THOROUGHLY WETTED PRIOR TO PLACEMENT. THE SURFACE SHALL BE COATED WITH NEAT CEMENT PASTE, MIXED TO THE CONSISTENCY OF THICK LATEX PAINT, AND THOROUGHLY BRUSHED INTO THE SURFACE. WHEN "OVERHEAD AND VERTICAL CONCRETE REPAIR MATERIAL" CONFORMING WITH SUPPLEMENTAL SPECIFICATION SECTION 780 IS USED, THE BONDING AGENT, (IF ANY REQUIRED) AND ITS APPLICATION PROCEDURE SHALL COMPLY WITH THE REQUIREMENTS OF THE PATCHING MATERIAL MANUFACTURER. PAYMENT FOR BONDING AGENT WILL BE INCIDENTAL TO ITEM 580.13, 580.14 OR 580.15.

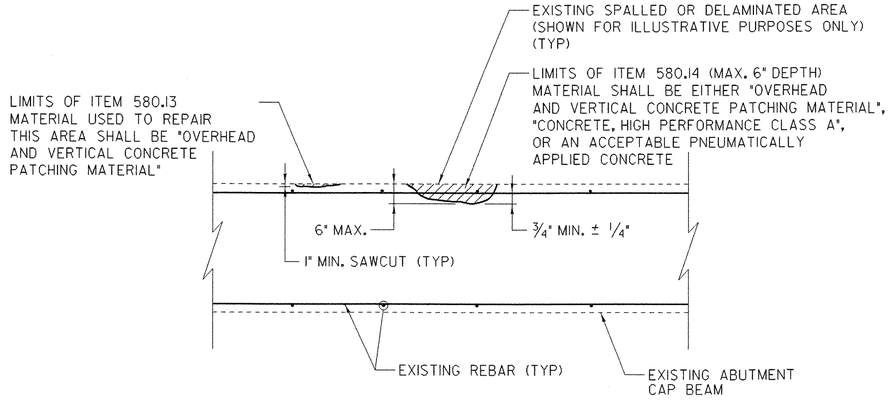
2. THE LIMITS FOR REMOVAL OF CONCRETE UNDER THE ITEM 580.13, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I" SHALL BE FROM THE EXISTING CONCRETE SURFACE TO A MAXIMUM DEPTH OF THE OUTSIDE FACE OF THE REINFORCING STEEL. ALL WORK AND MATERIALS NECESSARY FOR PREPARING A PATCH AND FILLING IT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 580.13, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I". THE FILLING MATERIAL SHALL BE "OVERHEAD AND VERTICAL CONCRETE REPAIR MATERIAL" CONFORMING WITH SUPPLEMENTAL SPECIFICATION 780. THE EDGES OF ALL PATCHES SHALL BE SAW CUT IN STRAIGHT LINES TO A MINIMUM DEPTH OF 1INCH. IF MORE THAN 1/4 INCH OF THE REBAR IS EXPOSED, OR THE BOND BETWEEN THE REBAR AND THE CONCRETE IS BROKEN, THEN PROCEED TO ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II".

3. THE LIMITS FOR REMOVAL OF CONCRETE UNDER THE ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II" SHALL BE FROM THE EXISTING CONCRETE SURFACE TO A MINIMUM DEPTH OF 3/4 INCH +/- 1/4 INCH INSIDE THE INSIDE FACE OF THE REINFORCING STEEL AND TO A MAXIMUM DEPTH OF 6 INCHES FROM THE EXISTING CONCRETE SURFACE. ALL WORK AND MATERIALS NECESSARY FOR PREPARING A PATCH AND FILLING IT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II". THE FILLING MATERIAL SHALL BE "CONCRETE REPAIR MATERIAL" CONFORMING WITH SUPPLEMENTAL SPECIFICATION 780, "CONCRETE, HIGH PERFORMANCE CLASS A, OR AN ACCEPTABLE PNEUMATICALLY APPLIED CONCRETE (SEE SPECIAL PROVISIONS). THE EDGES OF ALL PATCHES SHALL BE SAW CUT IN STRAIGHT LINES TO A MINIMUM DEPTH OF 1INCH.

4. THE LIMITS FOR REMOVAL OF CONCRETE UNDER THE ITEM 580.15, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III" SHALL BE FROM THE EXISTING CONCRETE SURFACE TO A DEPTH OF GREATER THAN 6 INCHES. ALL WORK AND MATERIALS NECESSARY FOR PREPARING A PATCH AND FILLING IT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 580.15, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III". THE FILLING MATERIAL SHALL BE "CONCRETE, HIGH PERFORMANCE CLASS A, CLASS B OR AN ACCEPTABLE PNEUMATICALLY APPLIED CONCRETE. THE EDGES OF ALL PATCHES SHALL BE SAW CUT IN STRAIGHT LINES TO A MINIMUM DEPTH OF 1INCH.

5. IF PNEUMATICALLY APPLIED CONCRETE IS SELECTED FOR REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II OR III, THEN THIS TYPE OF CONCRETE REPAIR SHALL BE CONFINED ONLY TO VERTICAL AND OVERHEAD SURFACES OF THE SUBSTRUCTURE. ALSO, THE BRIDGE AND GIRDERS SHOULD BE COMPLETELY PROTECTED FROM REBOUND MATERIAL DURING PNEUMATICALLY APPLIED CONCRETE APPLICATION PROCEDURES.

6. THE ENGINEER SHALL ORDER REPLACEMENT OF ANY SUBSTRUCTURE REINFORCING STEEL THAT IS DETERIORATED (WITH MORE THAN 25% SECTION LOSS) WITH NEW REINFORCING STEEL OF THE SAME SIZE. ALL REINFORCING STEEL SHALL HAVE AN APPROPRIATE LAP SPLICE.



NOTES

1. PLAN VIEW OF EXISTING ABUTMENT CAP BEAM SHOWN.
2. REMOVAL OF EXISTING CONCRETE TO A DEPTH GREATER THAN SPECIFIED FOR ITEM 580.14 SHALL BE PAID UNDER THE ITEM 580.15, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III".
3. DETAIL SHOWS LIMIT OF ITEMS 580.13, 580.14 AND 580.15 REPAIR CONCRETE SUBSTRUCTURE SURFACE, CLASS I, CLASS II, OR CLASS III.

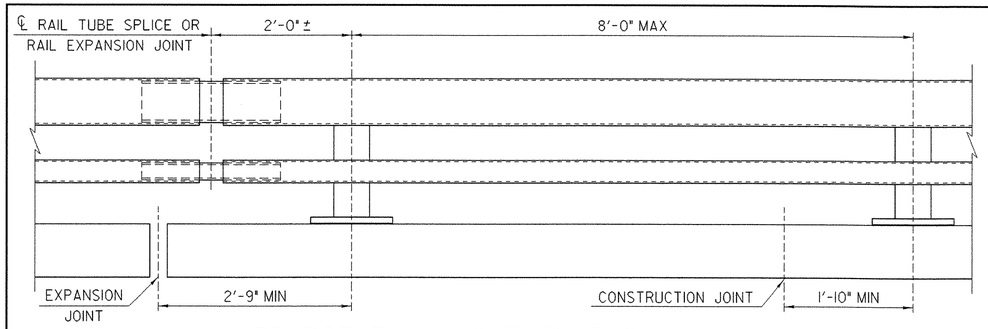
CONCRETE SUBSTUCTURE REPAIR DETAIL

NOT TO SCALE

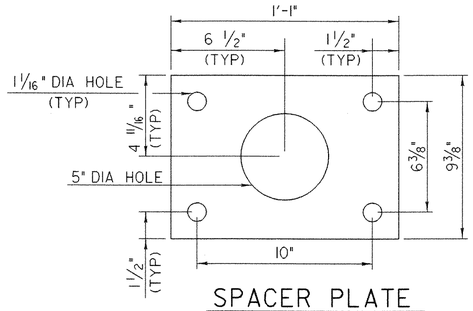
DATE: #DATE# FILENAME: #FILE#

STATE OF VERMONT
AGENCY OF TRANSPORTATION

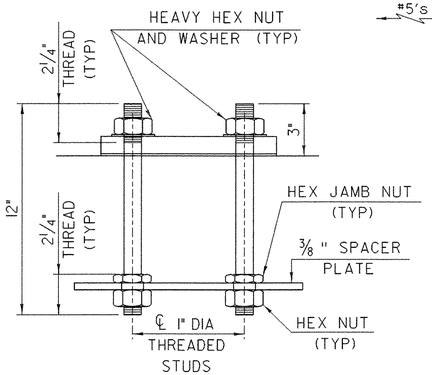
Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
CONCRETE REPAIR NOTES AND DETAILS	
Designed By J HOWE	Drawn By P.Donovan
Checked By R HEBERT Date 6/21/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC316RNI.DGN
Bridge Sheet No.	Sheet 31 of 45



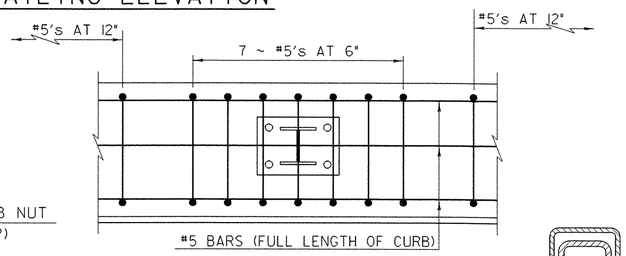
BRIDGE RAILING ELEVATION



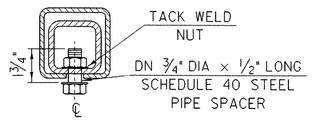
SPACER PLATE

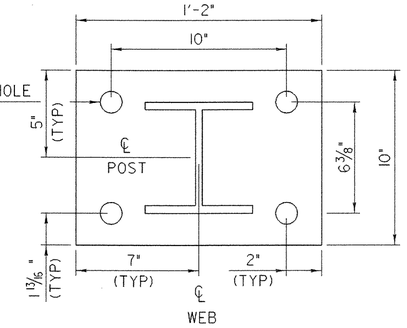


RAIL POST ANCHORAGE

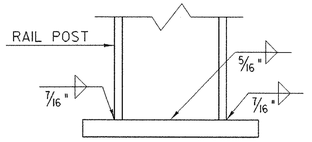


CURB REINFORCING PLAN





POST AND BASE PLATE



BASE WELD DETAIL

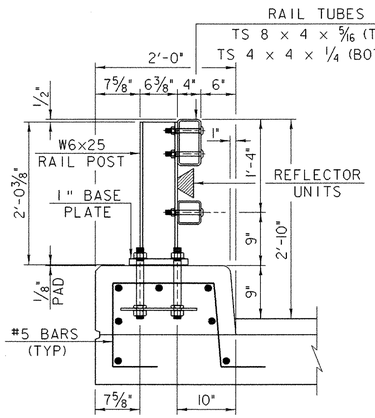
5⅝" DIA TAPPED HOLE IN SPLICE TUBE AND 1⅛" x 'C' SLOT IN RAIL TUBE FOR ⅝" DIA BOLT AND PLAIN HARDENED WASHER

EXPANSION JOINT SECTION

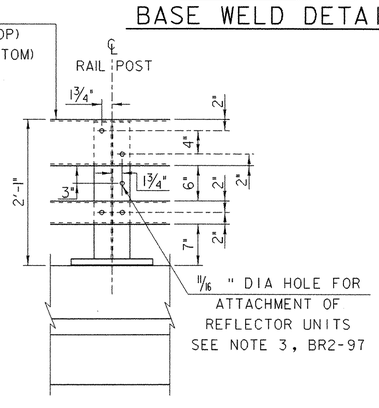
FOR DETAILS NOT SHOWN, SEE "RAIL TUBE SPLICE SECTION."

SPLICE TABLE					
T	A	B	C	L	X
N/A	4"	2"	--	20"	¾"
EXPANSION JOINT TABLE					
<4"	4"	2"	2½"	20"	2½"
>4" <6½"	5½"	2⅜"	3½"	23¾"	4"
>6½" <9"	6½"	3⅜"	9"*	27¾"	5"
>9" <13"	8½"	4⅜"	11"*	33¾"	7"

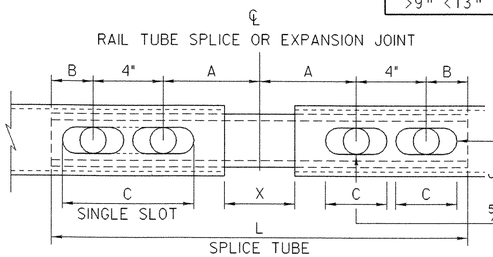
T = TOTAL MOVEMENT BETWEEN BRIDGE EXPANSION JOINTS. SEE NOTE 6.
* = SINGLE SLOT



TYPICAL SECTION

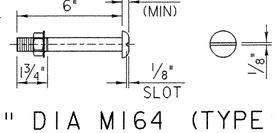


ELEVATION



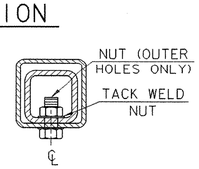
RAIL TUBE SPLICE AND RAIL EXPANSION JOINT DETAIL

(BOTTOM VIEW)

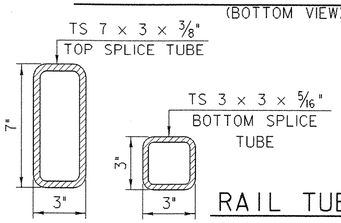


¾" DIA M164 (TYPE I) ROUND HEAD BOLT

(WITH WASHER AND PREVAILING TORQUE TYPE LOCK NUT)
(SEE NOTE #9)
ONLY FULL DIAMETER BODY BOLTS WILL BE ALLOWED.



⅝" DIA TAPPED HOLE IN SPLICE TUBE & ¾" DIA HOLE IN RAIL TUBE FOR ⅝" DIA BOLT & PLAIN HARDENED WASHER



RAIL TUBE SPLICE SECTION

NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE PROVISIONS OF SECTION 525, "RAILINGS OF THE STANDARD SPECIFICATION FOR CONSTRUCTION."
2. TUBING AND POSTS SHALL MEET THE REQUIREMENTS OF SECTION 732, "RAILING MATERIALS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION" EXCEPT THE DROP-WEIGHT TEAR TEST IN SECTION 732 SHALL NOT APPLY TO THE STRUCTURAL TUBING IN THIS STANDARD.
3. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 1/16" RADIUS AND BE FREE OF BURRS.
4. RAIL POSTS SHALL BE SET NORMAL TO GRADE.
5. SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO (2) RAIL POSTS AND PREFERABLY TO AT LEAST FOUR (4) POSTS.
6. RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING A SUPERSTRUCTURE EXPANSION JOINT. EXPANSION JOINT WIDTH SHALL BE "X" AT 45°F AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
7. ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111, EXCEPT THAT HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M232.
8. RAIL POSTS ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
9. RAIL TUBES SHALL BE ATTACHED USING ¾" FULL DIAMETER BODY AASHTO M164 (TYPE I) ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE TUBE. HOLES IN POSTS SHALL BE 1/16" LARGER THAN THE BOLT SIZE.
10. HOLES IN RAILS FOR RAIL TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.
11. IF THERE IS A CONFLICT BETWEEN THESE STANDARD DETAILS AND THE DESIGN, THE REQUIREMENTS OF THE DESIGN DRAWINGS SHALL BE FOLLOWED.
12. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.
13. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH THE PROVISION OF 506.04, SHOP DRAWINGS. ALL WELDING SHALL CONFORM WITH SECTION 506.10.
14. RAIL POSTS AND BASE PLATES SHALL BE TESTED FOR IMPACT PROPERTIES IN ACCORDANCE WITH ASTM A-370 CHARPY IMPACT TESTING USING TYPE A SPECIMEN.

MATERIALS

RAIL TUBES.....ASTM A500, GRADE B OR ASTM A501
RAIL POSTS AND BASE PLATES.....ASTM A709A709M, GRADE 50
ALL OTHER SHAPES AND PLATES.....ASTM A709/A709M, GRADE 36
ANCHOR STUDS.....ASTM A449
ALL OTHER BOLTS (UNLESS NOTED).....AASHTO M164, TYPE I

NUTS FOR AASHTO M164 (ASTM A325) BOLTS AND FOR ANCHOR STUDS SHALL COMPLY WITH AASHTO M291 (ASTM A563).

WASHERS SHALL COMPLY WITH AASHTO M293 (ASTM F436) SPECIFICATIONS.

⅛" PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.01 OR 731.02.

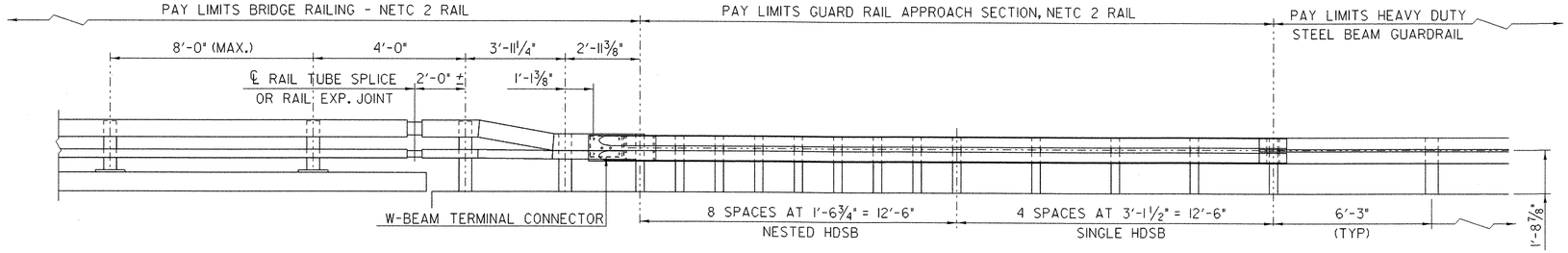
T-Y LIN INTERNATIONAL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

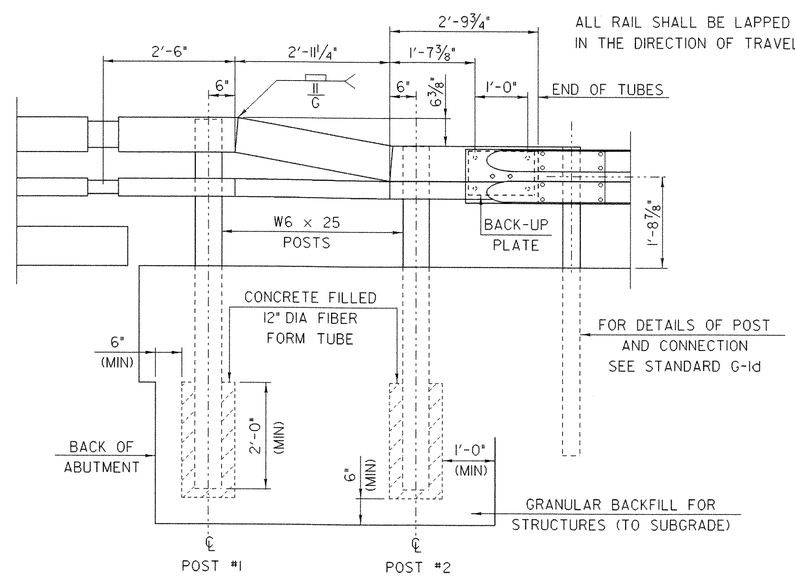
Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.

BRIDGE RAILING - N.E.T.C. 2 RAIL

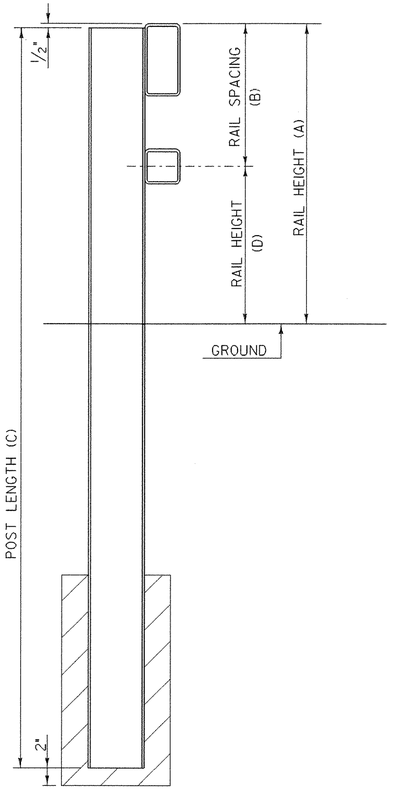
Designed By	Drawn By
Checked By Date	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.C.C. Info.	BRI-97.DGN
Bridge Sheet No.	Sheet 32 of 45



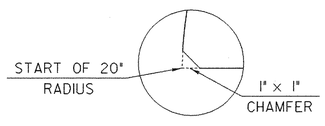
RAILING TRANSITION ELEVATION



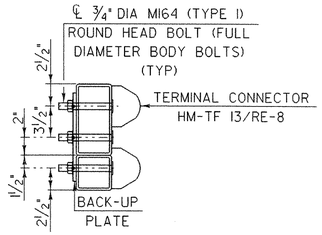
ELEVATION



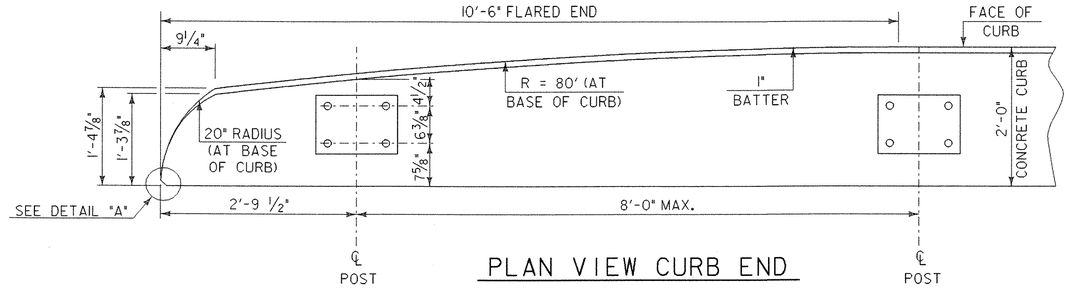
TYPICAL SECTION



DETAIL "A"



SECTION THROUGH GUARD RAIL CONNECTION AT TERMINAL CONNECTOR



PLAN VIEW CURB END

BACK-UP PLATE

DELINEATION DEVICE DETAILS

POST NUMBER	RAIL HEIGHT (A)	RAIL SPACING (B)	POST LENGTH (C)	RAIL HEIGHT (D)
1	2'-10"	1'-4"	7'-0"	1'-6"
2	2'-3 5/8"	10"	6'-5"	1'-5 5/8"

Notes:

1. REFER TO SHEET 32 FOR ADDITIONAL DETAILS, NOTES AND MATERIAL SPECIFICATIONS.
2. TO FACILITATE FIELD FIT - UP OF THE TRANSITION RAILING, POSTS SHALL BE SET LOOSELY INTO FIBER FORM TUBES WHILE TRANSITION PARTS ARE BEING ASSEMBLED. POST HOLES SHALL BE BACKFILLED WITH A CONCRETE MIX APPROVED BY THE ENGINEER. PAYMENT FOR COMPONENTS, INCLUDING BACKUP PLATE AND END TERMINAL CONNECTOR FOR GUARD RAIL, AUGERING, FIBER FORM TUBES AND CONCRETE, AND INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO BRIDGE RAILING, N.E.TC. 2 RAIL.
3. THE REFLECTORIZED ALUMINUM DELINEATION IS TO BE ERECTED EVERY 30' (OR CLOSEST POST) WITH A 5/8" DIAMETER BOLT. DELINEATORS SHALL MEET SPECIFICATION REQUIREMENTS FOR ASTM B209 ALLOY 5052-H32.
4. REFLECTIVE MATERIAL SHALL MEET REQUIREMENTS OF SUBSECTION 750.08 AND SHALL BE OF ENCAPSULATED LENS SILVER OR AMBER. AMBER IS TO BE INSTALLED ON THE DRIVER'S LEFT AND SILVER ON THEIR RIGHT.
5. ON BRIDGES WITH A SIDEWALK, DELINEATORS ARE NOT TO BE INSTALLED ON THE SIDEWALK SIDE OF THE BRIDGE (I.E. DELINEATORS INSTALLED ONLY ON THE CURB SIDE AND ON THE APPROACH ON THE CURB SIDE). PAYMENT SHALL BE INCIDENTAL TO ALL OTHER ITEMS.
6. ALL APPROACH RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW.
7. SEE STANDARD G-1 AND G-1d FOR ADDITIONAL INFORMATION.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No. VT 118	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
GUARDRAIL APPROACH SECTION - N.E.T.C. 2 RAIL	
Designed By J Howe	Drawn By P Donovan
Checked By R Hebert Date 04/16/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC316-BR2-97.DGN
Bridge Sheet No.	Sheet 33 of 45

T-Y LIN INTERNATIONAL

DATE: $DATE$ FILENAME: $FILE$

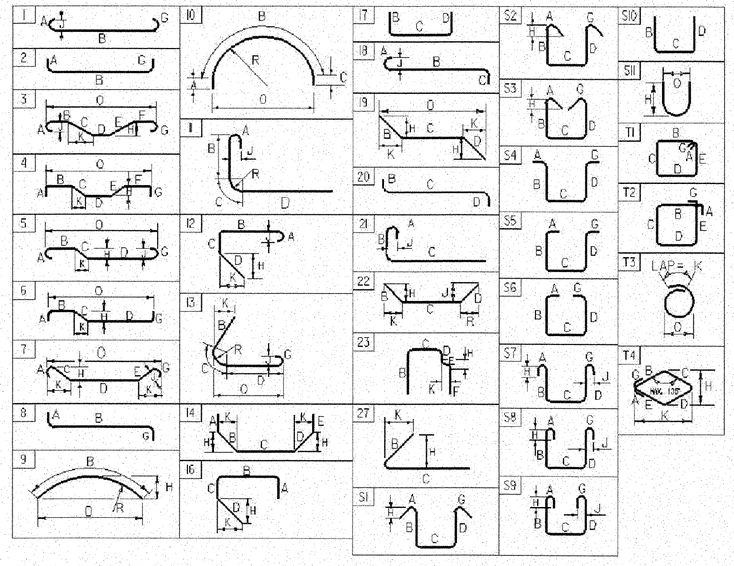
STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	END DETAILS/CURTAIN WALLS																
	10	5	3'- 6"	EA504	STR												
	24	5	3'- 0"	EA505	STR												
✳	21	5	5'- 8"	EA506	STR												
	NOT USED			EA507													
	NOT USED			EA508													
▲	4	5	2'- 3"	EA509	STR												
▲	4	5	2'- 6"	EA510	STR												
	20	5	17'- 3"	EA511	STR												
	NOT USED			EA512													
	8	5	15'- 6"	EA513	STR												
	64	5	4'- 7"	EA501	16	0'- 6"	1'- 6"	0'- 8"	1'- 5"			0'- 6"					
	28	5	11'- 1"	EA502	S5	2'- 2"	3'- 3"	0'- 7"	2'- 11"			2'- 2"					
	28	5	10'- 7"	EA503	S5	2'- 2"	3'- 0"	0'- 7"	2'- 8"			2'- 2"					
	32	8	3'- 9"	EA801	22	---	---	2'- 0"	1'- 9"					1'- 4"	1'- 4"		
	APPROACH SLABS																
✳	81	5	15'- 6"	EAS501	STR												
✳	77	9	20'- 10"	EAS901	1	1'- 3"	19'- 7"					---		1'- 0"			
	DECK SLAB																
	68	5	13'- 0"	ES501	STR												
	750	5	17'- 4"	ES502	STR												
	NOT USED			ES503													
	90	5	40'- 0"	ES505	STR												
✳	91	5	11'- 0"	ES506	STR												
	180	5	36'- 0"	ES507	STR												
	90	5	34'- 0"	ES508	STR												
	90	5	38'- 9"	ES509	STR												
✳	31	5	6'- 4"	ES511	STR												
	NOT USED			ES513													
	NOT USED			ES514													
	NOT USED			ES515													
	16	5	3'- 4"	ES516	STR												
	520	5	6'- 4"	ES504	25	1'- 0"	1'- 5"	1'- 6"	1'- 5"			1'- 0"					
	60	5	4'- 5"	ES510	25	2'- 0"	0'- 10"	1'- 1"	0'- 6"			---					
	750	5	17'- 11"	ES512	1	0'- 7"	17'- 4"					---		0'- 5"			

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M31 (ASTM A615-SI). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E DENOTES EPOXY COATED REINFORCING STEEL.



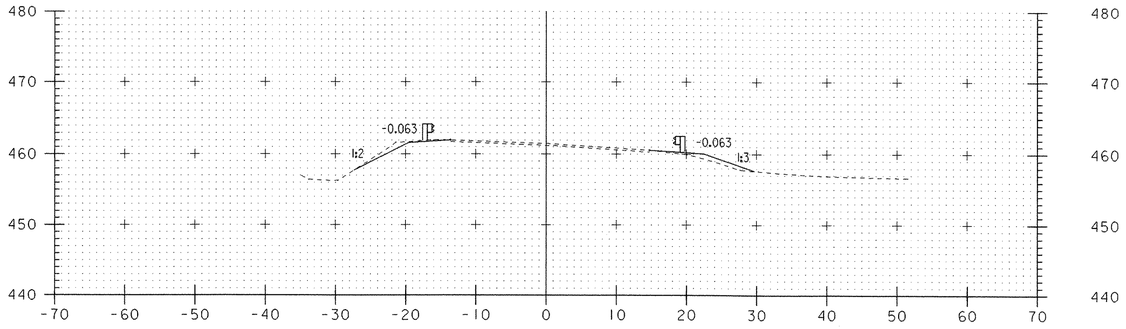
ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION DIAMETER INCHES	AREA INCHES^2	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

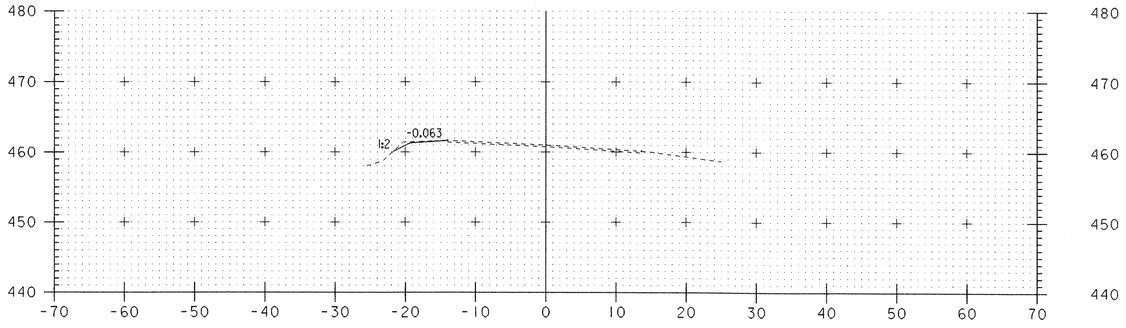
PROJECT NAME: MONTGOMERY
PROJECT NUMBER: BHF 0283 (8)S

FILE NAME: 98c316\Structures\sc316rss.xls
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: J. HOWE
REINFORCING STEEL SCHEDULE SHEET #1

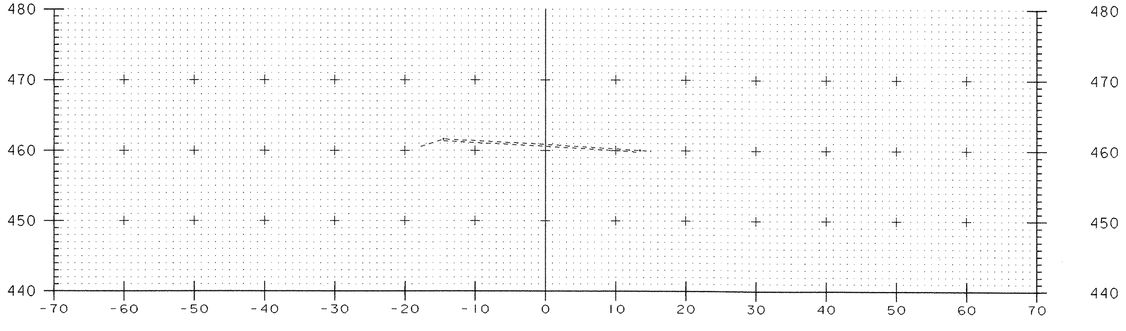
PLOT DATE: 9/12/2005
DRAWN BY: J. DAVIS
CHECKED BY: R. HEBERT
SHEET 34 OF 45



10+50.00



10+00.00



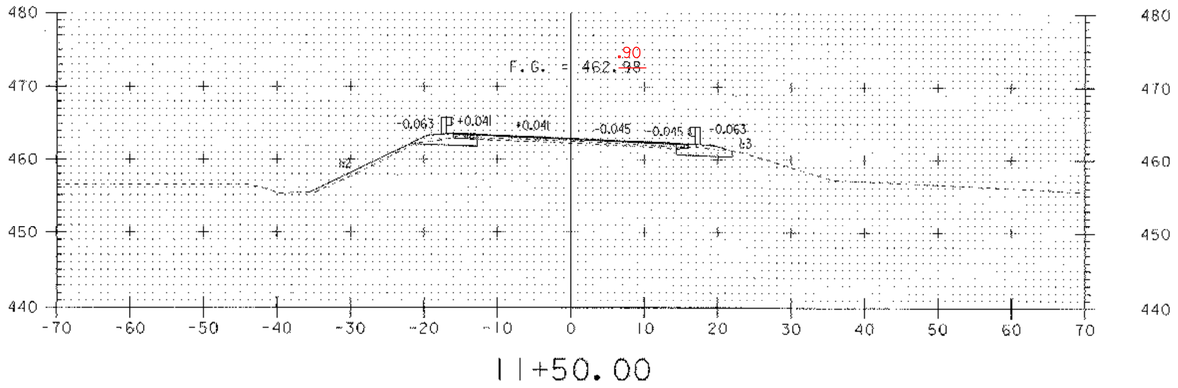
9+84.76
BEGIN APPROACH

STATE OF VERMONT
AGENCY OF TRANSPORTATION

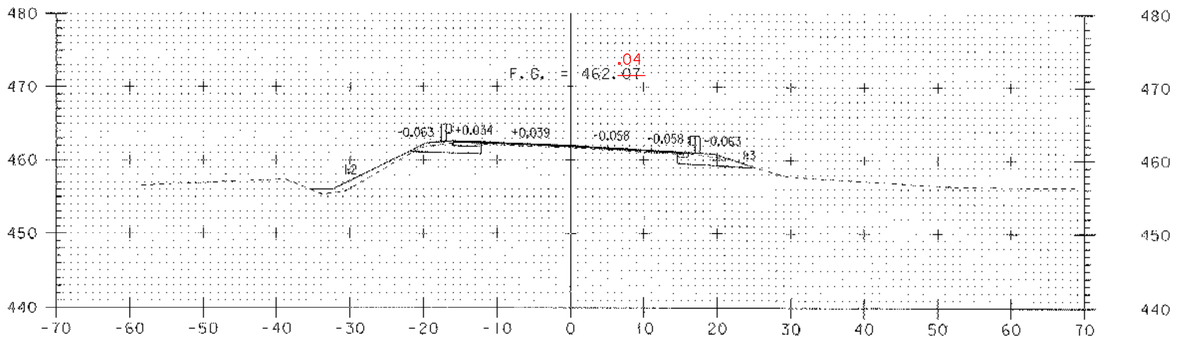
Town Of MONTGOMERY	Bridge No. 21
Highway No.	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
CROSS SECTIONS	
Designed By D Bryant	Drawn By P Donovan
Checked By R Hebert Date 08/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC316XSI.DGN
Bridge Sheet No.	Sheet 35 of 45

TY·LIN INTERNATIONAL

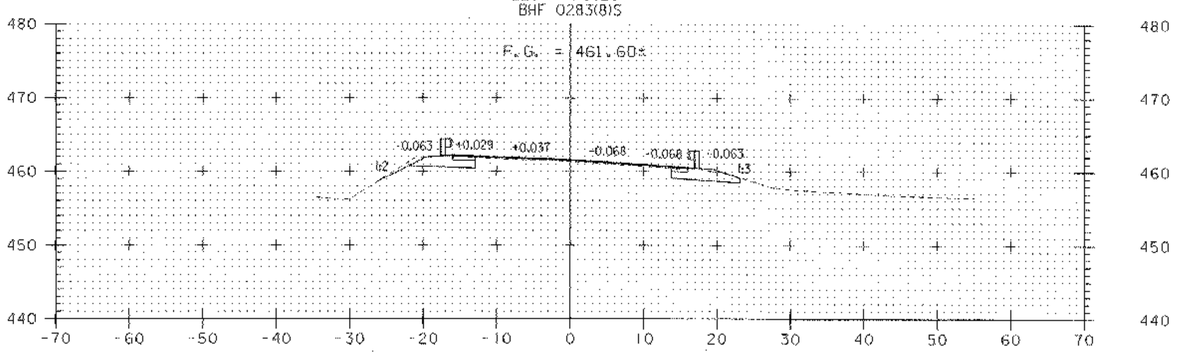
DATE: $DATE$ FILENAME: $FILE$



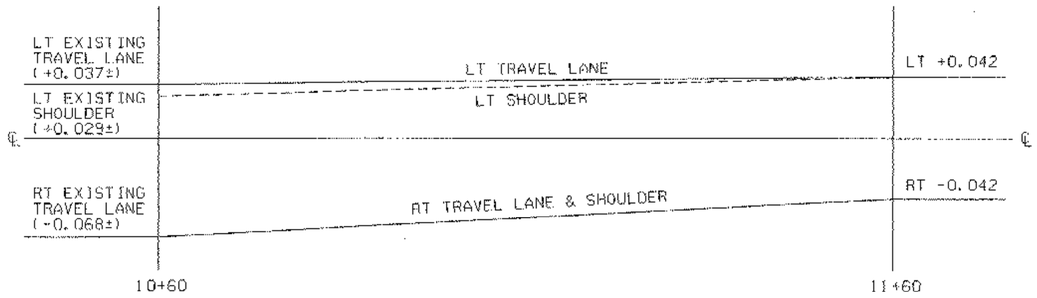
11+50.00



11+00.00
END APPROACH
BEGIN PROJECT
BHF 0283(8)S



10+60.00
BEGIN ROADWAY OVERLAY AND WIDENING
MATCH EXISTING PAVEMENT



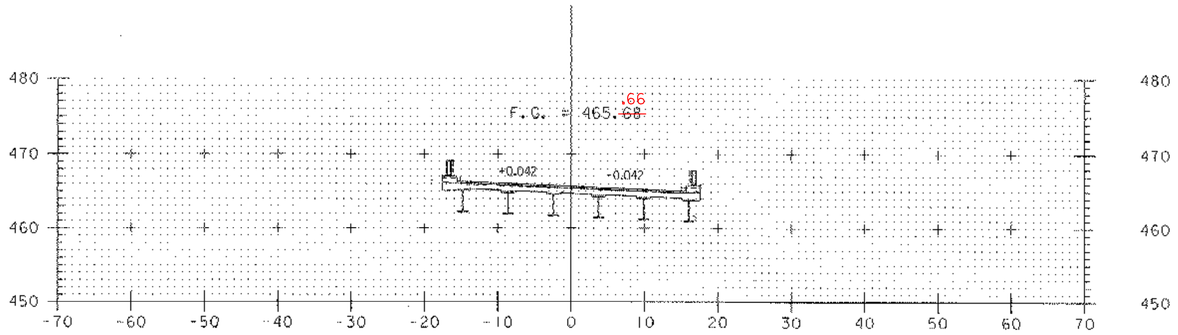
BANKING TRANSITION DETAIL

REVISED 3/13/06

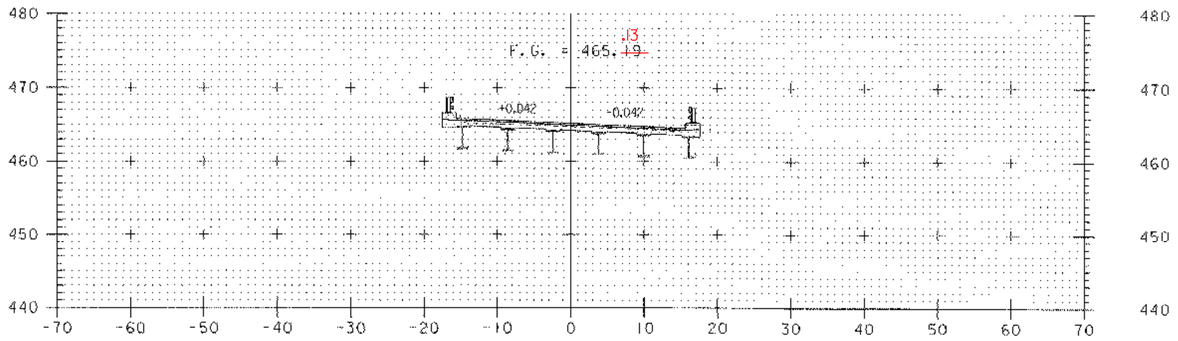
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No.	Log Sta. / Surv. Sta.
VT 118 OVER TROUT RIVER	
CROSS SECTIONS	
Designed By D Bryant	Drawn By P Denaron
Checked By R Hebert — Date 08/31/01	Bridge Design Supervisor R.WHITCOMB — Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
L.G.C. Info.	ZC316XSI.DGN
Bridge Sheet No.	Sheet 36 of 45

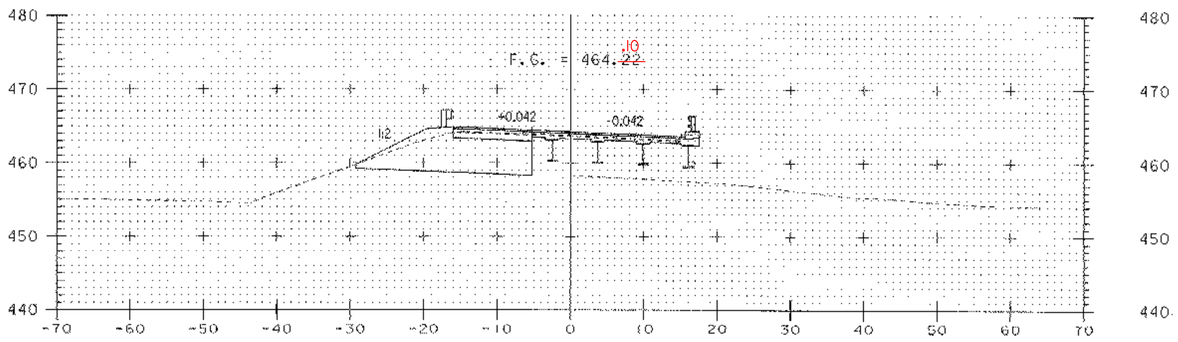
TY-LIN INTERNATIONAL



13+00.00



12+50.00



12+00.00

STA 11+97.91
BEGIN BRIDGE
END ROADWAY
OVERLAY AND
WIDENING

REVISED 3/13/06

TY·LIN INTERNATIONAL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

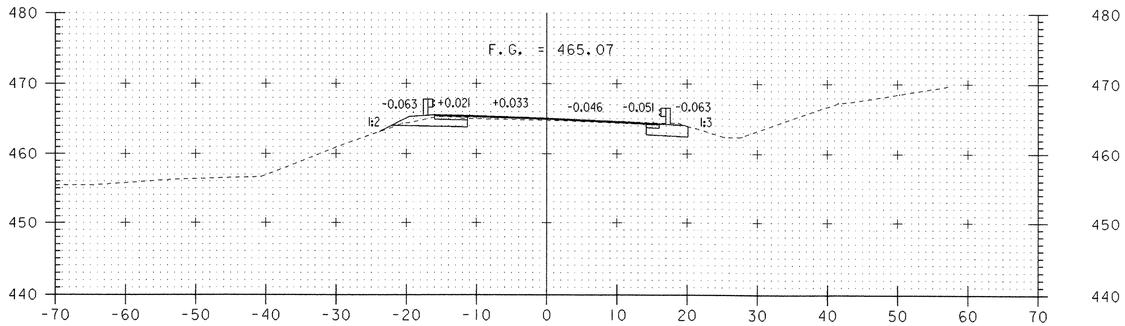
Town Of MONTGOMERY	Bridge No. 21
Highway No.	Leg Sta. / Surv. Sta.

VT 118 OVER TROUT RIVER

CROSS SECTIONS

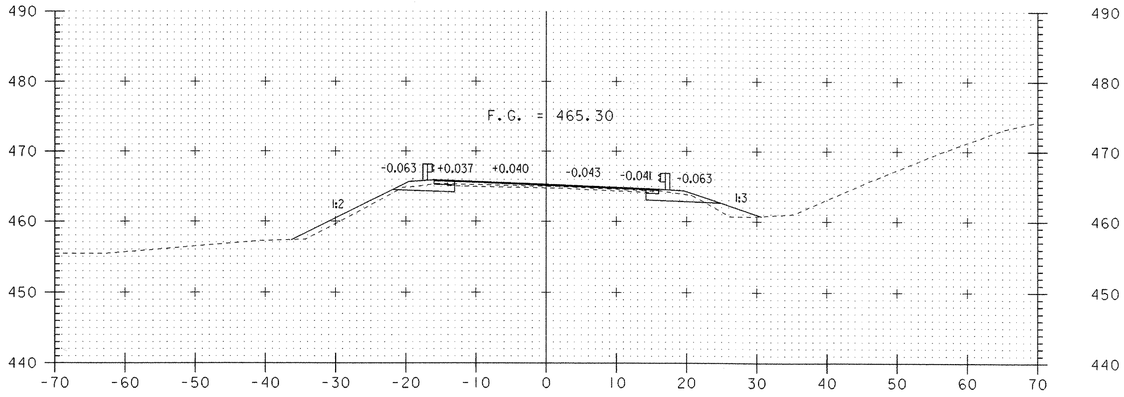
Designed By D Bryant	Drawn By P Donovan
Checked By R Hebert Date 08/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC316XSL.DGN
Bridge Sheet No.	Sheet 37 of 45

FILENAME: #FILE#
DATE: #DATE#



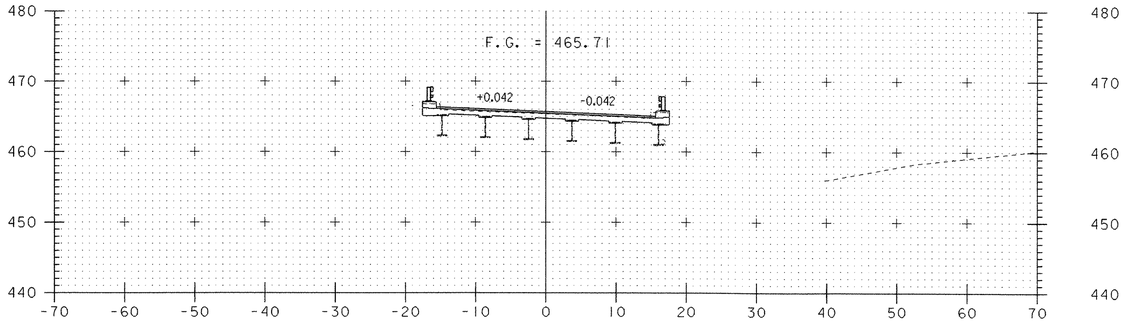
14+50.00

END PROJECT
BHF 0283(8)S
BEGIN APPROACH

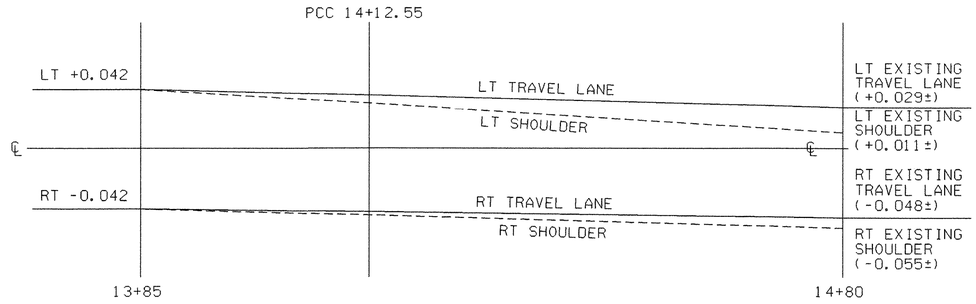


14+00.00

STA. 13+84.99
END BRIDGE
BEGIN ROADWAY
OVERLAY AND
WIDENING



13+50.00



BANKING TRANSITION DETAIL

DATE: $DATE$ FILENAME: $FILE$

T.Y.LIN INTERNATIONAL

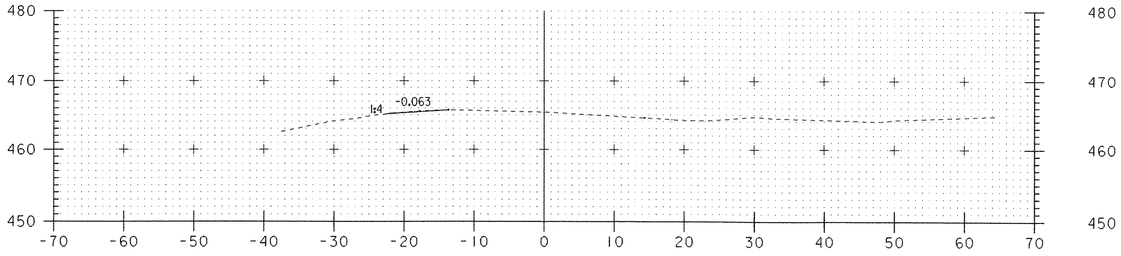
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No.	Log Sta.
	Surv. Sta.

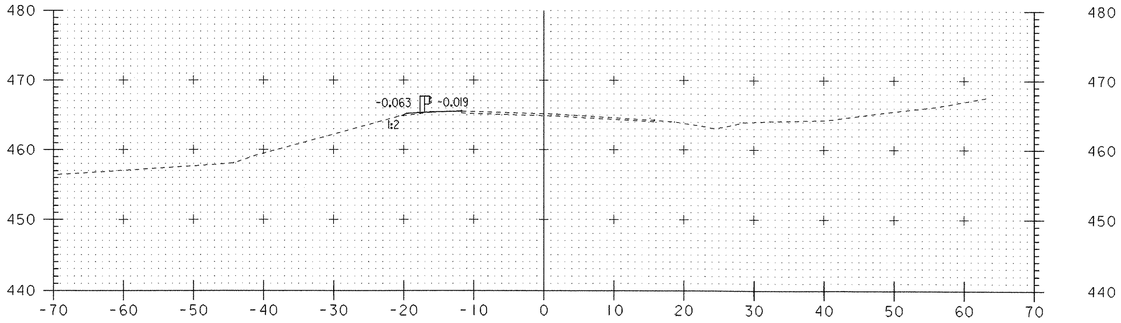
VT 118 OVER TROUT RIVER

CROSS SECTIONS

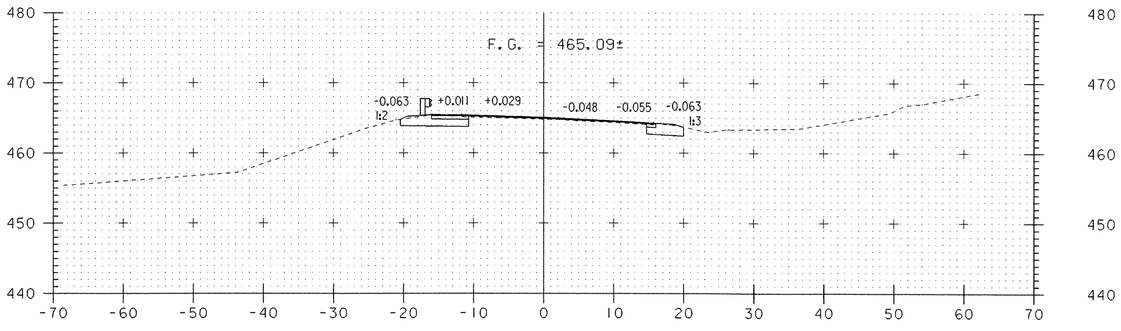
Designed By D Bryant	Drawn By P Donovan
Checked By R Hebert Date 08/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC316XSI.DGN
Bridge Sheet No.	Sheet 38 of 45



15+50.00



15+00.00



14+80.00

END OVERLAY AND WIDENING
MATCH EXISTING PAVEMENT

DATE: $DATE$ FILENAME: $FILE$

T.Y.LIN INTERNATIONAL

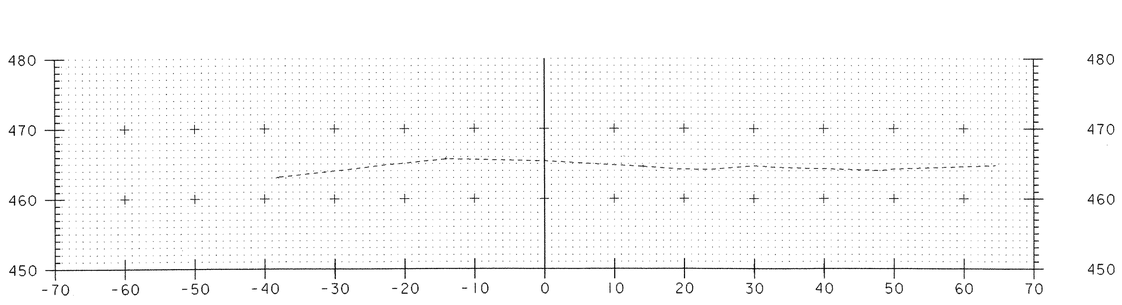
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No.	Log Sta.
	Surv. Sta.

VT 118 OVER TROUT RIVER

CROSS SECTIONS

Designed By D Bryant	Drawn By P Donovan
Checked By R Hebert Date 08/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC316XSI.DGN
Bridge Sheet No.	Sheet 39 of 45



15+60.00

STA. 15+60
END APPROACH

DATE: $DATE$ FILENAME: $FILE$

TY·LIN INTERNATIONAL

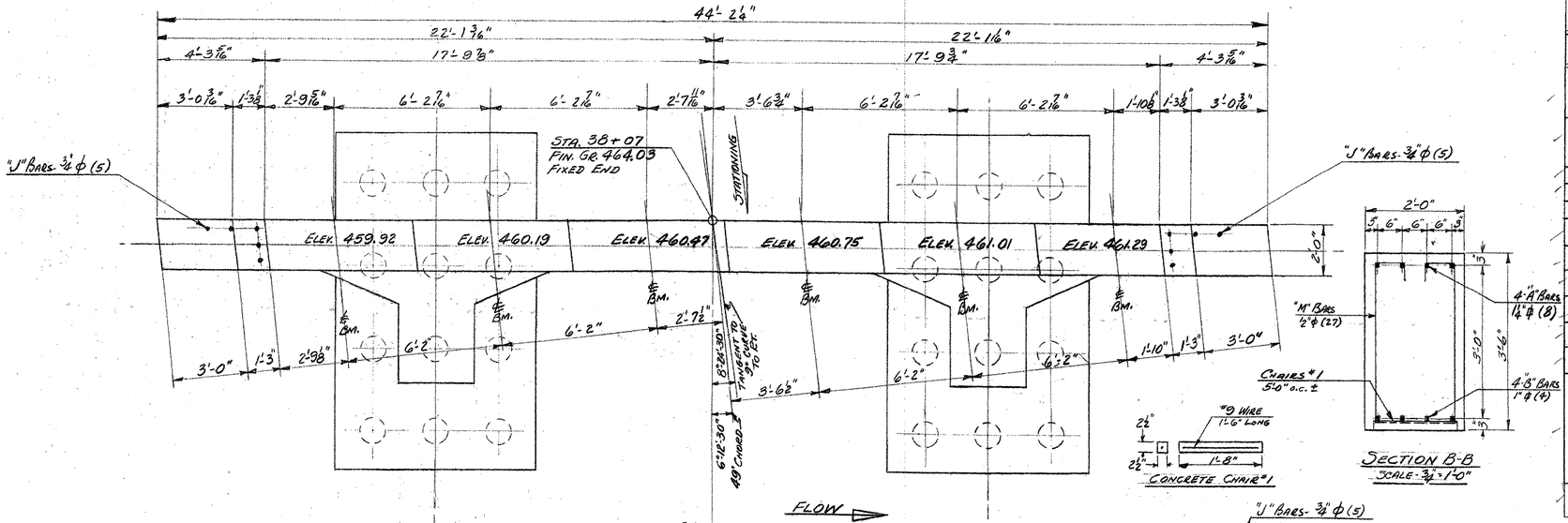
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MONTGOMERY	Bridge No. 21
Highway No.	Log Sta.
	Surv. Sta.

VT 118 OVER TROUT RIVER

CROSS SECTIONS

Designed By D Bryant	Drawn By P Donovan
Checked By R Hebert Date 08/31/01	Bridge Design Supervisor R.WHITCOMB Date
PROJECT MONTGOMERY	PROJECT NO. BHF 0283(8)S
I.G.C. Info.	ZC316XSI.DGN
Bridge Sheet No.	Sheet 40 of 45

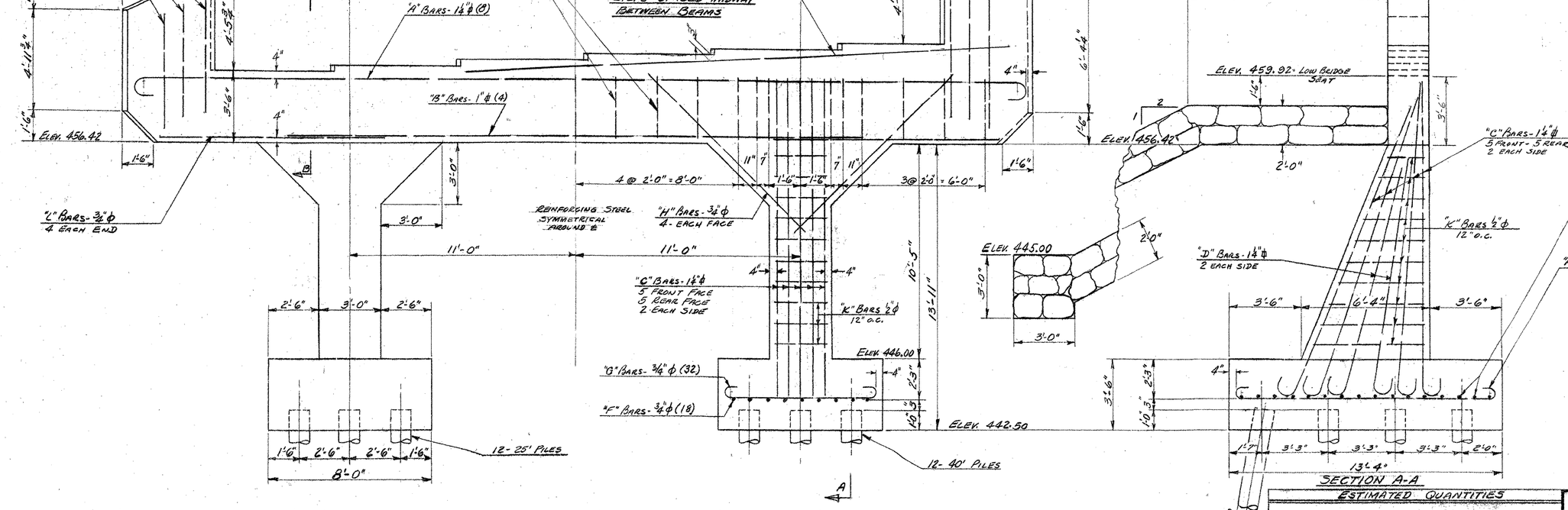


REINFORCING STEEL

BAR	SIZE	NO. REQ'D.	TOTAL LENGTH	DETAIL
A	1¼"φ	8	25'-9"	5R, 5", 24'-0"
B	1"φ	4	28'-0"	STRAIGHT
C	1¼φ	28	17'-1"	
D	1¼φ	8	13'-0"	5R, 5", 15'-4" FOR "C", 11'-3" FOR "D"
F	¾"φ	18	14'-5"	3R, 4", 12'-2" FOR "F", 6'-10" FOR "G", 4", 3"R
G	¾"φ	32	9'-1"	
H	¾"φ	16	11'-0"	STRAIGHT
J	¾"φ	10	6'-6"	STRAIGHT
K	½"φ	10	26'-0"	STRAIGHT - CUT & BEND IN FIELD
L	¾"φ	8	11'-0"	STRAIGHT
M	½"φ	27	9'-11"	1'-7¾", 4", 3", 3'-1⅜"
N	¾"φ	4	26'-6"	STRAIGHT

GENERAL NOTES

ALL REINFORCING STEEL TO BE INTERMEDIATE GRADE. ALL REINFORCING STEEL DIMENSIONED TO ℄ OF BARS. ALL CONCRETE TO BE CLASS B. (MODIFIED)
CHAMFER ALL EXPOSED EDGES ¾".



NOTE: ALL PILING TO BE UNTREATED TIMBER PILING- ITEM 502-A, DRIVEN TO 20 TON BEARING CAPACITY
12 PILES ESTIMATED TO BE 25' LONG, MINIMUM DIAMETER 8" FAST FROM BUTT, UNDER BARK TO BE 12"
12 PILES ESTIMATED TO BE 40' LONG, MINIMUM DIAMETER 8" FAST FROM BUTT, UNDER BARK TO BE 13"
CUT-OFF ALLOWANCE FOR UNTREATED TIMBER PILING, ITEM 502-A: 3 (DIA) = 72 LIN. FT.
PILES SHALL BE SHOD WITH STEEL SHOES AS SHOWN ON STD. DWG. 3820-DETAIL "N"
COST OF STEEL SHOES SHALL BE INCLUDED IN BID PRICE FOR UNTREATED TIMBER PILING.

REFERENCE SHEET ONLY

ESTIMATED QUANTITIES

STRUCTURE EXCAVATION (MODIFIED)	134	C.Y.
CONCRETE CLASS B (MODIFIED)	55	C.Y.
REINFORCING STEEL	6360	LBS.
UNTREATED TIMBER PILING	780	LIN. FT.
RIPRAP FOR BANK PROTECTION	321	C.Y.
CUT-OFFS, UNTREATED TIMBER PILING	72	L.F.

MONTGOMERY
BHF 0283(8)S
VT RTE. 118 OVER THE TROUT RIVER

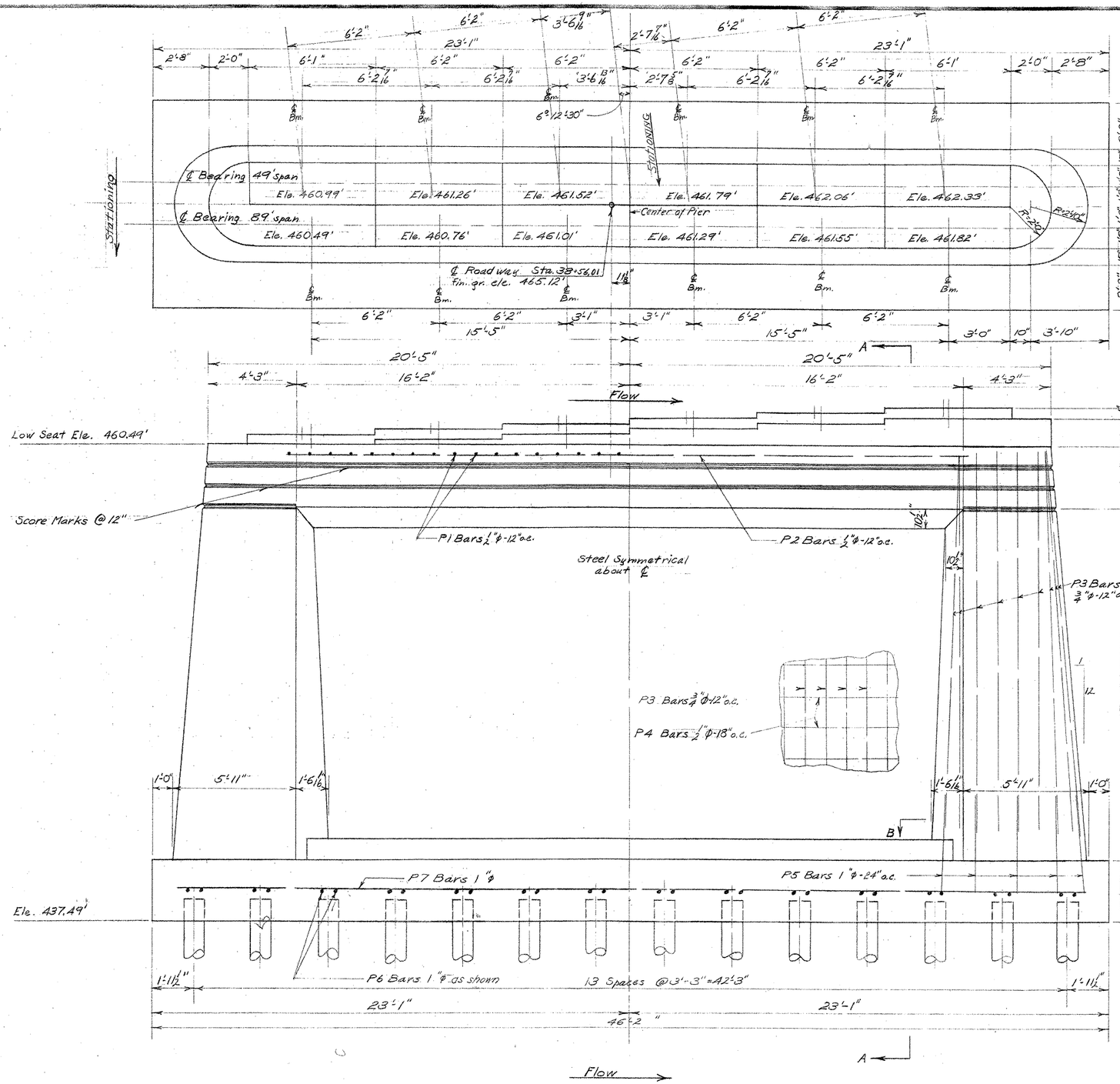
SHEET 41 OF 45

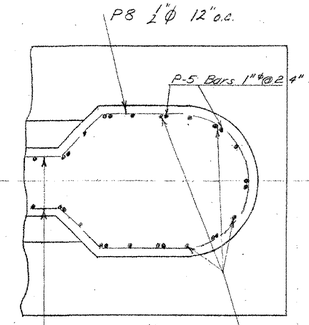
FOR INFORMATION PURPOSES ONLY

MONTGOMERY
ABUTMENT NO. 1
BRIDGE NO. 19

SCALE ¾" = 1'-0" EXCEPT AS NOTED

PRINTED BY EFFELSBURG-WOOD CO., BOSTON, MASS., RE-ORDER NO. B-4034

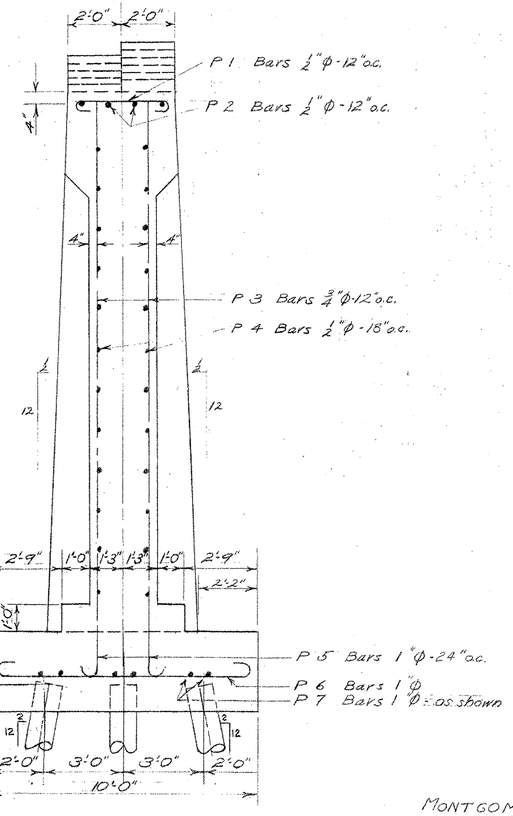




REINFORCING STEEL

Bar	Size	No. Rods	Length	Detail
P1	1/2"φ	34	4'-9"	4" R-2" 3'-0"
P2	1/2"φ	8	17'-6"	Straight
P3	3/4"φ	92	18'-0"	Straight
P4	1/2"φ	48	17'-1"	Straight
P5	1"φ	46	7'6"	4" R=4" 6'-1"
P6	1"φ	28	11'-6"	4" R=4" 8'-9"
P7	1"φ	12	24'-7"	4" R-47 1/2" 23'-2"
P8	1/2"φ	36	Ave. 16'-6"	Straight, bent in field

For General Notes See Details Abut. #1



Section A-A

MONTGOMERY
PIER No. 1
BRIDGE No. 19
Scale 3/8" = 1'-0"

Note: All Piling to be Untreated Timber Piling, Item 502-A, Driven to 20 Ton Bearing Capacity
42 Piles Estimated to be 35' long, Minimum Diameter 8" from Butt to be 13" Under Bark.
Piles shall be shod with Steel Shoes as shown on Std. Dwg. SB-20 Det. "N". Cost of Steel Shoes shall be included in bid price for Untreated Timber Piling.
Cut-off Allowance for Untreated Timber Piling, Item 502-A, = 3x42 = 126 Lin. ft.

REINFORCING STEEL REVISED
Estimated Quantities

Structure Excav. (Mod.)	160 C.Y.
Concrete, Class C (Mod.)	160 C.Y.
Reinf. Steel	6202 Lbs.
Untd. Timber Piling	1470 Lin. Ft.
Cut-offs Untd. Tim. Piling	126 Lin. Ft.

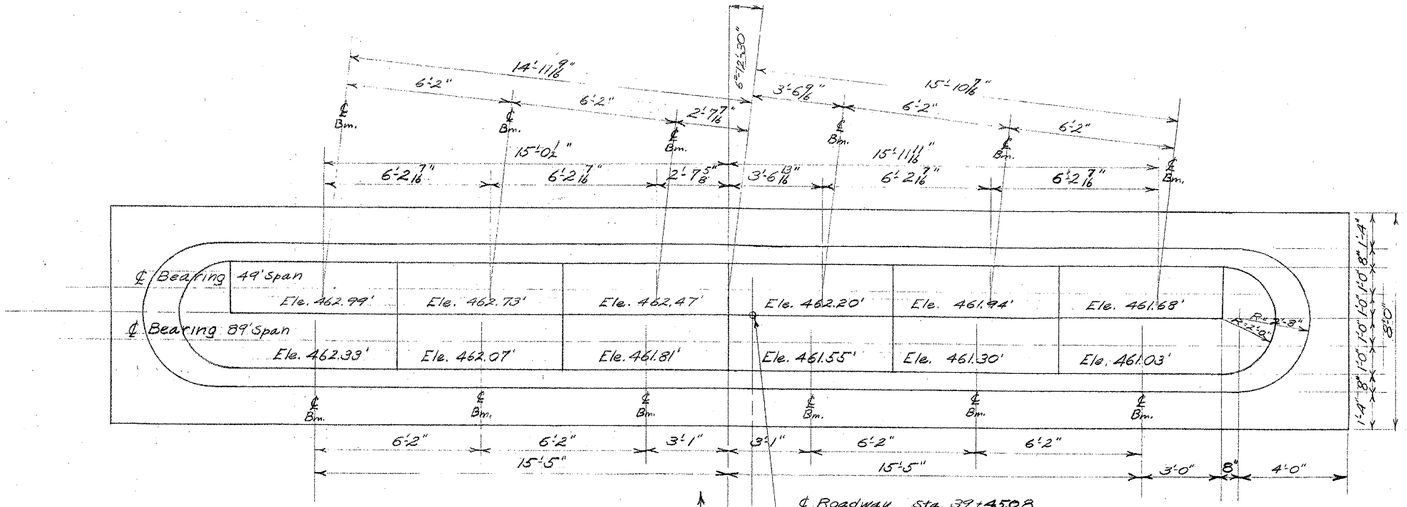
REFERENCE SHEET ONLY

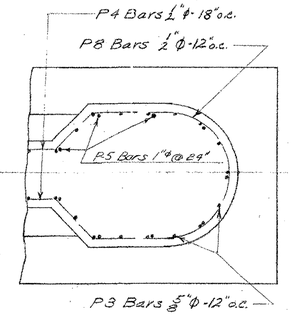
MONTGOMERY
BHF 0283(8)S
VT RTE. 118 OVER THE TROUT RIVER

SHEET 42 OF 45

FOR INFORMATION PURPOSES ONLY

PRINTED BY SPAULDING-MOSS CO., BOSTON, MASS. RE-ORDER NO. 1-10324



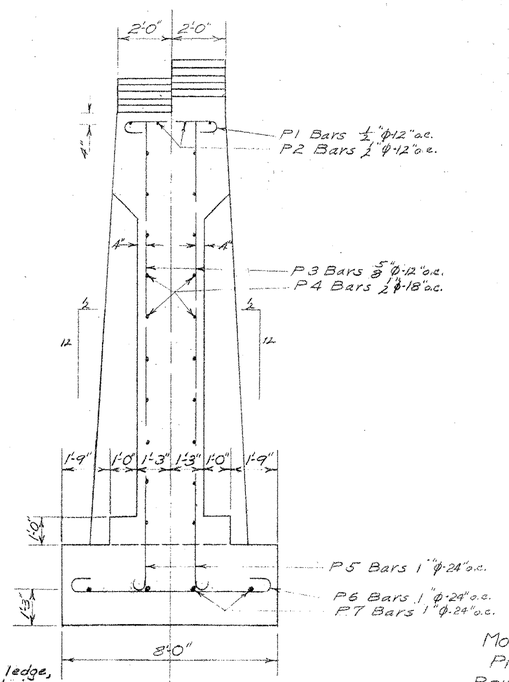


Section B-B

Reinforcing Steel

Bar	Size	No.	Length	Detail
P1	1/2"ϕ	34	4'-9"	4" R=2" 3'-0"
P2	1/2"ϕ	8	17'-6"	Straight
P3	5/8"ϕ	92	15'-0"	Straight
P4	1/2"ϕ	40	17'-1"	Straight
P5	1"ϕ	46	6'-3"	4" R=4" 4'-10"
P6	1"ϕ	23	9'-6"	4" R=4" 6'-8"
P7	1"ϕ	8	24'-7"	1'-9" R=4" 23'-2"
P8	1/2"ϕ	30	16'-5 1/2"	Straight, bent in field

For General Notes See Details Abut. #1



Section A-A

Pier to be founded on ledge, footing may be stepped in field under the direction of the Engineer. Steps to be made level.

MONTGOMERY
PIER NO. 2
BRIDGE NO. 19
Scale 3/8"=1'

Reinforcing Steel Revised

Estimated Quantities

Structure Excav. (Mod.)	54 C.Y.
Concrete Class C (Mod.)	130 C.Y.
Rein. Steel	4,309 Lbs

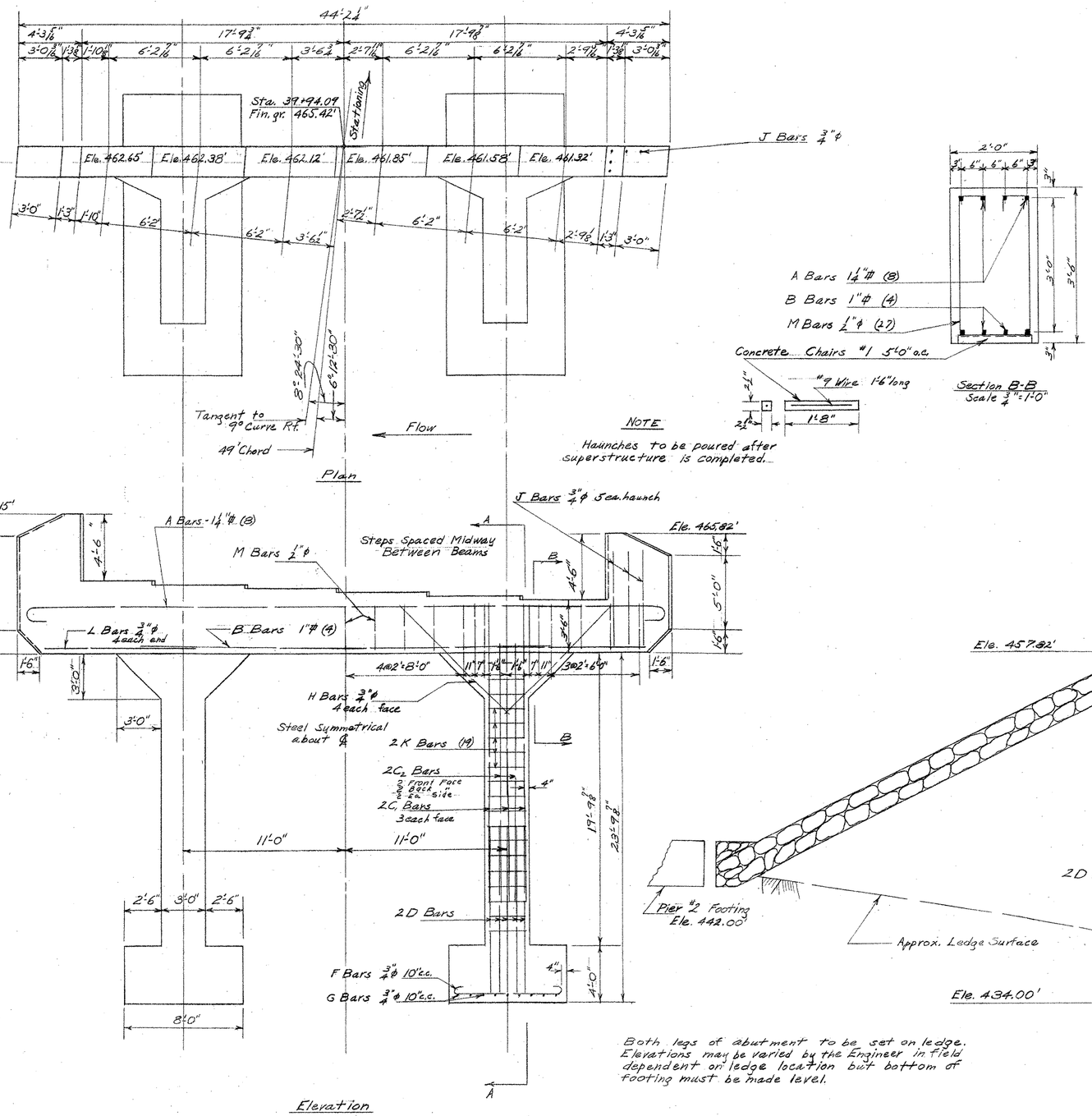
REFERENCE SHEET ONLY

MONTGOMERY
BHF 0283(8)S
VT RTE. 118 OVER THE TROUT RIVER

SHEET 43 OF 45

FOR INFORMATION PURPOSES ONLY

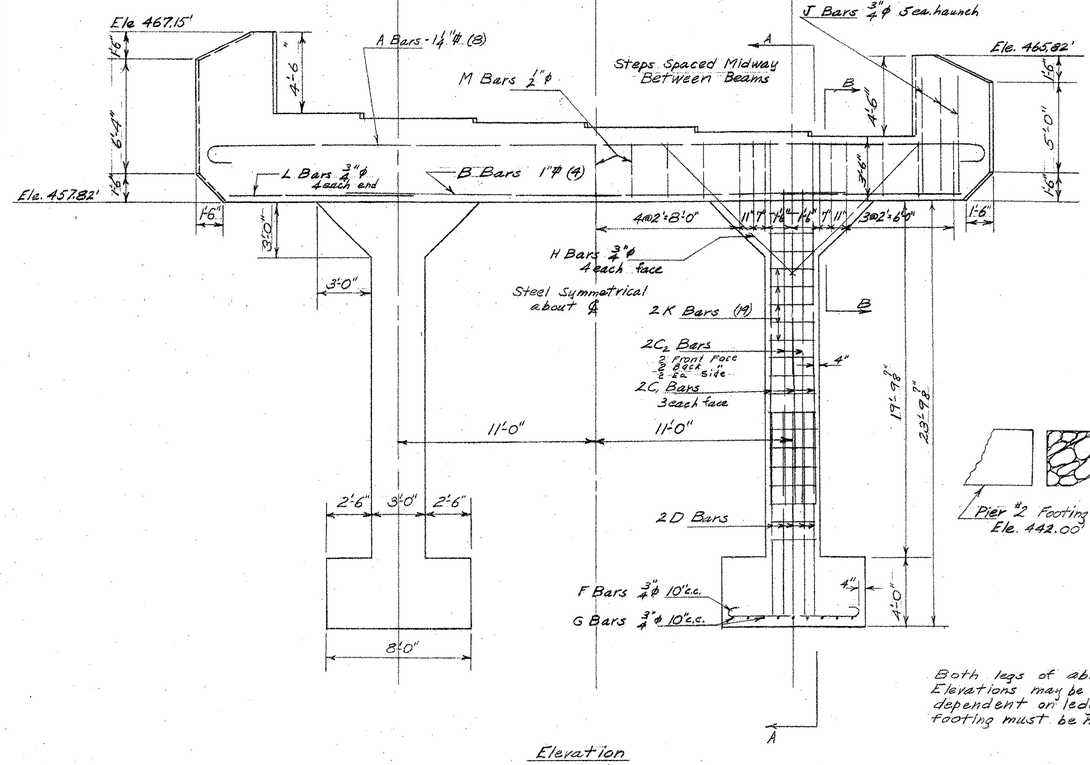
PRINTED BY SPAULDING-MOSS CO., BOSTON, MASS. RE-ORDER NO. 6-6934



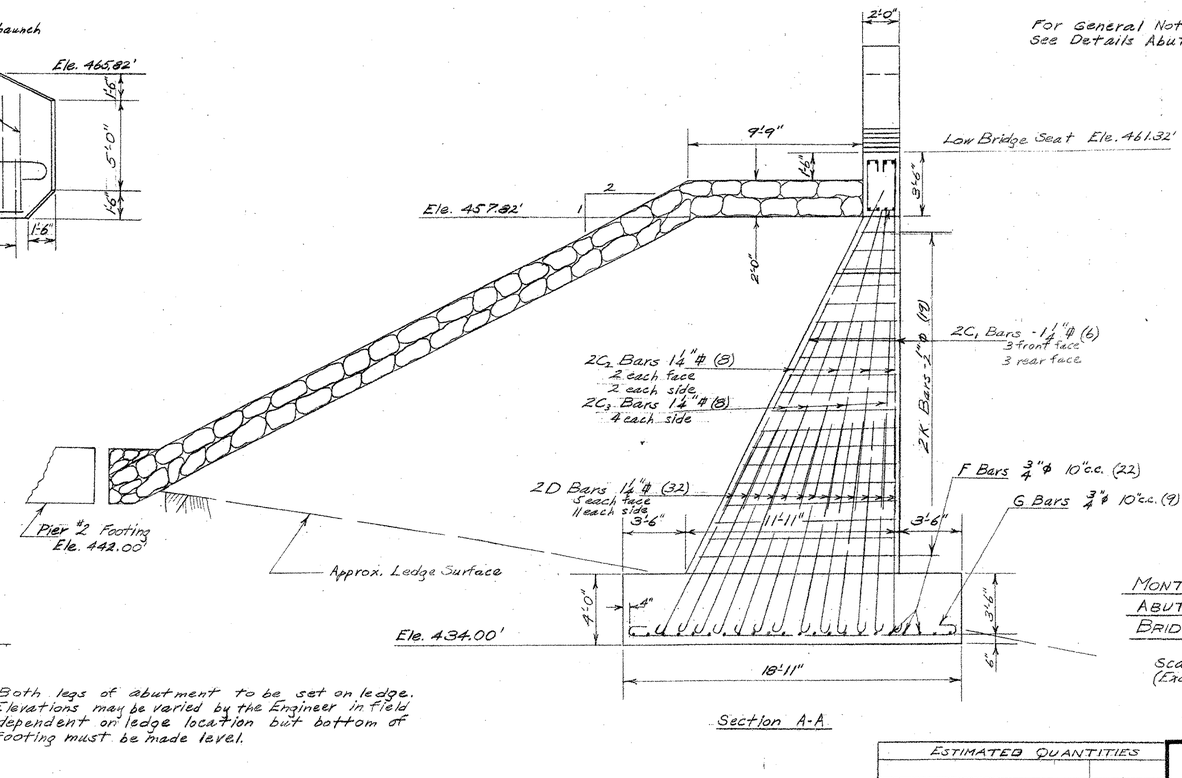
NOTE

Haunches to be poured after superstructure is completed.

REINFORCING STEEL				
Bar	Size	No. Bars	Length	Detail
A	1¼"ϕ	8	25'-9"	5" R=5" 24'-0"
B	1"ϕ	4	28'-0"	Straight
M	½"ϕ	27	9'-11"	1'-9⅞" 4" 3'-1⅝"
2C₁	1¼"#	12	20'-3"	Straight
2C₂	1¼"#	16	17'-9"	Straight
2C₃	1¼"#	16	11'-9"	Straight
2D	1¼"#	64	13'-3"	5" R=5" 11'-6"
2F	¾"ϕ	44	9'-1"	4" R=3" 6'-10" 4"
2G	¾"ϕ	18	20'-0"	4" R=3" 17'-9" 4"
H	¾"ϕ	16	11'-0"	Straight
J	¾"ϕ	10	6'-6"	Straight
2K	½"ϕ	38	Arc. 20'-0"	Straight - Cut & bent in field
L	¾"ϕ	8	11'-0"	Straight



Both legs of abutment to be set on ledge. Elevations may be varied by the Engineer in field dependent on ledge location but bottom of footing must be made level.



For General Notes See Details Abut. #1

MONTGOMERY
ABUTMENT No. 2
BRIDGE No. 19

Scale ¼"=1'-0" (Except as noted)

ESTIMATED QUANTITIES	
Structure Excav. (Mod.)	395 C.Y.
Concrete Class B (Mod.)	94 C.Y.
Reinforcing Steel	12104 lbs.
Riprap	300 C.Y.

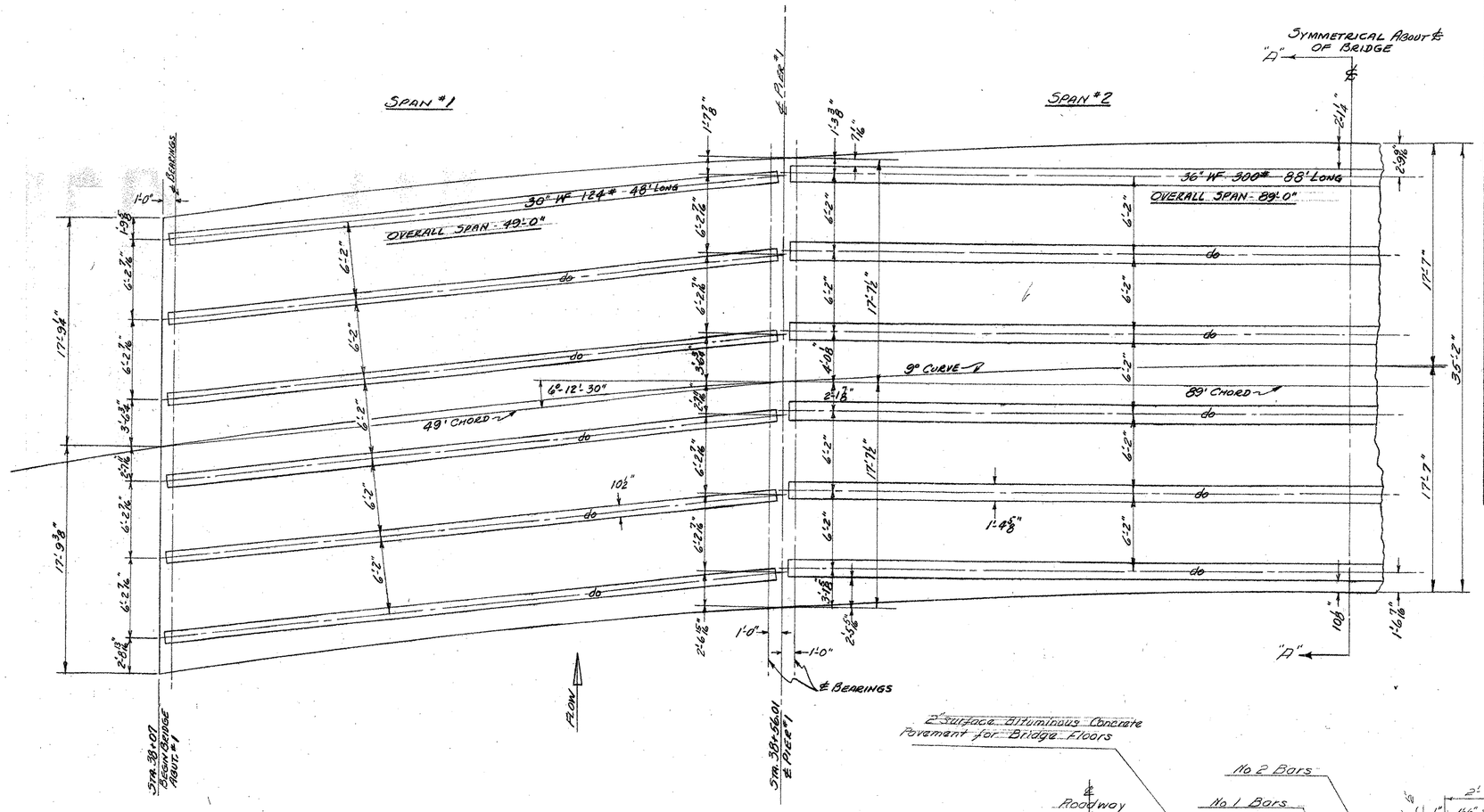
REFERENCE SHEET ONLY

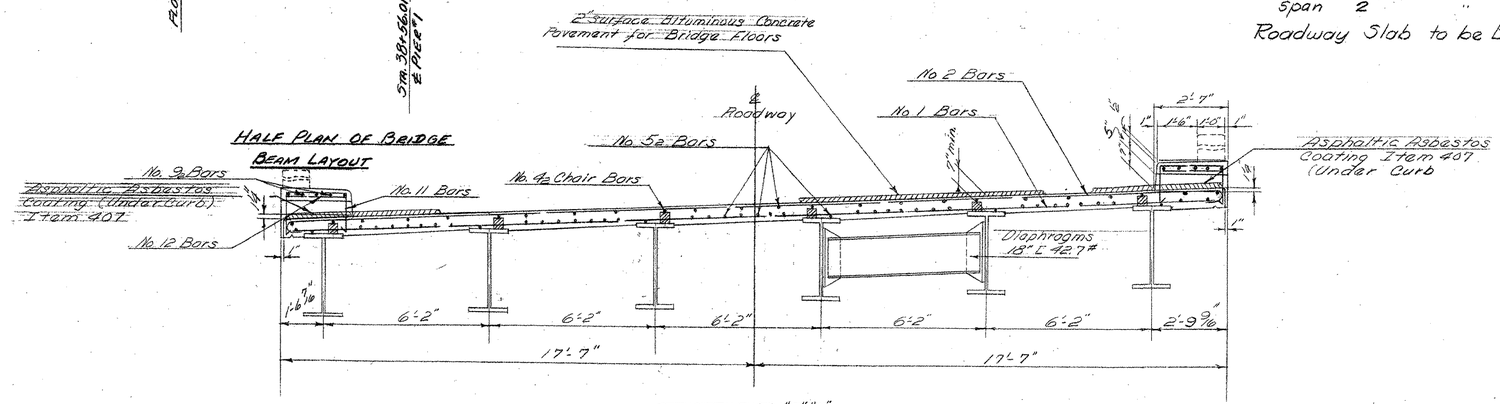
MONTGOMERY
BHF 0283(8)S
VT RTE. 118 OVER THE TROUT RIVER

SHEET 44 OF 45

FOR INFORMATION PURPOSES ONLY

PRINTED BY SPAULDING-MOSS CO., BOSTON, MASS., RE-ORDER NO. 54034





HALF PLAN OF BRIDGE BEAM LAYOUT

SECTION "A"-"A"

REINFORCING STEEL

REFER TO STD. 518 No. 30 (H-20)-1

BAR	SIZE	No. OF RODS SPAN #1	SPAN #2	SPAN #3	LENGTH	DETAIL
1	5/8"ϕ	107	195	107	34'-6"	STRAIGHT
2	5/8"ϕ	107	195	107	36'-1"	R = 2½", 4½", 34'-1", 4½"
4	3/4"ϕ	12	NONE	12	25'-8"	STRAIGHT
4a	3/4"ϕ	NONE	24	NONE	24'-3"	STRAIGHT
5	1/2"ϕ	128	NONE	128	25'-3"	STRAIGHT
5a	1/2"ϕ	NONE	256	NONE	23'-8"	STRAIGHT
6A	1/2"ϕ	29	NONE	29	5'-7"	8", 3", 2'-2½" (6A), 1'-7½" (6P)
6P	1/2"ϕ	29	58	29	4'-5"	
9	1/2"ϕ	20	NONE	20	25'-3"	STRAIGHT
9a	1/2"ϕ	NONE	40	NONE	23'-8"	STRAIGHT
10	5/8"ϕ	12	12	12	34'-7"	STRAIGHT
11	1/2"ϕ	44	76	44	5'-2"	2'-2", 3½", 1'-3"
12	1/2"ϕ	40	72	40	2'-3"	STRAIGHT

THE REINFORCING STEEL SCHEDULE ABOVE IS THE STD. 518 30 (H-20)-1 SCHEDULE MODIFIED BY ELIMINATING No. 3 BARS AND SPACING #1 ϕ #2 BARS @ 5½" c/c.
LONGITUDINAL BARS IN SPANS 1 & 3 DESIGNATED AS #4 #5 & #9
LONGITUDINAL BARS IN SPAN 2 ARE DESIGNATED AS #4a #5a & 9a
Modify SIB 30(H20)-1 to use 1" Cork Expansion Material Between Spans.

FOR ESTIMATED QUANTITIES IN BRIDGE RAILING SEE STD DWG. 58-55-1

Beams Shall be rolled to a true circular camber with middle ordinates as follows:
Spans 1 & 3 Midd. Ordinate 1"
Span 2 " " 3¾"
Roadway Slab to be Banked ½" Per Foot.

MONTGOMERY
BRIDGE #19
BEAM LAYOUT & REINFORCING STEEL
IN SUPERSTRUCTURE

TO BE USED WITH STANDARD 518 No. 30 (H-20)-1

ESTIMATED QUANTITIES

CONCRETE CLASS B (MOD)	198 C.Y.
REINFORCING STEEL	44290 LBS.
STRUCTURAL STEEL	247090 LBS.
BITUMINOUS CONCRETE PAVEMENT FOR BRIDGE FLOORS	10T.
BRIDGE RAILING	379 L.F.
Asphaltic Asbestos Coating	67 S.Y.

SCALE 1" = 5'0"

REFERENCE SHEET ONLY

MONTGOMERY
BHF 0283(8)S
VT RTE. 118 OVER THE TROUT RIVER

SHEET 45 OF 45

FOR INFORMATION PURPOSES ONLY

PRINTED BY STAULEBUHG-HOES CO., BOSTON, MASS., AE-ORDER NO. 9-3034

STATE OF VERMONT
AUTHORITY OF TRANSPORTATION
PROJ. NO. HP 0283(6)S
MONTGOMERY, VT

EMS-QC-110 VTRANS
RECEIVED
OK'D BY _____ OK'D BY JEWC
APR 0 3 2006
RESUBMIT _____ APPROVED ✓
BY CWL DATE 4/4/06

COSMEC, INC.
70 SOUTH STREET
WALPOLE, MA 02081
PH# 508-668-6600
FAX# 508-660-1022

ENGINEERING AND MANUFACTURING STANDARD
PTFE FACING AND STEEL
OR PREFORMED FABRIC SUBSTRATE
SURFACE PREPARATION AND ADHESIVE PROCEDURE

The PTFE facing shall be prepared for bonding to a substrate material by chemically etching the face to be bonded using the sodium ammonia process.

The mating surface of the substrate shall be prepared for bonding using a three-step process as follows:

1. preliminary degrease using methyl ethyl ketone.
2. mechanically roughen to approx. 125 RMS and thoroughly brush and clean for final degreasing.
3. final degrease using methyl ethyl ketone

The PTFE and substrate mating surfaces shall be clean and dry with final degreasing performed within 30 minutes of bonding. Adhesive shall consist of a two-part epoxy adhesive system conforming to Military Specification MMM-A-134

The adhesive shall be applied to the full area of the contact surface in an even manner so as to establish a glue line not less than .002 inch nor more than .010 inch thick. Surfaces being bonded are to be assembled immediately with open assembly time not to exceed 20 minutes.

The PTFE material shall be greater in width and length than the substrate material by at least ½ inch when bonded. The PTFE shall be applied with contact starting at one edge and with contact progressing across entire bonded surface to eliminate air entrapment. The PTFE is to be in full contact with the steel or preformed fabric substrate. Curing of the bond shall be done under pressure of approx. 2-100 psi for 10-12 hours at approx. 70°F or other schedules as established by the manufacturer of the adhesive.

The PTFE shall be carefully trimmed to the same size as the substrate after bond curing and all bonds shall be visually inspected for bond retention.

045A - B.B

STATE OF VERMONT
AUTHORITY OF TRANSPORTATION
PROJ. NO. HP 0283(69)S
MONTGOMERY, VT

COSMEC INC.

WELDING PROCEDURE SPECIFICATION

VTRANS RECEIVED APR 03 2006

SPECIFICATIONS AND CODE: D1.6 (D1.3)
MATERIAL SPECIFICATION ASTM A240 TYPE 304 TO ASTM A709 GR 50W
WELDING PROCESS---------- GTAW
MANUAL OR MACHINE------- MANUAL
POSITION OF WELDING----- 1F & 2F
FILLER METAL SPECIFICATION ER309L CLASSIFICATION: A5.9
MANUFACTURER: HARRIS WELCO TRADENAME:
FLUX------- INTERNAL
SHIELDING GAS---------- ARGON FLOW RATE 45 CFH
SINGLE OR MULTIPLE PAS S SINGLE
SINGLE OR MULTIPLE ARC SINGLE
WELDING CURRENT---------- DC
POLARITY : REVERSE (EN)
WELDING PROGRESSION----------
ROOT TREATMENT---------- CLEANED & PREPARED BRIGHT METAL
PREHEAT AND INTERPASS TEMPERATURE---------- SEE BELOW
POSTHEAT TEMPERATURE N/A
HEAT IMPUT MIN.---------- MAX.----

CK'D BY_____ OK'D BY Jwe
RESUBMIT_____ APPROVED ✓
BY CWK DATE 4/6/06

WELDING PROCEDURE

PASS NO.	ELECTRODE SIZE	WELDING CURRENT AMPERES	VOLTS	TRAVEL SPEED	JOINT DETAIL
ALL	3/32"	130--155 16 GA THRU 10 GA BM THICKNESS	14-17	6.75--8.5	LAP JOINT

PREHEAT TEMPS. ***PREHEAT UNTIL NO MOSITURE PRESENT

THICKNESS	TEMP.
UP TO 3/4"	100 DEG.
OVER 3/4" TO 1 1/2"	100 DEG.
OVER 1 1/2" TO 2 1/2"	100 DEG.
OVER 2 1/2"	100 DEG.

THIS PROCEURE MAY VARY DUE TO FABRICATION SEQUENCE, FIT-UP, PASS SIZE, ETC.
WITHIN THE LIMITATION OF VARIABLES GIVEN IN SECTION 5.
SUPPORTING PQR: GTAW-WF-05
PROCEDURE NO. GTAW-WF

REVISION NO. 1

CONTRACTOR: COSMEC INC.
AUTHORIZED BY: DONALD VOSE
CWI#:01100551 Donald Vose

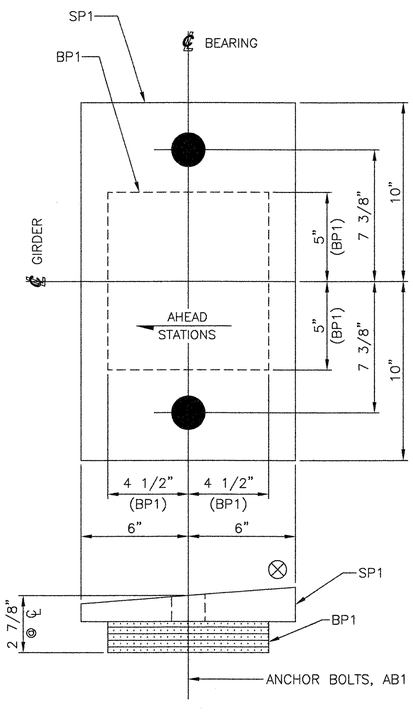
DATE:--- 2/1/2005

AWS QC 1 DONALD E VOSE 01100551 CWI

045B -B.B

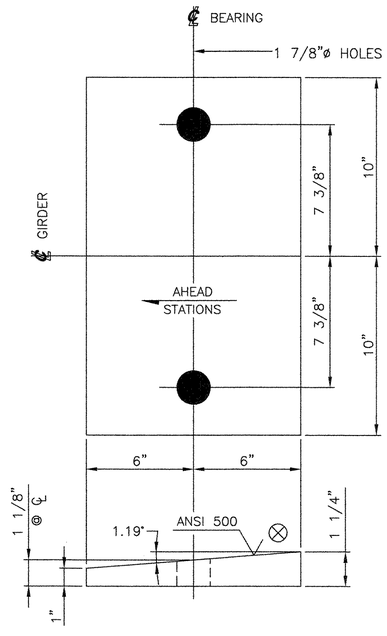
MARK	QTY	DESCRIPTION	IN	16ths	FAB MARK	MILL MARK	WEIGHT
FBA-1	6	FIXED BEARING ASSEMBLIES					
SP1	6	PL 1 1/4" x 12"	20	0	·	METALIZED	510
BP1	6	PREF. PAD 1 3/4" x 9"	10	0	·	·	49

TOTAL = 559



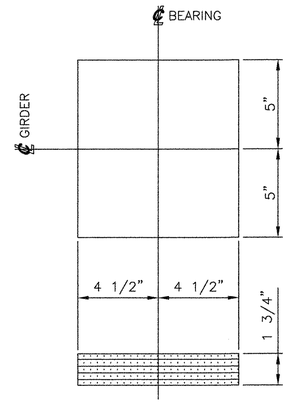
6 FIXED BEARING ASSEMBLIES, FBA-1

LOCATE AT
ABUTMENT 1, SPAN 1
GIRDERS 1 THRU 5



6 FIXED SOLE PLATES, SP1

PL 1 1/4" X 12" X 20"
(METALIZED)
USE WITH
FIXED BEARING ASSEMBLY, FBA-1



6 BEARING PADS, BP1

PREFORMED FABRIC PAD 1 3/4" X 9" X 10"
USE WITH
FIXED BEARING ASSEMBLY, FBA-1

SHOP NOTES:

1. SOLE PLATES: AASHTO M270, GR. 36, METALIZED.
2. PREFORMED FABRIC PADS: IN ACCORDANCE WITH SECTION 731.01 OF THE 2001 VERMONT STATE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
3. ⚠ STAINLESS STEEL: ASTM A240, TYPE 304, WITH A 10 RMS OR LESS FINISH ON SLIDING SURFACE.
4. PTFE: ASTM D1457, VIRGIN, UNFILLED.
5. ANCHOR BOLTS: F1554, GR. 55, GALVANIZED.
6. PLATE WASHERS: ASTM A36 OR EQUIVALENT, GALVANIZED.
7. MATERIAL NOTED AS M270, GR. 36 MAY BE AASHTO M270, GR. 36, ASTM A709, GR. 36 OR ASTM A36.
8. MATERIAL NOTED AS GALVANIZED SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 (ASTM A123) OR AASHTO M232 (ASTM A153) AS APPLICABLE.
9. FABRICATION TOLERANCES SHALL BE IN ACCORDANCE WITH SECTION 531.04.(d) OF THE 2001 VERMONT STANDARD SPECIFICATION FOR CONSTRUCTION.
10. ALL FREE EDGES OF PLATES TO BE METALIZED SHALL BE ROUNDED TO 1/16" RADIUS.
11. SOLE PLATES SHALL BE BLAST CLEANED TO SSPC-SP5, "WHITE METAL" AND METALIZED TO A MINIMUM THICKNESS OF 6 MILS WITH 99.9% PURE ZINC IN ACCORDANCE WITH AWS C 2.18, AND SEALED WITH #90290 METCO ALS.
12. COSMEC, INC. WILL BLAST THE MATERIAL AND APPLY THE REQUIRED COATING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND ALL APPLICABLE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS. COSMEC, INC. WILL PACKAGE AND LOAD THE BEARINGS FOR SHIPMENT IN SUCH A MANNER AS TO INSURE NO DAMAGE IS DONE TO THE COATING. ANY DAMAGE TO THE COATING IN THE FIELD IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND IS TO BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
13. WHEN WELDING SOLE PLATE TO GIRDER FLANGE, USE TEMPERATURE INDICATING WAX PEN OR OTHER SUITABLE MEANS TO INSURE THAT THE TEMPERATURE OF THE BEARING DOES NOT EXCEED 250°F. TEMPERATURES ABOVE THIS MAY DAMAGE ELASTOMER.
14. ALL SURFACES OF PLATES SHALL BE SMOOTH AND STRAIGHT.
15. ⊗ SHOP TO MARK HIGH SIDE OF PLATE.
16. SHIM PLATES ARE NOT REQUIRED PER THE CONTRACTOR.
17. COSMEC, INC. REPRESENTATIVE: MR. MATT McANDREWS (508) 668-6600

RECEIVED
CK'D BY mxH OK'D BY
MAY 18 2006
RESUBMIT APPROVED
BY DATE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

VT 118
OVER THE TROUT RIVER

TOWN OF
MONTGOMERY, VERMONT

PROJECT NO. BHF-0283(8)S

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

SCALE: NONE	DRAWN BY: JEP	CHECKED BY: PJM
SHEET 1 OF 7	DATE: 03/06	DATE: 03/06

COSMEC BEARINGS

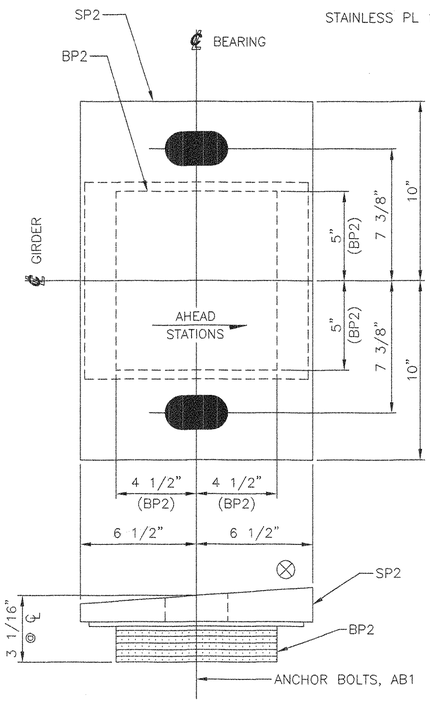
REV.		BY:	DATE	CK'D BY:	DATE
⚠	REVISED ST. STEEL SPEC. PER APPROVED AS NOTED DRAWING.	MM	4/06	MCM	4/06

CUSTOMER:	S.O. NUMBER	DRAWING NUMBER	REV.
A. L. ST. ONGE	60530	4718	1

046 BB

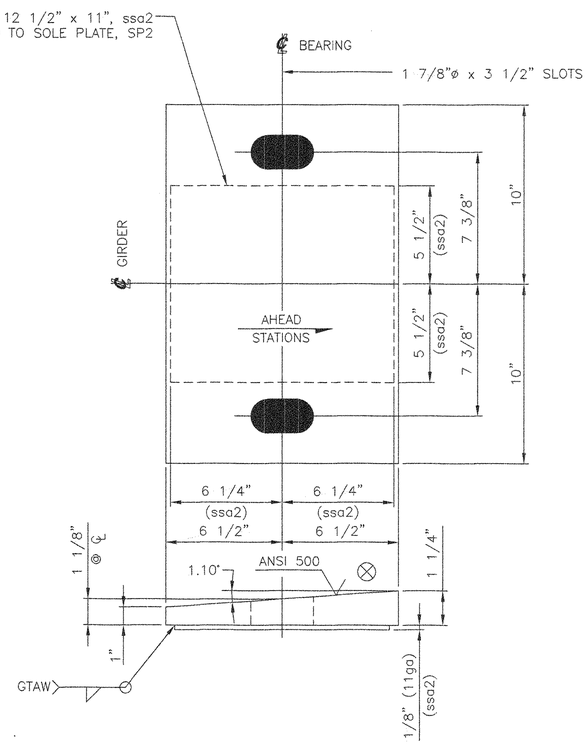
MARK	QTY	DESCRIPTION	IN	16ths	FAB MARK	MILL MARK	WEIGHT
EBA-1	6	EXPANSION BEARING ASSEMBLIES					
SP2	6	PL 1 1/4" x 13"	20	0	·	METALIZED	553
·	6	STAINLESS PL 1/8" (11ga) x 12 1/2"	11	0	ssa2	A240 TYPE 304	32
BP2	6	PREF. PAD 1 3/4" x 9"	10	0	·	·	49
·	6	PTFE 1/16" x 9"	10	0	tfe2	D1457	3

TOTAL = 637



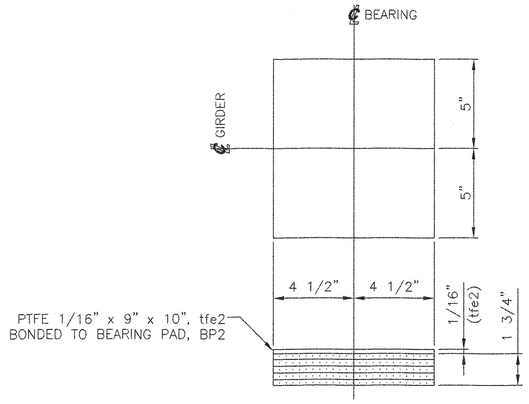
6 EXPANSION BEARING ASSEMBLIES, EBA-1

LOCATE AT
PIER 1, SPAN 1
GIRDERS 1 THRU 6



6 EXPANSION SOLE PLATES, SP2

PL 1 1/4" X 13" X 20"
(METALIZED)
USE WITH
EXPANSION BEARING ASSEMBLY, EBA-1



6 BEARING PADS, BP2

PREFORMED FABRIC PAD 1 3/4" X 9" X 10"
USE WITH
EXPANSION BEARING ASSEMBLY, EBA-1

SEE SHEET 1 FOR SHOP NOTES.

RECEIVED
CK'D BY LB CK'D BY
APR 03 2006
RESUBMIT APPROVED
BY CWC DATE 4.6.06

STATE OF VERMONT
AGENCY OF TRANSPORTATION

VT 118
OVER THE TROUT RIVER
TOWN OF
MONTGOMERY, VERMONT
PROJECT NO. BHF-0283(8)S

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

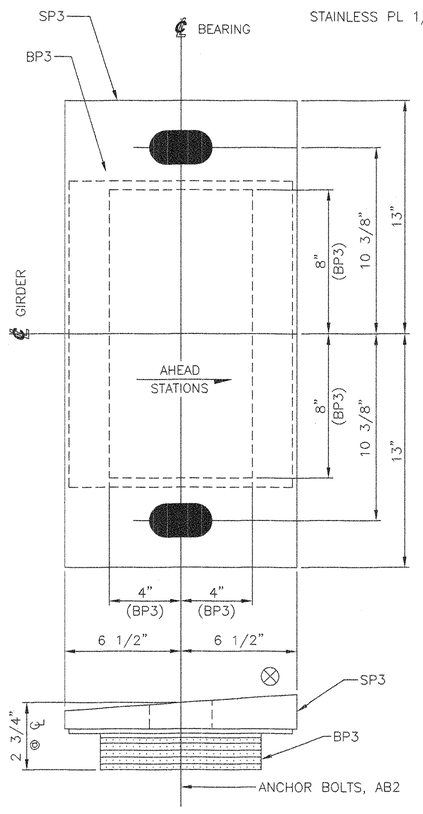
SCALE: NONE	DRAWN BY: JEP	CHECKED BY: PJM
SHEET 2 OF 7	DATE: 03/06	DATE: 03/06

COSMEC BEARINGS

REV.		BY:	DATE	CK'D BY:	DATE	CUSTOMER:	S.O. NUMBER	DRAWING NUMBER	REV.
—		— — —	— — —	— — —	— — —	A. L. ST. ONGE	60530	4719	0

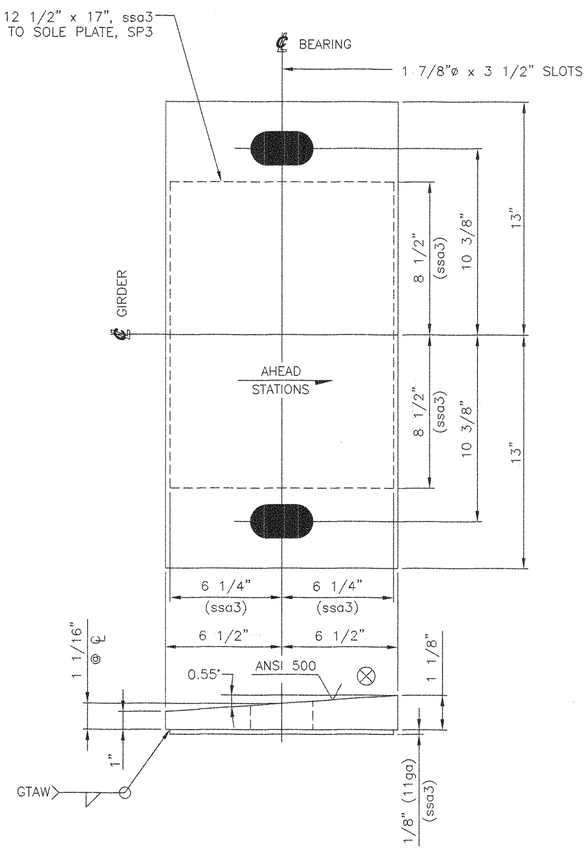
047 3B

MARK	QTY	DESCRIPTION	IN	16ths	FAB MARK	MILL MARK	WEIGHT
EBA-2	6	EXPANSION BEARING ASSEMBLIES					
SP3	6	PL 1 1/8" x 13"	26	0	·	METALIZED	647
·	6	STAINLESS PL 1/8" (11ga) x 12 1/2"	17	0	ssa3	A240 TYPE 304	50
BP3	6	PREF. PAD 1 1/2" x 8"	16	0	·	·	59
·	6	PTFE 1/16" x 8"	16	0	tfe3	D1457	4
						TOTAL =	760



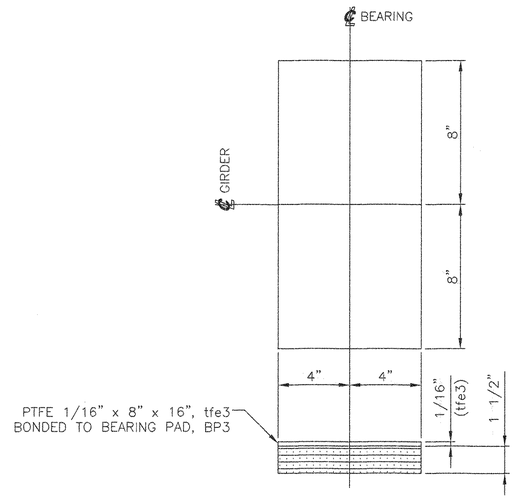
6 EXPANSION BEARING ASSEMBLIES, EBA-2

LOCATE AT
PIER 1, SPAN 2
GIRDERS 1 THRU 6



6 EXPANSION SOLE PLATES, SP3

PL 1 1/8" X 13" X 26"
(METALIZED)
USE WITH
EXPANSION BEARING ASSEMBLY, EBA-2



6 BEARING PADS, BP3

PREFORMED FABRIC PAD 1 1/2" X 8" X 16"
USE WITH
EXPANSION BEARING ASSEMBLY, EBA-2

SEE SHEET 1 FOR SHOP NOTES.

RECEIVED
CK'D BY LB CK'D BY
APR 03 2006
RESUBMIT APPROVED
BY CWC DATE 4-6-06

STATE OF VERMONT
AGENCY OF TRANSPORTATION

VT 118
OVER THE TROUT RIVER

TOWN OF
MONTGOMERY, VERMONT.

PROJECT NO. BHF-0283(8)S

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

SCALE: NONE	DRAWN BY: JEP	CHECKED BY: PJM
SHEET 3 OF 7	DATE: 03/06	DATE: 03/06

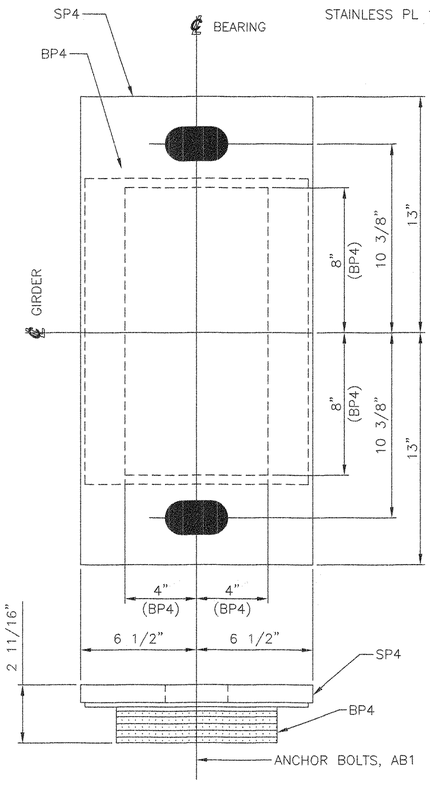
COSMEC BEARINGS

REV.		BY:	DATE	CK'D BY:	DATE
-		---	---	---	---

CUSTOMER:	S.O. NUMBER:	DRAWING NUMBER	REV.
A. L. ST. ONGE	60530	4720	0

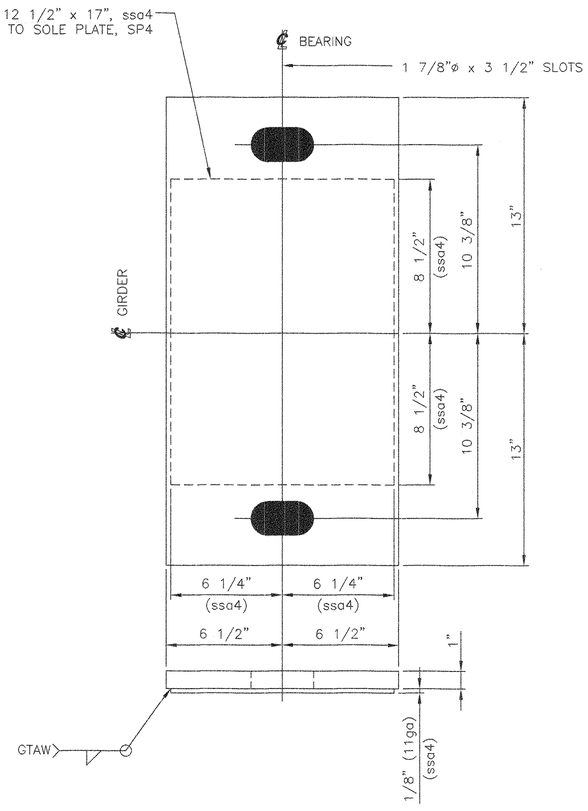
048 B3

MARK	QTY	DESCRIPTION	IN	16ths	FAB MARK	MILL MARK	WEIGHT
EBA-3	6	EXPANSION BEARING ASSEMBLIES					
SP4	6	PL 1" x 13"	26	0	·	METALIZED	575
·	6	STAINLESS PL 1/8" (11ga) x 12 1/2"	17	0	ssa4	A240 TYPE 304	50
BP4	6	PREF. PAD 1 1/2" x 8"	16	0	·	·	59
·	6	PTFE 1/16" x 8"	16	0	tfe4	D1457	4
						TOTAL =	688



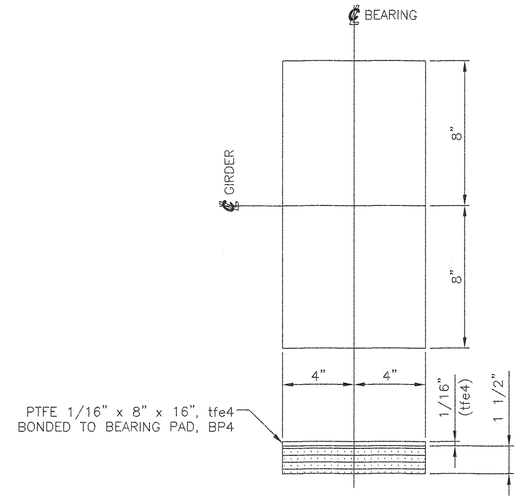
6 EXPANSION BEARING ASSEMBLIES, EBA-3

LOCATE AT
PIER 2, SPAN 2
GIRDERS 1 THRU 6



6 EXPANSION SOLE PLATES, SP4

PL 1" X 13" X 26"
(METALIZED)
USE WITH
EXPANSION BEARING ASSEMBLY, EBA-3



6 BEARING PADS, BP4

PREFORMED FABRIC PAD 1 1/2" X 8" X 16"
USE WITH
EXPANSION BEARING ASSEMBLY, EBA-3

SEE SHEET 1 FOR SHOP NOTES.

RECEIVED
CK'D BY LBZ OK'D BY
APR 0 3 2006
RESUBMIT APPROVED
BY awc DATE 4-6-06

STATE OF VERMONT
AGENCY OF TRANSPORTATION

VT 118
OVER THE TROUT RIVER

TOWN OF
MONTGOMERY, VERMONT
PROJECT NO. BHF-0283(8)S

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

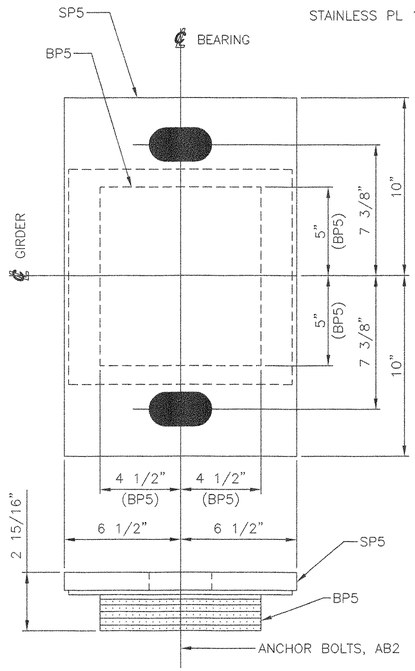
SCALE: NONE	DRAWN BY: JEP	CHECKED BY: PJM
SHEET 4 OF 7	DATE: 03/06	DATE: 03/06

COSMEC BEARINGS

REV.		BY:	DATE	CK'D BY:	DATE	CUSTOMER:	S.O. NUMBER	DRAWING NUMBER	REV.
–		---	---	---	---	A. L. ST. ONGE	60530	4721	0

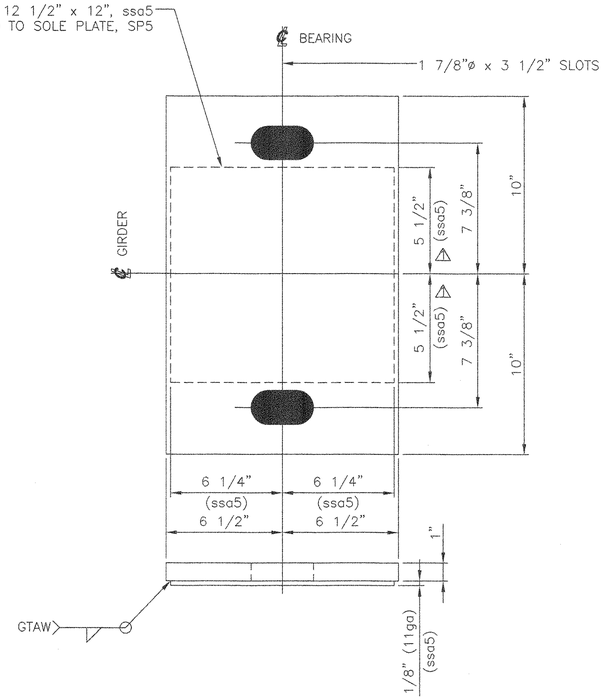
099 BB

MARK	QTY	DESCRIPTION	IN	16ths	FAB MARK	MILL MARK	WEIGHT
EBA-4	6	EXPANSION BEARING ASSEMBLIES					
SP5	6	PL 1" x 13"	20	0	·	METALIZED	442
·	6	STAINLESS PL 1/8" (11ga) x 12 1/2" ⚠	11	0	ssa5	A240 TYPE 304	35
BP5	6	PREF. PAD 1 3/4" x 9" ⚠	10	0	·	·	49
·	6	PTFE 1/16" x 9"	10	0	tfe5	D1457	3
						TOTAL =	529



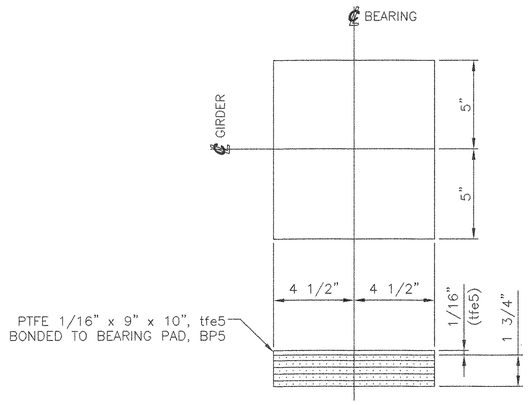
6 EXPANSION BEARING ASSEMBLIES, EBA-4

LOCATE AT
PIER 2, SPAN 3
GIRDERS 1 THRU 6



6 EXANSION SOLE PLATES, SP5

PL 1" X 13" X 20"
(METALIZED)
USE WITH
EXPANSION BEARING ASSEMBLY, EBA-4



6 BEARING PADS, BP5

PREFORMED FABRIC PAD 1 3/4" X 9" X 10"
USE WITH
EXPANSION BEARING ASSEMBLY, EBA-4

SEE SHEET 1 FOR SHOP NOTES.

RECEIVED
CK'D BY WKH OK'D BY
MAY 18 2006
RESUBMIT APPROVED
BY DATE 5/18/06

STATE OF VERMONT
AGENCY OF TRANSPORTATION

VT 118
OVER THE TROUT RIVER

TOWN OF
MONTGOMERY, VERMONT

PROJECT NO. BHF-0283(8)S

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

SCALE: NONE	DRAWN BY: JEP	CHECKED BY: PJM
SHEET 5 OF 7	DATE: 03/06	DATE: 03/06

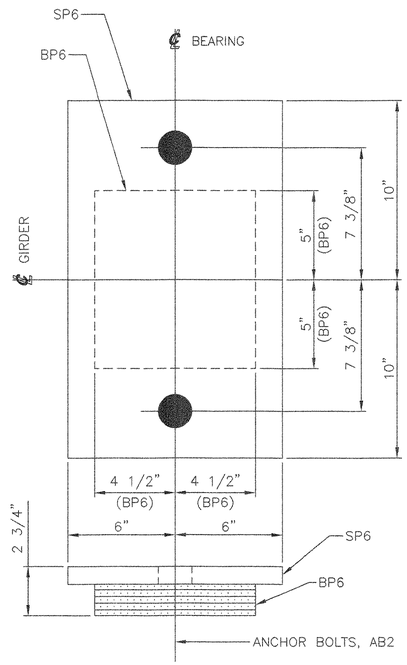
COSMEC BEARINGS

REV.		BY:	DATE	CK'D BY:	DATE	CUSTOMER:	S.O. NUMBER	DRAWING NUMBER	REV.
⚠	REVISED ST.STEEL DIMS. PER APPROVED AS NOTED DRAWING.	MM	4/06	MCM	4/06	A. L. ST. ONGE	60530	4722	1

050 BB

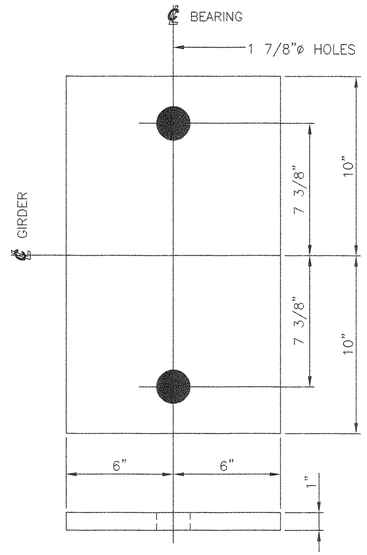
MARK	QTY	DESCRIPTION	IN	16ths	FAB MARK	MILL MARK	WEIGHT
FBA-2	6	FIXED BEARING ASSEMBLIES					
SP6	6	PL 1" x 12"	20	0	·	MEATALIZED	408
BP6	6	PREF. PAD 1 3/4" x 9"	10	0	·	·	49

TOTAL = 457



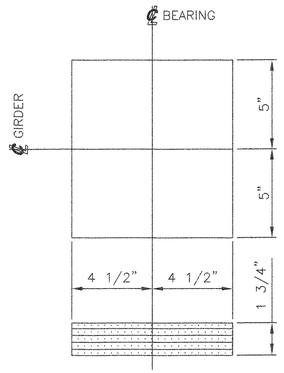
6 FIXED BEARING ASSEMBLIES, FBA-2

LOCATE AT
ABUTMENT 2, SPAN 3
GIRDERS 1 THRU 6



6 FIXED SOLE PLATES, SP6

⚠ PL 1" X 12" X 20"
(METALIZED)
USE WITH
FIXED BEARING ASSEMBLY, FBA-2



6 BEARING PADS, BP6

PREFORMED FABRIC PAD 1 3/4" X 9" X 10"
USE WITH
FIXED BEARING ASSEMBLY, FBA-2

SEE SHEET 1 FOR SHOP NOTES.

RECEIVED
CK'D BY NXH OK'D BY
MAY 18 2006
RESUBMIT APPROVED
BY DATE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

VT 118
OVER THE TROUT RIVER

TOWN OF
MONTGOMERY, VERMONT

PROJECT NO. BHF-0283(8)S

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

SCALE: NONE	DRAWN BY: JEP	CHECKED BY: PJM
SHEET 6 OF 7	DATE: 03/06	DATE: 03/06

COSMEC BEARINGS

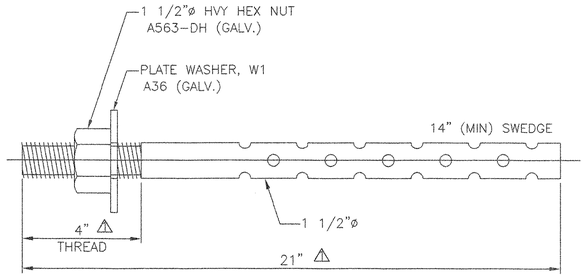
REV.		BY:	DATE	CK'D BY:	DATE
⚠	REVISED PER APPROVED AS NOTED DRAWING	MM	5/06	MCM	5/06

CUSTOMER:	S.O. NUMBER	DRAWING NUMBER	REV.
A. L. ST. ONGE	60530	4723	1

051 B3

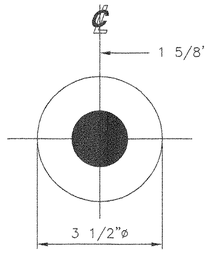
MARK	QTY	DESCRIPTION	IN	16ths	FAB MARK	MILL MARK	WEIGHT
AB1	36	RD 1 1/2"ø ⚠	21	0	GALV.	F1554 GR. 55	451
AB2	36	RD 1 1/2"ø ⚠	21	0	GALV.	F1554 GR. 55	397
W1	72	PL 3/8" x 3 1/2"ø	·	·	GALV.	·	57
·	72	1 1/2"ø HVY HEX NUTS	·	·	GALV.	A563-DH	68

TOTAL WEIGHT IN LBS = 973



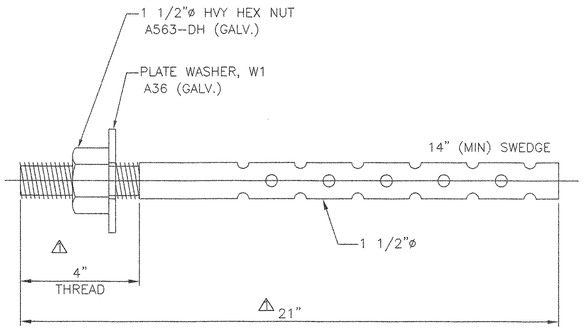
36 ANCHOR BOLTS, AB1

RD 1 1/2"ø x 21" ⚠
F1554 GR. 55 (GALV.)
MIN. EMBED: 15"
LOCATE AT
ABUTMENT 1, SPAN 1
PIER 1, SPAN 1
PIER 2 SPAN 2



72 PLATE WASHERS, W1

PL 3/8" x 3 1/2"ø
(GALV.)
USE WITH
ANCHOR BOLTS, AB1 & AB2



36 ANCHOR BOLTS, AB2

RD 1 1/2"ø x 21" ⚠
F1554 GR. 55 (GALV.)
MIN. EMBED: 15"
LOCATE AT
PIER 1, SPAN 2
PIER 2, SPAN 3
ABUTMENT 2, SPAN 3

SEE SHEET 1 FOR SHOP NOTES.

RECEIVED
CK'D BY MEH CK'D BY _____
MAY 18 2006
RESUBMIT _____ APPROVED _____
BY _____ DATE _____

REV.		BY:	DATE	CK'D BY:	DATE
⚠	REVISED A-BOLTS PER APPROVED AS NOTED DRAWINGS	MM	4/06	MCM	4/06

STATE OF VERMONT
AGENCY OF TRANSPORTATION

HIGHWAY VT 118
OVER THE TROUT RIVER

TOWN OF
MONTGOMERY, VERMONT

PROJECT NO. BHF-0283(8)S

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

SCALE: NONE	DRAWN BY: JEP	CHECKED BY: PJM
SHEET 7 OF 7	DATE: 03/06	DATE: 03/06

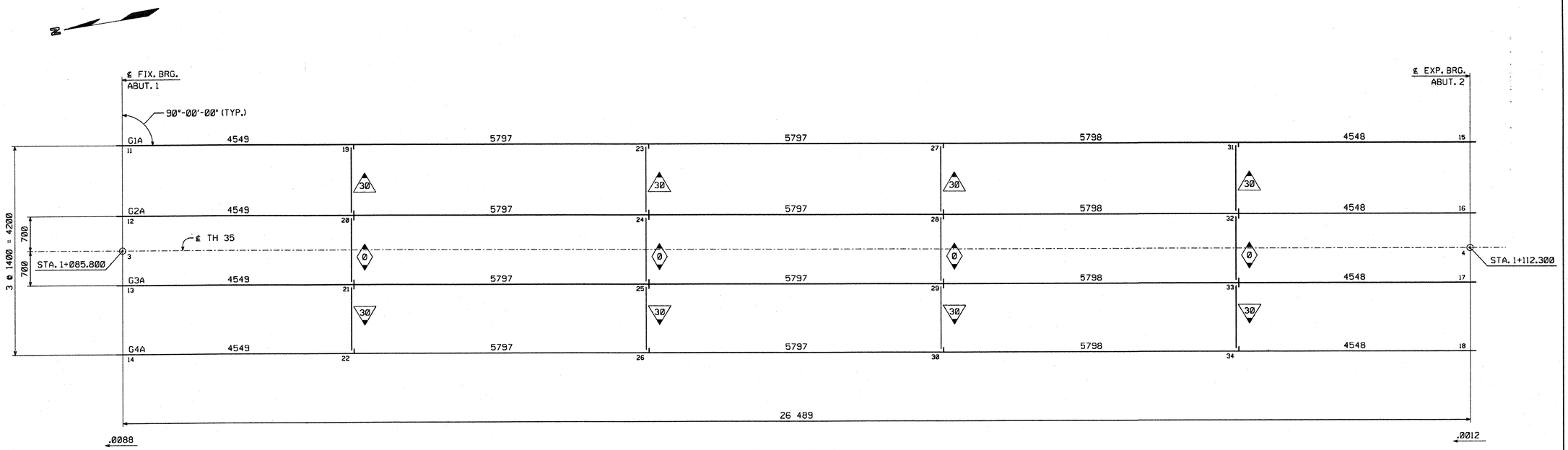
COSMEC BEARINGS

CUSTOMER:	S.O. NUMBER	DRAWING NUMBER	REV.
A. L. ST. ONGE	60530	4724	1

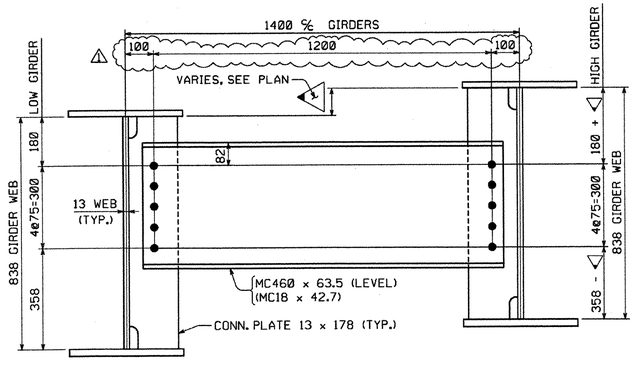
052 BB

METRIC

METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE VT	FED. AID PROJ. NO.



CALCULATION PLAN



INTERMEDIATE DIAPHRAGM LAYOUT
(LOOKING STATIONS AHEAD)

NOTES:

DIMENSIONS ON PLAN ALONG GIRDERS ARE GIVEN TO THE CHORD AT THE BOTTOM OF WEB IN FULLY CAMBERED POSITION. ALL OTHER DIMENSIONS ARE GIVEN HORIZONTALLY.
DIMENSIONS PLACED ON THE GIRDER LINES REPRESENT DIAPHRAGM SPACING.
FIGURES GIVEN THUS: .0088 ARE THE GRADES OF THE GIRDERS AT THE BEARINGS IN FINAL POSITION; ARROW POINTS DOWNGRADE.
ALL STIFFENER AND CONNECTION PLATE SPACINGS ARE GIVEN TO ℄ PLATE.
ENDS OF GIRDERS TO BE VERTICAL IN FINAL POSITION.
ALL STEEL TO BE AASHTO M270M GRADE 345W (U.N.).
ALL FIELD CONNECTIONS TO BE MADE WITH 7/8"ø H.S. (AASHTO M164 TYPE 3) BOLTS IN 15/16"ø HOLES (U.N.).
FIGURES GIVEN THUS: △30 ARE THE DIFFERENCES IN ELEVATIONS OF GIRDERS (IN THE PLANE OF THE DIAPHRAGM IN ERECTED POSITION) AT DIAPHRAGMS; ARROW POINTS TOWARD LOW GIRDER.
ALL STATIONS ARE GIVEN IN METERS.

NOTE
THE PURPOSE OF THIS DRAWING IS TO COORDINATE GEOMETRIC CONTROL INFORMATION. THIS DRAWING IS SUBMITTED FOR INFORMATION ONLY AND IS NOT INTENDED FOR SHOP FABRICATION. THIS DRAWING IS FOR REFERENCE ONLY, APPROVAL IS NOT REQUIRED.

RECEIVED
CK'D BY MKH CK'D BY
APR 27 2006
RESUBMIT APPROVED ✓
BY RC DATE 5/2/06

NO.	REVISION	BY	DATE
△			
△			
1	REVISED DIAPHRAGM CONN. AS PER APPROVAL	WBW	4-19-06

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

WORKSHEET - CALCULATION PLAN
RTE. NO. TH 35 (BRIDGE NO. 24) OVER PACIFIC BROOK
RTE. NO. TH 35 STA. 1+085.800 TO STA. 1+112.300
TOWN OF MONTGOMERY
FRANKLIN COUNTY, VERMONT
STATE OF VERMONT, AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. BRO 1448 (20)
CONTRACTOR A.L. ST. ONGE CONTRACTOR, INC.
IN CHARGE: BRITIGAN (IH) MADE BY: RC CHK'D BY: MGK DATE: 3/3/06
CONTRACT NUMBER: VT-06001-1 DRAWING NUMBER: WS1 OF WS1

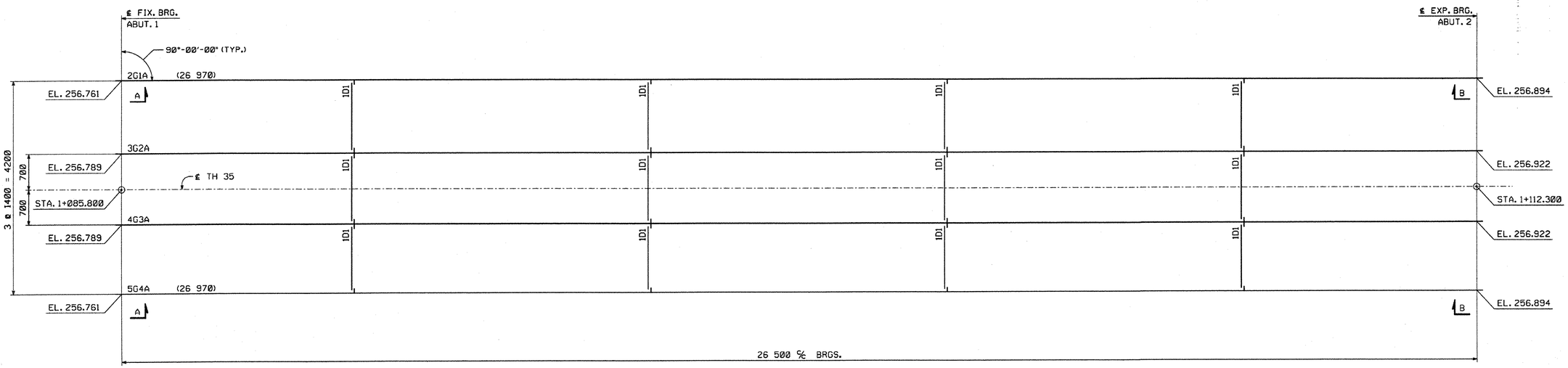
05335
STRUCTURES COPY 05335

06001 X2 4/21/06 Final Approval and Distribution TO:A.L. St. Onge Contractor,

METRIC
Scale = 0.025000 of full size.
PLOTTED: 04/19/06 03:56:16 PM
BY: cshaffer

METRIC

METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	



ERECTION FRAMING PLAN

SHIPPING PIECE MARK	WEIGHT EA. (KG)
G1A	6,406
G2A	6,466
G3A	6,466
G4A	6,406

FIELD BOLT SUMMARY

(2% ADDITIONAL BOLTS ADDED + 3 EA. FOR TESTING)

AASHTO M164 TYPE 3 BOLTS WITH HVY. HEX HEAD AND AASHTO M291 GRADE DH3 HVY. HEX NUT

125 - ⅞"ø HIGH STRENGTH BOLTS x 0'-2¼ } (RCT)

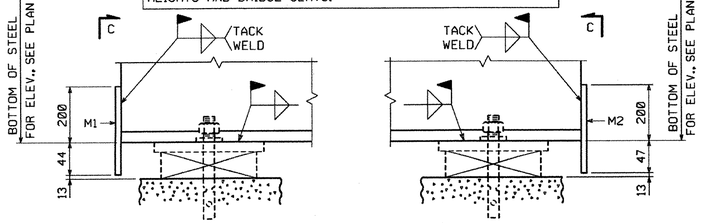
125 HARD. FLAT AASHTO M293 WEATHERING WASHERS FOR ⅞"ø H. S. BOLTS } (RCT)

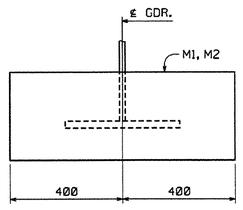
(RCT) INDICATES ROTATIONAL CAPACITY TESTED BOLTS. DO NOT MIX NUTS, BOLTS AND WASHERS FROM DIFFERENT CONTAINERS UNLESS ALL NUTS, BOLTS AND WASHERS HAVE THE SAME LOT NUMBER.

LOOSE MATERIAL

4 - MISC. END PLATE ~ MK. M1
4 - MISC. END PLATE ~ MK. M2

CONTRACTOR NOTE:
ELEVATIONS ARE GIVEN TO BOTTOM OF STEEL - DO NOT POUR TO FINAL ELEVATIONS WITHOUT VERIFICATION OF BEARING HEIGHTS AND BRIDGE SEATS.





NOTES:

NO CREDIT WILL BE ALLOWED FOR WORK PERFORMED BY OTHERS IN REPLACING OR CORRECTING MATERIALS OR WORKMANSHIP COVERED BY THIS DRAWING UNLESS EXPRESSLY AUTHORIZED BY HIGH STEEL STRUCTURES, INC.
ALL FIELD CONNECTIONS TO BE MADE IN ACCORDANCE WITH THE FIELD BOLT SUMMARY.
ALL DIMENSIONS ARE GIVEN HORIZONTALLY (U.N.).
DIMENSIONS GIVEN THUS: (26 970) ARE THE SHIPPING LENGTHS OUT TO OUT OF FASCIA GIRDERS.
HIGH STEEL STRUCTURES, INC. DOES NOT SUPPLY SHEAR STUDS, BEARING ASSEMBLIES INCLUDING PADS AND ANCHOR BOLTS AND HOLES OR BOLTS FOR FLEMING BRACKETS.
NOTICE: WEIGHTS OF MEMBERS LISTED ON THESE DRAWINGS ARE ESTIMATED WEIGHTS AND ACTUAL WEIGHTS WILL VARY. HIGH STEEL STRUCTURES, INC. WILL NOT BE RESPONSIBLE FOR ANY ERECTION PROCEDURES, SHIPPING PROCEDURES, ETC. DEVELOPED USING ESTIMATED WEIGHTS AS SHOWN.
ERECTOR NOTE: ALL BOLTS MUST BE LOCATED IN ACCORDANCE WITH THE FIELD BOLT SUMMARY. HIGH STEEL STRUCTURES WILL NOT BE RESPONSIBLE FOR FURNISHING ADDITIONAL BOLTS OR ANY OTHER RELATED COSTS OR DAMAGES RESULTING FROM IMPROPER LOCATION OF BOLTS.
ALL FIELD BOLTS THRU WEB OF FASCIA GIRDERS ARE TO HAVE HEADS TOWARD WEATHER.
THE SHIPPING MARKS SHOWN CONSIST OF THE PREFIX INDICATING THE SHEET NUMBER UPON WHICH THE PIECE IS DETAILED ALONG WITH THE SHIPPING PIECE MARK.
ALL ELEVATIONS AND STATIONS ARE GIVEN IN METERS.

RECEIVED
CK'D BY MKH OK'D BY
APR 27 2006
RESUBMIT APPROVED ✓
BY DATE 5/2/06

NO.	REVISION	BY	DATE
1			
2			
3			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

ERECTION FRAMING PLAN
RTE. NO. TH 35 (BRIDGE NO. 24) OVER PACIFIC BROOK
RTE. NO. TH 35 STA. 1+085.800 TO STA. 1+112.300
TOWN OF MONTGOMERY
FRANKLIN COUNTY, VERMONT
STATE OF VERMONT, AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. BRO 1448 (20)
CONTRACTOR A.L. ST. ONGE CONTRACTOR, INC.
IN CHARGE: BRITIGAN (IH) MADE BY: RC CHK'D BY: WBW DATE: 3/2/06
CONTRACT NUMBER: VT-06001-1 DRAWING NUMBER: E1 OF E2

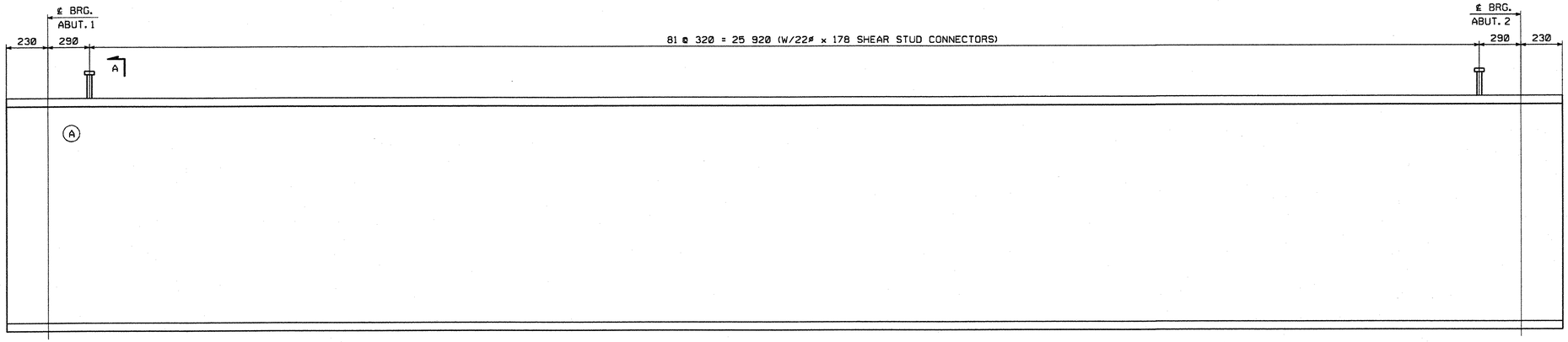
05455

06001 X2 4/21/06 Final Approval and Distribution TO:A.L. St. Onge Contractor,

PLOTTED: 03/06/06 09:38:05 AM BY: Mk-eidel

METRIC

METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	



SHEAR STUD CONNECTOR LOCATION LAYOUT

SECTION A

NOTES:
FOR NOTES, SEE DRAWING E1.
WORK THIS DRAWING WITH DRAWING E1.
(A) INDICATES SUFFIX MARK OF SHIPPING PIECE.

RECEIVED
CK'D BY MKH CK'D BY
APR 27 2006
RESUBMIT APPROVED ✓
BY RKL DATE 5/2/06

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/293-5211
A Division of High Industries, Inc.

ERECTION FRAMING PLAN - STUD LAYOUTS
RTE. NO. TH 35 (BRIDGE NO. 24) OVER PACIFIC BROOK
RTE. NO. TH 35 STA. 1+085.800 TO STA. 1+112.300
TOWN OF MONTGOMERY
FRANKLIN COUNTY, VERMONT
STATE OF VERMONT, AGENCY OF TRANSPORTATION

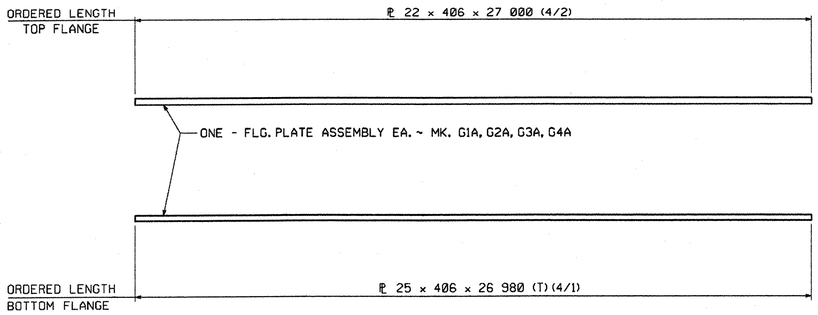
STATE CONTRACT OR REF. NO. PROJECT NO. BRO 1448 (20)
CONTRACTOR A.L. ST. ONGE CONTRACTOR, INC.
IN CHARGE: BRITIGAN (IH) MADE BY: RC CHK'D BY: MGK DATE: 3/3/06
CONTRACT NUMBER: VT-06001-1 DRAWING NUMBER: E2 OF E2

055 SS

PLOTTED: 03/06/06 09:38:11 AM
BY: MKreidel

06001 X2 4/21/06 Final Approval and Distribution TO:A.L. St. Onge Contractor,

METRIC



METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	

NOTES:

FOR GENERAL SHOP NOTES, SEE DRAWING GN1.
(T) INDICATES PLATES THAT REQUIRE CHARPY V-NOTCH TEST.

RECEIVED
CK'D BY WJG1 CK'D BY
APR 27 2006
RESUBMIT APPROVED ✓
BY KRW DATE 5/2/06

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

FLANGE SPLICE DETAILS
RTE. NO. TH 35 (BRIDGE NO. 24) OVER PACIFIC BROOK
RTE. NO. TH 35 STA. 1+085.800 TO STA. 1+112.300
TOWN OF MONTGOMERY
FRANKLIN COUNTY, VERMONT
STATE OF VERMONT, AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. BRO 1448 (20)
CONTRACTOR A.L. ST. ONGE CONTRACTOR, INC.
IN CHARGE: BRITIGAN (IH) MADE BY: KMA CHK'D BY: SJA DATE: 2/13/06
CONTRACT NUMBER: VT-06001-1 DRAWING NUMBER: FS1 OF FS1

CODE:30

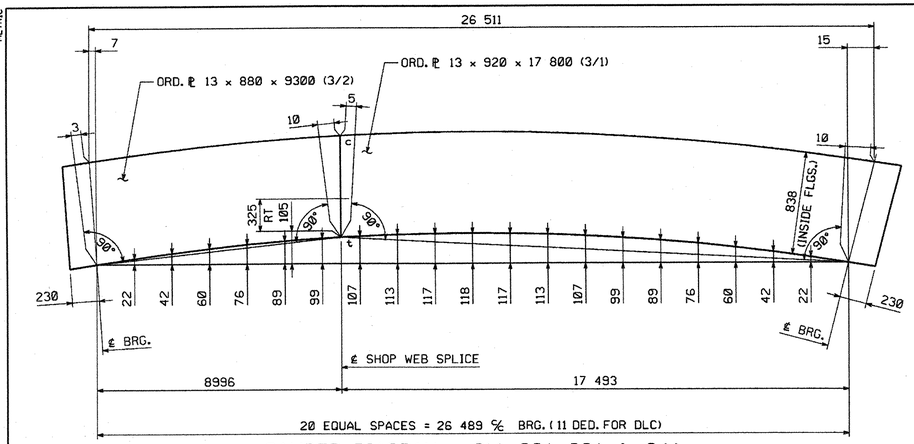
056 33

PLOTTED: 03/06/06 08:47:46 AM BY: Mcreidel

06001 X2 4/21/06 Final Approval and Distribution TO:A.L. St. Onge Contractor,

METRIC

METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	

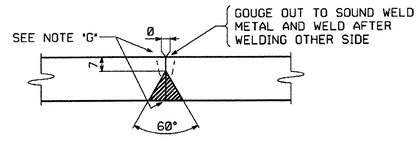


CAMBER DIAGRAM - G1A, G2A, G3A, & G4A

RECEIVED
CK'D BY MKH CK'D BY
APR 27 2006
RESUBMIT APPROVED ✓
BY DATE 5/2/06

NOTES:

FOR GENERAL SHOP NOTES, SEE DRAWING GN1.
ALL WEB PLATES REQUIRE CHARPY V-NOTCH TEST.
THE LETTERS 't' & 'c' AT WEB SPLICES INDICATE TENSION AND COMPRESSION EDGES AT SPLICES.
RT INDICATES RADIOGRAPHIC TESTING FOR 1/6 OF THE WEB DEPTH AT TENSION EDGE PLUS 25% OF THE REMAINDER.



TYPICAL WEB PLATE SPLICE
FOR WEB PLATES 13 mm TO 50 mm THICK (B-L2c-S)

NOTE "G"

ALL WELDS MAY HAVE A MAXIMUM REINFORCEMENT OF 3 mm. GRIND THE WELDS SMOOTH IN THE AREAS TO BE TESTED AND FOR THE FULL DEPTH OF WEB ON G1A (F.S.) AND G4A (N.S.).

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

WEB CAMBER DIAGRAMS
RTE. NO. TH 35 (BRIDGE NO. 24) OVER PACIFIC BROOK
RTE. NO. TH 35 STA. 1+085.800 TO STA. 1+112.300
TOWN OF MONTGOMERY
FRANKLIN COUNTY, VERMONT
STATE OF VERMONT, AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. BRO 1448 (20)
CONTRACTOR A.L. ST. ONGE CONTRACTOR, INC.
IN CHARGE: BRITIGAN (IH) MADE BY: KMA CHK'D. BY: SJA DATE: 2/13/06
CONTRACT NUMBER: VT-06001-1 DRAWING NUMBER: WC1 OF WC1

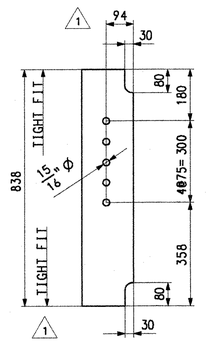
CODE:30

05733
~~05736~~

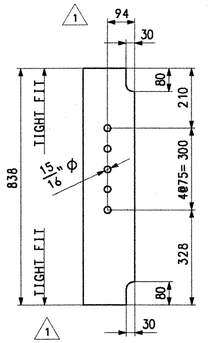
06001 X2 4/21/06 Final Approval and Distribution TO:A.L. St. Onge Contractor,

PLOTTED: 03/06/06 08:47:48 AM BY: Mkreidel

FED.ROAD DIV.NO.	STATE	FED.AID PROJ.NO.
	VT	



CONN. PLATE MK. x1a



CONN. PLATE MK. x1b

BILL OF MATERIAL

SHIP.	QTY. EA.	MARK	COMM.	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	SHIP WEIGHT EA. (KG)
1	16	x1a	PL	13 x 178	838	M270M	345W			7	1	15.22
1	8	x1b	PL	13 x 178	838	M270M	345W			7	1	15.22

RECEIVED
CK'D BY MGK CK'D BY
APR 27 2006
RESUBMIT APPROVED ✓
BY DATE 5/2/06

NO.	REVISION	BY	DATE
1	ADDED TIGHT FIT AT BOTTOM AND REVISED DIMENSION FROM STIFF. EDGE AS PER APPROVAL	WBW	4/19/06

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/298-5211
A Division of High Industries, Inc.

GIRDER JOB STANDARDS
RTE. NO. TH 35 (BRIDGE NO. 24) OVER PACIFIC BROOK
RTE. NO. TH 35 STA. 1+085.800 TO STA. 1+112.300
TOWN OF MONTGOMERY
FRANKLIN COUNTY, VERMONT
STATE OF VERMONT, AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. BRO 1448 (20)
CONTRACTOR A.L. ST. ONGE CONTRACTOR, INC.
IN CHARGE: BRITIGAN (IH) MADE By: RC CHK'D. By: MGK DATE: 3/2/06
CONTRACT NUMBER: VT-06001-1 DRAWING NUMBER: X1 OF X2

NOTES:
HOLES: AS NOTED
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

CODE: 30

PLOTTED: DATE5678901234567 BY: USERNAME

06001 X2 4/21/06 Final Approval and Distribution TO:A.L. St. Onge Contractor,

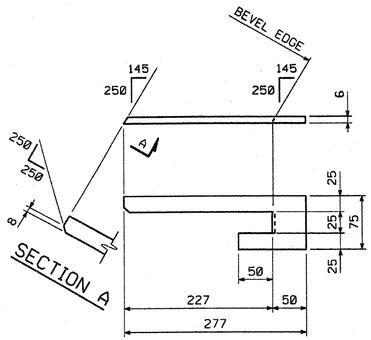
05855

METRIC

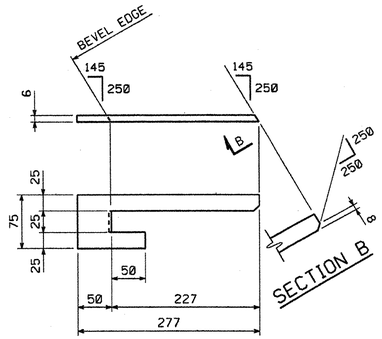
METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	

BILL OF MATERIAL

SHIP.	QTY	MARK	COMMODITY	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	WEIGHT EA. (KG)
1	1	x2a	PL	6 x 75	277	M270M	345W			7	2	0.98
1	1	x2b	PL	6 x 75	277	M270M	345W			7	2	0.98



DRIP PL MK. x2a



DRIP PL MK. x2b

SHOP NOTE

HOLES: NONE
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

CODE:30

RECEIVED
APR 27 2006

OK'D BY: NKH OK'D BY: _____
RESUBMIT: _____ APPROVED: ✓
BY: _____ DATE: 5/2/2006

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

GIRDER JOB STANDARDS
RTE. NO. TH 35 (BRIDGE NO. 24) OVER PACIFIC BROOK
RTE. NO. TH 35 STA. 1+085.800 TO STA. 1+112.300
TOWN OF MONTGOMERY
FRANKLIN COUNTY, VERMONT
STATE OF VERMONT, AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO.: PROJECT NO. BRO 1448 (20)
CONTRACTOR: A.L. ST. ONGE CONTRACTOR, INC.
IN CHARGE: BRITIGAN (IH) MADE BY: RC CHK'D BY: MGK DATE: 3/3/06
CONTRACT NUMBER: VT-06001-1 DRAWING NUMBER: X2 OF X2

05955
06039

06001 X2 4/21/06 Final Approval and Distribution TO:A.L. St. Onge Contractor,

PLOTTED: 03/06/06
08:47:54 AM
BY: Mcreidel

METRIC

METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	

GENERAL SHOP NOTES

SPECIFICATIONS:
ALL MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH THE STATE OF VERMONT, AGENCY OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, WITH CURRENT MODIFICATIONS AND ADDITIONS.

MATERIAL:
UNLESS NOTED OTHERWISE, ALL STEEL TO BE AASHTO M270M GRADE 345W.
(T) INDICATES ZONE 2 CHARPY V-NOTCH TESTING REQUIRED.

SHOP PROCEDURE:
ALL WEB PLATE SPLICES TO BE MADE BEFORE FINAL FITTING AND WELDING INTO GIRDER.
CAMBER TOLERANCE: -0 mm TO +19 mm
ALL RE-ENTRANT CUTS TO HAVE 25 MIN. RADIUS.
BEARING AREA, AS NOTED ON GIRDER DETAILS, INDICATES AREA THAT MUST BE FLAT AND TRUE TO RECEIVE SOLE PLATE.
(CG) INDICATES CORNER GRINDING.
CORNER GRINDING IS REQUIRED FOR MAIN MEMBER FLANGE PLATES.
ALL SHARP CORNERS AND EDGES THAT ARE MARRED, CUT OR ROUGHENED IN HANDLING SHALL BE GROUND TO 1.6 mm RAD.
ONLY LOW STRESS DIE STAMPS MAY BE USED FOR MARKING IN AREAS NOT EXPOSED ON THE FINISHED STRUCTURE.

INSPECTION:
SHOP INSPECTION BY THE VERMONT AGENCY OF TRANSPORTATION

WELDING:
ALL WELDING IS TO CONFORM TO AWS D1.5-02.
WELDING METHODS, PROCEDURES, AND MATERIALS SHALL COMPLY WITH THE SPECIFIC PROCEDURE DESIGNATED IN THE WELD SYMBOL TAIL.
FOR WELDING STIFFENERS AND CONNECTION PLATES TO GIRDERS, SEE TYPICAL WELDING DETAIL.

IDENTIFICATION OF HOLE PLACEMENT:
UNLESS NOTED OTHERWISE, BOLT HOLES IN MATERIAL 16mm OR LESS IN THICKNESS MAY BE CNC (COMPUTER NUMERICALLY CONTROLLED) PUNCHED OR CNC DRILLED FULL SIZE UNASSEMBLED. ALL MATERIAL THICKER THAN 16mm IS TO BE DRILLED.

NON-DESTRUCTIVE TESTING:
WEB PLATE SPLICES TO BE RADIOGRAPHICALLY TESTED, AS CALLED FOR ON DRAWING PREFIXED "WC", BY H.S.S.I.

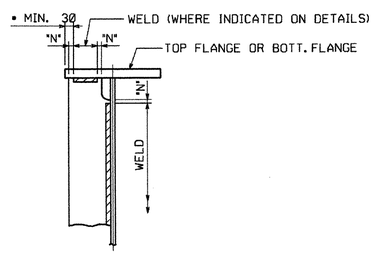
MAGNETIC PARTICLE INSPECTION IS REQUIRED ON AT LEAST 300 mm OF EVERY 3000 mm LENGTH OF FILLET WELDS AND 300 mm OF SUCH WELDS LESS THAN 3000 mm IN LENGTH ON GIRDER WEB TO FLANGE AND CONNECTION PLATES TO WEB AND FLANGE WELDS. TESTING PER THE YOKE METHOD, USING DC.

CLEANING:
ALL STEEL TO BE BLAST CLEANED TO SSPC-SP10 (NEAR WHITE).

PAINTING:
NO PAINT

DRAWING REFERENCE:

FLANGE SPLICES	-PREFIXED "FS"
WEB CAMBERS	-PREFIXED "WC"
GIRDER JOB STANDARDS	-PREFIXED "X"



"N" = 6 MIN., 13 MAX. (U.N.) •

STIFFENER WELDING DETAIL
• WELDS MUST STOP 30 MINIMUM FROM EDGE OF FLANGE

RECEIVED
CK'D BY YLK CK'D BY
APR 27 2006
RESUBMIT APPROVED ✓
BY DATE 5/2/06

NO.	REVISION	BY	DATE
1			
2			
3			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

GENERAL SHOP NOTES
RTE. NO. TH 35 (BRIDGE NO. 24) OVER PACIFIC BROOK
RTE. NO. TH 35 STA. 1+085.800 TO STA. 1+112.300
TOWN OF MONTGOMERY
FRANKLIN COUNTY, VERMONT
STATE OF VERMONT, AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. BRO 1448 (20)
CONTRACTOR A.L. ST. ONGE CONTRACTOR, INC.
IN CHARGE: BRITIGAN (IH) MADE BY: KMA CHK'D BY: SJA DATE: 2/13/06
CONTRACT NUMBER: VT-06001-1 DRAWING NUMBER: GN1 OF GN1

06033

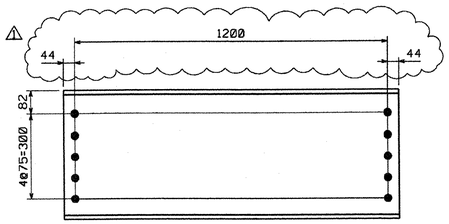
PLOTTED: 03/06/06 08:47:57 AM
BY: Mcreidel

06001 X2 4/21/06 Final Approval and Distribution TO:A.L. St. Onge Contractor,

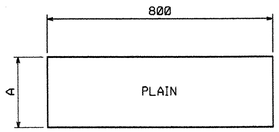
METRIC

METRIC 1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	



DIAPHRAGM ~ MK. D1



MISC. END PLATE
(CODE: 30)

MARK	A
M1	244
M2	247

BILL OF MATERIAL

SHIP.	QTY EA.	MARK	COMMODITY	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	SHIP WEIGHT EA.
				DIAPHRAGM								
1	12	D1	MC	460 x 63.5	1 288	M270M	345W		(MC18 x 42.7)	10	1	81.79
				MISC. END PLATES								
1	4	M1	PL	6 x 244	800	M270M	345W			7	3	9.19
1	4	M2	PL	6 x 247	800	M270M	345W			7	3	9.31
				TOTAL WEIGHT THIS SHEET:	1055.45 kg							

SHOP NOTE

HOLES: 15/16"ø
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

CODE:56 (U.N.) 30

RECEIVED
CK'D BY MGK OK'D BY
APR 27 2006
RESUBMIT APPROVED ✓
BY DATE 5/2/06

NO.	REVISION	BY	DATE
1	REVISED DIAPHRAGM DIMENSIONS & WEIGHT AS PER APPROVAL	WBW	4-19-06

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

DIAPHRAGM & MISC. END PLATES D1, M1 & M2
RTE. NO. TH 35 (BRIDGE NO. 24) OVER PACIFIC BROOK
RTE. NO. TH 35 STA. 1+085.800 TO STA. 1+112.300
TOWN OF MONTGOMERY
FRANKLIN COUNTY, VERMONT
STATE OF VERMONT, AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. BRO 1448 (20)
CONTRACTOR A.L. ST. ONGE CONTRACTOR, INC.
IN CHARGE: BRITIGAN (IH) MADE BY: RC CHK'D BY: MGK DATE: 3/3/06
CONTRACT NUMBER: VT-06001-1 DRAWING NUMBER: 1 OF 5

06135

PLOTTED: 04/19/06 03:55:26 PM BY: cshaffer

METRIC

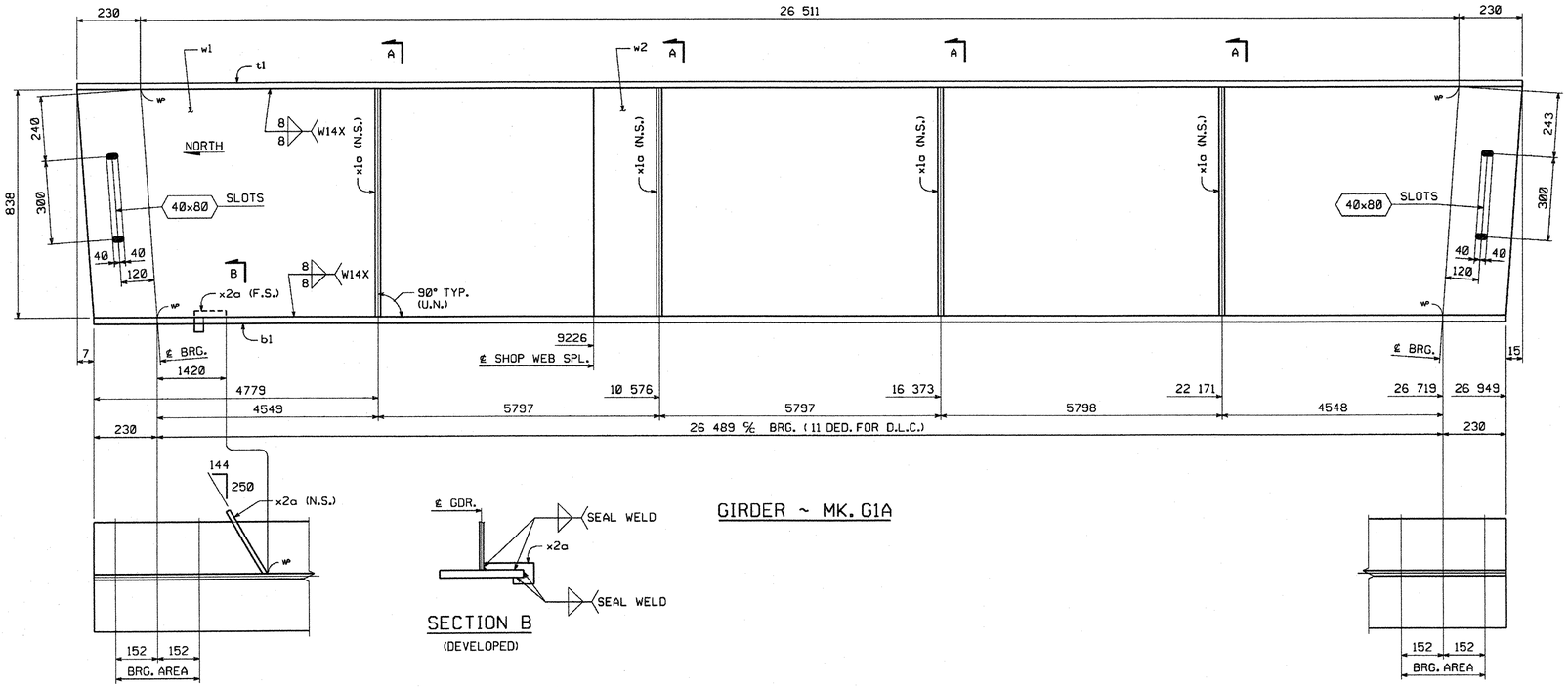
METRIC 1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	

BILL OF MATERIAL

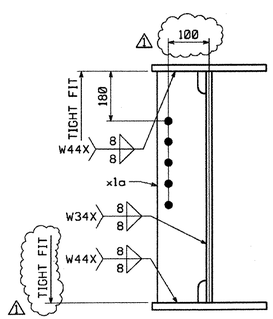
QTY EA.	MARK	COMMODITY	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	SHIP WEIGHT EA.
1	G1A	GIRDER									6406.33
1	w1	PL	13 x 838	9 236	M270M	345W	T		3	2	789.75
1	w2	PL	13 x 838	17 738	M270M	345W	T		3	1	1516.73
1	t1	PL	22 x 406	26 972	M270M	345W			4	2	1890.95
1	b1	PL	25 x 406	26 950	M270M	345W	T		4	1	2147.05
4	x1a	PL	13 x 178	838	M270M	345W			7	1	60.88
1	x2a	PL	6 x 75	277	M270M	345W			7	2	0.98

TOTAL WEIGHT THIS SHEET: 6 406.33 kg



GIRDER ~ MK. G1A

SECTION B
(DEVELOPED)



SECTION A

ORIENTATION DIAGRAM

SHOP NOTE

HOLES: 15/16"ø (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.
FOR WEB CAMBER DIAGRAM, SEE DWG. WC1.

CODE:30

RECEIVED
CK'D BY MKH OK'D BY
APR 27 2006
RESUBMIT APPROVED ✓
BY DKL DATE 5/2/06

NO.	REVISION	BY	DATE
1	REVISED SECTION A AS PER APPROVAL	WBW	4-19-06

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

GIRDER G1A
RTE. NO. TH 35 (BRIDGE NO. 24) OVER PACIFIC BROOK
RTE. NO. TH 35 STA. 1+085.800 TO STA. 1+112.300
TOWN OF MONTGOMERY
FRANKLIN COUNTY, VERMONT
STATE OF VERMONT, AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. BRO 1448 (20)
CONTRACTOR A.L. ST. ONGE CONTRACTOR, INC.
IN CHARGE: BRITIGAN (IH) MADE BY: RC CHK'D BY: MGK DATE: 3/3/06
CONTRACT NUMBER: VT-06001-1 DRAWING NUMBER: 2 OF 5

662 35

PLOTTED: 04/19/06 0355:35 PM BY: cshaffer

06001 X2 4/21/06 Final Approval and Distribution TO:A.L. St. Onge Contractor,

METRIC

METRIC

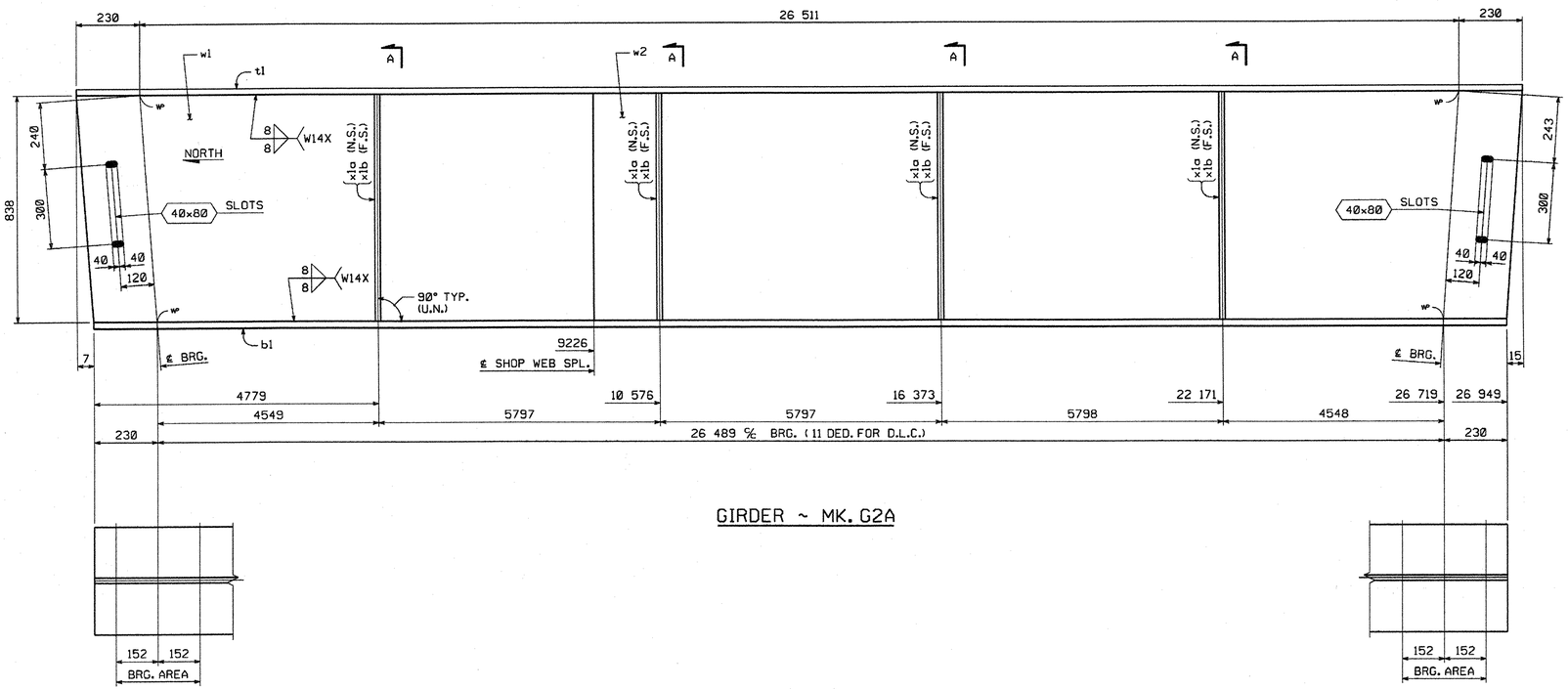
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	

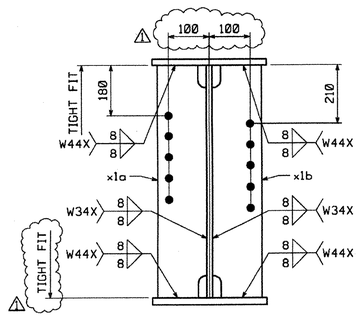
BILL OF MATERIAL

QTY EA.	MARK	COMMODITY	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	SHIP WEIGHT EA.
1	G2A	GIRDER									6466.24
1	w1	PL	13 x 838	9 236	M270M	345W	T		3	2	789.75
1	w2	PL	13 x 838	17 738	M270M	345W	T		3	1	1516.73
1	t1	PL	22 x 406	26 972	M270M	345W			4	2	1890.95
1	b1	PL	25 x 406	26 950	M270M	345W	T		4	1	2147.05
4	x1a	PL	13 x 178	838	M270M	345W			7	1	60.88
4	x1b	PL	13 x 178	838	M270M	345W			7	1	60.88

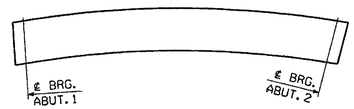
TOTAL WEIGHT THIS SHEET: 6 466.24 kg



GIRDER ~ MK. G2A



SECTION A



ORIENTATION DIAGRAM

SHOP NOTE

HOLES: 15/16"ø (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.
FOR WEB CAMBER DIAGRAM, SEE DWG. WC1.

CODE:30

RECEIVED
OK'D BY: MGK OK'D BY: _____
APR 27 2006
RESUBMIT: _____ APPROVED: ✓
BY: RRW DATE: 5/2/06

NO.	REVISION	BY	DATE
1	REVISED SECTION A AS PER APPROVAL	WBW	4-19-06

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

GIRDER G2A
RTE. NO. TH 35 (BRIDGE NO. 24) OVER PACIFIC BROOK
RTE. NO. TH 35 STA. 1+085.800 TO STA. 1+112.300
TOWN OF MONTGOMERY
FRANKLIN COUNTY, VERMONT
STATE OF VERMONT, AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. BRO 1448 (20)
CONTRACTOR A.L. ST. ONGE CONTRACTOR, INC.
IN CHARGE: BRITIGAN (IH) MADE BY: RC CHK'D BY: MGK DATE: 3/3/06
CONTRACT NUMBER: VT-06001-1 DRAWING NUMBER: 3 OF 5

06855

06001 X2 4/21/06 Final Approval and Distribution TO:A.L. St. Onge Contractor,

PLOTTED: 04/19/06 0365:42 PM BY: cshaffer

METRIC

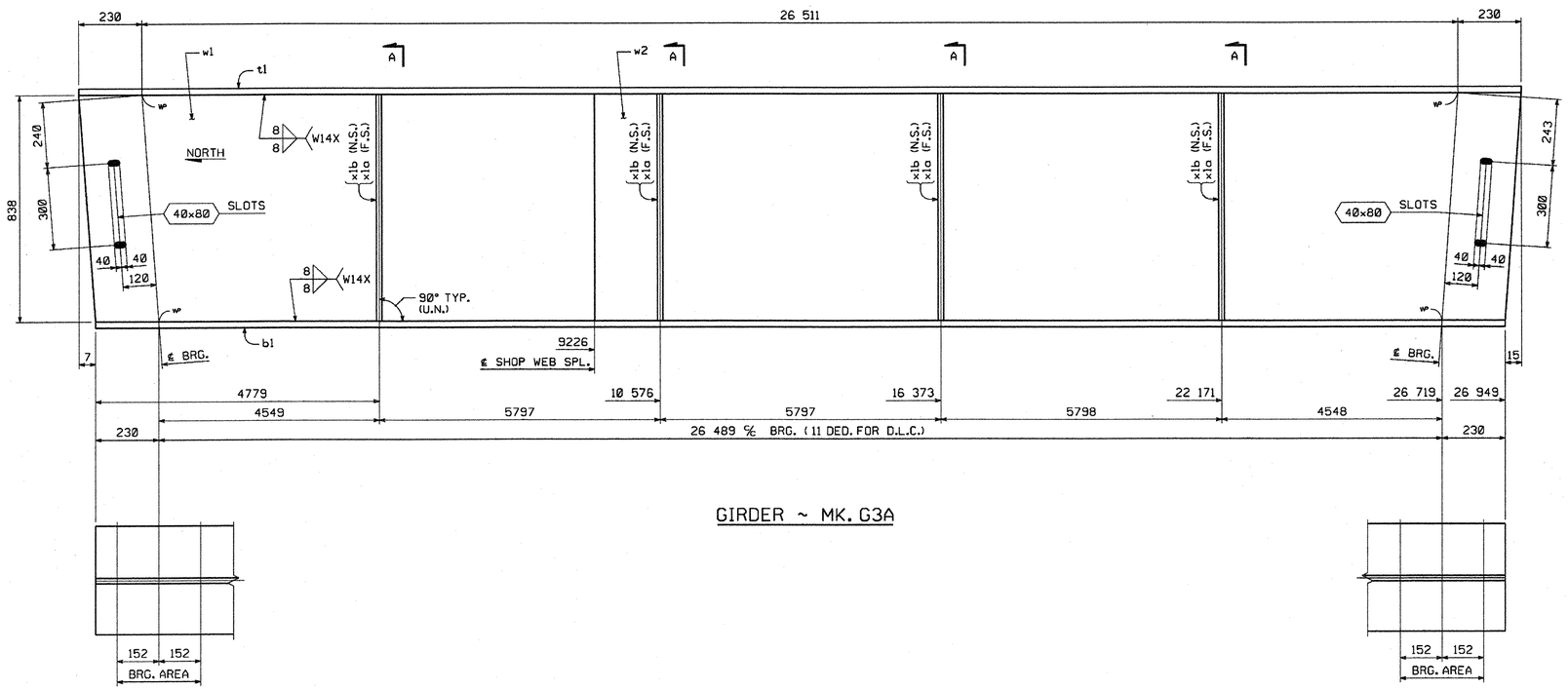
METRIC 1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	

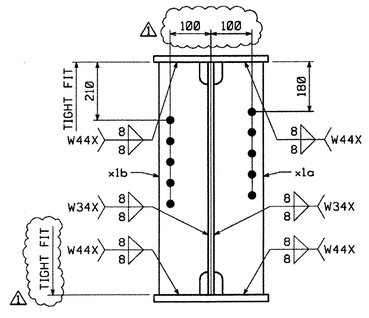
BILL OF MATERIAL

QTY EA.	MARK	COMMODITY	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	SHIP WEIGHT EA.
1	G3A	GIRDER									6466.24
1	w1	PL	13 x 838	9 236	M270M	345W	T		3	2	789.75
1	w2	PL	13 x 838	17 738	M270M	345W	T		3	1	1516.73
1	t1	PL	22 x 406	26 972	M270M	345W			4	2	1890.95
1	b1	PL	25 x 406	26 950	M270M	345W	T		4	1	2147.05
4	x1a	PL	13 x 178	838	M270M	345W			7	1	60.88
4	x1b	PL	13 x 178	838	M270M	345W			7	1	60.88

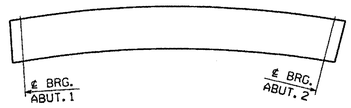
TOTAL WEIGHT THIS SHEET: 6 466.24 kg



GIRDER ~ MK. G3A



SECTION A



ORIENTATION DIAGRAM

SHOP NOTE

HOLES: 15/16"ø (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.
FOR WEB CAMBER DIAGRAM, SEE DWG. WC1.

RECEIVED
CK'D BY MKH OK'D BY
APR 27 2006
RESUBMIT APPROVED ✓
BY DATE 5/2/06

NO.	REVISION	BY	DATE
1	REVISED SECTION A AS PER APPROVAL	WBW	4-19-06

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

GIRDER G3A
RTE. NO. TH 35 (BRIDGE NO. 24) OVER PACIFIC BROOK
RTE. NO. TH 35 STA. 1+085.800 TO STA. 1+112.300
TOWN OF MONTGOMERY
FRANKLIN COUNTY, VERMONT
STATE OF VERMONT, AGENCY OF TRANSPORTATION
STATE CONTRACT OR REF. NO. PROJECT NO. BRO 1448 (20)
CONTRACTOR A.L. ST. ONGE CONTRACTOR, INC.
IN CHARGE: BRITIGAN (IH) MADE BY: RC CHK'D. BY: MGK DATE: 3/3/06
CONTRACT NUMBER: VT-06001-1 DRAWING NUMBER: 4 OF 5

CODE:30

064 55

06001 X2 4/21/06 Final Approval and Distribution TO:A.L. St. Onge Contractor,

PLOTTED: 04/19/06 BY: cshaffer

METRIC

METRIC

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

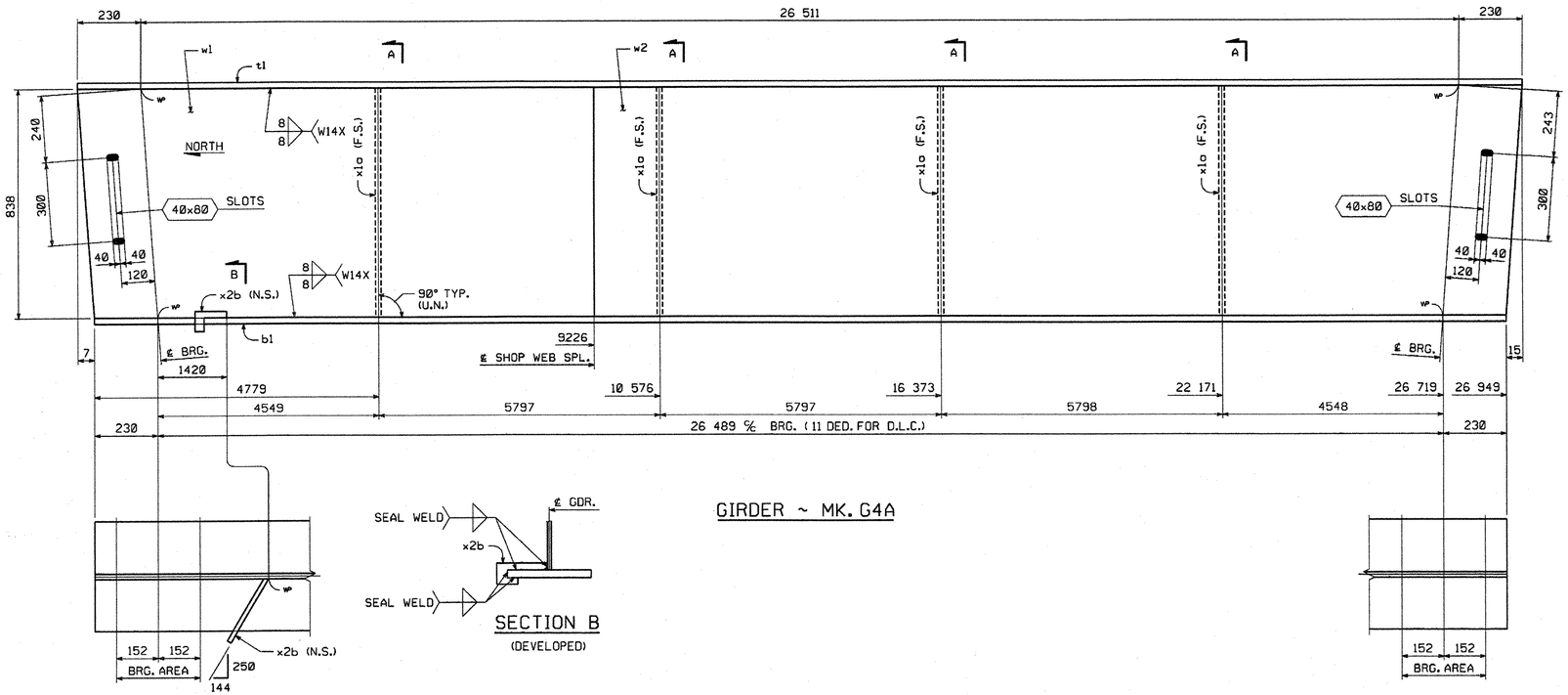
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	

BILL OF MATERIAL

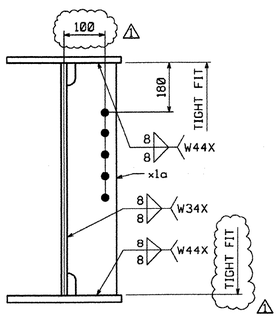
QTY EA.	MARK	COMMODITY	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	SHIP WEIGHT EA.
1	G4A	GIRDER									6406.33
1	w1	PL	13 x 838	9 236	M270M	345W	T		3	2	789.75
1	w2	PL	13 x 838	17 738	M270M	345W	T		3	1	1516.73
1	t1	PL	22 x 406	26 972	M270M	345W			4	2	1890.95
1	b1	PL	25 x 406	26 950	M270M	345W	T		4	1	2147.05
4	x1a	PL	13 x 178	838	M270M	345W			7	1	60.88
1	x2b	PL	6 x 75	277	M270M	345W			7	2	0.98

TOTAL WEIGHT THIS SHEET: 6 406.33 kg

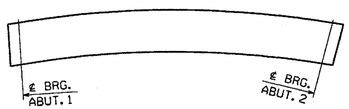
TOTAL WEIGHT FOR BID ITEM #506.55: 26845.59 kg



GIRDER ~ MK. G4A



SECTION A



ORIENTATION DIAGRAM

SHOP NOTE

HOLES: 15/16"ø (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.
FOR WEB CAMBER DIAGRAM, SEE DWG. WC1.

CODE:30

RECEIVED
CK'D BY WKH OK'D BY
APR 27 2006
RESUBMIT APPROVED ✓
BY RRC DATE 5/2/06

NO.	REVISION	BY	DATE
1	REVISED SECTION A AS PER APPROVAL AND UPDATED TOTAL WEIGHT	WBW	4-19-06

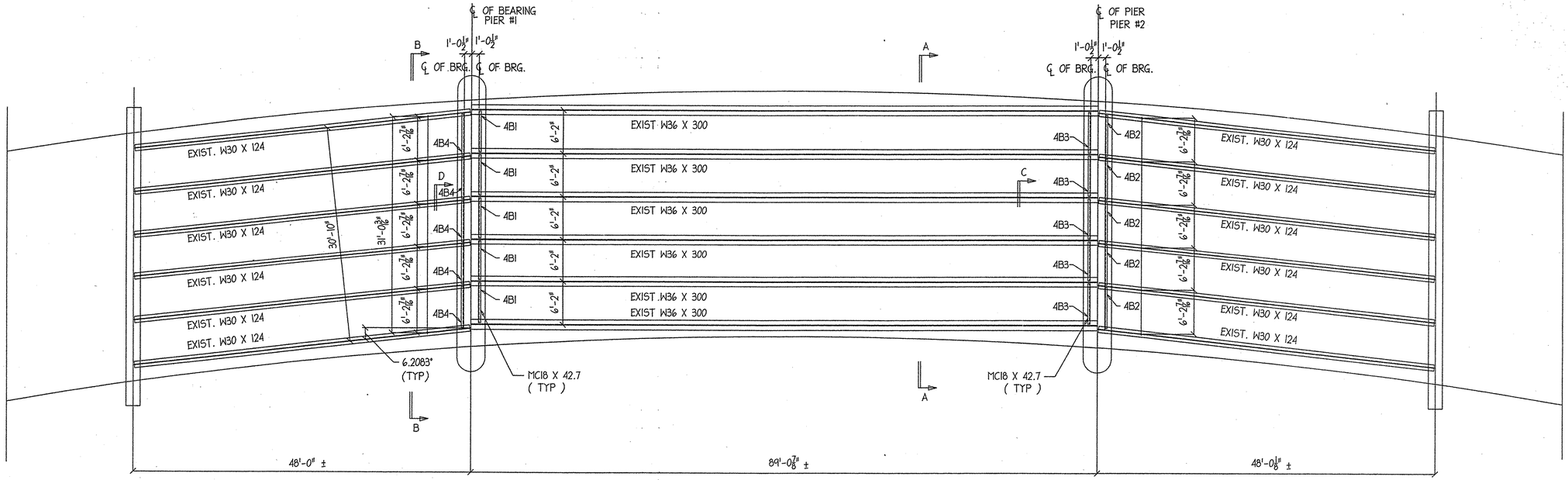
HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

GIRDER	G4A
RTE. NO. TH 35 (BRIDGE NO. 24) OVER PACIFIC BROOK	
RTE. NO. TH 35 STA. 1+085.800 TO STA. 1+112.300	
TOWN OF MONTGOMERY	
FRANKLIN COUNTY, VERMONT	
STATE OF VERMONT, AGENCY OF TRANSPORTATION	
STATE CONTRACT OR REF. NO. PROJECT NO. BRO 1448 (20)	
CONTRACTOR A.L. ST. ONGE CONTRACTOR, INC.	
IN CHARGE: BRITIGAN (IH) MADE BY: RC CHK'D. BY: MGK DATE: 3/3/06	
CONTRACT NUMBER: VT-06001-1 DRAWING NUMBER: 5 OF 5	

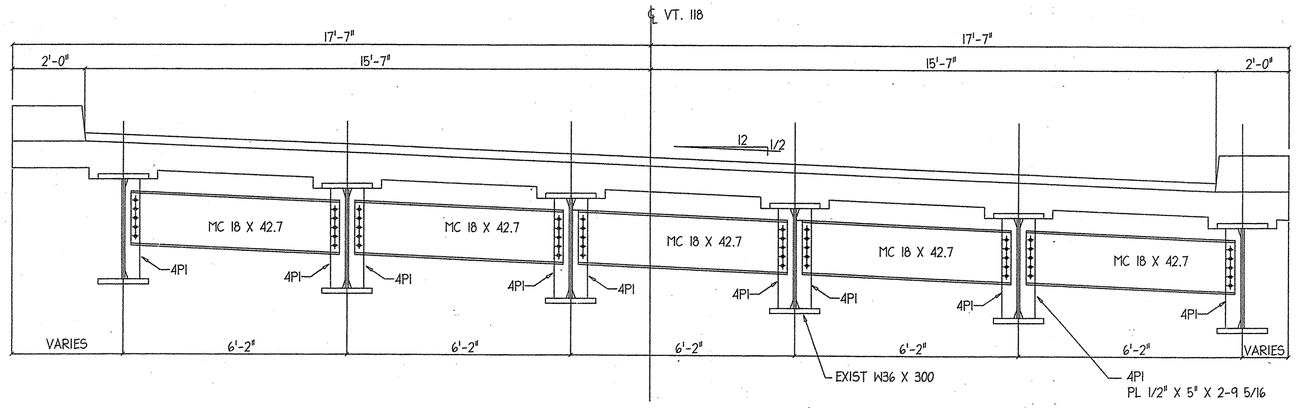
06535

06001 X2 4/21/06 Final Approval and Distribution TO:A.L. St. Onge Contractor,

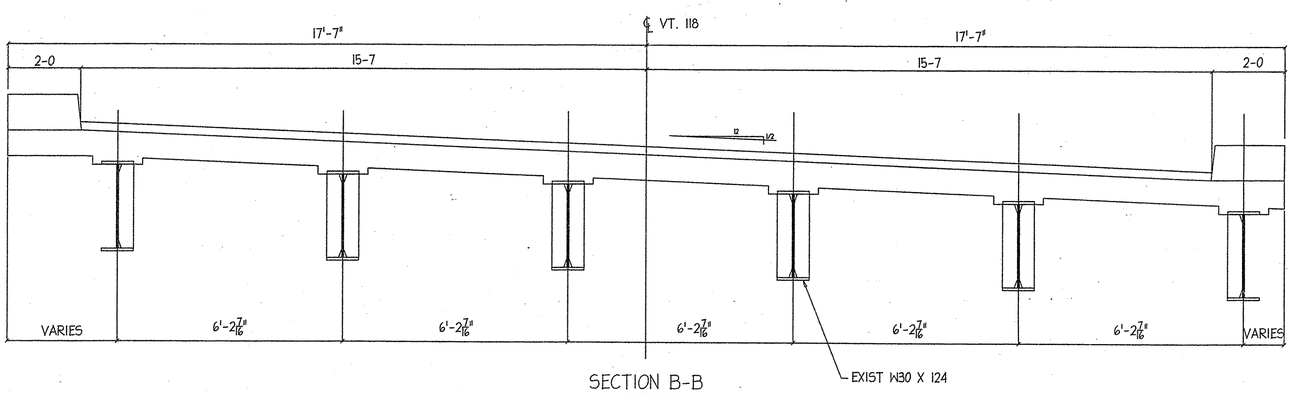
PLOTTED: 04/19/06 0:35:35 PM BY: csheffer



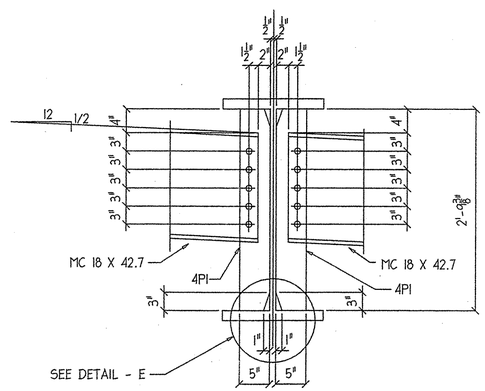
FRAMING PLAN



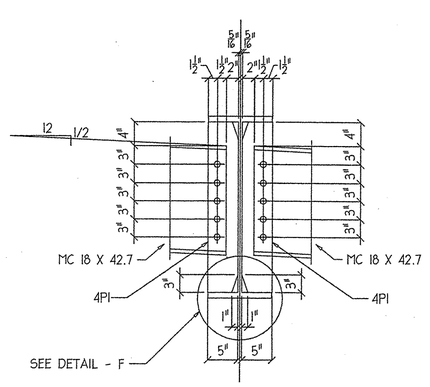
SECTION A-A



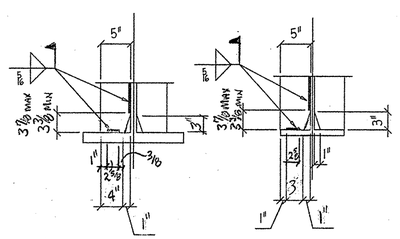
SECTION B-B



SECTION - C



SECTION - D



DETAIL - E

DETAIL - F

RECEIVED
OK'D BY JK OK'D BY DMC
MAY 31 2006
RESUBMIT APPROVED
BY RKW DATE 6/1/06

Structures

1	5/3	Field Welds
REV. NO.	DATE	DESCRIPTION
HOLES:	13/16ø (U.N.O.)	DATE: 3-16-06
PAINT:	GALVANIZED	

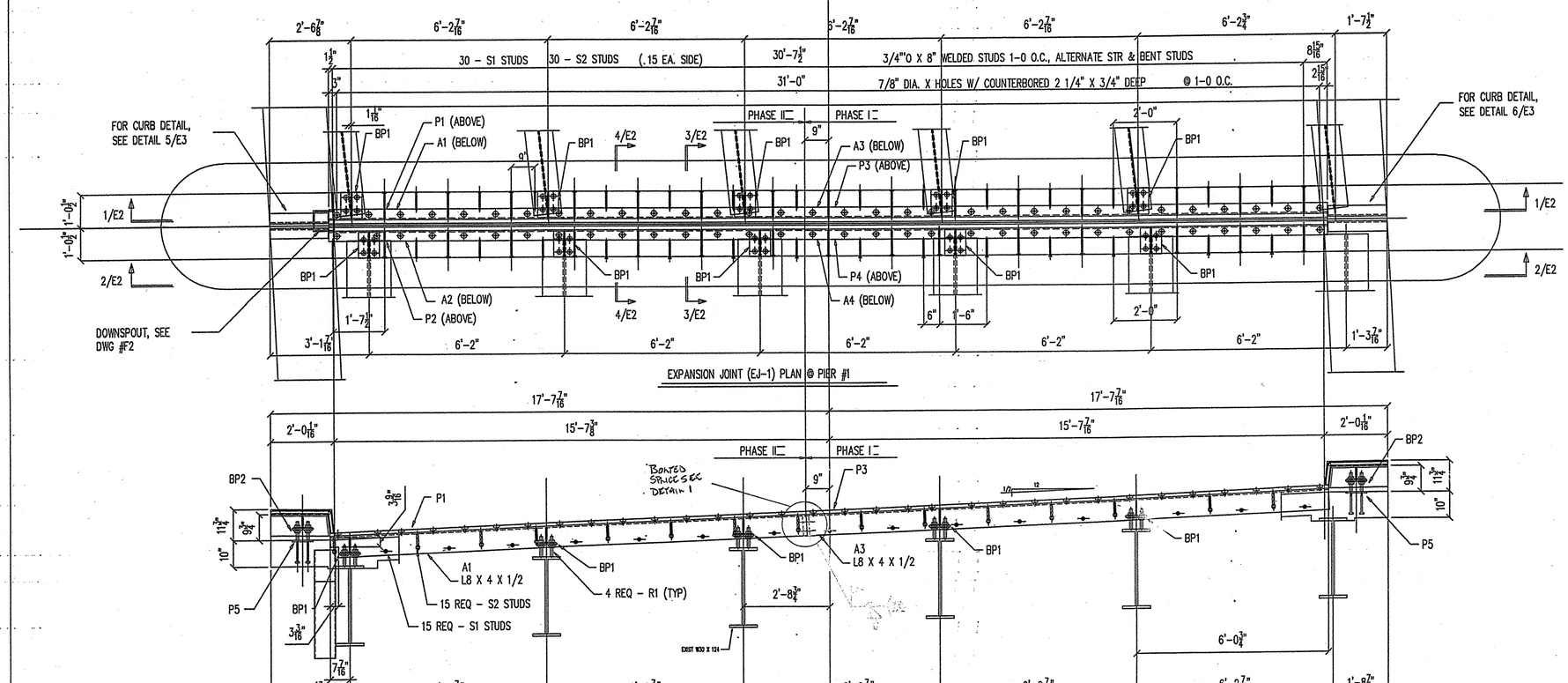
DATE SUB.	PROJECT	MONTGOMERY VT. BRIDGE VT. ROUTE 118 , BRIDGE #21
	LOCATION	MONTGOMERY, VT.
	ARCHITECT	
DATE APP.	ENGINEER	STATE OF VERMONT , AGENCY OF TRANSPROTATION
DATE DIST.	CUSTOMER	A.L. ST. ONGE CONST.

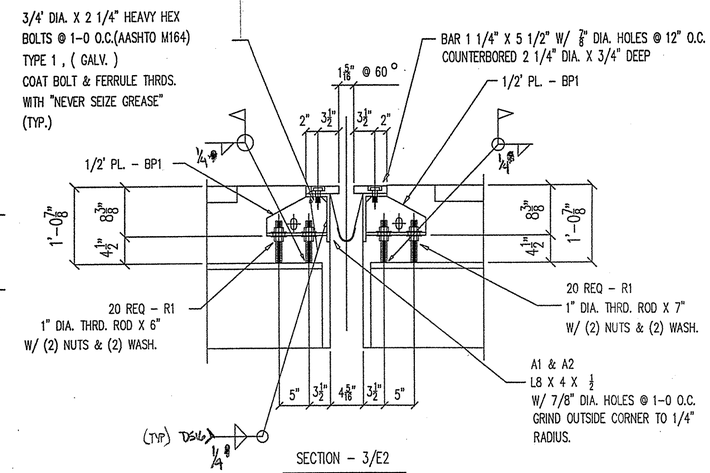
MERRIMACK
MISCELLANEOUS IRON STRUCTURAL STEEL FABRICATORS
MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224-7766
FAX. (603) 224-7925

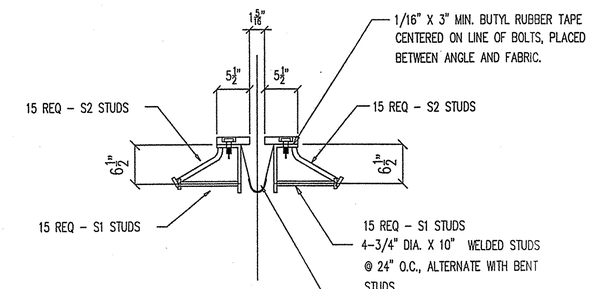
DR BY	KJM
REV BY	
JOB NO.	0770
DWG NO.	E1

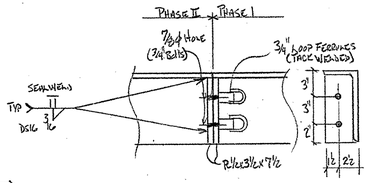
066-BJ

℄ VT. 118

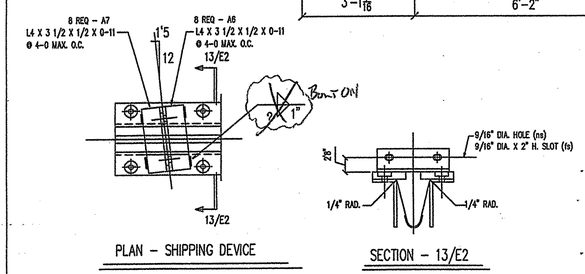


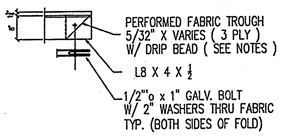






DETAIL 1 - FIELD SPLICE
(PER VT AOT JEFF CLARK)





FOLDED FABRIC TROUGH END DETAIL

TEMP	"A" DIST.	"B" DIST.	"C" DIST.
-30°F	2 9/16	5 9/16	3 1/16
-15°F	2 3/8	5 3/8	2 7/8
0°F	2 1/8	5 1/8	2 5/8
15°F	1 15/16	4 15/16	2 7/16
30°F	1 11/16	4 11/16	2 3/16
45°F	1 1/2	4 1/2	2
60°F	1 5/16	4 5/16	1 13/16
75°F	1 1/16	4 1/16	1 9/16
90°F	7/8	3 7/8	1 3/8
105 F	5/8	3 5/8	1 1/8

RECEIVED
CK'D BY W OK'D BY
MAY 31 2006
RESUBMIT APPROVED
BY DATE 6/1/06

REV. NO.	DATE	DESCRIPTION
1	5/3	FIELD SPLICE

HOLES: 13/16"ϕ (U.N.O.) DATE: 3-16-06
PAINT: GALVANIZED

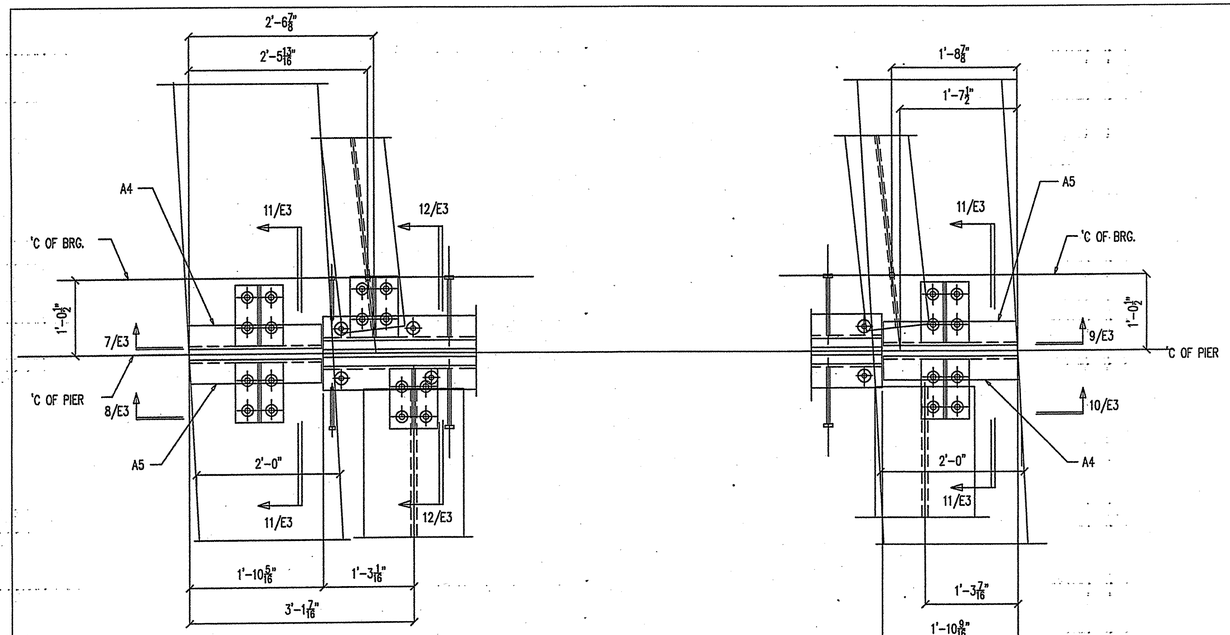
EXPANSION JOINT (EJ-1) PLAN @ PIER #1

DATE SUB.	PROJECT	MONTGOMERY VT. BRIDGE
		VT. ROUTE 118 , BRIDGE #21
	LOCATION	MONTGOMERY, VT.
	ARCHITECT	
DATE APP.	ENGINEER	STATE OF VERMONT , AGENCY OF TRANSPROTATION
DATE DIST.	CUSTOMER	A.L. ST. ONGE CONST.

MERRIMACK
MISCELLANEOUS IRON STRUCTURAL STEEL FABRICATORS
MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224-7766
FAX. (603) 224-7925

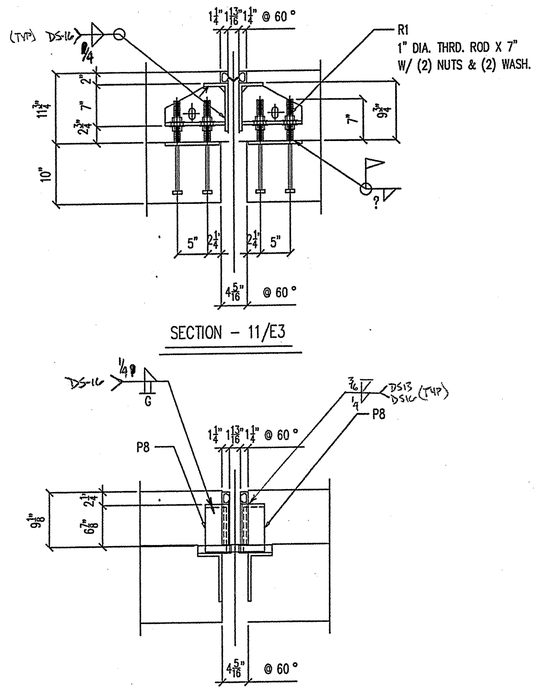
DR BY	KJM
REV BY	
JOB NO.	0770
DWG NO.	E2

0612-85



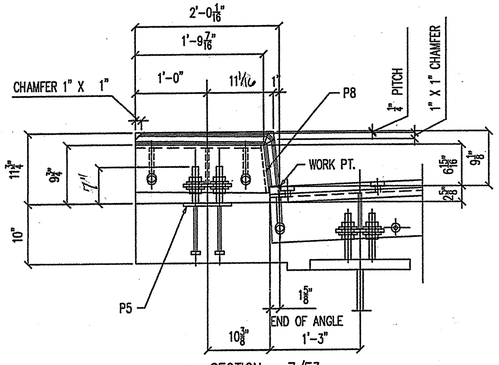
DETAIL – 5/E2

DETAIL – 6/E2

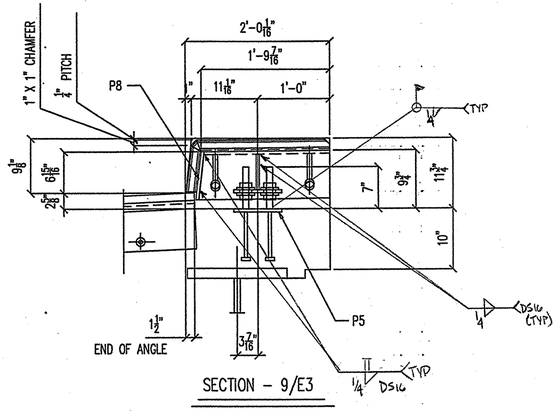


SECTION – 11/E3

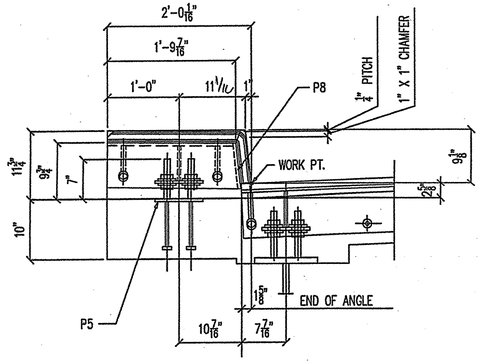
SECTION – 12/E3



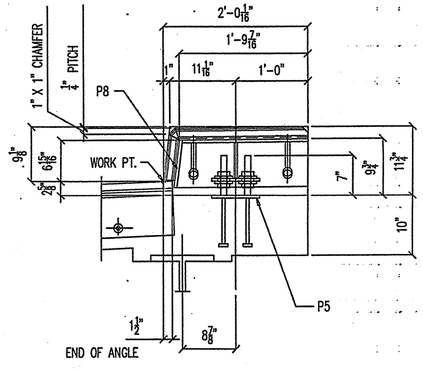
SECTION – 7/E3



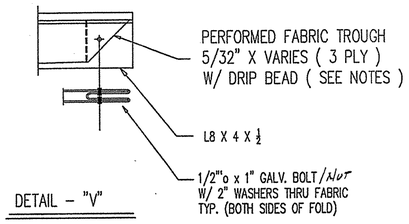
SECTION – 9/E3



SECTION – 8/E3



SECTION – 10/E3



DETAIL – "V"

NOTES:

1.) PREFORMED FABRIC MATERIAL SHALL BE CONTINUOUS AND SHALL CONFORM TO SUBSECTION 707.07.

2.) BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO SPEC. M-198, TYPE B.

3.) ALL STEEL COMPONENTS SHALL BE AASHTO M270, GRADE 36, GALVANIZED OR METALIZED AS PER SUBSECTION 506.15 UNLESS NOTED OTHERWISE, EXCEPT FOR THREADED RODS AND NUTS TO BE ASTM A307.

4.) THE L8 X 4 X 1/2 ANGLES SHALL BE FURNISHED AS ONE CONTINUOUS PIECE (PER PHASE) THE 1 1/4" X 5 1/2" BARS EACH SIDE OF THE JOINT SHALLBE PROVIDED IN TWO EQUAL LENGTHS.

5.) A DRIP BEAD OF 1/4" X 7" STRIP OF PREFORMED MATERIAL SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH USING AN ADHESIVE APPROVED BY THE MANUFACTURER. THE DRIP BEAD SHALL BE APPLIED 1" FROM THE DOWNSPOUT END OF THE TROUGH.

6.) THE EXPANSION JOINT SHALL BE SHOP ASSEMBLED AND SHIPPED AS ONE UNIT, PER PHASE

7.) ALL BOLTS, STUDS, AND RELATED HARDWARE EXCEPT AS NOTED SHALL BE ASTM A307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 (AASHTO M232).

RECEIVED
OK'D BY _____ OK'D BY _____
MAY 3 1 2006
RESUBMIT _____ APPROVED _____
BY RRW DATE 6/1/06

REV. NO.	DATE	DESCRIPTION
1	5/3	PER ENG.

HOLES: 13/16"ø (U.N.O.) DATE: 3-16-06
PAINT: GALVANIZED

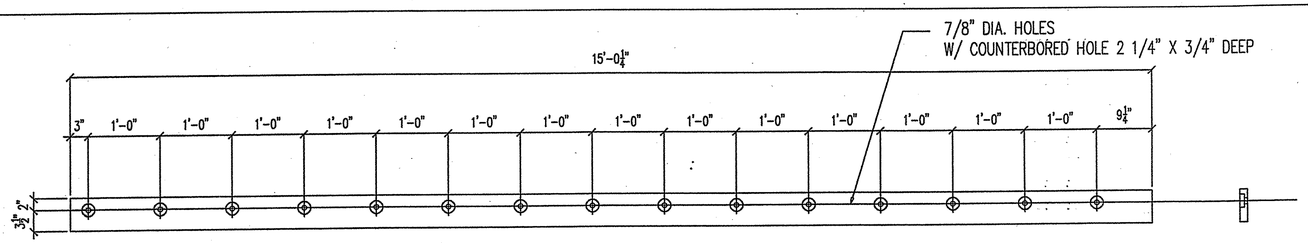
EXPANSION JOINT (EJ-1) CURB DETAILS

DATE SUB.	PROJECT	MONTGOMERY VT. BRIDGE VT. ROUTE 118 , BRIDGE #21
	LOCATION	MONTGOMERY, VT.
	ARCHITECT	
DATE APP.	ENGINEER	STATE OF VERMONT , AGENCY OF TRANSPROTATION
DATE DIST.	CUSTOMER	A.L. ST. ONGE CONST.

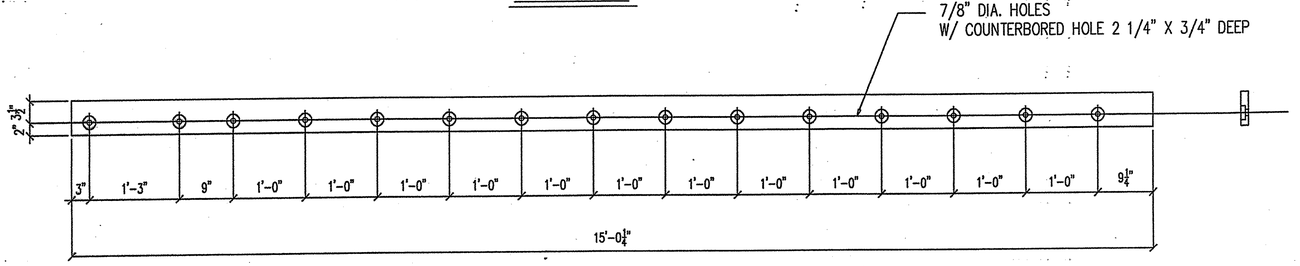
MERRIMACK
MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224-7766
FAX. (603) 224-7925
MISCELLANEOUS IRON STRUCTURAL STEEL FABRICATORS

DR BY KJM
REV BY
JOB NO. 0770
DWG NO. E3

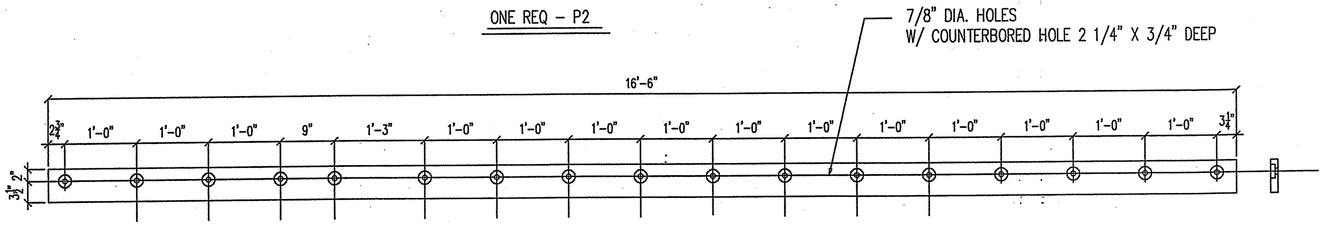
068-85



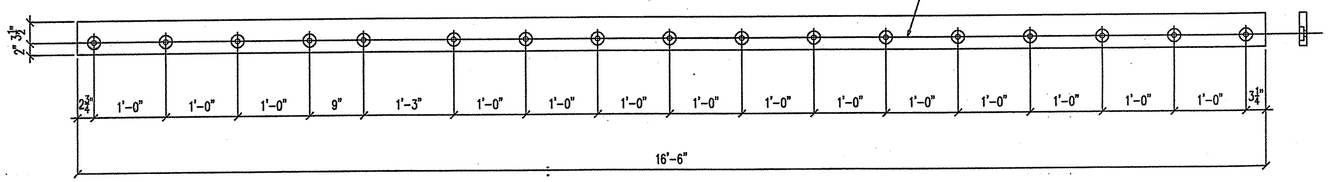
ONE REQ – P1



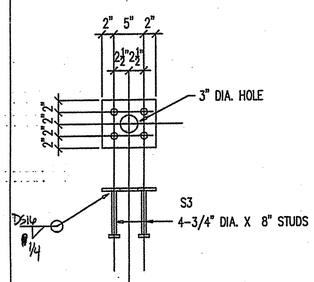
ONE REQ – P2



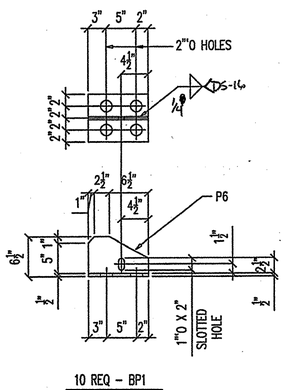
ONE REQ – P3



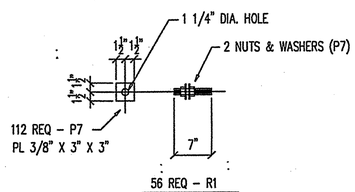
ONE REQ – P4



4 REQ – P5

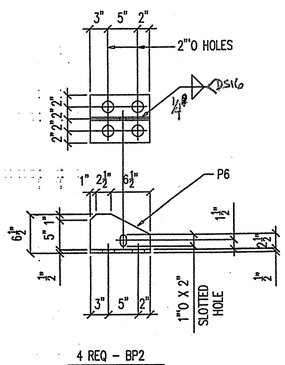


10 REQ – BP1

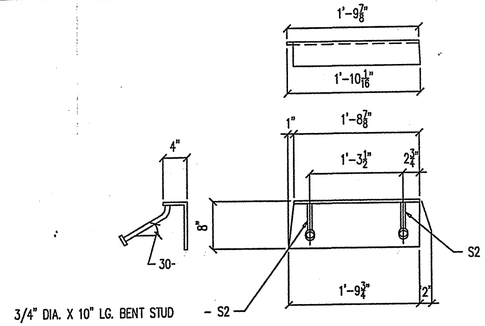


112 REQ – P7
PL 3/8" X 3" X 3"

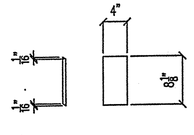
56 REQ – R1



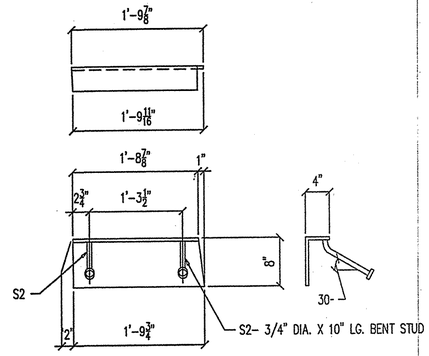
4 REQ – BP2



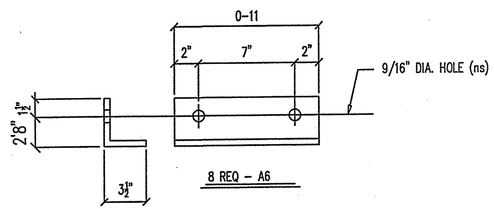
2 REQ – A5



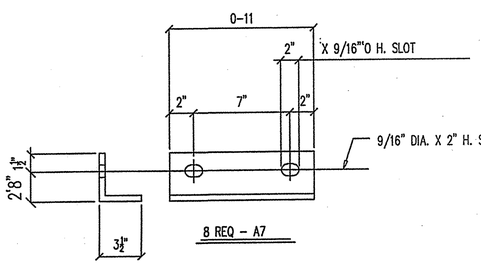
4 REQ – P8



2 REQ – A4



8 REQ – A6



8 REQ – A7

LONG POINT
to
LONG POINT

BILL OF MATERIAL

QTY	MARK	SHAPE	LENGTH		REMARKS
1	EJ–1	EXPANSION JOINT			GALV.
1	A1	L8 X 4 X 1/2	15	0 1/4	
1	A2	L8 X 4 X 1/2	15	0 1/4	
1	A3	L8 X 4 X 1/2	16	6	
1	A4	L8 X 4 X 1/2	16	6	
1	A4	L8 X 4 X 1/2	1	10 1/16	
1	A5	L8 X 4 X 1/2	1	9 7/8	
1	P1	FB 1 1/4" X 5 1/2"	15	0 1/4	
1	P2	FB 1 1/4" X 5 1/2"	15	0 1/4	
1	P3	FB 1 1/4" X 5 1/2"	16	6	
1	P4	FB 1 1/4" X 5 1/2"	16	6	
4	P5	PL 1/2" X 8"	0	9	
16	S3	3/4"ø STUDS	0	8	
10	BP1	PL 1/2" X 8"	0	10	
8	P6	PL 1/2" X 6"	0	10	
56	R1	1"ø THRD. ROD	0	6	W/ 2 NUTS
112	P7	PL 3/8" X 3"	0	3	
4	BP2	PL 1/2" X 8"	0	10	
4	P6	PL 1/2" X 6"	0	10	
4	P8	PL 1/2" X 4"	0	8 1/8	
8	A6	L4 X 3 1/2 X 1/2	0	11	
8	A7	L4 X 3 1/2 X 1/2	0	11	

FIELD BOLTS GALVANIZED

70 – 3/4" DIA. X 2 1/4" HEAVY HEX BOLTS AASHTO M164 TYPE 1.
WITH FERRULE NUTS. (JOINT BAR)

2 – 1/2"ø x 1" BOLT @ FABRIC END.

16 – 3/4" DIA. X 2 1/4" A325 BOLTS (@ SHIPPING DEVICE)

RECEIVED
CK'D BY JP OK'D BY
MAY 3 1 2006
RESUBMIT APPROVED
BY DATE 6/1/06

EXP. JT. FAB. DETAILS

DATE SUB.	PROJECT	MONTGOMERY VT. BRIDGE
		VT. ROUTE 118 , BRIDGE #21
	LOCATION	MONTGOMERY, VT.
	ARCHITECT	
DATE APP.	ENGINEER	STATE OF VERMONT , AGENCY OF TRANSPROTATION
DATE DIST.	CUSTOMER	A.L. ST. ONGE CONST.

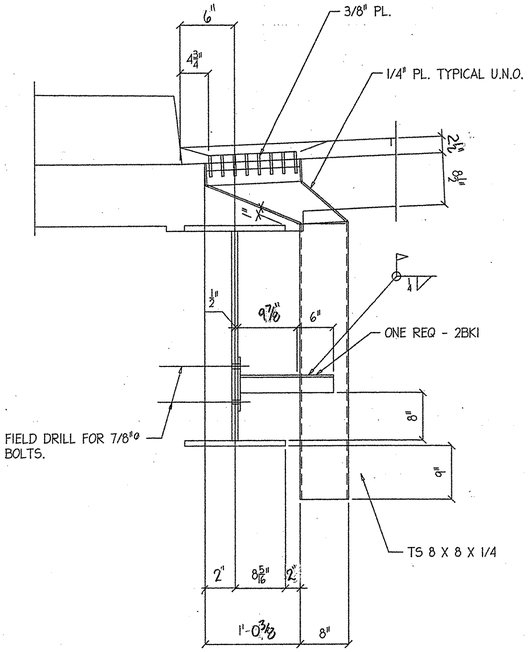
REV. NO.	DATE	DESCRIPTION
HOLES:	13/16"ø (U.N.O.)	DATE: 3-16-06
PAINT:	GALVANIZED	

MERRIMACK
MISCELLANEOUS IRON
STRUCTURAL STEEL
FABRICATORS

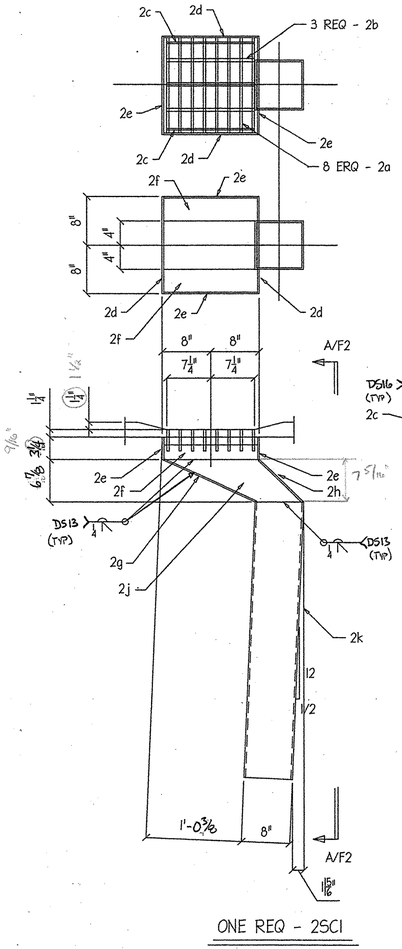
MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224–7766
FAX. (603) 224–7925

DR BY	KJM
REV BY	
JOB NO.	0770
DWG NO.	F1

069-B5

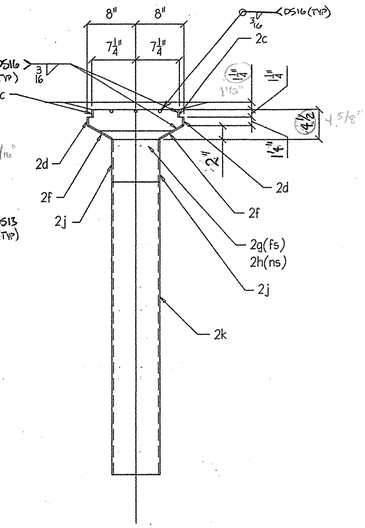


SCUPPER ELEVATION

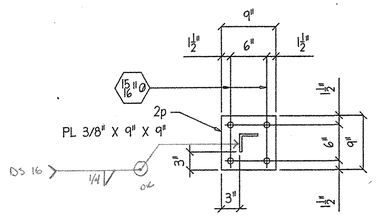


ONE REQ - 2SC1

SCUPPER DETAIL

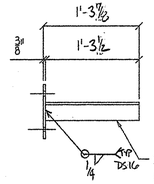


SECTION - A/F2



ONE REQ - 2BK1

(6AW)



L3 X 3 X 3/8 X 1-3 7/16

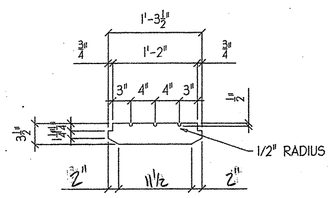
NOTE:
SEAL WELD ALL CONNECTIONS WHEN POSSIBLE

BILL OF MATERIAL

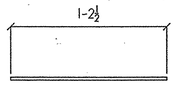
QTY	MARK	SHAPE	LENGTH		REMARKS
1	2SC1	SCUPPER DETAIL			GALV.
8	2a	FB 3/8" X 3 1/2"	1	3 1/2	
3	2b	1/2"ø ROD	1	2 1/2	
2	2c	FB 1/4" X 1 1/4"	1	2 1/2	
2	2d	FB 1/4" X 1 1/4"	1	3 1/2	
2	2e	PL 1/4" X 3 1/4" 3/8"	1	4	
2	2f	FB 1/4" X 4 5/16"	1	3 1/2	
1	2g	FB 1/4" X 8"	1	1 11/16 5/8	
1	2h	FB 1/4" X 8"	0	17 7/8 8 3/16	
2	2j	PL 1/4" X TEMP			SEE DETAIL
1	2k	TS 8 X 8 X 1/4	3	10 1/4 9 13/16	SEE DETAIL
1	2BK1	BRACKET			GALV.
1	2m	L3 X 3 X 3/8	1	3 1/2	
1	2p	PL 3/8" X 9"	0	9	

FIELD BOLTS @ SCUPPER

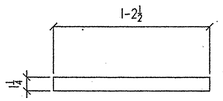
4 - 7/8" X 2 3/4" A-307 BOLTS W/ N & W



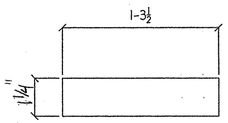
8 REQ - 2a



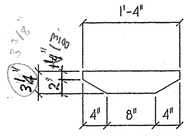
3 REQ - 2b



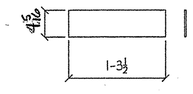
2 REQ - 2c



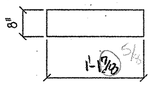
2 REQ - 2d



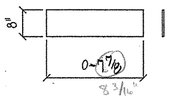
2 REQ - 2e



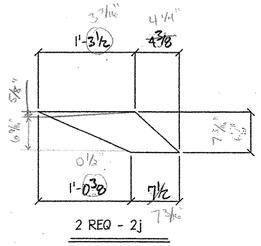
2 REQ - 2f



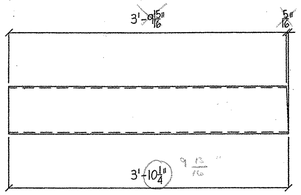
ONE REQ - 2g



ONE REQ - 2h



2 REQ - 2j



ONE REQ - 2k

SCUPPER NOTES

1.) HOLLOW STRUCTURAL STEEL TUBE SHALL CONFORM TO ASTM A-500 GR. B
2.) ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO AASHTO M270 GR. 36
3.) ALL SCUPPERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.
4.) ALL BOLTS AND RELATED HARDWARE SHALL BE ASTM A-307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 (AASHTO M 232M/M 232).

RECEIVED
CK'D BY SL OK'D BY CWC
MAY 31 2006
RESUBMIT ____ APPROVED AS NOTED
BY ____ DATE 6/1/06

REV. NO.	DATE	DESCRIPTION
1	5/3	PEER ENG.

HOLES: 13/16"ø (U.N.O.) DATE: 3-16-06
PAINT: GALVANIZED

SCUPPER ELEVATION

DATE SUB.	PROJECT	MONTGOMERY VT. BRIDGE VT. ROUTE 118 , BRIDGE #21
	LOCATION	MONTGOMERY, VT.
	ARCHITECT	
DATE APP.	ENGINEER	STATE OF VERMONT , AGENCY OF TRANSPROTATION
DATE DIST.	CUSTOMER	A.L. ST. ONGE CONST.

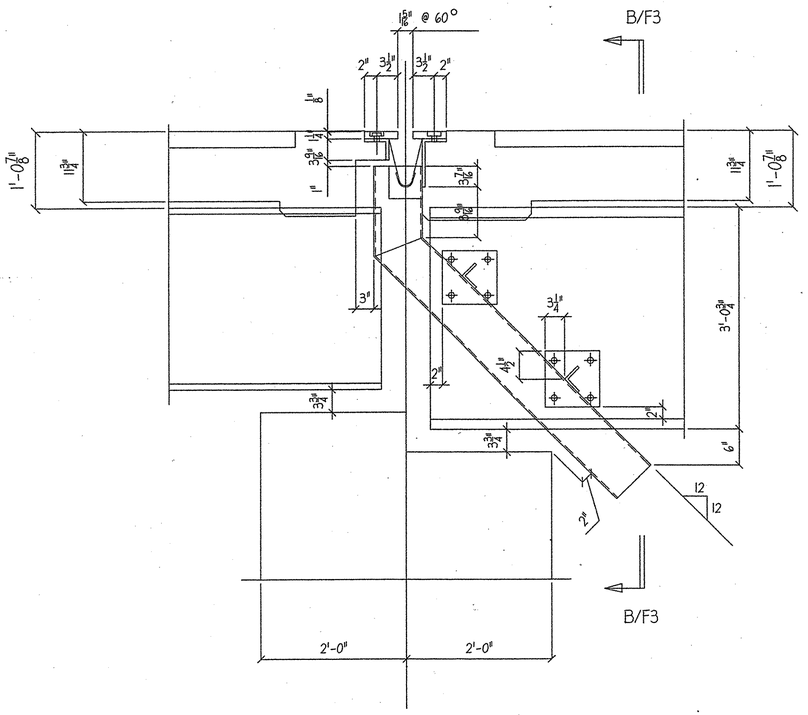
MERRIMACK

MISCELLANEOUS IRON
STRUCTURAL STEEL
FABRICATORS

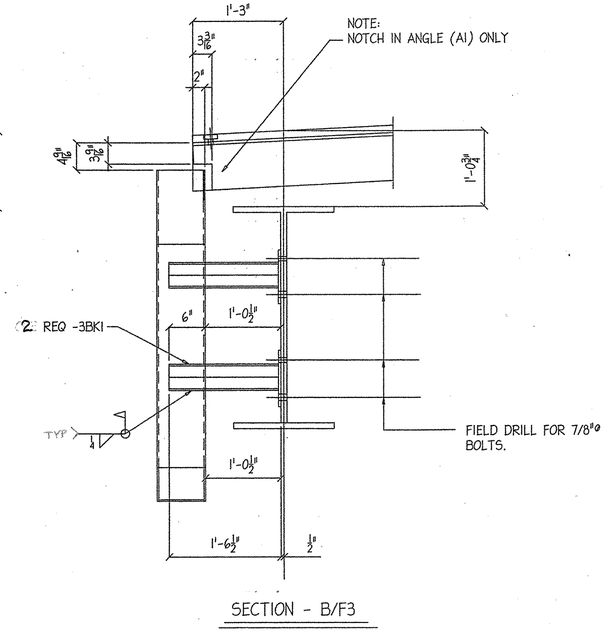
MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224-7766
FAX. (603) 224-7925

DR BY KJM
REV BY
JOB NO. 0770
DWG NO. F2

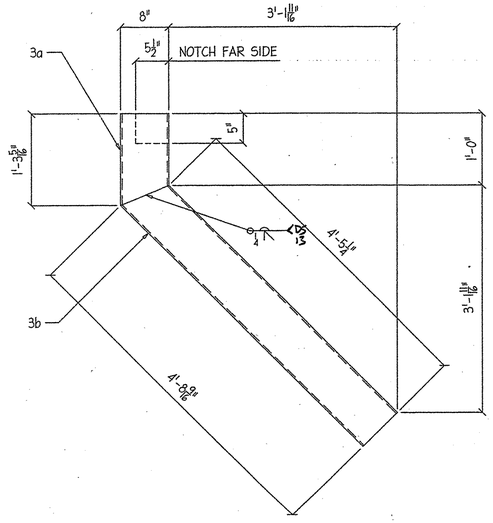
620-B3



DOWNSPOUT ELEVATION

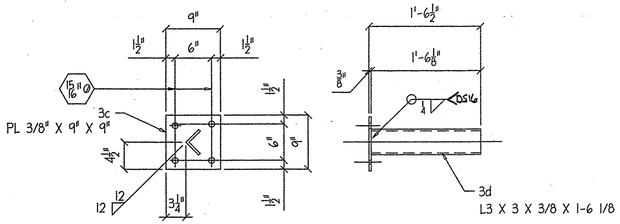


SECTION - B/F3



ONE REQ - 3DSP1

DOWNSPOUT DETAIL



2 REQ - 3BK1

(GALV.)

BILL OF MATERIAL

QTY	MARK	SHAPE	LENGTH		REMARKS
1	3DPT1	SCUPPER DETAIL			GALV.
1	3a	TS 8 X 8 X 1/4	1	3 5/16	TO LG. PT.
1	3b	TS 8 X 8 X 1/4	4	8 9/16	TO LG. PT.
2	3BK1	BRACKET			
2	3c	PL 3/8" X 9"	0	9	
2	3d	L3 X 3 X 3/8	1	6 1/8	

FIELD BOLTS @ DOWNSPOUT GALV.

8 - 7/8" X 2 3/4" A-307 BOLTS W/ N & W

RECEIVED
CK'D BY KP OK'D BY
MAY 31 2006
RESUBMIT APPROVED AS NOTED
BY KPW DATE 6/1/06

DOWNSPOUT NOTES

1.) HOLLOW STRUCTURAL STEEL TUBE SHALL CONFORM TO ASTM A-500 OR A-501.
2.) ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO AASHTO M270 GR. 36
3.) ALL SCUPPERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111.
4.) ALL BOLTS AND RELATED HARDWARE SHALL BE ASTM A-307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 (AASHTO M 232M/M 232).

REV. NO.	DATE	DESCRIPTION
1	5/3	Per Eng.

HOLES: 13/16" ø (U.N.O.) DATE: 3-16-06
PAINT: GALVANIZED

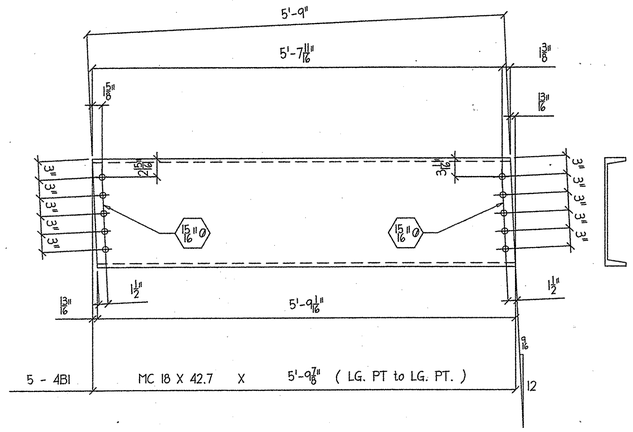
DOWNSPOUT ELEVATION

DATE SUB.	PROJECT	MONTGOMERY VT. BRIDGE VT. ROUTE 118 , BRIDGE #21
	LOCATION	MONTGOMERY, VT.
	ARCHITECT	
DATE APP.	ENGINEER	STATE OF VERMONT , AGENCY OF TRANSPROTATION
DATE DIST.	CUSTOMER	A.L. ST. ONGE CONST.

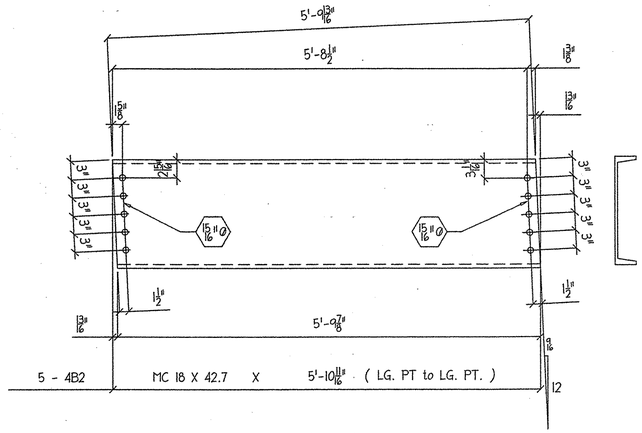
MERRIMACK
MISCELLANEOUS IRON STRUCTURAL STEEL FABRICATORS
MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224-7766
FAX. (603) 224-7925

DR BY KJM
REV BY
JOB NO. 0770
DWG NO. F3

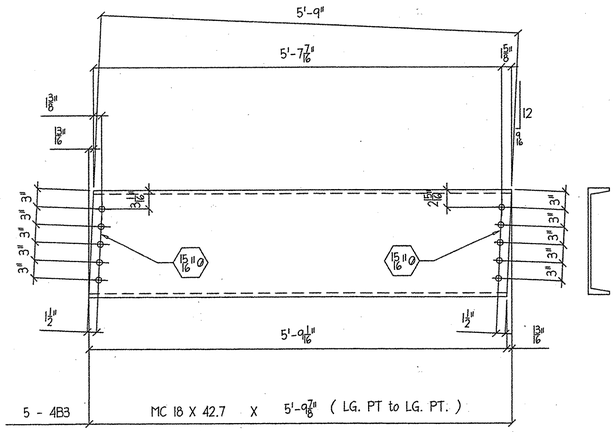
071-B5



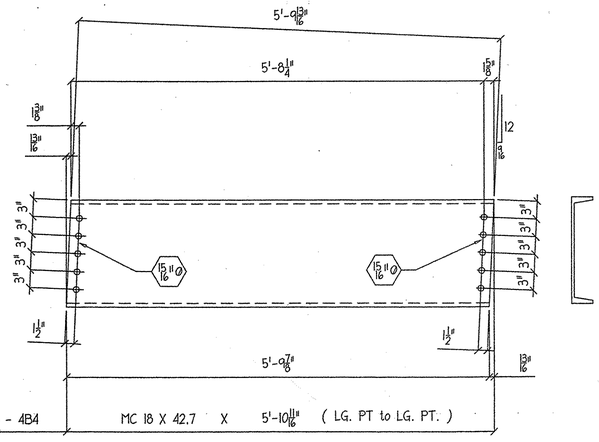
5 - 4B1 MC 18 X 42.7 X 5'-9 7/8" (LG. PT to LG. PT.)



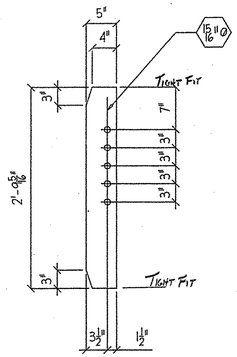
5 - 4B2 MC 18 X 42.7 X 5'-10 11/16" (LG. PT to LG. PT.)



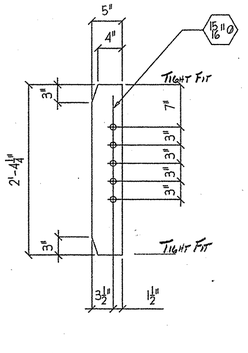
5 - 4B3 MC 18 X 42.7 X 5'-9 7/8" (LG. PT to LG. PT.)



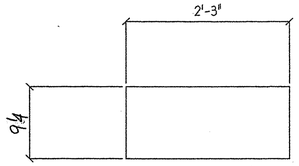
5 - 4B4 MC 18 X 42.7 X 5'-10 11/16" (LG. PT to LG. PT.)



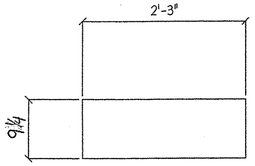
20 REQ - 4P1
PL 1/2" X 5" X 2-9 5/16



20 REQ - 4P2
PL 1/2" X 5" X 2-4 1/4



6 REQ - 4P3
PL 1/4" X 9 1/4" X 2-3
@ SHOE ABUT. #1



6 REQ - 4P4
PL 1/4" X 9 1/4" X 2-3
@ SHOE ABUT. #2

BILL OF MATERIAL

QTY	MARK	SHAPE	LENGTH		REMARKS
5	4B1	MC 18 X 42.7	5	9 7/8	GALV.
5	4B2	MC 18 X 42.7	5	10 11/16	
5	4B3	MC 18 X 42.7	5	9 7/8	
5	4B4	MC 18 X 42.7	5	10 11/16	
20	4P1	PL 1/2" X 5"	2	9 5/16	
20	4P2	PL 1/2" X 5"	2	4 1/4	
6	4P3	PL 1/4" X 9 1/4"	2	3	
6	4P4	PL 1/4" X 9 1/4"	2	3	

RECEIVED
CK'D BY OK'D BY
MAY 31 2006
RESUBMIT APPROVED
BY DATE 6/1/06

REV. NO.	DATE	DESCRIPTION
1	5/3	PER ENG.

HOLES: 13/16"ø (U.N.O.) DATE: 3-16-06
PAINT: GALVANIZED

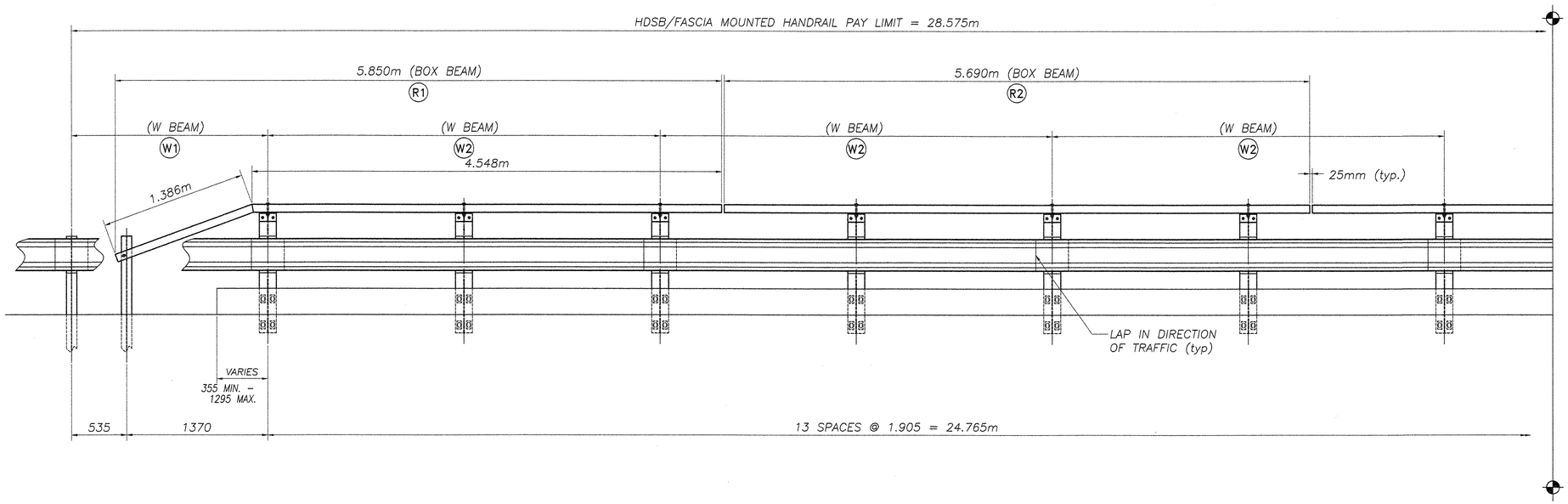
BMS. 4B1 to 4B4
PL. 4P1 & 4P2

DATE SUB.	PROJECT	MONTGOMERY VT. BRIDGE VT. ROUTE 118 , BRIDGE #21
	LOCATION	MONTGOMERY, VT.
	ARCHITECT	
DATE APP.	ENGINEER	STATE OF VERMONT , AGENCY OF TRANSPROTATION
DATE DIST.	CUSTOMER	A.L. ST. ONGE CONST.

MERRIMACK
MISCELLANEOUS IRON STRUCTURAL STEEL FABRICATORS
MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224-7766
FAX. (603) 224-7925

DR BY	KJM
REV BY	
JOB NO.	0770
DWG NO.	F4

072-B5

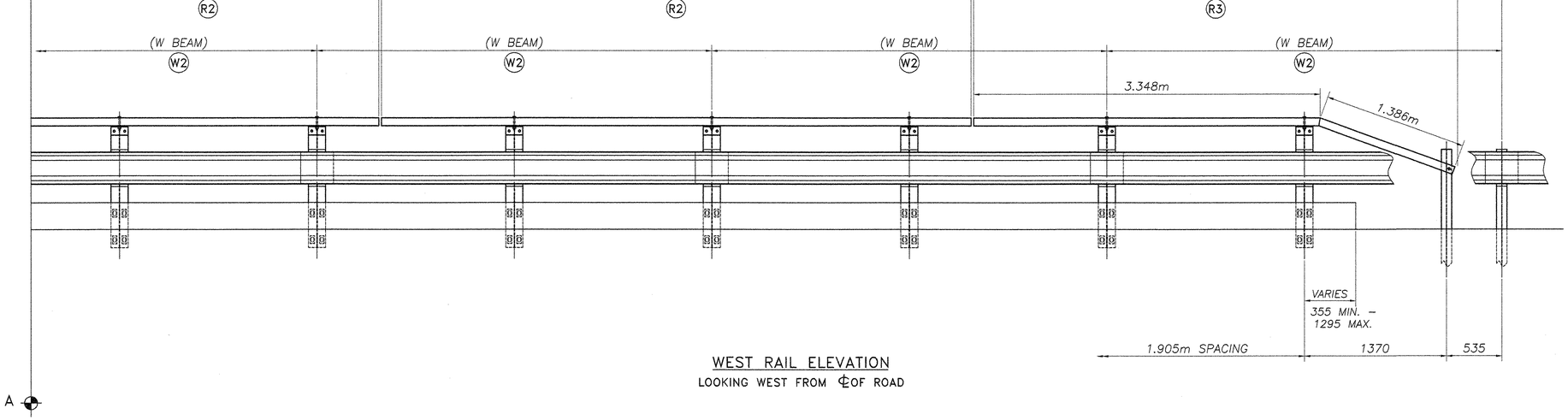


BILL OF MATERIAL (BOTH SIDES OF BRIDGE)					
MK. #	Qty.	Description	Size/Shape	Length	Material
		WEATHERING STEEL COMPONENTS			
		POST			
	29	fascia mounted post	W200 x 35.9	1270	AASHTO M222
	33	steel blockout	W150 x 13.5	360	AASHTO M222
	4	hex bolt w/ nut, flat washer & rec washer	M16	250	A307
	33	post bolt w/ hx nut, flat washer & rec washer	M16	50	A307
	136	post bolt w/ flat washer & hex nut	M16	38	A307
	29	hand rail attachment angle	L127 x 89 x 9.5	165	AASHTO M222
	58	post bolt w/ flat washer & hex nut	M16	50	A307
	8	driven post	W150 x 13.5	1829	AASHTO M222
	136	w beam splice bolt w/ DR nut	M16	32	A307
		GALVANIZED AND PAINTED STEEL COMPONENTS			
		HANDRAIL			
R1	1	hand rail tube w/ drop end	TS 152x75x6.4	5.850m	A500 gr B
R2	6	hand rail tube	TS 152x75x6.4	5.690m	A500 gr B
R3	1	hand rail tube w/ drop end	TS 152x75x6.4	4.560m	A500 gr B
R4	1	partially curved hand rail tube w/ drop end	TS 152x75x6.4	5.864m	A500 gr B
R5	1	hand rail tube w/ drop end	TS 152x75x6.4	6.555m	A500 gr B
	29	hex bolt w/2 flat washer & heavy hex nut	M16	120	A307
	16	splice plate	PL 20 x 127	787	AASHTO M223
	32	hex bolt w/ flat washer & heavy hex nut	M20	114	A307
		ITEMS FURNISHED BY OTHERS			
		W BEAM (by others)			
W1	2	w beam	1.905m		M180 B4
W2	13	w beam	3.810m		M180 B4
W3	1	w beam curved to 5.500m convex radius	1.905m		M180 B4
W4	1	w beam partially curved to 5.500m convex radius	3.810m		M180 B4
		ANCHORS (by others)			
	58	anchor u bolt w/ 4 hex nuts and 2 flat washers	25 x 250	305	A449
	116	plate washer	PL 6x55	130	AASHTO M222

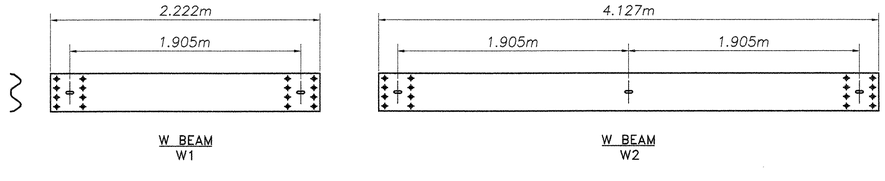
NOTE:

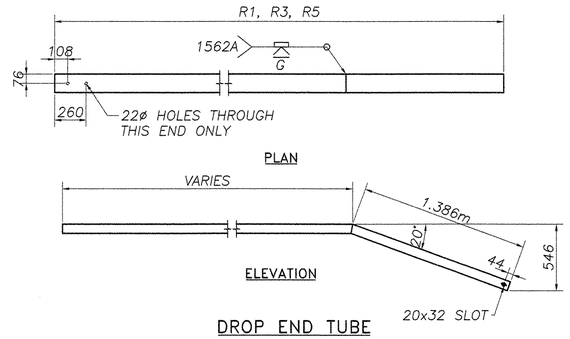
1. WEATHERING STEEL HARDWARE PROVIDED, SUBJECT TO AVAILABILITY AT TIME OF DELIVERY. BOLTS MAY BE ALTERNATIVELY PROVIDED GALVANIZED WITH ALL SURFACES, EXPOSED TO VIEW AFTER FINAL INSTALLATION, TOUCED UP WITH BROWN PAINT. PAINTING OF EXPOSED HARDWARE SURFACES SHALL BE PAINTED AFTER INSTALLATION IN THE FIELD. TOUCH UP PAINT MATCHING THE SHOP APPLIED PAINT SYSTEM WILL BE FURNISHED FOR MINOR FIELD REPAIR AFTER INSTALLATION AND PAINTING OF HARDWARE IF NECESSARY.

2. TS 152 x 76 x 6 HAND RAIL TO BE GALVANIZED AND PAINTED BROWN, COLOR 20059 IN ACCORDANCE WITH VAOT SUPPLEMENTAL SPECIFICATION 513.06(f).



WEST RAIL ELEVATION
LOOKING WEST FROM ℄OF ROAD





DROP END TUBE

REVISIONS		
No.	Remarks	Date
0	Initial submittal	7/31/06
0	Second submittal	8/16/06

VTrans - PDD

SEP 0 6 2006

Structures Design Section

—Record Plans—

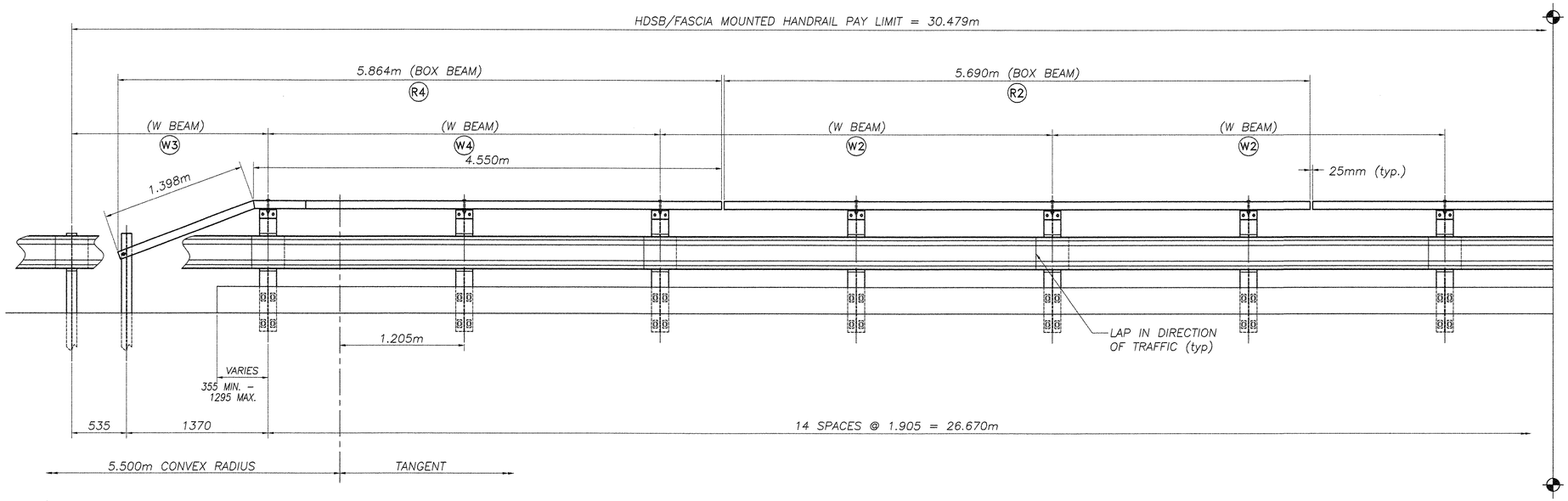
HIGHWAY SAFETY CORP.
GLASTONBURY, CT

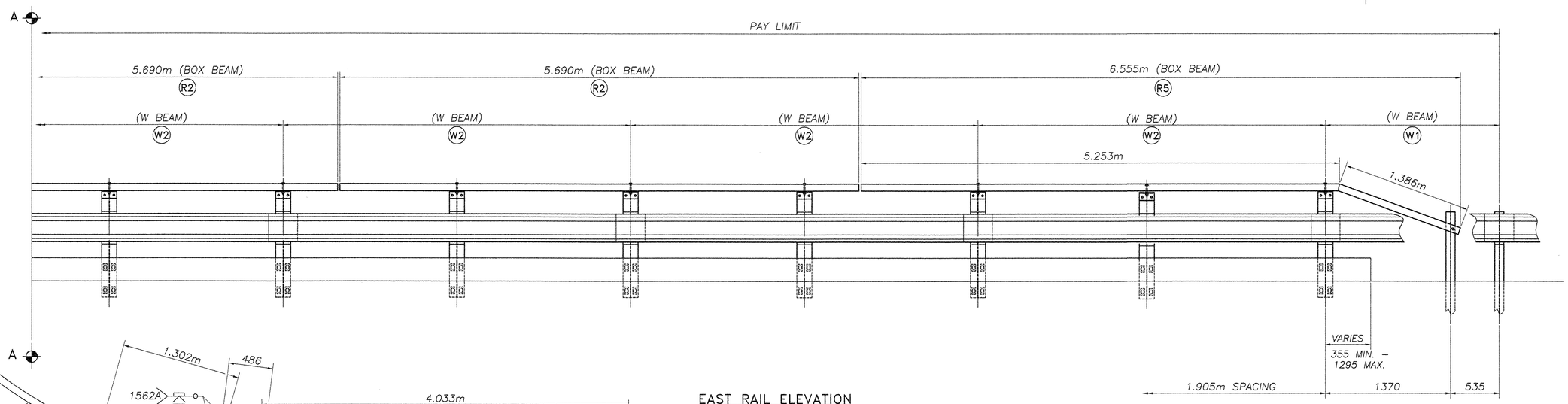
ITEM # 525.43 FASCIA MOUNTED HDSB WITH HANDRAIL
PROJECT NUMBER: BRO 1448 (20)
TOWN OF MONTGOMERY, VT
COUNTY OF FRANKLIN
ROUTE NO. TH 35, BRIDGE NO. 24

GENERAL CONTRACTOR
SUB CONTRACTOR F.R. LAFAYETTE INC.

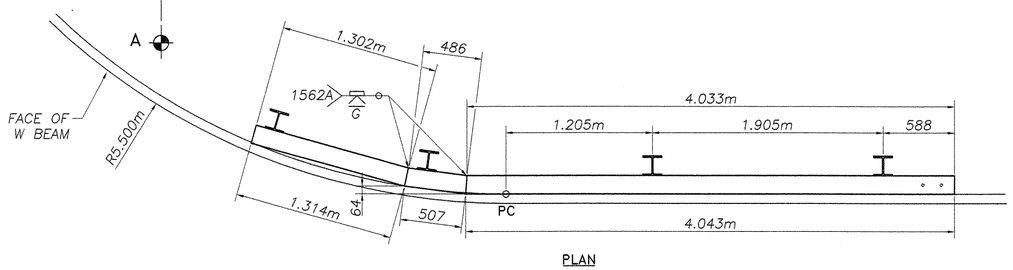
DRAWN MHM
CHECKED
DATE 7/20/06
SCALE NTS
HSC REFERENCE NO. 1562
SIZE D REVISION 0
SHEET NO. 1 of 3

073 BR

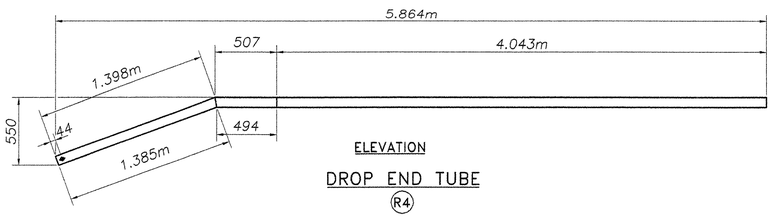




EAST RAIL ELEVATION
LOOKING EAST FROM ℄ OF ROAD



PLAN



ELEVATION

DROP END TUBE
R4

REVISIONS		
No.	Remarks	Date
0	Initial submittal	7/31/06
0	Second submittal	8/16/06

VTrans - PDD

SEP 0 6 2006

Structures Design Section

—RECORD PLANS—

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

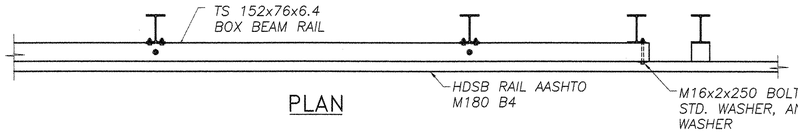
ITEM # 525.43 FASCIA MOUNTED HDSB WITH HANDRAIL
PROJECT NUMBER: BRO 1448 (20)
TOWN OF MONTGOMERY, VT
COUNTY OF FRANKLIN
ROUTE NO. TH 35, BRIDGE NO. 24

GENERAL CONTRACTOR

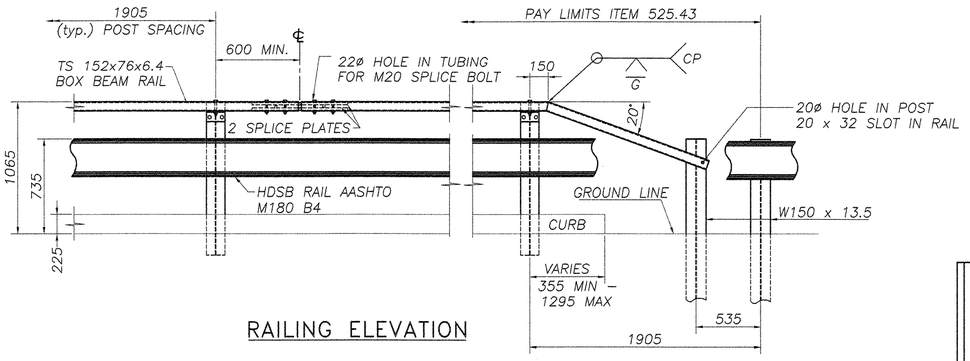
SUB CONTRACTOR F.R. LAFAYETTE INC.

DRAWN	MHM
CHECKED	
DATE	7/20/06
SCALE	NTS
HSC REFERENCE NO.	1562
SIZE	D
REVISION	0
SHEET NO.	2 of 3

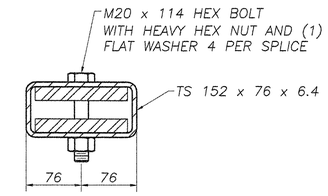
074 BR



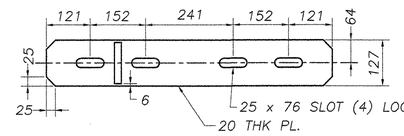
PLAN

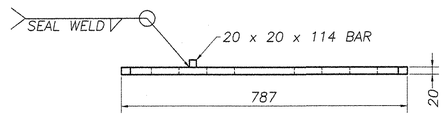


RAILING ELEVATION

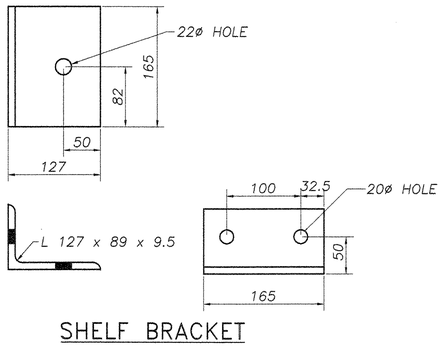


SPLICE SECTION

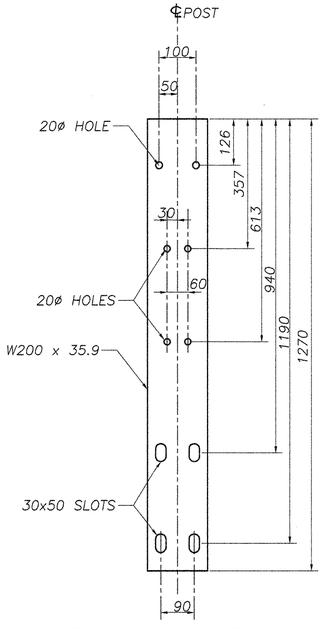




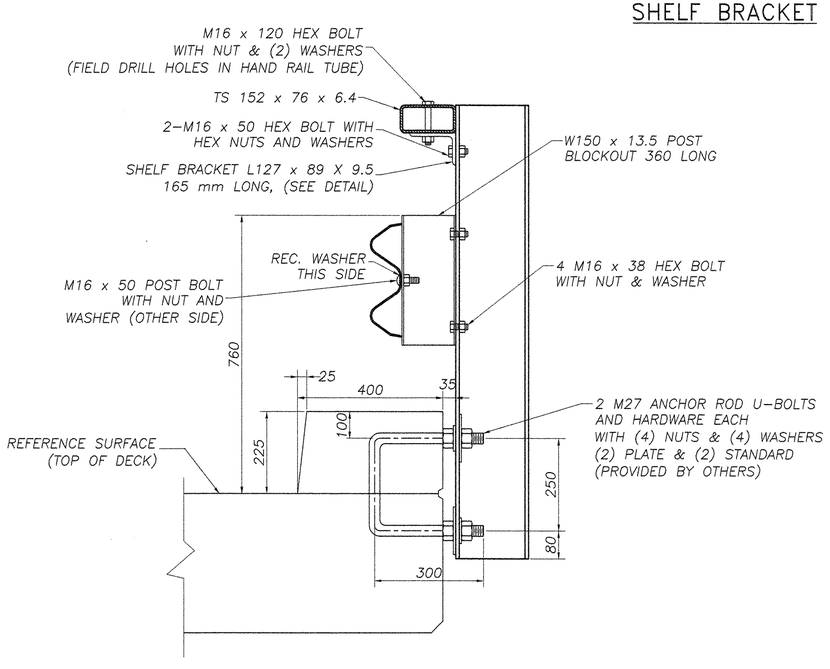
SPLICE PLATE DETAILS



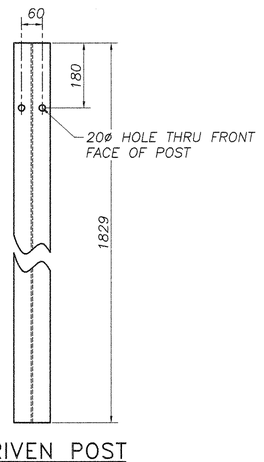
SHELF BRACKET



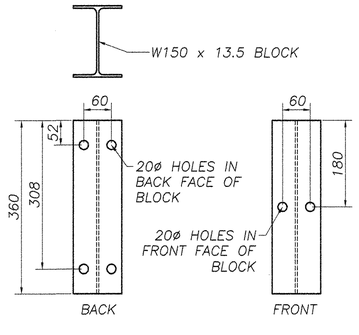
FASCIA MOUNTED POST



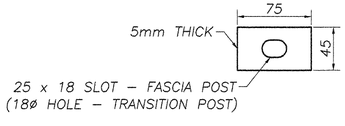
TYPICAL SECTION



DRIVEN POST
W150 x 13.5



OFFSET BLOCK DETAIL



RECTANGULAR WASHER

NOTES

1. SEE STANDARD G–1M & G–1dM FOR ADDITIONAL DETAILS OF STEEL BEAM GUARD RAIL AND STANDARD SB–R4a–82 FOR ADDITIONAL DETAILS OF BOX BEAM GUARD RAIL

2. ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED AND CONFORM TO SECTION 714.07 **BY OTHERS**

3. BRIDGE RAIL TYPES A, C & E: HEAVY DUTY STEEL BEAM RAIL SHALL BE AASHTO M180, CLASS B TYPE–II. POST AND BRACKETS, AS WELL AS PLATE AND SPECIAL WASHERS, SHALL BE AASHTO M223/M223M STEEL. BOLTS SHALL BE ASTM F568M, CLASS 4.6. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION TO AASHTO MIII OR M232 (HARDWARE). PRIOR TO GALV, GRIND ALL EDGES OF SHAPES AND PLATES TO MIN. 2mm RADIUS

4. BRIDGE RAIL TYPE B & D: HEAVY DUTY STEEL BEAM RAIL SHALL BE AASHTO M180, CLASS B–TYPE 4 **BY OTHERS**. POSTS AND BRACKETS AS WELL AS PLATE AND SPECIAL WASHERS, SHALL BE AASHTO M222/M222M STEEL.

5. ALL POSTS SHALL BE SET TO NORMAL GRADE

6. BRIDGE APPROACH RAIL HEIGHT SHALL BE TRANSITIONED TO NORMAL ROADWAY HEIGHT IN 7.62m

7. APPROACH RAILING SHALL BE HEAVY DUTY STEEL BEAM AS DETAILED ON THE PLANS.

8. FOR THE TYPE A,B,C, OR D BRIDGE RAILING, THE TRANSITION POST SHALL HAVE AN OFFSET BLOCK AND BE LOCATED AS CLOSE AS PRACTICAL TO THE MID POINT BETWEEN THE BRIDGE END POST AND APPROACH RAIL POST I.

9. SPLICES SHALL LAP IN DIRECTION OF TRAFFIC FLOW

10. SEE STANDARD SHEET G–1M FOR DELINEATOR DETAILS AND PLACEMENT.

11. ERECT DELINEATOR ON EVERY FIFTH POST OR APPROXIMATELY 9m APART. PAYMENT SHALL BE SUBSIDIARY TO OTHER ITEMS.

12. THE DROP WEIGHT TEAR TEST IN SECTION 732 SHALL NOT APPLY TO THE STRUCTURAL TUBING.

REVISIONS		
No.	Remarks	Date
0	Initial submittal	7/31/06
0	Second submittal	8/16/06

VTrans - PDD

SEP 0 6 2006

Structures Design
Section

—RECORD PLANS—

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM # 525.43 FASCIA MOUNTED HDSB WITH HANDRAIL
PROJECT NUMBER: BRO 1448 (20)
TOWN OF MONTGOMERY, VT
COUNTY OF FRANKLIN
ROUTE NO. TH 35, BRIDGE NO. 24

GENERAL CONTRACTOR

SUB CONTRACTOR F.R. LAFAYETTE INC.

DRAWN	MHM
CHECKED	
DATE	7/20/06
SCALE	NTS
HSC REFERENCE NO.	1562
SIZE	D
REVISION	0
SHEET NO.	3 of 3

075BR