STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF HARTFORD
COUNTY OF WINDSOR

ROUTE NO.: I-89 BRIDGE NO.: 11N & 11S

PROJECT LOCATION: I-89 BRIDGES 11N AND 11S OVER THE WHITE RIVER, VT. 14, AND NECR

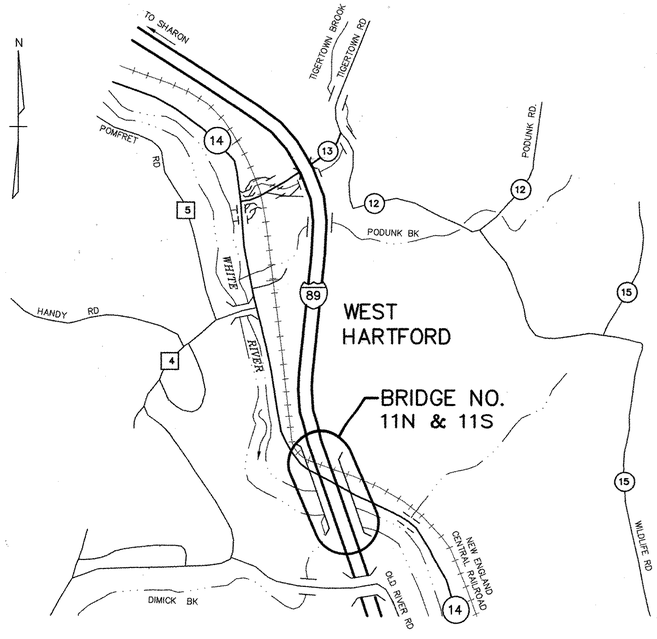
PROJECT DESCRIPTION: INSTALL TRAFFIC CONTROL, REHABILITATE BRIDGES, PAINT BRIDGES, AND REMOVE TRAFFIC CONTROL.

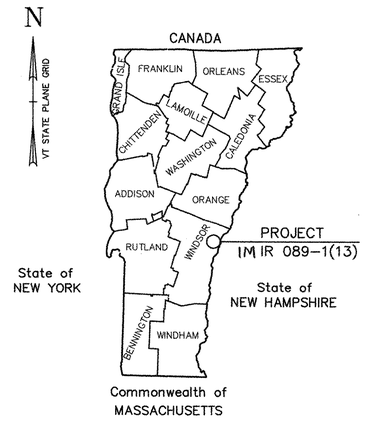
LENGTH OF STRUCTURES: BRIDGE 11N 1058.84 FEET
BRIDGE 11S 1058.84 FEET

TOTAL LENGTH OF STRUCTURES: 2117.68 FEET

THE PROPOSED REHABILITATION OF BRIDGES 11N AND 11S INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

- CONSTRUCTING MEDIAN CROSSOVERS TO MAINTAIN TRAFFIC
- REMOVING THE EXISTING CONCRETE BRIDGE DECKS AND APPURTENANCES
- INSTALLING STUD SHEAR CONNECTORS ON EXISTING GIRDERS
- REPLACING SCUPPERS AND REPAIRING AND/OR REPLACING SELECTED DETERIORATED LATERAL BRACING AND CROSS FRAME MEMBERS
- REPLACING ALL ROCKER EXPANSION BEARINGS WITH FABRIC BEARINGS AT ABUTMENTS AND ELASTOMERIC BEARINGS AT PIERS.
- STRENGTHENING THE CONNECTION OF THE FIXED BEARINGS TO THE GIRDERS BY WELDING, AND TO THE PIER CAP BY ENCASING THE BEARING IN CONCRETE.
- REPAIRING DETERIORATED SUBSTRUCTURE CONCRETE
- CONSTRUCTING BRIDGE SEAT EXTENSIONS AT ALL 4 ABUTMENTS TO MEET SEISMIC PERFORMANCE CATEGORY A REQUIREMENTS
- REPLACING EXISTING FINGER JOINTS AT ABUTMENTS WITH NEW FINGER JOINTS
- CONSTRUCTING NEW CONCRETE BRIDGE DECKS
- CONSTRUCTING CONCRETE BARRIER BRIDGE RAILING
- INSTALLING SHEET MEMBRANE WATERPROOFING ON BRIDGE DECKS AND APPROACH SLABS
- PAVING BRIDGE DECKS WITH 2½" OF BITUMINOUS CONCRETE PAVEMENT
- COLD PLANING AND REPAVING THE APPROACHES TO TRANSITION NEW BRIDGE PAVEMENT INTO EXISTING APPROACH PAVEMENT
- APPLYING WATER REPELLENT TO EXPOSED SUPERSTRUCTURE AND SUBSTRUCTURE CONCRETE SURFACES
- INSTALLING GUARD RAIL APPROACH SECTIONS
- COMPLETE CLEANING AND PAINTING OF ALL EXISTING STRUCTURAL STEEL THAT IS TO REMAIN





LOCATION MAP

RECORD PLANS

CONTRACTOR: WINTERSET INC. LYNDONVILLE, VT

RESIDENT ENGINEER: JACK COUTURE

CONSTRUCTION BEGAN: APRIL 14, 1999

CONSTRUCTION COMPLETE: APRIL 11, 2002

RECORD PLANS BY: K. NORTH, N. GARBACIK

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

BY Jacques D Couture RESIDENT ENGINEER

DATE 6-15-05

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.

CONVENTIONAL SIGNS

- COUNTY LINE
- TOWN LINE
- LIMITS OF ACCESS
- POINT OF ACCESS
- FENCE LINE
- STONE WALL
- TRAVELED WAY
- GUARD RAIL
- RAILROAD
- SURVEY LINE
- CULVERT
- UTILITY POLE
- TREES
- CONTROL OF ACCESS
- PROPERTY LINE
- R.O.W.
- SR SLOPE RIGHTS
- TOP OF CUT
- TOE OF CONST. SLOPE

DATUM

VERTICAL N/A

HORIZONTAL N/A

Christopher D. Bell

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE CHIEF ENGINEER.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1990, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON MARCH 15, 1990 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

VANASSE HANGEN BRUSTLIN, INC.

APPROVED ~~[illegible]~~ DATE 10/13/98
DIRECTOR OF PROJECT DEVELOPMENT

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED Mark D. Kille DATE 11-06-98
for DIVISION ADMINISTRATOR

PROJECT: HARTFORD IM IR 089-1(13)

SHEET 1 OF 101 SHEETS

PLOTTED 9-29-98

QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	BRIDGE 11N	BRIDGE 11S	EROSION CONTROL	TRAINING	TOTAL
203.99	SHOULDER BERM REMOVAL	L.F.	200	200			400
204.20	TRENCH EXCAVATION OF EARTH	C.Y.	5	5	70		80
210.10	COLD PLANING BITUMINOUS PAVEMENT	S.Y.	845	845			1690
301.15	SUBBASE OF GRAVEL	C.Y.			300		300
301.35	SUBBASE OF DENSE GRADED CRUSHED STONE	C.Y.	28	40			68
402.11	AGGREGATE SHOULDERS, TRUCK MEASUREMENT	C.Y.	21	25			46
406.25	BITUMINOUS CONCRETE PAVEMENT (PG 58-34)	TON	890	890			1780
501.22	CONCRETE, CLASS A	C.Y.	128	131			259
501.22	CONCRETE, CLASS A (MOD.)	C.Y.	292	292			584
501.221	CONCRETE, CLASS A QC/QA	C.Y.	1095	1095			2190
502.11	SHORING SUPERSTRUCTURE BEARINGS	EA.	30	30			60
506.60	STRUCTURAL STEEL	LBS.	8450	10330			18780
507.15	REINFORCING STEEL	LBS.	3591	3591			7182
507.16	DRILLING AND GROUTING DOWELS	L.F.	520	520			1040
507.17	EPOXY COATED REINFORCING STEEL	LBS.	351091	352246			703337
508.15	SHEAR CONNECTORS (15120 - 7/8" DIA. x 7")	LS	0.5	0.5			1
513.25	STRUCTURAL PAINTING, SHOP APPLIED (9 TONS)	LS	0.5	0.5			1
513.30	STRUCTURAL PAINTING, FIELD APPLIED (1970 TONS)	LS	0.5	0.5			1
513.35	CONTAINMENT & ENVIRONMENTAL PROTECTION, SHOP (9 TONS)	LS	0.5	0.5			1
513.36	CONTAINMENT & ENVIRONMENTAL PROTECTION, FIELD (1970 TONS)	LS	0.5	0.5			1
513.40	SURFACE PREPARATION, SHOP (9 TONS)	LS	0.5	0.5			1
513.41	SURFACE PREPARATION, FIELD (1970 TONS)	LS	0.5	0.5			1
514.10	WATER REPELLENT	GAL.	235	235			470
516.10	BRIDGE EXPANSION JOINT	L.F.	97	97			194
519.20	SHEET MEMBRANE WATERPROOFING (MOD. - SPRAYED)	S.Y.	4010	4010			8020
525.10	REMOVAL OF EXISTING RAILING	L.F.	2473	2593			5066
527.11	TRAFFIC PROTECTION FOR BRIDGE PROJECT	LS	0.5	0.5			1
529.10	REMOVAL OF BRIDGE PAVEMENT	S.Y.	3735	3735			7470
529.20	PARTIAL REMOVAL OF STRUCTURE	EA.	1	1			2
531.10	BEARING DEVICE ASSEMBLY (FABRIC PTFE EXPANSION)	EA.	10	10			20
531.10	BEARING DEVICE ASSEMBLY (STEEL REINFORCED ELASTOMERIC)	EA.	20	20			40
531.10	BEARING DEVICE ASSEMBLY (RETROFIT)	EA.	5	5			10
580.10	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE CLASS I (MOD.)	S.Y.	20	20			40
580.13	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS I	S.Y.	1	1			2
580.14	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS II	S.Y.	6	5			11
580.15	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS III	C.Y.	2	2			4
580.16	SURFACE PREPARATION FOR MEMBRANE	S.F.	80	80			160
580.17	RAPID SETTING CONCRETE REPAIR MATERIAL	C.F.	5	5			10
608.25	ALL PURPOSE EXCAVATOR RENTAL TYPE I	HR.			16		16
608.45	TRUCK MOUNTED ATTENUATOR	HR.	100	100			200
613.10	STONE FILL, TYPE I	C.Y.	15	15	70		100
613.11	STONE FILL, TYPE II	C.Y.		25			25
616.41	REMOVAL OF EXISTING CURB	L.F.	2195	2195			4390
621.20	STEEL BEAM GUARD RAIL	L.F.	190	463			653
621.21	HEAVY DUTY STEEL BEAM GUARD RAIL WITH STEEL POSTS	L.F.	127	127			254
621.505	MANUFACTURED TERMINAL SECTION	EA.	1	1			2
621.57	ENERGY ABSORPTION ATTENUATOR	EA.	2	2			4
621.70	GUARD RAIL APPROACH SECTION, TYPE I (MOD.)	EA.	2	2			4
621.71	GUARD RAIL APPROACH SECTION, TYPE II (MOD.)	EA.	2	2			4
621.75	REMOVING AND RESETTING GUARD RAIL	L.F.	413	225			638
621.77	REPLACE GUARD RAIL BEAM UNIT	EA.		3			3
621.80	REMOVAL AND DISPOSAL OF GUARD RAIL	L.F.	50	38			88
621.90	TEMPORARY TRAFFIC BARRIER	L.F.	2290	3420			5710
630.10	UNIFORMED TRAFFIC OFFICERS	HR.	200	200			400
630.15	FLAGGERS	HR.	350	350			700
631.10	FIELD OFFICE - ENGINEERS	LS	0.5	0.5			1
631.16	TESTING EQUIPMENT - CONCRETE	LS	0.5	0.5			1
631.17	TESTING EQUIPMENT - BITUMINOUS	LS	0.5	0.5			1
631.18	TESTING EQUIPMENT - PROTECTIVE COATINGS	LS	0.5	0.5			1
631.25	FIELD OFFICE TELEPHONE (NOT A BID ITEM)	LU	0.5	0.5			1
634.10	EMPLOYEE TRAINEESHIP	HR.				2080	2080
635.10	MOBILIZATION	LS	0.5	0.5			1
641.10	TRAFFIC CONTROL	LS	0.5	0.5			1
641.15	PORTABLE CHANGEABLE MESSAGE SIGN	EA.	1	1			2
641.16	PORTABLE ARROW BOARD	EA.	2	2			4

QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	BRIDGE 11N	BRIDGE 11S	EROSION CONTROL	TRAINING	TOTAL
646.414	DURABLE 6" WHITE LINE	L.F.	4700	4700			9400
646.415	DURABLE 6" YELLOW LINE	L.F.	1520	1520			3040
646.614	TEMPORARY 6" WHITE LINE	L.F.	900	1000			1900
646.614	TEMPORARY 6" WHITE LINE (TAPE, TYPE II)	L.F.	7680	7700			15380
646.615	TEMPORARY 6" YELLOW LINE	L.F.	900	1000			1900
646.615	TEMPORARY 6" YELLOW LINE (TAPE, TYPE II)	L.F.	7680	7700			15380
646.81	RAISED PAVEMENT MARKERS, TYPE II	EA.	880	900			1780
646.82	REMOVAL OF EXISTING PAVEMENT MARKINGS	S.F.	1850	550			2400
646.86	BLACK PAVEMENT MARKING MASKING TAPE	S.F.	200	210			410
649.51	GEOTEXTILE FOR SILT FENCE	S.Y.			820		820
651.15	SEED	LBS.			40		40
651.26	HAY BALES FOR EROSION CONTROL	EA.			80		80
654.10	EROSION MATTING	S.Y.			300		300

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7. DECK REINFORCEMENT (2 OF 3)
8. DECK REINFORCEMENT (3 OF 3)
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10. FRAMING PLAN - BRIDGE 11S
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12. STRUCTURAL STEEL REPAIR DETAILS
13. STUD SHEAR CONNECTOR LAYOUT & DETAILS
14. SCUPPER DETAILS
15. EXPANSION JOINT DETAILS (1 OF 2)
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24. ABUTMENT 2 REMOVAL & REPAIR AREAS
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83. *E4.* TYPICAL SECTIONS
84. *E5.* LATERAL BRACING LAYOUT AT ABUTMENTS
85. *E6.* LATERAL BRACING LAYOUT AT PIERS 1, 2, 9, & 10
86. *E7.* LATERAL BRACING LAYOUT AT PIERS 3, 4, 7, & 8
87. *E8.* LATERAL BRACING LAYOUT AT PIERS 5 & 6
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97. *S53.* INTERMEDIATE CROSS FRAME CF20
98. *S59.* INTERMEDIATE CROSS FRAME CF28
99. *S61.* INTERMEDIATE CROSS FRAME CF212
100. *S65.* INTERMEDIATE CROSS FRAME CF220
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E-102	08/08/95	E-143	09/20/95
E-102A	08/08/95	E-150	01/15/97
E-103	08/08/95	E-151	08/08/95
E-104	12/31/96	E-152	08/08/95
E-104A	12/27/96	E-160	08/18/95
E-105	08/08/95	E-162	08/18/95
E-106	08/08/95	G-1	06/01/94
E-107	08/08/95	G-1d	06/01/94
E-107A	08/08/95	G-18	06/01/94
E-108	08/18/95	T-1	06/01/94
E-110	08/08/95	T-2	06/01/94
E-120	08/08/95		
E-121	08/08/95		
E-131	08/08/95		

NOTE:

1. SHEET NUMBERS USED IN THE ORIGINAL DESIGN PLANS AND ORIGINAL SHOP FABRICATION DRAWINGS ARE LISTED IN *ITALICS* AFTER THE NEW SHEET NUMBERS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & 11S
	Log Sta.
Highway No. I-89 NB & SB	Surv. Sta.

I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR

INDEX OF SHEETS & QUANTITIES

Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699LOS	
Bridge Sheet No. 2	Sheet 2 of 101

VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 12-3-98

CONSTRUCTION NOTES

1. A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION THROUGH THE USE OF MEDIAN CROSSOVERS. TRAFFIC CONTROL FOR EACH BRIDGE SHALL BE IN ACCORDANCE WITH THE TRAFFIC CONTROL NOTES AND PLANS, SHEETS 46 – 49.

2. THE CONTRACTOR SHALL TAKE SPECIAL CARE AND PRECAUTIONS TO ENSURE THAT NO DEBRIS FALLS INTO THE WHITE RIVER, ONTO VT 14, OR ONTO THE NEW ENGLAND CENTRAL RAILROAD. SEE SHEET 46 NOTE: 12

3. THE EXISTING PAVEMENT ON THE BRIDGE DECKS AND APPROACH SLABS SHALL BE REMOVED USING ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT".

4. EXISTING BRIDGE RAILING AND APPROACH RAILING SHALL BE REMOVED UNDER ITEM 525.10, "REMOVAL OF EXISTING RAILING" AND SHALL BE SALVAGED TO THE STATE.

5. EXISTING GUARDRAIL SHALL BE REMOVED UNDER ITEM 621.80, "REMOVAL AND DISPOSAL OF EXISTING GUARDRAIL" AND SHALL BE SALVAGED TO THE STATE.

6. THE GRANITE PORTION OF THE EXISTING CURBS SHALL BE REMOVED USING ITEM 616.41 "REMOVAL OF EXISTING CURB" AND SHALL BE SALVAGED TO THE STATE.

7. ALL MATERIALS THAT ARE TO BE SALVAGED TO THE STATE SHALL BE TRANSPORTED BY THE CONTRACTOR TO THE VAOT DISTRICT 4 MAINTENANCE FACILITY IN WHITE RIVER JUNCTION. THE RESIDENT ENGINEER SHALL CONTACT THE DISTRICT 4 TRANSPORTATION ADMINISTRATOR BEFORE THE CONTRACTOR TRANSPORTS ANY SALVAGED MATERIALS TO THE MAINTENANCE FACILITY. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS FOR SALVAGING MATERIALS.

8. ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE" SHALL INCLUDE:

   A. REMOVAL OF THE EXISTING CONCRETE BRUSH CURBS, CONCRETE BRIDGE DECK, AND FINGER PLATE EXPANSION JOINTS. 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.

   B. REMOVAL OF ALL THE EXISTING BEARING DEVICES EXCEPT THE FIXED BEARINGS AT PIERS 5 AND 6.

   C. REMOVAL OF PORTIONS OF THE EXISTING ABUTMENT BACKWALLS AS NECESSARY TO INSTALL THE NEW FINGER PLATE EXPANSION JOINTS.

   D. REMOVAL OF PORTIONS OF THE EXISTING ABUTMENT WINGWALLS AS NECESSARY TO CONSTRUCT THE NEW CONCRETE BRIDGE BARRIER CURBS.

   E. REMOVAL OF DETERIORATED LATERAL BRACING ANGLES, GUSSET PLATES, AND CROSS-FRAMES.

   F. REMOVAL OF ALL EXISTING SCUPPERS.

   THE CONTRACTOR'S METHODS FOR PARTIAL REMOVAL OF THE EXISTING STRUCTURES SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY REMOVAL WORK.

9. SHEAR STUDS SHALL BE INSTALLED ON ALL GIRDERS AS SHOWN ON SHEET 13.

10. SCUPPERS SHALL EXTEND A MINIMUM OF 12" BELOW THE BOTTOM FLANGES OF THE GIRDERS. SEE SHEET 14 FOR DETAILS AND PAYMENT OF SCUPPER REPLACEMENTS.

11. DETERIORATED LATERAL BRACING AND CROSS FRAMES SHALL BE REPAIRED OR REPLACED AS DETAILED IN THESE PLANS OR AS DIRECTED BY THE ENGINEER. SEE SHEETS 8 – 12.

12. ALL EXISTING ROCKER EXPANSION BEARINGS SHALL BE REPLACED AS SHOWN ON SHEETS 18 & 19. THE EXISTING FIXED BEARINGS AT PIERS 5 AND 6 SHALL BE RETROFIT AS SHOWN ON SHEETS 20 & 21.

13. ABUTMENT AND PIER CONCRETE REPAIRS SHALL BE PERFORMED. A THOROUGH 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 AND LADDERS REQUIRED FOR THIS INSPECTION, THE COST FOR WHICH SHALL BE SUBSIDIARY TO ALL OTHER ITEMS IN THE CONTRACT.

14. THE EXISTING FINGER PLATE EXPANSION JOINTS AT BOTH ABUTMENTS ON EACH BRIDGE SHALL BE REPLACED WITH NEW FINGER PLATE JOINTS AS SHOWN ON SHEETS 15 & 16.

15. THE SHEET MEMBRANE WATERPROOFING SHALL BE INSTALLED ON THE BRIDGE DECK AND APPROACH SLABS ACCORDING TO THE SPECIFICATIONS CALLED FOR UNDER ITEM 519 AND IN SPECIAL PROVISIONS. BEFORE APPLYING THE SHEET MEMBRANE WATERPROOFING, THE EXISTING APPROACH SLAB SURFACE SHALL BE MADE SMOOTH TO THE SATISFACTION OF THE ENGINEER, USING ONE OR BOTH OF THE FOLLOWING METHODS:

   A. FILL IN ALL POCK MARKS, GOUGES OR OTHER DEPRESSIONS WITH ITEM 580.17, "RAPID SETTING CONCRETE REPAIR MATERIAL". CONTACT THE VERMONT AGENCY OF TRANSPORTATION MATERIALS DIVISION TO OBTAIN A LIST OF ACCEPTABLE MATERIALS FOR "RAPID SETTING CONCRETE REPAIR MATERIAL". USE OF "RAPID SETTING CONCRETE REPAIR MATERIAL" SHALL BE KEPT TO A MINIMUM IN SHALLOW DEPRESSIONS. THESE AREAS SHALL BE GROUND TO A "BOWL" SHAPE AS DIRECTED BY THE RESIDENT ENGINEER AND PAID UNDER ITEM 580.16, "SURFACE PREPARATION FOR MEMBRANE".

   B. GRIND SMOOTH ALL ROUGH AREAS, RIDGES, OR OTHER HIGH SPOTS UNDER THE ITEM 580.16, "SURFACE PREPARATION FOR MEMBRANE".

16. BECAUSE THE NEW DECK AND PAVEMENT ARE THICKER THAN THE EXISTING, THE PROPOSED FINISHED GRADE WILL BE 2"± HIGHER THAN THE EXISTING. CONSEQUENTLY IT IS NECESSARY TO TRANSITION THE NEW BRIDGE PAVEMENT INTO THE EXISTING APPROACH PAVEMENT. SEE SHEET 39 FOR THE APPROACH PAVEMENT TRANSITION DETAIL. 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 SURFACE 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 SUBSIDIARY TO THE ITEM 406.25, "BITUMINOUS CONCRETE PAVEMENT".

17. NO PAVING SHALL BE ALLOWED ON BRIDGES UNTIL BEARINGS HAVE BEEN RETROFIT OR REPLACED AS DESIGNATED IN THESE PLANS, AND ALL JACKING AND SHORING HAS BEEN COMPLETED AND REMOVED.

18. ITEM 514.10, "WATER REPELLENT" SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON ALL BRIDGE SUPERSTRUCTURES EXCEPT THE BOTTOM OF THE DECK BETWEEN THE DRIP BEADS. IT SHALL ALSO BE APPLIED TO THE EXPOSED CONCRETE ON ALL ABUTMENTS, WINGWALLS, PIER CAPS AND COLUMNS.

19. NOTE NOT USED

20. NOTE NOT USED

21. THREE 12'-6" SECTIONS OF VT 14 ROADWAY GUARD RAIL IN FRONT OF PIERS 9 AND 10 HAVE SUSTAINED MINOR DAMAGE. THE CONTRACTOR SHALL REPAIR THE GUARD RAIL BY REPLACING THE 3 W-BEAM SECTIONS AND RELATED HARDWARE, AND BY STRAIGHTENING STEEL POSTS AS DIRECTED BY THE RESIDENT ENGINEER. THIS WORK SHALL BE PAID AS ITEM 621.77, "REPLACE GUARD RAIL BEAM UNIT".

22. 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. DURING THE OCTOBER AND NOVEMBER 1998 PRELIMINARY INSPECTIONS, THE FOLLOWING LOCATIONS OF EMBANKMENT AND SLOPE EROSION WERE FOUND:
   - BRIDGE 11S, IN FRONT OF ABUTMENT 1, EAST AND WEST ENDS – USE 613.10
   - BRIDGE 11S, BELOW THE STONE FILL IN FRONT OF ABUTMENT 3 – USE 613.11
   - MINOR SLOPE EROSION IN FRONT OF ALL WINGWALLS – USE 613.10

23. A VOID UNDER THE CENTER OF THE ABUTMENT 3 CAP BEAM AT BRIDGE 11S (MEASURING APPROXIMATELY 3' WIDE BY 20' LONG BY 1' DEEP) AND UNDER THE STONE FILL IN FRONT OF THE ABUTMENT WAS DETECTED DURING THE OCTOBER 1998 PRELIMINARY INSPECTION. THE CONTRACTOR SHALL FILL THE VOID WITH ITEM 301.35, "SUBBASE OF DENSE GRADED CRUSHED STONE" AND SHALL REPAIR THE EMBANKMENT IN FRONT OF THE ABUTMENT AS CALLED FOR IN NOTE 22.

24. ITEM 204.20, "TRENCH EXCAVATION OF EARTH" SHALL BE USED FOR EXPLORATORY TRENCHING WHEN THE LOCATION OF BURIED UTILITIES IS IN DOUBT.

25. NOTE NOT USED.

26. ALL EXISTING STRUCTURAL STEEL ON BOTH BRIDGES THAT IS TO REMAIN SHALL BE 100% CLEANED AND PAINTED PER SUPPLEMENTAL SPECIFICATION SECTION 513, AND GREASED PER SECTION 513.06(c). PAINT COLOR SHALL BE GREEN AND SHALL CONFORM WITH FEDERAL STANDARD NO. 595, COLOR CHIP NO. 14062.

27. ITEM 203.35, "GRAVEL BACKFILL FOR SLOPE STABILIZATION" SHALL BE USED ON BRIDGE APPROACHES TO REGRADE AROUND GUARD RAIL POSTS AS ORDERED BY THE RESIDENT ENGINEER. ANY BERMS THAT HAVE DEVELOPED BEHIND GUARD RAIL AND AT THE TOPS OF SLOPES THAT PREVENT WATER FROM DRAINING AWAY FROM THE ROADWAY SHOULDER SHALL BE REMOVED AS DIRECTED BY THE ENGINEER WITHIN 100 FEET OF THE ENDS OF THE BRIDGE. THIS WORK SHALL BE PAID FOR USING ITEM 203.99, "SHOULDER BERM REMOVAL".

28. THE RESIDENT ENGINEER SHALL TAKE GIRDER PROFILES BEFORE DECK SLAB FORMS ARE SET AND SHEAR STUDS ARE INSTALLED TO PROVIDE INFORMATION FOR THE CONTRACTOR TO SET DECK SLAB FORM ELEVATIONS.

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 1990, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 16TH EDITION, DATED 1996, AND ITS LATEST INTERIMS.

2. DESIGN CRITERIA:
   - DESIGN LIVE LOAD FOR EXISTING STRUCTURES: HS 20
   - DESIGN LIVE LOAD FOR PROPOSED REHABILITATION: HS 25
   - SEISMIC PERFORMANCE CATEGORY: A

3. NO SURVEY WAS TAKEN ON THIS PROJECT. INFORMATION SHEETS INCLUDED IN THE PLANS WERE TAKEN FROM ORIGINAL PLANS AND ORIGINAL SHOP DRAWINGS, AND ARE FOR INFORMATION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR FIELD CHECKING ANY AND ALL DIMENSIONS AND ELEVATIONS APPLICABLE TO THIS WORK.

4. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68° F. UNLESS SHOWN OTHERWISE.

5. CONCRETE IN THE DECK SLABS SHALL BE ITEM 501.221, "CONCRETE, CLASS A QC/QA". CONCRETE IN THE ABUTMENT SEAT EXTENSIONS, BEARING ENCASEMENTS AT FIXED PIERS, BEARING PEDESTALS AT EXPANSION PIERS, WINGWALL AND APPROACH SLAB MODIFICATIONS, AND SPLASH PADS SHALL BE ITEM 501.22, "CONCRETE, CLASS A". CONCRETE IN THE BRIDGE BARRIER CURBS SHALL BE ITEM 501.22, "CONCRETE, CLASS A (MOD.)", WHICH CONTAINS ADDITIVES TO IMPROVE THE DURABILITY OF THE CONCRETE. (SEE SPECIAL PROVISION). CONCRETE USED TO PATCH APPROACH SLABS AND SUBSTRUCTURES SHALL BE AS CALLED FOR IN THE APPLICABLE REPAIR NOTES. CONCRETE DESIGN STRENGTH:

   CLASS A f'_c = 4000 psi
   CLASS B f'_c = 3500 psi

6. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1" UNLESS OTHERWISE NOTED. WHENEVER NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE, THE EXISTING SURFACE SHALL BE CLEANED AS CALLED FOR IN SECTION 501.13.

7. NEW REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM-A615), GRADE 60 AND SHALL BE EPOXY COATED WHERE INDICATED. REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI). WHEN EPOXY COATED REINFORCING STEEL IS CUT THE UNCOATED ENDS SHALL BE REPAIRED WITH MATERIALS AND PROCEDURES APPROVED BY THE COATING MANUFACTURER. NO FLAME CUTTING OF REINFORCING STEEL WILL BE ALLOWED.

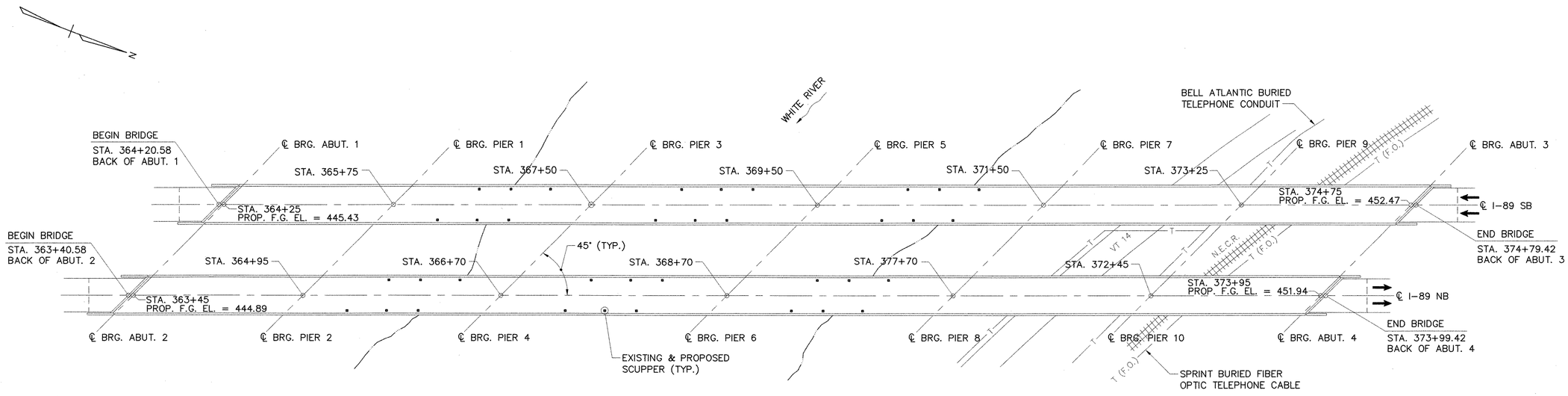
8. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:
   - SPACING TOLERANCE: +/- 1"
   - CLEARANCE TOLERANCE: +/- 1/4"

APPROACH SLAB REPLACEMENT
REVISIONS 6/99

STATE OF VERMONT
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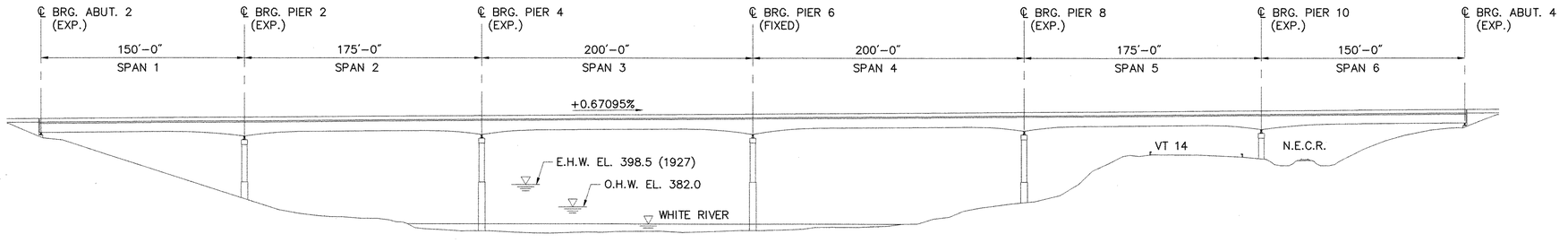
Town Of HARTFORD	Bridge No. 11N & 11S
Highway No. I-89 NB & SB	Log Sta.
	Surv. Sta.
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
GENERAL NOTES & CONSTRUCTION NOTES	
Designed By T.S. BRYANT	Drawn By R.F. CLARK
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 6/99
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50589NOTREV	
Bridge Sheet No. 3R	Sheet 3R of 101

VANASSE HANGEN BRUSTLIN, INC.



PLAN

SCALE: 1" = 50'



NORTHBOUND ELEVATION

SCALE: 1" = 50'

50 0 50 100

SCALE IN FEET

NOTES:

1. ALL STATIONING, DIMENSIONS, AND ELEVATIONS SHOWN ARE FROM THE ORIGINAL 1963 DESIGN PLANS UNLESS OTHERWISE NOTED.
2. SCUPPER LOCATIONS SHOWN ARE FROM THE ORIGINAL 1966 STEEL FABRICATION SHOP DRAWINGS.
3. NORTHBOUND ELEVATION SHOWN, SOUTHBOUND ELEVATION SIMILAR.

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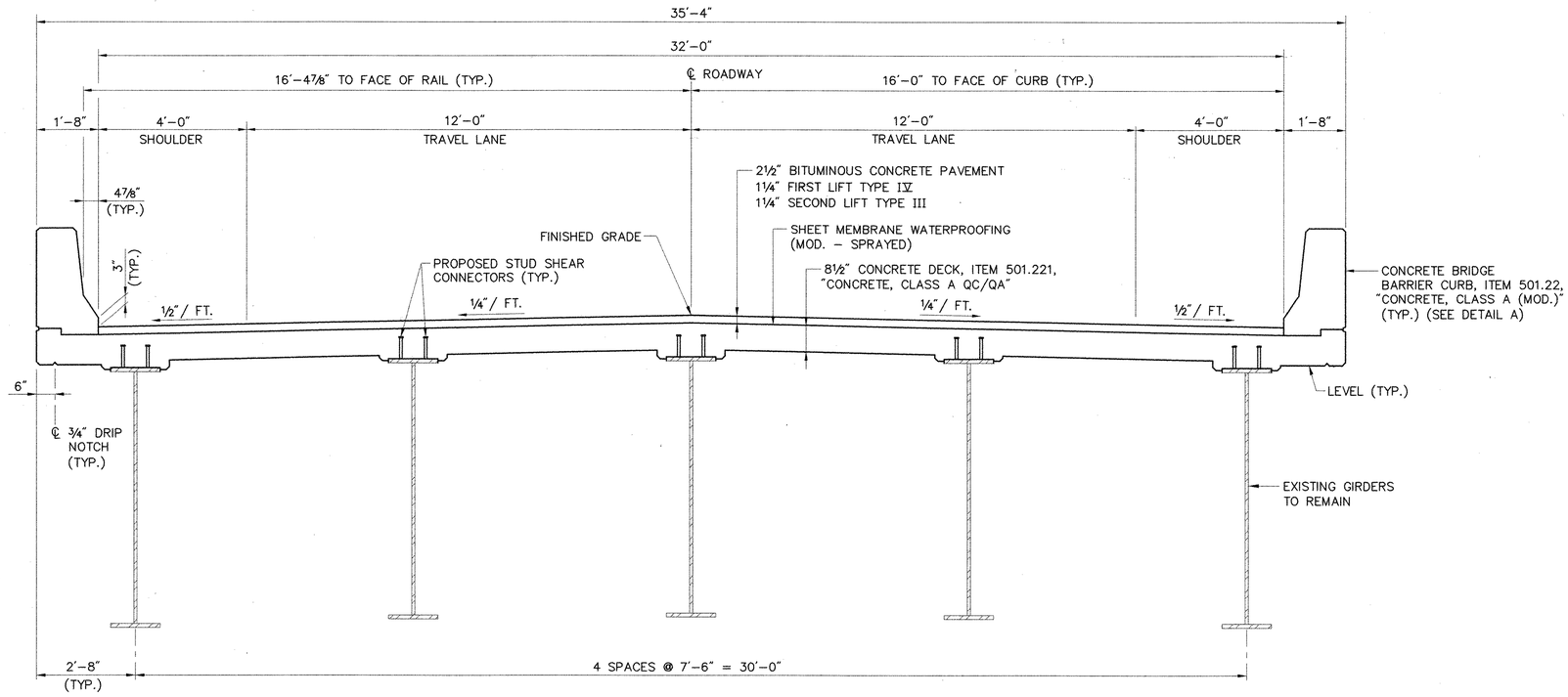
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR

PLAN & ELEVATION

Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699PLN	
Bridge Sheet No. 4	Sheet 4 of 101

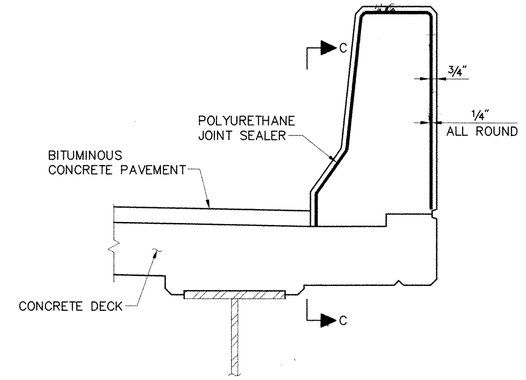
VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9-22-98



PROPOSED TRANSVERSE SECTION

SCALE: ½" = 1'-0"



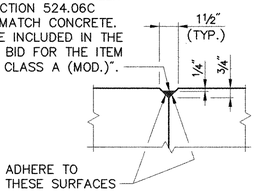
TYPICAL SECTION THROUGH CONCRETE BRIDGE BARRIER CURB CONSTRUCTION JOINT

SCALE: 1" = 1'-0"

BARRIER CURB CONSTRUCTION JOINT NOTES:

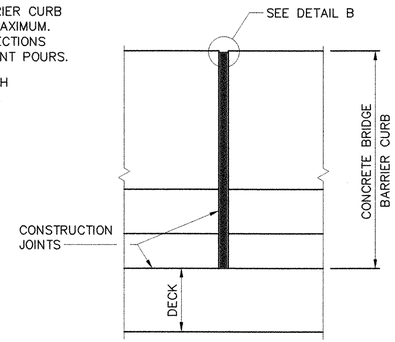
1. CONSTRUCTION JOINTS THROUGH CONCRETE BARRIER CURB SHALL BE SPACED 20'-0" CENTER TO CENTER MAXIMUM. CONCRETE SHALL BE PLACED IN ALTERNATING SECTIONS WITH A MINIMUM OF 48 HOURS BETWEEN ADJACENT POURS.
2. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE BARRIER CURB CONSTRUCTION JOINTS.

POLYURETHANE JOINT SEALER PER SUBSECTION 524.06C COLOR TO MATCH CONCRETE. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE, CLASS A (MOD.)".



DETAIL B

N.T.S.

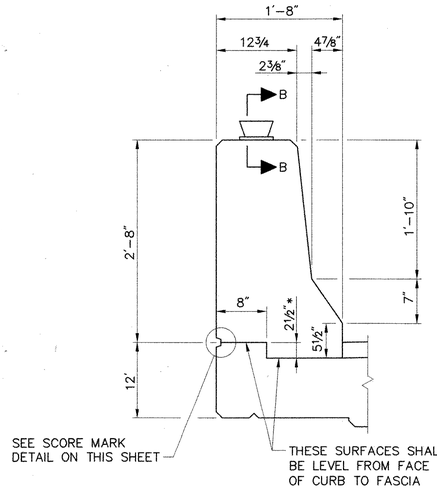


SECTION C–C

SCALE: 1" = 1'-0"

LOAD FACTOR LOAD RATING (TONS)							
LOADING LEVELS (LOAD FACTORS)	TRUCK						
	H	HS	3S2	6 AXLE	3A STR	4A STR	5A SEMI
INVENTORY A=2.17 B=1.00	28	51					
POSTED A=1.55 B=1.40	40	72	114*		124	125	136
OPERATING A=1.30 B=1.67		85	172*	185	147	149	

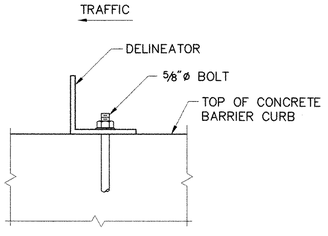
STRENGTH RF= $\frac{\Phi M_N - 1.3M_{DL}}{A \times M_{LL+I}}$ *SERVICEABILITY RF= B $\frac{.95F_y S_{LL+I} - M_{DL}\frac{S_{NET}}{S_{TR}} - M_{SDL}\frac{S_{NET}}{S_{TR}}}{1.67\ M_{LL+I}}$



* THIS KEY IS 2½" INSTEAD OF THE "STANDARD" 2" TO SIMPLIFY FORM WORK AT ABUTMENT EXPANSION JOINTS.

DETAIL A

SCALE: 1" = 1'-0"

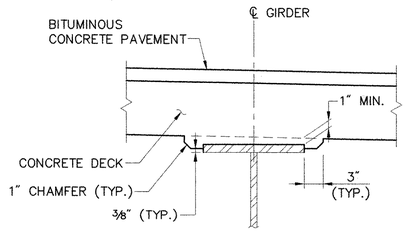


SECTION B–B

N.T.S.

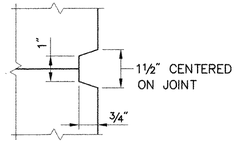
DELINEATOR NOTES:

1. PAYMENT FOR DELINEATOR SHALL BE SUBSIDIARY TO THE ITEM "CONCRETE, CLASS A (MOD.)".
2. DELINEATORS SHALL BE SPACED AT 30' MAX.
3. DELINEATORS SHALL BE AMBER OR WHITE WITH AMBER ON THE MEDIAN SIDE.
4. SEE STANDARD DRAWING G-1 FOR ADDITIONAL DETAILS OF DELINEATOR.



HAUNCH DETAIL

SCALE: 1" = 1'-0"



SCORE MARK DETAIL

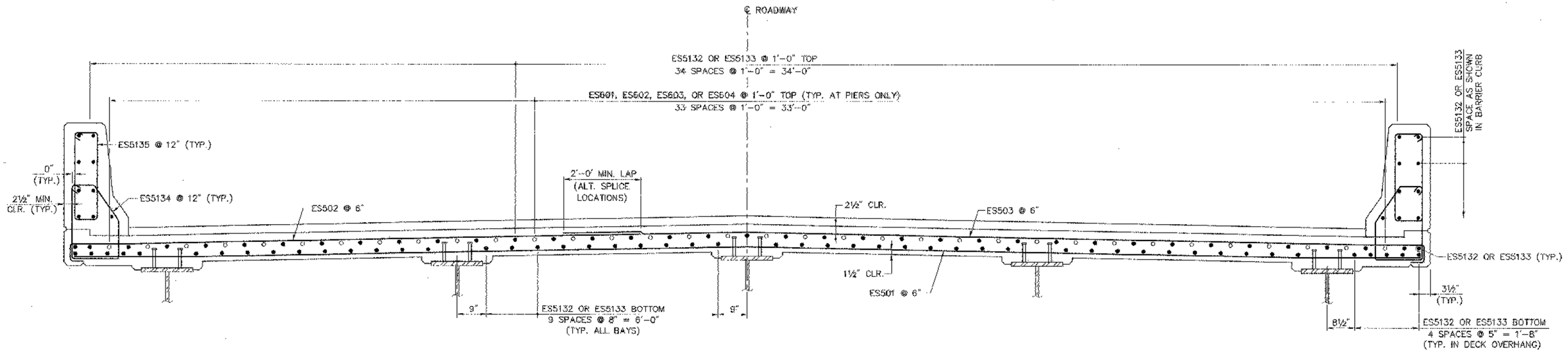
N.T.S.

STATE OF VERMONT
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TRANSVERSE SECTION	
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699TRN	
Bridge Sheet No. 5	Sheet 5 of 101

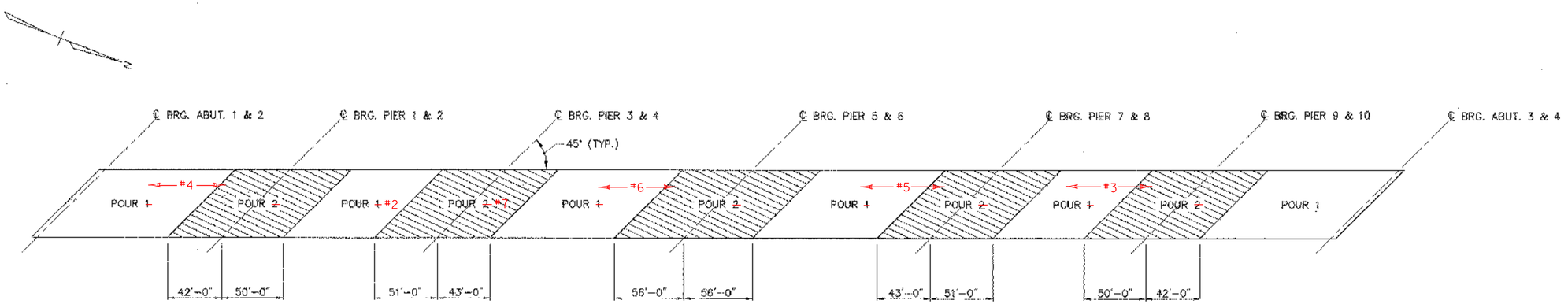
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PLOTTED 9-22-98



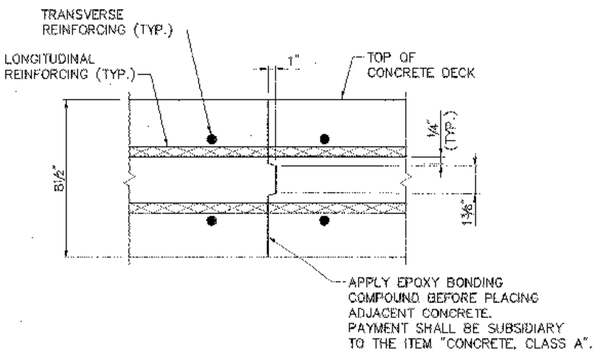
SECTION A-A

SCALE: ¾" = 1'-0"



DECK POUR SEQUENCE

N.T.S.



TRANSVERSE BRIDGE DECK CONSTRUCTION JOINT DETAILS

N.T.S.

DECK POUR SEQUENCE NOTES:

1. ALL POURS MARKED "POUR 1" SHALL BE COMPLETED BEFORE ANY POURS MARKED "POUR 2" ARE STARTED.
2. ALL POURS WITH THE SAME NUMBER DO NOT HAVE TO BE PLACED IN THE SAME DAY, HOWEVER, ALL POURS COMPLETED IN ONE DAY SHALL BE SYMMETRICAL ABOUT PIERS 5 & 6. MINIMUM WAITING FOR SUBSEQUENT POURS SHALL BE 96 HOURS.
3. THE MAXIMUM TIME SPAN FOR ANY COMBINATION OF POURS COMPLETED IN ONE DAY SHALL BE 8 HOURS. A RETARDING ADMIXTURE SHALL BE USED SO THAT THE DECK CONCRETE WILL NOT SET UP UNTIL THAT DAY'S POURS HAVE BEEN COMPLETED. THE RETARDING ADMIXTURE SHALL BE SUBSIDIARY TO ITEM 501.221, "CONCRETE, CLASS A QC/QA".
4. USE BRIDGE DECK CONSTRUCTION JOINTS BETWEEN POURS AS SHOWN ON THIS SHEET.
5. ANY POURING SEQUENCE OTHER THAN THAT INDICATED SHALL BE SUBMITTED IN WRITING TO THE STRUCTURES ENGINEER FOR APPROVAL.

NOTES:

1. SEE SHEET 7 FOR LOCATION OF SECTION A-A.

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	Surv. Sta.

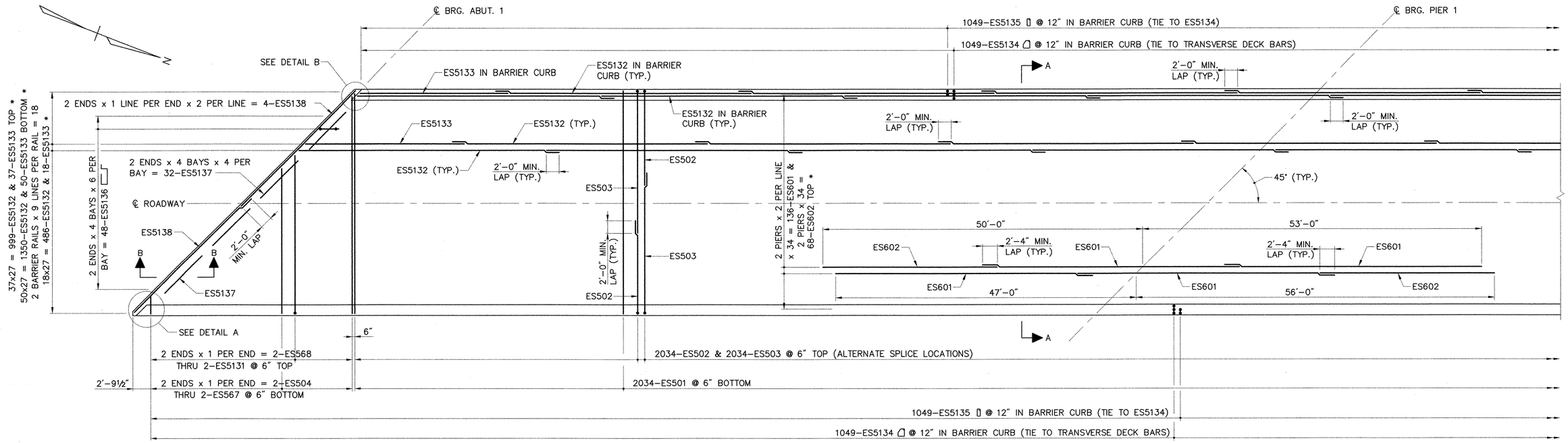
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR

DECK REINFORCEMENT (1 OF 3)

Designed By J.A. ROUILLARD	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699DR1	
Bridge Sheet No. 6	Sheet 6 of 101

VANASSE HANGEN BRUSTLIN, INC.

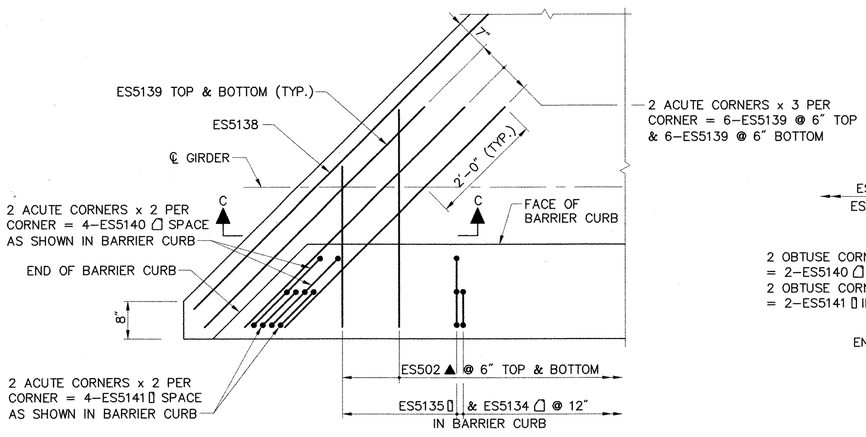
PLOTTED 9-24-98



* SPACE AS SHOWN IN SECTION A–A

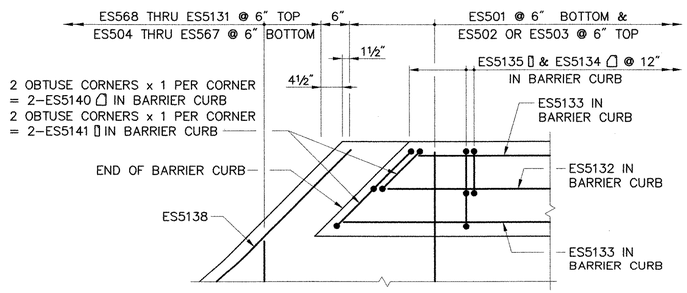
SPAN 1 DECK REINFORCING PLAN

SCALE: ⅛" = 1'–0"



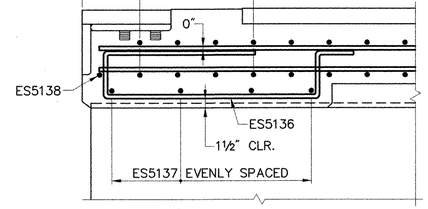
DETAIL A

SCALE: ¾" = 1'–0"



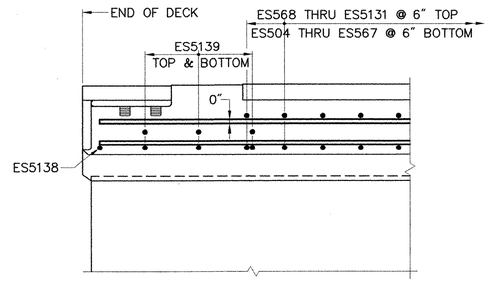
DETAIL B

SCALE: ¾" = 1'–0"



SECTION B–B

SCALE: 1" = 1'–0"



SECTION C–C

SCALE: 1" = 1'–0"

NOTES:

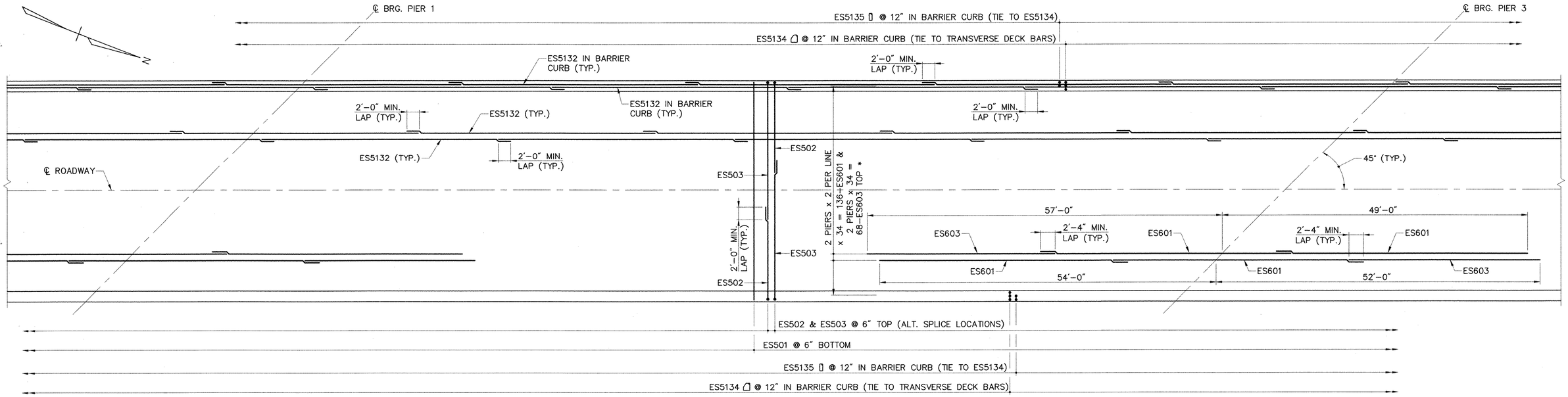
1. REINFORCING STEEL LAYOUT IS SYMMETRICAL ABOUT THE ℄ OF BEARING AT THE CENTER PIER, PIER 5. THE LAYOUT SHOWN IS FOR BRIDGE 11S. THE LAYOUT FOR BRIDGE 11N IS SIMILAR.
2. NUMBER OF REINFORCING BARS SHOWN ARE TOTALS FOR ALL SPANS IN BRIDGE 11S ONLY.
3. SEE SHEET 6 FOR SECTION A–A.
4. ALL REINFORCING STEEL IN THE DECK AND CONCRETE BRIDGE BARRIER CURB SHALL BE EPOXY COATED.
5. ALL EPOXY COATED BARS CUT IN THE FIELD SHALL BE SAW CUT AND THE EXPOSED ENDS SHALL BE TREATED AS SPECIFIED IN SECTION 507.04.

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DECK REINFORCEMENT (2 OF 3)	
Designed By J.A. ROUILLARD	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699DR2	
Bridge Sheet No. 7	Sheet 7 of 101

VANASSE HANGEN BRUSTLIN, INC.

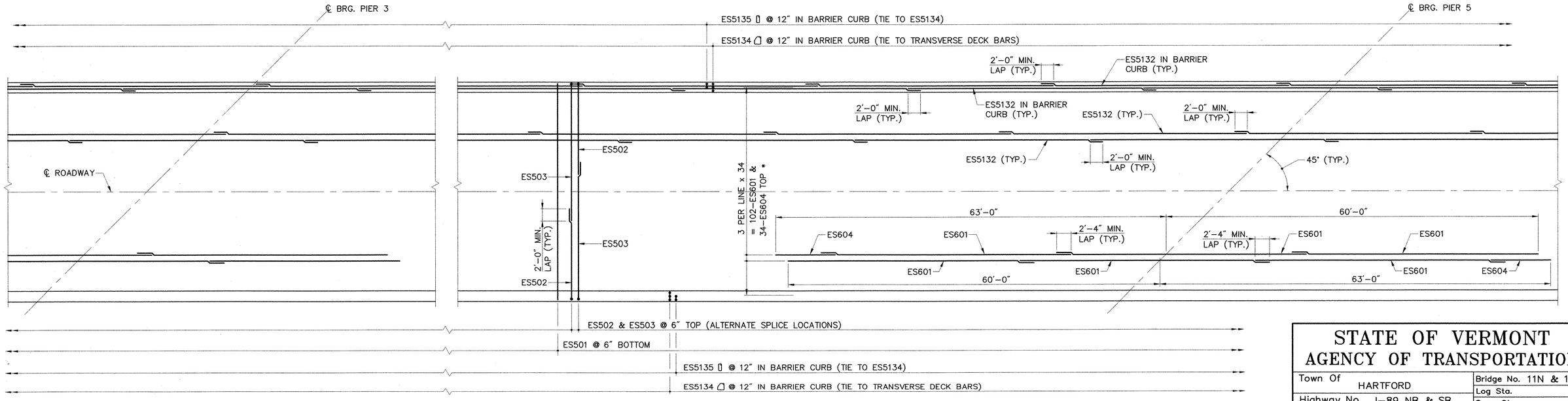
PLOTTED 9–29–98



* SPACE AS SHOWN IN SECTION A-A

SPAN 2 DECK REINFORCING PLAN

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



* SPACE AS SHOWN IN SECTION A-A

SPAN 3 DECK REINFORCING PLAN

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

NOTES:

1. REINFORCING STEEL LAYOUT IS SYMMETRICAL ABOUT THE ℄ OF BEARING AT THE CENTER PIER, PIER 5. THE LAYOUT SHOWN IS FOR BRIDGE 11S. THE LAYOUT FOR BRIDGE 11N IS SIMILAR.
2. SEE SPAN 1 DECK REINFORCING PLAN, SHEET 7, FOR NUMBER OF BARS.
3. SEE SHEET 6 FOR SECTION A-A.

STATE OF VERMONT
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Highway No. I-89 NB & SB	Log Sta.
	Surv. Sta.

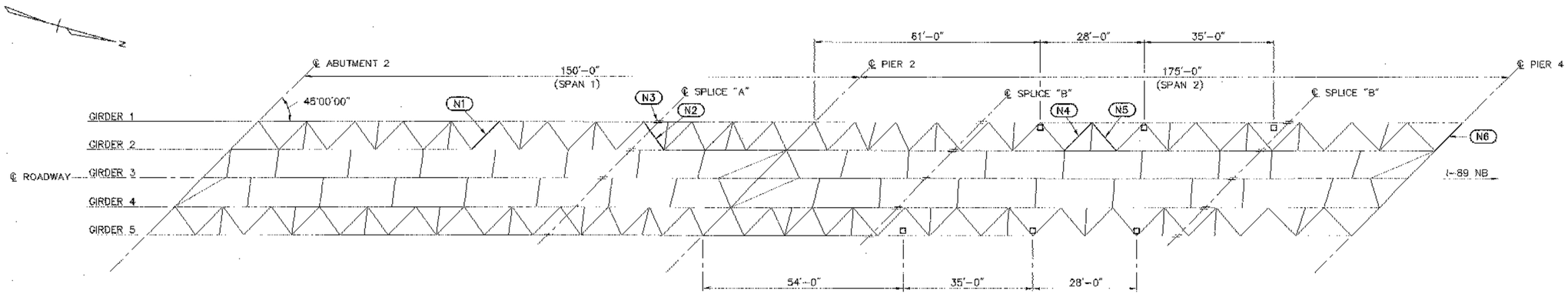
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR

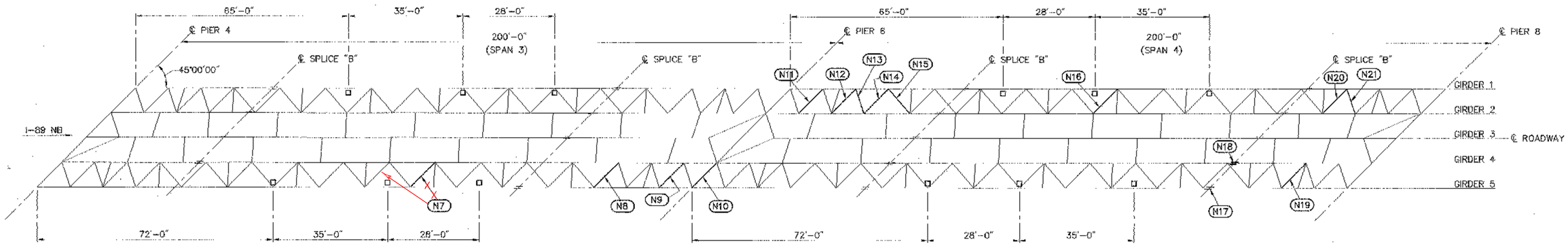
DECK REINFORCEMENT (3 OF 3)

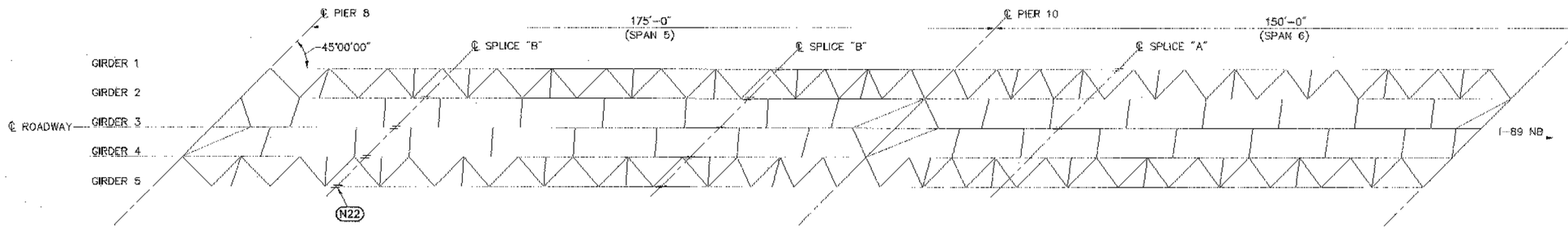
Designed By J.A. ROUILLARD	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699DR3	
Bridge Sheet No. 8	Sheet 8 of 101

VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9-24-98







FRAMING PLAN
SCALE: 1/16" = 1'-0"

NOTES:

1. (NXX) INDICATES LOCATION REQUIRING STRUCTURAL STEEL REPAIR OR REPLACEMENT.
2. SEE SHEET 11 FOR TABLE LISTING REPAIRS REQUIRED AT EACH LOCATION.
3. SEE ORIGINAL SHOP DRAWING SHEET E3, WHICH IS INCLUDED IN THIS SET OF PLANS FOR REFERENCE AS SHEET 82, FOR ORIGINAL SHOP DRAWING FRAMING PLAN.
4. ALL EXISTING SCUPPERS SHALL BE REMOVED AND REPLACED IN THE SAME LOCATION.
   □ INDICATES SCUPPER LOCATION. THE SCUPPER LOCATION DIMENSIONS SHOWN WERE OBTAINED FROM THE ORIGINAL 1966 SHOP DRAWINGS. SEE SHEET 14 FOR SCUPPER DETAILS.

STATE OF VERMONT
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Town Of HARTFORD	Bridge No. 11N
	Log Sta.
Highway No. I-89 NB	Surv. Sta.

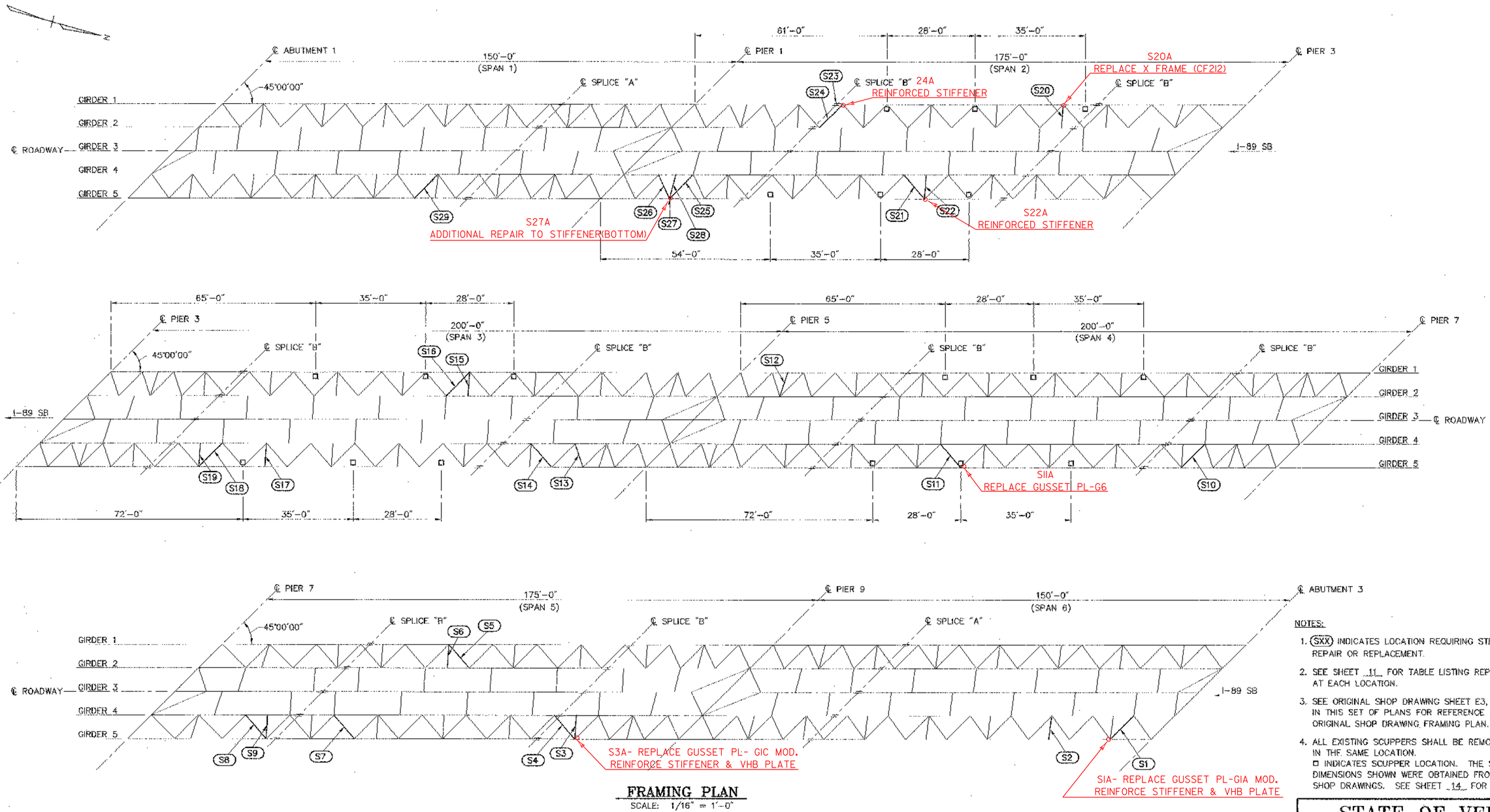
I-89 NB OVER WHITE RIVER, VT 14 & NECR

FRAMING PLAN – BRIDGE 11N

Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699FRM	
Bridge Sheet No. 9	Sheet 9 of 101

VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9-22-98



FRAMING PLAN

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

NOTES:

1. (SXX) INDICATES LOCATION REQUIRING STRUCTURAL STEEL REPAIR OR REPLACEMENT.
2. SEE SHEET 11 FOR TABLE LISTING REPAIRS REQUIRED AT EACH LOCATION.
3. SEE ORIGINAL SHOP DRAWING SHEET E3, WHICH IS INCLUDED IN THIS SET OF PLANS FOR REFERENCE AS SHEET 82, FOR ORIGINAL SHOP DRAWING FRAMING PLAN.
4. ALL EXISTING SCUPPERS SHALL BE REMOVED AND REPLACED IN THE SAME LOCATION.
   □ INDICATES SCUPPER LOCATION. THE SCUPPER LOCATION DIMENSIONS SHOWN WERE OBTAINED FROM THE ORIGINAL 1966 SHOP DRAWINGS. SEE SHEET 14 FOR SCUPPER DETAILS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11S
Highway No. I-89 SB	Log Sta.
	Surv. Sta.

I-89 SB OVER WHITE RIVER, VT 14 & NECR

FRAMING PLAN - BRIDGE 11S

Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699FRM	
Bridge Sheet No. 10	Sheet 10 of 101

VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9-22-98

STRUCTURAL STEEL REPAIR TABLE

REPAIR I.D. NUMBER	BRIDGE	SPAN	GIRDER BAY	REPAIRS REQUIRED	MATERIALS REQUIRED	SHOP DRAWING MARK	REFERENCE SHOP DWG. SHEETS	COMMENTS
N1	11N	1	G1–G2	REPLACE LATERAL BRACING ANGLE IN KIND	L 4 X 4 X 5/16 X 9' – 7 11/16" 4 H. S. BOLTS	L1 –	E3, S67 –	
N2	11N	1	G1–G2	REPLACE LATERAL BRACING ANGLE IN KIND	L 4 X 4 X 5/16 X 8' – 6" 4 H. S. BOLTS	L3 –	E3, S67 –	
N3	11N	1	G1–G2	REPLACE CORRODED BOLT IN GIRDER 1 BOTTOM FLANGE SPLICE	1 H.S. BOLT	SPLICE "A"	S11	
N4	11N	2	G1–G2	REPLACE LATERAL BRACING ANGLE IN KIND	L 4 X 4 X 5/16 X 9' – 7 11/16" 4 H. S. BOLTS	L1 –	E3, S67 –	
N5	11N	2	G1–G2	REPLACE CORRODED BOLTS AT GIRDER 1 LATERAL BRACING ANGLE GUSSET	2 H.S. BOLTS	–	–	
N6	11N	3	G1–G2	REPLACE CORRODED BOLTS IN CROSS FRAME (TYPE CF4) LOWER GUSSET PLATE AT GIRDER 1	14 H.S. BOLTS	–	E4	
N7	11N	3	G4–G5	REPLACE LATERAL BRACING ANGLE IN KIND REPLACE LATERAL BRACING ANGLE GUSSET PLATE AT GIRDER 5 IN KIND	L 4 X 4 X 5/16 X 9' – 7 11/16" PL. 9 5/8" X 3/8" X 0' – 9 5/8" 4 H.S. BOLTS	L1 g1 –	E3, S67 E3, E9, S21 –	SEE NOTE 8
N8	11N	3	G4–G5	REPLACE LATERAL BRACING ANGLE IN KIND REPLACE LATERAL BRACING ANGLE GUSSET PLATE AT GIRDER 5 IN KIND	L 4 X 4 X 5/16 X 9' – 7 11/16" PL. 9 5/8" X 3/8" X 0' – 9 5/8" 4 H.S. BOLTS	L1 g1 –	E3, S67 E3, E9, S21 –	SEE NOTE 8
N9	11N	3	G4–G5	REPLACE CORRODED BOLTS AT GIRDER 5 LATERAL BRACING ANGLE GUSSET	2 H.S. BOLTS	–	–	
N10	11N	3	G4–G5	REPLACE CORRODED BOLTS IN CROSS FRAME (TYPE CF4) LOWER GUSSET PLATE AT GIRDER 5	14 H.S. BOLTS	–	E4	
N11	11N	4	G1–G2	REPLACE LATERAL BRACING ANGLE IN KIND	L 4 X 4 X 5/16 X 9' – 7 11/16" 4 H. S. BOLTS	L1 –	E3, S67 –	
N12	11N	4	G1–G2	REPLACE LATERAL BRACING ANGLE IN KIND REPLACE LATERAL BRACING ANGLE GUSSET PLATE AT GIRDER 1 IN KIND	L 4 X 4 X 5/16 X 9' – 7 11/16" PL. 9 5/8" X 3/8" X 0' – 9 5/8" 4 H.S. BOLTS	L1 g1 –	E3, S67 E3, E8, S21 –	SEE NOTE 8
N13	11N	4	G1–G2	REPLACE LATERAL BRACING ANGLE IN KIND REPLACE LATERAL BRACING ANGLE GUSSET PLATE AT GIRDER 1 IN KIND	L 4 X 4 X 5/16 X 6' – 9 1/4" PL. 5 7/8" X 3/8" X 1' – 0 1/2" 4 H.S. BOLTS	L9 g9 –	E3, S67 E3, E9, S22 –	SEE NOTE 8
N14	11N	4	G1–G2	REPLACE LATERAL BRACING ANGLE IN KIND	L 4 X 4 X 5/16 X 9' – 7 11/16" 4 H. S. BOLTS	L1 –	E3, S67 –	
N15	11N	4	G1–G2	REPLACE CORRODED BOLTS AT GIRDER 1 LATERAL BRACING ANGLE GUSSET	2 H.S. BOLTS	–	–	
N16	11N	4	G1–G2	REPLACE LATERAL BRACING ANGLE IN KIND	L 4 X 4 X 5/16 X 9' – 7 11/16" 4 H. S. BOLTS	L1 –	E3, S67 –	
N17	11N	4	G4–G5	REPLACE LOOSE BOLT IN GIRDER 5 BOTTOM FLANGE SPLICE	1 H.S. BOLT	SPLICE "B"	S11	SEE NOTE 10
N18	11N	4	G3–G4	REPLACE LOOSE BOLT IN GIRDER 4 BOTTOM FLANGE SPLICE	1 H.S. BOLT	SPLICE "B"	S11	SEE NOTE 10
N19	11N	4	G4–G5	REPLACE CORRODED BOLTS AT GIRDER 5 LATERAL BRACING ANGLE GUSET	2 H.S. BOLTS	–	–	
N20	11N	4	G1–G2	REPLACE LATERAL BRACING ANGLE IN KIND REPLACE LATERAL BRACING ANGLE GUSSET PLATE AT GIRDER 1 IN KIND	L 4 X 4 X 5/16 X 9' – 7 11/16" PL. 9 5/8" X 3/8" X 0' – 9 5/8" 4 H.S. BOLTS	L1 g1 –	E3, S67 E3, E9, S21 –	SEE NOTE 8
N21	11N	4	G1–G2	REPLACE CORRODED BOLTS AT GIRDER 1 LATERAL BRACING ANGLE GUSSET	2 H.S. BOLTS	–	–	
N22	11N	5	G4–G5	REPLACE LOOSE BOLTS IN GIRDER 5 BOTTOM FLANGE SPLICE	4 H.S. BOLTS	SPLICE "B"	S11	
S1	11S	6	G4–G5	REPLACE LATERAL BRACING ANGLE IN KIND	L 4 X 4 X 5/16 X 9' – 7 11/16" 4 H. S. BOLTS	L1 –	E3, S67 –	
S2	11S	6	G4–G5	REPLACE ENTIRE CROSS FRAME IN KIND, SHOP DRAWING MARK CF20	2 X L 4 X 4 X 3/8 X 6' – 4 13/16" 2 X L 4 X 4 X 3/8 X 7' – 5 1/4" 4 X PL. 12 3/4 X 3/8 X 1' – 1" 1 X PL. 5 X 3/8 X 0' – 7"	a13 a14 K4 fp4	E3, S53 E3, S53 E3, S53 E3, S53	
S3	11S	5	G4–G5	REPLACE CORRODED BOLTS IN UPPER & LOWER CROSS FRAME (TYPE CF2) GUSSETS AT GIRDER 5	12 H.S. BOLTS	–	E4	
S4	11S	5	G4–G5	REPLACE LATERAL BRACING ANGLE IN KIND REPLACE LATERAL BRACING ANGLE GUSSET PLATE AT GIRDER 5 IN KIND	L 4 X 4 X 5/16 X 9' – 3 1/2" PL. 8 1/8" X 3/8" X 0' – 8 1/2" 4 H.S. BOLTS	L6 g6c –	E3, S67 E3, E9, S21 –	SEE NOTE 8
S5	11S	5	G1–G2	REPLACE CORRODED BOLTS AT GIRDER 1 LATERAL BRACING ANGLE GUSSET	2 H.S. BOLTS	–	–	
S6	11S	5	G1–G2	REPLACE ENTIRE CROSS FRAME IN KIND, SHOP DRAWING MARK CF212	2 X L 4 X 4 X 3/8 X 6' – 4 3/16" 2 X L 4 X 4 X 3/8 X 7' – 8 7/16" 4 X PL. 12 3/4 X 3/8 X 1' – 1" 1 X PL. 5 X 3/8 X 0' – 7"	a23 a24 K4 fp4	E3, S61 E3, S61 E3, S61 E3, S61	
S7	11S	5	G4–G5	REPLACE LATERAL BRACING ANGLE IN KIND	L 4 X 4 X 5/16 X 9' – 3 1/2" 4 H.S. BOLTS	L6 –	E3, S67 –	
S8	11S	5	G4–G5	REPLACE LATERAL BRACING ANGLE IN KIND	L 4 X 4 X 5/16 X 9' – 3 1/2" 4 H.S. BOLTS	L6 –	E3, S67 –	
S9	11S	5	G4–G5	REPLACE CORRODED BOLTS IN LOWER CROSS FRAME (TYPE CF2) GUSSET AT GIRDER 5	6 H.S. BOLTS	–	E4	
S10	11S	4	G4–G5	REPLACE CORRODED BOLTS AT GIRDER 5 LATERAL BRACING ANGLE GUSSET	2 H.S. BOLTS	–	–	
S11	11S	4	G4–G5	REPLACE LATERAL BRACING ANGLE IN KIND	L 4 X 4 X 5/16 X 9' – 3 1/2" 4 H.S. BOLTS	L6 –	E3, S67 –	
S12	11S	4	G1–G2	REPLACE ENTIRE CROSS FRAME IN KIND, SHOP DRAWING MARK CF220	2 X L 4 X 4 X 3/8 X 6' – 8 3/4" 2 X L 4 X 4 X 3/8 X 8' – 11 3/4" 4 X PL. 12 3/4 X 3/8 X 1' – 1" 1 X PL. 5 X 3/8 X 0' – 7"	a26 a29 K4 fp4	E3, S65 E3, S65 E3, S65 E3, S65	
S13	11S	3	G4–G5	REPLACE CORRODED BOLTS AT GIRDER 5 LATERAL BRACING ANGLE GUSSET	2 H.S. BOLTS	–	–	
S14	11S	3	G4–G5	REPLACE LATERAL BRACING ANGLE IN KIND	L 4 X 4 X 5/16 X 9' – 3 1/2" 4 H.S. BOLTS	L6 –	E3, S67 –	
S15	11S	3	G1–G2	REPLACE ENTIRE CROSS FRAME IN KIND, SHOP DRAWING MARK CF212	2 X L 4 X 4 X 3/8 X 6' – 4 3/16" 2 X L 4 X 4 X 3/8 X 7' – 8 7/16" 4 X PL. 12 3/4 X 3/8 X 1' – 1" 1 X PL. 5 X 3/8 X 0' – 7"	a23 a24 K4 fp4	E3, S61 E3, S61 E3, S61 E3, S61	
S16	11S	3	G1–G2	REPLACE CORRODED BOLTS AT GIRDER 1 LATERAL BRACING ANGLE GUSSET	2 H.S. BOLTS	–	–	
S17	11S	3	G4–G5	REPLACE CORRODED BOLTS IN LOWER CROSS FRAME (TYPE CF2) GUSSET AT GIRDER 5	6 H.S. BOLTS	–	E4	
S18	11S	3	G4–G5	REPLACE LATERAL BRACING ANGLE IN KIND	L 4 X 4 X 5/16 X 9' – 7 11/16" 4 H. S. BOLTS	L1 –	E3, S67 –	
S19	11S	3	G4–G5	REPLACE CORRODED BOLTS IN LOWER CROSS FRAME (TYPE CF2) GUSSET AT GIRDER 5	6 H.S. BOLTS	–	E4	
S20	11S	2	G4–G5	REPLACE CORRODED BOLTS IN UPPER & LOWER CROSS FRAME (TYPE CF2) GUSSETS AT GIRDER 5	12 H.S. BOLTS	–	E4	
S21	11S	2	G4–G5	REPLACE LATERAL BRACING ANGLE IN KIND REPLACE LATERAL BRACING ANGLE GUSSET PLATE AT GIRDER 5 IN KIND	L 4 X 4 X 5/16 X 9' – 3 1/2" PL. 8 1/8" X 3/8" X 0' – 8 1/2" 4 H.S. BOLTS	L6 g6c –	E3, S67 E3, E9, S21 –	SEE NOTE 8
S22	11S	2	G4–G5	REPLACE CORRODED BOLTS IN LOWER CROSS FRAME (TYPE CF2) GUSSET AT GIRDER 5	6 H.S. BOLTS	–	E4	
S23	11S	2	G1–G2	REPLACE BOTTOM 6 ROWS OF CORRODED BOLTS IN GIRDER 1 WEB SPLICE REPLACE ALL INTERIOR BOTTOM FLANGE SPLICE BOLTS IN GIRDER 1 SPLICE	36 H.S. BOLTS 14 H.S. BOLTS	SPLICE "B" SPLICE "B"	S11 S11	SEE NOTE 10 SEE NOTE 10
S24	11S	2	G1–G2	REPLACE LATERAL BRACING ANGLE IN KIND REPLACE LATERAL BRACING ANGLE GUSSET PLATE AT GIRDER 1 IN KIND	L 4 X 4 X 5/16 X 9' – 7 11/16" PL. 9 5/8" X 3/8" X 0' – 9 5/8" 4 H.S. BOLTS	L1 g1 –	E3, S67 E3, E9, S21 –	SEE NOTE 8
S25	11S	2	G4–G5	REPLACE LATERAL BRACING ANGLE IN KIND REPLACE LATERAL BRACING ANGLE GUSSET PLATE AT GIRDER 5	L 4 X 4 X 5/16 X 9' – 7 11/16" PL. 9 5/8" X 3/8" X 0' – 9 5/8" 4 H.S. BOLTS	L1 g1d –	E3, S67 E3, E6, S21 –	SEE NOTE 12
S26	11S	2	G4–G5	REPLACE LATERAL BRACING ANGLE IN KIND REPLACE LATERAL BRACING ANGLE GUSSET PLATE AT GIRDER 5	L 4 X 4 X 5/16 X 7' – 1 11/16" PL. 8 1/8" X 3/8" X 1' – 0 3/16" 4 H.S. BOLTS	L5 g5d –	E3, S67 E3, E6, S21 –	SEE NOTE 12
S27	11S	2	G4–G5	REPAIR VERTICAL STIFFENER ON INT. SIDE OF GIRDER 5 WEB AT LAT. BRACING GUSSETS	2 X PL. 5 1/2" X 3/8" X 1' – 0"	h13a	E3, S20, S2	SEE NOTE 13
S28	11S	2	G4–G5	REPLACE ENTIRE CROSS FRAME IN KIND, SHOP DRAWING MARK CF28	2 X L 4 X 4 X 3/8 X 6' – 7" 2 X L 4 X 4 X 3/8 X 8' – 3 1/2" 4 X PL. 12 3/4 X 3/8 X 1' – 1" 1 X PL. 5 X 3/8 X 0' – 7"	a18 a21 K4 fp4	E3, S59 E3, S59 E3, S59 E3, S59	
S29	11S	1	G4–G5	REPLACE LATERAL BRACING ANGLE IN KIND	L 4 X 4 X 5/16 X 9' – 7 11/16" 4 H. S. BOLTS	L1 –	E3, S67 –	

STRUCTURAL STEEL REPAIR NOTES:

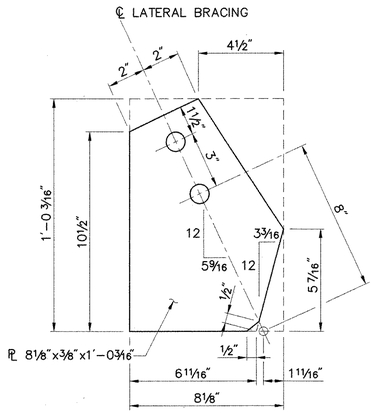
1. THE STRUCTURAL STEEL REPAIRS TABLE ON THIS SHEET LISTS THE REQUIRED STRUCTURAL STEEL REPAIRS AND REPLACEMENTS THAT WERE IDENTIFIED DURING A DECEMBER 1997 PRELIMINARY INSPECTION. A THOROUGH INSPECTION BY VERMONT AOT PERSONNEL ASSIGNED TO THE PROJECT SHALL BE MADE OF ALL STRUCTURAL STEEL AT THE START OF CONSTRUCTION TO IDENTIFY ANY ADDITIONAL MEMBERS THAT REQUIRE REPAIR. THE RESIDENT ENGINEER MAY SCHEDULE USE OF THE VAOT UNDERBRIDGE INSPECTION VEHICLE TO ASSIST VAOT PERSONNEL IN PERFORMING THIS INSPECTION. THE CONTRACTOR WILL NOT BE ALLOWED TO USE THE VAOT UNDERBRIDGE INSPECTION VEHICLE.
2. SEE THE FRAMING PLANS ON SHEETS 9 AND 10 FOR LOCATIONS OF THE REPAIRS LISTED IN THE STRUCTURAL STEEL REPAIRS TABLE ON THIS SHEET.
3. SHOP DRAWINGS FROM THE ORIGINAL STEEL FABRICATION ARE INCLUDED IN THIS SET OF PLANS FOR REFERENCE. SEE SHEETS 80 – 101. THE ORIGINAL SHOP DRAWING MARK FOR ALL MEMBERS THAT ARE TO BE REPLACED IN KIND IS INCLUDED IN THE STEEL REPAIRS TABLE, ALONG WITH THE ORIGINAL SHEET NUMBER(S) OF THE SHOP DRAWING(S) THAT THE MEMBER IS DETAILED ON . THE DIMENSIONS OF THE STEEL MEMBERS THAT ARE TO BE REPLACED IN KIND SHOWN IN THE STRUCTURAL STEEL REPAIRS TABLE ARE TAKEN FROM THE ORIGINAL SHOP DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS OF ALL STRUCTURAL STEEL TO BE REPLACED.
4. IN THE STRUCTURAL STEEL REPAIRS TABLE ON THIS SHEET, THE GIRDERS ARE NUMBERED FROM LEFT TO RIGHT IN THE DIRECTION OF INCREASING STATIONING FOR BOTH BRIDGE 11N AND BRIDGE 11S.
5. ALL NEW STRUCTURAL STEEL SHALL BE AASHTO M270, GRADE 36, UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).
6. ALL WELDING AND DIMENSIONAL TOLERANCES OF WELDED MEMBERS SHALL CONFORM TO THE LATEST ANSI/AASHTO/AWS BRIDGE WELDING CODE AND IT'S LATEST REVISIONS.
7. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH STRENGTH BOLTS, AASHTO M164 (ASTM A–325), TYPE 3 UNLESS OTHERWISE NOTED. HOLES SHALL BE 15/16" DIAMETER. CONNECTIONS NOT DETAILED IN THESE PLANS SHALL BE DETAILED BY THE FABRICATOR.
8. TO REPLACE A LATERAL BRACING ANGLE GUSSET PLATE, REMOVE EXISTING GUSSET PLATE, GRIND EXISTING WELDS ON GIRDER WEB AND STIFFENER SMOOTH, THEN FIELD WELD NEW GUSSET TO WEB AND STIFFENER USING A ¼" FILLET WELD ON THE TOP AND BOTTOM OF THE PLATE, AS SHOWN IN THE TYPICAL REPLACEMENT GUSSET ATTACHMENT DETAIL ON SHEET 12.
9. THE CONTRACTOR'S PROPOSED SEQUENCE OF REMOVAL AND REPLACEMENT OF CROSS FRAMES AND LATERAL BRACING SHALL BE REVIEWED BY A LICENSED PROFESSIONAL ENGINEER ENGAGED BY THE CONTRACTOR, TO ENSURE THAT REMOVAL AND REPLACEMENT OPERATIONS WILL NOT CAUSE THE GIRDERS TO BECOME UNSTABLE. A WRITTEN DESCRIPTION OF THE PROPOSED REMOVAL AND REPLACEMENT SEQUENCE, STAMPED BY A LICENSED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. ALL COSTS INCURRED BY THE CONTRACTOR TO ENSURE THAT THE GIRDERS REMAIN STABLE DURING THE PROPOSED REMOVAL AND REPLACEMENT SEQUENCE SHALL BE SUBSIDIARY TO ITEM 506.60, "STRUCTURAL STEEL".
10. ONLY ONE BOLT AT A TIME MAY BE REMOVED DURING THE REPLACEMENT OF CORRODED OR LOOSE BOLTS IN GIRDER WEB AND FLANGE SPLICES. THE REPLACMENT BOLT SHALL BE INSTALLED AND TIGHTENED AS REQUIRED BY THE SPECIFICATIONS BEFORE THE NEXT BOLT IS REMOVED.
11. UNLESS OTHERWISE NOTED, REPLACEMENT LATERAL BRACING ANGLES, GUSSET PLATES, AND CROSS FRAMES SHALL BE FABRICATED AS SHOWN IN THE ORIGINAL SHOP DRAWINGS, EXCEPT THAT ALL NOTES IN THE SHOP DRAWINGS RELATED TO PAINTING SHALL BE IGNORED.
12. THE DIMENSIONS OF THE REPLACEMENT GUSSET PLATES AT REPAIR NUMBERS S25 AND S26 HAVE BEEN ADJUSTED TO ACCOMMODATE THE PROPOSED STIFFENER REPAIR PLATES. SEE REPAIR NUMBERS S25–S27 REPAIR DETAILS ON SHEET 12. TO REPLACE THE LATERAL BRACING ANGLE GUSSET PLATES, REMOVE EXISTING GUSSET PLATES, GRIND EXISTING WELDS ON GIRDER WEB SMOOTH, INSTALL STIFFENER REPAIR PLATES AS DESCRIBED IN NOTE 13, THEN FIELD WELD NEW GUSSETS TO WEB AND STIFFENER REPAIR PLATES USING A ¼" FILLET WELD ON THE TOP AND BOTTOM OF THE PLATES.
13. TO REPAIR THE WEB STIFFENER AT REPAIR NUMBER S27, GRIND SMOOTH THE EXISTING GUSSET PLATE WELDS, THEN FIELD WELD A STIFFENER REPAIR PLATE TO EACH SIDE OF THE STIFFENER, AS SHOWN IN THE REPAIR NUMBERS S25–S27 REPAIR DETAILS ON SHEET 12.
14. THE CONTRACTOR SHALL TAKE CARE TO AVOID DAMAGING THE EXISTING GIRDER WEBS AND STIFFENERS DURING REMOVAL OF EXISTING GUSSET PLATES. ANY DAMAGE TO THE GIRDERS CAUSED BY THE REMOVAL OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
15. ALL NEW STRUCTURAL STEEL SHALL BE INCLUDED IN ITEM 506.60 "STRUCTURAL STEEL". REMOVAL OF EXISTING LATERAL BRACING, GUSSET PLATES, CROSS FRAMES, AND BOLTS SHALL BE INCLUDED IN ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE".
16. THE STRUCTURAL STEEL ON THE EXISTING BRIDGE IS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. ALL STRUCTURAL STEEL REMOVED FROM THE BRIDGE SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSING OF IT PROPERLY.

VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

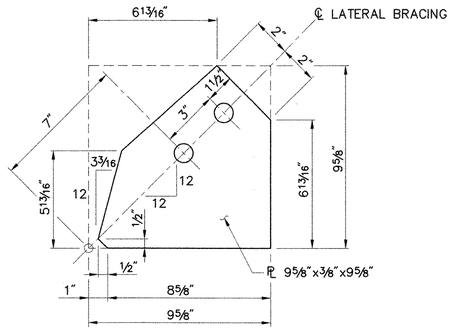
Town Of HARTFORD	Bridge No. 11N & 11S
Highway No. I–89 NB & SB	Log Sta. Surv. Sta.
I–89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
STRUCTURAL STEEL REPAIRS TABLE & NOTES	
Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By Date S.M. HODGDON 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699SR1	
Bridge Sheet No. 11	Sheet 11 of 101

PLOTTED 9–24–98



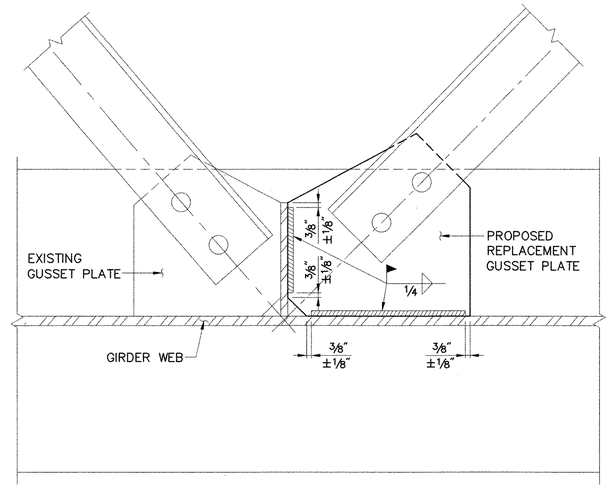
"MODIFIED g5d" GUSSET PLAN

SCALE: 3" = 1'-0"



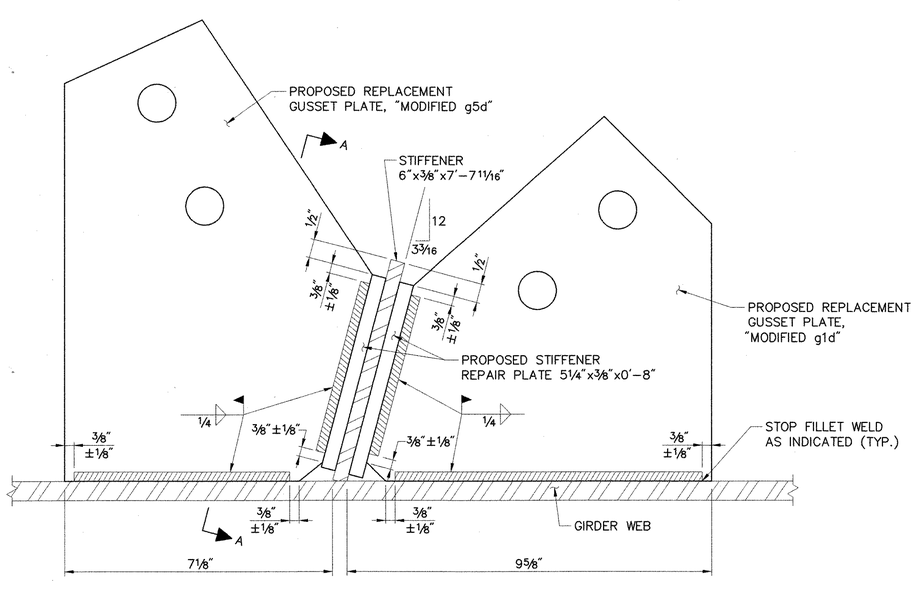
"MODIFIED g1d" GUSSET PLAN

SCALE: 3" = 1'-0"



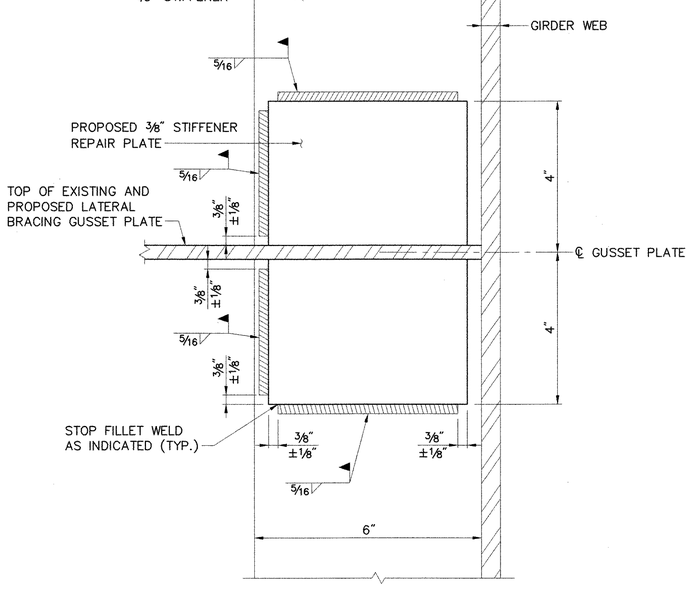
TYPICAL REPLACEMENT GUSSET ATTACHMENT DETAIL

SCALE: 3" = 1'-0"



PLAN

SCALE: 6" = 1'-0"



VIEW A–A

SCALE: 6" = 1'-0"

NOTES:

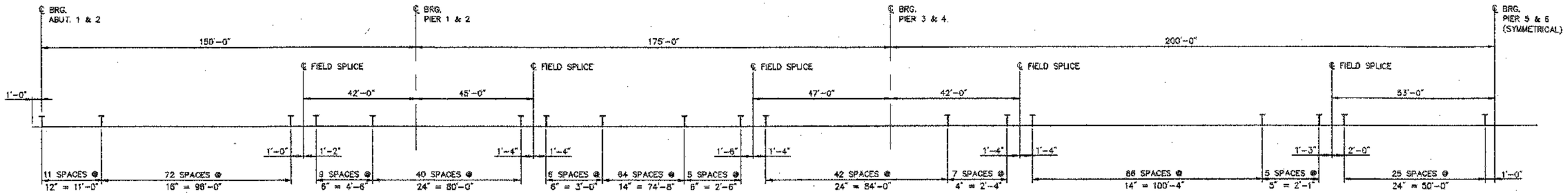
1. SEE SHEET 11 FOR STEEL REPAIRS TABLE AND NOTES.
2. FOR LOCATIONS OF REPAIRS SEE FRAMING PLANS ON SHEETS 9 AND 10.

BRIDGE 11S STEEL REPAIRS S25–S27 DETAILS

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of HARTFORD	Bridge No. 11N & 11S
	Log Sta.
Highway No. I–89 NB & SB	Surv. Sta.
I–89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
STRUCTURAL STEEL REPAIR DETAILS	
Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699SD1	
Bridge Sheet No. 12	Sheet 12 of 101

VANASSE HANGEN BRUSTLIN, INC.

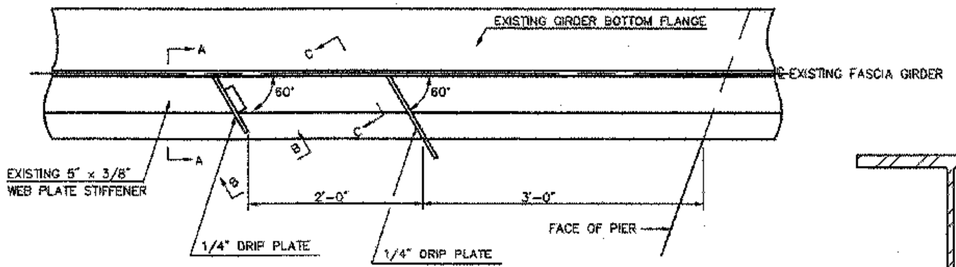
PLOTTED 9-22-98



TOTAL STUDS PER GIRDER LINE = 1512

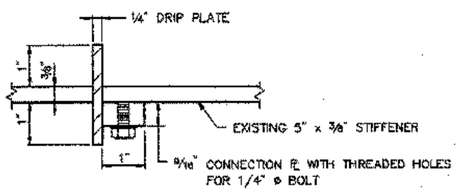
STUD SHEAR CONNECTOR LAYOUT

N.T.S.



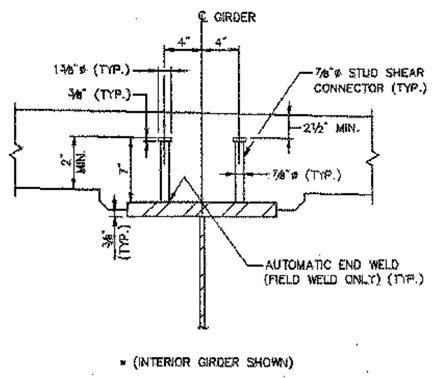
PLAN

N.T.S.



VIEW B-B

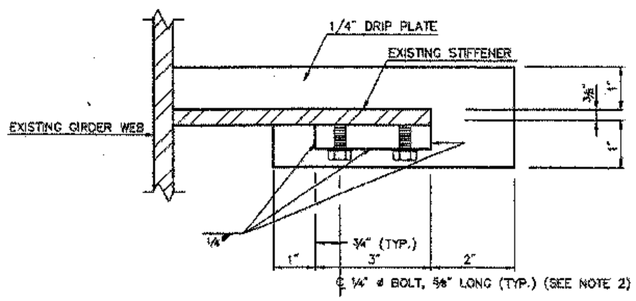
N.T.S.



* (INTERIOR GIRDER SHOWN)

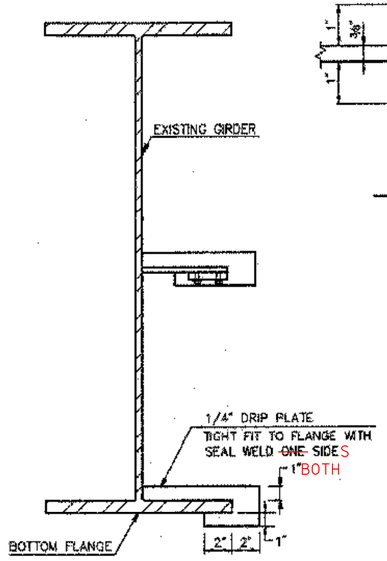
SHEAR CONNECTOR DETAIL*

SCALE: 1½" = 1'-0"



VIEW C-C

N.T.S.



VIEW A-A

N.T.S.

DRIP PLATE DETAILS

N.T.S.

DRIP PLATE NOTES:

1. DRIP PLATES SHALL BE INSTALLED ON THE EXTERIOR SIDE OF EACH FASCIA GIRDER, ON BOTH SIDES OF EACH PIER. DRIP PLATES SHALL BE INSTALLED ON THE BOTTOM FLANGE OF THE GIRDER AND ON THE WEB STIFFENER AS SHOWN IN THE DETAILS ON THIS SHEET.
2. DRIP PLATES SHALL BE FASTENED TO WEB STIFFENERS WITH 1/4" DIAMETER GALVANIZED OR STAINLESS STEEL BOLTS. THE BOLTS SHALL BE TIGHTENED THROUGH THE THREADED HOLES IN THE DRIP PLATE CONNECTION TAB SO THAT THEY BEAR ON THE STIFFENER. THE BOLTS SHALL BE THREADED FOR THEIR ENTIRE LENGTH AND HAVE CUP POINTS. BOLTS SHALL HAVE 20 THREADS PER INCH AND UNC THREAD SERIES.
3. AT EACH STIFFENER DRIP PLATE, THE JOINT BETWEEN THE GIRDER WEB, THE STIFFENER, AND THE DRIP PLATE SHALL BE SEALED WITH AN APPROVED CAULKING.
4. DRIP PLATES SHALL BE CONNECTED TO GIRDER BOTTOM FLANGES WITH A SEAL WELD ON ONE SIDE.

DRIP PLATE REVISIONS
REVISIONS 6/99

NOTE:

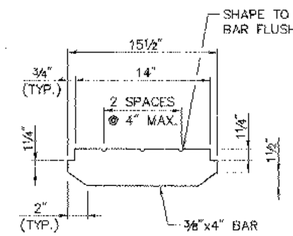
1. ONCE THE HAUNCHES HAVE BEEN CALCULATED, THE SHEAR STUDS WITHIN THE AREAS WITH GREATER THAN 4" OF HAUNCH MUST BE EITHER "PIGGY-BACKED" WITH ADDITIONAL SHEAR STUDS OR LONGER STUDS MUST BE USED. IN NO CASE SHALL THERE BE LESS THAN 2½" OF COVER OVER THE TOP OF THE STUDS OR SHALL THE STUDS HAVE LESS THAN 2" OF EMBEDMENT INTO THE CONCRETE DECK.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & 11S
	Log Sta.
Highway No. I-89 NB & SB	Surv. Sta.
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
STUD SHEAR CONNECTOR LAYOUT & DETAILS	
Designed By J.A. ROUILLARD	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 9/98	Bridge Design Supervisor C.D. BAKER Date 6/99
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50899SSC-R	
Bridge Sheet No. 13R	Sheet 13R of 101

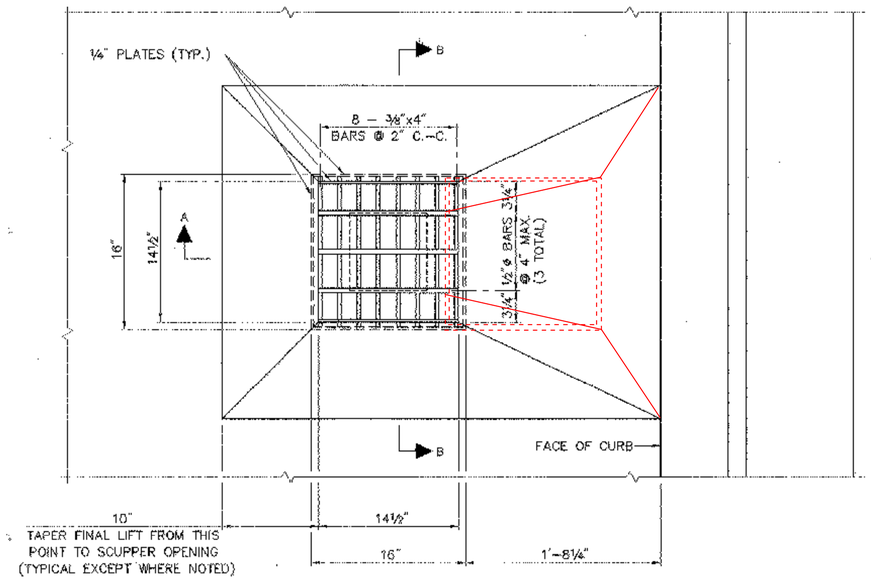
VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 6/99



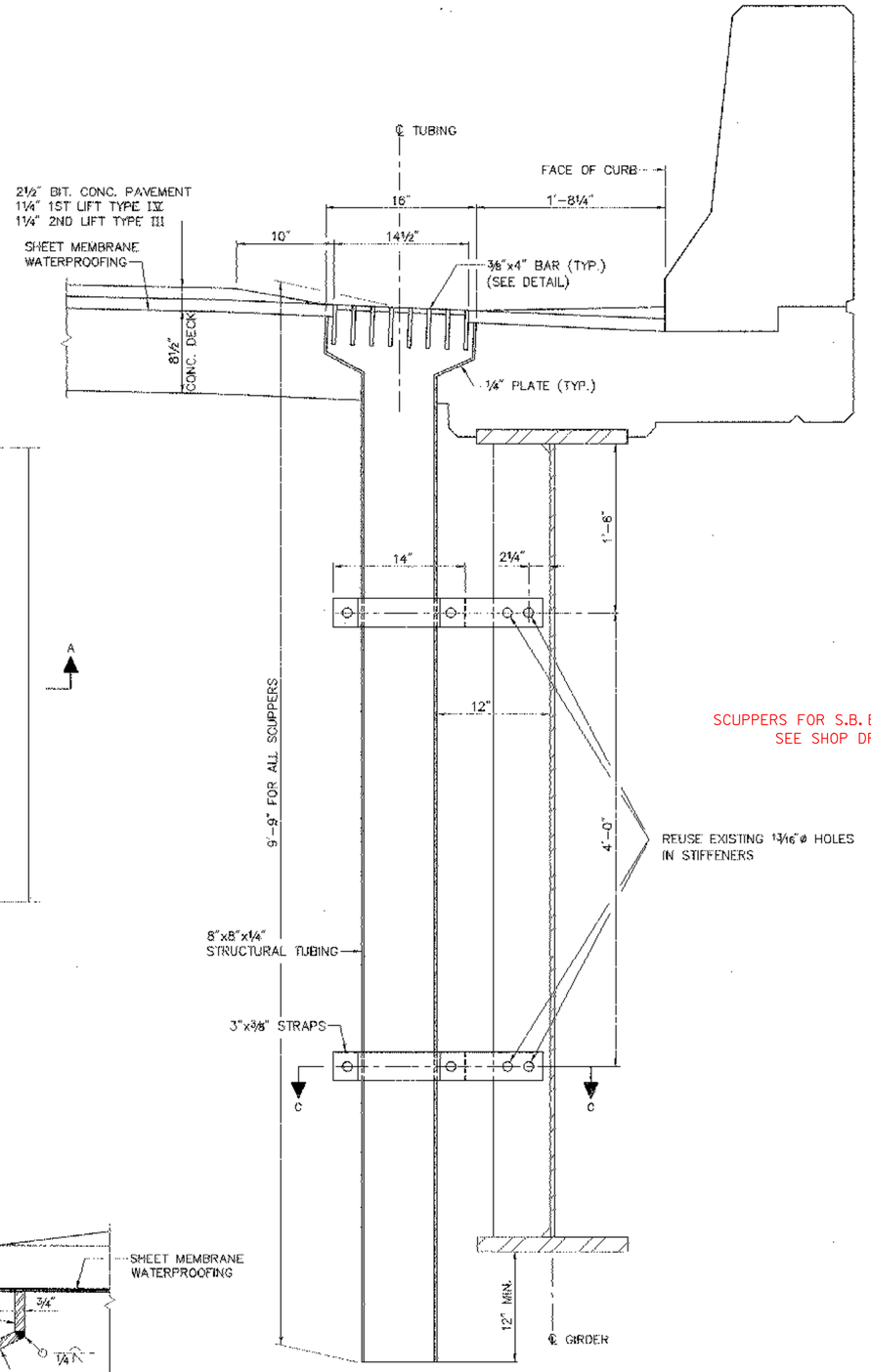
BAR DETAIL FOR GRATE

SCALE: 1½" = 1'-0"



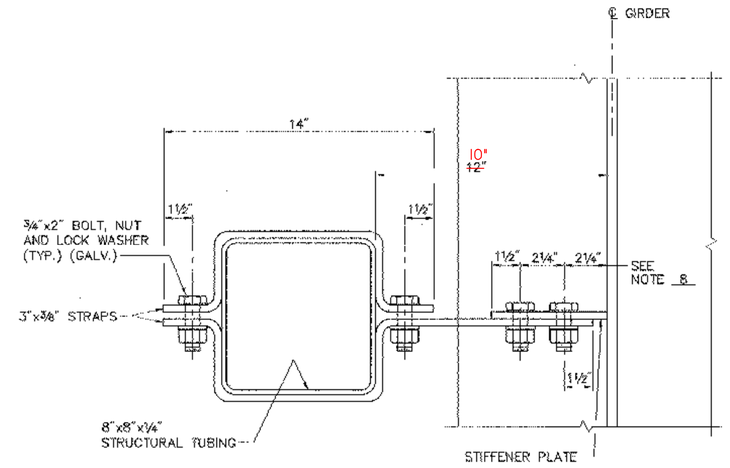
PLAN

SCALE: 1½" = 1'-0"



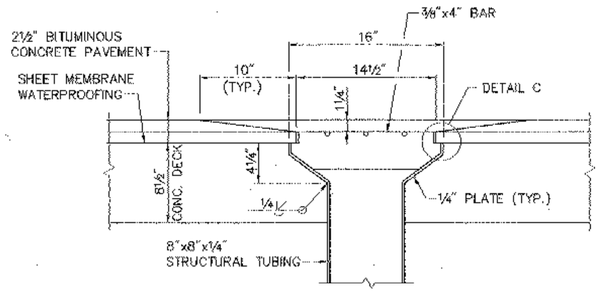
SECTION A-A

SCALE: 1½" = 1'-0"



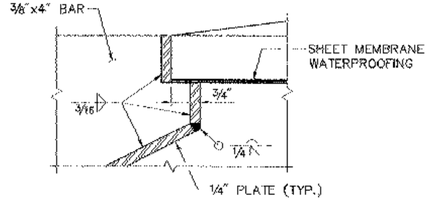
SECTION C-C

SCALE: 3" = 1'-0"



SECTION B-B

SCALE: 1½" = 1'-0"



DETAIL C

SCALE: 6" = 1'-0"

SCUPPERS FOR S.B. BRIDGE REVISED.
SEE SHOP DRAWINGS

SCUPPER NOTES:

1. ALL EXISTING SCUPPERS, INCLUDING THE STRAPS THAT ATTACH SCUPPERS TO GIRDER STIFFENERS, SHALL BE REMOVED. ALL COSTS FOR REMOVAL OF EXISTING SCUPPERS SHALL BE INCLUDED IN ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE".
2. NEW SCUPPERS, INCLUDING NEW STRAPS, SHALL BE INSTALLED AT ALL EXISTING SCUPPER LOCATIONS AS SHOWN ON THIS SHEET. NEW SCUPPERS SHALL BE PAID FOR UNDER ITEM 506.60, "STRUCTURAL STEEL".
3. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A-500 OR A-501.
4. ALL PLATES, BARS, STRAPS, AND ANGLES SHALL CONFORM TO AASHTO M 270, GRADE 36.
5. ALL SCUPPERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-123 (AASHTO M 111) AFTER FABRICATION.
6. THE TOP SURFACE OF SCUPPER SHALL BE SLOPED TO MATCH ROADWAY SLOPE AND GRADE.
7. THE BAR AND GRATE SECTION MAY BE PREFABRICATED PROVIDING THE GEOMETRY AND SECTION PROPERTIES ARE EQUIVALENT TO THE DETAILS SHOWN.
8. SCUPPERS SHALL BE LOCATED AS SHOWN ON SHEETS 9 & 10. THE SCUPPER LOCATIONS SHOWN WERE OBTAINED FROM THE ORIGINAL SHOP DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL SCUPPERS, AND THE LOCATIONS AND DIMENSIONS OF THE ATTACHMENT BOLT HOLES IN THE VERTICAL STIFFENERS, AND MAKE ADJUSTMENTS TO THE SCUPPER ATTACHMENT DETAILS AS NECESSARY.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

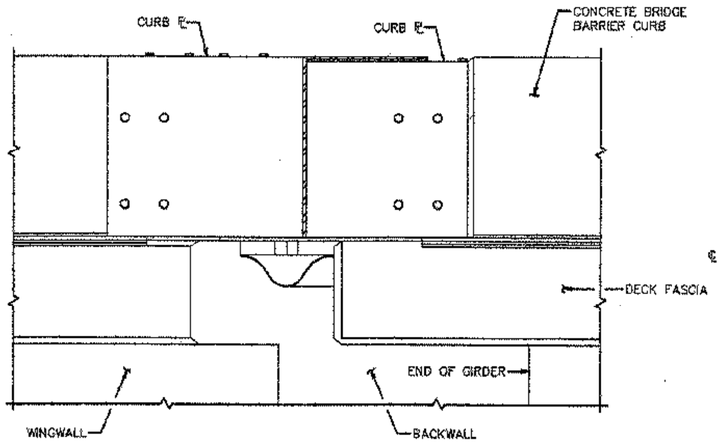
Town Of HARTFORD	Bridge No. 11N & 11S
Highway No. I-89 NB & SB	Log Sta. / Surv. Sta.
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR	

SCUPPER DETAILS

Designed By J.A. ROUILLARD	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699SCP	
Bridge Sheet No. 14	Sheet 14 of 101

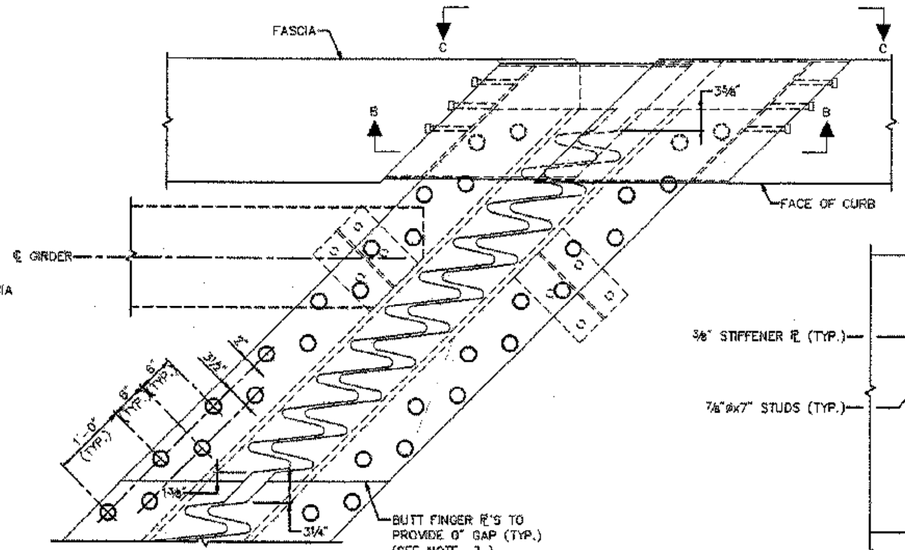
VANASSE HANGEN BRUSTLIN, INC.

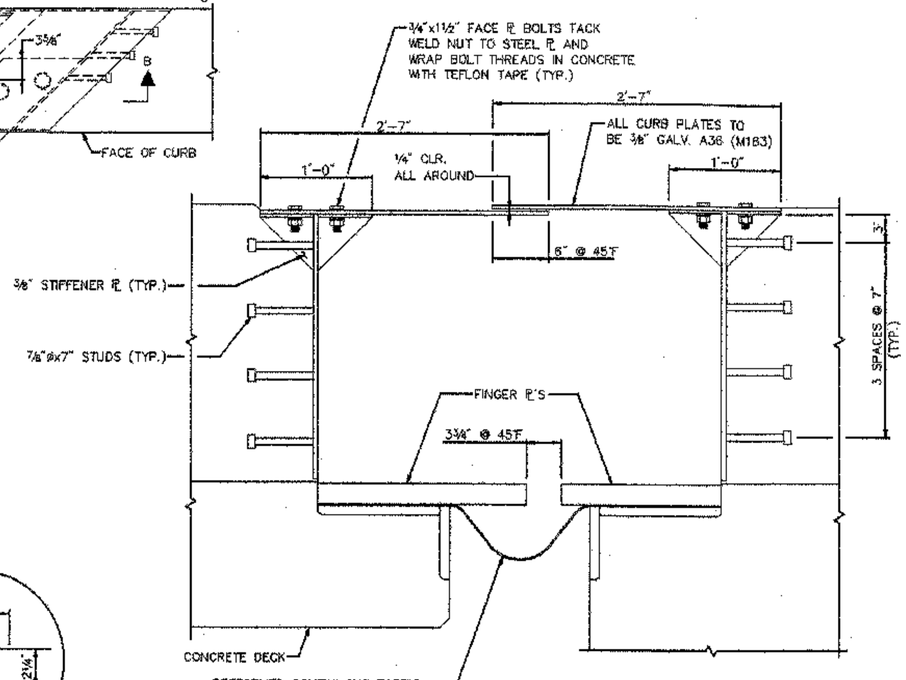
PLOTTED 9-22-98

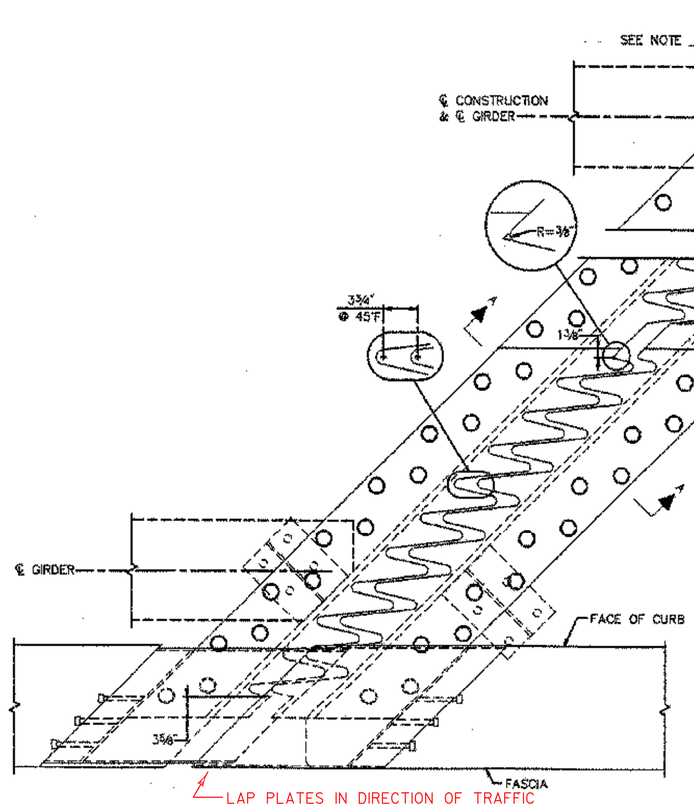


VIEW C–C

SCALE: 1" = 1'–0"

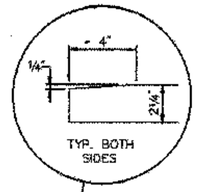


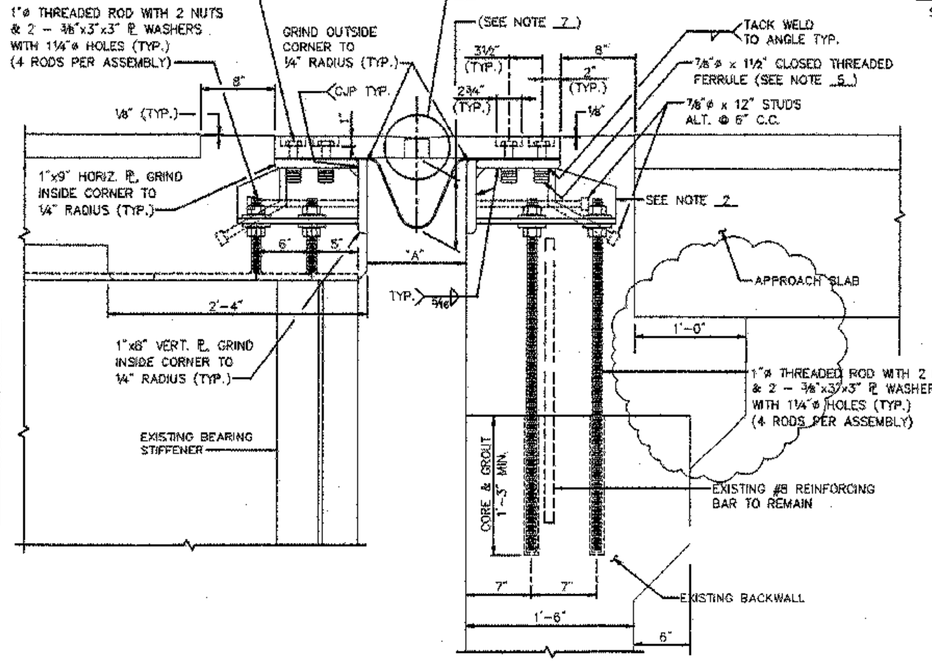




PARTIAL PLAN VIEW

SCALE: 1" = 1'–0"





SECTION A–A

SCALE: 1½" = 1'–0"

SECTION B–B

SCALE: 1½" = 1'–0"

TEMPERATURE ADJUSTMENT TABLE	
TEMPERATURE	"A"
0° F	12"
15° F	11½"
30° F	11⅛"
45° F	10⅝"
60° F	10¼"
75° F	9¾"
90° F	9⅜"

APPROACH SLAB REPLACEMENT
REVISIONS 6/99

NOTES:

1. SEE SHEET 16 FOR EXPANSION JOINT NOTES.
2. SEE SHEET 16 FOR BRACKET DETAILS.
3. SEE SHEET 16 FOR LOCATION OF FINGER PLATE JOINTS.
4. SEE PARTIAL PLAN VIEW ON THIS SHEET FOR ADDITIONAL SPACING DETAILS. UNDER EACH LINE OF BOLTS THERE SHALL BE A CONTINUOUS STRIP OF 1/16"x3" WIDE BUTYL RUBBER TAPE CONFORMING TO SUBSECTION 707.12.
5. SEE SHEET 16 FOR FERRULE DETAIL.
6. SEE SHEET 16 FOR DETAIL OF FABRIC TROUGH.
7. SEE EXPANSION JOINT NOTE 9 ON SHEET 16.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & 11S
Highway No. I–89 NB & SB	Log Sta.
	Surv. Sta.

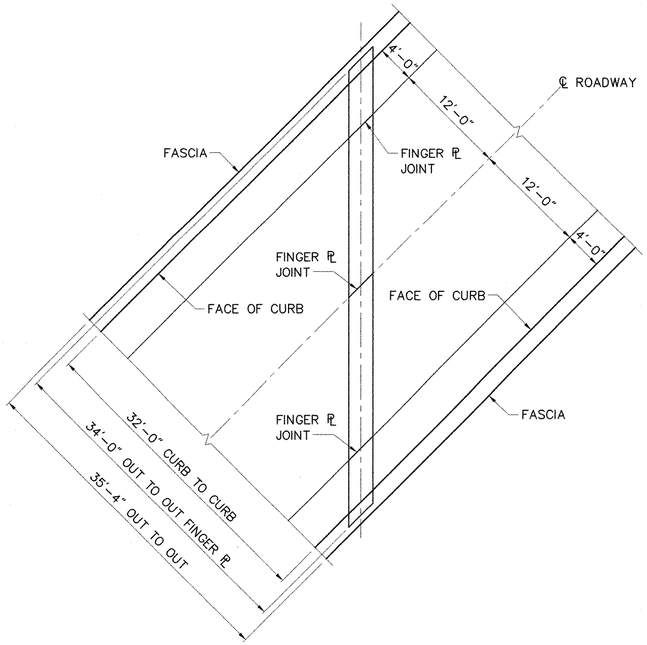
I–89 NB & SB OVER WHITE RIVER, VT 14 & NECR

EXPANSION JOINT DETAILS (1 OF 2)

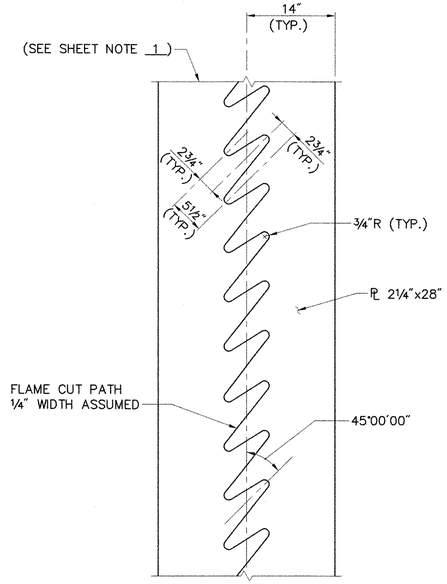
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 6/99
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699FJ1REV	
Bridge Sheet No. 15R	Sheet 15R of 101

VANASSE HANGEN BRUSTLIN, INC.

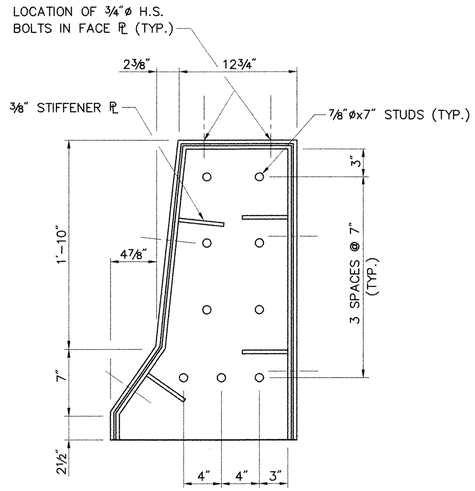
PLOTTED 6/99



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



FINGER CUTTING DETAILS
SCALE: 1" = 1'-0"



NOTE: OUTSIDE CURB PLATE DIMENSIONS SHOWN, DIMENSION INSIDE PLATES TO PROVIDE ¼" CLEARANCE ALL AROUND.

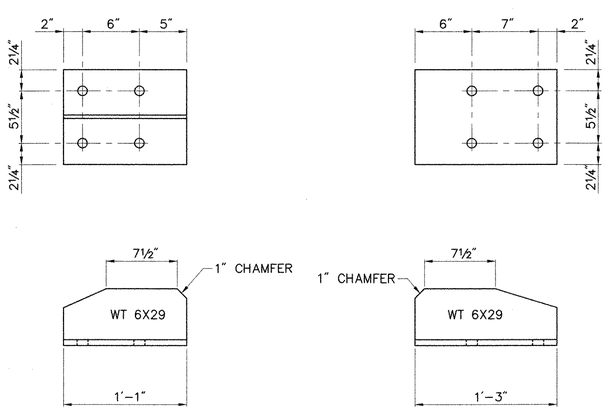
CURB PLATE DETAILS (NORMAL TO CURB)
SCALE: 1½" = 1'-0"

EXPANSION JOINT NOTES:

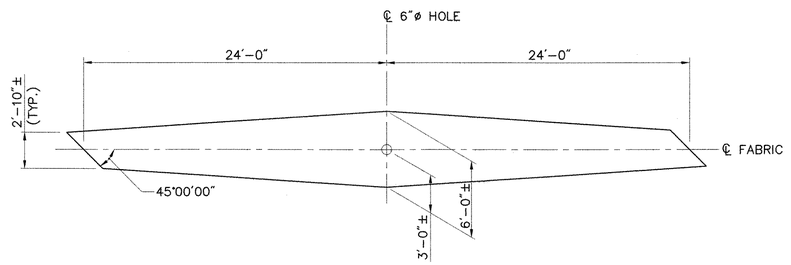
1. NEW EXPANSION JOINTS SHALL BE INSTALLED AT BOTH ABUTMENTS ON BRIDGE 11N AND BRIDGE 11S. REMOVAL OF EXISTING EXPANSION JOINTS SHALL BE INCLUDED IN ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE".
2. ALL STEEL EXPANSION JOINT COMPONENTS SHALL BE AASHTO M270 GRADE 36 GALVANIZED OR METALIZED AS PER SECTION 506.15 (b) OR (c) UNLESS OTHERWISE SPECIFIED.
3. THE FINAL FINISH OF THE EXPANSION DEVICE SHALL BE COVERED DURING THE PLACEMENT OF ADJACENT CONCRETE.
4. EXPANSION JOINTS SHALL MEET THE REQUIREMENTS OF SECTION 516, EXPANSION DEVICES. EXPANSION JOINT ASSEMBLY SHALL BE PAID AS ITEM 516.10, "BRIDGE EXPANSION JOINT". ITEM 516.10 SHALL INCLUDE THE FABRICATION AND ERECTION OF THE COMPLETE JOINT ASSEMBLY INCLUDING ALL STEEL PLATES, CURB PLATES, BRACKETS, WELDED STUDS OR RODS, PREFORMED FABRIC DRAIN TROUGH MATERIAL, BUTYL RUBBER TAPE, AND ANY OTHER MISCELLANEOUS MATERIAL REQUIRED TO INSTALL JOINT.
5. THE BUILT-UP ANGLES SHALL BE FURNISHED AS ONE CONTINUOUS PIECE. THE FINGER PLATES SHALL BE FURNISHED IN FOUR SEGMENTS ON BOTH SIDES OF THE JOINT AS SHOWN.
6. COAT CONCRETE CONTACT SUFACES WITH EPOXY BONDING COMPOUND MEETING THE REQUIREMENTS OF SUBSECTION 719.02. PAYMENT SHALL BE INCLUDED UNDER ITEM 516.10.
7. FILL COUNTERBORED HOLES IN THE FINGER PLATES WITH HOT POURED JOINT SEALER AFTER BOLT INSTALLATION. PAYMENT SHALL BE INCLUDED UNDER ITEM 516.10.
8. A DRIP BEAD STRIP ¼" x 9" OF PREFORMED FABRIC 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 AT EVERY HOPPER LOCATION.
9. THE FABRIC TROUGH SHALL BE PITCHED TO DRAIN TO THE HOPPER WITH A CONSTANT SLOPE OF ½" PER FOOT. THE TROUGH SHALL HAVE A DEPTH OF 5" AT THE FASCIA AND APPROXIMATELY 23" AT THE HOPPER AT 45 DEGREES FARENHEIT.
10. FOLLOWING PAVING, ANY BITUMINOUS CONCRETE PAVEMENT THAT BECOMES LODGED IN THE EXPANSION JOINTS OR ENTERS DRAIN TROUGHS, SCUPPERS, OR DOWNSPOUTS SHALL BE REMOVED BY THE CONTRACTOR AT NO COST TO THE STATE.

NOTES:

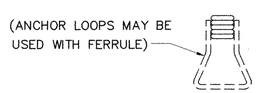
1. FOR PLATE TREATMENT AT ENDS AND AT BUTT JOINTS, SEE PARTIAL PLAN VIEW ON SHEET 15.
2. SEE SHEET 17 FOR DOWNSPOUT DETAILS.



BRACKET DETAILS
SCALE: 1½" = 1'-0"



PLAN VIEW OF FABRIC FOR TROUGH
N.T.S.



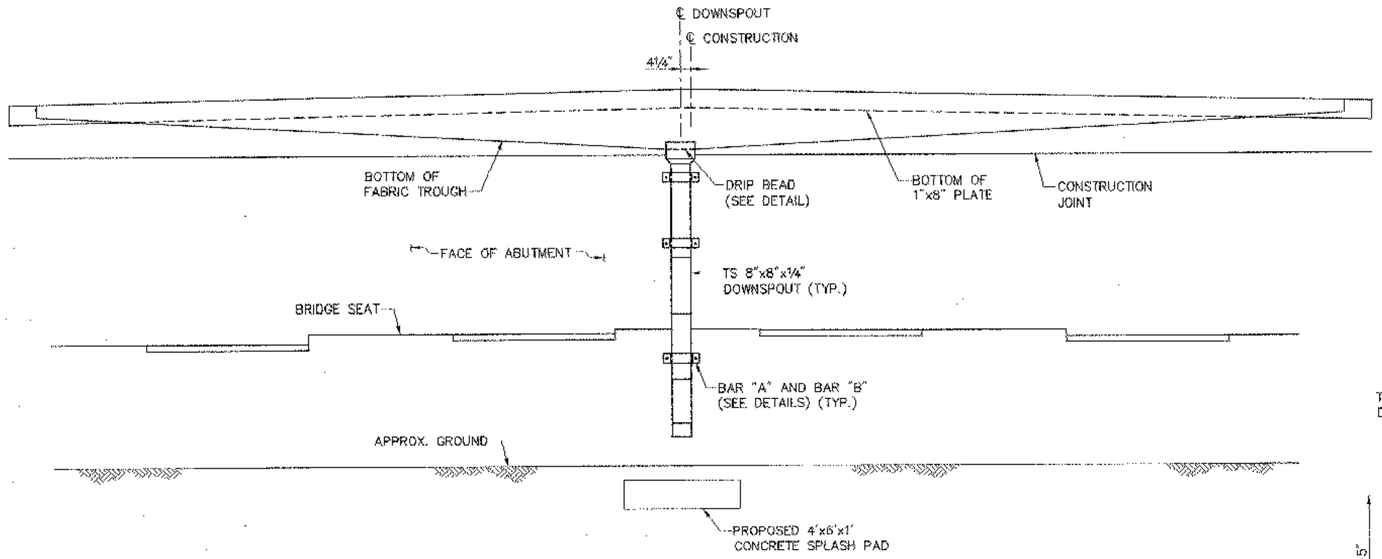
FERRULE DETAIL
N.T.S.

VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

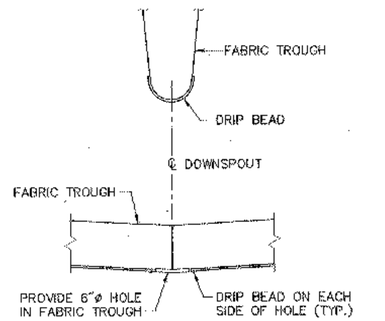
Town Of HARTFORD	Bridge No. 11N & 11S
	Log Sta.
Highway No. I-89 NB & SB	Surv. Sta.
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
EXPANSION JOINT DETAILS (2 OF 2)	
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699FJ2	
Bridge Sheet No. 16	Sheet 16 of 101

PLOTTED 9-22-98



FRONT ELEVATION

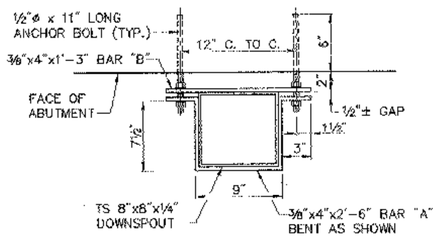
SCALE: ⅜" = 1'–0"



A DRIP BEAD OF POLYURETHANE JOINT SEALER IS TO BE APPLIED TO THE UNDERSIDE OF THE FABRIC TROUGH AS SHOWN WITH THE COST TO BE SUBSIDIARY TO ITEM 516.10, "BRIDGE EXPANSION JOINT".

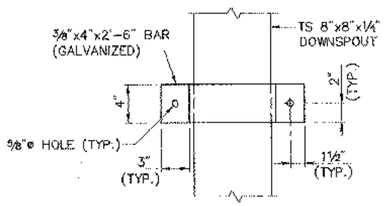
DRIP BEAD DETAIL

N.T.S.

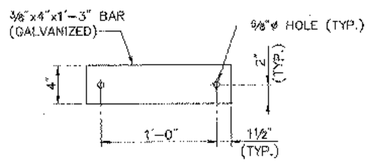


DOWNSPOUT TO ABUTMENT ATTACHMENT DETAIL

SCALE: 1½" = 1'–0"



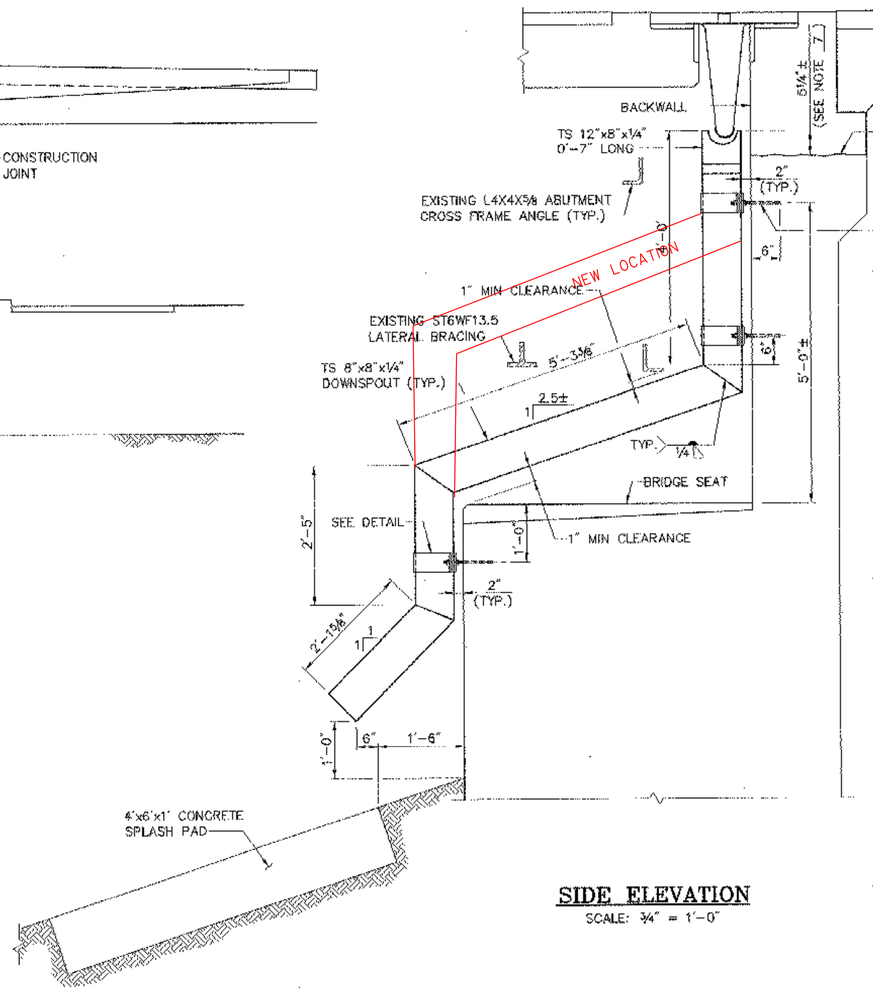
ELEVATION BAR "A"



ELEVATION BAR "B"

BAR DETAILS

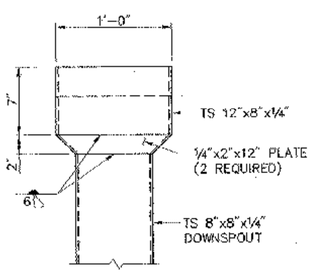
SCALE: 1½" = 1'–0"



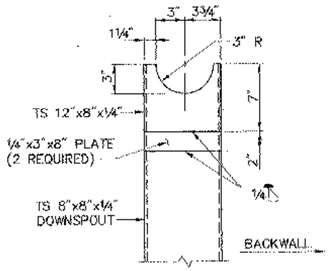
ROUTING OF DOWN SPOUT TUBE CHANGED TO CLEAR CROSS FRAME AND BRACING

SIDE ELEVATION

SCALE: ¾" = 1'–0"



ELEVATION



SIDE VIEW

HOPPER DETAILS

SCALE: 1½" = 1'–0"

NOTES:

1. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO A–500 OR A–501.
2. ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO AASHTO M–270, GRADE 36.
3. DOWNSPOUTS AND BRACKETS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A–153 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–232).
5. ANY PLACE WHERE THE GALVANIZING HAS BEEN REMOVED FROM THE DOWNSPOUT OR BRACKETS, EITHER BY CUTTING, BURRING, WELDING, PLACING, OR BY ANY OTHER MEANS, SHALL BE REPAIRED BY THOROUGHLY CLEANING THE DAMAGED AREAS WITH A WIRE BRUSH AND PAINTING THE AREAS WITH TWO COATS OF ZINC RICH PAINT.
6. PAYMENT FOR ALL MATERIALS AND LABOR RELATED TO THE DOWNSPOUT SHALL BE INCLUDED IN ITEM 506.60, "STRUCTURAL STEEL".
7. DIMENSIONS MAY VARY, ADJUST TOP OF HOPPER ELEVATION AS REQUIRED SO THAT BOTTOM OF TROUGH IS APPROXIMATELY 1½"± BELOW THE HOPPER RIM @ 45° F.
8. CONCRETE SPLASH PAD SHALL BE PAID FOR AS ITEM 501.22, "CONCRETE, CLASS A". EXCAVATION AND BACKFILL REQUIRED TO PLACE SPLASH PAD SHALL BE SUBSIDIARY TO ITEM 501.22.

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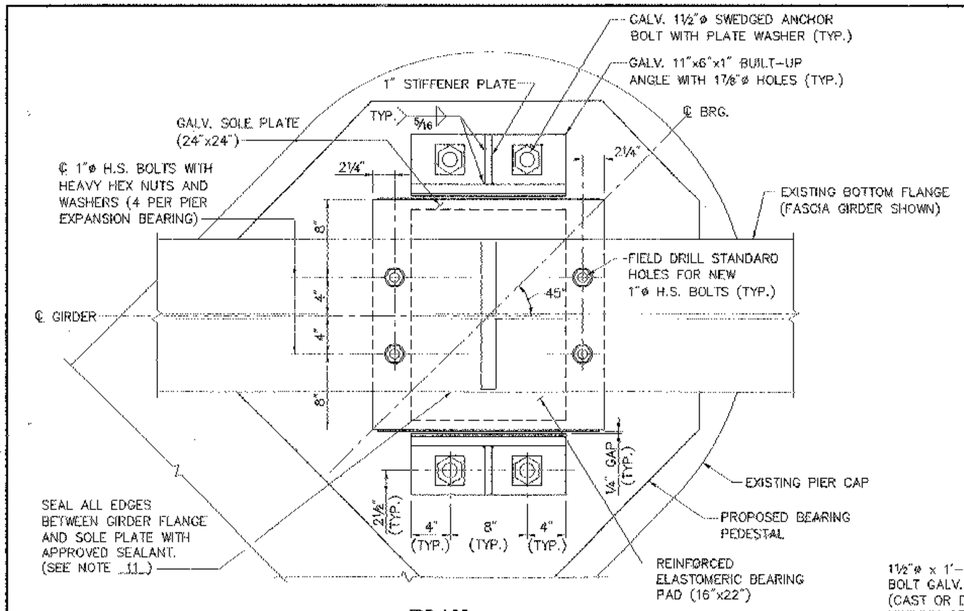
Town Of HARTFORD	Bridge No. 11N & 11S
	Log Sta.
Highway No. I–89 NB & SB	Surv. Sta.
I–89 NB & SB OVER WHITE RIVER, VT 14 & NECR	

DOWNSPOUT DETAILS

Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699DS	
Bridge Sheet No. 17	Sheet 17 of 101

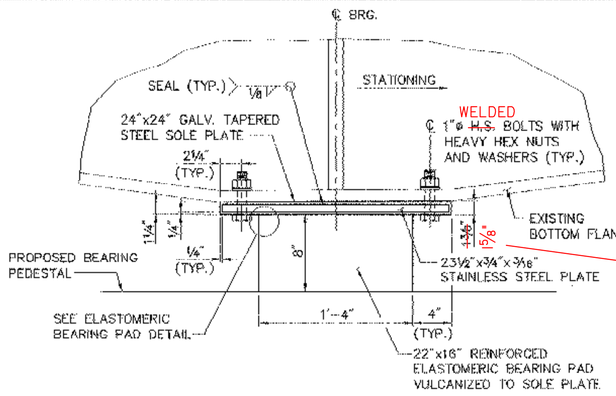
VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9–22–98



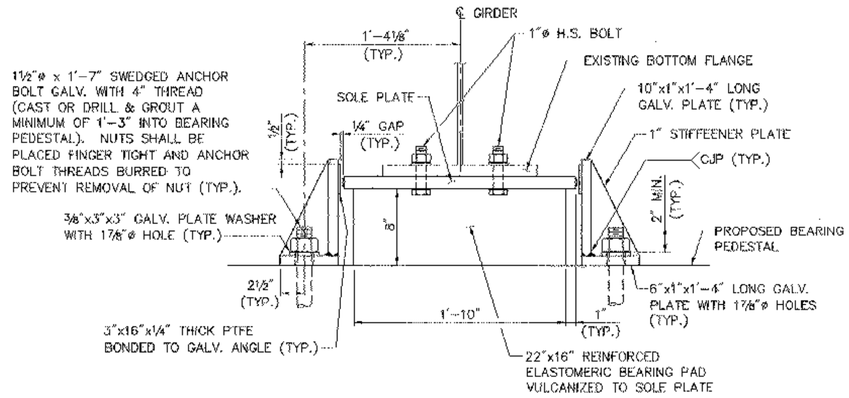
PLAN

PIER EXPANSION BEARING DESIGN CRITERIA				
LOCATION	DEAD LOAD (KIPS)	LIVE LOAD (KIPS)	ROTATION (RADS.)	TOTAL LOAD (KIPS)
ABUTMENTS	122	74	0.013	196
PIERS (1,2,9,10)	265	161	0.012	426
PIERS (3,4,7,8)	310	178	0.009	488



(BUILT-UP ANGLES AND ANCHOR BOLTS NOT SHOWN)

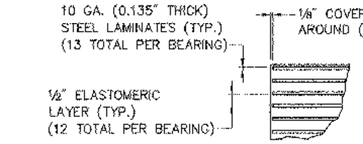
SIDE ELEVATION



END ELEVATION

PIER BEARINGS (EXPANSION)

SCALE: 1½" = 1'-0"



ELASTOMERIC BEARING PAD DETAIL

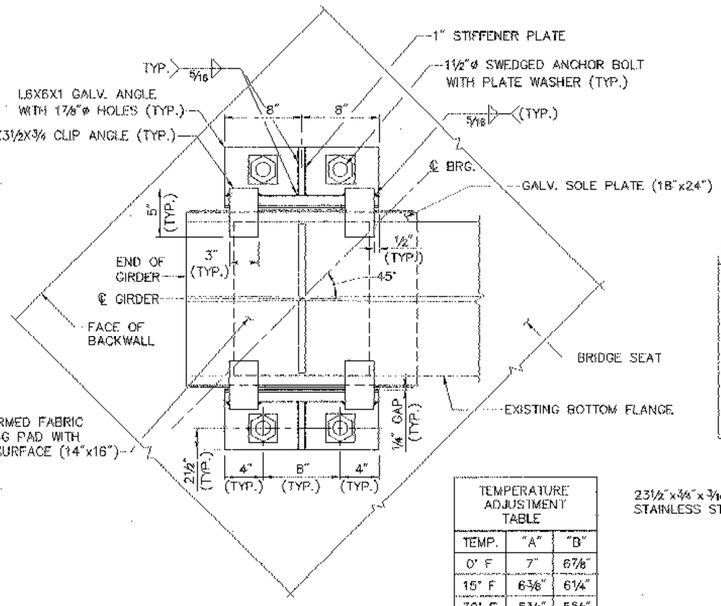
N.T.S.

EXPANSION BEARING NOTES:

1. BEARING HEIGHTS AND DIMENSIONS SHOWN ARE BEFORE APPLICATION OF LOADS.
2. FABRIC BEARING PAD ASSEMBLIES SHALL BE PAID UNDER ITEM 531.10, "BEARING DEVICE ASSEMBLY (FABRIC PTFE EXPANSION)."
3. REINFORCED ELASTOMERIC BEARING ASSEMBLIES SHALL BE PAID UNDER ITEM 531.10, "BEARING DEVICE ASSEMBLY (STEEL REINFORCED ELASTOMERIC)".
4. MASONRY SURFACES UNDER BEARINGS SHALL BE LEVEL BEFORE INSTALLING BEARING ASSEMBLIES.
5. ALL STRUCTURAL STEEL COMPONENTS FOR BEARING ASSEMBLIES SHALL BE GALVANIZED OR METALIZED UNLESS OTHERWISE NOTED.
6. STRUCTURAL STEEL FOR BEARING ASSEMBLIES SHALL BE AASHTO M270, GRADE 36.
7. ALL JACKING AND SHORING REQUIRED TO REPLACE BEARINGS WILL BE PAID UNDER ITEM 502.11, "SHORING SUPERSTRUCTURE BEARING". THE CONTRACTOR SHALL SUBMIT DETAILS AND CALCULATIONS SHORING AND JACKING AS SPECIFIED IN SECTION 502 OF THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
8. THE CONTRACTOR SHALL BE PAID ONLY ONCE FOR JACKING AND SHORING ANY ONE BEARING. ANY SHORING OF ADJACENT GIRDERS THAT IS REQUIRED ONLY TO REPLACE THE BEARING IN QUESTION SHALL BE SUBSIDIARY TO THE UNIT PRICE BID FOR THE SHORING OF THE BEARING BEING REPLACED.
9. THE WORK REQUIRED TO REMOVE EXISTING BEARINGS IN ORDER TO INSTALL NEW BEARINGS AS SHOWN IN THESE PLANS, SHALL BE INCLUDED IN ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE."
10. THE ESTIMATED INSTANTANEOUS COMPRESSIVE DEFLECTION OF THE BEARING PAD DUE TO THE DEAD LOAD REACTION LISTED IN THE TABLE ON THIS SHEET SHALL BE CALCULATED BY THE BEARING MANUFACTURER AND SHOWN ON THE SHOP DRAWINGS FOR ALL STEEL REINFORCED ELASTOMERIC BEARINGS.
11. SEALANT COLOR SHALL BE CLEAR OR CLOSELY MATCH THE COLOR OF THE GIRDER OR SOLE PLATE. SEALANT SHALL BE RESISTANT TO ULTRAVIOLET LIGHT AND SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. COST SHALL BE INCLUDED IN ITEM 531.10.
12. THE CONTRACTOR MAY FIELD WELD THE NEW SOLE PLATE TO THE GIRDER FLANGE AT THE PIER EXPANSION BEARINGS INSTEAD OF BOLTING AS SHOWN AT HIS OR HER OPTION. HOWEVER, THE SOLE PLATE THICKNESS SHALL BE MODIFIED SO THAT THE PLATE IS A MINIMUM OF 1½" THICK AT THE SMALLEST TAPERED END AND THE PEDESTAL ELEVATIONS ADJUSTED ACCORDINGLY. IF WELDING IS SELECTED, THE CONTRACTOR SHALL ENSURE THE HEAT FROM WELDING DOES NOT DAMAGE THE ELASTOMER.
13. THE TEMPERATURE OF THE STEEL GIRDERS SHALL BE BETWEEN 30° AND 65° F WHEN THE PIER EXPANSION BEARINGS ARE SET. IF BEARINGS MUST BE TEMPORARILY SET WHEN GIRDER TEMPERATURES ARE NOT BETWEEN 30° AND 65° F, THE GIRDERS SHALL BE JACKED AND BEARINGS SHALL BE RESET WHEN GIRDER TEMPERATURES ARE BETWEEN 30° AND 65° F.
14. THE "A" DISTANCE IS THE SOLE PLATE ADJUSTMENT TO BE USED BEFORE DEAD LOAD IS ADDED TO THE GIRDERS. THE "B" DISTANCE IS THE SOLE PLATE ADJUSTMENT TO BE USED AFTER THE DECK AND BARRIER CURB RAIL HAVE BEEN POURED. THE DIFFERENCE IS THE ELONGATION DUE TO DEAD LOAD DEFLECTION OF SLAB, BARRIER CURB RAIL, AND PAVEMENT.
15. ELASTOMERIC MATERIAL SHALL BE 100% VIRGIN RUBBER WITH A MINIMUM LOW TEMPERATURE GRADE OF 4. THE ELASTOMERIC COMPOUND SHALL HAVE A SHORE 'A' DUROMETER OF 50.

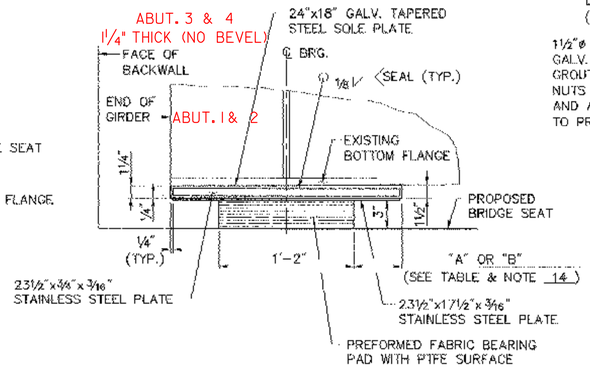
NOTE:

1. SEE SHEET 19 FOR PROPOSED BEARING PEDESTAL DETAILS.



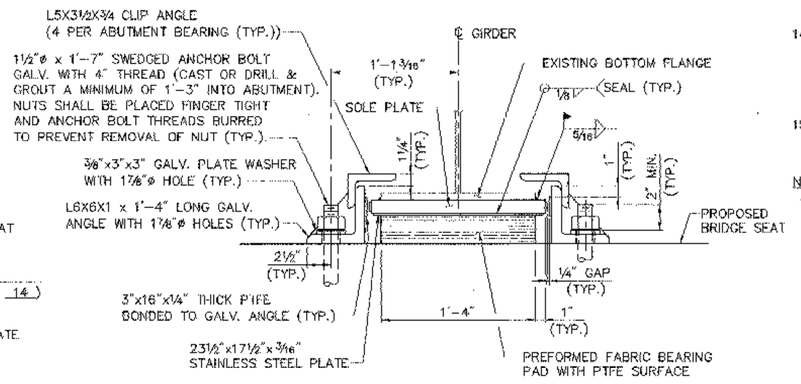
PLAN

TEMPERATURE ADJUSTMENT TABLE		
TEMP.	"A"	"B"
0° F	7"	6⅞"
15° F	6⅜"	6¼"
30° F	5¾"	5⅝"
45° F	5⅛"	5"
60° F	4½"	4⅜"
75° F	3⅞"	3¾"
90° F	3¼"	3⅛"



(L6X6X1 ANGLES NOT SHOWN)

SIDE ELEVATION



END ELEVATION

ABUTMENT BEARINGS (EXPANSION)

SCALE: 1½" = 1'-0"

STATE OF VERMONT
AGENCY OF TRANSPORTATION

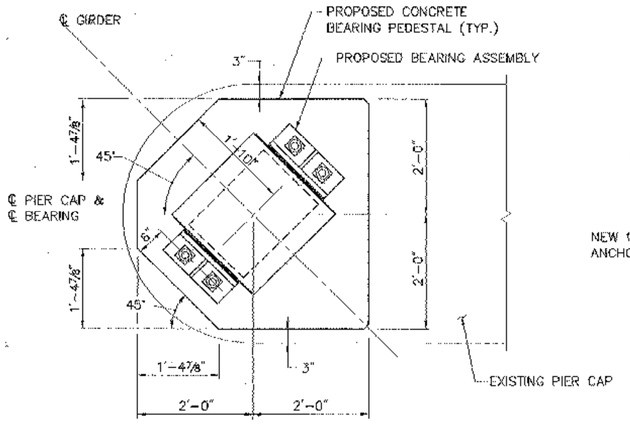
Town Of HARTFORD	Bridge No. 11N & 11S
	Log Sta.
Highway No. I-89 NB & SB	Surv. Sta.
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EXPANSION BEARING DETAILS (1 OF 2)

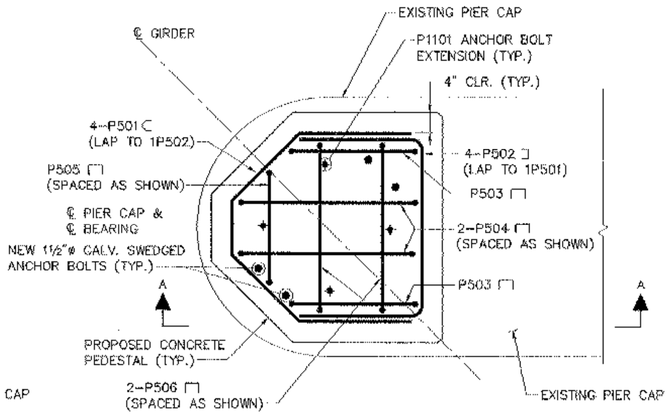
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By J.A. ROUILLARD Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699BRG	
Bridge Sheet No. 18	Sheet 18 of 101

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PLOTTED 10-8-98



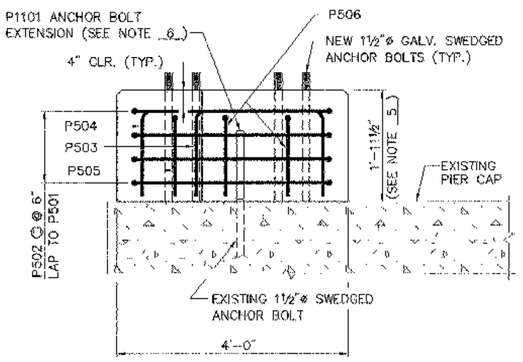
MASONRY PLAN



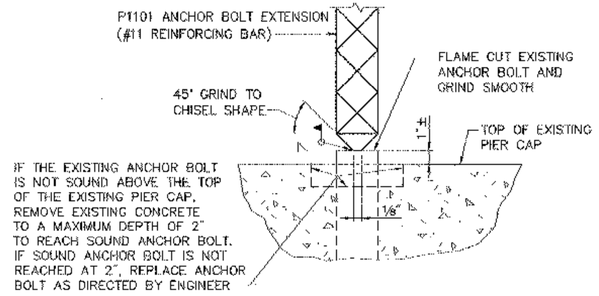
REINFORCING PLAN

TYPICAL FASCIA GIRDER PEDESTAL AT EXPANSION PIERS

SCALE: ¾" = 1'-0"



SECTION A–A



WELDED ANCHOR BOLT EXTENSION DETAIL

N.T.S.

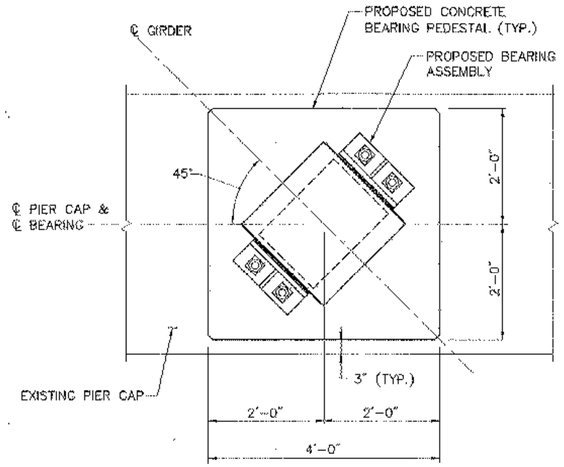
NOTES:

1. THE DETAILS ON THIS SHEET APPLY TO ALL PIERS ON BOTH BRIDGES EXCEPT FOR THE FIXED PIERS, PIERS 5 AND 6.
2. ALL CONCRETE IN THE PEDESTALS SHALL BE ITEM 501.22, "CONCRETE, CLASS A".
3. THE BAR MARKS SHOWN ON THIS SHEET APPLY TO ALL EXPANSION PIERS.
4. SEE SHEET 18 FOR DETAILS OF PROPOSED EXPANSION BEARINGS.
5. THE PROPOSED PEDESTAL HEIGHT SHOWN ON THIS SHEET WAS CALCULATED AS FOLLOWS BASED ON THE EXISTING BEARING HEIGHT SHOWN IN THE ORIGINAL DESIGN PLANS:

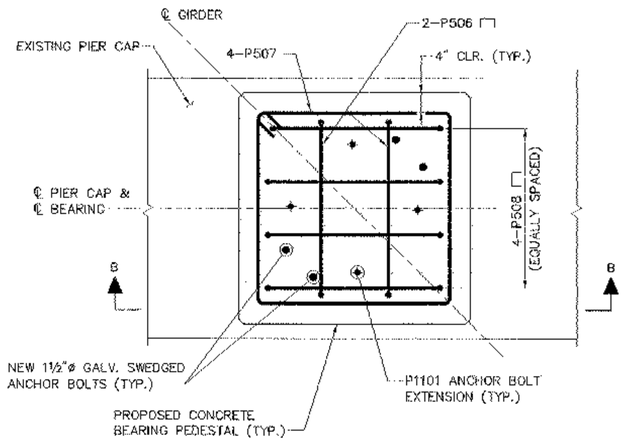
32.5"	EXISTING BEARING AND 0.5" PAD HEIGHT
− 8.0"	ELASTOMERIC BEARING PAD HEIGHT
1.5625 − ~~1.3125"~~	BEVELED SOLE PLATE THICKNESS AT BRG. ℄
+ 0.217"	INSTANTANEOUS COMPRESSIVE DEFLECTION OF
~~23.4"~~ 26.15"	BEARING PAD DUE TO DEAD LOADS.

THE CONTRACTOR SHALL DETERMINE THE EXISTING BOTTOM OF GIRDER AND TOP OF PIER CAP ELEVATIONS AT THE EXPANSION PIERS BY FIELD MEASUREMENTS AND/OR SURVEY. THE PROPOSED PEDESTAL HEIGHT SHOWN SHALL BE ADJUSTED AS NECESSARY TO MAINTAIN THE EXISTING BOTTOM OF GIRDER ELEVATIONS AT EACH PIER. THE BEARING MANUFACTURER'S ESTIMATED INSTANTANEOUS COMPRESSIVE DEFLECTION OF THE ELASTOMERIC BEARING PADS DUE TO DL, AS PROVIDED ON THE BEARING SHOP DRAWINGS, SHALL BE USED WHEN CALCULATING THE PEDESTAL HEIGHT INSTEAD OF THE VALUE SHOWN ABOVE.

6. ALL OF THE EXISTING ANCHOR BOLTS SHALL BE EXTENDED. THE EXISTING ANCHOR BOLTS SHALL BE INSPECTED JOINTLY BY THE CONTRACTOR AND ENGINEER. ANCHOR BOLTS WHICH ARE IN GOOD CONDITION SHALL BE EXTENDED TO A MINIMUM OF 15 INCHES ABOVE THE EXISTING PIER CAP USING AN APPROVED MECHANICAL COUPLER THAT DEVELOPS 150% OF THE ANCHOR BOLT STRENGTH, OR BY WELDING AS SHOWN IN THE WELDED ANCHOR BOLT EXTENSION DETAIL ON THIS SHEET, AT THE CONTRACTOR'S OPTION. ANCHOR BOLTS EXHIBITING SIGNIFICANT SECTION LOSS SHALL BE CUT OFF BELOW THE AREA OF SECTION LOSS AND EXTENDED TO A MINIMUM OF 15 INCHES ABOVE THE EXISTING PIER CAP.
7. ALL COSTS FOR EXTENDING EXISTING ANCHOR BOLTS BY EITHER METHOD SHALL BE SUBSIDIARY TO ITEM 531.10, "BEARING DEVICE ASSEMBLY (STEEL REINFORCED ELASTOMERIC)".



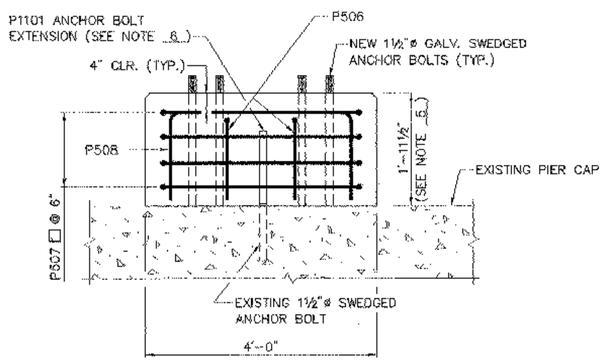
MASONRY PLAN



REINFORCING PLAN

TYPICAL INTERIOR GIRDER PEDESTAL AT EXPANSION PIERS

SCALE: ¾" = 1'-0"



SECTION B–B

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & 11S
	Log Sta.
Highway No. I-89 NB & SB	Surv. Sta.

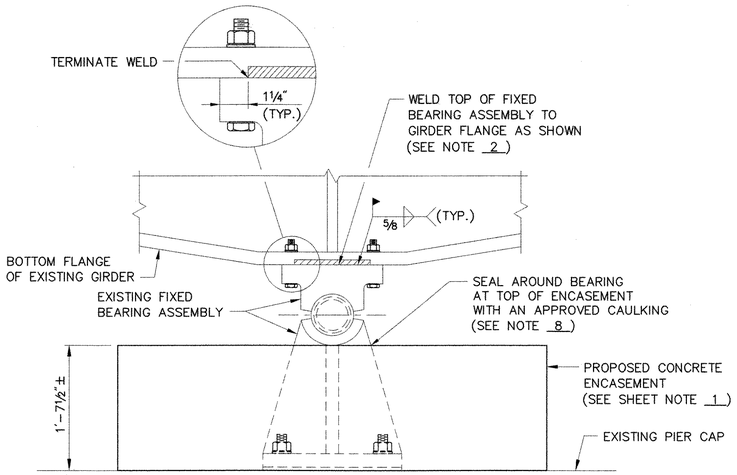
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR

EXPANSION BEARING DETAILS (2 OF 2)

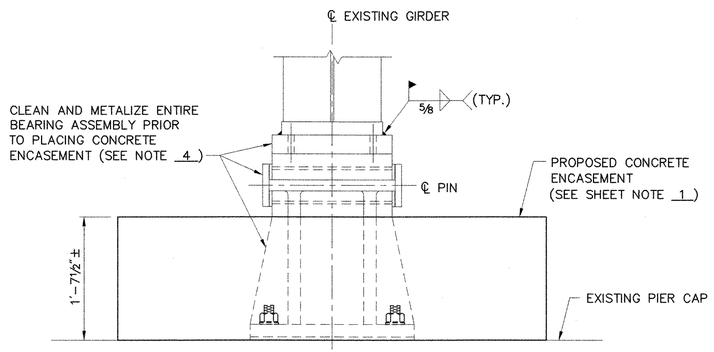
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699PCM	
Bridge Sheet No. 19	Sheet 19 of 101

VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9-28-98

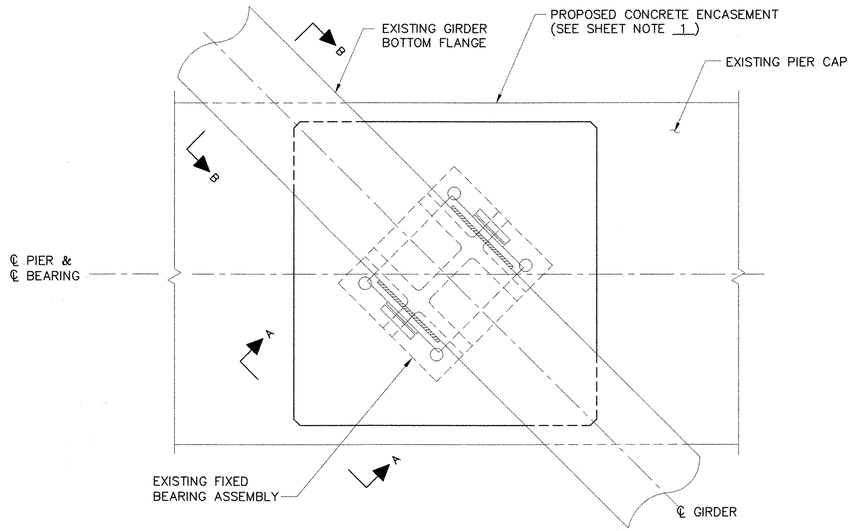


VIEW A–A



VIEW B–B

SCALE: 1" = 1'–0"



TYPICAL FIXED BEARING RETROFIT PLAN

SCALE: 1" = 1'–0"

FIXED BEARING RETROFIT NOTES:

1. ALL OF THE EXISTING FIXED BEARINGS AT BRIDGE 11S PIER 5 AND BRIDGE 11N PIER 6 SHALL BE RETROFIT AS SHOWN IN THESE PLANS TO MEET THE AASHTO SEISMIC PERFORMANCE REQUIREMENTS OF SEISMIC PERFORMANCE CATEGORY A. THE RETROFITS CONSIST OF STRENGTHENING THE GIRDER TO BEARING CONNECTION BY WELDING THE BOTTOM FLANGE OF THE GIRDER TO THE TOP OF THE BEARING ASSEMBLY, AND STRENGTHENING THE BEARING TO PIER CAP CONNECTION BY ENCASING THE BEARING IN CONCRETE AND CORING AND GROUTING DOWEL BARS INTO THE PIER CAP.
2. ALL WELDING AND DIMENSIONAL TOLERANCES OF WELDED MEMBERS SHALL CONFORM TO THE LATEST ANSI/AASHTO/AWS BRIDGE WELDING CODE AND ITS LATEST REVISIONS. ALL COSTS FOR LABOR AND MATERIALS REQUIRED TO PERFORM THE WELDING SHALL BE INCLUDED IN ITEM 531.10, "BEARING DEVICE ASSEMBLY (RETROFIT)".
3. CONCRETE FOR ENCASEMENTS SHALL BE ITEM 501.22, "CONCRETE, CLASS A."
4. PRIOR TO PLACING THE CONCRETE ENCASEMENTS, THE BEARINGS SHALL BE COMPLETELY BLAST CLEANED AND FIELD METALIZED IN ACCORDANCE WITH SECTION 506.15 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. COSTS FOR BLAST CLEANING AND FIELD METALIZING SHALL BE SUBSIDIARY TO ITEM 531.10, "BEARING DEVICE ASSEMBLY RETROFIT."
5. CORING AND GROUTING OF DOWEL BARS SHALL BE PAID AS ITEM 507.16, "DRILLING AND GROUTING DOWELS."
6. THE CONTRACTOR SHALL TAKE EXTREME CARE TO NOT DAMAGE THE EXISTING PIER CAP REINFORCING STEEL DURING CORING OF THE REINFORCING DOWEL HOLES. THE CONTRACTOR SHALL SUBMIT A WRITTEN PLAN TO THE ENGINEER FOR APPROVAL DETAILING HIS PROPOSED METHODS FOR LOCATING THE REINFORCING STEEL IN THE PIER CAPS, AND PROPOSED PROCEDURES FOR PERFORMING THE CORING, TO ENSURE THE EXISTING PIER CAP REINFORCING STEEL IS NOT DAMAGED. THE CONTRACTOR SHALL HAVE THIS PLAN APPROVED BY THE ENGINEER BEFORE PERFORMING ANY CORING WORK.
7. ALL PIER CAP CORES SHALL BE SALVAGED AND INSPECTED BY THE ENGINEER FOR SIGNS OF DAMAGE TO EXISTING REINFORCING STEEL. ANY REINFORCING STEEL DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
8. SEAL AROUND ALL BEARINGS AT THE TOP OF THE ENCASEMENTS WITH AN APPROVED CAULKING. SEALANT SHALL BE RESISTANT TO ULTRAVIOLET LIGHT. COST FOR SEALANT SHALL BE INCLUDED IN ITEM 531.10, "BEARING DEVICE ASSEMBLY (RETROFIT)".

SHEET NOTE:

1. SEE SHEET 21 FOR CONCRETE ENCASEMENT DETAILS.

STATE OF VERMONT
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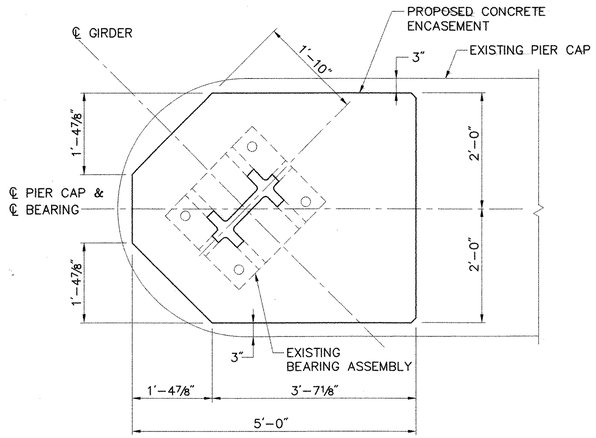
Town Of HARTFORD	Bridge No. 11N & 11S
	Log Sta.
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I–89 NB & SB OVER WHITE RIVER, VT 14 & NECR	

FIXED BEARING RETROFIT DETAILS (1 OF 2)

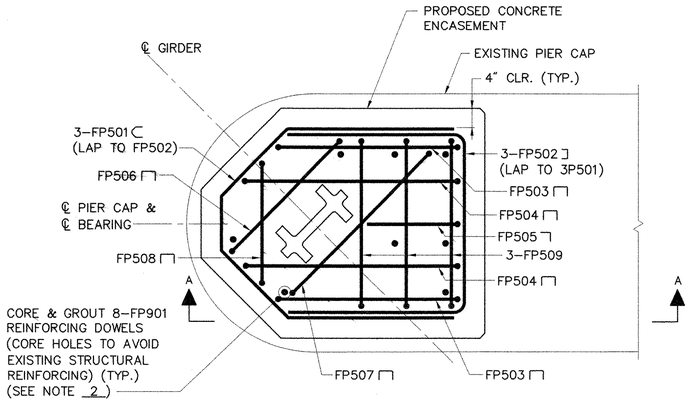
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699FB1	
Bridge Sheet No. 20	Sheet 20 of 101

VANASSE HANGEN BRUSTLIN, INC.

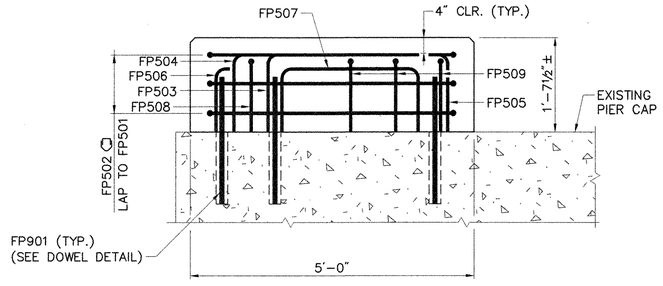
PLOTTED 9–28–98



MASONRY PLAN



REINFORCING PLAN

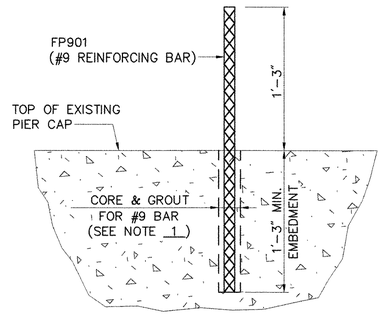


* EXISTING BEARING ASSEMBLY NOT SHOWN FOR CLARITY.

SECTION A–A*

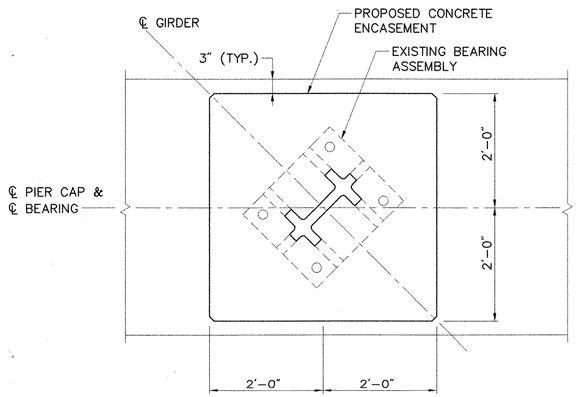
TYPICAL CONCRETE ENCASEMENT DETAILS AT FASCIA GIRDERS

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

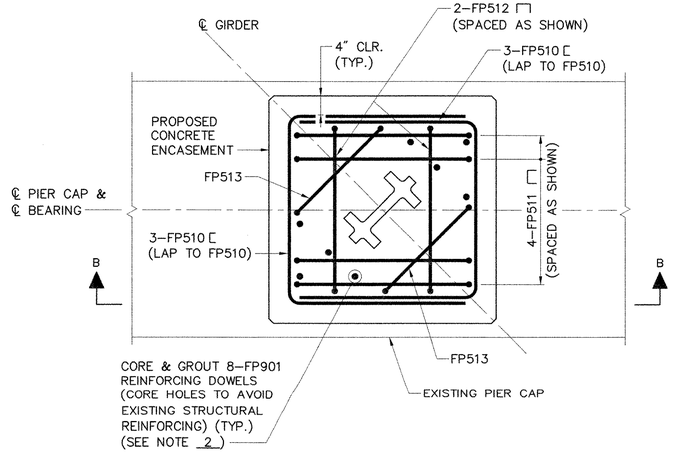


DOWEL DETAIL

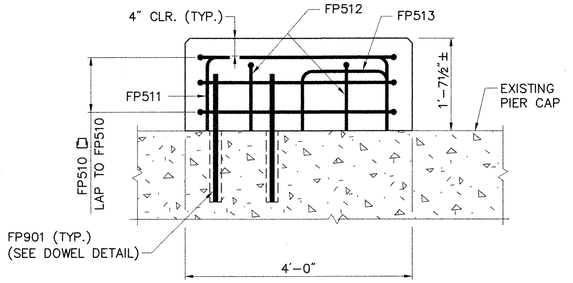
SCALE: 1½" = 1'-0"



MASONRY PLAN



REINFORCING PLAN



* EXISTING BEARING ASSEMBLY NOT SHOWN FOR CLARITY.

SECTION B–B*

TYPICAL CONCRETE ENCASEMENT DETAILS AT INTERIOR GIRDERS

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

SHEET NOTES:

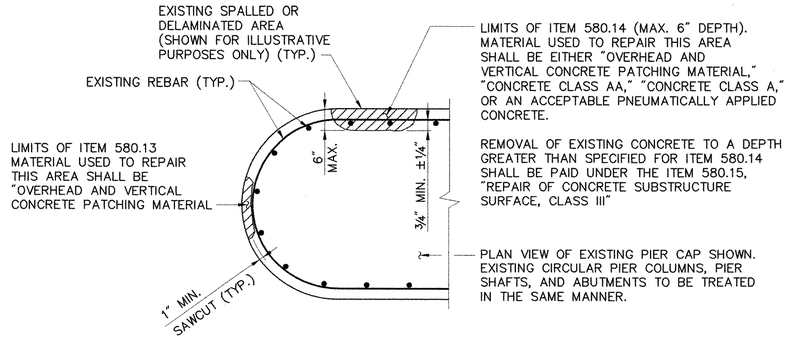
1. SEE FIXED BEARING RETROFIT NOTES ON SHEET 20.
2. DOWELS SHALL BE SPACED NOT LESS THAN 6" FROM A MASONRY EDGE OR ANOTHER REINFORCING DOWEL.
3. REINFORCING BARS SHOWN ARE FOR ONE ENCASEMENT ONLY.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & 11S
	Log Sta.
Highway No. I–89 NB & SB	Surv. Sta.
I–89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
FIXED BEARING RETROFIT DETAILS (2 OF 2)	
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699FB2	
Bridge Sheet No. 21	Sheet 21 of 101

VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9–22–98



DETAIL SHOWING LIMITS OF ITEMS 580.13, 580.14 AND 580.15 REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS I, CLASS II, OR CLASS III

N.T.S.

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 OF PATCHING MATERIAL OR NEW CONCRETE. IMMEDIATELY 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 SUBSIDIARY 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 SECTION 780. THE EDGES OF ALL PATCHES SHALL BE SAW CUT IN STRAIGHT LINES TO A MINIMUM DEPTH OF 1 INCH. IF MORE THAN 1/4 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" +/- 1/4" INSIDE THE INSIDE FACE OF REINFORCING STEEL AND TO A MAXIMUM DEPTH OF 6" 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 MAY BE EITHER "OVERHEAD AND VERTICAL CONCRETE REPAIR MATERIAL" CONFORMING WITH SUPPLEMENTAL SPECIFICATION SECTION 780, "CONCRETE CLASS AA", 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 1 INCH.

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". 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 MAY BE EITHER "OVERHEAD AND VERTICAL CONCRETE REPAIR MATERIAL" CONFORMING WITH SUPPLEMENTAL SPECIFICATION SECTION 780 OR "CONCRETE CLASS AA", CLASS A, CLASS B 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 1 INCH.

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 BEARINGS AND GIRDERS SHOULD BE COMPLETELY PROTECTED FROM REBOUND MATERIAL DURING PNEUMATICALLY APPLIED CONCRETE APPLICATION PROCEDURES.

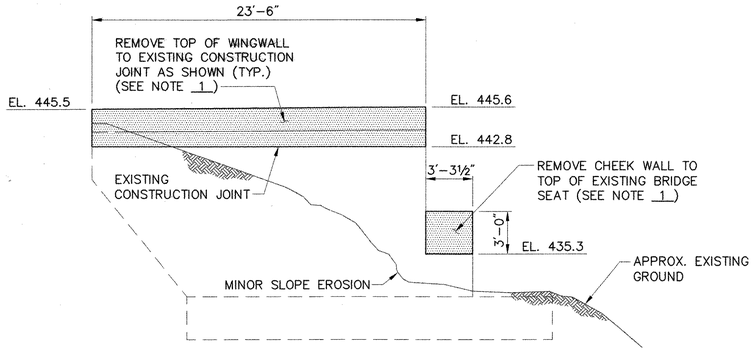
6. THE ENGINEER SHALL ORDER REPLACEMENT OF ANY EXISTING SUBSTRUCTURE REINFORCING STEEL THAT IS DETERIORATED (WITH MORE THAN 25% SECTION LOSS) WITH NEW REINFORCING STEEL OF THE SAME SIZE. ALL REINFORCING STEEL SHALL HAVE AN APPROPRIATE LAP SPLICE.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & 11S
	Log Sta.
Highway No. I-89 NB & SB	Surv. Sta.
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
SUBSTRUCTURE CONCRETE REPAIR DETAILS	
Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699MIS	
Bridge Sheet No. 22	Sheet 22 of 101

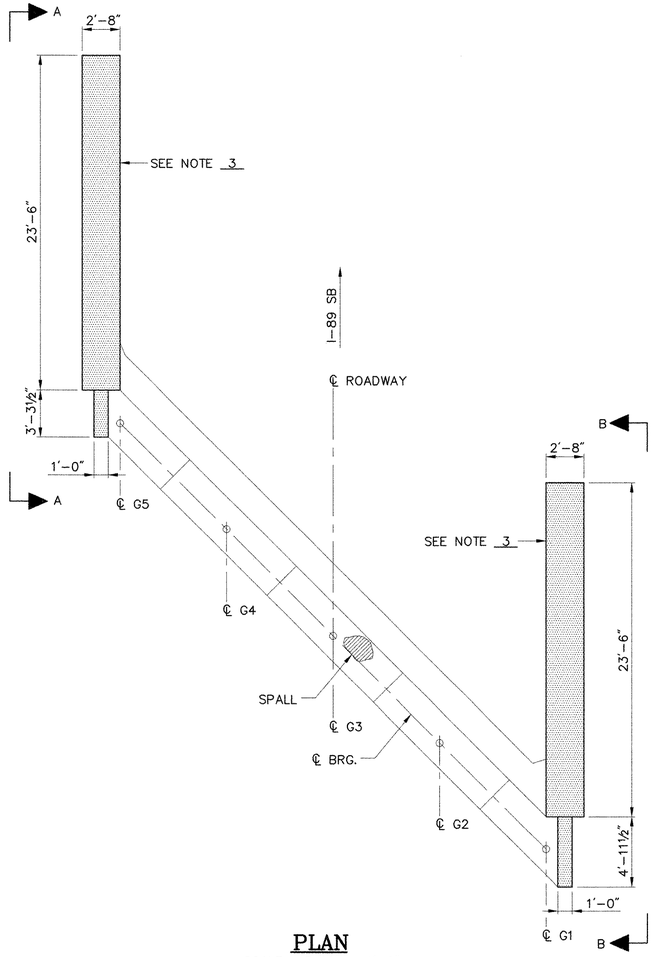
VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9-28-98



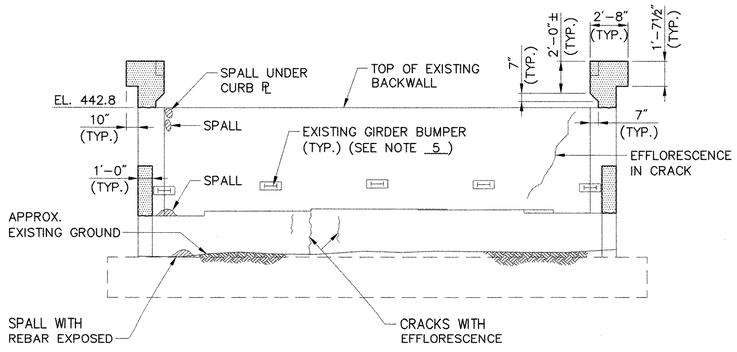
VIEW A-A

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



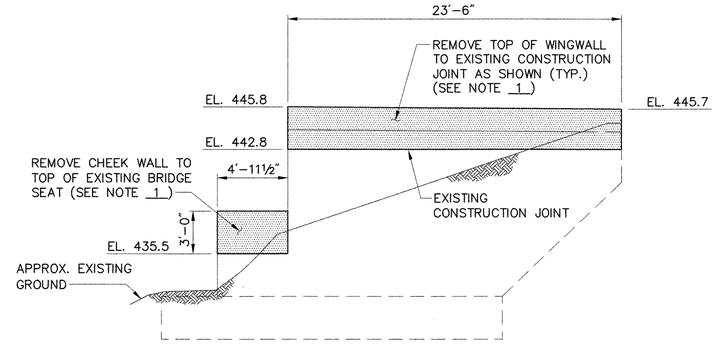
PLAN

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



ELEVATION

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



VIEW B-B

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

KEY:

- DELAMINATED AREAS
- SPALLED AREAS
- MASONRY REMOVAL

NOTES:

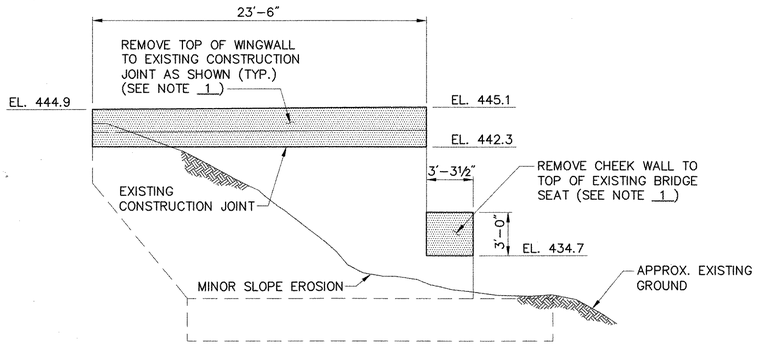
1. ALL EXISTING VERTICAL REINFORCING STEEL IN WINGWALLS AND CHEEK WALLS SHALL BE RETAINED. CUT EXISTING REINFORCING STEEL TO FIT PROPOSED BRIDGE SEAT AND WINGWALL CONFIGURATION. SEE SHEET 32 FOR TYPICAL WINGWALL MASONRY RECONSTRUCTION DETAIL.
2. REMOVAL OF WINGWALL AND CHEEKWALL MASONRY, SHALL BE PAID AS ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE". EXCAVATION AND BACKFILLING OF EXISTING GROUND REQUIRED TO PERFORM THIS WORK SHALL BE INCLUDED IN ITEM 529.20.
3. SEE TYPICAL WINGWALL MASONRY REMOVAL DETAIL ON SHEET 32.
4. SEE SHEET 22 FOR EXISTING SUBSTRUCTURE CONCRETE REPAIR DETAILS.
5. ALL EXISTING GIRDER BUMPERS SHALL BE CLEANED AND PAINTED.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11S
	Log Sta.
Highway No. I-89 SB	Surv. Sta.
I-89 SB OVER WHITE RIVER, VT 14 & NECR	
ABUTMENT 1 REMOVAL & REPAIR AREAS	
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699AB1	
Bridge Sheet No. 23	Sheet 23 of 101

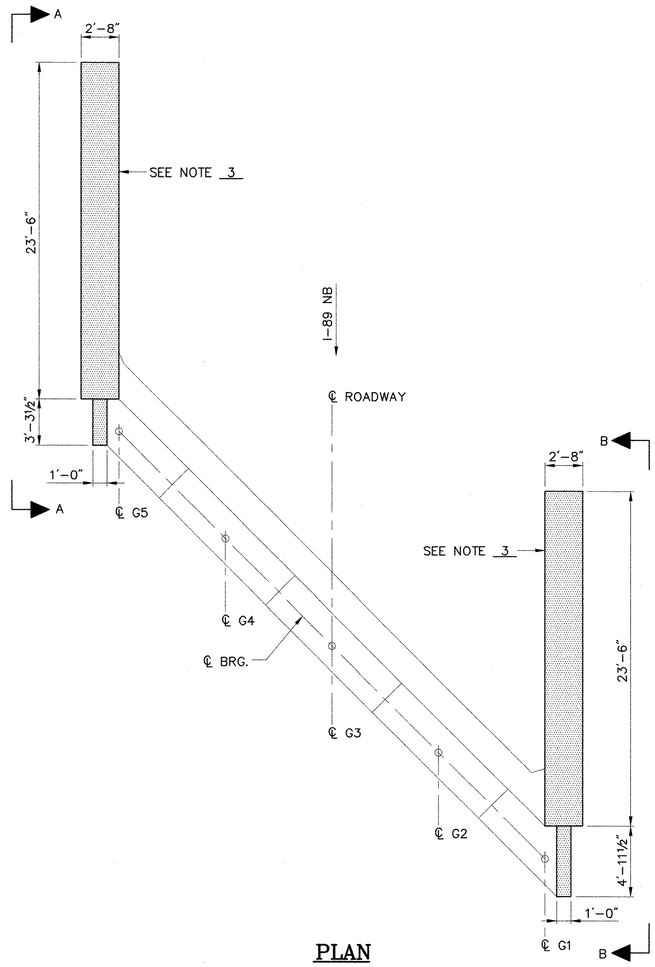
VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9-28-98



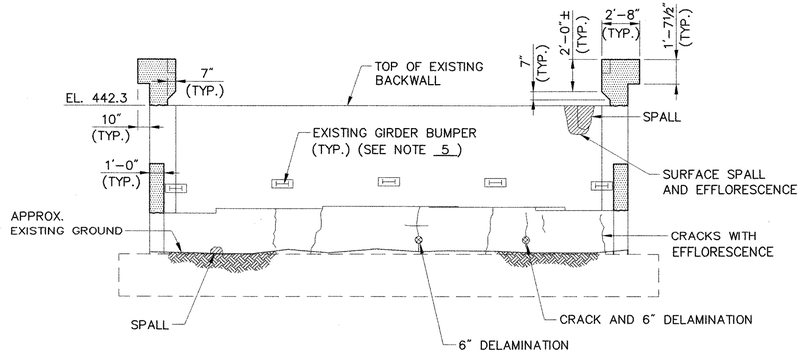
VIEW A-A

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



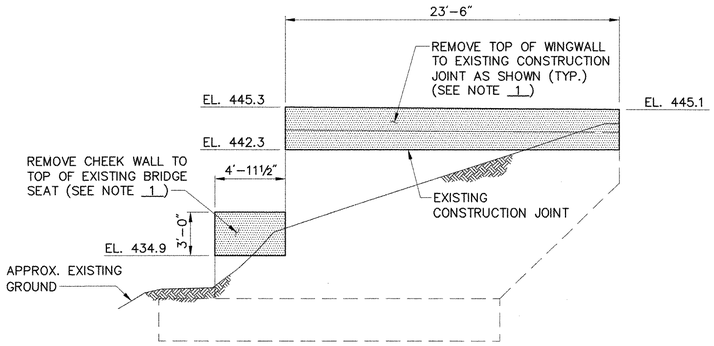
PLAN

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



ELEVATION

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



VIEW B-B

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

KEY:

- DELAMINATED AREAS
- SPALLED AREAS
- MASONRY REMOVAL

NOTES:

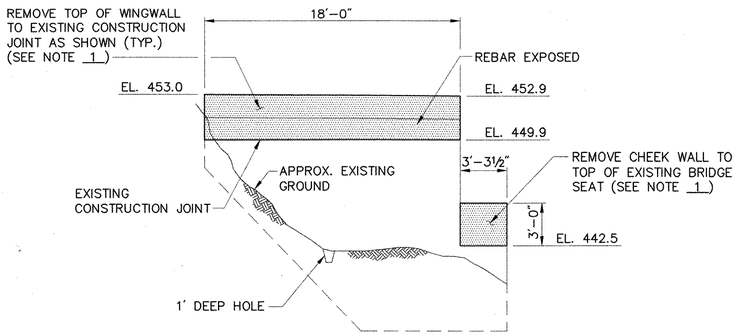
1. ALL EXISTING VERTICAL REINFORCING STEEL IN WINGWALLS AND CHEEK WALLS SHALL BE RETAINED. CUT EXISTING REINFORCING STEEL TO FIT PROPOSED BRIDGE SEAT AND WINGWALL CONFIGURATION. SEE SHEET 32 FOR TYPICAL WINGWALL MASONRY RECONSTRUCTION DETAIL.
2. REMOVAL OF WINGWALL AND CHEEKWALL MASONRY, SHALL BE PAID AS ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE". EXCAVATION AND BACKFILLING OF EXISTING GROUND REQUIRED TO PERFORM THIS WORK SHALL BE INCLUDED IN ITEM 529.20.
3. SEE TYPICAL WINGWALL MASONRY REMOVAL DETAIL ON SHEET 32.
4. SEE SHEET 22 FOR EXISTING SUBSTRUCTURE CONCRETE REPAIR DETAILS.
5. ALL EXISTING GIRDER BUMPERS SHALL BE CLEANED AND PAINTED.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N
Highway No. I-89 NB	Log Sta. / Surv. Sta.
I-89 NB OVER WHITE RIVER, VT 14 & NECR	
ABUTMENT 2 REMOVAL & REPAIR AREAS	
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699AB2	
Bridge Sheet No. 24	Sheet 24 of 101

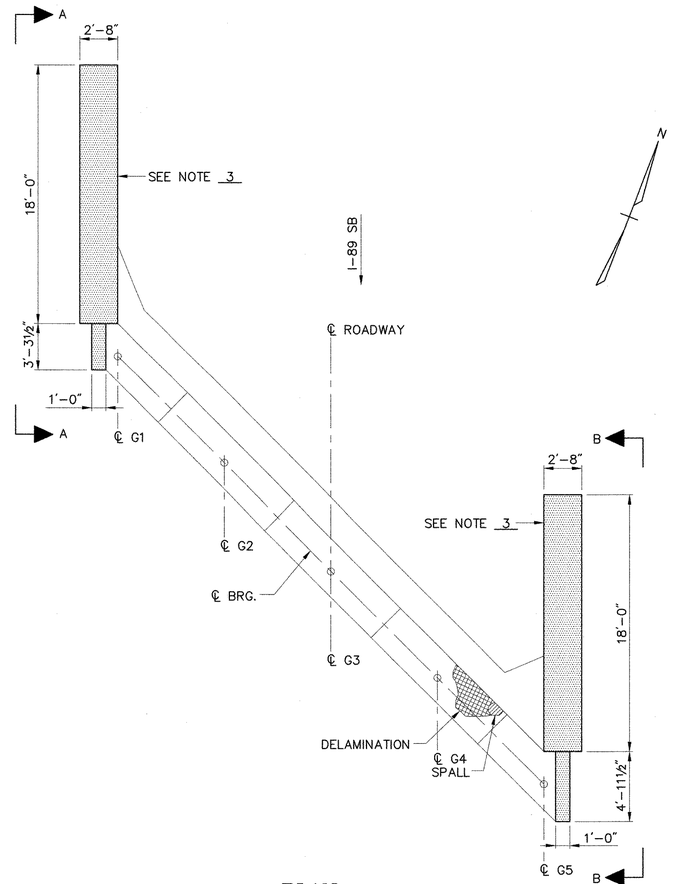
VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9-28-98



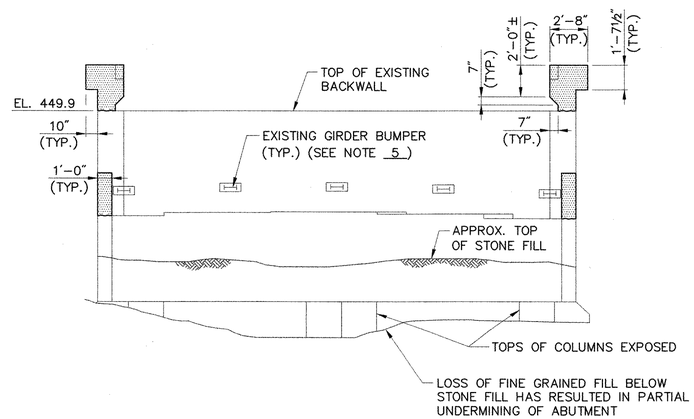
VIEW A–A

SCALE: 3/16" = 1'–0"



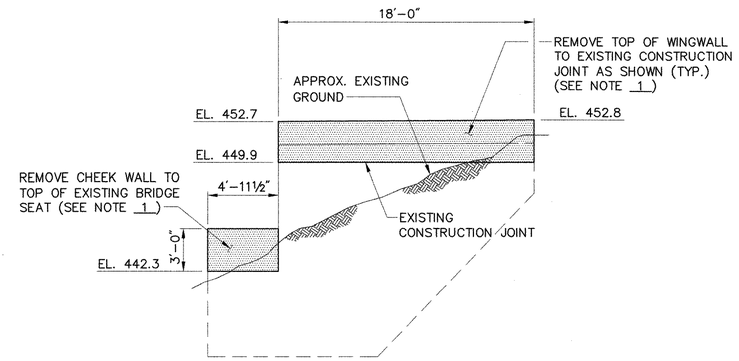
PLAN

SCALE: 3/16" = 1'–0"



ELEVATION

SCALE: 3/16" = 1'–0"



VIEW B–B

SCALE: 3/16" = 1'–0"

KEY:

- DELAMINATED AREAS
- SPALLED AREAS
- MASONRY REMOVAL

NOTES:

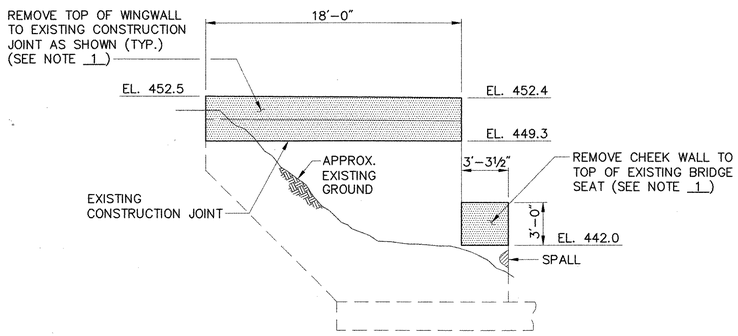
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2. REMOVAL OF WINGWALL AND CHEEKWALL MASONRY, SHALL BE PAID AS ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE". EXCAVATION AND BACKFILLING OF EXISTING GROUND REQUIRED TO PERFORM THIS WORK SHALL BE INCLUDED IN ITEM 529.20.
3. SEE TYPICAL WINGWALL MASONRY REMOVAL DETAIL ON SHEET 32.
4. SEE SHEET 22 FOR EXISTING SUBSTRUCTURE CONCRETE REPAIR DETAILS.
5. ALL EXISTING GIRDER BUMPERS SHALL BE CLEANED AND PAINTED.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11S
	Log Sta.
Highway No. I–89 SB	Surv. Sta.
I–89 SB OVER WHITE RIVER, VT 14 & NECR	
ABUTMENT 3 REMOVAL & REPAIR AREAS	
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699AB3	
Bridge Sheet No. 25	Sheet 25 of 101

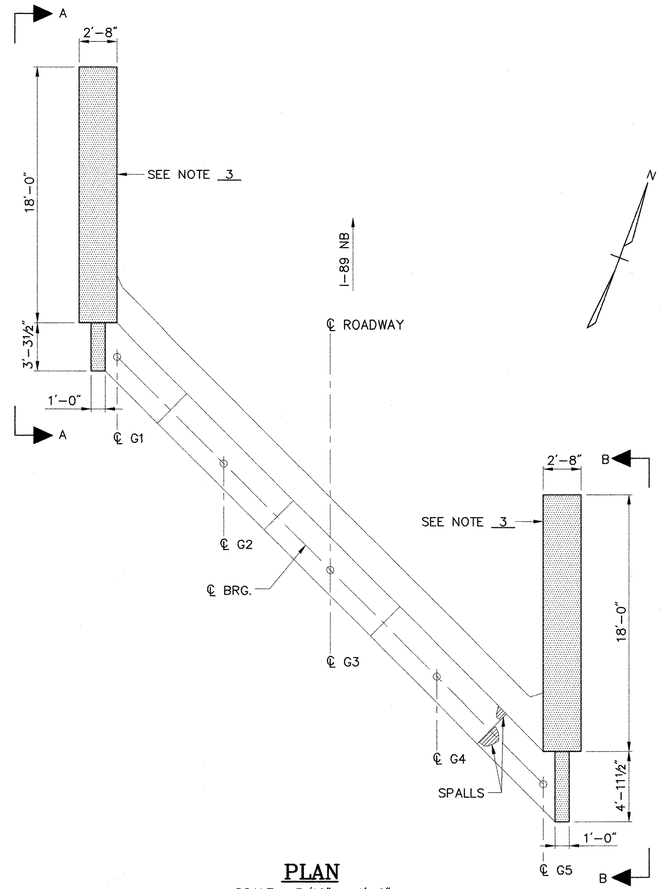
VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9–28–98



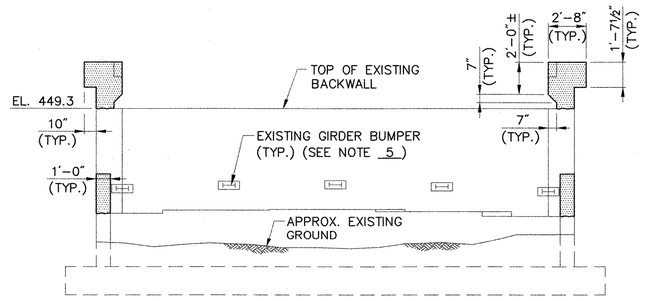
VIEW A–A

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



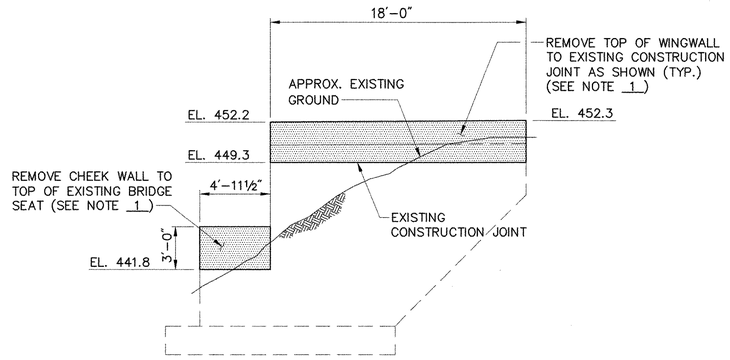
PLAN

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



ELEVATION

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



VIEW B–B

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

KEY:

- DELAMINATED AREAS
- SPALLED AREAS
- MASONRY REMOVAL

NOTES:

1. ALL EXISTING VERTICAL REINFORCING STEEL IN WINGWALLS AND CHEEK WALLS SHALL BE RETAINED. CUT EXISTING REINFORCING STEEL TO FIT PROPOSED BRIDGE SEAT AND WINGWALL CONFIGURATION. SEE SHEET 32 FOR TYPICAL WINGWALL MASONRY RECONSTRUCTION DETAIL.
2. REMOVAL OF WINGWALL AND CHEEKWALL MASONRY, SHALL BE PAID AS ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE". EXCAVATION AND BACKFILLING OF EXISTING GROUND REQUIRED TO PERFORM THIS WORK SHALL BE INCLUDED IN ITEM 529.20.
3. SEE TYPICAL WINGWALL MASONRY REMOVAL DETAIL ON SHEET 32.
4. SEE SHEET 22 FOR EXISTING SUBSTRUCTURE CONCRETE REPAIR DETAILS.
5. ALL EXISTING GIRDER BUMPERS SHALL BE CLEANED AND PAINTED.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

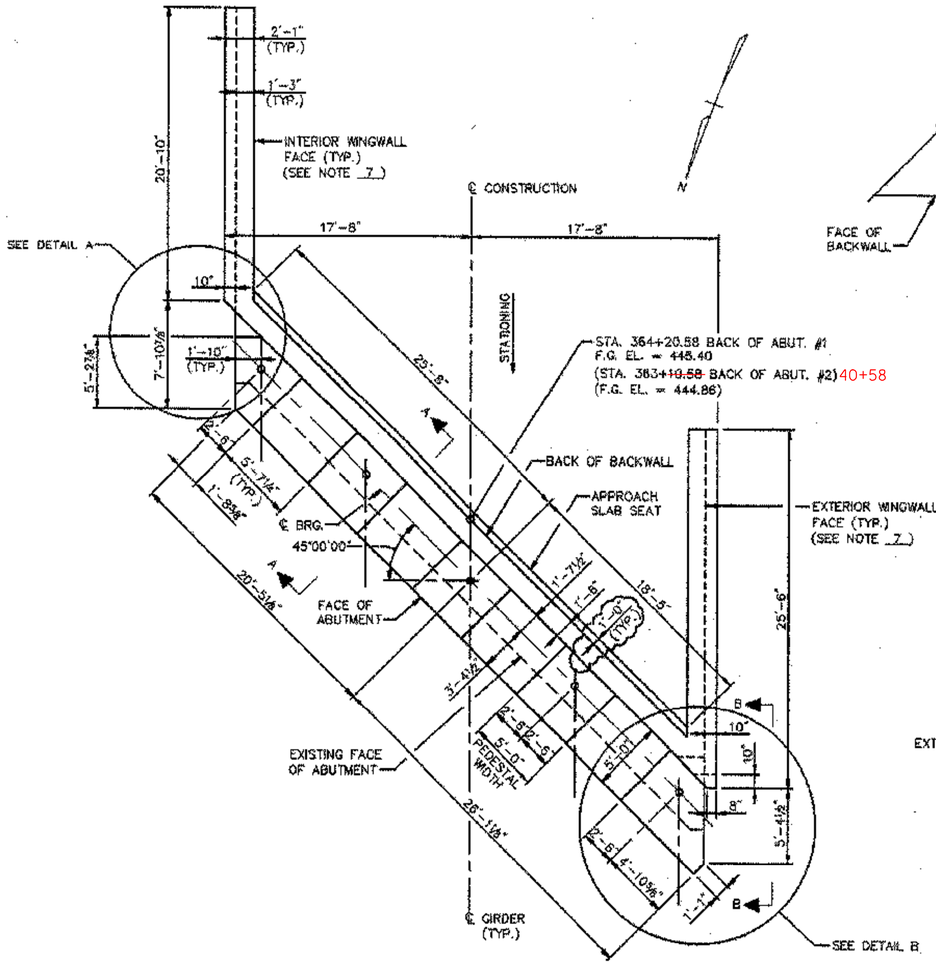
Town Of HARTFORD	Bridge No. 11N
	Log Sta.
Highway No. I-89 NB	Surv. Sta.
I-89 NB OVER WHITE RIVER, VT 14 & NECR	

ABUTMENT 4 REMOVAL & REPAIR AREAS

Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699AB4	
Bridge Sheet No. 26	Sheet 26 of 101

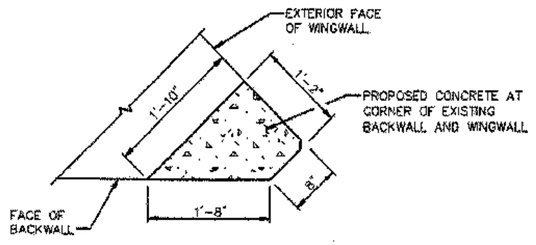
VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9-28-98

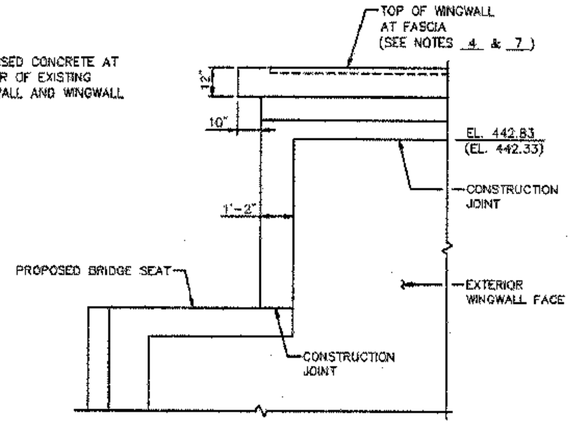


* FOOTING AND FINGER ℞ BLOCKOUT NOT SHOWN FOR CLARITY

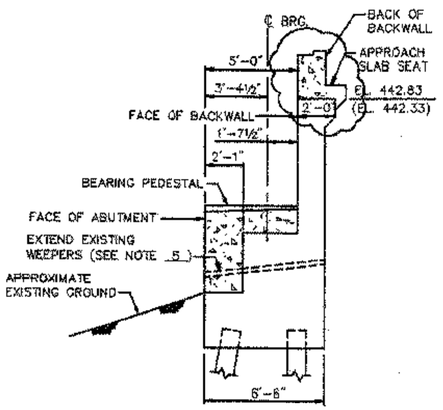
MASONRY PLAN*
SCALE: 3/16" = 1'-0"



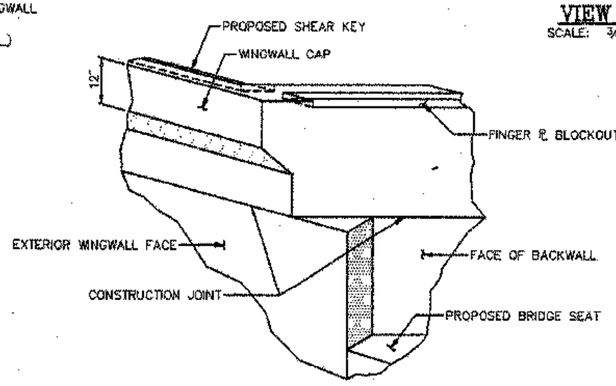
SECTION C–C
SCALE: 1" = 1'-0"



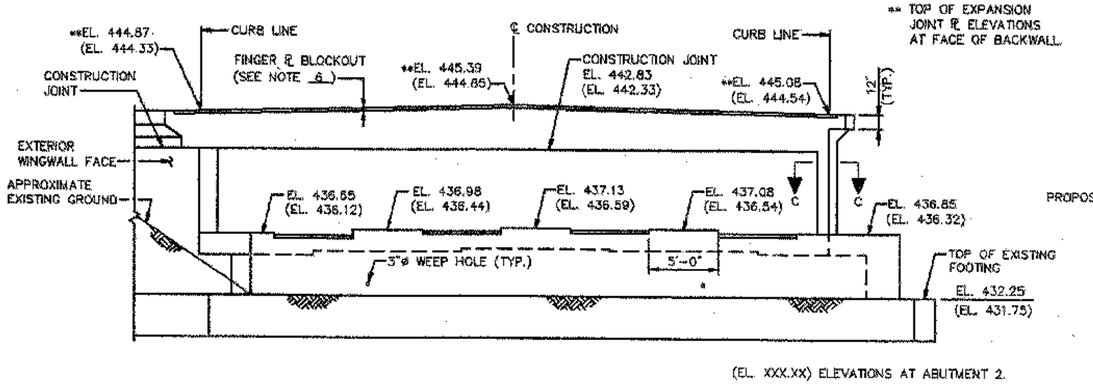
VIEW B–B
SCALE: ⅜" = 1'-0"



SECTION A–A
SCALE: ¼" = 1'-0"



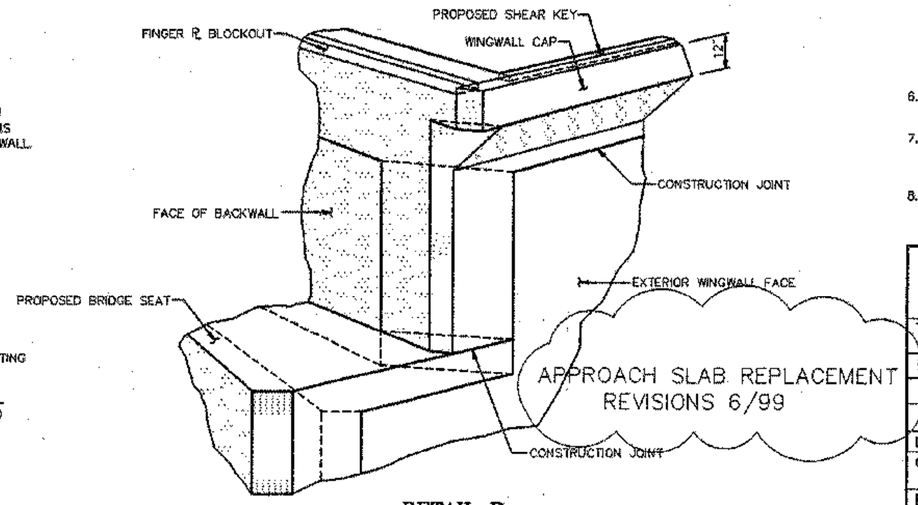
DETAIL A
N.T.S.



** TOP OF EXPANSION JOINT ℞ ELEVATIONS AT FACE OF BACKWALL.

(EL. XXX.XX) ELEVATIONS AT ABUTMENT 2.

ELEVATION (NORMAL TO BACKWALL)
SCALE: 3/16" = 1'-0"



DETAIL B
N.T.S.

NOTES:

1. ABUTMENT 1 IS SHOWN, ABUTMENT 2 IS SIMILAR.
2. PROPOSED BEARING PEDESTAL ELEVATIONS WERE CALCULATED BASED ON THE EXISTING BEARING SEAT ELEVATIONS AND BEARING HEIGHTS SHOWN IN THE ORIGINAL DESIGN PLANS. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND ADJUST THE PROPOSED PEDESTAL ELEVATIONS AS NECESSARY TO MAINTAIN THE EXISTING BOTTOM OF GIRDER ELEVATIONS.
3. CONCRETE FOR ABUTMENT MODIFICATIONS SHALL BE PAID UNDER ITEM 501.22, "CONCRETE, CLASS A".
4. FOR TOP OF WINGWALL ELEVATIONS SEE TABLE ON SHEET 33.
5. THE CONTRACTOR SHALL PROVIDE A WATERTIGHT, CORROSION RESISTANT EXTENSION OF THE EXISTING WEEPERS THROUGH THE NEW ABUTMENT CONCRETE. PAY PARTICULAR ATTENTION TO ENSURE THAT THE CONNECTION FROM THE EXISTING WEEPERS TO THE PROPOSED WEEPERS IS WATERTIGHT AND PERMANENT. THE CONTRACTOR SHALL PROPOSE THE MATERIALS AND MEANS AND METHODS OF CONSTRUCTION. SUBMIT THE PROPOSED SYSTEM TO THE ENGINEER FOR APPROVAL. COST FOR EXTENDING WEEPERS SHALL BE INCLUDED IN ITEM 501.22, "CONCRETE, CLASS A."
6. SEE SHEETS 15 & 16 FOR DETAILS OF FINGER PLATES AT EXPANSION JOINT.
7. CONCRETE BRIDGE BARRIER CURB ON WINGWALLS NOT SHOWN. SEE SHEETS 32 & 33 AND 40 – 42 FOR DETAILS OF BARRIER CURB ON WINGWALLS.
8. EXCAVATION AND BACKFILLING OF EXISTING GROUND REQUIRED TO CONSTRUCT THE ABUTMENT MODIFICATIONS SHALL BE INCLUDED IN ITEM 529.20.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & 11S
Highway No. I-89 NB & SB	Log Sta.
	Surv. Sta.

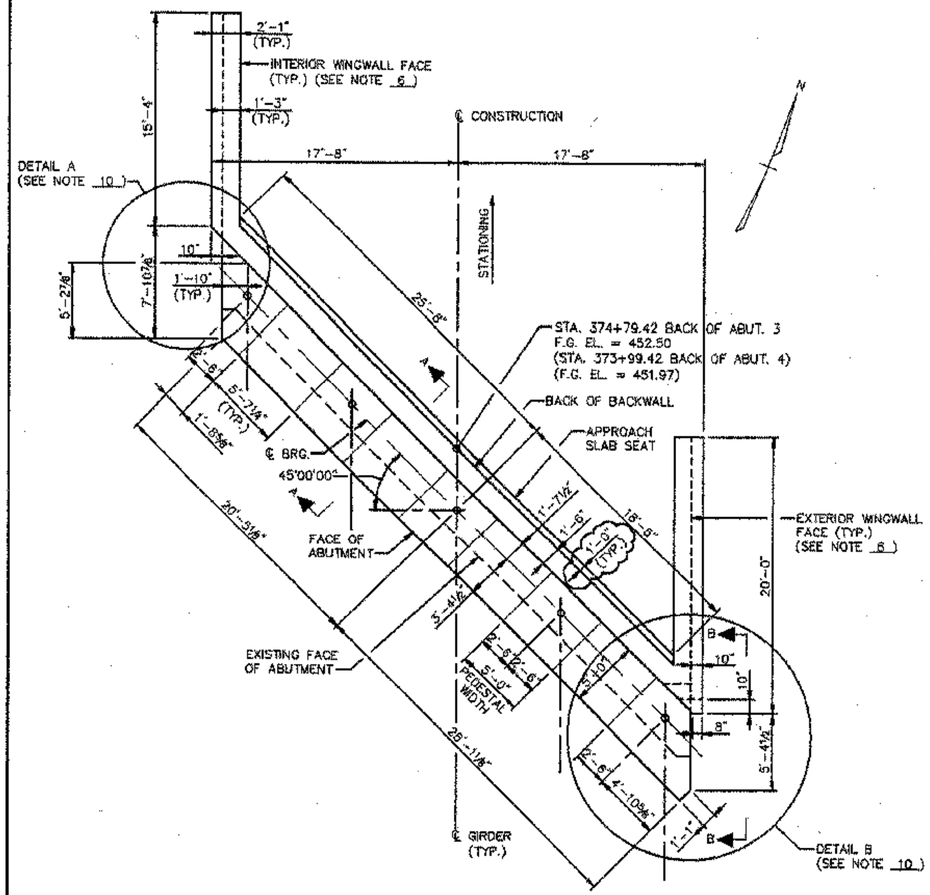
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR

ABUTMENT 1 & 2 MODIFICATIONS

Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 6/99
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699A1MREV	
Bridge Sheet No. 27R	Sheet 27R of 101

VANASSE HANGEN BRUSTLIN, INC.

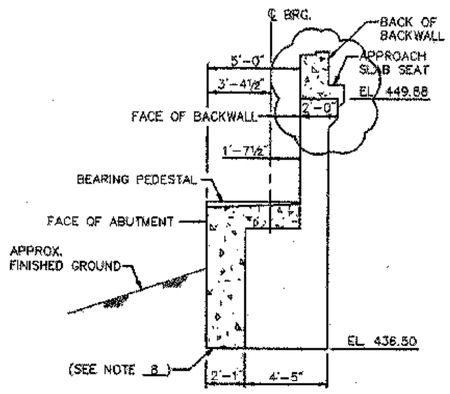
PLOTTED 6/99



* COLUMNS AT ABUTMENT 3, FOOTINGS AND FINGER ℄ BLOCKOUT NOT SHOWN FOR CLARITY

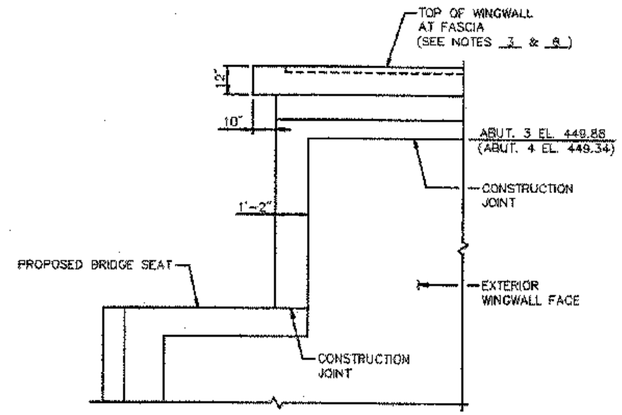
ABUTMENTS 3 & 4 MASONRY PLAN*

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



ABUTMENT 3 SECTION A-A

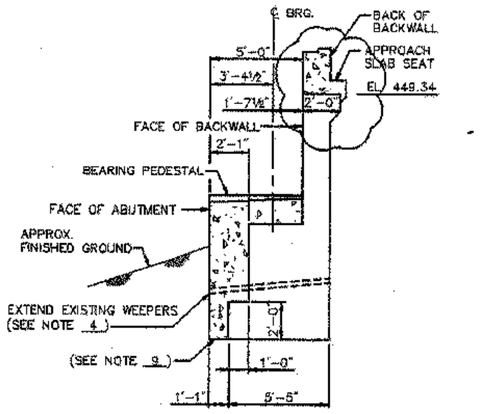
SCALE: ¼" = 1'-0"



VIEW B-B

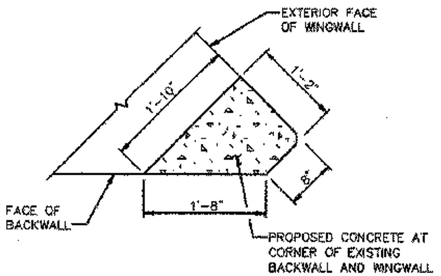
SCALE: ⅜" = 1'-0"

FILL VOID UNDER CAP
SEE NOTE 23, SHEET 3



ABUTMENT 4 SECTION A-A

SCALE: ¼" = 1'-0"



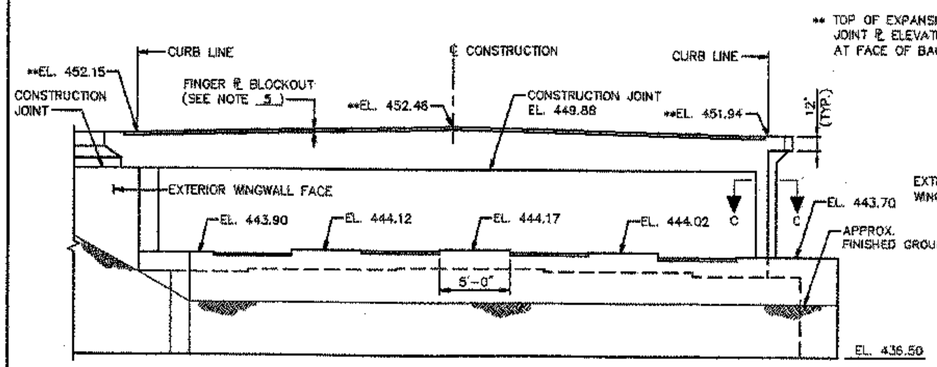
SECTION C-C

SCALE: 1" = 1'-0"

NOTES:

1. PROPOSED BEARING PEDESTAL ELEVATIONS WERE CALCULATED BASED ON THE EXISTING BEARING SEAT ELEVATIONS AND BEARING HEIGHTS SHOWN IN THE ORIGINAL DESIGN PLANS. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND ADJUST THE PROPOSED PEDESTAL ELEVATIONS AS NECESSARY TO MAINTAIN THE EXISTING BOTTOM OF GIRDER ELEVATIONS.
2. CONCRETE FOR ABUTMENT MODIFICATIONS SHALL BE PAID UNDER ITEM 501.22, "CONCRETE, CLASS A".
3. FOR TOP OF WINGWALL ELEVATIONS SEE TABLE ON SHEET 33.
4. THE CONTRACTOR SHALL PROVIDE A WATERTIGHT, CORROSION RESISTANT EXTENSION OF THE EXISTING WEEPERS THROUGH THE NEW ABUTMENT CONCRETE. PAY PARTICULAR ATTENTION TO ENSURE THAT THE CONNECTION FROM THE EXISTING WEEPERS TO THE PROPOSED WEEPERS IS WATERTIGHT AND PERMANENT. THE CONTRACTOR SHALL PROPOSE THE MATERIALS AND MEANS AND METHODS OF CONSTRUCTION. SUBMIT THE PROPOSED SYSTEM TO THE ENGINEER FOR APPROVAL. COST FOR EXTENDING WEEPERS SHALL BE INCLUDED IN ITEM 501.22, "CONCRETE, CLASS A."
5. SEE SHEETS 15 & 16 FOR DETAILS OF FINGER PLATES AT EXPANSION JOINT.
6. CONCRETE BRIDGE BARRIER CURB ON WINGWALLS NOT SHOWN. SEE SHEETS 32 & 33 AND 40 - 42 FOR DETAILS OF BARRIER CURB ON WINGWALLS.
7. EXCAVATION AND BACKFILLING OF EXISTING GROUND REQUIRED TO CONSTRUCT THE ABUTMENT MODIFICATIONS SHALL BE INCLUDED IN ITEM 529.20.
8. A MINIMUM OF 2 FEET OF ITEM 301.35, "SUBBASE OF DENSE GRADED CRUSHED STONE" SHALL BE PLACED BELOW THE BOTTOM OF THE ABUTMENT 3 SEAT EXTENSION.
9. THE BOTTOM OF THE ABUTMENT 4 SEAT EXTENSION SHALL BE FOUNDED ON LEDGE.
10. SEE SHEET 27 FOR DETAIL A AND DETAIL B

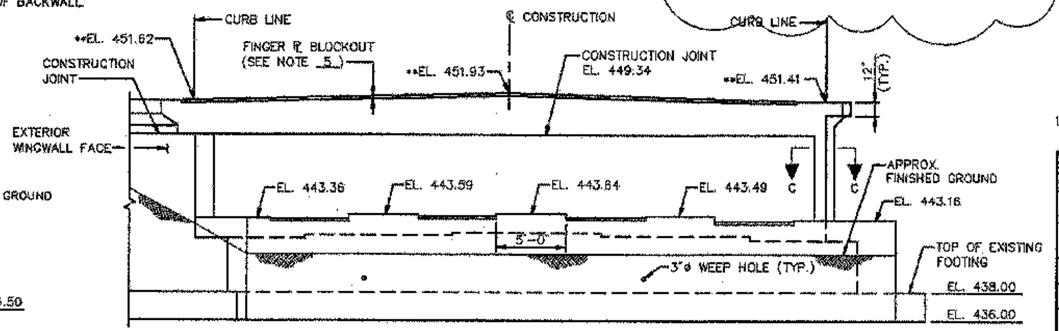
APPROACH SLAB REPLACEMENT
REVISIONS 6/99



* COLUMNS AND FOOTINGS NOT SHOWN FOR CLARITY

ABUTMENT 3 ELEVATION (NORMAL TO BACKWALL)*

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



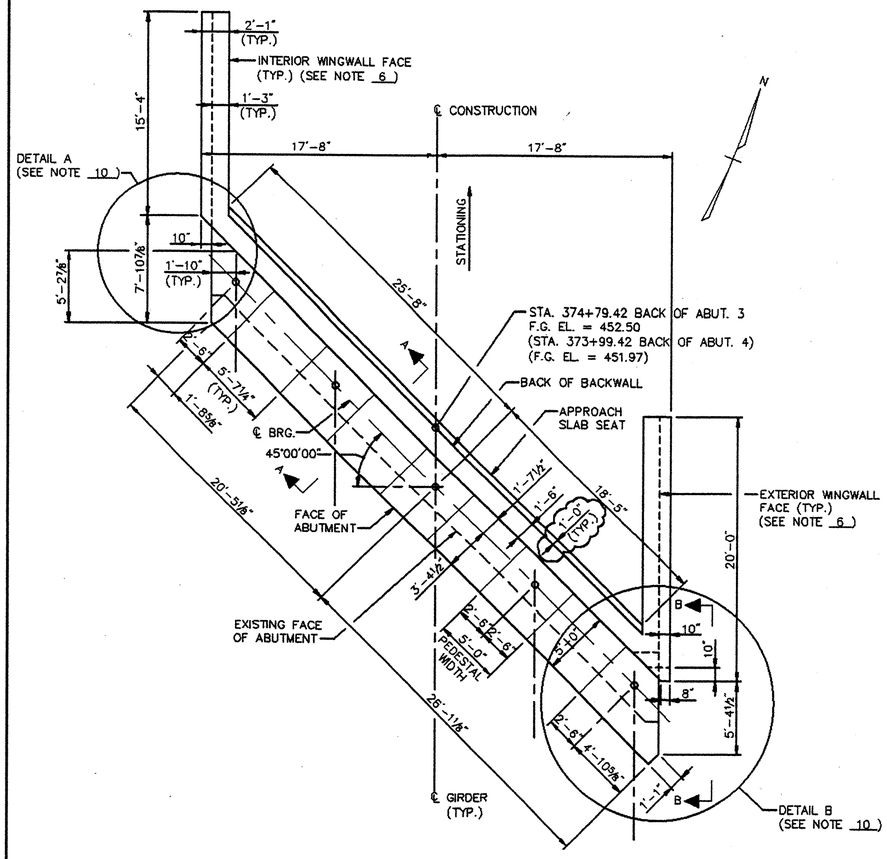
ABUTMENT 4 ELEVATION (NORMAL TO BACKWALL)

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

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of HARTFORD	Bridge No. 11N & 11S Log Sta.
Highway No. I-89 NB & SB	Surv. Sta.
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
ABUTMENT 3 & 4 MODIFICATIONS	
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 6/99
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50899A3MREV	
Bridge Sheet No. 28R	Sheet 28R of 101

VANASSE HANGEN BRUSTLIN, INC.

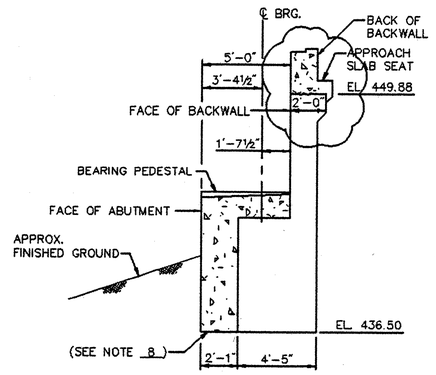
PLOTTED 6/99



* COLUMNS AT ABUTMENT 3, FOOTINGS AND FINGER ℄ BLOCKOUT NOT SHOWN FOR CLARITY

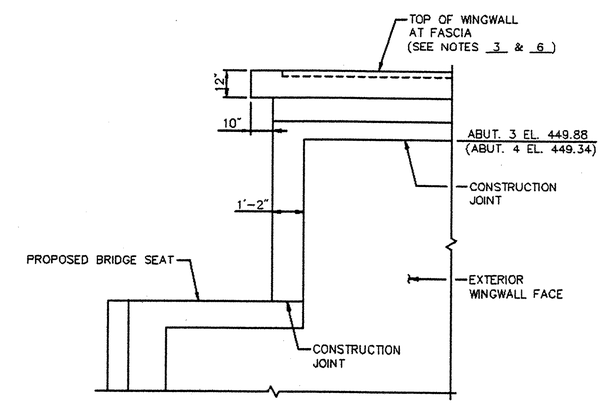
ABUTMENTS 3 & 4 MASONRY PLAN*

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



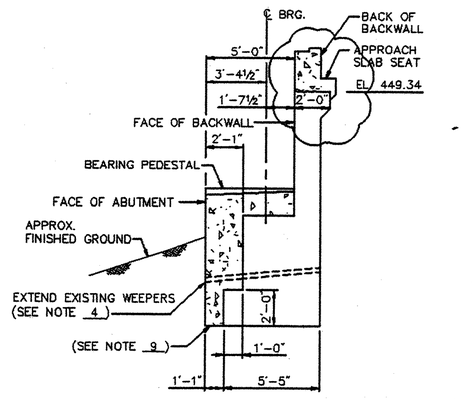
ABUTMENT 3 SECTION A-A

SCALE: ¼" = 1'-0"



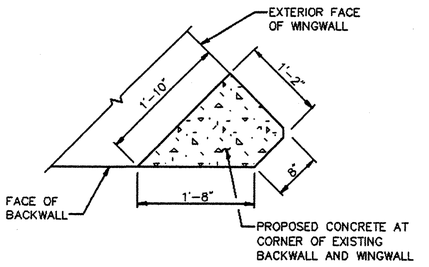
VIEW B-B

SCALE: ⅜" = 1'-0"



ABUTMENT 4 SECTION A-A

SCALE: ¼" = 1'-0"

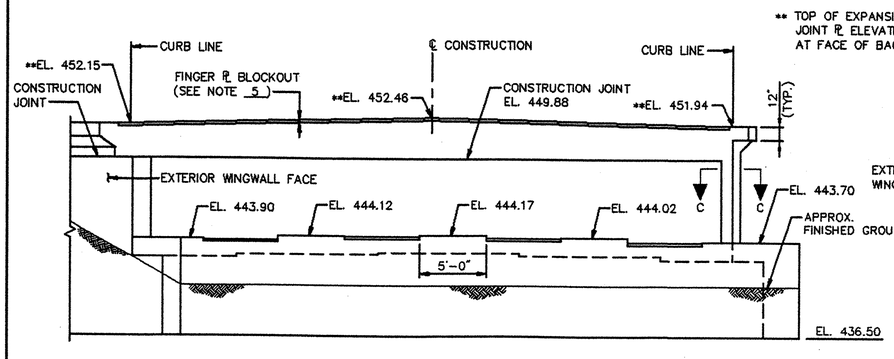


SECTION C-C

SCALE: 1" = 1'-0"

NOTES:

1. PROPOSED BEARING PEDESTAL ELEVATIONS WERE CALCULATED BASED ON THE EXISTING BEARING SEAT ELEVATIONS AND BEARING HEIGHTS SHOWN IN THE ORIGINAL DESIGN PLANS. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND ADJUST THE PROPOSED PEDESTAL ELEVATIONS AS NECESSARY TO MAINTAIN THE EXISTING BOTTOM OF GIRDER ELEVATIONS.
2. CONCRETE FOR ABUTMENT MODIFICATIONS SHALL BE PAID UNDER ITEM 501.22, "CONCRETE, CLASS A".
3. FOR TOP OF WINGWALL ELEVATIONS SEE TABLE ON SHEET 33.
4. THE CONTRACTOR SHALL PROVIDE A WATERTIGHT, CORROSION RESISTANT EXTENSION OF THE EXISTING WEEPERS THROUGH THE NEW ABUTMENT CONCRETE. PAY PARTICULAR ATTENTION TO ENSURE THAT THE CONNECTION FROM THE EXISTING WEEPERS TO THE PROPOSED WEEPERS IS WATERTIGHT AND PERMANENT. THE CONTRACTOR SHALL PROPOSE THE MATERIALS AND MEANS AND METHODS OF CONSTRUCTION. SUBMIT THE PROPOSED SYSTEM TO THE ENGINEER FOR APPROVAL. COST FOR EXTENDING WEEPERS SHALL BE INCLUDED IN ITEM 501.22, "CONCRETE, CLASS A."
5. SEE SHEETS 15 & 16 FOR DETAILS OF FINGER PLATES AT EXPANSION JOINT.
6. CONCRETE BRIDGE BARRIER CURB ON WINGWALLS NOT SHOWN. SEE SHEETS 32 & 33 AND 40 - 42 FOR DETAILS OF BARRIER CURB ON WINGWALLS.
7. EXCAVATION AND BACKFILLING OF EXISTING GROUND REQUIRED TO CONSTRUCT THE ABUTMENT MODIFICATIONS SHALL BE INCLUDED IN ITEM 529.20.
8. A MINIMUM OF 2 FEET OF ITEM 301.35, "SUBBASE OF DENSE GRADED CRUSHED STONE" SHALL BE PLACED BELOW THE BOTTOM OF THE ABUTMENT 3 SEAT EXTENSION.
9. THE BOTTOM OF THE ABUTMENT 4 SEAT EXTENSION SHALL BE FOUNDED ON LEDGE.
10. SEE SHEET 27 FOR DETAIL A AND DETAIL B

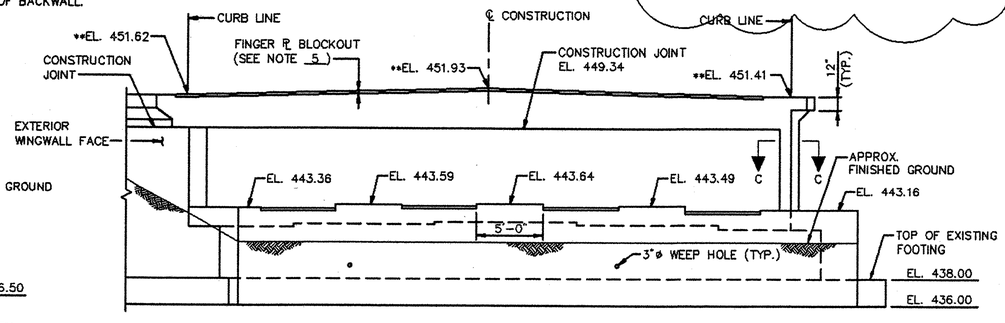


* COLUMNS AND FOOTINGS NOT SHOWN FOR CLARITY

ABUTMENT 3 ELEVATION (NORMAL TO BACKWALL)*

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

APPROACH SLAB REPLACEMENT REVISIONS 6/99



ABUTMENT 4 ELEVATION (NORMAL TO BACKWALL)

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

STATE OF VERMONT
AGENCY OF TRANSPORTATION

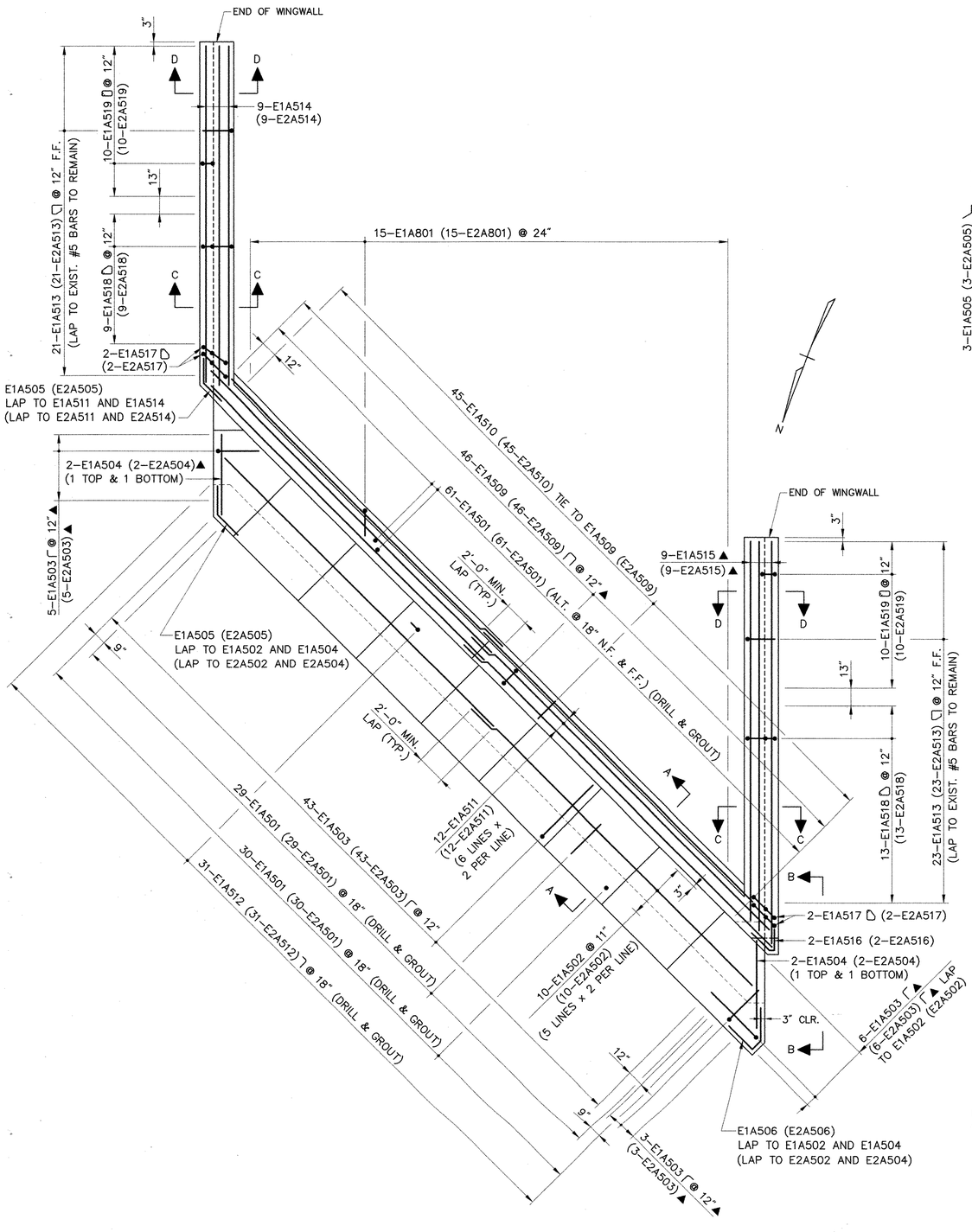
Town Of HARTFORD	Bridge No. 11N & 11S
Highway No. I-89 NB & SB	Log Sta. / Surv. Sta.
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR	

ABUTMENT 3 & 4 MODIFICATIONS

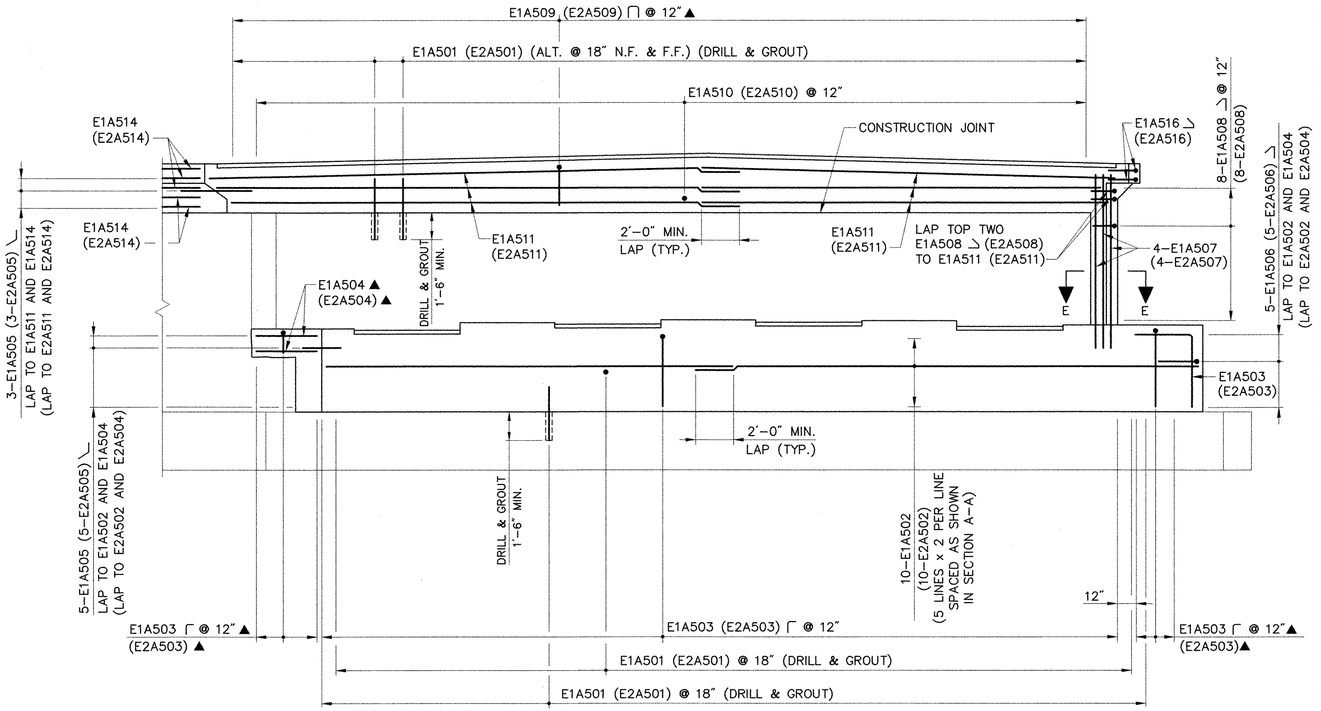
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 6/99
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699A3MREV	
Bridge Sheet No. 28R	Sheet 28R of 101

VANASSE HANGEN BRUSTLIN, INC.

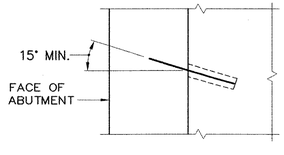
PLOTTED 6/99



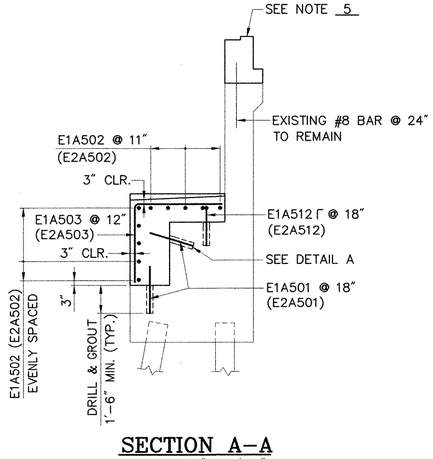
PLAN
SCALE: 1/4" = 1'–0"



ELEVATION (NORMAL TO BACKWALL)
SCALE: 1/4" = 1'–0"



DETAIL A
N.T.S.



SECTION A–A
SCALE: 1/4" = 1'–0"

KEY:

N.F. – NEAR FACE
F.F. – FAR FACE
E.F. – EACH FACE
▲ – DENOTES BARS TO BE CUT IN FIELD

NOTES:

1. ABUTMENT 1 SHOWN, ABUTMENT 2 IS SIMILAR.
2. FOR TOP OF WINGWALL ELEVATIONS SEE TABLE ON SHEET 33.
3. FOR DETAILS OF VIEW B–B, SECTION C–C, SECTION D–D, AND SECTION E–E, SEE SHEET 33.
4. DRILLING AND GROUTING OF DOWELS SHALL BE PAID UNDER ITEM 507.16, "DRILLING AND GROUTING DOWELS".
5. FOR DETAILS OF REINFORCEMENT IN BACKWALL, SEE BACKWALL/APPROACH SLAB REINFORCEMENT DETAIL ON SHEET 32.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

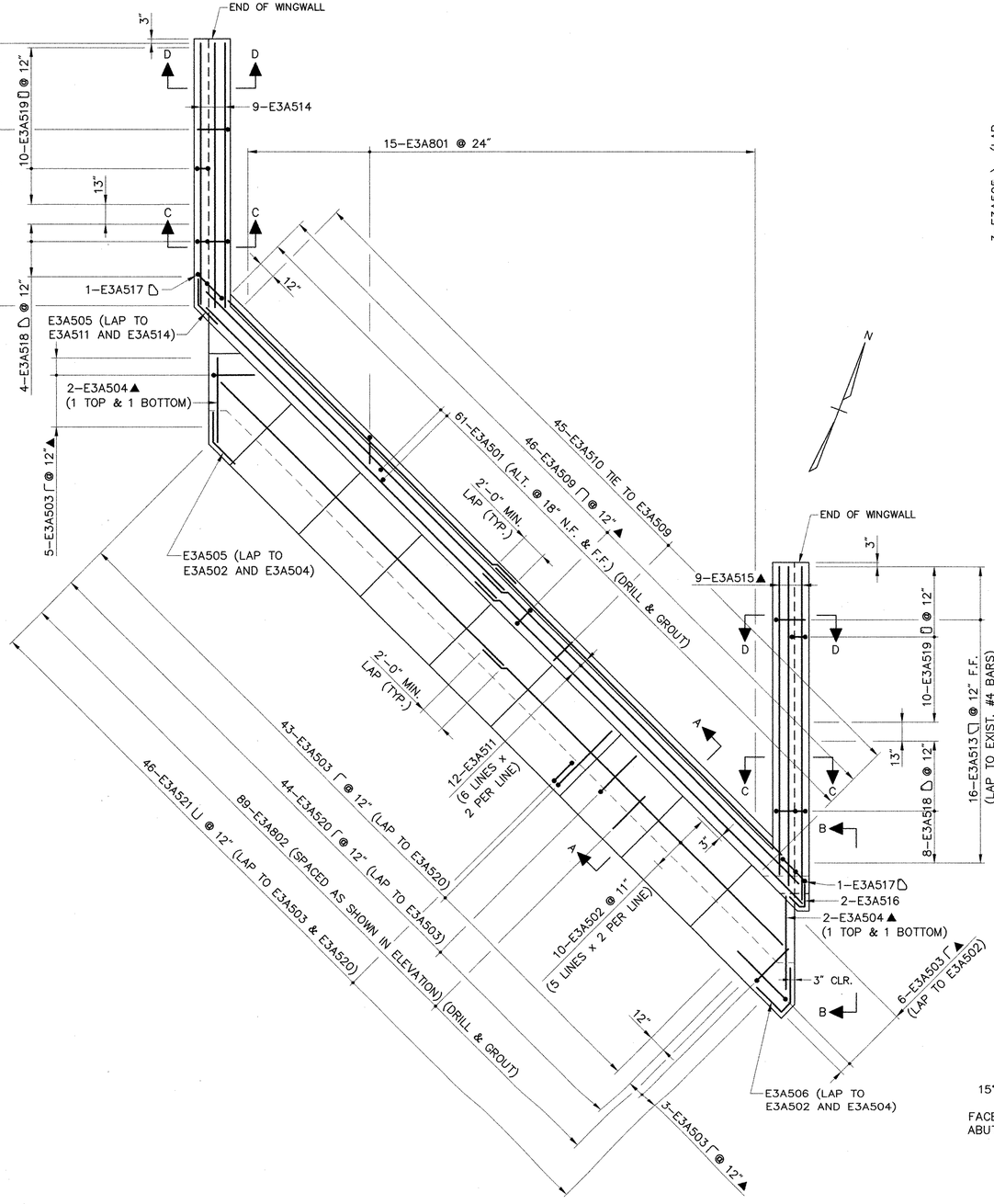
Town Of HARTFORD	Bridge No. 11N & 11S
	Log Sta.
Highway No. I–89 NB & SB	Surv. Sta.
I–89 NB & SB OVER WHITE RIVER, VT 14 & NECR	

ABUTMENT 1 & 2 REINFORCEMENT

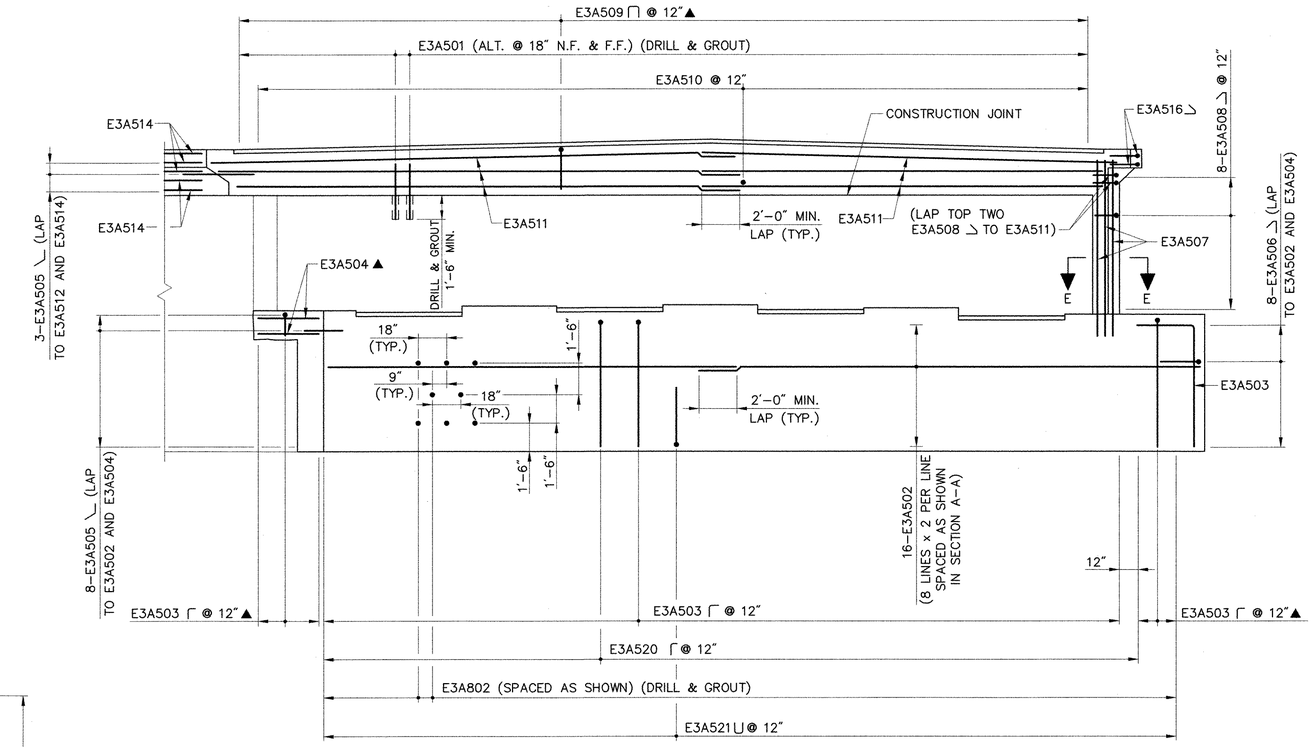
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699A1R	
Bridge Sheet No. 29	Sheet 29 of 101

VANASSE HANGEN BRUSTLIN, INC.

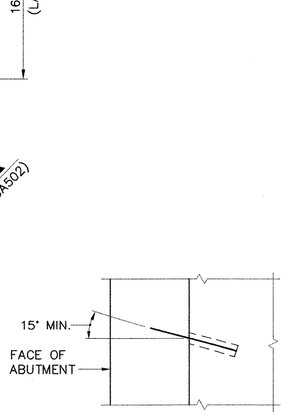
PLOTTED 9–28–98



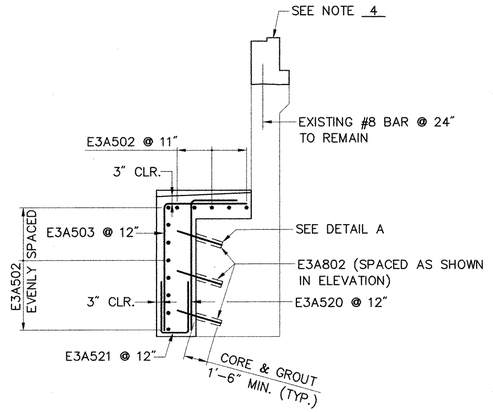
PLAN
SCALE: 1/4" = 1'–0"



ELEVATION (NORMAL TO BACKWALL)
SCALE: 1/4" = 1'–0"



DETAIL A
N.T.S.



SECTION A–A
SCALE: 1/4" = 1'–0"

KEY:

N.F. – NEAR FACE
F.F. – FAR FACE
E.F. – EACH FACE
▲ – DENOTES BARS TO BE CUT IN FIELD

NOTES:

1. FOR TOP OF WINGWALL ELEVATIONS SEE TABLE ON SHEET 33.
2. FOR DETAILS OF VIEW B–B, SECTION C–C, SECTION D–D, AND SECTION E–E, SEE SHEET 33.
3. DRILLING AND GROUTING OF DOWELS SHALL BE PAID UNDER ITEM 507.16, "DRILLING AND GROUTING DOWELS".
4. FOR DETAILS OF REINFORCEMENT IN BACKWALL, SEE BACKWALL/APPROACH SLAB REINFORCEMENT DETAIL ON SHEET 32.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

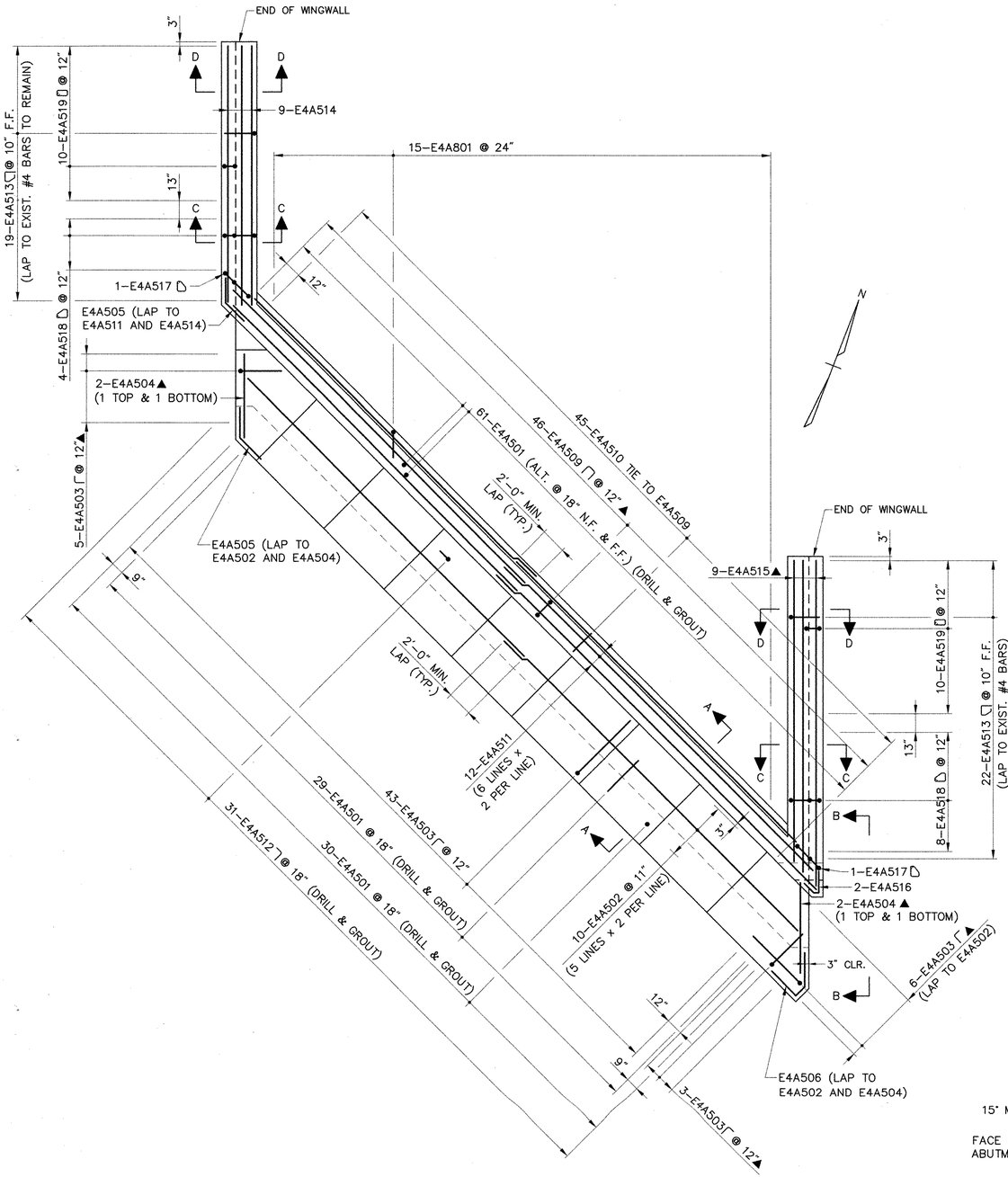
Town Of HARTFORD	Bridge No. 11S
Highway No. I–89 SB	Log Sta.
	Surv. Sta.
I–89 SB OVER WHITE RIVER, VT 14 & NECR	

ABUTMENT 3 REINFORCEMENT

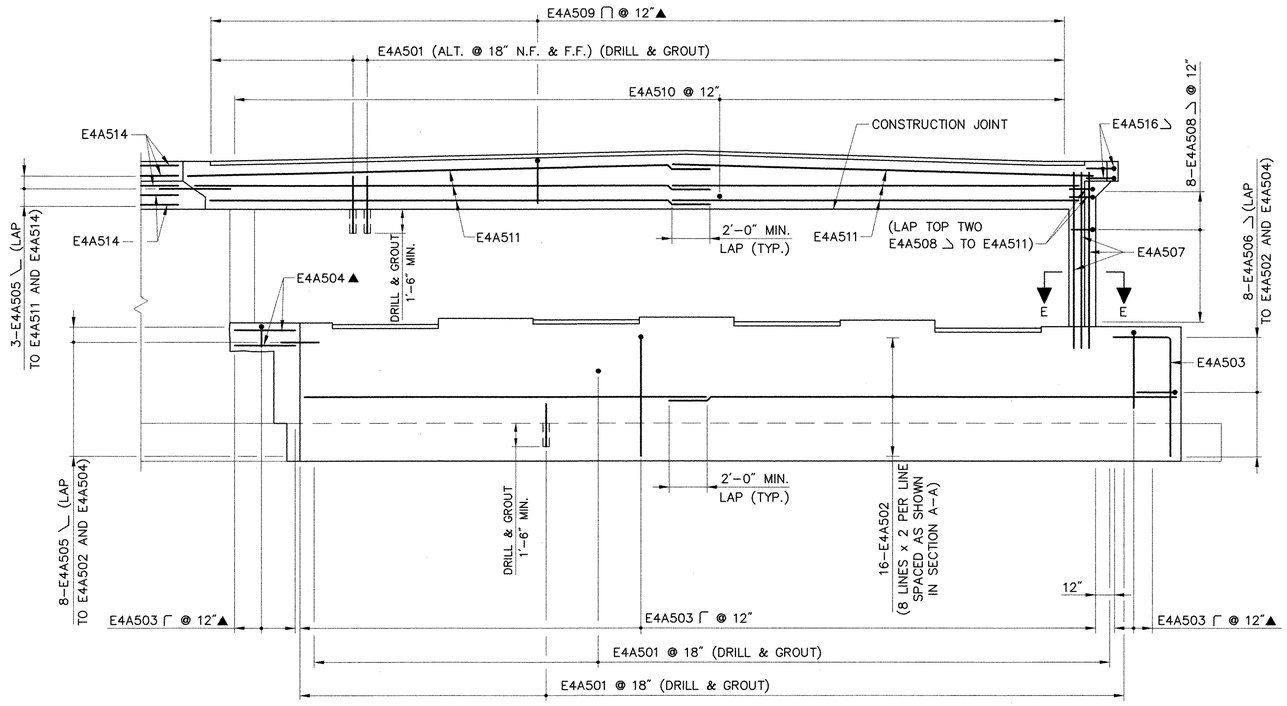
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699A3R	
Bridge Sheet No. 30	Sheet 30 of 101

VANASSE HANGEN BRUSTLIN, INC.

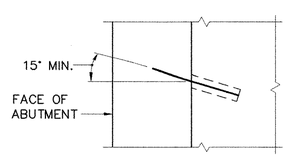
PLOTTED 9–28–98



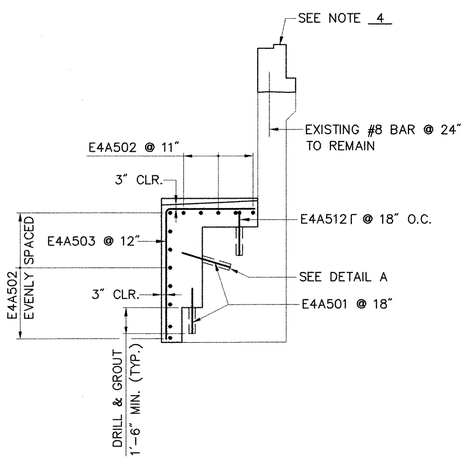
PLAN
SCALE: 1/4" = 1'–0"



ELEVATION (NORMAL TO BACKWALL)
SCALE: 1/4" = 1'–0"



DETAIL A
N.T.S.



SECTION A–A
SCALE: 1/4" = 1'–0"

KEY:

N.F. – NEAR FACE
F.F. – FAR FACE
E.F. – EACH FACE
▲ – DENOTES BARS TO BE CUT IN FIELD

NOTES:

1. FOR TOP OF WINGWALL ELEVATIONS SEE TABLE ON SHEET 33.
2. FOR DETAILS OF VIEW B–B, SECTION C–C, SECTION D–D, AND SECTION E–E, SEE SHEET 33.
3. DRILLING AND GROUTING OF DOWELS SHALL BE PAID UNDER ITEM 507.16, "DRILLING AND GROUTING DOWELS".
4. FOR DETAILS OF REINFORCEMENT IN BACKWALL, SEE BACKWALL/APPROACH SLAB REINFORCEMENT DETAIL ON SHEET 32.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N
	Log Sta.
Highway No. I–89 NB	Surv. Sta.

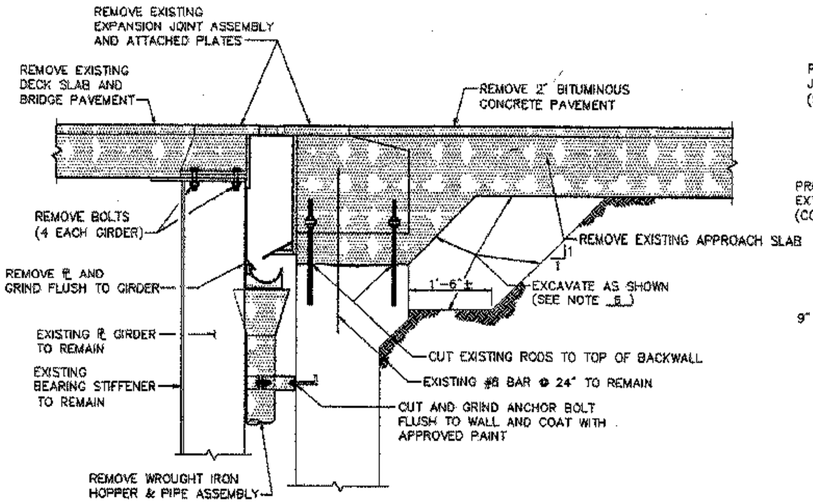
I–89 NB OVER WHITE RIVER, VT 14 & NECR

ABUTMENT 4 REINFORCEMENT

Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699A4R	
Bridge Sheet No. 31	Sheet 31 of 101

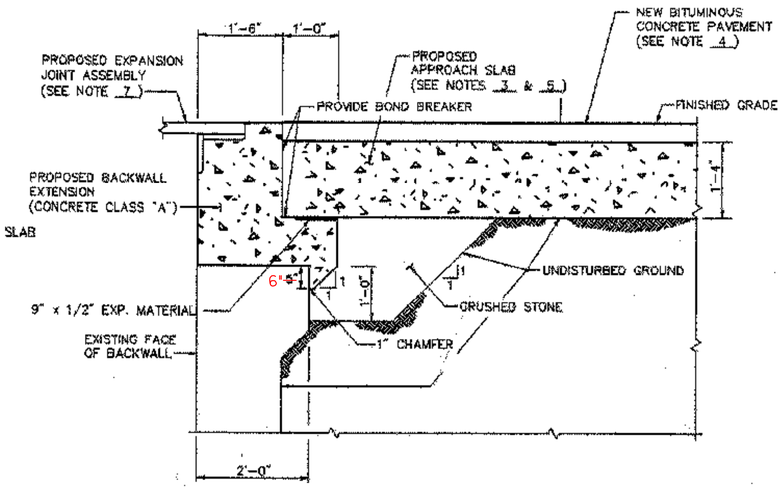
VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9–28–98



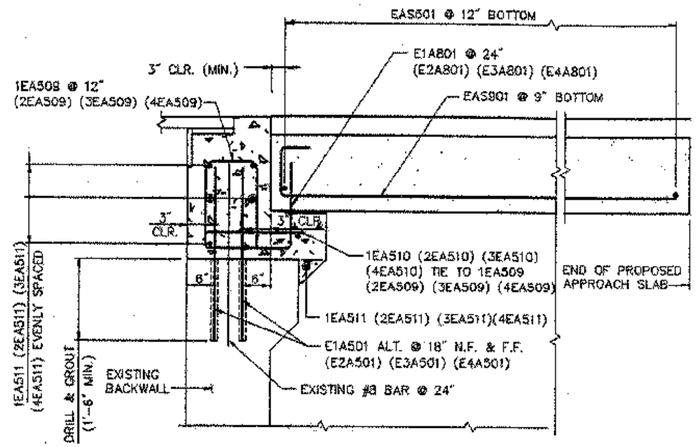
EXPANSION JOINT/APPROACH SLAB REMOVAL

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



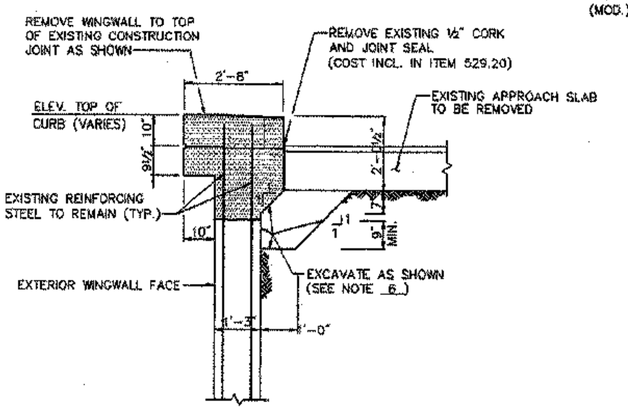
BACKWALL/APPROACH SLAB RECONSTRUCTION

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



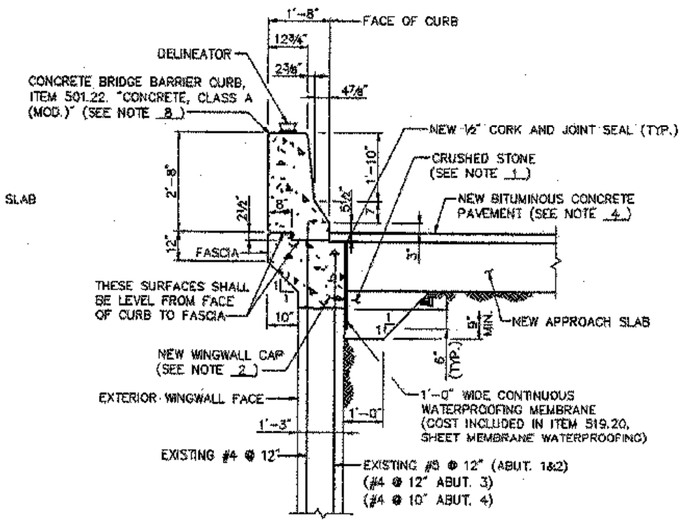
BACKWALL/APPROACH SLAB REINFORCEMENT

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



TYPICAL WINGWALL MASONRY REMOVAL DETAIL

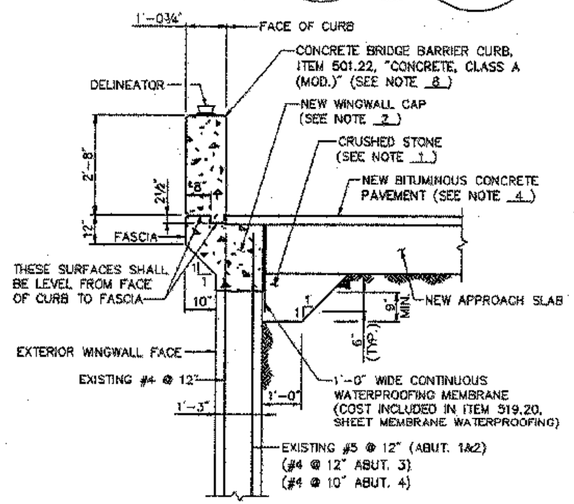
SCALE: ½" = 1'-0"



TYPICAL MASONRY RECONSTRUCTION AT BEGINNING OF WINGWALL

SCALE: ½" = 1'-0"

APPROACH SLAB REPLACEMENT REVISIONS 6/99



TYPICAL MASONRY RECONSTRUCTION AT END OF WINGWALL

SCALE: ½" = 1'-0"

NOTES:

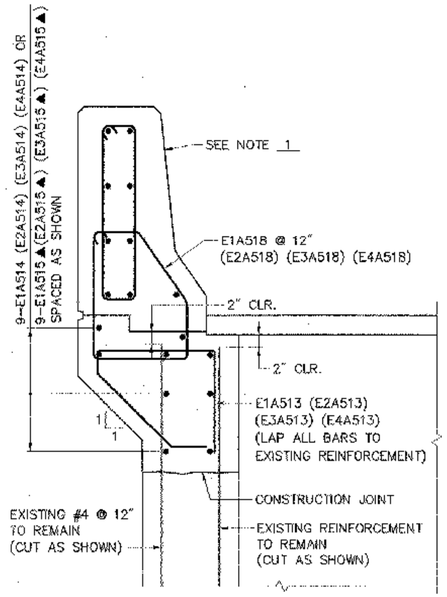
1. ITEM 301.35, "SUBBASE OF DENSE GRADED CRUSHED STONE" SHALL BE USED TO FILL BETWEEN THE WINGWALLS AND APPROACH SLABS, AND UNDER THE APPROACH SLABS BEHIND THE BACKWALLS.
2. FOR WINGWALL CAP REINFORCING SEE SHEETS 29, 30, AND AND 31. ALSO, SEE TYPICAL DETAILS ON SHEET 33.
3. TOP OF PROPOSED APPROACH SLAB SHALL MATCH THE PROFILE OF THE EXISTING APPROACH SLAB, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. CONCRETE FOR APPROACH SLAB RECONSTRUCTION SHALL BE PAID FOR UNDER ITEM 501.22, "CONCRETE, CLASS A".
4. FOR APPROACH PAVEMENT TRANSITION, SEE DETAIL ON SHEET 38.
5. FOR PLAN VIEWS OF THE PROPOSED APPROACH SLAB CONFIGURATIONS, SEE SHEET 39.
6. EXCAVATION OF EXISTING GROUND REQUIRED TO PERFORM THE MASONRY RECONSTRUCTION SHOWN SHALL BE INCLUDED IN ITEM 529.20.
7. FOR DETAILS OF EXPANSION JOINT ASSEMBLY, SEE SHEETS 15 AND 16.
8. SEE SHEETS 40 AND 41 FOR PLAN AND ELEVATION OF BRIDGE BARRIER CURB ON WINGWALLS. SEE SHEET 42 FOR REINFORCING DETAILS OF BARRIER CURB.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & 11S
	Log Sta.
Highway No. I-89 NB & SB	Surv. Sta.
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
TYPICAL ABUTMENT DETAILS (1 OF 2)	
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 6/99
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699DT1RREV	
Bridge Sheet No. 32R	Sheet 32R of 101

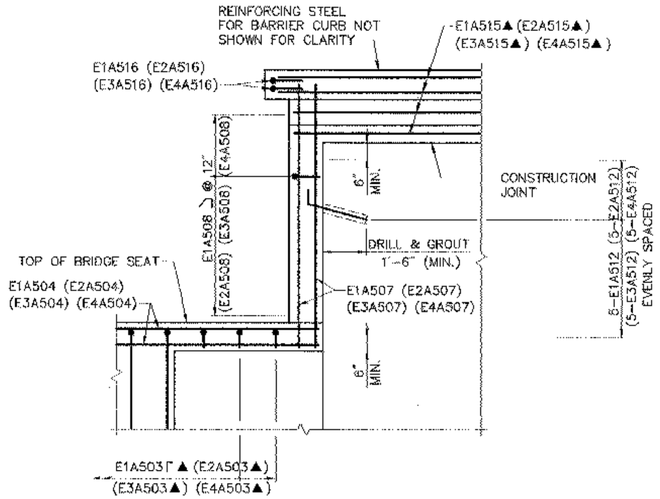
VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 6/99



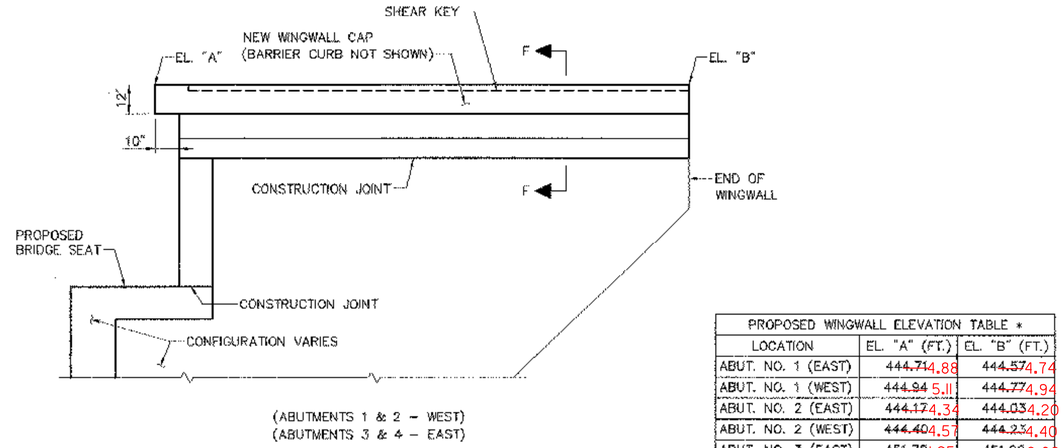
SECTION C–C

SCALE: 1" = 1'–0"



VIEW B–B

SCALE: 3/8" = 1'–0"



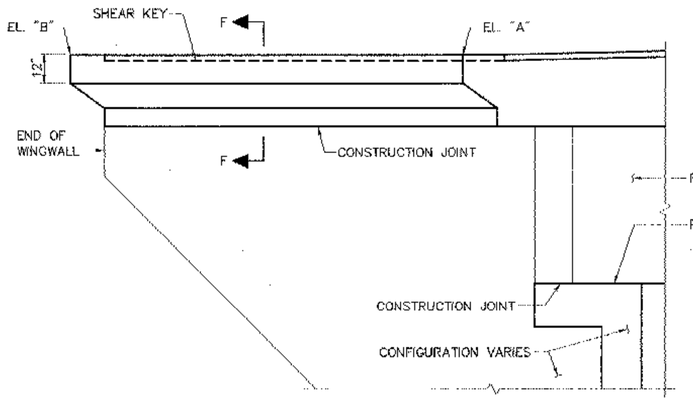
(ABUTMENTS 1 & 2 – WEST)
(ABUTMENTS 3 & 4 – EAST)

WINGWALL ELEVATION

N.T.S.

PROPOSED WINGWALL ELEVATION TABLE *		
LOCATION	EL. "A" (FT.)	EL. "B" (FT.)
ABUT. NO. 1 (EAST)	~~444.71~~ 444.88	~~444.57~~ 444.74
ABUT. NO. 1 (WEST)	~~444.94~~ 445.11	~~444.77~~ 444.94
ABUT. NO. 2 (EAST)	~~444.17~~ 444.34	~~444.03~~ 444.20
ABUT. NO. 2 (WEST)	~~444.40~~ 444.57	~~444.23~~ 444.40
ABUT. NO. 3 (EAST)	~~451.78~~ 451.95	~~451.92~~ 452.09
ABUT. NO. 3 (WEST)	~~452.02~~ 452.18	~~452.12~~ 452.29
ABUT. NO. 4 (EAST)	~~451.25~~ 451.42	~~451.39~~ 451.56
ABUT. NO. 4 (WEST)	~~451.49~~ 451.65	~~451.59~~ 451.76

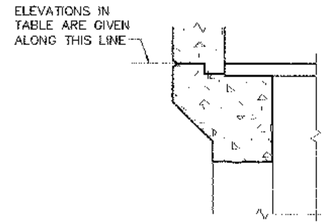
* NOTE: ELEVATIONS SHOWN ARE ALONG THE FASCIA OF THE WINGWALL CAP.



(ABUTMENTS 1 & 2 – EAST)
(ABUTMENTS 3 & 4 – WEST)

WINGWALL ELEVATION

N.T.S.

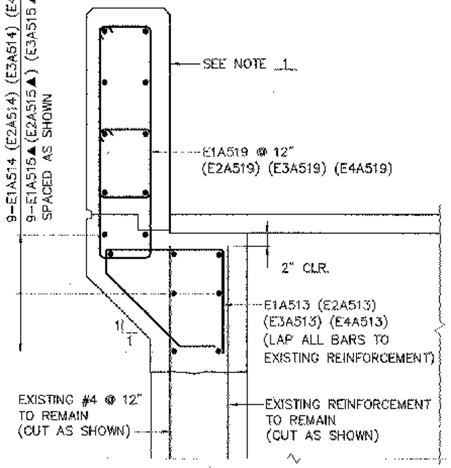


SECTION F–F

N.T.S.

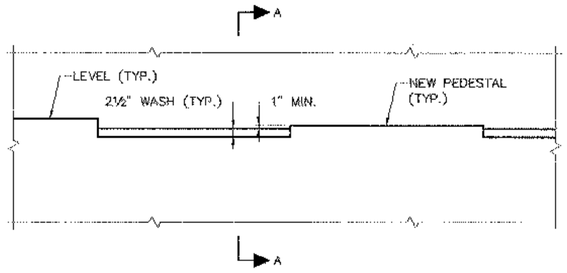
NOTE:

1. FOR DETAILS OF BARRIER CURB REINFORCING SEE SHEET 42.
2. FOR LOCATION OF SECTIONS C–C, D–D, AND E–E AND VIEW B–B SEE SHEETS 29, 30, AND 31.

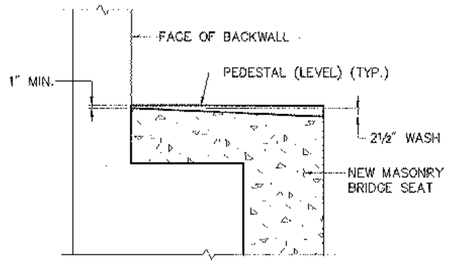


SECTION D–D

SCALE: 1" = 1'–0"



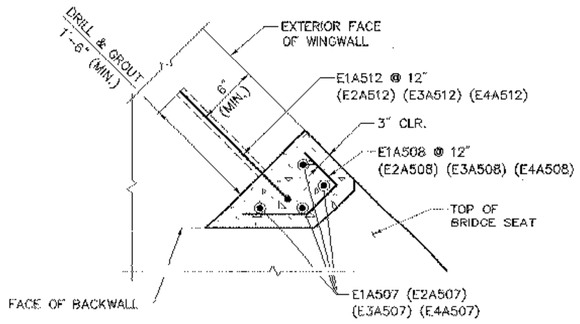
ELEVATION



SECTION A–A

PEDESTAL DETAILS

SCALE: ½" = 1'–0"



SECTION E–E

SCALE: 1" = 1'–0"

KEY:

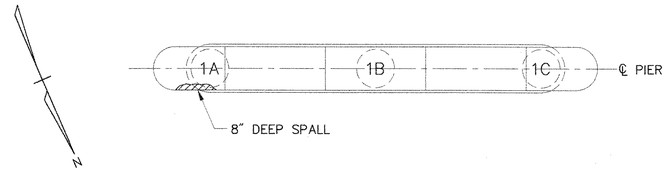
N.F. – NEAR FACE
F.F. – FAR FACE
E.F. – EACH FACE
▲ – DENOTES BARS TO BE CUT IN FIELD

STATE OF VERMONT
AGENCY OF TRANSPORTATION

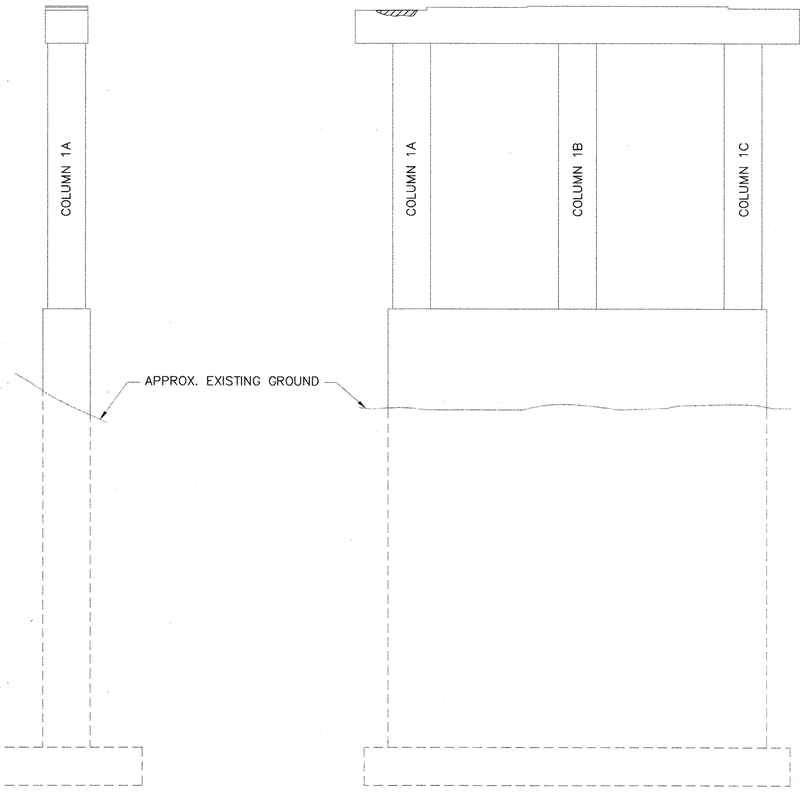
Town Of HARTFORD	Bridge No. 11N & 11S
	Log Sta.
Highway No. I–89 NB & SB	Surv. Sta.
I–89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
TYPICAL ABUTMENT DETAILS (2 OF 2)	
Designed By S.M. HODGDON	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699DT2	
Bridge Sheet No. 33	Sheet 33 of 101

VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9-28-98

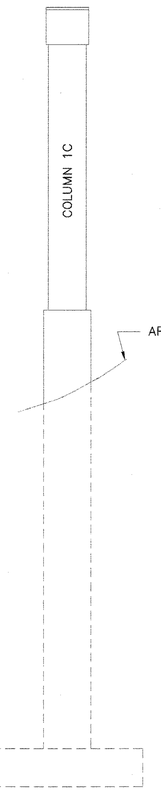


PLAN
SCALE: 1⁄8" = 1'–0"

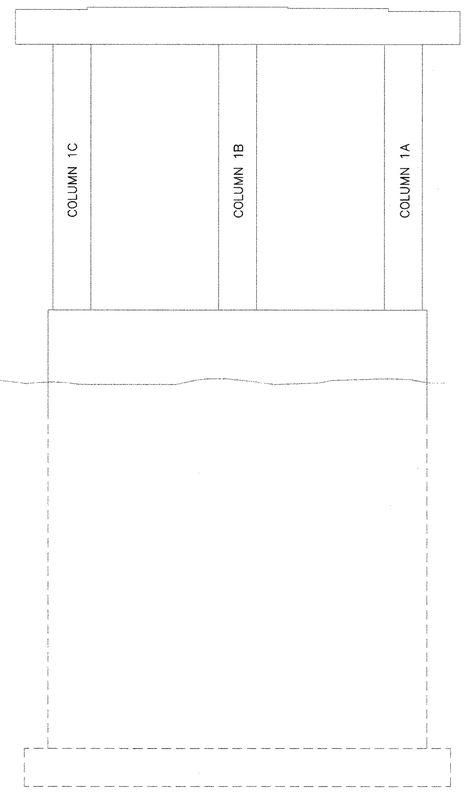


EAST END VIEW
SCALE: 1⁄8" = 1'–0"

NORTH ELEVATION
SCALE: 1⁄8" = 1'–0"



WEST END VIEW
SCALE: 1⁄8" = 1'–0"



SOUTH ELEVATION
SCALE: 1⁄8" = 1'–0"

KEY:

DELAMINATED AREAS

SPALLED AREAS

NOTES:

1. ONLY PIERS WITH DEFICIENCIES NOTED DURING THE INSPECTION ARE SHOWN.
2. SEE SHEET 22 FOR SUBSTRUCTURE CONCRETE REPAIR DETAILS.

VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

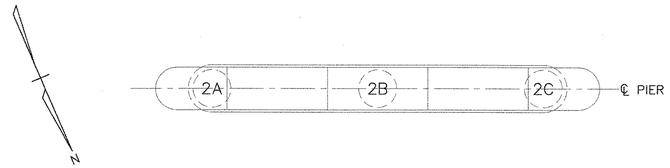
Town Of HARTFORD	Bridge No. 11S
Highway No. I–89 SB	Log Sta. / Surv. Sta.

I–89 SB OVER WHITE RIVER, VT 14 & NECR

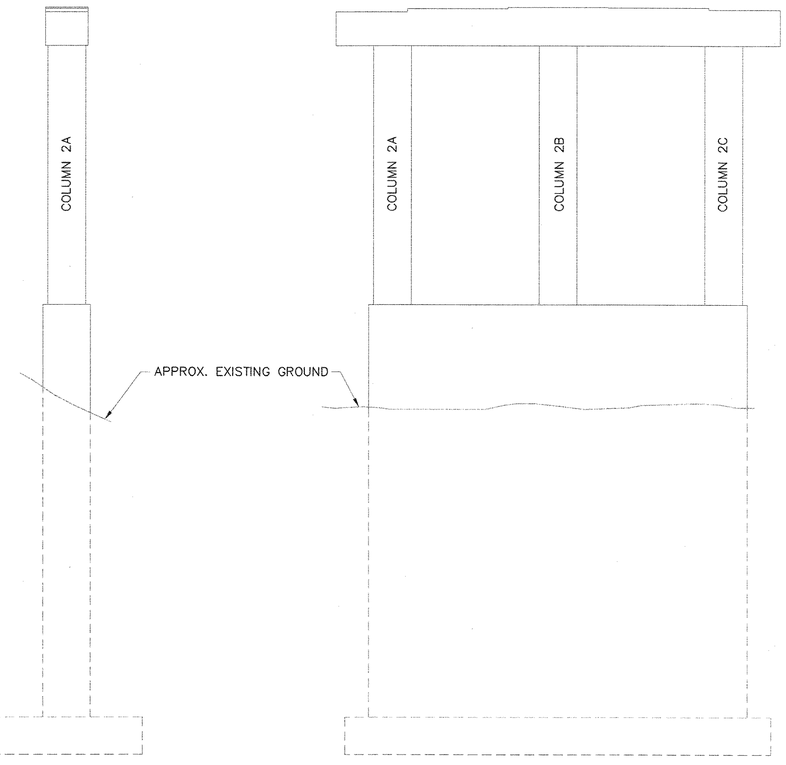
PIER 1 REPAIR AREAS

Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699P1	
Bridge Sheet No. 34	Sheet 34 of 101

PLOTTED 9–22–98

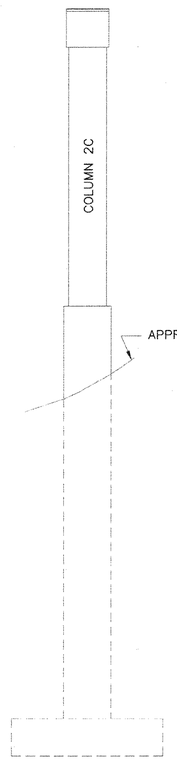


PLAN
SCALE: 1/8" = 1'-0"

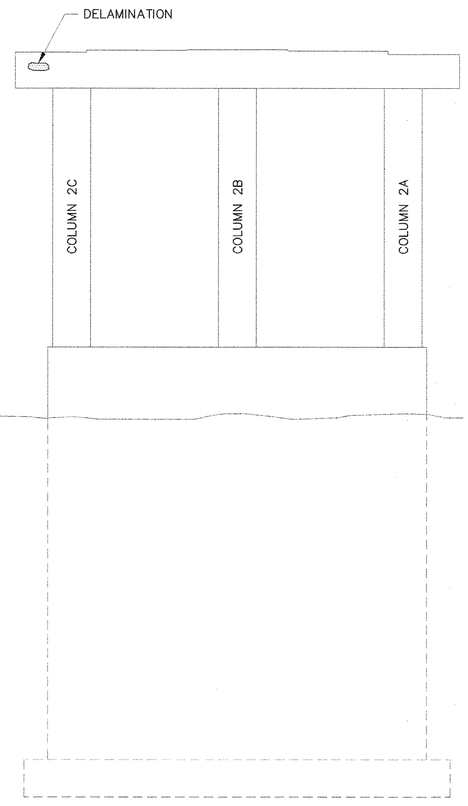


EAST END VIEW
SCALE: 1/8" = 1'-0"

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



WEST END VIEW
SCALE: 1/8" = 1'-0"



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

KEY:

- DELAMINATED AREAS
- SPALLED AREAS

NOTES:

1. ONLY PIERS WITH DEFICIENCIES NOTED DURING THE INSPECTION ARE SHOWN.
2. SEE SHEET 22 FOR SUBSTRUCTURE CONCRETE REPAIR DETAILS.

VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

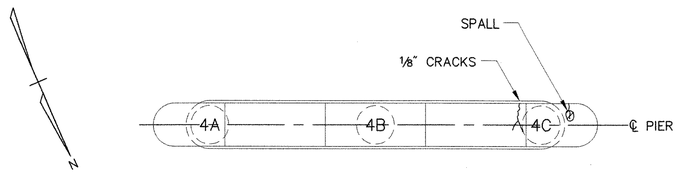
Town Of HARTFORD	Bridge No. 11N
	Log Sta.
Highway No. I-89 NB	Surv. Sta.

I-89 NB OVER WHITE RIVER, VT 14 & NECR

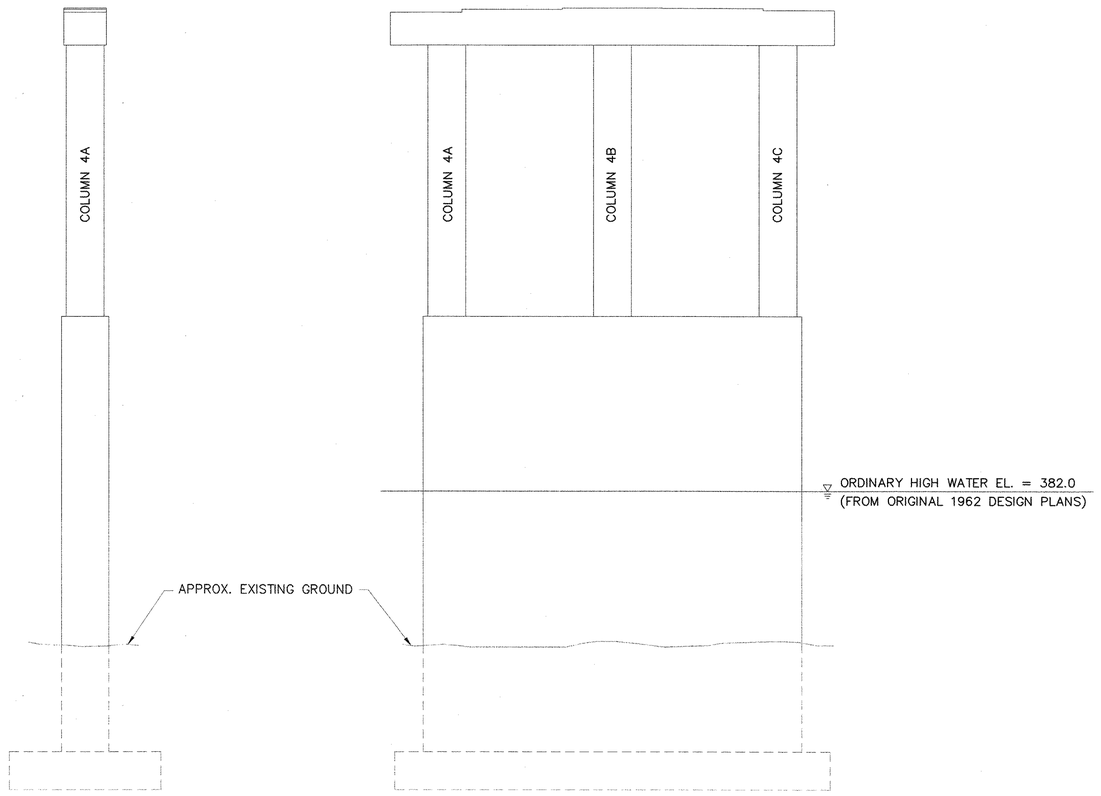
PIER 2 REPAIR AREAS

Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699P2	
Bridge Sheet No. 35	Sheet 35 of 101

PLOTTED 9 22 98

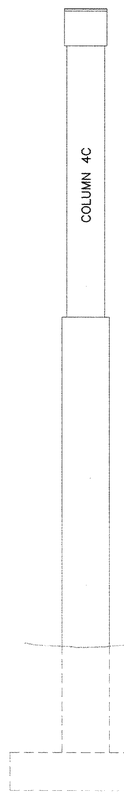


PLAN
SCALE: 1/8" = 1'-0"

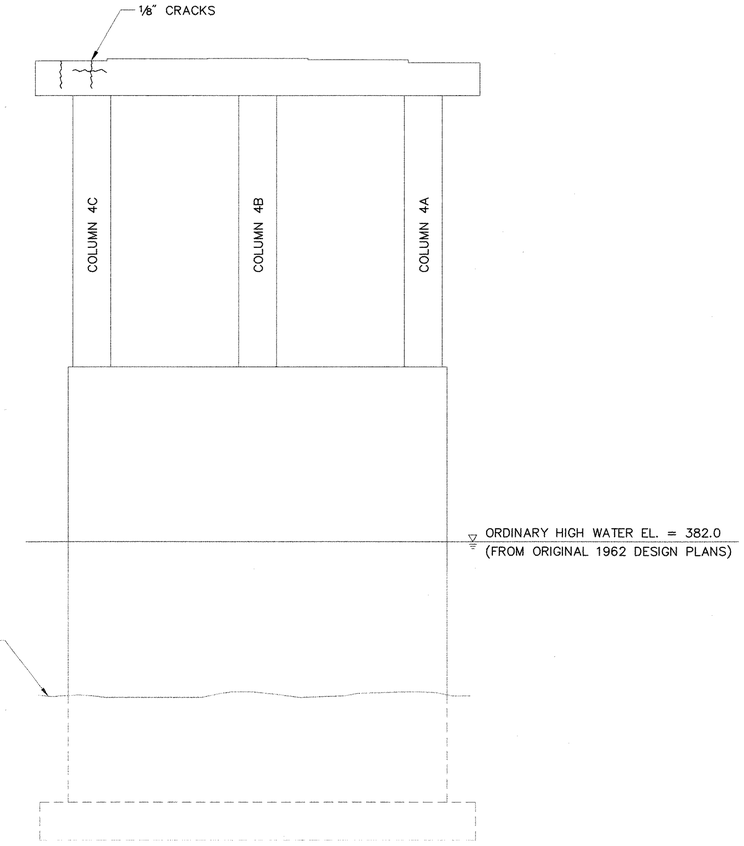


EAST END VIEW
SCALE: 1/8" = 1'-0"

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



WEST END VIEW
SCALE: 1/8" = 1'-0"



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

KEY:

DELAMINATED AREAS

SPALLED AREAS

NOTES:

1. ONLY PIERS WITH DEFICIENCIES NOTED DURING THE INSPECTION ARE SHOWN.
2. SEE SHEET 22 FOR SUBSTRUCTURE CONCRETE REPAIR DETAILS.

VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

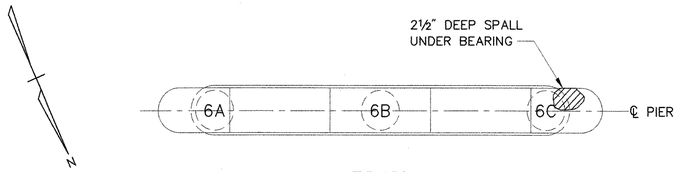
Town Of HARTFORD	Bridge No. 11N
	Log Sta.
Highway No. I-89 NB	Surv. Sta.

I-89 NB OVER WHITE RIVER, VT 14 & NECR

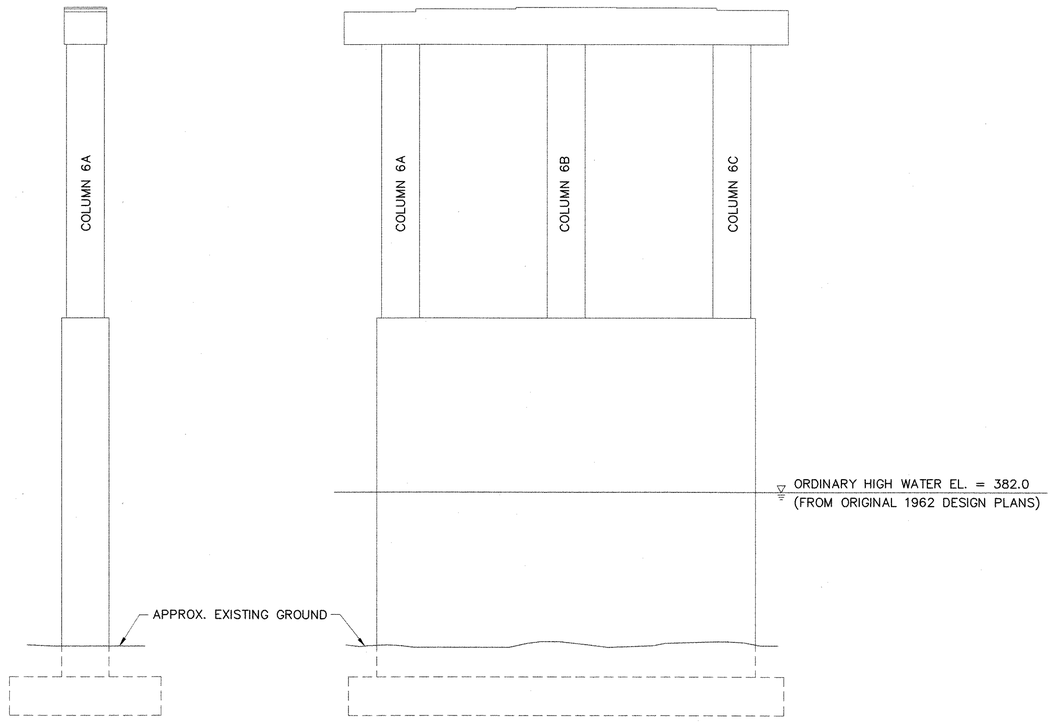
PIER 4 REPAIR AREAS

Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699P4	
Bridge Sheet No. 36	Sheet 36 of 101

PLOTTED 9 22 98

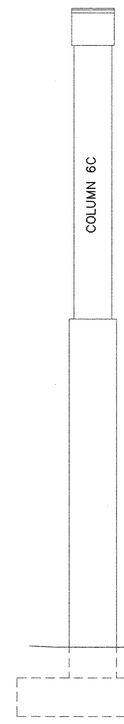


PLAN
SCALE: ⅛" = 1'–0"

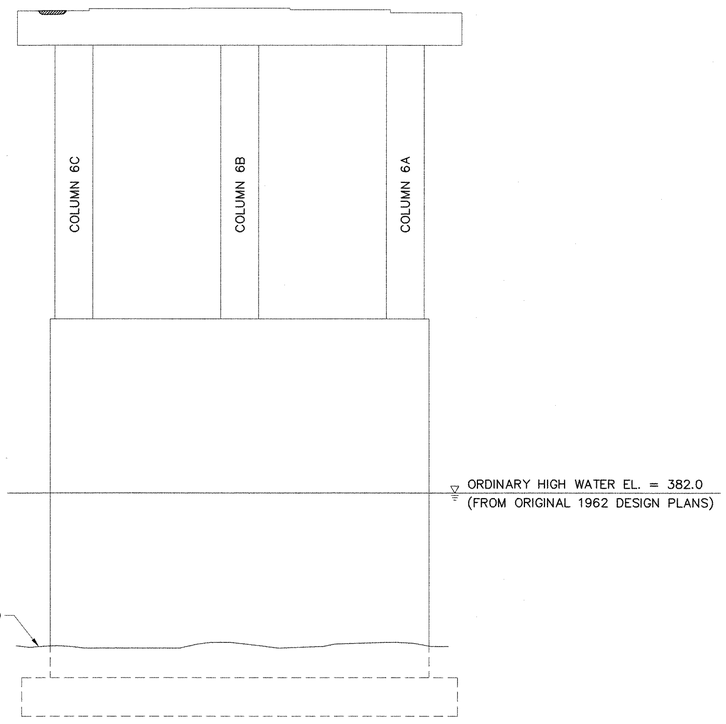


EAST END VIEW
SCALE: ⅛" = 1'–0"

NORTH ELEVATION
SCALE: ⅛" = 1'–0"



EAST END VIEW
SCALE: ⅛" = 1'–0"



SOUTH ELEVATION
SCALE: ⅛" = 1'–0"

KEY:

- DELAMINATED AREAS
- SPALLED AREAS

NOTES:

1. ONLY PIERS WITH DEFICIENCIES NOTED DURING THE INSPECTION ARE SHOWN.
2. SEE SHEET 22 FOR SUBSTRUCTURE CONCRETE REPAIR DETAILS.

VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

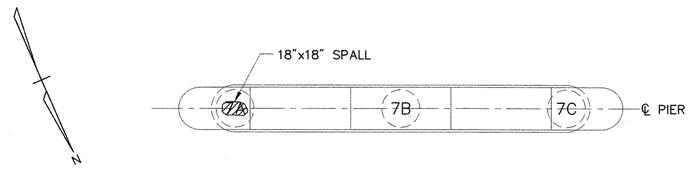
Town Of HARTFORD	Bridge No. 11N
	Log Sta.
Highway No. I–89 NB	Surv. Sta.

I–89 NB OVER WHITE RIVER, VT 14 & NECR

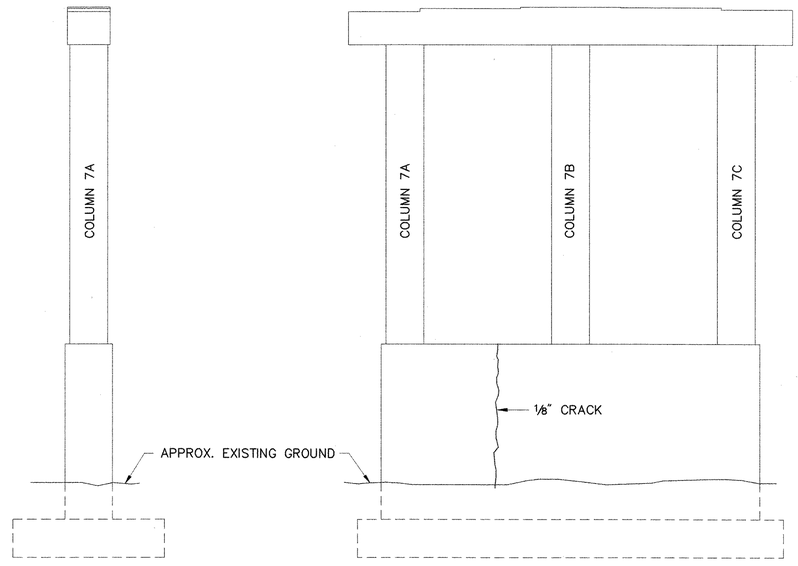
PIER 6 REPAIR AREAS

Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By Date S.M. HODGDON 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699P6	
Bridge Sheet No. 37	Sheet 37 of 101

PLOTTED 9–22–98

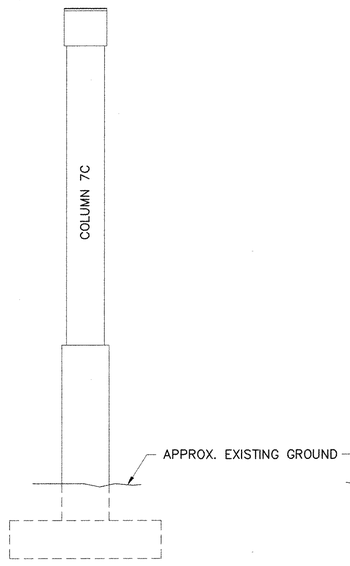


PLAN
SCALE: 1/8" = 1'-0"

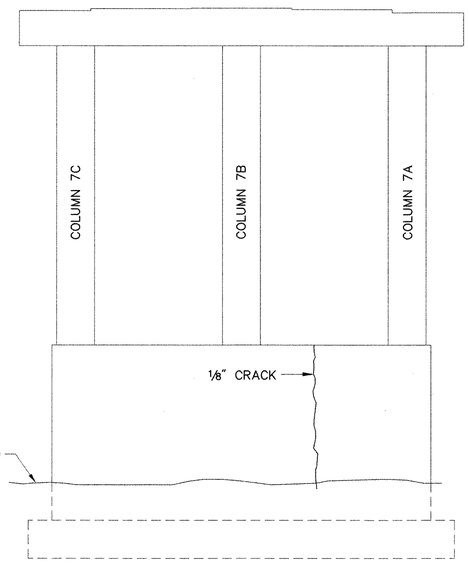


EAST END VIEW
SCALE: 1/8" = 1'-0"

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



WEST END VIEW
SCALE: 1/8" = 1'-0"



SOUTH ELEVATION
SCALE: 1/8" = 1'0"

KEY:

DELAMINATED AREAS

SPALLED AREAS

NOTES:

1. ONLY PIERS WITH DEFICIENCIES NOTED DURING THE INSPECTION ARE SHOWN.
2. SEE SHEET 22 FOR SUBSTRUCTURE CONCRETE REPAIR DETAILS.

VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

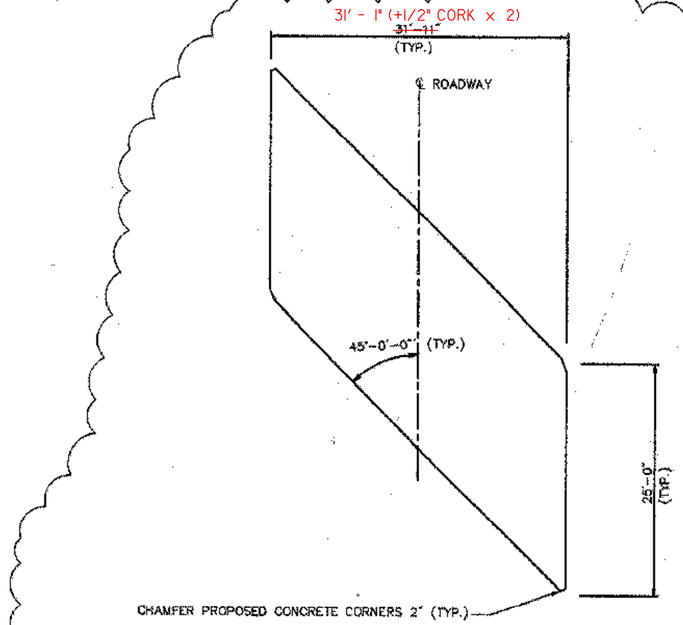
Town Of HARTFORD	Bridge No. 11S
	Log Sta.
Highway No. I-89 SB	Surv. Sta.

I-89 SB OVER WHITE RIVER, VT 14 & NECR

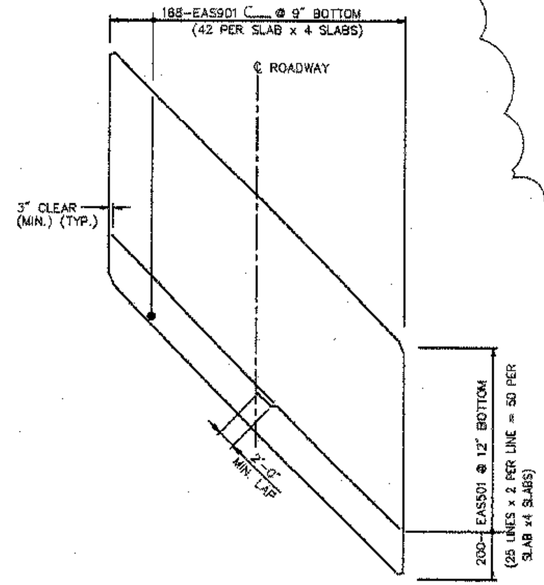
PIER 7 REPAIR AREAS

Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699P7	
Bridge Sheet No. 38	Sheet 38 of 101

PLOTTED 9-22-98

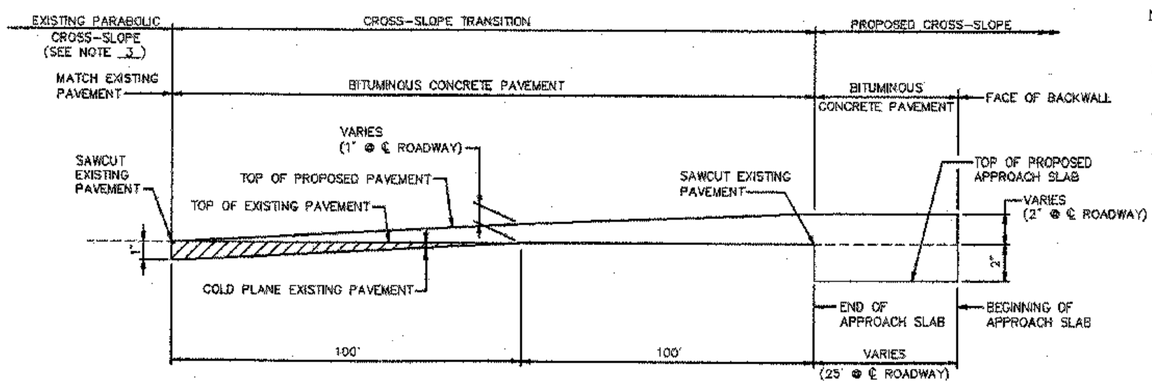


TYPICAL PROPOSED APPROACH SLAB MASONRY PLAN
SCALE: 1/8" = 1'-0"



TYPICAL PROPOSED APPROACH SLAB REINFORCEMENT PLAN
SCALE: 1/8" = 1'-0"

APPROACH SLAB REPLACEMENT
REVISIONS 6/99



APPROACH PAVEMENT TRANSITION DETAIL
N.T.S.

NOTES:

1. SEE SHEET 32 FOR DETAILS OF APPROACH SLAB REMOVAL.
2. SEE SHEET 32 FOR DETAILS OF APPROACH SLAB RECONSTRUCTION.
3. BASED ON EXISTING BRIDGE PLANS, THE ROADWAY APPROACH SECTIONS ARE ASSUMED TO HAVE A PARABOLIC CROSS SLOPE.
4. BOTH APPROACH SLABS ON BRIDGE 11N AND BRIDGE 11S SHALL BE REPLACED ACCORDING TO THE NOTES AND DETAILS ON THIS SHEET.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & S
Highway No. I-89 NB & SB	Log Sta.
	Surv. Sta.

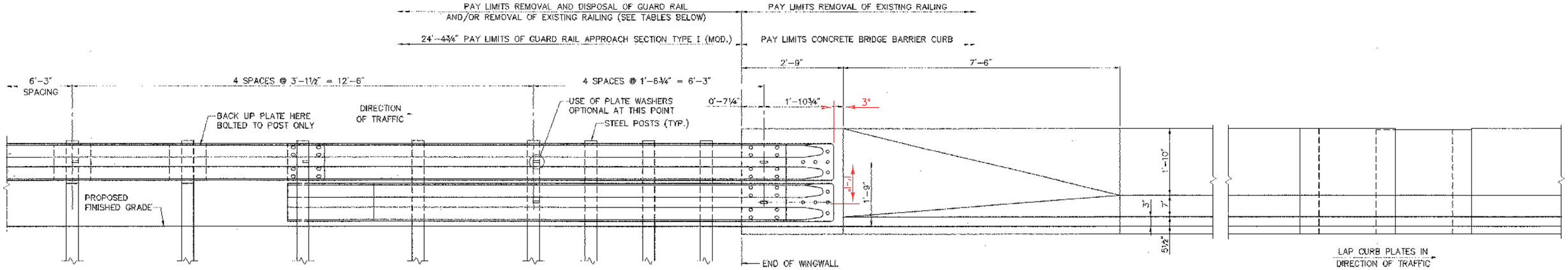
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR

APP. SLAB PLANS & PVMT. TRANSITION DETAILS

Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 6/99
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50889ASDRrev	
Bridge Sheet No. 39R	Sheet 39R of 101

VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 6/99



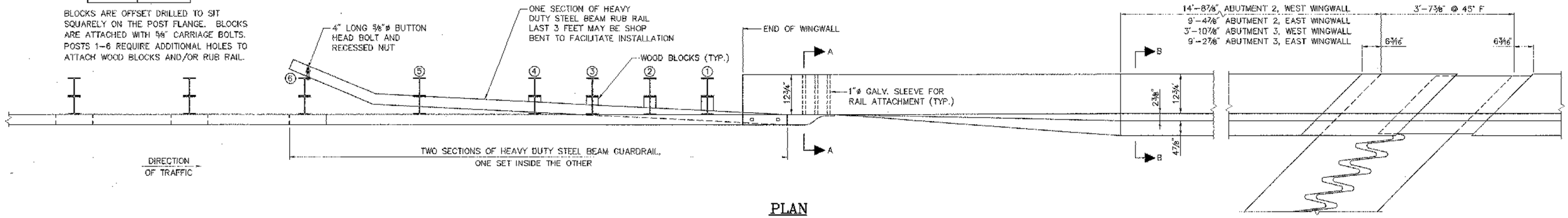
ELEVATION

SCALE: ¾" = 1'-0"

RUB RAIL WOOD BLOCKS (14"x4½")

POST NO.	THICKNESS
1	5"
2	4"
3	3"
4	2"

BLOCKS ARE OFFSET DRILLED TO SIT SQUARELY ON THE POST FLANGE. BLOCKS ARE ATTACHED WITH ⅝" CARRIAGE BOLTS. POSTS 1-6 REQUIRE ADDITIONAL HOLES TO ATTACH WOOD BLOCKS AND/OR RUB RAIL.



PLAN

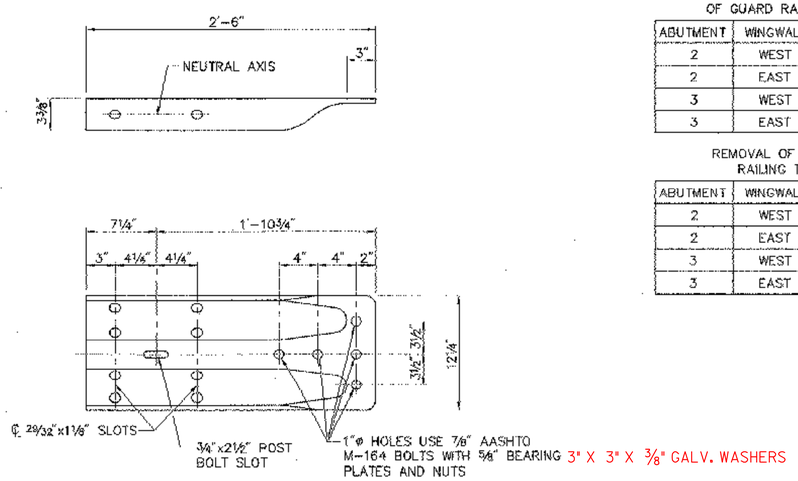
SCALE: ¾" = 1'-0"

REMOVAL AND DISPOSAL OF GUARD RAIL TABLE

ABUTMENT	WINGWALL	LENGTH (FT.)
2	WEST	25
2	EAST	25
3	WEST	12.5
3	EAST	0

REMOVAL OF EXISTING RAILING TABLE

ABUTMENT	WINGWALL	LENGTH (FT.)
2	WEST	25
2	EAST	25
3	WEST	150
3	EAST	225



TERMINAL CONNECTOR DETAIL

N.T.S.

NOTES:

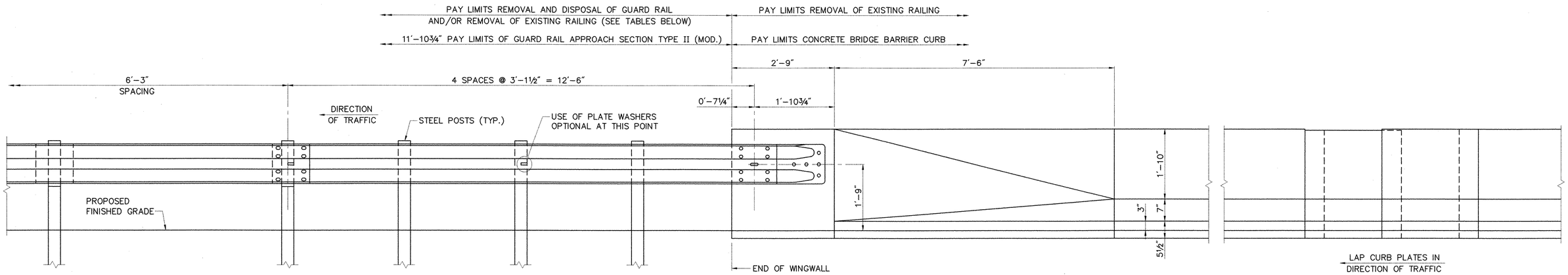
1. SEE SHEET 45 FOR GUARD RAIL APPROACHES LAYOUT.
2. SEE SHEET 42 FOR SECTIONS A-A AND B-B.
3. SEE SHEET 42 FOR BRIDGE BARRIER CURB END DETAILS.
4. THE TERMINAL CONNECTOR AND ALL THE HARDWARE NECESSARY TO ATTACH THE APPROACH RAIL SECTIONS TO THE CONCRETE BRIDGE BARRIER CURB SHALL BE INCLUDED IN THE BID PRICE FOR GUARD RAIL APPROACH SECTION TYPE I (MOD).

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & S
Highway No. I-89 NB & SB	Log Sta. / Surv. Sta.
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
GUARD RAIL APPROACH SECTION TYPE I (MOD.)	
Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699RL	
Bridge Sheet No. 40	Sheet 40 of 101

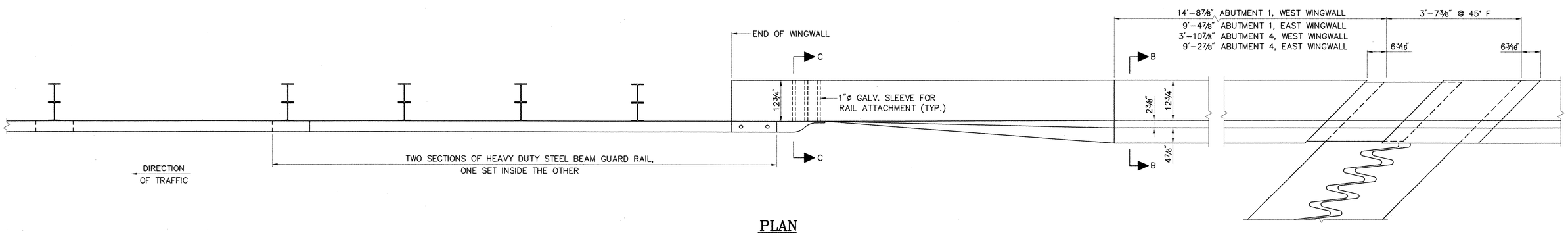
VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9-22-98



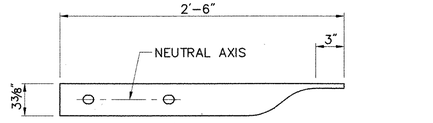
ELEVATION

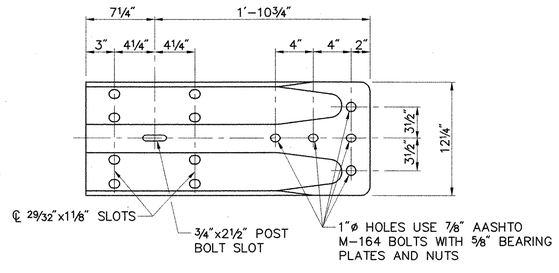
SCALE: ¾" = 1'-0"



PLAN

SCALE: ¾" = 1'-0"





TERMINAL CONNECTOR DETAIL

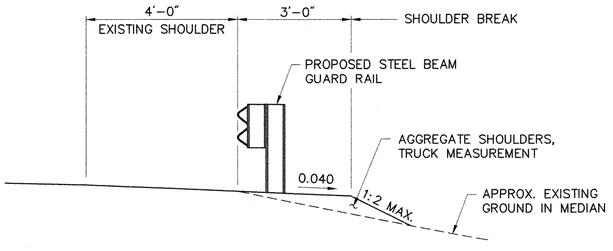
N.T.S.

REMOVAL AND DISPOSAL
OF GUARD RAIL TABLE

ABUTMENT	WINGWALL	LENGTH (FT.)
1	WEST	25
1	EAST	0
4	WEST	0
4	EAST	0

REMOVAL OF EXISTING
RAILING TABLE

ABUTMENT	WINGWALL	LENGTH (FT.)
1	WEST	25
1	EAST	0
4	WEST	115
4	EAST	115



TYPICAL SHOULDER WIDENING DETAIL

SCALE: ½" = 1'-0"

NOTES:

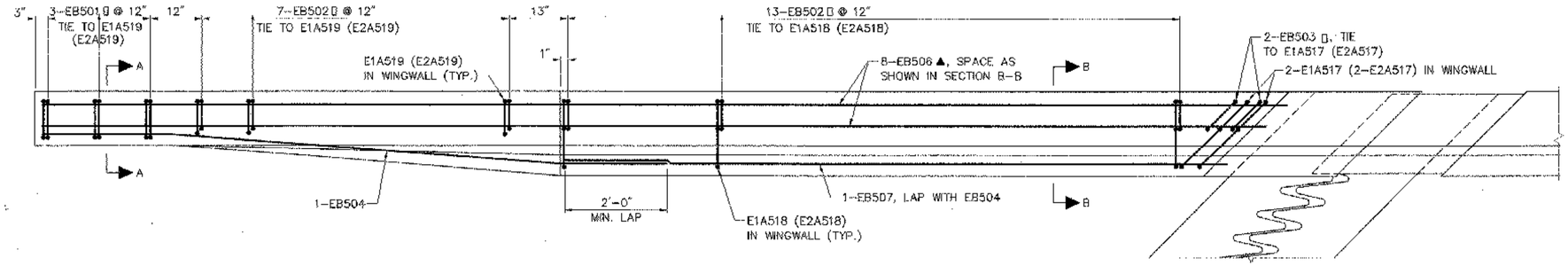
1. SEE SHEET 45 FOR GUARD RAIL APPROACHES LAYOUT.
2. SEE SHEET 42 FOR SECTIONS B-B AND C-C.
3. SEE SHEET 42 FOR BRIDGE BARRIER CURB END DETAILS.
4. THE TERMINAL CONNECTOR AND ALL THE HARDWARE NECESSARY TO ATTACH THE APPROACH RAIL SECTIONS TO THE CONCRETE BRIDGE BARRIER CURB SHALL BE INCLUDED IN THE BID PRICE FOR GUARD RAIL APPROACH SECTION TYPE II (MOD.)

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & 11S
Highway No. I-89 NB & SB	Log Sta. / Surv. Sta.
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
GUARD RAIL APPROACH SECTION TYPE II (MOD.)	
Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699RL1	
Bridge Sheet No. 41	Sheet 41 of 101

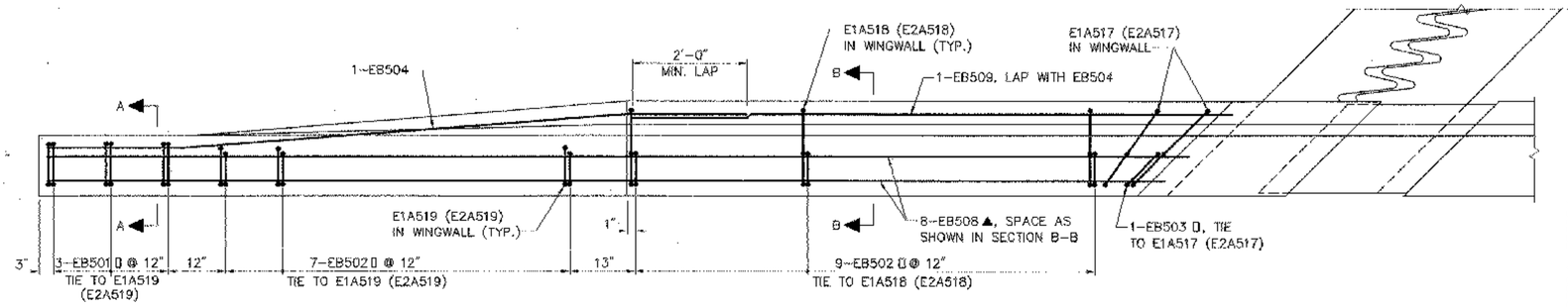
VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9-22-98



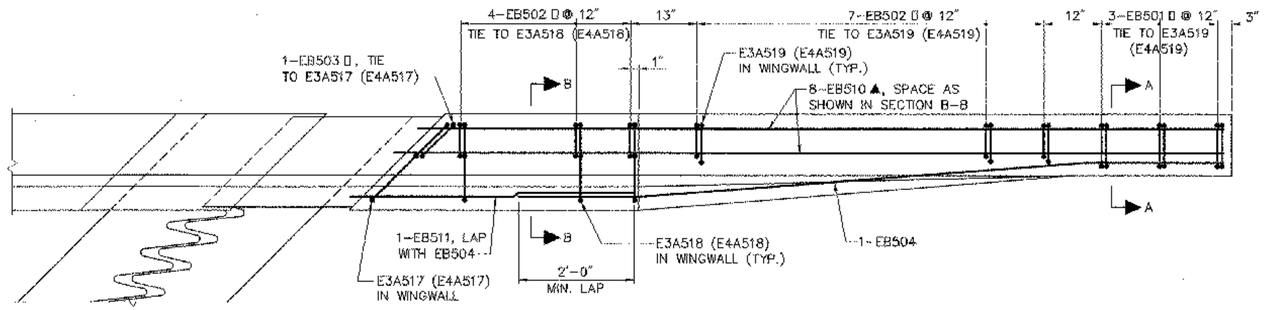
ABUT. 1 & 2 WEST WINGWALL PLAN

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



ABUT. 1 & 2 EAST WINGWALL PLAN

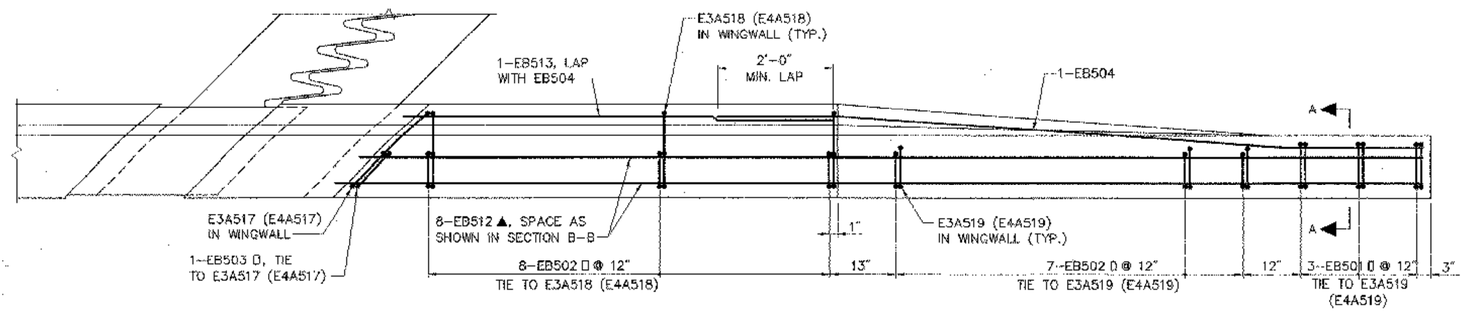
SCALE: 3/4" = 1'-0"



ABUT. 3 & 4 WEST WINGWALL PLAN

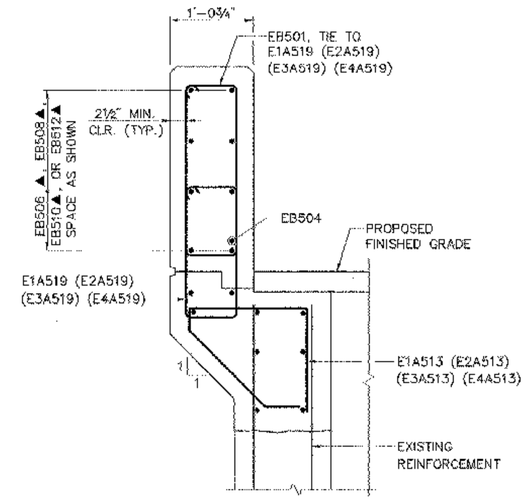
SCALE: 3/4" = 1'-0"

LAP CURB PLATES IN
DIRECTION OF TRAFFIC



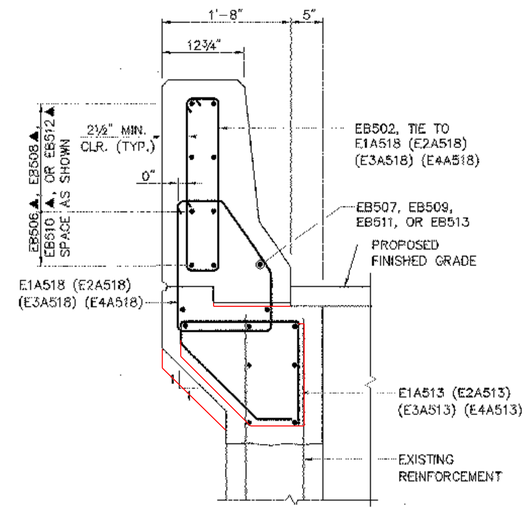
ABUT. 3 & 4 EAST WINGWALL PLAN

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



SECTION A-A

SCALE: 1" = 1'-0"



SECTION B-B

SCALE: 1" = 1'-0"

NOTES:

1. SEE SHEETS 27 & 28 FOR WINGWALL MASONRY DIMENSION.
2. SEE SHEETS 29 - 33 FOR WINGWALL REINFORCING STEEL LAYOUT AND DETAILS.
3. BAR MARKS IN PARENTHESES APPLY TO OTHER ABUTMENTS.
   "1A" = ABUTMENT 1
   "2A" = ABUTMENT 2
   "3A" = ABUTMENT 3
   "4A" = ABUTMENT 4
4. NUMBER OF BARS SHOWN IN PLAN ARE FOR ONE BARRIER CURB ON ONE WINGWALL ONLY.

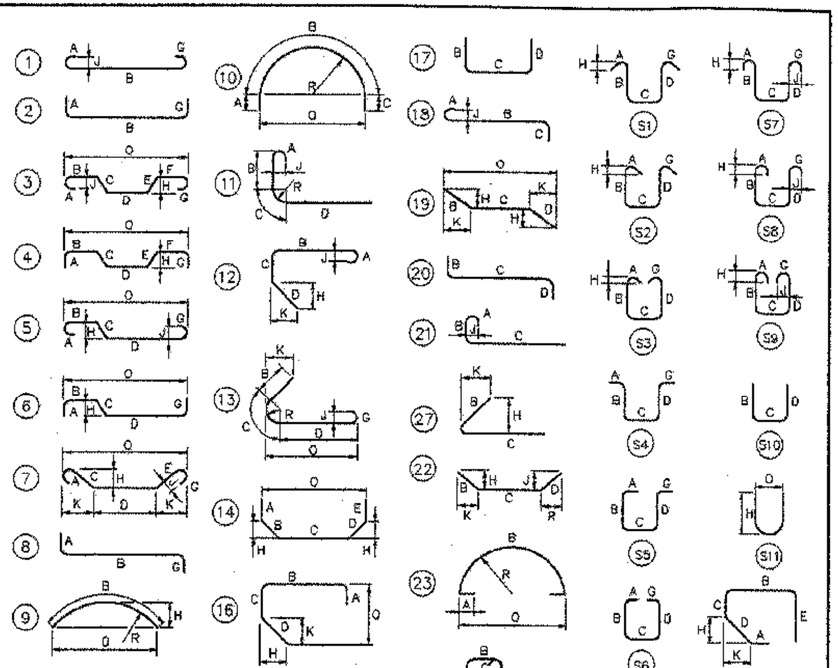
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & S
Highway No. I-89 NB & SB	Log Sta. / Surv. Sta.
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
BARRIER CURB END REINFORCEMENT	
Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699RLR	
VANASSE HANGEN BRUSTLIN, INC.	Bridge Sheet No. 42 Sheet 42 of 101

PLOTTED 9-22-98

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	Q
1				BRIDGE NO. 11S													
2				ABUTMENT 1													
3																	
4	120	5	3'-0"	E1A501	STR												
5	20	5	24'-8"	E1A502	STR												
6 ▲△	6	5	7'-0"	E1A504	STR												
7 *	5	5	8'-8"	E1A507	STR												
8	45	5	7'-9"	E1A510	STR	0'-7"	2'-0"										
9	14	5	25'-9"	E1A511	STR												
10 *	10	5	20'-6"	E1A514	STR												
11 ▲	9	5	24'-6"	E1A515	STR												
12																	
13 ▲	57	5	8'-5"	E1A503	17		4'-7"	3'-10"	0'-0"								
14	8	5	3'-6"	E1A505	19		1'-9"	1'-9"	0'-0"								3'-0"
15	5	5	4'-7"	E1A508	16	0'-0"	2'-0"	0'-7"	2'-0"								2'-0"
16	8	5	2'-0"	E1A508	16	0'-0"	0'-8"	0'-5"	0'-11"								1'-0¾"
17 ▲	48	5	4'-7"	E1A508	17		1'-8"	1'-1"	1'-9"								
18	36	5	2'-10"	E1A512	2	0'-10"	2'-0"					0'-0"					
19	44	5	8'-2"	E1A513	S13	0'-6"	1'-8"	0'-6"	1'-2"	1'-4"			0'-10"		0'-10"		
20	2	5	3'-4½"	E1A516	16	0'-0"	1'-8"	0'-4½"	1'-6"								1'-5¼"
21	4	5	7'-11½"	E1A517	T10	0'-6"	0'-10"	1'-3½"	1'-1"	1'-9"	2'-0"	0'-8"	0'-11"		0'-11"		
22	22	5	7'-1"	E1A518	T10	0'-6"	0'-7"	1'-2"	1'-1"	1'-3"	2'-0"	0'-8"	0'-8"		0'-11½"		
23	20	5	6'-3"	E1A518	T1	0'-6"	0'-7½"	2'-0"	0'-7½"	2'-0"		0'-6"					
24																	
25	16	8	2'-10"	E1A801	17		1'-4"	1'-6"	0'-0"								
26	32		3'-0"														
27				ABUTMENT 3													
28																	
29	61	5	3'-0"	E3A501	STR												
30	25	5	24'-8"	E3A502	STR												
31 ▲	4	5	7'-0"	E3A504	STR												
32	4	5	8'-8"	E3A507	STR												
33	45	5	7'-9"	E3A510	STR	0'-7"	2'-0"										
34	14	5	25'-9"	E3A511	STR												
35	6	5	18'-0"	E3A514	STR												
36 ▲	9	5	19'-0"	E3A515	STR												
37																	
38	88	8	3'-0"	E3A802	STR												
39																	
40 ▲△	59	5	10'-11"	E3A503	17		4'-7"	6'-4"	0'-0"								
41	11	5	3'-8"	E3A505	19		1'-9"	1'-9"	0'-0"								3'-0"
42	8	5	4'-7"	E3A506	16	0'-0"	2'-0"	0'-7"	2'-0"								2'-0"
43	8	5	2'-0"	E3A508	16	0'-0"	0'-8"	0'-5"	0'-11"								1'-0¾"
44 ▲	48	5	4'-7"	E3A509	17		1'-8"	1'-1"	1'-9"								
45	5	5	2'-10"	E3A512	2	0'-10"	2'-0"					0'-0"					
46	32	5	8'-2"	E3A513	S13	0'-6"	1'-8"	0'-6"	1'-2"	1'-4"			0'-10"		0'-10"		
47	2	5	3'-4½"	E3A516	16	0'-0"	1'-8"	0'-4½"	1'-6"								1'-5¼"
48	2	5	7'-11½"	E3A517	T10	0'-6"	0'-10"	1'-3½"	1'-1"	1'-9"	2'-0"	0'-8"	0'-11"		0'-11"		
49	12	5	7'-1"	E3A518	T10	0'-6"	0'-7"	1'-2"	1'-1"	1'-3"	2'-0"	0'-6"	0'-8"		0'-11½"		
50	20	5	6'-3"	E3A518	T1	0'-6"	0'-7½"	2'-0"	0'-7½"	2'-0"		0'-6"					
51 △	46	5	9'-11"	E3A520	17		2'-9"	8'-4"	0'-0"								
52	46	5	7'-8"	E3A521	17		3'-0"	1'-8"	3'-0"								
53																	
54	18	8	2'-10"	E3A801	17		1'-4"	1'-6"	0'-0"								
55	22		3'-0"														
56				EXPANSION PIER PEDESTALS													
57																	
58	80	11	1'-6"	P1101	STR												
59																	
60	32	5	8'-4"	P901	14	2'-0"	1'-8½"	0'-11"	1'-8½"	2'-0"			1'-2½"				3'-4"
61	32	5	7'-4"	P902	17		2'-0"	3'-4"	2'-0"								
62	16	5	5'-3"	P903	17		1'-6½"	2'-2"	1'-6½"								
63	16	5	6'-3"	P904	17		1'-6½"	3'-2"	1'-6½"								
64	8	5	4'-11"	P905	17		1'-5½"	2'-0"	1'-5½"								
65	40	5	6'-1"	P906	17		1'-5½"	3'-2"	1'-5½"								
66	48	5	14'-4"	P907	T1	0'-6"	3'-4"	3'-4"	3'-4"	3'-4"		0'-6"					
67	48	5	6'-3"	P908	17		1'-6½"	3'-2"	1'-6½"								
68																	
69				FIXED PIER BEARING ENCASEMENTS													
70																	
71	40	9	2'-8"	FP901	STR												
72																	
73	8	5	10'-4"	FP501	14	3'-0"	1'-8½"	0'-11"	1'-8½"	3'-0"			1'-2½"				3'-4"
74	8	5	9'-4"	FP502	17		3'-0"	3'-4"	3'-0"								
75	4	5	5'-10"	FP503	17		1'-3½"	3'-3"	1'-3½"								
76	4	5	6'-5"	FP504	17		1'-3½"	3'-10"	1'-3½"								
77	2	5	2'-10½"	FP505	17		1'-7"	1'-3½"	0'-0"								
78	2	5	5'-3"	FP506	17		1'-2"	2'-11"	1'-2"								
79	2	5	6'-4"	FP507	17		1'-2"	4'-0"	1'-2"								
80	2	5	4'-7"	FP508	17		1'-2½"	2'-2"	1'-2½"								
81	8	5	5'-7½"	FP509	17		1'-2½"	3'-2½"	1'-2½"								
82	18	5	10'-0"	FP510	17		3'-4"	3'-4"	3'-4"								
83	12	5	5'-9½"	FP511	17		1'-3½"	3'-2½"	1'-3½"								
84	8	5	5'-7½"	FP512	17		1'-2½"	3'-2½"	1'-2½"								
85	6	5	4'-7"	FP513	17		1'-2"	2'-3"	1'-2"								
86																	
87																	
88																	
89																	
90																	
91																	
92																	
93																	
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ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	Q
100				BRIDGE NO. 11S													
101				DECK SLAB													
102																	
103	2034	5	34'-11"	ES501	STR												
104	2	5	2'-11"	ES504	STR												
105	↓	↓	↓	↓	↓	VARY IN 63 EQUAL INCREMENTS											
106	2	5	34'-5"	ES507	STR												
107	2835	5	40'-0"	ES502	STR												
108	105	5	26'-0"	ES503	STR												
109 △	34	5	8'-3"	ES513	STR												
110	4	5	25'-8"	ES513	STR												
111 △	14	5	9'-0"	ES513	STR												
112																	
113	374	6	40'-0"	ES601	STR												
114	68	6	26'-0"	ES602	STR												
115	68	6	31'-0"	ES603	STR												
116 △	70	6	11'-0"	ES604	STR												
117	36																
118 △	2038	3	15'-4"	ES502	1	0'-7"	14'-9"										
119	2034	5	22'-10"	ES503	1	0'-7"	22'-3"										
120	2	5	3'-6"	ES568	1	0'-7"	2'-11"										
121	↓	↓	↓	↓	↓	VARY IN 63 EQUAL INCREMENTS											
122	2	5	35'-0"	ES513	1	0'-7"	36'-5"										
123	2098	9	7'-1"	ES5134	T10	0'-6"	0'-7"	1'-2"	1'-1"	1'-3"	2'-0"	0'-8"	0'-8"		0'-11½"		
124	2098	5	6'-9"	ES5135	T1	0'-6"	0'-7½"	2'-3"	0'-7½"	2'-3"		0'-8"					
125	48	5	6'-6"	ES5136	S6	2'-0"	0'-7"	2'-10"	0'-7"			0'-6"					
126	6	3	8'-0"	ES5140	T10	0'-9"	0'-10"	1'-4"	1'-1"	1'-8"	2'-0"	0'-6"	0'-11"		0'-11½"		
127	8	3	7'-2"	ES5141	T1	0'-6"	0'-10"	2'-3"	0'-10"	2'-3"		0'-6"					
128																	
129				APPROACH SLABS													
130																	
131 △	102	5	23'-4"	EAS501	STR												
132	84	9	25'-7"	EAS901	18	6"	24'-3"								10"		
133				BARRIER CURB ENDS													
134																	
135 ▲	8	5	24'-6"	EB506	STR												
136	1	5	13'-0"	EB507	STR												
137 ▲	8	5	19'-2"	EB508	STR												
138 △	3	5	11'-6"	EB509	STR												
139 ▲	8	5	14'-3"	EB510	STR												
140	1	5	5'-0"	EB511	STR												
141 ▲	8	5	18'-9"	EB512	STR												
142	1	5	11'-6"	EB513	STR												
143																	
144	12	5	5'-9"	EB501	T1	0'-6"	0'-7½"	2'-3"	0'-7½"	2'-3"		0'-6"					
145	62	5	6'-9"	EB508	T1	0'-6"	0'-7½"	2'-3"	0'-7½"	2'-3"		0'-6"					
146	5	5	7'-3"	EB503	T1	0'-6"	0'-10½"	2'-3"	0'-10½"	2'-3"		0'-6"					
147	4	5	12'-6"	EB504	19		2'-6"	7'-6"	2'-6"				0'-2¼"		2'-6"		12'-6"
148																	
149																	
150	100	5	22'-3"	EAS501	STR												
151	100	5	22'-3"	EAS501	STR												
152	100	5	22'-3"	EAS501	STR												
153																	
154																	
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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 M 31 (ASTM A 615-S1). 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° AND 135° HOOKS.
5. "J" DIMENSION ON 180° 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. "E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.
8. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
9. * DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. ▲ DENOTES BARS TO BE CUT TO FIT IN FIELD.

ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	CROSS SECTIONAL AREA SQ. INCHES	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	7.650	1.693	2.25	5.320
#18	13.60	2.257	4.00	7.090

APPROACH SLAB REPLACEMENT
REVISIONS 6/99

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11S
Highway No. I-89 SB	Log Sta.
	Surv. Sta.

I-89 SB OVER WHITE RIVER, VT 14 & NECR

REINFORCING STEEL SCHEDULE (1 OF 2)

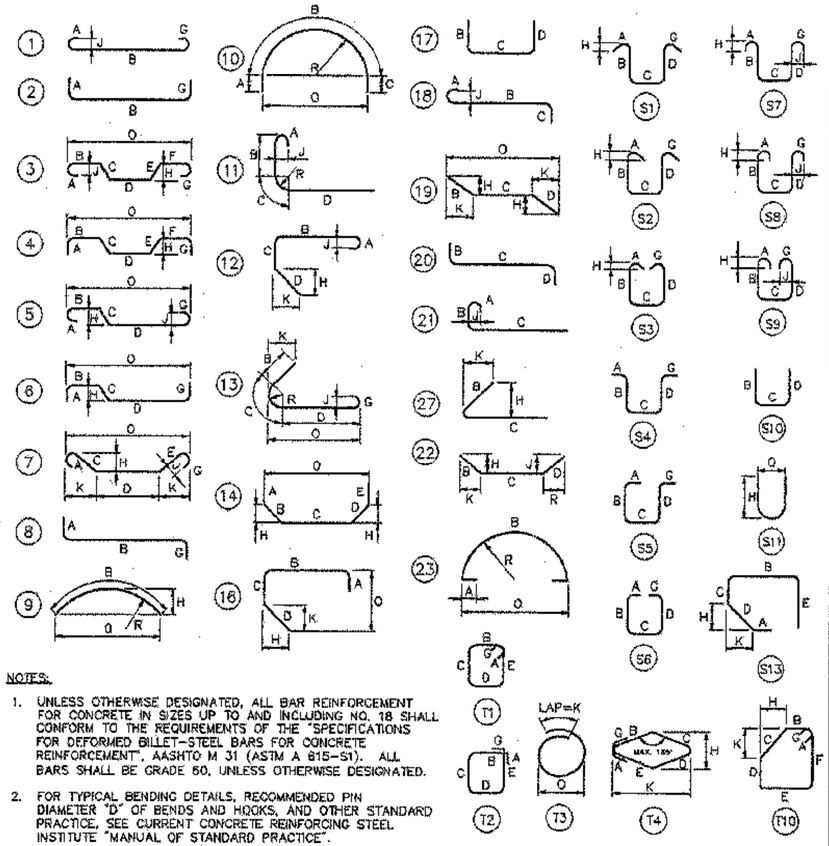
Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 6/99
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699REFREV	
Bridge Sheet No. 43R	Sheet 43 R of 101

VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 6/99

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
				BRIDGE NO. 11N													
				ABUTMENT 2													
4	120	5	3'-0"	E2A501	STR												
5	20	5	24'-8"	E2A502	STR												
△▲ 6	5	5	7'-0"	E2A504	STR												
* 7	5	5	8'-9"	E2A507	STR												
8	45	5	1'-9"	E2A510	STR												
9	14	5	25'-9"	E2A511	STR												
* 10	10	5	20'-6"	E2A514	STR												
▲ 11	9	5	24'-6"	E2A515	STR												
12																	
▲ 13	57	5	8'-5"	E2A503	17		4'-7"	3'-10"	0'-0"								
14	8	5	3'-8"	E2A505	19		1'-9"	1'-9"	0'-0"								3'-0"
15	5	5	4'-7"	E2A506	16	0'-0"	2'-0"	0'-7"	2'-0"								2'-0"
16	8	5	2'-0"	E2A508	16	0'-0"	0'-8"	0'-5"	0'-11"								1'-03/4"
▲ 17	46	5	4'-7"	E2A509	17		1'-9"	1'-1"	1'-9"								
18	36	5	2'-10"	E2A512	2	0'-10"	2'-0"					0'-0"					
19	44	5	3'-2"	E2A513	S13	0'-6"	1'-8"	0'-6"	1'-2"	1'-4"			0'-10"		0'-10"		
20	2	5	3'-4½"	E2A516	16	0'-0"	1'-6"	0'-4½"	1'-6"								1'-5¼"
21	4	5	7'-11½"	E2A517	T10	0'-6"	0'-10"	1'-3½"	1'-1"	1'-9"	2'-0"	0'-6"	0'-11"		0'-11"		
22	22	5	7'-1"	E2A518	T10	0'-6"	0'-7"	1'-2"	1'-1"	1'-3"	2'-0"	0'-8"	0'-8"		0'-11½"		
23	20	5	6'-3"	E2A519	T1	0'-6"	0'-7½"	2'-0"	0'-7½"	2'-0"		0'-6"					
24																	
25	15	8	2'-10"	E2A801	17		1'-4"	1'-6"	0'-0"								
26																	
27				ABUTMENT 4													
28																	
29	120	5	3'-0"	E4A501	STR												
* 30	27	5	24'-8"	E4A502	STR												
▲ 31	4	5	7'-0"	E4A504	STR												
△ 32	5	5	8'-9"	E4A507	STR												
33	45	5	1'-9"	E4A510	STR												
34	14	5	25'-9"	E4A511	STR												
* 35	10	5	15'-0"	E4A514	STR												
▲ 36	9	5	19'-0"	E4A515	STR												
37																	
▲ 38	57	5	10'-11"	E4A503	17		4'-7"	6'-4"	0'-0"								
39	11	5	3'-6"	E4A505	19		1'-9"	1'-9"	0'-0"								3'-0"
40	8	5	4'-7"	E4A506	16	0'-0"	2'-0"	0'-7"	2'-0"								2'-0"
41	8	5	2'-0"	E4A508	16	0'-0"	0'-8"	0'-5"	0'-11"								1'-03/4"
▲ 42	46	5	4'-7"	E4A509	17		1'-9"	1'-1"	1'-9"								
43	38	5	2'-10"	E4A512	2	0'-10"	2'-0"					0'-0"					
44	41	5	5'-2"	E4A513	S13	0'-6"	1'-8"	0'-6"	1'-2"	1'-4"			0'-10"		0'-10"		
45	2	5	3'-4½"	E4A516	16	0'-0"	1'-6"	0'-4½"	1'-6"								1'-5¼"
46	2	5	7'-11½"	E4A517	T10	0'-6"	0'-10"	1'-3½"	1'-1"	1'-9"	2'-0"	0'-6"	0'-11"		0'-11"		
47	12	5	7'-1"	E4A518	T10	0'-6"	0'-7"	1'-2"	1'-1"	1'-3"	2'-0"	0'-6"	0'-8"		0'-11½"		
48	20	5	6'-3"	E4A519	T1	0'-6"	0'-7½"	2'-0"	0'-7½"	2'-0"		0'-6"					
49																	
△ 50	15	8	2'-10"	E4A801	17		1'-4"	1'-6"	0'-0"								
51																	
52				EXPANSION PIER PEDESTALS													
53																	
54	80	11	1'-6"	P1101	STR												
55																	
56	32	5	8'-4"	P501	14	2'-0"	1'-8½"	0'-11"	1'-8½"	2'-0"			1'-2½"				3'-4"
57	32	5	7'-4"	P502	17		2'-0"	3'-4"	2'-0"								
58	16	5	5'-3"	P503	17		1'-6½"	2'-2"	1'-6½"								
59	16	5	6'-3"	P504	17		1'-6½"	3'-2"	1'-6½"								
60	8	5	4'-11"	P505	17		1'-5½"	2'-0"	1'-5½"								
61	40	5	6'-1"	P506	17		1'-5½"	3'-2"	1'-5½"								
62	48	5	14'-4"	P507	T1	0'-6"	3'-4"	3'-4"	3'-4"	3'-4"		0'-8"					
63	48	5	6'-3"	P508	17		1'-6½"	3'-2"	1'-6½"								
64																	
65				FIXED PIER BEARING ENCASEMENTS													
66																	
67	40	9	2'-8"	FP901	STR												
68																	
69	5	5	10'-4"	FP501	14	3'-0"	1'-5½"	0'-11"	1'-8½"	3'-0"			1'-2½"				3'-4"
70	6	5	9'-4"	FP502	17		3'-0"	3'-4"	3'-0"								
71	4	5	5'-10"	FP503	17		1'-3½"	3'-3"	1'-3½"								
72	4	5	6'-9"	FP504	17		1'-3½"	3'-10"	1'-3½"								
73	2	5	2'-10½"	FP505	17		1'-7"	1'-3½"	0'-0"								
74	2	5	5'-3"	FP506	17		1'-6"	2'-11"	1'-2"								
75	2	5	6'-4"	FP507	17		1'-2"	4'-0"	1'-2"								
76	2	5	4'-7"	FP508	17		1'-2½"	2'-2"	1'-2½"								
77	6	5	5'-7½"	FP509	17		1'-2½"	3'-2½"	1'-2½"								
78	18	5	10'-0"	FP510	17		3'-4"	3'-4"	3'-4"								
79	12	5	5'-9½"	FP511	17		1'-3½"	3'-2½"	1'-3½"								
80	6	5	5'-7½"	FP512	17		1'-2½"	3'-2½"	1'-2½"								
81	6	5	4'-7"	FP513	17		1'-2"	2'-3"	1'-2"								
82																	
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ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
100				BRIDGE NO. 11N													
101				DECK SLAB													
102																	
103	2034	5	34'-11"	ES501	STR												
104	2	5	2'-11"	ES504	STR												
105	↓	↓	↓	↓	↓	VARY IN 63 EQUAL INCREMENTS											
106	2	5	34'-5"	ES507	STR												
107	2835	5	40'-0"	ES5132	STR												
108	105	5	28'-0"	ES5133	STR												
△ 109	34	5	8'-3"	ES5137	STR												
110	4	5	25'-8"	ES5138	STR												
△ 111	14	5	6'-0"	ES5139	STR												
112																	
113	374	6	40'-0"	ES601	STR												
114	88	6	28'-0"	ES602	STR												
115	69	6	31'-0"	ES603	STR												
△ 116	70	6	11'-0"	ES604	STR												
117																	
△ 118	2036	5	15'-4"	ES502	1	0'-7"	14'-9"										
119	2034	5	22'-10"	ES503	1	0'-7"	22'-3"										
120	2	5	3'-6"	ES556	1	0'-7"	2'-11"										
121	↓	↓	↓	↓	↓	VARY IN 83 EQUAL INCREMENTS											
122	2	5	36'-0"	ES5131	1	0'-7"	34'-5"										
123	2088	5	7'-1"	ES5134	T10	0'-6"	0'-7"	1'-2"	1'-1"	1'-3"	2'-0"	0'-8"	0'-8"		0'-11½"		
124	2098	5	6'-9"	ES5135	T1	0'-6"	0'-7½"	2'-3"	0'-7½"	2'-3"		0'-6"					
125	45	5	6'-6"	ES5136	S6	2'-0"	0'-7"	2'-10"	0'-7"			0'-6"					
126	6	5	8'-0"	ES5140	T10	0'-6"	0'-10"	1'-4"	1'-1"	1'-9"	2'-0"	0'-6"	0'-11"		0'-11½"		
127	6	5	7'-2"	ES5141	T1	0'-6"	0'-10"	2'-3"	0'-10"	2'-3"		0'-6"					
128																	
129				APPROACH SLABS													
130																	
△ 131	102	8	23'-4"	EAS501	STR												
132	84	9	25'-7"	EAS801	18	6"	24'-3"										
133				BARRIER CURB ENDS													
134																	
▲ 135	8	5	24'-6"	EB506	STR												
136	1	5	13'-0"	EB507	STR												
▲ 137	8	5	19'-2"	EB508	STR												
△ 138	3	5	11'-6"	EB509	STR												
▲ 139	8	5	14'-3"	EB510	STR												
140	1	5	5'-0"	EB511	STR												
▲ 141	8	5	18'-9"	EB512	STR												
142	1	5	11'-6"	EB513	STR												
143																	
144	12	5	6'-9"	EB501	T1	0'-6"	0'-7½"	2'-3"	0'-7½"	2'-3"		0'-8"					
145	82	5	6'-9"	EB502	T1	0'-6"	0'-7½"	2'-3"	0'-7½"	2'-3"		0'-8"					
146	5	5	7'-3"	EB503	T1	0'-6"	0'-10½"	2'-3"	0'-10½"	2'-3"		0'-8"					
147	4	5	12'-6"	EB504	19		2'-6"	7'-6"	2'-6"				0'-2¼"		2'-6"		12'-9"
148																	
149																	
150																	
151																	
152																	
153																	
154																	
155																	
156																	
157																	
158				REINFORCING STEEL CHANGES FOR NEW APPROACH SLABS- BRIDGE NN (6-28-99)													
159																	
160				BRIDGE NN													
161																	
162																	
163																	
164				APPROACH SLAB 2													
165																	
166																	
167																	
168																	
169	5	5	23-4	E2A550I	STR •												
170	2	5	25-9	E2A5II	STR												
171				INCREASE IN QUANITY OF ABUT 2 BARS													
172																	
173																	
174																	
175																	
176				APPROACH SLAB 4													
177																	
178																	
179	5	5	23-4	E4AS50I	STR •												
180	2	5	25-9	E4A5II	STR												
181				INCREASE IN QUANITY OF ABUT 4 BARS													
182	43	9	25-6	E4AS90I	JB, I-3, 243												
183																	
184																	
185																	
186				• DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES													
187																	
188																	
189																	
190																	
191																	
192																	
193																	
194																	
195																	
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197																	
198																	



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 M 31 (ASTM A 615-S1). 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° AND 135° HOOKS.
5. "J" DIMENSION ON 180° 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. "E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.
8. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
9. * DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. ▲ DENOTES BARS TO BE CUT TO FIT IN FIELD.

ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION DIAMETER INCHES	CROSS SECTIONAL AREA SQ. INCHES	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	7.650	1.693	2.25	5.320
#18	13.60	2.257	4.00	7.090

APPROACH SLAB REPLACEMENT
REVISIONS 6/99

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N
Highway No. I-89 NB	Log Sta.
	Surv. Sta.

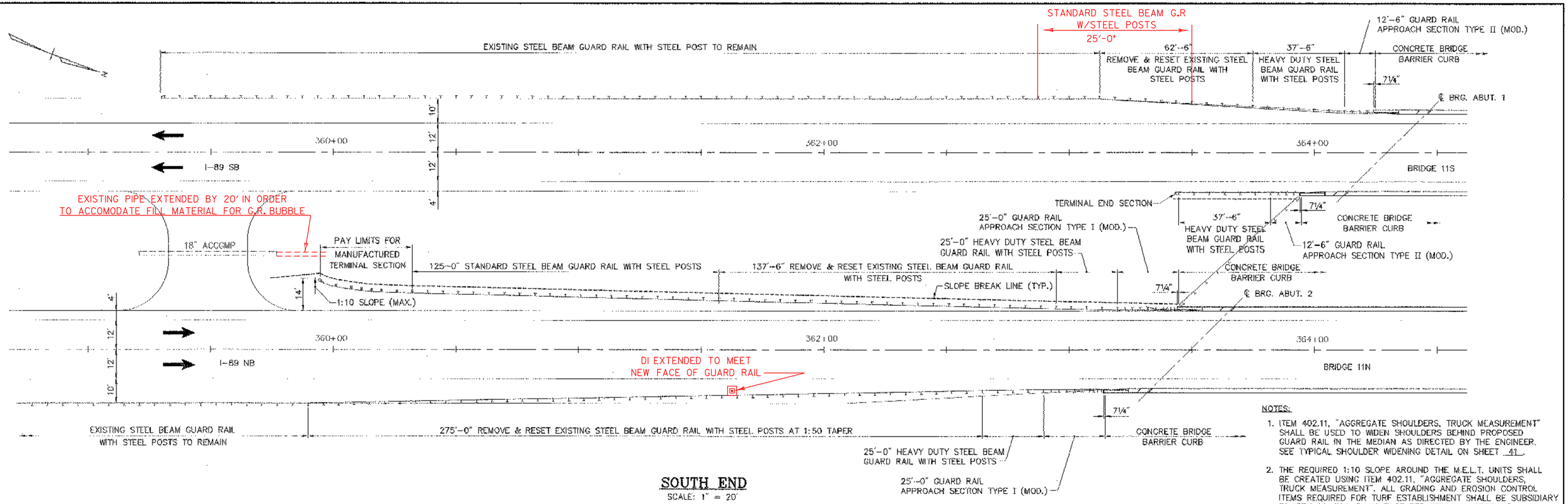
I-89 NB OVER WHITE RIVER, VT 14 & NECR

REINFORCING STEEL SCHEDULE (2 OF 2)

Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 6/99
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699REFREV	
Bridge Sheet No. 44R	Sheet 44R of 101

VANASSE HANGEN BRUSTLIN, INC.

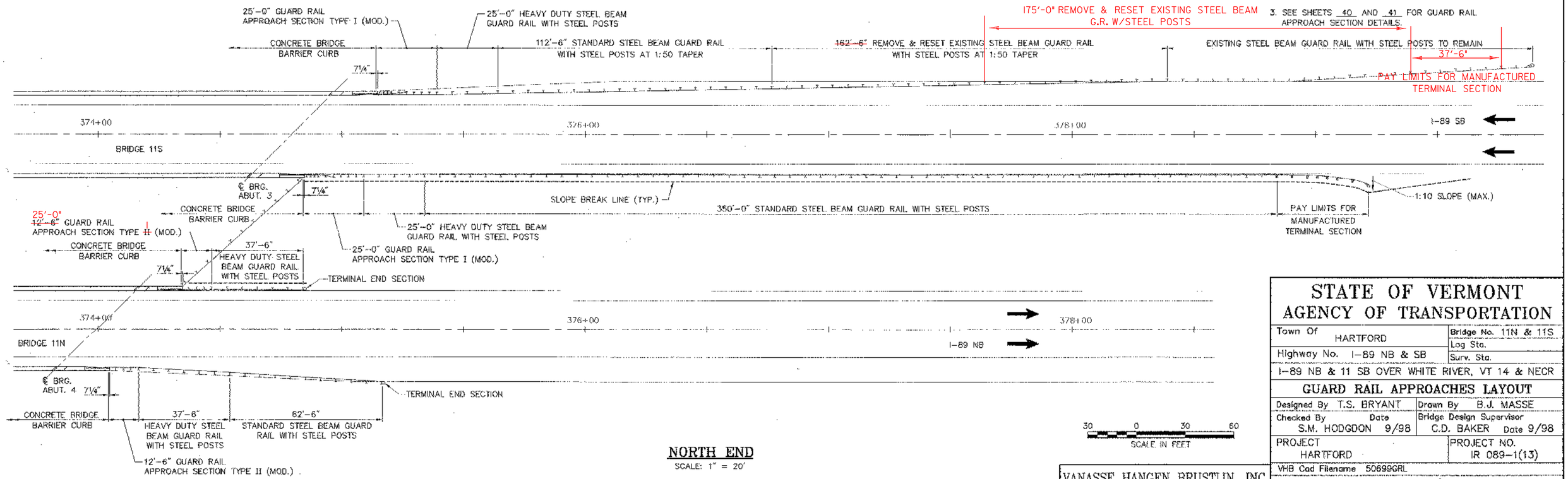
PLOTTED 6/99



SOUTH END
SCALE: 1" = 20'

NOTES:

1. ITEM 402.11, "AGGREGATE SHOULDERS, TRUCK MEASUREMENT" SHALL BE USED TO WIDEN SHOULDERS BEHIND PROPOSED GUARD RAIL IN THE MEDIAN AS DIRECTED BY THE ENGINEER. SEE TYPICAL SHOULDER WIDENING DETAIL ON SHEET 41.
2. THE REQUIRED 1:10 SLOPE AROUND THE M.E.L.T. UNITS SHALL BE CREATED USING ITEM 402.11, "AGGREGATE SHOULDERS, TRUCK MEASUREMENT". ALL GRADING AND EROSION CONTROL ITEMS REQUIRED FOR TURF ESTABLISHMENT SHALL BE SUBSIDIARY TO ITEM 621.505, "MANUFACTURED TERMINAL SECTION".
3. SEE SHEETS 40 AND 41 FOR GUARD RAIL APPROACH SECTION DETAILS.



NORTH END
SCALE: 1" = 20'

SCALE IN FEET
30 0 30 60

VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

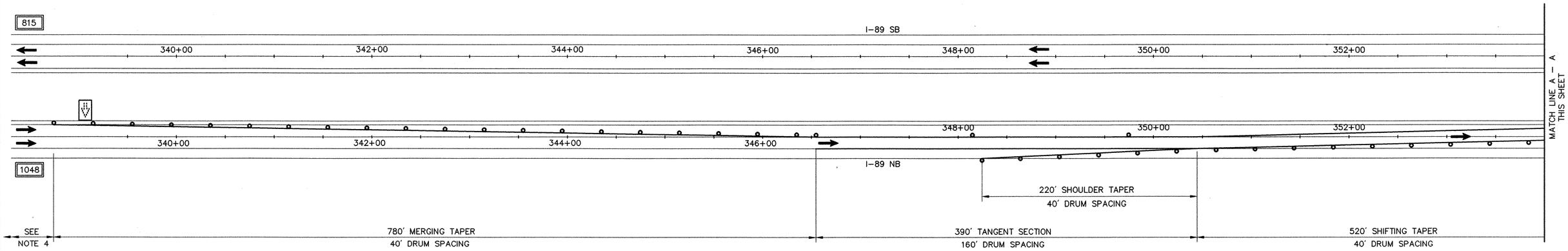
Town Of HARTFORD	Bridge No. 11N & 11S
Highway No. I-89 NB & SB	Log Sta.
	Surv. Sta.

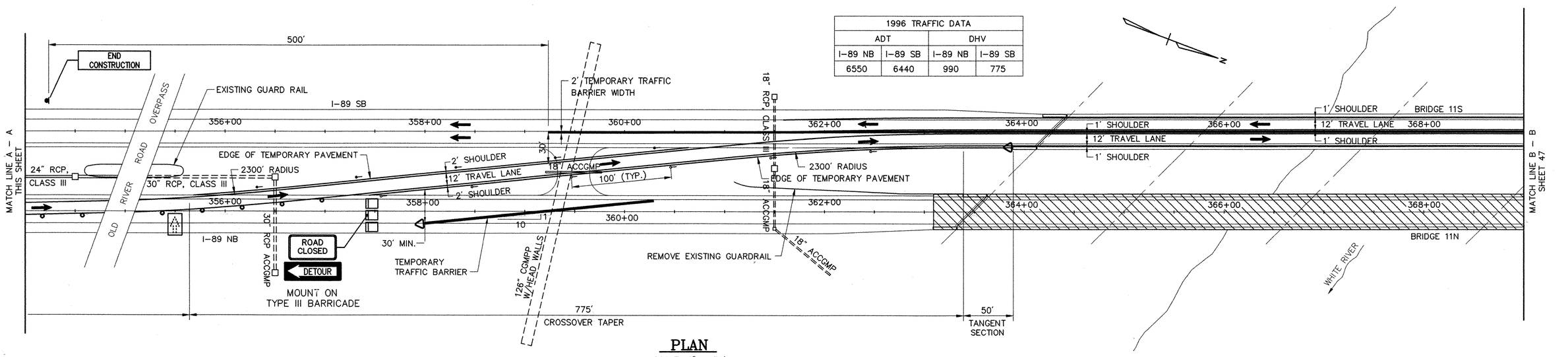
I-89 NB & 11 SB OVER WHITE RIVER, VT 14 & NECR

GUARD RAIL APPROACHES LAYOUT

Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699GRL	
Bridge Sheet No. 45	Sheet 45 of 101

PLOTTED 10-8-98





1996 TRAFFIC DATA			
ADT		DHV	
I-89 NB	I-89 SB	I-89 NB	I-89 SB
6550	6440	990	775

PLAN

SCALE: 1" = 50'

50 0 50 100

SCALE IN FEET

TRAFFIC CONTROL NOTES:

1. TRAFFIC SHALL BE CONTROLLED AND MAINTAINED AT ALL TIMES AS SPECIFIED IN THE TRAFFIC CONTROL PLANS. A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. BRIDGE 11N SHALL BE CLOSED AND REHABILITATED BEFORE BRIDGE 11S.
2. TRAFFIC CONTROL MEASURES WILL NOT BE PERMITTED BETWEEN NOVEMBER 1 AND APRIL 15, UNLESS OTHERWISE APPROVED BY THE ENGINEER. IN ADDITION, ONCE TRAFFIC CONTROL DEVICES HAVE BEEN INSTALLED (PARTICULARLY CROSSOVERS), THE CONTRACTOR SHALL BEGIN ASSOCIATED CONSTRUCTION WORK IMMEDIATELY, AND PROCEED WITHOUT DELAYS THROUGH COMPLETION IN ORDER TO MINIMIZE INCONVENIENCE TO THE TRAVELING PUBLIC.
3. ALL PRIVATE VEHICLES BELONGING TO THE CONTRACTOR'S WORK CREWS SHALL NOT BE PARKED ON THE INTERSTATE RIGHT-OF-WAY NOR ON THE TRAVELLED WAY OF ANY OTHER ROAD.
4. SIGNS, BARRICADES, AND OTHER TRAFFIC CONTROL DEVICES SHALL BE CLEANED WEEKLY. ALSO ALL EXISTING SIGNS WHICH CONTRADICT TEMPORARY TRAFFIC CONTROL SIGNS MUST BE COVERED, OR REMOVED AND THEN REPLACED AFTER CONSTRUCTION COMPLETION. COST FOR THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 641.10, "TRAFFIC CONTROL".
5. PAYMENT FOR PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE UNDER ITEM 641.15, "PORTABLE CHANGEABLE MESSAGE SIGN" AND PAYMENT FOR FLASHING ARROW PANELS SHALL BE UNDER ITEM 641.16, "PORTABLE ARROW BOARD". PAYMENT FOR TRAFFIC CONTROL SIGNS, PLASTIC DRUMS, DELINEATORS, FLEXIBLE TUBULAR MARKERS AND TYPE III BARRICADES SHALL BE UNDER 641.10, "TRAFFIC CONTROL". PAYMENT SHALL INCLUDE ALL NECESSARY MAINTENANCE AND REPAIRS TO THESE TRAFFIC CONTROL DEVICES ON A DAILY BASIS. THE ENGINEER MAY ADD TRAFFIC CONTROL SIGNS AS NECESSARY. ADDITIONAL SIGNS, INCLUDING POSTS AND FOUNDATIONS, SHALL BE PAID FOR AS EXTRA WORK, IN ACCORDANCE WITH SECTION 109.06.
6. TEMPORARY SPEED LIMIT THROUGH THE CONSTRUCTION ZONE SHALL BE 50 MPH.
7. ENERGY ABSORPTION ATTENUATORS WILL BE REQUIRED AT LOCATIONS INDICATED IN THE TRAFFIC CONTROL PLANS AND AS ORDERED BY THE ENGINEER. ATTENUATORS SHOWN IN THE PLANS ARE SYMBOLIC ONLY AND DO NOT REPRESENT THE ACTUAL CONFIGURATION OF THE ATTENUATORS TO BE USED. THE ATTENUATORS SHALL MEET THE REQUIREMENTS OF THE LATEST VERSION OF THE AASHTO "GUIDE FOR SELECTING, LOCATING AND DESIGNING TRAFFIC BARRIERS" AND THE AASHTO "ROADSIDE DESIGN GUIDE". ATTENUATORS SHALL BE DESIGNED FOR 65 MPH AND A 4500 LB. VEHICLE. ATTENUATORS SHALL BE APPROVED BY THE ENGINEER AND PAID FOR UNDER ITEM 621.57. IF ATTENUATORS ARE DAMAGED BY AN ERRANT VEHICLE, COSTS 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 FOR EACH TYPE OF ATTENUATOR USED ON THIS PROJECT, FOR THE PURPOSE OF IMMEDIATE REPLACEMENT OF DAMAGED ATTENUATORS. THE COST OF ON-SITE STORAGE OF EXTRA ATTENUATORS SHALL BE PAID AS SPECIFIED IN THE SPECIAL PROVISIONS.
8. ANY REMOVAL AND REINSTALLATION OF GUARD RAIL, BRIDGE APPROACH RAIL OR BRIDGE RAIL WHICH IS REQUIRED TO COMPLETE WORK SHOWN IN THE TRAFFIC CONTROL PLANS SHALL BE SUBSIDIARY TO ITEM 641.10, "TRAFFIC CONTROL" UNLESS OTHERWISE NOTED.
9. ALL PAVEMENT MARKINGS TO BE REMOVED AS SHOWN IN STANDARD SHEETS E-103, E-104, AND E-104A, SHALL BE REMOVED USING ITEM 646.82, "REMOVAL OF EXISTING PAVEMENT MARKINGS", EXCEPT FOR EXISTING YELLOW LINES ON THE APPROACHES BEYOND THE LIMITS OF NEW PAVEMENT WHICH SHALL BE COVERED WITH ITEM 645.86, "BLACK PAVEMENT MASKING TAPE". TEMPORARY PAVEMENT MARKINGS ON THE CROSSOVERS IN THE MEDIAN SHALL BE PAID AS ITEM 646.614, "TEMPORARY 6" WHITE LINE" AND ITEM 646.615, "TEMPORARY 6" YELLOW LINE". TEMPORARY PAVEMENT MARKINGS THROUGHOUT THE REST OF THE TRAFFIC CONTROL PACKAGE SHALL BE PAID AS ITEM 646.614, "TEMPORARY 6" WHITE LINE (TAPE, TYPE II)", AND ITEM 646.615, "TEMPORARY 6" YELLOW LINE (TAPE, TYPE II)". ALL PAVEMENT MARKINGS PERMANENTLY REMOVED SHALL BE REPLACED WITH ITEM 646.414, "DURABLE 6" WHITE LINE" AND ITEM 646.415, "DURABLE 6" YELLOW LINE.
10. AT THE APPROACHES TO BOTH BRIDGES, PRIOR TO BEGINNING COLD PLANING OF THE ROADWAY SURFACE, THE CONTRACTOR SHALL INSTALL THE ADVANCED WARNING SIGN PACKAGE SHOWN IN STANDARD SHEET E-106. THE COST SHALL BE INCLUDED UNDER ITEM 641.10, "TRAFFIC CONTROL".
11. THE CONTRACTOR SHALL PERFORM FIELD SURVEY SUFFICIENT TO DESIGN THE CROSSOVER PROFILES, SUPERELEVATION TRANSITIONS, AND DRAINAGE. CROSSOVER DESIGN COMPUTATIONS AND PLANS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE RESIDENT ENGINEER FOR APPROVAL. FILL MATERIAL PLACED IN THE MEDIAN SHALL BE APPROVED BY THE RESIDENT ENGINEER AND SHALL NOT CONTAIN EXCESSIVE AMOUNTS OF MOISTURE, SILT OR ORGANIC SUBSTANCES. EXISTING EMBANKMENT SLOPES WHICH CROSSOVER FILL IS TO BE PLACED AGAINST SHALL BE BENCHED AS ORDERED BY THE RESIDENT ENGINEER. SUBBASE MATERIAL SHALL BE APPROVED BY THE RESIDENT ENGINEER AND SHALL BE PLACED WITH A MINIMUM 12" THICKNESS. PAVING OF CROSSOVER DETOURS SHALL BE PAID FOR AS "BITUMINOUS CONCRETE PAVEMENT, TYPE III", ITEM 406.25, AND SHALL BE PLACED IN A SINGLE COURSE, 2" THICK. THE COST OF ALL OTHER WORK REQUIRED FOR THE DESIGN, CONSTRUCTION, AND REMOVAL OF CROSS-OVERS SHALL BE INCLUDED UNDER ITEM 641.10, "TRAFFIC CONTROL".
12. DURING BRIDGE DECK CONCRETE REMOVAL AND RECONSTRUCTION OPERATIONS, THE VT. 14 TRAFFIC LANES, THE WHITE RIVER, AND THE NEW ENGLAND CENTRAL RAILROAD UNDER THE BRIDGE SHALL BE PROTECTED BY ENCLOSING THE AREA BELOW THE DECK (WITHOUT REDUCING OVERHEAD CLEARANCE). THE CONTRACTOR SHALL SUBMIT DETAILS OF PROTECTIVE ENCLOSURES TO THE RESIDENT ENGINEER FOR APPROVAL. COSTS FOR PROVIDING PROTECTIVE ENCLOSURES SHALL BE INCLUDED UNDER ITEM 527.11, "TRAFFIC PROTECTION FOR BRIDGE PROJECT".

KEY

- CONSTRUCTION AREA
- DIRECTION OF TRAFFIC FLOW
- TEMPORARY TRAFFIC BARRIER
- XXX 1998 DESIGN HOUR TRAFFIC VOLUME
- FLASHING ARROW PANEL
- TYPE I DELINEATOR (YELLOW)
- TYPE I DELINEATOR (WHITE)
- REFLECTORIZED DRUM
- TYPE III BARRICADE
- ENERGY ABSORPTION ATTENUATOR

NOTES:

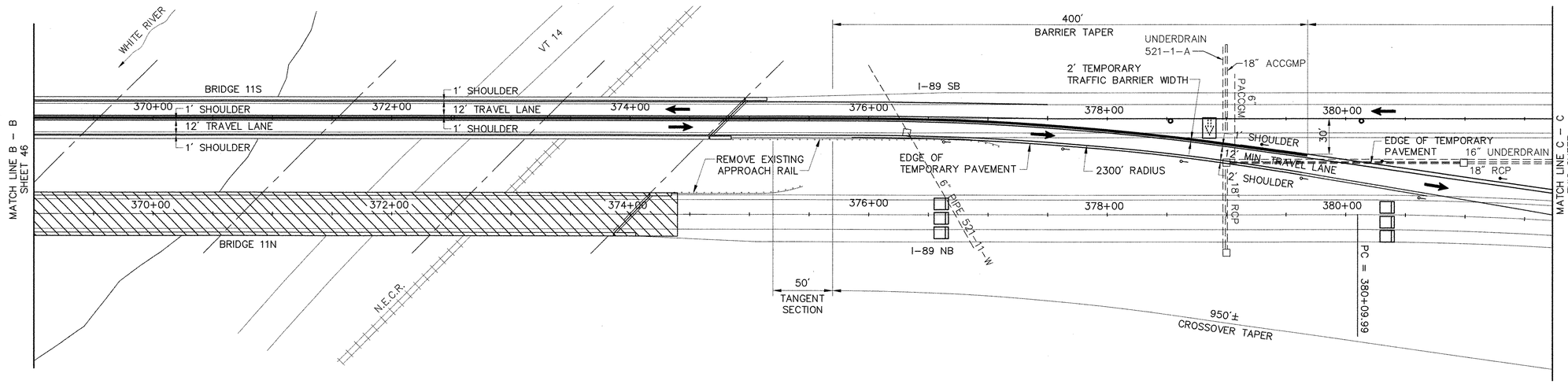
1. DESIGN SPEED 65 MPH.
2. LAYOUT BASED ON VAOT STANDARD E-104.
3. THIS TRAFFIC CONTROL SHEET IS TO BE USED IN CONJUNCTION WITH VAOT STANDARD SHEETS E-103, E-104, E-104A, AND E-107A.
4. SEE VAOT STANDARD SHEET E-103 FOR ADVANCE SIGN PACKAGE. SIGN PACKAGE LAYOUT EXTENDS BACK FROM THE BEGINNING OF THE 780' MERGING TAPER.
5. EXISTING DRAINAGE STRUCTURES ARE SHOWN ONLY IN AREAS BETWEEN PROPOSED CROSSOVERS. ALL DRAINAGE SHOWN WAS OBTAINED FROM THE EXISTING ROADWAY DESIGN PLANS AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO DESIGNING THE CROSSOVER.

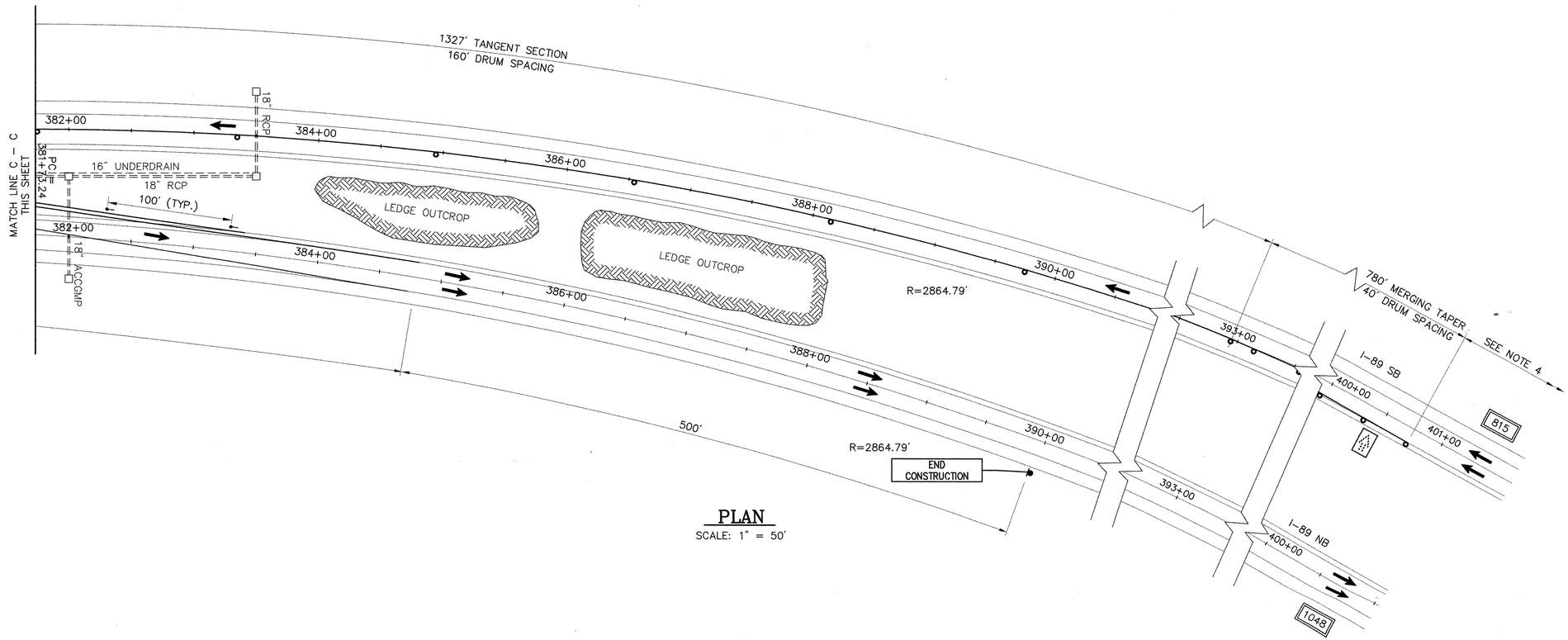
VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & 11S
Highway No. I-89 NB & SB	Log Sta.
	Surv. Sta.
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
TRAFFIC CONTROL-BR. 11N CLOSED (1 OF 2)	
Designed By J.A. ROUILLARD	Drawn By R.F. CLARK
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699TCP	
Bridge Sheet No. 46	Sheet 46 of 101

PLOTTED 12-3-98





PLAN
SCALE: 1" = 50'

NOTES:

1. DESIGN SPEED 65 MPH.
2. LAYOUT BASED ON VAOT STANDARD E–104.
3. THIS TRAFFIC CONTROL SHEET IS TO BE USED IN CONJUNCTION WITH VAOT STANDARD SHEETS E–103, E–104, E–104A, AND E–107A.
4. SEE VAOT STANDARD SHEET E–103 FOR ADVANCE SIGN PACKAGE. SIGN PACKAGE LAYOUT EXTENDS BACK FROM THE BEGINNING OF THE 780' MERGING TAPER.
5. EXISTING DRAINAGE STRUCTURES ARE SHOWN ONLY IN AREAS BETWEEN PROPOSED CROSSOVERS. ALL DRAINAGE SHOWN WAS OBTAINED FROM THE EXISTING ROADWAY DESIGN PLANS AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO DESIGNING THE CROSSOVER.

KEY

- CONSTRUCTION AREA
- DIRECTION OF TRAFFIC FLOW
- TEMPORARY TRAFFIC BARRIER
- XXX — 1998 DESIGN HOUR TRAFFIC VOLUME
- FLASHING ARROW PANEL
- TYPE I DELINEATOR (YELLOW)
- TYPE I DELINEATOR (WHITE)
- REFLECTORIZED DRUM
- TYPE III BARRICADE

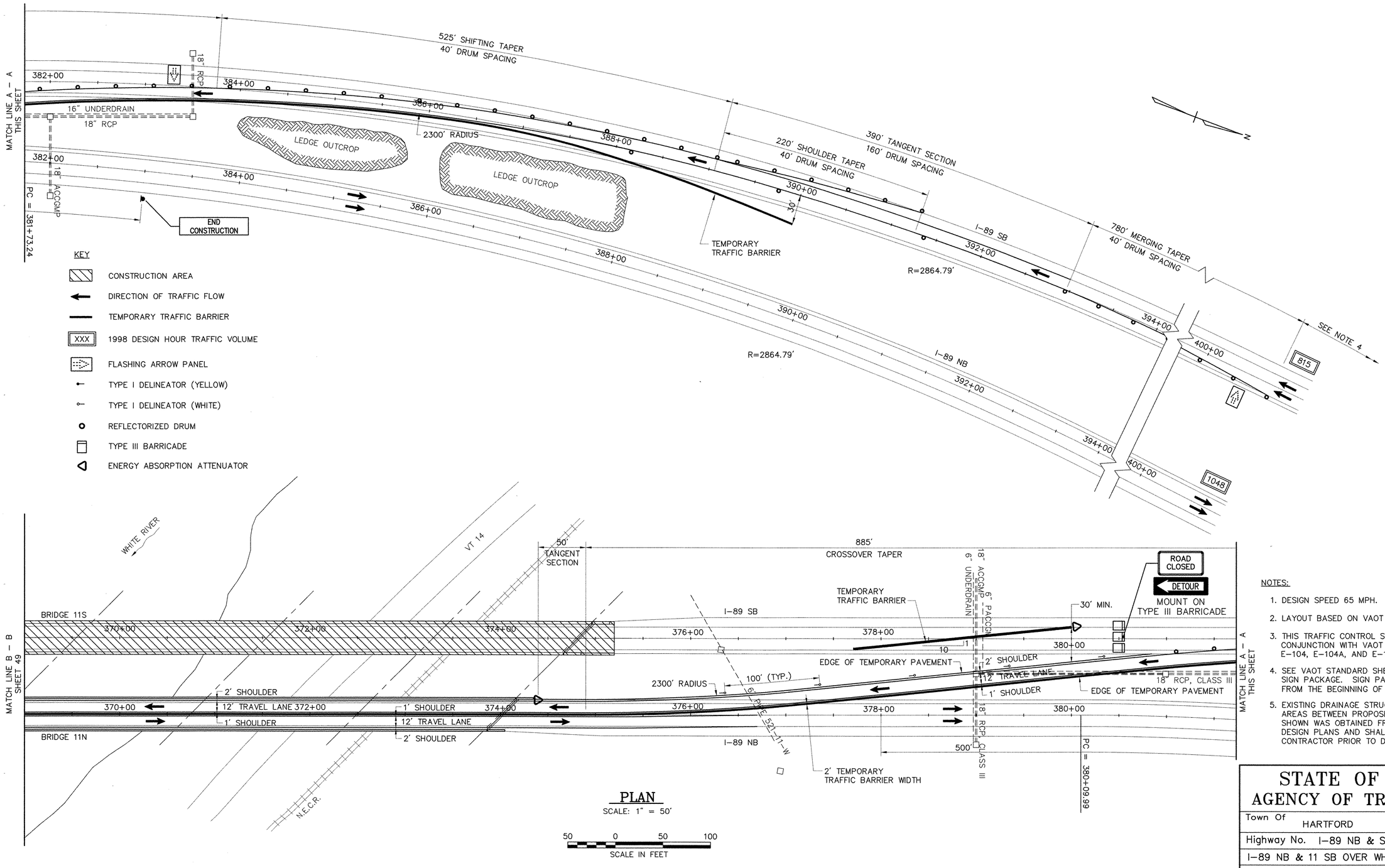
50 0 50 100
SCALE IN FEET

VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & 11S
Highway No. I–89 NB & SB	Log Sta. / Surv. Sta.
I–89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
TRAFFIC CONTROL–BR. 11N CLOSED (2 OF 2)	
Designed By J.A. ROUILLARD	Drawn By R.F. CLARK
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699TCP	
Bridge Sheet No. 47	Sheet 47 of 101

PLOTTED 9–28–98



NOTES:

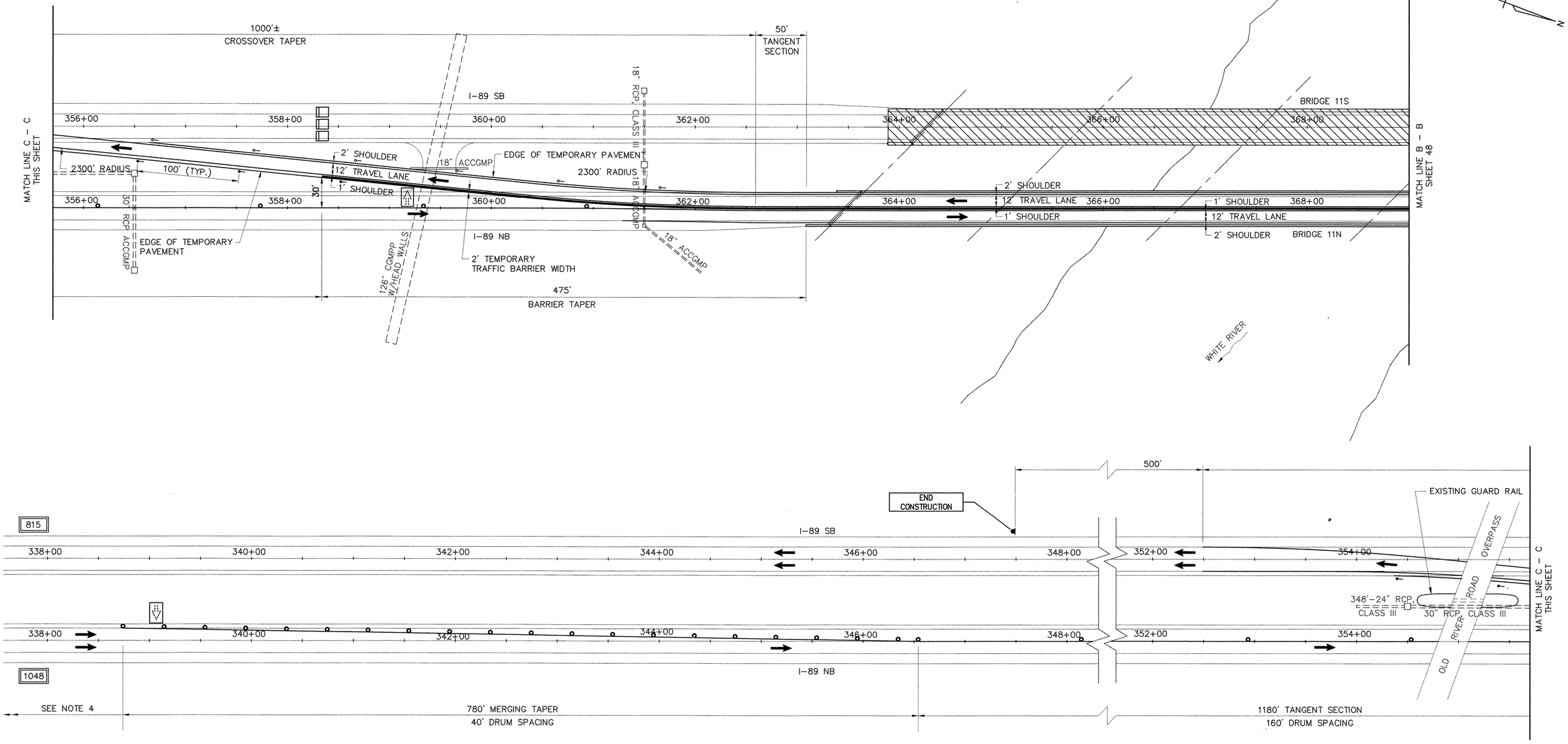
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2. LAYOUT BASED ON VAOT STANDARD E–104.
3. THIS TRAFFIC CONTROL SHEET IS TO BE USED IN CONJUNCTION WITH VAOT STANDARD SHEETS E–103, E–104, E–104A, AND E–107A.
4. SEE VAOT STANDARD SHEET E–103 FOR ADVANCE SIGN PACKAGE. SIGN PACKAGE LAYOUT EXTENDS BACK FROM THE BEGINNING OF THE 780′ MERGING TAPER.
5. EXISTING DRAINAGE STRUCTURES ARE SHOWN ONLY IN AREAS BETWEEN PROPOSED CROSSOVERS. ALL DRAINAGE SHOWN WAS OBTAINED FROM THE EXISTING ROADWAY DESIGN PLANS AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO DESIGNING THE CROSSOVER.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & 11S
Highway No. I–89 NB & SB	Log Sta. / Surv. Sta.
I–89 NB & 11 SB OVER WHITE RIVER, VT 14 & NECR	
TRAFFIC CONTROL–BR. 11S CLOSED (1 OF 2)	
Designed By J.A. ROUILLARD	Drawn By R.F. CLARK
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089–1(13)
VHB Cad Filename 50699TCP	
Bridge Sheet No. 48	Sheet 48 of 101

VANASSE HANGEN BRUSTLIN, INC.

PLOTTED 9–28–98



KEY

- CONSTRUCTION AREA
- DIRECTION OF TRAFFIC FLOW
- TEMPORARY TRAFFIC BARRIER
- XXX — 1998 DESIGN HOUR TRAFFIC VOLUME
- FLASHING ARROW PANEL
- TYPE I DELINEATOR (YELLOW)
- TYPE I DELINEATOR (WHITE)
- REFLECTORIZED DRUM
- TYPE III BARRICADE

PLAN

SCALE: 1" = 50'

50 0 50 100

SCALE IN FEET

NOTES:

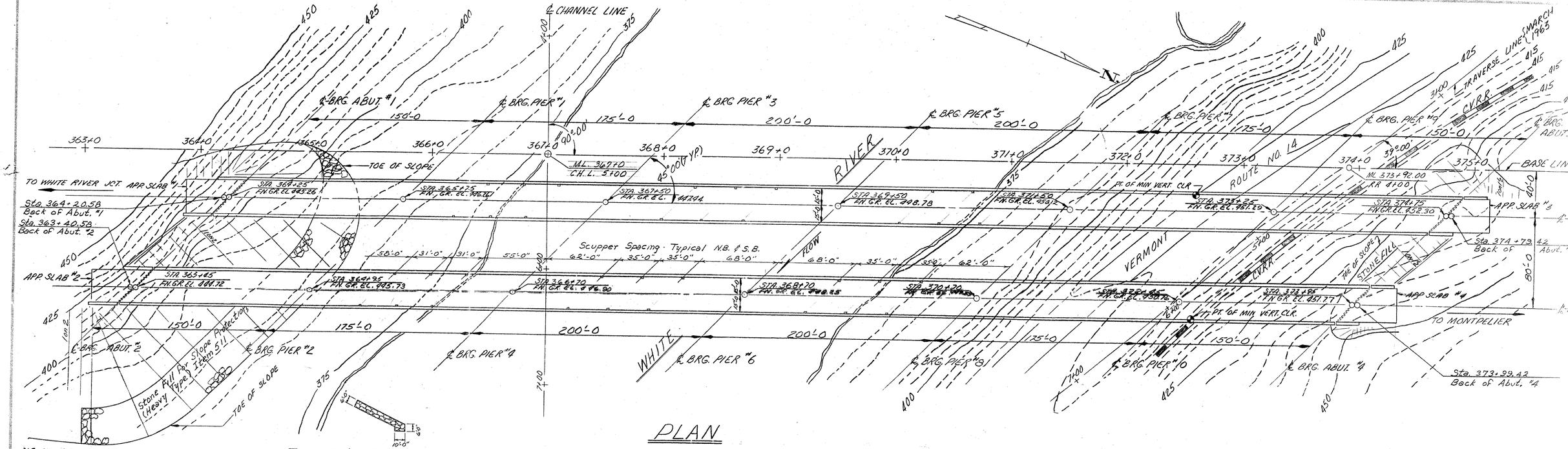
1. DESIGN SPEED 65 MPH.
2. LAYOUT BASED ON VAOT STANDARD E-104.
3. THIS TRAFFIC CONTROL SHEET IS TO BE USED IN CONJUNCTION WITH VAOT STANDARD SHEETS E-103, E-104, E-104A, AND E-107A.
4. SEE VAOT STANDARD SHEET E-103 FOR ADVANCE SIGN PACKAGE. SIGN PACKAGE LAYOUT EXTENDS BACK FROM THE BEGINNING OF THE 780' MERGING TAPER.
5. EXISTING DRAINAGE STRUCTURES ARE SHOWN ONLY IN AREAS BETWEEN PROPOSED CROSSOVERS. ALL DRAINAGE SHOWN WAS OBTAINED FROM THE EXISTING ROADWAY DESIGN PLANS AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO DESIGNING THE CROSSOVER.

VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of HARTFORD	Bridge No. 11N & 11S
Highway No. I-89 NB & SB	Log Sta. / Surv. Sta.
I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR	
TRAFFIC CONTROL-BR. 11S CLOSED (2 OF 2)	
Designed By J.A. ROUILLARD	Drawn By R.F. CLARK
Checked By T.S. BRYANT Date 9/98	Bridge Design Supervisor C.D. BAKER Date 9/98
PROJECT HARTFORD	PROJECT NO. IR 089-1(13)
VHB Cad Filename 50699TCP	
Bridge Sheet No. 49	Sheet 49 of 101

PLOTTED 9-28-98



Note: Granular Borrow or Granular fill meeting requirements of Granular Borrow as available, is to be made at all abutments. Payment for this fill is to be made only if made as Granular Borrow Item 105 as directed by the Engineer.
Granular material in the abutment area where steel piles are driven shall pass the nine (9) inch square opening screen. see sheet BR 115 of 128 for this area. I 89-1(5)

General Notes

1. Elevation Datum Sea Level based on nearest U.S. Goverment Vertical Control.
2. Original and final Sections shall be taken by the Engineer To determine limits of Unclassified Channel Excavation Item 108-C and Stone Fill for Slope Protection (Heavy Type), Item 511
3. For additional General Notes see SCB-D1-65
4. The following items are to be constructed at both ends of the bridges by the Contractor doing the I 89-1(5) project as specified in the special Provisions
   a. All fill, granular fill, or Granular Borrow, Item 105
   b. All other Items as listed on Bridge Quantity Sheet in I 89-1(5) Column.
   c. All necessary approach quantities - See I 89-1(5) Plans

List of Bridge Sheets

Br. 100 Plan & Elevation
101, 102 Bridge Quantity Sheets
103 Preliminary Information
104-106 Borings
107 Slab Details
108 Framing Plan - Span #1
109 Framing Plan - Span #2
110 Framing Plan - Span #3
111 Bracing Details
112 Expansion Dam Details
113 Finger Plates & Scuppers
Br. 114 Bearing Devices
Br. 115 Abutment No. 1 & 2
116 Abutment No. 3
117 Abutment No. 4
118 Pier No. 1 & 2
119 Pier No. 3, 4, 7, & 8
120 Pier No. 5 & 6
121 Pier No. 9 & 10
122 Reinforcing - Abutments
123 Reinforcing - Piers No. 1 thru 6
124 Reinforcing - Piers No. 7 thru 10, Superstructure, Approach Slabs
Br. 125-128 Channel Line Sections

Standard Sheets

G 3a
SCB-D1-65
SCB-D6-65
SB-R1-64, Sh. 1 & 2 of 2
SB-R2-65

Maximum Allowed Design Stresses

Concrete: f_c 1200 #/in.²
f_c' 3000 #/in.²
Structural Steel: 20,000 #/in.²
Reinforcing Steel:
Tension 20,000 #/in.²
Compression 16,000 #/in.²

IR 089-1(13)
This sheet for information only
BR 11 N & S

Br 100 of 128

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROAD NO. I-89 BRIDGE NO.
I-89 OVER WHITE RIVER, VT 14, AND CVRR
PLAN AND ELEVATION
SCALE 1 IN. = 40 FT.
SURVEYED BY
DRAWN BY S.H.S. CHECKED BY R.L.O.
PROJECT NO. I-89-1(6) 109 181
SHEET 8 OF 59

EARTHWORK

VC.	% GRD	STATION	GRADES ELEVATION ON TAN.	GRADES ELEVATION ON V.C.	CORR. V.C.	DIST.	AREA	CU.YDS.	AREA	CU.YDS.	AREA	CU.YDS.	AREA	CU.YDS.

BRIDGE QUANTITY SHEET

Sh. 1 of 2

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

NO.	ITEM	UNIT	QUANTITY BREAKDOWN Abut. No. 1	Abut. No. 2	Abut. No. 3	Abut. No. 4	Pier No. 1	Pier No. 2	Pier No. 3	Pier No. 4	Pier No. 5	Pier No. 6	Pier No. 7	Pier No. 8	I89-1(5) SUB TOTAL	I89-1(6) SUB-TOTAL
101	Clearing and Grubbing	L.S.														
108-C	Unclassified Channel Excavation (Est.)	c.y.														
109	Structure Excavation	c.y.	27	27	246	85	1100	1070	540	650	480	580	410	360		5575
204	Sub-base of Crushed Rock	c.y.														
222-B	Gravel Backfill for Structures	c.y.	44	44		35									123.	
*318	Tar Emulsion for Bridge Floors	Gal.														
*361-B	Bituminous Concrete Pavement (Dense Graded Top Course)	Tons														
*372-A	Joint Sealer - Hot Poured	L.F.														
372-C	Joint Sealer-PreFormed Type B - 1"	L.F.														
401-AA	Concrete Class A A	c.y.														
401-B	Concrete Class B	c.y.	133	133	160	109	520	510	490	515	495	510	305	310		4190
402	Reinforcing Steel	lbs.	9400	9340	30,830	7090	50,300	49,570	49,900	50,800	97,750	99,080	36,440	39,140		526,640
404-A	Structural Steel	lbs.					2400	2300	2300	2300	2300	2300	2300	2300		18,500
407	Asphaltic-Asbestos Coating	s.y.	15	15	15	15	21	21	21	21	21	21	21	21		228
440	Water Repellent	Gal.	8	8	6½	6½	8	8	8	8	8	8	8	8		93
501	Furnishing Equipment for Driving Piling	L.S.														
503-C	Steel Piling	L.F.	1350	1350												2700
504	Splices for Steel Piling	Ea.	22	22												44
511	Stone Fill for Slope Protection (Heavy Type) (Est.)	c.y.														
556-C	Granite Bridge Curb	L.F.														
*566	Erection of Project Markers	Ea.														
567	Boundary Markers	Ea.														
572	Bridge Railing	L.F.														
599-A	Field Office - Engineers	L.S.														

* Indicates Items to be included in Stage II Estimate

IR 089-1(13)
This sheet for information only
BR 11 N & S

BRIDGE(S) AT STATION(S) 369+50 S.B., 368+70 N.B.
LOCATION(S) Over White River, Vt. #14, E.C.V.R.R.

Hartford
BR 101 OF 128

PROJECT NO. I 89-1(6)
SHEET NO. 9 OF 59

EARTHWORK

V.C.	% GRD	STATION	GRADES ELEVATION ON TAN.	GRADES ELEVATION ON V.C.	CORR. V.C.	DIST.	AREA	CU.YDS.	AREA	CU.YDS.	AREA	CU.YDS.	AREA	CU.YDS.

BRIDGE QUANTITY SHEET

Sh. 2 of 2

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

NO.	ITEM	UNIT	QUANTITY BREAKDOWN Pier No. 9	Pier No. 10	Superst. S. B.	Superst. N. B.	Approach Slab No. 1	Approach Slab No. 2	Approach Slab No. 3	Approach Slab No. 4	I89-1(5) TOTAL SHEET 1	PROJECT I 89-1(6) TOTAL SHEET 2	TOTAL	FINAL
101	Clearing and Grubbing	L.S.									1			
106-A	Trench Excav. of Earth	c.y.											0	25
108-C	Unclassified Channel Excavation(Est)	c.y.									1600			
109	Structure Excavation	c.y.	520	425								5575	945	6520
204	Sub-base of Crushed Rock	c.y.									270			
222-B	Gravel Backfill For Structures	c.y.									123			
* 318	Tar Emulsion For Bridge Floors	Gal.			1,400	1,400	I89-1(24) → 45	→ 45	45	45				
* 361-B	Bituminous Concrete Pavement (Dense Graded Top Course)	Tons			320	320	→ 10	→ 10	10	10		* 2980	* 2980	
* 372-A	Joint Sealer - Hot Poured	L.F.					→ 44	→ 44	36	36		* 680	* 680	
372-C	Joint Sealer - PreFormed, Type B: 1"	L.F.					44	44	36	36		* 160	* 160	
401-AA	Concrete Class AA	c.y.			1100	1100						160	160	
401-B	Concrete Class B	c.y.	135	130			45	45	45	45		2200	2200	
402	Reinforcing	lbs.	32,820	30,360	269,150	269,150	7140	7090	7090	7090	4190	445	4635	
404-A	Structural Steel	lbs.			1,902,000	1,902,000					526,640	629,890	1,156,530	
407	Asphaltic - Asbestos Coating	s.y.	21	21							18,500	3,804,000	3,822,500	
422-B	8" ACCGMP Elbow	l.f.									228	42	270	
424-B	8" AC.C.G.M.P	l.f.											0	
440	Water Repellent	Gal.	8	8	120	120					93	256	349	
501	Furnishing Equipment for Driving Piling	L.S.											1	
503-C	Steel Piling	L.F.									2700		2700	
504	Splices for Steel Piling	Ea.									44		44	
511	Stone Fill For Slope Protection (Heavy Type)(Est.)	c.y.												
541	Two Cable Guard Rail	l.f.									5400			
543	Anchors for Two Cable Guard Rail	Ea.											0	
556-C	Granite Bridge Curb	L.F.			2195	2195							0	
545	Standard Steel Beam Guard Rail w/Steel Posts	l.f.										4390	4390	
* 566	Erection of Project Markers	Ea.											0	
													* 2	
567	Boundary Markers	Ea.												
572	Bridge Railing	L.F.			2191	2191							10	
599A	Field Office - Engineers	L.S.										4382	4382	
													1	

(Deduct from total for Proj I89-1(25))

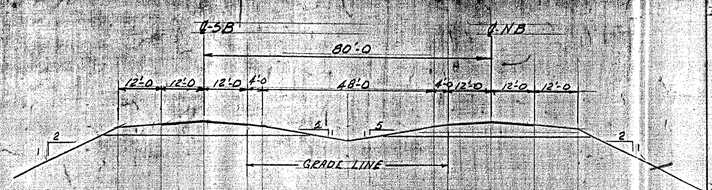
* Indicates Items to be included in Stage II Estimate

IR 089-1(13)
This sheet for information only
BR 11 N & S

BRIDGE(S) AT STATION(S) 369+50 S. B., 368+70 N.B
LOCATION(S) Over White River, Vt. #14, & C.V.R.R.

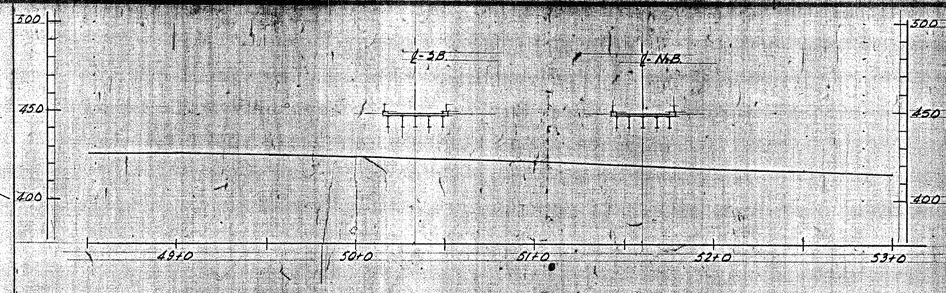
Hartford
BR102 OF 128

PROJECT NO. I 89-1(6)
SHEET NO. 110 OF 181



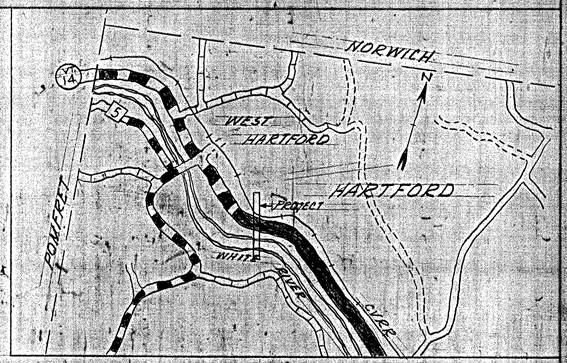
NEW HIGHWAY SECT. STA. 363+45 TO STA. 374+75

SCALE 1 IN. = 20 FT.

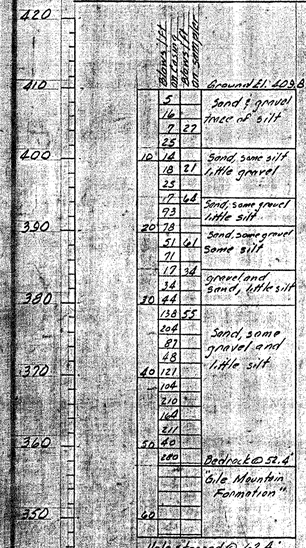


EXISTING ~~NEW~~ HIGHWAY PROFILE ALONG ℄ VERMONT ROUTE NO. 14

SCALE 1 IN. = 40 FT.



PROJECT LOCATION

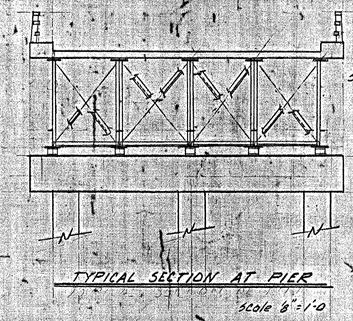


B-5

ABUT. NO. 1

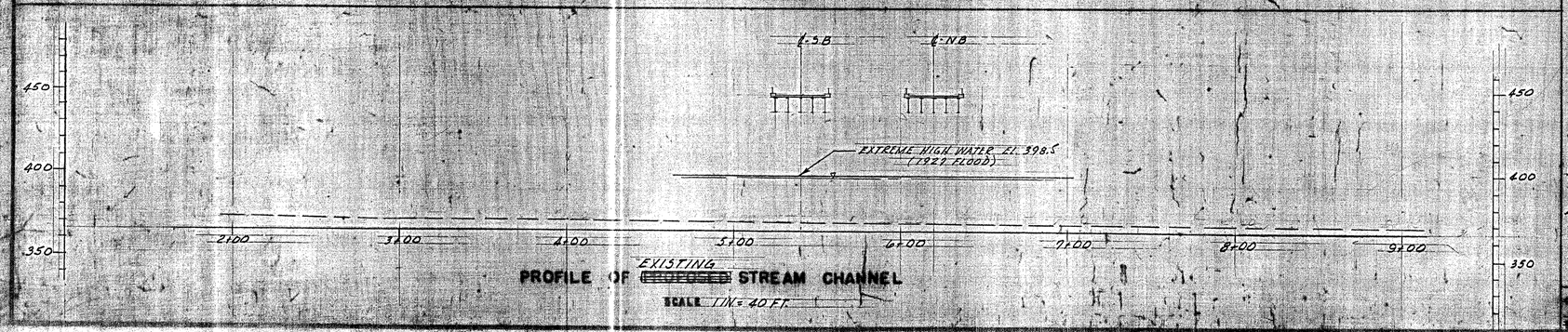
BORINGS

SCALE 1" = 10'



TYPICAL SECTION AT PIER

Scale 3/8" = 1'-0



PROFILE OF ~~PROPOSED~~ EXISTING STREAM CHANNEL

SCALE 1 IN. = 40 FT.

HIGHWAY NO. I-89 NAME OF HIGHWAY INTERSTATE

STRUCTURE NO. ____ COUNTY WINDSOR TOWN HARTFORD

PROJECT NO I-89-1(6) LOCATION HARTFORD

EXISTING STRUCTURE

1 RATED LOADING OF EXISTING STRUCTURE ____

2 TYPE OF EXISTING STRUCTURE ____

3 UNDERCLEARANCE ELEVATION OF EXISTING STRUCTURE ____

4 WHAT DISPOSITION SHOULD BE MADE OF EXISTING STRUCTURE ____ COST OF REMOVAL ____

5 SHOULD EXISTING STRUCTURE BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF NEW STRUCTURE ____

6 SHOULD NEW TEMPORARY STRUCTURE BE BUILT ____

7 ORDINARY HIGH WATER SURFACE ELEV. AT EXISTING STRUCTURE ____ WATERWAY TO ORDINARY H.W. ____

8 EXTREME HIGH WATER AT EXISTING STRUCTURE ____

9 SPAN OF EXISTING BRIDGE UPSTREAM ____ WATERWAY TO EXTREME H.W. ____

SPAN OF EXISTING BRIDGE DOWNSTREAM ____ WATERWAY TO EXTREME H.W. ____

10 TYPE OF FOUNDATION UNDER EXISTING ABUTMENTS ____

11 DOES ALL WATER AT FLOOD ELEVATION PASS THROUGH EXISTING STRUCTURE ____

12 IF NOT AT WHAT ELEVATION IS RELIEF AFFORDED ____

13 ADDITIONAL WATERWAY AREA PROVIDED ____

NEW STRUCTURE

1 RECOMMENDED TYPE OF STRUCTURE SIX SPAN CONTINUOUS ℔ GIRDER (FIVE GIRDERS SCB-30-62 MOD.)

2 RECOMMENDED CLEAR SPAN OR SPANS 150'-175'-200'-200'-175'-150'

MEASURED PARALLEL TO ℄ NEW HIGHWAY 1050 FT.

MEASURED AT RIGHT ANGLES TO ℄ STREAM 742.5 FT.

3 ARE THERE OBJECTIONS TO A PIER IN THE STREAM, ANSWER YES OR NO NO

4 ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE 382.0

5 EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE 398.5 SOURCE OF INFORMATION 1927 Flood Data

6 IS ALL WATER INTENDED TO PASS THROUGH NEW STRUCTURE? YES

7 DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? NO IS ORDINARY RISE RAPID? NO

8 LOW WATER ELEVATION AT NEW STRUCTURE 371.5

9 DRAINAGE AREA IN ACRES ABOVE STRUCTURE 442,000 CHARACTER OF TERRAINE MOUNTAINOUS

10 IS STREAM EVER DRY? NO

11 VELOCITY OF STREAM AT HIGH WATER STAGE 12.2 FT/sec ESTIMATED DISCHARGE 120,000 C.F.S. (1927)

12 AREA FULL OPENING ____ AREA BELOW ORDINARY H.W. ____

13 CHARACTER OF SCOUR SLIGHT DRIFT SOME ICE YES

14 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE ____

15 VERTICAL CLEARANCE ABOVE FLOOD ELEVATION 35 FT.

16 ARE SIDEWALKS REQUIRED, IF SO, ON WHAT SIDE NO ON WHAT SIDES ____

17 RECOMMENDED TYPE OF PAVEMENT REINFORCED CONCRETE = BITUMINOUS SURFACE (1½")

18 TRAFFIC TO BE MAINTAINED UNDER ITEM NO. ____ ONE OR TWO WAYS ____ PROBABLE COST ____

19 PROBABLE COST OF CLEARING AND GRUBBING STREAM CHANNEL AT STRUCTURE SITE ____

20 SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES? NO

21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS 3 TONS/FT² SHOULD PILES BE USED? YES 75 FT. ABUT. #2

Estimated allowable load on piles 45 Tons/pile

FOUNDATION INFORMATION

OBTAINED FOR DESIGN PURPOSES ONLY, AND THE STATE ASSUMES NO RESPONSIBILITY WHATSOEVER FOR THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN. BOULDERS MAY BE ENCOUNTERED AT ANY PIER OR ABUTMENT LOCATION.

BORING EQUIPMENT INFORMATION

CASING:

OUTSIDE DIAMETER	3"
INSIDE DIAMETER	2¼"
WGT. OF HAMMER	350 LBS.
FALL OF HAMMER	24"

SPOON SAMPLER

OUTSIDE DIAMETER	2"
INSIDE DIAMETER	1⅜"
WGT. OF HAMMER	140 LBS.
FALL OF HAMMER	30"

IR 089-1(13)
This sheet for information only
BR 11 N & S

BR 103 OF 128

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

INTERSTATE IN THE TOWN OF HARTFORD

ROUTE NO I-89 LOG STA ____

I-89 OVER VT. 14, WHITE RIVER AND CVRR

Recommended for approval ____ Bridge Engineer 2/19/64

Recommended for approval ____ Asst. Chief Engineer 2/26/64

Approved by ____ Chief Engineer 2/20/64

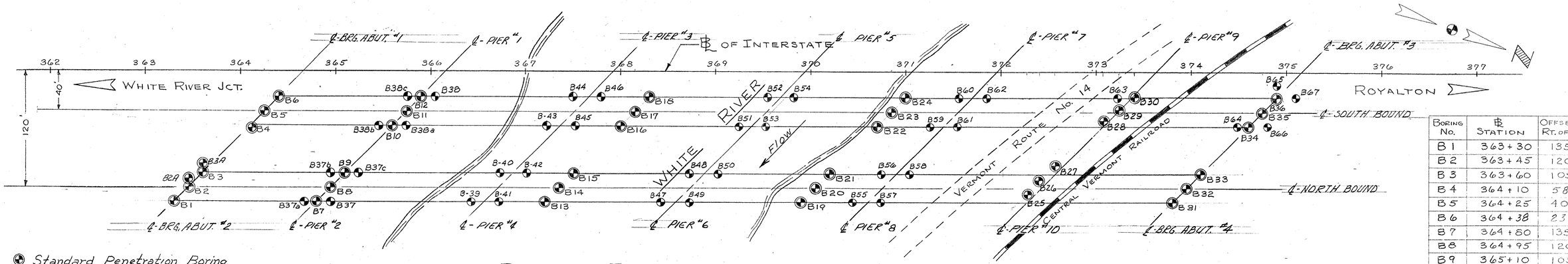
SURVEYED BY ____ DRAWN BY RLD | CHECKED BY RSH IN CHARGE RAH | SCALE As shown DATE 8/20/64

PROJECT NO I-89-1(6) SHEET 11 OF 59

SUBMITTED ____ DESIGN ENGINEER

APPROVED ____ CHIEF ENGINEER

SHEET 53 OF 101

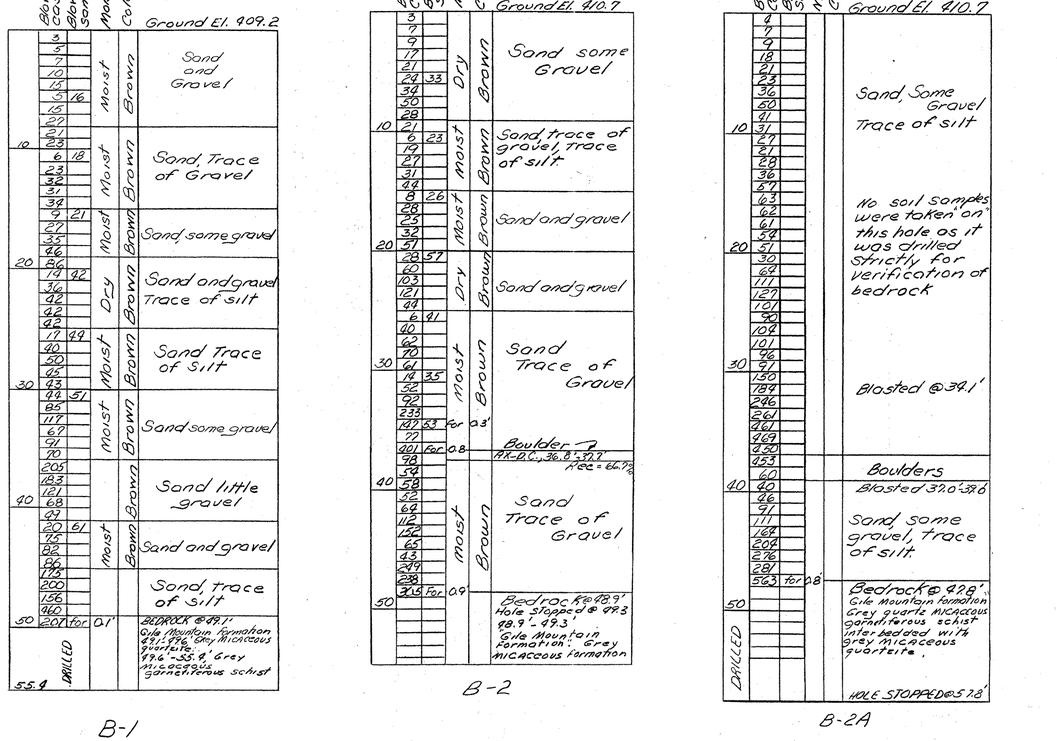


Standard Penetration Boring

Auger Boring

BORING PLAN LAYOUT

SCALE 1"=50'



BOTTOM OF FOOTING ELEV. 428.75

ABUTMENT NO. 2

SCALE 1"=6'-0"

Table of Auger Borings

Boring No.	Station	Offset Rt. of ℄	Ground Elev.	Elev. of Ledge
B37	364+94	135'	381.8	353.8
B37a	364+66	135'	384.6	359.6
B37b	364+94	105'	385.3	352.8
B37c	365+22	105'	381.8	355.8
B38	366+05	25'	382.0	349.0
B38a	365+76	25'	385.2	350.2
B38b	365+46	55'	384.6	354.6
B38c	365+74	55'	381.3	352.3
B39	366+42	135'	370.5	356.5
B40	366+72	105'	370.6	350.6
B41	366+71	135'	370.0	354.0
B42	367+01	105'	370.1	351.1
B43	367+23	55'	370.6	354.6
B44	367+53	25'	371.0	356.0
B45	367+50	55'	371.0	357.5
B46	367+80	25'	371.0	357.0
B47	368+42	135'	370.8	358.3
B48	368+72	105'	370.9	364.4
B49	368+72	135'	370.9	364.4
B50	369+02	105'	370.8	366.3
B51	369+24	55'	371.2	361.2
B52	369+54	25'	371.4	363.9
B53	369+52	55'	370.8	362.3
B54	369+82	25'	371.2	364.7
B55	370+45	135'	386.0	380.0
B56	370+75	105'	385.9	378.9
B57	370+75	135'	395.1	385.1
B58	371+05	105'	393.6	377.6
B59	371+26	55'	388.2	378.2
B60	371+56	25'	389.1	380.1
B61	371+55	55'	395.8	380.8
B62	371+85	25'	396.2	382.2
B63	373+22	25'	424.5	396.5
B64	374+48	55'	429.4	419.4
B65	374+90	13'	424.8	410.8
B66	374+80	55'	431.5	425.0
B67	375+10	25'	428.2	422.7

Boring No.	℄ Station	Offset Rt. of ℄
B1	363+30	135
B2	363+45	120
B3	363+60	105
B4	364+10	58
B5	364+25	40
B6	364+38	23
B7	364+80	135
B8	364+95	120
B9	365+10	105
B10	365+60	55
B11	365+75	40
B12	365+90	25
B13	367+20	135
B14	367+35	120
B15	367+50	105
B16	368+00	55
B17	368+15	40
B18	368+30	25
B19	369+90	135
B20	370+05	120
B21	370+20	105
B22	370+70	55
B23	370+85	40
B24	371+00	25
B25	372+27	126
B26	372+40	112
B27	372+56	91
B28	373+07	49
B29	373+23	38
B30	373+40	25
B31	373+80	135
B32	373+95	120
B33	374+10	105
B34	374+60	55
B35	374+75	40
B36	374+90	25
B2A	363+45	118
B3A	363+60	102

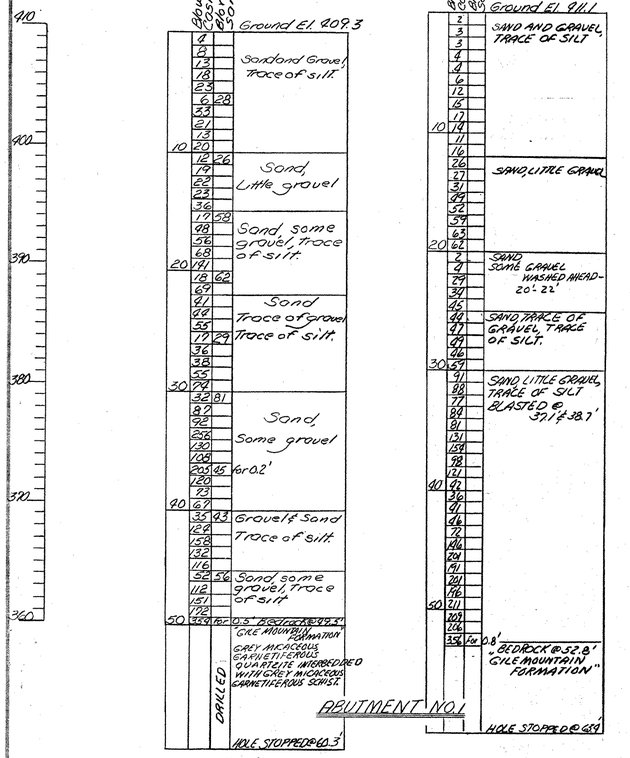
IR 089-1(13)
This sheet for information only
BR 11 N & S

Br. 104 of 128

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROUTE NO. _____ LOG STA. _____
I-89 OVER WHITE RIVER VT 14 & CVRR
BORINGS
SCALE AS SHOWN
SURVEYED BY _____
DRAWN BY R.S.H. & S.H.S. CHECKED BY RLO
PROJECT NO. I 89-1(6)
SHEET 12 OF 59

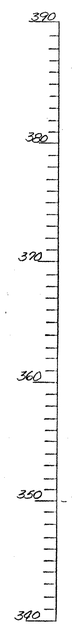
BOTTOM OF FOOTING ELEV. 429.25

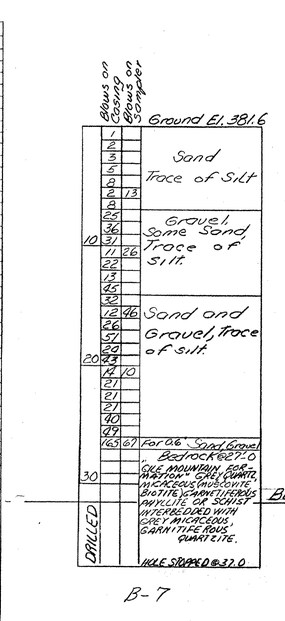


B-9

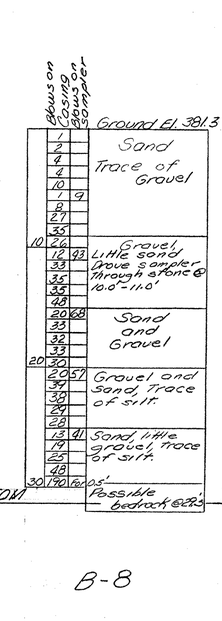
B-6C

ABUTMENT NO.1



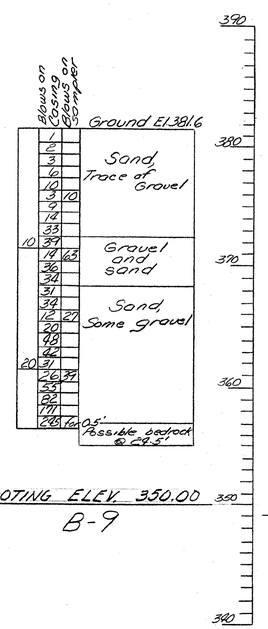


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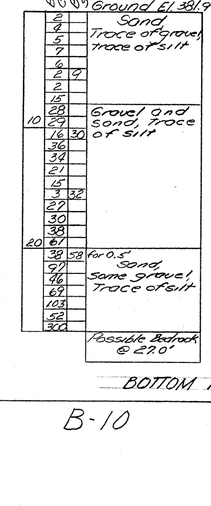
B-8

BOTTOM FOOTING ELEV. 350.00

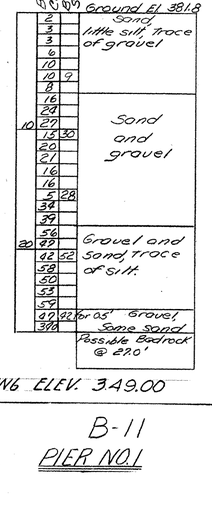


B-9

PIER NO.2



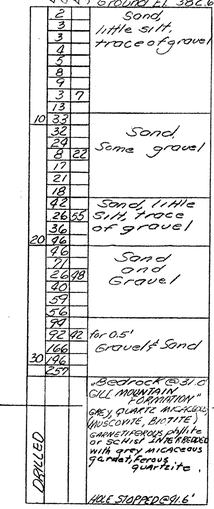
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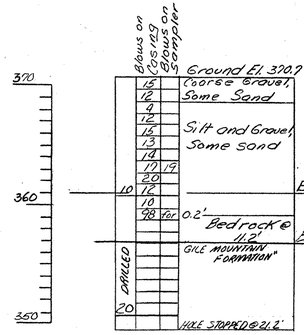
B-11

BOTTOM FOOTING ELEV. 349.00

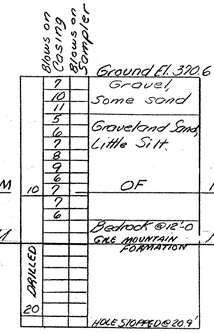
PIER NO.1



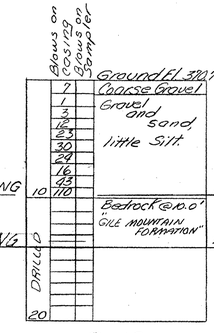
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B-16

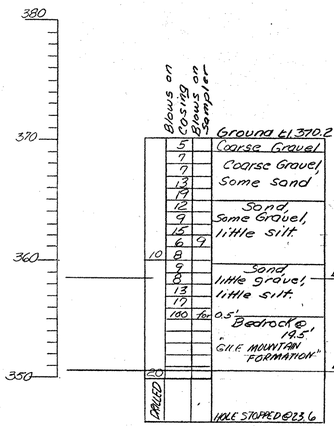


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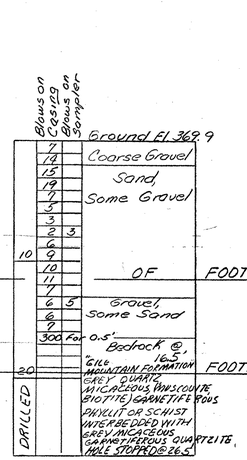


B-18

PIER NO.3 & 5



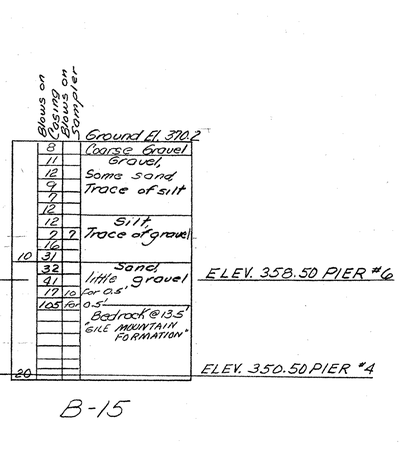
B-13



B-14

BOTTOM OF FOOTING ELEV. 358.50 PIER #6

BOTTOM OF FOOTING ELEV. 350.50 PIER #4



B-15

PIER NO. 4 & 6

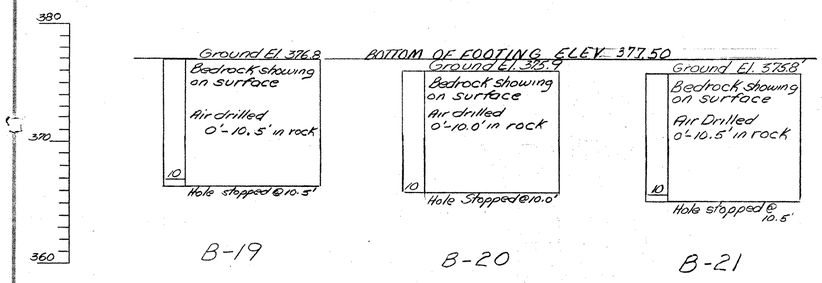
BR 105 OF 128

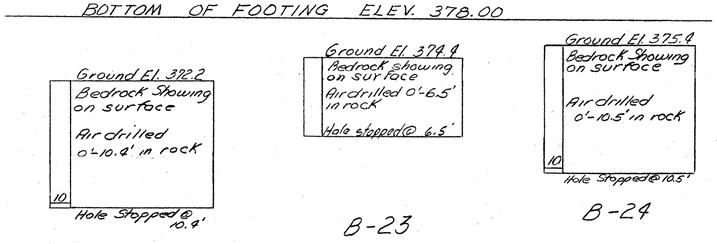
ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
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	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV.	C.Y.				
	STRUCT. EXCAV.	C.Y.				
	CONC. CLASS AA (MOD.)	C.Y.				
	CONC. CLASS B (MOD.)	C.Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L.F.				
	UNTREATED TIMBER PILING	L.F.				

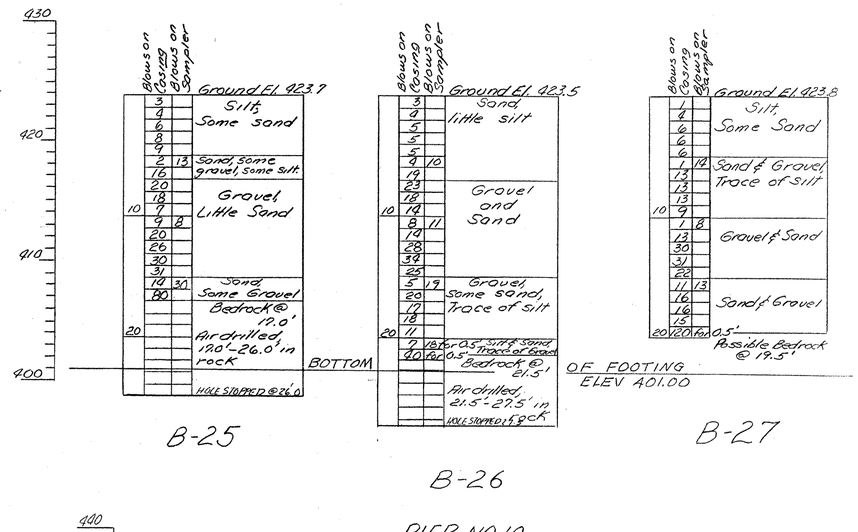
IR 089-1(13)
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BR 11 N & S

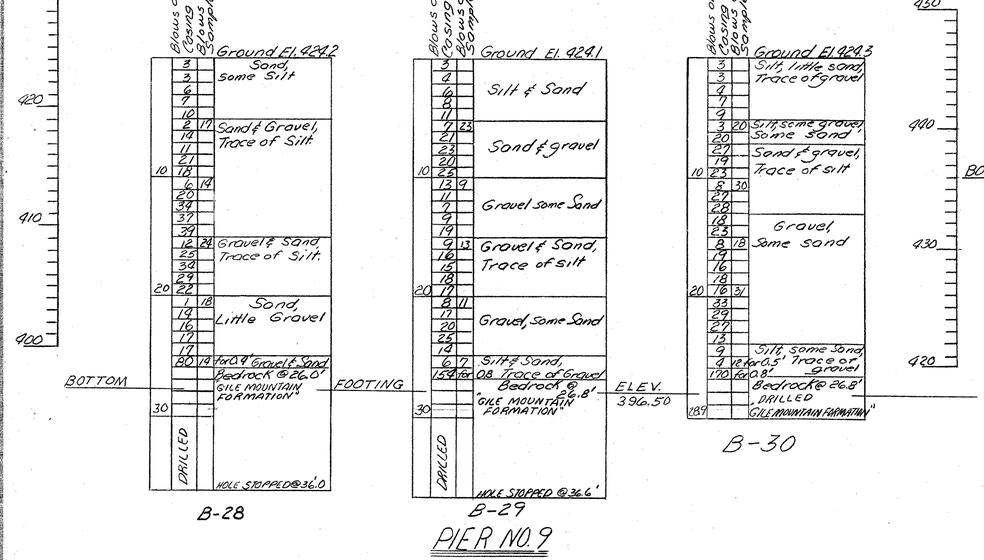
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROAD NO. ____ BRIDGE NO. ____
I-89 OVER WHITE RIVER VT 14 & CVRR
BORINGS
SCALE 1" = 6'-0"
SURVEYED BY ____
DRAWN BY S.H.S. CHECKED BY R.L.O.
PROJECT NO. I-89-1(16)
SHEET 13 OF 59









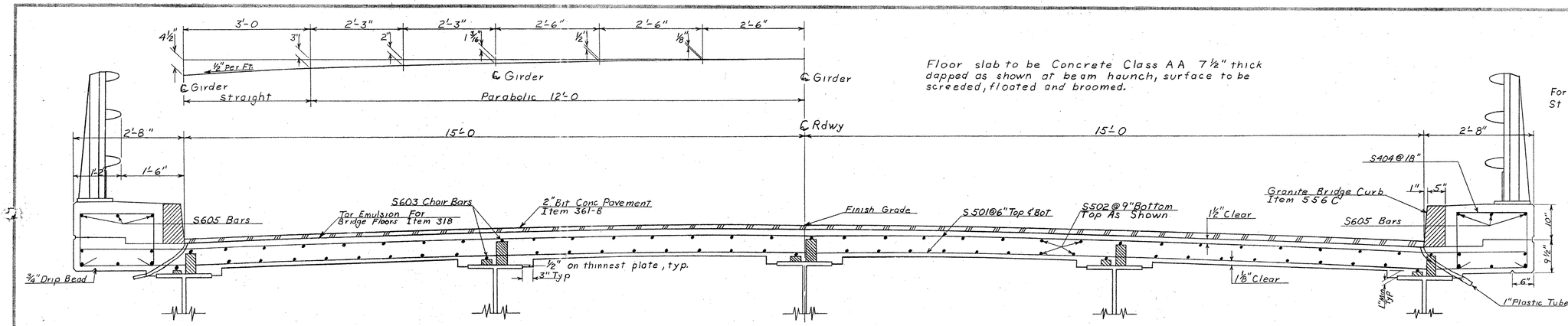
BR. 106 OF 128

ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C. Y.				
	CHAN. EXCAV. OF ROCK	C. Y.				
	UNCLASS. CHAN. EXCAV.	C. Y.				
	STRUCT. EXCAV.	C. Y.				
	CONC. CLASS AA (MOD.)	C. Y.				
	CONC. CLASS B (MOD.)	C. Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S. Y.				
	TREATED TIMBER PILING	L. F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L. F.				
	UNTREATED TIMBER PILING	L. F.				

IR 089-1(13)
This sheet for information only
BR 11 N & S

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROAD No. _____ BRIDGE No. _____
I-89 OVER WHITE RIVER, VT. 14 & CVRR
BORINGS
SCALE 1" = 6'-0"
SURVEYED BY _____
DRAWN BY SHS. CHECKED BY RLO
PROJECT No. I-89-1(16)
SHEET 14 OF 59



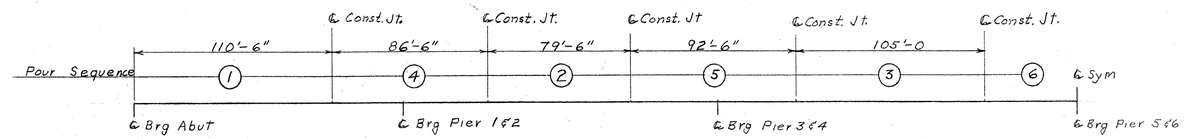
Floor slab to be Concrete Class AA 7½" thick dapped as shown at beam haunch, surface to be screeded, floated and broomed.

For Railing Details See St Sh SB-R1-64 Sh 1 & 2 & SB-R2-65

Refer To SCB-D6-65 For Details of Curb

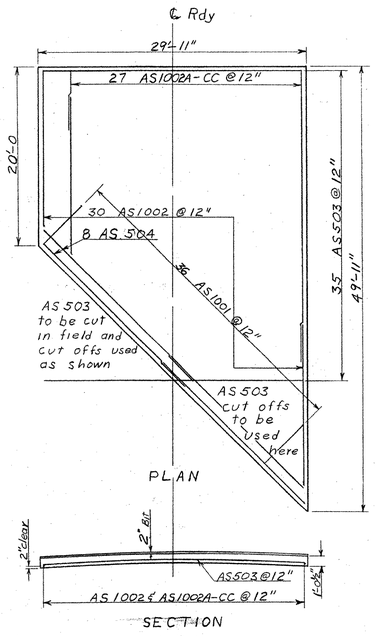
TYPICAL DECK SECTION

Scale ¾ in = 1ft



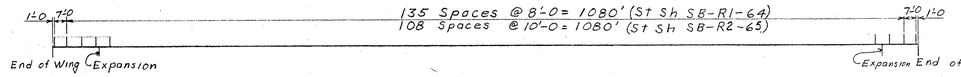
DECK POUR PLAN

Not To Scale



APPROACH SLAB DETAILS

Scale ⅛ in = 1ft



Note: All rails to be spliced at expansion points with a 4" gap at the splice. For Railing Details See Std Sh SB R1 64 sh 1&2 and SB R2 65.

RAIL POST SPACING

Not To Scale

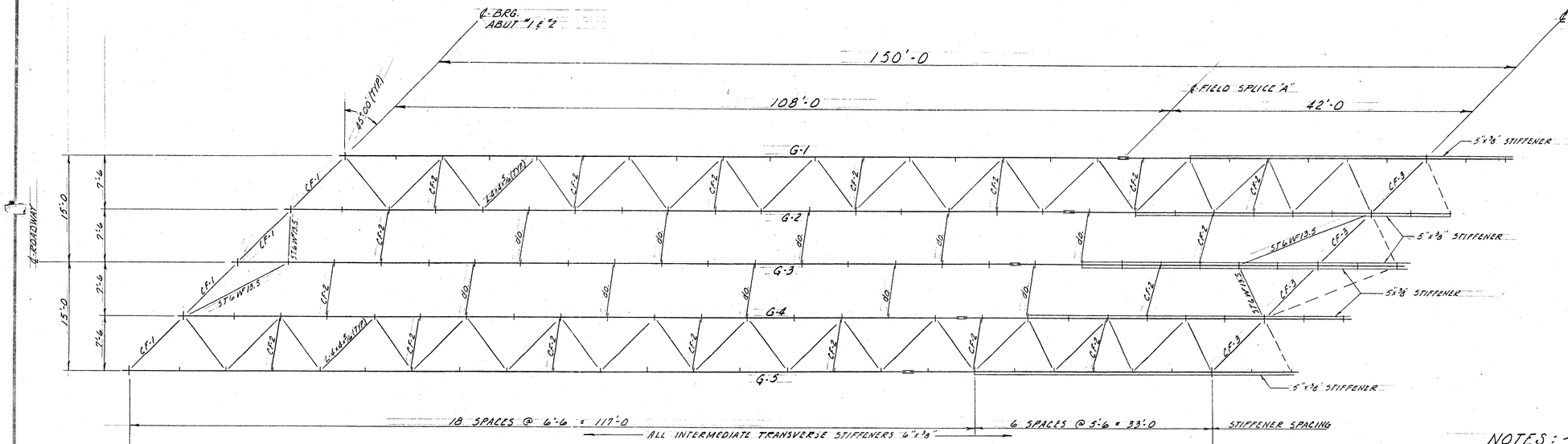
ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C.Y.				
	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV.	C.Y.				
	STRUCT. EXCAV.	C.Y.				
	CONC. CLASS AA (MOD.)	C.Y.				
	CONC. CLASS B (MOD.)	C.Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L.F.				
	UNTREATED TIMBER PILING	L.F.				

IR 089-1(13)
This sheet for information only
BR 11 N & S

BR 107 OF 128

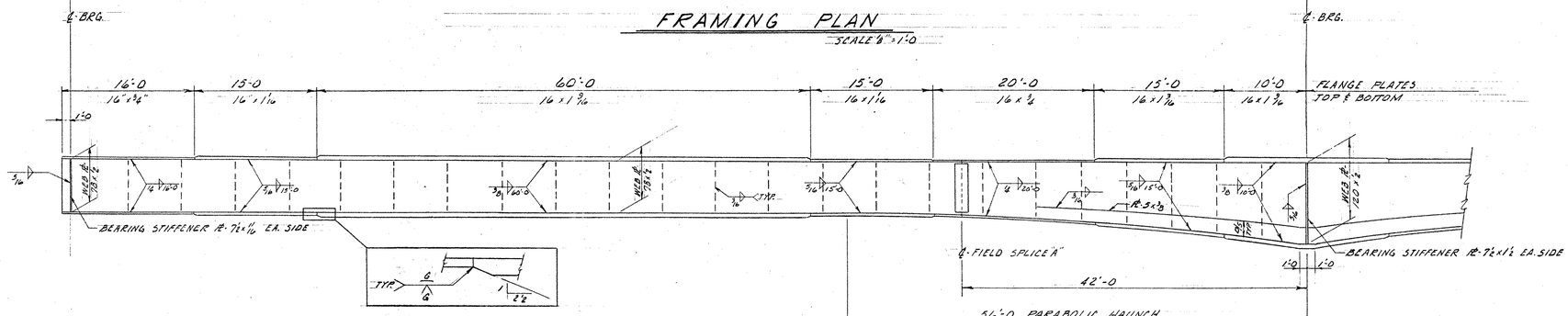
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROUTE NO. I-89 LOG STA. 369
I 89 over WHITE RIVER, VT#14, CVRR
SLAB DETAILS
SCALE As Shown
SURVEYED BY
DRAWN BY AGC CHECKED BY WBT
PROJECT NO. I 89-1(6) 111 181
SHEET 15 OF 59



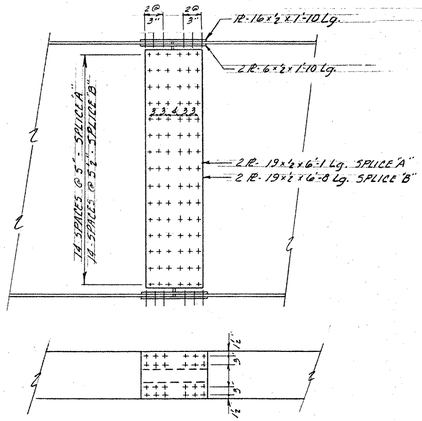
FRAMING PLAN

SCALE ⅛" = 1'-0



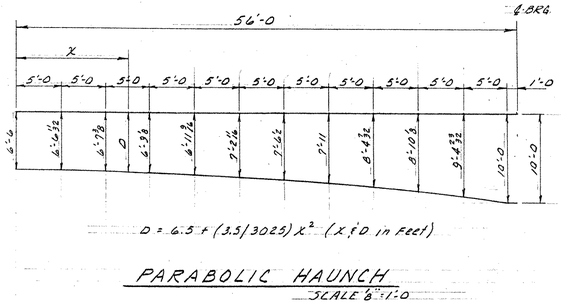
ELEVATION ~ EXTERIOR GIRDER

SCALE ⅛" = 1'-0



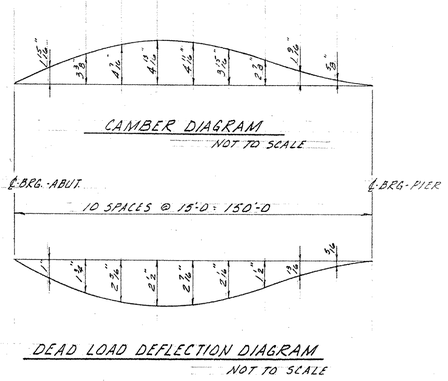
FIELD SPLICE "A" & "B"

SCALE 2" = 1'-0



PARABOLIC HAUNCH

SCALE ⅛" = 1'-0



NOTES: ~

1- For General Notes see Std. Sht. SCB-D1-65 and BR.100
2- Span No. 6 girders identical to Span No. 1 girders. Bracing to be similar.
3- Span Nos. 1 and 6 shall each be cambered 4 13/16" as shown.
4- Intermediate transverse stiffeners to the left of Field Splice "A" shall be welded to the web and to the top flange. Intermediate transverse stiffeners to the right of Field Splice "A" shall be welded to the web and to the bottom flange.
5- Bearing stiffeners for all spans shall be welded to the web only, and the ends of these stiffeners shall be ground to bear against the flanges.
6- All transverse stiffeners shall be coped 1"x1" at junction of flange and web.
7- For details of lateral bracing and cross-frames see sheet BR. 111.
8- Structural steel shall be ASTM A36-62T unless otherwise indicated on the plans.

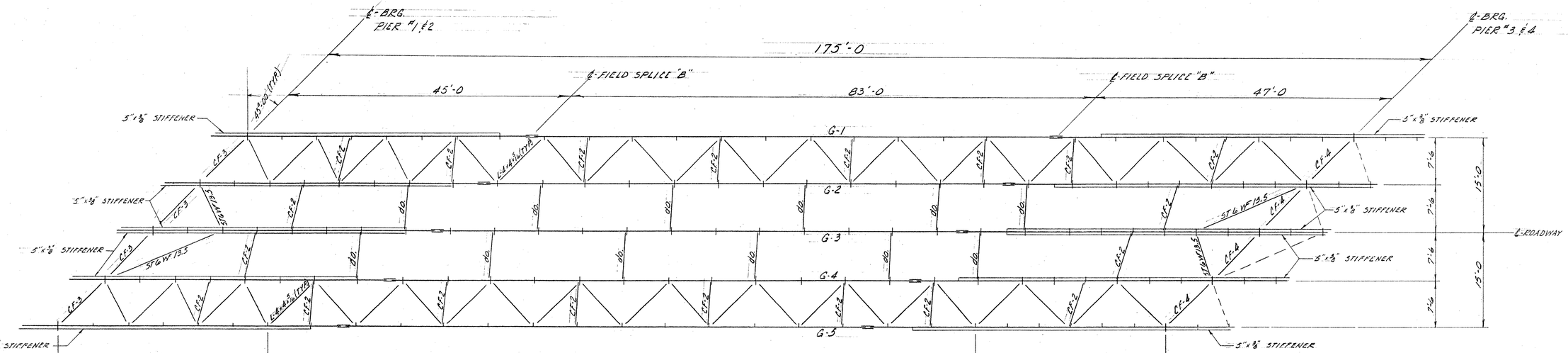
ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C. Y.				
	CHAN. EXCAV. OF ROCK	C. Y.				
	UNCLASS. CHAN. EXCAV.	C. Y.				
	STRUCT. EXCAV.	C. Y.				
	CONC. CLASS AA (MOD.)	C. Y.				
	CONC. CLASS B (MOD.)	C. Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S. Y.				
	TREATED TIMBER PILING	L. F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L. F.				
	UNTREATED TIMBER PILING	L. F.				

IR 089-1(13)
This sheet for information only
BR 11 N & S

BR. 108 OF 128

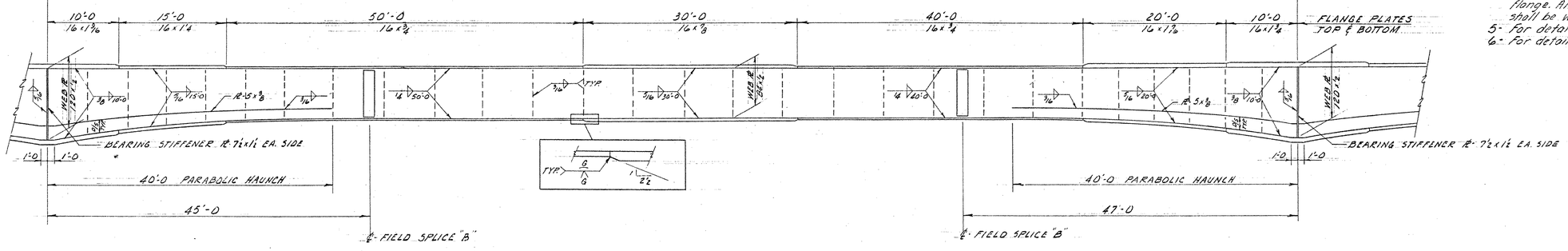
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROAD No. I-89 BRIDGE No.
I-89 OVER WHITE RIVER, VT. #14 AND C.V.R.R.
SPAN NO. 1 FRAMING PLAN
SCALE As Shown
SURVEYED BY
DRAWN BY RLO CHECKED BY A G C
PROJECT NO. I-89-1(6)
SHEET 16 OF 59



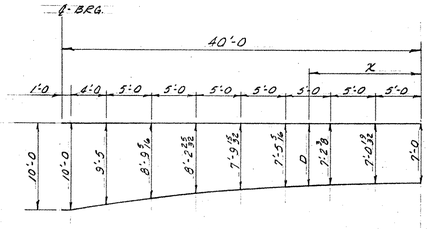
FRAMING PLAN

SCALE ⅛" = 1'-0



ELEVATION ~ EXTERIOR GIRDER

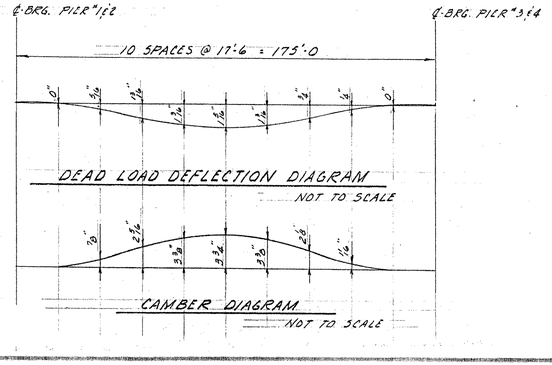
SCALE ⅛" = 1'-0



D = 7.0 + (3.0/1521)X² ~ (X & D in feet)

PARABOLIC HAUNCH

SCALE ⅛" = 1'-0



DEAD LOAD DEFLECTION DIAGRAM

NOT TO SCALE

CAMBER DIAGRAM

NOT TO SCALE

NOTES: ~

1- For General Notes see Std. Sht. SCB-D1-65 and BR.100.
2- Span No. 5 girders identical to span No. 2 girders. Bracing to be similar.
3- Span Nos. 2 and 5 shall each be cambered 3¾".
4- Intermediate transverse stiffeners between Field Splices shall be welded to the web and to the top flange. All other intermediate transverse stiffeners shall be welded to the web and to the bottom flange.
5- For detail of Field Splice "B" and other notes see BR.108
6- For details of lateral bracing and cross-frames see BR.111

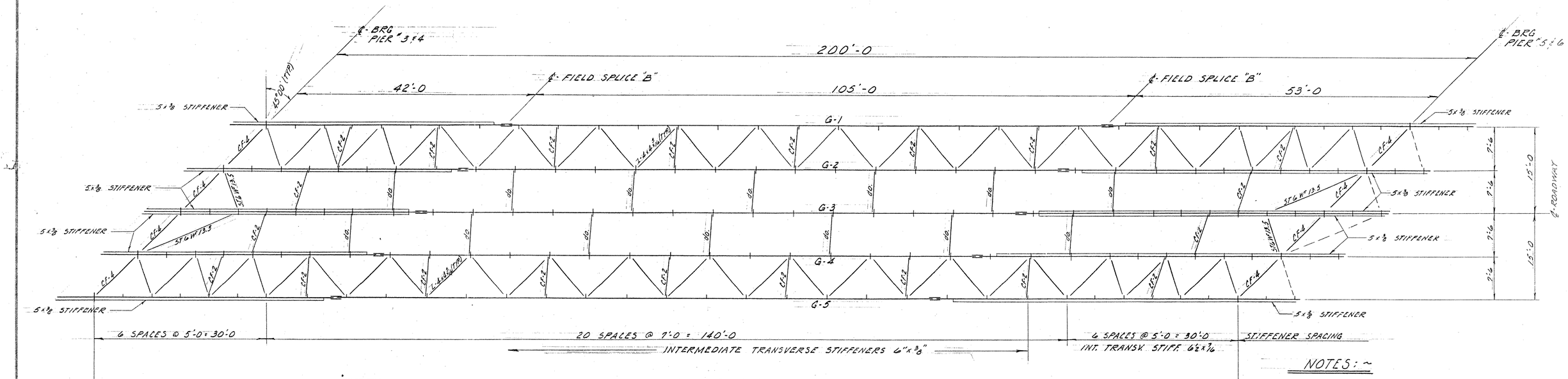
ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C. Y.				
	CHAN. EXCAV. OF ROCK	C. Y.				
	UNCLASS. CHAN. EXCAV.	C. Y.				
	STRUCT. EXCAV.	C. Y.				
	CONC. CLASS AA (MOD.)	C. Y.				
	CONC. CLASS B (MOD.)	C. Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S. Y.				
	TREATED TIMBER PILING	L. F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L. F.				
	UNTREATED TIMBER PILING	L. F.				

IR 089-1(13)
This sheet for information only
BR 11 N & S

BR.109 OF 128

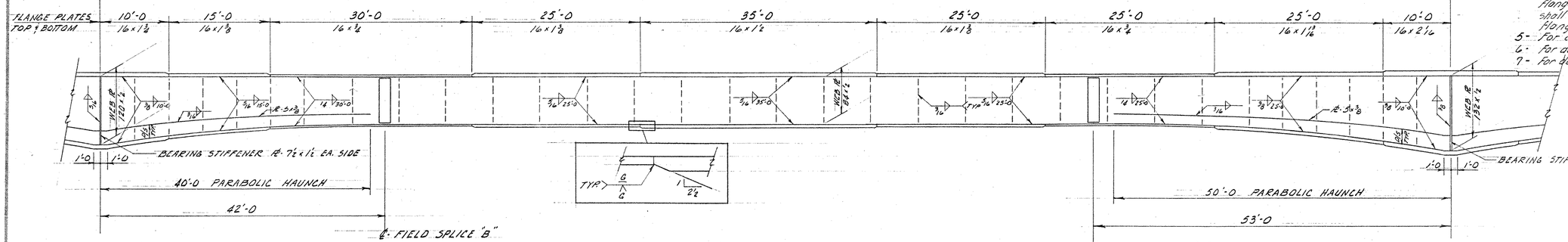
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROAD NO. I-89 BRIDGE NO.
I-89 OVER WHITE RIVER, VT"14 AND C.V.R.R.
SPAN NO. 2 FRAMING PLAN
SCALE As Shown
SURVEYED BY
DRAWN BY RLO CHECKED BY AGC
PROJECT NO. I-89-1(6)
SHEET 17 OF 59



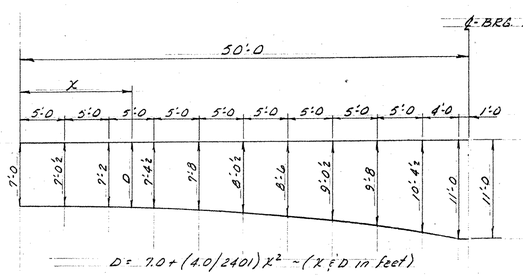
FRAMING PLAN

SCALE ⅛"=1'-0



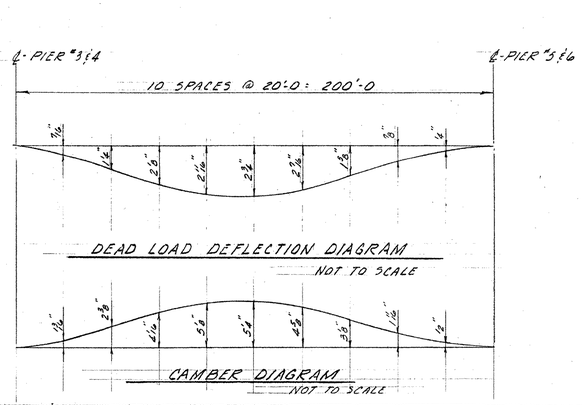
ELEVATION - EXTERIOR GIRDER

SCALE ⅛"=1'-0



PARABOLIC HAUNCH

SCALE ⅛"=1'-0



NOTES: ~

1- For General Notes see Std. Sht. SCB-D:165 and BR.100.
2- Span No. 4 girders identical to Span No. 3. Bracing to be similar.
3- Span Nos. 3 and 4 shall each be cambered 5¼"
4- Intermediate transverse stiffeners between Field Splices shall be welded to the web and to the top flange. All other intermediate transverse stiffeners shall be welded to the web and to the bottom flange.
5- For detail of 40'0 parabolic haunch see BR. 109.
6- For detail of Field Splice "B" and other notes see BR. 108.
7- For details of lateral bracing and cross-frames see BR. 111.

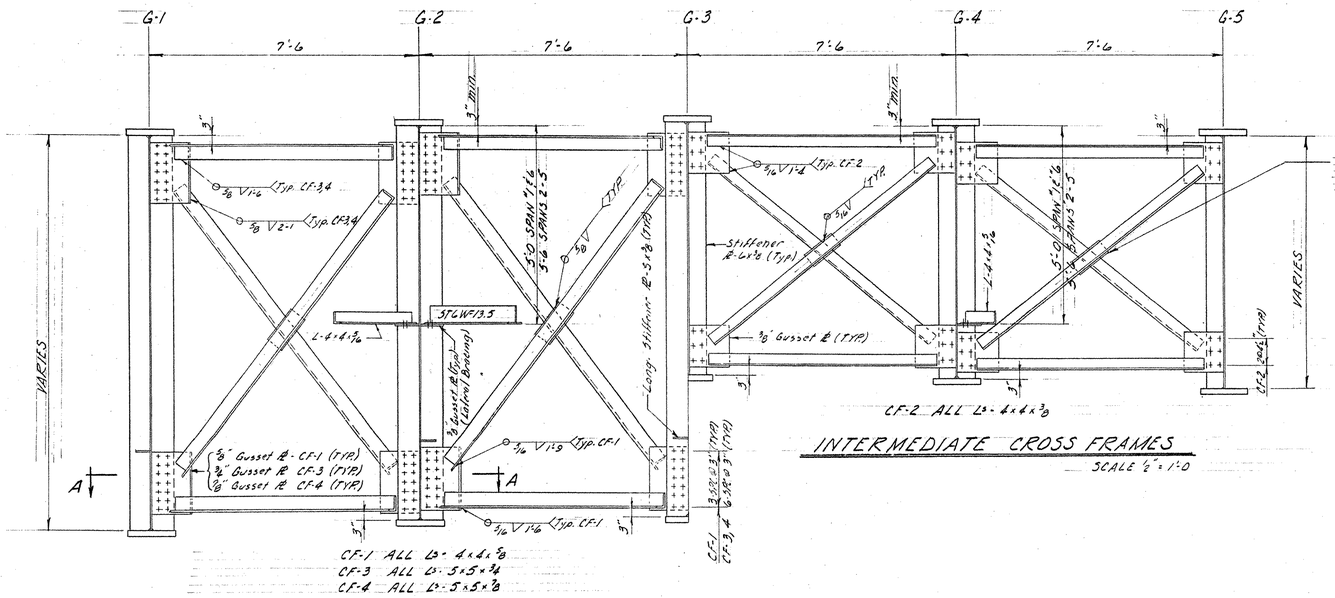
ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C. Y.				
	CHAN. EXCAV. OF ROCK	C. Y.				
	UNCLASS. CHAN. EXCAV.	C. Y.				
	STRUCT. EXCAV.	C. Y.				
	CONC. CLASS AA (MOD.)	C. Y.				
	CONC. CLASS B (MOD.)	C. Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S. Y.				
	TREATED TIMBER PILING	L. F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L. F.				
	UNTREATED TIMBER PILING	L. F.				

IR 089-1(13)
This sheet for information only
BR 11 N & S

BR. 110 OF 128

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROAD NO. I-89 BRIDGE NO.
I-89 OVER WHITE RIVER, VT 14 AND C.V.R.R.
SPAN NO. 3 - FRAMING PLAN
SCALE As Shown
SURVEYED BY
DRAWN BY RLO CHECKED BY AGC
PROJECT NO. I-89-1(16)
SHEET 18 OF 59



CF-1 ALL L's - 4x4x3/8
CF-3 ALL L's - 5x5x3/4
CF-4 ALL L's - 5x5x3/8

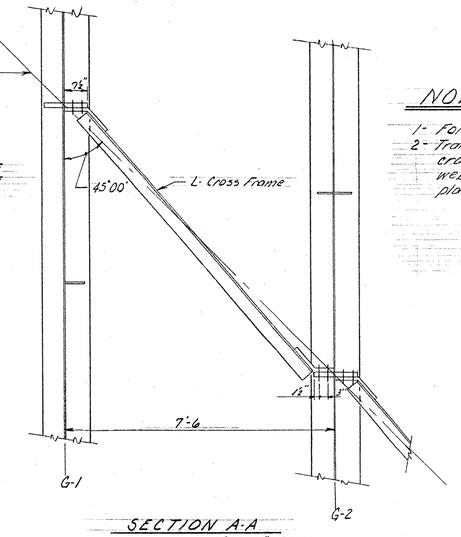
PIER AND ABUTMENT CROSS FRAMES

SCALE 1/2" = 1'-0

CF-2 ALL L's - 4x4x3/8

INTERMEDIATE CROSS FRAMES

SCALE 1/2" = 1'-0

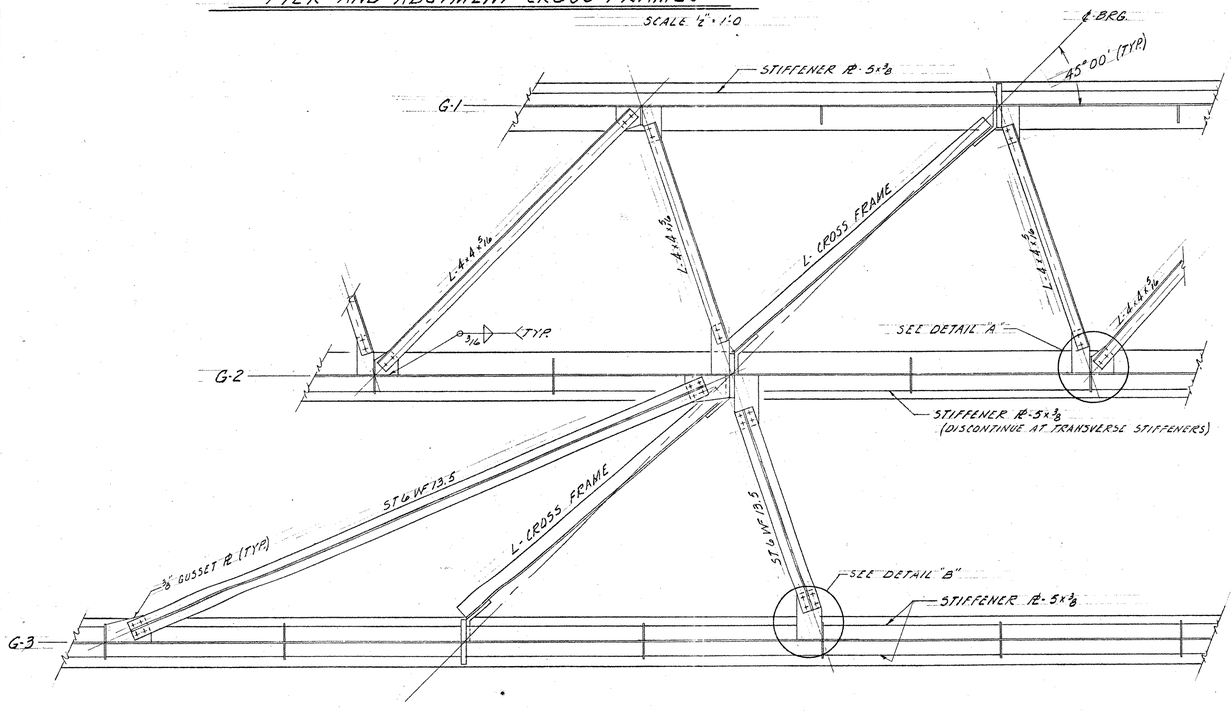


SECTION A-A

SCALE 1/2" = 1'-0

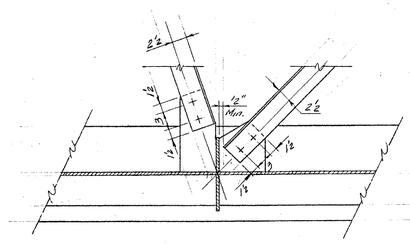
NOTES :-

1- For location of cross-frames see BR. 108-110
2- Transverse stiffeners at intermediate cross-frames (CF-2) shall be welded to the web or an angle so that the gusset plates need not be bent.



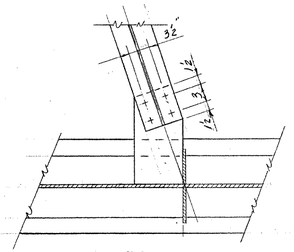
PARTIAL PLAN - LATERAL BRACING

SCALE 1/2" = 1'-0



DETAIL "A"

SCALE 1" = 1'-0



DETAIL "B"

SCALE 1" = 1'-0

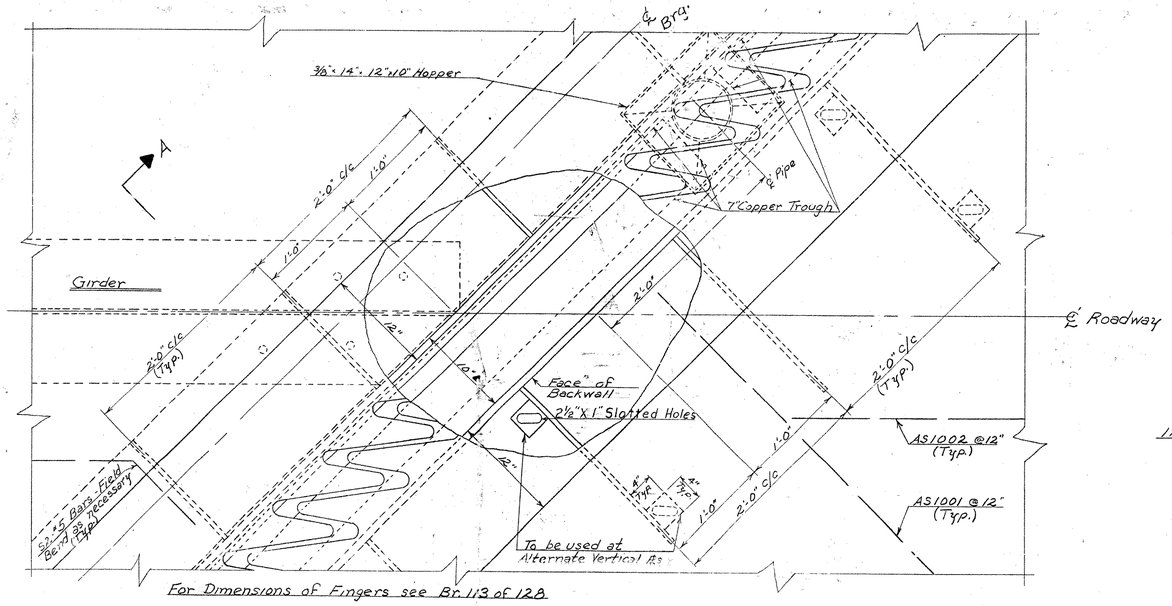
ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C. Y.				
	CHAN. EXCAV. OF ROCK	C. Y.				
	UNCLASS. CHAN. EXCAV.	C. Y.				
	STRUCT. EXCAV.	C. Y.				
	CONC. CLASS AA (MOD.)	C. Y.				
	CONC. CLASS B (MOD.)	C. Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S. Y.				
	TREATED TIMBER PILING	L. F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L. F.				
	UNTREATED TIMBER PILING	L. F.				

IR 089-1(13)
This sheet for information only
BR 11 N & S

BR. 111 OF 128

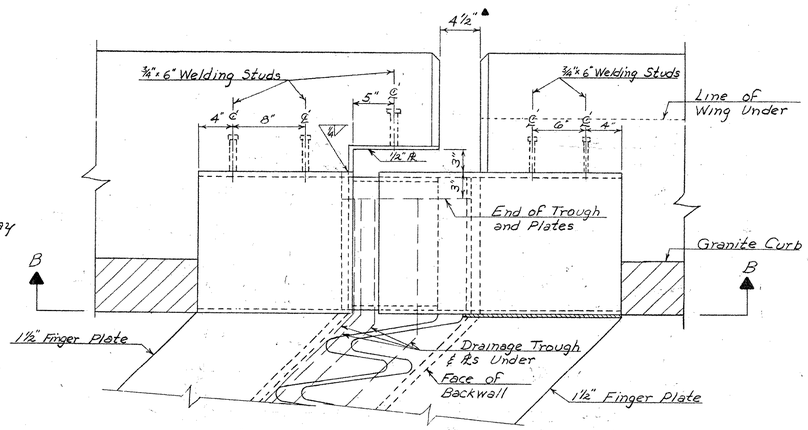
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROAD NO. I-89 BRIDGE NO.
I-89 OVER WHITE RIVER, VT. '14 AND CVRR
BRACING DETAILS
SCALE As Shown
SURVEYED BY
DRAWN BY RLO CHECKED BY AGC
PROJECT NO. I-89-1(6)
SHEET 19 OF 59



For Dimensions of Fingers see Br. 113 of 128

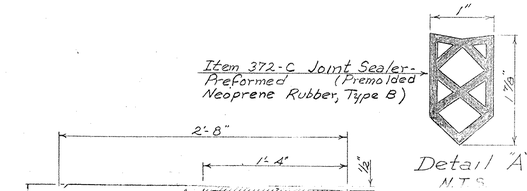
Plan of Expansion Dam at ℄ of Roadway



Plan of Expansion Dam at Curb

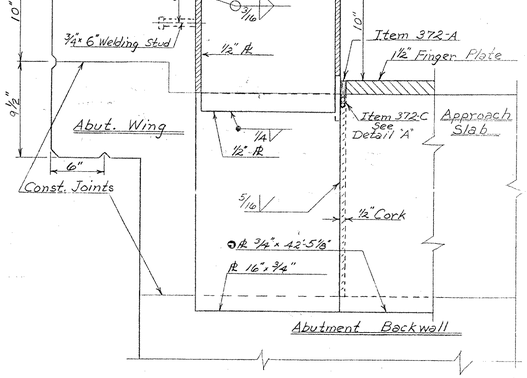
(Opposite End Similar)

1. Plates marked ◑ shall conform to the roadway grade and parabolic crown.
2. For additional details of Finger Rs and drainage see Br. 113 of 128
3. All steel for the Expansion Dam shall be ASTM A 242 unless otherwise noted.
4. All plates which are embedded completely in concrete may be A-36 steel.
5. All clear dimensions indicated ▲ are for 68°F.

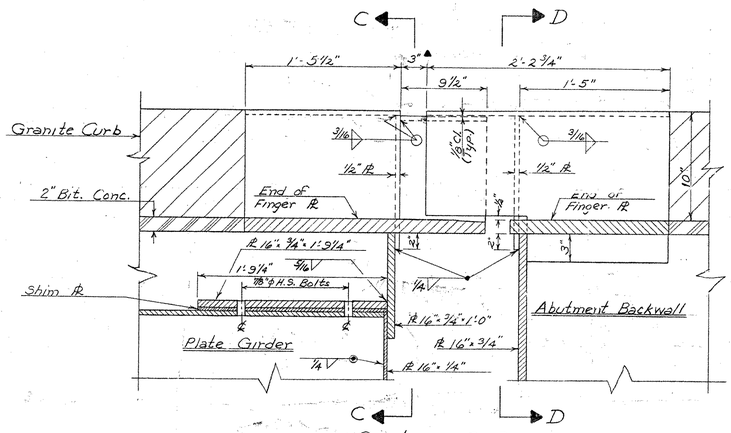


Item 372-C Joint Sealer-Preformed (Premolded Neoprene Rubber, Type B)

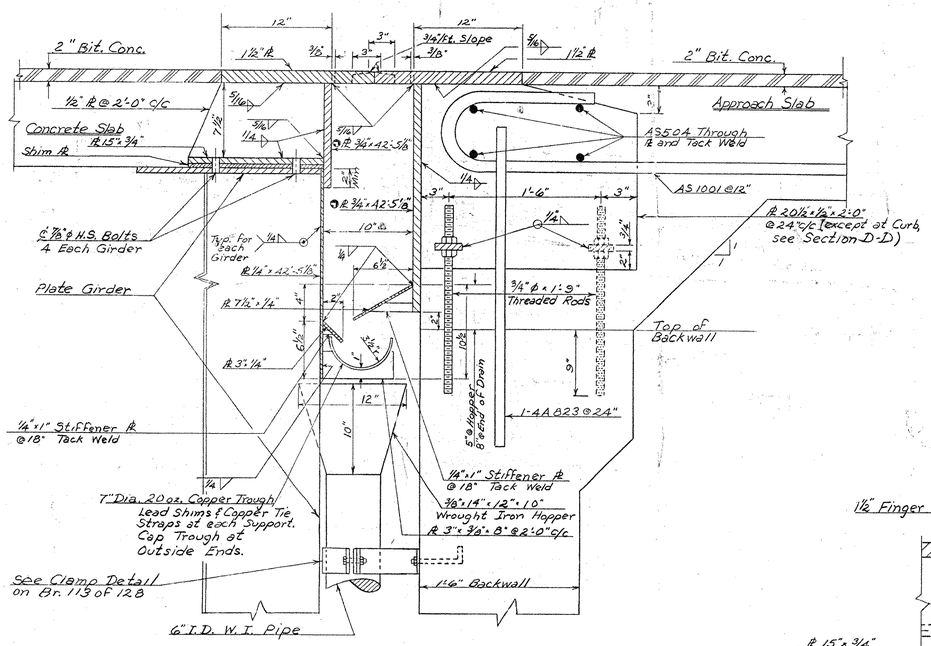
Detail "A"



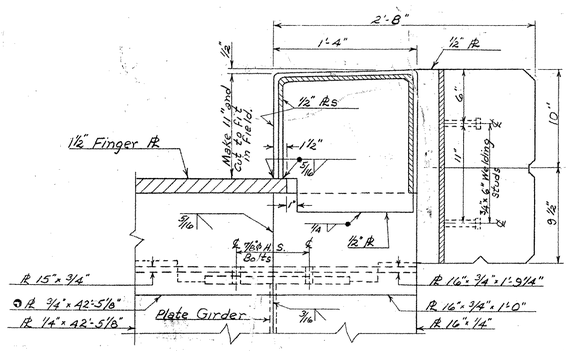
Section D-D



Section B-B



Section A-A



Section C-C

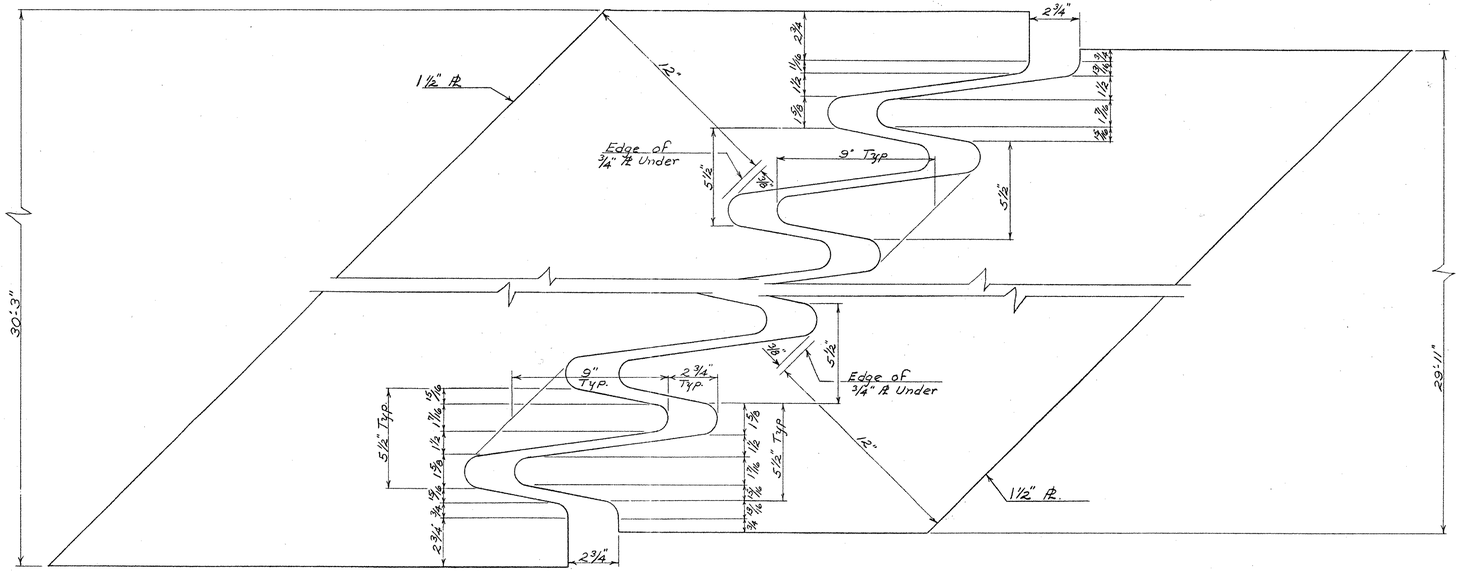
ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C.Y.				
	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV.	C.Y.				
	STRUCT. EXCAV.	C.Y.				
	CONC. CLASS AA (MOD.)	C.Y.				
	CONC. CLASS B (MOD.)	C.Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L.F.				
	UNTREATED TIMBER PILING	L.F.				

IR 089-1(13)
This sheet for information only
BR 11 N & S

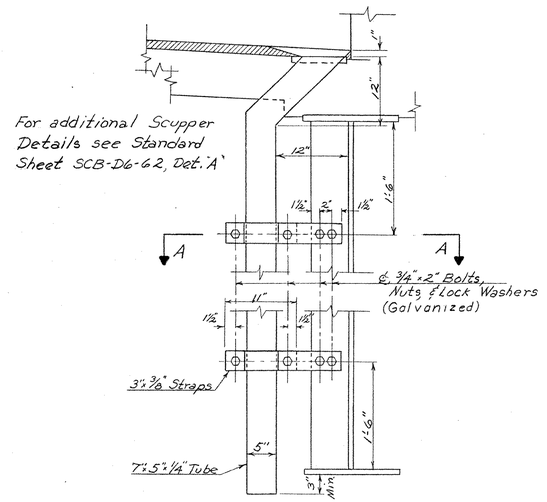
Br. 112 of 128

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

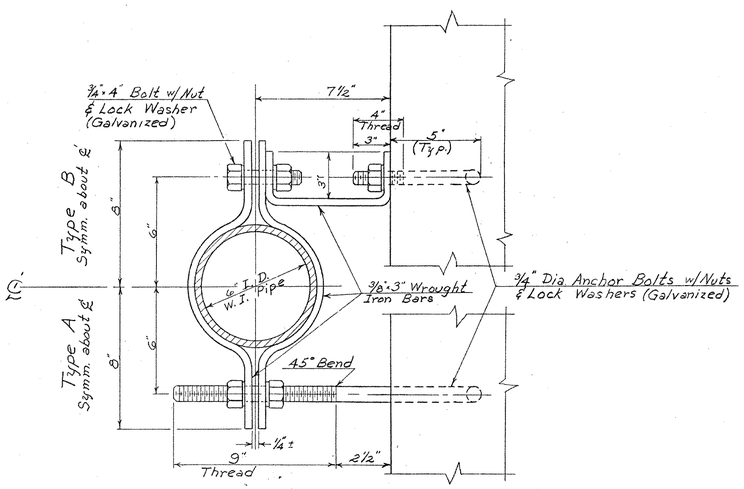
TOWN OF Hartford
ROAD NO. I 89 BRIDGE NO.
I89 over White River, Vt. "A" & CVRR
Expansion Dam Details
SCALE 1½" = 1'-0"
SURVEYED BY
DRAWN BY W.B.T. CHECKED BY R.L.O
PROJECT NO. I 89-1(6)
SHEET 20 OF 59



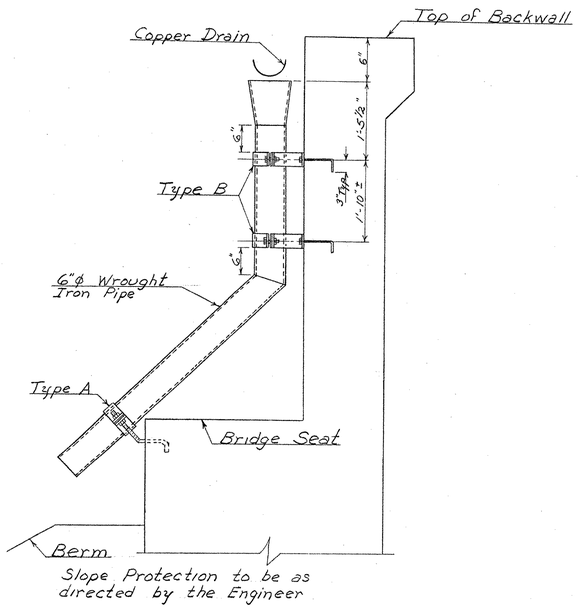
Finger Plate Details
Scale: 3"=1'-0"



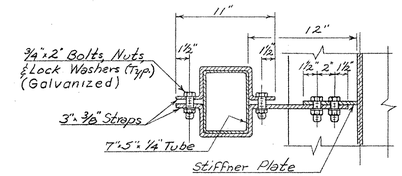
Scupper Detail
Scale: 1"=1'-0"
For location of Scuppers see Br. 100



Clamp Detail
Scale: 3"=1'-0"



Drainage Pipe at Expansion Dam
Scale: ¾"=1'-0"



Section A-A
Scale: 1½"=1'-0"

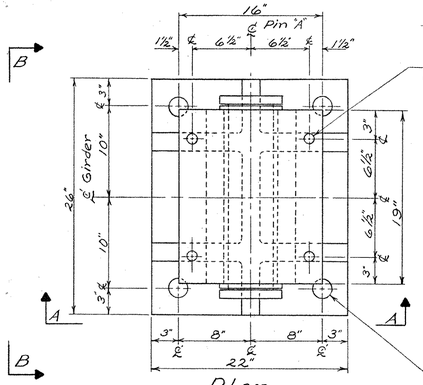
IR 089-1(13)
This sheet for information only
BR 11 N & S

Br. 113 of 128

ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C. Y.				
	CHAN. EXCAV. OF ROCK	C. Y.				
	UNCLASS. CHAN. EXCAV.	C. Y.				
	STRUCT. EXCAV.	C. Y.				
	CONC. CLASS AA (MOD.)	C. Y.				
	CONC. CLASS B (MOD.)	C. Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S. Y.				
	TREATED TIMBER PILING	L. F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L. F.				
	UNTREATED TIMBER PILING	L. F.				

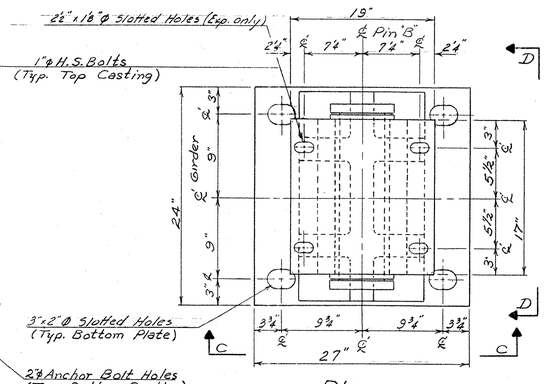
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Hartford
ROAD NO. I89 BRIDGE NO.
I 89 over White River, Vt. 14 & CVRR
Finger Plate, Drain Pipe, & Scupper Details
SCALE As noted
SURVEYED BY
DRAWN BY WBT CHECKED BY RLO
PROJECT NO. I89-1(6)
SHEET 21 OF 59



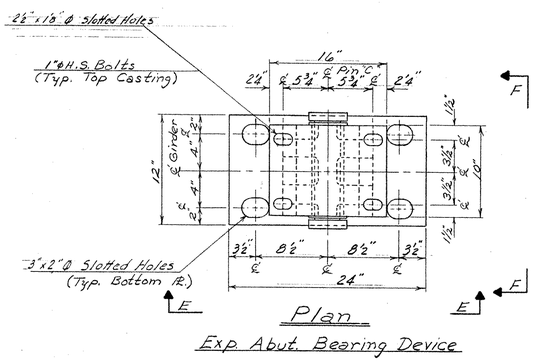
Plan

Fixed Pier Bearing Device



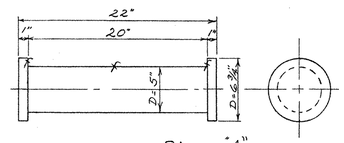
Plan

Exp. Pier Bearing Device

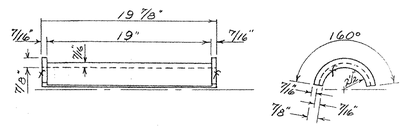


Plan

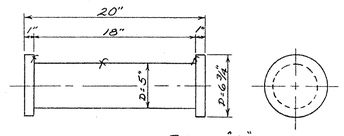
Exp. Abut. Bearing Device



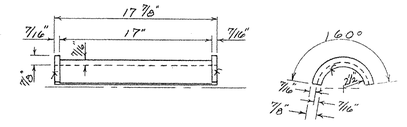
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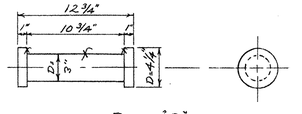
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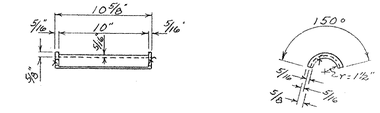
Pin "B"



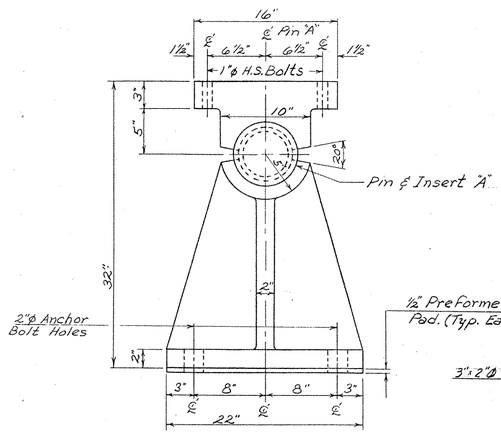
Insert "B"



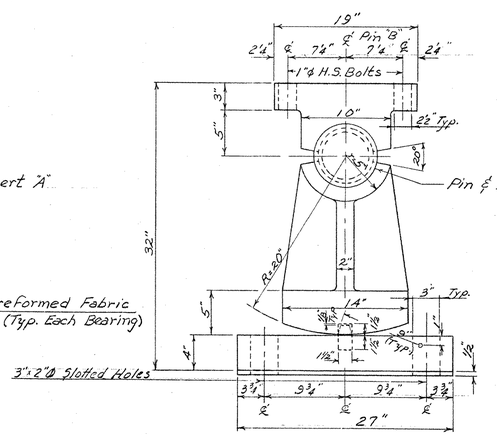
Pin "C"



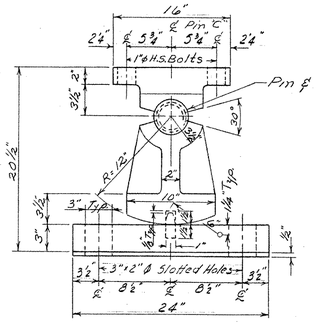
Insert "C"



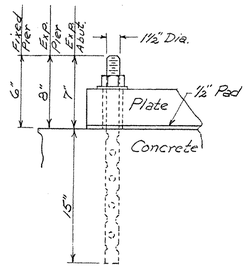
Elev. A-A



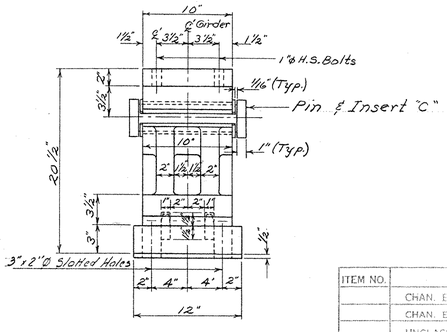
Elev. C-C



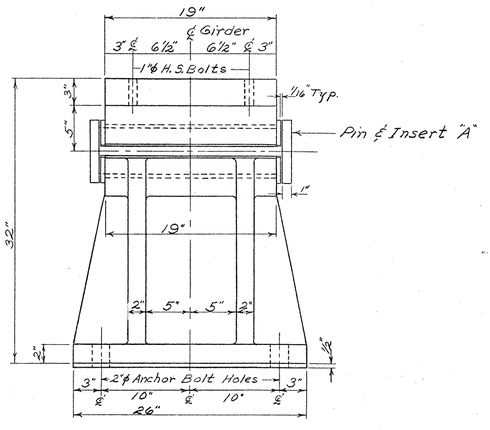
Elev. E-E



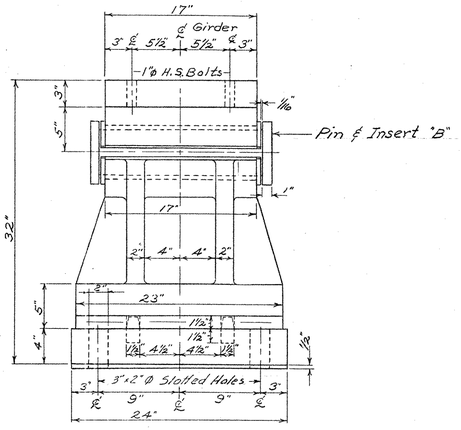
Swedge Bolt Detail



Elev. F-F



Elev. B-B



Elev. D-D

Details of Pins and Bronze Inserts

Note: Bronze inserts to be Cast Bridge Bearing Bronze, A.S.T.M. B-22-52, Alloy E, AASHO Designation M 107. All Bronze inserts are to be self-lubricating with tre-panned or drilled in lubricant filled recesses. The lubricating areas shall comprise not less than 25% of the total bearing area. Bronze inserts shall have a capacity of not less than 5,000 p.s.i. of projected area. The coefficient of friction shall not exceed one-tenth.

Notes:

1. Preformed Fabric Pads ½" thick, equal in size to the bearing plates, shall be used under each bearing to conform with AASHO "Standard Specifications for Highway Bridges, 1961, Section 2.10.3(K).

2. The Fabricator may furnish the bearing devices either as steel castings conforming to "Steel Castings for Highway Bridges" AASHO Designation M-192 Class 70, or as welded assemblies using structural steel conforming to AASHO Designation M183 in which case the weldment shall be stress relieved by heat treatment in accordance with A.W.S. Specifications Section 412. Should the Fabricator elect to furnish a weldment in lieu of the details indicated for castings he may submit details for modifying the devices to facilitate welding the assembly.

3. Align devices so that all rocker arm shafts will be vertical at 45°F.

Weight of Fixed Pier Bearing = 1570 lbs.
Weight of Exp. Pier Bearing = 1965 lbs.
Weight of Exp. Abut. Bearing = 585 lbs.

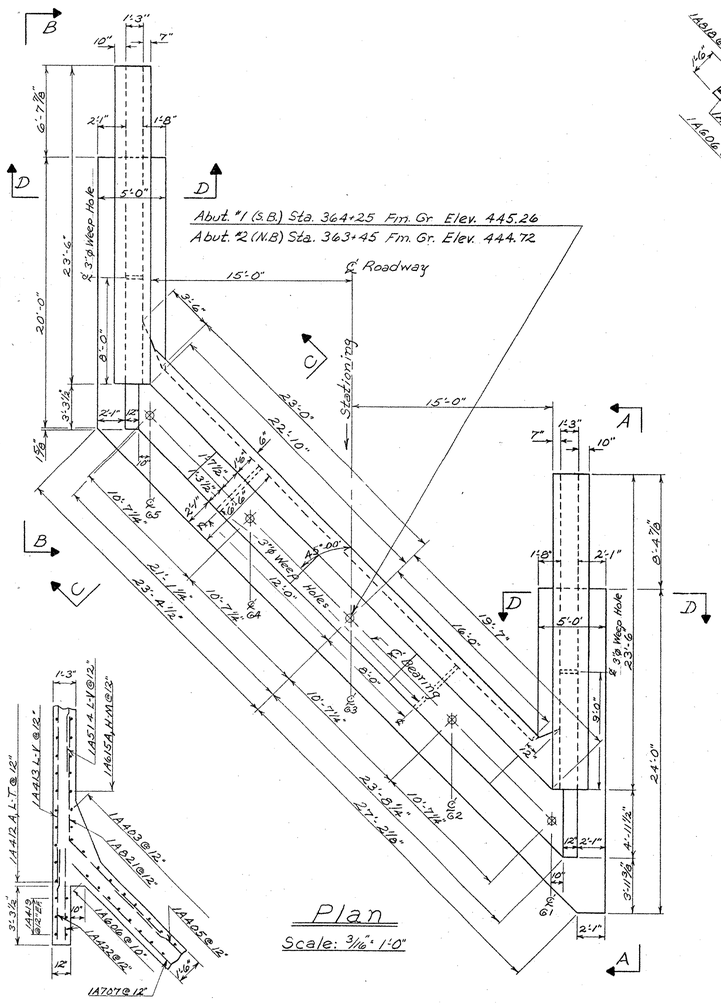
ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C.Y.				
	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV.	C.Y.				
	STRUCT. EXCAV.	C.Y.				
	CONC. CLASS AA (MOD.)	C.Y.				
	CONC. CLASS B (MOD.)	C.Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L.F.				
	UNTREATED TIMBER PILING	L.F.				

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This sheet for information only
BR 11 N & S

Br. 114 of 128

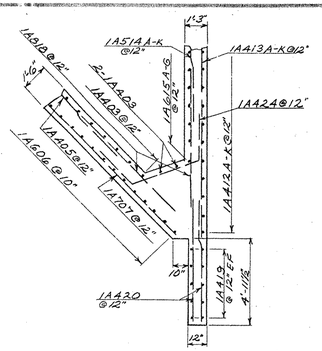
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Hartford
ROAD NO. I 89 BRIDGE NO.
I 89 over White River, Vt "14, & CVRR
Abut. & Pier Bearing Devices
SCALE 1½" = 1'-0"
SURVEYED BY
DRAWN BY WBT CHECKED BY RLO
PROJECT NO. I-89-1(6)
SHEET 22 OF 59



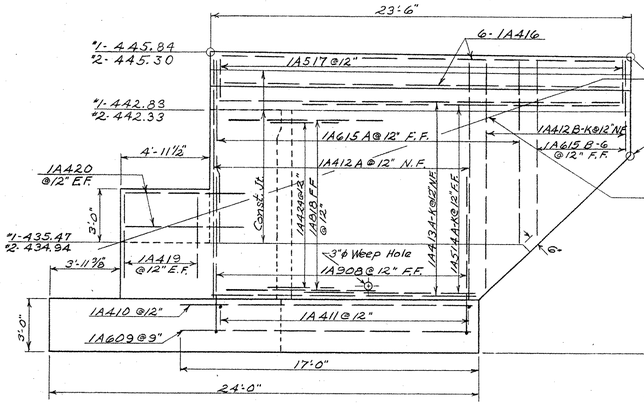
Plan

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



Section F-F

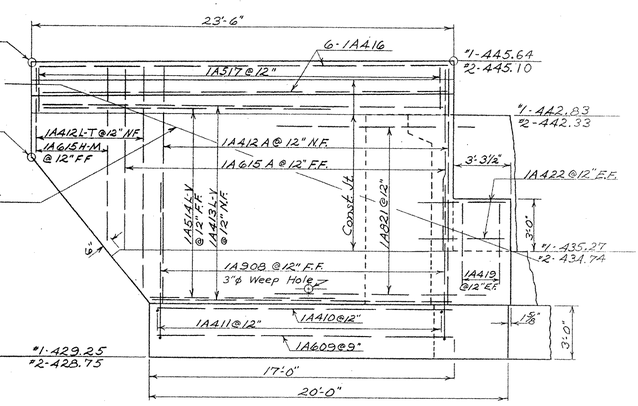
Scale: 1/4" = 1'-0"



Elevation A-A

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

Note: Steel is shown for Abut. #1. Abut. #2 is the same except Mark 2A----.



Elevation B-B

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

Section C-C

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

Section D-D

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

Elevation

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

Pile Layout Plan

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

Notes

1. All piles shall be driven to point bearing on ledge unless the design bearing capacity of the pile is attained above this elevation. Approximate ledge elevations are indicated.

2. For Abutments No. 1 & 2 Fill is to be placed to pile cut-off elevation prior to driving piles. Excavation to bottom of footing after piles are driven is to be paid for under Item 109 Structure Excavation.

3. Front face of Backwall above Bridge Seats and inside face of backwall and wings are to be mopped with two (2) coats of Emulsified Asphalt, Type RS-1, as specified in Item 407.02-A1, State of Vermont, Department of Highways, Standard Specifications, dated 1964. Cost of this work to be included in the unit price bid for Concrete Class B, Item 401-B. Typical all abutments.

4. Steel Piles are designed for a maximum load of 45 Tons each.

5. For construction details see Standard Sheet SCB-D6-62.

6. All concrete above the top of Backwall shall be placed after girders are profiled.

7. For details of Cable Guard Rail Post Anchorage see Std. Sheet G36.

8. For details of Girder Bumper see Detail A, Br.117 of 128

9. For additional General Notes see Standard Sheet SCB-D1-65.

10. For details of rounded curb at ends of wings see Std. Sheet SCB-D4-65

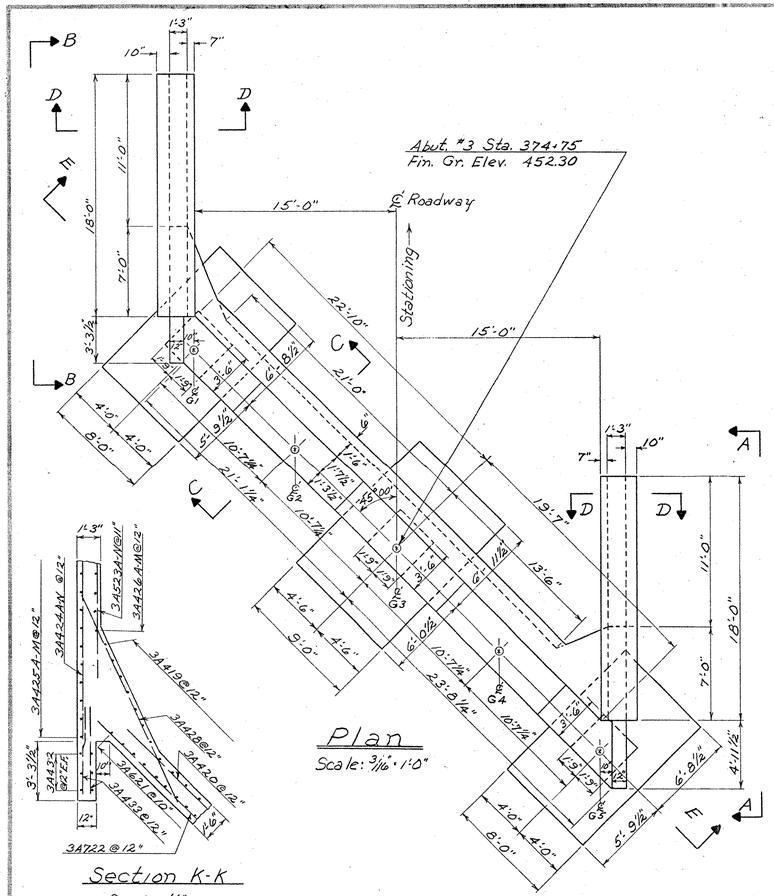
Abut. No.	No. of Piles	Size	Est. Lgth. of Piles	Splices allowed for piles not exceeding plan length. (To be paid for only if used)	Splices estimated for piles exceeding plan length. (To be paid for only if used)
1	18	12BP53	75'	18	4
2	18	12BP53	75'	18	4

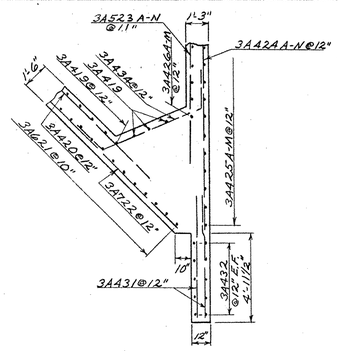
IR 089-1(13)
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BR 11 N & S

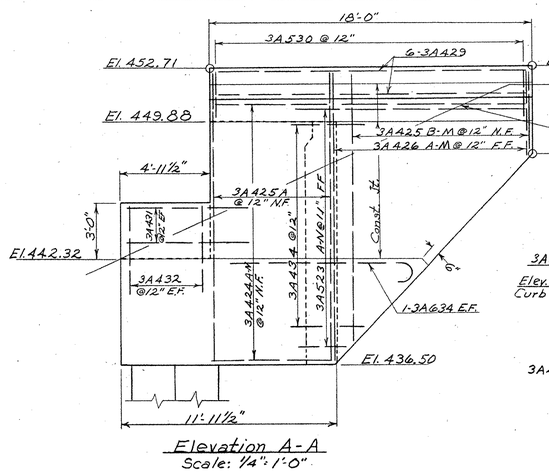
Br. 115 of 128

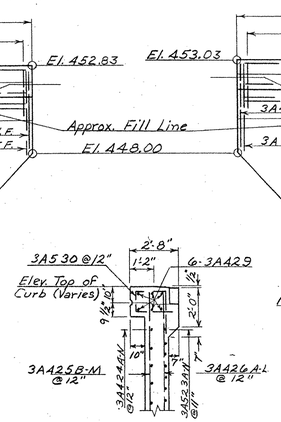
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

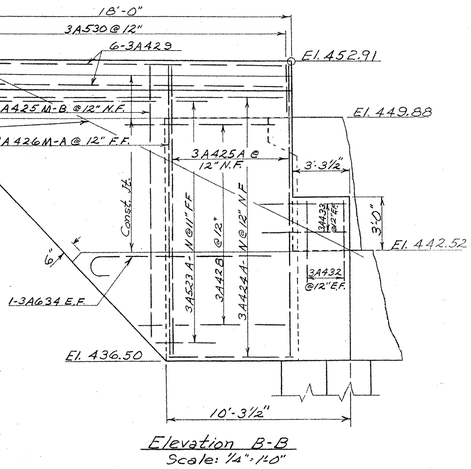
TOWN OF Hartford
ROAD No. I89 BRIDGE No.
I89 over White River, Vt. #14, & CVRR
Abut. #1 & #2 : Plan, Sections, and Details
SCALE As noted
SURVEYED BY
DRAWN BY WBT CHECKED BY RLO
PROJECT NO. I 89-1(6)
SHEET 23 OF 59

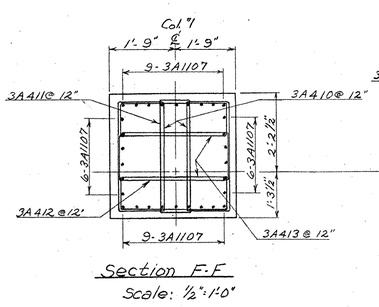


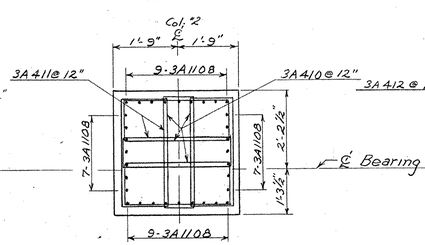


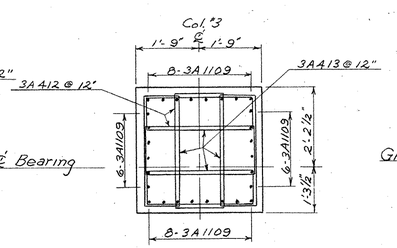


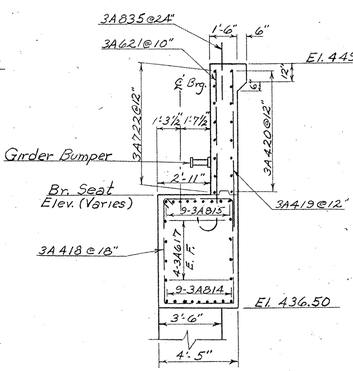


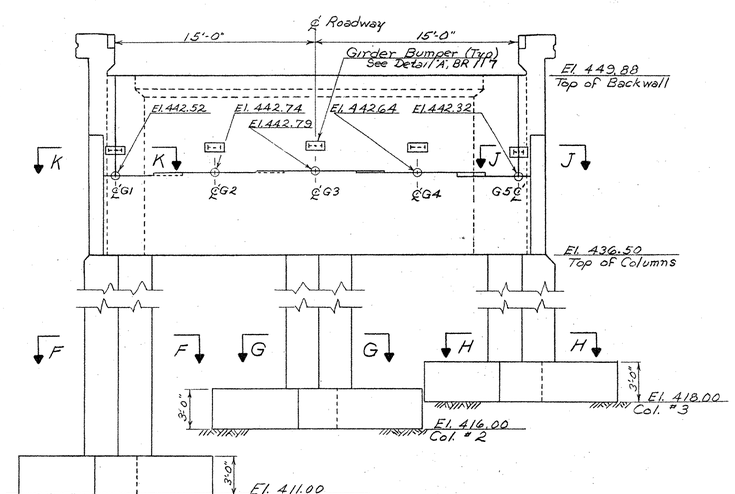


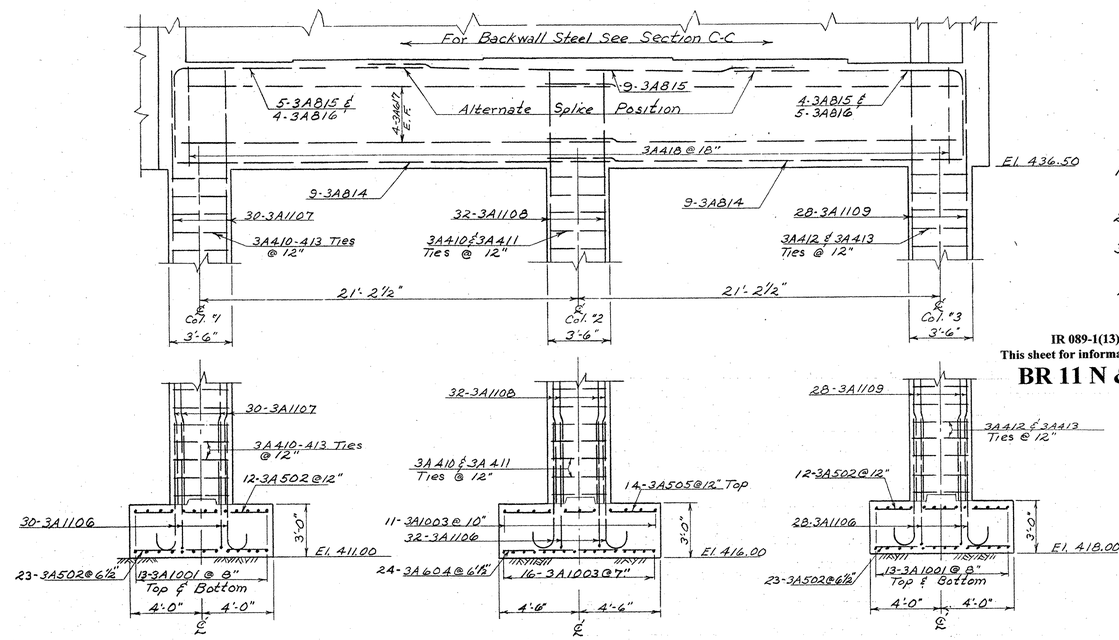












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BR 11 N & S

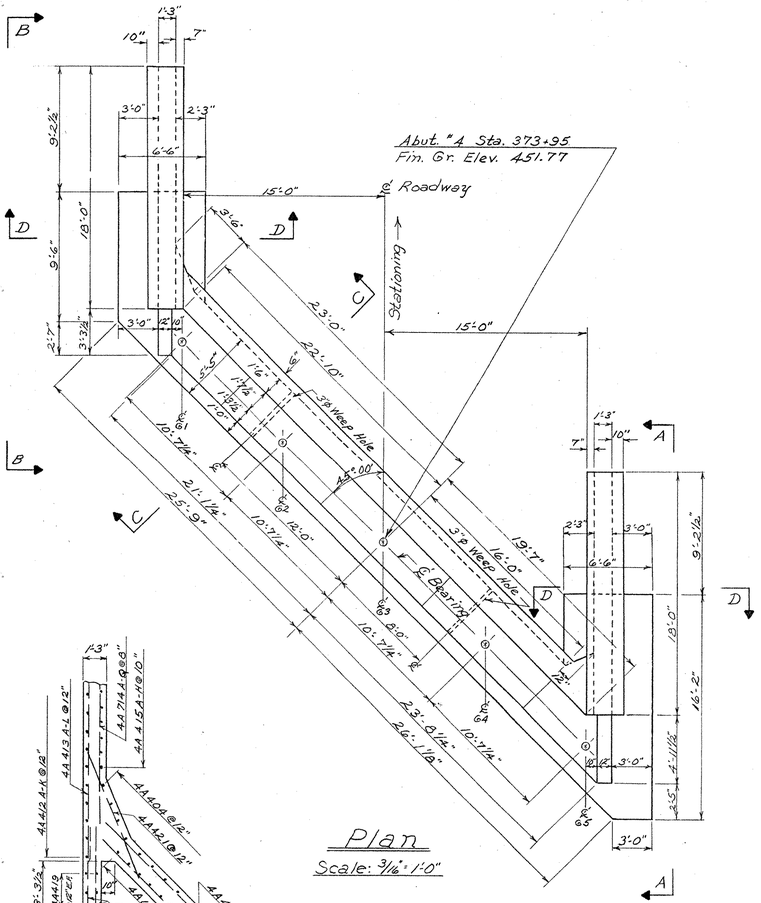
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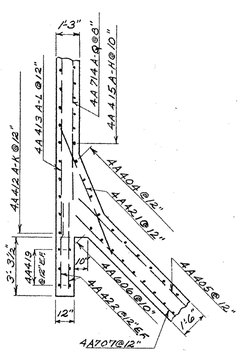
1. Abut. #3 is designed for a maximum bearing of 10 K/s.f. on ledge.
2. See Br.115 of 128 for general abutment notes.
3. See Detail 'A' Br.117 of 128 for details of girder bumpers.
4. See Br. 118 of 128, Notes #5 & 6 for footings on ledge.

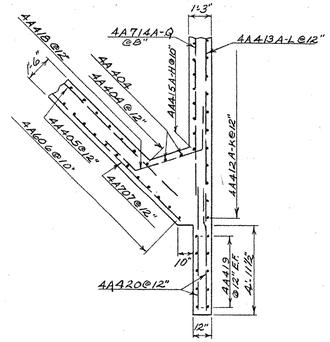
Br. 116 of 128

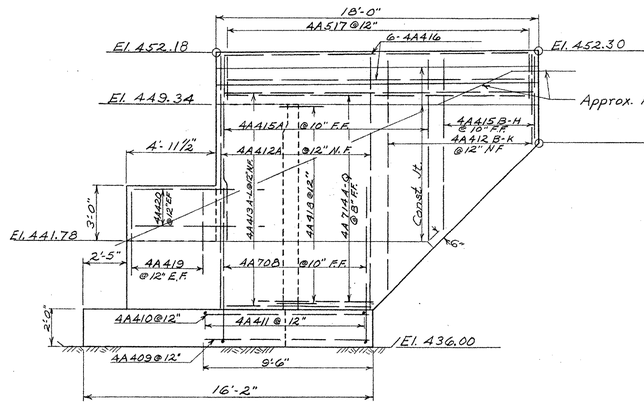
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

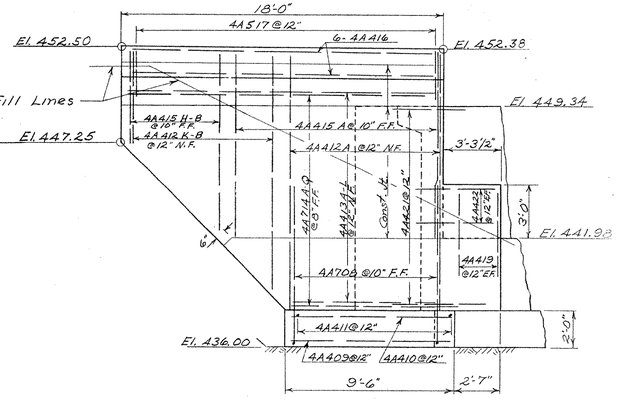
TOWN OF Hartford
ROAD No. I 89 BRIDGE No.
I 89 over White River, Vt. #4, & C.V.R.R.
Abut. #3
SCALE As noted
SURVEYED BY
DRAWN BY WBT CHECKED BY RLO
PROJECT No. I 89-1(6)
SHEET 24 OF 59

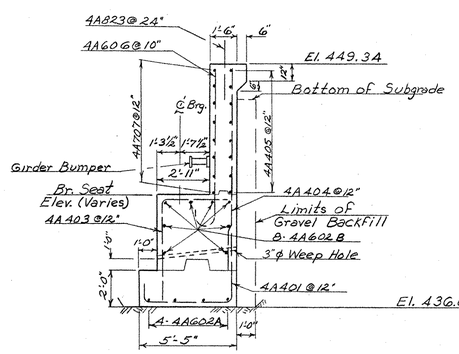


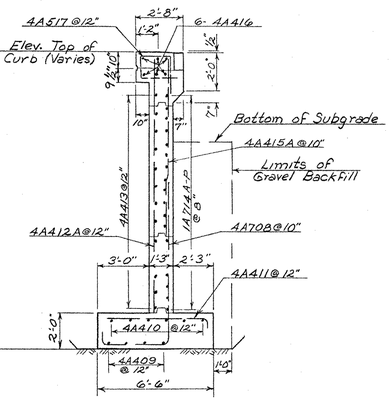


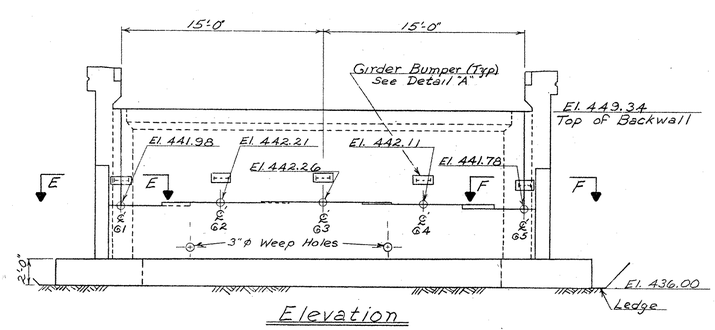


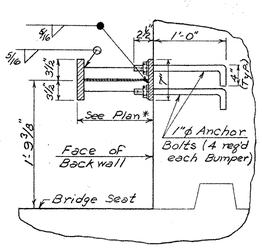




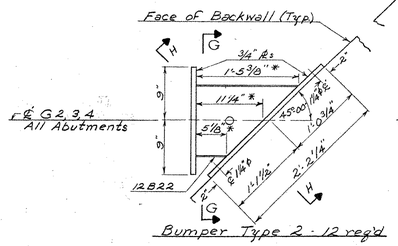


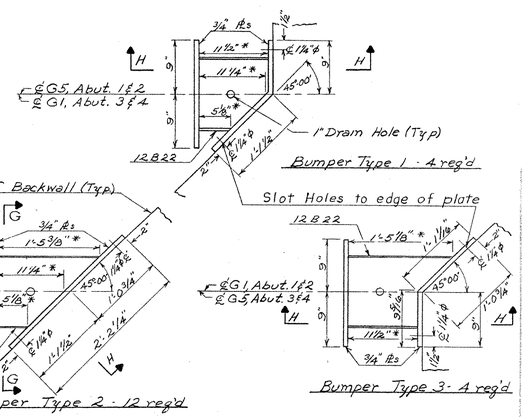






* Bumpers to be fitted to prevent fingers on expansion device from coming within 1/2" of bottom of slot and field welded to anchor plate after girders are erected.





Detail "A" (Details of Girder Bumpers)
Scale: 1" = 1'-0"

Notes

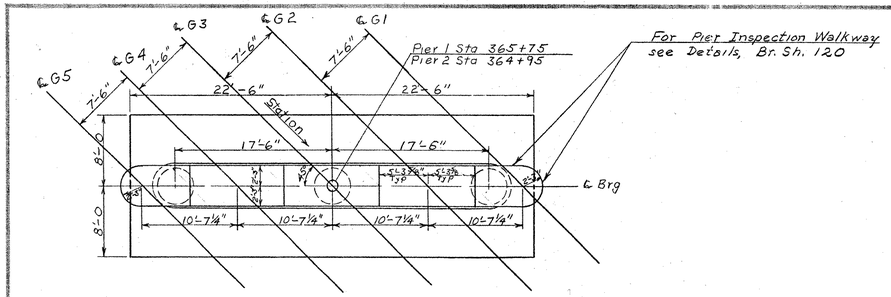
1. Abutment "4 is designed for a maximum bearing of 8 k.s.f. on ledge.
2. See Br. 115 of 128 for general abutment notes.
3. See Br. 118 of 128, Notes "5 & "6, for footings on ledge.

IR 089-1(13)
This sheet for information only
BR 11 N & S

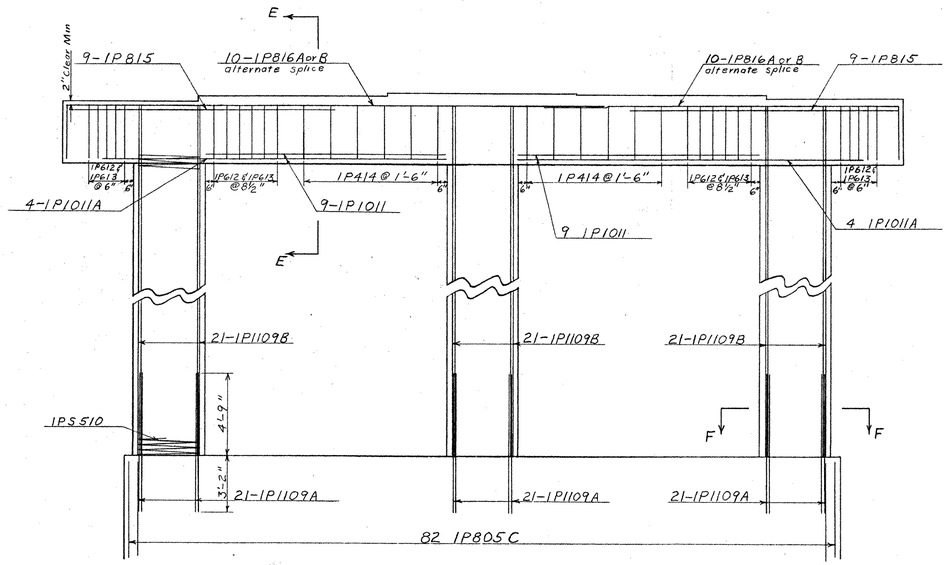
Br. 117 of 128

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

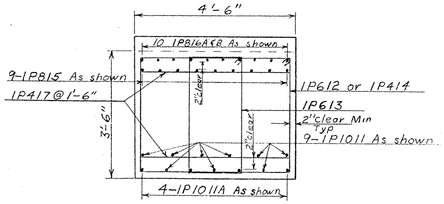
TOWN OF Hartford
ROAD No. I 89 BRIDGE No.
I 89 over White River, Vt. "14, & CVRR
Abut. "A & Girder Bumpers
SCALE As noted
SURVEYED BY
DRAWN BY W.B.T. CHECKED BY R.L.O
PROJECT NO. I 89-1(16)
SHEET 25 OF 59



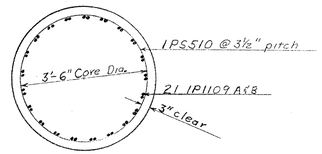
PLAN
Scale ⅛ in = 1 ft



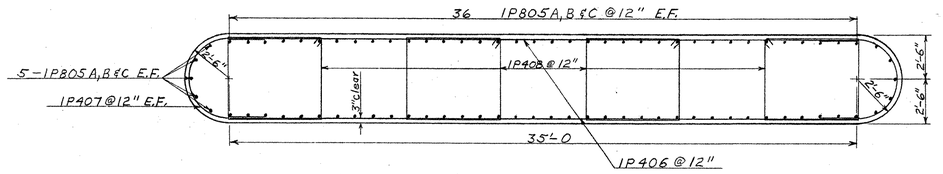
SEC A-A
Scale ¼ in = 1 ft



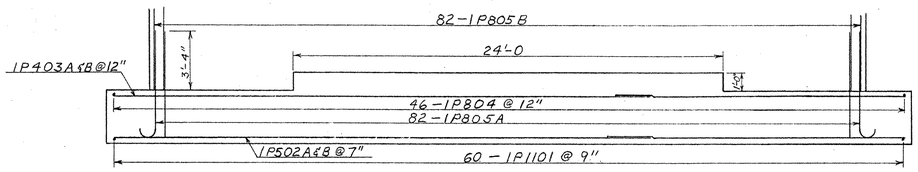
SEC E-E
Scale ½ in = 1 ft



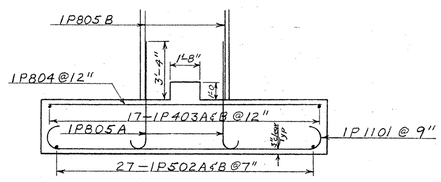
SEC F-F
Scale ½ in = 1 ft



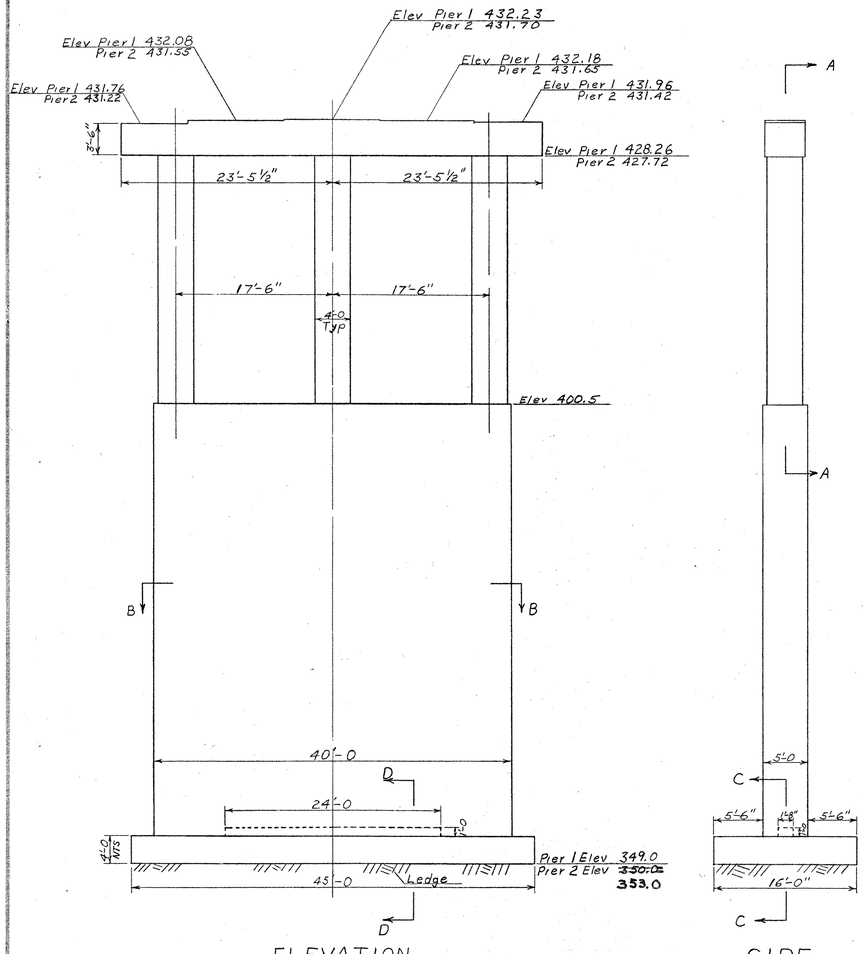
SEC B-B
Scale ⅛ in = 1 ft



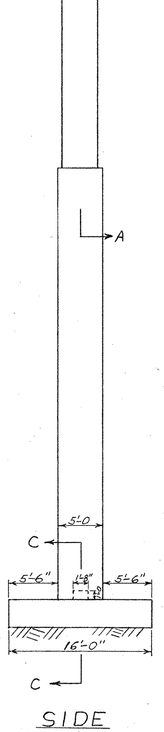
SEC C-C
Scale ¼ in = 1 ft



SEC D-D
Scale ⅛ in = 1 ft



ELEVATION
Scale ⅛ in. = 1 ft



SIDE
Scale ⅛ in = 1 ft

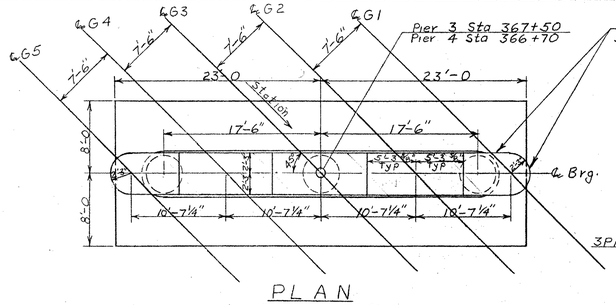
NOTES:
1. For general notes see Std Sht SCB-D1-65 & Br 100 of 128
2. All Spiral Reinforcement shall conform to AASHO Designation M 32-60 Cold Drawn Steel Wire for Concrete Reinforcement and shall be paid for under Item 402 Reinforcing Steel.
3. Pier 2 reinforcing steel similar to Pier 1 except mark is 2P in lieu of 1P.
4. Maximum footing pressure is 10 kips per sq. ft.
5. All footings shall be set on sound ledge.
6. The ledge under the footing shall be roughened such that no ledge shall project above the elevation of the bottom of the footing indicated on the plans.

IR 089-1(13)
This sheet for information only
BR 11 N & S

BR 118 OF 128

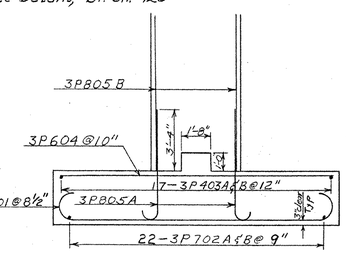
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROUTE No. I-89 LOG STA. 369
I 89 over WHITE RIVER, VT #14, CVRR
PIER NO. 1 & 2
SCALE As Shown
SURVEYED BY
DRAWN BY AGC CHECKED BY RLO
PROJECT No. I 89-1(6)
SHEET 26 OF 59



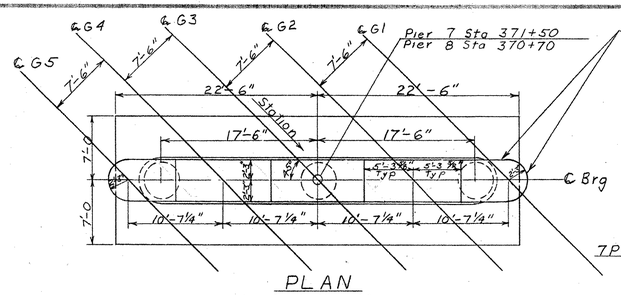
PLAN

Scale : ⅛ in = 1 ft.



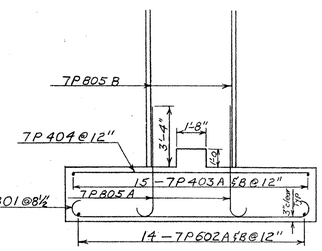
SEC D-D

Scale ¼ in = 1 ft



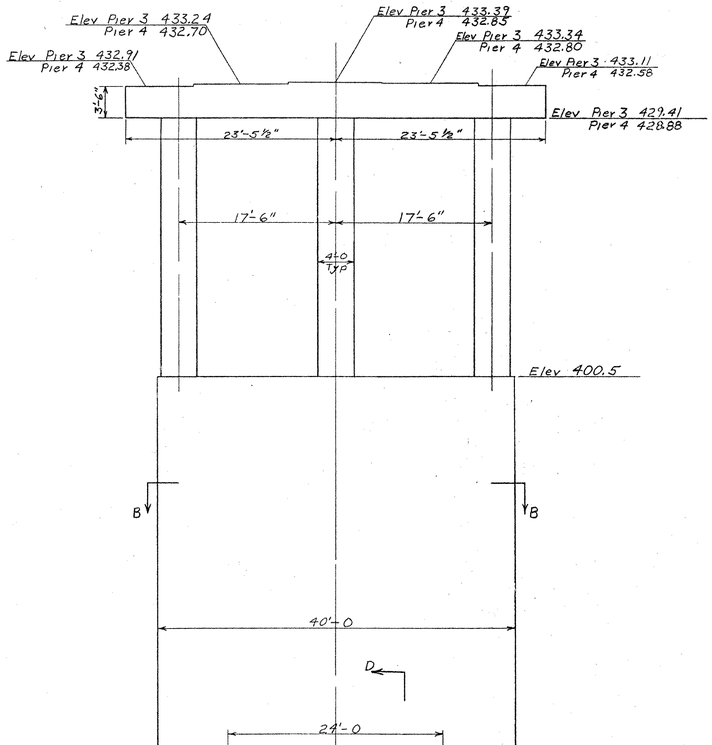
PLAN

Scale ⅛ in = 1 ft.



SEC D'-D'

Scale ¼ in = 1 ft.

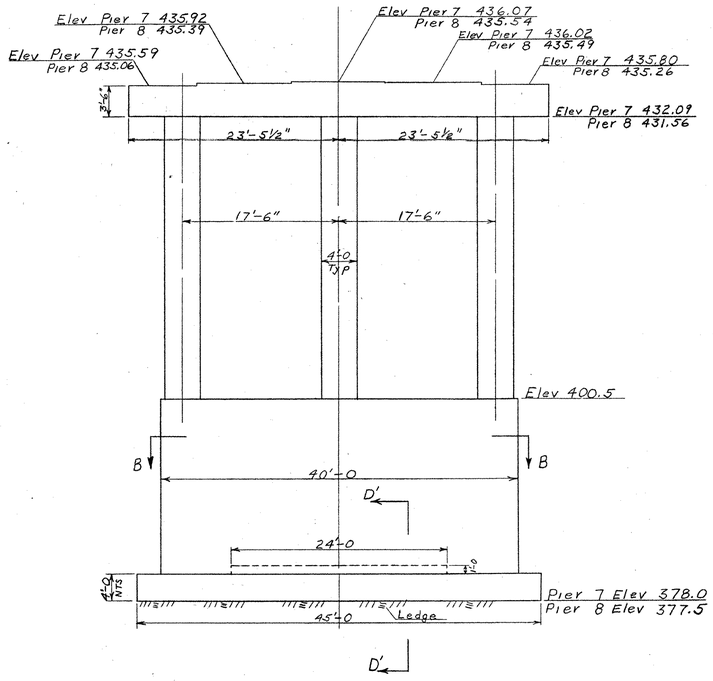


ELEVATION

Scale ⅛ in = 1 ft

SIDE

Scale ⅛ in = 1 ft



ELEVATION

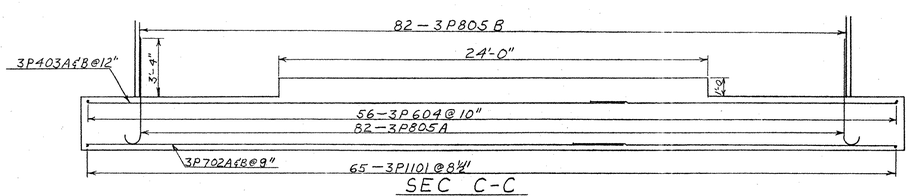
Scale ⅛ in = 1 ft.

SIDE

Scale ⅛ in = 1 ft.

NOTES:

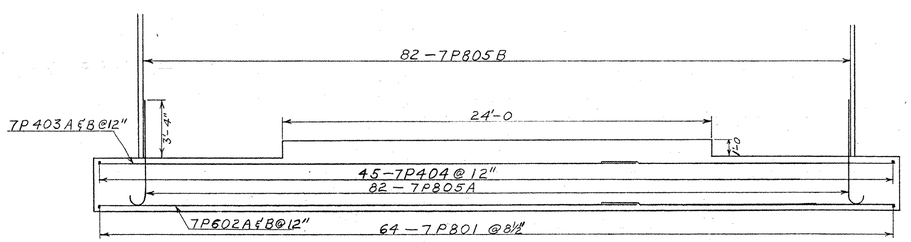
1. For Pier notes see Br Sh 118 of 128
2. For Sections A-A and B-B see Br Sh 118 of 128, reinforcing steel similar except mark is 3P, 4P, 7P or 8P in lieu of 1P.
3. Footing reinforcing steel for Pier 4 & 8 similar to Pier 3 & 7 respectively except mark is 4P and 8P in lieu of 3P and 7P.
4. The _P805C bar is omitted on Pier 7 & 8



SEC C-C

Scale ¼ in = 1 ft.

PIER NO. 3 & 4



SEC C'-C'

Scale ¼ in = 1 ft.

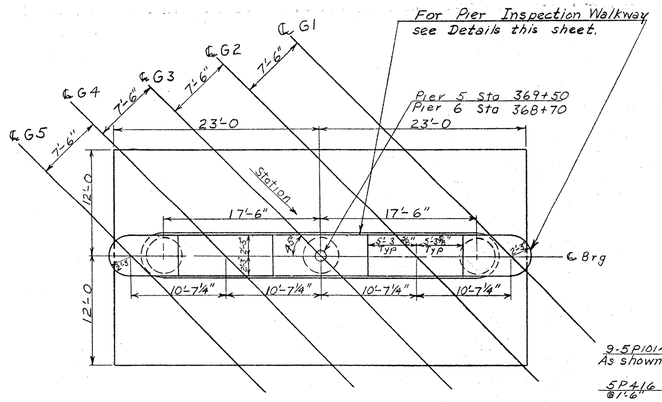
PIER NO. 7 & 8

IR 089-1(13)
This sheet for information only
BR 11 N & S

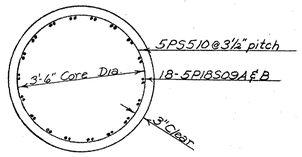
BR 119 OF 128

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

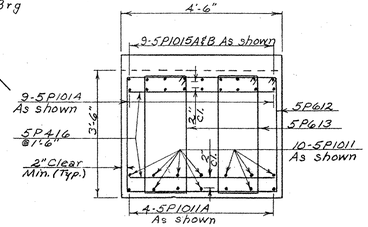
TOWN OF HARTFORD
ROUTE NO. I-89 LOG STA. 369
I 89 over WHITE RIVER, VT #14, CVRR
PIER NO. 3, 4, 7, & 8
SCALE As Shown
SURVEYED BY
DRAWN BY AGC CHECKED BY RLO
PROJECT NO. I 89-1(6)
SHEET 27 OF 59



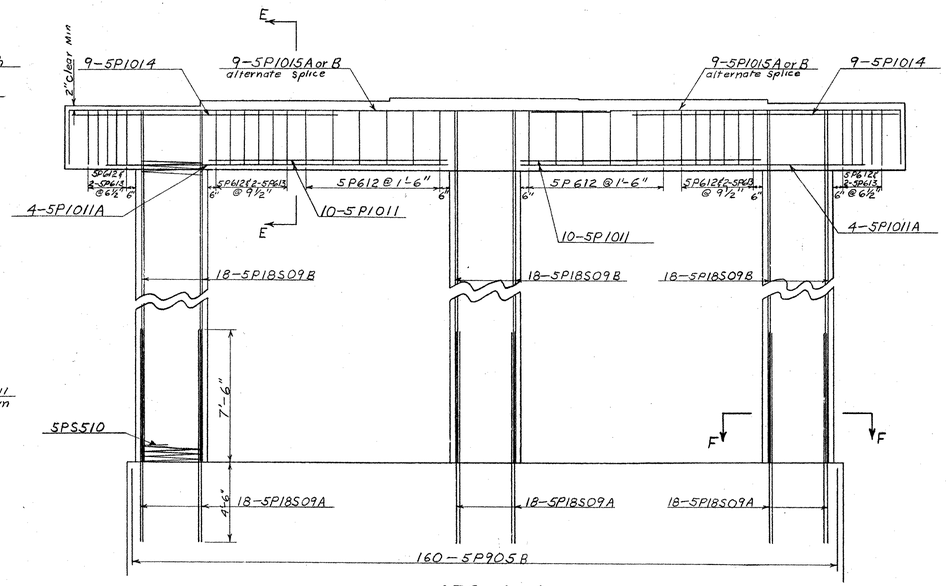
PLAN
Scale ⅛ in = 1ft



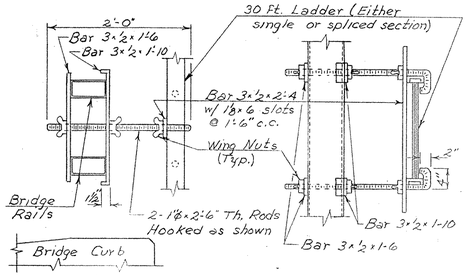
SEC F-F
Scale: ½" = 1'-0"



SEC E-E
Scale: 1½" = 1'-0"



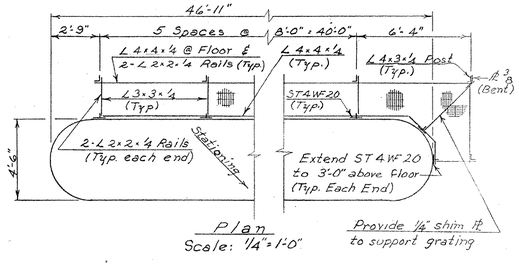
SEC A-A
Scale ¼ in = 1ft



Elevation Scale: 1"=1'-0" Plan

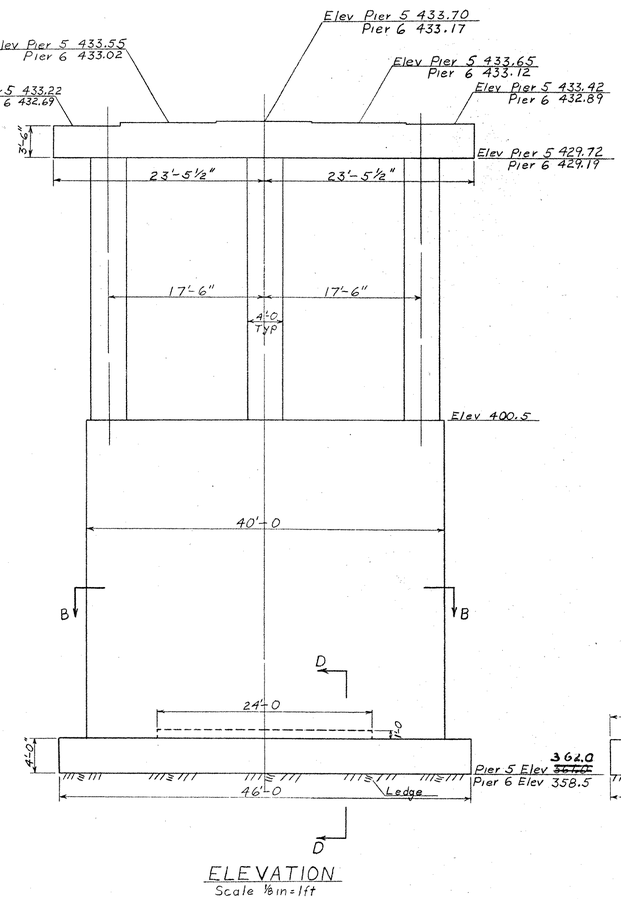
Access Ladder and Attachment

Provide one (1) each, Ladder and Attachment. Ladder to be standard Aluminum or other approved lightweight alloy, attachment to be A-36 Steel.

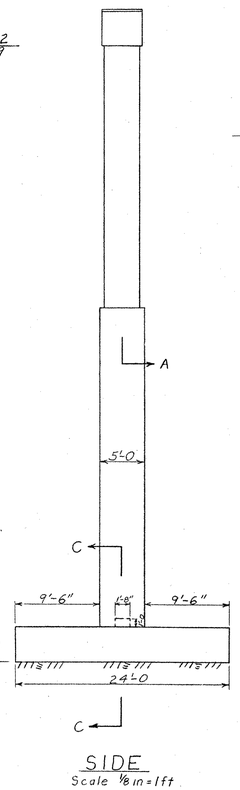


Plan
Scale: 1/4"=1'-0"

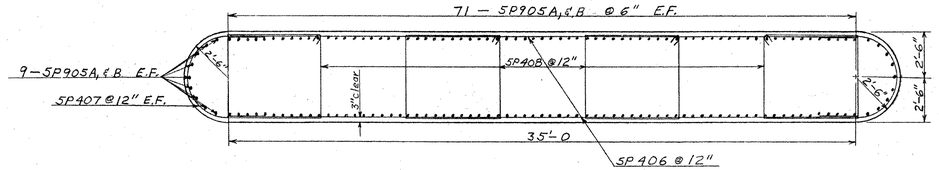
Provide ½" shim ft to support grating



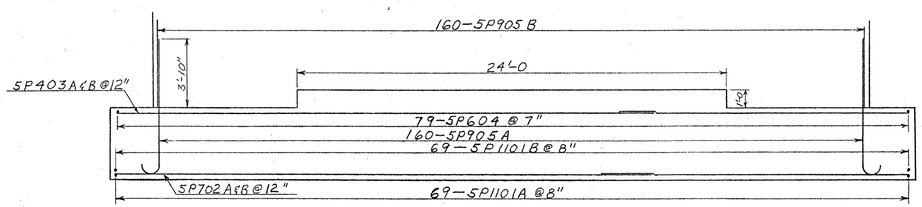
ELEVATION
Scale ⅛ in = 1ft



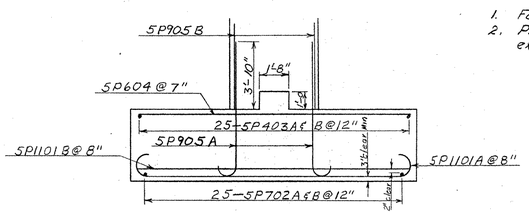
SIDE
Scale ⅛ in = 1ft



SEC B-B
Scale ¼ in = 1ft



SEC C-C
Scale ¼ in = 1ft

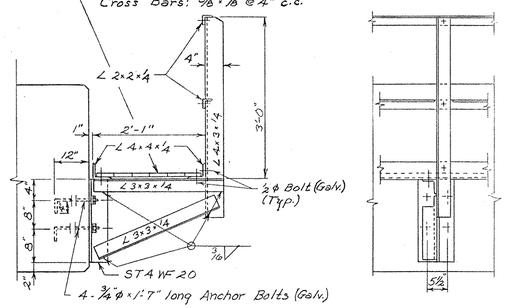


SEC D-D
Scale ¼ in = 1ft

Notes

1. For Pier Notes see Br. 118 of 128.
2. Pier 6 reinforcing steel similar to Pier 5 except mark is 6P... in lieu of 5P....

IR 089-1(13)
This sheet for information only
BR 11 N & S



Typical Section
Scale: ¾"=1'-0"

Elevation
Scale: ¾"=1'-0"

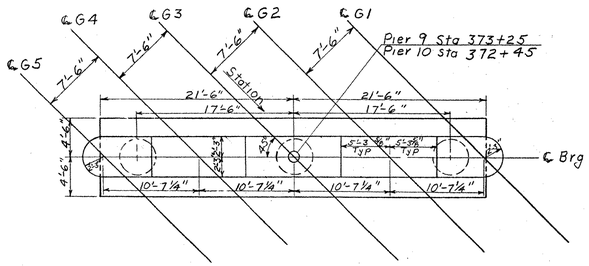
Pier Inspection Walkway Details

All walkway members shall be ASTM A-36 steel, Galvanized after fabrication to ASTM A-123. Walkways are required on Piers #1 thru #8, inc.

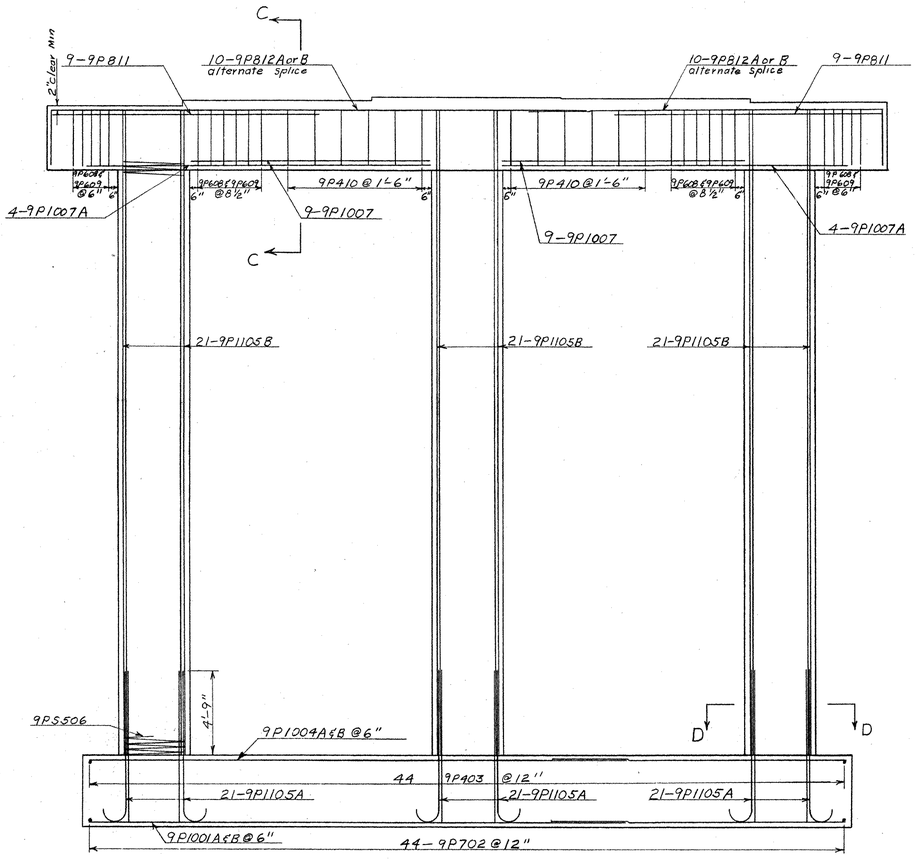
BR 120 OF 128

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

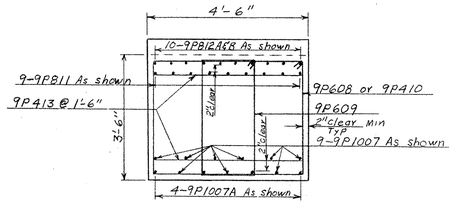
TOWN OF HARTFORD
ROUTE NO. I 89 LOG STA. 369
I 89 OVER WHITE RIVER, VT #14, CVRR
PIER NO. 5 & 6
SCALE As Shown
SURVEYED BY
DRAWN BY AGC CHECKED BY RLO
PROJECT NO. I 89-1(6)
SHEET 28 OF 59



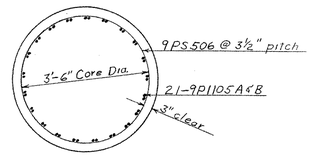
PLAN
Scale ⅛ in = 1 ft



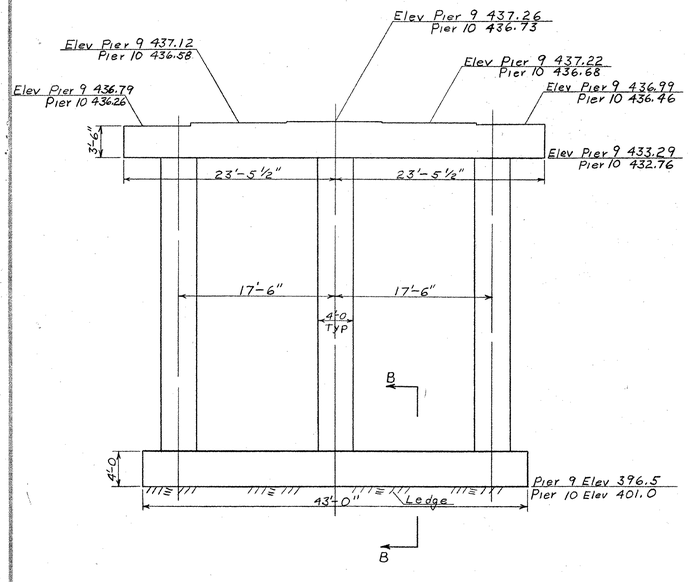
SEC A-A
Scale ¼ in = 1 ft



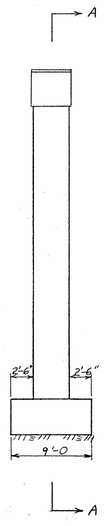
SEC C-C
Scale ½ in = 1 ft



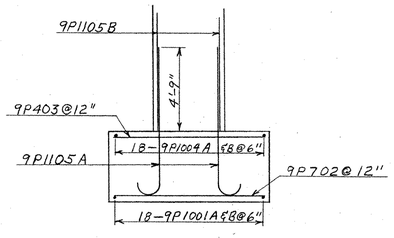
SEC D-D
Scale ½ in = 1 ft



ELEVATION
Scale ⅛ in = 1 ft



SIDE
Scale ⅛ in = 1 ft



SEC B-B
Scale ¼ in = 1 ft

NOTES:
1. For Pier notes see Br Sh 118 of 128
2. Pier 10 reinforcing steel similar to Pier 9 except mark is 10P in lieu of 9P.

IR 089-1(13)
This sheet for information only
BR 11 N & S

BR 121 OF 128

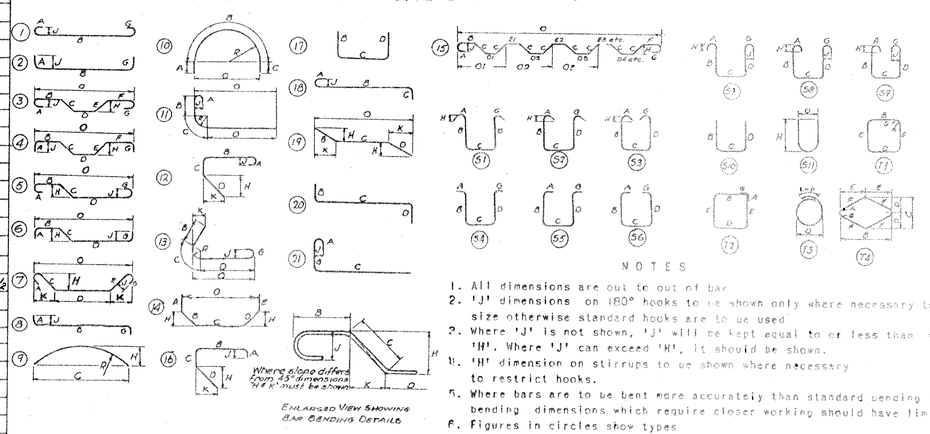
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROUTE NO. I-89 LOG STA. 369
I 89 OVER WHITE RIVER, VT#14, CVRR
PIER NO. 9 & 10
SCALE As Shown
SURVEYED BY
DRAWN BY AGC CHECKED BY RLO
PROJECT NO. I 89-1(6)
SHEET 29 OF 59

Item	No. Pieces	Size	Length	Mark	Type	A	B	C	D	E	F	G	H	J	K	R	O
						Abutment #1											
1	56	4	6-0	1A402	Str												
2	46	4	12-1	1A403	Str												
3	16	4	18-6	1A405	Str												
4	10	4	16-9	1A410	Str												
5	*33	4	4-6	1A411	Str												
6	32	4	13-3	1A412A	Str												
7	1	4	12-6	1A412B	Str												
8				thru		1 each, vary in 8 increments of 0-11½											
9	1	4	5-0	1A412K	Str												
10	1	4	4-7	1A412L	Str												
11				thru		1 each, vary in 7 increments of 1-1											
12	1	4	12-2	1A412T	Str												
13	1	4	14-9	1A413A	Str												
14				thru		1 each, vary in 8 increments of 1-0											
15	1	4	22-9	1A413J	Str												
16	3	4	23-2	1A413K	Str												
17	1	4	16-7	1A413L	Str												
18				thru		1 each, vary in 8 increments of 0-9½											
19	1	4	22-9	1A413U	Str												
20	3	4	23-2	1A413V	Str												
21	12	4	23-0	1A416	Str												
22	16	4	5-0	1A419	Str												
23	6	4	7-0	1A420	Str												
24	6	4	5-2	1A422	Str												
25	1	5	7-3	1A514A	Str												
26				thru		1 each, vary in 8 increments of 1-0											
27	1	5	15-3	1A514J	Str												
28	3	5	15-6	1A514K	Str												
29	1	5	10-7	1A514L	Str												
30				thru		1 each, vary in 8 increments of 0-9½											
31	1	5	16-9	1A514U	Str												
32	3	5	17-0	1A514Y	Str												
33	34	6	26-3	1A601	Str												
34	10	6	16-9	1A609	Str												
35	37	6	10-0	1A615A	Str												
36	1	6	9-7	1A615B	Str												
37				thru		1 each, vary in 5 increments of 0-11											
38	1	6	5-0	1A615G	Str												
39	1	6	4-10	1A615H	Str												
40				thru		1 each, vary in 4 increments of 1-2½											
41	1	6	9-7	1A615M	Str												
42	16	7	22-6	1A707	Str												
43	22	8	8-4	1AB1B	Str												
44	*23	8	5-0	1AB23	Str												
45																	
46	48	4	9-1	1A404	17		5-0	4-1									
47	11	4	8-4	1A424	14		2-0	4-4	2-0				1-10¼				5-10½
48	48	5	7-5	1A517	16	2-0	1-9	1-5	2-3					2-1½	2-3		
49	52	6	9-10	1A606	1	0-8	9-2										
50	11	8	14-6	1AB21	14	7-3	7-3						5-2				5-2
51	*33	9	12-0	1A908	17		2-10	9-2									
52																	
53																	
54																	
55						Abutment #2											
56			Same as Abutment #1 except Mark 2A--- and no test bars														
57																	
58																	
59																	
60						Abutment #3											
61	46	4	9-4	3A419	Str												
62	16	4	20-3	3A420	Str												
63	2	4	6-5	3A424A	Str												
64				thru		2 each, vary in 11 increments of 0-11											
65	2	4	16-6	3A424M	Str												
66	8	4	17-5	3A424N	Str												
67	16	4	16-0	3A425A	Str												
68	2	4	15-0	3A425B	Str												
69				thru		2 each, vary in 10 increments of 1-0½											
70	2	4	4-7	3A425M	Str												
71	2	4	16-0	3A426A	Str												
72				thru		2 each, vary in 11 increments of 1-02*											
73	2	4	4-7	3A426M	Str												
74	12	4	12-8	3A428	Str												
75	12	4	17-6	3A429	Str												
76	6	4	7-0	3A431	Str												
77	16	4	5-0	3A432	Str												
78	6	4	5-2	3A433	Str												
79	14	5	8-6	3A505	Str												
80	*71	5	7-6	3A502	Str												
81																	

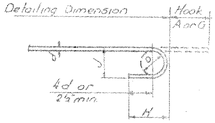
Item	No. Pieces	Size	Length	Mark	Type	A	B	C	D	E	F	G	H	J	K	R	O
						(Abutment #3 - Cont.)											
92	2	5	2-8	3A523A	Str												
93				thru		2 each, vary in 11 increments of 0-10											
94	2	5	11-10	3A523M	Str												
95	6	5	12-10	3A523N	Str												
96	*25	6	8-6	3A604	Str												
97	16	6	24-6	3A617	Str												
98	16	7	24-0	3A722	Str												
99	18	8	25-0	3AB1A	Str												
100	22	8	5-0	3AB35	Str												
101	*53	10	12-0	3A1001	Str												
102	27	10	12-6	3A1003	Str												
103	30	11	28-0	3A1107	Str												
104	32	11	23-0	3A1108	Str												
105	28	11	21-0	3A1109	Str												
106																	
107	118	4	9-4	3A410	T1	0-5	1-3	3-0	1-3	3-0		0-5					
108	59	4	8-8	3A411	T1	0-5	0-11	3-0	0-11	3-0		0-5					
109	55	4	9-8	3A412	T1	0-5	1-5	3-0	1-5	3-0		0-5					
110	110	4	8-10	3A413	T1	0-5	1-0	3-0	1-0	3-0		0-5					
111	30	4	19-6	3A418	T1	0-5	5-5	3-11	5-5	3-11		0-5					
112	12	4	10-4	3A434	14		2-0	6-4	2-0				1-10¼				7-10½
113	38	5	7-5	3A530	16	2-0	1-9	1-5	2-3					2-1¼	2-3		
114	52	6	9-10	3A621	1	0-8	9-2										
115	9	8	23-0	3AB15	17		4-0	19-0									
116	9	8	35-0	3AB16	17		4-0	31-0									
117	*91	11	9-1	3A1106	1	1-7	7-6										
118																	
119																	
120																	
121						Abutment #4											
122	45	4	11-2	4A404	Str												
123	16	4	24-0	4A405	Str												
124	8	4	9-3	4A409	Str												
125	12	4	9-3	4A410	Str												
126	18	4	14-2	4A412A	Str												
127	2	4	13-0	4A412B	Str												
128				thru		2 each, vary in 8 increments of 1-0											
129	2	4	5-0	4A412K	Str												
130	2	4	8-3	4A413A	Str												
131				thru		2 each, vary in 9 increments of 1-0											
132	2	4	17-3	4A413K	Str												
133	6	4	17-8	4A413L	Str												
134	30	4	10-6	4A415A	Str												
135	2	4	10-0	4A415B	Str												
136				thru		2 each, vary in 6 increments of 0-10											
137	2	4	5-0	4A415H	Str												
138	12	4	17-6	4A416	Str												
139	16	4	5-0	4A419	Str												
140	6	4	7-0	4A420	Str												
141	6	4	5-2	4A422	Str												
142	12	4	7-3	4A421	Str												
143	8	6	27-3	4A602A	Str												
144	16	6	23-9	4A602B	Str												
145	16	7	24-0	4A707	Str												
146	2	7	7-0	4A714A	Str												
147				thru		2 each, vary in 13 increments of 0-8											
148	2	7	15-8	4A714P	Str												
149	10	7	16-4	4A714Q	Str												
150	22	8	5-0	4AB23	Str												
151																	
152	45	4	9-8	4A401	17		1-0	4-11	3-9								
153	45	4	9-0	4A403	17		5-3	3-9									
154	20	4	6-8	4A411	2	0-7½	6-0½										
155	12	4	8-4	4A418	14		2-0	4-4	2-0				1-10¼				5-10½
156	38	5	7-5	4A517	16	2-0	1-9	1-5	2-3					2-1¼	2-3		
157	52	6	9-10	4A606	1	0-8	9-2										
158	*19	7	13-9	4A708	17		1-0	3-9	9-0								
159																	
160																	
161																	
162																	
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165																	
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TYPICAL BAR BENDS



NOTES

1. All dimensions are out to out of bar.
2. 'J' dimensions on 180° hooks to be shown only where necessary to restrict size otherwise standard hooks are to be used.
3. Where 'J' is not shown, 'J' will be kept equal to or less than 'H'. Where 'J' can exceed 'H', it should be shown.
4. 'H' dimension on stirrups to be shown where necessary to restrict hooks.
5. Where bars are to be bent more accurately than standard bending tolerances bending dimensions which require closer working should have limits indicated.
6. Figures in circles show types.
7. No allowance for bend curvature is to be made except for standard hook & radii in excess of same.



STANDARD HOOK DETAIL

BAR SIZES

Equivalent Size	Present Number	Weight per ft.
¼"	2	.167
⅜"	3	.376
½"	4	.668
⅝"	5	1.043
¾"	6	1.502
⅞"	7	2.044
1"	8	2.670
1⅛"	9	3.400
1¼"	10	4.303
1⅜"	11	5.313
1½"	14 S	7.650
2"	18 S	13.600

GENERAL NOTES

(1) Unless otherwise designated all standard reinforcement shall be deformed bars conforming with the requirements of the "Standard Specification for Billet-Steel Bars for Concrete Reinforcement"(Intermediate Grade) AASHO Designation M31-60 or its latest revision.

(2) Unless otherwise designated all special large size reinforcement shall be deformed bars conforming with the requirements of the "Standard Specification for Special Large size Deformed Billet-Steel Bars for Concrete Reinforcement"(Intermediate Grade) AASHO Designation M-174-60 or its latest revision.

(3) * Denotes one extra bar added for testing purposes.

(4) Stirrups and tie bars shall be bent around a pin having a diameter not less than two times the minimum thickness of the bar. Bends for other bars shall be made around a pin having a diameter not less than six times the minimum thickness except for bars larger than 1 inch, in which case the bends shall be made around a pin of eight bar diameters.

ESTIMATED QUANTITIES

LOCATION	PLAN (LBS)	FINAL (LBS)
Abutment #1	9400	
Abutment #2	9340	
Abutment #3	30,830	
Abutment #4	7090	
	56,660	

IR 089-1(13)
This sheet for information only
BR 11 N & S

Br 122 of 128

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

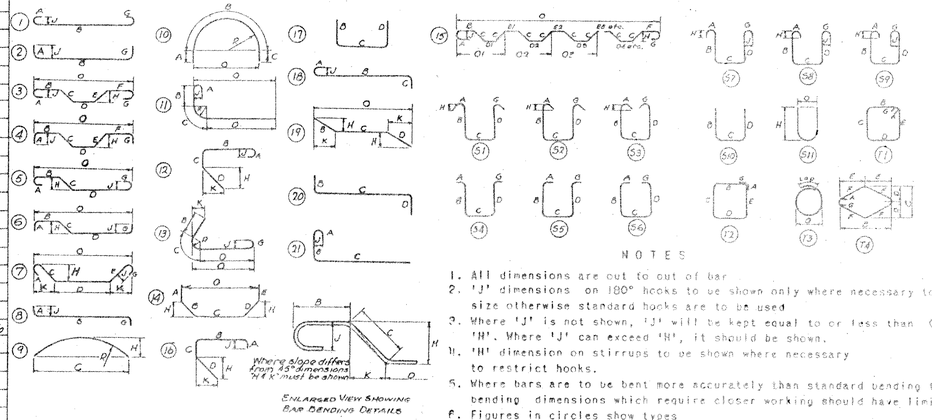
TOWN OF Hartford
I89 over White River, CVRR & Vt #14
Remforcing for Abut. #1-#4

DRAWN BY WBT CHECKED BY RLO
PROJECT I NO. 89-1(6)
SHEET 30 OF 59

Item	No. Pieces	Size	Length	Mark	Type	A	B	C	D	E	F	G	H	J	K	R	O
						Pier No. 1											
1	*43	4	4-2	1P417	Str												
2	17	4	16-6	403B													
3	17	4	30-0	403A													
4	98	4	35-0	406													
5	27	5	17-0	502B													
6	27	5	30-0	502A													
7	46	8	15-6	804													
8	82	8	20-7	805C													
9	10	8	30-0	816A													
10	82	8	30-0	805B													
11	18	8	15-0	815													
12	*19	10	13-6	1011													
13	8	10	19-3	1011A													
14	63	11	31-0	1109B	Str												
15	98	4	11-1	407	10	2-0	7-1	2-0								2-0	4-6
16	12	4	15-6	414	T1	0-5	4-2	3-2	4-2	3-2		0-5					
17	196	4	20-2	408	T1	0-5	5-2	4-6	5-2	4-6		0-5					
18	22	6	10-6	613	T1	0-7	1-6	3-2	1-6	3-2		0-7					
19	*23	6	15-10	612	T1	0-7	4-2	3-2	4-2	3-2		0-7					
20	*83	8	8-2	805A	1	1-1	7-1										
21	10	8	22-9	816B	20		3-0	19-9									
22	*64	11	9-6	1109A	1	1-7	7-11										
23	60	11	18-8	1P1101	1	1-7	15-6					1-7					
24																	
25		Spiral			Core	Pitch	Turns	Spacers									
26	3	5	28-10½	1PS510	3-6	0-3½	99	4									
27																	
28																	
29																	
30						Pier No. 2											
31	42	4	4-2	2P417	Str												
32	17	4	16-6	403B													
33	17	4	30-0	403A													
34	96	4	35-0	406													
35	27	5	17-0	502B													
36	27	5	30-0	502A													
37	18	8	15-0	815													
38	46	8	15-6	804													
39	82	8	19-7	805C													
40	82	8	30-0	805B													
41	10	8	30-0	816A													
42	18	10	13-6	1011													
43	8	10	19-3	1011A													
44	63	11	30-6	1109B	Str												
45	96	4	11-1	407	10	2-0	7-1	2-0								2-3	4-6
46	12	4	15-6	414	T1	0-5	4-2	3-2	4-2	3-2		0-5					
47	192	4	20-2	408	T1	0-5	5-2	4-6	5-2	4-6		0-5					
48	22	6	10-6	613	T1	0-7	1-6	3-2	1-6	3-2		0-7					
49	22	6	15-10	612	T1	0-7	4-2	3-2	4-2	3-2		0-7					
50	82	8	8-2	805A	1	1-1	7-1										
51	10	8	22-9	816B	20		3-0	19-9									
52	63	11	9-6	1109A	1	1-7	7-11										
53	60	11	18-8	2P1101	1	1-7	15-6					1-7					
54																	
55		Spiral			Core	Pitch	Turns	Spacers									
56	3	5	28-3½	2PS510	3-6	0-3½	97	4									
57																	
58																	
59																	
60						Pier No. 3											
61	*43	4	4-2	3P417	Str												
62	17	4	17-6	403B													
63	17	4	30-0	403A													
64	88	4	35-0	406													
65	56	6	15-6	604													
66	*23	7	18-5	702B													
67	22	7	30-0	702A													
68	18	8	15-0	815													
69	82	8	15-4	805C													
70	82	8	30-0	805B													
71	10	8	30-0	816A													
72	*19	10	13-6	1011													
73	8	10	19-3	1011A													
74	63	11	32-2	1109B	Str												
75	88	4	11-1	407	10	2-0	7-1	2-0								2-3	4-6
76	12	4	15-6	414	T1	0-5	4-2	3-2	4-2	3-2		0-5					
77	176	4	20-2	408	T1	0-5	5-2	4-6	5-2	4-6		0-5					
78	22	6	10-6	613	T1	0-7	1-6	3-2	1-6	3-2		0-7					
79	*23	6	15-10	612	T1	0-7	4-2	3-2	4-2	3-2		0-7					
80	*83	8	8-2	805A	1	1-1	7-1										
81	10	8	22-9	3P8168	20		3-0	19-9									

Item	No. Pieces	Size	Length	Mark	Type	A	B	C	D	E	F	G	H	J	K	R	O
						(Pier No. 3 - Cont.)											
82	*64	11	9-6	3P1109A	1	1-7	7-11										
83	65	11	18-8	3P1101	1	1-7	15-6					1-7					
84																	
85		Spiral			Core	Pitch	Turns	Spacers									
86	3	5	30-0½	3PS510	3-6	0-3½	103	4									
87																	
88																	
89																	
90						Pier No. 4											
91	42	4	4-2	4P417	Str												
92	17	4	17-6	403B													
93	17	4	30-0	403A													
94	96	4	35-0	406													
95	56	6	15-6	604													
96	22	7	18-5	702B													
97	22	7	30-0	702A													
98	18	8	15-0	815													
99	82	8	19-4	805C													
100	82	8	30-0	805B													
101	10	8	30-0	816A													
102	18	10	13-6	1011													
103	8	10	19-3	1011A													
104	63	11	31-8	1109B	Str												
105	96	4	11-1	407	10	2-0	7-1	2-0								2-3	4-6
106	12	4	15-6	414	T1	0-5	4-2	3-2	4-2	3-2		0-5					
107	192	4	20-2	408	T1	0-5	5-2	4-6	5-2	4-6		0-5					
108	22	6	10-6	613	T1	0-7	1-6	3-2	1-6	3-2		0-7					
109	22	6	15-10	612	T1	0-7	4-2	3-2	4-2	3-2		0-7					
110	82	8	8-2	805A	1	1-1	7-1										
111	10	8	22-9	8168	20		3-0	19-9									
112	63	11	9-6	1109A	1	1-7	7-11										
113	65	11	18-8	4P1101	1	1-7	15-6					1-7					
114																	
115		Spiral			Core	Pitch	Turns	Spacers									
116	3	5	29-5½	4PS510	3-6	0-3½	101	4									
117																	
118																	
119																	
120						Pier No. 5											
121	*43	4	4-2	5P416	Str												
122	25	4	17-6	403B													
123	25	4	30-0	403A													
124	72	4	35-0	406													
125	79	6	23-6	604													
126	*26	7	18-5	702B													
127	25	7	30-0	702A													
128	160	9	35-3	905B													
129	*21	10	13-6	1011													
130	18	10	15-0	1014													
131	8	10	19-3	1011A													
132	9	10	30-0	1015A													
133	*70	11	23-6	11018													
134	54	18S	32-5	18509B	Str												
135	72	4	11-1	407	10	2-0	7-1	2-0								2-3	4-6
136	144	4	20-2	408	T1	0-5	5-2	4-6	5-2	4-6		0-5					
137	44	6	10-0	613	T1	0-7	1-3	3-2	1-3	3-2		0-7					
138	*35	6	15-10	612	T1	0-7	4-2	3-2	4-2	3-2		0-7					
139	*161	9	8-10	905A	1	1-3	7-7										
140	9	10	23-8	10158	20		3-0	20-8									
141	69	11	26-8	1101A	1	1-7	23-6					1-7					
142	*55	18S	14-6	5P18509A	1	2-6	12-0				1-10½						
143																	
144		Spiral			Core	Pitch	Turns	Spacers									
145	3	5	30-4	5PS510	3-6	0-3½	104	4									
146																	
147																	
148																	
149																	
150						Pier No. 6											
151	*43	4	4-2	6P416	Str												
152	25	4	17-6	403B													
153	25	4	30-0	403A													
154	78	4	35-0	406													
155	79	6	23-6	604													
156	*26	7	18-5	702B													
157	25	7	30-0	702A													
158	160	9	37-9	905B													
159	18	10	15-0	1014													
160	*21	10	13-6	1011													
161	8	10	19-3	1011A													
162	9	10	30-0	6P1015A	Str												

TYPICAL BAR BENDS



ENLARGED VIEW SHOWING BAR BENDING DETAILS

NOTES

1. All dimensions are out to out of bar.
2. 'J' dimensions on 180° hooks to be shown only where necessary to restrict size otherwise standard hooks are to be used.
3. Where 'J' is not shown, 'J' will be kept equal to or less than 'H'. Where 'J' can exceed 'H', it should be shown.
4. 'H' dimension on stirrups to be shown where necessary to restrict hooks.
5. Where bars are to be bent more accurately than standard bending tolerances bending dimensions which require closer working should have limits indicated.
6. Figures in circles show types.
7. No allowance for bend curvature is to be made except for standard hook & radii in excess of same.

Item	No. Pieces	Size	Length	Mark	Type	A	B	C	D	E	F	G	H	J	K	R	O
163	*70	11	23-6	6P11018	Str												
164	54	18S	32-0	18509B	Str												
165	78	4	11-1	407	10	2-0	7-1	2-0								2-3	4-6
166	156	4	20-2	408	T1	0-5	5-2	4-6	5-2	4-6		0-5					
167	44	6	10-0	613	T1	0-7	1-3	3-2	1-3	3-2		0-7					
168	*35	6	15-10	612	T1	0-7	4-2	3-2	4-2	3-2		0-7					
169	*161	9	8-10	905A	1	1-3	7-7										
170	9	10	23-8	10158	20		3-0	20-8									
171	69	11	26-8	1101A	1	1-7	23-6					1-7					
172	*55	18S	14-6	6P18509A	1	2-6	12-0								1-10½		
173																	
174		Spiral			Core	Pitch	Turns	Spacers									
175	3	5	29-9	6PS510	3-6	0-3½	102	4									
176																	
177																	
178																	
179																	
180																	
181																	
182																	
183																	
184																	
185																	
186																	
187																	
188																	
189																	
190																	



STANDARD HOOK DETAIL

BAR SIZES

Equivalent Size	Present Number	Weight per ft
¼"	2	.167
⅜"	3	.376
½"	4	.668
⅝"	5	1.043
¾"	6	1.502
⅞"	7	2.044
1"	8	2.670
1⅛"	9	3.400
1¼"	10	4.303
1⅜"	11	5.313
1½"	14 S	7.650
2"	18S	8.600

GENERAL NOTES

(1) Unless otherwise designated all standard reinforcement shall be deformed bars conforming with the requirements of the "Standard Specification for Billet-Steel Bars for Concrete Reinforcement"(Intermediate Grade) AASHO Designation M31-60 or its latest revision.

(2) Unless otherwise designated all special large size reinforcement shall be deformed bars conforming with the requirements of the "Standard Specification for Special Large size Deformed Billet-Steel Bars for Concrete Reinforcement"(Intermediate Grade) AASHO Designation M-174-60 or its latest revision.

(3) * Denotes one extra bar added for testing purposes.

(4) Stirrups and tie bars shall be bent around a pin having a diameter not less than two times the minimum thickness of the bar. Bends for other bars shall be made around a pin having a diameter not less than six times the minimum thickness except for bars larger than 1 inch, in which case the bends shall be made around a pin of eight bar diameters.

(5) All Spiral Reinforcement shall conform to AASHO Designation M32-60 Cold Drawn Steel Wire for Concrete Reinforcement.

ESTIMATED QUANTITIES

LOCATION	PLAN (LBS)	FINAL (LBS)
Pier #1	50,300	
Pier #2	43,570	
Pier #3	49,900	
Pier #4	50,800	
Pier #5	97,750	
Pier #6	99,080	
Total This Sheet	397,400	

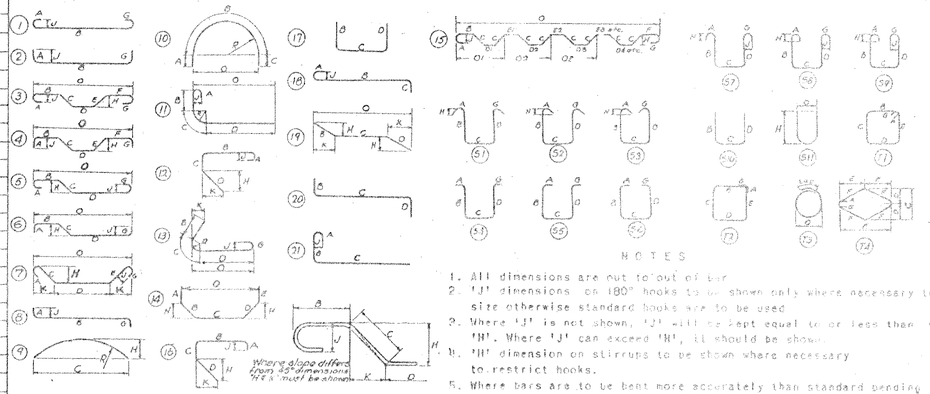
IR 089-1(13)
This sheet for information only
BR 11 N & S
Br. 123 of 128

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
TOWN OF Hartford
I 89 over White River, Vt. 14 & C.V.R.R.
Reinforcing - Piers #1 thru #6
DRAWN BY WBT CHECKED BY RLO
PROJECT I NO. 89-1(16)
SHEET 31 OF 59 SHEET 73 OF 101

Item	No. Pieces	Size	Length	Mark	Type	A	B	C	D	E	F	G	H	J	K	R	O
					Pier No. 7												
1	*43	4	4-2	7P417	Str												
2	45	4	13-6	404													
3	15	4	16-6	403B													
4	15	4	30-0	403A													
5	40	4	35-0	406													
6	*15	6	16-7	602B													
7	14	6	30-0	602A													
8	18	8	15-0	815													
9	82	8	18-3	805B													
10	10	8	30-0	816A													
11	*19	10	13-6	1011													
12	8	10	19-3	1011A													
13	63	11	34-10	1109B	Str												
14	40	4	11-1	407	10	2-0	7-1	2-0								2-3	4-6
15	12	4	15-6	414	T1	0-5	4-2	3-2	4-2	3-2		0-5					
16	80	4	20-2	408	T1	0-5	5-2	4-6	5-2	4-6		0-5					
17	22	6	10-6	613	T1	0-7	1-6	3-2	1-6	3-2		0-7					
18	*23	6	15-10	612	T1	0-7	4-2	3-2	4-2	3-2		0-7					
19	*83	8	8-2	805A	1	1-1	7-1										
20	64	8	15-8	801	1	1-1	13-6					1-1					
21	10	8	22-9	816B	20		3-0	19-9									
22	*64	11	9-6	7P1108A	1	1-7	7-11										
23																	
24		Spiral			Core	Pitch	Turns	Spacers									
25	3	5	32-8	7PS510	3-6	0-3½	112	4									
26																	
27																	
28																	
29																	
30					Pier No. 8												
31	42	4	4-2	8P417	Str												
32	45	4	13-6	404													
33	15	4	16-6	403B													
34	15	4	30-0	403A													
35	40	4	35-0	406													
36	14	6	16-7	602B													
37	14	6	30-0	602A													
38	18	8	15-0	815													
39	82	8	18-9	805B													
40	10	8	30-0	816A													
41	18	10	13-6	1011													
42	8	10	19-3	1011A													
43	63	11	34-4	1109B	Str												
44	40	4	11-1	407	10	2-0	7-1	2-0								2-3	4-6
45	12	4	15-6	414	T1	0-5	4-2	3-2	4-2	3-2		0-5					
46	80	4	20-2	408	T1	0-5	5-2	4-6	5-2	4-6		0-5					
47	22	6	10-6	613	T1	0-7	1-6	3-2	1-6	3-2		0-7					
48	22	6	15-10	612	T1	0-7	4-2	3-2	4-2	3-2		0-7					
49	82	8	8-2	805A	1	1-1	7-1										
50	64	8	15-8	801	1	1-1	13-6					1-1					
51	10	8	22-9	816B	20		3-0	19-9									
52	63	11	9-6	8P1109A	1	1-7	7-11										
53																	
54		Spiral			Core	Pitch	Turns	Spacers									
55	3	5	32-1	8PS510	3-6	0-3½	110	4									
56																	
57																	
58																	
59					Pier No. 9												
60	*43	4	4-2	9P413	Str												
61	44	4	8-6	403													
62	*45	7	8-6	702													
63	*19	8	15-0	B11													
64	10	8	30-0	B12A													
65	*19	10	13-6	1007													
66	18	10	16-9	1001B													
67	18	10	16-9	1004B													
68	8	10	19-3	1007A													
69	18	10	30-0	1001A													
70	18	10	30-0	1004A													
71	63	11	36-0	1105B	Str												
72	12	4	15-6	410	T1	0-5	4-2	3-2	4-2	3-2		0-5					
73	22	6	10-6	609	T1	0-7	1-6	3-2	1-6	3-2		0-7					
74	*23	6	15-10	608	T1	0-7	4-2	3-2	4-2	3-2		0-7					
75	10	8	22-9	B12B	20		3-0	19-9									
76	*64	11	10-1	9P1105A	1	1-7	8-6										
77																	
78		Spiral			Core	Pitch	Turns	Spacers									
79	3	5	33-10	9PS506	3-6	0-3½	116	4									
80																	
81																	

Item	No. Pieces	Size	Length	Mark	Type	A	B	C	D	E	F	G	H	J	K	R	O
					Pier No. 10												
82	42	4	4-2	10P413	Str												
83	44	4	8-6	403													
84	44	7	8-6	702													
85	18	8	15-0	B11													
86	10	8	30-0	B12A													
87	18	10	13-6	1007													
88	18	10	16-9	1001B													
89	18	10	16-9	1004B													
90	8	10	19-3	1007A													
91	18	10	30-0	1004A													
92	18	10	30-0	1001A													
93	63	11	31-0	1105B	Str												
94	12	4	15-6	410	T1	0-5	4-2	3-2	4-2	3-2		0-5					
95	22	6	10-6	609	T1	0-7	1-6	3-2	1-6	3-2		0-7					
96	22	6	15-10	608	T1	0-7	4-2	3-2	4-2	3-2		0-7					
97	10	8	22-9	B12B	20		3-0	19-9									
98	63	11	10-1	10P1105A	1	1-7	8-6										
99																	
100		Spiral			Core	Pitch	Turns	Spacers									
101	3	5	28-10½	10PS506	3-6	0-3½	99	4									
102																	
103																	
104					Superstructure - S.B.												
105					Pour S1 (Spans 1 & 6)												
106	*1	4	4-0	S1S406	Str												
107	*561	5	29-10	S1S502	Str												
108	888	5	35-0	S1S501	Str												
109	*81	6	30-3	S1S603	Str												
110	48	6	30-3	S1S605	Str												
111	296	4	5-4	S1S404	S3	0-5	1-4	1-10	1-4			0-5					
112																	
113					Pour S2 (Spans 2 & 5)												
114	420	5	29-3	S2S502	Str												
115	640	5	35-0	S2S501	Str												
116	60	6	29-10	S2S603	Str												
117	36	6	29-10	S2S605	Str												
118	216	4	5-4	S2S404	S3	0-5	1-4	1-10	1-4			0-5					
119																	
120					Pour S3 (Spans 3 & 4)												
121	*1	4	4-0	S3S406	Str												
122	*561	5	28-10	S3S502	Str												
123	844	5	35-0	S3S501	Str												
124	*81	6	29-5	S3S603	Str												
125	48	6	29-5	S3S605	Str												
126	284	4	5-4	S3S404	S3	0-5	1-4	1-10	1-4			0-5					
127																	
128					Pour S4 (Over Piers 1 & 9)												
129	420	5	30-2	S4S502	Str												
130	696	5	35-0	S4S501	Str												
131	60	6	30-5	S4S603	Str												
132	36	6	30-5	S4S605	Str												
133	232	4	5-4	S4S404	S3	0-5	1-4	1-10	1-4			0-5					
134																	
135					Pour S5 (Over Piers 3 & 7)												
136	*1	4	4-0	S5S406	Str												
137	*421	5	32-2	S5S502	Str												
138	744	5	35-0	S5S501	Str												
139	*61	6	32-5	S5S603	Str												
140	36	6	32-5	S5S605	Str												
141	248	4	5-4	S5S404	S3	0-5	1-4	1-10	1-4			0-5					
142																	
143					Pour S6 (Over Pier 5)												
144	280	5	27-0	S6S502	Str												
145	410	5	35-0	S6S501	Str												
146	40	6	27-4	S6S603	Str												
147	24	6	27-4	S6S605	Str												
148	138	4	5-4	S6S404	S3	0-5	1-4	1-10	1-4			0-5					
149																	
150																	
151					Superstructure - N.B.												
152					Pour N1 (Spans 1 & 6)												
153					Same as S1 except Mark N1----												
154																	
155					Pour N2 (Spans 2 & 5)												
156					Same as S2 except Mark N2----												
157																	
158					Pour N3 (Spans 3 & 4)												
159					Same as S3 except Mark N3----												
160																	
161																	
162																	

TYPICAL BAR BENDS



ENLARGED VIEW SHOWING BAR BENDING DETAILS

NOTES

1. All dimensions are out to out of bar.
2. 'J' dimensions on 180° hooks to be shown only where necessary to restrict size otherwise standard hooks are to be used.
3. Where 'J' is not shown, 'J' will be kept equal to or less than CRN 1a 'H'. Where 'J' can exceed 'H', it should be shown.
4. 'H' dimension on stirrups to be shown where necessary to restrict hooks.
5. Where bars are to be bent more accurately than standard bending tolerances bending dimensions which require closer working should have limits indic
6. Figures in circles show types.
7. No allowance for bend curvature is to be made except for standard hook & radii in excess of same.

Item	No. Pieces	Size	Length	Mark	Type	A	B	C	D	E	F	G	H	J	K	R	O
					(Superstructure - N.B - Cont.)												
					Pour N4 (Over Piers 2 & 10)												
					Same as S4 except Mark N4----												
					Pour N5 (Over Piers 4 & 8)												
					Same as S5 except Mark N5----												
					Pour N6 (Over Piers 6)												
					Same as S6 except Mark N6----												
					Approach Slab No. 1												
176	*9	5	22-0	1AS504	Str												
177	35	5	29-5	1AS503	Str												
178	30	10	18-0	1AS1002	Str												
179	1	10	7-3	1AS1002A	Str												
180				thru	1 each, vary in 26 increments of 1-0												
181	1	10	33-3	1AS1002CC	Str												
182	*37	10	7-5	1AS1001	1	1-5	6-0										
183																	
184																	
185					Approach Slab No. 2 thru 4												
186					Same as No.1 except Mark 2AS---, 3AS--, 4AS--- and no test bars.												
187																	
188																	
189																	
190																	

GENERAL NOTES

(1) Unless otherwise designated all standard reinforcement shall be deformed bars conforming with the requirements of the "Standard Specification for Billet-Steel Bars for Concrete Reinforcement" (Intermediate Grade) AASHO Designation M31-60 or its latest revision.

(2) Unless otherwise designated all special large size reinforcement shall be deformed bars conforming with the requirements of the "Standard Specification for Special Large size Deformed Billet-Steel Bars for Concrete Reinforcement" (Intermediate Grade) AASHO Designation M-174-60 or its latest revision.

(3) * Denotes one extra bar added for testing purposes.

(4) Stirrups and tie bars shall be bent around a pin having a diameter not less than two times the minimum thickness of the bar. Bends for other bars shall be made around a pin having a diameter not less than six times the minimum thickness except for bars larger than 1 inch, in which case the bends shall be made around a pin of eight bar diameters.

(5) See note (6), Br 123 of 124.

(6) (continued)

ESTIMATED QUANTITIES

LOCATION	PLAN (LBS)	FINAL (LBS)
Pier #7	36,440	
Pier #8	36,140	
Pier #9	32,820	
Pier #10	30,360	
Superstructure-S.B.	269,150	
Superstructure-N.B.	269,150	
Approach Slab #1	7140	
Approach Slab #2	7090	
Approach Slab #3	7090	
Approach Slab #4	7090	
Total this sheet	702,470	
Total Br. 122	56,660	
Total Br. 123	397,400	
Bridge Total	1156,530	



STANDARD HOOK DETAIL

BAR SIZES

Equivalent Size	Present Number	Weight per ft
¼"	2	.167
⅜"	3	.376
½"	4	.668
⅝"	5	1.043
¾"	6	1.502
⅞"	7	2.044
1"	8	2.670
1"	9	3.400
1⅛"	10	4.303
1¼"	11	5.313
1⅜"	14.5	7.650
2"	18S	13.600

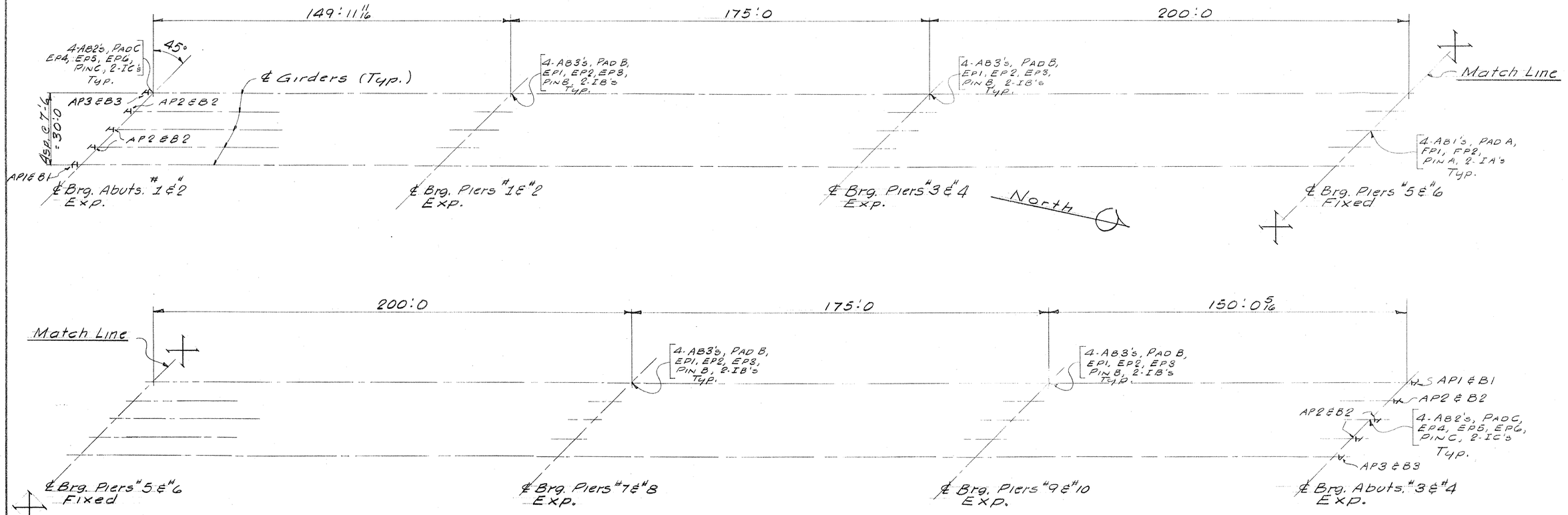
IR 089-1(13)
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BR 11 N & S

Br 124 of 126

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Hartford
I 89 over White River, Vt. #14 & CVRR
Reinforcing for Piers No. 7 thru 10,
Superstructure & Approach Slabs

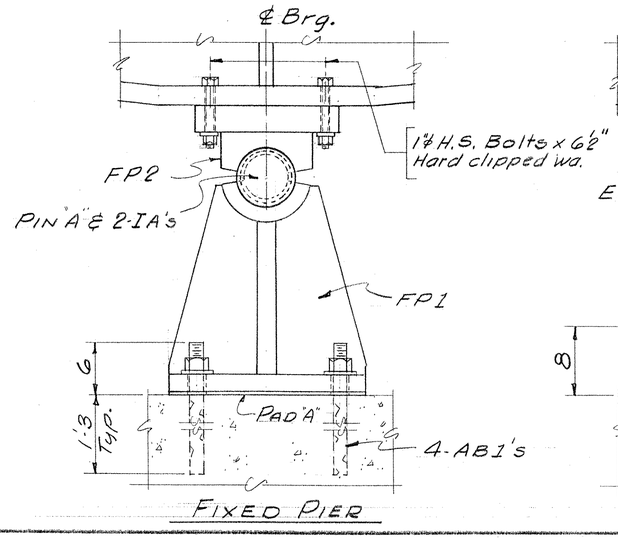
DRAWN BY WBT CHECKED BY AGC
PROJECT I NO. 89-1(6)
SHEET 32 OF 59 SHEET 74 OF 101



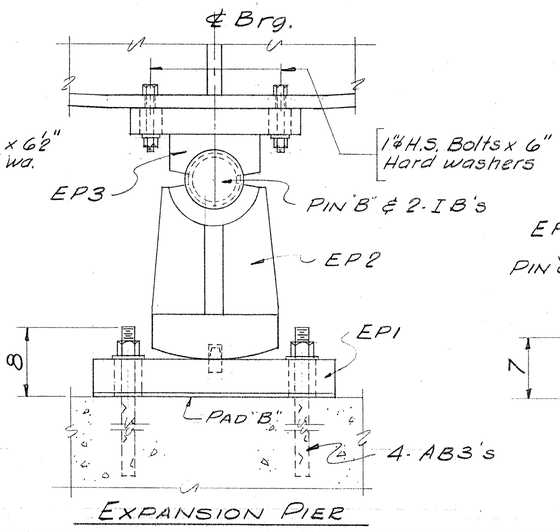
ERECTION PLAN - NORTHBOUND & SOUTHBOUND BRIDGES

NORTHBOUND: Suffix N to be added to all Marks
SOUTHBOUND: Suffix S to be added to all Marks

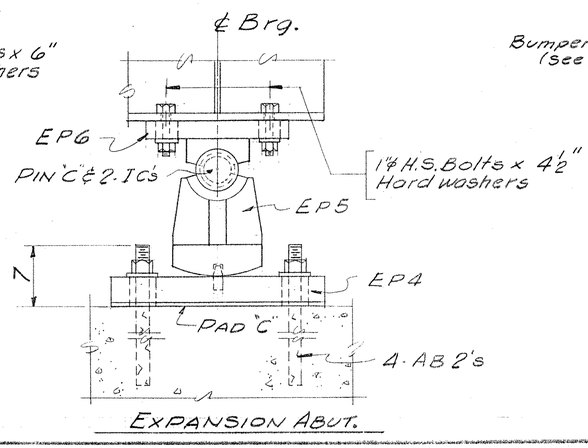
NOTE:
Dimensions given on slope



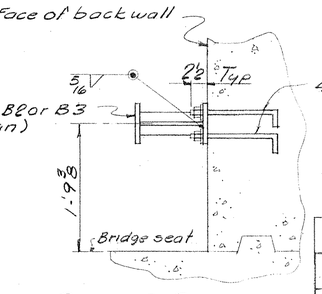
FIXED PIER



EXPANSION PIER



EXPANSION ABUT.



SECT. @ BUMPERS

IR 089-1(13)
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BR 11 N & S

SHEET 80 OF 101

Proj. No. I-89-1(6)

N.B. & S.B. BRIDGES

BEARING LOCATION PLAN

Bancroft & Martin Inc.
South Portland 7, Maine

I-89 BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

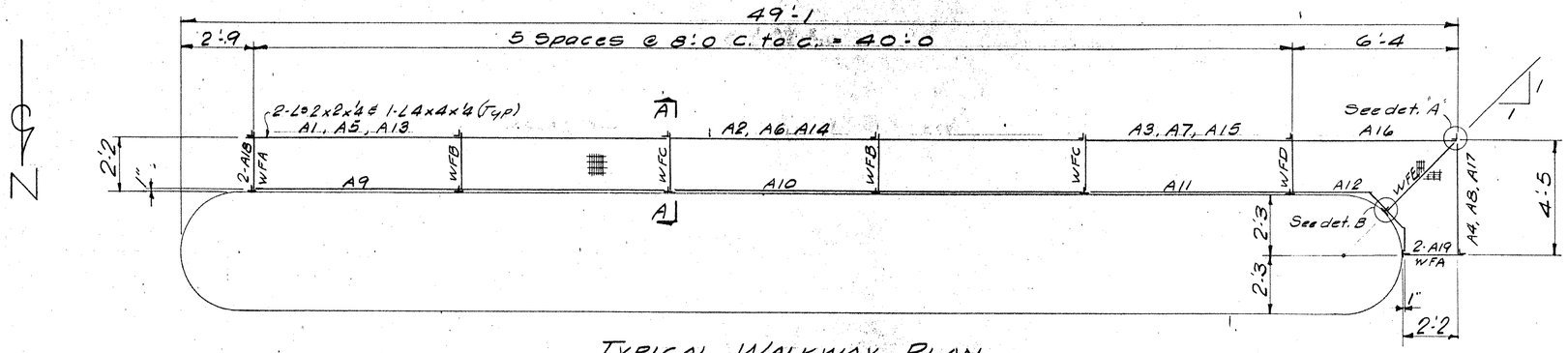
CUSTOMER CIANCHETTE BROS. INC.

DESIGNER VERMONT DEPT. OF HIGHWAYS

ORDER NO. _____ DWG. NO. 65-374-E1

DRAWN	12-28-65	TFG
REVISION		
REVISION		
REVISION		

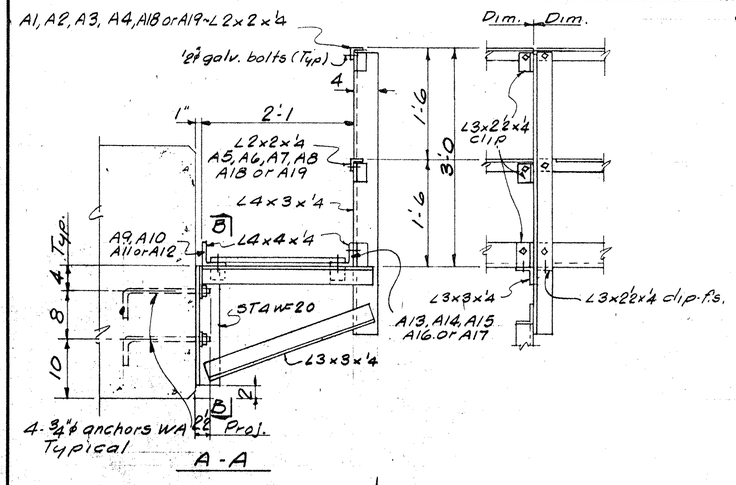
APP. 1-14-66

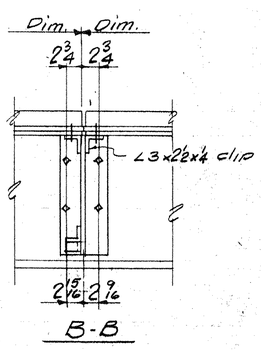


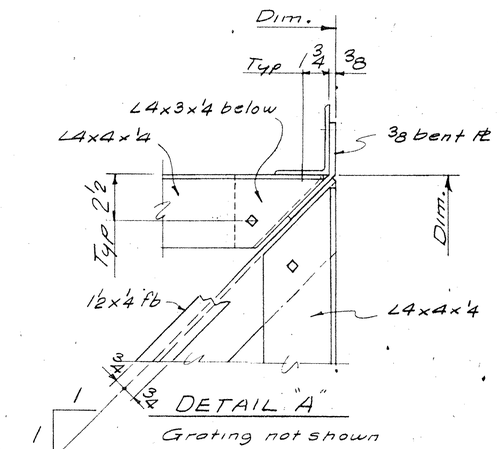
TYPICAL WALKWAY PLAN

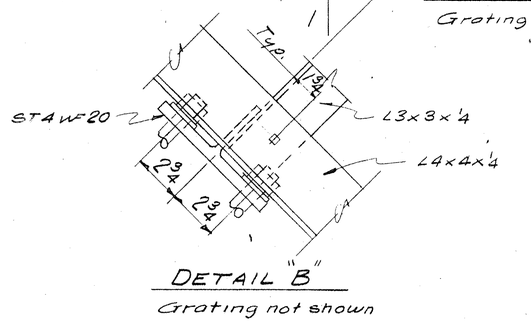
NORTHBOUND & SOUTHBOUND BRIDGES

NORTHBOUND: Suffix N. to be added to all marks.
SOUTHBOUND: Suffix S to be added to all marks.
For piers 1 thru 8 inclusive





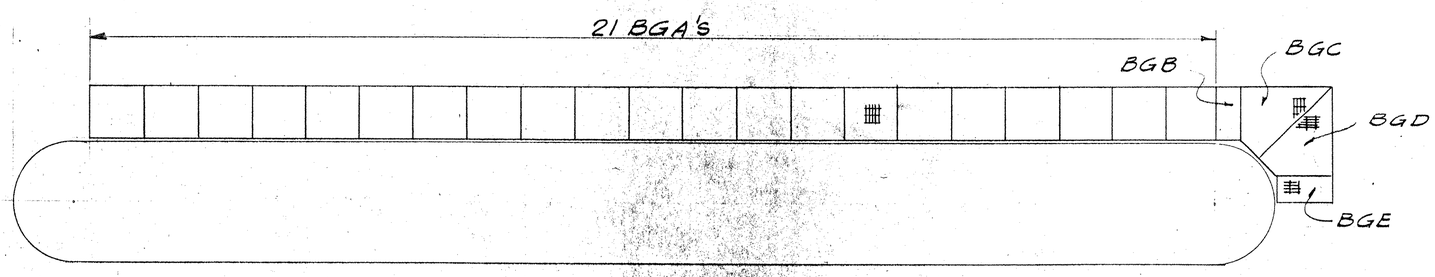




FIELD NOTE

Erect members with piece marks on East end of East-West members and North end of North-South members.

All material to be Hot Galvonized per A.S.T.M. A123 after fabrication.



GRATING LAYOUT

IR 089-1(13)
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BR 11 N & S

SHEET 81 OF 101

Proj. No. I-89-1(6)

NB. & SB. BRIDGES

INSPECTION WALKWAY PLAN

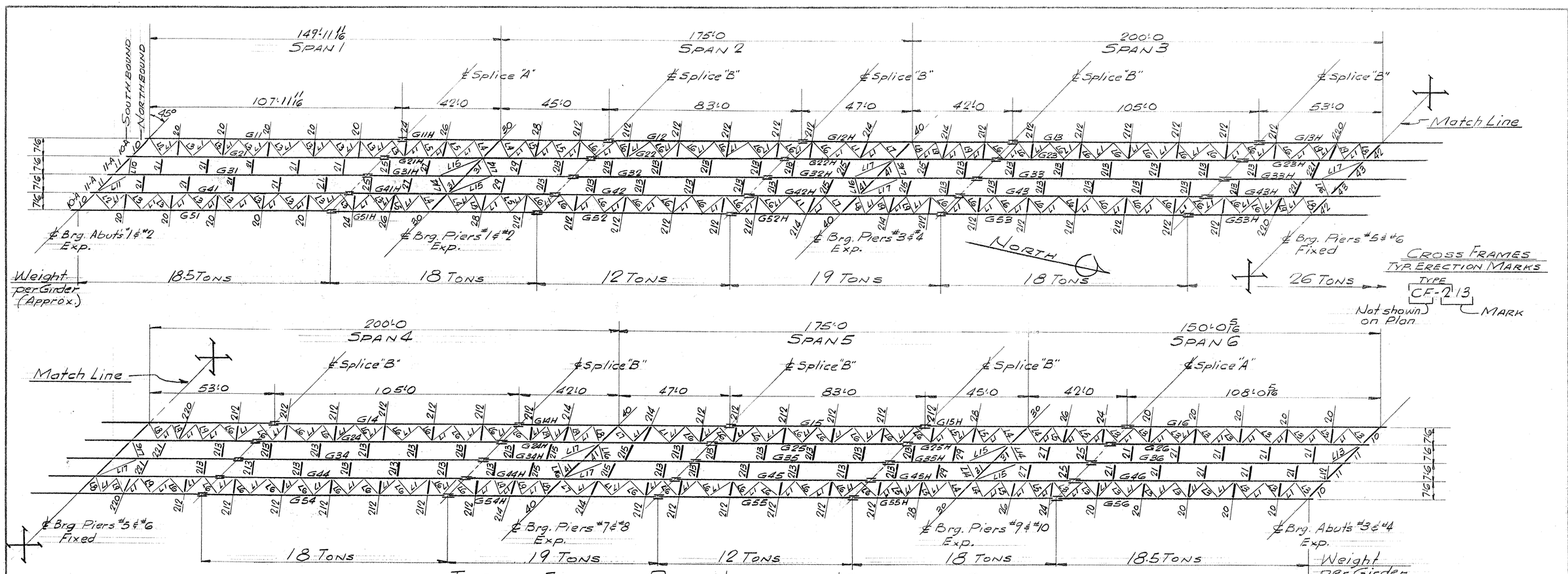
Bancroft & Martin Inc.
South Portland 7, Maine

I-89 BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

CUSTOMER CIANCHETTE BROS. INC.
DESIGNER VERMONT DEPT. OF HIGHWAYS

ORDER NO. _____ DWG. NO. 65-374-E2

			App. 1-17-66
DRAWN	1-3-66	TFG	
REVISION			
REVISION			
REVISION			



TYPICAL ERECTION PLAN - NORTHBOUND & SOUTHBOUND BRIDGES

NORTHBOUND: Suffix N to be added to all Marks
SOUTHBOUND: Suffix S to be added to all Marks

NOTE
Dimensions given on slope

GENERAL NOTES

1) All material and construction shall conform to the State of Vermont Department of Highways, Standard Specifications for Highway and Bridge Construction, Dated April 1964, and Special Provisions for this project, the AASHO Standard Specifications for Highways & Bridges Dated 1961. Welding shall conform to AWS Specifications for Welded Highway & Railway Bridges
2.) Unless otherwise noted on the plans all structural steel shall conform with A.S.T.M. Desig A36-62T.
3.) Holes in field splices of continuous girders are to be sub-punched (or sub-drilled) and reamed while assembled in the shop and connecting parts to be match marked & bolted for shipment (Bridge is on constant grade)
4.) Shop Paint shall be one coat per Vermont Spec's.

IR 089-1(13)
This sheet for information only
BR 11 N & S

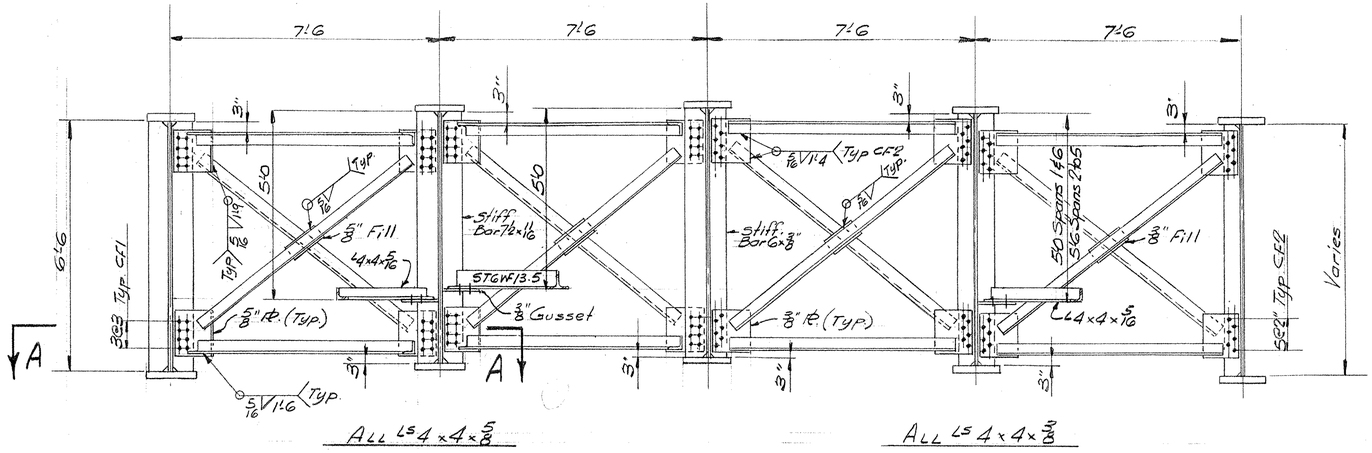
SHEET 82 OF 101

PROJ. NO. I-89-1(6)
N. B & S. B. BRIDGES
ERECTION PLAN
Bancroft & Martin Inc.
South Portland 7, Maine
I-89 - BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

APP'D 4-6-66

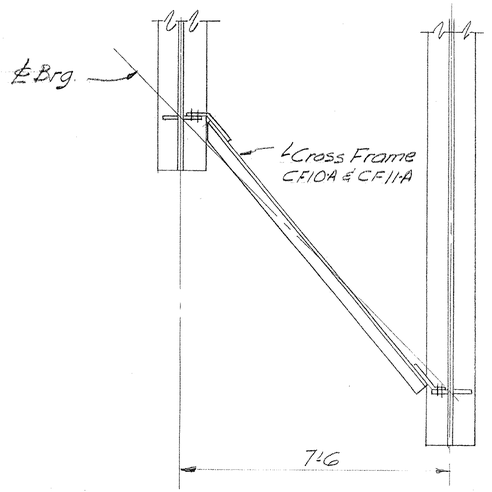
Change @ S. Abut. S.B. Bridge

DRAWN	12-16-65	J.P.F.	CUSTOMER CIANCHETTE BROS INC.
REVISION	9-15-66	J.P.F.	DESIGNER VERMONT DEPT. OF HIGHWAYS
REVISION			ORDER NO. VERBAL / DWG. NO 65-374-E3
REVISION			



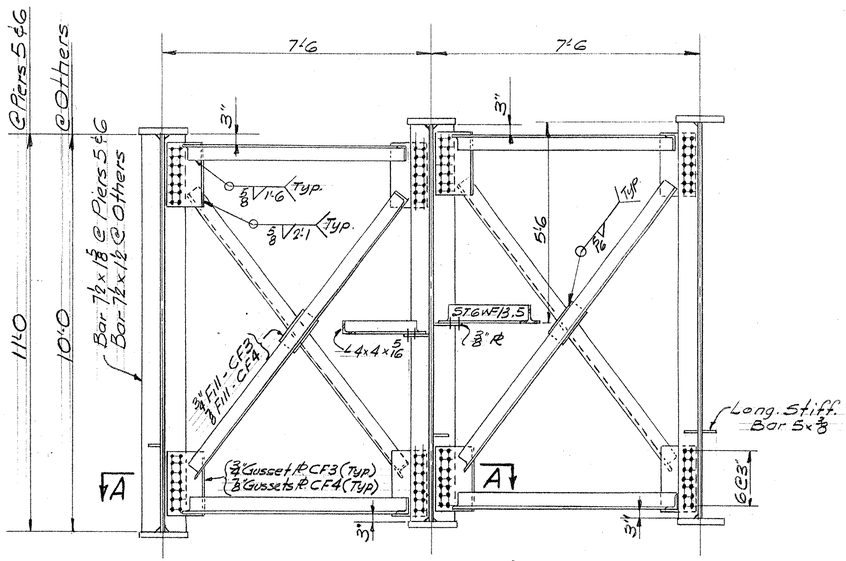
ALL L^S 4 x 4 x 5/8 — ALL L^S 4 x 4 x 3/8

ABUTMENT CROSS FRAMES-CF1 — INTERMEDIATE CROSS FRAMES - CF2



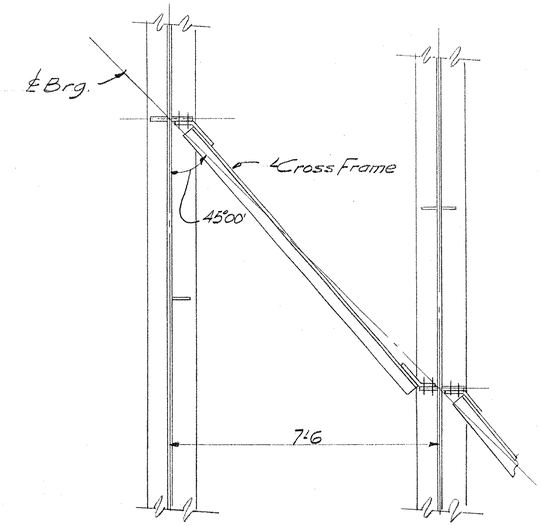
SPECIAL DETAIL @ SOUTH ABUT.
SOUTHBOUND BRIDGE

N



CF3 ALL L^S 5 x 5 x 3/4
CF4 ALL L^S 5 x 5 x 7/8

PIER CROSS FRAMES - CF3 & CF4



SECTION A-A

IR 089-1(13)
This sheet for information only
BR 11 N & S

SHEET 83 OF 101

N.B. & S.B. BRIDGES
TYPICAL SECTIONS
Bancroft & Martin Inc.
South Portland 7, Maine
I-89 BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

DRAWN	12-20-65	J.P.F.	
REVISION	7-15-66	J.P.F.	Change @ S. Abut. S.B. Bridge
REVISION			
REVISION			

CUSTOMER CIANCHETTE BROS. INC.
DESIGNER VERMONT DEPT OF HIGHWAYS
ORDER NO. _____ DWG. NO. 65-374-E4

APP'D 4/66

℄ Brgs. @ Abut's

g3b g1a g3a g1

L2 @ Abut's #1 & #2
L3 @ Abut's #3 & #4

45°00'

7'-6

7'-6

7'-6

g3 g1 g3 g1

g10b

L10 @ Abut's #1 & #2
L12 @ Abut's #3 & #4

ST6WF13.5

1'-0 Typ.

g10

g11

Bar 7½ x 11/16 (Typ.)
Bearing Stiffeners

Bar 6 x ⅜ (Typ.)
@ Cross Frames - Type CF-2

Bar 6 x ⅜ (Typ.)
Intermediate Stiffeners

ST6WF13.5

L11 @ Abut's #1 & #2
L13 @ Abut's #3 & #4

7'-6 13/16

12

5/8

℄ Cross Frames
Type CF-2

½" Web

g11b

g3b g1a g3a g1

L2 @ Abut's #1 & #2
L3 @ Abut's #3 & #4

L1 L3 L1

g3 g1 g3 g1

@ Abut's #1 & #2 6'-5 11/16

@ Abut's #3 & #4 6'-6 5/16

17 Spc's @ 6'-6

North
Abut's #1 & #2

North
Abut's #3 & #4

BRACING NOTES
All lateral bracing L 4 x 4 x ⅜ unless noted
⅜" Gusset plates

PLAN OF LATERAL BRACING @ ABUTMENTS
Cross Frames not shown.

IR 089-1(13)
This sheet for information only
BR 11 N & S

SHEET 84 OF 101

PROJ No. I-89-1(6)

NB & SB BRIDGES
LATERAL BRACING LAYOUT
Bancroft & Martin Inc.
South Portland 7, Maine
I-89-BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

APP. 4-6-66

DRAWN	1-5-66	J.R.F.	
REVISION			
REVISION			
REVISION			

CUSTOMER CIANCHETTE BROS INC.
DESIGNER VERMONT DEPT OF HIGHWAYS
ORDER NO. VERBAL
DWG. NO. 65-314-E5

℄ Brg's Piers #1-#2-#9 & #10

g1d g5d g1 g4 g4b g1

L1 L5 L1 L4 L4 L1

7'-6"

45°00'

NORTH

g1 g5 g1 g4b g4 g1

g15b g14

L15 STGWF13.5

STGWF18.5 L14

Bar 7½ x 1½ (Typ) Bearing Stiffeners

g15 g14 g14 g15

½" Web

STGWF18.5 L14

STGWF13.5 - L15

g14 g15b

2'-0" Typ.

Bar 6 x ⅜ (Typ) @ Cross Frames - Type CF-2

Bar 6 x ⅜ (Typ) Intermediate Stiffeners

7'-9⅜"

℄ Cross Frames Type CF-2

12

3 3/16

g1 g4 g4b g1 g5 g1

L1 L4 L4 L1 L5 L1

g1 g4b g4 g1 g5d g1d

6 Spcs @ 5'-6" = 33'-0

6 Spcs @ 5'-6" = 33'-0

PLAN OF LATERAL BRACING @ PIERS #1-#2-#9 & #10

Cross Frames & Longitudinal Stiffeners not shown.

BRACING NOTES

All lateral bracing 4 x 4 x ⅝ unless noted

⅜" Gusset plates

IR 089-1(13)
This sheet for information only
BR 11 N & S

SHEET 85 OF 101

PROJ. No. I-89-1(6)

NB & SB BRIDGES

LATERAL BRACING LAYOUT

Bancroft & Martin Inc.
South Portland 7, Maine

I-89-BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

DRAWN	1-5-66	J.P.F.	
REVISION			
REVISION			
REVISION			

CUSTOMER CIANCHETTE BROS. INC.
DESIGNER VERMONT DEPT. OF HIGHWAYS

ORDER NO. VERBAL | DWG. NO. 65-374-E6

APPROVED

℄ Brg's - Piers #3 - #4 - #7 & #8

NORTH
Piers #3 & #4

NORTH
Piers #7 & #8

45°00'

STGWF13.5 - L17

Bar 7½ × ½ (Typ)
Bearing Stiffeners

½" Web

STGWF13.5 - L17

STGWF13.5 - L17

STGWF13.5 - L17

2'-6 Typ.

Bar 6 × ⅜ (Typ)
@ Cross Frames - Type CF-2

Bar 6 × ⅜ (Typ)
Intermediate Stiffeners

7'-10½

12
4

℄ Cross Frames
Type CF-2

7'-6

6 Spc's @ 5'-0 = 30'-0

6 Spc's @ 5'-0 = 30'-0

PLAN OF LATERAL BRACING @ PIERS #3 - #4 - #7 & #8

Cross Frames & Longitudinal Stiffeners not shown.

BRACING NOTES

All lateral bracing L 4 × 4 × ½ unless noted
⅜" Gusset plates

IR 089-1(13)
This sheet for information only

BR 11 N & S

SHEET 86 OF 101

Proj. No. I-89-1(6)

NB & SB BRIDGES

LATERAL BRACING LAYOUT

Bancroft & Martin Inc.
South Portland 7, Maine

I-89 - BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

APP'D 4-6-66

DRAWN	1-6-66	JPF	
REVISION			
REVISION			
REVISION			

CUSTOMER GIANCHETTE BROS. INC.
DESIGNER VERMONT DEPT. OF HIGHWAYS
ORDER NO. VERBAL
DWG. NO. 65-374-E7

℄ Brgs. Piers #5 & #6

NORTH

7'6

7'6

7'6

45°00'

7'10⅜

2'6 Typ.

12
4

℄ Cross Frames
Type CF-2

g9 g1e g9e g1 g8 g8b g1 g9 g1 g9 g1 g8b g1 g8 g1

L7 L7 L7 L7 L8 L8 L7

g17b g16

STGWF13.5 - L17

STGWF13.5 L17

Bar 7½×1⅝ (Typ)
Bearing Stiffeners

½" Web

Bar 6½×⅞ (Typ)
@ Cross Frames - Type CF-2

Bar 6½×⅞ (Typ)
Intermediate Stiffeners

g17 g16 g17 g16 g17 g16 g17b g1 g8 g8b g1 g9 g1 g9 g1 g8b g1 g8 g1 g9e g1e g9

L7 L8 L7 L7 L8 L7

6 Spc's @5'0 = 30'0

6 Spc's @5'0 = 30'0

PLAN OF LATERAL BRACING @ PIERS #5 & #6

Cross Frames & Longitudinal Stiffeners not shown.

BRACING NOTES

All lateral bracing L 4×4×⅝ unless noted
⅜" Gusset plates

IR 089-1(13)
This sheet for information only

BR 11 N & S

SHEET 87 OF 101

PROJ. NO. I-89-1(6)

NB & SB BRIDGES

LATERAL BRACING LAYOUT

Bancroft & Martin Inc.
South Portland 7, Maine

I-89 - BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

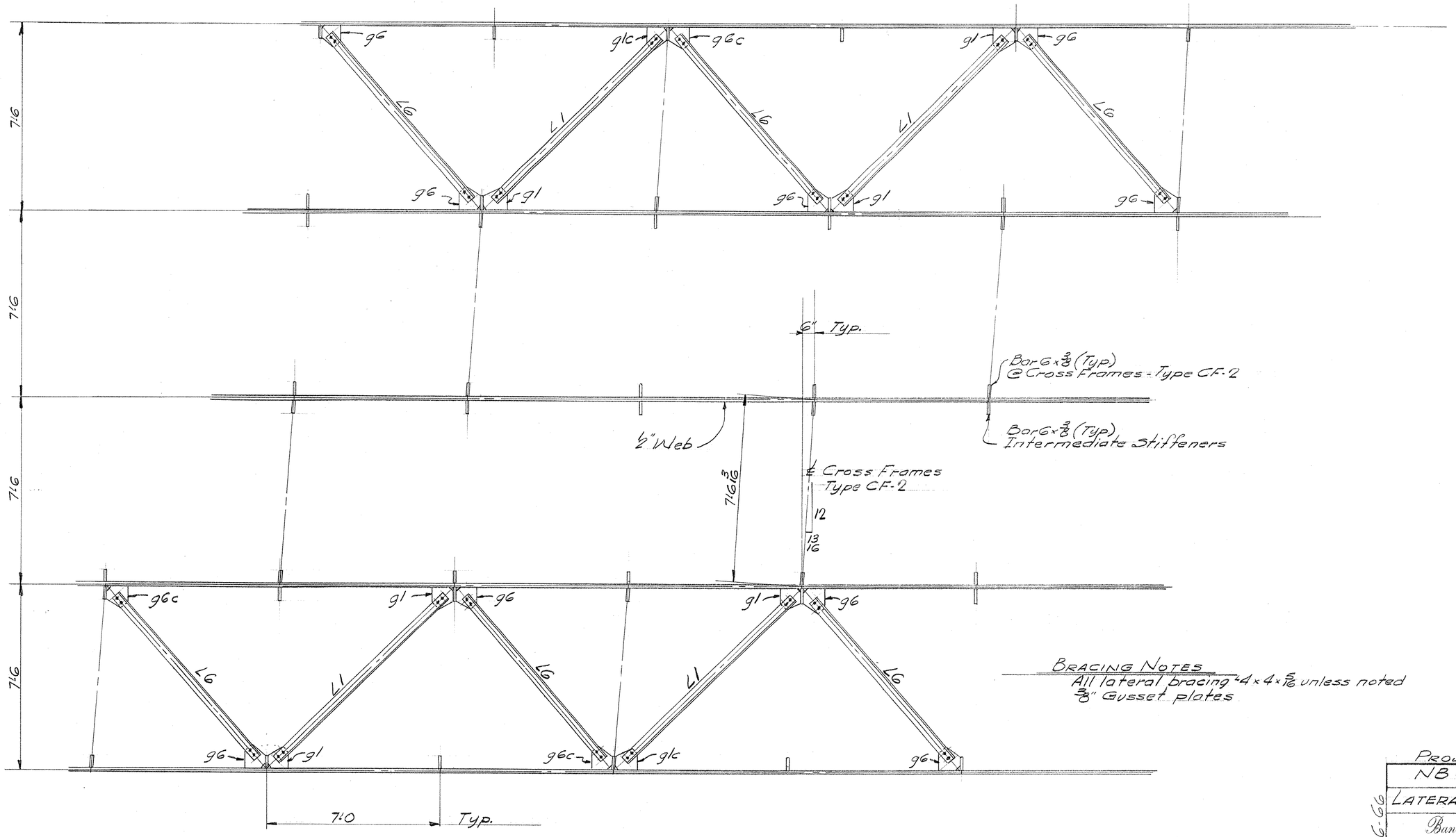
DRAWN	1-6-66	J.P.F.	
REVISION	4-21-66	J.P.F.	
REVISION			
REVISION			

CUSTOMER CIANCHETTE BROS. INC.
DESIGNER VERMONT DEPT OF HIGHWAYS

ORDER NO. VERBAL

DWG. NO. 65.374-E8

APP. 4-25-66



PLAN OF LATERAL BRACING @ SPANS 2-3-4 & 5

Cross Frames not shown.

BRACING NOTES

All lateral bracing 4 x 4 x 5/16 unless noted

3/8" Gusset plates

IR 089-1(13)
This sheet for information only
BR 11 N & S

SHEET 88 OF 101

PROJ. No. I-89-1(6)

NB & SB BRIDGES

LATERAL BRACING LAYOUT

Bancroft & Martin Inc.
South Portland 7, Maine

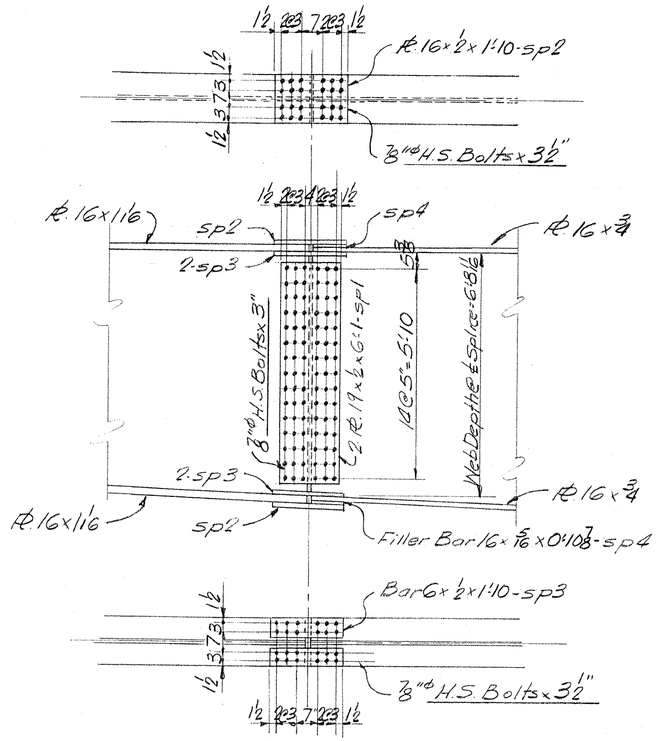
I-89-BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

CUSTOMER CIANCHETTE BROS INC.
DESIGNER VERMONT DEPT. OF HIGHWAYS

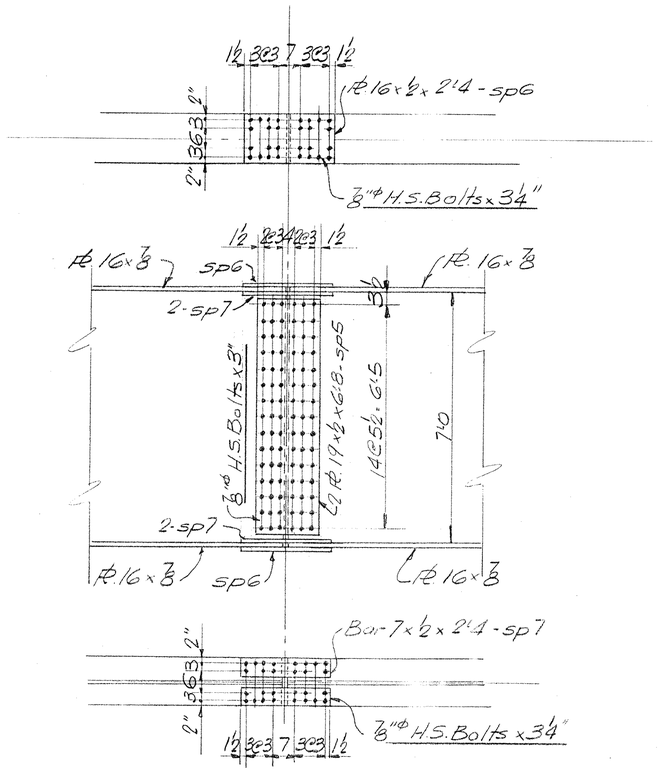
APP 4-6-66

DRAWN	1-7-66	J.P.F.
REVISION		
REVISION		
REVISION		

ORDER NO. VERBAL DWG. NO. 65-374-E9



Detail - Splice "A"



Detail - Splice "B"

Note: Payment is to be for weight of Splice "B" as designed on contract Plans.

Material to be listed on Girder Dwg's.

Note

Splice connections to be made with ⅞"ϕ (15/16") ⅞"ϕ High Strength Bolts - Holes to be For General Notes see Dwg. E1

IR 089-1(13)
This sheet for information only
BR 11 N & S

SHEET 89 OF 101

PROJ. No. I-89-1(6)

NB & SB BRIDGES

SPLICE DETAILS

Bancroft & Martin Inc.
South Portland 7, Maine

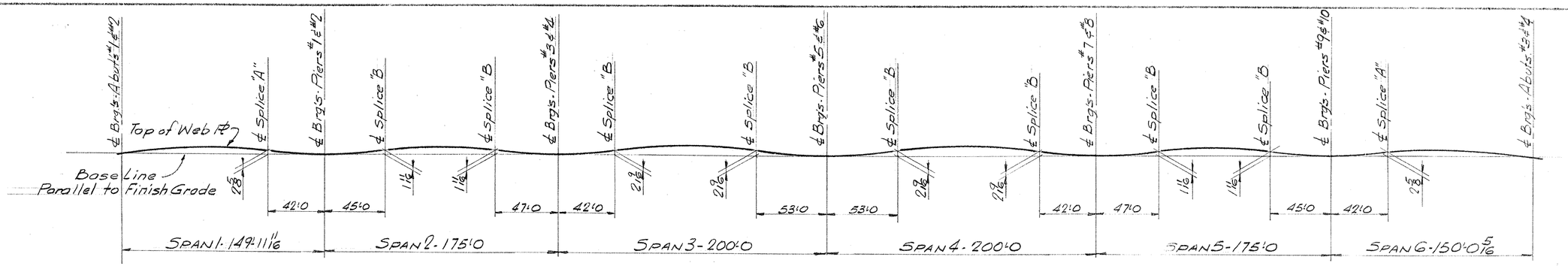
I-89 - BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

CUSTOMER CIANCHETTE BROS. INC.
DESIGNER VERMONT DEPT OF HIGHWAYS

ORDER NO. VERBAL
DWG. NO. 65-374-S11

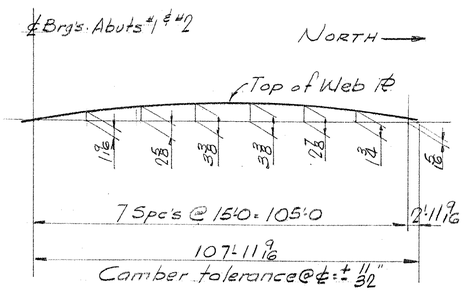
DRAWN	1-13-66	J.P.F.
REVISION	1-25-66	J.P.F.
REVISION		
REVISION		

Issued 4-6-66

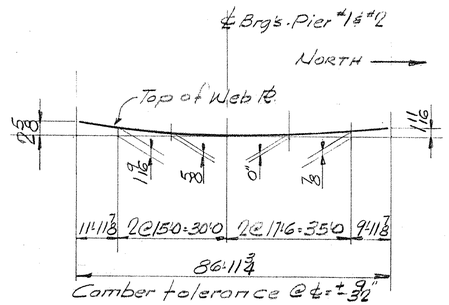


SHOP ASSEMBLY DIAGRAM
For All Girder Lines

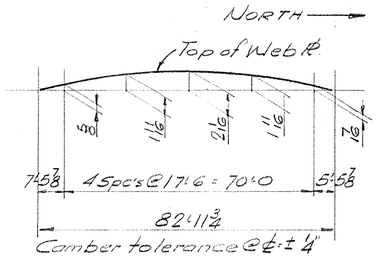
NOTE
Cambers shown are finish cambers.
No allowances shown for shrinkage due to welding.
The ends of girders shall be cut normal to a working base line unless otherwise detailed.



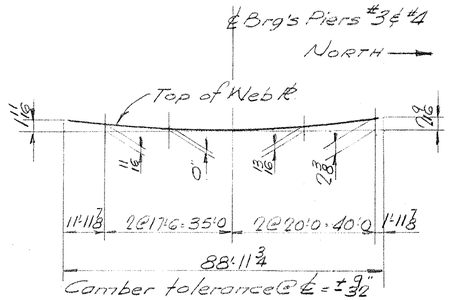
GIRDERS G11 - G21 - G31 - G41 & G51



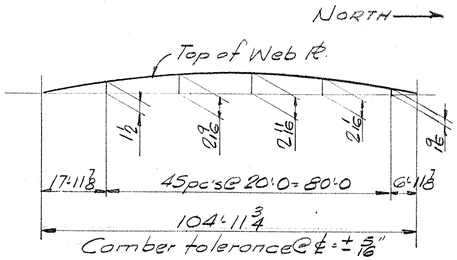
G11H - G21H - G31H - G41H & G51H



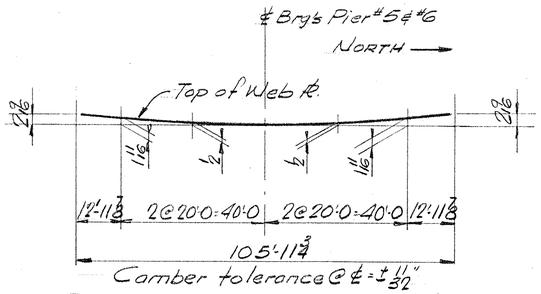
G12 - G22 - G32 - G42 & G52



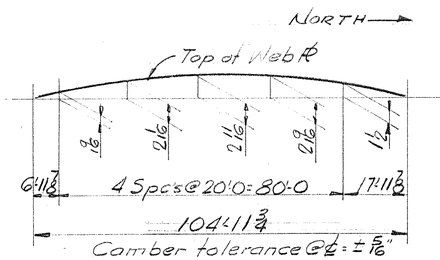
G12H - G22H - G32H - G42H - G52H



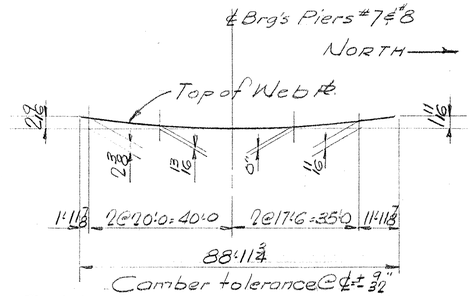
GIRDERS G13 - G23 - G33 - G43 & G53



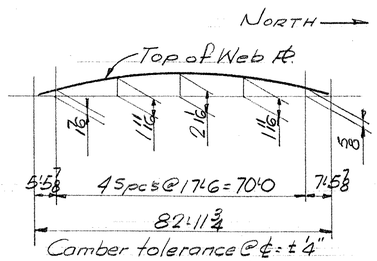
G13H - G23H - G33H - G43H & G53H



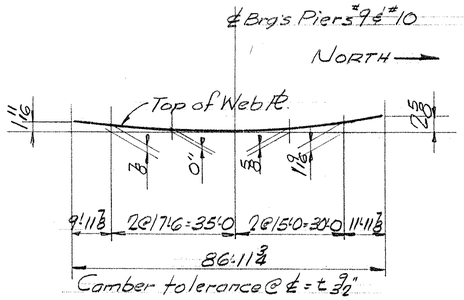
G14 - G24 - G34 - G44 & G54



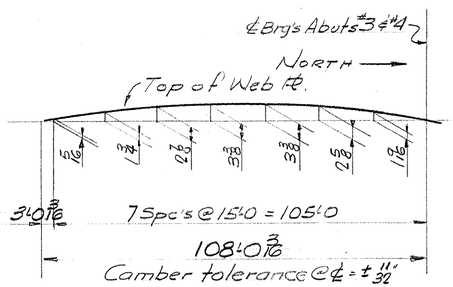
G14H - G24H - G34H - G44H & G54H



GIRDERS G15 - G25 G35 - G45 & G55



G15H - G25H - G35H - G45H - G55H



G16 - G26 - G36 - G46 & G56

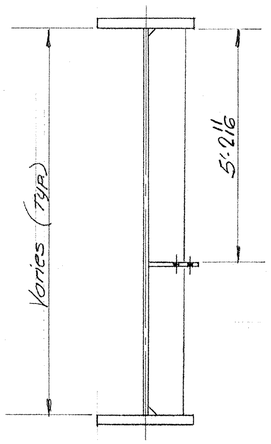
IR 089-1(13)
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SHEET 90 OF 101

BR 11 N & S
PROJ NO I-89-1(6)

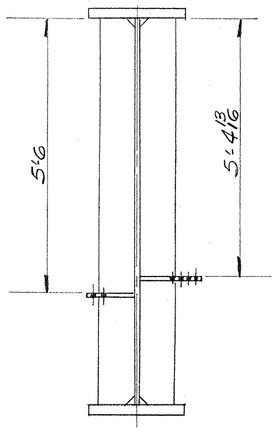
N.B. & S.B. BRIDGES
CAMBER DIAGRAMS
Bancroft & Martin Inc.
South Portland 7, Maine
I-89 BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

DRAWN	12-22-65 J.P.F.	CUSTOMER CIANCHETTE BROS. INC.
REVISION		DESIGNER VERMONT DEPT. OF HIGHWAYS
REVISION		ORDER NO. VERBAL DWG. NO. 65-374-513
REVISION		

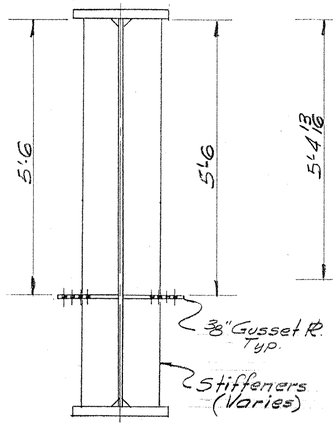
ADD G & G56



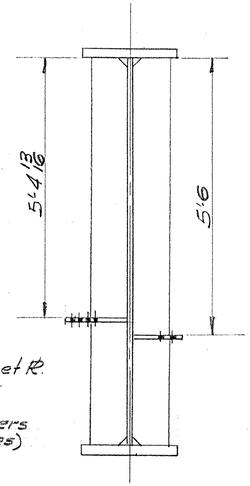
G51H
G52-G52H
G53-G53H
G54-G54H
G55-G55H



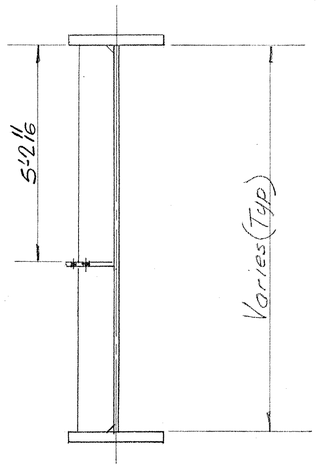
G41H
G42-G42H
G43-G43H
G44-G44H
G45-G45H



G31H
G32-G32H
G33-G33H
G34-G34H
G35-G35H

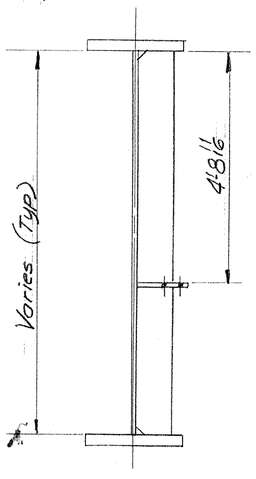


G21H
G22-G22H
G23-G23H
G24-G24H
G25-G25H

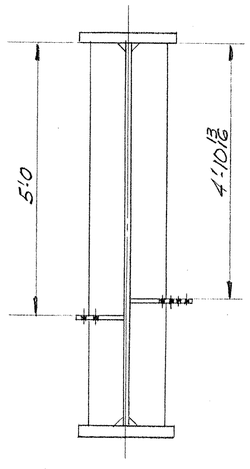


G11H
G12-G12H
G13-G13H
G14-G14H
G15-G15H

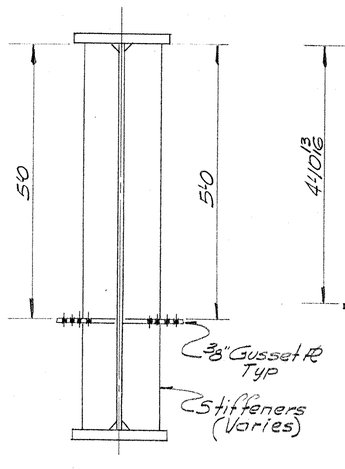
SECTION "A-A"



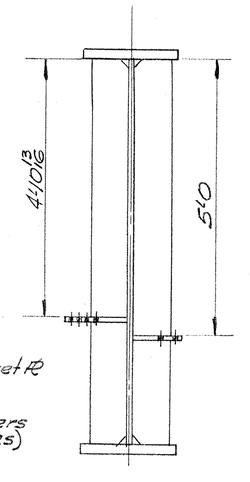
G51-G51H
G56-G55H



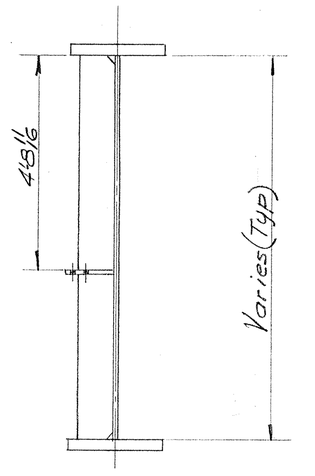
G41-G41H
G46-G45H



G31-G31H
G36-G35H



G21 G21H
G26-G25H



G11-G11H
G16-G15H

SECTION "B-B"

IR 089-1(13)
This sheet for information only
BR 11 N & S

SHEET 91 OF 101

PROJ. No. I-89-1(6)

N.B & S.B BRIDGES

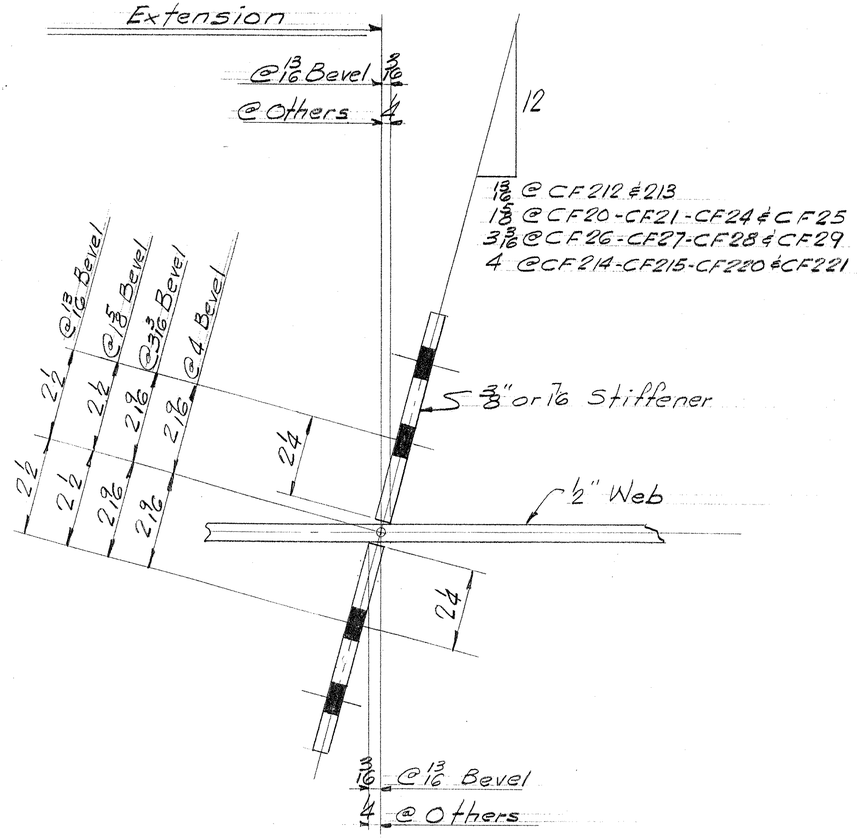
SECTIONS

Bancroft & Martin Inc.
South Portland 7, Maine

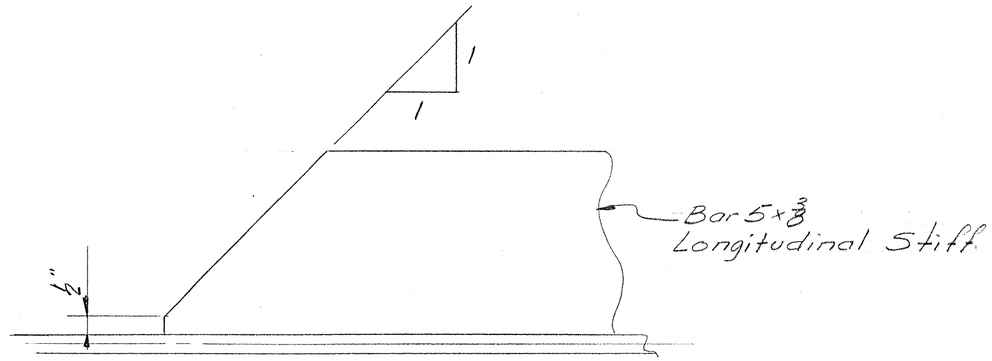
I-89-BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

APP. A-G-66

DRAWN	2-26-66	J.P.F.	CUSTOMER CIANCHETTE BROS. INC
REVISION			DESIGNER VERMONT DEPT. OF HIGHWAYS
REVISION			ORDER NO. VERBAL / DWG. NO 65-374-517
REVISION			



DETAIL @ SKEWED STIFFENERS



SPECIAL DETAIL
@ CUT LONGITUDINAL STIFFENERS
See Girder Details for location

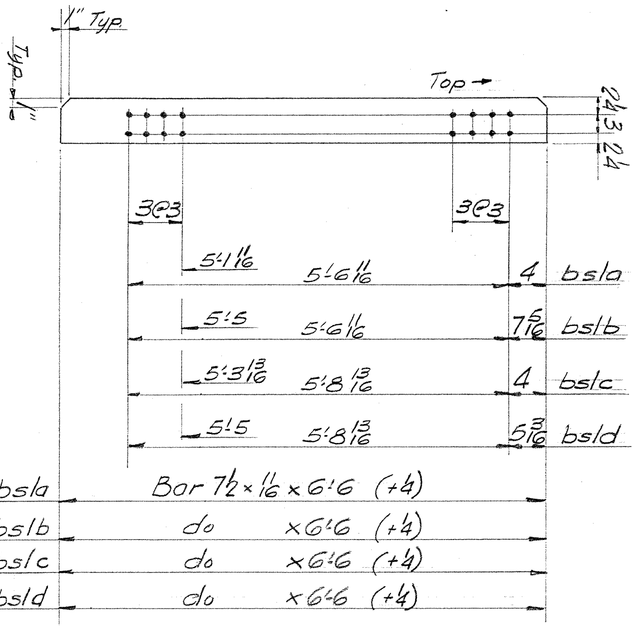
IR 089-1(13)
This sheet for information only
BR 11 N & S

SHEET 92 OF 101

PROJ. No. I-89-1(6)
N.B & S.B BRIDGES
SPECIAL DETAILS
Bancroft & Martin Inc.
South Portland 7, Maine
I-89 - BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT
CUSTOMER CIANCHETTE BROS INC.
DESIGNER VERMONT DEPT OF HIGHWAYS
ORDER NO. VERBAL
DWG. NO. 65-374-518

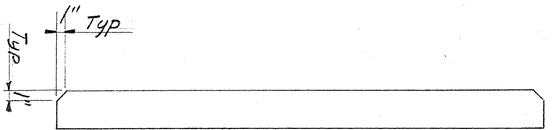
APP. 4-25-66

DRAWN	1.28.66	J.P.F.
REVISION	4.21.66	J.P.F.
REVISION		
REVISION		

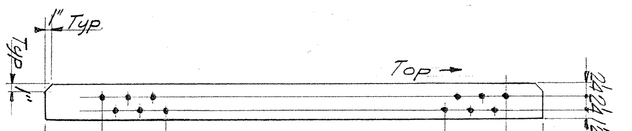


	5'-1 1/16	5'-6 1/16	4	bs1a
	5'-5	5'-6 1/16	7 5/16	bs1b
	5'-3 13/16	5'-8 13/16	4	bs1c
	5'-5	5'-8 13/16	5 3/16	bs1d

4 -bs1a	Bor 7/2 × 1/16 × 6'-6	(+4)
4 -bs1b	do	× 6'-6 (+4)
4 -bs1c	do	× 6'-6 (+4)
4 -bs1d	do	× 6'-6 (+4)



4 -bs1	Bor 7/2 × 1/16 × 6'-6	(+4)
152 -s1	Bor 6 × 3/8 × 6'-6	
8 -h1		× 6'-6 3/16
16 -h2		× 6'-7 3/8
8 -h3		× 6'-9 3/4
8 -h4		× 7'-1 5/16
16 -h5		× 7'-5 1/4
8 -h6		× 7'-10
8 -h7		× 8'-3 9/16
16 -h8		× 8'-9 15/16
16 -h9	Bor 6 × 3/8	× 9'-5 3/16



	5'-0 1/16	5'-6 1/16	4	s1a-h1a
	5'-4	5'-6 1/16	7 5/16	s1b-h1b
	5'-2 13/16	5'-8 13/16	4	s1c-h1c
	5'-4	5'-8 13/16	5 3/16	s1d-h1d
	5'-4 1/16	5'-10 1/16	4	h3a-h4a
	5'-7 3/4	5'-10 1/16	7 5/16	h3b-h4b
	5'-6 9/16	6'-0 9/16	4	h3c-h4c
	5'-7 3/4	6'-0 9/16	5 3/16	h3d-h4d
	6'-4 1/16	6'-10 1/16	4	h6a-h7a
	6'-8	6'-10 1/16	7 5/16	h6b-h7b
	6'-6 13/16	7'-0 13/16	4	h6c-h7c
	6'-8	7'-0 13/16	5 3/16	h6d-h7d

18 -s1a	Bar 6 × 3/8 × 6'-6	
18 -s1b		× 6'-6
18 -s1c		× 6'-6
18 -s1d		× 6'-6
2 -h1a		× 6'-6 3/16 (+4)
2 -h1b		× 6'-6 3/16 (+4)
2 -h1c		× 6'-6 3/16 (+4)
2 -h1d		× 6'-6 3/16 (+4)
2 -h3a		× 6'-9 3/4 (+4)
2 -h3b		× 6'-9 3/4 (+4)
2 -h3c		× 6'-9 3/4 (+4)
2 -h3d		× 6'-9 3/4 (+4)
2 -h4a		× 7'-1 5/16 (+4)
2 -h4b		× 7'-1 5/16 (+4)
2 -h4c		× 7'-1 5/16 (+4)
2 -h4d		× 7'-1 5/16 (+4)
2 -h6a		× 7'-10 (+4)
2 -h6b		× 7'-10 (+4)
2 -h6c		× 7'-10 (+4)
2 -h6d		× 7'-10 (+4)
2 -h7a		× 8'-3 9/16 (+4)
2 -h7b		× 8'-3 9/16 (+4)
2 -h7c		× 8'-3 9/16 (+4)
2 -h7d	Bor 6 × 3/8	× 8'-3 9/16 (+4)

Quantities shown are for One Bridge

13/16" ø Holes

HOLES ARE FOR HIGH TENSILE BOLTS
They are to be free from burrs and shall not be painted on any surface within 5" of such open holes.

IR 089-1(13) SHEET 99 OF 101

This sheet for information only

BR 11 N & S
Proj. No. I-89-1(6)
N.B. & S.B. BRIDGES

STIFFENER DETAILS

Borough of Allenton Inc.
South Portland, Maine

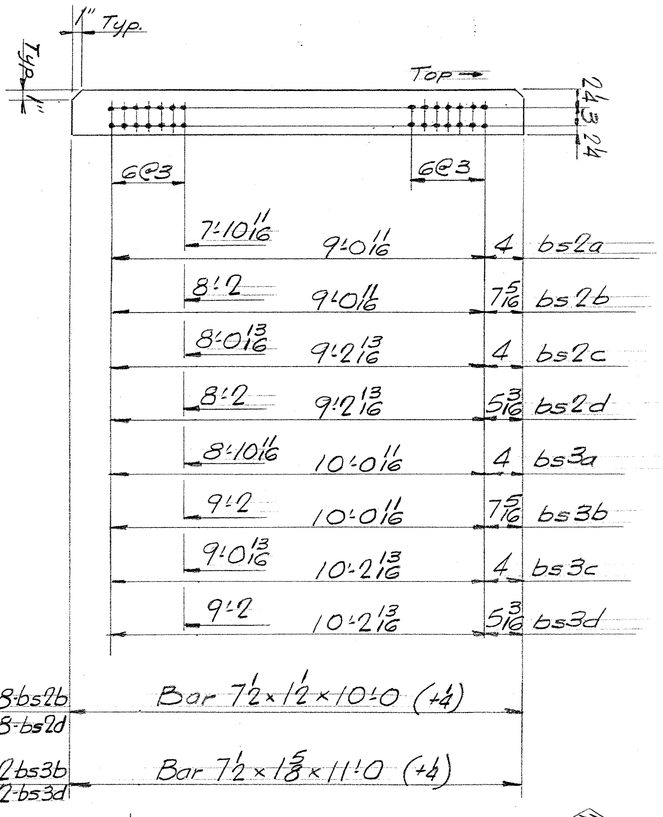
I-89- BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

CUSTOMER Ciancchette Bros. Inc.
DESIGNER VERMONT DEPT OF HIGHWAYS

ORDER NO. VERBAL DWG. NO. 65-37-519

DRAWN 2/15/66 J.P.F.
REVISION
REVISION
REVISION

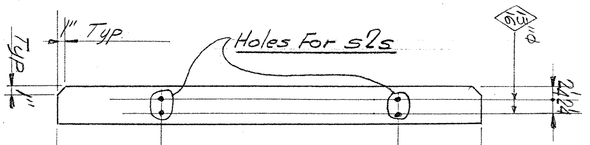
APP. 4.6.66



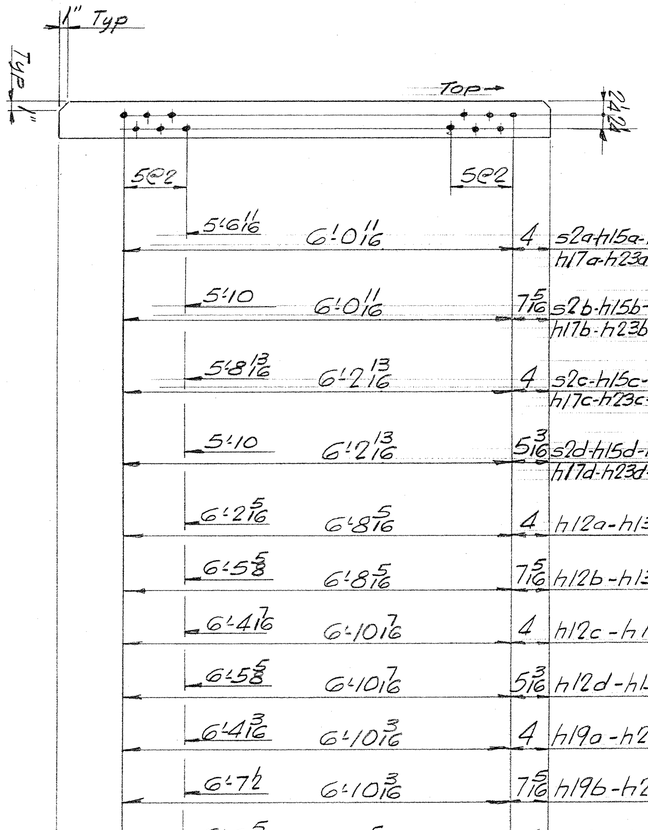
7'-10 11/16	9'-0 11/16	4	bs2a
8'-2	9'-0 11/16	7 5/16	bs2b
8'-0 13/16	9'-2 13/16	4	bs2c
8'-2	9'-2 13/16	5 3/16	bs2d
8'-10 11/16	10'-0 11/16	4	bs3a
9'-2	10'-0 11/16	7 5/16	bs3b
9'-0 13/16	10'-2 13/16	4	bs3c
9'-2	10'-2 13/16	5 3/16	bs3d

8-bs2a,-8-bs2b 8-bs2c,-8-bs2d — Bar 7 1/2 x 1 1/2 x 10'-0 (+4)

2-bs3a,-2-bs3b 2-bs3c,-2-bs3d — Bar 7 1/2 x 1 5/8 x 11'-0 (+4)



8-bs2	Bar 7 1/2 x 1 1/2 x 10'-0 (+4)	
2-bs3	Bar 7 1/2 x 1 5/8 x 11'-0 (+4)	
302-s2	Bar 6 x 3/8 x 7'-0	
16-h10	x 9'-4 5/8	
16-h11	x 8'-7 7/8	
8-h12	x 8'-1 1/16	
8-h13	x 7'-7 11/16	
16-h14	x 7'-3 11/16	
8-h15	x 7'-1 7/16	
16-h16	x 7'-0 1/4	
24-h17	x 7'-2 3/8	
32-h18	x 7'-5 5/16	
16-h19	x 7'-9 1/2	
16-h20	x 8'-2 13/16	
32-h21	x 8'-9 5/16	
32-h22	x 9'-5	
8-h23	x 7'-0 3/4	
8-h24	Bar 6 x 3/8 x 7'-3 3/8	
16-h25	Bar 6 1/2 x 1/16 x 7'-8	
16-h26	x 8'-0 1/2	
8-h27	x 8'-6	
8-h28	x 9'-0 1/2	
16-h29	x 9'-8	
16-h30	Bar 6 1/2 x 1/16 x 10'-4 1/2	
18-s2s	Bar 6 x 3/8 x 7'-0	



5'-6 11/16	6'-0 11/16	4	s2a-h15a-h16a h17a-h23a-h24a
5'-10	6'-0 11/16	7 5/16	s2b-h15b-h16b h17b-h23b-h24b
5'-8 13/16	6'-2 13/16	4	s2c-h15c-h16c h17c-h23c-h24c
5'-10	6'-2 13/16	5 3/16	s2d-h15d-h16d h17d-h23d-h24d
6'-2 5/16	6'-8 5/16	4	h12a-h13a
6'-5 5/8	6'-8 5/16	7 5/16	h12b-h13b
6'-4 7/16	6'-10 7/16	4	h12c-h13c
6'-5 5/8	6'-10 7/16	5 3/16	h12d-h13d
6'-4 3/16	6'-10 3/16	4	h19a-h20a
6'-7 1/2	6'-10 3/16	7 5/16	h19b-h20b
6'-6 5/16	7'-0 5/16	4	h19c-h20c
6'-7 1/2	7'-0 5/16	5 3/16	h19d-h20d
7'-0 11/16	7'-6 11/16	4	h27a-h28a
7'-4	7'-6 11/16	7 5/16	h27b-h28b
7'-2 13/16	7'-8 13/16	4	h27c-h28c
7'-4	7'-8 13/16	5 3/16	h27d-h28d

40-s2a,-40-s2b 40-s2c,-40-s2d	Bar 6 x 3/8 x 7'-0	
2-h12a,-2-h12b 2-h12c,-2-h12d		x 8'-1 1/16 (+1/4)
2-h13a,-2-h13b 2-h13c,-2-h13d		x 7'-7 11/16 (+1/4)
2-h15a,-2-h15b 2-h15c,-2-h15d		x 7'-1 3/16 (+1/4)
4-h16a,-4-h16b 4-h16c,-4-h16d		x 7'-0 1/4 (+1/4)
2-h17a,-2-h17b 2-h17c,-2-h17d		x 7'-2 3/8 (+1/4)
4-h19a,-4-h19b 4-h19c,-4-h19d		x 7'-9 1/2 (+1/4)
4-h20a,-4-h20b 4-h20c,-4-h20d		x 8'-2 13/16 (+1/4)
2-h23a,-2-h23b 2-h23c,-2-h23d		x 7'-0 3/4 (+1/4)
2-h24a,-2-h24b 2-h24c,-2-h24d	Bar 6 x 3/8	x 7'-3 3/8 (+1/4)
2-h27a,-2-h27b 2-h27c,-2-h27c	Bar 6 1/2 x 1/16	x 8'-6 (+1/4)
2-h28a,-2-h28b 2-h28c,-2-h28d	Bar 6 1/2 x 1/16	x 9'-0 1/2 (+1/4)

3/4" ø Holes - unless noted

HOLES ARE FOR HIGH TENSILE BOLTS. They are to be free from burrs and shall not be painted on any surface within 5" of such open holes.

This sheet for information only

IR 689-1(13)

BR 11 N & S

Quantities shown are for One Bridge

SHEET 94 OF 101

Prov. No. I-89-1(16)

N & S. B. Bridges

STIFFENER DETAILS

Bancroft & Martin Inc.
South Portland, Maine

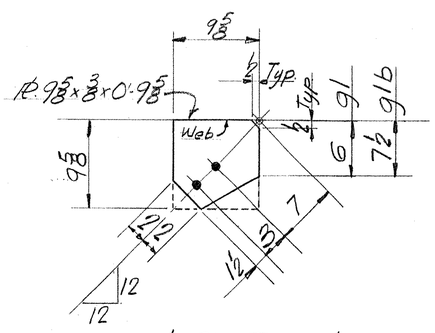
I-89 BRIDGE OVER WHITE RIVER
HARTFORD VERMONT

CUSTOMER Giancchette Bros. Inc.
DESIGNER Vermont Dept. of Highways

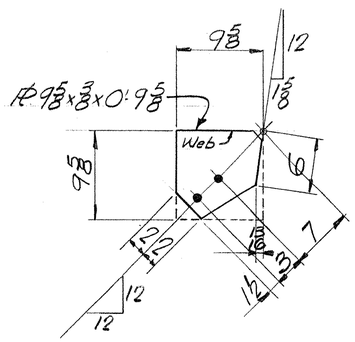
ORDER NO. VER844 DWG. NO. 65-374-520

REVISION	DRAWN
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4-21-66	J.P.T.

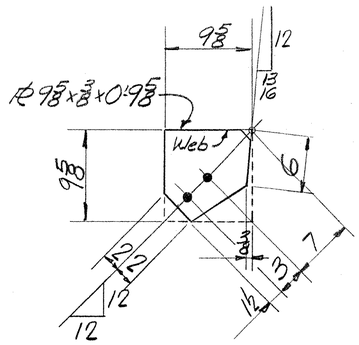
App 4.25.66



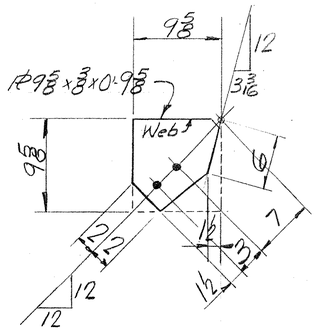
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g1b-4-Req'd.



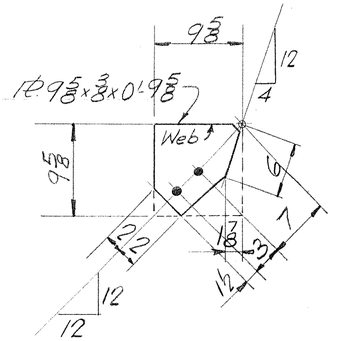
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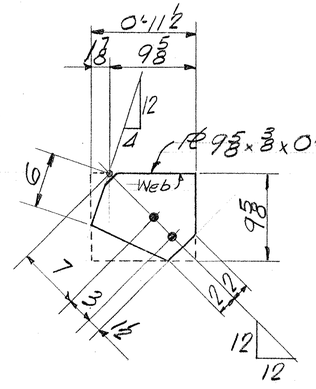
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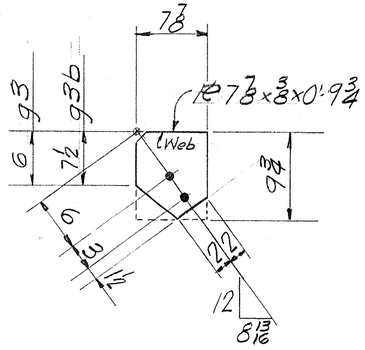
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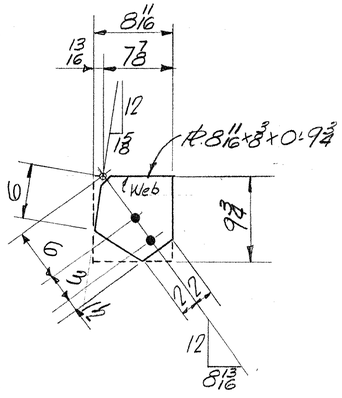
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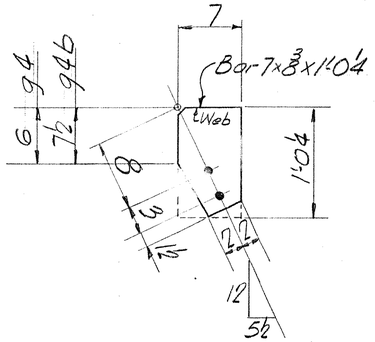
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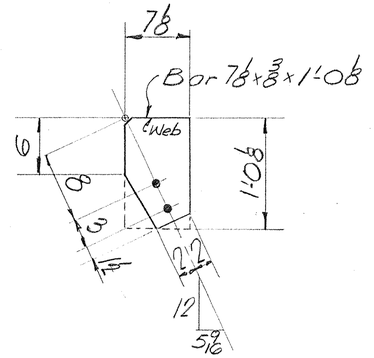
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g3b-4-Req'd



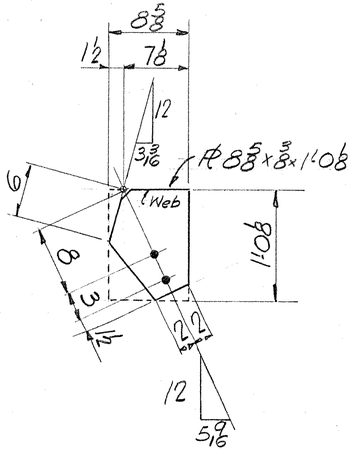
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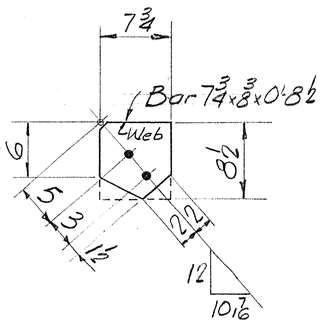
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g4b-8-Req'd



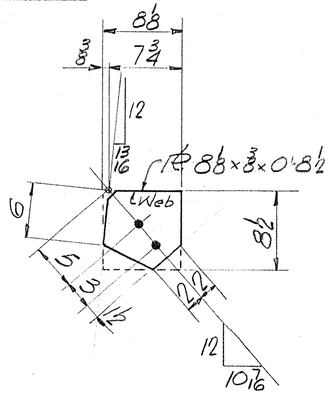
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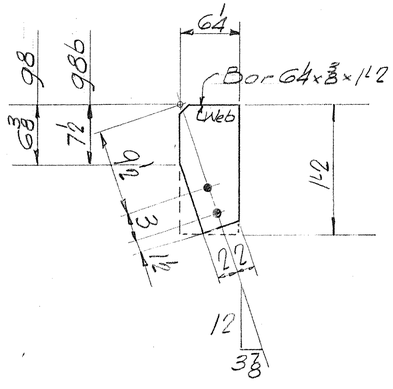
g5d-8-Req'd.



g6-92-Req'd.



g6c-52-Req'd.



g8-8-Req'd.
g8b-8-Req'd.

15/16" ⌀ Holes

Quantities shown are for One Bridge

IR 089-1(13)
This sheet for information only
BR 11 N & S
SHEET 95 OF 101

PROJ. No. I-89-1(6)

NB & SB BRIDGES

GUSSET DETS. LATERAL BRACING

Bancroft & Martin Inc.
South Portland 7, Maine

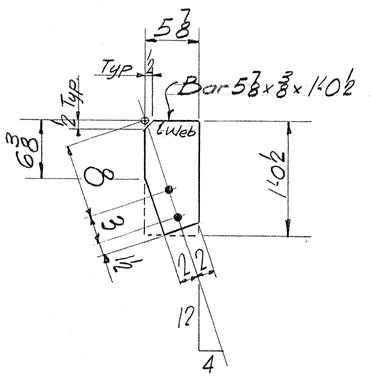
I-89 BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

CUSTOMER CIANCHETTE BROS INC.
DESIGNER VERMONT DEPT. OF HIGHWAYS

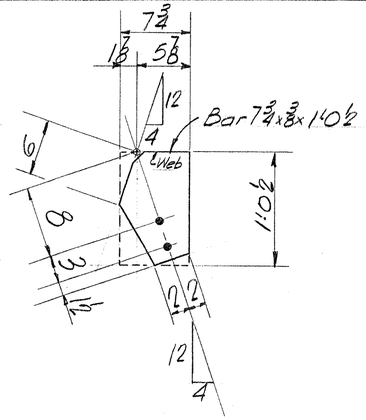
ORDER NO. VERBAL
DWG. NO 65-374-521

DRAWN	1-21-66	J.P.F.
REVISION		
REVISION		
REVISION		

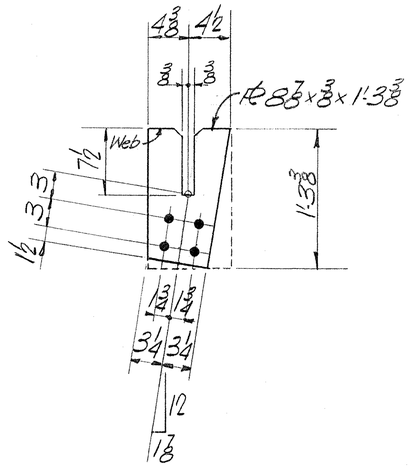
APP'D 4-6-66



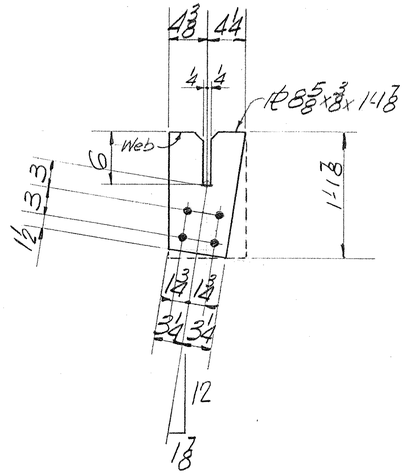
g9-24-Req'd



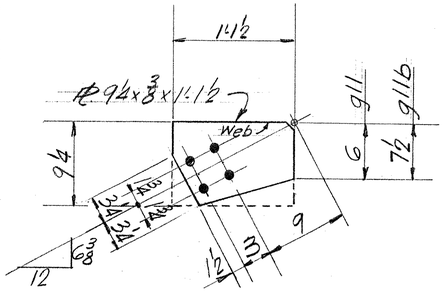
g9e-8-Req'd.



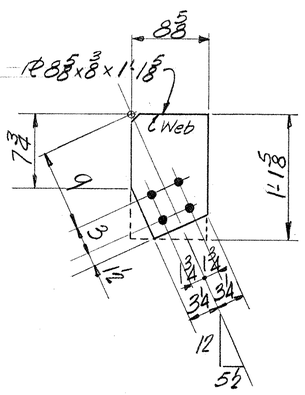
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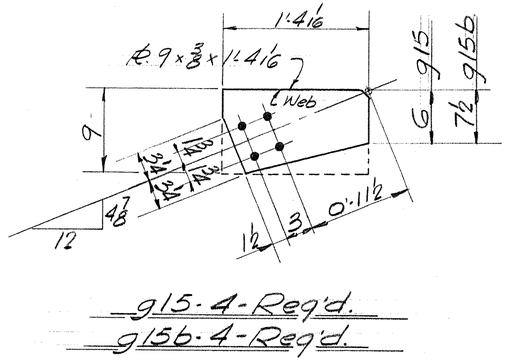
g10-2-Req'd



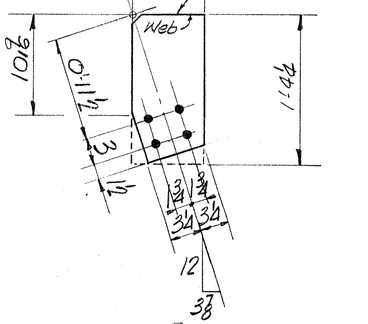
g11-2-Req'd.
g11b-2-Req'd.



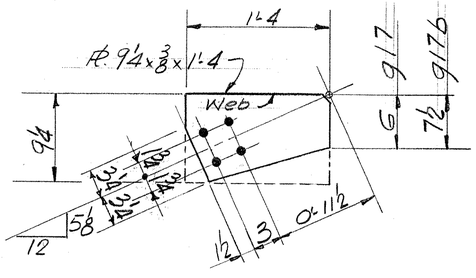
g14-8-Req'd.



g15-4-Req'd.
g15b-4-Req'd.



g16-12 Req'd.



g17-6-Req'd.
g17b-6-Req'd.

15/16" ⌀ Holes

Quantities shown are for One Bridge.

IR 089-1(13)
This sheet for information only
BR 11 N & S

SHEET 96 OF 101

PROJ. No. I-89-1(6)

NB & SB BRIDGES

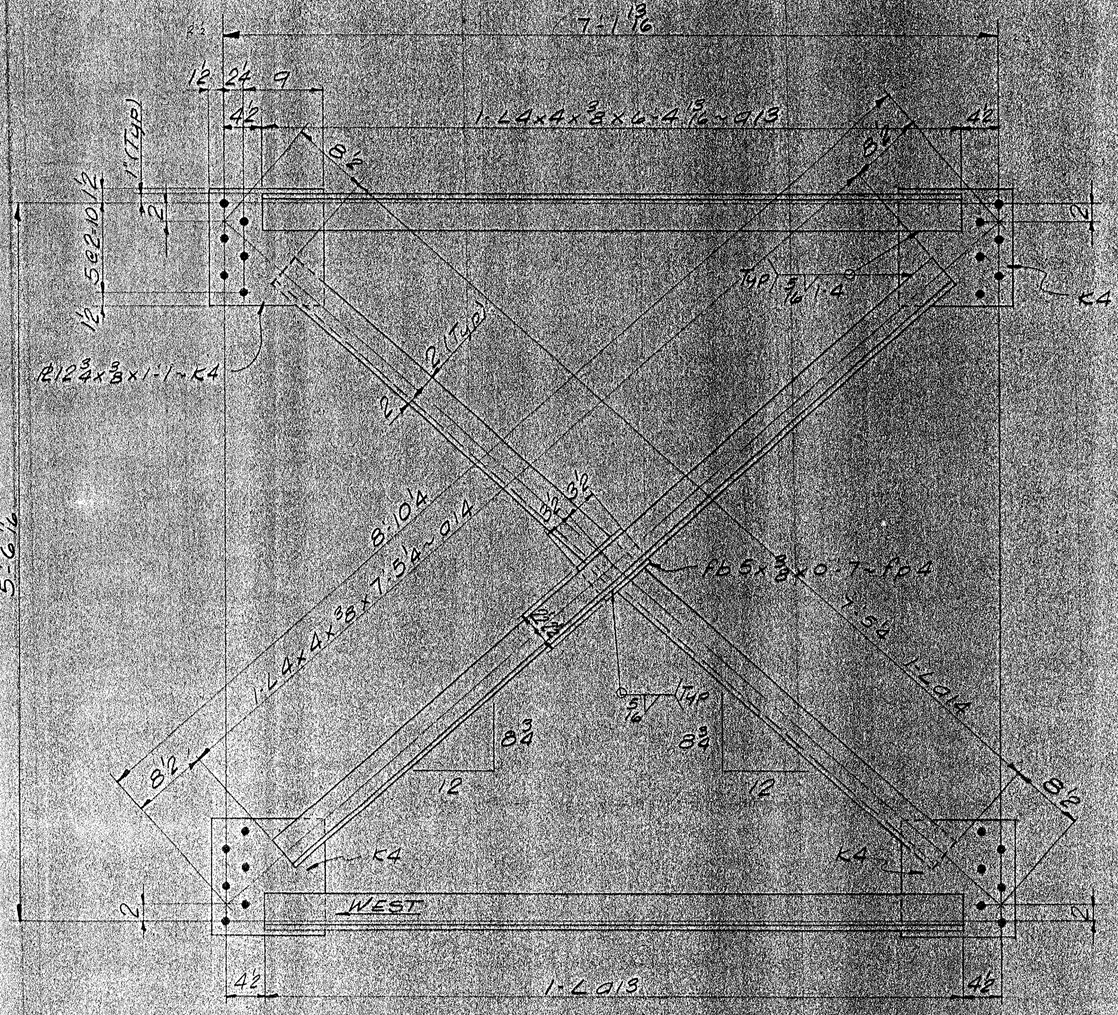
GUSSET DETS - LATERAL BRACING

Bancroft & Martin Inc.
South Portland 7, Maine

I-89 BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

APP. A.G. 66

DRAWN	1-25-66	J.P.F.	CUSTOMER CIANCHETTE BROS. INC.
REVISION			DESIGNER VERMONT DEPT. OF HIGHWAYS
REVISION			ORDER NO. VERBAL / DWG. NO. 65-374-522
REVISION			



INTERMEDIATE FRAME CF20
20 REQ'D.

Note: Steel to be A.S.T.M. A36
Holes to be 15/16"ϕ
Paint one shop coat per Vermont Specs.

15/16ϕ HOLES ARE FOR HIGH TENSILE BOLTS They are to be free from burrs and shall not be painted on any surface within 6" of such open holes.

RECEIVED MAR 28 1966
CK'D BY MAT OK'D BY EL
RESUBMIT APPROVED
BY JHS DATE 4-5-66

IR 089-1(13)
This sheet for information only
BR 11 N & S

SHEET 97 OF 101

Proj. I-89-1(6)

N.B. & S.B. BRIDGES

INTERMEDIATE CROSS FRAMES

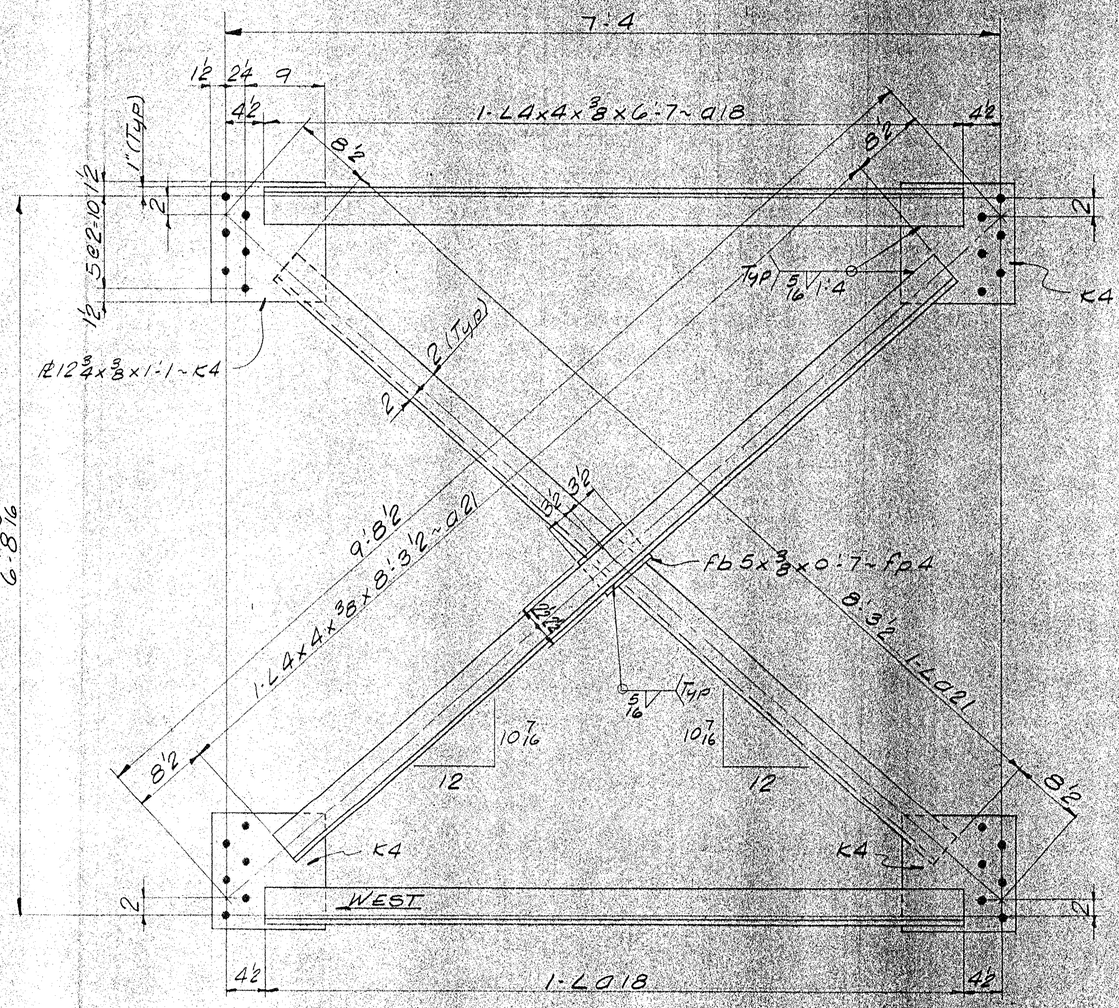
Bancroft & Martin Inc.
South Portland 7, Maine

I-89 BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

DRAWN	2-25-66	TFG	
REVISION			
REVISION			
REVISION			

CUSTOMER CIANCHETTE BROS. INC.
DESIGNER VERMONT DEPT. OF HIGHWAYS
ORDER NO. Verbal
DWG. NO. 65-374-S53

Quantities shown are for one bridge.
Add suffix N to marks for Northbound Bridge. (Bill of matl. S55N)
S " Southbound Bridge. (Bill of matl. S55S)



INTERMEDIATE FRAME CF2B
4 REQ'D.

Note: Steel to be A.S.T.M. A36
Holes to be 15/16"ϕ
Paint one shop coat per Vermont Specs.

15/16"ϕ HOLES ARE FOR HIGH TENSILE BOLTS. They are to be free from burrs and shall not be countersunk on any surface within ½" of such open holes.

Quantities shown are for one bridge.
Add suffix N to marks for Northbound Bridge. (Bill of matl. S59N)
" S " " Southbound Bridge. (Bill of matl. S59S)

RECEIVED MAR 28 1966
CK'D BY WET OK'D BY RLO
RESUBMIT APPROVED
BY JHUS DATE 3-5-66

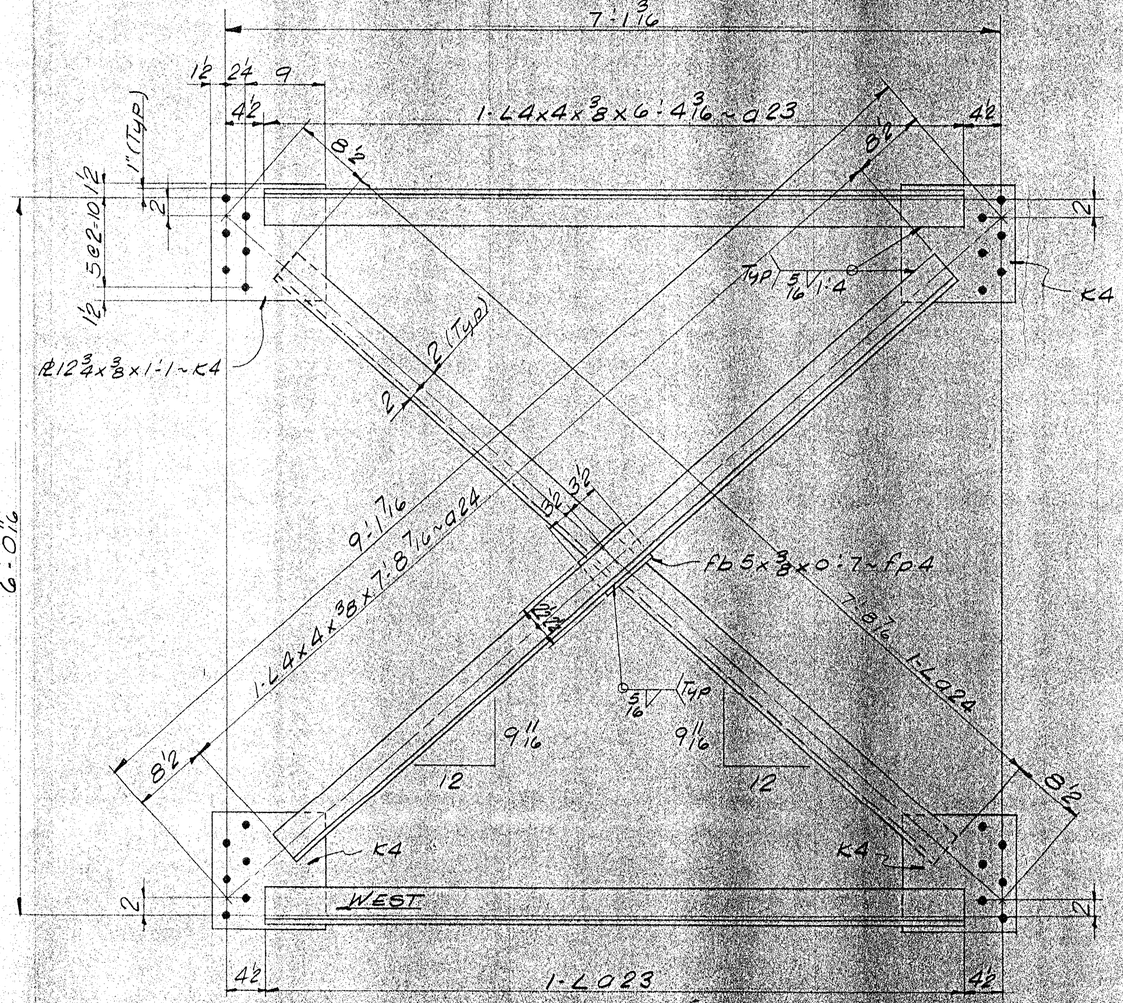
IR 089-1(13)
This sheet for information only
BR 11 N & S
SHEET 98 OF 101

Proj. I-89-1(6)

	N.B.E.S.E BRIDGES
	INTERMEDIATE CROSS FRAMES
	Bancroft & Martin Inc. South Portland 7, Maine
	I-89 BRIDGE OVER WHITE RIVER HARTFORD, VERMONT
	CUSTOMER CIANCHETTE BROS. INC.
	DESIGNER VERMONT DEPT. OF HIGHWAYS
	ORDER NO. Verbal DWG. NO. 65-374-S59

DRAWN	2-25-66	TFG
REVISION		
REVISION		
REVISION		

G



INTERMEDIATE FRAME CF 212
52 REQ'D.

Note: Steel to be A.S.T.M. A36
Holes to be 15/16" ϕ
Paint one shop coat per Vermont Specs.

15/16" ϕ HOLES ARE FOR HIGH TENSILE BOLTS. These holes [illegible] from burrs and shall not be placed on any surface within ½ of such open holes.

Quantities shown are for one bridge.
Add suffix N to marks for Northbound Bridge. (Bill of mat'l. S61N)
" S " " Southbound Bridge. (Bill of mat'l. S61S)

IR 089-1(13)
This sheet for information only
BR 11 N & S

SHEET 99 OF 101

RECEIVED MAR 8 1966
CK'D BY WBT CK'D BY RLO
RESUBMIT APPROVED
BY AWS DATE 4-5-66

Proj. I-89-1(6)

N. B. & S. B. BRIDGES

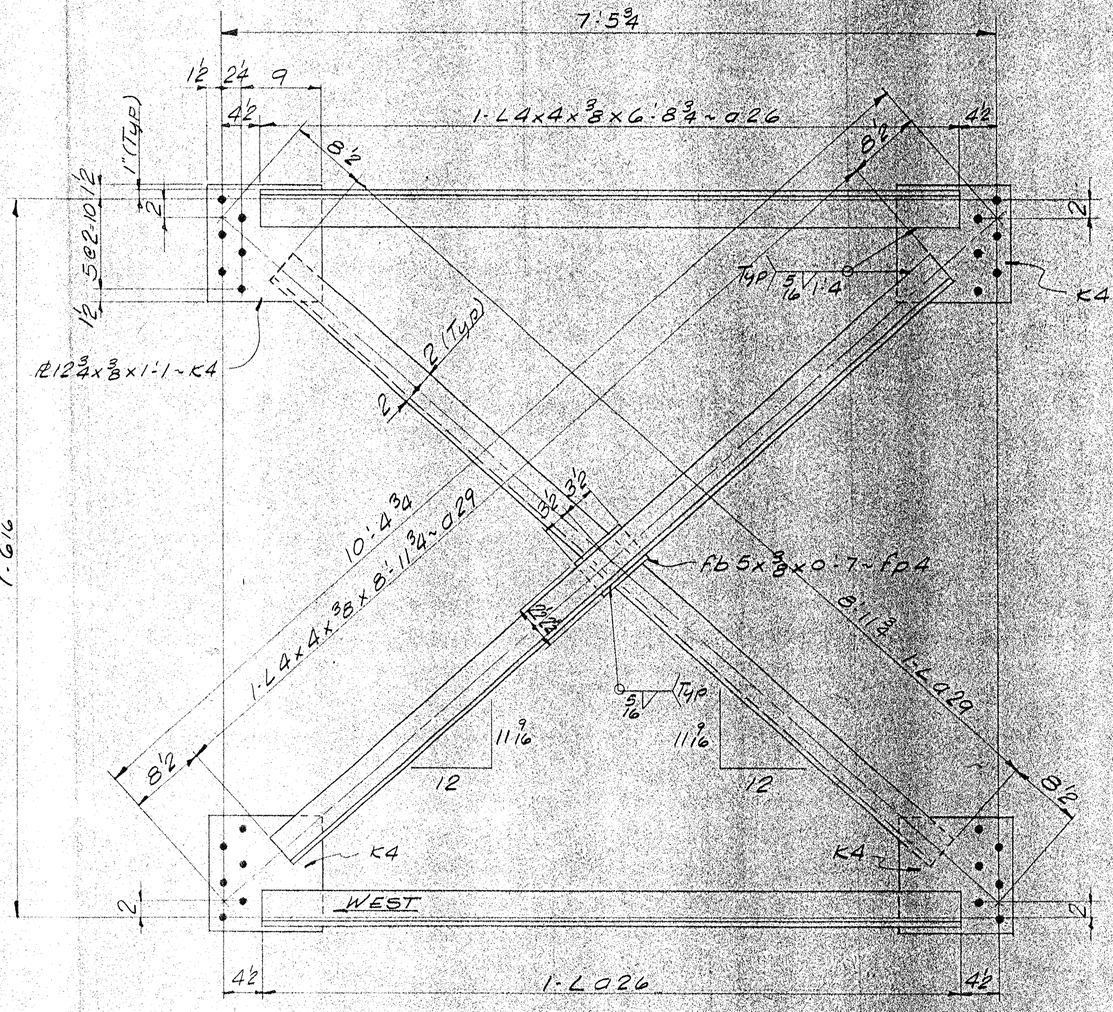
INTERMEDIATE CROSS FRAMES

Bancroft & Martin Inc.
South Portland 7, Maine

I-89 BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

DRAWN	2-25-66	TFG
REVISION		
REVISION		
REVISION		

CUSTOMER CIANCHETTE BROS. INC.
DESIGNER VERMONT DEPT. OF HIGHWAYS
ORDER NO. Verbal DWG. NO. 65-374-S61



INTERMEDIATE FRAME CF220
4 REQ'D.

Note: Steel to be A.S.T.M. A36
Holes to be 13/16"ø
Paint one shop coat per Vermont Specs.

15/16" HOLES ARE FOR HIGH TENSILE BOLTS
Where members are connected from both sides and access is possible on both sides within 3" of each open hole.

Quantities shown are for one bridge.
Add suffix N to marks for Northbound Bridge. (Bill of mat'l. S65N)
" S " " " Southbound Bridge. (Bill of mat'l. S65S)

RECEIVED MAR 28 1966
CK'D BY WET OK'D BY RLO
RESUBMIT APPROVED
BY CWS DATE 3-5-66

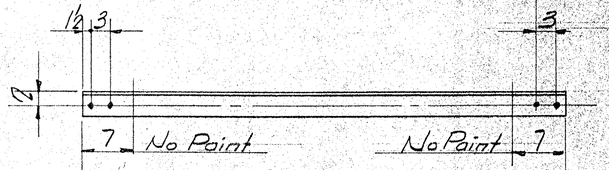
IR 089-1(13)
This sheet for information only
BR 11 N & S
SHEET 100 OF 101

Proj. I-89-1(6)
N. B. & S. P. BRIDGES
INTERMEDIATE CROSS FRAMES
Bancroft & Martin Inc.
South Portland 7, Maine
I-89 BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT
CUSTOMER CIANCHETTE BROS. INC.
DESIGNER VERMONT DEPT. OF HIGHWAYS
ORDER NO. Verbal DWG. NO. 65-374-S65

DRAWN	2-25-66	TFG
REVISION		
REVISION		
REVISION		

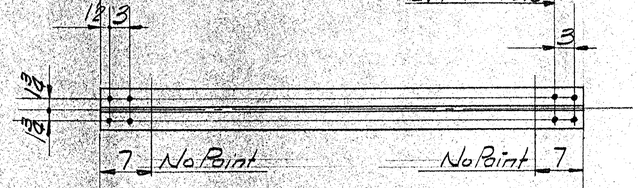
(G)

L1- 9'-3 3/16
L2- 8'-1 3/16
L3- 8'-1/2
L4- 6'-9
L5 6'-9 3/16
L6- 8'-11
L7- 9'-2 3/4
L8- 6'-1 3/8
L9- 6'-4 3/4



156-L1	10'-6 1/2 -5 1/2	L4×4×5/16 × 9'-7 11/16	-5 1/2
2-L2	7'-5 1/2 -4 1/2	Do × 8'-5 11/16	-4 1/2
34-L3	9'-3 -4 1/2	Do × 8'-6	-4 1/2
8-L4	8'-2 1/2 -6 1/2	Do × 7'-1 1/2	-6 1/2
16-L5	8'-2 1/2 -6 1/2	Do × 7'-1 11/16	-6 1/2
72-L6	7'-10 1/2 -3 1/2	Do × 9'-3 1/2	-3 1/2
4-L7	11'-6 1/4 -5 1/4	Do × 9'-7 1/4	-5 1/4
8-L8	7'-10 1/2 -8	Do × 6'-6 1/8	-8
16-L9	7'-10 1/2 -6 1/2	Do × 6'-9 1/4	-6 1/2

L10- 5'-9 1/2
L11- 14'-2 1/16
L12- 5'-9 3/8
L13- 14'-3
L14- 6'-7
L15- 17'-10
L16- 5'-9 5/8
L17- 16'-10 15/16



1-L10	6'-6 1/2	ST6WF13.5 × 6'-2	-1 1/2
1-L11	15'-9 1/2 -7 1/2	Do × 14'-6 9/16	-7 1/2
1-L12	6'-4 3/8 -1 1/2	Do × 6'-1 3/8	-1 1/2
1-L13	15'-10 3/8 -7 1/2	Do × 14'-7 1/2	-7 1/2
4-L14	8'-2 1/2 -1 1/2	Do × 6'-11 1/2	-1 1/2
4-L15	19'-10 1/2 -10	Do × 18'-2 1/2	-10
6-L16	7'-10 3/8 -10	Do × 6'-2 3/8	-10
6-L17	18'-11 1/16 -10	Do × 17'-3 7/16	-10

Quantities shown are for One Bridge
Add suffix N to marks for Northbound Bridge (Bill of Mat. 567N)
do S do Southbound Bridge (do do 567S)

ERECTION NOTE
Washer must be placed over 1 1/16" Φ Hole

RECEIVED APR 25 1966
CK'D BY WGT OK'D BY RLO
RESUBMIT ____ APPROVED ✓
BY ____ DATE 4-22-66

FIELD CONN: 7/8" Φ H.S. Bolts
HOLES: 1 1/16" Φ
PAINT: Per Vermont Specs. & As Noted

IR 089-1(13)
This sheet for information only
BR 11 N & S

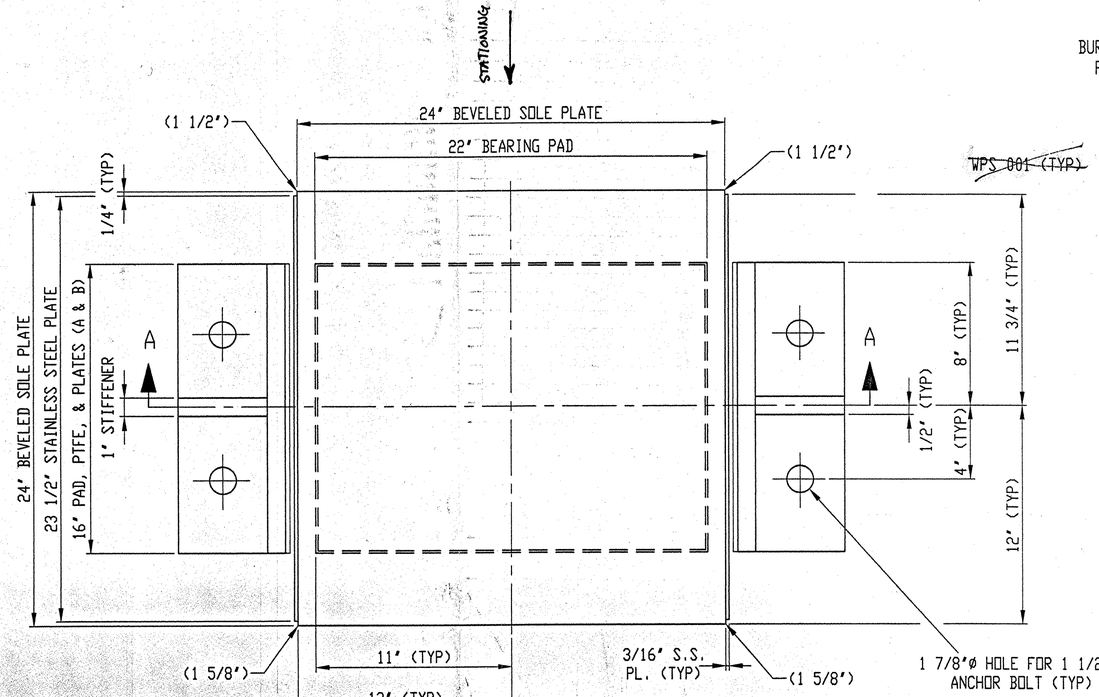
SHEET 101 OF 101

HOLES FOR HIGH TENSILE BOLTS
They are to be free from burrs and shall not be painted on any surface within 2" of such open holes.

PROJ. No I-89-1(6)
N.B. & S.B. BRIDGES
LATERAL BRACING
Bancroft & Martin Inc.
South Portland 7, Maine
I-89 BRIDGE OVER WHITE RIVER
HARTFORD, VERMONT

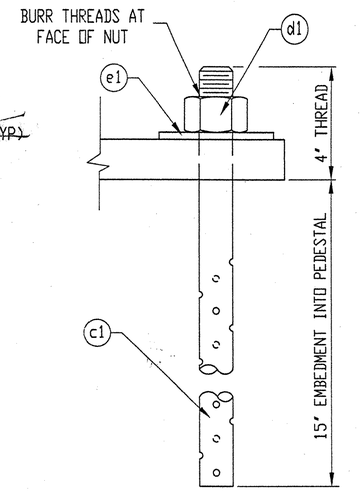
DRAWN	1-25-66	J.P.F.	
REVISION	4-21-66	J.P.F.	
REVISION			
REVISION			

CUSTOMER CIANCHETTE BROS. INC.
DESIGNER VERMONT DEPT. OF HIGHWAYS
ORDER NO. VERBAL DWG. NO 65-374-567



PLAN VIEW

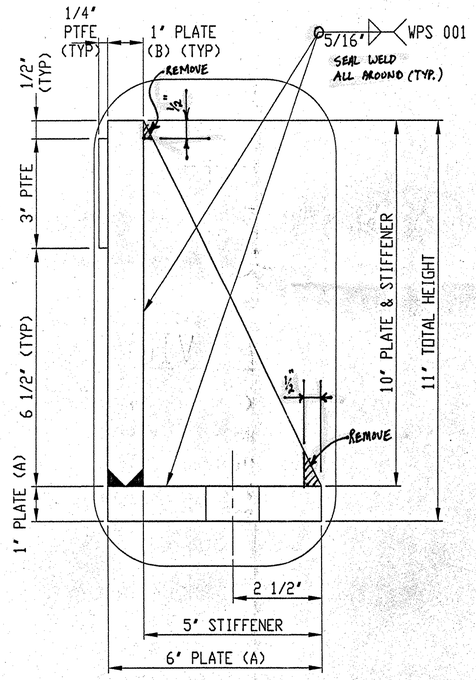
MARK: 6635-300-A
EXPANSION BEARING
(5) EACH @ PIERS 1,2,3,4,7,8,9,10
(40) REQ'D TOTAL
SCALE: 1/2



ANCHOR DETAIL

NOT TO SCALE

LINE	PART	MARK	NO. REQ'D	DESCRIPTION	REMARKS
1		1A	40	ELASTOMERIC BEARING ASSEMBLY	
2	ELASTOMERIC PAD	a1	40	8' X 16' X 22'	50±5 DUROMETER NEOPRENE (4505.83 LBS)
3	SHIMS	a2	520	10GA. X 15 3/4' X 21 3/4'	ASTM A570 GR 36
4	BEVELED SOLE PLATE	a3	40	1 5/8'--1 1/2' X 24' X 24'	ASTM A709 GR 36, VULC. TO PAD, GALV. A123
5	STAINLESS STEEL PLATE	a4	80	3/16' X 3/4' X 23 1/2'	ASTM A240 TYPE 304 W/#8 MIRROR FINISH
6					
7		1B	80	RETAINER ASSEMBLY	
8	PLATE (A)	b1	80	1' X 6' X 16'	ASTM A709 GR 36, GALVANIZED A123
9	PLATE (B)	b2	80	1' X 10' X 16'	ASTM A709 GR 36, GALVANIZED A123
10	STIFFENER	b3	80	1' X 5' X 10'	ASTM A709 GR 36, GALVANIZED A123
11	PTFE	b4	80	1/4' X 3' X 16'	PURE VIRGIN ~~UNFILLED~~, EPOXY BOND TO PL. (B) GLASS FIBER OR CARBON FILLED PER SPECIFICATION SECTION 731.04
12					
13		1C	160	ANCHOR BOLT ASSEMBLY	
14	SWEDGED ANCHOR BOLT	c1	160	1 1/2'ø X 19' W/ 4' THREADED	ASTM A449, GALVANIZED A153
15					
16		1D	160	HEX NUT ASSEMBLY	
17	HEX NUT	d1	160	1 1/2'ø	ASTM A563, GALVANIZED A153
18					
19		1E	160	WASHER PLATE ASSEMBLY	
20	WASHER PLATE	e1	160	3/8' X 3' X 3' W/ 1 7/8'ø HOLE	ASTM A36, GALVANIZED A123



DETAIL 'B'

SCALE: FULL SIZE

GENERAL NOTES

1. PAD AND MATERIALS CONFORM TO VERMONT A.O.T. SPECIFICATIONS FOR ELASTOMERIC BEARINGS.
2. THESE SHOP DRAWINGS WERE PREPARED IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS. THE D.S. BROWN COMPANY DOES NOT ACCEPT LIABILITY FOR THE DESIGN OF THE PRODUCTS DETAILED IN THESE SHOP DRAWINGS.
3. D.S. BROWN TO SUPPLY ONLY THE PARTS SHOWN ON THIS DRAWING.
4. ELASTOMERIC MATERIAL SHALL HAVE A MINIMUM LOW TEMPERATURE GRADE OF 4.
5. ALL ASTM A709 GR 36 STEEL SHALL BE GALVANIZED.
6. GIRDER FLANGE TO BE FIELD WELDED TO THE SOLE PLATE.
7. PRIOR TO GALVANIZING, ALL CORNERS AND EDGES OF STEEL PLATES, SHAPES, ETC., SHALL BE GROUND TO A 1/16 INCH RADIUS.

DATA	6635-300-A
AASHTO SHAPE FACTOR	9.0
AREA OF COMPRESSION	352.0
AREA OF SHEAR	352.0
EFFECTIVE RUBBER THICKNESS	6.3
LENGTH/HEIGHT	3.5

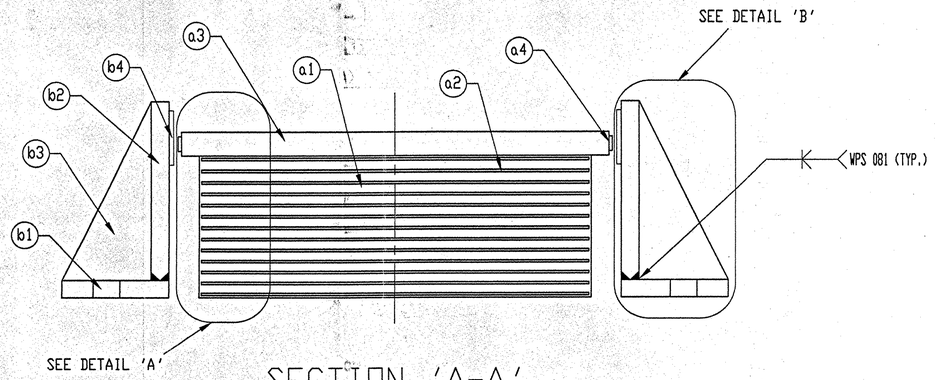
SHOP DRAWING REVIEW

☐ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.
☐ REJECTED ☐ REVISE AND RESUBMIT ☒ FURNISH AS CORRECTED

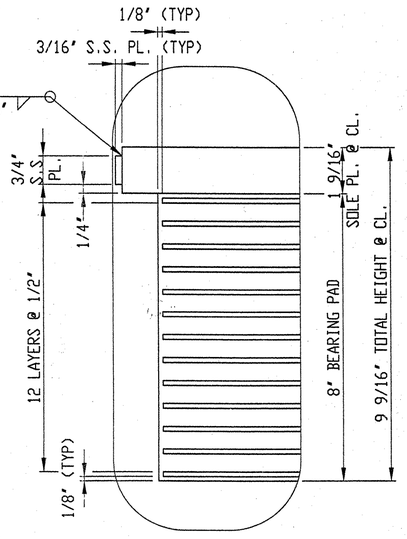
CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists Six Bedford Farms, Kilton Rd., Bedford, NH 03102 603 644 0888
Job Number: 50699
Reviewed By: T.S. BRYANT
Date: 4/21/1999

SUPPLY ESTIMATED DEAD LOAD DEFLECTION FOR PIER EXPANSION BEARINGS BASED ON ELASTOMER PROPERTIES AND LOADS GIVEN IN CONTRACT PLANS. SEE EXPANSION BEARING NOTE #10 ON SHEET 1B OF THE CONTRACT PLANS.



SECTION 'A-A'



DETAIL 'A'

SCALE: FULL SIZE

DSB FILE NO: 6635-300\Sht-01

F.A.P. NO.:
STATE PROJ. NO.: IR 089-1(13)
BRIDGE NO: 11N & 11S
DESIGNER: VANASSE HANGEN BRUSTLIN, INC.
CONTRACTOR: WINTERSET, INC.

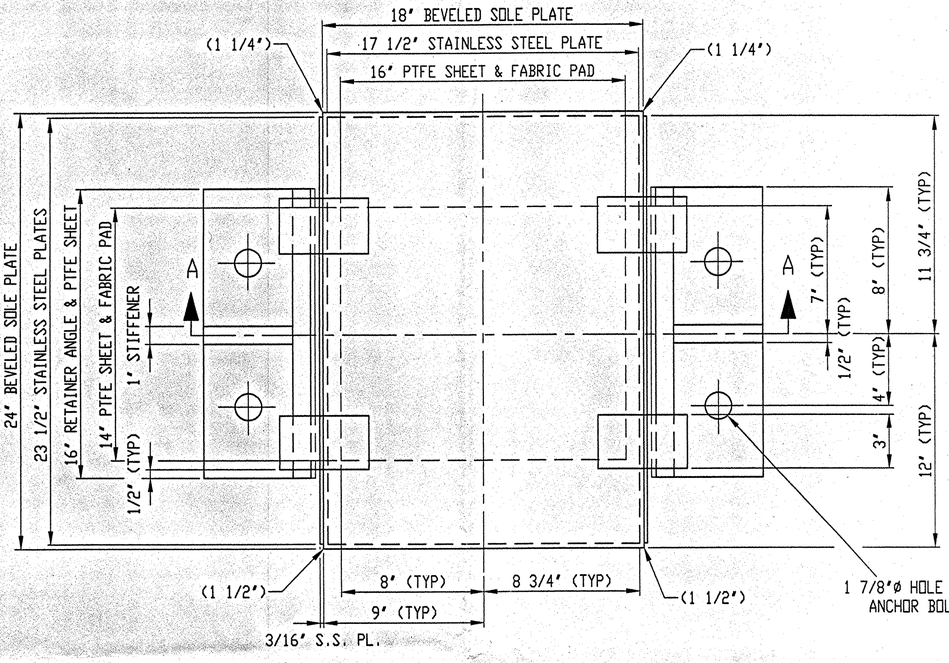
DATE	SYM	REVISION	DR	CK

THE D.S. BROWN COMPANY, INC.
NORTH BALTIMORE, OHIO 45872-0158 U.S.A.

SCALE: AS NOTED
DATE: 2/25/99
DRAWN BY: Eric Bontrager
ROUTE I-89 OVER WHITE RIVER & VT 14 102
WINDSOR COUNTY HARTFORD, VERMONT
VERSIFLEX ELASTOMERIC BEARING
DRAWING NUMBER 6635-300-01

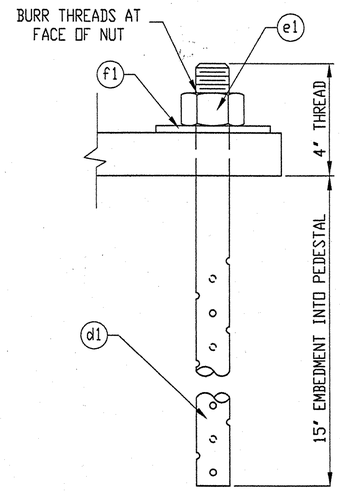
D.S. BROWN 6635-300-18322 SHEET 1 OF 2

Read 4-29-99



PLAN VIEW

MARK: 6635-300-B
EXPANSION BEARING
(5) EACH @ ABUTMENTS 1,2,3,4
(20) REQ'D TOTAL
SCALE: 1/2



ANCHOR DETAIL

NOT TO SCALE

LINE	PART	MARK	NO. REQ'D	DESCRIPTION	REMARKS
1		2A	20	FABRIC BEARING ASSEMBLY	
2	FABRIC PAD	a1	20	2 7/8" X 14" X 16"	AASHTO 18.4.10.1
3	PTFE SHEET	a2	20	1/8" X 14" X 16"	PURE VIRGIN UNFILLED, EPOXY BONDED TO PAD
4					
5		2B	20	SOLE PLATE ASSEMBLY	
6	BEVELED SOLE PLATE	b1	20	1 1/2"--1 1/4" X 18" X 24"	ASTM A709 GR 36, GALVANIZED A123
7	STAINLESS STEEL PLATE	b2	40	3/16" X 3/4" X 23 1/2"	ASTM A240 TYPE 304 W/#8 MIRROR FINISH
8	STAINLESS STEEL PLATE	b3	20	3/16" X 17 1/2" X 23 1/2"	ASTM A240 TYPE 304 W/#8 MIRROR FINISH
9					
10		2C	40	RETAINER ASSEMBLY	
11	RETAINER ANGLE	c1	40	L6" X 6" X 1" X 16"	ASTM A709 GR 36, GALVANIZED A123
12	CLIP ANGLE	c2	80	L5" X 3 1/2" X 3/4" X 3"	ASTM A709 GR 36, GALVANIZED A123
13	STIFFENER	c3	40	1" X 4 3/4" X 4 3/4"	ASTM A709 GR 36, GALVANIZED A123
14	PTFE	c4	40	1/4" X 3" X 16"	PURE VIRGIN UNFILLED, EPOXY TO RET. ANGLE
15					GLASS FIBER OR CARBON FILLED PER SPECIFICATION SECTION 731.04
16		2D	80	ANCHOR BOLT ASSEMBLY	
17	SWEDGED ANCHOR BOLT	d1	80	1 1/2"ø X 19" W/ 4" THREADED	ASTM A449, GALVANIZED A153
18					
19		2E	80	HEX NUT ASSEMBLY	
20	HEX NUT	e1	80	1 1/2"ø	ASTM A563, GALVANIZED A153
21					
22		2F	80	WASHER PLATE ASSEMBLY	
23	WASHER PLATE	f1	80	3/8" X 3" X 3" W/ 1 7/8"ø HOLE	ASTM A36, GALVANIZED A123

GENERAL NOTES

1. PAD AND MATERIALS CONFORM TO VERMONT AGENCY OF T. SPECIFICATIONS FOR ~~ELASTOMERIC BEARINGS.~~ PREFORMED FABRIC BEARING PADS.
2. THESE SHOP DRAWINGS WERE PREPARED IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS. THE D.S. BROWN COMPANY DOES NOT ACCEPT LIABILITY FOR THE DESIGN OF THE PRODUCTS DETAILED IN THESE SHOP DRAWINGS.
3. D.S. BROWN TO SUPPLY ONLY THE PARTS SHOWN ON THIS DRAWING.
4. ALL ASTM A709 GR 36 STEEL SHALL BE GALVANIZED.
5. PRIOR TO GALVANIZING, ALL CORNERS AND EDGES OF STEEL PLATES, SHAPES, ETC., SHALL BE GROUND TO A 1/16 INCH RADIUS.

SHOP DRAWING REVIEW

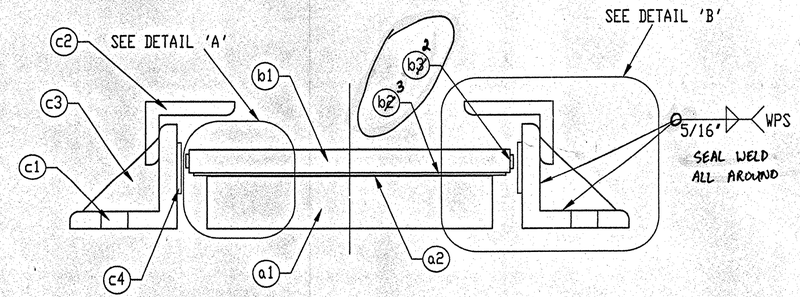
☐ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☒ FURNISH AS CORRECTED

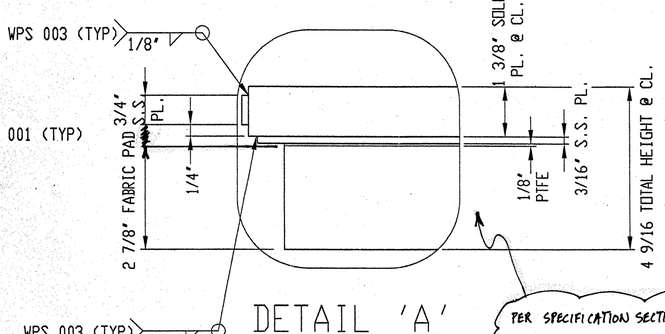
CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists Six Bedford Farms, Kitton Rd., Bedford, NH 03102 603 644 0888

Job Number: 50699
Reviewed By: T.S. BRYANT
Date: 4/21/1999



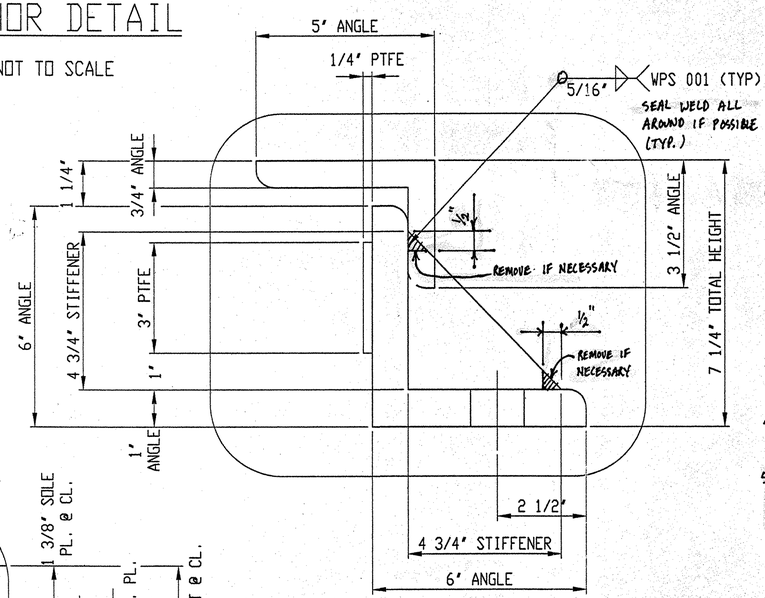
SECTION 'A-A'



DETAIL 'A'

SCALE: FULL SIZE

PER SPECIFICATION SECTIONS 531.03 & 731.01, SHOW THE NUMBER OF LAMINATED JOINTS, WHICH SHALL NOT BE GREATER THAN 4.



DETAIL 'B'

SCALE: FULL SIZE

D.S. BROWN 6635-300-18322 SHEET 2 OF 2

DATE	SYM	REVISION	DR	CK

THE D.S. BROWN COMPANY, INC.
NORTH BALTIMORE, OHIO 45872-0158 U.S.A.

F.A.P. NO.:
STATE PROJ. NO.: IR 089-1(13)
BRIDGE NO: 11N & 11S
DESIGNER: VANASSE HANGEN BRUSTLIN, INC.
CONTRACTOR: WINTERSET, INC.

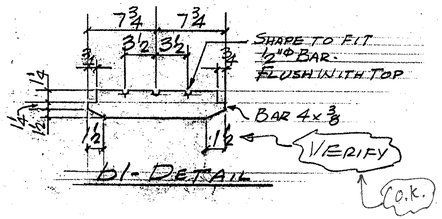
SCALE: AS NOTED
DATE: 2/25/99
DRAWN BY: S. KNIGHT
Eric Bontrager

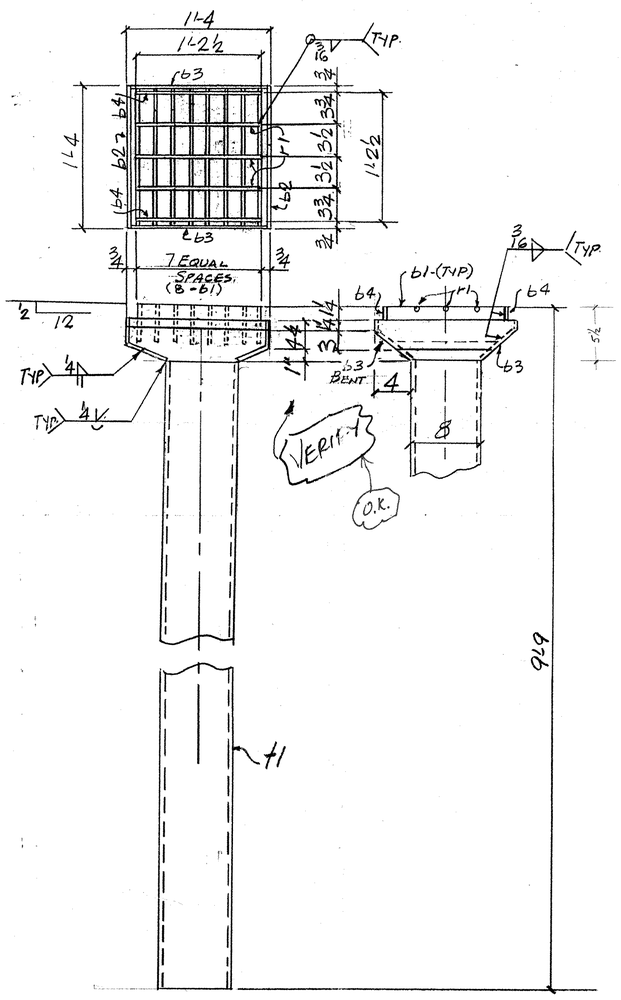
ROUTE I-89 OVER WHITE RIVER & VT 14 103
WINDSOR COUNTY HARTFORD, VERMONT

VERSIFLEX ELASTOMERIC BEARING

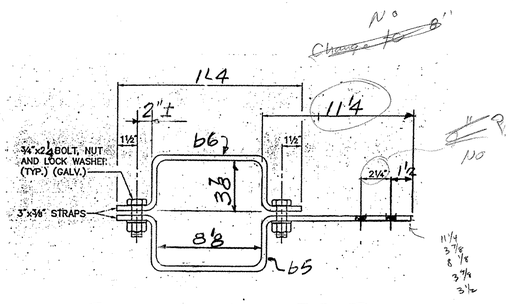
DRAWING NUMBER 6635-300-02

DSB FILE NO: 6635-300\Sht-02





SCUPPERS-SC1-36-REQ'D.
18 @ BRIDGE-11N
18 @ BRIDGE-11S



STRAPS-ST1- 72 REQ'D.
36 @ BRIDGE-11N
36 @ BRIDGE-11S

AEM INFO PAGE	LINE	NO.	DESCRIPTION	FT	IN	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		36	SCUPPERS	9	9		SC1		—
		36	PL 8x8x4	9	2¾	#1		M5000BA601	
		288	BAR 4x⅜	1	3½	b1			
		72	PL 4x8¼	1	4	b2		BEND	
		72	PL 4x 7	1	3½	b3		BEND	
		72	BAR 1¼x4	1	2½	b4			
		108	¾"ø BAR	1	2½	r1			
		72	STRAP ASS'Y	1	4±		ST1		—
		72	BAR 3x⅜	2	6½	b5		BEND	
		72	DO	1	11	b6		BEND	
		144	¾"ø BOLTS (GALV)		2¾			SQUARE WASHER & LOCK WASHER	
		144	DO		2		FIELD	DO	

JOB NO. 048 DRG. NO. 1

PAY ITEM 506.60

SHOP DRAWING REVIEW

✓ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ SUBMIT AS CORRECTED

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VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists Six Bedford Farms, Khon Rd. Bedford, NH 03102 603-644-0888

Job Number: 5D699
Reviewed By: JAR
Date: 3-26-99

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	3/29/99									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

PROJECT NO. IR-089-1(13) STATE PROJECT NO. 11N & 11S

MATERIAL: AASHTO M270 GRADE 36 ELECTRODES: PER PROC. HOLES: 13/16" ø SHOP BOLTS:

SURFACE PREP. & PAINT:

GALV. AFTER FAB. PER ASTM: A-123 (AASHTO: M-111)

DESCRIPTION: SCUPPERS

JOB: I-89 NB & SB OVER WHITE RIVER, VT. 14 & NECR HARTFORD, VT.

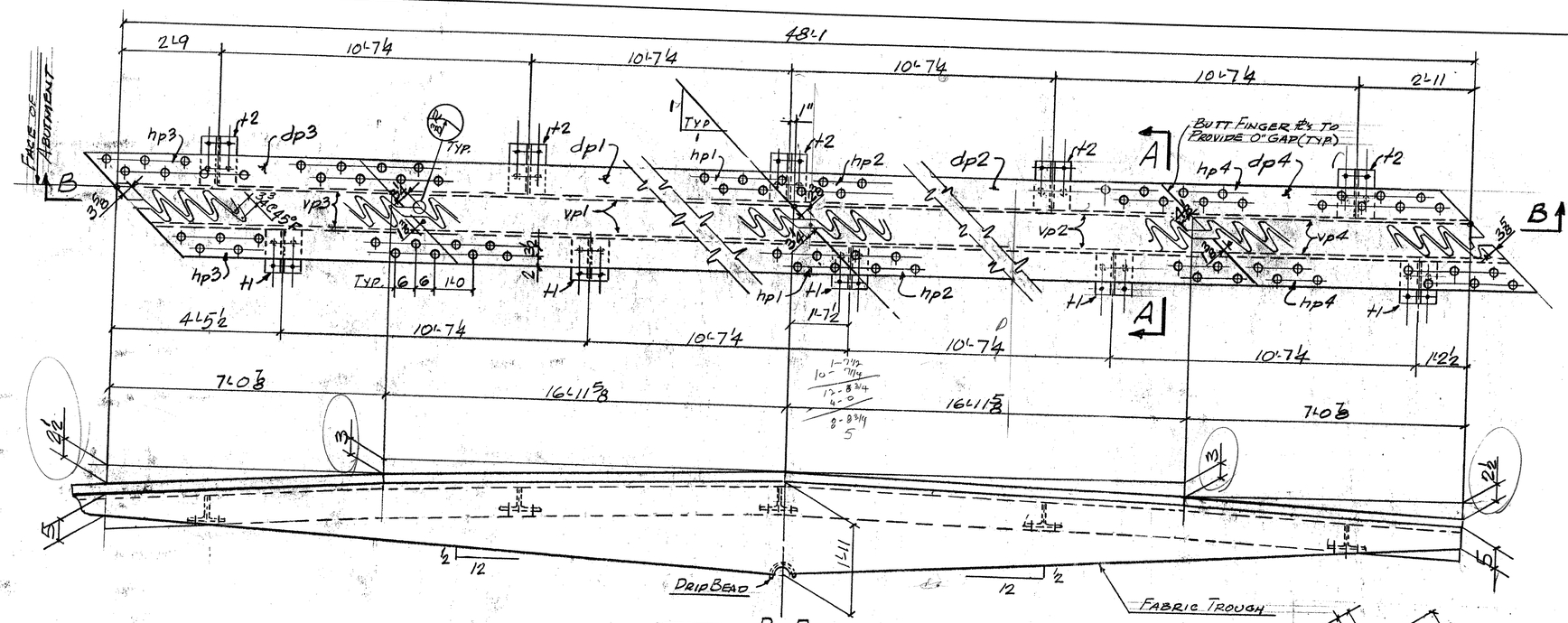
CUSTOMER: WINTERSET INC.

	DRAWN BY	DATE
	JPF	2-99
CHKD BY	EJ	
APPROV BY		
Q.A.		

Rec'd 4-29-99

CASCO BAY STEEL STRUCTURES, INC.
5 INDUSTRY ROAD SOUTH PORTLAND, ME. 04106
PHONE (207) 772-2533 FAX. (207) 772-0580

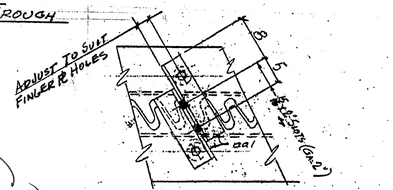
JOB NO.	DRG. NO.
048	1
104	REV. △



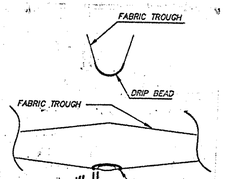
B-B

EJI-4 REQ'D @ ABUT'S NO. 1, 2, 3 & 4

BRIDGE IS ON A GRADE AND HAS A 45° SKEW. CONSTRUCT ℄ TO MATCH ELEVATIONS SHOWN ON CONTRACT PLANS SHEETS 27 & 28. JOINT WILL NOT MATCH ROADWAY GRADE IF FABRICATED AS CURRENTLY SHOWN.



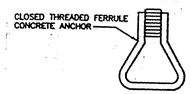
DETAIL @ SHIPPING DEVICES SPACED 5'-0" ± MAX. (MIN. 8 PER JOINT)



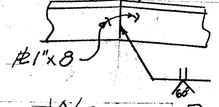
DRIPBEAD DETAIL

NTS

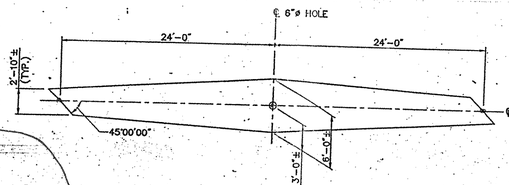
A DRIP BEAD OF POLYURETHANE JOINT SEALER IS TO BE APPLIED TO THE UNDERSIDE OF THE FABRIC TROUGH, AS SHOWN. COST TO BE SUBSIDIARY TO THE ITEM "BRIDGE EXPANSION JOINT"



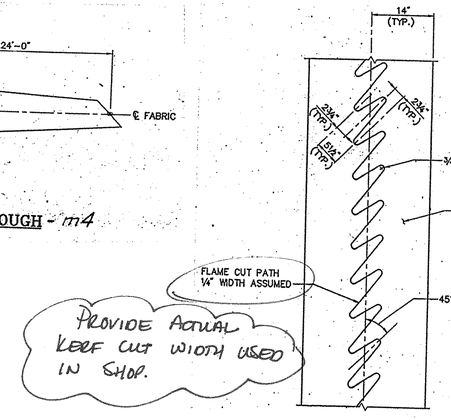
ANCHOR FERRULE DETAIL



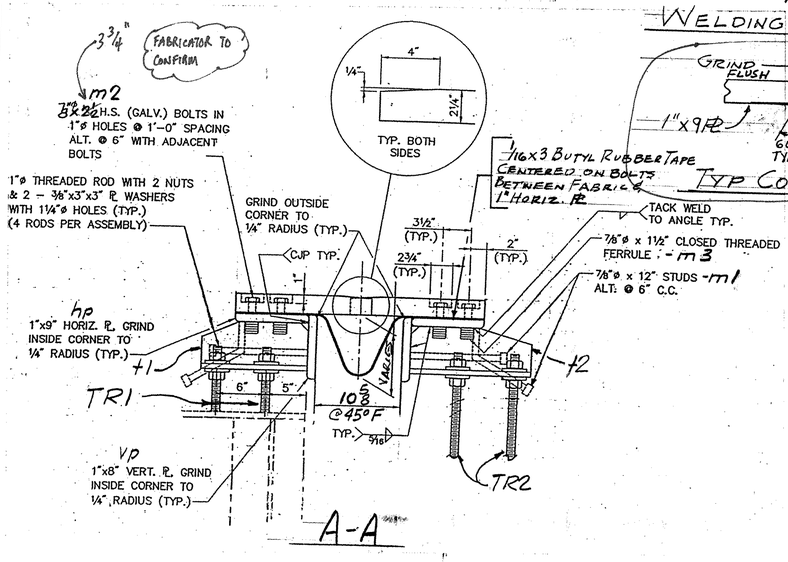
WELDING DET.



PLAN VIEW OF FABRIC FOR TROUGH - m4



FINGER CUTTING DETAILS

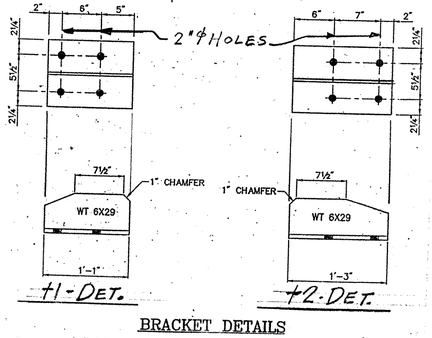


TYP CORNER JOINT (TC-P5-S)

N.T.S.

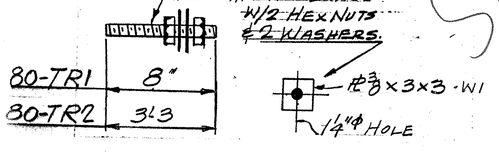
USE APPROVED ALTERNATE DETAIL SHOWN ON ATTACHED SHEETS

PROVIDE ACTUAL KERF CUT WIDTH USED IN SHOP.

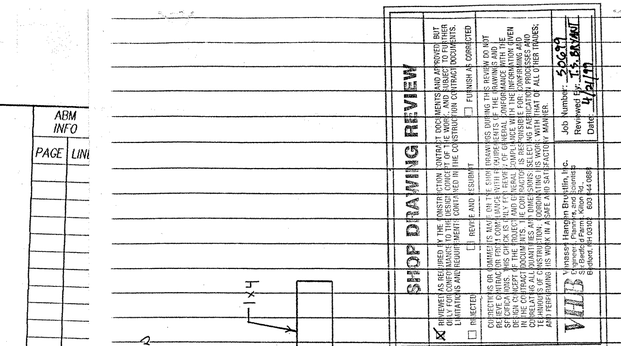


BRACKET DETAILS

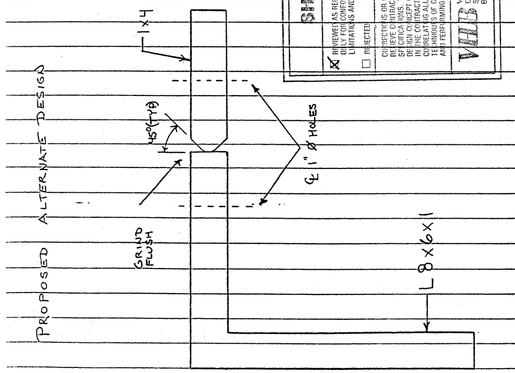
SUPERCEDED



SUP



PAY ITEM - 516.10



SHOP DRAWING REVIEW
REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS DEFINITIVELY IN THE CONSTRUCTION CONTRACT DOCUMENTS.
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VHB Vanasse Hangen Brustlin, Inc.
Job Number: 50699
Reviewed By: JAR
Date: 5-24-99

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL										
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

PROJECT NO. IR-089-1(13) STATE PROJECT NO. 11N&11S

MATERIAL: AASHTO-M270 GRADE 36 ELECTRODES: PER PROC. HOLES: AS NOTED SHOP BOLTS: 7/8ø A325

SURFACE PREP. & PAINT:

GALVANIZED AFTER FAB PER SECTION 506.15 (b) OR (c)

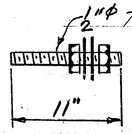
DESCRIPTION: EXPANSION JOINTS

JOB: I-89 NB & SB OVER WHITE RIVER, VT. 14 & NECR HARTFORD, VT.

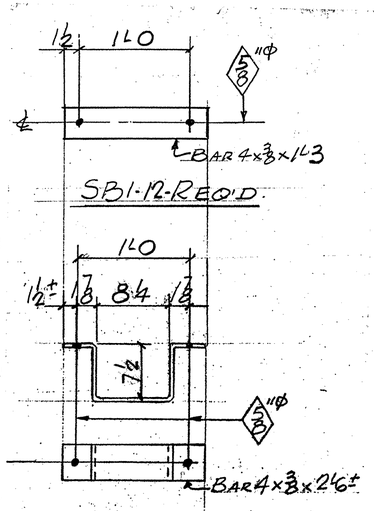
CUSTOMER: WINTERSET INC.

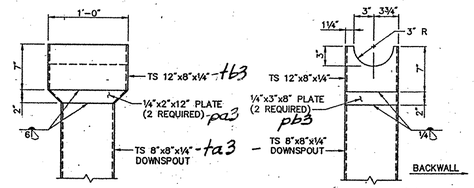
	DRAWN BY	DATE
	JPF	2-99
CHKD BY	EJ	
APPROV BY		
Q.A.		
		105
JOB NO.	DRG. NO.	
048	2	

CASCO BAY STEEL STRUCTURES, INC.
5 INDUSTRY ROAD SOUTH PORTLAND, ME. 04106
PHONE (207) 772-2533 FAX. (207) 772-0580

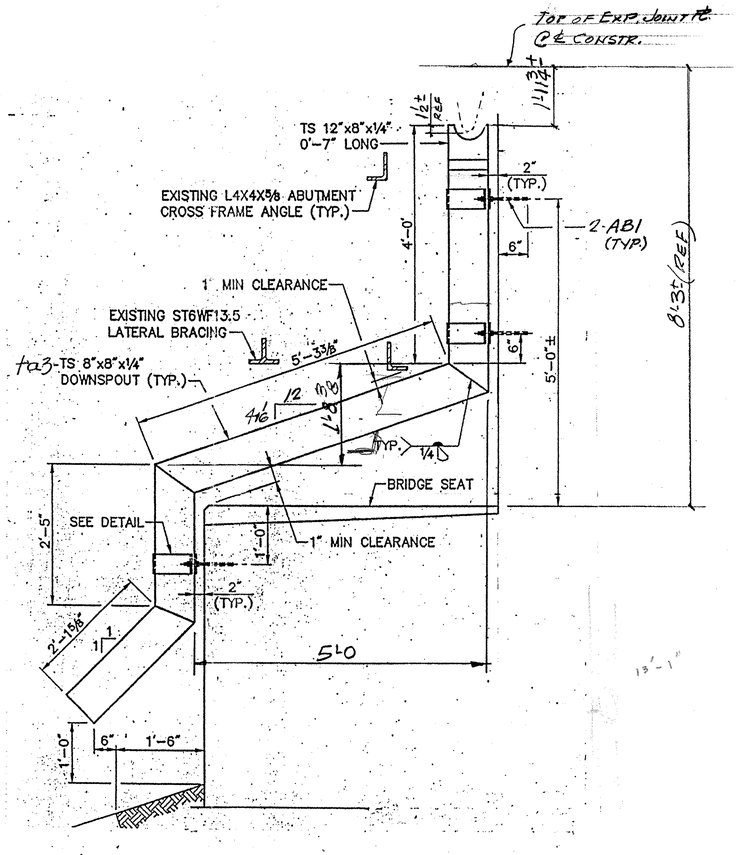


AB1-24-REQ'D.





HOPPER DETAILS



DS1-4-REQ'D.

ABM INFO		SHOP BILL						JOB NO. 048	DRG. NO. 3
PAGE	LINE	NO.	DESCRIPTION	FT	IN	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		4	DOWNSPOUTS				DS1		—
		4	TS 8x8x¼	15	0½	ta3		A500 GrA-Gr.B DO	
		4	TS 12x8x¼		7	tb3			
		8	PL ¼ x 2	1	0	pa3			
		8	PL ¼ x 3		8	pb3			
		12	BAR 4 x ⅜ø	2	6¼		SA1	BEND	
		12	DO	1	3		SB1		
		24	½"ø THREADED RODS		11		AB1		
		48	½"ø HEX NUTS						
		48	½"ø WASHERS						

PAY ITEM 506.60

SHOP DRAWING REVIEW

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☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED

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VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 54 Dartmouth Drive, Suite 204, Bedford, NH 03102 603 644-0888

Job Number: 50499
Reviewed By: JAR
Date: 3-26-99

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL										
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

PROJECT NO. IR-089-1(13) STATE PROJECT NO. 11N & 11S

MATERIAL: AASHTO-M270 GRADE 36 ELECTRODES: PER SPEC. HOLES: AS NOTED SHOP BOLTS:

SURFACE PREP. & PAINT:

GALVANIZED AFTER FAB - PER ASTM-A-153

DESCRIPTION: DOWNSPOUTS

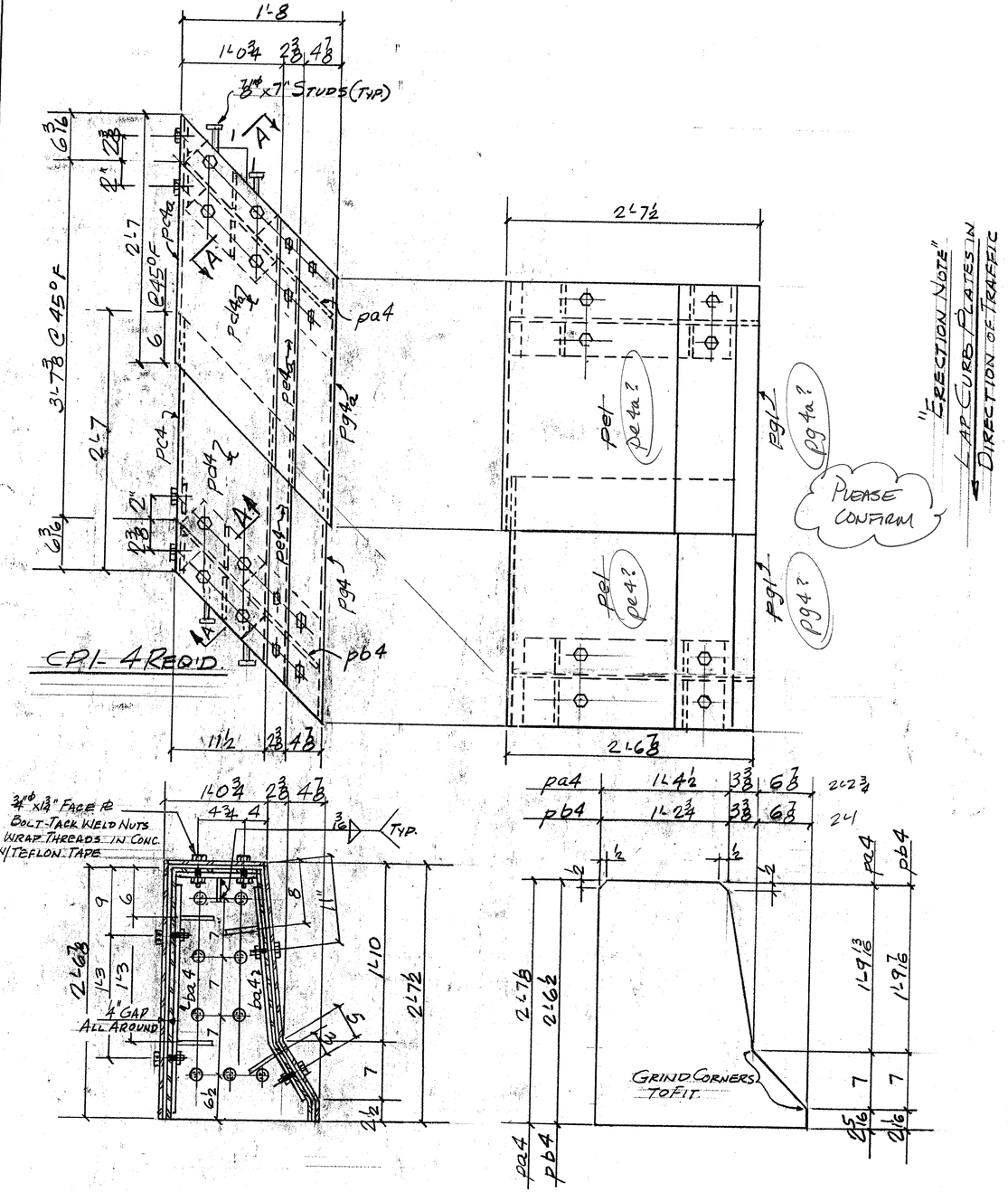
JOB: I-89-NB & SB OVER WHITE RIVER, VT. 14 & NEC R HARTFORD, VT.

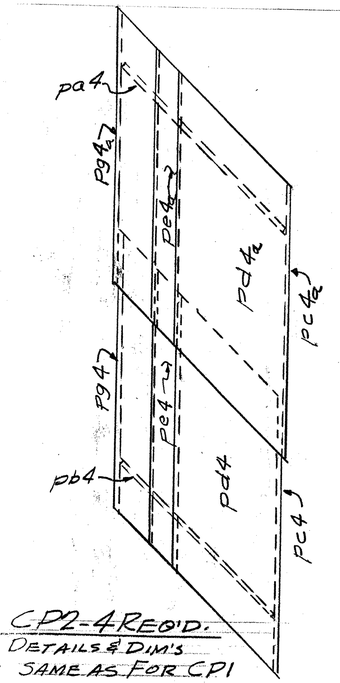
CUSTOMER: WINTERSET INC.

	DRAWN BY	DATE
	JPF	3-99
CHKD BY	EJ	
APPROV BY		
Q.A.		

CASCO BAY STEEL STRUCTURES, INC.
5 INDUSTRY ROAD SOUTH PORTLAND, ME. 04106
PHONE (207) 772-2533 FAX. (207) 772-0580

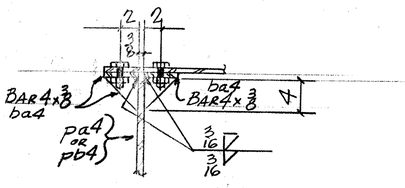
JOB NO.	DRG. NO.
048	3
106	REV. △





ABM INFO		SHOP BILL						JOB NO. 048	DRG. NO. 4
PAGE	LINE	NO.	DESCRIPTION	FT	IN	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		4	CURB PL ASS'Y	6	4½		CP1		—
		4	DO	6	4½		CP2		—
		8	PL ⅜ x 26¾	2	7⅛	pa4			
		8	PL ⅜ x 25	2	6⅝	pb4			
		8	PL ⅜ x 30½	2	7	pc4			
		8	PL ⅜ x 31⅛	2	7	pd4a			
		8	PL ⅜ x 10¾	3	5¾	pd4			
		8	PL ⅜ x 12	3	7	pd4a			
		8	PL ⅜ x 21	2	9⅜	pe4			
		8	PL ⅜ x 21⅝	2	9⅜	pe4a			
		8	PL ⅜ x 11⅜	2	11⅜	pg4		BEND	
		8	PL ⅜ x 12⅛	2	11⅜	pg4a		BEND	
		1	BAR 4 x ⅜	260	0	ba4		CUT TO FT. W/NUT & WASH.	
		192	¾"ø BOLTS		1¾	SHOP			
		144	⅞" STUDS		7	SHOP			

PAY ITEM 516.10



SHOP DRAWING REVIEW

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VELB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 54 Dunbar Street, Milton, MA Bedford, NH 03103 603 644 0888

Job Number: 50499
Reviewed By: JAR
Date: 3-26-99

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL										
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

PROJECT NO. IR-089-1(13) STATE PROJECT NO. 111N & 115

MATERIAL AASHTO-M270 GRADE 36 ELECTRODES: PER PROC. HOLES: 13/16"ø SHOP BOLTS: ¾"ø A325

SURFACE PREP. & PAINT:

GALVANIZED AFTER FAB - PER ASTM-A-153

DESCRIPTION: CURB PLATES

JOB: I-89-NB & SB OVER WHITE RIVER, VT. 14 & NECR HARTFORD, VT.

CUSTOMER: WINTERSET INC.

	DRAWN BY	DATE
	JPF	3-99
CHKD BY	EJ	
APPROV BY		
Q.A.		
JOB NO.	048	
DRG. NO.	4	
REV.	107	△

CASCO BAY STEEL STRUCTURES, INC.
5 INDUSTRY ROAD SOUTH PORTLAND, ME. 04106
PHONE (207) 772-2533 FAX. (207) 772-0580

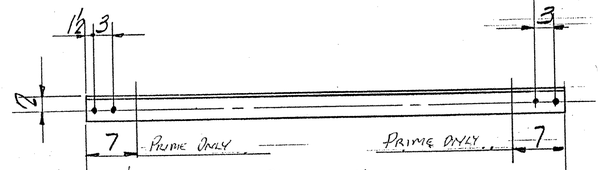
L1 - 9'-3 3/16

L3 - 8'-1/2

L5 6'-9 3/16

L6 - 8'-11

L9 6'-4 3/4



14 - L1	10'-6 1/16 -5/2	L 4x4x5/16 x 9'-7 1/16	-5/2	REPAIR ID# N1, N4, N7, N8, N11, N12, N14, N16, N20 S1, S18, S24, S25, S29
1 - L3	9'-3 -4 1/2	Do x 8'-6	-4 1/2	REPAIR ID# N2
1 - L5	8'-2 1/2 -6 1/2	Do x 7'-1 1/16	-6 1/2	REPAIR ID# S26
6 - L6	7'-10 1/2 -3 1/2	Do x 9'-3 1/2	-3 1/2	REPAIR ID# S4, S7, S8, S11, S14, S21
1 - L9	7'-10 1/2 -6 1/2	Do x 6'-9 1/4	-6 1/2	REPAIR ID# N13

FOR FUTURE REFERENCE:
PER AOT SPECS § 105.03
ALL SHEETS
22" x 36"
1 1/2" LEFT MARGIN
1/2" T, R, & B

CONTACT VAOT MATERIALS DIV. FOR CURRENT REQUIREMENTS FOR NON REPLACEMENT STEEL
TYPICAL ALL DWGS

SHOP DRAWING REVIEW

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VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 54 Dartmouth Franklin, Kittery Rd. Bedford, NH 03102 603 644 0888

Job Number: 50699
Reviewed By: SMH
Date: 5-7-99

ABM INFO PAGE	LINE	NO.	DESCRIPTION	FT	IN	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		14	L 4x4x 5/16	9	7 1/16		L1		
		1	L 4x4x 3/16	8	6		L3		
		1	L 4x4x 5/16	7	1 1/16		L5		
		6	L 4x4x 5/16	9	3 1/2		L6		
		1	L 4x4x 1/16	6	9 1/4		L9		
			FIELD BOLTS						
		92	3/4 A325	0	24			w/N&W	

JOB NO. 048 DRG. NO. 5

FILL IN

INCLUDE BOLT TYPE AND GRADE WASHER & NUT TYPE & GRADE

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.
	OUT FOR APPROVAL	4-22-99				
	OUT FOR APPROVAL					
	ISSUED TO SHOP					
	FIELD & OFFICE					

NO.	DIA.	LGT	TYPE	WASHER

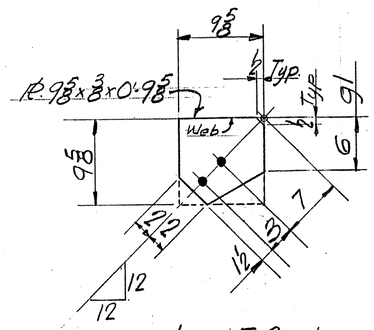
PROJECT NO. IM IR 089 1(13) STATE PROJECT NO.
MATERIAL: A709-36 ELECTRODES: HOLES: 1/16 Ø SHOP BOLTS:
SURFACE PREP & PAINT: SSPC-SP10, SHERWIN WILLIAMS
PRIMER: ZINC CLAD II B69WB/B69V5
INTERM: HEAVY DUTY EPOXY B67W301/B60V3
FINISH: HI SOLIDS POLYURETHANE B65W301/B60V40
DESCRIPTION: LATERAL BRACE
JOB: I-89 NB & SB over WHITE RIVER, VT 14 & NECR HARTFORD VT
CUSTOMER: WINTERGT INC

	DRAWN BY	DATE
	BT	4-21-99
CHKD BY	WDS	
APPROV BY		
Q.A.		
JOB NO.	048	
DRG. NO.	5	
REV.	△	

CASCO BAY STEEL STRUCTURES, INC.
5 INDUSTRY ROAD SOUTH PORTLAND, ME. 04106
PHONE (207) 772-2533 FAX. (207) 772-0580
108

1" = 1'-0

Rec'd - 51099



g1: 5 REQ'D

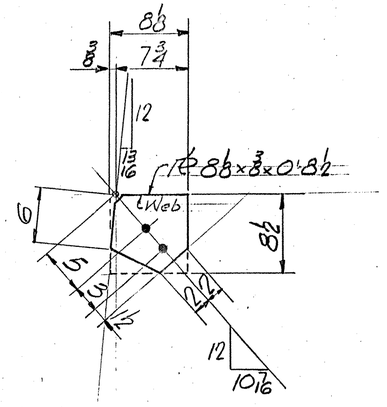
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(1 @ REPAIR ID # N8)

(1 @ REPAIR ID # N12)

(1 @ REPAIR ID # N20)

(1 @ REPAIR ID # S24)



g6c: 2 REQ'D

1 @ REPAIR ID # S4

1 @ REPAIR ID # S21

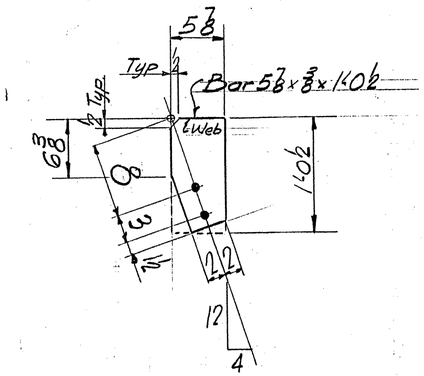
CONFIRM
SHOULD BE 6 1/8 ACCORDING TO DETAILS
TRS

ABM INFO		SHOP BILL						JOB NO. 048	DRG. NO. 6
PAGE	LINE	NO.	DESCRIPTION	FT	IN	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		5	GUSSET PL				g1		
		5	PL 3/8 x 9 5/8	0	9 5/8				
		2	GUSSET PL						
		2	PL 3/8 x 8 1/2	0	8 1/2		g6c		
		1	GUSSET PL				g9		
		1	PL 3/8 x 5 3/8	1	0 1/2				
		1	GUSSET PL				g5d		
		1	PL 3/8 x 8 1/2	1	0 1/2				
		1	GUSSET PL				g1d		
		1	PL 3/8 x 9 5/8	0	9 5/8				
		2	VENT STIFF	0	8				
		2	PL 3/8 x 5 1/2	1	0		h13a	PLATE	
			FIELD BOLTS						
		20	3/4 A325	0	2 4			GUSSET PL	
		1	3/4 A325	0	3 1/2	w/N & W		REPAIR N3	
		14	3/4 A325	0	3 3/4			N6	
		14	3/4 A325	0	3 3/4			N10	
		1	3/4 A325	0	3 4			N17	
		1	3/4 A325	0	3 4			N18	
		4	3/4 A325	0	3 4			N22	
		12	3/4 A325	0	2 4			S3	
		6	3/4 A325	0	2 4			S9	
		6	3/4 A325	0	2 4			S17	
		6	3/4 A325	0	2 4			S19	
		12	3/4 A325	0	2 4			S20	
		6	3/4 A325	0	2 4			S22	
		36	3/4 A325	0	3 4			S23	
		14	3/4 A325	0	3 4			S24	

INCLUDE BOLT TYPE/GRADE WASHER + NUT TYPE/GRADE

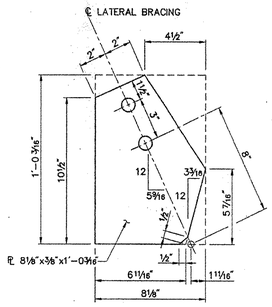
FILL IN

CONFIRM



g9: 1 REQ'D

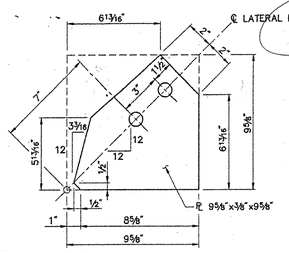
@ REPAIR ID # N13



"MODIFIED g5d" GUSSET PLAN

1 - REQ'D

@ REPAIR ID # S25



"MODIFIED g1d" GUSSET PLAN

1 - REQ'D

@ REPAIR ID # S26

WHERE ARE FIELD WELDING PROCEDURES?

℄ LATERAL BRACING

VERIFY. SWITCHED?

YES

SHOP DRAWING REVIEW

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VBB Vanasse Hangen Brustlin, Inc. Engineers, Planners and Economists Six Bedford Farms, Bedford, NH 03110 603 641 0808

Job Number: 50699
Reviewed By: SMH
Date: 5-7-99

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.
	OUT FOR APPROVAL	4/29				
	OUT FOR APPROVAL					
	ISSUED TO SHOP					
	FIELD & OFFICE					

PROJECT NO. IM IR 089 1(13) STATE PROJECT NO.

MATERIAL: A709-36 ELECTRODES: HOLES: 15/16 SHOP BOLTS:

SURFACE PREP. & PAINT: SSPC-SP10, SHERWIN WILLIAMS

PRIMER: ZINC CLAD IV B69W8/B69V5

SHERWIN: HEAVY DUTY EPOXY B67W301/B60V3

FINISH: HI SOLIDS POLYURETHANE B65W301/B60V30

DESCRIPTION: GUSSET PLATES

JOB: I-89 NB & SB over WHITE RIVER, VT 14 & NECR HARTFORD, VT

CUSTOMER: WINTONSET INC

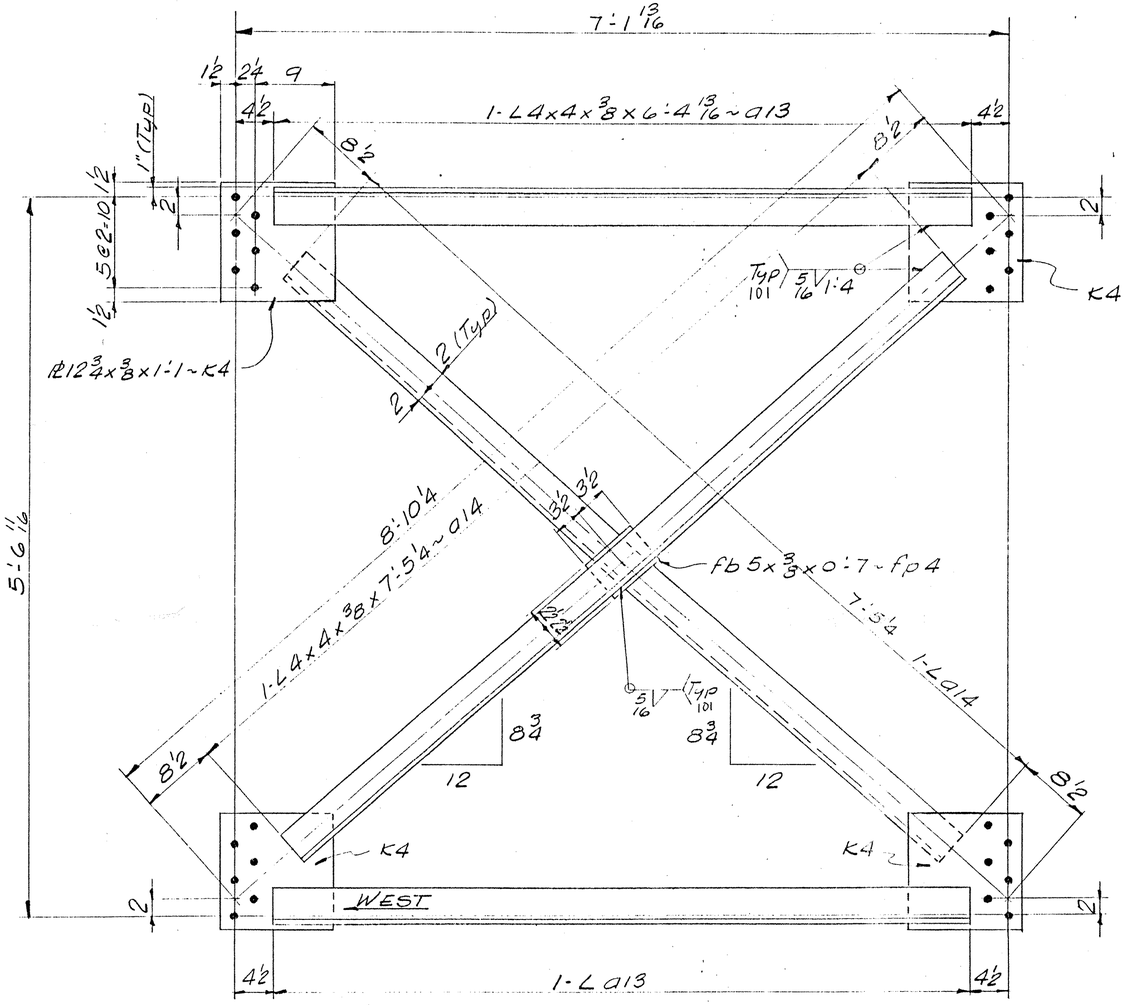
	DRAWN BY	DATE
	TST	4-21-99
CHKD BY	WEB	
APPROV BY		
Q.A.		

CASCO BAY STEEL STRUCTURES, INC.

5 INDUSTRY ROAD SOUTH PORTLAND, ME. 04106
PHONE (207) 772-2533 FAX. (207) 772-0580

JOB NO.	DRG. NO.
048	6
109	REV. △

1" = 1'-0



INTERMEDIATE FRAME CF20

ONE REQ'D REPAIR I.D.# S2 (SPAN 6 GIRDER BAY G4-G5)

ASM INFO		SHOP BILL						JOB NO. 048	DRG. NO. 7
PAGE	LINE	NO.	DESCRIPTION	FT	IN	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		1	CROSSFRAME				CF20		
		2	L 4x4x3/8	6	4 3/8	a13			
		2	L 4x4x3/8	7	5 1/4	a14			
		4	PL 3/8 x 12 3/4	1	1	K4			
		1	FB 3/8 x 5	0	7	fp4			
			FIELD BOLTS						
		24	7/8 A325	0	24			w/NUT & WASHER	

FILL IN

INCLUDE BOLT TYPE/GRADE WASHER + NUT TYPE/GRADE

WHERE?

SHOP DRAWING REVIEW

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VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists. Six Bedford Farms, Milton Rd. Bedford, NH 03102 603 644 0800

Job Number: 50699
Reviewed By: SMM
Date: 5-7-99

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	4/29									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

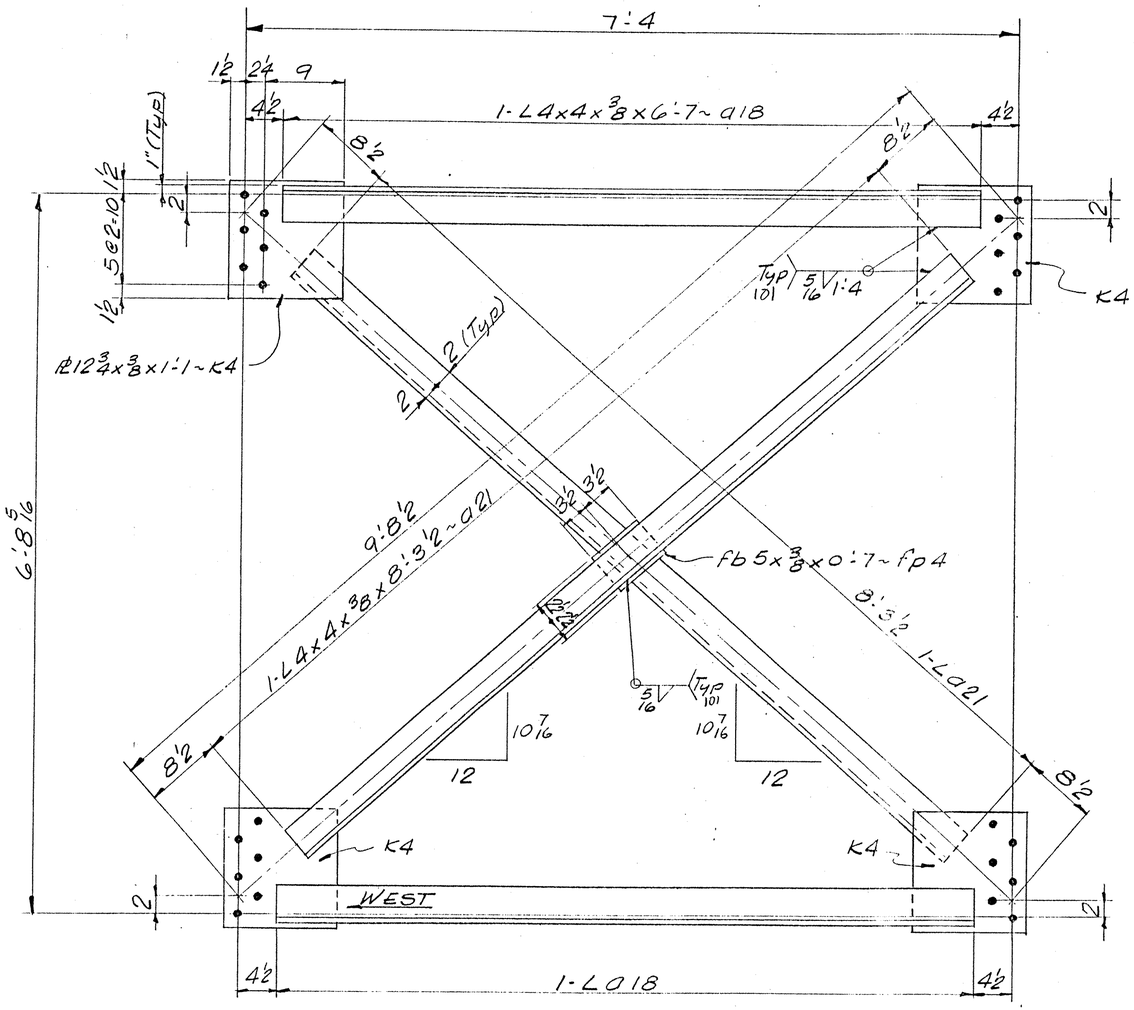
PROJECT NO. IM IR 089-1(13) STATE PROJECT NO.
MATERIAL: A709 36 ELECTRODES: Prot Proc HOLES: 15/16 Ø SHOP BOLTS:
SURFACE PREP. & PAINT: SSPC-SP10, SHERWIN WILLIAMS
PRIMER: ZINC CLAD II B69WB/B69VS
INTERM: HEAVY DUTY EPOXY B67W3201/B60V3
FINISH: HI SOLIDS POLYURETHANE B65W3011/B60V30
DESCRIPTION: CROSSFRAME (CF20)
JOB: I-89 NB & SB OVER WHITE RIVER, VT 14 & NECK HARTFORD VT
CUSTOMER: WINTHROP INC

	DRAWN BY	DATE
	JST	4-21-99
CHKD BY	NJB	
APPROV BY		
Q.A.		

CASCO BAY STEEL STRUCTURES, INC.
5 INDUSTRY ROAD SOUTH PORTLAND, ME. 04106
PHONE (207) 772-2533 FAX. (207) 772-0580

JOB NO.	DRG. NO.
048	7
110	REV. △

1" = 1'-0



INTERMEDIATE FRAME CF28

ONE REQ'D REPAIR ID# S28 (SPAN 2, GIRDER G4-G5)

ABM INFO		SHOP BILL						JOB NO. 048	DRG. NO. 8
PAGE	LINE	NO.	DESCRIPTION	FT	IN	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		1	CROSSFRAME				CF28		
		2	L 4x4x⅜	6	7	a18			
		2	L 4x4x⅜	8	3½	a21			
		4	R ⅜ x 12¾	1	1	K4			
		1	FB ⅜ x 5	0	7	fp4			
			FIELD BOLTS						
		24	⅞ A325	0	24			W/NUW	

FILL IN

INCLUDE BOLT TYPE/GRADE
WASHER+NUT TYPE/GRADE

WHOSE?

SHOP DRAWING REVIEW

REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THIS WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

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VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 54 Dartmouth Farms, Hilton Rd., Bedford, NH 03110 603 644 0888

Job Number: 50699
Reviewed By: SMM
Date: 5-7-99

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	4-22-99									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

PROJECT NO. IM IR 089-1(13) STATE PROJECT NO.

MATERIAL: A709-36 ELECTRODES: E70XX HOLES: ⅞ ø SHOP BOLTS:

SURFACE PREP. & PAINT: ~~SSPC~~ SP10, SHERWIN WILLIAMS
PRIMER: ZINC CLAD II B69W8/B69V5
INTERM: HEAVY DUTY EPOXY B67W301/B60V3
FINISH: HI SOLIDS POLYURETHANE B65W301/B60V30

DESCRIPTION: CROSS FRAME (CF28)

JOB: I-89 NB & SB over WHITE RIVER, VT 14 & NECR HARTFORD VT

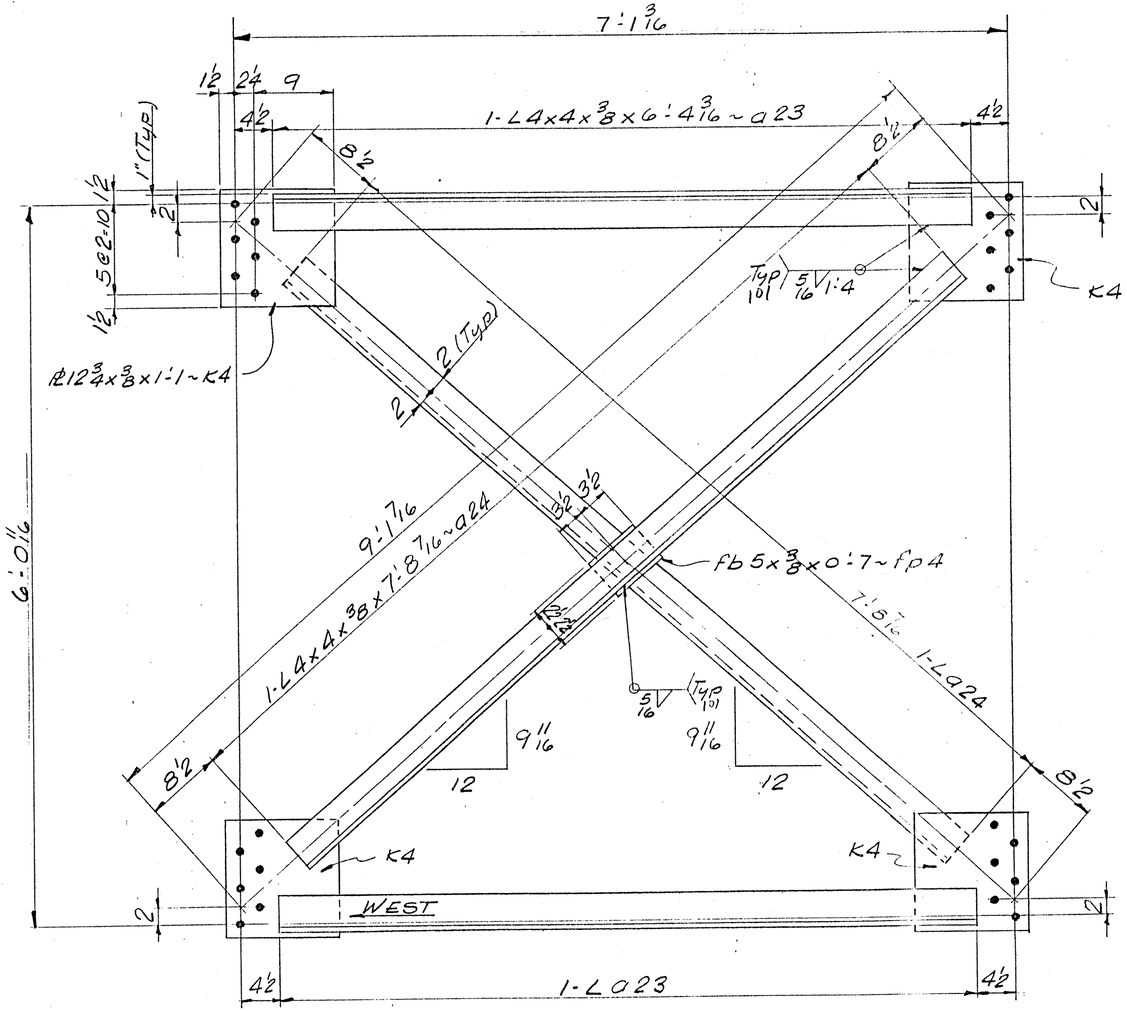
CUSTOMER: WINTERSET INC

	DRAWN BY	DATE
	LST	4-21-99
CHKD BY	WB3	
APPROV BY		
Q.A.		

CASCO BAY STEEL STRUCTURES, INC.
5 INDUSTRY ROAD SOUTH PORTLAND, ME. 04106
PHONE (207) 772-2533 FAX. (207) 772-0580

JOB NO.	DRG. NO.
048	8
111	REV. △

1" = 1'-0



INTERMEDIATE FRAME CF212

ONE REQ'D REPAIR ID# S6 SPAN 5 GIRDER BAY G1-G2

ONE REQ'D REPAIR ID# S15 SPAN 3 GIRDER BAY G1-G2

SHOP DRAWING REVIEW

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VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 54 Boston Post Rd., Wilton Rd. Westbrook, ME 03092 603 644 0888

Job Number: 50699
Reviewed By: SMM
Date: 5-7-99

ABM INFO PAGE	LINE	NO.	DESCRIPTION	FT	IN	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		2	CROSSFRAME				CF212		
		4	L4x4x3/8	6	4 1/2	a23			
		4	L4x4x3/8	7	8 1/2	a24			
		8	R 3/8 x 12 3/4	1	1	K4			
		2	FB 3/8 x 5	0	7	FP4			
			FIELD BOLTS						
		48	& A325	0	24			w/N&W	

JOB NO. 048 DRG. NO. 9

FILL IN

INCLUDE BOLT TYPE WASHER & NUT GRADE / TYPE

~~OFFER?~~

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	4/29									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

PROJECT NO. IM IR 089 1(13) STATE PROJECT NO.

MATERIAL: AASHTO - 36 ELECTRODES: ~~FCA~~ PROC HOLES: 18 SHOP BOLTS:

SURFACE PREP. & PAINT: ~~SSPC~~ SP10 SHERWIN WILLIAMS

PRIMER: ZINC CLAD IV B67W301/B60V3

INTERM: HEAVY DUTY EPOXY B67W301/B60V3

FINISH: ~~HI SOLIDS POLYURETHANE B65W301/B60V30~~

DESCRIPTION: CROSSFRAME (CF212)

JOB: I-89 NB & SB OVER WHITE RIVER, VT 14 & NECR HARTFORD VT

CUSTOMER: WINTERSET INC.

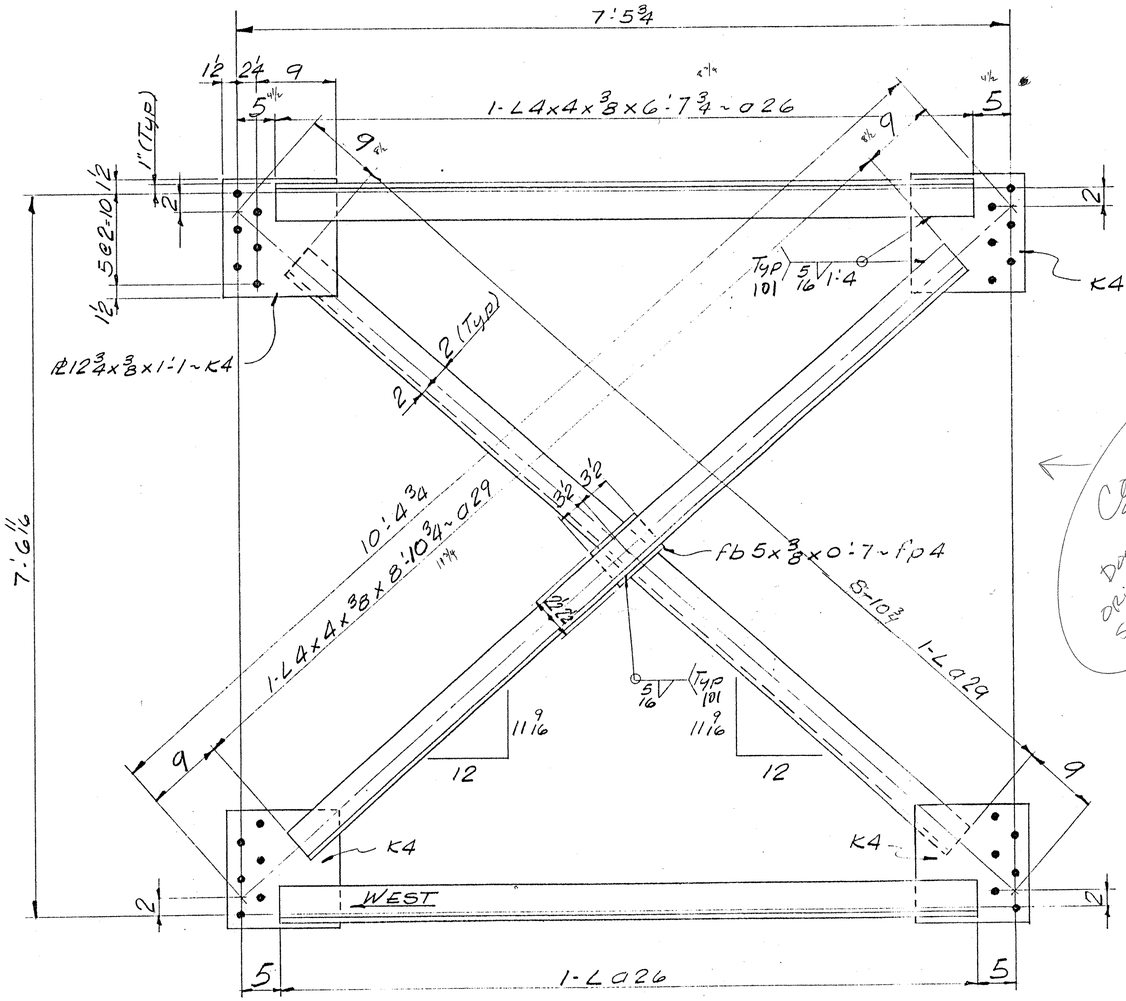
	DRAWN BY	DATE
	BT	4-21-99
CHKD BY		
APPROV BY		
Q.A.		

CASCO BAY STEEL STRUCTURES, INC.

5 INDUSTRY ROAD SOUTH PORTLAND, ME. 04106
PHONE (207) 772-2533 FAX. (207) 772-0580

JOB NO.	DRG. NO.
048	9
112	REV. △

1" = 1'-0



INTERMEDIATE FRAME CF220

ONE REQ'D REPAIR I.D. # S12 (SPAN 4, GIRDER BAY G1-G2)

ABM INFO PAGE	LINE	NO.	DESCRIPTION	FT	IN	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		1	CROSSFRAME				CF220		
		2	L4x4x3/8	6	7 3/4	a26			
		2	L4x4x3/8	8	10 3/4	a29			
		4	R3/4x12 3/4	1	1	K4			
		1	FB 3/8x5	0	7	FP4			
			F1120 BOLT						
		14	3/4 A325	0	24			w/N&W	

SHOP BILL — JOB NO. 048 — DRG. NO. 10

CONFIRM DOES NOT CORRESPOND TO ORIGINAL SHOP DRAWING REF. SHEET S65 IN CONTRACT PLANS

INCLUDE BOLT TYPE/GRADE NUT & WASHER TYPE/GRADE

CHANGE

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	4/21/99									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

PROJECT NO. IM IR 089 1(13) STATE PROJECT NO.

MATERIAL: A709-36 ELECTRODES: E70 Prior HOLES: 1 1/8 SHOP BOLTS:

SURFACE PREP. & PAINT: SSPC-SP10, SHERWIN WILLIAMS

PRIMER: ZINC CLAD IV B69W8 / B69V5

INTERM: HEAVY DUTY EPOXY B67W301 / B6DV3

FINISH: HI SOLIDS POLYURETHANE B65W201/B6DV50

DESCRIPTION: CROSSFRAME (F220

JOB: I 89 NB & SB over WHITE RIVER, VT 14 & NECR HARTFORD VT

CUSTOMER: WINTERSET, INC

	DRAWN BY	DATE
	BT	4-21-99
CHKD BY		
	WGB	
APPROV BY		
Q.A.		

CASCO BAY STEEL STRUCTURES, INC.
5 INDUSTRY ROAD SOUTH PORTLAND, ME. 04106
PHONE (207) 772-2533 FAX. (207) 772-0580

JOB NO. 048 — DRG. NO. 10 — REV. 113 △

SHOP DRAWING REVIEW

☐ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ✓ FURNISH AS CORRECTED

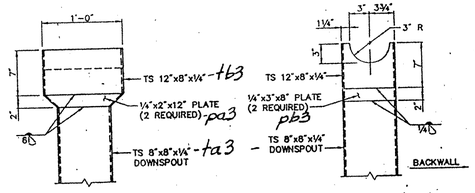
CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWING DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VBH Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 54 Portsmouth Street, Concord, NH 03301 603 647-5865

Job Number: 50699
Reviewed By: SMW
Date: 5-7-99

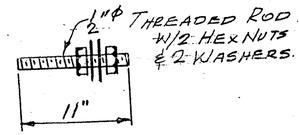
1" = 1'-0

AEIM INFO		SHOP BILL					JOB NO. 048	DRG. NO. 3-X
PAGE	LINE	NO.	DESCRIPTION	FT	IN	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		2	DOWNSPOUTS				DS1-R		
		2	TS 8x8x1/4	15	0	ta3		ASTM or A501	
		2	TS 12x8x1/4		7	tb3		Do	
		4	PL 4x2	1	0	pa3			
		4	PL 4x3		8	pb3			
		4	BAR 4x3/8	2	6±		SA1	BEND	
		4	Do	1	3		SB1		
		8	1" ϕ THREADED ROD		11		AB1		
		16	1/2" HEX NUTS						
		16	1/2" WASHERS						

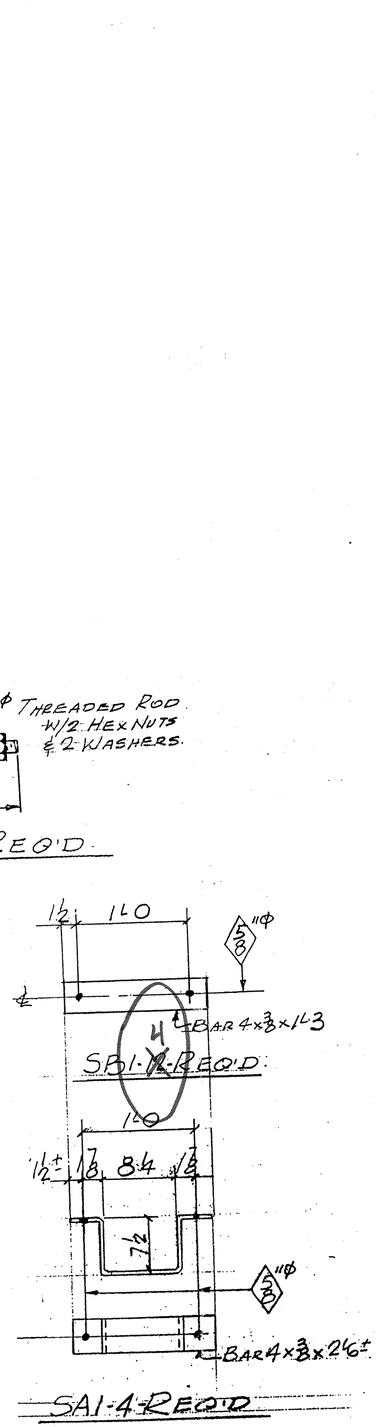


ELEVATION SIDE VIEW

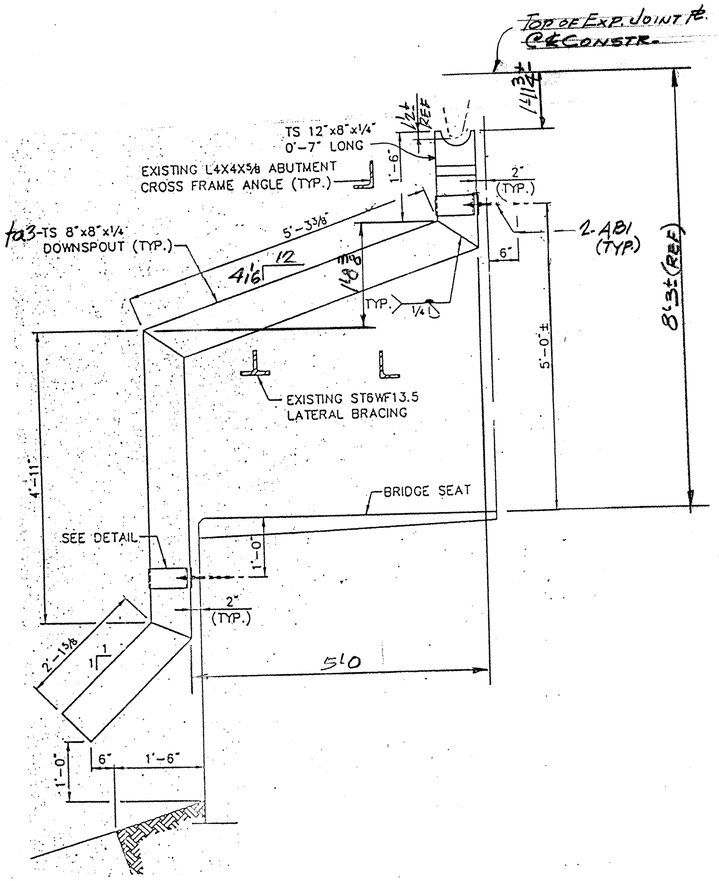
HOPPER DETAILS



AB1- 8 REQ'D.



SA1-4 REQ'D.



DS1-R - 2 REQ'D.

REVISED DOWNSPOUTS FOR S.B. Bridge
JGC

PAY ITEM 506.60 EXTRA

SHOP DRAWING REVIEW

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☐ REJECTED ☐ REVISE AND RESUBMIT ✓ RELEASED AS CORRECTED

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VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 54 Bedford Farms, Kitos Rd., Bedford, NH 03102 603 644 0888

Job Number: 50699
Reviewed By: KRC
Date: 2/15/00

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	2-1-00									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

PROJECT NO. I-089-1(13) STATE PROJECT NO. 11N&11S

MATERIAL AASHTO-M270 GR-36 ELECTRODES: PER PROC. HOLES: AS NOTED SHOP BOLTS:

SURFACE PREP. & PAINT:

GALVANIZED AFTER FAB. - PER ASTM-A/123 (AASHTO-M-111)

DESCRIPTION: REVISED DOWNSPOUTS (SB)

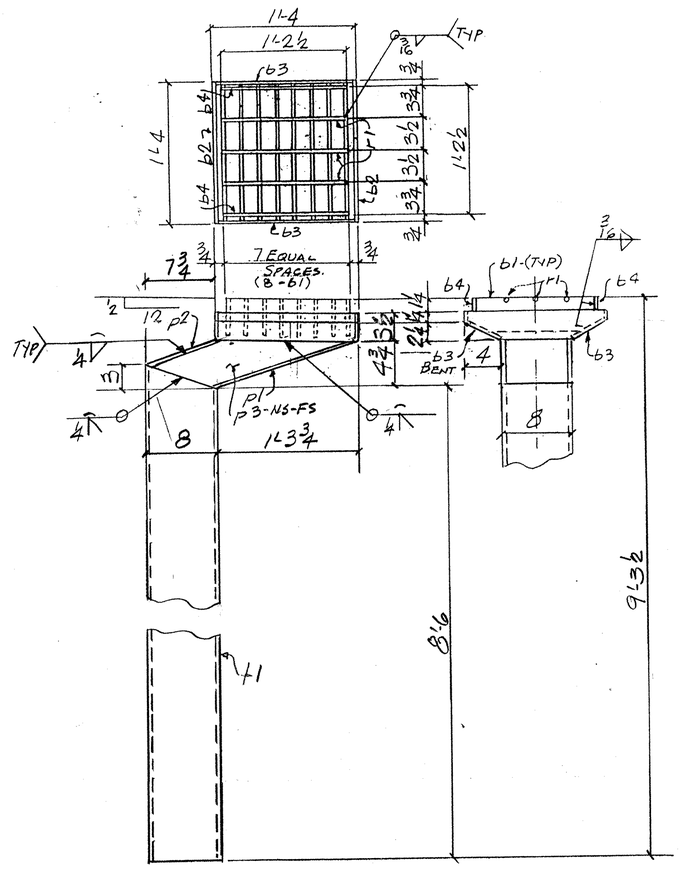
JOB: I-89-NB & SB OVER WHITE RIVER, VT. 14 & NE CR HARTFORD, VT.

CUSTOMER: WINTERSET INC.

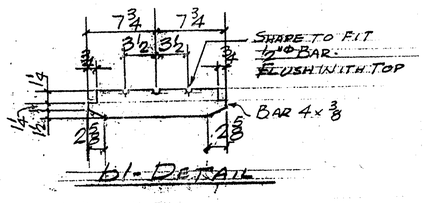
DRAWN BY	DATE
JPF	1-00
CHKD BY	
EJ	
APPROV BY	
Q.A.	
JOB NO.	DRG. NO.
048	3-X
114	REV. △

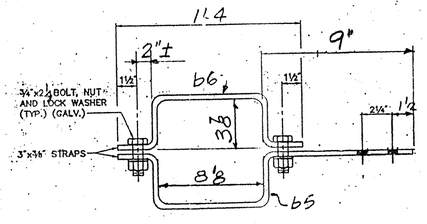
CASCO BAY STEEL STRUCTURES, INC.
5 INDUSTRY ROAD SOUTH PORTLAND, ME. 04106
PHONE (207) 772-2533 FAX. (207) 772-0580

NEW PHONE 207 282-7360 207 282-1179



SC1-R-18-REQ'D





STRAPS-ST1-R-36-REQ'D.

REVISED SCUPPERS FOR SB Bridge

ABM INFO PAGE	LINE	NO.	DESCRIPTION	FT	IN	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
			SHOP BILL					JOB NO. 048	DRG. NO. 1-X
		18	SCUPPERS	9	4±		SC1-R		—
		18	TS8x8x¼	8	9	f1			
		144	BAR 4x⅜	1	3½	b1			
		36	BAR 3½x¼	1	4	b2			
		36	R 4x5⅝	1	3½	b3		BEND	
		36	BAR 4x¼	1	2½	b4			
		54	½"Ø BAR	1	2½	r1			
		18	R 4x7½		7±	p1			
		18	DO	1	4½±	p2			
		36	R 4x4½	1	11±	p3			
		36	STRAP ASS'Y	1	9½		ST1-R		—
		36	BAR 3x⅜	2	6½	b5		BEND	
		36	DO	1	9½	b6		BEND	
		72	¾"Ø BOLTS (GALV.)		2¼	SHOP		W/NUT, WASH & LOCK WASH	
		72	DO		2		FIELD	DO	

PAY ITEM 506.60 EXTRA

SHOP DRAWING REVIEW

☑ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FOREGOING LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

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VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 54 Dodrod Farms, Route 101 Bedford, NH 03110 603 644 2888

Job Number: 50699
Reviewed By: KRC
Date: 2/15/00

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	9-1-00									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

PROJECT NO. IR-089-1(13) STATE PROJECT NO. 11N&11S

MATERIAL: AASHTO-M270 GR.36 ELECTRODES: PER PROC HOLES: 13/16"Ø SHOP BOLTS:

SURFACE PREP. & PAINT:

GALV. AFTER FAB. PER ASTM-A-123 (AASHTO-M-111)

DESCRIPTION: REVISED SCUPPERS (SB)

JOB: I-89-NB&SB OVER WHITE RIVER, VT. 14&NECR HARTFORD, VT.

CUSTOMER: WINTERSET INC.

	DRAWN BY	DATE
	JPF	1-00
CHKD BY		
APPROV BY		
Q.A.		

JOB NO.	DRG. NO.
048	1-X
115	REV. △

CASCO BAY STEEL STRUCTURES, INC.
5 INDUSTRY ROAD SOUTH PORTLAND, ME. 04106
PHONE (207) 772-2533 FAX. (207) 772-0580

STATE OF VERMONT AGENCY OF TRANSPORTATION

ORIGINAL SUBMITTAL GHC

CONTRACT No. IR 089-1(13)

ROUTE I-89 BRIDGES over THE WHITE RIVER, VT. 14 & NECR
TOWN OF HARTFORD, WINDSOR COUNTY

PREPARED FOR

NORTH STAR PAINTING CO.

3526 McCARTNEY ROAD
YOUNGSTOWN, OH 44505

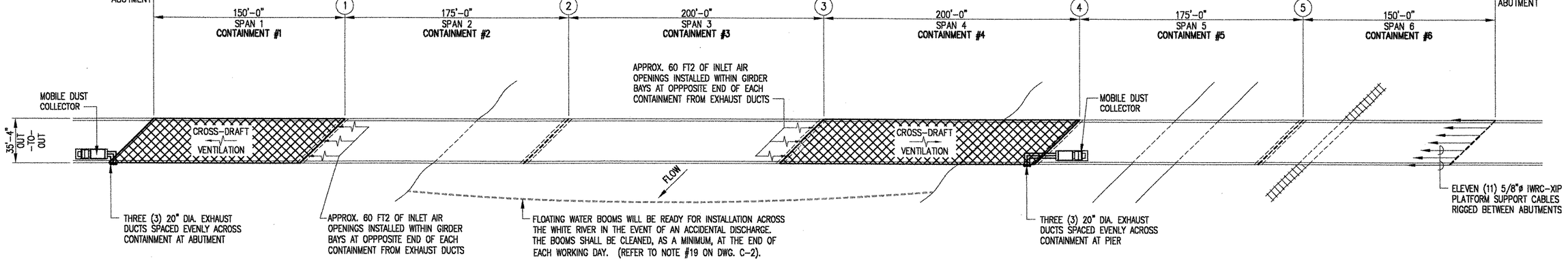
ABRASIVE BLASTING CONTAINMENT PLANS

Containment Design, Inc.

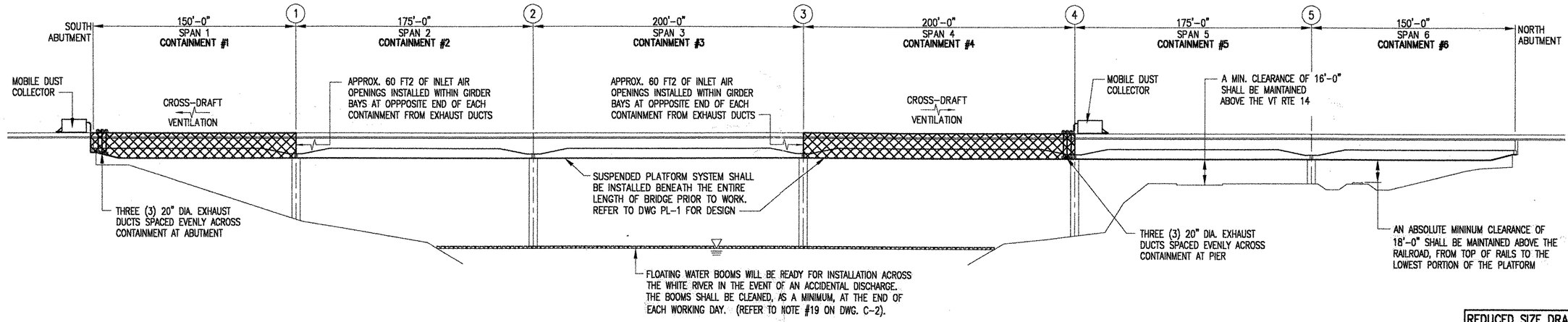
1260 Prospect Road
Pittsburgh, PA 15227
Phone: (412)882-9046
Fax: (412)884-8091

116

2-22-2001
SUF



PLAN VIEW
NORTHBOUND AS SHOWN – SOUTHBOUND IDENTICAL
SCALE: 1" = 40'-0"



ELEVATION
NORTHBOUND AS SHOWN – SOUTHBOUND IDENTICAL
SCALE: 1" = 40'-0"

REDUCED SIZE DRAWING
THIS DRAWING IS TO SCALE BUT HAS BEEN REPRODUCED AT 70% OF ORIGINAL SIZE.

STATE OF VERMONT
WAYNE E. LOMAG
No. 3131
REGISTERED PROFESSIONAL ENGINEER
P.E. SEAL

Containment Design, Inc.
1260 Prospect Road ◦ Pittsburgh, PA 15227 ◦ Phone: (412) 882-9046 ◦ Fax (412) 884-8091

NORTH STAR PAINTING COMPANY

STATE OF VERMONT AGENCY OF TRANSPORTATION
CONTRACT IR 089-1(13) WINDSOR COUNTY
RTE I-89 over THE WHITE RIVER, VT. 14 & NECR
ABRASIVE BLASTING CONTAINMENT PROPOSAL
TYPICAL PLAN & ELEVATION

117

CDI JOB NO.	DATE	DWG. NO.	
21-11	1-22-00	C-1	0

SERIES OF 5/8" DIA. CABLES RIGGED BETWEEN THE ABUTMENTS AND/OR PIERS. THE PATENTED PLATFORM SYSTEM HAS BEEN LICENSED FOR USE ON THIS PROJECT BY TOTAL CONTAINMENT SYSTEMS, INC.

3. THE PLATFORM SYSTEMS HAVE BEEN DESIGNED TO SUPPORT A MAXIMUM DEAD AND LIVE LOADING OF 16 PSF, WHICH INCLUDES A 3/4" UNIFORM LAYER OF SPENT STEEL ABRASIVES OVER THE ENTIRE AREA OF THE PLATFORM AND ONE (1) WOKER PER PLATFORM CABLE. REFER TO DWGS PL-1 AND PL-2 FOR DESIGN AND INSTALLATION OF THE PROPOSED PLATFORM SYSTEMS.

4. THE SUSPENDED PLATFORM SYSTEM SHALL BE INSTALLED BENEATH ALL OR PORTIONS OF EACH BRIDGE. THE PLATFORM CABLES SHALL BE RIGGED TO BOTH THE TOPS OF THE BEARINGS, DIRECTLY BENEATH THE GIRDER FLANGES, AND DIRECTLY TO THE BACKS OF THE BRIDGE GIRDERS, ELIMINATING ANY LOADING TO THE BEARINGS. REFER TO THE CABLE ATTACHMENT DETAILS ON DWG PL-2.

5. ON SPAN #5, A MININUM CLEARANCE OF 16'-0" SHALL BE MAINTAINED ABOVE THE ROADWAY (VT RTE 14). ON SPAN #6, AN ABSOLUTE MININUM CLEARANCE OF 18'-0" SHALL BE MAINTAINED ABOVE THE RAILROAD, AS MEASURED FROM THE TOP OF RAILS TO THE LOWEST PORTION OF THE PLATFORM DURING MAXIMUM LOADING. NORTH STAR PAINTING SHALL MONITOR THE OVERHEAD CLEARANCE ON A CONTINUOUS BASIS TO ENSURE THE PLATFORM DOES NOT DROP BELOW THE MINIMUM REQUIRED CLEARANCES.

6. A TOTAL OF SIX (6) CONTAINMENTS WILL BE REQUIRED TO COMPLETE WORK ON EACH BRIDGE. EACH CONTAINMENT WILL BE INSTALLED TO ENCLOSE AN ENTIRE SPAN AT A TIME, OR MULTIPLE SPANS AT A TIME TO ALLOW FOR BLASTING AND PAINTING TO BE PERFORMED SIMULTANEOUSLY ON SEVERAL SPANS. REFER TO THE PLAN & ELEVATION VIEWS ON DWG C-1 FOR TYPICAL CONTAINMENT SCENARIO.

7. ON MAIN SPANS #1 thru #4, THE SUSPENDED PLATFORM SHALL BE RIGGED APPROX. 2'-0" BELOW THW BOTTOM FLANGES OF THE GIRDERS, RESULTING IN A TOTAL CONTAINMENT HEIGHT OF 10'-0" (UNDERSIDE OF BRIDGE DECK TO THE PLATFORM. REFER TO THE CONTAINMENT SCHEDULE ON THIS DWG FOR DIMENSIONS OF THE TYPICAL CONTAINMENT.

SHALL BE SECURED IN-PLACE AND SEALED BY CLAMPING WITH LUMBER STRIPPING TO THE TOPS OF THE CONCRETE PARAPETS AND/OR BY CLIPPING THE SIDEWALL TARPAULINS TO A CABLE RIGGED ALONG THE BASE OF THE PARAPETS. REFER TO THE ENCLOSURE DETAILS PROVIDED ON DWG D-2.

10. THE ENTIRE PLAN VIEW AREA OF THE CHAIN-LINK PLATFORM SHALL BE COVERED WITH 100% IMPERMEABLE TARPAULINS TO CONTAIN THE SPENT ABRASIVES AND ALLOW FOR VACUUMING. THE BASE OF THE TARPAULIN WALLS AROUND THE ENTIRE PERIMETER OF THE CONTAINMENT WILL BE SEALED BY ROLLING AND CLAMPING THE FLOOR AND WALL TARPAULINS TO EACH OTHER AND TO THE CHAIN-LINK FENCE FLOOR. SNAP CLIPS OR ROPE TIES WILL BE USED ALONG EVERY PLATFORM CABLE, AS REQ'D, TO SECURE THE FLOOR TARPAULINS AND KEEP THE WIND FROM LIFTING THE FLOOR TARPS DURING WORK.

11. THE TARPAULIN WALLS WILL BE PULLED TIGHT AT THE ABUTMENTS AND SEALED WITH SPRAY FOAM. IF REQUIRED TO IMPROVE THE SEAL AT THE ABUTMENTS, THE TARPAULIN WALLS SHALL BE SEALED USING LUMBER STRIPPING AND NAILERS ANCHORED WITH CONCRETE STUDS. UPON COMPLETION OF WORK, ALL HOLES IN THE ABUTMENT WALLS SHALL BE PATCHED IN-KIND TO THE SATISFACTION OF THE RESIDENT ENGINEER.

12. CROSS-DRAFT (HORIZONTAL) VENTILATION PARALLEL TO THE BRIDGE GIRDERS SHALL BE PROVIDED THROUGH EACH ACTIVE ENCLOSURE. A MINIMUM AIRFLOW VELOCITY OF 100 FT/MIN WILL BE PROVIDED DURING ABRASIVE BLASTING OPERATIONS. REFER TO THE CONTAINMENT SCHEDULE ON DWG C-2 FOR VENTILATION REQUIREMENTS, INCLUDING EXHAUST VOLUME, INLET AIR OPENINGS AND NUMBER OF DUCTS.

13. MAKE-UP AIR WILL BE DRAWN INTO EACH CONTAINMENT THROUGH PASSIVE INLET AIR OPENINGS LOCATED BETWEEN THE BRIDGE GIRDERS AT THE OPPOSITE END OF THE ENCLOSURE FROM THE EXHAUST DUCTS. A TARGET VELOCITY OF 700-1000 FT/MIN WILL BE USED TO SIZE THE INLET OPENINGS. THE SIZE, QUANTITY AND LOCATION OF THE INLETS MAY BE VARIED TO IMPROVE VENTILATION.

15. NORTH STAR PAINTING WILL UTILIZE ONE OR MORE WORKERS, AS REQUIRED, TO CONTINUOUSLY VACUUM THE SPENT ABRASIVES FROM THE PLATFORM DECK TO MINIMIZE BUILD-UP AND REDUCE SAG OF THE SUPPORT CABLES AND FENCING.

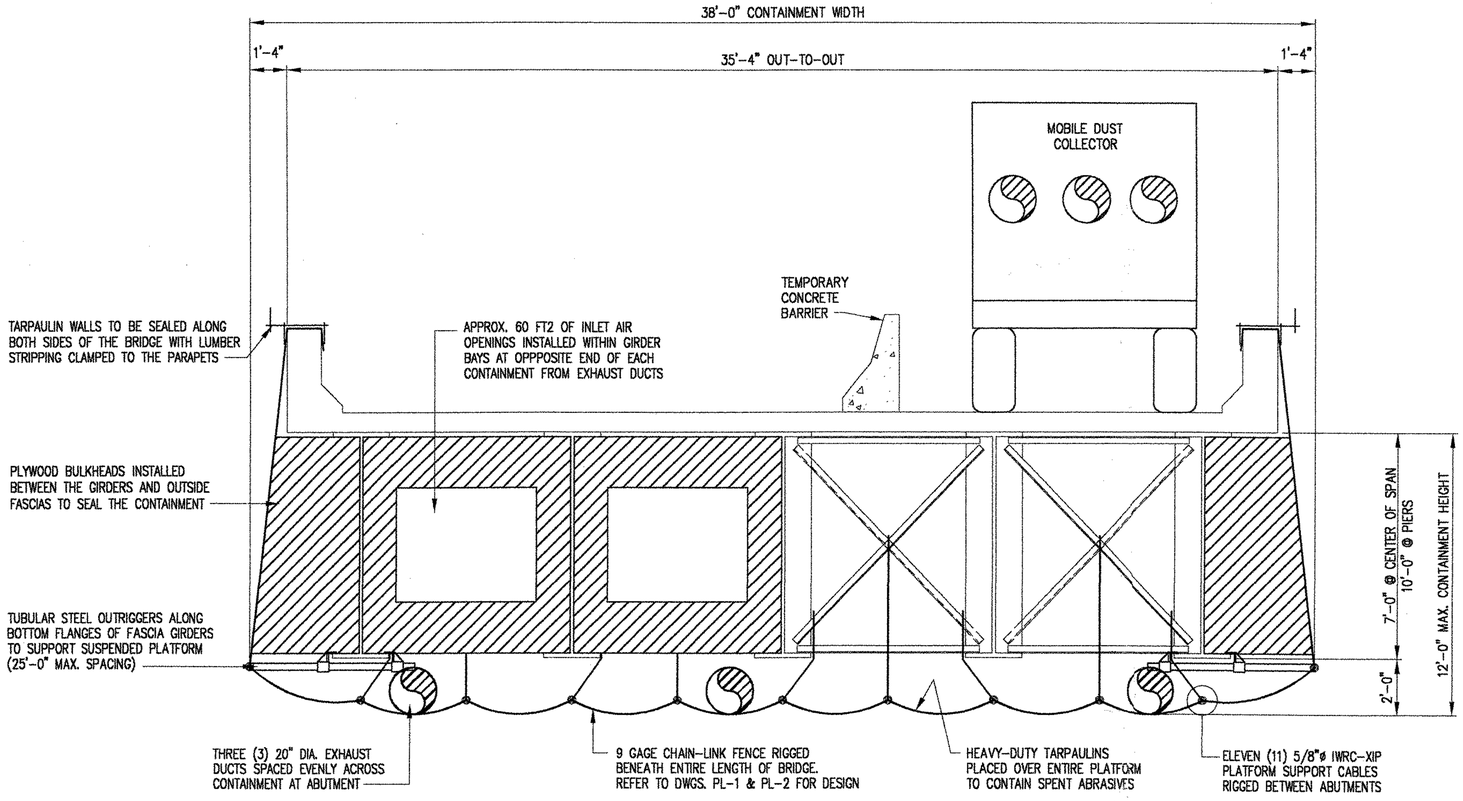
16. LOADS IMPOSED ON THE ROUTE I-89 BRIDGES DUE TO INSTALLATION OF THE PROPOSED PLATFORM AND CONTAINMENT SYSTEMS WILL HAVE NO ADVERSE EFFECT ON THE BRIDGE STRUCTURE, AS DEFINED IN THE LATEST AASHTO SPECIFICATIONS.

17. AASHTO ALLOWS A 36% INCREASE IN STRESS FOR TEMPORARY LOADINGS (18,000 PSI INVENTORY RATING VERSUS 24,500 PSI OPERATING RATING). THE MAXIMUM ANTICIPATED WEIGHT OF THE PLATFORM CONTAINMENT ADDED TO THE DESIGN LOADING OF THE BRIDGE RESULTS IN A TOTAL ANTICIPATED DEAD AND LIVE LOADING OF 80 PSF (16 PSF + 64 PSF DESIGN). THIS TEMPORARY LOADING APPLIED TO THE GIRDERS ON THE PORTIONS OF THE BRIDGE OPENED TO TRAFFIC RESULTS IN A 23% INCREASE, WHICH IS BELOW THE 36% ALLOWABLE INCREASE PER AASHTO. THEREFORE, THE BRIDGE GIRDERS ARE DEEMED SUFFICIENT FOR SUPPORTING THE PLATFORM AND CONTAINMENT, EVEN IF THE BRIDGES ARE FULLY LOADED TO 100% OF ITS INVENTORY RATING.

18. BASED ON THE MAXIMUM ALLOWABLE WIND VELOCITY OF 40 MPH (5.28 PSF WIND LOAD), THE RESULTING LOADS TRANSFERRED TO THE BRIDGE STRUCTURE SHALL NOT EXCEED 95 PLF, BASED ON A MAXIMUM CONTAINMENT HEIGHT OF 18'-0" (AT THE PIERS) FROM THE TOP OF BRIDGE PARAPET TO THE PLATFORM. SINCE AASHTO SPECIFIES A LATERAL LOADING OF 300 PLF FOR DESIGN OF GIRDER BRIDGES, THE MAXIMUM ANTICIPATED WIND LOAD OF 95 PLF IS ACCEPTABLE. WIND LOADING FOR GIRDER BRIDGES DOES NOT GOVERN.

19. FLOATING WATER BOOMS WILL BE AVAILABLE FOR INSTALLATION ACROSS THE WHITE RIVER IN THE EVENT OF AN ACCIDENTAL DISCHARGE. IF REQUIRED, THE BOOMS WILL BE INSTALLED ACROSS THE ENTIRE WIDTH OF THE WATERWAY, DIRECTLY DOWN-STREAM OF THE BRIDGE, TO CONTAIN ANY WASTE DEBRIS LOST. BOOMS SHALL BE INSTALLED PER THE RESIDENT ENGINEER-IN-CHARGE. THE BOOMS SHALL BE EMPTIED OR CLEANED AT THE END OF EACH WORKING DAY, OR MORE FREQUENTLY IF NECESSARY, TO PREVENT THE LOSS OF COLLECTED RESIDUE.

20. REFER TO DWGS D-1 AND D-2 FOR TYPICAL CONTAINMENT DETAILS AND GENERAL INSTALLATION NOTES TO BE USED ON THIS PROJECT.



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

Containment Design Schedule
RTE I-89 N/B & S/B BRIDGES

Design Parameters		SUSPENDED PLATFORMS
Dimensions, feet	Length, L	VARIES
	Width, W	38.00
	Height, H	12.00 Max.
	Area, A = W x H	456 ft²
Ventilation	System	Cross-Draft
	Volume 'Q' (cfm)	46,000
	V = Q/A (ft/min)	101
Inlets	Min. Area 'A' (ft²)	60
	V = Q/A (ft/min)	767
No. of Exhaust Ducts		3

REDUCED SIZE DRAWING
THIS DRAWING IS TO SCALE BUT HAS BEEN REPRODUCED AT 70% OF ORIGINAL SIZE.

STATE OF VERMONT
WAYNE T. BOMAG
No. 3131
REGISTERED PROFESSIONAL ENGINEER
P.E. SEAL

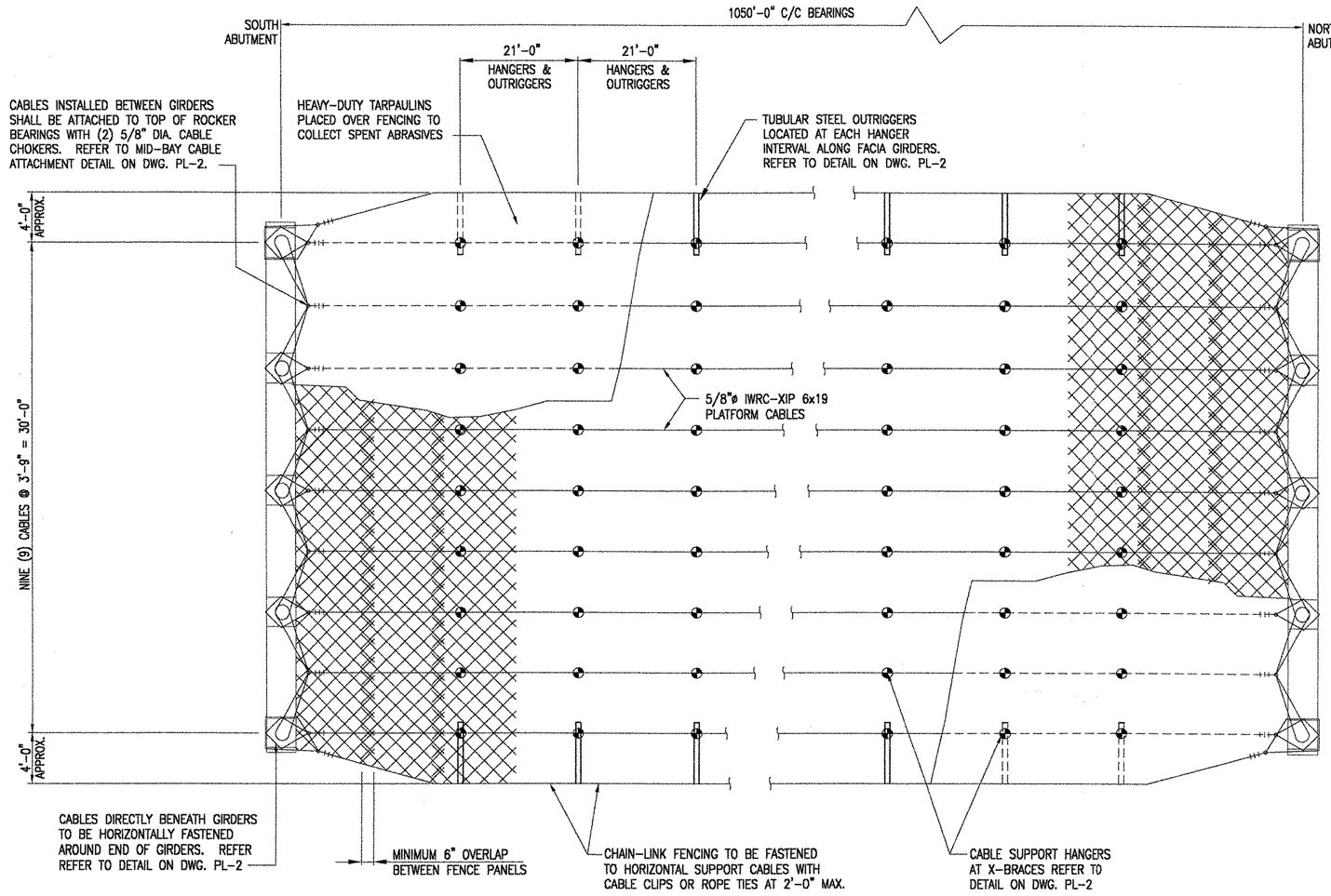
Containment Design, Inc.
1260 Prospect Road ◦ Pittsburgh, PA 15227 ◦ Phone: (412) 882-9046 ◦ Fax: (412) 884-8091

NORTH STAR PAINTING COMPANY

STATE OF VERMONT AGENCY OF TRANSPORTATION
CONTRACT IR 089-1(13) WINDSOR COUNTY
RTE I-89 over THE WHITE RIVER, VT. 14 & NECR
ABRASIVE BLASTING CONTAINMENT PROPOSAL
TYPICAL CROSS-SECTION

118

CDI JOB NO.	DATE	DWG. NO.	
21-11	1-22-00	C-2	0



SUSPENDED PLATFORM SYSTEM INSTALLATION

PLAN VIEW

NOT-TO-SCALE

SUSPENDED PLATFORM SYSTEM DESIGN

1. THE SUSPENDED PLATFORM SYSTEM PROPOSED FOR THIS PROJECT WILL CONSIST OF 9-GAGE CHAIN-LINK FENCING SUPPORTED BY A SERIES OF HORIZONTAL CABLES RIGGED BETWEEN THE ABUTMENTS AND/OR PIERS. THE PLATFORM SYSTEM HAS BEEN LICENSED FOR USE FROM TOTAL CONTAINMENT SYSTEMS, INC. REFER TO THE SUSPENDED PLATFORM INSTALLATION PLAN VIEW ON THIS DWG FOR THE PROPOSED INSTALLATION.
2. THE SUSPENDED PLATFORM SYSTEM HAS BEEN DESIGNED FOR A UNIFORM DEAD AND LIVE LOADING OF 16 PSF, WHICH INCLUDES A 3/4" MAXIMUM ALLOWABLE LAYER OF SPENT STEEL ABRASIVES. IN ADDITION, THE PLATFORM SYSTEM HAS BEEN DESIGNED TO SUPPORT ONE (1) WORKER PER PLATFORM CABLE.
3. THE PROPOSED PLATFORM SYSTEM WILL UTILIZE STEEL CHAIN-LINK FENCE PANELS MEASURING A MINIMUM OF 36" WIDE BY THE WIDTH OF THE PLATFORM. THE FENCE WILL BE COMPRISED OF A 2" SQUARE MESH WOVEN OF 9-GAGE WIRE (0.148" DIA). WITH A 2" MESH AT A 45-DEGREE ANGLE TO THE SUPPORT CABLES, THE 9-GAGE FENCE HAS A CALCULATED ALLOWABLE TENSION OF 15,480 LBS PER LINEAL FOOT OF PLATFORM. BASED ON THE MAXIMUM PROPOSED CABLE SPACING, THE RESULTING FACTOR OF SAFETY WILL BE 4.61, WHICH EXCEEDS THE OSHA REQUIRED SAFETY FACTOR OF 4.0.
4. A TOTAL OF (11) HORIZONTAL PLATFORM CABLES SHALL BE RIGGED ACROSS THE WIDTH OF THE BRIDGE, WHICH SHALL INCLUDE (5) CABLES DIRECTLY BENEATH THE GIRDERS, (4) MID-BAY CABLES BETWEEN THE GIRDERS, AND (2) OUTRIGGERS BEYOND EACH BRIDGE FASCIA GIRDER. REFER TO THE TYPICAL CROSS-SECTIONAL VIEW PROVIDED ON DWG C-2.
5. THE HORIZONTAL PLATFORM CABLES SHALL BE 5/8" DIA. 6x19 IWRC-XIP STEEL CABLES HAVING A NOMINAL STRENGTH OF 20.60 TONS. REFER TO THE CABLE SCHEDULE ON THIS DRAWING FOR THE REQUIRED PLATFORM CABLE INSTALLATION.
6. THE HORIZONTAL PLATFORM CABLES SHALL BE RIGGED BENEATH THE ENTIRE LENGTH OF BRIDGE. THE ENDS OF THE CABLES SHALL BE ATTACHED AT EACH ABUTMENT BY RIGGING AROUND THE BACKS OF THE BRIDGE GIRDERS OR TOPS OF THE BEARINGS WITH 5/8" DIA. CABLE CHOKERS AND SHACKLES. REFER TO THE VARIOU CABLE ATTACHMENT DETAILS PROVIDED ON DWG PL-2.
7. IN THE EVENT THE PLATFORM CABLES ARE ONLY INSTALLED ON A PORTION OF THE BRIDGE, THE PLATFORM CABLES SHALL BE RIGGED TO THE PIER(S) IN THE SAME MANNER AS THE ABUTMENTS. AS AN OPTION TO UTILIZING CHOKERS AROUND THE BEARINGS, THE MID-BAY CABLES MAY BE RIGGED VERTICALY AROUND THE CONCRETE PIER CAPS.
8. EACH HORIZONTAL PLATFORM CABLE SHALL BE SUPPORTED FROM EVERY CROSS-BRACE (21'-0" INTERVALS) USING 1/2" DIA. IWRC 6x19 CABLES (11.50 TON STRENGTH) OR 3/8" DIA CHAINS (5.30 TON RATING).
9. TO SUPPORT THE 2 OUTERMOST CABLES, TUBULAR STEEL OUTRIGGERS SHALL BE INSTALLED ALONG THE BOTTOM FLANGES OF EACH FASCIA GIRDER (21'-0" INTERVALS). THE END OF EACH OUTRIGGER WILL BE SUPPORTED BACK TO THE BRIDGE PARAPETS WITH CABLES.
10. THE FENCE PANELS WILL BE FASTENED TO THE SUPPORT CABLES AND TO ADJACENT PANELS AT MAXIMUM 2'-0" SPACINGS IN BOTH DIRECTIONS USING SNAP RINGS, CABLE CLIPS AND/OR OR ROPE TIES. THE SECTIONS OF FENCE SHALL BE INSTALLED WITH AN ABSOLUTE MINIMUM OVERLAP OF 6" BETWEEN PANELS.
11. SHACKLES FOR THE MAIN HORIZONTAL SUPPORT CABLES SHALL BE 5/8" DIA. WITH A WORKLOAD RATING OF 4.88 TONS AT A 4-TO-1 SAFETY FACTOR (19.5 TONS ULTIMATE LOAD). SHACKLES FOR THE VERTICAL HANGERS SHALL BE 1/2" DIA. WITH A WORKLOAD RATING OF 3 TONS AT A 4-TO-1 SAFETY FACTOR (12 TONS ULTIMATE LOAD).
12. IN ORDER TO PREVENT DAMAGE TO THE MAIN HORIZONTAL PLATFORM CABLES, SECTIONS OF RUBBER BLAST HOSE SHALL BE INSTALLED AS A AT EACH LOCATION WHERE THE MAIN CABLES AND/OR ATACHMENT SLINGS COME IN CONTACT WITH THE BRIDGE GIRDERS AND BEARINGS.
13. THE ENTIRE PLAN VIEW AREA OF THE CHAIN-LINK PLATFORM SHALL BE COVERED WITH 100% IMPERMEABLE TARPAULINS TO CONTAIN THE SPENT ABRASIVES AND ALLOW FOR VACUUMING. THE BASE OF THE TARPAULIN WALLS AROUND THE ENTIRE PERIMETER OF THE CONTAINMENT WILL BE SEALED BY ROLLING AND CLAMPING THE FLOOR AND WALL TARPAULINS TO EACH OTHER AND TO THE FENCE FLOOR. SNAP CLIPS OR ROPE TIES WILL BE USED ALONG EVERY PLATFORM CABLE, AS REQ'D, TO SECURE THE FLOOR TARPS AND KEEP THE WIND FROM LIFTING THE TARPAILINS DURING WORK.
14. NORTH STAR PAINTING WILL UTILIZE ONE OR MORE WORKERS, AS REQUIRED, TO CONTINUOUSLY VACUUM THE STEEL ABRASIVE FROM THE CONTAINMENT FLOOR TO MINIMIZE BUILD-UP AND REDUCE SAG OF THE SUPPORT CABLES AND FENCING.
15. ALL CABLES, CLIPS, SHACKLES AND OTHER HARDWARE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES.
16. NORTH STAR PAINTING SHALL INSPECT THE SUSPENDED PLATFORMS ON A DAILY BASIS TO ENSURE THE INSTALLATION IS SOUND AND VOID OF ANY DAMAGED OR LOOSE COMPONENTS. THE DAILY INSPECTIONS SHOULD INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

* CHECK ALL FENCING FOR LOOSE PANELS. SECURE WITH CLIPS OR ROPE TIES, AS REQ'D
* CHECK ALL VERTICAL HANGERS FOR PROPER INSTALLATION
* CHECK THE PLATFORM FOR TEARS IN THE FLOOR TARPAULINS OR AREAS WHERE THE WALL TARPS HAVE PULLED AWAY FROM THE PLATFORM
* CHECK FOR REQUIRED INSTALLATION OF WORKER SAFETY TIE-OFF CABLES, WHERE REQ'D
* CHECK ALL CONNECTIONS FOR COMPLIANCE WITH THE PLATFORM INSTALLATION PLANS

CABLE CLIP INSTALLATION

CABLE DIA.	MIN. CABLE TURNBACK, IN.	# CLIPS W/O SNATCHBLOCK	# CLIPS W/ SNATCHBLOCK	NOTES
5/16"	5"	2	N/A	SAFETY TIE-OFF CABLES
1/2"	11"	3	4	CABLE LOOP HANGERS
5/8"	14"	3	4	PLATFORM CABLES

STATE OF VERMONT — JAMES T. MONTAG — No. 3181 — REGISTERED PROFESSIONAL ENGINEER

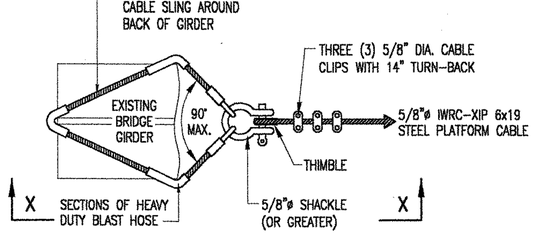
P.E. SEAL

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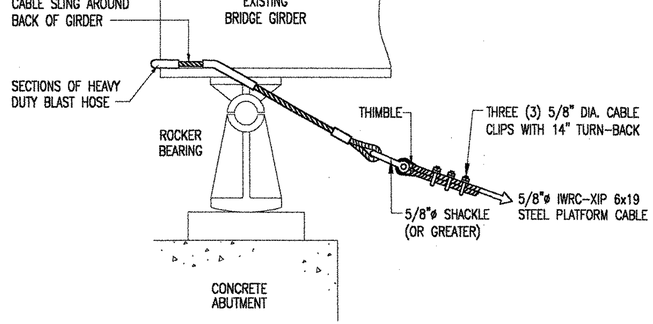
NORTH STAR PAINTING COMPANY

STATE OF VERMONT AGENCY OF TRANSPORTATION
CONTRACT IR 089-1(13) WINDSOR COUNTY
RTE. I-89 over THE WHITE RIVER, VT. 14 & NECR
SUSPENDED PLATFORM INSTALLATION 119

CDI JOB NO.	DATE	DWG. NO.	
21-11	1-22-00	PL-1	0

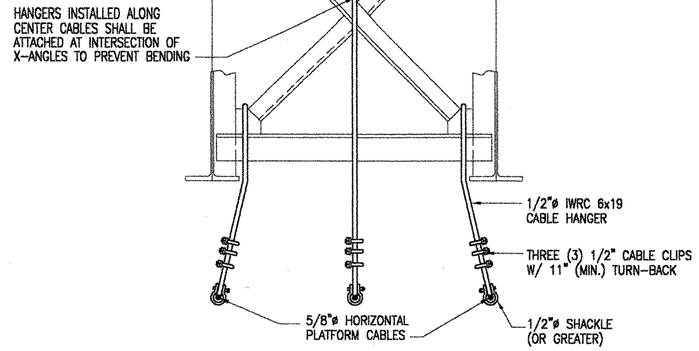


PLAN VIEW

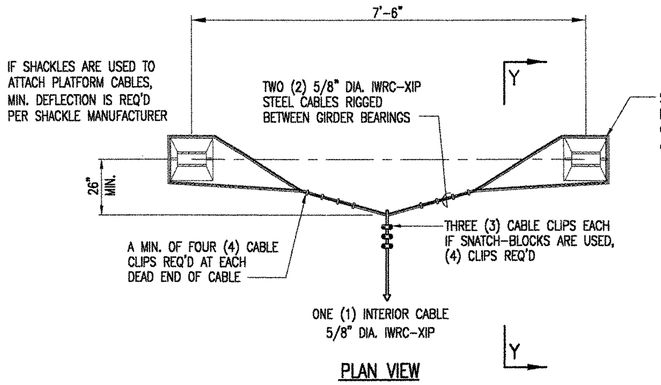


SECTION X-X

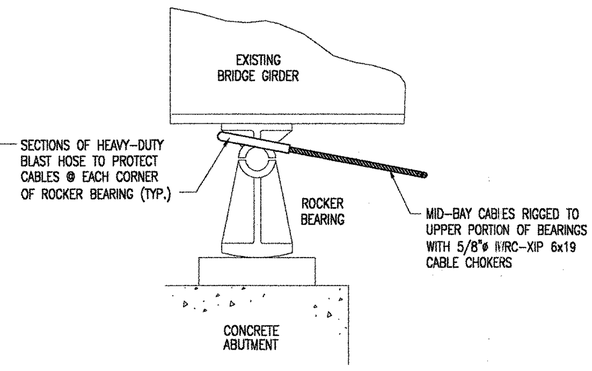
DETAIL #2A
CABLE ATTACHMENT @ ABUTMENTS
NOT-TO-SCALE



DETAIL #2B
TYPICAL SUPPORT HANGER
NOT-TO-SCALE

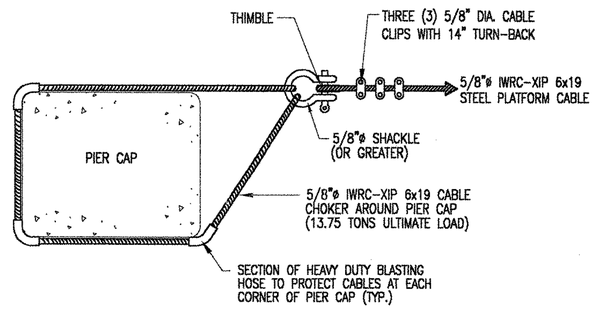


PLAN VIEW

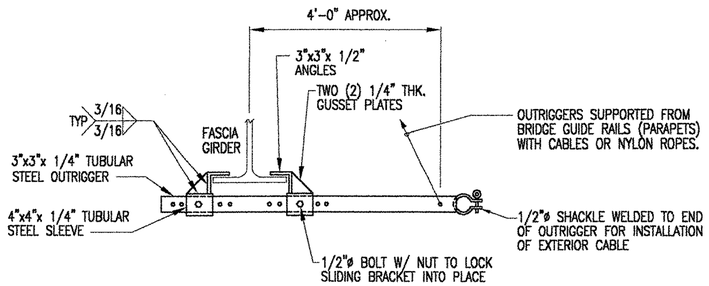


SECTION Y-Y

DETAIL #2C
MID-BAY CABLE ATTACHMENT
NOT-TO-SCALE



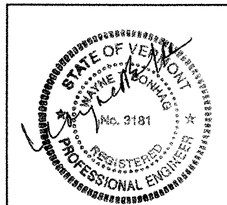
DETAIL #2D
ALTERNATE MID-CABLE ATTACHMENT
NOT-TO-SCALE



DETAIL #2E
OUTRIGGER DETAIL
NOT-TO-SCALE

FABRICATION NOTES:

1. ALL STRUCTURAL TUBE STEEL SHALL CONFORM TO ASTM A500 GRADE B, WITH A MINIMUM Fy=46 KSI AND Ft=58 KSI.
2. ALL STRUCTURAL SHAPES AND PLATES SHALL CONFORM TO ASTM A36, WITH A MINIMUM Fy=36 KSI.
3. ALL BOLTS TO BE ASTM A-325.
4. ALL WELDS SHALL BE MINIMUM 3/16" FILLET, UNLESS OTHERWISE NOTED.
5. STEEL FABRICATION AND INSTALLATION SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION, 9TH EDITION.
6. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE AWS STRUCTURAL WELDING CODE.



P.E. SEAL

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STATE OF VERMONT AGENCY OF TRANSPORTATION
CONTRACT IR 089-1(13) WINDSOR COUNTY
RTE. I-89 over THE WHITE RIVER, VT. 14 & NECR
SUSPENDED PLATFORM DETAILS 120

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2. THE ABRASIVE BLASTING CONTAINMENT SYSTEMS UTILIZED ON THIS PROJECT ARE REQUIRED TO LIMIT WORKER EXPOSURE TO LEAD CONCENTRATIONS TO 50 MICROGRAMS OR LESS OVER AN 8-HOUR PERIOD. THIS PERMISSIBLE EXPOSURE LIMIT (PEL) WILL BE ACHIEVED THROUGH IMPLEMENTATION OF PROPER ENGINEERING CONTROLS AND WORK PRACTICES. IF THE PEL CANNOT BE REASONABLY ACHIEVED BY THESE MEANS, APPROPRIATE RESPIRATORY PROTECTION MUST BE UTILIZED AS A SUPPLEMENTARY MEASURE IN ORDER TO MEET THE PEL.

3. THE CONTRACTOR WILL UTILIZE HAT-MOUNTED LIGHTS AND SPOTLIGHTS MOUNTED ON THE BLAST NOZZLES TO PROVIDE LIGHT FOR ABRASIVE BLASTING, PAINTING AND INSPECTION. IN THE EVENT THE LIGHTING LEVEL WITHIN THE CONTAINMENT DROPS BELOW THE MINIMUM REQUIRED 10 FOOT-CANDLES (535 LX) FOR WORK OPERATIONS AND/OR 30 FOOT-CANDLE (1605 LX) FOR INSPECTION, AN AUXILIARY LIGHTING SYSTEM COMPRISED OF MULTIPLE LAMPS WILL BE INSTALLED WITHIN THE CONTAINMENT TO MEET THE MINIMUM REQUIREMENTS.

4. A MULTI-STAGE DECONTAMINATION TRAILER WILL BE PROVIDED FOR THE DURATION OF THIS PROJECT, AND WILL BE LOCATED AT AN APPROPRIATE SITE DETERMINED IN THE FIELD.

5. ALL SPENT ABRASIVES AND PAINT DEBRIS SHALL BE CONSIDERED HAZARDOUS, AND SHALL BE DISPOSED OF IN ACCORDANCE WITH AL FEDERAL, STATE AND LOCAL REGULATIONS.

6. AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL THOUROUGHLY COLLECT AND REMOVE ALL SPENT ABRASIVES AND WASTE DEBRIS GENERATED DURING HIS OPERATIONS.

7. ALL PAINT REMOVAL WASTE GENERATED DURING THIS PROJECT SHALL BE STORED AT AN OWNER APPROVED SITE. ALL WASTE DEBRIS SHALL BE SEALED IN 55 GALLON DRUMS AND COVERED WITH TARPAULINS. BULK CONTAINERS MAY ONLY BE USED IF THE HAZARDOUS WASTE IS PACKAGED IN SEALED BAGS PRIOR TO DUMPING INTO THE BULK CONTAINERS. THE STORAGE SITE SHALL BE LOCATED SO AS NOT TO IMPOSE A TRAFFIC AND/OR SAFETY HAZARD. THE DESIGNATED AREA SHALL BE PROPERLY DRAINED AND RUN-OFF WILL NOT BE PERMITTED TO POND AROUND OR NEAR THE SEALED WASTE CONTAINERS.

8. MAINTENANCE AND PROTECTION OF TRAFFIC DURING THIS PROJECT SHALL BE PROVIDED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS AND TRAFFIC CONTROL PLANS INCLUDED AS PART OF THE CONTRACT PROPOSAL. LANE CLOSURES SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFIED LANE RESTRICTIONS.

9. THE SUSPENDED PLATFORM AND/OR CONTAINMENT DRAWINGS WILL WORK IN CONJUNCTION WITH THE APPROVED TRAFFIC CONTROL PLANS (SUBMITTED SEPARATELY). THE CONTRACTOR SHALL COORDINATE THE DIFFERENT PHASES OF HIS WORK AND ALL LANE CLOSINGS WITH THE ENGINEER.

B. CONTAINMENT ENCLOSURE

1. ALL ABRASIVE BLASTING CONTAINMENTS WILL BE CONSTRUCTED OF 100% IMPERMEABLE, FIRE RESISTANT TARPAULINS, INCLUDING GROUND COVER, SIDEWALLS AND ENDWALLS. ADJACENT TARPAULIN PANELS WILL BE FASTENED TOGETHER BY ROLLING AND CLAMPING OR BY CLAMPING LUMBER STRIPPING TO CREATE A CONTINUOUS SEAL (TAPE AND/OR CAULKING, AS REQ'D). A MINIMUM 24" OVERLAP SHALL BE USED BETWEEN TARPAULINS.

2. DUE TO EXISTING SITE CONDITIONS, MINOR FIELD MODIFICATIONS FROM THE SUBMITTED CONTAINMENT PLANS MAY BE REQUIRED. MODIFICATIONS MAY INCLUDE EXACT LOCATIONS OF THE BULKHEADS AND/OR DUCTWORK, LOCATION OF EQUIPMENT, AND OVERALL ENCLOSURE DIMENSIONS. ANY FIELD MODIFICATION SHALL NOT SIGNIFICANTLY ALTER THE OVERALL DIMENSIONS AND/OR OPERATION OF THE PROPOSED SYSTEM DESIGN.

3. THE UPPER PORTIONS OF EACH CONTAINMENT SHALL BE SEALED ALONG EACH SIDE AND BETWEEN THE BRIDGES AS DETAILED ON DWG D-2. THE CONTRACTOR MAY UTILIZE ANY APPROPRIATE METHOD AVAILABLE TO PROPERLY SEAL THE UPPER CONTAINMENT AGAINST DUST EMISSIONS (ABRASIVE BLASTING) AND/OR RELEASE OF WATER (WASHING OPERATIONS).

4. FOR BRIDGE-TO-GRADE TYPE CONTAINMENTS (IF UTILIZED), THE BASE OF THE VERTICAL TARPAULIN WALLS WILL BE SEALED AROUND THE ENTIRE PERIMETER USING SANDBAGS OR SIMILAR WEIGHTS. FOR HIGHLY ELEVATED STRUCTURES, THE CONTRACTOR MAY UTILIZE VERTICAL CABLES SUPPORTED BY 55-GALLON DRUMS FILLED WITH CONCRETE OR GRAVEL TO AID IN SUPPORTING THE VERTICAL TARPAULIN WALLS.

5. FOR SUSPENDED PLATFORM ENCLOSURES (IF UTILIZED), THE BASE OF THE TARPAULIN WALLS WILL BE SECURED TO THE PLATFORM AND ADEQUATELY SEALED AROUND THE ENTIRE PERIMETER OF THE ENCLOSURE, USING APPROPRIATE METHODS, TO PROPERLY SEAL THE CONTAINMENT AGAINST EMISSIONS.

6. THE AREAS BETWEEN THE BRIDGE MEMBERS (I.E.. GIRDERS, STRINGERS. CHORDS) AT EACH END OF THE CONTAINMENTS WILL BE CLOSED USING 2"x4" LUMBER FRAMING COVERED WITH RIGID PLYWOOD PANELS OR TARPAULINS. REFER TO THE GIRDER BAY ENCLOSURE DETAIL ON DWG D-2.

7. IF WATER-WASHING IS TO BE PERFORMED PRIOR TO BLAST CLEANING, THE CONTAINMENTS MAY UTILIZE 85% TARPAULIN MATERIALS (MESH OR SCREEN) TO CONSTRUCT THE SIDE-WALLS AND END-WALLS. 100% WATER-RESISTANT GROUND TARPAULINS SHALL BE INSTALLED OVER THE ENTIRE AREA OF EACH CONTAINMENT TO CONTAIN THE WASTEWATER AND ALLOW FOR VACUUMING.

8. IN ORDER TO PREVENT DAMAGE AND/OR FAILURE OF THE TARPAULIN CONTAINMENT SYSTEMS, THE MAXIMUM WIND VELOCITY UNDER WHICH ABRASIVE BLASTING OPERATIONS MAY BE PERFORMED SHALL NOT EXCEED 40 MPH, OR AS SPECIFIED IN THE CONTRACT DOCUMENTS. IF WINDS IN EXCESS OF 40 MPH ARE FORE-CASTED, THE PAINT REMOVAL OPERATIONS WILL BE SUSPENDED AND THE TARPAULIN WALLS DISMANTLED, ROLLED AND SECURED IN-PLACE.

9. WHEN ABRASIVE BLASTING IS PERFORMED NEAR THE TARPAULIN WALLS OF THE ENCLOSURE, THE ABRASIVE BLAST SHOULD BE DIRECTED AWAY FROM THE TARP WALL TO REDUCE THE POTENTIAL FOR DAMAGING THE ENCLOSURE. WHEN WORK IS PERFORMED NEAR AN INLET OPENING, THE OPENING SHALL BE TEMPORARILY SEALED TO MINIMIZE THE POTENTIAL FOR EMISSIONS.

10. CONSTRUCTION OF ALL TARPAULIN CONTAINMENTS WILL BE DONE IN SUCH A MANNER TO DIRECT THE TOTAL FLOW OF AIR TO PASS THROUGH THE ENTIRE LENGTH OF THE CONTAINMENT. THE TARPAULIN SIDEWALLS AND FLOORING MUST BE SEALED IN A SUFFICIENT MANNER TO PREVENT EXCESSIVE LEAKS BETWEEN PANELS. THE ENDS OF THE CONTAINMENT MUST BE SEALED WITH PLYWOOD OR TARPAULIN BULKHEADS TO PREVENT SHORT-CIRCUITING OF AIR DIRECTLY TO THE EXHAUST DUCTS.

C. VENTILATION SYSTEM

1. THE CONTRACTOR WILL PROVIDE MECHANICAL EXHAUST VENTILATION FOR THE ABRASIVE BLASTING CONTAINMENTS USING ONE OR MORE MOBILE DUST COLLECTORS. REFER TO THE FAN CURVE AND SYSTEM STATIC PRESSURE CALCULATIONS ON THIS DRAWING FOR THE ESTIMATED EXHAUST CAPACITY USED TO SIZE THE ABRASIVE BLASTING CONTAINMENTS FOR THIS PROJECT.

2. THE MAIN OBJECTIVES FOR UTILIZING NEGATIVE AIR EXHAUST VENTILATION IS TO CONTAIN AIRBORNE PARTICULATE WITHIN THE CONTAINMENT AND PROVIDE AIRFLOW THROUGH THE WORK AREAS. FOR THE ABUTMENT SPAN CONTAINMENTS (IF APPLICABLE), PLACING THE EXHAUST DUCTS AT THE ABUTMENT WALLS AT RELATIVELY THE SAME ELEVATION AS THE INLET AIR OPENINGS BETWEEN THE GIRDERS WILL IMPROVE VENTILATION BY PROVIDING INCREASED AIRFLOW THROUGH THE WORK AREAS.

3. CROSS-DRAFT (HORIZONTAL) VENTILATION DESIGNED FOR 100 FT/MIN AND/OR DOWN-DRAFT (VERTICAL) VENTILATION DESIGNED FOR 60 FT/MIN WILL BE PROVIDED THROUGH EACH OF THE ABRASIVE BLASTING CONTAINMENTS. AIR WILL BE DRAWN INTO EACH ACTIVE ENCLOSURE THROUGH PASSIVE INLET AIR OPENINGS OR FORCED-AIR (COMPRESSED AIR HORNS) PROVIDED AT THE OPPOSITE END OF THE CONTAINMENT FROM THE EXHAUST DUCTS.

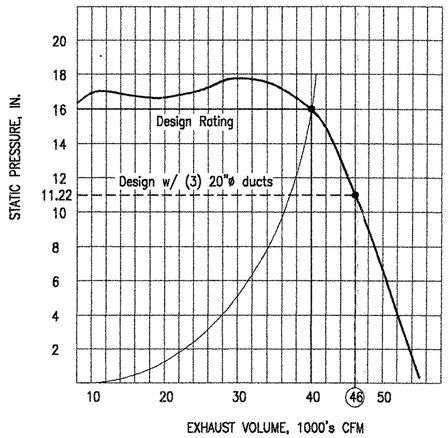
4. ALTHOUGH SSPC RECOMMENDS A MINIMUM DOWN-DRAFT VELOCITY OF 60 FT/MIN FOR CONTAINMENTS UP TO 400 SQ.FT, THE GUIDELINES ALSO PERMIT A REDUCTION IN THE AIRFLOW VELOCITY AS THE PLAN VIEW AREA OF THE CONTAINMENT INCREASES (REFER TO SECTION 5.4.4.1 OF SSPC GUIDE 6). IN THE EVENT THE PROPOSED PLAN VIEW AREAS OF THE CONTAINMENTS TO BE INSTALLED ON THIS PROJECT ARE GREATER THAN THE SPECIFIED 400 SQ.FT, A REDUCED DOWN-DRAFT AIRFLOW VELOCITY MAY BE SUFFICIENT TO PROVIDE PROPER VENTILATION.

5. IN THE EVENT THE EXHAUST VENTILATION SYSTEM IS UNABLE TO ADEQUATELY REMOVE AIRBORNE PARTICULATE AND/OR CONTAIN THE DUST GENERATED DURING BLASTING, INTERNAL TARPAULIN DIVIDER WALLS CLAMPED TO THE BOTTOM FLANGES OF THE BRIDGE GIRDERS MAY BE REQUIRED TO SEGMENT THE MAIN CONTAINMENT INTO SMALLER "ACTIVE" ENCLOSURES. THE REDUCED CROSS-SECTIONAL AREA WILL RESULT IN AN INCREASED AIRFLOW VELOCITY THROUGH THE WORKING ENCLOSURE.

6. IN LEIU OF SEGMENTING THE MAIN CONTAINMENT INTO SMALLER ENCLOSURES (PERVIOUS NOTE), THE CONTRACTOR MAY OPT TO INCREASE THE CAPACITY OF EXHAUST VENTILATION BY UTILIZING ADDITIONAL DUST COLLECTORS AND FLEXIBLE EXHAUST DUCTS.

7. AIRFLOW THROUGH THE WORK AREAS MAY BE IMPROVED BY INSTALLING THE EXHAUST DUCTS AND INLET AIR OPENINGS AT APPROXIMATELY THE SAME ELEVATION NEAR / WITHIN THE BRIDGE STEEL. THIS CONFIGURATION WILL RESULT IN A GREATER AIRFLOW VELOCITY PAST THE WORKERS AND THROUGH THE BRIDGE STEEL, WHICH IS WHERE THE ELEVATED VELOCITY IS DESIRED TO REDUCE WORKER EXPOSURE TO AIRBORNE PARTICULATE.

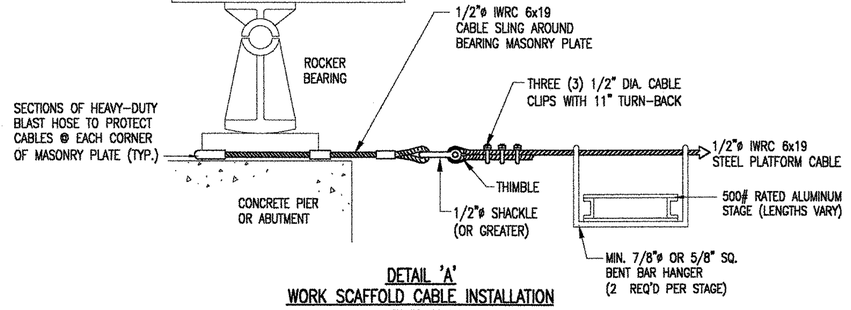
D. ENTECH INC.
MODEL ET-40 MOBILE DUST COLLECTOR



SYSTEM STATIC PRESSURE ESTIMATE

BASED ON (3) 20" DIA. EXAUST DUCTS @ 15,333 CFM PER DUCT

* 50-FT SECTION OF 20" DIA. DUCT @ 2.87"/100'	1.44" W.G.
* (3) 90° ELBOWS @ 46 EQUIV. L.F. EACH	3.96" W.G.
* LOSS THRU CONTAINMENT	1.82" W.G.
* LOSS THRU FABRIC FILTERS	4.00" W.G.
TOTAL ESTIMATED SYSTEM STATIC PRESSURE	**11.22" W.G.**
TOTAL AVAILABLE EXHAUST CAPACITY	46,000 CFM



DETAIL 'A'
WORK SCAFFOLD CABLE INSTALLATION
NOT-TO-SCALE

WORK SCAFFOLD CABLE DESIGN

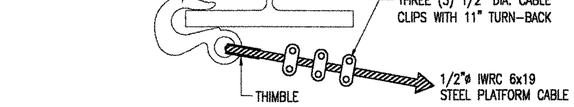
1. ALL WORK SCAFFOLD SUPPORT CABLES, INCLUDING HORIZONTAL CABLES, CABLE CHOKER HANGERS AND BEARING PLATE ATTACHMENT SLINGS SHALL BE MIN. 1/2" DIA. IWRC 6x19 IMPROVED PLOW STEEL WITH A DESIGN BREAKING STRENGTH OF 11.5 TONS.

2. HORIZONTAL CABLES SHALL BE SUPPORTED FROM THE BRIDGE CROSS-BRACING AND/OR DIAPHRAGMS AT 25'-0" MAXIMUM INTERVALS AND INSTALLED WITH A MINIMUM SAG OF 7" BETWEEN HANGERS.

3. SHACKLES FOR THE HORIZONTAL SUPPORT CABLES AND CABLE CHOKER HANGERS SHALL BE MINIMUM 1/2" DIA. WITH A WORKING LOAD OF 2 TONS (12 TONS ULTIMATE LOAD).

4. ALL CABLES AND SHACKLES TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DESIGN OF CABLE SUPPORT SYSTEM INCLUDES ALL OSHA SAFETY FACTORS REQUIRED FOR SUSPENDED SCAFFOLDING. REFER TO DETAIL ABOVE FOR TYPICAL SCAFFOLD SUPPORT CABLE INSTALLATION.

5. MIN. 5/16" DIA. IWRC WORKER SAFETY TIE-OFF CABLES (MIN. 5000# RATING) AND WORKER HARNESSES WILL BE UTILIZED DURING ALL WORK, IN ACCORDANCE WITH THE LATEST OSHA GUIDELINES. SAFETY TIE-OFF CABLES SHALL BE INSTALLED AT MAX. 12'-0" SPACINGS.



DETAIL 'B'
ALUMINUM SCAFFOLD CABLE INSTALLATION
(ALTERNATE)
NOT-TO-SCALE

STATE OF VERMONT
WAYNE T. MONLUX
No. 3181
REGISTERED PROFESSIONAL ENGINEER

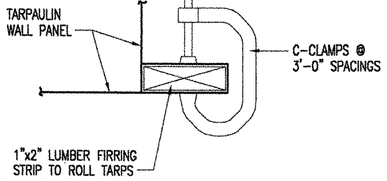
P.E. SEAL

Containment Design, Inc.
1260 Prospect Road ◦ Pittsburgh, PA 15227 ◦ Phone: (412) 882-9046 ◦ Fax: (412) 884-8091

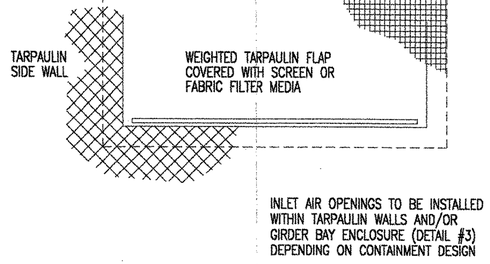
NORTH STAR PAINTING COMPANY

STATE OF VERMONT AGENCY OF TRANSPORTATION
CONTRACT IR 089-1(13) WINDSOR COUNTY
ABRASIVE BLASTING CONTAINMENT PROPOSAL
GENERAL CONTAINMENT SPECIFICATIONS 121

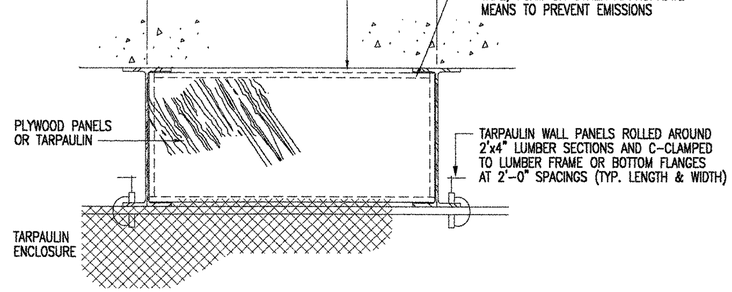
CDI JOB NO.	DATE	DWG. NO.	
21-11	1-22-00	D-1	0



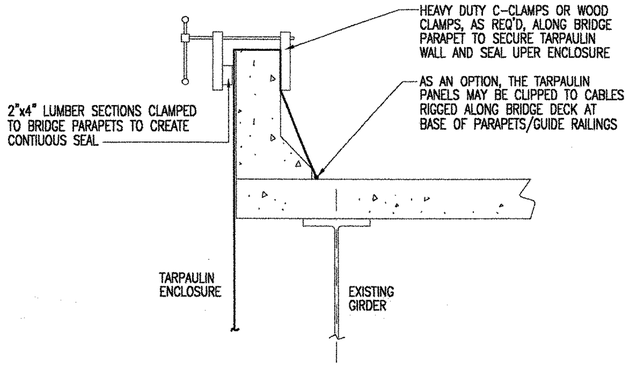
DETAIL #1
ADJACENT TARPAULIN
CONNECTION
NOT-TO-SCALE



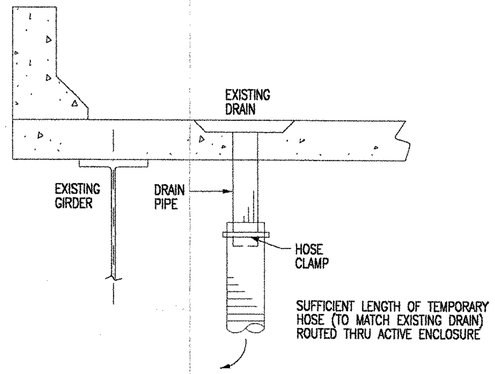
DETAIL #2
INLET AIR OPENING
NOT-TO-SCALE



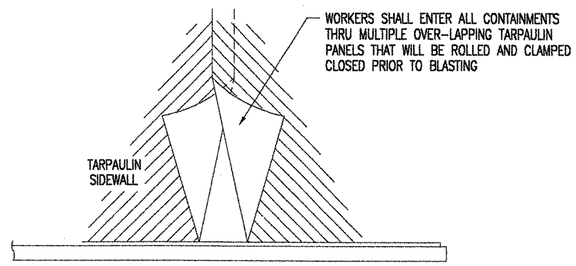
DETAIL #3
GIRDER BAY ENCLOSURE
NOT-TO-SCALE



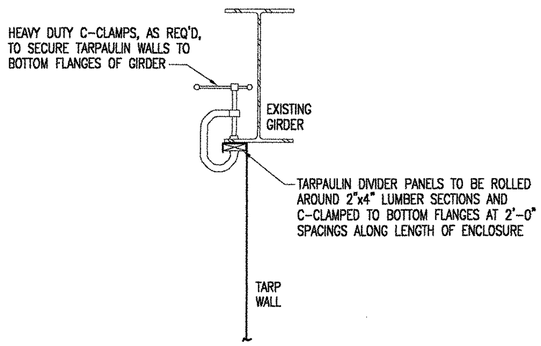
DETAIL #4
UPPER ENCLOSURE
NOT-TO-SCALE



DETAIL #5
TEMPORARY BRIDGE DRAINS
NOT-TO-SCALE



DETAIL #6
CONTAINMENT ENTRYWAY
NOT-TO-SCALE



DETAIL #7
TARPAULIN DIVIDER WALL
NOT-TO-SCALE

STATE OF VERMONT
WAYNE T. BONHAG
No. 9181
REGISTERED
PROFESSIONAL ENGINEER

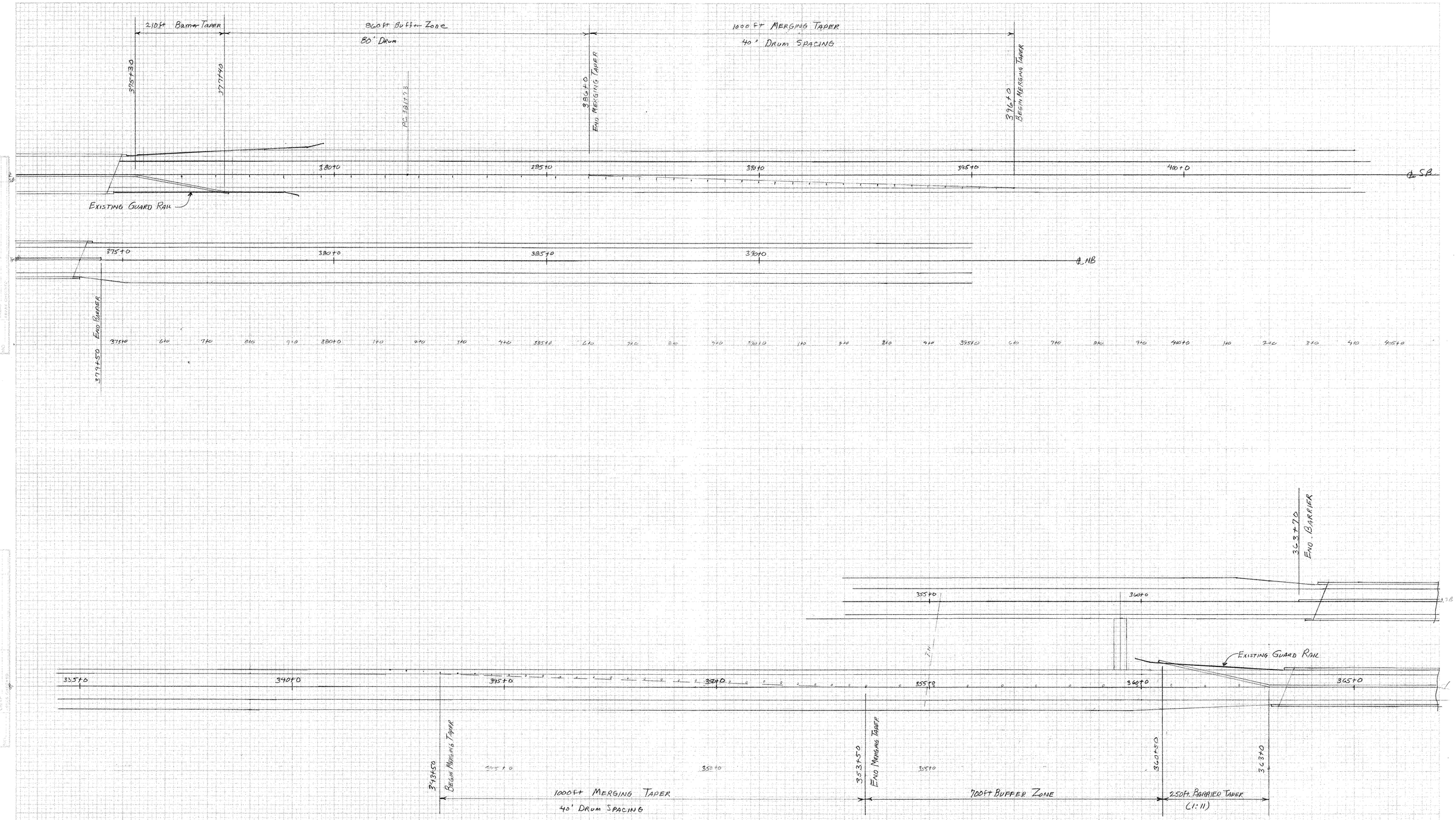
P.E. SEAL

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NORTH STAR PAINTING COMPANY

STATE OF VERMONT AGENCY OF TRANSPORTATION
CONTRACT IR 089-1(13) WINDSOR COUNTY
ABRASIVE BLASTING CONTAINMENT PROPOSAL
TYPICAL INSTALLATION DETAILS 122

CDI JOB NO.	DATE	DWG. NO.	
21-11	1-22-00	D-2	0



HARTFORD
IMIR089-1(13)
TRAFFIC CONTROL FOR
BRIDGE PAINTING (2001)
123

PLATE 3-FULL CROSS SECTION-FIELD LINE

450

359+0

450

358+50

450

358+0

450

357+50

450

357+0

450

DI

356+50

450

440

356+50 | 357+0 | +50 | 358+0 | +50 | 359+0 | +15

e: RT
SB
0 | 20 | 42

e: RT
NB
98

ORIGINAL SURVEY
DATE
BY
NOTE BOOK
SHEET
PAGE
DESCRIPTION

HIGHWAY RESEARCH RECORD
PLATE 3-FULL CROSS SECTION-FULL LINE
PRINTED BY U.S.A.