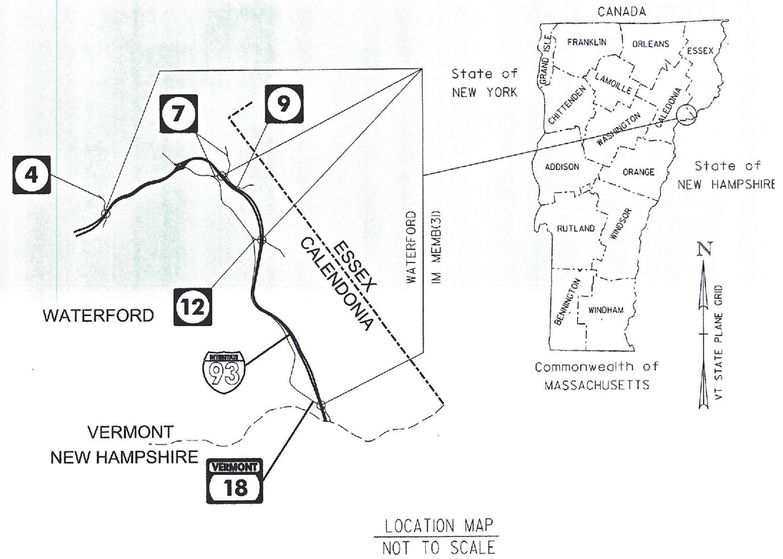
INDEX OF SHEETS

SEE SHEET 2

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF WATERFORD
COUNTY OF CALEDONIA
PROJECT IM MEMB(31)



LOCATION MAP
NOT TO SCALE

ROUTE NO.: INTERSTATE I-93
TH NO. 4 (DANIELS FARM ROAD)

BRIDGE NO.: 1N&S, 3N&S, 5N&S, 8

PROJECT LOCATION: BR 1N&S OVER VT 18 (MM 0.367)
BR 3N&S OVER TH NO. 12 (OLD COUNTY ROAD) (MM 4.60)
BR 5N&S OVER TH NO. 7 (WALSH ROAD) (MM 6.385)
BR 8 OVER I-93 (MM 9.53) (T.H. NO. 4 - DANIELS FARM ROAD)

PROJECT DESCRIPTION: THIS PROJECT INVOLVES REMOVING AND REPLACING THE SHEET MEMBRANE WATERPROOFING AND BITUMINOUS CONCRETE PAVEMENT ON THE BRIDGE AND ITS APPROACHES ALONG WITH MINOR RELATED WORK.

LENGTH OF STRUCTURES:

BR 1N	204.88'
BR 1S	170.91'
BR 3N	113.04'
BR 3S	113.08'
BR 5N	109.16'
BR 5S	108.96'
BR 8	306.44'

TOTAL LENGTH OF STRUCTURES: 1126.47'

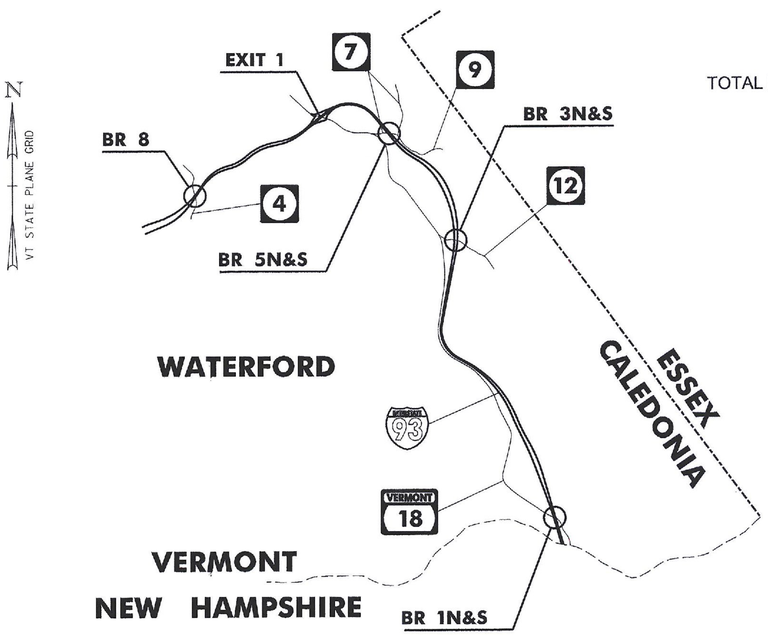
QUALITY ASSURANCE PROGRAM: LEVEL I

SURVEYED BY : N/A
SURVEYED DATE : N/A

DATUM
VERTICAL N/A
HORIZONTAL N/A

CONVENTIONAL SYMBOLS

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



RECORD PLANS

CONTRACTOR: J.P. SICARD, INC. – BARTON, VT
RESIDENT ENGINEER: JAY STRONG
CONSTRUCTION BEGAN: JULY 5, 2012
CONSTRUCTION COMPLETE: SEPTEMBER 27, 2014
RECORD PLANS BY: JAY STRONG & CRAIG PIERCE

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

BY _____ RESIDENT ENGINEER
DATE 10/8/2015

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found by contacting Vtrans Records Management.

STATE OF VERMONT
JOHN F. BRATT
Structural
LICENSED
PROFESSIONAL ENGINEER
3/14/12

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

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

PLANS PREPARED BY:

CONSULTING ENGINEERS
CLD Inc.
540 Commercial Street Manchester, NH 03101
(603) 668-8223 • Fax: (603) 668-8802
email: cld@cldengineers.com • www.cldengineers.com
Maine • New Hampshire • Vermont

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED _____ DATE 4/2/12
PROJECT MANAGER : DOUGLAS BONNEAU

PROJECT NAME : **WATERFORD**
PROJECT NUMBER : IM MEMB(31)

SHEET 1 OF 48 SHEETS

INDEX OF SHEETS

VAOT STANDARD SHEETS

01/02/04	E-100	CONSTRUCTION APPROACH SIGNS
01/02/04	E-100A	SIDE ROAD CONSTRUCTION APPROACH SIGNS
05/30/03	E-101	CONSTRUCTION SIGN DETAILS
06/30/03	E-102	CONSTRUCTION SIGN DETAILS
05/01/04	E-102A	CONSTRUCTION SIGN DETAILS
03/01/04	E-103	MAINLINE TRAFFIC CONTROL DIVIDED HIGHWAY ONE LANE CLOSED
03/01/04	E-106	TRAFFIC CONTROL MISCELLANEOUS DETAILS
06/30/03	E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS
06/08/09	E-107A	BREAKAWAY BARRICADE DETAILS
06/08/09	E-108A	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS FOR PAVING
08/08/95	E-110	MAJOR MAINTENANCE OPERATION LANE CLOSURE
08/08/95	E-120	STANDARD SIGN PLACEMENT EXPRESSWAY AND FREEWAY
08/08/95	E-121	STANDARD SIGN PLACEMENT CONVENTIONAL ROAD

PROJECT NOTES

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2006 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2010, AND ITS LATEST REVISIONS.

2. ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS.

3. ALL COSTS ASSOCIATED WITH PROTECTION OF TRAFFIC DURING REMOVAL OF THE BRIDGE PAVEMENT WILL BE INCIDENTAL TO ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT".

4. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE PIERS AND THE UNDERSIDE OF THE DECK. THIS WORK WILL BE PAID FOR UNDER ITEM 514.10, "WATER REPELLENT, SILANE".

5. FOLLOWING THE COMPLETION OF ALL OTHER CONSTRUCTION ACTIVITIES, ALL FABRIC DRAIN TROUGHS, DOWNSPOUTS AND SCUPPERS WITHIN THE LIMITS OF CONSTRUCTION AS SHOWN ON THE BITUMINOUS CONCRETE REMOVAL PLAN, SHALL BE THOROUGHLY FLUSHED BY THE CONTRACTOR. COST FOR FLUSHING THE FABRIC DRAIN TROUGHS, DOWNSPOUTS AND SCUPPERS WILL BE INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.

6. A 25-FOOT SECTION OF BRIDGE APPROACH RAIL (WOOD POSTS) SHALL BE REMOVED AND REPLACED AT THE NORTHWEST CORNER OF BRIDGE NO. 5N (ADJACENT TO WINGWALL #3). THE REMOVAL AND REPLACEMENT OF THE RAIL SHALL BE PAID FOR UNDER ITEM 900.640, "SPECIAL PROVISION (REMOVE AND REPLACE EXISTING APPROACH RAILING)". SEE STANDARD SB-R4B-82 ON SHEET 12A.

3N

TRAFFIC CONTROL

7. THE TRAFFIC CONTROL PLANS SHOWN ON TRAFFIC CONTROL SHEETS 1, 2, AND 3 ARE SCHEMATICS ONLY AND SHOULD BE USED AS REFERENCES. THE CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS DEPICTING EACH PHASE OF THE PLANNED WORK. PLANS SHALL BE SUBMITTED IN ACCORDANCE WITH SUBSECTION 105.03 AND SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN AN APPROPRIATE DISCIPLINE IN THE STATE OF VERMONT. PAYMENT FOR PREPARING AND SUBMITTING THE TRAFFIC CONTROL PLAN AND MAKING ANY NECESSARY REVISIONS TO THE PLAN WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 641.10, "TRAFFIC CONTROL". THE CONTRACTOR SHALL ALLOW TWO WEEKS FOR APPROVAL OF THE TRAFFIC CONTROL PLAN. NO WORK SHALL COMMENCE UNTIL THE CONTRACTOR HAS AN APPROVED TRAFFIC CONTROL PLAN.

8. UNLESS COVERED UNDER INDIVIDUAL PAY ITEMS OR NOTED OTHERWISE, ALL COSTS FOR WORK SHOWN ON TRAFFIC CONTROL SHEETS AND FOR TEMPORARY TRAFFIC CONTROL DEVICES INCLUDING RETROREFLECTIVE DRUMS, SIGNS, AND SIGN POSTS WILL BE CONSIDERED TO BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR ITEM 641.10, "TRAFFIC CONTROL". THE QUANTITY FOR ITEM 630.15, "FLAGGERS" AS SHOWN ON THE QUANTITY SUMMARY SHEETS WAS ESTIMATED FOR TRAFFIC CONTROL ON ROADS UNDERNEATH THE BRIDGES DURING APPLICATION OF ITEM 514.10, "WATER REPELLENT, SILANE". ANY ADDITIONAL TRAFFIC CONTROL NECESSARY FOR ROADS UNDERNEATH BRIDGES UNDER CONSTRUCTION SHALL BE INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL".

9. TRAFFIC WILL BE ALLOWED TO DRIVE ON THE BARE CONCRETE BRIDGE DECK (EXCEPT FOR BRIDGE NO. 8) AFTER THE REMOVAL OF THE BARRIER MEMBRANE, BUT PRIOR TO THE DECK BEING CLEANED AND PREPARED FOR THE NEW SHEET MEMBRANE. ONCE THE CONCRETE BRIDGE DECK IS PREPARED FOR THE NEW SHEET MEMBRANE, NO TRAFFIC WILL BE ALLOWED ON THE NEW MEMBRANE UNTIL THE SECOND LIFT OF BITUMINOUS CONCRETE PAVEMENT IS IN PLACE.

10. TRAFFIC WILL BE ALLOWED TO DRIVE ON THE BARE CONCRETE BRIDGE DECK OF BRIDGE NO. 8 AFTER THE REMOVAL OF THE OVERLAY, BUT PRIOR TO THE DECK BEING CLEANED AND PREPARED FOR THE NEW OVERLAY. ONCE THE CONCRETE BRIDGE DECK IS PREPARED FOR THE NEW OVERLAY, NO TRAFFIC WILL BE ALLOWED ON THE NEW OVERLAY UNTIL IT HAS CURED PER THE MANUFACTURER'S SPECIFICATIONS.

CONCRETE STRUCTURE AND JOINT REPAIR

11. REPAIRS TO DETERIORATED CONCRETE CURBS ON BRIDGE NO. 1N&S AT THE WINGWALL JOINTS SHALL BE PAID FOR UNDER ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III". THE QUANTITY FOR ITEM 580.12 AS SHOWN ON THE QUANTITY SUMMARY SHEETS IS ESTIMATED.

12. REPAIRS SHALL BE MADE TO DETERIORATED AREAS OF THE BEARING SEATS ON BRIDGE NO. 3N, ABUTMENT #2, AND BRIDGE NO. 3S, ABUTMENT #4. ALL REPAIR WORK SHALL BE PAID FOR UNDER ITEM 580.15, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III". THE QUANTITY FOR ITEM 580.15 AS SHOWN ON THE QUANTITY SUMMARY SHEETS IS ESTIMATED.

13. THE BRIDGE NO. 8 ABUTMENT JOINTS SHALL REMAIN IN-PLACE. CONCRETE REPAIRS TO DETERIORATED AREAS ALONG THE JOINT ARE REQUIRED AND SHALL BE PAID FOR UNDER ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III". THE QUANTITY FOR ITEM 580.12 AS SHOWN ON THE THE QUANTITY SUMMARY SHEETS IS ESTIMATED. THE NEOPRENE COMPRESSION SEAL WITHIN EACH JOINT SHALL BE REMOVED AND REPLACED. ALL COSTS FOR REMOVAL OF EXISTING SEALS AND THE FABRICATION AND INSTALLATION OF THE REPLACEMENT SEALS SHALL BE PAID FOR UNDER ITEM 900.640, "SPECIAL PROVISION (REMOVE AND REPLACE COMPRESSION JOINT SEAL)".

PAVEMENT/OVERLAY REMOVAL AND NEW MEMBRANE/OVERLAY

14. THE FINAL ONE HALF INCH OF PAVEMENT (OR THE ¾" OVERLAY FOR BRIDGE NO. 8) ON THE CONCRETE BRIDGE DECK (AND APPROACH SLABS IF APPLICABLE) SHALL BE REMOVED BY LOADER, GRADER OR EQUIPMENT APPROVED BY THE ENGINEER. COLD PLANING TO REMOVE BRIDGE PAVEMENT WILL BE INCIDENTAL TO ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT".

15. AFTER THE REMOVAL OF THE EXISTING 216 TAMMS FLEXOLITH OVERLAY ON BRIDGE NO. 8, THE CONCRETE BRIDGE DECK SHALL BE CLEANED IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND TO THE SATISFACTION OF THE ENGINEER. THE REMOVAL OF THE EXISTING 216 TAMMS FLEXOLITH OVERLAY AND CLEANING OF THE CONCRETE DECK WILL BE PAID FOR UNDER ITEM 900.670, "SPECIAL PROVISION (SURFACE PREPARATION FOR OVERLAY)".

PAVEMENT/OVERLAY REMOVAL AND NEW MEMBRANE/OVERLAY (CONT.)

16. DURING BRIDGE (AND APPROACH SLAB IF APPLICABLE) PAVEMENT REMOVAL (OR OVERLAY FOR BRIDGE NO. 8), THE CONTRACTOR SHALL EXERCISE CARE TO INSURE THAT NO DAMAGE OCCURS TO THE EXISTING CONCRETE BRIDGE DECK (AND THE EXISTING APPROACH SLABS IF APPLICABLE). ANY DAMAGE TO THE CONCRETE BRIDGE DECK (OR APPROACH SLABS IF APPLICABLE) SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. REPAIRS SHALL BE MADE IN ACCORDANCE WITH SECTION 580.

17. CARE SHALL BE TAKEN TO PROTECT ANY SCUPPERS OR DROP INLETS AT ALL STAGES OF CONSTRUCTION. ANY DAMAGE TO THESE STRUCTURES SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AND AT THE CONTRACTOR'S EXPENSE.

18. AFTER THE REMOVAL OF THE BRIDGE PAVEMENT, THE BARRIER MEMBRANE SHALL BE REMOVED AND THE CONCRETE BRIDGE DECK (AND APPROACH SLABS IF APPLICABLE) SHALL BE CLEANED IN ACCORDANCE WITH SUBSECTION 580.04 AND TO THE SATISFACTION OF THE ENGINEER. REMOVAL OF THE BARRIER MEMBRANE AND THE CLEANING OF THE CONCRETE BRIDGE DECK WILL BE PAID FOR UNDER ITEM 580.16, "SURFACE PREPARATION FOR MEMBRANE".

19. ONCE THE BARRIER MEMBRANE IS REMOVED, ANY AREAS ON THE CONCRETE BRIDGE DECK (AND APPROACH SLABS IF APPLICABLE) THAT ARE FOUND TO BE UNSOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE METHOD FOR DETERMINING AREAS OF UNSOUND CONCRETE SHALL BE APPROVED BY THE ENGINEER. THE ENGINEER SHALL MAKE A DETERMINATION AS TO HOW TO REPAIR THE DETERIORATED PORTION OF THE CONCRETE BRIDGE DECK (AND APPROACH SLABS IF APPLICABLE) AND THE LIMITS OF THE REPAIR. THE REPAIRS SHALL BE PAID FOR UNDER ITEM 580.10, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I", ITEM 580.11, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II", OR ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III". QUANTITIES FOR ITEMS 580.10, 580.11, AND 580.12 AS SHOWN ON THE QUANTITY SUMMARY SHEETS ARE ESTIMATED.

20. ANY REPAIR WORK REQUIRING THE USE OF ITEM 580.20, "RAPID SETTING CONCRETE REPAIR MATERIAL WITH COURSE AGGREGATE" SHALL BE APPROVED BY THE ENGINEER.

21. UPON THE ENGINEER'S APPROVAL OF THE CONCRETE BRIDGE DECK'S CONDITION, AND WITH THE EXCEPTION OF BRIDGE NO. 8, ITEM 519.20, "SHEET MEMBRANE WATERPROOFING, TORCH APPLIED" SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 519. THE CONTRACTOR SHALL NOT INSTALL ITEM 519.20, "SHEET MEMBRANE WATERPROOFING, TORCH APPLIED" WHEN THE DECK CONCRETE AND/OR DECK PATCH AREAS' MOISTURE CONTENT IS ABOVE SECTION 519 SPECIFICATIONS OR MANUFACTURER'S SPECIFICATIONS, WHICHEVER IS LESS. A ¾" OVERLAY SHALL BE PLACED ON THE CONCRETE BRIDGE DECK FOR BRIDGE NO. 8. PLACEMENT OF THE OVERLAY SHALL BE PAID FOR UNDER ITEM 900.675, "SPECIAL PROVISION (BRIDGE DECK OVERLAY SYSTEM, POLY-CARB FLEXOGRID)".

PAVEMENT

22. FOLLOWING THE INSTALLATION OF THE NEW SHEET MEMBRANE WATERPROOFING ON THE CONCRETE BRIDGE DECK, THE CONCRETE BRIDGE DECK (AND THE AT-GRADE APPROACH SLABS IF APPLICABLE) SHALL BE PAVED CURB TO CURB WITH ITEM 406.27, "MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT" IN TWO 1¼" LIFTS. THE PAVEMENT SHALL BE TYPE IV FOR BOTH LIFTS, NO EXCEPTIONS.

23. NO PAVEMENT OR SHEET MEMBRANE SHALL BE PLACED ON BRIDGE NO. 8.

24. CARE SHALL BE EXERCISED TO SMOOTHLY TRANSITION THE NEW BRIDGE PAVEMENT INTO THE EXISTING PAVEMENT. ANY COLD PLANING NECESSARY FOR SHAPING BRIDGE APPROACHES SHALL BE PAID FOR UNDER ITEM 210.10, "COLD PLANING, BITUMINOUS PAVEMENT".

25. TESTING FOR PAVEMENT DENSITY WILL REQUIRE CORES OF THE PAVEMENT ON THE BRIDGE. THE COST FOR THIS WORK WILL BE INCIDENTAL TO ITEM 406.27, "MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT". ANY DAMAGE TO THE NEW SHEET MEMBRANE CAUSED BY CORING THE PAVEMENT SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AND AT THE CONTRACTOR'S EXPENSE.

26. FOR PG BINDER GRADE SEE SECTION 406 OF THE GENERAL SPECIAL PROVISIONS AND SPECIAL PROVISIONS.

27. EMULSIFIED ASPHALT SHALL BE APPLIED AT A RATE OF 0.08 GAL/SY TO ALL COLD PLANED SURFACES AND AT A RATE OF 0.03 TO 0.04 GAL/SY BETWEEN PAVEMENT LIFTS. PAYMENT SHALL BE UNDER ITEM 404.65, "EMULSIFIED ASPHALT".

28. THE CONTRACTOR SHALL INSTALL TEMPORARY PAVEMENT MARKINGS ON ALL PAVED SURFACES THAT WILL NOT HAVE THE PERMANENT MARKINGS APPLIED WITHIN 14 CALENDAR DAYS OF THE FINAL PAVING OPERATIONS AS DIRECTED BY THE ENGINEER.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES									TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
	ROADWAY	BRIDGE NO. 1N	BRIDGE NO. 3N	BRIDGE NO. 5N	BRIDGE NO. 8	FULL C.E. ITEMS	BRIDGE NO. 1S	BRIDGE NO. 3S	BRIDGE NO. 5S	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
	1								1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
		815	815	815			815	815	815	4890		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
		15.8	12.2	12.1			14.5	12.2	12.1	78.9		CWT	EMULSIFIED ASPHALT	404.65				
		290	237	235			270	237	235	1504		TON	MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT	406.27				
		1	1	1			1	1	1	6		LU	MAT DENSITY PAY ADJUSTMENT (N.A.B.I.)	406.29				
	1									1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
		17	14	28	26		16	14	24	139		GAL	WATER REPELLENT, SILANE	514.10				
		106	76	110			96	76	106	570		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
		835	461	445			697	461	444	3343		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20				
		835	461	445			697	461	444	3343		SY	REMOVAL OF BRIDGE PAVEMENT	529.10				
		42	24	23	50		35	24	23	221		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I	580.10				
		126	70	67	150		105	70	67	655		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II	580.11				
		21	3	3	14		21	3	3	68		CY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III	580.12				
			3					3		6		CY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	580.15				
		7513	4145	4003			6267	4147	3996	30071		SF	SURFACE PREPARATION FOR MEMBRANE	580.16				
		10	10	10	10		10	10	10	70		CF	RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE	580.20				
		5	5	5			5	5	5	30		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25				
		5	5	5			5	5	5	30		HR	TRUCK RENTAL	608.37				
		346	191	185	414		289	191	184	1800		HR	TRUCK-MOUNTED ATTENUATOR	608.45				
		1	1	1	2		1	1	1	8		EACH	ENERGY ABSORPTION ATTENUATOR	621.56				
		733	641	637	160		699	641	637	4148		LF	TEMPORARY TRAFFIC BARRIER	621.90				
		707	615	611	160		673	615	611	3992		LF	REMOVE AND RESET TEMPORARY TRAFFIC BARRIER	621.95				
		692	382	369	207		578	383	368	2979		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
		150	150	150	300		150	150	150	1200		HR	FLAGGERS	630.15				
						1				1		LS	FIELD OFFICE, ENGINEERS	631.10				
						1				1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
						1				1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
						3000				3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
	1									1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
		1								1		LS	TRAFFIC CONTROL (I-93 - BRIDGE NO. 1N)	641.10				
							1			1		LS	TRAFFIC CONTROL (I-93 - BRIDGE NO. 1S)	641.10				
			1							1		LS	TRAFFIC CONTROL (I-93 - BRIDGE NO. 3N)	641.10				
								1		1		LS	TRAFFIC CONTROL (I-93 - BRIDGE NO. 3S)	641.10				
				1						1		LS	TRAFFIC CONTROL (I-93 - BRIDGE NO. 5N)	641.10				
									1	1		LS	TRAFFIC CONTROL (I-93 - BRIDGE NO. 5S)	641.10				
					1					1		LS	TRAFFIC CONTROL (T.H. 4 OVER I-93 - BRIDGE NO. 8)	641.10				
		1	1	1			1	1	1	6		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
		1	1	1			1	1	1	6		EACH	PORTABLE ARROW BOARD	641.16				
		507	392	387			464	392	387	2529		LF	6 INCH WHITE LINE	646.214				
		405	314	310	1013		371	314	309	3036		LF	6 INCH YELLOW LINE	646.215				

PROJECT NAME: Waterford
PROJECT NUMBER: IM MEMB(31)

FILE NAME: s11A296qss.dgn
PROJECT LEADER: JPB
DESIGNED BY: SRB
QUANTITY SHEET #1

PLOT DATE: 03/19/2012
DRAWN BY: SRB
CHECKED BY: JPB
SHEET 3 OF 48

STATE OF VERMONT
AGENCY OF TRANSPORTATION

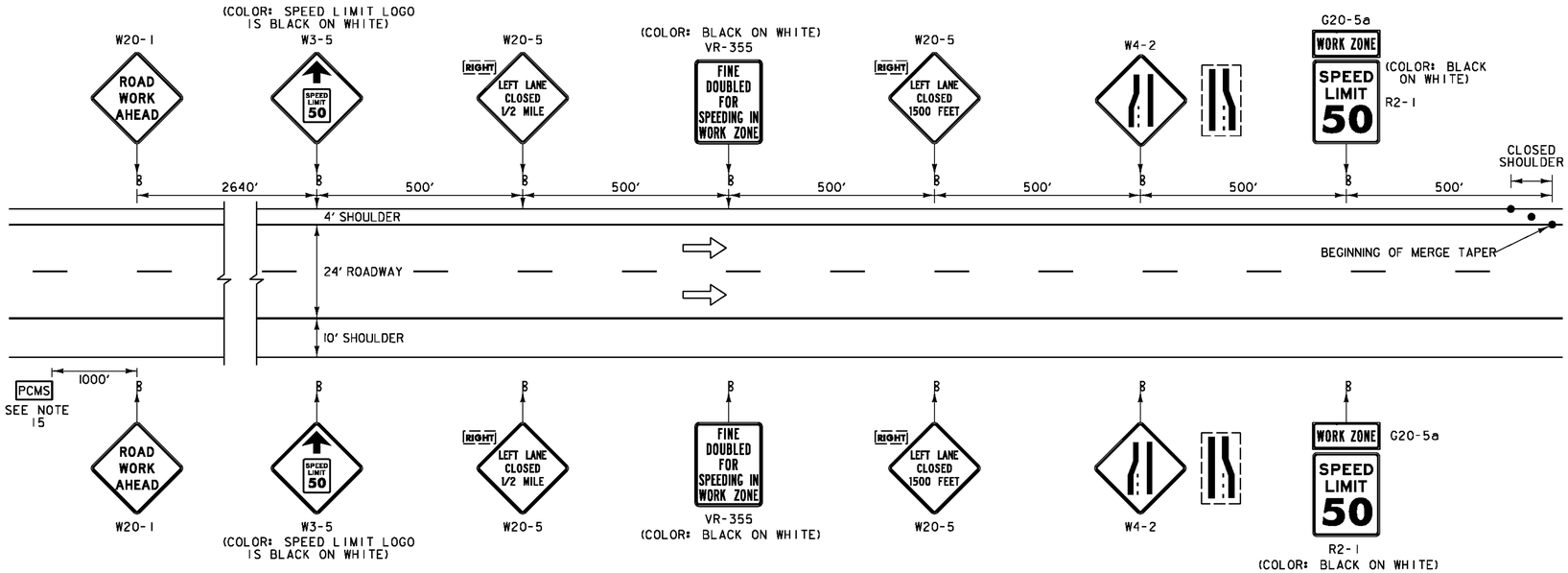
QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
	ROADWAY	BRIDGE NO. 1N	BRIDGE NO. 3N	BRIDGE NO. 5N	BRIDGE NO. 8	FULL C.E. ITEMS	BRIDGE NO. 1S	BRIDGE NO. 3S	BRIDGE NO. 5S	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
		3467	3283	3275			3399	3283	3275	19982		LF	TEMPORARY 6 INCH WHITE LINE, TYPE II TAPE	646.621				
		3467	3283	3275			3399	3283	3275	19982		LF	TEMPORARY 6 INCH YELLOW LINE, TYPE II TAPE	646.631				
					48					48		LF	TEMPORARY 24 INCH STOP BAR, TYPE II TAPE	646.681				
		174	165	164			170	165	164	1002		EACH	RAISED PAVEMENT MARKERS, TYPE II	646.75				
		1321	1275	1273	600		1304	1275	1273	8321		SF	PAVEMENT MARKING MASK	646.86				
	1									1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50				
					1					1		EACH	SPECIAL PROVISION (TEMPORARY TRAFFIC SIGNAL SYSTEM, PORTABLE)	900.620				
		17	10	9			14	10	9	69		GAL	SPECIAL PROVISION (REPOINTING GRANITE CURB)	900.625				
					76					76		LF	SPECIAL PROVISION (REMOVE AND REPLACE COMPRESSION JOINT SEAL)	900.640				
			25	~~25~~						25		LF	SPECIAL PROVISION (REMOVE AND REPLACE EXISTING APPROACH RAILING)	900.640				
					8991					8991		SF	SPECIAL PROVISION (SURFACE PREPARATION FOR OVERLAY)	900.670				
					999					999		SY	SPECIAL PROVISION (BRIDGE DECK OVERLAY SYSTEM, POLY-CARB FLEXOGRID)	900.675				

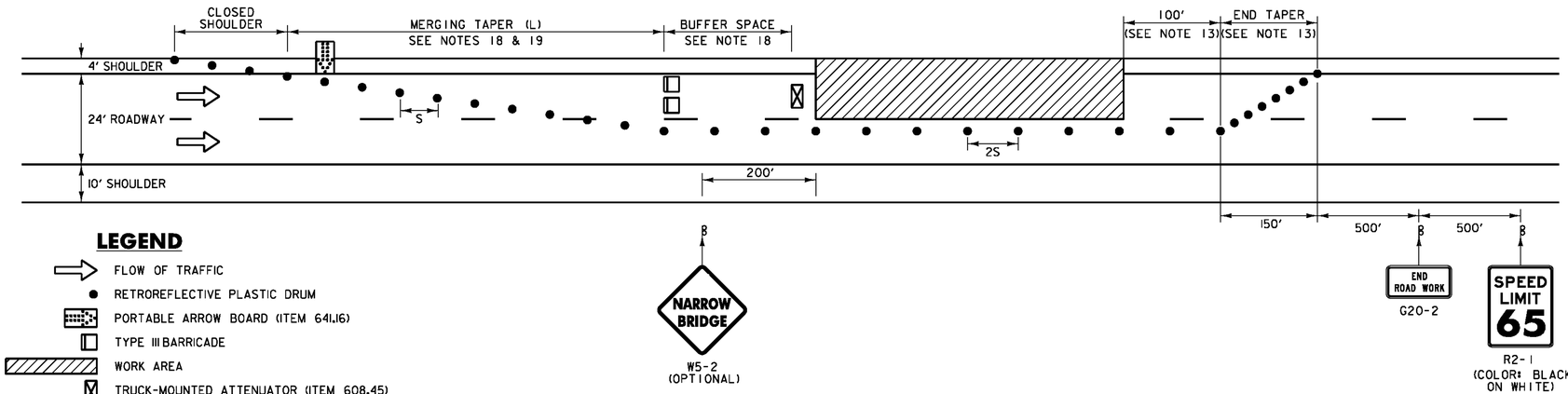
PROJECT NAME: Waterford
PROJECT NUMBER: IM MEMB(31)

FILE NAME: s11A296qss.dgn
PROJECT LEADER: JPB
DESIGNED BY: SRB
QUANTITY SHEET #2

PLOT DATE: 03/19/2012
DRAWN BY: SRB
CHECKED BY: JPB
SHEET 4 OF 48



CONSTRUCTION APPROACH SIGNING ON INTERSTATE 93 LEFT LANE CLOSED



LEGEND

- FLOW OF TRAFFIC
- RETROREFLECTIVE PLASTIC DRUM
- PORTABLE ARROW BOARD (ITEM 641.16)
- TYPE III BARRICADE
- WORK AREA
- TRUCK-MOUNTED ATTENUATOR (ITEM 608.45)
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN (ITEM 641.15) (SEE NOTE 15)

TRAFFIC CONTROL ON INTERSTATE 93 LEFT LANE CLOSED

CHANNELIZING DEVICES

TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATION:
L = WS FOR POSTED SPEEDS OF 45 MPH OR GREATER
L = WS/60 FOR POSTED SPEEDS OF 40 MPH OR LESS

L = MINIMUM LENGTH OF TAPER
W = WIDTH OF OFFSET IN FEET. (TYPICAL)
S = POSTED SPEED IN MPH

POSTED SPEED (MPH)	TAPER LENGTHS (FT)		TANGENT W=12 FT (L/2)	BARRIER FLARE RATE (MINIMUM)	MINIMUM BUFFER SPACE LENGTH (FT)	MAXIMUM CHANNELIZING DEVICE SPACING (FT)	
	SHOULDER W=10 FT (L/3)	MERGING 12 FT LANE* (L)				TAPER (S)	TANGENT (2S)
≤40	90	320	160	1:9	305	40	80
45	150	540	270	1:9	360	45	90
50	170	600	300	1:11	425	50	100
55	185	660	330	1:13	495	55	110
60	200	720	360	1:13	570	60	120
65	215	780	390	1:13	645	65	130

* SEE NOTE 19.

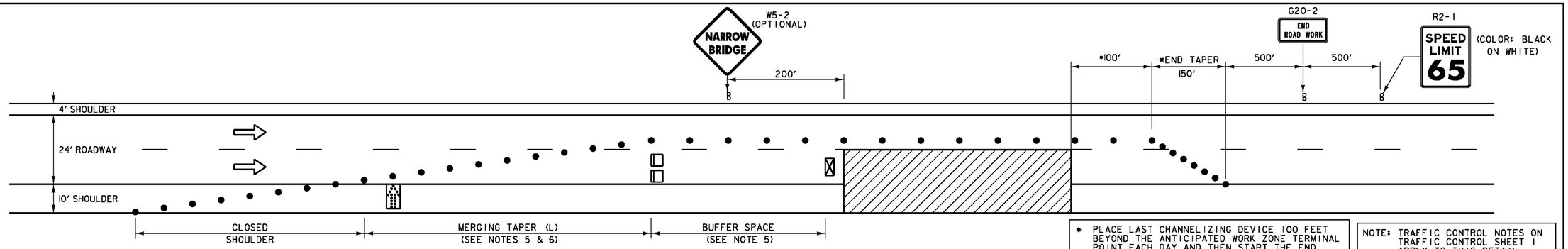
TRAFFIC CONTROL NOTES:

1. THE LEFT LANE CLOSURE IS SHOWN. THE RIGHT LANE APPROACH SIGNING IS SIMILAR. THE RIGHT LANE CLOSURE IS SHOWN ON TRAFFIC CONTROL SHEET 2.
2. THE EXISTING SPEED LIMIT IS 65 MPH. THE SPEED LIMIT WILL BE REDUCED TO 50 MPH IN THE WORK ZONE FOR THIS PROJECT. ANY EXISTING SPEED LIMIT SIGNS WITHIN THE SPEED REDUCTION AREA SHALL BE COMPLETELY COVERED.
3. CONSTRUCTION SIGNS SHALL BE INSTALLED SO AS NOT TO OBSTRUCT EXISTING SIGNS.
4. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOK (SHSM) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).
5. SOLID SUBSTRATE CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) TYPE VII, VIII OR IX REQUIREMENTS, UNLESS OTHERWISE NOTED. BLACK AND WHITE REGULATORY SIGNS SHALL BE A MINIMUM OF TYPE III, UNLESS OTHERWISE NOTED.
6. ROLL UP SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING ASTM TYPE VI.
7. CONSTRUCTION SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES, DURING PERIODS OF INACTIVITY, OR UPON COMPLETION OF THE WORK. EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER. SIGNS SHALL BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER.
8. FIXED SIGNS SHALL BE SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST SEVEN FEET ABOVE THE EDGE OF PAVEMENT. THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST SIX FEET OUTSIDE THE SHOULDER POINT OR FOUR FEET OUTSIDE GUARDRAIL.
9. PORTABLE SIGNS SHALL BE PLACED ON THE EDGE OF ROADWAY AND ONE FOOT MINIMUM ABOVE TRAVELED WAY. ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE. WHEN PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACE SHALL BE ABOVE THE TOP OF THE GUARDRAIL.
10. WHERE SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARDRAIL OR OTHER APPROVED TRAFFIC BARRIERS, ALL SIGN STANDS AND POST INSTALLATIONS SHALL BE "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 COMPLIANT. NO SIGN POSTS SHALL EXTEND OVER THE TOP OF THE SIGN INSTALLED ON SAID POST(S). WHEN ANCHORS ARE INSTALLED, STUB SHALL NOT BE GREATER THAN FOUR INCHES ABOVE EXISTING GROUND.
11. THE CONTRACTOR SHALL HAVE SIGNS FOR CLOSURE OF RIGHT AND LEFT LANES ON PROJECT BEFORE WORK COMMENCES.
12. THE NUMBER OF CHANNELIZING DEVICES, TYPE THREE BARRICADE AND OTHER TRAFFIC CONTROL DEVICES SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED ARE TO BE DETERMINED BASED ON INDIVIDUAL DETOUR CONDITIONS (TAPERS, SPEED LIMITS, LENGTH OF DETOUR, CURVE, ETC.). WARNING LIGHTS SHALL NOT BE USED ON CHANNELIZING DEVICES.
13. PLACE LAST CHANNELIZING DEVICE 100 FEET BEYOND THE ANTICIPATED WORK ZONE TERMINAL POINT EACH DAY AND THEN START THE END TAPER. THE END TAPER SHALL BE CONSTRUCTED OF 8 ADDITIONAL RETROREFLECTIVE DRUMS SPACED AT 20 FEET MAX. ON CENTER.
14. THE ARROW BOARD SHALL BE PLACED ON THE SHOULDER OF THE ROADWAY, OR, IF PRACTICAL, FURTHER FROM THE TRAVELED LANE AT THE END OF THE SHOULDER TAPER.
15. THE PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE USED AT THE DISCRETION OF THE ENGINEER. THE PCMS SHALL BE USED IN ACCORDANCE WITH SECTION 6F.60 OF THE MUTCD. THE PCMS SHALL READ "LEFT (OR RIGHT) LANE CLOSED AHEAD, PLEASE MERGE EARLY".
16. TRAVEL LANE SHALL BE A MINIMUM OF 12 FEET WIDE.
17. THE CONTRACTOR SHALL REDUCE TRAFFIC TO ONE LANE DURING WORKING HOURS IN ACCORDANCE WITH THIS SHEET. ALL EQUIPMENT SHALL BE MOVED TO A LOCATION OFF PAVED SHOULDERS AND OUTSIDE THE CLEAR ZONE (MINIMUM 30 FEET) DURING NON-WORK PERIODS AND PROTECTED BY BARRELS OR CONES, UNLESS PROTECTED BY TRAFFIC BARRIER OR GUARDRAIL.
18. AT THE DISCRETION OF THE ENGINEER, MERGING TAPER AND BUFFER SPACE LENGTHS MAY BE EXTENDED BEYOND MINIMUM VALUES, ESPECIALLY IN CLOSE PROXIMITY TO INTERCHANGE RAMPS, CURVES, OR OTHER INFLUENCING FACTORS. THIS WORK SHALL BE INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL".
19. EXTEND MERGING TAPER TO ACCOUNT FOR REQUIRED LANE SHIFT OFFSET.

PROJECT NAME: WATERFORD
PROJECT NUMBER: IM MEMB(31)

FILE NAME: s11a296ts_1.dgn
PROJECT LEADER: JPB
DESIGNED BY: SRB
TRAFFIC CONTROL SHEET 1

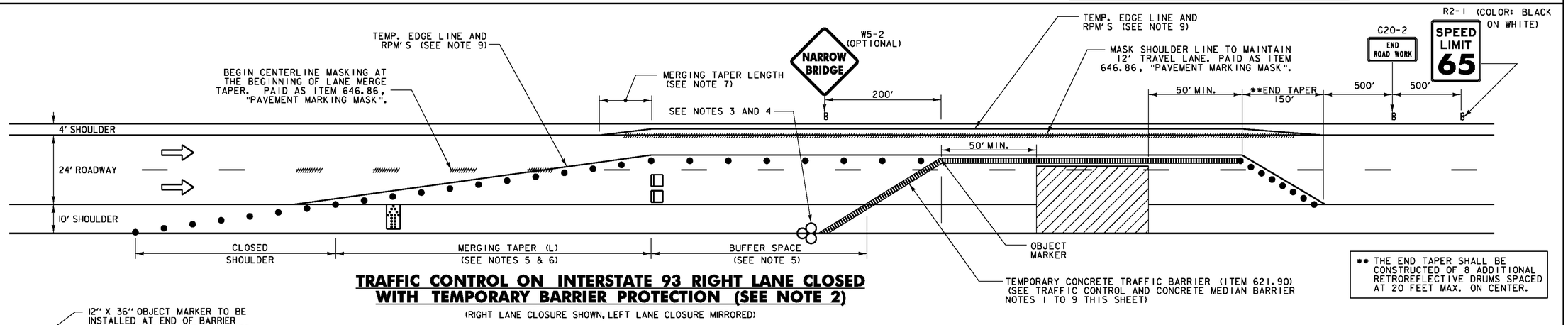
PLOT DATE: 3/19/2012
DRAWN BY: MWS
CHECKED BY: JF
SHEET 5 OF 48



TRAFFIC CONTROL ON INTERSTATE 93 RIGHT LANE CLOSED

* PLACE LAST CHANNELIZING DEVICE 100 FEET BEYOND THE ANTICIPATED WORK ZONE TERMINAL POINT EACH DAY AND THEN START THE END TAPER. THE END TAPER SHALL BE CONSTRUCTED OF 8 ADDITIONAL RETROREFLECTIVE DRUMS SPACED AT 20 FEET MAX. ON CENTER.

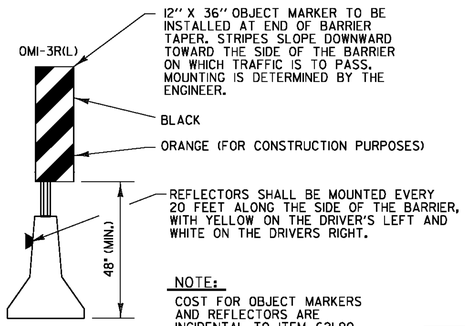
NOTE: TRAFFIC CONTROL NOTES ON TRAFFIC CONTROL SHEET 1 APPLY TO THIS DETAIL.



TRAFFIC CONTROL ON INTERSTATE 93 RIGHT LANE CLOSED WITH TEMPORARY BARRIER PROTECTION (SEE NOTE 2)

(RIGHT LANE CLOSURE SHOWN, LEFT LANE CLOSURE MIRRORED)

** THE END TAPER SHALL BE CONSTRUCTED OF 8 ADDITIONAL RETROREFLECTIVE DRUMS SPACED AT 20 FEET MAX. ON CENTER.



NOTE:
COST FOR OBJECT MARKERS AND REFLECTORS ARE INCIDENTAL TO ITEM 621.90 TEMPORARY TRAFFIC BARRIER.

LEGEND

- FLOW OF TRAFFIC
- RETROREFLECTIVE PLASTIC DRUM
- PORTABLE ARROW BOARD (ITEM 641.16)
- TYPE III BARRICADE
- WORK AREA
- TRUCK-MOUNTED ATTENUATOR (ITEM 608.45)
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN (ITEM 641.15) (SEE NOTE 15 ON TRAFFIC CONTROL SHEET 1)
- ENERGY ABSORPTION ATTENUATOR (ITEM 621.56)
- TEMPORARY TRAFFIC BARRIER (ITEM 621.90)

CHANNELIZING DEVICES

POSTED SPEED (MPH)	TAPER LENGTHS (FT)		TANGENT W=12 FT (L/2)	BARRIER FLARE RATE (MINIMUM)	MINIMUM BUFFER SPACE LENGTH (FT)	MAXIMUM CHANNELIZING DEVICE SPACING (FT)	
	SHOULDER W=10 FT (L/3)	MERGING 12 FT LANE• (L)				TAPER (S)	TANGENT (2S)
≤40	90	320	160	1:9	305	40	80
45	150	540	270	1:9	360	45	90
50	170	600	300	1:11	425	50	100
55	185	660	330	1:13	495	55	110
60	200	720	360	1:13	570	60	120
65	215	780	390	1:13	645	65	130

• SEE NOTE 6.

TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATION:
L = WS FOR POSTED SPEEDS OF 45 MPH OR GREATER
L = WS²/60 FOR POSTED SPEEDS OF 40 MPH OR LESS

L = MINIMUM LENGTH OF TAPER
W = WIDTH OF OFFSET IN FEET. (TYPICAL)
S = POSTED SPEED IN MPH

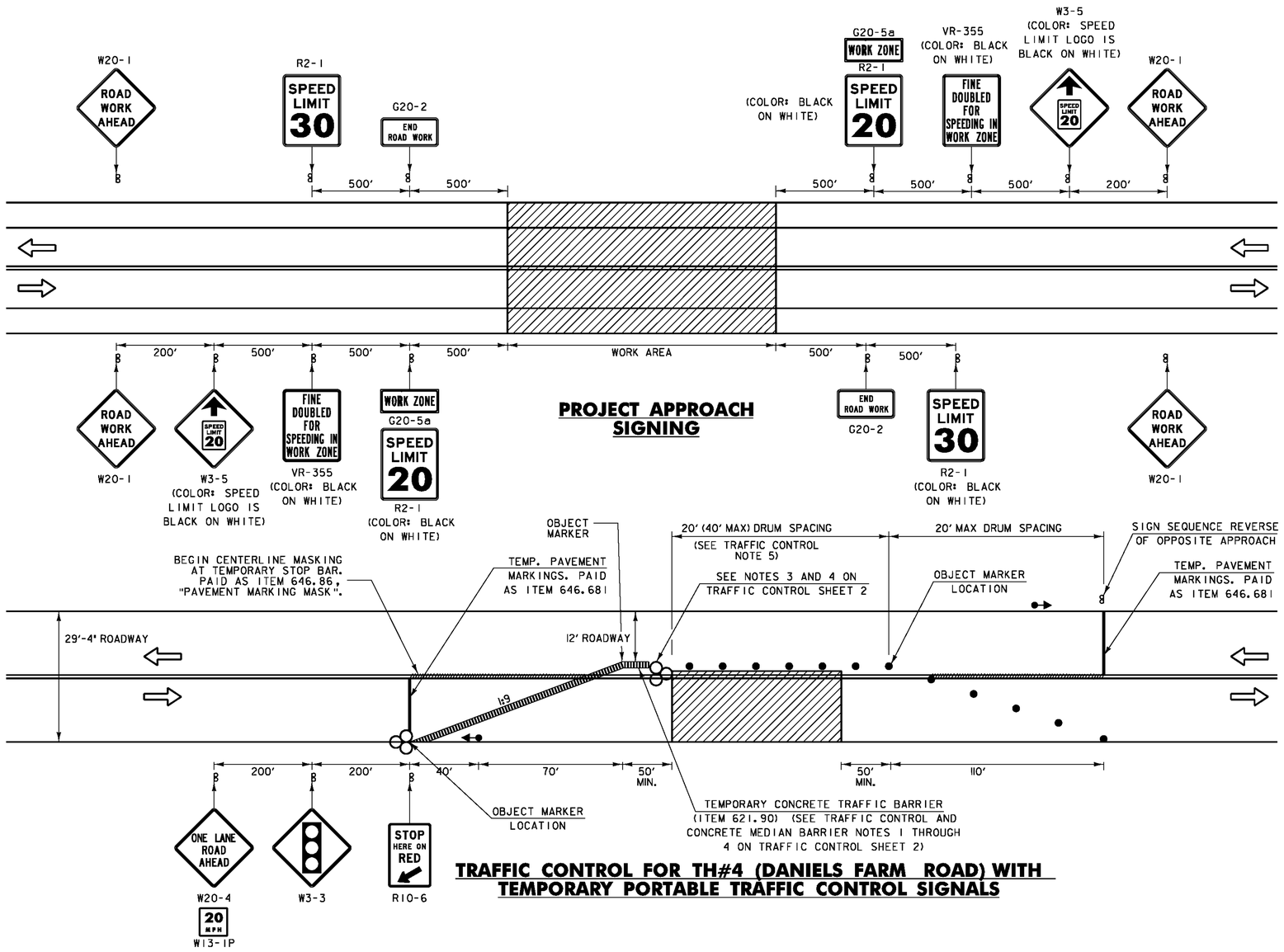
TRAFFIC CONTROL AND CONCRETE MEDIAN BARRIER NOTES:

1. SEE THE TRAFFIC CONTROL NOTES ON THE PREVIOUS SHEET (TRAFFIC CONTROL SHEET 1) FOR ADDITIONAL NOTES AND APPROACH SIGNING FOR THE RIGHT LANE CLOSURE.
2. IF THE LANE CLOSURE IS TO LAST LONGER THAN 3 DAYS, THE CONTRACTOR SHALL USE TEMPORARY TRAFFIC BARRIER AS SHOWN ON THIS SHEET AND PAID FOR AS ITEM 621.90, "TEMPORARY TRAFFIC BARRIER". TEMPORARY TRAFFIC BARRIER SHALL BE A CONCRETE MEDIAN BARRIER (CMB) TYPE. STEEL BEAM GUARDRAIL WILL NOT BE ALLOWED FOR USE AS A TEMPORARY TRAFFIC BARRIER. WHEN ONE SIDE OF THE BRIDGE IS COMPLETE, MOVING THE BARRIER TO CLOSE THE OTHER SIDE TO TRAFFIC WILL BE PAID FOR AS ITEM 621.95, "REMOVE AND RESET TEMPORARY TRAFFIC BARRIER".
3. THE END OF THE BARRIER FACING APPROACHING TRAFFIC SHALL MEET THE FOLLOWING REQUIREMENTS.
   A. WHEN NO GUARDRAIL IS PRESENT, A 30' OFFSET SHALL BE USED FROM THE EDGE OF TRAVELLED WAY. IF A 30' OFFSET IS NOT ATTAINABLE, THEN AN ENERGY ABSORPTION ATTENUATOR SHALL BE LOCATED AT THE END OF THE BARRIER.
   B. IF GUARDRAIL IS PRESENT, THEN TEMPORARY CONCRETE TRAFFIC BARRIER SHALL BE CONNECTED TO EXISTING GUARDRAIL (COST INCIDENTAL TO ITEM 621.90, "TEMPORARY TRAFFIC BARRIER".) (COSTS FOR DISMANTLING BARRIER CONNECTION AND RESTORING EXISTING BARRIER TO ORIGINAL CONFIGURATION SHALL BE INCIDENTAL TO ITEM 621.90, "TEMPORARY TRAFFIC BARRIER".) SEE BARRIER RAIL DETAILS ON SHEET 12. AN ENERGY ABSPORTION ATTENUATOR SHALL BE LOCATED AT THE END OF THE BARRIER.
4. THE QUANTITIES INCLUDE ONE ENERGY ABSORPTION ATTENUATOR PER BRIDGE EXCEPT FOR BRIDGE NO. 8 WHICH SHALL HAVE 2. THE COST FOR THE ATTENUATORS AND TO MOVE ATTENUATORS FOR SHIFTING LANE CLOSURES SHALL BE PAID FOR AS ITEM 621.56, "ENERGY ABSORPTION ATTENUATOR". THE COST FOR ENERGY ABSORPTION ATTENUATORS USED FOR ANY OTHER TRAFFIC CONTROL SETUP SHALL BE INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL".
5. AT THE DISCRETION OF THE ENGINEER, MERGING TAPER AND BUFFER SPACE LENGTHS MAY BE EXTENDED BEYOND MINIMUM VALUES, ESPECIALLY IN CLOSE PROXIMITY TO INTERCHANGE RAMPS, CURVES, OR OTHER INFLUENCING FACTORS. THIS WORK SHALL BE INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL".
6. EXTEND MERGING TAPER TO ACCOUNT FOR REQUIRED LANE SHIFT OFFSET.
7. PROVIDE MERGING TAPER LENGTH AS REQUIRED FOR LANE SHIFT.
8. TEMPORARY TAPE EDGELINES SHALL BE APPLIED AND SHALL MAINTAIN A ONE FOOT MINIMUM DISTANCE FROM THE BARRIER WITH TWO FEET BEING DESIRABLE.
9. THE RAISED PAVEMENT MARKERS (RPM'S), TYPE II SHALL BE PLACED TO THE OUTSIDE OF THE TEMPORARY TAPE PAVEMENT MARKINGS. THE RPM'S SHALL BE SPACED AT 20 FEET AND SHALL BE PAID FOR UNDER ITEM 646.75, "RAISED PAVEMENT MARKERS, TYPE II".

PROJECT NAME: WATERFORD
PROJECT NUMBER: IM MEMB(31)

FILE NAME: s11a296ts_1.dgn
PROJECT LEADER: JPB
DESIGNED BY: SRB
TRAFFIC CONTROL SHEET 2

PLOT DATE: 3/19/2012
DRAWN BY: MWS
CHECKED BY: JF
SHEET 6 OF 48



TRAFFIC CONTROL FOR TH#4 (DANIELS FARM ROAD) WITH TEMPORARY PORTABLE TRAFFIC CONTROL SIGNALS

LEGEND

- FLOW OF TRAFFIC
- RETROREFLECTIVE PLASTIC DRUM
- WORK AREA
- ENERGY ABSORPTION ATTENUATOR (ITEM 621.56)
- TEMPORARY PORTABLE TRAFFIC CONTROL SIGNAL (SEE NOTES THIS SHEET)
- TEMPORARY TRAFFIC BARRIER (ITEM 621.90)

TRAFFIC CONTROL NOTES:

1. THE EXISTING TOWN HIGHWAY 4 SPEED LIMIT IS 30 MPH. THE SPEED LIMIT WILL BE REDUCED TO 20 MPH IN THE WORK ZONE FOR THIS PROJECT. ANY EXISTING SPEED LIMIT SIGNS WITHIN THE SPEED REDUCTION AREA SHALL BE COMPLETELY COVERED.
2. SEE THE TRAFFIC CONTROL NOTES 3 THROUGH 10 AND NOTE 17 ON TRAFFIC CONTROL SHEET 1 FOR ADDITIONAL NOTES.
3. THE CONTRACTOR SHALL HAVE SIGNS FOR CLOSURE OF LANES ON THE PROJECT BEFORE WORK COMMENCES.
4. SEE THE TRAFFIC CONTROL AND CONCRETE MEDIAN BARRIER NOTES 2 THROUGH 7 ON TRAFFIC CONTROL SHEET 2 FOR ADDITIONAL NOTES.
5. DUE TO THE NARROW TRAVELWAY AND SHOULDERS ON BRIDGE NO. 8, CHANNELIZING DEVICES SHALL BE USED IN LIEU OF CONCRETE BARRIER WITHIN THE WORK ZONE.
6. TRAFFIC CONTROL PLANS SUBMITTED BY THE CONTRACTOR PER NOTE 7 ON SHEET 2 SHALL INCLUDE DRIVE ENTRANCE LOCATIONS ADJACENT TO BRIDGE NO. 8. IF A TEMPORARY STOP BAR OCCURS BEYOND A DRIVE ENTRANCE PER THE TRAFFIC CONTROL DETAILS ON THIS SHEET, THE DIMENSIONS SHALL BE REVISED TO ENSURE ALL DRIVE ENTRANCES OCCUR OUTSIDE TEMPORARY STOP BAR LOCATIONS. ACCESS TO DRIVES ON BOTH SIDES OF BRIDGE NO. 8 SHALL BE MAINTAINED AT ALL TIMES.

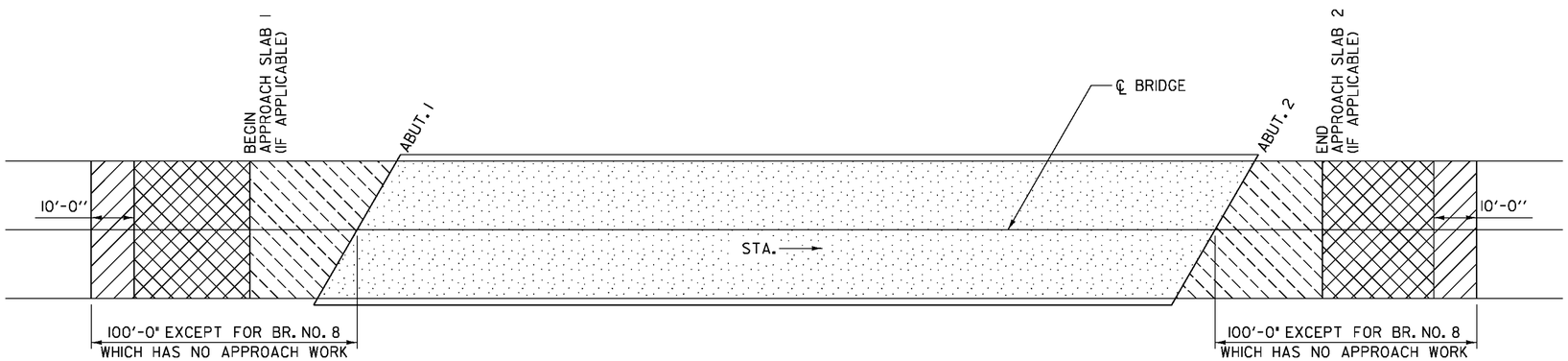
TEMPORARY PORTABLE SIGNAL NOTES:

1. TEMPORARY TRAFFIC CONTROL (TTC) SIGNALS SHALL BE INSTALLED AND OPERATED IN ACCORDANCE WITH THE PROVISIONS OF PART 4 OF THE MUTCD. TTC SIGNALS SHALL MEET THE PHYSICAL DISPLAY AND OPERATIONAL REQUIREMENTS OF CONVENTIONAL TRAFFIC CONTROL SIGNALS.
2. TTC SIGNAL TIMING SHALL BE ESTABLISHED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. DURATIONS OF RED CLEARANCE INTERVALS SHALL BE ADEQUATE TO CLEAR THE ONE-LANE SECTION OF CONFLICTING VEHICLES.
3. STOP LINES SHALL BE INSTALLED WITH TTC SIGNALS. EXISTING CONFLICTING PAVEMENT MARKINGS BETWEEN THE ACTIVITY AREA AND THE STOP LINE SHALL BE MASKED. AFTER THE TTC SIGNAL IS REMOVED, THE STOP LINES AND OTHER TEMPORARY PAVEMENT MARKINGS SHALL BE REMOVED AND THE PERMANENT PAVEMENT MARKINGS RESTORED.
4. ADJUSTMENTS IN LOCATION OF THE ADVANCE WARNING SIGNS SHOULD BE MADE AS NEEDED AND AT THE DISCRETION OF THE ENGINEER TO ACCOMMODATE THE HORIZONTAL OR VERTICAL ALIGNMENT OF THE ROADWAY, RECOGNIZING THAT THE DISTANCES SHOWN FOR SIGN SPACINGS ARE MINIMUMS.
5. TTC SIGNALS SHALL BE ASSUMED TO BE LOCATED BEHIND TEMPORARY CONCRETE TRAFFIC BARRIER OR EXISTING GUARDRAIL. ANY FILL REQUIRED FOR ESTABLISHING A LEVEL SURFACE FOR TTC SIGNALS BEHIND THE GUARDRAIL SHALL BE INCIDENTAL TO ITEM 900.620, "SPECIAL PROVISION, "(TEMPORARY TRAFFIC SIGNAL SYSTEM, PORTABLE)". IF THE CONTRACTOR INSTALLS THE TTC SIGNALS INSIDE THE GUARDRAIL, TWO ENERGY ABSORPTION ATTENUATORS SHALL BE PROVIDED, ONE ON EITHER SIDE OF THE TTC SIGNAL. THE COST OF THE ENERGY ABSORPTION ATTENUATORS SHALL BE INCIDENTAL TO ITEM 900.620, "SPECIAL PROVISION (TEMPORARY TRAFFIC SIGNAL SYSTEM, PORTABLE)".
6. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

PROJECT NAME: WATERFORD
PROJECT NUMBER: IM MEMB(31)

FILE NAME: s110296ts_1.dgn
PROJECT LEADER: JPB
DESIGNED BY: SRB
TRAFFIC CONTROL SHEET 3

PLOT DATE: 3/19/2012
DRAWN BY: MWS
CHECKED BY: JF
SHEET 7 OF 48



ALL BRIDGES IN THIS PROJECT HAVE EITHER BURIED OR NO APPROACH SLABS. THEREFORE, ALL PAVEMENT REMOVAL BEHIND ABUTMENTS SHALL BE PAID FOR UNDER ITEM 210.10, "COLD PLANING, BITUMINOUS PAVEMENT".

COLD PLANE - 1¼"

COLD PLANE - 2½"

REMOVE BIT. CONC. PAV'T - TO THE TOP OF THE CONCRETE BRIDGE DECK AND REMOVE THE BARRIER MEMBRANE FOR BRIDGE NO. 1N&S, 3N&S, AND 5N&S. REMOVE EXISTING TAMMS FLEXOLITH 216 OVERLAY FOR BRIDGE NO. 8 - TO TOP OF THE CONCRETE BRIDGE DECK.

NOTE:

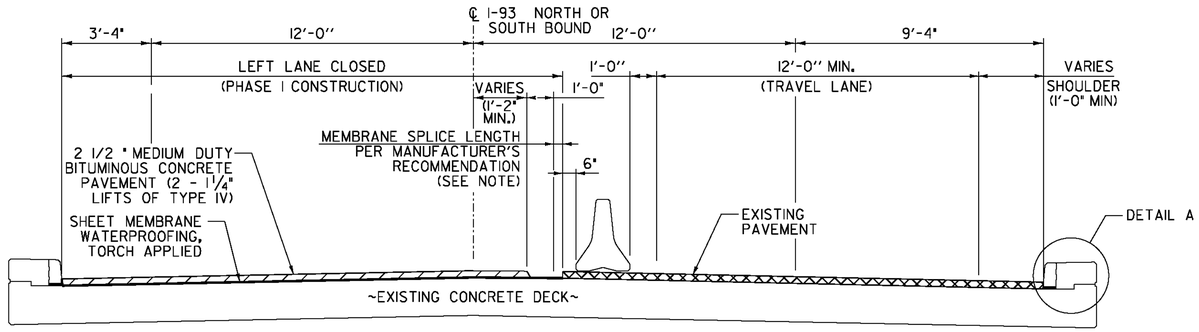
1. COLD PLANING WILL BE PAID FOR UNDER ITEM 210.10 EXCEPT AS OTHERWISE SPECIFIED IN NOTE 13 ON SHEET 2.
2. REMOVAL OF THE BIT. CONC. PAV'T. WILL BE PAID FOR UNDER ITEM 529.10.
3. REMOVAL OF THE BARRIER MEMBRANE WILL BE PAID FOR UNDER ITEM 580.16.
4. REMOVAL OF THE EXISTING TAMMS FLEXOLITH 216 OVERLAY ON BRIDGE NO. 8 WILL BE PAID FOR UNDER ITEM 900.670, "SPECIAL PROVISION (SURFACE PREPARATION FOR OVERLAY)".
5. IN THE EVENT THAT COLD PLANING OF THE RIGHT ROADWAY SHOULDERS ALONG BRIDGE APPROACHES EXPOSES GRAVEL SUBBASE, THE CONTRACTOR SHALL REMOVE 2" OF GRAVEL SUBBASE, PREPARE THE AREA AS DIRECTED BY THE ENGINEER, AND PROVIDE 2" BASE PAVEMENT. IN ADDITION TO THE 2½" PAVEMENT TO BE PLACED IN TWO EQUAL LIFTS OF TYPE IV MIX IN ALL OTHER LOCATIONS PER TYPICAL APPROACH SECTION ON BITUMINOUS CONCRETE DETAILS SHEET 1. FOR BRIDGES 1N&S, 3N&S, AND 5N&S, A TOTAL OF 182 ADDITIONAL TONS HAVE BEEN INCLUDED IN THE ESTIMATED QUANTITY FOR ITEM 406.27 TO ADDRESS THIS WORK. WHERE DIRECTED BY THE ENGINEER, PAYMENT FOR BASE PREPARATION WILL BE PAID FOR UNDER EQUIPMENT RENTAL ITEMS.

BITUMINOUS CONCRETE REMOVAL & REPLACEMENT PLAN

NOT TO SCALE

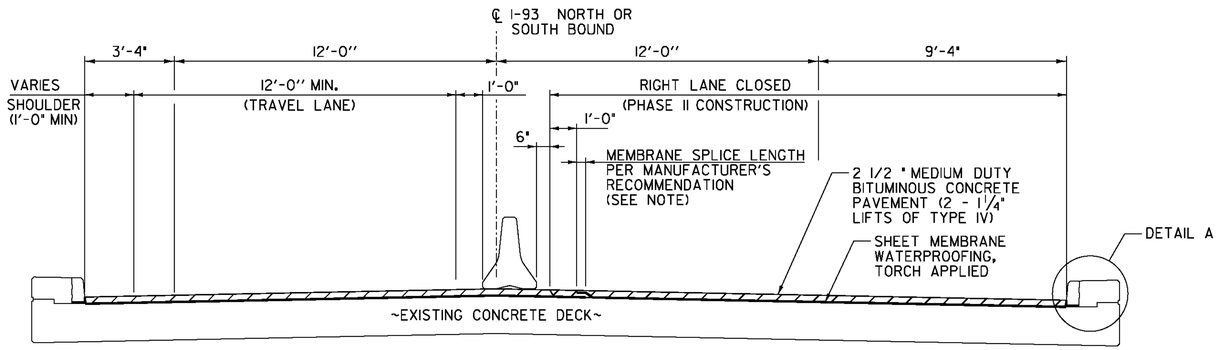
PROJECT NAME: WATERFORD
PROJECT NUMBER: IM MEMB(31)

FILE NAME: sll0296removal.dgn
PROJECT LEADER: JPB
DESIGNED BY: SRB
PLOT DATE: 3/19/2012
DRAWN BY: MWS
CHECKED BY: JF
BITUMINOUS CONCRETE REMOVAL PLAN
SHEET 8 OF 48



TYPICAL SECTION - PHASE I CONSTRUCTION

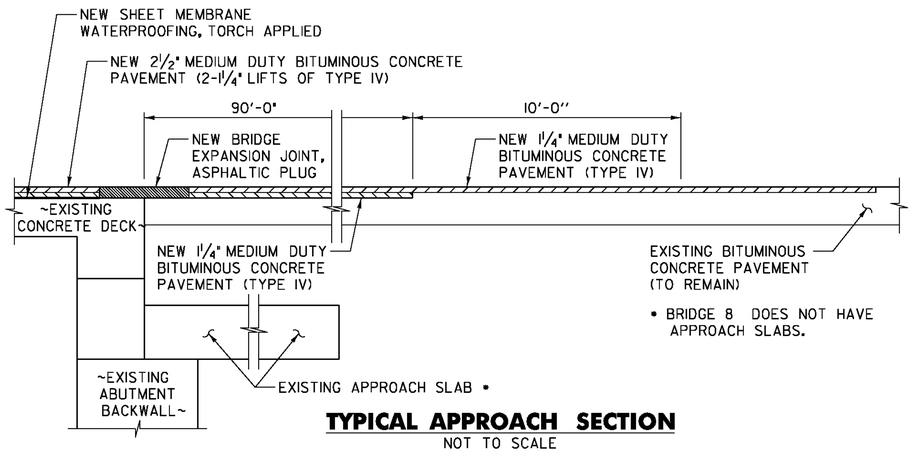
(BRIDGES IN&S, 5N&S, AND 3N)
NOT TO SCALE



TYPICAL SECTION - PHASE II CONSTRUCTION

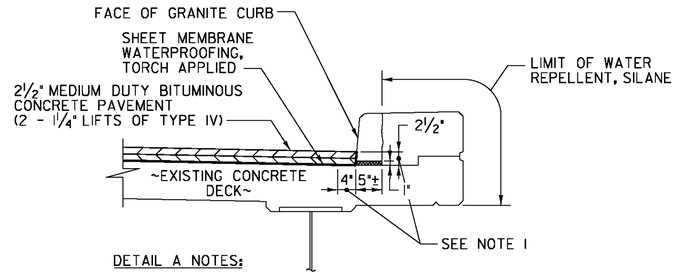
(BRIDGES IN&S, 5N&S, AND 3N)
NOT TO SCALE

NOTE: MEMBRANE PLACEMENT FOR BRIDGE NO. 3N IS SIMILAR TO THAT SHOWN IN THE ABOVE SECTIONS EXCEPT THE THE BRIDGE IS SUPERELEVATED WITH THE LEFT SHOULDER AT THE LOW SIDE OF THE CROSS SLOPE. THE CONTRACTOR SHALL BEGIN PLACEMENT OF THE MEMBRANE AT THE LOW SIDE OF THE BRIDGE TO ENSURE THAT THE HIGH SIDE OVERLAPS THE LOW SIDE AT THE MEMBRANE SPLICE.



TYPICAL APPROACH SECTION

NOT TO SCALE



DETAIL A NOTES:

1. INDICATES AREA ALONG DECK AND UP FACE OF CURB FOR PLACEMENT OF TWO COATS OF POLYURETHANE MEMBRANE.
2. POLYURETHANE MEMBRANE AND BLAST CLEANING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SHEET MEMBRANE WATERPROOFING, TORCH APPLIED.
3. SHEET MEMBRANE WATERPROOFING SHALL EXTEND TO FACE OF CURB AS SHOWN.
4. IN ADDITION TO THE REQUIREMENTS OF SUBSECTION 519.04, BLAST CLEAN 2½" UP THE FACE OF CURB PRIOR TO PLACING THE MEMBRANE.
5. REPOINTING OF THE GRANITE CURB SHALL BE REQUIRED AND PAID FOR UNDER ITEM 900.625, "SPECIAL PROVISION (REPOINTING GRANITE CURB). THE QUANTITY FOR THIS ITEM AS SHOWN ON THE QUANTITY SHEET IS ESTIMATED.

DETAIL A

(BRIDGES IN&S, 3N&S, AND 5N&S)
NOT TO SCALE

BRIDGE LENGTH AND WIDTH (CURB TO CURB)

BRIDGE NO.	WIDTH (CURB TO CURB) (FEET)	LENGTH (FEET)
IN	36.67	204.88
IS	36.67	170.91
3N	36.67	113.04
3S	36.67	113.08
5N	36.67	109.16
5S	36.67	108.96
8	29.33	306.44

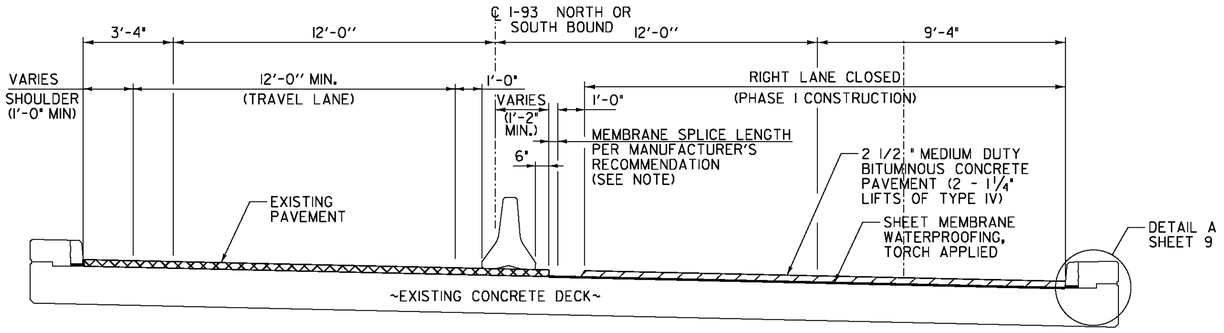
ASPHALTIC PLUG JOINT REPLACEMENT SCHEDULE

BRIDGE NO.	ABUT. 1	PIER 1	PIER 2	ABUT. 2
IN	53 LF	-	-	53 LF
IS	48 LF	-	-	48 LF
3N	38 LF	-	-	38 LF
3S	38 LF	-	-	38 LF
5N	55 LF	-	-	55 LF
5S	53 LF	-	-	53 LF
8	-	-	-	-

PROJECT NAME: WATERFORD
PROJECT NUMBER: IM MEMB(31)

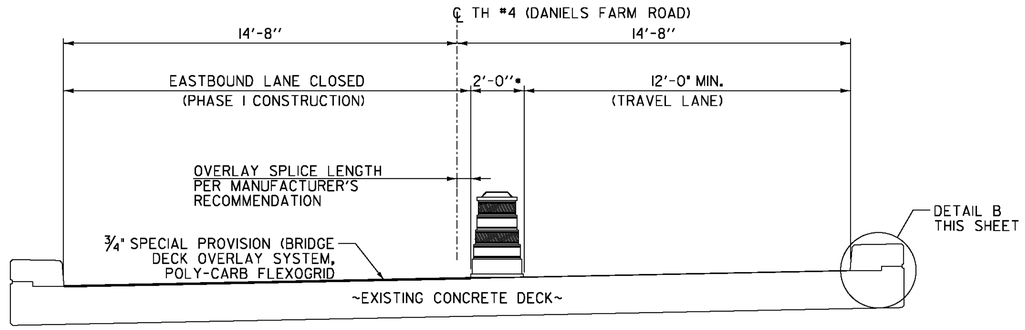
FILE NAME: sllo296conc_details.dgn
PROJECT LEADER: JPB
DESIGNED BY: SRB
PLOT DATE: 3/19/2012
DRAWN BY: MWS
CHECKED BY: JF

BITUMINOUS CONCRETE DETAILS SHEET 1



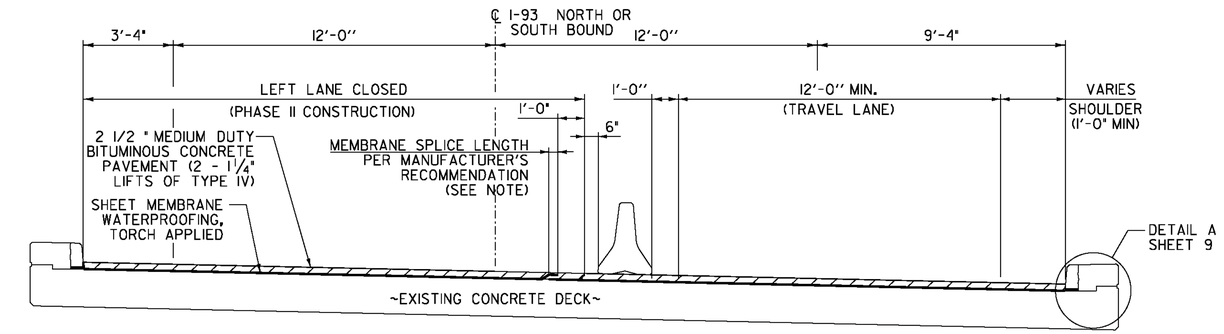
TYPICAL SECTION – PHASE I CONSTRUCTION – BRIDGE NO. 3S

NOT TO SCALE



TYPICAL SECTION – PHASE I CONSTRUCTION – BRIDGE NO. 8

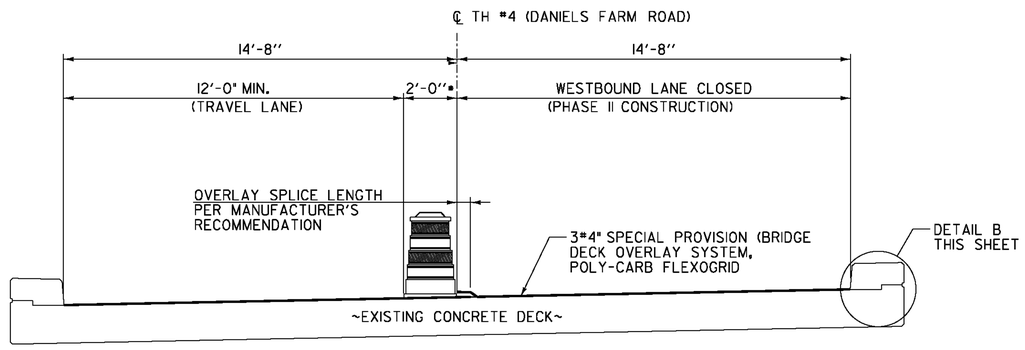
NOT TO SCALE



TYPICAL SECTION – PHASE II CONSTRUCTION – BRIDGE NO. 3S

NOT TO SCALE

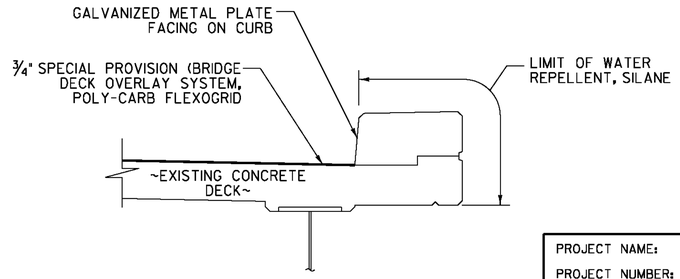
NOTE: PLACEMENT OF THE MEMBRANE SHALL START AT THE LOW SIDE OF THE BRIDGE. THE SPLICE SHALL BE AS SHOWN ABOVE, WITH THE HIGH SIDE OVERLAPPING THE LOW SIDE.



TYPICAL SECTION – PHASE II CONSTRUCTION – BRIDGE NO. 8

NOT TO SCALE

- TEMPORARY BARRELS SHALL BE MOVED AND REPLACED AS NECESSARY TO ACCOMMODATE OVERSIZED VEHICLES AND CONSTRUCTION ACTIVITIES. PAYMENT SHALL BE INCIDENTAL TO ITEM 641.10.



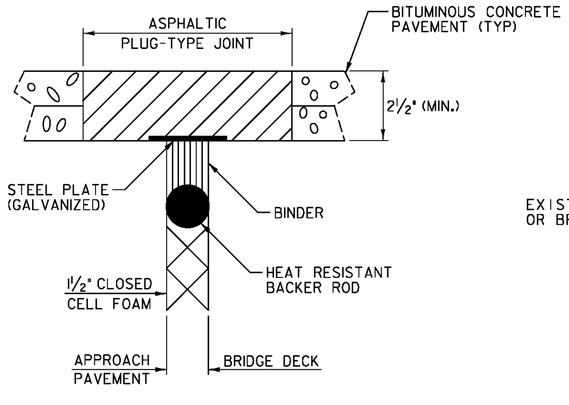
DETAIL B

NOT TO SCALE

PROJECT NAME: WATERFORD
PROJECT NUMBER: IM MEMB(31)

FILE NAME: sila296conc_details.dgn
PROJECT LEADER: JPB
DESIGNED BY: SRB
PLOT DATE: 3/19/2012
DRAWN BY: MWS
CHECKED BY: JF

BITUMINOUS CONCRETE DETAILS SHEET 2



ASPHALTIC PLUG-TYPE JOINT DETAIL

(NOT TO SCALE)

NOTES:

1. THE JOINT SHALL BE LOCATED CENTRALLY OVER THE DECK EXPANSION GAP OR FIXED JOINT MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.
2. THE JOINT SHALL BE EXCAVATED AS SHOWN ON THE PLANS BY USE OF SAWS AND PNEUMATIC HAMMER OR A HAMMER AND CHISEL.
3. THE JOINT AREA SHALL BE BLAST CLEANED OF DEBRIS AND ASPHALT. THE JOINT AREA SHALL BE THOROUGHLY DRIED USING HOT COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.
4. SPALLED AND DEFECTIVE CONCRETE SHALL BE REPAIRED WITH AN APPROVED MATERIAL AS AGREED UPON BY THE ENGINEER.
5. PROPERLY SIZED HEAT RESISTANT BACKER ROD SHALL BE PLACED IN THE MOVEMENT GAP ALLOWING FOR 1INCH +/- OF BINDER ABOVE THE ROD.
6. THE BINDER MATERIAL SHALL BE HEATED AND PLACED AS RECOMMENDED BY THE MANUFACTURER.
7. PLACE 1/4 INCH THICK BY 8 INCH WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRESTAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER.
   A. THE STEEL PLATES MAY BE OMITTED WHERE THE APPROACH SLAB IS COVERED WITH A STONE BASE OR BITUMINOUS PAVEMENT AND VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.
   B. FOR ALL EXPANSION LENGTHS OVER 100 FEET, THE CONTRACTOR SHALL BE REQUIRED TO USE STEEL PLATE. ADJACENT SURFACES SHALL BE GROUND DOWN TO ENSURE FULL CONTACT WITH THE STEEL PLATE.
8. THE BINDER MATERIAL AND AGGREGATE SHALL BE HEATED AND MIXED AS RECOMMENDED BY THE MANUFACTURER.
9. THE INSTALLATION OF MATERIAL, COMPACTION, AND TOPCOATING SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
10. IMMEDIATELY AFTER TOPCOATING, AN ANTI-SKID MATERIAL SHALL BE CAST OVER THE JOINT TO REDUCE THE RISK OF TRACKING.
11. JOINT SHALL BE PROTECTED FROM TRAFFIC UNTIL THE MATERIAL HAS COOLED TO 125°F±.

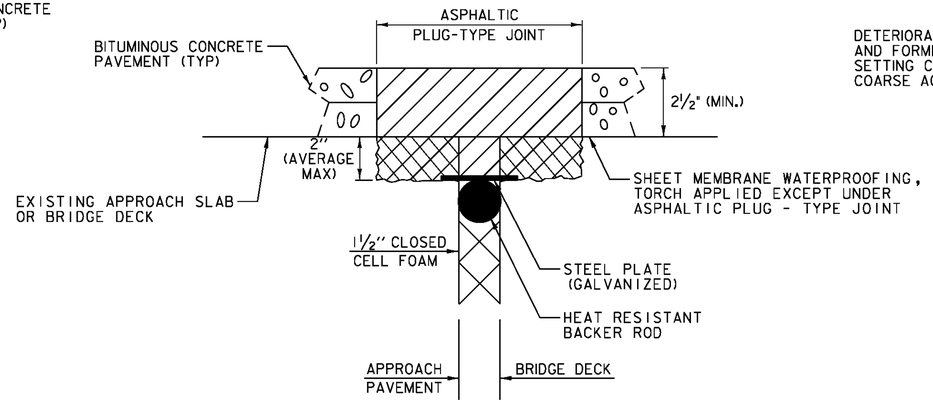
WEATHER LIMITATIONS

BINDER MATERIAL SHALL BE APPLIED ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL:

A. THE AMBIENT AIR TEMPERATURE IS AT LEAST 50° F AND RISING.

B. THE ROAD SURFACE IS SUFFICIENTLY DRY.

C. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.

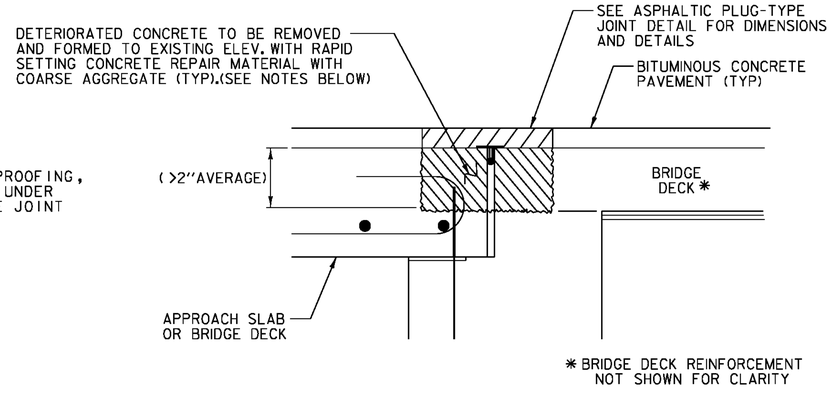


ASPHALTIC PLUG-TYPE JOINT DETAIL
REMOVAL OF UP TO
2" DETERIORATED CONCRETE

(NOT TO SCALE)

NOTES:

1. UPON ENCOUNTERING UP TO 2" AVERAGE OF DETERIORATED CONCRETE, THE CONTRACTOR SHALL REMOVE THE DETERIORATED MATERIAL AND REPLACE IT WITH THE ASPHALTIC PLUG JOINT MATERIAL AS DIRECTED BY THE ENGINEER.
2. REMOVAL OF THE DETERIORATED CONCRETE WILL NOT BE PAID SEPARATELY BUT WILL BE CONSIDERED INCIDENTAL TO THE UNIT BID PRICE FOR ITEM 516.10. THE ADDITIONAL PLUG JOINT MATERIAL BELOW THE DESIGN DEPTH REQUIRED TO REPLACE THE DETERIORATED CONCRETE WILL BE CONSIDERED INCIDENTAL TO THE UNIT BID PRICE FOR THE ITEM 516.10.
3. THE STEEL PLATE IN THE ASPHALTIC PLUG JOINT MAY BE OMITTED ONLY IF THE REPAIRED SURFACE IS SO IRREGULAR IT WILL CAUSE VERTICAL MOVEMENT AND IT IS DIRECTED BY THE ENGINEER.



ASPHALTIC PLUG-TYPE JOINT DETAIL
REMOVAL OF >2"
DETERIORATED CONCRETE

(NOT TO SCALE)

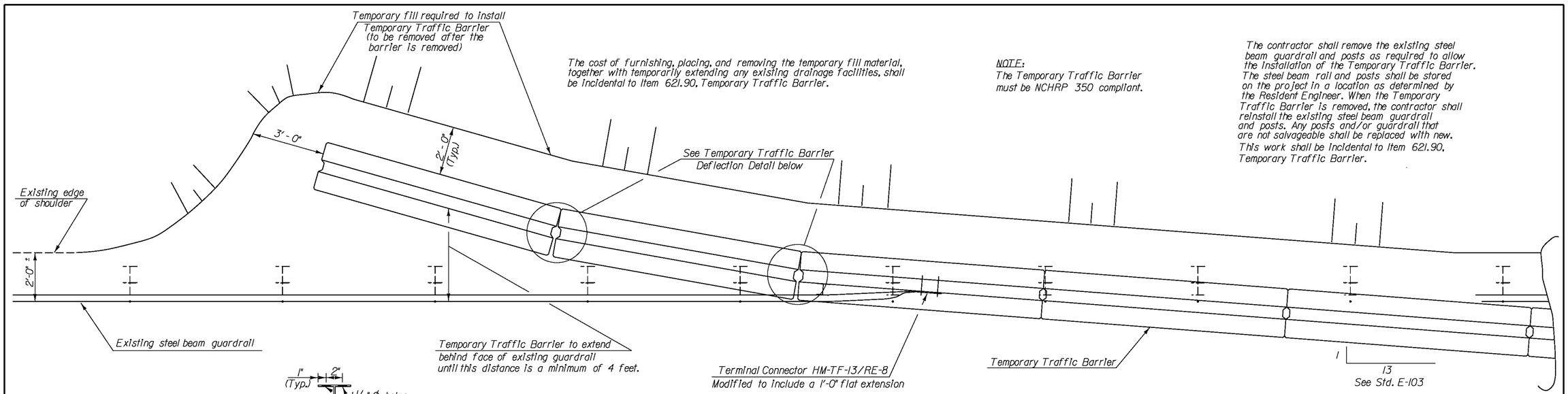
NOTES:

1. UPON ENCOUNTERING GREATER THAN 2" AVERAGE OF DETERIORATED CONCRETE, THE CONTRACTOR SHALL REMOVE THE DETERIORATED MATERIAL AND REPLACE IT WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.
2. REMOVAL OF THE DETERIORATED CONCRETE WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 580.20 "RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE".
3. THE STEEL PLATE IN THE ASPHALTIC PLUG JOINT MAY BE OMITTED ONLY IF THE REPAIRED SURFACE IS SO IRREGULAR IT WILL CAUSE VERTICAL MOVEMENT AND IT IS DIRECTED BY THE ENGINEER.

PROJECT NAME: WATERFORD
PROJECT NUMBER: IM MEMB(31)

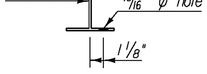
FILE NAME: sllo296jnt_detail.dgn
PROJECT LEADER: JPB
DESIGNED BY: SRB
PAVEMENT JOINT DETAILS

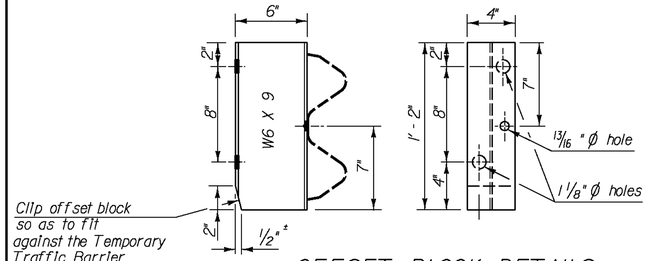
PLOT DATE: 3/19/2012
DRAWN BY: MWS
CHECKED BY: JF
SHEET 11 OF 48



PLAN VIEW SHOWING POSITIVE CONNECTION BETWEEN TEMPORARY TRAFFIC BARRIER AND EXISTING GUARDRAIL

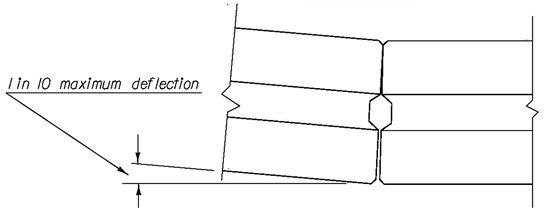
1/2" = 1'-0"





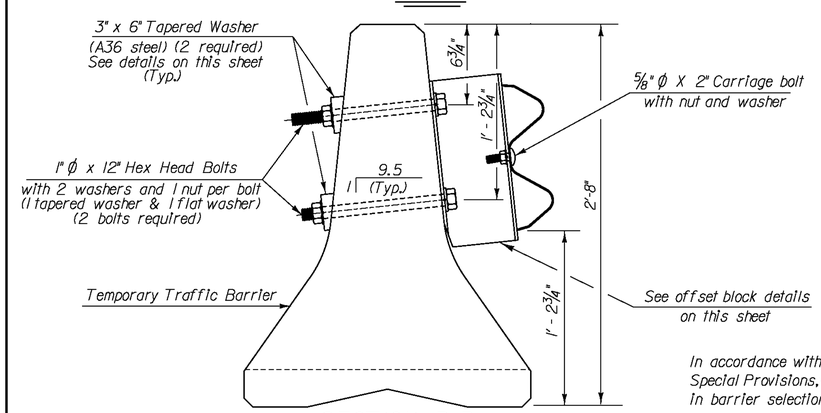
OFFSET BLOCK DETAILS

1" = 6"



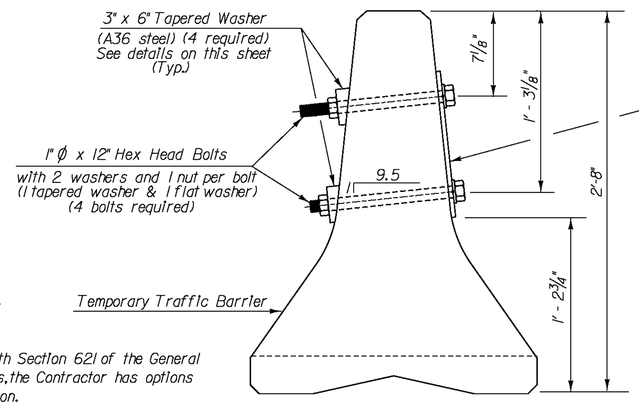
TEMPORARY TRAFFIC BARRIER DEFLECTION DETAIL

NTS



SECTION B-B

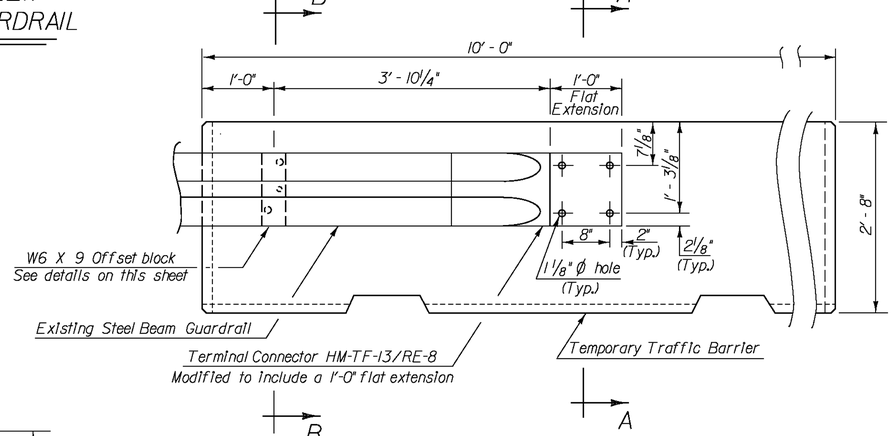
1" = 6"



SECTION A-A

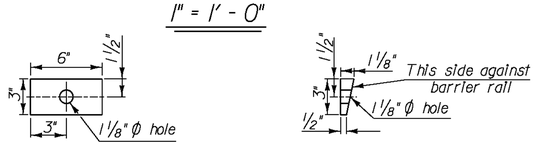
In accordance with Section 621 of the General Special Provisions, the Contractor has options in barrier selection.

1" = 6"



ELEVATION VIEW SHOWING POSITIVE CONNECTION BETWEEN TEMPORARY TRAFFIC BARRIER AND EXISTING GUARDRAIL

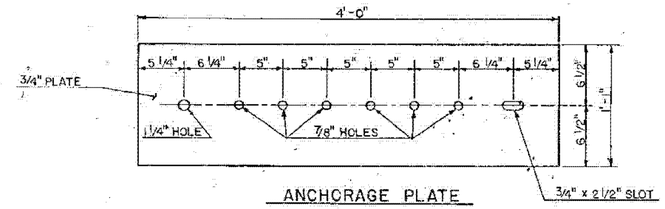
1" = 1'-0"



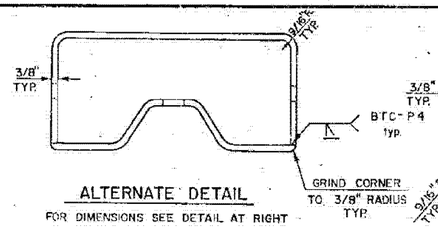
TAPERED WASHER DETAILS

1" = 6"

PROJECT NAME: WATERFORD	
PROJECT NUMBER: IM MEMB(31)	
FILE NAME: s11a296rail.dgn	PLOT DATE: 3/19/2012
PROJECT LEADER: JPB	DRAWN BY: VTRANS
DESIGNED BY: VTRANS	CHECKED BY: VTRANS
BARRIER RAIL DETAILS	SHEET 12 OF 48

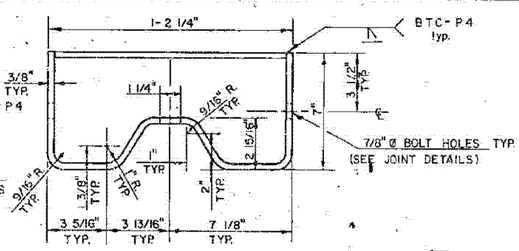


ANCHORAGE PLATE



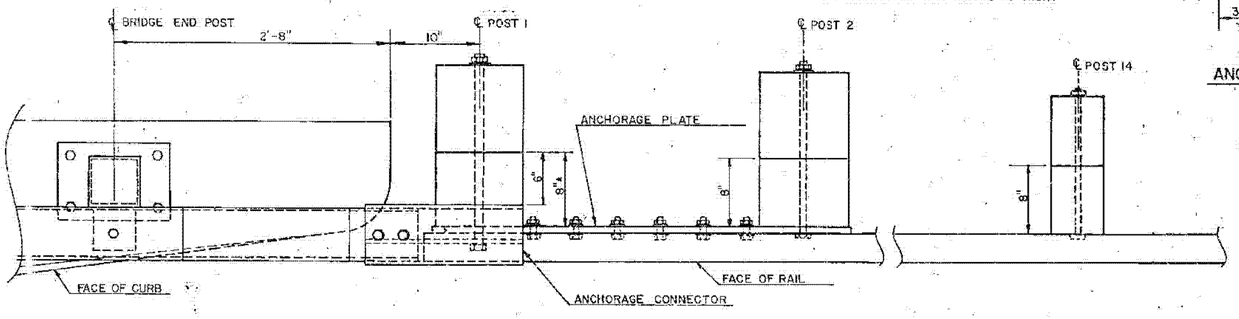
ALTERNATE DETAIL

FOR DIMENSIONS SEE DETAIL AT RIGHT



NOTES

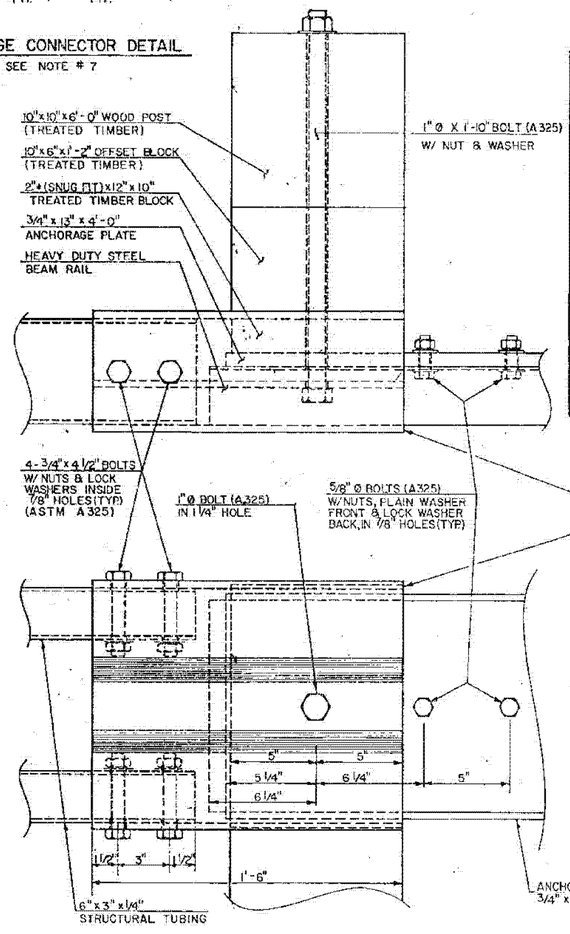
1. REFER TO STANDARD G-1 FOR DETAILS OF APPROACH GUARD RAIL.
2. APPROACH RAIL SPLICES SHALL LAP IN DIRECTION OF TRAFFIC FLOW.
3. ANCHORAGE CONNECTOR AND ANCHORAGE PLATE SHALL BE ASTM A 36 STEEL GALVANIZED TO ASTM A 123 AFTER FABRICATION.
4. REFER TO STANDARD SB-R4A-82 FOR NOTES AND DETAILS OF BRIDGE RAILING.
5. GUARD RAIL APPROACH SECTION-TYPE I & II SHALL INCLUDE ANCHORAGE PLATE, ANCHORAGE CONNECTOR, RAIL, POSTS, BLOCKS, AND ATTACHMENT HARDWARE.
6. APPROACH RAILING SHALL BE HEAVY DUTY STEEL BEAM FOR 50'-0" FROM THE ℄ OF POST 1 FOR TYPE I AND 12'-6" FROM THE ℄ OF POST 1 FOR TYPE II.
7. ALLOWABLE DIMENSIONAL TOLERANCE FOR BENT SECTIONS IS ±1/16 OF AN INCH.



BRIDGE APPROACH PLAN

ANCHORAGE CONNECTOR DETAIL

SEE NOTE # 7

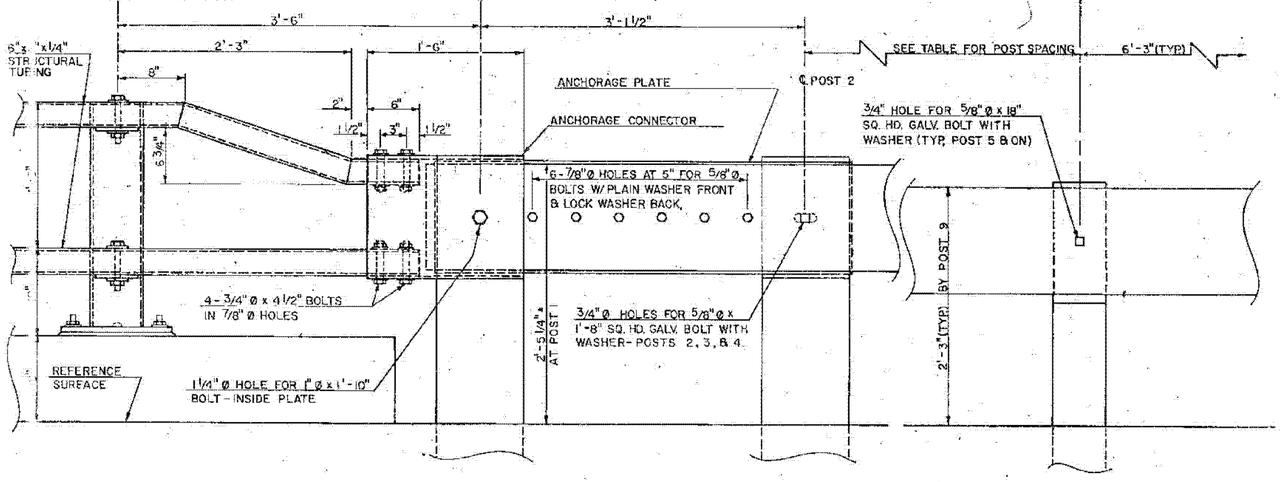


GUARD RAIL APPROACH SECTION TYPE I

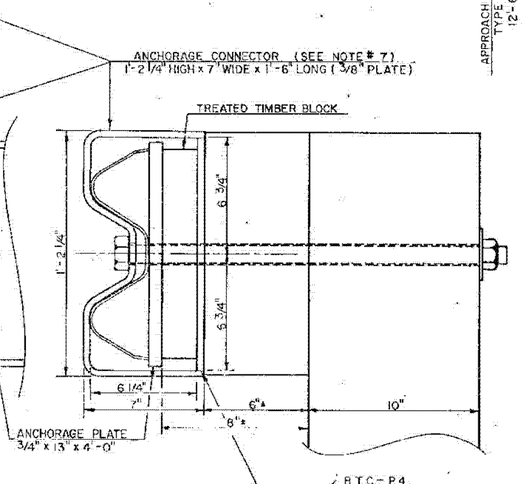
POST NO.	POST SIZE	OFFSET BLOCK	SPACING	
END POST			3'-6"	GUARD RAIL APPROACH SECTION TYPE I, 50'-0"
1	10"x10"	10"x6"	3'-11/2"	
2	10"x10"	10"x8"	3'-11/2"	
3	10"x10"	10"x6"	3'-11/2"	
4	10"x10"	10"x8"	3'-11/2"	
5	8"x8"	8"x8"	3'-11/2"	
6	8"x8"	8"x8"	3'-11/2"	
7	8"x8"	6"x8"	3'-11/2"	
8	8"x8"	6"x8"	3'-11/2"	
9	6"x8"	6"x8"	4'-2"	
10	6"x8"	6"x8"	4'-2"	
11	6"x8"	6"x8"	4'-2"	
12	6"x8"	6"x8"	4'-2"	
13	6"x8"	6"x8"	6'-3"	
14	6"x8" (TYP)	6"x8" (TYP)	6'-3" (TYP)	

GUARD RAIL APPROACH SECTION TYPE II

END POST			3'-6"	GUARD RAIL APPROACH SECTION TYPE II, 12'-6"
1	10"x10"	10"x6"	3'-11/2"	
2	10"x10"	10"x8"	4'-8 1/4"	
3	8"x8"	8"x8"	4'-6 1/8"	
4	8"x8"	8"x8"	6'-3" (TYP)	



BRIDGE APPROACH ELEVATION



JOINT DETAILS

REVISIONS AND CORRECTIONS

1. ADDED TYPE II APPROACH DETAILS, AND REVISED ANCHORAGE CONNECTOR DETAILS. R. HAUPT 9/7/83
2. ADDED DIMENSION TO POST NO. 1. R.S.H. 12-13-84
3. CHANGED WELD DESIGNATION FOR ANCHORAGE CONNECTOR. K.B.M. 3-30-88.

APPROVED:

DECEMBER 28, 1981
DATE

CHIEF OF DESIGN

STRUCTURES ENGINEER

DIRECTOR OF ENGINEERING AND CONSTRUCTION

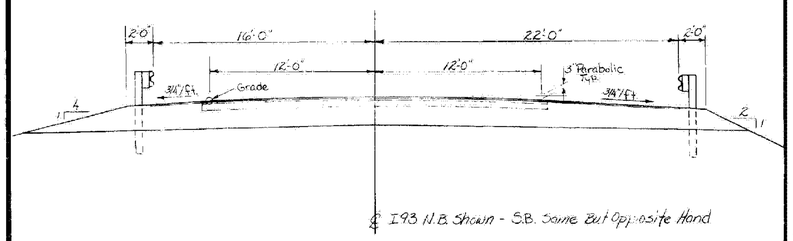
APPROVED FOR THIS PROJECT AND/OR DESIGN IMPLEMENTATION PENDING FINAL APPROVAL

GUARD RAIL APPROACH SECTION-TYPE I & TYPE II

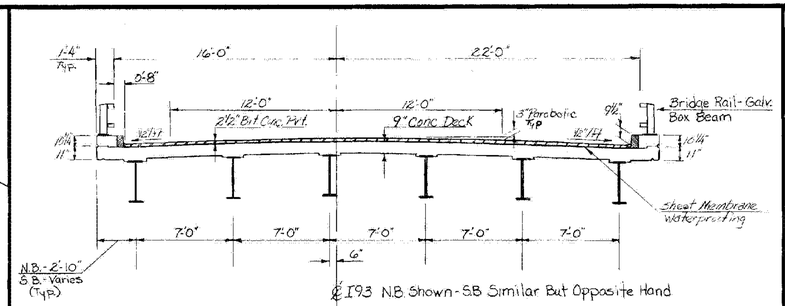
VERMONT AGENCY OF TRANSPORTATION

STANDARD

SB-R4B-82

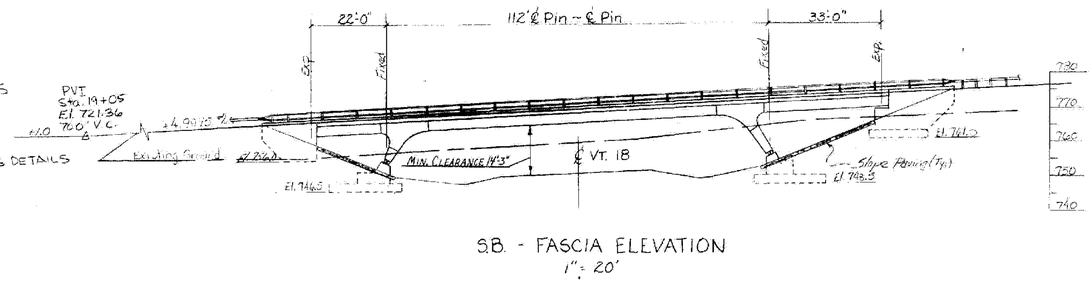


NEW HIGHWAY SECTION — BRIDGE APPROACHES
Scale 1" = 5'-0"

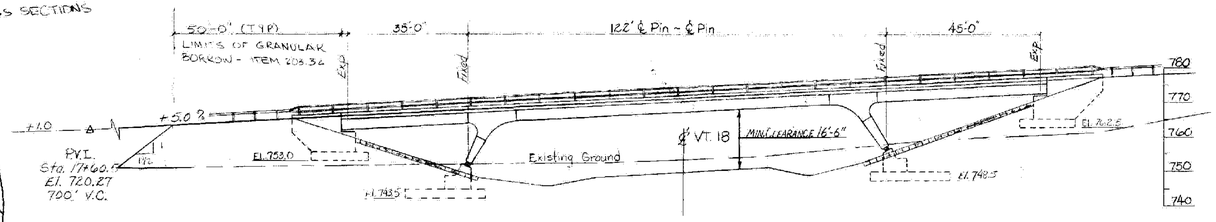


BRIDGE TYPICAL SECTION
Scale 1" = 5'-0"

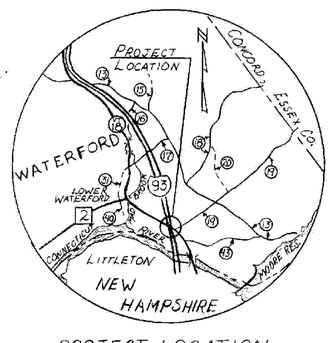
INDEX OF SHEETS



S.B. - FASCIA ELEVATION
1" = 20'



N.B. - FASCIA ELEVATION
1" = 20'



PROJECT LOCATION
(TRACED FROM COUNTY MAP)
SCALE: 1" = 1 MILE

EXISTING STRUCTURE

1. STRUCTURE TYPE _____ OVERALL LENGTH _____ INVENTORY RATING _____
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS _____
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM _____
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) _____ VERTICAL CLEARANCE ABOVE STREAMBED _____
5. WATER SURFACE ELEVATION @ Q 2.33 _____ WATER SURFACE ELEVATION @ Q _____
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD _____ YEAR _____ ESTIMATED DISCHARGE _____
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? _____ IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? _____
   ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF _____
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL _____
9. DISPOSITION OF STRUCTURE _____

NEW STRUCTURE

STRUCTURE GEOMETRY:

1. STRUCTURE TYPE 3 SPAN STEEL RIGID FRAME OVERALL LENGTH 204'-11" ± N.B. 170'-11" S.B.
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 202' N.B. 167' S.B.
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER 14'-3" MIN. S.B. 16'-6" MIN. N.B.
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM N.A.
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) N.A.
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? NO

HYDRAULIC DATA:

1. Q 2.33 _____ WATER ELEVATION _____ VELOCITY _____
   Q 10 _____ WATER ELEVATION _____ VELOCITY _____
   Q 25 _____ WATER ELEVATION _____ VELOCITY _____
   Q 50 _____ WATER ELEVATION _____ VELOCITY _____
   Q 100 _____ WATER ELEVATION _____ VELOCITY _____
2. DRAINAGE AREA _____ CHARACTER OF TERRAIN _____
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? _____
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? _____ IS ORDINARY RISE RAPID? _____
5. NATURE OF NATURAL STREAMBED _____
6. ESTIMATED SCOUR DEPTH _____ COMMENT ON: DRIFT _____ ICE _____
7. WILL ALL WATER PASS THROUGH NEW STRUCTURE? _____ IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR? _____
   ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF _____
8. VERTICAL CLEARANCE ABOVE Q _____
9. ALLOWABLE WATER SURFACE ELEVATION _____ LIMITED BY _____
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? _____ IF YES, DESCRIBE _____
11. AVERAGE DAILY LOW FLOW _____ DEPTH _____ AVERAGE DAILY HIGH FLOW _____ DEPTH _____
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED _____
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE _____ SPAN _____ WATERWAY AREA OF FULL OPENING _____ Q _____
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE _____ SPAN _____ WATERWAY AREA OF FULL OPENING _____ Q _____

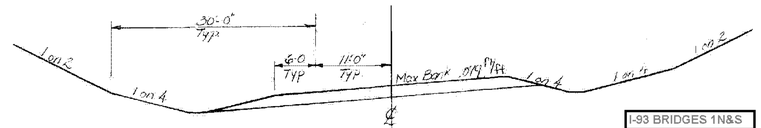
ALLOWABLE STRESSES:

1. DESIGN LIVE LOAD AASHTO HS25
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 4 KSF ON LEDGE N.A.
3. ALLOWABLE LOAD FOR PILING N.A. TYPE _____ ESTIMATED LENGTH _____
4. ALLOWABLE STRESS FOR STRUCTURAL STEEL ASTM A 588 TENSION 27000 PSI
5. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 24000 PSI COMPRESSION 20000 PSI
6. ALLOWABLE STRESS FOR CONCRETE CLASS A f'_c 3500 f_c 1400 PSI
   CLASS B f'_c 3500 PSI f_c 1400 PSI

TRAFFIC MAINTENANCE:

1. IS TRAFFIC TO BE MAINTAINED? _____ IF YES, ON EXISTING STRUCTURE _____ OR ON TEMPORARY BRIDGE _____
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY _____ TRAFFIC CONTROL SIGNALS REQUIRED _____
   MINIMUM CLEAR SPAN _____ MINIMUM CLEAR HEIGHT _____ MINIMUM WATERWAY AREA _____
   ARE SIDEWALKS REQUIRED? _____ IF SO, ON WHAT SIDE? _____

ADDITIONAL DESIGN CONSIDERATIONS



NEW TYPICAL SECTION - VT. 18
1" = 10'

I-93 BRIDGES 1N&S
WATERFORD
IM MEMB(31)
SHEET 13 OF 48
FOR REFERENCE ONLY

NORTHBOUND LOAD RATING (TONS)	TRUCK						
STRESS LEVELS	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy =							
POSTED 0.67 Fy =							
OPERATING 0.75 Fy =							

SOUTHBOUND LOAD RATING (TONS)	TRUCK						
STRESS LEVELS	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy =							
POSTED 0.67 Fy =							
OPERATING 0.75 Fy =							

RECOMMENDED FOR APPROVAL W. M. Smith STRUCTURES ENGINEER 1-30-80 DATE
RECOMMENDED FOR APPROVAL Arthur L. Goss CHIEF OF DESIGN 1-30-80 DATE
APPROVED BY S. J. Yaga DIRECTOR OF ENGINEERING & CONSTRUCTION 1-30-80 DATE

REVISIONS

NO.	DESCRIPTION	BY & DATE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

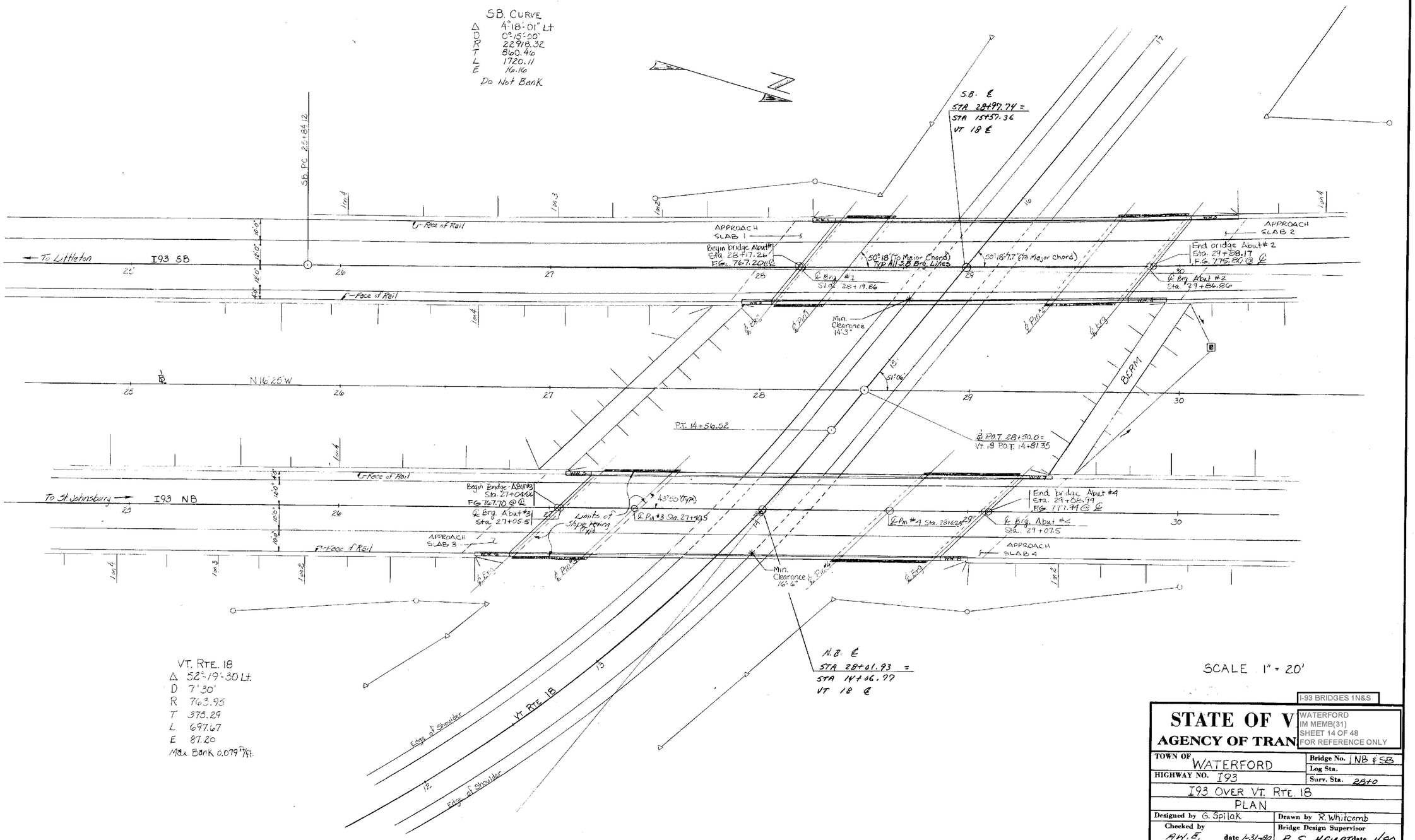
TOWN OF WATERFORD	Bridge No. 1 NB & SB
HIGHWAY NO. I93	Log Sta.
	Surv. Sta. 28+00

I93 N.B. & S.B. OVER VT. RTE. 18
PRELIMINARY INFORMATION

Designed by G. Spilak	Drawn by R. Whitcomb
Checked by AWE date 1-31-80	Bridge Design Supervisor R. S. HAUPT date 1/80
PROJECT CONTRACT # 1 WATERFORD	PROJECT NO. I93-1(3)
Bridge Sheet No. BR 100	Sheet 130 of 489

174 of 290

BRUNING 44-131 4015
BR-2



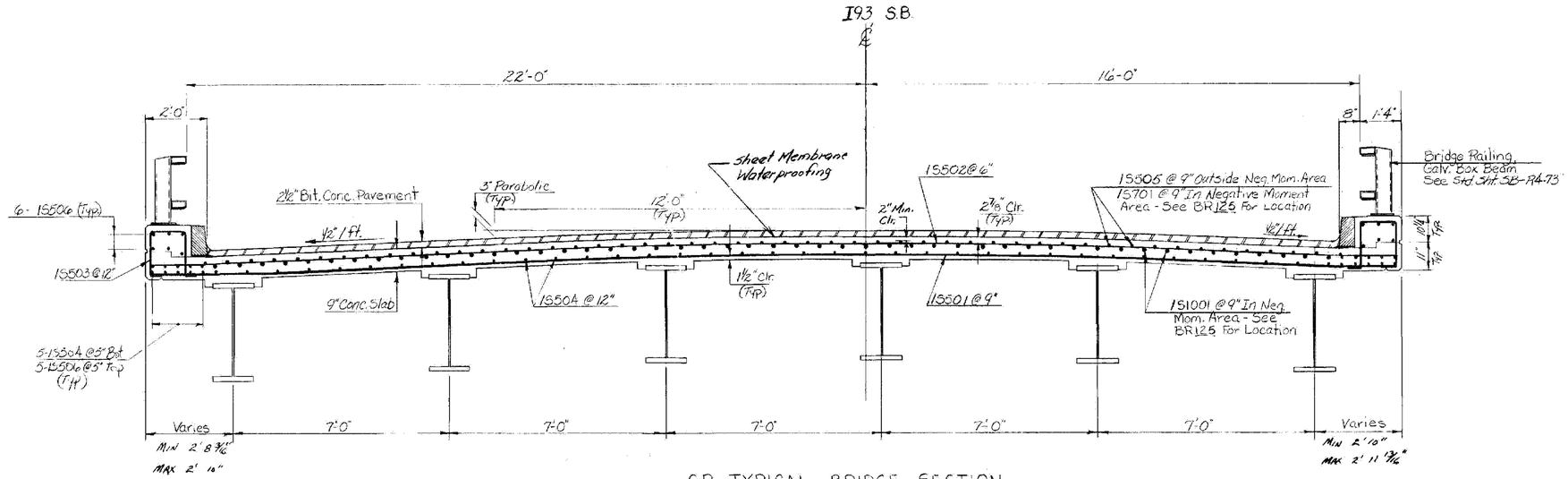
I-93 BRIDGES 1N&S

STATE OF V
AGENCY OF TRAN

WATERFORD
IM MEMB(31)
SHEET 14 OF 48
FOR REFERENCE ONLY

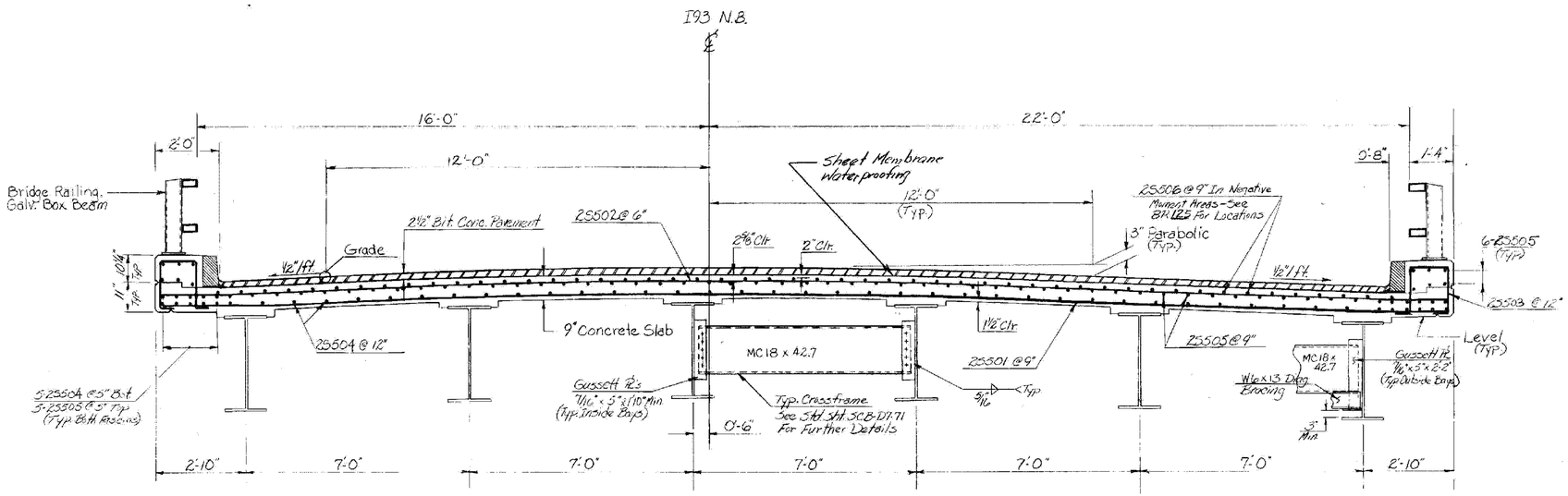
TOWN OF WATERFORD	Bridge No. 1 NB & SB
HIGHWAY NO. I93	Log Sta.
	Surv. Sta. 28+0
I93 OVER VT. RTE. 18	
PLAN	
Designed by G. Spilak	Drawn by R. Whitcomb
Checked by A.W.E. date 1-31-90	Bridge Design Supervisor R. S. NAUPT date 1/80
PROJECT CONTRACT #1 WATERFORD	PROJECT NO. I93-1(3)
Bridge Sheet No. BR101	Sheet 131 of 489

BR-6



S.B. TYPICAL BRIDGE SECTION

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



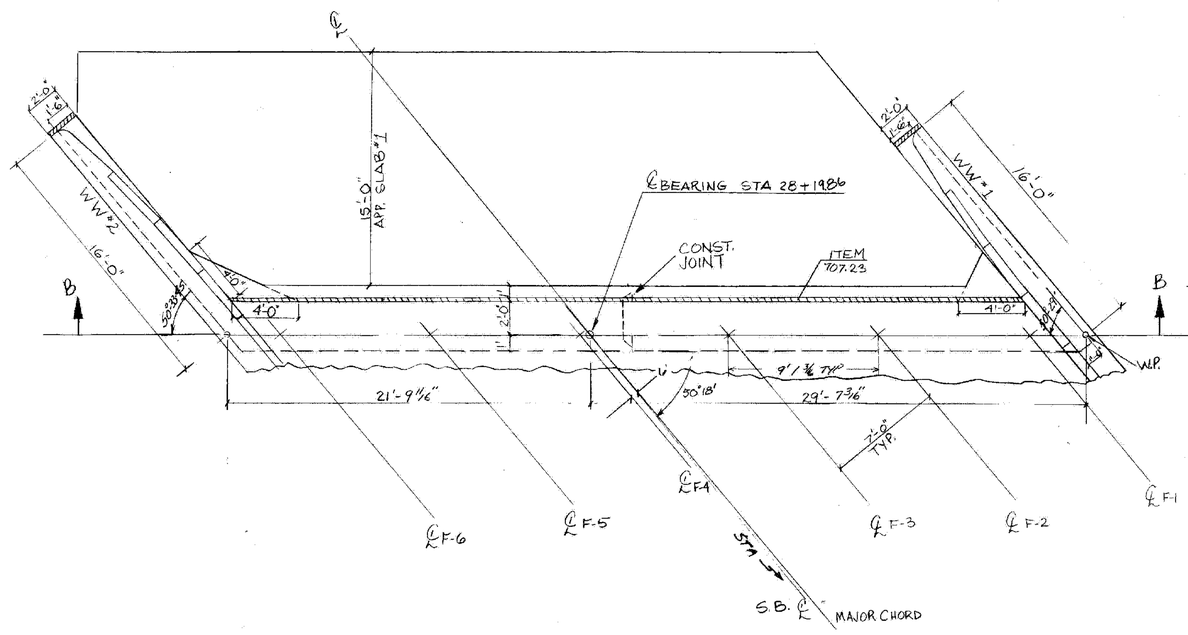
N.B. TYPICAL BRIDGE SECTION

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

I-93 BRIDGES 1N&S
WATERFORD
IM MEMB(31)
SHEET 15 OF 48
FOR REFERENCE ONLY

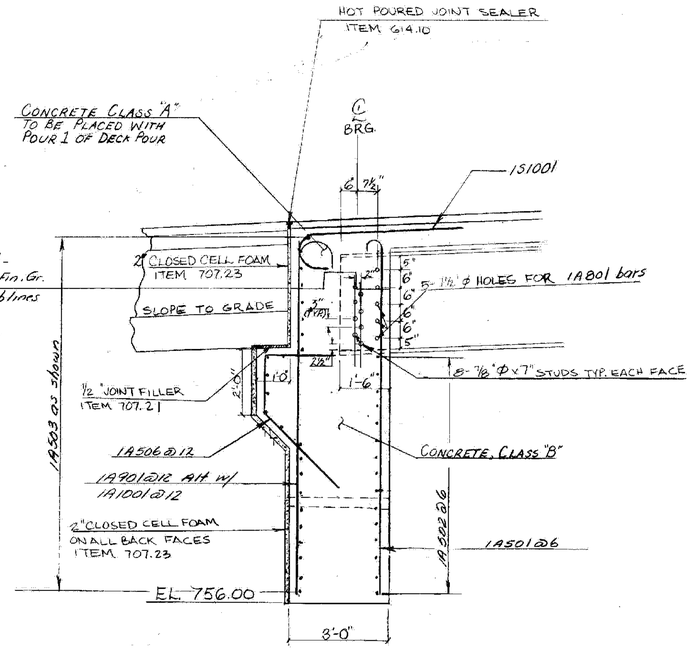
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. 1 NB & SB
HIGHWAY NO. I93	Log Sta.
	Surv. Sta. 28+0
I93 N.B. & S.B. Over VT. Rte. 18	
TYPICAL BRIDGE SECTIONS	
Designed by G. SPILAR	Drawn by R. WHITCOMB
Checked by A. Elwood date 6-19-80	Bridge Design Supervisor R.S. HAUPT date 6/80
PROJECT WATERFORD- CONTRACT 1	PROJECT NO. I93-1(3)
Bridge Sheet No. BR 103	Sheet 133 of 489



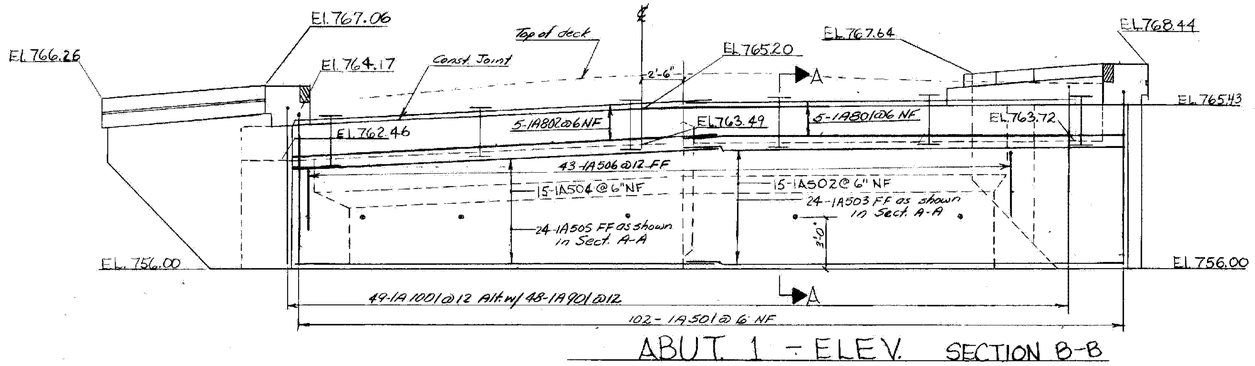
ABUT 1 - PLAN

SCALE 1/4"=1'-0"



SECTION A-A (DECK SHOWN FOR CLARITY)

SCALE ½"=1'



ABUT 1 - ELEV. SECTION B-B

SCALE 1/4"=1'-0"

NOTE: ITEMS CONFORMING TO SPECIFICATIONS 707.2.1, 707.23 AND 707.30 SHALL BE SUBSIDIARY TO CONCRETE CLASS B.

FF FAR FACE
NF NEAR FACE

I-93 BRIDGES 1N&S

WATERFORD
IM MEMB(31)
SHEET 16 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. 1 SB
HIGHWAY NO. I 93	Log Sta.
	Surv. Sta. 28+00

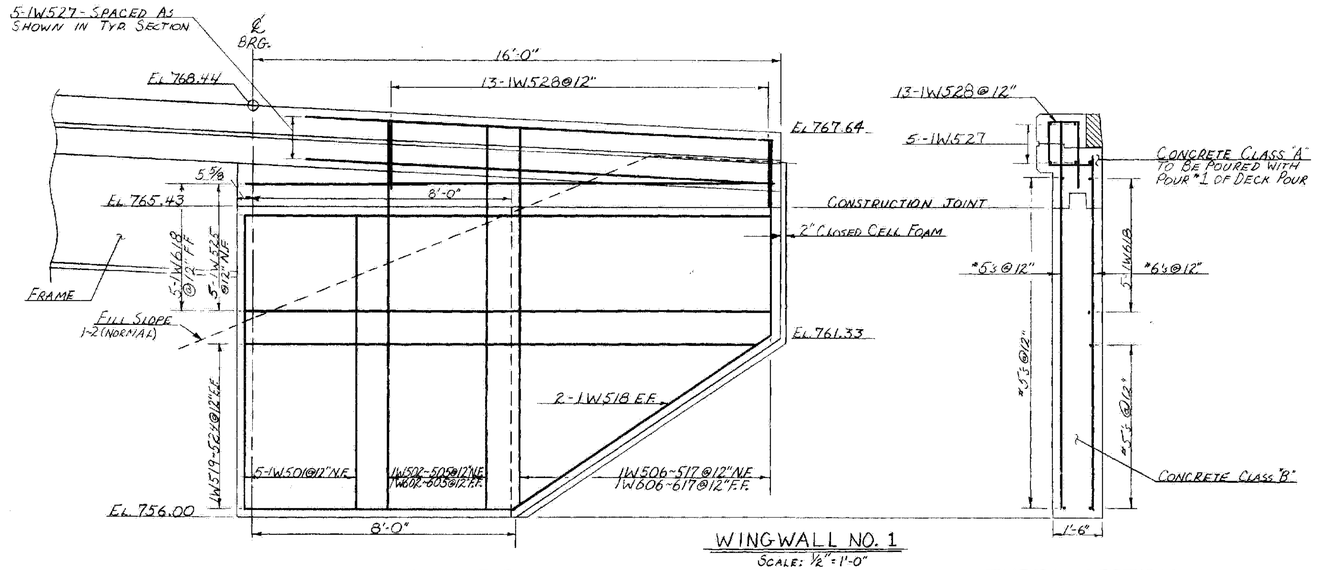
I93 N.B. & S.B. Over VT. Rte. 18

S.B. ABUTMENT 1 DETAILS

Designed by G. SPILAK	Drawn by M. HEALD
Checked by A. Elwood date 6-13-80	Bridge Design Supervisor R. HAUPT date 6-80
PROJECT CONTRACT 1 WATERFORD	PROJECT NO. I93-1(3)
Bridge Sheet No. BR 111.	Sheet 141 of 489 178 of 290

BRUNING 44-131-40151

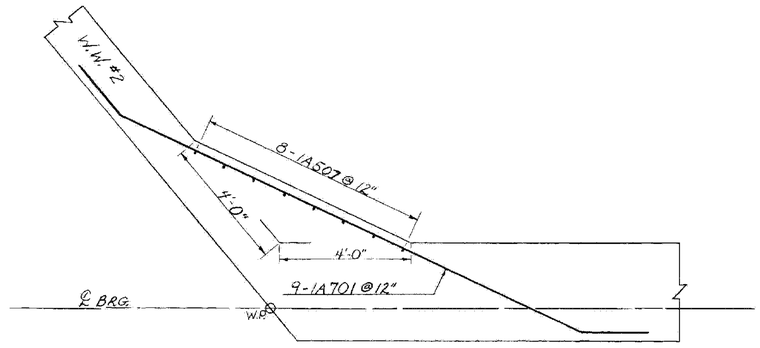
BR-6



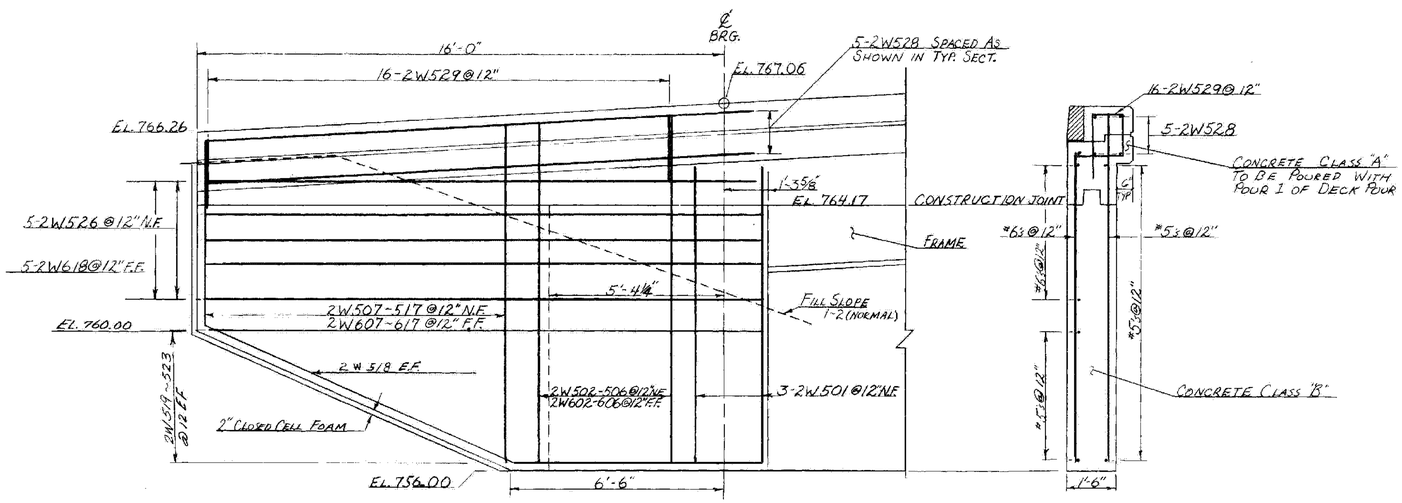
ELEVATION

WINGWALL NO. 1
SCALE: ½" = 1'-0"

TYPICAL SECTION



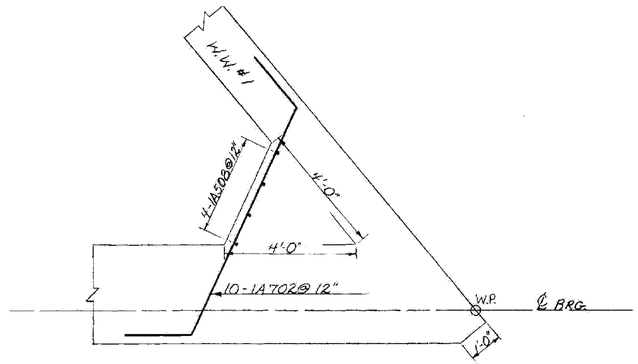
FILLET DETAILS
SCALE: ½" = 1'-0"



ELEVATION

WINGWALL NO. 2
SCALE: ½" = 1'-0"

TYPICAL SECTION



FILLET DETAIL
SCALE: ½" = 1'-0"

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

I-93 BRIDGES 1N&S

WATERFORD
IM MEMB(31)
SHEET 17 OF 48
FOR REFERENCE ONLY

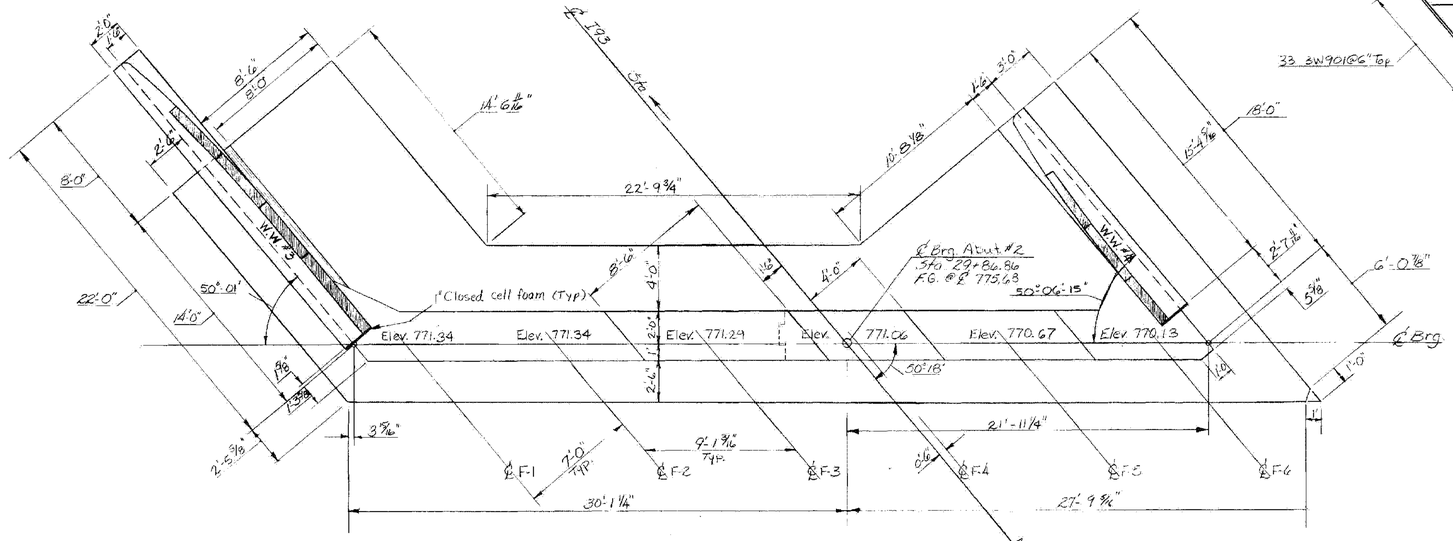
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. 1 SB
HIGHWAY NO. I 93	Log Sta.
	Surv. Sta. 28+0

I 93 N.B. & S.B. OVER VT. 18
S.B. WINGWALLS NO. 1&2 DETAILS

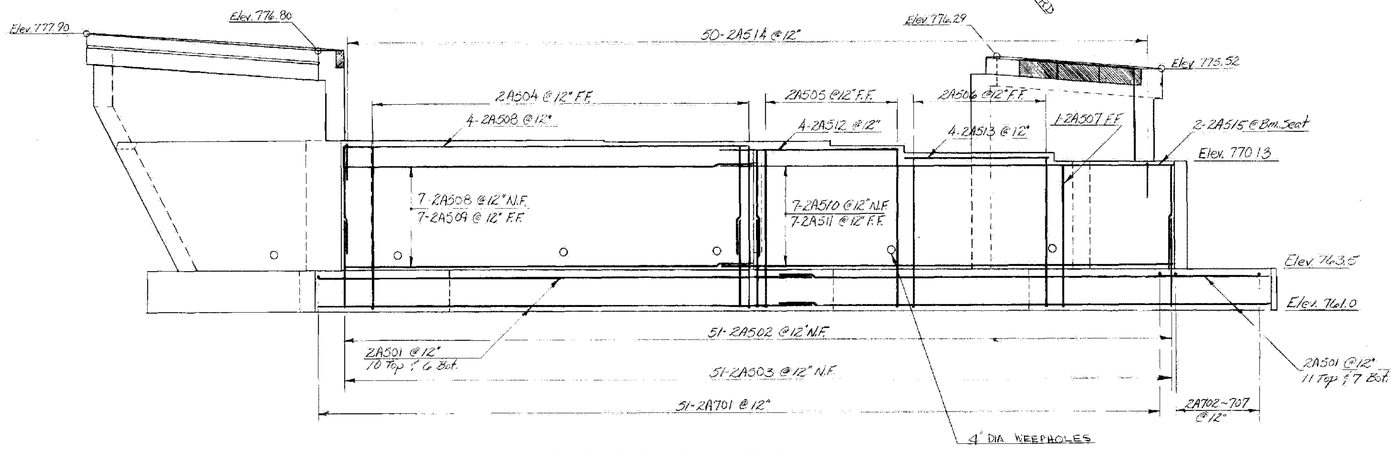
Designed by G. SPILAR	Drawn by S. BASCOM
Checked by A. Elwood date 6-16-80	Bridge Design Supervisor R.S. HAUPT date 6-80
PROJECT CONTRACT 1 WATERFORD	PROJECT NO. I 93-1(3)
Bridge Sheet No. BR 112	Sheet 142 of 489

BRUNING 44-131 #0151
BR-6



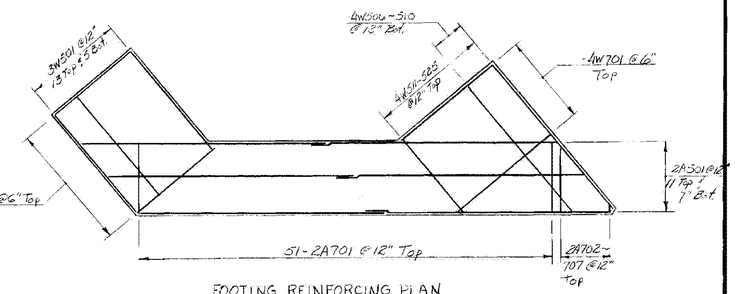
ABUTMENT No. 2 - PLAN

¼" = 1'-0"



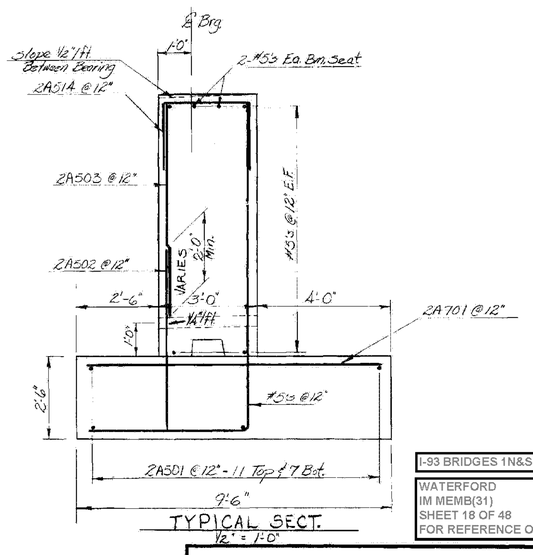
ABUTMENT No. 2 - ELEV.

¼" = 1'-0"



FOOTING REINFORCING PLAN

⅛" = 1'-0"



TYPICAL SECT.

½" = 1'-0"

I-93 BRIDGES 1N&S

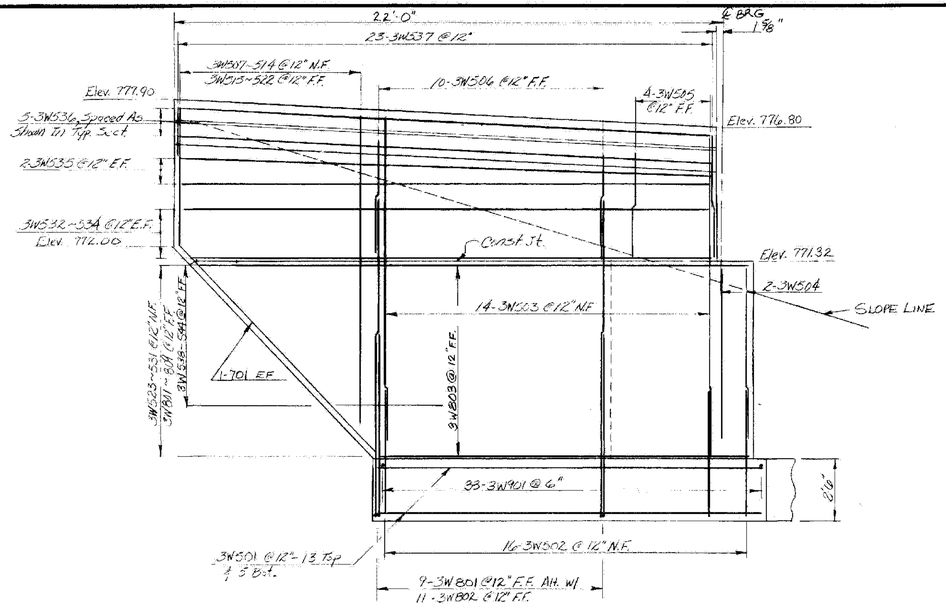
WATERFORD
IM MEMB(31)
SHEET 18 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

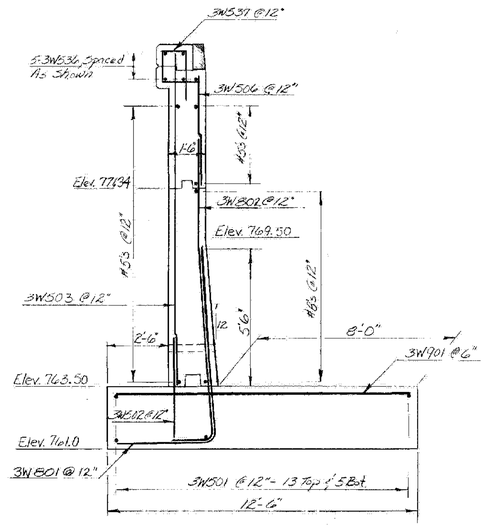
TOWN OF WATERFORD	Bridge No. 1 SB
HIGHWAY NO. I93	Log Sta.
	Surv. Sta. 2B+0
I93 N.B. & S.B. Over Vt. Rte 18	
S.B. ABUTMENT 2 DETAILS	
Designed by G. Spilak	Drawn by R. Whitcomb
Checked by A. Elwood date 6-80	Bridge Design Supervisor R.S. HAUPT date 6-80
PROJECT CONTRACT 1 WATERFORD	PROJECT NO. I93-1(3)
Bridge Sheet No. BR 113	Sheet 143 of 489

BRUNING 44-131 40151

BR-6



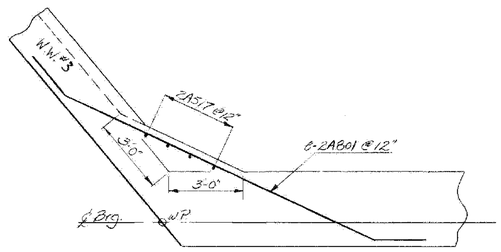
ELEVATION



TYPICAL SECTION

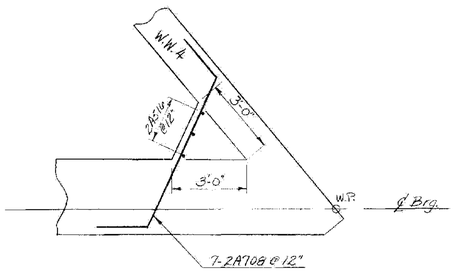
WINGWALL No. 3

3/8" = 1'-0"



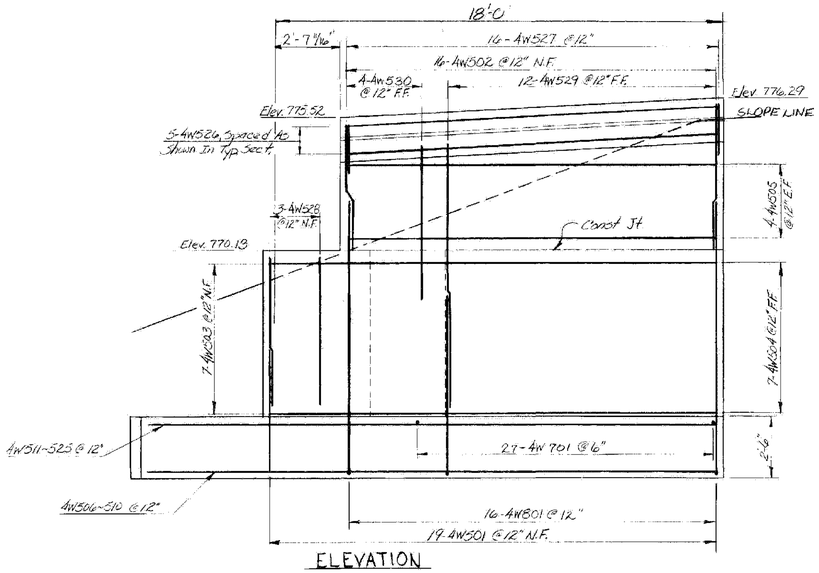
FILLET DETAIL

3/8" = 1'-0"

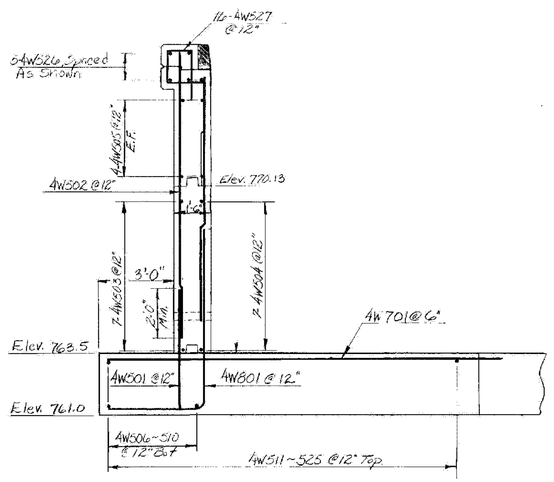


FILLET DETAIL

3/8" = 1'-0"



ELEVATION



TYPICAL SECTION

WINGWALL No. 4

3/8" = 1'-0"

I-93 BRIDGES 1N&S

WATERFORD
IM MEMB(31)
SHEET 19 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. 1 SB
HIGHWAY NO. I93	Log Sta.
	Surv. Sta. 284+0

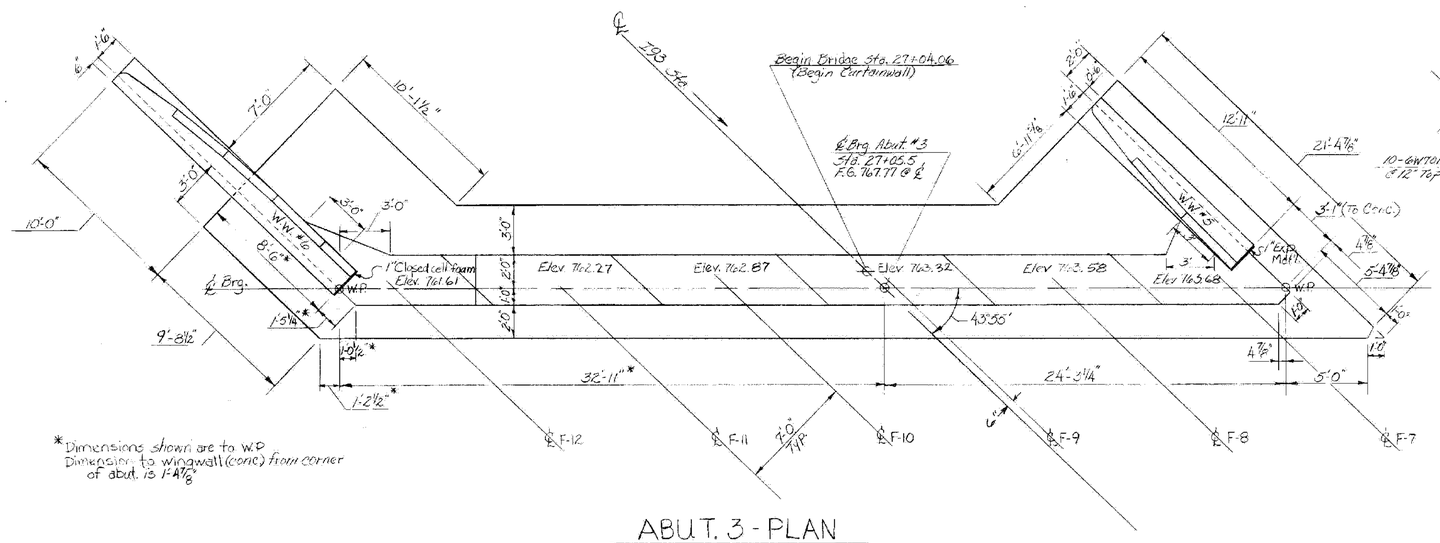
I93 N.B. & S.B. Over Vt. Rte. 18

S.B. WINGWALLS No. 3 & 4 DETAILS

Designed by G. Spilak	Drawn by R. Whitcomb
Checked by A. Elwood date 6-80	Bridge Design Supervisor R.S. HAUPT date 6-80
PROJECT CONTRACT 1 WATERFORD	PROJECT NO. I93-1(3)
Bridge Sheet No. BR14	Sheet 144 of 489

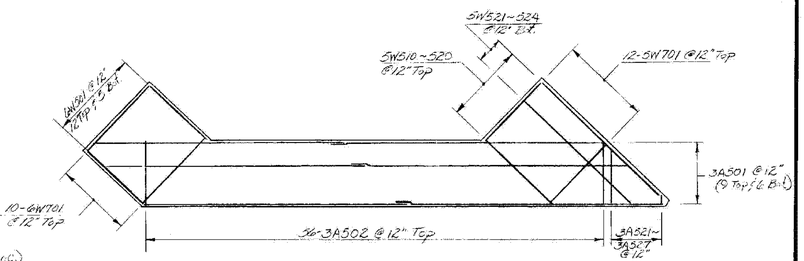
BRUNING 44-131 40151

BR-6

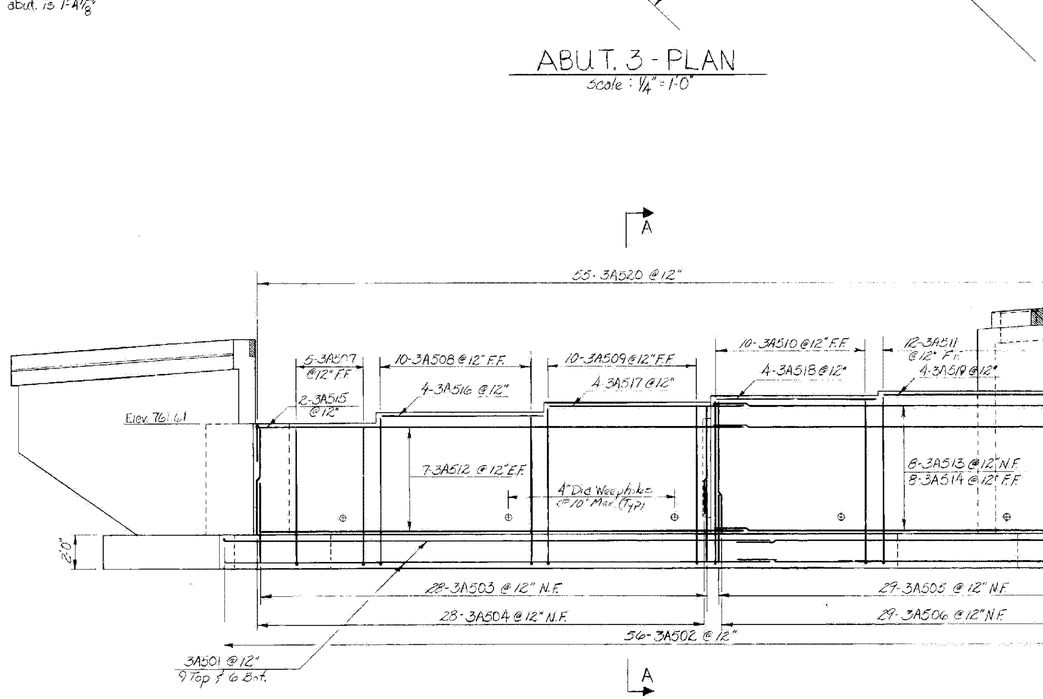


* Dimensions shown are to W.P.
Dimension to wingwall (conic) from corner of abut. is 1'-4⅞"

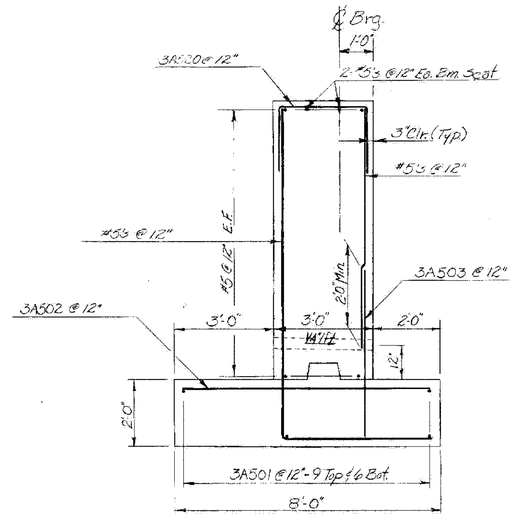
ABUT. 3 - PLAN
Scale: ¼" = 1'-0"



FOOTING REINFORCING PLAN
Scale ⅛" = 1'-0"



ABUT. 3 - ELEV.
Scale: ¼" = 1'-0"



SECT. A-A
Scale ½" = 1'-0"

Note:
N.F. = Near Face
F.F. = Far Face
E.F. = Each Face

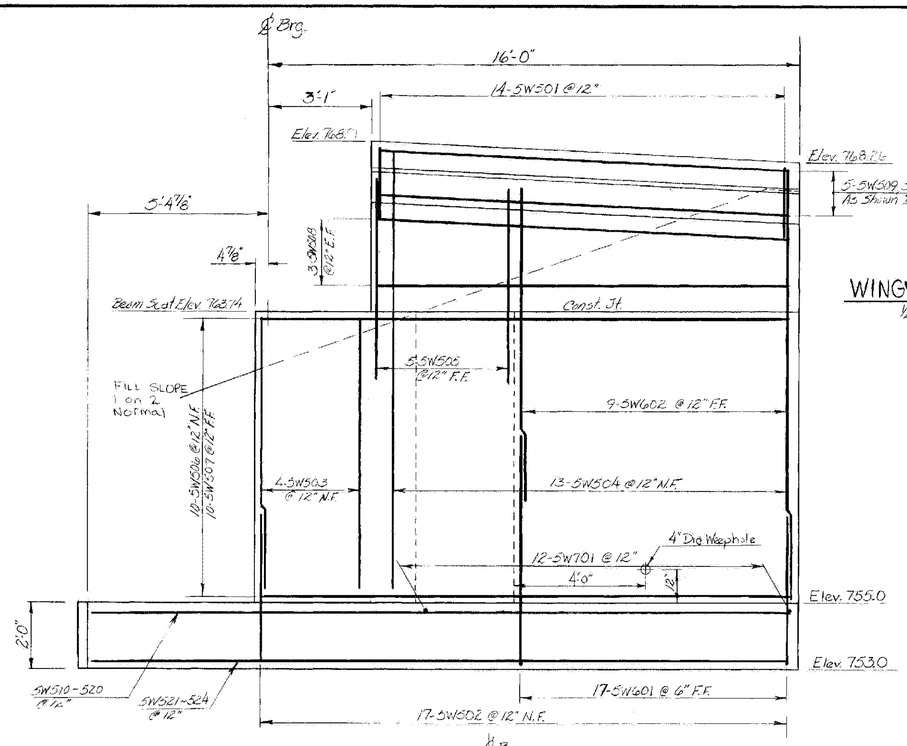
I-93 BRIDGES 1N&S

WATERFORD
IM MEMB(31)
SHEET 20 OF 48
FOR REFERENCE ONLY

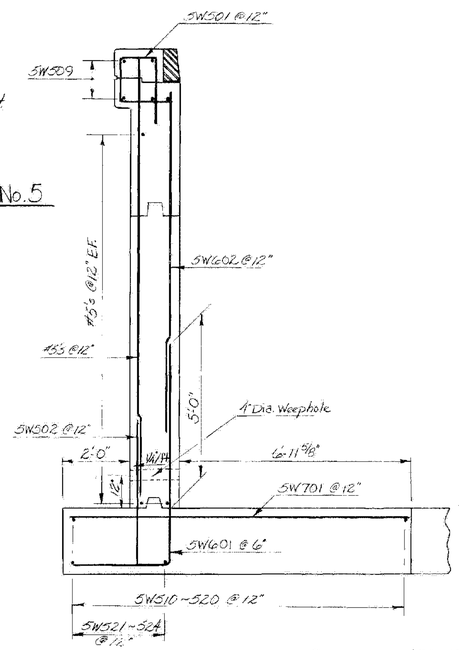
STATE OF V
AGENCY OF TRAN

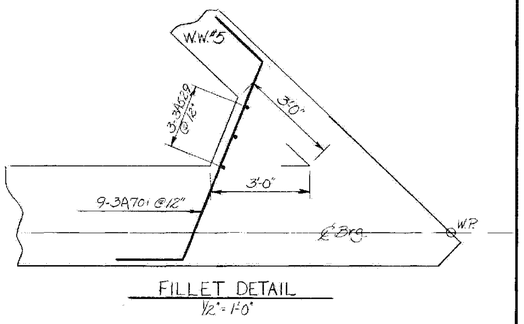
TOWN OF WATERFORD	Bridge No. 1 NB
HIGHWAY NO. I93	Log Sta.
	Surv. Sta. 28+0
I93 N.B. & S.B. Over Vt. Rte. 18	
N.B. ABUT. 3 DETAILS	
Designed by A. Elwood	Drawn by R. Whitcomb
Checked by G.V.S date 5-22-80	Bridge Design Supervisor R.S. HAUPT date 6-80
PROJECT CONTRACT 1 WATERFORD	PROJECT NO. I93-1(3)
Bridge Sheet No. BR 116	Sheet 145 of 489

BRUNING 44-131-40151
BR-6

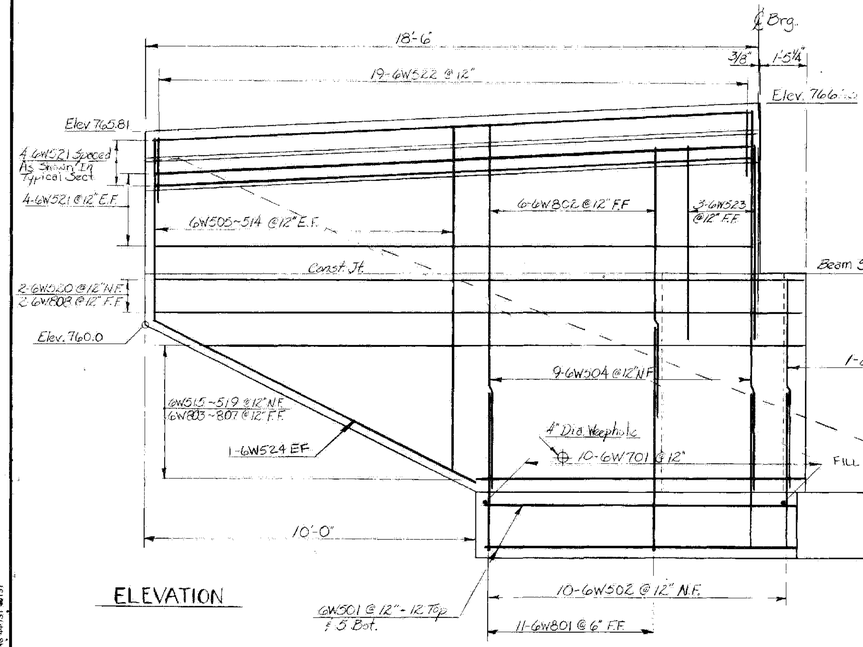


WINGWALL No. 5
1/2" = 1'-0"



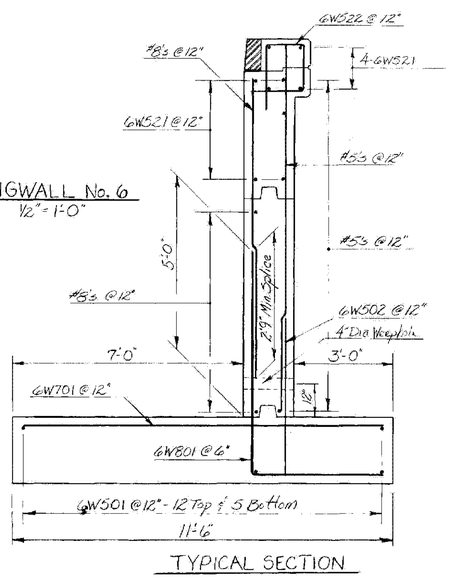


FILLET DETAIL
1/2" = 1'-0"

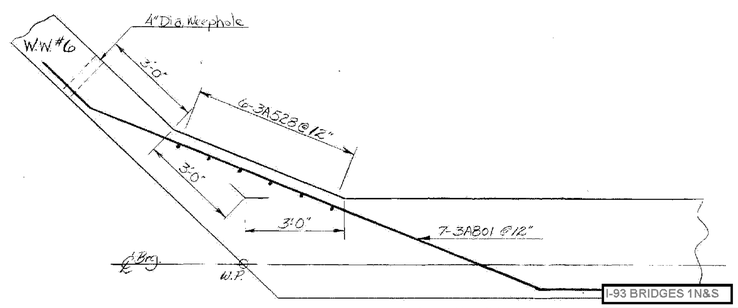


ELEVATION

WINGWALL No. 6
1/2" = 1'-0"



TYPICAL SECTION



FILLET DETAIL
1/2" = 1'-0"

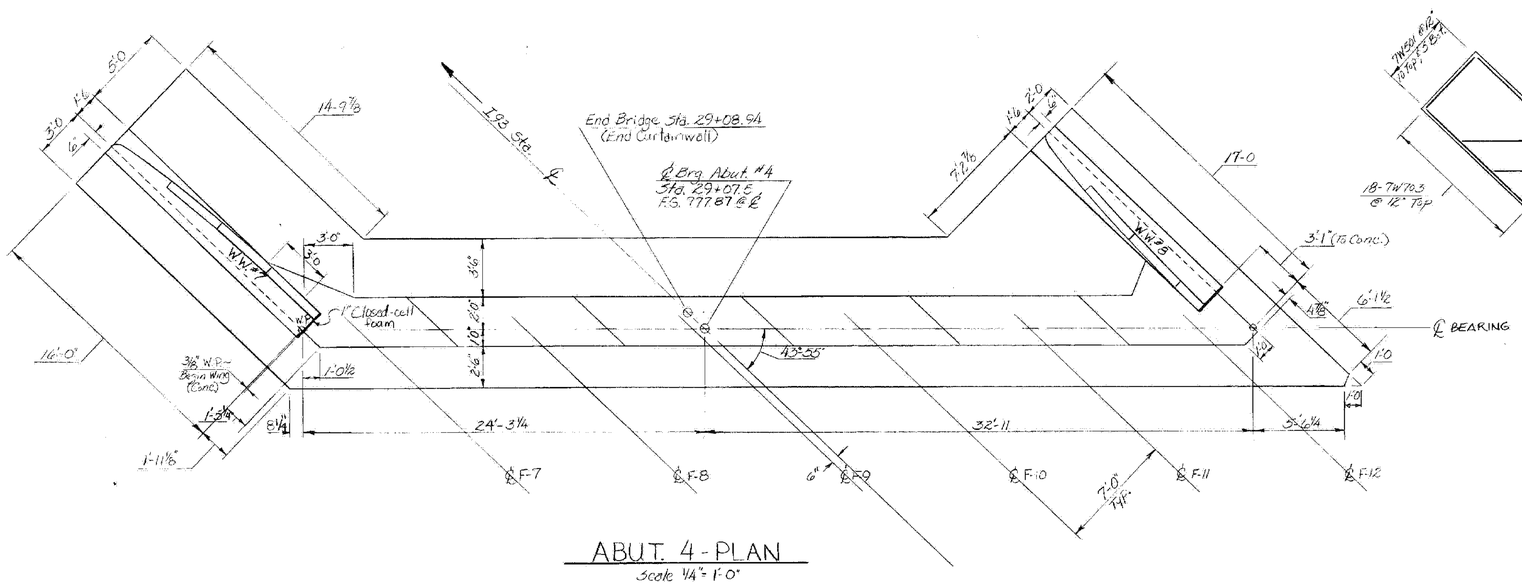
NOTE: N.F. = Near Face
F.F. = Far Face
E.F. = Each Face

I-93 BRIDGES 1N&S
WATERFORD
IM MEMB(31)
SHEET 21 OF 48
FOR REFERENCE ONLY

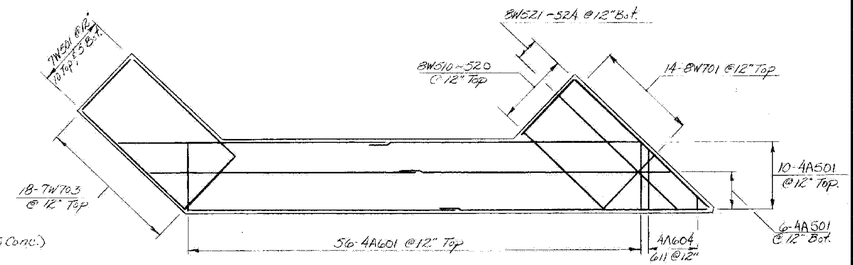
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. 1 NB
HIGHWAY NO. I93	Log Sta.
	Surv. Sta. 284+0
I93 N.B. & S.B. Over Vt. Rte. 18	
N.B. WINGWALL No. 5 & 6 DETAILS	
Designed by A. Elwood	Drawn by K. Whitcomb
Checked by GVS date 5-23-80	Bridge Design Supervisor R.S. HAUPT date 6-80
PROJECT CONTRACT 1 WATERFORD	PROJECT NO. I93-1(3)
Bridge Sheet No. BR116	Sheet 146 of 489

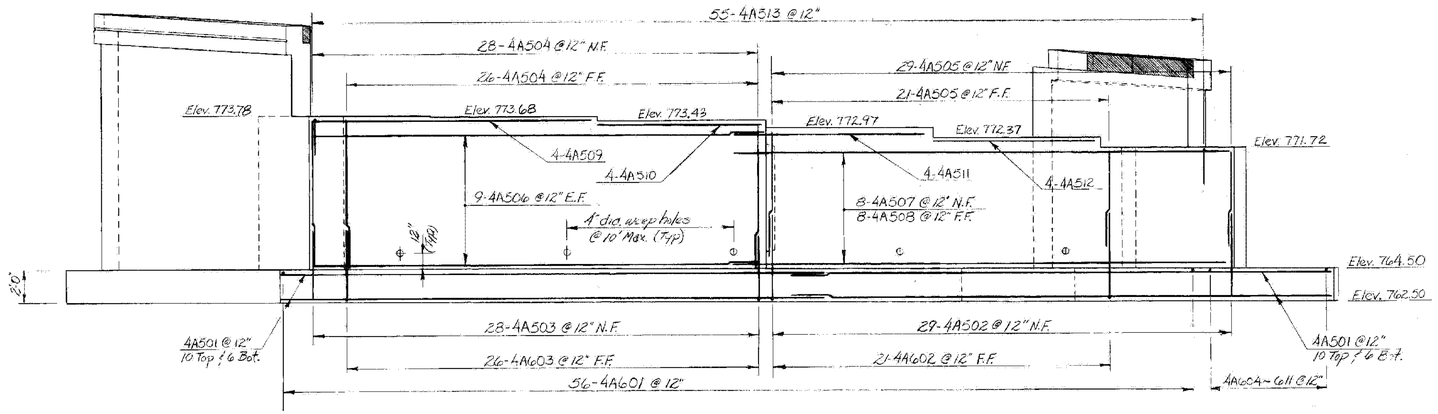
BRUNING 44-131 40151
BR-4



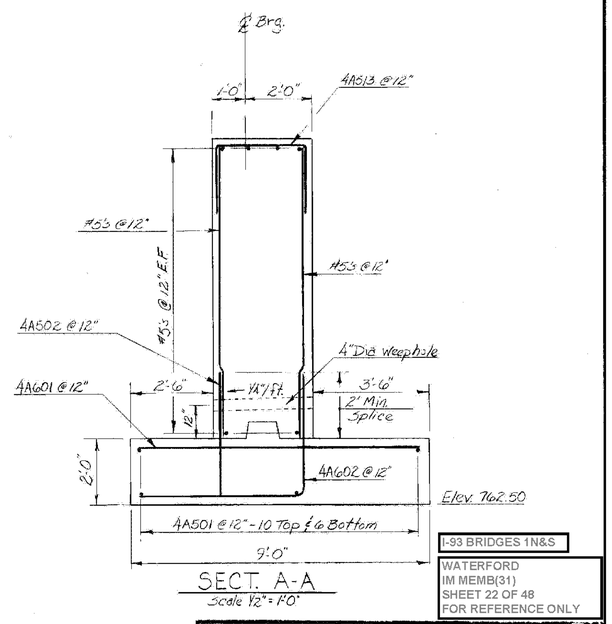
ABUT. 4 - PLAN
Scale 1/4" = 1'-0"



FOOTING REINFORCING PLAN
Scale 1/8" = 1'-0"



ABUT. 4 - ELEV.
Scale 1/4" = 1'-0"



SECT. A-A
Scale 1/2" = 1'-0"

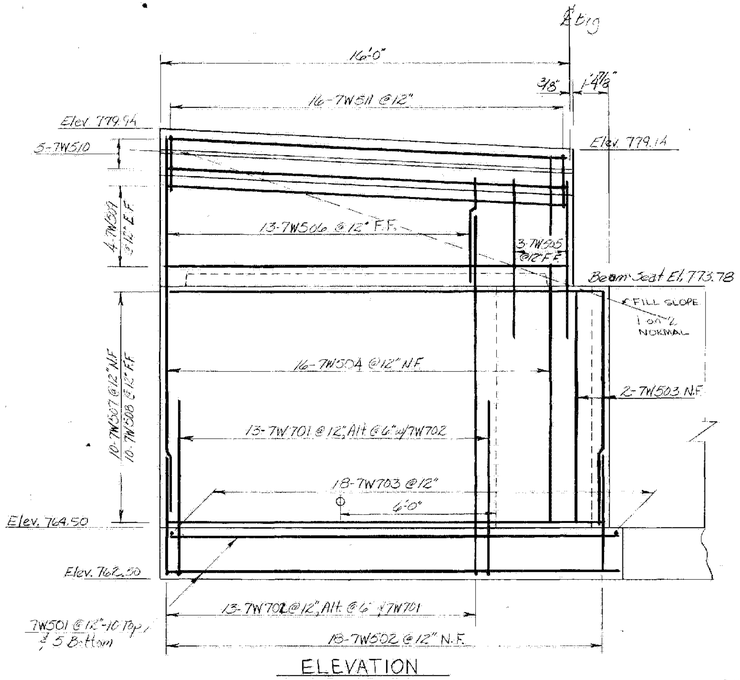
NOTES
N.F. = Near Face
F.F. = Far Face
E.F. = Each Face

I-93 BRIDGES 1N&S
WATERFORD
IM MEMB(31)
SHEET 22 OF 48
FOR REFERENCE ONLY

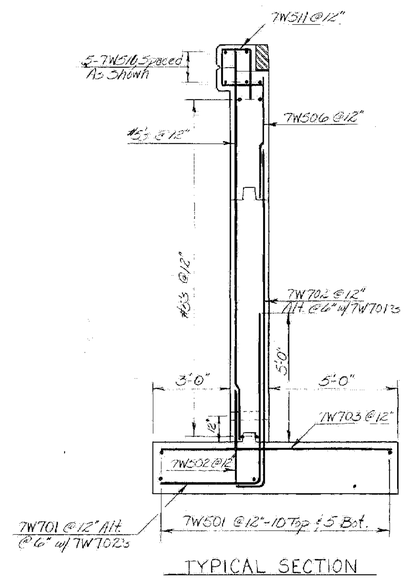
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. 1 NB
HIGHWAY NO. I93	Log Sta.
	Surv. Sta. 28+0
I93 N.B. & S.B. Over Vt. Rte. 18	
N.B. ABUT. 4 DETAILS	
Designed by A. Elwood	Drawn by R. Whitcomb
Checked by G.V.S. date 5-19-80	Bridge Design Supervisor R. S. HAUPT date 6-80
PROJECT CONTRACT 1 WATERFORD	PROJECT NO. I93-1(3)
Bridge Sheet No. BR 117	Sheet 147 of 489

BRUNING 44-131 40151
BR-4



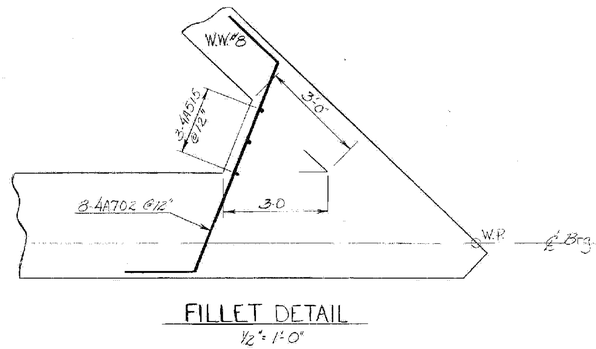
ELEVATION



TYPICAL SECTION

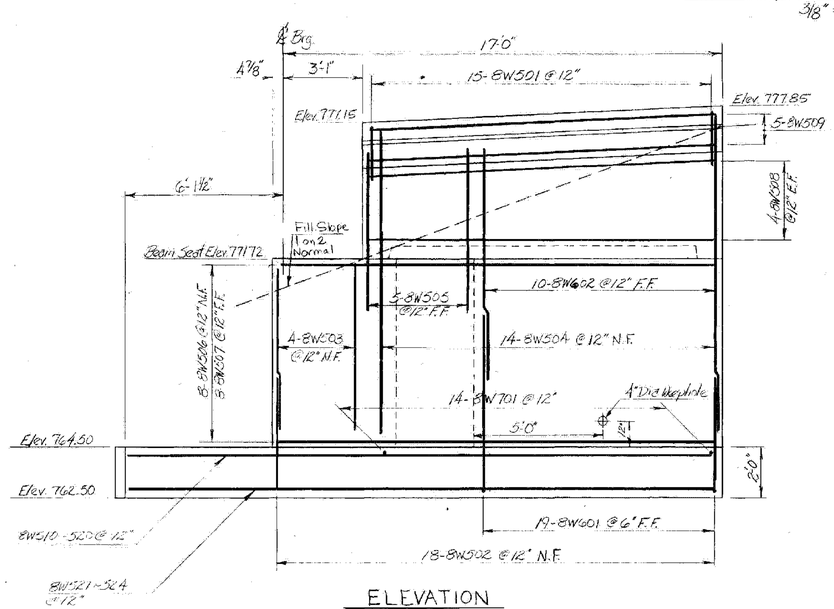
WINGWALL No. 7

3/8" = 1'-0"

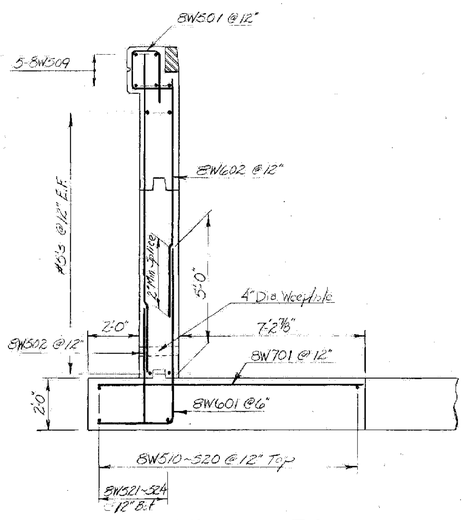


FILLET DETAIL

1/2" = 1'-0"



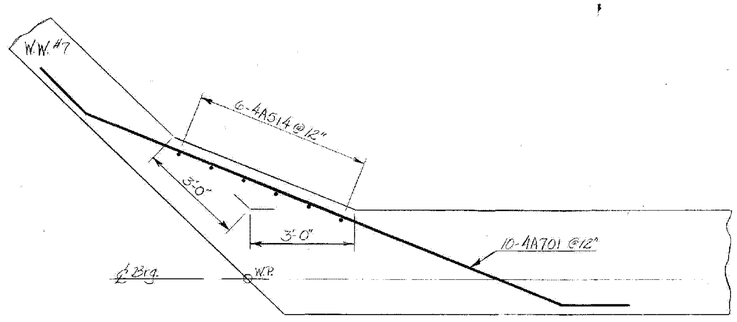
ELEVATION



TYPICAL SECTION

WINGWALL No. 8

3/8" = 1'-0"



FILLET DETAIL

1/2" = 1'-0"

NOTE: N.F. = Near Face
F.F. = Far Face
E.F. = Each Face

I-93 BRIDGES 1N&S

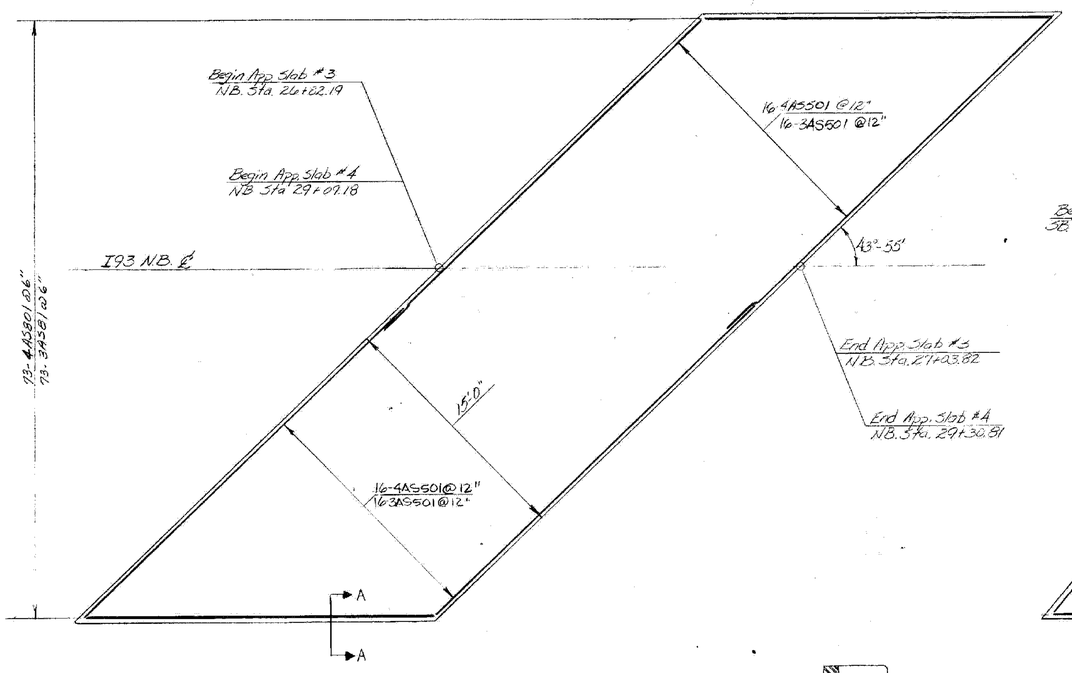
WATERFORD
IM MEMB(31)
SHEET 23 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

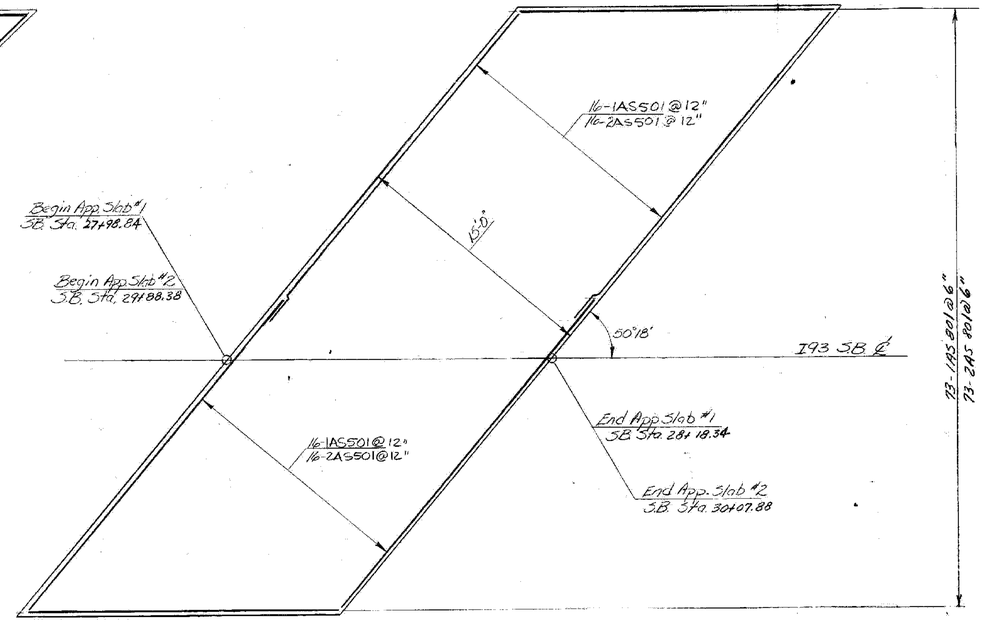
TOWN OF WATERFORD	Bridge No. 1 NB
	Log Sta.
HIGHWAY NO. I93	Surv. Sta. 284+0
I93 N.B. & S.B. Over Vt Rte. 18	
N.B. WINGWALL No. 7 & 8 DETAILS	
Designed by A. Elwood	Drawn by R. Whitcomb
Checked by GVS date 5-20-80	Bridge Design Supervisor R.S. HAUPT date 6-80
PROJECT CONTRACT 1 WATERFORD	PROJECT NO. I93-1(1)
Bridge Sheet No. BR 18	Sheet 148 of 489

BRUNING 44-131-40151

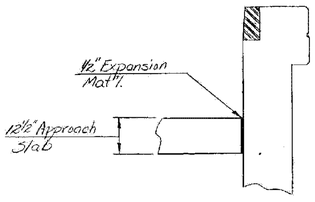
BR-4



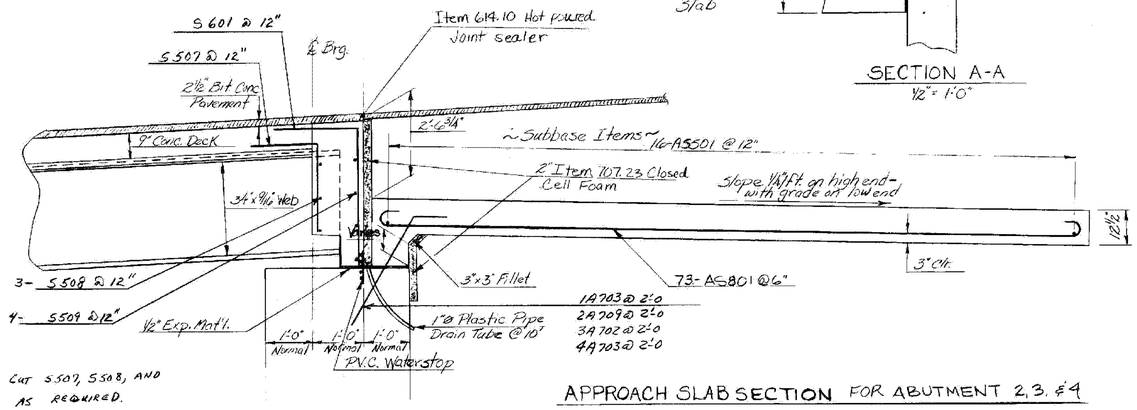
N.B. APPROACH SLABS PLAN
1/4" = 1'-0"



S.B. APPROACH SLABS PLAN
1/4" = 1'-0"



SECTION A-A
1/2" = 1'-0"



FIELD CUT S507, S508, AND S601 AS REQUIRED.

APPROACH SLAB SECTION FOR ABUTMENT 2, 3, & 4
1/2" = 1'-0"

SEE BR 111. FOR ABUTMENT 1 APPROACH SLAB

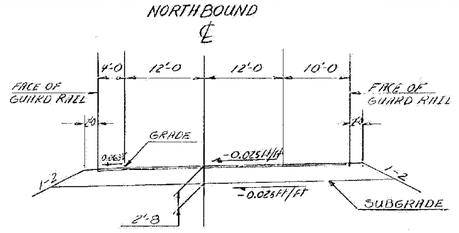
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. 1 NB & SB
HIGHWAY NO. I93	Log Sta.
	Surv. Sta. 28+10

I93 N.B. & S.B. Over Vt. Rte. 18
N.B. & S.B. Approach Slab Details

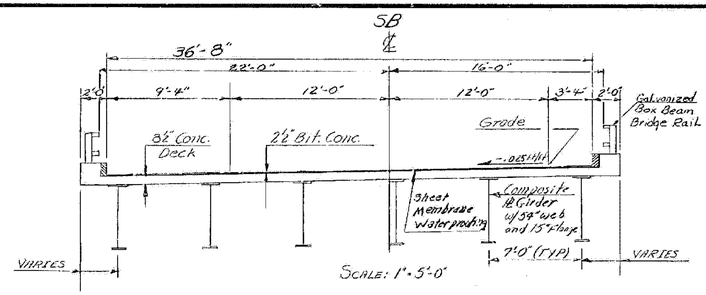
Designed by G. Spilak	Drawn by R. Whitcomb
Checked by A. Elwood date 6-18-80	Bridge Design Supervisor R.S. Haupt date 6-80
PROJECT CONTRACT 1 WATERFORD	PROJECT NO. I93-1(3)
Bridge Sheet No. BR 120	Sheet 156 of 179 of 293

BRUNING 44-131-40151
BR-6



SCALE: 1"=10'-0

NEW HIGHWAY SECTION — BRIDGE APPROACHES



SCALE: 1"=5'-0"

SB BRIDGE TYPICAL SECTION

EXISTING STRUCTURE (None)

1. STRUCTURE TYPE _____ OVERALL LENGTH _____ INVENTORY RATING _____
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS _____
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM _____
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) _____ VERTICAL CLEARANCE ABOVE STREAMBED _____
5. WATER SURFACE ELEVATION @ Q 2.33 _____ WATER SURFACE ELEVATION @ Q _____
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD _____ YEAR _____ ESTIMATED DISCHARGE _____
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? _____ IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? _____
   ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF _____
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL _____
9. DISPOSITION OF STRUCTURE _____

NEW STRUCTURE

STRUCTURE GEOMETRY:

1. STRUCTURE TYPE COMPOSITE PLATE GIRDER OVERALL LENGTH SB = 113.08' NB = 113.04'
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS SB = 110.00' NB = 110.00'
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER NB = 16'-4", SB = 16'-5"
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM N/A
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) N/A
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? NO

HYDRAULIC DATA: N/A

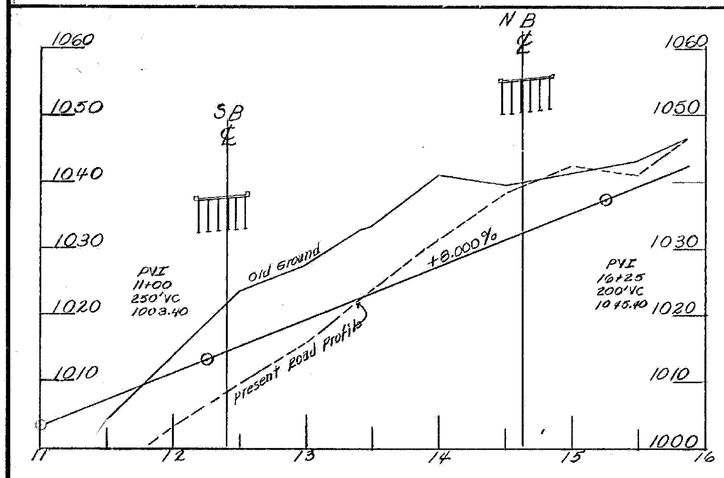
1. Q 2.33 _____ WATER ELEVATION _____ VELOCITY _____
   Q 10 _____ WATER ELEVATION _____ VELOCITY _____
   Q 25 _____ WATER ELEVATION _____ VELOCITY _____
   Q 50 _____ WATER ELEVATION _____ VELOCITY _____
   Q 100 _____ WATER ELEVATION _____ VELOCITY _____
2. DRAINAGE AREA _____ CHARACTER OF TERRAIN _____
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? _____
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? _____ IS ORDINARY RISE RAPID? _____
5. NATURE OF NATURAL STREAMBED _____
6. ESTIMATED SCOUR DEPTH _____ COMMENT ON: DRIFT _____ ICE _____
7. WILL ALL WATER PASS THROUGH NEW STRUCTURE? _____ IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR? _____
   ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF _____
8. VERTICAL CLEARANCE ABOVE Q _____
9. ALLOWABLE WATER SURFACE ELEVATION _____ LIMITED BY _____
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? _____ IF YES, DESCRIBE _____
11. AVERAGE DAILY LOW FLOW _____ DEPTH _____ AVERAGE DAILY HIGH FLOW _____ DEPTH _____
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED _____
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE _____ SPAN _____ WATERWAY AREA OF FULL OPENING _____ Q _____
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE _____ SPAN _____ WATERWAY AREA OF FULL OPENING _____ Q _____

ALLOWABLE STRESSES:

1. DESIGN LIVE LOAD AASHTO H 15 S 25-44
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 2 TONS/FT² ON LEDGE N/A
3. ALLOWABLE LOAD FOR PILING N/A TYPE N/A ESTIMATED LENGTH N/A
4. ALLOWABLE STRESS FOR STRUCTURAL STEEL ASTM A 588 TENSION 27,000 PSI
5. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 50 TENSION 24,000 PSI COMPRESSION 20,000 PSI
6. ALLOWABLE STRESS FOR CONCRETE CLASS A f'_c 3500 PSI f_c 1400 PSI
   CLASS B f'_c 3500 PSI f_c 1400 PSI

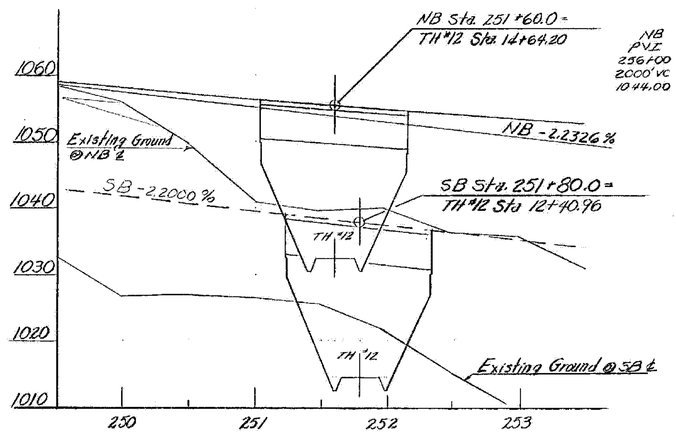
TRAFFIC MAINTENANCE:

1. IS TRAFFIC TO BE MAINTAINED? N/A IF YES, ON EXISTING STRUCTURE N/A OR ON TEMPORARY BRIDGE N/A
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY N/A TRAFFIC CONTROL SIGNALS REQUIRED N/A
   MINIMUM CLEAR SPAN N/A MINIMUM CLEAR HEIGHT N/A MINIMUM WATERWAY AREA N/A
   ARE SIDEWALKS REQUIRED? N/A IF SO, ON WHAT SIDE? N/A



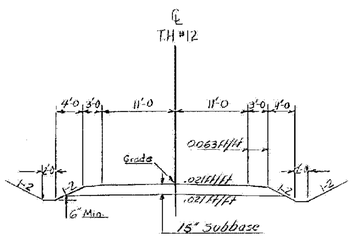
TOWN HIGHWAY #12 - PROFILE

Scale: 1"=50' (hor.)
1"=10' (Vert)



NB & SB PROFILE

Scale: 1"=50' (hor.)
1"=10' (Vert)

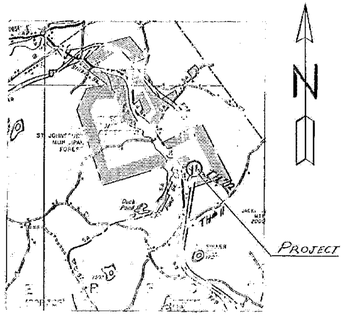


SCALE: 1"=10'-0

TOWN HIGHWAY SECTION NORMAL

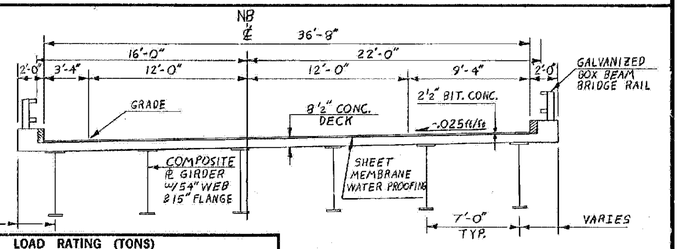
INDEX OF SHEETS ON SHEET BR502

GENERAL NOTES ON SHEET BR503



PROJECT LOCATION

Scale: 1"=1 mile



NB BRIDGE TYPICAL SECTION

SCALE: 1" = 5'-0"

LOAD RATING (TONS)

STRESS LEVELS	TRUCK						
	HS	H	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy = 27.0	52	47					
POSTED 0.67 Fy = 33.5		74	93		77	78	87
OPERATING 0.75 Fy = 37.5			114	131			

RECOMMENDED FOR APPROVAL W. M. Smith STRUCTURES ENGINEER 1-30-80 DATE

RECOMMENDED FOR APPROVAL Arthur Gove CHIEF OF DESIGN 1-30-80 DATE

APPROVED BY A. J. Gove DIRECTOR OF ENGINEERING & CONSTRUCTION 1-30-80 DATE

REVISIONS

NO.	DESCRIPTION	BY & DATE

I-93 BRIDGES 3N&S
WATERFORD
IM MEMB(31)
SHEET 25 OF 48
FOR REFERENCE ONLY

STATE OF V
AGENCY OF TRAN

TOWN OF WATERFORD — Bridge No. B5
HIGHWAY NO. I93 NB & SB — Log Sta. — Surv. Sta. 251+70
I 93 N.B. & S.B. OVER T.H. #12
PRELIMINARY INFORMATION SHEET
Designed by Plumb — Drawn by Plumb
Checked by S. Farnsworth, G. ROGERS 6/80 date 1-24-80 — Bridge Design Supervisor F. W. Balkum date 1-30
PROJECT WATERFORD — PROJECT NO. I 93-1(3) 92
Bridge Sheet No. BR500 — Sheet 121 of 531

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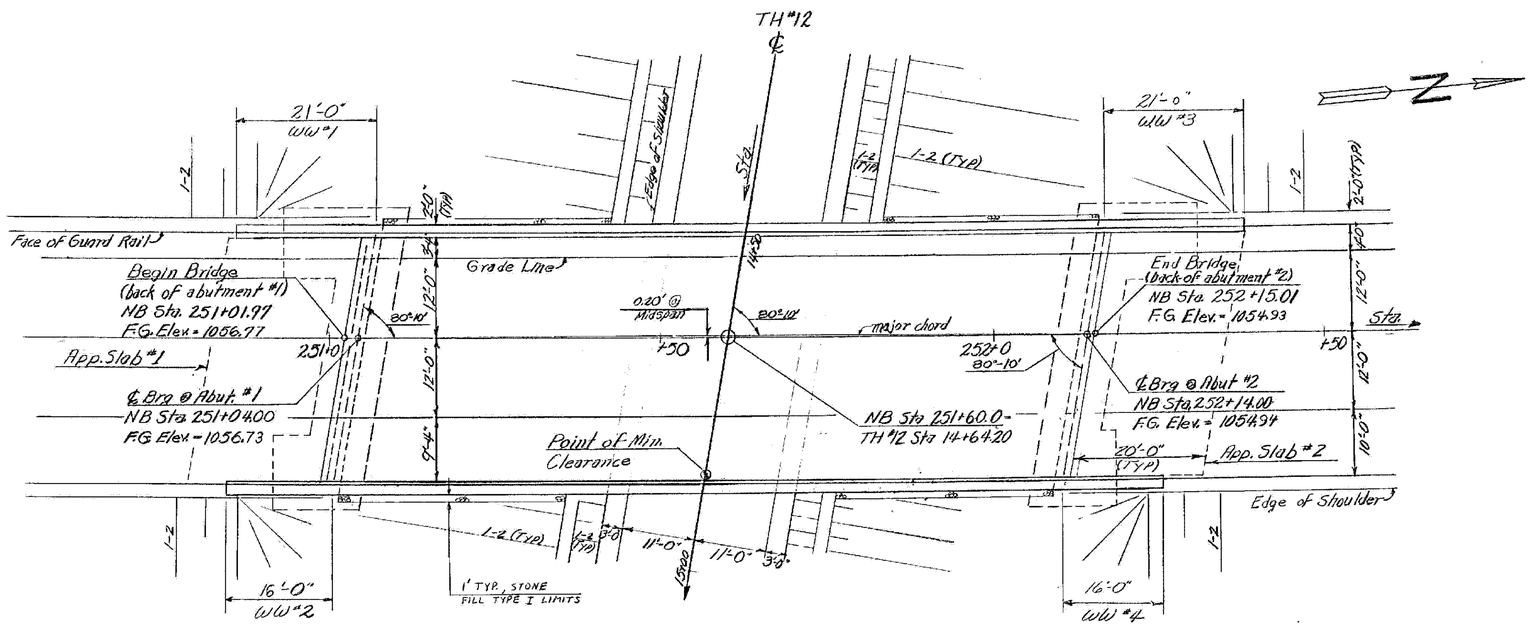
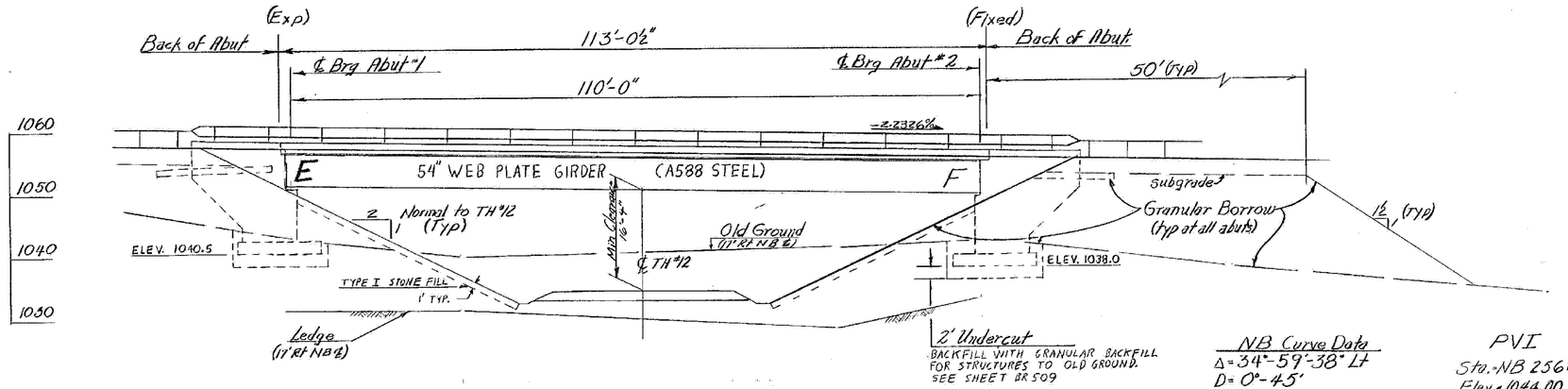
BR-2



PLAN

Scale: 1"=10'



ELEVATION (along rt. fascia)

Scale: 1"=10'

NB Curve Data

Δ = 34°-59'-38" Lt
D = 0°-45'
R = 7639.44
T = 2408.26
L = 4665.85
E = 393.00
Bnk. = 0.025 %

PVI

Sta. NB 256+00
Elev. = 1044.00
L.C. = 2000 Ft.
E. = 5.34 Ft.
k. = 933 Ft.
G1 = -2.2326 %
G2 = -0.0909 %

INDEX OF SHEETS

STANDARD DRAWINGS

STD. DWG.	SCB-D1-75	APRIL 3, 1978(R)
STD. DWG.	SCB-D4-76	JAN. 8, 1976 (R)
STD. DWG.	SCB-D6-73	JAN. 3, 1979 (R)
STD. DWG.	SCB-D7-71 (DETAIL C)	DEC. 15, 1976 (R)
STD. DWG.	SCB-D8-71	JUNE 1, 1977 (R)
STD. DWG.	SCB-D9-71	JAN. 27, 1975 (R)
STD. DWG.	SB-R4-73	NOV. 21, 1979 (R)

REFERENCE SHEETS

I93, NB & SB PLAN STA. 235+0 - 267+0	(2 SHEETS)
I93, NB & SB PROFILE STA. 235+0 - 267+0	(2 SHEETS)
TH #12 RELOCATION PLAN & PROFILE STA. 7+0 - 20+0	(1 SHEET)
I93 ,NB X-SECTIONS STA. 250+50 - 252+50	(1 SHEET)
I93, SB X-SECTIONS STA. 249+00 - 254+00	(1 SHEET)
TH #12 RELOCATION X-SECTIONS STA. 11+50 - 15+50	(2 SHEETS)

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. B5
	Log Sta.
HIGHWAY NO. I 93 NB	Surv. Sta. 251+70
I93 NORTHBOUND OVER TH #12	
PLAN AND ELEVATION SHEET	
Designed by Plumb	Drawn by Plumb
Checked by S. Farnsworth & ROGERS 6/80 date 1-80	Bridge Design Supervisor F.W. Balkum date 1-80
PROJECT WATERFORD	PROJECT NO. I 93-1(3) 62
Bridge Sheet No. BR502	Sheet 123 of 531

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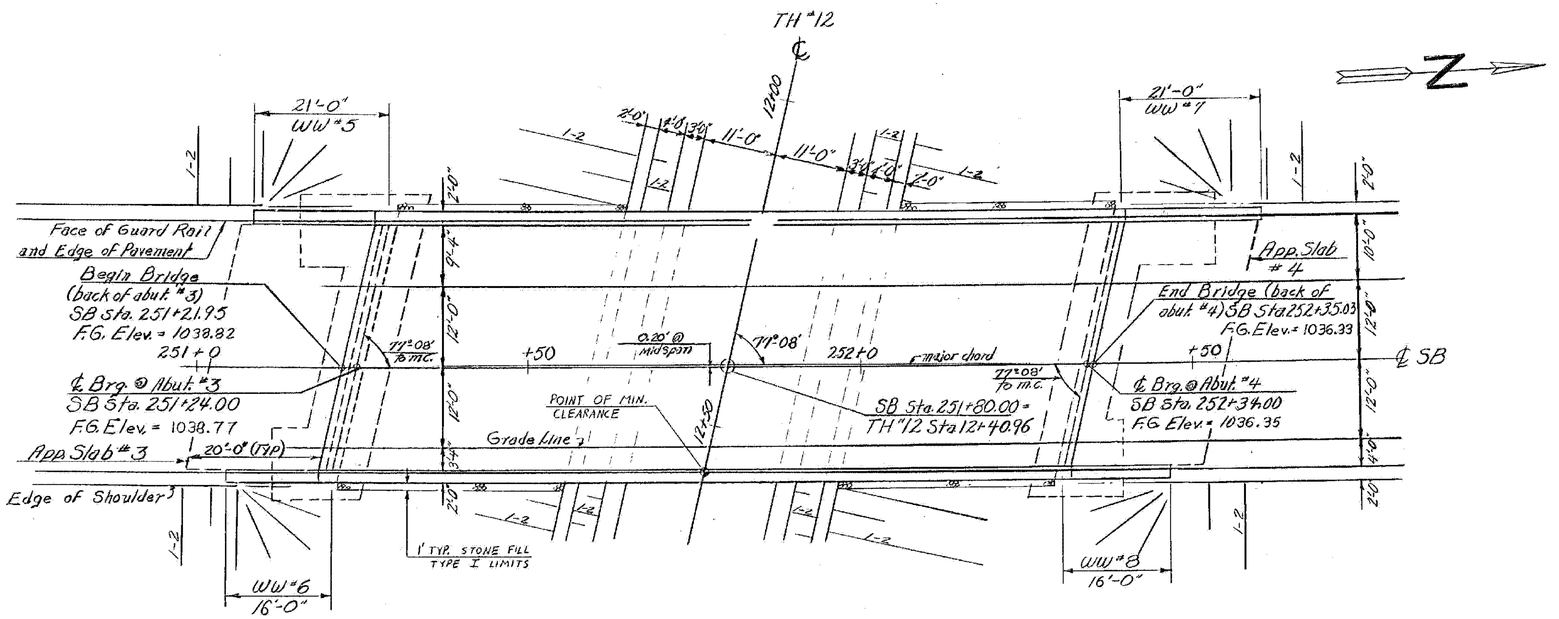


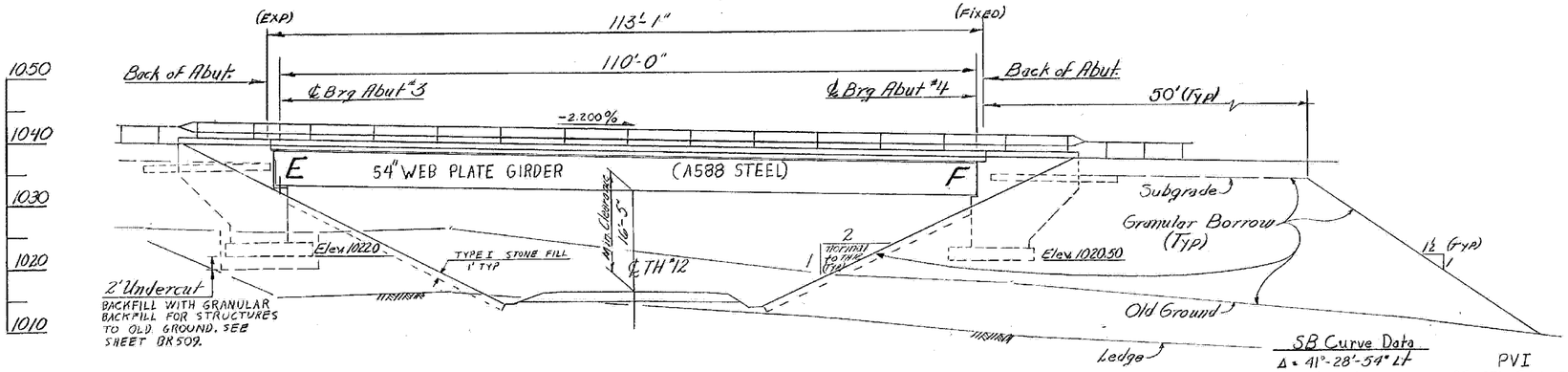
PLAN

Scale: 1"=10'

GENERAL NOTES

1. THE GENERAL NOTE PERTAINING TO SPECIFICATIONS, MATERIALS, AND CONSTRUCTION IS SHOWN ON STD. DWG. SCB-D1-75. OTHER GENERAL NOTES ON THE STANDARD, NOT OTHERWISE SHOWN OR MODIFIED ON THESE PLANS, ARE NOTES 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, & 16.
2. FLEMING BRACKETS OR SIMILAR FALSEWORK SHALL BE SPACED AT A MAXIMUM OF FOUR (4) FEET.
3. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED AREAS OF THE ABUTMENTS AND WINGWALLS, CURBS, FASCIA, AND THE CURB SOFFIT BACK TO THE DRIP NOTCH.
4. ALL WEEP PIPES SHALL BE PLACED ON THE LOW CURB SIDE ONLY, AND BETWEEN THE ABUTMENT AND EDGE OF TH 12 SHOULDER. THEY SHOULD NOT BE PLACED MORE THAN TEN (10) FEET APART OR WITHIN TWO (2) HORIZONTAL FEET OF ABUTMENT OR CROSS FRAMES.
5. THE PREFORMED JOINT FILLER, VINYLFOAM, SHALL BE SEMI-RIGID GRADE, AND SHALL MEET THE REQUIREMENTS OF SUB-SECTION 707.23. PAYMENT SHALL BE INCLUDED IN THE UNIT BID PRICE FOR CONCRETE, CLASS A.
6. THE PVC WATER STOP SHALL BE AS SPECIFIED IN SUBSECTION 707.30. THE COST OF THE WATER STOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE, CLASS A.
7. FOR CURB JOINT DETAILS, SEE STANDARD SCB-D4-76, DETAIL B.
8. FOR TREATMENT OF THE CURB AREA BETWEEN THE DECK AND WINGWALLS, SEE STANDARD SHEET SCB-D9-71, AND NOTE THE FOLLOWING CHANGES:

   OMIT WATERSTOP AND INCREASE 1/2" EXPANSION MATERIAL, PREFORMED JOINT FILLER, CORK, TO 1".



ELEVATION (along r.f. fascia)

Scale: 1"=10'

SB Curve Data

Δ = 41°-28'-54" Lt
D = 0°-45'
R = 7639.44
T = 2892.93
L = 5530.89
E = 529.41
Bnk. = 0.025 ft

PVI

SB STA. 264+00.00
ELEV. = 1011.00
L C = 1800'
E = 8.15
G_1 = -2.2000 %
G_2 = +1.4223 %

I-93 BRIDGES 3N&S
WATERFORD
IM MEMB(31)
SHEET 27 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. B5
HIGHWAY NO. I 93	Log Sta.
	Surv. Sta. 251+70

I93 SOUTHBOUND over TH #12

PLAN and ELEVATION SHEET

Designed by Plumb	Drawn by Plumb
Checked by S. Farnsworth G. ROGERS 1/80 date 1-80	Bridge Design Supervisor F.W. Balkum date 1-80
PROJECT WATERFORD	PROJECT NO. I 93-1(3) 6/
Bridge Sheet No. BR 503	Sheet 124 of 531

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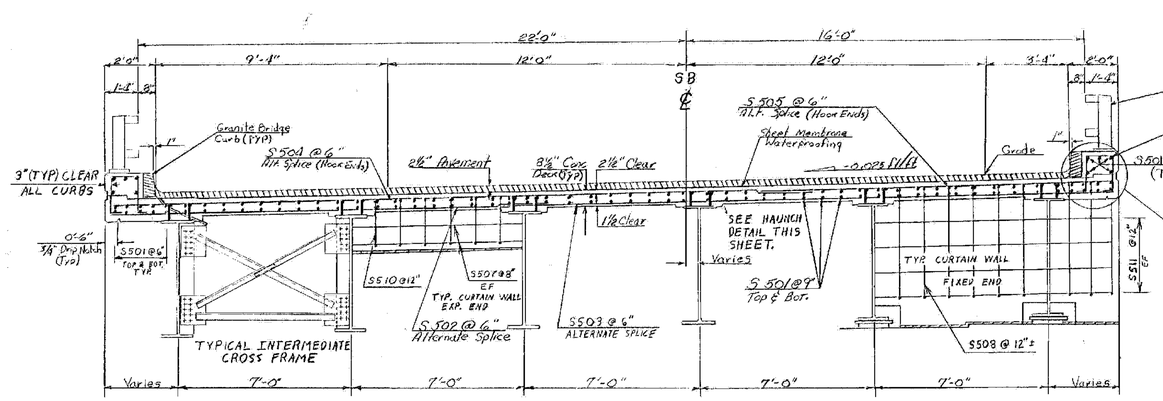
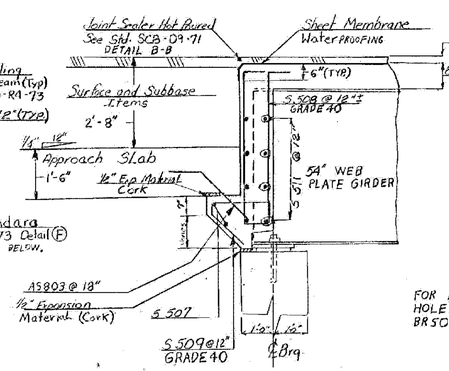
BRUNING 44-137-40151

BR-6

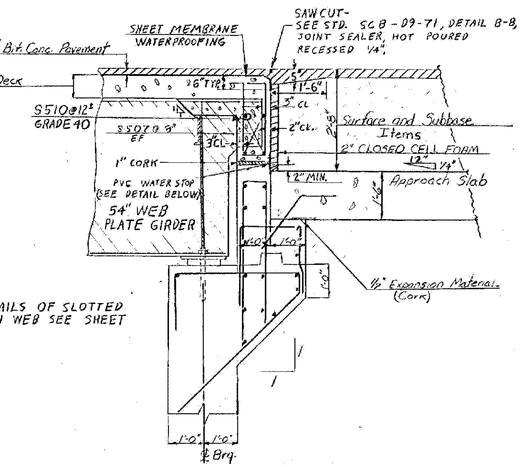


TYPICAL BRIDGE SECTION
SCALE: 3/8" = 1'-0"

NOTE: NORTH BOUND BRIDGE IS SIMILAR BUT OPPOSITE HAND.

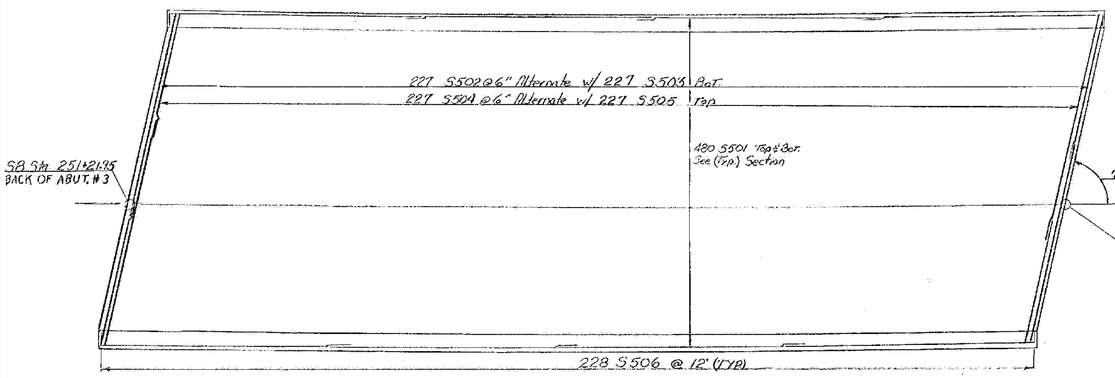


TYPICAL CURTAIN WALL DETAILS
FIXED END
Scale ½" = 1.0'

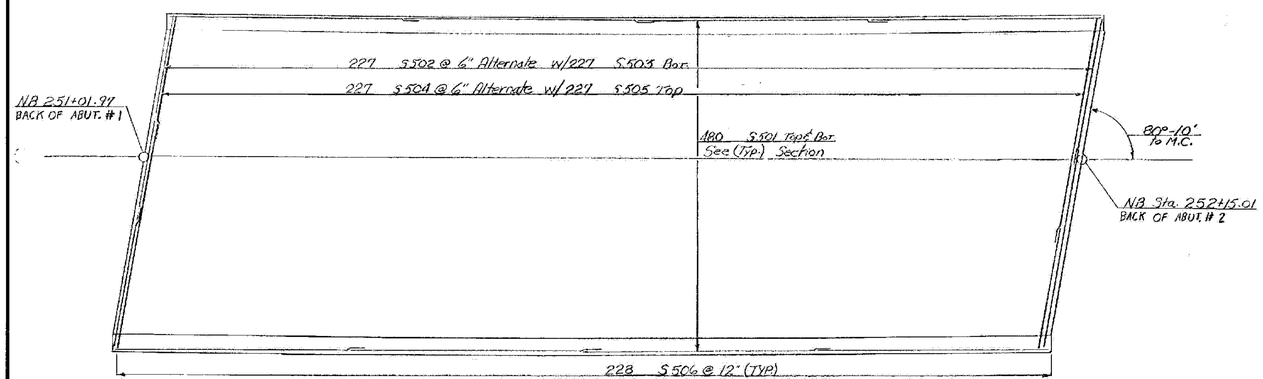


FOR DETAILS OF SLOTTED HOLES IN WEB SEE SHEET BR506

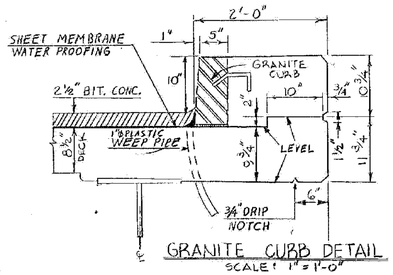
TYPICAL BACK WALL DETAILS
EXPANSION END
N.T.S.



SOUTHBOUND DECK REINFORCING PLAN
Scale ⅛" = 1.0'

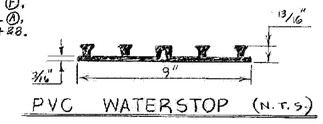


NORTHBOUND DECK REINFORCING PLAN
Scale ⅛" = 1.0'

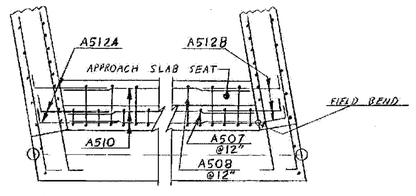


FOR ADDITIONAL CURB DETAILS SEE SCB-DG-73 DETAIL (F), SCB-D4-76 DETAIL (A), & GENERAL NOTES 4 & 8.

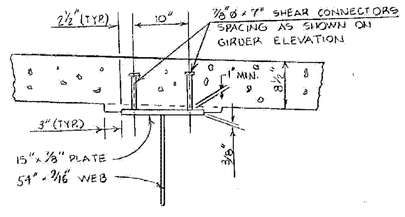
GRANITE CURB DETAIL
SCALE: 1" = 1'-0"



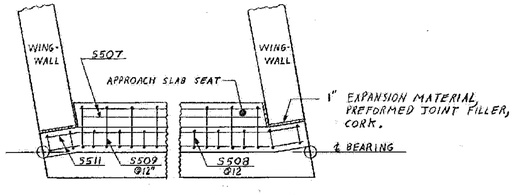
PVC WATERSTOP (N.T.S.)



ADDITIONAL BACK WALL DETAILS OF REINFORCING
SCALE: 3/8" = 1'-0"



HAUNCH DETAIL
SCALE: 1" = 1'-0"



ADDITIONAL CURTAIN WALL DETAILS
FIXED END
SCALE: 3/8" = 1'-0"

I-93 BRIDGES 3N&S
WATERFORD
IM MEMB(31)
SHEET 28 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. B5
HIGHWAY NO. I 93	Log Sta.
	Surv. Sta. 251+70

I 93 NB & SB over T.H. #12

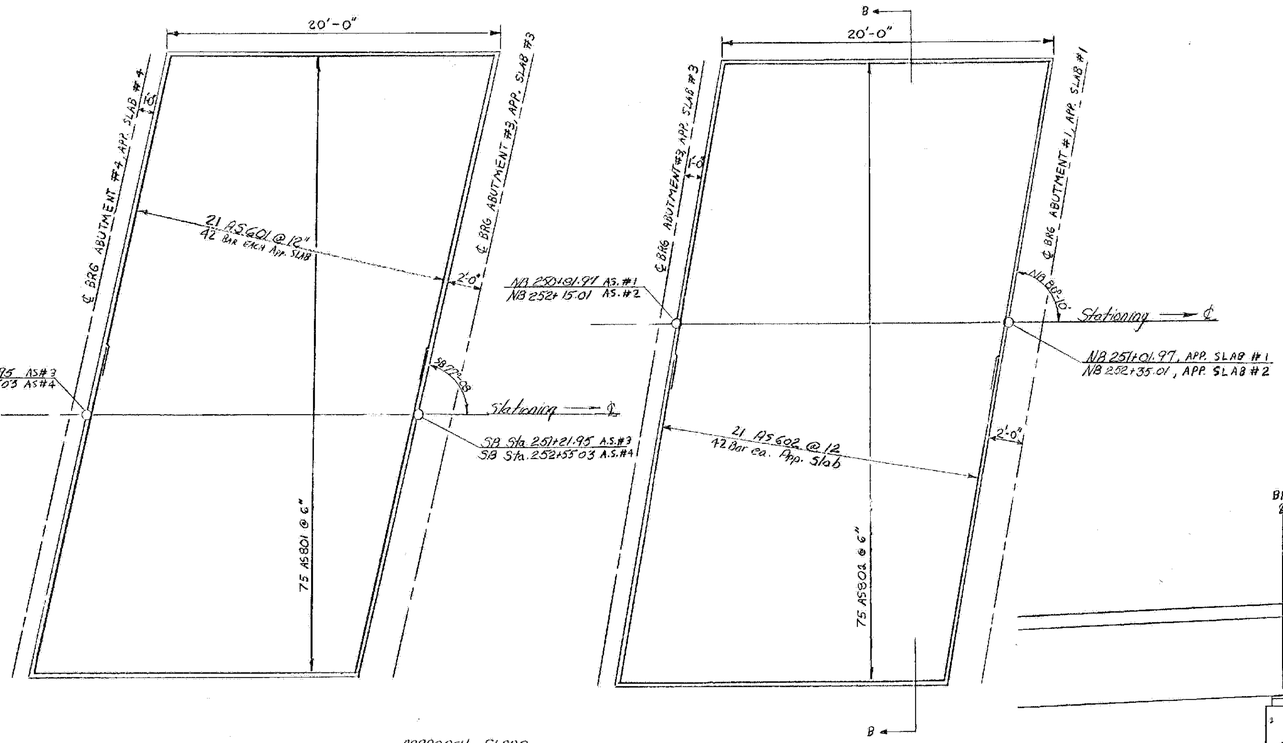
TYPICAL SECTION & DECK REINFORCING STEEL

Designed by Gary Rogers	Drawn by R. JENSEN & S. FARNSWORTH
Checked by G. ROGERS date 6/80	Bridge Design Supervisor F.W. Bolkum date 7/80
PROJECT WATERFORD	PROJECT NO. I93-1(3) 92
Bridge Sheet No. BR505	Sheet 126 of 531

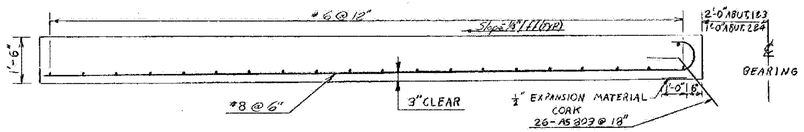
135 OF 290

BRUNING 44 151 40151

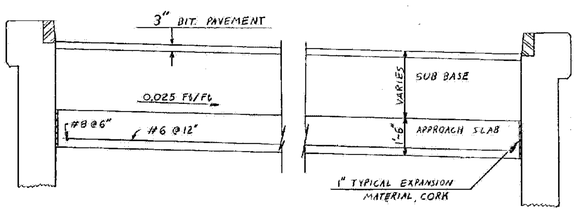
BR-6



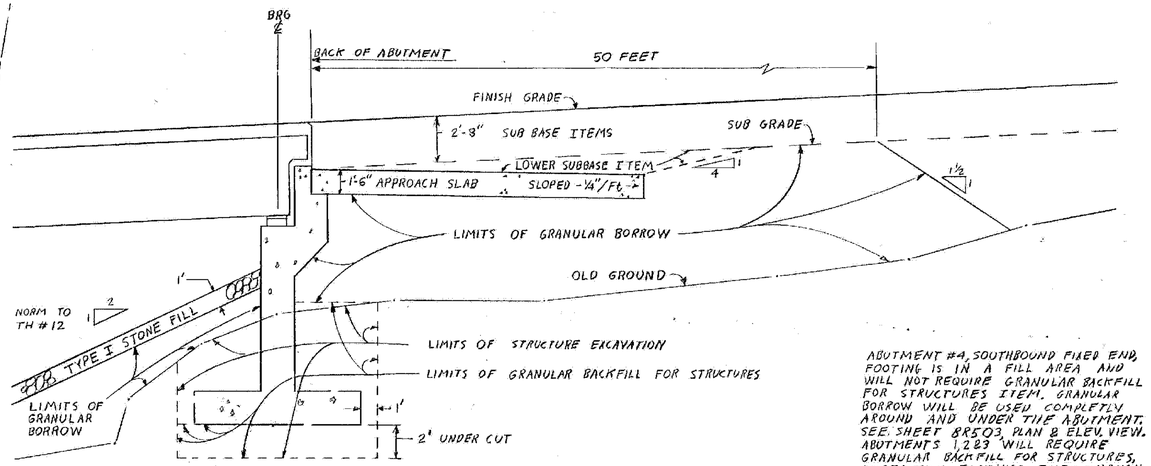
APPROACH SLABS
Scale 1/4" = 1.0'



TYPICAL CROSS SECTION
Scale 1/2" = 1.0'



SECTION B-B
SCALE : 3/8" = 1'-0"

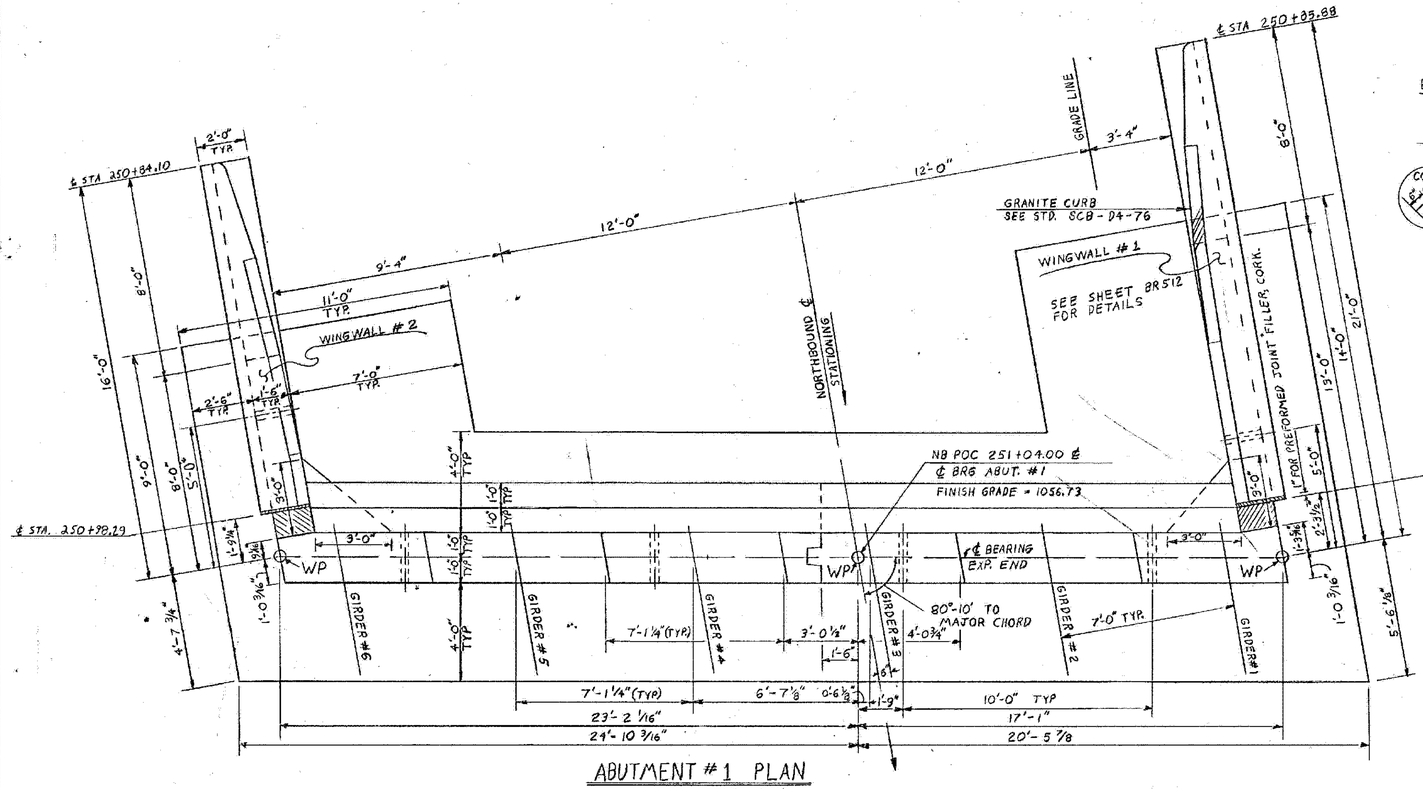


TYPICAL ABUTMENT LIMITS OF EXCAVATION & BACKFILL
SCALE : 1/4" = 1'-0"

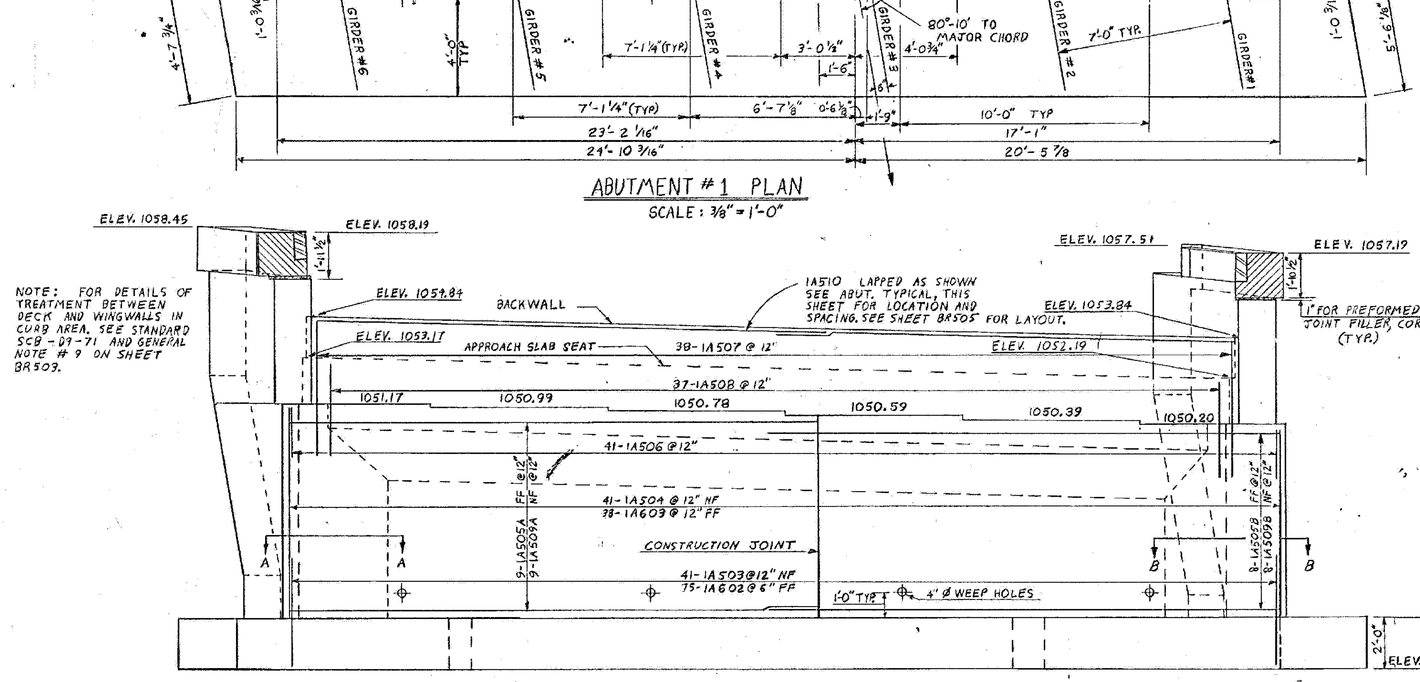
ABUTMENT #4, SOUTHBOUND FIXED END, FOOTING IS IN A FILL AREA AND WILL NOT REQUIRE GRANULAR BACKFILL FOR STRUCTURES ITEM. GRANULAR BORROW WILL BE USED COMPLETLY AROUND AND UNDER THE ABUTMENT. SEE SHEET BR503 PLAN & ELEV. VIEW. ABUTMENTS 1,2&3 WILL REQUIRE GRANULAR BACKFILL FOR STRUCTURES, UNDER THE FOOTINGS, EVEN THOUGH PART OF SOME FOOTINGS MAY BE IN FILL AREA.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. B5
	Log Sta.
HIGHWAY NO. I93	Surv. Sta. 251+70
I93 NB & SB OVER T.H. 12	
APPROACH SLAB DETAILS & ABUTMENT BACKFILL AND EXCAVATION LIMITS TYPICAL	
Designed by FARNSWORTH, S.	Drawn by R. JENSEN
Checked by G. ROGERS date 6/80	Bridge Design Supervisor F. W. Bolkum date 7/80
PROJECT WATERFORD	PROJECT NO. I93-1(3)92
Bridge Sheet No. BR509	Sheet 130 of 531

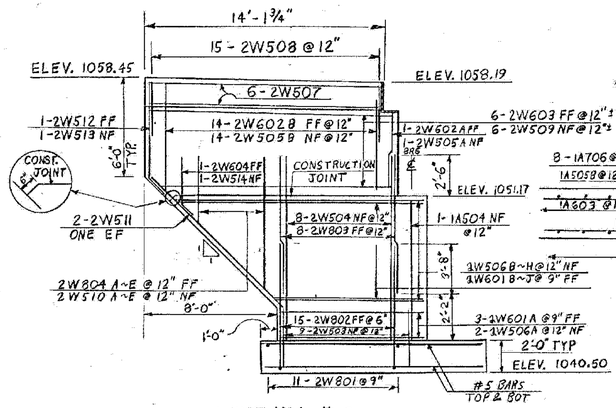


ABUTMENT # 1 PLAN
SCALE: 3/8" = 1'-0"

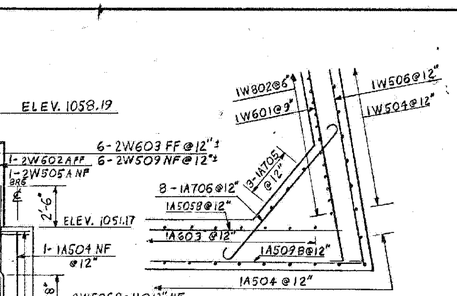


NOTE: FOR DETAILS OF TREATMENT BETWEEN DECK AND WINGWALLS IN CURB AREA, SEE STANDARD SCB-D9-71 AND GENERAL NOTE # 9 ON SHEET BR503.

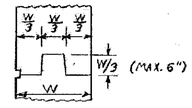
ABUTMENT # 1 ELEVATION
SCALE: 3/8" = 1'-0"



WINGWALL # 2
SCALE: 1/4" = 1'-0"

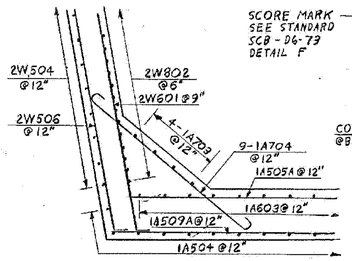


SECTION B-B
SCALE: 3/8" = 1'-0"

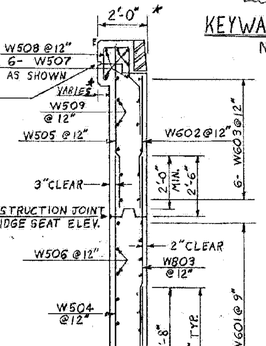


KEYWAY TYPICAL
N.T.S.

FOR ADDITIONAL DETAILS SEE SCB-D6-73 DETAIL B

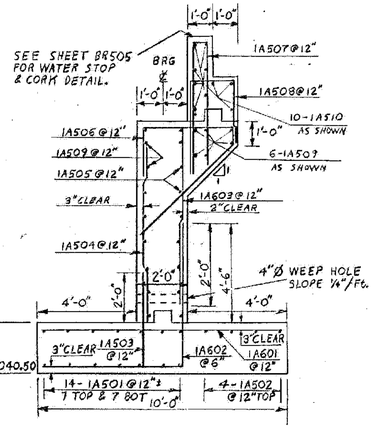


SECTION A-A
SCALE: 3/8" = 1'-0"



★ WINGWALL STEM TO BE CONSTRUCTED IN A STRAIGHT LINE WITH STATIONS ON ABUTMENT PLAN, WHILE THE WINGWALL CURB & FASCIA IS TO BE CONSTRUCTED ON THE CURVE.

TYPICAL WINGWALL SECTION
SCALE: 3/8" = 1'-0"



ABUTMENT # 1 - TYPICAL SECTION
SCALE: 3/8" = 1'-0"
ABUT. SOIL PRESSURE MAX. = 3.6 KSF

I-93 BRIDGES 3N&S

WATERFORD
IM MEMB(31)
SHEET 30 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

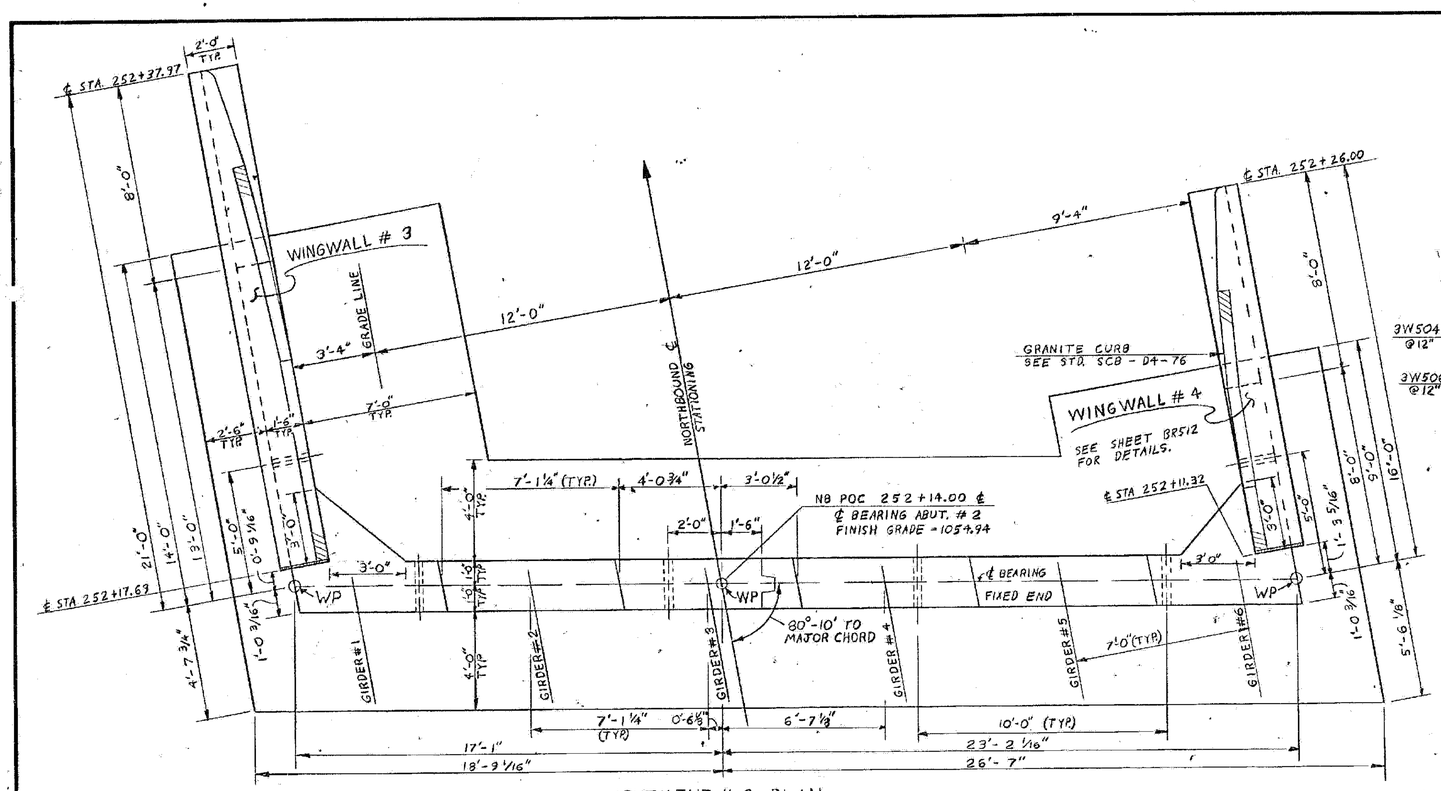
TOWN OF WATERFORD	Bridge No. 85
	Log Sta.
HIGHWAY NO. I 93	Surv. Sta. 251+70

I 93 NORTHBOUND OVER TH. 12
ABUTMENT # 1 & WINGWALL #2 DETAILS

Designed by S.G. FARNSWORTH	Drawn by S.G. FARNSWORTH
Checked by G. ROGERS date 6/80	Bridge Design Supervisor F.W. Balkum date 7/80
PROJECT WATERFORD	PROJECT NO. I93-1(3) 92
Bridge Sheet No. BR 510	Sheet 131 of 531

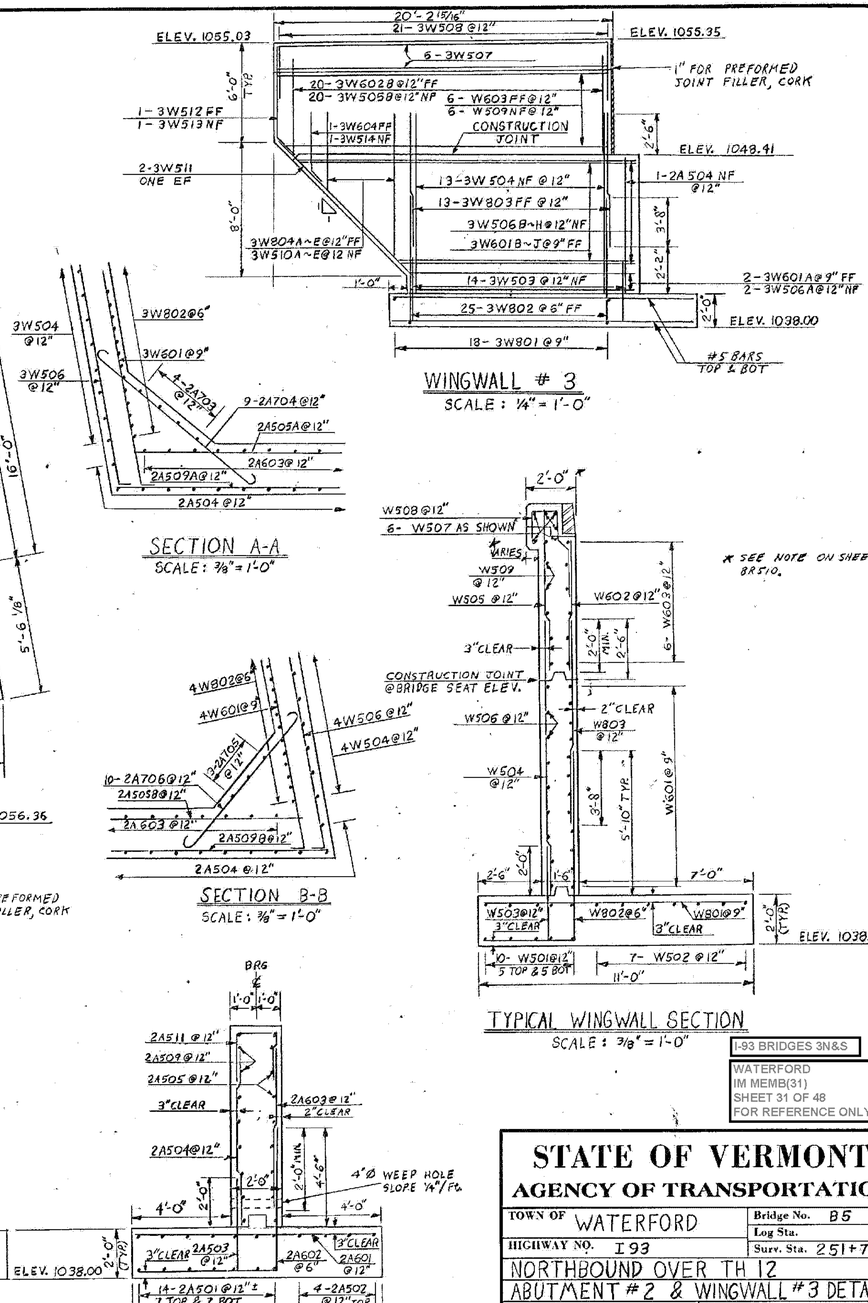
BRUNING 44-131 42151

BR-4



ABUTMENT # 2 PLAN
SCALE : 3/8" = 1'-0"

ABUTMENT # 2 ELEVATION
SCALE : 3/8" = 1'-0"



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

SECTION A-A
SCALE: 3/8" = 1'-0"

SECTION B-B
SCALE : 3/8" = 1'-0"

* SEE NOTE ON SHEET BR510.

TYPICAL WINGWALL SECTION
SCALE : 3/8" = 1'-0"

ABUTMENT # 2 - TYPICAL SECTION
SCALE : 3/8" = 1'-0"

I-93 BRIDGES 3N&S

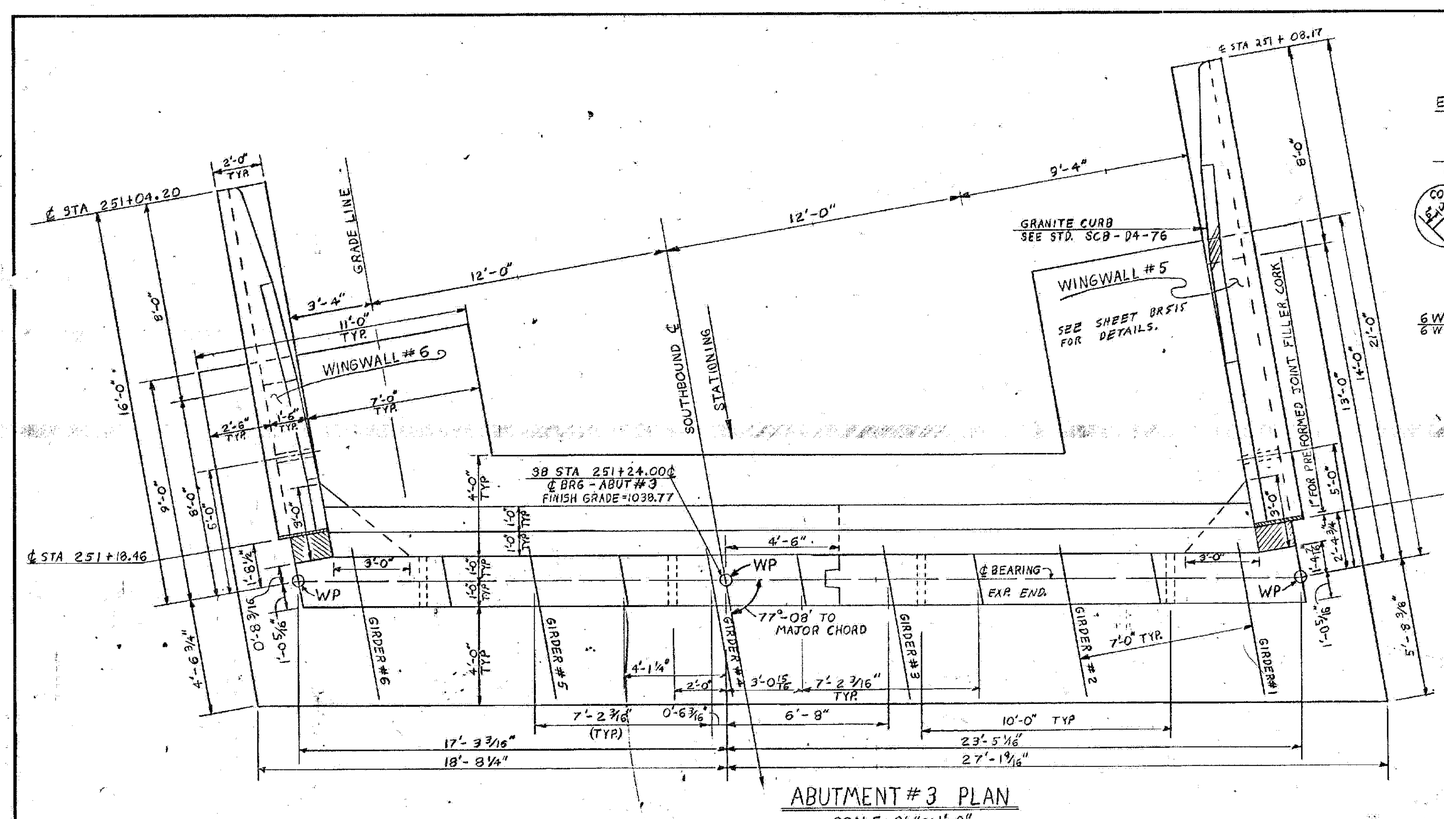
WATERFORD
IM MEMB(31)
SHEET 31 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

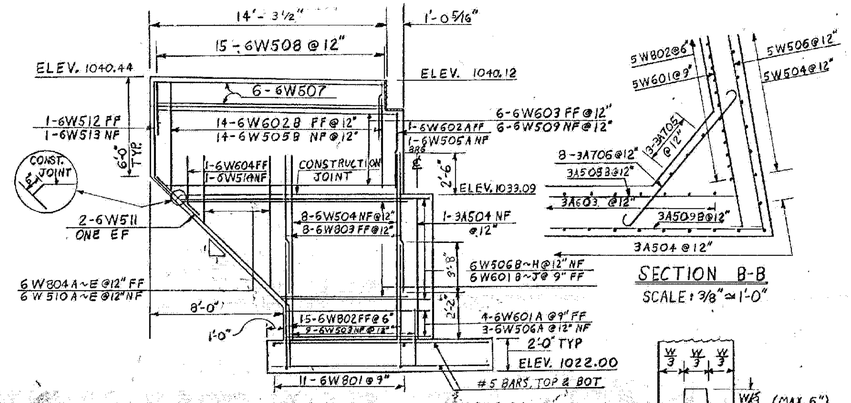
TOWN OF WATERFORD	Bridge No. B5
	Log Sta.
HIGHWAY NO. I 93	Surv. Sta. 251+70
NORTHBOUND OVER TH 12	
ABUTMENT # 2 & WINGWALL # 3 DETAILS	
Designed by S. G. FARNSWORTH	Drawn by S. G. FARNSWORTH
Checked by C. ROGERS date 6/80	Bridge Design Supervisor F. W. Bolkum date 7/80
PROJECT WATERFORD	PROJECT NO. I 93-1(31) 92
Bridge Sheet No. BR 511	Sheet 132 of 531

BRUNING 44-131 40151

BR-6



ABUTMENT # 3 PLAN
SCALE: 3/8" = 1'-0"

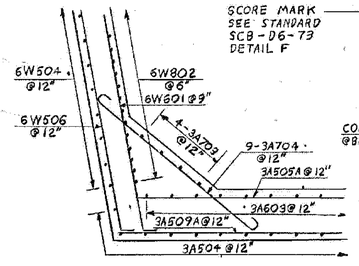


SECTION B-B
SCALE: 3/8" = 1'-0"

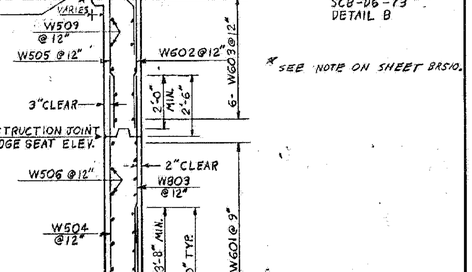
WINGWALL # 6
SCALE: 1/4" = 1'-0"

KEYWAY TYPICAL
N.T.S.

FOR ADDITION DETAILS SEE SCB-D6-73 DETAIL B



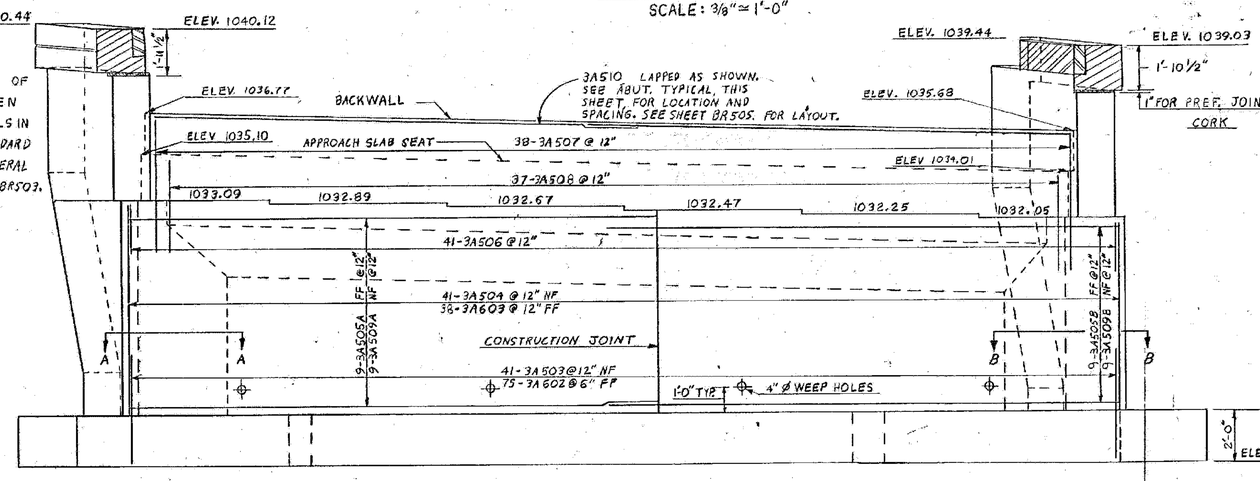
SECTION A-A
SCALE: 3/8" = 1'-0"



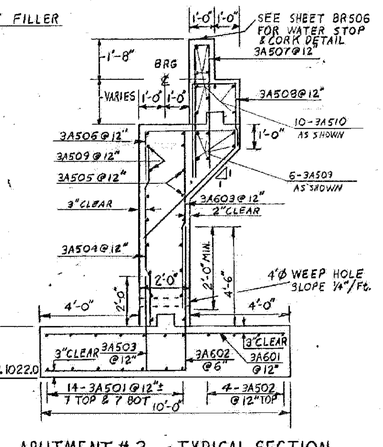
* SEE NOTE ON SHEET BR510.

TYPICAL WINGWALL SECTION
SCALE: 3/8" = 1'-0"

NOTE: FOR DETAILS OF TREATMENT BETWEEN DECK AND WINGWALLS IN CURB AREA. SEE STANDARD SCB-D9-71 AND GENERAL NOTE # 9 ON SHEET BR503.



ABUTMENT # 3 ELEVATION
SCALE: 3/8" = 1'-0"



ABUTMENT # 3 - TYPICAL SECTION
SCALE: 3/8" = 1'-0"

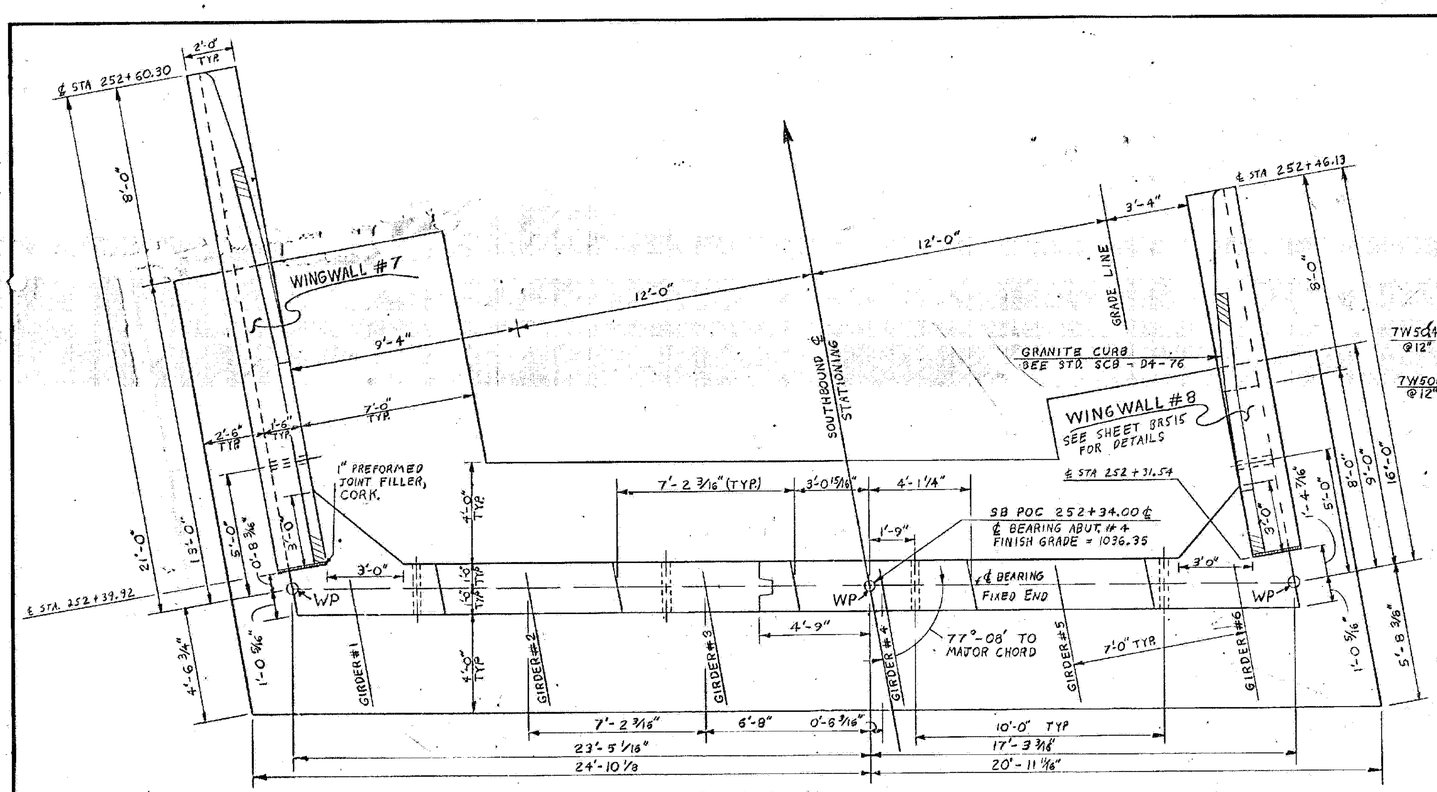
I-93 BRIDGES 3N&S
WATERFORD
IM MEMB(31)
SHEET 32 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

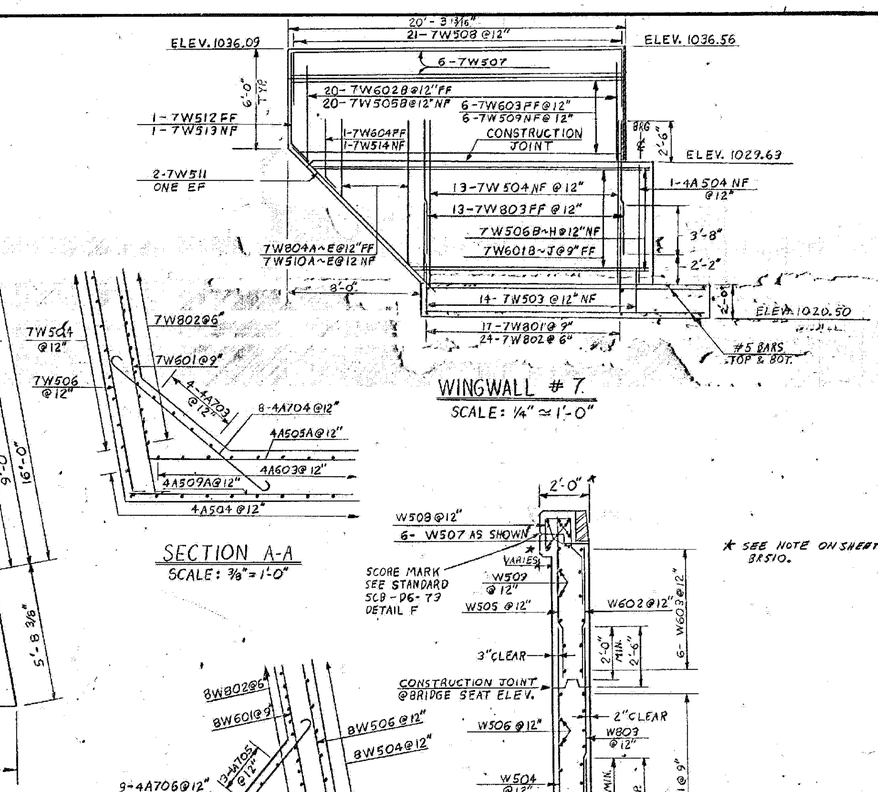
TOWN OF WATERFORD	Bridge No. 85
	Log Sta.
HIGHWAY NO. I 93	Surv. Sta. 251+70
I93 SOUTHBOUND OVER TH.12	
ABUTMENT # 3 & WINGWALL # 6 DETAILS	
Designed by S.G. FARNSWORTH	Drawn by S.G. FARNSWORTH
Checked by G ROGERS date 6/80	Bridge Design Supervisor F.W. Bolkum date 7/80
PROJECT WATERFORD	PROJECT NO. I93-1(3) 92
Bridge Sheet No. BR 513	Sheet 134 of 531

BRUNING 44-131 40151

BR 4



ABUTMENT # 4 PLAN
SCALE: 3/8" = 1'-0"

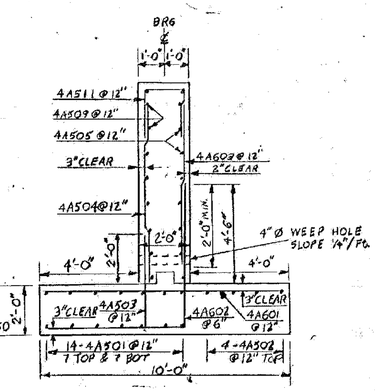


WINGWALL # 7
SCALE: 1/4" = 1'-0"

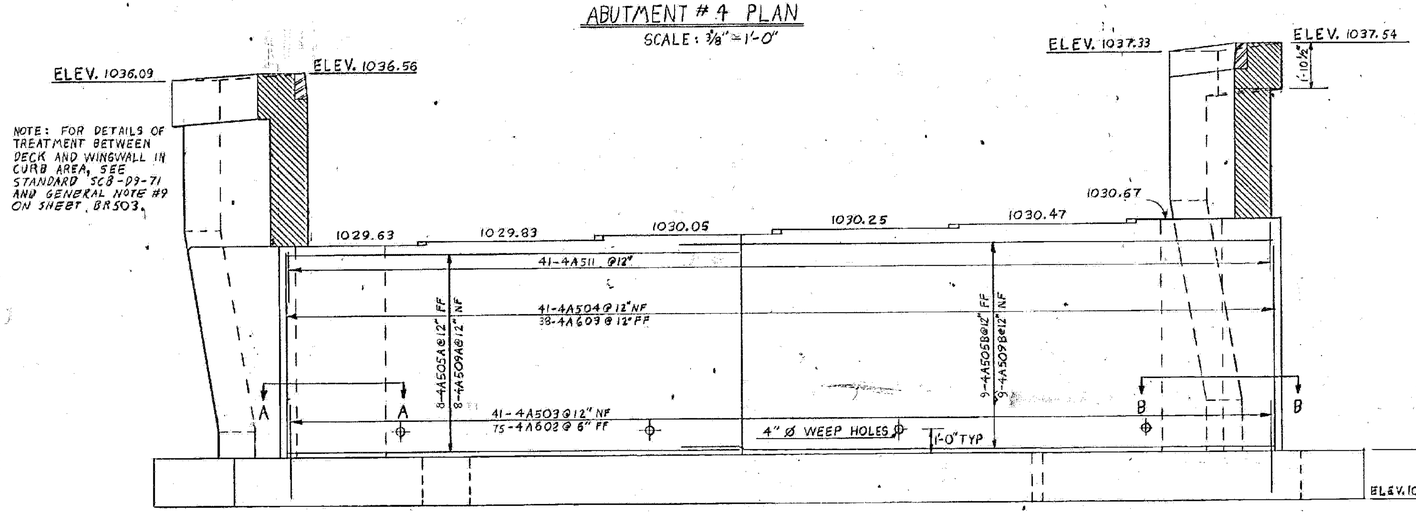
TYPICAL WINGWALL SECTION
SCALE: 3/8" = 1'-0"

SECTION B-B
SCALE: 3/8" = 1'-0"

SECTION A-A
SCALE: 3/8" = 1'-0"



ABUTMENT # 4 - TYPICAL SECTION
SCALE: 3/8" = 1'-0"



NOTE: FOR DETAILS OF TREATMENT BETWEEN DECK AND WINGWALL IN CURB AREA, SEE STANDARD SCB-09-71 AND GENERAL NOTE #9 ON SHEET BR503.

ABUTMENT # 4 ELEVATION
SCALE: 3/8" = 1'-0"

I-93 BRIDGES 3N&S

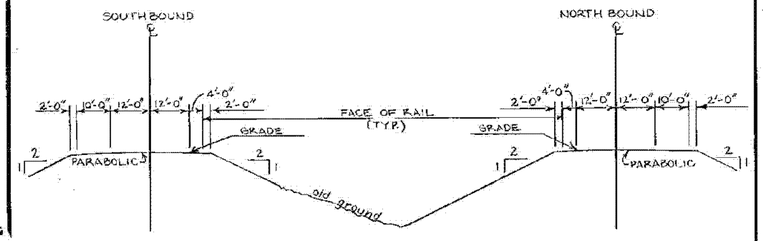
WATERFORD
IM MEMB(31)
SHEET 33 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

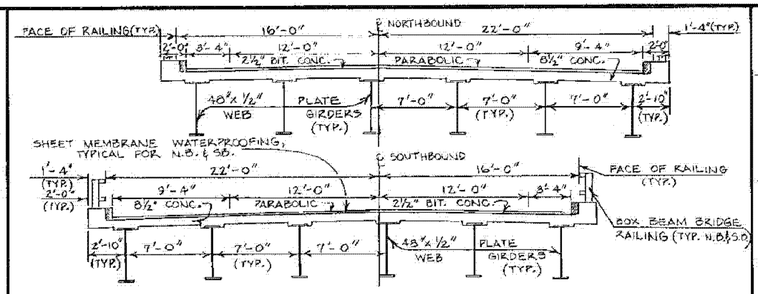
TOWN OF WATERFORD	Bridge No. 85
HIGHWAY NO. I 93	Log Sta.
	Surv. Sta. 251+70
I 93 SOUTHBOUND OVER TH 12	
ABUTMENT # 4 & WINGWALL # 7 DETAILS	
Designed by S.G. FARNSWORTH	Drawn by S.G. FARNSWORTH
Checked by G. ROGERS date 6/80	Bridge Design Supervisor F.W. Bolkum date 7/80
PROJECT WATERFORD	PROJECT NO. I 93-1(3) S/2
Bridge Sheet No. BR514	Sheet 135 of 531

BRUNING 44-1131 40151

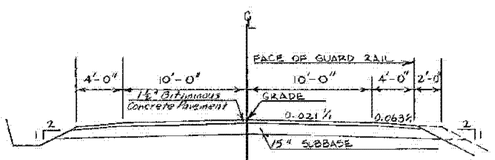
BR 8



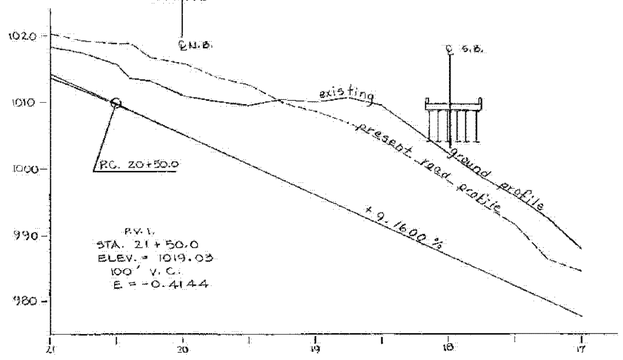
NEW HIGHWAY SECTION — BRIDGE APPROACHES
SCALE: 1" = 20'-0"



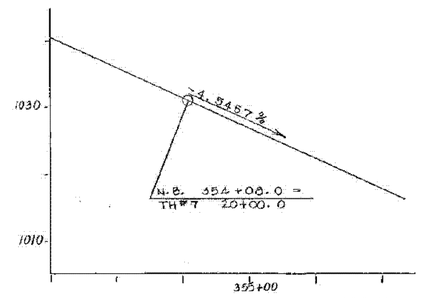
BRIDGE TYPICAL SECTION
SCALE: 3/16" = 1'-0"



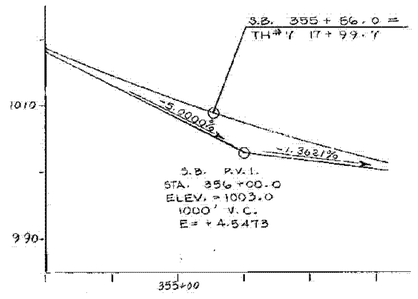
TYPICAL NORMAL SECTION OF TH#7
SCALE: 3/16" = 1'-0"



TOWN HIGHWAY #7 PROFILE
SCALE: 1" = 10' VERTICAL ; 1" = 50' HORIZONTAL



I-93 NORTHBOUND PROFILE
SCALE: 1" = 10' VERTICAL ; 1" = 100' HORIZONTAL



I-93 SOUTHBOUND PROFILE
SCALE: 1" = 10' VERTICAL ; 1" = 100' HORIZONTAL

LIST OF SHEETS

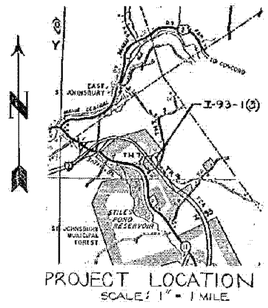
BR 700	PRELIMINARY INFORMATION SHEET
BR 701	BRIDGE QUANTITY SHEET
BR 702	PLAN & ELEVATION SHEET - (NORTHBOUND)
BR 703	PLAN & ELEVATION SHEET - (SOUTHBOUND)
BR 704	BORING LOGS - NORTHBOUND
BR 705	BORING LOGS - SOUTHBOUND
BR 706	SUPERSTRUCTURE DETAILS
BR 707	SOLE PLATE, BEARING & CROSS FRAME DETAILS
BR 708	BRIDGE APPROACH RAIL DETAILS
BR 709	APPROACH SLAB & DECK REINFORCING PLAN
BR 710	ABUTMENT NO. 1 DETAILS
BR 711	ABUTMENT NO. 2 DETAILS
BR 712	ABUTMENT NO. 3 DETAILS
BR 713	ABUTMENT NO. 4 DETAILS
BR 714	WINGWALL DETAILS - (NORTHBOUND)
BR 715	WINGWALL DETAILS - (SOUTHBOUND)
BR 716-BR 718	REINFORCING STEEL SCHEDULES

STANDARD SHEETS

SCB-01-75	APRIL 3, 1978(R)
SCB-04-76	JANUARY 8, 1976(R)
SCB-05-73	JANUARY 3, 1979(R)
SCB-07-71 (Detail C)	DECEMBER 15, 1976(R)
SCB-08-71	JANUARY 27, 1975(R)
SB-R4- 73	NOVEMBER 21, 1979(R)

REFERENCE SHEETS

193, NBSSB PLAN, STA. 339+0 - 371+0 (2 SHEETS)
193, NBSSB PROFILE, STA. 339+0 - 371+0 (2 SHEETS)
TH #7 RELOCATION PLAN, STA. 6+0 - 24+0 (1 SHEET)
TH #7 RELOCATION PROFILE, STA. 6+0 - 22+0 (2 SHEETS)
193, NB X-SECTIONS, STA. 352+0 - 358+50 (2 SHEETS)
193, SB X-SECTIONS, STA. 352+0 - 359+50 (2 SHEETS)
TH #7 RELOCATION X-SECTIONS, STA. 16+0 - 21+0 (4 SHEETS)



PROJECT LOCATION
SCALE: 1" = 1 MILE

EXISTING STRUCTURE

1. STRUCTURE TYPE _____ OVERALL LENGTH _____ INVENTORY RATING _____
2. SPAN LENGTH(S) ~~CENTER~~ TO CENTER OF BEARINGS _____
3. CLEAR SPAN LENGTH(S) ~~NORMAL~~ TO STREAM _____
4. WATERWAY AREA OF FULL OPENING (~~NORMAL TO STREAM~~) _____ VERTICAL ~~CLEARANCE~~ ABOVE STREAMBED _____
5. WATER SURFACE ELEVATION @ Q 2.33 _____ WATER SURFACE ELEVATION @ Q _____
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD _____ YEAR _____ ESTIMATED DISCHARGE _____
7. DOES ALL WATER PASS THROUGH EXISTING ~~STRUCTURE~~? _____ IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? _____
   ADDITIONAL WATERWAY AREA ~~PROVIDED~~ BY RELIEF _____
8. TYPE OF ~~SUBSTRUCTURE~~ FOUNDATION MATERIAL _____
9. DISPOSITION OF STRUCTURE _____

NEW STRUCTURE

STRUCTURE GEOMETRY:
1. STRUCTURE TYPE PLATE GIRDER BRIDGE OVERALL LENGTH N.B. = 109.16' S.B. = 108.96'
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 104'
3. VERTICAL CLEARANCE ABOVE ~~SERVED~~ ROAD UNDER N.B. 18'-6" MIN. S.B. 18'-3" MIN.
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM N/A
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) N/A
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? NO

HYDRAULIC DATA:
1. Q 2.33 _____ WATER ELEVATION _____ VELOCITY _____
   Q 10 _____ WATER ELEVATION _____ VELOCITY _____
   Q 25 _____ WATER ELEVATION _____ VELOCITY _____
   Q 50 _____ WATER ELEVATION _____ VELOCITY _____
   Q 100 _____ WATER ELEVATION _____ VELOCITY _____
2. DRAINAGE AREA _____ CHARACTER OF TERRAIN _____
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? _____
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? _____ IS ORDINARY RISE RAPID? _____
5. NATURE OF NATURAL STREAMBED _____
6. ESTIMATED SCOUR DEPTH _____ COMMENT ON: DRIFT _____ ICE _____
7. WILL ALL WATER PASS THROUGH NEW STRUCTURE? _____ IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR? _____
   ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF _____
8. VERTICAL CLEARANCE ABOVE Q _____
9. ALLOWABLE WATER SURFACE ELEVATION _____ LIMITED BY _____
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? _____ IF YES, DESCRIBE _____
11. AVERAGE DAILY LOW FLOW _____ DEPTH _____ AVERAGE DAILY HIGH FLOW _____ DEPTH _____
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED _____
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE _____ SPAN _____ WATERWAY AREA OF FULL OPENING _____ Q _____
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE _____ SPAN _____ WATERWAY AREA OF FULL OPENING _____ Q _____

ALLOWABLE STRESSES:
1. DESIGN LIVE LOAD AASHTO H S 25 - 44
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 4.0 KSF ON LEDGE 10.0 KSF
3. ALLOWABLE LOAD FOR PILING _____ TYPE _____ ESTIMATED LENGTH _____
4. ALLOWABLE STRESS FOR STRUCTURAL STEEL ASTM A 588 TENSION 27,000 psi
5. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 24,000 psi COMPRESSION 20,000 psi
6. ALLOWABLE STRESS FOR CONCRETE CLASS A f'_c 3,500 psi f_c 1400 psi
   CLASS B f'_c 3,500 psi f_c 1400 psi

TRAFFIC MAINTENANCE:
1. IS TRAFFIC TO BE MAINTAINED? N/A IF YES, ON EXISTING STRUCTURE N/A OR ON TEMPORARY BRIDGE N/A
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY _____ TRAFFIC CONTROL SIGNALS REQUIRED _____
   MINIMUM CLEAR SPAN _____ MINIMUM CLEAR HEIGHT _____ MINIMUM WATERWAY AREA _____
   ARE SIDEWALKS REQUIRED? _____ IF SO, ON WHAT SIDE? _____

ADDITIONAL DESIGN CONSIDERATIONS

LOAD RATING (TONS)

STRESS LEVELS	TRUCK H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy = 27.0	49	44					
POSTED 0.67 Fy = 33.5		69	88		12	13	82
OPERATING 0.75 Fy = 37.5			107	125			

I-93 BRIDGES 5N&S
WATERFORD
IM MEMB(31)
SHEET 34 OF 48
FOR REFERENCE ONLY

RECOMMENDED FOR APPROVAL W. M. Smith STRUCTURES ENGINEER 1-30-80 DATE
RECOMMENDED FOR APPROVAL Arthur J. Gove CHIEF OF DESIGN 1-30-80 DATE
APPROVED BY J. V. Clague DIRECTOR OF ENGINEERING & CONSTRUCTION 1-30-80 DATE

REVISIONS

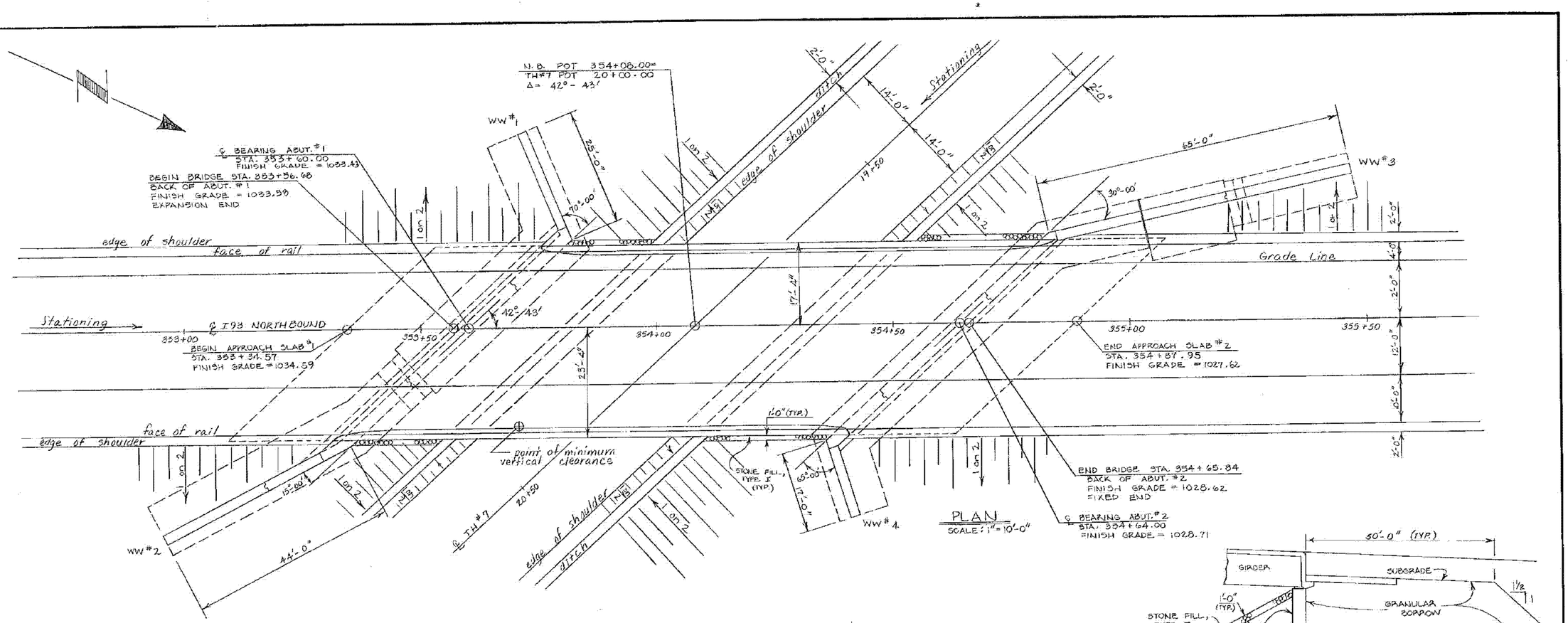
NO.	DESCRIPTION	BY & DATE

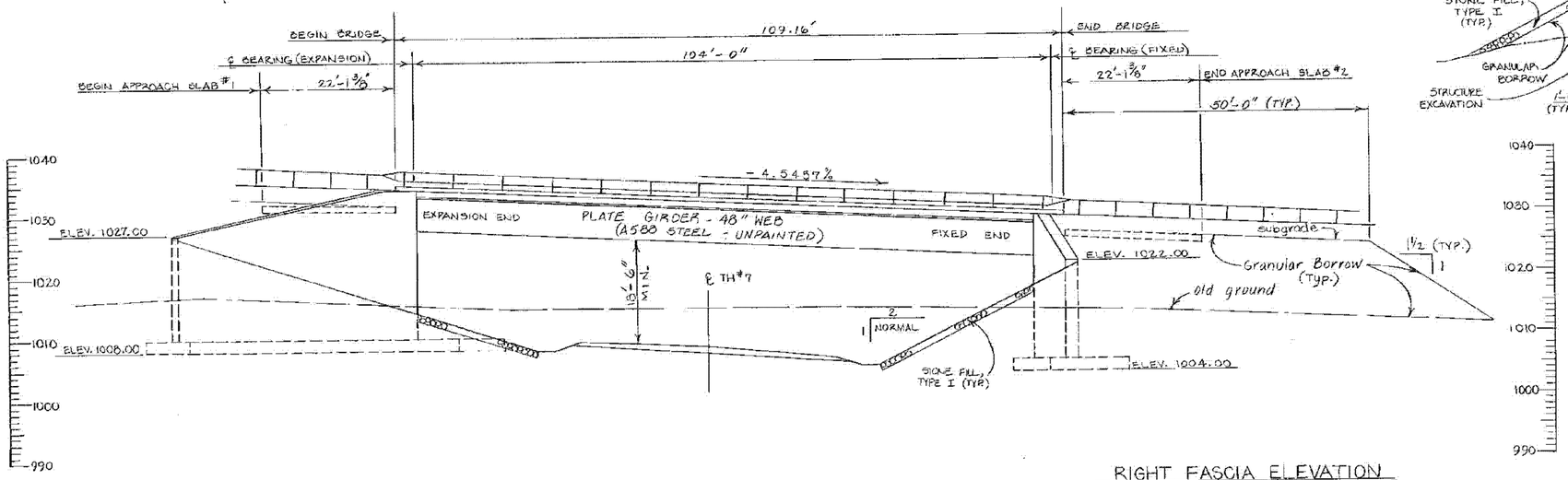
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. 67 / Log Sta.
HIGHWAY NO. I-93	Surv. Sta. 354+83
I-93 N.B. & S.B. OVER TH #7	
PRELIMINARY INFORMATION SHEET	
Designed by G. S. ROGERS	Drawn by G. L. DAVIS
Checked by R. W. JENSEN date 1/15/80	Bridge Design Supervisor F. W. Bolkum date 1/80
PROJECT WATERFORD	PROJECT NO. I-93-1(3)CONTR.2
Bridge Sheet No. BR700	Sheet 151 of 531

189 of 290

DRAWING 44-131 (4/75)





RIGHT FASCIA ELEVATION
SCALE: 1" = 10'-0"

LIMITS OF FILL & EXCAVATION
NOT TO SCALE

I-93 BRIDGES 5N&S

WATERFORD
IM MEMB(31)
SHEET 35 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. 87
	Log Sta.
HIGHWAY NO. I 93	Surv. Sta. 354+08

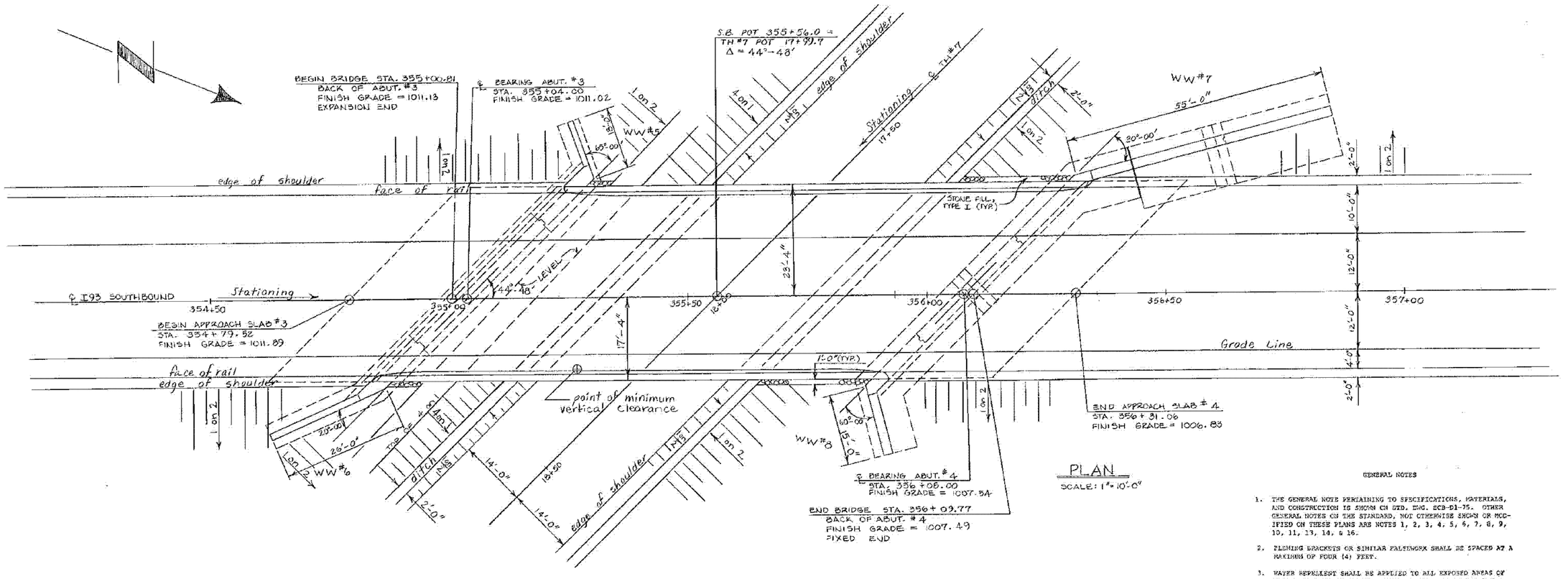
I 93 NORTHBOUND OVER TH#7
PLAN & ELEVATION SHEET

Designed by G.S. ROGERS	Drawn by G.L. DAVIS
Checked by R.W. JENSEN date 11/22/80	Bridge Design Supervisor F.W. Balkum date 11/80
PROJECT WATERFORD	PROJECT NO. I93-1(3)CONTR.#2
Bridge Sheet No. BR102	Sheet 153 of 531

189 of 290

BENNINGTON-147-4(15)

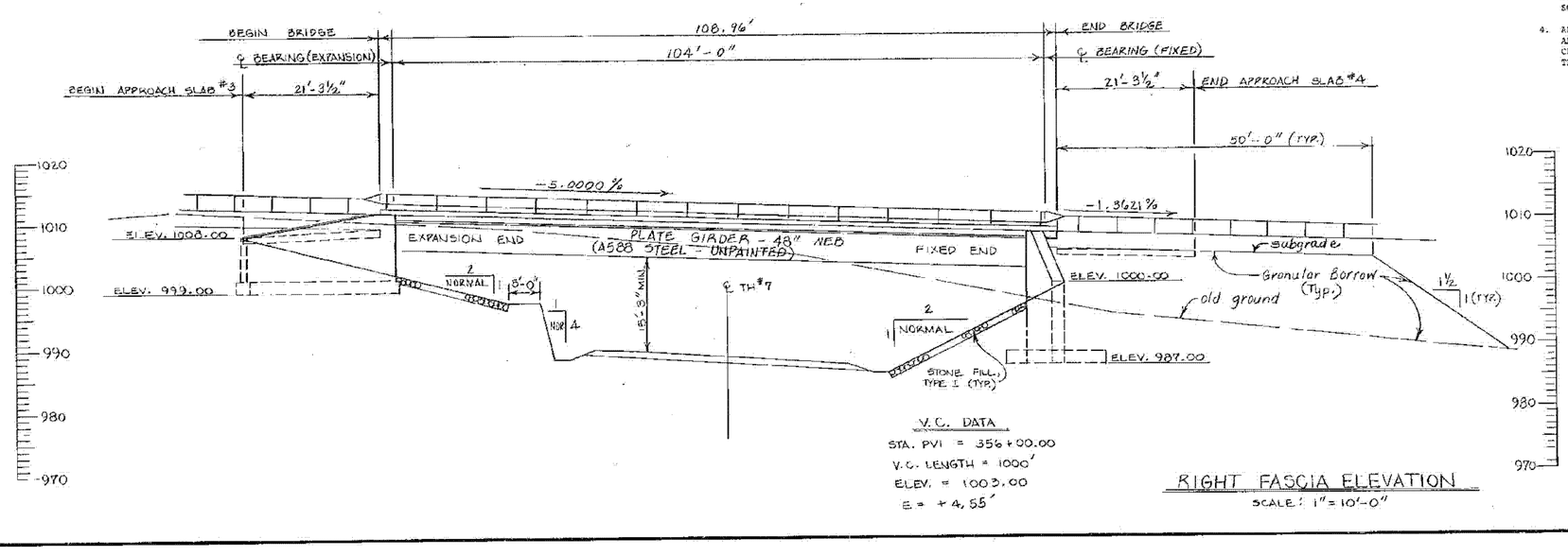
BR-6



PLAN
SCALE: 1"=10'-0"

GENERAL NOTES

1. THE GENERAL NOTE PERTAINING TO SPECIFICATIONS, MATERIALS, AND CONSTRUCTION IS SHOWN ON STD. ENG. SCB-01-75. OTHER GENERAL NOTES ON THE STANDARD, NOT OTHERWISE SHOWN OR MODIFIED ON THESE PLANS ARE NOTES 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, & 16.
2. FLEMING BRACKETS OR SIMILAR FALSEWORK SHALL BE SPACED AT A MAXIMUM OF FOUR (4) FEET.
3. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED AREAS OF THE ABUTMENTS, WINGWALLS, CURBS, FASCIA, AND TO THE CURB SOFFIT BACK TO THE DRIP NOTCH.
4. ALL WEEP PIPES SHALL NOT BE PLACED MORE THAN TEN (10) FEET APART OR WITHIN TWO (2) HORIZONTAL FEET OF ABUTMENT OR CROSS-FRAME; AND ONLY BETWEEN THE ABUTMENTS AND EDGES OF THE7 SHOULDERS.



V.C. DATA
STA. PVI = 356+00.00
V.C. LENGTH = 1000'
ELEV. = 1003.00
E = +4.55'

RIGHT FASCIA ELEVATION
SCALE: 1"=10'-0"

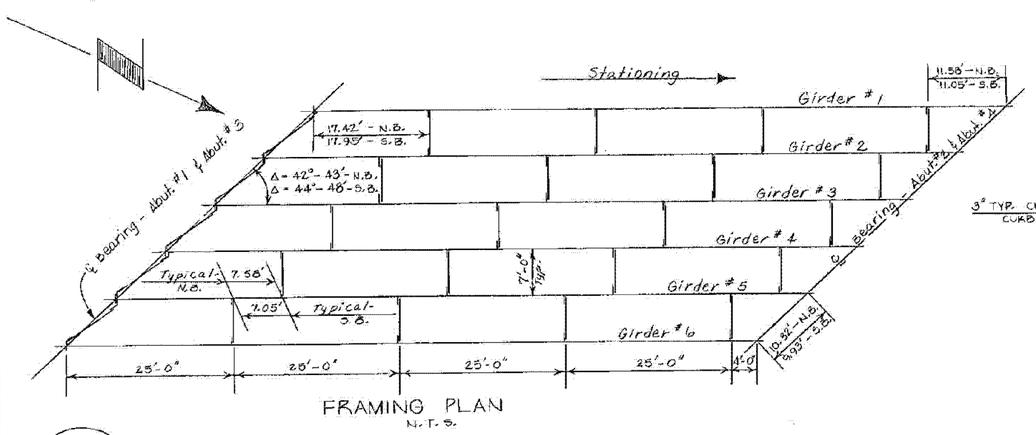
I-93 BRIDGES 5N&S
WATERFORD
IM MEMB(31)
SHEET 36 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

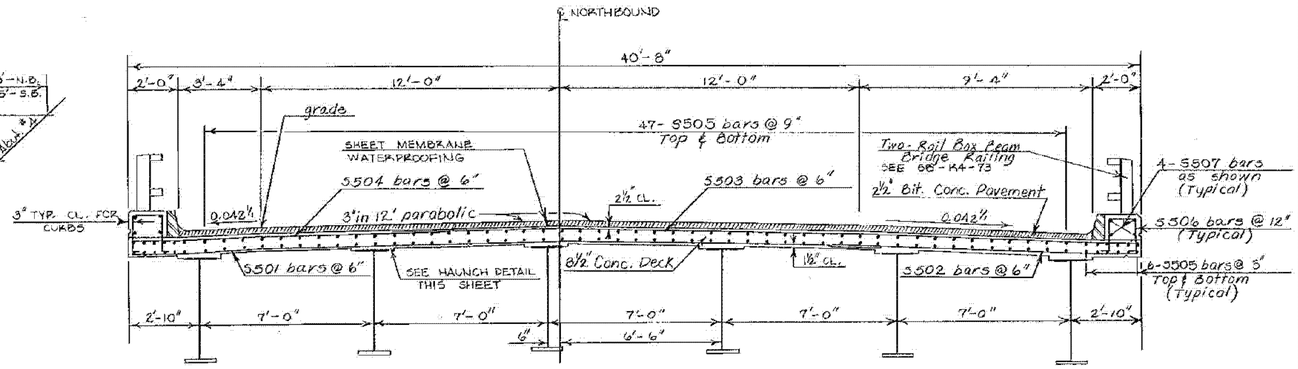
TOWN OF WATERFORD	Bridge No. 87
	Log Sta.
HIGHWAY NO. I 93	Surv. Sta. 354+83
I93 SOUTHBOUND OVER TH #7	
PLAN & ELEVATION SHEET	
Designed by G.S. ROGERS	Drawn by G.L. DAVIS
Checked by R.W. JENSEN date 1/22/80	Bridge Design Supervisor F.W. Botkum date 1/80
PROJECT WATERFORD	PROJECT NO. I93-1(3)CONTR.#2
Bridge Sheet No. BR703	Sheet 154 of 531

170 of 290

BRUNING 44-151-42151
BR-6



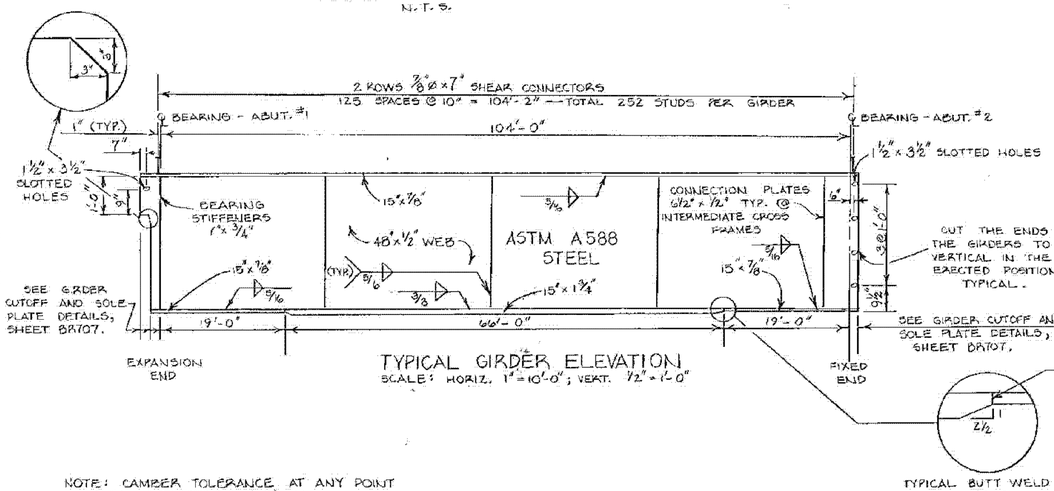
FRAMING PLAN
N.T.S.



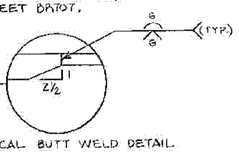
TYPICAL BRIDGE SECTION @ MIDSPAN
SCALE: 3/8" = 1'-0"

NOTE: SOUTHBOUND BRIDGE IS SIMILAR, BUT DIMENSIONS ARE REVERSED.

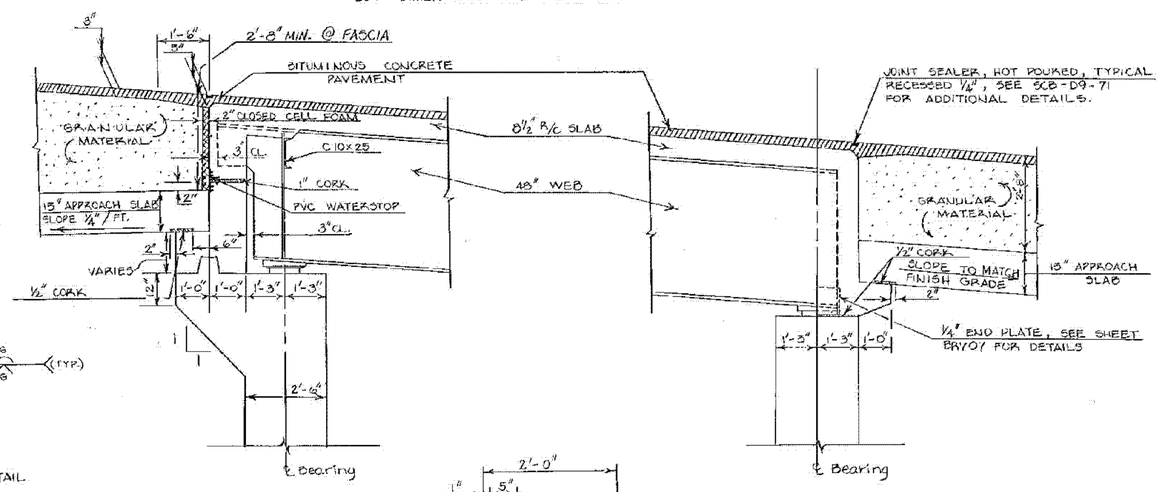
NOTE: FOR GRANITE CURB DETAILS, SEE STD. DWG. SCB-D6-73, AND DETAILS BELOW.



TYPICAL GIRDER ELEVATION
SCALE: HORIZ. 1" = 10'-0"; VERT. ½" = 1'-0"



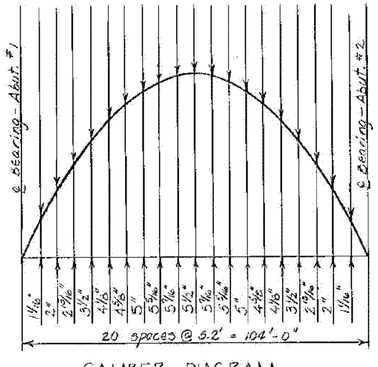
TYPICAL BUTT WELD DETAIL
N.T.S.



EXPANSION END DETAIL
SCALE: ½" = 1'-0"

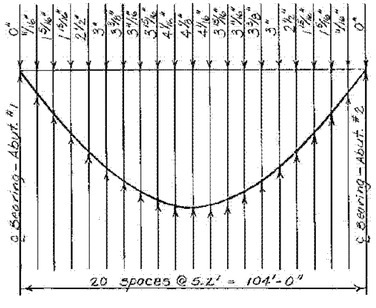
FIXED END DETAIL
SCALE: ½" = 1'-0"

NOTE: CAMBER TOLERANCE AT ANY POINT SHALL NOT EXCEED (-0) OR $+\frac{1}{8}\left(\frac{\text{DISTANCE TO NEAREST SUPPORT}}{10}\right)$.

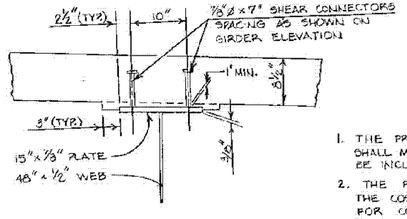


CAMBER DIAGRAM
SCALE: HORIZ. 1" = 20'; VERT. 1" = 2"

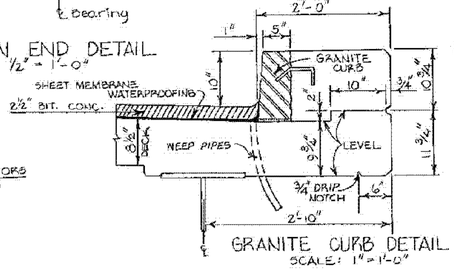
NOTE: LIVE LOAD DEFLECTION IS 1 1/16".



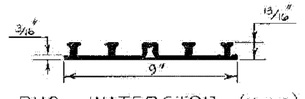
DEAD LOAD DEFLECTION DIAGRAM
SCALE: HORIZ. 1" = 20'; VERT. 1" = 2"
DEAD LOAD DEFLECTION DUE TO BEAM, DECK, DIAPHRAGMS, CURB, RAIL, AND PAVEMENT.



HAUNCH DETAIL
SCALE: 1" = 1'-0"



GRANITE CURB DETAIL
SCALE: 1" = 1'-0"



PVC WATERSTOP (N.T.S.)

NOTES:

1. THE PREFORMED JOINT SEALER, VINYLFOAM, SHALL BE SEMI-RIGID GRADE AND SHALL MEET THE REQUIREMENTS OF SUBSECTION 707.23. PAYMENT SHALL BE INCLUDED IN THE UNIT BID PRICE FOR CONCRETE, CLASS A.
2. THE PVC WATERSTOP SHALL BE AS SPECIFIED IN SUBSECTION 707.30. THE COST OF THE WATERSTOP SHALL BE INCLUDED IN THE UNIT BID PRICE FOR CONCRETE, CLASS A.
3. DRIP PLATES ON GIRDERS 1 & 6 ARE TO BE PLACED ACCORDING TO DETAIL (C) ON STANDARD SHEET SCB-D7-71.

I-93 BRIDGES 5N&S

WATERFORD
IM MEMB(31)
SHEET 37 OF 48
FOR REFERENCE ONLY

STATE OF V
AGENCY OF TRAN

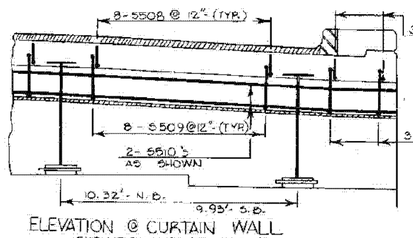
TOWN OF WATERFORD	Bridge No. B7
HIGHWAY NO. I 93	Log Sta.
	Surv. Sta. 354+83

I93 OVER TOWN HIGHWAY #7
SUPERSTRUCTURE DETAILS

Designed by G.S. ROGERS	Drawn by G.L. DAVIS
Checked by G.S. ROGERS date 6-80	Bridge Design Supervisor F.W. Balkum date 9/80
PROJECT WATERFORD	PROJECT NO. I 93-1(3)CONTR#2
Bridge Sheet No. BR706	Sheet 157 of 531 191 of 290

BRUNING 44-131-40151

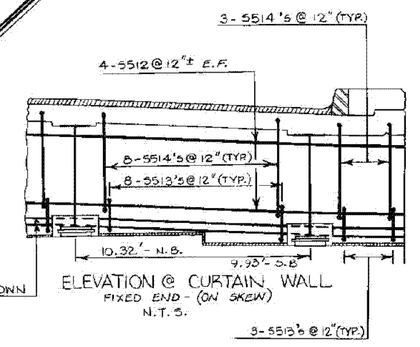
BR-5



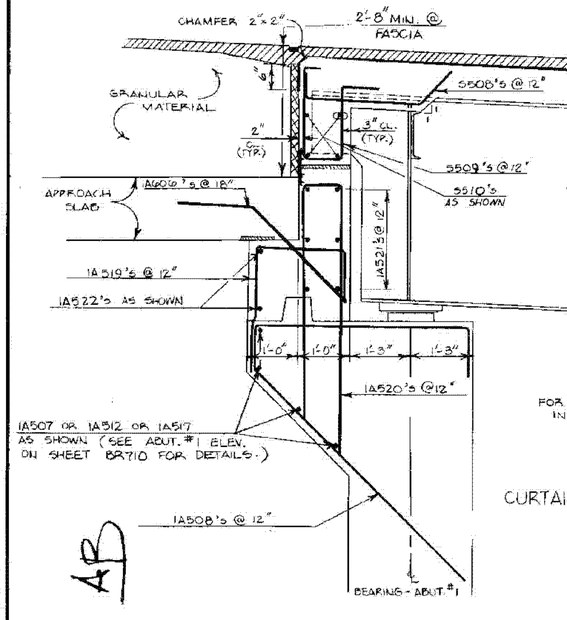
ELEVATION @ CURTAIN WALL
EXPANSION END - (ON SKEW)
N.T.S.

APPROACH SLAB & DECK REINFORCING PLAN
N.T.S.

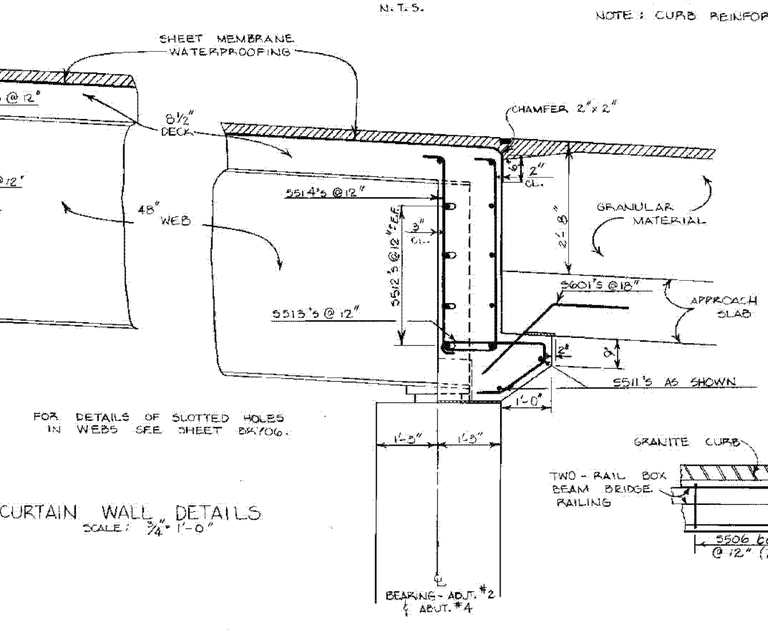
NOTE: CURB REINFORCING IS NOT SHOWN.



ELEVATION @ CURTAIN WALL
FIXED END - (ON SKEW)
N.T.S.



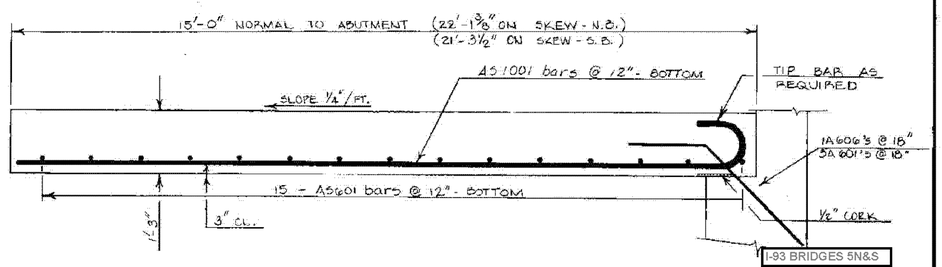
EXPANSION END - NORTHBOUND



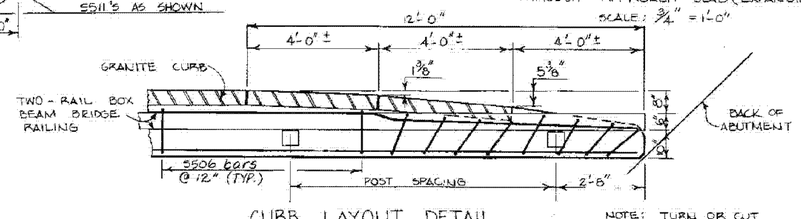
FIXED END - NORTHBOUND & SOUTHBOUND

FOR DETAILS OF SLOTTED HOLES IN WEBS SEE SHEET BR706.

CURTAIN WALL DETAILS
SCALE: 3/4" = 1'-0"



SECTION A-A
THROUGH APPROACH SLAB (EXPANSION END)
SCALE: 3/4" = 1'-0"



CURB LAYOUT DETAIL
SCALE: ½" = 1'-0"

NOTE: TURN OR CUT STIRRUP BARS AS REQUIRED TO FIT FLARED END. FOR CURB JOINT DETAILS SEE SCB - D4 - 76 DETAIL (B).

I-93 BRIDGES 5N&S
WATERFORD
IM MEMB(31)
SHEET 38 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. 67
HIGHWAY NO. I 93	Log Sta.
	Surv. Sta. 354+83
I93 OVER TOWN HIGHWAY #7	
APPROACH SLAB & DECK REINFORCING PLAN	
Designed by G.S. ROGERS	Drawn by G.L. DAVIS
Checked by G.S. ROGERS date 7-80	Bridge Design Supervisor F.W. Balkum date 7/80
PROJECT WATERFORD	PROJECT NO. I93-1(3) CONTR.#2
Bridge Sheet No. BR709	Sheet 160 of 531

BRUNING 44-1311 47121

BR-5

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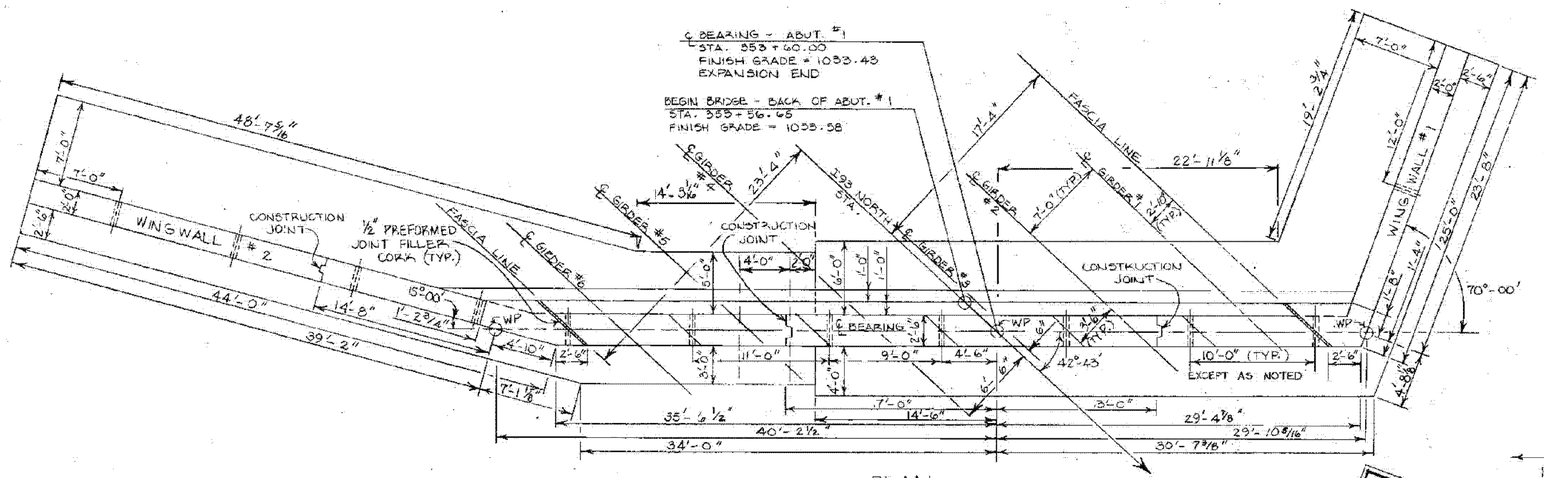
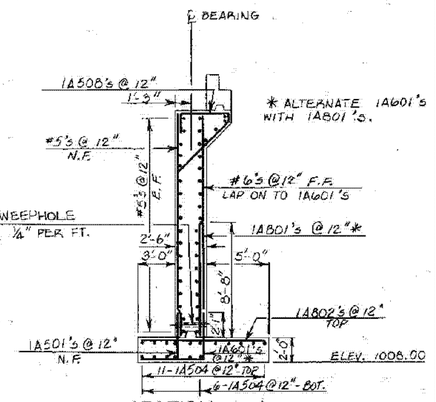
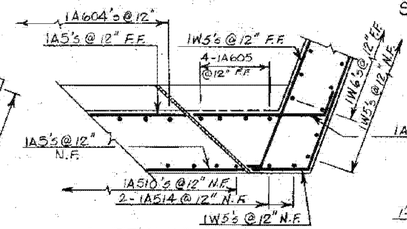
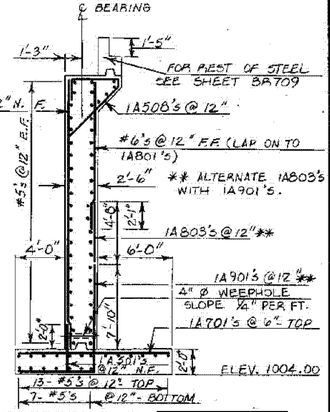




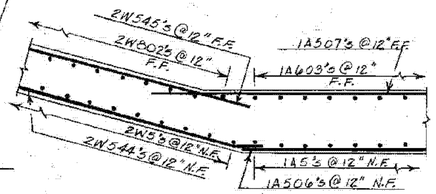
SECTION A-A
SCALE: 3/16" = 1'-0"



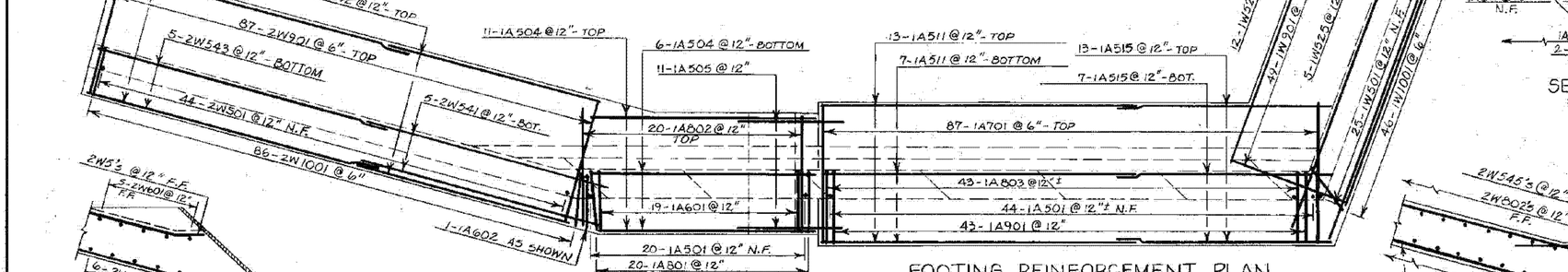
SECTION C-C
SCALE: 3/8" = 1'-0"



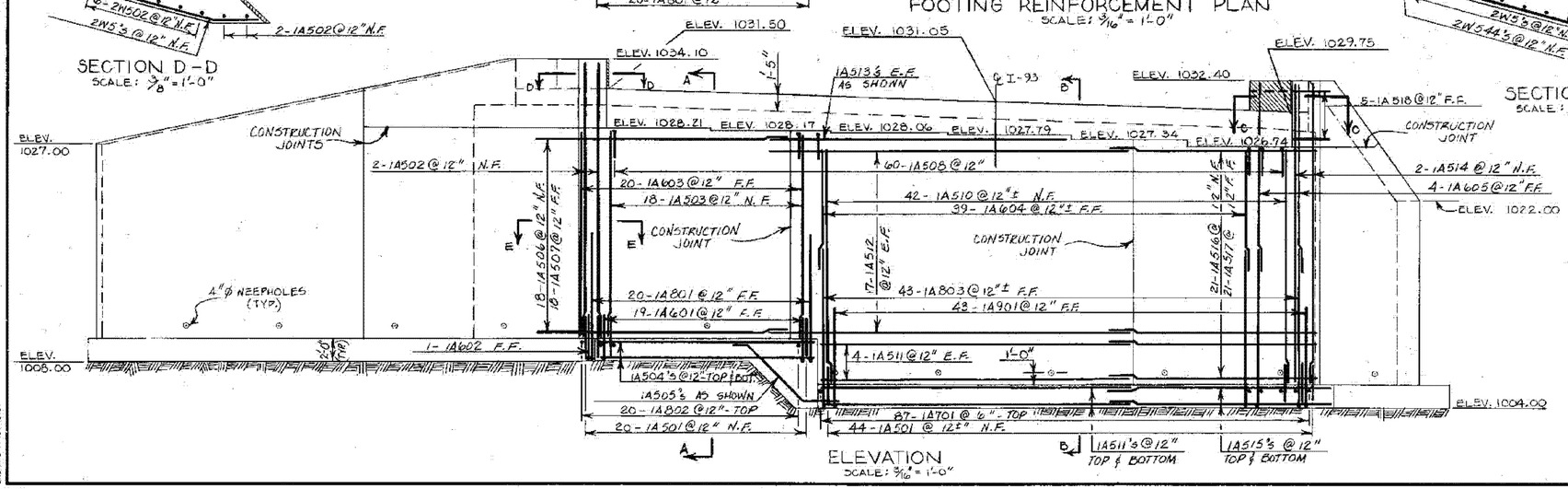
SECTION B-B
SCALE: 3/16" = 1'-0"



SECTION E-E
SCALE: 3/8" = 1'-0"



FOOTING REINFORCEMENT PLAN
SCALE: 3/16" = 1'-0"



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

I-93 BRIDGES 5N&S
WATERFORD
IM MEMB(31)
SHEET 39 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. 57
HIGHWAY NO. I-93	Log No.
	Serv. No. 354+88
I-93 NORTHBOUND OVER TH#7	
ABUTMENT NO. 1 DETAILS	
Designed by G.S. ROGERS	Drawn by G.L. DAVIS
Checked by G.S. ROGERS date 6-80	Bridge Design Supervisor F.W. Bolkum date 7/80
PROJECT WATERFORD	PROJECT NO. I93-1(3) CONTR.#2
Bridge Sheet No. BR710	Sheet 161 of 531

BRUNING 44-131 40151
BR-4

NOTES:

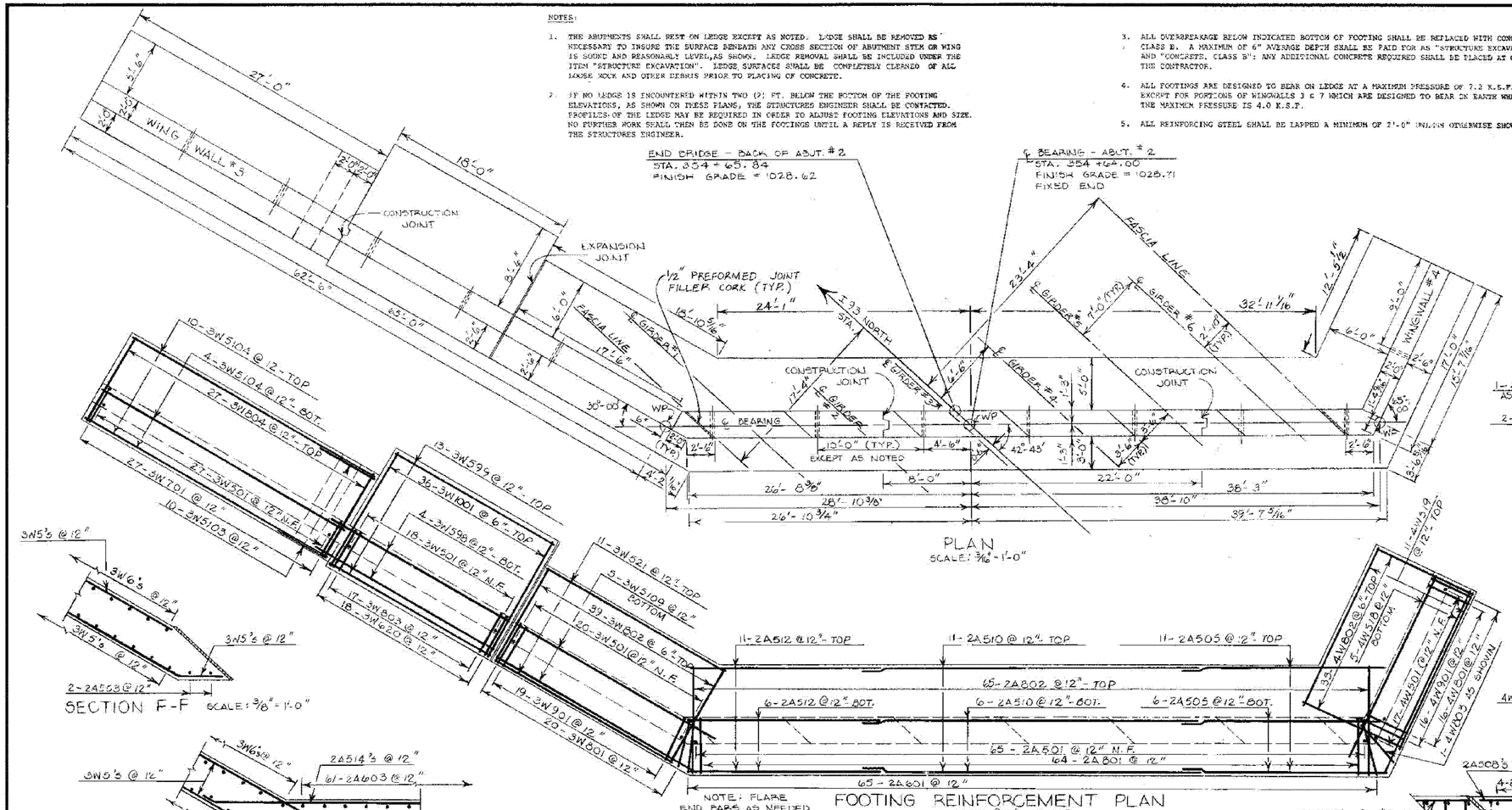
1. THE ABUTMENTS SHALL REST ON LEDGE EXCEPT AS NOTED. LEDGE SHALL BE REMOVED AS NECESSARY TO INSURE THE SURFACE BENEATH ANY CROSS SECTION OF ABUTMENT STEM OR WING IS SOUND AND REASONABLY LEVEL, AS SHOWN. LEDGE REMOVAL SHALL BE INCLUDED UNDER THE ITEM "STRUCTURE EXCAVATION". LEDGE SURFACES SHALL BE COMPLETELY CLEANED OF ALL LOOSE ROCK AND OTHER DEBRIS PRIOR TO PLACING OF CONCRETE.

2. IF NO LEDGE IS ENCOUNTERED WITHIN TWO (2) FT. BELOW THE BOTTOM OF THE FOOTING ELEVATIONS, AS SHOWN ON THESE PLANS, THE STRUCTURES ENGINEER SHALL BE CONTACTED. PROFILES OF THE LEDGE MAY BE REQUIRED IN ORDER TO ADJUST FOOTING ELEVATIONS AND SIZE. NO FURTHER WORK SHALL THEN BE DONE ON THE FOOTINGS UNTIL A REPLY IS RECEIVED FROM THE STRUCTURES ENGINEER.

3. ALL OVEREXCAVATION BELOW INDICATED BOTTOM OF FOOTING SHALL BE REPLACED WITH CONCRETE, CLASS B. A MAXIMUM OF 6" AVERAGE DEPTH SHALL BE PAID FOR AS "STRUCTURE EXCAVATION" AND "CONCRETE, CLASS B"; ANY ADDITIONAL CONCRETE REQUIRED SHALL BE PLACED AT COST OF THE CONTRACTOR.

4. ALL FOOTINGS ARE DESIGNED TO BEAR ON LEDGE AT A MAXIMUM PRESSURE OF 7.2 K.S.F., EXCEPT FOR PORTIONS OF WINGWALLS 3 & 7 WHICH ARE DESIGNED TO BEAR ON EARTH WHERE THE MAXIMUM PRESSURE IS 4.0 K.S.F.

5. ALL REINFORCING STEEL SHALL BE LAPPED A MINIMUM OF 2'-0" UNLESS OTHERWISE SHOWN.



I-93 BRIDGES 5N&S

WATERFORD
IM MEMB(31)
SHEET 40 OF 48
FOR REFERENCE ONLY

STATE OF V
AGENCY OF TRAN

TOWN OF WATERFORD	Bridge No. B7
HIGHWAY NO. I-93	Log Sta.
	Surv. Sta. 354+83

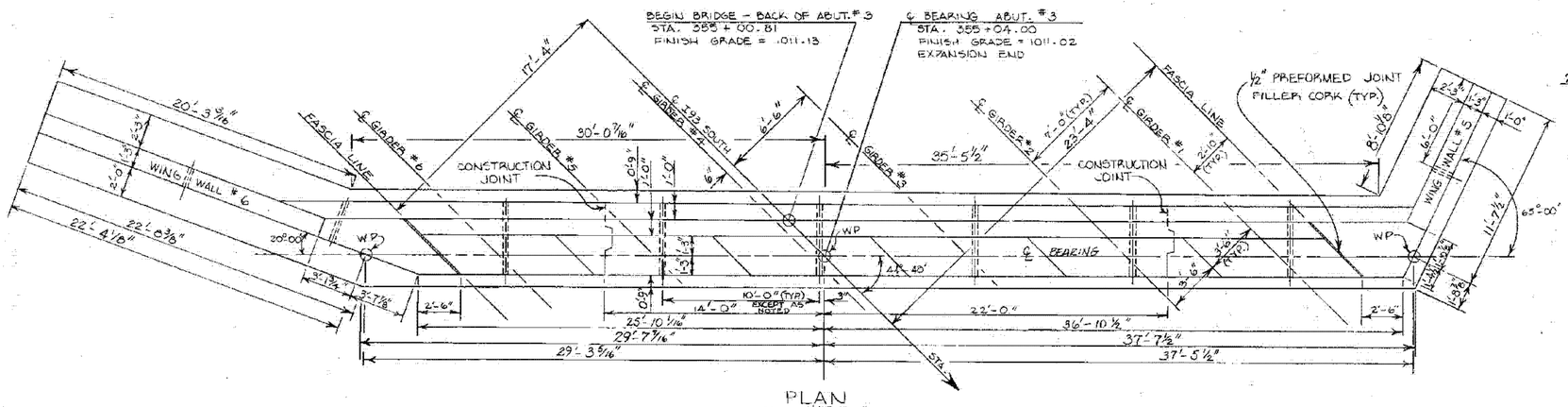
I93 NORTHBOUND OVER TH # 7

ABUTMENT NO. 2 DETAILS

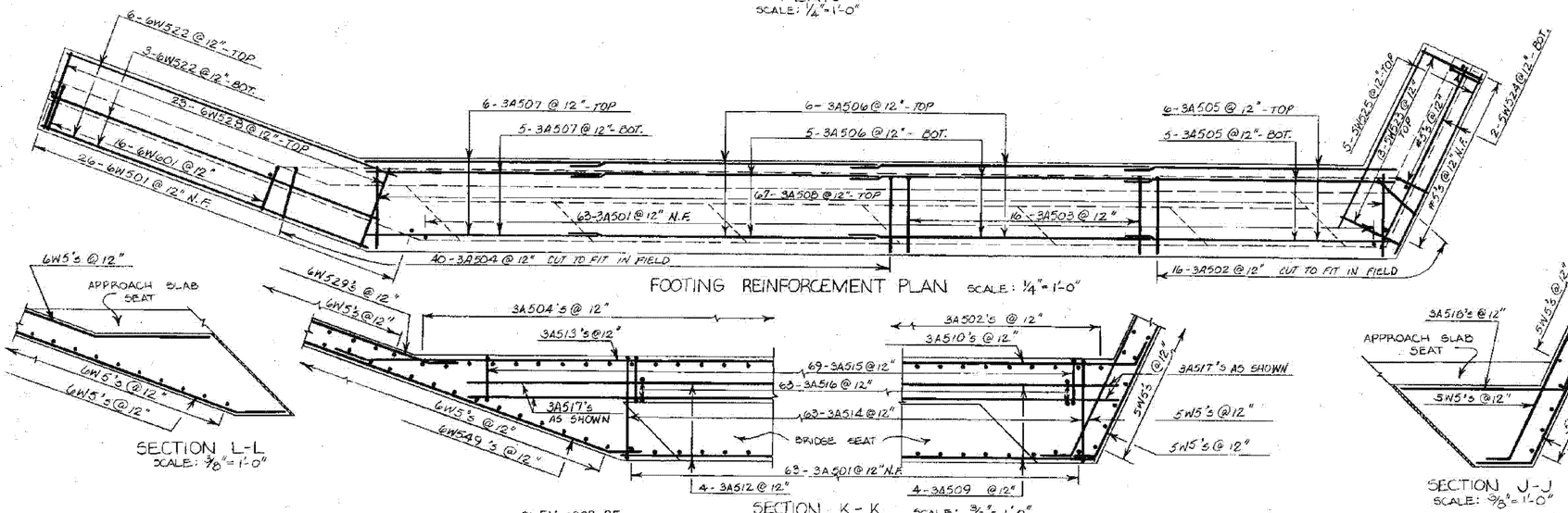
Designed by G.S. ROGERS	Drawn by G.L. DAVIS
Checked by G.S. ROGERS date 6-80	Bridge Design Supervisor F.W. Bolkum date 7/80
PROJECT WATERFORD	PROJECT NO. I93-1(2)CONTR.#2
Bridge Sheet No. BR 711	Sheet 162 of 531

BR-6

BRUNING 44-121-4015



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

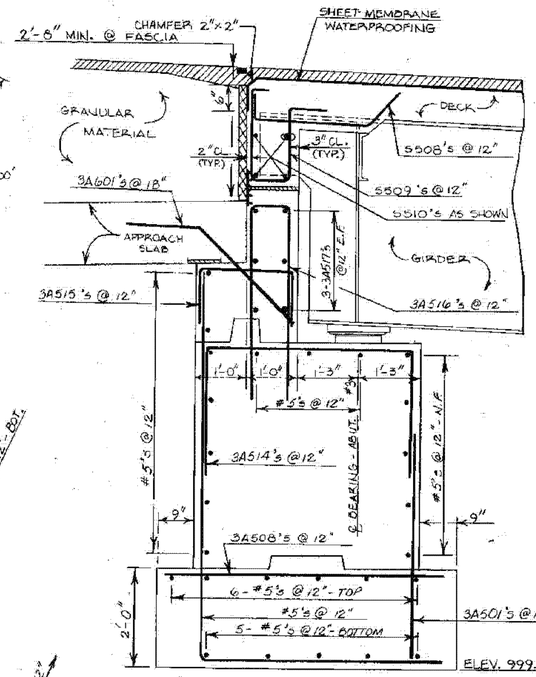


FOOTING REINFORCEMENT PLAN SCALE: 1/4"=1'-0"

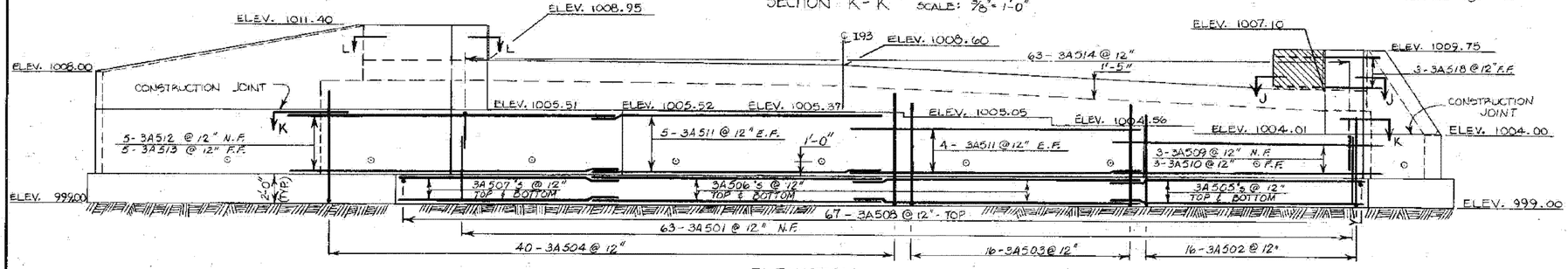
SECTION L-L
SCALE: 3/8"=1'-0"

SECTION K-K SCALE: 3/8"=1'-0"

SECTION J-J
SCALE: 3/8"=1'-0"



TYPICAL SECTION – ABUT. #3
EXPANSION END
SCALE: 3/4" = 1'-0"



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

I-93 BRIDGES 5N&S

WATERFORD
IM MEMB(31)
SHEET 41 OF 48
FOR REFERENCE ONLY

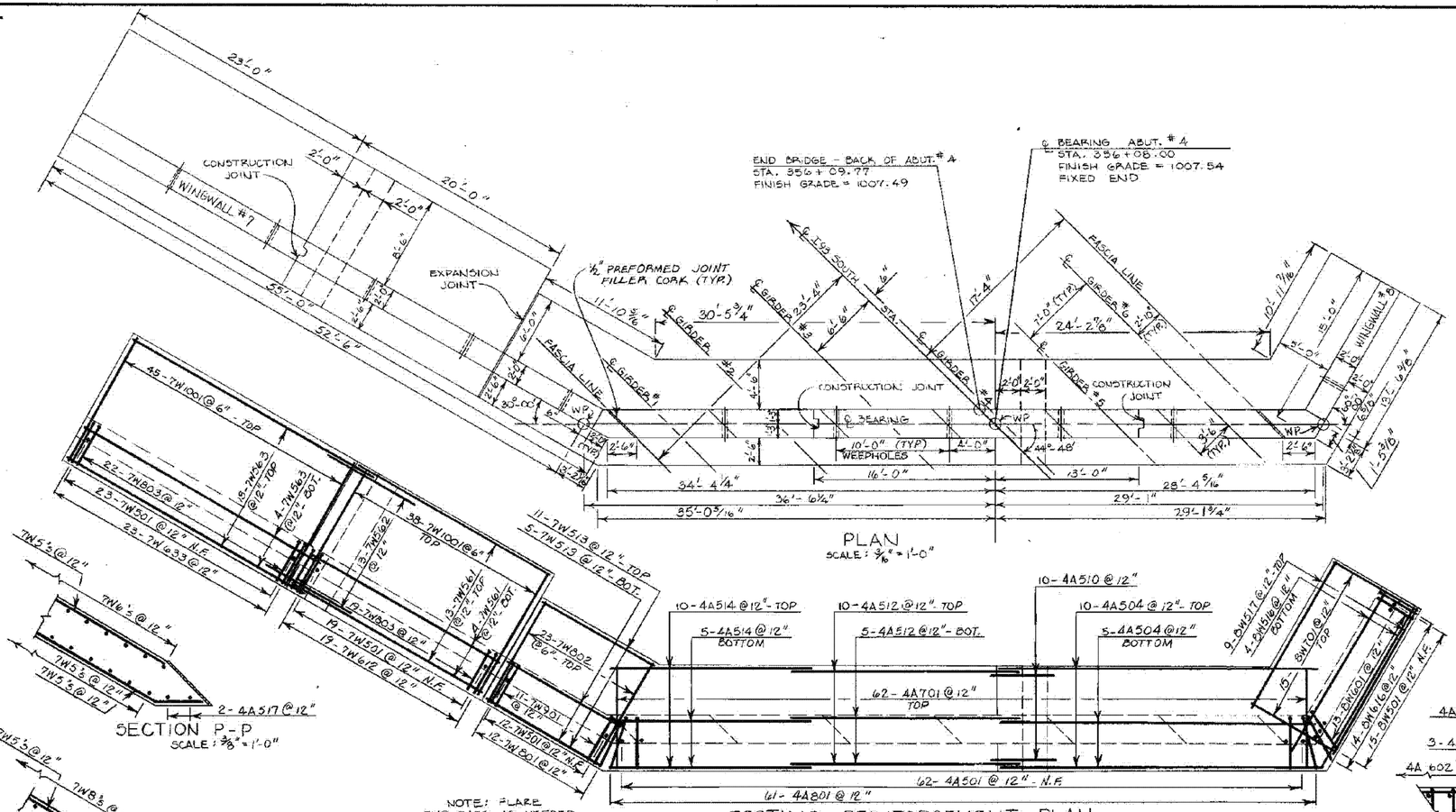
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. 87
	Log Sta.
HIGHWAY NO. I93	Surv. Sta. 354+83
I 93 SOUTHBOUND OVER TH #7	
ABUTMENT NO. 3 DETAILS	
Designed by G. S. ROGERS	Drawn by G. L. DAVIS
Checked by G. S. ROGERS date 6-80	Bridge Design Supervisor E.W. Balkum date 7/80
PROJECT WATERFORD	PROJECT NO. I93-1(3) CONTR. #2
Bridge Sheet No. BR712	Sheet 163 of 531

194 of 290

DRAWING 44 1ST 40 ISH

BR-4



I-93 BRIDGES 5N&S

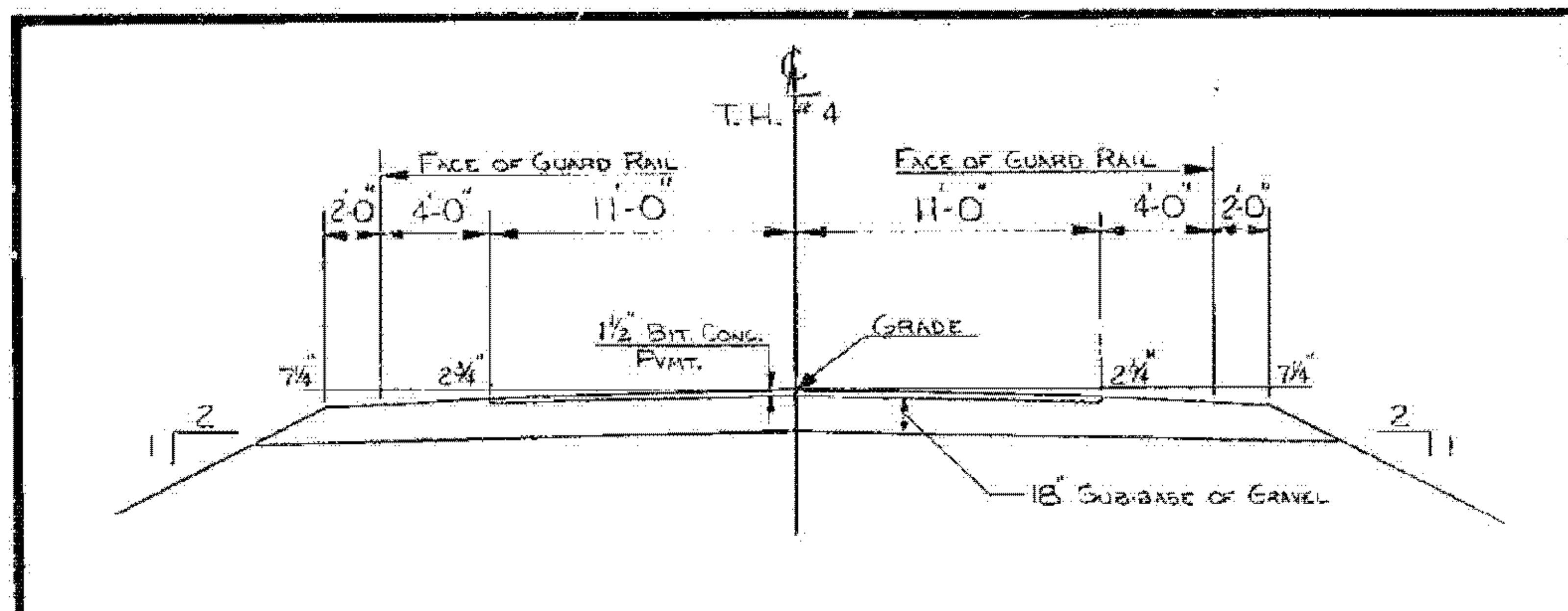
WATERFORD
IM MEMB(31)
SHEET 42 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

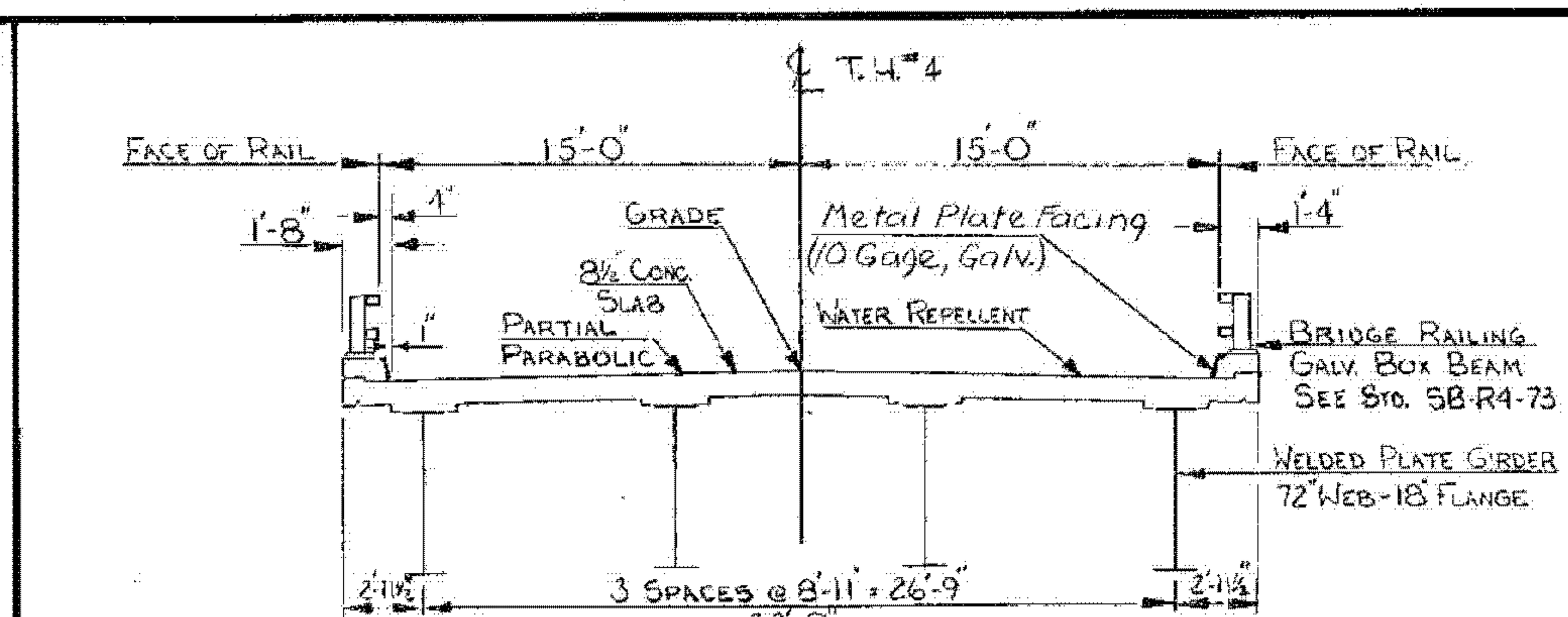
TOWN OF WATERFORD	Bridge No. 57
HIGHWAY NO. I 93	Log Sta.
	Surv. Sta. 354+83
I93 SOUTHBOUND OVER TH # 7	
ABUTMENT NO. 4 DETAILS	
Designed by G.S. ROGERS	Drawn by G.L. DAVIS
Checked by G.S. ROGERS date 6-80	Bridge Design Supervisor F.W. Bolkum date 7/80
PROJECT WATERFORD	PROJECT NO. I93-1(3)CONTR.#2
Bridge Sheet No. BR713	Sheet 164 of 531

BRUNING 44 131 80 (5)

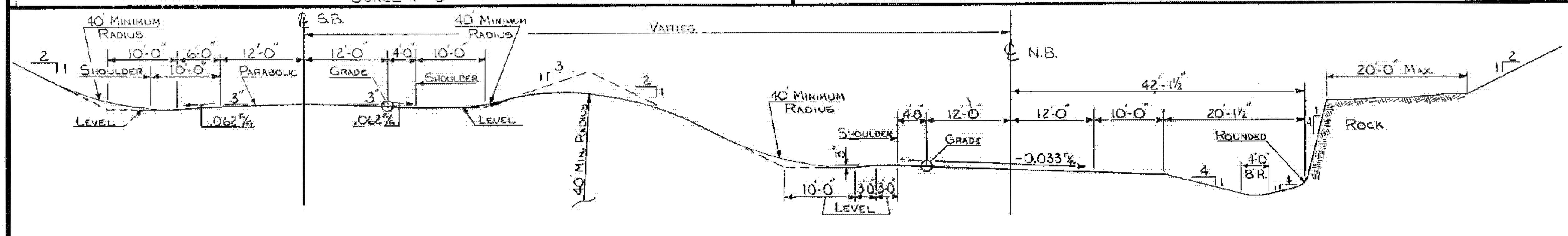
BR-4



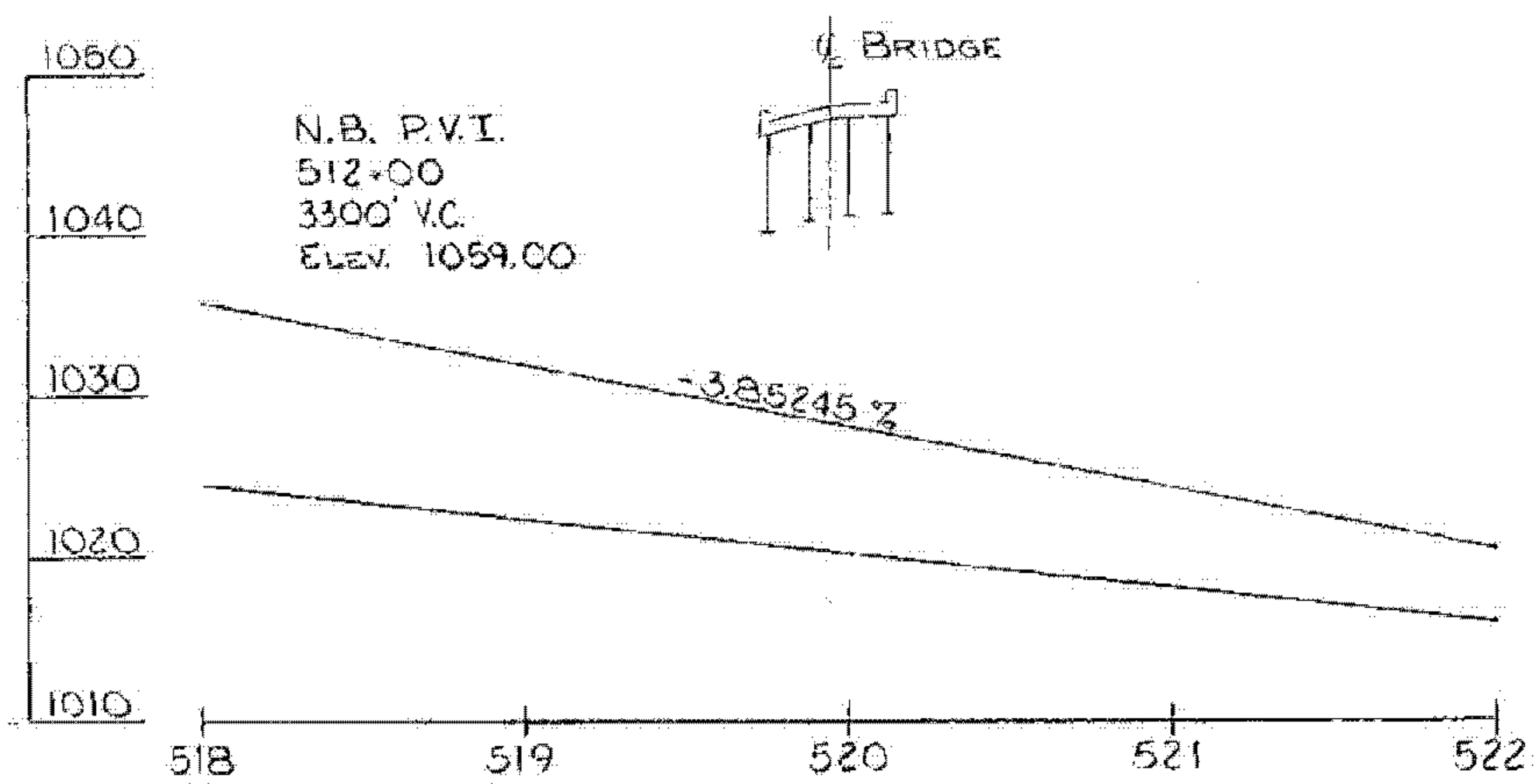
NEW HIGHWAY SECTION — BRIDGE APPROACHES
Scale 1"=5'



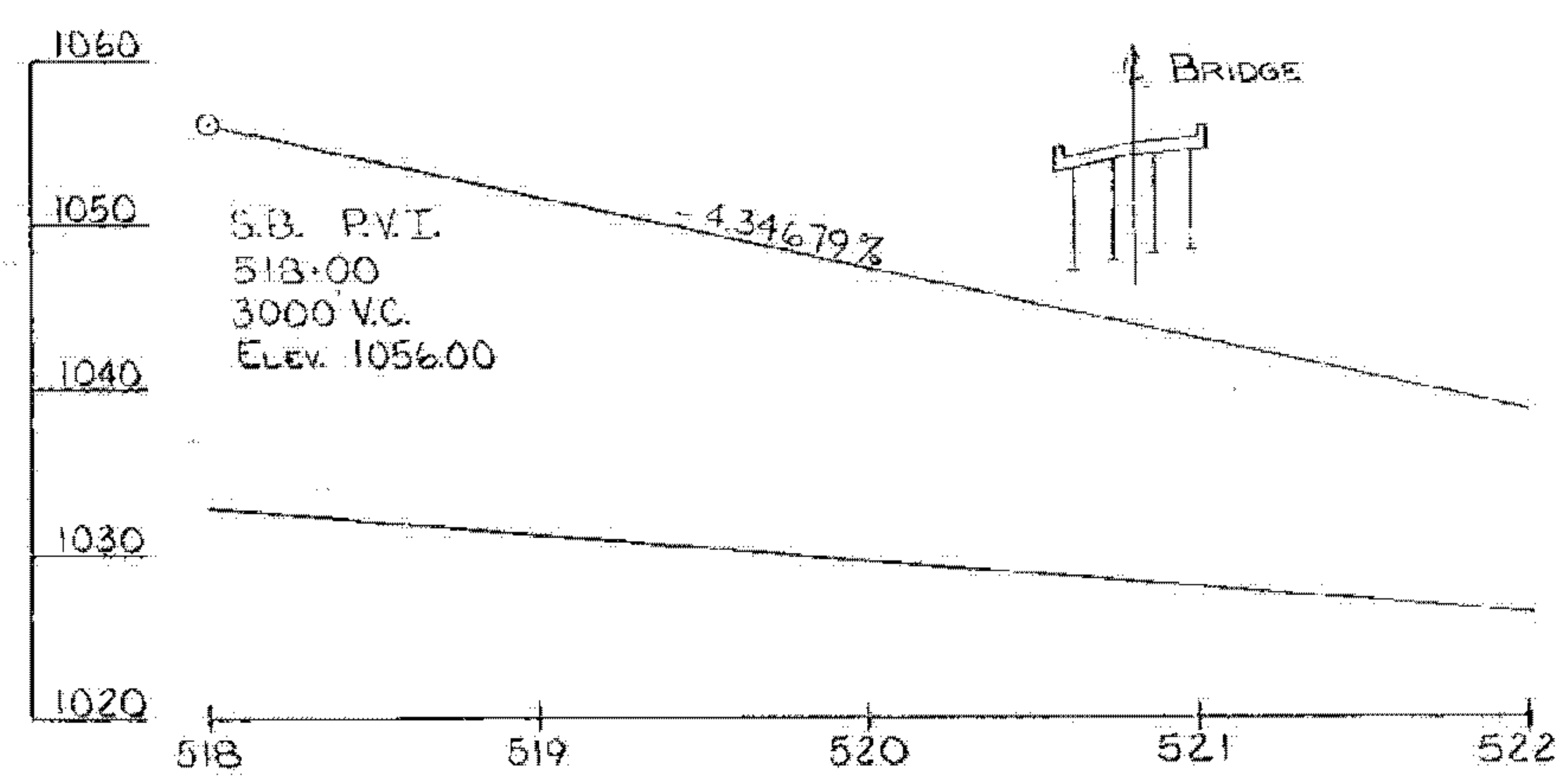
BRIDGE TYPICAL SECTION
Scale 1"=5'



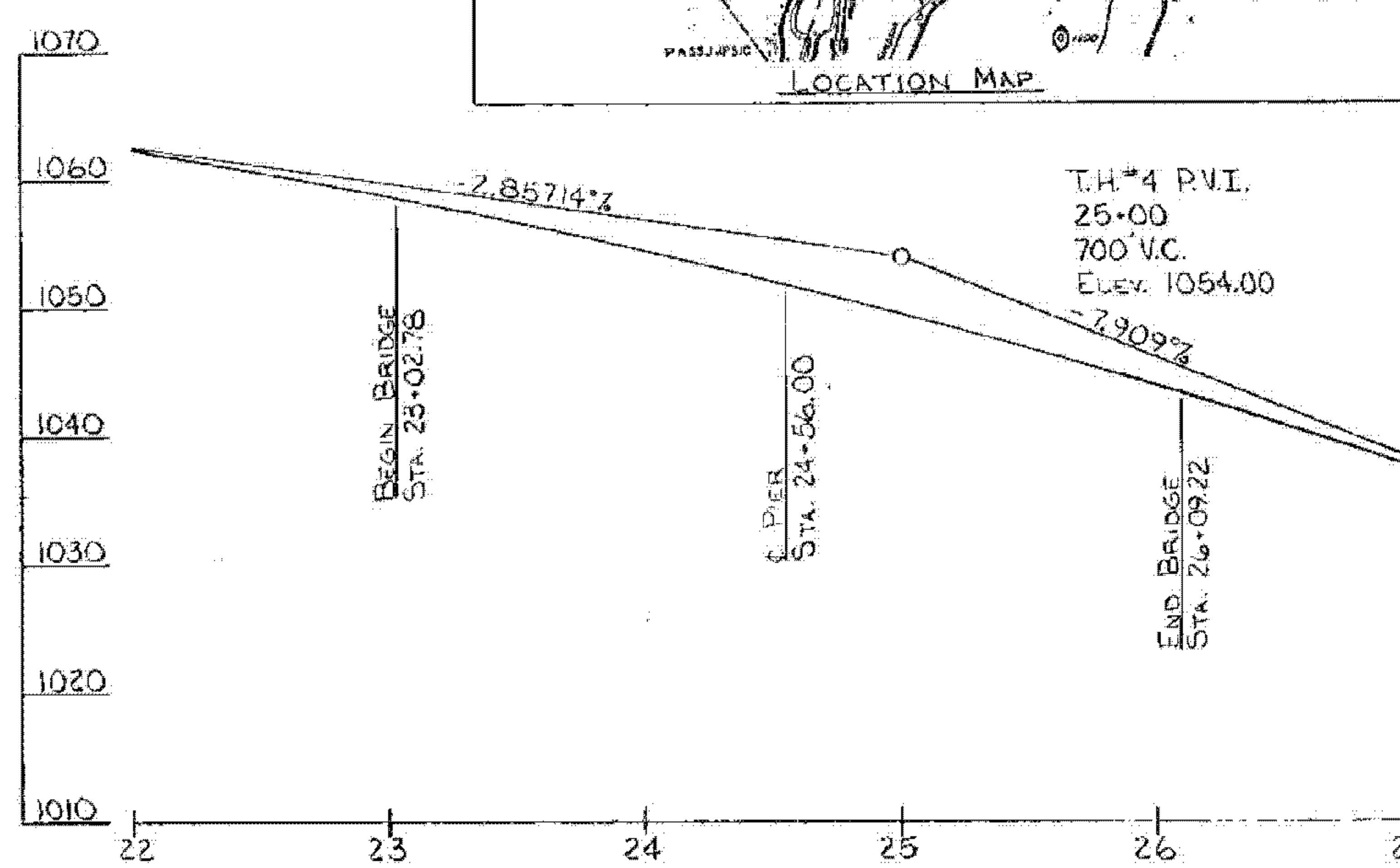
Modified Typical Section Interstate 93 Under Bridge at ℄ Sta. 520+20 ±
Scale: 1"=20'



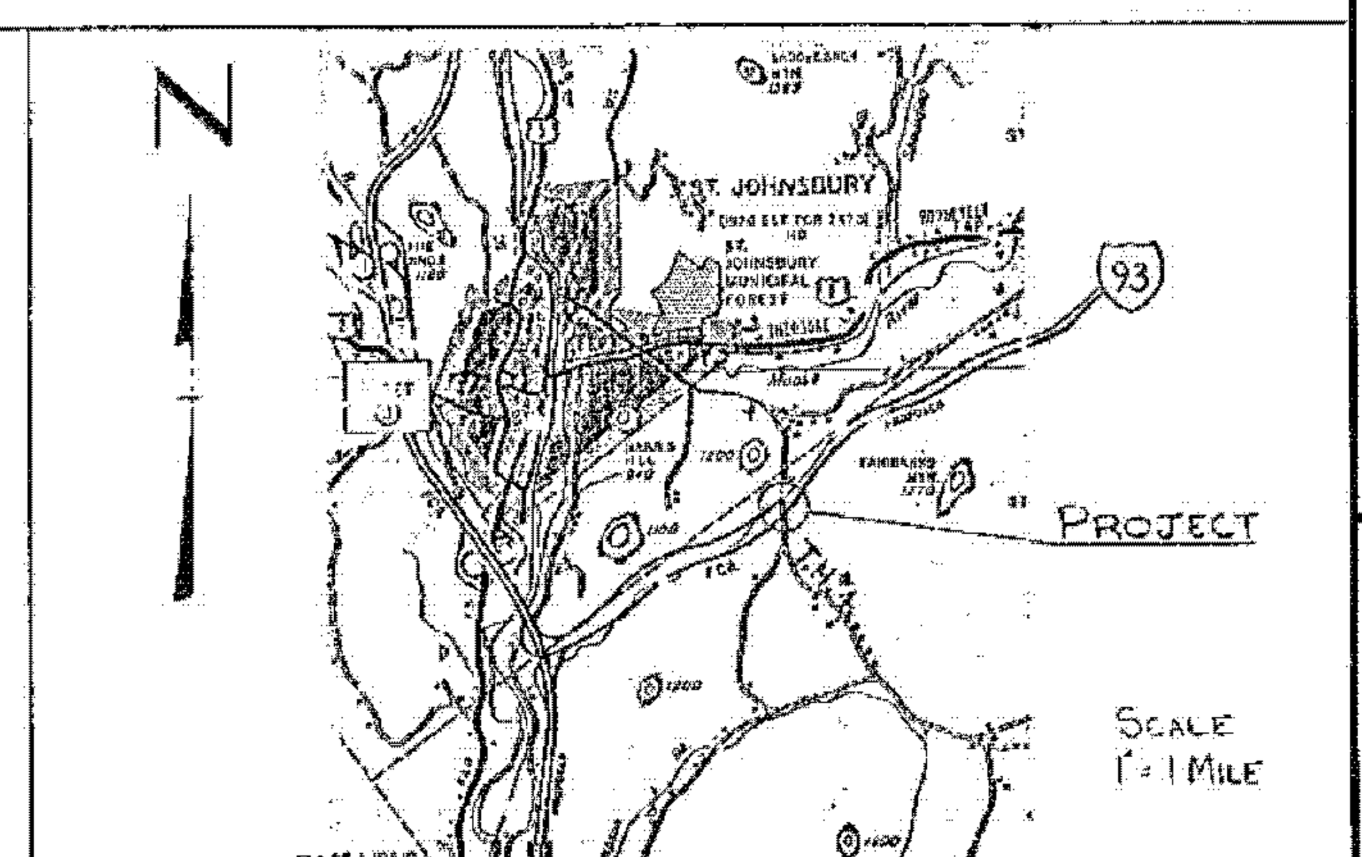
N.B. Profile I 93
Scale: 1"=50' Hor. 1"=10' Vert.



S.B. Profile I 93
Scale: 1"=50' Hor. 1"=10' Vert.



New Highway Profile Along ℄ Town Highway #4
Scale: 1"=50' Hor. 1"=10' Vert.



Location Map

EXISTING STRUCTURE

1. STRUCTURE TYPE ______ OVERALL LENGTH ______ INVENTORY RATING ______
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS ______
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM ______
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) N.A. VERTICAL CLEARANCE ABOVE STREAMBED ______
5. WATER SURFACE ELEVATION @ Q 2.33 ______ WATER SURFACE ELEVATION @ Q ______
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD ______ YEAR ______ ESTIMATED DISCHARGE ______
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? ______ IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? ______
ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF ______
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL ______
9. DISPOSITION OF STRUCTURE ______

NEW STRUCTURE

STRUCTURE GEOMETRY:

1. STRUCTURE TYPE 2 Span Continous Plate Girder OVERALL LENGTH 306.44
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 150-0
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER 17.00 S.B. 18.43 N.B.
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM N.A.
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) N.A.
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? NO

HYDRAULIC DATA: N.A.

1. Q 2.33 ______ WATER ELEVATION ______ VELOCITY ______
Q 10 ______ WATER ELEVATION ______ VELOCITY ______
Q 25 ______ WATER ELEVATION ______ VELOCITY ______
Q 50 ______ WATER ELEVATION ______ VELOCITY ______
Q 100 ______ WATER ELEVATION ______ VELOCITY ______
2. DRAINAGE AREA ______ CHARACTER OF TERRAIN ______
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? ______
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? ______ IS ORDINARY RISE RAPID? ______
5. NATURE OF NATURAL STREAMBED ______
6. ESTIMATED SCOUR DEPTH ______ COMMENT ON: DRIFT ______ ICE ______
7. WILL ALL WATER PASS THROUGH NEW STRUCTURE? ______ IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR? ______
ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF ______
8. VERTICAL CLEARANCE ABOVE Q ______
9. ALLOWABLE WATER SURFACE ELEVATION ______ LIMITED BY ______
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? ______ IF YES, DESCRIBE ______
11. AVERAGE DAILY LOW FLOW ______ DEPTH ______ AVERAGE DAILY HIGH FLOW ______ DEPTH ______
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED ______
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE ______ SPAN ______ WATERWAY AREA OF FULL OPENING ______ Q ______
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE ______ SPAN ______ WATERWAY AREA OF FULL OPENING ______ Q ______

ALLOWABLE STRESSES:

1. DESIGN LIVE LOAD AASHTO HS 20-44
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N.A. ON LEDGE 10 KSF
3. ALLOWABLE LOAD FOR PILING 140 KIPS TYPE HP 12×53 ESTIMATED LENGTH 30'
4. ALLOWABLE STRESS FOR STRUCTURAL STEEL ASTM A-588 TENSION 27,000 PSI
5. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 24000 PSI COMPRESSION 20,000 PSI
6. ALLOWABLE STRESS FOR CONCRETE CLASS A f'_c 3500 f_c 1400
CLASS B f'_c 3500 f_c 1400

TRAFFIC MAINTENANCE:

1. IS TRAFFIC TO BE MAINTAINED? ______ IF YES, ON EXISTING STRUCTURE N.A. OR ON TEMPORARY BRIDGE ______
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY ______ TRAFFIC CONTROL SIGNALS REQUIRED ______
MINIMUM CLEAR SPAN ______ MINIMUM CLEAR HEIGHT ______ MINIMUM WATERWAY AREA ______
ARE SIDEWALKS REQUIRED? ______ IF SO, ON WHAT SIDE? ______

INDEX OF BRIDGE SHEETS

STANDARD SHEETS

REFERENCE SHEETS

LOAD RATING (TONS)

STRESS LEVELS	TRUCK: H	HS	3S2	5 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy =	40	42					
POSTED 0.67 Fy =	60		71		62	63	68
OPERATING 0.75 Fy =			89	98			

RECOMMENDED FOR APPROVAL W. M. Smith 1-30-80
STRUCTURES ENGINEER DATE

RECOMMENDED FOR APPROVAL Arthur J. Goss 1-30-80
CHIEF OF DESIGN DATE

APPROVED BY S. J. Gage 1/30/80
DIRECTOR OF ENGINEERING & CONSTRUCTION DATE

REVISIONS

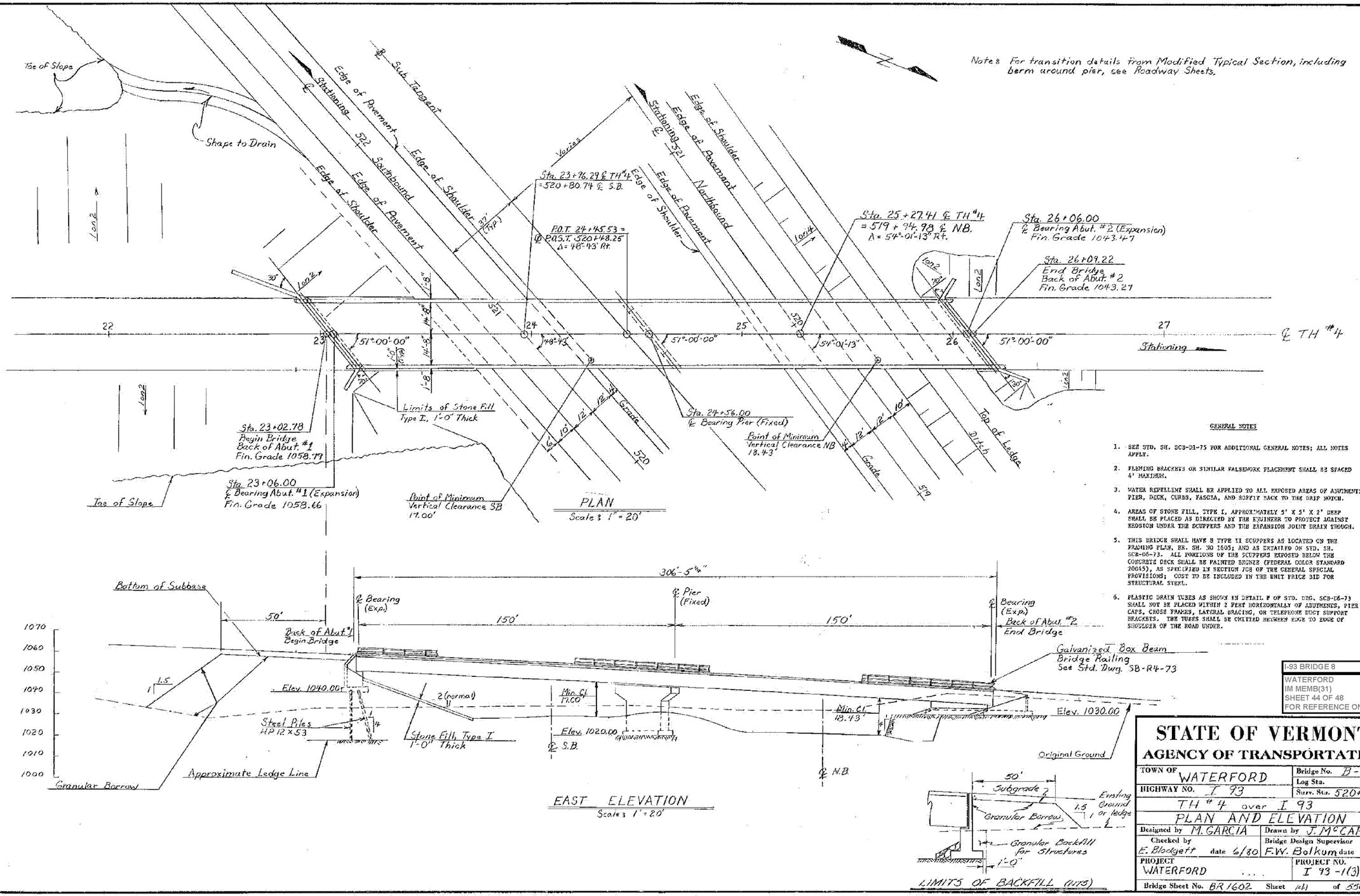
NO.	DESCRIPTION	BY & DATE

STATE OF V
AGENCY OF TRANS

TOWN OF WATERFORD	Bridge No. B-16
	Log Sta.
HIGHWAY NO. I 93	Surv. Sta. 520+48
T.H. #4 Over I-93	
Preliminary Information	
Designed by N. Danforth	Drawn by W. Flanders
Checked by M. Garcia date 1-80	Bridge Design Supervisor F.W. Bolkum date 1/80
PROJECT WATERFORD	PROJECT NO. I 93-1(3) C-3
Bridge Sheet No. BR 1600	Sheet 139 of 330

BR-2

Note: For transition details from Modified Typical Section, including berm around pier, see Roadway Sheets.



GENERAL NOTES

1. SEE STD. SH. SCB-D1-75 FOR ADDITIONAL GENERAL NOTES; ALL NOTES APPLY.
2. FLEMING BRACKETS OR SIMILAR FALSEWORK PLACEMENT SHALL BE SPACED 4' MAXIMUM.
3. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED AREAS OF ABUTMENTS, PIER, DECK, CURBS, FASCIA, AND SOFFIT BACK TO THE DRIP NOTCH.
4. AREAS OF STONE FILL, TYPE I, APPROXIMATELY 5' X 5' X 2' DEEP SHALL BE PLACED AS DIRECTED BY THE ENGINEER TO PROTECT AGAINST EROSION UNDER THE SCUPPERS AND THE EXPANSION JOINT DRAIN TROUGH.
5. THIS BRIDGE SHALL HAVE 8 TYPE II SCUPPERS AS LOCATED ON THE FRAMING PLAN, ER. SH. NO 1605; AND AS DETAILED ON STD. SH. SCB-D6-73. ALL PORTIONS OF THE SCUPPERS EXPOSED BELOW THE CONCRETE DECK SHALL BE PAINTED BRONZE (FEDERAL COLOR STANDARD 20045), AS SPECIFIED IN SECTION 708 OF THE GENERAL SPECIAL PROVISIONS; COST TO BE INCLUDED IN THE UNIT PRICE BID FOR STRUCTURAL STEEL.
6. PLASTIC DRAIN TUBES AS SHOWN IN DETAIL F OF STD. DRG. SCB-D6-73 SHALL NOT BE PLACED WITHIN 2 FEET HORIZONTALLY OF ABUTMENTS, PIER CAPS, CROSS FRAMES, LATERAL BRACING, OR TELEPHONE DUCT SUPPORT BRACKETS. THE TUBES SHALL BE OMITTED BETWEEN EDGE TO EDGE OF SHOULDER OF THE ROAD UNDER.

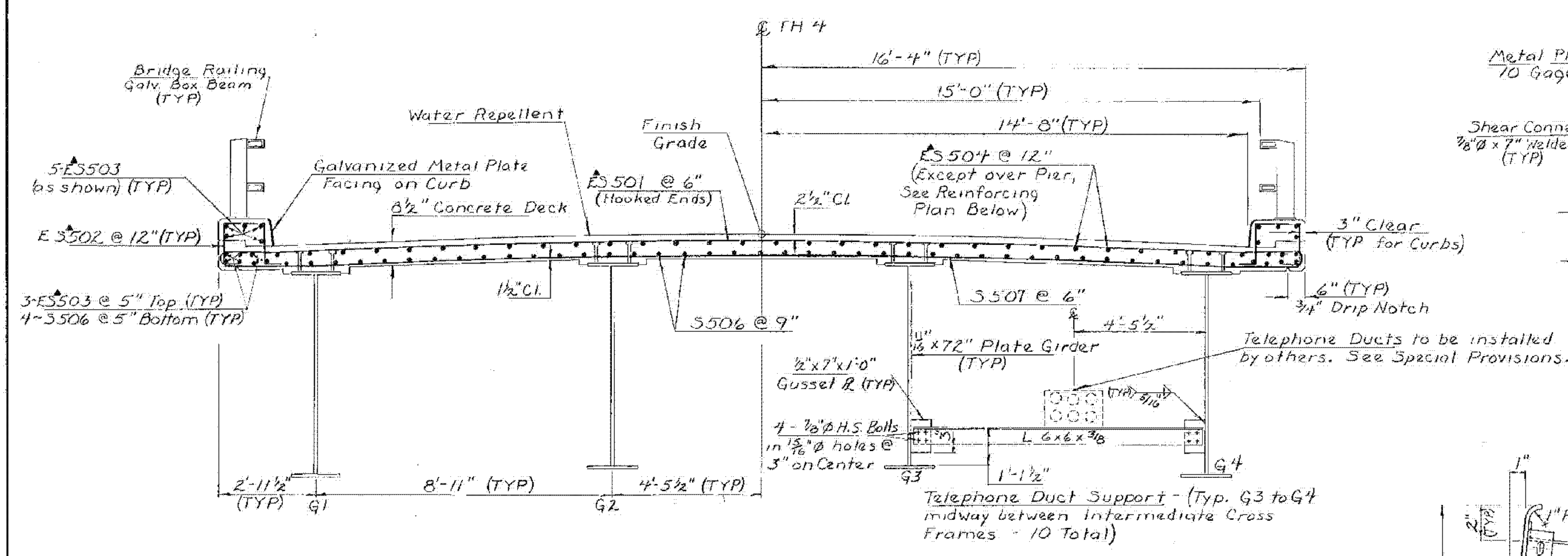
I-93 BRIDGE 8
WATERFORD
IM MEMB(31)
SHEET 44 OF 48
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. B-16
HIGHWAY NO. I 93	Log Sta.
	Surv. Sta. 520+48
TH #4 over I 93	
PLAN AND ELEVATION	
Designed by M. GARCIA	Drawn by J. McCARTHY
Checked by E. Blodgett date 6/80	Bridge Design Supervisor F.W. Bolkum date 1/80
PROJECT WATERFORD	PROJECT NO. I 93-1(3) 2/3
Bridge Sheet No. BR/602 Sheet 141 of 550	

BRUNING 44-131-40101

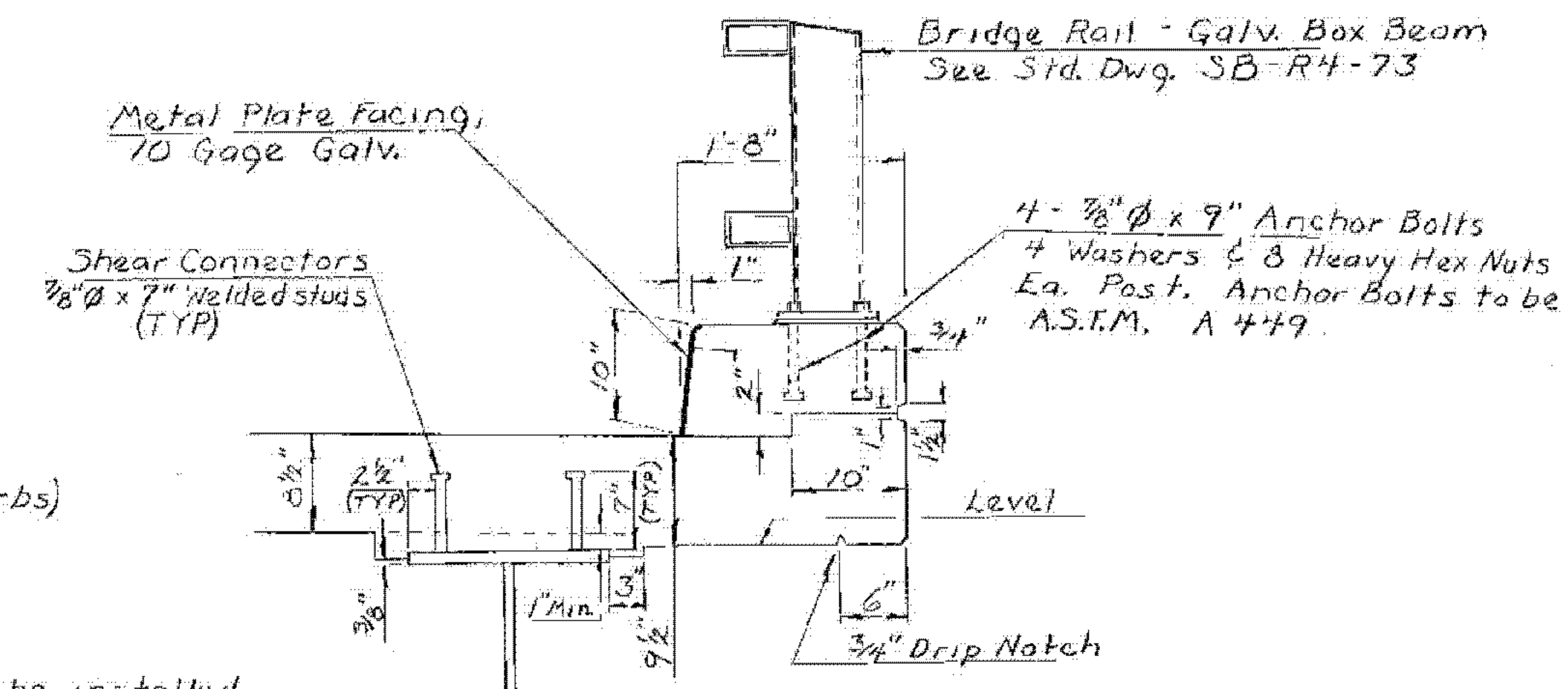
BR-6



TYPICAL BRIDGE SECTION

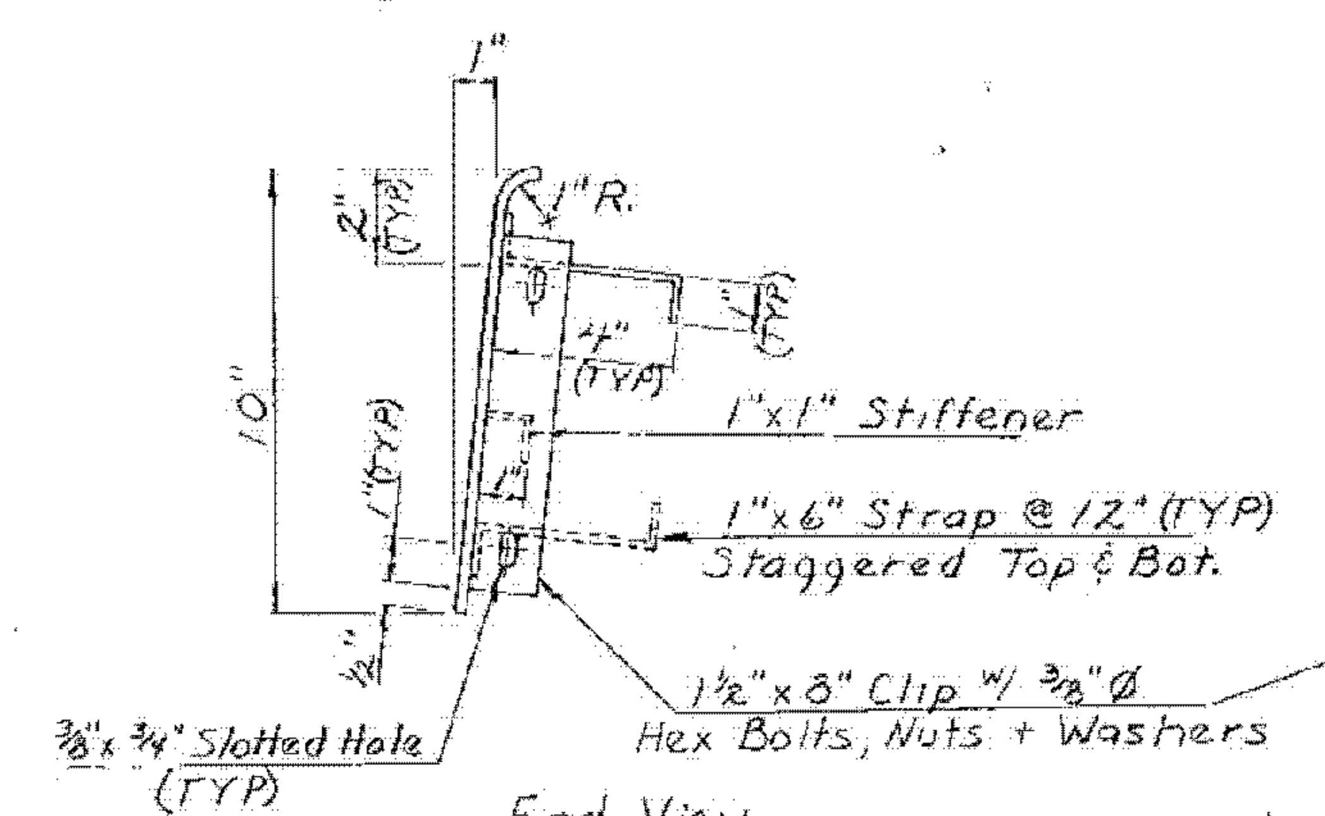
Scale ½" = 1'-0"

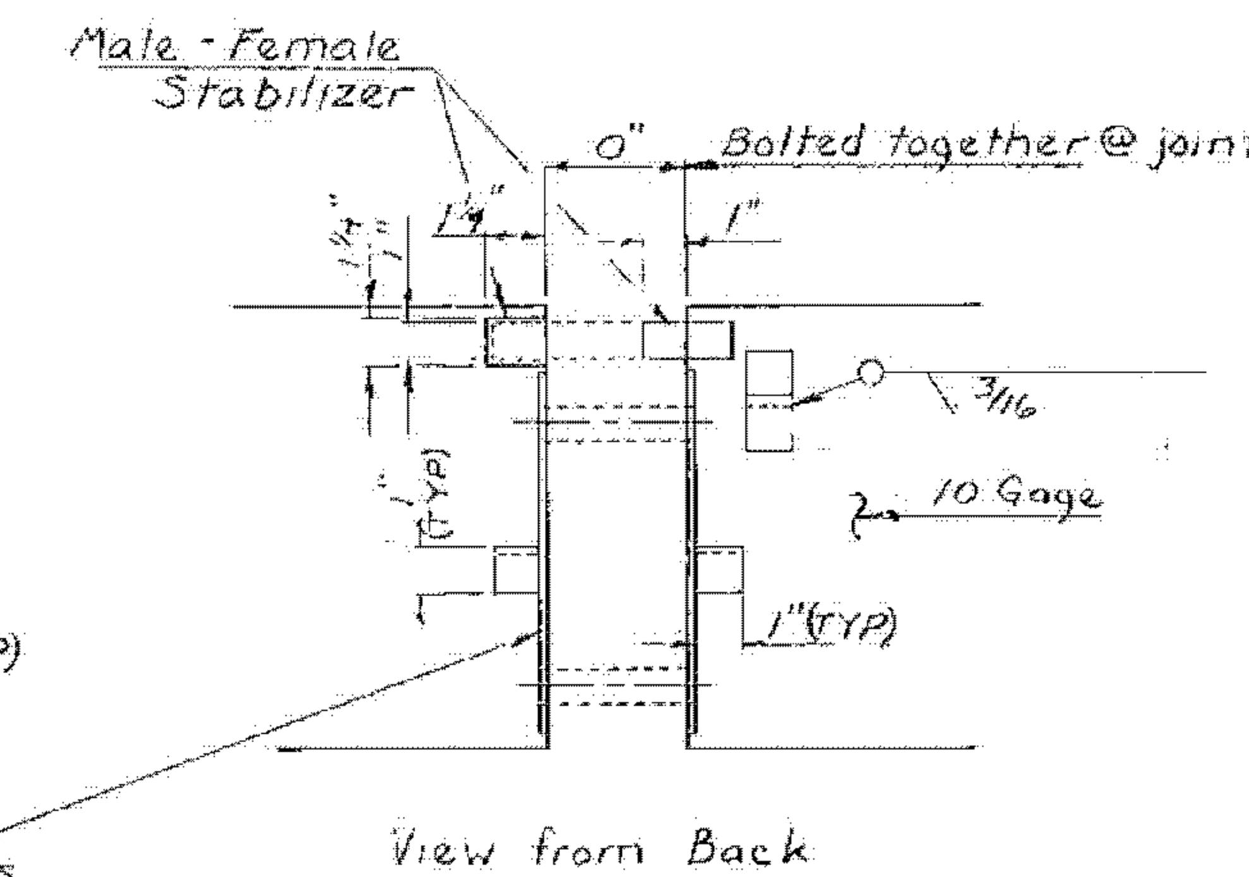
▲ Indicates Epoxy Coated Reinforcing Steel.



CURB & HAUNCH DETAIL

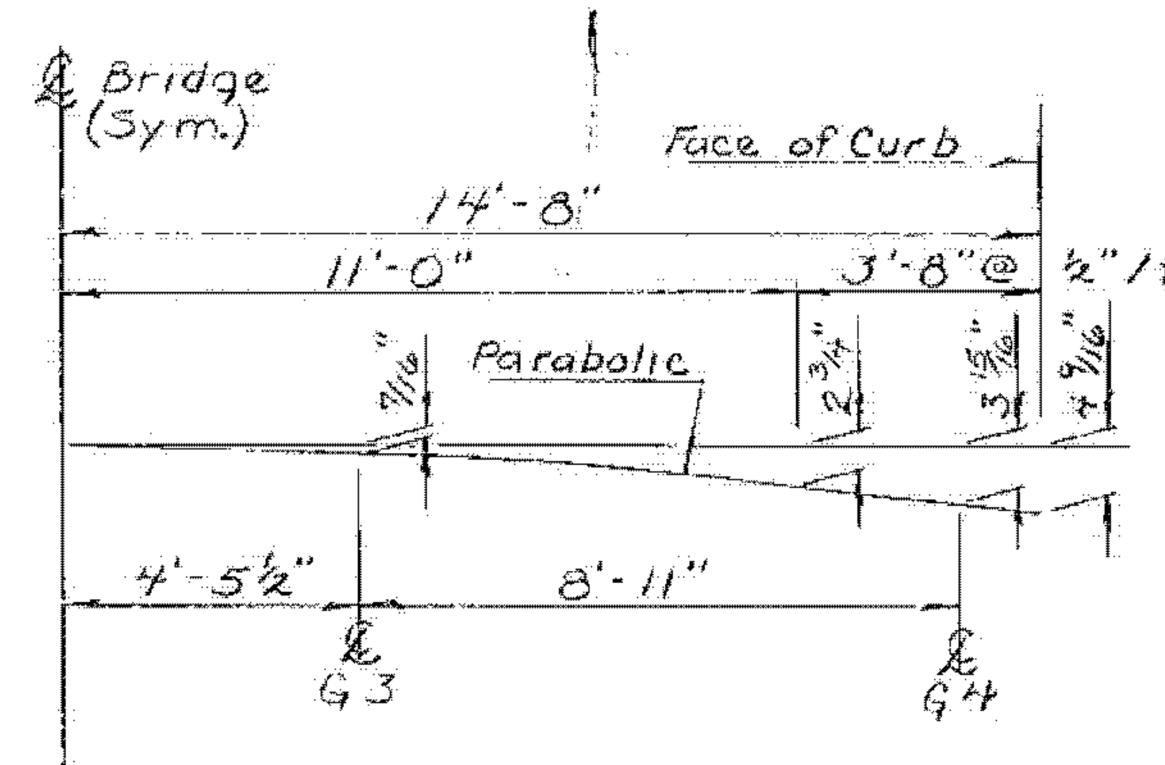
Scale 1" = 1'-0"





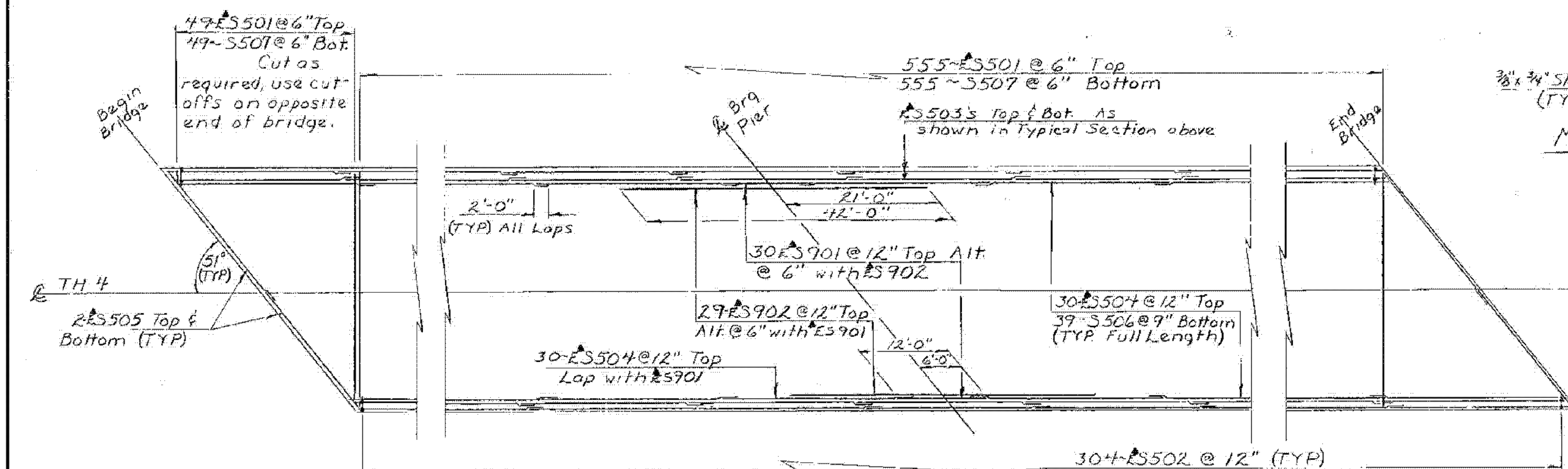
Metal Plate Facing, 10 Gage Galv.

Scale 3" = 1'-0"



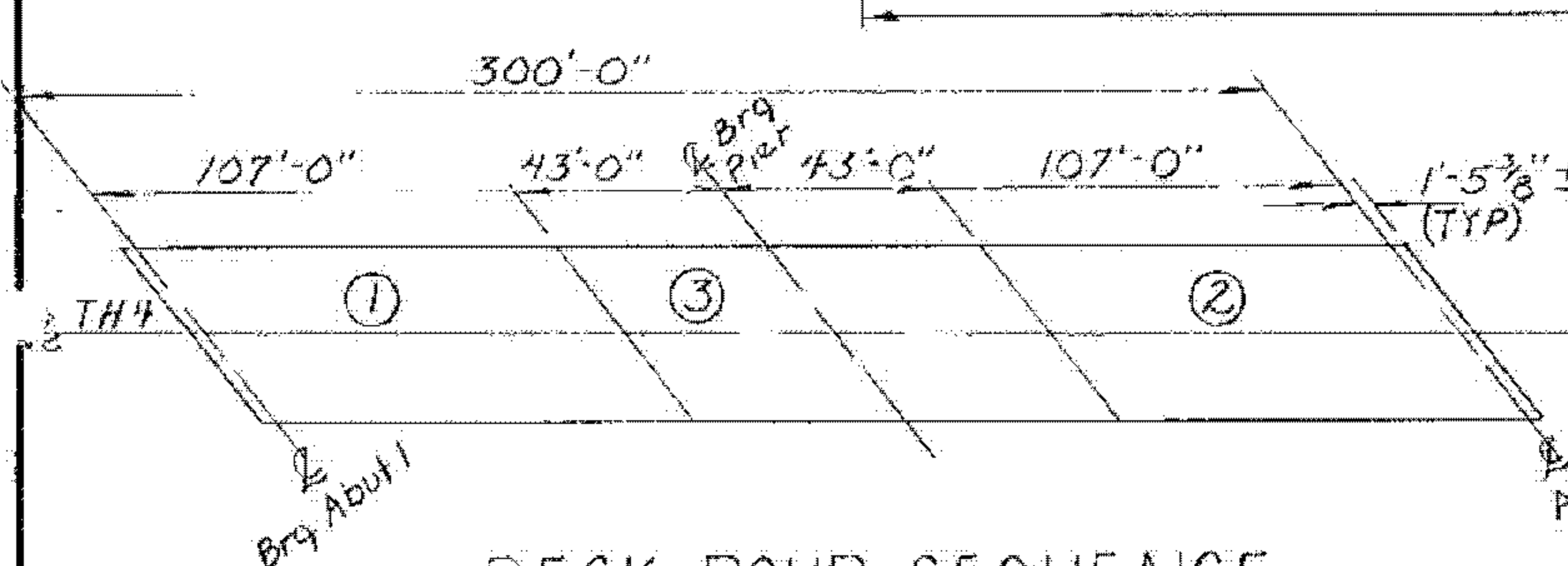
PARABOLIC DETAIL

Scale ⅜" = 1'-0" Horiz.
1" = 1'-0" Vert.



DECK REINFORCING PLAN

Scale 1" = 10'



DECK POUR SEQUENCE

NTS

NOTES:

1. ① ② ③ INDICATE SEQUENCE IN WHICH SECTIONS ARE TO BE POURED. SEQUENCE OF POURING ① AND ② MAY BE INTERCHANGED. A MINIMUM WAIT OF 3 DAYS BETWEEN POURS IS REQUIRED.

2. IF APPROVED BY THE ENGINEER, ALL SECTIONS MAY BE POURED IN THE SAME DAY, PROVIDING THE INDICATED POURING SEQUENCE IS FOLLOWED AND THAT A RETARDING ADMIXTURE SHALL BE USED SO THAT THE DECK CONCRETE WILL NOT SET UP UNTIL ALL THE DECK CONCRETE HAS BEEN PLACED. THE RETARDING ADMIXTURE SHALL BE SUBSIDIARY TO CONCRETE, CLASS A.

3. IF ALL SECTIONS ARE NOT POURED IN THE SAME DAY, USE BRIDGE SLAB CONSTRUCTION JOINTS BETWEEN POURS. SEE STD. DWG. SCB-D6-73, DET. D. JOINTS SHALL BE PARALLEL TO ℄ BEARING.

4. BRIDGE CURB SECTIONS ARE TO BE A MAXIMUM OF 20 FT. WITH A TOOLED JOINT LOCATED AT THE METAL FACING JOINTS AND SPACED 1'-0" MINIMUM FROM ADJACENT RAIL POSTS. THE CONCRETE IS TO BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOURS BETWEEN POURS. THE CONTRACTOR HAS THE OPTION OF EXTENDING THE REINFORCING STEEL THROUGH THE JOINTS OR OF CUTTING IT OFF (2" CLEAR).

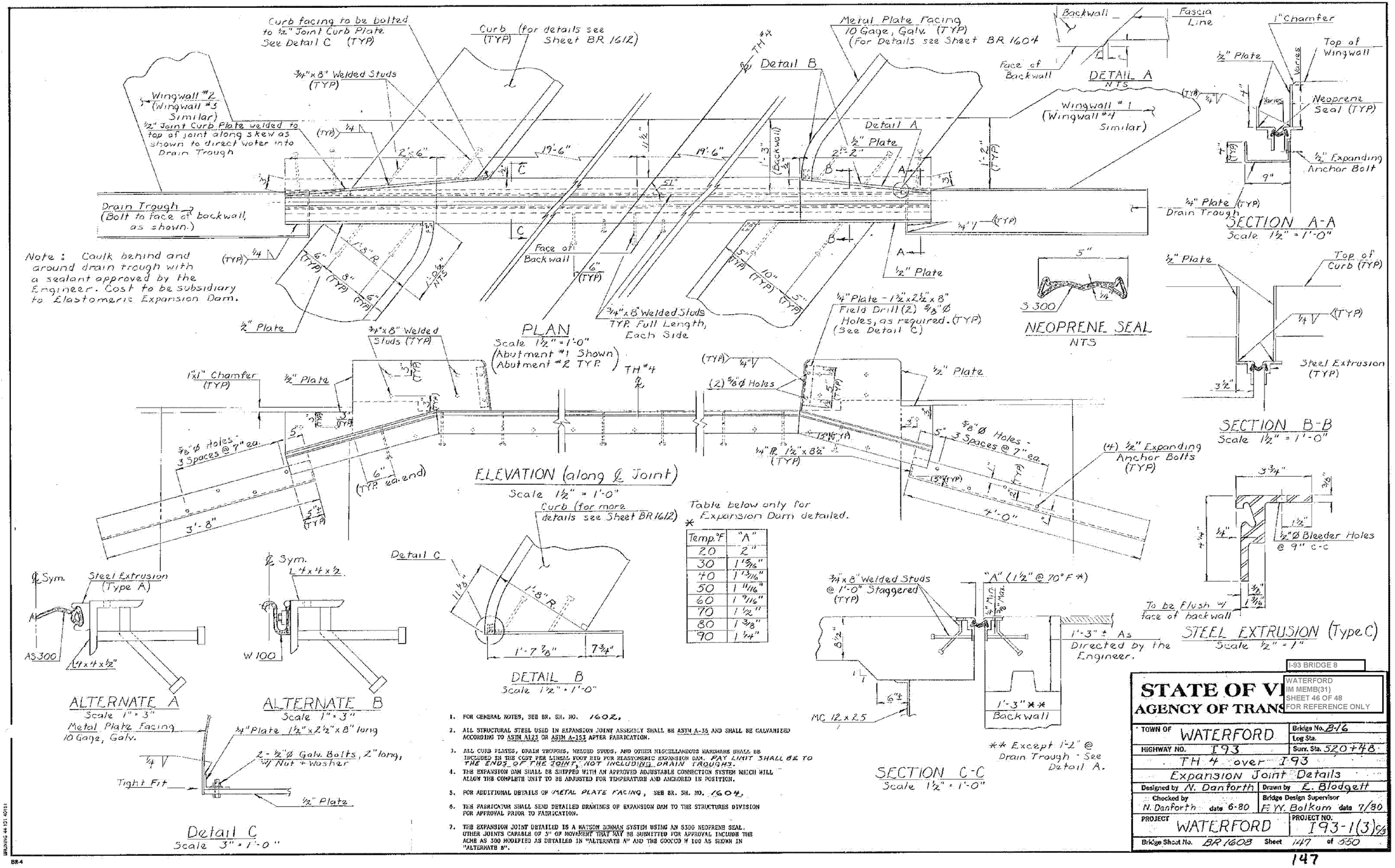
5. METAL PLATE FACING ON CURB SHALL BE FABRICATED, 10 GAGE, ASTM A 569 STEEL, GALVANIZED, AND IN MAXIMUM LENGTHS OF 10'-0". SHOP DRAWINGS SHALL BE SUBMITTED FOLLOWING THE REQUIREMENTS OF SECTION 506.04. SECTIONS SHALL BE BOLTED TOGETHER WITH 3/8" X 3/4" LONG ASTM A307 BOLTS, GALVANIZED (AASHTO-M232).

6. REFER TO END OF CURB DETAILS ON BRIDGE SHEET NO. BR 1612

7. ALL REINFORCING STEEL IN THE TOP MAT OF DECK AND IN THE CURB SHALL BE EPOXY COATED AS NOTED.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. B-16
	Log Sta.
HIGHWAY NO. I93	Surv. Sta. 520+48
TH 4 over I93	
SUPERSTRUCTURE DETAILS	
Designed by N. DANFORTH	Drawn by E. Blodgett
Checked by G. ROGERS date 6/80	Bridge Design Supervisor F.W. Bolkum date 7/80
PROJECT WATERFORD	PROJECT NO. I93-1(3)c/3
Bridge Sheet No. BR 1604	Sheet 143 of 550



1. FOR GENERAL NOTES, SEE BR. SH. NO. 1602.
2. ALL STRUCTURAL STEEL USED IN EXPANSION JOINT ASSEMBLY SHALL BE ASTM A-36 AND SHALL BE GALVANIZED ACCORDING TO ASTM A123 OR ASTM A-153 AFTER FABRICATION.
3. ALL CURB PLATES, DRAIN TROUGHS, WELDED STUDS, AND OTHER MISCELLANEOUS HARDWARE SHALL BE INCLUDED IN THE COST PER LINEAL FOOT BID FOR ELASTOMERIC EXPANSION DAM. PAY LIMIT SHALL BE TO THE ENDS OF THE JOINT, NOT INCLUDING DRAIN TROUGHS.
4. THE EXPANSION DAM SHALL BE SHIPPED WITH AN APPROVED ADJUSTABLE CONNECTION SYSTEM WHICH WILL ALLOW THE COMPLETE UNIT TO BE ADJUSTED FOR TEMPERATURE AND ANCHORED IN POSITION.
5. FOR ADDITIONAL DETAILS OF METAL PLATE FACING, SEE BR. SH. NO. 1604.
6. THE FABRICATOR SHALL SEND DETAILED DRAWINGS OF EXPANSION DAM TO THE STRUCTURES DIVISION FOR APPROVAL PRIOR TO FABRICATION.
7. THE EXPANSION JOINT DETAILED IS A WATSON BOWMAN SYSTEM USING AN S300 NEOPRENE SEAL. OTHER JOINTS CAPABLE OF 3" OF MOVEMENT THAT MAY BE SUBMITTED FOR APPROVAL INCLUDE THE ACME AS 300 MODIFIED AS DETAILED IN "ALTERNATE A" AND THE GOODCO W 100 AS SHOWN IN "ALTERNATE B".

I-93 BRIDGE 8

WATERFORD
IM MEMB(31)
SHEET 46 OF 48
FOR REFERENCE ONLY

STATE OF VT
AGENCY OF TRANS

TOWN OF WATERFORD	Bridge No. B-16
HIGHWAY NO. I93	Log Sta. Surv. Sta. 520+48
TH 4 over I93	
Expansion Joint Details	
Designed by N. Danforth	Drawn by E. Blodgett
Checked by N. Danforth date 6-80	Bridge Design Supervisor E.W. Bolkum date 7/80
PROJECT WATERFORD	PROJECT NO. I93-1(3)c/s
Bridge Sheet No. BR 1608	Sheet 147 of 350

BRUNING 44-131, 40161

BR-4

3"x3" Fillet to be constructed to bridge seat elevation (Typ.)

℄ Bearing Abut. "1
Station 23+06.00
F.G. Elev. 1058.66

See Detail A on Sheet BR-16/11

℄ T.H. #4 Stationing

Edge of Shoulder

17'-0" (Typ.)

Edge of Shoulder

Wing Wall No. 1

Wing Wall No. 2

℄ Brg.

Const. Jt.

W.P.

Girder #4

Girder #3

Girder #2

Girder #1

1'-10" W. x 1'-6" H. Box Out for Telephone Conduits. Slope towards back of abutment 2" ±. Adjust re-bar placement as directed by the Engineer so as to cut off as few bars as practicable.

Note: Top of Fillets to be Sloped Away From Abutments a Minimum of 0.021"/" Bridge Seats to be Sloped Towards Front of Stem 0.021"/" Except Level @ Bearings

See sheet BR-16/12 for Details of curbs and curb supports.

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

1050.47 Const. Jt.
1051.05
1051.33
1057.87 *
1058.73 *
1059.10
1058.00
1053.80
1054.60
1051.33
1040.00

(43) 1A504's @ 12"
(47) 1A511 @ 12" F.F. alter w/ (46) 1A655 @ 12" F.F.
(43) 1A503's @ 12" N.F.
1A602-1A621 @ 6" Top
1A622-1A640 @ 6" Bot.
1A601's (20) @ 6" Top (19) @ 6" Bot.
(32) 1A641's @ 12" Top Mat
(32) 1A901's @ 12" Bot. Mat
(47) 1A501 @ 12" F.F. alter w/ (46) 1A654 @ 12" F.F.
(43) 1A502's @ 12" N.F.
1A642 ~ 1A649 @ 12" Top
1A902 ~ 1A909 @ 12" Bot.
1A650 ~ 1A653 @ 12" Top
1A910 ~ 1A913 @ 12" Bot.

4" ℄ Weepholes Cost to be subsidiary to Concrete Cl. B

* Elevations at front face of backwall.

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

35'-4 3/4"

W.P.

1-1W583 E.F. As Shown

3-1W581's @ 12" N.F.
3-1W633's @ 12" F.F.

1-1W582 E.F. As Shown

1059.10

Const. Jt. 1W577-1W580 @ 12" F.F.

1054.60

3-1W576's @ 12" F.F.
3-1W508's @ 12" F.F.

1051.33

Const. Jt. 1051.33

4-1A503's @ 12" N.F.

9-1W575's @ 12" N.F.
9-1W576's @ 12" F.F.
1W513-1W573 @ 12" N.F.
Alternated w/ 1W602-1W632 @ 12" F.F.
33-1W701's @ 12" F.F.
9-1W574's @ 12" F.F.

4-1A502's @ 12" N.F.

1W902-1W906 @ 12"

1W523-1W542 @ 6"
20-1W502's @ 6"
1W504-1W522 @ 6"
19-1W502's @ 6"

1040.00

1W802~1W806 @ 12"

36-1W901's @ 12"
35-1W801's @ 12"
34-1W501's @ 12" N.F.
34-1W601's @ 12" F.F. alter w/ 33-1W701 @ 12" F.F.

WING WALL #1
Scale 1/4"=1'-0"

11'-1 3/8"

W.P.

2-2W60's @ 12" F.F. (Alter w/ portion @ 12" F.F.)
3-2W549's @ 12" N.F.

1-2W561 E.F. As Shown

1058.00

1-2W562 E.F. As Shown

2W553-2W556 N.F.
2W557-2W560 F.F.
Spaced @ 12"

1053.80

3-2W553's @ 12" N.F.
3-2W551's @ 12" F.F.

1051.05

Const. Jt. 1050.47

2W541-2W548 @ 12" N.F.
2W602-2W632 @ 12" F.F.
Alternated w/ 9-2W701's @ 12" F.F.

2-1A503 @ 12" N.F.

2W550's @ 12" N.F.
2W551's @ 12" F.F.

2W902-2W909 @ 12" Top
2W802-2W809 @ 12" Bot.

1040.00

2W521-2W540 @ 6"
2W502-2W520 @ 6"
2-1A502's @ 12" N.F.

7-2W301's @ 12"
7-2W901's @ 12"
11-2W501's @ 12" N.F.
10-2W601's @ 12" F.F.
Alter w/ 9-2W701 @ 12" F.F.

WING WALL #2
Scale 1/4"=1'-0"

1'-6"

Approx. Fill Slope

Limits of Granular Borrow

3'Cl.

2"Cl.

#5 Bars @ 12"

#6 Bars @ 12" Alternated w/ W701's @ 12"

W601's @ 12" Alternated w/ W701's @ 12"

W701's @ 12"

W501's @ 12"

4" ℄ Weephole Slope 1/4" per ft.

W901's @ 12"

20-#5 Bars @ 6"

19-#5 Bars @ 6"

HP 12x53 (Typ.)

W801's @ 12"

WING WALL TYPICAL
Scale 1/4"=1'-0"

Note: Reinforcing Steel to Have 3" Cl. Cover in Footings

Finish Grade

Const. Joint
See Sh. BR 16/08

1A512 @ 12" Brg.

3-1A509

1A515 @ 12"

Sub-Base

Limits of Granular Borrow

1A507 @ 12"

1A504 @ 12"

1A511's @ 12" Alternating w/ 1A655 @ 12"

1A501 @ 12" Alternating w/ 1A654 @ 12"

1A503's @ 12"

1A502's @ 12"

4" ℄ Weephole Slope 1/4" per ft.

1A641's @ 12"

20-#6's @ 6"

19-#6's @ 6"

1A901's @ 12"

HP 12x53 (Typ.)

ABUTMENT STEM TYPICAL ℄
Scale: 1/4"=1'-0"

Note: Rein. Steel in Footing to Have 3" Cl. Cover

See pile layout plan for location of rear piles to be battered.

I-93 BRIDGE 8

WATERFORD
IM MEMB(31)
SHEET 47 OF 48
FOR REFERENCE ONLY

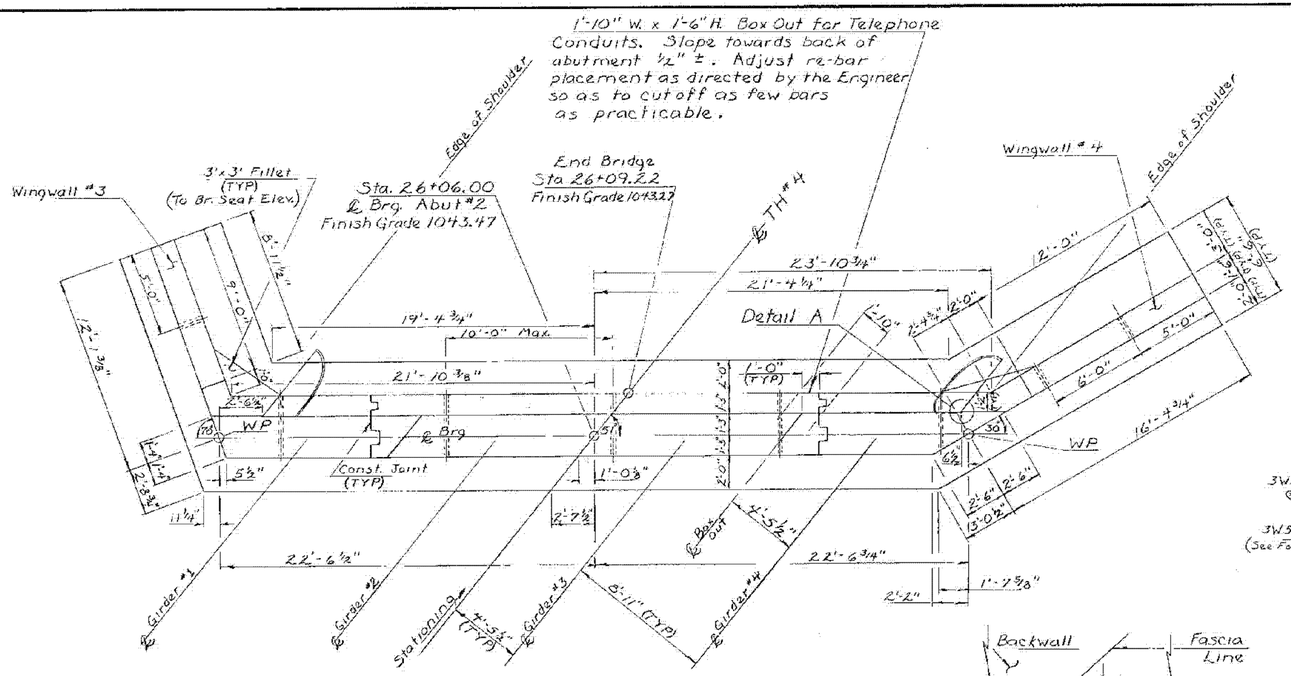
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERFORD	Bridge No. B-16
HIGHWAY NO. I 93	Log Sta. / Surv. Sta. 520+48
TOWN HIGHWAY #4 OVER I 93	
ABUTMENT NO. 1 DETAILS	
Designed by M. GARCIA	Drawn by W. FLANDERS
Checked by M. GARCIA date 6/80	Bridge Design Supervisor F.W. Balkum date 7/80
PROJECT WATERFORD	PROJECT NO. I 93-1(3)C-3
Bridge Sheet No. BR 16/10 Sheet 149 of 550	

149

BRUNING 44-131-40151

BR-6



Note: See Br. Sh. 1612 for Curb & Curb Support Details.

Note: Footing Reinforcing Steel shall have a Clear Cover of 3".

I-93 BRIDGE 8
WATERFORD
IM MEMB(31)
SHEET 48 OF 48
FOR REFERENCE ONLY

STATE OF VT
AGENCY OF TRANS

TOWN OF WATERFORD	Bridge No. B-16
	Log Sta.
HIGHWAY NO. I93	Surv. Sta. 520+48
TH #4 over I93	
ABUTMENT No. 2 Details	
Designed by J. McCarthy	Drawn by E. Blodgett
Checked by J. McCarthy date 6/80	Bridge Design Supervisor F.W. Balkum date 7/80
PROJECT WATERFORD	PROJECT NO. I93-1(3)cb
Bridge Sheet No. BR 1611	Sheet 150 of 550

BR-4