

SEE SHEET 2 FOR INDEX OF SHEETS

STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT BRIDGE PROJECT

TOWNS OF WATERBURY AND MORETOWN
COUNTY OF WASHINGTON
BRIDGE MEMBRANE & JOINT PROJECT

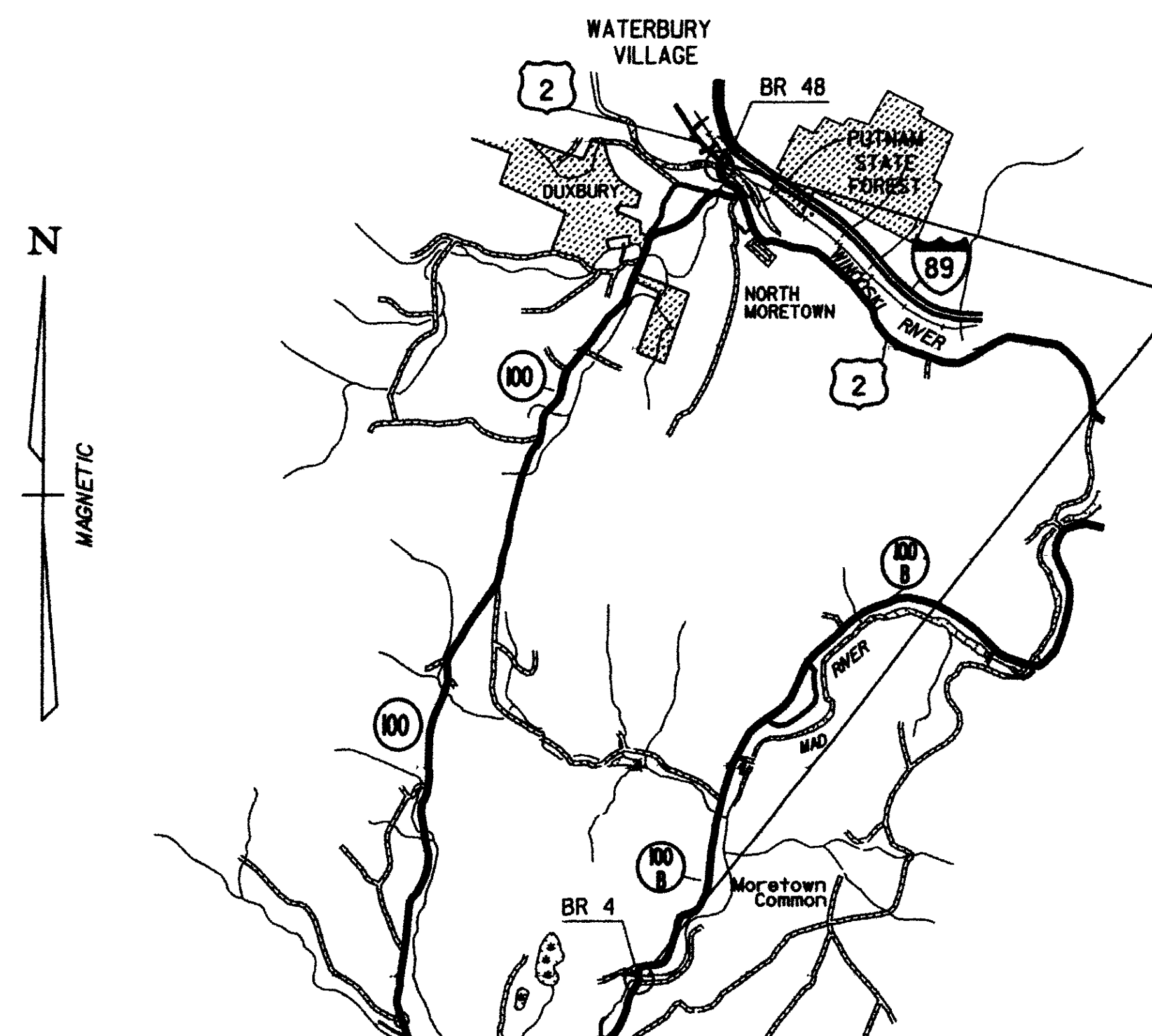
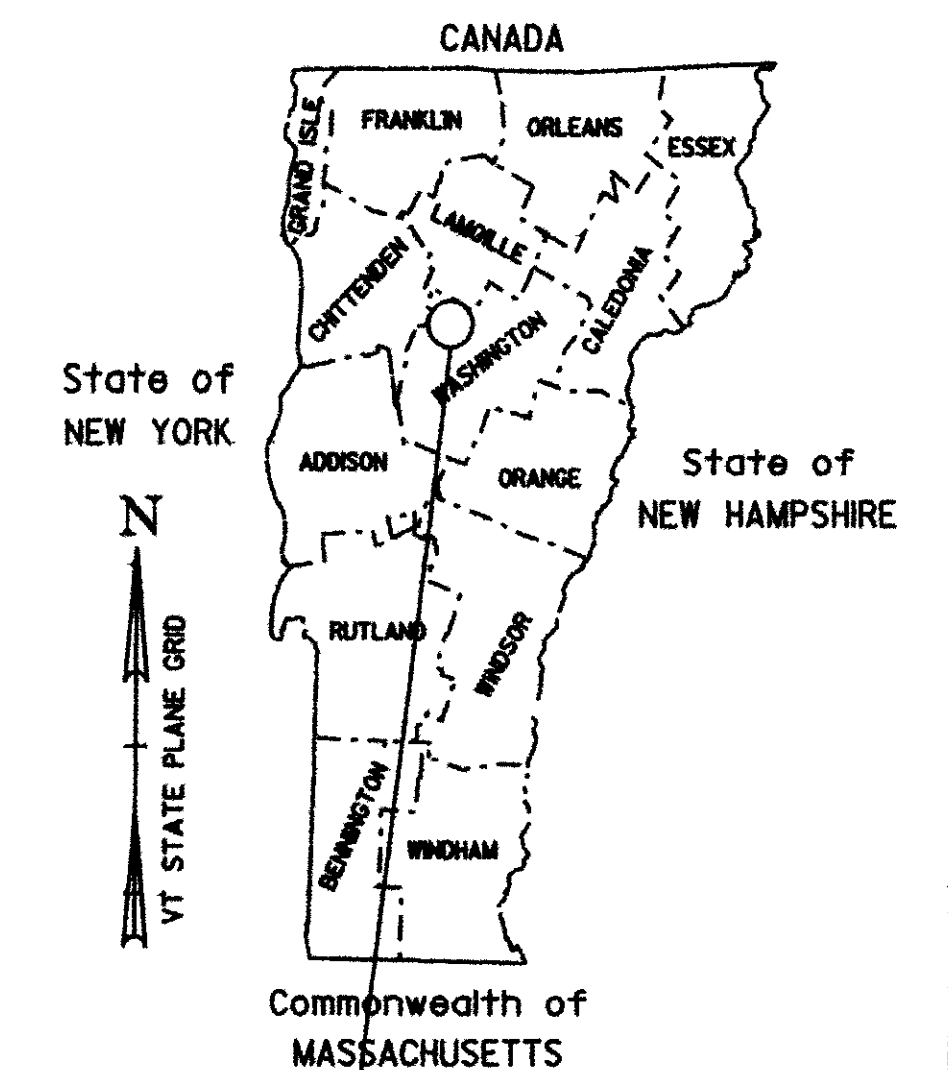
RECORD PLANS	
CONTRACTOR	A.C. PAVING CORP. - SO. BURLINGTON, VT
RESIDENT ENGINEER	TOM MANCINI
CONSTRUCTION BEGAN	MAY 27, 2009
CONSTRUCTION COMPLETE	JULY 20, 2009
RECORD PLANS BY	TOM MANCINI
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN	
BY <i>Tom Mancini</i>	RESIDENT ENGINEER
DATE 11/11/09	
NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives	

PROJECT LOCATION: ROUTE US 2 BR 48 : 0.2 MILES WEST OF JUNCTION OF VT 100 AND US 2
ROUTE VT 100B BR 4 : 1.6 MILES NORTH OF JUNCTION OF VT 100 AND VT 100B

PROJECT DESCRIPTION: COLD PLANING, MEMBRANE REPLACEMENT, JOINT REHABILITATION, AND PAVING OF BRIDGE AND APPROACH SLABS.

LENGTH OF STRUCTURES: ROUTE US 2 BR 48: 277.45' ROUTE VT 100B BR 4: 198.41'

TOTAL LENGTH OF STRUCTURES: 475.86'



PROJECT LOCATION
WATERBURY-MORETOWN
BHF MEMB(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.

PLOTTED 19-FEB-2009

BUILT AS DESIGNED

DIRECTOR OF PROGRAM DEVELOPMENT	
APPROVED <i>[Signature]</i>	DATE 2/20/09
PROJECT MANAGER : C.P. WILLIAMS	
PROJECT NAME : WATERBURY-MORETOWN	
PROJECT NUMBER : BHF MEMB (12)	
SHEET 1 OF 28 SHEETS	

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	

SURVEYED BY : N/A

SURVEYED DATE : N/A

DATUM

VERTICAL N/A

HORIZONTAL N/A

INDEX OF SHEETS

- 1. TITLE SHEET
- 2. INDEX & PROJECT NOTES SHEET
- 3. QUANTITIES SHEET
- 4. DETAILS SHEET

REFERENCE SHEETS

- BRIDGE (US 2 Br. 48)
- 5. TRAFFIC DESIGN LAYOUT
- 6. PRELIMINARY INFORMATION SHEET
- 7. PLAN AND ELEVATION
- 8. SUPERSTRUCTURE DETAILS
- 9. CURB, RAILING, AND SCUPPER LAYOUTS
- 10.-11. FINISHER JOINT DETAILS
- 12. APPROACH SLAB DETAILS
- 13.-16. ABUTMENT AND WING WALL DETAILS
- BRIDGE (VT 100B Br. 4)
- 17.-18. TRAFFIC DESIGN LAYOUT
- 19. PRELIMINARY INFORMATION SHEET
- 20. PLAN AND ELEVATION
- 21. TYPICAL SECTION AND DECK REINFORCING PLAN
- 22. APPROACH SLAB DETAILS
- 23.-26. ABUTMENT AND WING WALL DETAILS
- 27.-28. EXPANSION JOINT DETAILS

VAOT STANDARDS FOR CONSTRUCTION

E-100	CONSTRUCTION APPROACH SIGNS	1-2-2004
E-100A	SIDE ROAD CONSTRUCTION – APPROACH SIGNS	1-2-2004
E-101	CONSTRUCTION SIGN DETAILS	5-30-2003
E-102	CONSTRUCTION SIGN DETAILS	6-30-2003
E-102A	CONSTRUCTION SIGN DETAILS	5-1-2004
E-106	TRAFFIC CONTROL – MISCELLANEOUS DETAILS	3-1-2004
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	6-30-2003
E-107A	BREAKAWAY BARRICADE DETAILS	8-8-1995
E-108	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS	12-8-08
E-110	MAJOR MAINTENANCE OPERATIONS LANE CLOSURE	8-8-1995
E-193	PAVEMENT MARKING DETAILS	8-18-1995

GENERAL NOTES

- 1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, DATED 2002, AND ITS LATEST REVISIONS.
- 2. DIMENSIONS, ANGLES, BEARINGS, AND ELEVATIONS OF THE EXISTING BRIDGES SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURES AND LIMITED FIELD INVESTIGATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING STRUCTURE COMPONENTS TO ASSURE CONSISTENCY WITH THE PROPOSED MODIFICATIONS. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER BEFORE ADVANCING THE WORK. NOTE THAT ALL REFERENCE SHEETS ARE SCANS AND NOT TO SCALE.
- 3. FOLLOWING COMPLETION OF ALL OTHER CONSTRUCTION ACTIVITIES, ALL FABRIC DRAIN TROUGHS, METAL DOWNSPOUTS, AND BRIDGE SCUPPERS SHALL BE THOROUGHLY FLUSHED BY THE CONTRACTOR WITH THE COST TO BE INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.

PAVEMENT REMOVAL NOTES

- 1. THE FINAL ON-EARTH FINISH OF PAVEMENT ON THE BRIDGE DECK AND APPROACH SLABS SHALL BE REMOVED BY LOADER, GRADER, OR EQUIPMENT APPROVED BY THE ENGINEER. USE OF COLD PLANER TO REMOVE BRIDGE AND APPROACH SLAB PAVEMENT SHALL BE INCIDENTAL TO ITEM 529.10 "REMOVAL OF BRIDGE PAVEMENT". THE REMOVAL OF EXISTING SHEET MEMBRANE SHALL BE INCIDENTAL TO ITEM 529.10 "REMOVAL OF BRIDGE PAVEMENT".

- 2. DURING BRIDGE AND APPROACH SLAB PAVEMENT REMOVAL, THE CONTRACTORS SHALL EXERCISE CARE TO INSURE THAT NO DAMAGE OCCURS TO THE EXISTING PORTLAND CEMENT CONCRETE DECK OR THE APPROACH SLABS. IF THE CONTRACTOR DAMAGES AREAS OF THE DECK OR APPROACH SLABS, THEN THE REQUIRED REPAIRS SHALL BE AS PER SECTION 580.04 OF THE SPECIFICATION AND WILL BE AT THE CONTRACTOR'S EXPENSE.
- 3. WHERE TRAFFIC IS TO BE MAINTAINED ON ONE LANE OF A BRIDGE WHILE THE OTHER LANE IS BEING REPAIRED, THE EXISTING PAVEMENTS SHALL BE RETAINED TO INSURE A SMOOTH RIDE AND LESS IMPACT DAMAGE TO THE REPAIRS MADE.
- 4. THE CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE ANY DRAIN PIPES, CATCH BASINS, MANHOLES OR BRIDGE SCUPPERS AT ANY STAGE DURING THE CONSTRUCTION. DAMAGE TO THESE STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER. THE COST FOR SUCH WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

WATERPROOFING NOTES

- 1. FOLLOWING REMOVAL OF BRIDGE PAVEMENT, THE CONCRETE BRIDGE DECK SHALL BE CLEANED AND PREPARED IN ACCORDANCE WITH SUBSECTION 580.04 AND TO THE SATISFACTION OF THE ENGINEER AND SHALL BE PAID FOR AS ITEM 580.16 "SURFACE PREPARATION FOR MEMBRANE".
- 2. ANY AREA OF THE BRIDGE DECK THAT IS DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED AT THE SOLE COST OF THE CONTRACTOR. ANY AREA OF CONCRETE BELOW THE MEMBRANE THAT IS FOUND TO BE UNSOUND SHALL BE IDENTIFIED BY THE CONTRACTOR AND BROUGHT TO THE ATTENTION OF THE ENGINEER. THE ENGINEER SHALL MAKE A DETERMINATION AS TO HOW TO REPAIR THE DETERIORATED PORTION OF THE DECK AND AS TO THE EXTENT OF THE REPAIRS.
- 3. UPON APPROVAL OF THE DECK CONDITION BY THE ENGINEER, SHEET MEMBRANE WATERPROOFING, TORCH APPLIED, SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 519. IF THE DECK CANNOT BE WATERPROOFED AND PAVED IN ITS ENTIRETY, IN A CONTINUOUS OPERATION, OR IF TRAFFIC IS TO BE MAINTAINED ON ONE LANE WHILE THE OTHER LANE IS BEING REPAIRED, THEN THE FOLLOWING SHALL APPLY:
 - a. THE MEMBRANE SHALL EXTEND 1+/- FOOT BEYOND THE LANE LINE OF THE REPAIRED LANE SO THAT THE MEMBRANE CAN BE LAPPE D ON TO WHEN WATERPROOFING THE SECOND LANE OR WHEN CONSTRUCTION OPERATIONS HAVE RESUMED.
 - b. BOTH LIFTS OF PAVEMENT SHALL BE PLACED ON THE NEWLY INSTALLED MEMBRANE FOR THE ENTIRE LENGTH OF THE BRIDGE PRIOR TO ALLOWING TRAFFIC ON TO THIS LANE.
 - c. THAT PART (1'+/-) OF THE MEMBRANE THAT EXTENDS BEYOND THE NECESSARY LANE WIDTH TO MAINTAIN TRAFFIC SHALL BE COVERED WITH RELEASE PAPER AND BITUMINOUS CONCRETE PAVEMENT. WHEN WATERPROOFING THE SECOND LANE, REMOVAL OF THE PAVEMENT ON THE RELEASE PAPER IN ORDER TO OVERLAP THE MEMBRANE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 900.680 "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".
- 4. WATER REPELLENT, SILANE, SHALL BE APPLIED TO ALL EXPOSED CONCRETE, EXCEPT FOR PERS AND THE UNDERSIDE OF THE DECK BETWEEN THE DRIP NOTCHES. THIS WORK SHALL BE PAID FOR AS ITEM 514.10 "WATER REPELLENT, SILANE".

PAVEMENT NOTES

- 1. FOLLOWING INSTALLATION OF SHEET MEMBRANE WATERPROOFING ON THE BRIDGE DECK, THE BRIDGE DECKS AND AT-GRADE APPROACH SLABS SHALL BE PAVED CURB TO CURB WITH ITEM 900.680 "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)", IN TWO COURSES.
- 2. CARES SHALL BE EXERCISED TO SMOOTHLY TRANSITION THE NEW BRIDGE PAVEMENT INTO THE EXISTING PAVEMENT (50' MINIMUM, SEE DETAIL SHEET). ANY COLD PLANING NECESSARY FOR SHAPING BRIDGE APPROACHES ALONG THE EXISTING MAIN LINE SHALL BE PAID FOR UNDER ITEM 210.10 "COLD PLANING, BITUMINOUS PAVEMENT". ANY COLD PLANING ALONG SIDE ROADS SHALL BE DONE AT THE RESIDENT ENGINEER'S DISCRETION.
- 3. LONGITUDINAL JOINTS IN THE PAVEMENTS SHALL BE TAPERED IN ACCORDANCE WITH SECTION 490 OF THE SPECIFICATION.
- 4. EMULSIFIED ASPHALTS SHALL BE APPLIED TO TACK CONTACT SURFACES AT A RATE OF .025 GAL/SY. THIS WORK SHALL BE PAID FOR AS ITEM 404.65 "EMULSIFIED ASPHALT".

- 5. TESTING FOR PAVEMENT DENSITY WILL REQUIRE CORES OF THE PAVEMENT ON THE BRIDGED ECK, POSSIBLY RESULTING IN DAMAGE TO THE MEMBRANE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF ANY DAMAGED MEMBRANE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE COST FOR THIS WORK SHALL BE INCIDENTAL TO ITEM 900.680 "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".

EXPANSION JOINT NOTES

- 1. BRIDGE EXPANSION JOINTS HAVE BEEN EVALUATED ON A CASE BY CASE BASIS AND SHALL BE TREATED AS FOLLOWS:
 - a. US 2, BRIDGE 48 – THE NORTHERN JOINT IS A "SAWCUT JOINT" AND SHALL BE REMOVED. THE REMOVAL WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 529.10 "REMOVAL OF BRIDGE PAVEMENT". A NEW ASPHALTIC PLUG JOINT SHALL BE INSTALLED AS SHOWN ON DETAIL SHEET. THE NEW JOINT SHALL BE PAID FOR AS ITEM 516.10 "BRIDGE EXPANSION JOINT, ASPHALTIC PLUG". THE SOUTHERN JOINT IS A "FINGER JOINT". THE DRAIN TROUGH SHALL BE FLUSHED AND EVALUATED. THIS SHALL BE CONSIDERED INCIDENTAL TO ITEM 529.10 "REMOVAL OF BRIDGE PAVEMENT".
 - b. VT 100B, BRIDGE 4 – THE NORTHERN JOINT IS A "SAWCUT JOINT" AND SHALL BE REMOVED. THE REMOVAL WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 529.10 "REMOVAL OF BRIDGE PAVEMENT". A NEW ASPHALTIC PLUG JOINT SHALL BE INSTALLED AS SHOWN ON DETAIL SHEET. THE NEW JOINT SHALL BE PAID FOR AS ITEM 516.10 "BRIDGE EXPANSION JOINT, ASPHALTIC PLUG". THE SOUTHERN JOINT IS A "VERMONT JOINT". THE DRAIN TROUGH SHALL BE FLUSHED AND EVALUATED. THIS SHALL BE CONSIDERED INCIDENTAL TO ITEM 529.10 "REMOVAL OF BRIDGE PAVEMENT".
- 2. AT THE BEGINNING AND END OF EACH AT-GRAD E APPROACH SLAB, NO T ADJACENT TO THE BRIDGE DECK, A SAWCUT PAVEMENT JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAIL SHOWN ON DETAIL SHEET. PAYMENT FOR THE SAWCUT JOINT SHALL BE MADE AS ITEM 524.11 "JOINT SEALER, HOTPOURED" OR 524.13 "JOINT SEALER, COLDOURED" AT THE OPTION OF THE CONTRACTOR.

TRAFFIC CONTROL

- 1. A MINIMUM OF ONE WAY TRAFFICS SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THIS PROJECT. WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE MUTCD (2003), AND THE APPROPRIATE VTRANS STANDARD DRAWINGS.
- 2. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN, AND A SCHEDULE FOR IMPLEMENTATION AND MAINTENANCE OF TRAFFIC CONTROL FOR ALL WORK ASSOCIATED WITH THIS PROJECT. THE SUBMISSION SHALL BE MADE AT LEAST 30 CALENDAR DAYS PRIOR TO IMPLEMENTATION, THROUGH THE ENGINEER TO VTRANS TRAFFIC DESIGN FOR APPROVAL PRIOR TO IMPLEMENTATION.
- 3. TEMPORARY ROAD AND/OR SHOULDER CLOSURES WILL BE ALLOWED DURING WORKING HOURS ONLY. THE ROADWAYS SHALL BE RESTORED TO FULL CAPACITY AT THE CLOSE OF DAILY CONSTRUCTION ACTIVITIES.
- 4. ALL COSTS ASSOCIATED WITH PROTECTION OF TRAFFIC DURING REMOVAL OF THE BRIDGE PAVEMENT WILL BE INCIDENTAL TO ITEM 641.10 "TRAFFIC CONTROL".
- 5. ALL SIGNS, BARRICADES, AND OTHER TRAFFIC CONTROL DEVICES SHALL BE CLEANED WEEKLY OR AS DIRECTED BY THE RESIDENT ENGINEER. EXISTING PERMANENT SIGNS THAT CONTRADICT TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE REMOVED AND REPLACED OR COVERED FOR THE PERIOD OF TIME THAT THE TRAFFIC CONTROL PLAN IS IMPLEMENTED. COST FOR THIS WORKS SHALL BE CONSIDERED INCIDENTAL TO ITEM 641.10 "TRAFFIC CONTROL".
- 6. THE CONTRACTOR SHALL COORDINATE ITS WORK ACTIVITIES AND TRAFFIC CONTROL WITH ANY OTHER CONTRACTOR WORKING WITHIN THE PROJECT AREAS,
- 7. PAYMENT FOR TEMPORARY CONSTRUCTION SIGNS AND TRAFFIC CONTROL DEVICES NOT OTHERWISE PAID FOR UNDER A SEPARATE CONTRACT ITEM WILL BE INCLUDED IN THE UNIT BID PRICE FOR CONTRACT ITEM 641.10 "TRAFFIC CONTROL".

PROJECT NAME: WATERBURY-MORETOWN	
PROJECT NUMBER: BHF MEMB(12)	
FILE NAME: 08ell4notes.dgn	PLOT DATE: 17-FEB-2009
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY: D.D.BEARD
DESIGNED BY: H.J.SALLS	CHECKED BY: H.J.SALLS
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**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	BRIDGE (US 2 Br. 48)	BRIDGE (VT 100B Br. 4)	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
								450	580		1030		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
								4	3		7		CWT	EMULSIFIED ASPHALT	404.65				
							1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
								70	60		130		GAL	WATER REPELLENT, SILANE	514.10				
								100	50		150		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
								1280	635		1915		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20				
														BEGIN OPTION AA					
								170	105		275		LF	JOINT SEALER, HOT POURED	524.11				
								170	105		275		LF	JOINT SEALER, COLD POURED	524.13				
														END OPTION AA					
								1605	895		2500		SY	REMOVAL OF BRIDGE PAVEMENT	529.10				
								11525	5680		17205		SF	SURFACE PREPARATION FOR MEMBRANE	580.16				
								40	8		48		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
								800	600		1400		HR	FLAGGERS	630.15				
										1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
							1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
								1			1		LS	TRAFFIC CONTROL (US 2 - BRIDGE NO. 48)	641.10				
									1		1		LS	TRAFFIC CONTROL (VT 100B - BRIDGE NO. 4)	641.10				
								750	630		1380		LF	DURABLE 4 INCH WHITE LINE	646.400				
								645	610		1255		LF	DURABLE 4 INCH YELLOW LINE	646.410				
								11			11		LF	DURABLE 24 INCH STOP BAR	646.480				
							1				1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50				
								1	1		2		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I.)	900.650				
								1	1		2		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N.A.B.I.)	900.650				
								323	222		545		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

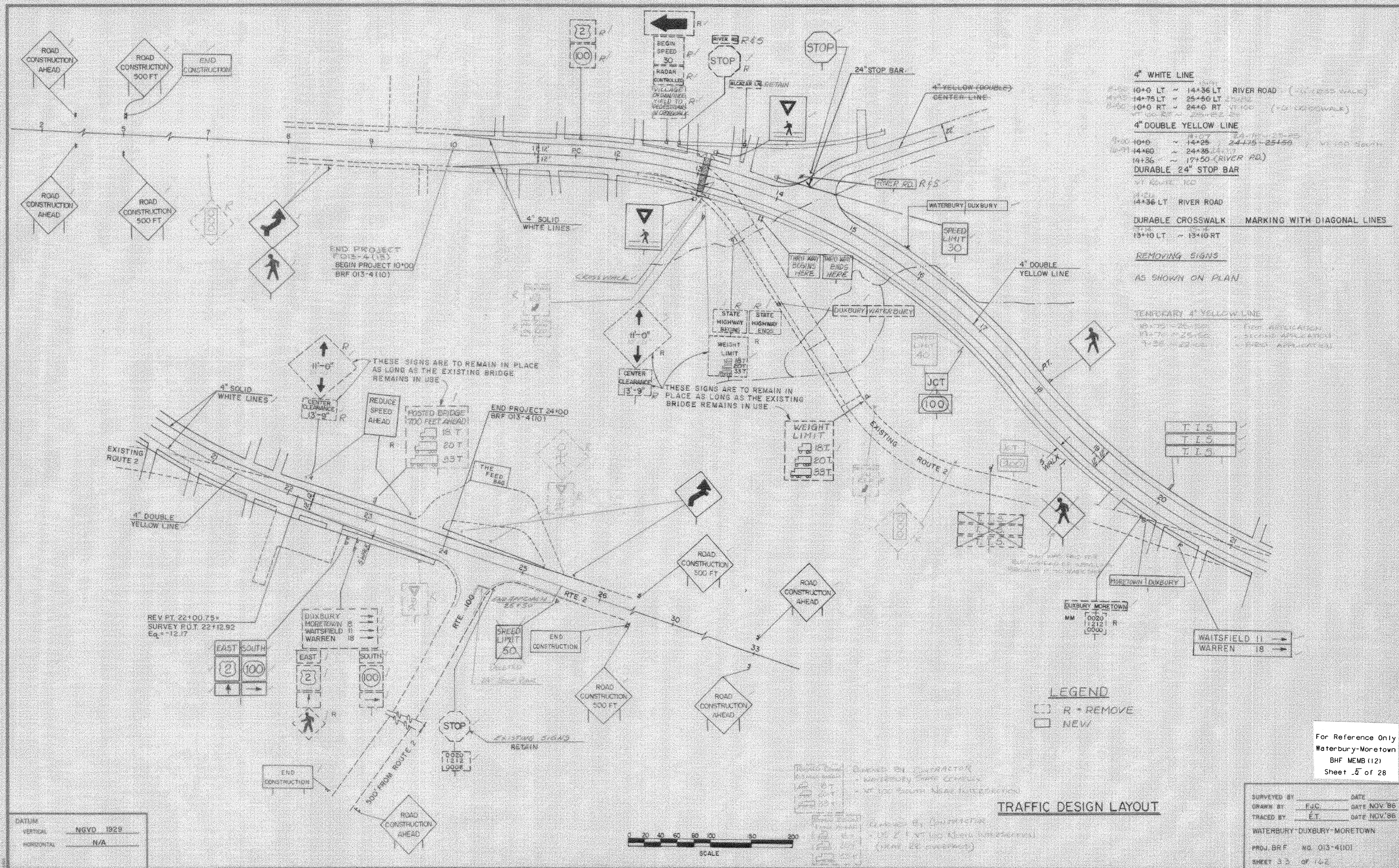
PROJECT NAME: WATERBURY-MORETOWN

PROJECT NUMBER: BHF MEMB(12)

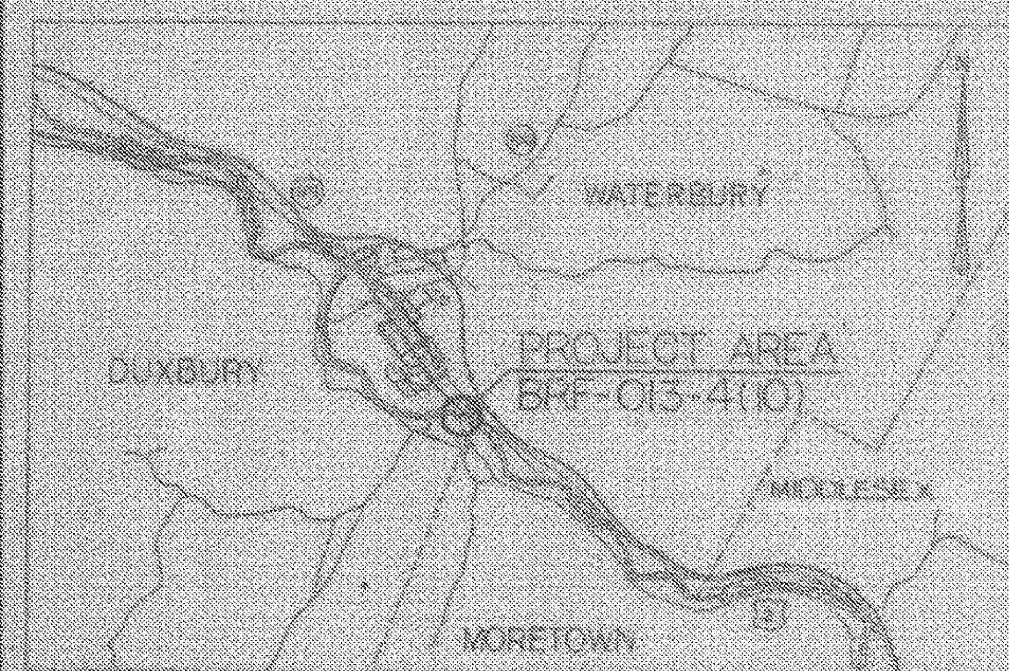
FILE NAME: 08e114excel.dgn PLOT DATE: 03/19/2009
PROJECT MANAGER: C.P.WILLIAMS DRAWN BY: D.D.BEARD
DESIGNED BY: H.J.SALLS CHECKED BY: H.J.SALLS
QUANTITY SHEET #1 SHEET 3 OF 28



PROJECT NAME: WATERBURY-MORETOWN	
PROJECT NUMBER: BHF MEMB(12)	
FILE NAME: 08elld4detall.dgn	PLOT DATE: 17-FEB-2009
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY: D.D.BEARD
DESIGNED BY: H.J.SALLS	CHECKED BY: H.J.SALLS
DETAIL SHEET	SHEET 4 OF 28



NEW HIGHWAY SECTION — BRIDGE APPROACHES

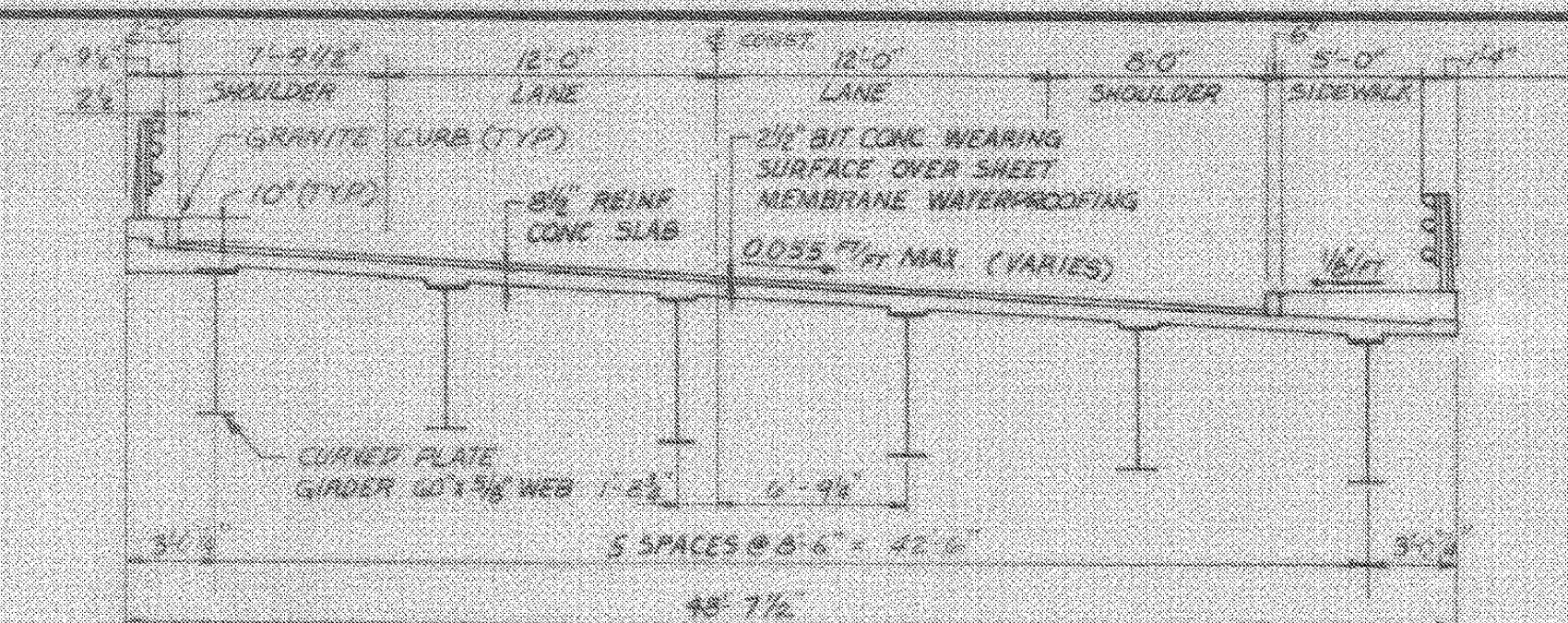


PROJECT LOCATION

SCALE IN MILES
0 5

LIST OF BRIDGE SHEETS

BR100	PRELIMINARY INFORMATION
BR101	PLAN AND ELEVATION
BR102	BRIDGE QUANTITY SHEET
BR103	BORING INFORMATION SHEET
BR104-105 & 106A	BORING LOGS
BR107	SUPERSTRUCTURE DETAILS
BR108	BRIDGE DECK REINFORCING PLAN
BR109	CURB, RAILING & SCOPPER LAYOUT
BR110	TRAINING PLAN
BR111	GRADE ELEVATION
BR112	GRINDER DETAILS
BR113	CROSS FRAME DETAILS
BR114	BRACING DEVICE DETAILS
BR115	BRACING DEVICE DETAILS
BR116	FINGER JOINT DETAILS
BR117	FINGER JOINT DETAILS
BR118	APPROACH RAIL DETAILS
BR119	PILE DETAILS
BR120	PLAN & ELEVATION - ABUTMENT NO. 1
BR121	ABUTMENT NO. 1 PILE PLAN & SECTIONS
BR122	RETAINING WALL DETAILS
BR123	PLAN & ELEVATION - ABUTMENT NO. 2
BR124	ABUTMENT NO. 2 PILE PLAN & SECTIONS
BR125	CURB JOINT DETAILS
BR126	DETAILS
BR127-128	ALUMINUM BRIDGE RAIL DETAILS
BR129	BRIDGE AND APPROACH RAIL DETAILS
BR130-BR131	REINFORCING STEEL SCHEDULE

BRIDGE TYPICAL SECTION * EXCEPT FROM STA. 14+25 TO STA. 14+82.29 SEE BR 106
SCALE 3/16"=1'-0"

GENERAL NOTES

- ALL STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).
- ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER TYPE 1 BOLDS MEETING ASTM SPECIFICATION A-325. BOLDS SHALL BE 1 1/4" DIAMETER. CONNECTIONS NOT DESIGNATED SHALL BE DESIGNED BY THE FABRICATOR AND SUBMITTED TO THE STATE FOR APPROVAL.
- ALL WELDING SHALL CONFORM WITH THE PROVISIONS OF SUBSECTION 106.10.
- AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF BEAMS SHALL BE TAKEN AS DIRECTED BY THE ENGINEER FOR USE IN DETERMINING FINAL GRADE.
- ANY HOLES IN FASCIA BEAMS OR FASCIA GIRDER WEBS NOT OTHERWISE FILLED SHALL BE FILLED WITH HOTTON ROAD OR SEE ROAD NOTES.
- ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE.
- MINIMUM COVER FOR REINFORCING STEEL SHALL BE TWO (2) INCHES ALONG FACE OF WALLS AGAINST EARTH, AND THREE (3) INCHES ELSEWHERE, UNLESS OTHERWISE NOTED.
- REINFORCING PLACEMENT TOLERANCES SHALL BE:
SPACING - 1/4"
- DECK CONCRETE SHALL BE CONCRETE, CLASS A'. ALL OTHER CONCRETE SHALL BE CONCRETE, CLASS B' UNLESS OTHERWISE DESIGNATED ON THE PLANS.
- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" BY 1/4".
- SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED 1/2" PER FOOT. ABUTMENT SEATS SHALL BE SLOPED PLUS WIDTH TOWARD CENTER SPAN. TIER SEATS SHALL BE SLOPED EACH WAY FROM LOWER. THE TOP OF BRIDGE SEAT SURFACE SHALL BE SMOOTH STEEL SHOWER FINISHED.
- FOR BRIDGE DECK BIDDING THE MAXIMUM TIME LIMIT FOR ANY COMBINATION OF POURS SHALL BE ONE DAY PER 1000 SQUARE FEET. THERE SHALL BE A MINIMUM DELAY OF NINETY SIX HOURS BETWEEN THE COMPLETION OF ONE DAY'S POUR AND THE BEGINNING OF ANY OTHER POUR.
- WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF DECK BEHIND DRIP NOTCHES.
- ITEM 125.15, REMOVAL OF EXISTING STRUCTURE, SHALL INCLUDE THE FOLLOWING:
 - REMOVAL AND DISPOSAL OF THE EXISTING BITUMINOUS CONCRETE BRIDGE PAVEMENT AND REINFORCED CONCRETE DECK.
 - REMOVAL OF THE EXISTING TRUSSES, FLOOR BEAMS, STRINGERS, BEARINGS, ETC., ALL OF WHICH SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
 - REMOVAL OF THE TEMPORARY REPAIR GIRDERS, INCLUDING BOLTED ATTACHMENTS, WHICH SHALL REMAIN THE PROPERTY OF THE STATE (SEE SPECIAL PROVISIONS).

EXISTING STRUCTURE

- STRUCTURE TYPE CAMEL BACK THROUGH WARREN TRUSS 25 SPAN OVERALL LENGTH 244 FT. INVENTORY RATING
- SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS NORTH SPAN 143 FT. 1 1/4 IN. OF SOUTH SPAN 101 FT. 6 IN. OF
- CLEAR SPAN LENGTH(S) NORMAL TO STREAM SAME AS #2
- WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 34.98 SQ. FT. VERTICAL CLEARANCE ABOVE STREAMED 23.5 FT
- WATER SURFACE ELEVATION @ Q 233 429.6 WATER SURFACE ELEVATION @ Q 234 429.6
- WATER SURFACE ELEVATION AT FLOOD OF RECORD 239 YEAR NOV. 4, 1927 ESTIMATED DISCHARGE 28,000 CFS
- DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? YES IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR?
- ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF NONE
- TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL UNDERWAY
- DISPOSITION OF STRUCTURE REMOVE EXISTING STRUCTURE ITEM 125.15

NEW STRUCTURE

- STRUCTURE GEOMETRY:
- STRUCTURE TYPE 2 SPAN CONTINUOUS WELDED PLATE GIRDER OVERALL LENGTH 277'-5 3/4" ALONG & CONST.
 - SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 138.10 FT. ALONG & CONSTRUCTION
 - VERTICAL CLEARANCE ABOVE STREAMED OR ROAD UNDER 20.5 FT. @ EAST FASCIA 24 FT. @ WEST FASCIA
 - CLEAR SPAN LENGTH(S) NORMAL TO STREAM NORTH SPAN 105 FT. SOUTH SPAN 130 FT.
 - WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 4250.36 SQ. FT.
 - ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES?

HYDRAULIC DATA:

1. Q 233 15,500 CFS	WATER ELEVATION 429.1	VELOCITY 6.22 FPS
Q 10 12,000 CFS	WATER ELEVATION 428.5	VELOCITY 7.22 FPS
Q 25 12,500 CFS	WATER ELEVATION 428.5	VELOCITY 7.22 FPS
Q 50 12,000 CFS	WATER ELEVATION 428.1	VELOCITY 6.22 FPS
Q 100 10,500 CFS	WATER ELEVATION 428.2	VELOCITY 5.22 FPS
2. DRAINAGE AREA 715 SQ. MI.	CHARACTER OF TERRAIN RELATING TO MOUNTAINING	
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? PIER TO BE LOCATED OUT AT THE SOUTH EDGE OF THE MAIN CHANNEL		
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? YES	IS ORDINARY RISE RAPID? YES	
5. NATURE OF NATURAL STREAMBED RAPIDLY ERODES AND FREQUENT BOTTOMS ARE IN MEDIUM COARSE GRAVEL AND SILTY SAND		
6. ESTIMATED SCOUR DEPTH 2.12 FEET COMMENT ON DRIFT MODERATE NO MODERATE		
7. WILL ALL WATER PASS THROUGH NEW STRUCTURE? NO IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR? 250, 426.1		
ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF N/A		
8. VERTICAL CLEARANCE ABOVE Q 10 0 FT		
9. ALLOWABLE WATER SURFACE ELEVATION 428.2 LIMITED BY 8.100		
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO IF YES, DESCRIBE		
11. AVERAGE DAILY LOW FLOW 400 CFS DEPTH EL. 418 AVERAGE DAILY HIGH FLOW 2300 CFS DEPTH EL. 417		
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED TYPE 12		
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE 200 FT. SPAN WATERWAY AREA OF FULL OPENING 0		
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE 3.0 MI. SPAN WATERWAY AREA OF FULL OPENING 0		

ALLOWABLE STRESSES:

- DESIGN LIVE LOAD ASHTO HS 20 ON LEDGE N/A
- ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL TYPE ESTIMATED LENGTH SEE PLANS BR107
- ALLOWABLE LOAD FOR PILING N/A
- ALLOWABLE STRESS FOR STRUCTURAL STEEL A572-50 TENSION 27 KSI
- ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 24 KSI COMPRESSION 30 KSI
- ALLOWABLE STRESS FOR CONCRETE CLASS A 1.1 1650 PSI CLASS B 1.1 1500 PSI

TRAFFIC MAINTENANCE:

- IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE YES OR ON TEMPORARY BRIDGE NO
- TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY N/A TRAFFIC CONTROL SIGNALS REQUIRED
- MINIMUM CLEAR SPAN
- ARE SIDEWALKS REQUIRED? IF SO, ON WHAT SIDE? MINIMUM WATERWAY AREA

ADDITIONAL DESIGN CONSIDERATIONS

LOAD RATING (TONS)		TRUCK					
STRESS LEVELS	R	HS	SS	TAKE	3A 57E	4A 57E	5A 57E
INVENTORY 0.95 Fy	45	46	46	46	46	46	46
POSTED 0.87 Fy	43	74	146	118	120	135	135
OPERATING 0.75 Fy	38	100	207	211	168	170	170

RECOMMENDED FOR APPROVAL STRUCTURES ENGINEER DATE

RECOMMENDED FOR APPROVAL CHIEF OF DESIGN DATE

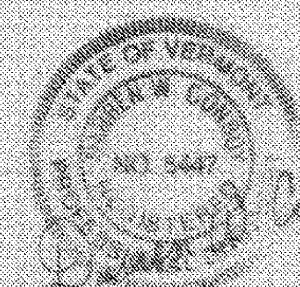
APPROVED BY DIRECTOR OF ENGINEERING & CONSTRUCTION DATE

REVISIONS		BY & DATE
NO.	DESCRIPTION	BY & DATE
1	CHANGE HP PILING TO CAST-IN-PLACE CONCRETE PILING	AME 1-25-91

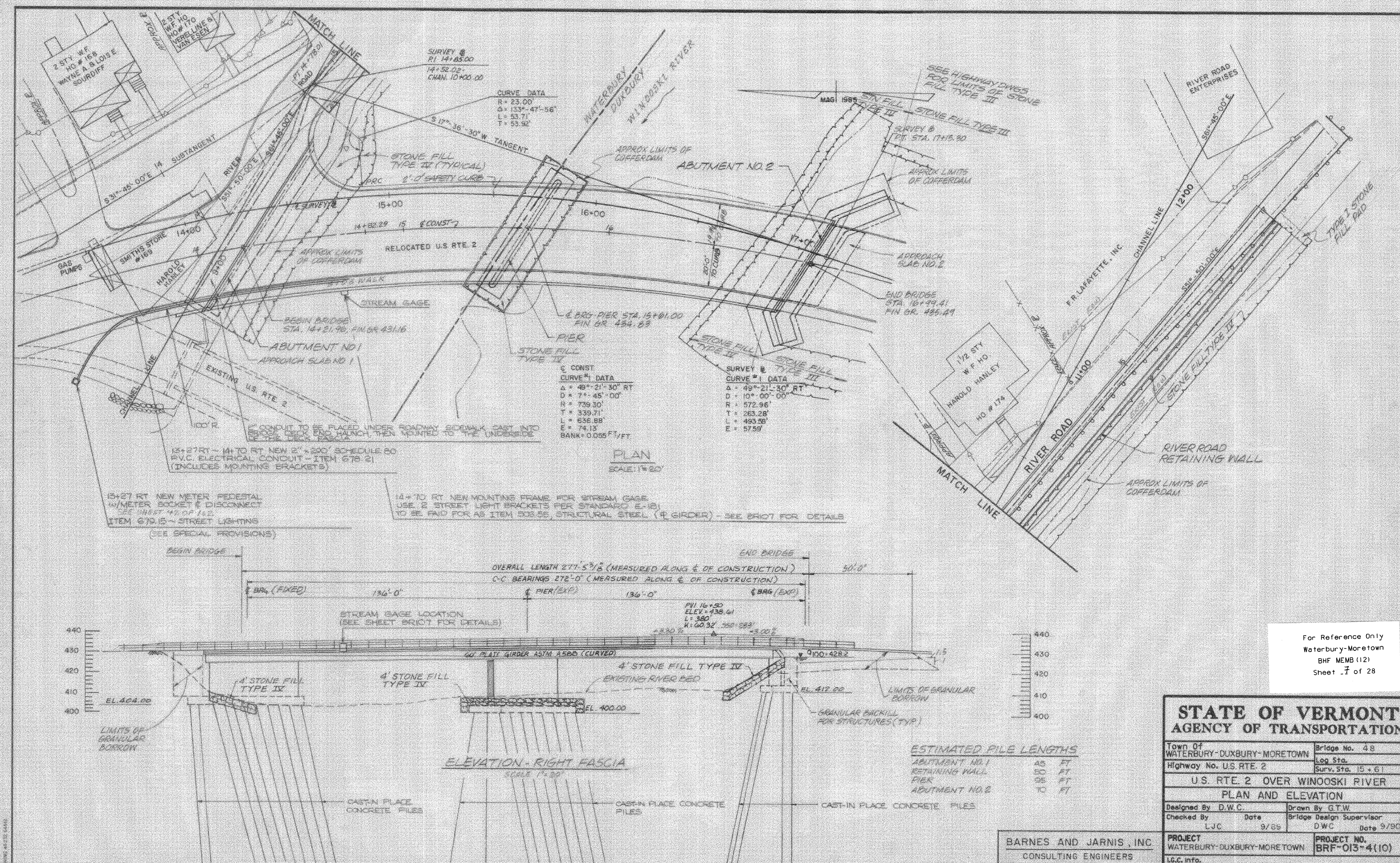
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WATERBURY-DUXBURY-MORETOWN	Bridge No. 48
HIGHWAY NO. U.S. RTE. 2	Log Sta. 15+61
U.S. RTE. 2 OVER WINOOSKI RIVER	
PRELIMINARY INFORMATION	
Designed by D.W.C.	Drawn by G.T.W.
Checked by J.C. date 9/90	Bridge Design Supervisor DWC date 9/90
PROJECT WATERBURY-DUXBURY-MORETOWN	PROJECT NO. BRF-013-4(10)
Bridge Sheet No. BR100	Sheet 45 of 162

For Reference Only
Waterbury-Moretown
BRF MEMB (12)
Sheet 46 of 28



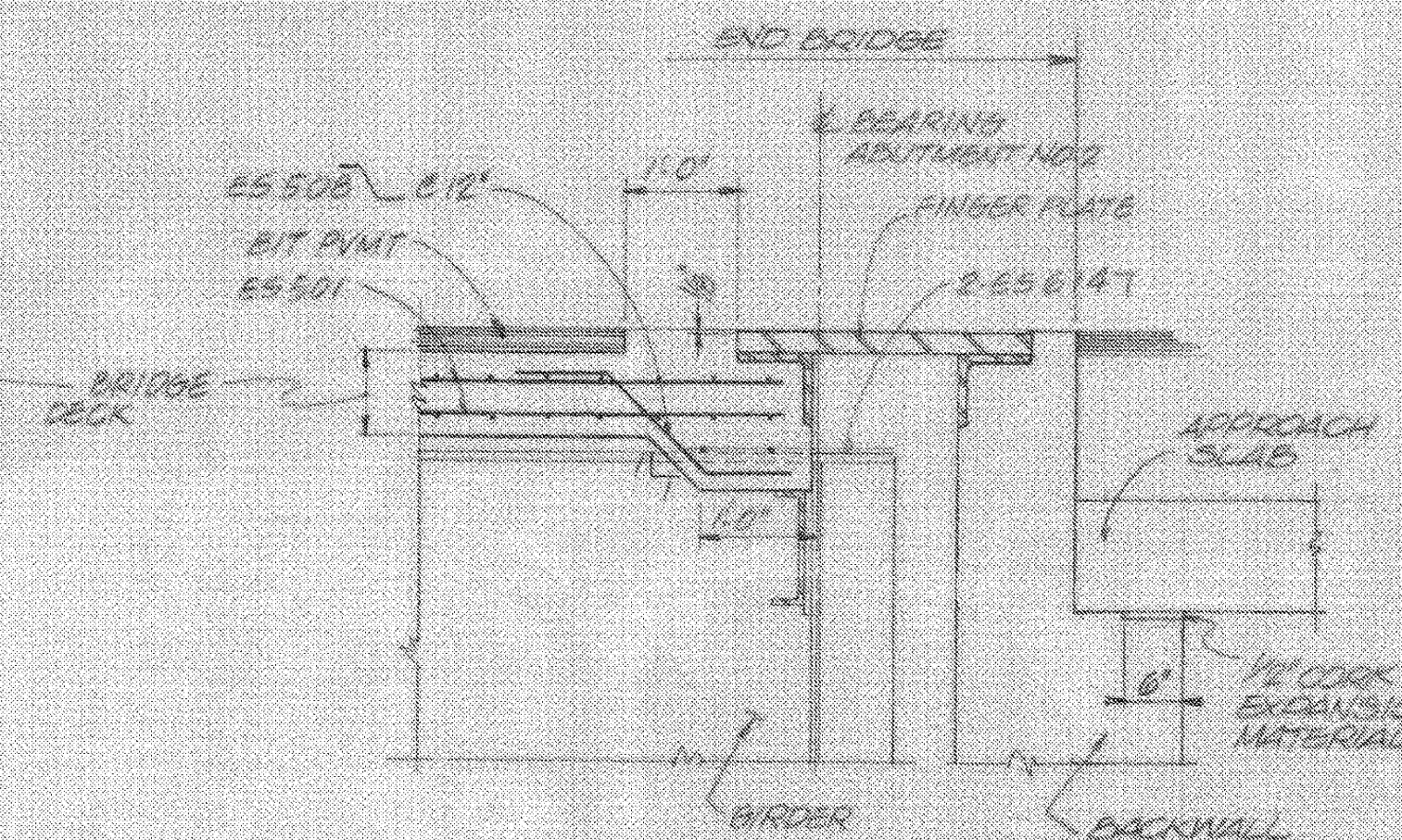
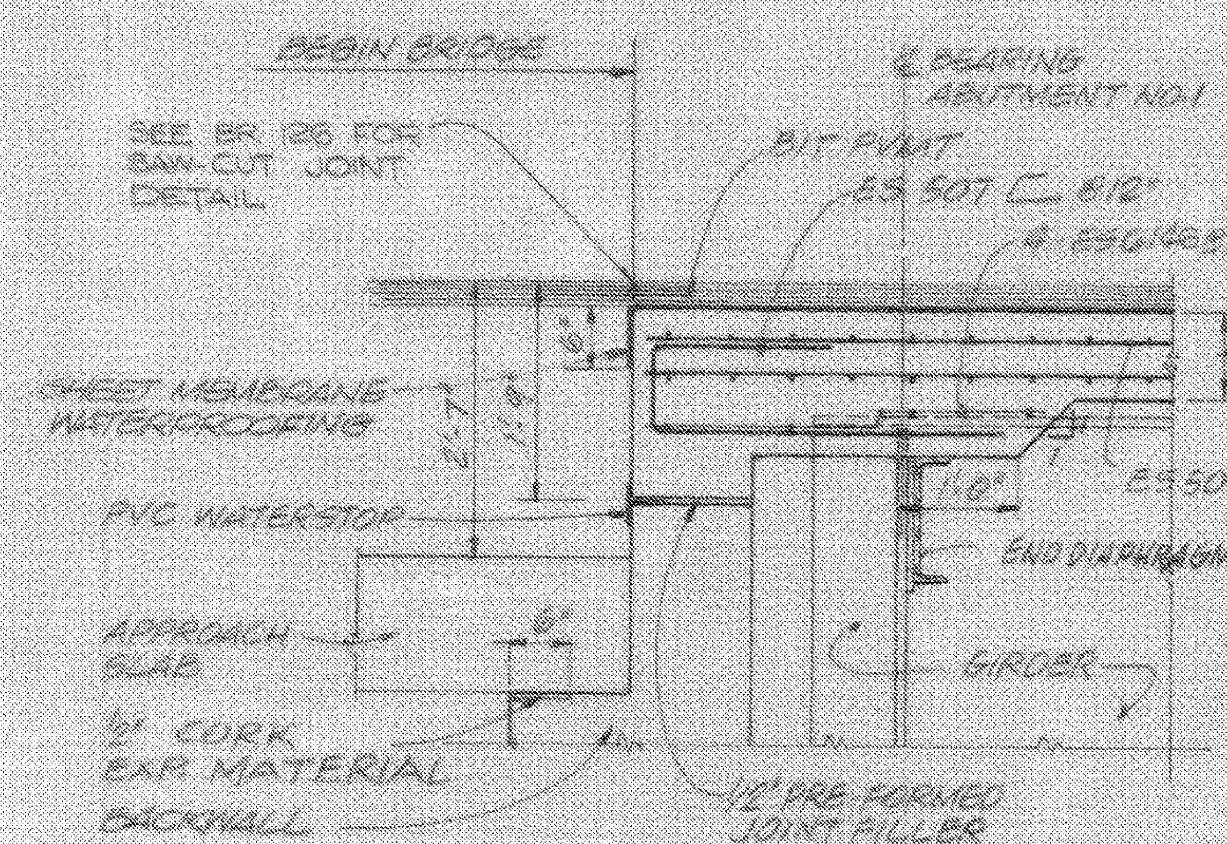
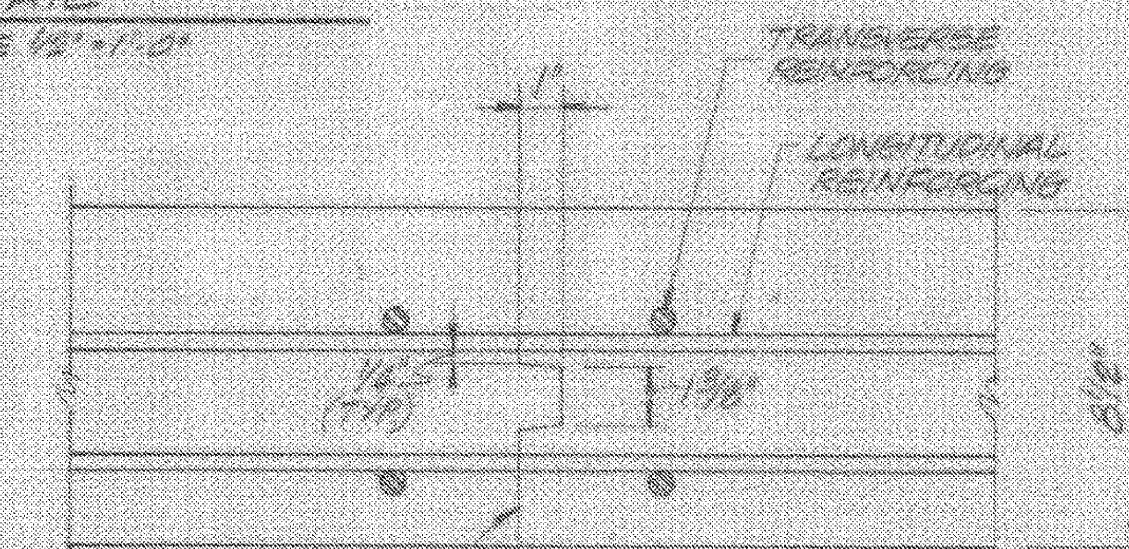
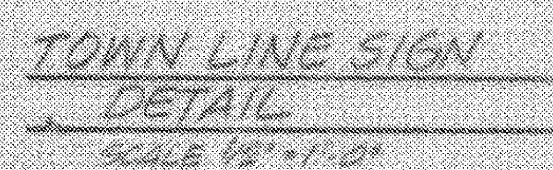
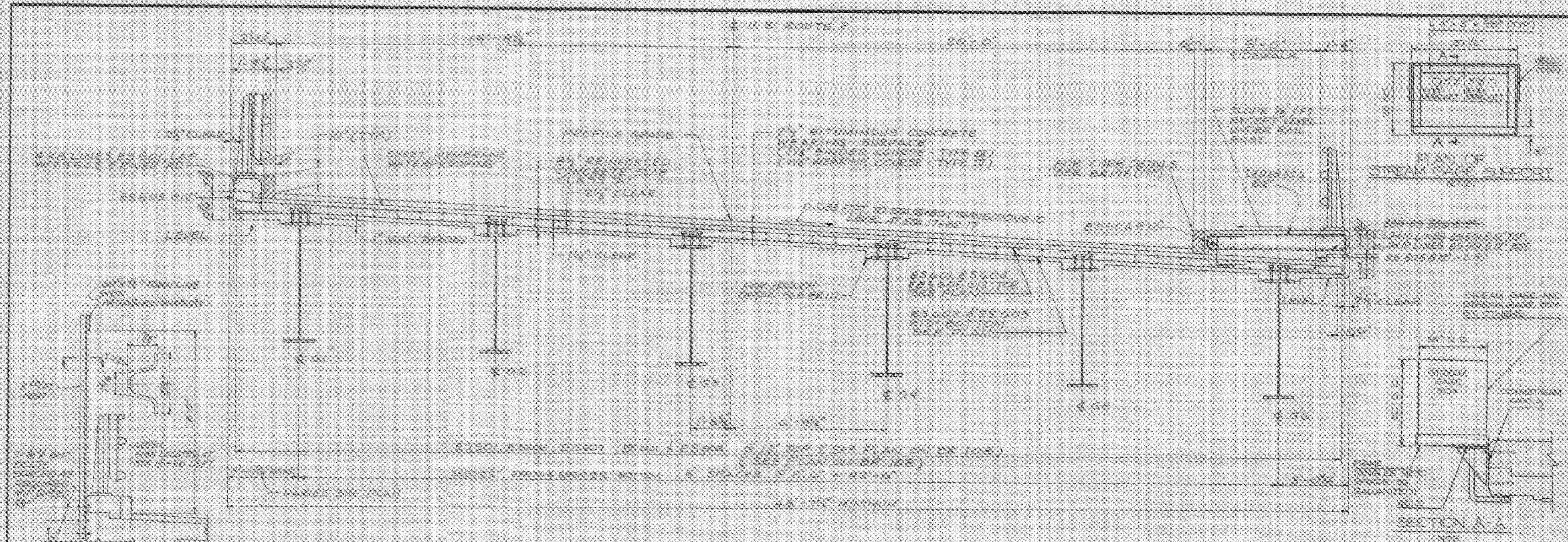
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CONSULTING ENGINEERS
BOSTON, MASS.



For Reference Only
 Waterbury-Moretown
 BHF MEMB (12)
 Sheet 7 of 28

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town of WATERBURY-DUXBURY-MORETOWN	Bridge No. 48
Highway No. U.S. RTE. 2	Leg Sta.
U.S. RTE. 2 OVER WINOOSKI RIVER	
PLAN AND ELEVATION	
Designed By D.W.C.	Drawn By G.T.W.
Checked By LJC	Bridge Design Supervisor D.W.C.
Date 9/85	Date 9/90
PROJECT WATERBURY-DUXBURY-MORETOWN	PROJECT NO. BRF-013-4(10)
L.C. info.	
Bridge Sheet No. BR101	Sheet 48 of 102

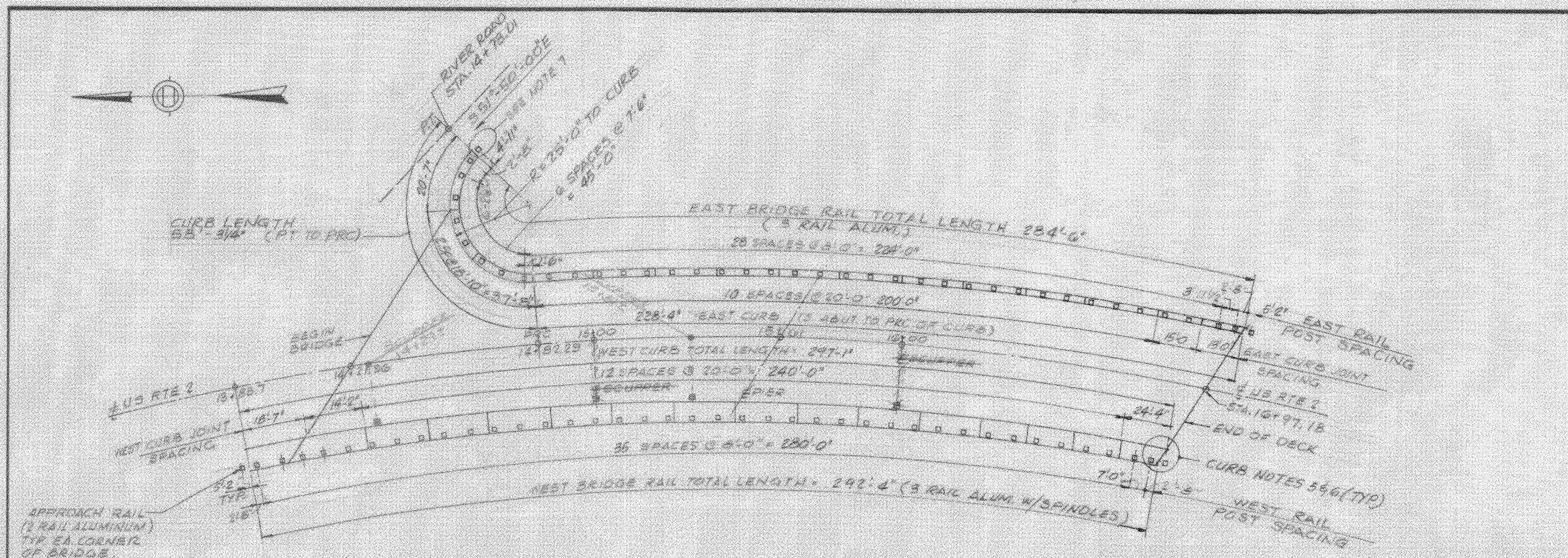
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 CONSULTING ENGINEERS
 BOSTON, MASS.



NOTES:

1. THE BRIDGE RAILING SHALL BE 3 RAIL ALUMINUM. RAILING ON THE SIDEWALK SIDE (WEST FASCIA) SHALL HAVE SPINDLES. SEE BRIDGE SHEET NO. BR127.
2. SEE DRAWING BR111 FOR GIRDER HAUNCH AND SHEAR CONNECTOR DETAILS.
3. ALL SUPERSTRUCTURE REINFORCING STEEL SHALL BE EPOXY COATED.
4. * - EXCEPT FROM STA. 14+25 TO 14+27.71 (SEE BRIDGE DECK REINFORCING PLAN BR103 & SECTIONS A-A & B-B FOR DETAILS AT NORTHEAST CORNER.)

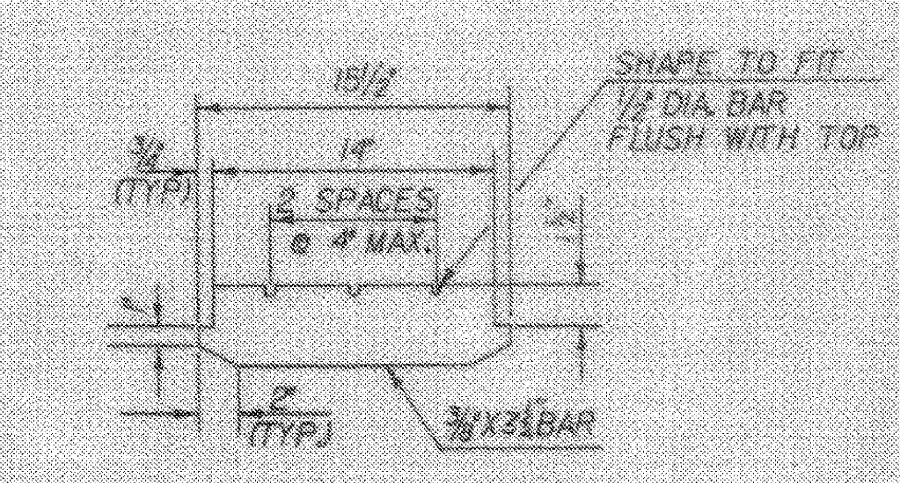
STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
Town Of WATERBURY-DUXBURY-MORETOWN	Bridge No. 46
Highway No. U.S. RTE 2	Log Sta. Surv. Sta. 15+61
U.S. RTE. 2 OVER WINOOSKI RIVER	
SUPERSTRUCTURE DETAILS	
Designed By CJB	Drawn By RLL
Checked By LJC	Date 9/89
Bridge Design Supervisor DWC	Date 9/90
PROJECT WATERBURY-DUXBURY-MORETOWN	PROJECT NO. BRF-013- 4(10)
I.G.C. info.	
Bridge Sheet: No. BR 107	Sheet 1 of 102



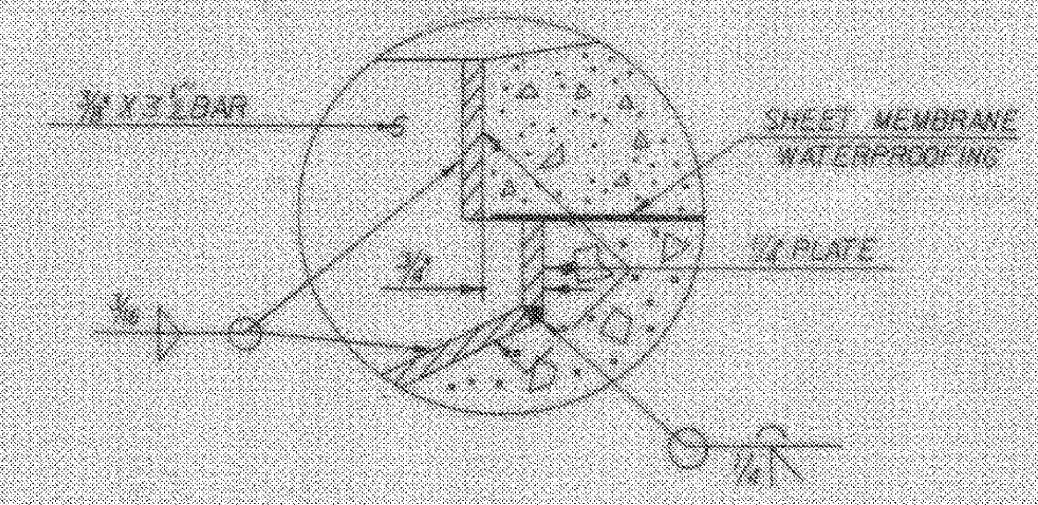
- SCUPPER NOTES:**
1. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 OR A501. ALL OTHERS SHALL BE TO ASTM A56. THE WHOLE SCUPPER ASSEMBLY SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A115.
 2. ALL SURFACES OF SCUPPER WHICH WILL CONTACT CONCRETE SHALL BE COATED WITH EPOXY BONDING COMPOUND IN ACCORDANCE WITH SECTION 719. THE COST OF THIS WORK SHALL BE INCLUDED WITH THE UNIT PRICE BID FOR CONCRETE CLASS 4.
 3. SCUPPERS SHALL BE PAID FOR AS STRUCTURAL STEEL.
 4. SPECIAL CARE SHALL BE TAKEN TO SEAL WATER-PROOFING MEMBRANE AROUND SCUPPERS SIMILAR TO METHOD USED AT CURB.
 5. THE TOP SURFACE OF SCUPPERS SHALL BE SLOPED TO MATCH ROADWAY SLOPE AND GRADE.
 6. ANY GALVANIZED AREAS THAT ARE WELDED IN THE FIELD MUST BE COATED WITH ZINC RICH PRIMER AFTERWARDS ACCORDING TO VERMONT SPECIFICATION 708.01 (6).

- CURB & RAILING NOTES:**
1. THE 2'0" CURB SHALL BE PLACED IN 20'0" SECTIONS AS PER DWS BR 125. CURB JOINT DETAILS, PLACEMENT DETAILS FOR THE CURB, SHALL BE SUBMITTED TO THE BRIDGE RAILING FABRICATOR BY THE CONTRACTOR.
 2. BRIDGE RAIL POST SHALL BE 1 1/2" MINIMUM FROM CURB CONSTRUCTION JOINTS (UNLESS OTHERWISE NOTED).
 3. FOR CURB JOINT DETAILS AND GRANITE CURB DETAILS, SEE BR 125.
 4. FOR BRIDGE RAILING DETAILS SEE BR 121-BR 129.
 5. FOR APPROACH RAIL (2 RAIL ALUMINUM) SEE BR 129.
 6. FOR CURB DETAILS @ SOUTH END OF BRIDGE SEE BR 114.
 7. FOR CONTINUATION OF CURB & RAIL ON RIVER ROAD SEE BR 121.

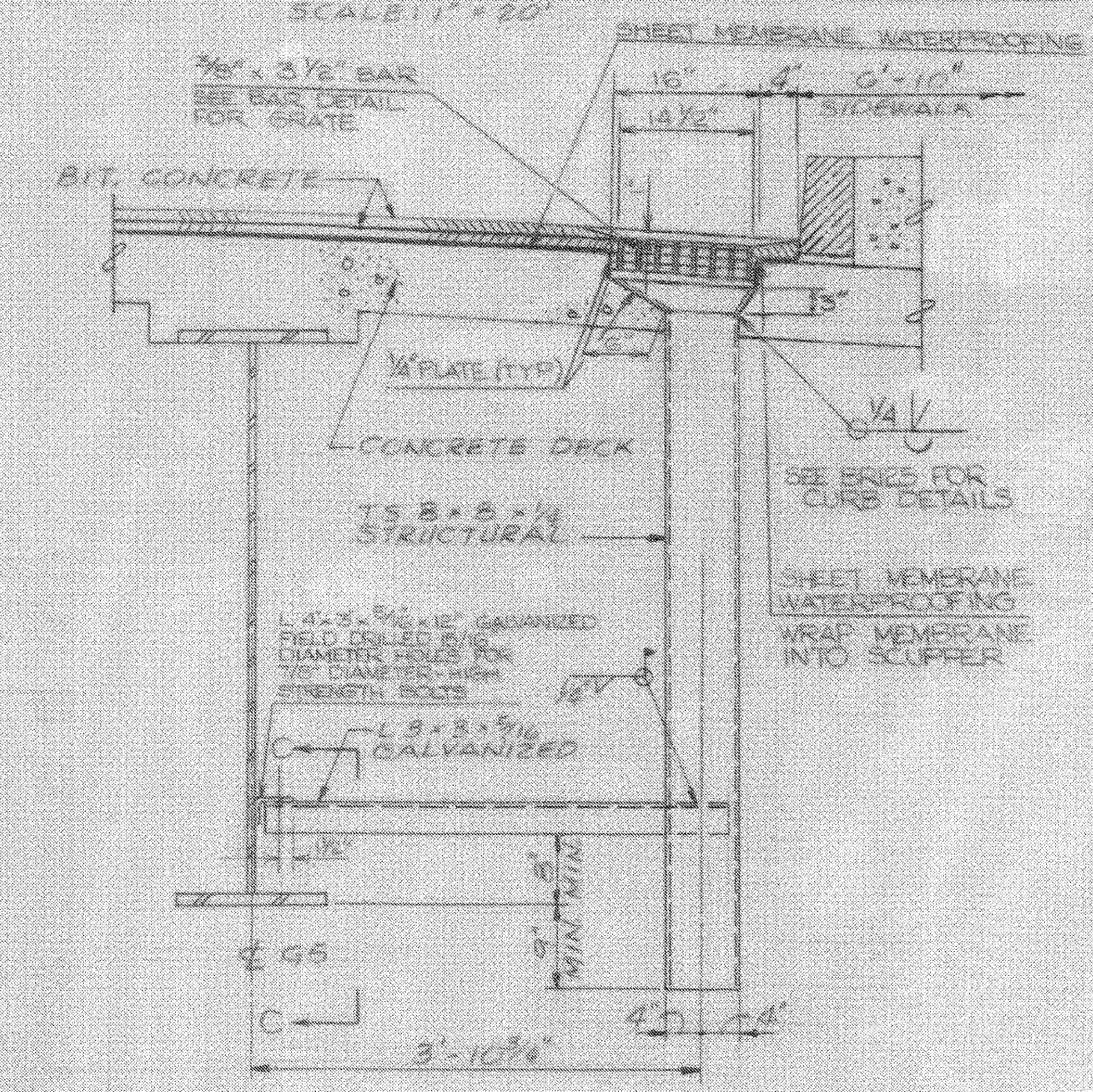
CURB, RAILING & SCUPPER PLAN
SCALE: 1" = 20'



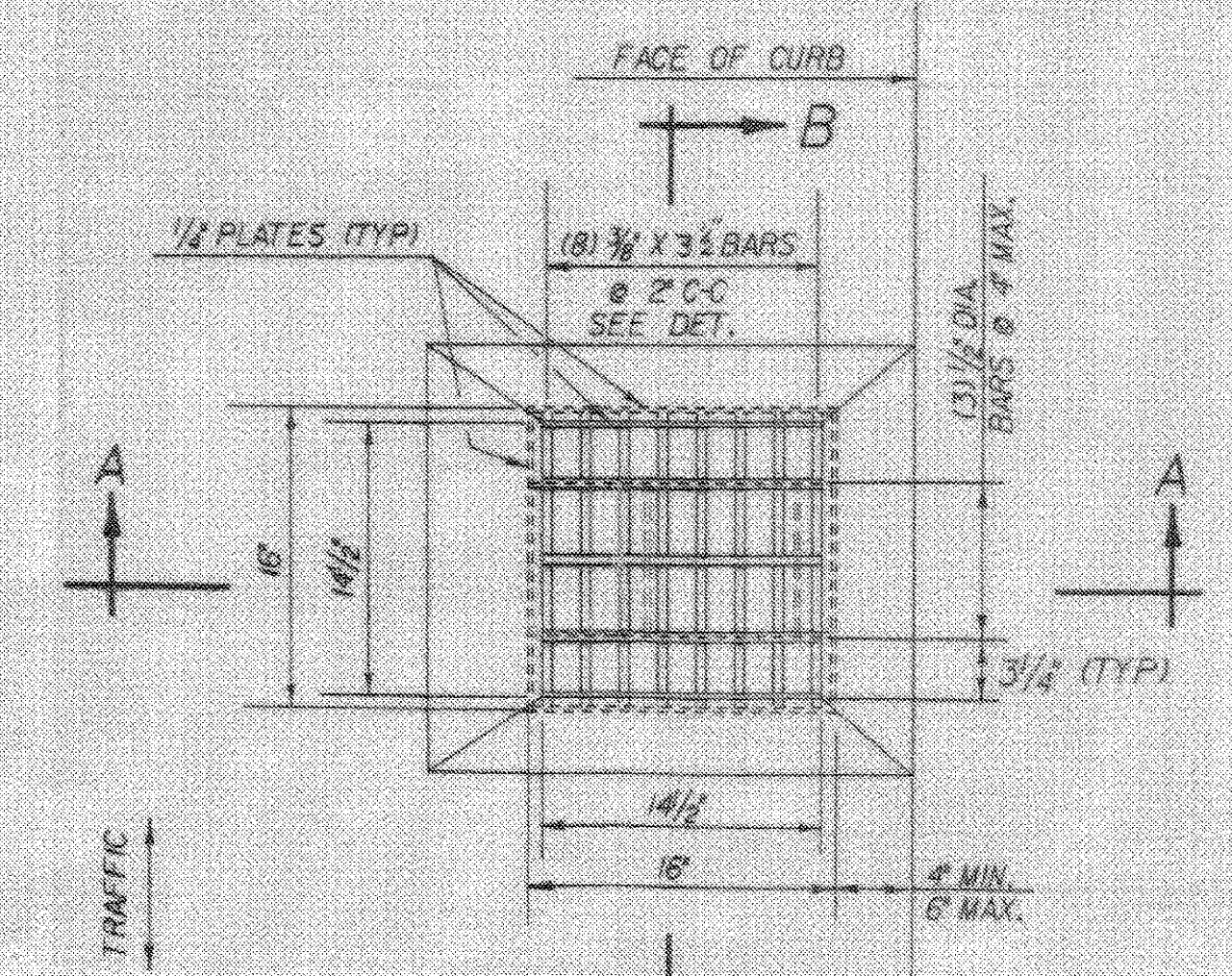
BAR DETAIL FOR GRATE
SCALE: 1 1/2" = 1'-0"



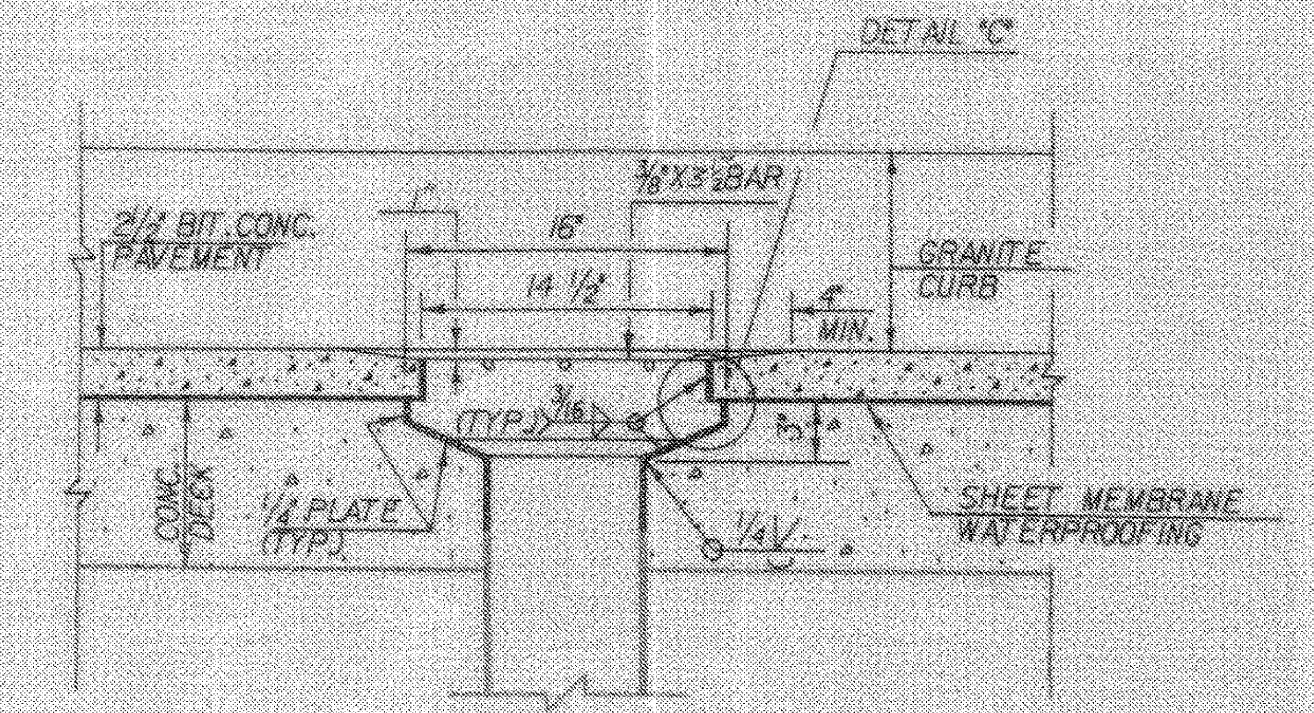
DETAIL C-C



SECTION B-B
SCALE: 1" = 1'-0"



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



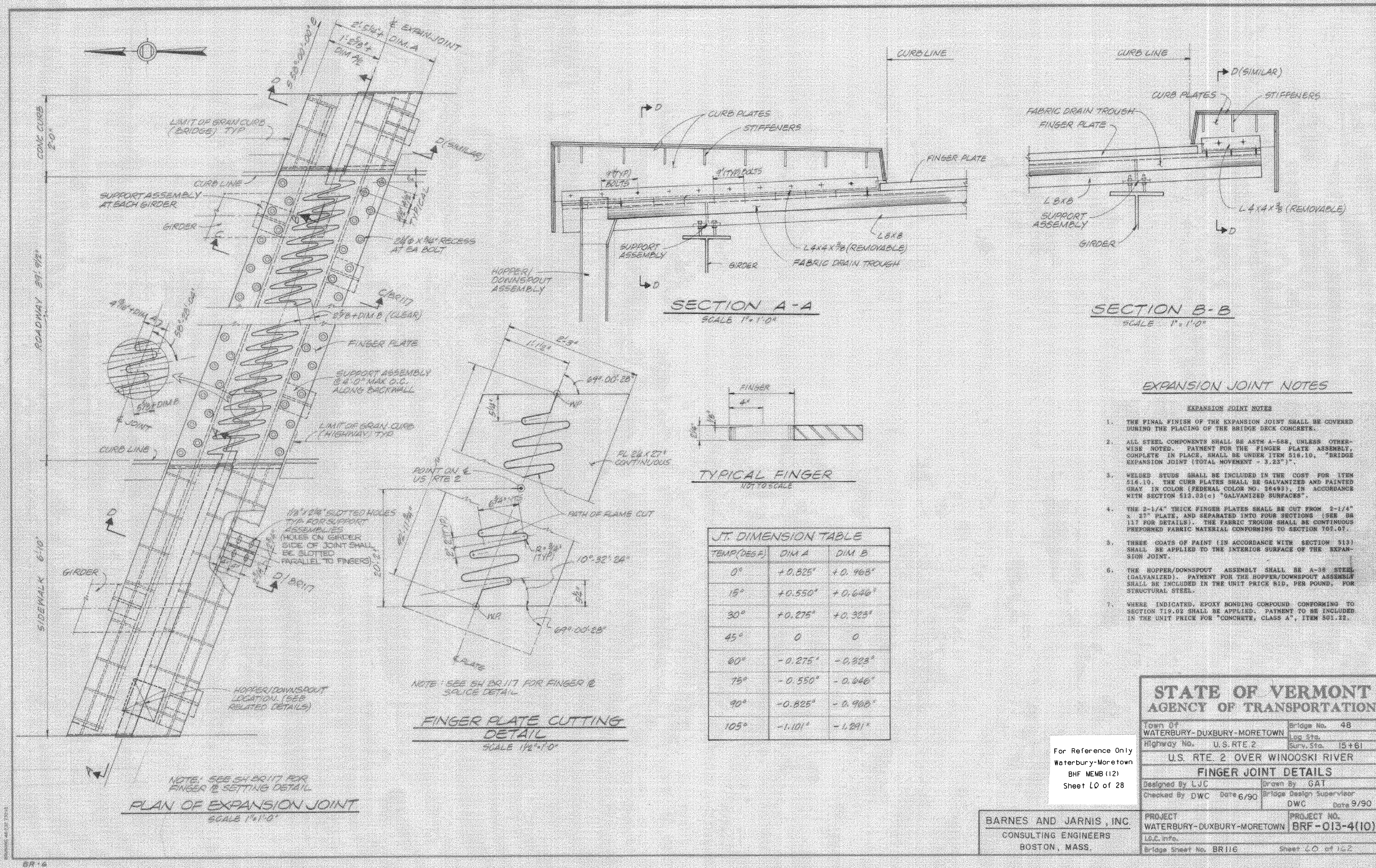
SECTION B-B
SCALE: 1 1/2" = 1'-0"

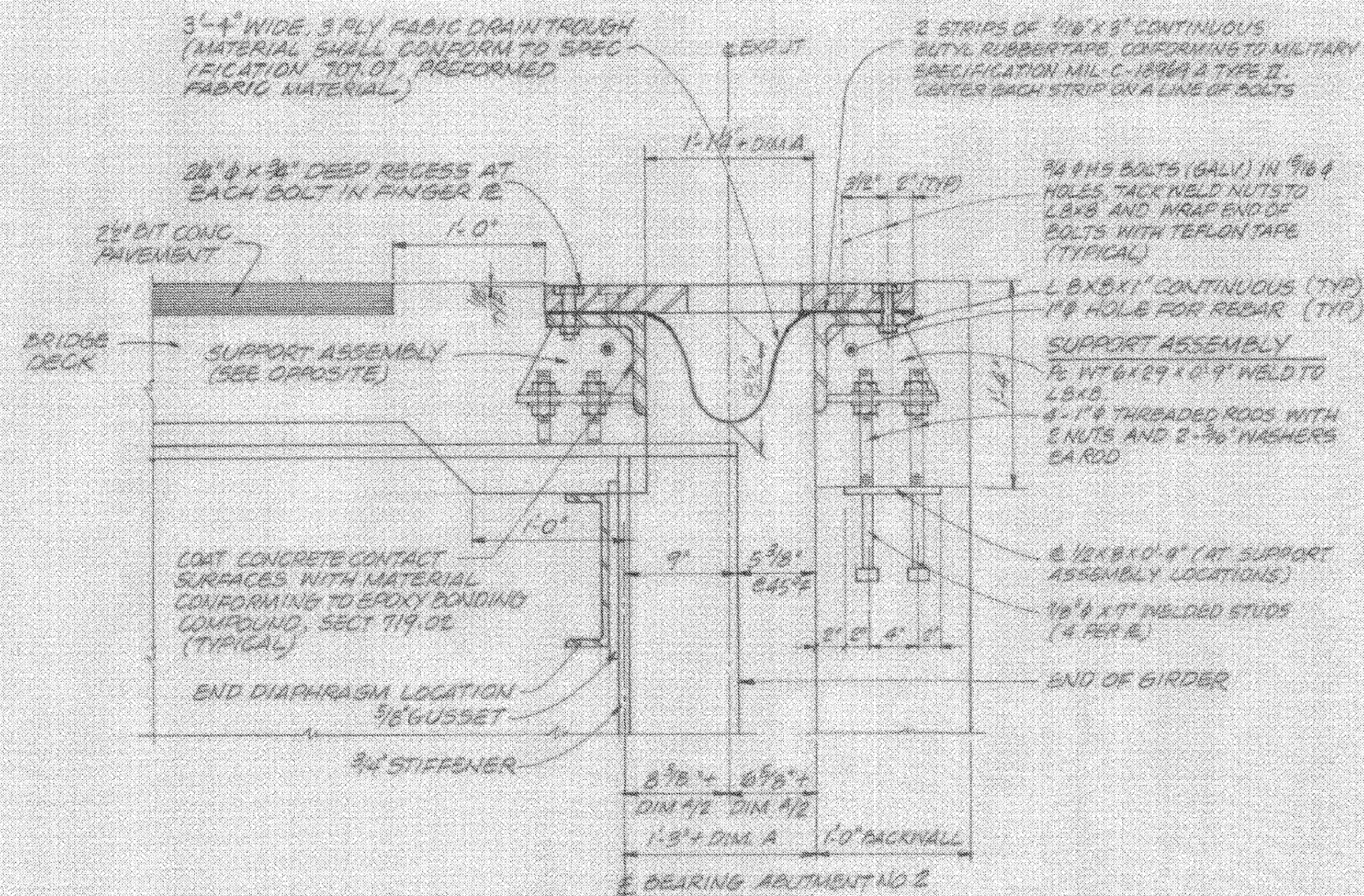
REVISED MAY 14, 1991 KSC
BARNES AND JARNIS, INC.
CONSULTING ENGINEERS
BOSTON, MASS.

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

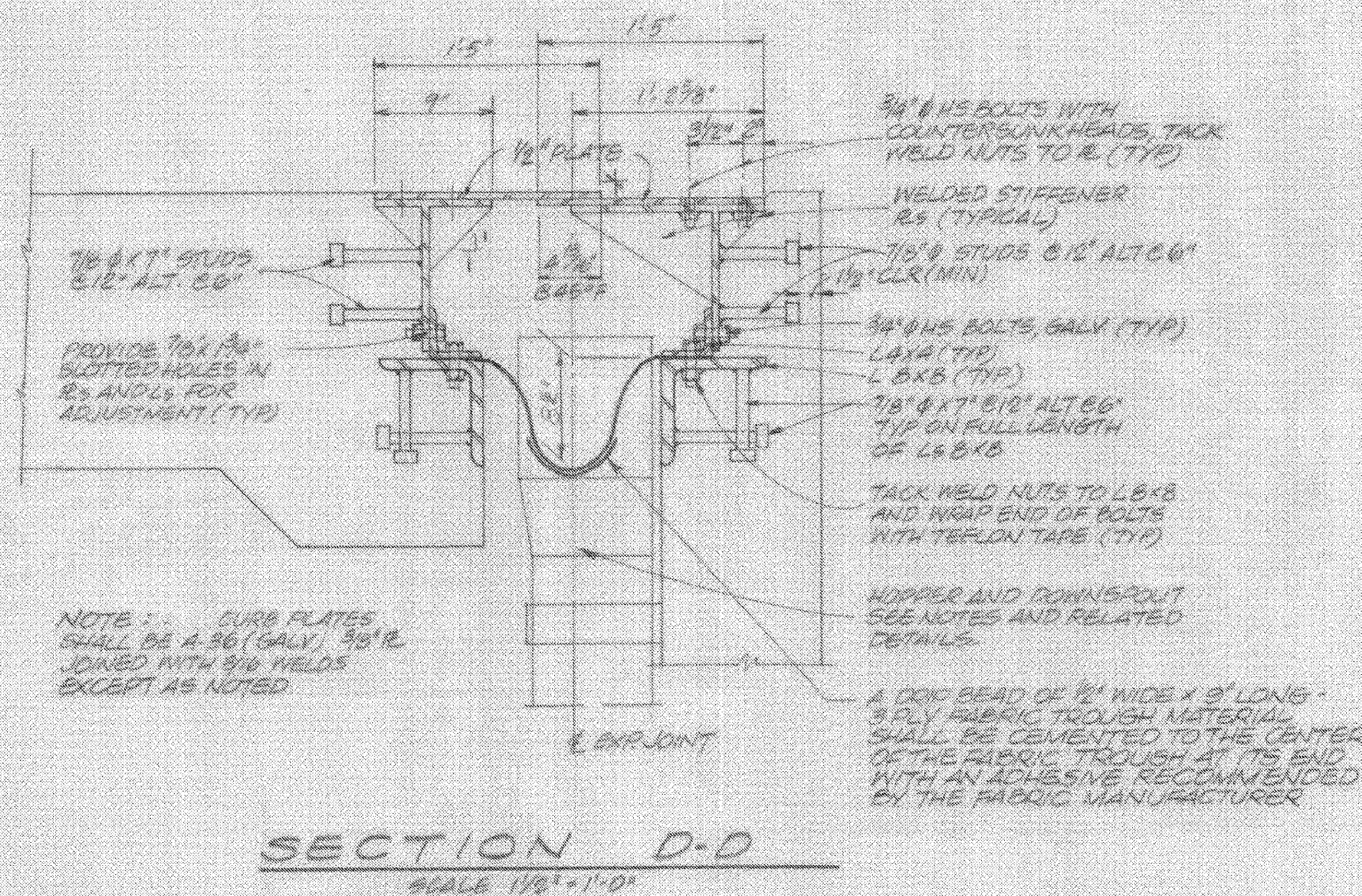
Town Of	Waterbury-Duxbury-Moretown	Bridge No.	48
Highway No. U.S. RTE.	2	Log Sta.	
		Surv. Sta.	15+61
U.S. RTE. 2 OVER WINOOSKI RIVER			
CURB, RAILING & SCUPPER LAYOUTS			
Designed By	CJB	Drawn By	RJL
Checked By	LJC	Bridge Design Supervisor	DWC
	9/89	Date	9/90
PROJECT	WATERBURY-DUXBURY-MORETOWN	PROJECT NO.	BRF-013-4 (10)
LOG. INFO.			
Bridge Sheet No.	BR 109	Sheet	53 of 142

For Reference Only
Waterbury-Moretown
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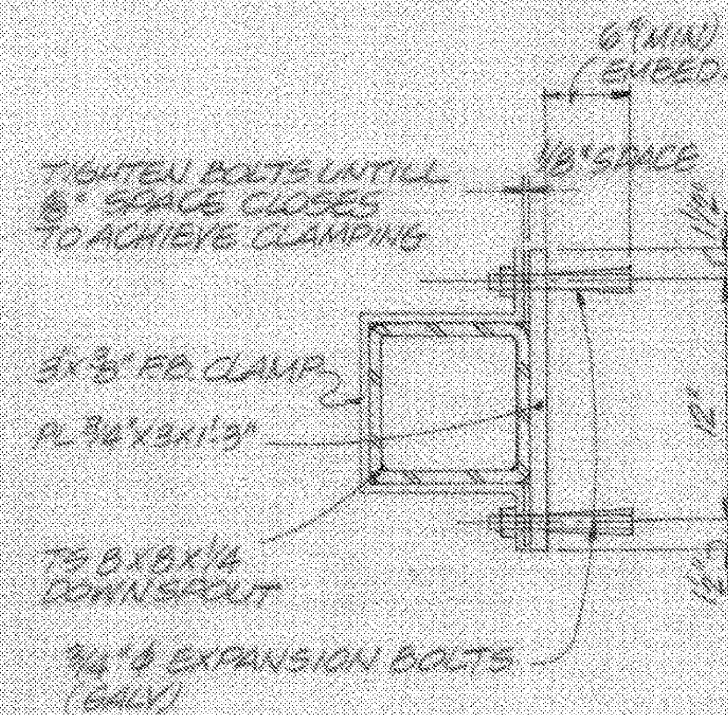




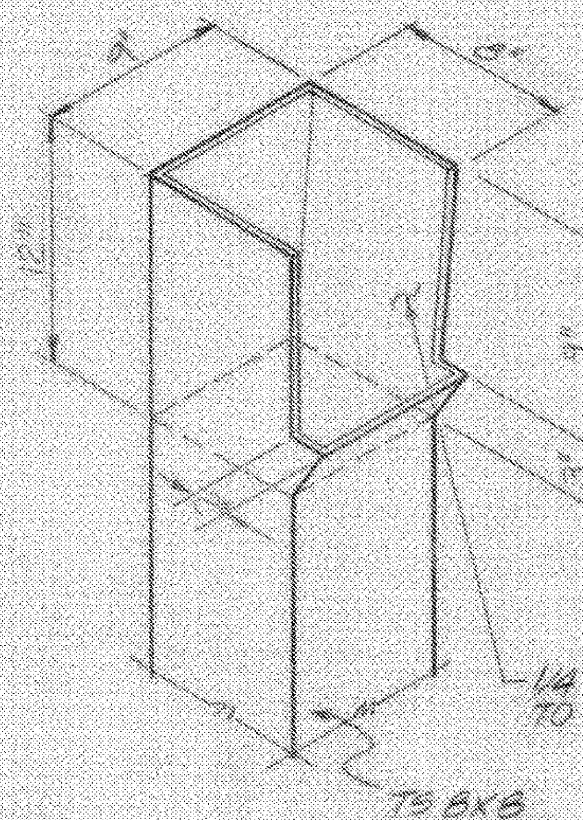
SECTION C-C
SCALE 1/8\"/>



SECTION D-D
SCALE 1/8\"/>

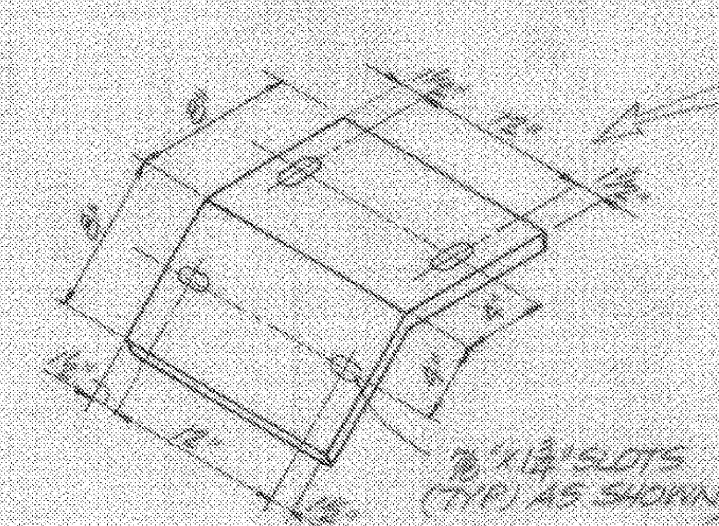


BACKWALL CLAMP DETAIL
SCALE 1/2\"/>



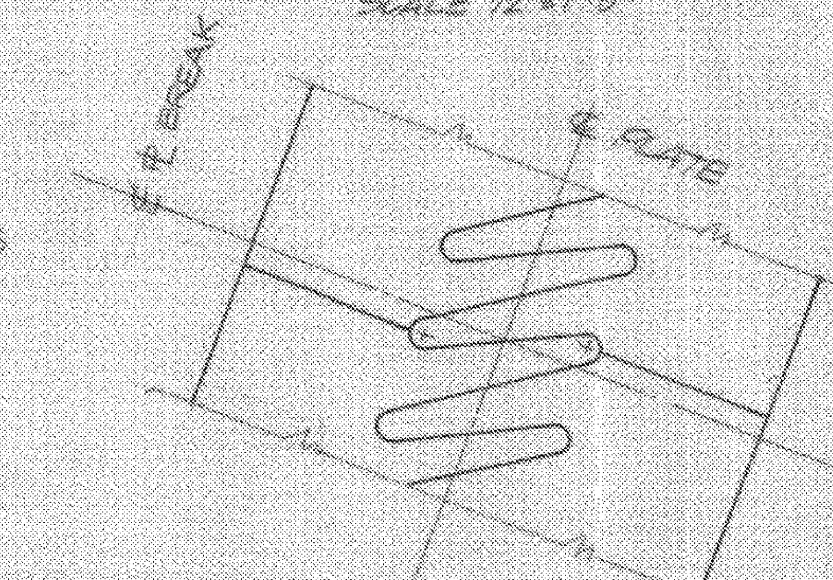
HOPPER DETAIL
SCALE 1/2\"/>

- DOWNSPOUT NOTES**
1. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 OR SOI GALVANIZED IN ACCORDANCE WITH ASTM A103.
 2. PLAT-BAR CLAMPS AND PLATES SHALL BE GALVANIZED OR METALLIZED AS PER SECTION 701.05.
 3. DOWNSPOUT AND ACCESSORIES TO BE PAID FOR AS STRUCTURAL STEEL.

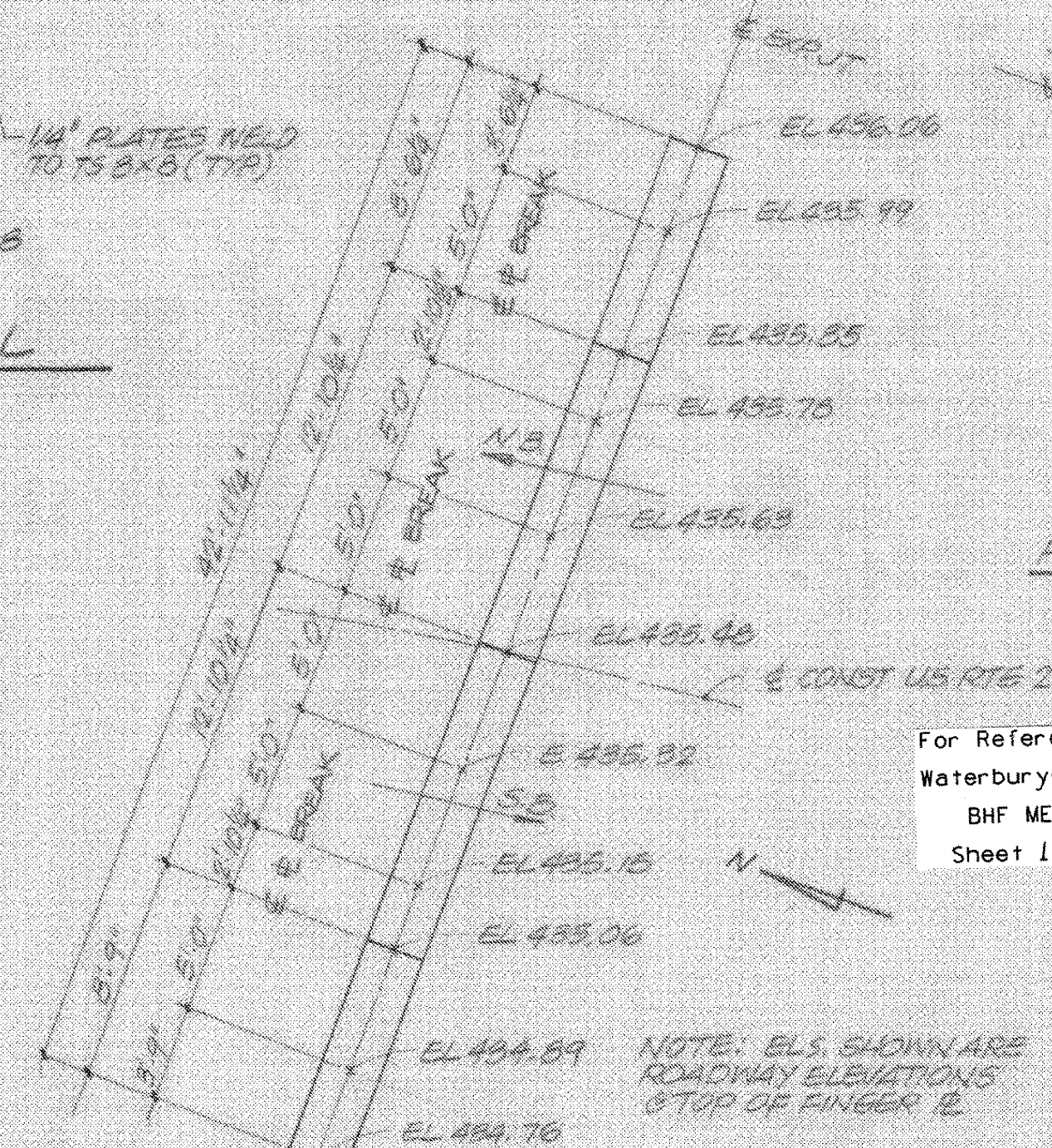


BENT PLATE
SCALE 1/2\"/>

**SECTION AT HOPPER/DOWN-
SPOUT ASSEMBLY**
SCALE 1/2\"/>



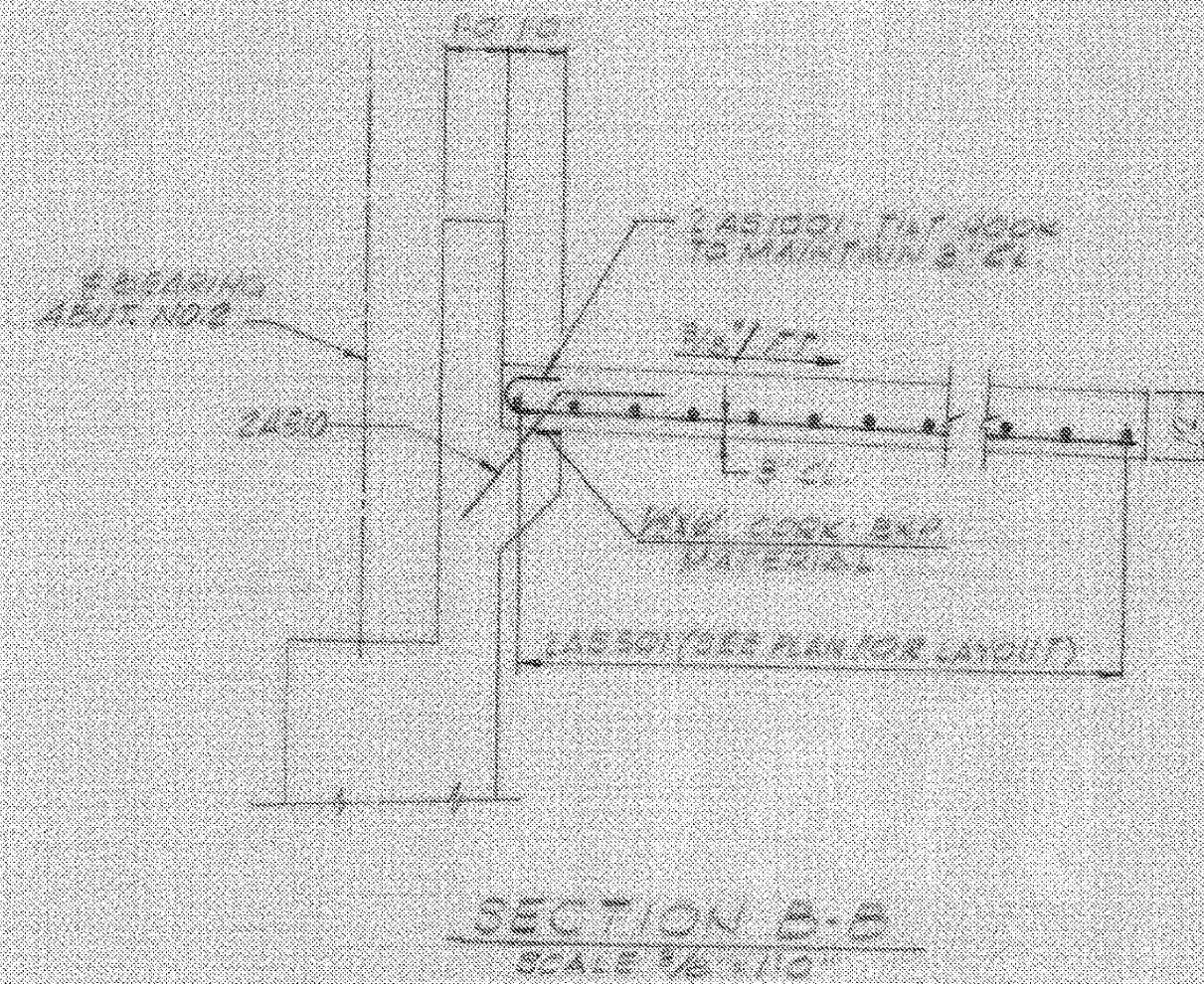
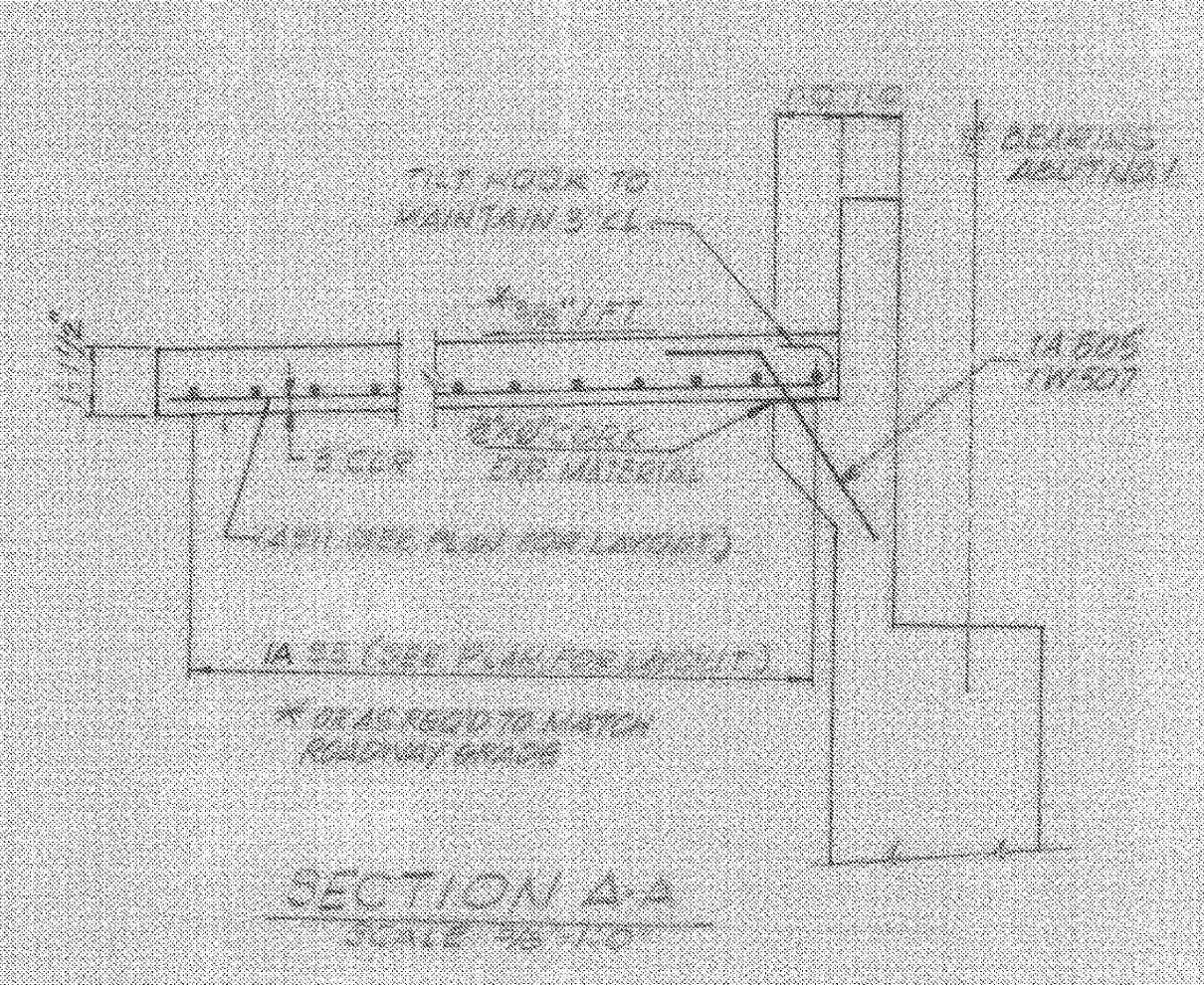
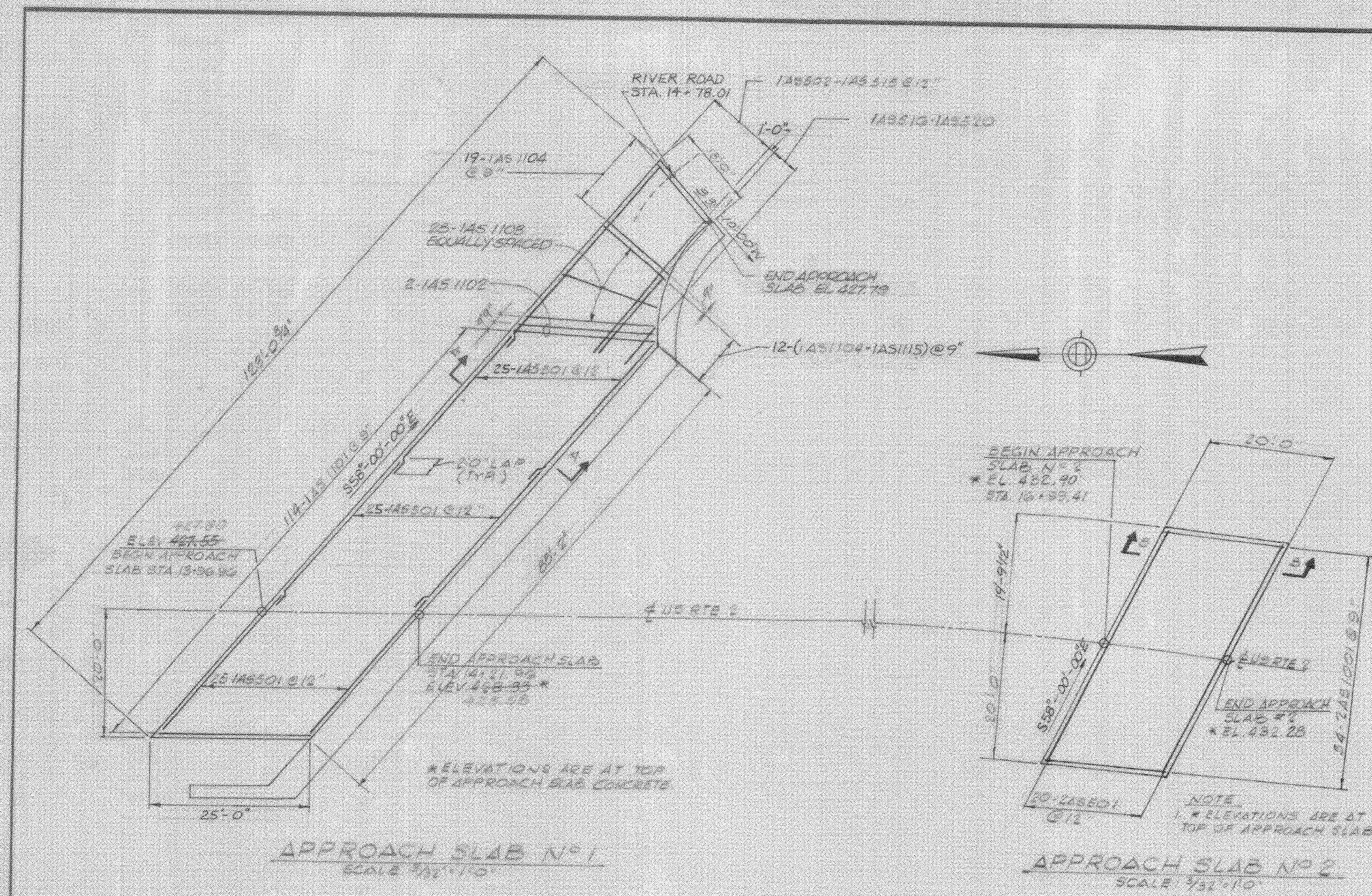
FINGER & SECTION BREAK DETAIL
SCALE 1/2\"/>



FINGER & SETTING DETAIL
SCALE 9/16\"/>

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Waterbury-Moretown
BHF MEMB (12)
Sheet 11 of 28

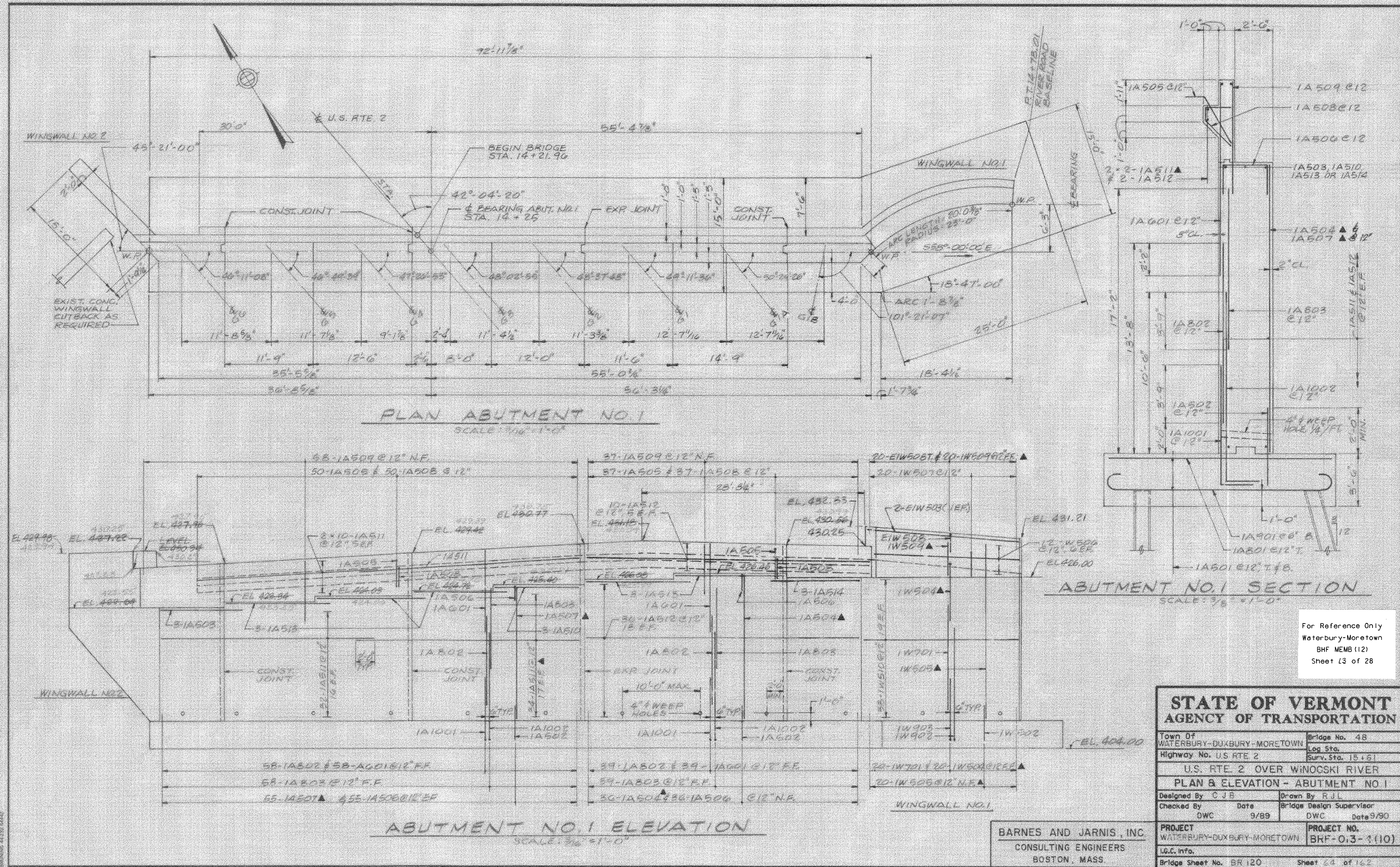
REVISED HOPPER DETAIL FINGER DETAIL 1-13-91 YG:OT		BARNES AND JARNIS, INC. CONSULTING ENGINEERS BOSTON, MASS.	
STATE OF VERMONT AGENCY OF TRANSPORTATION		Bridge No. 48 Log Sta. Surv. Sta. 15+61	
Town of WATERBURY-DUXBURY-MORETOWN Highway No. U.S. RTE. 2		U.S. RTE. 2 OVER WINOOSKI RIVER FINGER JOINT DETAILS	
Designed by LJC Checked by DWK Date 6/90		Drawn by GAT Bridge Design Supervisor DWK Date 9/90	
PROJECT WATERBURY-DUXBURY-MORETOWN L&C Info.		PROJECT NO. BRF 013 4 (10)	
Bridge Sheet No. BR117		Sheet 61 of 162	



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STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	WATERBURY-DUXBURY-MORETOWN	Bridge No.	48
Highway No.	U.S. RTE 2	Log Sta.	
		Surv. Sta.	15+61
U.S. RTE. 2 OVER WINOOSKI RIVER			
APPROACH SLAB DETAILS			
Designed By	C.J.B.	Drawn By	D.F.H.
Checked By	LJC	Bridge Design Supervisor	DWC
Date	9/89	Date	9/90
PROJECT	WATERBURY-DUXBURY-MORETOWN	PROJECT NO.	BRF-013-4(10)
Bridge Sheet No.	BR 116	Sheet	12 of 28

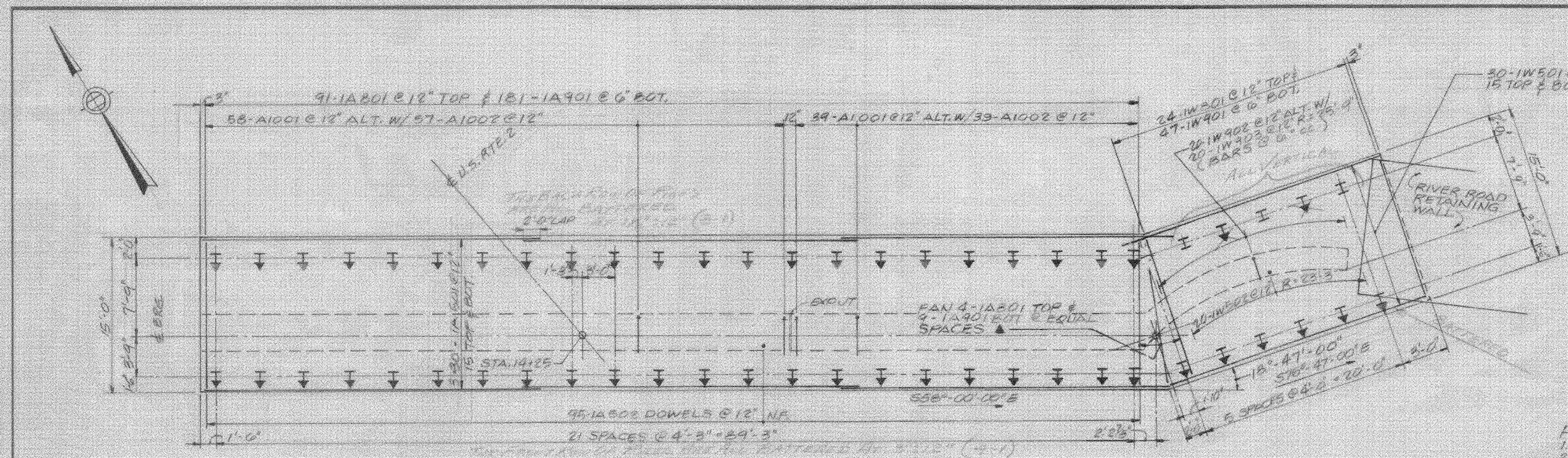
BARNES AND JARNIS, INC.
CONSULTING ENGINEERS
BOSTON, MASS.



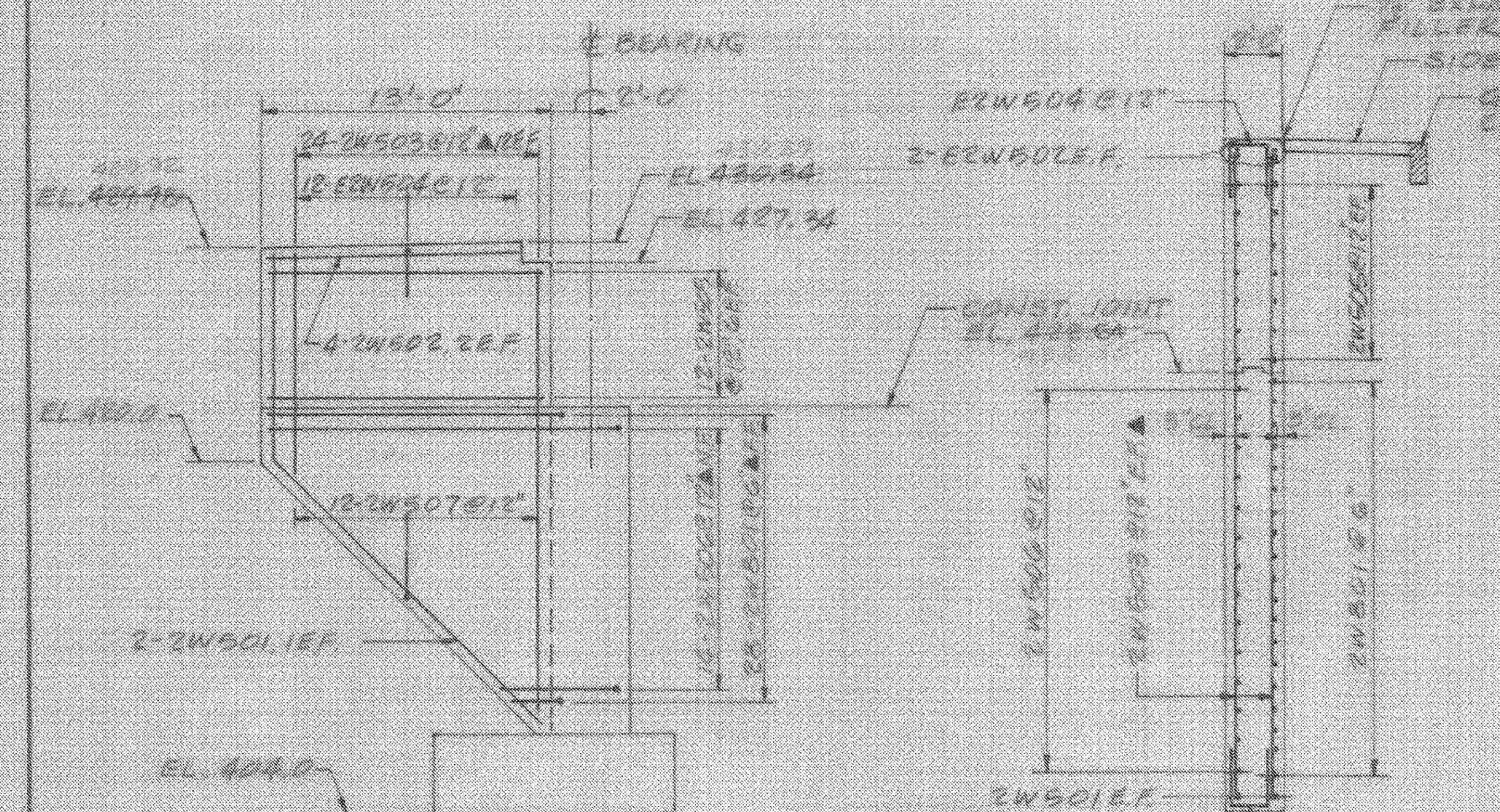
STATE OF VERMONT **AGENCY OF TRANSPORTATION**

Town Of WATERBURY-DUXBURY-MORETOWN	Bridge No. 48
Highway No. U.S. RTE 2	Log Sta.
	Surv. Sta. 15+61
U.S. RTE. 2 OVER WINOOSKI RIVER	
PLAN & ELEVATION - ABUTMENT NO. 1	
Designed By CJB	Drawn By R.J.L.
Checked By DWC	Date 9/89
	Bridge Design Supervisor DWC
	Date 9/90
PROJECT WATERBURY-DUXBURY-MORETOWN	
I.G.C. Info.	
Bridge Sheet No. BR 120	Sheet 14 of 162

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BOSTON, MASS.

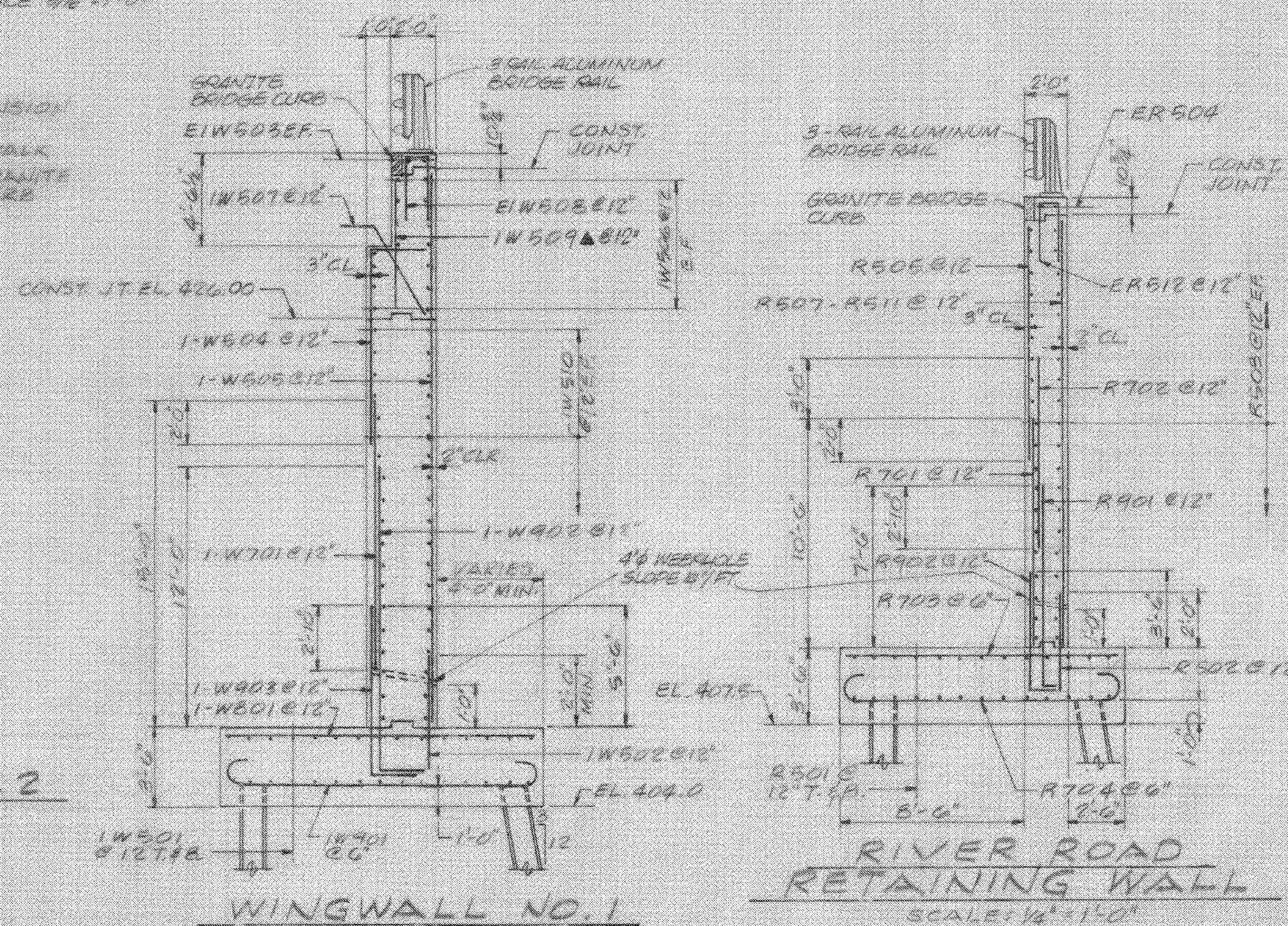


ABUTMENT NO. 1 PILE & FOOTING REIN. PLAN
SCALE 3/4" = 1'-0"



WINGWALL NO. 2
ELEVATION
SCALE 3/4" = 1'-0"

WINGWALL NO. 2
SECTION
SCALE 3/4" = 1'-0"



WINGWALL NO. 1
SECTION
SCALE 3/4" = 1'-0"

RIVER ROAD
RETAINING WALL
SCALE 1/4" = 1'-0"

PILE NOTES

1. ESTIMATED PILE LENGTH 45 FT.
2. ALL PILES TO BE CAST-IN-PLACE CONCRETE
3. DESIGN LOAD 140 KIPS
4. POINT ENDS OF ALL PILES SHALL BE CLOSED WITH A 1" THICK FLAT PLATE (SEE BR 122 FOR DETAIL)

5. I INDICATES VERTICAL PILE (IF 12" x 24" CONCRETE FILL)
6. BATTERED PILE - ARROW INDICATES DIRECTION OF BATTER AT 8/12

COFFERDAM NOTES

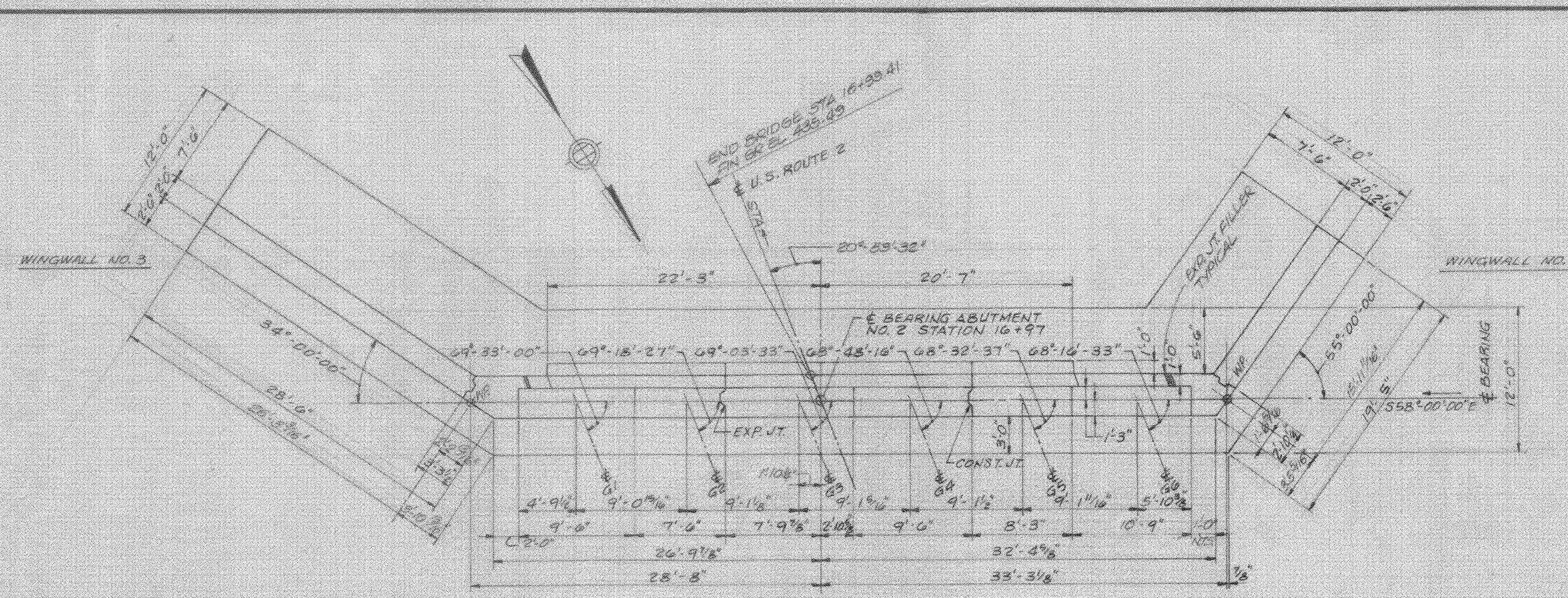
1. COFFERDAM DESIGN SHOULD BE BASED ON ORDINARY HIGH WATER ELEVATION OF 410.1 MINIMUM TOP OF COFFERDAM ELEVATION SHALL BE 421.1.
2. LIMITS OF COFFERDAM SHALL BE A MINIMUM 2'-0" OUTSIDE OF FOOTING OR AS SECURED TO CLEAR BATTERED PILES AT THE REQUIRED EMBEDMENT DEPTH.
3. A CONCRETE SEAL SHALL BE PROVIDED WITH A THICKNESS AS DETERMINED FROM THE DESIGN ORDINARY HIGH WATER ELEVATION OF 410.1.

For Reference Only
Waterbury-Moretown
BHF MEMB (12)
Sheet 14 of 28

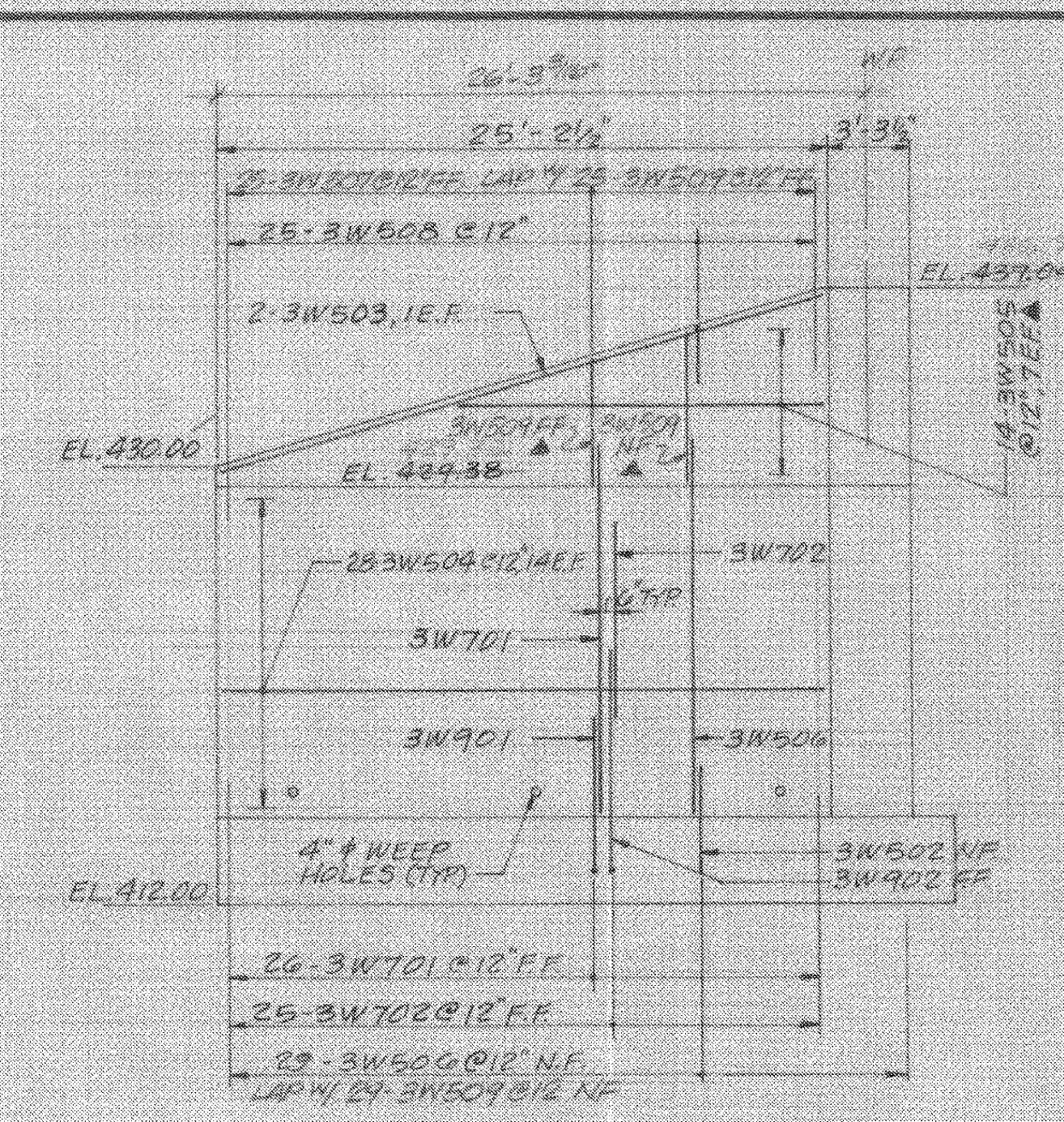
BARNES AND JARNIS, INC.
CONSULTING ENGINEERS
BOSTON, MASS.

STATE OF VERMONT AGENCY OF TRANSPORTATION

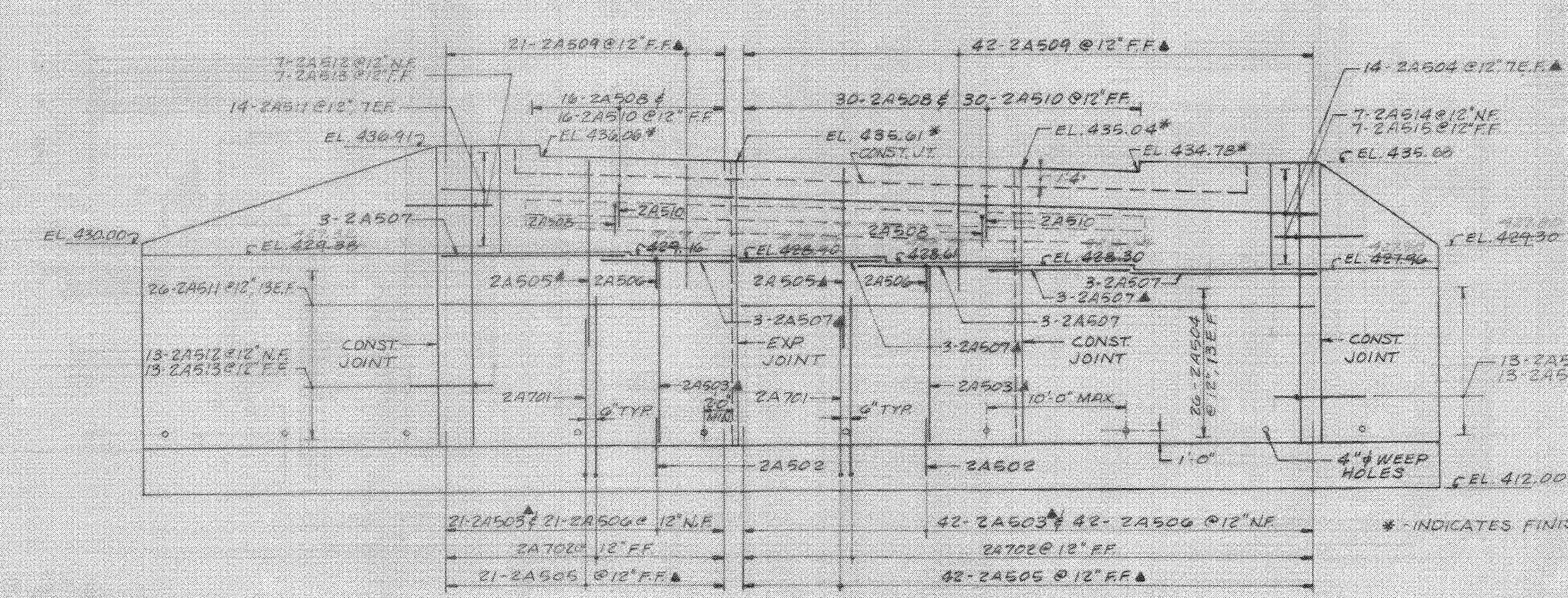
Town of WATERBURY-DUXBURY-MORETOWN	Bridge No. 48
Highway No. U.S. RTE. 2	20 Sps.
	Surv. Sta. 15+61
U.S. RTE. 2 OVER WINOOSKI RIVER	
ABUTMENT NO. 1 PILE PLAN & SECTIONS	
Designed By C.J.B.	Drawn By R.J.L.
Checked By Date	Bridge Design Supervisor
DWC 9/89	DWC Date 9/90
PROJECT WATERBURY-DUXBURY-MORETOWN	PROJECT NO. BRF-013-4(10)
166.170	
Bridge Sheet No. BR 121	Sheet 45 of 142



PLAN ABUTMENT NO. 2
SCALE: 3/16" = 1'-0"



**WINGWALL NO. 3
ELEVATION**
SCALE: 3/16" = 1'-0"



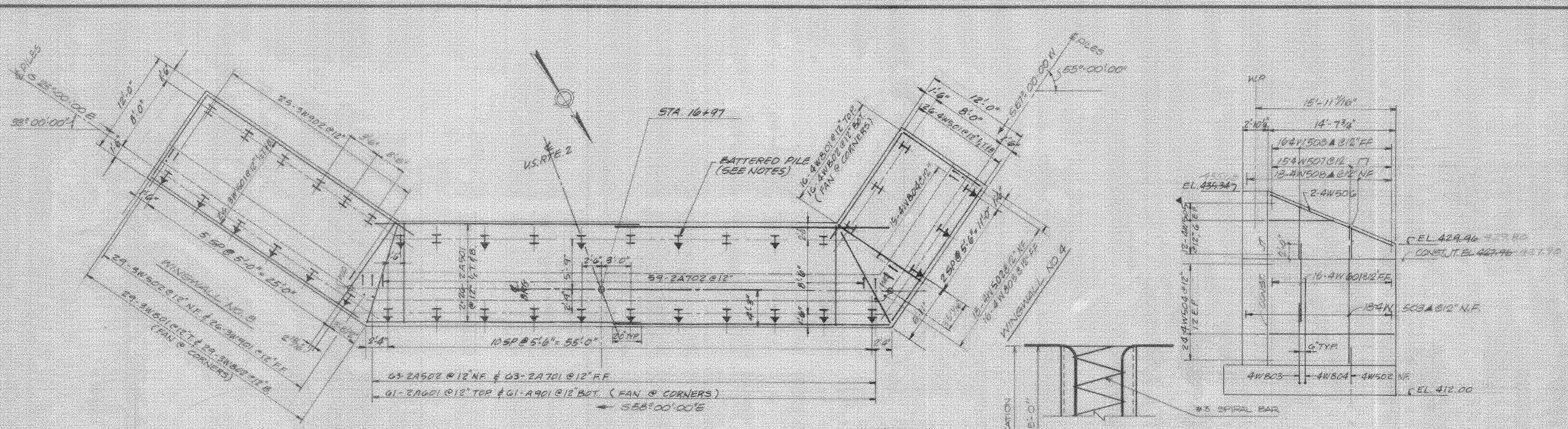
ABUTMENT NO. 2 ELEVATION
SCALE: 3/16" = 1'-0"

NOTE: BRIDGE SEAT ELEVATIONS COVERED
ON DWG 16 EXTRA THICKNESS OF
BEARING DEVICES.

For Reference Only
Waterbury-Moretown
BHF MEMB (12)
Sheet 15 of 28

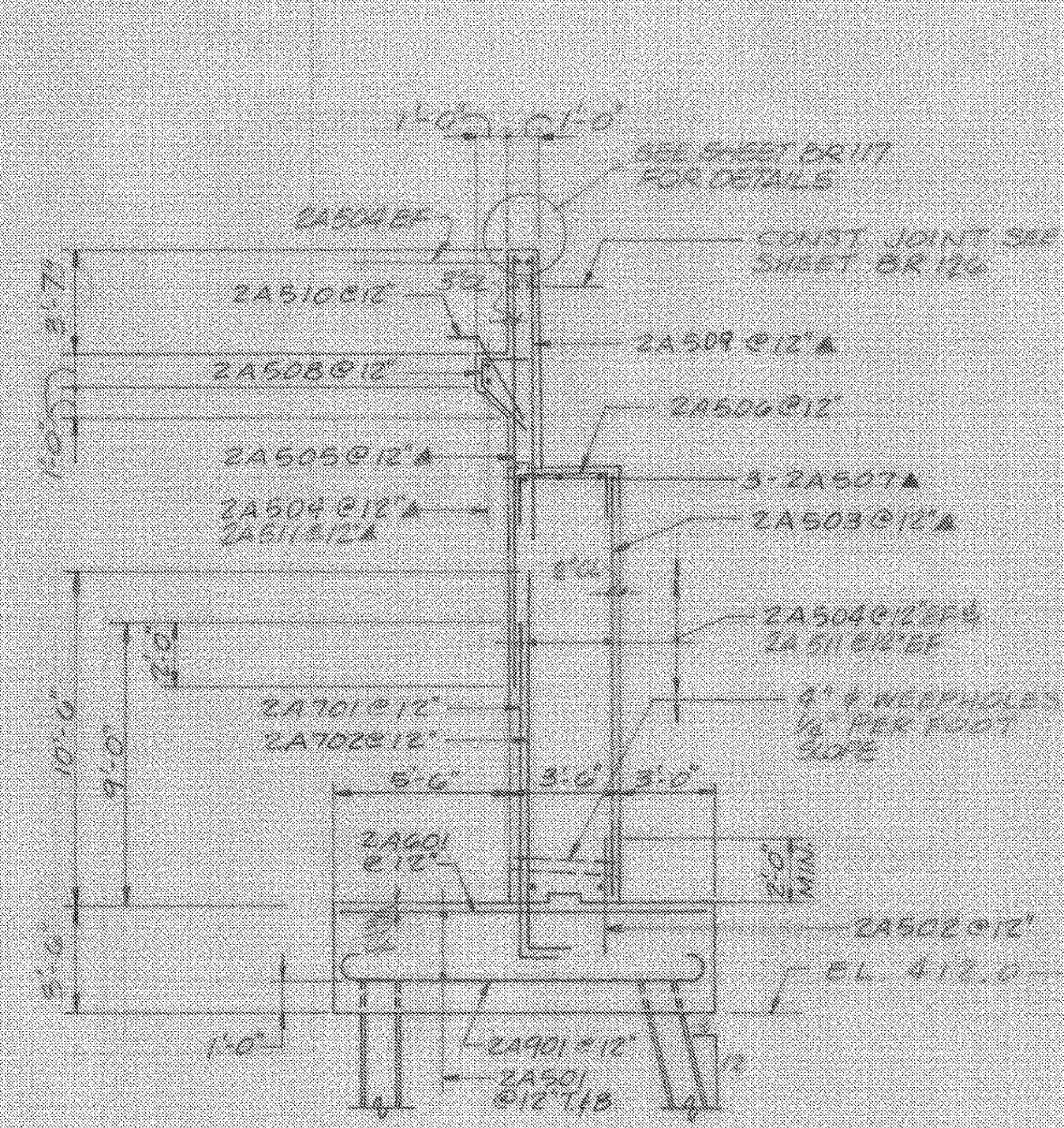
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town of WATERBURY-DUXBURY-MORETOWN		Bridge No. 48	
Highway No. U.S. RTE 2		Log Sta. Surv. Sta. 15+61	
U.S. RTE 2 OVER WINOOSKI RIVER			
PLAN & ELEVATION - ABUTMENT NO. 2			
Designed By CJB	Date	Drawn By RJL	Date
Checked By DWC	Date 9/89	Bridge Design Supervisor DWC	Date 9/90
PROJECT WATERBURY-DUXBURY-MORETOWN		PROJECT NO. BRF-013-4(10)	
L&C info.		Bridge Sheet No. BR 123	
Sheet 15 of 28		Sheet 17 of 182	

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BOSTON, MASS.

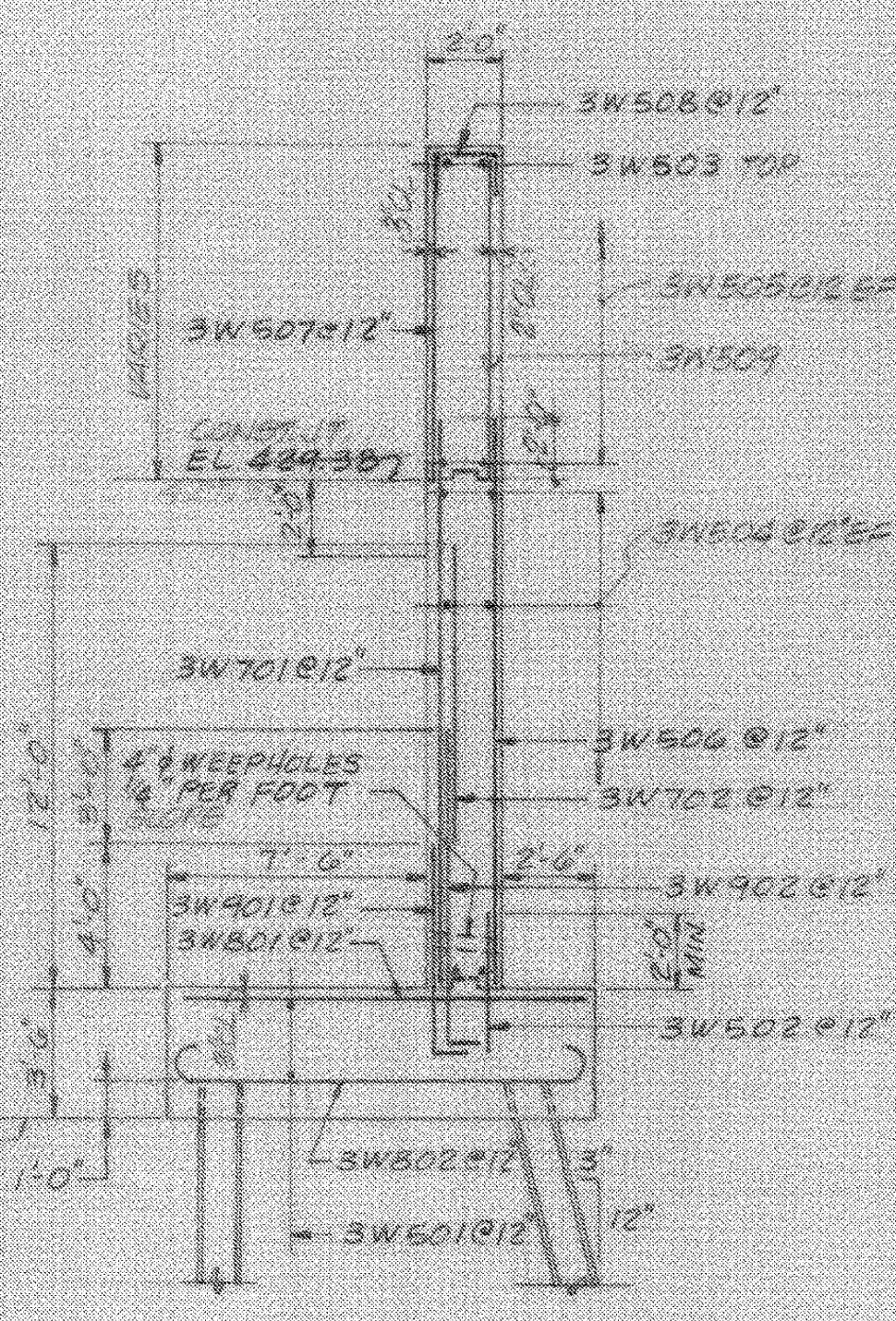


ABUTMENT NO. 2 PILE & FOOTING REINF. PLAN
SCALE: 3/16" = 1'-0"

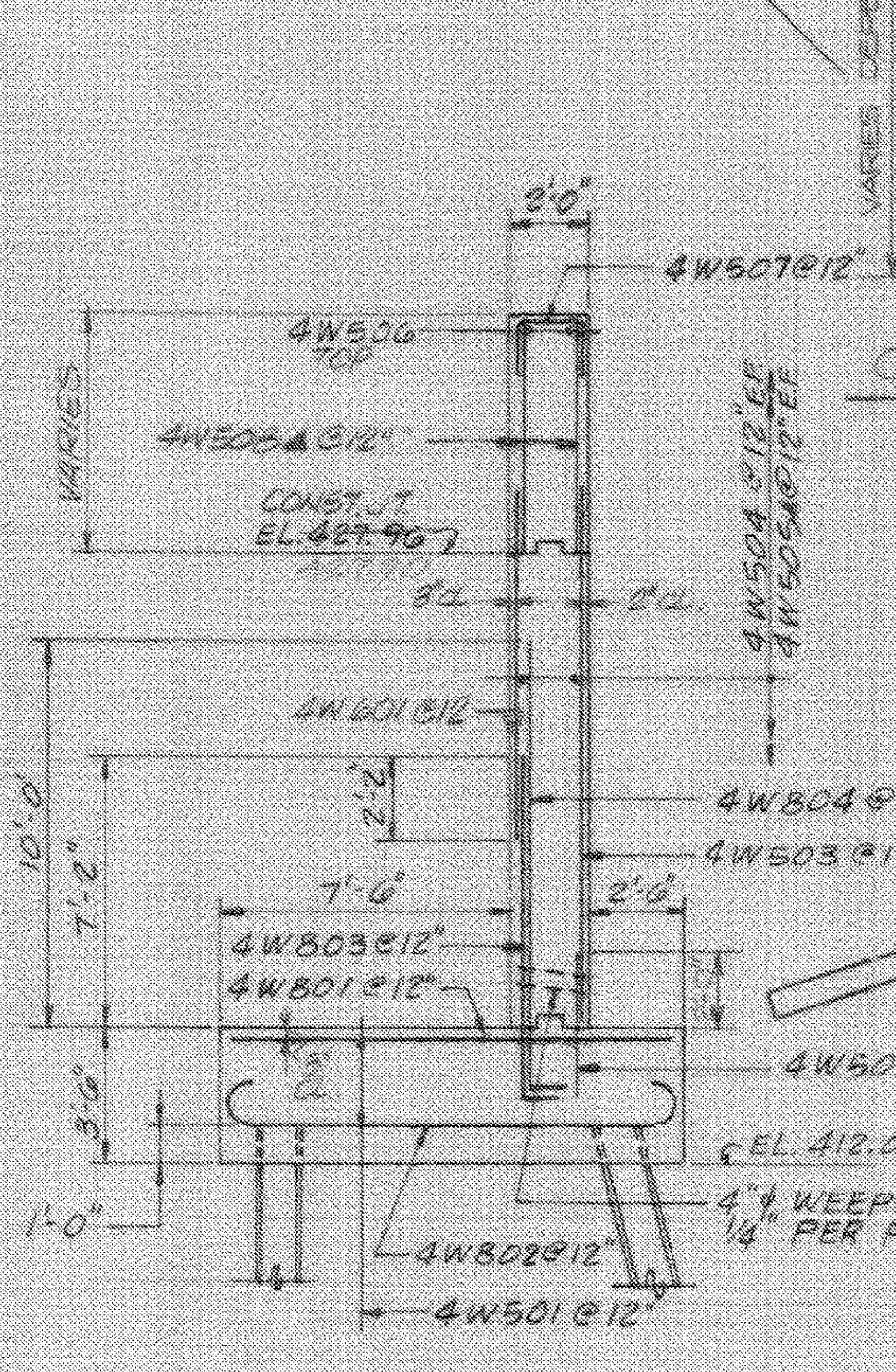
WINGWALL NO. 4
ELEVATION
SCALE: 3/16" = 1'-0"



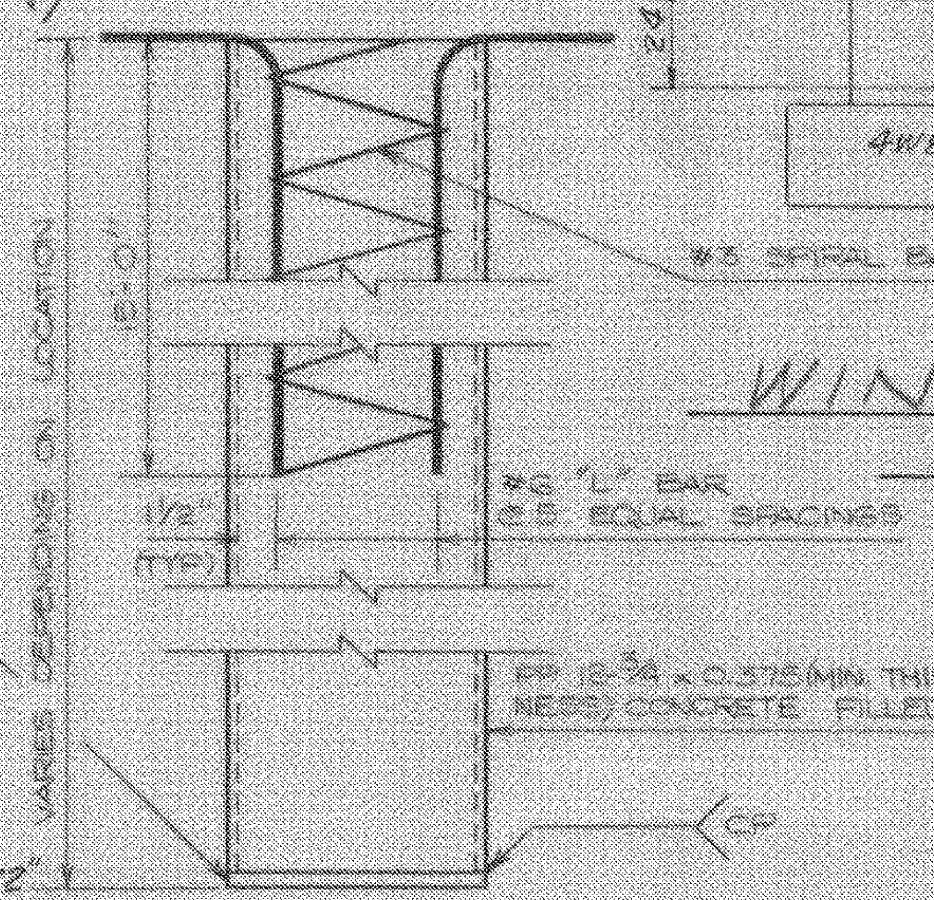
ABUTMENT NO. 2
SECTION
SCALE: 1/4" = 1'-0"



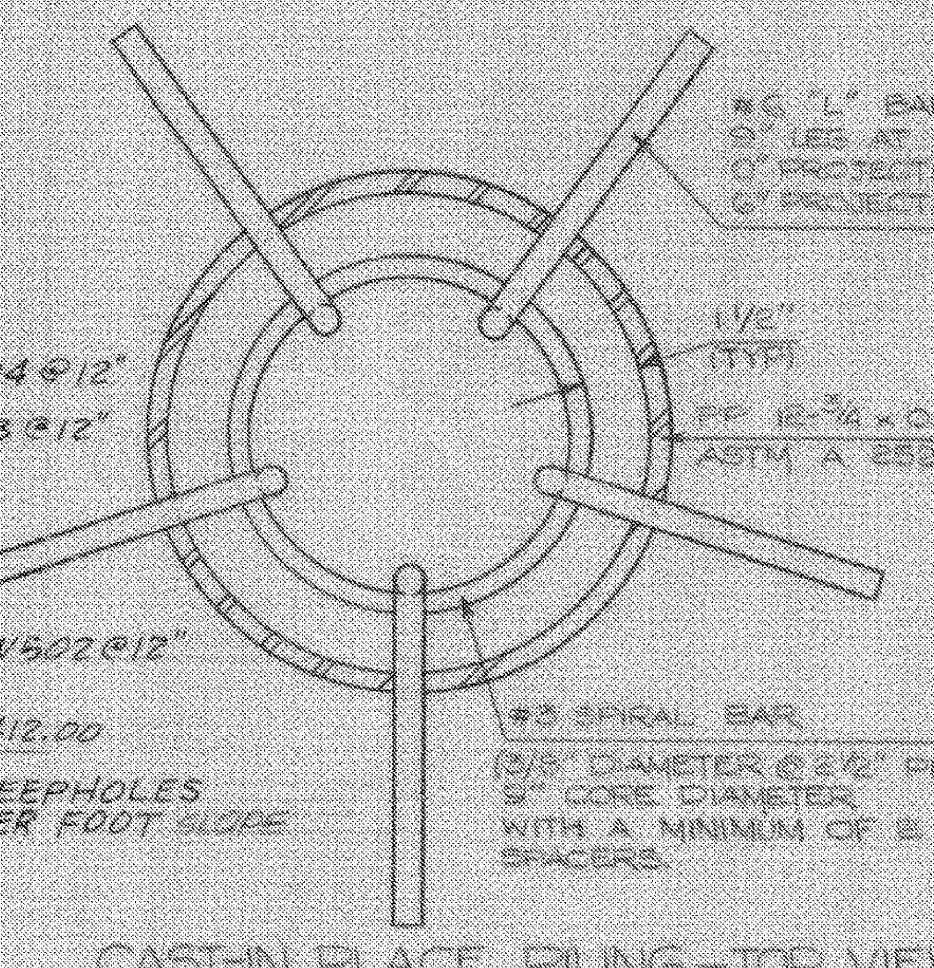
WINGWALL NO. 3
SECTION
SCALE: 1/4" = 1'-0"



WINGWALL NO. 4
SECTION
SCALE: 1/4" = 1'-0"



CAST-IN PLACE PILING - ELEVATION
SCALE: 1/2" = 1'-0"



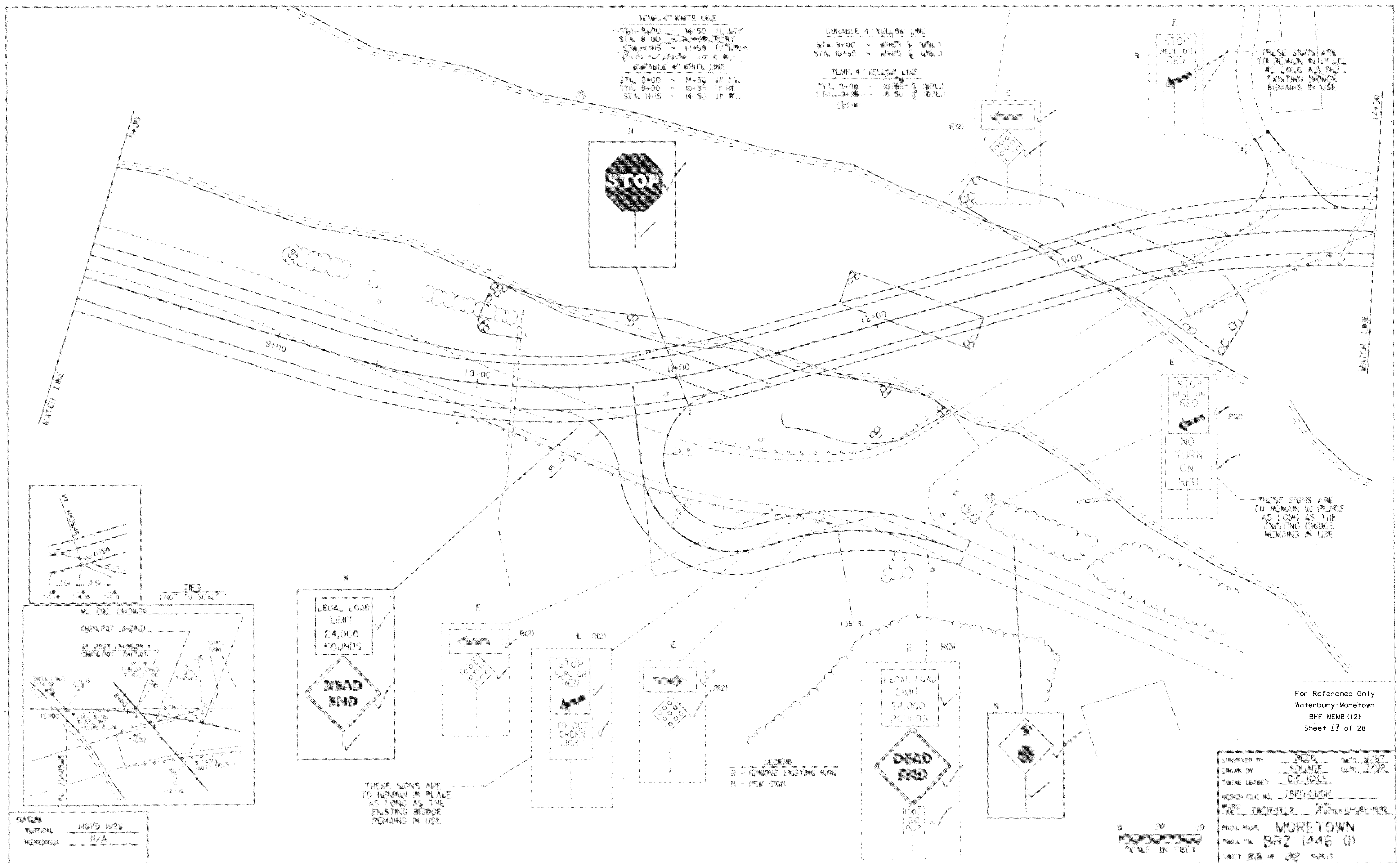
CAST-IN PLACE PILING - TOP VIEW
SCALE: 1/4" = 1'-0"

- PILE NOTES**
1. ESTIMATED PILE LENGTH TO FT.
 2. ALL PILES TO BE CAST-IN PLACE CONCRETE
 3. DESIGN LOAD - 140 KIPS
 4. POINT ENDS OF ALL PILES SHALL BE CLOSED WITH A 1" THICK PLATE (SEE DETAIL AT LEFT)
 5. I INDICATES VERTICAL PILE (PP 12-3/4" x 0.375" CONCRETE FILLED)
 6. B INDICATES BATTERED PILE - ARROW INDICATES DIRECTION OF BATTER AT 3:12
- NOTE: SEE BR SHEET 121 FOR COFFERDAM NOTES.

For Reference Only
Waterbury-Moretown
BHF MEMB (12)
Sheet 10 of 28

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town of WATERBURY-DUXBURY-MORETOWN	Bridge No. 48	Log Sta.	Surf. Sta. 15+61
Highway No. U.S. RTE. 2	U.S. RTE. 2 OVER WINOOSKI RIVER	ABUTMENT NO. 2 PILE PLAN & SECTIONS	
Designed By CJB	Drawn By PJT	Checked By DW	Date 9/89
Bridge Design Supervisor	DWC	Date 9/90	
PROJECT WATERBURY-DUXBURY-MORETOWN	PROJECT NO. BRF-013-4(10)	LOG. INFO.	
Bridge Sheet No. BR 124	Sheet 10 of 10		

BARNES AND JARNIS, INC.
CONSULTING ENGINEERS
BOSTON, MASS.



TEMP. 4" WHITE LINE
STA. 8+00 ~ 14+50 11' LT.
STA. 8+00 ~ 10+35 11' RT.
STA. 11+5 ~ 14+50 11' RT.
DURABLE 4" WHITE LINE
STA. 8+00 ~ 14+50 11' LT.
STA. 8+00 ~ 10+35 11' RT.
STA. 11+5 ~ 14+50 11' RT.

DURABLE 4" YELLOW LINE
STA. 8+00 ~ 10+55 (DBL.)
STA. 10+95 ~ 14+50 (DBL.)
TEMP. 4" YELLOW LINE
STA. 8+00 ~ 10+55 (DBL.)
STA. 10+95 ~ 14+50 (DBL.)
14+50

THESE SIGNS ARE TO REMAIN IN PLACE AS LONG AS THE EXISTING BRIDGE REMAINS IN USE

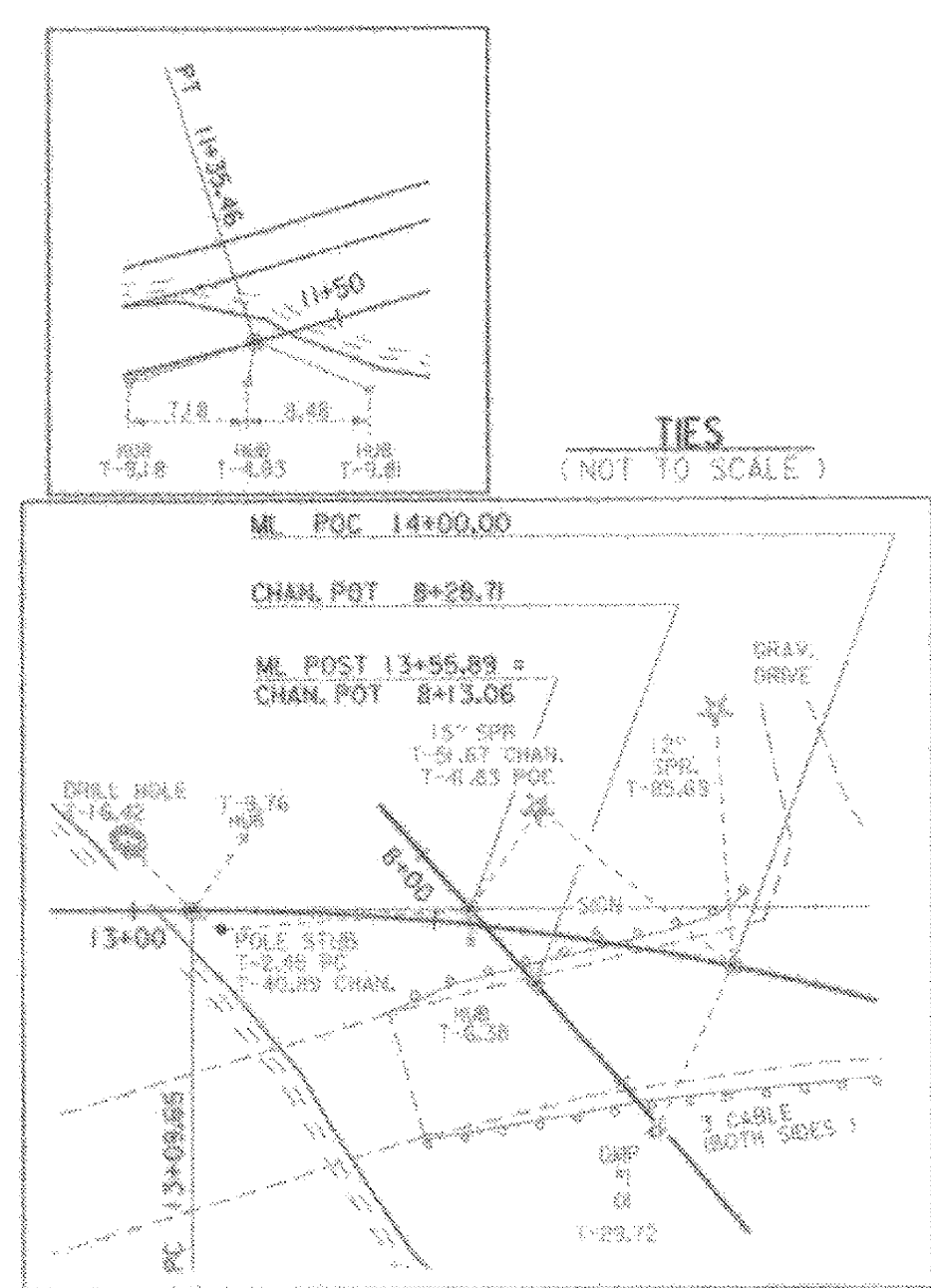
THESE SIGNS ARE TO REMAIN IN PLACE AS LONG AS THE EXISTING BRIDGE REMAINS IN USE

THESE SIGNS ARE TO REMAIN IN PLACE AS LONG AS THE EXISTING BRIDGE REMAINS IN USE

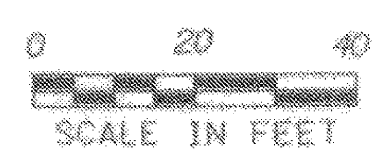
LEGEND
R - REMOVE EXISTING SIGN
N - NEW SIGN

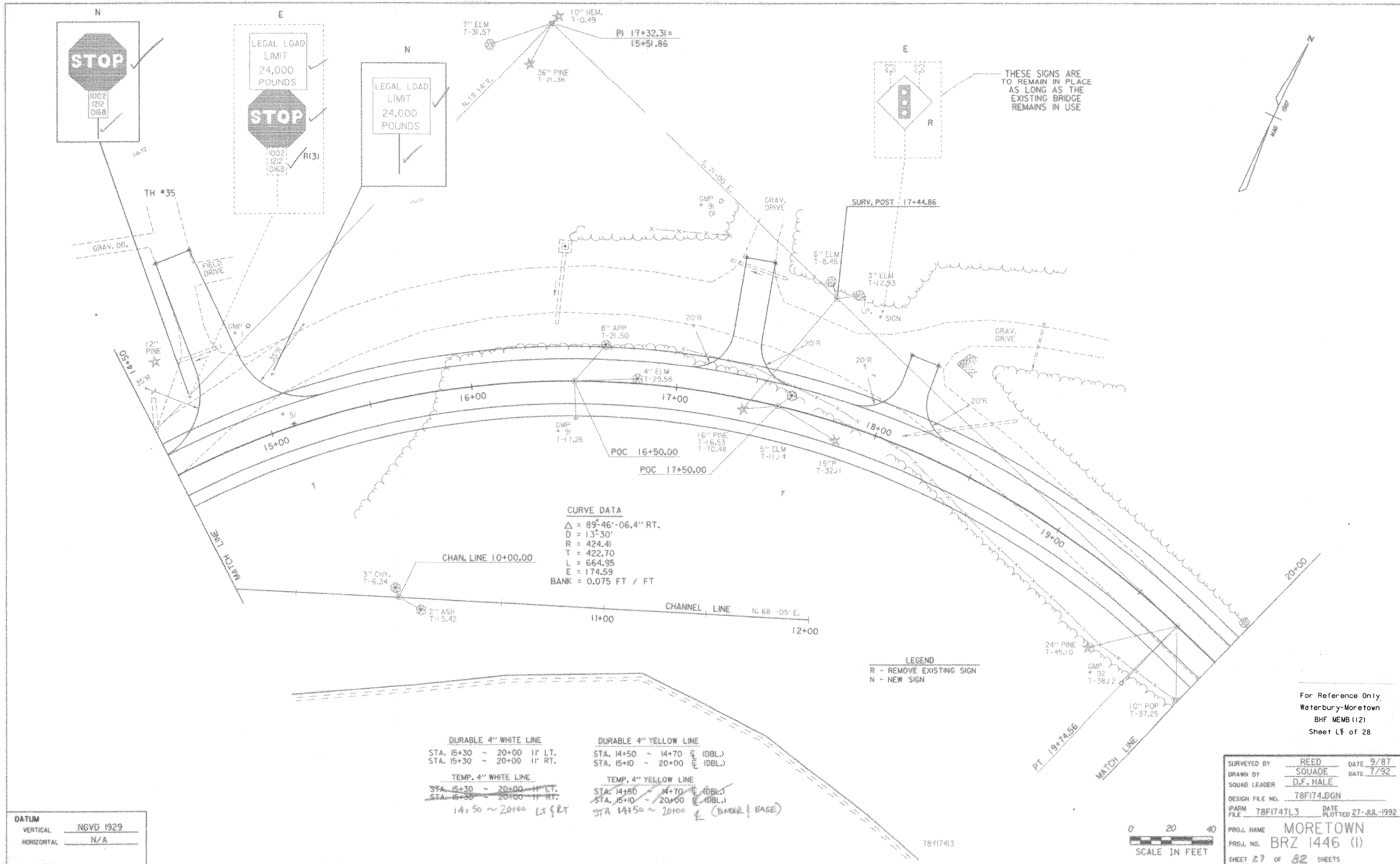
For Reference Only
Waterbury-Moretown
BHF MEMB (12)
Sheet 17 of 28

SURVEYED BY	REED	DATE	9/87
DRAWN BY	SQUADE	DATE	7/92
SQUAD LEADER	D.F. HALE		
DESIGN FILE NO.	78F174.DGN		
FILE	78F174TL2	DATE PLOTTED	10-SEP-1992
PROJ. NAME	MORETOWN		
PROJ. NO.	BRZ 1446 (I)		
SHEET	26 OF 82	SHEETS	

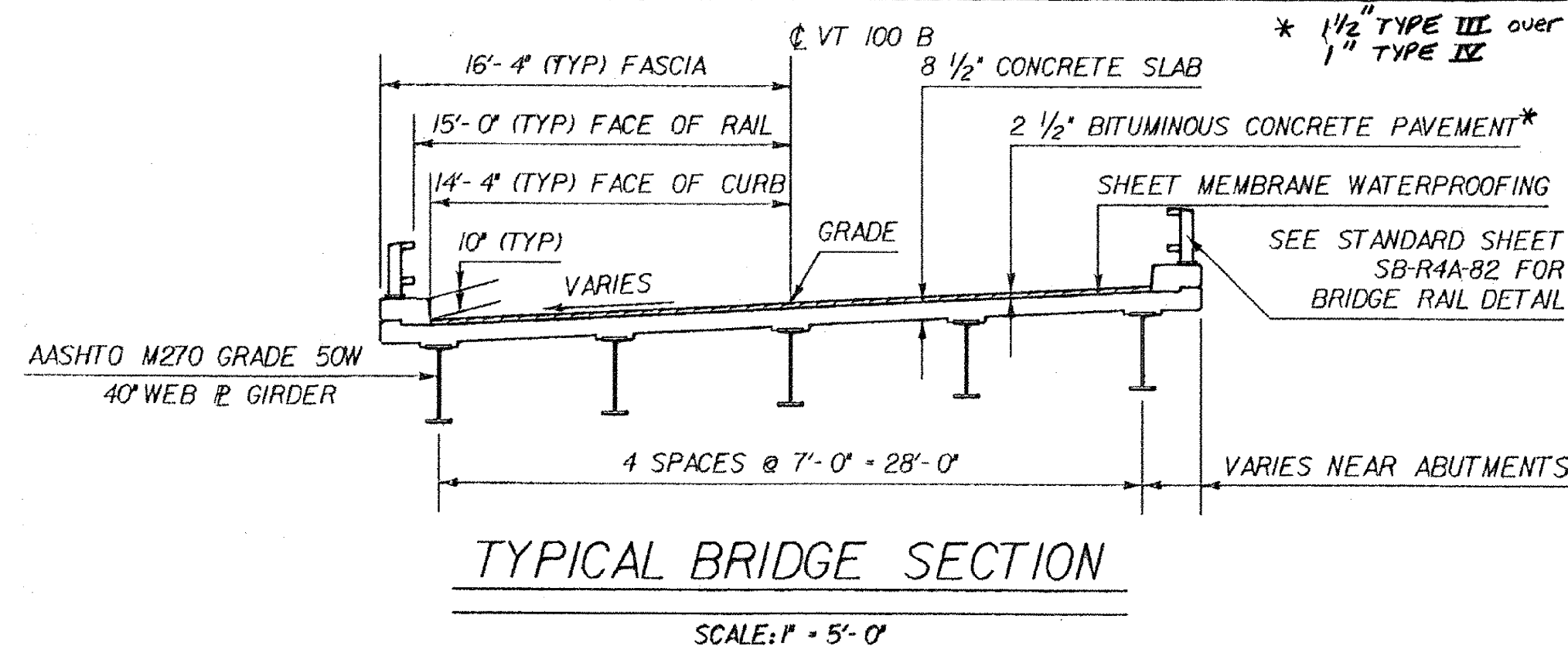


DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A



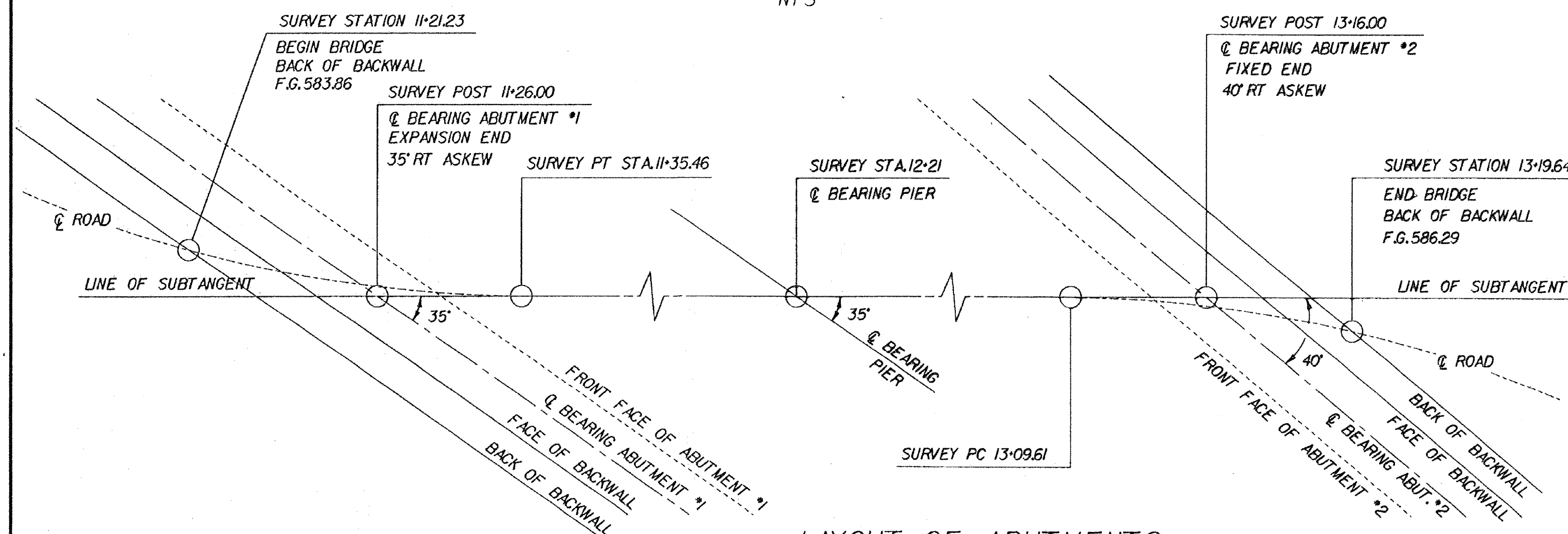
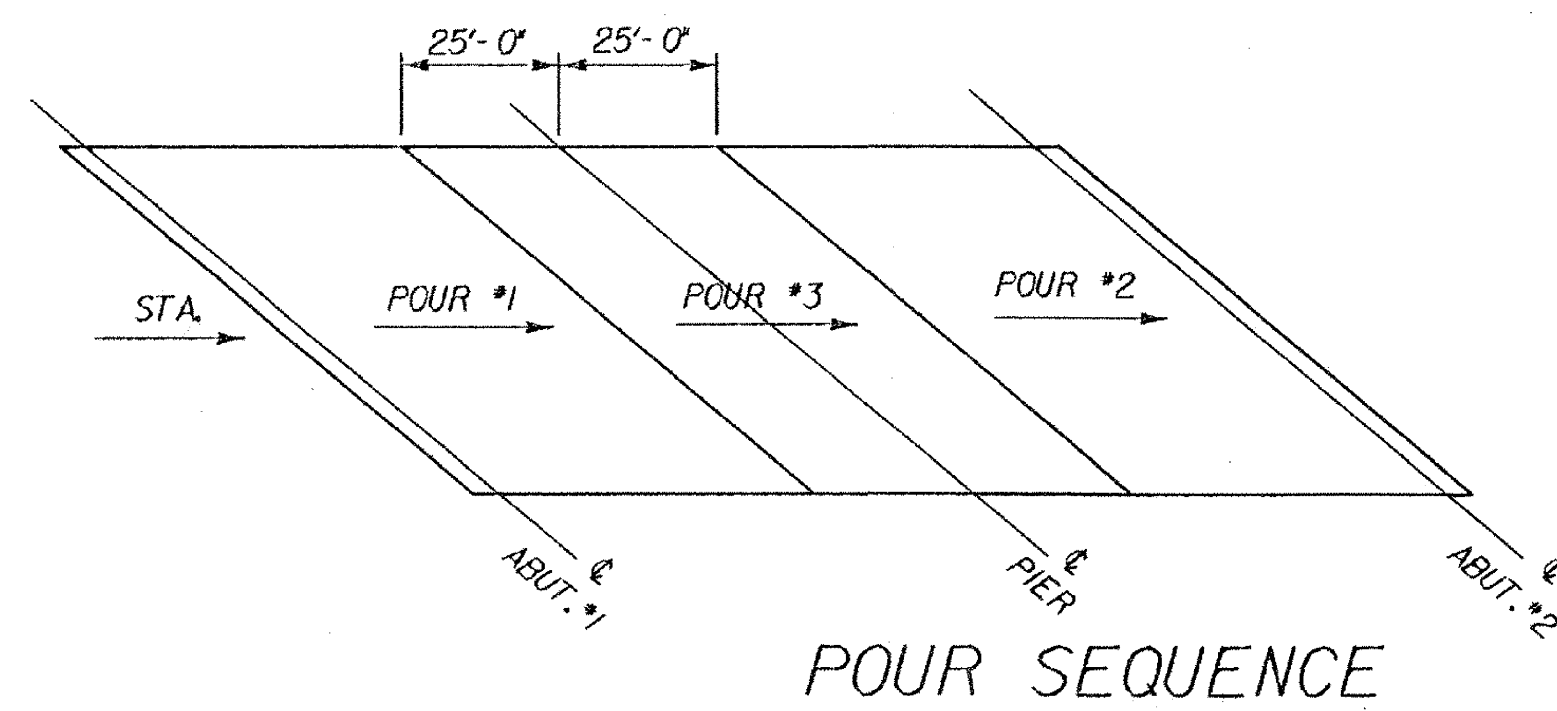


LIST OF SHEETS	
BR100	PRELIMINARY INFORMATION
BR101	BRIDGE QUANTITIES
BR102	GENERAL NOTES
BR103	PLAN & ELEVATION
BR104-106	BORING INFORMATION
BR107	TYPICAL SECTION & DECK REINFORCING PLAN
BR108	FRAMING PLAN & GIRDER ELEVATION
BR109	DIAPHRAGM & SPLICE DETAILS
BR110	APPROACH SLAB DETAILS
BR111	BEARING DETAILS
BR112	ABUTMENT 2 BEARING DETAILS & BEARING NOTES
BR113	MISCELLANEOUS DETAILS
BR114	ABUTMENT 1 DETAILS
BR115	ABUTMENT 2 DETAILS
BR116	FOOTING REINFORCING STEEL
BR117	PILE LAYOUT
BR118	WINGWALL 1 DETAILS
BR119	WINGWALL 2,3,4 DETAILS
BR120	BACKWALL DETAILS
BR121	PIER DETAILS
BR122	EXPANSION JOINT DETAILS
BR123	EXPANSION JOINT PLAN VIEW
BR124	END BRIDGE RAIL DETAIL
BR125	SCUPPER DETAILS
BR126-127	REINFORCING STEEL SCHEDULE
BR128-133	CHANNEL SECTIONS



NOTES

1. THE SEQUENCE OF POURS 1 & 2 MAY BE INTERCHANGED. A MINIMUM OF 96 HOURS BETWEEN POURS IS REQUIRED.
2. IF APPROVED BY THE ENGINEER, POURS 1 & 2 OR ALL SECTIONS MAY BE POURED THE SAME DAY PROVIDED THE MAXIMUM TIME OF THE POUR IS 8 HOURS AND THE INDICATED POURING SEQUENCE IS FOLLOWED AND A RETARDING ADMIXTURE IS USED SO THAT THE DECK CONCRETE WILL NOT SET UP UNTIL ALL THE POUR HAS BEEN MADE. THE RETARDING ADMIXTURE WILL BE SUBSIDIARY TO THE ITEM 501.22, CONCRETE CLASS A.
3. ALL POURS SHALL START FROM THE LOW END (ELEVATION WISE).
4. IF ALL SECTIONS ARE NOT POURED IN THE SAME DAY, USE TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINTS. (SEE SHEET BR113 FOR DETAILS.)
5. BRIDGE DECK CONCRETE SHALL BE DEPOSITED AND SCREEDED PARALLEL TO THE CENTERLINE OF BEARING.



LAYOUT OF ABUTMENTS

NOT TO SCALE

EXISTING STRUCTURE

1. STRUCTURE TYPE: SINGLE SPAN STEEL OVERALL LENGTH: 125.0' INVENTORY RATING: -----
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS: 120.0' OVER 105.0'
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM: 105.0' VERTICAL CLEARANCE ABOVE STREAMBED: 11.0'
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM): 15.5' WATER SURFACE ELEVATION @ 0.00: 571.0'
5. WATER SURFACE ELEVATION @ 0.23: 569.5' WATER SURFACE ELEVATION @ 0.00: 571.0'
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD: YEAR 1927 ESTIMATED DISCHARGE: -----
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? YES IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? -----
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL: TIMBER PILES TO LEDGE
9. DISPOSITION OF STRUCTURE: REMOVE EXISTING STRUCTURE

NEW STRUCTURE

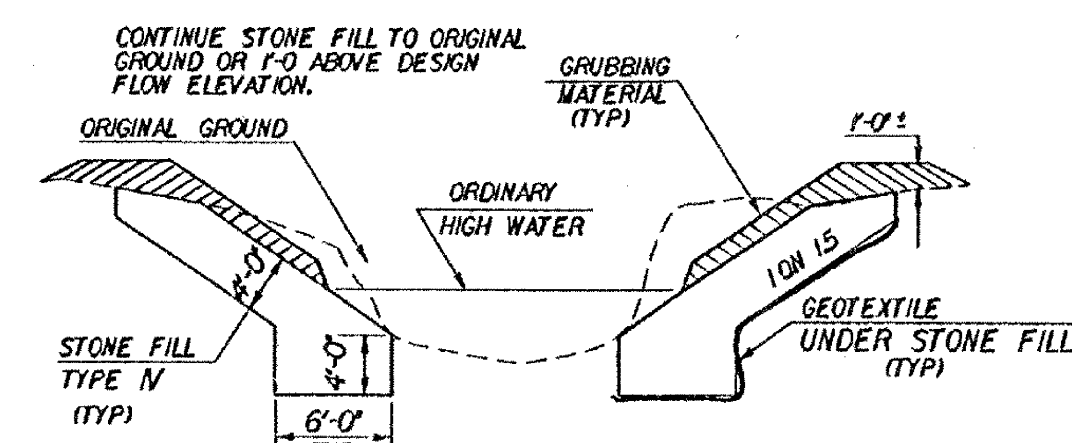
1. STRUCTURE TYPE: 2 SPAN CONTINUOUS PLATE GIRDER OVERALL LENGTH: 198.4'
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS: 2 SPANS @ 95.0'
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER: 15.5'
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM: 95.5' TOTAL 195.0'
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM): 1630' SQ. FT.
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? -----

1. Q 2.33 4000 CFS WATER ELEVATION 569.5 VELOCITY 7.3 FPS
- Q 10 9400 CFS WATER ELEVATION 573.0 VELOCITY 10.2 FPS
- Q 25 12600 CFS WATER ELEVATION 574.7 VELOCITY 11.7 FPS
- Q 50 15000 CFS WATER ELEVATION 575.8 VELOCITY 12.6 FPS
- Q 100 17800 CFS WATER ELEVATION 577.0 VELOCITY 13.4 FPS
2. DRAINAGE AREA: 131.50 SQ. MI. CHARACTER OF TERRAIN: ROLLING HILLS TO MOUNTAINOUS
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? NO
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? YES IS ORDINARY RISE RAPID? YES
5. NATURE OF NATURAL STREAMBED: GRAVEL AND COBBLES
6. ESTIMATED SCOUR DEPTH: 8.0' PER COMMENT ON: DRIFT MODERATE ICE HEAVY
7. WILL ALL WATER PASS THROUGH NEW STRUCTURE? YES IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR? -----
8. ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF: -----
9. VERTICAL CLEARANCE ABOVE 0.100 = 1.0' LIMITED BY LOW STEEL ELEVATION
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO IF YES, DESCRIBE: -----
11. AVERAGE DAILY LOW FLOW: 126 CFS DEPTH: 10' AVERAGE DAILY HIGH FLOW: 2900 CFS DEPTH: 4.0'
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED: STONE FILL TYPE IV
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE: 2500' SPAN 20' WATERWAY AREA OF FULL OPENING: 280' 0
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE: 10000' SPAN 111' WATERWAY AREA OF FULL OPENING: 1554' 0

1. ALLOWABLE STRESSES: DESIGN LIVE LOAD AASHTO: HS 20 ON LEDGE: -----
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL: ----- ESTIMATED LENGTH: SEE BORING LOGS
3. ALLOWABLE LOAD FOR PILING: 2 KSI TYPE: HP 14X73
4. ALLOWABLE STRESS FOR STRUCTURAL STEEL AASHTO M 270, GRADE 50W TENSION: 27 KSI
5. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION: 24 KSI COMPRESSION: 20 KSI
6. ALLOWABLE STRESS FOR CONCRETE CLASS A: $f_c = 3.5$ KSI $f_s = 1.4$ KSI CLASS B: $f_c = 3.5$ KSI $f_s = 1.4$ KSI

1. IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE: YES 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



TYPICAL CHANNEL SECTION

For Reference Only
Waterbury-Moretown
BHF MEMB (12)
Sheet 13 of 28

LOAD RATING (TONS)							
STRESS LEVELS	TRUCK				TRAILER		
	H	HS	352	6 AXLE	3A, STR.	4A, STR.	5A, SEM
INVENTORY	42	49					
POSTED	61	70	81		64	64	74
OPERATING	61	70	81		64	64	74
0.55 $F_y = 27$							
0.67 $F_y = 33.5$							
0.75 $F_y = 37.5$							

NO.	DESCRIPTION	BY & DATE
-----	-------------	-----------

STATE OF VERMONT AGENCY OF TRANSPORTATION

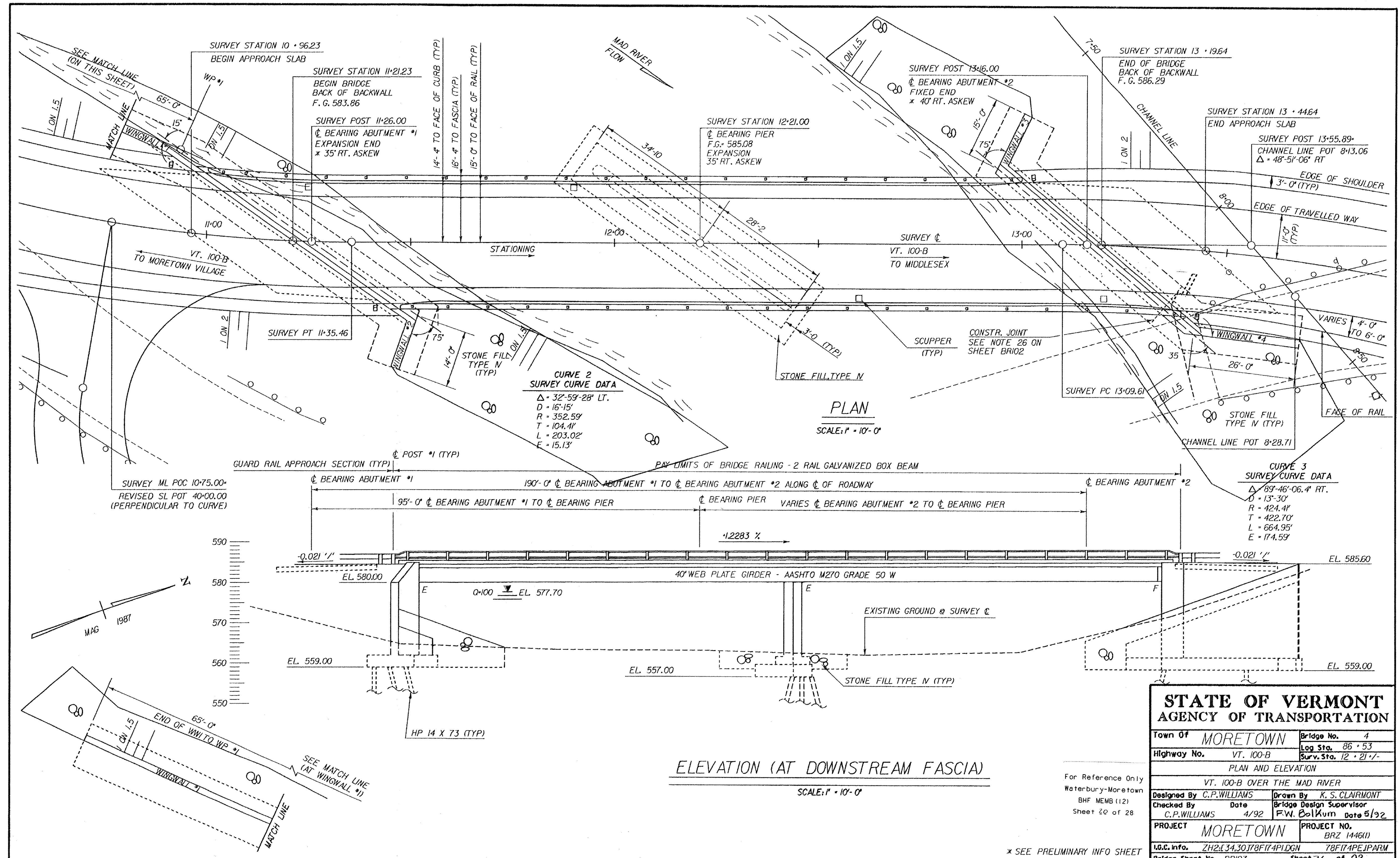
Town Of: MORETOWN Bridge No.: 4
Highway No.: VT. 100-B Log Sta.: 86+53
Surv. Sta.: 12+21.7

PRELIMINARY INFORMATION
VT. 100-B OVER THE MAD RIVER

Designed By: C.P. WILLIAMS Drawn By: T.A. SUMNER
Checked By: C.P. WILLIAMS Date: 4/92 Bridge Design Supervisor: F.Y. BOLKUM Date: 5/92

PROJECT: MORETOWN PROJECT NO.: BRZ 1446(1)

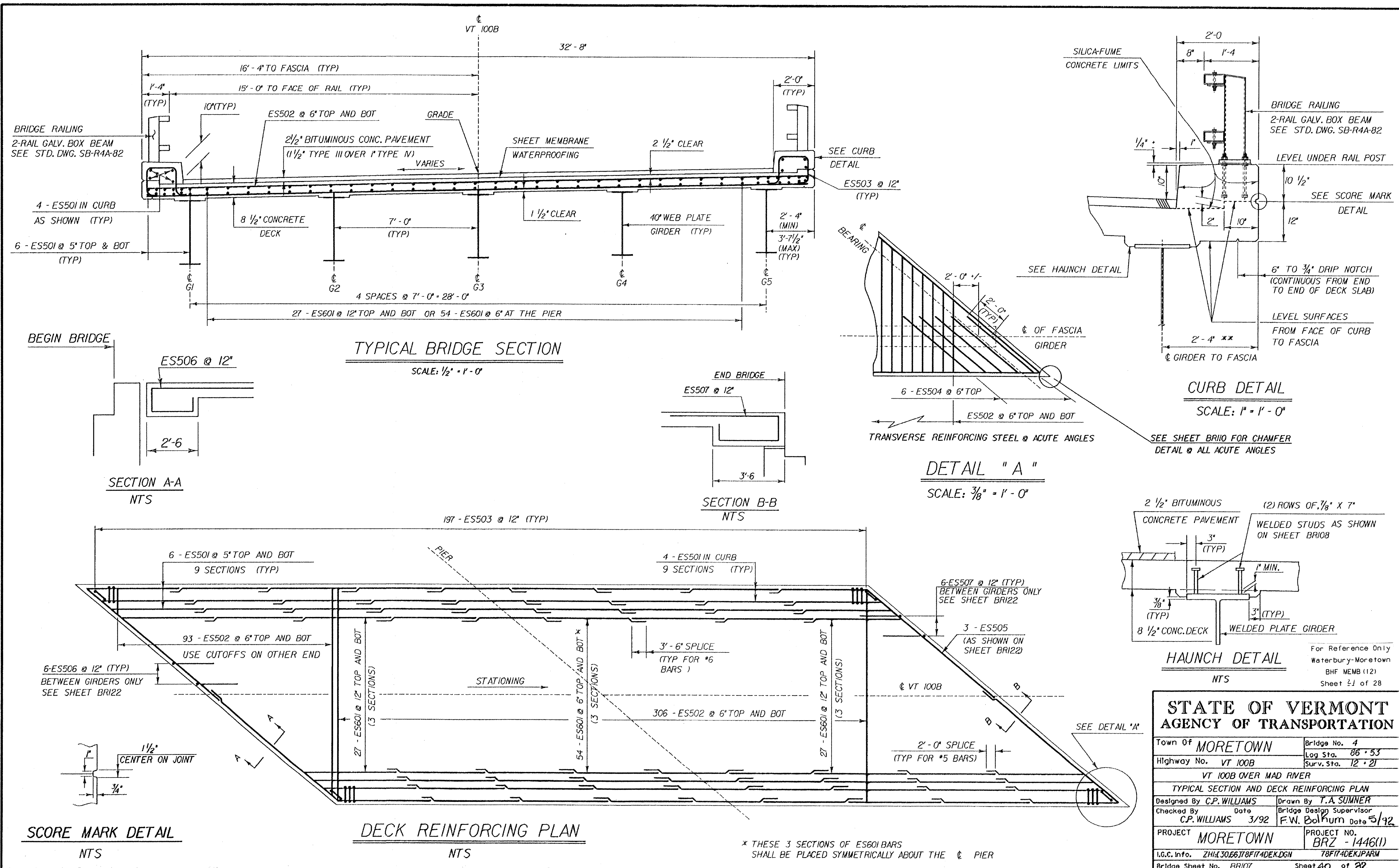
LOG. Info.: ZH2C343078F174PLDGN 78F174PLDGN
Bridge Sheet No.: BR100 Sheet: 33 of 82



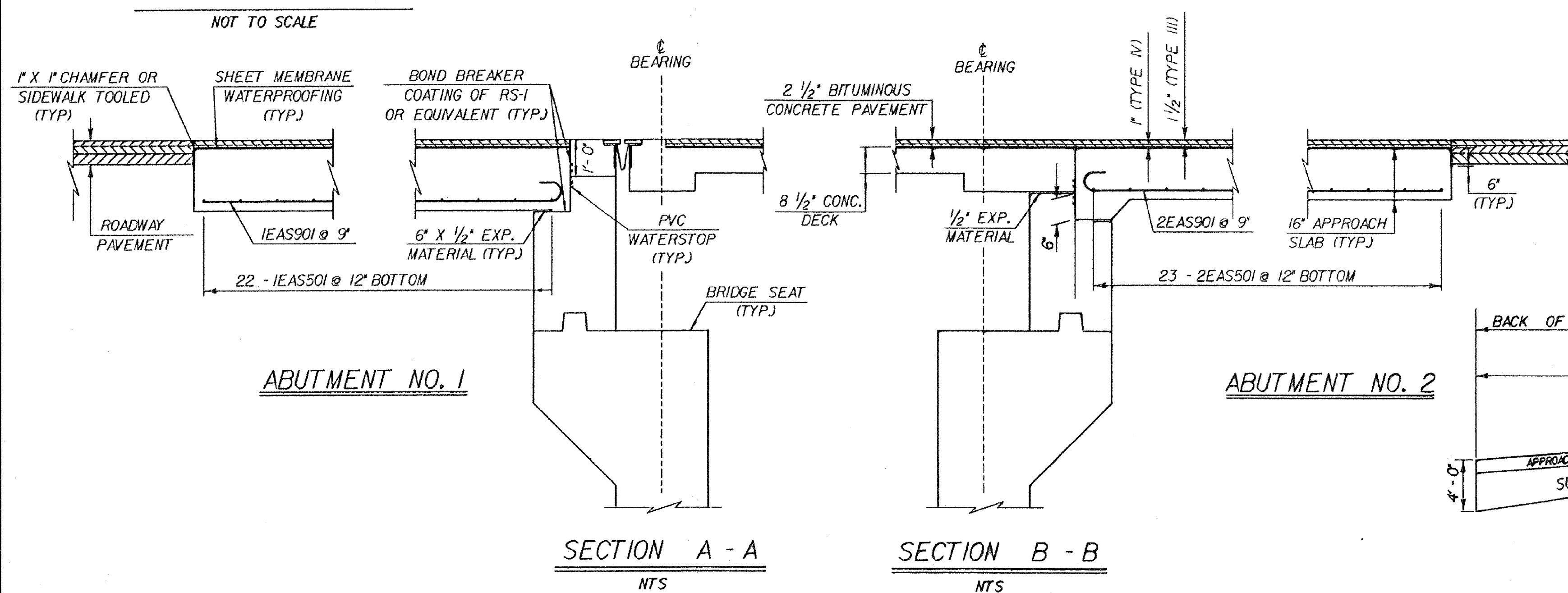
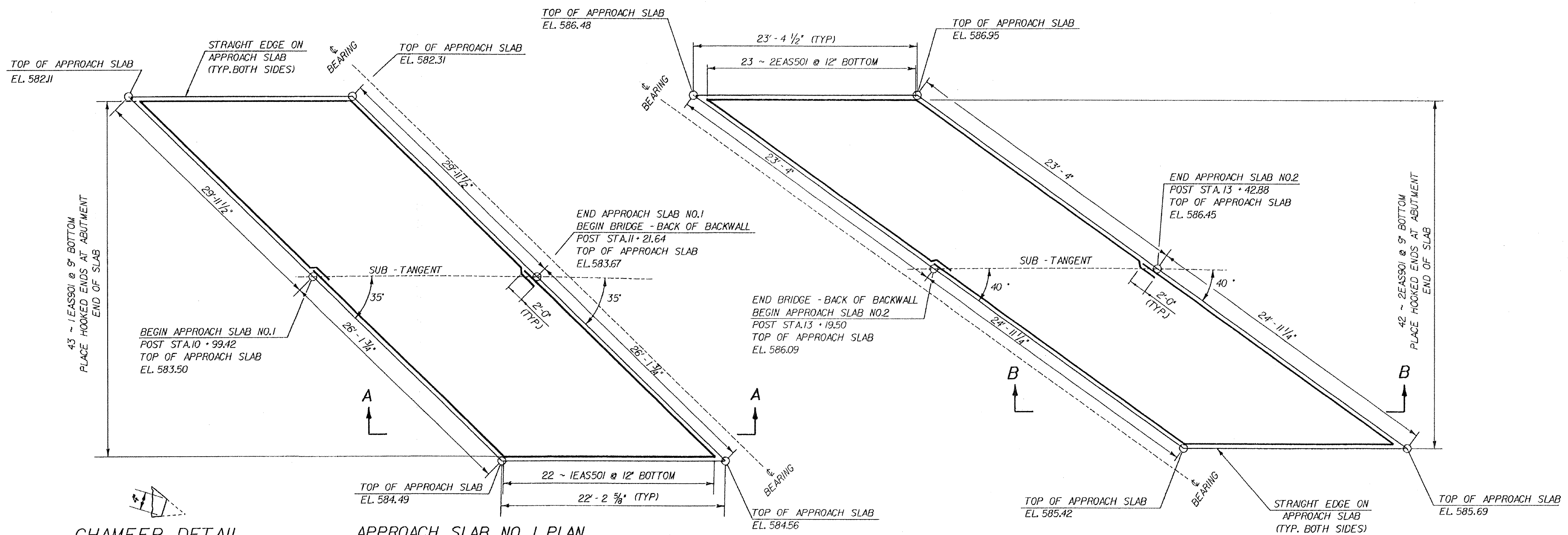
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	MORETOWN	Bridge No.	4
Highway No.	VT. 100-B	Log Sta.	86 + 53
		Surv. Sta.	12 + 21 + 1/2
PLAN AND ELEVATION			
VT. 100-B OVER THE MAD RIVER			
Designed By	C.P. WILLIAMS	Drawn By	K. S. CLAIRMONT
Checked By	Date	Bridge Design Supervisor	
C.P. WILLIAMS	4/92	F.W. Colkum	Date 5/92
PROJECT		PROJECT NO.	
MORETOWN		BRZ 1446(1)	
I.D.C. Info.		78F174PEJPARM	
Bridge Sheet No. BR103		Sheet 36 of 32	

For Reference Only
Waterbury-Moretown
BHF MEMB (12)
Sheet 20 of 28

* SEE PRELIMINARY INFO SHEET



STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	MORETOWN	Bridge No.	4
Highway No.	VT 100B	Log Sta.	86 + 53
		Surv. Sta.	12 + 21
VT 100B OVER MAD RIVER			
TYPICAL SECTION AND DECK REINFORCING PLAN			
Designed By	C.P. WILLIAMS	Drawn By	T.A. SUMNER
Checked By	C.P. WILLIAMS	Bridge Design Supervisor	F.W. BOLHUM
	3/92	Date	5/92
PROJECT	MORETOWN	PROJECT NO.	BRZ - 1446(1)
I.G.C. Info.	ZH43066T8F174DEK.DGN		78F174DEK.PAR
Bridge Sheet No.	BR107	Sheet	40 of 82



P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS

THE COSTS FOR P.V.C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.

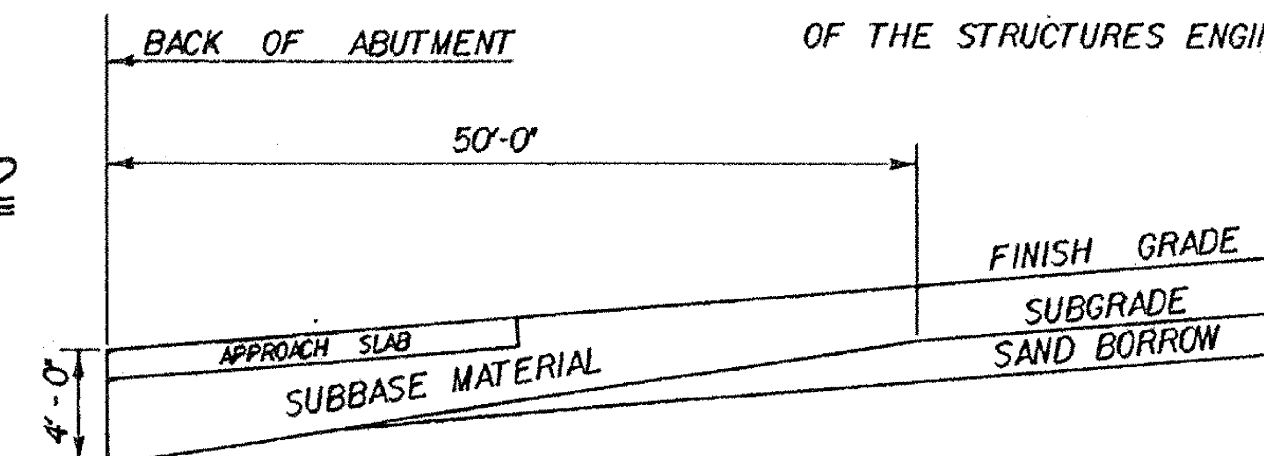
For Reference Only
Waterbury-Moretown
BHF MEMB (12)
Sheet 23 of 28

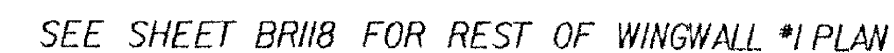
STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	MORETOWN	Bridge No.	4
Highway No.	VT100B	Log Sta.	86+53
	VT100B OVER MAD RIVER	Surv. Sta.	12+21'-0"
APPROACH SLAB DETAILS			
Designed By	C.P. WILLIAMS	Drawn By	T.A. SUMNER
Checked By	C.P. WILLIAMS	Date	4/92
		Bridge Design Supervisor	F.W. Bolham Date 5/92
PROJECT	MORETOWN	PROJECT NO.	BRZ - 1446 (1)
I.G.C. Info.	ZH2134.30178F174AS.DGN		78F174ASIPARM
Bridge Sheet No.	BR110	Sheet	43 of 82

SUBBASE DETAIL AT ABUTMENTS

(ELEVATION IN CUT AND FILL)
NOT TO SCALE





SEE BACKWALL DETAILS ON SHEET BR 110 AND BR 120

FIN.GR.

1'-3"

1'-0"

1A509 @ 12"

1A507 @ 12"

2'-6"

4 - 1A508 AS SHOWN IN HAUNCH

JOINT

EL 575.87

1A504 @ 12"

1A506 @ 12"

3'-CLR

1A505 @ 12" EF

2"-CLR

1A801 @ 12"

1A803 @ 12"

(ALT. W/ 1A802 @ 12")

6'-0"

6'-0"

2'-10"

4" WEEPHOLE (TYP)

3'-6"

2'-0"

1A503 @ 12"

11'-6"

6'-0"

3'-0"

EL 559.00

HP14 X 73 PILES (TYP)

1A501 @ 12"

1'-0"

2 ON 12 BATTER

1'-6"

4'-6"

4'-6"

1'-6"

1A1001 @ 12" TOP

1A901 @ 12" BOT

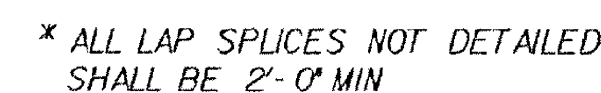
1A802 @ 12"

(ALT. W/ 1A803 @ 12")

12 - 1A502 @ 12" TOP AND BOT

ABUTMENT No. 1 TYPICAL

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

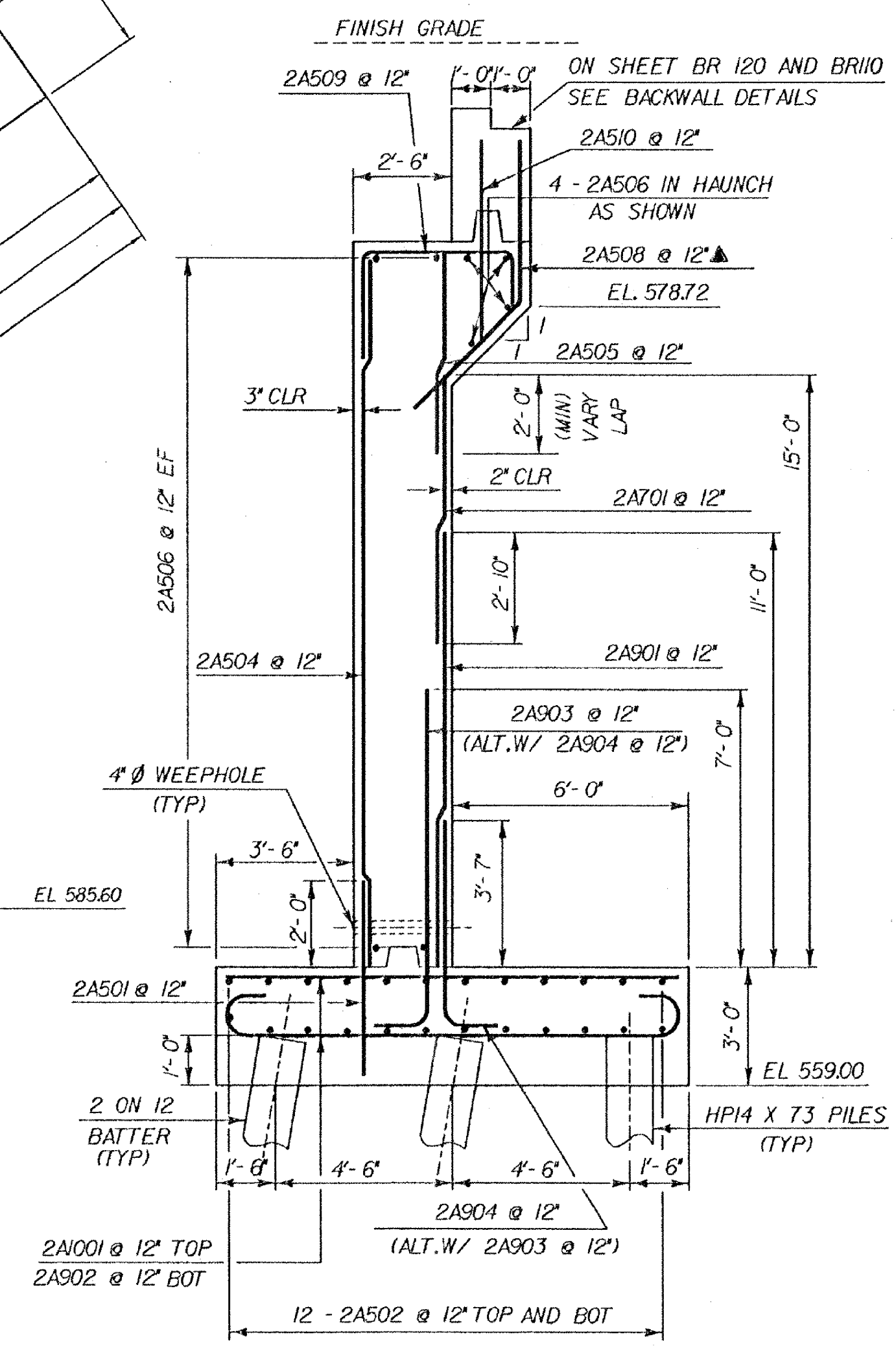


ABUTMENT NO.1 ELEVATION

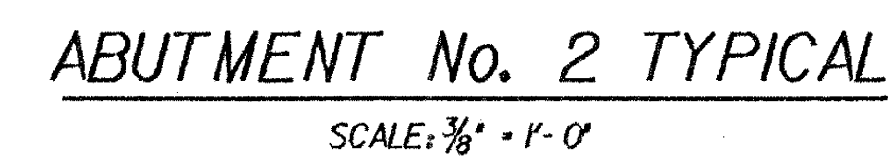
SCALE: $\frac{1}{4}" = 1'-0"$

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of <u>MORETOWN</u>	Bridge No. <u>4</u>
Highway No. <u>VT 100B</u>	Log Sta. <u>86 + 53</u> Surv. Sta. <u>12 + 21/-</u>
<u>VT 100B OVER MAD RIVER</u>	
<u>ABUTMENT #1 DETAILS</u>	
Designed By <u>C.P. WILLIAMS</u>	Drawn By <u>T.A. SUMNER</u>
Checked By <u>Date</u>	Bridge Design Supervisor <u>Date</u>
PROJECT <u>MORETOWN</u>	PROJECT NO. <u>BRZ-1446 (1)</u>
I.G.C. Info. <u>ZH2E34303TBFB1ANBT.DGN</u>	<u>7BF17AAHJLPARM</u>
Bridge Sheet No. <u>BR104</u>	Sheet <u>47</u> of <u>82</u>

For Reference Only
Waterbury-Moretown
BHF MEMB (12)
Sheet 23 of 28



SCALE: $\frac{1}{4}" = 1' - 0"$

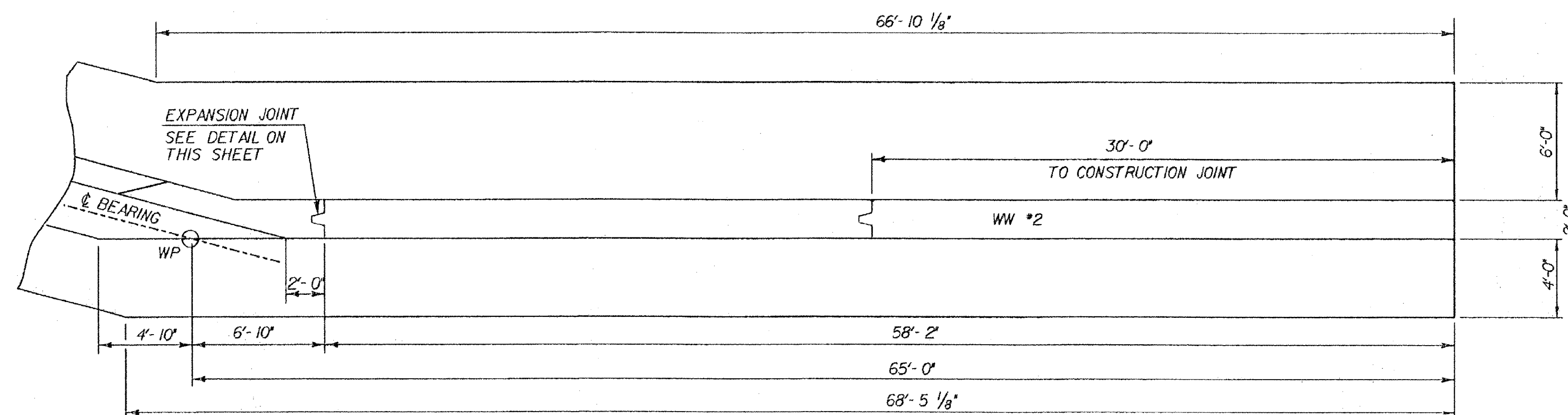


SCALE: $\frac{1}{4}" = 1' - 0"$

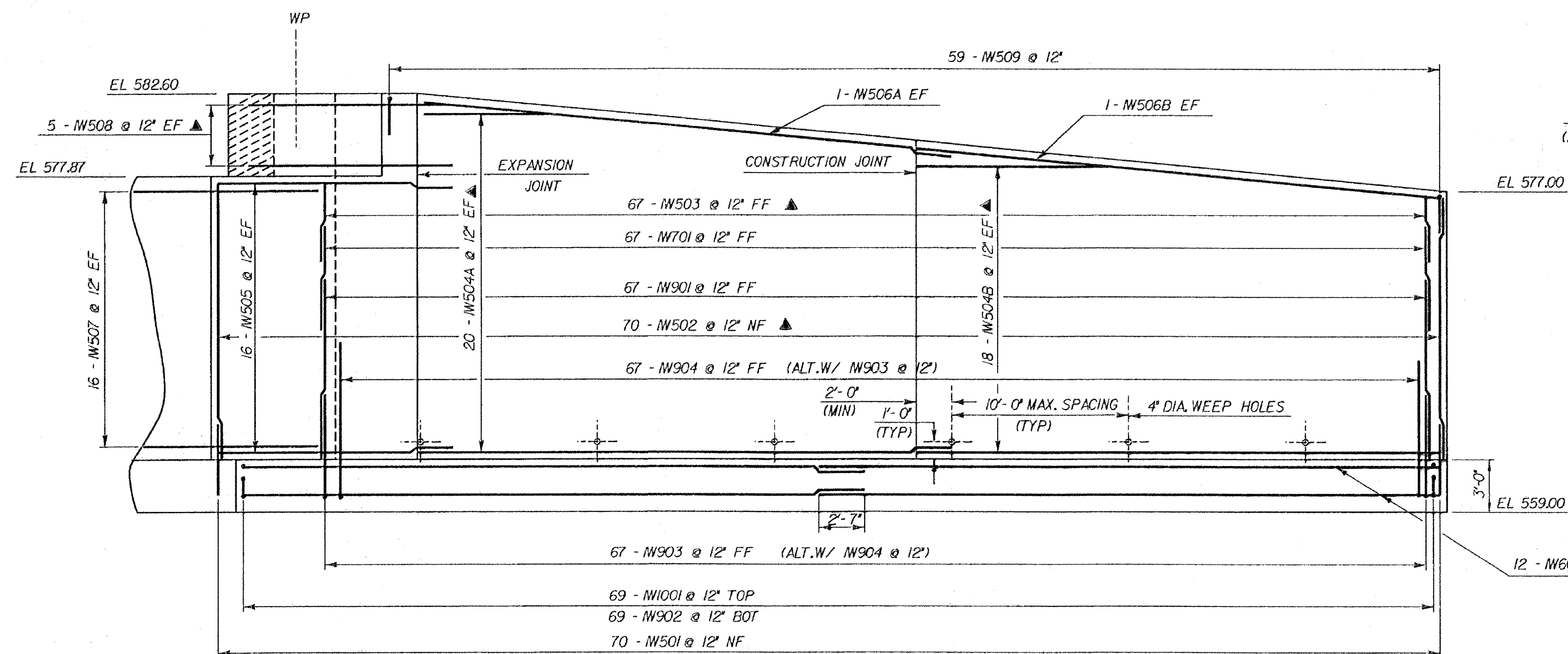
* ALL LAP SPLICES NOT DETAILED
SHALL BE 2'-0" MIN

For Reference Only
Waterbury-Moretown
BHF MEMB (12)
Sheet 24 of 28

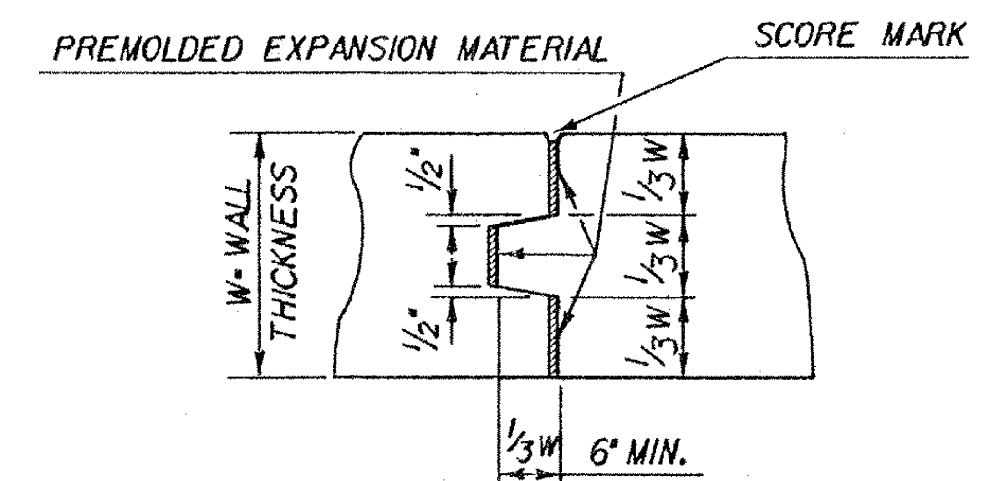
STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of <i>MORETOWN</i>	Bridge No. <i>4</i>
Highway No. <i>VT 100B</i>	Log Sta. <i>86 + 53</i> Surv. Sta. <i>12 + 21 1/4</i>
<i>VT 100B OVER MAD RIVER</i>	
ABUTMENT #2 DETAILS	
Designed By <i>C.P. WILLIAMS</i>	Drawn By <i>T.A. SUMNER</i>
Checked By <i>Date</i>	Bridge Design Supervisor
<i>C.P. WILLIAMS</i> <i>4/92</i>	<i>F.Y. Bolkom</i> <i>date 5/92</i>
PROJECT <i>MORETOWN</i>	PROJECT NO. <i>BRZ-1446 (I)</i>
I.G.C. Info. <i>ZH2E34.30178F1748BT.DGN</i>	<i>78F1748B2J.PAR</i>
Bridge Sheet No. <i>BR115</i>	Sheet <i>48</i> of <i>82</i>



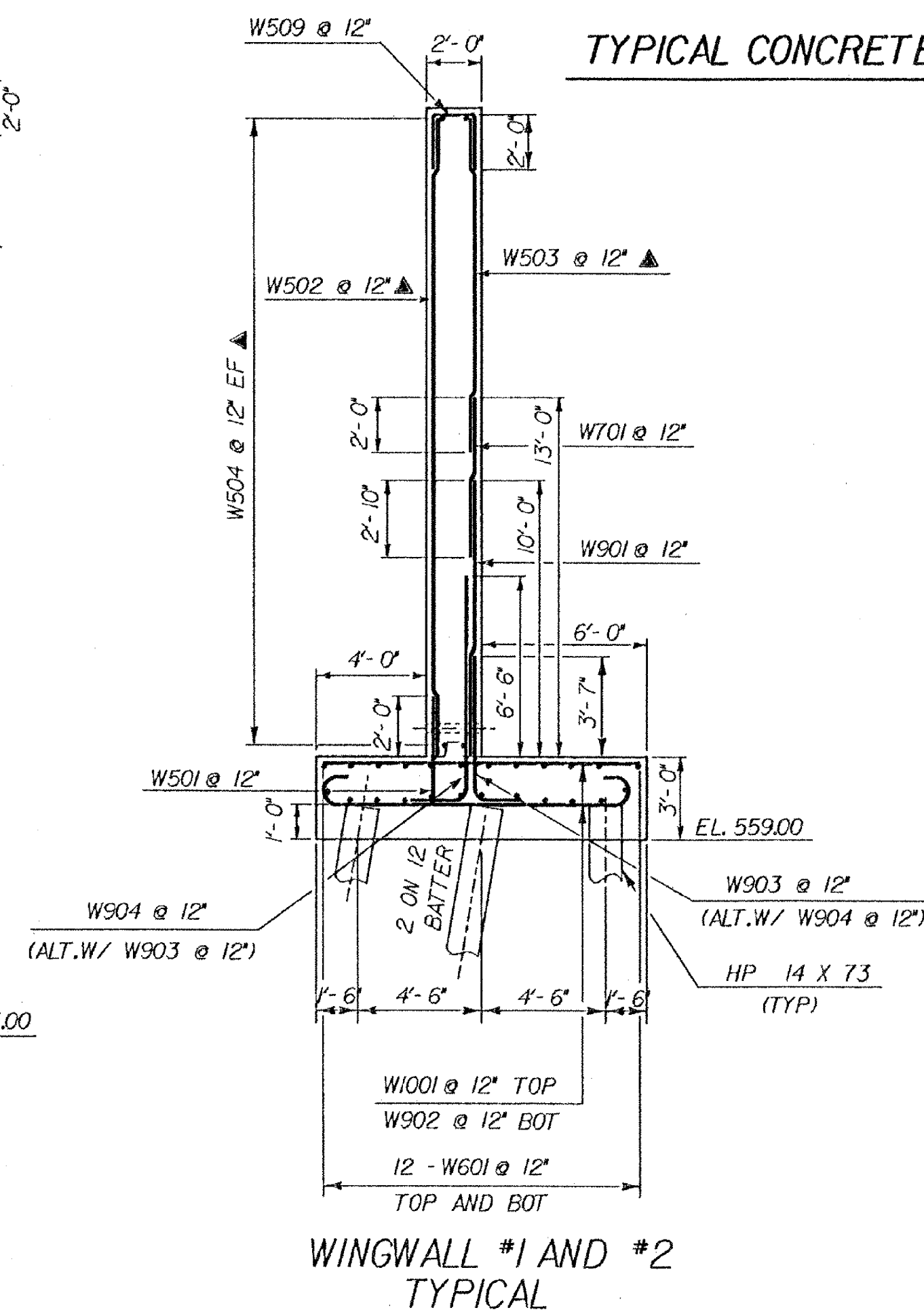
WINGWALL #1 PLAN
SCALE: 1/4" = 1'-0"



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



TYPICAL CONCRETE EXPANSION JOINT



WINGWALL #1 AND #2
TYPICAL

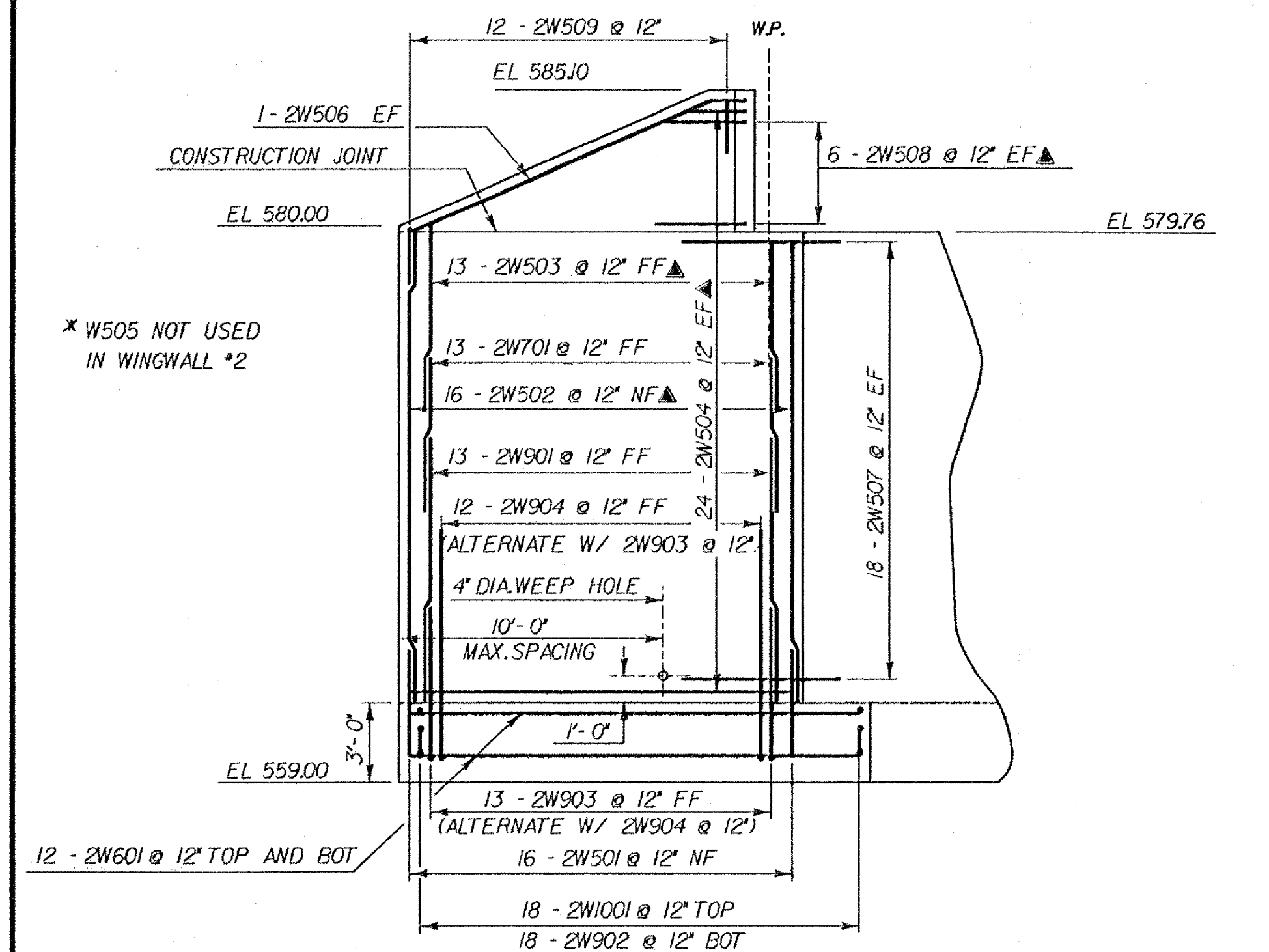
SCALE: 1/4" = 1'-0"

For Reference Only
Waterbury-Moretown
BHF MEMB (12)
Sheet 22 of 28

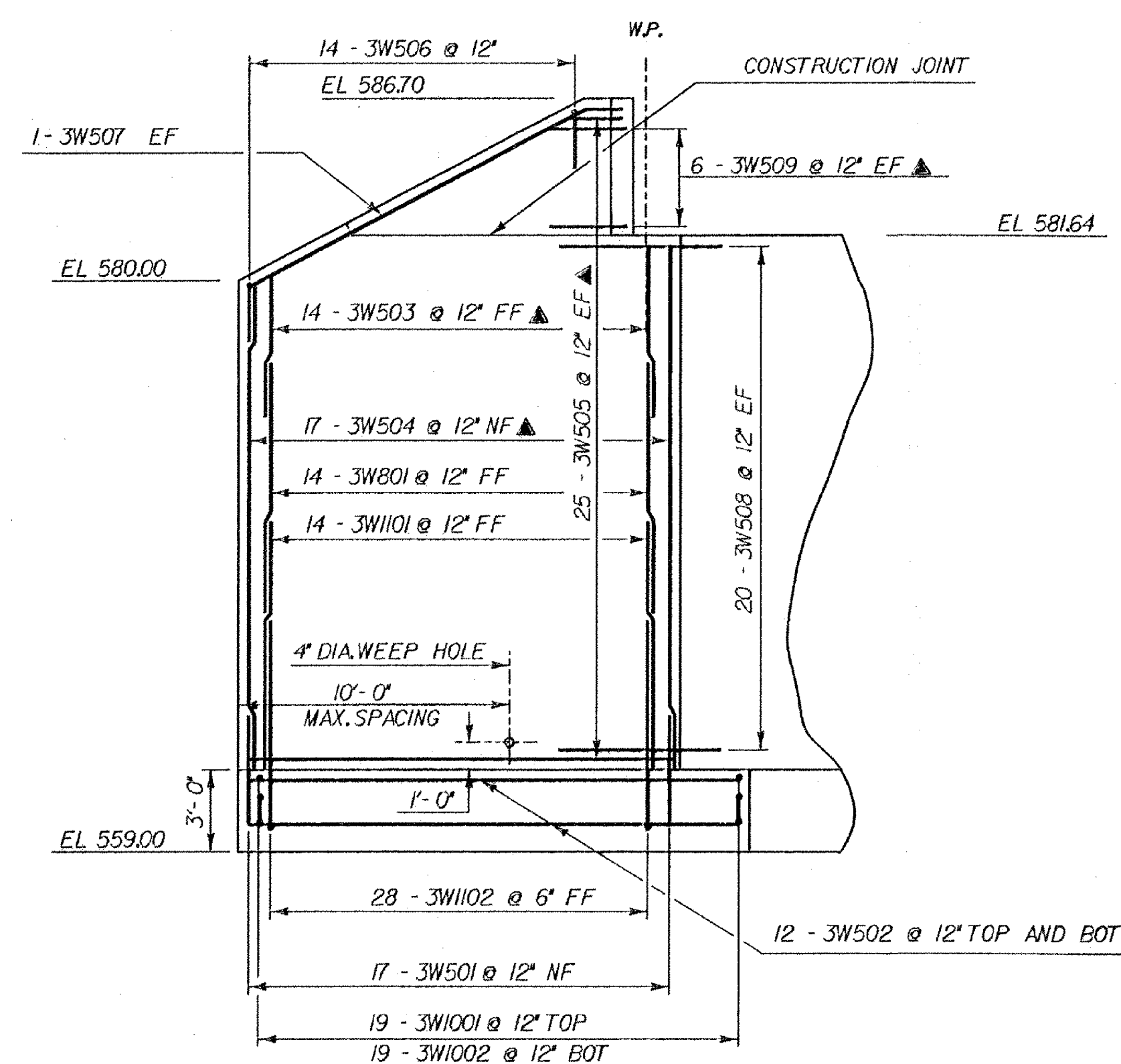
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town of	MORETOWN	Bridge No.	4
Highway No.	VT 100B	Log Sta.	86 + 53
		Surv. Sta.	72 + 21 + 1/2
VT 100B OVER MAD RIVER			
WINGWALL #1 DETAILS			
Designed By	C.P. WILLIAMS	Drawn By	T.A. SUMNER
Checked By	C.P. WILLIAMS	Bridge Design Supervisor	F.Y. Bolkum
	4/92	Date	5/92
PROJECT	MORETOWN	PROJECT NO.	BRZ-1446 (1)
I.C.C. Info.	ZH2X343078714ABT.DGN		78F174WUJPARM
Bridge Sheet No.	BRI18	Sheet	51 of 82

* ALL LAP SPLICES NOT DETAILED
SHALL BE 2'-0" MIN

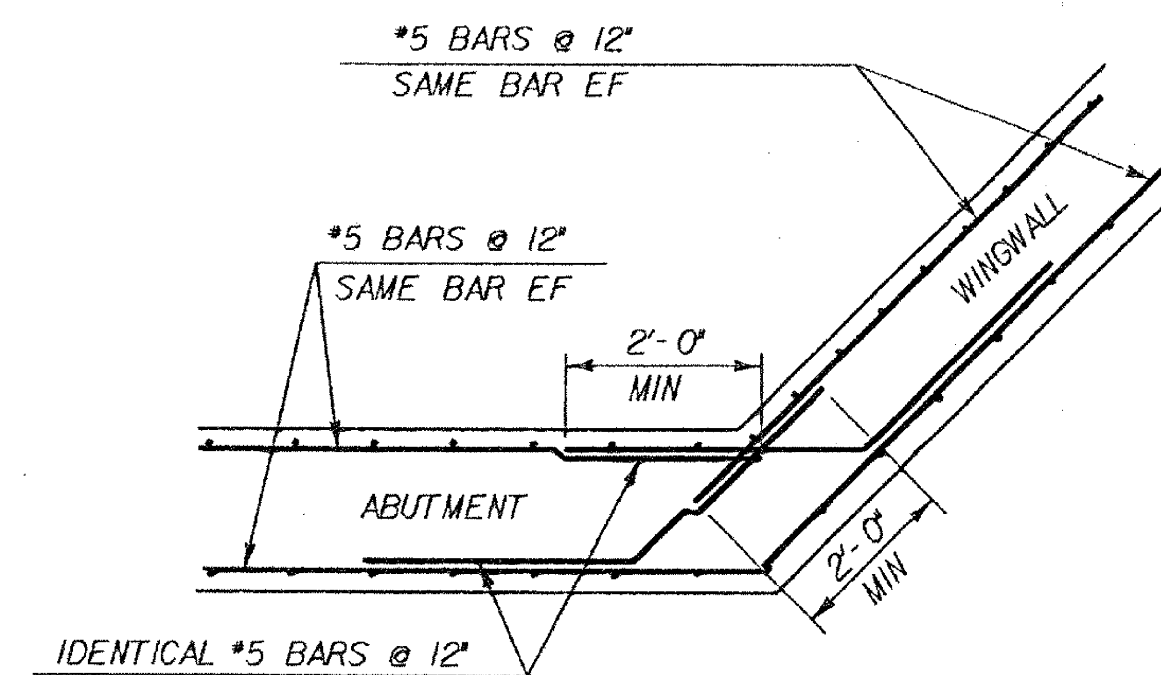


WING WALL NO. 2 ELEVATION SCALE: 1/4" = 1'-0"



WING WALL NO. 3 ELEVATION

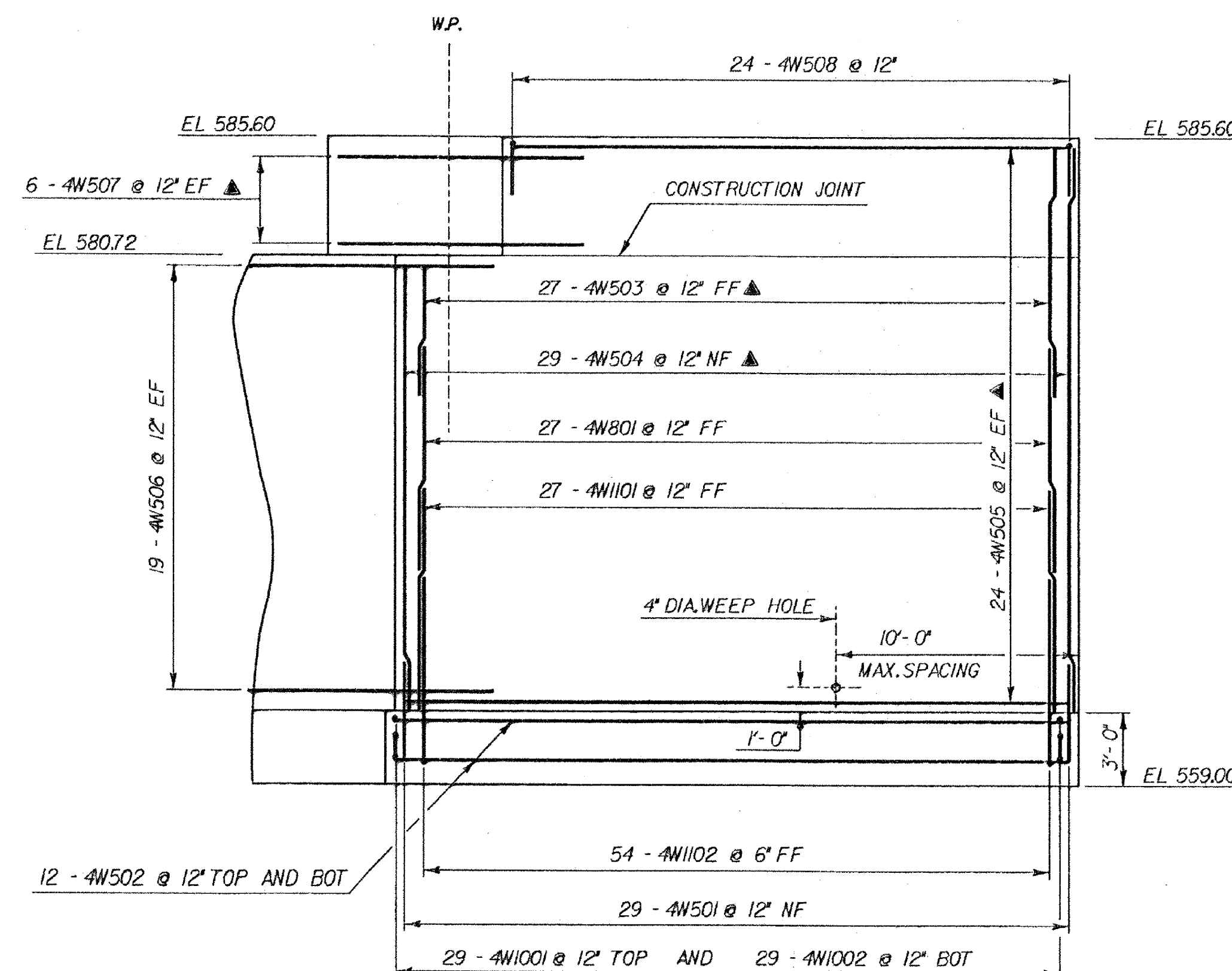
SCALE: 1/4" = 1'-0"



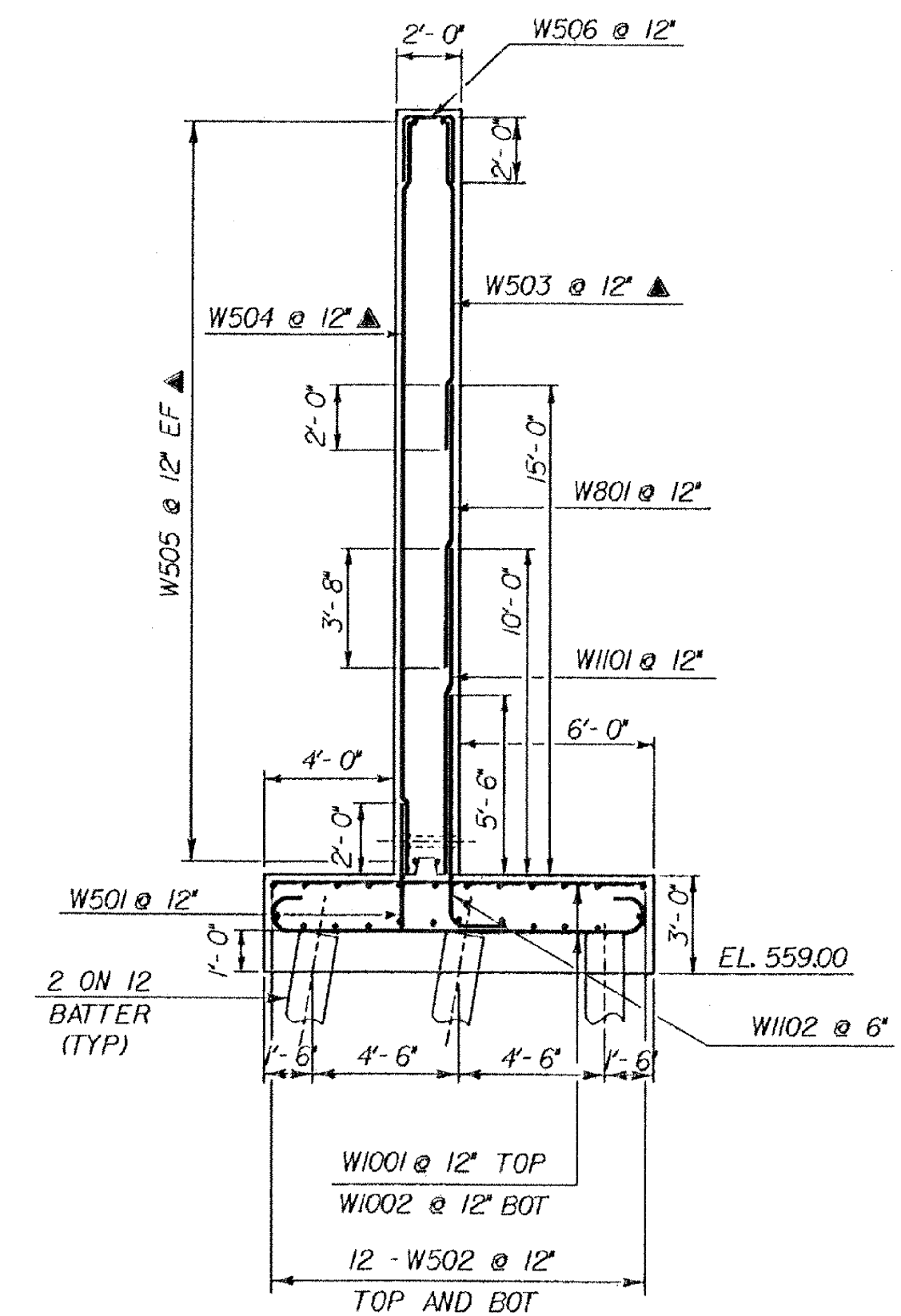
TYPICAL CORNER DETAIL BELOW BRIDGE SEAT

NOT TO SCALE

NOTE:
ALL HORIZONTAL STEEL IN WINGWALL #1 WILL NOT PASS THROUGH THE EXPANSION JOINT.



WING WALL NO. 4 ELEVATION



WINGWALL #3 AND #4 TYPICAL

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

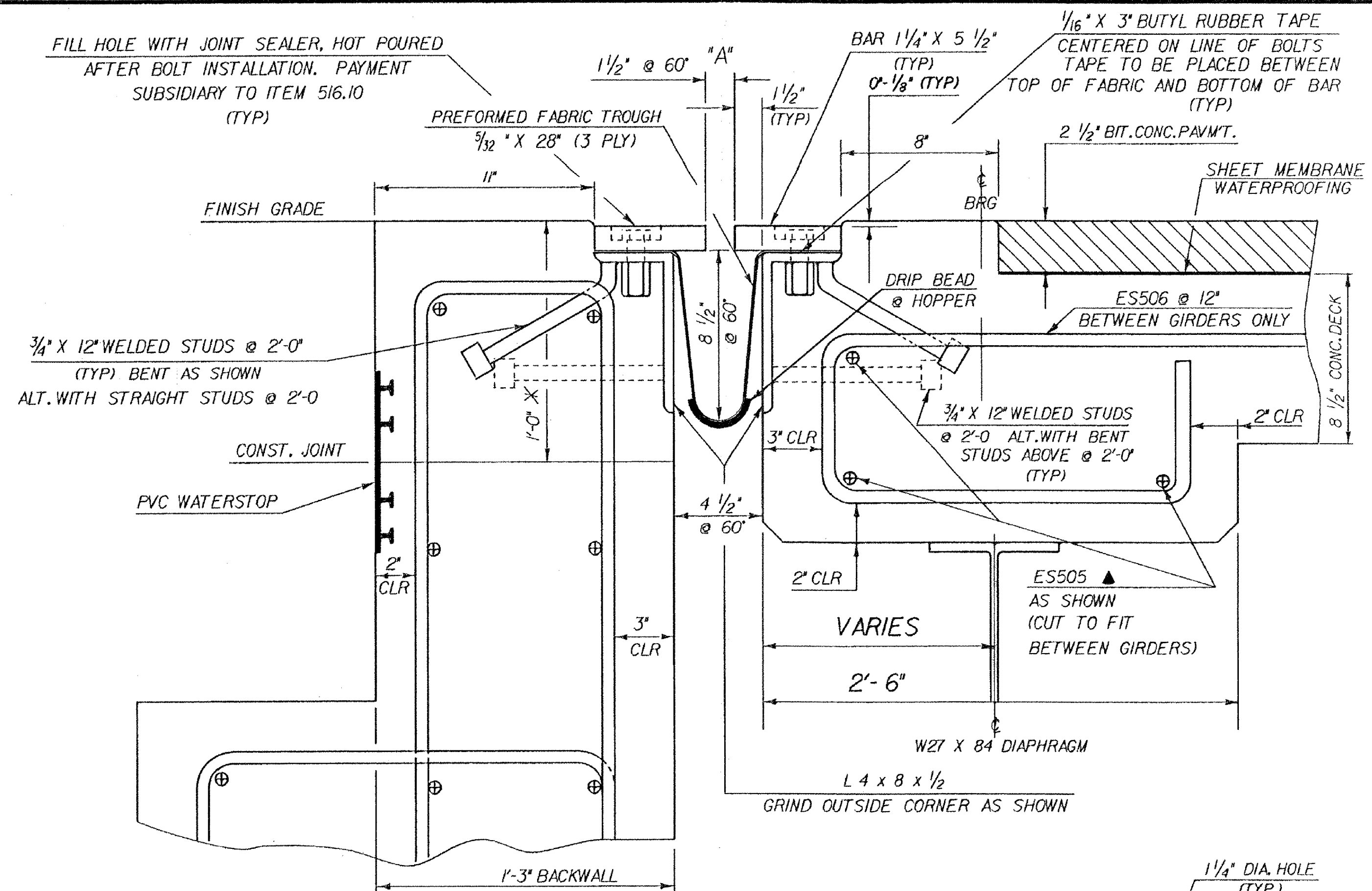
SEE SHEET BR118 FOR WINGWALL TYPICAL

ALL LAP SPLICES NOT DETAILED SHALL BE 2'-0" MIN.

For Reference Only
Waterbury-Moretown
BHF MEMB (12)
Sheet 24 of 28

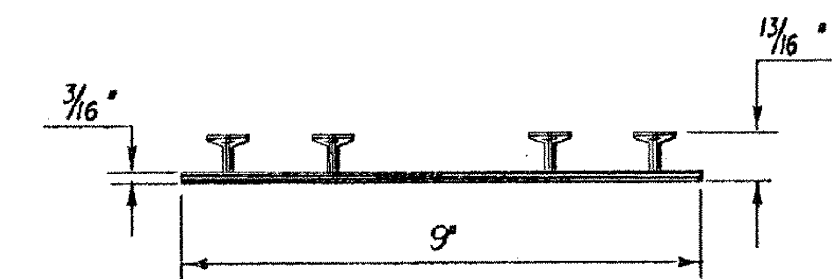
STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	MORETOWN	Bridge No.	4
Highway No.	VT 100B	Log Sta.	86 + 53
		Surv. Sta.	12 + 21.7
VT 100B OVER MAD RIVER			
WINGWALL #2, #3 AND #4 DETAILS			
Designed By	C.P. WILLIAMS	Drawn By	T.A. SUMNER
Checked By	C.P. WILLIAMS	Bridge Design Supervisor	F.W. BOLKUM
	4/92	Date	5/92
PROJECT	MORETOWN	PROJECT NO.	BRZ-1446 (1)
I.S.C. Info.	ZH24343078FT1ABT.DGN	78FT-ANWJPARM	
Bridge Sheet No.	BR119	Sheet	52 of 82



TYPICAL SECTION BETWEEN GIRDERS (NORMAL)

SCALE: 3" = 1'-0"



P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS

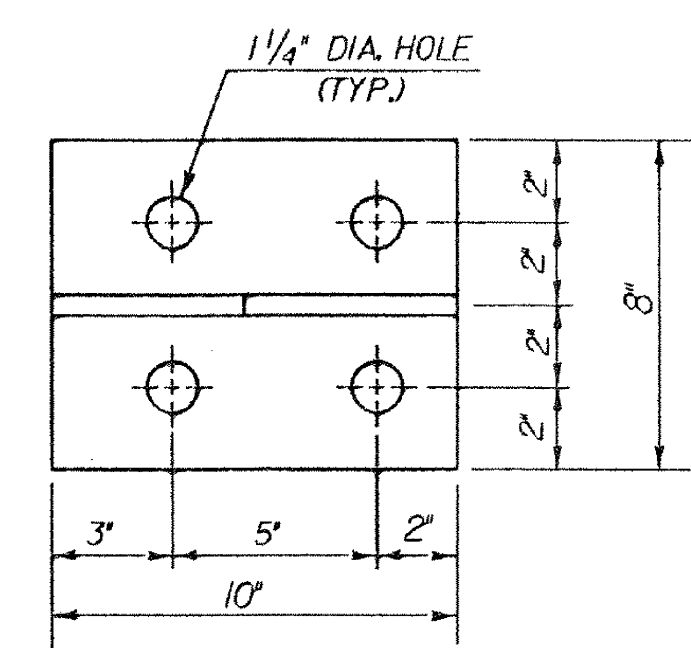
THE COSTS FOR P.V.C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.

NOTES

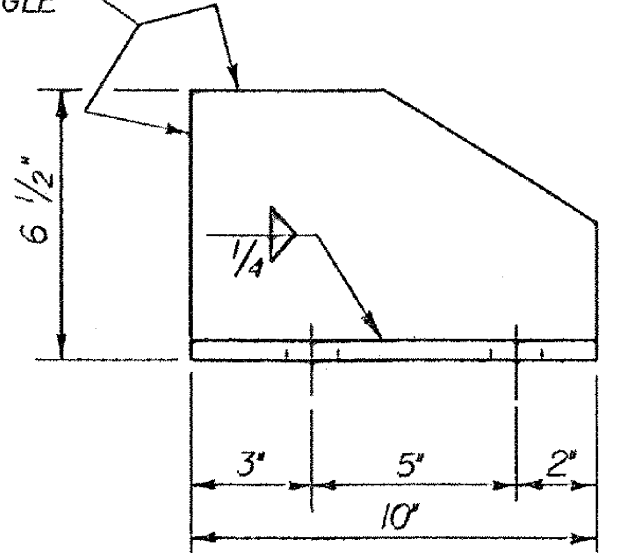
1. THE FINAL FINISH OF THE EXPANSION DEVICE SHALL BE COVERED DURING THE PLACING OF BRIDGE DECK CONCRETE.
2. ALL STEEL COMPONENTS SHALL BE AASHTO M270 GRADE 36 GALVANIZED OR METALIZED AS PER SUBSECTION 506J5 (b) OR (c).
3. THE 1 1/4" X 5 1/2" BARS SHALL BE FURNISHED IN 2 PIECES MINIMUM, EACH SIDE OF JOINT.
4. DETAILS ON THIS SHEET ARE FOR ITEM 516.10 "BRIDGE EXPANSION JOINTS".
5. A 1" DIAMETER PLASTIC DRAIN TUBE SHALL BE INSTALLED AS SHOWN AT THE FACE OF CURB. THE UPPER END IS TO BE PLUGGED WITH STEEL WOOL AND THE LOWER END IS TO EXTEND 6" BELOW THE BOTTOM OF THE ADJACENT GIRDER. THE DRAIN TUBES SHALL BE FASTENED TO THE GIRDERS USING A METHOD APPROVED BY THE ENGINEER.
6. A DRIP BEAD OF PREFORMED FABRIC MATERIAL SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH USING AN ADHESIVE APPROVED BY THE MANUFACTURER.

BRACKET PLAN IN BACKWALL

SCALE: 3" = 1'-0"



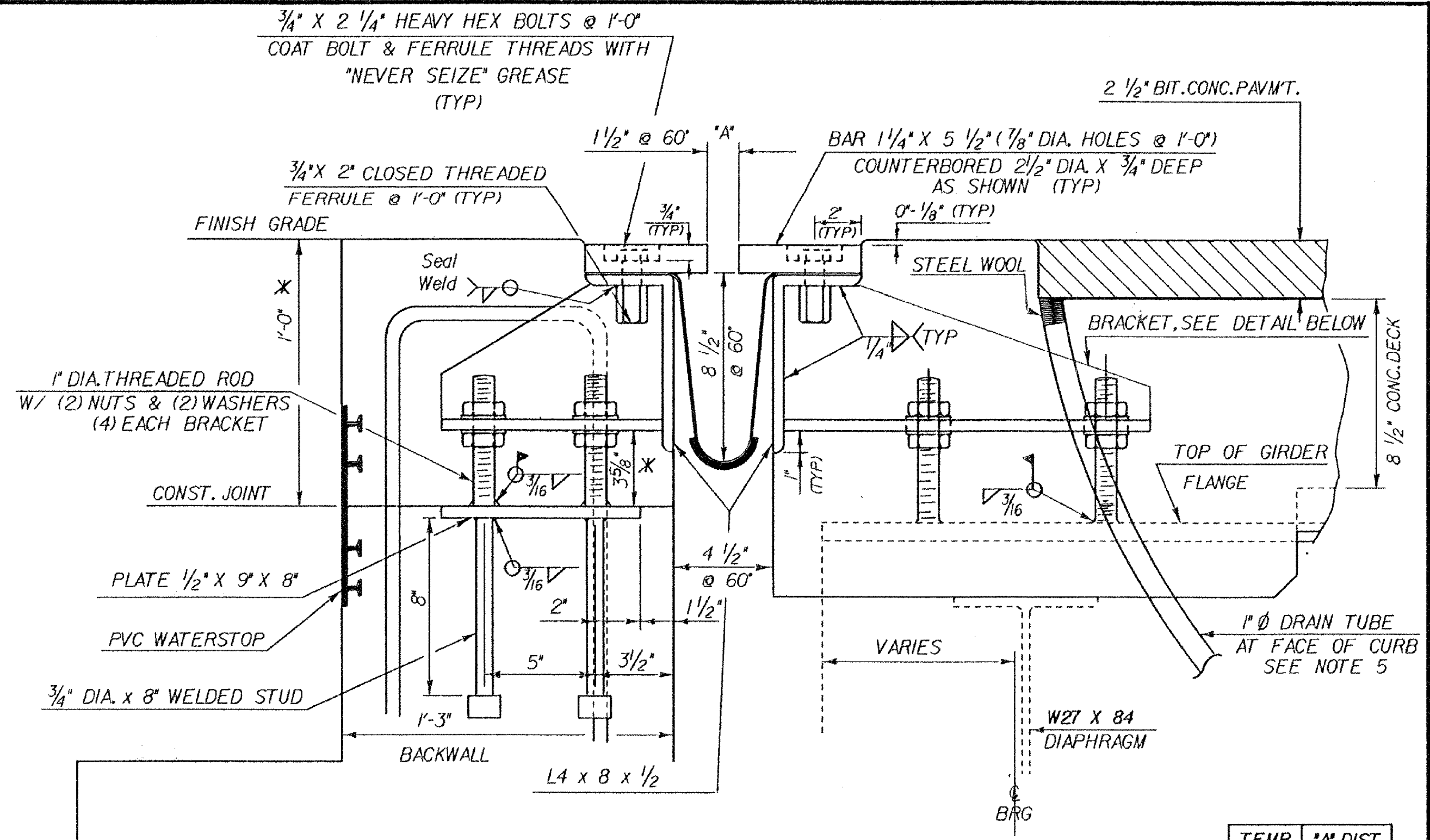
CUT & SHAPE TO FIT AGAINST 8" X 4" ANGLE



BRACKET ELEVATION IN BACKWALL

SCALE: 3" = 1'-0"

ALL PLATES 1/2"



TYPICAL SECTION AT GIRDERS (NORMAL)

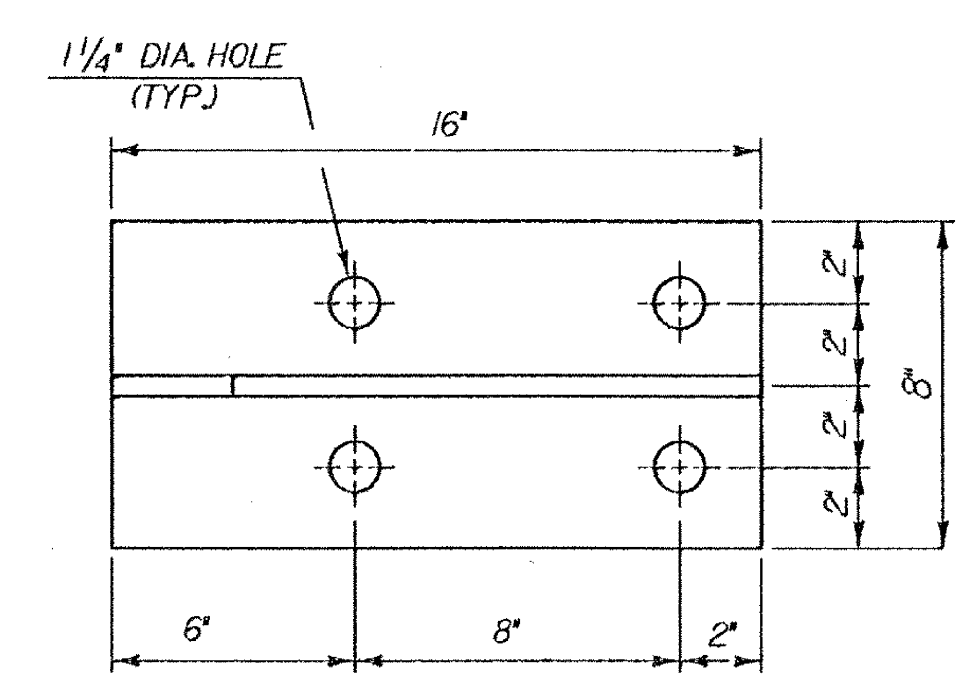
SCALE: 3" = 1'-0"

* THESE DIMENSIONS ARE THEORETICAL AND MAY CHANGE DEPENDING UPON THE OUTCOME OF THE BEAM PROFILES

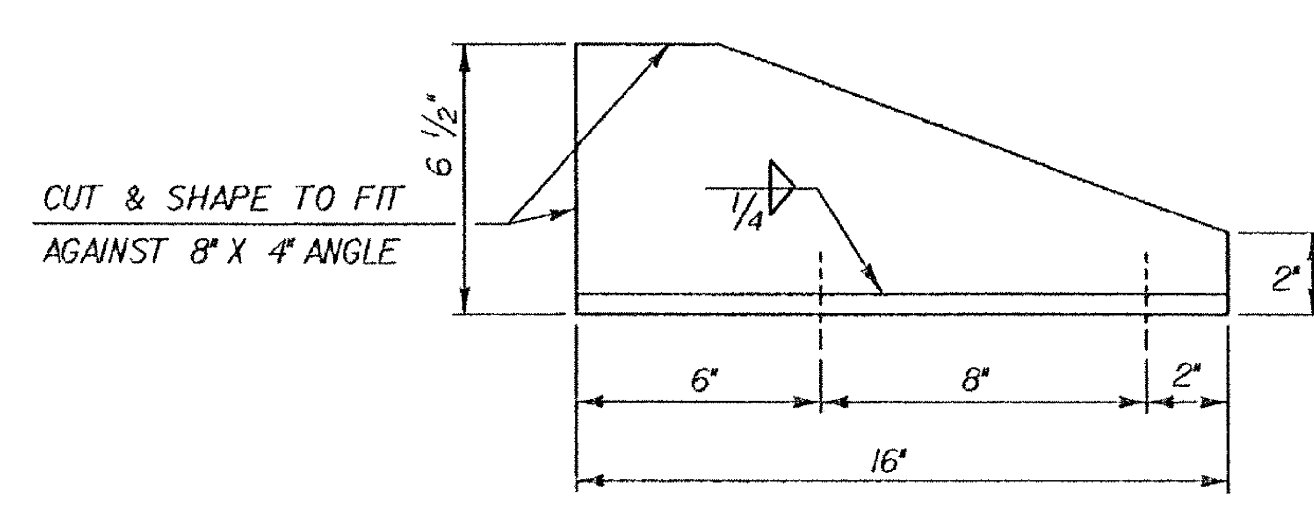
TEMP	"A" DIST
0° F	2"
15° F	1 1/8"
30° F	1 3/4"
45° F	1 5/8"
60° F	1 1/2"
75° F	1 3/8"
90° F	1 1/4"
105° F	1 1/8"

BRACKET PLAN ON GIRDER

SCALE: 3" = 1'-0"



CUT & SHAPE TO FIT AGAINST 8" X 4" ANGLE

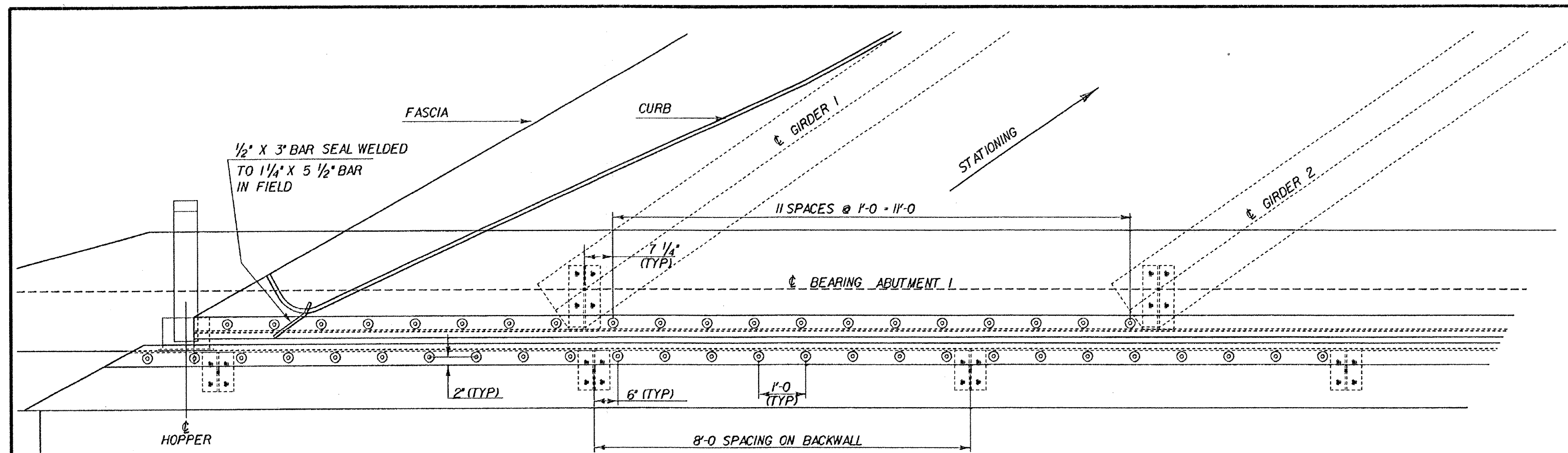


BRACKET ELEVATION ON GIRDER

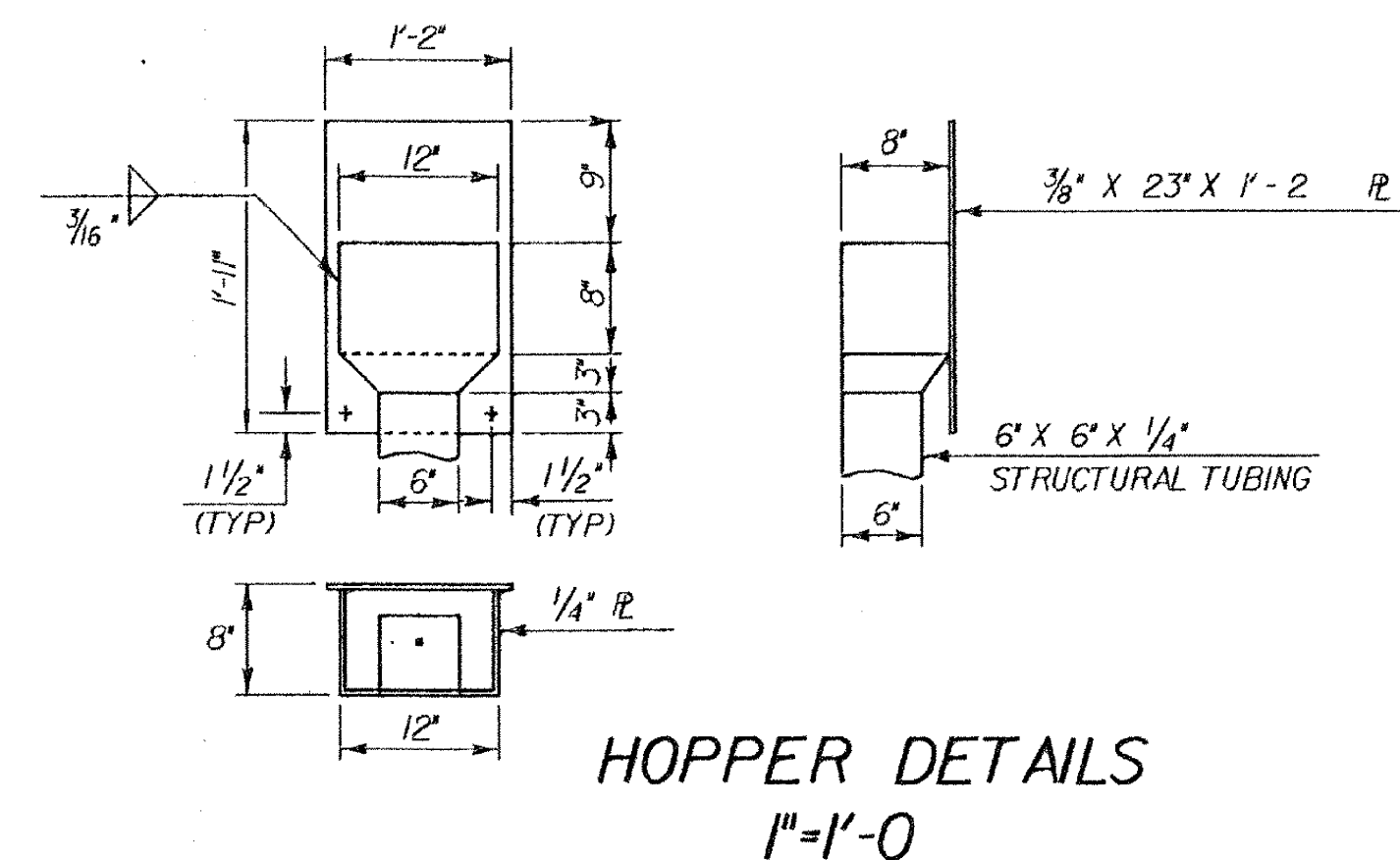
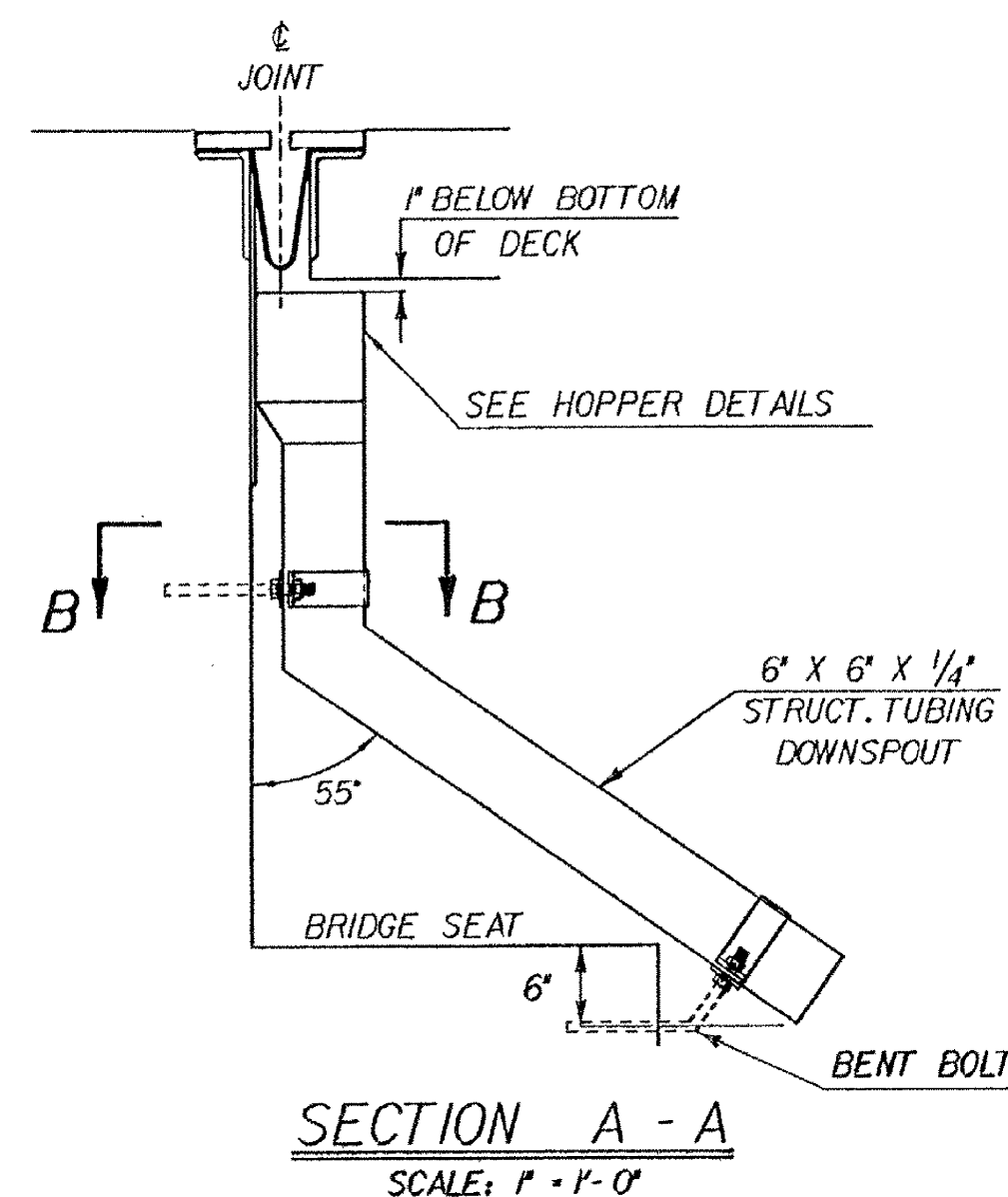
SCALE: 3" = 1'-0"

For Reference Only
Waterbury-Moretown
BHF MEMB (12)
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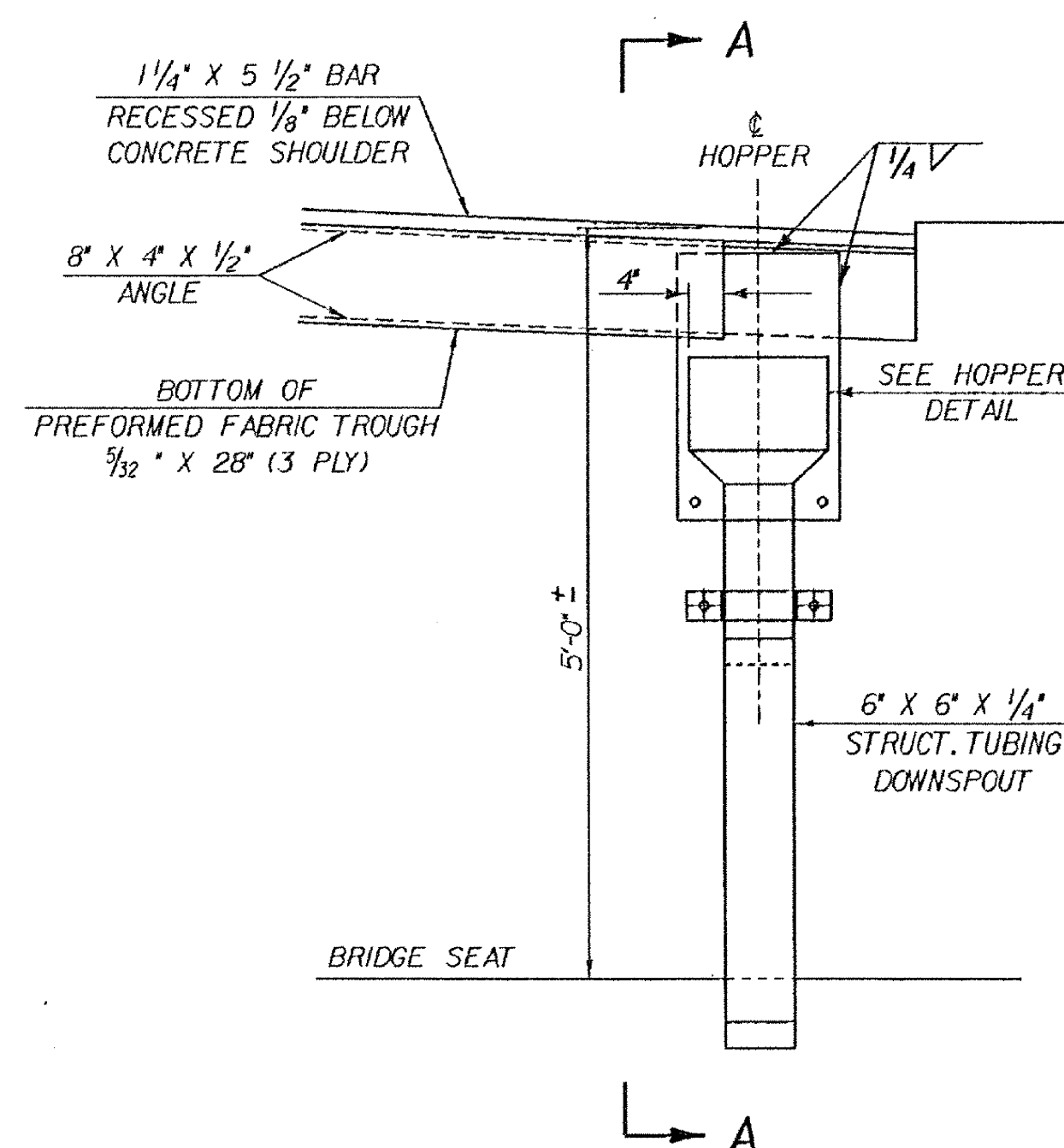
STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of MORETOWN	Bridge No. 4
Highway No. VT 100B	Log Sta. 85+53 Surv. Sta. 12+21 1/2
VT 100B OVER MAD RIVER	
EXPANSION JOINT DETAILS	
Designed By C.P. WILLIAMS	Drawn By T.A. SUMNER
Checked By C.P. WILLIAMS Date 4/92	Bridge Design Supervisor F.W. Bolchini Date 5/92
PROJECT MORETOWN	PROJECT NO. BRZ - 1446 (I)
I.C.C. Info. ZH2134.30178F174EXP.DGN	78F174EXLIPARM
Bridge Sheet No. BR122	Sheet 53 of 82



PARTIAL PLAN VIEW
3/4" = 1'-0"



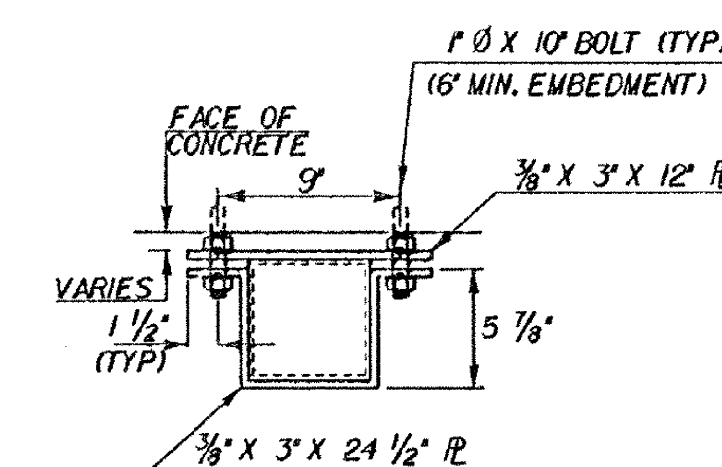
HOPPER DETAILS
1" = 1'-0"



SECTION AT CENTERLINE OF JOINT
SCALE: 1" = 1'-0"

NOTES

1. THE HIGH END OF THE FABRIC TROUGH SHALL BE CLOSED BY FOLDING.
2. A HOPPER WILL ONLY BE REQUIRED AT THE WINGWALL CORNER.
3. ALL HOPPER AND DOWNSPOUT COMPONENTS AND HARDWARE SHALL BE GALVANIZED PER VT. SPEC. 506.15 (B). STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500 B AND ALL OTHER COMPONENTS SHALL CONFORM TO AASHTO M 270 GRADE 36.
4. THE HOPPER AND DOWNSPOUT ASSEMBLY SHALL NOT BE INSTALLED UNTIL AFTER THE BRIDGE EXPANSION JOINT IS IN PLACE.
5. THE HOPPER AND DOWNSPOUT SHALL BE PAID FOR UNDER ITEM 506.55 "STRUCTURAL STEEL - PLATE GIRDER".



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

For Reference Only
Waterbury-Moretown
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STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	MORETOWN	Bridge No.	4
Highway No.	VT. RTE 100B	Log Sta.	86 + 53
		Surv. Sta.	12 + 21
VT RTE 100B OVER MAD RIVER			
EXPANSION JOINT PLAN			
Designed By	C.P. WILLIAMS	Drawn By	C.P. WILLIAMS
Checked By	M.M. GARCIA	Date	4/92
		Bridge Design Supervisor	F. W. BOLKUM
PROJECT	MORETOWN	PROJECT NO.	BRZ 1446(1)
I.G.C. Info.	ZH2403403018714EXP.DGN		78F14EX2IPARM
Bridge Sheet No.	BR123	Sheet	56 of 82

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