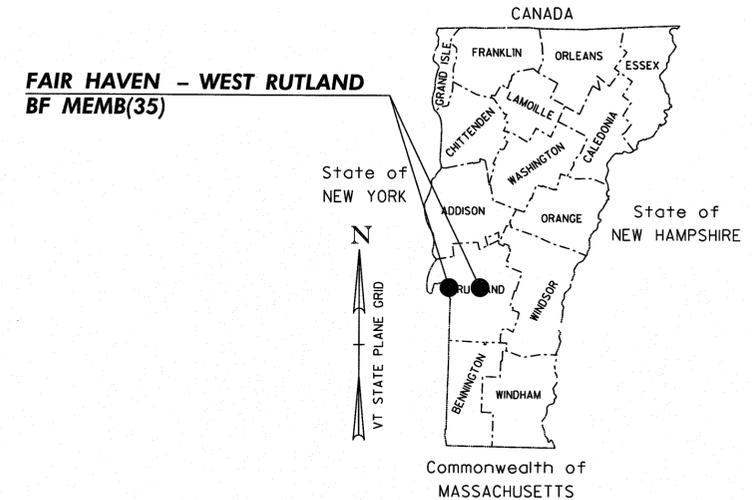


STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT TOWNS OF FAIR HAVEN & WEST RUTLAND COUNTY OF RUTLAND PROJECT BF MEMB(35)



ROUTE NO. : US4

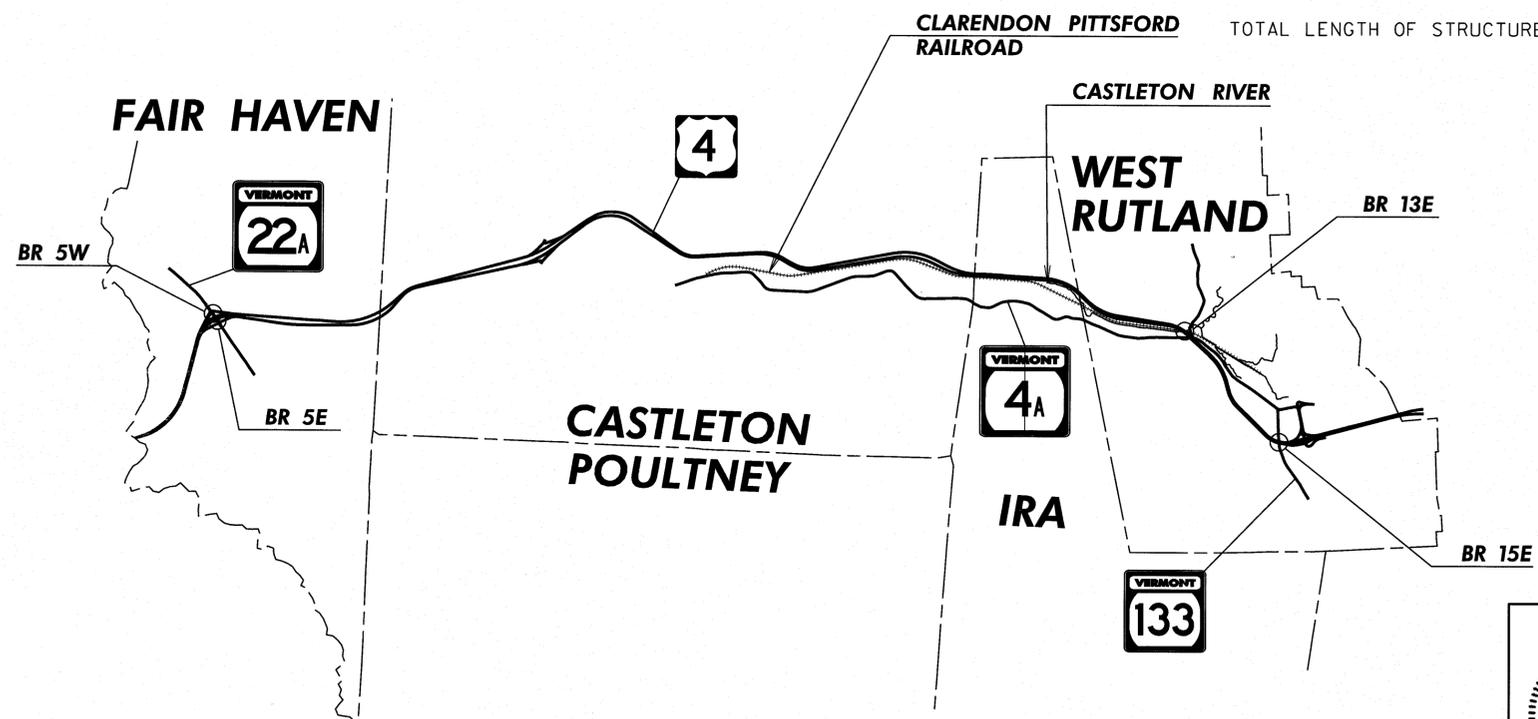
BRIDGE NO. : 5E, 5W, 13E, 15E

PROJECT LOCATIONS: FAIR HAVEN - BR 5E OVER VT 22A (MM 1.68)
FAIR HAVEN - BR 5W OVER VT 22A (MM 1.68)
WEST RUTLAND - BR 13E OVER CLARENDON PITTSFORD RAILROAD AND CASTLETON RIVER (MM 12.95)
WEST RUTLAND - BR 15E OVER VT133 (MM 14.61)

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.

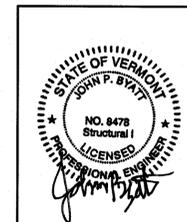
LENGTH OF STRUCTURES: BR 5E 191.38'
BR 5W 203.49'
BR 13E 410.00'
BR 15E 96.48'

TOTAL LENGTH OF STRUCTURES: 901.35'



CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

QUALITY ASSURANCE PROGRAM : LEVEL I
SURVEYED BY : XX
SURVEYED DATE : XX
DATUM
VERTICAL XX
HORIZONTAL XX



CLD CONSULTING ENGINEERS

540 Commercial Street
Manchester, NH 03101
(603) 668-8223
www.cldengineers.com

DIRECTOR OF PROJECT DELIVERY
APPROVED _____ DATE _____
PROJECT MANAGER : DOUGLAS BONNEAU, P. E.
PROJECT NAME : FAIR HAVEN-WEST RUTLAND
PROJECT NUMBER : BF MEMB (35)
SHEET 1 OF 44 SHEETS

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08/29/11 SD-516.10 BRIDGE ASPHALTIC PLUG

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08/06/12	T-12	TRAFFIC CONTROL DIVIDED HIGHWAY ONE LANE CLOSED
08/06/12	T-13	TRAFFIC CONTROL DIVIDED HIGHWAY ONE LANE CLOSED
08/06/12	T-22	TRAFFIC CONTROL FOR PAVEMENT MARKING ON DIVIDED HIGHWAY
08/06/12	T-23	TRAFFIC CONTROL FOR PAVEMENT MARKING ON DIVIDED HIGHWAY
08/06/12	T-28	CONSTRUCTION SIGN DETAILS
08/06/12	T-30	CONSTRUCTION SIGN DETAILS
08/06/12	T-31	CONSTRUCTION SIGN DETAILS

PROJECT NOTES

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2012, 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 BEAM SEATS SHALL BE CLEANED OFF AND ALL FABRIC DRAIN TROUGHS, FINGER JOINT 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. THE COST FOR CLEANING BEAM SEATS AND FLUSHING THE FABRIC DRAIN TROUGHS, FINGER JOINT DRAIN TROUGHS, DOWNSPOUTS AND SCUPPERS WILL BE INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.

TRAFFIC CONTROL

6. THE TRAFFIC CONTROL PLANS SHOWN ON TRAFFIC CONTROL SHEETS 1 THROUGH 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 PLANS. NO WORK SHALL COMMENCE UNTIL THE CONTRACTOR HAS AN APPROVED TRAFFIC CONTROL PLAN FOR EACH BRIDGE.
7. 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.
8. TRAFFIC WILL BE ALLOWED TO DRIVE ON THE BARE CONCRETE BRIDGE DECK AFTER THE REMOVAL OF THE BARRIER MEMBRANE, AND 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.

CONCRETE STRUCTURE AND RAIL REPAIR

9. REPAIRS TO DETERIORATED PORTIONS OF THE SOUTHWEST CORNER OF THE ABUTMENT NO. 3 BACKWALL OF BRIDGE NO. 5E SHALL BE PAID FOR UNDER ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II". THE QUANTITY FOR ITEM 580.14 AS SHOWN ON THE QUANTITY SUMMARY SHEET IS ESTIMATED.
10. A LARGE WASHOUT EXISTS AT THE SOUTHWEST CORNER OF BRIDGE NO. 5W EXTENDING BEHIND THE ABUTMENT/WINGWALL AND UNDERNEATH THE AT-GRADE APPROACH SLAB. EXISTING DEBRIS LEFTOVER FROM THE WASHOUT SUCH AS PAVEMENT AND STONE SHALL BE REMOVED. THIS WORK SHALL BE PAID FOR UNDER ITEM 204.25, "STRUCTURE EXCAVATION". FLOWABLE FILL SHALL BE USED TO FILL THE HOLE. THIS WORK SHALL BE PAID FOR UNDER ITEM 541.45, "CONTROLLED DENSITY (FLOWABLE) FILL" AND ALL FORMS OF CONTAINMENT FOR THE FLOWABLE FILL SHALL BE INCIDENTAL TO THIS ITEM. ONCE THE WASHOUT HAS BEEN FILLED, THE EXISTING SLOPE SHALL BE REGRADED ON A SLOPE NO STEEPER THAN 2H:1V AND STABILIZED WITH A MINIMUM 2'-0" OF TYPE II STONE FILL. PAYMENT FOR REGRADEING THE SLOPE WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT EXCAVATION AND FILL ITEMS.
11. REPAIRS TO DETERIORATED PORTIONS OF THE SOUTHWEST CORNER OF THE ABUTMENT NO. 1 BACKWALL, BEAM SEAT, AND WINGWALL OF BRIDGE NO. 5W SHALL BE PAID FOR UNDER ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II". THE QUANTITY FOR ITEM 580.14 AS SHOWN ON THE QUANTITY SUMMARY SHEETS IS ESTIMATED.
12. REPAIRS TO DETERIORATED PORTIONS OF THE ABUTMENT NO. 3 AND NO. 4 BEAM SEATS OF BRIDGE NO. 13E SHALL BE PAID FOR UNDER ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II". THE QUANTITY FOR ITEM 580.14 AS SHOWN ON THE QUANTITY SUMMARY SHEETS IS ESTIMATED.
13. REPAIRS TO DETERIORATED PORTIONS OF THE ABUTMENT NO. 3 BACKWALL OF BRIDGE NO. 15E SHALL BE PAID FOR UNDER ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II". THE QUANTITY FOR ITEM 580.14 AS SHOWN ON THE QUANTITY SUMMARY SHEETS IS ESTIMATED.

PAVEMENT REMOVAL AND DECK REPAIRS

14. THE FINAL ONE HALF INCH OF PAVEMENT ON THE CONCRETE BRIDGE DECK (AND AT-GRADE 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. DURING BRIDGE (AND AT-GRADE APPROACH SLAB IF APPLICABLE) PAVEMENT REMOVAL, 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 AT-GRADE APPROACH SLABS IF APPLICABLE) SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. REPAIRS SHALL BE MADE IN ACCORDANCE WITH SECTION 580.
16. 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.
17. AFTER THE REMOVAL OF THE BRIDGE PAVEMENT, THE BARRIER MEMBRANE SHALL BE REMOVED AND THE CONCRETE BRIDGE DECK (AND AT-GRADE 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".
18. ONCE THE BARRIER MEMBRANE IS REMOVED, ANY AREAS ON THE CONCRETE BRIDGE DECK (AND AT-GRADE 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 AT-GRADE 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.
19. ANY REPAIR WORK REQUIRING THE USE OF ITEM 580.20, "RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE" SHALL BE APPROVED BY THE ENGINEER.

PAVEMENT AND MEMBRANE

20. UPON THE ENGINEER'S APPROVAL OF THE CONCRETE BRIDGE DECK'S CONDITION, 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.
21. 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 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)" IN TWO 1/2" LIFTS. THE PAVEMENT SHALL BE TYPE IVS FOR BOTH LIFTS, NO EXCEPTIONS.
22. 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".
23. TESTING FOR PAVEMENT DENSITY WILL REQUIRE CORES OF THE PAVEMENT ON THE BRIDGE. THE COST FOR THIS WORK WILL BE INCIDENTAL TO ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)". 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.
24. FOR PG BINDER GRADE SEE THE SPECIAL PROVISIONS FOR PAY ITEM 900.680.
25. 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.
29. UPON COMPLETION OF ALL PAVING OPERATIONS, FINAL PAVEMENT MARKINGS SHALL BE INSTALLED TO REPLICATE THE EXISTING CONFIGURATION.

PROJECT NAME: FAIR HAVEN-WEST RUTLAND
PROJECT NUMBER: BF MEMB(35)

FILE NAME: z13b062-notes.dgn	PLOT DATE: 1/20/2015
PROJECT LEADER: JPB	DRAWN BY: MWS
DESIGNED BY: SRB	CHECKED BY: JPB
INDEX OF SHEETS AND PROJECT NOTES	SHEET 2 OF 44

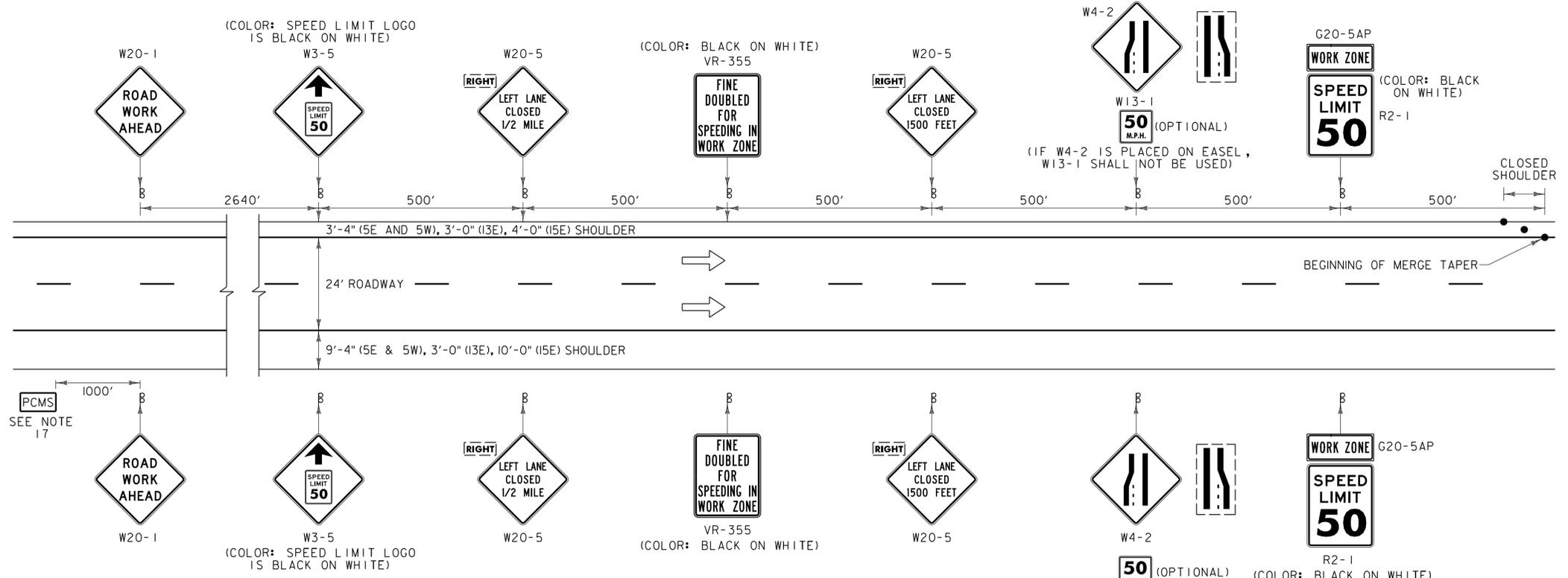
QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
				ROADWAY	BRIDGE NO. 5E	BRIDGE NO. 5W	BRIDGE NO. 13E	BRIDGE NO. 15E	FULL C.E. ITEMS	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				
						20				20		CY	STRUCTURE EXCAVATION	204.25				
						20				20		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
				1	302	302	254	271		1129		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
					12	13	17	9		51		CWT	EMULSIFIED ASPHALT	404.65				
										1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
					30	37	38	22		127		GAL	WATER REPELLENT, SILANE	514.10				
					38	38	62	82		220		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
					780	830	1367	408		3385		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20				
					74	74	60	76		284		LF	JOINT SEALER, HOT POURED	524.11				
					968	1017	1514	644		4143		SY	REMOVAL OF BRIDGE PAVEMENT	529.10				
						30				30		CY	CONTROLLED DENSITY (FLOWABLE) FILL	541.45				
					39	42	69	21		171		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I	580.10				
					117	125	205	62		509		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II	580.11				
					3	3	31	3		40		CY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III	580.12				
					10	30	20	10		70		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14				
					7018	7462	12300	3667		30447		SF	SURFACE PREPARATION FOR MEMBRANE	580.16				
					10	10	10	10		40		CF	RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE	580.20				
					5	5		5		15		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25				
					5	5		5		15		HR	TRUCK RENTAL	608.37				
					221	235	388	116		960		HR	TRUCK-MOUNTED ATTENUATOR	608.45				
						20				20		CY	STONE FILL, TYPE II	613.11				
					16	17	33	8		74		GAL	REPOINTING GRANITE BRIDGE CURB	616.225				
					3	2	2	2		9		EACH	ENERGY ABSORPTION ATTENUATOR	621.56				
					661	673	226	581		2141		LF	TEMPORARY TRAFFIC BARRIER	621.90				
					661	673	226	581		2141		LF	REMOVE AND RESET TEMPORARY TRAFFIC BARRIER	621.95				
					74	79	130	39		322		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
					150	150	150	150		600		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 (US ROUTE 4 - BRIDGE NO. 13E)	641.10				
								1		1		LS	TRAFFIC CONTROL (US ROUTE 4 - BRIDGE NO. 15E)	641.10				
					1					1		LS	TRAFFIC CONTROL (US ROUTE 4 - BRIDGE NO. 5E)	641.10				
						1				1		LS	TRAFFIC CONTROL (US ROUTE 4 - BRIDGE NO. 5W)	641.10				
					2	2	2	2		8		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
					1	1	1	1		4		EACH	PORTABLE ARROW BOARD	641.16				
					400	450	700	350		1900		LF	6 INCH WHITE LINE	646.214				

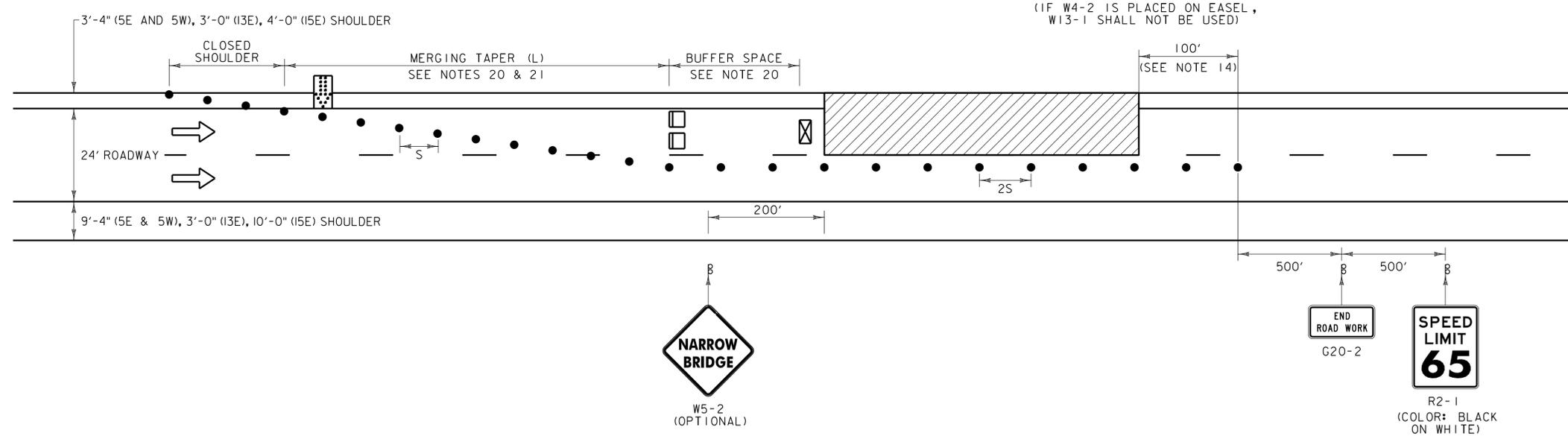
PROJECT NAME: FAIR HAVEN-WEST RUTLAND
PROJECT NUMBER: BF MEMB(35)

FILE NAME: z13b062-qss.dgn
PROJECT LEADER: JPB
DESIGNED BY: SRB
QUANTITY SHEET 1

PLOT DATE: 1/20/2015
DRAWN BY: SRB
CHECKED BY: AEG
SHEET 3 OF 44



CONSTRUCTION APPROACH SIGNING ON US 4 LEFT LANE CLOSED



TRAFFIC CONTROL ON US 4 LEFT LANE CLOSED

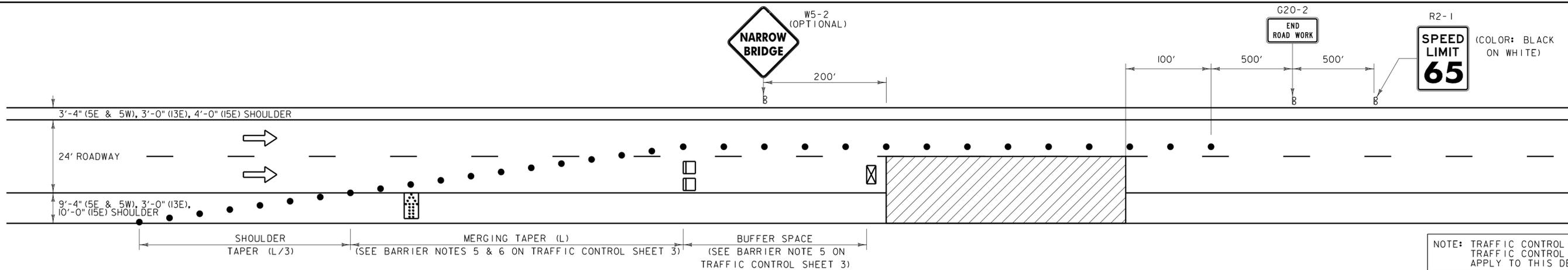
POSTED SPEED (MPH)	TAPER LENGTHS (FT)		TANGENT W=12 FT (L/2)	BARRIER FLARE RATE (MINIMUM)	MINIMUM BUFFER SPACE LENGTH (FT)	MAXIMUM CHANNELIZING DEVICE SPACING (FT)	
	SHOULDER W=10 FT (L/3)	MERGING 12 FT LANE (L)				TAPER (S)	TANGENT (2S)
≤40	90	320	160	1:9	305	40	80
45	150	540	270	1:9	360	45	90
50	170	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 21.
 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

- LEGEND**
- FLOW OF TRAFFIC
 - RETROREFLECTIVE PLASTIC DRUM
 - PORTABLE ARROW BOARD (ITEM 641.16)
 - TYPE III BARRICADE
 - WORK AREA
 - TRUCK-MOUNTED ATTENUATOR (ITEM 608.45)
 - PORTABLE CHANGEABLE MESSAGE SIGN (ITEM 641.15) (SEE NOTE 17)

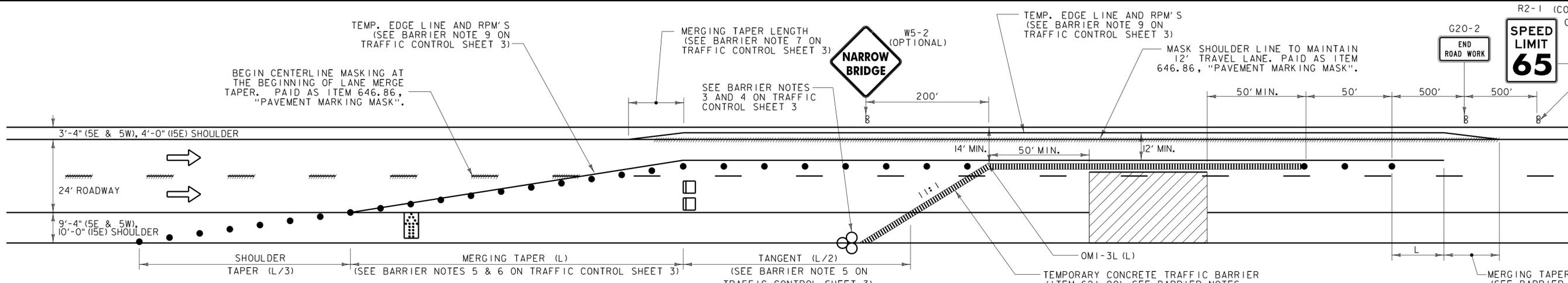
- TRAFFIC CONTROL NOTES:**
- THE LEFT LANE CLOSURE IS SHOWN. THE RIGHT LANE APPROACH SIGNING IS SIMILAR. THE RIGHT LANE CLOSURE IS SHOWN ON TRAFFIC CONTROL SHEET 2.
 - THE EXISTING SPEED LIMIT IS 65 MPH. THE SPEED LIMIT WILL BE REDUCED TO 50 MPH IN THE WORK ZONE FOR THIS PROJECT. ANY EXISTING SPEED LIMIT SIGNS WITHIN THE SPEED REDUCTION AREA SHALL BE COMPLETELY COVERED.
 - CONSTRUCTION SIGNS SHALL BE INSTALLED SO AS NOT TO OBSTRUCT EXISTING SIGNS.
 - 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).
 - SOLID SUBSTRATE CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM D 4956) TYPE VII, VIII OR IX REQUIREMENTS, UNLESS OTHERWISE NOTED. BLACK AND WHITE REGULATORY SIGNS SHALL BE A MINIMUM OF TYPE III, UNLESS OTHERWISE NOTED.
 - ROLL UP SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING ASTM D 4956 TYPE VI.
 - 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.
 - 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.
 - 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.
 - 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.
 - THE CONTRACTOR SHALL HAVE SIGNS FOR CLOSURE OF RIGHT AND LEFT LANES ON PROJECT BEFORE WORK COMMENCES.
 - CHANNELIZING DEVICES OTHER THAN RETROREFLECTIVE PLASTIC DRUMS SHALL BE ALLOWED ALONG THE BUFFER SPACE AND WORK AREA. THE TYPE OF DEVICE SHALL BE CONSISTENT THROUGHOUT THE BUFFER SPACE AND WORK AREA AND SHALL REMAIN STABLE WHILE UNATTENDED.
 - THE NUMBER OF CHANNELIZING DEVICES, TYPE III 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.
 - PLACE LAST CHANNELIZING DEVICE 100 FEET BEYOND THE ANTICIPATED WORK ZONE TERMINAL POINT EACH DAY.
 - THE ARROW PANEL SHALL BE PLACED ON THE SHOULDER OF THE ROADWAY AS CLOSE AS PRACTICAL TO THE BEGINNING OF THE MERGING TAPER.
 - WHEN FLAGGER IS PRESENT THE "FLAGGER" (W20-7) SIGN SHALL BE USED; TO BE REMOVED IF FLAGGING STOPS FOR 15 MINUTES OR MORE.
 - 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".
 - TRAVEL LANE SHALL BE A MINIMUM OF 12 FEET WIDE FOR ALL BRIDGES.
 - 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.
 - 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.
 - EXTEND MERGING TAPER TO ACCOUNT FOR REQUIRED LANE SHIFT OFFSET.
 - BRIDGE NOS. 5E, 5W, AND 15E ARE LOCATED AT INTERCHANGES. ACCESS TO ENTRANCE AND EXIT RAMPS SHALL BE MAINTAINED AT ALL TIMES. TRAFFIC CONTROL SHALL BE INSTALLED IN ACCORDANCE WITH TRAFFIC CONTROL SHEET 3 WHERE APPLICABLE. PHASING SHALL OCCUR PER THE APPROPRIATE MEMBRANE SPLICE DETAILS ON THE BITUMINOUS CONCRETE DETAILS SHEETS 1 AND 2.

PROJECT NAME: FAIR HAVEN-WEST RUTLAND	PLOT DATE: 1/20/2015
PROJECT NUMBER: BF MEMB(35)	DRAWN BY: MWS
FILE NAME: z13b062-t.cpl.dgn	CHECKED BY: JPB
PROJECT LEADER: JPB	TRAFFIC CONTROL SHEET 1
DESIGNED BY: SRB	SHEET 5 OF 44



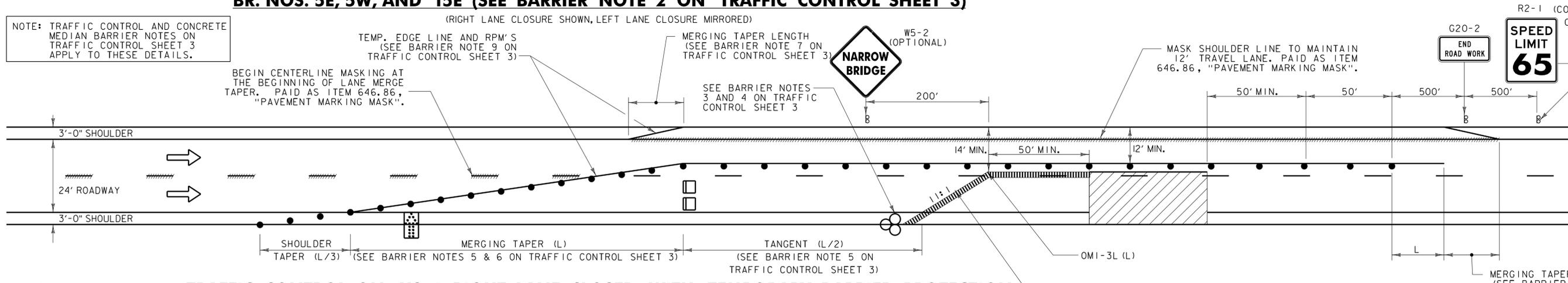
TRAFFIC CONTROL ON US 4 RIGHT LANE CLOSED

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



**TRAFFIC CONTROL ON US 4 RIGHT LANE CLOSED WITH TEMPORARY BARRIER PROTECTION
BR. NOS. 5E, 5W, AND 15E (SEE BARRIER NOTE 2 ON TRAFFIC CONTROL SHEET 3)**

NOTE: TRAFFIC CONTROL AND CONCRETE MEDIAN BARRIER NOTES ON TRAFFIC CONTROL SHEET 3 APPLY TO THESE DETAILS.



**TRAFFIC CONTROL ON US 4 RIGHT LANE CLOSED WITH TEMPORARY BARRIER PROTECTION
BR. NO. 13E (SEE BARRIER NOTE 2 ON TRAFFIC CONTROL SHEET 3)**

LEGEND

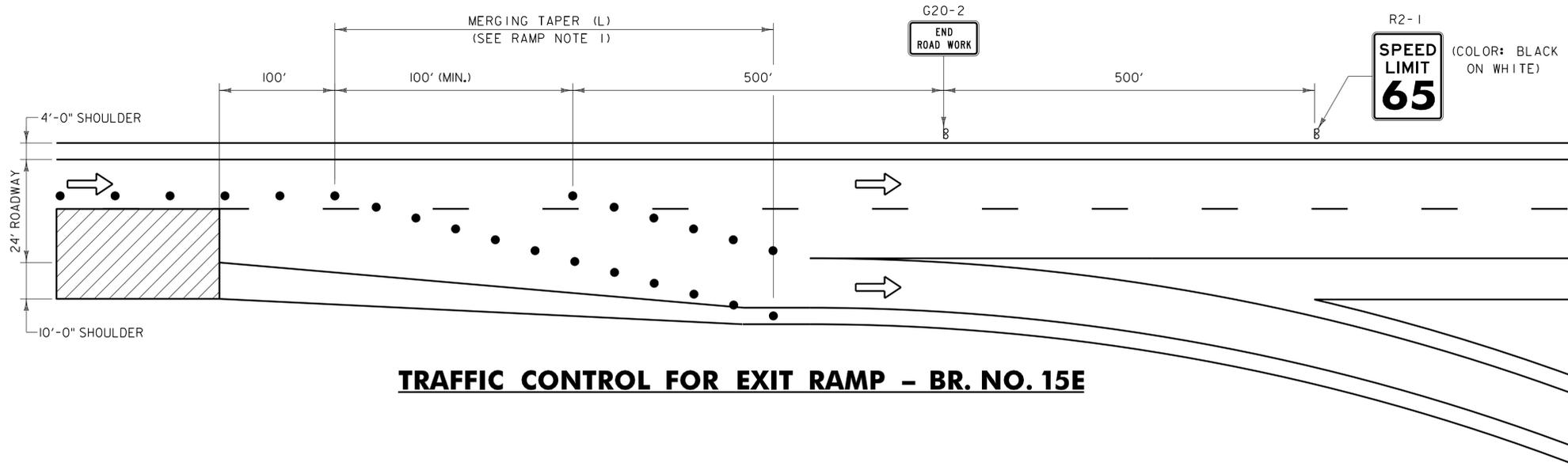
- FLOW OF TRAFFIC
- RETROREFLECTIVE PLASTIC DRUM
- PORTABLE ARROW BOARD (ITEM 641.6)
- TYPE III BARRICADE
- WORK AREA
- TRUCK-MOUNTED ATTENUATOR (ITEM 608.45)
- PORTABLE CHANGEABLE MESSAGE SIGN (ITEM 641.5) (SEE NOTE 17 ON TRAFFIC CONTROL SHEET 1)
- ENERGY ABSORPTION ATTENUATOR (ITEM 621.56)

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

TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATION:
 $L = WS$ FOR POSTED SPEEDS OF 45 MPH OR GREATER
 $L = WS^2/60$ 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

PROJECT NAME: FAIR HAVEN-WEST RUTLAND
PROJECT NUMBER: BF MEMB(35)
FILE NAME: z13b062-tcp2.dgn
PROJECT LEADER: JPB
DESIGNED BY: SRB
TRAFFIC CONTROL SHEET 2
PLOT DATE: 1/20/2015
DRAWN BY: MWS
CHECKED BY: JPB
SHEET 6 OF 44

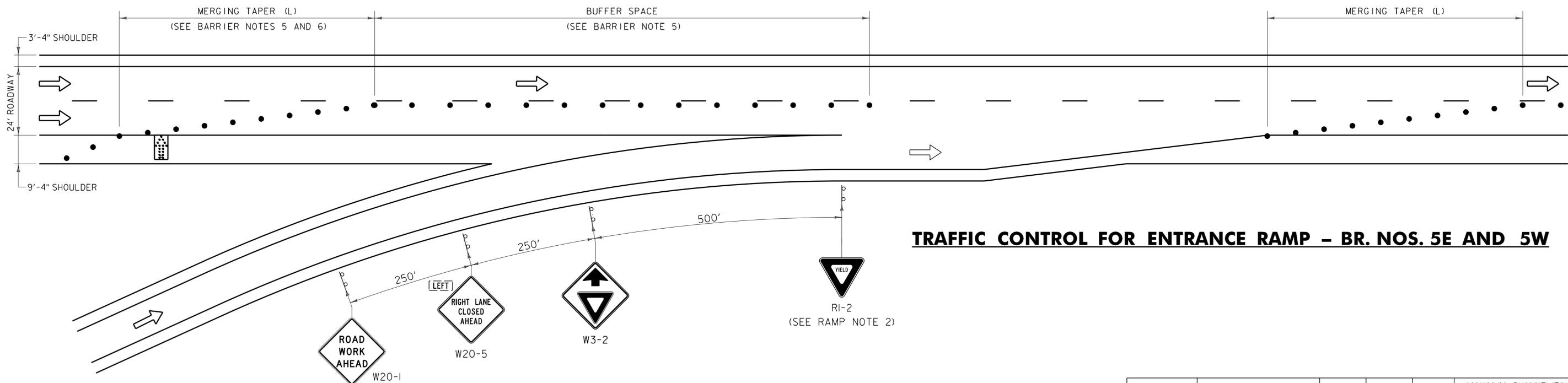


TRAFFIC CONTROL FOR EXIT RAMP - BR. NO. 15E

NOTE: TRAFFIC CONTROL NOTES ON TRAFFIC CONTROL SHEET 1. APPLY TO THESE DETAILS.

ENTRANCE /EXIT RAMP NOTES:

1. DUE TO CLOSE PROXIMITY OF THE BRIDGE NO.15E WORK AREA TO THE EXIT RAMP, THE MERGING TAPER MAY NEED TO BE REDUCED. THE GORE PAINT AT THE EXIT RAMP SHALL BE MASKED AS NECESSARY TO PROVIDE THE LONGEST TAPER POSSIBLE WITHIN THE SPACE AVAILABLE.
2. AT ENTRANCE RAMPS; THE "YIELD" (RI-2) SIGN SHALL BE PLACED AT THE THEORETICAL GORE TO PROVIDE ADEQUATE SIGHT DISTANCE OF ONCOMING MAINLINE VEHICULAR TRAFFIC.
3. THE "TRAFFIC CONTROL FOR ENTRANCE RAMP - BR. NOS. 5E AND 5W" DETAIL HAS BEEN PROVIDED AS GUIDANCE IF APPLICABLE. IF SUFFICIENT DISTANCE EXISTS BETWEEN THE ENTRANCE RAMP AND THE WORK AREA TO PROVIDE THE TAPER, TANGENT, AND BUFFER SPACE LENGTHS AS SHOWN ON TRAFFIC CONTROL SHEET 2 WITHOUT IMPACTING THE ENTRANCE RAMP, ONLY THE ENTRANCE RAMP SIGNING SHALL BE REQUIRED.



TRAFFIC CONTROL FOR ENTRANCE RAMP - BR. NOS. 5E AND 5W

TRAFFIC CONTROL AND CONCRETE MEDIAN BARRIER NOTES:

1. SEE TRAFFIC CONTROL SHEETS 1 AND 2 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 TRAVELED 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 ABSORPTION ATTENUATOR SHALL BE LOCATED AT THE END OF THE BARRIER.

4. THE QUANTITIES INCLUDE TWO ENERGY ABSORPTION ATTENUATORS PER BRIDGE, AND ONE BACKUP ATTENUATOR FOR THE PROJECT (INCLUDED IN QUANTITY FOR BRIDGE NO. 5E) TO BE USED IN THE EVENT AN IN-SERVICE ATTENUATOR IS DAMAGED AND NEEDS TO BE REPLACED, 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, BUFFER SPACE, AND TANGENT LENGTHS MAY BE EXTENDED BEYOND MINIMUM VALUES, ESPECIALLY IN CLOSE PROXIMITY TO INTERCHANGE RAMPS, CURVES, OR OTHER INFLUENCING FACTORS.
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".
10. DASHED LINE REMOVAL SHALL BEGIN 750 FEET IN ADVANCE OF THE BEGINNING OF THE SHOULDER TAPER FOR TRAFFIC CONTROL WITH TEMPORARY BARRIER PROTECTION.

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

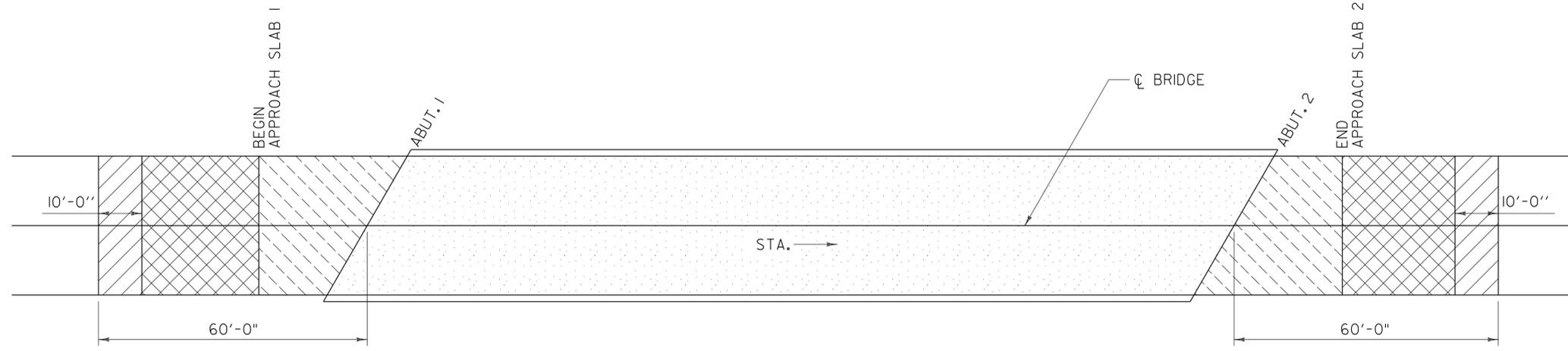
TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATION:
 L = WS FOR POSTED SPEEDS OF 45 MPH OR GREATER
 L = WS²/60 FOR POSTED SPEEDS OF 40 MPH OR LESS

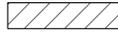
L = MINIMUM LENGTH OF TAPER
 W = WIDTH OF OFFSET IN FEET. (TYPICAL)
 S = POSTED SPEED IN MPH

LEGEND

- FLOW OF TRAFFIC
- RETROREFLECTIVE PLASTIC DRUM
- PORTABLE ARROW BOARD (ITEM 641.16)
- WORK AREA

PROJECT NAME: FAIR HAVEN-WEST RUTLAND
 PROJECT NUMBER: BF MEMB(35)
 FILE NAME: z13b062-1cp3.dgn
 PROJECT LEADER: JPB
 DESIGNED BY: SRB
 TRAFFIC CONTROL SHEET 3
 PLOT DATE: 1/20/2015
 DRAWN BY: MWS
 CHECKED BY: JPB
 SHEET 7 OF 44



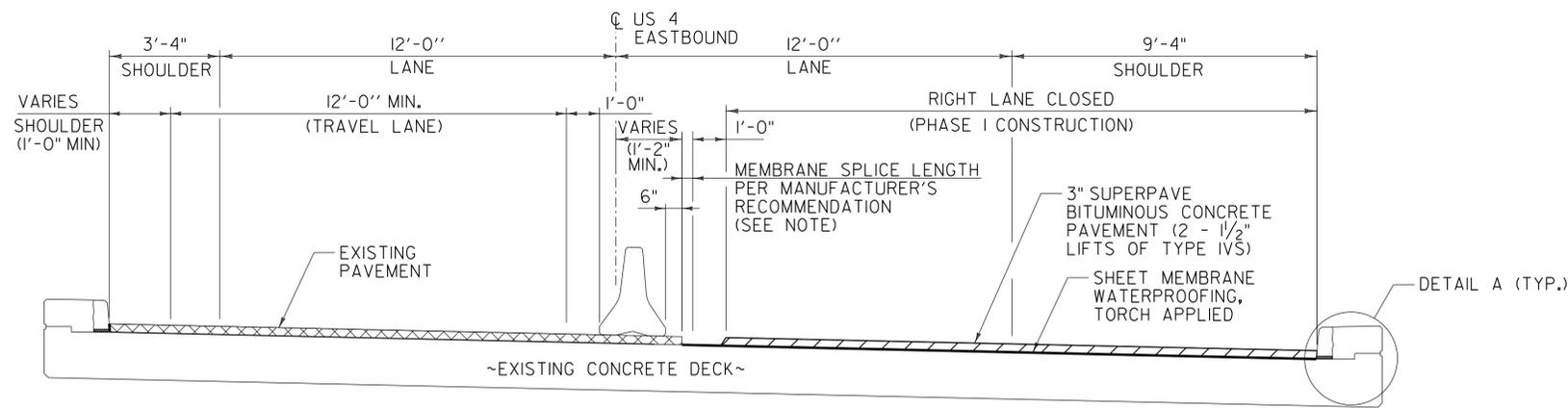
-  COLD PLANE - 1/2"
-  COLD PLANE - 3"
-  REMOVE BIT. CONC. PAV'T - TO TOP OF AT-GRADE APPROACH SLABS. PAID UNDER ITEM 529.I0. SEE NOTE 5 BELOW.
-  REMOVE BIT. CONC. PAV'T - TO THE TOP OF THE CONCRETE BRIDGE DECK AND REMOVE THE BARRIER MEMBRANE.

NOTE:

1. COLD PLANING WILL BE PAID FOR UNDER ITEM 210.I0 EXCEPT AS OTHERWISE SPECIFIED IN NOTE 14 ON SHEET 2.
2. REMOVAL OF THE BITUMINOUS CONCRETE PAVEMENT WILL BE PAID FOR UNDER ITEM 529.I0.
3. REMOVAL OF THE BARRIER MEMBRANE WILL BE PAID FOR UNDER ITEM 580.I6.
4. 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 3" PAVEMENT TO BE PLACED IN ALL OTHER LOCATIONS PER TYPICAL APPROACH SECTION ON BITUMINOUS CONCRETE DETAILS SHEET 1. FOR BRIDGE NOS. 5E, 5W, AND 15E, 56 ADDITIONAL TONS HAVE BEEN INCLUDED IN THE ESTIMATED QUANTITY FOR ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)" TO ADDRESS THIS WORK, WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR BASE PREPARATION WILL BE PAID FOR UNDER EQUIPMENT RENTAL ITEMS.
5. FOR AT-GRADE APPROACH SLABS, NO MORE THAN 4" OF PAVEMENT SHALL BE REMOVED.
6. ANY MILLED RUMBLE STRIPS ENCOUNTERED WITHIN THE LIMITS OF THE COLD PLANE AREA SHALL BE REMOVED.

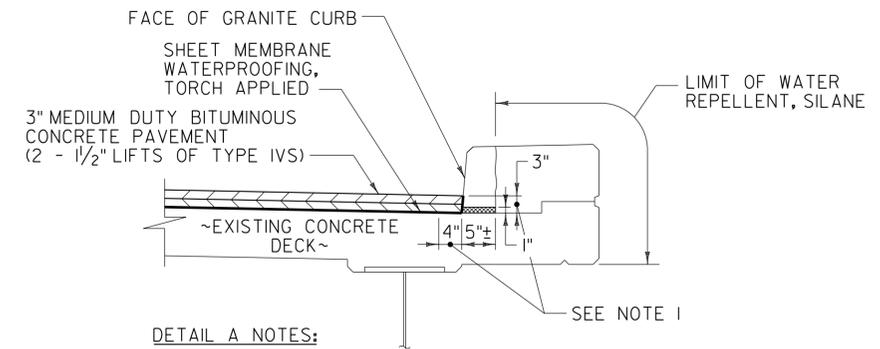
BITUMINOUS CONCRETE REMOVAL & REPLACEMENT PLAN
NOT TO SCALE

PROJECT NAME: FAIR HAVEN-WEST RUTLAND	
PROJECT NUMBER: BF MEMB(35)	
FILE NAME: z13b062-removal.dgn	PLOT DATE: 1/20/2015
PROJECT LEADER: JPB	DRAWN BY: MWS
DESIGNED BY: SRB	CHECKED BY: JPB
BITUMINOUS CONCRETE REMOVAL PLAN	SHEET 8 OF 44



TYPICAL SECTION - PHASE I CONSTRUCTION - BRIDGE NO. 5E

NOT TO SCALE

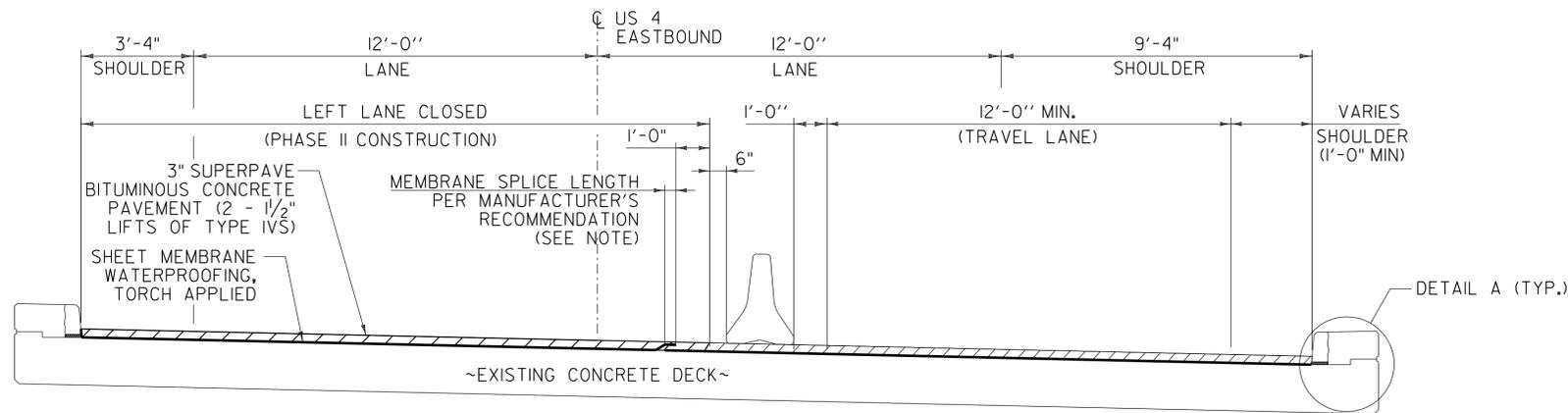


DETAIL A NOTES:

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 3" UP THE FACE OF CURB PRIOR TO PLACING THE MEMBRANE.
5. REPOINTING OF THE GRANITE CURB SHALL BE REQUIRED AND PAID FOR UNDER ITEM 616.225, "REPOINTING GRANITE BRIDGE CURB". THE QUANTITY FOR THIS ITEM AS SHOWN ON THE QUANTITY SHEET IS ESTIMATED.

DETAIL A

NOT TO SCALE



TYPICAL SECTION - PHASE II CONSTRUCTION - BRIDGE NO. 5E

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.

BRIDGE LENGTH AND WIDTH (CURB TO CURB)

BRIDGE NO.	WIDTH (CURB TO CURB) (FEET)	LENGTH (FEET)
5E	36.67	191.38
5W	36.67	203.49
13E	30.00	410.00
15E	38.00	96.48

MATERIAL TOLERANCES

(IF USED ON PROJECT)

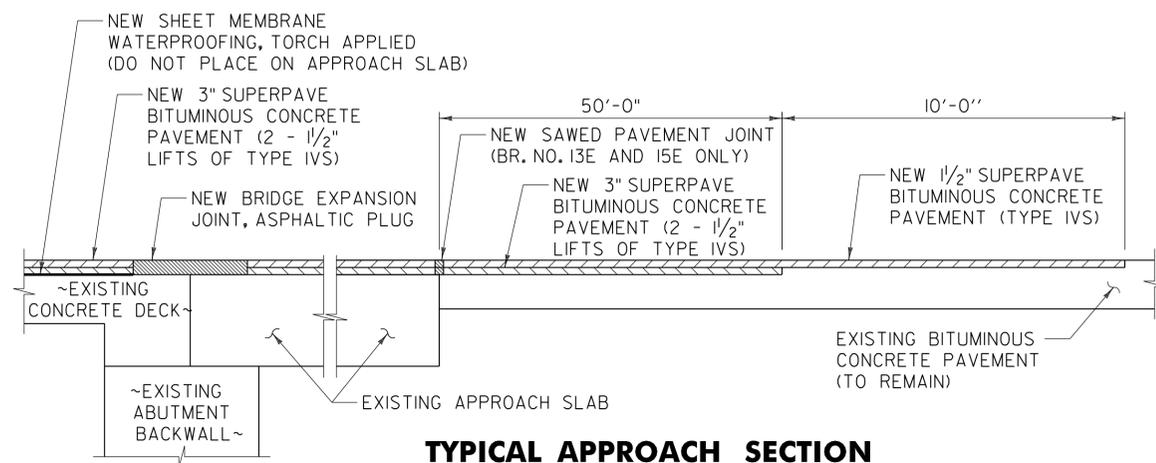
SURFACE	TOLERANCE
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

SAWED PAVEMENT JOINT REPLACEMENT SCHEDULE

BRIDGE NO.	APPROACH SLAB 1/3	APPROACH SLAB 2/4
5E	37 LF	37 LF
5W	37 LF	37 LF
13E	30 LF	30 LF
15E	38 LF	38 LF

ASPHALTIC PLUG JOINT REPLACEMENT SCHEDULE

BRIDGE NO.	ABUT. 1/3	PIER 1/5	PIER 2/6	PIER 3/7	PIER 4/8	ABUT. 2/4
5E	38 LF	-	-	-	-	0 LF
5W	38 LF	-	-	-	-	0 LF
13E	31 LF	-	-	-	-	31 LF
15E	41 LF	-	-	-	-	41 LF



TYPICAL APPROACH SECTION

NOT TO SCALE

PROJECT NAME: FAIR HAVEN-WEST RUTLAND

PROJECT NUMBER: BF MEMB(35)

FILE NAME: z13b062-sect.dgn

PLOT DATE: 1/20/2015

PROJECT LEADER: JPB

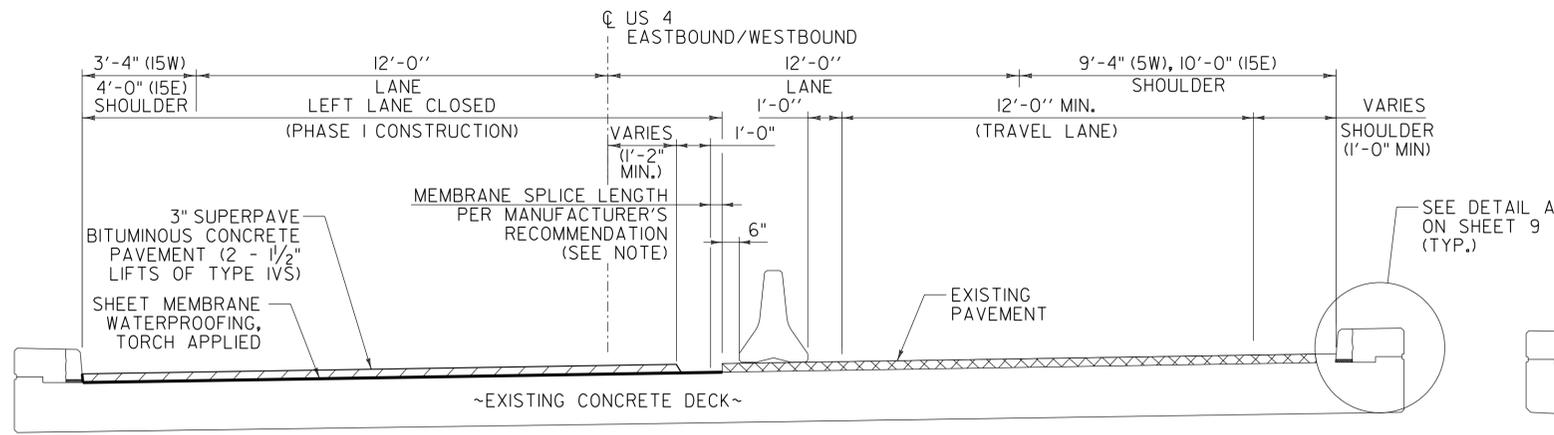
DRAWN BY: MWS

DESIGNED BY: SRB

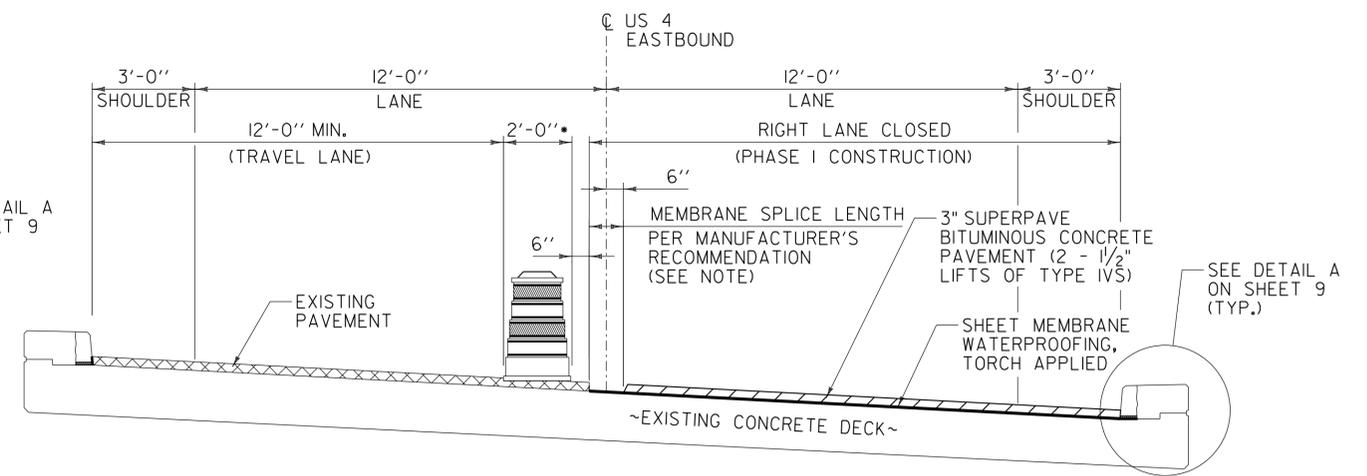
CHECKED BY: JPB

BITUMINOUS CONCRETE DETAILS SHEET 1

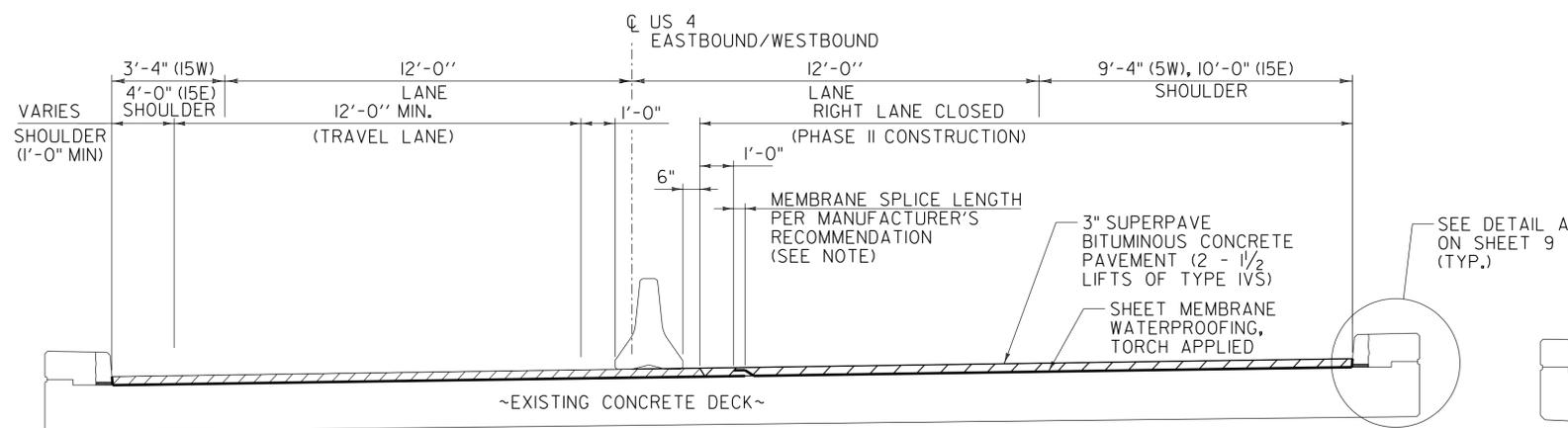
SHEET 9 OF 44



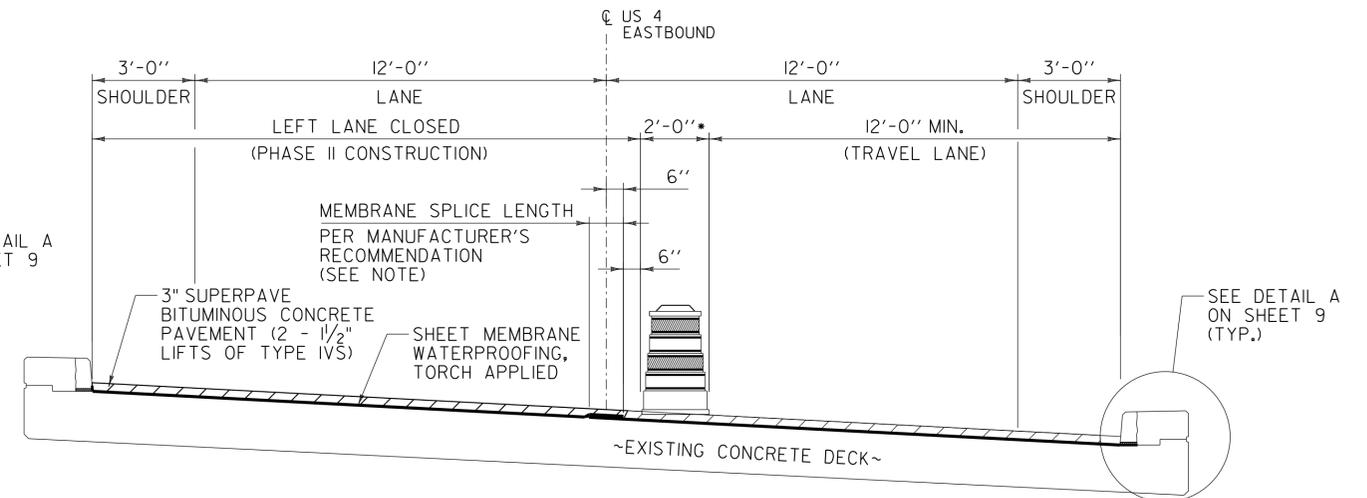
TYPICAL SECTION - PHASE I CONSTRUCTION - BRIDGE NO. 5W & 15E
NOT TO SCALE



TYPICAL SECTION - PHASE I CONSTRUCTION - BRIDGE NO. 13E
NOT TO SCALE



TYPICAL SECTION - PHASE II CONSTRUCTION - BRIDGE NO. 5W & 15E
NOT TO SCALE

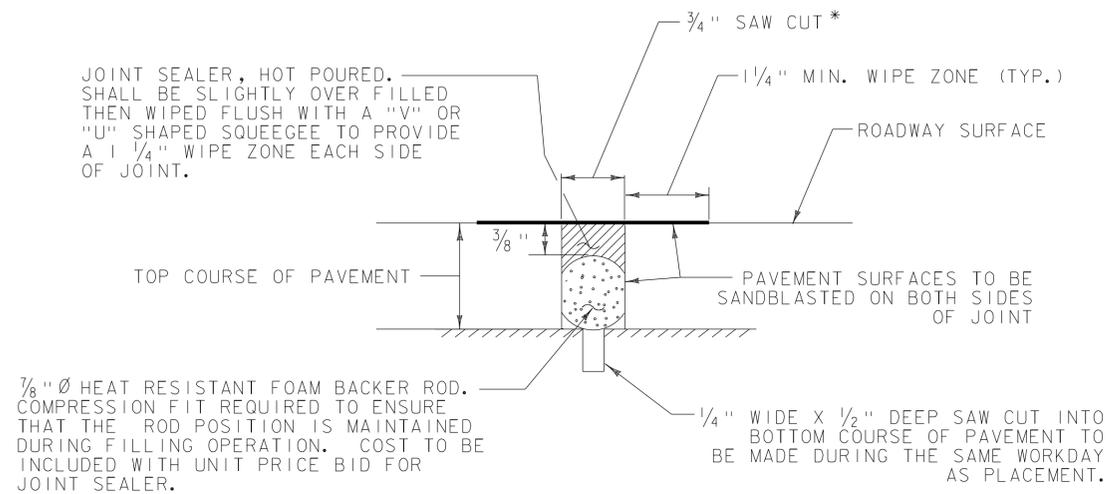


TYPICAL SECTION - PHASE II CONSTRUCTION - BRIDGE NO. 13E
NOT TO SCALE

- TEMPORARY BARRELS SHALL BE MOVED AND REPLACED AS NECESSARY TO ACCOMMODATE OVERSIZED VEHICLES AND CONSTRUCTION ACTIVITIES. PAYMENT SHALL BE INCIDENTAL TO ITEM 64110.

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.

PROJECT NAME: FAIR HAVEN-WEST RUTLAND	
PROJECT NUMBER: BF MEMB(35)	
FILE NAME: z13b062-sect.dgn	PLOT DATE: 1/20/2015
PROJECT LEADER: JPB	DRAWN BY: MWS
DESIGNED BY: SRB	CHECKED BY: JPB
BITUMINOUS CONCRETE DETAILS SHEET 2	SHEET 10 OF 44

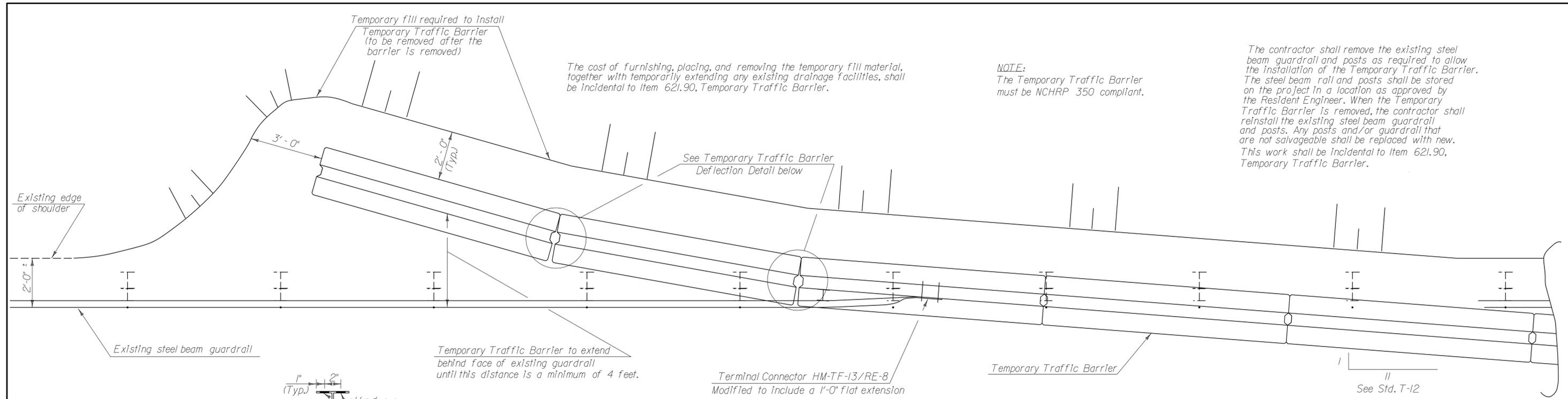


NOTE: PLACE JOINT SEALER, HOT Poured AT THE END OF APPROACH SLABS.

SAWED PAVEMENT JOINT DETAIL
(NOT TO SCALE)

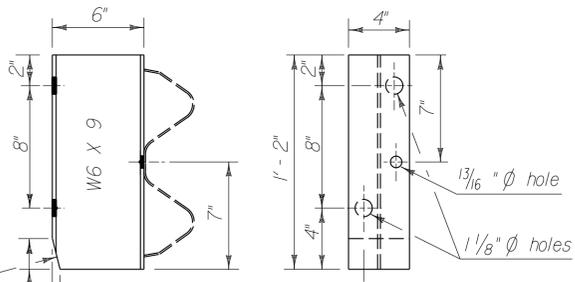
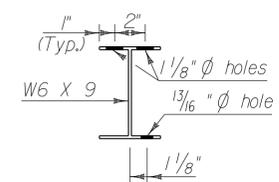
*JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUTS WILL BE MADE DIRECTLY OVER THE END OF APPROACH SLAB. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER. ALL WORK SHALL BE PAID FOR UNDER ITEM 524.11, "JOINT SEALER, HOT Poured".

PROJECT NAME: FAIR HAVEN-WEST RUTLAND	
PROJECT NUMBER: BF MEMB(35)	
FILE NAME: z13b062-jnts.dgn	PLOT DATE: 1/20/2015
PROJECT LEADER: JPB	DRAWN BY: MWS
DESIGNED BY: SRB	CHECKED BY: JPB
PAVEMENT JOINT DETAIL	SHEET 11 OF 44



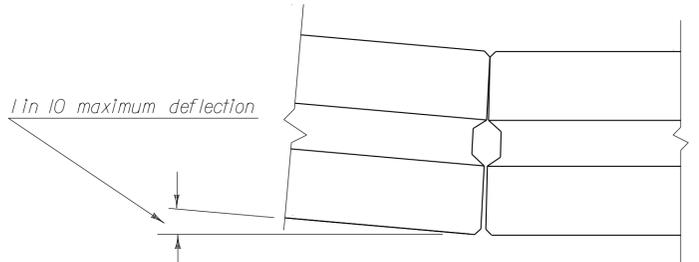
PLAN VIEW SHOWING POSITIVE CONNECTION BETWEEN TEMPORARY TRAFFIC BARRIER AND EXISTING GUARDRAIL

NTS



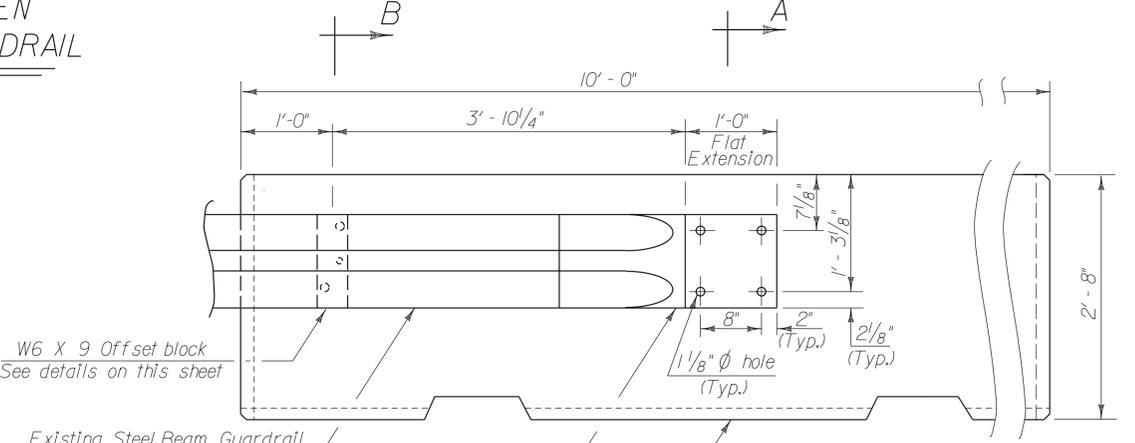
OFFSET BLOCK DETAILS

NTS



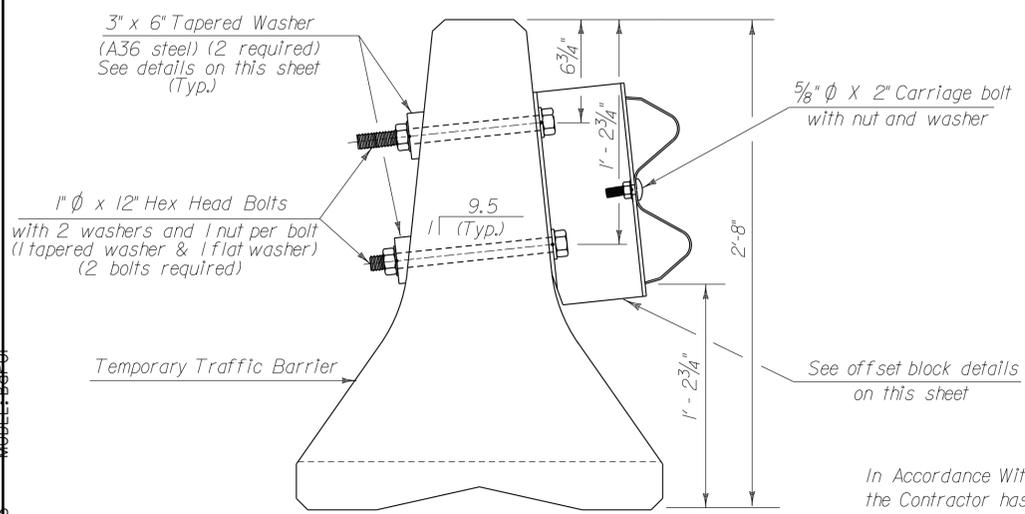
TEMPORARY TRAFFIC BARRIER DEFLECTION DETAIL

NTS



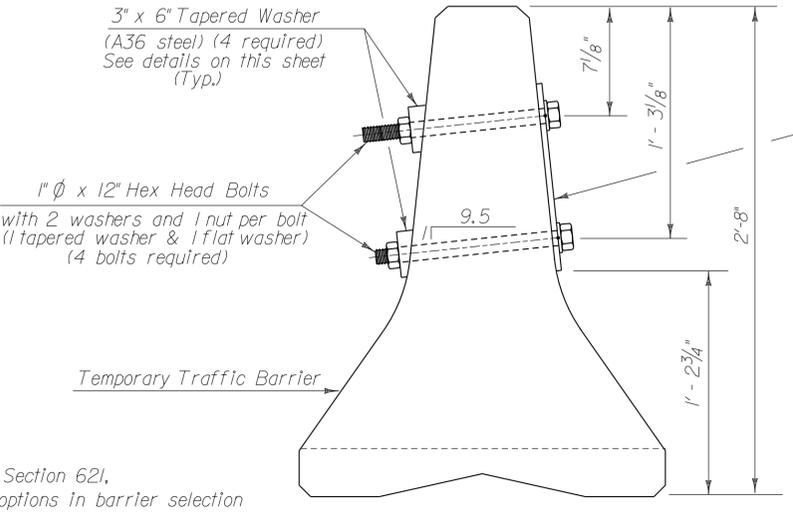
ELEVATION VIEW SHOWING POSITIVE CONNECTION BETWEEN TEMPORARY TRAFFIC BARRIER AND EXISTING GUARDRAIL

NTS



SECTION B-B

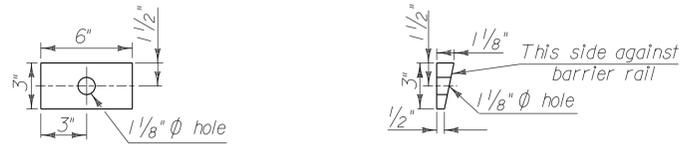
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SECTION A-A

NTS

In Accordance With Section 621, the Contractor has options in barrier selection

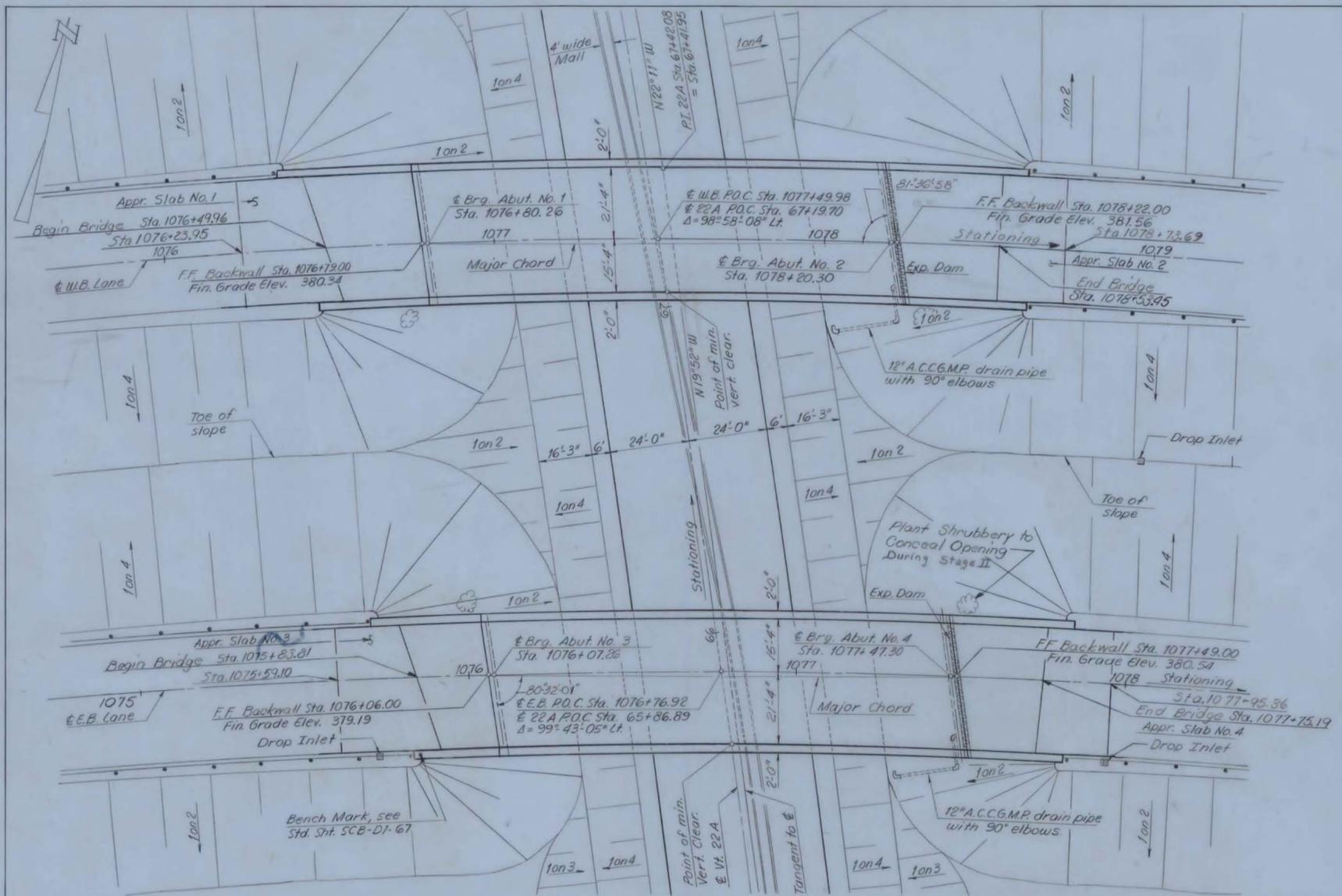


TAPERED WASHER DETAILS

NTS

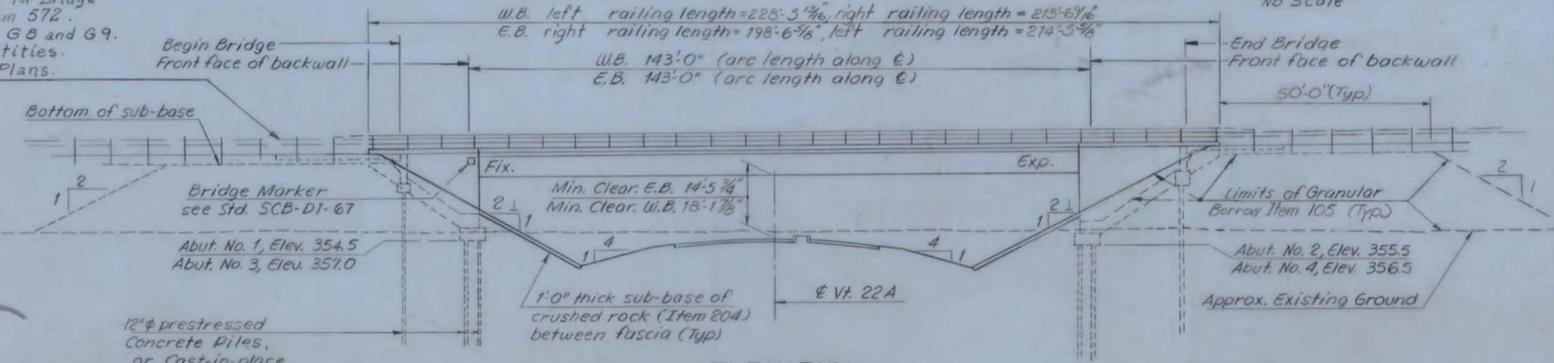
PROJECT NAME:	FAIR HAVEN-WEST RUTLAND
PROJECT NUMBER:	
FILE NAME:	z13b062-barrier.dgn
PROJECT LEADER:	JPB
DESIGNED BY:	
TRAFFIC CONTROL BARRIER SHEET	
PLOT DATE:	1/20/2015
DRAWN BY:	MWS
CHECKED BY:	JPB
SHEET	12 OF 44

MODEL-Barr-0



Curve Data	Curve Data	Curve Data
E.B. U.S. Ete. 4	U.B. U.S. Ete. 4	Vt. 22A
$\Delta = 74^\circ 44' 00''$ Rt.	$\Delta = 70^\circ 21' 00''$ Rt.	$\Delta = 2^\circ 19' 00''$ Lt.
$D = 3^\circ 00'$	$D = 0^\circ 15'$	$D = 0^\circ 15'$
$R = 1909.86'$	$R = 1909.86'$	$R = 22,918.32'$
$T = 1458.44'$	$T = 463.40'$	$T = 463.40'$
$L = 2491.11'$	$L = 2345.00'$	$L = 326.67'$
$E = 493.18'$	$E = 426.66'$	$E = 4.68'$
Bank $1\frac{1}{16}''$ per ft.	Bank $1\frac{1}{16}''$ per ft.	No Bank

Bridge Railing for Bridge Approaches, Item 572. See Standards G8 and G9. Stage II Quantities. See Roadway Plans.



ELEVATION
Scale: 1"=20'

Addition: Bridge Railing for Bridge Approaches 8-25-69 R.P.G.

GENERAL NOTES

- SPECIFICATIONS:**
All materials and construction shall conform to the State of Vermont, Department of Highways, Standard Specifications for Highway and Bridge Construction dated April, 1964, and the A.A.S.H.O. Standard Specifications dated 1965, as modified by current Interim Specifications.
- LIVE LOAD:**
Structure designed for HS-20-44 Loading modified for National System of Interstate Highways applied in accordance with the provisions of the A.A.S.H.O. Standard Specifications, Article 1.2.6.
- CONCRETE:**
All exposed edges of concrete shall be chamfered 1"x1" unless otherwise noted. All construction joints to be made as shown on SCB-D6-67, details B and C, unless otherwise noted.
- REINFORCEMENT:**
All reinforcement to have a clear cover of 2", unless otherwise noted.
- DIMENSIONS:**
All dimensions given are measured horizontally or vertically unless otherwise noted. Dimensions given are for 98°F, unless otherwise noted. Elevation datum, sea level, based on nearest U.S. Government Vertical control.
- STRUCTURAL STEEL:**
Item 404-A shall include all structural steel, copper, wrought iron, and any other materials indicated or required in the completed structure which are not otherwise classified. All structural steel shall be structural carbon steel conforming to the requirements of the specifications for steel bridges and buildings A.S.T.M. Designation A-36-62T, except as otherwise noted. The contractor shall submit complete details of the structural steel to the State of Vermont, Department of Highways, and receive their written approval prior to the start of fabrication. The steel details shall include provisions for cambering of beams for dead load deflection as well as erection diagrams and falsework details. The final coat of field paint shall be green.
- WATER REPELLENT:**
The top surfaces of safety walks, fascia and back to the fascia beam under the slab, and on exposed areas of abutments not otherwise treated shall be covered with water repellent, (Item 440).
- FIELD BOLTING:**
Field bolted connections shall be made with 7/8" A325 High Strength bolts. A490 bolts are not allowed.
- ABUTMENTS:**
The top surfaces of all abutments shall be sloped 1/4" per foot from the front edge of abutment curtain walls, except for bearing pads projecting 1" or more above the general area, which surfaces shall be level. Elevation of bridge seats given are for centerline of bearings. The entire exposed top surface of abutments shall be coated with Asphaltic-Asbestos Coating, 1/2" thick, as per Item 407 of the specifications. The application of this item shall be after all painting and incidental items are completed. Fill inside the abutments shall be graded to 3' above the bottom of the exterior concrete girders of the abutment section and shall meet the requirements of Item 105.
- PILES:**
Cast-in-Place Piling or Prestressed Concrete Piling Type will be chosen by alternate bids. Vertical Design Load=40 tons/pile; Horizontal Design Load=1 ton /pile. All piling shall be driven to the lengths indicated on the plans unless otherwise directed in writing by the Engineer.
- GENERAL:**
Cross slopes of the approach slabs to conform to the cross slope of the bridge. All expansion material shall be pre-molded cork containing no bitumen or asphalt.
- BITUMINOUS CONCRETE PAVEMENT:**
Bituminous concrete pavement, Item 361 Modified, Type IV, shall be applied in two courses.

INDEX OF DRAWINGS

- BR 501 PLAN AND ELEVATION
- BR 502 QUANTITY SHEET
- BR 503 PRELIMINARY INFORMATION SHEET
- BR 504 BORING LOG
- BR 505 BORING LOG
- BR 506 BORING LOG
- BR 507 SUPERSTRUCTURE DETAILS
- BR 508 SUPERSTRUCTURE DETAILS
- BR 509 SUPERSTRUCTURE DETAILS
- BR 510 JOINT DETAILS
- BR 511 ABUTMENT No. 1 DETAILS
- BR 512 ABUTMENT No. 2 DETAILS
- BR 513 ABUTMENT No. 3 DETAILS
- BR 514 ABUTMENT No. 4 DETAILS
- BR 515 FOOTING DETAILS & TYPICAL SECTIONS
- BR 516 FOOTING DETAILS & TYPICAL SECTIONS
- BR 517 APPROACH SLAB No. 1
- BR 518 APPROACH SLAB No. 2
- BR 519 APPROACH SLAB No. 3
- BR 520 APPROACH SLAB No. 4
- BR 521 REINFORCING STEEL DETAILS
- BR 522 REINFORCING STEEL DETAILS
- BR 523 REINFORCING STEEL DETAILS
- BR 524 REINFORCING STEEL DETAILS
- BR 525 REINFORCING STEEL DETAILS

STANDARD DRAWINGS

- SCB-D6-67 PILE SPLICE DETAILS, CONSTRUCTION JOINT DETAILS
- SCB-D4-67 DECK REINFORCING LAYOUT AT ABUTMENT
- SCB-D2-67 BEAM HAUNCH
- SCB-D1-67 BENCH MARK & BRIDGE MARKER DETAILS AND GENERAL NOTES
- SB-R2-65 STEEL RAILING DETAILS
- SB-R1-64 (SHEETS 1 AND 2) ALUMINUM RAILING DETAILS.
- PRESTRESSED CONCRETE PILES - JOINT COMMITTEE, AASHTO COMMITTEE ON BRIDGES & STRUCTURES AND

**FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 13 OF 44
BRIDGE NOS. 5E AND 5W
FOR REFERENCE ONLY**

DESIGN STRESSES

Concrete	$f'_c = 3,000$ p.s.i.
	$f_c = 1,200$ p.s.i.
Structural Steel	$f_s = 20,000$ p.s.i.
	(A-36, other steels as per AASHTO specs.)
Reinforcing Steel	$f_s = 20,000$ p.s.i. (tension)
	(Intermediate) $f_s = 16,000$ p.s.i. (compression)



U.S. RTE. 4 RELOCATION OVER VT. 22A RELOC.

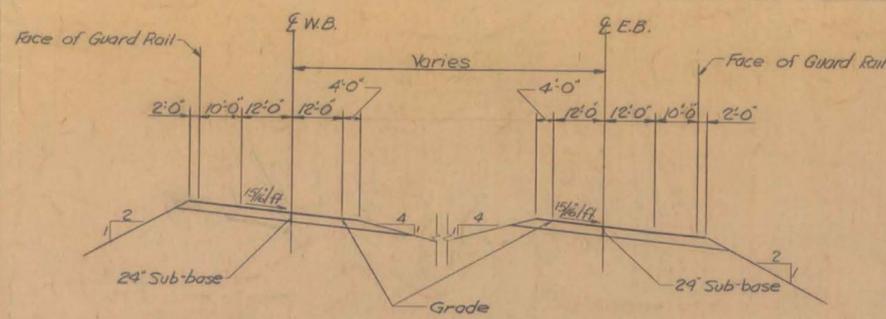
PLAN AND ELEVATION

MCFARLAND-JOHNSON CONSULTING ENGINEERS BINGHAMTON, NEW YORK

DESIGNED BRK	CHECKED REC	DATE 5-23-69
DRAWN EMG	IN CHARGE HGC	SCALE As shown

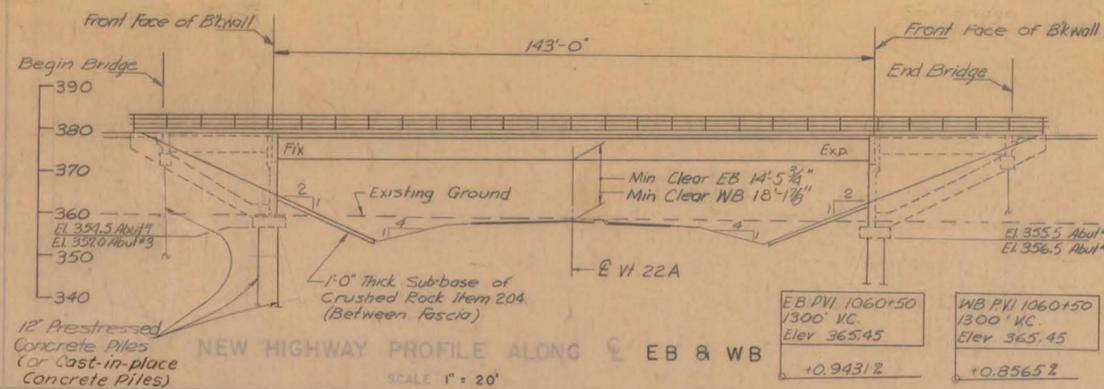
PROJECT NO. FO20-1(4)(8)SH/80 OF532

CONTRACT NO. BR 501 180 255



NEW HIGHWAY SECT. STA. 1075+00 TO STA. 1079+00

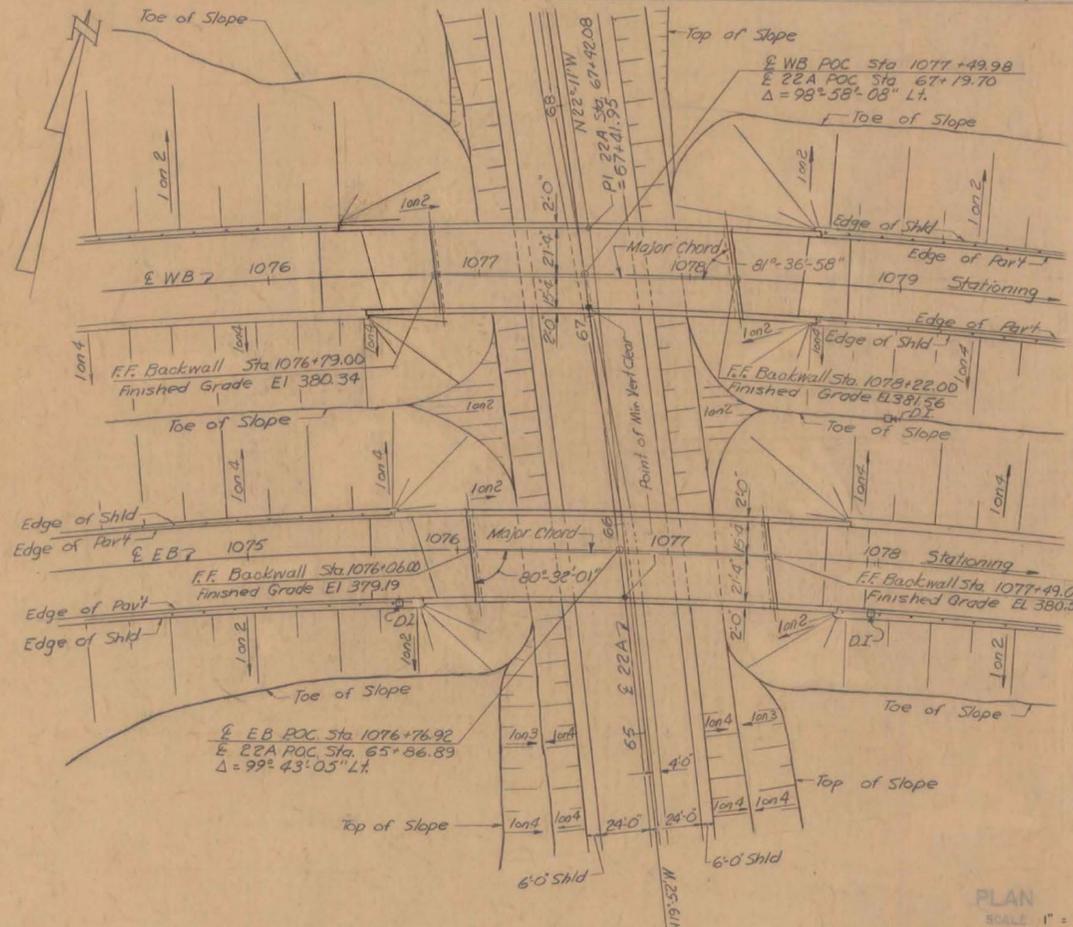
SCALE 1" = 20'



NEW HIGHWAY PROFILE ALONG EB & WB

SCALE 1" = 20'

EB PVI 1060+50 1300' VC Elev 365.45 +0.9431%	WB PVI 1060+50 1300' VC Elev 365.45 +0.8565%
---	---



PLAN SCALE 1" = 40'

CURVE DATA

EB US 4	WB US 4	VT 22A
Δ 74°-44'-00" Rt	Δ 70°-21'-00" Rt	Δ 2°-19'-00" Lt
D 3'-00"	D 3'-00"	D 0'-15"
R 1909.86	R 1909.86	R 22,918.32
T 1458.44	T 1346.01	T 463.40
L 2491.11	L 2345.00	L 926.67
E 493.18	E 426.66	E 4.68
Bank 1 1/2% per ft	Bank 1 1/2% per ft	No Bank

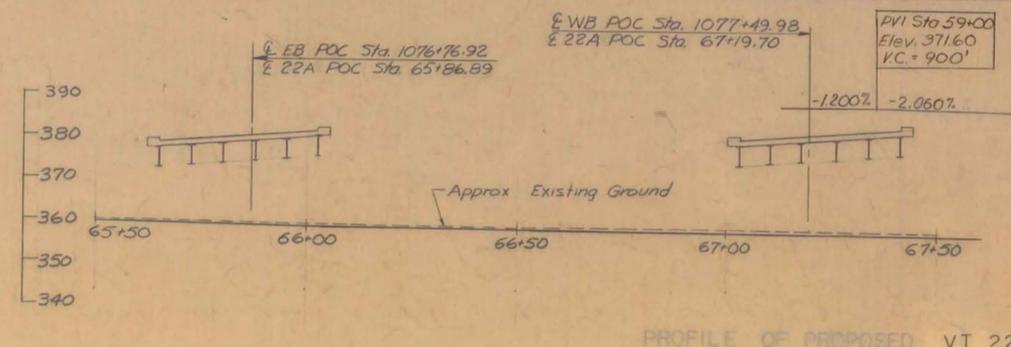
PVI Sta. 76+25
Elev. 359.17
VC = 850'

NOTES:

All materials and construction shall conform to the State of Vermont, Department of Highways, Standard Specifications for Highway and Bridge Construction dated April 1964 and the AASHTO Standard Specifications dated 1965, as modified by current Interim Specifications.
Structure designed for HS-20-44 loading modified for National System of Interstate Highways applied in accordance with the provisions of the AASHTO Standard Specifications Article 1.2.8.

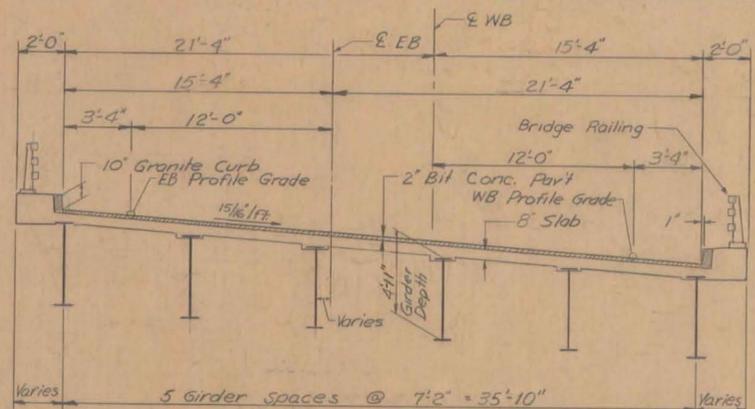
Design Stresses

Concrete - $f_c = 3000$ psi - $f_t = 1200$ psi
Structural Steel - $f_s = 20,000$ psi (A36 other steels as per AASHTO Specifications)
Reinforcing Steel - $f_s = 20,000$ psi (tension)
 $f_s = 16,000$ psi (compression)



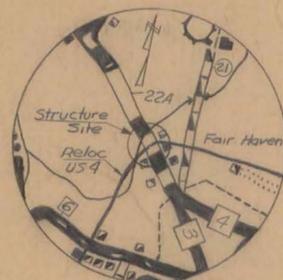
PROFILE OF PROPOSED VT 22A

SCALE 1" = 20'



TYPICAL SECTION SCALE 1" = 5'

For Railing Details, see SB-R2-65 & SB-R1-64 (2 Sheets)



HIGHWAY NO. US 4 NAME OF HIGHWAY U.S. ROUTE 4
 COUNTY RUTLAND TOWN FAIR HAVEN
 PROJECT NO. F020-1(4) LOCATION U.S. ROUTE 4 RELOCATION OVER VERMONT 22A RELOCATION
0.4 MILE NORTH ALONG EXISTING 22A FROM ITS INTERSECTION WITH 4th STREET.

EXISTING STRUCTURE

1. RATED LOADING OF EXISTING STRUCTURE _____
2. TYPE OF EXISTING STRUCTURE _____
3. UNDERCLEARANCE ELEVATION OF EXISTING STRUCTURE _____
4. WHAT DISPOSITION SHOULD BE MADE OF EXISTING STRUCTURE? COST OF REMOVAL
5. SHOULD EXISTING STRUCTURE BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF NEW STRUCTURE? _____
6. SHOULD NEW TEMPORARY STRUCTURE BE BUILT? _____
7. ORDINARY HIGH WATER SURFACE ELEV. AT EXISTING STRUCTURE _____ WATERWAY TO ORDINARY H.W. _____
8. EXTREME HIGH WATER AT EXISTING STRUCTURE _____
9. SPAN OF EXISTING BRIDGE UPSTREAM _____ WATERWAY TO EXTREME H.W. _____
10. SPAN OF EXISTING BRIDGE DOWNSTREAM _____ WATERWAY TO EXTREME H.W. _____
11. TYPE OF FOUNDATION UNDER EXISTING ABUTMENTS _____
12. DOES ALL WATER AT FLOOD ELEVATION PASS THROUGH EXISTING STRUCTURE? _____
13. IF NOT AT WHAT ELEVATION IS RELIEF AFFORDED? _____
14. ADDITIONAL WATERWAY AREA PROVIDED _____

NEW STRUCTURE

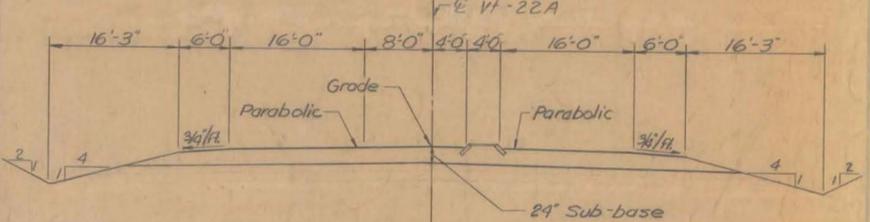
1. RECOMMENDED TYPE OF STRUCTURE 2 SINGLE SPAN BRIDGES, WELDED PLATE GIRDERS - COMPOSITE
2. RECOMMENDED CLEAR SPAN OR SPANS 143'-0" EB, 143'-0" WB
3. MEASURED PARALLEL TO NEW HIGHWAY _____
4. MEASURED AT RIGHT ANGLES TO STREAM _____
5. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? ANSWER YES OR NO _____
6. ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE _____
7. EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE _____ SOURCE OF INFORMATION _____
8. DOES ALL WATER INTENDED TO PASS THROUGH NEW STRUCTURE? _____
9. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? _____ IS ORDINARY RISE RAPID? _____
10. LOW WATER ELEVATION AT NEW STRUCTURE _____
11. DRAINAGE AREA IN ACRES ABOVE STRUCTURE _____ CHARACTER OF TERRAIN _____
12. VELOCITY OF STREAM AT HIGH WATER STAGE _____ ESTIMATED DISCHARGE _____
13. AREA FULL OPENINGS _____ AREA BELOW ORDINARY H.W. _____
14. CHARACTER OF SCOUR _____ BRIFT _____ ICE _____
15. ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE _____
16. VERTICAL CLEARANCE ABOVE FLOOD ELEVATION _____
17. ARE SIDEWALKS REQUIRED? IF SO ON WHAT SIDE? NO _____ BOTH SIDES _____
18. RECOMMENDED TYPE OF PAVEMENT 2" BITUMINOUS CONCRETE 8" CONCRETE
19. TRAFFIC TO BE MAINTAINED UNDER ITEM NO. _____ ONE OR TWO WAYS _____ PROBABLE COST _____
20. PROBABLE COST OF CLEARING AND GRUBBING STREAM CHANNEL AT STRUCTURE SITE _____
21. SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES? NO _____ SEE BELOW
22. ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS 40 T/PILE SHOULD PILES BE USED? YES _____ EXT. LIT. _____

PRESTRESSED CONCRETE PILES (OR CAST-IN-PLACE CONCRETE PILES)

FOUNDATION INFORMATION

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

ESTIMATED PILE LENGTH ABUTMENT # 1 - 165', ABUTMENT # 2 - 160'
 ABUTMENT # 3 - 140' TO 160', ABUTMENT # 4 - 185'



NOTE: For location of 4' wall see Vt 22A alignment data sheet.

**FAIR HAVEN - WEST RUTLAND
 BF MEMB (35)
 SHEET 14 OF 44
 BRIDGE NOS. 5E AND 5W
 FOR REFERENCE ONLY**

TYPICAL V. STATION 65

RECOMMENDED FOR APPROVAL [Signature] 9/28/67
 CONSTRUCTION ENGINEER DATE

RECOMMENDED FOR APPROVAL [Signature] 9/27/67
 BRIDGE ENGINEER DATE

RECOMMENDED FOR APPROVAL [Signature] 9/28/67
 ASST. CHIEF ENGINEER DATE

APPROVED BY [Signature] 9/28/67
 CHIEF ENGINEER DATE

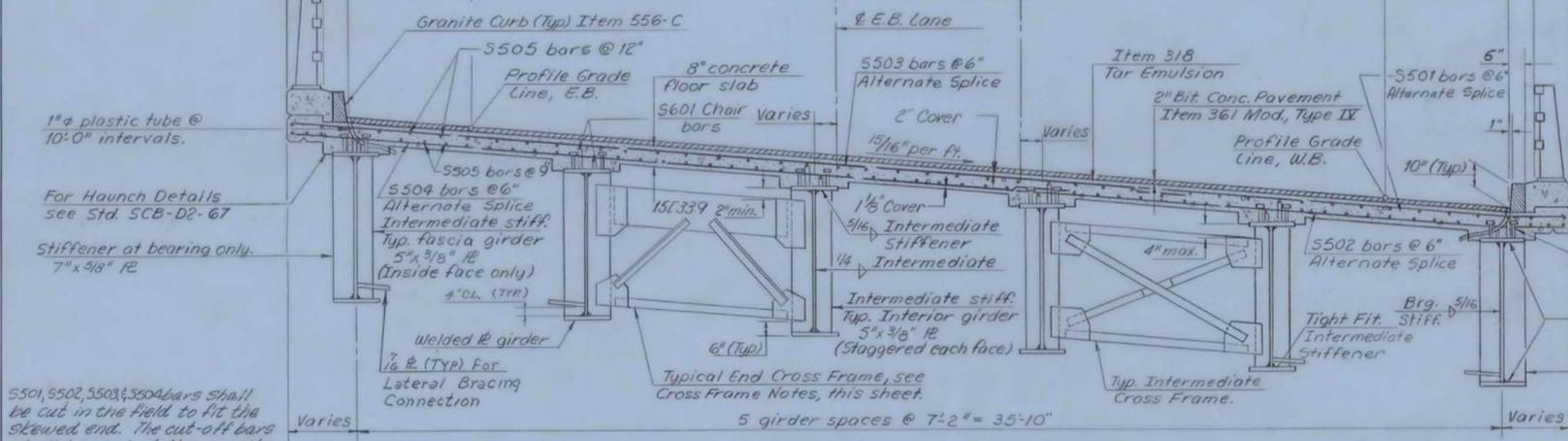
STATE OF VERMONT
 DEPARTMENT OF HIGHWAYS
 U.S. ROUTE 4 IN THE TOWNS OF
 FAIR HAVEN
 ROUTE NO. 4 LOG STA. WB 1077+50
 US RTE 4 RELOC OVER VT 22A RELOC EB 1076+77

M'FARLAND-JOHNSON
 CONSULTING ENGINEERS

PROJECT NO. F020-1(4) SHEET 182 OF 255
 (8)
 182 255
 Bridge Width JHT 11/30/67 Major Chord Angles BLK 2-19-68
 Abutment Details & Approach Slab Location JHT 11/30/67 22A Profile, Gen. Spd. & Abut. Layout BRK 5-17-68

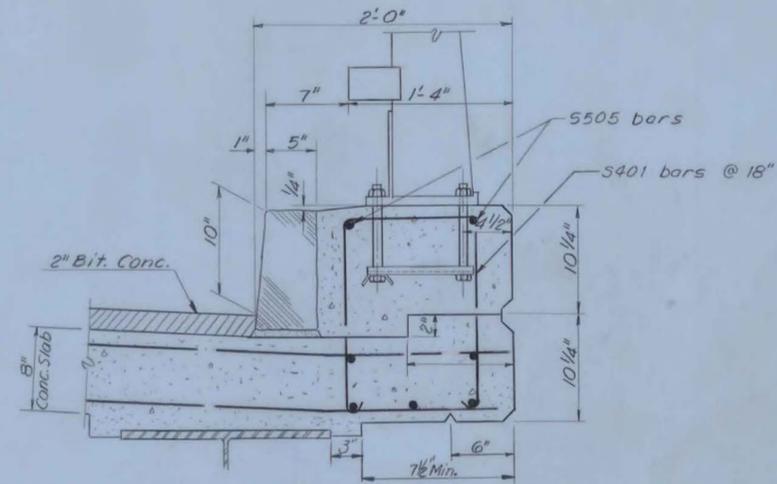
BR503

NOTE: The concrete floor slab surface shall be finished with a self-propelled concrete finishing machine.

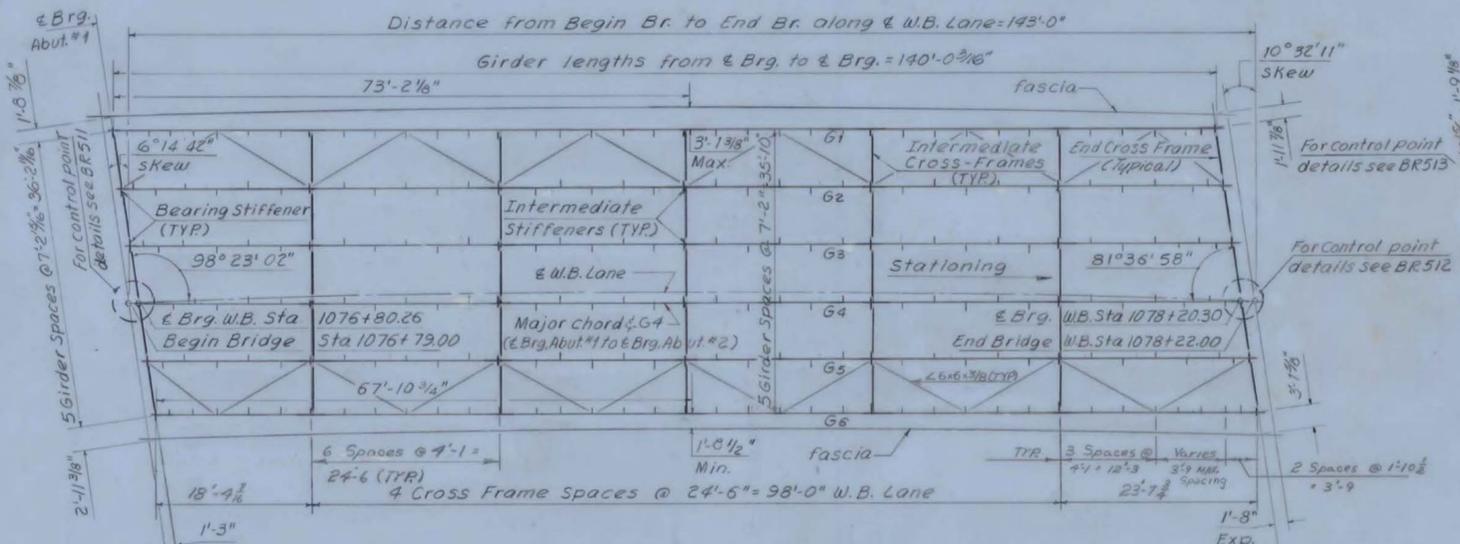


5501, 5502, 5503, 5504 bars shall be cut in the field to fit the skewed end. The cut-off bars shall be used at the opposite end.

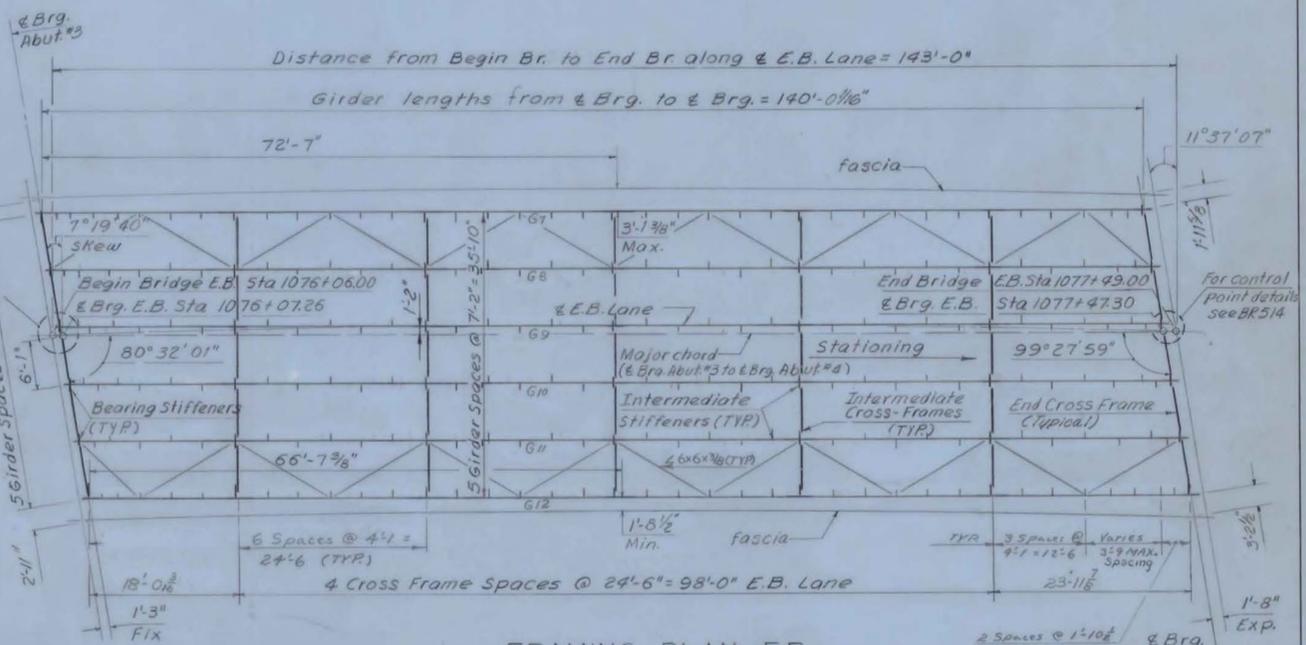
TYPICAL SECTION
Scale: 3/8" = 1'-0"



TYPICAL CURB SECTION
Scale: 1 1/2" = 1'-0"



FRAMING PLAN W.B.
Scale: 3/32" = 1'-0"



FRAMING PLAN E.B.
Scale: 3/32" = 1'-0"

REVISIONS (5-15-69)	
R.S.H.	
1)	CHANGE STIFFENER SPACING
2)	ADD LATERAL BRACING
3)	ELIMINATE GIRDER SPLICE
REVISIONS (6-23-69)	
R.D.H.	
1)	CHANGE LATERAL BRACING FROM $\angle 5 \times 5 \times 3/16$ TO $\angle 6 \times 6 \times 3/8$.

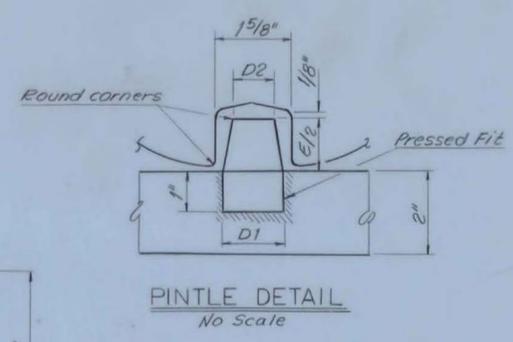
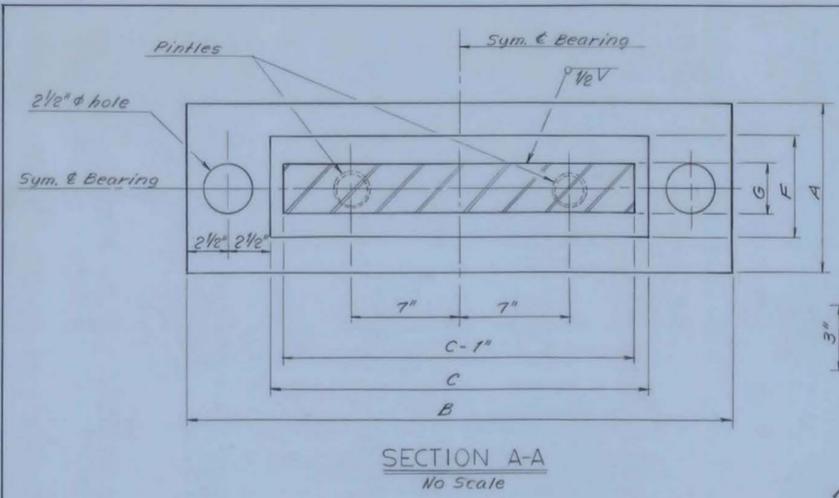
NOTES

- For General Notes, see BR 501
- For Joint Details, see BR 510.
- For Beam Haunch Details, see SCB-D2-67.
- All studs are to be 3/4" x 7" welded studs. If 7/8" studs are used, increase the spacing shown for 3/4" studs by 50%, see detail BR 508.
- Cross Frame Notes: All gusset & connection plates shall be 7/16" plates. Cross Frame angles shall be $4 \times 4 \times 3/8$ Ls. All shop connections for Cross Frames and Lateral Bracing shall be 5/16" Fillet welds. All field connections shall be 3/4" high strength bolts meeting the requirements of ASTM A 325.
- All girders are parallel to the major chord.
- Cross Frames shall be bolted to stiffeners.

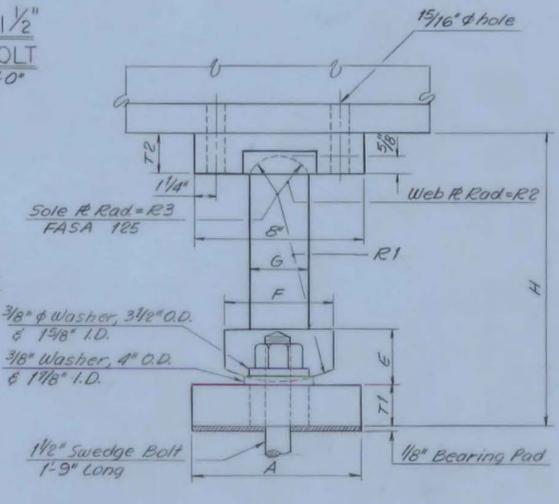
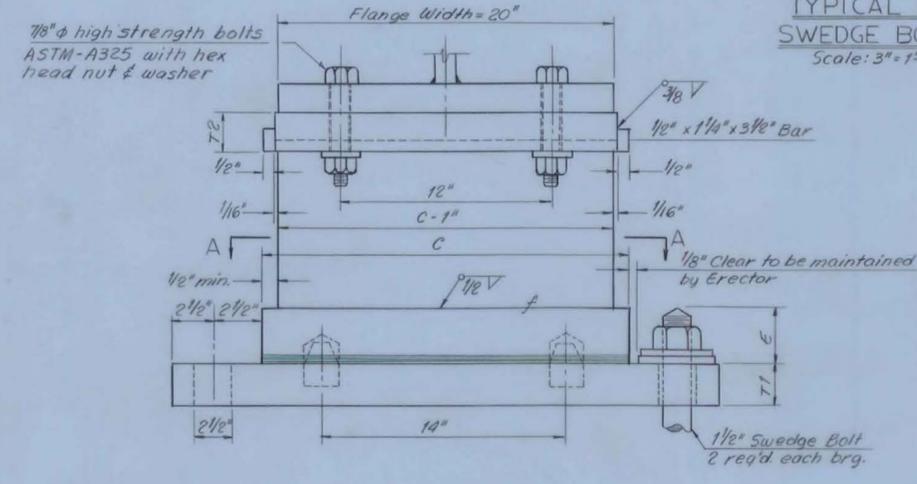
**FAIR HAVEN - WEST RUTLAND
BF ME (35)
SHEET 15 OF 44
BRIDGE NOS. 5E AND 5W
FOR REFERENCE ONLY**

SUPERSTRUCTURE DETAILS

McFARLAND-JOHNSON CONSULTING ENGINEERS BINGHAMTON, NEW YORK		
DESIGNED <u>M.J.P.</u>	CHECKED <u>R.E.C.</u>	DATE <u>5-23-68</u>
DRAWN <u>EMG</u>	IN CHARGE <u>HGC</u>	SCALE <u>As shown</u>
PROJECT NO. F020 - 1 (8) SH 186 OF 222		
CONTRACT NO. BR 507 183 255		



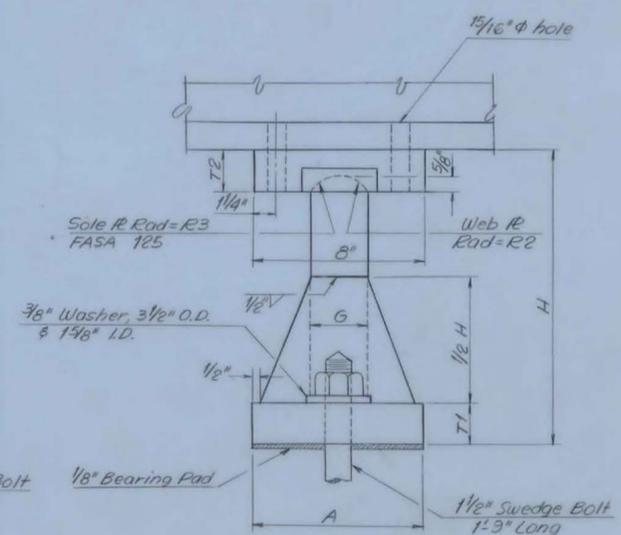
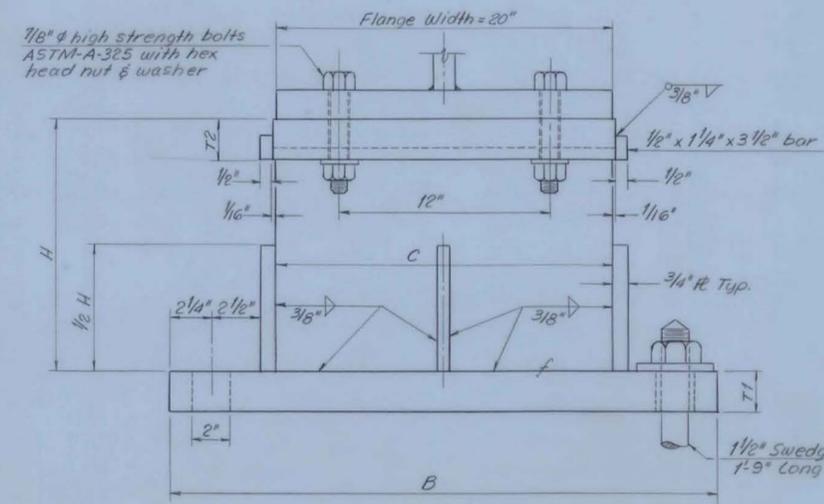
TYPICAL 1 1/2" SWEDGE BOLT
Scale: 3" = 1'-0"



ELEVATION
No Scale

EXPANSION DEVICE

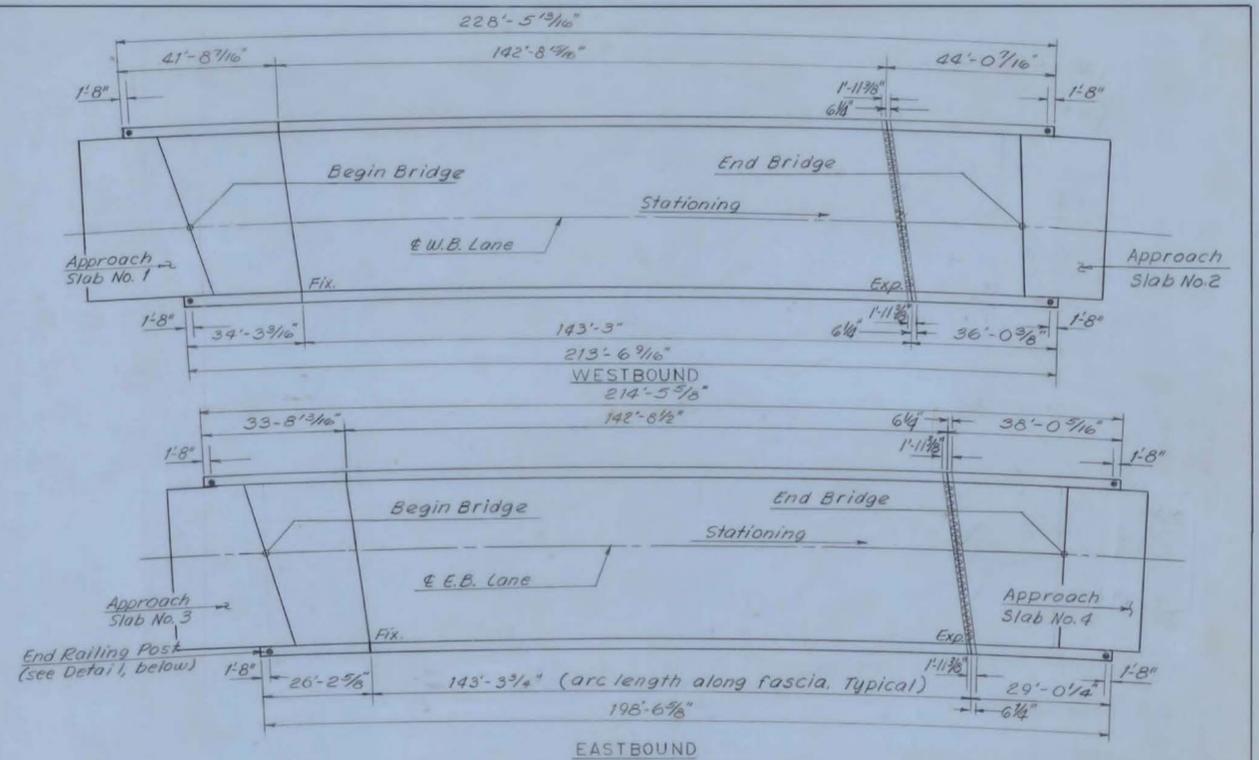
SIDE VIEW
No Scale



ELEVATION
No Scale

FIXED DEVICE

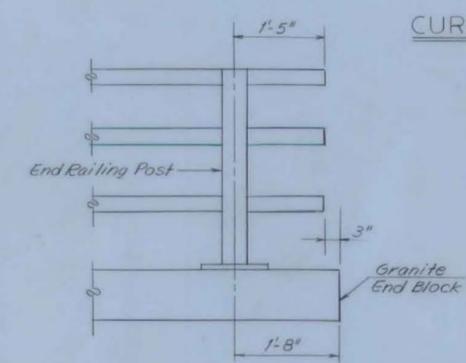
SIDE VIEW
No Scale



CURB AND RAILING PLAN
No Scale

CURB AND RAILING NOTES

- For details of granite bridge curb, see BR 507
- For details of bridge railing, see Std. Sh. SB-R1-64 and SB-R2-65.
- The ends of the granite curb shall be sawed square against the expansion plate and where Item 312-C is to be used.
- Straight sections of curb shall be in random lengths of 4 to 10 feet.
- Detailed drawings for the layout of the granite curb (Item 556-C) shall be submitted in triplicate to the State for approval prior to fabrication or shipment.
- Provide for 2" movement in the rail panel over the roadway expansion joint.



END RAILING POST DETAIL
Scale: 3/4" = 1'-0"

DIMENSIONS (INCHES)

Location	Fixed or Expansion	Max. Reaction (K)	A	B	C	D1	D2	E	F	G	T1	T2	R1	R2	R3	H
Abut. No. 1	Fix.	167.62	8	31	20	-	-	-	-	2 1/2	2	2	-	1 3/8	1 7/16	11 3/4
Abut. No. 2	Exp.	167.62	8	31	21	1 1/2	1	2	5	2 1/2	2	2	7	1 3/8	1 7/16	11 3/4
Abut. No. 3	Fix.	167.62	8	31	20	-	-	-	-	2 1/2	2	2	-	1 3/8	1 7/16	11 3/4
Abut. No. 4	Exp.	167.62	8	31	21	1 1/2	1	2	5	2 1/2	2	2	7	1 3/8	1 7/16	11 3/4

BEARING NOTES

- For General Notes, see BR 501.
- All steel other than bolts, nuts and washers to be ASTM-A36 Steel. 7/8 inch high strength bolts to be ASTM-A325.
- All bearing pads are to meet AASHTO Specifications 2.10.3. (K) (7/8 inch thick). Prior to placing pads, each bearing area shall be inspected by the Engineer to assure a flat and smooth masonry contact surface. Any irregularity exceeding 1/16 inch shall be corrected, and if necessary, the whole bearing area shall be ground to obtain full bearing. Rockers are to be set vertical @ 45°F. Allowable tolerance equals 1/16 inch in height of rocker.
- Contact surfaces of rockers are to be given a shop coat of white lead and tallow. Pintle holes are to be filled with graphite at the time of placement. The remainder of the bearing device will be given three (3) coats of paint in accordance with Vermont Specifications, Section 404.03, and Section 404.05 B.
- All welding shall conform to the current specifications for Welded Highway and Railway Bridges of the American Welding Society.

**FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 16 OF 44
BRIDGE NOS. 5E AND 5W
FOR REFERENCE ONLY**

OVER VI. ZZA RELOC.

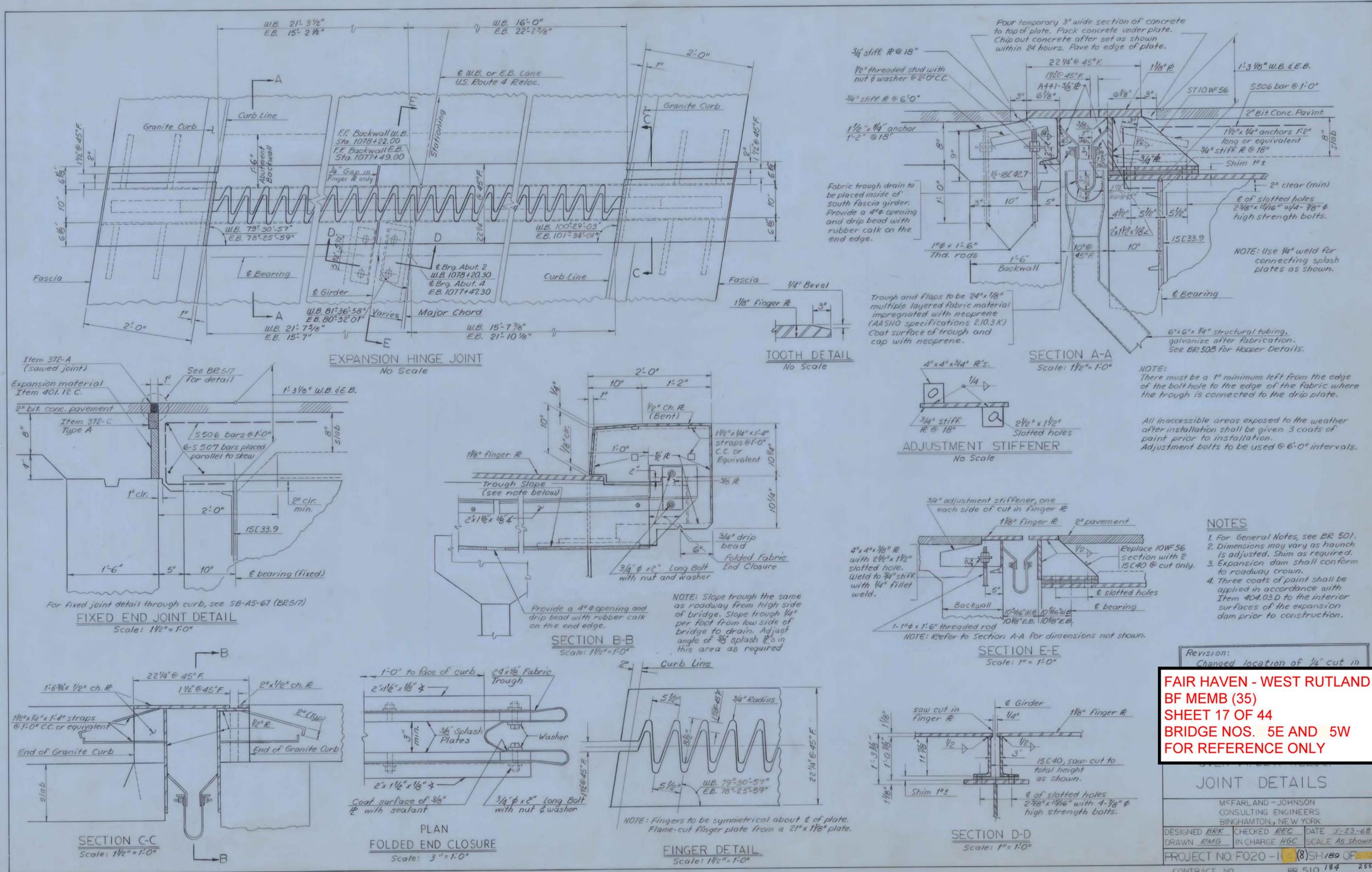
SUPERSTRUCTURE DETAILS

MCFARLAND-JOHNSON
CONSULTING ENGINEERS
BINGHAMTON, NEW YORK

DESIGNED MJP CHECKED EEC DATE 5-23-68
DRAWN EMG IN CHARGE HGC SCALE AS SHOWN

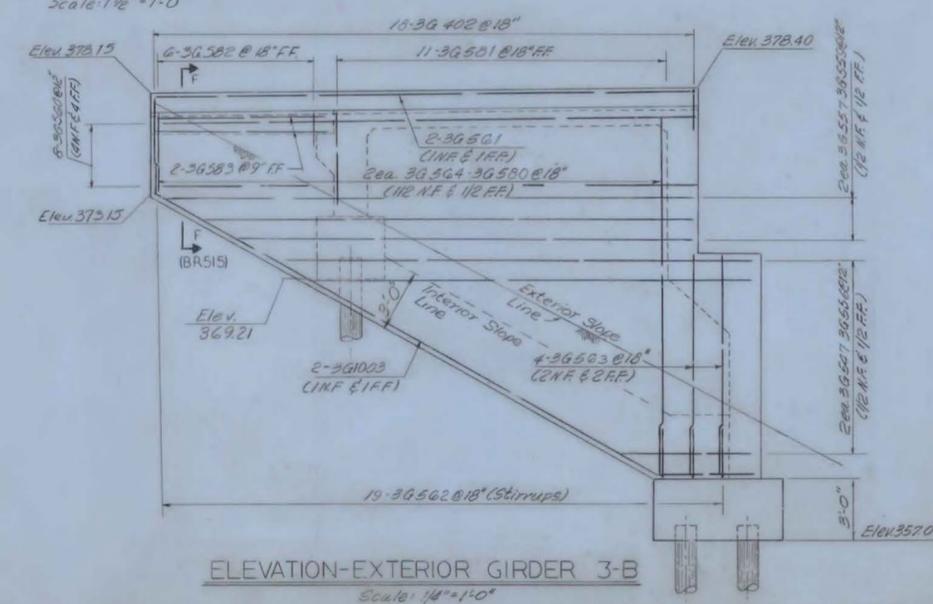
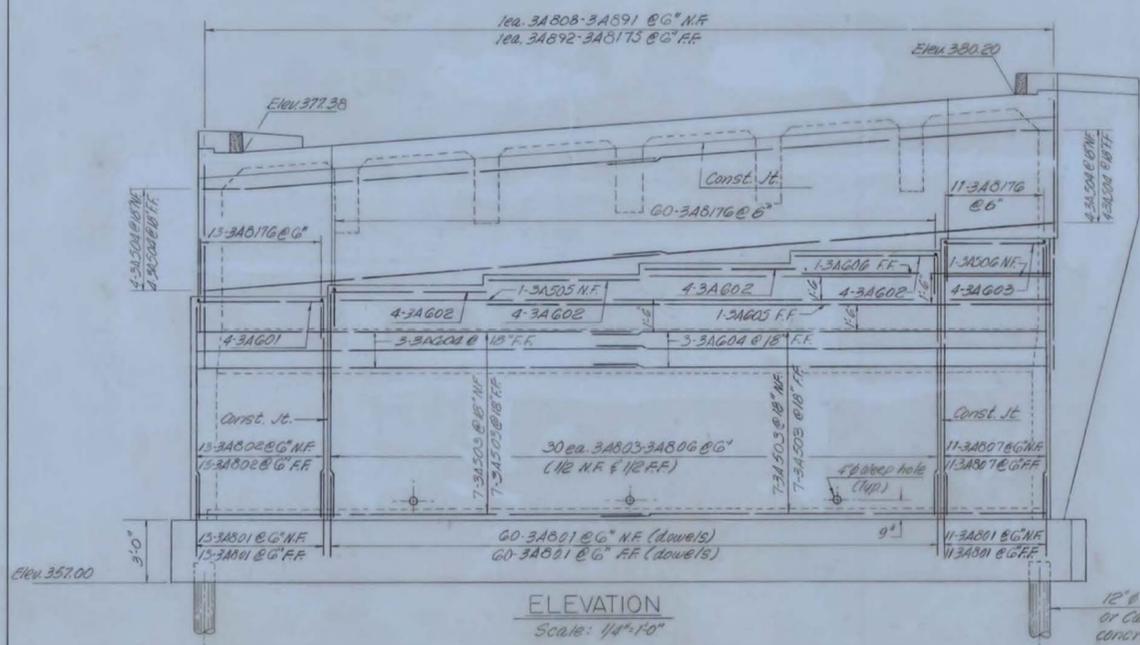
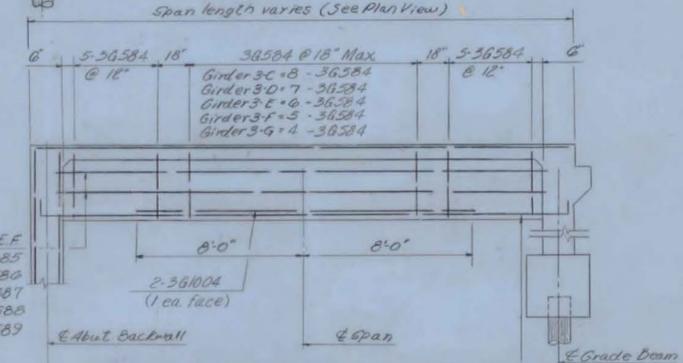
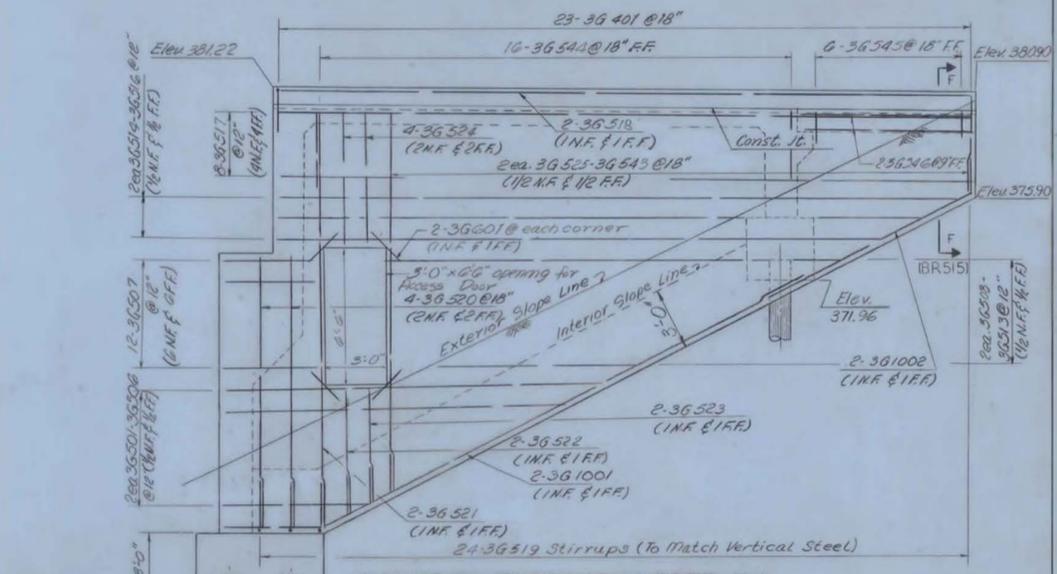
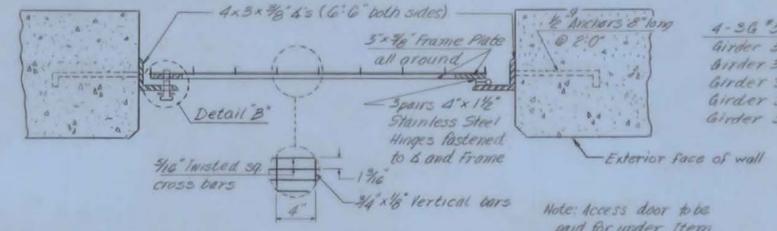
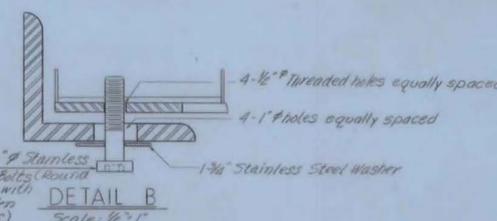
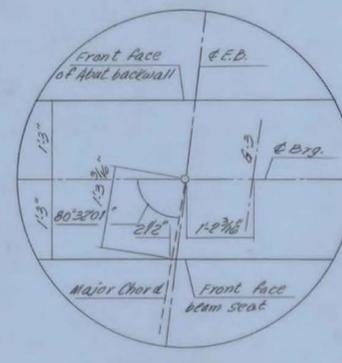
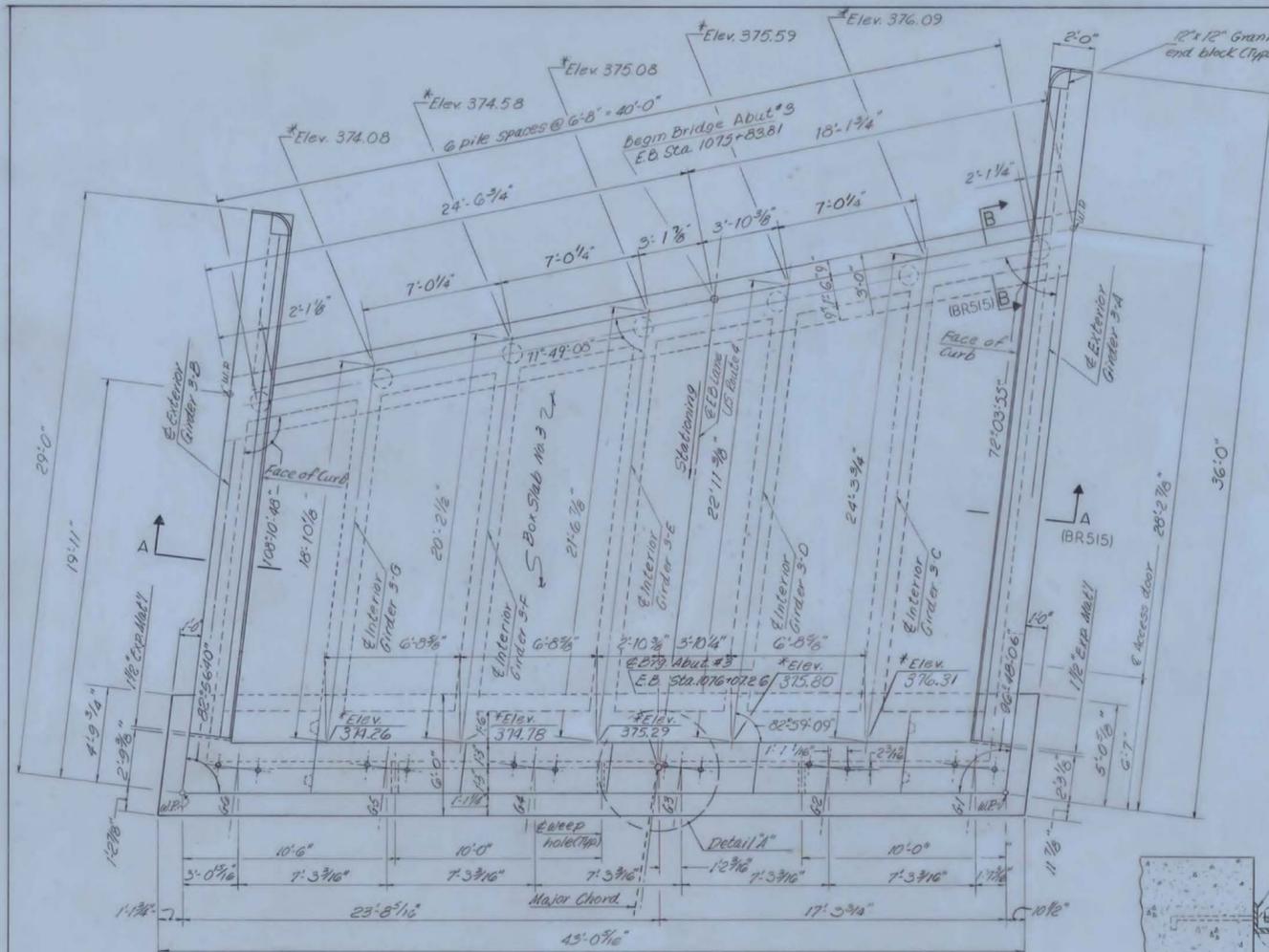
PROJECT NO. F020-(4) SH/88 OF 532

CONTRACT NO. BR 509



**FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 17 OF 44
BRIDGE NOS. 5E AND 5W
FOR REFERENCE ONLY**

JOINT DETAILS		
MCFARLAND - JOHNSON CONSULTING ENGINEERS BINGHAMTON, NEW YORK		
DESIGNED BRK	CHECKED REC	DATE 5-23-68
DRAWN EMG	IN CHARGE HGC	SCALE As shown
PROJECT NO. F020 - 1 (8) SH 189 OF 255		
CONTRACT NO.		BR 510 184



NOTES

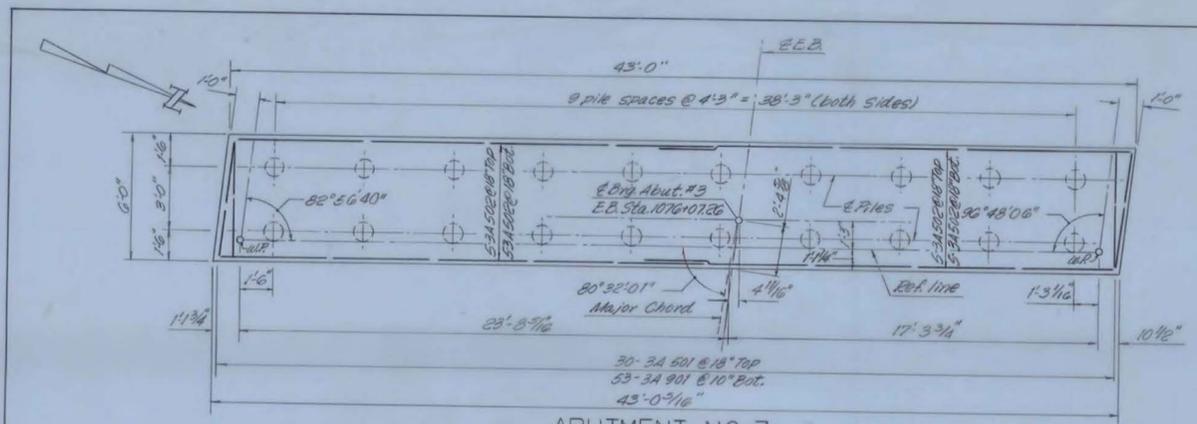
- For General Notes, see BR 501.
- For additional notes, see BR 511 & BR 515.

**FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 20 OF 44
BRIDGE NOS. 5E AND 5W
FOR REFERENCE ONLY**

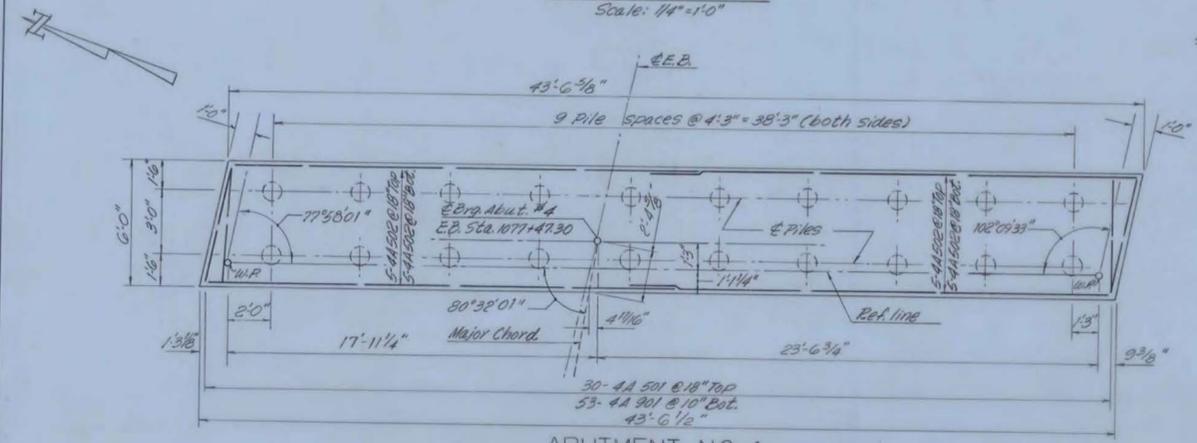
U.S. ROUTE 4
U.S. RTE. 4 RELOCATION
OVER VT. 22A RELOC.
ABUTMENT NO. 3 DETAILS

McFARLAND-JOHNSON
CONSULTING ENGINEERS
BINGHAMTON, NEW YORK

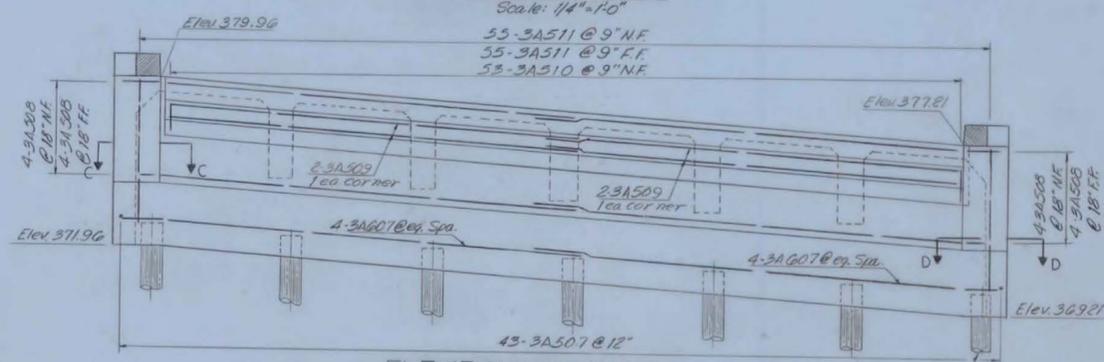
DESIGNED BRK CHECKED BRK DATE 5-23-68
DRAWN CJP IN CHARGE HGC SCALE AS NOTED
PROJECT NO. F020-1(4) SH 192 OF 532



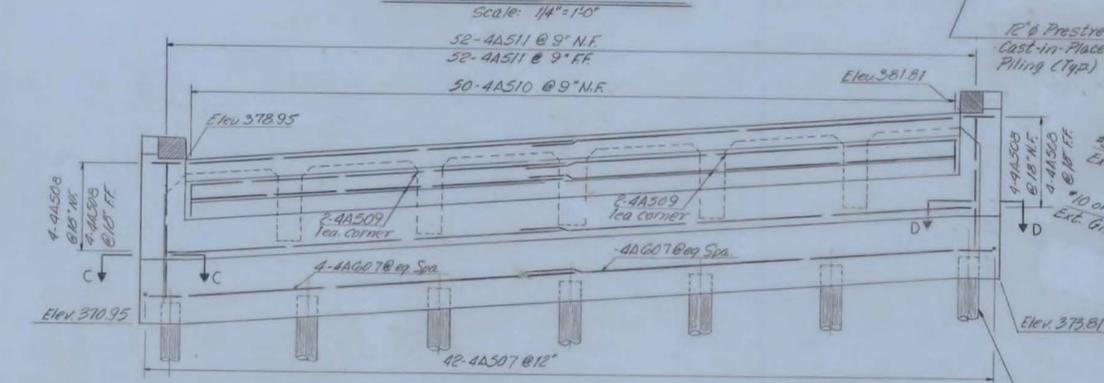
ABUTMENT NO. 3
Scale: 1/4"=1'-0"



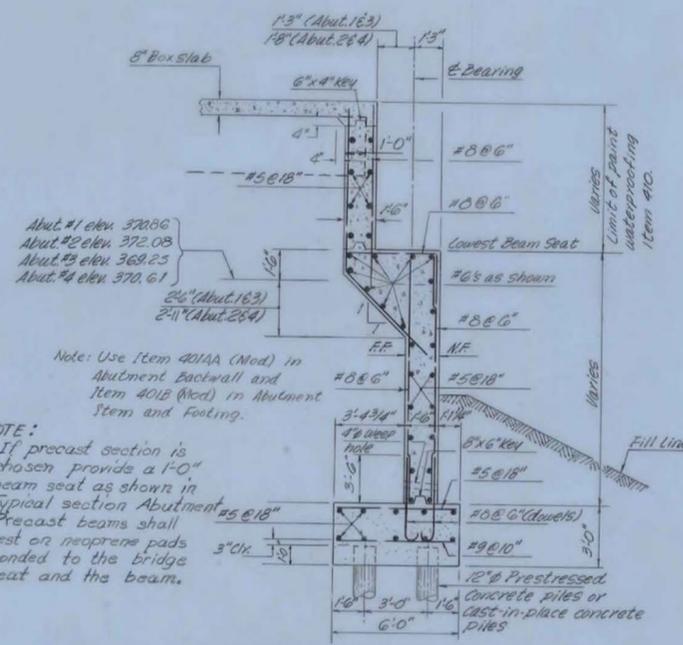
ABUTMENT NO. 4
Scale: 1/4"=1'-0"



ELEVATION - ABUT NO. 3A
Scale: 1/4"=1'-0"

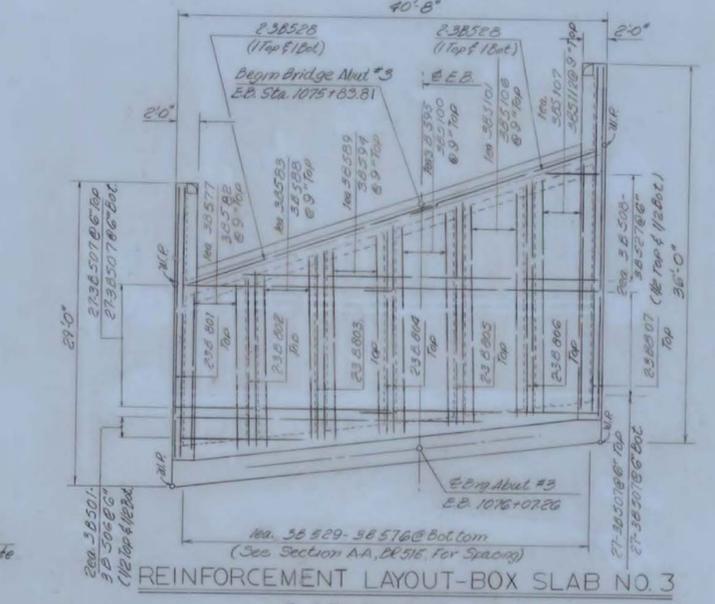


ELEVATION - ABUT. NO. 4A
Scale: 1/4"=1'-0"

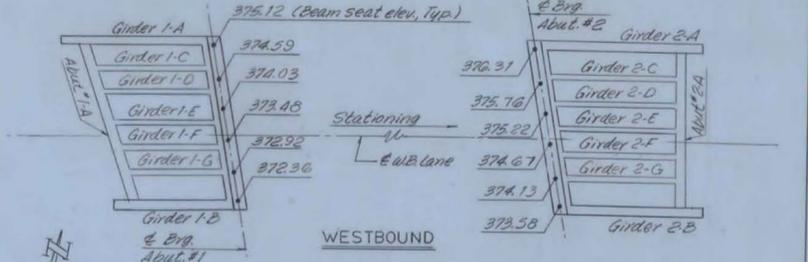


TYPICAL SECTION ABUTMENT
Scale: 1/4"=1'-0"

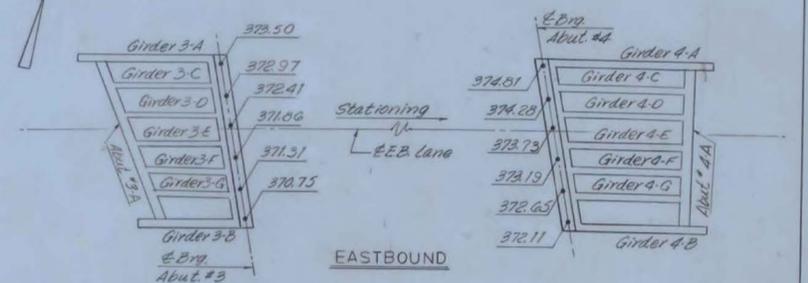
*NOTE:
If precast section is chosen provide a 1'-0" beam seat as shown in Typical section Abutment #3 & 4. Precast beams shall rest on neoprene pads bonded to the bridge seat and the beam.



REINFORCEMENT LAYOUT-BOX SLAB NO. 3
ABUTMENT NO. 3
Scale: 1/8"=1'-0"

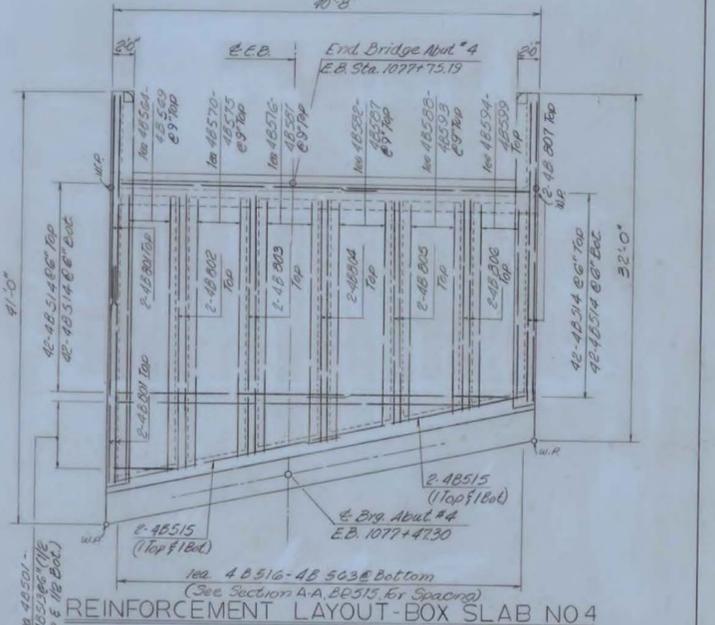


WESTBOUND

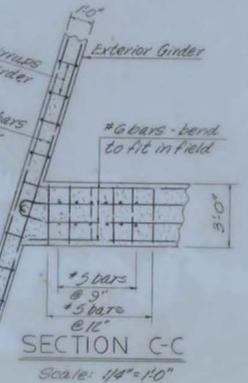


EASTBOUND

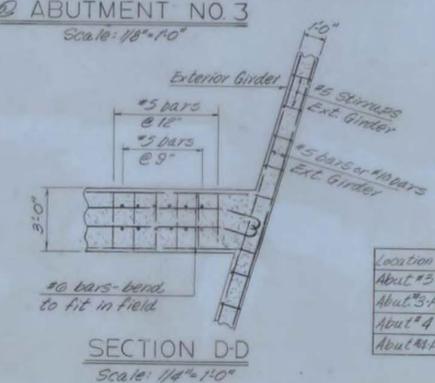
KEY PLAN
No Scale



REINFORCEMENT LAYOUT-BOX SLAB NO. 4
Scale: 1/8"=1'-0"



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



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

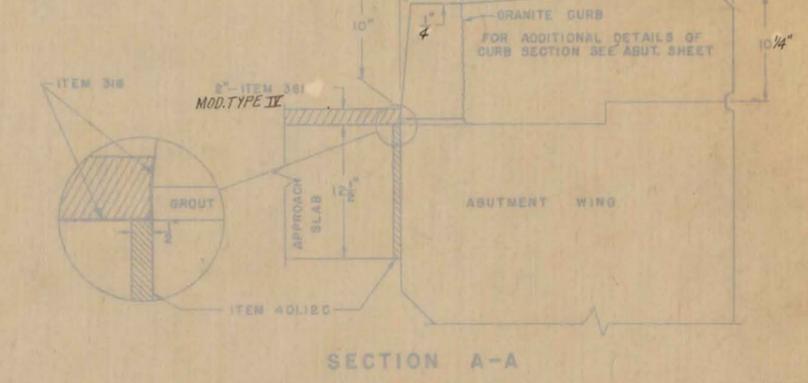
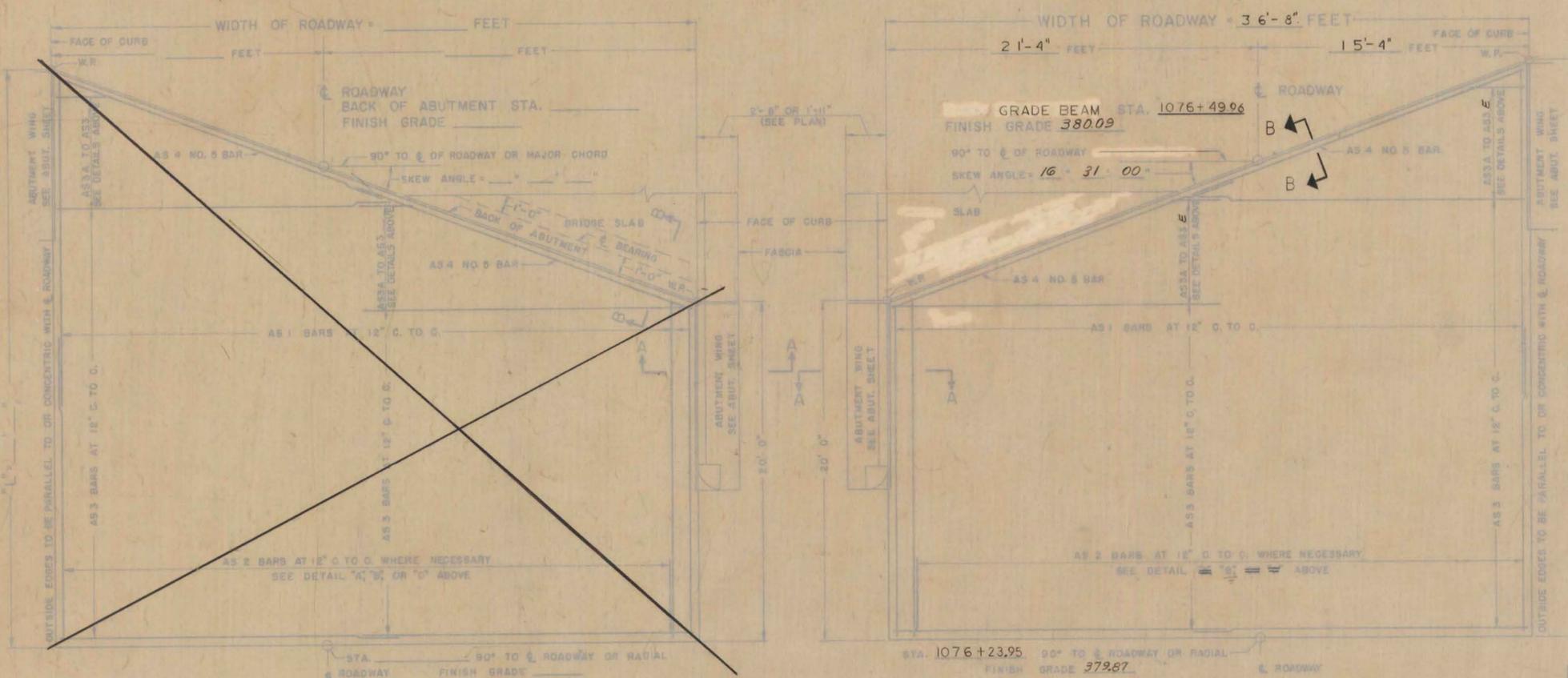
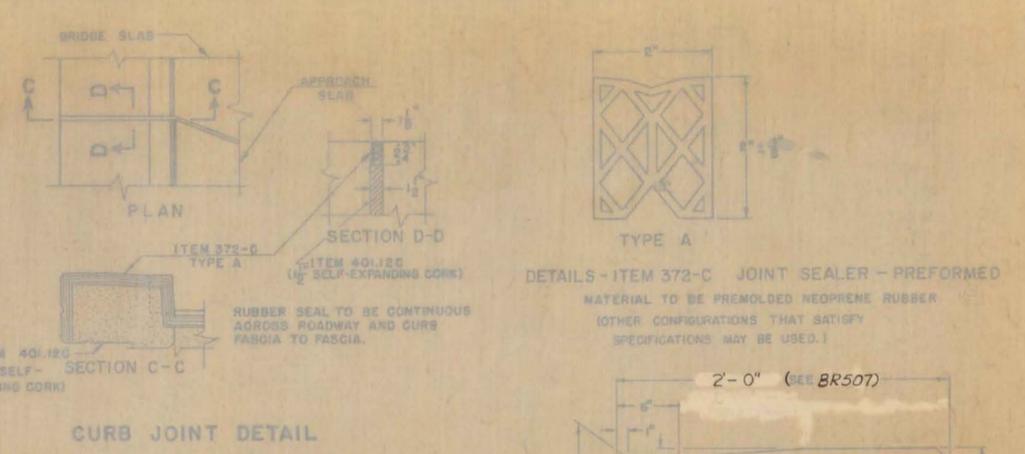
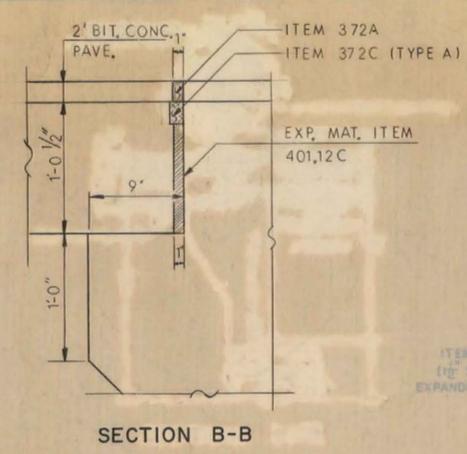
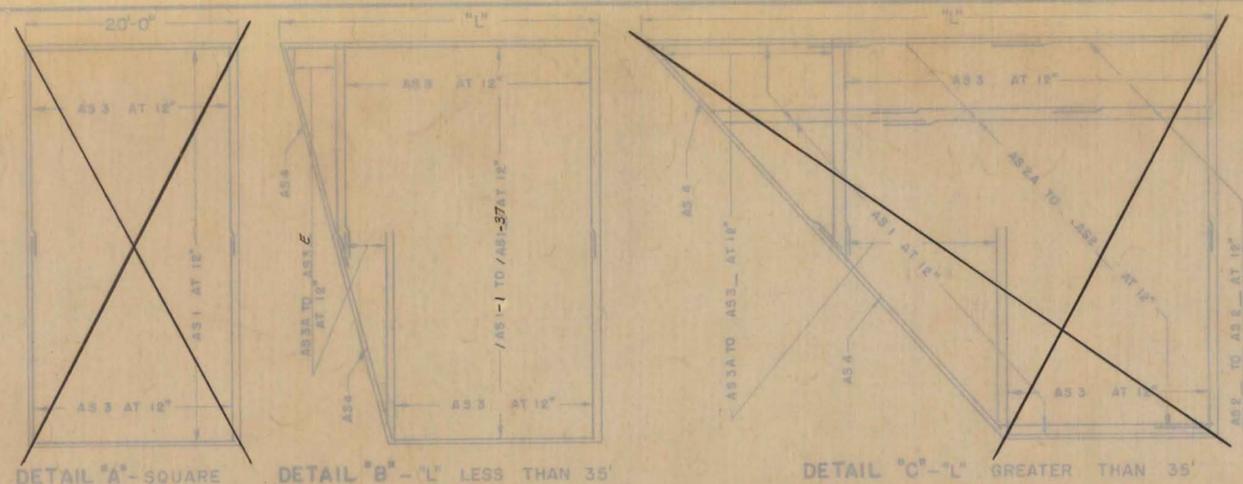
NOTES:
1. For General Notes, see BR 501.
2. For additional notes, see BR 511 & BR 515.

Location	Number of Piles	Size of Pile	Est length of Piles
Abut #3	20	12"Ø	140' to 160'
Abut #3-A	7	12"Ø	155' to 175'
Abut #4	20	12"Ø	185'
Abut #4-A	7	12"Ø	200'

PILE TABLE

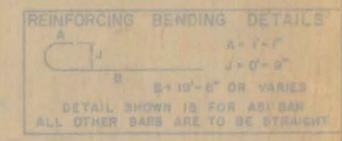
**FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 23 OF 44
BRIDGE NOS. 5E AND 5W
FOR REFERENCE ONLY**

FOOTING DETAILS ABUTS. 3 & 4
DETAILS & TYPICAL SECTIONS
McFARLAND-JOHNSON
CONSULTING ENGINEERS
BINGHAMTON, NEW YORK
DESIGNED B.R.K. CHECKED B.R.K. DATE 5-23-68
DRAWN C.J.P. IN CHARGE H.G.C. SCALE AS NOTED
PROJECT NO. FO20-1(4) SH 195 OF 532
CONTRACT NO. BR 516



- GENERAL NOTES**
- ALL WORK AND MATERIALS SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION DATED APRIL 1964, AND THE A.S.S.H.O. SPECIFICATIONS DATED 1961. DESIGNED FOR HS 20-44 LOADING.
 - ALL REINFORCING STEEL SHALL BE DETAILED ON THE REINFORCING STEEL SCHEDULE. ALL BRIDGES SHALL BE A MINIMUM OF 40 BAR DIAMETERS.
 - BITUMINOUS CONCRETE PAVEMENT VARIES FROM 2" AT BRIDGE END TO 3" AT ROADWAY END.

**FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 24 OF 44
BRIDGE NOS. 5E AND 5W
FOR REFERENCE ONLY**



LIST OF QUANTITIES

ITEM NO.	ITEM	UNIT
318	TAR EMULSION FOR BRIDGE FLOORS	SAL.
361	BITUMINOUS CONCRETE PAVEMENT MOD. TYPE II	TONS
372-A	JOINT SEALER - HOT POURED	L.F.
372-C	JOINT SEALER - PREFORMED, TYPE A	L.F.
401-B	CONCRETE SLABS	CY.
402	REINFORCING STEEL	LB.

REVISIONS AND CORRECTIONS

- DIMENSIONS OF JOINT SEALER TYPE A REVISED. 4/15/65. W.B.T.
- DIMENSIONS OF JOINT SEALER TYPE B REVISED. 6/23/65. W.B.T.
- JOINT BETWEEN CURB AND SLAB REVISED, BITUMINOUS CONCRETE REVISED TO 2". QUANTITY TOTALS REVISED. 12/7/65. W.B.T.

DRAWN BY: *W.B.T. Jan 1965*
 TRACED BY: *W.B.T. Jan 1965*
 CHECKED BY: *W.M.S. Feb 1965*

RECOMMENDED FOR APPROVAL: *[Signature]* 2/1/65
 ENGINEER
 DATE

RECOMMENDED FOR APPROVAL: *[Signature]* 2/1/65
 ASSISTANT CHIEF ENGINEER
 DATE

APPROVED BY: *[Signature]* 2/1/65
 CHIEF ENGINEER
 DATE

**DETAILS OF APPROACH SLAB
FOR 36'-8" FOOT BRIDGE**
(WIDTH)

TO BE USED FOR BRIDGE AT STATION 1077 + 50 W.B.
 LOCATION U.S. RTE. 4 RELOCATION OVER VT. 22A RELOC.
 (APPROACH SLAB NO.1)

STATE OF VERMONT
 DEPARTMENT OF HIGHWAYS
 STANDARD STRUCTURE
SB-AS-65

PROJECT FAIR HAVEN
 TOWN OF FAIR HAVEN
 ROUTE NO. U.S. 4 STA. WB 1077+50
 EB 1076+77
 U.S. RTE. 4 RELOCATION OVER VT. 22A RELOC.
 APPROACH SLAB NO.1

NOT TO SCALE

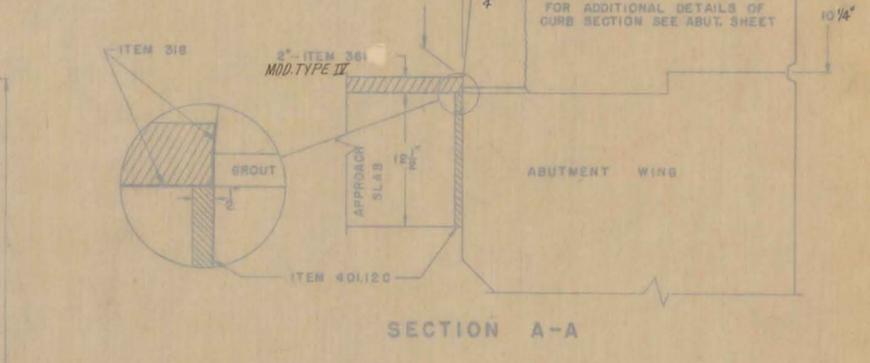
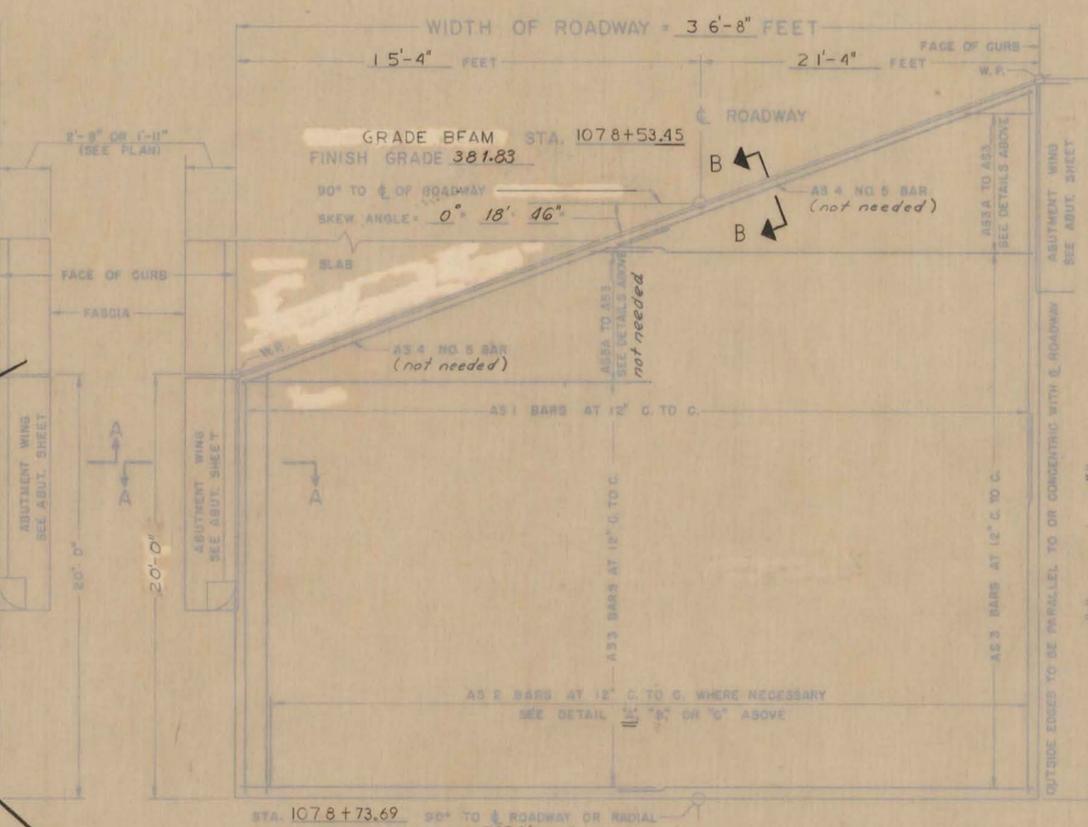
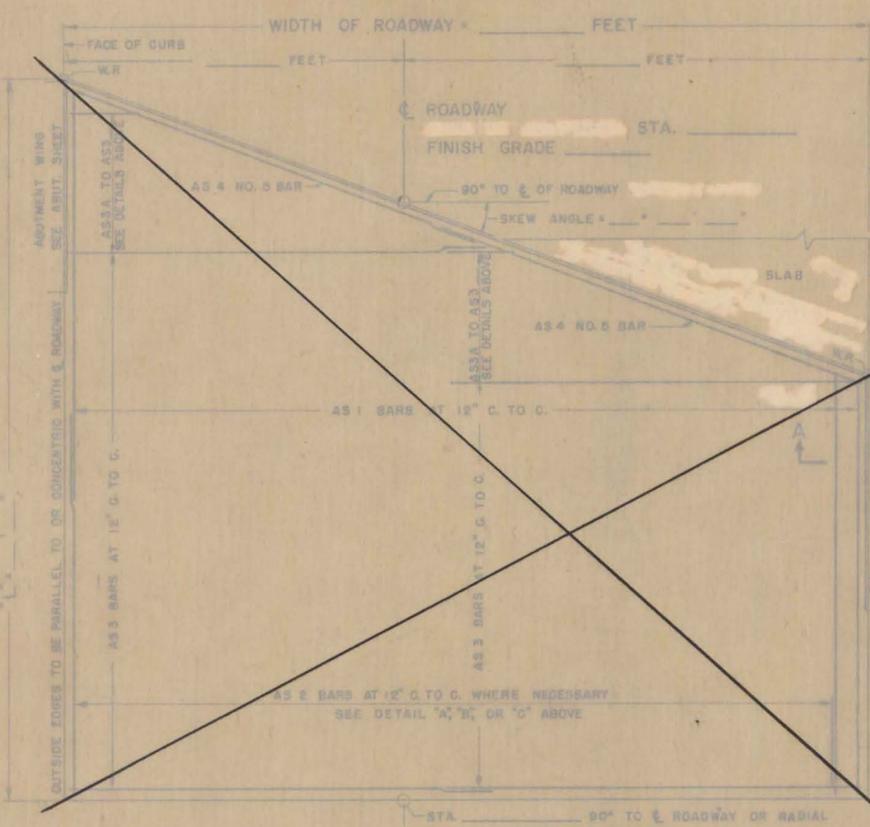
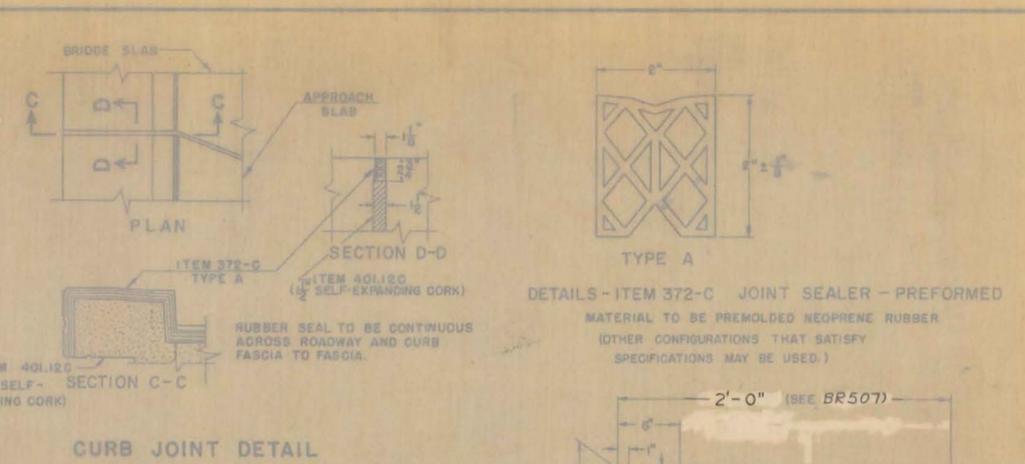
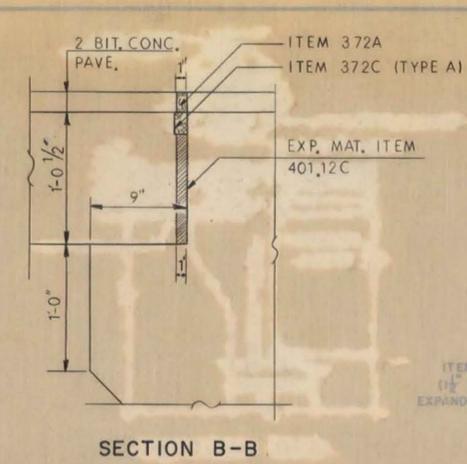
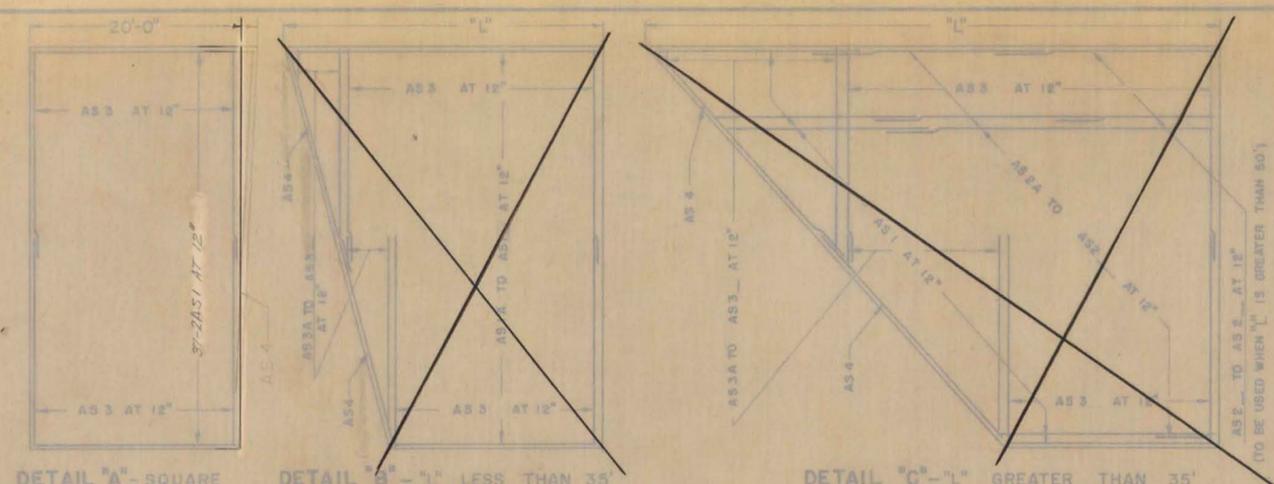
IN CHARGE H.G.C.

DESIGNED BY A.M.D. CHECKED BY R.E.C.

PROJECT NO. FO20-1 (8)

SHEET 24 OF 44
 185 255

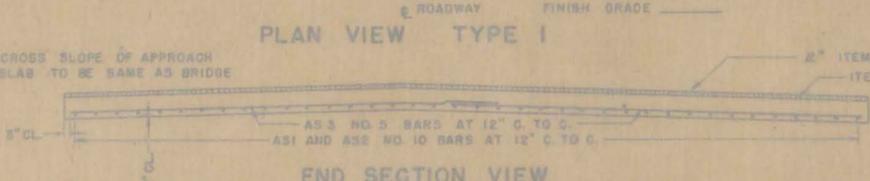
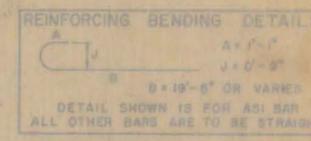
CONTRACT NO. BR 517



GENERAL NOTES

- ALL WORK AND MATERIALS SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION DATED APRIL 1964, AND THE A.A.S.H.O. SPECIFICATIONS DATED 1961, DESIGNED FOR HS 20-44 LOADING.
- ALL REINFORCING STEEL SHALL BE DETAILED ON THE REINFORCING STEEL SCHEDULE. ALL SPLICES SHALL BE A MINIMUM OF 40 BAR DIAMETERS.
- BITUMINOUS CONCRETE PAVEMENT VARIES FROM 2" AT BRIDGE END TO 3" AT ROADWAY END.

**FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 25 OF 44
BRIDGE NOS. 5E AND 5W
FOR REFERENCE ONLY**



LIST OF QUANTITIES

ITEM NO.	ITEM	UNIT
318	TAR EMULSION FOR BRIDGE FLOORS	GAL.
361	BITUMINOUS CONCRETE PAVEMENT MOD. TYPE IV	TONS
372-A	JOINT SEALER - HOT Poured	L.F.
372-C	JOINT SEALER - PREFORMED, TYPE A	L.F.
401-B	CONCRETE CLASS B	CY.
402	REINFORCING STEEL	LB.

REVISIONS AND CORRECTIONS

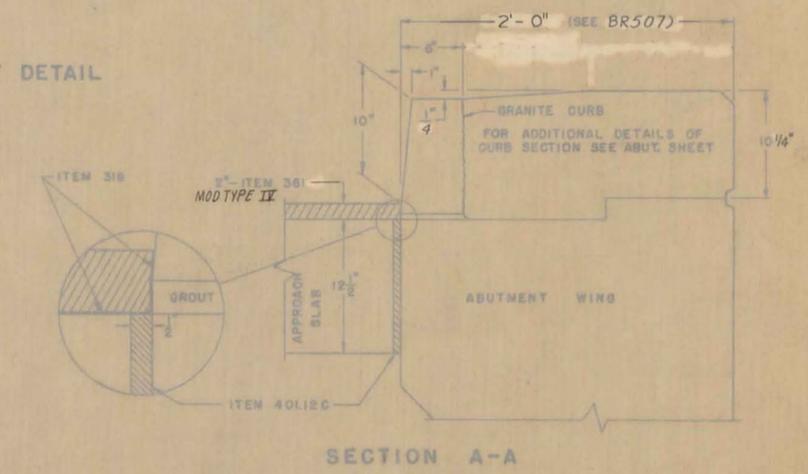
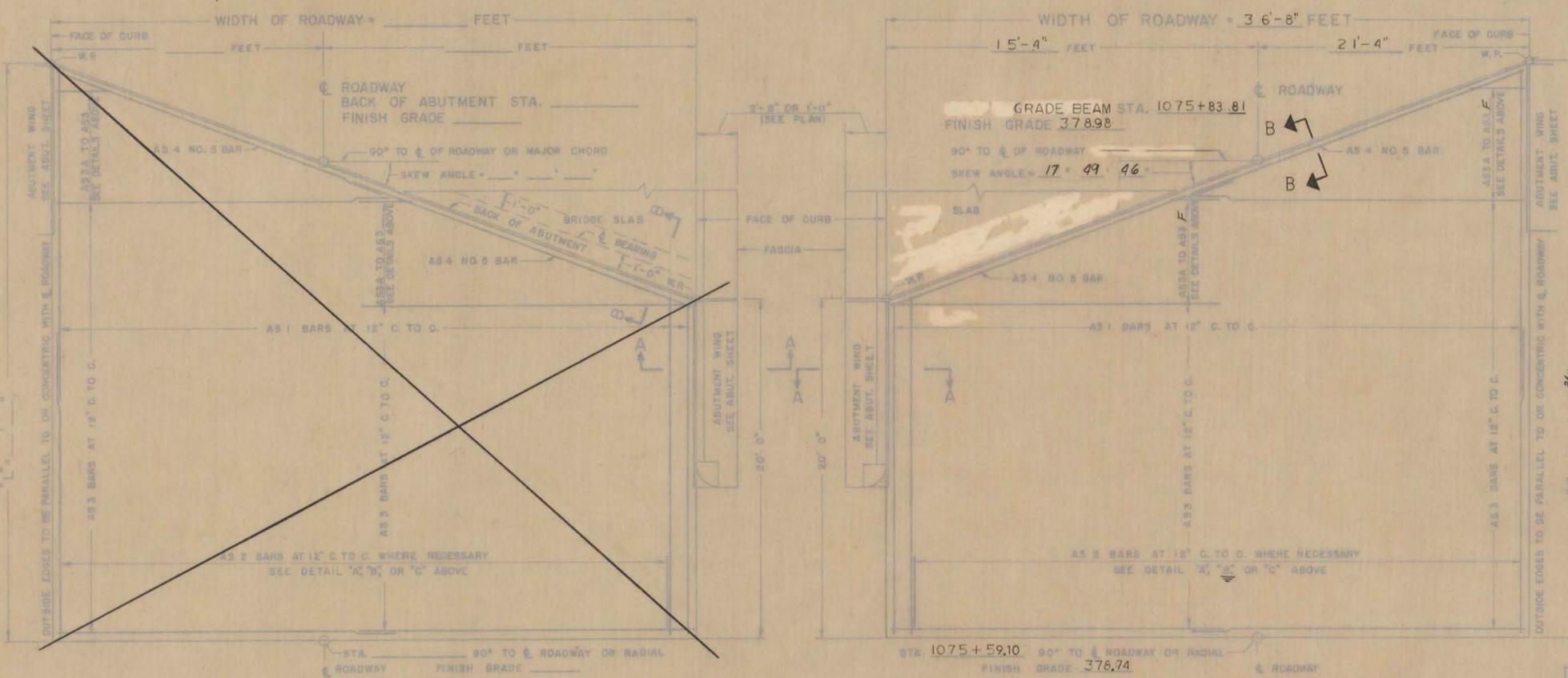
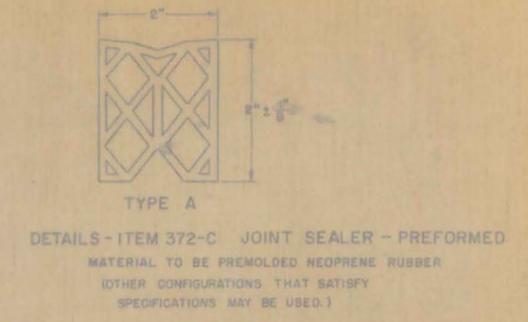
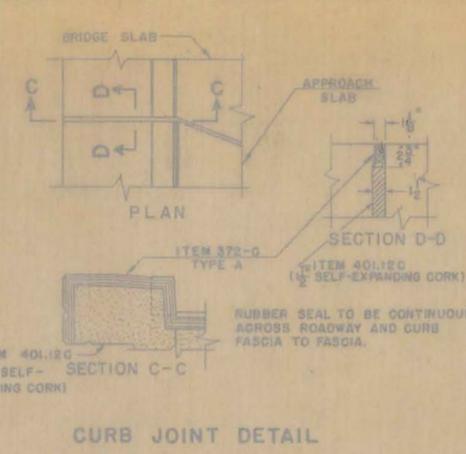
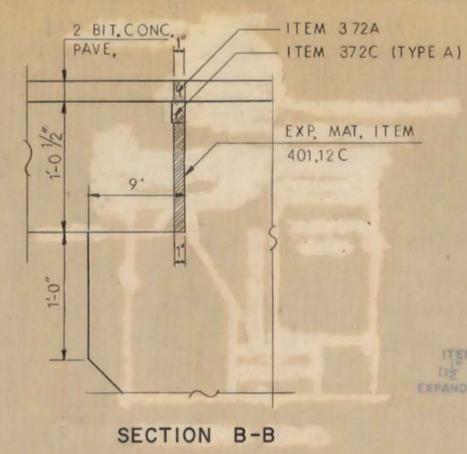
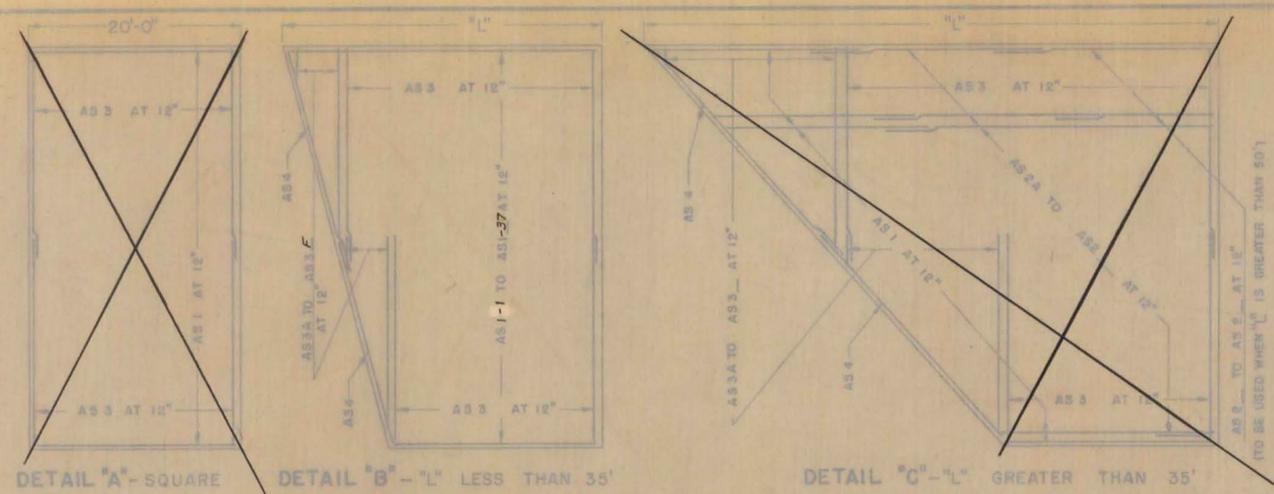
- DIMENSIONS OF JOINT FOR SEALER TYPE A REVISED 4/15/88 W.B.T.
- DIMENSIONS OF JOINT SEALER TYPE B REVISED 6/23/85 W.B.T.
- JOINT BETWEEN CURB AND SLAB REVISED, BITUMINOUS CONCRETE REVISED TO 3", QUANTITY TOTALS REMOVED. 12/7/83. W.B.T.

DRAWN BY: W.B.T. Jan 1965
 TRACED BY: W.B.T. Jan 1965
 CHECKED BY: W.M.S. Feb 1965
 RECOMMENDED FOR APPROVAL: [Signature] 2/4/65
 BRIDGE ENGINEER DATE
 RECOMMENDED FOR APPROVAL: [Signature] 2/4/65
 ASSISTANT CHIEF ENGINEER DATE
 APPROVED BY: [Signature] 2/4/65
 CHIEF ENGINEER DATE

DETAILS OF APPROACH SLAB FOR 36'-8" FOOT BRIDGE
 TO BE USED FOR BRIDGE AT STATION 1077+50 W.B.
 LOCATION U.S. RTE. 4 RELOCATION OVER VT. 22 A RELOC. (APPROACH SLAB NO. 2)

STATE OF VERMONT
 DEPARTMENT OF HIGHWAYS
 STANDARD STRUCTURE
SB-AS-65

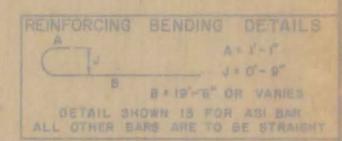
PROJECT FAIR HAVEN
 TOWN OF FAIR HAVEN
 ROUTE NO. U.S. 4 STA. WB 1077+50
 U.S. RTE. 4 RELOCATION OVER VT. 22 A RELOC. STA. EB 1076+77
 APPROACH SLAB NO. 2
 NOT TO SCALE
 IN CHARGE H.G.C.
 DESIGNED BY A.M.D. CHECKED BY R.E.C.
 PROJECT NO. FO20-1 (4) (8)
 SHEET 197 OF 255
 CONTRACT NO. BR 518



GENERAL NOTES

- ALL WORK AND MATERIALS SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION DATED APRIL 1964, AND THE A.S.H.O. SPECIFICATIONS, DATED 1961, DESIGNED FOR HS20-44 LOADING.
- ALL REINFORCING STEEL SHALL BE DETAILED ON THE REINFORCING STEEL SCHEDULE. ALL SPLICES SHALL BE A MINIMUM OF 40 BAR DIAMETERS.
- BITUMINOUS CONCRETE PAVEMENT VARIES FROM 2" AT BRIDGE END TO 3" AT ROADWAY END.

**FAIR HAVEN - WEST RUTLAND
 BF MEMB (35)
 SHEET 26 OF 44
 BRIDGE NOS. 5E AND 5W
 FOR REFERENCE ONLY**



LIST OF QUANTITIES

ITEM NO.	ITEM	UNIT
316	TAR EMULSION FOR BRIDGE FLOORS	GAL.
361	BITUMINOUS CONCRETE PAVEMENT MOD. TYPE IV	TONS
372-A	JOINT SEALER - NOT ROUNDED	L.F.
372-C	JOINT SEALER - PREFORMED, TYPE A	L.F.
401-B	CONCRETE CLASS B	CY.
402	REINFORCING STEEL	L.B.

REVISIONS AND CORRECTIONS

- DIMENSIONS OF JOINT SEALER TYPE A REVISED 4/15/85 W.B.T.
- DIMENSIONS OF JOINT SEALER TYPE B REVISED 5/23/85 W.B.T.
- JOINT BETWEEN CURB AND SLAB REVISED, BITUMINOUS CONCRETE REVISED TO 2", QUANTITY TOTALS REMOVED, 12/7/85, W.B.T.

DRAWN BY: W.B.T. Jan 1965
 TRACED BY: W.B.T. Jan 1965
 CHECKED BY: W.M.S. Feb 1965

RECOMMENDED FOR APPROVAL: [Signature] 2/19/65
 BRIDGE ENGINEER DATE

RECOMMENDED FOR APPROVAL: [Signature] 2/19/65
 ASSISTANT CHIEF ENGINEER DATE

APPROVED BY: [Signature] 2/19/65
 CHIEF ENGINEER DATE

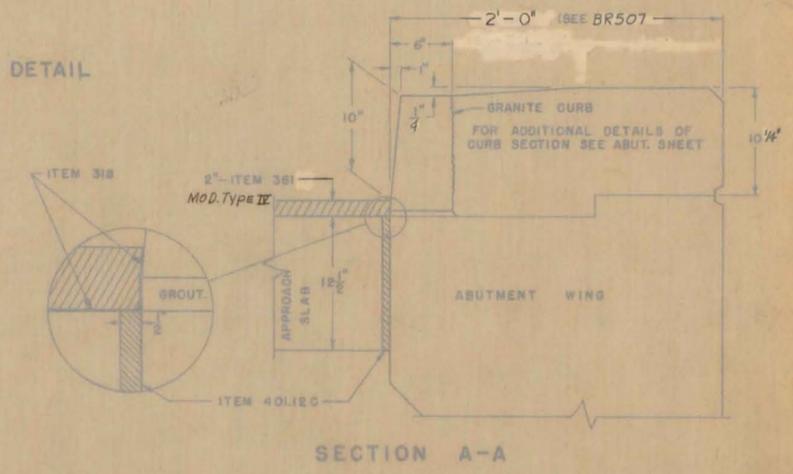
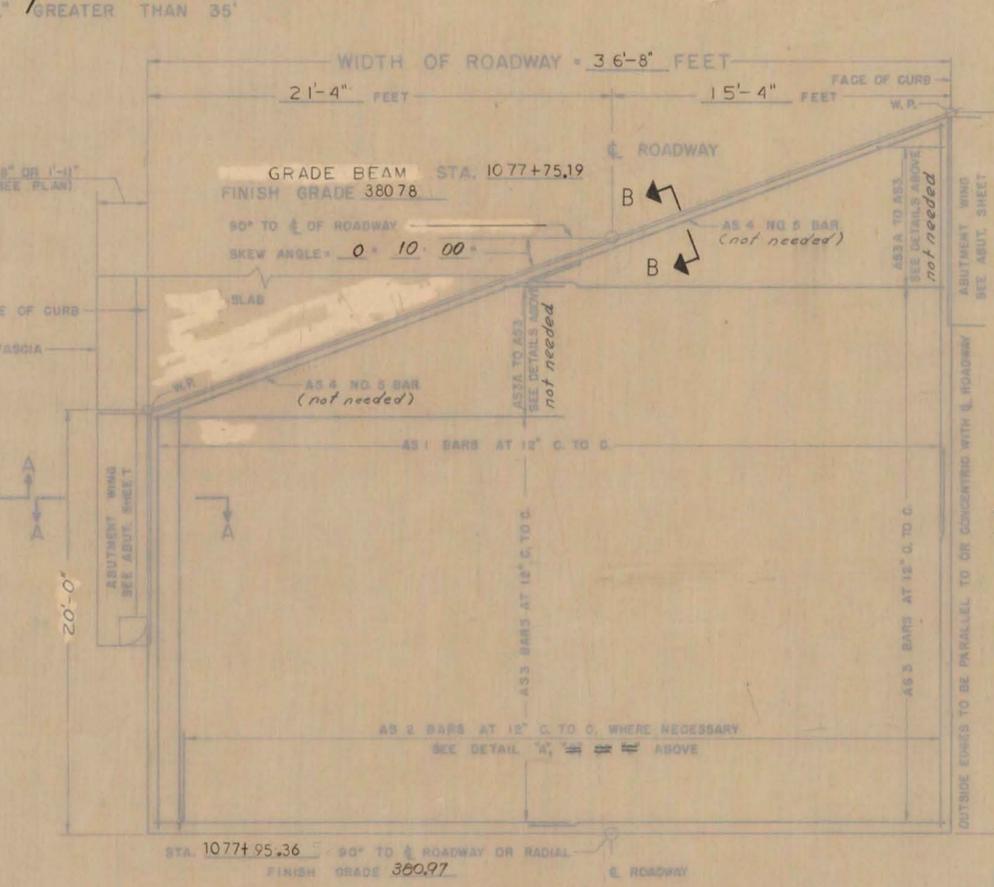
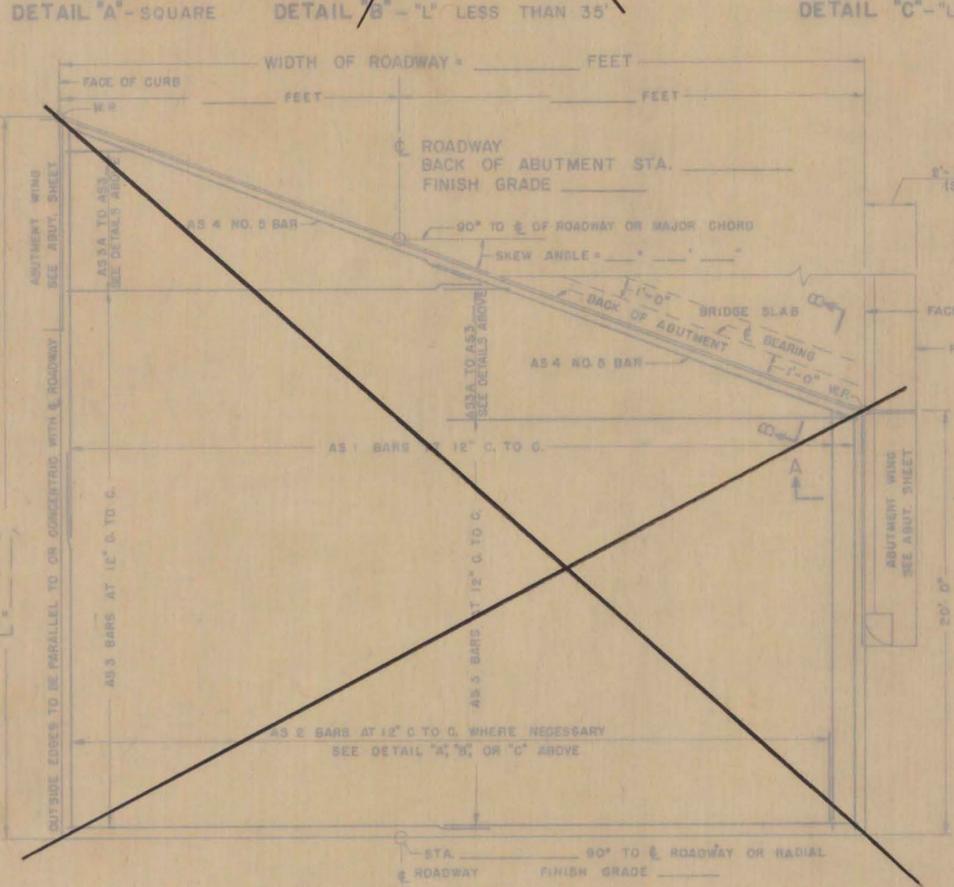
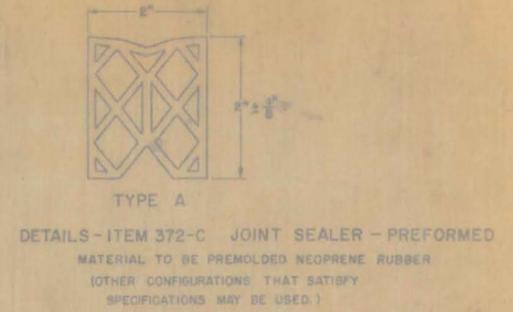
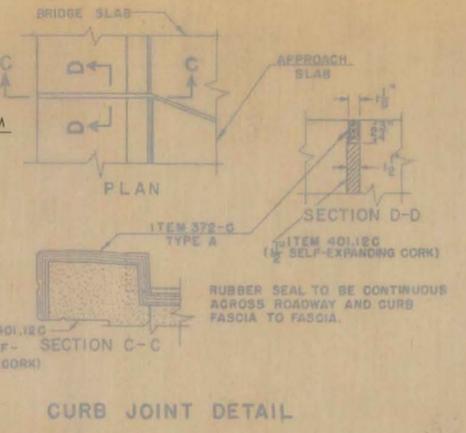
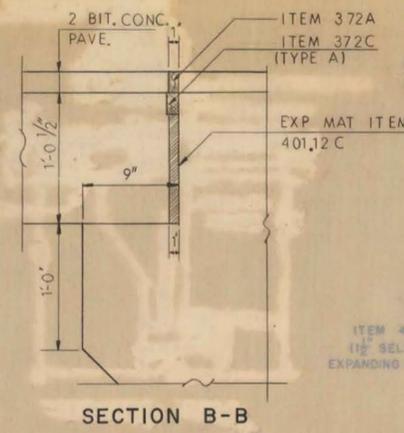
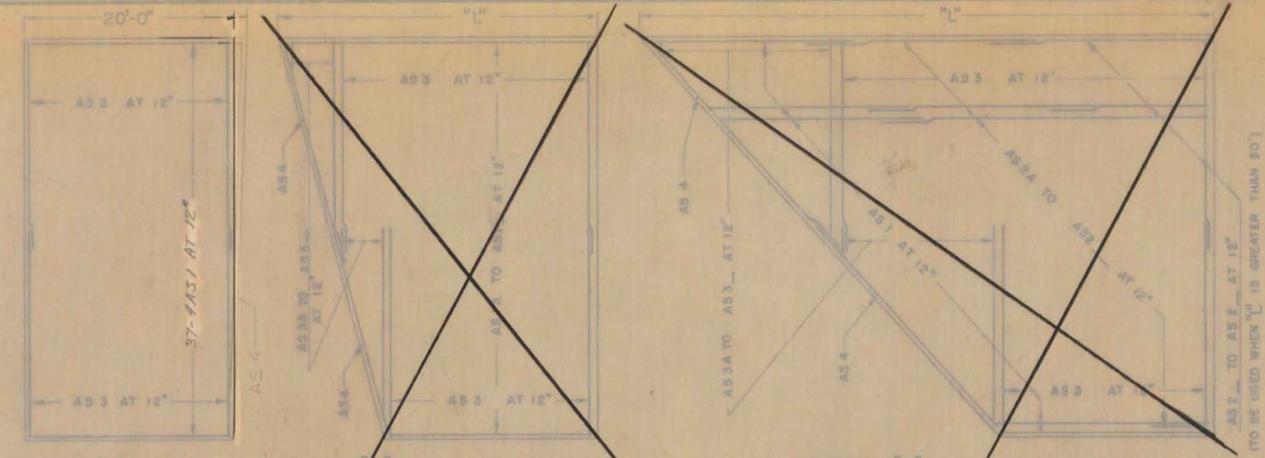
DETAILS OF APPROACH SLAB FOR 36'-8" FOOT BRIDGE (W19TH)

TO BE USED FOR BRIDGE AT STATION 1076+77 E.B.
 LOCATION U.S. RTE. 4 RELOCATION OVER VT. 22A RELOC. (APPROACH SLAB NO. 3)

STATE OF VERMONT
 DEPARTMENT OF HIGHWAYS
 STANDARD STRUCTURE
SB-AS-65

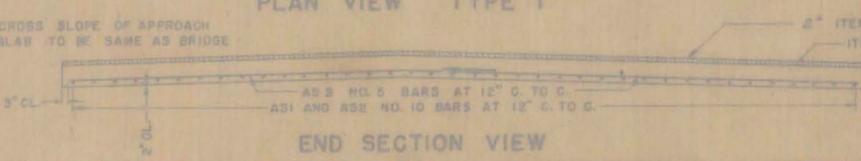
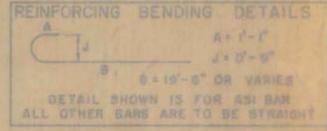
PROJECT FAIR HAVEN
 TOWN OF FAIR HAVEN
 ROUTE NO. U.S. 4
 U.S. RTE 4 RELOCATION OVER VT. 22A RELOC.
 APPROACH SLAB NO. 3

NOT TO SCALE
 IN CHARGE H.G.C.
 DESIGNED BY A.M.D. CHECKED BY R.E.C.
 PROJECT NO. FO20-1 (8)
 SHEET 198 OF 255
 CONTRACT NO. BR 519



- GENERAL NOTES**
1. ALL WORK AND MATERIALS SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION DATED APRIL 1964, AND THE A.A.S.H.O. SPECIFICATIONS DATED 1961, DESIGNED FOR HS20-44 LOADING.
 2. ALL REINFORCING STEEL SHALL BE DETAILED ON THE REINFORCING STEEL SCHEDULE. ALL SPLICES SHALL BE A MINIMUM OF 40 BAR DIAMETERS.
 3. BITUMINOUS CONCRETE PAVEMENT VARIES FROM 2" AT BRIDGE END TO 3" AT ROADWAY END.

**FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 27 OF 44
BRIDGE NOS. 5E AND 5W
FOR REFERENCE ONLY**



LIST OF QUANTITIES

ITEM NO.	ITEM	UNIT
318	TAR EMULSION FOR BRIDGE FLOORS	GAL.
361	BITUMINOUS CONCRETE PAVEMENT MOD. TYPE IX	TONS
372-A	JOINT SEALER - HOT FOUNDED	L.F.
372-C	JOINT SEALER - PREFORMED, TYPE A	L.F.
401-B	CONCRETE CLASS B	CY.
402	REINFORCING STEEL	LB.

REVISIONS AND CORRECTIONS

1. DIMENSIONS OF JOINT FOR SEALER TYPE A REVISED. 4/15/65 W.B.T.
2. DIMENSIONS OF JOINT SEALER TYPE B REVISED. 6/23/65 W.B.T.
3. JOINT BETWEEN CURB AND SLAB REVISED, BITUMINOUS CONCRETE REVISED TO 2". QUANTITY TOTALS REMOVED. 12/7/65 W.B.T.

DRAWN BY: *W.B.T. Jan 1964*
 TRACED BY: *W.B.T. Jan 1964*
 CHECKED BY: *W.H.S. Feb 1965*
 RECOMMENDED FOR APPROVAL: *[Signature]* 2/4/65
 RECOMMENDED FOR APPROVAL: *[Signature]* 2/16/65
 APPROVED BY: *[Signature]* 2/16/65

DETAILS OF APPROACH SLAB FOR 36'-8" FOOT BRIDGE
 TO BE USED FOR BRIDGE AT STATION 1076+77 E.B.
 LOCATION U.S. ROUTE 4 RELOCATION OVER VT. 22A RELOC. (APPROACH SLAB NO. 4)

**STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
STANDARD STRUCTURE
SB-AS-65**

PROJECT FAIR HAVEN
 TOWN OF FAIR HAVEN
 ROUTE NO. U.S. 4 STA. WB 1077+50 E.B. 1076+77
 U.S. RTE. 4 RELOCATION OVER VT. 22A RELOC
 APPROACH SLAB NO. 4
 NOT TO SCALE
 IN CHARGE H.G.C.
 DESIGNED BY A.M.D. CHECKED BY R.E.C.
 PROJECT NO. F020-1 (8)
 SHEET 199 OF 255
 CONTRACT NO. BR 520

LIST OF BRIDGE SHEETS

BR 100	PLAN & ELEVATION
BR 101-102	BRIDGE QUANTITY SHEETS
BR 103	PRELIMINARY INFORMATION SHEET
BR 104-105	BORINGS
BR 106-107	RAILING, CURB, & FRAMING PLANS
BR 108-112	ABUTMENTS #1, #2, #3, #4
BR 113-118	PIERS #1 THRU #8
BR 119-122	APPROACH SLABS #1 THRU #4
BR 123-125	RETAINING WALLS
BR 126-131	REINFORCING STEEL SHEETS
BR 132-134	CHANNEL SECTIONS

STANDARD SHEETS

SCB-30-65	SB-R1-64(SH. 1#2)
SB-R2-65	SCB-D1 THRU D9-65

GENERAL NOTES

- ALL 12BP53 STEEL PILES SHALL BE DRIVEN TO A BEARING CAPACITY OF 45 TONS PER PILE.
- ELEVATION DATUM IS SEA LEVEL BASED ON NEAREST U.S. GOVERNMENT VERTICAL CONTROL.
- FOR ADDITIONAL GENERAL NOTES SEE SCB-D1-65.
- APPROACH SLABS SHALL BE CONSTRUCTED AS PART OF STAGE 1 CONSTRUCTION.
- IF ROCK FILL IS NOT AVAILABLE, USE ITEM 204 (1" THICK) FOR SLOPE PROTECTION UNDER BRIDGES AT ABUT. #1 & #3.
- EASTBOUND BRIDGE SHALL BE POSITIONED FROM PIER 6. THE E OF PIER 6 SHALL BE AT THE INTERSECTION OF E.B. LANE AND D.H. R.R. A PRELIMINARY FIELD CHECK WAS MADE PRIOR TO DESIGN. A FINAL FIELD CHECK SHOULD BE MADE OF THIS INTERSECTION, AND PIER LOCATION REVISED IF NECESSARY.
- ITEM 505, PILE WHEN IN THE OP DESIGNED LOAD ACHIEVED.

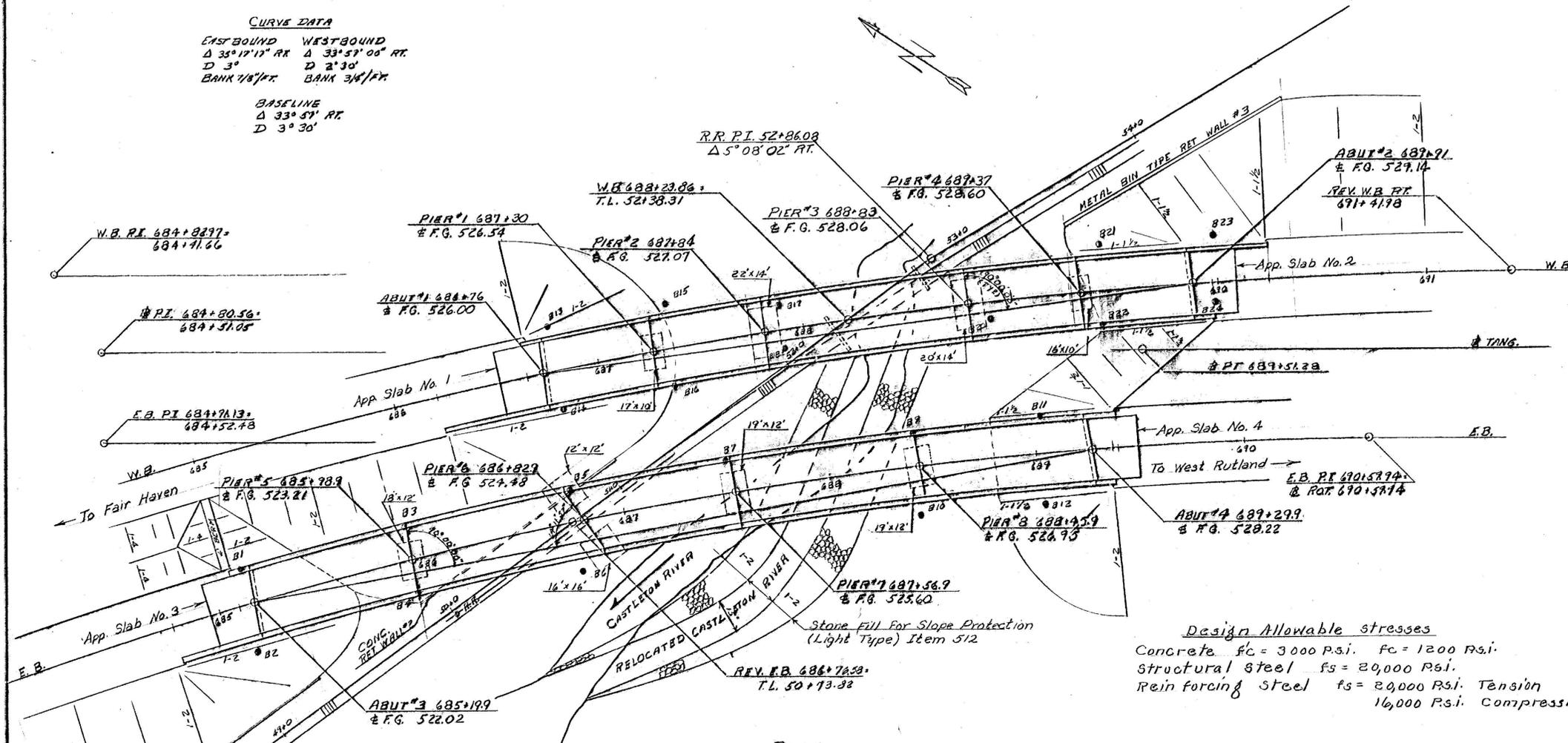
**FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 28 OF 44
BRIDGE NO. 13E
FOR REFERENCE ONLY**

**STATE OF VERMONT
DEPARTMENT OF HIGHWAYS**

PROJECT --- WEST RUTLAND
TOWN OF --- WEST RUTLAND
ROUTE NO. U.S. 4 STA. 487+50
U.S. 4 OVER D.H. RAILROAD &
CASTLETON RIVER
SCALE 1" = 30'
IN CHARGE W. SMITH
DRAWN BY PERKINS CHECKED BY M. SMITH
PROJECT NO. BR 039-110
SHEET 28 OF 35 BR-100

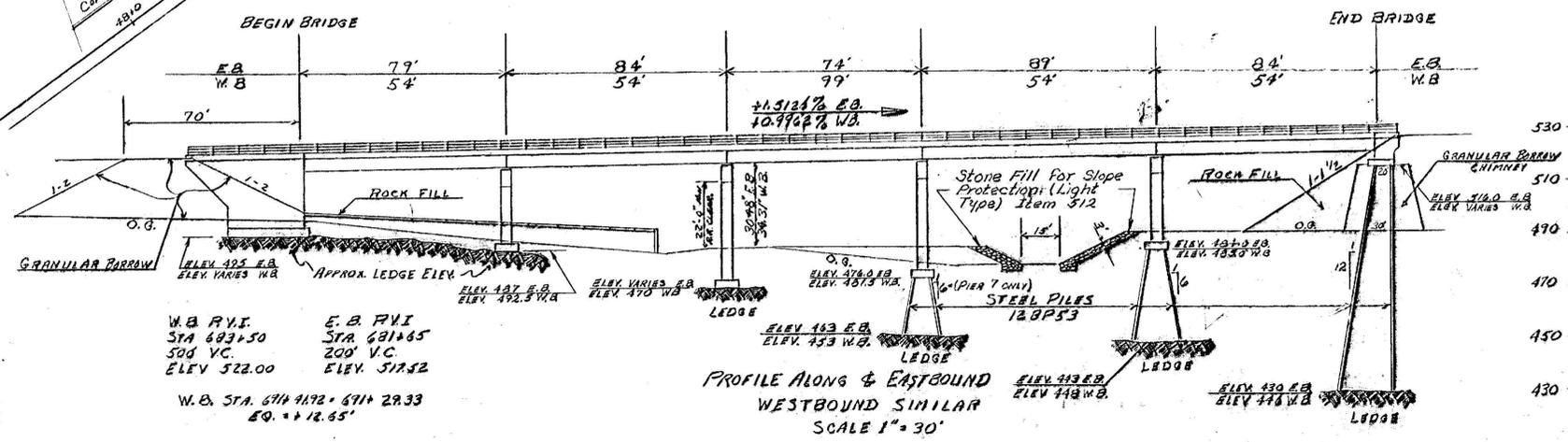
CURVE DATA
EASTBOUND WESTBOUND
Δ 33° 17' 17" RT Δ 33° 57' 00" RT
D 3° D 2' 30"
BANK 1/8" FT. BANK 3/4" FT.

BASELINE
Δ 33° 57' RT
D 3° 30'



**PLAN
SCALE 1" = 30"**

Design Allowable stresses
Concrete $f_c = 3000$ P.s.i. $f_c = 1200$ P.s.i.
Structural steel $f_s = 20,000$ P.s.i.
Reinforcing steel $f_s = 20,000$ P.s.i. Tension
16,000 P.s.i. Compression



HIGHWAY NO. US 4 NAME OF HIGHWAY RELOCATED US 4
 STRUCTURE NO. S2-81 COUNTY RUTLAND TOWN WEST RUTLAND
 PROJECT NO. APO20-1(10) LOCATION RELOCATED US 4 OVER DELAWARE & HUDSON RAILROAD & CASTLETON RIVER

EXISTING STRUCTURE

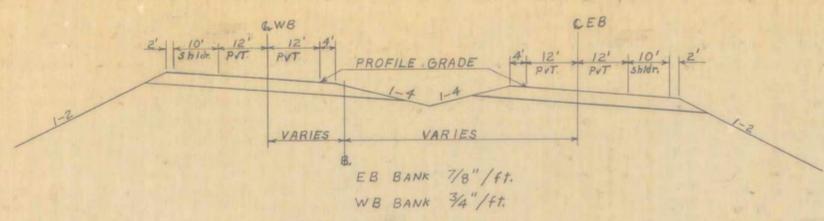
1 RATED LOADING OF EXISTING STRUCTURE _____
 2 TYPE OF EXISTING STRUCTURE _____
 3 UNDERCLEARANCE ELEVATION OF EXISTING STRUCTURE _____
 4 WHAT DISPOSITION SHOULD BE MADE OF EXISTING STRUCTURE? COST OF REMOVAL _____
 5 SHOULD EXISTING STRUCTURE BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF NEW STRUCTURE? _____
 6 SHOULD NEW TEMPORARY STRUCTURE BE BUILT? _____
 7 ORDINARY HIGH WATER SURFACE ELEV. AT EXISTING STRUCTURE _____ WATERWAY TO ORDINARY H.W. _____
 8 EXTREME HIGH WATER AT EXISTING STRUCTURE _____
 9 SPAN OF EXISTING BRIDGE UPSTREAM _____ WATERWAY TO EXTREME H.W. _____
 SPAN OF EXISTING BRIDGE DOWNSTREAM _____ WATERWAY TO EXTREME H.W. _____
 10 TYPE OF FOUNDATION UNDER EXISTING ABUTMENTS _____
 11 DOES ALL WATER AT FLOOD ELEVATION PASS THROUGH EXISTING STRUCTURE? _____
 12 IF NOT AT WHAT ELEVATION IS RELIEF AFFORDED? _____
 13 ADDITIONAL WATERWAY AREA PROVIDED _____

NEW STRUCTURE

1 RECOMMENDED TYPE OF STRUCTURE Simple Spans - WF Beam Composite
 2 RECOMMENDED CLEAR SPAN OR SPANS 79-84-74-89-84 EB & 54-54-99-54-54 WB
 MEASURED PARALLEL TO ϵ NEW HIGHWAY Same
 MEASURED AT RIGHT ANGLES TO ϵ STREAM NA
 3 ARE THERE OBJECTIONS TO A PIER IN THE STREAM? ANSWER YES OR NO No
 4 ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE 480
 5 EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE 487 SOURCE OF INFORMATION USGS
 6 IS ALL WATER INTENDED TO PASS THROUGH NEW STRUCTURE? Yes
 7 DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? No IS ORDINARY RISE RAPID? No
 8 LOW WATER ELEVATION AT NEW STRUCTURE 479
 9 DRAINAGE AREA IN ACRES ABOVE STRUCTURE 9656 CHARACTER OF TERRAIN Mountainous
 10 IS STREAM EVER DRY? No
 11 VELOCITY OF STREAM AT HIGH WATER STAGE 9 ft/sec ESTIMATED DISCHARGE 2300 cfs
 12 AREA FULL OPENING 225 ft² AREA BELOW ORDINARY H.W. 16 ft²
 13 CHARACTER OF SCOUR slight DRIFT slight ICE slight
 14 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE None
 15 VERTICAL CLEARANCE ABOVE FLOOD ELEVATION? No BOTH SIDES _____
 16 ARE SIDEWALKS REQUIRED? IF SO ON WHAT SIDE? No
 17 RECOMMENDED TYPE OF PAVEMENT 7/8" Concrete slab & 2" Bituminous Concrete
 18 TRAFFIC TO BE MAINTAINED UNDER ITEM NO. 8 ONE OR TWO WAYS _____ PROBABLE COST _____
 19 PROBABLE COST OF CLEARING AND GRUBBING STREAM CHANNEL AT STRUCTURE SITE None
 20 SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES? No
 21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS Ledge should piles be used? Yes EST LGTH VARIES
3 tons/ft²; Earth (walls) 2 tons/ft² 12 BP53 - 45 tons

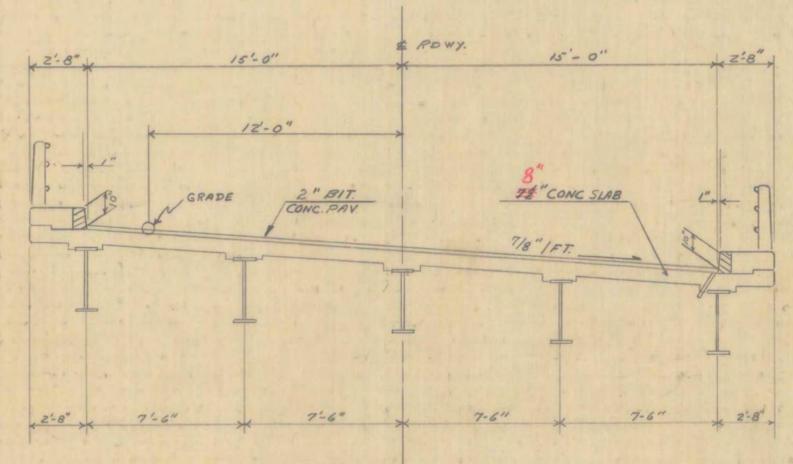
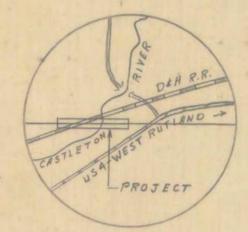
FOUNDATION INFORMATION

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



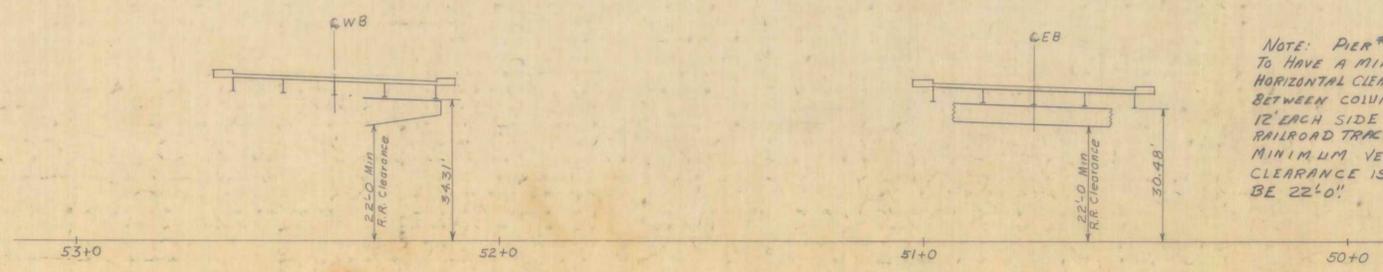
NEW HIGHWAY SECT. STA. 688+00 TO STA. _____
 SCALE 1" = 20'

NEW HIGHWAY PROFILE ALONG ϵ
 SCALE _____



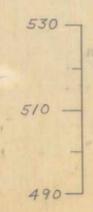
TYPICAL EASTBOUND BRIDGE SECTION
 SCALE 1" = 4'-0"
 WESTBOUND BRIDGE SIMILAR

PLAN SCALE



PROFILE OF EXISTING RAILROAD
 SCALE 1" = 20'

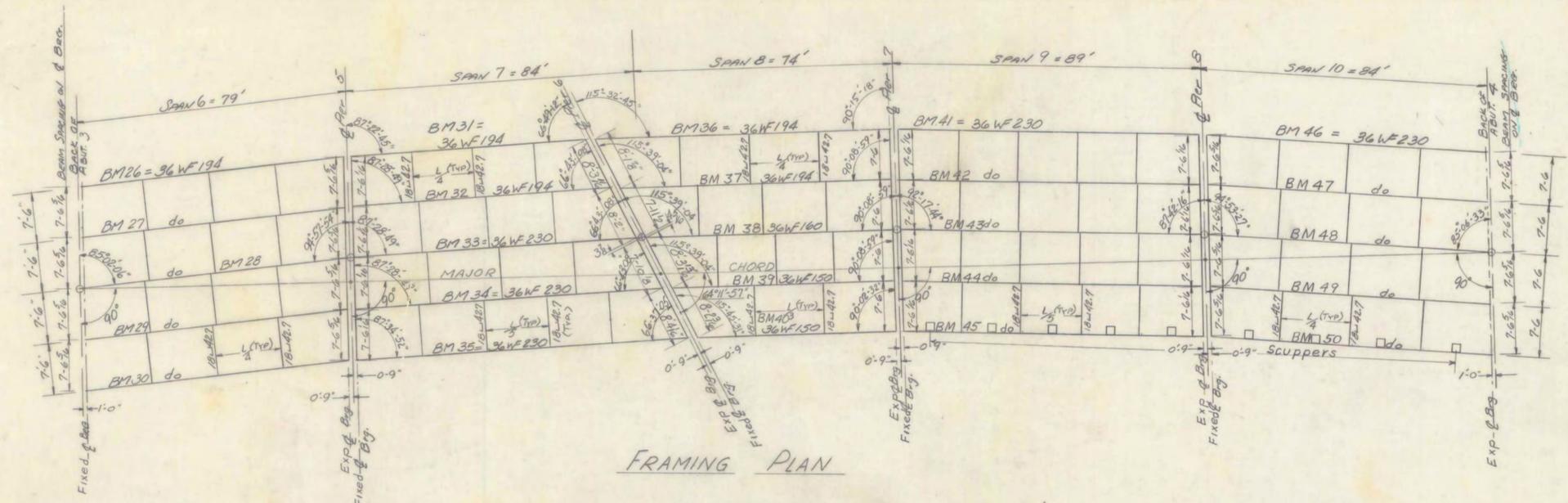
NOTE: PIER #2 (EB) TO HAVE A MINIMUM HORIZONTAL CLEARANCE BETWEEN COLUMNS OF 12' EACH SIDE OF ϵ OF RAILROAD TRACK. MINIMUM VERTICAL CLEARANCE IS TO BE 22'-0"



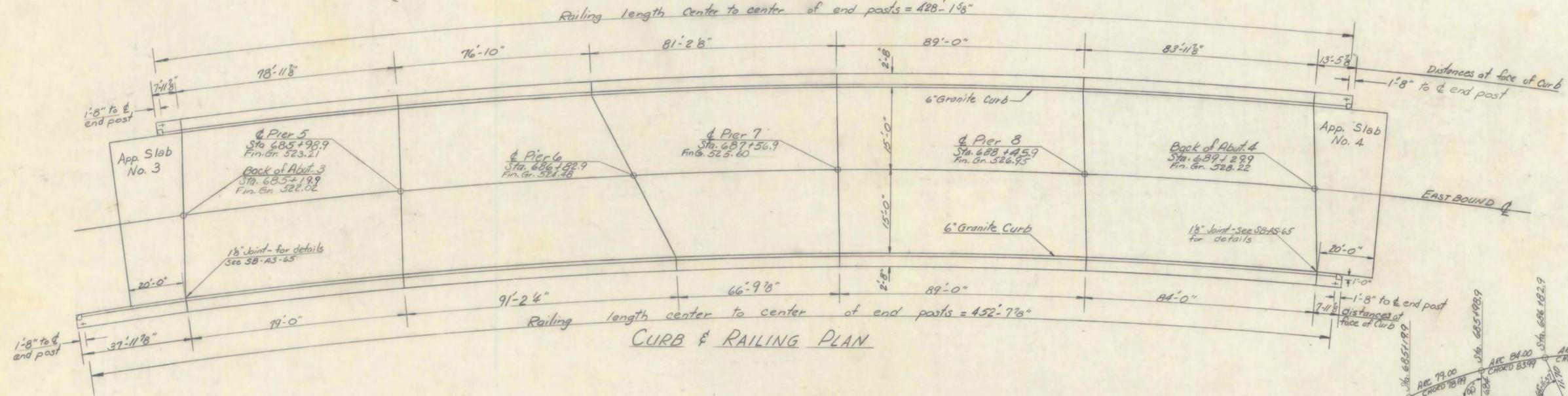
RECOMMENDED FOR APPROVAL E. H. Stinchey 11/19/65
 CONSTRUCTION ENG. DATE
 RECOMMENDED FOR APPROVAL Jim Ryan 11/19/65
 BRIDGE ENGINEER DATE
 RECOMMENDED FOR APPROVAL R. H. Crowl 11/19/65
 ASST. CHIEF ENGINEER DATE
 APPROVED BY A. S. Paul 11/19/65
 CHIEF ENGINEER DATE

**FAIR HAVEN - WEST RUTLAND
 BF MEMB (35)
 SHEET 29 OF 44
 BRIDGE NO. 13E
 FOR REFERENCE ONLY**

STATE OF VERMONT
 DEPARTMENT OF HIGHWAYS
 RELOCATED US 4 IN THE TOWNS OF
WEST RUTLAND
 ROUTE NO US 4 STA. 687+50
US 4 OVER D & H RAILROAD & CASTLETON R.
 SURVEYED BY Bornas CHECKED BY WMS SCALE As Noted
 DRAWN BY AGC IN CHARGE WMS DATE 12 Nov 65
 PROJECT NO. APO20-1(10) SHEET 34 OF 359



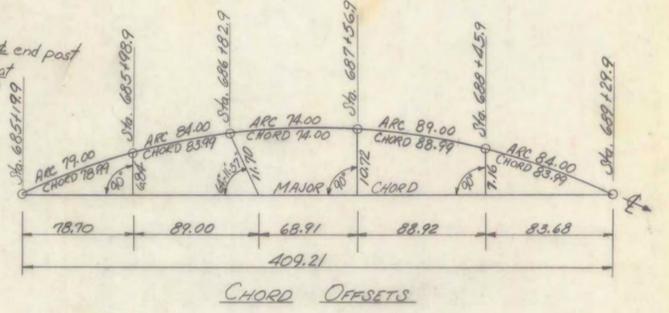
FRAMING PLAN



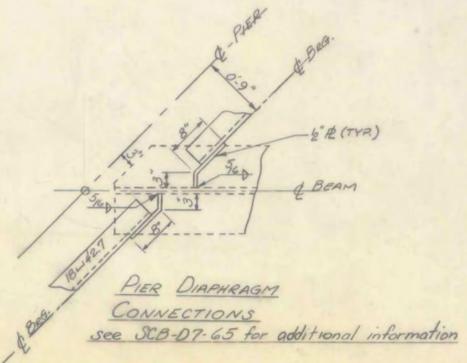
CURB & RAILING PLAN

NOTES:
 1. For Superstructure notes see Br 106
 2. All expansion bearing devices on the eastbound lane shall be as per SCB-DB-65, detail B

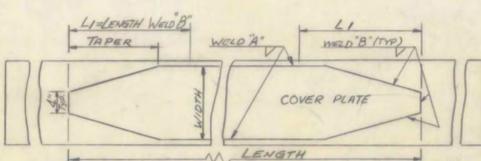
FAIR HAVEN - WEST RUTLAND
 BF MEMB (35)
 SHEET 30 OF 44
 BRIDGE NO. 13E
 FOR REFERENCE ONLY



CHORD OFFSETS



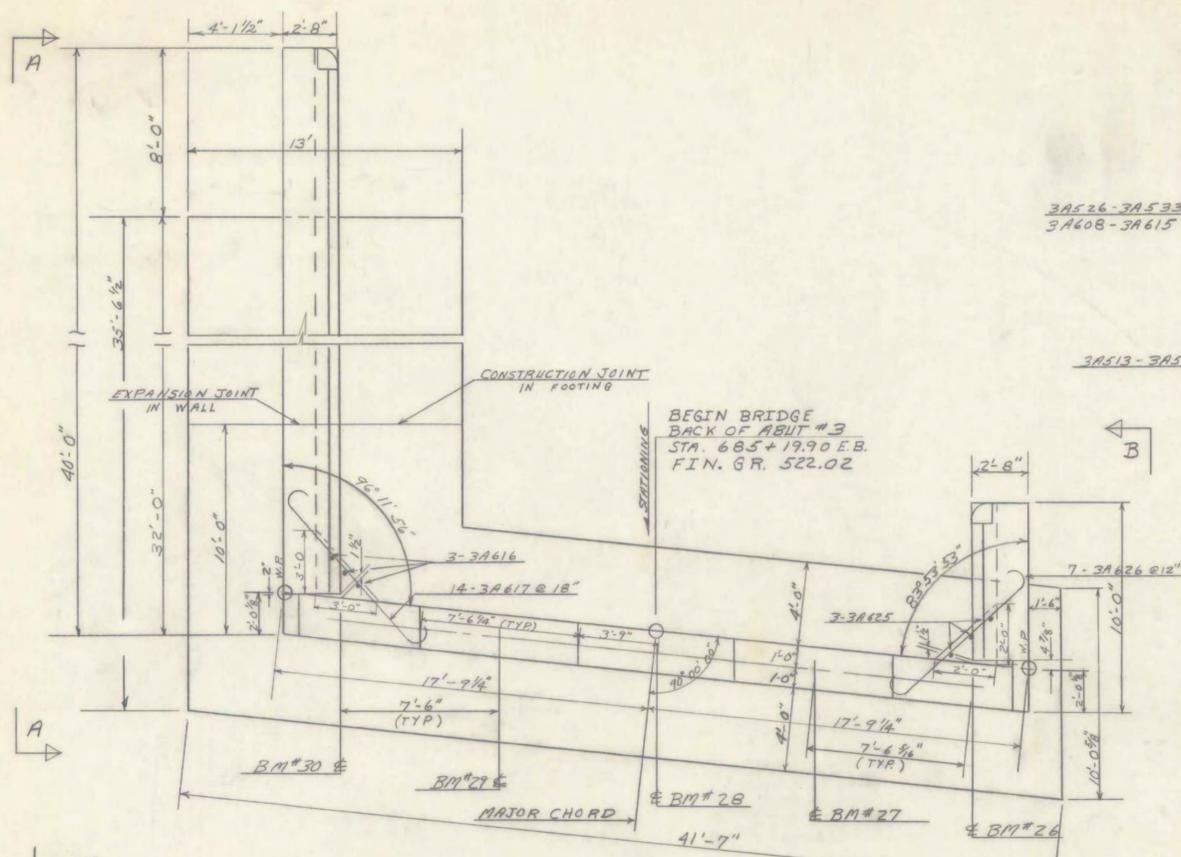
PIER DIAPHRAGM CONNECTIONS
 see SCB-D7-65 for additional information



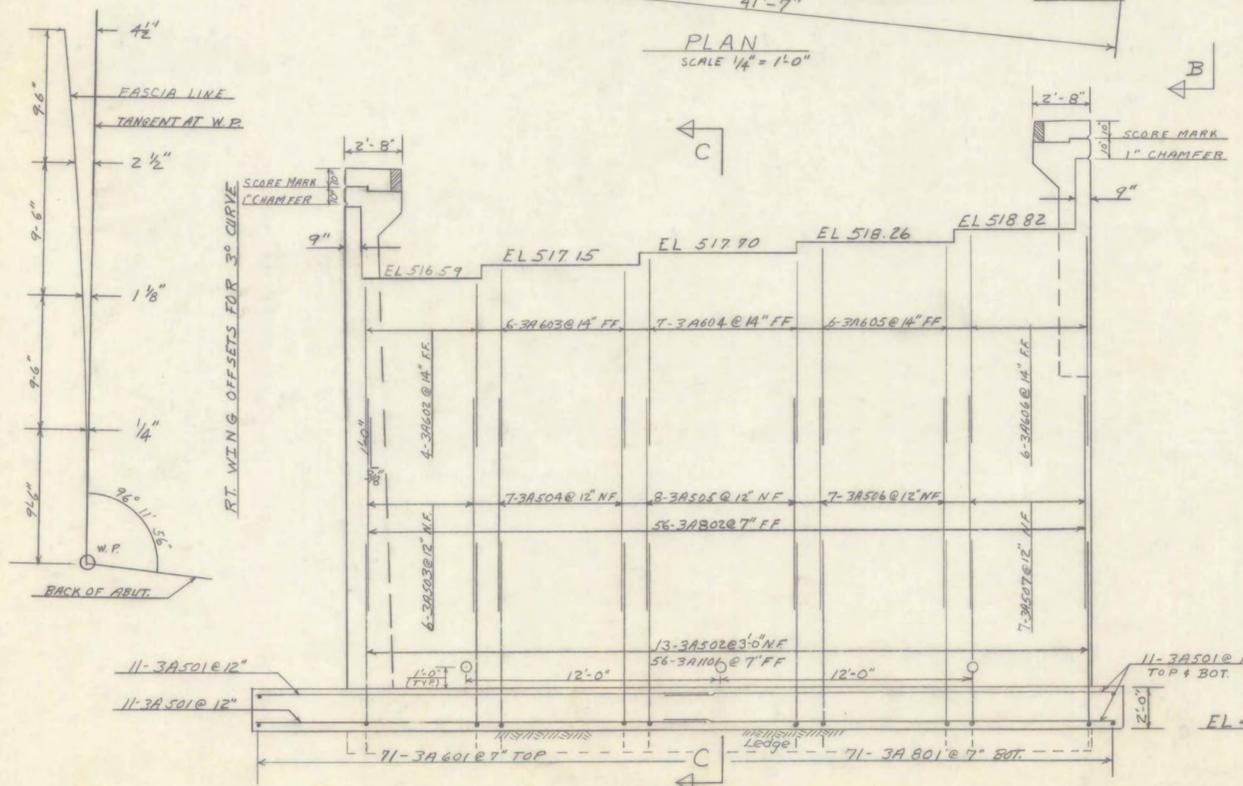
COVER PLATE DETAILS

SPAN	BEAM NO.	CAMBER	SIZE	LENGTH C-C of BRG.	COVER PLATE (SEE SCB-D7-65)					SPIRAL PITCH FOR SHEAR CONNECTION (SEE SCB-D7-65)					
					LENGTH	WIDTH	THICKNESS	TAPER	WELD "A"	WELD "B"	L1	0'-10"	10'-20"	20'-30" @ 4'	30'-40" @ 4'
6	ALL	3/8"	36WF194	77.24	49-10	10"	1/2"	1'-0"	5/16"	1/2"	2'-0"	double @ 5"	double @ 7"	single @ 4 1/2"	single @ 6"
	31	3/8"	36WF194	75.26	47-1	10"	1/2"	1'-0"	5/16"	1/2"	1'-9 1/2"	double @ 5 1/2"	double @ 6 1/2"	single @ 4 1/2"	single @ 5 1/2"
	32	3/4"	36WF194	78.87	52-9	10"	1 3/8"	1'-0"	5/16"	1/2"	2'-3"	double @ 5"	double @ 6 1/2"	" " 4"	" " 5 1/2"
	33	3/8"	36WF230	82.43	49-7	14"	7/8"	1'-6"	5/16"	1/2"	1'-11"	" " 5 1/2"	" " 6 1/2"	" " 4"	" " 5"
	34	3/2"	36WF230	85.98	56-8	14"	1 1/8"	1'-6"	5/16"	1/2"	2'-7"	" " 5 1/2"	" " 6 1/2"	" " 4"	" " 5"
7	35	3/8"	36WF230	89.61	63-2	14"	1 3/8"	1'-6"	5/16"	1/2"	3'-2"	" " 5 1/2"	" " 6 1/2"	" " 4"	" " 5"
	36	3/8"	36WF194	79.59	54-11	10"	1/2"	1'-0"	5/16"	1/2"	2'-6"	double @ 5"	double @ 6 1/2"	single @ 4"	single @ 5 1/2"
	37	3"	36WF194	76.03	46-5	10"	1 1/2"	1'-0"	5/16"	1/2"	1'-9 1/2"	" " 5"	" " 6 1/2"	" " 4"	" " 5 1/2"
	38	2 1/8"	36WF160	72.41	50-0	10"	1 1/4"	1'-0"	5/16"	1/2"	2'-0"	" " 5"	" " 6"	" " 4"	" " 5 1/2"
	39	2 3/4"	36WF150	68.79	46-11	10"	1 1/8"	1'-0"	5/16"	1/2"	1'-9 1/2"	" " 5"	" " 6 1/2"	" " 4 1/2"	" " 5 1/2"
8	40	2 3/8"	36WF150	65.23	41-1	10"	7/8"	1'-0"	5/16"	5/16"	1'-9 1/2"	" " 5"	" " 6 1/2"	" " 4 1/2"	" " 4 1/2"
	ALL	3 1/8"	36WF230	87.50	59-5	14"	1 1/4"	1'-6"	5/16"	1/2"	2'-10"	double @ 5 1/2"	double @ 6 1/2"	" @ 4 1/2"	" " 5"
9	ALL	3 1/8"	36WF230	87.50	59-5	14"	1 1/4"	1'-6"	5/16"	1/2"	2'-10"	double @ 5 1/2"	double @ 6 1/2"	" @ 4 1/2"	" " 5"
10	ALL	3 1/2"	36WF230	82.24	49-5	14"	7/8"	1'-6"	5/16"	1/2"	1'-11"	double @ 5 1/2"	" @ 7"	" @ 4 1/2"	" @ 6"

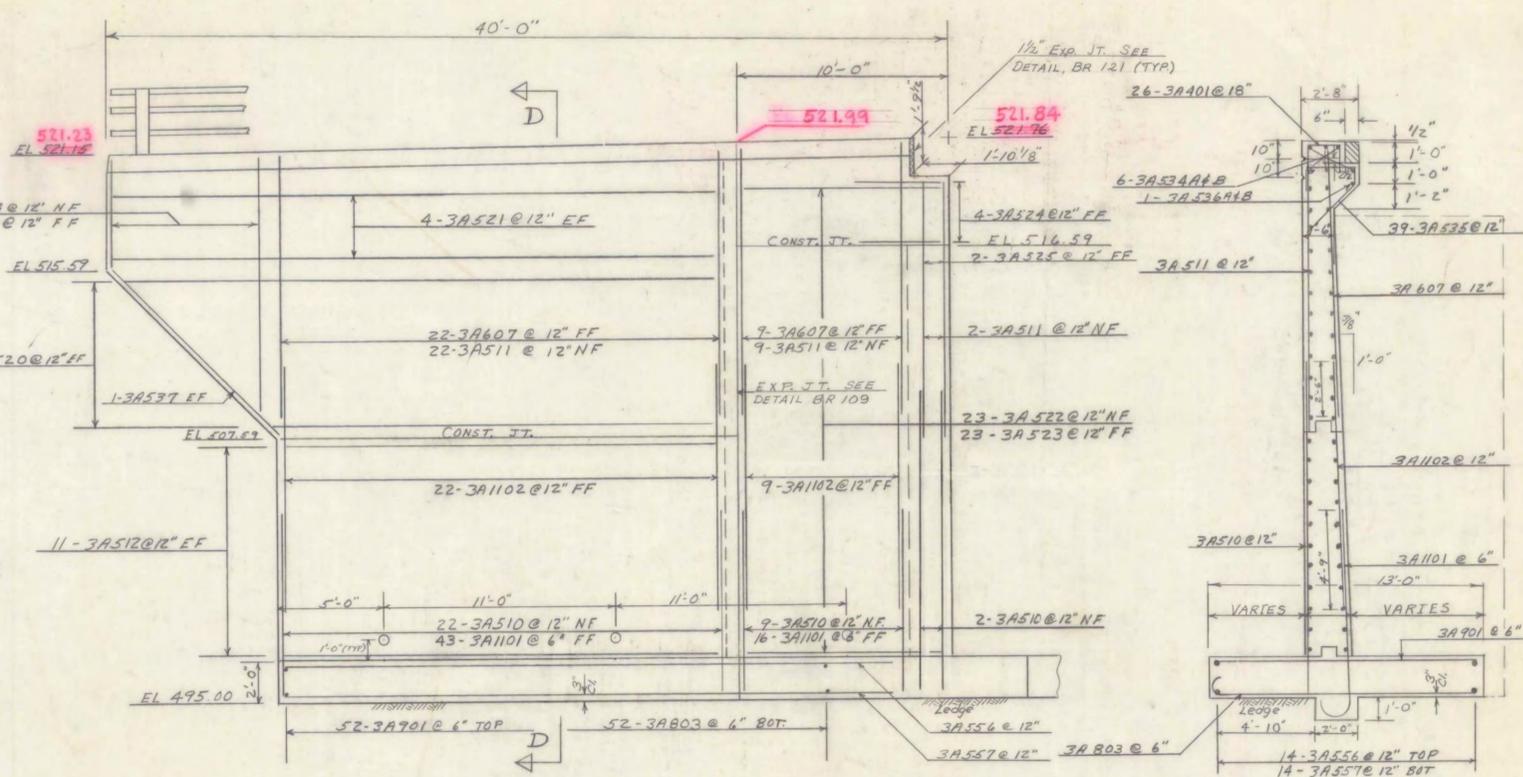
STATE OF VERMONT
 DEPARTMENT OF HIGHWAYS
 PROJECT WEST RUTLAND
 TOWN OF WEST RUTLAND
 ROUTE NO US 4 STA. 687+50
 USA OVER R.R. and CASTLETON RIVER EASTBOUND
 FRAMING PLAN & CURB and RAILING PLAN
 SCALE NOT TO SCALE
 IN CHARGE W. Smith
 DRAWN BY ISHAM CHECKED BY D. PERKINS
 PROJECT NO AP 020-1(10)
 SHEET 30 OF 359 BR 107



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

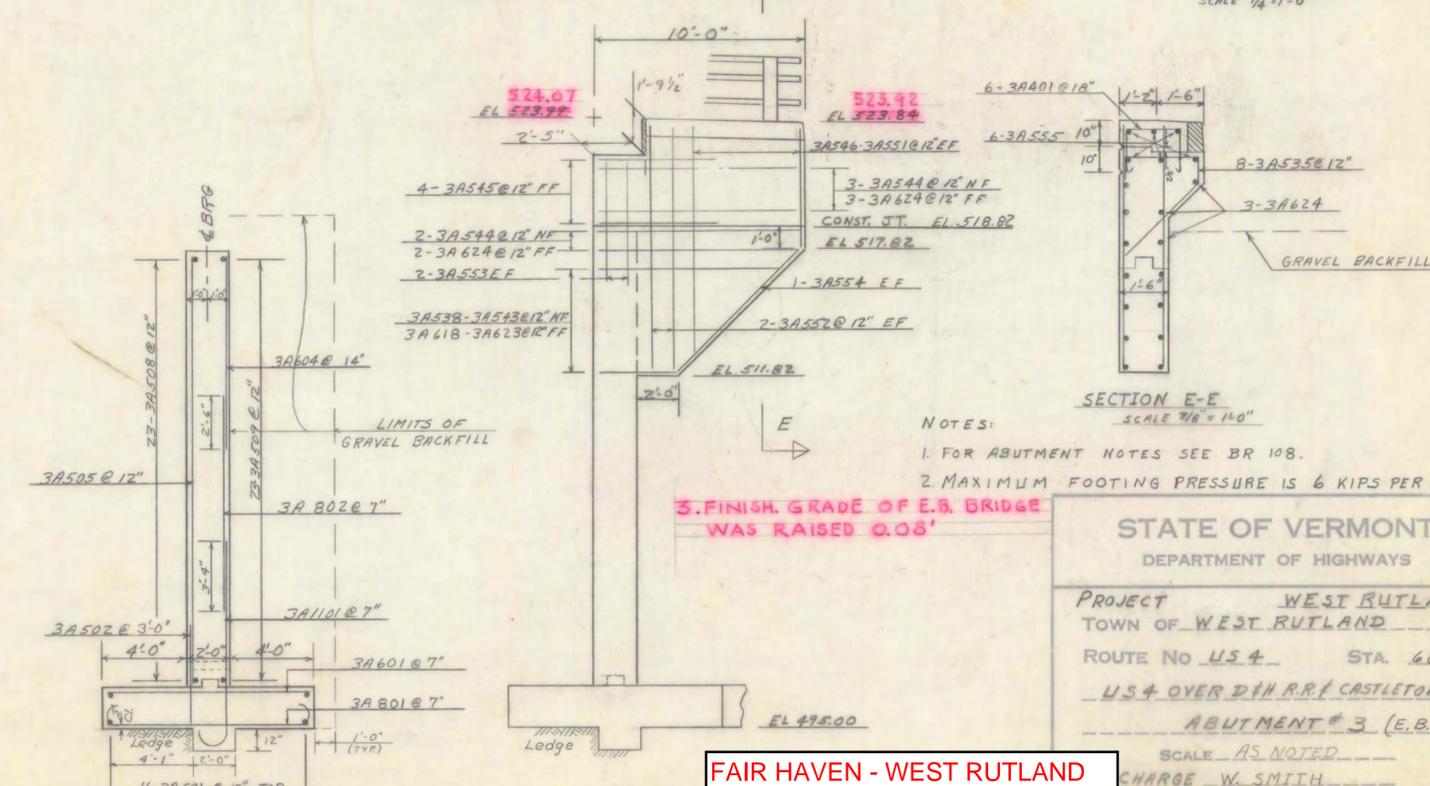


ELEVATION
SCALE 1/4" = 1'-0"



VIEW A-A
SCALE 1/4" = 1'-0"

SECTION D-D
SCALE 1/4" = 1'-0"



VIEW B-B
SCALE 1/4" = 1'-0"

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

- NOTES:
1. FOR ABUTMENT NOTES SEE BR 108.
 2. MAXIMUM FOOTING PRESSURE IS 6 KIPS PER SQ. FT.

3. FINISH GRADE OF E.B. BRIDGE WAS RAISED 0.08'

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

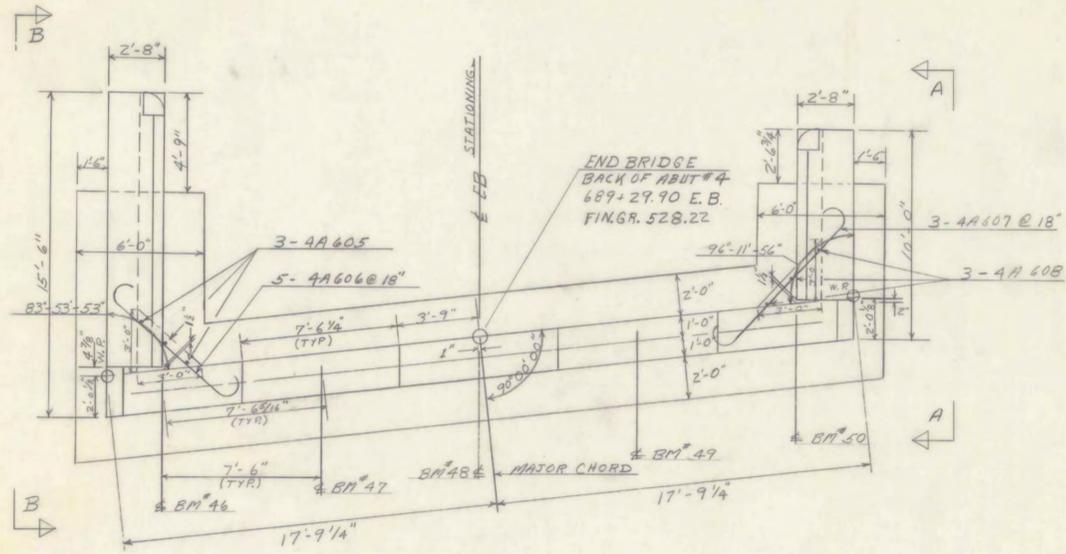
PROJECT WEST RUTLAND
TOWN OF WEST RUTLAND

ROUTE NO. US 4 STA. 687+50
US 4 OVER D.H. R.R. CASTLETON R.

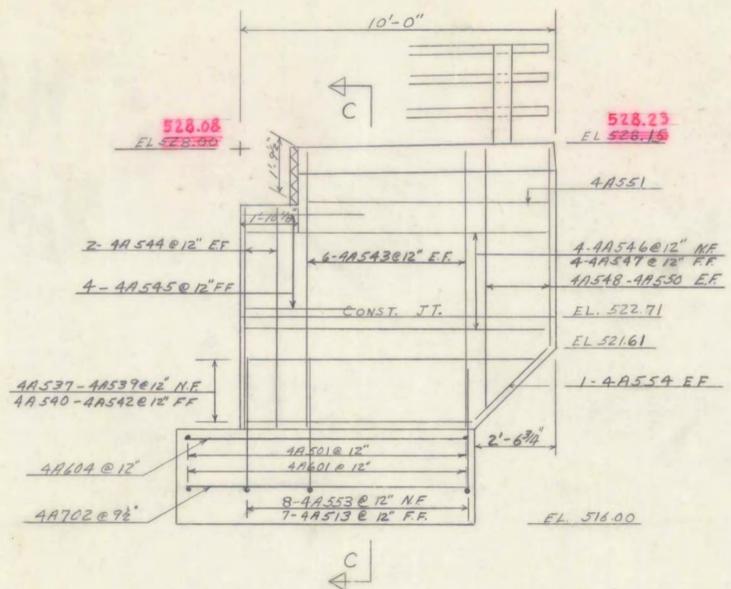
ABUTMENT # 3 (E.B.)

SCALE AS NOTED
CHARGE W. SMITH
DRAWN BY D. PERKINS CHECKED BY A. COUCH 4-66
PROJECT NO. AP 020-110
SHEET 92 OF 359 BR JLL

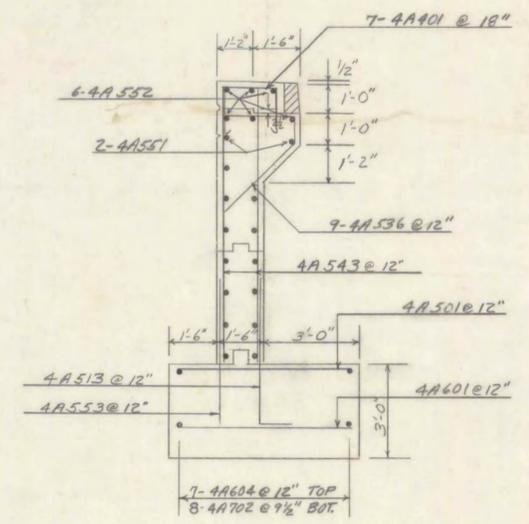
FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 31 OF 44
BRIDGE NO. 13E
FOR REFERENCE ONLY



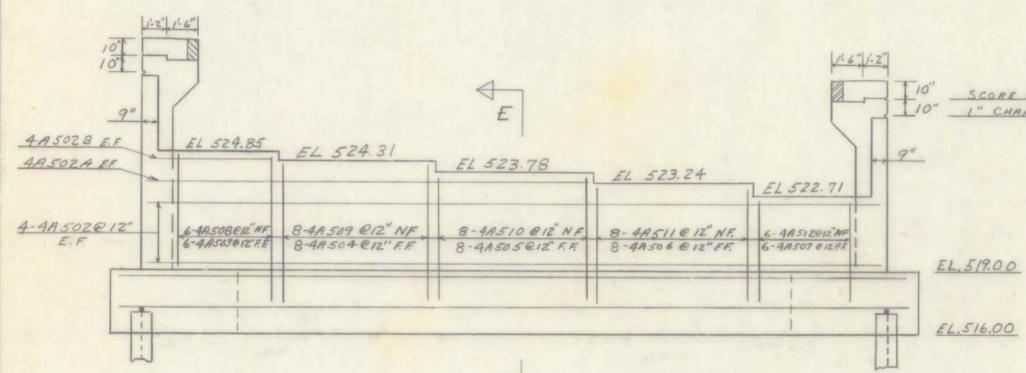
PLAN
1/4" = 1'-0"



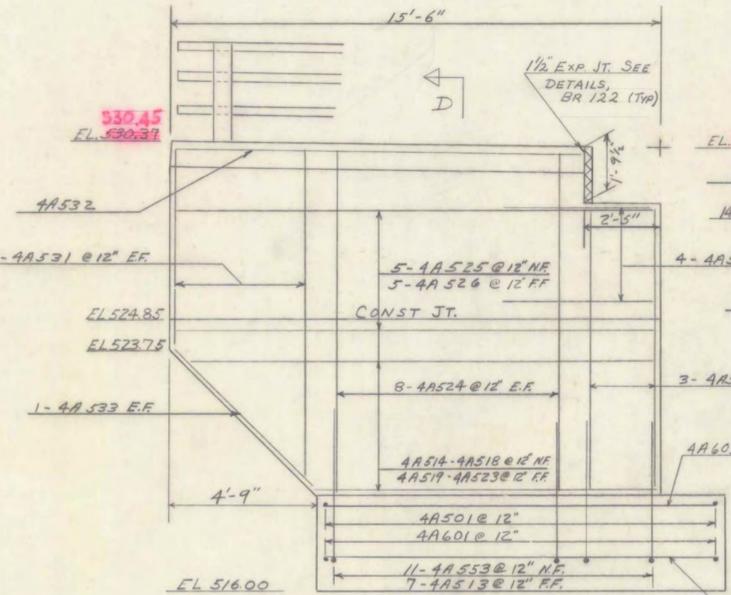
VIEW A-A
3/8" = 1'-0"



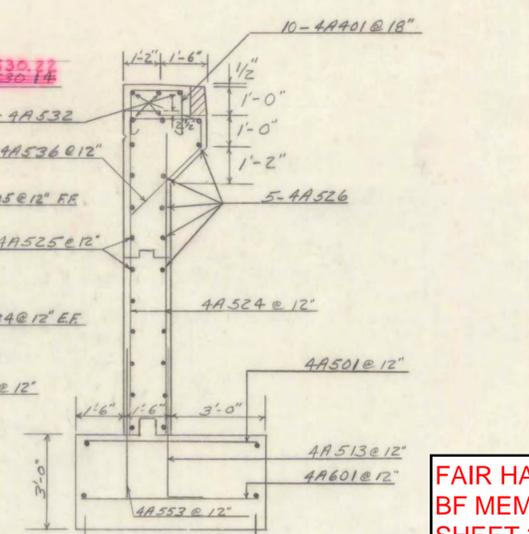
SECTION C-C
3/8" = 1'-0"



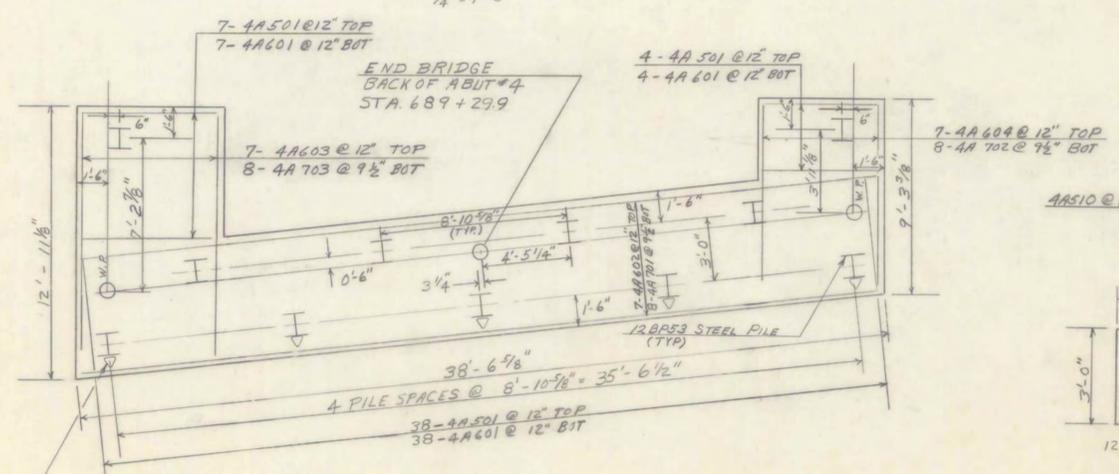
ELEVATION
1/4" = 1'-0"



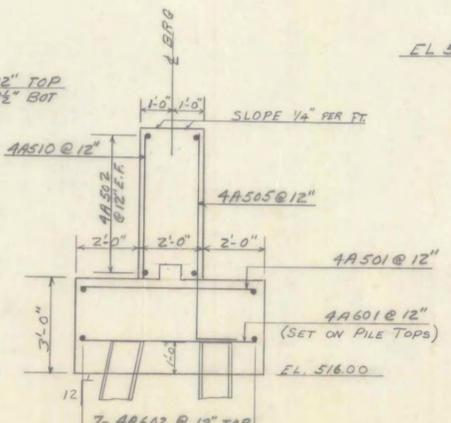
VIEW B-B
3/8" = 1'-0"



SECTION D-D
3/8" = 1'-0"



FOOTING & PILE LAYOUT
1/4" = 1'-0"



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

- NOTES:
1. FOR ABUTMENT NOTES SEE BR 108.
 2. MAXIMUM PILE LOADING IS 90 KIPS PER PILE.
 3. FINISH GRADE OF E.B. BRIDGE RAISED 0.08'

No Piles	Size	Est Length of Piles	Splices Allowed for Piles not exceeding Plan Length (To be paid for only if used)	Splices Estimated for Piles exceeding Plan Length (to be paid for only if used)
11	12BP53	90	11	2

FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 32 OF 44
BRIDGE NO. 13E
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROJECT WEST RUTLAND
TOWN OF WEST RUTLAND

ROAD NO. US 4 STA. 687+50
US 4 OVER DASH R.R. & CASTLETON R.

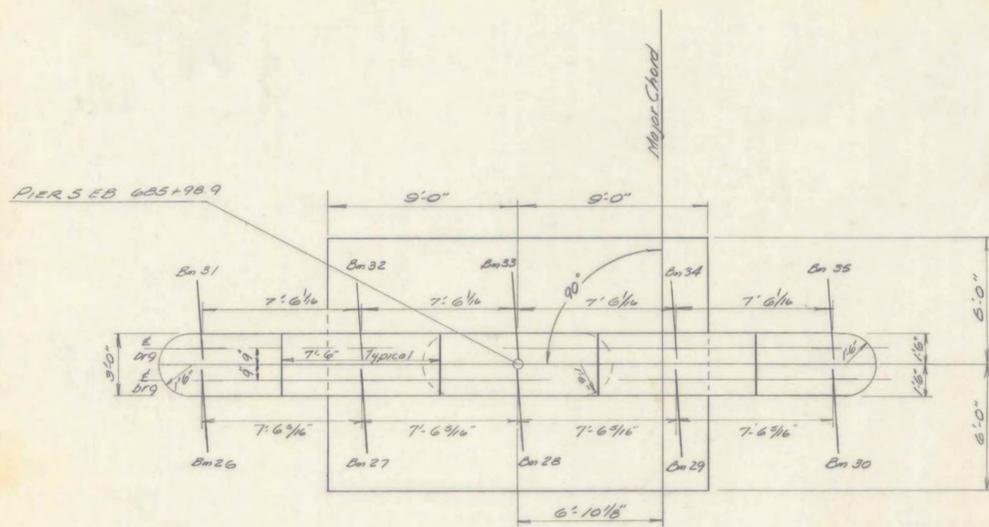
ABUTMENT #4 (E.B.)

SCALE AS NOTED
IN CHARGE W. SMITH

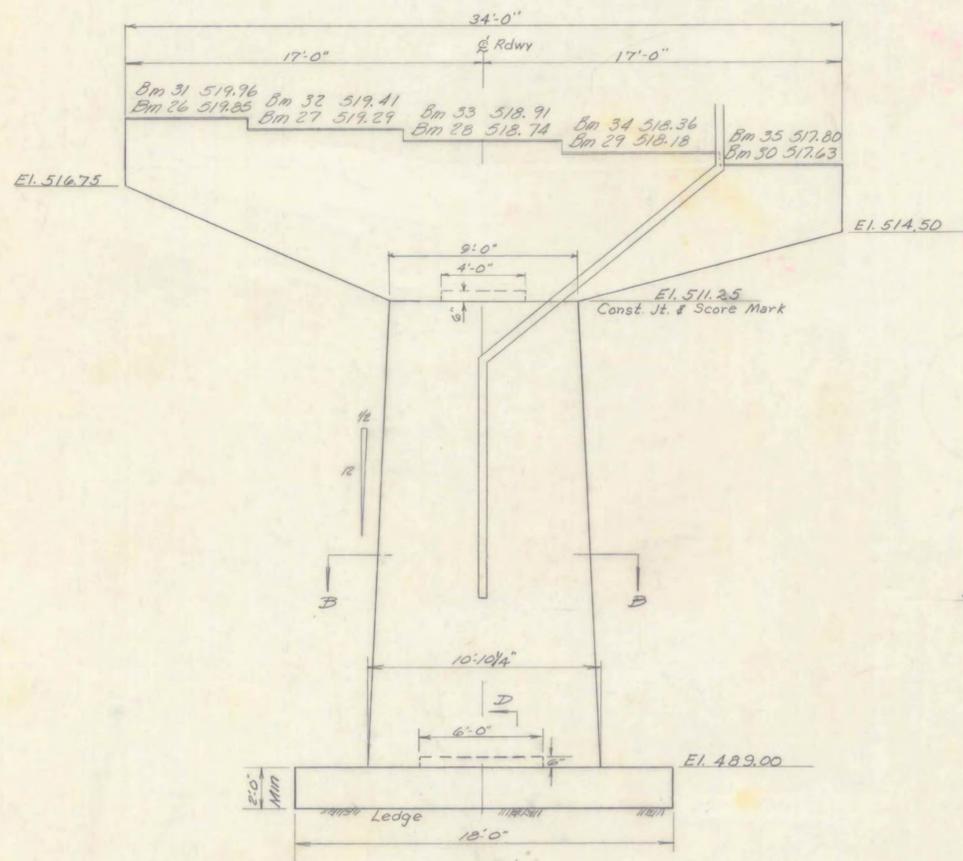
DRAWN BY P. BIRKINS CHECKED BY A. COLCH 3-66

PROJECT No. AP 020-1(10)

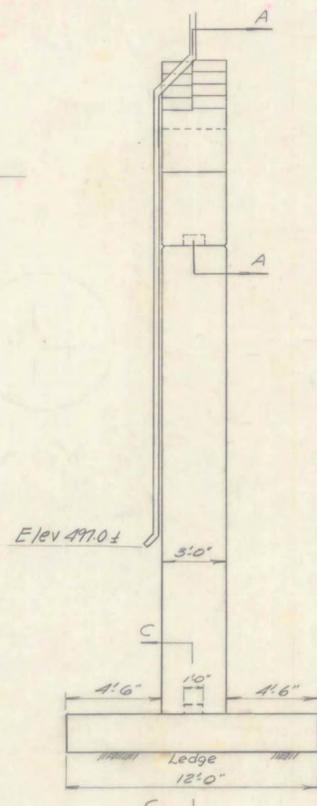
SHEET 93 OF 359 BR 112



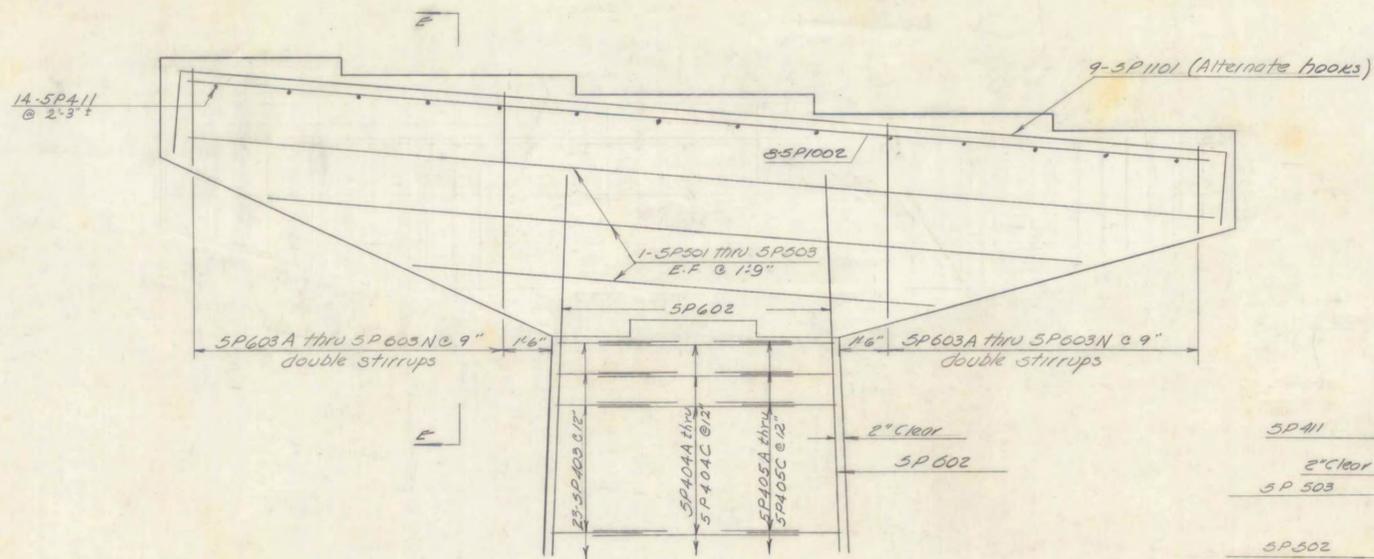
PLAN
Scale 1/4" = 1'



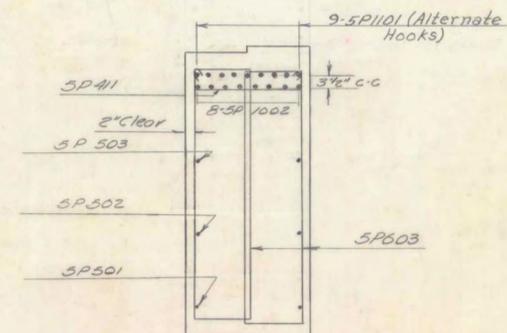
ELEVATION
Scale 1/4" = 1'



SIDE
Scale 1/4" = 1'



SECTION A-A
Scale 3/8" = 1'



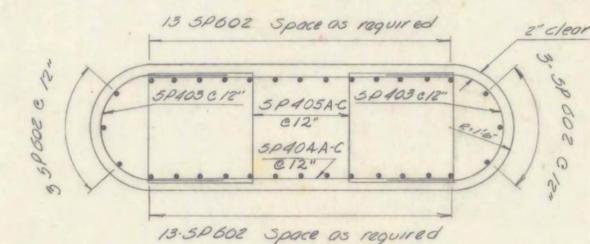
SECTION E-E
Scale 3/8" = 1'
SEE REVISION (BELOW)

NOTES

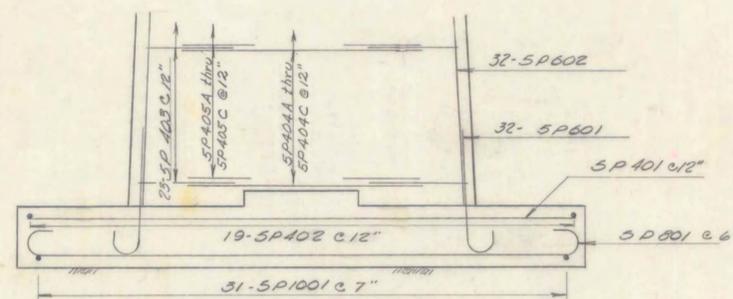
1. For pier notes see Br 113
2. Maximum footing pressure is 6.3 k/ps per sq ft



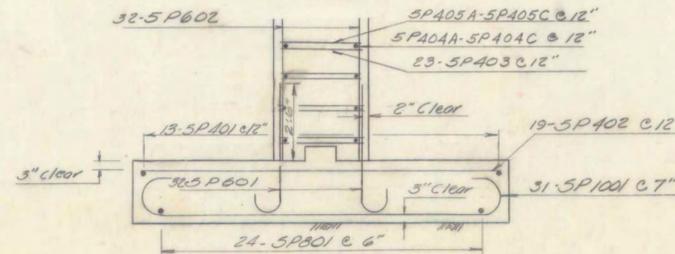
REVISED SECTION E-E
LOCATE 5-PI101 & 5PI002 AS SHOWN
TO PROVIDE CLEARANCE FOR SWEDGE BOLTS



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



SECTION C-C
Scale 3/8" = 1'

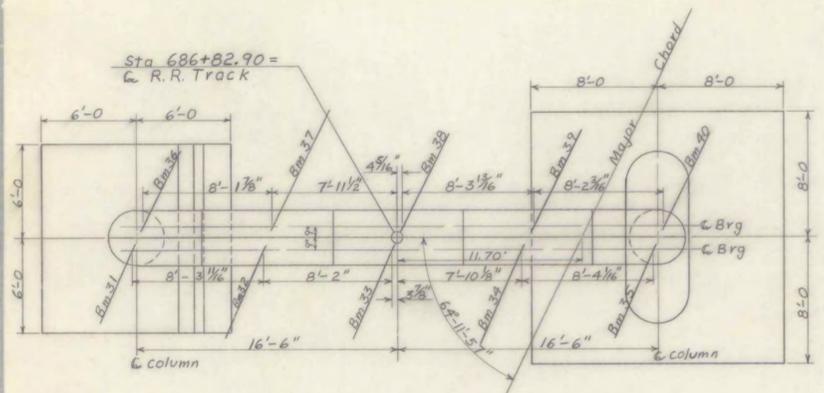


SECTION D-D
Scale 3/8" = 1'

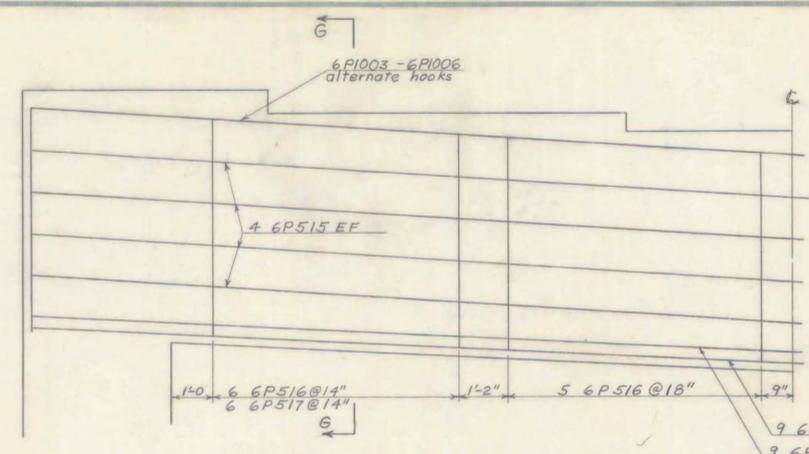
PIER 5

FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 33 OF 44
BRIDGE NO. 13E
FOR REFERENCE ONLY

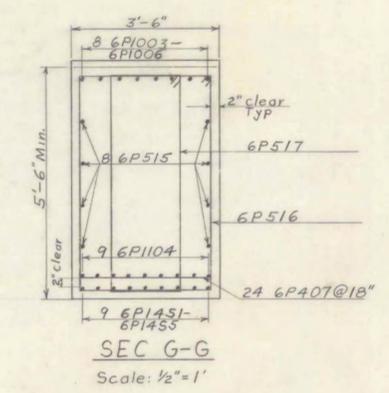
ROUTE No US 4 STA 687+50
PIER 5 (E.B.)
US 4 over DEHRR & CASTLETON RIVER
SCALE As noted
IN CHARGE WENDELL SMITH
DRAWN BY Phalen CHECKED BY A. Coughlin
PROJECT No. R 020-1(10)
SHEET 37 OF 359 Br 116



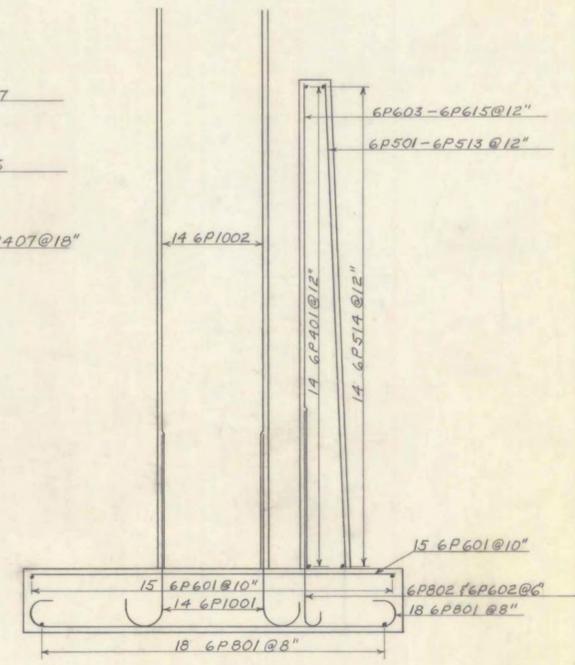
PLAN
Scale: 3/16" = 1'



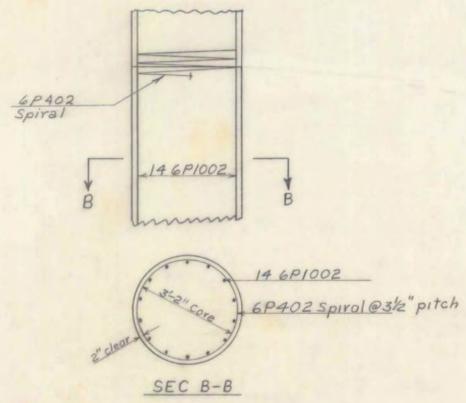
HALF ELEVATION OF CAP
Scale: 1/2" = 1'



SEC G-G
Scale: 1/2" = 1'

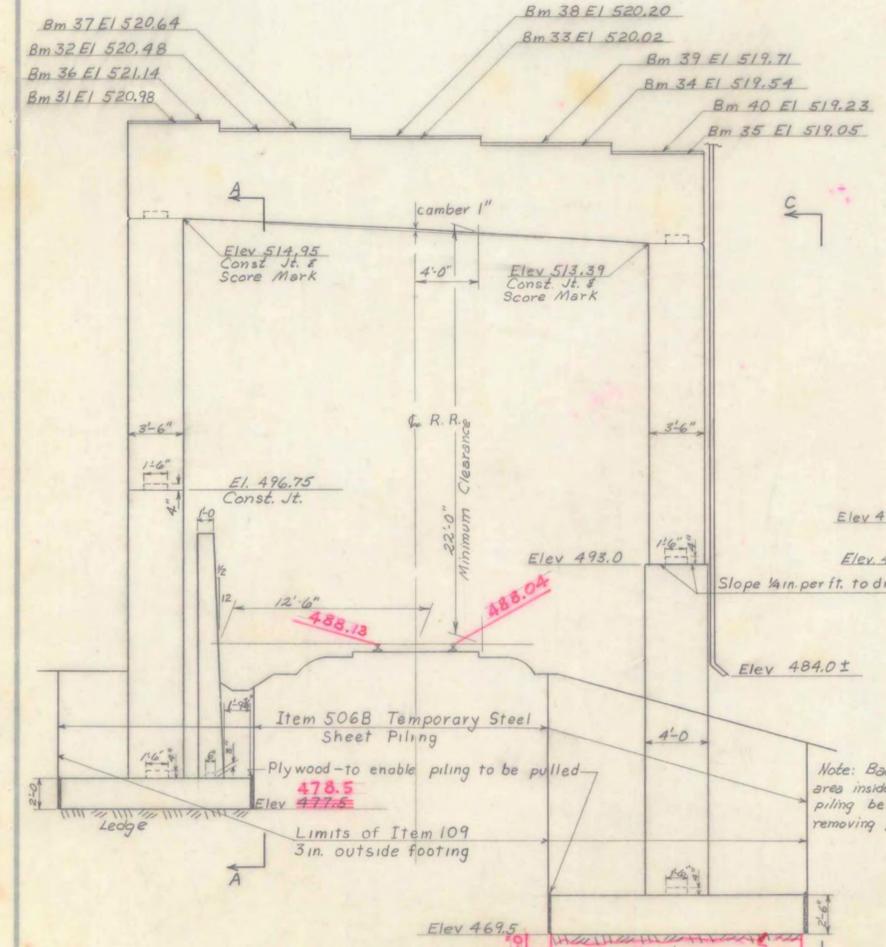


SEC F-F
Scale: 3/8" = 1'

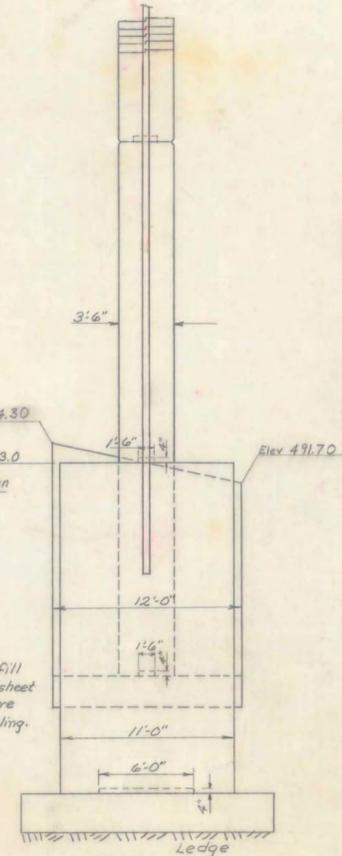


SEC B-B

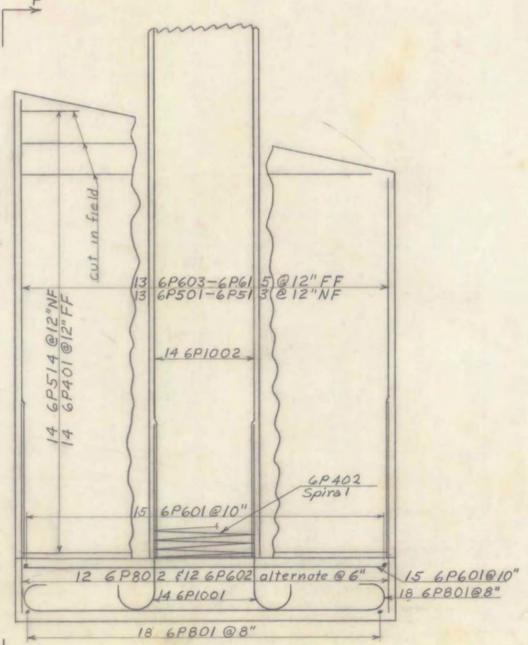
SEC D-D



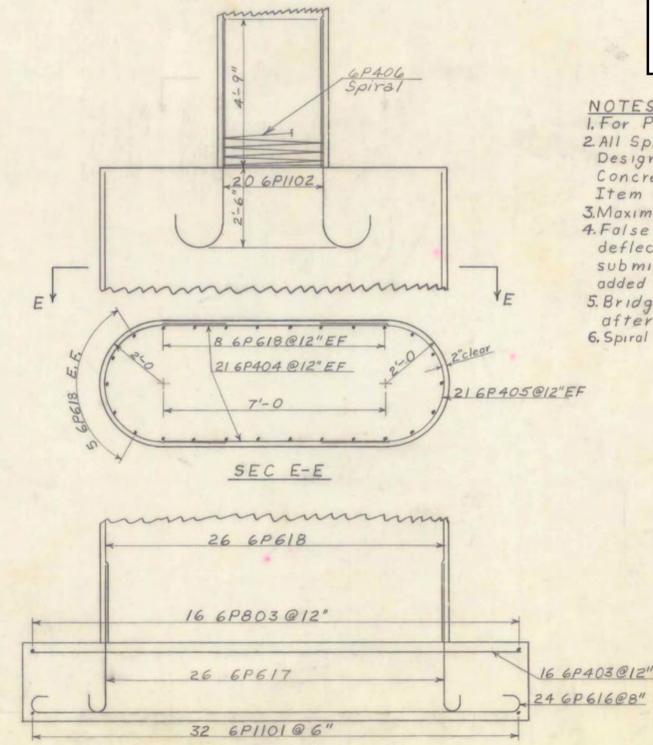
ELEVATION
Scale: 3/16" = 1'



SIDE
Scale: 3/16" = 1'



SEC A-A
Scale: 3/8" = 1'

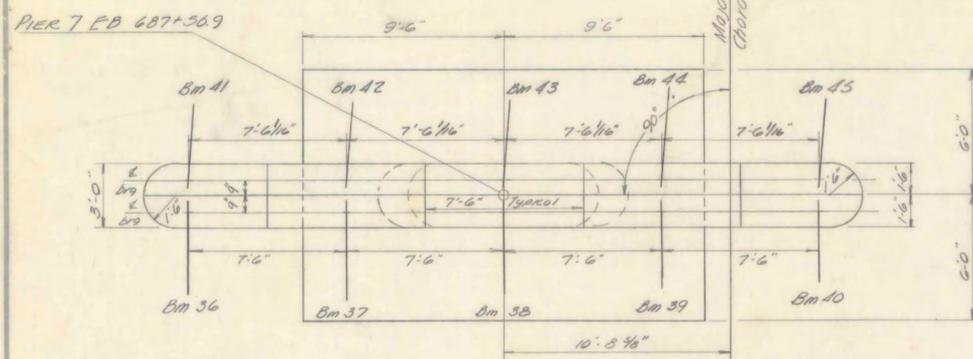


SEC C-C
Scale: 3/8" = 1'

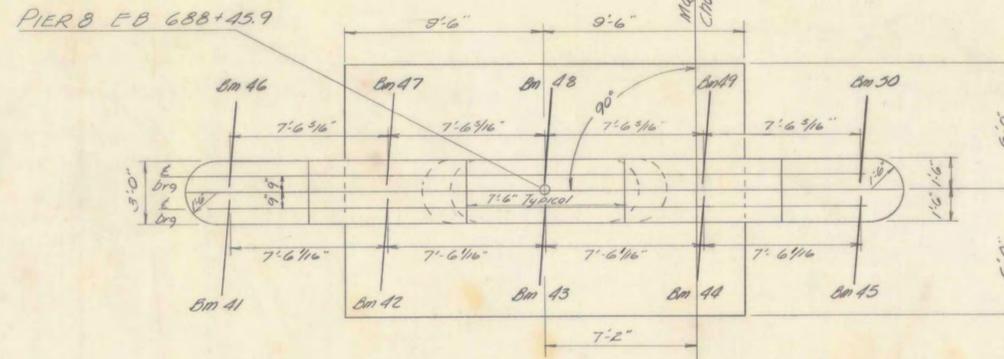
**FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 34 OF 44
BRIDGE NO. 13E
FOR REFERENCE ONLY**

- NOTES
1. For Pier notes see sheet Br 113.
 2. All Spiral Reinforcement shall conform to AASHTO Designation M32-60 Cold Drawn Steel Wire for Concrete Reinforcement and shall be paid for under Item 402 Reinforcing Steel.
 3. Maximum footing pressure is 6.5 kips per sq. ft.
 4. False work for the cap beam shall be checked for deflection prior to pouring either in the field or submitted to the Bridge Division and this deflection added to the 1 inch final camber called for.
 5. Bridge seat elevations to be checked immediately after cap beam is poured and adjusted if necessary.
 6. Spiral shall be lapped 1 1/2 turns where ever it is spliced.

STATE OF VERMONT DEPARTMENT OF HIGHWAYS	
PROJECT	WEST RUTLAND
TOWN OF	WEST RUTLAND
ROUTE No	US 4 STA. 687+50
US 4 OVER D.S.H.R.R. & CASTLETON R.	
PIER No 6 (E.B.)	
SCALE	AS NOTED
IN CHARGE	W.M. SMITH
DRAWN BY	A. COUCH CHECKED BY D. PERKINS
PROJECT No	1020-(10) 4-66
SHEET	98 OF 359 BR 117



PLAN
Scale 1/4" = 1'

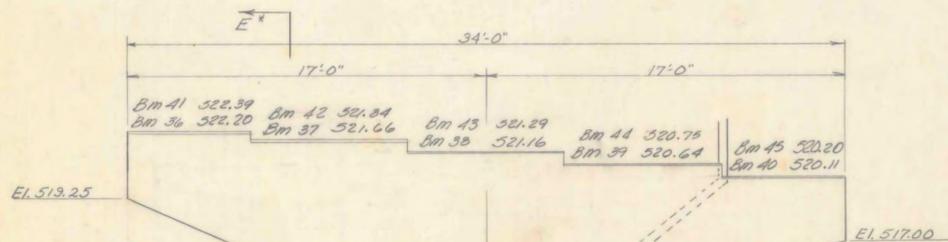


PLAN
Scale 1/4" = 1'

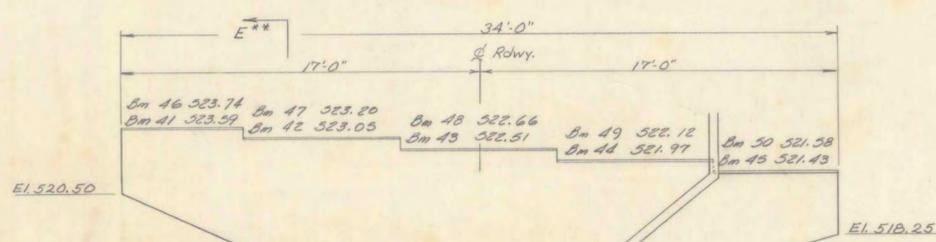
PILE TABLE					
Location	No Piles	Size	Est Splices allowed for piles not exceeding 1/4th of plan length (to be paid for only if used)	Splices estimated for piles exceeding plan length (to be paid for only if used)	
Pier 7	20	12BP53	20	0	
Pier 8	15	12BP53	45	0	

NOTES

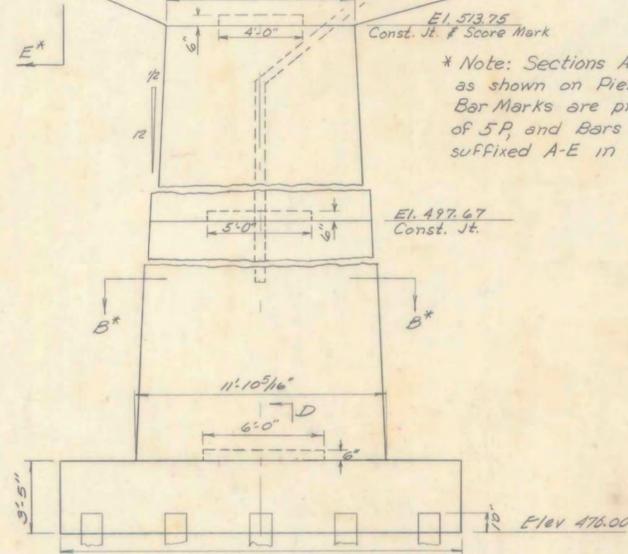
- For pier notes see Br 113
- Maximum pile loading Pier 7 81 kips per pile
Pier 8 90 kips per pile



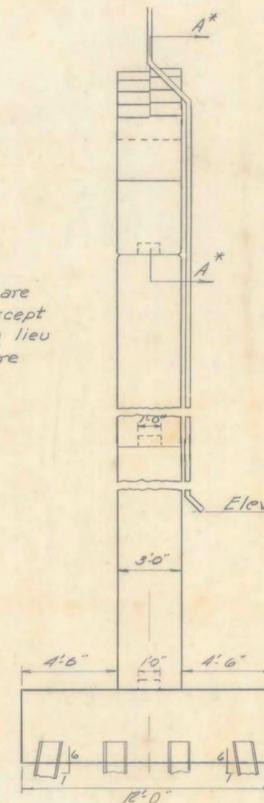
* Note: Sections A-A, B-B, & E-E are as shown on Pier #5, Br. 116, except Bar Marks are prefixed 7P in lieu of 5P, and Bars 404 & 405 are suffixed A-E in lieu of A-C.



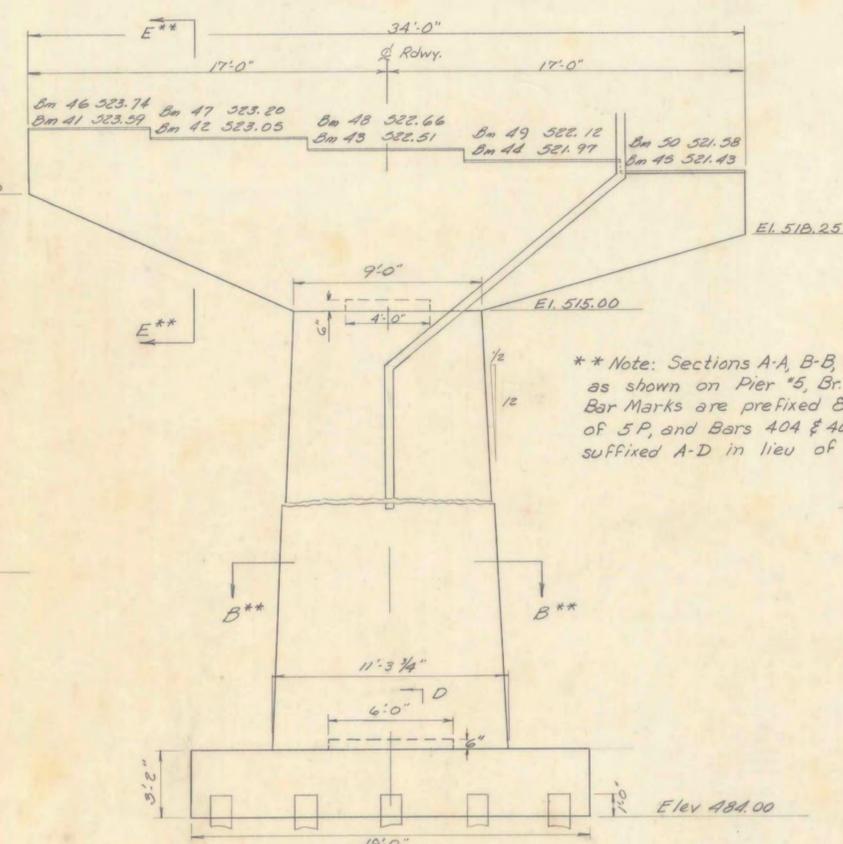
** Note: Sections A-A, B-B, & E-E are as shown on Pier #5, Br. 116, except Bar Marks are prefixed BP in lieu of 5P, and Bars 404 & 405 are suffixed A-D in lieu of A-C.



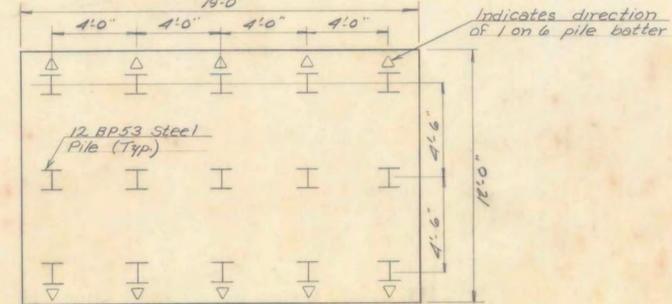
ELEVATION
Scale 1/4" = 1'



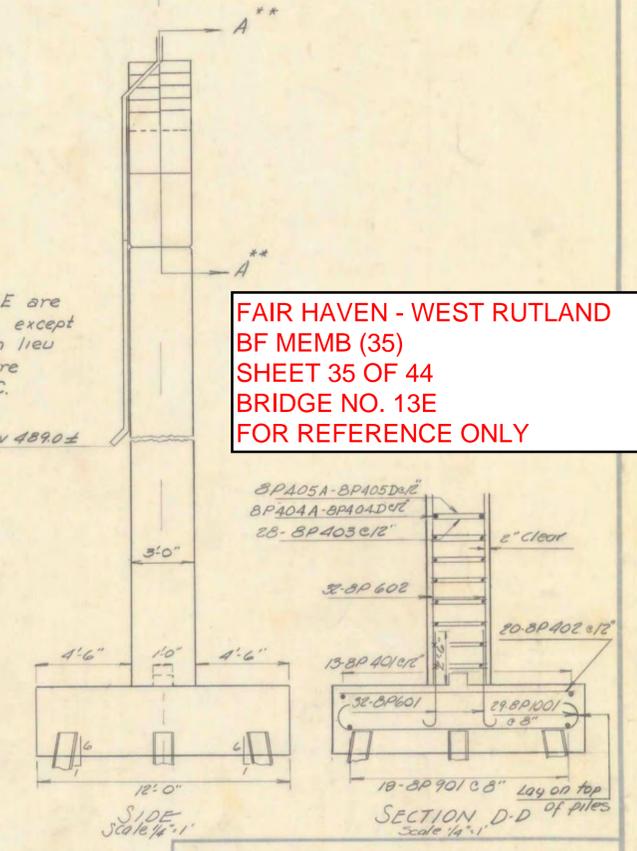
SECTION D-D
Scale 1/4" = 1'



ELEVATION
Scale 1/4" = 1'



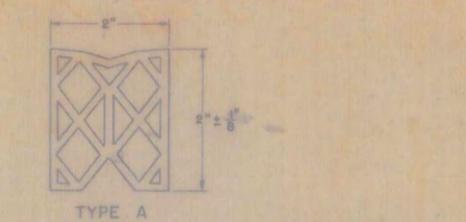
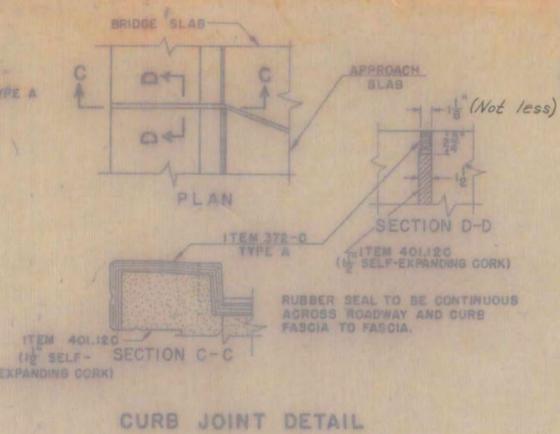
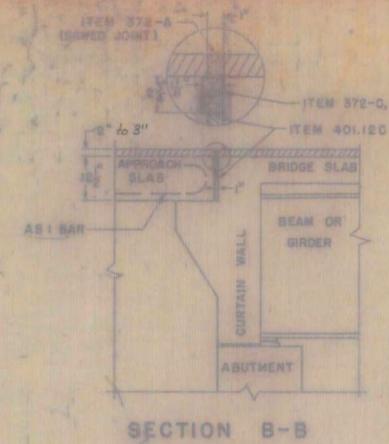
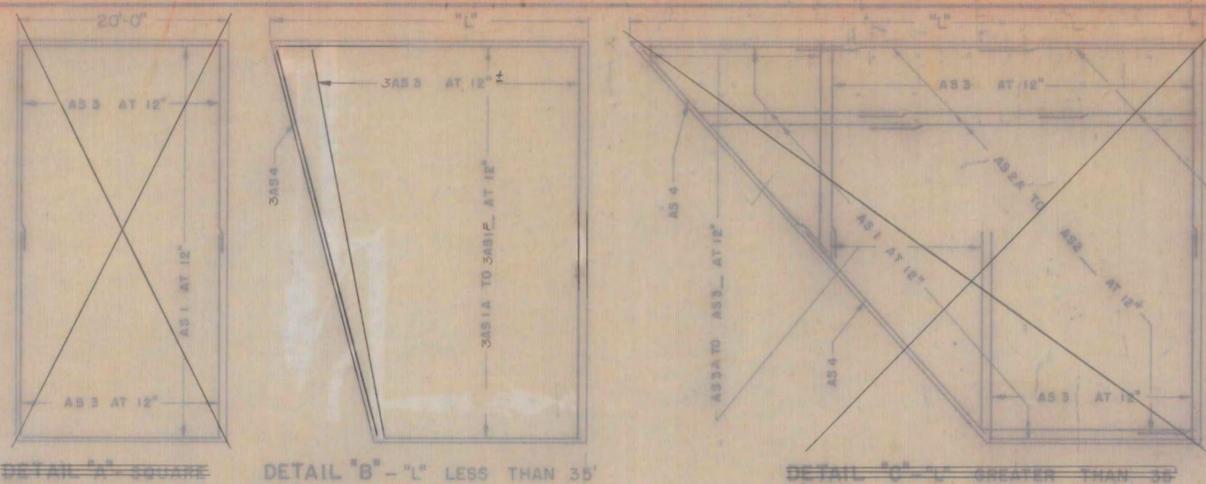
PILE LAYOUT PLAN
Scale 1/4" = 1'



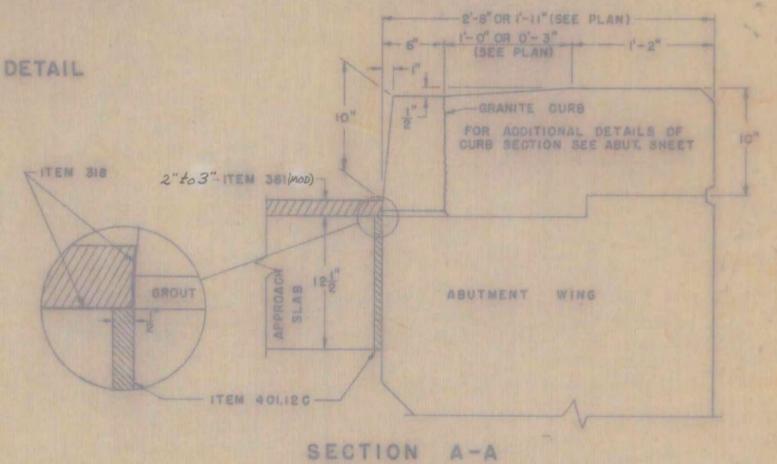
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROJECT WEST RUTLAND
TOWN OF WEST RUTLAND
ROUTE No US 4 STA 687+50
PIER 7 & PIER 8 (E.B.)
US 4 OVER DEHER & CASTLETON RIVER
SCALE 1/4" = 1'
IN CHARGE Wendell Smith
DRAWN BY Phalen CHECKED BY A. Guetz 346
PROJECT No. 110
SHEET 99 OF 359 Br. 118

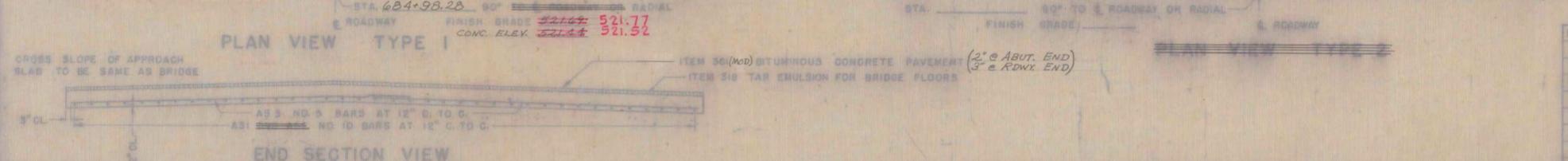
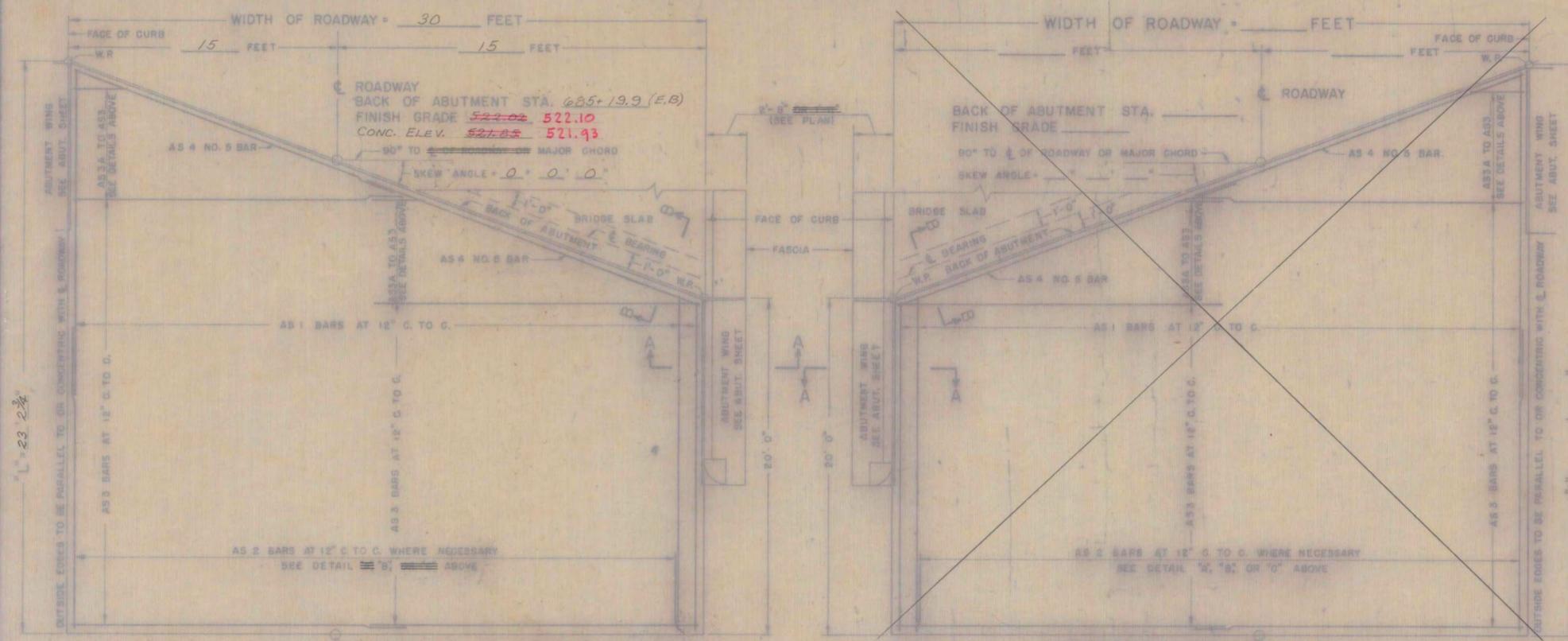
FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 35 OF 44
BRIDGE NO. 13E
FOR REFERENCE ONLY



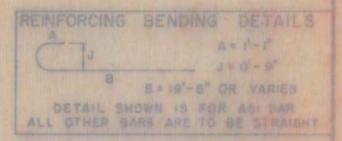
DETAILS - ITEM 372-C JOINT SEALER - PREFORMED
 MATERIAL TO BE PREFORMED NEOPRENE RUBBER
 (OTHER CONFIGURATIONS THAT SATISFY SPECIFICATIONS MAY BE USED.)



GENERAL NOTES
 1. ALL WORK AND MATERIALS SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION DATED APRIL 1964, AND THE A.A.S.H.O. SPECIFICATIONS DATED 1961. DESIGNED FOR HS20-44 LOADING.
 2. ALL REINFORCING STEEL SHALL BE DETAILED ON THE REINFORCING STEEL SCHEDULE. ALL SPLICES SHALL BE A MINIMUM OF 40 BAR DIAMETERS.



FAIR HAVEN - WEST RUTLAND
 BF MEMB (35)
 SHEET 36 OF 44
 BRIDGE NO. 13E
 FOR REFERENCE ONLY



LIST OF QUANTITIES

ITEM NO.	ITEM	UNIT
318	TAR EMULSION FOR BRIDGE FLOORS	GAL.
361	BITUMINOUS CONCRETE PAVEMENT (MOD)	TONS
372-A	JOINT SEALER - HOT Poured	L.F.
372-C	JOINT SEALER - PREFORMED, TYPE A	L.F.
40-B	CONCRETE CLASS B	CY.
40E	REINFORCING STEEL	LB.

REVISIONS AND CORRECTIONS
 1. DIMENSIONS OF JOINT FOR SEALER TYPE A REVISED 4/15/65 WBT.
 2. DIMENSIONS OF JOINT SEALER TYPE B REVISED 9/23/65 WBT.
 3. JOINT BETWEEN CURB AND SLAB REVISED, BITUMINOUS CONCRETE REVISED TO 2". QUANTITY TOTALS REMOVED, 12/7/65, WBT.

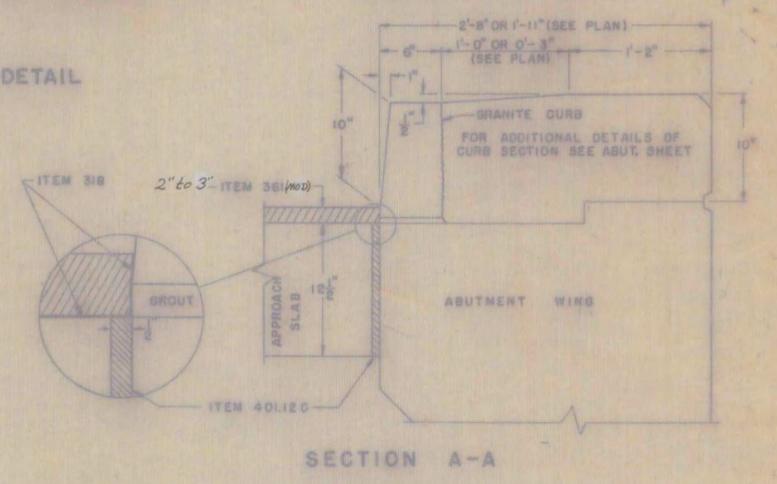
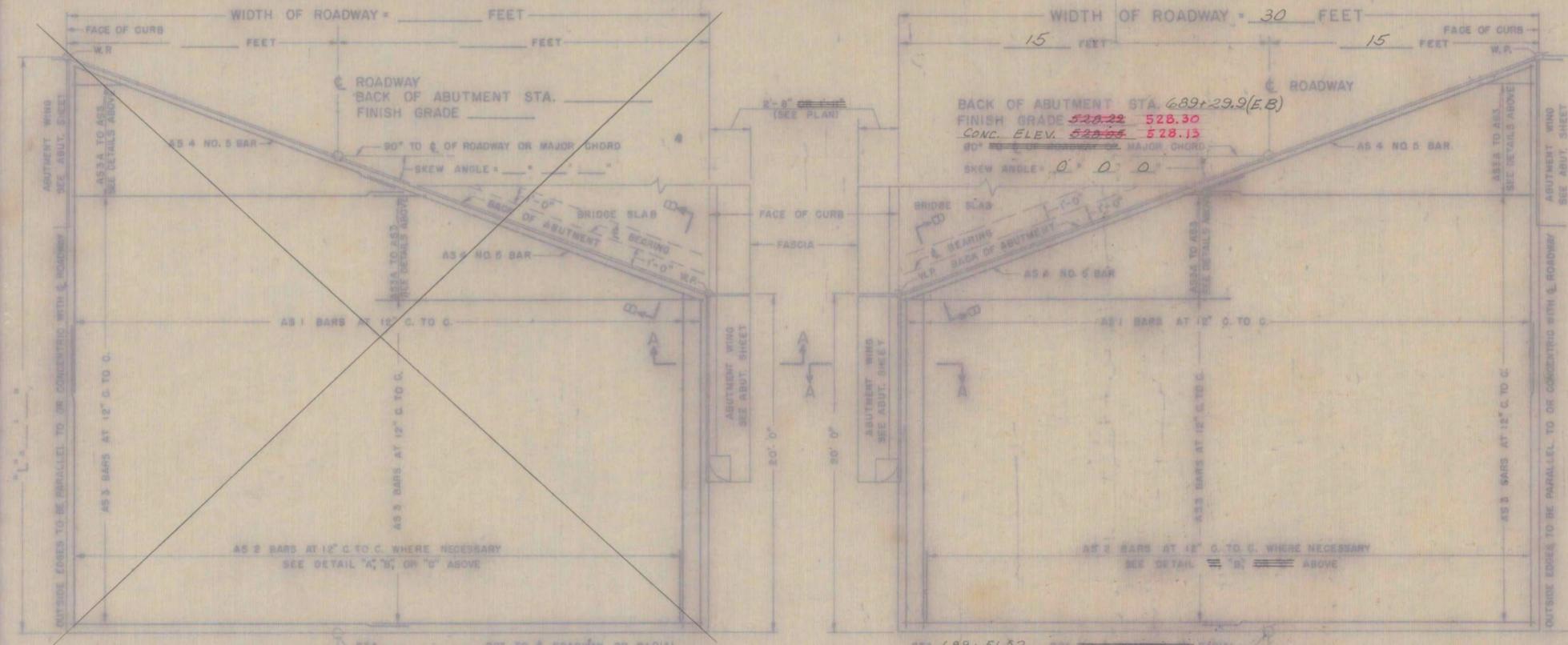
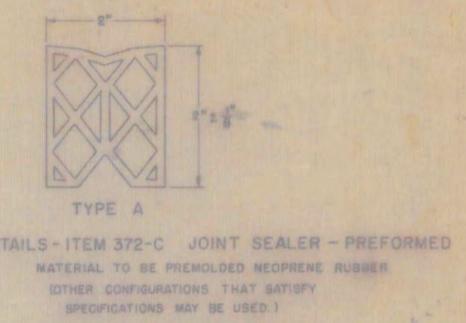
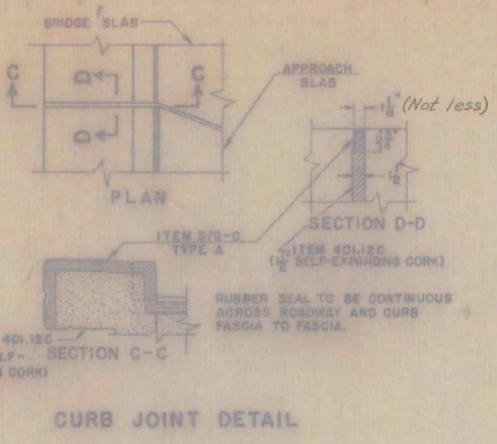
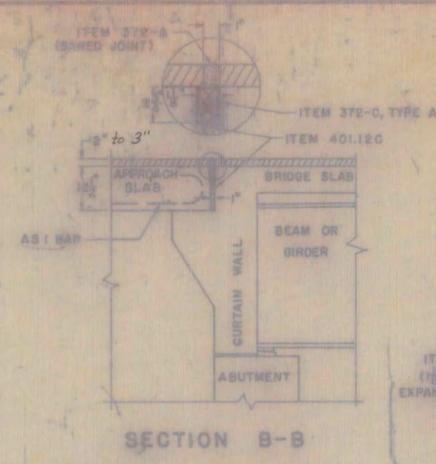
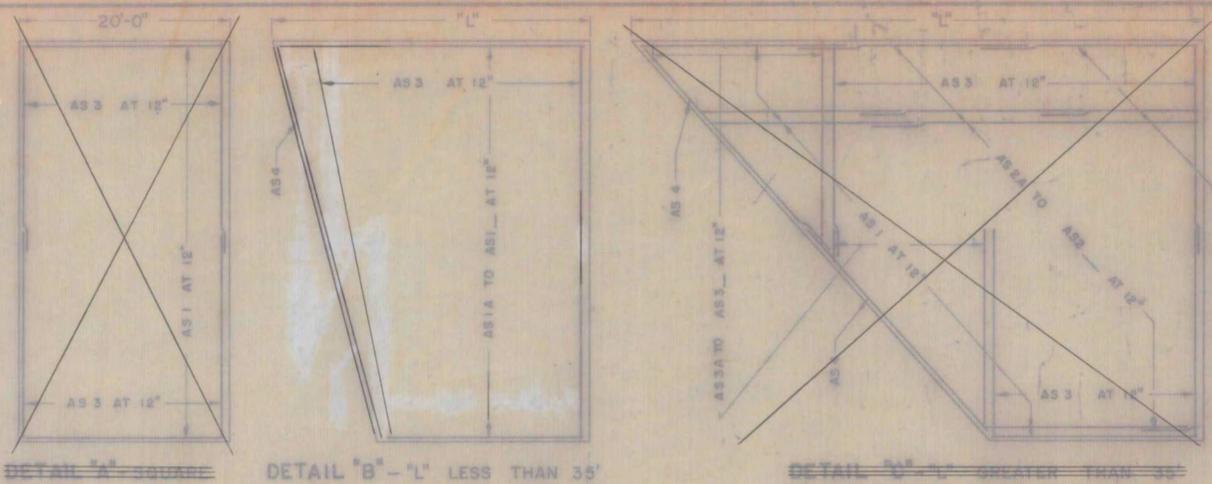
DRAWN BY: *W.B.T. Jan 1965*
 TRACED BY: *W.B.T. Jan 1965*
 CHECKED BY: *W.M.S. Feb 1965*

RECOMMENDED FOR APPROVAL: *[Signature]* DATE: *4/16/65*
 RECOMMENDED FOR APPROVAL: *[Signature]* DATE: *4/16/65*
 APPROVED BY: *[Signature]* DATE: *4/16/65*

DETAILS OF APPROACH SLAB FOR 30 FOOT BRIDGE
 TO BE USED FOR BRIDGE AT STATION 687+50
 LOCATION U.S. #4 OVER D.H. RAILROAD & CASTLETON RIVER

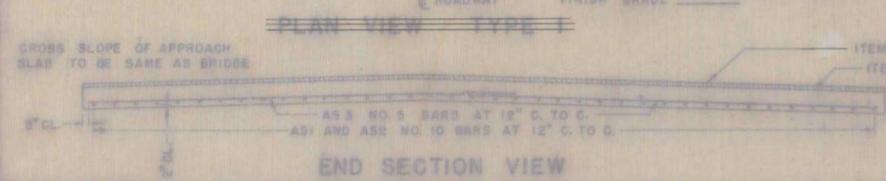
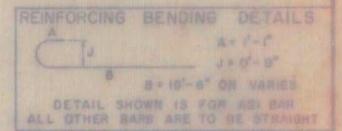
STATE OF VERMONT
 DEPARTMENT OF HIGHWAYS
 STANDARD STRUCTURE
 SB-AS-65

PROJECT WEST RUTLAND
 TOWN OF WEST RUTLAND
 ROUTE NO. U.S. #4 STA. 687+50
 U.S. 4 OVER D.H. R.R. & CASTLETON RIVER
 APPROACH SLAB No. 3 E.B.
 NOT TO SCALE
 IN CHARGE W. SMITH
 DESIGNED BY W. TRIPP CHECKED BY F. Gilman
 PROJECT NO. AP-020-1(10)
 SHEET 102 OF 359 BR 121



GENERAL NOTES
 1. ALL WORK AND MATERIALS SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION DATED APRIL 1984, AND THE A.A.S.H.O. SPECIFICATIONS DATED 1981, DESIGNED FOR HS20-44 LOADING.
 2. ALL REINFORCING STEEL SHALL BE DETAILED ON THE REINFORCING STEEL SCHEDULE. ALL SPLICES SHALL BE A MINIMUM OF 40 BAR DIAMETERS.

**FAIR HAVEN - WEST RUTLAND
 BF MEMB (35)
 SHEET 37 OF 44
 BRIDGE NO. 13E
 FOR REFERENCE ONLY**



STA. 687+51.52 90° TO ROADWAY OR RADIAL
 FINISH GRADE ~~528.22~~ 528.63
 CONC. ELEV. ~~528.13~~ 528.38

LIST OF QUANTITIES

ITEM NO.	ITEM	UNIT
318	TAR EMULSION FOR BRIDGE FLOORS	GAL.
381	BITUMINOUS CONCRETE PAVEMENT (MOD)	TONS
372-A	JOINT SEALER - HOT POURED	L.F.
372-C	JOINT SEALER - PREFORMED, TYPE A	L.F.
401-B	CONCRETE CLASS B	CY.
402	REINFORCING STEEL	L.B.

REVISIONS AND CORRECTIONS
 1. DIMENSIONS OF JOINT FOR SEALER TYPE A REVISED 4/18/85 WBT.
 2. DIMENSIONS OF JOINT SEALER TYPE B REVISED 6/23/85 WBT.
 3. JOINT BETWEEN CURB AND SLAB REVISED, BITUMINOUS CONCRETE REVISED TO 2" QUANTITY TOTALS REMOVED. 12/7/85. WBT.

DRAWN BY: W.S.T. Jan 1965
 TRACED BY: W.S.T. Jan 1965
 CHECKED BY: W.M.S. Feb 1965

RECOMMENDED FOR APPROVAL: [Signature] 4/14/65
 ASSISTANT CHIEF ENGINEER DATE

RECOMMENDED FOR APPROVAL: [Signature] 2/16/65
 ASSISTANT CHIEF ENGINEER DATE

APPROVED BY: [Signature] 2/16/65
 CHIEF ENGINEER DATE

DETAILS OF APPROACH SLAB FOR 30 FOOT BRIDGE
 TO BE USED FOR BRIDGE AT STATION 687+50
 LOCATION U.S. #4 OVER D & H RAILROAD & CASTLETON RIVER

**STATE OF VERMONT
 DEPARTMENT OF HIGHWAYS
 STANDARD STRUCTURE
 SB-AS-65**

PROJECT WEST RUTLAND
 TOWN OF WEST RUTLAND
 ROUTE NO. U.S. #4 STA. 687+50
 U.S. #4 OVER D & H R.R. & CASTLETON RIVER
 APPROACH SLAB No. 4 (E.B.)
 NOT TO SCALE
 IN CHARGE W. SMITH
 DESIGNED BY W. TRIPP CHECKED BY F. Gilman
 PROJECT NO. AP 020-1(10)
 SHEET 103 OF 359 BR 122

LIST OF BRIDGE SHEETS

- BR-300 PLAN AND ELEVATION
- BR-301 BRIDGE QUANTITY SHEET
- BR-302 PRELIMINARY INFORMATION SHEET
- BR-303 BORING PLAN AND DETAIL
- BR-304 W.B. FRAMING, CURB AND RAILING PLAN
- BR-305 E.B. FRAMING, CURB AND RAILING PLAN
- BR-306 ABUTMENT No. 1 W.B.
- BR-307 ABUTMENT No. 2 W.B.
- BR-308 ABUTMENT No. 3 E.B.
- BR-309 ABUTMENT No. 4 E.B.
- BR-310-313 APPROACH SLABS
- BR-314-315 REINFORCING STEEL SCHEDULE

STANDARD SHEETS

- | | | |
|-----------------------|------------------------|-----------------------|
| SCB-38-65 | SCB-D6-65 Det. A,B,C,E | SB-R1-64 Sheets 1 & 2 |
| SCB-D1-65 | SCB-D7-65 Det. C,D,E | SB-R2-65 |
| SCB-D2-65 All details | SCB-D8-65 All details | |
| SCB-D4-65 | SCB-D9-65 Det. A | |

NOTES

1. For general notes see Std Structures SCB-D1-65
2. For superstructure details see Std Structures SCB-38-65 and Typical Bridge Section on sheet BR-305, E.B. Framing, Curb and Railing Plan.
3. For Curve Layout and Framing Plans see Sheets 304 & 305.
4. For Quantities see BR-301, Bridge Quantity Sheet.
5. Elevation datum is Sea Level based on nearest U.S. Government Control.
6. Approach Slabs shall be constructed as part of Stage 1 Construction.
7. Item 440, Water Repellent, shall consist of furnishing and applying Water Repellent on exterior concrete surfaces on top of the safety walk, on the fascia and back to the drip bead under the slab and on the exposed faces of abutments not otherwise treated.
8. All Treated Timber Piles shall be driven to the designed bearing capacity of 20 tons per pile. In any case, these piles are to be driven to penetrate original ground at least 10' using whatever means are necessary.
9. Item 505 Pile Loading Tests are to be used when, in the opinion of the Engineer, the designed load carrying capacity of the piles may not be achieved based on information obtained when test piles are driven.
10. Shop Drawings for Item 556-C, Granite Bridge Curb, shall be submitted in triplicate to the State of Vermont Department of Highways for approval before fabrication.

REFERENCE SHEETS

- Roadway Plan Sheet Sta. 762 - 778
- " Profile " " 762 - 778
- US 4 x-section " " 773+00 - 774+50
- " " " " 775+00 - 776+00
- " " " " 776+50 - 778+00
- Vt. Route 133 x-section Sheet Sta. 73+50 - 74+50
- " " " " 74+67 - 75+50

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROJECT WEST RUTLAND
TOWN OF WEST RUTLAND

ROUTE No. US-4 STA. 774+50 ±
RELOC. US. 4 OVER VT. 133

PLAN AND ELEVATION

SCALE 1" = 20'

IN CHARGE W. SMITH

DRAWN BY Quellette CHECKED BY D. SAAL Dec 65

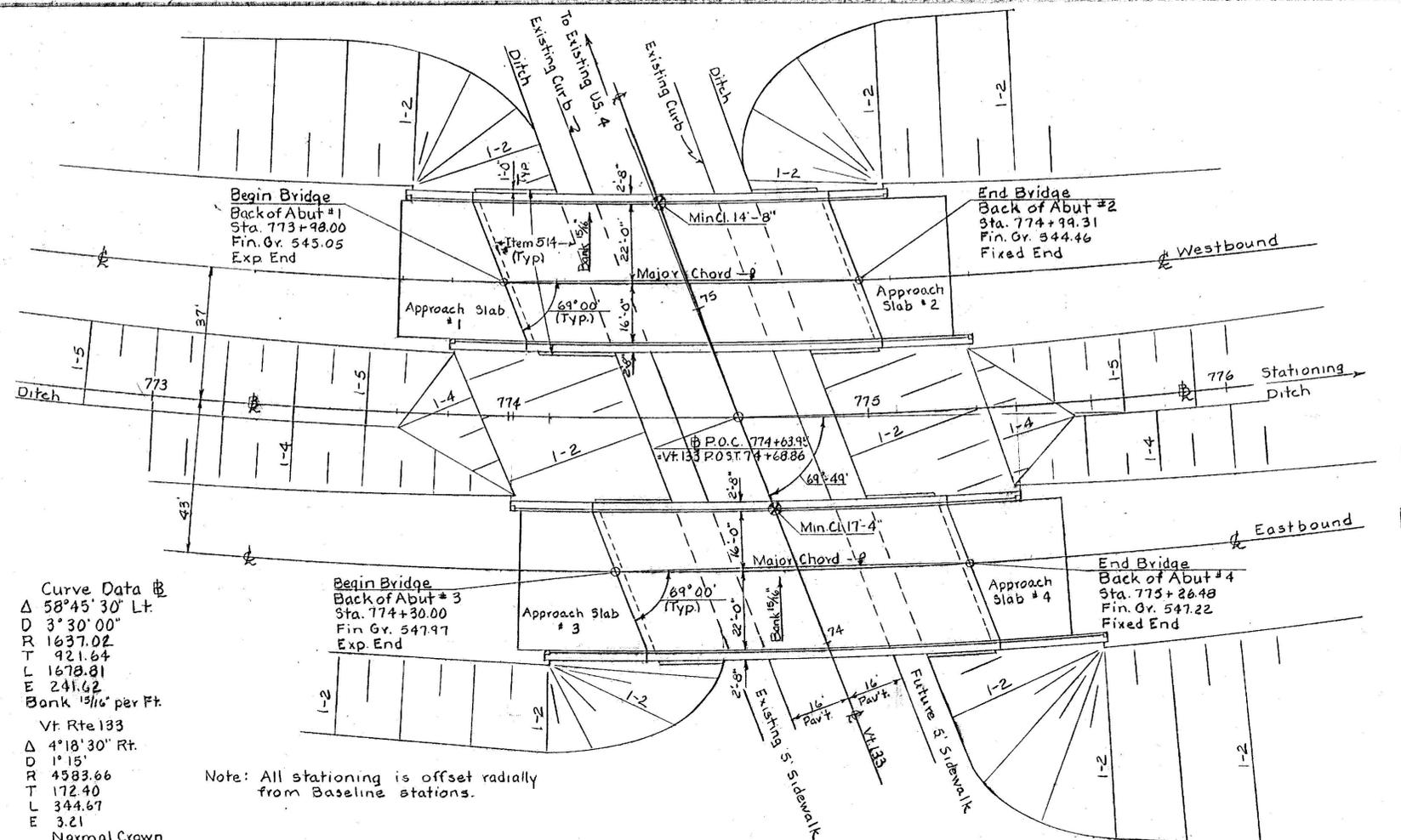
PROJECT No. A1020-1101

SHEET 13 OF 39 BR-300

Sheet 13a of 170 Sheets

FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 38 OF 44
BRIDGE NO. 15E
FOR REFERENCE ONLY

Stage 2 Construction

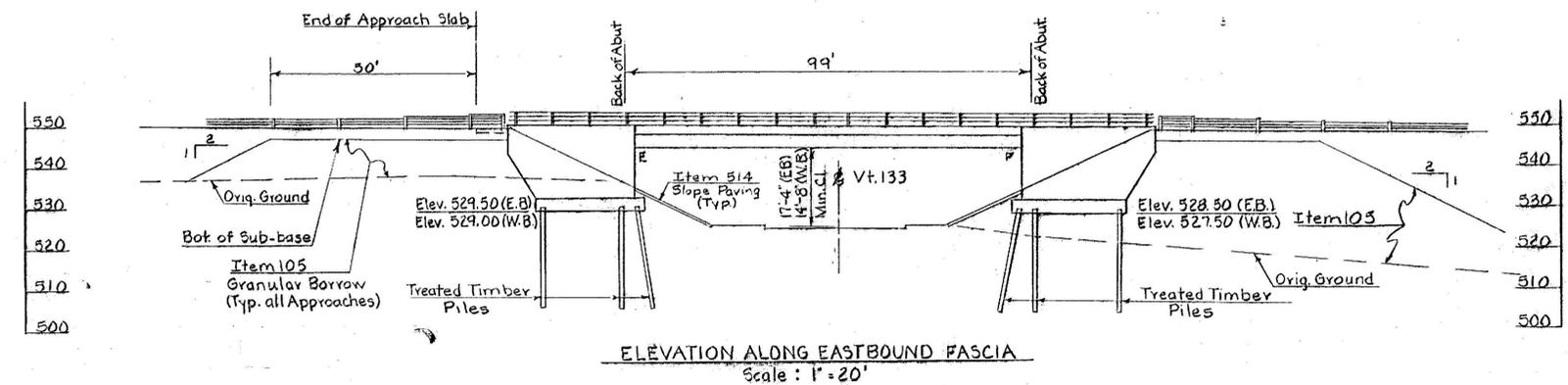


Curve Data B
 Δ 58°45'30" Lt.
D 3°30'00"
R 1637.02
T 921.64
L 1678.81
E 241.62
Bank 1 1/2% per Ft.
Vt. Rte 133
 Δ 4°18'30" Rt.
D 1°15'
R 4583.66
T 172.40
L 344.67
E 3.21
Normal Crown

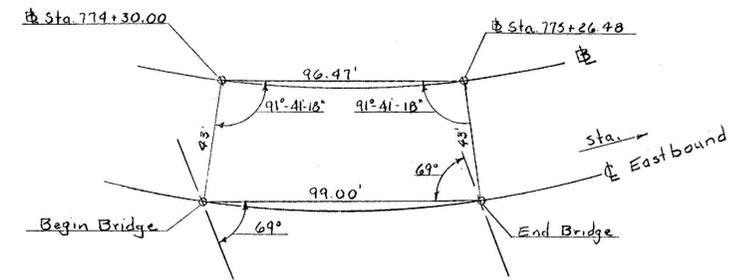
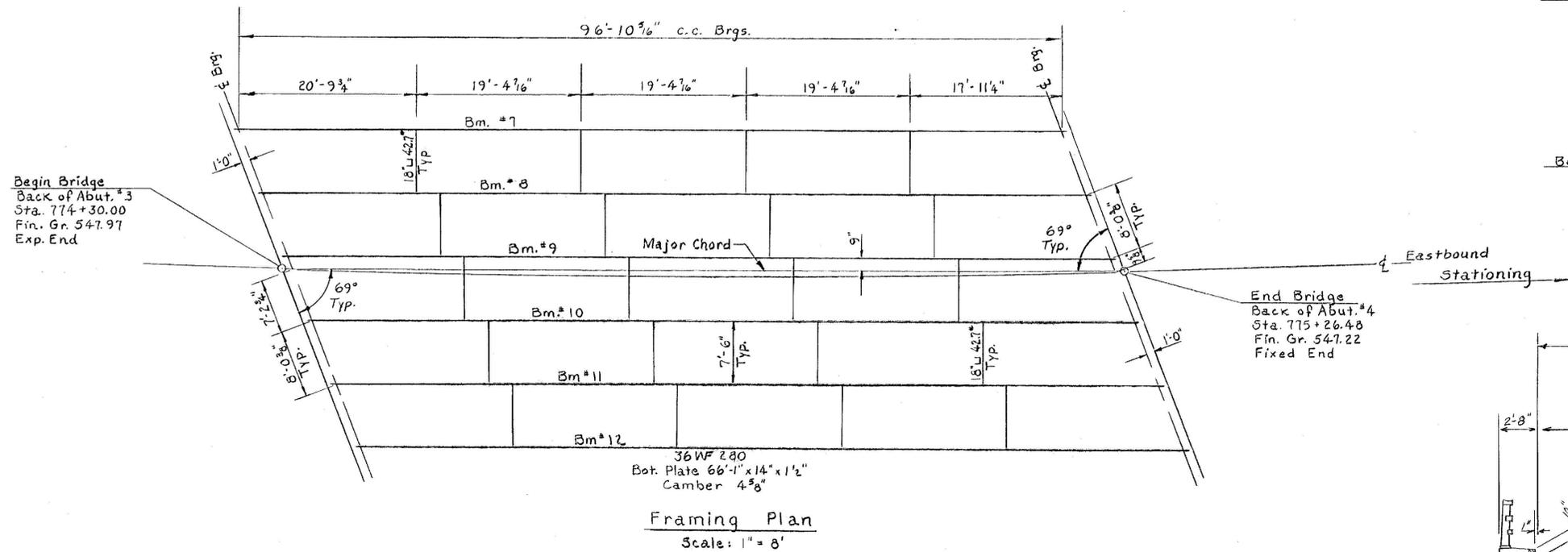
Note: All stationing is offset radially from Baseline stations.

PLAN
Scale: 1" = 20'

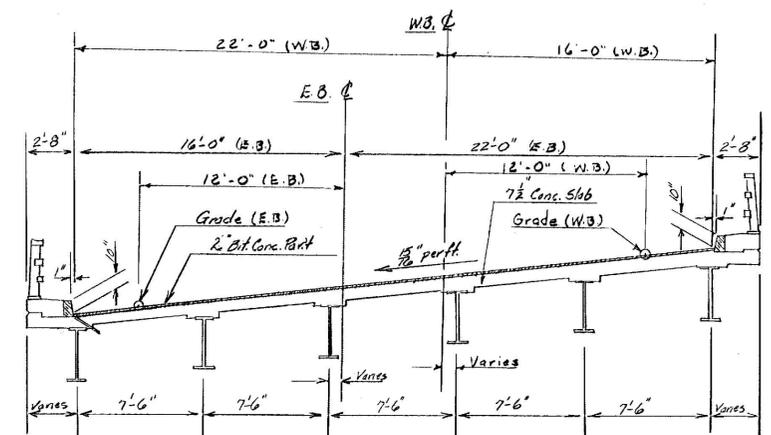
Design Allowable stresses
Concrete $f_c = 3000$ P.S.I. $f_c = 1200$ P.S.I.
Structural Steel $f_s = 20,000$ P.S.I.
Reinforcing Steel $f_s = 20,000$ P.S.I. Tension
16,000 P.S.I. Compression



ELEVATION ALONG EASTBOUND FASCIA
Scale: 1" = 20'



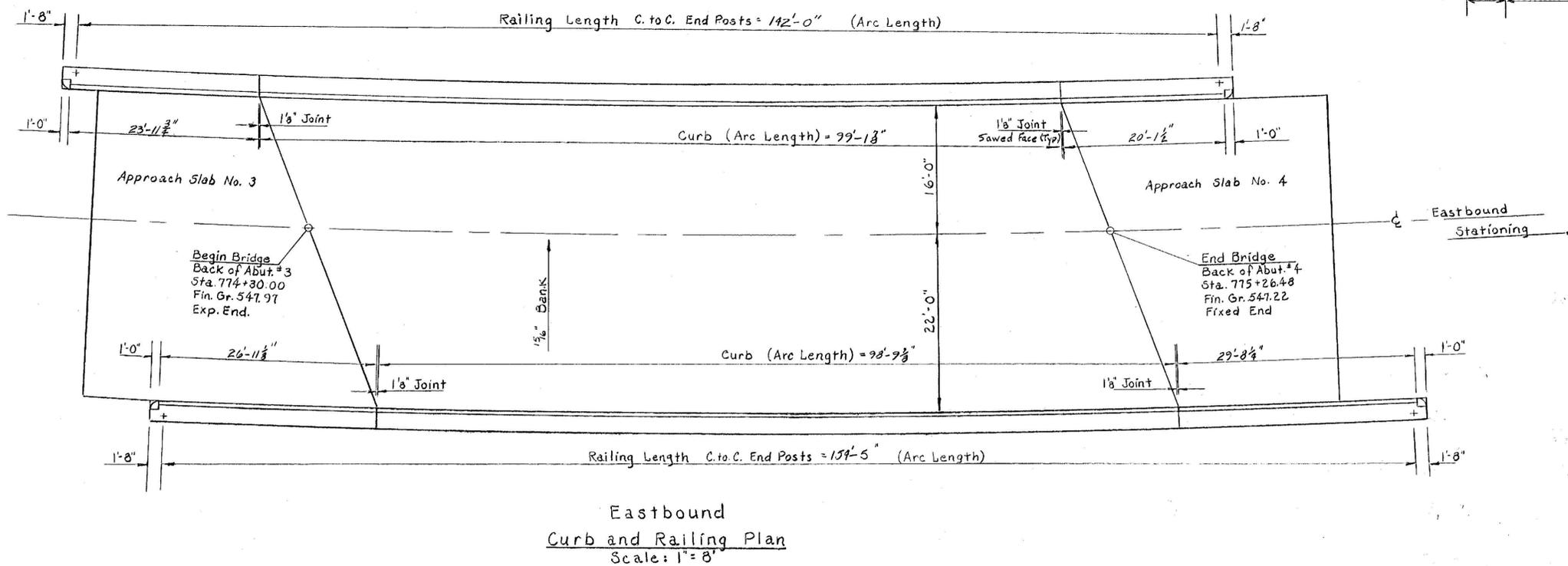
LAYOUT DIAGRAM
Not to Scale



Typical Bridge Section
Scale: 1/4" = 1'

NOTES

1. See notes on sheet BR 304

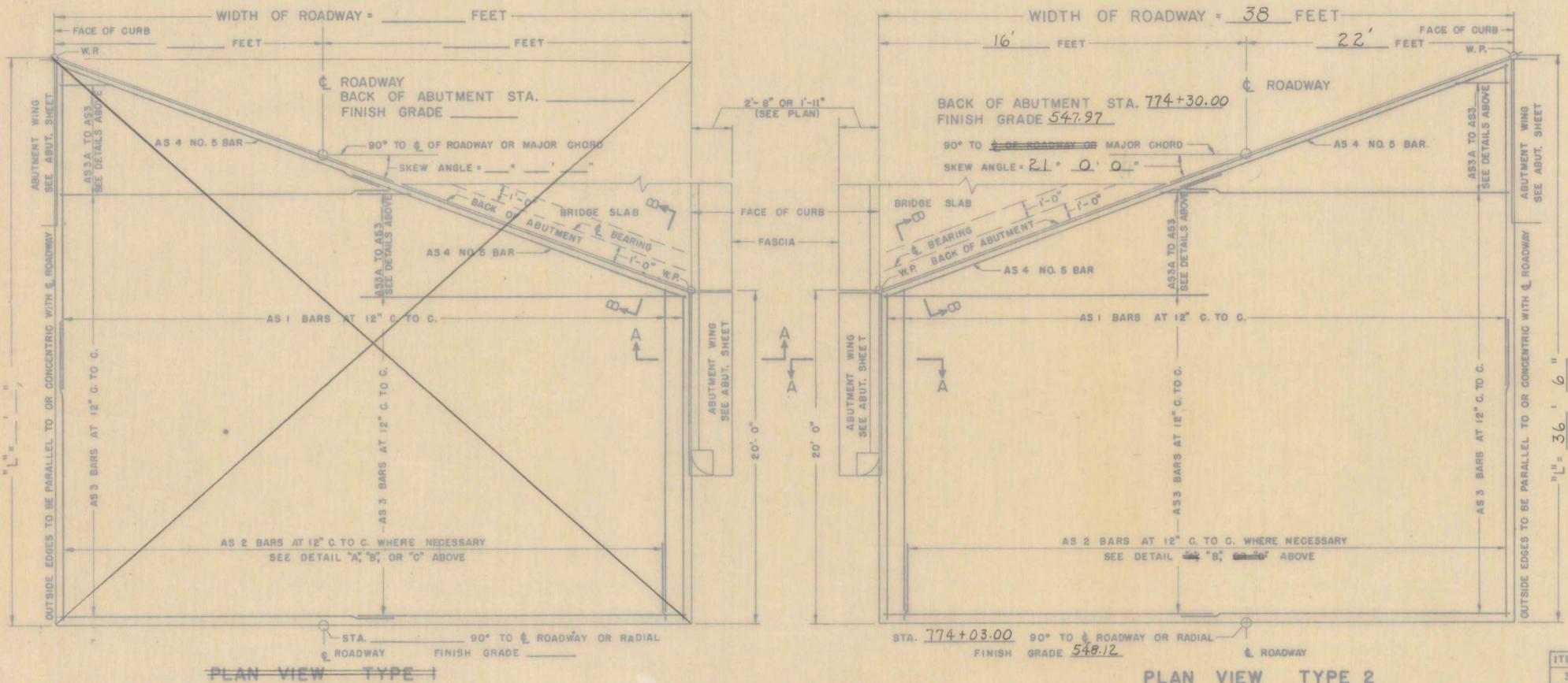
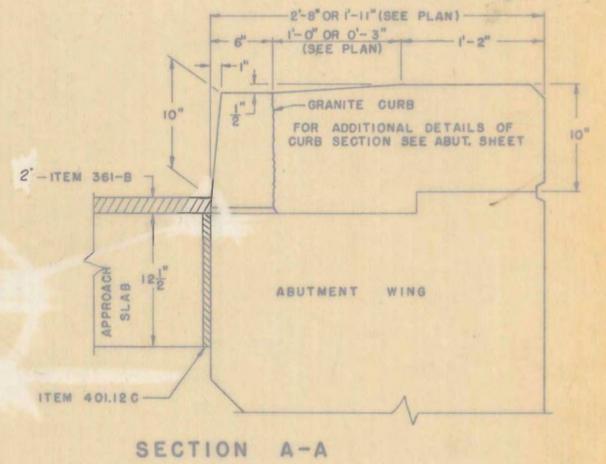
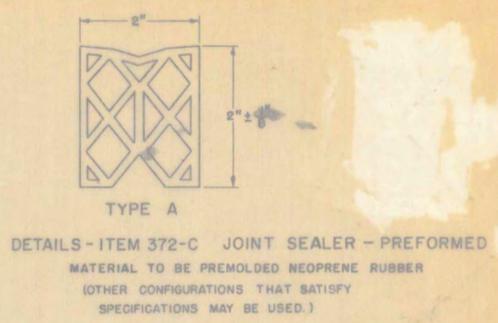
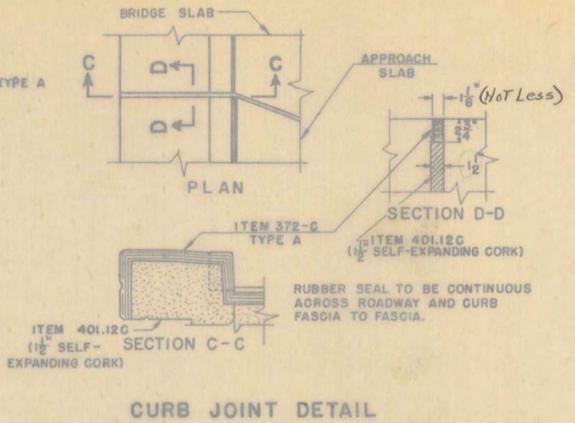
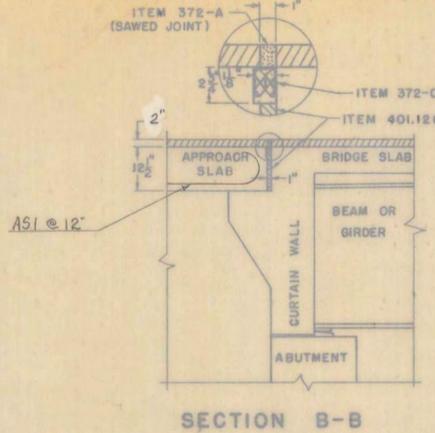
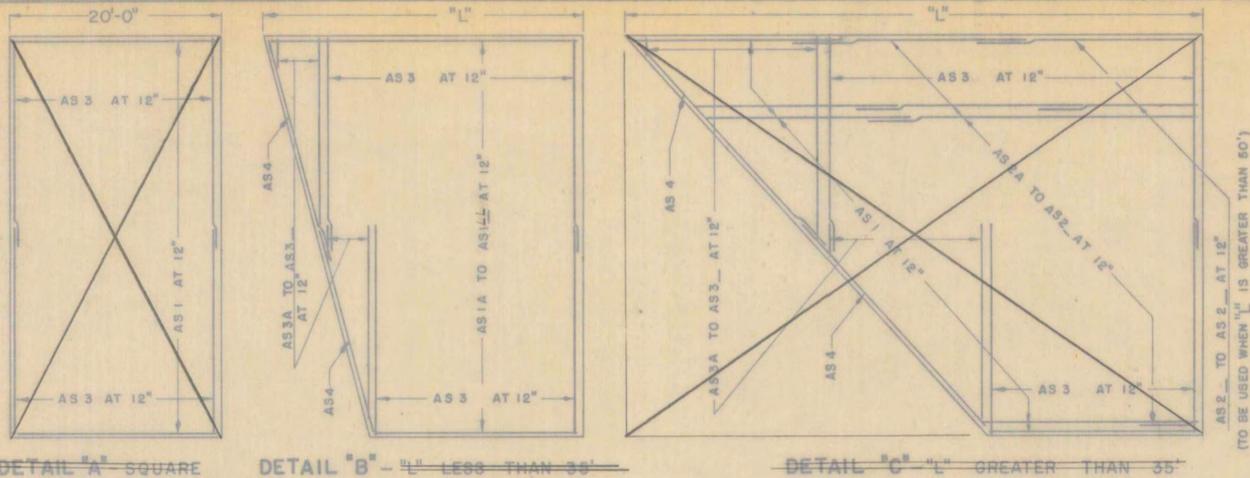


**FAIR HAVEN - WEST RUTLAND
BF MEMB (35)
SHEET 40 OF 44
BRIDGE NO. 15E
FOR REFERENCE ONLY**

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROJECT - WEST RUTLAND
TOWN OF WEST RUTLAND
ROUTE No. U.S. 4 STA. 774+50±
RELOC. US 4 OVER VT. 133
E.B. FRAMING CURB AND RAILING PLAN
SCALE - As Noted

IN CHARGE - W. SOUTER
DRAWN BY J. WOOD CHECKED BY D. W. SAGAL
PROJECT No. 1020-110
SHEET 40 OF 44 BR 304



GENERAL NOTES
 1. ALL WORK AND MATERIALS SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION DATED APRIL 1964, AND THE A.A.S.H.O. SPECIFICATIONS DATED 1961. DESIGNED FOR HS20-44 LOADING.
 2. ALL REINFORCING STEEL SHALL BE DETAILED ON THE REINFORCING STEEL SCHEDULE. ALL SPLICES SHALL BE A MINIMUM OF 40 BAR DIAMETERS.

FAIR HAVEN - WEST RUTLAND
 BF MEMB (35)
 SHEET 43 OF 44
 BRIDGE NO. 15E
 FOR REFERENCE ONLY

REINFORCING BENDING DETAILS

A	J	A = 1'-1"
B	J	J = 0'-9"
B = 19'-6" OR VARIES		
DETAIL SHOWN IS FOR AS1 BAR		
ALL OTHER BARS ARE TO BE STRAIGHT		

SUMMARY OF QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL	FINAL
318	TAR EMULSION FOR BRIDGE FLOORS	GAL.		
361	BITUMINOUS CONCRETE PAVEMENT M.O.D.	TONS		
372-A	JOINT SEALER - HOT Poured	L.F.		
372-C	JOINT SEALER - PREFORMED, TYPE A	L.F.		
372-C	JOINT SEALER - PREFORMED, TYPE B	L.F.		
401-B	CONCRETE CLASS B	CY.		
402	REINFORCING STEEL	L.B.		

REINFORCING		STEEL		
BAR NO.	NO. PIECES	LENGTH	WEIGHT PER FT.	WEIGHT IN LBS.
AS1			4.303	
AS2			4.303	
AS3			1.043	
AS4			1.043	
TOTAL WEIGHT =				

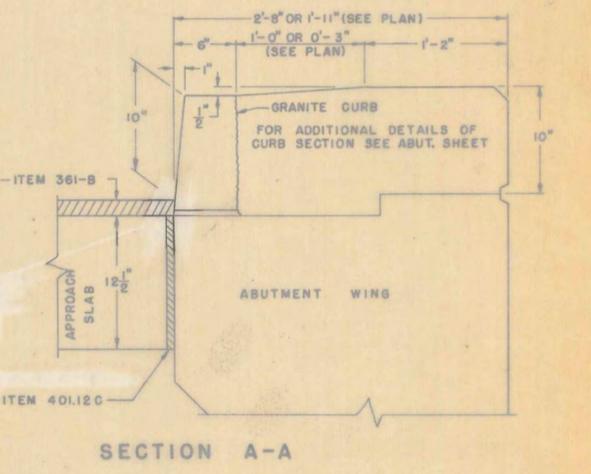
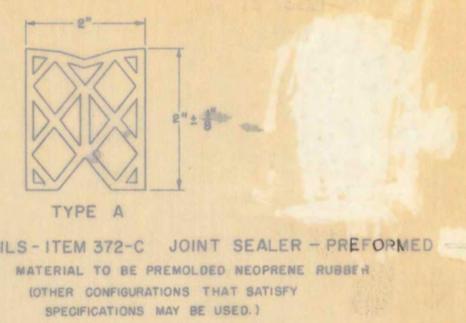
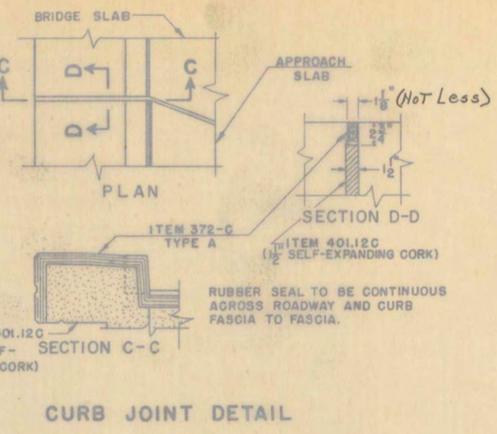
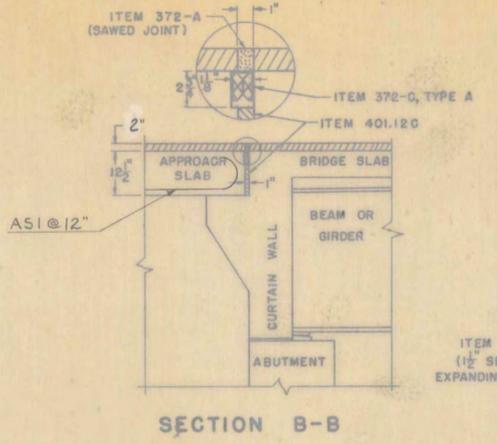
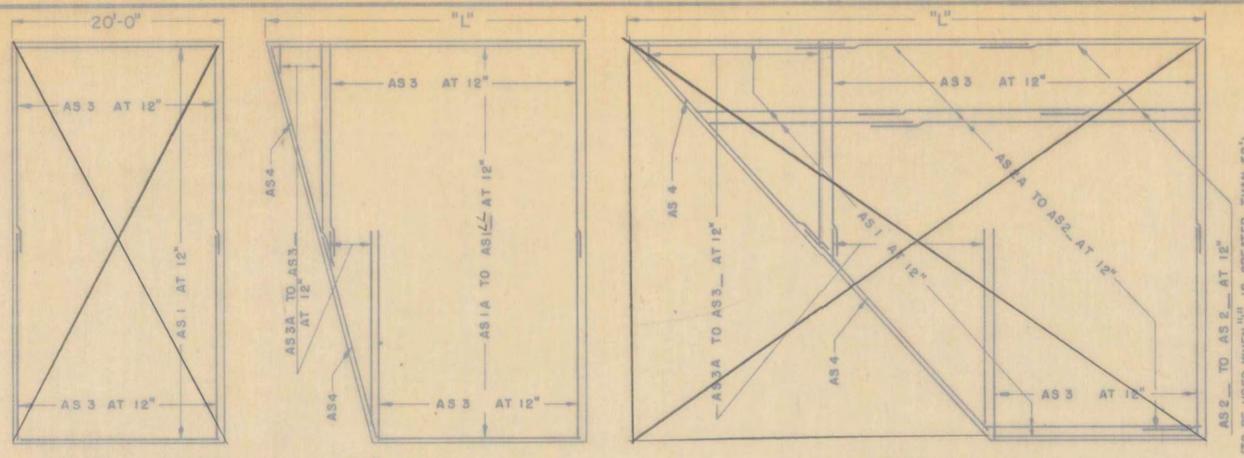
REVISIONS AND CORRECTIONS
 1. DIMENSIONS OF JOINT SEALER TYPE A REVISED. 4/15/65 W.B.T.
 2. DIMENSIONS OF JOINT SEALER TYPE B REVISED AND MODIFICATION OF ITEM 372-C ADDED. 6/23/65 W.B.T.

DRAWN BY: W.B.T. Jan. 1965
 TRACED BY: W.B.T. Jan. 1965
 CHECKED BY: W.M.S. Feb. 1965
 RECOMMENDED FOR APPROVAL: [Signature] 2/4/65
 BRIDGE ENGINEER DATE
 RECOMMENDED FOR APPROVAL: [Signature] 2/4/65
 ASSISTANT CHIEF ENGINEER DATE
 APPROVED BY: [Signature] 2/4/65
 CHIEF ENGINEER DATE

DETAILS OF APPROACH SLAB
 FOR 38'-0" FOOT BRIDGE
 (WIDTH)
 TO BE USED FOR BRIDGE AT STATION 774+50
 LOCATION APPROACH SLAB NO. 3 (E.B.)

STATE OF VERMONT
 DEPARTMENT OF HIGHWAYS
 STANDARD STRUCTURE
 SB-AS-65

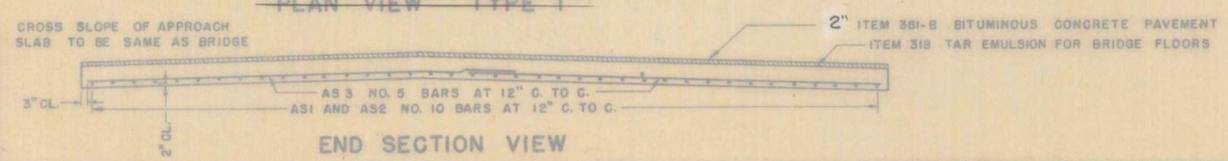
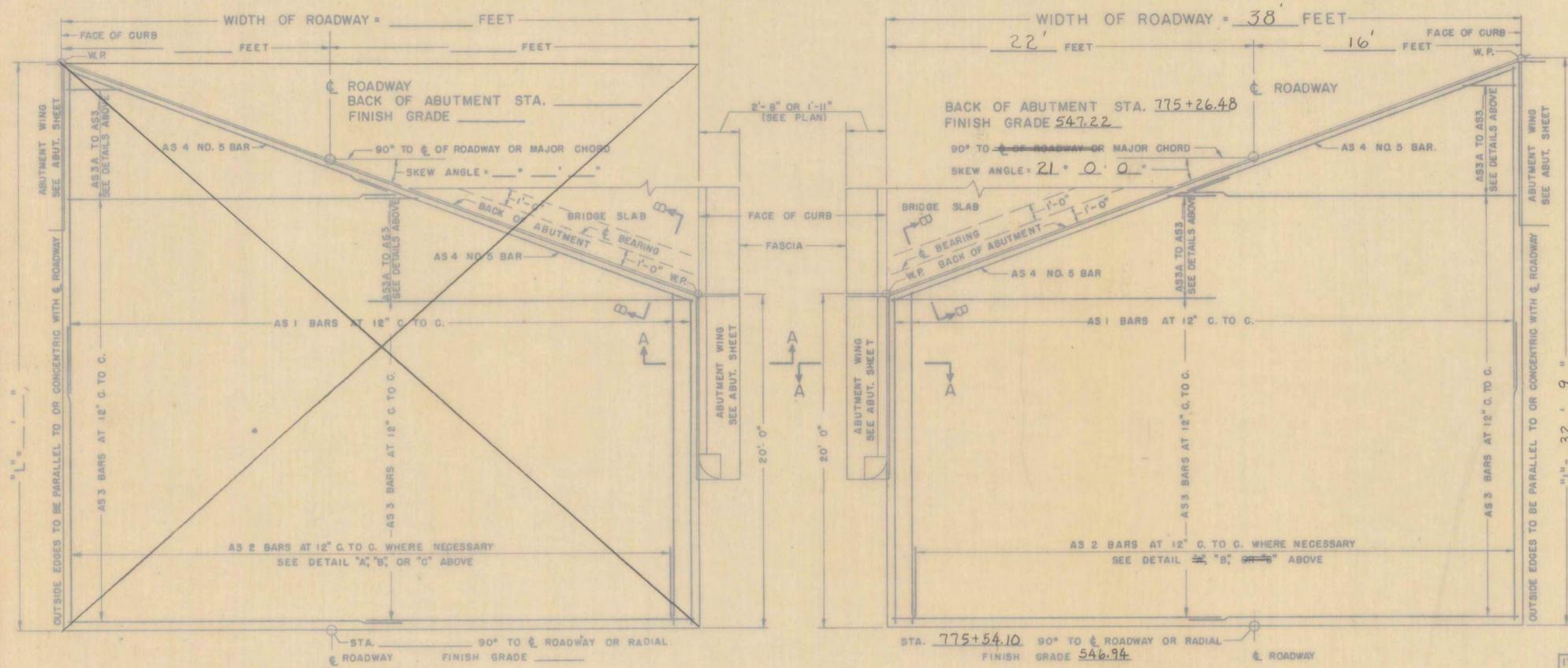
TOWN OF TRA WEST RUTLAND
 ROUTE NO. RELOC. US 4
 STA. 774+50 ±
 DESIGNED BY J. WOOD CHECKED BY D. SAAL
 PROJECT NO. AP 020-1(10) 12-65
 BR 312 OF 315 SHEET 155 OF 359



GENERAL NOTES

- ALL WORK AND MATERIALS SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION DATED APRIL 1964, AND THE A.A.S.H.O. SPECIFICATIONS DATED 1961. DESIGNED FOR HS 20-44 LOADING.
- ALL REINFORCING STEEL SHALL BE DETAILED ON THE REINFORCING STEEL SCHEDULE. ALL SPLICES SHALL BE A MINIMUM OF 40 BAR DIAMETERS.

FAIR HAVEN - WEST RUTLAND
 BF MEMB (35)
 SHEET 44 OF 44
 BRIDGE NO. 15E
 FOR REFERENCE ONLY



SUMMARY OF QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL	FINAL
318	TAR EMULSION FOR BRIDGE FLOORS	GAL.		
361	BITUMINOUS CONCRETE PAVEMENT MOD.	TONS		
372-A	JOINT SEALER - HOT Poured	L.F.		
372-C	JOINT SEALER - PREFORMED, TYPE A	L.F.		
372-C	JOINT SEALER - PREFORMED, TYPE B	L.F.		
401-B	CONCRETE CLASS B	CY.		
402	REINFORCING STEEL	LB.		
TOTAL WEIGHT =				

REINFORCING BENDING DETAILS

REINFORCING STEEL

BAR NO.	NO. PIECES	LENGTH	WEIGHT PER FT.	WEIGHT IN LBS.
AS 1				4,303
AS 2				4,303
AS 3				1,043
AS 4				1,043
TOTAL WEIGHT =				

REVISIONS AND CORRECTIONS

- DIMENSIONS OF JOINT FOR SEALER TYPE A REVISED. 4/15/65 W.B.T.
- DIMENSIONS OF JOINT SEALER TYPE B REVISED AND MODIFICATION OF ITEM 372-C ADDED. 6/23/65 W.B.T.

DRAWN BY: W.B.T. Jan 1965
 TRACED BY: W.B.T. Jan 1965
 CHECKED BY: W.M.S. Feb 1965

RECOMMENDED FOR APPROVAL: [Signature] 2/4/65
 BRIDGE ENGINEER DATE

RECOMMENDED FOR APPROVAL: [Signature] 2/4/65
 ASSISTANT CHIEF ENGINEER DATE

APPROVED BY: [Signature] 2/4/65
 CHIEF ENGINEER DATE

DETAILS OF APPROACH SLAB
 FOR 38' FOOT BRIDGE
 (WIDTH)

TO BE USED FOR BRIDGE AT STATION 774+50
 LOCATION APPROACH SLAB NO. 4 (E.B.)

STATE OF VERMONT
 DEPARTMENT OF HIGHWAYS
 STANDARD STRUCTURE
 SB-AS-65

TOWN OF FAIR HAVEN - WEST RUTLAND
 ROUTE NO. RELOC. U.S. 4
 STA. 774+50 ±

DESIGNED BY J. WOOD CHECKED BY D. SAAL
 PROJECT NO. AP-020-1(10) 12-65
 BR 313 OF 315 SHEET 156 OF 359

ASPHALTIC PLUG JOINT NOTES

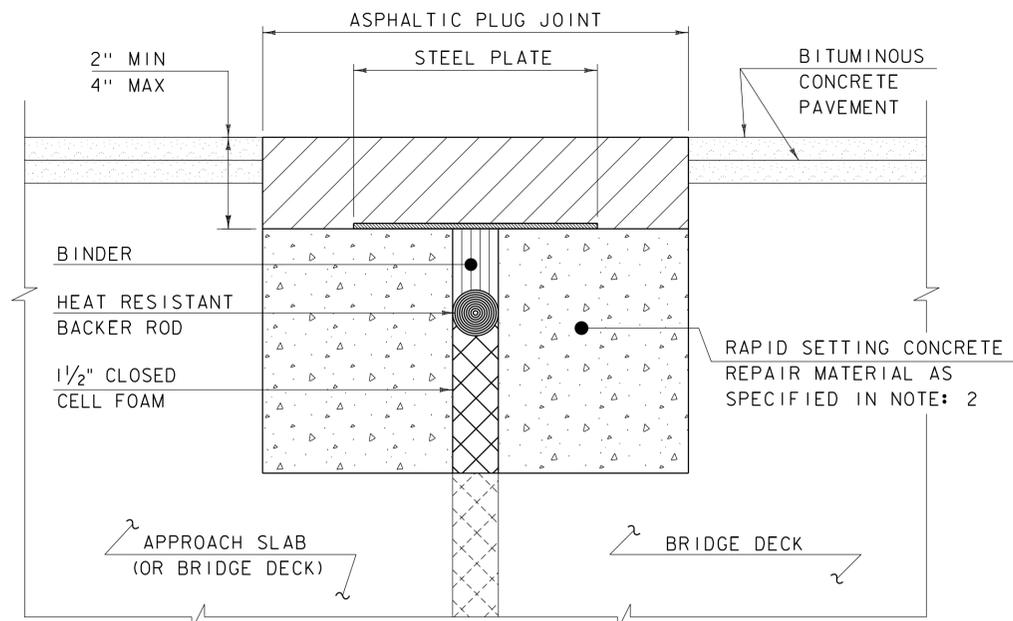
INSTALLATION:

1. LOCATE THE JOINT CENTRALLY OVER THE DECK OVERLAY EXPANSION GAP OR FIXED JOINT, MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.
2. REMOVE THE BITUMINOUS CONCRETE PAVEMENT FULL DEPTH AS SHOWN ON THE PLANS. THE PAVEMENT SHALL BE DRY AND SAW CUT TO THE LIMITS REQUIRED TO PLACE THE JOINT. A PNEUMATIC HAMMER AND CHISEL MAY BE USED ADJACENT TO THE CURB ONLY WHEN SAW CUTTING IS NOT POSSIBLE.
3. BLAST CLEAN THE JOINT AREA OF DEBRIS, ASPHALT AND SHEET MEMBRANE. THOROUGHLY DRY THE JOINT AREA WITH COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.
4. PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 1" +/- OF BINDER ABOVE THE ROD.
5. HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.
6. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.

WEATHER LIMITATIONS

APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL OR AS RECOMMENDED BY THE MANUFACTURER:

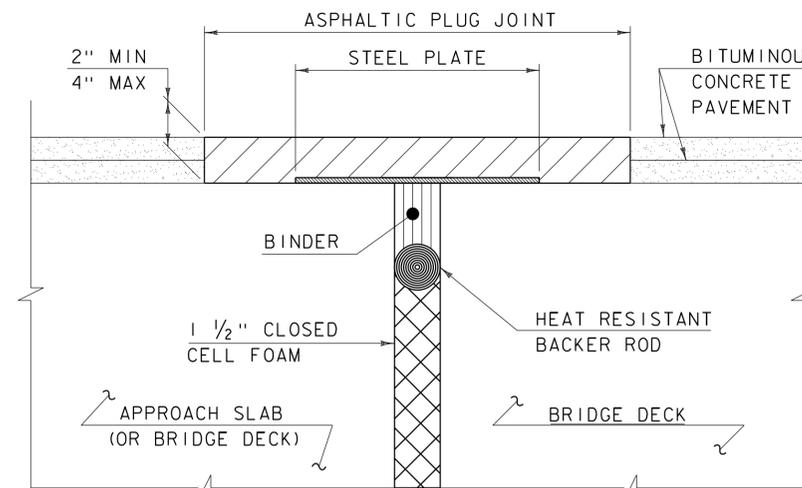
1. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.
2. THE ROAD SURFACE IS DRY.
3. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.



ASPHALTIC PLUG JOINT DETAIL - REHAB

NOTES:

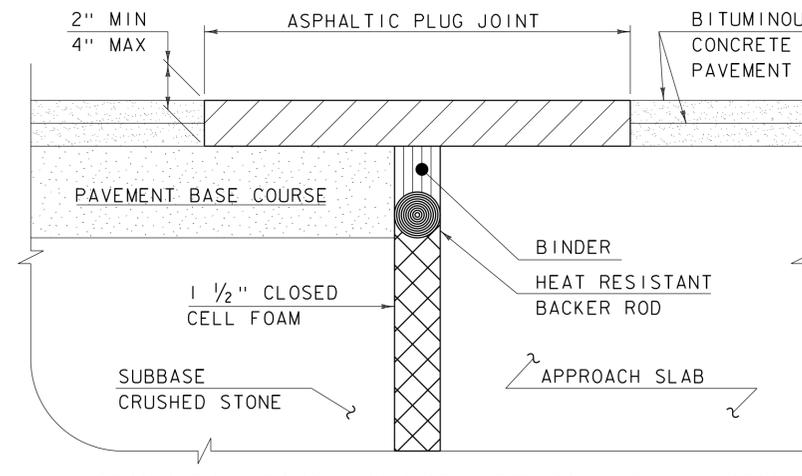
1. THE CONTRACTOR SHALL REMOVE ALL ASPHALTIC PLUG JOINT MATERIAL AND DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER. REMOVAL OF THE FIRST 4 INCHES OF MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG. ANY REMOVAL OF MATERIAL GREATER THAN 4 INCHES SHALL BE INCLUDED IN THE BID PRICE OF ITEM 580.20 RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.
2. THE CONTRACTOR SHALL REPLACE REMOVED MATERIAL THAT IS LESS THAN 4" FROM FINISHED GRADE WITH ASPHALTIC PLUG JOINT MATERIAL MEETING THE REQUIREMENTS OF SUBSECTION 707.15. ALL REMOVED MATERIAL THAT IS GREATER THAN 4 INCHES FROM FINISHED GRADE SHALL BE REPLACED WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.
4. PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER. THE STEEL PLATES MAY BE OMITTED WHERE THE ENGINEER DETERMINES THAT THE APPROACH SLAB OR BRIDGE DECK WILL PROVIDE INADEQUATE SUPPORT AND WHERE VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.



ASPHALTIC PLUG JOINT DETAIL "A" - NEW

NOTE:

PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER.



ASPHALTIC PLUG JOINT DETAIL "B" - NEW

DETAILS ON THIS SHEET ARE NOT TO SCALE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
AUGUST 29, 2011	ADD DETAIL "B" AND REV. NOTES

BRIDGE JOINT
ASPHALTIC PLUG



STRUCTURES
DETAIL
SD-516.10