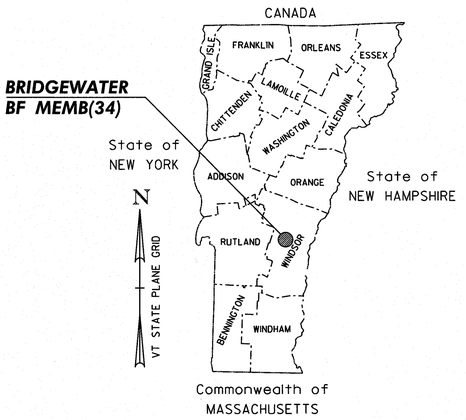
STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT

TOWN OF BRIDGEWATER
COUNTY OF WINDSOR
PROJECT BF MEMB(34)

ROUTE NO.: US4

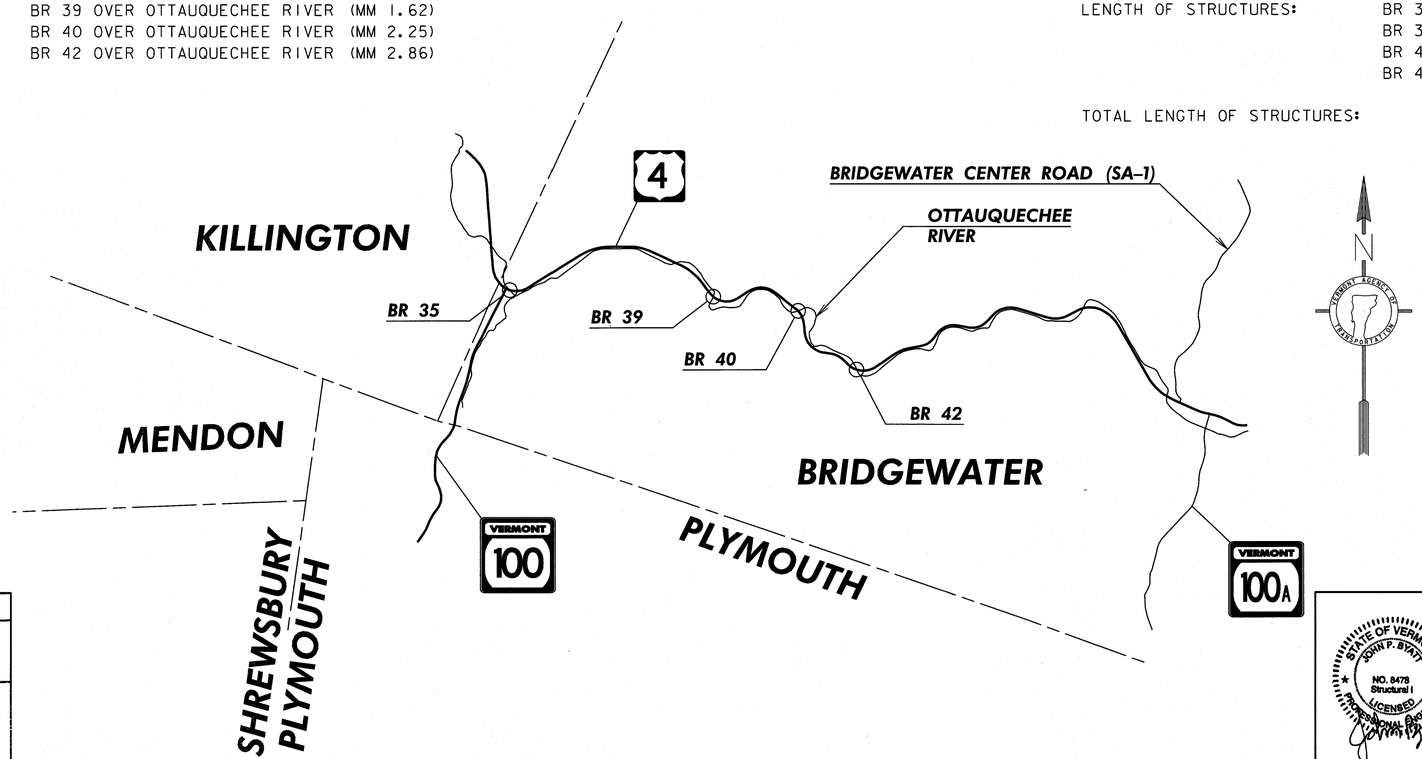
BRIDGE NO.: 35, 39, 40, 42

PROJECT LOCATIONS:
BR 35 OVER OTTAUQUECHEE RIVER (MM 0.12)
BR 39 OVER OTTAUQUECHEE RIVER (MM 1.62)
BR 40 OVER OTTAUQUECHEE RIVER (MM 2.25)
BR 42 OVER OTTAUQUECHEE RIVER (MM 2.86)

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 35 202.00'
BR 39 138.00'
BR 40 99.00'
BR 42 168.00'

TOTAL LENGTH OF STRUCTURES: 607.00'



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 : N/A
SURVEYED DATE : N/A

DATUM
VERTICAL N/A
HORIZONTAL N/A

STATE OF VERMONT
JOHN P. STATT
NO. 8478
Structural
LICENSED
PROFESSIONAL ENGINEER

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DIRECTOR OF PROJECT DELIVERY
APPROVED _____ DATE _____

PROJECT MANAGER : DOUGLAS BONNEAU, P.E.

PROJECT NAME : BRIDGEWATER
PROJECT NUMBER : BF MEMB(34)

SHEET 1 OF 36 SHEETS

INDEX OF SHEETS

STRUCTURES DETAIL SHEETS

08/29/11	SD-516.10 BRIDGE ASPHALTIC PLUG

VAOT STANDARD SHEETS

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08/06/12	T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNS
08/06/12	T-17	TRAFFIC CONTROL MISCELLANEOUS DETAILS
08/06/12	T-28	CONSTRUCTION SIGN DETAILS
08/06/12	T-29	CONSTRUCTION SIGN DETAILS
08/06/12	T-30	CONSTRUCTION SIGN DETAILS
08/06/12	T-31	CONSTRUCTION SIGN DETAILS
08/06/12	T-36	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS FOR PAVING
02/11/98	C-10	CURBING
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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 5 ARE SCHEMATICS ONLY AND SHOULD BE USED AS REFERENCES. SEE THESE SHEETS FOR ADDITIONAL TRAFFIC CONTROL NOTES. 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 JOINT REPAIR

9. REPAIRS TO DETERIORATED PORTIONS OF THE SOUTHEAST CORNER OF THE ABUTMENT NO. 1 BEAM SEAT AND THE SOUTHWEST CORNER OF THE ABUTMENT NO. 2 BEAM SEAT OF BRIDGE NO. 40 SHALL BE PAID FOR UNDER ITEM 580.15, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III". THE QUANTITY FOR ITEM 580.15 AS SHOWN ON THE QUANTITY SHEETS IS ESTIMATED.

10. REPAIRS TO DETERIORATED PORTIONS OF THE NORTHEAST CORNER OF THE ABUTMENT NO. 2 BEAM SEAT OF BRIDGE NO. 42 SHALL BE PAID FOR UNDER ITEM 580.15, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III". THE QUANTITY FOR ITEM 580.15 AS SHOWN ON THE QUANTITY SHEETS IS ESTIMATED.

11. THE BRIDGE NO. 35 PIER JOINTS SHALL BE REPLACED WITH ASPHALTIC PLUG JOINTS. CONCRETE REPAIRS TO DETERIORATED AREAS ALONG THE JOINTS MAY BE REQUIRED AND SHALL BE PAID FOR UNDER ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III". CONCRETE REPAIRS TO DETERIORATED AREAS ALONG BRIDGE NOS. 39 AND 42 PIER JOINTS MAY BE REQUIRED AND SHALL BE PAID FOR UNDER ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III".THE QUANTITY FOR ITEM 580.12 AS SHOWN ON THE QUANTITY SHEETS IS ESTIMATED.

PAVEMENT REMOVAL AND DECK REPAIRS

12. 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".

13. DURING BRIDGE (AND AT-GRADE APPROACH SLAB IF APPLICABLE) PAVEMENT REMOVAL, THE CONTRACTOR SHALL EXERCISE CARE TO ENSURE 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.

14. 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.

15. 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".

16. 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.

17. 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

18. 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/ARE ABOVE SECTION 519 SPECIFICATIONS OR MANUFACTURER'S SPECIFICATIONS, WHICHEVER IS LESS.

19. 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 1½" LIFTS. THE PAVEMENT SHALL BE TYPE IVS FOR BOTH LIFTS, NO EXCEPTIONS.

20. 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".

21. TESTING FOR PAVEMENT DENSITY WILL REQUIRE CORES OF THE PAVEMENT ON THE BRIDGE. THE COST FOR THIS WORK WILL BE CONSIDERED 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.

22. FOR PG BINDER GRADE SEE THE SPECIAL PROVISIONS FOR PAY ITEM 900.680.

23. 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".

24. 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.

25. UPON COMPLETION OF ALL PAVING OPERATIONS, FINAL PAVEMENT MARKINGS SHALL BE INSTALLED TO REPLICATE THE EXISTING CONFIGURATION.

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PROJECT NAME: BRIDGEWATER
PROJECT NUMBER: BF MEMB(34)

FILE NAME: z13b110-notes.dgn
PROJECT LEADER: JPB
DESIGNED BY: SRB
INDEX OF SHEETS AND PROJECT NOTES

PLOT DATE: 12/2/2014
DRAWN BY: MWS
CHECKED BY: AEG
SHEET 2 OF 36

CLD 13-0203 MODEL: Notes01

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES						TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	BRIDGE NO. 35	BRIDGE NO. 39	BRIDGE NO. 40	BRIDGE NO. 42	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
	15					15		CY	COMMON EXCAVATION	203.15				
1						1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
	15					15		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
	347	200	120	260		927		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
	13	8	6	10		37		CWT	EMULSIFIED ASPHALT	404.65				
1						1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
	20	13	20	16		69		GAL	WATER REPELLENT, SILANE	514.10				
	260	99	76	139		574		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
	674	460	330	560		2024		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20				
	994	594	544	800		2932		SY	REMOVAL OF BRIDGE PAVEMENT	529.10				
	34	23	17	28		102		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I	580.10				
	101	69	50	84		304		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II	580.11				
	17	10	3	10		40		CY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III	580.12				
			6	3		9		CY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	580.15				
	6060	4140	2970	5040		18210		SF	SURFACE PREPARATION FOR MEMBRANE	580.16				
	10	10	10	10		40		CF	RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE	580.20				
	17	12	8	14		51		GAL	REPOINTING GRANITE BRIDGE CURB	616.225				
	100					100		LF	PRECAST REINFORCED CONCRETE CURB, TYPE A	616.25				
	3	2	2	2		9		EACH	ENERGY ABSORPTION ATTENUATOR	621.56				
	200	200	200	200		800		LF	TEMPORARY TRAFFIC BARRIER	621.90				
	70	200	200	200		670		LF	REMOVE AND RESET TEMPORARY TRAFFIC BARRIER	621.95				
	107	73	53	89		322		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
	300					300		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 4 - BRIDGE NO. 35)	641.10				
		1				1		LS	TRAFFIC CONTROL (US 4 - BRIDGE NO. 39)	641.10				
			1			1		LS	TRAFFIC CONTROL (US 4 - BRIDGE NO. 40)	641.10				
				1		1		LS	TRAFFIC CONTROL (US 4 - BRIDGE NO. 42)	641.10				
	5	2	2	2		11		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
	850	500	400	650		2400		LF	4 INCH WHITE LINE	646.20				
	850	500	400	650		2400		LF	4 INCH YELLOW LINE	646.21				
	100					100		LF	8 INCH YELLOW LINE	646.23				
	15					15		LF	24 INCH STOP BAR	646.26				
	1800	1850	1800	2050		7500		LF	TEMPORARY 4 INCH WHITE LINE, TEMPORARY PAVEMENT MARKING TAPE	646.6011				
	72	48	48	48		216		LF	TEMPORARY 24 INCH STOP BAR, TEMPORARY PAVEMENT MARKING TAPE	646.6811				
	90	95	90	105		380		EACH	RAISED PAVEMENT MARKERS, TYPE II	646.75				

PROJECT NAME: BRIDGEWATER
PROJECT NUMBER: BF MEMB(34)

FILE NAME: z13b110-qss.dgn
PROJECT LEADER: JPB
DESIGNED BY: SRB
QUANTITY SHEET 1

PLOT DATE: 12/2/2014
DRAWN BY: SRB
CHECKED BY: AEG
SHEET 3 OF 36

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES							TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	BRIDGE NO. 35	BRIDGE NO. 39	BRIDGE NO. 40	BRIDGE NO. 42	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
	800	600	600	650		2650		SF	PAVEMENT MARKING MASK	646.86				
	26					26		SF	TRAFFIC SIGNS, TYPE A	675.20				
	30					30		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
	7					7		EACH	REMOVING SIGNS	675.50				
1						1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50				
	1	1	1	1		4		EACH	SPECIAL PROVISION (TEMPORARY TRAFFIC SIGNAL SYSTEM, PORTABLE)	900.620				
	1	1	1	1		4		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I)	900.650				
	1	1	1	1		4		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N.A.B.I)	900.650				
	253	144	122	197		716		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

PROJECT NAME: BRIDGEWATER
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QUANTITY SHEET 2

PLOT DATE: 12/2/2014
DRAWN BY: SRB
CHECKED BY: AEG
SHEET 4 OF 36

TRAFFIC CONTROL NOTES:

1. THE EXISTING SPEED LIMIT IS 50 MPH. THE SPEED LIMIT WILL BE REDUCED TO 35 MPH IN THE WORK ZONE. ANY EXISTING SPEED LIMIT SIGNS WITHIN THE SPEED REDUCTION AREA SHALL BE COMPLETELY COVERED.

2. TRAFFIC CONTROL PLANS SUBMITTED BY THE CONTRACTOR PER NOTE 6 ON SHEET 2 SHALL INCLUDE DRIVE ENTRANCE LOCATIONS ADJACENT TO BRIDGES. DIMENSIONS SHOWN SHALL BE REVISED AS NECESSARY TO ENSURE ALL DRIVE ENTRANCES OCCUR OUTSIDE TEMPORARY STOP BAR LOCATIONS. ACCESS TO DRIVES ON BOTH SIDES OF ALL BRIDGES SHALL BE MAINTAINED AT ALL TIMES.

3. THE CONTRACTOR SHALL HAVE SIGNS FOR CLOSURE OF ALL LANES ON THE PROJECT BEFORE WORK COMMENCES.

4. CONSTRUCTION SIGNS SHALL BE INSTALLED SO AS NOT TO OBSTRUCT EXISTING SIGNS.

5. 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).

6. 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.

7. ROLL UP SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING ASTM D 4956 TYPE VI.

8. 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.

9. 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.

10. PORTABLE SIGNS SHALL BE PLACED ON THE EDGE OF ROADWAY AND ONE FOOT MINIMUM ABOVE TRAVELLED 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.

11. THE PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) SHALL BE USED AT THE DISCRETION OF THE ENGINEER. THE PCMS SHALL BE IN ACCORDANCE WITH SECTION 6F.60 OF THE MUTCD. THE PCMS SHALL READ "SIGNAL AHEAD, PREPARE TO STOP". ADDITIONAL PCMS ARE REQUIRED FOR A TRUCK DETOUR FOR BRIDGE NO. 35. SEE REGIONAL TRUCK DETOUR NOTE 4 ON TRAFFIC CONTROL SHEET 4.

12. 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.

13. DUE TO THE NARROW TRAVELWAY AND SHOULDERS ON THE BRIDGES, CHANNELIZING DEVICES SHALL BE USED IN LIEU OF CONCRETE BARRIER WITHIN THE WORK ZONES.

14. THE NUMBER OF CHANNELIZING DEVICES 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.

15. TRAVEL LANE SHALL BE A MINIMUM OF 12 FEET WIDE FOR ALL BRIDGES.

16. 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.

17. PROVIDE A 1:9 BARRIER TAPER RATE AS SHOWN ON THE PLANS.

18. IF THE LANE CLOSURE IS TO LAST LONGER THAN 3 DAYS, THE CONTRACTOR SHALL USE TEMPORARY TRAFFIC BARRIER AS SHOWN ON TRAFFIC CONTROL SHEETS 2 THROUGH 5 AND SHALL BE PAID FOR AS ITEM 621.90, "TEMPORARY TRAFFIC BARRIER". 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".

19. THE END OF THE BARRIER FACING APPROACHING TRAFFIC SHALL MEET THE FOLLOWING REQUIREMENTS:

    A. WHEN NO GUARDRAIL IS PRESENT, A 30' OFFSET SHALL BE USED FROM THE EDGE OF TRAVELLED WAY. IF A 30' OFFSET IS NOT ATTAINABLE, THEN AN ENERGY ABSORPTION ATTENUATOR SHALL BE LOCATED AT THE END OF THE BARRIER.

    B. IF GUARDRAIL IS PRESENT, THEN TEMPORARY 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 13.

20. THE QUANTITIES INCLUDE TWO ENERGY ABSORPTION ATTENUATORS PER BRIDGE AND ONE BACKUP ATTENUATOR FOR THE PROJECT (INCLUDED IN QUANTITY FOR BRIDGE NO. 35) 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".

21. THE RAISED PAVEMENT MAKERS (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".

TEMPORARY PORTABLE SIGNAL NOTES:

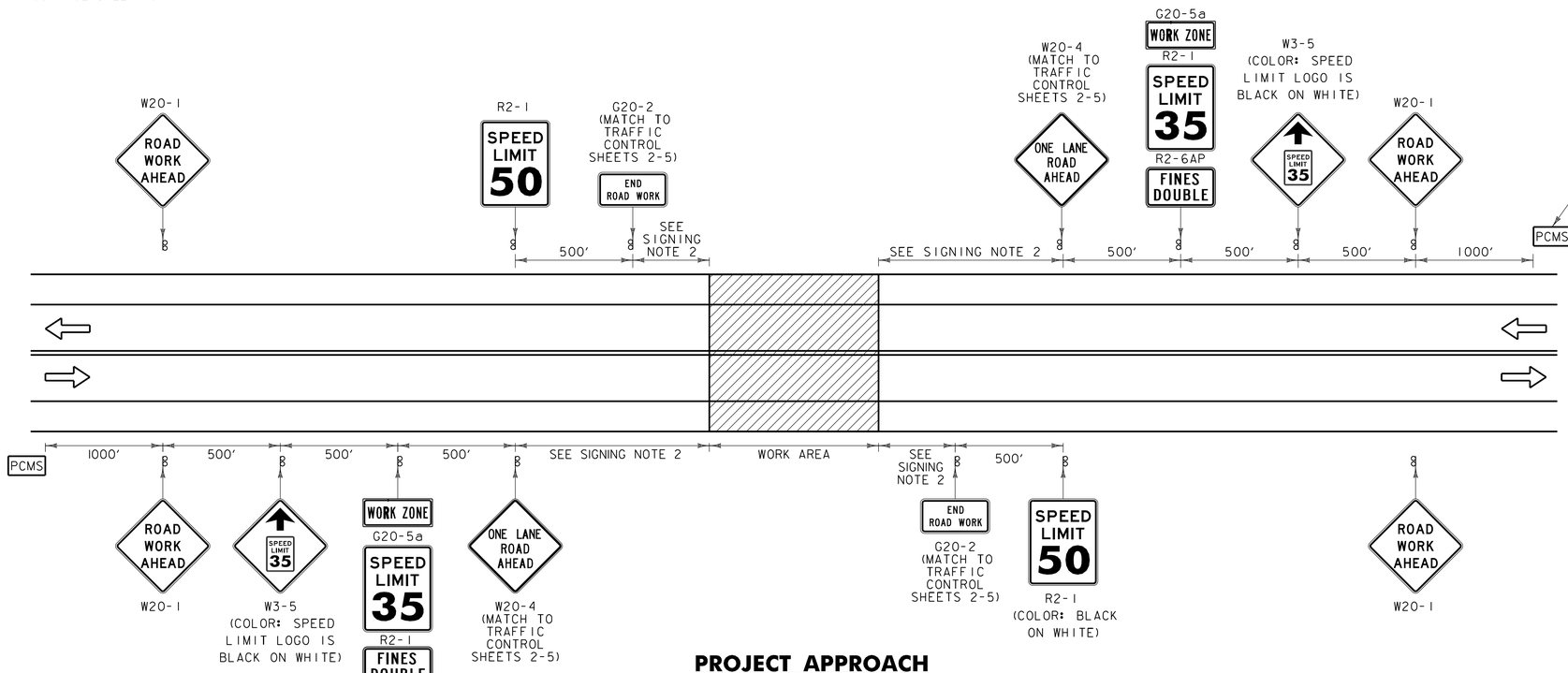
1. TEMPORARY TRAFFIC CONTROL (TTC) SIGNALS SHALL BE INSTALLED AND OPERATED IN ACCORDANCE WITH THE PROVISIONS OF PART 4 OF THE MUTCD. TTC SIGNALS SHALL MEET THE PHYSICAL DISPLAY AND OPERATIONAL REQUIREMENTS OF CONVENTIONAL TRAFFIC CONTROL SIGNALS.

2. TTC SIGNAL TIMING SHALL BE ESTABLISHED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. DURATIONS OF RED CLEARANCE INTERVALS SHALL BE ADEQUATE TO CLEAR THE ONE-LANE SECTION OF CONFLICTING VEHICLES. THREE-WAY SIGNAL TIMING WILL BE REQUIRED FOR BRIDGE NO. 35 TO ACCOMMODATE TRAFFIC FLOW ALONG US 4 AND VT 100.

3. STOP BARS SHALL BE INSTALLED WITH TTC SIGNALS. EXISTING CONFLICTING PAVEMENT MARKINGS AND RAISED PAVEMENT MARKER REFLECTORS BETWEEN THE ACTIVITY AREA AND THE STOP BAR SHALL BE REMOVED. AFTER THE TTC SIGNAL IS REMOVED, THE STOP BARS AND OTHER TEMPORARY PAVEMENT MARKINGS (IF APPLICABLE) SHALL BE REMOVED AND THE PERMANENT PAVEMENT MARKINGS RESTORED.

4. ADJUSTMENTS IN LOCATION OF THE ADVANCE WARNING SIGNS SHOULD BE MADE AS NEEDED AND AT THE DISCRETION OF THE ENGINEER TO ACCOMMODATE THE HORIZONTAL OR VERTICAL ALIGNMENT OF THE ROADWAY, RECOGNIZING THAT THE DISTANCES SHOWN FOR SIGN SPACINGS ARE MINIMUMS.

5. PAYMENT FOR TTC SIGNALS WILL BE MADE UNDER CONTRACT ITEM 900.620, "SPECIAL PROVISION (TEMPORARY TRAFFIC SIGNAL SYSTEM, PORTABLE). SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.



PROJECT APPROACH SIGNING

- SEE TRAFFIC CONTROL SHEETS 2-5 FOR BRIDGE SPECIFIC WORK ZONE APPROACH SIGNING.

SIGNING NOTE:

1. ALL SPEED LIMIT SIGNS SHALL BE BLACK ON WHITE.
2. SEE TRAFFIC CONTROL SHEETS 2 THROUGH 5 FOR BRIDGE SPECIFIC WORK ZONE APPROACH SIGNING.

LEGEND

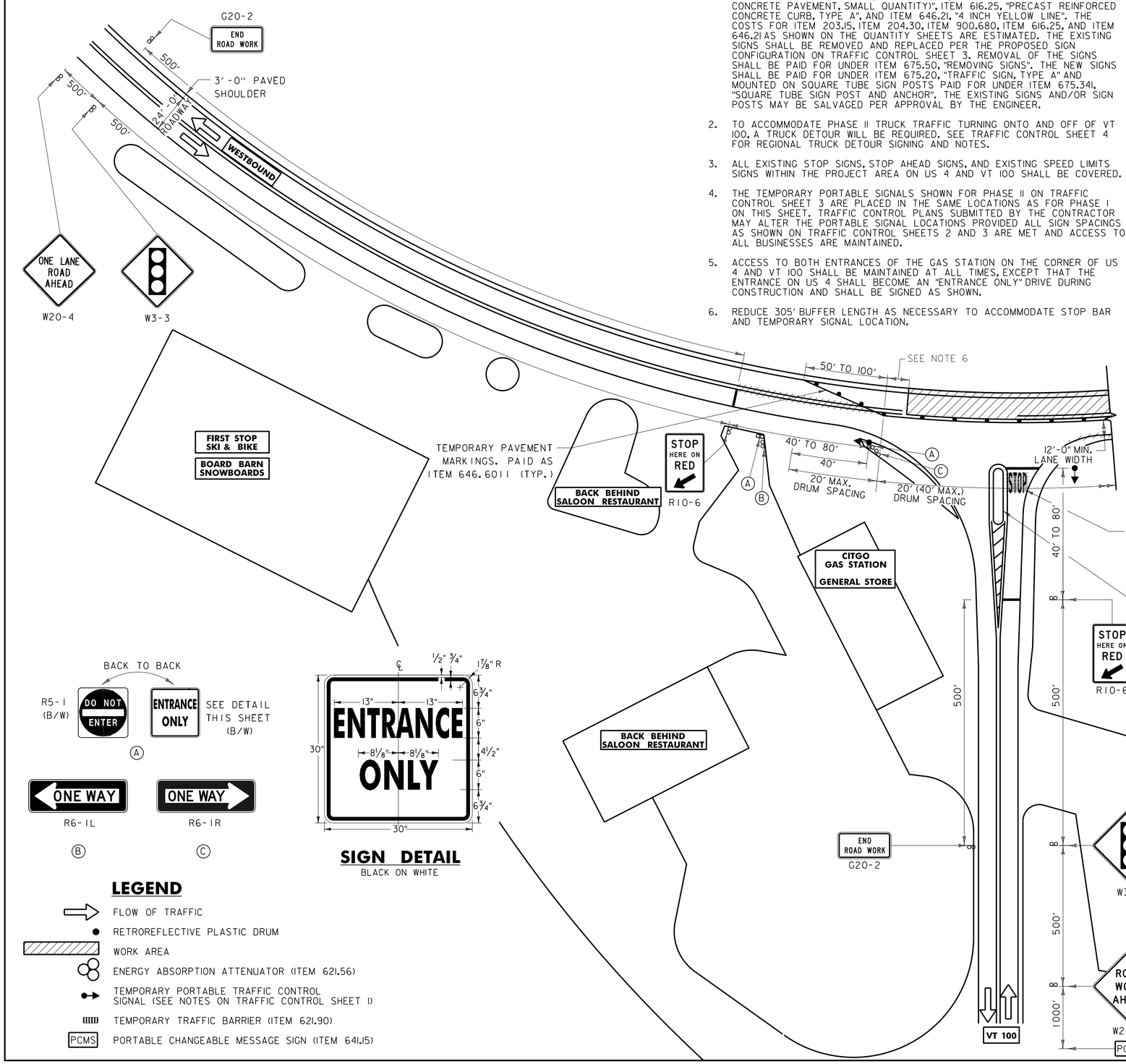
- FLOW OF TRAFFIC
- WORK AREA
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN (ITEM 641.15)

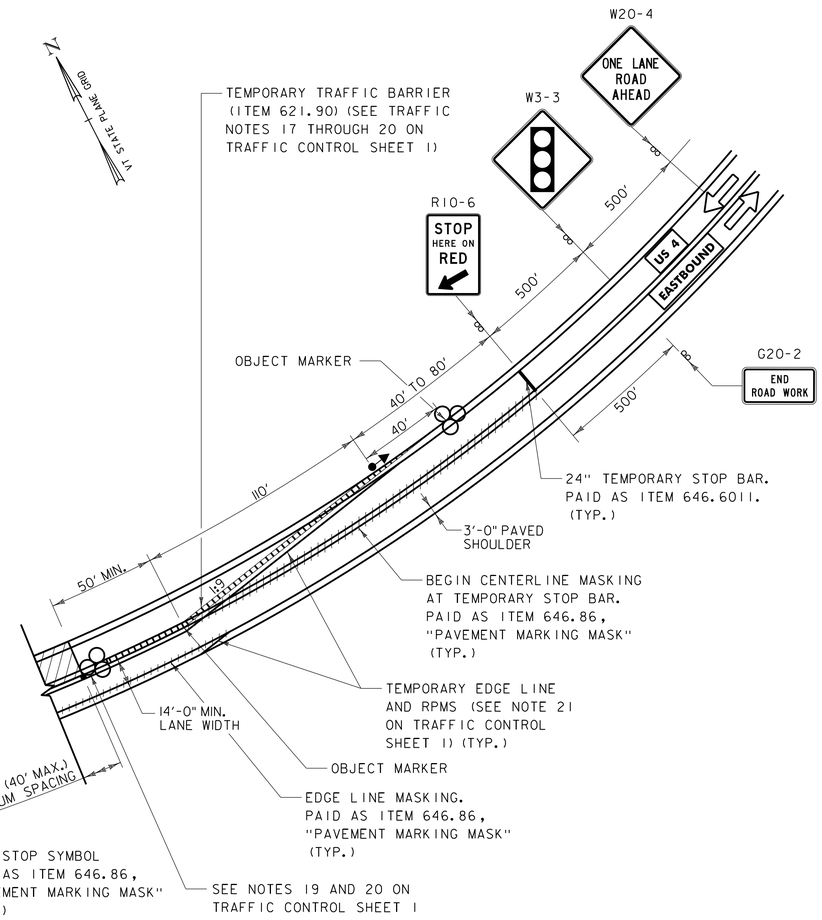
PROJECT NAME:	BRIDGEWATER
PROJECT NUMBER:	BF MEMB(34)
FILE NAME: z13b110-tcp.dgn	PLOT DATE: 12/2/2014
PROJECT LEADER: JPB	DRAWN BY: MWS
DESIGNED BY: SRB	CHECKED BY: AEG
TRAFFIC CONTROL SHEET 1	SHEET 5 OF 36

CLD XX-XXXX MODEL: TCP01

TRAFFIC CONTROL NOTES:

1. ACCESS TO VT 100 SHALL BE MAINTAINED AT ALL TIMES. TO ACCOMMODATE TRUCK TURNING RADII, THE RAISED MEDIAN ON VT 100 SHALL BE TEMPORARILY REMOVED. THE COST TO REMOVE THE RAISED MEDIAN SHALL BE PAID FOR UNDER ITEM 203.15, "COMMON EXCAVATION". THE COST TO REPLACE THE RAISED MEDIAN IN KIND SHALL BE PAID FOR UNDER ITEM 204.30, "GRANULAR BACKFILL FOR STRUCTURES", ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)", ITEM 616.25, "PRECAST REINFORCED CONCRETE CURB, TYPE A", AND ITEM 646.21, "4 INCH YELLOW LINE". THE COSTS FOR ITEM 203.15, ITEM 204.30, ITEM 900.680, ITEM 616.25, AND ITEM 646.21 AS SHOWN ON THE QUANTITY SHEETS ARE ESTIMATED. THE EXISTING SIGNS SHALL BE REMOVED AND REPLACED PER THE PROPOSED SIGN CONFIGURATION ON TRAFFIC CONTROL SHEET 3. REMOVAL OF THE SIGNS SHALL BE PAID FOR UNDER ITEM 675.50, "REMOVING SIGNS". THE NEW SIGNS SHALL BE PAID FOR UNDER ITEM 675.20, "TRAFFIC SIGN, TYPE A" AND MOUNTED ON SQUARE TUBE SIGN POSTS PAID FOR UNDER ITEM 675.341, "SQUARE TUBE SIGN POST AND ANCHOR". THE EXISTING SIGNS AND/OR SIGN POSTS MAY BE SALVAGED PER APPROVAL BY THE ENGINEER.
2. TO ACCOMMODATE PHASE II TRUCK TRAFFIC TURNING ONTO AND OFF OF VT 100, A TRUCK DETOUR WILL BE REQUIRED. SEE TRAFFIC CONTROL SHEET 4 FOR REGIONAL TRUCK DETOUR SIGNING AND NOTES.
3. ALL EXISTING STOP SIGNS, STOP AHEAD SIGNS, AND EXISTING SPEED LIMITS SIGNS WITHIN THE PROJECT AREA ON US 4 AND VT 100 SHALL BE COVERED.
4. THE TEMPORARY PORTABLE SIGNALS SHOWN FOR PHASE II ON TRAFFIC CONTROL SHEET 3 ARE PLACED IN THE SAME LOCATIONS AS FOR PHASE I ON THIS SHEET. TRAFFIC CONTROL PLANS SUBMITTED BY THE CONTRACTOR MAY ALTER THE PORTABLE SIGNAL LOCATIONS PROVIDED ALL SIGN SPACINGS AS SHOWN ON TRAFFIC CONTROL SHEETS 2 AND 3 ARE MET AND ACCESS TO ALL BUSINESSES ARE MAINTAINED.
5. ACCESS TO BOTH ENTRANCES OF THE GAS STATION ON THE CORNER OF US 4 AND VT 100 SHALL BE MAINTAINED AT ALL TIMES, EXCEPT THAT THE ENTRANCE ON US 4 SHALL BECOME AN "ENTRANCE ONLY" DRIVE DURING CONSTRUCTION AND SHALL BE SIGNED AS SHOWN.
6. REDUCE 305' BUFFER LENGTH AS NECESSARY TO ACCOMMODATE STOP BAR AND TEMPORARY SIGNAL LOCATION.





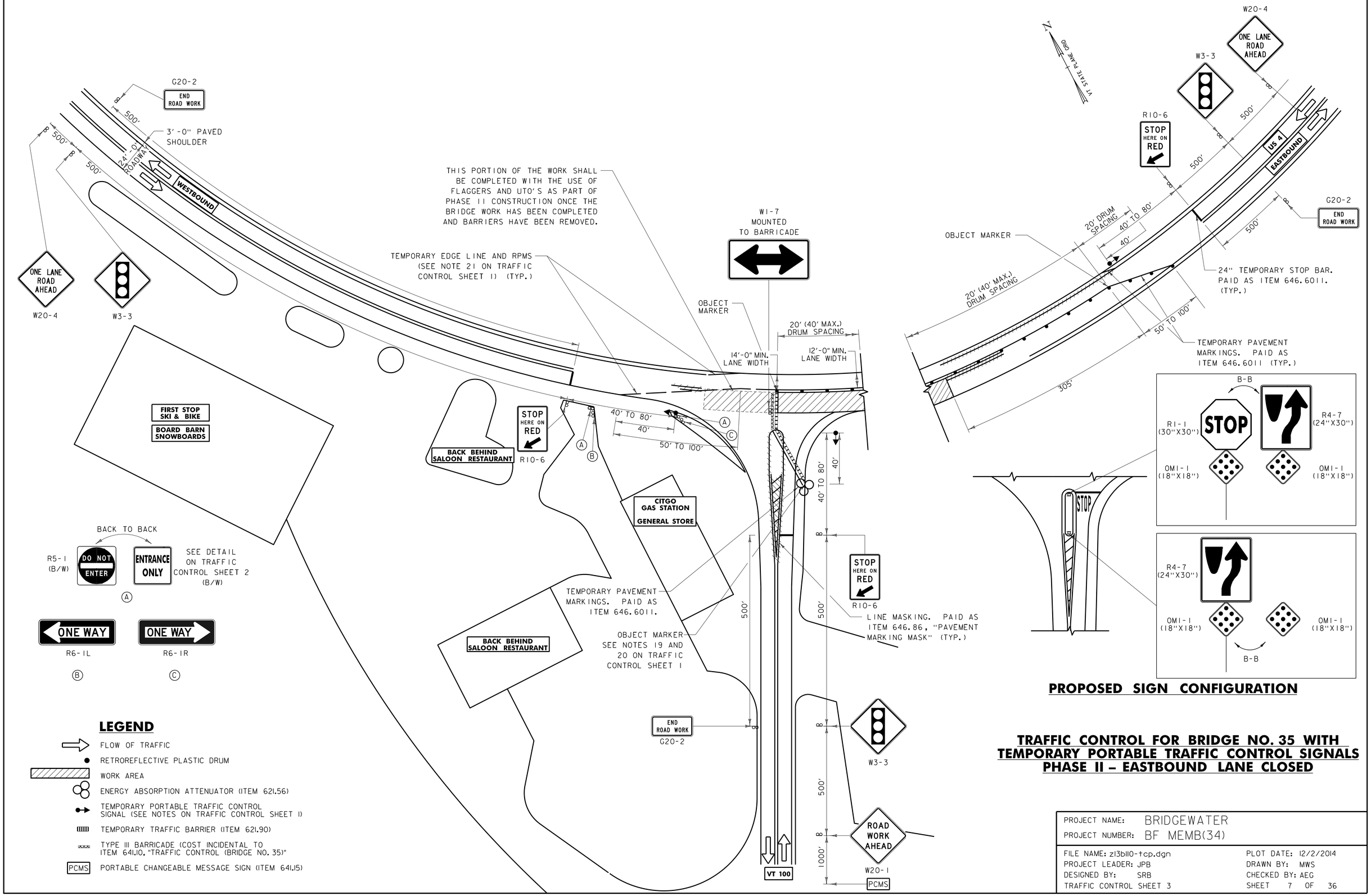
SIGN DETAIL
BLACK ON WHITE

LEGEND

- FLOW OF TRAFFIC
- RETROREFLECTIVE PLASTIC DRUM
- WORK AREA
- ENERGY ABSORPTION ATTENUATOR (ITEM 621.56)
- TEMPORARY PORTABLE TRAFFIC CONTROL SIGNAL (SEE NOTES ON TRAFFIC CONTROL SHEET 1)
- TEMPORARY TRAFFIC BARRIER (ITEM 621.90)
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN (ITEM 641.15)

TRAFFIC CONTROL FOR BRIDGE NO. 35 WITH TEMPORARY PORTABLE TRAFFIC CONTROL SIGNALS PHASE I – WESTBOUND LANE CLOSED

PROJECT NAME:	BRIDGEWATER
PROJECT NUMBER:	BF MEMB(34)
FILE NAME: z13b110-tcp.dgn	PLOT DATE: 12/2/2014
PROJECT LEADER: JPB	DRAWN BY: MWS
DESIGNED BY: SRB	CHECKED BY: AEG
TRAFFIC CONTROL SHEET 2	SHEET 6 OF 36



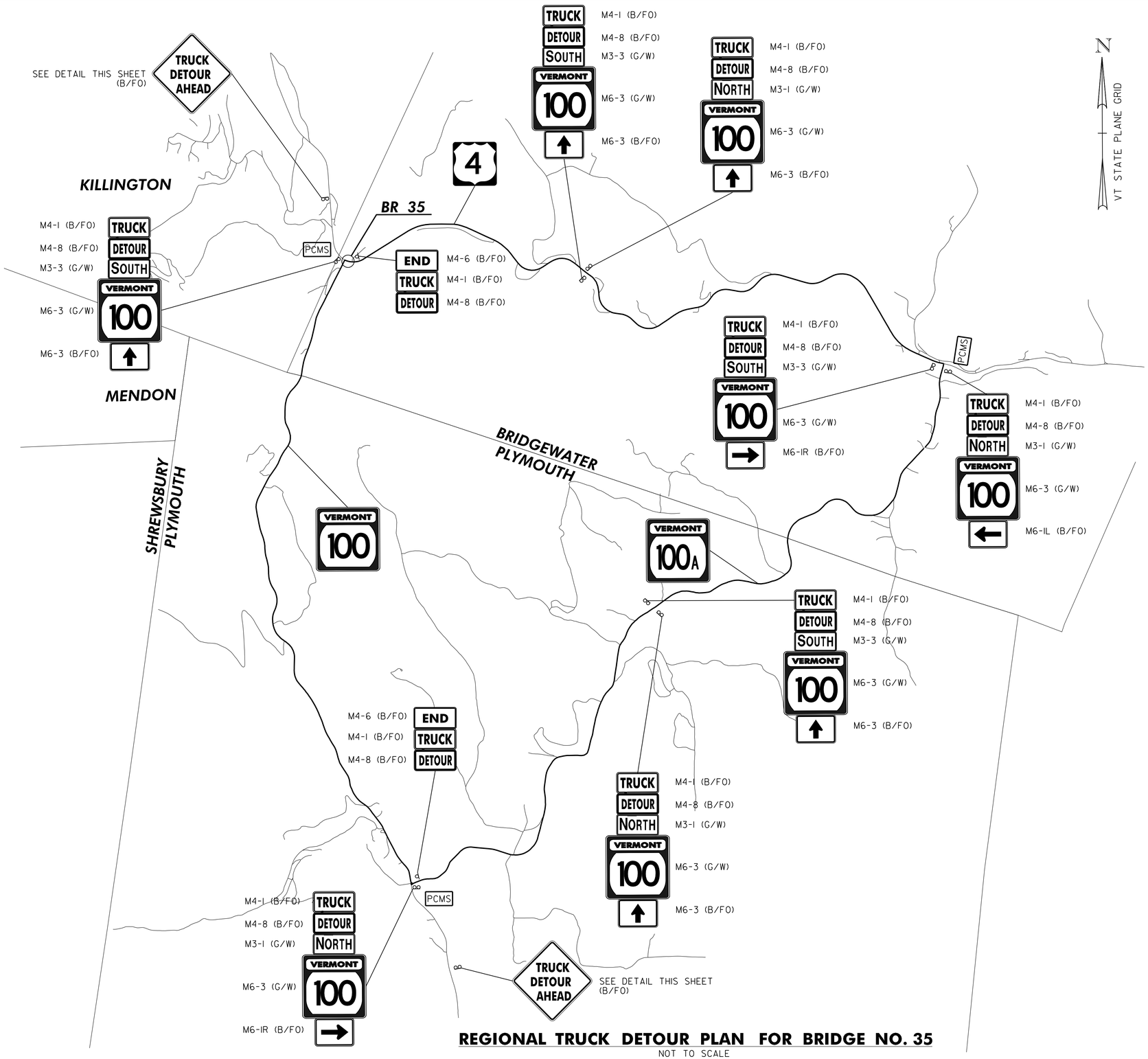
LEGEND

- FLOW OF TRAFFIC
- RETROREFLECTIVE PLASTIC DRUM
- WORK AREA
- ENERGY ABSORPTION ATTENUATOR (ITEM 621.56)
- TEMPORARY PORTABLE TRAFFIC CONTROL SIGNAL (SEE NOTES ON TRAFFIC CONTROL SHEET 1)
- TEMPORARY TRAFFIC BARRIER (ITEM 621.90)
- TYPE III BARRICADE (COST INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL (BRIDGE NO. 35)"
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN (ITEM 641.15)

PROPOSED SIGN CONFIGURATION

TRAFFIC CONTROL FOR BRIDGE NO. 35 WITH TEMPORARY PORTABLE TRAFFIC CONTROL SIGNALS PHASE II – EASTBOUND LANE CLOSED

PROJECT NAME:	BRIDGEWATER
PROJECT NUMBER:	BF MEMB(34)
FILE NAME: z13b110-tcp.dgn	PLOT DATE: 12/2/2014
PROJECT LEADER: JPB	DRAWN BY: MWS
DESIGNED BY: SRB	CHECKED BY: AEG
TRAFFIC CONTROL SHEET 3	SHEET 7 OF 36

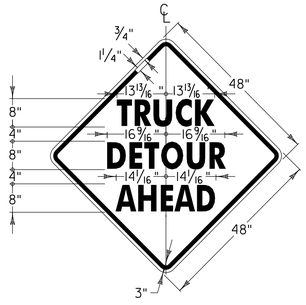


REGIONAL TRUCK DETOUR PLAN FOR BRIDGE NO. 35

NOT TO SCALE

REGIONAL TRUCK DETOUR NOTES:

1. TRUCK TRAFFIC WILL BE MAINTAINED ON A REGIONAL DETOUR VIA ROUTE 100A BETWEEN BRIDGEWATER AND PLYMOUTH.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DETOUR AND CONSTRUCTION SIGNING. THE EXACT LOCATION WILL BE COORDINATED WITH THE ENGINEER AND SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD.
3. TRAFFIC CONTROL WARNING SIGNS SHALL BE PROVIDED PER STANDARDS T-1, T-10, AND THE LATEST EDITION OF THE MUTCD. ADDITIONAL PROJECT CONSTRUCTION SIGNS SHALL BE INSTALLED AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. ALL ON AND OFF PROJECT SIGNS AND BARRICADES AS REQUIRED FOR THE DETOUR WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PAID FOR UNDER ITEM 641.10, "TRAFFIC CONTROL". ALL SIGNS AND BARRICADES SHALL BE INSPECTED DAILY AND REPAIRED AS NECESSARY. ALL SIGNS AND BARRICADES SHALL BE CLEARED OF DUST AND DEBRIS WEEKLY.
4. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE PLACED AT THE APPROXIMATE LOCATIONS SHOWN ON THE PLANS OR WHERE DIRECTED BY THE ENGINEER AND SHALL BE USED IN ACCORDANCE WITH SECTION 6F.60 OF THE MUTCD, FOURTEEN DAYS PRIOR TO THE START OF PHASE II CONSTRUCTION. THE THREE PCMS SHOWN ON TRAFFIC CONTROL SHEETS 1 THROUGH 3 THAT READ "SIGNAL AHEAD, PREPARE TO STOP" PER NOTE 11 ON TRAFFIC CONTROL SHEET 1 SHALL ALTERNATE THIS MESSAGE WITH "TRUCK DETOUR AHEAD (DATE) - (DATE)" TO WARN OF THE IMPENDING DETOUR. THE CONTRACTOR SHALL DETERMINE THE DATES FOR WHICH PHASE II CONSTRUCTION WILL OCCUR, BUT THE TIME FRAME SHALL NOT EXCEED 2 WEEKS IN DURATION. TWO ADDITIONAL PCMS SHALL THEN BE DEPLOYED TO THE LOCATIONS SHOWN ON THIS SHEET ONCE PHASE II CONSTRUCTION HAS BEGUN. THE PCMS FACING EASTBOUND TRAFFIC ON US 4 SHALL REMAIN IN PLACE AND CONTINUE TO ALTERNATE THE TWO MESSAGES THROUGHOUT PHASE II CONSTRUCTION. PAYMENT FOR THESE SIGNS WILL BE MADE UNDER ITEM 641.15, "PORTABLE CHANGEABLE MESSAGE SIGN".
5. THE ROUTE MARKERS USED FOR THE DETOUR AS SHOWN ON THE PLANS SHALL FOLLOW STANDARDS E-127 AND E-136B. THESE SIGNS SHALL BE REMOVED AT THE END OF THE CONSTRUCTION PERIOD. THESE SIGNS AND THEIR REMOVAL SHALL BE PAID FOR UNDER ITEM 641.10, "TRAFFIC CONTROL".
6. ACCESS TO ALL EXISTING DRIVES AND SIDE ROADS SHALL BE MAINTAINED AT ALL TIMES DURING ALL PHASES OF CONSTRUCTION.
7. INSTALLATION OF THE DETOUR SIGNS SHALL NOT BLOCK ANY EXISTING TRAFFIC CONTROL SIGN ASSEMBLIES AND SHALL MODIFY OR BE PLACED ADJACENT TO EXISTING SIGN ASSEMBLIES WHEN POSSIBLE. THE CONTRACTOR SHALL MAINTAIN AT LEAST 200 FEET BETWEEN SIGN ASSEMBLIES WHENEVER POSSIBLE.
8. EXISTING SIGNS THAT ARE IN CONFLICT WITH THE TRAFFIC FLOW OF THE DETOUR SHALL BE REMOVED OR COVERED BY THE CONTRACTOR. ALL SIGNS REMOVED OR COVERED SHALL BE REPLACED OR UNCOVERED WHEN THE TRAFFIC CONTROL PLAN IS DISASSEMBLED. PAYMENT FOR THIS WORK SHALL BE INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL".
9. CONTACT DIG-SAFE AT LEAST 48 HOURS PRIOR TO BREAKING GROUND TO INSTALL ANY POSTS.



SIGN DETAIL

BLACK ON FLOURESCENT ORANGE

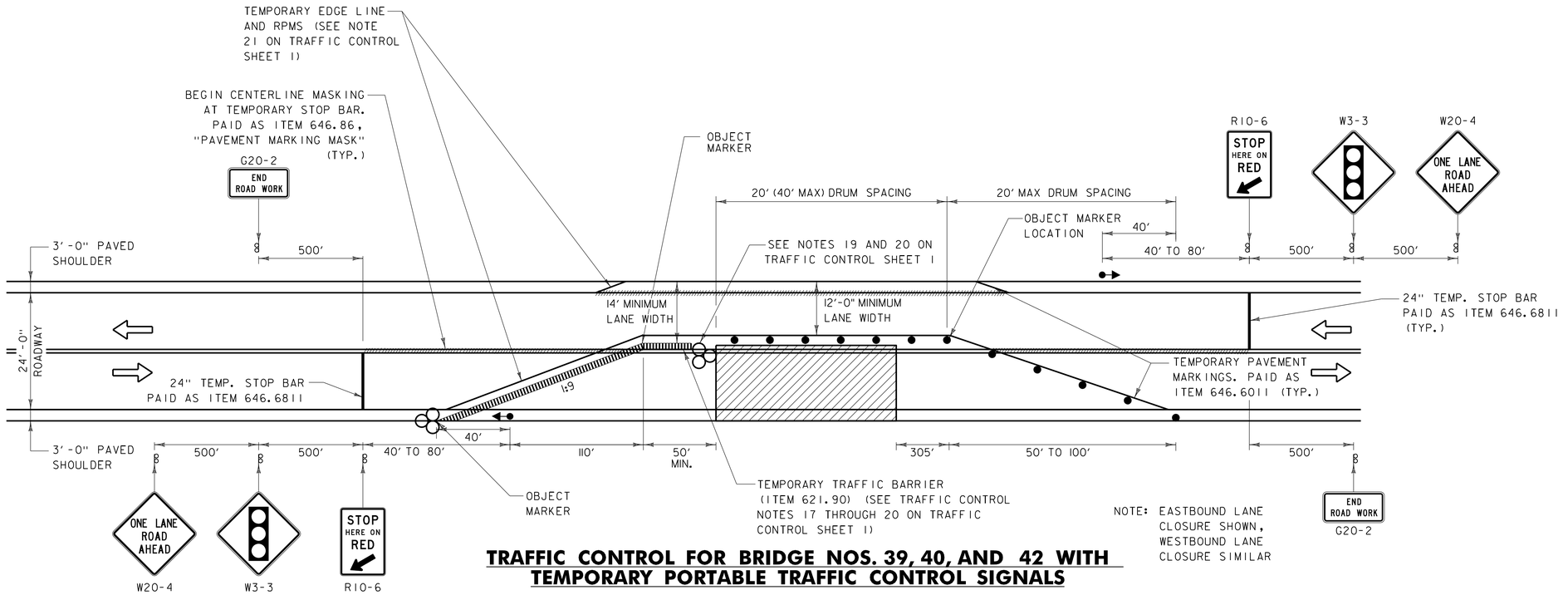
LEGEND

PCMS	PORTABLE CHANGEABLE MESSAGE SIGN (ITEM 641.15)
B/FO	BLACK ON FLOURESCENT ORANGE
G/W	GREEN ON WHITE

PROJECT NAME:	BRIDGEWATER
PROJECT NUMBER:	BF MEMB(34)

FILE NAME: z13b110-tcp.dgn	PLOT DATE: 12/2/2014
PROJECT LEADER: JPB	DRAWN BY: MWS
DESIGNED BY: SRB	CHECKED BY: AEG
TRAFFIC CONTROL SHEET 4	SHEET 8 OF 36

CLD XX-XXXX MODEL: TCP04



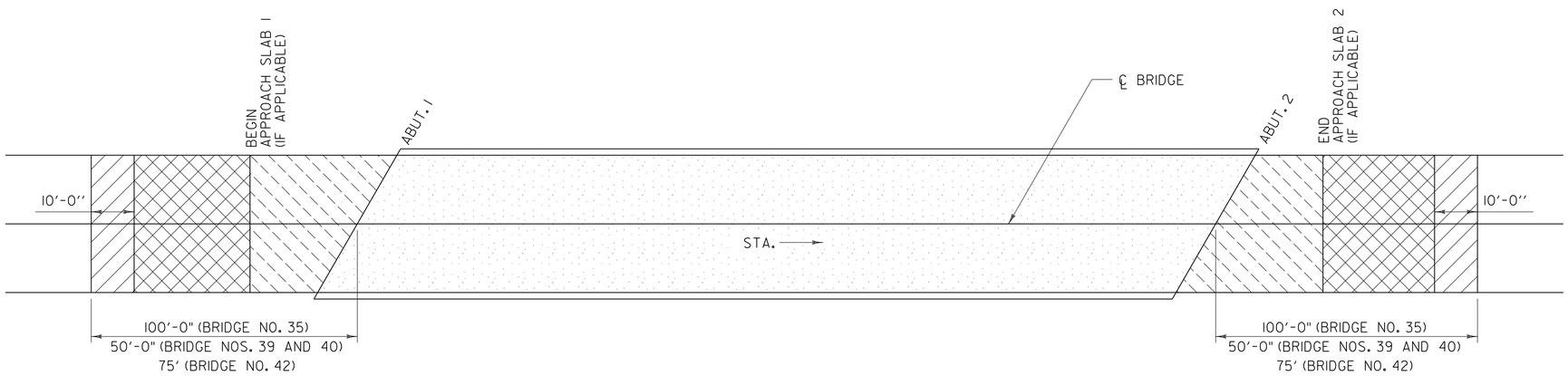
TRAFFIC CONTROL FOR BRIDGE NOS. 39, 40, AND 42 WITH TEMPORARY PORTABLE TRAFFIC CONTROL SIGNALS

LEGEND

- FLOW OF TRAFFIC
- RETROREFLECTIVE PLASTIC DRUM
- WORK AREA
- ENERGY ABSORPTION ATTENUATOR (ITEM 621.56)
- TEMPORARY PORTABLE TRAFFIC CONTROL SIGNAL (SEE NOTES ON TRAFFIC CONTROL SHEET 1)
- TEMPORARY TRAFFIC BARRIER (ITEM 621.90)

CLD XX-XXXX MODEL: TCP05

PROJECT NAME:	BRIDGEWATER
PROJECT NUMBER:	BF MEMB(34)
FILE NAME: z13b110-tcp.dgn	PLOT DATE: 12/2/2014
PROJECT LEADER: JPB	DRAWN BY: MWS
DESIGNED BY: SRB	CHECKED BY: AEG
TRAFFIC CONTROL SHEET 5	SHEET 9 OF 36



COLD PLANE - 1½"

COLD PLANE - 3"

REMOVE BITUMINOUS CONCRETE PAVEMENT TO THE TOP OF APPROACH SLAB.

REMOVE BITUMINOUS CONCRETE PAVEMENT TO THE TOP OF THE CONCRETE BRIDGE DECK AND REMOVE THE BARRIER MEMBRANE.

NOTE:

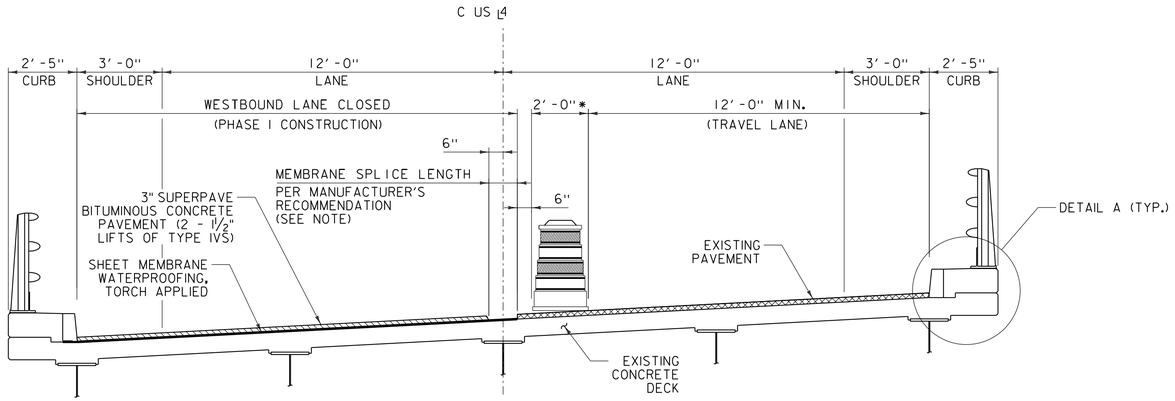
1. COLD PLANING WILL BE PAID FOR UNDER ITEM 210.10 EXCEPT AS OTHERWISE SPECIFIED IN NOTE 12 ON SHEET 2.
2. REMOVAL OF THE BIT. CONC. PAV'T. WILL BE PAID FOR UNDER ITEM 529.10.
3. REMOVAL OF THE BARRIER MEMBRANE WILL BE PAID FOR UNDER ITEM 580.16.

BITUMINOUS CONCRETE REMOVAL & REPLACEMENT PLAN

NOT TO SCALE

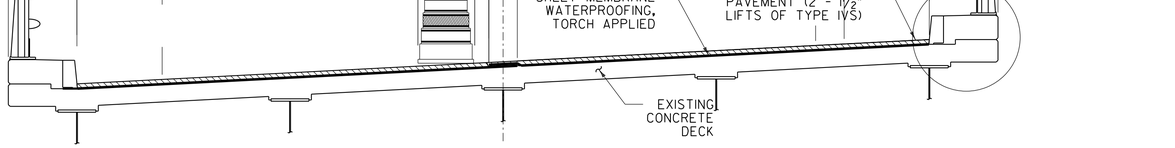
PROJECT NAME: BRIDGEWATER	
PROJECT NUMBER: BF MEMB(34)	
FILE NAME: z13b110-removal.dgn	PLOT DATE: 12/2/2014
PROJECT LEADER: JPB	DRAWN BY: MWS
DESIGNED BY: SRB	CHECKED BY: AEG
BITUMINOUS CONCRETE REMOVAL PLAN	SHEET 10 OF 36

CLD 12-02-2014X MODEL: Rmv101



TYPICAL SECTION – PHASE I CONSTRUCTION – BRIDGE NOS. 35, 39, & 42

NOT TO SCALE

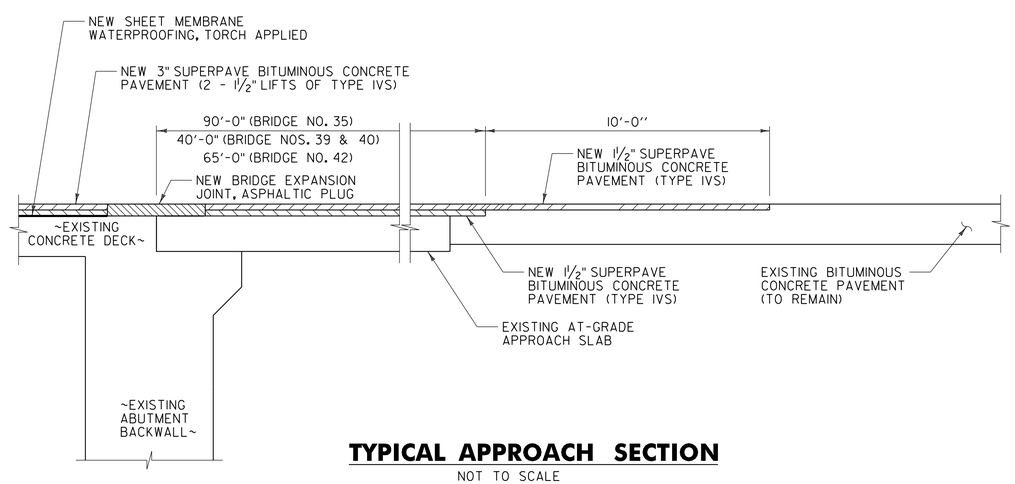


TYPICAL SECTION – PHASE II CONSTRUCTION – BRIDGE NOS. 35, 39, & 42

NOT TO SCALE

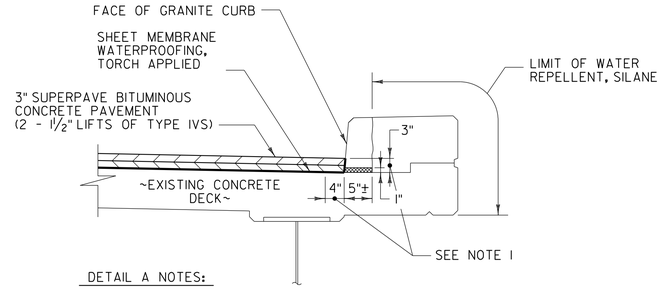
NOTE: PLACEMENT OF THE MEMBRANE SHALL START AT THE LOW SIDE OF THE BRIDGE. THE MEMBRANE SPLICE SHALL BE AS SHOWN ABOVE, WITH THE HIGH SIDE OVERLAPPING THE LOW SIDE.

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



TYPICAL APPROACH SECTION

NOT TO SCALE



DETAIL A NOTES:

1. INDICATES AREA ALONG DECK AND UP FACE OF CURB FOR PLACEMENT OF TWO COATS OF POLYURETHANE MEMBRANE.
2. POLYURETHANE MEMBRANE AND BLAST CLEANING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SHEET MEMBRANE WATERPROOFING, TORCH APPLIED.
3. SHEET MEMBRANE WATERPROOFING SHALL EXTEND TO FACE OF CURB AS SHOWN.
4. IN ADDITION TO THE REQUIREMENTS OF SUBSECTION 519.04, BLAST CLEAN 3" UP THE FACE OF CURB PRIOR TO PLACING THE MEMBRANE.
5. REPOINTING OF THE GRANITE CURB IS REQUIRED AND WILL BE 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

MATERIAL TOLERANCES

(IF USED ON PROJECT)

SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- ¼"
- AGGREGATE SURFACE COURSE	+/- ½"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

BRIDGE LENGTH AND WIDTH (CURB TO CURB)

BRIDGE NO.	WIDTH (CURB TO CURB) (FEET)	LENGTH (FEET)
35	30.00	202.00
39	30.00	138.00
40	30.00	99.00
42	30.00	168.00

ASPHALTIC PLUG JOINT REPLACEMENT SCHEDULE

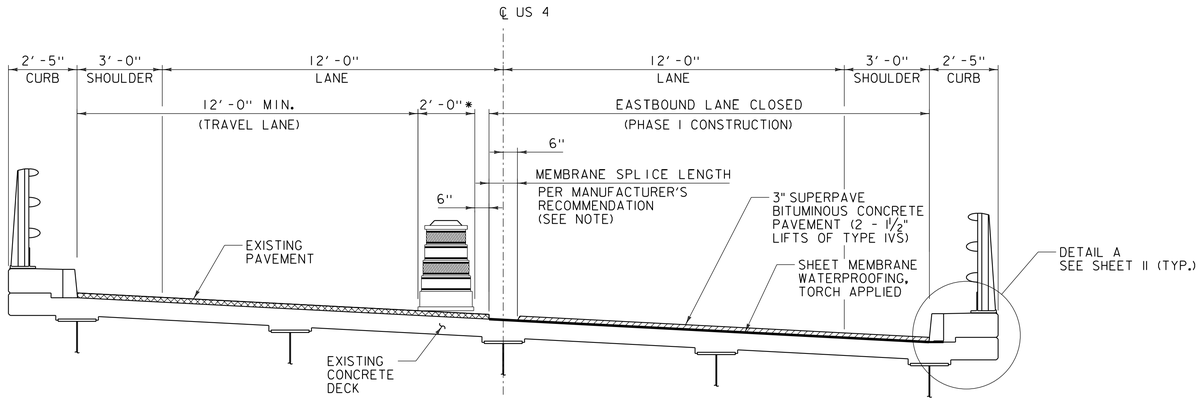
BRIDGE NO.	ABUT. 1	PIER 1	PIER 2	PIER 3	PIER 4	ABUT. 2	BRIDGE TOTALS
35	85 LF	60 LF	60 LF	-	-	55 LF	260 LF
39	33 LF	33 LF	-	-	-	33 LF	99 LF
40	42 LF	-	-	-	-	34 LF	76 LF
42	53 LF	43 LF	-	-	-	43 LF	139 LF

PER STRUCTURES STANDARD SD-516.10

PROJECT NAME: BRIDGEWATER
PROJECT NUMBER: BF MEMB(34)

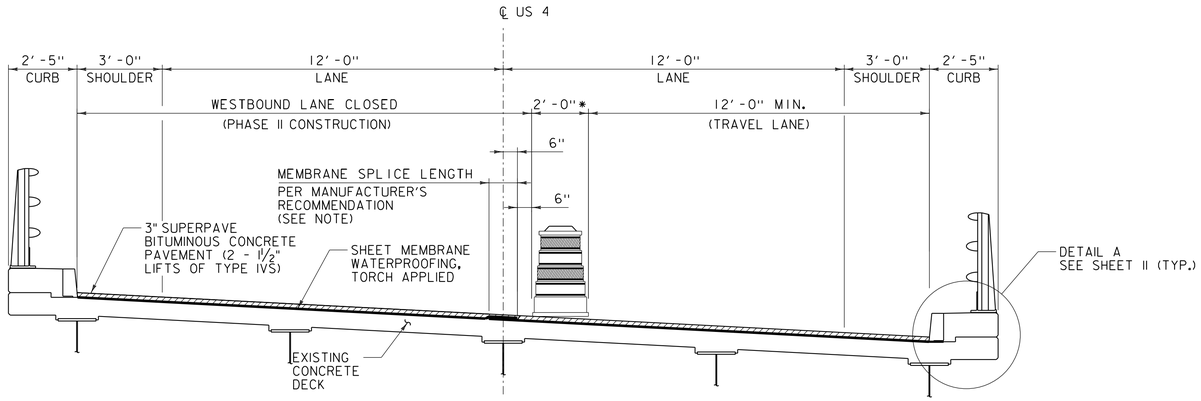
FILE NAME: z13b110-sect.dgn
PROJECT LEADER: JPB
DESIGNED BY: SRB
BITUMINOUS CONCRETE DETAILS SHEET 1

PLOT DATE: 12/2/2014
DRAWN BY: MWS
CHECKED BY: AEG
SHEET 11 OF 36



TYPICAL SECTION – PHASE I CONSTRUCTION – BRIDGE NO. 40

NOT TO SCALE



TYPICAL SECTION – PHASE II CONSTRUCTION – BRIDGE NO. 40

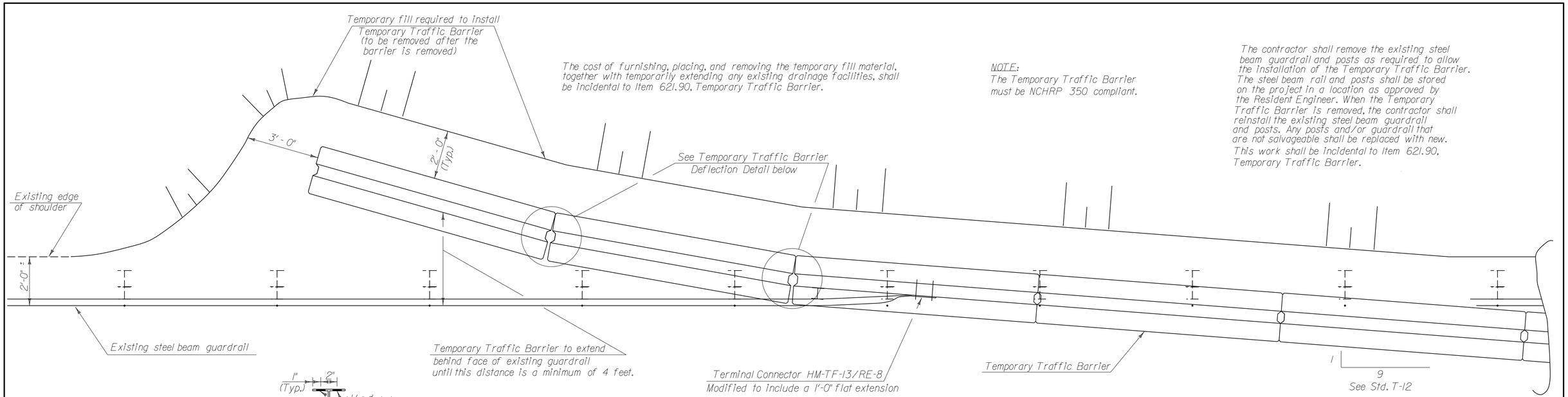
NOT TO SCALE

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

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

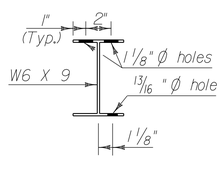
CLD XX-XXXX MODEL: Sect02

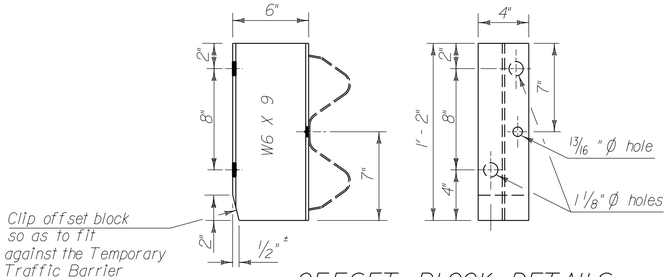
PROJECT NAME: BRIDGEWATER	
PROJECT NUMBER: BF MEMB(34)	
FILE NAME: z13b110-sect.dgn	PLOT DATE: 12/2/2014
PROJECT LEADER: JPB	DRAWN BY: MWS
DESIGNED BY: SRB	CHECKED BY: AEG
BITUMINOUS CONCRETE DETAILS SHEET 2	SHEET 12 OF 36



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

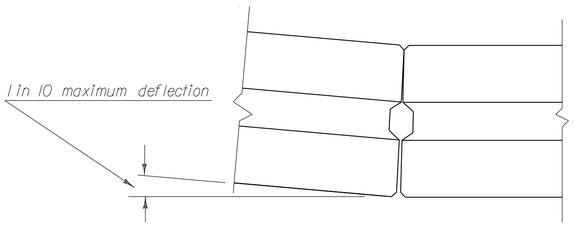
NTS





OFFSET BLOCK DETAILS

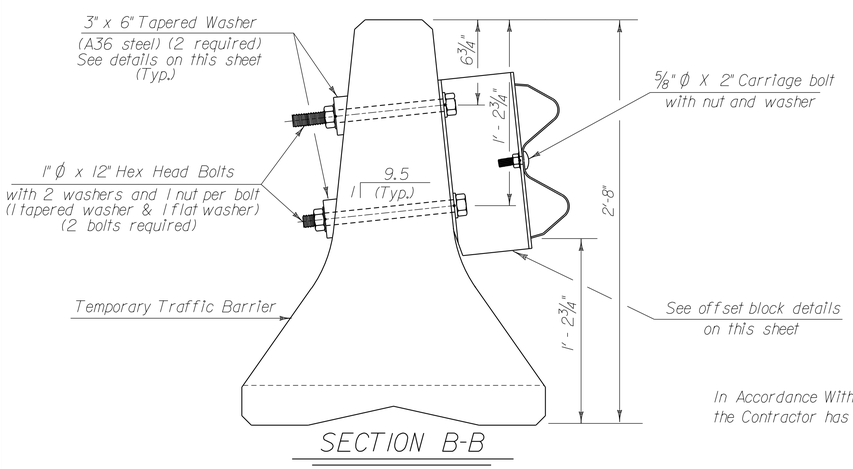
NTS



TEMPORARY TRAFFIC BARRIER DEFLECTION DETAIL

NTS

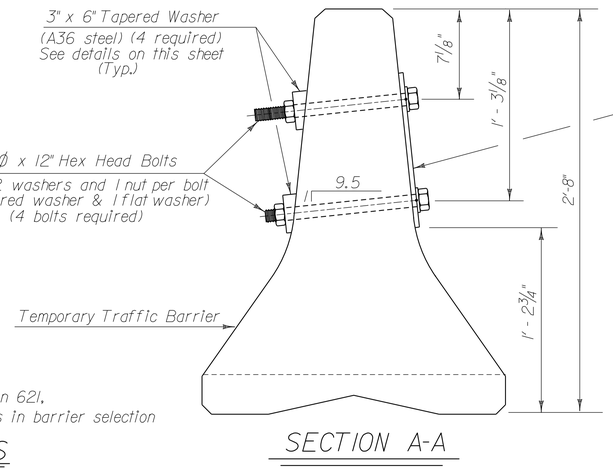
ELEVATION VIEW SHOWING POSITIVE CONNECTION BETWEEN TEMPORARY TRAFFIC BARRIER AND EXISTING GUARDRAIL



SECTION B-B

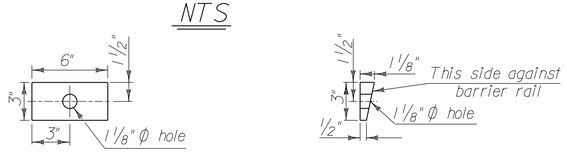
In Accordance With Section 621, the Contractor has options in barrier selection

NTS



SECTION A-A

NTS

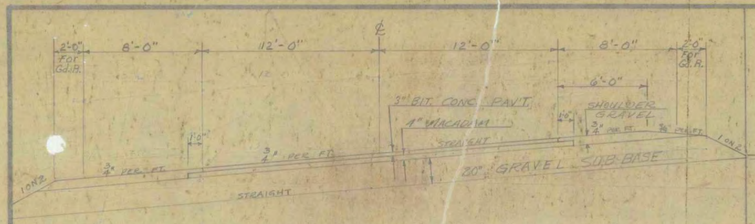


TAPERED WASHER DETAILS

NTS

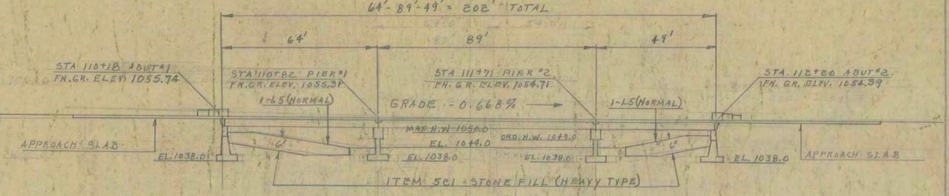
PROJECT NAME:	BRIDGEWATER
PROJECT NUMBER:	BF MEMB(34)
FILE NAME: z13b110-barrier.dgn	PLOT DATE: 12/2/2014
PROJECT LEADER: JPB	DRAWN BY: MWS
DESIGNED BY: SRB	CHECKED BY: AEG
TRAFFIC CONTROL BARRIER SHEET	SHEET 13 OF 36

CLD 13-0203 MODEL: Bar01



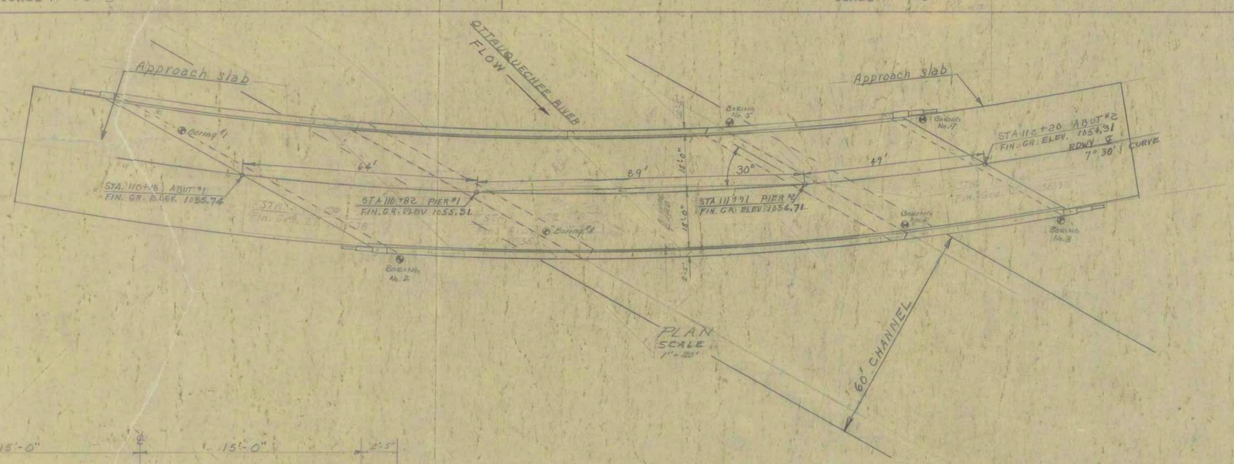
NEW HIGHWAY SECT. AT STA. 109+00 AND TO, STA. 113+00

SCALE 1" = 5'-0"



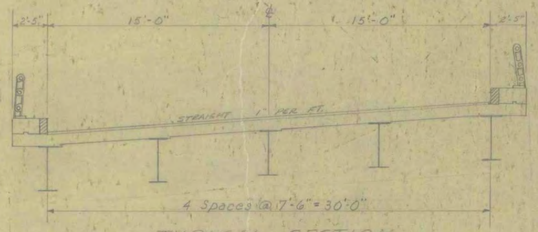
NEW HIGHWAY PROFILE ALONG ℄

SCALE 1" = 30'



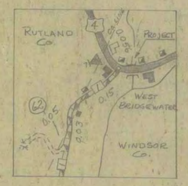
PLAN

SCALE 1" = 20'



TYPICAL SECTION

SCALE 1" = 5'-0"



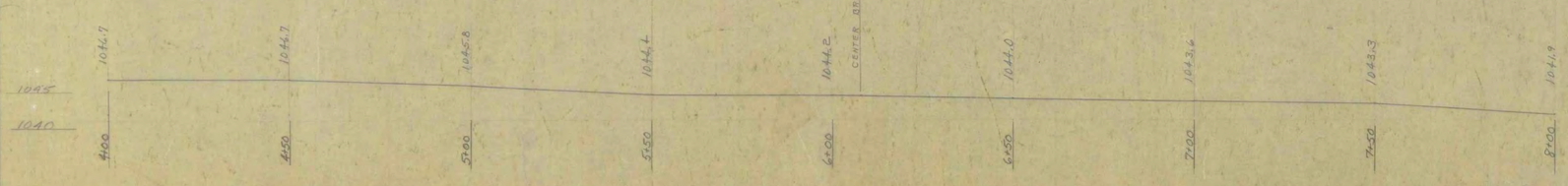
MAP

TOWN OF WEST BRIDGEWATER WINDSOR CO.

SCALE 1" = 1000'

PLAN

SCALE AS NOTED



PROFILE OF PROPOSED STREAM CHANNEL (EXISTING)

SCALE HORIZ. 1" = 20'
VERT. 1" = 10'

HIGHWAY NO U.S. 4 NAME OF HIGHWAY BLUE STAR MEMORIAL HIGHWAY
STRUCTURE NO 35 COUNTY WINDSOR TOWN BRIDGEWATER
PROJECT NO F-020-2(3) LOCATION SURVEY STA. 110+18 LOG. STA. 4+32

EXISTING STRUCTURE

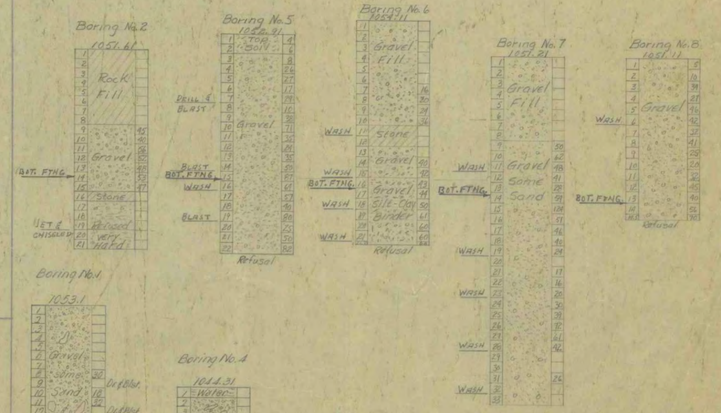
1 RATED LOADING OF EXISTING STRUCTURE H-15
2 TYPE OF EXISTING STRUCTURE STEEL PONY TRUSS
3 UNDERCLEARANCE ELEVATION OF EXISTING STRUCTURE 1053.3
4 WHAT DISPOSITION SHOULD BE MADE OF EXISTING STRUCTURE REMOVED COST OF REMOVAL $2000
5 SHOULD EXISTING STRUCTURE BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF NEW STRUCTURE NO
6 SHOULD NEW TEMPORARY STRUCTURE BE BUILT YES
7 ORDINARY HIGH WATER SURFACE ELEV. AT EXISTING STRUCTURE 1049.2 WATERWAY TO ORDINARY H.W. 302 SQ FT
8 EXTREME HIGH WATER AT EXISTING STRUCTURE 1051.0
9 SPAN OF EXISTING BRIDGE UPSTREAM 60' WATERWAY TO EXTREME H.W. 430 SQ FT
SPAN OF EXISTING BRIDGE DOWNSTREAM 56' WATERWAY TO EXTREME H.W. 510 SQ FT
10 TYPE OF FOUNDATION UNDER EXISTING ABUTMENTS APPROX. SAME AS BORINGS BELOW
11 DOES ALL WATER AT FLOOD ELEVATION PASS THROUGH EXISTING STRUCTURE YES
12 IF NOT AT WHAT ELEVATION IS RELIEF AFFORDED —
13 ADDITIONAL WATERWAY AREA PROVIDED —

NEW STRUCTURE

1 RECOMMENDED TYPE OF STRUCTURE COMPOSITE WF BEAM (60° SKEW)
2 RECOMMENDED CLEAR SPAN OR SPANS 64' - 89' - 49'
MEASURED PARALLEL TO ℄ NEW HIGHWAY 64' - 89' - 49' = 202' OVERALL
MEASURED AT RIGHT ANGLES TO ℄ STREAM 89' - 45' - 89'
3 ARE THERE OBJECTIONS TO A PIER IN THE STREAM, ANSWER YES OR NO No
4 ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE 1047.0
5 EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE 1050.0 SOURCE OF INFORMATION COMPUTED
6 IS ALL WATER INTENDED TO PASS THROUGH NEW STRUCTURE? YES
7 DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? MED. IS ORDINARY RISE RAPID? MED
8 LOW WATER ELEVATION AT NEW STRUCTURE 1044.5
9 DRAINAGE AREA IN ACRES ABOVE STRUCTURE 18,368 CHARACTER OF TERRAIN HILLY
10 IS STREAM EVER DRY? NO
11 VELOCITY OF STREAM AT HIGH WATER STAGE 9.5 FPS ESTIMATED DISCHARGE 3720 CFS
12 AREA FULL OPENING 437 SQ FT AREA BELOW ORDINARY H.W. 182 SQ FT
13 CHARACTER OF SCOUR NONE DRIFT NONE ICE SLIGHT
14 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE NONE
15 VERTICAL CLEARANCE ABOVE FLOOD ELEVATION NONE
16 ARE SIDEWALKS REQUIRED, IF SO ON WHAT SIDE NONE BOTH SIDES —
17 RECOMMENDED TYPE OF PAVEMENT CONCRETE - BITUMINOUS SURFACE
18 TRAFFIC TO BE MAINTAINED UNDER ITEM NO. 441 ONE OR TWO WAYS ONE PROBABLE COST $3000
19 PROBABLE COST OF CLEARING AND GRUBBING STREAM CHANNEL AT STRUCTURE SITE $200
20 SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES? NO
21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS 2 TONS/SQ FT SHOULD PILES BE USED? NO EST. LGTH.

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.



STATE OF VERMONT

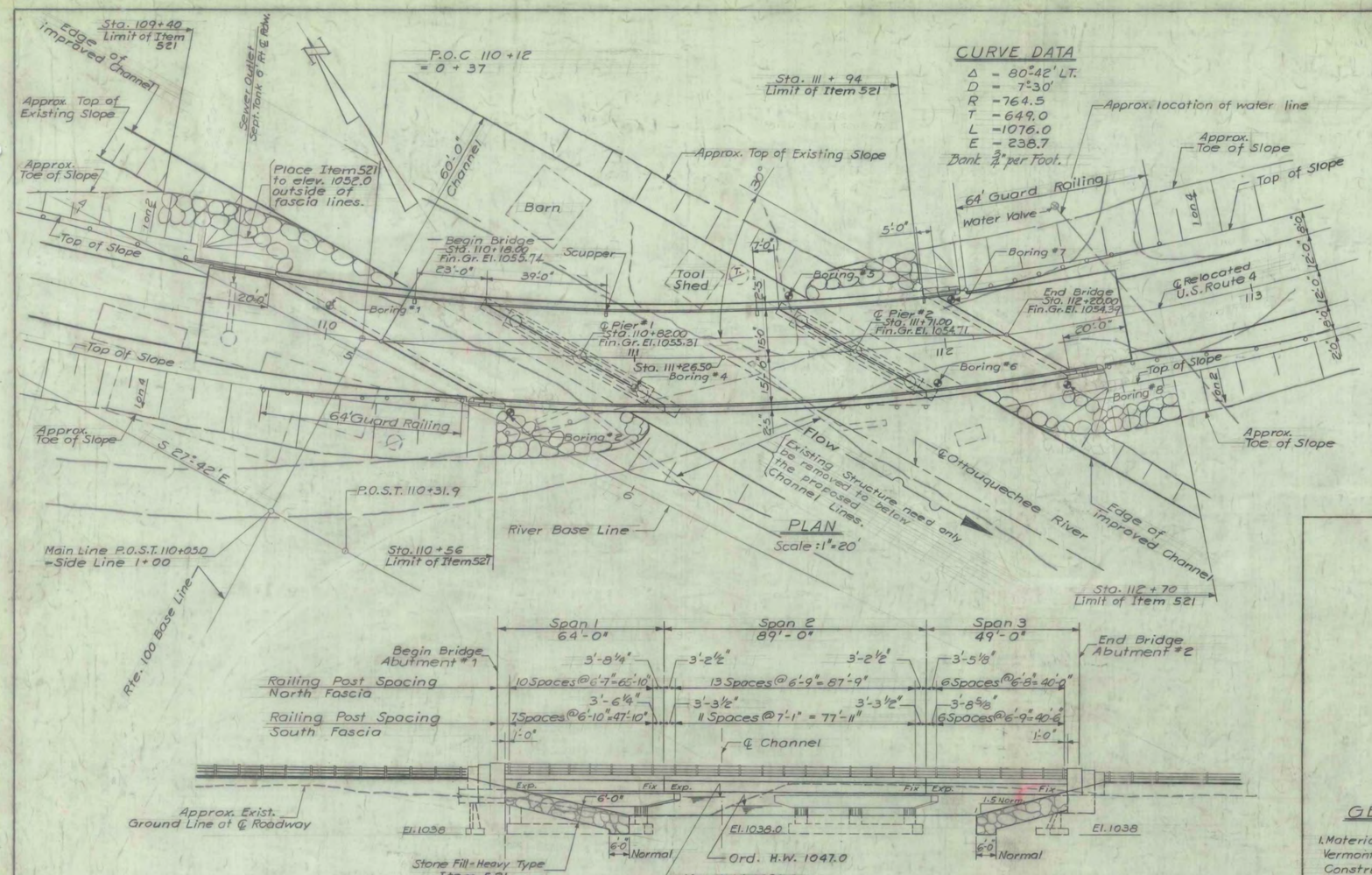
DEPT. OF HIGHWAYS

PRELIMINARY INFORMATION SHEET

DWG'R ABH
CK'D SMITH

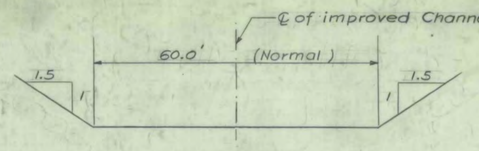
SHEET 13 OF 151

DESIGNED BRIDGE ENGINEER A.S. Bishop
APPROVED CHIEF ENGINEER H.E. Laugenour
BRIDGEWATER F-0



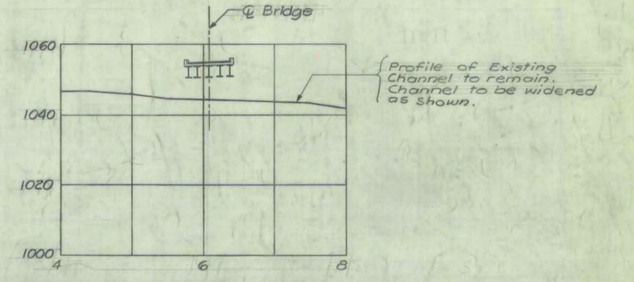
CURVE DATA

Δ = 80°-42' LT.
D = 7°-30'
R = 764.5
T = 649.0
L = 1076.0
E = 238.7
Bank ¾" per Foot.



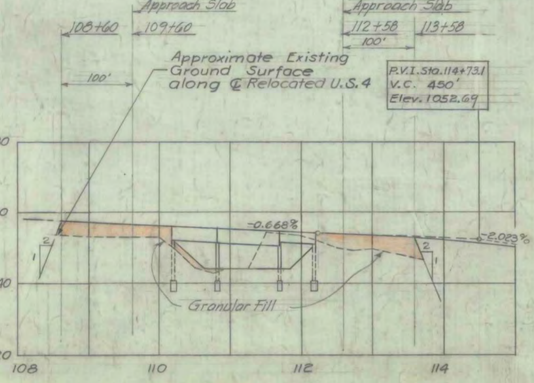
TYPICAL CHANNEL SECTION

Scale: 1/16" = 1:0"



PROFILE OF EXISTING STREAM CHANNEL

Horiz.: 1" = 100' - Vert.: 1" = 20'

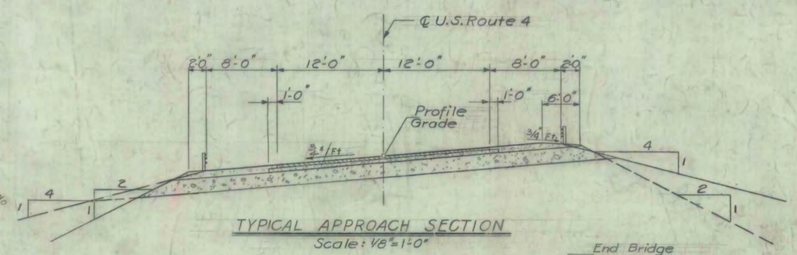


PROFILE OF U.S. 4

Scale: Horiz.: 1" = 100'
Vert.: 1" = 20'

ELEVATION

Scale: 1" = 20'



SUMMARY OF QUANTITIES

ITEM NO.	ITEM	UNIT	QUANTITY	FINAL QUANTITY
318	Tar Emulsion For Bridge Floors	Gal	~~391~~	193 ✓
282	Gravel Backfill	C.Y.	~~195~~	207 ✓
522	Stone Fill for Slope Protection	c.y.	~~307~~	318
106-G	Unclassified Channel Excavation	c. y.	~~6,503~~	6609 ✓
107	Structure Excavation	c. y.	~~551~~	603 ✓
441	Temporary Bridge	l. s.	Req. 1 V	1 ✓
361-B	Bituminous Concrete Pavt (Mod.)	ton.	108 V	108 ✓
401-B	Concrete, Class B (Mod.)	c. y.	~~756~~	739 ✓
402	Reinforcing Steel	lb.	~~98,467~~	100,572 ✓
403	Spiral Reinforcement (5,790°)	l.s.	Req.	1 ✓
404-A	Structural Steel	lb.	254,883 V	254,883 ✓
407	Asphaltic-Asbestos Coating	s.y.	75 V	75 ✓
442	Removal of Present Superstr.	l. s.	Req. 1 V	1 ✓
521	Stone Fill (Heavy Type)	c.y.	~~1,253~~	829 ✓
556-C	Granite Bridge Curb	l. f.	~~438~~	455 ✓
572	Bridge Railing (Mod.) S.A. 9-7-60 ✓	l. f.	~~390~~	384 ✓

GENERAL NOTES:

1. Material and Construction shall conform to State of Vermont Standard Spec.s for Highway and Bridge Construction, dated 1956.
2. All design in accordance with A.A.S.H.O. Standard Spec.s for Highway Bridges, dated 1957. Loading is H 20-S16-44 Truck as modified for National System of Interstate Highways
3. Concrete shall attain a minimum strength of 3000psi. prior to the addition of any superimposed load.
4. All concrete to be Class B
5. All welding to conform with the American Welding Society Standard Spec.s for Welded Highway and Railway Bridges.
6. Reinforcing Steel in top of piers and abutments shall be placed so as to allow drilling for anchor bolts.
7. All dimensions given are measured horizontally or vertically unless noted.
8. Beam seats to slope 1/4" / ft. and be coated with Asphaltic-Asbestos Coating Item 407, except under brg.s
9. Railing posts and pylon lines to be normal to grade and top of pylon to be parallel to grade.
10. The haunch over the beam to vary in order to compensate for camber remaining after D.L. deflection.
11. The beam seat elevations have been lowered to account for difference between actual camber and required camber.
12. Maximum bearing pressure for abutments and piers is 2T/sq.ft.
13. Where rock is encountered, footings shall not be poured until all blasting in adjacent areas has been completed.
14. Cross slope of ¼" per ft. extends full length of bridge and approach slab.
15. Minimum cover for reinforcing bars shall be 2" unless noted.

LIST OF SHEETS

STRUCTURE:

REFERENCE —

Std. DRWG. SB-20-56 : Bearing & Steel Diaphragms
Std. DRWG. SCB-30-58 (SH. 16 SH. 2) Superstructure
Std. DRWG. SB-5G-57 (SH. 1 & SH. 2) Bridge Railing
Std. DRWG. G-3 Detail of Guard Rail
Std. DRWG. SB-22-58: Detail of Exp. Jt. over Piers and at Abutments

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S. ROUTE 4

BRIDGE AT STA. 111 + 26.50
GENERAL PLAN, ELEVATION, PROFILES & SECTIONS

WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

DESIGNED: F.W.C. | CHECKED: K.W.R. | DATE: Feb. 1959
DRAWN: H.H.T. | IN CHARGE: H.G.C. | SCALE: AS SHOWN

PROJECT NO. F-020-2(3) SH. 39 OF 151

Boring No.1

Gr. El. 1053.1

Ft.	Material	Blows	Remarks
1			
2			
3	Gravel		
4			
5			
6	some		
7			
8		30	
9	Sand		Dr. & Blst.
10		18	
11	&	32	
12			Dr. & Blst.
13		38	
14	Boulders	45	
15 (Bott. Ftg.)		45	
16		60	
17	on		Wash & Blst.
18		28	
19			Dr. & Blst.
20	Rock	30	
21		30	
22		21	
23		25	

Elevation of Bottom of footings for Abutments & Piers is 1038.0 .

NOTE:
Foundation information was 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.
For location of borings see General Plan Sheet 1.

Boring No.5

Gr. El. 1052.91

Ft.	Material	Blows	Remarks
1	Top	4	
2	Soil	6	
3		8	
4		26	
5		27	
6		17	
7		29	Dr. & Blst.
8		10	
9		38	
10		71	
11		35	
12	Gravel	24	
13		35	
14		50	Blst.
15 (Bott. Ftg.)		87	
16		64	Wash
17		57	
18		40	
19		80	Blst.
20		25	
21		50	
22		82	

Refusal

Boring No.7

Gr. El. 1051.21

Ft.	Material	Blows	Remarks
1			
2			
3			
4	Gravel		
5	Fill		
6			
7			
8			
9		50	
10		62	
11		48	Wash
12		41	
13 (Bott. Ftg.)		28	
14		54	
15		124	
16		51	
17		46	
18		40	
19	Gravel	24	Wash
20			
21		17	
22	some	16	
23		20	Wash
24		30	
25	Sand	39	
26		72	
27		61	
28		42	Wash
29			
30			
31		26	
32			Wash
33			

Boring No.2

Gr. El. 1051.61

Ft.	Material	Blows	Remarks
1			
2			
3	Rock		
4			
5	Fill		
6			
7			
8			
9		45	
10		40	
11		56	
12	Gravel	52	
13		48	
14 (Bott. Ftg.)		53	
15		47	
16	Stone		
17			
18			
19	Refused		Jet &
20	Very Hard		Chiseled
21			

Boring No.4

Gr. El. 1044.31

Ft.	Material	Blows	Remarks
1	Water		
2			
3	Gravel		
4			
5	some		
6 (Bott. Ftg.)			Dr. & Blst.
7	Sand	12	
8		14	
9	&	20	
10		21	
11	Stones	25	Ref.

Boring No.6

Gr. El. 1054.11

Ft.	Material	Blows	Remarks
1			
2			
3			
4			
5	Gravel		
6	Fill		
7		16	
8		20	
9		24	
10		36	
11	Stone		Wash
12			
13			
14	Gravel	40	
15		42	Wash
16 (Bott. Ftg.)		43	
17	Gravel	44	
18		50	Wash
19	Silt-Clay	61	
20		60	
21	Binder	60	Wash
	Refusal	60	

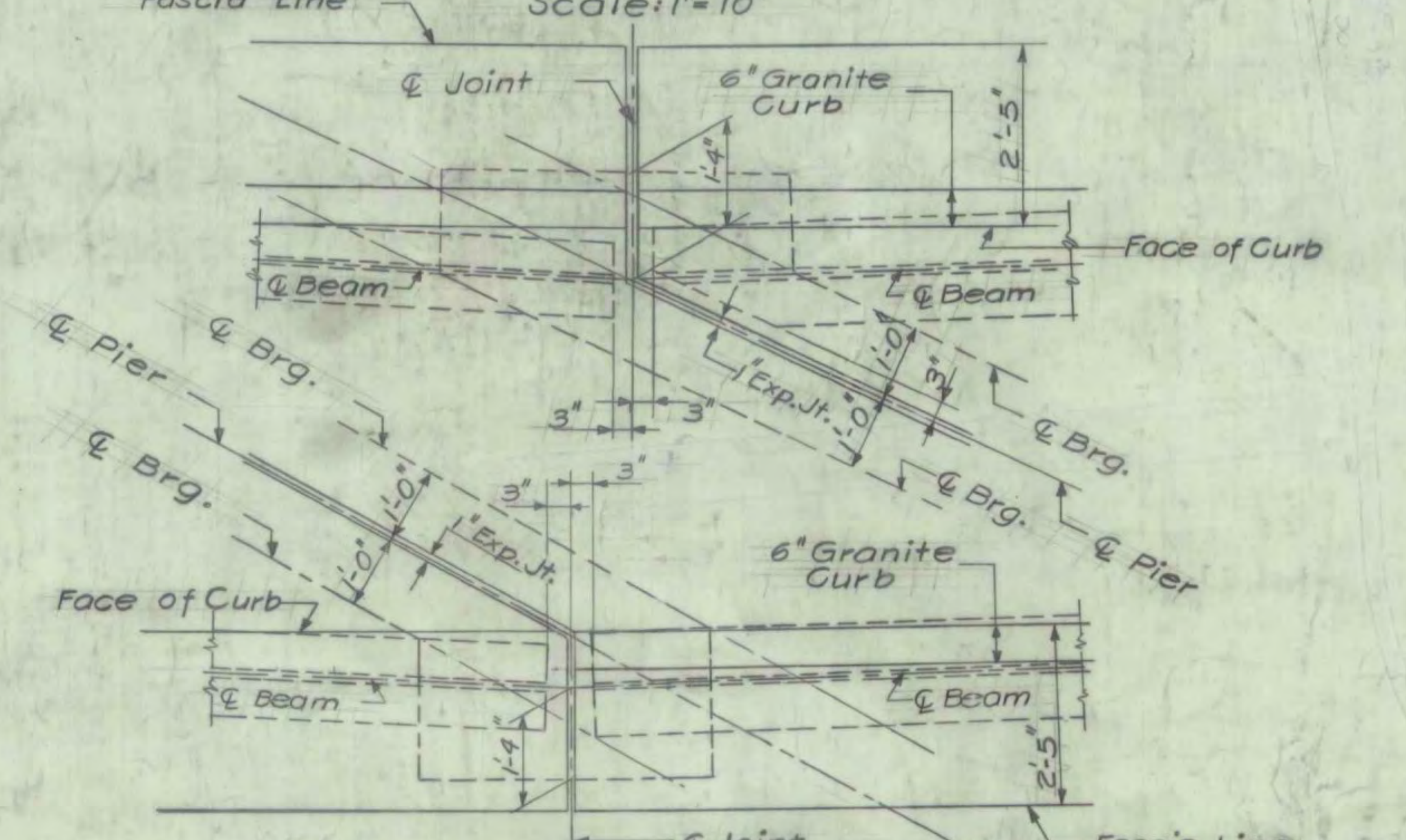
Boring No.8

Gr. El. 1051.11

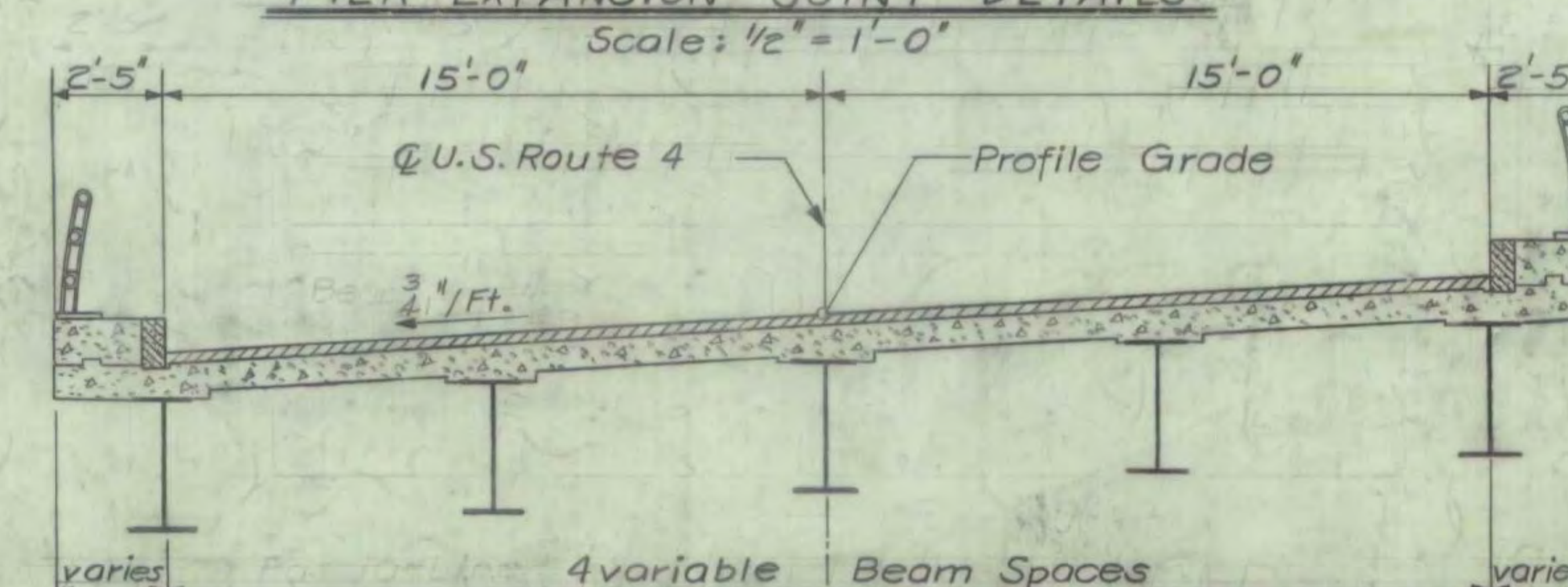
Ft.	Material	Blows	Remarks
1		5	
2		10	
3		34	
4		27	
5		46	
6		42	Wash
7	Gravel	32	
8		41	
9		25	
10		20	
11		32	
12		45	
13 (Bott. Ftg.)		40	
14		56	
	Refusal	70	

BORING LOGS

FRAMING PLAN
Scale: 1" = 10'



PIER EXPANSION JOINT DETAILS
Scale: 1/2" = 1'-0"



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

NOTE:
Camber shown is minimum Camber likely to remain permanent.
Beams in the same span are not parallel to each other.

BEAM SCHEDULE			
BEAM	SIZE	CAMBER	COVER PLATE
1 - A	33 WF 130	1 3/4"	10" x 7/8" x 36'-6"
1 - B	33 WF 130	1 3/4"	10" x 7/8" x 36'-6"
1 - C	36 WF 150	2"	10" x 7/8" x 39'-6"
1 - D	36 WF 150	2"	10" x 7/8" x 39'-6"
1 - E	36 WF 160	2 1/4"	13" x 7/8" x 46'-3"
2 - A	36 WF 245	3 1/2"	14" x 1" x 51'-10"
2 - B	36 WF 245	3 1/2"	14" x 1" x 51'-10"
2 - C	36 WF 300	3 3/4"	14" x 1" x 52'-8"
2 - D	36 WF 300	4"	14" x 1" x 52'-8"
2 - E	36 WF 300	4 1/4"	18" x 1" x 59'-8"
3 - A	33 WF 141	1 1/4"	NONE
3 - B	↕	↕	↕
3 - C			
3 - D			
3 - E	33 WF 141	1 1/4"	NONE

NOTES:
1. For General Notes, see Sheet 1,
2. Beam lengths given are C.C. Bearing,
3. All Diaphrgm 18 [42.7.

BRIDGEWATER
BF MEMB (34)
SHEET 16 OF 36
BRIDGE NO. 35
FOR REFERENCE ONLY

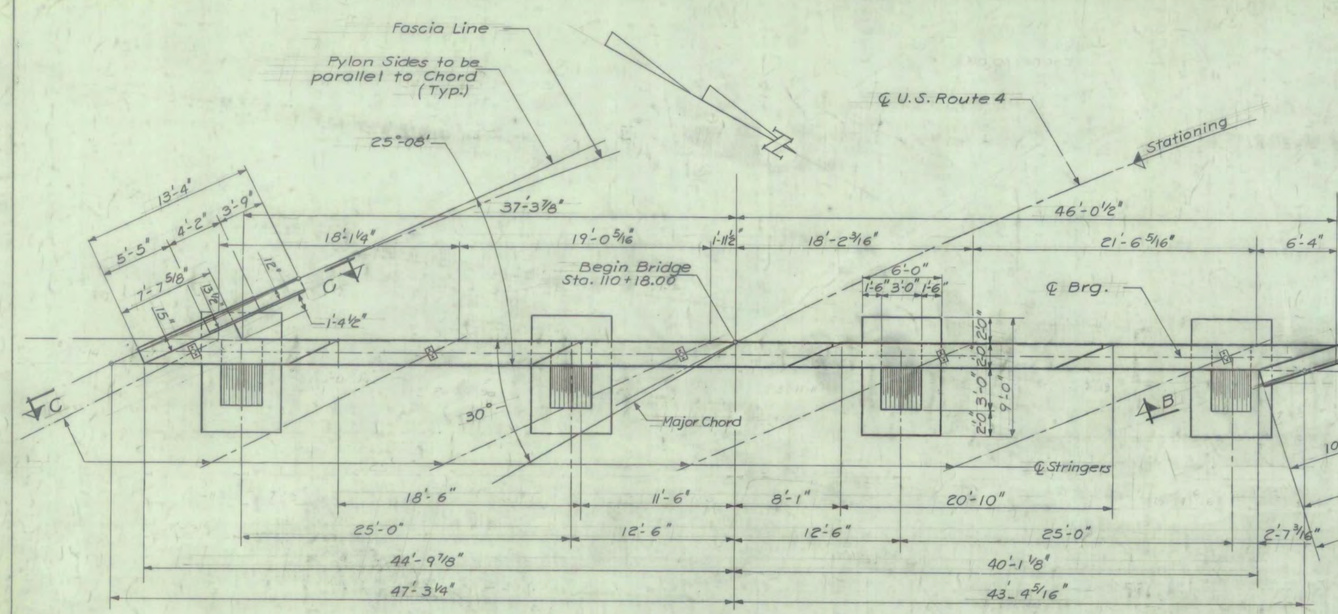
VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S. ROUTE 4

BRIDGE AT STA. 111 + 26.50
FRAMING PLAN,
BORING LOGS & SECTION

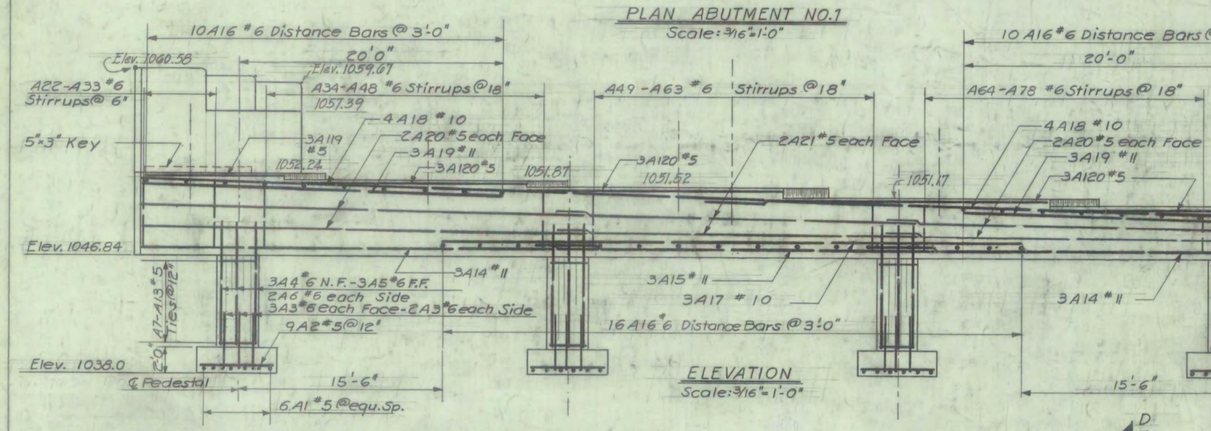
WM H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

DESIGNED: F.W.C.	CHECKED: J.R.	DATE: Feb. 6, 1959
DRAWN: H.H.T.	IN CHARGE: H.G.C.	SCALE: AS NOTED

PROJECT NO. F-020-2(3) SH 40 OF 151

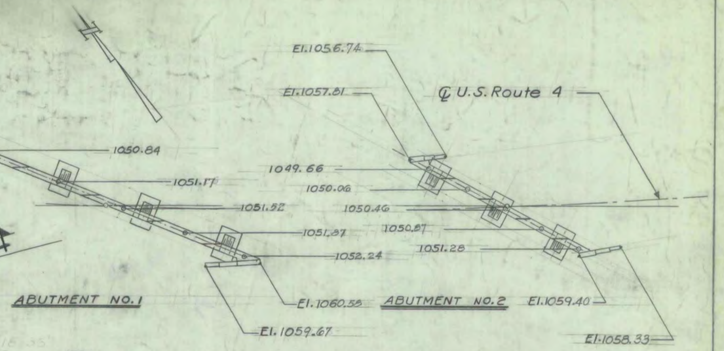


PLAN ABUTMENT NO.1
Scale: 3/16"=1'-0"

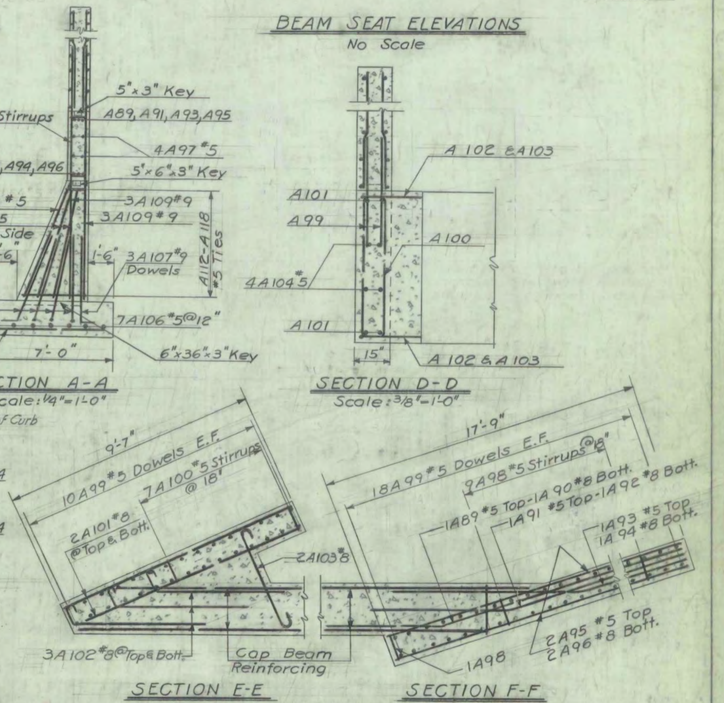


ELEVATION
Scale: 3/16"=1'-0"

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



BEAM SEAT ELEVATIONS
No Scale

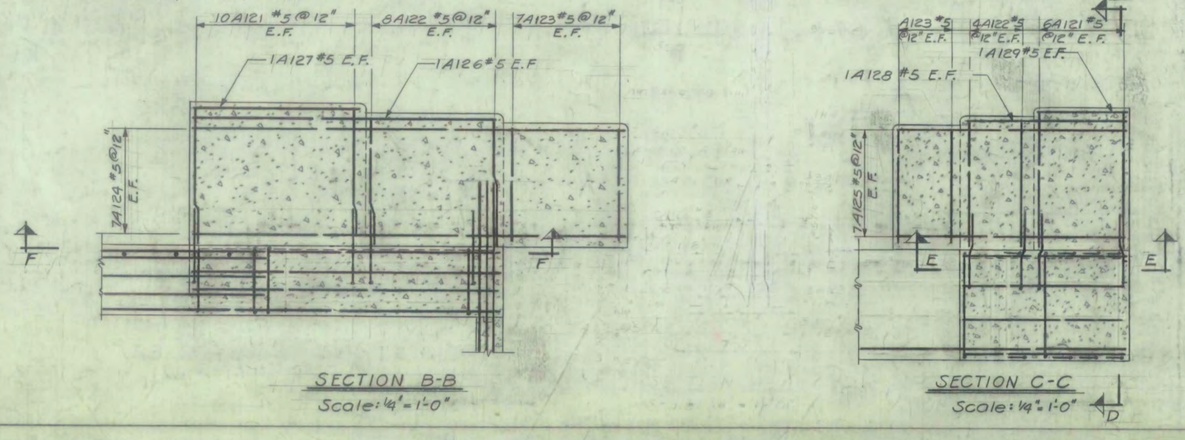


SECTION A-A
Scale: 1/4"=1'-0"

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

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

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



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

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

FINAL	ESTIMATED QUANTITIES				
	ITEM NO.	ITEM	NEAT	OVERRUN	TOTAL
212 ✓	107	Structure Excavation (c.y.)	~~158~~	~~16~~	~~174~~
88 ✓	401B	Concrete Class B Mod.(c.y.)	~~80~~	~~4~~	~~84~~
10 ✓	407	Asphaltic-Asbestos Coating (s.y.)	10 ✓	–	10 ✓

NOTES:
1. For General Notes, see Sheet No. 1.
2. For Reinforcing Bar Schedule and Quantities see Sheet 6

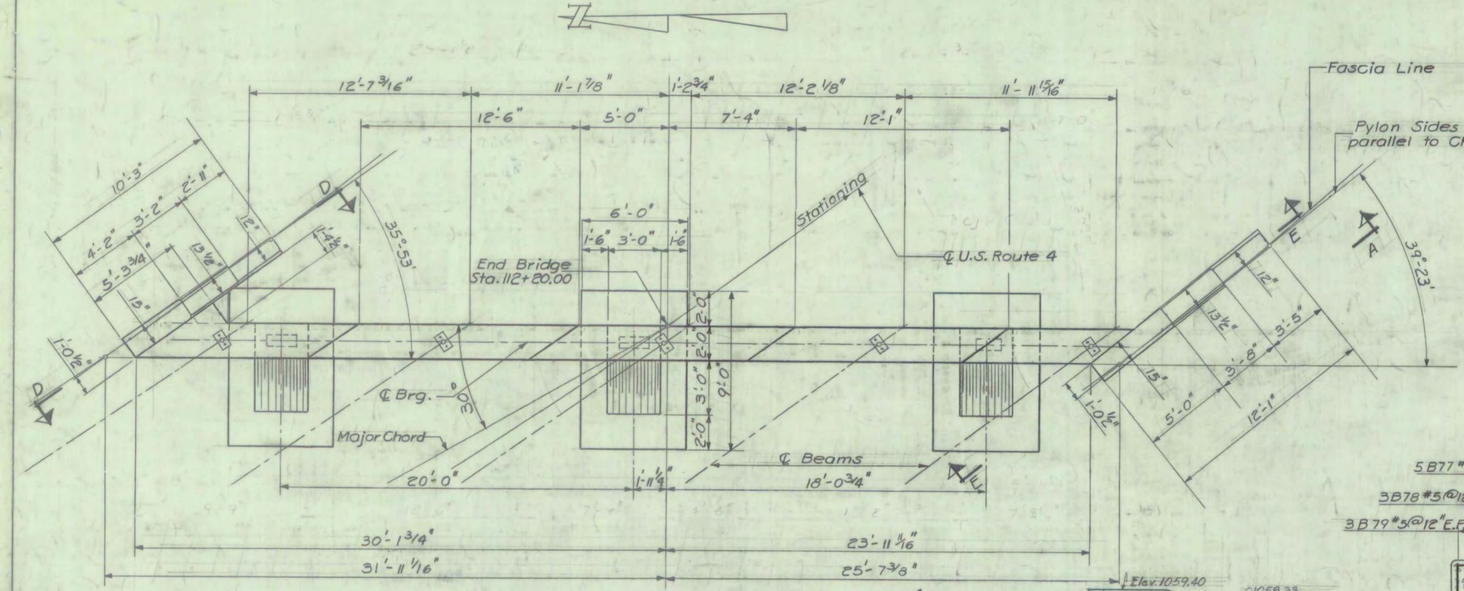
VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S. ROUTE 4

BRIDGE AT STA. 111+26.50

ABUTMENT NO.1 DETAILS

WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

DESIGNED: T.J.S | CHECKED: W.OWEN | DATE: Feb. 6, 1959
DRAWN: H.H.T. | IN CHARGE: H.G.C. | SCALE: AS SHOWN
PROJECT NO. F-020-2 (3) SH. 41 OF 151



FINAL	ESTIMATED QUANTITIES				
	ITEM NO.	ITEM	NEAT	OVERRUN	TOTAL
~~148~~ ✓	107	Structure Excavation (c.y.)	~~123~~	~~12~~	~~135~~
~~50~~ ✓	401B	Concrete Class B Mod. (c.y.)	~~50~~	~~2~~	~~52~~
7 ✓	407	Asphaltic Asbestos Coating (s.y.)	7 ✓	–	7 ✓

NOTES:

1. For General Notes see Sheet No. 1
2. For Beam Seat and Pylon Elevations see Sheet No. 3
3. For Reinforcement Bar Schedule and Quantity, see Sheet # 6

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
US ROUTE 4

BRIDGE AT STA. 111 + 26.50

ABUTMENT NO. 2 DETAILS

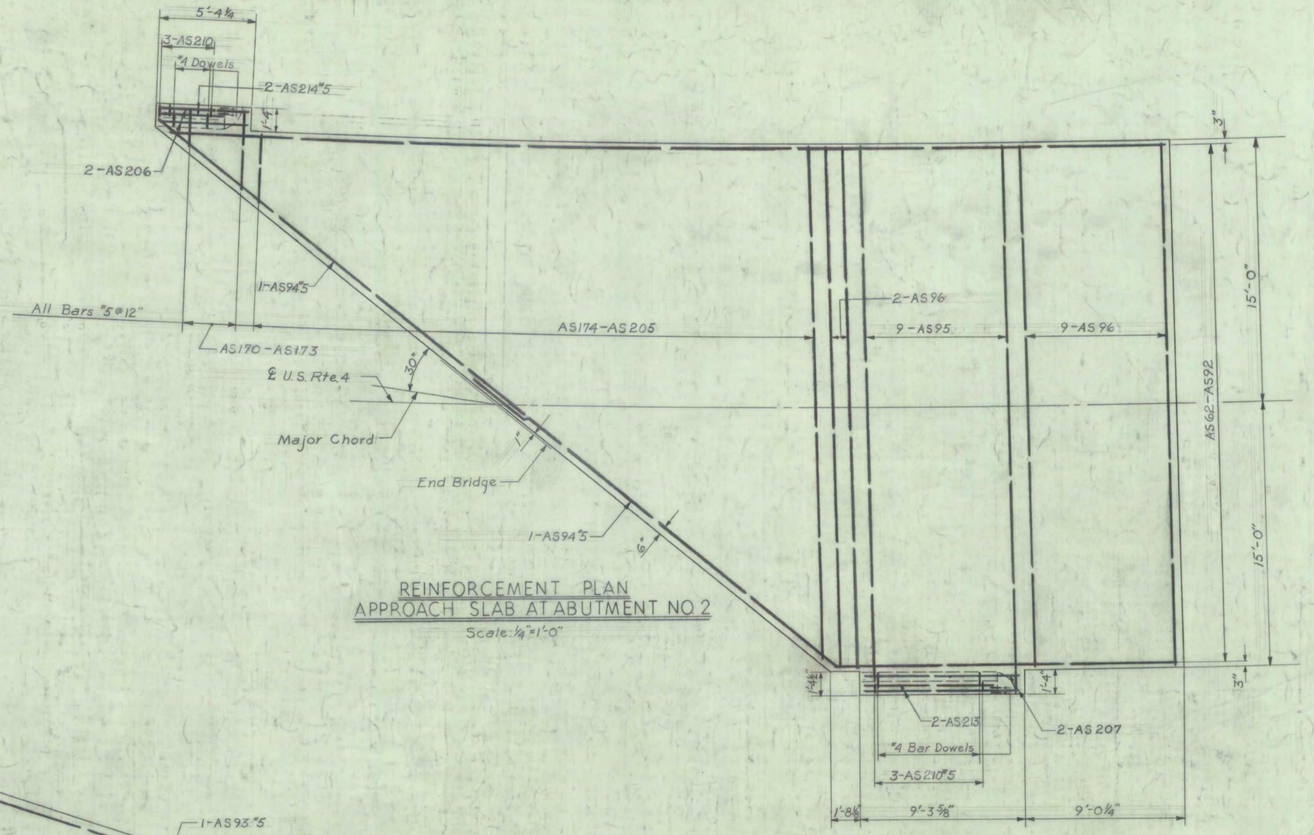
WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

DESIGNED: T.S.	CHECKED: G.G.S.	DATE: Feb. 6, 1959
DRAWN: H.H.T.	IN CHARGE: H.G.C.	SCALE: AS NOTED

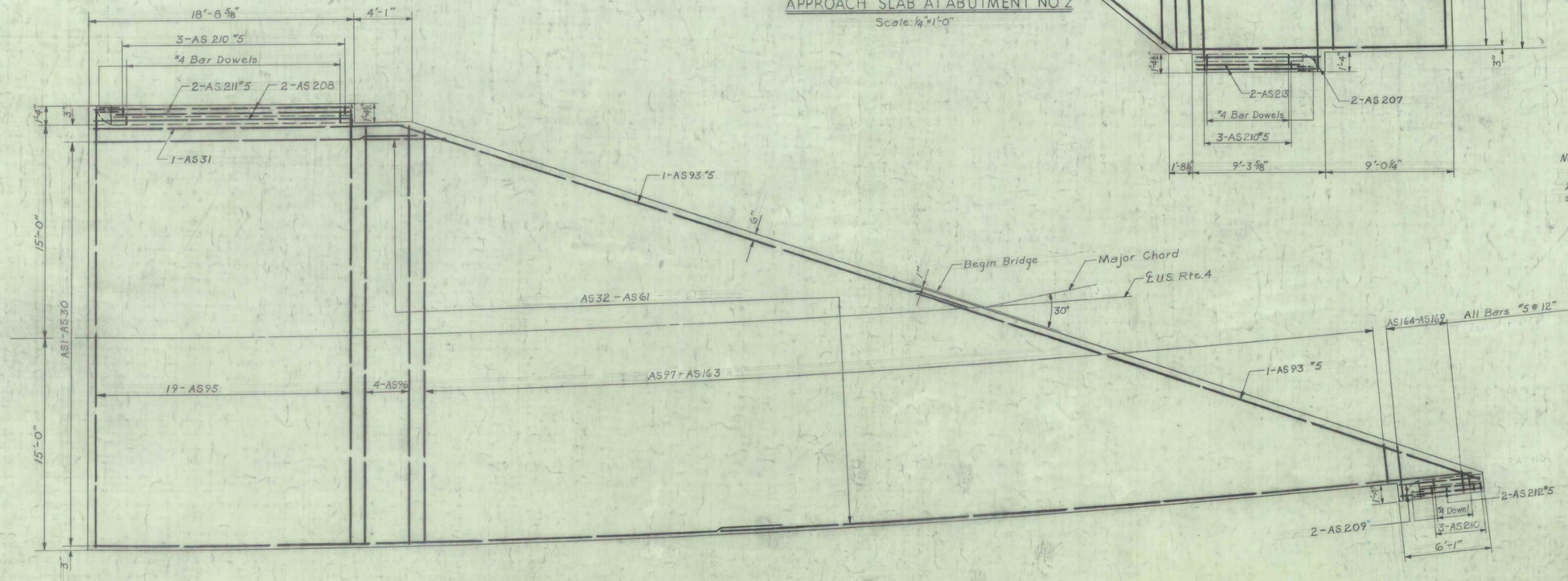
PROJECT NO. F-020-2(3) SH. 42 OF 151

BRIDGE SHEET 4 OF 8

ESTIMATED QUANTITIES					FINAL
ITEM NO.	ITEM	NEAT	OVERRUN	TOTAL	
401-B	CONCRETE CLASS B MOD. (C.Y.)	120 ✓	~~6~~	~~126~~	120 ✓
556-C	GRANITE BRIDGE CURB(LF)	34 ✓	—	34 ✓	34 ✓



REINFORCEMENT PLAN
APPROACH SLAB AT ABUTMENT NO.2
Scale: ½"=1'-0"



REINFORCEMENT PLAN
APPROACH SLAB AT ABUTMENT NO.1
Scale: ¼"=1'-0"

Notes:
1. For General Notes, see Sheet No.1
2. For typical sections and standard details, see, Standard Sheet: SB-AS 57.

BRIDGEWATER
BF MEMB (34)
SHEET 19 OF 36
BRIDGE NO. 35
FOR REFERENCE ONLY

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U S ROUTE 4

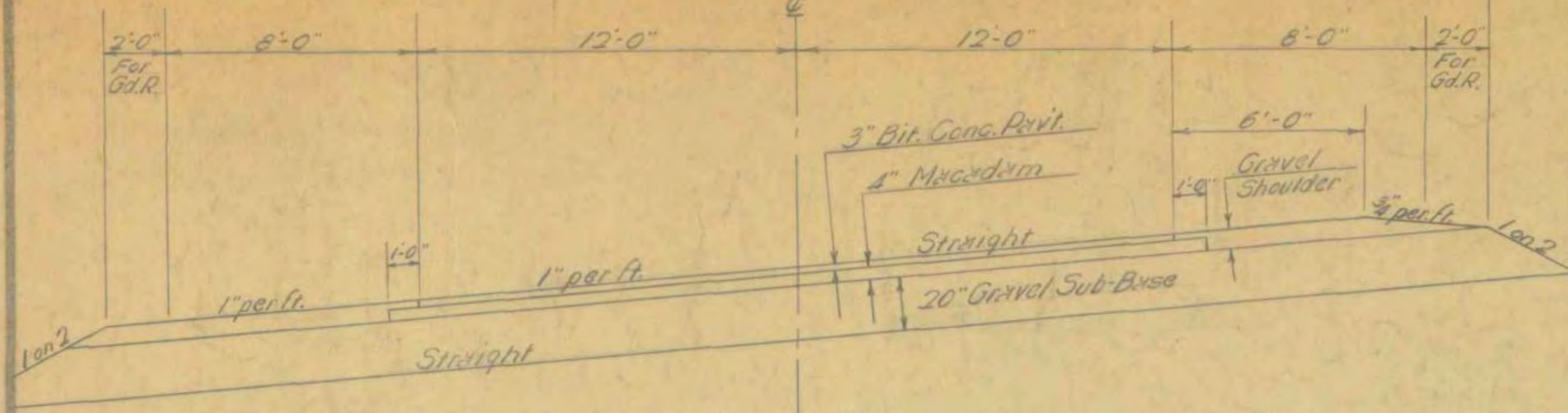
BRIDGE AT STA. 111+26.50
APPROACH SLAB DETAILS
AT ABUTMENT'S NO.1&2

WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

DESIGNED: F.W.C.	CHECKED: T.J.S.	DATE: Feb. 6, 1959
DRAWN: W.L.M.	IN CHARGE: H.G.C.	SCALE: AS NOTED

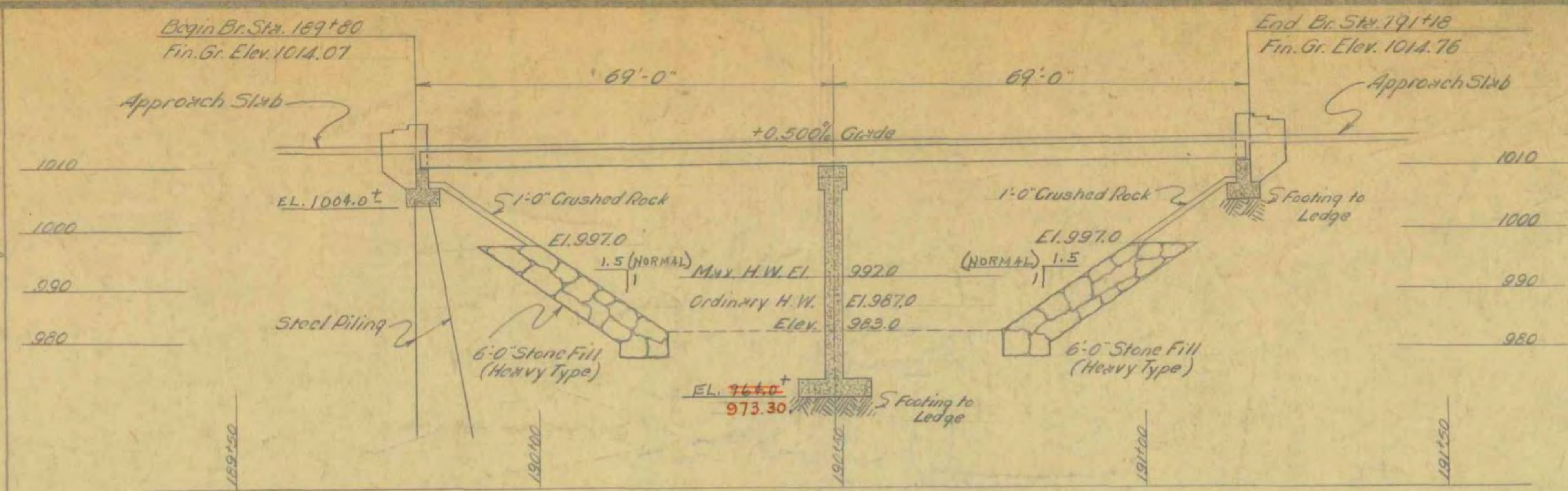
PROJECT NO. F-020-2 (3) SH 45 OF 151

BR 39



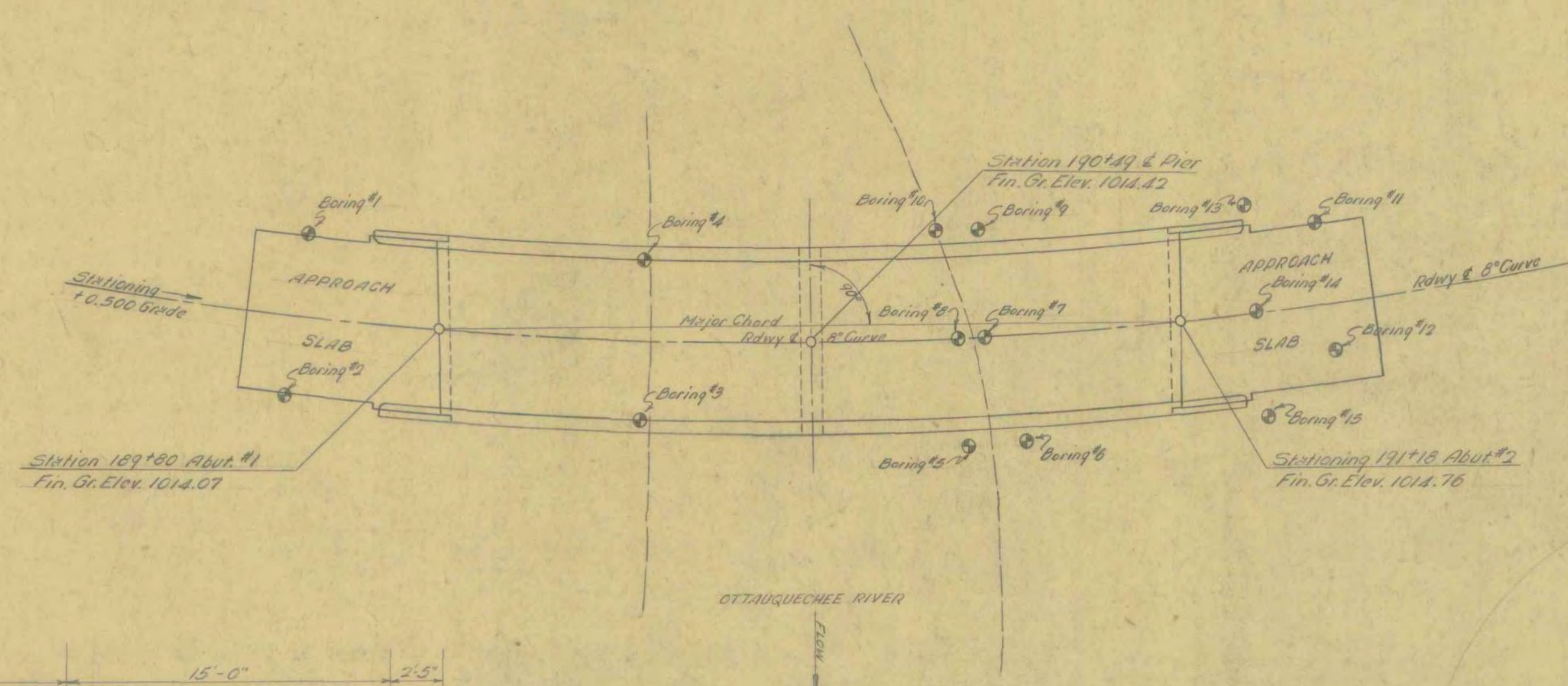
NEW HIGHWAY SECT. STA. 189+00± TO AND STA. 199+00±

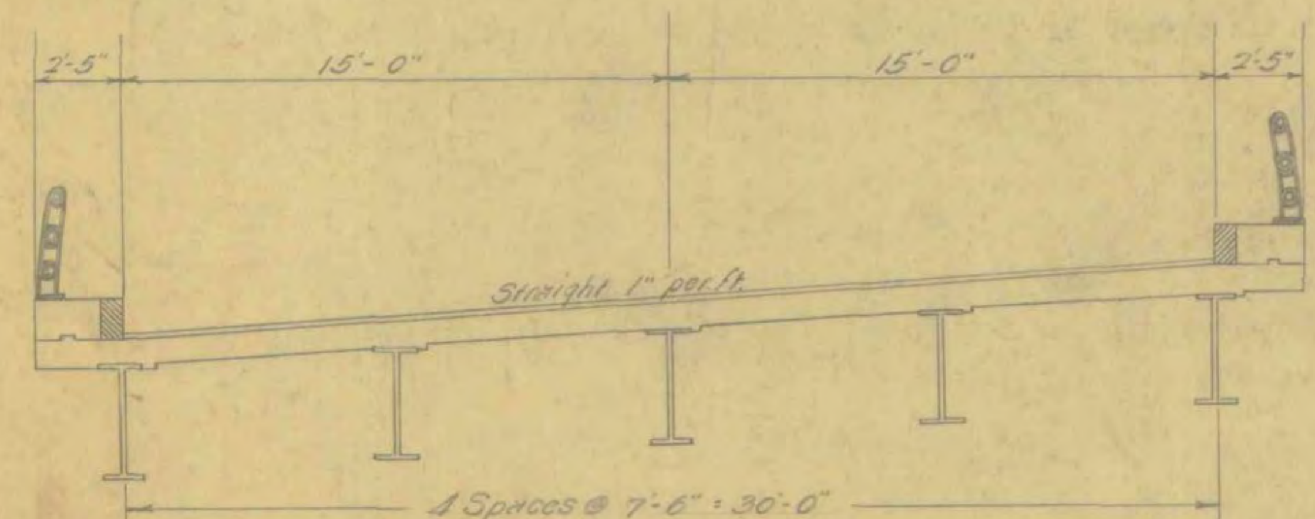
SCALE 1" = 5'-0"



NEW HIGHWAY PROFILE ALONG ℄

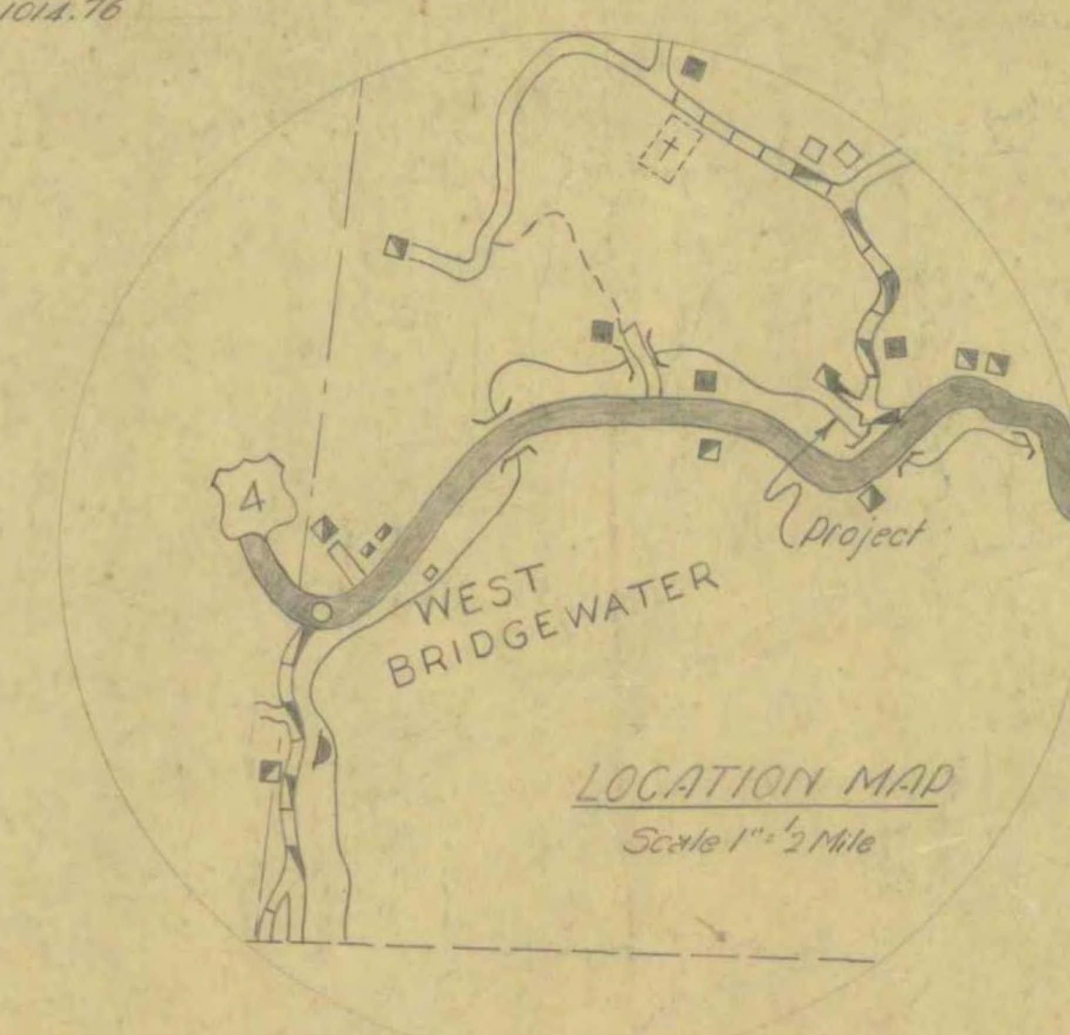
SCALE 1" = 20'-0"



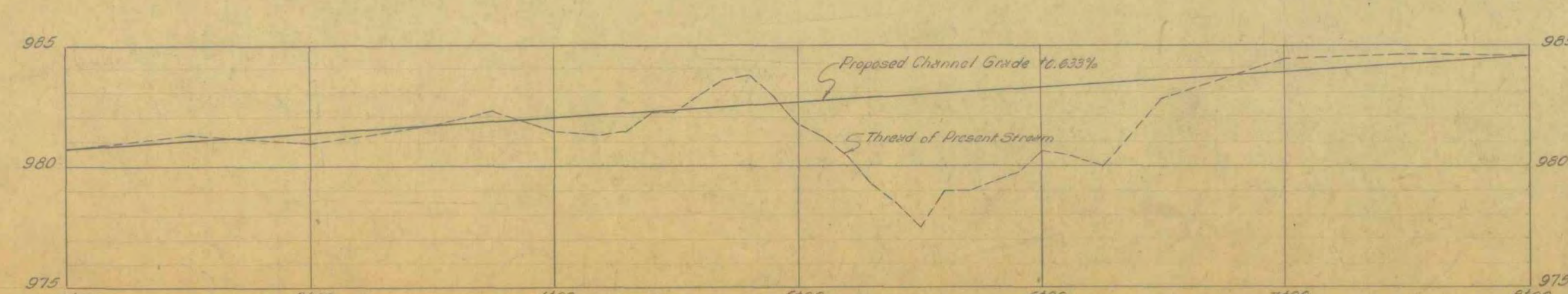


TYPICAL SECTION
Scale 1" = 5'-0"

PLAN
SCALE 1" = 20'-0"



LOCATION MAP
Scale 1" = ½ Mile



PROFILE OF PROPOSED STREAM CHANNEL

SCALE 1" = 20'-0" (Horz.) 1" = 4'-0" (Vert.)

HIGHWAY NO. U.S. 4 NAME OF HIGHWAY BLUE STAR MEMORIAL HIGHWAY
STRUCTURE NO. 38 COUNTY WINDSOR TOWN BRIDGEWATER
PROJECT NO. F-020-2(3) LOCATION 1.6 Miles East of Bridgewater-Sherburne town line.

EXISTING STRUCTURE

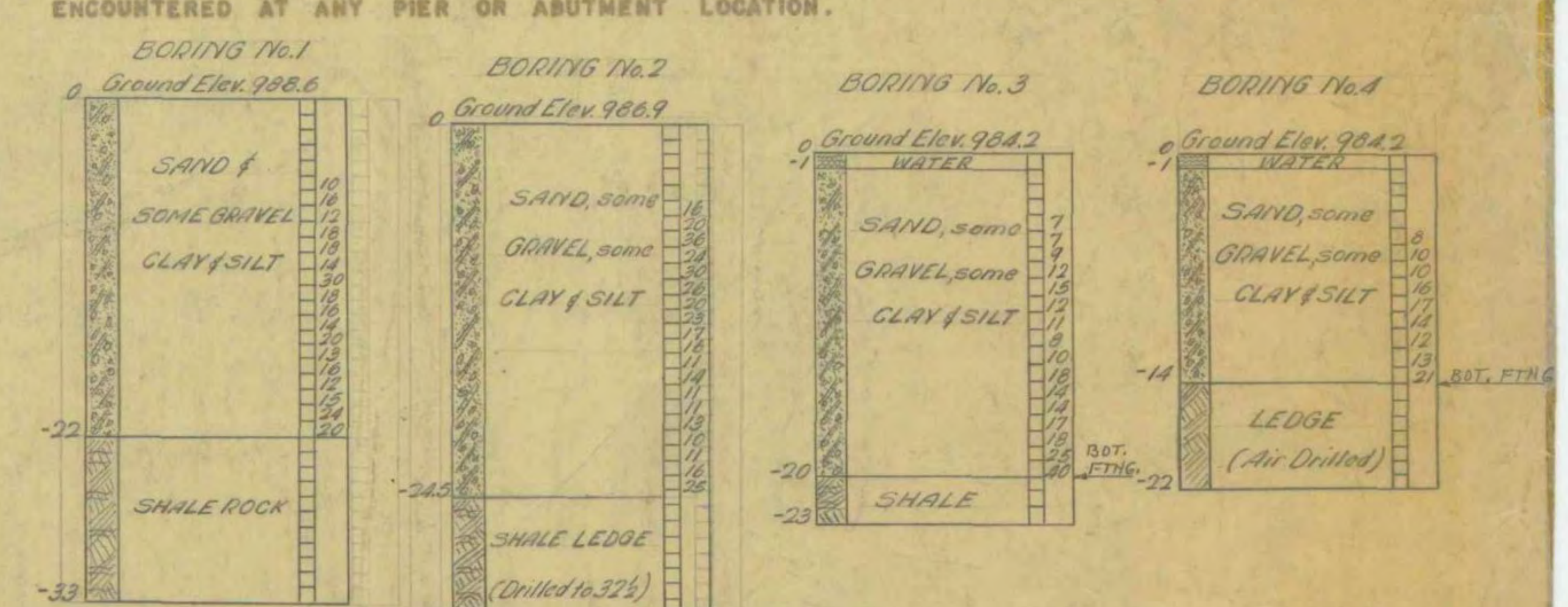
1 RATED LOADING OF EXISTING STRUCTURE H-15
2 TYPE OF EXISTING STRUCTURE Steel Pony Truss
3 UNDERCLEARANCE ELEVATION OF EXISTING STRUCTURE Unknown
4 WHAT DISPOSITION SHOULD BE MADE OF EXISTING STRUCTURE Retain COST OF REMOVAL
5 SHOULD EXISTING STRUCTURE BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF NEW STRUCTURE Yes
6 SHOULD NEW TEMPORARY STRUCTURE BE BUILT No
7 ORDINARY HIGH WATER SURFACE ELEV. AT EXISTING STRUCTURE Unknown WATERWAY TO ORDINARY H.W. —
8 EXTREME HIGH WATER AT EXISTING STRUCTURE Unknown
9 SPAN OF EXISTING BRIDGE UPSTREAM 64'-0" (Overall) WATERWAY TO EXTREME H.W. 510□'
SPAN OF EXISTING BRIDGE DOWNSTREAM 75'-0" (Overall) WATERWAY TO EXTREME H.W. 700□'
10 TYPE OF FOUNDATION UNDER EXISTING ABUTMENTS Unknown
11 DOES ALL WATER AT FLOOD ELEVATION PASS THROUGH EXISTING STRUCTURE Yes
12 IF NOT AT WHAT ELEVATION IS RELIEF AFFORDED
13 ADDITIONAL WATERWAY AREA PROVIDED

NEW STRUCTURE

1 RECOMMENDED TYPE OF STRUCTURE 2-WF Composite Beam Spans, 30'-0" Curb to Curb
2 RECOMMENDED CLEAR SPAN OR SPANS 65'-0" & 65'-0"
MEASURED PARALLEL TO ℄ NEW HIGHWAY 69'-0" & 69'-0" (Overall)
MEASURED AT RIGHT ANGLES TO ℄ STREAM " "
3 ARE THERE OBJECTIONS TO A PIER IN THE STREAM, ANSWER YES OR NO No
4 ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE 987.0
5 EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE 992.0 SOURCE OF INFORMATION Computed
6 IS ALL WATER INTENDED TO PASS THROUGH NEW STRUCTURE? Yes
7 DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? Medium IS ORDINARY RISE RAPID? Medium
8 LOW WATER ELEVATION AT NEW STRUCTURE 984.0
9 DRAINAGE AREA IN ACRES ABOVE STRUCTURE 24,000 CHARACTER OF TERRAINE Mountainous
10 IS STREAM EVER DRY? No
11 VELOCITY OF STREAM AT HIGH WATER STAGE 8.8'/sec. ESTIMATED DISCHARGE 4550 c.f.s.
12 AREA FULL OPENING 2600□' AREA BELOW ORDINARY H.W. 235□'
13 CHARACTER OF SCOUR Medium DRIFT None ICE Slight
14 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE None
15 VERTICAL CLEARANCE ABOVE FLOOD ELEVATION 16.5'
16 ARE SIDEWALKS REQUIRED, IF SO ON WHAT SIDE No BOTH SIDES
17 RECOMMENDED TYPE OF PAVEMENT Bituminous Concrete
18 TRAFFIC TO BE MAINTAINED UNDER ITEM NO. ONE OR TWO WAYS Two PROBABLE COST Neg.
19 PROBABLE COST OF CLEARING AND GRUBBING STREAM CHANNEL AT STRUCTURE SITE $500.00
20 SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES? No
21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS 2 Tons SHOULD PILES BE USED? Yes EST. LGTH. 40'-0"

FOUNDATION INFORMATION

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



Boring No.	Location	Gnd. Elev.	Ledge El.
5	Sta. 190+78, 20' Rt.	985.0	977.4
6	Sta. 190+88, 20' Rt.	984.3	984.3
7	Sta. 190+82 @ ℄	984.2	984.2
8	Sta. 190+77 @ ℄	985.1	981.2
9	Sta. 190+82, 20 Lt.	986.9	986.9
10	Sta. 190+72, 20 Lt.	983.8	983.8
11	Sta. 191+46, 15' Lt.	1028.5	1025.6
12	Sta. 191+46, 9' Rt.	1025.1	1021.6
13	Sta. 191+32, 20' Lt.	1024.3	1021.4
14	Sta. 191+32 @ ℄	1019.4	1017.3
15	Sta. 191+32, 20' Rt.	1017.3	1015.8

BRIDGEWATER
BF MEMB (34)
SHEET 20 OF 36
BRIDGE NO. 39
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

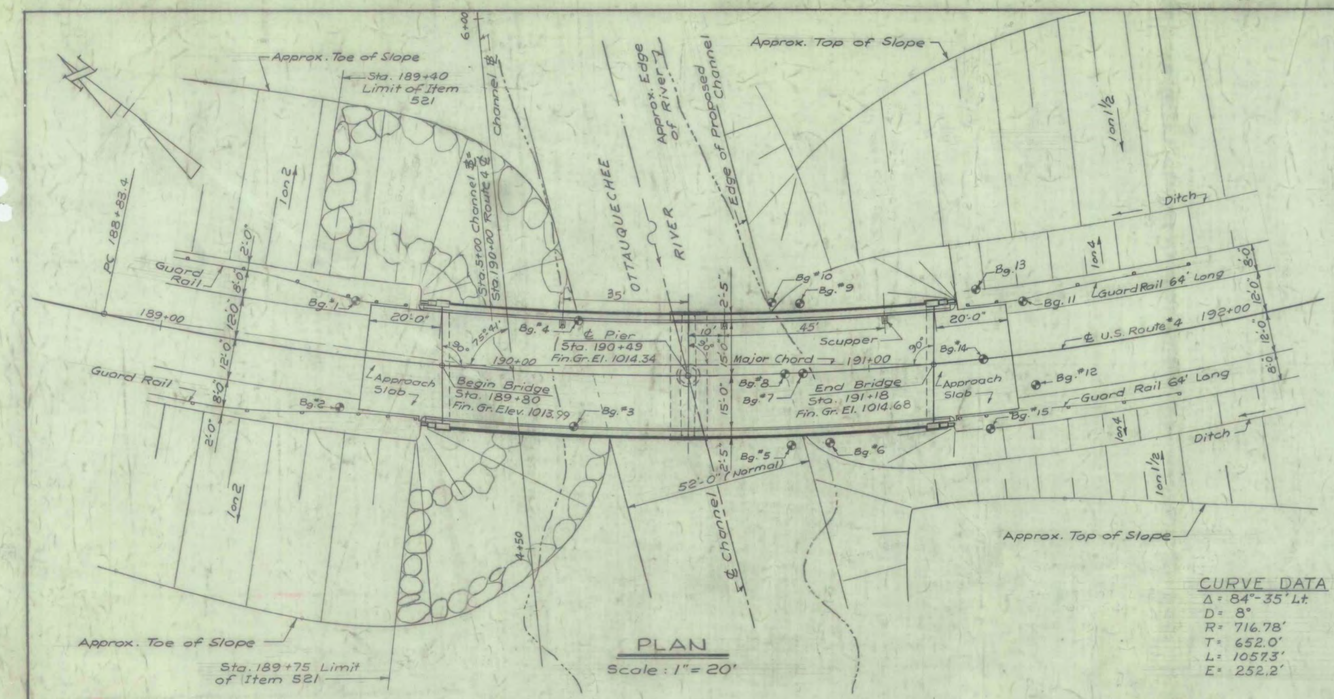
2 SPAN BRIDGE IN THE TOWNS OF SHERBURNE-BRIDGEWATER
ROUTE NO. U.S. 4 LOG STA. 84+50
F-020-2(3)

SURVEYED BY — DRAWN BY A.B.M. | CHECKED BY W.M.S. IN CHARGE W.M.S. | SCALE As noted DATE 3-23-58

PROJECT NO. | SHEET 54 OF 151

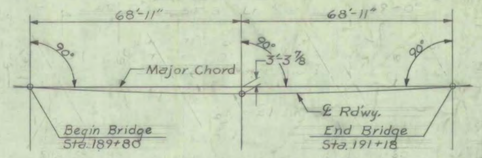
CORRECT — BRIDGE ENGINEER | APPROVED H. E. Sargent CHIEF ENGINEER

BRIDGEWATER
F-020-2(3)

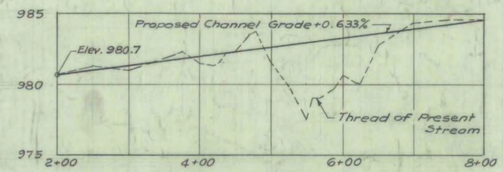


PLAN
Scale: 1" = 20'

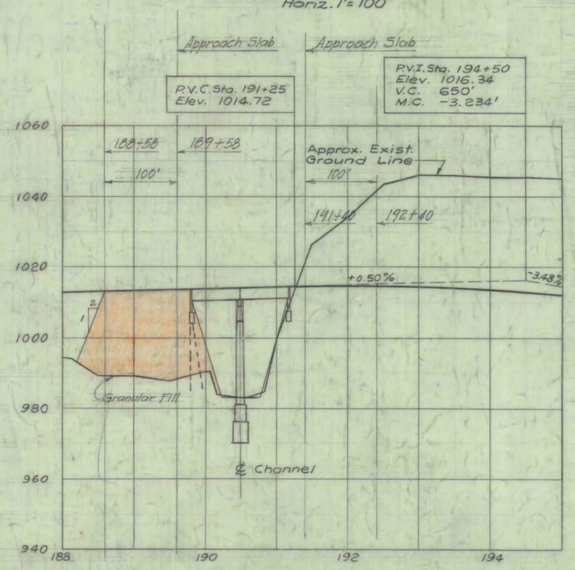
CURVE DATA
Δ = 84°-35' Lt.
D = 8°
R = 716.78'
T = 652.0'
L = 1057.3'
E = 252.2'



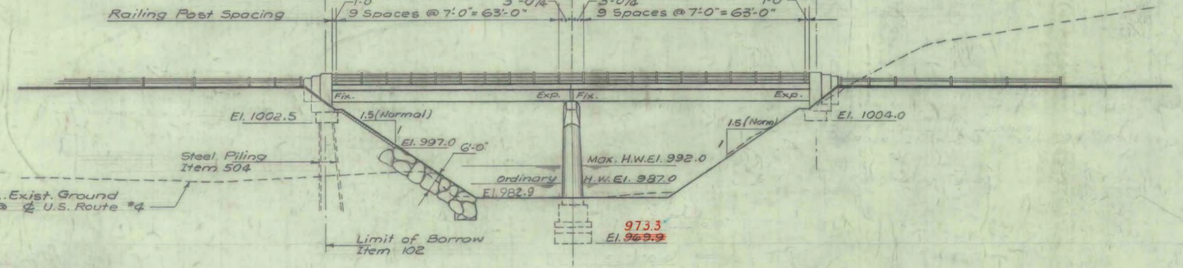
CURVE LAYOUT
NO SCALE



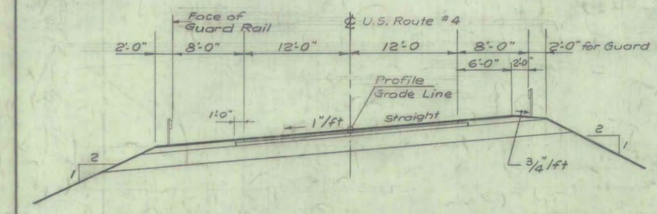
PROFILE OF PROPOSED STREAM CHANNEL
Scales: Vert. 1"=5'
Horiz. 1"=100'



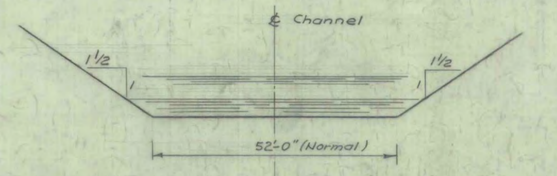
U.S. ROUTE # 4 PROFILE
Scales: Vert. 1"=20'
Horiz. 1"=100'



ELEVATION
Scale: 1" = 20'



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



TYPICAL CHANNEL SECTION
Scale: 1/16" = 1'

SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	FINAL
106-C	Unclassified Channel Excavation	c.y.	1,535	1480*
107	Structure Excavation	c.y.	261	196*
204	Sub-base Crushed Rock (Mod)	c.y.	33	45*
222	Gravel Backfill	c.y.	39	0*
361-B	Bituminous Concrete Pavement (Mod)	ton	72	72*
401-B	Concrete Class "B" (Mod)	c.y.	424	409*
402	Reinforcing Steel	lb.	66,347	68,489*
403	Spiral Reinforcement (4,180#)	l.s.	1	1*
404-A	Structural Steel	lb.	138,998	138998*
407	Asphaltic-Asbestos Coating	s.y.	23	23*
501	Furnishing Equipment for Driving Piles	l.s.	Required	0.5*
504	Steel Piling	l.f.	400	427*
521	Stone Fill (Heavy Type)	c.y.	1,485	1491*
503	Splices For Steel Piling	ea.	2	0*
556-C	Granite Bridge Curb	l.f.	304	301*
572	Bridge Railing Supp. Agree. 9-7-60	l.f.	267	267*
318	Tar Emulsion For Bridge Floors	Gal	243	235*

GENERAL NOTES

1. Material and Construction shall conform to State of Vermont Standard Specifications for Highway & Bridge Construction, dated 1956.
2. All design in accordance with A.A.S.H.O. Standard Specifications for Highway Bridges, dated 1957. Loading is H20-S16-44 Truck as modified for National System of Interstate Highways.
3. Concrete shall attain a minimum strength of 2000 p.s.i. prior to the addition of any superimposed load.
4. All concrete to be Class B (Mod)
5. All welding to conform with the American Welding Society Standard Specifications for Welded Highway and Railway Bridges.
6. All Bearing Devices to be modified as shown on Sheet 2 of 3, ℄ Std. Dwg. SB-20-56, Detail C.
7. All dimensions given are measured horizontally or vertically unless noted.
8. Beam seats to slope 1/4 in./ft. and be coated with Asphaltic-Asbestos Coating Item 407, except under bearings.
9. Railing posts and pylon lines to be normal to grade and top of pylon to be parallel to grade.
10. The haunch over the beam to vary in order to compensate for camber remaining after D.L. defl.
11. The beam seat elevations have been lowered to account for difference between actual camber and required camber.
12. Where piles are driven in fill, the material should be such as to have no stones large enough to interfere with driving of piles.
13. All piles to be 10BP42 and driven to a minimum bearing capacity of 37 tons.
14. Maximum bearing pressures: Pier 5 Tons/sq. ft. Abutment #2 is 2 Tons/sq. ft.
15. Where rock is encountered footings shall not be poured until all blasting in adjacent areas has been completed.
16. Cross slope of 1 in. per ft. extends full length of bridge and approach slabs.
17. Piles shall not be spliced, except with the written approval of the Engineer.
18. Minimum cover for reinforcing bars shall be 2" unless noted.

LIST OF SHEETS

STRUCTURE:
- Sheet 1. General Plan, Elevation, Profiles & Sect's.
- " 2. Boring Logs & Framing Plan.
- " 3. Abutment Details.
- " 4. Pier Details.
- " 5. Reinforcing Bar Schedule.

REFERENCE:
- St. Dwg. SB-5G-57, Sh. 1 & Sh. 2 Bridge Railing.
- " 6-3 Detail of Guard Rail.
- " SB-22-58 Detail of Expansion Joint over Piers and at Abutments.
- " SB-20-56 Bearing & Steel Diaphragms.
- " SB-AS-SQUARE-57 Details of Approach Slabs for Square Bridges.
- " SCB-30-58 Sheets 1 & 2 - Superstructure.

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S. ROUTE 4

BRIDGE AT STA. 190+49

GENERAL PLAN, ELEVATION, PROFILES & SECTIONS

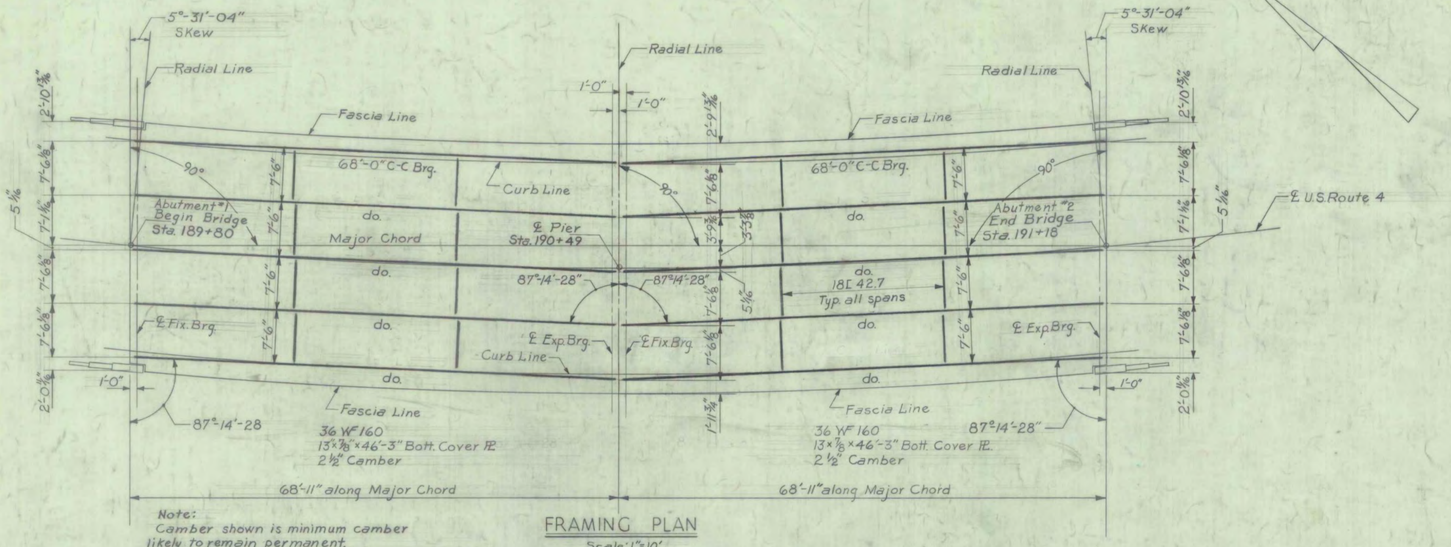
WM. H. MS FARLAND
ENGINEER
BINGHAMTON, N.Y.

DESIGNED: F.W.C.	CHECKED: K.W.R.	DATE: Feb. 6, 1959
DRAWN: F. Counti	IN CHARGE: H.G.C.	SCALE: As Shown

PROJECT NO. F-020-2(3) SH. 55 OF 151

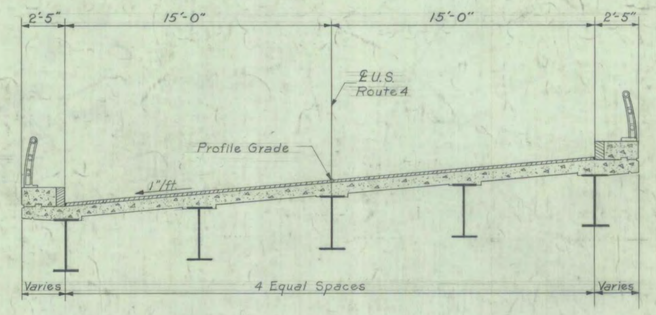
BRIDGEWATER
BF MEMB (34)
SHEET 21 OF 36
BRIDGE NO. 39
FOR REFERENCE ONLY

BR 39

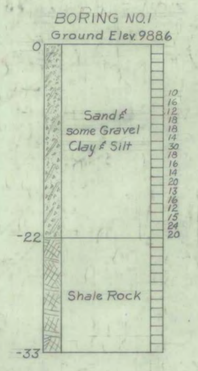


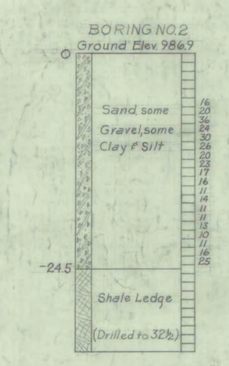
FRAMING PLAN
Scale: 1"=10'

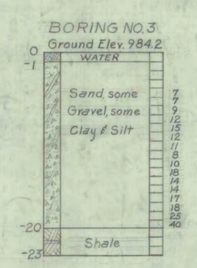
Note:
Camber shown is minimum camber likely to remain permanent.

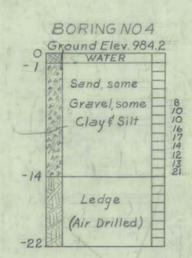


TYPICAL SECTION
Scale: 1/4"=1'







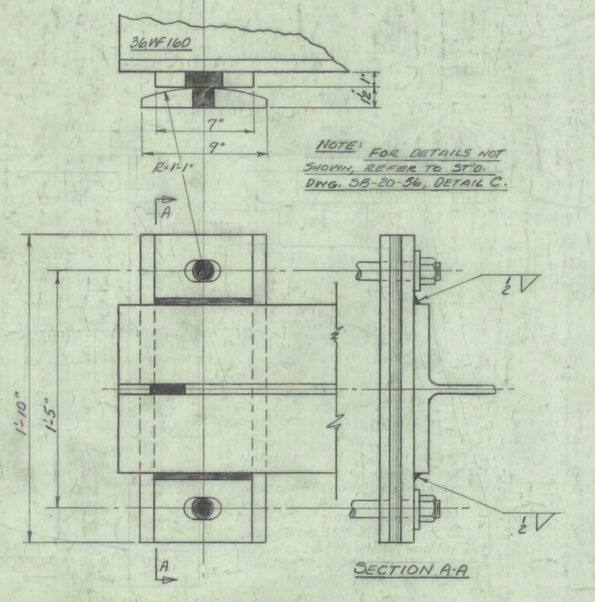


Note:
Foundation information was obtained for design purposes only, and the State assumes no responsibility whatsoever for the sufficiency or accuracy of the information shown. Boulders may be encountered at any pier or abutment location. For location of borings, see General Plan, Sheet 1.

Boring No.	Location	Gnd Elev.	Ledge El.
5	Sta. 190+78, 20' Rt.	985.0	977.4
6	Sta. 190+88, 20' Rt.	984.3	984.3
7	Sta. 190+82 @ ℄	984.2	984.2
8	Sta. 190+77 @ ℄	985.1	981.2
9	Sta. 190+82, 20' Lt.	986.9	986.9
10	Sta. 190+72, 20' Lt.	983.8	983.8
11	Sta. 191+46, 15' Lt.	1028.5	1025.6
12	Sta. 191+46, 9' Rt.	1025.1	1021.6
13	Sta. 191+32, 20' Lt.	1024.3	1021.4
14	Sta. 191+32 @ ℄	1019.4	1017.3
15	Sta. 191+32, 20' Rt.	1017.3	1015.8

BORING LOGS
Scale: 1/8"=1'

Bottom of Footing Elevation	
Abut #1	1002.5
Pier	~~969.9~~ 973.3
Abut #2	1004.0



BEARING DEVICE
SCALE- 1" = 0'-5"

Notes:
1. For General Notes, see sheet 1.

BRIDGEWATER
BF MEMB (34)
SHEET 22 OF 36
BRIDGE NO. 39
FOR REFERENCE ONLY

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S. ROUTE 4

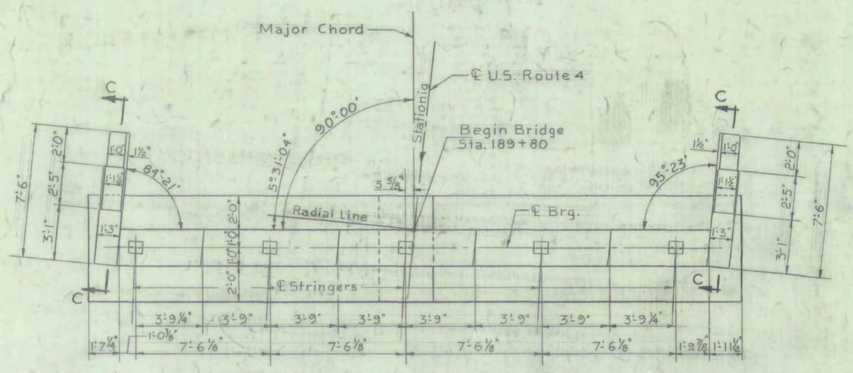
BRIDGE AT STATION 190+49
FRAMING PLAN, BORING LOGS & SECTION

WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

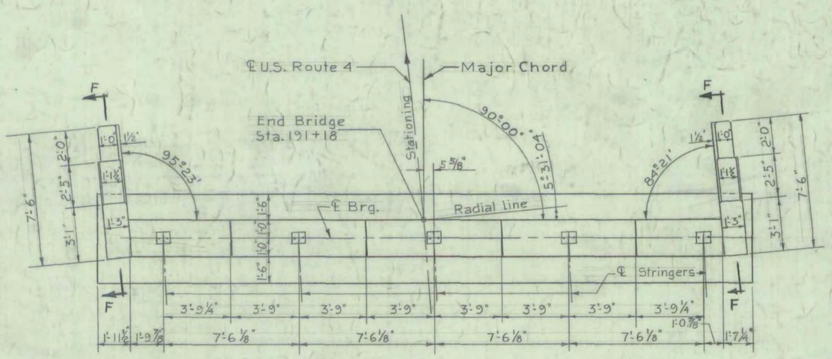
DESIGNED: F.W.C.	CHECKED: K.W.R.	DATE: Feb. 6, 1959
DRAWN: W.L.M.	IN CHARGE: H.G.C.	SCALE: AS NOTED

PROJECT NO. F-020-2 (3) SH. 56 OF 151

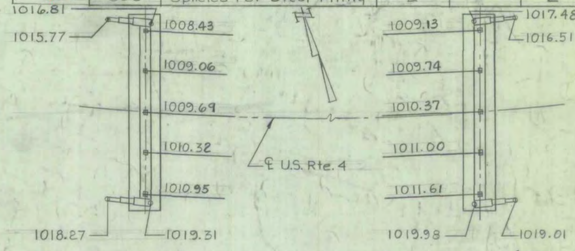
FINAL QUANTITIES	ESTIMATED QUANTITIES				
	ITEM NO.	ITEM	NEAT	OVERRUN	TOTAL
47 ✓	107	Structure Excavation (c.y.)	45	5	50
0 ✓	222	Gravel Backfill (c.y.)	36	3	39
81 ✓	401-B	Concrete Class B Mod. (c.y.)	72	4	76
8 ✓	407	Asphaltic-Asb. Coating (s.y.)	8	—	8
427 ✓	504	Steel Piling (L.F.)	400	—	400
0 ✓	503	Splices For Steel Piling	2	-	2



PLAN ABUTMENT #1
Scale ¼"=1'0"



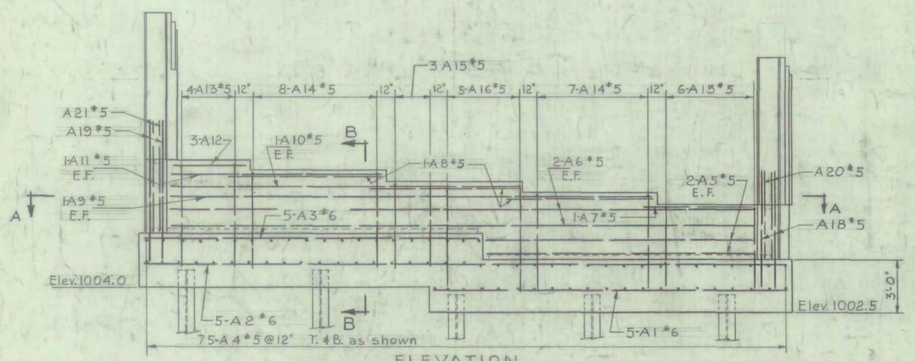
PLAN ABUTMENT #2
Scale ¼"=1'0"



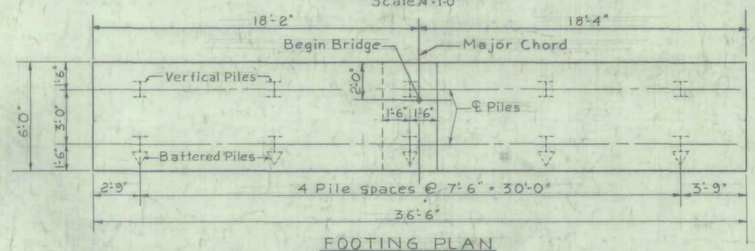
Abutment #1

Abutment #2

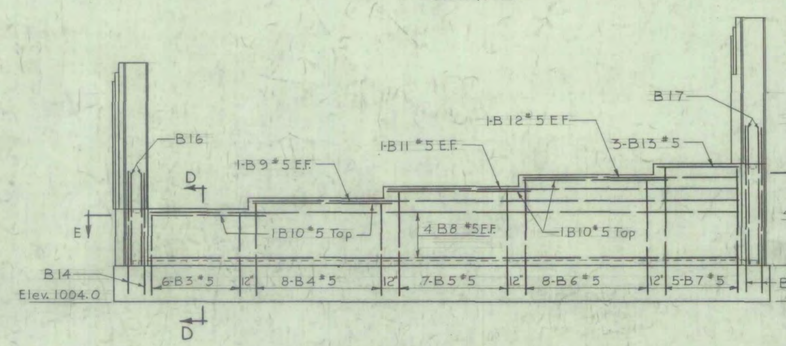
KEY PLAN
No Scale



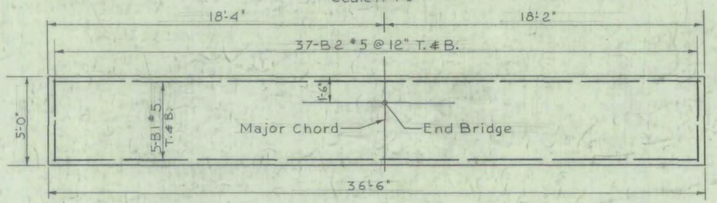
ELEVATION
Scale ¼"=1'0"



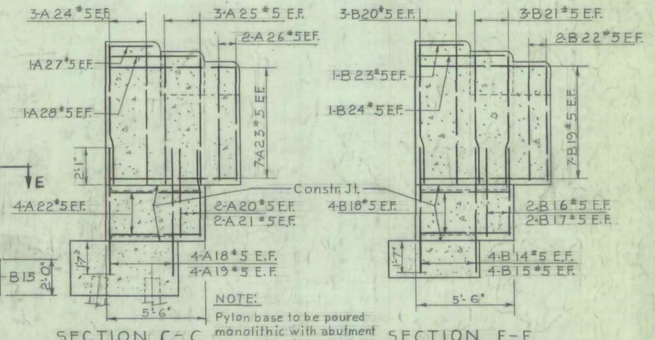
FOOTING PLAN
Scale ¼"=1'0"



ELEVATION
Scale ¼"=1'0"



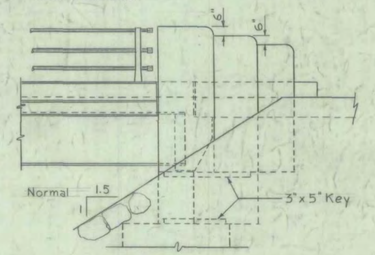
FOOTING PLAN
Scale ¼"=1'0"



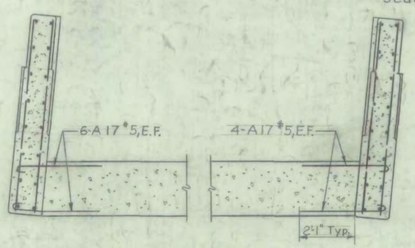
NOTE:
Pylon base to be poured monolithic with abutment stem up to adjacent beam seat elevation.

SECTION C-C
Scale ¼"=1'0"

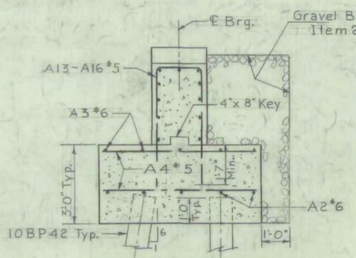
SECTION F-F
Scale ¼"=1'0"



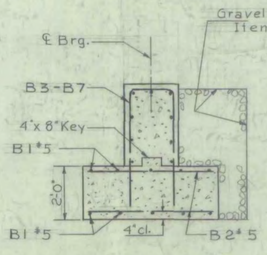
TYPICAL PYLON ELEVATION
Scale ¼"=1'0"



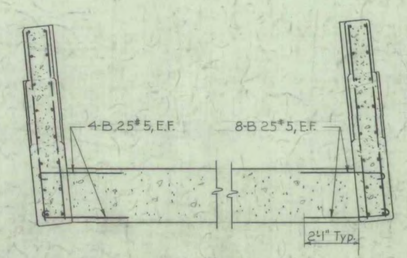
SECTION A-A
Scale ⅜"=1'0"



SECTION B-B
Scale ⅜"=1'0"



SECTION D-D
Scale ⅜"=1'0"



SECTION E-E
Scale ⅜"=1'0"

NOTES:
1. For General Notes see sheet 1
2. Estimated length of piles 40ft.
3. For Reinforcement Bar Schedule and Quantity see sheet 5.
4. Bar Marks designated 'A' refer to Abutment #1 'B' refer to Abutment #2
5. For Bearing Devices, See Sh. 2 of 5

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S. ROUTE 4

BRIDGE AT STA 190+49

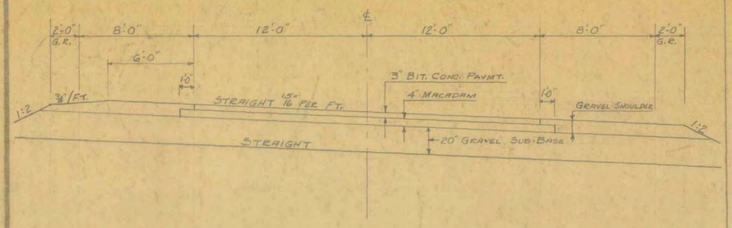
ABUTMENT DETAILS

WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

DESIGNED: G.G.S. CHECKED: J. ROOK DATE: Feb. 6 1959
DRAWN: H. BROCK IN CHARGE: K. COLES SCALE: AS SHOWN

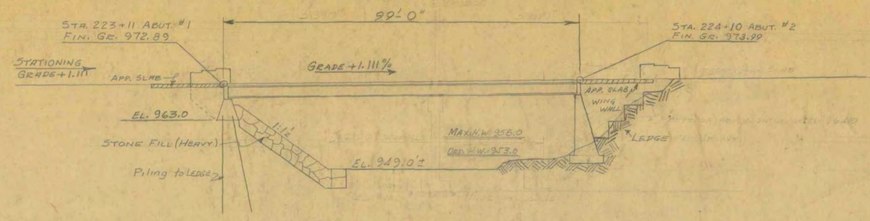
PROJECT NO. F-020-2(3) SH. 57 OF 161

BRIDGEWATER
BF MEMB (34)
SHEET 23 OF 36
BRIDGE NO. 39
FOR REFERENCE ONLY



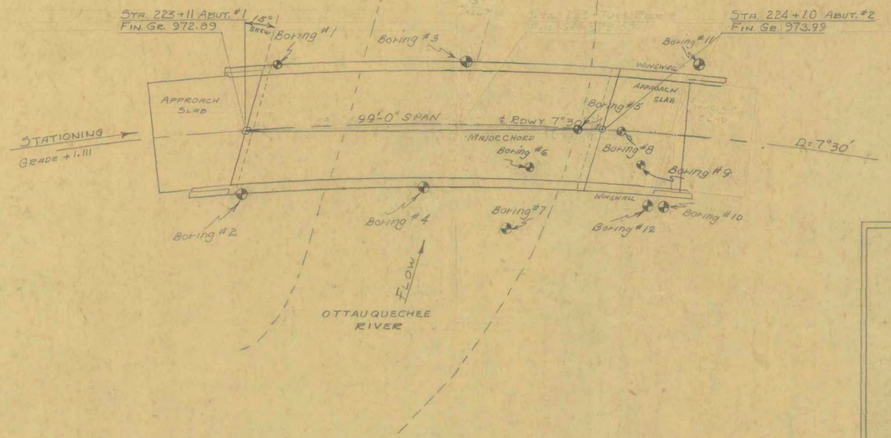
NEW HIGHWAY SECT. STA. 222+75 TO STA. 223+00

SCALE 1"=5'-0"



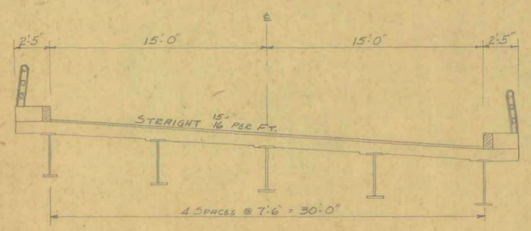
NEW HIGHWAY PROFILE ALONG ℄

SCALE: 1"=20'



PLAN

SCALE 1"=20'-0"

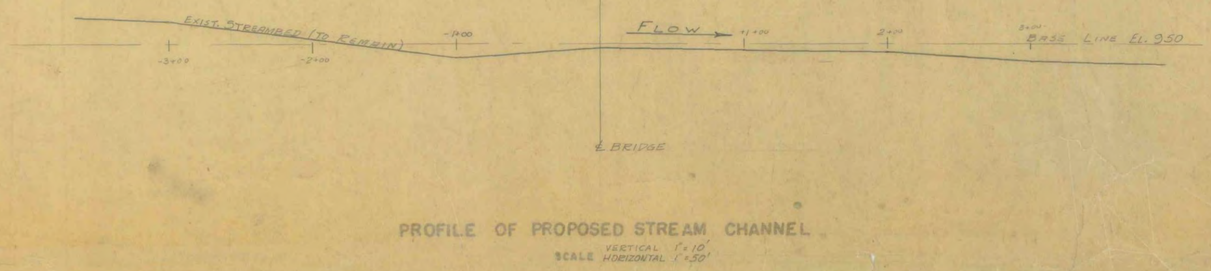


TYPICAL BRIDGE SECTION

SCALE 1"=5'-0"

LOCATION MAP

Scale 1"=½ Mile



PROFILE OF PROPOSED STREAM CHANNEL

SCALE VERTICAL 1"=10'
HORIZONTAL 1"=50'

HIGHWAY NO U.S. 4 NAME OF HIGHWAY BLUE STAR MEMORIAL HIGHWAY

STRUCTURE NO 40 COUNTY WINDSOR TOWN BRIDGEWATER

PROJECT NO F-020-2(5) LOCATION 2.2 MILES EAST OF BRIDGEWATER-SHERBURNE TOWN LINE

EXISTING STRUCTURE

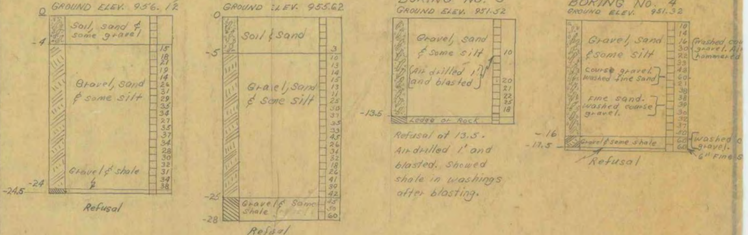
1 RATED LOADING OF EXISTING STRUCTURE H-15
2 TYPE OF EXISTING STRUCTURE STEEL PONY TRUSS
3 UNDERCLEARANCE ELEVATION OF EXISTING STRUCTURE 9 FT.
4 WHAT DISPOSITION SHOULD BE MADE OF EXISTING STRUCTURE REMOVE COST OF REMOVAL #1500.-
5 SHOULD EXISTING STRUCTURE BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF NEW STRUCTURE YES
6 SHOULD NEW TEMPORARY STRUCTURE BE BUILT NO
7 ORDINARY HIGH WATER SURFACE ELEV. AT EXISTING STRUCTURE 954.4 WATERWAY TO ORDINARY H.W. 600 FT²
8 EXTREME HIGH WATER AT EXISTING STRUCTURE 958.4
9 SPAN OF EXISTING BRIDGE UPSTREAM 60 FT. WATERWAY TO EXTREME H.W. 600 FT²
SPAN OF EXISTING BRIDGE DOWNSTREAM 70 FT. WATERWAY TO EXTREME H.W. 630 FT²
10 TYPE OF FOUNDATION UNDER EXISTING ABUTMENTS UNKNOWN
11 DOES ALL WATER AT FLOOD ELEVATION PASS THROUGH EXISTING STRUCTURE YES
12 IF NOT AT WHAT ELEVATION IS RELIEF AFFORDED —
13 ADDITIONAL WATERWAY AREA PROVIDED SUFFICIENT

NEW STRUCTURE

1 RECOMMENDED TYPE OF STRUCTURE 1 SPAN W.F. COMPOSITE BEAMS, 30' CURB TO CURB
2 RECOMMENDED CLEAR SPAN OR SPANS 95.0'
MEASURED PARALLEL TO ℄ NEW HIGHWAY 95.0
MEASURED AT RIGHT ANGLES TO ℄ STREAM 91.77'
3 ARE THERE OBJECTIONS TO A PIER IN THE STREAM, ANSWER YES OR NO YES
4 ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE 953.0
5 EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE 958.0 SOURCE OF INFORMATION COMP.
6 IS ALL WATER INTENDED TO PASS THROUGH NEW STRUCTURE? YES
7 DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? MED. IS ORDINARY RISE RAPID? MED.
8 LOW WATER ELEVATION AT NEW STRUCTURE 951.0
9 DRAINAGE AREA IN ACRES ABOVE STRUCTURE 25216 CHARACTER OF TERRAINE MOUNTAINOUS
10 IS STREAM EVER DRY? NO
11 VELOCITY OF STREAM AT HIGH WATER STAGE 7.5 FT/SEC ESTIMATED DISCHARGE 4710 CFS
12 AREA FULL OPENING 1450 FT² AREA BELOW ORDINARY H.W. 204 FT²
13 CHARACTER OF SCOUR MEDIUM DRIFT NEG. ICE SLIGHT
14 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE NONE
15 VERTICAL CLEARANCE ABOVE FLOOD ELEVATION 10 FT.
16 ARE SIDEWALKS REQUIRED, IF SO ON WHAT SIDE NO BOTH SIDES —
17 RECOMMENDED TYPE OF PAVEMENT BITUMINOUS CONCRETE
18 TRAFFIC TO BE MAINTAINED UNDER ITEM NO. 109 ONE OR TWO WAYS TWO PROBABLE COST #300.-
19 PROBABLE COST OF CLEARING AND GRUBBING STREAM CHANNEL AT STRUCTURE SITE #500.-
20 SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES? NO
21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS — SHOULD PILES BE USED? YES EST. LGTH. 30 FT.

FOUNDATION INFORMATION

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



Boring No.	LOCATION	GND. ELEV.	LEDGE EL.
5	Sta. 224+03	951.7	951.7
6	Sta. 223+90, 11' Rt.	951.6	951.6
7	Sta. 223+84, 28' Rt.	951.5	951.5
8	Sta. 224+15	956.8	956.8
9	Sta. 224+21, 9' Rt.	970.8	970.8
10	Sta. 224+28, 20' Rt.	975.4	975.4
11	Sta. 224+33, 20' Lt.	964.1	964.1
12	Sta. 224+25, 21' Rt.	967.5	967.5

BRIDGEWATER
BF MEMB (34)
SHEET 24 OF 36
BRIDGE NO. 40
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

SPAN BRIDGE IN THE TOWNS OF BRIDGEWATER

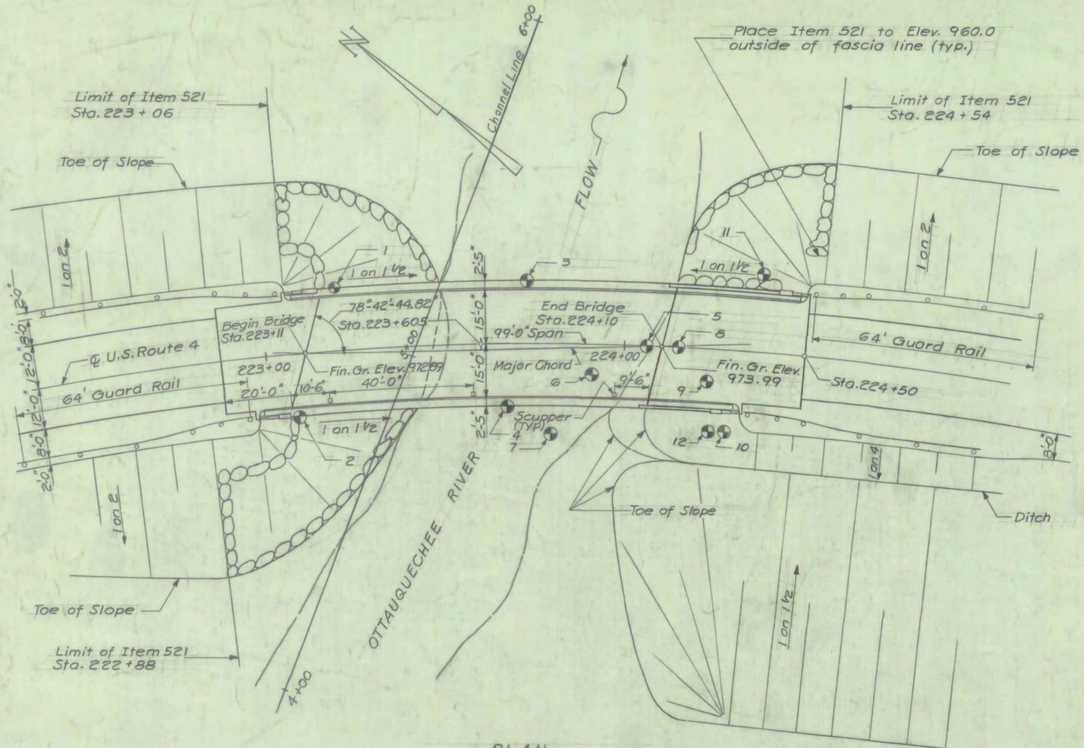
ROUTE NO U.S. 4 LOG STA 129+36

SURVEYED BY — CHECKED BY WM S. — SCALE AS NOTED
DRAWN BY ERNASCO — IN CHARGE — DATE AUG. 1956

PROJECT NO. F-020-2(5) SHEET 39 OF 141

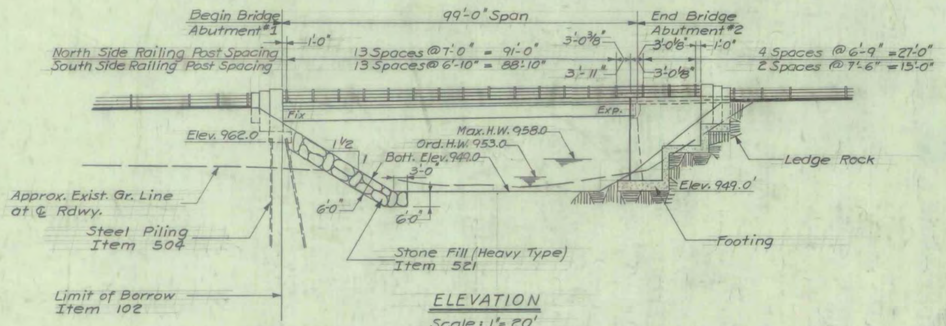
CORRECT A.S.B. Bishop BRIDGE ENGINEER
APPROVED H. E. Lacquet CHIEF ENGINEER

BRIDGEWATER F-020-2(5)



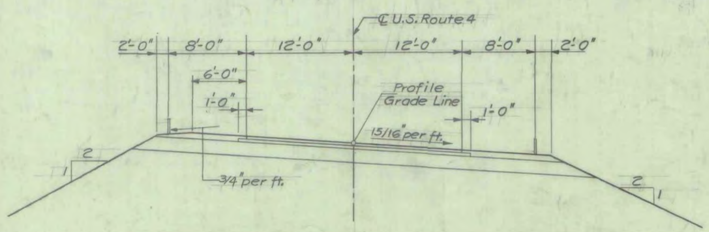
PLAN

Scale : 1" = 20'



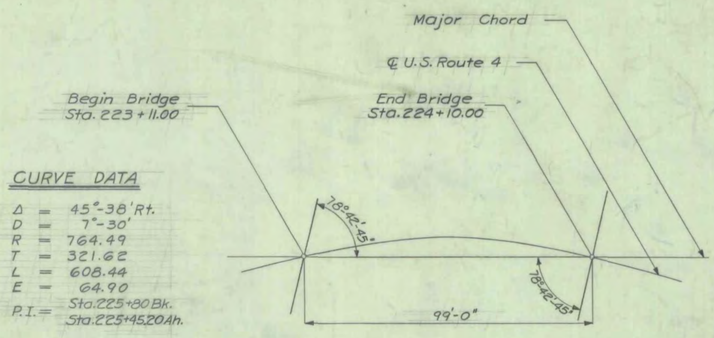
ELEVATION

Scale : 1" = 20'



TYPICAL APPROACH SECTION

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

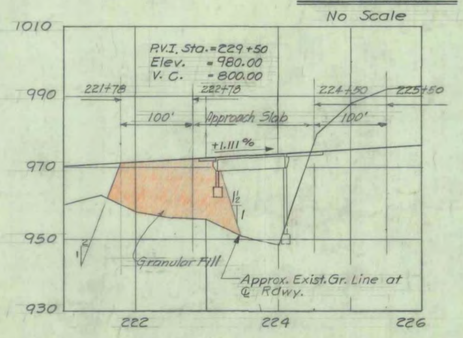


CURVE DATA

Δ = 45°-38' Rt.
D = 7°-30'
R = 764.49
T = 321.62
L = 608.44
E = 64.90
P.I. = Sta. 225+80 Bk.
Sta. 225+45.20 Ah.

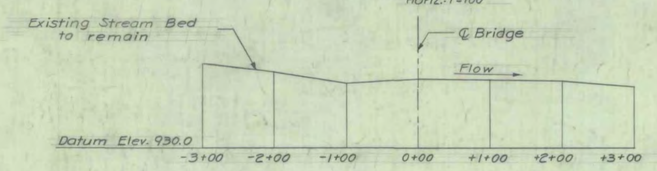
CURVE LAYOUT

No Scale



U.S. ROUTE 4 PROFILE

Scales: Vert.: 1" = 20'
Horiz.: 1" = 100'



PROFILE OF STREAM CHANNEL

Scales : Vert. : 1" = 20'
Horiz. : 1" = 100'

SUMMARY OF QUANTITIES

ITEM-NO	ITEM	UNIT	QUANTITY	FINAL
102-A	Granular Borrow	c.y.	~~0~~	232
106-	Unclassified Channel Excavation	c.y.	~~935~~ V	935
107	Structure Excavation	c.y.	~~164~~	793
222	Gravel Backfill	c.y.	~~159~~	202
361-B	Bituminous Concrete Pav't. (Mod.)	ton	~~33~~	*
401-B	Concrete Class B (Mod.)	c.y.	~~511~~	524
402	Reinforcing Steel	lb.	~~51,727~~	59311
403	Spiral Reinforcement (2550*)	l.s.	——	1
404-A	Structural Steel	lb.	~~192,860~~	190311
407	Asphaltic Asbestos Coating	s.y.	~~8~~ V	8
442	Removal of Existing Superstructure	l.s.		1
501	Furnishing Equipment for Driving Piles	l.s.	Required	½
504	Steel Piling	l.f.	~~492~~	455
521	Stone Fill (Heavy Type)	c.y.	~~1,222~~	1306
556-C	Granite Bridge Curb	l.f.	~~275~~	276
572	Bridge Railing	l.f.	~~238~~	241
503	Splices for Steel Piling	Ea.	~~3~~	1
318	Tar Emulsion For Bridge Floors	Gal	~~217~~	*

GENERAL NOTES: * Roadway Items

1. Material and Construction shall conform to State of Vermont Standard Specification for Highway and Bridge Construction, dated 1956.
2. All design in accordance with A.A.S.H.O. Standard Specifications for Highway Bridges, dated 1957. Loading is H20-S16-44 Truck as Modified for National System of Interstate Highways.
3. Concrete shall attain a minimum strength of 2000 PSI. prior to the addition of any superimposed load.
4. All Concrete to be Class B.
5. All welding to conform with the American Welding Society Standard Specifications for Welded Highway and Railway Bridges.
6. Reinforcing steel in top of abutments shall be placed so as to allow drilling for anchor bolts.
7. All dimensions given are measured horizontally or vertically unless noted.
8. Beam seats to slope ¼" per ft. and be coated with Asphaltic-Asbestos coating, Item 407, except under bearings.
9. Railing posts and pylon lines to be normal to grade and top of pylon to be parallel to grade.
10. The haunch over the beam to vary in order to compensate for camber remaining after D.L. deflection.
11. The beam seat elevations have been lowered to account for difference between actual camber and required camber.
12. Where piles are driven in fill, the material should be such as to have no stones large enough to interfere with driving of piles.
13. All piles to be 10 BP 42 and driven to a minimum bearing capacity of 37 tons.
14. Maximum bearing pressure for foundations is 5 tons per Sq. Ft.
15. Where rock is encountered footings shall not be poured until all blasting has been completed.
16. Cross slope of 15/16" per ft. extends full length of bridge and approach slabs.
17. Piles shall not be spliced, except with the written approval of the Engineer.
18. Minimum cover for reinforcing bars shall be 2" unless noted.
19. Standards SCB-30-58 & SB-5G-57 shall be modified by substituting the following:
Use 2" of Bituminous Concrete pavement in lieu of the 2½" indicated.
Granite Bridge Curb (Modified) as indicated in the General Special Provisions shall be substituted in lieu of Granite Bridge Curb Type 1. The curb height finish grade to top of curb will therefore be 12".

LIST OF SHEETS:

Sheet 1 : General PLAN, Elevation, Profiles & Sections
" 2: Framing Plan, Section & Boring Logs.
" 3: Abutment No. 1 Details.
" 4: Abutment No. 2 Details.
" 5: " " "
" 6: Approach Slab
Sheet 7: Reinforcing Bar Schedule.

REFERENCE:

Std. Drwg. SCB-30-58, Sheet 1 & 2: Superstructure
" " SB-5G-57, Sheet 1 & 2: Bridge Railing
" " SB-20-56. : Bearings & Steel Diaphr.
" " SB-AS-15° Skew-57. : Approach Slab
Std. Drwg. SB-22-58 : Exp. Jt's at Abut.s

BRIDGEWATER
BF MEMB (34)
SHEET 25 OF 36
BRIDGE NO. 40
FOR REFERENCE ONLY

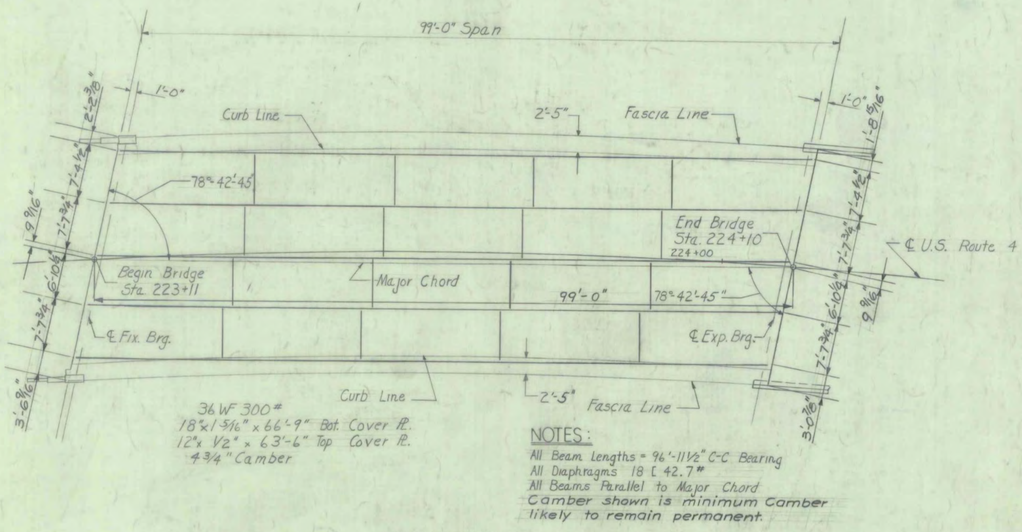
VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S. ROUTE 4

BRIDGE AT STA. 223+60.5
GENERAL PLAN, ELEVATION, PROFILES & SECTIONS

WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

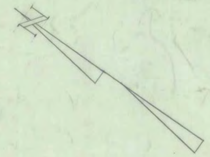
DESIGNED: F.W.C. | CHECKED: K.R. | DATE: 2-6-59
DRAWN: H.H.T. | INCHARGE: H.G.C. | SCALE: AS SHOWN

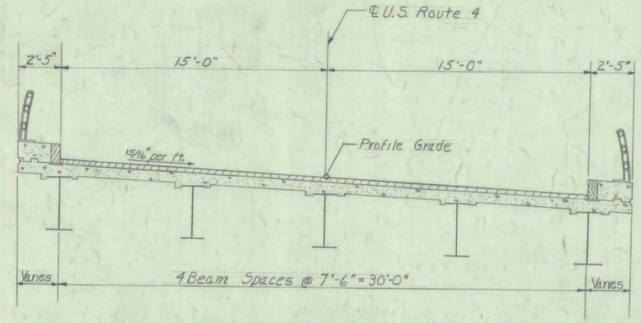
PROJECT NO. F-020-2 (5) SH. 40 OF 141



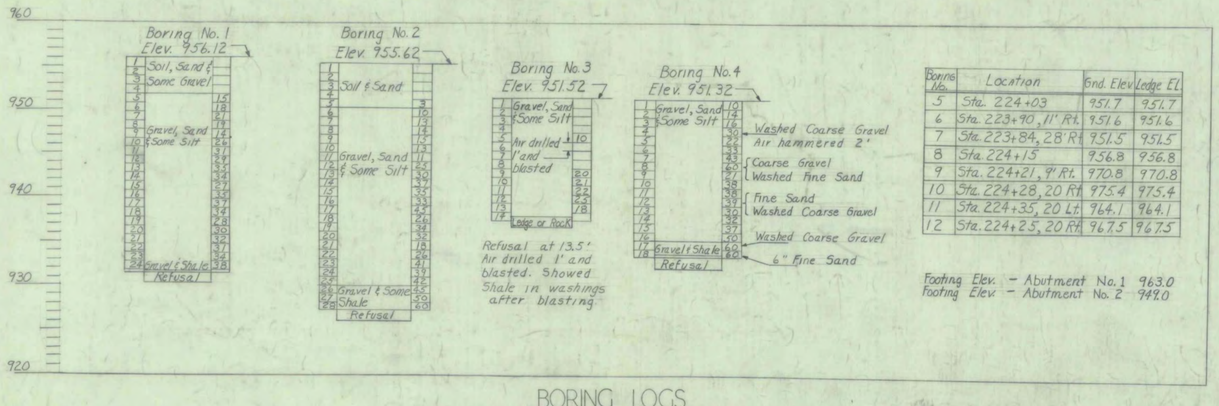
NOTES:
All Beam Lengths = 96'-11 1/2" C-C Bearing
All Diaphragms 18 [42.7#
All Beams Parallel to Major Chord
Camber shown is minimum camber likely to remain permanent.

FRAMING PLAN
Scale 1"=10'





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



Boring No.	Location	Gnd. Elev	Ledge El.
5	Sta. 224+03	951.7	951.7
6	Sta. 223+90, 11' Rt.	951.6	951.6
7	Sta. 223+84, 28' Rt.	951.5	951.5
8	Sta. 224+15	956.8	956.8
9	Sta. 224+21, 9' Rt.	970.8	970.8
10	Sta. 224+28, 20 Rt.	975.4	975.4
11	Sta. 224+35, 20 Lt.	964.1	964.1
12	Sta. 224+23, 20 Rt.	967.5	967.5

Footing Elev. - Abutment No. 1 963.0
Footing Elev. - Abutment No. 2 949.0

BORING LOGS

NOTES:
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. For location of borings, see Sheet 1.

NOTE:
1.- For General Notes, see sheet #1.

BRIDGEWATER
BF MEMB (34)
SHEET 26 OF 36
BRIDGE NO. 40
FOR REFERENCE ONLY

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
US ROUTE 4

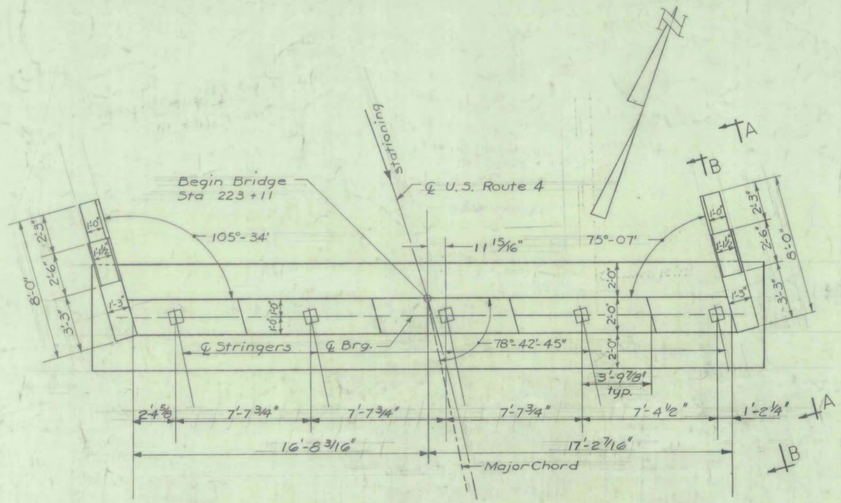
BRIDGE AT STA. 223+60.5
BORING LOGS, FRAMING PLAN & TYPICAL BRIDGE SECTION

WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

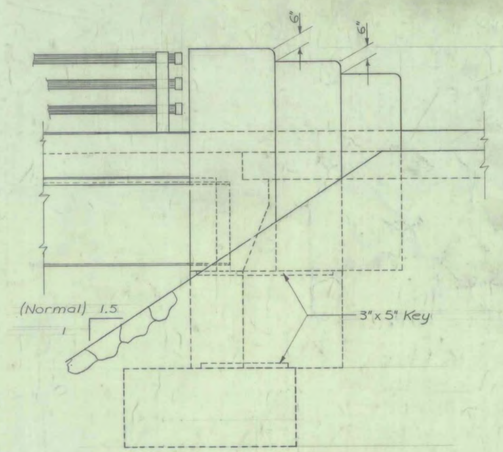
DESIGNED: F.W.C. | CHECKED: T.J.S. | DATE: Feb. 6, 1959
DRAWN: E.F.D. | IN CHARGE: H.G.C. | SCALE: AS SHOWN

PROJECT NO. F-020-2(5) SH. 41 OF 141

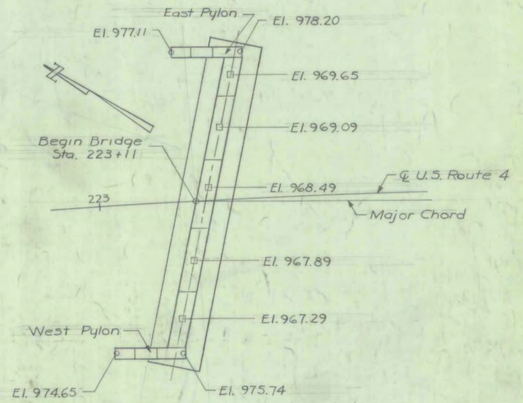
BRIDGE SHEET 2 OF 7



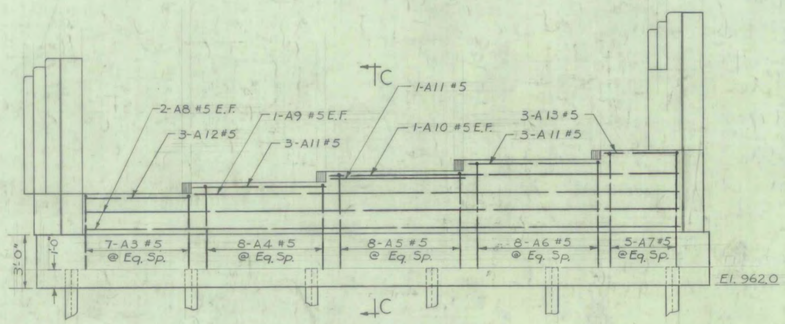
PLAN
Scale: 1/4" = 1'-0"



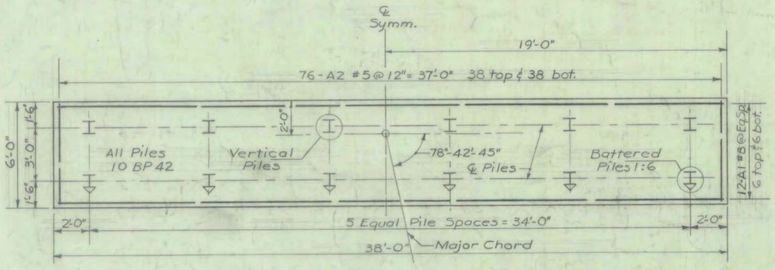
ELEVATION AA
Scale: 3/8" = 1'-0"



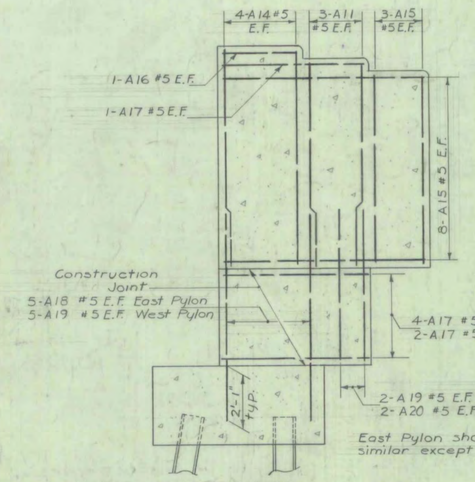
KEY PLAN
No Scale



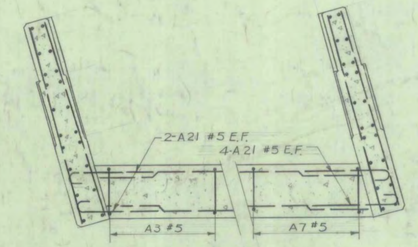
ELEVATION
Scale: 1/4" = 1'-0"



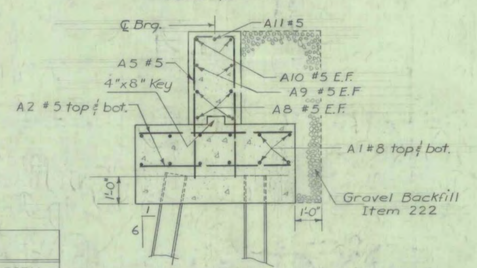
FOOTING PLAN
Scale: 1/4" = 1'-0"



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



WINGWALL REINFORCEMENT
Scale: 3/8" = 1'-0"



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

ABUTMENT NOTES

1. For General Notes, see Sheet 1
2. For Reinforcement Bar Schedule and quantity, see Sheet 7
3. Pylon base to be poured monolithic with abutment stem up to adjacent beam seat.
4. Estimated length of piles = 41'

FINAL	ESTIMATED QUANTITIES					
	ITEM NO.	ITEM		NEAT	OVERRUN	TOTAL
0	107	STRUCTURE EXCAVATION	C.Y.	–	–	–
~~17~~	222	GRAVEL BACKFILL	C.Y.	17 ✓	~~1~~	~~18~~
42	401-B	CONCRETE CLASS B (MOD.)	C.Y.	42 ✓	~~2~~	~~44~~
4	407	ASPH. ASBESTOS COATING	S.Y.	4 ✓	-	4 ✓
~~455~~	504	STEEL PILING	L.F.	~~492~~	–	~~492~~

ITEM No.	ITEM	NEAT	OVERRUN	TOTAL	FINAL
503	Splices for Steel Piling	~~3~~	-	~~3~~	1

BRIDGEWATER
BF MEMB (34)
SHEET 27 OF 36
BRIDGE NO. 40
FOR REFERENCE ONLY

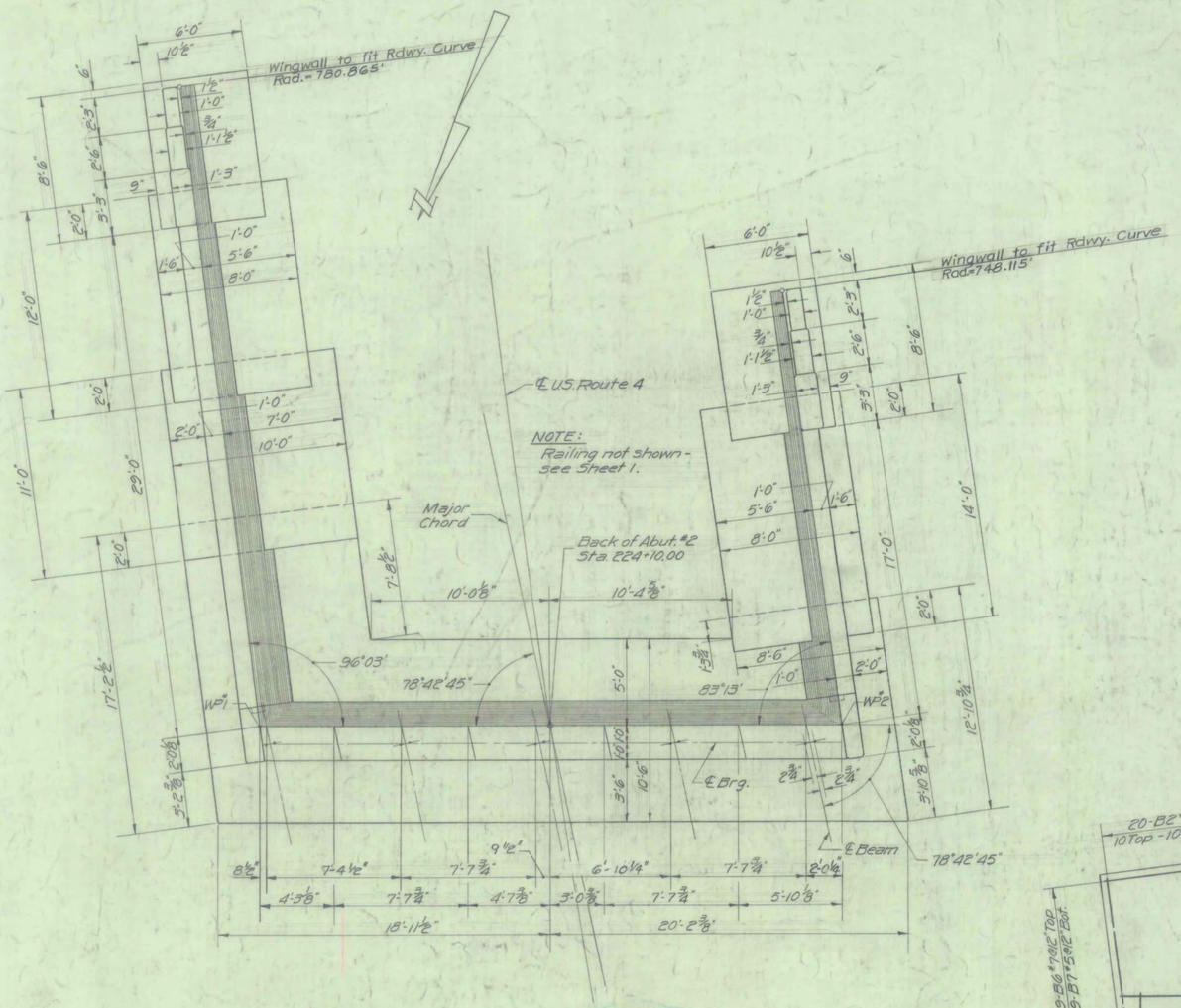
VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S. ROUTE 4

BRIDGE AT STA. 223+60.5
ABUTMENT #1 DETAILS

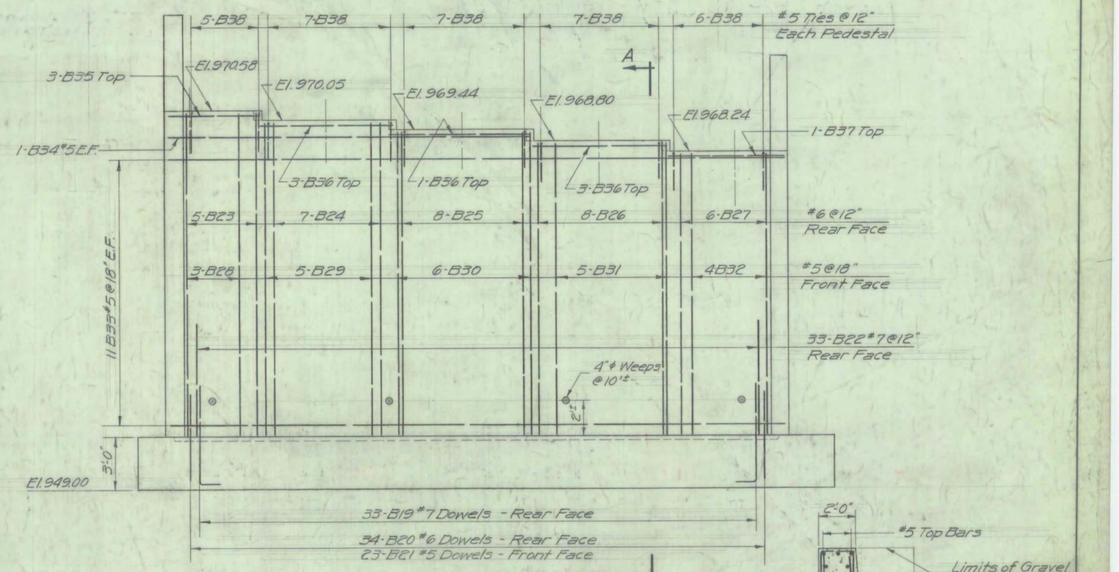
WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

DESIGNED: D. STEWART | CHECKED: G. SMITH | DATE: Feb. 6, 1959
DRAWN: R. LOFTUS | IN CHARGE: H. COLES | SCALE: AS SHOWN

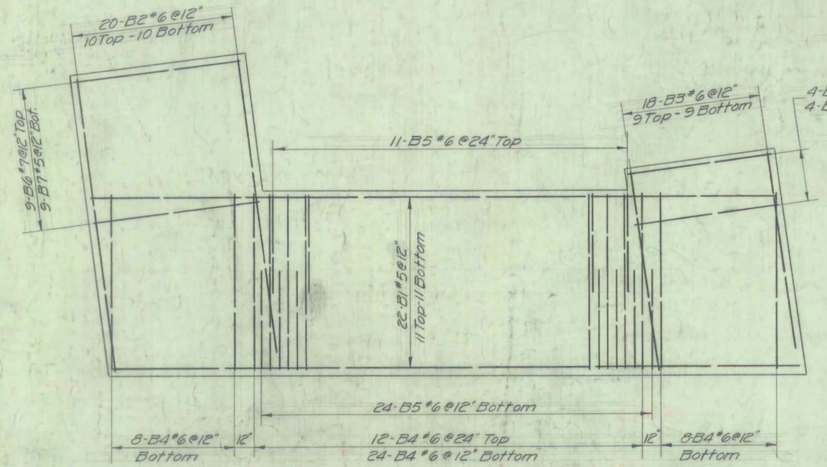
PROJECT NO. F-020-2(5) SH. 42 OF 141



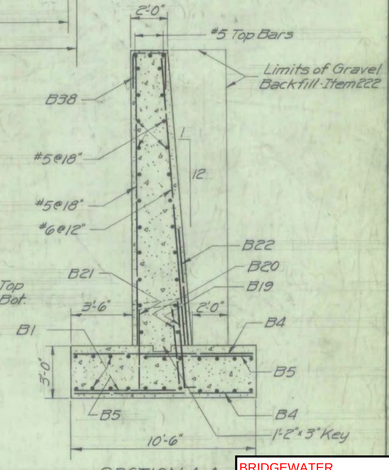
PLAN
Scale: ½"=1'-0"



BACKWALL ELEVATION
Scale: ½"=1'-0"



PLAN-BACKWALL
FOOTING REINFORCEMENT
Scale: ½"=1'-0"



SECTION A-A
Scale: ½"=1'-0"

BRIDGEWATER
BF MEMB (34)
SHEET 28 OF 36
BRIDGE NO. 40
FOR REFERENCE ONLY

NOTES

1. For General Notes see Sheet 1.
2. For Estimate of Quantities for this abutment see sheet 5.
3. For Reinforcing Bar Schedule and Quantity see Sheet 7.

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
US ROUTE 4

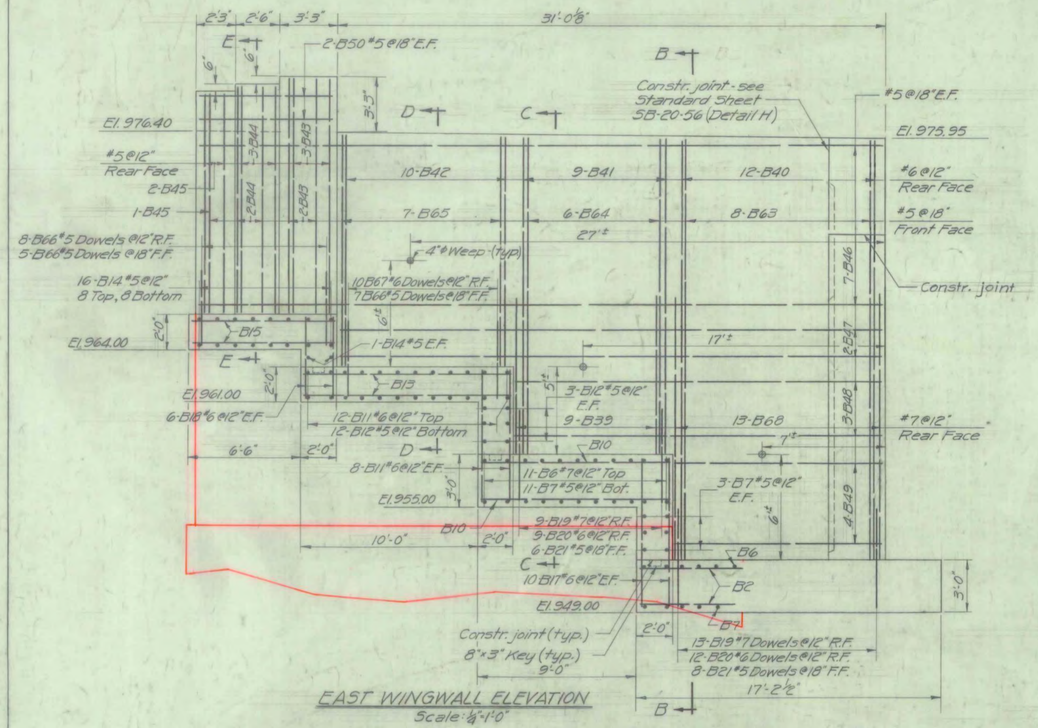
BRIDGE AT STA. 223+60.5

ABUTMENT #2 DETAILS

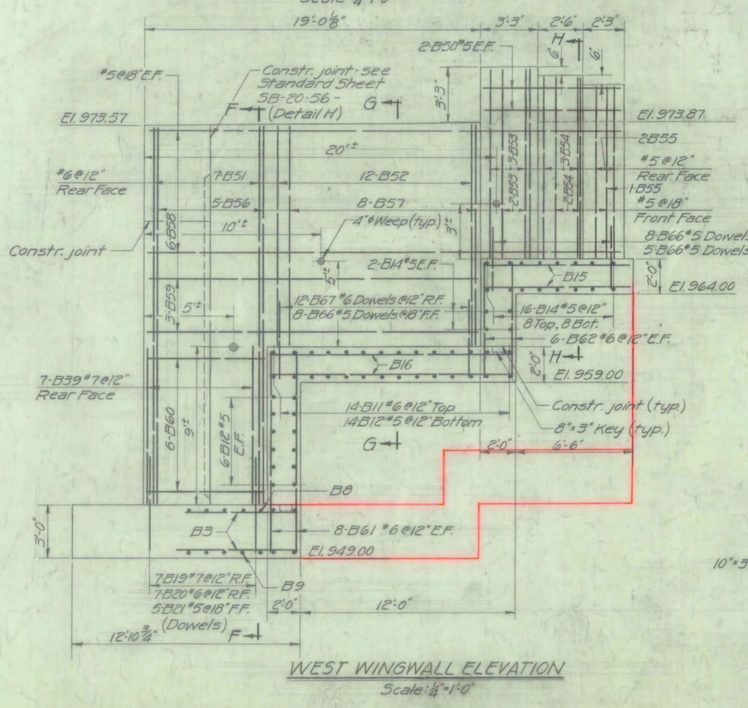
WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

DESIGNED: DAS.	CHECKED: DAS.	DATE: Feb. 6, 1959
DRAWN: C.C.B./M.S.	IN CHARGE: H.G.C.	SCALE: As Noted

PROJECT NO. F-020-2(5) SH. 43 OF 141



ESTIMATED QUANTITIES						FINAL
ITEM NO.	ITEM		NEAT	OVERRUN	TOTAL	
107	Structure Excavation	C.Y.	~~119~~	~~15~~	~~164~~	793
222	Gravel Backfill	C.Y.	~~127~~	~~8~~	~~135~~	185
401-B	Concrete Class B (Mod.)	C.Y.	~~256~~	~~13~~	~~269~~	282
407	Asphaltic Asbestos Coating	S.Y.	4 V	-	4 V	4



NOTES:

1. For General Notes see sheet 1
2. For Reinforcing Bar Schedule and Quantity see sheet 7
3. Exact location of wingwall weeps to be determined by the Engineer in the field.

BRIDGEWATER
BF MEMB (34)
SHEET 29 OF 36
BRIDGE NO. 40
FOR REFERENCE ONLY

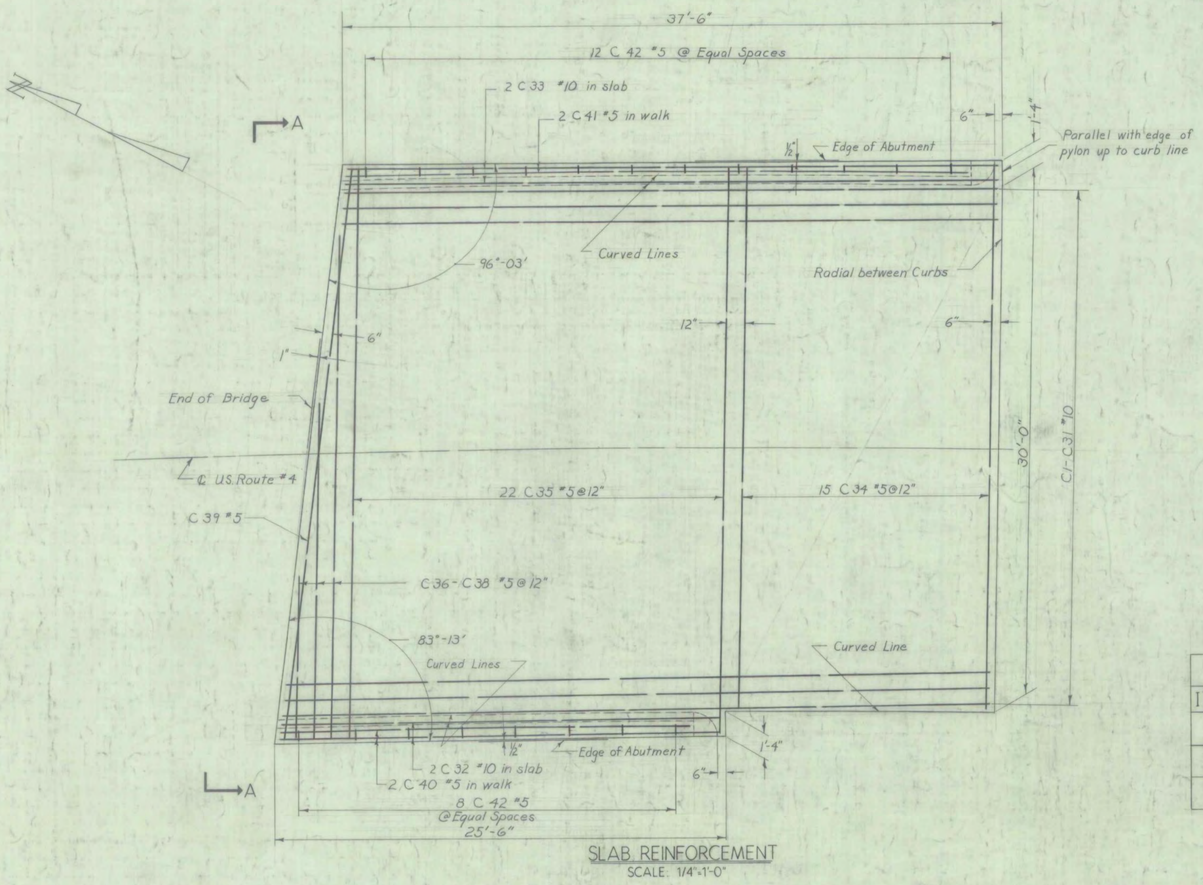
VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S. ROUTE 4
BRIDGE AT STA. 223+60.5

ABUTMENT #2 DETAILS

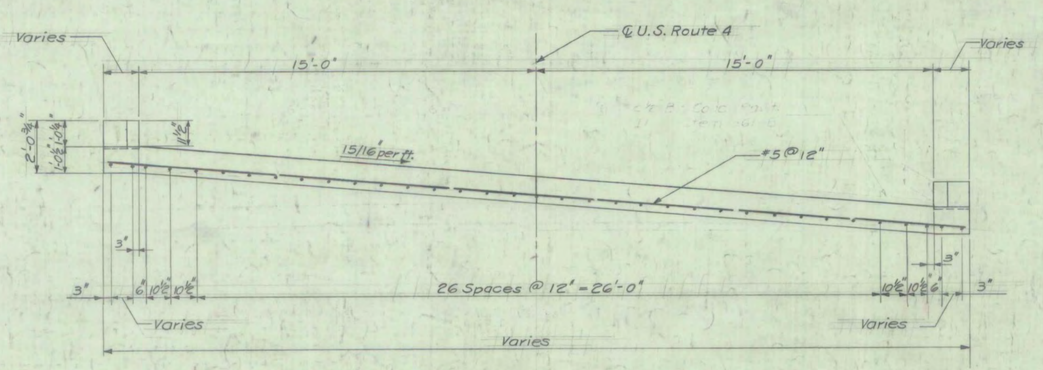
WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

DESIGNED D.A.S.	CHECKED D.A.S.	DATE Feb. 6, 1959
DRAWN C.C. Bells	IN CHARGE H.G.C.	SCALE As Noted

PROJECT NO. F-020-2(5) SH. 44 OF 141



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



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

ESTIMATED QUANTITIES					FINAL
ITEM NO.	ITEM	NEAT	OVERRUN	TOTAL	
401-B	CONCRETE CLASS B(C.Y.)-MOD.	~~78~~	~~4~~	~~82~~	Roadway Item
556-C	GRANITE BRIDGE CURB (L.F.)	~~77~~	—	~~77~~	78.5

Note: Quantities given are for both approach slabs.

NOTES:
1. For General Notes see Sheet 1.
2. For typical sections and standard details see Standard Sheet SB-AS-57.
3. For details of Approach Slab at Begin Bridge see Standard Sheet SB-AS-57. 15° Skew. Mod. for 15/16" bank.
4. For reinforcing bar schedule and quantities see sheet # 7

BRIDGEWATER
BF MEMB (34)
SHEET 30 OF 36
BRIDGE NO. 40
FOR REFERENCE ONLY

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S. ROUTE 4

BRIDGE AT STA. 223+60.5

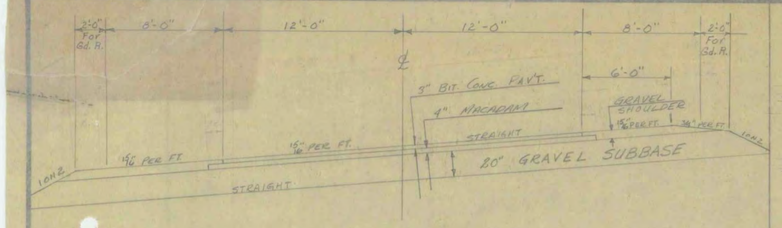
APPROACH SLAB

WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

DESIGNED: F.W.C.	CHECKED: C.C.B.	DATE: Feb. 6, 1959
DRAWN: N.A.C.	IN CHARGE: H.G.C.	SCALE: As Shown

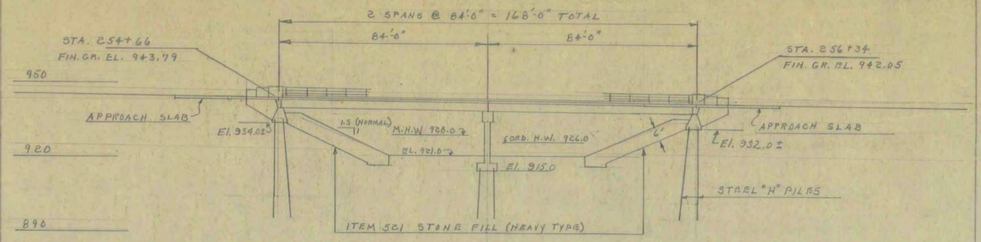
PROJECT NO. F-020-2 (5) SH 45 OF 141

BRIDGE SHEET 6 OF 7



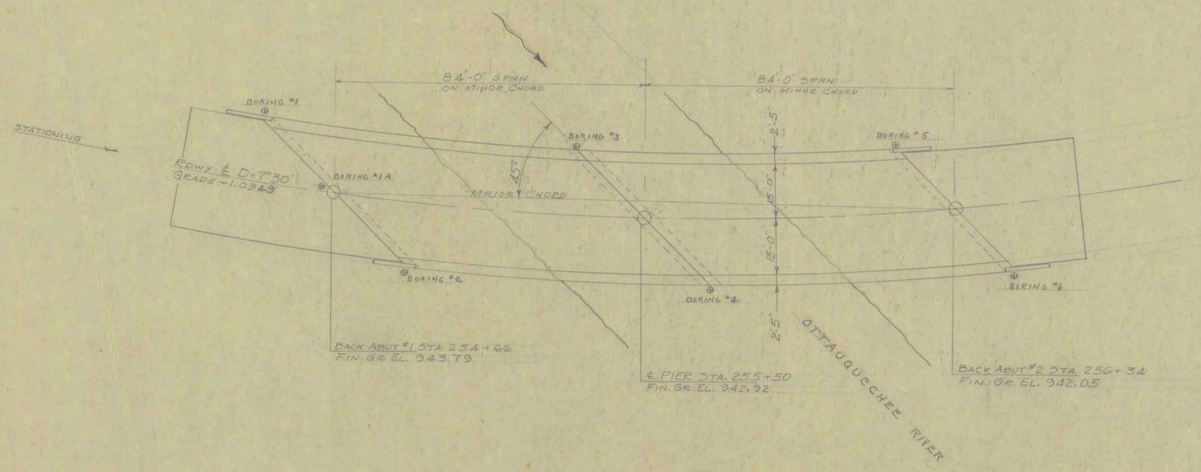
NEW HIGHWAY SECT. STA. TO STA.

SCALE 1"=5'



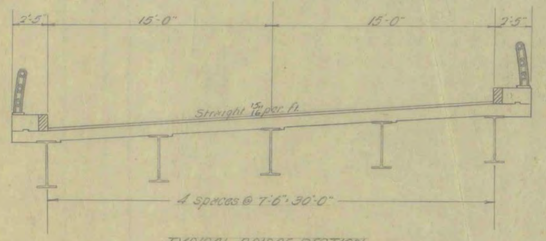
NEW HIGHWAY PROFILE ALONG ℄

SCALE 1"=30'



PLAN

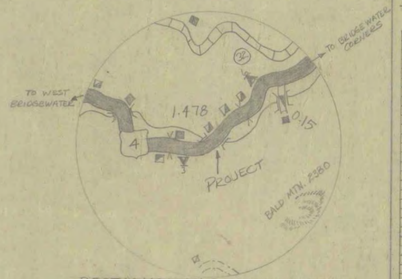
SCALE 1"=20'



TYPICAL BRIDGE SECTION

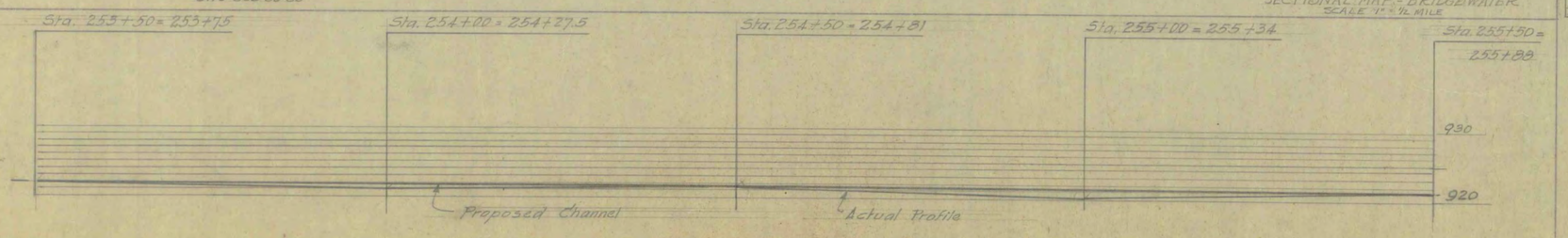
Scale 1"=5'-0"

For Additional Details see DWG SCB 30-56



SECTIONAL MAP - BRIDGEWATER

SCALE 1" = ½ MILE



PROFILE OF PROPOSED STREAM CHANNEL

SCALE 1" = 10'

HIGHWAY NO U.S. 4 NAME OF HIGHWAY BLUE STAR MEMORIAL HIGHWAY

STRUCTURE NO 12 COUNTY WINDSOR TOWN BRIDGEWATER

PROJECT NO F-020-2(3) LOCATION SURVEY STA. 255+0 LOG. STA. 165+65

EXISTING STRUCTURE

1 RATED LOADING OF EXISTING STRUCTURE H-15

2 TYPE OF EXISTING STRUCTURE STEEL PONY TRUSS

3 UNDERCLEARANCE ELEVATION OF EXISTING STRUCTURE EL. 931.5

4 WHAT DISPOSITION SHOULD BE MADE OF EXISTING STRUCTURE REMOVE COST OF REMOVAL $2000

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

6 SHOULD NEW TEMPORARY STRUCTURE BE BUILT NO

7 ORDINARY HIGH WATER SURFACE ELEV. AT EXISTING STRUCTURE EL. 926.5 WATERWAY TO ORDINARY H.W. 303 SQ. FT.

8 EXTREME HIGH WATER AT EXISTING STRUCTURE EL. 928.5

9 SPAN OF EXISTING BRIDGE UPSTREAM 68' WATERWAY TO EXTREME H.W. 710 SQ. FT.
SPAN OF EXISTING BRIDGE DOWNSTREAM 68' WATERWAY TO EXTREME H.W. 550 SQ. FT.

10 TYPE OF FOUNDATION UNDER EXISTING ABUTMENTS GRAVEL - STONES

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

12 IF NOT AT WHAT ELEVATION IS RELIEF AFFORDED —

13 ADDITIONAL WATERWAY AREA PROVIDED —

NEW STRUCTURE

1 RECOMMENDED TYPE OF STRUCTURE COMPOSITE WF BEAM 45° SKEW

2 RECOMMENDED CLEAR SPAN OR SPANS 2 @ 81'
MEASURED PARALLEL TO ℄ NEW HIGHWAY 2-84' SPANS = 168' TOTAL
MEASURED AT RIGHT ANGLES TO ℄ STREAM 2 @ 59'

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

4 ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE EL. 926.0

5 EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE 928.0 SOURCE OF INFORMATION COMPUTED

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

7 DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? MED. IS ORDINARY RISE RAPID? MED.

8 LOW WATER ELEVATION AT NEW STRUCTURE EL. 922.0

9 DRAINAGE AREA IN ACRES ABOVE STRUCTURE 26,000 CHARACTER OF TERRAINE HILLY

10 IS STREAM EVER DRY? No

11 VELOCITY OF STREAM AT HIGH WATER STAGE 11 FPS ESTIMATED DISCHARGE 4830 c.f.s.

12 AREA FULL OPENING 1306 SQ. FT. AREA BELOW ORDINARY H.W. 300 SQ. FT.

13 CHARACTER OF SCOUR SLIGHT DRIFT NONE ICE SLIGHT

14 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE NONE

15 VERTICAL CLEARANCE ABOVE FLOOD ELEVATION 6'

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

17 RECOMMENDED TYPE OF PAVEMENT CONCRETE - BIT. CONC. SURFACE

18 TRAFFIC TO BE MAINTAINED UNDER ITEM NO. 108 ONE OR TWO WAYS TWO PROBABLE COST $500

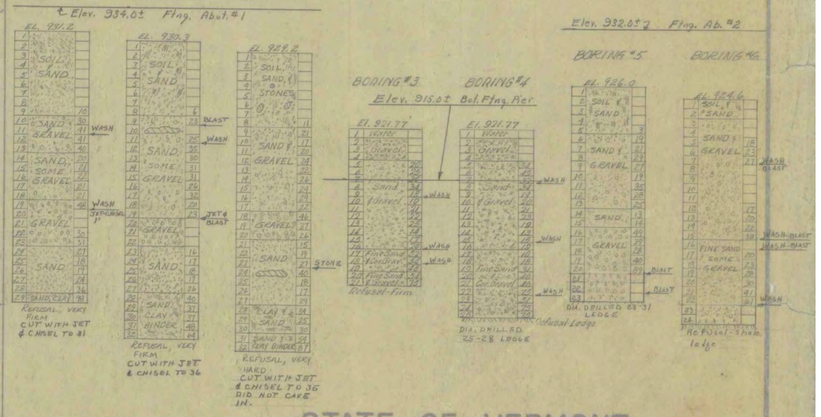
19 PROBABLE COST OF CLEARING AND GRUBBING STREAM CHANNEL AT STRUCTURE SITE $200

20 SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES? No

21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS 4 KSF SHOULD FILES BE USED? YES EST. LGTH. 30'

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.



STATE OF VERMONT

DEPT. OF HIGHWAYS

PRELIMINARY INFORMATION SHEET FOR BRIDGES

BRIDGEWATER
BF MEMB (34)
SHEET 31 OF 36
BRIDGE NO. 42
FOR REFERENCE ONLY

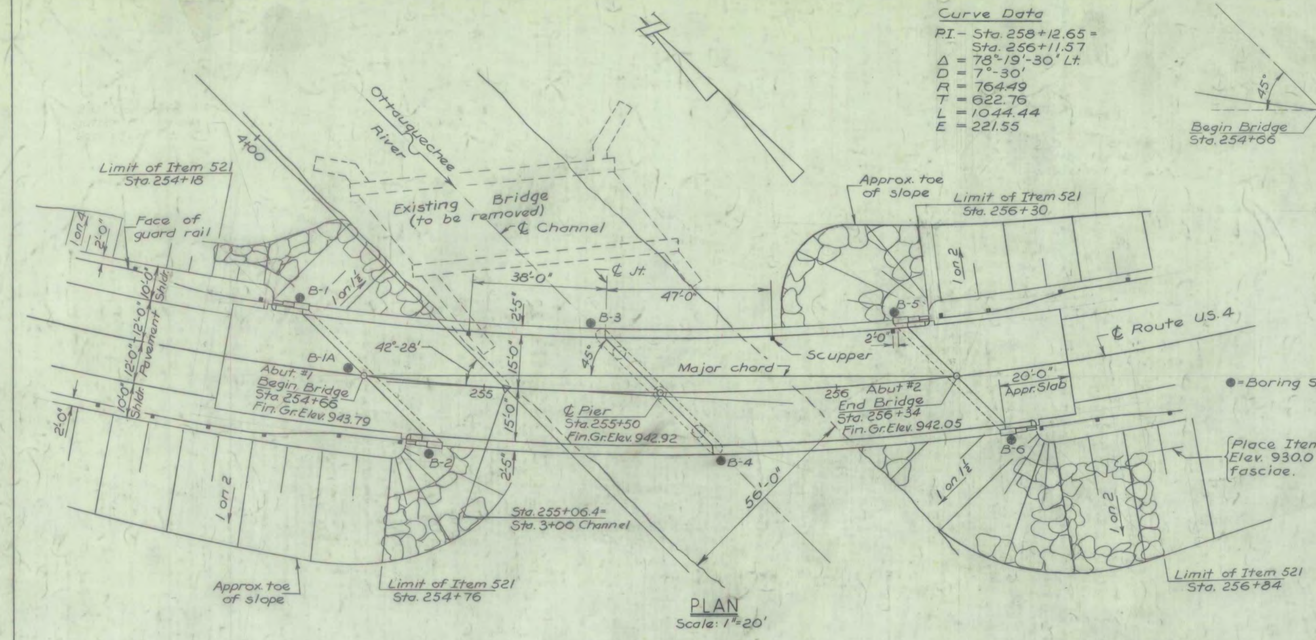
SH. 47 OF 141

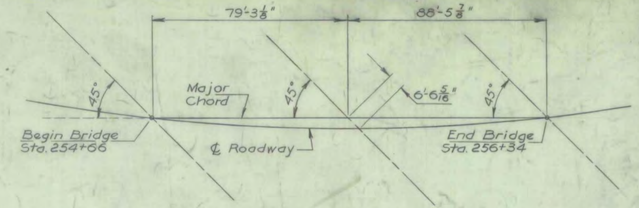
BRIDGEWATER

F-020-2(3)

CORRECT C.D. Tracy BRIDGE ENGINEER

APPROVED H. E. Sargent CHIEF ENGINEER





CURVE LAYOUT
No Scale

GENERAL NOTES

Standards SCB-30-58 & SB-5G-57 shall be modified by substituting the following: Use 2" of Bituminous Concrete pavement in lieu of the 2½" indicated. Granite Bridge Curb (Modified) as indicated in the General Special Provisions shall be substituted in lieu of Granite Bridge Curb Type 1. The curb height finish grade to top of curb will therefore be 12".

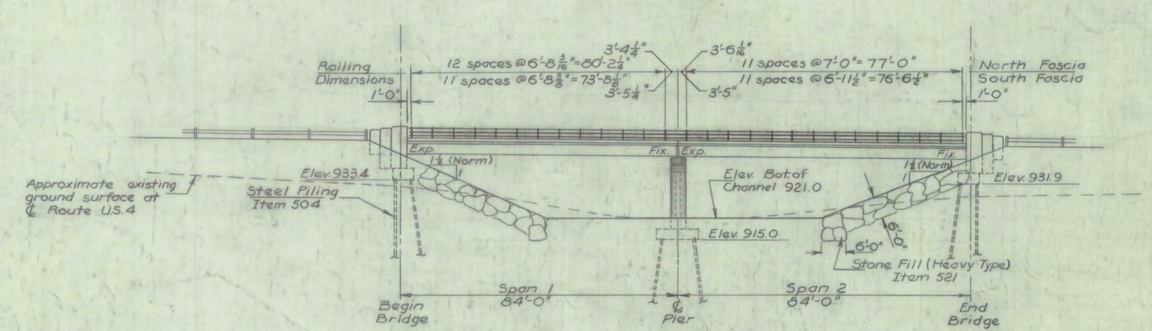
SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	FINAL
106-G	Unclassified Channel Excavation	c.y.	3,524 ✓	3524
107	Structure Excavation	c.y.	~~107~~	112
222	Gravel Backfill	c.y.	~~44~~	0
361-B	Bituminous Concrete Pavement (Mod.)	ton	~~130~~	*
401-B	Concrete Class B (Mod.)	c.y.	~~511~~	507
402	Reinforcing Steel	l.b.	~~72,023~~	73,199
403	Spiral Reinforcement (4,740#)	l.s.	-	1
404-A	Structural Steel	l.b.	~~246,800~~	244,169
407	Asphaltic-Asbestos Coating	s.y.	33 ✓	33
442	Removal of Existing Superstructure	l.s.	-	1
501	Furnishing Equipment for Driving Piles	l.s.	Required	½
504	Steel Piling	l.f.	~~1,410~~	1428
521	Stone Fill (Heavy Type)	c.y.	~~1,997~~	2157
556-C	Granite Bridge Curb	l.f.	~~361~~	373
572	Bridge Railing	l.f.	~~324~~	326
503	Splices for Steel Piling	ea.	~~10~~	3
318	Tar Emulsion For Bridge Floors	Gal	~~320~~	*

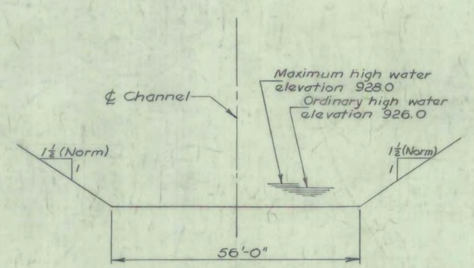
* Roadway Items

GENERAL NOTES

1. Material and construction shall conform to State of Vermont Standard Specifications for Highway and Bridge Construction, dated 1956.
2. All design in accordance with AASHO Standard Specifications for Highway Bridges, dated 1957. Loading is H-20-S16-44 Truck as modified for National System of Interstate Highways.
3. Concrete shall attain a minimum strength of 2000 p.s.i. prior to the addition of any superimposed load.
4. All concrete to be Class B.
5. All welding to conform with the American Welding Society Standard Specifications for Welded Highway and Railway Bridges.
6. Reinforcing steel in top of piers and abutments shall be placed so as to allow drilling for anchor bolts.
7. All dimensions given are measured horizontally or vertically unless otherwise noted.
8. Beam seats to slope ¼" per foot and be coated with Asphaltic-Asbestos Coating, Item 407, except under bearings.
9. Railing posts and pylon lines to be normal to grade, and top of pylon to be parallel to grade.
10. The haunch over the beam is to vary in order to compensate for camber remaining after dead load deflection.
11. The beam seat elevations have been lowered to account for difference between actual camber and required camber.
12. Where piles are driven in fill, the material should be such as to have no stones large enough to interfere with the driving of piles.
13. All piles to be 10BP42 and driven to a minimum bearing capacity of 37 tons.
14. Cross slope of 15/16" per foot extends full length of bridge and approach slabs.
15. Piles shall not be spliced, except with the written approval of the Engineer.
16. Minimum cover for reinforcing bars shall be 2" unless noted.



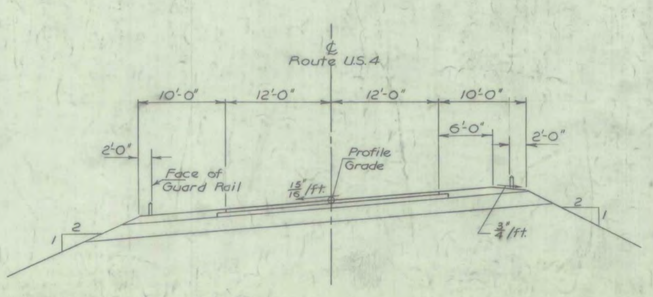
ELEVATION
Scale: 1"=20'



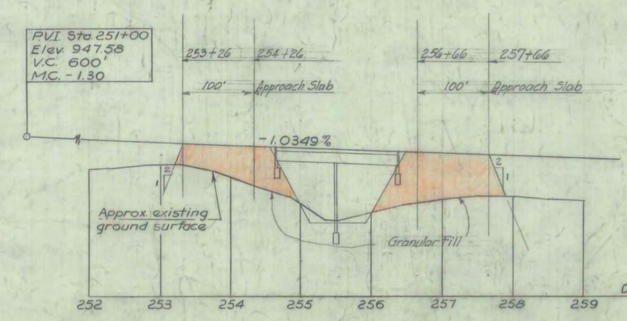
TYPICAL CHANNEL SECTION
Scale: 1/16"=1'-0"

LIST OF SHEETS

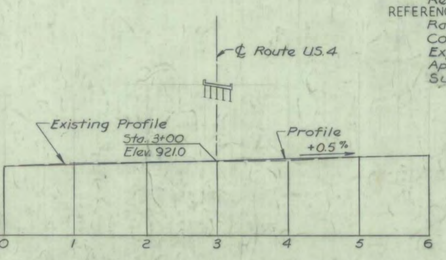
STRUCTURE		
General Plan	Sheet #	1
Framing Plan, Section & Boring Logs	"	2
Abutment #1 Details	"	3
Abutment #2 Details	"	4
Pier Details	"	5
Approach Slabs	"	6
Reinforcing Schedule	"	7
REFERENCE		
Railing and Curb Details	Standard Sheet	SB-5G-57 (1 of 2)
Construction Details	" "	SB-20-56
Expansion Joint Details	" "	SB-22-58
Approach Slabs	" "	SBA545 Sheet 57
Superstructure	" "	SCB-30-58



TYPICAL APPROACH SECTION
Scale: ½"=1'-0"



ROUTE US 4 PROFILE
Scales: 1"=20' Vert. 1"=100' Horiz.



PROFILE OTTAUQUECHEE RIVER
Scales: 1"=20' Vert. 1"=100' Horiz.

BRIDGEWATER
BF MEMB (34)
SHEET 32 OF 36
BRIDGE NO. 42
FOR REFERENCE ONLY

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S. ROUTE 4
BRIDGE AT STA. 255+50

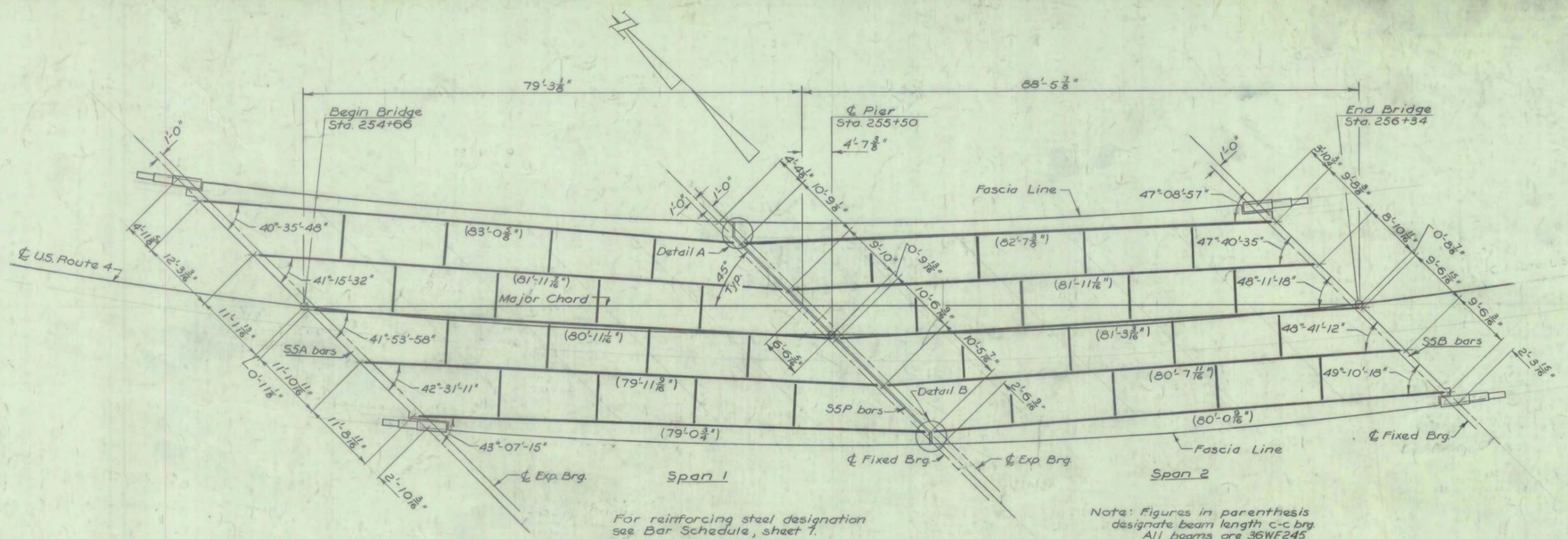
GENERAL PLAN, ELEVATION PROFILES & SECTIONS

WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

DESIGNED: Chrisman	CHECKED: A.W.R.	DATE: Feb. 6, 1959
DRAWN: J. Kleske	IN CHARGE: H. Coles	SCALE: as shown

PROJECT NO. F-020-2(5) SH. 48 OF 141

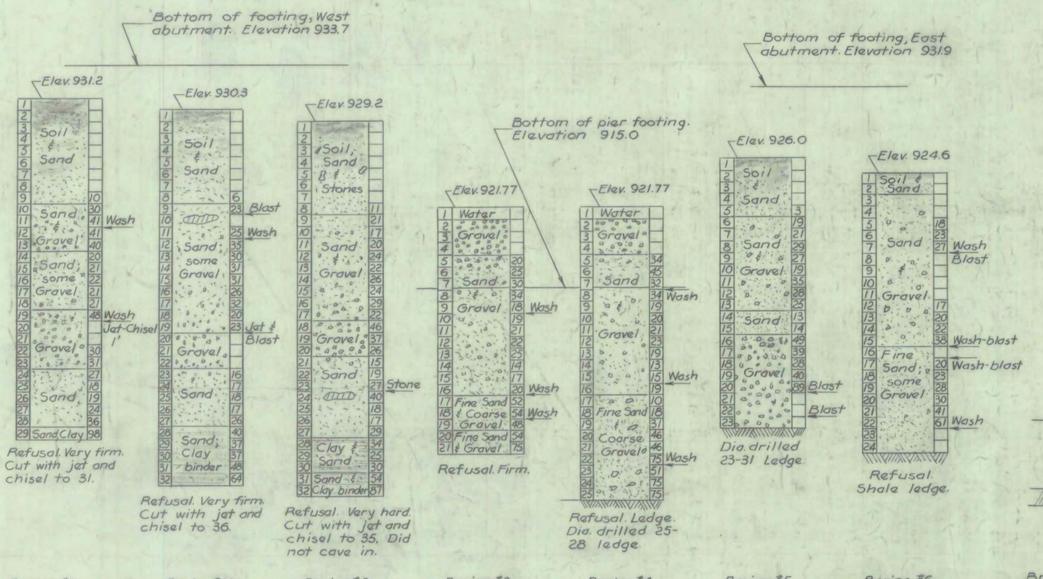
BRIDGE SHEET 1 OF 7



For reinforcing steel designation see Bar Schedule, sheet 7.

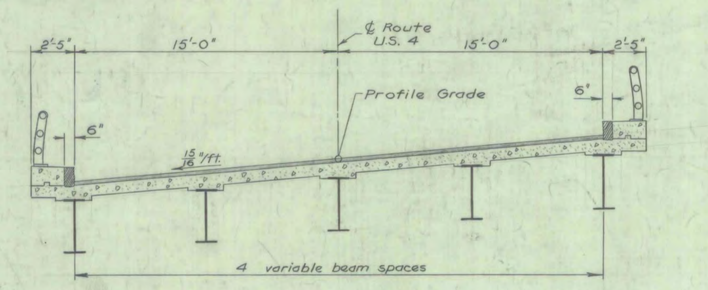
FRAMING PLAN
Scale: 1"=10'

Note: Figures in parenthesis designate beam length c-c brg. All beams are 36WF245 with 14"x1"x51'-10" cover pl on bottom and 3 3/4" camber. Diaphragms 18°∠ 42.7 Beams are not parallel. Camber shown is minimum camber likely to remain permanent.

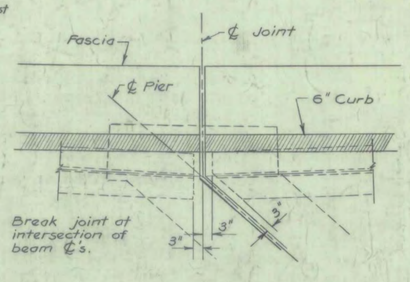


BORING LOGS

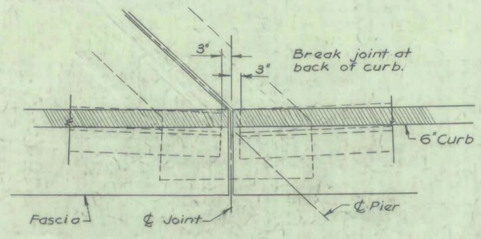
NOTE:
Foundation information obtained for design purposes only, and the State assumes no responsibility whatsoever for the sufficiency or accuracy of the information shown. Boulders may be encountered at any pier or abutment location.
For location of borings see General Plan, Sheet 1.



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



DETAIL A



DETAIL B

PIER JOINT DETAILS
Scale: 1/2"=1'-0"

NOTES

1. For General Notes see sheet 1.
2. For reinforcement bar designation see sheet 7.

BRIDGEWATER
BF MEMB (34)
SHEET 33 OF 36
BRIDGE NO. 42
FOR REFERENCE ONLY

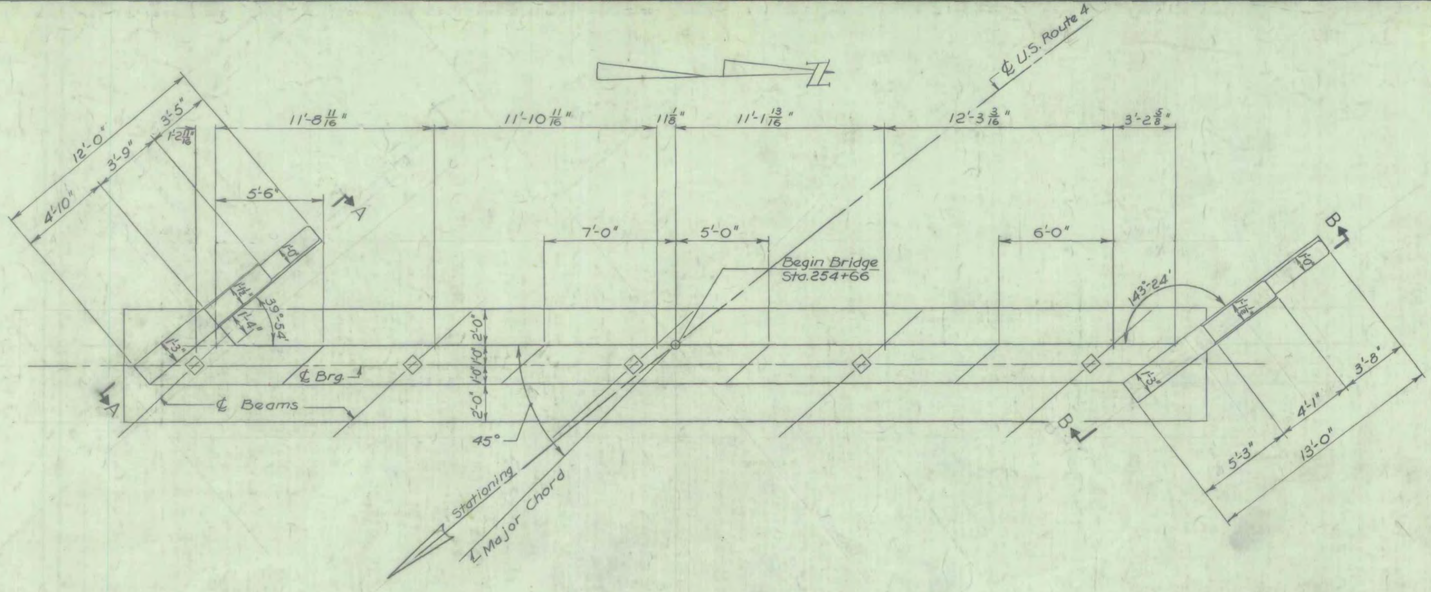
VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S. ROUTE 4
BRIDGE AT STA 255+50
FRAMING PLAN, SECTION & BORING LOGS

WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

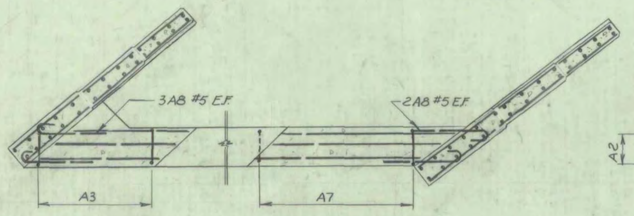
DESIGNED: F.W.C.	CHECKED: L.H.S.	DATE: Feb. 6, 1959
DRAWN: J. Kleske	IN CHARGE: H. Coles	SCALE: as shown

PROJECT NO. F-020-2(5) SH. 49 OF 141

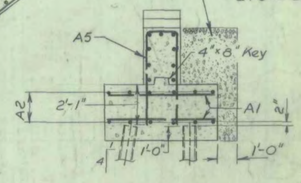
ESTIMATED QUANTITIES					FINAL
ITEM NO.	ITEM	NEAT	OVERRUN	TOTAL	
401-B	Concrete Class B Mod. C.Y.	61 ✓	~~3~~	~~64~~	61
407	Asphaltic-Asb. Coating S.Y.	6 ✓	–	6 ✓	0
504	Steel Piling L.F.	~~560~~	–	~~560~~	588
503	Splices for Steel Piling	~~3~~	-	~~3~~	0



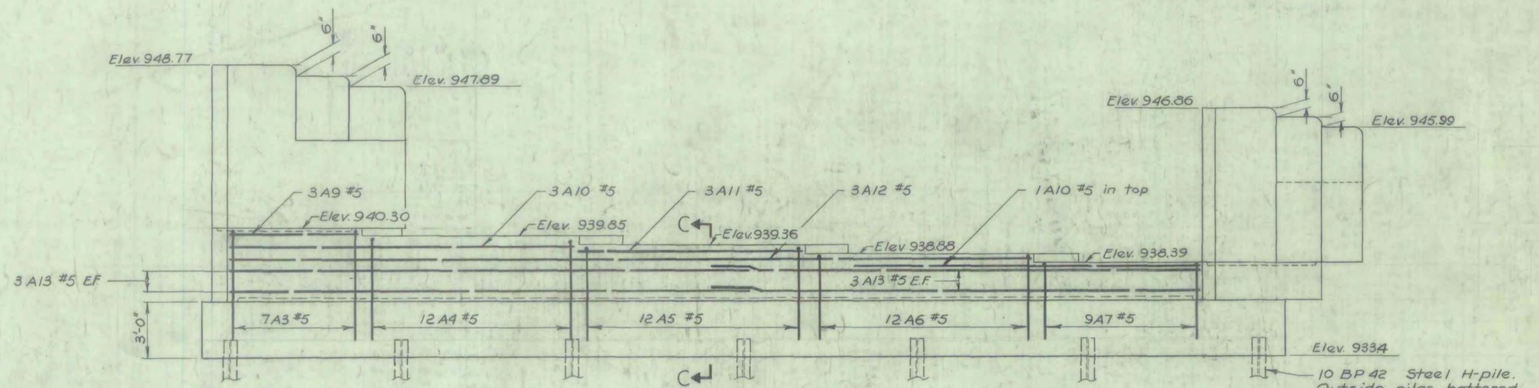
PLAN



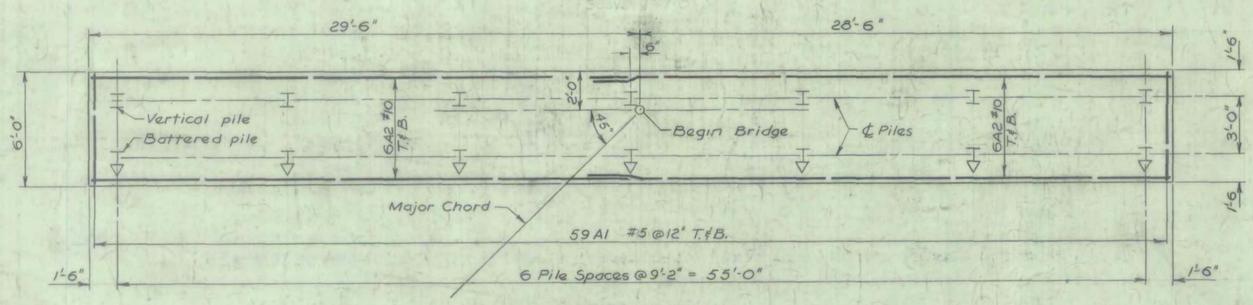
WINGWALL REINFORCEMENT



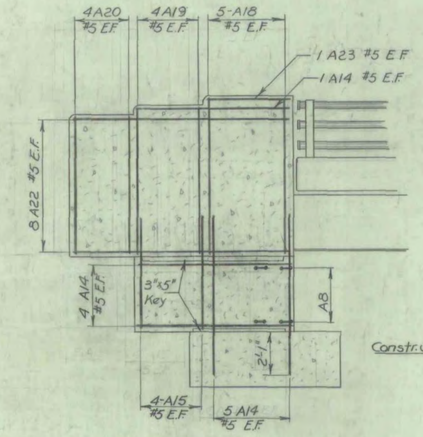
SECTION C-C



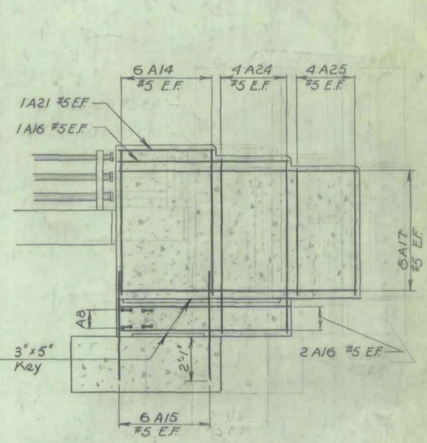
ELEVATION



FOOTING PLAN



SECTION A-A



SECTION B-B

NOTES

1. For General Notes see sheet #1 this bridge
2. Pylon base to be poured monolithic with abutment stem up to adjacent beam seat elevation.
3. Estimated length of piles = 40'
4. For reinforcement bar schedule and quantities see sheet #7 this bridge.

BRIDGEWATER
BF MEMB (34)
SHEET 34 OF 36
BRIDGE NO. 42
FOR REFERENCE ONLY

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S. ROUTE 4
BRIDGE AT STA. 255+50

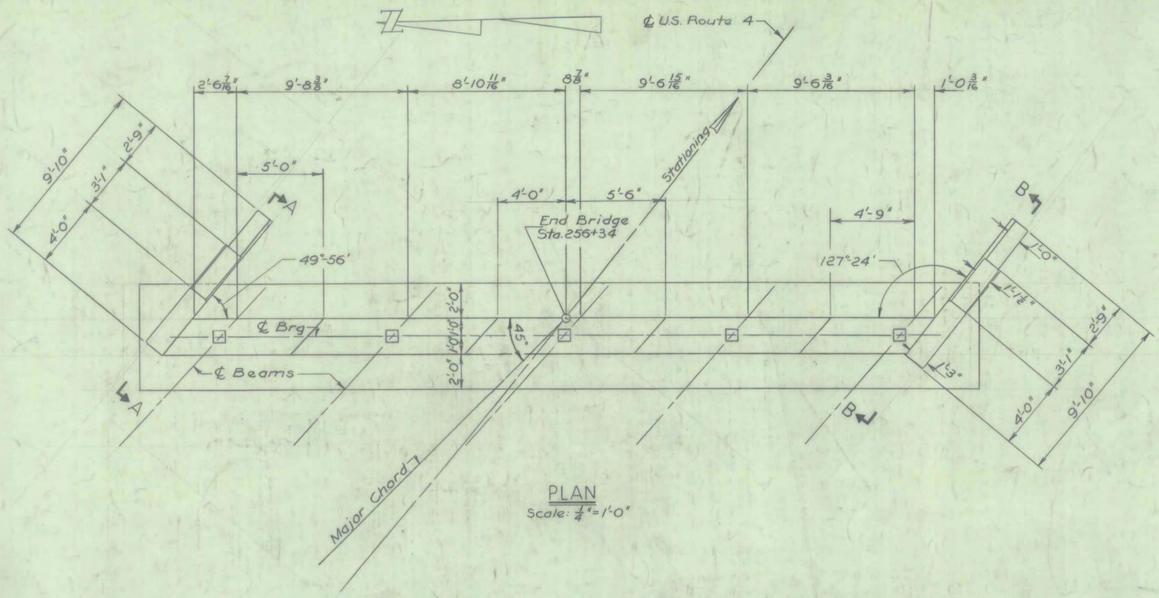
ABUTMENT #1 DETAILS

WM. H. McFARLAND
ENGINEER
BINGHAMTON, N.Y.

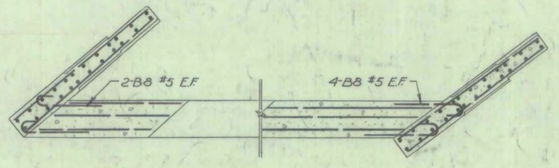
DESIGNED: C.C. Ballis	CHECKED: W.H.M.	DATE: Feb. 6, 1959
DRAWN: J. Kleske	IN CHARGE: H. Goles	SCALE: 1/4" = 1'-0"

PROJECT NO. F-020-2(5) SH. 50 OF 141

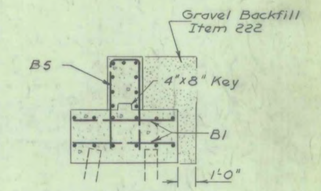
ESTIMATED QUANTITIES					Final
ITEM NO.	ITEM	NEAT	OVERRUN	TOTAL	
401-B	Concrete Class B Mod. C.Y.	50 #	2	52	51
407	Asphaltic-Asb. Coating S.Y.	5 #	–	5 #	5
504	Steel Piling L.F.	490	–	490	434
503	Splices for Steel Piling	3	–	3	0



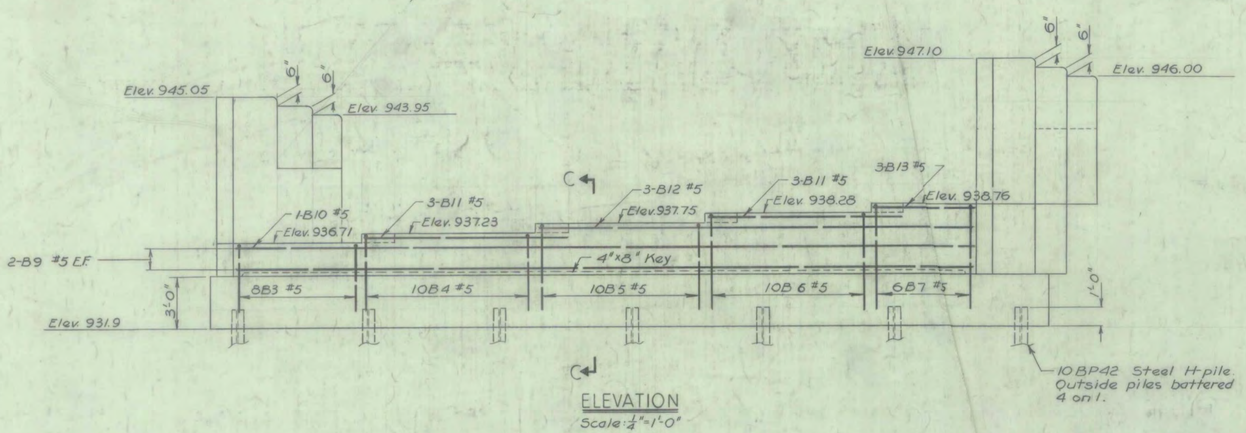
PLAN
Scale: 1/4"=1'-0"



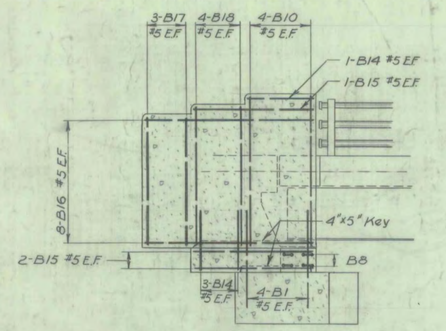
WINGWALL REINFORCEMENT
Scale: 1/4"=1'-0"



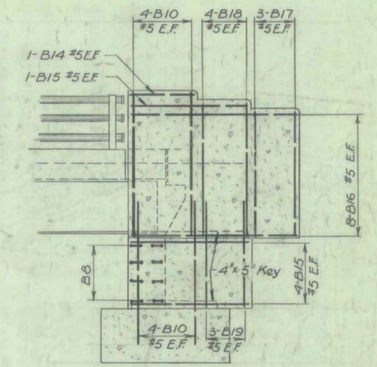
SECTION C-C
Scale: 1/4"=1'-0"



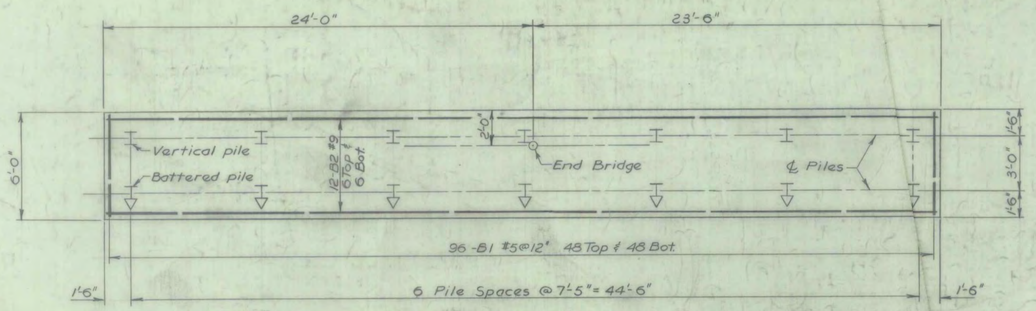
ELEVATION
Scale: 1/4"=1'-0"



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



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



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

NOTES:

1. For General Notes see sheet #1.
2. Pylon bases to be poured monolithic with and to the elevation of the adjacent bridge seat.
3. Estimated length of piles = 35'
4. For bar reinforcement schedule and quantities see sheet #7 this bridge.

BRIDGEWATER
BF MEMB (34)
SHEET 35 OF 36
BRIDGE NO. 42
FOR REFERENCE ONLY

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S. ROUTE 4
BRIDGE AT STA. 255+50

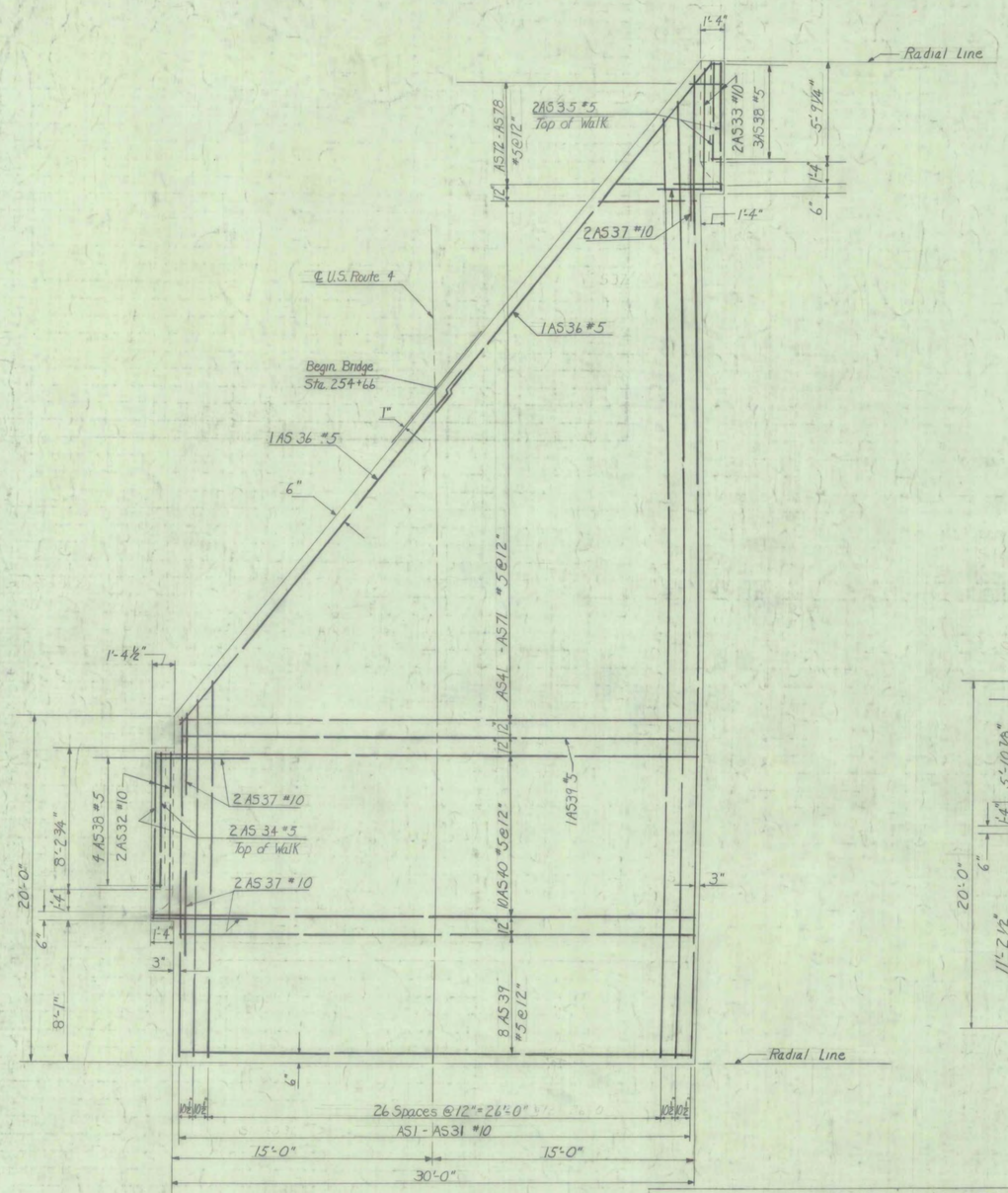
ABUTMENT #2 DETAILS

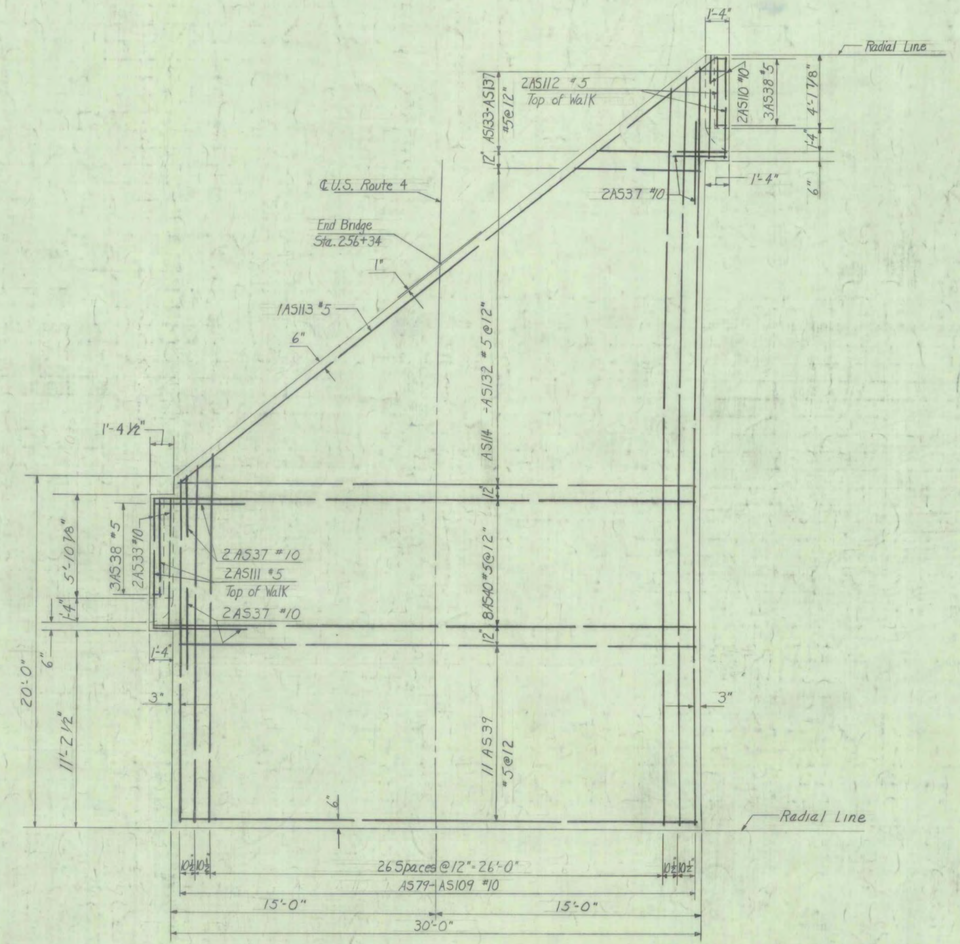
WM. H. Mc FARLAND
ENGINEER
BINGHAMTON, N.Y.

DESIGNED: C.C. Bellis	CHECKED: F.W.C.	DATE: Feb. 6, 1959
DRAWN: J. Kleske	IN CHARGE: H. Coles	SCALE: 1/4"=1'-0"

PROJECT NO. F-020-2(5) SH. 51 OF 141

BRIDGE SHEET 4 OF 7





NOTES:

1) For General Notes, see Sheet No.1
2) For typical Sections and Standard Details, see Standard Sheet SB-AS-45°Skew 57 (modified for 12" superelev.)
3) For Reinforcing Bar Schedule and Quantities see Sheet 7.

REINFORCEMENT PLAN
APPROACH SLAB-ABUTMENT #1
SCALE: 1/4" 1'-0"

REINFORCEMENT PLAN
APPROACH SLAB ABUTMENT #2
SCALE: 1/4" = 1'-0"

ESTIMATED QUANTITIES — FINAL

ITEM NO.	ITEM	NEAT	OVERRUN	TOTAL	
401B	Concrete Class B Mod(cy)	~~85~~	~~5~~	~~90~~	Roadway Item
556-C	Granite Bridge Curb (l.f.)	~~25~~	-	~~25~~	See Total

BRIDGEWATER
BF MEMB (34)
SHEET 36 OF 36
BRIDGE NO. 42
FOR REFERENCE ONLY

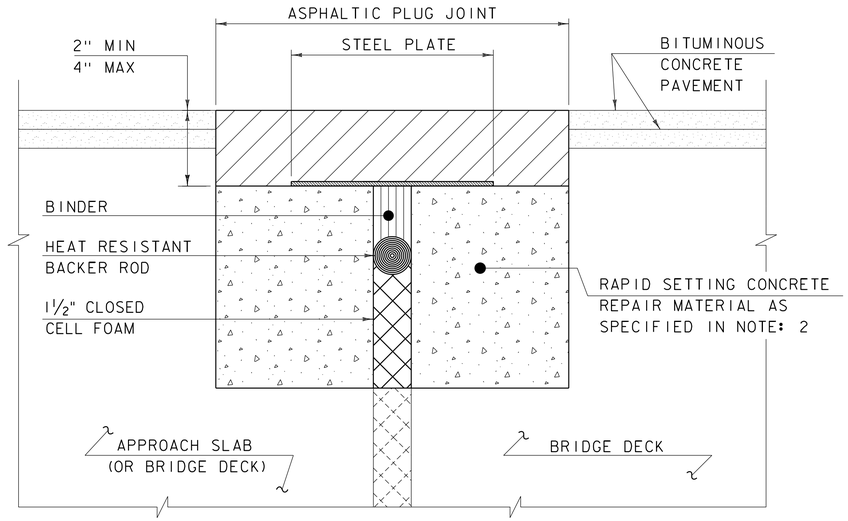
VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF BRIDGEWATER
U.S ROUTE 4

BRIDGE AT STA. 255+50
APPROACH SLAB DETAILS
AT ABUTMENTS NO. 1 & 2

WM. H. MCFARLAND
ENGINEER
BINGHAMTON, N.Y.

DESIGNED: | CHECKED: W.O. | DATE: Feb. 6, 1959
DRAWN: E.F.D. | IN CHARGE: H.G.C. | SCALE: AS NOTED

PROJECT NO. F-020-2(5) SH.53 OF 141



ASPHALTIC PLUG JOINT DETAIL - REHAB

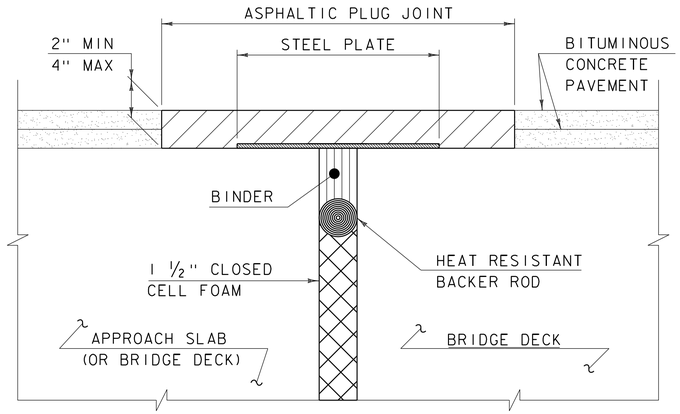
NOTES:

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.

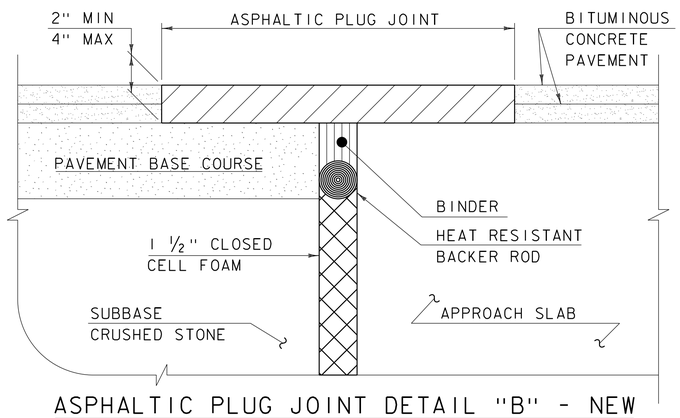
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.

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

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.

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

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - DIVISION

STRUCTURES DETAIL
SD-516.10