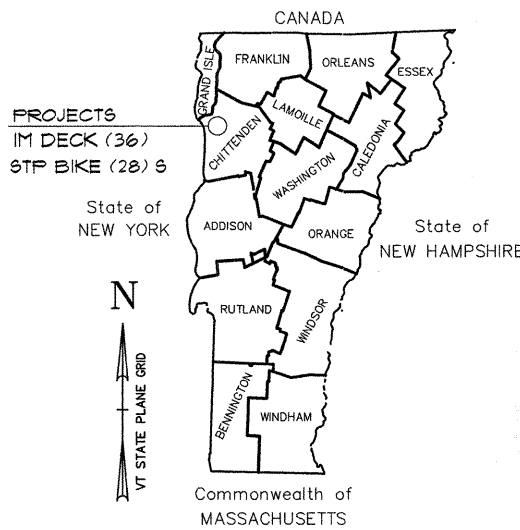


STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
CITY OF SOUTH BURLINGTON
COUNTY OF CHITTENDEN



LOCATION MAP

IM DECK (36)

ROUTE NO. : 1-89

PROJECT LOCATION:

PROJECT DESCRIPTION:

LENGTH OF STRUCTURE:

LENGTH OF PROJECT:

BRIDGE NO. : 68

U.S. 2 (WILLISTON RD.) OVER 1-89

INSTALL TRAFFIC CONTROL, REHABILITATE

STRUCTURE, REMOVE TRAFFIC CONTROL

261.00'

1723.00'

STP BIKE (28) S

PROJECT LOCATION:

PROJECT DESCRIPTION:

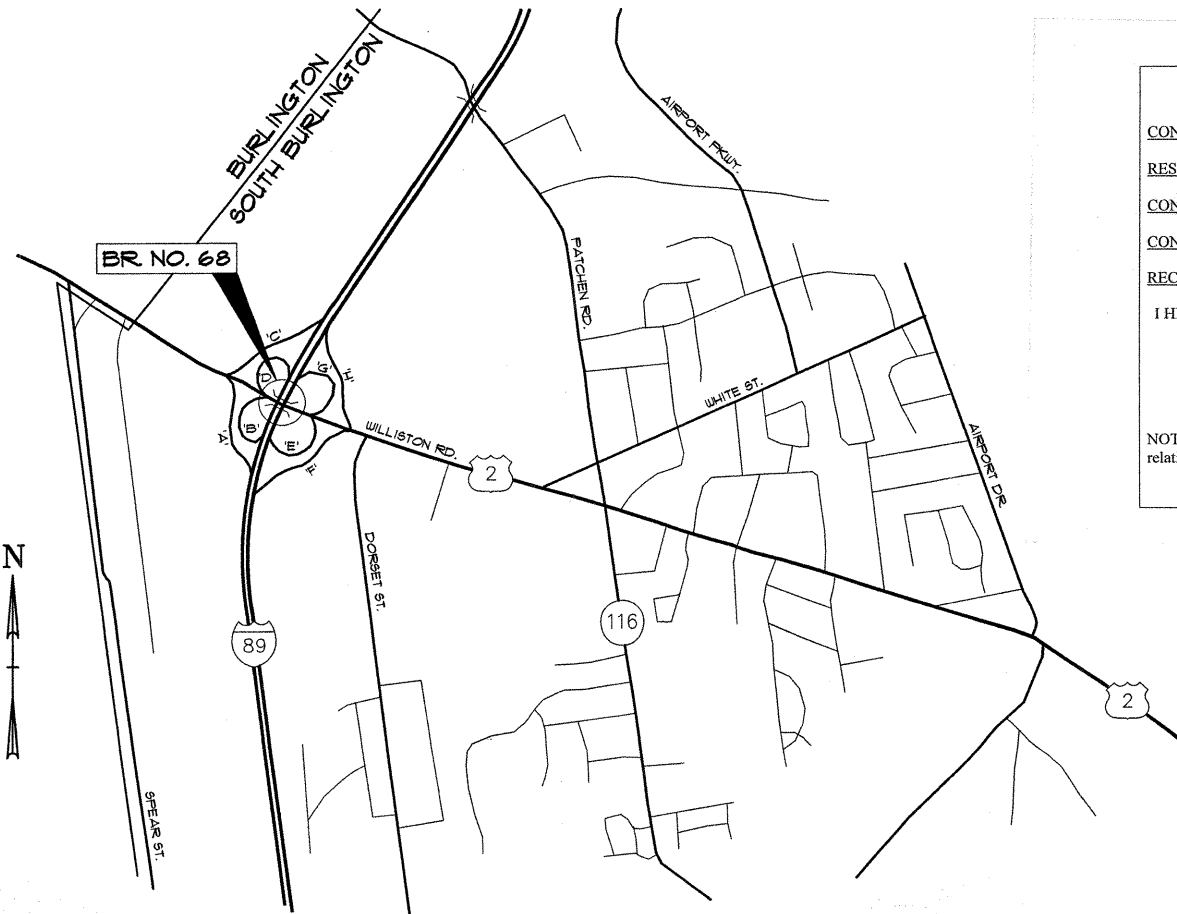
LENGTH OF PROJECT:

U.S. 2 (WILLISTON RD.) OVER 1-89

CONSTRUCT SIDEWALK AND BIKEWAY ALONG

U.S. 2 BETWEEN STA. 21400 AND 36461

1561.00'



RECORD PLANS

CONTRACTOR:	J.A. McDONALD - LYNDON CTR. VT.
RESIDENT ENGINEER:	ROBERT SUCKERT
CONSTRUCTION BEGAN:	JUNE 12, 2009
CONSTRUCTION COMPLETE:	APRIL 23, 2014
RECORD PLANS BY:	R. SUCKERT, D. HOSKING & N. GARRACIE
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.	
BY:	RESIDENT ENGINEER
DATE:	6-2-09

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



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

APPROVED: DATE: 3/1/14

DIRECTOR OF PROJECT DEVELOPMENT

DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

APPROVED: DATE: 3/1/14

DIVISION ADMINISTRATOR

PROJECT: SOUTH BURLINGTON IM DECK(36)

SOUTH BURLINGTON STP BIKE (28)S

SHEET 1 OF 75 SHEETS

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

DATUM	N/A
VERTICAL	N/A
HORIZONTAL	N/A

VANASSE HANGEN BRUSTLIN, INC.

LIST OF SHEETS

- 1. TITLE SHEET
- 2. LIST OF SHEETS
- 3. COMPOSITE QUANTITIES (1 OF 2)
- 4. COMPOSITE QUANTITIES (2 OF 2)
- 5. IM DECK(36) QUANTITIES
- 6. STP BIKE(28)S QUANTITIES

IM DECK 36

- 6A. EXISTING PLAN & ELEVATION
 - 7. SCOPE OF WORK NOTES
 - 8. NEW TRANSVERSE SECTION & BRIDGE INFO. SUMMARY
 - 9. GENERAL NOTES & DECK REHABILITATION NOTES
 - 10. SIDEWALK & APPROACH SLAB REHABILITATION NOTES

- 11. CONSTRUCTION PHASING (1 OF 2)
- 12. CONSTRUCTION PHASING (2 OF 2)
- 12A. DECK& MEDIAN REHABILITATION DETAILS
- 12B. SIDEWALK REHABILITATION DETAILS

- 13. ABUTMENT JOINT REPAIR DETAILS
- 14. PIER EXPANSION JOINT REPAIR PLAN
- 15. PIER EXPANSION JOINT REPAIR SECTIONS
- 16. PIER EXPANSION JOINT REPAIR DETAILS & NOTES
- 17. DRAIN TROUGH DETAILS

- 18. BEARING REPAIR NOTES
- 19. BEARING CONDITION & TREATMENT SUMMARY
- 20. BEARING TREATMENT DETAIL 'A'
- 21. BEARING TREATMENT DETAIL 'D'
- 22. BEARING TREATMENT DETAIL 'X'
- 23. BEARING TREATMENT DETAIL 'Y'

- 24. NETC BRIDGE RAIL - 4 RAIL
- 25. GUARD RAIL APPROACH SECTION, NETC 4 RAIL
- 26. BRIDGE RAIL LAYOUT
- 27. SHEET NOT USED

- 28. EXISTING PIER REMOVAL
- 29. PIER MASONRY
- 30. PIER CAP PLAN
- 31. PIER REINFORCEMENT

- 32. ABUTMENT REPAIR AREAS
- 33. ABUTMENT REPAIR NOTES
- 34. SHEET NOT USED
- 35. SHEET NOT USED
- 36. SHEET NOT USED

- 37. TRAFFIC CONTROL PLAN NOTES
- 38. GENERAL CONSTRUCTION SIGNING
- 39. TRAFFIC CONTROL PLAN PHASES 1&2
- 40. TRAFFIC CONTROL PLAN PHASES 3&4
- 41. TRAFFIC CONTROL PLAN PHASE 5

- 42. NON-STANDARD SIGNS
- 43. REINFORCING STEEL SCHEDULE

- 44. APPROACH ROADWAY PLAN (1 OF 2)
- 45. APPROACH ROADWAY PLAN (2 OF 2)

STP BIKE 28(S)

- 46. BIKEWAY GENERAL NOTES
- 47. BIKEWAY PLAN (1 OF 2)
- 48. BIKEWAY PLAN (2 OF 2)
- 49. BIKEWAY PLAN RAMP B
- 50. BIKEWAY PLAN RAMP D
- 51. BIKEWAY PLAN RAMP E
- 52. BIKEWAY PLAN RAMP G
- 53. BIKEWAY PLAN RAMPS A, C, F & H
- 54. BIKEWAY TYPICAL SECTIONS

- 54A. US 2 & DORSET ST. INTERSECTION (1 OF 3)
- 54B. US 2 & DORSET ST. INTERSECTION (2 OF 3)
- 54C. US 2 & DORSET ST. INTERSECTION (3 OF 3)

- 55. BIKEWAY SIGN SUMMARY (1 OF 4)
- 56. BIKEWAY SIGN SUMMARY (2 OF 4)
- 57. BIKEWAY SIGN SUMMARY (3 OF 4)
- 58. BIKEWAY SIGN SUMMARY (4 OF 4)
- 59. FEDESTRIAN SIGNAL PLAN

- REFERENCE SHEETS FROM EXISTING PLANS
- 60-69. BRIDGE NO. 68 INFORMATION SHEETS (10 SHEETS)

REFERENCE STANDARD SHEETS

- 70. SHEET NOT USED
- 71. SCB-D-60
- 72. SCB-42-60
- 73. SB-20-60
- 74. SB-21-56
- 75. SB-22-60

STANDARD SHEETS

BR3 - 9T	06-23-98	E - 171A	08-09-95
C - 1	01-03-00	E - 171B	08-09-95
C - 2A	01-03-00	E - 171C	08-09-95
C - 2B	01-03-00	E - 172	08-09-95
C - 3	01-03-00	E - 173	08-09-95
D - 9	06-01-94	E - 175	11-17-93
D - 10	06-01-94	E - 180A	08-09-95
D - 15	06-01-94	E - 180B	08-09-95
E - 100	01-06-97	E - 181	08-09-95
E - 101	03-10-97	E - 191	02-01-99
E - 102	08-08-95	E - 192	12-28-98
E - 102A	08-08-95	E - 193	08-18-95
E - 103	09-23-98	E - 197	08-18-95
E - 104	02-03-99	G - 1	01-03-00
E - 104A	12-27-96	G - 1D	01-03-00
E - 105	04-01-99	G - 18	06-01-94
E - 106	08-08-95	G - 19	10-21-98
E - 107	08-08-95	T - 1	06-01-94
E - 107A	08-08-95	T - 2	06-01-94
E - 108	08-18-95		
E - 110	08-08-95		
E - 119	08-08-95		
E - 120	08-08-95		
E - 121	08-08-95		
E - 131	08-08-95		
E - 136A	08-08-95		
E - 140	08-30-96		
E - 142	09-20-95		
E - 143	09-20-95		
E - 144	03-29-99		
E - 145A	12-23-94		
E - 145B	12-23-94		
E - 146	09-20-95		
E - 150	01-15-97		
E - 151	08-08-95		
E - 152	08-08-95		
E - 154	08-08-95		
E - 155	08-08-95		
E - 160	05-20-99		
E - 161	08-18-95		
E - 162	05-20-99		
E - 163	05-20-99		
E - 164	05-20-99		
E - 170	11-04-99		

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No. 68
Highway No. U.S. 2		Log Sta.
		Surv. Sta.
U.S. 2 OVER I-89		
LIST OF SHEETS		
Designed By S.M. HODGDON	Drawn By B.J. MASSE	
Checked By Date T.S. BRYANT 1/00	Bridge Design Supervisor C.D. BAKER Date 1/00	
PROJECT SOUTH BURLINGTON		PROJECT NO. IM DECK (36)/STP BIKE (28) S
VHB Cad Drawing No. 50929SHT		Date 1/00
Bridge Sheet No.		Sheet 2 of 75

COMPOSITE QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	EROSION CONTROL		TRAINING		FULL E&C		GRAND TOTAL
			IM DECK(36)	STP BIKE(28)S	IM DECK(36)	STP BIKE(28)S	IM DECK(36)	STP BIKE(28)S	
203.15	COMMON EXCAVATION	C.Y.	330	1500					1830
203.28	EXCAVATION OF SURFACES AND PAVEMENTS	C.Y.		130					130
203.35	GRAVEL BACKFILL FOR SLOPE STABILIZATION	C.Y.	5						5
204.20	TRENCH EXCAVATION OF EARTH	C.Y.	1	15		30			46
204.25	STRUCTURE EXCAVATION	C.Y.	650						650
204.30	GRANULAR BACKFILL FOR STRUCTURES	C.Y.	640						640
210.10	COLD PLANING - BITUMINOUS PAVEMENT	S.Y.	16000						16000
621.90	TEMPORARY TRAFFIC BARRIER (MOD - INNOVATIVE)	LF	4200						4200
219.10	MILLED RUMBLE STRIPS	L.F.		140					140
301.26	SUBBASE OF CRUSHED GRAVEL (FINE GRADED)	C.Y.	340	970	40	130			1480
404.65	EMULSIFIED ASPHALT	CWT	200						200
406.25	BITUMINOUS CONCRETE PAVEMENT (PG 64-28)	TON	2180						2180
501.25	CONCRETE, CLASS B	C.Y.		10					10
501.60	SILICA-FUME CONCRETE (MOD.)	C.Y.	470	5					475
502.10	SHORING SUPERSTRUCTURE	L.S.	1						1
502.10	SHORING SUPERSTRUCTURE (AT PIERS 1, 2, AND 3)	L.S.	1						1
502.11	SHORING SUPERSTRUCTURE BEARINGS (FROM BRIDGE SEAT)	EA.	15						15
505.36	TEMPORARY STEEL SHEET PILING	S.F.	2800						2800
506.60	STRUCTURAL STEEL	LB\$.	1200						1200
506.80	DRAIN TROUGH	L.F.	230						230
506.80	DRAIN TROUGH (MOD. DOWNSPOUTS)	L.F.	254						254
507.15	REINFORCING STEEL	LB\$.	2500	500					3000
507.16	DRILLING AND GROUTING DOWELS	L.F.	1630						1630
507.17	EPOXY COATED REINFORCING STEEL	LB\$.	101044						101044
507.19	MECHANICAL BAR CONNECTOR (NO. 5)	EA.	100						100
513.30	STRUCTURAL PAINTING, FIELD APPLIED (.375 TONS)	L.S.	1						1
513.36	CONTAINMENT AND ENVIRONMENTAL PROTECTION, FIELD (.375 TONS)	L.S.	1						1
513.41	SURFACE PREPARATION, FIELD (.375 TONS)	L.S.	1						1
514.10	WATER REPELLENT	GAL.	120						120
516.10	BRIDGE EXPANSION JOINT (ARMORED JOINT)	L.F.	230						230
519.20	SHEET MEMBRANE WATERPROOFING (MOD. - TORCH APPLIED)	S.Y.	2200						2200
524.20	JOINT SEALER, POLYURETHANE	GAL.	10						10
525.10	REMOVAL OF EXISTING RAILING	L.F.	550						550
525.34	BRIDGE RAILING - NETC 4 RAIL	L.F.	550						550
527.11	TRAFFIC PROTECTION FOR BRIDGE PROJECT	L.S.	1						1
529.10	REMOVAL OF BRIDGE PAVEMENT	S.Y.	2700						2700
529.20	PARTIAL REMOVAL OF STRUCTURE	EA.	1						1
529.25	REMOVAL OF CONCRETE OR MASONRY	C.Y.	110	3					113
531.10	BEARING DEVICE ASSEMBLY (STEEL PLT. EXP. BEARINGS)	EA.	1						1
531.10	BEARING DEVICE ASSEMBLY (STEEL PLT. FIXED BEARINGS)	EA.	13						13
531.10	BEARING DEVICE ASSEMBLY (FABRIC TFE EXP. BEARINGS)	EA.	56						56
531.10	BEARING DEVICE ASSEMBLY (FABRIC FIXED BEARINGS)	EA.	28						28
580.10	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I	S.Y.	27						27
580.11	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II	S.Y.	30						30
580.12	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III	C.Y.	52						52
580.13	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	S.Y.	1						1
580.14	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	S.Y.	6						6
580.15	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	C.Y.	1						1
580.19	CONCRETE CLASS AA OVERLAY	S.Y.	2450						2450
604.10	CONCRETE CATCH BASIN WITH CAST IRON GRATE	EA.		2					2
604.40	CHANGING ELEVATIONS OF DROP INLETS, CATCH BASINS OR MANHOLES	EA.		6					6
604.41	REHABILITATION OF DROP INLETS, CATCH BASINS OR MANHOLES	EA.		2					2
604.52	CAST IRON GRATE WITH FRAME, TYPE E	EA.		8					8
608.25	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	HR.			1	3			4
613.10	STONE FILL, TYPE I	C.Y.	115	895	10	20			1040
616.20	GRANITE SLOPE EDGING	L.F.		100					100
616.21	VERTICAL GRANITE CURB	L.F.		240					240
616.40	REMOVING AND RESETTING CURB	L.F.	910	900					1810
616.41	REMOVAL OF EXISTING CURB	L.F.	1770	315					2085
616.47	BITUMINOUS CONCRETE GUTTERS AND TRAFFIC ISLANDS	TON	35						35
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	S.Y.		1210					1210
618.15	BITUMINOUS CONCRETE SIDEWALK	TON		90					90
620.75	SNOW BARRIER - GALVANIZED	L.F.	340						340
621.21	HEAVY DUTY STEEL BEAM GUARD RAIL	L.F.		595					595
621.57	ENERGY ABSORPTION ATTENUATOR	EA.	9						9
621.73	GUARD RAIL APPROACH SECTION, NETC 4 RAIL	EA.	4						4
621.75	REMOVING AND RESET GUARD RAIL	L.F.	720	155					875
621.80	REMOVAL AND DISPOSAL OF GUARD RAIL	L.F.	520						520
516.10	BRIDGE EXPANSION JOINT (SIDEWALK)	L.F.	47						47

THE ITEM 621.90 "TEMPORARY TRAFFIC BARRIER (MOD - INNOVATIVE)" IS TO BE USED DURING THE PHASE CONSTRUCTION WORK ON WILLISTON ROAD.

NOTE:
1. QUANTITY OF REINFORCING STEEL INCLUDES A NOMINAL AMOUNT ASSUMED FOR CLASS II CONCRETE REPAIRS.

*** ITEM OUT OF ORDER

VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
		Log Sta.	
Highway No.	U.S. 2	Surv. Sta.	
U.S. 2 OVER I-89			
COMPOSITE QUANTITIES (1 OF 2)			
Designed By	S.M. HODGDON	Drawn By	B.J. MASSE
Checked By	Date T.S. BRYANT 2/00	Bridge Design Supervisor	C.D. BAKER Date 2/00
PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK(36)
VHB Cad Drawing No.	50929QNT2	Date	2/00
Bridge Sheet No.		Sheet	3 of 75

COMPOSITE QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	EROSION CONTROL		TRAINING		FULL E&C		GRAND TOTAL
			IM DECK(36)	STP BIKE(28)S	IM DECK(36)	STP BIKE(28)S	IM DECK(36)	STP BIKE(28)S	
621.90	TEMPORARY TRAFFIC BARRIER	L.F.	880						880
630.10	UNIFORMED TRAFFIC OFFICERS	HR.	2100	300					3000
630.15	FLAGGERS	HR.	1800	200					2000
631.10	FIELD OFFICE - ENGINEERS	L.S.					1		1
631.16	TESTING EQUIP. - CONCRETE	L.S.					1		1
631.17	TESTING EQUIP. - BITUMINOUS	L.S.					1		1
631.18	TESTING EQUIP. - PROTECTIVE COATINGS	L.S.					1		1
631.25	FIELD OFFICE - TELEPHONE (NOT A BID ITEM)	L.U.					1		1
634.10	EMPLOYEE TRAINEESHIP	HR.				1560			1560
635.10	MOBILIZATION	L.S.	1						1
641.10	TRAFFIC CONTROL	L.S.	0.9	0.1					1
641.10	TRAFFIC CONTROL (MOD. - PUBLIC RELATIONS OFFICER)	L.S.	0.9	0.1					1
641.15	PORTABLE CHANGEABLE MESSAGE SIGN	EA.	4						4
641.16	PORTABLE ARROW BOARD	EA.	1						1
646.27	PAINTED CURB	L.F.	10						10
646.40	DURABLE 4" WHITE LINE (TYPE I TAPE)	L.F.	3690	1310					5000
646.41	DURABLE 4" YELLOW LINE (TYPE I TAPE)	L.F.	3320						3320
646.414	DURABLE 6" WHITE LINE (TYPE I TAPE)	L.F.	110	1720					1830
646.415	DURABLE 6" YELLOW LINE (TYPE I TAPE)	L.F.	110	425					535
646.42	DURABLE 8" WHITE LINE (TYPE I TAPE)	L.F.	40	895					935
646.43	DURABLE 8" YELLOW LINE (TYPE I TAPE)	L.F.	10						10
646.44	DURABLE 12" WHITE LINE (TYPE I TAPE)	L.F.		190					190
646.46	DURABLE 24" STOP BAR (TYPE I TAPE)	L.F.	120	22					142
646.50	DURABLE LETTER OR SYMBOL	EA.		35					35
646.50	DURABLE LETTER OR SYMBOL (TYPE I TAPE)	EA.	31	24					55
646.51	DURABLE CROSSWALK WITH DIAGONAL LINES (TYPE I TAPE)	L.F.	250	190					440
646.60	TEMPORARY 4" WHITE LINE	L.F.	5250						5250
646.60	TEMPORARY 4" WHITE LINE (TAPE-TYPE II)	L.F.	8775						8775
646.61	TEMPORARY 4" YELLOW LINE	L.F.	1280						1280
646.61	TEMPORARY 4" YELLOW LINE (TAPE-TYPE II)	L.F.	7200						7200
646.614	TEMPORARY 6" WHITE LINE	L.F.	210						210
646.615	TEMPORARY 6" YELLOW LINE	L.F.	210						210
646.62	TEMPORARY 8" WHITE LINE	L.F.	80						80
646.62	TEMPORARY 8" WHITE LINE (TAPE-TYPE II)	L.F.	895						895
646.63	TEMPORARY 8" YELLOW LINE	L.F.	20						20
646.66	TEMPORARY 24" STOP BAR	L.F.	240						240
646.66	TEMPORARY 24" STOP BAR (TAPE-TYPE II)	L.F.	20						20
646.70	TEMPORARY LETTER OR SYMBOLS	EA.	22						22
646.71	TEMPORARY CROSSWALK WITH DIAGONAL LINES	L.F.	500						500
646.81	RAISED PAVEMENT MARKERS, TYPE II	EA.	3500						3500
646.82	REMOVAL OF EXISTING PAVEMENT MARKINGS	S.F.	1800	150					1950
646.85	PAINTED ISLAND (MOD-BLUE)	S.F.		6000					6000
649.31	GEOTEXTILE UNDER STONE FILL	S.Y.		1780					1780
649.31	GEOTEXTILE FOR SILT FENCE	S.Y.			30	110			140
651.15	SEED	LB\$.			40	60			100
651.18	FERTILIZER	LB\$.				400			400
651.20	AGRICULTURAL LIMESTONE	TON				2			2
651.25	HAY MULCH	TON				2			2
651.26	HAY BALES FOR EROSION CONTROL	EA.			10	20			30
651.35	TOPSOIL	C.Y.		480					480
654.10	EROSION MATTING	S.Y.			20	450			470
675.20	TRAFFIC SIGNS, TYPE A	S.F.		159					159
	*** BEGIN OPTION ***								
675.301	FLANGED CHANNEL SIGN POST	L.F.		574					574
675.341	SQUARE TUBE SIGN POSTS AND ANCHOR	L.F.		574					574
	*** END OPTION ***								
675.50	REMOVING SIGNS	EA.		8					8
675.50	REMOVING SIGNS (BRIDGE-MOUNTED SIGNS)	EA.	3						3
675.60	ERECTING SALVAGED SIGNS	EA.		8					8
675.60	ERECTING SALVAGED SIGNS (BRIDGE-MOUNTED SIGNS)	EA.	3						3
676.20	DELINEATORS WITH FLEXIBLE POSTS (MOD.)	EA.	140						140
678.15	TRAFFIC CONTROL SIGNAL SYSTEM - INTERSECTION	EA.		1					1
678.22	VEHICLE LOOP DETECTOR	L.F.	1470	275					1745
678.23	WIRED CONDUIT	L.F.	450	500					950
678.25	FULL BOX - STANDARD	EA.		2					2
678.26	JUNCTION BOX	EA.		4					4
679.15	STREET LIGHTING	L.S.		1					1
679.15	STREET LIGHTING (MOD.)	L.S.	1						1
679.25	REMOVE AND RESETTNG LIGHT POLE	EA.	3						3

NOTE:
1. QUANTITY OF REINFORCING STEEL INCLUDES A NOMINAL AMOUNT ASSUMED FOR CLASS II CONCRETE REPAIRS.

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
		Log Sta.	
Highway No. U.S. 2		Surv. Sta.	
U.S. 2 OVER I-89			
COMPOSITE QUANTITIES (2 OF 2)			
Designed By S.M. HODGDON		Drawn By B.J. MASSE	
Checked By	Date	Bridge Design Supervisor	Date
T.S. BRYANT	2/00	C.D. BAKER	2/00
PROJECT SOUTH BURLINGTON		PROJECT NO. IM DECK(36)	
VHB Cad. Drawing No. 50929QNT2		Date 2/00	
Bridge Sheet No.		Sheet 4 of 15	

IM DECK(36) QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	BRIDGE 68	EROSION CONTROL	TRAINING	FULL E&C	GRAND TOTAL
203.15	COMMON EXCAVATION	C.Y.	330				330
203.35	GRAVEL BACKFILL FOR SLOPE STABILIZATION	C.Y.	5				5
204.20	TRENCH EXCAVATION OF EARTH	C.Y.	1				1
204.25	STRUCTURE EXCAVATION	C.Y.	650				650
204.30	GRANULAR BACKFILL FOR STRUCTURES	C.Y.	640				640
210.10	COLD PLANING - BITUMINOUS PAVEMENT	S.Y.	16000				16000
301.26	SUBBASE OF CRUSHED GRAVEL (FINE GRADED)	C.Y.	340	40			380
404.65	EMULSIFIED ASPHALT	CWT	200				200
406.25	BITUMINOUS CONCRETE PAVEMENT (PG 64-28)	TON	2180				2180
501.60	SILICA-FUME CONCRETE (MOD.)	C.Y.	470				470
502.10	SHORING SUPERSTRUCTURE	L.S.	1				1
502.10	SHORING SUPERSTRUCTURE (AT PIERS 1, 2, AND 3)	L.S.	1				1
502.11	SHORING SUPERSTRUCTURE BEARINGS (FROM BRIDGE SEAT)	EA.	15				15
505.36	TEMPORARY STEEL SHEET PILING	S.F.	2800				2800
506.60	STRUCTURAL STEEL	LBs.	1200				1200
506.80	DRAIN TROUGH	L.F.	290				290
506.80	DRAIN TROUGH (MOD. - DOWNSPOUTS)	L.F.	254				254
507.15	REINFORCING STEEL	LBs.	2500				2500
507.16	DRILLING AND GROUTING DOWELS	L.F.	1630				1630
507.17	EPOXY COATED REINFORCING STEEL	LBs.	101044				101044
507.19	MECHANICAL BAR CONNECTOR (NO. 5)	EA.	100				100
513.30	STRUCTURAL PAINTING, FIELD APPLIED (.375 TONS)	L.S.	1				1
513.36	CONTAINMENT AND ENVIRONMENTAL PROTECTION, FIELD (.375 TONS)	L.S.	1				1
513.41	SURFACE PREPARATION, FIELD (.375 TONS)	L.S.	1				1
514.10	WATER REPELLENT	GAL.	120				120
516.10	BRIDGE EXPANSION JOINT (ARMORED JOINT)	L.F.	230				230
519.20	SHEET MEMBRANE WATERPROOFING (MOD. - TORCH APPLIED)	S.Y.	2200				2200
524.20	JOINT SEALER, POLYURETHANE	GAL.	10				10
525.10	REMOVAL OF EXISTING RAILING	L.F.	550				550
525.34	BRIDGE RAILING - NETC 4 RAIL	L.F.	550				550
527.11	TRAFFIC PROTECTION FOR BRIDGE PROJECT	L.S.	1				1
529.10	REMOVAL OF BRIDGE PAVEMENT	S.Y.	2700				2700
529.20	PARTIAL REMOVAL OF STRUCTURE	EA.	1				1
529.25	REMOVAL OF CONCRETE OR MASONRY	C.Y.	110				110
531.10	BEARING DEVICE ASSEMBLY (STEEL FLT. EXP. BEARINGS)	EA.	1				1
531.10	BEARING DEVICE ASSEMBLY (STEEL FLT. FIXED BEARINGS)	EA.	13				13
531.10	BEARING DEVICE ASSEMBLY (FABRIC TFE EXP. BEARINGS)	EA.	56				56
531.10	BEARING DEVICE ASSEMBLY (FABRIC FIXED BEARINGS)	EA.	28				28
580.10	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I	S.Y.	27				27
580.11	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II	S.Y.	30				30
580.12	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III	C.Y.	52				52
580.13	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	S.Y.	1				1
580.14	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	S.Y.	6				6
580.15	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	C.Y.	1				1
580.19	CONCRETE CLASS AA OVERLAY	S.Y.	2450				2450
608.25	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	HR.		1			1
613.10	STONE FILL, TYPE I	C.Y.	115	10			125
616.40	REMOVING AND RESETTNG CURB	L.F.	910				910
616.41	REMOVAL OF EXISTING CURB	L.F.	1770				1770
616.47	BITUMINOUS CONCRETE GUTTERS AND TRAFFIC ISLANDS	TON	35				35
620.75	SNOW BARRIER - GALVANIZED	L.F.	340				340
621.57	ENERGY ABSORPTION ATTENUATOR	EA.	9				9
516.10	BRIDGE EXPANSION JOINT (SIDEWALK)	L.F.	47				47
621.90	TEMPORARY TRAFFIC BARRIER (MOD - INNOVATIVE)	LF	4200				4200

ITEM NO.	ITEM DESCRIPTION	UNIT	BRIDGE 68	EROSION CONTROL	TRAINING	FULL E&C	GRAND TOTAL
621.73	GUARD RAIL APPROACH SECTION, NETC 4 RAIL	EA.	4				4
621.75	REMOVING AND RESET GUARD RAIL	L.F.	720				720
621.80	REMOVAL AND DISPOSAL OF GUARD RAIL	L.F.	520				520
621.90	TEMPORARY TRAFFIC BARRIER	L.F.	880				880
630.10	UNIFORMED TRAFFIC OFFICERS	HR.	2700				2700
630.15	FLAGGERS	HR.	1800				1800
631.10	FIELD OFFICE - ENGINEERS	L.S.				1	1
631.16	TESTING EQUIP. - CONCRETE	L.S.				1	1
631.17	TESTING EQUIP. - BITUMINOUS	L.S.				1	1
631.18	TESTING EQUIP. - PROTECTIVE COATINGS	L.S.				1	1
631.25	FIELD OFFICE - TELEPHONE (NOT A BID ITEM)	L.U.				1	1
634.10	EMPLOYEE TRAINEESHIP	HR.			1560		1560
635.10	MOBILIZATION	L.S.	1				1
641.10	TRAFFIC CONTROL	L.S.	0.9				0.9
641.10	TRAFFIC CONTROL (MOD. - PUBLIC RELATIONS OFFICER)	L.S.	0.9				0.9
641.15	PORTABLE CHANGEABLE MESSAGE SIGN	EA.	4				4
641.16	PORTABLE ARROW BOARD	EA.	1				1
646.27	PAINTED CURB	L.F.	70				70
646.40	DURABLE 4" WHITE LINE (TYPE I TAPE)	L.F.	3690				3690
646.41	DURABLE 4" YELLOW LINE (TYPE I TAPE)	L.F.	3320				3320
646.414	DURABLE 6" WHITE LINE (TYPE I TAPE)	L.F.	110				110
646.415	DURABLE 6" YELLOW LINE (TYPE I TAPE)	L.F.	110				110
646.42	DURABLE 8" WHITE LINE (TYPE I TAPE)	L.F.	40				40
646.43	DURABLE 8" YELLOW LINE (TYPE I TAPE)	L.F.	10				10
646.46	DURABLE 24" STOP BAR (TYPE I TAPE)	L.F.	120				120
646.50	DURABLE LETTER OR SYMBOL (TYPE I TAPE)	EA.	31				31
646.51	DURABLE CROSSWALK W/ DIAGONAL LINES (TYPE I TAPE)	L.F.	250				250
646.60	TEMPORARY 4" WHITE LINE	L.F.	5250				5250
646.60	TEMPORARY 4" WHITE LINE (TAPE-TYPE II)	L.F.	8775				8775
646.61	TEMPORARY 4" YELLOW LINE	L.F.	1280				1280
646.61	TEMPORARY 4" YELLOW LINE (TAPE-TYPE II)	L.F.	7200				7200
646.614	TEMPORARY 6" WHITE LINE	L.F.	210				210
646.615	TEMPORARY 6" YELLOW LINE	L.F.	210				210
646.62	TEMPORARY 8" WHITE LINE	L.F.	80				80
646.62	TEMPORARY 8" WHITE LINE (TAPE-TYPE II)	L.F.	895				895
646.63	TEMPORARY 8" YELLOW LINE	L.F.	20				20
646.66	TEMPORARY 24" STOP BAR	L.F.	240				240
646.66	TEMPORARY 24" STOP BAR (TAPE-TYPE II)	L.F.	20				20
646.70	TEMPORARY LETTER OR SYMBOLS	EA.	22				22
646.71	TEMPORARY CROSSWALK WITH DIAGONAL LINES	L.F.	500				500
646.81	RAISED PAVEMENT MARKERS, TYPE II	EA.	3500				3500
646.82	REMOVAL OF EXISTING PAVEMENT MARKINGS	S.F.	1800				1800
649.51	GEOTEXTILE FOR SILT FENCE	S.Y.		30			30
651.15	SEED	LBs.		40			40
651.26	HAY BALES FOR EROSION CONTROL	EA.		10			10
654.10	EROSION MATTING	S.Y.		20			20
675.50	REMOVING SIGNS (BRIDGE-MOUNTED SIGNS)	EA.	3				3
675.60	ERECTING SALVAGED SIGNS (BRIDGE-MOUNTED SIGNS)	EA.	3				3
676.20	DELINEATORS WITH FLEXIBLE POSTS (MOD.)	EA.	140				140
678.22	VEHICLE LOOP DETECTOR	L.F.	1470				1470
678.23	WIRED CONDUIT	L.F.	450				450
679.15	STREET LIGHTING (MOD.)	L.S.	1				1
679.25	REMOVE AND RESETTNG LIGHT POLE	EA.	3				3

NOTE:

1. QUANTITY OF REINFORCING STEEL INCLUDES A NOMINAL AMOUNT ASSUMED FOR CLASS II CONCRETE REPAIRS.

*** ITEM OUT OF ORDER

THE ITEM 621.90 "TEMPORARY TRAFFIC BARRIER (MOD - INNOVATIVE)" IS TO BE USED DURING THE PHASE CONSTRUCTION WORK ON WILLISTON ROAD.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	

U.S. 2 OVER I-89

IM DECK(36) QUANTITIES

Designed By	S.M. HODGDON	Drawn By	B.J. MASSIE
Checked By	T.S. BRYANT	Bridge Design Supervisor	C.D. BAKER
Date	2/00	Date	2/00

PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK(36)
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VANASSE HANGEN BRUSTLIN, INC.

VHB Cad Drawing No.	50929QNT3	Date	2/00
Bridge Sheet No.		Sheet	5 of 75

STP BIKE(28)S QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	BIKEWAY	EROSION CONTROL	TRAINING	FULL E&C	GRAND TOTAL
203.15	COMMON EXCAVATION	C.Y.	1500				1500
203.28	EXCAVATION OF SURFACES AND PAVEMENTS	C.Y.	130				130
204.20	TRENCH EXCAVATION OF EARTH	C.Y.	15	30			45
213.10	MILLED RUMBLE STRIPS	L.F.	140				140
301.26	SUBBASE OF CRUSHED GRAVEL (FINE GRADED)	C.Y.	970	130			1100
501.25	CONCRETE, CLASS B	C.Y.	10				10
501.60	SILICA-FUME CONCRETE (MOD.)	C.Y.	5				5
507.15	REINFORCING STEEL	LBS.	500				500
529.25	REMOVAL OF CONCRETE OR MASONRY	C.Y.	3				3
604.10	CONCRETE CATCH BASIN WITH CAST IRON GRATE	EA.	2				2
604.40	CHANGING ELEVATIONS OF DROP INLETS, CATCH BASINS OR MANHOLES	EA.	6				6
604.41	REHABILITATION OF DROP INLETS, CATCH BASINS OR MANHOLES	EA.	2				2
604.52	CAST IRON GRATE WITH FRAME, TYPE E	EA.	8				8
608.25	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	HR.		3			3
613.10	STONE FILL, TYPE I	C.Y.	895	20			915
616.20	GRANITE SLOPE EDGING	L.F.	100				100
616.21	VERTICAL GRANITE CURB	L.F.	240				240
616.40	REMOVING AND RESETTNG CURB	L.F.	900				900
616.41	REMOVAL OF EXISTING CURB	L.F.	315				315
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	S.Y.	1210				1210
618.15	BITUMINOUS CONCRETE SIDEWALK	TON	90				90
621.21	HEAVY DUTY STEEL BEAM GUARD RAIL	L.F.	595				595
621.75	REMOVING AND RESET GUARD RAIL	L.F.	155				155
630.10	UNIFORMED TRAFFIC OFFICERS	HR.	300				300
630.15	FLAGGERS	HR.	200				200
641.10	TRAFFIC CONTROL	L.S.	0.1				0.1
641.10	TRAFFIC CONTROL (MOD. - PUBLIC RELATIONS OFFICER)	L.S.	0.1				0.1
646.40	DURABLE 4" WHITE LINE (TYPE I TAPE)	L.F.	1310				1310
646.414	DURABLE 6" WHITE LINE (TYPE I TAPE)	L.F.	1720				1720
646.415	DURABLE 6" YELLOW LINE (TYPE I TAPE)	L.F.	425				425
646.42	DURABLE 8" WHITE LINE (TYPE I TAPE)	L.F.	855				855
646.44	DURABLE 12" WHITE LINE (TYPE I TAPE)	L.F.	190				190
646.46	DURABLE 24" STOP BAR (TYPE I TAPE)	L.F.	22				22
646.50	DURABLE LETTER OR SYMBOL	EA.	35				35
646.50	DURABLE LETTER OR SYMBOL (TYPE I TAPE)	EA.	24				24
646.51	DURABLE CROSSWALK WITH DIAGONAL LINES (TYPE I TAPE)	L.F.	190				190
646.82	REMOVAL OF EXISTING PAVEMENT MARKINGS	S.F.	150				150
646.85	PAINTED ISLAND (MOD-BLUE)	S.F.	6000				6000
649.31	GEOTEXTILE UNDER STONE FILL	S.Y.	1780				1780
649.51	GEOTEXTILE FOR SILT FENCE	S.Y.		110			110
651.15	SEED	LBS.		60			60
651.18	FERTILIZER	LBS.		400			400
651.20	AGRICULTURAL LIMESTONE	TON		2			2
651.25	HAY MULCH	TON		2			2
651.26	HAY BALES FOR EROSION CONTROL	EA.		20			20
651.35	TOPSOIL	C.Y.	480				480
654.10	EROSION MATTING	S.Y.		450			450
675.20	TRAFFIC SIGNS, TYPE A	S.F.	159				159
	*** BEGIN OPTION ***						
675.301	FLANGED CHANNEL SIGN POST	L.F.	574				574
675.341	SQUARE TUBE SIGN POSTS AND ANCHOR	L.F.	574				574
	*** END OPTION ***						
675.50	REMOVING SIGNS	EA.	8				8
675.60	ERECTING SALVAGED SIGNS	EA.	8				8
678.15	TRAFFIC CONTROL SIGNAL SYSTEM - INTERSECTION	EA.	1				1
678.22	VEHICLE LOOP DETECTOR	L.F.	275				275
678.23	WIRED CONDUIT	L.F.	500				500
678.25	FULL BOX	EA.	2				2
678.26	JUNCTION BOX	EA.	4				4
679.15	STREET LIGHTING	L.S.	1				1

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
		Log Sta.	
Highway No.	U.S. 2	Surv. Sta.	

U.S. 2 OVER I-89

STP BIKE(28)S QUANTITIES

Designed By	A. SETAS	Drawn By	B.J. MASSE
Checked By	T.S. BRYANT	Date	2/00
		Bridge Design Supervisor	C.D. BAKER
			Date 2/00

PROJECT	SOUTH BURLINGTON	PROJECT NO.	STP BIKE (28)S

VANASSE HANGEN BRUSTLIN, INC.

VHB Cad Drawing No.	50929QNT4	Date	2/00
Bridge Sheet No.		Sheet	6 of 75

SCOPE OF WORK NOTES:

- 1A. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE TRAFFIC CONTROL NOTES AND PLANS. THIS PROJECT REQUIRES NIGHTTIME CONSTRUCTION AND INCLUDES CONSTRUCTION TIME RESTRICTIONS FOR BOTH DAY AND NIGHT WORK. SEE THE TRAFFIC CONTROL PLAN NOTES ON SHEET 21.
- 1B. PORTIONS OF THE BRIDGE REHABILITATION SHALL BE PERFORMED IN FIVE CONSTRUCTION PHASES AS SHOWN ON SHEETS 11 AND 12. ALL OTHER PHASED BRIDGE CONSTRUCTION SHALL BE PERFORMED IN A MANNER TO BE APPROVED BY THE ENGINEER.
- 1C. PIER RECONSTRUCTION AND BEARING REHABILITATION AND REPLACEMENTS SHALL BE COMPLETED PRIOR TO SETTING ARMORED JOINTS IN THE DECK. NO JACKING OR SHIMMING OF THE SUPERSTRUCTURE SHALL OCCUR AFTER THE ARMORED JOINTS ARE SET.
2. SUPERSTRUCTURE REHABILITATION SHALL INCLUDE THE FOLLOWING:
- REMOVING EXISTING PAVEMENT AND SIDEWALK AND MEDIAN GRANITE CURB
 - REMOVING MEDIAN
 - COLD PLANING THE APPROACHES
 - OVERLAYING THE CONCRETE DECK
 - REMOVING ALL EXISTING SCUPPERS
 - REMOVING EXISTING ALUMINUM BRIDGE AND APPROACH RAILING
 - PARTIALLY REMOVING CONCRETE SIDEWALKS
 - OVERLAYING AND WIDENING THE CONCRETE SIDEWALKS
 - INSTALLING NEW NETC 4 RAIL BRIDGE RAILING AND SNOW FENCE
 - INSTALLING NEW NETC 4 RAIL BRIDGE APPROACH RAILING
 - REPLACING DECK JOINTS AT PIERS WITH ARMORED JOINTS
 - INSTALLING NEW DRAIN TROUGHS AND DOWNSPOUTS AT PIERS
 - REPAIRING DECK JOINTS AT ABUTMENTS
 - INSTALLING SHEET MEMBRANE WATERPROOFING
 - REPAVING WITH BITUMINOUS CONCRETE PAVEMENT
 - APPLYING WATER REPELLENT TO SUPERSTRUCTURE
 - CLEANING AND PAINTING EXISTING STRUCTURAL STEEL
3. ALL SPANS OF THE CONCRETE DECK SHALL RECEIVE A CONCRETE OVERLAY. CONCRETE OVERLAY PROCEDURES AND PAYMENT SHALL BE ACCORDING TO THE DECK REHABILITATION NOTES ON SHEET 3.
4. SUBSTRUCTURE REHABILITATION SHALL INCLUDE THE FOLLOWING:
- REPLACING EACH PIER DOWN TO TOP OF EXISTING FOOTING.
 - SHORING SUPERSTRUCTURE DURING PIER REPLACEMENT.
 - REPLACING ALL PIER BEARINGS AND SELECTED ABUTMENT BEARINGS.
 - REHABILITATING EXISTING ABUTMENT BEARINGS.
 - REPAIRING DETERIORATED CONCRETE AT ABUTMENTS.
 - APPLYING WATER REPELLENT TO SUBSTRUCTURES.
5. THE EXISTING EXPANSION JOINT AT ABUTMENT 1 SHALL BE REPLACED WITH A FIXED JOINT AS SHOWN ON SHEET 13.
6. DECK JOINTS AT PIERS SHALL BE REPLACED WITH ARMORED JOINTS AS SHOWN ON SHEETS 14 - 16.
- 7A. THE EXISTING FABRIC DRAIN TROUGHS UNDER THE DECK JOINTS AT EACH PIER SHALL BE REPLACED AS SHOWN ON SHEET 17. PAYMENT FOR DRAIN TROUGH REPLACEMENT SHALL BE UNDER ITEM 506.80, "DRAIN TROUGH". ALL DRAIN TROUGHS SHALL BE FLUSHED, USING A METHOD APPROVED BY THE ENGINEER, AFTER ALL DECK AND JOINT WORK IS COMPLETE AND PAVEMENT HAS BEEN PLACED. COST FOR FLUSHING THE TROUGHS SHALL BE SUBSIDIARY TO ITEM 506.80.
- 7B. DOWNSPOUTS SHALL BE INSTALLED AT BOTH ENDS OF EACH PIER TO COLLECT THE DRAINAGE FROM THE FABRIC DRAIN TROUGHS BELOW THE DECK JOINTS. SEE SHEET 11 FOR DETAILS.
8. ALL EXISTING STRUCTURAL STEEL SHALL BE ENCLOSED, 100% CLEANED AND PAINTED PER SUPPLEMENTAL SPECIFICATION SECTION 513, AND GREASED PER SECTION 513.06(d). NOTE THAT THE ENDS OF THE BEAMS AT ABUTMENTS AND PIERS HAVE A GREASE COATING WHICH SHALL BE REMOVED PRIOR TO CLEANING AND PAINTING. THE "BRIDGE INFORMATION SUMMARY" ON SHEET 8 SHOWS WHEN THE STEEL WAS LAST PAINTED, AS WELL AS DATA ON BEAM SIZES AND APPROXIMATE STEEL WEIGHT.
9. BASED ON AN OCTOBER, 1992 PRELIMINARY INSPECTION, EXISTING BEARINGS SHALL BE REPAIRED OR REPLACED IN ACCORDANCE WITH THE "BEARING REPAIR NOTES" ON SHEET 18 AND THE "BEARING CONDITION AND TREATMENT SUMMARY" ON SHEET 19. A THOROUGH INSPECTION BY VERMONT AOT PERSONNEL ASSIGNED TO THE PROJECT WILL BE MADE TO DETERMINE IF ANY OTHER BEARING REPAIRS ARE NECESSARY, WHICH THE CONTRACTOR SHALL BE REQUIRED TO PERFORM.
10. ALL EXISTING PIERS SHALL BE REPLACED DOWN TO THE TOPS OF THE EXISTING FOOTINGS AS SHOWN ON SHEETS 28 - 31. THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPERSTRUCTURE SHORING FOR REPLACEMENT OF PIERS 1, 2, AND 3. THE SCHEME FOR TEMPORARY SHORING SHALL BE SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL. ALSO, THE CONTRACTOR SHALL SUBMIT DETAILS AND CALCULATIONS PREPARED BY A QUALIFIED REGISTERED PROFESSIONAL ENGINEER TO THE STRUCTURES ENGINEER FOR INFORMATION ONLY AT LEAST TWO WEEKS PRIOR TO PERFORMING WORK. SHORING SHALL BE DESIGNED FOR H20 LOADING. WELDING TO EXISTING STEEL SHALL NOT BE PERMITTED. ALL COSTS SHALL BE INCLUDED IN ITEM 502.10, "SHORING SUPERSTRUCTURE (AT PIERS 1, 2, AND 3)".
11. ABUTMENT CONCRETE REPAIRS SHALL BE PERFORMED IN ACCORDANCE WITH THE NOTES AND DETAILS ON SHEET 32. THE "ABUTMENT REPAIR AREAS" PLAN, SHEET 32 WAS DEVELOPED FROM NOTES OF AN OCTOBER, 1992 PRELIMINARY INSPECTION, AND SHALL BE USED ONLY AS AN INDICATION OF THE GENERAL CONDITION OF THE ABUTMENTS. A THOROUGH INSPECTION BY VERMONT AOT PERSONNEL ASSIGNED TO THE PROJECT WILL BE MADE OF ABUTMENT AREAS AT THE TIME OF CONSTRUCTION, AND THOSE AREAS FOUND TO HAVE SPALLED, DELAMINATED OR OTHERWISE UNSOUND CONCRETE WILL BE REPAIRED.

12. ITEM 514.10, "WATER REPELLENT" SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON BRIDGE SUPERSTRUCTURE AND APPROACH SLABS EXCEPT THE BOTTOM OF THE DECK BETWEEN THE DRIF BEADS. IT SHALL ALSO BE APPLIED TO THE EXPOSED CONCRETE ON ALL ABUTMENTS, WINGWALLS, PIER CAPS AND COLUMNS.
13. ITEM 525.34, "BRIDGE RAIL - NETC 4 RAIL" AND ITEM 620.75, "SNOW BARRIER - GALVANIZED", SHALL BE INSTALLED AS SHOWN ON SHEET 24. ITEM 621.73, "GUARD RAIL APPROACH SECTION, NETC 4 RAIL" SHALL BE INSTALLED AT ALL FOUR CORNERS OF THE BRIDGE AS SHOWN ON SHEET 25.
14. THE CONTRACTOR SHALL CALL "DIG-SAFE" PRIOR TO PERFORMING ANY EXCAVATION, IN ACCORDANCE WITH DIG-SAFE'S RULES OF NOTIFICATION. THE COST OF COORDINATING WITH "DIG-SAFE" AND THE FOLLOWING UTILITY COMPANIES SHALL BE SUBSIDIARY TO ITEM 635.10, "MOBILIZATION".
- ADELPHIA CABLE COMMUNICATIONS
 - BELL ATLANTIC
 - CHAMPLAIN WATER DISTRICT
 - VERMONT GAS SYSTEMS, INC.
 - GREEN MOUNTAIN POWER CORP.
- ITEM 204.20, "TRENCH EXCAVATION OF EARTH" SHALL BE USED FOR EXPLORATORY TRENCHING WHEN THE LOCATION OF BURIED UTILITIES IS IN DOUBT.
15. EXISTING STATE-OWNED UNDERGROUND STREET LIGHTING CONDUIT AND PULL BOXES ARE LOCATED NEAR PIER 1 & 3 FOOTINGS, AS SHOWN ON SHEET 6A. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT AND TEMPORARILY SUPPORT THESE UTILITIES DURING EXCAVATION. COST TO BE SUBSIDIARY TO ITEM 204.25, "STRUCTURE EXCAVATION".
- IN ADDITION, STATE-OWNED STREET LIGHTING, CONDUIT, AND JUNCTION BOXES ARE CURRENTLY MOUNTED ON THE EXISTING PIERS AS SHOWN ON SHEETS 6A AND 28. THESE STREET LIGHTS, CONDUITS, AND JUNCTION BOXES SHALL BE TEMPORARILY REMOVED AND STORED DURING REPLACEMENT OF THE PIERS. A TEMPORARY ILLUMINATION SYSTEM SHALL BE INSTALLED AND OPERATIONAL BEFORE THE EXISTING STREET LIGHTING IS REMOVED. SEE THE SPECIAL PROVISIONS FOR REQUIREMENTS FOR THE TEMPORARY ILLUMINATION SYSTEM. THE TEMPORARY ILLUMINATION SYSTEM SHALL BE PAID UNDER ITEM 673.15, STREET LIGHTING (MOD.).
- AFTER THE PIER REPLACEMENTS ARE COMPLETED, THE LIGHTING SYSTEM SHALL BE RESTORED TO ITS ORIGINAL CONFIGURATION. THE EXISTING LUMINAIRES MAY BE REUSED IF THEY ARE UNDAMAGED AND MEET THE CURRENT REQUIREMENTS OF SPECIFICATION SECTION 679. ALL ACTIVE CONDUIT, WIRING, AND JUNCTION BOXES THAT ARE TEMPORARILY REMOVED SHALL BE REPLACED IN-KIND. ALL COSTS FOR NEW CONDUIT, WIRING, AND JUNCTION BOXES SHALL BE PAID UNDER ITEM 678.23, "WIRED CONDUIT". EXISTING CONDUIT AND WIRING WHICH IS NOT ACTIVE SHALL BE REMOVED AND CAPPED AT THE NEAREST WATERPROOF JUNCTION BOX, THE COST FOR WHICH SHALL BE SUBSIDIARY TO ITEM 678.23. ALL COSTS FOR REMOVAL, STORAGE, REPLACEMENT, AND REINSTALLATION OF THE PIER STREET LIGHTS SHALL BE PAID UNDER ITEM 673.15, "STREET LIGHTING (MOD.)" UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL ENSURE THAT POWER TO OTHER STREET LIGHTS IS NOT INTERRUPTED DUE TO THIS WORK. ALL WORK ASSOCIATED WITH THE STREET LIGHTING SYSTEM SHALL BE COORDINATED WITH GREEN MOUNTAIN POWER. ANY DAMAGE TO THE STREET LIGHTING SYSTEM CAUSED BY THE CONTRACTOR SHALL BE REPAIRED IMMEDIATELY AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
16. ALL EXISTING SCUPPERS SHALL BE REMOVED. ALL COSTS FOR REMOVAL OF EXISTING SCUPPERS SHALL BE INCLUDED IN ITEM 523.20, "PARTIAL REMOVAL OF STRUCTURE". THIS SHALL INCLUDE ANY NECESSARY REMOVAL OF ATTACHMENT ANGLE, ANY GRINDING, OR OTHER INCIDENTAL WORK TO REMOVE THE EXISTING SCUPPERS.
17. SOME OF THE EXISTING STONE SLOPE PROTECTION ON THE SLOPES UNDER SPANS 1 AND 4 WILL BE REMOVED DURING REPLACEMENT OF THE PIERS. ITEM 613.10 "STONE FILL TYPE 1" SHALL BE USED TO REPLACE THE STONE SLOPE PROTECTION THAT IS REMOVED. NEW STONE FILL TYPE 1 SHALL BE PLACED AS DIRECTED BY THE ENGINEER.
18. MINOR CLEARING AND GRUBBING IS REQUIRED AT SOME LOCATIONS IN ORDER TO REMOVE VEGETATION WHICH IS GROWING UP AGAINST SUBSTRUCTURE COMPONENTS, AND MAY BE REQUIRED FOR PLACEMENT OF CONSTRUCTION SIGNS. CLEARING AND GRUBBING FOR THESE PURPOSES SHALL BE AS ORDERED BY THE RESIDENT ENGINEER AND COSTS SHALL BE SUBSIDIARY TO ITEM 635.10, "MOBILIZATION".
19. ITEM 203.35, "GRAVEL BACKFILL FOR SLOPE STABILIZATION" SHALL BE USED ON BRIDGE APPROACHES TO REGRADE AROUND GUARDRAIL POSTS AS ORDERED BY THE RESIDENT ENGINEER.
20. THE ENTIRE SURFACE OF THE BRIDGE DECK AND EACH APPROACH SLAB SHALL BE STRIPPED TO BARE CONCRETE WITHIN THE LIMITS OF THE WORK AREA ESTABLISHED FOR THAT PHASE OF CONSTRUCTION. EXISTING PAVEMENT SHALL NOT BE REMOVED FROM AREAS OUTSIDE OF THE CURRENT PHASE WORK AREA TO ENSURE A SMOOTHER RIDE IN THE LANES OPEN TO TRAFFIC, AND LESS IMPACT DAMAGE TO THE REPAIRS MADE WITHIN THE WORK AREA. IF A COLD FLANER IS USED TO STRIP PAVEMENT FROM THE DECK OR THE APPROACH SLABS, THE FINAL ONE HALF (1/2) INCH SHALL BE REMOVED BY LOADER, GRADER, OR EQUIPMENT APPROVED BY THE ENGINEER. THIS WORK SHALL ALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 523.10, "REMOVAL OF BRIDGE PAVEMENT". IF THE CONTRACTOR DAMAGES AREAS OF THE DECK OR APPROACH SLABS DURING PAVEMENT REMOVAL THAT OTHERWISE WOULD NOT REQUIRE REHABILITATION, THEN THE REQUIRED REPAIRS SHALL BE MADE AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

21. DURING EACH PHASE OF CONSTRUCTION, THE PORTIONS OF THE BRIDGE DECK AND APPROACH SLABS WITHIN THE WORK AREA SHALL BE PAVED WITH TWO COURSES OF BITUMINOUS CONCRETE PAVEMENT ON THE BRIDGE DECK. THE BOTTOM LIFT SHALL BE 1-1/4" MIN. OF TYPE IV MIX AND THE TOP LIFT SHALL BE 1-1/4" OF TYPE III MIX. ON THE APPROACH SLABS THE BOTTOM LIFT SHALL BE 3/4" TO 1 1/4" OF TYPE IV MIX AND THE TOP LIFT SHALL BE 1 1/4" OF TYPE III MIX. THIS PAVING SHALL BE PAID AS ITEM 406.25, "BITUMINOUS CONCRETE PAVEMENT (FG 64-28)".

THE COMBINATION OF THE NEW DECK OVERLAY AND THE NEW THICKER PAVEMENT WILL RESULT IN AN INCREASE IN THE FINISHED GRADE ON THE BRIDGE OF APPROXIMATELY ONE INCH. THE NEW FINISHED GRADE ON THE BRIDGE SHALL BE TEMPORARILY TRANSITIONED INTO THE EXISTING GRADE AT THE ENDS OF THE APPROACH SLABS AS SHOWN IN THE TEMPORARY APPROACH SLAB PAVEMENT TRANSITION DETAIL ON SHEET 12A.

AFTER ALL THE PHASED REHABILITATION OF THE BRIDGE DECK AND APPROACH SLABS IS COMPLETE, THE APPROACH ROADWAYS, BRIDGE DECK, AND APPROACH SLABS SHALL BE COLD PLANED AND REPAVED AS SHOWN ON SHEETS 44 AND 45. ON THE BRIDGE DECK AND APPROACH SLABS, THE TOP 1-1/4" LIFT OF PAVEMENT SHALL BE REMOVED FROM CURB TO CURB. THE GRINDINGS FROM COLD PLANING THIS RECENTLY PLACED TOP LIFT OF PAVEMENT SHALL BE SALVAGED TO VAOT DISTRICT 5 AS DESCRIBED IN THE SPECIAL PROVISIONS. THE NEW FINISHED GRADE ON THE BRIDGE SHALL BE SMOOTHLY TRANSITIONED INTO THE EXISTING GRADE ON THE APPROACHES AS SHOWN IN THE APPROACH PAVEMENT TRANSITION DETAIL ON SHEET 45.

ITEM 404.65, "EMULSIFIED ASPHALT" SHALL BE APPLIED BETWEEN EACH LIFT OF NEW PAVEMENT AND TO ALL COLD PLANED SURFACES AT THE RATE OF 0.05 GALLONS/S.Y.

FINAL PAVING ON THE BRIDGE SHALL NOT BE ALLOWED UNTIL BEARINGS HAVE BEEN REPAIRED OR REPLACED AS DESIGNATED IN THESE PLANS, AND ALL JACKING AND SHORING HAS BEEN COMPLETED AND REMOVED.

22. FOLLOWING PAVING, ANY BITUMINOUS CONCRETE PAVEMENT THAT BECOMES LODGED IN THE DECK JOINTS, OR ENTERS THE DRAIN TROUGHS OR DOWNSPOUTS, SHALL BE REMOVED BY THE CONTRACTOR AT NO COST TO THE STATE.
23. ITEM 519.20, "SHEET MEMBRANE WATERPROOFING (MOD. - TORCH APPLIED)" SHALL BE INSTALLED ON ALL SPANS OF THE BRIDGE DECK. IT SHALL ALSO BE INSTALLED ON TWO (2) FEET OF EACH APPROACH SLAB AS SHOWN ON SHEET 13. THE MEMBRANE SHALL BE SPICED AT PHASED CONSTRUCTION JOINTS AS RECOMMENDED BY THE MANUFACTURER. BOTH LIFTS OF PAVEMENT SHALL BE INSTALLED ON THE MEMBRANE FOR THE ENTIRE LENGTH OF THE BRIDGE BEFORE TRAFFIC IS ALLOWED ON THAT LANE, UNLESS OTHERWISE SHOWN IN THESE PLANS OR DIRECTED BY THE ENGINEER.
24. SOME OF THE STEEL END DIAPHRAGMS IN THE TWO SOUTHERN-MOST BAYS AT PIER 1 HAVE BEEN DAMAGED DUE TO SHIMMING AND BLOCKING OF THE BEAMS AT THIS LOCATION. AT THE START OF CONSTRUCTION THE ENGINEER SHALL INSPECT THE DIAPHRAGMS IN THESE BAYS AND DETERMINE THE NUMBER TO BE REPLACED. THE CONTRACTOR SHALL REPLACE ALL DAMAGED DIAPHRAGMS IN-KIND. THE NEW DIAPHRAGMS SHALL BE AASHTO M270, GRADE 36, PAINTED. DETAILS OF THE EXISTING DIAPHRAGMS ARE SHOWN IN THE EXISTING PLANS REFERENCE SHEETS THAT ARE INCLUDED IN THIS SET OF PLANS. THE SHIMS AND BLOCKING SHALL BE REMOVED BY THE CONTRACTOR AND RETURNED TO VAOT DISTRICT 5 AS DIRECTED BY THE ENGINEER. ALL COSTS FOR REPLACING THE DIAPHRAGMS SHALL BE INCLUDED IN ITEM 506.60, "STRUCTURAL STEEL".
- ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER TYPE 1 BOLTS, CONFORMING TO AASHTO M164, (A8TM-A325). HOLES SHALL BE 15/16" DIAMETER. CONNECTIONS NOT DESIGNATED SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL. THE FAYING SURFACES OF THE EXISTING DIAPHRAGM CONNECTION PLATES SHALL BE CLEANED TO BARE STEEL AND COATED PER SUPPLEMENTAL SPECIFICATION SECTION 513. ALL COSTS ASSOCIATED WITH PREPARING THE FAYING SURFACES SHALL BE INCLUDED IN ITEM 506.60.
25. THE THREE EXISTING STREET LIGHTS THAT ARE MOUNTED TO THE BRIDGE SIDEWALKS MUST BE REMOVED AND RESET IN ORDER TO COMPLETE THE SIDEWALK REHABILITATION. SEE THE BRIDGE SIDEWALK STREET LIGHTING NOTES ON SHEET 10.

DECK REPAIR WAS ELIMINATED.
A COMPLETE NEW DECK WAS PLACED.
SEE THE NEW TYPICALS.
UTILITIES WERE RELOCATED.

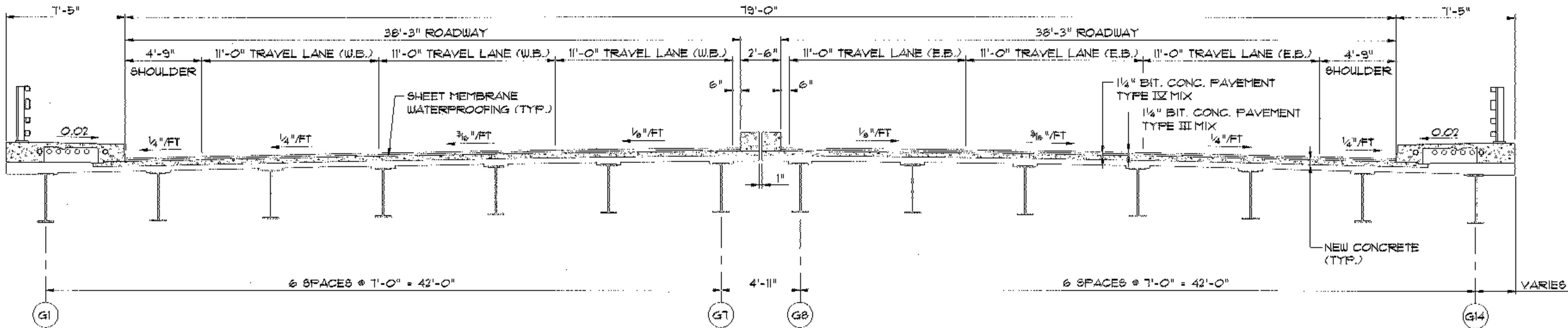
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SOUTH BURLINGTON		Bridge No. 68
Highway No. U.S. 2		Log. Sta.
		Surv. Sta.
U.S. 2 OVER 1-89		
SCOPE OF WORK NOTES		
Designed By S.M. HODGDON		Drawn By B.J. MASSE
Checked By T.S. BRYANT	Date 2/00	Bridge Design Supervisor C.D. BAKER Date 2/00
PROJECT SOUTH BURLINGTON		PROJECT NO. IM DECK(36)
VHB Cad Drawing No. 50929NOT		Date 2/00
Bridge Sheet No.		Sheet 7 of 75

VANASSE HANGEN BRUSTLIN, INC.

BRIDGE INFORMATION SUMMARY

BRIDGE NO.	YEAR BUILT	SKEW	SUBSTR. UNIT	SPAN (FEET)	BEARING		SPAN NO.	BEAMS	COVER PLATE SIZE	DIAPH. AT PIERS	NEW DECK JOINTS	% OF DECK > D. 35V	% OF DECK > D. 40V	2 DECK TO REPAIR			LAST PAINTED IN	PAINTING REQUIRED	STRUCT. STEEL (TONS)
					2 PLT	3 PLT EXP.								CLASS I	CLASS II	CLASS III			
68VB	1962	VARIES (+ - 86 RT)	ABUT. 1	54	Y		1	7 - 36WF150	5/16" X 9" X 23'-0"	18L42.7	Y		37	23	OVERLAY	6	1976	Y	187
			PIER 1	74	Y	Y	2	7 - 36WF170	1" X 14" X 51'-9"	18L42.7	Y		26	13	OVERLAY	7			
			PIER 2	74	Y	Y	3	7 - 36WF170	1" X 14" X 51'-9"	18L42.7	Y		30	18	OVERLAY	7			
			PIER 3	59	Y		4	7 - 36WF150	1/2" X 10" X 32'-6"	18L42.7	Y		41	22	OVERLAY	6			
			ABUT. 2		Y						Y	WEIGHTED AVE. =	33	19					
68EB	1962	VARIES (+ - 86 RT)	ABUT. 1	54	Y		1	7 - 36WF150	5/16" X 9" X 23'-0"	18L42.7	Y		42	29	OVERLAY	6	1976	Y	187
			PIER 1	74	Y	Y	2	7 - 36WF170	1" X 14" X 51'-9"	18L42.7	Y		32	15	OVERLAY	7			
			PIER 2	74	Y	Y	3	7 - 36WF170	1" X 14" X 51'-9"	18L42.7	Y		24	7	OVERLAY	7			
			PIER 3	59	Y		4	7 - 36WF150	1/2" X 10" X 32'-6"	18L42.7	Y		23	19	OVERLAY	6			
			ABUT. 2		Y						Y	WEIGHTED AVE. =	30	17					



NEW TRANSVERSE SECTION

* SEE NEW TYPICAL SECTIONS ON PAGE IIA & IIB

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

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SOUTH BURLINGTON Bridge No. 68
Highway No. U.S. 2 Log Sta.
Surv. Sta.

U.S. 2 OVER I-89
NEW TRANSVERSE SECTION & BRIDGE INFO. SUMMARY

Designed By T.S. BRYANT Drawn By E.J. MASSE
Checked By A. SETAS Date 1/00 Bridge Design Supervisor
C.D. BAKER Date 1/00

PROJECT SOUTH BURLINGTON PROJECT NO. 1M DECK (36)
VHB Cad Drawing No. 50929INF Date 1/00
Bridge Sheet No. Sheet 8 of 15

VANASSE HANGEN BRUSTLIN, INC.

GENERAL NOTES

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION", DATED 1990, AND ITS LATEST REVISIONS, AND THE AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 16TH EDITION", AND ITS LATEST REVISIONS.
- ANY REFERENCE TO "LEFT" AND/OR "RIGHT" ON THE PLANS OR NOTES REFERS TO THE DIRECTION OF STATIONING AND NOT THE DIRECTION OF TRAFFIC.
- NO SURVEY WAS TAKEN ON THIS PROJECT FOR BRIDGE RELATED WORK. INFORMATION SHEETS INCLUDED IN THE PLANS WERE TAKEN FROM ORIGINAL PLANS AND ARE FOR INFORMATION ONLY. ALL ELEVATIONS SHOWN IN THESE PLANS ARE BASED ON ELEVATIONS FROM THE ORIGINAL PLANS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD CHECKING ANY AND ALL DIMENSIONS APPLICABLE TO THIS WORK.
- ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68°F, UNLESS SHOWN OTHERWISE.
- DESIGN CRITERIA:
 - DESIGN LIVE LOAD FOR EXISTING STRUCTURE: HS 20
 - DESIGN LIVE LOAD FOR NEW CONCRETE PIERS: HS 25
- UNLESS OTHERWISE NOTED, THE CONCRETE FOR THE VARIOUS ELEMENTS OF THE WORK SHALL BE:
 - BRIDGE DECK OVERLAY AND FULL-DEPTH REPAIRS
 - CONCRETE CLASS AA, f'c = 4000 PSI
 - PAID AS ITEM 580.19, "CONCRETE CLASS AA OVERLAY" FOR OVERLAY, AND ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III" FOR CLASS III REPAIRS
 - BRIDGE DECK FASCIA REPAIR
 - CONCRETE CLASS AA, f'c = 4000 PSI
 - PAID AS ITEM 580.10, 580.11 OR 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I, II OR III"
 - BRIDGE SIDEWALK OVERLAY AND WIDENING
 - SILICA-FUME CONCRETE, f'c = 5000 PSI
 - PAID AS ITEM 501.60, "SILICA-FUME CONCRETE (MOD.)"
 - BRIDGE AND APPROACH ROADWAY MEDIAN REPLACEMENT
 - SILICA-FUME CONCRETE, f'c = 5000 PSI
 - PAID AS ITEM 501.60, "SILICA-FUME CONCRETE (MOD.)"
 - APPROACH SLAB REPAIR
 - CONCRETE CLASS AA, f'c = 4000 PSI
 - PAID AS ITEM 580.10, 580.11 OR 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I, II OR III"
 - NEW PIERS
 - SILICA-FUME CONCRETE, f'c = 5000 PSI
 - PAID AS ITEM 501.60, "SILICA-FUME CONCRETE (MOD.)"
 - ABUTMENT REPAIR
 - CONCRETE TYPE USED IS DEPENDENT ON REPAIR DEPTH, SEE ABUTMENT REPAIR NOTES IN THESE PLANS
 - PAID AS ITEM 580.13, 580.14 OR 580.15, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I, II, OR III"
- ALL EXPOSED EDGES OF NEW SUPERSTRUCTURE CONCRETE SHALL HAVE A 3/4" CHAMFER UNLESS OTHERWISE NOTED.
- NEW REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM-A615), GRADE 60 AND SHALL BE EPOXY COATED WHERE INDICATED. REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI). WHEN EPOXY COATED REINFORCING STEEL IS CUT, THE UNCOATED ENDS SHALL BE REPAIRED WITH MATERIALS AND PROCEDURES APPROVED BY THE COATING MANUFACTURER. NO FLAME CUTTING OF NEW REINFORCING STEEL WILL BE ALLOWED.
- REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:
 - SPACING +/- 1"
 - CLEARANCE +/- 1/4"
- ALL NEW STRUCTURAL STEEL SHALL CONFORM TO AASHTO M270, GRADE 36, UNLESS OTHERWISE NOTED.
- ALL WELDING AND DIMENSIONAL TOLERANCES OF WELDED MEMBERS SHALL CONFORM TO THE LATEST ANSI/AASHTO/AWS BRIDGE WELDING CODE AND ITS LATEST REVISIONS.

DECK REHABILITATION NOTES

- THE EXISTING CONCRETE DECK IN ALL SPANS SHALL BE REHABILITATED BY THE OVERLAY METHOD. IN EACH SPAN THE OVERLAY SHALL EXTEND FROM DECK JOINT TO DECK JOINT IN THE LONGITUDINAL DIRECTION, AND IN THE TRANSVERSE DIRECTION FROM THE JOINT BETWEEN THE EXISTING GRANITE CURB AND SIDEWALK TO THE SAME JOINT ON THE OPPOSITE SIDE OF THE BRIDGE.
- THE OVERLAY MATERIAL SHALL BE "CONCRETE, CLASS AA", AND SHALL BE OF A SUFFICIENT DEPTH TO GIVE A MINIMUM OF TWO (2) INCHES OF COVER OVER THE TOP MAT OF REINFORCING STEEL. THE FINISHED SURFACE OF THE OVERLAY SHALL HAVE THE CROSS SLOPE SHOWN ON SHEET 2. CONCRETE, CLASS AA USED IN OVERLAYS SHALL BE CURED FOR TEN (10) DAYS IN ACCORDANCE WITH SPECIFICATION SECTION 501.16 AND 501.16 EXCEPT THE USE OF MEMBRANE FORMING CURING COMPOUND WILL NOT BE ALLOWED FOR OVERLAYS.
- THE LIMITS FOR REMOVAL OF CONCRETE UNDER ITEM 580.19, "CONCRETE CLASS AA OVERLAY", SHALL BE FROM THE TOP OF THE EXISTING CONCRETE DECK TO A SURFACE FROM 3/4" (+/- 1/4") MINIMUM DEPTH BELOW THE BOTTOM BAR OF THE TOP MAT OF REINFORCING STEEL TO A MAXIMUM DEPTH OF THE TOP OF THE TOP BAR OF THE BOTTOM MAT OF REINFORCING STEEL. IF MORE THAN ONE-QUARTER OF THE CIRCUMFERENCE OF THE TOP BAR OF THE BOTTOM MAT IS EXPOSED OR THE BOND BETWEEN THE CONCRETE AND REBAR IS BROKEN, THEN ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III" SHALL BE USED TO MAKE A FULL DEPTH REPAIR. NO PAYMENT FOR ITEM 580.19, "CONCRETE CLASS AA OVERLAY" SHALL BE MADE WITHIN AREAS OF CLASS III REPAIR. SEE THE DETAIL ON SHEET 12A.
- THE LIMITS FOR REMOVAL OF CONCRETE UNDER ITEM 580.12 "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE CLASS III" WILL BE FROM THE TOP OF EXISTING CONCRETE DECK TO THE BOTTOM OF THE CONCRETE DECK (FULL DEPTH REMOVAL). ANY FULL DEPTH REPAIRS SHALL NECESSITATE THE USE OF FORMS AND FALSEWORK. WHERE CLASS III REPAIRS ARE REQUIRED ADJACENT TO THE BARRIERS SEPARATING THE WORK AREA FROM TRAFFIC, THE ENGINEER SHALL DETERMINE WHETHER TEMPORARY SUPPORT OF THE DECK SLAB IS REQUIRED. IF DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SHORING. ALL SHORING, FORMWORK, "CONCRETE, CLASS AA", FALSEWORK, LABOR, TOOLS, EQUIPMENT, AND OTHER INCIDENTALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III".
- THE CONTRACTOR MAY USE A SCARIFIER OR COLD-PLANER TO REMOVE CONCRETE TO WITHIN ONE HALF (1/2) INCH OF THE TOP MAT OF REINFORCING STEEL. THIS WORK SHALL BE SUBSIDIARY TO THE BID PRICE FOR ITEM 580.19, "CONCRETE CLASS AA OVERLAY". THE CONCRETE GRINDINGS SHALL BE DISPOSED OF IN ACCORDANCE WITH SPECIFICATION SECTIONS 105.24 AND 105.25. ANY REINFORCING STEEL DAMAGED BY THIS EQUIPMENT, WHICH WOULD NOT OTHERWISE REQUIRE REPLACEMENT, SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
- A MAXIMUM OF 24 HOURS PRIOR TO PLACING THE NEW CONCRETE OVERLAY, THE EXISTING DECK CONCRETE, AND ALL EXPOSED STEEL WHICH WILL HAVE CONCRETE PLACED AGAINST OR AROUND IT (SUCH AS STEEL DECK JOINTS AND REINFORCING STEEL) SHALL BE ABRASIVE BLASTED. THE AREA SHALL BE VACUUMED OR FLUSHED, USING HIGH PRESSURE AIR OR WATER, TO REMOVE ALL LOOSE PARTICLES, DUST AND DEBRIS. AFTER ABRASIVE BLASTING, ONCE THE EXISTING CONCRETE IS WET, WHETHER FROM FLUSHING OR RAIN, THE CONCRETE MUST BE KEPT WET UNTIL THE PLACING OF NEAT CEMENT PASTE AND NEW CONCRETE. IF THE EXISTING CONCRETE IS ALLOWED TO DRY OUT, THE AREA MUST BE ABRASIVE BLASTED AGAIN AND THE ENTIRE AREA VACUUMED OR FLUSHED AGAIN. THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR ITEMS 580.19, "CONCRETE CLASS AA OVERLAY", AND 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III".
- ALL SURFACES OF STEEL DECK JOINTS, WHICH ARE TO HAVE CONCRETE PLACED AGAINST THEM, SHALL BE COATED WITH EPOXY BONDING COMPOUND. THE COST SHALL BE SUBSIDIARY TO ITEM 516.10, "BRIDGE EXPANSION JOINT (ARMORED JOINT)".
- NEAT CEMENT PASTE SHALL BE APPLIED TO THE LONGITUDINAL JOINT (ON THE FACE OF THE NEW CONCRETE) PRIOR TO PLACEMENT OF THE ADJACENT PHASE OVERLAY. ALSO, THE AREA TO BE OVERLAYED SHALL BE THOROUGHLY CLEANED, WETTED, AND COATED WITH NEAT CEMENT PASTE (THOROUGHLY BRUSHED INTO THE SURFACE). THE CEMENT AND WATER SHALL BE MIXED TO A THICK LATEX PAINT CONSISTENCY AND APPLIED AS THE OVERLAY PROGRESSES TO ENSURE THAT THE PASTE DOES NOT DRY OUT. THIS WORK SHALL BE SUBSIDIARY TO ITEMS 580.12 AND 580.19.
- HYDRO-DEMOLITION SHALL BE THE REQUIRED METHOD OF REMOVAL OF CONCRETE FROM THE EXISTING DECK IN ALL AREAS RECEIVING AN OVERLAY. THE SLURRY GENERATED FROM THIS OPERATION SHALL BE DISPOSED OF IN ACCORDANCE WITH SPECIFICATION SECTIONS 105.24 AND 105.25.
 - HYDRO-DEMOLITION EQUIPMENT SHALL BE CAPABLE OF REMOVING ALL CONCRETE TO THE MINIMUM DEPTH REQUIRED FOR ITEM 580.19 REMOVAL AND REMOVE ONLY UNSOUND CONCRETE BELOW THAT DEPTH. THE DECK SHALL BE INSPECTED BY THE ENGINEER TO ENSURE REMOVAL OF ALL UNSOUND CONCRETE.
 - IN ALL CASES, IF ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III" IS REQUIRED AFTER ITEM 580.19 REMOVAL BY THE HYDRO-DEMOLITION EQUIPMENT, THEN AIR HAMMERS WILL BE USED FOR THIS ADDITIONAL REMOVAL. HOWEVER, THE CONTRACTOR SHALL PROVIDE PROTECTION ABOVE TRAFFIC IN THE EVENT THAT THE WATER JET BLOWS THROUGH THE DECK (SEE TRAFFIC CONTROL PLAN NOTES, SHEET 31).

- AIR HAMMERS, USED FOR THE REMOVAL OF UNSOUND AND DETERIORATED CONCRETE, SHALL BE OPERATED BETWEEN THE HORIZONTAL POSITION AND A FORTY-FIVE (45) DEGREE ANGLE WHEN REMOVING CONCRETE. HOWEVER, THEY MAY BE STARTED IN THE VERTICAL POSITION AND IMMEDIATELY LOWERED. AIR HAMMERS SHALL HAVE A MAXIMUM RATING OF THIRTY (30) POUNDS AND SHALL USE CHISEL POINTS ONLY. IF REINFORCING STEEL IS DAMAGED OR IF CONCRETE IS DEBONDED, DELAMINATED OR OTHERWISE DAMAGED BEYOND THE DEFINED LIMITS OF REMOVAL, BECAUSE OF THE IMPROPER USE OF THE AIR HAMMERS, THEN THE CONTRACTOR SHALL REPAIR THE DAMAGED AREAS BY REMOVING AND REPLACING THE CONCRETE AND/OR REINFORCING STEEL AT HIS OWN EXPENSE.
- NO VEHICLES SHALL BE ALLOWED TO TRAVEL ON THE EXPOSED REINFORCING STEEL ONCE THE EXISTING SUPERSTRUCTURE CONCRETE HAS BEEN REMOVED.
- THE ENGINEER SHALL ORDER REPLACEMENT OF ANY EXISTING REINFORCING STEEL THAT IS DETERIORATED (WITH MORE THAN 25% SECTION LOSS) WITH NEW REINFORCING STEEL OF THE SAME SIZE. ALL REINFORCING STEEL SHALL HAVE A MINIMUM 2'-2" LAP SPLICE IN DECK SLAB. EIGHT (8) FEET OF EACH BAR SIZE SHALL BE SAMPLED FOR TESTING PURPOSES IF NEW REINFORCING STEEL IS USED. REINFORCING STEEL SHALL BE PAID UNDER ITEM 501.15. ESTIMATED QUANTITY OF 2500 LBS. HAS BEEN INCLUDED TO PERFORM ANY REQUIRED REINFORCING STEEL REPLACEMENT.
- MECHANICAL CONNECTORS SHALL BE USED TO SPLICE TRANSVERSE DECK REINFORCING STEEL AT PHASED CONSTRUCTION JOINTS. THE CONTRACTOR SHALL SUBMIT MANUFACTURER'S DATA TO THE ENGINEER FOR APPROVAL. TEST SPLICES SHALL BE SUBMITTED TO THE STATE IN ACCORDANCE WITH SPECIFICATION SECTION 713.02. MECHANICAL CONNECTORS SHALL BE PAID UNDER ITEM 507.19, "MECHANICAL BAR CONNECTOR (NO. 5)".
- IT MAY BE NECESSARY TO PATCH THE DECK SLAB FASCIAS IN SOME AREAS. THE ENGINEER SHALL DETERMINE THE AREAS OF THE DECK FASCIAS THAT REQUIRE REPAIR BY VISUAL INSPECTION, HAMMER SOUNDING, OR OTHER METHODS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH ACCESS TO THE FASCIAS TO ALLOW THE ENGINEER TO DETERMINE THE REPAIR AREAS. ALL COSTS ASSOCIATED WITH REPAIRING THE DECK FASCIAS SHALL BE INCLUDED IN ITEM 580.10, 580.11 OR 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I, II, OR III". THE PROCEDURES USED FOR THE DECK FASCIA REPAIRS SHALL BE AS DESCRIBED FOR APPROACH SLAB REPAIRS ON SHEET 12.

DECK REPAIR WAS ELIMINATED.
A COMPLETE NEW DECK WAS PLACED.
SEE THE NEW TYPICALS.
UTILITIES WERE RELOCATED.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No. 68
		Log. Sta.
Highway No. U.S. 2		Surv. Sta.

U.S. 2 OVER 1-89

GENERAL NOTES & DECK REHABILITAION NOTES

Designed By	T.S. BRYANT	Drawn By	B.J. MASSE
Checked By	Date	Bridge Design Supervisor	
A. SETAS	1/00	C.D. BAKER	Date 1/00

PROJECT	PROJECT NO.
SOUTH BURLINGTON	IM DECK (36)

VHB Cad Drawing No. 50929NO11	Date 1/00
Bridge Sheet No.	Sheet 9 of 15

VANASSE HANGEN BRUSTLIN, INC.

SIDEWALK REHABILITATION AND WIDENING NOTES:

1. THE ENTIRE LENGTH OF BOTH SIDEWALKS ON THE BRIDGE AND APPROACH SLABS SHALL BE OVERLAYED AND WIDENED AS SHOWN IN THE SIDEWALK WIDENING AND OVERLAY DETAIL ON SHEET 12B.
2. EXISTING CONCRETE SHALL BE REMOVED TO THE LIMITS SHOWN IN THE SIDEWALK WIDENING AND OVERLAY DETAIL. IN ADDITION ALL UNSOUND CONCRETE IN THE SIDEWALK BELOW THE REMOVAL LIMITS SHOWN IN THE DETAIL SHALL BE REMOVED. THE ENGINEER SHALL DETERMINE THE LIMITS OF THE ADDITIONAL REMOVAL BY VISUAL INSPECTION, HAMMER SOUNDING, OR OTHER METHODS. ALL CONCRETE REMOVAL SHALL BE PAID AS ITEM 523.25, "REMOVAL OF CONCRETE OR MASONRY", UNLESS OTHERWISE NOTED.
3. ALL CONCRETE REMOVAL OPERATIONS SHALL BE PERFORMED CAREFULLY TO AVOID DAMAGING THE TELEPHONE CONDUITS LOCATED WITHIN THE SIDEWALKS. SOME OF THE CONDUITS CONTAIN FIBER OPTIC CABLES. THE ENGINEER MAY REQUIRE THAT REMOVAL OF CONCRETE ABOVE AND AROUND THE CONDUITS BE PERFORMED WITH HAND METHODS, AT NO ADDITIONAL COST TO THE STATE, IF THE ENGINEER DETERMINES THAT OTHER METHODS OF REMOVAL PROPOSED BY THE CONTRACTOR WILL NOT SUFFICIENTLY PROTECT THE CONDUITS FROM DAMAGE.
4. ALL NEW CONCRETE IN THE SIDEWALK, INCLUDING THE OVERLAY, THE WIDENING, AND ALL REPAIR AREAS SHALL BE ITEM 501.60, "SILICA-FUME CONCRETE (MOD.)"
5. CONSTRUCTION JOINTS THROUGH THE CONCRETE CURB AND OVERLAY SHALL BE SPACED AT 15'-0" CENTER TO CENTER MAXIMUM. CONCRETE SHALL BE PLACED IN ALTERNATING SECTIONS TO MATCH EXISTING SIDEWALK JOINTS WITH A MINIMUM OF 48 HOURS DELAY BETWEEN ADJACENT POURS. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CURB CONSTRUCTION JOINTS, EXCEPT AT JOINTS OVER PIERS WHICH SHALL REMAIN OPEN. THE SIDEWALK OVERLAY AND ALL FULL-DEPTH SECTIONS OF THE NEW SIDEWALK SHALL BE PLACED IN THE SAME POUR.

BRIDGE SIDEWALK STREET LIGHTING NOTES:

1. THE THREE EXISTING LIGHT POLES THAT ARE MOUNTED TO THE BRIDGE SIDEWALK (1 ON NORTH SIDEWALK, 2 ON SOUTH SIDEWALK) SHALL BE REMOVED AND RESET DURING THE SIDEWALK REHABILITATION. THE LIGHT POLES SHALL BE RESET IN APPROXIMATELY THE SAME LOCATION AS EXISTING.
2. THE EXISTING LIGHT POLES SHALL BE MOUNTED TO THE SIDEWALK FASCIAS AS SHOWN ON VAOT STANDARD E-181.
3. ALL COSTS FOR REMOVING AND RESETTING BRIDGE LIGHT POLES SHALL BE INCLUDED IN ITEM 679.25, "REMOVE AND RESET LIGHT POLE", UNLESS OTHERWISE NOTED.
4. ALL JUNCTION BOXES, CONDUIT AND WIRING ATTACHED TO THE SUPERSTRUCTURE THAT SERVICE THE THREE LIGHTS SHALL BE REPLACED. COSTS FOR NEW JUNCTION BOXES, CONDUIT AND WIRING SHALL BE PAID AS ITEM 678.23, "WIRED CONDUIT". THE QUANTITY OF WIRED CONDUIT ESTIMATED FOR THIS WORK IS 300 LF.
5. THE CONTRACTOR SHALL PROVIDE TEMPORARY LIGHTING AT NIGHT AS DIRECTED BY THE ENGINEER DURING ALL PERIODS IN WHICH THE THREE STREET LIGHTS ON THE BRIDGE ARE NOT OPERATIONAL. ALL COSTS FOR ANY TEMPORARY LIGHTING REQUIRED SHALL BE INCLUDED IN ITEM 679.25.

APPROACH SLAB REHABILITATION NOTES:

1. REMOVAL AND REPLACEMENT OF CONCRETE ON APPROACH SLABS SHALL BE PAID AS ITEM 580.10, 580.11 OR 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I, II OR III". SPALLED, DELAMINATED, OR OTHERWISE DETERIORATED AREAS OF THE APPROACH SLABS TO BE REPAIRED SHALL BE MARKED ON THE STRIPPED SLABS BY VERMONT AOT PERSONNEL. THE METHODS USED FOR DEFINING AREAS NEEDING REPAIR MAY BE BY VISUAL INSPECTION, THE CHAIN DRAG METHOD, HAMMER SOUNDING, ETC. ALL NECESSARY CLEANING OF EACH SLAB SURFACE PRIOR TO MARKING OF THE SLAB REPAIR AREAS SHALL BE PERFORMED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER. THIS SHALL ALSO INCLUDE ADDITIONAL CLEANINGS AT OTHER TIMES AS THE WORK PROGRESSES. COST FOR THIS WORK SHALL BE SUBSIDIARY TO ITEMS 580.10, 580.11 AND 580.12.
2. THE LIMITS FOR REMOVAL OF APPROACH SLAB CONCRETE UNDER ITEM 580.10, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I" SHALL INCLUDE REMOVAL OF CONCRETE TO A MAXIMUM DEPTH OF TWO (2) INCHES FROM THE TOP OF THE APPROACH SLAB. IF THE REPAIR DEPTH EXCEEDS TWO (2) INCHES, THEN ITEM 580.11, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II" SHALL BE USED.
3. THE LIMITS FOR REMOVAL OF APPROACH SLAB CONCRETE UNDER ITEM 580.11, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE CLASS II" SHALL BE FROM THE TOP OF THE APPROACH SLAB TO A MAXIMUM DEPTH OF SIX (6) INCHES. IF THE REPAIR DEPTH EXCEEDS SIX (6) INCHES, THEN ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III" SHALL BE USED.
4. THE LIMITS FOR REMOVAL OF APPROACH SLAB CONCRETE UNDER ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE CLASS III" SHALL BE FROM THE TOP OF THE APPROACH SLAB TO A DEPTH GREATER THAN SIX (6) INCHES. SEE SHEET 13 FOR LIMITS OF CLASS III REPAIRS REQUIRED FOR REPAIR OF FIXED ABUTMENT JOINTS.
5. DUPLICATE PAYMENT WILL NOT BE MADE FOR REPAIR OF CONCRETE SURFACES IN ANY AREA. FOR EXAMPLE, IF AN AREA IS ORIGINALLY PREPARED AS CLASS I AND THE ENGINEER ORDERS A CHANGE TO CLASS II DEPTH, THE AREA WILL BE PAID AS CLASS II ONLY.
6. UNDER ITEMS 580.10, 580.11 OR 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I, II OR III", ALL EDGES OF REPAIRED AREAS SHALL BE SAWCUT SQUARE AND A MINIMUM OF ONE (1) INCH DEEP. HYDRODEMOLITION OR AIR HAMMERS MAY BE USED TO REMOVE UNSOUND CONCRETE FROM THE APPROACH SLABS.
7. APPROACH SLAB PATCHES SHALL BE MADE WITH "CONCRETE CLASS 4A". THE AREA TO BE PATCHED SHALL BE THOROUGHLY CLEANED, WETTED AND COATED (THOROUGHLY BRUSHED INTO THE SURFACE) WITH NEAT CEMENT PASTE. THE CEMENT (AASHTO M85, TYPE II) AND WATER SHALL BE MIXED TO A THICK LATEX PAINT CONSISTENCY. THE NEAT CEMENT PASTE SHALL NOT BE ALLOWED TO DRY OUT BEFORE IT IS COVERED WITH FRESH CONCRETE. THIS PREPARATION WORK, NEAT CEMENT PASTE AND "CONCRETE, CLASS 4A", SHALL BE INCLUDED IN THE BID PRICE FOR ITEMS 580.10, 580.11 OR 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I, II OR III".
8. A MAXIMUM OF 24 HOURS PRIOR TO PLACING NEW CONCRETE IN REPAIR AREAS, THE EXISTING APPROACH SLAB CONCRETE, AND ALL EXPOSED STEEL WHICH WILL HAVE CONCRETE PLACED AGAINST OR AROUND IT (SUCH AS REINFORCING STEEL) SHALL BE ABRASIVE BLASTED. THE AREA SHALL BE VACUUMED OR FLUSHED, USING HIGH PRESSURE AIR OR WATER, TO REMOVE ALL LOOSE PARTICLES, DUST AND DEBRIS. AFTER ABRASIVE BLASTING, ONCE THE EXISTING CONCRETE IS WET, WHETHER FROM FLUSHING OR RAIN, THE CONCRETE MUST BE KEPT WET UNTIL THE PLACING OF NEAT CEMENT PASTE AND NEW CONCRETE. IF THE EXISTING CONCRETE IS ALLOWED TO DRY OUT, THE AREA MUST BE ABRASIVE BLASTED AGAIN AND THE ENTIRE AREA VACUUMED OR FLUSHED AGAIN. THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR ITEMS 580.10, 580.11 AND 580.12.
9. THE CONTRACTOR SHALL PROVIDE AND UTILIZE A TWELVE (12) FOOT STRAIGHT EDGE TO ENSURE THAT PATCHES ARE SMOOTH AND MATCH THE SURROUNDING CONCRETE. THE STRAIGHT EDGE IS TO BE USED PARALLEL TO CENTERLINE ONLY.

10. A MEMBRANE-FORMING CURING COMPOUND MAY BE USED TO CURE THE CONCRETE APPROACH SLAB PATCHES, PROVIDED THE PATCHED AREAS ARE COVERED WITH WHITE POLYETHYLENE SHEETING AFTER THE CURING COMPOUND IS APPLIED. WHITE POLYETHYLENE SHEETING SHALL CONFORM TO SECTION 725.01(c). THE TYPE OF CURING COMPOUND SHALL BE APPROVED BY THE ENGINEER PRIOR TO ITS USE. THE CURING PERIOD SHALL BE SEVEN (7) DAYS, REGARDLESS OF WHICH CURING METHOD IS USED. ANY OTHER METHOD OF CURING LISTED IN SPECIFICATION SECTION 501.17(b) 1, 2, 5 OR 7 MAY BE USED TO CURE THESE APPROACH SLAB PATCHES. HOWEVER, IF THE METHOD USED DOES NOT PRODUCE DESIRED RESULTS, ALTERNATE CURING METHODS MAY BE REQUIRED BY THE ENGINEER.
11. IF A LIQUID MEMBRANE CURING COMPOUND IS USED, PRIOR TO THE APPLICATION OF ANY PROTECTIVE COATING OR PRIMER FOR THE SHEET MEMBRANE, THE CURING COMPOUND SHALL BE BLAST CLEANED FROM THE SURFACE. THIS WORK SHALL BE SUBSIDIARY TO ITEM 519.20, "SHEET MEMBRANE WATERPROOFING (MOD. - TORCH APPLIED)".

DECK REPAIR WAS ELIMINATED.
A COMPLETE NEW DECK WAS PLACED.
SEE THE NEW TYPICALS.
UTILITIES WERE RELOCATED.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
		Log Sta.	
Highway No. U.S.	2	Surv. Sta.	

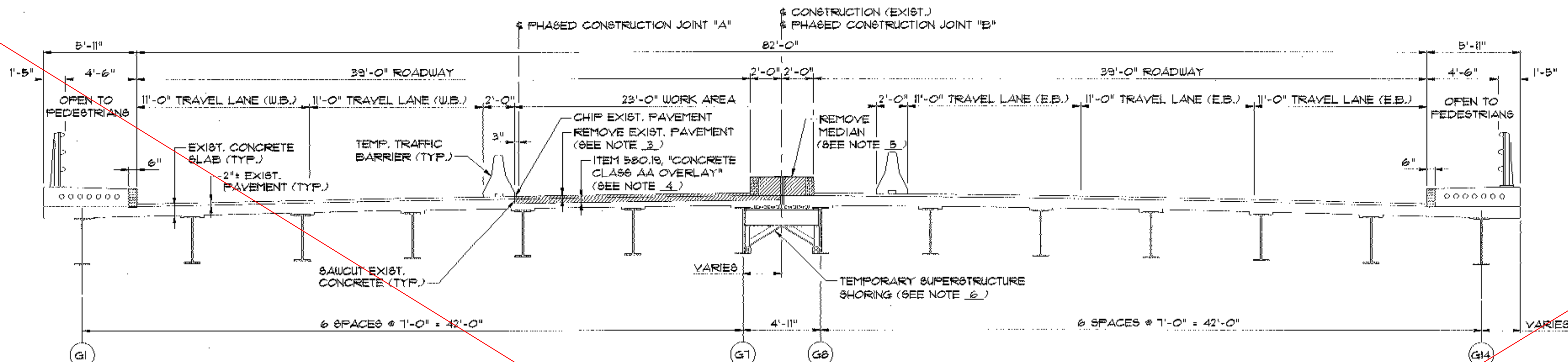
U.S. 2 OVER 1-89

SIDEWALK & APPROACH SLAB REHABILITATION NOTES

Designed By	T.G. BRYANT	Drawn By	B.J. MASSE
Checked By		Date	
	A. GETAS	1/00	C.D. BAKER
			Date 1/00

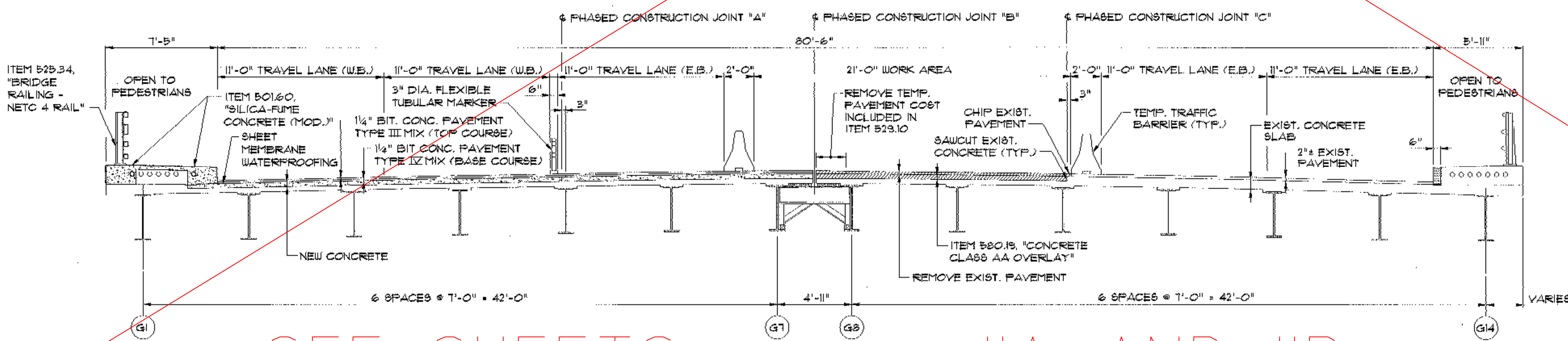
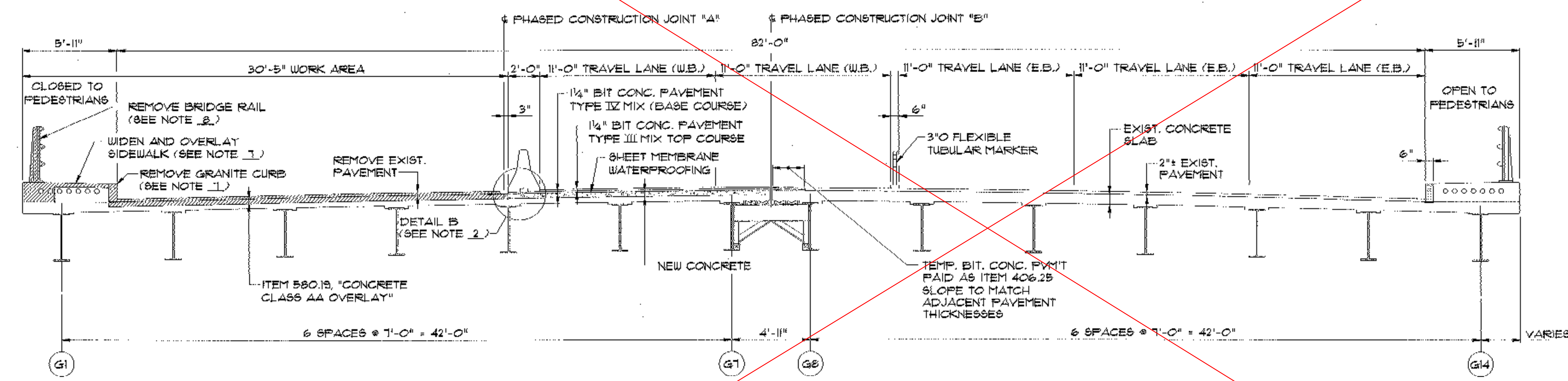
PROJECT		PROJECT NO.	
	SOUTH BURLINGTON		IM DECK (36)

VHB Cad Drawing No.	50929NOT2	Date	1/00
Bridge Sheet No.		Sheet	12 of 15



- DENOTES LIMIT OF REMOVAL
- DENOTES LIMIT OF NEW CONCRETE
- DENOTES TEMPORARY PAVEMENT

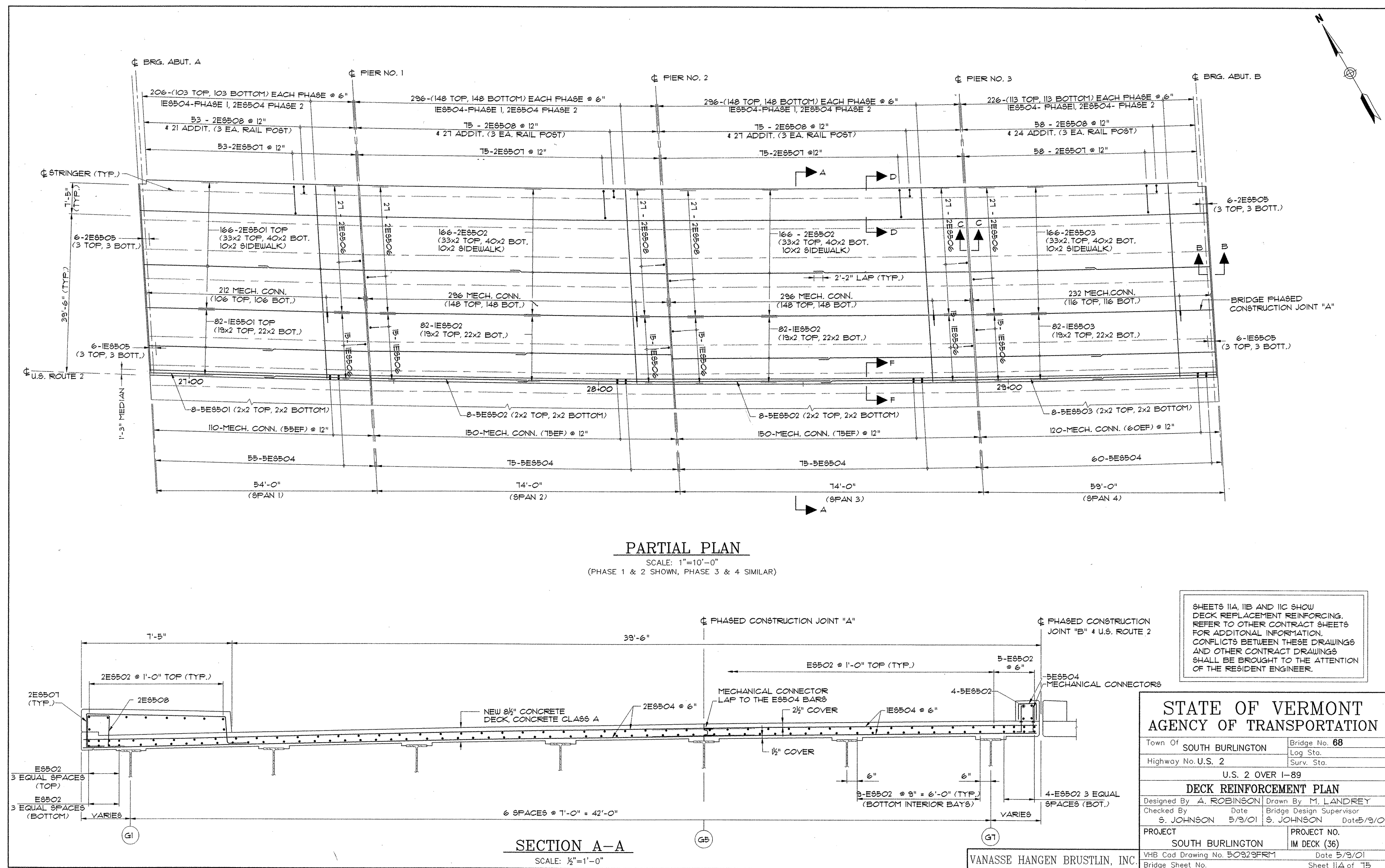
- NOTES:**
- SEE TRAFFIC CONTROL PLANS FOR DIRECTION OF TRAFFIC.
 - SEE SHEET 12 FOR DETAIL B.
 - REMOVAL AND DISPOSAL OF EXISTING BRIDGE PAVEMENT SHALL BE PAID UNDER ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT".
 - THE BRIDGE DECK OVERLAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DECK REHABILITATION NOTES ON SHEET 9 AND THE DETAIL ON SHEET 12A.
 - BRIDGE AND APPROACH SLAB MEDIAN TREATMENT: REMOVAL OF EXISTING MEDIAN GRANITE CURB SHALL BE PAID UNDER ITEM 616.41, "REMOVAL OF EXISTING CURB". REMOVAL OF EXISTING CONCRETE MEDIAN SHALL BE PAID AS ITEM 529.25, "REMOVAL OF CONCRETE OR MASONRY". THE NEW MEDIAN SHALL BE CONSTRUCTED AS SHOWN IN THE MEDIAN REPLACEMENT DETAIL ON SHEET 12A.
 - THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPERSTRUCTURE SHORING BELOW THE MEDIAN FOR THE FULL LENGTH OF BRIDGE NO. 68. THE SCHEME FOR TEMPORARY SHORING SHALL BE SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL. ALSO, THE CONTRACTOR SHALL SUBMIT DETAILS AND CALCULATIONS PREPARED BY A QUALIFIED REGISTERED PROFESSIONAL ENGINEER TO THE STRUCTURES ENGINEER FOR INFORMATION ONLY (TWO WEEKS PRIOR TO PERFORMING WORK). SHORING SHALL BE DESIGNED FOR H820 LOADING. WELDING TO EXISTING STEEL SHALL NOT BE PERMITTED. ALL COSTS TO BE INCLUDED IN ITEM 502.10, "SHORING SUPERSTRUCTURE".
 - BRIDGE AND APPROACH SLAB SIDEWALK TREATMENT: REMOVAL OF EXISTING SIDEWALK GRANITE CURB SHALL BE PAID UNDER ITEM 616.41, "REMOVAL OF EXISTING CURB". CONCRETE REMOVAL SHALL BE PAID UNDER ITEM 529.25, "REMOVAL OF CONCRETE OR MASONRY", UNLESS OTHERWISE NOTED. THE SIDEWALK WIDENING AND OVERLAY SHALL BE CONSTRUCTED AS SHOWN IN THE DETAIL ON SHEET 12B, AND IN ACCORDANCE WITH THE SIDEWALK REHABILITATION AND WIDENING NOTES ON SHEET 10.
 - REMOVAL AND DISPOSAL OF ALL EXISTING ALUMINUM BRIDGE RAILING SHALL BE PAID UNDER ITEM 525.10, "REMOVAL OF EXISTING RAILING".
 - SEE SHEET 13 FOR MEDIAN TREATMENTS BEYOND THE APPROACH SLABS.

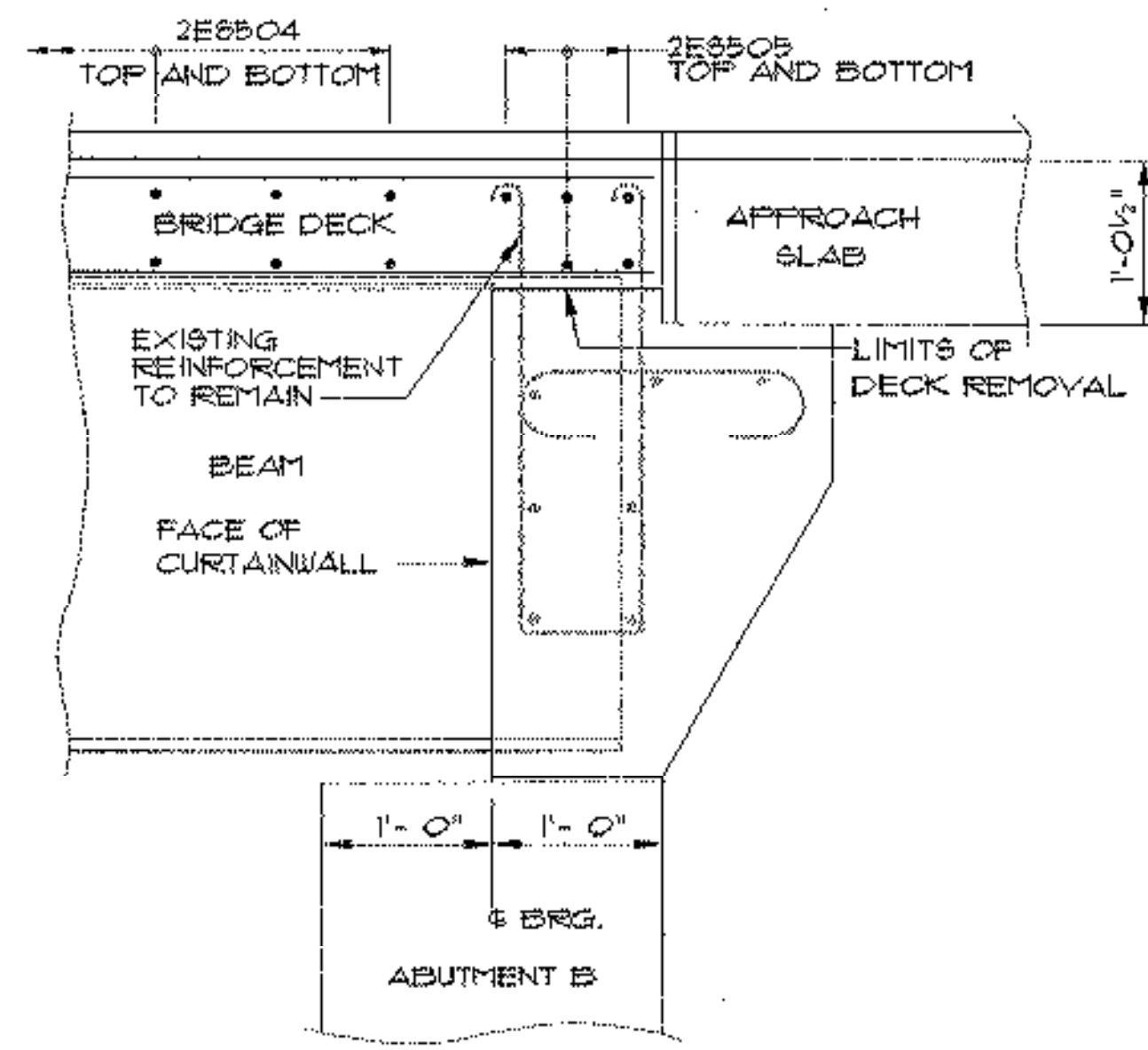


SEE SHEETS IIA AND IIB

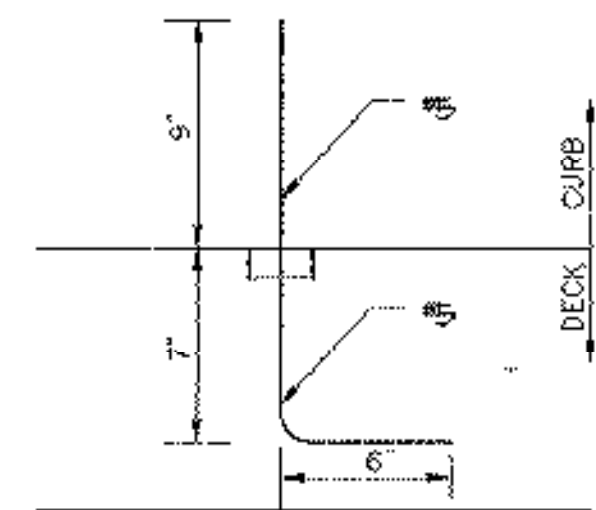
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log Sta. Surv. Sta.	
U.S. 2 OVER I-89			
CONSTRUCTION PHASING (1 OF 2)			
Designed By T.S. BRYANT		Drawn By B.J. MASSE	
Checked By A. SETAS		Bridge Design Supervisor	
Date 2/00		Date 2/00	
PROJECT SOUTH BURLINGTON		PROJECT NO. IM DECK (36)	
VHB Cad Drawing No. 50928CPI		Date 2/00	
Bridge Sheet No.		Sheet 11 of 15	

VANASSE HANGEN BRUSTLIN, INC.

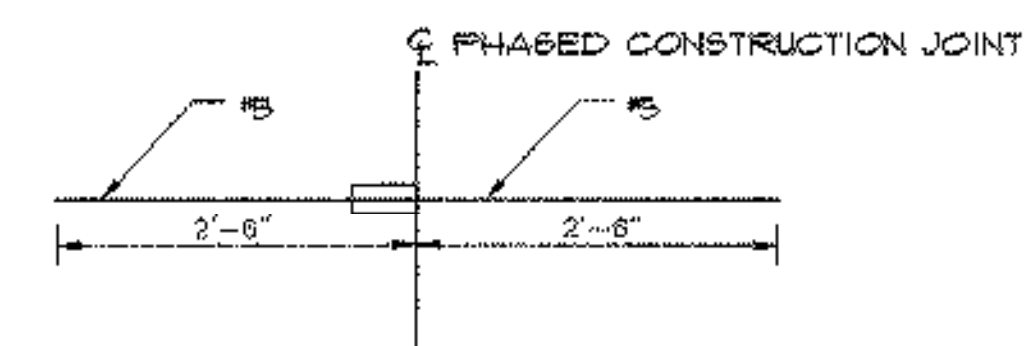




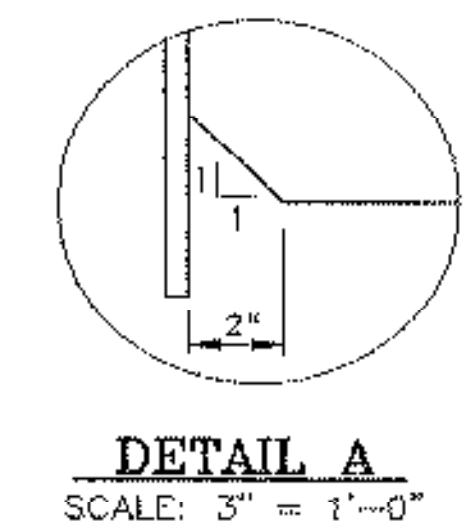
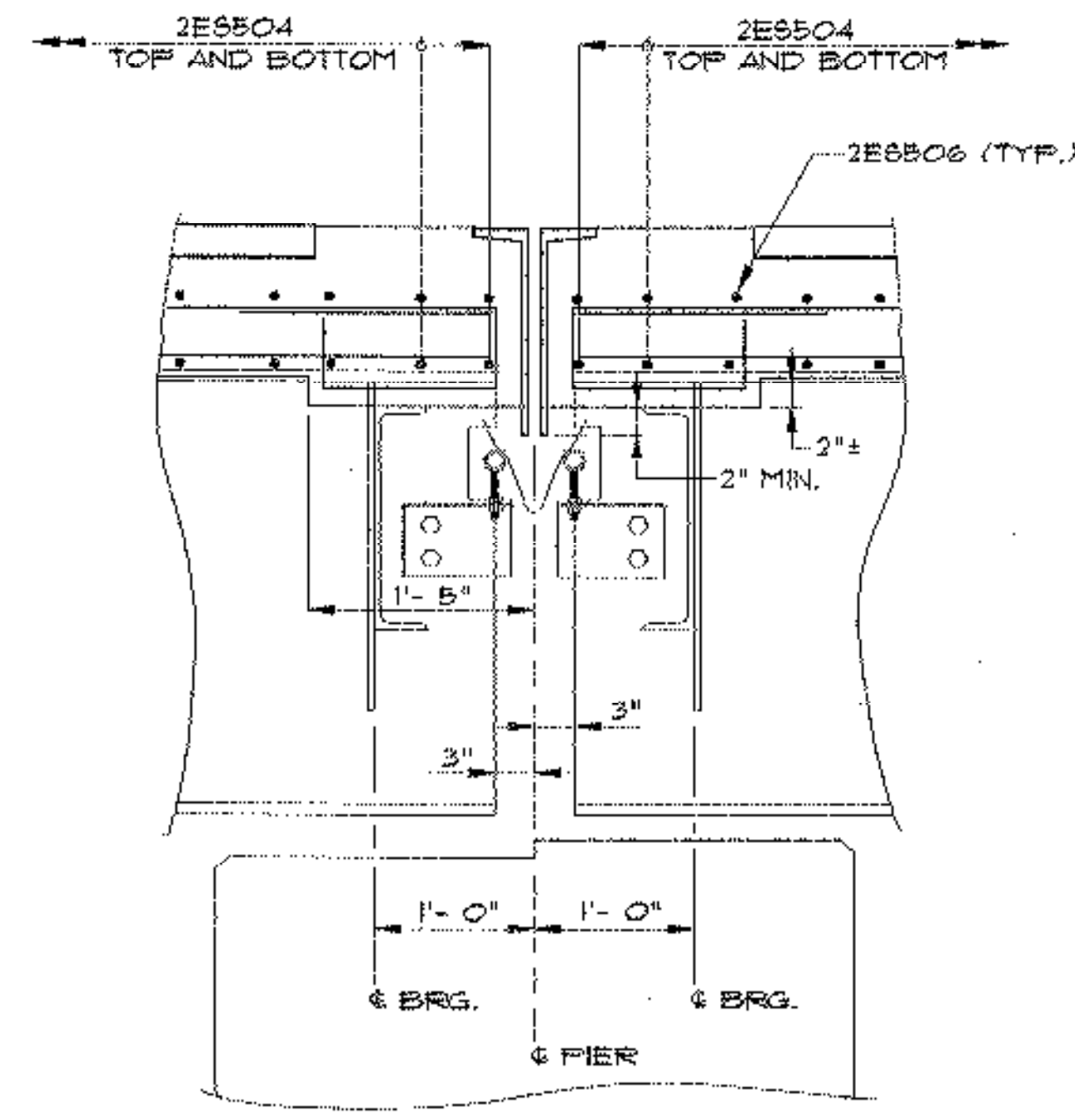
SECTION B-B
SCALE: 1" = 1'-0"



MECHANICAL CONNECTOR AT MEDIAN
N.T.S.

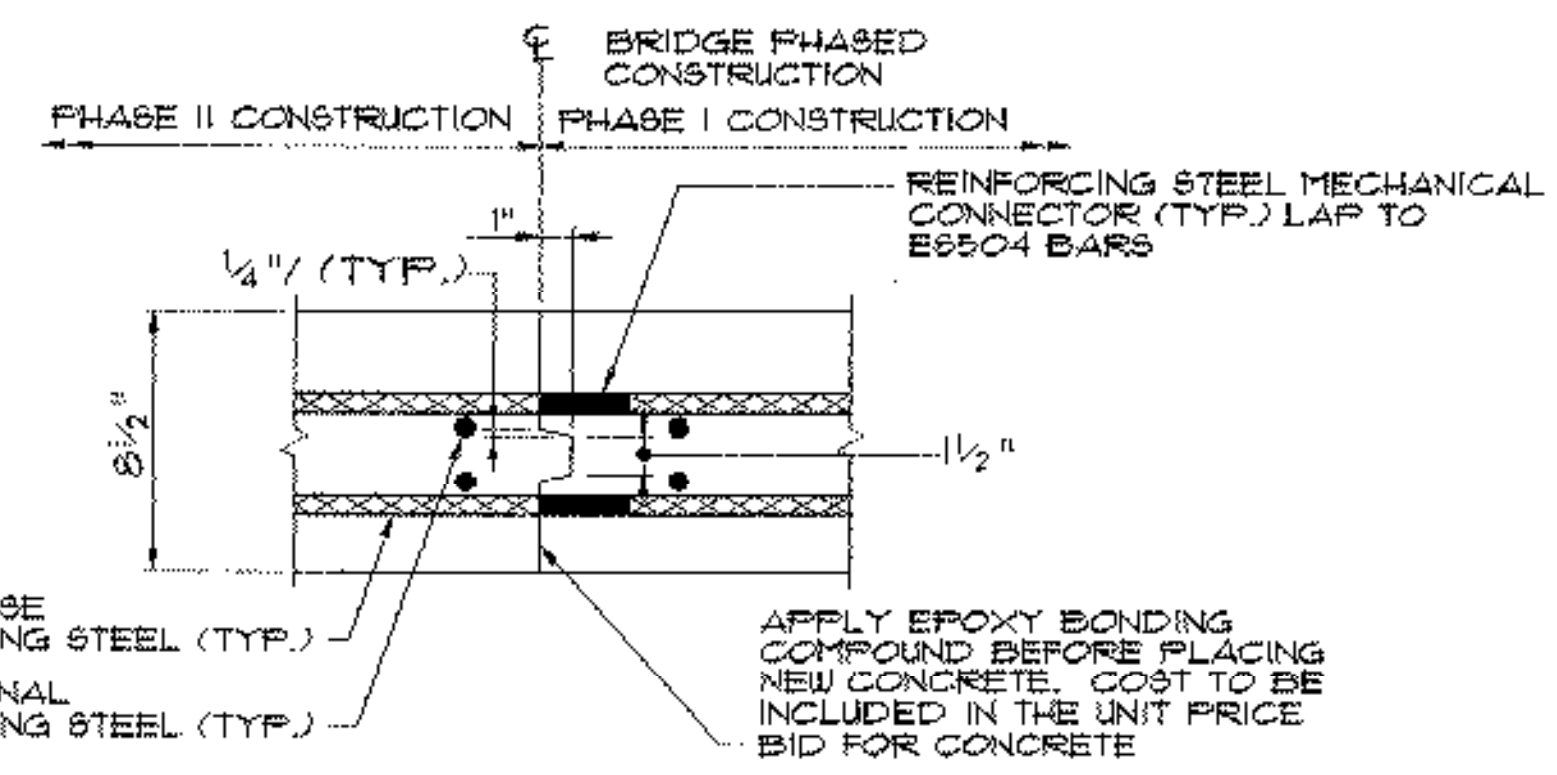


MECHANICAL CONNECTOR AT PHASED CONSTRUCTION JOINT
N.T.S.

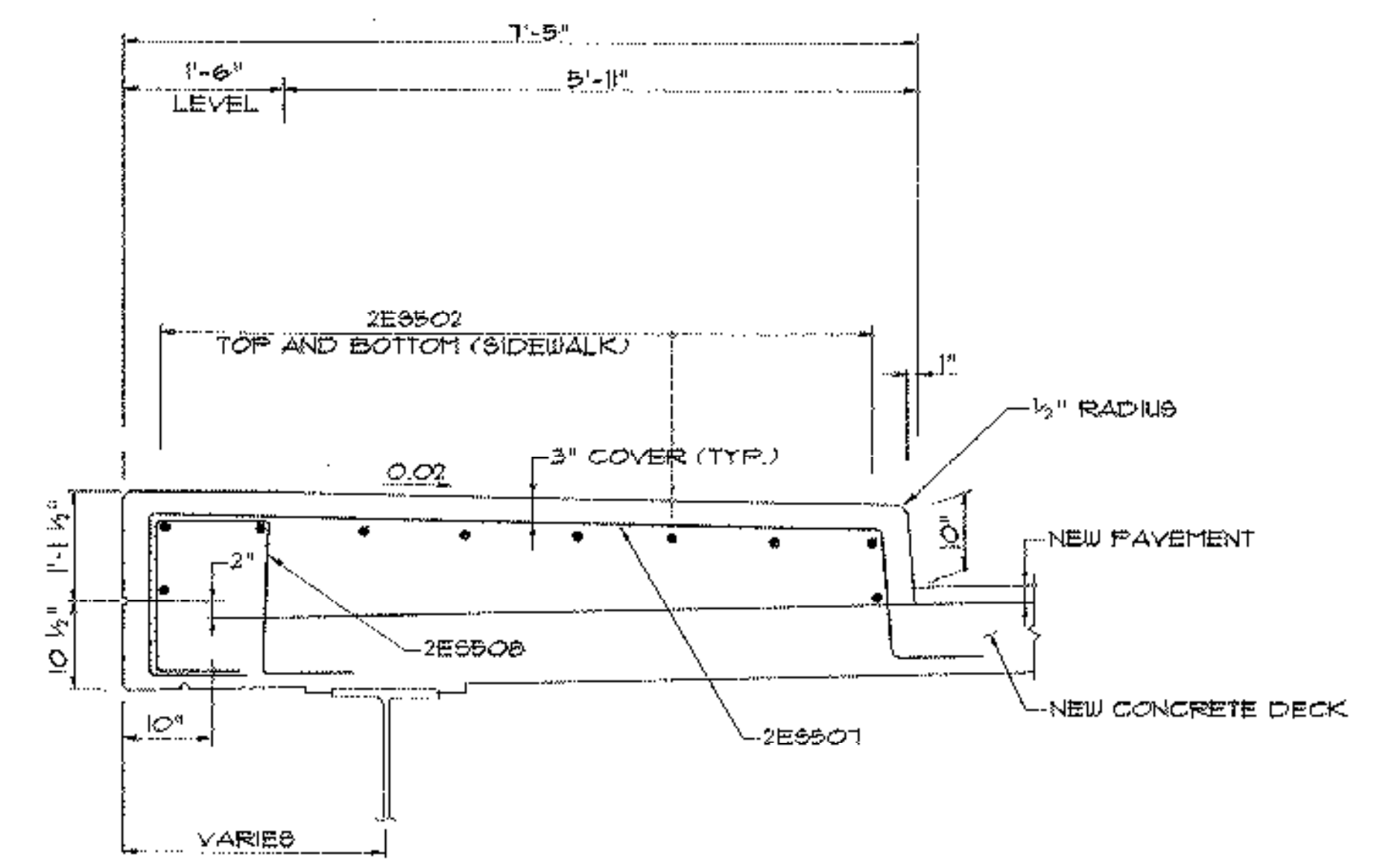


DETAIL A
SCALE: 3" = 1'-0"

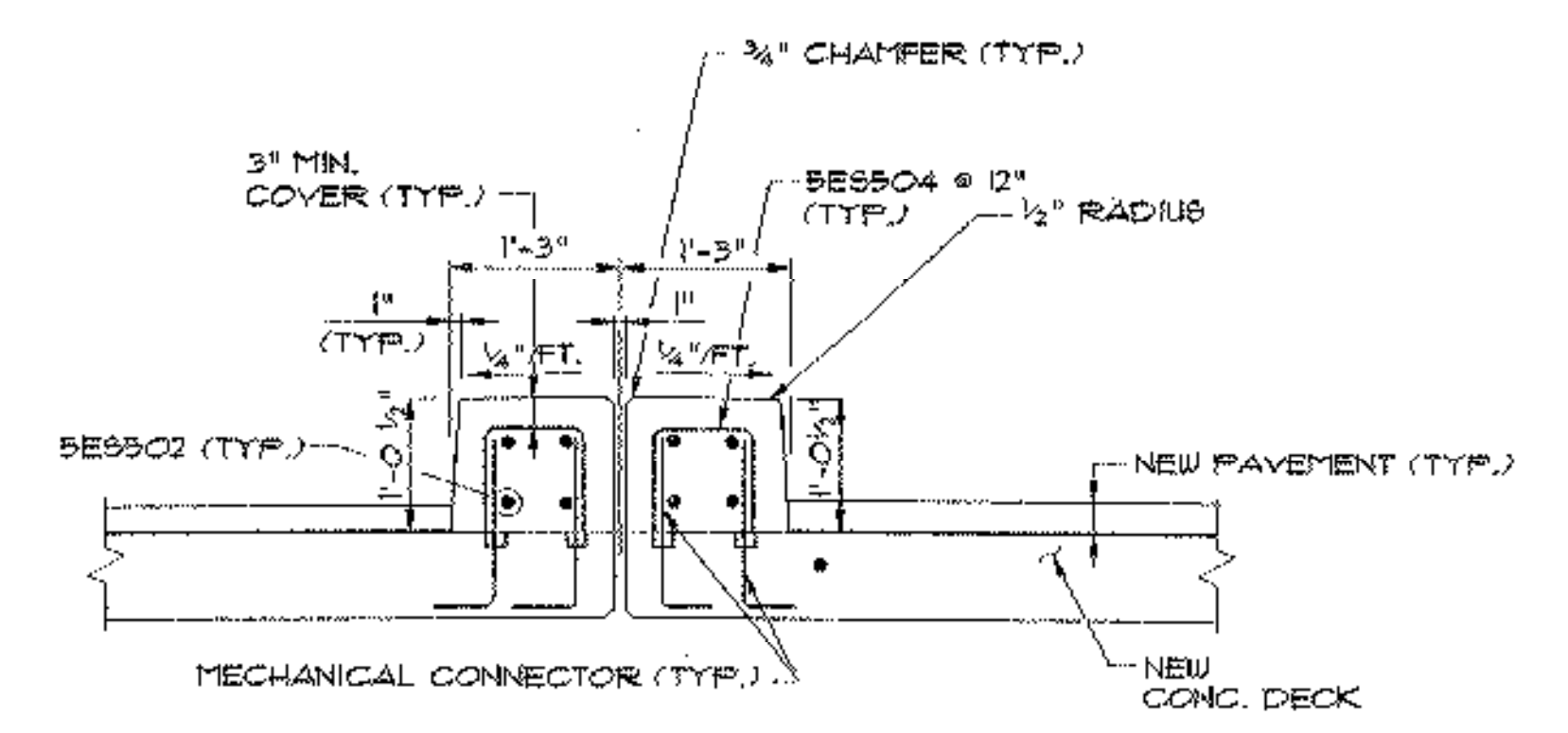
SECTION C-C
SCALE: 1" = 1'-0"



SECTION E-E
PHASED DECK CONSTRUCTION JOINT DETAIL
N.T.S.



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

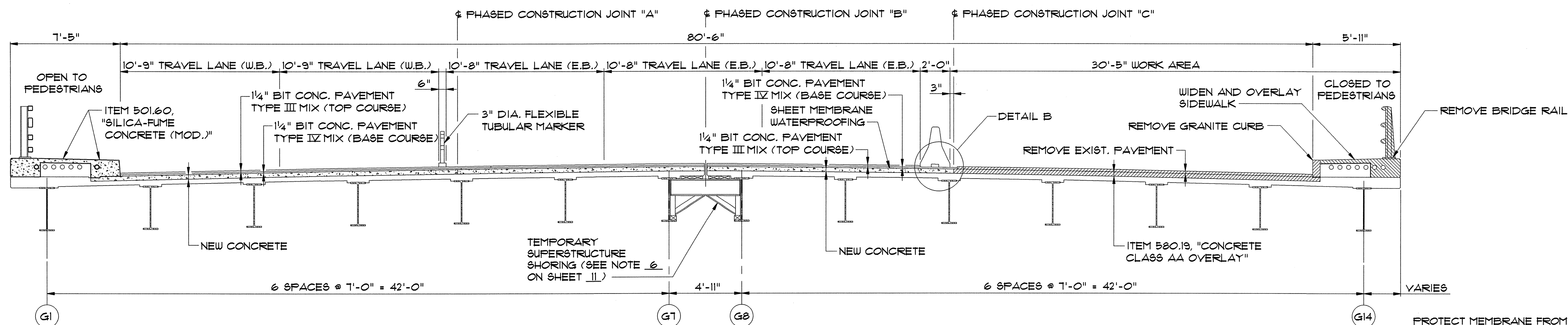


SECTION F-F
SCALE: 3/4" = 1'-0"

SHEETS IIA, IIB AND IIC SHOW DECK REPLACEMENT REINFORCING. REFER TO OTHER CONTRACT SHEETS FOR ADDITIONAL INFORMATION. CONFLICTS BETWEEN THESE DRAWINGS AND OTHER CONTRACT DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER.

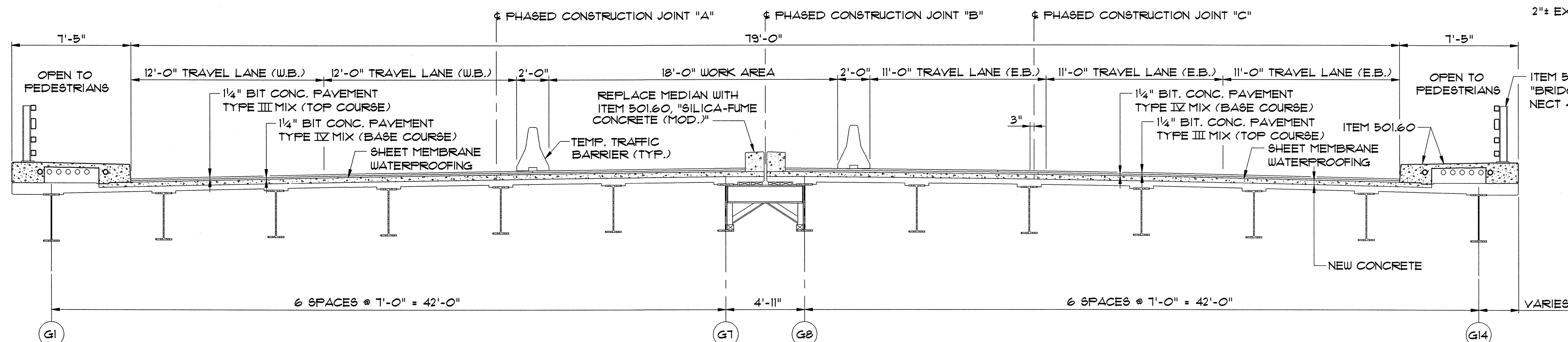
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
REINFORCEMENT DETAILS			
Designed By A. ROBINSON		Drawn By M. LANDREY	
Checked By S. JOHNSON		Bridge Design Supervisor S. JOHNSON	
Date 5/3/01		Date 5/3/01	
PROJECT SOUTH BURLINGTON		PROJECT NO. IM DECK (36)	
VHB Cad Drawing No. 50929DET2		Date 5/3/01	
Bridge Sheet No.		Sheet IIE of 15	

VANASSE HANGEN BRUSTLIN, INC.



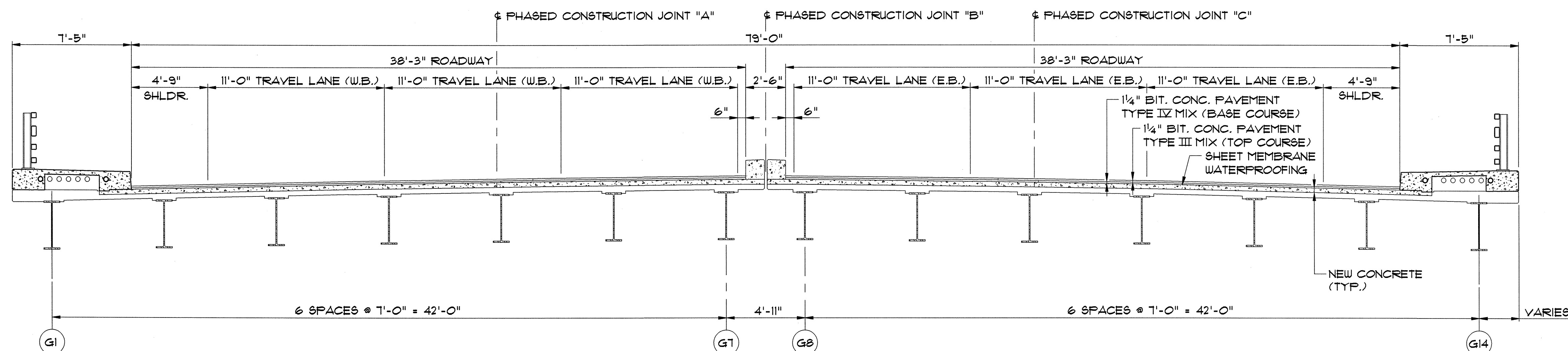
PHASE 4 SECTION

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



PHASE 5 SECTION

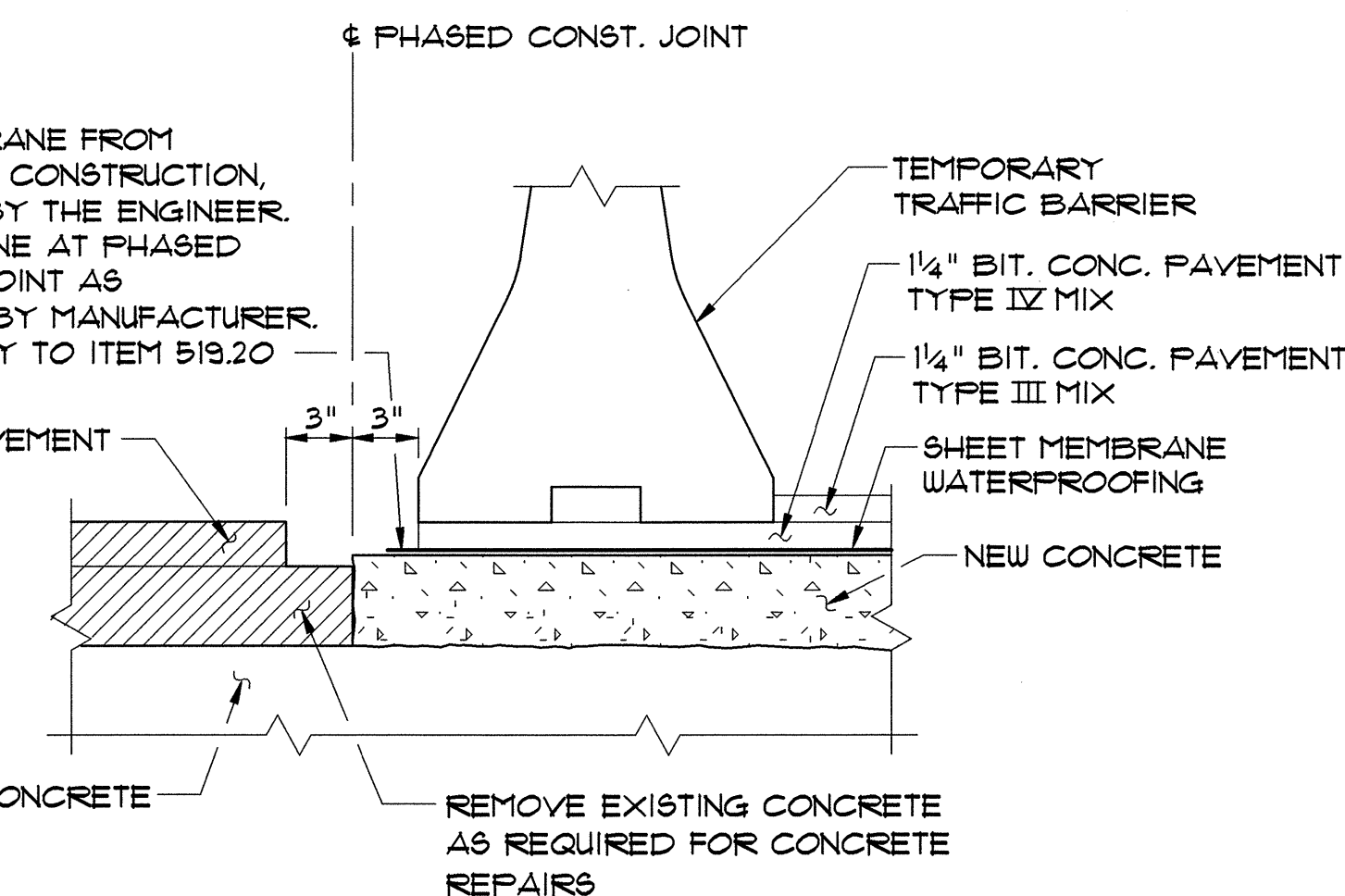
SCALE: 1/4"=1'-0"



COMPLETED SECTION

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

PROTECT MEMBRANE FROM DAMAGE DURING CONSTRUCTION, AS APPROVED BY THE ENGINEER. SPLICE MEMBRANE AT PHASED CONSTRUCTION JOINT AS RECOMMENDED BY MANUFACTURER. COST SUBSIDIARY TO ITEM 519.20



DETAIL B

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

/// DENOTES LIMIT OF REMOVAL

■■■ DENOTES LIMIT OF NEW CONCRETE

NOTES:

1. SEE NOTES ON SHEET III.

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of **SOUTH BURLINGTON** Bridge No. **68**
Highway No. **U.S. 2** Log Sta.
Surv. Sta.

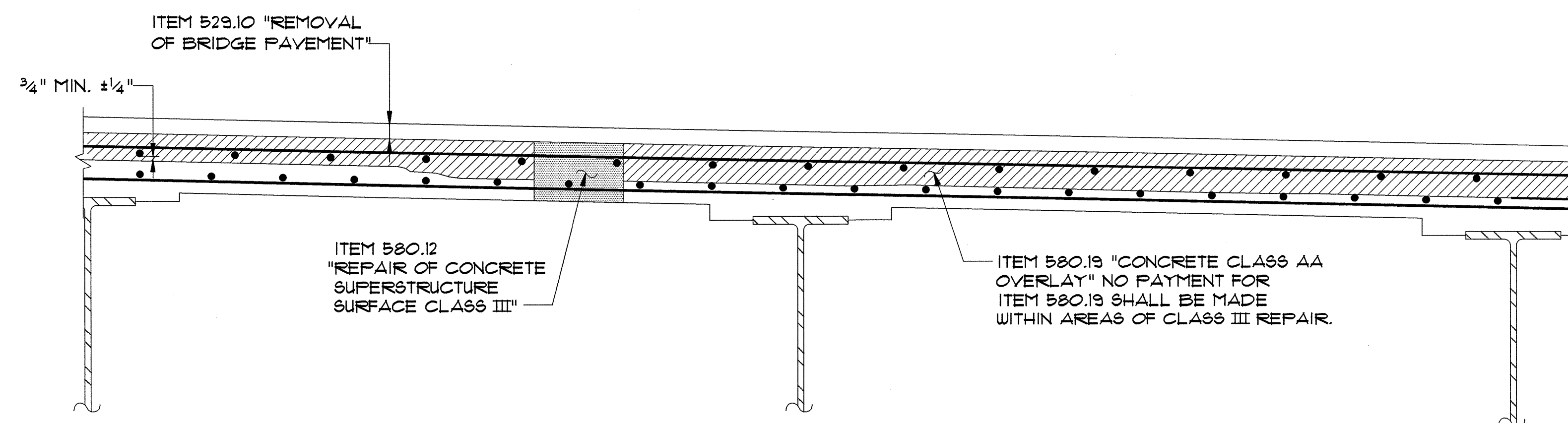
U.S. 2 OVER I-89

CONSTRUCTION PHASING (2 OF 2)

Designed By **S.M. HODGDON** Drawn By **B.J. MASSE**
Checked By **T.S. BRYANT** Date **2/00** Bridge Design Supervisor **C.D. BAKER** Date **2/00**

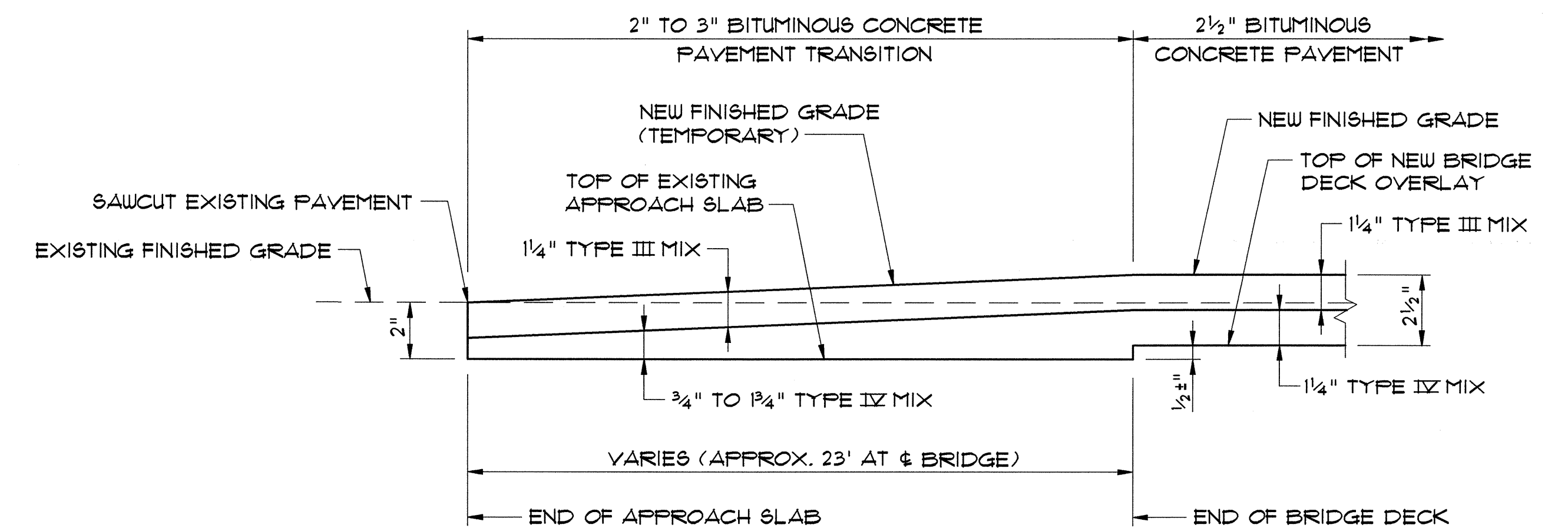
PROJECT **SOUTH BURLINGTON** PROJECT NO. **IM DECK(36)**
VHB Cad Drawing No. **50329CF2** Date **2/00**
Bridge Sheet No. Sheet **12** of **15**

VANASSE HANGEN BRUSTLIN, INC.



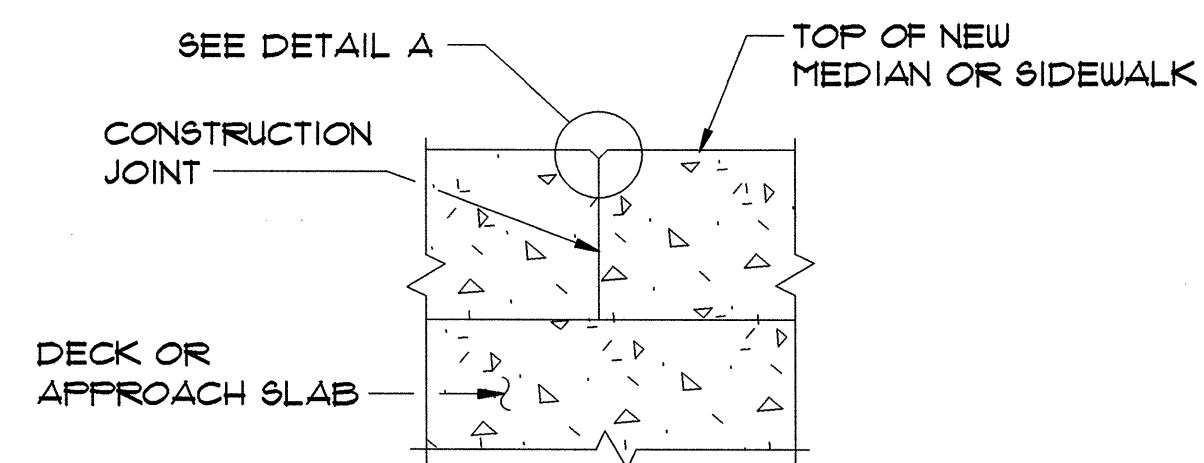
**DETAIL SHOWING LIMITS OF 580.12, REPAIR OF CONCRETE SUPERSTRUCTURE
SURFACE CLASS III AND 580.19, CONCRETE CLASS AA OVERLAY**

NTS



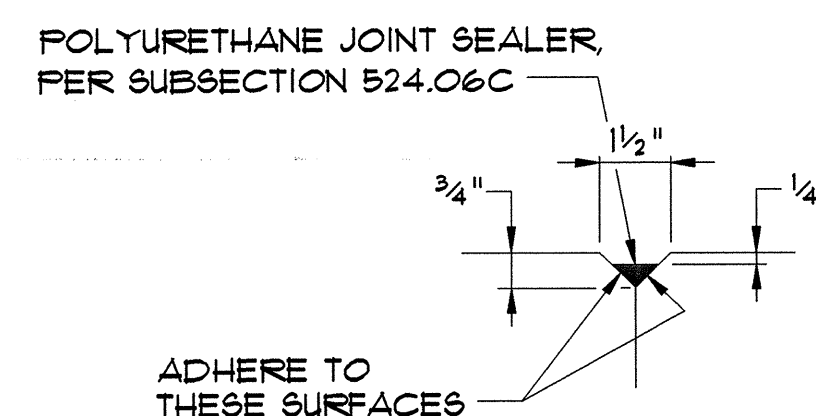
**TEMPORARY APPROACH SLAB
PAVEMENT TRANSITION DETAIL**

NTS



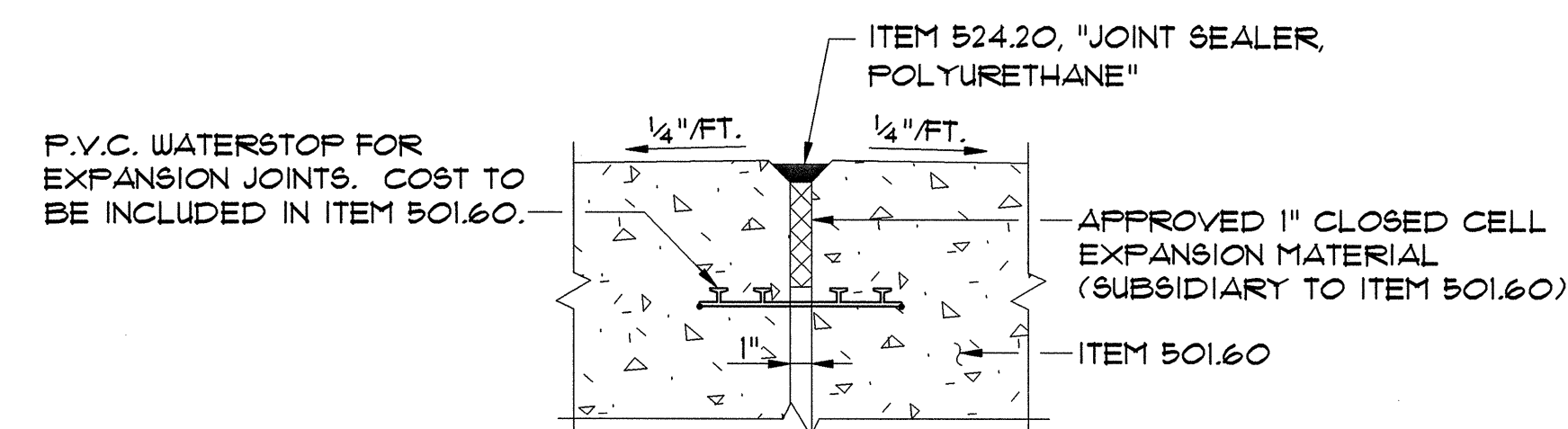
SECTION A-A

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



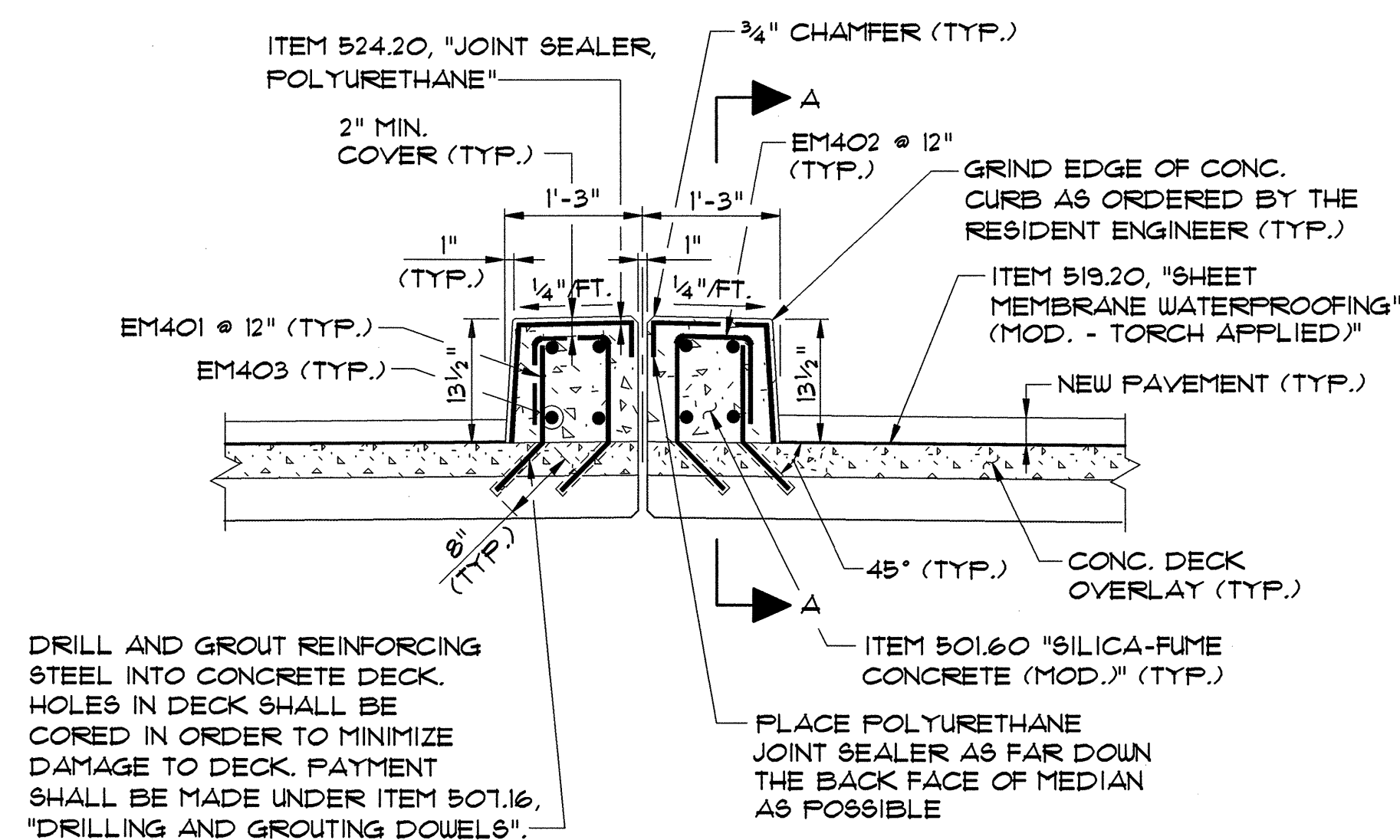
DETAIL A

SCALE: 3"=1'-0"



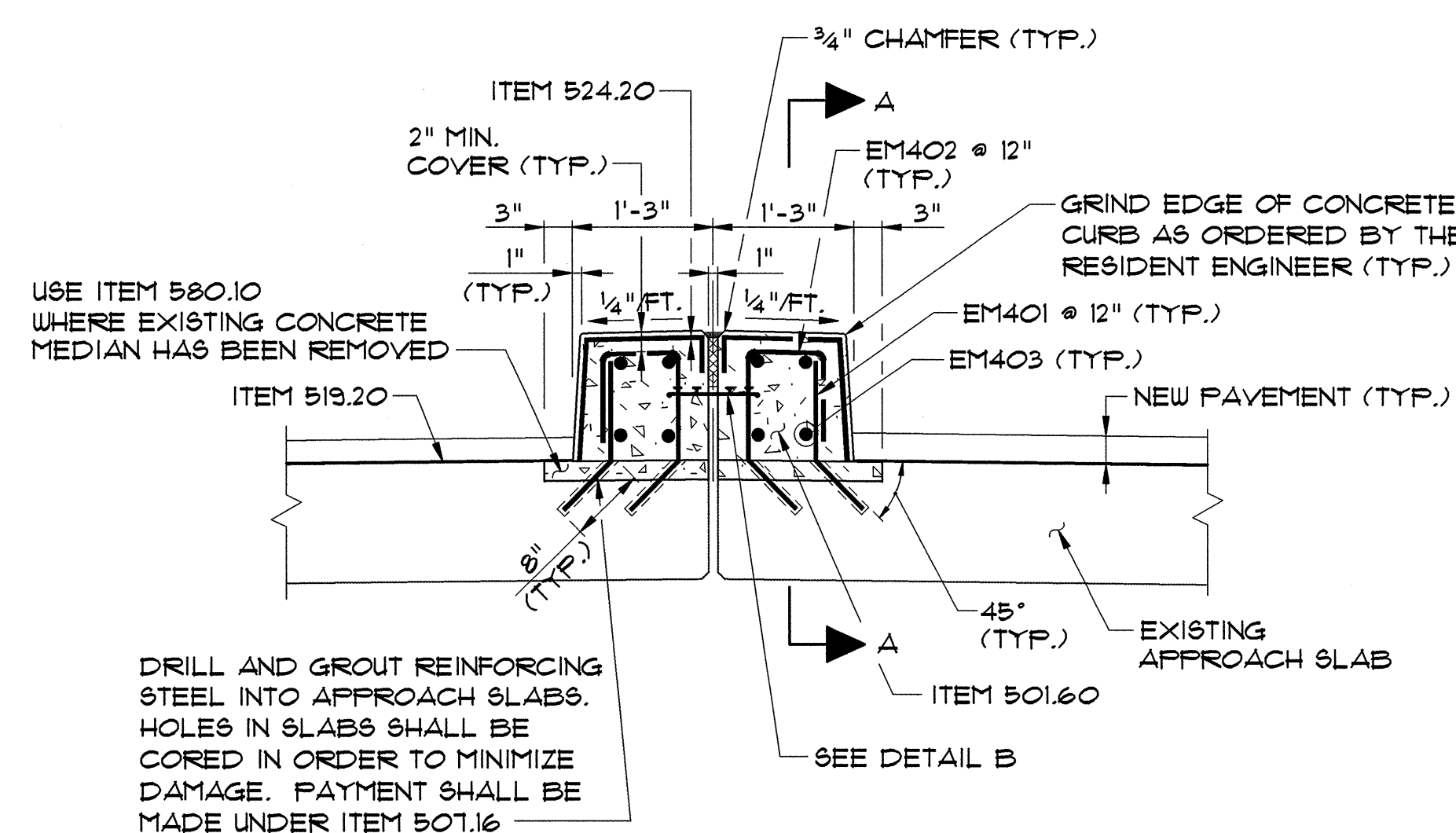
DETAIL B

NTS



DECK MEDIAN REPLACEMENT DETAIL

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



APPROACH SLAB MEDIAN REPLACEMENT DETAIL

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

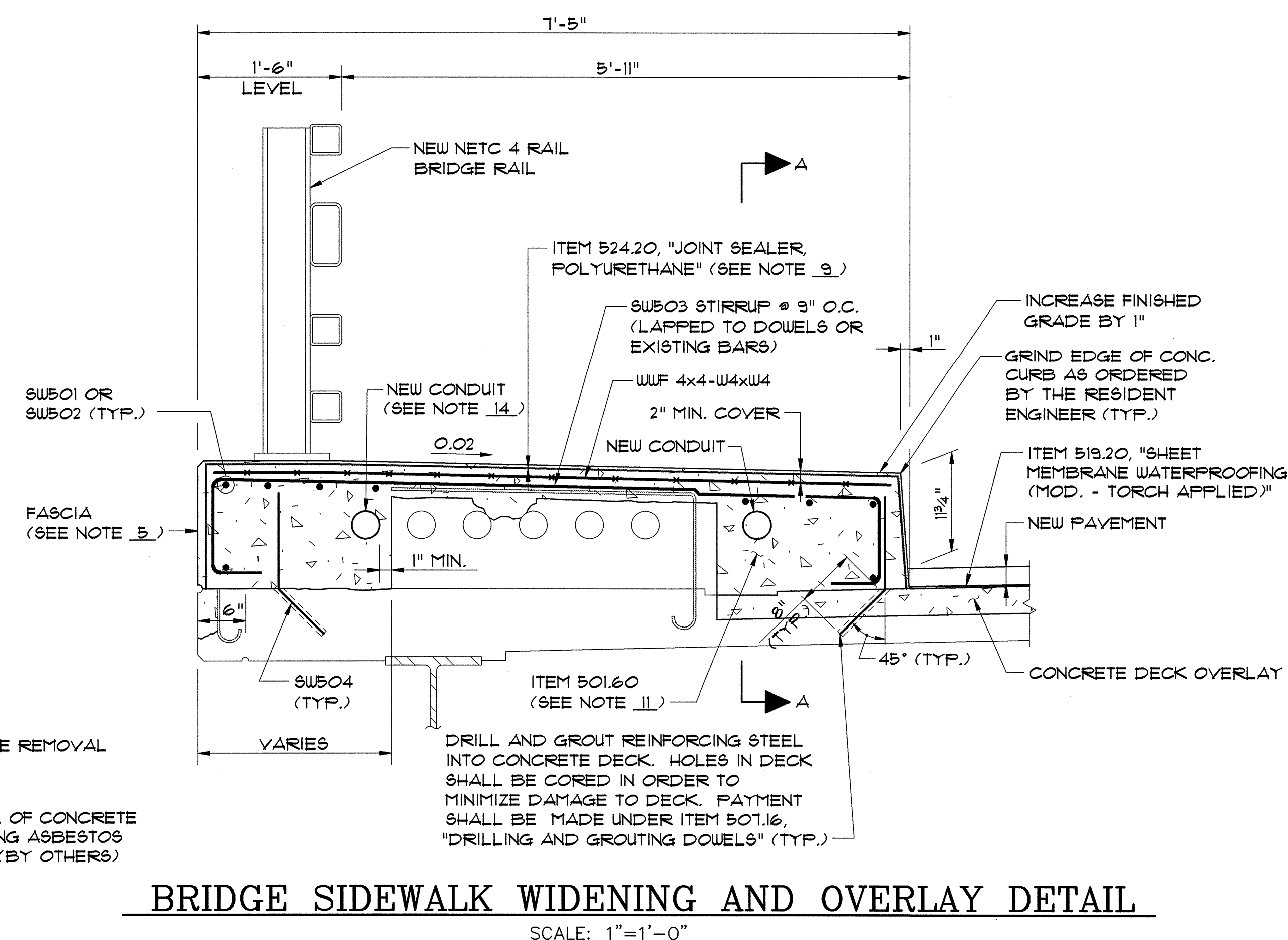
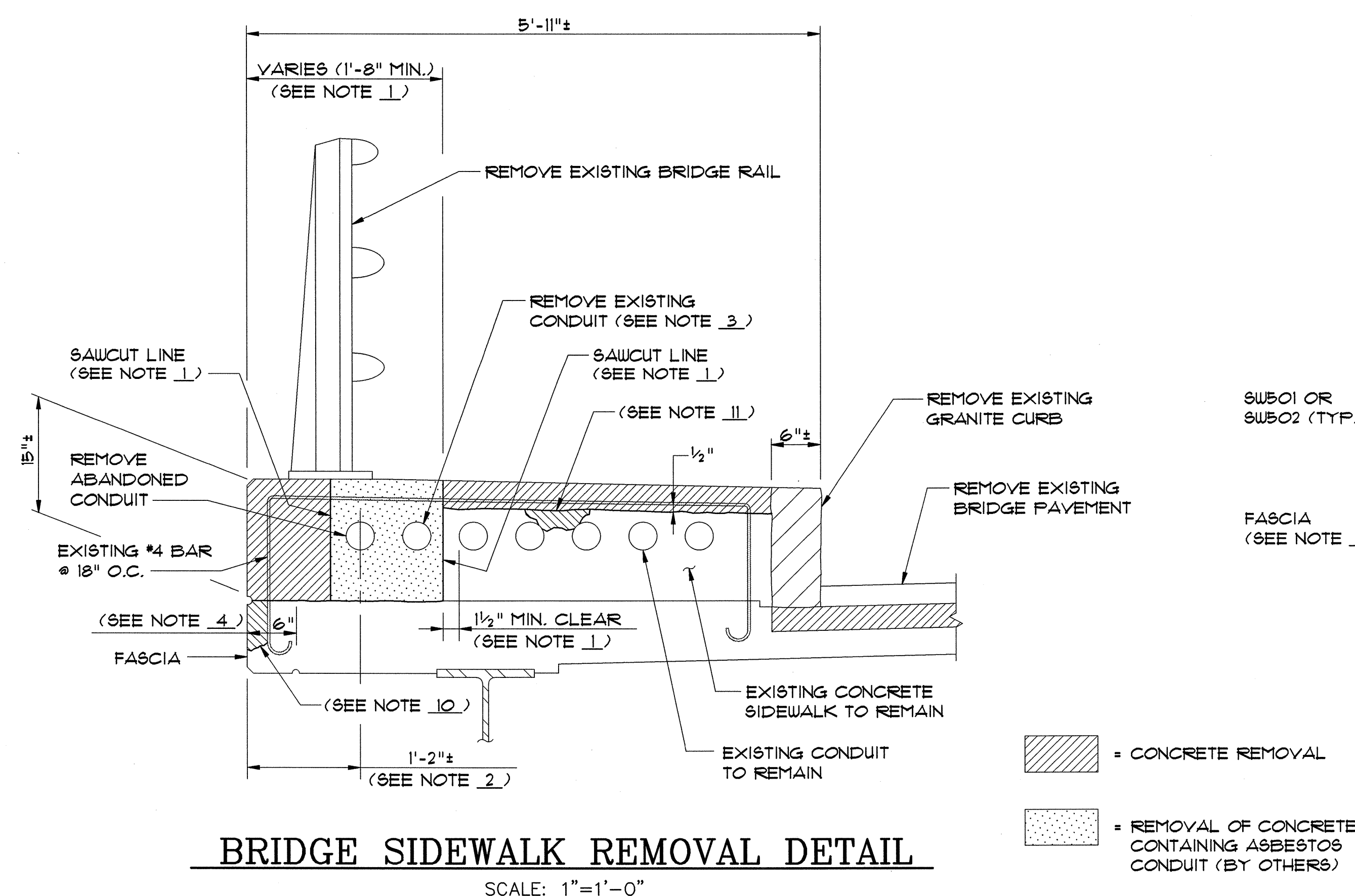
NOTES:

1. SEE SHEET 9 FOR DECK REHABILITATION NOTES.
2. NOTE USED.
3. SEE SHEET 10 FOR APPROACH SLAB REHABILITATION NOTES.
4. CONSTRUCTION JOINTS THROUGH CONCRETE MEDIAN SHALL BE SPACED MAXIMUM 15'-0" CENTER TO CENTER. CONCRETE SHALL BE PLACED IN ALTERNATING SECTIONS WITH A MINIMUM OF 48 HOURS DELAY BETWEEN ADJACENT POURS. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE MEDIAN CONSTRUCTION JOINTS, EXCEPT AT JOINTS OVER PIERS WHICH SHALL REMAIN OPEN.
5. NO SEALER SHALL BE USED AT JOINTS OVER PIERS WHICH SHALL REMAIN OPEN. COLOR OF POLYURETHANE JOINT SEALANT SHALL MATCH CONCRETE.

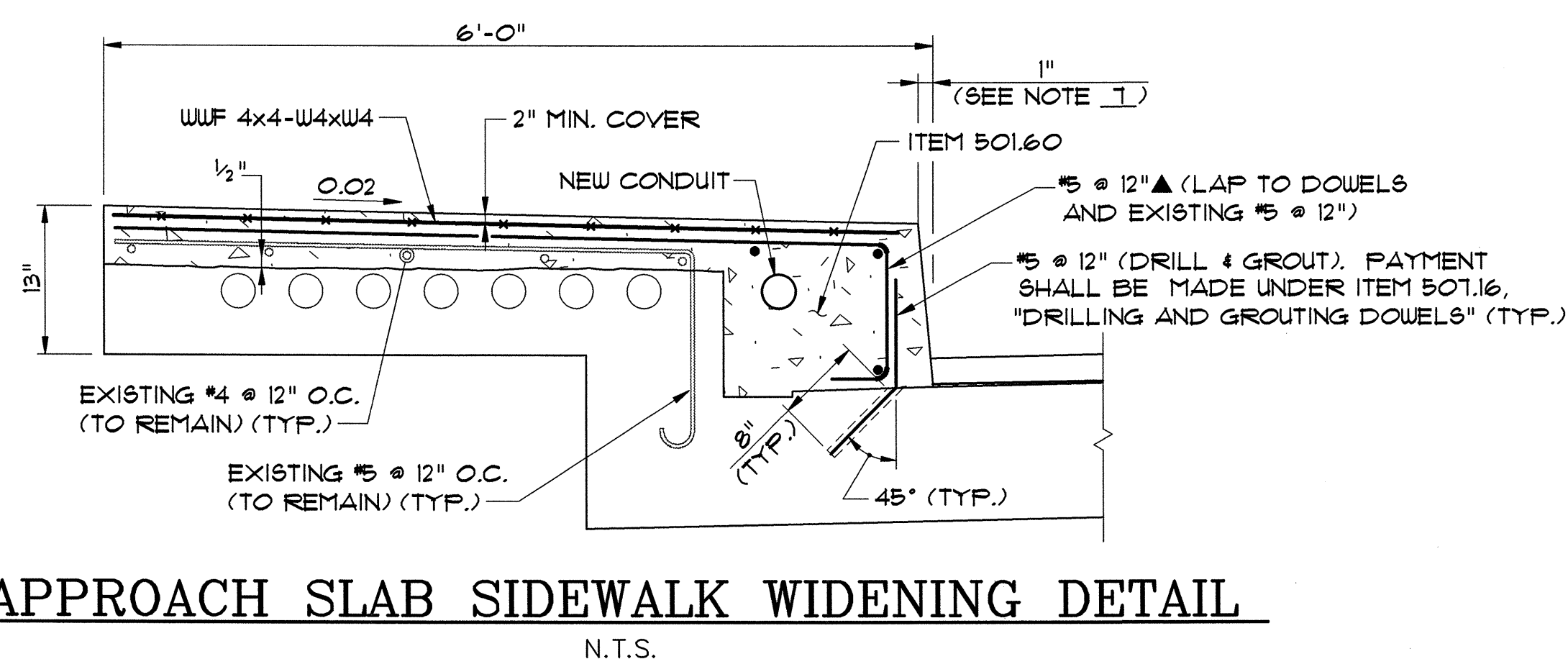
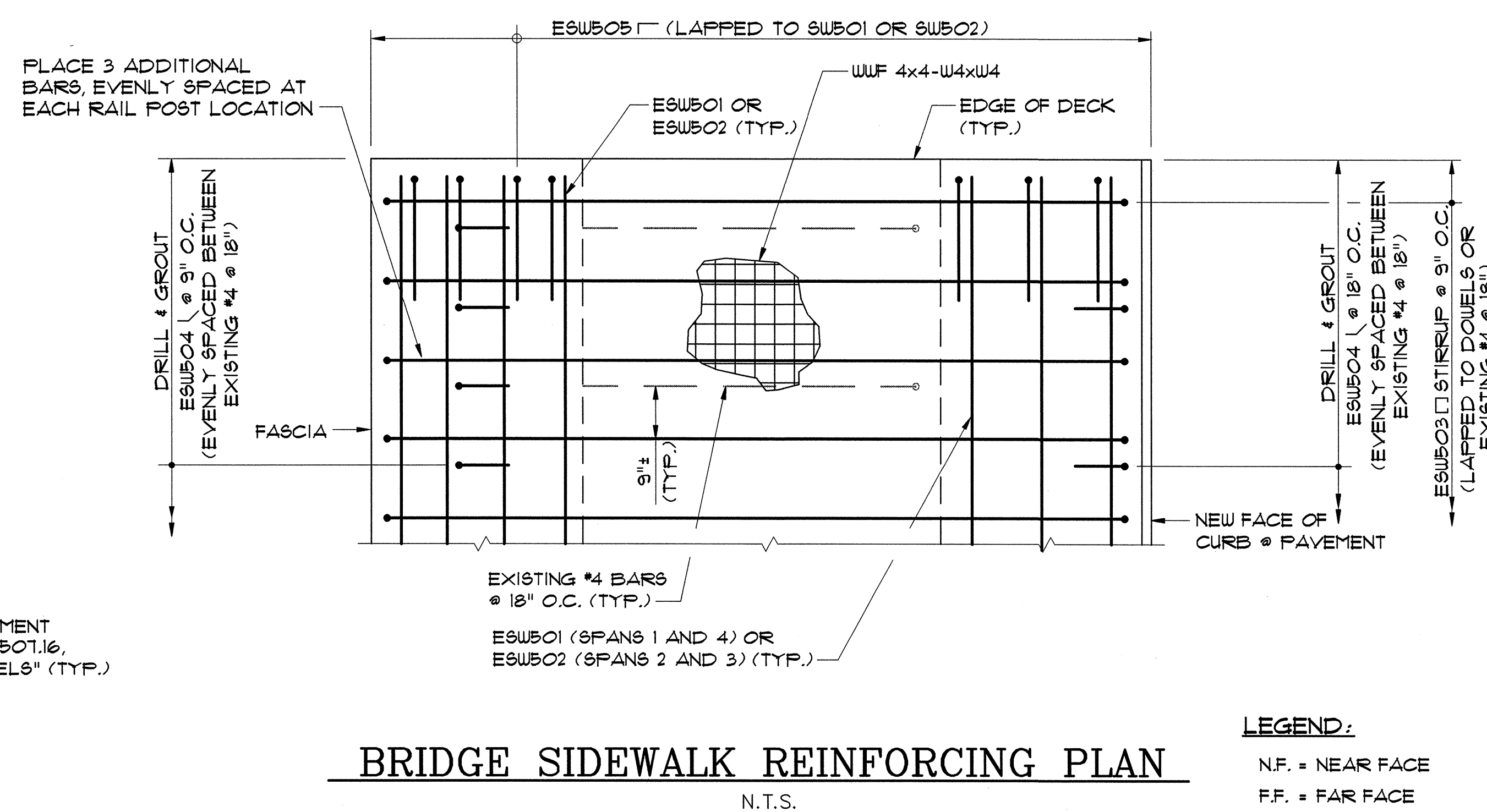
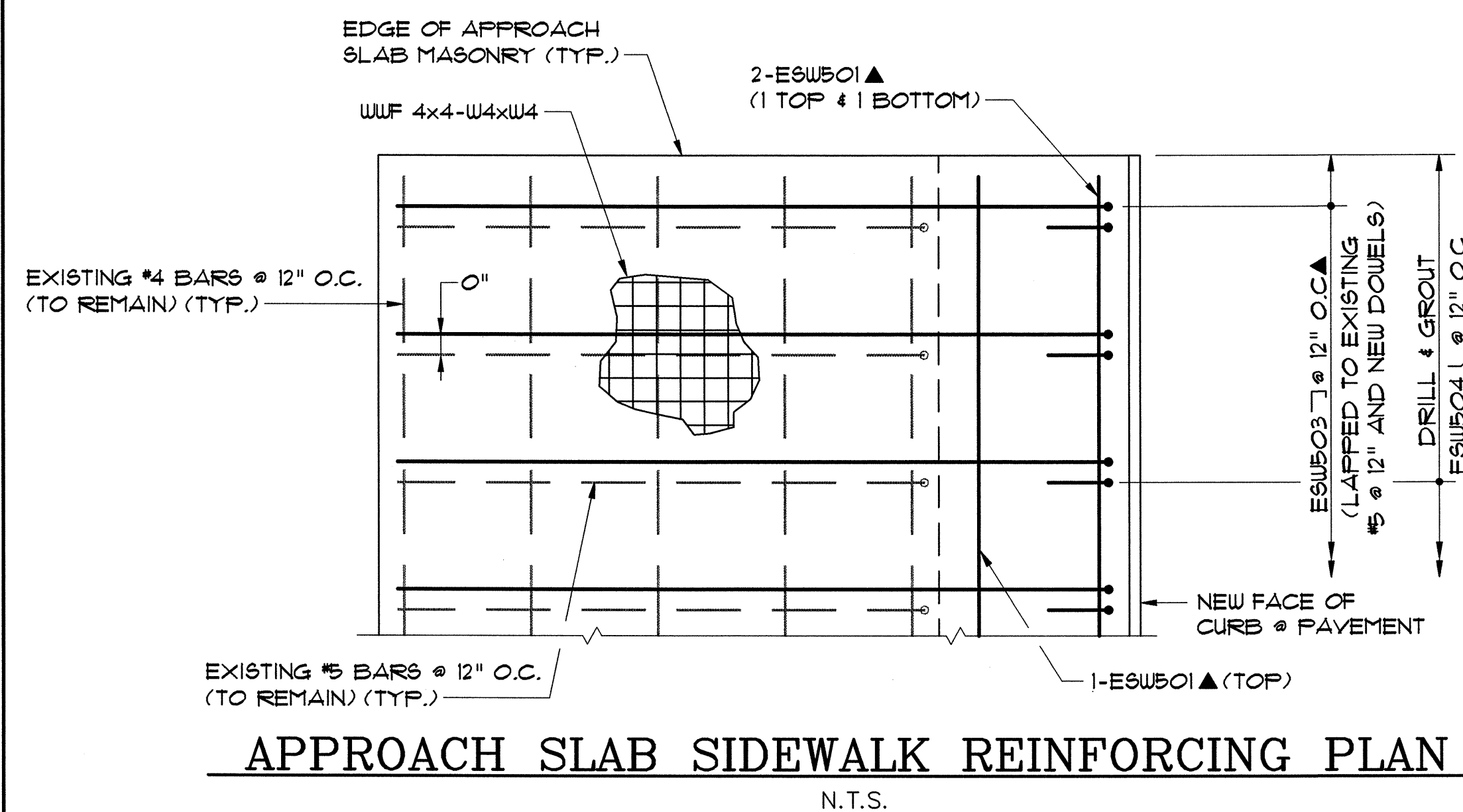
**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
DECK & MEDIAN REHABILITATION DETAILS			
Designed By	S.M. HODGDON	Drawn By	B.J. MASSE
Checked By	T.S. BRYANT	Date	1/00
		Bridge Design Supervisor	C.D. BAKER
PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK (36)
VHB Cad Drawing No.	50929CPD2	Date	1/00
Bridge Sheet No.		Sheet	12 of 75

VANASSE HANGEN BRUSTLIN, INC.



- NOTES:**
1. SIDEWALK REMOVAL LIMITS SHALL BE BASED ON LOCATIONS OF EXISTING CONDUIT. THE SAWCUT LINE SHALL BE LOCATED A MINIMUM OF 1'-8" FROM THE FASCIA. ALL SAWCUT LINES SHALL BE AT LEAST 1½" FROM EXISTING CONDUITS.
 2. THE LOCATIONS OF UTILITY CONDUITS VARY. DIMENSIONS SHOWN ARE BASED ON FIELD MEASUREMENTS AT THE SOUTH SIDEWALK AT PIER 1.
 3. EXISTING BRIDGE PLANS INDICATE THAT CONDUIT IS 3½" INSIDE DIAMETER AND MAY BE CEMENT ASBESTOS. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION ABOUT THE EXISTING CONDUITS. IF THE EXISTING CONDUITS TO BE REMOVED CONTAIN ASBESTOS, THEN THE CONCRETE CONTAINING THE CONDUITS SHALL BE REMOVED BY OTHERS WITHIN THE APPROXIMATE LIMITS SHOWN. SEE SPECIAL PROVISIONS.
 4. THE TOP OF THE EXISTING DECK SHALL BE ROUGHENED WITHIN 6 INCHES OF THE DECK FASCIA PRIOR TO PLACING NEW SIDEWALK CONCRETE.
 5. SEE SHEET 10 FOR BRIDGE SIDEWALK STREET LIGHTING NOTES.
 6. SEE SHEET 24 FOR BRIDGE RAIL DETAILS.
 7. THE 1" BATTER AT THE FACE OF CURB SHALL TRANSITION TO 0" OVER THE LAST 10' OF THE APPROACH SLAB TO MATCH THE VERTICAL GRANITE CURBING BEYOND THE APPROACH SLAB.
 8. ALL NEW REINFORCING STEEL IN THE BRIDGE AND APPROACH SLAB SIDEWALKS SHALL BE EPOXY COATED.
 9. NO SEALER SHALL BE USED AT JOINTS OVER PIERS WHICH SHALL REMAIN OPEN. COLOR OF POLYURETHANE JOINT SEALER SHALL MATCH CONCRETE.
 10. SEE DECK REHABILITATION NOTE 14 ON SHEET 9.
 11. SEE SIDEWALK REHABILITATION AND WIDENING NOTES ON SHEET 10.
 12. SPACE REINFORCEMENT TO CLEAR ANCHOR BOLTS FOR BRIDGE RAIL.
 13. BARS USED IN THE SIDEWALK WIDENING ON THE APPROACH SLABS SHALL BE CUT-TO-FIT AND PLACED AS DIRECTED BY THE ENGINEER.
 14. NEW CONDUITS IN SIDEWALKS SHALL BE SUBSIDIARY TO ITEM 501.60. THE NEW CONDUITS IN THE SIDEWALKS SHALL EXTEND FROM END OF APPROACH SLAB TO END OF APPROACH SLAB. SEE THE SPECIAL PROVISIONS FOR REQUIREMENTS FOR NEW CONDUITS THAT MAY BE REQUIRED BEYOND THE ENDS OF THE APPROACH SLABS.
 15. SEE SHEET 12A FOR SECTION A-A.



LEGEND:

N.F. = NEAR FACE
F.F. = FAR FACE
▲ = BARS TO BE CUT IN FIELD

STATE OF VERMONT
AGENCY OF TRANSPORTATION

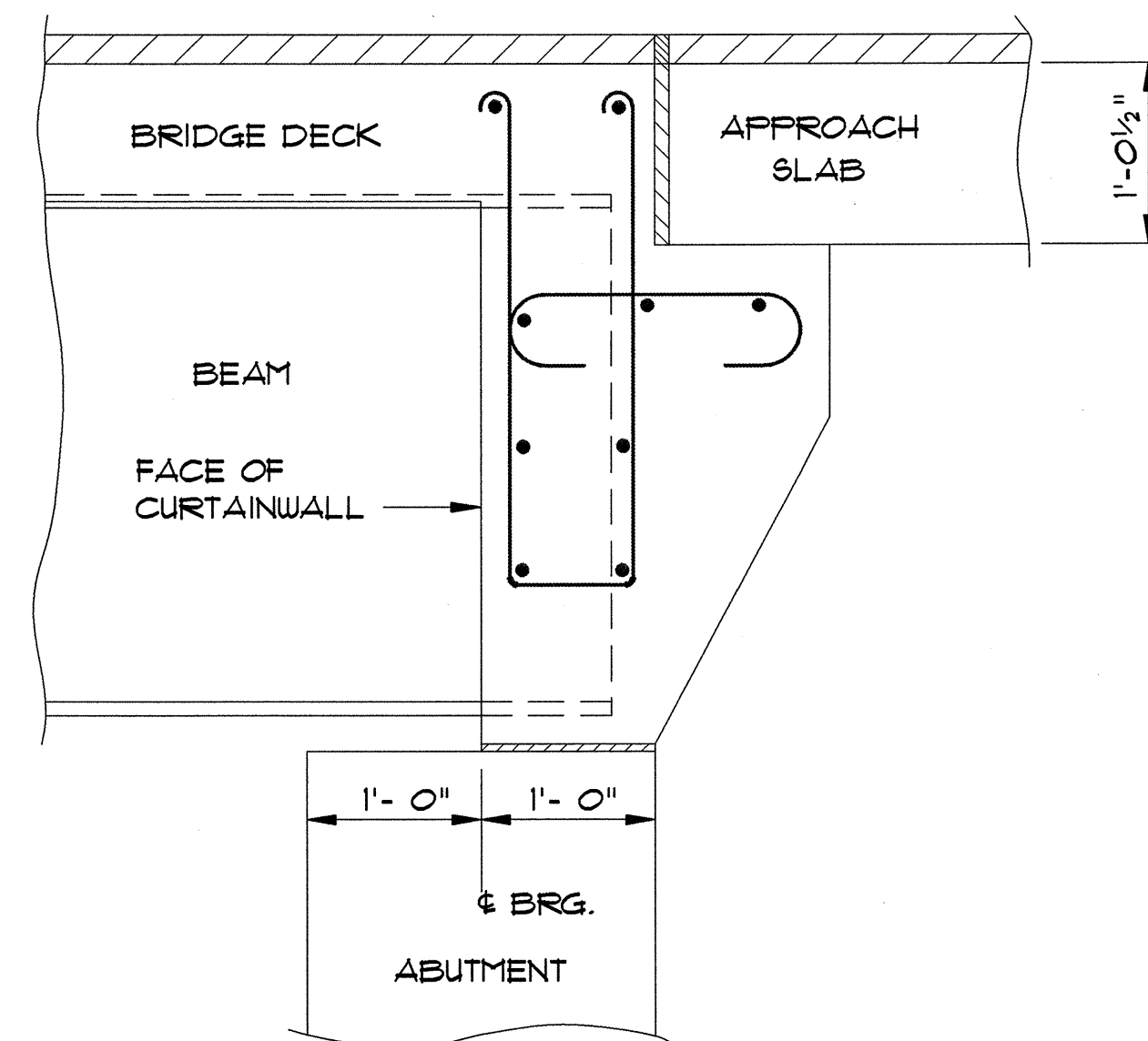
Town Of SOUTH BURLINGTON	Bridge No. 68
Highway No. U.S. 2	Log Sta.
	Surv. Sta.

U.S. 2 OVER 1-89

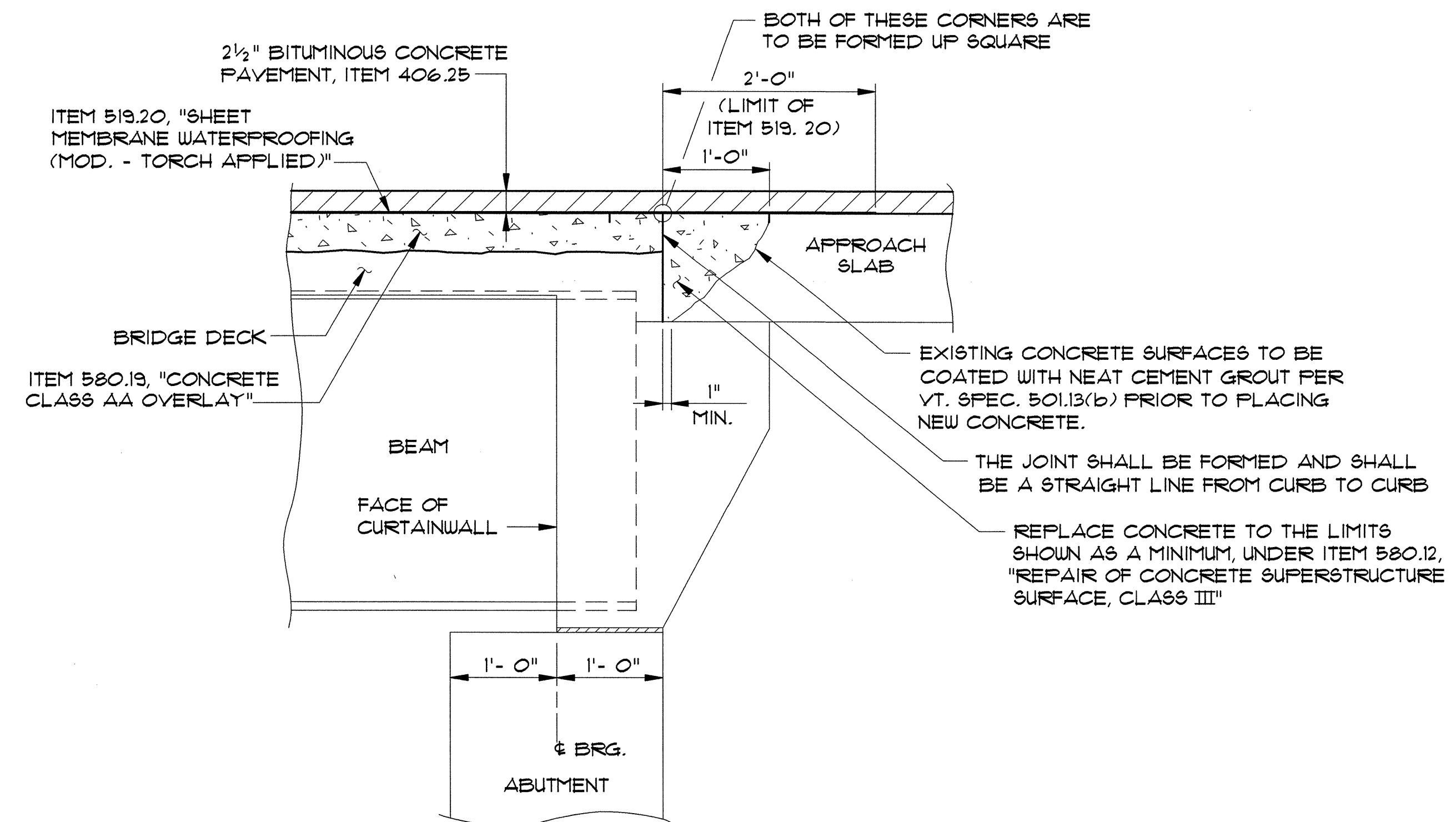
SIDEWALK REHABILITATION DETAILS

Designed By S.M. HODGDON		Drawn By B.J. MASSE	
Checked By T.S. BRYANT	Date 2/00	Bridge Design Supervisor C.D. BAKER Date 2/00	

PROJECT SOUTH BURLINGTON	PROJECT NO. IM DECK (36)
VHB Cad Drawing No. 50929CPD	Date 2/00
Bridge Sheet No.	Sheet 12B of 75



**EXISTING JOINT AT
FIXED AND EXPANSION ENDS**
SCALE: 1" = 1'-0"



REPAIR DETAILS FOR JOINT AT FIXED END
SCALE: 1" = 1'-0"

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No. 68
Highway No.	U.S. 2	Log Sta.
		Surv. Sta.

U.S. 2 OVER I-89

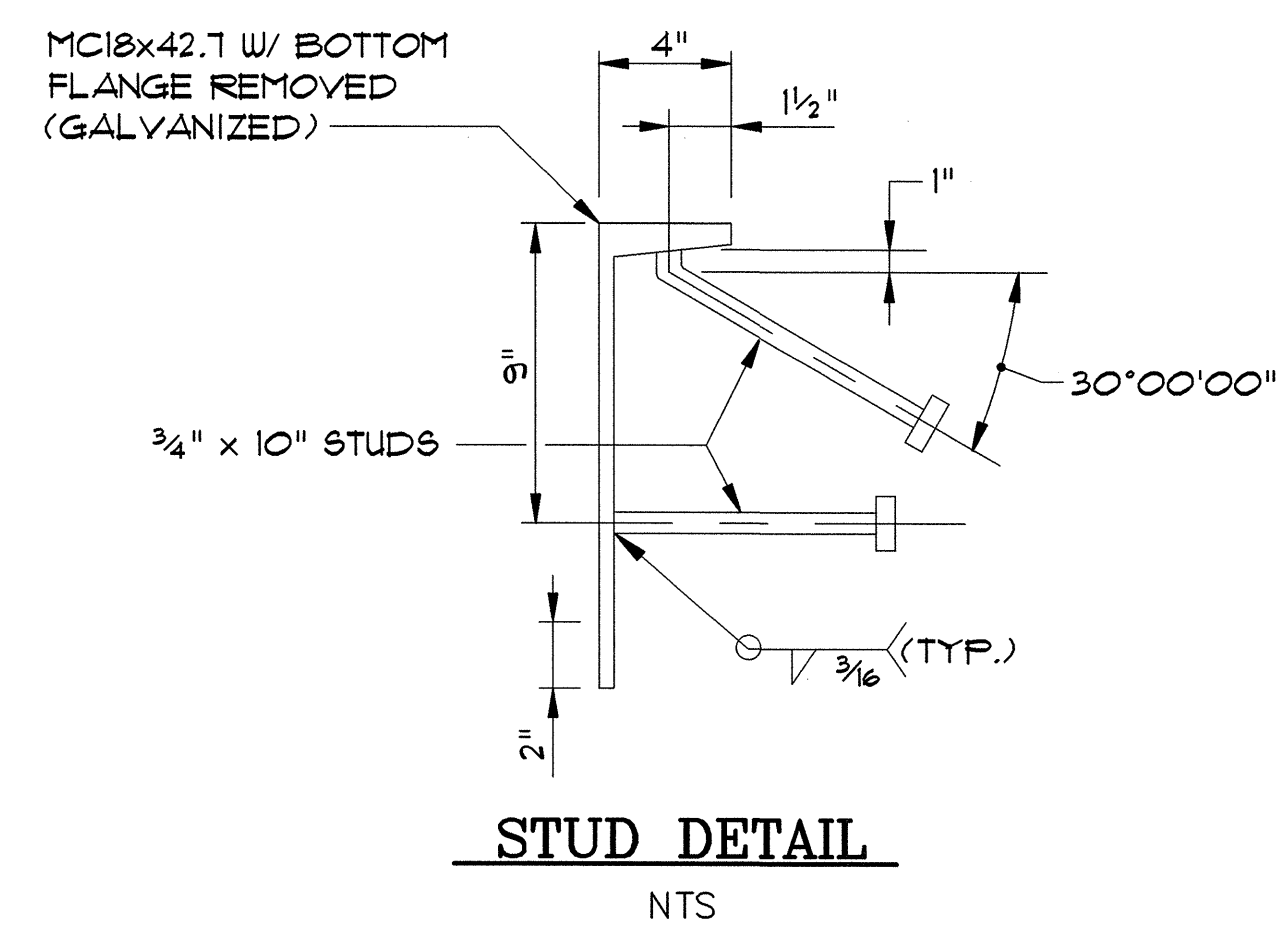
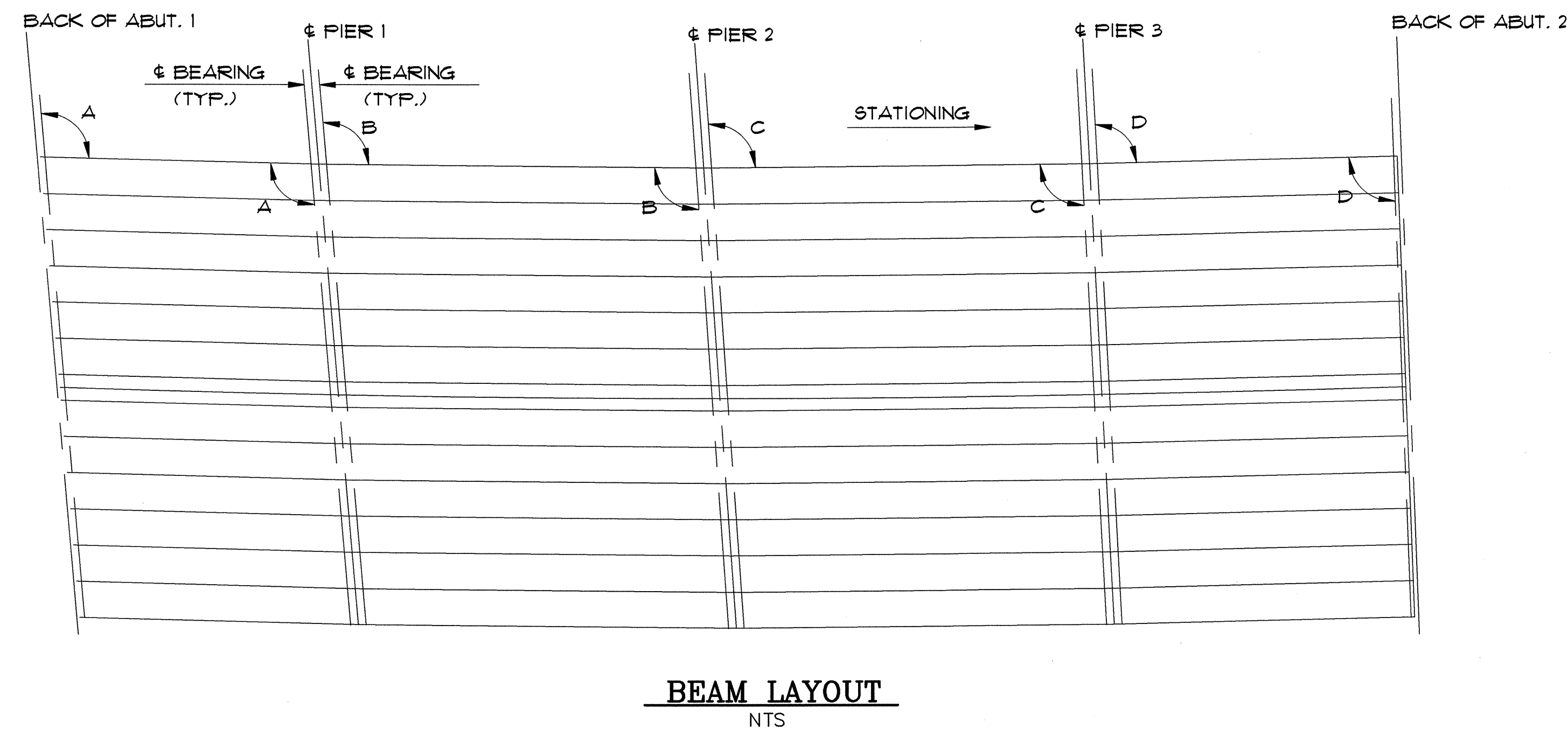
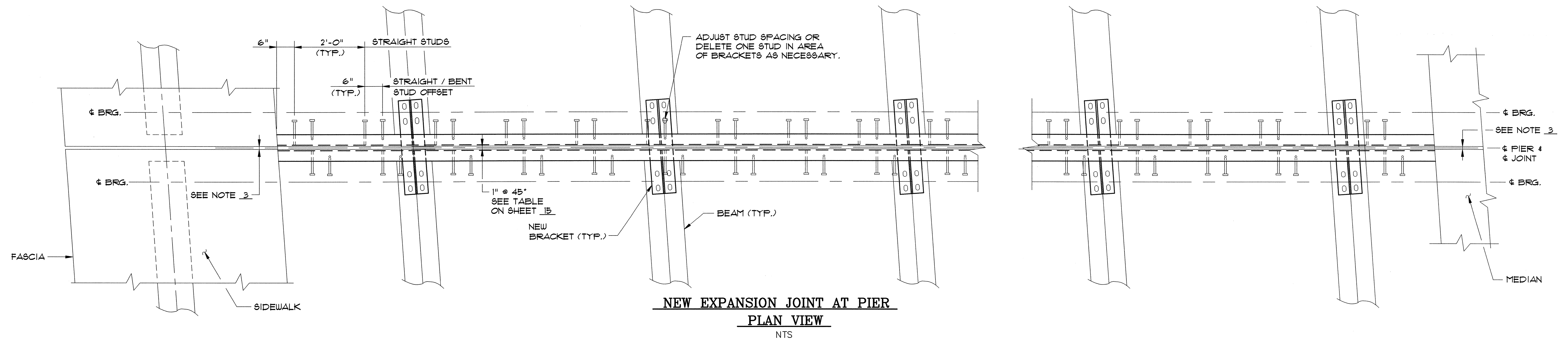
ABUTMENT JOINT REPAIR DETAILS

Designed By	T.S. BRYANT	Drawn By	B.J. MASSE
Checked By	A. SETAS	Date	1/00
		Bridge Design Supervisor	C.D. BAKER Date 1/00

PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK (36)
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VANASSE HANGEN BRUSTLIN, INC.

VHB Cad Drawing No.	50929JRD	Date	1/00
Bridge Sheet No.		Sheet	13 of 75



NOTES:

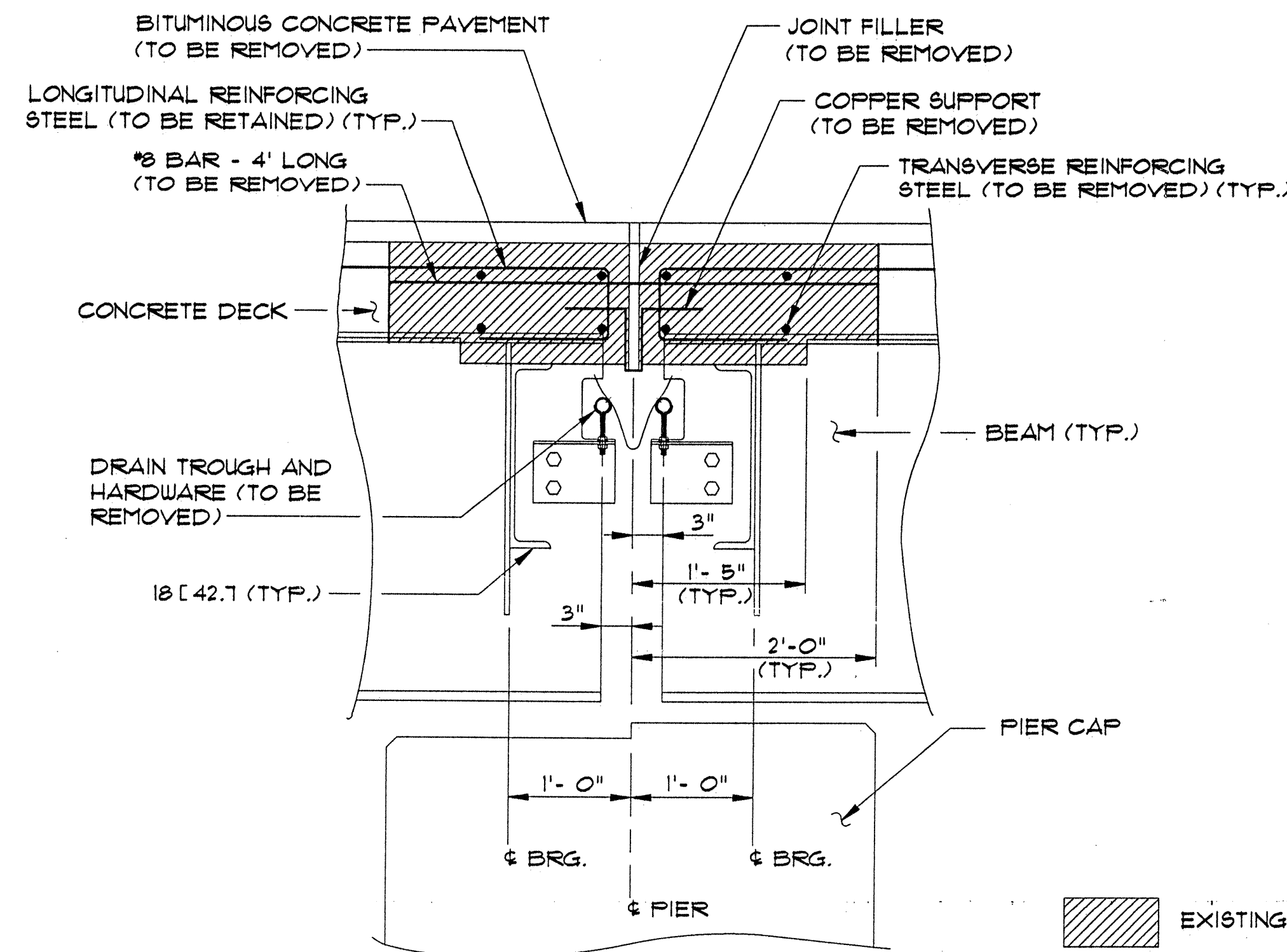
- SEE NEW TRANSVERSE SECTION ON SHEET 2 FOR PROPOSED CROSS SLOPE.
- SEE SHEET 15 FOR TYPICAL PIER EXPANSION JOINT SECTIONS.
- EXPANSION JOINT SHALL EXTEND FROM CURB TO CURB FOR EASTBOUND AND WESTBOUND STRUCTURES, SIDEWALK AND MEDIAN JOINT SHALL REMAIN OPEN AND EXPOSED. CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER.
- THE EXPANSION JOINT REQUIRES A SPLICE AT CHANGES IN CROSS SLOPE AND PHASED CONSTRUCTION JOINTS. SEE SHEETS 11 AND 12 FOR CONSTRUCTION PHASING.

EXISTING GEOMETRIC INFORMATION TABLE

BRIDGE NO.	PIER NO.	SPAN NO.	BEAM SPACING	NO. OF BEAMS	SKIEW ANGLE	CURB TO CURB WIDTH (FT.)	BANKING	LENGTH OF JOINT (FT.)
68W	1	1	7'-0"	1	A	94°50'48"	38'-3"	SEE NOTE 1
		2	7'-0"	1	B	93°59'36"	38'-3"	SEE NOTE 1
68W	2	2	7'-0"	1	B	93°59'36"	38'-3"	SEE NOTE 1
		3	7'-0"	1	C	93°00'24"	38'-3"	SEE NOTE 1
68W	3	3	7'-0"	1	C	93°00'24"	38'-3"	SEE NOTE 1
		4	7'-0"	1	D	92°01'12"	38'-3"	SEE NOTE 1
68E	1	1	7'-0"	1	A	94°50'48"	38'-3"	SEE NOTE 1
		2	7'-0"	1	B	93°59'36"	38'-3"	SEE NOTE 1
68E	2	2	7'-0"	1	B	93°59'36"	38'-3"	SEE NOTE 1
		3	7'-0"	1	C	93°00'24"	38'-3"	SEE NOTE 1
68E	3	3	7'-0"	1	C	93°00'24"	38'-3"	SEE NOTE 1
		4	7'-0"	1	D	92°01'12"	38'-3"	SEE NOTE 1

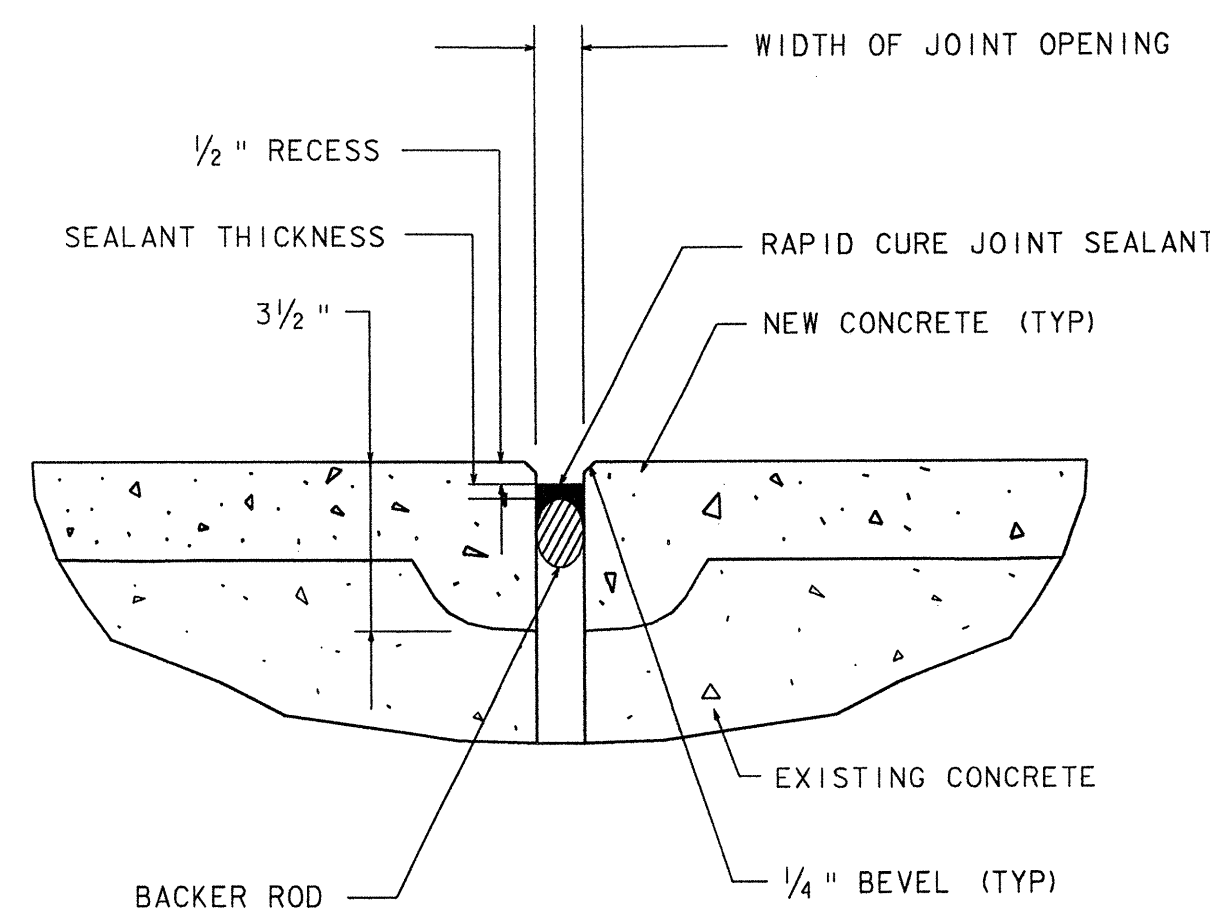
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
PIER EXPANSION JOINT REPAIR PLAN			
Designed By	B.J. MASSE	Drawn By	B.J. MASSE
Checked By	A. SETAS	Date	1/00
		Bridge Design Supervisor	C.D. BAKER
PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK (36)
VHB Cad. Drawing No.	50929EXJ	Date	1/00
Bridge Sheet No.		Sheet	14 of 75



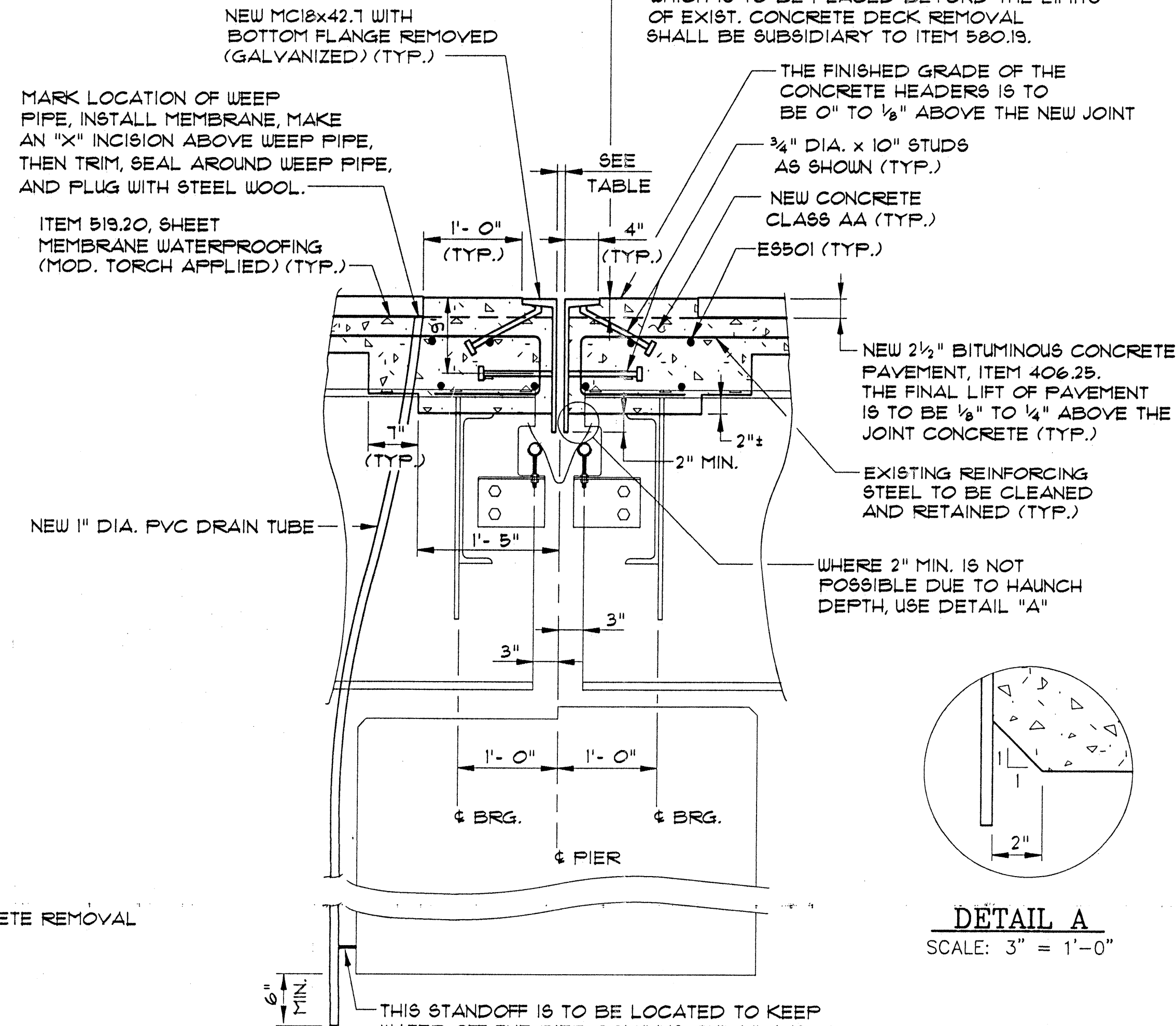
**SECTION OF
EXISTING EXPANSION JOINT AT PIER**

SCALE: 1" = 1'-0"



**NEW EXPANSION JOINT IN
SIDEWALKS AT PIERS**

NOT TO SCALE



**NEW EXPANSION JOINT AT PIER
SECTION BETWEEN BEAMS**

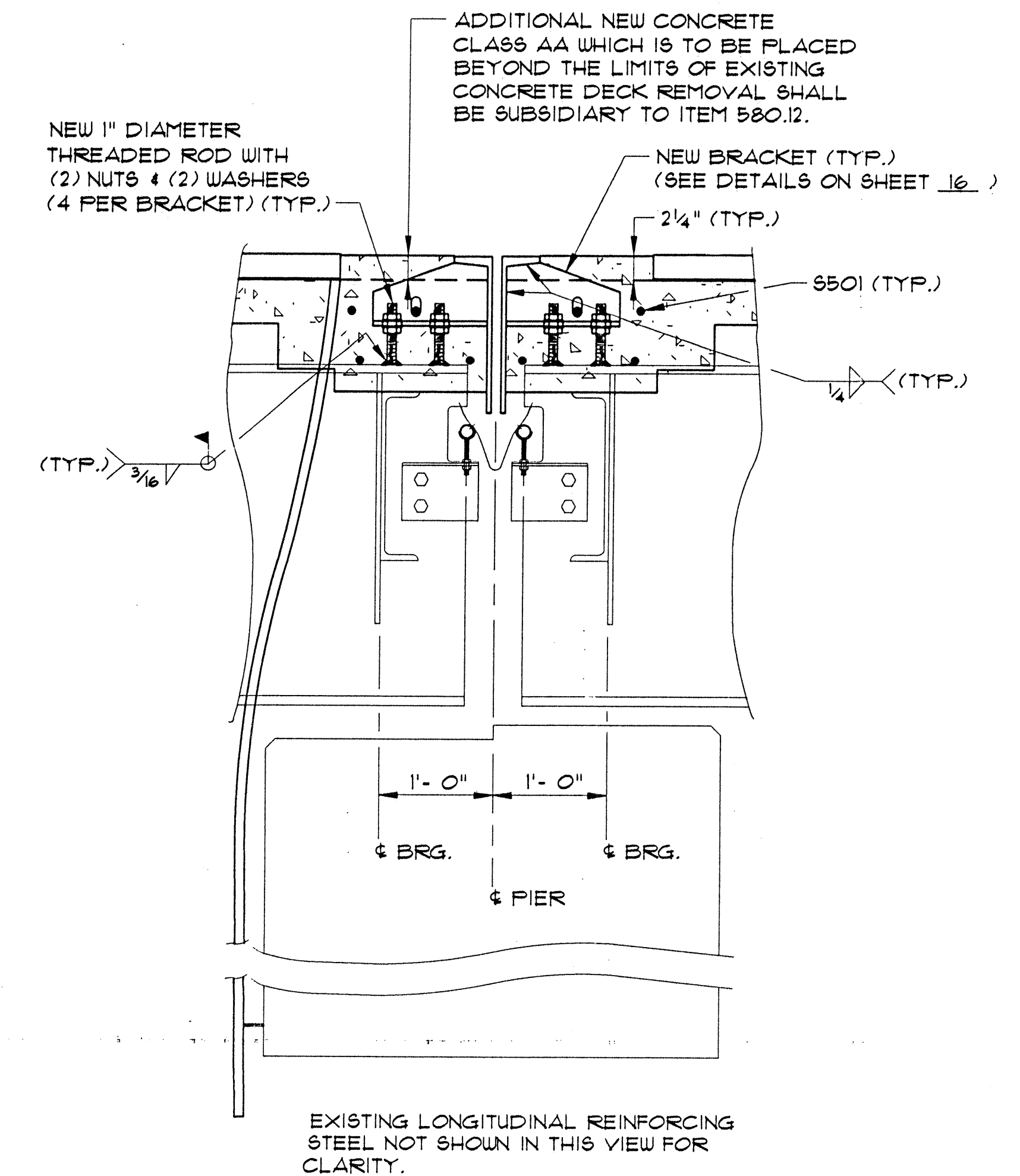
SCALE: 1" = 1'-0"

SIDEWALK JOINT NOTES:

1. THE EXISTING CONCRETE SHALL BE REMOVED A MINIMUM OF SIX INCHES BACK FROM EXISTING SIDEWALK JOINTS AND REPLACED WITH ITEM 516.10 "BRIDGE EXPANSION JOINT (SIDEWALK)".
2. THE JOINT WILL BE A "SILICONE SEALANT WITH BACKER ROD". THE CONTRACTOR IS TO CONTACT VTRANS MATERIALS SECTION AT (802) 828-2561 FOR "APPROVED PRODUCTS LIST".
3. THE SILICONE SEALANT THICKNESS AND WIDTH OF JOINT OPENING SHALL BE AS RECOMMENDED BY SILICONE SEALANT SUPPLIER. THE JOINT SHALL BE INSTALLED AS RECOMMENDED BY SEALANT SUPPLIER.
4. THE "SILICONE SEALANT WITH BACKER ROD" SHALL BE PLACED DOWN THE FASCIA FROM THE TOP SIX INCHES, ACROSS THE TOP OF SIDEWALK, AND DOWN THE CURBSIDE OF SIDEWALK TO TOP OF CONCRETE DECK. THE QUANTITY TO BE MEASURED FOR PAYMENT WILL BE THE SIX INCHES ALONG FASCIA, PLUS DISTANCE ALONG TOP OF SIDEWALK, PLUS DISTANCE DOWN TO TOP OF CONCRETE DECK AT CURBSIDE OF SIDEWALK.

DECK AND MEDIAN JOINT SETTINGS

PIER NO.	45° F	60° F	75° F	90° F
1	1 1/4"	1"	7/8"	3/4"
2	1"	7/8"	7/8"	3/4"
3	1"	7/8"	7/8"	3/4"



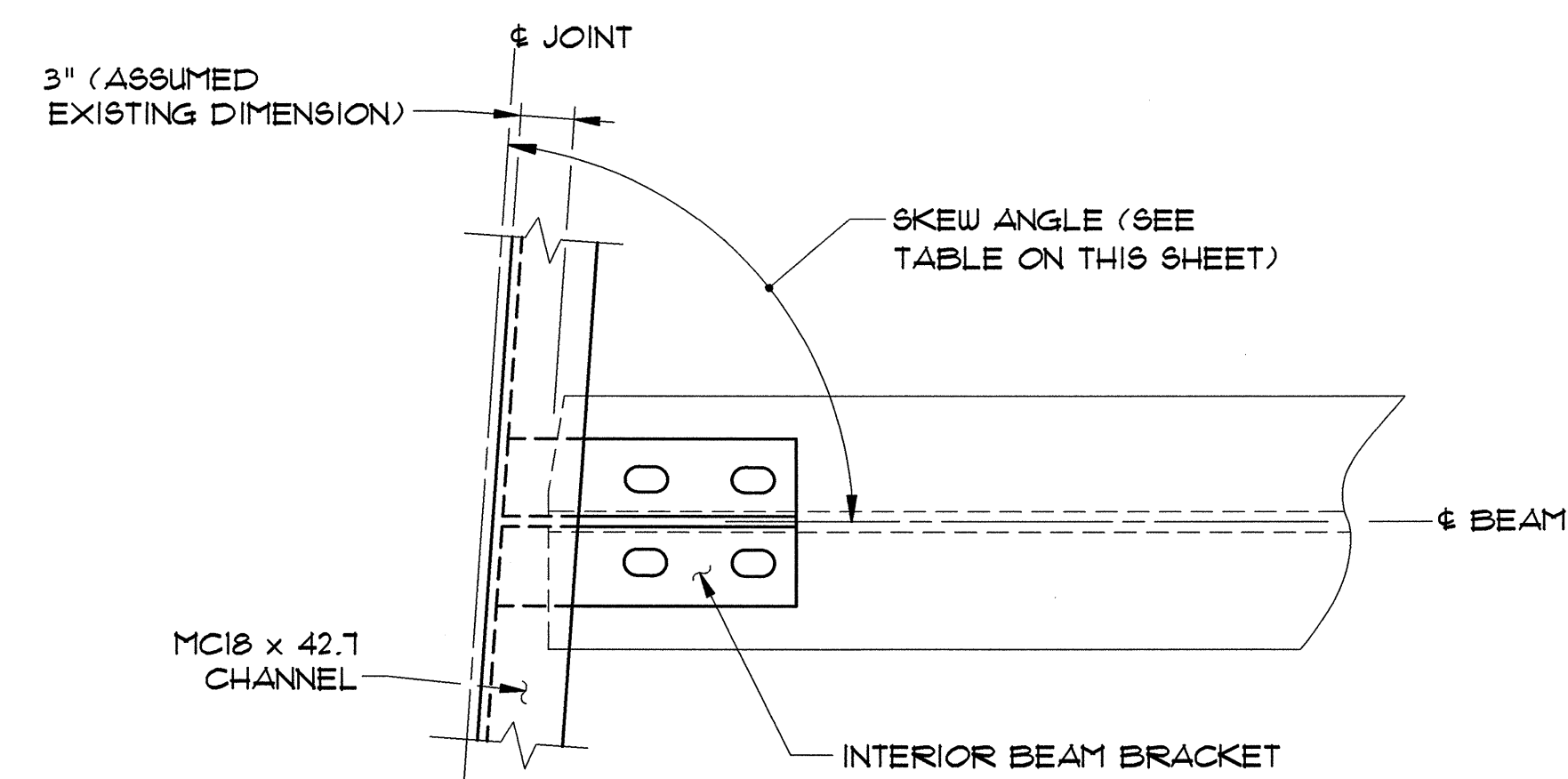
**NEW EXPANSION JOINT AT PIER
SECTION AT BEAMS**

SCALE: 1" = 1'-0"

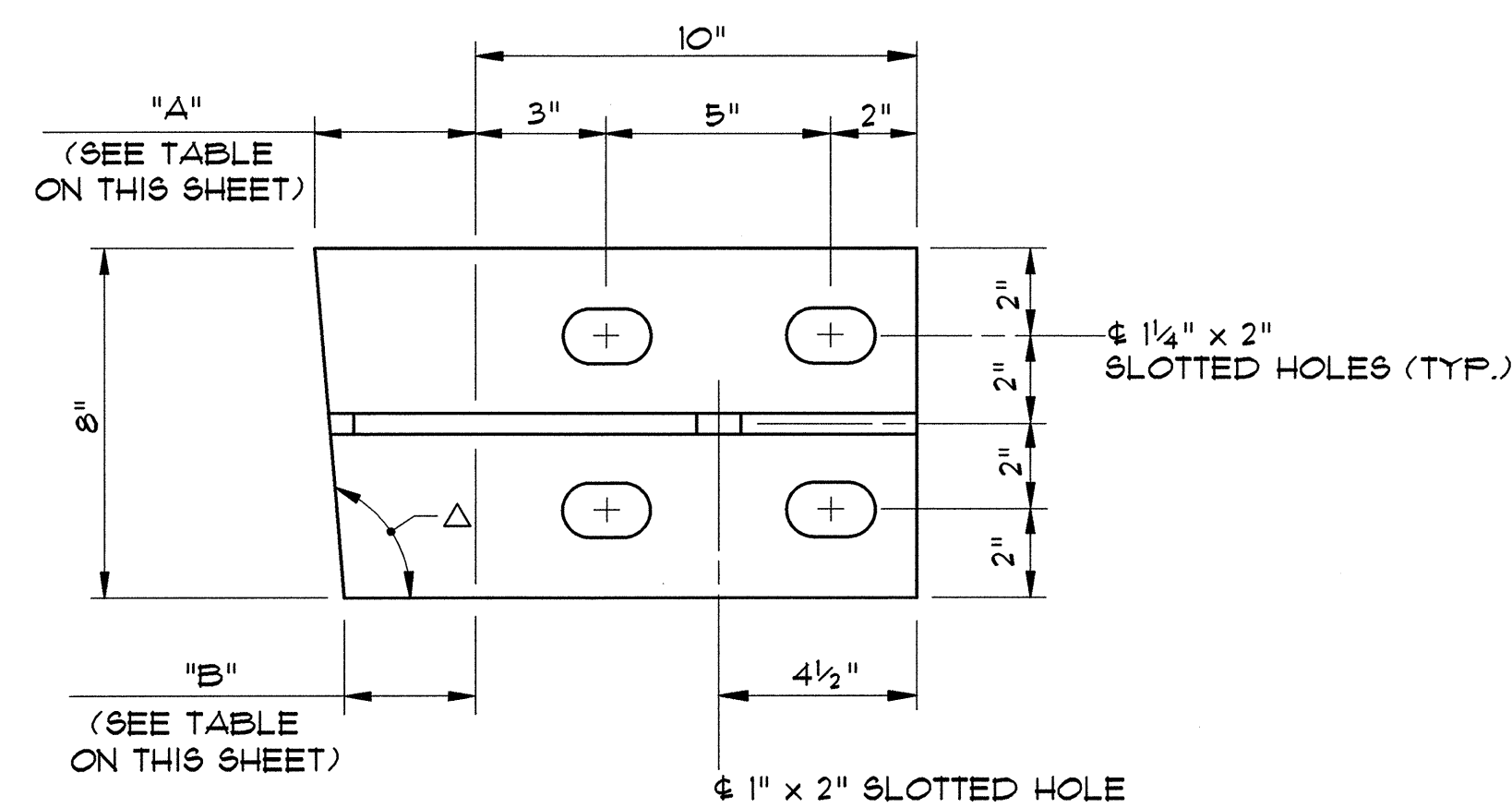
NOTES:

1. EXISTING CONCRETE AND RELATED JOINT HARDWARE WILL BE REMOVED BACK TO THE BREAK LINE AS SHOWN AND WILL BE PAID FOR UNDER ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III".
2. SEE SHEET 16 FOR NOTES AND ADDITIONAL DETAILS.

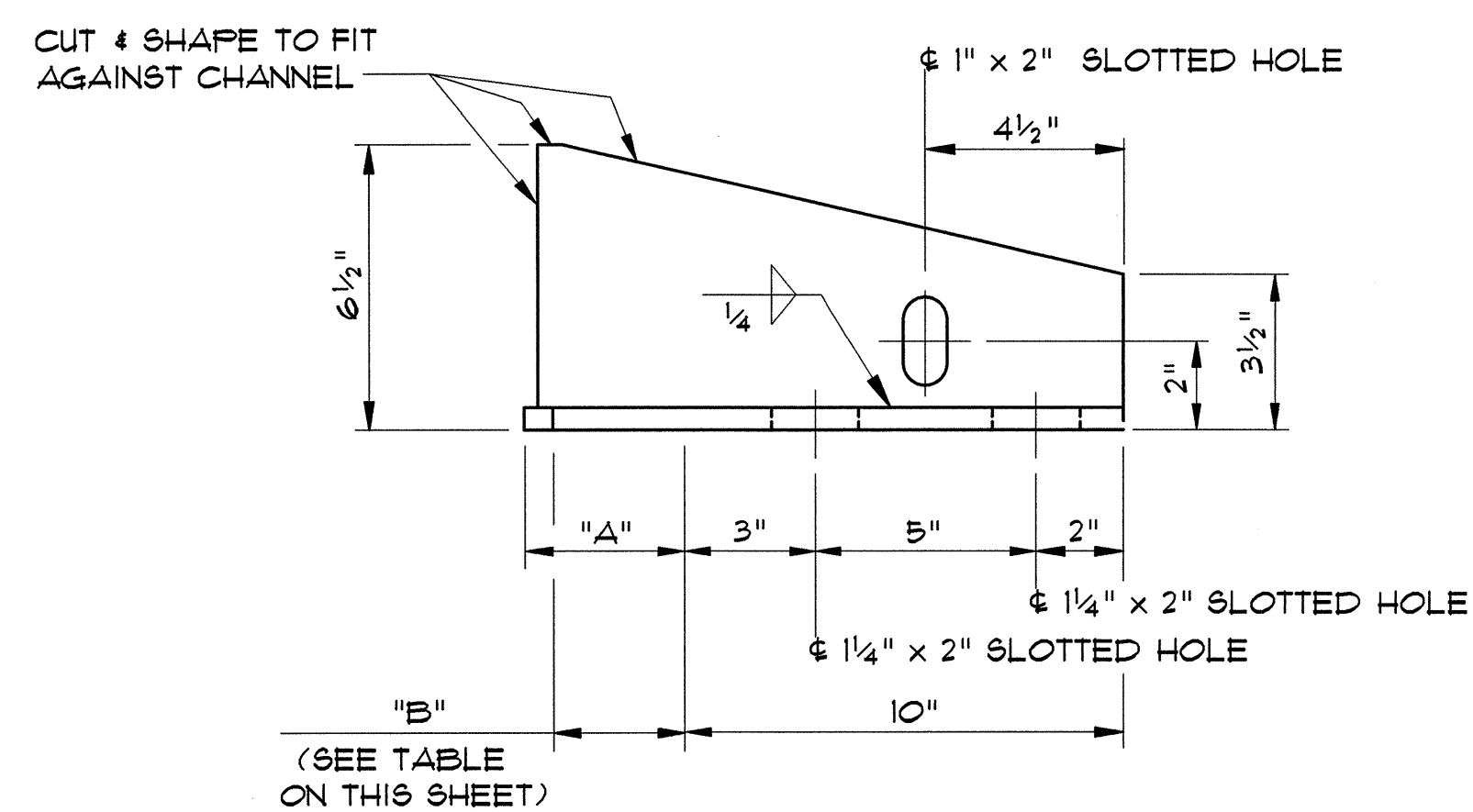
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
PIER EXPANSION JOINT REPAIR SECTIONS			
Designed By T.S. BRYANT		Drawn By B.J. MASSE	
Checked By A. SETAS	Date 1/00	Bridge Design Supervisor C.D. BAKER	Date 1/00
PROJECT SOUTH BURLINGTON		PROJECT NO. IM DECK (36)	
VHB Cad Drawing No. 50929EJR		Date 1/00	
Bridge Sheet No.		Sheet 15 of 75	



BEAM BRACKET PLAN
NTS

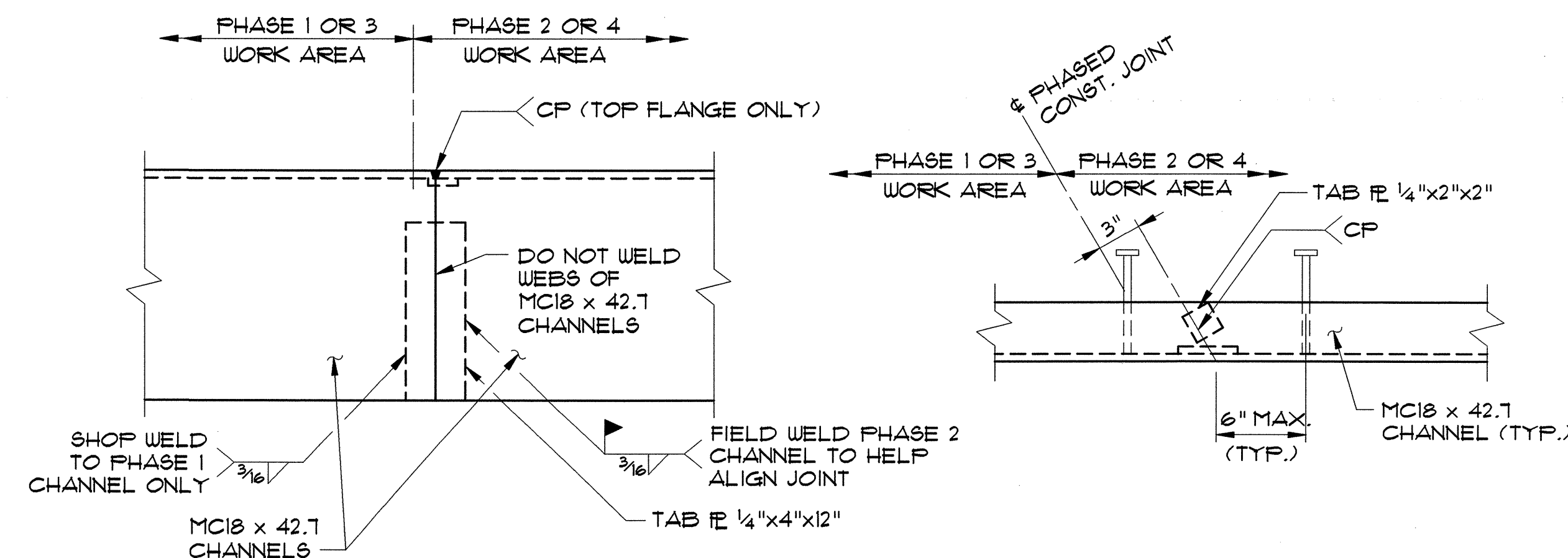


BEAM BRACKET PLAN
NTS



BEAM BRACKET ELEVATION
NTS

PIER NO.	SPAN NO.	SKEW ANGLE (Δ)	"A" DISTANCE	"B" DISTANCE
1	1	94°50'48"	3 3/8"	3"
	2	93°59'36"	3 3/8"	3"
2	2	93°59'36"	3 3/8"	3"
	3	93°00'24"	3 3/8"	3"
3	3	93°00'24"	3 3/8"	3"
	4	92°07'12"	3 1/4"	3"



**FIELD SPICE DETAILS
AT PHASED CONSTRUCTION JOINTS**
NTS

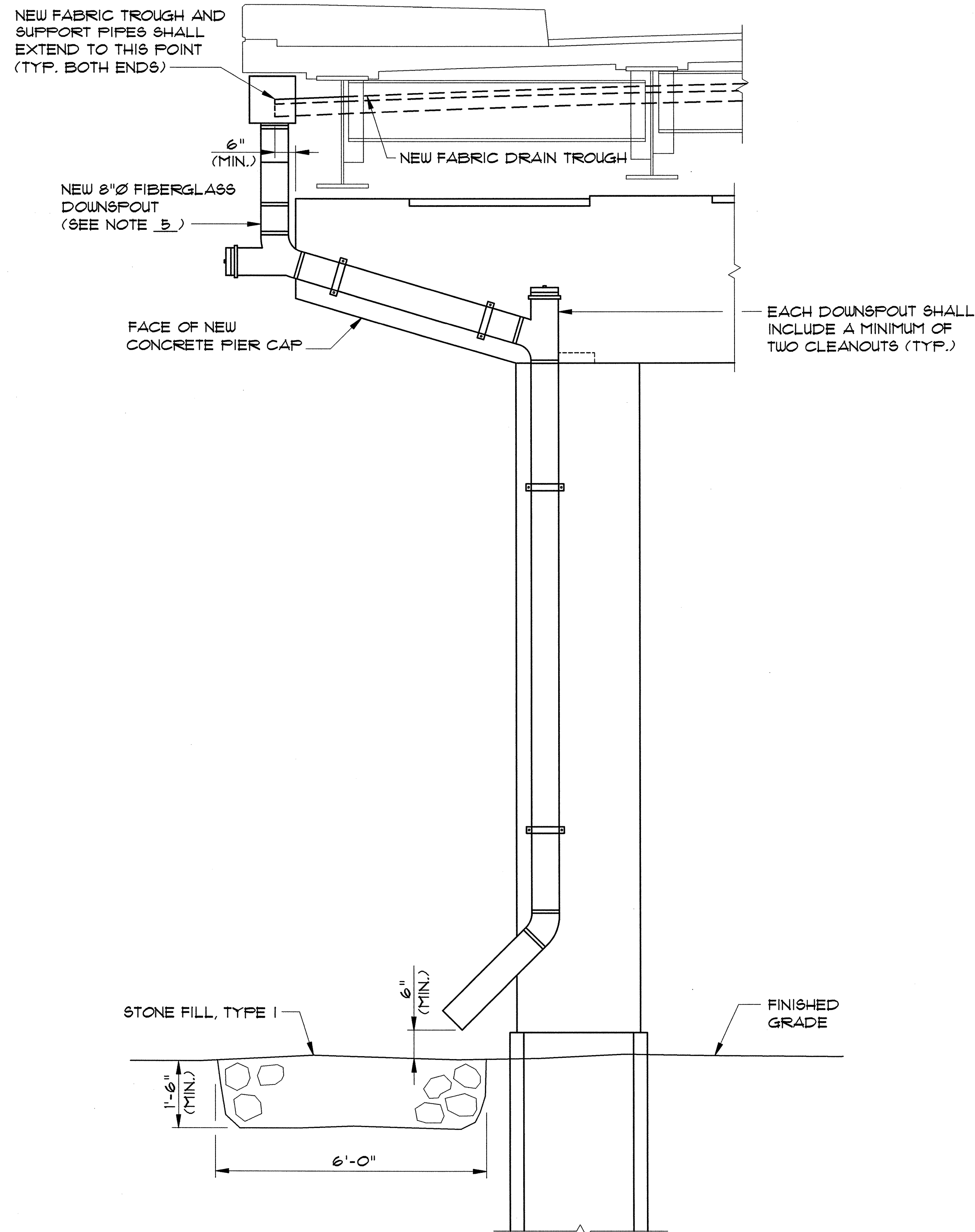
PIER EXPANSION (ARMORED) JOINT NOTES:

1. THE FINAL FINISH OF THE EXPANSION DEVICE SHALL BE COVERED DURING THE PLACING OF THE CONCRETE HEADERS.
2. ALL STEEL COMPONENTS SHALL BE AASHTO M270 GRADE 36 GALVANIZED OR METALIZED PER SUBSECTION 506.15 (a) OR (b) OF THE GENERAL SPECIAL PROVISIONS FOR ALL PROJECTS UNLESS OTHERWISE NOTED.
3. ITEM 516.10, "BRIDGE EXPANSION JOINT (ARMORED JOINT)" SHALL INCLUDE FABRICATION OF THE COMPLETE JOINT ASSEMBLY INCLUDING ALL STEEL CHANNELS, PLATES, WELDED STUDS OR RODS, PVC DRAIN TUBES, AND ANY OTHER MISCELLANEOUS MATERIAL.
4. THE CHANNELS SHALL BE FURNISHED AS ONE CONTINUOUS PIECE (NO SPLICES), EXCEPT AT CHANGES IN CROSS SLOPE AND PHASED CONSTRUCTION JOINTS, WHERE THE CHANNEL FLANGES SHALL BE FIELD SPICED AS SHOWN. THE CONTRACTOR SHALL GRIND THE FIELD WELD FLUSH AND APPLY COLD ZINC PAINT TO DAMAGED GALVANIZED SURFACES.
5. SEE DECK REHABILITATION NOTE 1 ON SHEET 9.

SHEET NOTES:

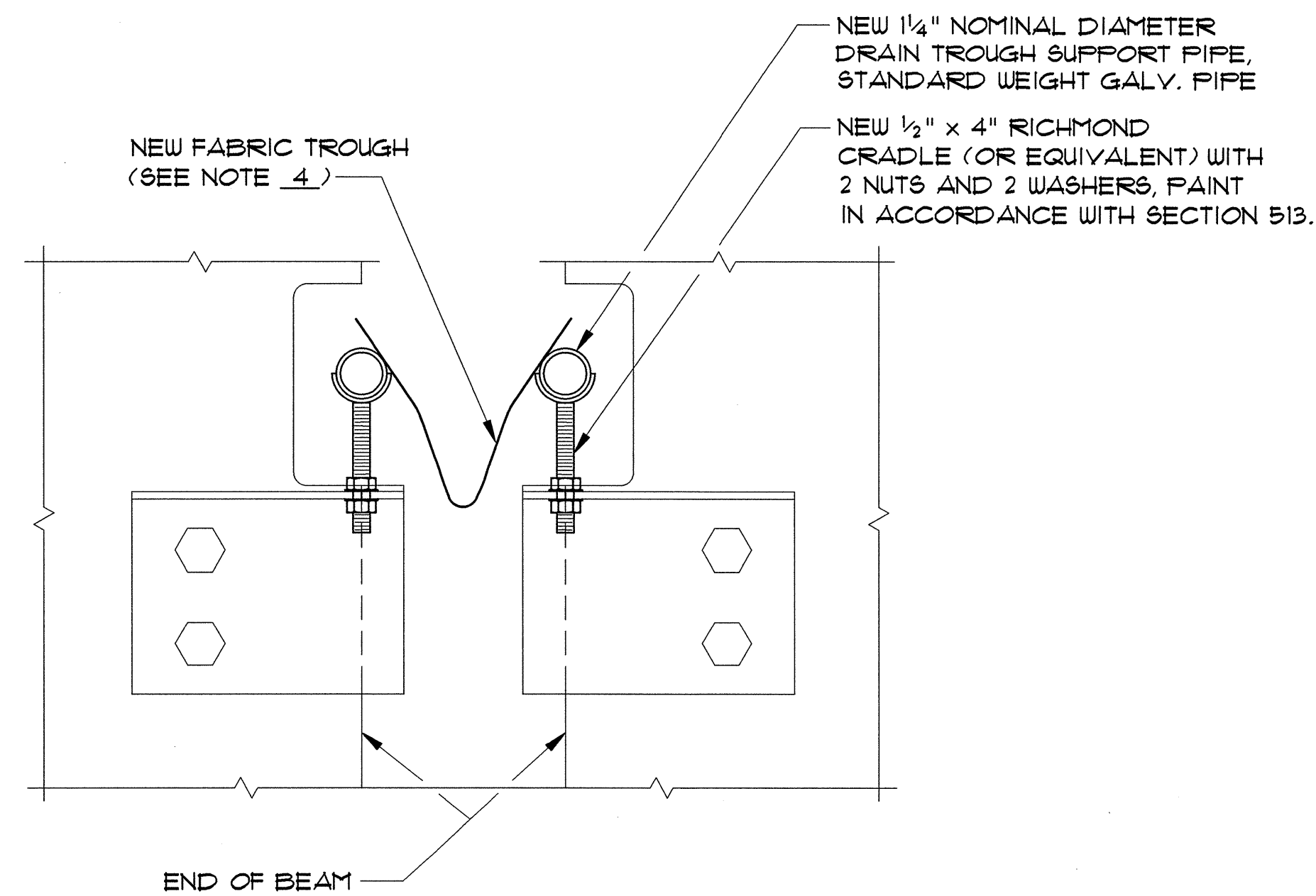
1. ALL PLATES SHALL BE 1/2" THICK, UNLESS OTHERWISE NOTED.
2. DIMENSIONS "A" AND "B" ARE BASED ON AN ASSUMED DIMENSION OF 3" FROM PIER TO END OF BEAM. THE CONTRACTOR SHALL FIELD VERIFY THE PIER TO END OF BEAM DIMENSION AND ADJUST DIMENSIONS "A" AND "B" AS NECESSARY.

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
PIER EXPANSION JOINT REPAIR DETAILS & NOTES			
Designed By B.J. MASSE		Drawn By B.J. MASSE	
Checked By T.S. BRYANT 1/00		Bridge Design Supervisor C.D. BAKER Date 1/00	
PROJECT SOUTH BURLINGTON		PROJECT NO. IM DECK (36)	
VHB Cad Drawing No. 50929EJRN		Date 1/00	
Bridge Sheet No.		Sheet 16 of 75	



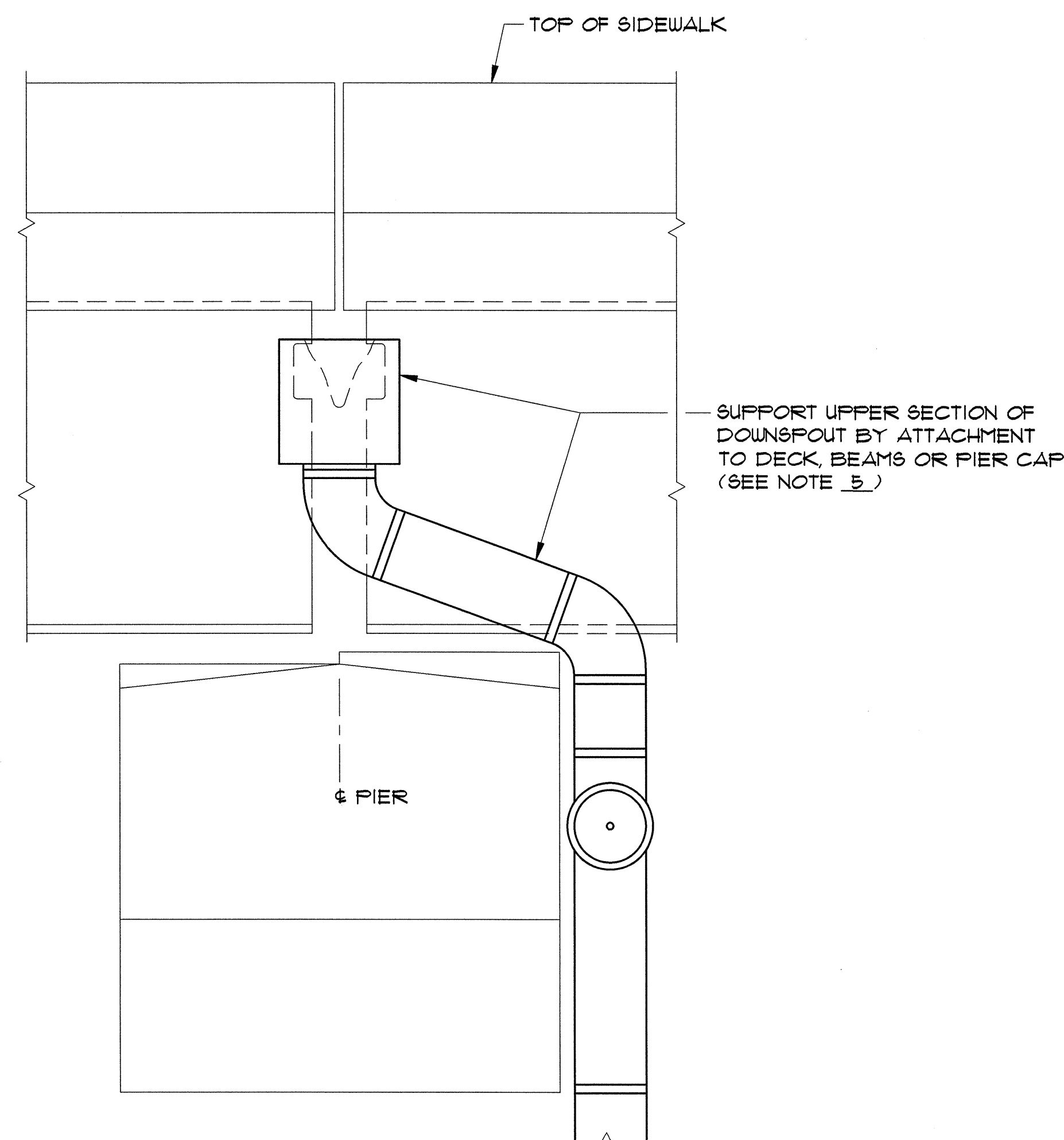
**TYPICAL ELEVATION VIEW OF
NEW DRAIN TROUGH & DOWNSPOUT**

NTS



SECTION AT BEAMS

SCALE: 3" = 1'-0"



**TYPICAL END VIEW OF
NEW DRAIN TROUGH & DOWNSPOUT**

NTS

NOTES:

1. ALL EXISTING FABRIC DRAIN TROUGH, DRAIN TROUGH SUPPORT PIPES, AND PIPE CRADLES SHALL BE REMOVED AT PIERS 1, 2 AND 3. ALL REMOVAL AND DISPOSAL COSTS SHALL BE PAID UNDER ITEM 506.80, "DRAIN TROUGH".
2. NEW FABRIC DRAIN TROUGH, DRAIN TROUGH SUPPORT PIPES, AND PIPE CRADLES SHALL BE INSTALLED AT PIERS 1, 2 AND 3 AS SHOWN ON THIS SHEET. NEW DRAIN TROUGH SUPPORT PIPE SHALL BE 1/4" NOMINAL DIAMETER STANDARD WEIGHT GALVANIZED PIPE.
3. ALL NEW FABRIC DRAIN TROUGH, DRAIN TROUGH SUPPORT PIPES, PIPES, PIPE CRADLES, AND FASTENERS (USED TO ATTACH THE FABRIC TO THE PIPE) SHALL BE PAID UNDER THE ITEM 506.80, "DRAIN TROUGH".
4. THE NEW FABRIC TROUGH SHALL BE ATTACHED TO THE PIPE SUPPORTS WITH 3/8"Ø GALVANIZED HEX HEAD SCREWS, SPACED AT 1'-0" MAXIMUM.
5. SIX (6) NEW FIBERGLASS DOWNSPOUTS SHALL BE INSTALLED, ONE AT EACH END OF THE NEW FABRIC DRAIN TROUGH AT EACH PIER. THE DOWNSPOUT CONFIGURATION SHOWN IS SCHEMATIC ONLY AND IS NOT INTENDED TO INDICATE A PREFERRED CONFIGURATION. BOTH BEARINGS AT PIER 1 ARE EXPANSION. ANY DOWNSPOUT ATTACHMENT TO SUPERSTRUCTURE AT PIER 1 SHALL BE DESIGNED TO ACCOMMODATE THE SUPERSTRUCTURE MOVEMENT. THE ENTIRE SYSTEM, INCLUDING DOWNSPOUT SUPPORTS ATTACHED TO THE PIERS, AND IF NECESSARY, THE SUPERSTRUCTURE SHALL BE DESIGNED AND DETAILED BY THE MANUFACTURER. THE CONTRACTOR SHALL SUBMIT DETAILS OF THE DOWNSPOUT CONFIGURATION TO THE ENGINEER FOR REVIEW AND APPROVAL BEFORE ORDERING ANY DOWNSPOUT COMPONENTS. THE NEW FIBERGLASS DOWNSPOUTS SHALL BE PAID AS ITEM 506.80, "DRAIN TROUGH (MOD. - DOWNSPOUTS)". ALL LABOR AND MATERIALS REQUIRED TO DESIGN, DETAIL, AND INSTALL THE NEW FIBERGLASS DOWNSPOUTS AND THEIR SUPPORTS SHALL BE INCLUDED IN ITEM 506.80 "DRAIN TROUGH (MOD. - DOWNSPOUTS)".
6. THE CONTRACTOR SHALL INSTALL A 6' x 4' AREA OF ITEM 613.10 "STONE FILL, TYPE I" AT EACH PIPE OUTLET, AS SHOWN ON THIS SHEET. EXCAVATION REQUIRED TO PLACE STONE FILL SHALL BE SUBSIDIARY TO ITEM 613.10.

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
DRAIN TROUGH DETAILS			
Designed By	T.S. BRYANT	Drawn By	B.J. MASSE
Checked By	A. SETAG	Date	1/00
		Bridge Design Supervisor	C.D. BAKER
PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK (36)
VHB Cad Drawing No.	50929DRN	Date	1/00
Bridge Sheet No.		Sheet	17 of 15

BEARING REPAIR NOTES:

1.

BEARINGS SHALL BE REPLACED OR MODIFIED IN ACCORDANCE WITH BEARING TREATMENT DETAIL 'A', 'D', 'X', OR 'Y'. THE BEARING CONDITIONS SUMMARY TABLE ON SHEET 19 SHOWS WHICH BEARING TREATMENT DETAIL APPLIES TO EACH BEARING. THE BEARING TREATMENT DETAILS ARE SHOWN ON SHEETS 20 TO 23. DESCRIPTIONS AND PAYMENT FOR EACH BEARING TREATMENT DETAIL ARE AS FOLLOWS:
- BEARING TREATMENT DETAIL 'A':

REPLACE EXISTING EXPANSION BEARINGS AT ABUTMENTS IN KIND, ITEM 531.10, "BEARING DEVICE ASSEMBLY (STEEL FLT. EXP. BRGS.)."

- BEARING TREATMENT DETAIL 'D':

MODIFY EXISTING EXPANSION BEARINGS TO FIXED BEARINGS AT ABUTMENTS, ITEM 531.10, "BEARING DEVICE ASSEMBLY (STEEL FLT. FIXED BRGS.)."

- BEARING TREATMENT DETAIL 'X':

REPLACE EXISTING EXPANSION AND FIXED BEARINGS AT PIERS WITH THE FABRIC EXPANSION BEARINGS, ITEM 531.10, "BEARING DEVICE ASSEMBLY (FABRIC TFE EXP. BRGS.)."

- BEARING TREATMENT DETAIL 'Y':

REPLACE EXISTING FIXED BEARINGS AT PIERS WITH FABRIC FIXED BEARINGS, ITEM 531.10, "BEARING DEVICE ASSEMBLY (FABRIC FIXED BRGS.)."
- THE JACKING AND SHORING REQUIRED FOR BEARING TREATMENT DETAILS 'A' AND 'D' WILL BE PAID UNDER ITEM 502.11, "SHORING SUPERSTRUCTURE BEARINGS (FROM BRIDGE SEAT)".

2.

ALL OTHER ABUTMENT BEARINGS REQUIRING REPLACEMENT OR MODIFICATION, AS DETERMINED BY THE RESIDENT ENGINEER WILL BE PAID FOR UNDER ITEM 531.10. BEARING TREATMENT 'A', 'D', 'X' OR 'Y' SHALL BE USED WHERE APPLICABLE.

3.

JACKING AND SHORING FOR BEARINGS REQUIRING JCPG (I.E., JACKING, CLEANING, PAINTING AND GREASING) AS SHOWN IN THE BEARING CONDITIONS SUMMARY ON SHEET 19 WILL BE PAID UNDER ITEM 502.11, "SHORING SUPERSTRUCTURE BEARINGS (FROM BRIDGE SEAT)". THESE BEARINGS WILL BE JACKED THE MINIMUM DISTANCE REQUIRED TO CLEAN THE BEARINGS IN PLACE. ALL BEARINGS WHICH REQUIRE ONLY CFG (I.E., CLEANING, PAINTING AND GREASING) AT THE ABUTMENTS WILL NOT BE JACKED UNLESS OTHERWISE ORDERED BY THE RESIDENT ENGINEER. THE COST FOR CFG SHALL BE SUBSIDIARY TO ITEM 513.30, "STRUCTURAL PAINTING, FIELD APPLIED" AND ITEM 513.41, "SURFACE PREPARATION, FIELD". ALL WORK REQUIRED FOR JACKING AND SHORING ADDITIONAL ABUTMENT BEARINGS, AS ORDERED BY THE RESIDENT ENGINEER, SHALL BE PAID UNDER ITEM 502.11, "SHORING SUPERSTRUCTURE BEARINGS (FROM BRIDGE SEAT)". IT SHOULD BE NOTED THAT MANY ENDS OF THE BEAMS AND THE BEARINGS AT THE ABUTMENTS AND PIERS HAVE AN EXISTING GREASE COATING WHICH MUST BE REMOVED PRIOR TO ANY CLEANING AND PAINTING.

4.

AFTER REMOVAL OF ALL DIRT, DEBRIS, AND OTHER FOREIGN MATERIAL, AND INSPECTION OF THE BRIDGE SEATS, THE RESIDENT ENGINEER SHALL DETERMINE IF THE CONCRETE UNDER THE EXISTING BEARING DEVICES AT THE ABUTMENTS NEEDS REPAIR. THESE AREAS WILL BE REPAIRED IN ADDITION TO THE ABUTMENT REPAIRS ALREADY NOTED ON THE ABUTMENT REPAIR AREAS SHEET. ALL UNSOUND AND DETERIORATED CONCRETE UNDER THE BEARINGS AT ABUTMENTS SHALL BE REMOVED AND REPLACED WITH CONCRETE, CLASS "AA" OR "A" EITHER UNDER ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II" OR ITEM 580.15, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III". THE NEW CONCRETE SURFACES AROUND THE BEARINGS SHALL SLOPE AWAY (TOWARD THE FRONT OF THE ABUTMENT) A MINIMUM OF ¼" PER FOOT OR AS PRACTICAL. THE CONCRETE UNDER THE BEARINGS SHALL BE LEVEL. "OVERHEAD AND VERTICAL CONCRETE REPAIR MATERIAL" AND OTHER PATCHING MATERIAL WILL NOT BE ALLOWED TO BE USED UNDER THE BEARINGS (I.E., ONLY CONCRETE CLASS "AA" OR "A" WILL BE ALLOWED). ALL WORK AND MATERIAL REQUIRED TO PERFORM THIS WORK (EXCLUDING JACKING AND SHORING) SHALL BE PAID UNDER ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II", OR ITEM 580.15 "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III" AS DETERMINED BY THE RESIDENT ENGINEER.
5.

THE CONTRACTOR WILL BE PAID ONLY ONCE FOR JACKING AND SHORING ANY ONE ABUTMENT BEARING. ANY SHORING OF ADJACENT BEAMS, REQUIRED ONLY TO REPAIR OR REPLACE THE BEARING OR BRIDGE SEAT IN QUESTION, SHALL BE SUBSIDIARY TO THE UNIT PRICE BID FOR THE SHORING OF THE BEARING OR BRIDGE SEAT BEING REPAIRED OR REPLACED. THE ENTIRE SUPERSTRUCTURE WILL BE JACKED AND SHORED AT EACH PIER TO ALLOW RECONSTRUCTION OF THE PIER AND REPLACEMENT OF ALL PIER BEARINGS, UNDER ITEM 502.10, "SHORING SUPERSTRUCTURE (AT PIERS 1, 2 AND 3)".
6.

ALL BEARINGS SHALL CONFORM TO SUBSECTIONS 531 AND 731.
7.

SHOP DRAWINGS CONFORMING TO SUBSECTION 531.03 MUST BE SUBMITTED, AND INCLUDE THE WELDING PROCEDURE IF THE STAINLESS STEEL PLATE IS TO BE WELDED TO THE SOLE PLATE, OR THE BONDING PROCEDURE IF THE STAINLESS STEEL PLATE IS TO BE BONDED TO THE SOLE PLATE. BONDING PROCEDURES ARE ALSO REQUIRED FOR BONDING THE TFE TO THE FABRIC PAD OR FOR BONDING LAMINATIONS WITHIN THE PAD.
8.

ALL STEEL USED IN THE BEARINGS (EXCEPT STAINLESS STEEL) SHALL BE AASHTO M183 AND GALVANIZED OR METALIZED PER SUBSECTION 531.04 (B) OF THE GENERAL SPECIAL PROVISIONS FOR ALL PROJECTS. THIS INCLUDES ANY SHIM PLATES THAT MAY BE REQUIRED.
9.

ANY GALVANIZED AREAS THAT ARE WELDED IN THE FIELD (OR OTHERWISE DAMAGED) MUST BE COATED WITH ZINC RICH COATING AFTERWARDS IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 513 - PROTECTIVE COATINGS.
10.

DRILL HOLES (IN CONCRETE AT ABUTMENTS) FOR NEW ANCHOR BOLTS SHALL BE 2-½" DIAMETER IF ANCHOR BOLTS ARE TO BE GROUTED, AND 2" DIAMETER IF ANCHOR BOLTS ARE TO BE INSTALLED USING EPOXY MORTAR. ALL COSTS FOR DRILLING AND GROUTING NEW ANCHOR BOLTS SHALL BE INCLUDED IN ITEM 531.10.
11.

ALL EXISTING SLOTTED HOLES IN EXPANSION BEARINGS OR BEAM FLANGES WILL BE CLEANED OF FOREIGN MATERIAL (DIRT, RUST, CONCRETE, ETC.) WITH THE COST SUBSIDIARY TO THE COST OF ALL OTHER BEARINGS BEING REPAIRED OR REPLACED.
12.

AFTER CLEANING, FILL ALL HOLES IN THE BEAM FLANGES AND BEARING PLATES (WHERE EXISTING ANCHOR BOLTS HAVE BEEN REMOVED) WITH JOINT SEALER, POLYURETHANE, WITH THE COST TO BE SUBSIDIARY TO THE COST OF THE BEARING BEING REPAIRED OR REPLACED.
13.

THE WORK REQUIRED TO REMOVE EXISTING ANCHOR BOLTS, BEARINGS AND BEARING PLATES IN ORDER TO INSTALL NEW BEARINGS AS SHOWN IN THESE PLANS, SHALL BE SUBSIDIARY TO ITEM 531.10, "BEARING DEVICE ASSEMBLY".

14.

ALL BRIDGE SEATS SHALL BE CLEANED OF ALL FOREIGN MATERIAL (AFTER ALL OTHER WORK AT SEATS IS DONE) WITH THE COSTS SUBSIDIARY TO BEARING ITEMS. PARTICULAR CARE SHALL BE USED TO ENSURE AREAS OF BLOCKOUTS IN CURTAIN WALLS ARE CLEAN.
15.

IF EXISTING SHIM PLATES ARE ENCOUNTERED DURING THE REPLACEMENT OF ABUTMENT BEARINGS, THEY SHALL BE REPLACED WITH STEEL SHIMS, WITH THE COST BEING SUBSIDIARY TO ITEM 531.10, "BEARING DEVICE ASSEMBLY". SHIMS SHALL BE GALVANIZED OR METALIZED.
16.

NEW PLATES REQUIRED FOR BEARINGS BEING REPLACED IN KIND SHALL BE FABRICATED TO MATCH EXACTLY THE DIMENSIONS (INCLUDING RADIUS IF REQUIRED) OF THE PLATES BEING REPLACED. HOLES ARE ONLY REQUIRED IN THE NEW PLATES AT THE LOCATIONS INDICATED IN THE BEARING TREATMENT DETAILS. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF THE EXISTING PLATES BEFORE THE CONTRACTOR ORDERS ANY NEW BEARING PLATES.

STATE OF VERMONT
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Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
BEARING REPAIR NOTES			
Designed By	S.M. HODGDON	Drawn By	B.J. MASSE
Checked By	T.S. BRYANT	Date	1/00
		Bridge Design Supervisor	C.D. BAKER Date 1/00
PROJECT	SOUTH BURLINGTON		PROJECT NO.
			IM DECK (36)
VHB Cad Drawing No.	50929BERN	Date	1/00
Bridge Sheet No.			Sheet 18 of 75

BEARING CONDITION AND TREATMENT SUMMARY

BRDG. NO.	LOCATION	BRG. TYPE	CHANGE TO FIXED/EXP.	EXIST. 2 PLT/ 3 PLT	BEAM LINE 1			BEAM LINE 2			BEAM LINE 3			BEAM LINE 4			BEAM LINE 5			BEAM LINE 6			BEAM LINE 7		
					RECESSED INTO SEAT	TREATMENT		RECESSED INTO SEAT	TREATMENT		RECESSED INTO SEAT	TREATMENT		RECESSED INTO SEAT	TREATMENT		RECESSED INTO SEAT	TREATMENT		RECESSED INTO SEAT	TREATMENT		RECESSED INTO SEAT	TREATMENT	
						DESC.	DETAIL		DESC.	DETAIL		DESC.	DETAIL		DESC.	DETAIL		DESC.	DETAIL		DESC.	DETAIL		DESC.	DETAIL
68WB	ABUT. 1	EXP.	FIXED	2		J-C-P-G	D		J-C-P-G	D		J-C-P-G	D		J-C-P-G	D		J-C-P-G	D		J-C-P-G	D		J-C-P-G	D
68WB	PIER 1	FIXED	EXP.	2		R-TFE	X		R-TFE	X	Y	R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X
68WB	PIER 1	EXP.		3		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X
68WB	PIER 2	FIXED		2		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y
68WB	PIER 2	EXP.		3		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X
68WB	PIER 3	FIXED		2		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y
68WB	PIER 3	EXP.		2		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X
68WB	ABUT. 2	FIXED		2		C-P-G	N/A		C-P-G	N/A		C-P-G	N/A		C-P-G	N/A		C-P-G	N/A		C-P-G	N/A		J-C-P-G	N/A

					BEAM LINE 8			BEAM LINE 9			BEAM LINE 10			BEAM LINE 11			BEAM LINE 12			BEAM LINE 13			BEAM LINE 14		
68EB	ABUT. 1	EXP.	FIXED	2		J-C-P-G	D		J-C-P-G	D		J-C-P-G	D		J-C-P-G	D		J-C-P-G	D		J-C-P-G	D		R-I-K	A
68EB	PIER 1	FIXED	EXP.	2		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X
68EB	PIER 1	EXP.		3		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X
68EB	PIER 2	FIXED		2		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y
68EB	PIER 2	EXP.		3		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X
68EB	PIER 3	FIXED		2		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y		R-FAB	Y
68EB	PIER 3	EXP.		2		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X		R-TFE	X
68EB	ABUT. 2	FIXED		2		C-P-G	N/A		C-P-G	N/A		C-P-G	N/A		C-P-G	N/A		C-P-G	N/A		C-P-G	N/A		C-P-G	N/A

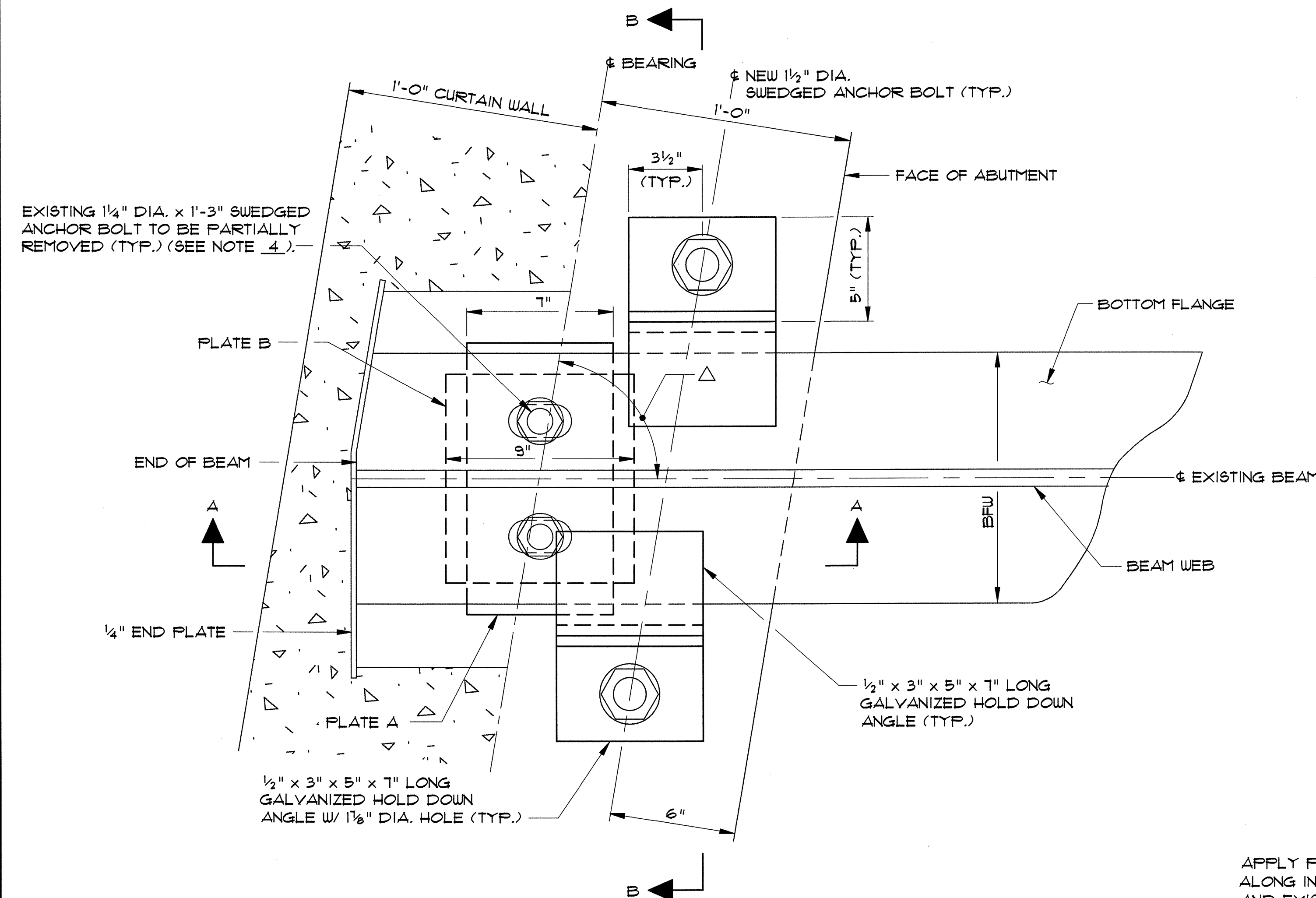
LEGEND:

C-P-G	CLEAN, PAINT AND GREASE
J-C-P-G	JACK, CLEAN, PAINT AND GREASE
R-I-K	REPLACE IN KIND
R-FAB	REPLACE W/ NEW FABRIC FIXED BEARING
R-TFE	REPLACE W/ NEW TFE EXPANSION BEARING

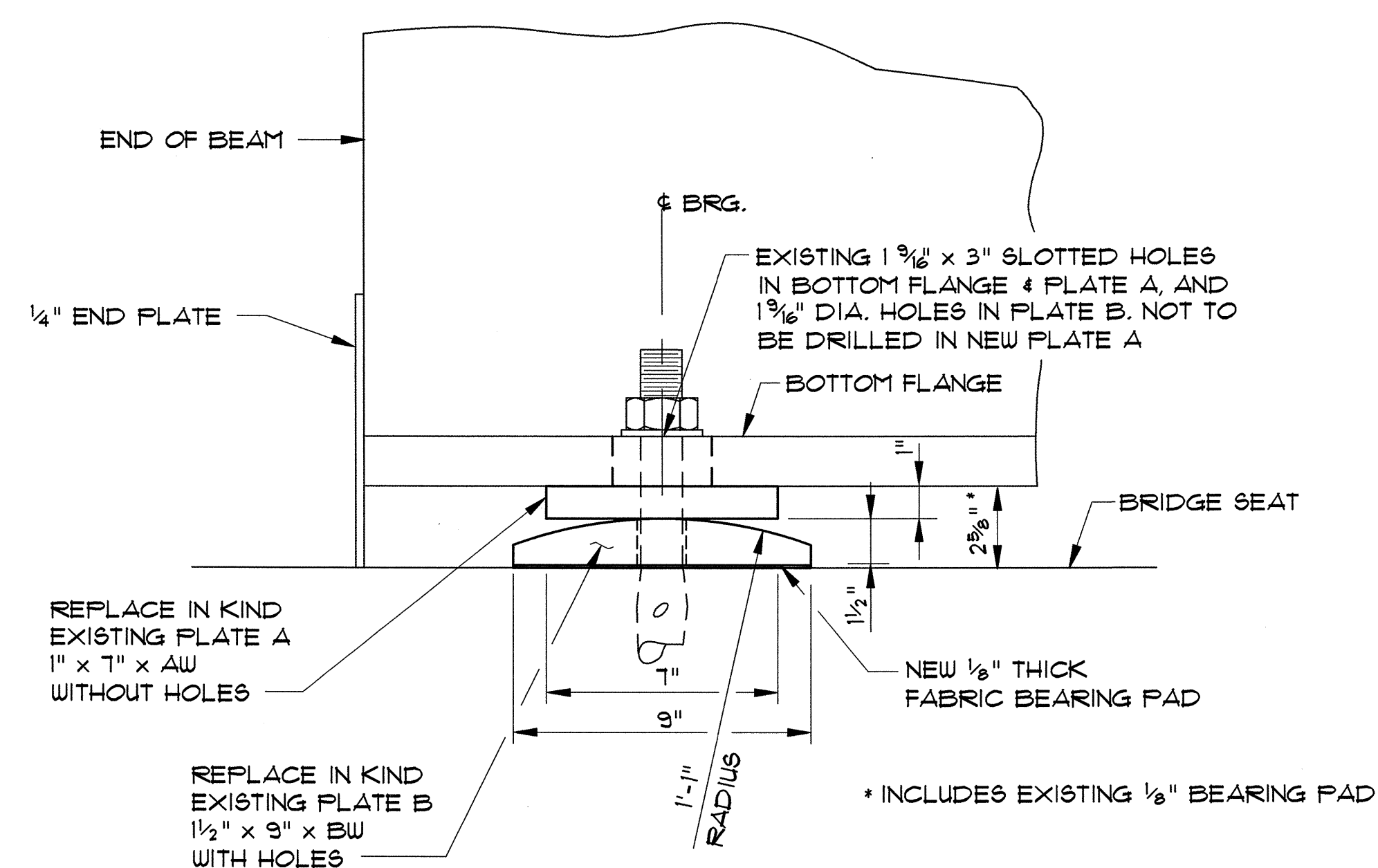
NOTES:

1. BEAM LINES APPLY TO ALL SPANS ON THE BRIDGE, AND ARE LABELED FROM LEFT TO RIGHT WHILE LOOKING UP STATION.
2. TREATMENT DETAIL REFERS TO THE SPECIFIC BEARING REPAIR / REPLACEMENT DETAIL. SEE SHEETS 20 - 23.

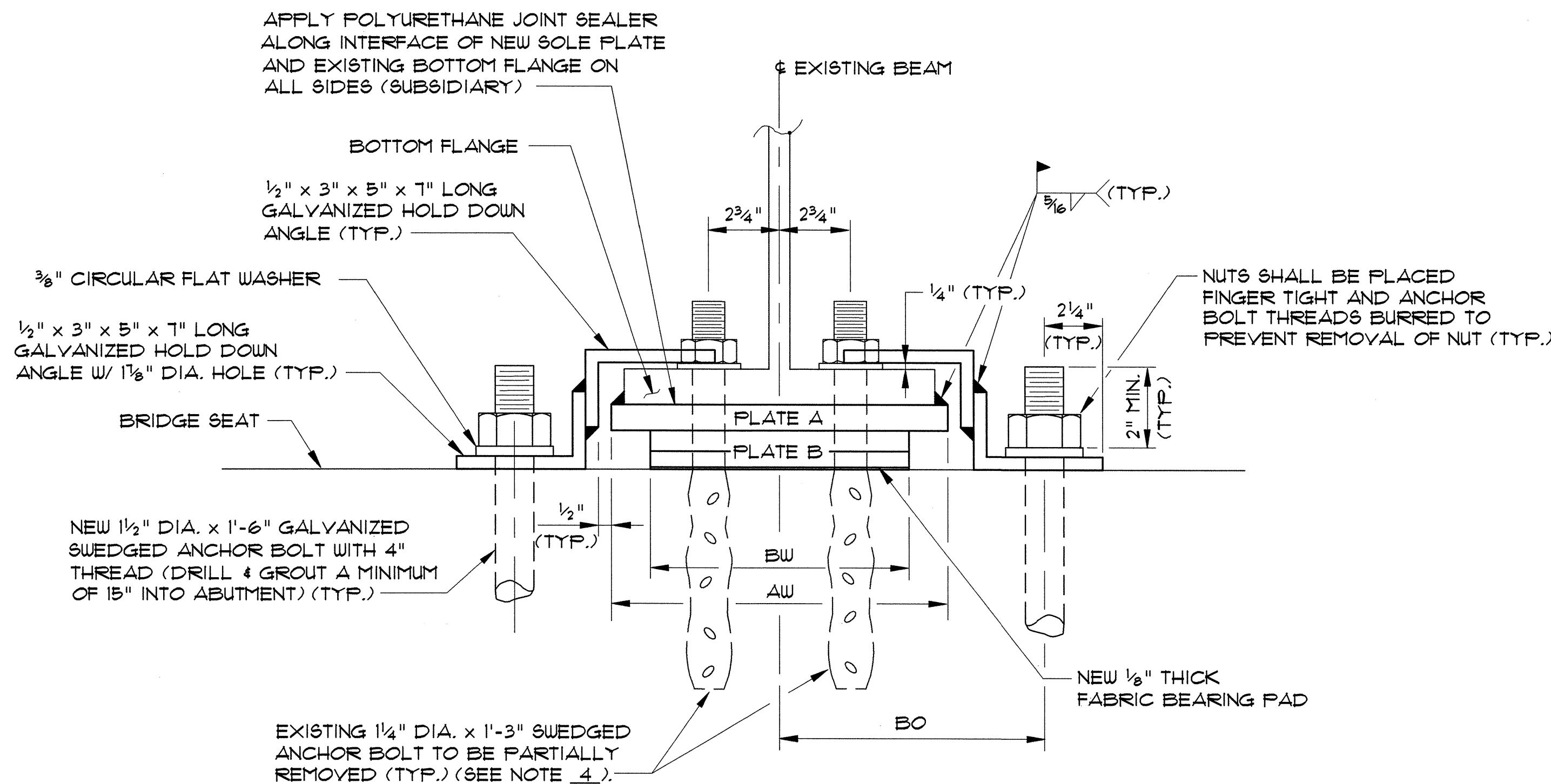
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
BEARING CONDITION & TREATMENT SUMMARY			
Designed By T.S. BRYANT		Drawn By B.J. MASSE	
Checked By	Date	Bridge Design Supervisor	Date
A. SETAS	1/00	C.D. BAKER	1/00
PROJECT		PROJECT NO.	
SOUTH BURLINGTON		IM DECK (36)	
VHB Cad Drawing No. 50929BER		Date 1/00	
Bridge Sheet No.		Sheet 19 of 75	



PLAN VIEW
NTS



SECTION A-A
(HOLD-DOWN ANGLES NOT SHOWN FOR CLARITY)
NTS



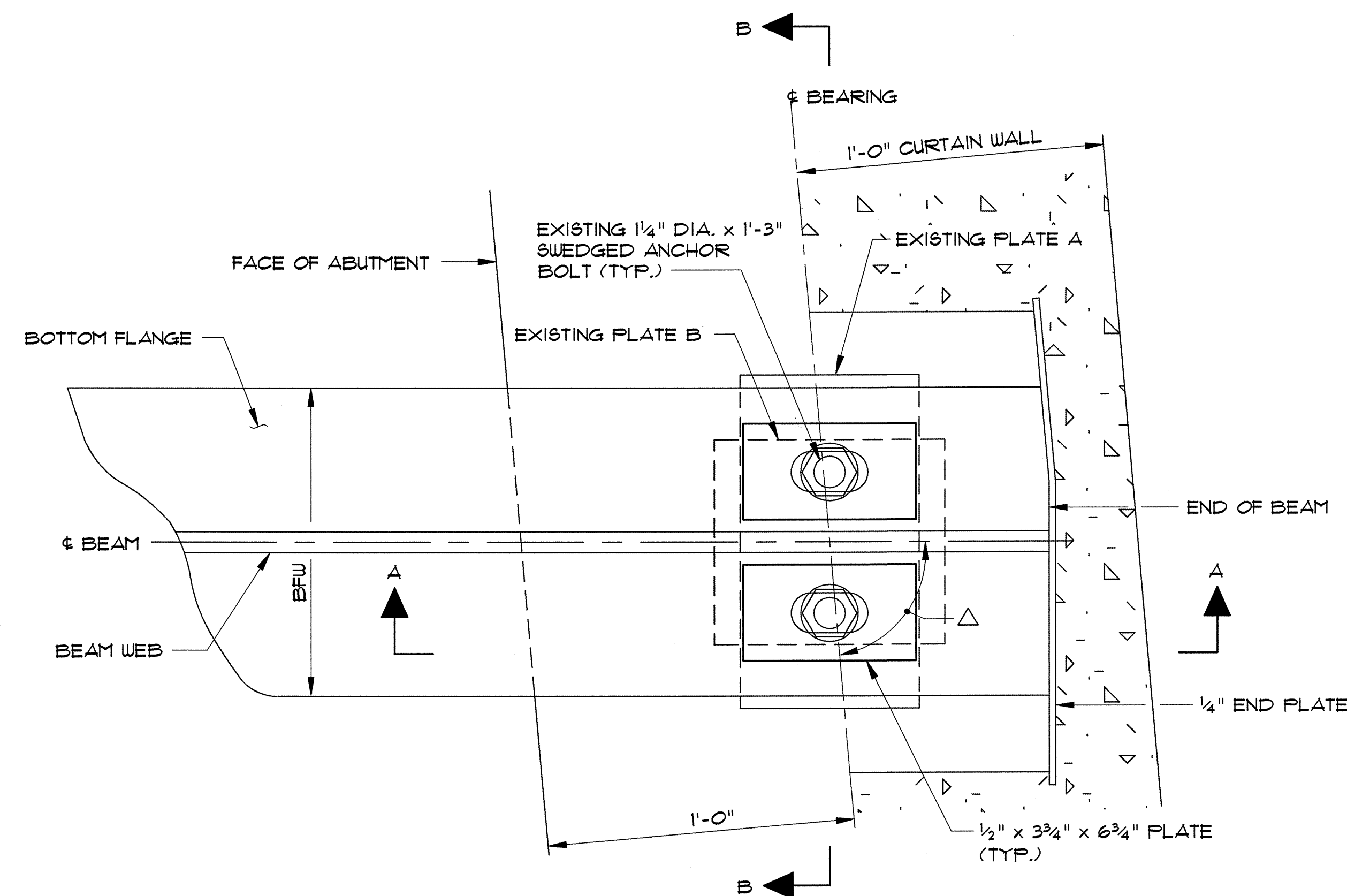
SECTION B-B
NTS

BRIDGE NO.	ABUT. NO.	BEAM LINE	BEAM	SPAN LENGTH	BOTT. FLG. WIDTH (BFW)	PLATE A WIDTH (AW)	PLATE B WIDTH (BW)	ANCHOR BOLT OFFSET (BO)	Δ
68	1	14	36WF50	54'	12"	13"	10"	10 1/4"	94°50'48"
TOTAL NO. OF BRGS. = 1									

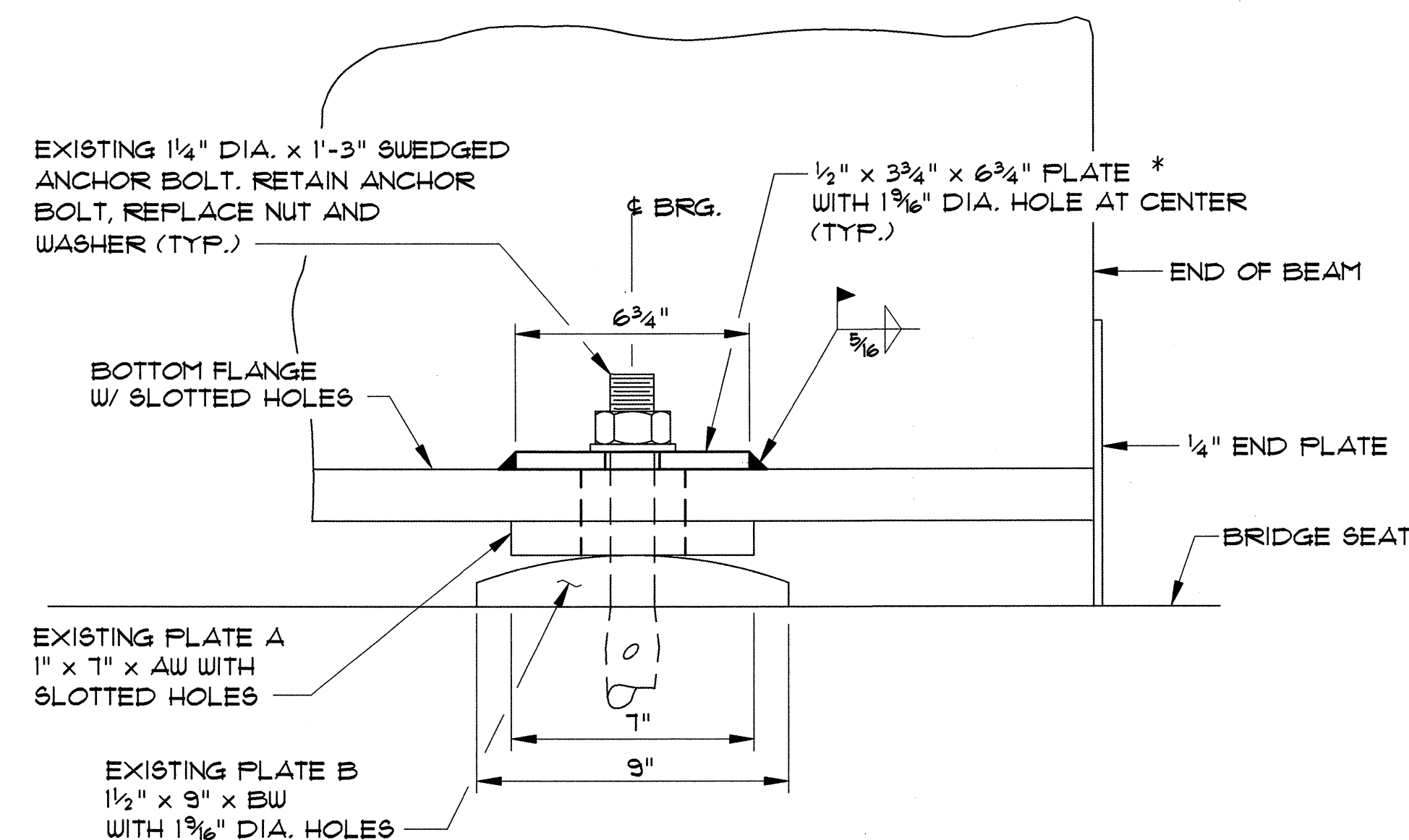
- NOTES:**
1. PLUG EXISTING HOLES IN BEAM FLANGES WITH POLYURETHANE SEALER (SUBSIDIARY).
 2. BURRED THREADS SHALL BE TOUCHED UP WITH ZINC-RICH PAINT AFTER FINAL ASSEMBLY (SUBSIDIARY).
 3. BEARING HEIGHT ASSUMES A 3/16" THICK STAINLESS STEEL PLATE.
 4. EXISTING ANCHOR BOLTS SHALL BE CUT OFF 1/2" ABOVE THE BRIDGE SEAT. THE 1/2" OF EACH ANCHOR BOLT THAT REMAINS WILL EXTEND INTO THE HOLES IN NEW PLATE B TO KEEP IT FROM SLIDING.

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log Sta. Surv. Sta.	
U.S. 2 OVER I-89			
BEARING TREATMENT DETAIL 'A'			
Designed By T.S. BRYANT	Date 1/00		Drawn By B.J. MASSÉ
Checked By S.M. HODGDON	Date 1/00		Bridge Design Supervisor C.D. BAKER
PROJECT SOUTH BURLINGTON		PROJECT NO. IM DECK (36)	
VHB Cad Drawing No. 50929BTA		Date 1/00	
Bridge Sheet No.		Sheet 20 of 75	

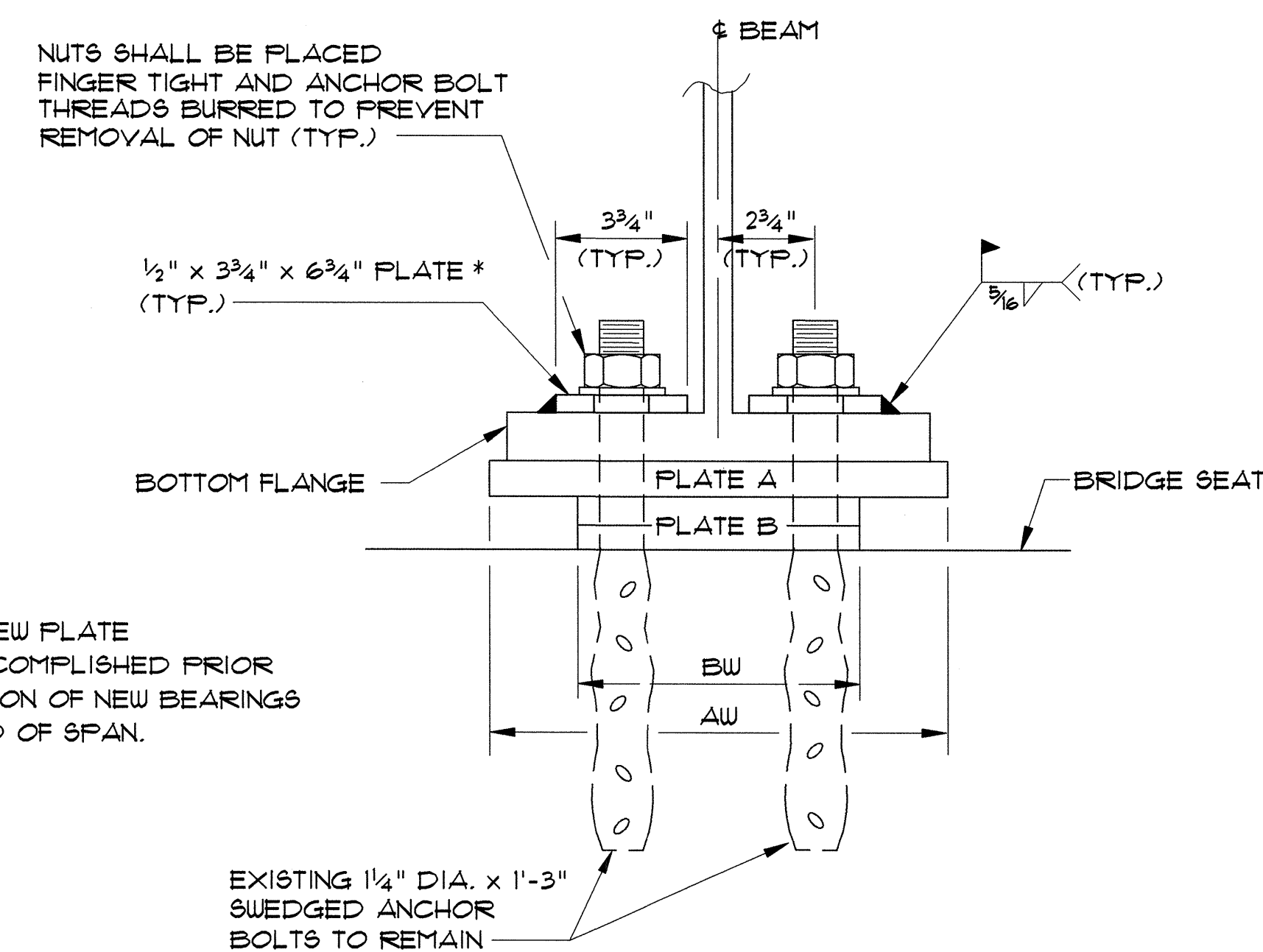
**DETAILS FOR REPLACING EXISTING EXPANSION BEARINGS
AT ABUTMENTS IN KIND**



PLAN VIEW
NTS



SECTION A-A
NTS



SECTION B-B
NTS

* WELDING OF NEW PLATE SHALL BE ACCOMPLISHED PRIOR TO INSTALLATION OF NEW BEARINGS AT OTHER END OF SPAN.

BRIDGE NO.	ABUT. NO.	BEAM LINE	BEAM	SPAN LENGTH	BOTT. FLG. WIDTH (BW)	PLATE A WIDTH (AW)	PLATE B WIDTH (BW)	Δ
68	1	1-13	36WF150	54'	12"	13"	10"	85°03'12"
TOTAL NO. OF BRGS. = 13								

DETAILS FOR MODIFYING EXISTING EXPANSION BEARINGS TO FIXED BEARINGS AT ABUTMENTS

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Checked By	S.M. HODGDON	Log Sta.	
Date	1/00	Surv. Sta.	

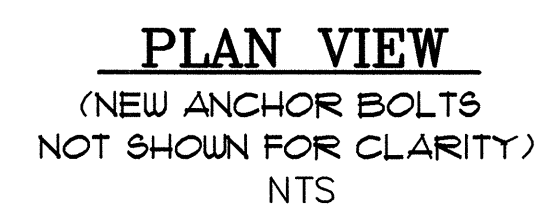
U.S. 2 OVER I-89

BEARING TREATMENT DETAIL 'D'

Designed By	T.S. BRYANT	Drawn By	B.J. MASSE
Checked By	S.M. HODGDON	Bridge Design Supervisor	C.D. BAKER
Date	1/00	Date	1/00

PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK (36)
VHB Cad Drawing No.	50929BTD	Date	1/00
Bridge Sheet No.		Sheet	21 of 15

VANASSE HANGEN BRUSTLIN, INC.



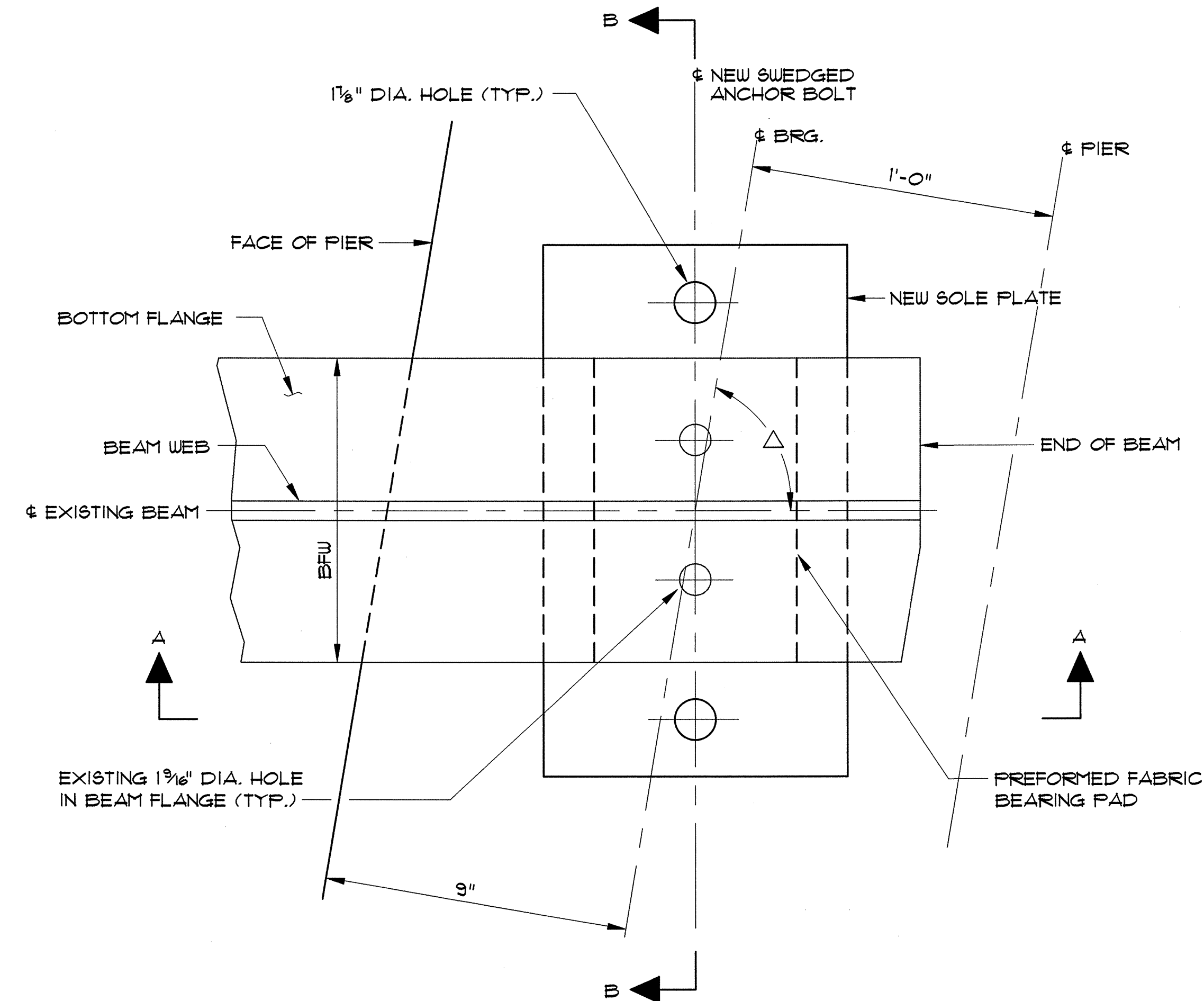
BRIDGE NO.	PIER NO.	SPAN NO.	EXIST. EXP. / FIXED	BEAM LINE	SPAN LENGTH	BEAM	BOTT. FLG. WIDTH (BFW)	FABRIC BRG. PAD WITH PTFE SURFACE			STAINLESS STEEL		SOLE PLATE			BEVELED WASHER THICK.		NEW * BRG. HEIGHT	ANCHOR BOLT OFFSET (BO) LENGTH (BL)		Δ	"A" DISTANCE							
								WIDTH (FPW)	LENGTH (FPL)	THICK (FPT)	WIDTH (SSW)	LENGTH (SSL)	WIDTH (SPW)	LENGTH (SPL)	THICK. (SPTB)	(WTA)	(WTB)		TEMPERATURE (°F)										
																			0	15		30	45	60	75	90			
68	1	1	FIXED	1-14	54'	36WF50	12"	12"	10"	2 1/2"	13 1/4"	13 1/4"	21"	14"	1"	3/4"	3/8"	1/2"	3 9/16"	8 1/4"	1'-10"	94°50'48"	2 3/16"	2 1/8"	2 1/16"	2"	1 5/16"	1 7/8"	1 3/16"
68	1	2	EXP.	1-14	74'	36WF70	12"	12"	10"	2 1/2"	13 1/4"	13 1/4"	21"	14"	3/4"	1"	3/8"	3/8"	3 9/16"	8 1/4"	1'-10"	93°59'36"	2 1/4"	2 3/16"	2 1/16"	2"	1 5/16"	1 3/4"	1 3/16"
68	2	3	EXP.	1-14	74'	33WF10	12"	12"	10"	2 1/2"	13 1/4"	13 1/4"	21"	14"	3/4"	1"	3/8"	3/8"	3 9/16"	8 1/4"	1'-10"	93°00'24"	2 1/4"	2 3/16"	2 1/16"	2"	1 5/16"	1 3/4"	1 3/16"
68	3	4	EXP.	1-14	59'	36WF50	12"	12"	10"	2 1/2"	13 1/4"	13 1/4"	21"	14"	3/4"	1"	1/2"	3/8"	3 9/16"	8 1/4"	1'-10"	92°07'12"	2 3/16"	2 1/8"	2 1/16"	2"	1 5/16"	1 7/8"	1 3/16"
TOTAL NO. OF BRGS. = 56																													

* SEE NOTE 3

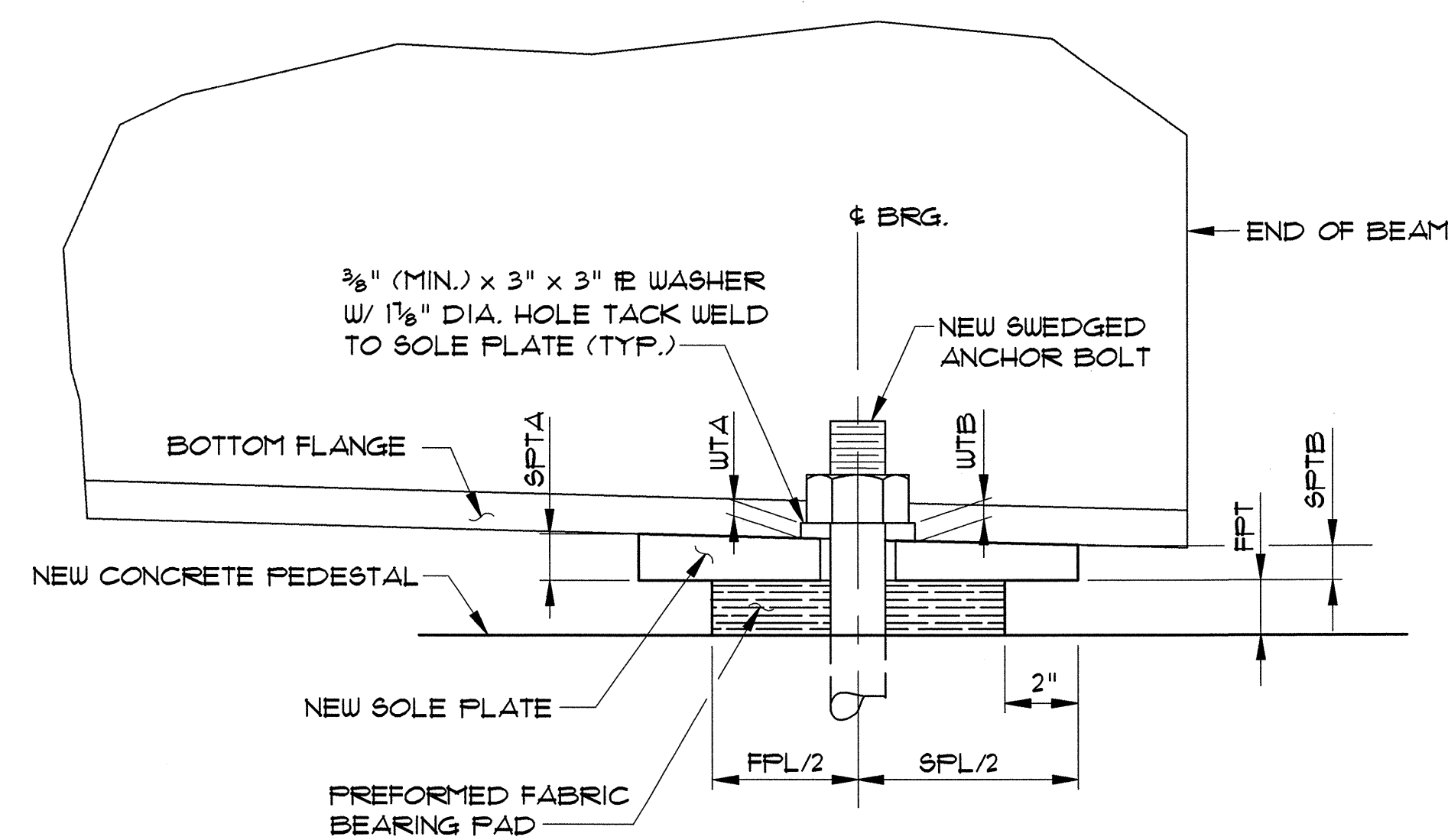


- | | |
|------------------------------|----------------|
| VHB Cad Drawing No. 50929BTX | Date 1/00 |
| Bridge Sheet No. | Sheet 22 of 75 |

VANASSE HANGEN BRUSTLIN, INC.

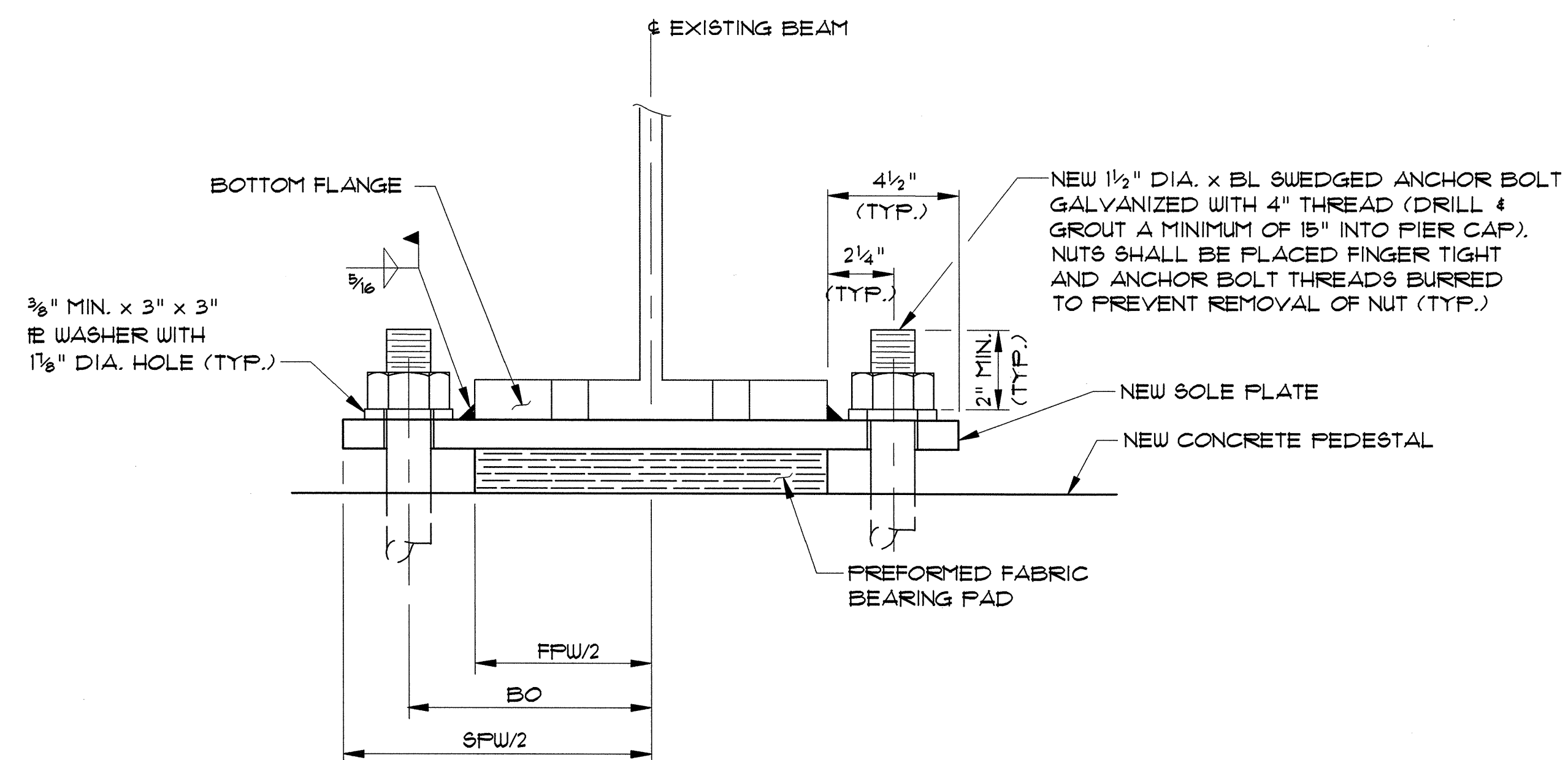


PLAN VIEW
(NEW ANCHOR BOLTS
NOT SHOWN FOR CLARITY)
NTS



SECTION A-A
NTS

BRIDGE NO.	PIER NO.	SPAN NO.	BEAM LINE	SPAN LENGTH	BEAM	BOTT. FLG. WIDTH (BFW)	FABRIC BRG. PAD			SOLE PLATE			WASHER THICKNESS		NEW BRG. HEIGHT	ANCHOR BOLT OFFSET (BO)	ANCHOR BOLT LENGTH (BL)	Δ
							WIDTH (FFW)	LENGTH (FPL)	THICK. (FFT)	WIDTH (SPW)	LENGTH (SPL)	THICK. (SPTA) (SPTB)	(WTA)	(WTB)				
68	2	2	1-14	74'	36WFI70	12"	12"	10"	2 1/2"	21"	14"	1"	3/4"	3/8"	3/8"	8 1/4"	1'-10"	93°59'36"
68	3	3	1-14	74'	36WFI70	12"	12"	10"	2 1/2"	21"	14"	1"	3/4"	3/8"	3/8"	8 1/4"	1'-10"	93°00'24"
TOTAL NO. OF BRGS. = 28																		



SECTION B-B
NTS

NOTES:

1. PLUG EXISTING HOLES IN BEAM FLANGES WITH POLYURETHANE SEALER (SUBSIDIARY).
2. BURRED THREADS SHALL BE TOUCHED UP WITH ZINC-RICH PAINT AFTER FINAL ASSEMBLY (SUBSIDIARY).
3. ALL BEARING COMPONENTS ARE NEW EXCEPT AS NOTED.

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	

U.S. 2 OVER I-89

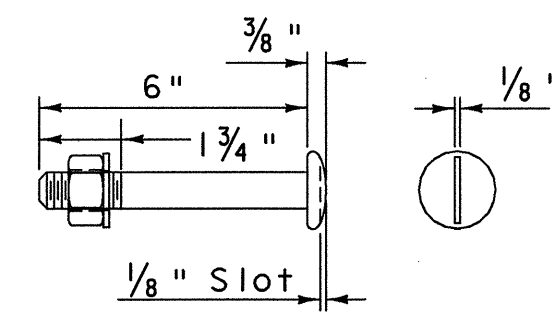
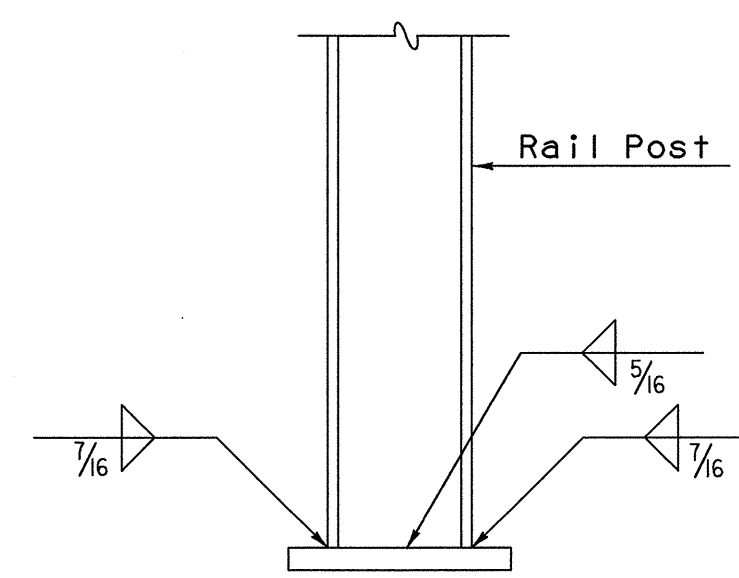
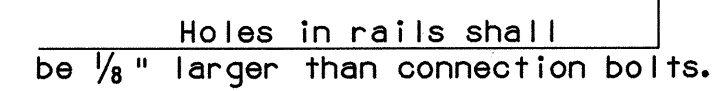
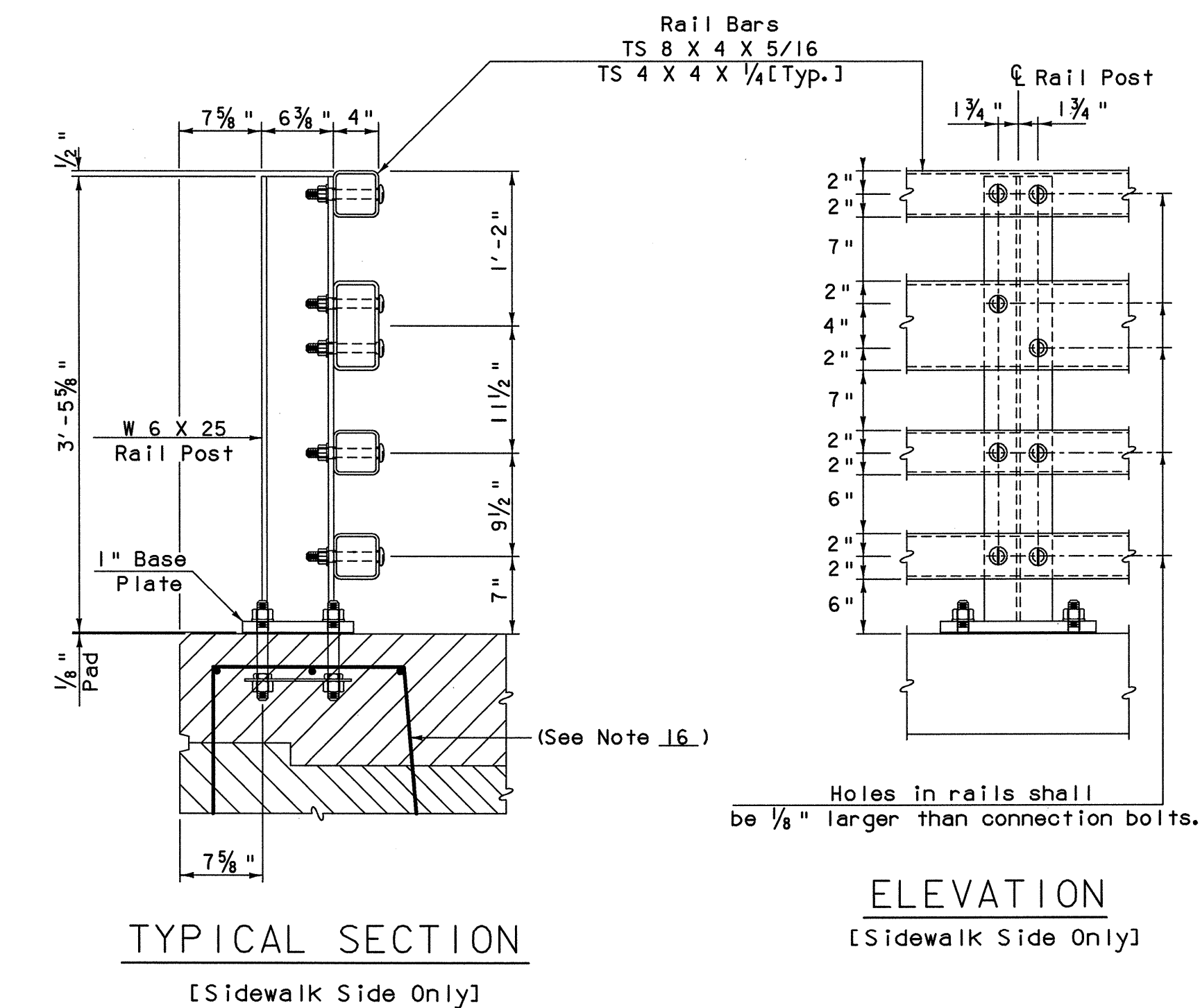
BEARING TREATMENT DETAIL 'Y'

Designed By	W.M. MOSHER	Drawn By	B.J. MASSE
Checked By	S.M. HOGDON	Date	1/00
		Bridge Design Supervisor	C.D. BAKER Date 1/00

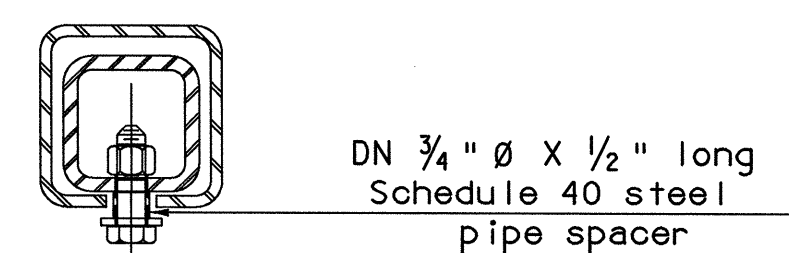
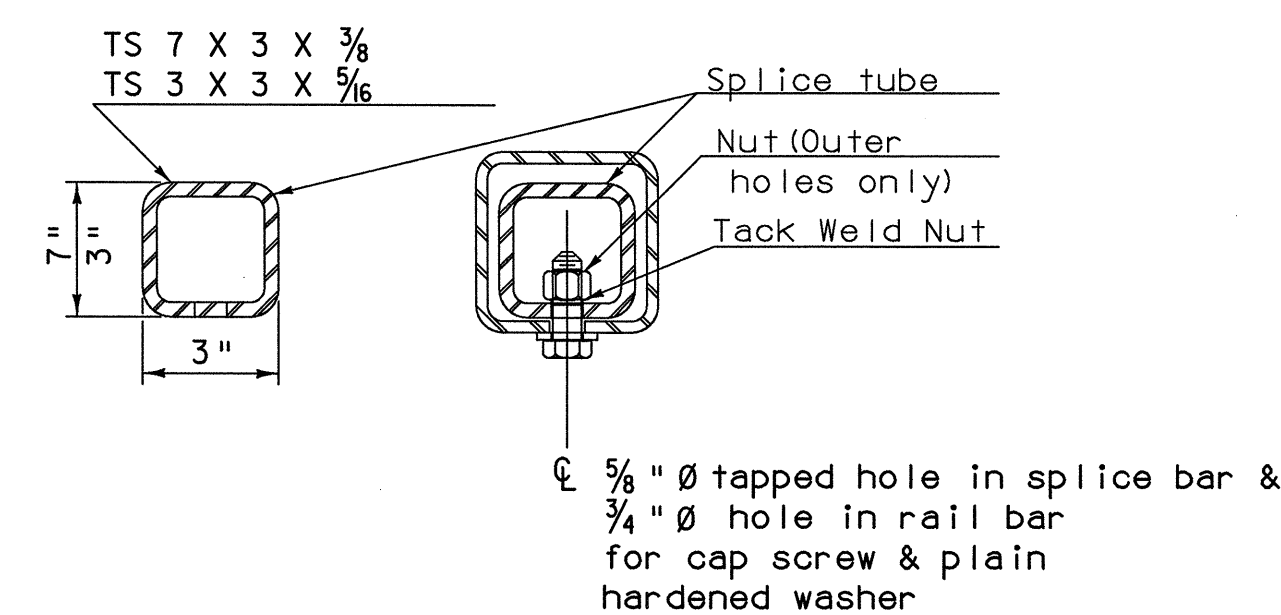
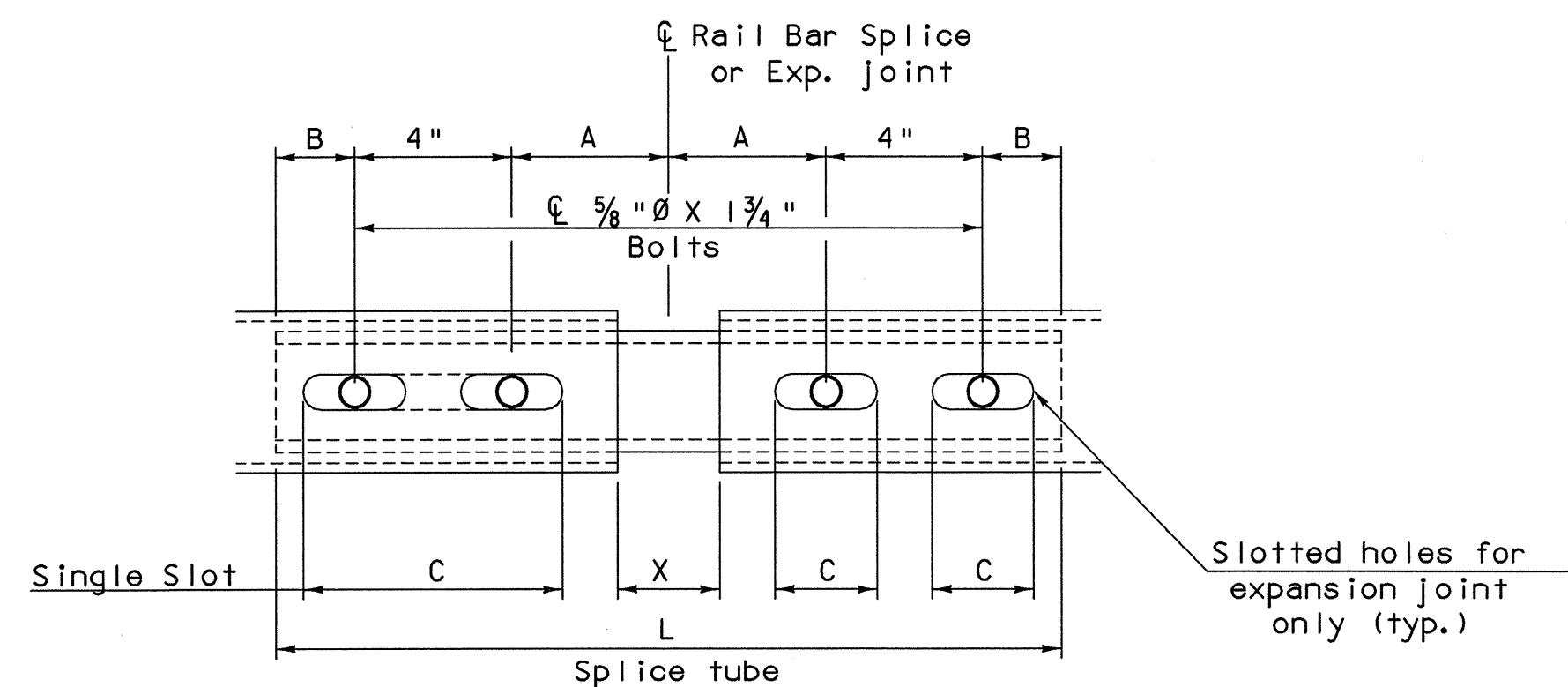
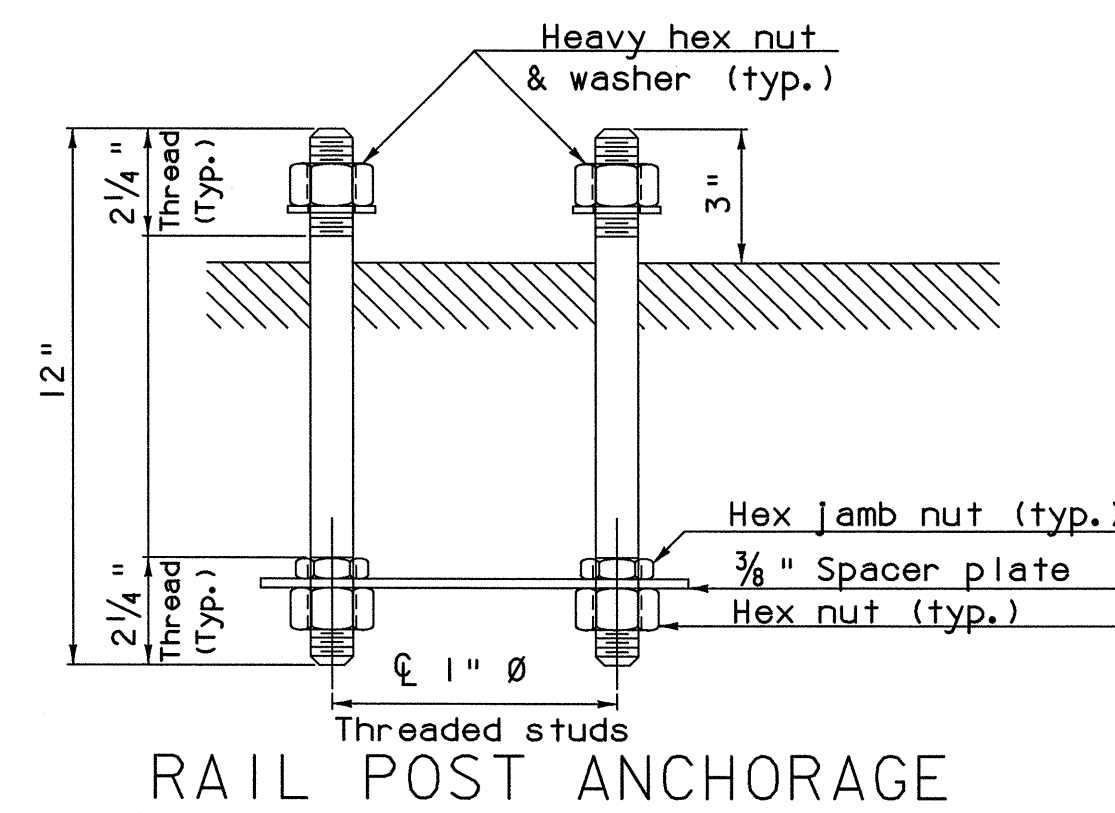
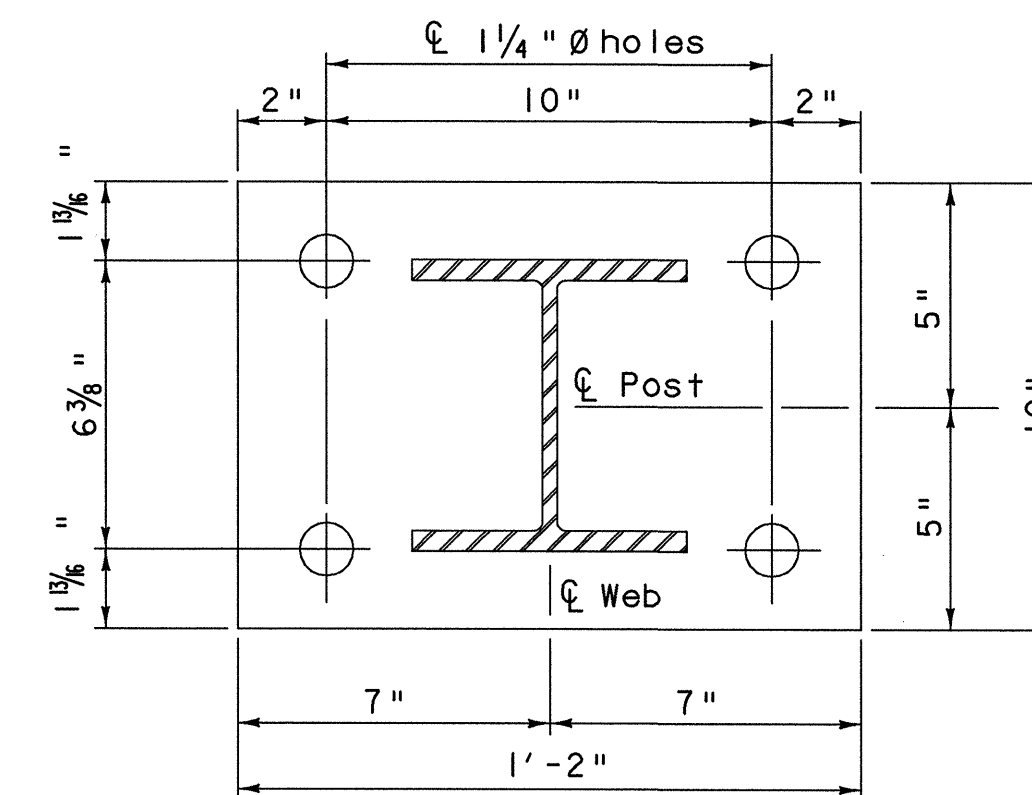
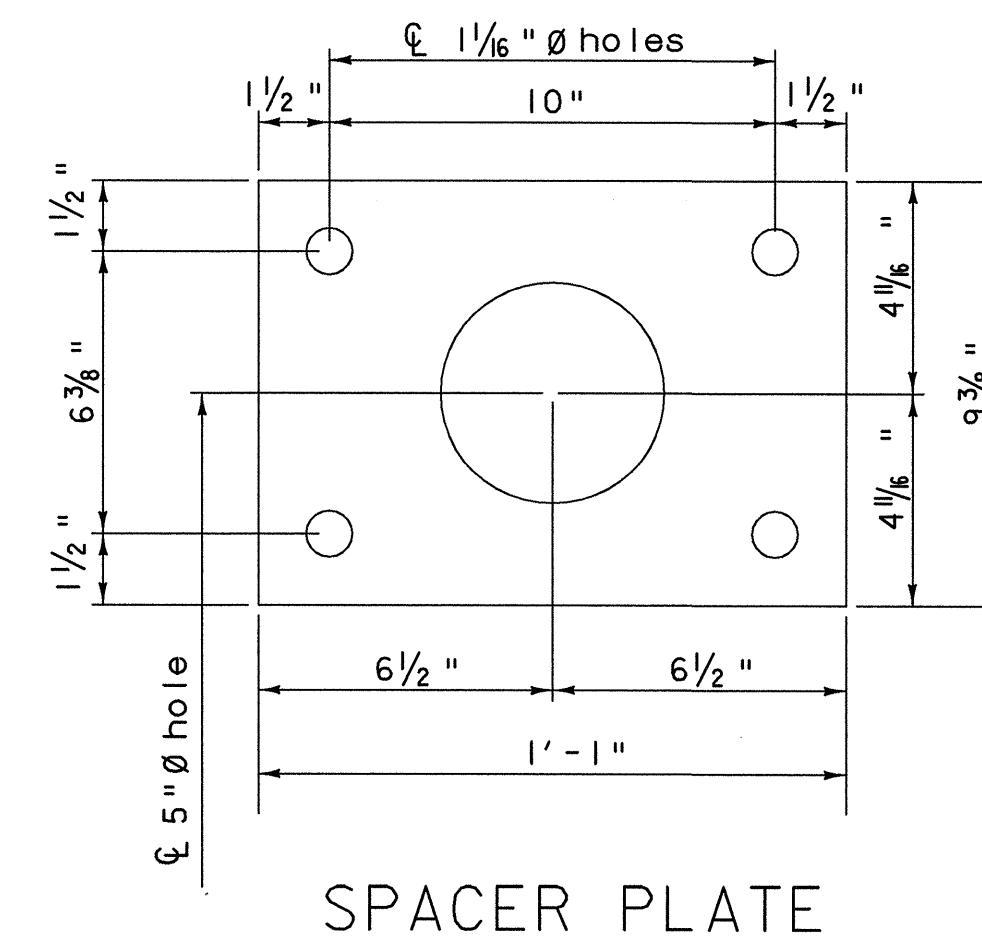
PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK (36)
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VANASSE HANGEN BRUSTLIN, INC.	VHB Cad Drawing No. 50929BTY	Date	1/00
	Bridge Sheet No.		Sheet 23 of 75

**DETAILS FOR REPLACING EXISTING FIXED BEARINGS AT PIERS
WITH FABRIC BEARING PADS**



[with washer & prevailing torque type lock nut]
[See Note No. 9]
Only full diameter body bolts will be allowed



④ 5/8" Ø tapped hole in splice bar &
1 1/8" X "C" slot in rail bar
for cap screw & plain
hardened washer

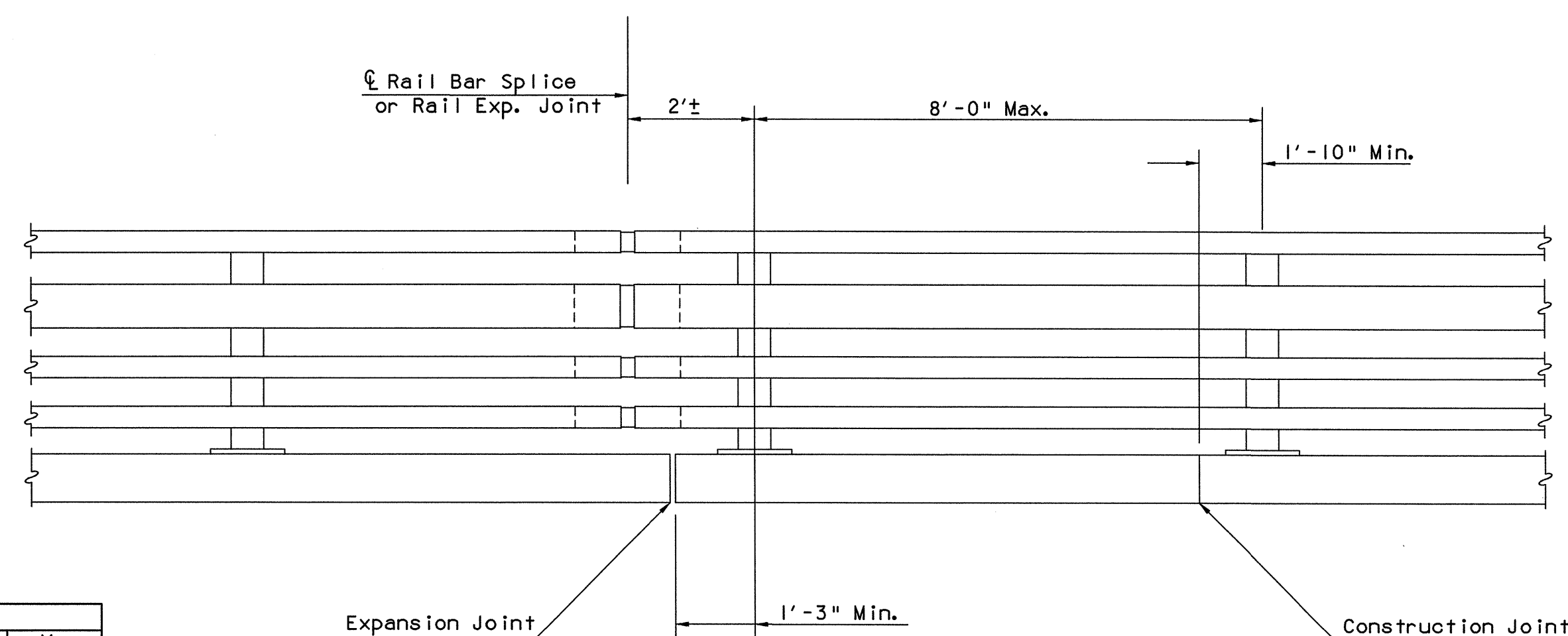
EXPANSION JOINT SECTION

For details not shown, see
"Rail Bar Splice Section"

T	A	B	C	L	X
Splice	4"	2"	--	20"	$\frac{3}{4}$ "
<4"	4"	2"	2 $\frac{1}{2}$ "	20"	2 $\frac{1}{2}$ "
>4" ≤ 6 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	2 $\frac{3}{8}$ "	3 $\frac{1}{2}$ "	23 $\frac{3}{4}$ "	4"
>6 $\frac{1}{2}$ " ≤ 9"	6 $\frac{1}{2}$ "	3 $\frac{3}{8}$ "	9**	27 $\frac{3}{4}$ "	5"
>9" < 13"	8 $\frac{1}{2}$ "	4 $\frac{3}{8}$ "	11**	33 $\frac{3}{4}$ "	7"

T = Total Movement

* = Single Slot



NOTES

1. All work and materials shall conform to the provisions of Section 525 - Railings of the Standard Specifications for Construction.
2. Tubing and posts shall meet the requirements of Section 732 - Railing materials of the Standard Specifications for Construction.
3. All exposed cut or sheared edges shall be rounded to a $\frac{1}{16}$ " radius and be free of burrs.
4. Rail posts shall be set normal to grade.
5. Sections of rail bar shall be attached to a minimum of two [2] rail posts and preferably to four [4] posts.
6. Rail bar expansion joints shall be provided in any rail bay spanning a superstructure expansion joint. Rail expansion joint width shall be "X" at 45 °F and will be adjusted in the field by the Engineer.
7. All parts shall be galvanized after fabrication in accordance with AASHTO M111, except that hardware shall meet the requirements of AASHTO M232.
8. Rail posts anchoring nuts shall be tightened to a snug fit and given an additional $\frac{1}{8}$ turn.
9. Rail bars shall be attached using $\frac{3}{4}$ " $\emptyset$ full diameter body AASHTO M164 (Type I) round head bolts inserted through the face of the bar. Holes in posts shall be $\frac{1}{16}$ " larger than the bolt size.
10. Holes in rails for rail bar attachment may be field - drilled. Holes shall be coated with an approved zinc - rich paint prior to erection.
11. If there is a conflict between these Standard Details and the Design Drawings, the requirements of the Design drawings shall be followed.
12. Any bending of rail shall be by shop procedure only.
13. The fabricator shall submit shop drawings including welding procedures to the Structures Section for approval in accordance with the provisions of 506.04, shop drawings. All welding shall conform with section 506.10.
14. The drop-weight tear test in section 732 shall not apply to the structural tubing on this standard.
15. See Standard BR3-97 for snow fence details. Adjust u-bolt spacing to accommodate 4-bar bridge rail.
16. See sheet 12B for reinforcing details in sidewalk.
17. See sheet 26 for bridge rail layout and additional notes and details.

MATERIALS

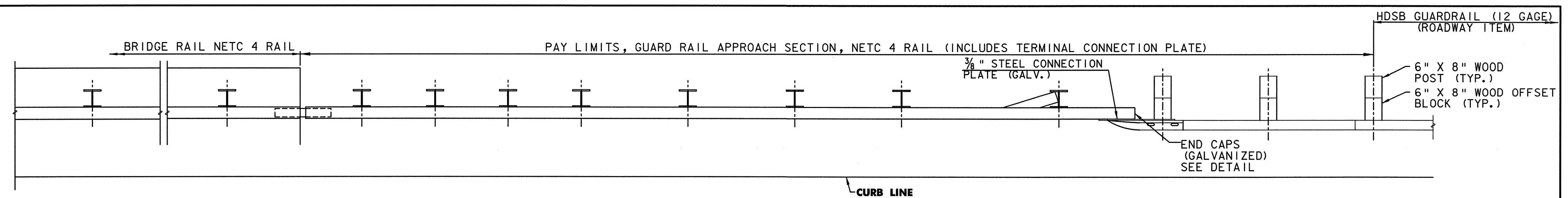
Rail bars.....	ASTM A500, Grade B or ASTM A501
Rail posts.....	ASTM A709/A709M, Grade 50
All other shapes & plates.....	ASTM A709/A709M, Grade 36
Anchor studs.....	ASTM A449
All other bolts [unless noted].....	ASTM A307

Nuts for AASHTO M164 bolts shall comply with AASHTO M291. Nuts for anchor studs shall comply with ASTM A563.

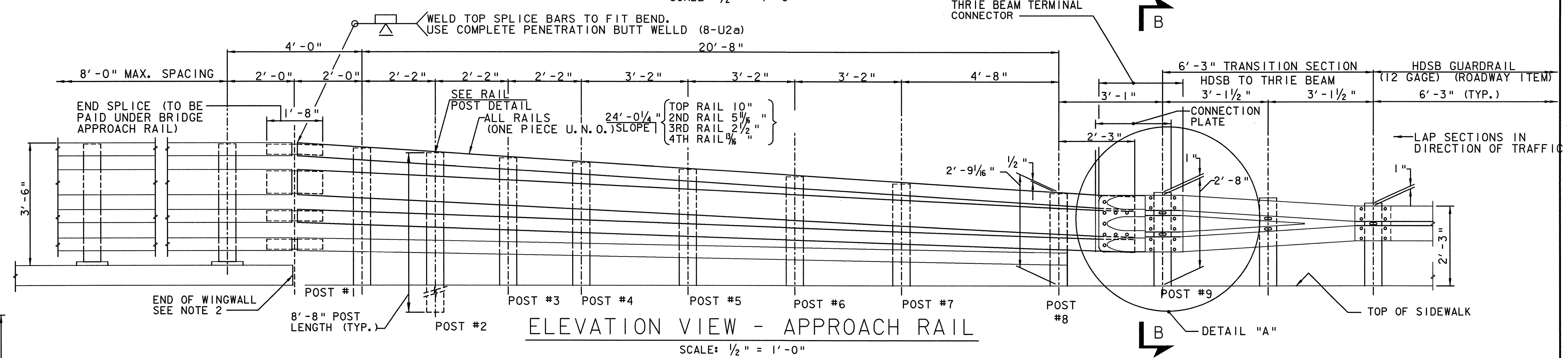
Washers shall comply with AASHTO M293 (ASTM F436) specification.

1/8" pad shall comply with standard specification subsection 731.01 or 731.02.

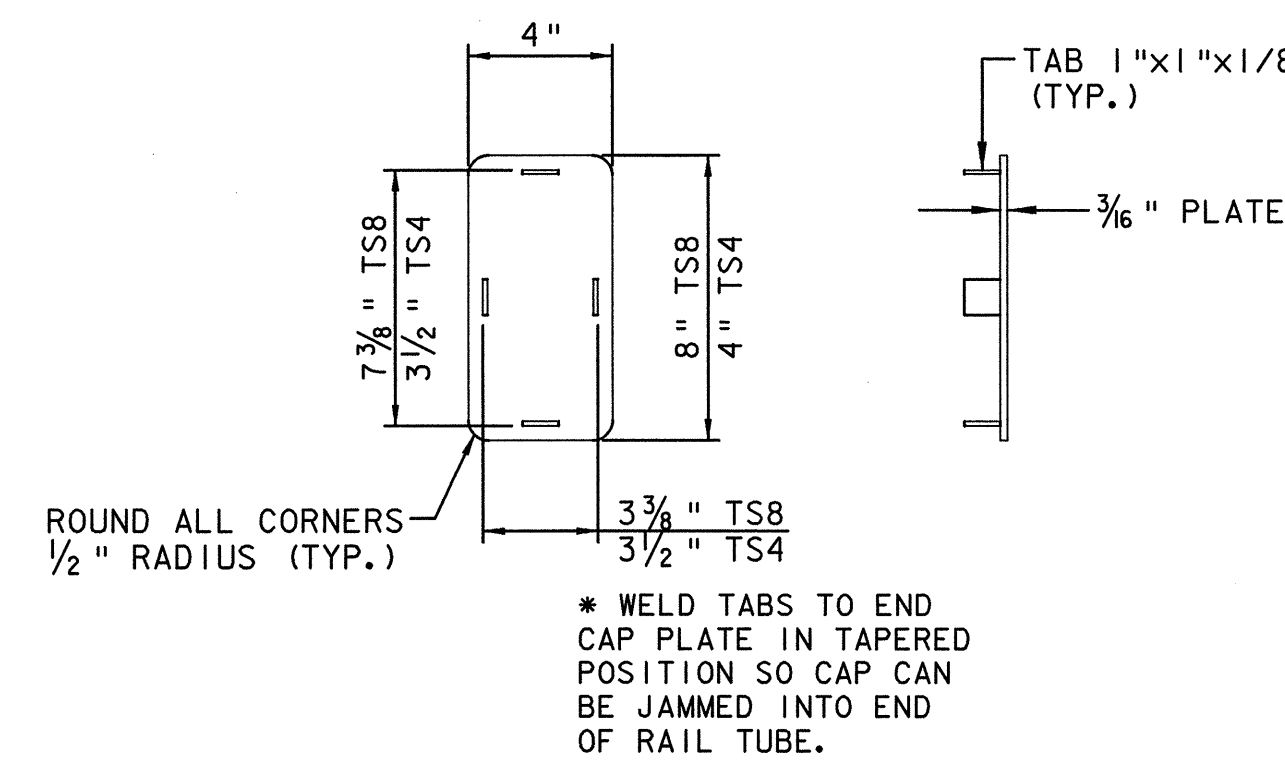
STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of SOUTH BURLINGTON	Bridge No. 68 Log Sta.
Highway No. U.S. 2	Surv. Sta.
U.S. 2 OVER I-89	
N.E.T.C. BRIDGE RAIL - 4 RAIL	
Designed By VAOT	Drawn By C. L. CILLEY
Checked By VAOT	Bridge Design Supervisor Date
Project SOUTH BURLINGTON	Project No. IM DECK (36)
VHB Cad Drawing No. BR-119	
Date 1/00	
Bridge Sheet No.	
Sheet 24 of 75	



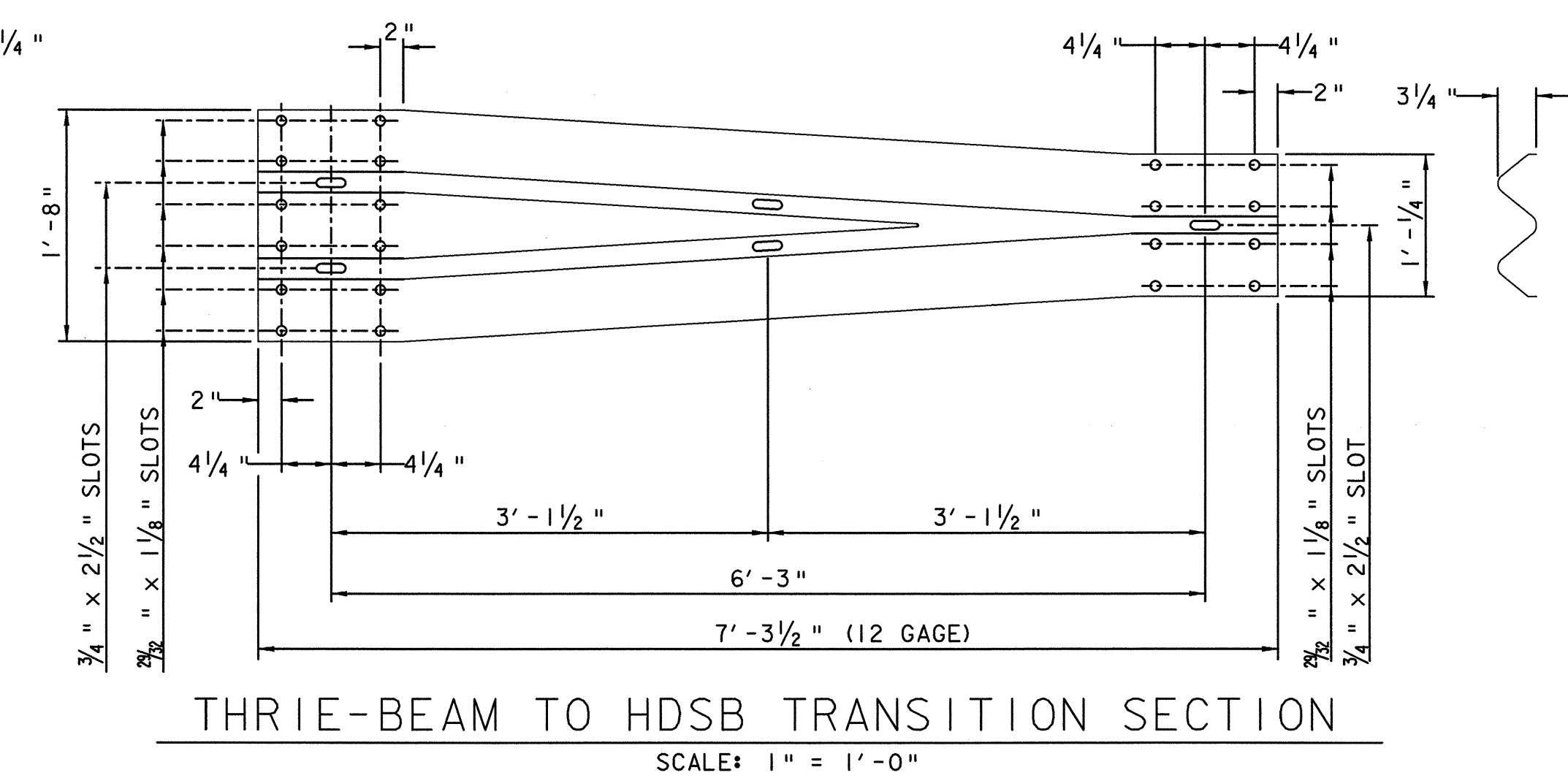
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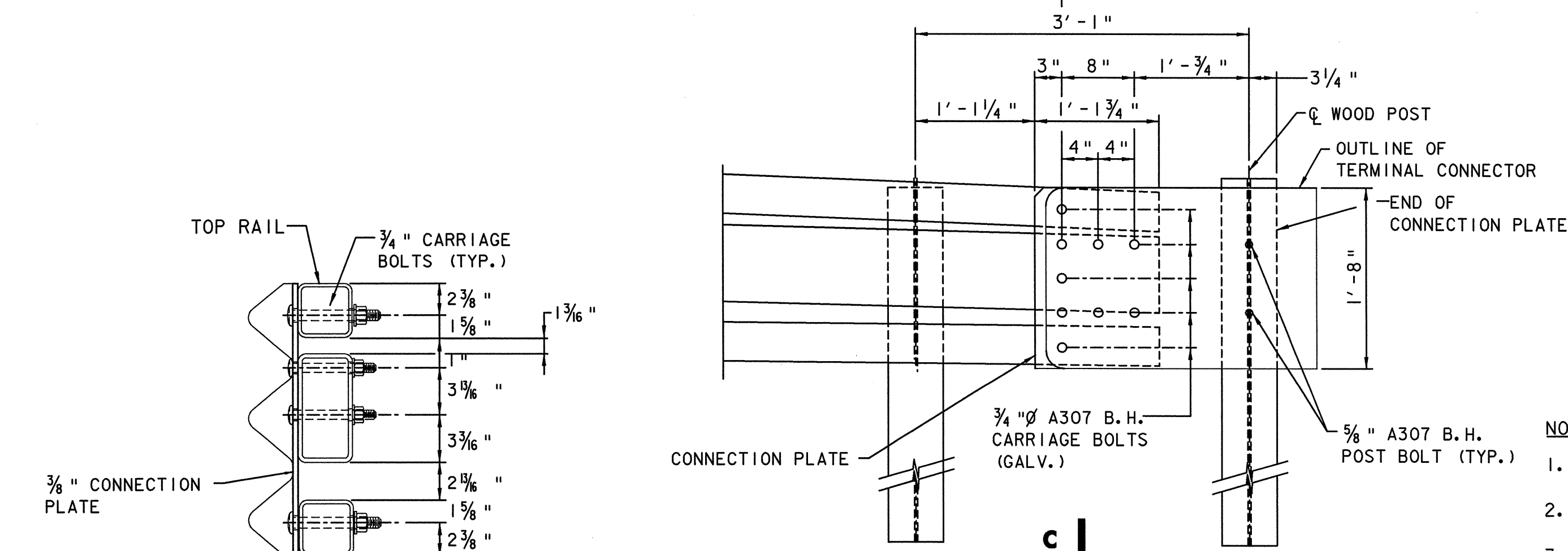
SCALE: $\frac{1}{2}'' = 1' - 0''$



SCALE: $1\frac{1}{2}'' = 1'-0''$



SCALE: 1" = 1'-0"



SCALE: 1" = 1'-0"

SCALE: 1" = 1'-0"

SCALE: 1" = 1' - 0"

1. FOR NOTES SEE SHEET 24.
2. SEE EXISTING PLANS FOR LOCATION OF WINGWALL.
3. SEE SHEET 26 FOR BRIDGE AND APPROACH RAIL LAYOUT.

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of SOUTH BURLINGTON	Bridge No. 68
Highway No. U.S. 2	Log Sta.
	Surv. Sta.

U.S. 2 OVER I-89

GUARD RAIL APPROACH SECTION, N.E.T.C. 4 RAIL

Designed By VAOT	Drawn By C. J. CILLEY
---------------------	--------------------------

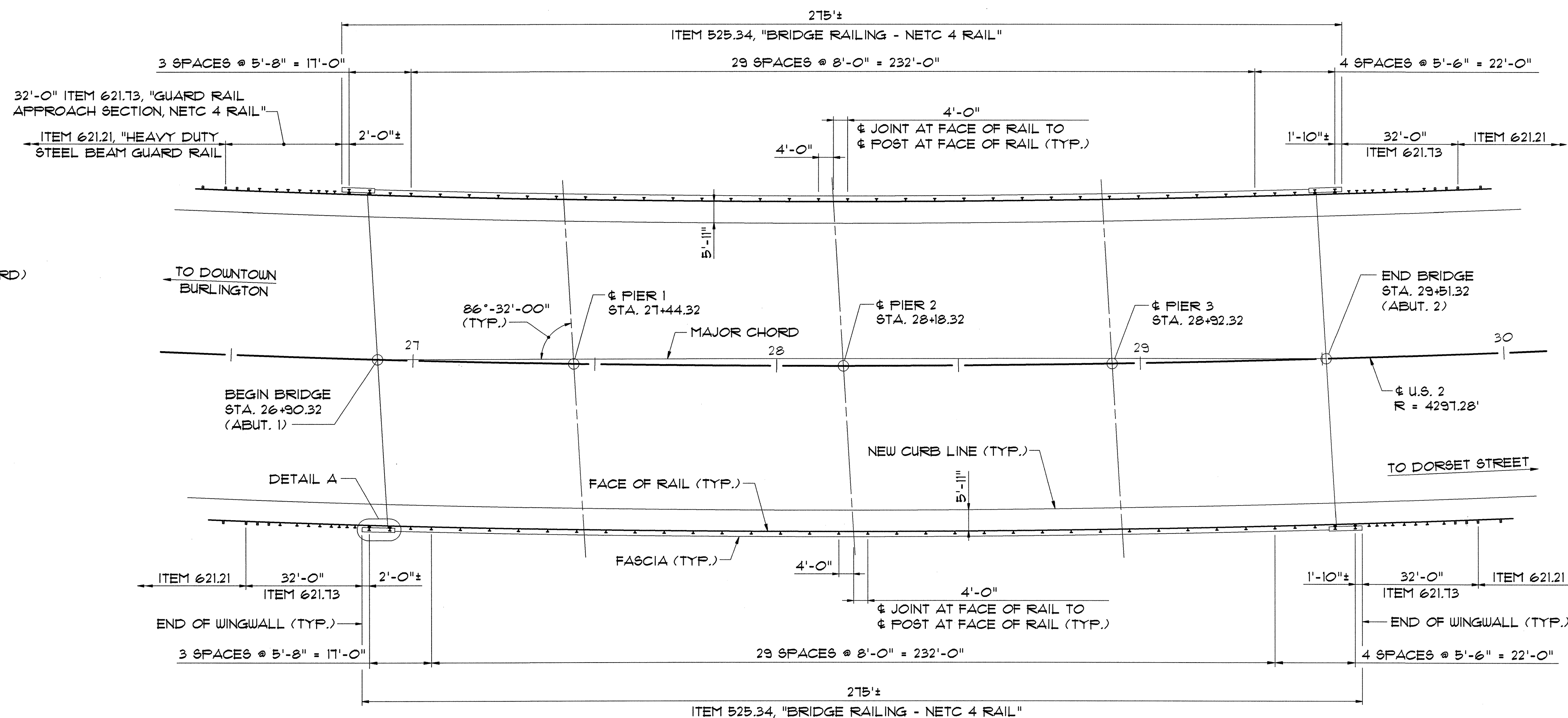
Checked By VAOT	Date 1/20	C. L. CILLEY Bridge Design Supervisor
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VAOT	I/00	Date
Project	Project No.	

SOUTH BURLINGTON	IM DECK (36)
VIR. Card Drawing No. BB-122	Date: 1/1/99

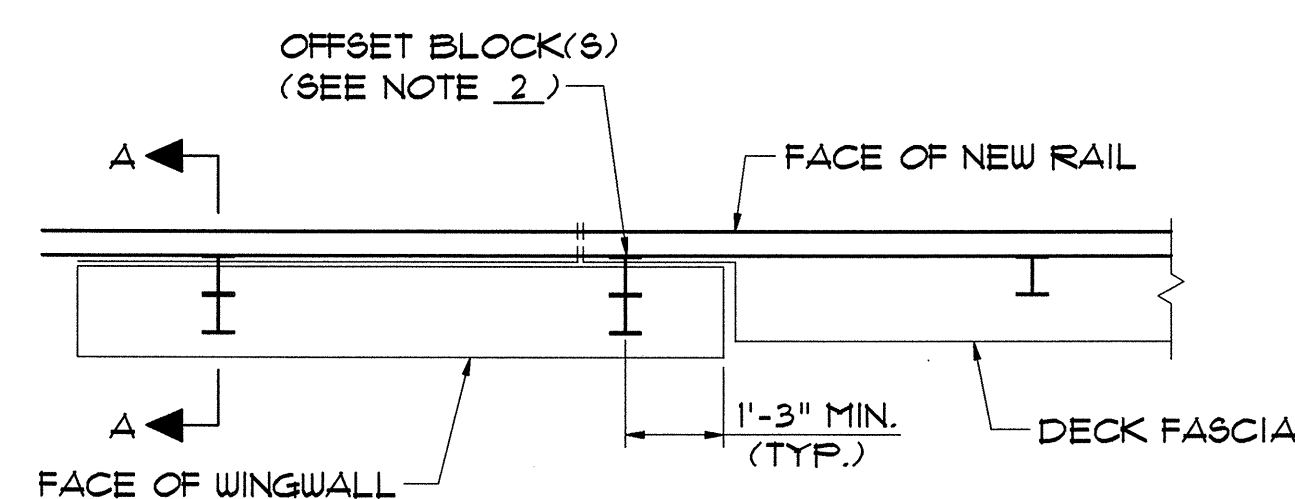
VHB Cad Drawing No. BR-122	Date 1/00
Bridge Sheet No.	Sheet 25 of 75

U.S. ROUTE 2
 $\Delta = 9^{\circ}-11'-00''$ LT.
 $D = 1^{\circ}-20'-00''$
 $R = 4297.28'$ (CHORD)
 $T = 345.12'$
 $L = 688.75'$
 $E = 13.84'$



PLAN

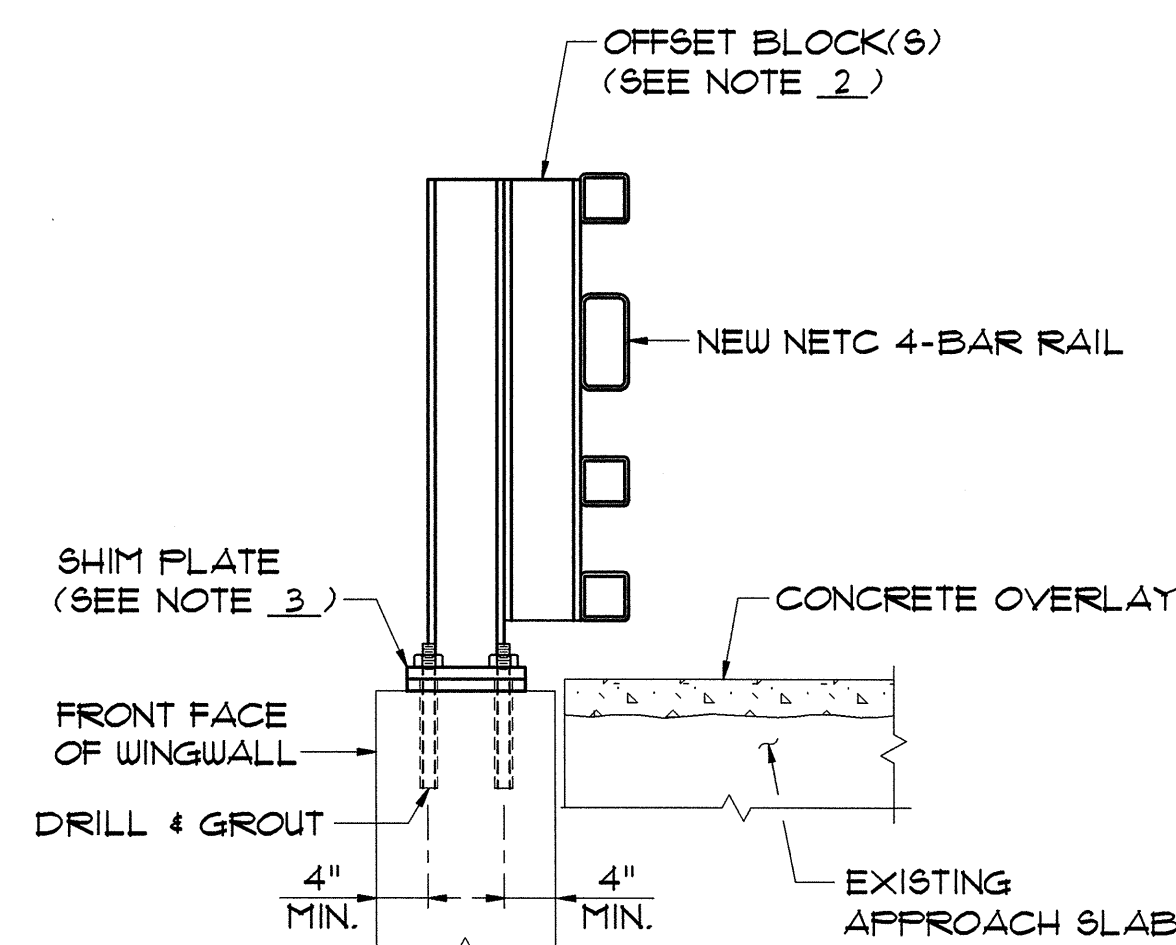
SCALE: 1"=20'



DETAIL A

TYPICAL RAIL TREATMENT AT WINGWALL

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



SECTION A-A

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

NOTES:

1. THE BRIDGE RAIL LAYOUT SHOWN IS BASED ON INFORMATION FROM EXISTING PLANS. THE CONTRACTOR SHALL VERIFY THE PROPOSED BRIDGE RAIL LAYOUT PRIOR TO THE FABRICATION OF BRIDGE RAIL.
2. NEW BRIDGE RAIL POSTS ON EXISTING WINGWALLS SHALL INCLUDE OFFSET BLOCK(S) TO ACCOMMODATE THE PROPOSED FACE OF RAIL. THE CONFIGURATION OF THE OFFSET BLOCK(S) SHALL BE DETERMINED FROM FIELD MEASUREMENTS. DETAILS SHALL BE INCLUDED IN THE BRIDGE RAIL SHOP DRAWINGS. NEW RAIL POSTS SHALL BE POSITIONED ON EXISTING WINGWALLS SO THAT THE RAIL POST ANCHOR BOLTS ARE AT LEAST 4 INCHES AWAY FROM THE FRONT FACE AND BACK FACE OF THE EXISTING WINGWALL MASONRY AS SHOWN ON THIS SHEET.
3. NEW BRIDGE RAIL POSTS ON EXISTING WINGWALLS REQUIRE A SINGLE SHIM PLATE BETWEEN THE 1/8" BEARING PAD AND THE RAIL POST BASE PLATE. THE SHIM PLATE THICKNESS SHALL BE DETERMINED FROM FIELD MEASUREMENTS BASED ON THE INCREASE IN FINISHED GRADE OF THE SIDEWALK AND THE EXISTING ELEVATION OF THE WINGWALL. ANCHOR BOLT LENGTHS FOR POSTS ON WINGWALLS SHALL BE ADJUSTED TO COMPENSATE FOR SHIM PLATE THICKNESS.
4. DRILLING AND GROUTING OF ANCHOR BOLTS INTO THE EXISTING WINGWALL MASONRY SHALL BE PAID AS ITEM 507.16, "DRILLING AND GROUTING DOUELS."
5. SEE SHEET 24 FOR ADDITIONAL NOTES AND DETAILS.

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of SOUTH BURLINGTON Bridge No. 68
 Highway No. U.S. 2 Log Sta.
 Surv. Sta.

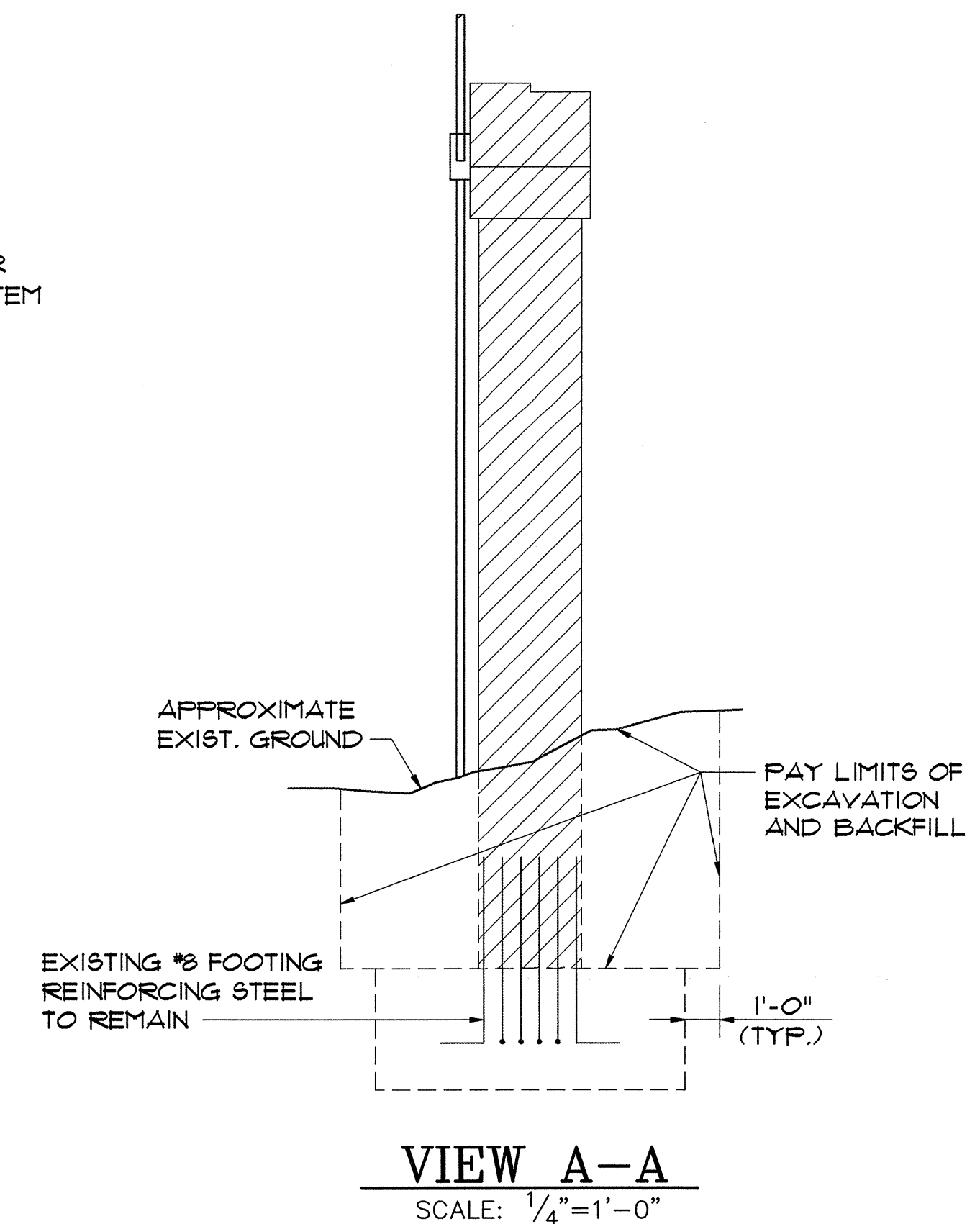
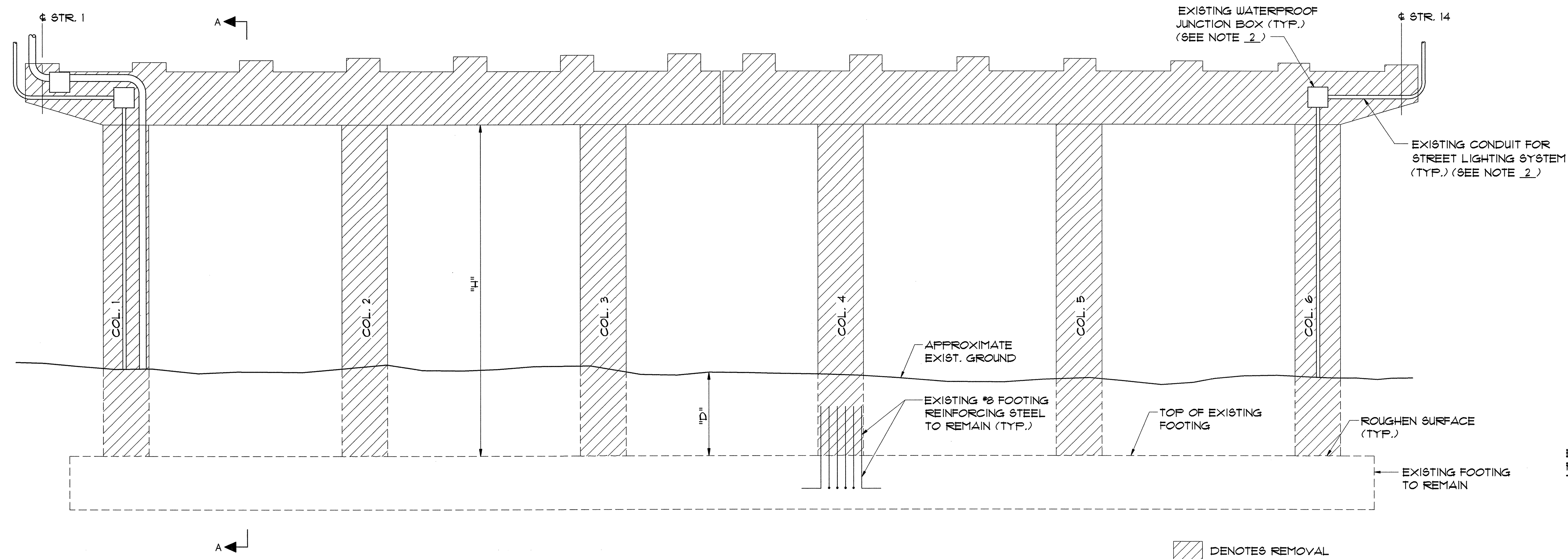
U.S. 2 OVER I-89

BRIDGE RAIL LAYOUT

Designed By T.S. BRYANT Drawn By B.J. MASSE
 Checked By S.M. HODGDON 1/00 Date 1/00
 Bridge Design Supervisor C.D. BAKER

PROJECT SOUTH BURLINGTON PROJECT NO. IM DECK (36)
 VHB Cad Drawing No. 50929BRL Date 1/00
 Bridge Sheet No. Sheet 26 of 15

VANASSE HANGEN BRUSTLIN, INC.



TYPICAL EXISTING PIER REMOVAL

(PIER 1, ABUTMENT 1 SIDE, SHOWN - OTHER PIERS SIMILAR)

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

COLUMN HEIGHT "H"	PIER 1	PIER 2	PIER 3
COLUMNS 1 THRU 6	21'-9"	20'-6"	23'-3"
EXISTING GROUND TO TOP OF FOOTING AVERAGE DIMENSION, "D"	6'	4'	9'

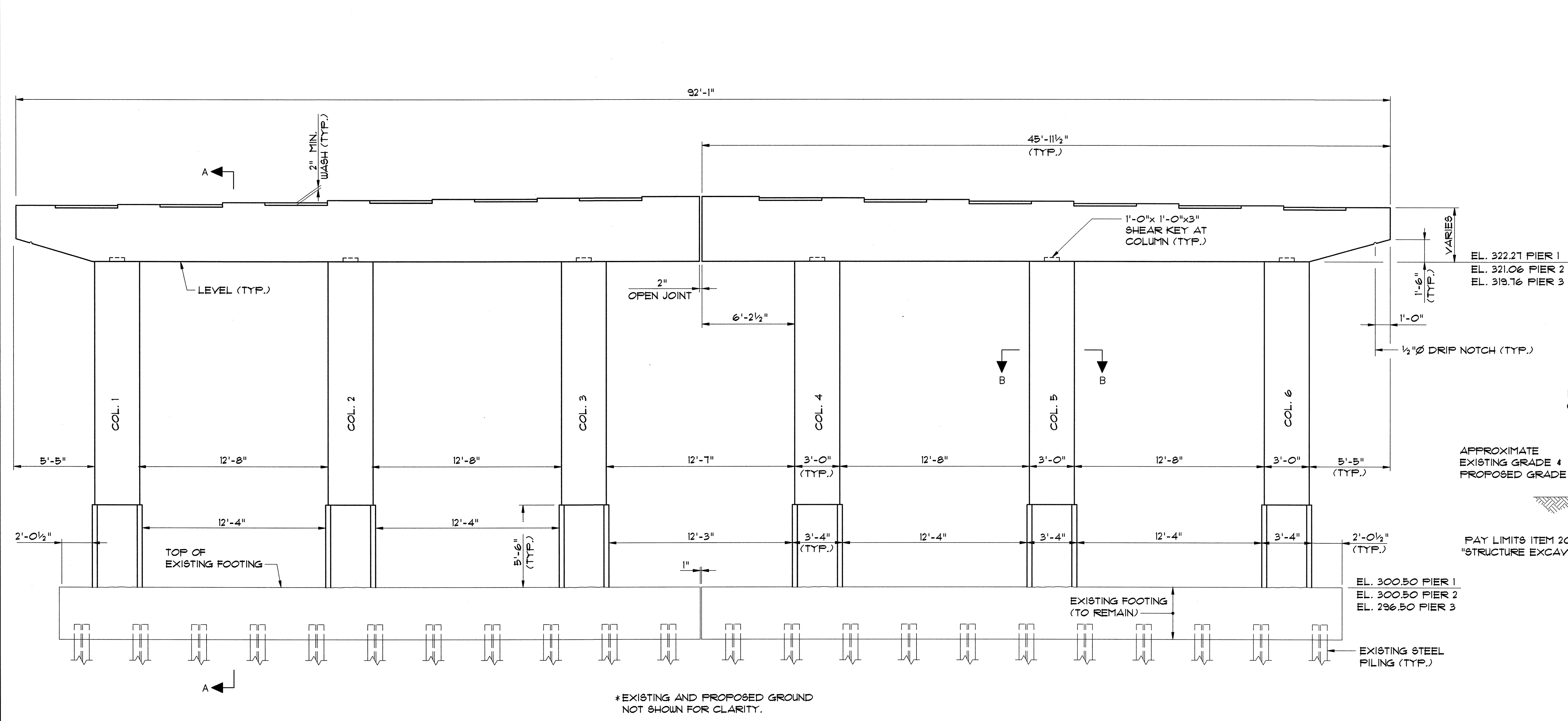
NOTES:

- ALL EXISTING PIER CAPS AND COLUMNS SHALL BE REMOVED TO THE TOP OF FOOTING. EXISTING #8 REINFORCING STEEL THAT EXTENDS FROM THE EXISTING FOOTINGS SHALL BE RETAINED AND CLEANED OF ALL CONCRETE, SCALE, PAINT, OIL AND OTHER FOREIGN SUBSTANCES. ALL PIER REMOVAL WORK SHALL BE PAID UNDER ITEM 523.20, "PARTIAL REMOVAL OF STRUCTURE". SEE SCOPE OF WORK NOTE 10 ON SHEET 1 FOR SUPERSTRUCTURE SHORING REQUIREMENTS.
- EXISTING STREET LIGHTING, CONDUIT AND JUNCTION BOXES ON PIERS 1 AND 3 SHALL BE TEMPORARILY RELOCATED DURING REMOVAL AND RECONSTRUCTION OF THE PIERS. SEE SCOPE OF WORK NOTE 15 ON SHEET 1.
- EXCAVATION REQUIRED TO REMOVE THE SECTIONS OF THE EXISTING PIERS AND RECONSTRUCT PIERS SHALL BE PAID AS ITEM 204.25, "STRUCTURE EXCAVATION".
- DRIVE TEMPORARY SHEET PILING 1' MIN. OUTSIDE THE EDGE OF THE PIER 1 AND PIER 3 FOOTINGS ON THE I-89 SIDE TO AVOID DAMAGE TO THE EXISTING GUARDRAIL AND ROADWAY FROM THE EXCAVATION REQUIRED FOR PIER WORK. IN THE EVENT THAT THE REMOVAL OF GUARDRAIL ADJACENT TO THE PIERS IS REQUIRED IN ORDER TO PERFORM THE PIER WORK, THE REMOVAL AND REPLACEMENT OF GUARDRAIL SHALL BE PAID AS ITEM 621.15, "REMOVING AND RESET GUARD RAIL." ITEM 621.90, "TEMPORARY TRAFFIC BARRIER" SHALL BE PLACED AS DIRECTED BY THE ENGINEER TO COMPENSATE FOR REMOVAL OF THE GUARDRAIL. ANOTHER METHOD OF TEMPORARY EXCAVATION SUPPORT MAY BE USED AT THE CONTRACTOR'S OPTION IF APPROVED BY THE ENGINEER. FOR ALL TEMPORARY EXCAVATION SUPPORT METHODS USED, THE CONTRACTOR SHALL SUBMIT DETAILS AND CALCULATIONS PREPARED BY A REGISTERED PROFESSIONAL ENGINEER TO THE STRUCTURES ENGINEER FOR INFORMATION ONLY AT LEAST TWO WEEKS PRIOR TO PERFORMING THE WORK. THE DESIGN LIVE LOAD SHALL BE HS20. ALL COSTS FOR TEMPORARY EXCAVATION SUPPORT AT PIERS 1 AND 3 SHALL BE INCLUDED IN ITEM 505.36, "TEMPORARY STEEL SHEET PILING".
- COLUMN HEIGHTS AND EXISTING GROUND TO TOP OF FOOTING DIMENSIONS SHOWN IN THE TABLE ARE BASED ON EXISTING PLAN INFORMATION AND LIMITED FIELD MEASUREMENTS AND ARE APPROXIMATE.

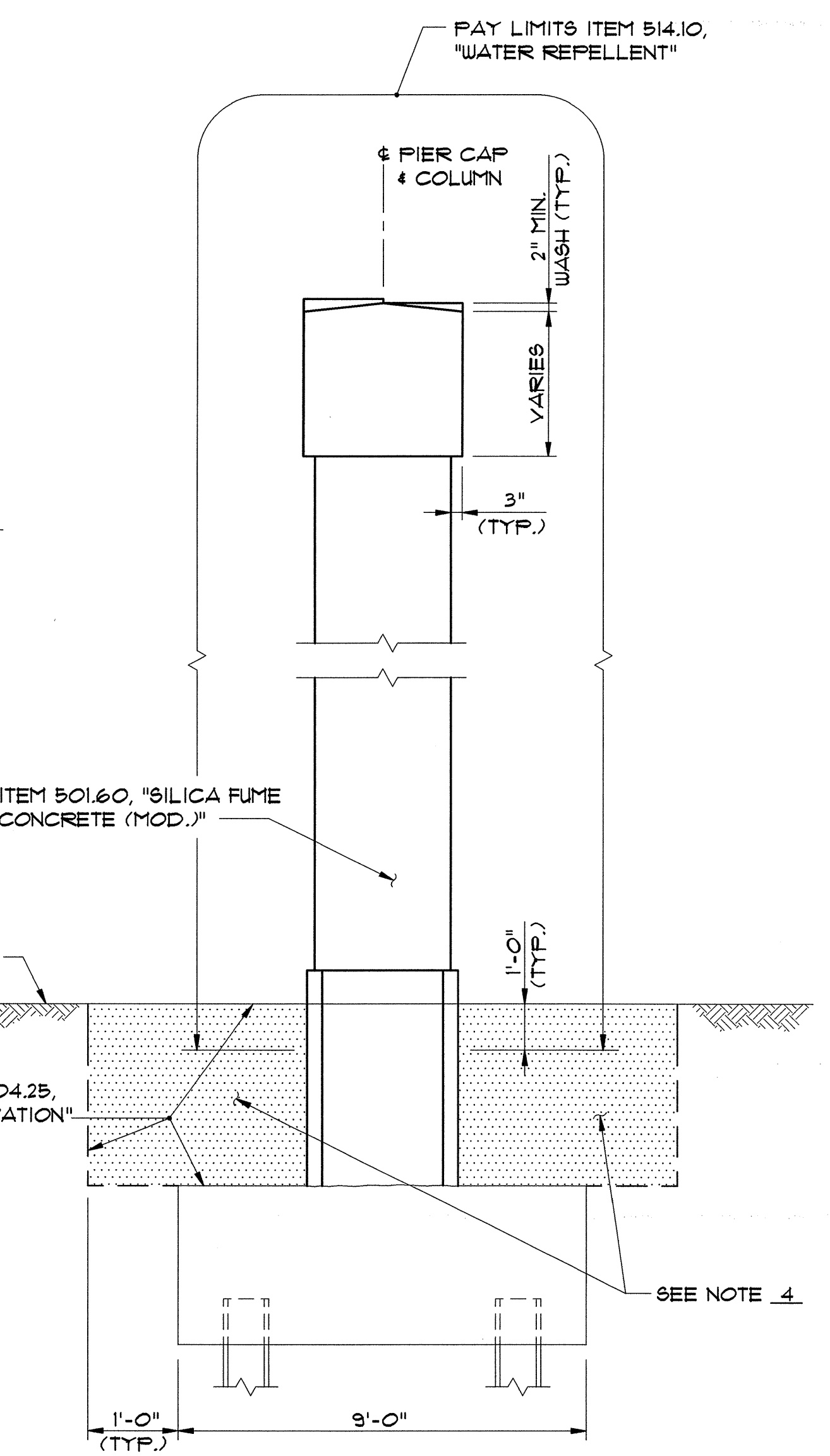
STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
EXISTING PIER REMOVAL			
Designed By	A. SETAS	Drawn By	B.J. MASSE
Checked By	T.S. BRYANT	Date	1/00
		Bridge Design Supervisor	C.D. BAKER Date 1/00
PROJECT	SOUTH BURLINGTON		
	IM DECK (36)		
VHB Cad Drawing No.	50323PREM	Date	1/00
Bridge Sheet No.		Sheet	28 of 75

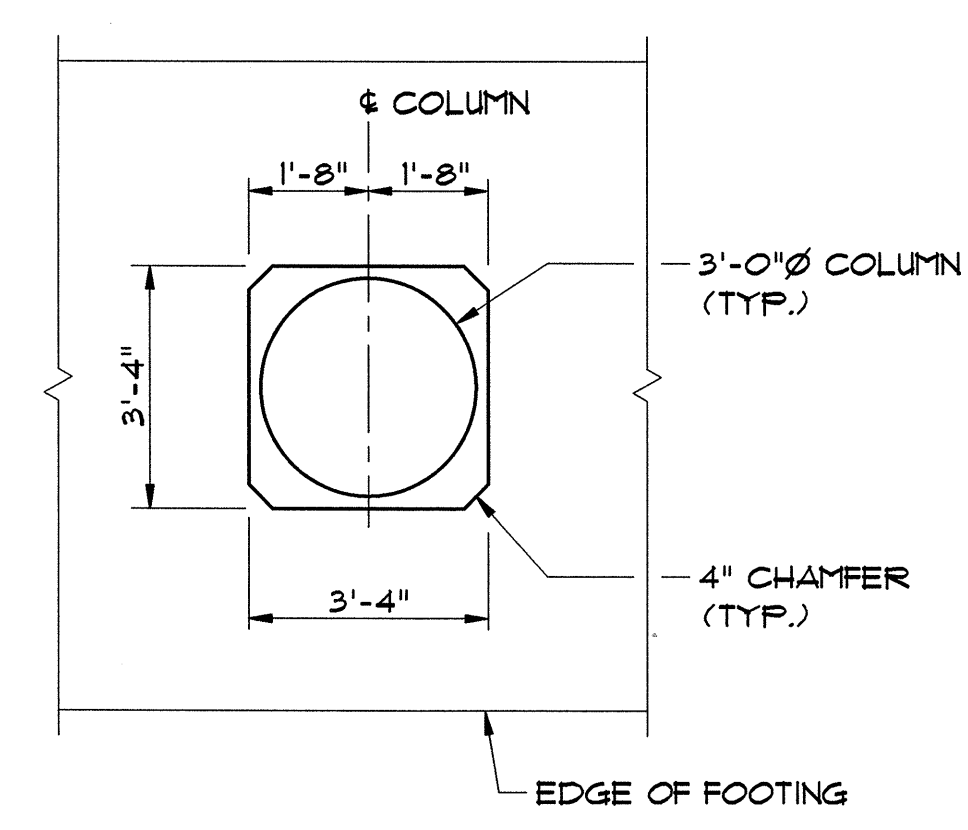
VANASSE HANGEN BRUSTLIN, INC.



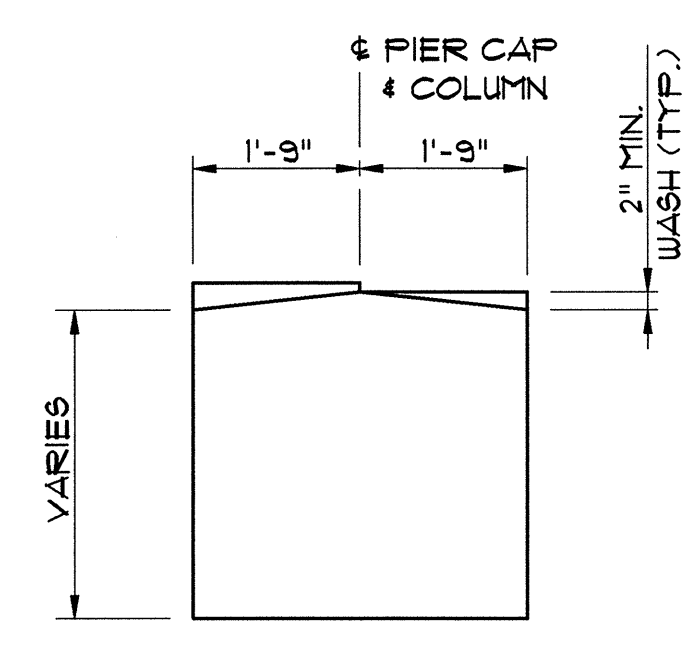
TYPICAL PIER ELEVATION*
(PIER 2, PIER 1 SIDE, SHOWN - OTHER PIERS SIMILAR)
SCALE: 1/4" = 1'-0"



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



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



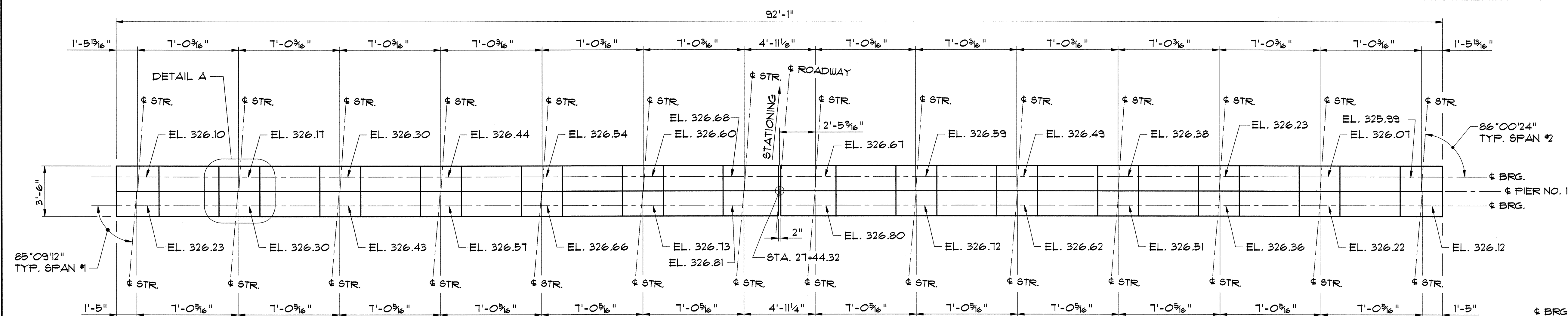
PIER CAP MASONRY
SCALE: 1/2" = 1'-0"

PIER QUANTITIES

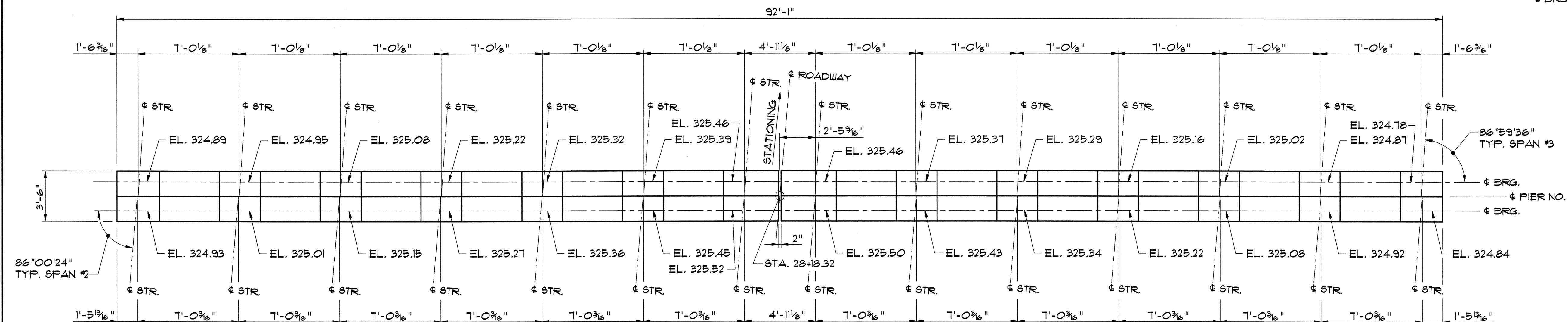
	PIER 1	PIER 2	PIER 3
CONCRETE	85 CY	85 CY	90 CY
REINFORCING STEEL	25385 LBS	25254 LBS	25601 LBS

- NOTES:**
1. REINFORCING STEEL IN THE PIERS SHALL HAVE 4" MINIMUM CLEAR COVER UNLESS OTHERWISE NOTED.
 2. SEE SHEETS 22 AND 23 FOR PIER BEARING ANCHOR BOLT LOCATIONS.
 3. SEE SHEET 30 FOR PIER CAP FLANS.
 4. BACKFILL WITH EXISTING MATERIAL REMOVED (SUBSIDIARY TO ITEM 204.25) UNLESS ORDERED BY THE ENGINEER TO USE ITEM 204.30, "GRANULAR BACKFILL FOR STRUCTURES".

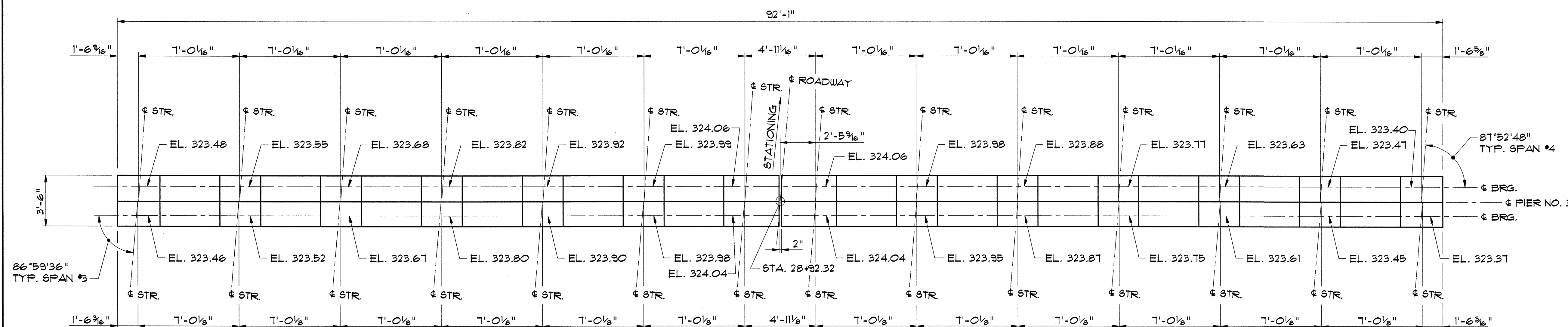
STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of SOUTH BURLINGTON	Bridge No. 68
Highway No. U.S. 2	Log Sta. Surv. Sta.
U.S. 2 OVER I-89	
PIER MASONRY	
Designed By A. SETAS	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 1/00	Bridge Design Supervisor C.D. BAKER Date 1/00
PROJECT SOUTH BURLINGTON	PROJECT NO. IM DECK (36)
VHB Cad Drawing No. 50929PM	Date 1/00
Bridge Sheet No.	Sheet 29 of 75



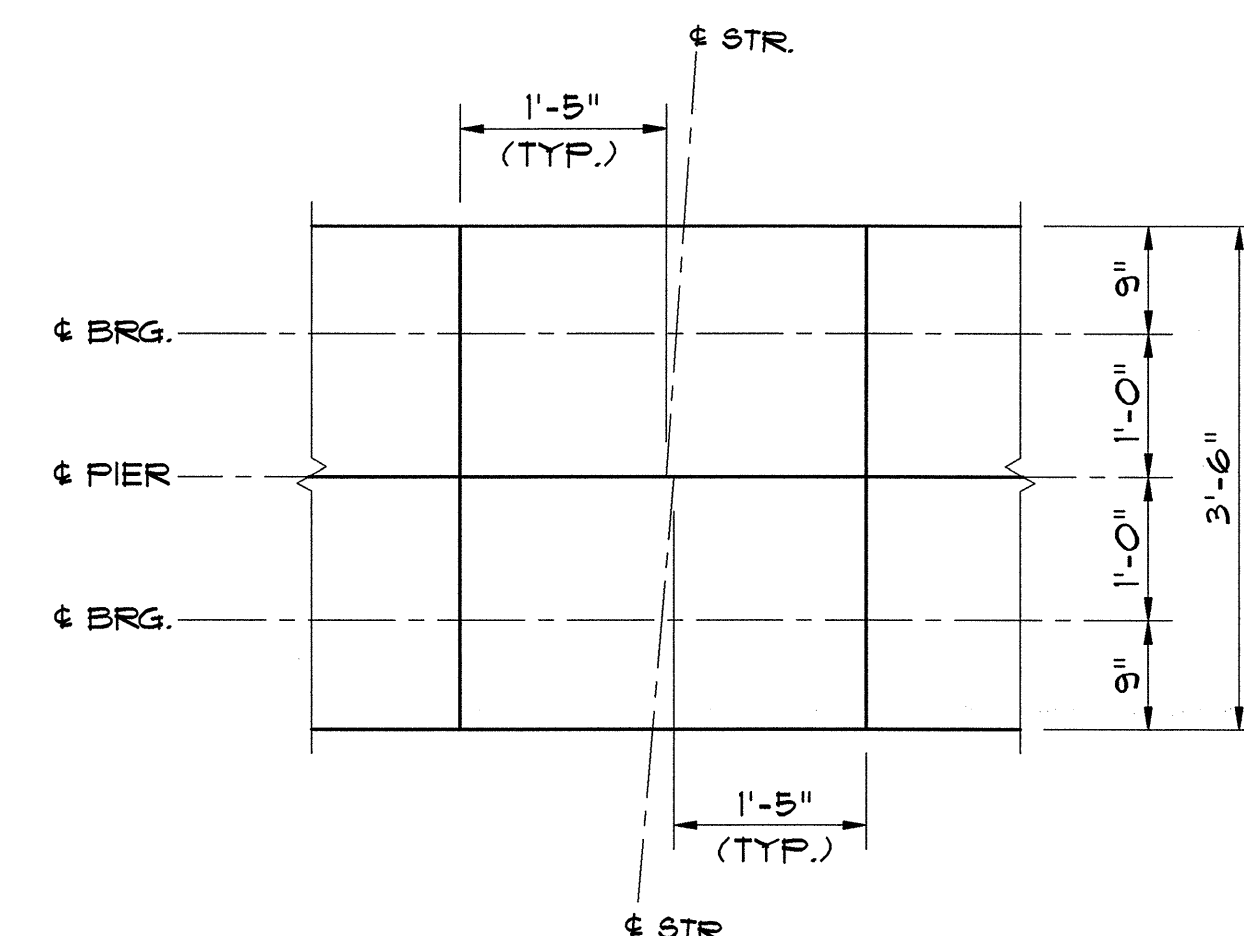
PIER NO. 1 CAP PLAN
SCALE: 1/4" = 1'-0"



PIER NO. 2 CAP PLAN
SCALE: 1/4" = 1'-0"



PIER NO. 3 CAP PLAN
SCALE: 1/4" = 1'-0"



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

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of SOUTH BURLINGTON Bridge No. 68
Highway No. U.S. 2 Log Sta.
Surv. Sta.

U.S. 2 OVER I-89

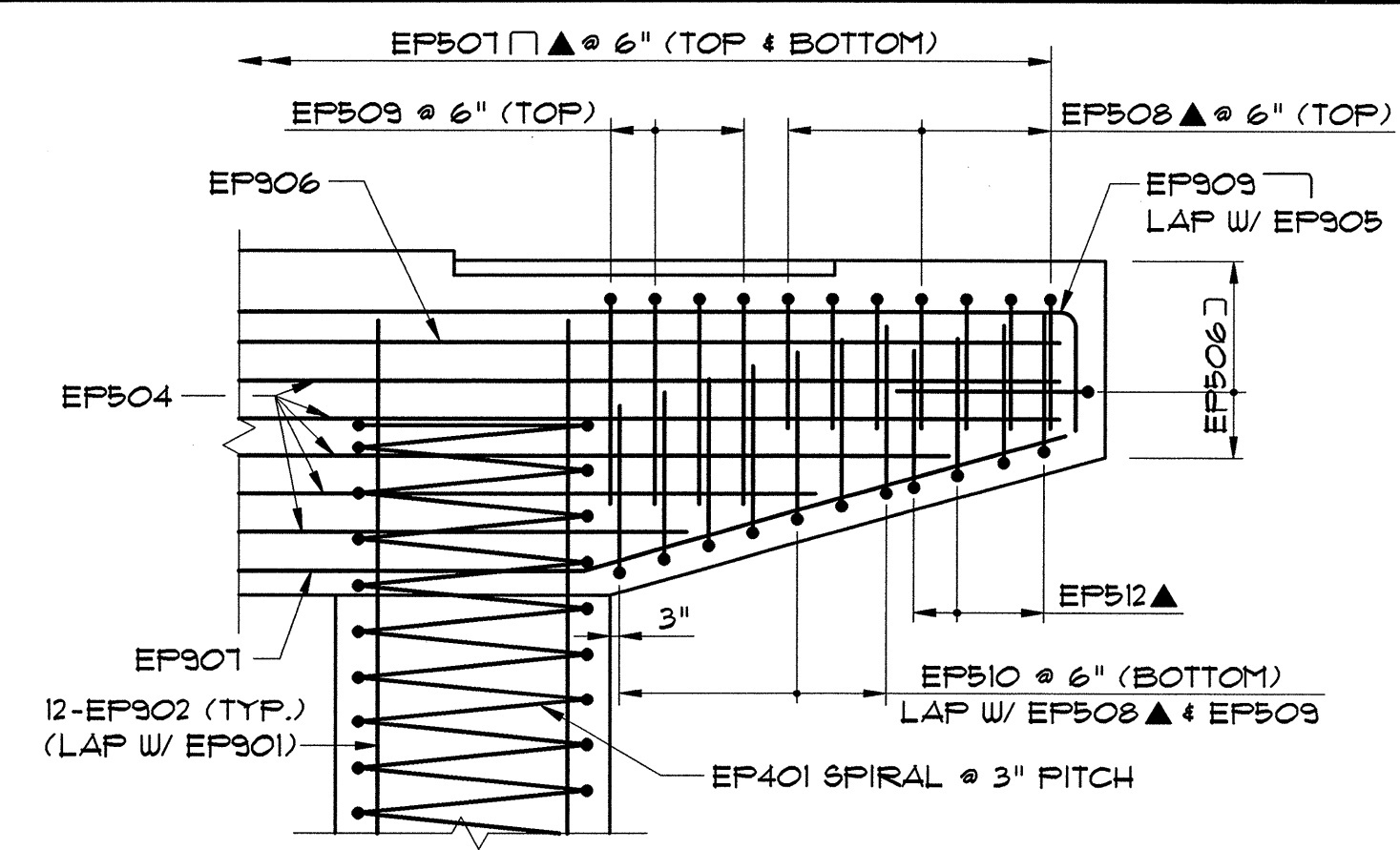
PIER CAP PLAN

Designed By S.M. HODGDON Drawn By B.J. MASSE
Checked By Date Bridge Design Supervisor
T.S. BRYANT 1/00 C.D. BAKER Date 1/00

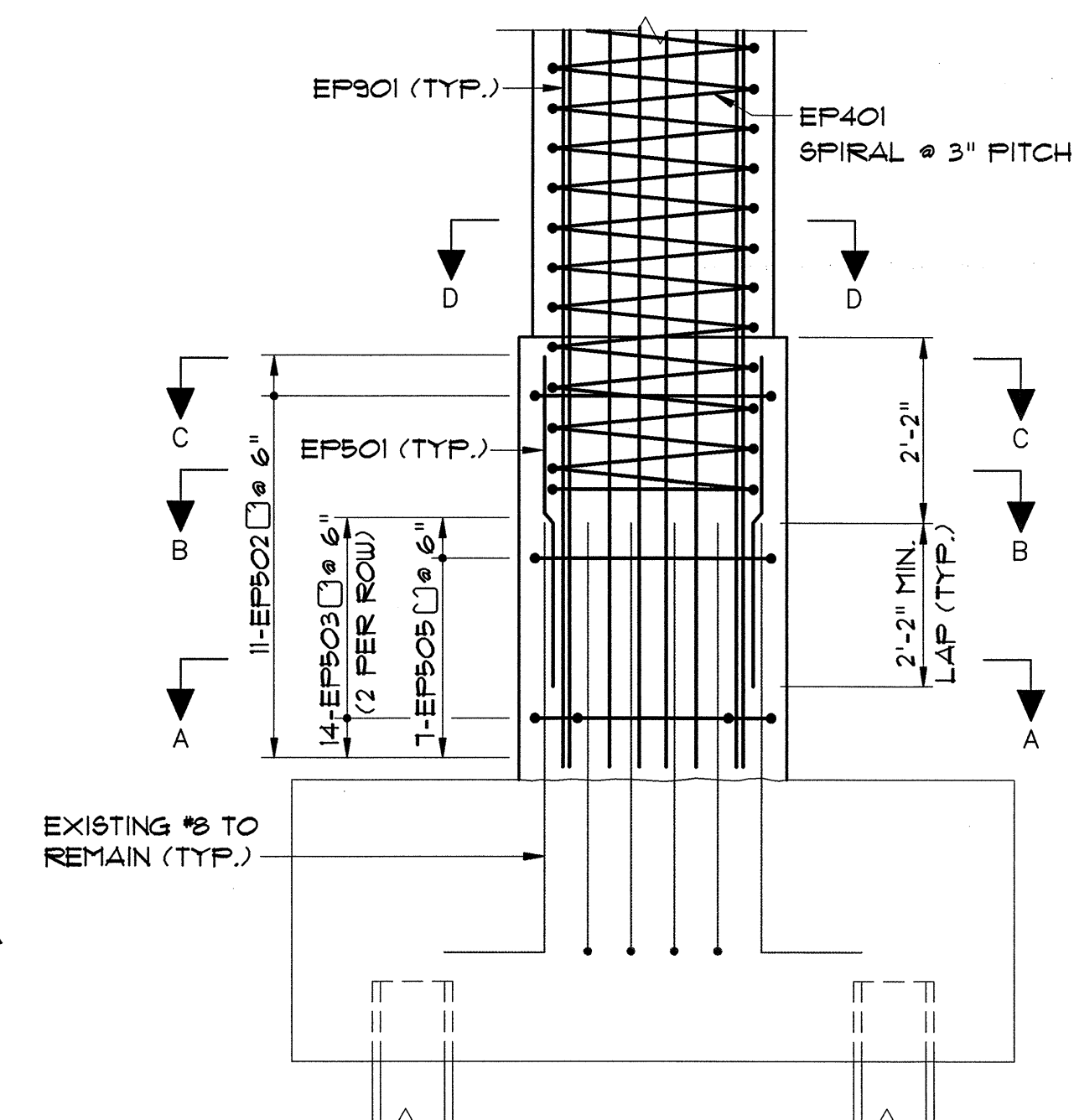
PROJECT SOUTH BURLINGTON PROJECT NO.
IM DECK (36)

VHB Cad Drawing No. 50929FRPL Date 1/00
Bridge Sheet No. Sheet 30 of 75

VANASSE HANGEN BRUSTLIN, INC.

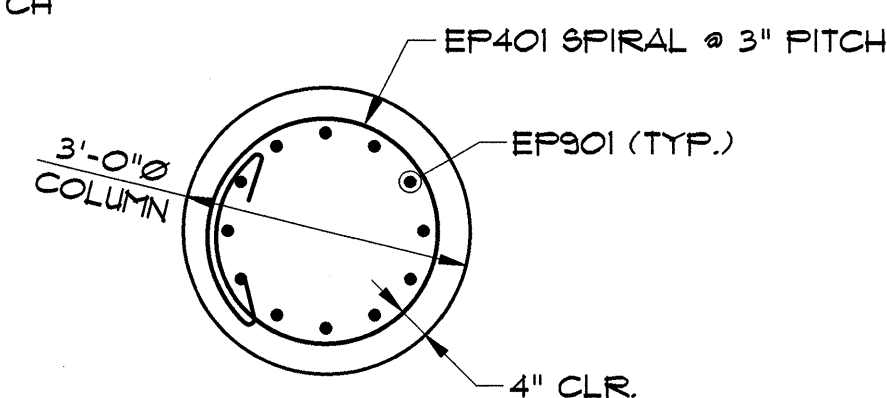


PIER CAP PLAN
SCALE: 1/4" = 1'-0"

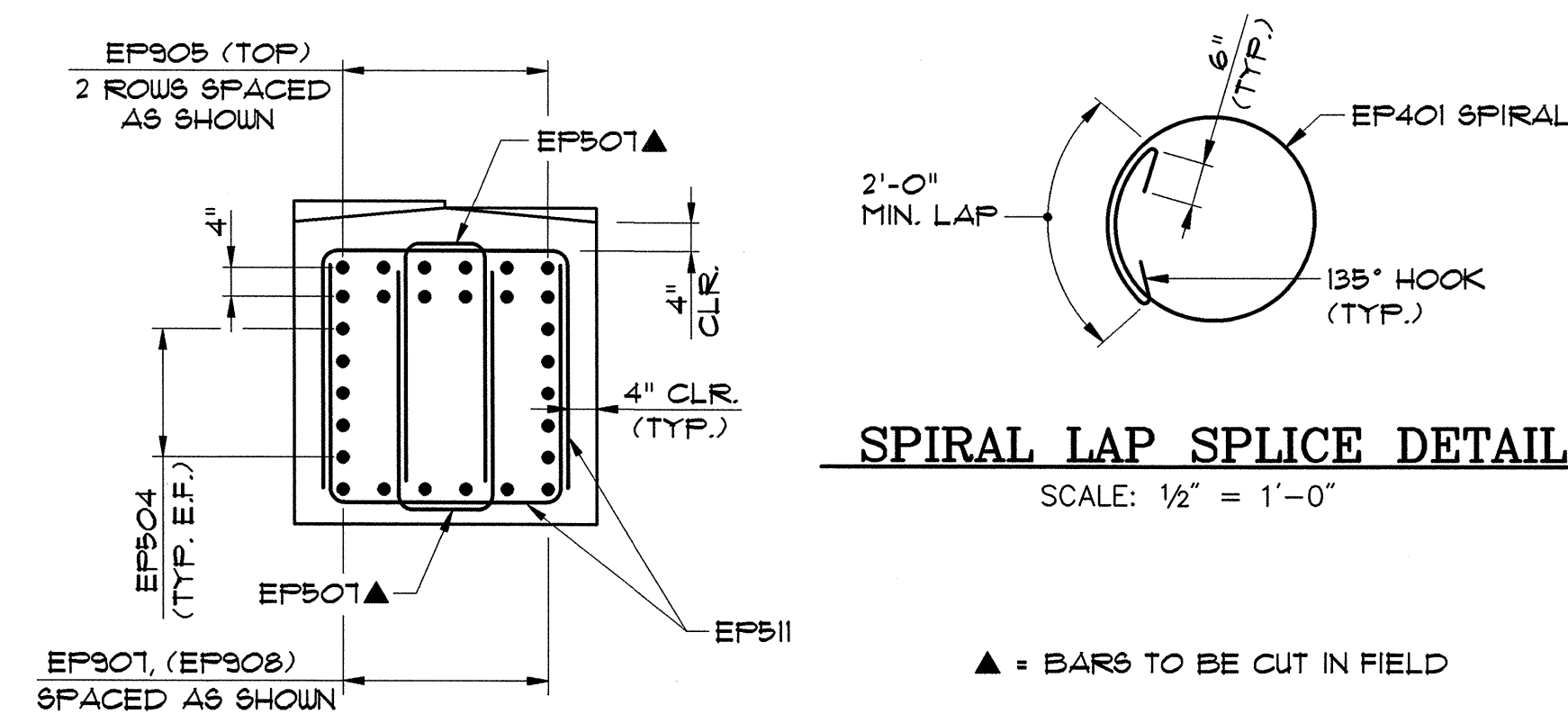


SECTION G-G
SCALE: $\frac{1}{2}" = 1'-0"$

TYPICAL PIER REINFORCEMENT
SCALE: 1/4" = 1'-0"



SECTION D-D
SCALE: $\frac{1}{2}'' = 1'-0''$

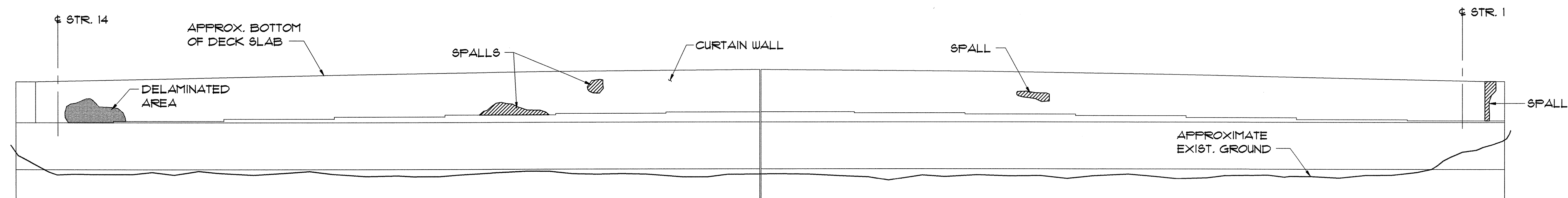


▲ = BARS TO BE CUT IN FIELD

1. NO LAP SPLICES IN THE COLUMN SPIRAL REINFORCEMENT SHALL BE ALLOWED WITHIN THE LIMITS SHOWN. ALL COLUMN SPIRAL REINFORCEMENT LAP SPLICES SHALL BE AS SHOWN ON SPIRAL LAP SPLICE DETAIL.
2. NOTE NOT USED.
3. SEE BRIDGE SHEET 9 FOR REINFORCEMENT NOTES.
4. SEE BRIDGE SHEETS 22 AND 23 FOR BEARING ANCHOR BOLTS LAYOUT.

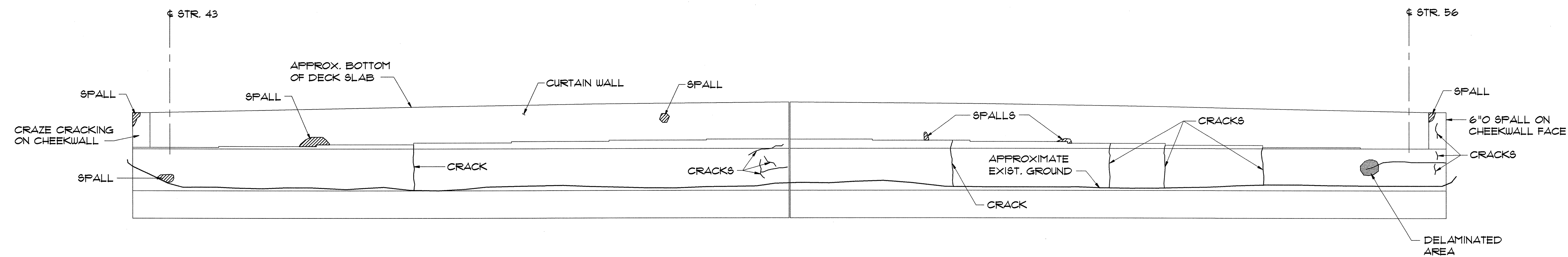
	PROJECT SOUTH BURLINGTON	PROJECT NO. IM DECK(36)
C.	VHB Cad Drawing No. 50929PREF	Date 1/00
	Bridge Sheet No.	Sheet 31 of 75

VANASSE HANGEN BRUSTLIN, INC.



ABUT. 1 ELEVATION

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



ABUT. 2 ELEVATION

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

KEY:

- DELAMINATED AREAS
- SPALLED AREAS

NOTES:

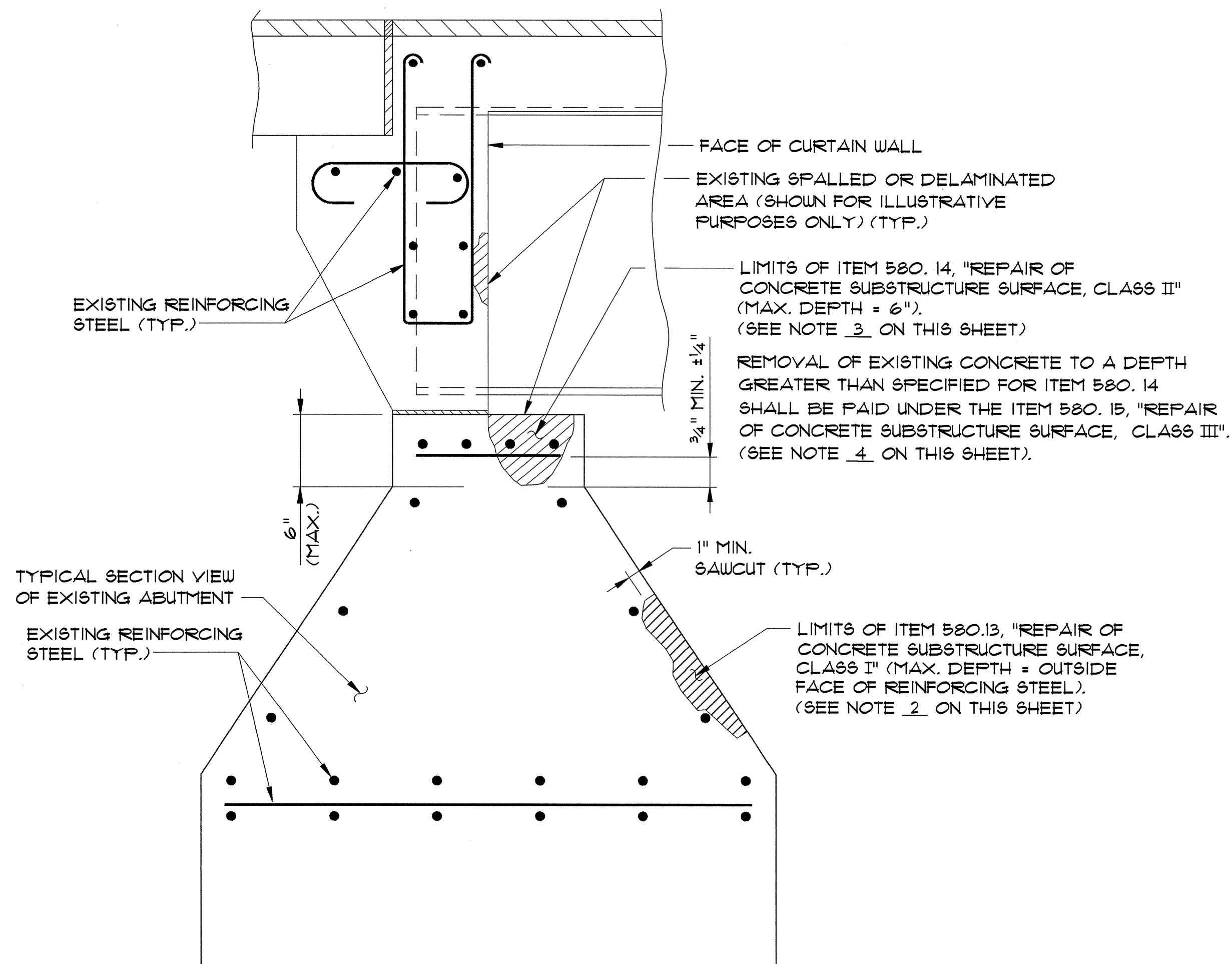
1. ALL DIMENSIONS OF REPAIR AREAS ARE ESTIMATED.

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
ABUTMENT REPAIR AREAS			
Designed By T.S. BRYANT		Drawn By B.J. MASSE	
Checked By A. SETAS		Bridge Design Supervisor C.D. BAKER	
Date 10/99		Date 10/99	
PROJECT SOUTH BURLINGTON		PROJECT NO. IM DECK(36)	
VHB Cad Drawing No. 50929ABR		Date 10/99	
Bridge Sheet No.		Sheet 32 of 75	

VANASSE HANGEN BRUSTLIN, INC.

ABUTMENT REPAIR NOTES:

1. THIS WORK SHALL INCLUDE REMOVAL AND DISPOSAL OF UNSOUND AND DELAMINATED CONCRETE FROM ALL ABUTMENTS, CURTAIN WALLS AND WINGWALLS AS DIRECTED BY THE ENGINEER. THE PREPARED SURFACES SHALL BE THOROUGHLY ABRASIVE BLASTED TO REMOVE ALL LOOSE MATERIAL AND ANY CONTAMINANTS OR EFFLORESCENCE. THE REINFORCING STEEL (IF EXPOSED), SHALL BE ABRASIVE BLASTED. THE MATERIAL USED TO FILL A PATCH SHALL BE PLACED AND FINISHED OR FORMED SO THAT THE FINAL SURFACE WILL HAVE THE SAME SCORE MARKS AND EXTERIOR FACE APPEARANCE AS THE ORIGINAL SURFACES BEING REPAIRED. THE SURFACE SHALL BE THOROUGHLY WETTED PRIOR TO PLACEMENT OF PATCHING MATERIAL OR NEW CONCRETE. IMMEDIATELY PRIOR TO PLACEMENT, THE SURFACE SHALL BE COATED WITH NEAT CEMENT PASTE, MIXED TO THE CONSISTENCY OF THICK LATEX PAINT, AND THOROUGHLY BRUSHED INTO THE SURFACE. WHEN "OVERHEAD AND VERTICAL CONCRETE REPAIR MATERIAL" CONFORMING WITH SUPPLEMENTAL SPECIFICATION SECTION 780.02 IS USED, THE BONDING AGENT (IF ANY REQUIRED) AND ITS APPLICATION PROCEDURE SHALL COMPLY WITH THE REQUIREMENTS OF THE PATCHING MATERIAL MANUFACTURER. PAYMENT FOR BONDING AGENT WILL BE SUBSIDIARY TO ITEM 580.13, 580.14 OR 580.15.
2. THE LIMITS FOR REMOVAL OF CONCRETE UNDER THE ITEM 580.13, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I" SHALL BE FROM THE EXISTING CONCRETE SURFACE TO A MAXIMUM DEPTH OF THE OUTSIDE FACE OF THE REINFORCING STEEL. ALL WORK AND MATERIALS NECESSARY FOR PREPARING A PATCH AND FILLING IT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 580.13, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I". THE FILLING MATERIAL SHALL BE "CONCRETE CLASS AA", OR OVERHEAD AND VERTICAL CONCRETE REPAIR MATERIAL" CONFORMING WITH SUPPLEMENTAL SPECIFICATION SECTION 780.02. THE EDGES OF ALL PATCHES SHALL BE SAW CUT IN STRAIGHT LINES TO A MINIMUM DEPTH OF 1 INCH. IF MORE THAN 1/4 OF THE REBAR IS EXPOSED OR THE BOND BETWEEN THE REINFORCING STEEL AND THE CONCRETE IS BROKEN, THEN PROCEED TO ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II".
3. THE LIMITS FOR REMOVAL OF CONCRETE UNDER THE ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II" SHALL BE FROM THE EXISTING CONCRETE SURFACE TO A MINIMUM DEPTH OF 3/4" +/- 1/4" INSIDE THE INSIDE FACE OF REINFORCING STEEL AND TO A MAXIMUM DEPTH OF 6" FROM THE EXISTING CONCRETE SURFACE. ALL WORK AND MATERIALS NECESSARY FOR PREPARING A PATCH AND FILLING IT, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II". THE FILLING MATERIAL MAY BE EITHER "OVERHEAD AND VERTICAL CONCRETE REPAIR MATERIAL" CONFORMING WITH SUPPLEMENTAL SPECIFICATION SECTION 780.02, OR "CONCRETE CLASS AA", (SEE SPECIAL PROVISIONS). THE EDGES OF ALL PATCHES SHALL BE SAW CUT IN STRAIGHT LINES TO A MINIMUM DEPTH OF 1 INCH.
4. THE LIMITS FOR REMOVAL OF CONCRETE UNDER THE ITEM 580.15 "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS III" SHALL BE FROM THE EXISTING CONCRETE SURFACE TO A DEPTH OF GREATER THAN 6". ALL WORK AND MATERIALS NECESSARY FOR PREPARING A PATCH AND FILLING IT, SHALL INCLUDED IN THE UNIT PRICE BID FOR ITEM 580.15, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III". THE FILLING MATERIAL MAY BE EITHER "CONCRETE CLASS AA", "CONCRETE CLASS A", OR "CONCRETE CLASS B". THE EDGES OF ALL PATCHES SHALL BE SAWCUT IN STRAIGHT LINES TO A MINIMUM DEPTH OF 1 INCH.
5. PNEUMATICALLY APPLIED CONCRETE SHALL NOT BE USED FOR REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II OR III.
6. SEE THE "BEARING REPAIR NOTES", SHEET 18 FOR OTHER INFORMATION REGARDING REPAIR OF BRIDGE SEAT SURFACES AT ABUTMENTS.
7. DUPLICATE PAYMENT WILL NOT BE MADE FOR PREPARATION OF CONCRETE SURFACES IN ANY AREA. FOR EXAMPLE, IF AN AREA IS ORIGINALLY PREPARED AS CLASS I AND THE ENGINEER ORDERS A CHANGE TO CLASS II DEPTH, THE AREA IN QUESTION WILL ONLY BE PAID AS CLASS II.



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

NTS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	

U.S. 2 OVER I-89

ABUTMENT REPAIR NOTES

Designed By	T.S. BRYANT	Drawn By	B.J. MASSE
Checked By	A. SETAS	Date	1/00
		Bridge Design Supervisor	C.D. BAKER Date 1/00

PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK (36)
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VHB Cad Drawing No.	50929REM1	Date	1/00
Bridge Sheet No.		Sheet	33 of 75

VANASSE HANGEN BRUSTLIN, INC.

TRAFFIC CONTROL PLAN NOTES

1. TRAFFIC IS TO BE CONTROLLED AND MAINTAINED AT ALL TIMES AS SPECIFIED IN THE TRAFFIC CONTROL PLAN.
2. THE CONTRACTOR SHALL RETAIN A PUBLIC RELATIONS OFFICER TO PROVIDE TRAVEL INFORMATION TO THE PUBLIC THROUGHOUT THE CONSTRUCTION OF THIS PROJECT. SEE SPECIAL PROVISIONS. THIS SHALL BE PAID UNDER ITEM 641.10, "TRAFFIC CONTROL (MOD. - PUBLIC RELATIONS OFFICER)".
3. TRAFFIC CONTROL MEASURES WILL NOT BE PERMITTED BETWEEN NOVEMBER 1 AND APRIL 15, UNLESS OTHERWISE APPROVED BY THE ENGINEER. IN ADDITION, ONCE TRAFFIC CONTROL DEVICES HAVE BEEN INSTALLED THE CONTRACTOR SHALL BEGIN ASSOCIATED CONSTRUCTION WORK IMMEDIATELY, AND PROCEED IN A TIMELY MANNER THROUGH COMPLETION IN ORDER TO MINIMIZE INCONVENIENCE TO THE TRAVELING PUBLIC.
4. ALL PRIVATE VEHICLES BELONGING TO THE CONTRACTOR'S WORK CREWS SHALL NOT BE PARKED ON THE INTERSTATE RIGHT-OF-WAY NOR ON THE TRAVELLED WAY OF ANY OTHER ROAD.
5. SIGNS, BARRICADES, AND OTHER TRAFFIC CONTROL DEVICES SHALL BE CLEANED WEEKLY. ALSO, ALL EXISTING SIGNS WHICH CONTRADICT TEMPORARY TRAFFIC CONTROL SIGNING MUST BE COVERED OR REMOVED (AND REPLACED AFTER CONSTRUCTION COMPLETION). COST FOR THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 641.10, "TRAFFIC CONTROL".
6. FLASHING ARROW PANELS SHALL BE PAID UNDER ITEM 641.16, "PORTABLE ARROW BOARD", AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE PAID UNDER ITEM 641.15, "PORTABLE CHANGEABLE MESSAGE SIGN". PAYMENT FOR TRAFFIC CONTROL SIGNS, PLASTIC DRUMS, DELINEATORS, AND TYPE III BARRICADES SHALL BE UNDER 641.10, "TRAFFIC CONTROL". PAYMENT SHALL INCLUDE ALL NECESSARY MAINTENANCE AND REPAIRS TO THESE TRAFFIC CONTROL DEVICES ON A DAILY BASIS. THE ENGINEER MAY ADD TRAFFIC CONTROL SIGNS AS NECESSARY. ADDITIONAL SIGNS, INCLUDING POSTS AND FOUNDATIONS, SHALL BE PAID FOR AS EXTRA WORK, IN ACCORDANCE WITH SECTION 109.06.
7. ENERGY ABSORPTION ATTENUATORS WILL BE REQUIRED AT LOCATIONS INDICATED IN THE TRAFFIC CONTROL PLAN AND AS ORDERED BY THE ENGINEER. ATTENUATORS SHOWN IN THE PLANS ARE SYMBOLIC ONLY AND DO NOT REPRESENT THE ACTUAL CONFIGURATION OF THE ATTENUATORS TO BE USED. THE ATTENUATORS SHALL MEET THE REQUIREMENTS OF THE LATEST VERSION OF THE AASHTO "GUIDE FOR SELECTING, LOCATING AND DESIGNING TRAFFIC BARRIERS" AND THE AASHTO "ROADSIDE DESIGN GUIDE". ATTENUATORS SHALL BE DESIGNED FOR 55 MPH AND A 4500 LB. VEHICLE. ATTENUATORS SHALL BE APPROVED BY THE ENGINEER AND PAID FOR UNDER ITEM 621.57. IF ATTENUATORS ARE DAMAGED BY AN ERRANT VEHICLE, COSTS TO THE CONTRACTOR FOR REPLACEMENT OF ANY PART OR ALL OF THE ATTENUATOR SHALL BE PAID AS "EXTRA WORK" PER SECTION 109.06. THE CONTRACTOR SHALL PROVIDE A SPARE FOR EACH TYPE OF ATTENUATOR USED ON THIS PROJECT, FOR THE PURPOSE OF IMMEDIATE REPLACEMENT OF DAMAGED ATTENUATORS. THE COST OF ON-SITE STORAGE OF EXTRA ATTENUATORS SHALL BE PAID AS SPECIFIED IN THE SPECIAL PROVISIONS.
8. 3" DIAMETER FLEXIBLE TUBULAR MARKERS SHALL BE PAID UNDER ITEM 616.20, "DELINEATORS WITH FLEXIBLE POSTS (MOD.)".
9. ALL TEMPORARY CENTERLINE STRIPING (SEPARATING TWO LANES IN THE SAME DIRECTION) SHALL BE ITEM 646.60, "TEMPORARY 4" WHITE LINE (TAPE TYPE II)". IN ADDITION, RAISED PAVEMENT MARKERS (RPM), TYPE II (WHITE) SHALL BE APPLIED ALONG ALL TEMPORARY CENTERLINE STRIPING (SEPARATING TWO LANES IN SAME DIRECTION) AT THE SAME SPACING AS RPM'S ON ADJACENT EDGE LINES, AND SHALL BE PAID FOR UNDER ITEM 646.81. RPM'S ALONG TEMPORARY CENTERLINE STRIPING ARE NOT SHOWN IN THE TRAFFIC CONTROL PLANS FOR CLARITY.
10. AT BRIDGE APPROACHES WHERE COLD PLANING OF THE ROADWAY SURFACE IS REQUIRED, THE CONTRACTOR SHALL INSTALL THE ADVANCED WARNING SIGN PACKAGE SHOWN IN STANDARD SHEET E-106, AND THE COST SHALL BE INCLUDED UNDER ITEM 641.10, "TRAFFIC CONTROL".
11. THE CONTRACTOR SHALL PROVIDE UNIFORMED TRAFFIC OFFICERS AT THE RAMP G/WILLISTON ROAD JUNCTION AT BRIDGE NO. 68 FROM 6:30 AM TO 7:30 PM 7 DAYS A WEEK FOR THE DURATION OF CONSTRUCTION AT THESE LOCATIONS. THESE HOURS MAY BE REDUCED OR INCREASED BY THE RESIDENT ENGINEER AS NECESSARY. IN ADDITION, THE RESIDENT ENGINEER MAY ORDER THE CONTRACTOR TO PROVIDE TRAFFIC POLICE OFFICERS AT OTHER LOCATIONS AT ANY TIME. PAYMENT FOR UNIFORMED TRAFFIC OFFICERS SHALL BE MADE UNDER ITEM 630.10, "UNIFORMED TRAFFIC OFFICERS".

12. DURING BRIDGE DECK CONCRETE REMOVAL OPERATIONS, THE TRAFFIC LANES UNDER THE BRIDGE SHALL BE PROTECTED BY ENCLOSING THE AREA BELOW THE DECK (WITHOUT REDUCING VERTICAL CLEARANCE). WHERE HYDRO-DEMOLITION IS USED AS THE METHOD OF CONCRETE REMOVAL, THE CONTRACTOR SHALL TEST THE PROTECTIVE ENCLOSURE FOR ITS ABILITY TO PREVENT DEBRIS AND WATER FROM FALLING ONTO TRAFFIC. THE CONTRACTOR SHALL SUBMIT DETAILS OF PROTECTIVE ENCLOSURES TO THE RESIDENT ENGINEER FOR APPROVAL. COSTS FOR PROVIDING PROTECTIVE ENCLOSURES SHALL BE INCLUDED UNDER ITEM 521.11, "TRAFFIC PROTECTION FOR BRIDGE PROJECT".
13. TEMPORARY TRAFFIC CONTROL USING LANE CLOSURES BELOW DECK CONCRETE REMOVAL OPERATIONS WILL ONLY BE ALLOWED DURING INSTALLATION AND REMOVAL OF THE PROTECTIVE ENCLOSURES. TEMPORARY TRAFFIC CONTROL UNDER BRIDGE 68 WILL ALSO BE NECESSARY IN ORDER TO PERFORM SUBSTRUCTURE REHABILITATION WORK AND CLEANING AND PAINTING OF STRUCTURAL STEEL. THE DURATION OF ALL TRAFFIC CONTROL UNDER THE BRIDGE SHALL BE MINIMIZED, PARTICULARLY TEMPORARY LANE CLOSURES. TEMPORARY LANE CLOSURES UNDER THE BRIDGE WILL NOT BE PERMITTED WHEN THE CONTRACTOR IS NOT PERFORMING WORK WHICH REQUIRES THE RESPECTIVE CLOSURE. THE CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS AND SCHEDULES ASSOCIATED WITH INSTALLATION OF PROTECTIVE ENCLOSURES, SUBSTRUCTURE REPAIR WORK, AND CLEANING AND PAINTING OF STRUCTURAL STEEL TO THE RESIDENT ENGINEER FOR APPROVAL. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE APPLICABLE STANDARD SHEETS, BUT SHALL BE MODIFIED AS NECESSARY FOR EACH SPECIFIC SITUATION. COSTS SHALL BE INCLUDED UNDER ITEM 641.10, "TRAFFIC CONTROL", EXCEPT THAT FLAGGERS AND/OR UNIFORMED TRAFFIC OFFICERS SHALL BE PAID FOR UNDER ITEMS 630.15 AND 630.10, RESPECTIVELY.

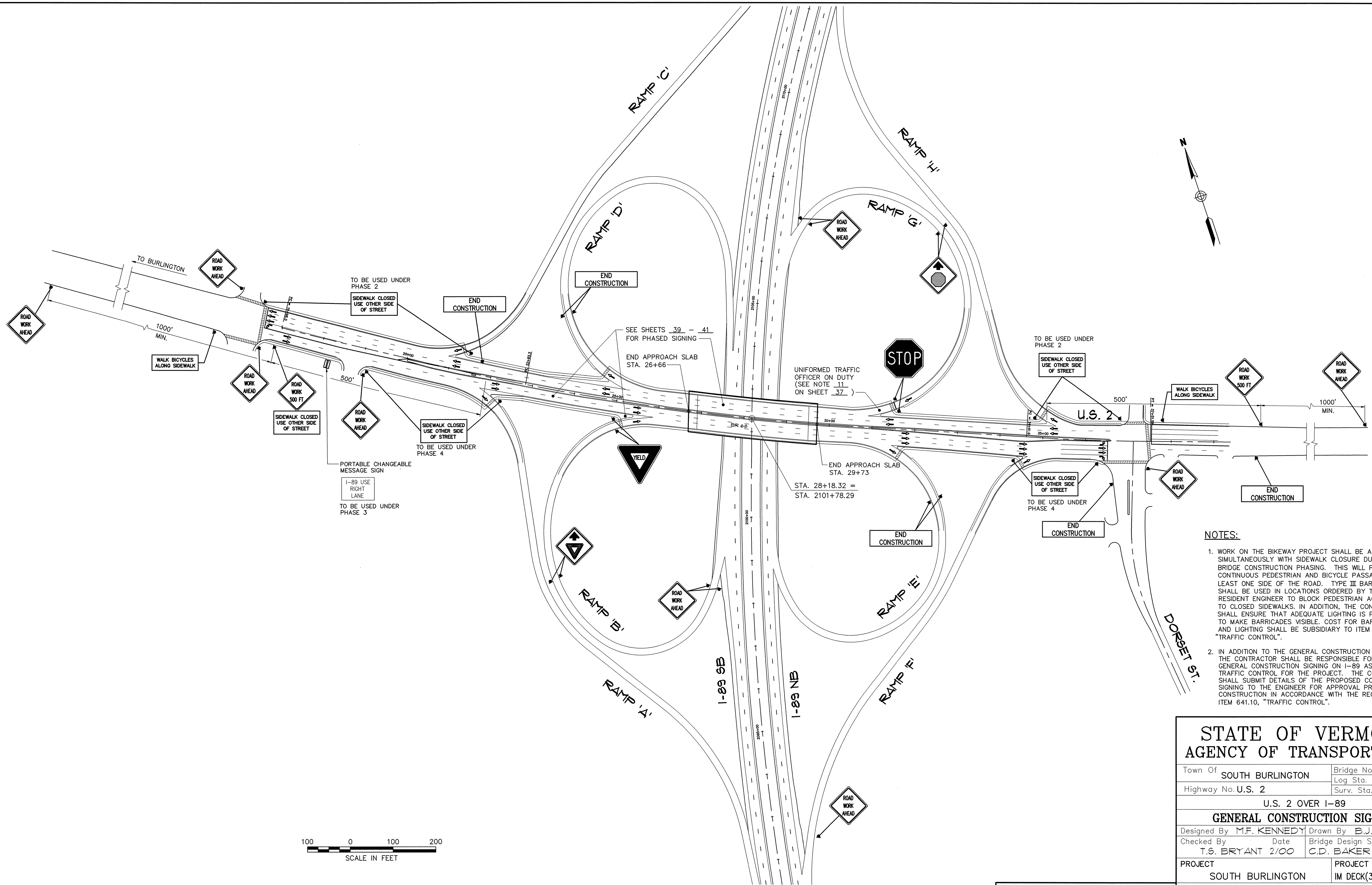
TEMPORARY LANE CLOSURES ON I-89 NORTHBOUND AND SOUTHBOUND UNDER BRIDGE 68 WILL ONLY BE ALLOWED BETWEEN 7:00 PM AND 6:00 AM, REQUIRING NIGHTTIME CONSTRUCTION. ON BOTH I-89 NORTHBOUND AND I-89 SOUTHBOUND TWO LANES OF TRAFFIC SHALL BE OPEN AT ALL TIMES WHEN LANE CLOSURES ARE IN PLACE. ONE LANE SHALL BE FOR THROUGH TRAFFIC AND THE OTHER SHALL BE FOR MERGING TRAFFIC ENTERING AND EXITING THE RAMPS. THE CONTRACTOR SHALL PROVIDE UNIFORMED TRAFFIC OFFICERS AT ALL TIMES DURING NIGHTTIME CONSTRUCTION WHEN I-89 LANE AND RAMP CLOSURES ARE IN PLACE.

14. IN ORDER TO PERFORM THE WORK NECESSARY FOR MEDIAN RECONSTRUCTION OFF THE BRIDGE, IT IS ANTICIPATED THE CONTRACTOR MUST WORK DURING NIGHT HOURS, (7 PM TO 6 AM). DURING NIGHT HOURS ONLY, THE CONTRACTOR MAY LIMIT THE EAST AND WESTBOUND TRAFFIC TO ONE LANE IN EACH DIRECTION. TWO LANES IN EACH DIRECTION MUST BE RESTORED BY 6 AM EACH DAY.
15. NIGHTTIME CONSTRUCTION WHICH IS REQUIRED IN THESE PLANS HAS BEEN COORDINATED WITH AND PRE-APPROVED BY THE CITY OF SOUTH BURLINGTON. HOWEVER, THE CONTRACTOR SHALL OBTAIN THE NECESSARY PERMIT(S) FOR THE PRE-APPROVED NIGHTTIME CONSTRUCTION FROM THE CITY MANAGER PRIOR TO PROCEEDING WITH THE WORK. ANY OTHER NIGHTTIME CONSTRUCTION WHICH THE CONTRACTOR WISHES TO PERFORM AT HIS CONVENIENCE SHALL BE APPROVED BY THE ENGINEER AND SHALL BE PERMITTED BY THE CITY OF SOUTH BURLINGTON. COMPRESSORS, GENERATORS, AND HYDRO-DEMOLITION ENGINES AND PUMPS SHALL BE OPERATED WITHIN SOUND INSULATED TRAILERS OR BUILDINGS DURING ALL NIGHTTIME CONSTRUCTION. IN ADDITION, CONSTRUCTION LIGHTING SHALL BE INSTALLED IN SUCH A MANNER AS TO MINIMIZE THE IMPACT ON ADJACENT RESIDENCES AND BUSINESSES. COSTS FOR OBTAINING PERMITS AND PERFORMING NIGHTTIME CONSTRUCTION MEASURES SHALL BE SUBSIDIARY TO ITEM 635.10, "MOBILIZATION". NO NIGHT TIME WORK THAT INVOLVES CLOSURE OF A RAMP SHALL BE DONE ON A FRIDAY OR A SATURDAY NIGHT.
16. THE RESIDENT ENGINEER AND THE CONTRACTOR SHALL HOLD A MEETING IN SOUTH BURLINGTON WITH LOCAL EMERGENCY SERVICES PERSONNEL TO COORDINATE EMERGENCY PROCEDURES THROUGH THIS PROJECT. THE CONTRACTOR SHALL BE PREPARED AND SHALL DO HIS UTMOST TO PERMIT EMERGENCY VEHICLES TO PROCEED THROUGH THE CONSTRUCTION ZONE WITHOUT HINDRANCE. COSTS TO BE INCLUDED UNDER ITEM 641.10, "TRAFFIC CONTROL".
17. "STANDARD" SIGN DIMENSIONS ARE TO BE USED ON SECONDARY ROADWAYS. "SPECIAL" SIGN DIMENSIONS ARE TO BE USED ON FREEWAY SECTIONS. THE LAYOUTS OF NON-STANDARD SIGNS TO BE USED ARE SHOWN ON SHEET 42.
18. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE PAID UNDER ITEM 646.82, "REMOVAL OF EXISTING PAVEMENT MARKINGS". THIS ITEM SHOULD NOT BE USED ON NEW PAVEMENT. ALL TEMPORARY PAVEMENT MARKINGS PLACED ON TOP LIFTS OF NEW PAVEMENT OR ON EXISTING PAVEMENT THAT WILL NOT BE REMOVED SHALL BE TAPE TYPE II, SO THAT THE TEMPORARY MARKINGS MAY BE REMOVED WITHOUT SCARRING THE PAVEMENT. IF APPROVED BY THE ENGINEER, PAINT MAY BE USED FOR TEMPORARY PAVEMENT MARKINGS ON PAVEMENT THAT WILL BE SUBSEQUENTLY REMOVED.

19. EXISTING BRIDGE MOUNTED SIGNS OVER I-89 SHALL BE REMOVED TO ACCOMMODATE STEEL PAINTING AND ENCLOSURE OPERATIONS. CONTRACTOR SHALL PROVIDE TEMPORARY MESSAGE BOARD SIGNS TO BE USED DURING THE PERIOD THAT THE EXISTING BRIDGE MOUNTED SIGNS OVER I-89 ARE NOT IN PLACE. COSTS FOR TEMPORARY MESSAGE BOARDS SHALL BE INCLUDED IN ITEM 641.15 "PORTABLE CHANGEABLE MESSAGE SIGN". COST FOR SIGN AND SUPPORT REMOVAL SHALL BE INCLUDED IN ITEM 615.50, "REMOVING SIGNS (BRIDGE MOUNTED SIGNS)". NO SIGNS SHALL BE REMOVED UNTIL PORTABLE CHANGEABLE MESSAGE SIGNS ARE IN PLACE ALONG I-89 AS DIRECTED BY THE ENGINEER. ONCE BRIDGE REHABILITATION OPERATIONS PERMIT, SALVAGED SIGNS SHALL BE REINSTALLED ON THE BRIDGE AT THEIR ORIGINAL LOCATIONS AND SHALL BE PAID AS ITEM 615.60, "ERECTING SALVAGED SIGNS (BRIDGE MOUNTED SIGNS)". PORTABLE CHANGEABLE MESSAGE SIGNS SHALL NOT BE REMOVED UNTIL SALVAGED SIGNS ARE ERECTED AND APPROVED BY THE ENGINEER.
20. FOUR (4) PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE USED ON THE PROJECT FOR THE DURATION OF CONSTRUCTION. TWO (2) SHALL BE PLACED ON U.S. ROUTE 2, ONE IN EACH DIRECTION, AND TWO (2) SHALL BE PLACED ON I-89, ONE IN EACH DIRECTION. SIGNS SHALL BE PLACED AS DIRECTED BY THE ENGINEER.
21. WHEN A RAMP NEEDS TO BE CLOSED FOR PART OF AN EVENING DURING PAVEMENT OPERATIONS, A TOTAL OF TWO (2) TO FOUR (4) ADDITIONAL PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE PLACED. THE ADDITIONAL SIGNS SHALL BE PLACED NEAR THIS PROJECT AND/OR BEFORE OTHER I-89 EXITS SUCH AS EXITS 13, 15, AND 16 AS DIRECTED BY THE ENGINEER. THE COST FOR THESE ADDITIONAL PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE SUBSIDIARY TO ITEMS 210.10 AND 406.25. THE ACTUAL NUMBER OF THESE SHORT TERM PORTABLE CHANGEABLE MESSAGE SIGNS REQUIRED SHALL BE DETERMINED BY THE ENGINEER BASED ON THE CONTRACTOR'S PROPOSED PAVEMENT OPERATIONS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

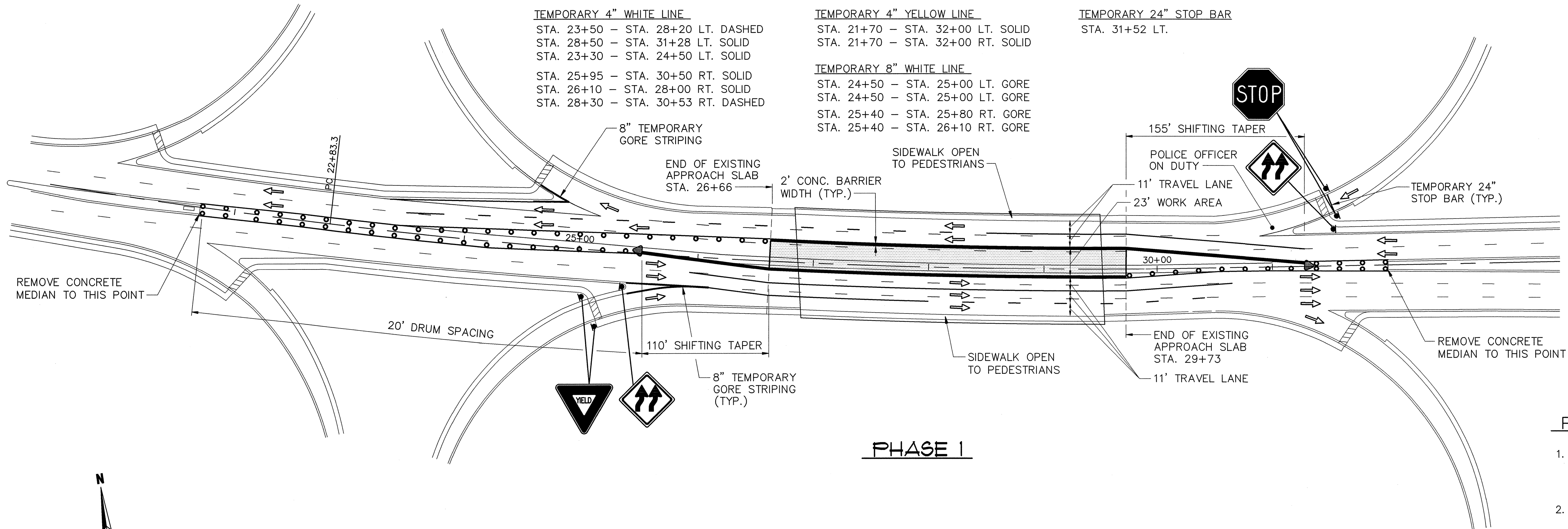
Town Of	SOUTH BURLINGTON	Bridge No.	68
		Log Sta.	
Highway No.U.S.	2	Surv. Sta.	
U.S. 2 OVER I-89			
TRAFFIC CONTROL PLAN NOTES			
Designed By	T.S. BRYANT	Drawn By	B.J. MASSIE
Checked By	Date	Bridge Design Supervisor	
	A. SETAS	2/00	C.D. BAKER Date2/00
PROJECT		PROJECT NO.	
SOUTH BURLINGTON		IM DECK (36)	
VHB Cad Drawing No. 50329TCF		Date 2/00	
Bridge Sheet No.		Sheet 37 of 75	



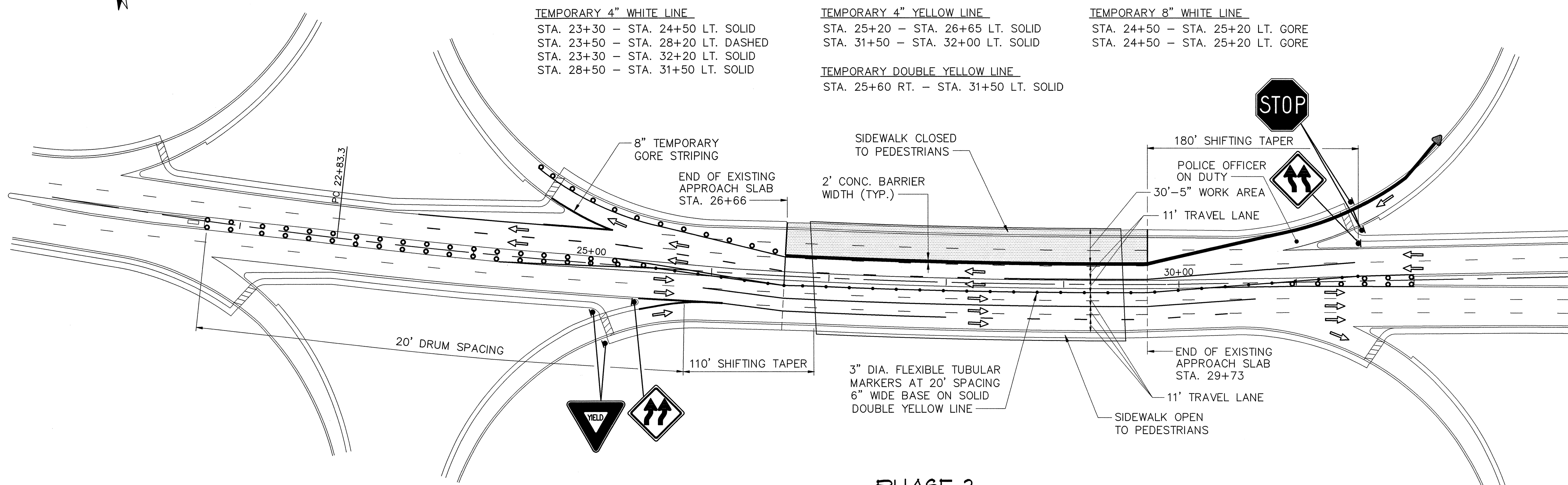
- NOTES:**
1. WORK ON THE BIKEWAY PROJECT SHALL BE ACCOMPLISHED SIMULTANEOUSLY WITH SIDEWALK CLOSURE DUE TO BRIDGE CONSTRUCTION PHASING. THIS WILL PROVIDE FOR CONTINUOUS PEDESTRIAN AND BICYCLE PASSAGE ON AT LEAST ONE SIDE OF THE ROAD. TYPE III BARRICADES SHALL BE USED IN LOCATIONS ORDERED BY THE RESIDENT ENGINEER TO BLOCK PEDESTRIAN ACCESS TO CLOSED SIDEWALKS. IN ADDITION, THE CONTRACTOR SHALL ENSURE THAT ADEQUATE LIGHTING IS PROVIDED TO MAKE BARRICADES VISIBLE. COST FOR BARRICADES AND LIGHTING SHALL BE SUBSIDIARY TO ITEM 641.10, "TRAFFIC CONTROL".
 2. IN ADDITION TO THE GENERAL CONSTRUCTION SIGNING SHOWN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING GENERAL CONSTRUCTION SIGNING ON I-89 AS PART OF THE TRAFFIC CONTROL FOR THE PROJECT. THE CONTRACTOR SHALL SUBMIT DETAILS OF THE PROPOSED CONSTRUCTION SIGNING TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 641.10, "TRAFFIC CONTROL".

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
GENERAL CONSTRUCTION SIGNING			
Designed By M.F. KENNEDY		Drawn By B.J. MASSE	
Checked By T.S. BRYANT		Bridge Design Supervisor C.D. BAKER	
Date 2/00		Date 2/00	
PROJECT SOUTH BURLINGTON		PROJECT NO. IM DECK(36)	
VHB Cad Drawing No. 50929TRF12		Date 2/00	
Bridge Sheet No.		Sheet 38 of 75	

VANASSE HANGEN BRUSTLIN, INC.



PHASE 1



PHASE 2

LEGEND

- CONSTRUCTION AREA
- DIRECTIONAL FLOW
- FLASHING ARROW PANEL
- TYPE I DELINEATOR (YELLOW)
- TYPE I DELINEATOR (WHITE)
- REFLECTORIZED DRUM
- RAISED PAVEMENT MARKING (YELLOW)
- RAISED PAVEMENT MARKING (WHITE)
- ENERGY ABSORPTION ATTENUATOR
- EXISTING GUARDRAIL
- CONCRETE BARRIER RAIL
- 4" TEMPORARY PAVEMENT STRIPING
- 8" TEMPORARY PAVEMENT STRIPING
- 3" DIA. TUBULAR FLEXIBLE MARKER
- EXISTING PAVEMENT MARKING
- TYPE III BARRICADE
- PORTABLE CHANGEABLE MESSAGE SIGN

PHASE 1-5 NOTES:

1. ALL SIGNS, CONES, DRUMS, TYPE III BARRICADES, CONCRETE MEDIAN BARRIERS AND FLASHING ARROW PANELS SHALL CONFORM WITH THEIR APPROPRIATE STANDARD SHEETS.
2. THIS TRAFFIC CONTROL SHEET IS TO BE USED IN CONJUNCTION WITH V.A.O.T. STANDARD SHEETS E-103, E-104 AND E-104A.
3. EDGE LINES AND REFLECTORIZED PAVEMENT MARKERS (R.P.M.'S) ARE NOT SHOWN ON BRIDGES FOR CLARITY. HOWEVER EDGE LINES AND R.P.M.'S ARE TO BE CONTINUED ALONG BRIDGE CURB AND CONCRETE BARRIERS. IN ADDITION WHITE R.P.M.'S SHALL BE INSTALLED ON TEMPORARY STRIPING BETWEEN TRAVEL LANES, AT THE SAME SPACING AS ADJACENT EDGE LINES. ALL R.P.M.'S SHALL BE PAID UNDER ITEM 646.81, "RAISED PAVEMENT MARKERS (TYPE II)."
4. WHEN TUBULAR MARKERS ARE DAMAGED OR VANDALIZED, THEY SHALL BE REPLACED IMMEDIATELY. PAYMENT FOR INITIAL INSTALLATION AND REPLACEMENT OF TUBULAR MARKERS SHALL BE UNDER ITEM 676.20, "DELINEATORS WITH FLEXIBLE POSTS (MOD.)."
5. DETAILS OF STANDARD SIGNS ARE AS SHOWN ON STANDARD SHEETS E-100, E-101, E-102, E-110, E-140, E-142, E-143, E-150, E-151, AND E-152. DETAILS FOR OTHER SIGNS (NON-STANDARD) ARE AS SHOWN ON SHEET 42.
6. PLACE 2" TEMPORARY BITUMINOUS CONCRETE PAVEMENT ITEM 406.25, AS NECESSARY TO PROVIDE A SMOOTH TRAVEL SURFACE IN AREAS WHERE MEDIAN HAS BEEN REMOVED.

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	

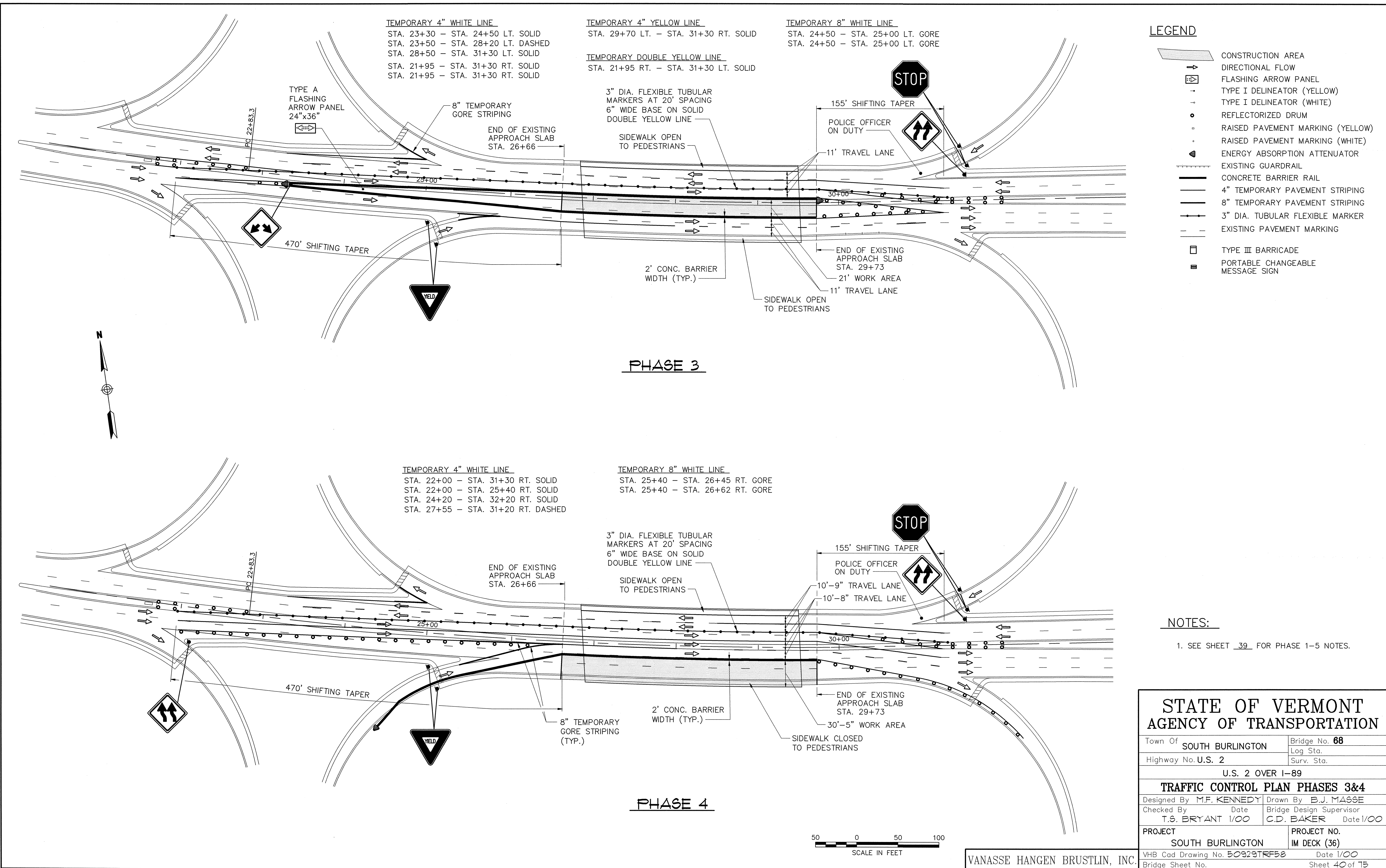
U.S. 2 OVER I-89

TRAFFIC CONTROL PLAN PHASES 1&2

Designed By	M.F. KENNEDY	Drawn By	B.J. MASSE
Checked By	T.S. BRYANT	Date	1/00
		Bridge Design Supervisor	C.D. BAKER
		Date	1/00

PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK (36)
VHB Cad Drawing No.	50929TRF51	Date	1/00
Bridge Sheet No.		Sheet	39 of 15

VANASSE HANGEN BRUSTLIN, INC.



LEGEND

- CONSTRUCTION AREA
- DIRECTIONAL FLOW
- FLASHING ARROW PANEL
- TYPE I DELINEATOR (YELLOW)
- TYPE I DELINEATOR (WHITE)
- REFLECTORIZED DRUM
- RAISED PAVEMENT MARKING (YELLOW)
- RAISED PAVEMENT MARKING (WHITE)
- ENERGY ABSORPTION ATTENUATOR
- EXISTING GUARDRAIL
- CONCRETE BARRIER RAIL
- 4" TEMPORARY PAVEMENT STRIPING
- 8" TEMPORARY PAVEMENT STRIPING
- 3" DIA. TUBULAR FLEXIBLE MARKER
- EXISTING PAVEMENT MARKING
- TYPE III BARRICADE
- PORTABLE CHANGEABLE MESSAGE SIGN

TEMPORARY 4" WHITE LINE

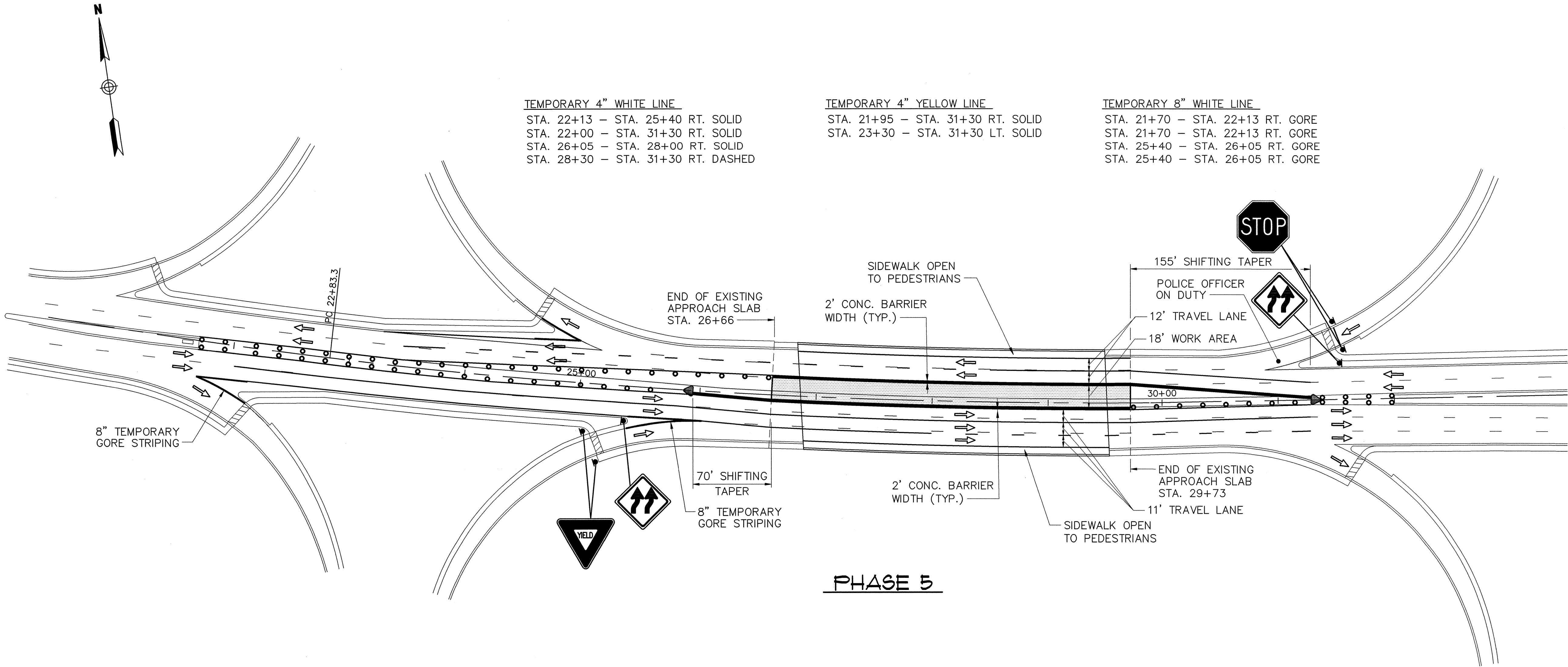
STA. 22+13 - STA. 25+40 RT. SOLID
STA. 22+00 - STA. 31+30 RT. SOLID
STA. 26+05 - STA. 28+00 RT. SOLID
STA. 28+30 - STA. 31+30 RT. DASHED

TEMPORARY 4" YELLOW LINE

STA. 21+95 - STA. 31+30 RT. SOLID
STA. 23+30 - STA. 31+30 LT. SOLID

TEMPORARY 8" WHITE LINE

STA. 21+70 - STA. 22+13 RT. GORE
STA. 21+70 - STA. 22+13 RT. GORE
STA. 25+40 - STA. 26+05 RT. GORE
STA. 25+40 - STA. 26+05 RT. GORE



PHASE 5

NOTES:

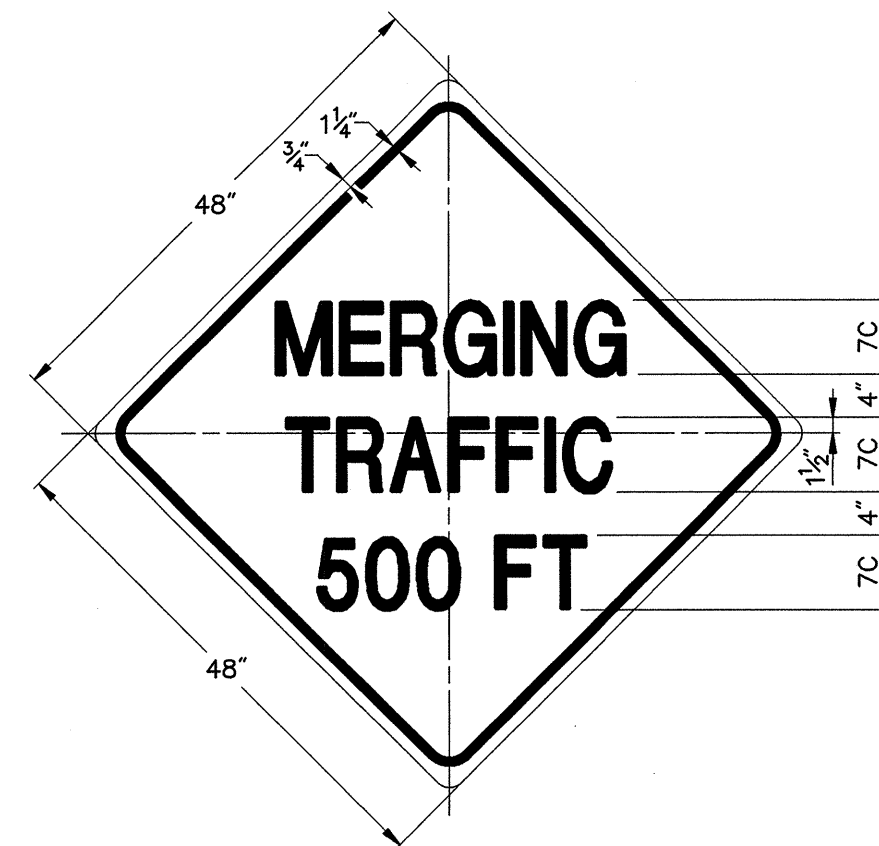
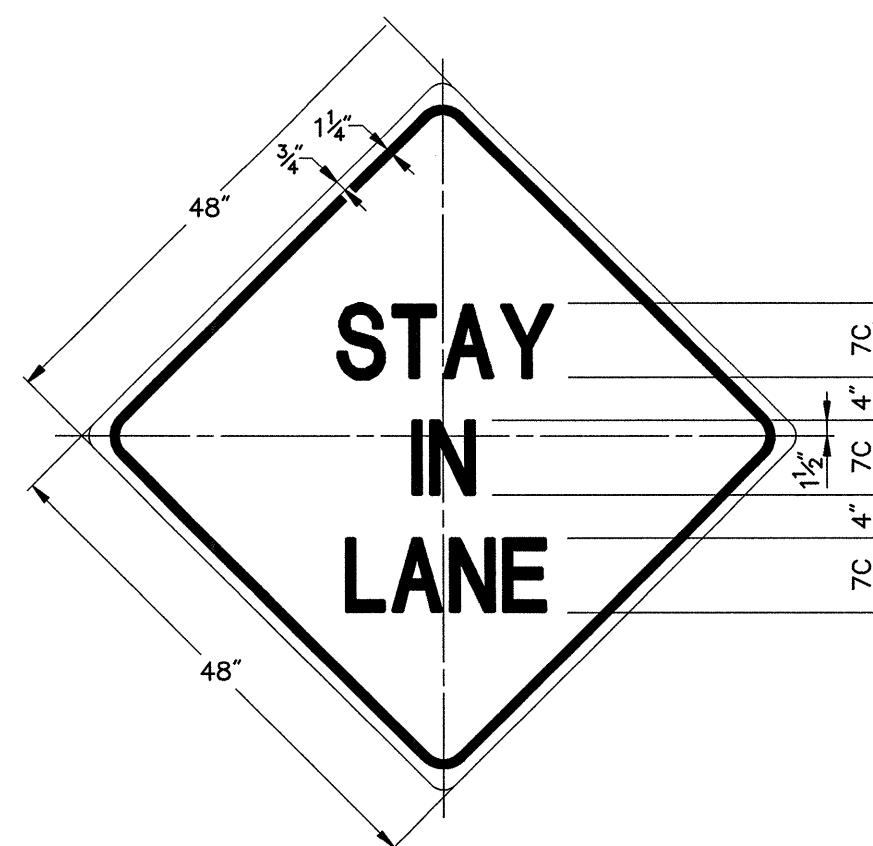
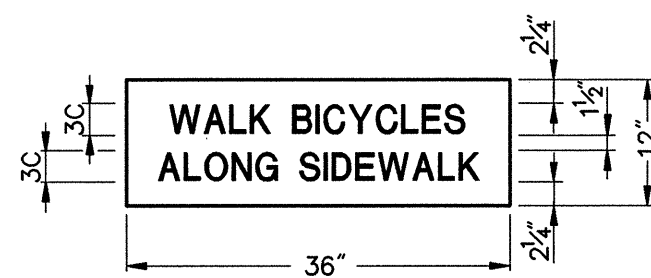
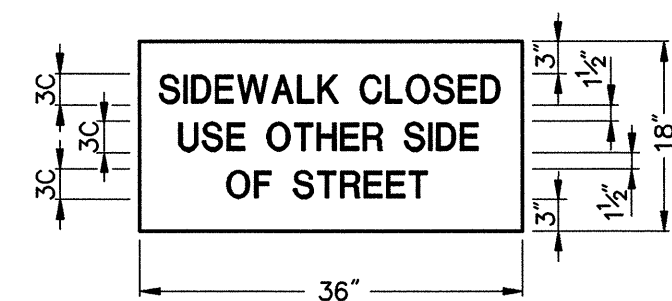
1. SEE SHEET 39 FOR PHASE 1 - 5 NOTES.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	
U.S. OVER I-89			
TRAFFIC CONTROL PLAN PHASE 5			
Designed By	M.F. KENNEDY	Drawn By	B.J. MASSE
Checked By	T.S. BRYANT	Date	1/00
		Bridge Design Supervisor	C.D. BAKER
		Date	1/00
PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK (36)
VHB Cod Drawing No.	50929TRF59	Date	1/00
Bridge Sheet No.		Sheet	41 of 75

50 0 50 100
SCALE IN FEET

VANASSE HANGEN BRUSTLIN, INC.



4 OF EACH OF THESE TWO SIGNS WILL BE REQUIRED ON THIS PROJECT. THE SIGNS WILL BE ERECTED BEHIND THE EXISTING GUARD RAIL AT LOCATIONS SPECIFIED BY THE RESIDENT ENGINEER. COST FOR SIGNS, POSTS, AND ERECTION SHALL BE SUBSIDIARY TO ITEM 641.10, "TRAFFIC CONTROL". COLORS AND MATERIALS SHALL BE PER STANDARD E-100. THESE SIGNS SHALL BE REMOVED AS SOON AS TRAVEL LANES ARE RETURNED TO FULL CAPACITY.

THE CONTRACTOR SHALL INSERT THE TELEPHONE NUMBER FOR THE CONTRACTOR'S PUBLIC RELATIONS OFFICER.

NOTES:

1. GRAPHICAL SYMBOLS ARE SHOWN AS SHADED FOR THE PURPOSE OF CLARITY. ALL SIGNS ARE TO BE BLACK ON ORANGE.
2. "STANDARD" DIMENSIONS ARE TO BE USED ON SECONDARY ROADWAYS. "SPECIAL" DIMENSIONS ARE TO BE USED ON FREEWAY SECTIONS.

STATE OF VERMONT
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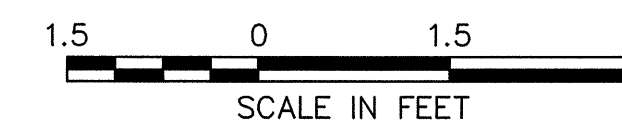
Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	

U.S. 2 OVER I-89

NON-STANDARD SIGNS

Designed By	B.J. MASSE	Drawn By	B.J. MASSE
Checked By	M.F. KENNEDY	Date	1/00
		Bridge Design Supervisor	C.D. BAKER
		Date	1/00

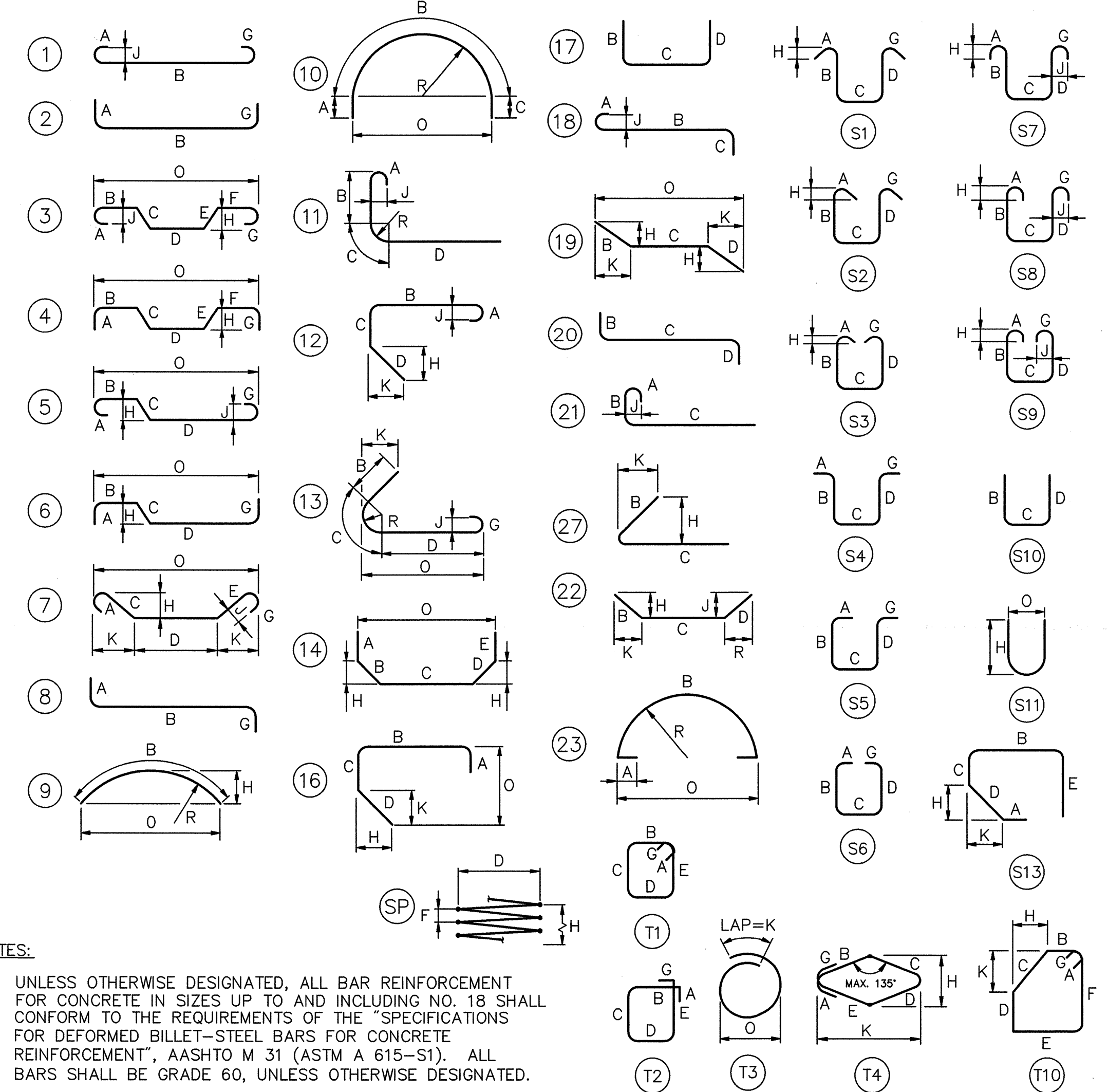
PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK (36)
VHB Cod Drawing No.	5092931G	Date	1/00
Bridge Sheet No.		Sheet	42 of 75



VANASSE HANGEN BRUSTLIN, INC.

	ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
△	1																	
	2																	
	3	6	4	599'-0"	E1P401	SP				2'-4"		0'-3"		20'-5"				
	4																	
	5	24	5	4'-0"	E1P501	STR												
	6	42	5	24'-3"	E1P504	STR												
	7																	
	8	66	5	11'-4"	E1P502	T1	0'-4"	2'-8"	2'-8"	2'-8"	2'-8"		0'-4"					
	9	84	5	8'-4"	E1P503	T1	0'-4"	2'-3"	1'-7"	2'-3"	1'-7"		0'-4"					
	10																	
▲	11	42	5	7'-5"	E1P505	S9	0'-1½"	2'-8"	1'-7"	2'-8"			0'-1½"	0'-1½"	0'-1½"			
	12																	
	13	8	5	7'-2"	E1P506	17		2'-2"	2'-10"	2'-2"								
	14																	
	15	368	5	6'-6"	E1P507	17		2'-9"	1'-0"	2'-9"								
	16	14	5	7'-4"	E1P508	17		2'-3"	2'-10"	2'-3"								
	17	8	5	7'-8"	E1P509	17		2'-5"	2'-10"	2'-5"								
	18	14	5	6'-10"	E1P510	17		2'-0"	2'-10"	2'-0"								
	19	324	5	8'-4"	E1P511	17		2'-9"	2'-10"	2'-9"								
	20	8	5	5'-10"	E1P512	17		1'-6"	2'-10"	1'-6"								
*	21																	
	22	73	9	9'-0"	E1P901	STR												
	23	72	9	20'-4"	E1P902	STR												
	24	12	9	18'-11"	E1P903	STR												
	25	12	9	18'-11"	E1P904	STR												
	26	24	9	22'-3"	E1P905	STR												
	27	13	9	17'-4"	E1P906	STR												
	28	12	9	28'-9"	E1P908	STR												
	29																	
	30	12	9	24'-6"	E1P907	16	0'-0"	0'-0"	19'-4"					1'-0"		5'-1"		
△	31																	
	32	12	9	19'-3"	E1P909	2	2'-0"	17'-3"										
	33																	
	34																	
	35																	
	36																	
	37	6	4	565'-0"	E2P401	SP				2'-4"		0'-3"		19'-3"				
	38																	
	39	24	5	4'-0"	E2P501	STR												
	40	42	5	24'-3"	E2P504	STR												
▲	41																	
	42	66	5	11'-4"	E2P502	T1	0'-4"	2'-8"	2'-8"	2'-8"	2'-8"		0'-4"					
	43	84	5	8'-4"	E2P503	T1	0'-4"	2'-3"	1'-7"	2'-3"	1'-7"		0'-4"					
	44																	
	45	42	5	7'-5"	E2P505	S9	0'-1½"	2'-8"	1'-7"	2'-8"			0'-1½"	0'-1½"	0'-1½"			
	46																	
	47	8	5	7'-2"	E2P506	17		2'-2"	2'-10"	2'-2"								
	48	368	5	6'-6"	E2P507	17		2'-9"	1'-0"	2'-9"								
	49	14	5	7'-4"	E2P508	17		2'-3"	2'-10"	2'-3"								
	50	8	5	7'-8"	E2P509	17		2'-5"	2'-10"	2'-5"								
▲	51	14	5	6'-10"	E2P510	17		2'-0"	2'-10"	2'-0"								
	52	324	5	8'-4"	E2P511	17		2'-9"	2'-10"	2'-9"								
	53	8	5	5'-10"	E2P512	17		1'-6"	2'-10"	1'-6"								
	54																	
	55	73	9	9'-0"	E2P901	STR												
	56	72	9	20'-4"	E2P902	STR												
	57	12	9	18'-11"	E2P903	STR												
	58	13	9	18'-11"	E2P904	STR												
	59	24	9	22'-3"	E2P905	STR												
	60	12	9	17'-4"	E2P906	STR												
*	61	12	9	28'-9"	E2P908	STR												
	62																	
	63	12	9	24'-6"	E2P907	16	0'-0"	0'-0"	19'-4"					1'-0"		5'-1"		
	64																	
	65	12	9	19'-3"	E2P909	2	2'-0"	17'-3"										
	66																	
	67																	
	68																	
	69																	
	70																	
△	71	6	4	645'-0"	E3P401	SP				2'-4"		0'-3"		22'-0"				
	72																	
	73	24	5	4'-0"	E3P501	STR												
	74	42	5	24'-3"	E3P504	STR												
	75																	
	76	66	5	11'-4"	E3P502	T1	0'-4"	2'-8"	2'-8"	2'-8"	2'-8"		0'-4"					
	77	84	5	8'-4"	E3P503	T1	0'-4"	2'-3"	1'-7"	2'-3"	1'-7"		0'-4"					
	78																	
	79	42	5	7'-5"	E3P505	S9	0'-1½"	2'-8"	1'-7"	2'-8"			0'-1½"	0'-1½"	0'-1½"			
	80																	
▲	81	8	5	7'-2"	E3P506	17		2'-2"	2'-10"	2'-2"								
	82	368	5	6'-6"	E3P507	17		2'-9"	1'-0"	2'-9"								
	83	14	5	7'-4"	E3P508	17		2'-3"	2'-10"	2'-3"								
	84	8	5	7'-8"	E3P509	17		2'-5"	2'-10"	2'-5"								
	85	14	5	6'-10"	E3P510	17		2'-0"	2'-10"	2'-0"								
	86	324	5	8'-4"	E3P511	17		2'-9"	2'-10"	2'-9"								
	87	8	5	5'-10"	E3P512	17		1'-6"	2'-10"	1'-6"								
	88																	
	89	72	9	9'-0"	E3P901	STR												
	90	73	9	20'-4"	E3P902	STR												
*	91	12	9	18'-11"	E3P903	STR												
	92	12	9	18'-11"	E3P904	STR												
	93	24	9	22'-3"	E3P905	STR												
	94	13	9	17'-4"	E3P906	STR												
	95	12	9	28'-9"	E3P908	STR												
	96																	
	97	12	9	24'-6"	E3P907	16	0'-0"	0'-0"	19'-4"					1'-0"		5'-1"		
	98																	
	99	12	9	19'-3"	E3P909	2	2'-0"	17'-3"										
	100																	

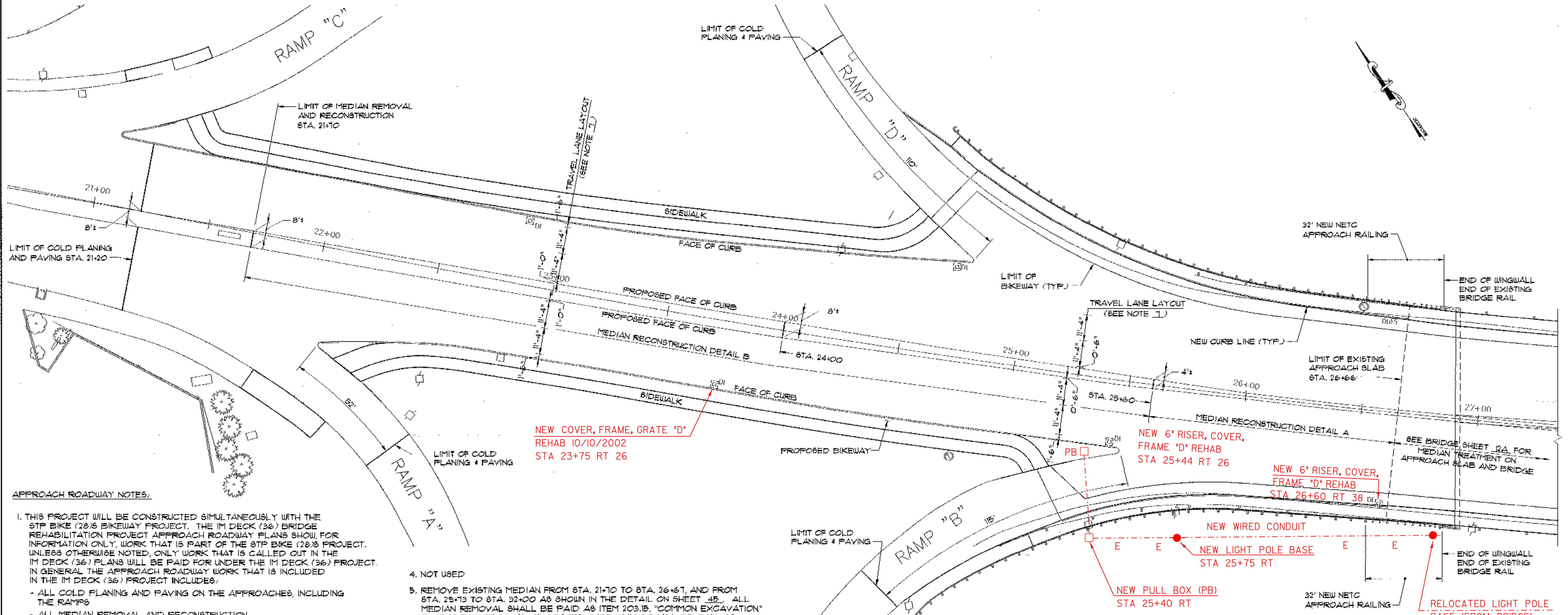
	ITEM NO.	PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O	
	100	BRIDGE NO. 68																	
	101																		
	102																		
	103																		
	104																		
▲ *	105	NEW JOINTS AT PIERS																	
	106	49	5	38'-3"	ES501	STR													
	107																		
	108																		
△	109	MEDIAN REPLACEMENT																	
	110	171	4	31'-0"	EM403	STR													
	111																		
	112	622	4	1'-7"	EM401	19		0'-8"	0'-11"	0'-0"									
	113																		
	114	622	4	3'-5"	EM402	16	0'-11"	0'-11"	0'-11"	0'-8"									
	115																		
	116	360	4	3'-9"	EM404	17		1'-7"	2'-2"	0'-0"									
	117																		
	118																		
	119																		
	120	SIDEWALK																	
	121																		
▲ *	122	72	5	30'-6"	ESW501	STR													
	123	125	5	26'-0"	ESW502	STR													
	124																		
	125																		
	126	1155	5	1'-8"	ESW504	19		0'-8"	1'-0"	0'-0"				0'-5"		0'-5"			
	127																		
	128																		
	129	112	5	3'-6"	ESW505	17		0'-0"	2'-6"	1'-0"									
▲ *	130																		
	131	802	5	9'-10"	ESW503	S6	0'-6"	1'-0"	7'-0"	0'-10"				0'-6"					
	132																		
	133																		
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- NOTES:**
1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-S1). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
 2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
 3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
 4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "C" ON STANDARD 180° AND 135° HOOKS.
 5. "J" DIMENSION ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
 6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
 7. "E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.
 8. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
 9. * DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
 10. Δ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
 11. ▲ DENOTES BARS TO BE CUT TO FIT IN FIELD.

ASTM STANDARD REINFORCING BARS				
BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS DIAMETER INCHES	ROUND SECTION CROSS SEC- TIONAL AREA SQ. INCHES	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.650	1.693	2.25	5.320
#18	13.60	2.257	4.00	7.090

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of SOUTH BURLINGTON	Bridge No. 68
	Log Sta.
Highway No. U.S. 2	Surv. Sta.
U.S. 2 OVER 1-89	
REINFORCING STEEL SCHEDULE	
Designed By A. SETAS	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 1/00	Bridge Design Supervisor C.D. BAKER Date 1/00
PROJECT SOUTH BURLINGTON	PROJECT NO. IM DECK(36)
VHB Cad Drawing No. 50929REF	Date 1/00
Bridge Sheet No.	Sheet 43 of 75



APPROACH ROADWAY NOTES:

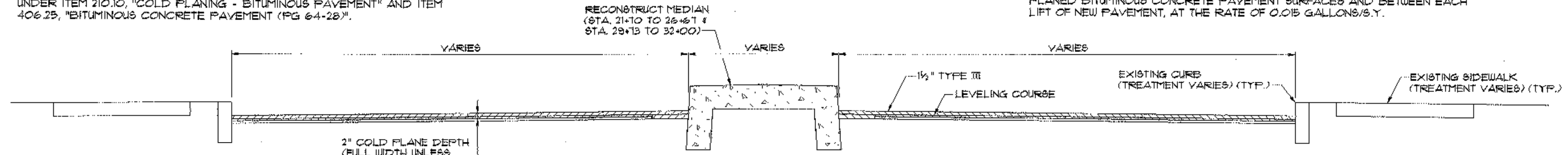
- THIS PROJECT WILL BE CONSTRUCTED SIMULTANEOUSLY WITH THE STP BIKE (28/8) BIKEWAY PROJECT. THE IM DECK (36) BRIDGE REHABILITATION PROJECT APPROACH ROADWAY PLANS SHOW, FOR INFORMATION ONLY, WORK THAT IS PART OF THE STP BIKE (28/8) PROJECT. UNLESS OTHERWISE NOTED, ONLY WORK THAT IS CALLED OUT IN THE IM DECK (36) PLANS WILL BE PAID FOR UNDER THE IM DECK (36) PROJECT. IN GENERAL THE APPROACH ROADWAY WORK THAT IS INCLUDED IN THE IM DECK (36) PROJECT INCLUDES:
 - ALL COLD PLANING AND PAVING ON THE APPROACHES, INCLUDING THE RAMP
 - ALL MEDIAN REMOVAL AND RECONSTRUCTION
 - LANE MARKINGS ADJACENT TO THE MEDIAN AND ALL DASHED WHITE LINE TRAVEL LANE MARKINGS
 - REMOVAL AND DISPOSAL OF ALL EXISTING ALUMINUM BRIDGE APPROACH RAIL AT THE FOUR CORNERS OF THE BRIDGE
 - INSTALLATION OF NEW NETC BRIDGE APPROACH RAIL AT EACH CORNER OF THE BRIDGE
- COLD PLANE AND REPAVE THE APPROACHES AND THE RAMP BETWEEN ENDS OF THE APPROACH SLABS AND THE LIMITS SHOWN ON SHEETS 44 AND 45. SEE THE COLD PLANE TYPICAL SECTION ON THIS SHEET. THIS WORK SHALL BE PAID UNDER ITEM 210.10, "COLD PLANING - BITUMINOUS PAVEMENT" AND ITEM 406.25, "BITUMINOUS CONCRETE PAVEMENT (PG 64-28)".
- AFTER ALL PHASED DECK REHABILITATION IS COMPLETED, COLD PLANE AND REPAVE THE TOP 1 1/2" TYPE III PAVEMENT ON THE BRIDGE AND APPROACH SLABS FROM CURB TO CURB. THIS WORK SHALL BE DONE SIMULTANEOUSLY WITH THE COLD PLANING AND REPAVING OF THE APPROACHES AND RAMP. THE GRINDINGS FROM THE COLD PLANING OF THE NEW PAVEMENT IN THIS AREA SHALL BE SALVAGED TO VAOT DISTRICT 5 AS DESCRIBED IN THE SPECIAL PROVISIONS. THIS WORK SHALL BE PAID UNDER ITEM 210.10, "COLD PLANING - BITUMINOUS PAVEMENT" AND ITEM 406.25, "BITUMINOUS CONCRETE PAVEMENT (PG 64-28)".

- NOT USED
- REMOVE EXISTING MEDIAN FROM STA. 21+10 TO STA. 26+67, AND FROM STA. 29+13 TO STA. 32+00 AS SHOWN IN THE DETAIL ON SHEET 45. ALL MEDIAN REMOVAL SHALL BE PAID AS ITEM 203.15, "COMMON EXCAVATION" EXCEPT FOR REMOVAL OF GRANITE CURB, WHICH SHALL BE PAID AS FOLLOWS:
 - REMOVAL OF EXISTING GRANITE CURB FROM STA. 21+10 TO STA. 25+60, AND FROM STA. 31+35 TO STA. 32+00, SHALL BE PAID AS ITEM 616.40, "REMOVING AND RESETTING CURB."
 - REMOVAL OF EXISTING GRANITE CURB FROM STA. 25+60 TO STA. 26+66, AND STA. 29+13 TO STA. 31+35, SHALL BE PAID AS ITEM 616.41, "REMOVAL OF EXISTING CURB". ALL SAW CUTTING SHALL BE SUBSIDIARY TO ITEM 616.41, "REMOVAL OF EXISTING CURB".
- RECONSTRUCT THE MEDIAN FROM STA. 21+10 TO STA. 26+67, AND FROM STA. 29+13 TO STA. 32+00 AS SHOWN IN THE DETAILS ON SHEET 45. MEDIAN RECONSTRUCTION DETAIL A SHALL BE USED WHERE THE PROPOSED MEDIAN IS 4 FEET WIDE OR LESS. MEDIAN RECONSTRUCTION DETAIL B SHALL BE USED WHERE THE PROPOSED MEDIAN IS GREATER THAN 4 FEET WIDE.
- LANE AND PAVEMENT MARKINGS NOT SHOWN FOR CLARITY. SEE SHEETS 41 AND 42 FOR PAVEMENT MARKING LAYOUT AND NOTES.

- REMOVE ALL EXISTING ALUMINUM RAIL AT THE FOUR CORNERS OF THE BRIDGE. AT EACH CORNER OF THE BRIDGE THE APPROACH RAIL BEGINS AT THE END OF THE EXISTING WINGWALL. REMOVAL OF EXISTING APPROACH RAIL SHALL BE PAID UNDER ITEM 621.80, "REMOVAL AND DISPOSAL OF GUARD RAIL". THE APPROXIMATE LENGTHS OF REMOVAL ARE:
 - NW CORNER, 115 FEET
 - NE CORNER, 120 FEET
 - SW CORNER, 115 FEET
 - SE CORNER, 110 FEET
- INSTALL NEW NETC APPROACH RAIL AT EACH CORNER OF THE BRIDGE, AS SHOWN ON SHEET 24E. GUARD RAIL SHALL BE INSTALLED UNDER THE STP BIKE (28/8) PROJECT.
- CARE SHALL BE EXERCISED TO SMOOTHLY TRANSITION THE NEW BRIDGE PAVEMENT INTO THE EXISTING PAVEMENT. ALL COLD PLANING NECESSARY FOR SHAPING BRIDGE APPROACHES FOR FINAL PAVING SHALL BE PAID UNDER ITEM 210.10, "COLD PLANING - BITUMINOUS PAVEMENT". A BUTT PAVEMENT JOINT IS REQUIRED IN LIEU OF FEATHERING NEW PAVEMENT INTO EXISTING. SEE THE APPROACH PAVEMENT TRANSITION DETAIL ON SHEET 43.
- ITEM 404.65, "EMULSIFIED ASPHALT" SHALL BE APPLIED TO ALL COLD PLANED BITUMINOUS CONCRETE PAVEMENT SURFACES AND BETWEEN EACH LIFT OF NEW PAVEMENT, AT THE RATE OF 0.015 GALLONS/S.Y.



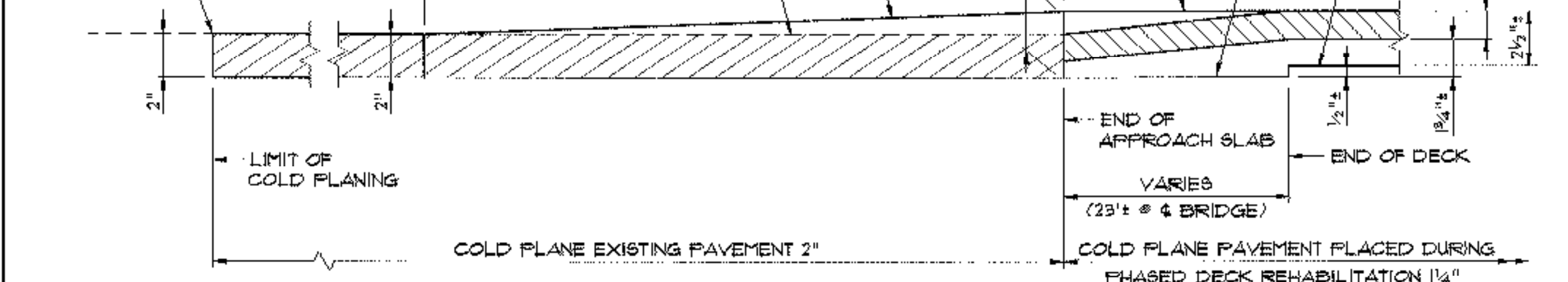
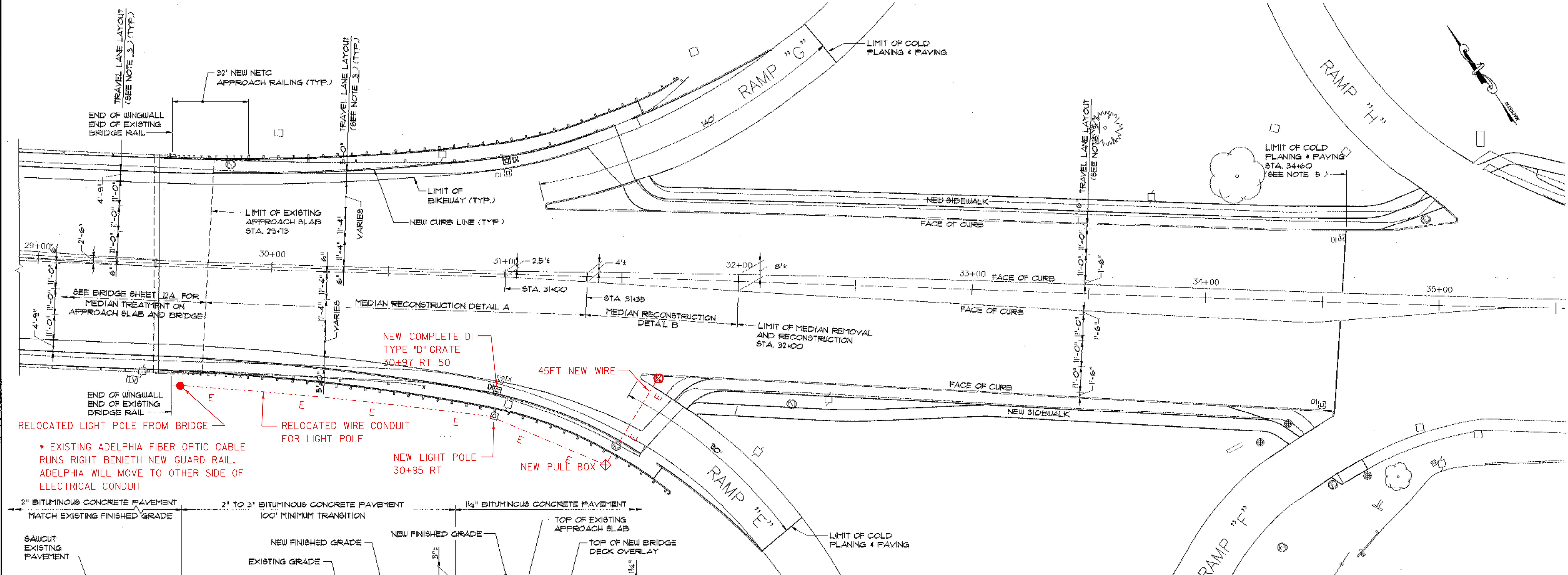
NOTES:
1. SEE SHEET 41 FOR LEGEND.



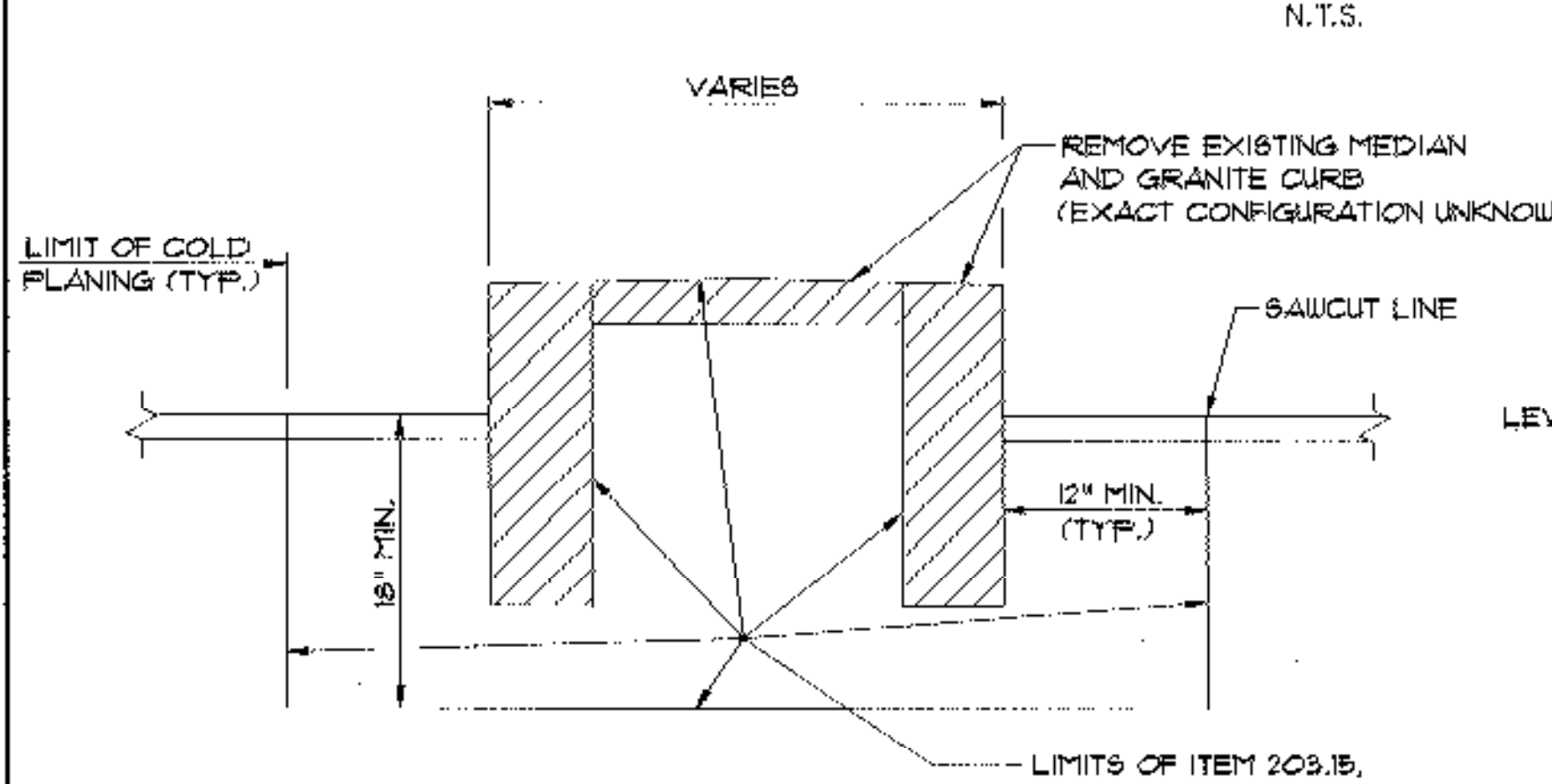
COLD PLANE TYPICAL SECTION - CURBED
(U.S. ROUTE 2 STA. 21+20 TO STA. 26+66 & STA. 29+73 TO STA. 34+60)
N.T.S.

VANASSE HANGEN BRUSTLIN, INC.

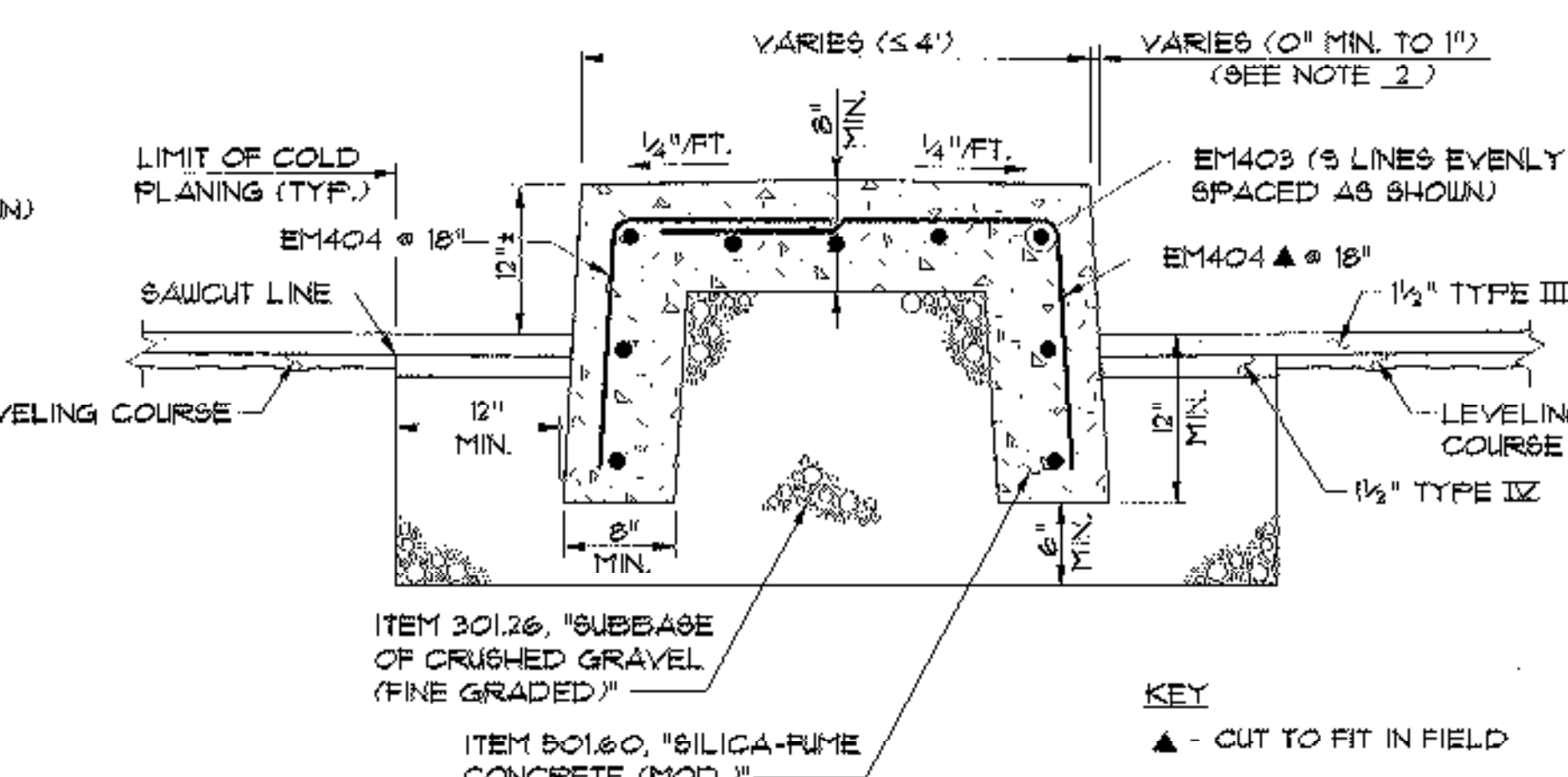
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No. U.S.	2	Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
APPROACH ROADWAY PLAN (1 OF 2)			
Designed By	A. SETAG	Drawn By	E.J. MASSE
Checked By	T.S. BRYANT	Date	2/00
		Bridge Design Supervisor	C.D. BAKER
		Date	2/00
PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK (36)
VHB Cad Drawing No.	50923RDP	Date	2/00
Bridge Sheet No.		Sheet	44 of 15



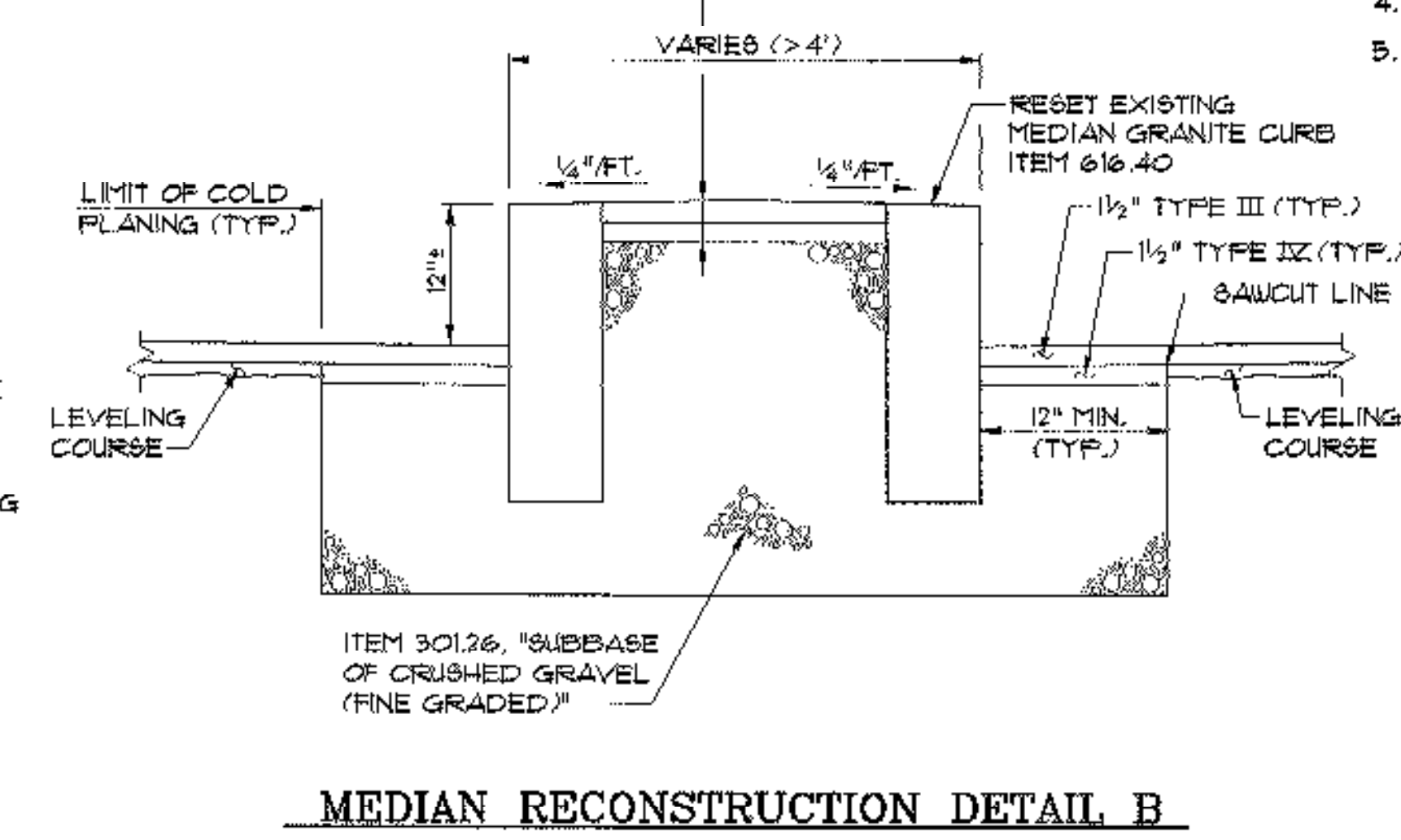
APPROACH PAVEMENT TRANSITION DETAIL
N.T.S.



MEDIAN REMOVAL DETAIL
N.T.S.

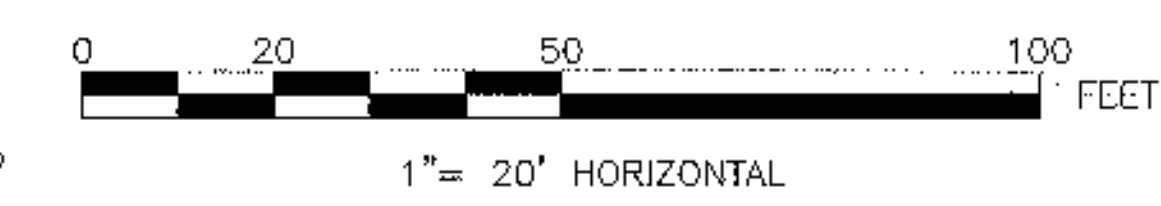


MEDIAN RECONSTRUCTION DETAIL A
N.T.S.



MEDIAN RECONSTRUCTION DETAIL B
N.T.S.

- NOTES:**
1. FOR APPROACH ROADWAY NOTES SEE SHEET 44.
 2. THE BATTER OF THE CONCRETE MEDIAN CURB SHALL TRANSITION FROM 1" TO 0" WITHIN THE FINAL TEN FEET AT EACH END, IN ORDER TO MATCH TO THE ADJACENT VERTICAL GRANITE CURB.
 3. LANE AND PAVEMENT MARKINGS NOT SHOWN FOR CLARITY. SEE SHEETS 47 & 48 FOR PAVEMENT MARKINGS LAYOUT.
 4. SEE SHEET 47 FOR LEGEND.
 5. COLD PLANING AND PAVING EXTENDS BEYOND THE LIMIT SHOWN AT STA. 34+60. SEE SHEETS 54A, 54B, AND 54C.



STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
APPROACH ROADWAY PLAN (2 OF 2)			
Designed By A. SETAS		Drawn By B.J. MASSE	
Checked By T.S. BRYANT 2/00		Date 2/00	
PROJECT SOUTH BURLINGTON		PROJECT NO. IM DECK (36)	
VHB Cad Drawing No. 50329RDP		Date 2/00	
Bridge Sheet No.		Sheet 45 of 15	

VANASSE HANGEN BRUSTLIN, INC.

BIKEWAY GENERAL NOTES:

- THIS PROJECT WILL BE CONSTRUCTED SIMULTANEOUSLY WITH THE IM DECK (36) BRIDGE REHABILITATION PROJECT. THE STP BIKE (28) PROJECT BIKEWAY PLAN SHEETS SHOW, FOR INFORMATION ONLY, WORK THAT IS INCLUDED IN THE IM DECK (36) PROJECT. IN GENERAL, ALL APPROACH ROADWAY WORK AND FINAL PAVEMENT MARKINGS NOT INCLUDED IN APPROACH ROADWAY NOTE 1 ON SHEET 44 ARE INCLUDED IN STP BIKE (28), UNLESS OTHERWISE NOTED.
- THE FOLLOWING GENERAL NOTES FROM SHEET 9 APPLY TO THE STP BIKE (28) PROJECT: 1, 2, AND 8.
- ALL WORK SHALL BE COORDINATED WITH THE UTILITY OWNERS.
- A COMPLETE SURVEY WAS NOT DONE FOR THIS PROJECT. SLOPE LIMITS AND EXTENTS OF THE WORK SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LIMITS OF WORK SHALL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL PERFORM ALL BIKEWAY WORK IN CONJUNCTION WITH THE IM DECK(36) TRAFFIC CONTROL PLAN SHEETS 39 - 41.
- STREET LIGHTING AND SIGNAL WORK SHALL BE COORDINATED WITH GREEN MOUNTAIN POWER CORPORATION AND THE CITY OF SOUTH BURLINGTON.
- THERE ARE FIBER OPTIC LINES IN THIS PROJECT WHICH MUST NOT BE COMPROMISED DURING CONSTRUCTION. THE LOCATION AND DEPTH OF THESE LINES ARE UNKNOWN OUTSIDE THE LIMITS OF THE BRIDGE. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH DIGSAFE AND THE UTILITY OWNER TO ENSURE THE FIBER OPTIC LINES ARE NOT DAMAGED.
- ALL EXISTING AND PROPOSED CATCH BASINS AND DROP INLETS WITHIN THE PROJECT LIMITS SHALL BE EQUIPPED WITH BICYCLE COMPATIBLE GRATES, TYPE E. REPLACEMENT OF EXISTING GRATES SHALL BE PAID UNDER ITEM 604.52, "CAST IRON GRATE WITH FRAME, TYPE E".
- ALL PAVEMENT PLACED ON SECTIONS OF THE BIKEWAY THAT ARE NOT ON THE ROADWAY SHALL BE PAID UNDER ITEM 618.15, "BITUMINOUS CONCRETE SIDEWALK".
- ITEM 613.10, "STONE FILL, TYPE 1", SHALL BE USED ON ALL FILL SLOPES BEHIND THE GUARDRAIL AS DIRECTED BY THE ENGINEER.
- A NOMINAL QUANTITY OF ITEM 616.20, "GRANITE SLOPE EDGING" HAS BEEN INCLUDED IN THE CONTRACT TO BE USED AT THE DISCRETION OF THE RESIDENT ENGINEER ON RAMPS "B", "D", "E", AND "G" AS NECESSARY.
- ITEM 616.21, "VERTICAL GRANITE CURB" SHALL BE USED AT CURB CUTS FOR THE PROPOSED SIDEWALK AND BIKEWAY. REMOVAL OF EXISTING VERTICAL GRANITE CURB SHALL BE PAID UNDER ITEM 616.41, "REMOVAL OF EXISTING CURB."
- REMOVAL AND RESETTING OF EXISTING DELINEATORS SHALL BE SUBSIDIARY TO ITEM 615.50, "REMOVING SIGNS."
- UNLESS OTHERWISE NOTED, THE CONCRETE FOR THE VARIOUS ELEMENTS OF THE WORK SHALL BE:

SIDEWALK OVERLAY AND WIDENING
 - SILICA-FUME CONCRETE, f'c = 5000 PSI
 - PAID AS ITEM 501.60, "SILICA-FUME CONCRETE (MOD.)"NEW SIDEWALK 5"
 - CONCRETE CLASS B, f'c = 3500 PSI
 - PAID AS ITEM 618.10, "PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH"STRUCTURAL SLAB AT UTILITY BANK
 - CONCRETE CLASS B, f'c = 3500 PSI
 - PAID AS ITEM 501.25, "CONCRETE CLASS B"
- ALL NEW GRASSED AREAS AND DISTURBED AREAS SHALL BE TREATED WITH:

ITEM 651.15, "SEED"

ITEM 651.18, "FERTILIZER"

ITEM 651.20, "AGRICULTURED LIMESTONE"

ITEM 651.25, "HAY MULCH"

ITEM 651.35, "TOPSOIL"
- PEDESTRIAN TRAFFIC SHALL BE MAINTAINED ON THE SIDEWALKS ON AT LEAST ONE SIDE OF THE ROADWAY AND BRIDGE AT ALL TIMES. WORK ON APPROACH SIDEWALKS SHALL BE COORDINATED WITH THE WORK ON THE BRIDGE SIDEWALKS.
- ALL SIDEWALK RAMPS AND ASSOCIATED CURB CUTS SHALL MEET THE "AMERICANS WITH DISABILITIES ACT" (ADA) GUIDELINES. ANY SIDEWALK RAMP OR CURB CUT INSTALLED AS PART OF THIS PROJECT WHICH DOES NOT MEET ADA GUIDELINES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE PAID UNDER ITEM 646.82, "REMOVAL OF EXISTING PAVEMENT MARKINGS".

APPROACH ROADWAY STREET LIGHTING NOTES:

- THE NEW STREETLIGHTS SHALL BE EQUIPPED WITH 250 WATT, HIGH-PRESSURE SODIUM, TYPE III LUMINAIRES. LUMINAIRES SHALL HAVE CUT-OFF REFRACTORS AND PHOTOELECTRIC CELLS.
- THE NEW LIGHT POLES ARE LOCATED APPROXIMATELY 8 FEET BEHIND THE EXISTING LIGHT POLES BEING REMOVED. REFER TO THE NEW STREETLIGHT INFORMATION TABLE ON THIS SHEET FOR LOCATION AND DETAILS. APPROXIMATE LOCATIONS ARE ALSO SHOWN ON SHEETS 41 AND 48.
- STREET LIGHTING SHALL CONFORM TO SECTION 619 OF THE STANDARD SPECIFICATIONS.
- EXISTING STREETLIGHTS TO BE REMOVED SHALL BE SALVAGED TO THE CITY OF SOUTH BURLINGTON. (SEE SPECIAL PROVISIONS).
- THE CONTRACTOR SHALL PROVIDE CALCULATIONS AND DETAILS, STAMPED BY A LICENSED PROFESSIONAL ENGINEER, TO THE VAOT STRUCTURES ENGINEER FOR THE DESIGN OF THE NEW LIGHT POLE FOUNDATIONS. THE TYPICAL FOUNDATION SIZE SHOWN ON THE VAOT LIGHTING STANDARD SHEET SHALL NOT BE USED WITHOUT SUBMITTING CALCULATIONS STAMPED BY A LICENSED PROFESSIONAL ENGINEER.
- ALL WORK ASSOCIATED WITH THE DESIGN, FABRICATION, AND ERECTION OF NEW STREETLIGHTS AND FOUNDATIONS SHALL BE PAID AS ITEM 619.15, "STREET LIGHTING", UNLESS OTHERWISE NOTED. THIS SHALL ALSO INCLUDE COMPLETE REMOVAL OF THE EXISTING STREETLIGHTS AND FOUNDATIONS BEING REPLACED.
- NEW JUNCTION BOXES SHALL BE INSTALLED IN THE VICINITY OF EACH EXISTING LIGHT POLE BEING REMOVED. NEW CONDUIT AND WIRING SHALL BE INSTALLED FROM THE NEW JUNCTION BOX TO THE NEW LIGHT POLE, AND FROM THE NEW LIGHT POLE TO THE NEAREST JUNCTION BOX AT THE BRIDGE. NEW CONDUIT AND WIRING SHALL BE COMPATIBLE WITH THE EXISTING CONDUIT AND WIRING AND THE NEW STREETLIGHT. ALL COSTS ASSOCIATED WITH REMOVAL AND REPLACEMENT OF EXISTING CONDUIT AND WIRING SHALL BE PAID AS ITEM 618.23, "WIRED CONDUIT". NEW JUNCTION BOXES SHALL BE PAID AS ITEM 618.26, "JUNCTION BOX".

THE CONTRACTOR SHALL DEVELOP A PLAN SHOWING THE PROPOSED LOCATIONS OF NEW JUNCTION BOXES AND CONDUIT REQUIRED FOR THE NEW STREETLIGHTS. THIS PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW ALONG WITH DETAILS OF THE NEW JUNCTION BOXES, CONDUIT, AND WIRING. THIS WORK SHALL BE SUBSIDIARY TO ITEMS 618.23 AND 618.26.
- REMOVAL OF ABANDONED STREETLIGHT FOUNDATIONS AS SHOWN ON THE PLANS OR AS ORDERED SHALL BE SUBSIDIARY TO ITEM 619.15.
- A DECAL SHALL BE APPLIED TO ALL NEW STREETLIGHT POLES ON THE ROADWAY SIDE AT APPROXIMATELY 6 FEET ABOVE FINISH GRADE. FOR DETAILS OF THE DECAL SEE SPECIAL PROVISIONS. COST FOR DECALS SHALL BE SUBSIDIARY TO ITEM 619.15.
- THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING STREET LIGHTING NOT BEING REPLACED REMAINS OPERATIONAL DURING CONSTRUCTION. UNTIL THE NEW STREET LIGHTS ARE OPERATIONAL THE CONTRACTOR SHALL PROVIDE TEMPORARY LIGHTING AS DIRECTED BY THE ENGINEER TO COMPENSATE FOR EXISTING STREET LIGHTS THAT HAVE BEEN REMOVED. ALL COSTS FOR ANY TEMPORARY LIGHTING REQUIRED SHALL BE INCLUDED IN ITEM 619.15.

NEW STREETLIGHT INFORMATION

POLE LOCATION		LENGTH OF POLE (FT)	LENGTH OF ARM (FT)	BREAKAWAY	LUMINAIRE		MOUNTING HEIGHT (FT)	REMARKS
STATION	OFFSET				WATTS	TYPE		
25+42	66' LEFT	38±	15	YES	250	III	40±	
25+78	65' RIGHT	38±	15	YES	250	III	40±	
30+70	60' LEFT	38±	15	YES	250	III	40±	
31+01	69' RIGHT	38±	15	YES	250	III	40±	

ITEM 646.50, "DURABLE LETTER OR SYMBOL (TYPE I TAPE)"		
DESCRIPTION	TOTAL QUANTITY	LOCATION
STOP	4 x 6 = 24	EACH RAMP CROSSING
TOTAL	24	

ITEM 646.50, "DURABLE LETTER OR SYMBOL"		
DESCRIPTION	TOTAL QUANTITY	LOCATION
	7	EACH RAMP CROSSING
	14	EQUALLY SPACED IN BIKEWAY BETWEEN RAMPS D4G AND B4E
	14	EQUALLY SPACED IN BIKEWAY BETWEEN RAMPS D4G AND B4E
TOTAL	35	

SEEDING FORMULA URBAN AREAS

% WT.	LB\$./A.	NAME	FUR %	GERM %
42.5	34.0	CREEPING RED FESCUE	98	85
10.0	8.0	PERENNIAL RYE GRASS	95	90
42.5	34.0	KENTUCKY BLUE GRASS	85	85
5.0	4.0	ANNUAL RYE GRASS	95	85
100.0	80.0			

SEEDING NOTES:

SEED MIXTURE:
SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.

SEED:
TO BE APPLIED PER SEEDING FORMULAS OR AS DIRECTED BY THE ENGINEER.

FERTILIZER:
FORMULA 10-20-10, TO BE USED WITH SEED, APPLIED AT THE RATE OF 500 LB\$/ACRE. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).

AGRICULTURAL LIMESTONE:
TO BE APPLIED AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

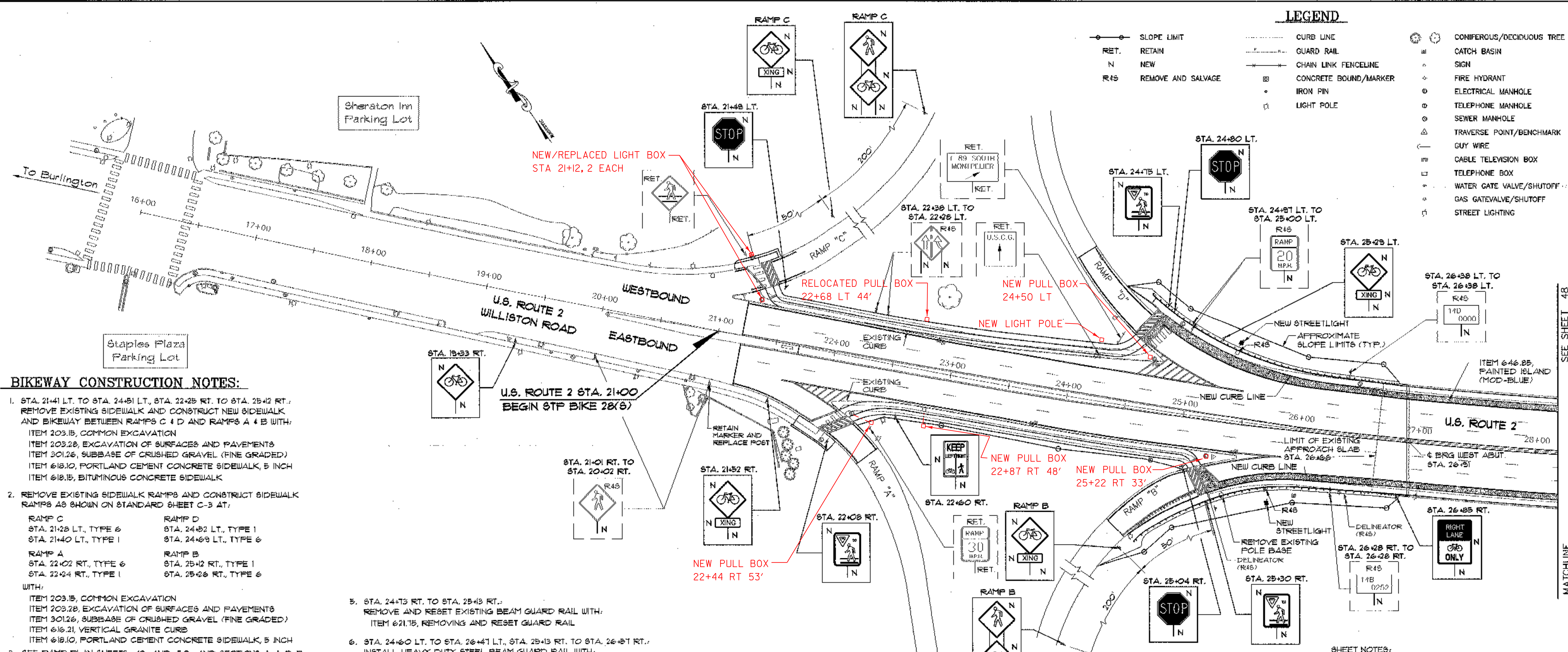
HAY MULCH:
TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

TOPSOIL:
TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No. 68
		Log Sta.
Highway No.U.S. 2		Surv. Sta.

U.S. 2 OVER I-89	
BIKEWAY GENERAL NOTES	
Designed By S.M. HODGDON	Drawn By C.L. CILLEY
Checked By T.S. BRYANT 2/00	Date 2/00 Bridge Design Supervisor C.D. BAKER Date 2/00
PROJECT SOUTH BURLINGTON	PROJECT NO. STP BIKE (28)S
VHB Cad Drawing No. 50363GNT	Date 2/00
Bridge Sheet No.	Sheet 46 of 75



- BIKEWAY CONSTRUCTION NOTES:**
- STA. 21+41 LT. TO STA. 24+51 LT., STA. 22+25 RT. TO STA. 25+42 RT.: REMOVE EXISTING SIDEWALK AND CONSTRUCT NEW SIDEWALK AND BIKEWAY BETWEEN RAMP C & D AND RAMP A & B WITH:
ITEM 203.15, COMMON EXCAVATION
ITEM 203.28, EXCAVATION OF SURFACES AND PAVEMENTS
ITEM 301.26, SUBBASE OF CRUSHED GRAVEL (FINE GRADED)
ITEM 618.10, PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
ITEM 618.15, BITUMINOUS CONCRETE SIDEWALK
 - REMOVE EXISTING SIDEWALK RAMP AND CONSTRUCT SIDEWALK RAMP AS SHOWN ON STANDARD SHEET C-3 AT:

RAMP C STA. 21+28 LT., TYPE 6 STA. 21+40 LT., TYPE 1	RAMP D STA. 24+52 LT., TYPE 1 STA. 24+69 LT., TYPE 6
RAMP A STA. 22+02 RT., TYPE 6 STA. 22+24 RT., TYPE 1	RAMP B STA. 25+12 RT., TYPE 1 STA. 25+26 RT., TYPE 6

WITH:
ITEM 203.15, COMMON EXCAVATION
ITEM 203.28, EXCAVATION OF SURFACES AND PAVEMENTS
ITEM 301.26, SUBBASE OF CRUSHED GRAVEL (FINE GRADED)
ITEM 618.21, VERTICAL GRANITE CURB
ITEM 618.10, PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
 - SEE RAMP PLAN SHEETS 49 AND 50, AND SECTIONS A-A, B-B, AND C-C ON SHEET 54.

STA. 24+61 LT. TO STA. 26+66 LT., STA. 25+11 RT. TO STA. 26+66 RT.
CONSTRUCT SIDEWALK WITH:
ITEM 203.15, COMMON EXCAVATION
ITEM 203.28, EXCAVATION OF SURFACES AND PAVEMENTS
ITEM 301.26, SUBBASE OF CRUSHED GRAVEL (FINE GRADED)
ITEM 618.21, VERTICAL GRANITE CURB
ITEM 618.40, REMOVING AND RESET CURB
ITEM 618.10, PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH

CONSTRUCT SIDEWALK WIDENING AND OVERLAY AS NECESSARY WITH:
ITEM 529.25, REMOVAL OF CONCRETE OR MASONRY
ITEM 501.60, SILICA-FUME CONCRETE (MOD.)

CONSTRUCT REINFORCED CONCRETE SLAB OVER FIBER OPTIC BANK AS NECESSARY WITH:
ITEM 501.25, CONCRETE CLASS B
ITEM 507.15, REINFORCING STEEL.
 - STA. 26+59 LT. AND STA. 26+61 RT.: RECONSTRUCT EXISTING DROP INLET AS NECESSARY TO RELOCATE GRATE FRAME ADJACENT TO NEW CURB LINE WITH:
ITEM 604.41, REHABILITATION OF DROP INLETS, CATCH BASINS OR MANHOLES.

COSTS FOR ANY NEW PIPE REQUIRED TO CONNECT THE RELOCATED DROP INLETS TO THE EXISTING DRAINAGE SYSTEM SHALL BE INCLUDED IN ITEM 604.41.

STA. 22+55 LT., STA. 23+75 RT., STA. 24+10 LT., AND STA. 25+45 RT.: ADJUST ELEVATIONS OF DROP INLETS AS NECESSARY TO ACCOMMODATE CHANGES IN FINISHED GRADE WITH:
ITEM 604.40, CHANGING ELEVATIONS OF DROP INLETS, CATCH BASINS OR MANHOLES.

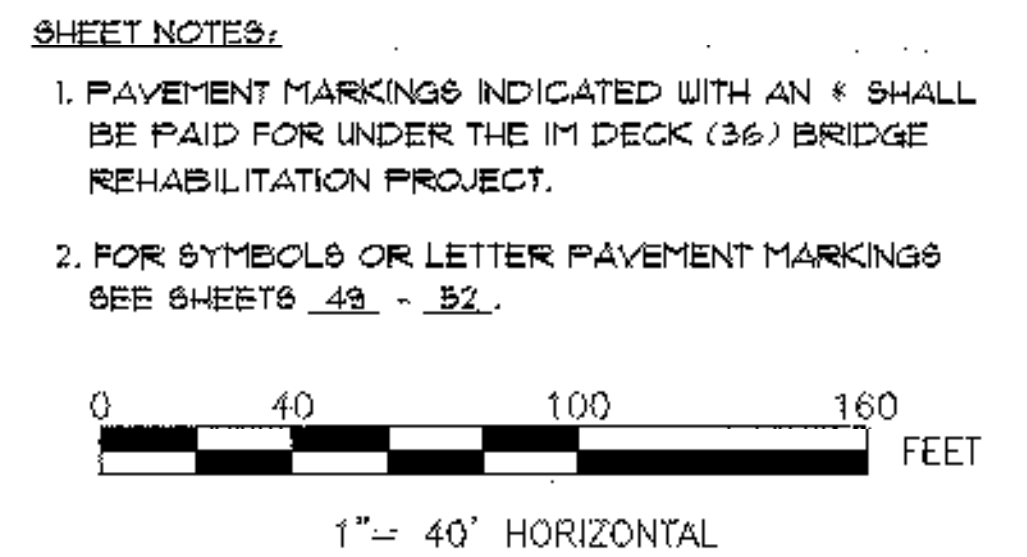
- STA. 24+14 RT.: RESET EXISTING END UNIT
COST INCLUDED IN ITEM 621.15, REMOVING AND RESET GUARD RAIL
- STA. 24+60 LT.: INSTALL G1-D TERMINAL UNIT
COST INCLUDED IN ITEM 621.21, HEAVY DUTY STEEL BEAM GUARD RAIL
- ALL SLOPES BEHIND FACE OF RAIL SHALL BE TREATED WITH THE FOLLOWING AS DIRECTED BY THE ENGINEER:
ITEM 203.15, COMMON EXCAVATION
ITEM 618.10, STONE FILL, TYPE I
ITEM 649.31, GEOTEXTILE UNDER STONE FILL
ITEM 651.35, TOPSOIL
SEE RAMP PLAN SHEETS 49 AND 50, AND SECTIONS A-A, B-B, AND C-C ON SHEET 54.
- STA. 24+75 RT. TO STA. 25+15 RT.: SCORE PAVEMENT TO CREATE RUMBLE STRIP WITH:
ITEM 213.10, MILLED RUMBLE STRIPS
- AN EXISTING RAMP MARKER SIGN IS PRESENTLY AT STA. 21+00 RT. MOUNTED TO A TRAFFIC SIGNPOST THAT IS BEING REMOVED. THE CONTRACTOR SHALL PROVIDE A NEW POST FOR THIS SIGN AND RESECURE THE RAMP MARKER SIGN. THIS WORK SHALL BE SUBSIDIARY TO ITEM 615.50, REMOVING SIGNS.
- ALL DELINEATORS REMOVED AND SALVAGED SHALL BE PLACED WITHIN 10 FEET OF EXISTING LOCATION OR AS DIRECTED BY THE ENGINEER. REMOVING AND RESET EXISTING DELINEATORS SHALL BE SUBSIDIARY TO ITEM 615.50, REMOVING SIGNS.

- PAVEMENT MARKING NOTES**
- ITEM 646.40, DURABLE 4" WHITE LINE (TYPE I TAPE)
STA. 21+21, LT - 24+43, LT
* STA. 21+21, LT - 28+20, LT (DASHED)
STA. 21+21, RT - 21+81, RT
* STA. 21+21, RT - 28+20, RT (DASHED)
STA. 22+11, RT - 25+48, RT
* STA. 25+50, LT - 28+20, LT (DASHED)
* STA. 25+56, RT - 28+20, RT (DASHED)
- ITEM 646.41, DURABLE 4" YELLOW LINE (TYPE I TAPE)
* STA. 21+21, LT - 28+20, LT
* STA. 21+21, RT - 28+20, RT
- ITEM 646.414, DURABLE 6" WHITE LINE (TYPE I TAPE)
STA. 21+33, LT - 21+52, LT
STA. 22+08, RT - 22+37, RT
STA. 24+04, LT - 24+61, LT
STA. 24+64, RT - 25+49, RT
STA. 24+60, LT - 24+20, LT
STA. 25+37, RT - 25+20, RT
- ITEM 646.415, DURABLE 6" YELLOW LINE (TYPE I TAPE)
STA. 21+43, LT - 21+63, LT
STA. 22+26, RT - 22+49, RT
STA. 23+81, LT - 24+50, LT
STA. 24+50, RT - 25+09, RT

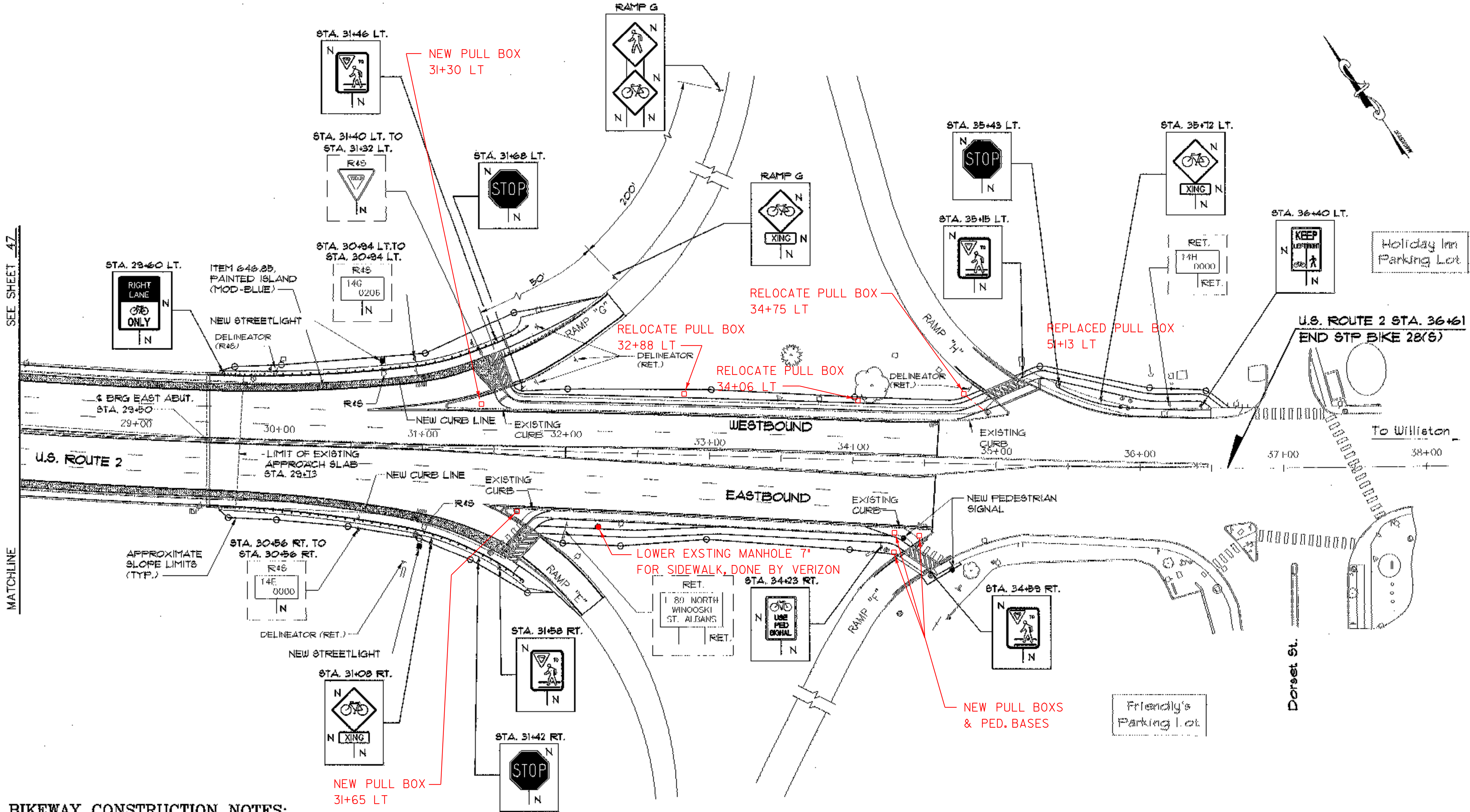
- ITEM 646.42, DURABLE 8" WHITE LINE (TYPE I TAPE)
STA. 21+11, LT - 21+25, LT
STA. 21+60, RT - 22+71, RT
STA. 21+73, RT - 22+21, RT (INCL. DIAGONALS)
STA. 24+43, LT - 25+48, LT
STA. 24+56, LT - 25+26, LT (INCL. DIAGONALS)
STA. 24+63, LT - 25+26, LT
STA. 25+22, RT - 25+36, RT
STA. 25+48, RT - 25+36, RT
- ITEM 646.44, DURABLE 12" WHITE LINE (TYPE I TAPE)
STA. 21+13, LT - 21+32, LT
STA. 21+42, LT - 21+45, LT
STA. 21+51, RT - 22+11, RT
STA. 24+60, LT - 24+80, LT
STA. 24+63, LT - 24+80, LT
STA. 25+13, RT - 25+48, RT
STA. 25+21, RT - 25+37, RT
- ITEM 646.51, DURABLE CROSSWALK W/ DIAGONAL LINES (TYPE I TAPE)
LOCATED AT EACH RAMP CROSSING AS SHOWN.
- ITEM 646.55, PAINTED ISLAND (MOD-BLUE)
RAMP D TO RAMP G, LT
RAMP B TO RAMP E, RT
SEE DETAIL ON SHEET 54.

LEGEND

	SLOPE LIMIT		CURB LINE		CONIFEROUS/DECIDUOUS TREE
	RETAIN		GUARD RAIL		CATCH BASIN
	NEW		CHAIN LINK FENCELINE		SIGN
	REMOVE AND SALVAGE		CONCRETE BOUND/MARKER		FIRE HYDRANT
			IRON PIN		ELECTRICAL MANHOLE
			LIGHT POLE		TELEPHONE MANHOLE
					SEWER MANHOLE
					TRAVERSE POINT/BENCHMARK
					GUY WIRE
					CABLE TELEVISION BOX
					TELEPHONE BOX
					WATER GATE VALVE/SHUTOFF
					GAS GATEVALVE/SHUTOFF
					STREET LIGHTING



STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log Sta. --- Surv. Sta. ---	
U.S. 2 OVER I-89			
BIKEWAY PLAN (1 OF 2)			
Designed By G.M. HODGSON		Drawn By G.L. CILEY	
Checked By T.S. BRYANT Date 2/00		Bridge Design Supervisor C.D. BAKER Date 2/00	
PROJECT SOUTH BURLINGTON		PROJECT NO. STP BIKE (28)S	
VHB Cad Drawing No. 50363BIK		Date 2/00	
Bridge Sheet No. ---		Sheet 47 of 15	



PAVEMENT MARKING NOTES:

- ITEM 646.40, DURABLE 4" WHITE LINE (TYPE I TAPE)
- * STA. 28+20, LT - 30+61, LT (DASHED)
 - * STA. 28+20, RT - 34+58, RT (DASHED)
 - * STA. 28+20, LT - 34+58, LT (DASHED)
 - * STA. 28+20, RT - 34+58, RT (DASHED)
 - STA. 31+16, LT - 34+58, LT
 - STA. 31+60, RT - 34+58, RT
- ITEM 646.41, DURABLE 4" YELLOW LINE (TYPE I TAPE)
- * STA. 28+20, LT - 34+58, LT
 - * STA. 28+20, RT - 34+58, RT
- ITEM 646.414, DURABLE 6" WHITE LINE (TYPE I TAPE)
- STA. 28+20, LT - 31+34, LT
 - STA. 28+20, RT - 31+51, RT
 - STA. 31+55, LT - 32+26, LT
 - STA. 31+72, RT - 32+15, RT
 - STA. 34+31, RT - 34+55, RT
 - STA. 34+82, LT - 35+11, LT
- ITEM 646.415, DURABLE 6" YELLOW LINE (TYPE I TAPE)
- STA. 31+62, LT - 32+37, LT
 - STA. 31+84, RT - 32+29, RT
 - STA. 34+17, RT - 34+38, RT
 - STA. 34+69, LT - 34+91, LT
- ITEM 646.42, DURABLE 8" WHITE LINE (TYPE I TAPE)
- STA. 30+61, LT - 31+16, LT
 - STA. 30+61, LT - 31+17, LT
 - STA. 31+44, RT - 31+60, RT
 - STA. 31+44, RT - 31+60, RT (INCL. DIAGONALS)
 - STA. 31+44, RT - 31+72, RT
 - STA. 34+45, RT - 34+55, RT
 - STA. 34+62, RT - 34+70, RT
- ITEM 646.44, DURABLE 12" WHITE LINE (TYPE I TAPE)
- STA. 31+34, LT - 31+48, LT
 - STA. 31+56, LT - 31+60, LT
 - STA. 31+57, RT - 31+65, RT
 - STA. 31+57, RT - 31+74, RT
 - STA. 35+02, LT - 35+34, LT
 - STA. 35+33, LT - 35+34, LT
- ITEM 646.46, DURABLE 24" STOP BAR (TYPE I TAPE)
- STA. 34+32, RT - 34+52, RT
- ITEM 646.51, DURABLE CROSSWALK W/ DIAGONAL LINES (TYPE I TAPE)
- LOCATED AT EACH RAMP CROSSING AS SHOWN.

BIKEWAY CONSTRUCTION NOTES:

- STA. 31+59 LT. TO STA. 34+32 LT., STA. 31+82 RT. TO STA. 34+40 RT. AND STA. 35+18 LT. TO STA. 36+61 LT.:
REMOVE EXISTING SIDEWALK AND CONSTRUCT NEW SIDEWALK AND BIKEWAY BETWEEN RAMP G & H, RAMP E & F, AND BEYOND RAMP H WITH:
ITEM 203.15, COMMON EXCAVATION
ITEM 203.28, EXCAVATION OF SURFACES AND PAVEMENTS
ITEM 301.26, SUBBASE OF CRUSHED GRAVEL (FINE GRADED)
ITEM 618.10, PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
ITEM 618.15, BITUMINOUS CONCRETE SIDEWALK
- REMOVE EXISTING SIDEWALK RAMP AND CONSTRUCT SIDEWALK RAMP AS SHOWN ON STANDARD SHEET C-3 AT:

RAMP G	RAMP F
STA. 31+49, LT, TYPE 6	STA. 34+40, RT, TYPE 1
STA. 31+58, LT, TYPE 1	STA. 34+60, RT, TYPE 6
RAMP E	RAMP H
STA. 31+63, RT, TYPE 6	STA. 34+83, LT, TYPE 1
STA. 31+82, RT, TYPE 1	STA. 35+18, LT, TYPE 1

WITH:
ITEM 203.15, COMMON EXCAVATION
ITEM 203.28, EXCAVATION OF SURFACES AND PAVEMENTS
ITEM 301.26, SUBBASE OF CRUSHED GRAVEL (FINE GRADED)
ITEM 618.21, VERTICAL GRANITE CURB
ITEM 618.10, PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
- STA. 29+73 LT. TO STA. 31+56 LT., STA. 29+73 RT. TO STA. 31+67 RT.:
CONSTRUCT SIDEWALK WITH:
ITEM 203.15, COMMON EXCAVATION
ITEM 203.28, EXCAVATION OF SURFACES AND PAVEMENTS
ITEM 301.26, SUBBASE OF CRUSHED GRAVEL (FINE GRADED)
ITEM 618.21, VERTICAL GRANITE CURB
ITEM 618.40, REMOVING AND RESET CURB
ITEM 618.10, PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH

CONSTRUCT SIDEWALK WIDENING AND OVERLAY AS NECESSARY WITH:
ITEM 523.25, REMOVAL OF CONCRETE OR MASONRY
ITEM 501.60, SILICA-FUME CONCRETE (MOD.)

CONSTRUCT REINFORCED CONCRETE SLAB OVER FIBER OPTIC BANK AS NECESSARY WITH:
ITEM 501.25, CONCRETE CLASS B
ITEM 501.13, REINFORCING STEEL

SEE RAMP PLAN SHEETS 49 AND 50, AND SECTIONS A-A, B-B, AND C-C ON SHEET 54.
- STA. 31+00 LT. AND STA. 31+00 RT.:
REPLACE EXISTING DROP INLETS WITH NEW DROP INLETS WITH:
ITEM 604.10, CONCRETE CATCH BASIN WITH CAST IRON GRATE

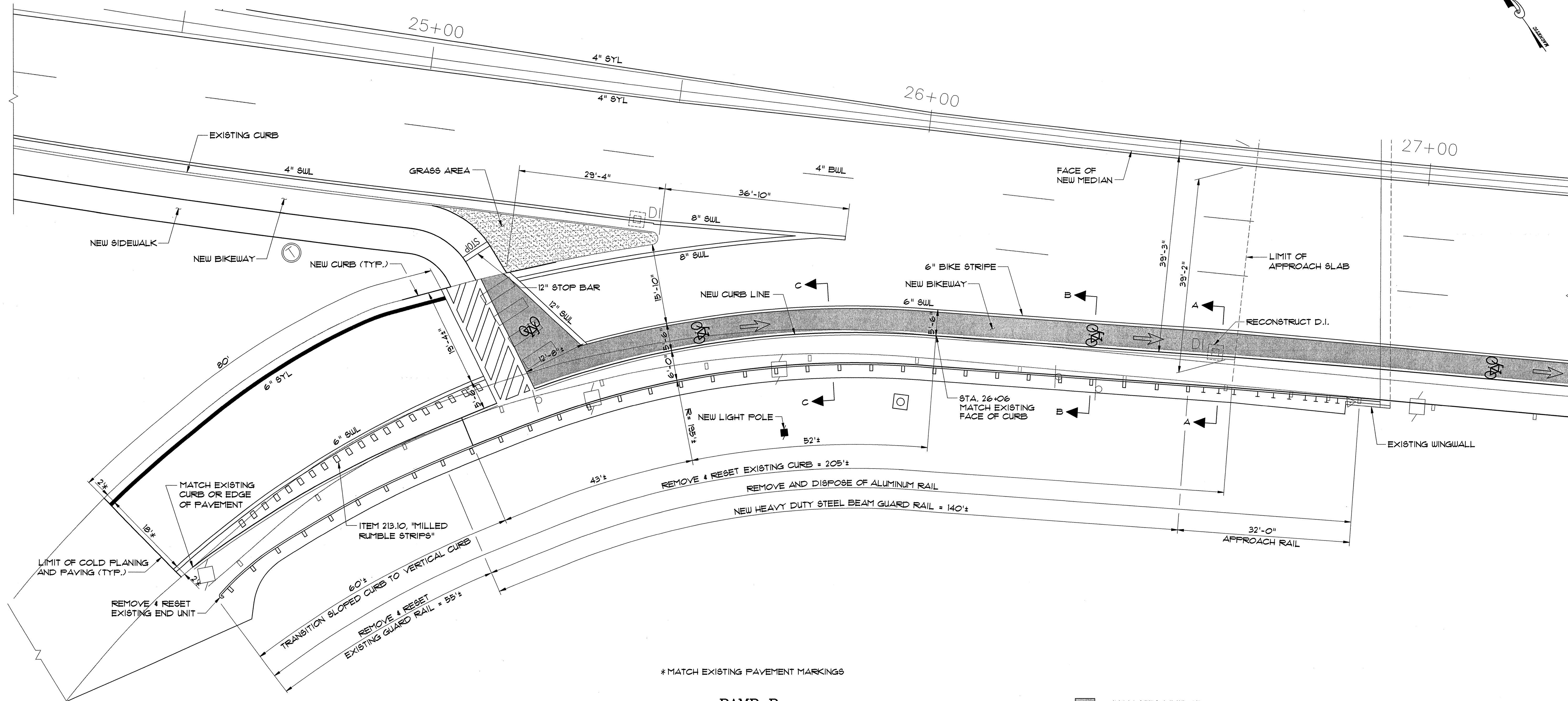
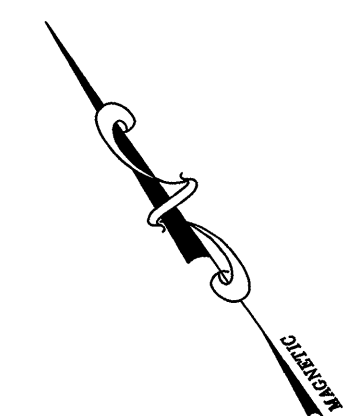
COSTS FOR ANY NEW PIPE REQUIRED TO CONNECT THE RELOCATED DROP INLETS TO THE EXISTING DRAINAGE SYSTEM SHALL BE INCLUDED IN ITEM 604.10. COSTS FOR REMOVAL OF EXISTING DROP INLETS SHALL BE SUBSIDIARY TO ITEM 604.10.
- STA. 30+76 LT. TO STA. 31+73 LT.:
REMOVE AND RESET EXISTING BEAM GUARD RAIL WITH:
ITEM 621.75, REMOVING AND RESET GUARD RAIL
- STA. 29+87 LT. TO STA. 30+76 LT., STA. 29+91 RT. TO STA. 31+73 RT.:
INSTALL HEAVY DUTY STEEL BEAM GUARD RAIL WITH:
ITEM 621.21, HEAVY DUTY STEEL BEAM GUARD RAIL
- STA. 31+71 LT.:
RESET EXISTING END UNIT
COST INCLUDED IN ITEM 621.75, REMOVING AND RESET GUARD RAIL
- STA. 31+73 RT.:
INSTALL G-1-D TERMINAL UNIT
COST INCLUDED IN ITEM 621.21, HEAVY DUTY STEEL BEAM GUARD RAIL
- ALL SLOPES BEHIND FACE OF RAIL SHALL BE TREATED WITH THE FOLLOWING AS DIRECTED BY THE ENGINEER:
ITEM 203.15, COMMON EXCAVATION
ITEM 613.10, STONE FILL, TYPE 1
ITEM 649.31, GEOTEXTILE UNDER STONE FILL
ITEM 651.35, TOPSOIL

SEE RAMP PLAN SHEETS 49 AND 50, AND SECTIONS A-A, B-B, AND C-C ON SHEET 54.
- STA. 31+55 LT. TO STA. 32+02 LT.:
SCORE PAVEMENT TO CREATE RUMBLE STRIP WITH:
ITEM 213.10, MILLED RUMBLE STRIPS

- ALL DELINEATORS REMOVED AND SALVAGED SHALL BE PLACED WITHIN 10 FEET OF EXISTING LOCATION OR AS DIRECTED BY THE ENGINEER. REMOVING AND RESET EXISTING DELINEATORS SHALL BE SUBSIDIARY TO ITEM 618.50, REMOVING SIGN.
- 0 40 100 160
FEET
1" = 40' HORIZONTAL

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of SOUTH BURLINGTON	Bridge No. 68
Highway No. U.S. 2	Log Sta. Surv. Sta.
U.S. 2 OVER I-89	
BIKEWAY PLAN (2 OF 2)	
Designed By S.M. HODGSON	Drawn By C.L. CILEY
Checked By Date	Bridge Design Supervisor
T.S. BRYANT 2/00	C.D. BAKER Date 2/00
PROJECT SOUTH BURLINGTON	PROJECT NO. STP BIKE (28)S
VHB Cad Drawing No. 5096-33-1K	Date 2/00
Bridge Sheet No.	Sheet 48 of 13

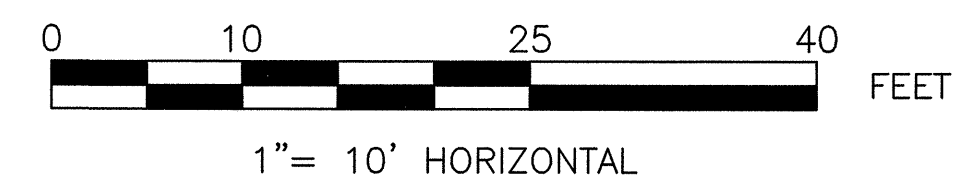
VANASSE HANGEN BRUSTLIN, INC.



RAMP B
SCALE: 1" = 10'

■ = INDICATES LIMIT OF
ITEM 646.25. SEE
SHEET 54 FOR TYPICAL DETAIL.

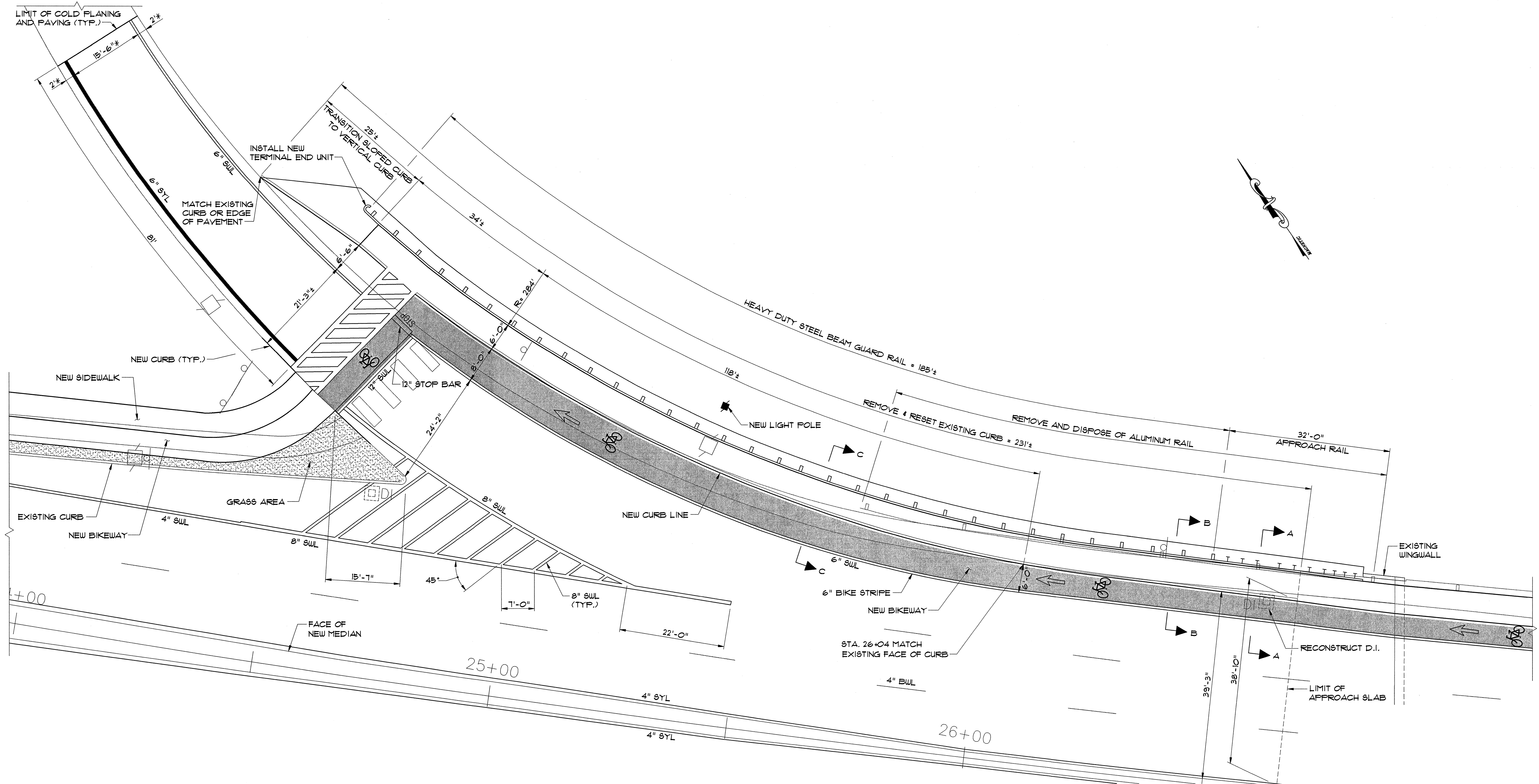
STRIPING LEGEND:
SWL = SOLID WHITE LINE
SYL = SOLID YELLOW LINE
BWL = BROKEN WHITE LINE



- SHEET NOTES:**
- SEE SHEET 41 FOR LEGEND.
 - CURB AND PAVEMENT SHALL BE PLACED AS DIRECTED BY THE ENGINEER FROM LIMIT OF COLD PLANING ON RAMP TO NEW CROSSWALK SO THAT THE ROADWAY WILL DRAIN PROPERLY. THIS WORK SHALL BE SUBSIDIARY TO THE CURB AND PAVEMENT ITEMS.
 - PAVEMENT MARKINGS FOR BIKE SYMBOL AND ARROWS SHALL BE PAID FOR AS ITEM 646.50, "DURABLE LETTER OR SYMBOL. SEE SPECIAL PROVISIONS FOR DETAILS.
 - SEE SHEET 54 FOR SECTIONS A-A, B-B, AND C-C.
 - INFORMATION SHOWN ON THE PLANS IS BASED ON EXISTING DRAWINGS AND LIMITED SURVEY. THE CONTRACTOR SHALL FIELD VERIFY THE LAYOUT OF THE PROPOSED CURB, SIDEWALK AND GUARD RAIL. ANY ADJUSTMENTS TO THE LAYOUT THAT ARE REQUIRED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO EXCAVATION OR PAVEMENT/CURB REMOVAL. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO ALL OTHER ITEMS IN THE CONTRACT.

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
BIKEWAY PLAN RAMP B			
Designed By S.M. HODGDON		Drawn By B.J. MASSE	
Checked By T.S. BRYANT		Bridge Design Supervisor C.D. BAKER	
Date 2/00		Date 2/00	
PROJECT SOUTH BURLINGTON		PROJECT NO. STP BIKE (28)S	
VHB Cad Drawing No. 50363RAMP		Date 2/00	
Bridge Sheet No.		Sheet 49 of 75	

VANASSE HANGEN BRUSTLIN, INC.



SHEET NOTES:

- SEE SHEET 41 FOR LEGEND.
- CURB AND PAVEMENT SHALL BE PLACED AS DIRECTED BY THE ENGINEER FROM LIMIT OF COLD PLANING ON RAMP TO NEW CROSSWALK SO THAT THE ROADWAY WILL DRAIN PROPERLY. THIS WORK SHALL BE SUBSIDIARY TO THE CURB AND PAVEMENT ITEMS.
- PAVEMENT MARKINGS FOR BIKE SYMBOL AND ARROWS SHALL BE PAID FOR AS ITEM 646.50, "DURABLE LETTER OR SYMBOL." SEE SPECIAL PROVISIONS FOR DETAILS.
- SEE SHEET 54 FOR SECTIONS A-A, B-B, AND C-C.
- INFORMATION SHOWN ON THE PLANS IS BASED ON EXISTING DRAWINGS AND LIMITED SURVEY. THE CONTRACTOR SHALL FIELD VERIFY THE LAYOUT OF THE PROPOSED CURB, SIDEWALK, AND GUARD RAIL. ANY ADJUSTMENTS TO THE LAYOUT THAT ARE REQUIRED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO EXCAVATION OR PAVEMENT/CURB REMOVAL. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO ALL OTHER ITEMS IN THE CONTRACT.

* MATCH EXISTING PAVEMENT MARKINGS

RAMP D
SCALE: 1" = 10'

■ = INDICATES LIMIT OF ITEM 646.50. SEE SHEET 54 FOR TYPICAL DETAIL.

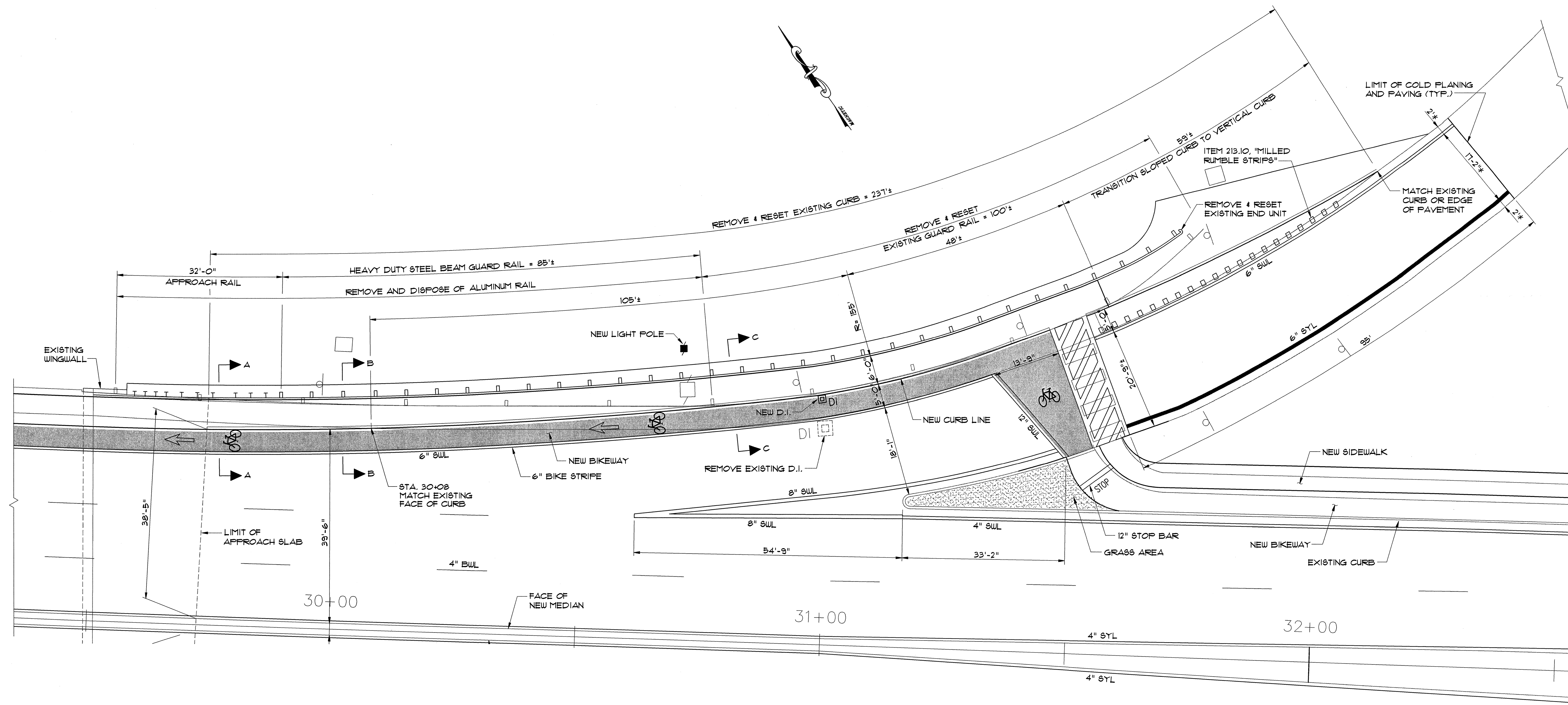
STRIPING LEGEND:

- SWL = SOLID WHITE LINE
- SYL = SOLID YELLOW LINE
- BWL = BROKEN WHITE LINE



STATE OF VERMONT			
AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
BIKEWAY PLAN RAMP D			
Designed By S.M. HODGDON		Drawn By B.J. MASSE	
Checked By T.S. BRYANT	Date 2/00	Bridge Design Supervisor C.D. BAKER	Date 2/00
PROJECT SOUTH BURLINGTON		PROJECT NO. STP BIKE (28)S	
VHB Cad Drawing No. 50363RAMP		Date 2/00	
Bridge Sheet No.		Sheet 50 of 15	

VANASSE HANGEN BRUSTLIN, INC.



*MATCH EXISTING PAVEMENT MARKINGS

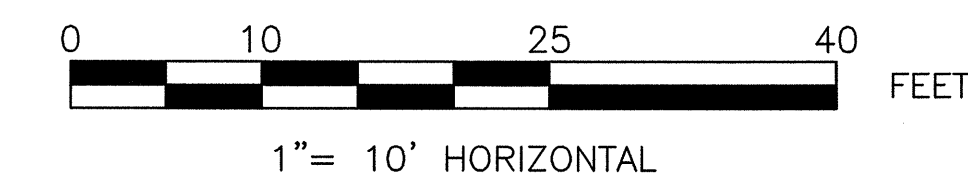
RAMP G

SCALE: 1" = 10'

■ = INDICATES LIMIT OF
ITEM 646.25. SEE
SHEET 34 FOR TYPICAL DETAIL.

STRIPING LEGEND:

SWL = SOLID WHITE LINE
SYL = SOLID YELLOW LINE
BWL = BROKEN WHITE LINE



SHEET NOTES:

- SEE SHEET 41 FOR LEGEND.
- CURB AND PAVEMENT SHALL BE PLACED AS DIRECTED BY THE ENGINEER FROM LIMIT OF COLD PLANING ON RAMP TO NEW CROSSWALK SO THAT THE ROADWAY WILL DRAIN PROPERLY. THIS WORK SHALL BE SUBSIDIARY TO THE CURB AND PAVEMENT ITEMS.
- PAVEMENT MARKINGS FOR BIKE SYMBOL AND ARROWS SHALL BE PAID FOR AS ITEM 646.50, "DURABLE LETTER OR SYMBOL. SEE SPECIAL PROVISIONS FOR DETAILS.
- SEE SHEET 34 FOR SECTIONS A-A, B-B, AND C-C.
- INFORMATION SHOWN ON THE PLANS IS BASED ON EXISTING DRAWINGS AND LIMITED SURVEY. THE CONTRACTOR SHALL FIELD VERIFY THE LAYOUT OF THE PROPOSED CURB, SIDEWALK, AND GUARD RAIL. ANY ADJUSTMENTS TO THE LAYOUT THAT ARE REQUIRED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO EXCAVATION OR PAVEMENT/CURB REMOVAL. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO ALL OTHER ITEMS IN THE CONTRACT.

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No. U.S.	2	Log Sta.	
		Surv. Sta.	

U.S. 2 OVER I-89

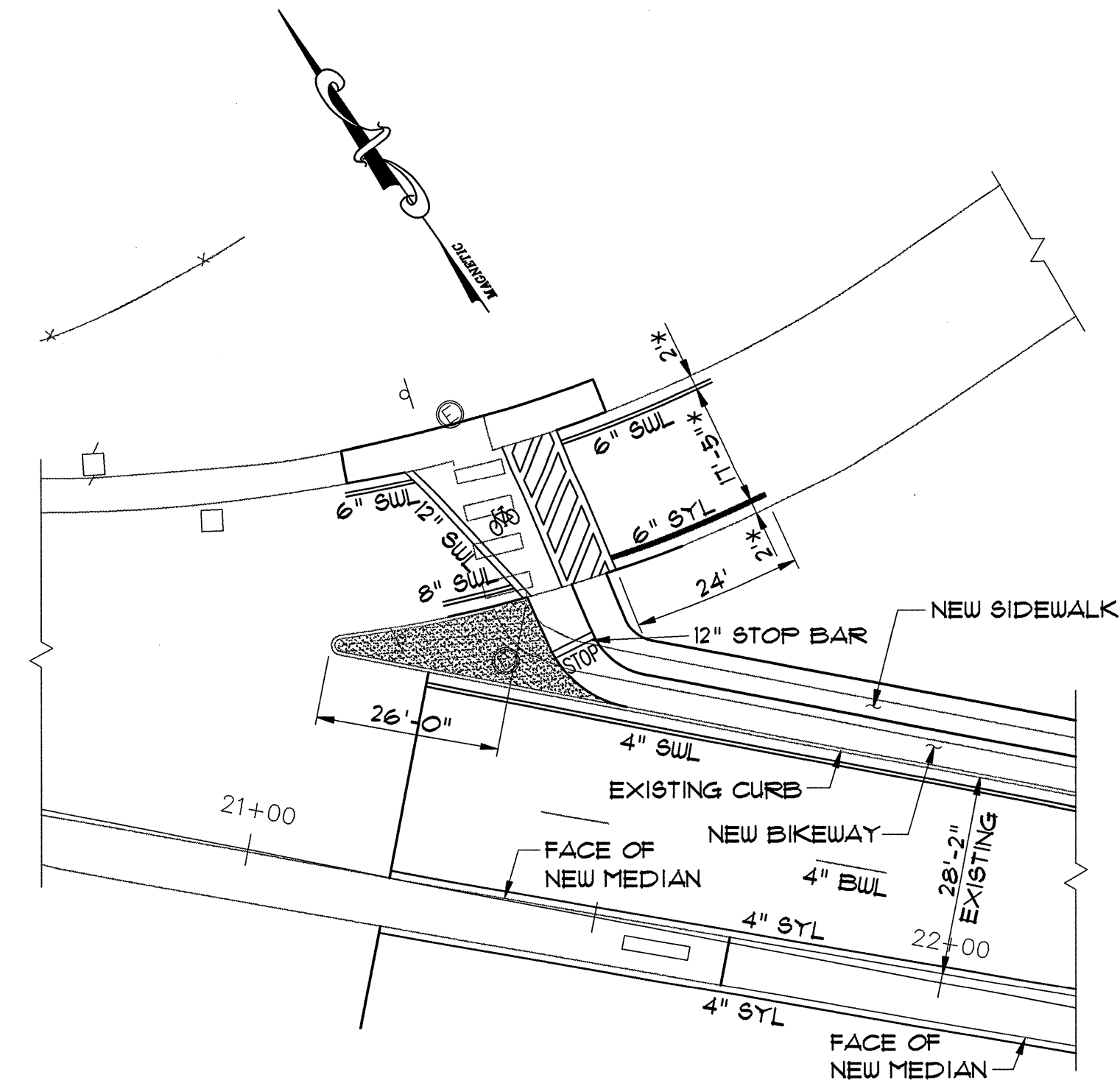
BIKEWAY PLAN RAMP G

Designed By	S.M. HODGDON	Drawn By	B.J. MASSE
Checked By	T.S. BRYANT	Date	2/00
		Bridge Design Supervisor	C.D. BAKER
		Date	2/00

PROJECT	SOUTH BURLINGTON	PROJECT NO.	STP BIKE (28)S
VHB Cad Drawing No.	50963RAMP	Date	2/00

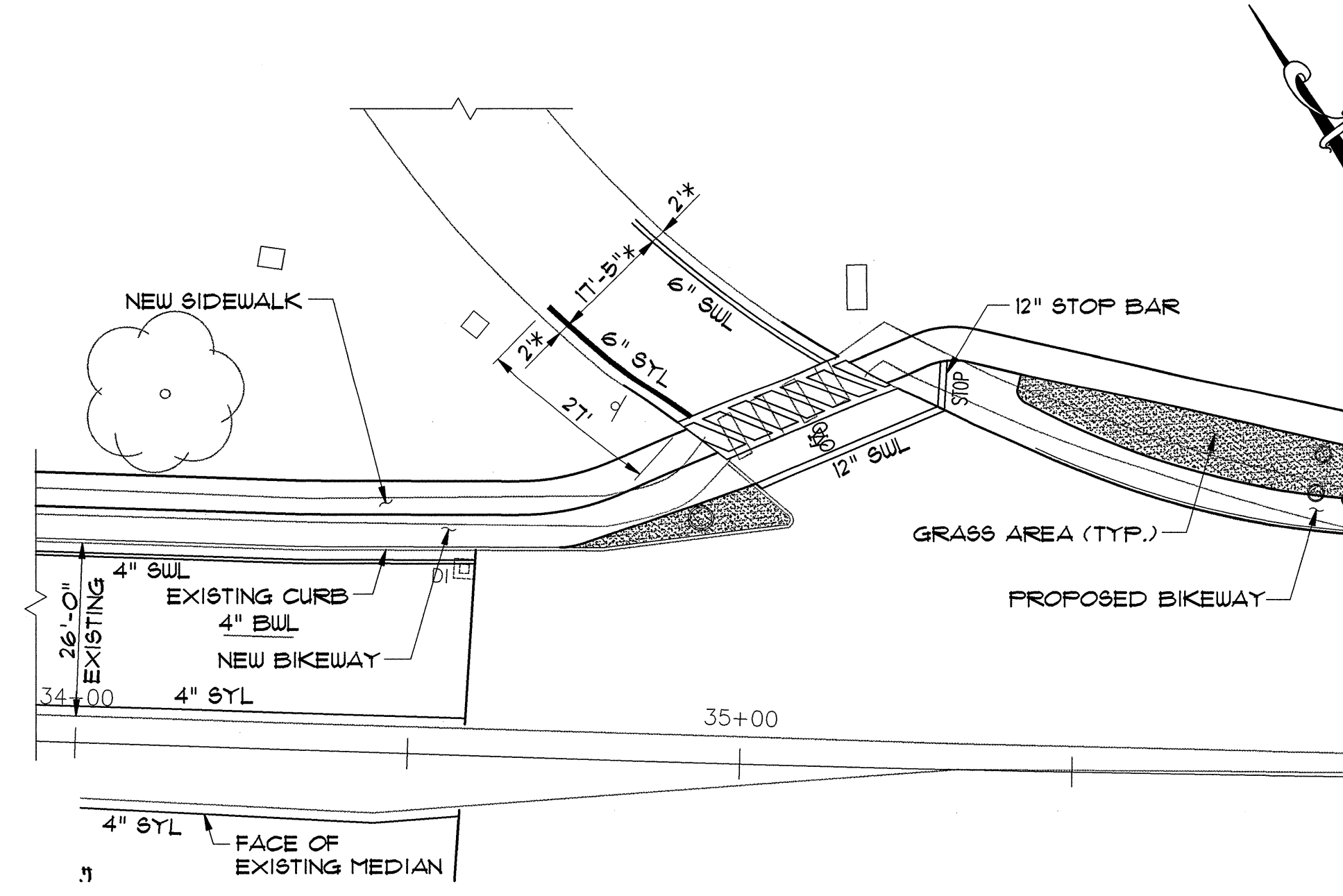
Bridge Sheet No.	Sheet 52 of 75
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VANASSE HANGEN BRUSTLIN, INC.



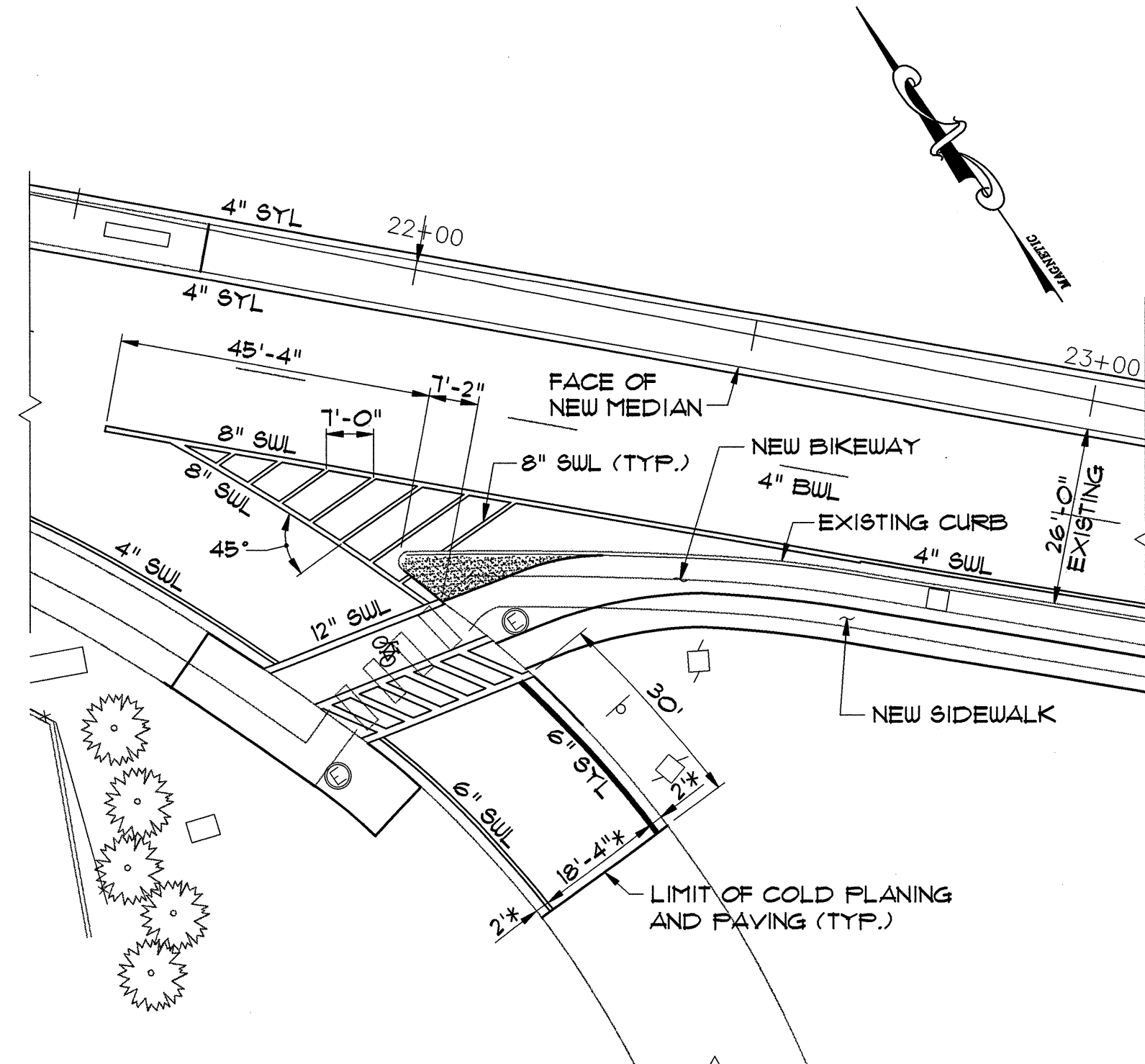
* MATCH EXISTING PAVEMENT MARKINGS

RAMP C
SCALE: 1" = 20'



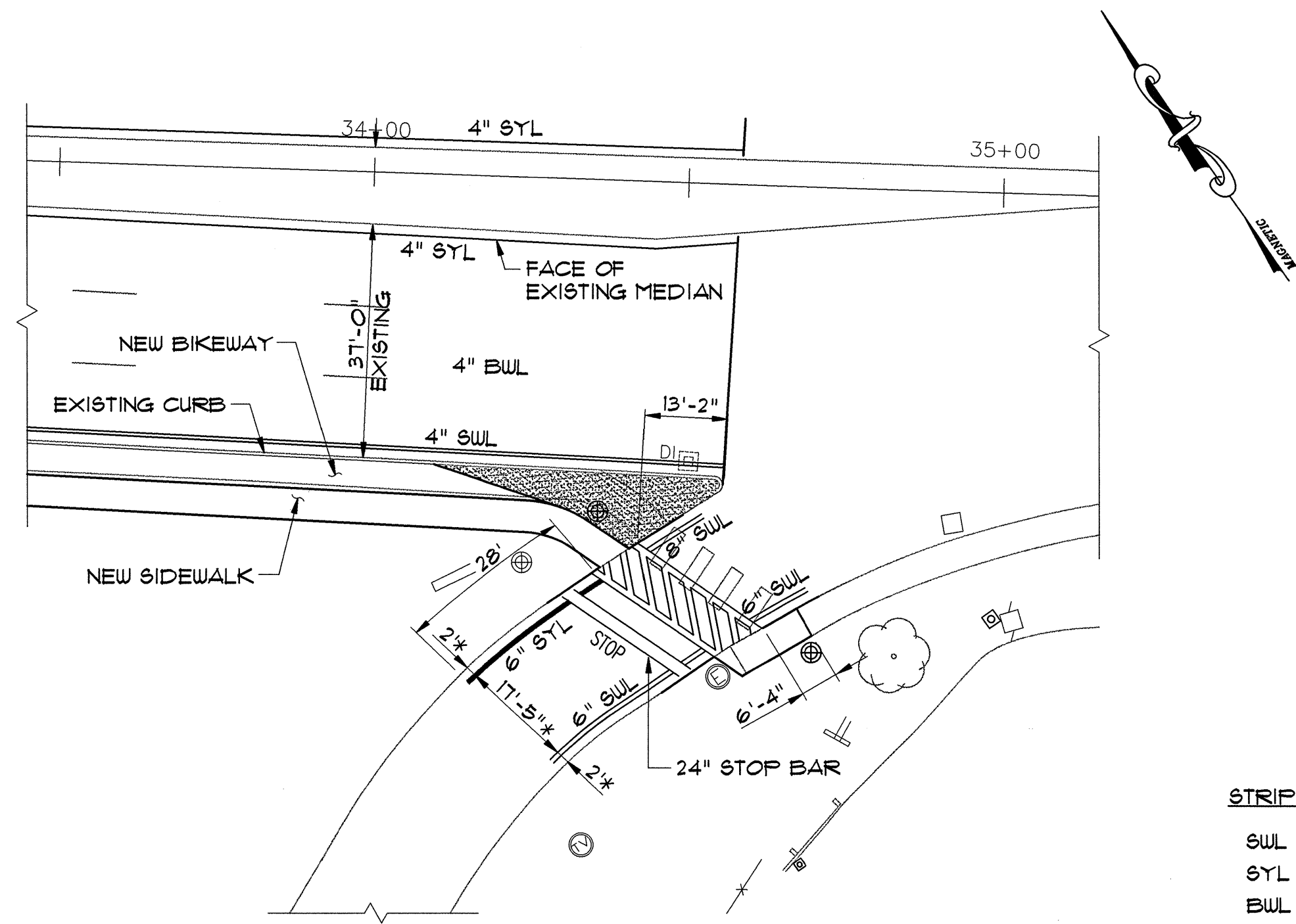
* MATCH EXISTING PAVEMENT MARKINGS

RAMP H
SCALE: 1" = 20'



* MATCH EXISTING PAVEMENT MARKINGS

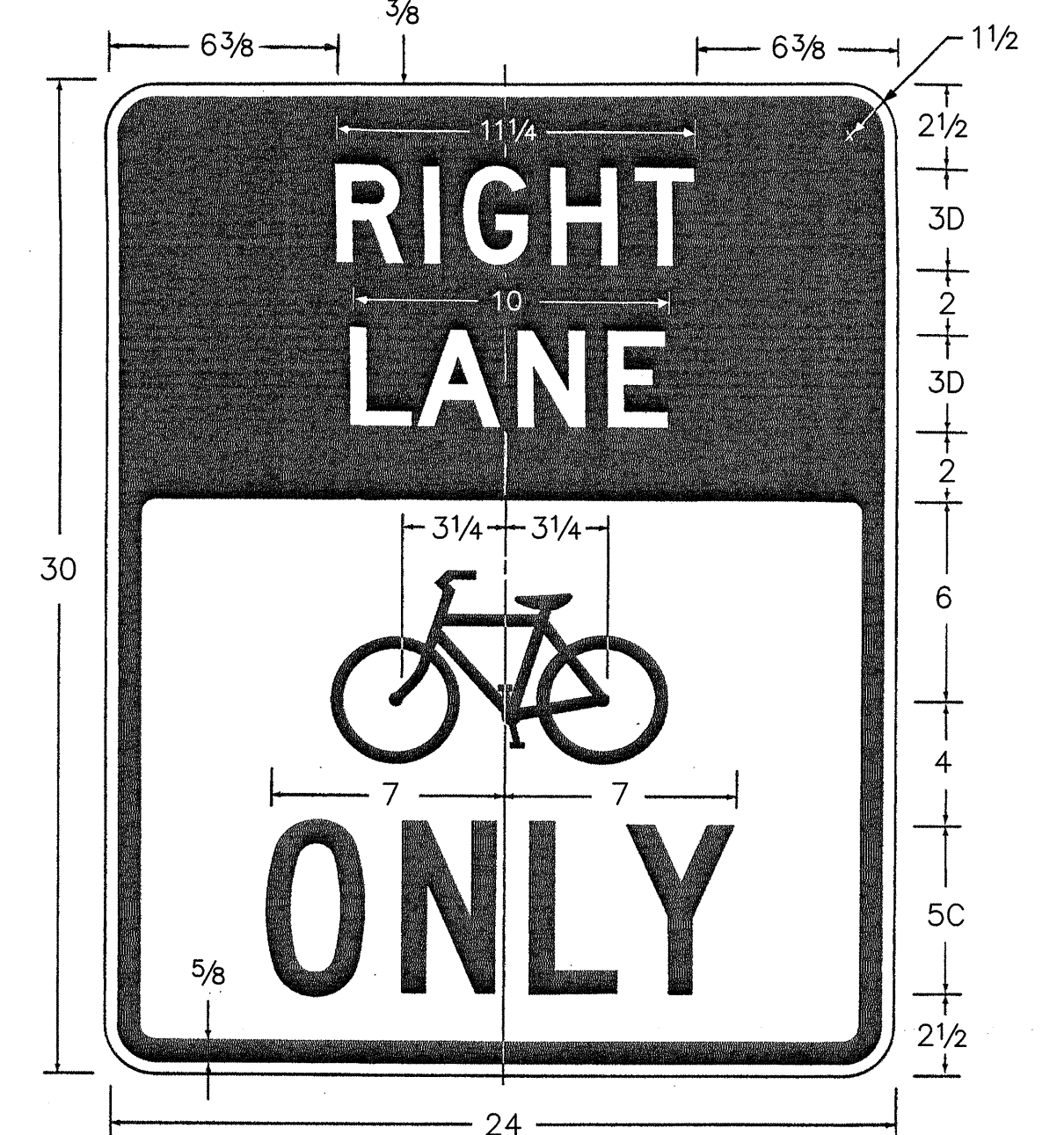
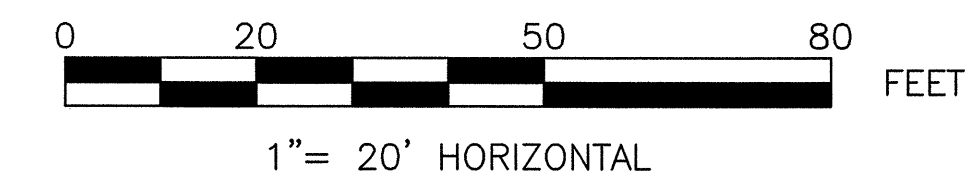
RAMP A
SCALE: 1" = 20'



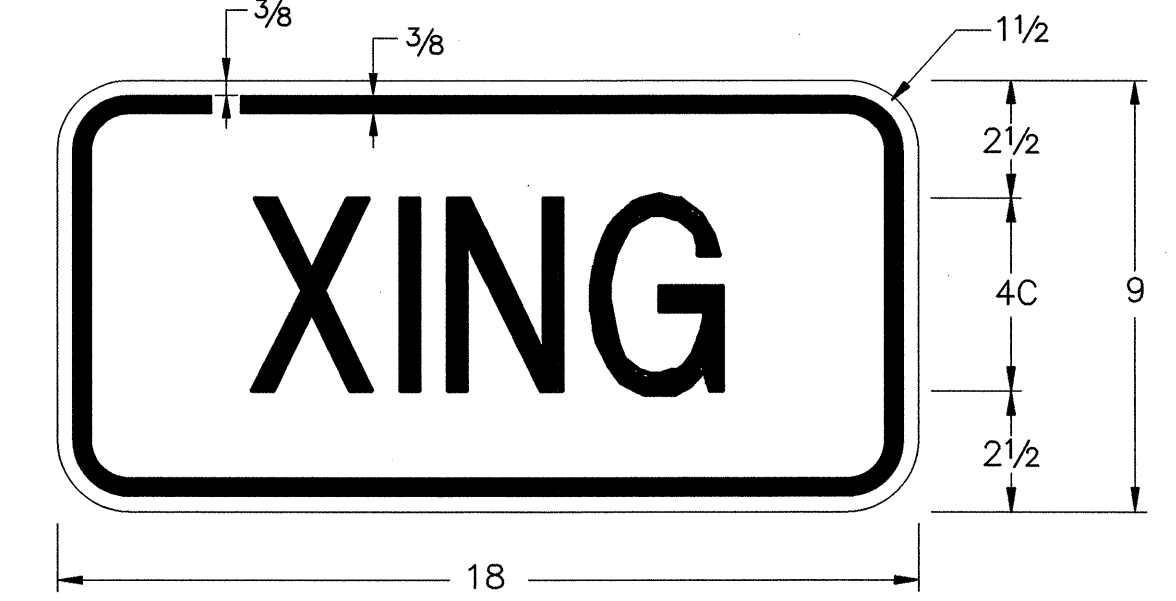
* MATCH EXISTING PAVEMENT MARKINGS

RAMP F
SCALE: 1" = 20'

STRIPING LEGEND:
SUL = SOLID WHITE LINE
SYL = SOLID YELLOW LINE
BWL = BROKEN WHITE LINE



R3-17 (MOD.)
N.T.S.

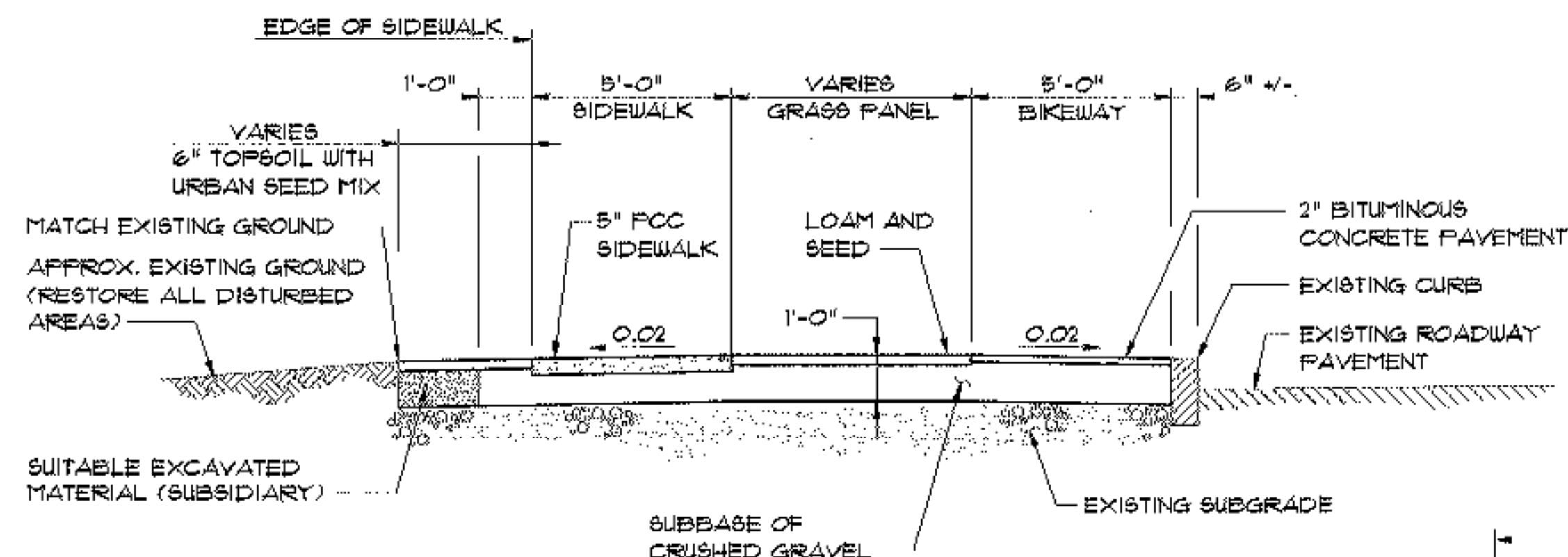


SPECIAL SIGN
N.T.S.

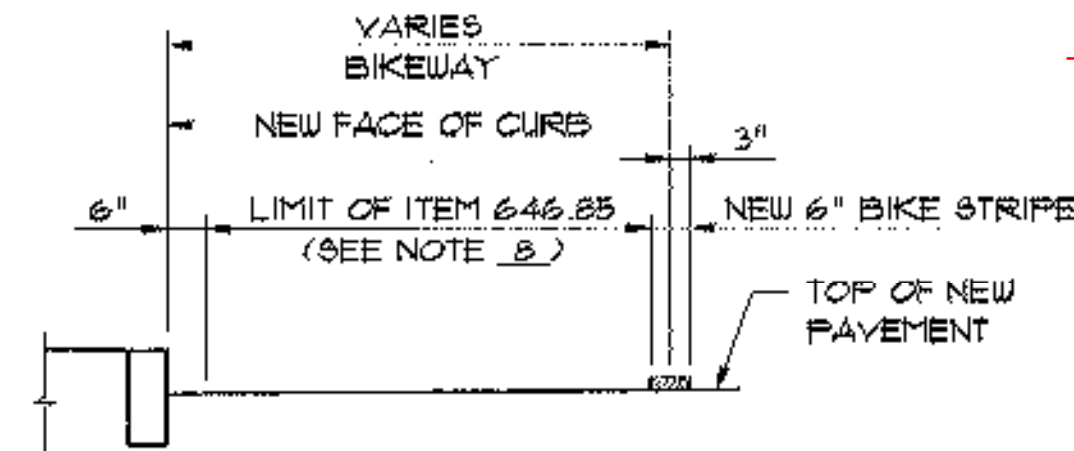
- SHEET NOTES:**
- SEE SHEET 41 FOR LEGEND.
 - PAVEMENT MARKINGS FOR BIKE SYMBOL AND ARROWS SHALL BE PAID FOR AS ITEM 646.50, "DURABLE LETTER OR SYMBOL. SEE SPECIAL PROVISIONS FOR DETAILS.

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

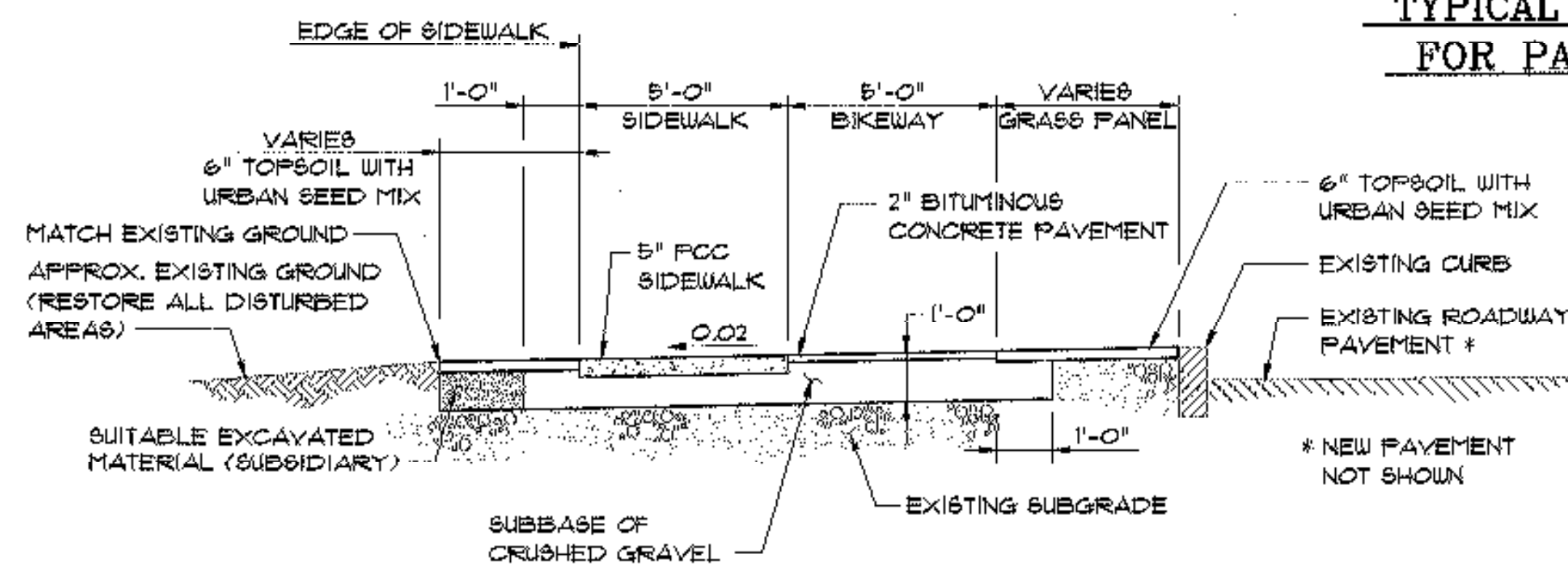
Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
BIKEWAY PLAN RAMPS A, C, F, & H			
Designed By	S.M. HODGDON	Drawn By	B.J. MASSE
Checked By	T.S. BRYANT	Date	2/00
		Bridge Design Supervisor	C.D. BAKER
PROJECT		PROJECT NO.	
SOUTH BURLINGTON		STP BIKE (28)S	
VHB Cad Drawing No. 50363RAMP1		Date 2/00	
Bridge Sheet No.		Sheet 53 of 75	



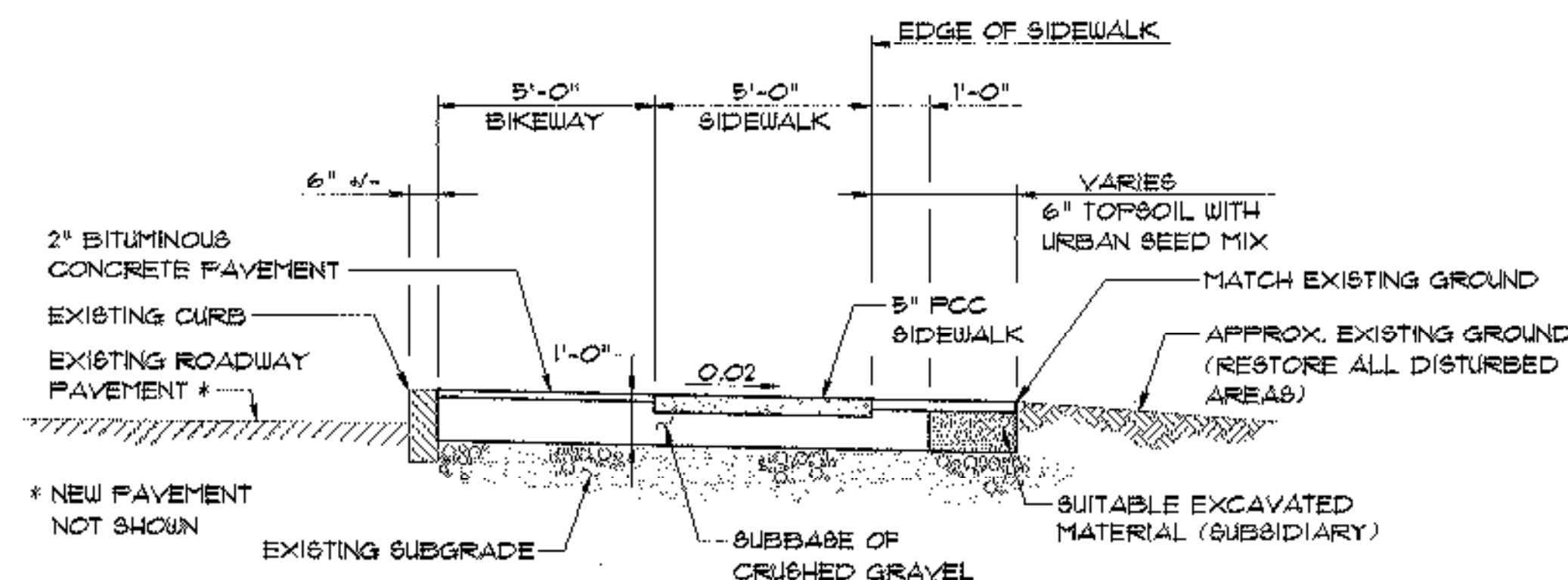
NEW TYPICAL SECTION BEYOND RAMP H
N.T.S.



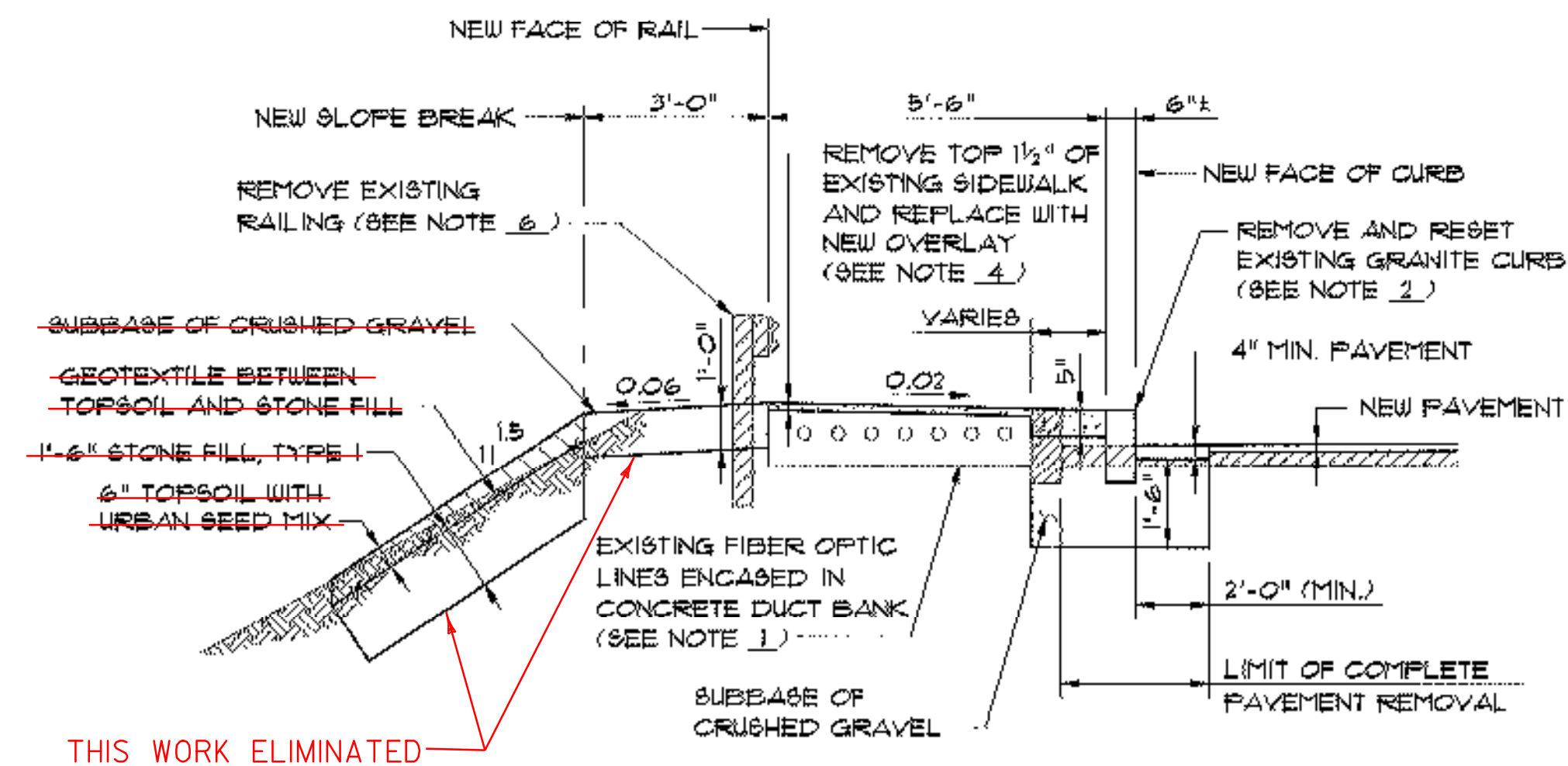
TYPICAL PAVEMENT MARKING DETAIL FOR PAINTED ISLAND (MOD-BLUE)
N.T.S.



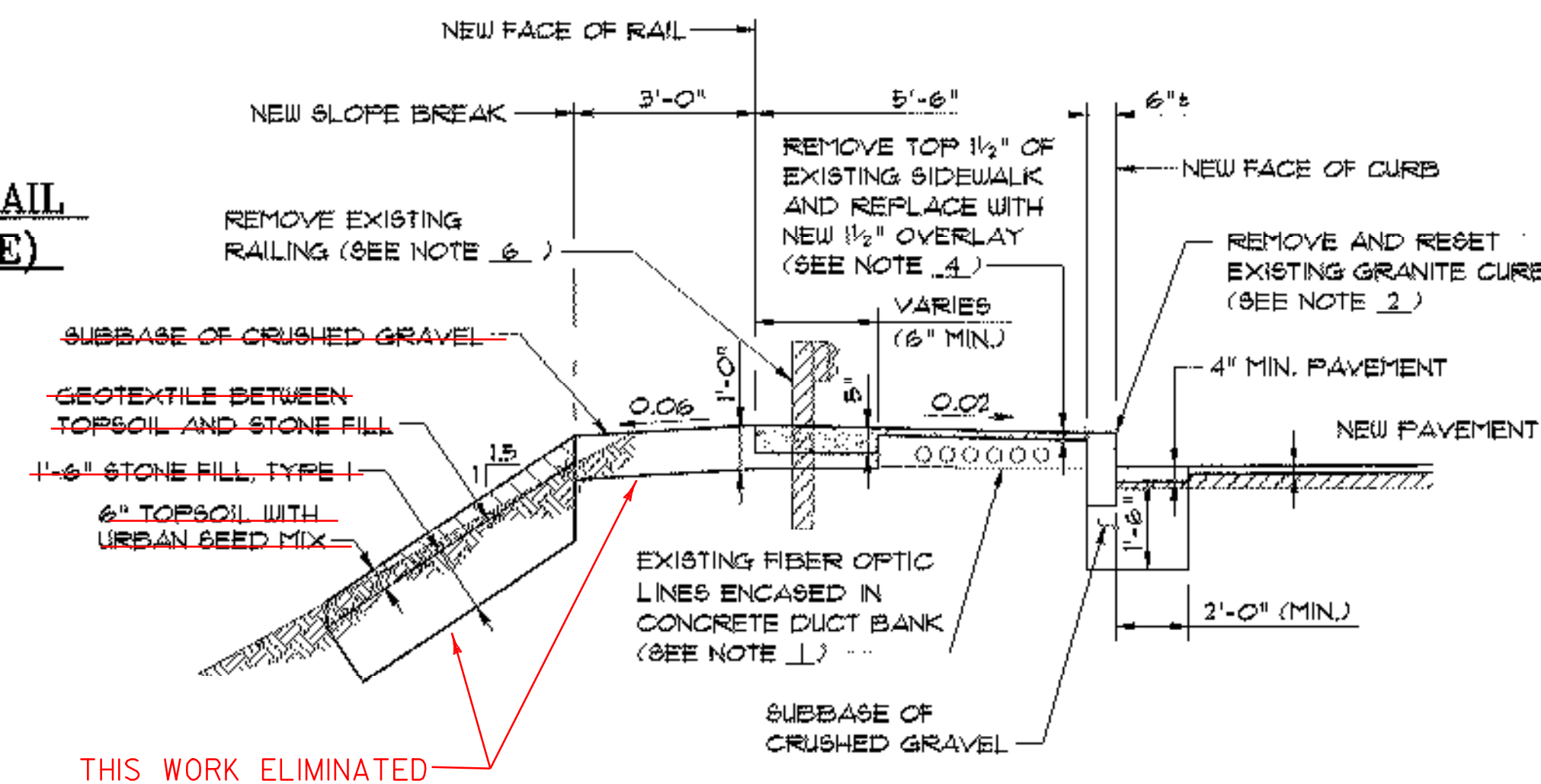
NEW TYPICAL SECTION BETWEEN RAMPS C & D
N.T.S.



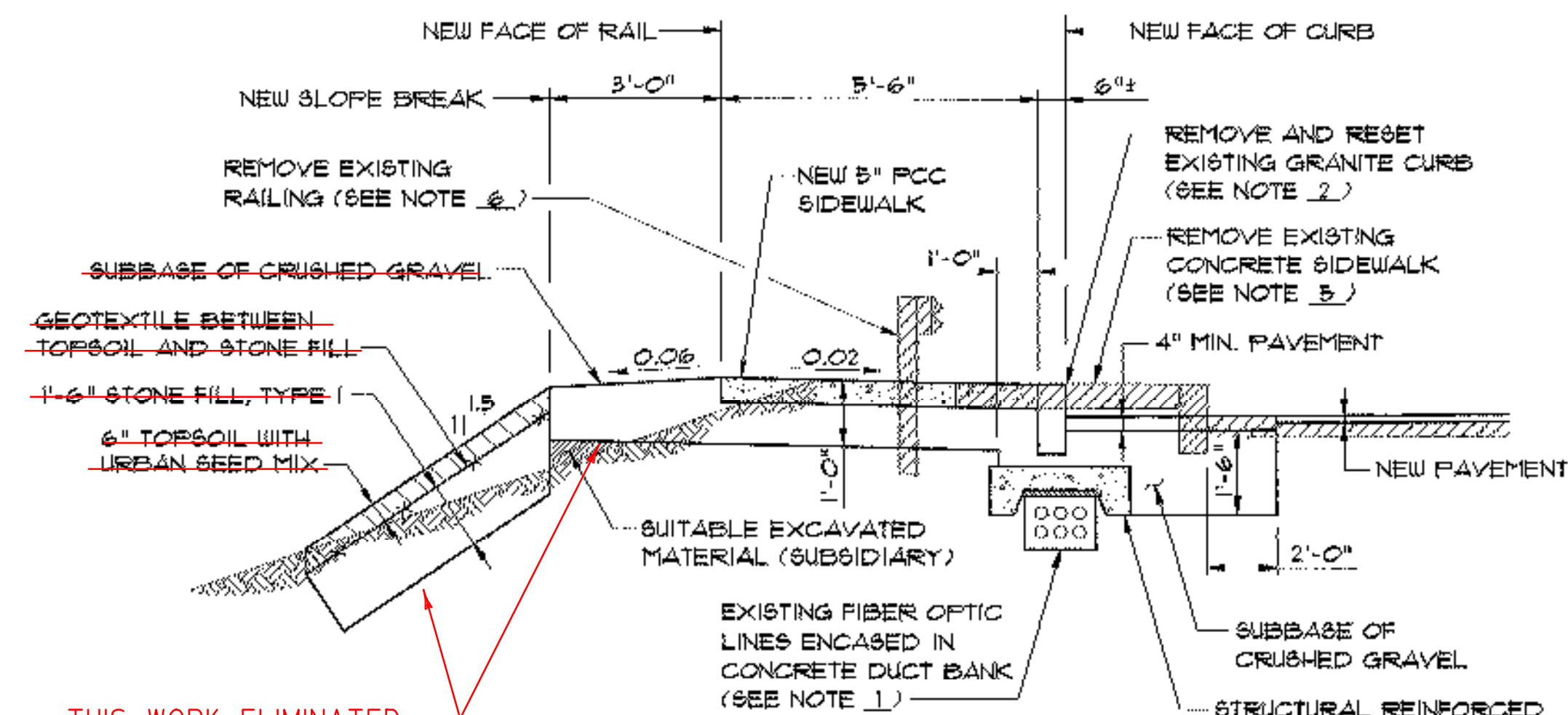
NEW TYPICAL SECTION BETWEEN RAMPS A & B, E & F AND G & H
N.T.S.



SECTION A-A
N.T.S.



SECTION B-B
N.T.S.



SECTION C-C
N.T.S.

NOTES:

1. THERE ARE FIBER OPTIC LINES IN THIS PROJECT WHICH MUST NOT BE COMPROMISED DURING CONSTRUCTION. THE LOCATION AND DEPTH OF THESE LINES ARE UNKNOWN OUTSIDE THE LIMITS OF THE BRIDGE. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH DIGSAFE AND THE UTILITY OWNER TO ENSURE THE FIBER OPTIC LINES ARE NOT DAMAGED. THE CONTRACTOR SHALL WORK OUT THE EXACT TREATMENTS IN THE VICINITY OF THE FIBER OPTIC LINES WITH THE UTILITY OWNER AND ENGINEER.
2. SECTIONS A-A, B-B, AND C-C ARE INTENDED TO SHOW THE TYPICAL ANTICIPATED TREATMENTS AT RAMPS "B", "D", "E", AND "G" IN ORDER TO ACCOMMODATE THE NEW CURBLINE LOCATION. SECTIONS A-A AND B-B SHALL BE USED WHERE THE EXISTING UTILITY BANK IS WITHIN THE CONSTRUCTION LIMITS OF THE NEW SIDEWALK AND CURB. SECTION C-C SHALL BE USED WHERE THE EXISTING UTILITY BANK IS OUTSIDE THE CONSTRUCTION LIMITS OF THE NEW SIDEWALK AND CURB.
3. A STRUCTURAL REINFORCED CONCRETE SLAB SHALL BE PLACED OVER ANY PORTIONS OF THE EXISTING CONCRETE UTILITY BANK WHICH PROJECT BEYOND THE NEW FACE OF CURB AND DO NOT HAVE AT LEAST 3 FEET OF COVER MEASURED FROM THE ROADWAY SURFACE AT THE FACE OF CURB. WHERE A SLAB IS NECESSARY, THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND DETAILS PREPARED AND STAMPED BY A LICENSED PROFESSIONAL ENGINEER TO THE ENGINEER. 1" OF AN APPROVED COMPRESSIBLE FILLER MATERIAL SHALL BE PLACED BETWEEN THE SLAB AND THE DUCT BANK. CONCRETE AND REINFORCING STEEL SHALL BE PAID AS ITEMS 501.25, "CONCRETE, CLASS B", AND ITEM 501.15, "REINFORCING STEEL" RESPECTIVELY. ALL COSTS ASSOCIATED WITH DESIGN AND DETAILING OF ANY STRUCTURAL CONCRETE SLAB REQUIRED SHALL BE SUBSIDIARY TO ITEM 501.25.
4. IN AREAS WHERE THE EXISTING SIDEWALK CONTAINS UTILITY CONDUITS, THE PARTIAL REMOVAL OF THE EXISTING CONCRETE SIDEWALK SHALL BE PAID AS ITEM 529.25, "REMOVAL OF CONCRETE OR MASONRY". THE SIDEWALK SHALL BE WIDENED AND OVERLAYED WITH ITEM 501.60, "SILICA-FUME CONCRETE, (MOD.)".
5. IN AREAS WHERE THE EXISTING SIDEWALK DOES NOT CONTAIN UTILITY CONDUITS, THE EXISTING SIDEWALK SHALL BE COMPLETELY REMOVED UNDER ITEM 203.28, "EXCAVATION OF SURFACES AND PAVEMENTS". NEW CONCRETE SIDEWALK SHALL BE PAID AS ITEM 618.10, "PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH".
6. SEE SHEETS 41 AND 42 FOR INFORMATION AND PAY LIMITS FOR EXISTING GUARD RAIL REMOVAL. REMOVAL OF EXISTING ALUMINUM APPROACH RAIL SHALL BE PAID FOR UNDER THE 1M DECK (38) BRIDGE REHABILITATION PROJECT.

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

Town Of **SOUTH BURLINGTON** Bridge No. **68**
Highway No. U.S. **2** Toy Sta.
Surv. Sta.
U.S. 2 OVER I-89

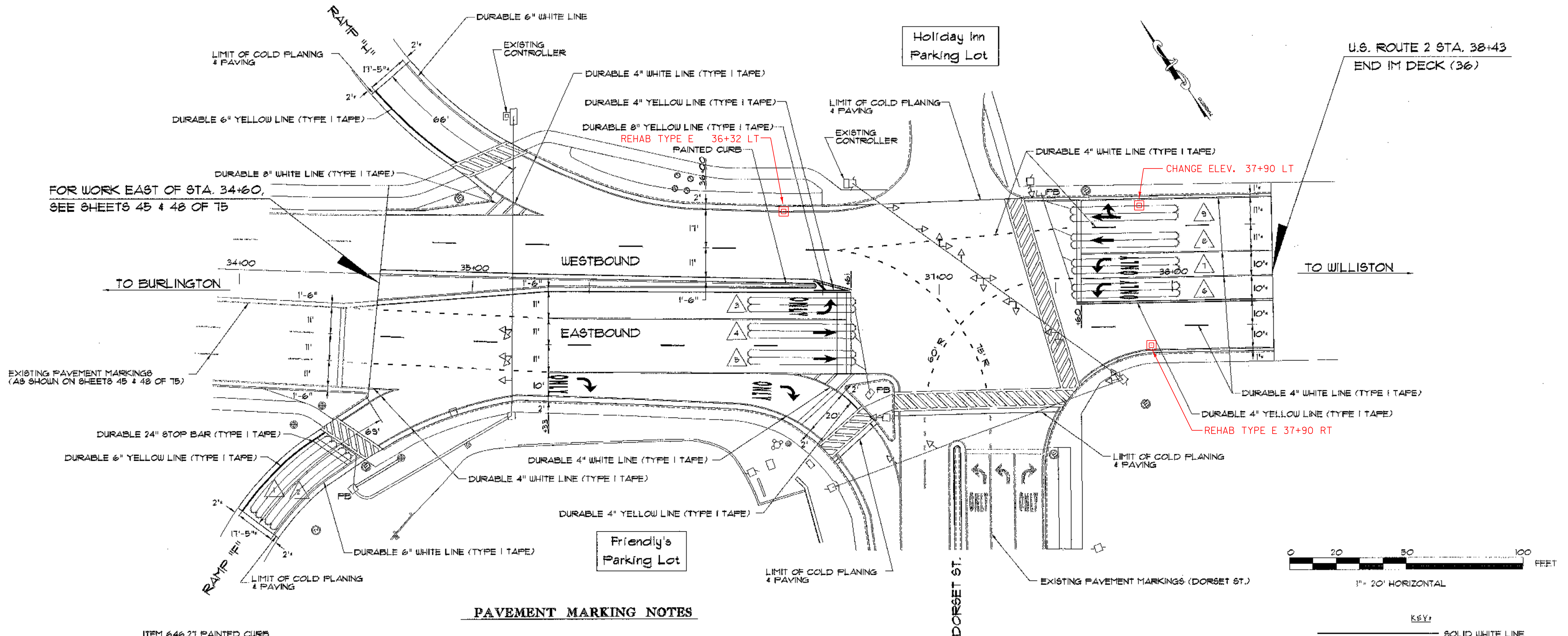
BIKEWAY TYPICAL SECTIONS

Designed By **S.M. HODGSON** Drawn By **C.L. CILLEY**
Checked By **T.S. BRYANT** Date **2/00** Bridge Design Supervisor
C.D. BAKER Date **2/00**

PROJECT **SOUTH BURLINGTON** PROJECT NO. **STP BIKE (28)S**

VMB Cad Drawing No. **50963TYP** Date **2/00**
Bridge Sheet No. Sheet **54** of **73**

VANASSE HANGEN BRUSTLIN, INC.



PAVEMENT MARKING NOTES

ITEM 646.21 PAINTED CURB
STA. 36+17, TO 36+47, LT. & RT. (ISLAND)

ITEM 646.40 DURABLE 4" WHITE LINE (TYPE I TAPE)
ITEM 646.60 TEMPORARY 4" WHITE LINE

STA. 34+60, LT. TO STA. 36+55, LT. (DASHED)
STA. 34+60, RT. TO STA. 35+33, RT. (DOTTED)
STA. 34+60, RT. TO STA. 36+60, RT. (DASHED)
STA. 34+45, RT. TO STA. 35+20, RT. (SOLID - RAMP "F")
STA. 34+63, LT. TO STA. 35+30, LT. (SOLID - RAMP "H")
STA. 35+20, RT. TO STA. 36+50 (EDGE LINE)
STA. 35+20, LT. TO STA. 36+74, LT. (EDGE LINE)
STA. 35+33, RT. TO STA. 36+60, RT. (LANE LINE)
STA. 35+33, RT. TO STA. 36+82, RT. (LANE LINE)
STA. 36+55, LT. TO STA. 37+53, LT. (DOTTED)
STA. 36+55, LT. TO STA. 37+20, RT. (DOTTED)
STA. 36+54, RT. TO STA. 37+53, LT. (DOTTED)
STA. 37+37, LT. TO STA. 38+43, LT. (EDGE LINE)
STA. 37+53, RT. TO STA. 38+43, RT. (EDGE LINE)
STA. 37+61, LT. TO STA. 38+43, LT. (LANE LINES X3)
STA. 37+61, RT. TO STA. 38+43, RT. (DASHED)

ITEM 646.41 DURABLE 4" YELLOW LINE (TYPE I TAPE)
ITEM 646.61 TEMPORARY 4" YELLOW LINE

STA. 34+60 TO STA. 36+62, LT. & RT. (ISLAND)
STA. 36+58, RT. TO STA. 36+71, RT. (ISLAND)
STA. 37+53 TO STA. 38+43, RT. (DOUBLE SOLID CENTERLINE)

ITEM 646.414 DURABLE 6" WHITE LINE (TYPE I TAPE)
ITEM 646.614 TEMPORARY 6" WHITE LINE

STA. 34+14, RT. TO STA. 34+51, RT. (RAMP "F")
STA. 34+63, LT. TO STA. 35+11, LT. (RAMP "H")

ITEM 646.415 DURABLE 6" YELLOW LINE (TYPE I TAPE)
ITEM 646.615 TEMPORARY 6" YELLOW LINE

STA. 34+02, RT. TO STA. 34+37, RT. (RAMP "F")
STA. 34+57, LT. TO STA. 34+82, LT. (RAMP "H")

ITEM 646.42 DURABLE 8" WHITE LINE (TYPE I TAPE)
ITEM 646.62 TEMPORARY 8" WHITE LINE

STA. 35+06, LT. TO STA. 35+23, LT. (DIAGONALS)
STA. 36+46, RT. TO STA. 36+63, RT. (DIAGONALS)

ITEM 646.43 DURABLE 8" YELLOW LINE (TYPE I TAPE)
ITEM 646.63 TEMPORARY 8" YELLOW LINE

STA. 36+50, LT. (DIAGONALS)

ITEM 646.46 DURABLE 24" STOP BAR (TYPE I TAPE)
ITEM 646.66 TEMPORARY 24" STOP BAR

STA. 34+40, RT. (RAMP "F")
STA. 36+50, RT.
STA. 36+61, RT.
STA. 37+60, LT.

ITEM 646.50 DURABLE LETTER OR SYMBOL (TYPE I TAPE)

STA. 35+37, RT. ("ONLY")
STA. 35+49, RT. (ARROW)
STA. 36+24, RT. ("ONLY")
STA. 36+36, RT. (ARROW)
STA. 36+40, RT. ("ONLY")
STA. 36+51, RT. (2-ARROWS)
STA. 36+52, RT. (ARROW)
STA. 37+63, LT. (ARROW)
STA. 37+63, RT. (ARROW)
STA. 37+70, LT. (ARROW)
STA. 37+72, LT. (2-ARROWS)
STA. 37+81, LT. ("ONLY")
STA. 37+81, RT. ("ONLY")

ITEM 646.51 DURABLE CROSSWALK W/DIAGONAL LINES (TYPE I TAPE)
ITEM 646.71 TEMPORARY CROSSWALK W/DIAGONAL LINES

STA. 34+50, RT. (RAMP "F")
STA. 35+06, LT. (RAMP "H")
STA. 36+61, RT.
STA. 36+81, RT. TO STA. 37+55, RT.
STA. 37+33, LT. TO STA. 37+55, RT.

ITEM 646.70 TEMPORARY LETTER OR SYMBOL

STA. 35+49, RT. (ARROW)
STA. 36+36, RT. (ARROW)
STA. 36+51, RT. (2-ARROWS)
STA. 36+52, RT. (ARROW)
STA. 37+63, LT. (ARROW)
STA. 37+63, RT. (ARROW)
STA. 37+70, LT. (ARROW)
STA. 37+72, LT. (2-ARROWS)

- NOTES:
- FOR ADDITIONAL STRIPING DETAILS SEE VTRANS STANDARDS E-191, E-192 & E-193
 - FOR VEHICLE DETECTOR-LOOP INFORMATION, SEE SHEET 54B
 - * MATCH EXISTING PAVEMENT MARKINGS

KEY:

	SOLID WHITE LINE
	SOLID YELLOW LINE
	DOTTED WHITE LINE
	DASHED WHITE LINE

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
U.S. ROUTE 2 & DORSET ST. INTERSECTION (1 OF 3)			
Designed By	D-H	Drawn By	D-H
Checked By	JLL	Bridge Design Supervisor	Date
PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK (36)
D-H Cad Drawing No.	DORSET ST.	Date	1/00
Bridge Sheet No.		Sheet	54A of 75



VEHICLE DETECTOR LOOPS											
LOOP NO.	LANE	CALL Ø	SIZE (FT)	TYPE & NO. TURNS	DELAY OR PRESENCE	INDUCTANCE		RESISTANCE		LEAKAGE TO GROUND	LOCKING MEMORY
						CALC.	ACT.	CALC.	ACT.		
1	RAMP "F"		6' X 45'	QUAD - 1	PRESENCE	343		1.186			NO
2	RAMP "F"		6' X 45'	QUAD - 1	PRESENCE	334		1.150			NO
3	EASTBOUND LEFT ONLY		6' X 45'	QUAD - 1	PRESENCE	446		1.588			YES
4	EASTBOUND THRU LANE		6' X 45'	QUAD - 1	PRESENCE	439		1.558			YES
5	EASTBOUND THRU LANE		6' X 45'	QUAD - 1	PRESENCE	430		1.523			YES
6	WESTBOUND LEFT ONLY		6' X 45'	QUAD - 1	PRESENCE	229		0.742			YES
7	WESTBOUND LEFT ONLY		6' X 45'	QUAD - 1	PRESENCE	222		0.716			YES
8	WESTBOUND THRU LANE		6' X 45'	QUAD - 1	PRESENCE	215		0.687			YES
9	WESTBOUND THRU & RIGHT TURN LANE		6' X 45'	QUAD - 1	PRESENCE	208		0.661			NO
ALL CALCULATED VALUES ARE AT THE CONTROLLER. MEASURED VALUES MUST BE FILLED IN PRIOR TO TEST PERIOD.											
FOR DETECTOR LOOP LOCATIONS, SEE SHEET 54A.											

NOTES

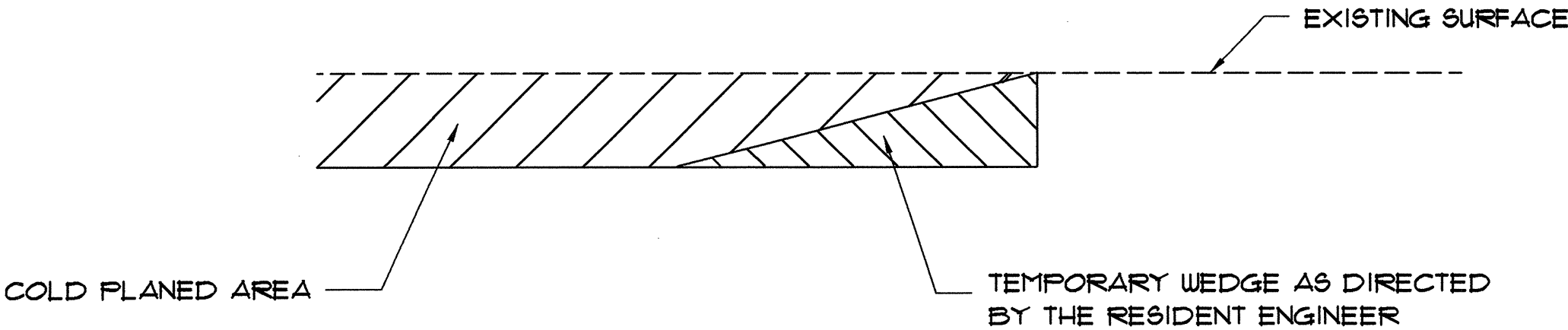
1. THE PAVEMENT WEARING COURSE SHALL BE TYPE III.
THE ESTIMATED LEVELING COURSE SHALL BE TYPE IV
UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ALL ASPHALT CEMENT
USED IN THE BITUMINOUS CONCRETE PAVEMENT SHALL BE PG 64-28.
2. GRASS GROWING ADJACENT TO PAVEMENT OR THROUGH CRACKS IN THE
PAVEMENT WHICH MAY HAMPER THE PLACEMENT OF NEW BITUMINOUS
CONCRETE SHALL BE REMOVED BY THE CONTRACTOR AS DIRECTED BY
THE ENGINEER. PAYMENT FOR THIS WORK WILL NOT BE MADE DIRECTLY,
BUT WILL BE CONSIDERED SUBSIDIARY TO ITEM 406.25 BITUMINOUS
CONCRETE PAVEMENT.
3. BITUMINOUS CONCRETE PAVEMENT TOLERANCE = ± 1/4"
(TOTAL THICKNESS EXCLUDING LEVELING)
4. EMULSIFIED ASPHALT SHALL BE APPLIED ON EXISTING PAVEMENT SURFACES,
BETWEEN ALL COURSES OF PAVEMENT AND ON COLD PLANED SURFACES,
AT THE RATE OF 0.25 GAL/YD² OR AS DIRECTED BY THE RESIDENT ENGINEER.
5. COLD PLANING TO BE COMPLETED ACCORDING TO TYPICAL OR AS NOTED
OTHERWISE ON THE PLANS. THE COLD PLANING AND PAVING SHALL MATCH
THE EXISTING CONDITIONS AT THE BEGINNING AND END OF CONSTRUCTION
AREAS BY THE USE OF A VERTICAL BUTT JOINT. SEE DETAIL ON THIS SHEET.
6. PRIOR TO COLD PLANING, ANY VEHICLE DETECTOR LOOPS SHALL BE
DISCONNECTED IN THE CONTROLLER CABINET AND CUT AT THE CURB.

ONCE THE LOOP IS DISCONNECTED, THE SIGNAL PHASE THAT IT WAS
CALLING SHALL BE PUT ON MAX RECALL OR THE SIGNAL PUT ON
FLASH AND TRAFFIC CONTROLLED BY A UNIFORMED TRAFFIC OFFICER.

ALL BITUMINOUS AREAS TO RECEIVE NEW VEHICLE DETECTOR LOOPS SHALL BE
LEVELED WITH TYPE IV BITUMINOUS CONCRETE PAVEMENT AS
DIRECTED BY THE RESIDENT ENGINEER PRIOR TO THE INSTALLATION OF THE
NEW DETECTOR LOOPS.

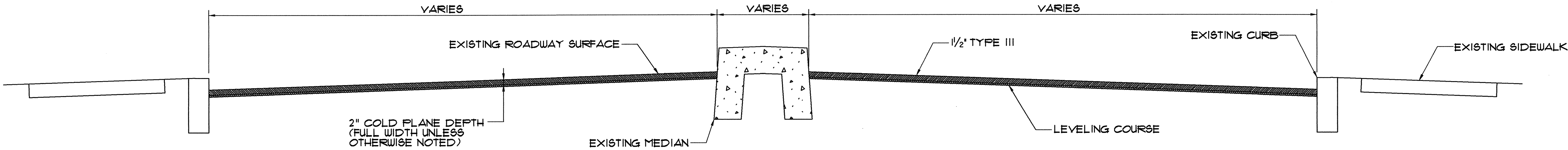
AFTER THE NEW LOOPS ARE INSTALLED, THE INDUCTANCE RESISTANCE AND LEAKAGE
TO GROUND SHALL BE TESTED USING PROPERLY CALIBRATED EQUIPMENT. THE
TEST RESULTS SHALL BE COMPARED WITH THE CALCULATED VALUES AND
RECORDED ON THE PLANS. ALL LOAD TESTING SHALL BE PERFORMED AS PER VTRANS
STANDARD E-112.

AFTER ACCEPTANCE OF THE LOOP INSTALLATION BY THE RESIDENT ENGINEER,
RETURN THE SIGNAL TO NORMAL OPERATION. ALL WORK REQUIRED SHALL BE
SUBSIDIARY TO ITEM 618.22, VEHICLE DETECTOR LOOP.



DETAIL AT VERTICAL COLD PLANE JOINTS

N.T.S.



COLD PLANE TYPICAL SECTION - CURBED

U.S. ROUTE 2 STA. 34+60 TO 38+43

N.T.S.



STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
U.S. ROUTE 2 & DORSET ST. INTERSECTION (2 OF 3)			
Designed By D-H		Drawn By D-H	
Checked By JLL		Date 1/00	
		Bridge Design Supervisor Date	
PROJECT SOUTH BURLINGTON		PROJECT NO. IM DECK (36)	
D-H Cad Drawing No. DORSET ST.		Date 1/00	
Bridge Sheet No.		Sheet 54B of 75	

QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITIES TOTALS
210.10	COLD PLANING-BITUMINOUS PAVEMENT	SY	4000
404.65	EMULSIFIED ASPHALT	CWT	170
406.25	BITUMINOUS CONCRETE PAVEMENT (PG 64-28)	T	450
646.21	PAINTED CURB	LF	70
646.40	DURABLE 4" WHITE LINE (TYPE I TAPE)	LF	2620
646.41	DURABLE 4" YELLOW LINE (TYPE I TAPE)	LF	640
646.414	DURABLE 6" WHITE LINE (TYPE I TAPE)	LF	110
646.415	DURABLE 6" YELLOW LINE (TYPE I TAPE)	LF	110
646.42	DURABLE 8" WHITE LINE (TYPE I TAPE)	LF	40
646.43	DURABLE 8" YELLOW LINE (TYPE I TAPE)	LF	10
646.46	DURABLE 24" STOP BAR (TYPE I TAPE)	LF	120
646.50	DURABLE LETTER OR SYMBOL (TYPE I TAPE)	EA	31
646.51	DURABLE CROSSWALK MARKING W/DIAGONAL LINES (TYPE I TAPE)	LF	250
646.60	TEMPORARY 4" WHITE LINE	LF	5250
646.61	TEMPORARY 4" YELLOW LINE	LF	1280
646.614	TEMPORARY 6" WHITE LINE	LF	210
646.615	TEMPORARY 6" YELLOW LINE	LF	210
646.62	TEMPORARY 8" WHITE LINE	LF	80
646.63	TEMPORARY 8" YELLOW LINE	LF	20
646.66	TEMPORARY 24" STOP BAR	LF	240
646.70	TEMPORARY LETTER OR SYMBOL	EA	22
646.71	TEMPORARY CROSSWALK MARKING W/DIAGONAL LINES	LF	500
678.22	VEHICLE DETECTOR LOOP	LF	1470

NOTE: THE QUANTITIES SHOWN HERE SUMMARIZE WORK BETWEEN CURBS ONLY, FROM U.S. ROUTE 2 STA. 34+60 TO STA. 38+43, PLUS RAMPS "F" AND "H". THESE ITEMS ARE SUBQUANTITIES FOR PROJECT NO. IM DECK (36)

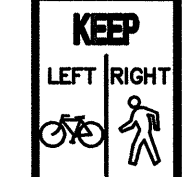
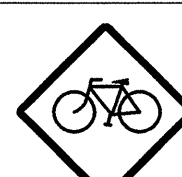


PROJECT		PROJECT NO.
SOUTH BURLINGTON		IM DECK (36)
D-H Cad Drawing No. DORSET ST.		Date 1/00
Bridge Sheet No.		Sheet 54C of 75

STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
Town Of SOUTH BURLINGTON	Bridge No. 68
Highway No. U.S. 2	Log Sta.
	Surv. Sta.
U.S. 2 OVER I-89	
U.S.ROUTE 2 & DORSET ST.INTERSECTION 3 OF 3	
Designed By D-H	Drawn By D-H
Checked By JLL	Bridge Design Supervisor
Date 1/00	Date

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

MILE MARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW & SALVAGED SIGNS				EXIST. POST		NO. OF POSTS	FLANGED CHANNEL LB./FT.			SQUARE STEEL (IN.)			NEW SIGN POSTS		TUBULAR STEEL				W-SHAPE STEEL				REMARKS	SIGN DETAIL					
				“A” (SF)	“B” (SF)	SALV SIGN	SALV TIS	RET	SALV		1.12	2.0	3.0	LB./FT.			ANCHOR	SLEEVE	3.0”Ø	4.0”Ø	FOUND- ATION	3.0”Ø	3.5”Ø	4.0”Ø	5.0”Ø	FTG. SIZE		WEIGHT	POST SIZE	FRAME	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER	
		WIDTH (IN)	HEIGHT (IN)											1.9	2.1	3.3										24”							30”
U.S. ROUTE 2																																	
19+33 RT		30	30	6.25						1			X			X	X														(W11-1)		
21+01 RT EXISTING STATION							1			1			X			X	X												SALVAGE SIGN TO BE INSTALLED USING POST TOP MOUNTING BRACKET, MOUNTED ON NEW POST				
21+49 LT		18	18	2.25						1		X		X		X															E-143 (R1-1)		
21+52 RT	 	18 30	9 30	1.13 6.25						1			X			X	X														(SP-1) (W11-1)		
22+08 RT		24	30	5						1			X			X	X														E-146 (VR004a)		
RAMP C	 	18 30	9 30	1.13 6.25						1			X			X	X														(SP-1) (W11-1)		
RAMP C	 	30 30	30 30	6.25 6.25						2			X			X	X														(W11-1) E-152 (W11-2)		
22+38 LT EXISTING STATION							1			2			X			X	X												SALVAGE SIGN TO BE MOUNTED ON TWO NEW POSTS				
22+60 RT		12	18	1.5						1		X		X		X															(R9-7) (MOD.)		
RAMP B	 	18 30	9 30	1.13 6.25						1			X			X	X														(SP-1) (W11-1)		
RAMP B	 	30 30	30 30	6.25 6.25						2			X			X	X														(W11-1) E-152 (W11-2)		

FINAL POST LENGTHS ARE TO BE DETERMINED
IN THE FIELD. POST SIZES ARE COMPUTED
BASED ON INFORMATION FURNISHED ON THE
STANDARD SHEETS AND THE TRAFFIC & SAFETY
DIVISION'S "SIGN POST DESIGN GUIDELINE."

TOTALS	S.F. 62.14	S.F.	EA. 2	S.F.		L.F.* 196	L.F.* 196	L.F.	EA.	L.F.	EA.	L.F.	EA.	L.F.
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* SIGN POST TYPE IS TO BE
EITHER FLANGED CHANNEL OR
SQUARE STEEL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SOUTH BURLINGTON

Bridge No. 68

Highway No. U.S. 2

Log Sta.

Surv. Sta.

U.S. 2 OVER I-89

BIKEWAY SIGN SUMMARY (1 OF 4)

Designed By A. SETAS

Drawn By B.J. MASSE

Checked By T.S. BRYANT

Date 1/00

Bridge Design Supervisor T.S. BRYANT

Date 1/00

PROJECT SOUTH BURLINGTON

PROJECT NO. STP BIKE (28)S

VHB Cad Drawing No. 5032933

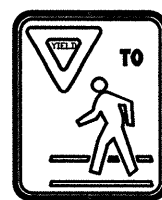
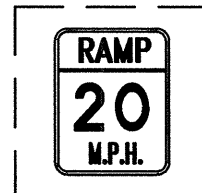
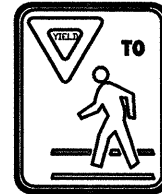
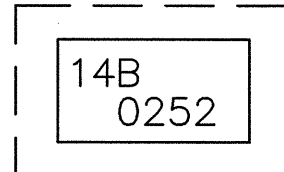
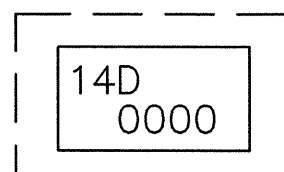
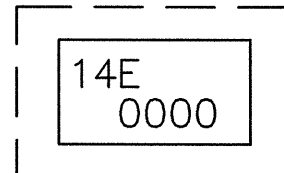
Date 1/00

Bridge Sheet No.

Sheet 55 of 75

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

MILE MARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW & SALVAGED SIGNS				EXIST. POST		NO. OF POSTS	FLANGED CHANNEL LB./FT.			SQUARE STEEL (IN.) LB./FT.			ANCHOR	SLEEVE	NEW SIGN POSTS		TUBULAR STEEL				W-SHAPE STEEL				REMARKS	SIGN DETAIL	
																			TUBULAR ALUMINUM	FOUND- ATION	3.0"Ø	4.0"Ø	3.0"Ø	3.5"Ø	4.0"Ø	5.0"Ø	FTG. SIZE			WEIGHT	POST SIZE
		3.0"Ø	4.0"Ø	24"	30"																										
						LB./FT.																									
U.S. ROUTE 2																															
24+75 LT		24	30	5						1			X			X	X													E-146 (VR004a)	
24+80 LT		18	18	2.25						1		X		X		X														E-143 (R1-1)	
24+97 LT EXISTING STATION							1			1		X		X		X												SALVAGED SIGN TO BE MOUNTED ON NEW POST			
25+04 RT		18	18	2.25						1		X		X		X														E-143 (R1-1)	
25+29 LT	 	18 30	9 30	1.13 6.25						1			X			X	X													(SP-1) (W11-1)	
25+30 RT		24	30	5						1			X			X	X													E-146 (VR004a)	
26+28 RT EXISTING STATION							1			1		X		X		X												SALVAGED SIGN TO BE MOUNTED ON NEW POST			
26+38 LT EXISTING STATION							1			1		X		X		X												SALVAGED SIGN TO BE MOUNTED ON NEW POST			
26+85 RT		24	30	5						1			X			X	X													R3-17 (MOD.)	
29+60 LT		24	30	5						1			X			X	X													R3-17 (MOD.)	
30+56 RT EXISTING STATION							1			1		X		X		X												SALVAGED SIGN TO BE MOUNTED ON NEW POST			

FINAL POST LENGTHS ARE TO BE DETERMINED
IN THE FIELD. POST SIZES ARE COMPUTED
BASED ON INFORMATION FURNISHED ON THE
STANDARD SHEETS AND THE TRAFFIC & SAFETY
DIVISION'S "SIGN POST DESIGN GUIDELINE."

TOTALS	S.F. 31.88	S.F.	EA. 4	S.F.		L.F.* 154	L.F.* 154	L.F.	EA.	L.F.	EA.	L.F.
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* SIGN POST TYPE IS TO BE
EITHER FLANGED CHANNEL OR
SQUARE STEEL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
BIKEWAY SIGN SUMMARY (2 OF 4)			
Designed By	A. SETAS	Drawn By	B.J. MASSE
Checked By	T.S. BRYANT	Date	1/00
Bridge Design Supervisor	T.S. BRYANT	Date	1/00
PROJECT	SOUTH BURLINGTON	PROJECT NO.	STP BIKE (28)S
VHB Cad. Drawing No.	5092936	Date	1/00
Bridge Sheet No.		Sheet	56 of 75

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

MILE MARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW & SALVAGED SIGNS				EXIST. POST		NO. OF POSTS	NEW SIGN POSTS														REMARKS	SIGN DETAIL							
											FLANGED CHANNEL LB./FT.			SQUARE STEEL (IN.) LB./FT.			ANCHOR SLEEVE		TUBULAR ALUMINUM		TUBULAR STEEL							W-SHAPE STEEL					
		3.0"ø	4.0"ø	FOUND- ATION	3.0"ø	3.5"ø	4.0"ø	5.0"ø	FTG. SIZE										WEIGHT	POST SIZE	FRAME												
					1.12	2.0	3.0	1.9	2.1		3.3	3.0"ø	4.0"ø	24"	30"																		
U.S. ROUTE 2																																	
30+94 LT EXISTING STATION						1				1		X			X		X														SALVAGE SIGN TO BE MOUNTED ON NEW POST		
31+08 RT		18 30	9 30	1.13 6.25						1			X			X	X														(SP-1) (W11-1)		
31+40 LT EXISTING STATION						1				1		X			X		X														SALVAGE SIGN TO BE MOUNTED ON NEW POST		
31+42 RT		18	18	2.25						1		X			X		X															E-143 (R1-1)	
31+46 LT		24	30	5						1			X			X	X															E-146 (VR004a)	
31+58 RT		24	30	5						1			X			X	X															E-146 (VR004a)	
31+68 LT		18	18	2.25						1		X			X		X															E-143 (R1-1)	
RAMP G		18 30	9 30	1.13 6.25						1			X			X	X															(SP-1) (W11-1)	
RAMP G		30 30	30 30	6.25 6.25						2			X			X	X															(W11-1) E-152 (W11-2)	
34+23 RT		12	18	1.5						1		X			X		X															(R9-5)	
34+59 RT		24	30	5						1			X			X	X															E-146 (VR004a)	

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S "SIGN POST DESIGN GUIDELINE."						L.F. L.F. L.F. L.F. L.F. L.F. L.F. L.F. L.F. L.F. L.F.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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* SIGN POST TYPE IS TO BE
EITHER FLANGED CHANNEL OR
SQUARE STEEL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SOUTH BURLINGTON

Bridge No. 68

Highway No.U.S. 2

Log Sta.

Surv. Sta.

U.S. 2 OVER I-89

BIKEWAY SIGN SUMMARY (3 OF 4)

Designed By A. SETAS

Drawn By B.J. MASSE

Checked By T.S. BRYANT

Date 1/00

Bridge Design Supervisor T.S. BRYANT

Date 1/00

PROJECT SOUTH BURLINGTON

PROJECT NO. STP BIKE (28)S

VHB Cod Drawing No. 5092933

Date 1/00

Bridge Sheet No.

Sheet 57 of 75

VANASSE HANGEN BRUSTLIN, INC.

TRAFFIC SIGN SUMMARY SHEET

MILE MARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW & SALVAGED SIGNS				EXIST. POST		NO. OF POSTS	FLANGED CHANNEL LB./FT.			SQUARE STEEL (IN.) LB./FT.			ANCHOR	SLEEVE	NEW SIGN POSTS		TUBULAR STEEL				W-SHAPE STEEL				FRAME	REMARKS	SIGN DETAIL		
				"A" (SF)	"B" (SF)	SALV SIGN	SALV TIS	RET	SALV		1.12	2.0	3.0	1.9	2.1	3.3			3.0"ø	4.0"ø	FOUND- ATION	3.0"ø	3.5"ø	4.0"ø	5.0"ø	FTG. SIZE		WEIGHT			POST SIZE	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
		WIDTH (IN)	HEIGHT (IN)																							24"	30"						
U.S. ROUTE 2																																	
35+15 LT		24	30	5						1			X			X	X														E-146 (VR004a)		
35+43 LT		18	18	2.25						1		X			X		X														E-143 (R1-1)		
35+72 LT		18 30	9 30	1.13 6.25						1			X			X	X														(SP-1) (W11-1)		
36+40 LT		12	18	1.5						1		X			X		X														(R9-7) (MOD.)		
		SHEET (1 OF 4)		62.14		2					196			196																			
		SHEET (2 OF 4)		31.88		4					154			154																			
		SHEET (3 OF 4)		48.26		2					168			168																			
		SHEET (4 OF 4)		16.13							56			56																			
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S "SIGN POST DESIGN GUIDELINE."											L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	EA.	L.F.	L.F.	L.F.	L.F.	EA.	EA.	L.F.					
											L.F.* 574	L.F.* 574			L.F.		EA.	L.F.				EA.	EA.	L.F.									
				TOTALS	S.F. 158.41	S.F. 8	EA. 8	S.F.			L.F.* 574			L.F.* 574			L.F.		EA.	L.F.				EA.	EA.	L.F.							
																											STATE OF VERMONT AGENCY OF TRANSPORTATION						
																											Town Of SOUTH BURLINGTON Bridge No. 68 Loc. Sta.						

* SIGN POST TYPE IS TO BE
EITHER FLANGED CHANNEL OR
SQUARE STEEL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SOUTH BURLINGTON

Bridge No. 68

Highway No. U.S. 2

Log Sta.

Surv. Sta.

U.S. 2 OVER I-89

BIKEWAY SIGN SUMMARY (4 OF 4)

Designed By A. SETAS

Drawn By B.J. MASSE

Checked By T.S. BRYANT

Date 1/00

Bridge Design Supervisor T.S. BRYANT

Date 1/00

PROJECT SOUTH BURLINGTON

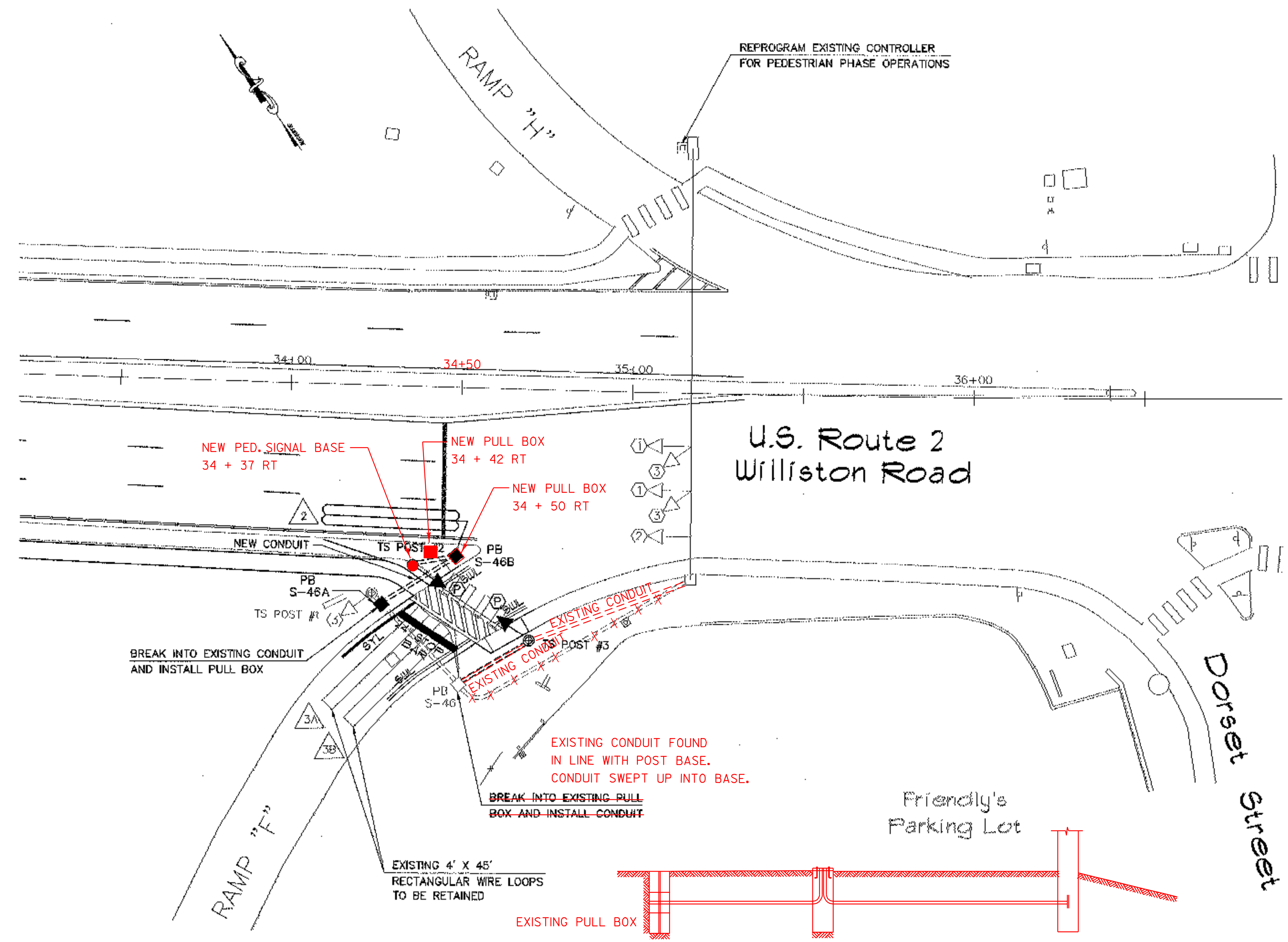
PROJECT NO. STP BIKE (28)S

VHB Cad Drawing No. 5092955

Date 1/00

Bridge Sheet No.

Sheet 58 of 75



SIGNAL PLAN
SCALE: 1" = 20'

NEW BASE WITH SWEEP CONDUIT
TRAFFIC SIGNAL SIGN BASE

LIST OF MAJOR EQUIPMENT

EQUIPMENT ITEM 678.15	QUANTITY
PEDESTAL POST - 6'	2
TWO-SECTION WALK/DONT WALK PEDESTRIAN HEADS W/ VISORS & MOUNTING HARDWARE	2 (POST TOP MOUNTED)
6X40 GAUDRUPOLE VEHICLE LOOP DETECTOR	1
MISC HARDWARE, EQUIPMENT, ETC. TO COMPLETE INSTALLATION	**
PULL BOX	2
SCH 40 SIGNAL CONDUIT	60 LF

**THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY. MISCELLANEOUS (UNLISTED) WIRE, CABLE, HARDWARE, ETC. ARE REQUIRED TO PROVIDE FOR A FUNCTIONING TRAFFIC SIGNAL SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF THE NUMBER OF ITEMS AND THE TYPES OF EQUIPMENT REQUIRED.

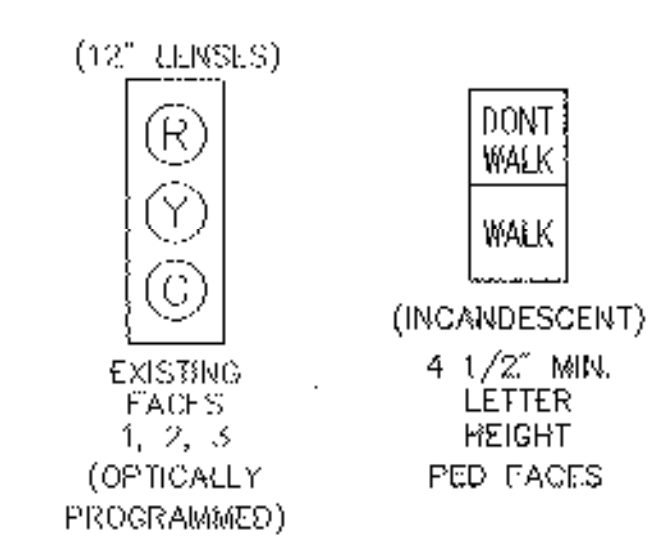
VEHICLE DETECTOR LOOPS									
LOOP NO.	LANE	CALL #	SIZE	TYPE & NO. TURNS	DELAY OR PRESENCE	INDUCTANCE CALC.	RESISTANCE ACT. CALC.	LEAKAGE TO GROUND	LOCKING MEMORY
1	EB RT	2	6X40	QUAD-2	PRESENCE				
2	NB RT	3	4X45	RECT	PRESENCE				
3	NB RT	3	4X45	RECT	PRESENCE				

1. ALL CALCULATED VALUES ARE AT THE CONTROLLER.
2. MEASURED VALUES MUST BE FILLED IN PRIOR TO TEST PERIOD.
3. 3A AND 3B ARE EXISTING RECTANGULAR LOOP DETECTORS

EQUIPMENT LOCATION CRITERIA

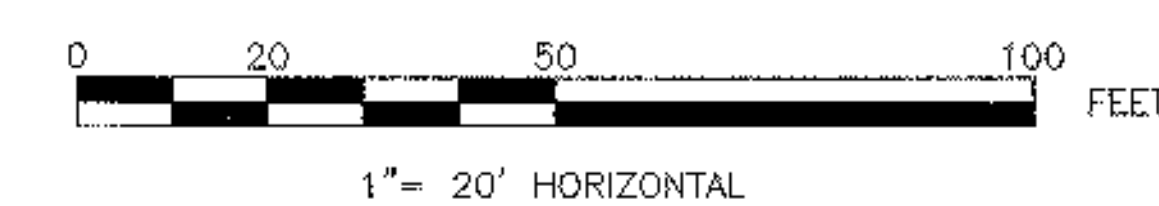
- (A) IF THE DISTANCE FROM THE CURB OR EDGE OF SHOULDER TO THE DETECTOR AMPLIFIER IS OVER 25' ±, A SHIELDED CABLE MUST BE MADE IN A JUNCTION BOX, PULL BOX, PEDESTAL BASE, OR POLE BASE. INSTALLATION OF DELEMA ZONE LOOPS MAY REQUIRE ADDITIONAL JUNCTION/PULL BOXES. JUNCTION BOXES MAY BE USED WITH LESS THAN 4 CONDUITS AND WHERE THEY WILL NOT BE RUN OVER BY VEHICULAR TRAFFIC.
- (B) SEE STANDARDS E-170, 171A, 171B, 171C, 172, 173, & 175 FOR ADDITIONAL INFORMATION.

SIGNAL FACE ARRANGEMENT



LEGEND

EXISTING	PROPOSED	
		PULL BOX
		SIGNAL HEAD
		CONDUIT
		PEDESTAL POST
		CONTROLLER CABINET
		VEHICLE LOOPS

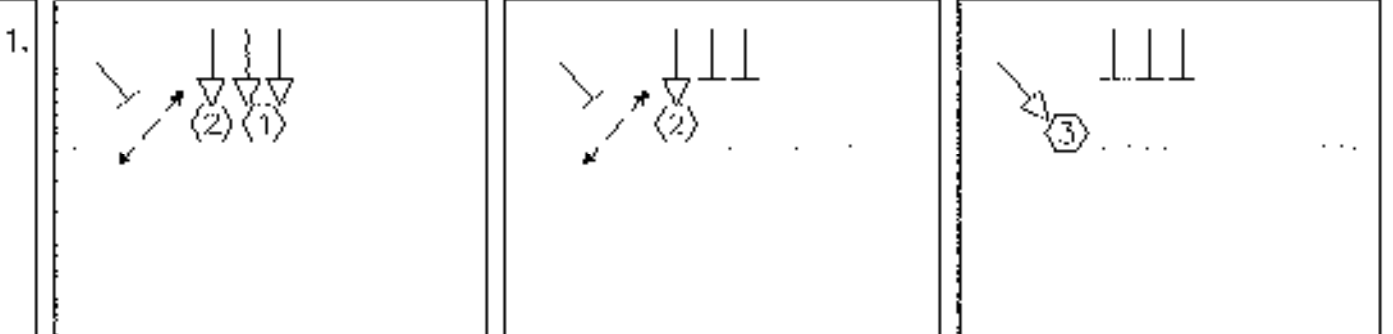


VANASSE HANGEN BRUSTLIN, INC.

TIMING AND PHASING

TIME OF DAY PLANS	PHASE 1/EB FIRE (DWELL)				PHASE 2				PHASE 3				FLASH OPERATION 11:00 PM TO 6:00 AM M-F, 12:00 AM TO 6:00 AM SAT,SUN	
	R/W	CLEAR TO:			R/W	CLEAR TO:			R/W	CLEAR TO:				
		Ø2	Ø3			Ø3	Ø1			Ø1				
	VEHICLE	-				1				1				
	MINIMUM	-				8	4	2	4	2	8	4		2
	PLAN 1 (AM MAX.)	36	2	4	2	4	2				47	4		2
PLAN 2 (NOON MAX.)	34	2	4	2	4	2				57	4	2		
PLAN 3 (OFF PK MAX.)	36	2	4	2	4	2				36	4	2		
PLAN 4 (PM MAX.)	36	2	4	2	4	2				50	4	2		
FACE 1	G	G	Y	R	Y	R				R	R	R	FY	
FACE 2	G	G	G	G	Y	R				G	G		FY	
FACE 3	R	R	R	R	R	R				R	R	R	FR	
PED	W	F	D	W	W	F	D	W	W	F	D	W	OUT	

* SEE NOTE 1.



NOTES:

1. IF #2 IS ACTUATED DURING #1, THEN PEDESTRIAN PHASE SHALL REMAIN IN "WALK" MODE THROUGHOUT #1 AND THEN SATISFY THE MINIMUM PEDESTRIAN WALK AND CLEARANCE TIMES DURING #2.
2. MAINTAIN EXISTING COORDINATION PROGRAMMING IN THE ECONOLITE CLOSED LOOP SYSTEM. CONTRACTOR SHALL COORDINATE WITH VDOT TRAFFIC ENG. DEPARTMENT FOR CURRENT SPLITS AND OFFSETS.
3. CONTRACTOR SHALL RETAIN THE EXISTING PRE-EMPTION SETTINGS CURRENTLY IN THE LOCAL CONTROLLER AND CLOSED-LOOP SYSTEM.

EXISTING PROGRAM PERIODS OF OPERATION

	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
	AM												PM											AM
SUNDAY	FLASH																							
MONDAY	FLASH	3	1	2									3	4										F
TUESDAY	FLASH	3	1	2									3	4										F
WEDNESDAY	FLASH	3	1	2									3	4										F
THURSDAY	FLASH	3	1	2									3	4										F
FRIDAY	FLASH	3	1	2									3	4										F
SATURDAY	FLASH																							

NOTES:

- PLAN 1 - AM PEAK (140 SEC CYCLE): 7:00AM TO 9:30AM MON-FRI
PLAN 2 - MIDDAY PEAK (150 SEC CYCLE): 9:30AM TO 12:00PM MON-SAT
PLAN 3 - OFF-PEAK (120 SEC CYCLE): 06:00AM TO 07:00AM MON-FRI
12:00PM TO 03:00PM MON-FRI
06:00PM TO 11:00PM MON-FRI
06:00AM TO 09:30AM SAT
12:00PM TO 12:00AM SAT
06:00AM TO 12:00AM SUN
PLAN 4 - PM PEAK (140 SEC CYCLE): 3:00PM TO 6:00PM MON-FRI
FLASH OPERATION: 11:00PM TO 6:00AM MON-FRI; 12:00AM TO 6:00AM SAT/SUN.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

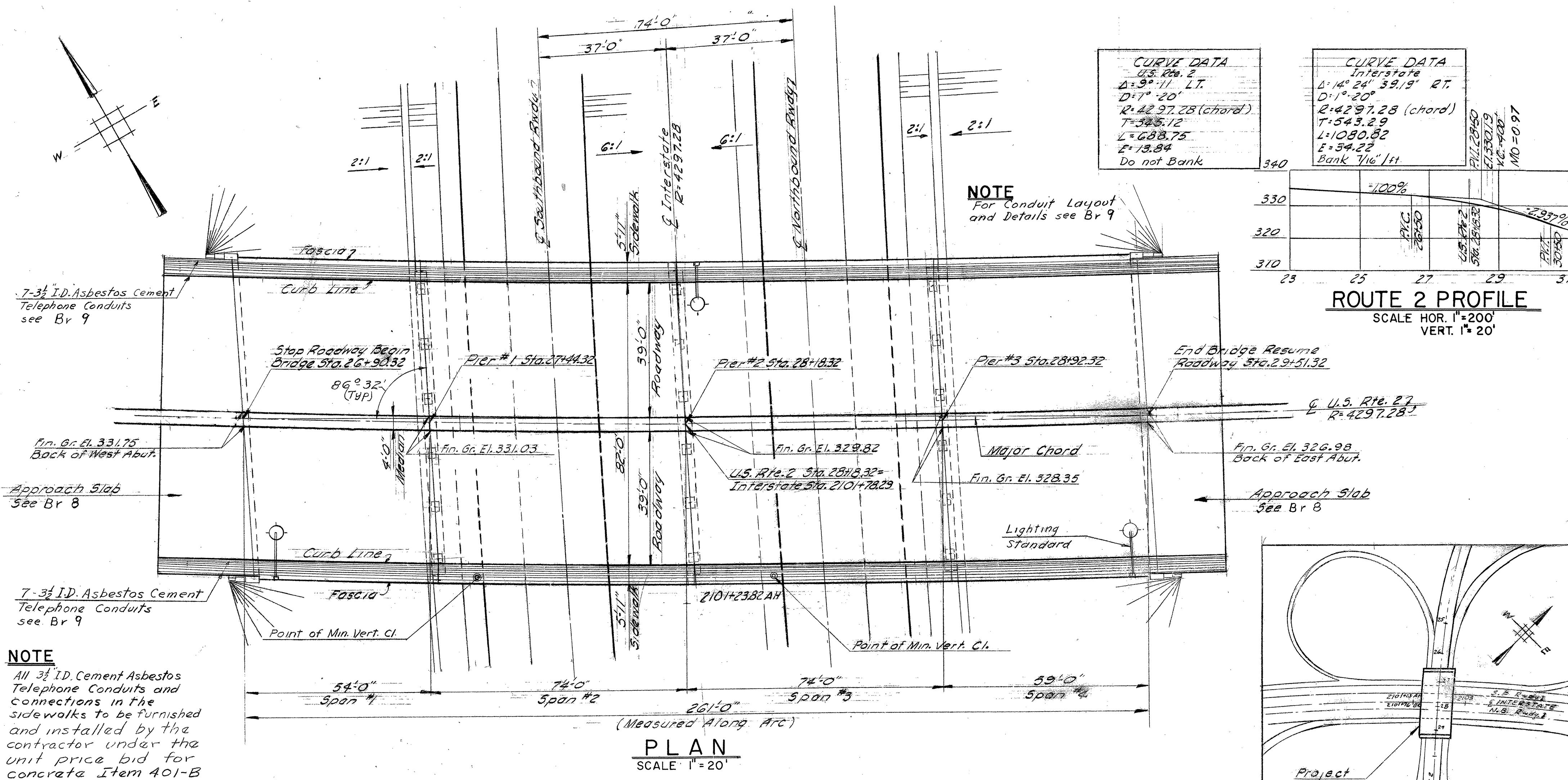
Town Of SOUTH BURLINGTON
Highway No. U.S. 2

Bridge No. 68
Log Sta.
Surv. Sta.

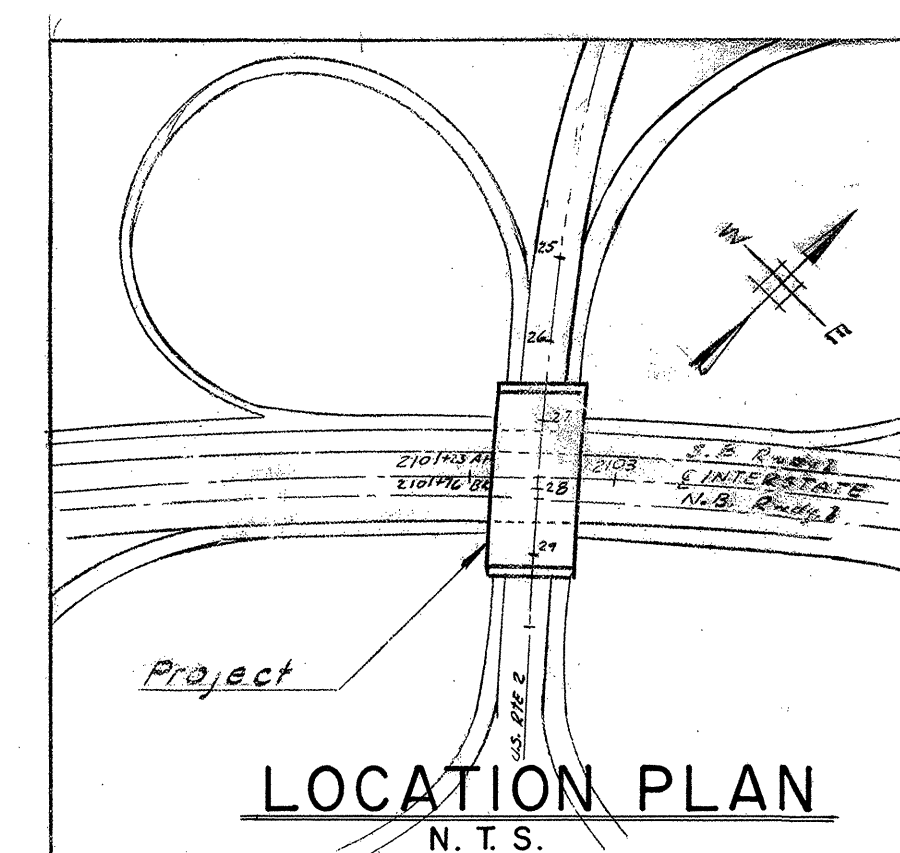
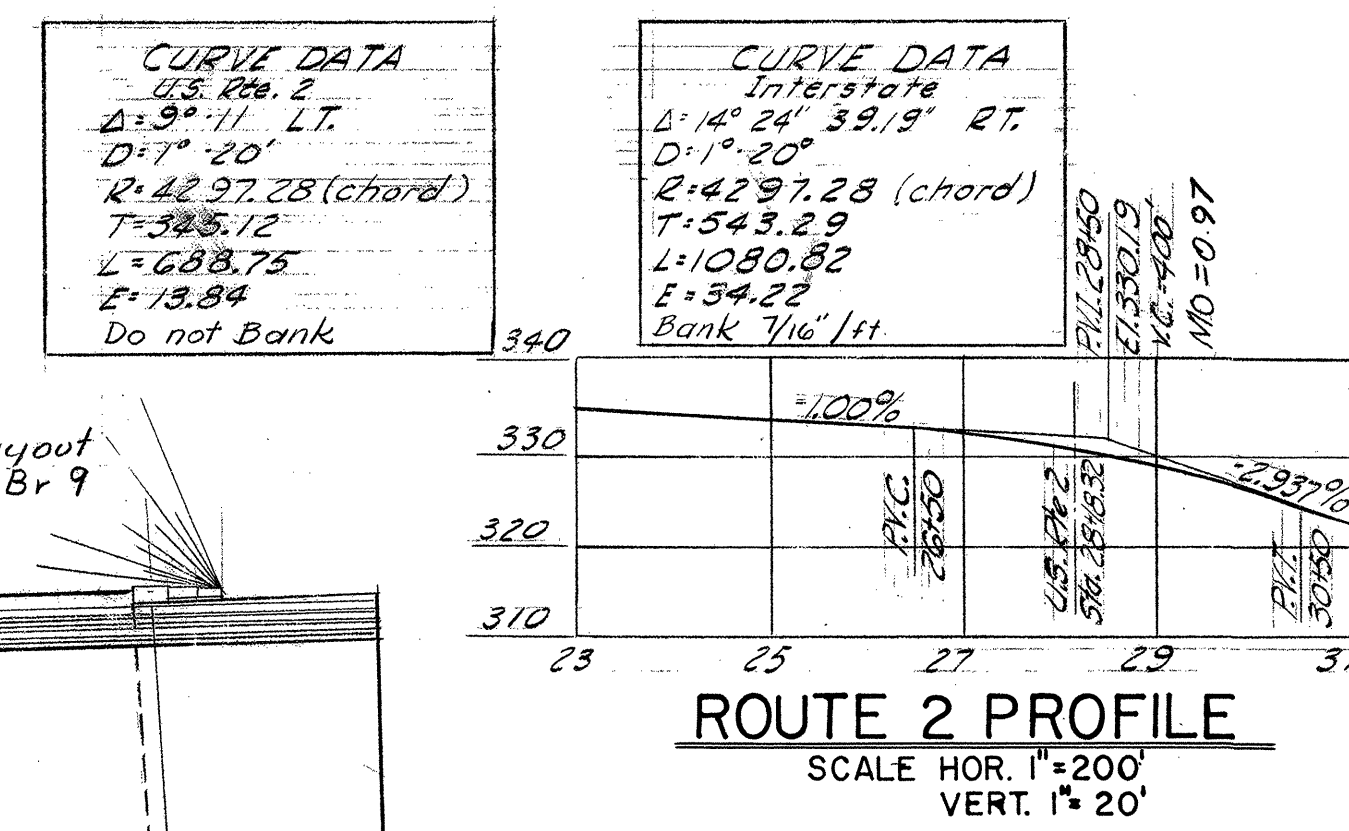
U.S. 2 OVER I-89

DESIGNED BY K. DANDRADE
CHECKED BY C.M. BOBAY
PROJECT SOUTH BURLINGTON

DRAWN BY B.J. MASSIE
DATE 1/00
BRIDGE DESIGN SUPERVISOR C.D. BAKER
PROJECT NO. STP BIKE (28)S
DATE 1/00
VHB CAD DRAWING NO. 5096391G
BRIDGE SHEET NO.



NOTE
All 3/4" ID. Cement Asbestos Telephone Conduits and connections in the sidewalks to be furnished and installed by the contractor under the unit price bid for concrete Item 401-B



ESTIMATED QUANTITIES

ITEM #	ITEM	UNIT	NEAT	OVERRUN	TOTAL	FINAL
107	Structure Excavation	C.Y.	826	83	909	889
204	Subbase of Crushed Rock (Mod. under Str.)	C.Y.	390	20	410	352
361B	Bit. Conc. Pav't. (Mod.)	Ton	300	45	345	* 0
401B	Conc. Class B Mod. (Incl. Appr. Slab)	C.Y.	1,735	86	1,821	1,729
402	Reinforcing Steel (Incl. Appr. Slab)	Lb.	292,950		292,950	293,058
403	Spiral Reinforcement (22,200)	L.S.	1		1	1
404A	Structural Steel	Lb.	750,163	15,003	765,166	748,658
407	Asphaltic Asbestos Coating	S.Y.	168		168	127
501	Furnishing Equipment for Driving Piles	L.S.	1		1	1
503	Splices for Steel Piling	Each	37		37	7
504	Steel H Piling (12.0P-53)	L.F.	8540		8540	8,557
556C	Granite Bridge Curb (Mod.)	L.F.	1,224		1,224	1,232
572	Bridge Railing	L.F.	511		511	511
222	Gravel Backfill	C.Y.	104	10	114	0
573B	Lighting System (Bridge)	L.S.	1		1	1
318	Formulation for Bridge Floors	Gal.	1061		1061	* 0
372	Joint Sealer Hot Roured Elastic Type	L.F.	391		391	* 0
-	Jonatlastic Sealant (Supp. Agree. 6-11-62)	Lb.	-	-	-	170

* Included in Roadway Quantity

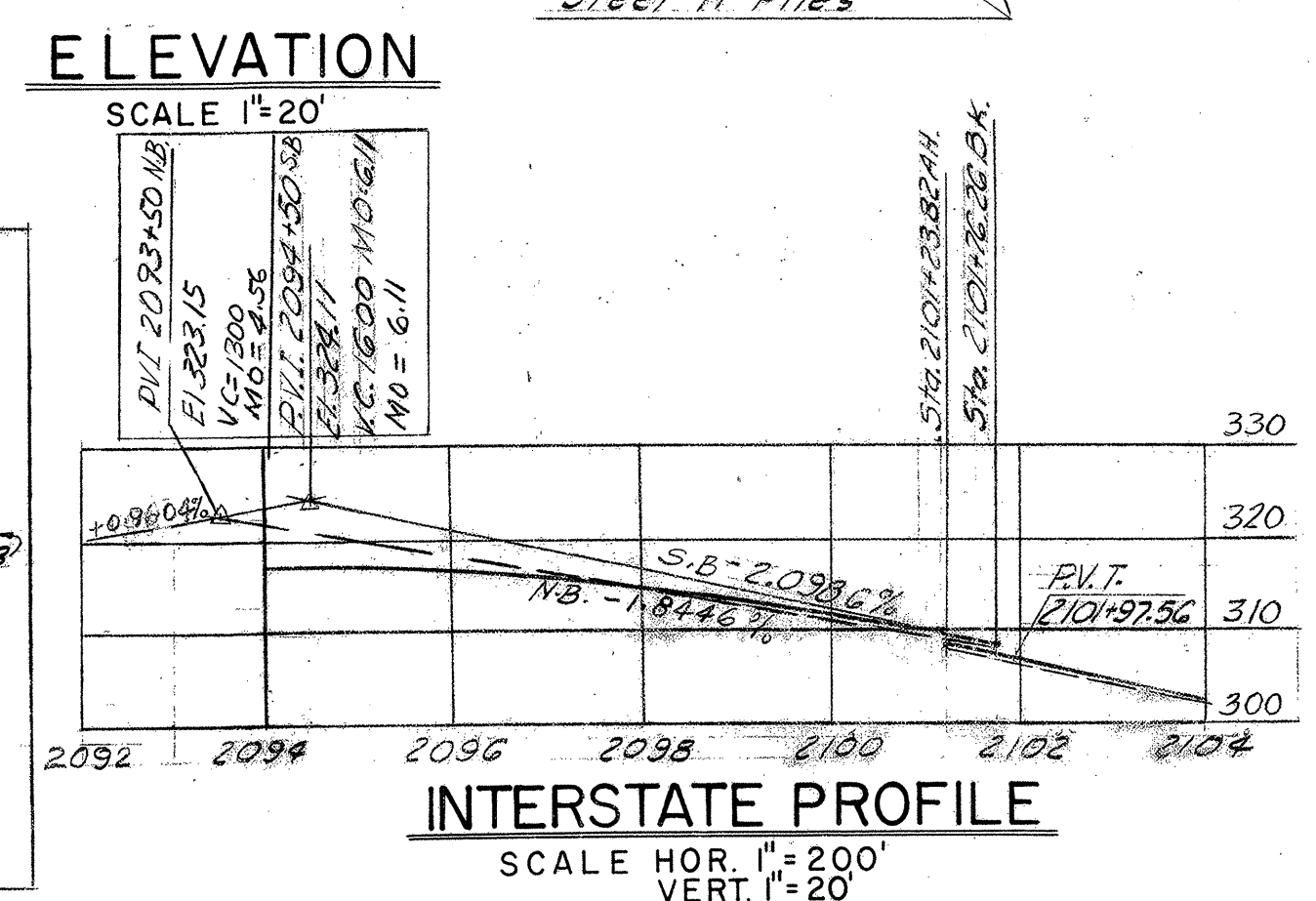
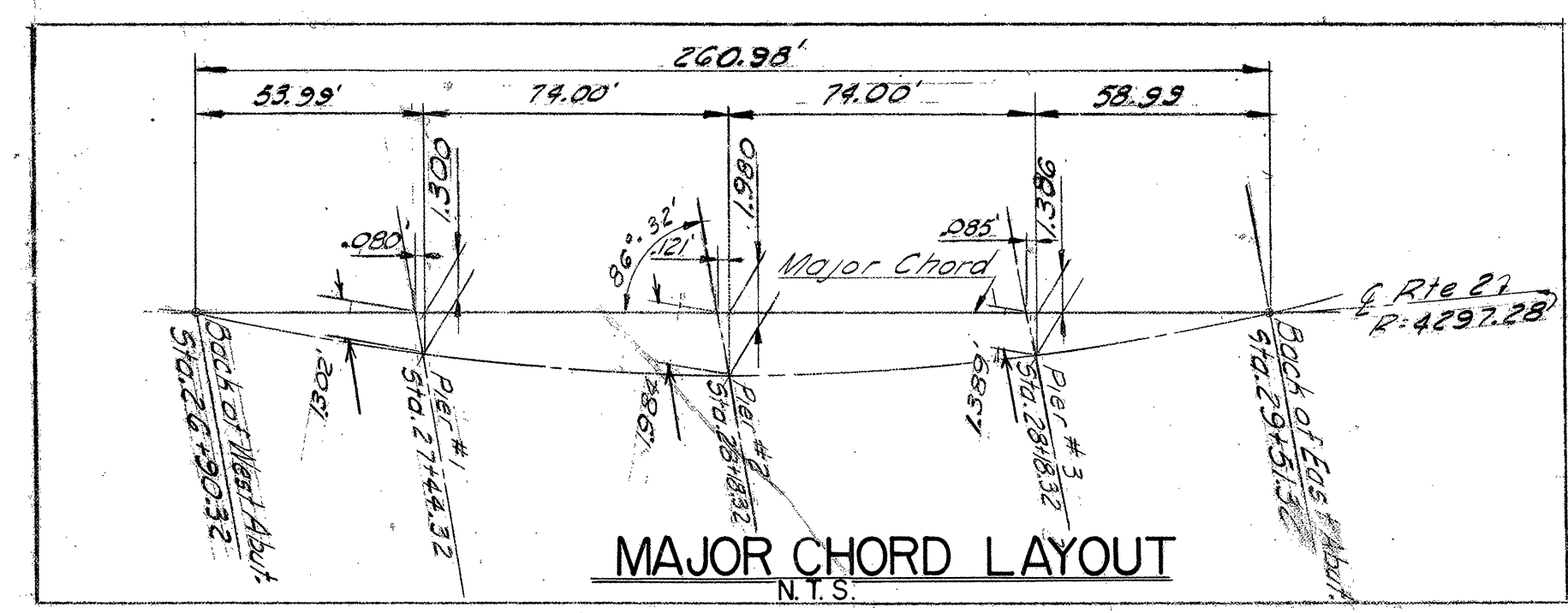
GENERAL NOTES

- All materials and construction shall conform to the State of Vermont, Department of Highways, Standard Specifications for Road and Bridge Construction dated Jan. 1956 and the A.A.S.H.O. Standard Specifications dated 1957. Designed for H-20-516-44 loading modified for National System of Interstate Highways applied in accordance with the provision of the A.A.S.H.O. Standard Specifications, Article 3, 2, 8.
- Cross Slope of Approach Slab to conform with cross slope of Bridge.
- All dimensions given are measured horizontally or vertically unless otherwise noted.
- Final coat of field paint shall be green unless otherwise directed by the Engineer.
- All dimensions given at 68°F.
- All reinforcing to have a clear cover of 3" unless noted.
- All exposed edges of concrete shall be chamfered 1"x1" unless noted.
- Borings indicated on the drawings have been made for design purposes only and are not warranted to show actual subsurface conditions.
- Elevation Datum Sea Level based on Bench Line U.S.C.G.S. Survey Level Line Vermont 25 (Second Order).
- Steel Bearing Piles shall be driven to refusal unless otherwise approved by the Engineer. When Piles are driven in fill, the material should be such as to have no stones large enough to interfere with the driving of piles.
- The top surfaces of all piers and abutments shall be sloped 1/4" per foot from front edge of abutment back wall or center lines of piers, except for bearing pads projecting 1" or more above the general area, which surfaces shall be level. The entire exposed top surface of piers and abutments shall be coated with asphaltic asbestos coating 1/2" thick as per Item 407 of specifications.
- Unless otherwise called for all beams shall be rolled to a true circular camber, the middle ordinate being that shown in AISC handbook as being the minimum camber likely to remain permanent.

LIST OF DRAWINGS

REFERENCE DRAWINGS

- | | |
|-------------------------------|-----------------|
| General Plan & Elevation | Br. # 1 |
| Slab Plan & Typical Section | Br. # 2 |
| Framing Plan & Details | Br. # 3 |
| Pier Elevations | Br. # 4 |
| Pier Plans | Br. # 5 |
| Pier Details | Br. # 6 |
| Abutment Details | Br. # 7 |
| Approach Slab Details | Br. # 8 |
| Utilities & Details | Br. # 9 |
| Boring Logs | Br. # 10 |
| Bar Schedule | Br. # 11, 12 |
| Preliminary Information Sheet | Br. # 13 |
| SCB 42 60 | Sh. # 163 |
| SB 55 58 1 of 2 f 2 of 2 | Sh. # 164 & 165 |
| SB 20 60 | Sh. # 166 |
| SB 21 56 | Sh. # 167 |
| SB 22 60 | Sh. # 168 |
| SCB-D 60 | Sh. # 169 |
| SB 58 60 1 of 2 | Sh. # 170 & |



STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

INTERSTATE PROJECT IN THE TOWNS OF
SOUTH BURLINGTON

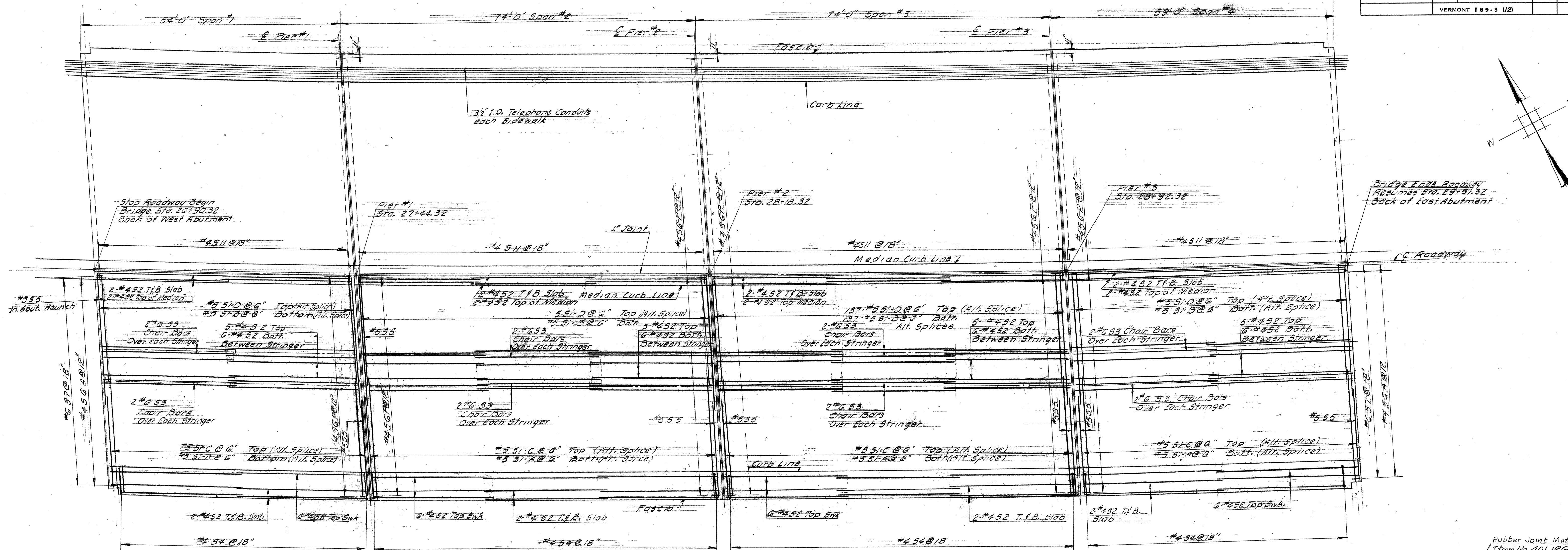
UNDERPASS STA. 2101+78.29
BURLINGTON INTERCHANGE
GENERAL PLAN & ELEVATION

BOSWELL ENGINEERING CO. RIDGEFIELD PARK, N.J.

DRAWN BY: R.H.E. IN CHARGE: A.J.L. DATE: SCALE: AS SHOWN

CHECKED BY: A.J.L.

PROJECT NO. I 89-3 (12) SHEET 750 OF 750

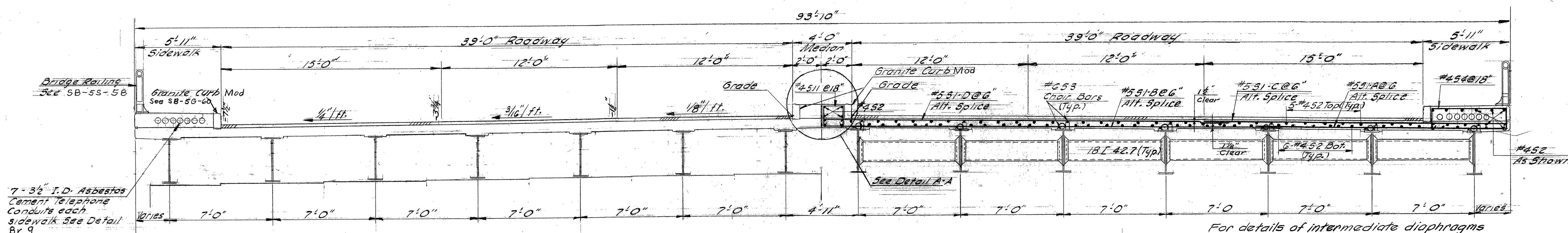


SLAB REINFORCING PLAN

SCALE 1"=10'

NOTES

1. For General Notes see Br 1
2. Slab reinforcement symmetrical about roadway
3. For superstructure details see SCB-42-60



AT PIER

For details of diaphragms at piers see Std. Sh. SCB-D-60.

TYPICAL SECTION

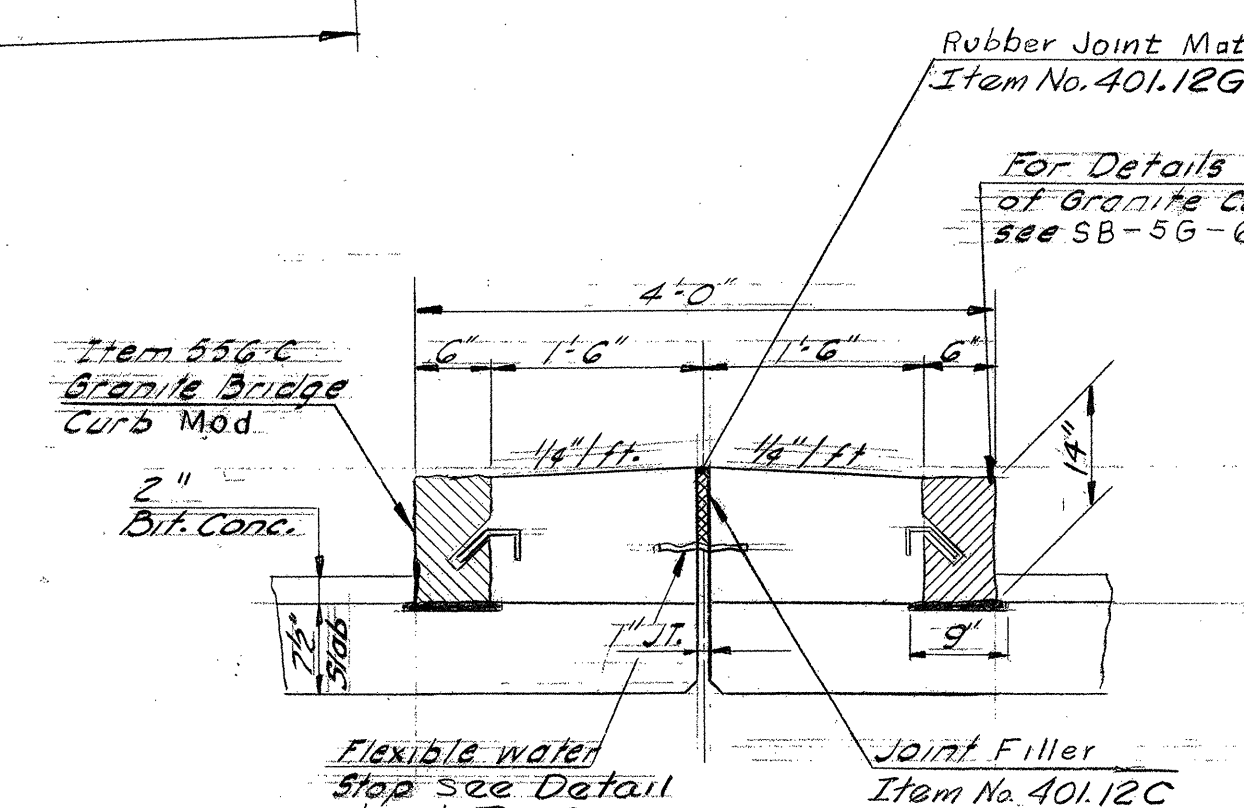
SCALE 1/4"=1'-0"

AT MID SPAN

For details of intermediate diaphragms see Std. Sh. SCB-20-60.

ESTIMATED QUANTITIES

ITEM#	ITEM	UNIT	NEAT	OVERRUN	TOTAL	FINAL
361B	Bituminous Conc. Pavement (Mod.)	TOT	256	38	294	0
401B	Concrete Class B (Mod.)	C.Y.	819	41	860	813
402	Reinforcing Steel	Lb.	See Sh. Br. 11			
556C	Granite Bridge Curb, Mod.	L.F.	1044		1044	1,232
572	Bridge Railing	L.F.	511		511	511
*	Included in Roadway Quantity					



DETAIL A-A

SCALE 3/4"=1'-0"

SOUTH BURLINGTON IM DECK (36)
FOR REFERENCE ONLY - BRIDGE 68

SHEET 61 OF 75

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

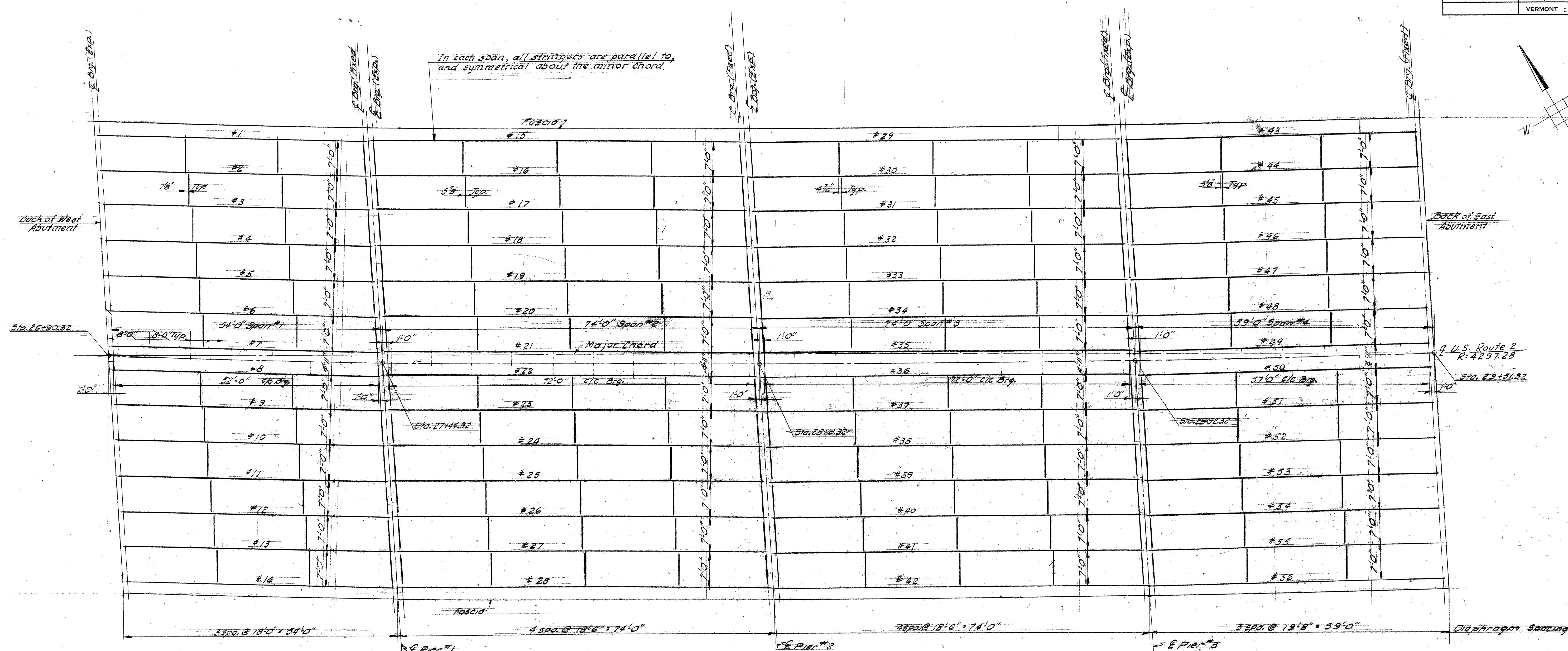
INTERSTATE PROJECT IN THE TOWNS OF
SOUTH BURLINGTON

UNDERPASS STA. 2101+78.29
BURLINGTON INTERCHANGE
SLAB PLAN & TYPICAL SECTION

BOSWELL ENGINEERING CO. RIDGEFIELD PARK, N.J.

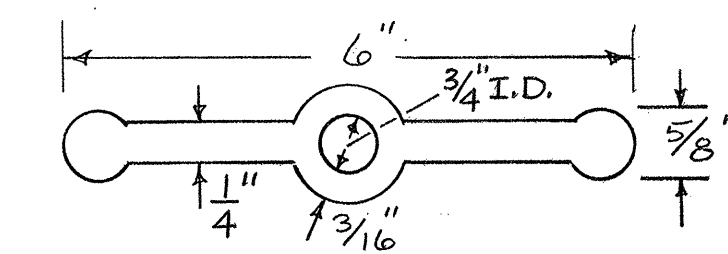
DRAWN BY R.H.E. IN CHARGE J.L. DATE SCALE As Shown

CHECKED BY A.J.L. PROJECT NO. 189-3 (12) SHEET 75 OF 175



FRAMING PLAN
SCALE 1"=10'

- NOTES:**
- For General Notes see Br 1
 - For Typical Section see Br 2
 - For Superstructure Details see Std. Sh. SCB-42-60, SCB-D-60, & SB-20-60.



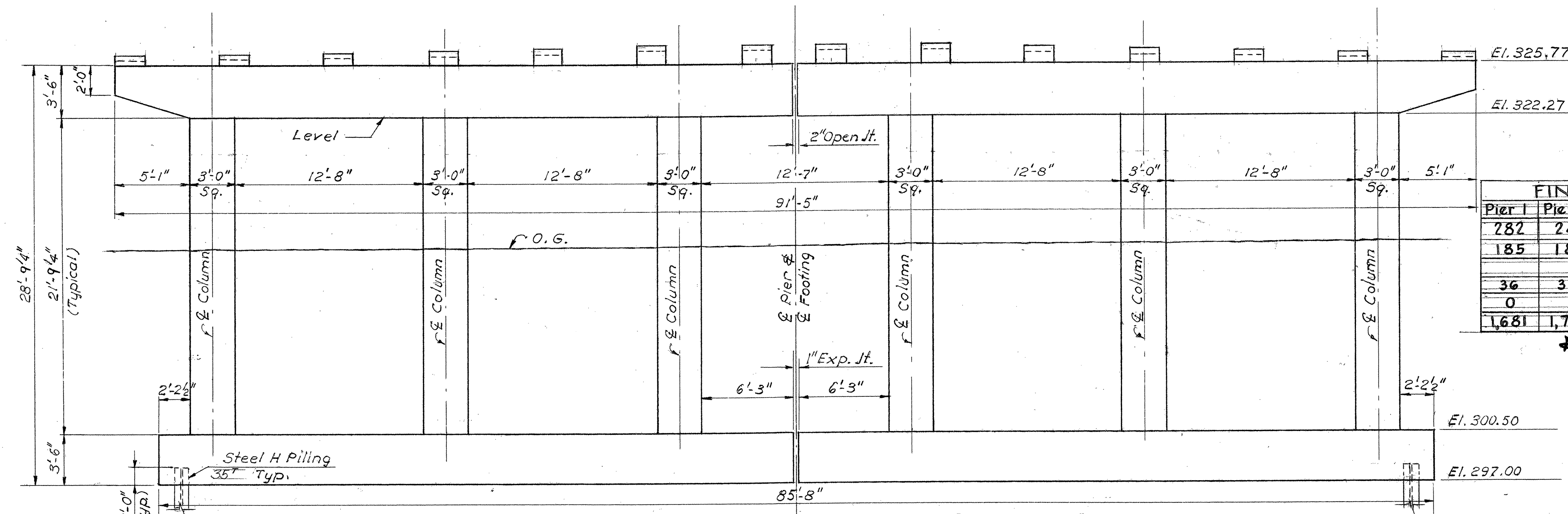
WATER STOP DETAIL

THE ABOVE SHALL BE MADE OF RUBBER AND SHALL MEET ALL THE REQUIREMENTS IN ACCORDANCE WITH A.S.T.M. SPECIFICATIONS D 395-55T CONDITION "B" AND D 676-55T

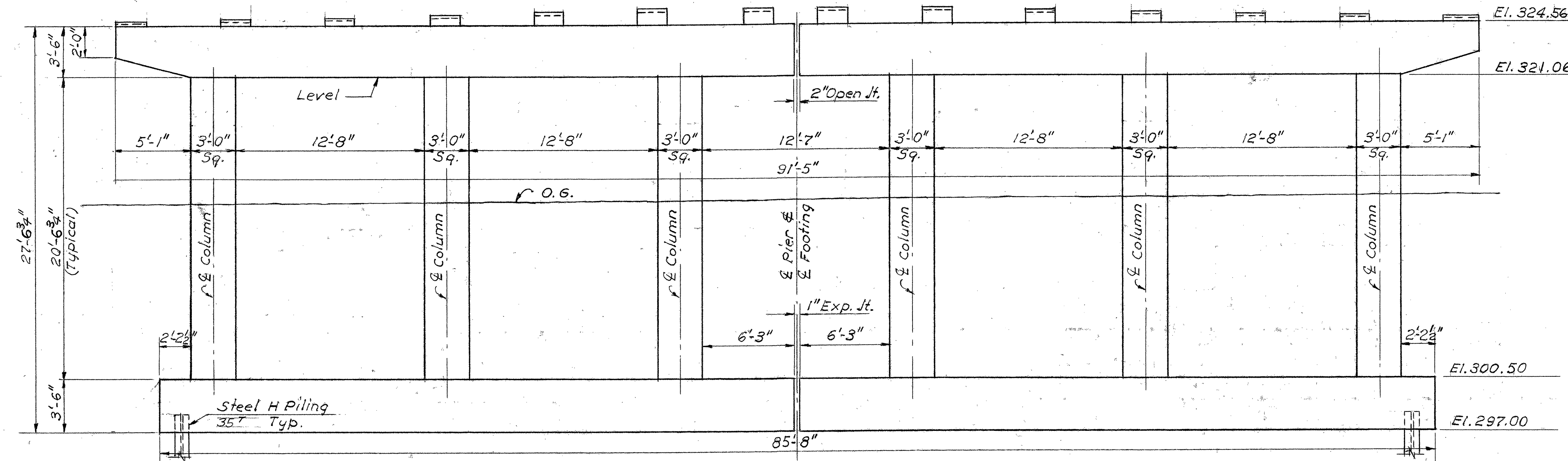
ESTIMATED QUANTITIES						
ITEM #	ITEM	UNIT	NEAT	OVERRUN	TOTAL	FINAL
403	Spiral Reinforcement (22,200')	L.S.	Required			
404A	Structural Steel	Lb.	750,163	15,003	765,166	748,658

SOUTH BURLINGTON IM DECK(36)
FOR REFERENCE ONLY - BRIDGE 68
SHEET 62 OF 75

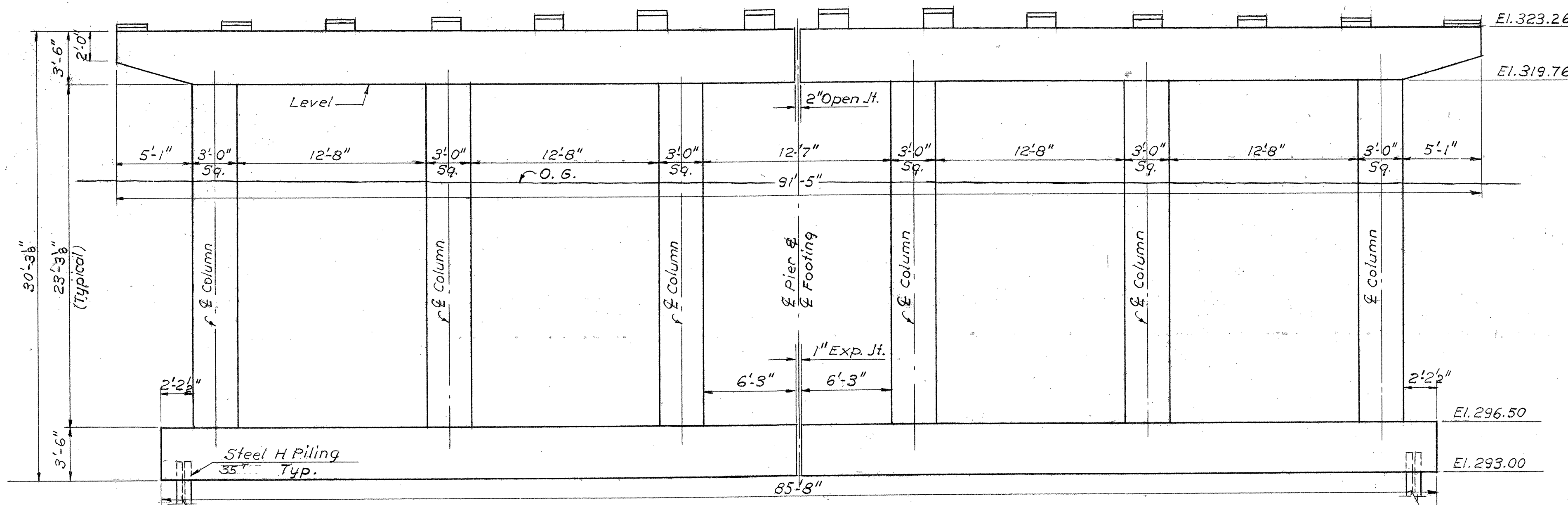
STATE OF VERMONT DEPARTMENT OF HIGHWAYS	
INTERSTATE PROJECT IN THE TOWNS OF SOUTH BURLINGTON	
UNDERPASS STA. 2101+78.29 BURLINGTON INTERCHANGE FRAMING PLAN & DETAILS	
BOSWELL ENGINEERING CO. RIDGEFIELD PARK, N.J.	
DRAWN BY R.H.E. CHECKED BY M.J.C.	IN CHARGE A.J.L. DATE
PROJECT NO. 189-3 (12)	SHEET 15-2 OF 175



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



PIER #2
SCALE: 3/16"=1'-0"



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

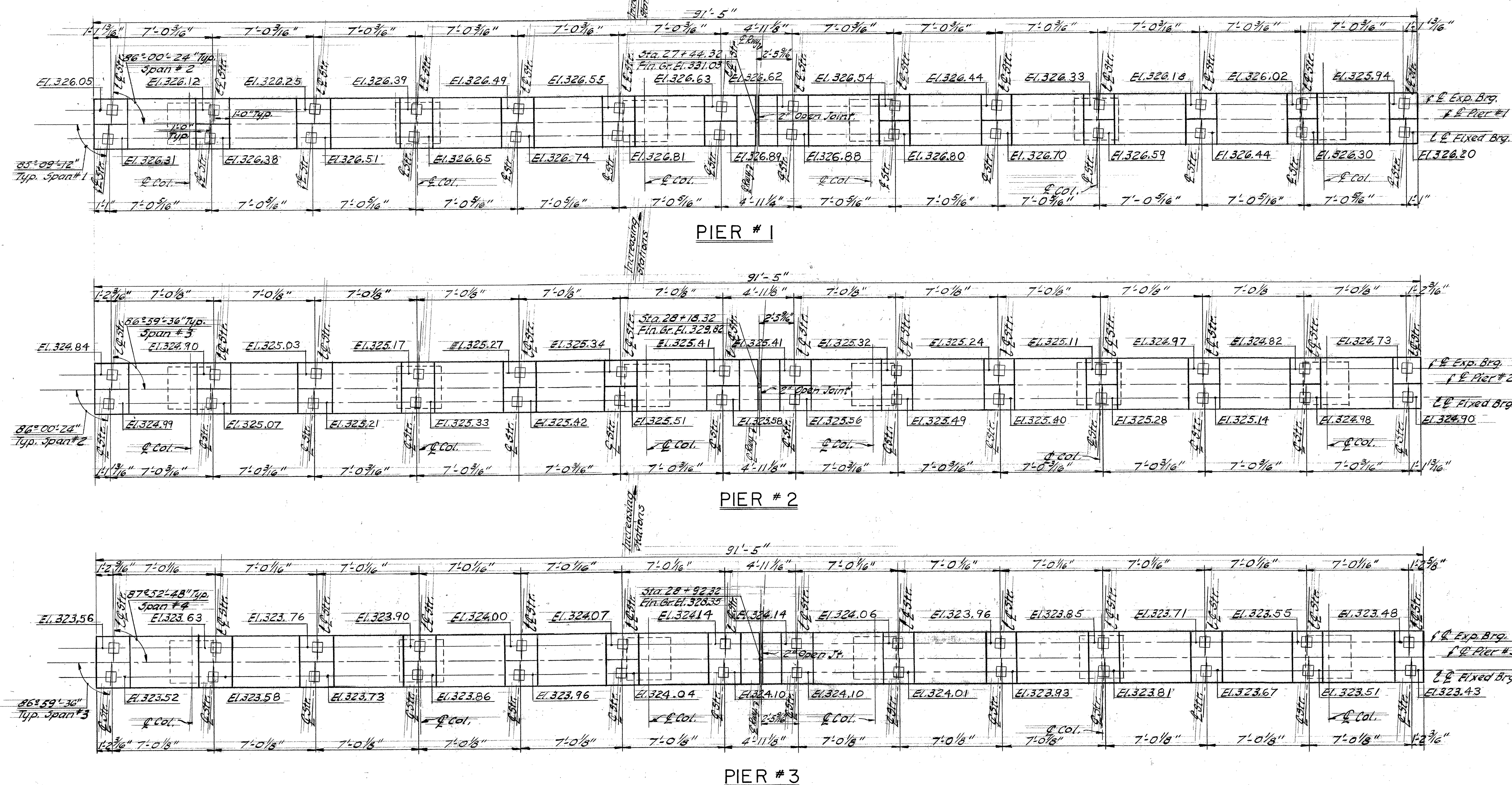
ESTIMATED QUANTITIES														
FINAL			ITEM #	ITEM	UNIT	PIER #1			PIER #2			PIER #3		
Pier 1	Pier 2	Pier 3				NEAT	OVRNUN	TOTAL	NEAT	OVRNUN	TOTAL	NEAT	OVRNUN	TOTAL
282	249	300	107	Structure Excavation	C.Y.	232	23	255	250	25	275	286	29	315
185	183	188	401B	Class "B" Concrete (Mod.)	C.Y.	186	9	195	183	9	192	189	9	198
			402	Reinforcing Steel	Lb.	See Bar Schedule Sh. #160								
36	36	36	407	Asphaltic-Asbestos Coating	S.Y.	43	-	43	41	-	41	42	-	42
0	1	6	503	Splices for Steel Piling	Ea.	9	-	9	9	-	9	9	-	9
1,681	1,778	1,902	504	Steel H Piling (12.B.P.53)	L.F.	1760	-	1760	1320	-	1320	1980	-	1980

NOTES

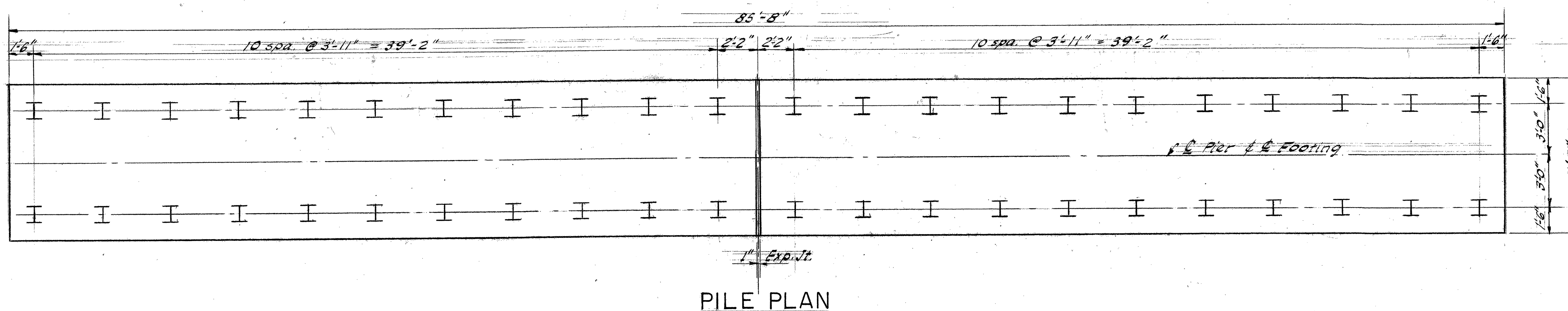
1. For General Notes see Br. 1
2. For Pier Details see Br. 6
3. For Pier Plans & Pile Plan see Br. 5
4. All elevations Looking toward Increasing Stations.

SOUTH BURLINGTON IM DECK(36)
FOR REFERENCE ONLY - BRIDGE 68
SHEET 63 OF 75

STATE OF VERMONT DEPARTMENT OF HIGHWAYS	
INTERSTATE PROJECT IN THE TOWNS OF SOUTH BURLINGTON	
UNDERPASS STA. 2101+78.29 BURLINGTON INTERCHANGE PIER ELEVATIONS	
BOSWELL ENGINEERING CO. RIDGEFIELD PARK, N.J.	
DRAWN BY <u>D.S.</u>	IN CHARGE <u>A.L.L.</u>
CHECKED BY <u>M.J.C.</u>	DATE <u> </u> SCALE <u>As Shown</u>
PROJECT NO. 1 89-3 (12)	SHEET 153 OF 175



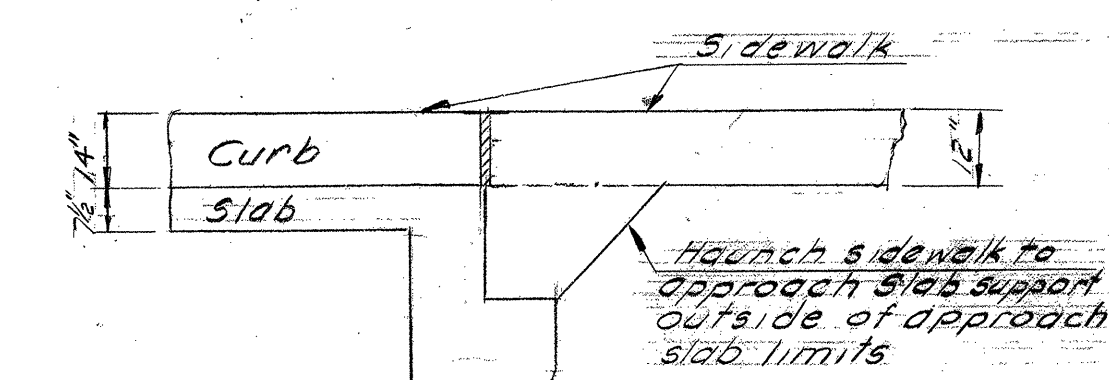
- NOTES:**
1. For General Notes see Br 1.
 2. For pier elevations see Br 4.
 3. For pier details see Br 6.
 4. For estimate of quantities see Br 4.



44-35^{TON} Steel H Piles ea Pier
 Estimated avg Pile Length
 Pier #1 - 40'
 Pier #2 - 30'
 Pier #3 - 45'

SOUTH BURLINGTON IM DECK(36)
 FOR REFERENCE ONLY - BRIDGE 68
 SHEET 64 OF 75

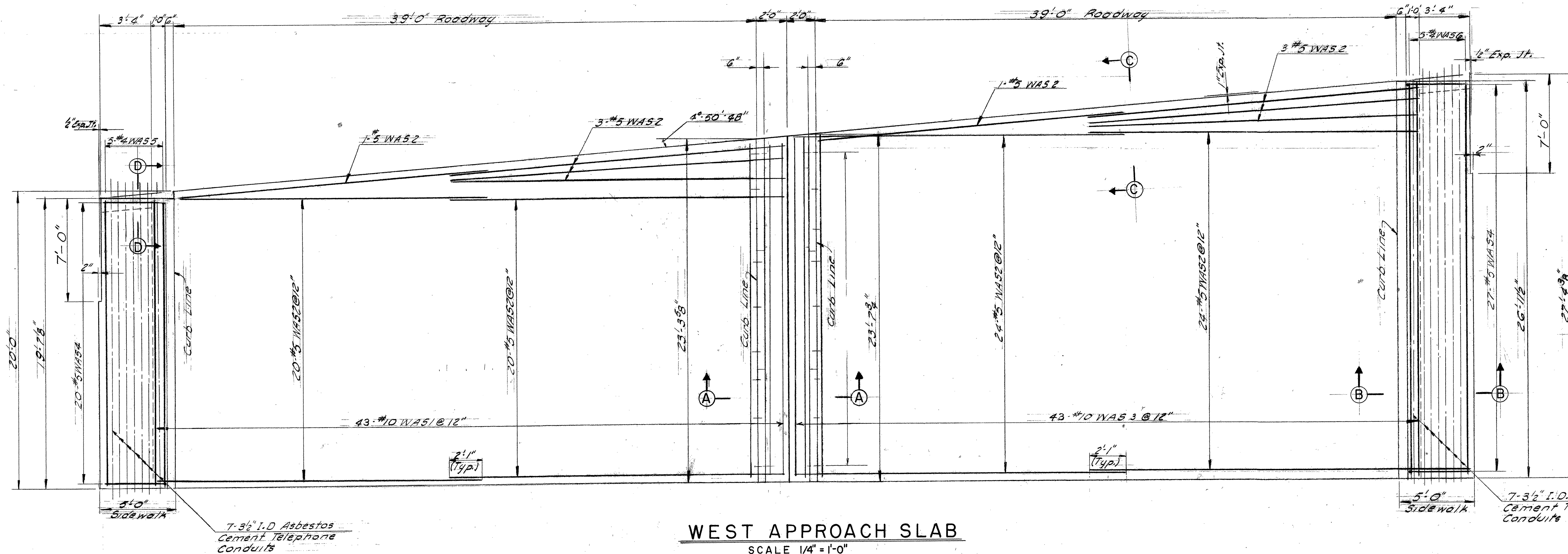
STATE OF VERMONT DEPARTMENT OF HIGHWAYS	
INTERSTATE PROJECT IN THE TOWNS OF SOUTH BURLINGTON	
UNDERPASS STA. 2101+78.29 BURLINGTON INTERCHANGE PIER PLANS	
BOSWELL ENGINEERING CO. RIDGEFIELD PARK, N.J.	
DRAWN BY A.M.	IN CHARGE A.J.I.
CHECKED BY M.J.C.	DATE
PROJECT NO. 1 89 - 3 (12)	SHEET 154 OF 175



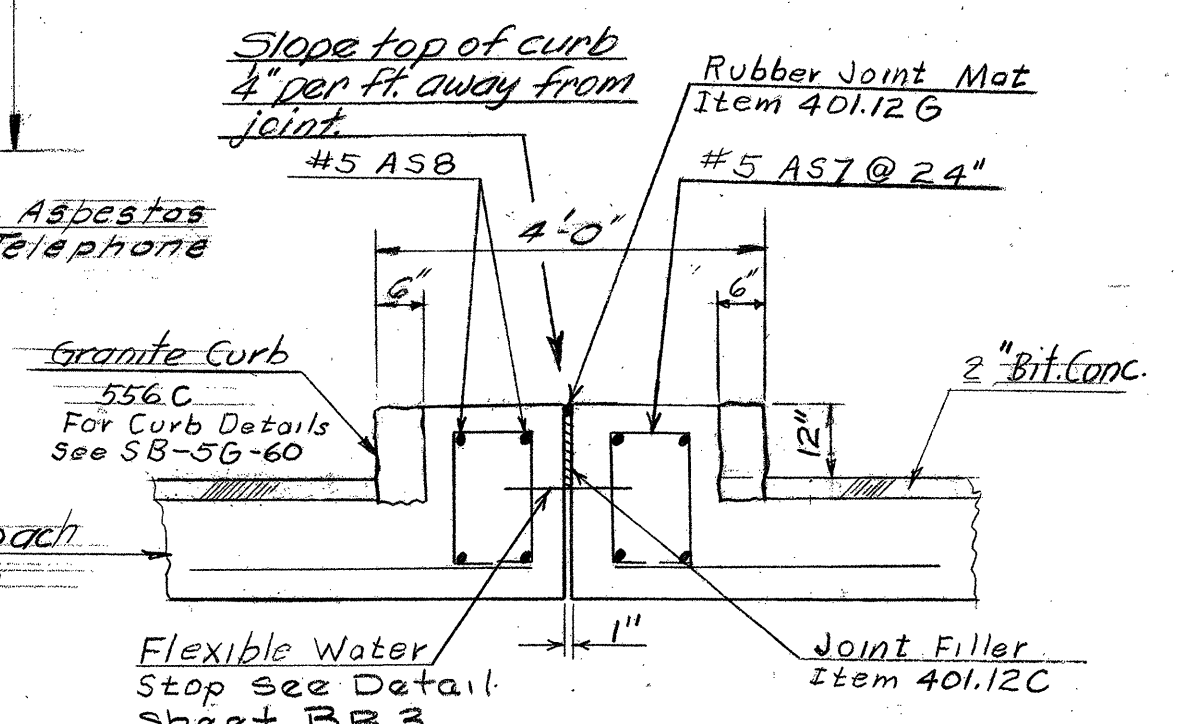
SECTION D-D
SCALE 3/8"=1'-0"

ESTIMATED QUANTITIES

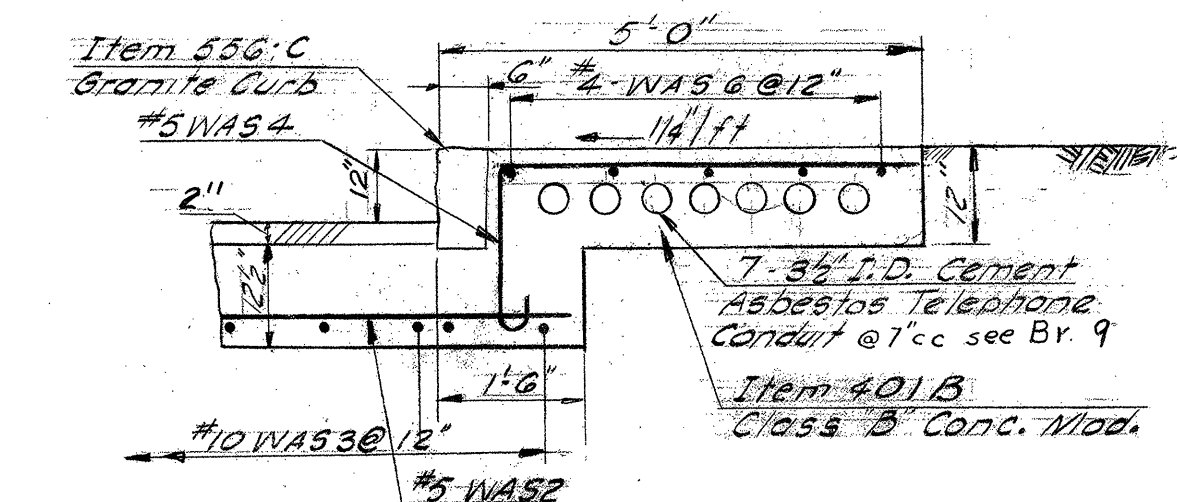
EAST APPROACH SLAB				
ITEM#	ITEM	UNIT	NEAT	OVERRUN
361-B	Bituminous Conc. Pavement	Ton	21	3
401-B	Concrete Class B (Mod)	C.Y.	81	4
402	Reinforcing Steel	Lb	580	Br#12
556-C	Granite Bridge Curb Mod	L.F.	86	
WEST APPROACH SLAB				
361-B	Bituminous Conc. Pavement	Ton	23	4
401-B	Concrete Class B (Mod)	C.Y.	87	4
402	Reinforcing Steel	Lb	580	Br#12
556-C	Granite Bridge Curb Mod	L.F.	94	



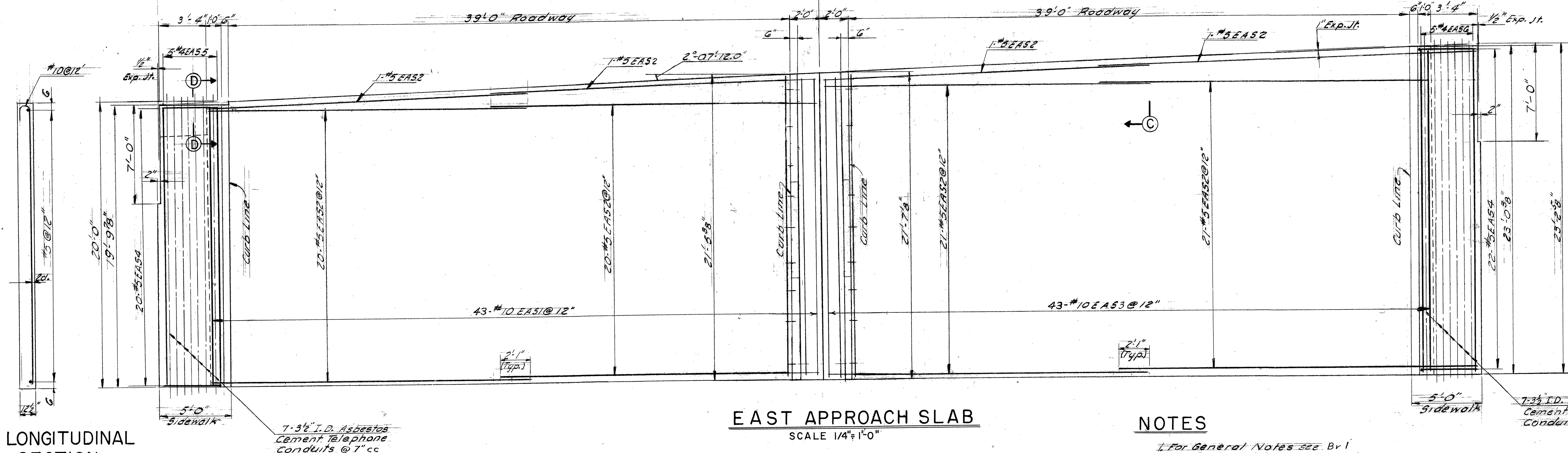
WEST APPROACH SLAB
SCALE 1/4"=1'-0"



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



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



EAST APPROACH SLAB
SCALE 1/4"=1'-0"

NOTES

- For General Notes see Br 1
- For Section C-C see SB-22-60
- All 3 1/2" I.D. Cement Asbestos Telephone Conduits and connections in each sidewalk of the Approach Slabs to be furnished by others and the installation is to be paid for in the price for "Concrete Class B Item 401-B"

LONGITUDINAL SECTION

SCALE 1/4"=1'-0"

STATE OF VERMONT DEPARTMENT OF HIGHWAYS

INTERSTATE PROJECT IN THE TOWNS OF
WILLISTON, SOUTH BURLINGTON, WINOOSKI, COLCHESTER

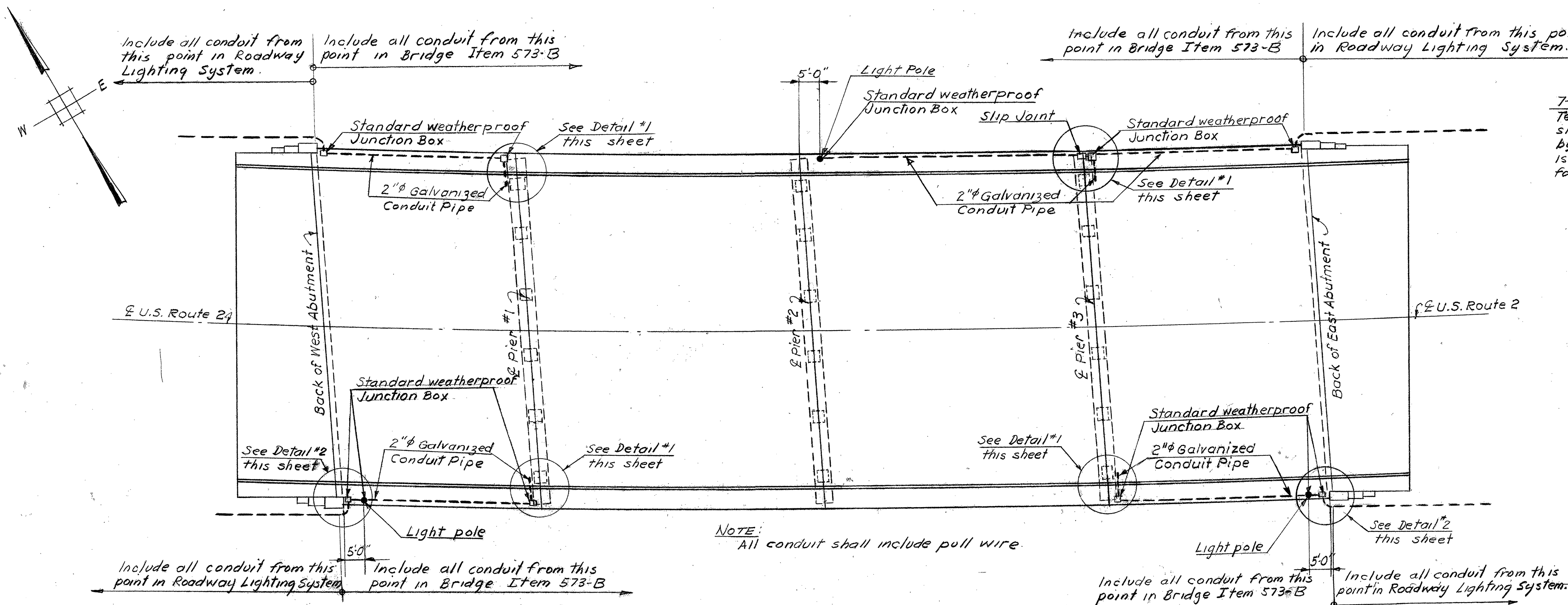
UNDERPASS STA. 2101+78.29 BURLINGTON INTERCHANGE APPROACH SLAB DETAILS

BOSWELL ENGINEERING CO. RIDGEFIELD PARK, N.J.

DRAWN BY R.H.E. IN CHARGE A.J.I. SCALE As Shown

CHECKED BY A.G.M. DATE

PROJECT NO. 189-3 (12) SHEET 157 OF 175



LIGHTING SYSTEM PLAN
SCALE: 1" = 20'

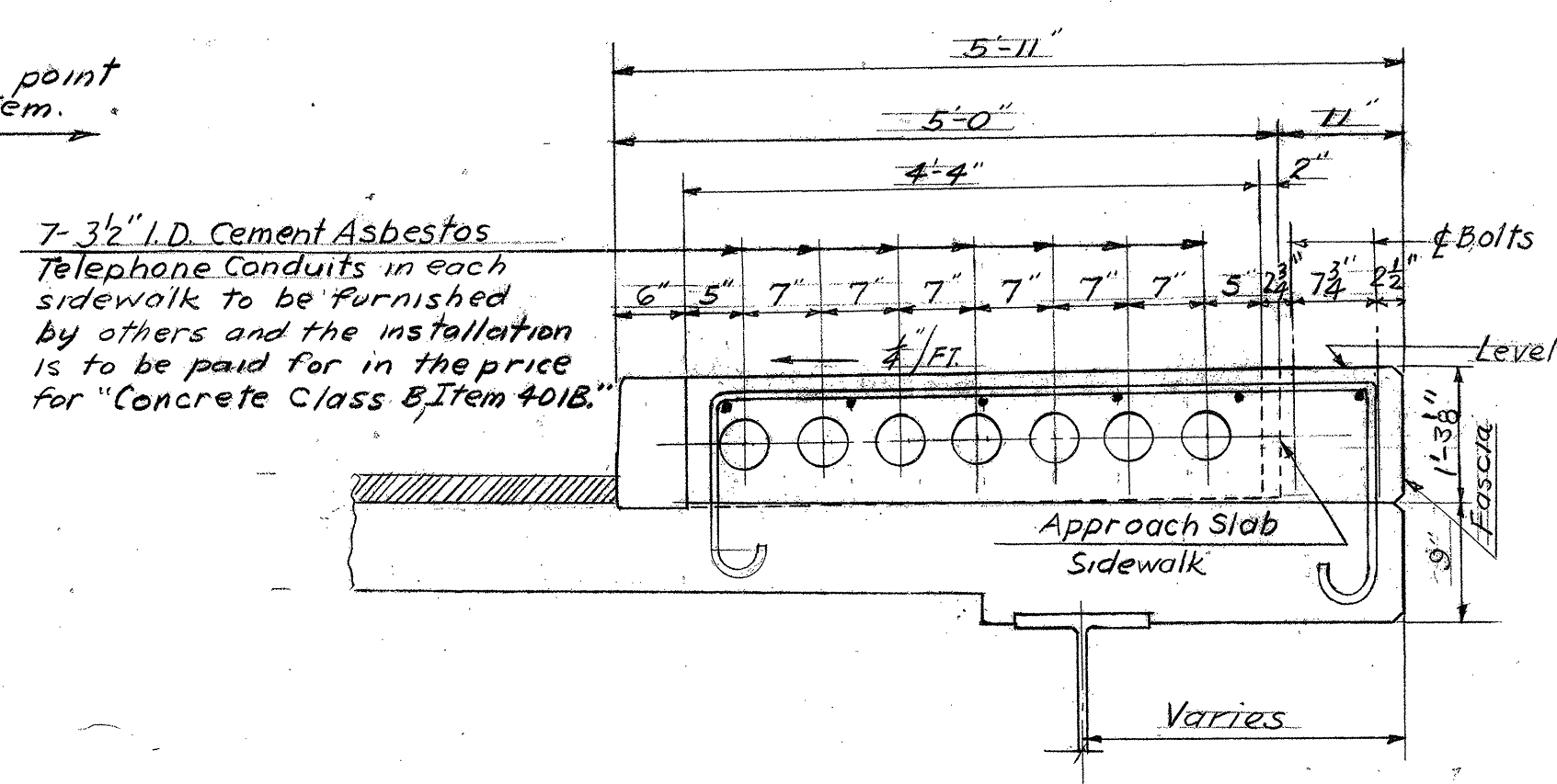
NOTES REGARDING LIGHTING SYSTEM

CONDUIT - The conduit shall be of the rigid steel type galvanized and coated inside and out with backed enamel and shall conform to the requirements of the National Electrical Manufacturers Association and each length shall bear the label of approval of the National Board of Fire Underwriters. Fittings, connections, and junction boxes shall be made of the same material as the conduit. The field cuts on conduit shall be made square and true so that the ends will butt or come together for the full diameter thereof. All couplings shall be screwed up until the ends of the conduit are brought together so that a good electrical connection will be made. All ends of conduit shall be reamed and unless slip joint expansion devices are indicated all connections shall be threaded. Where conduit bends are made in the field, they shall have a radius of not less than six (6) times the inside diameter of the conduit. The conduit shall be bent without crimping or flattening using the longest radius possible. One quarter (1/4) inch holes for drainage of the conduit shall be provided at the low point on each conduit run, or as ordered by the engineer. All holes for drainage shall be reamed thereby leaving no sharp edges on the inside of the conduit.

After the conduit lines are completed, the contractor shall, in the presence of the engineer, test the installation by pushing through the entire length, a mandrell of a diameter of one quarter (1/4) inch less than the inside diameter of the conduit. All obstructions, including stones, dirt, etc., shall be removed and any damaged conduit shall be replaced at the expense of the contractor. All exposed conduit ends shall be threaded and capped with standard conduit caps until wiring is started. When the caps are removed, the threaded ends shall be provided with approved conduit bushings.

A number 12 A.W.G. pull wire shall be installed in all conduit after installation and testing has been completed. The pull wire shall terminate beyond the end of the conduit in each pull box.

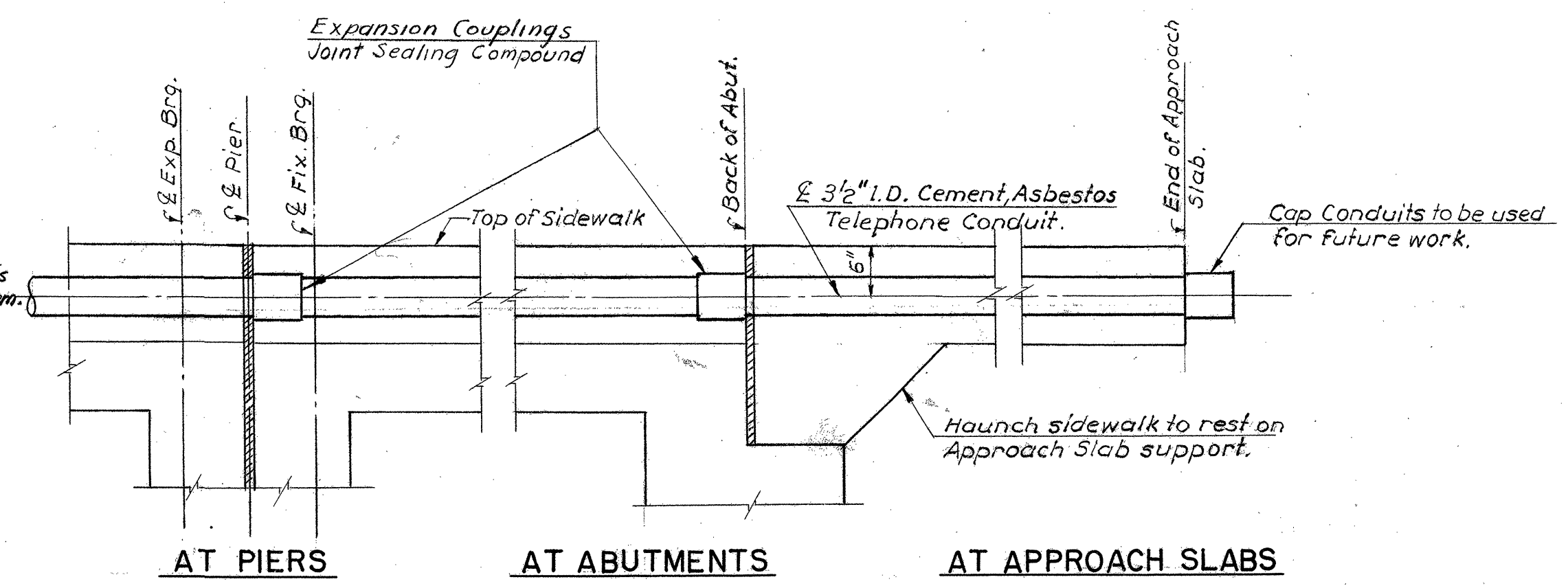
Previous to the pouring of the concrete, the anchor rods, nuts and washers and a template for the setting of the rods will be furnished to the Contractor, by the Utility Company installing the components necessary to complete the lighting system.



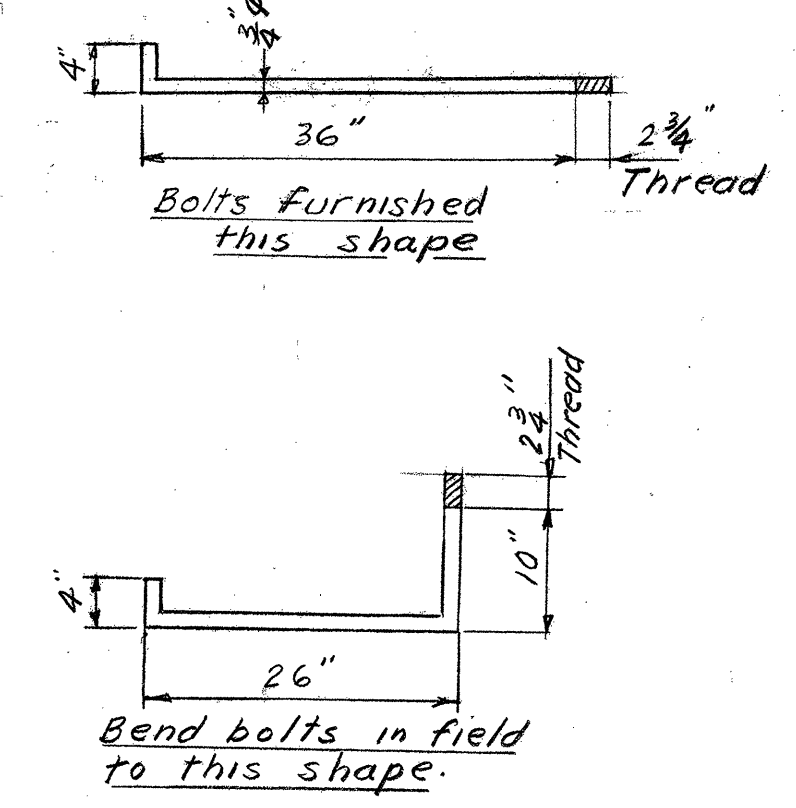
SECTION THRU BRIDGE SIDEWALK
SCALE: 3/4" = 1'-0"

BOLT HOLE POSITION FOR LIGHT STANDARD

SCALE: 1 1/2" = 1'-0"
(Template to be furnished by others)

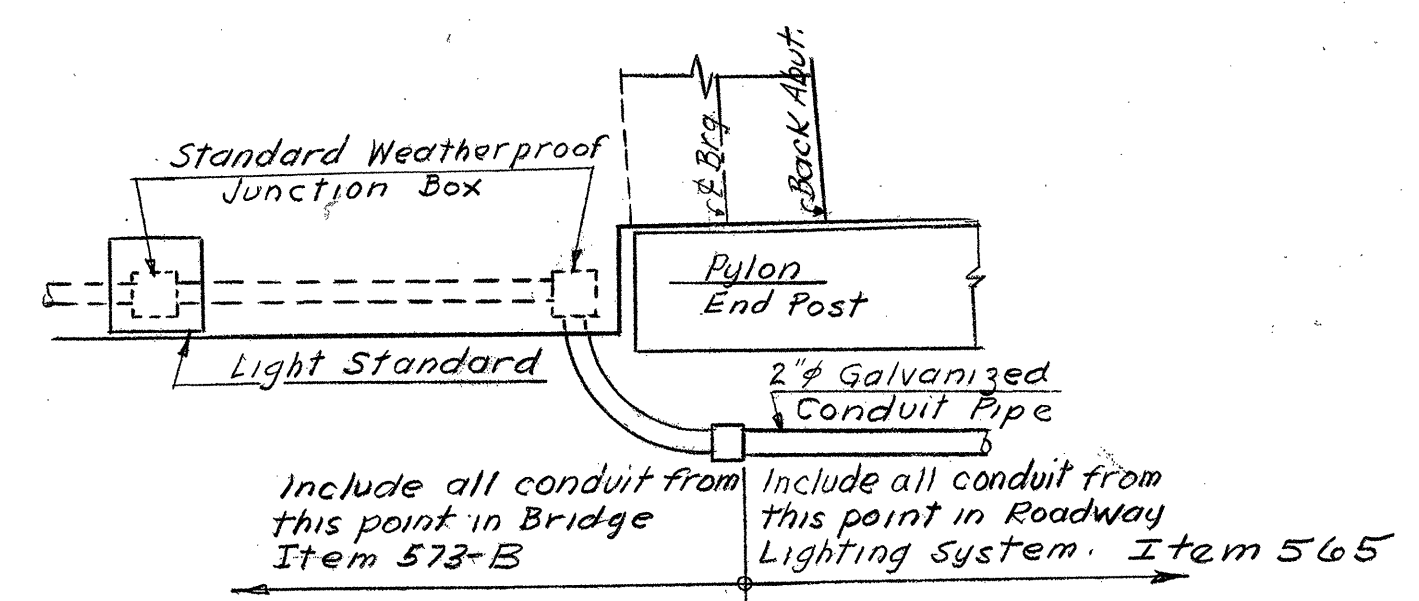


LONGITUDINAL SECTION
SCALE: 3/4" = 1'-0"

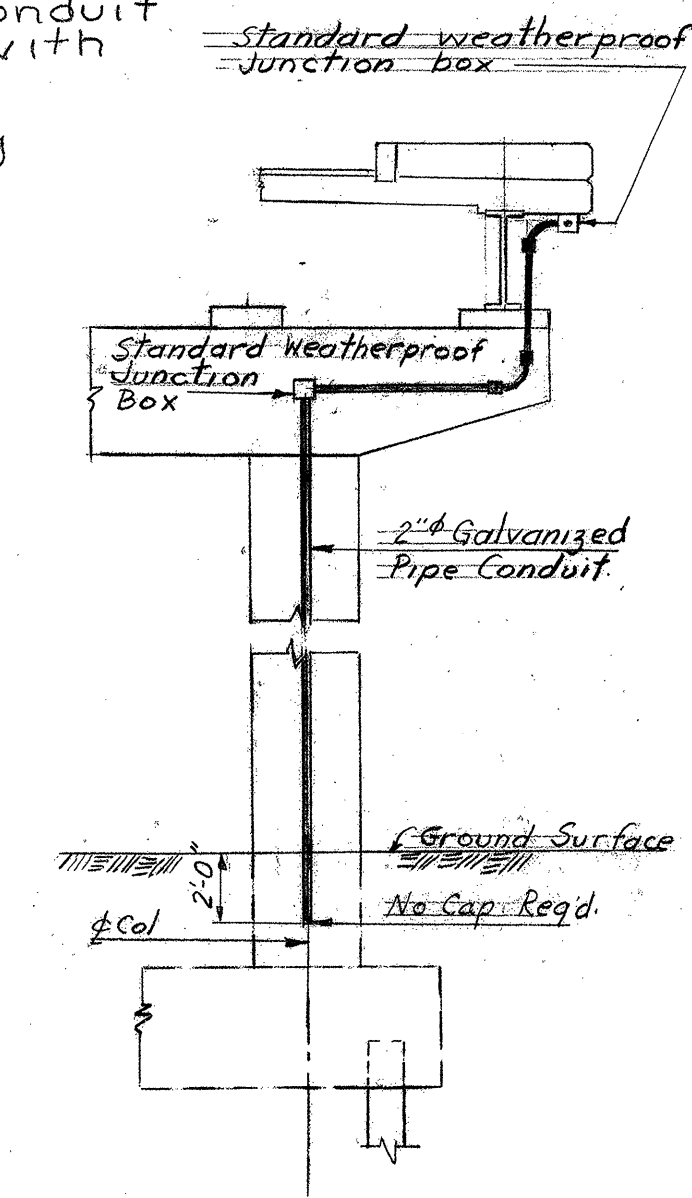


BOLT DETAILS FOR LIGHT STANDARD

SCALE: 3/4" = 1'-0"
(Bolts to be furnished by others)



DETAIL #2
SCALE: N.T.S.



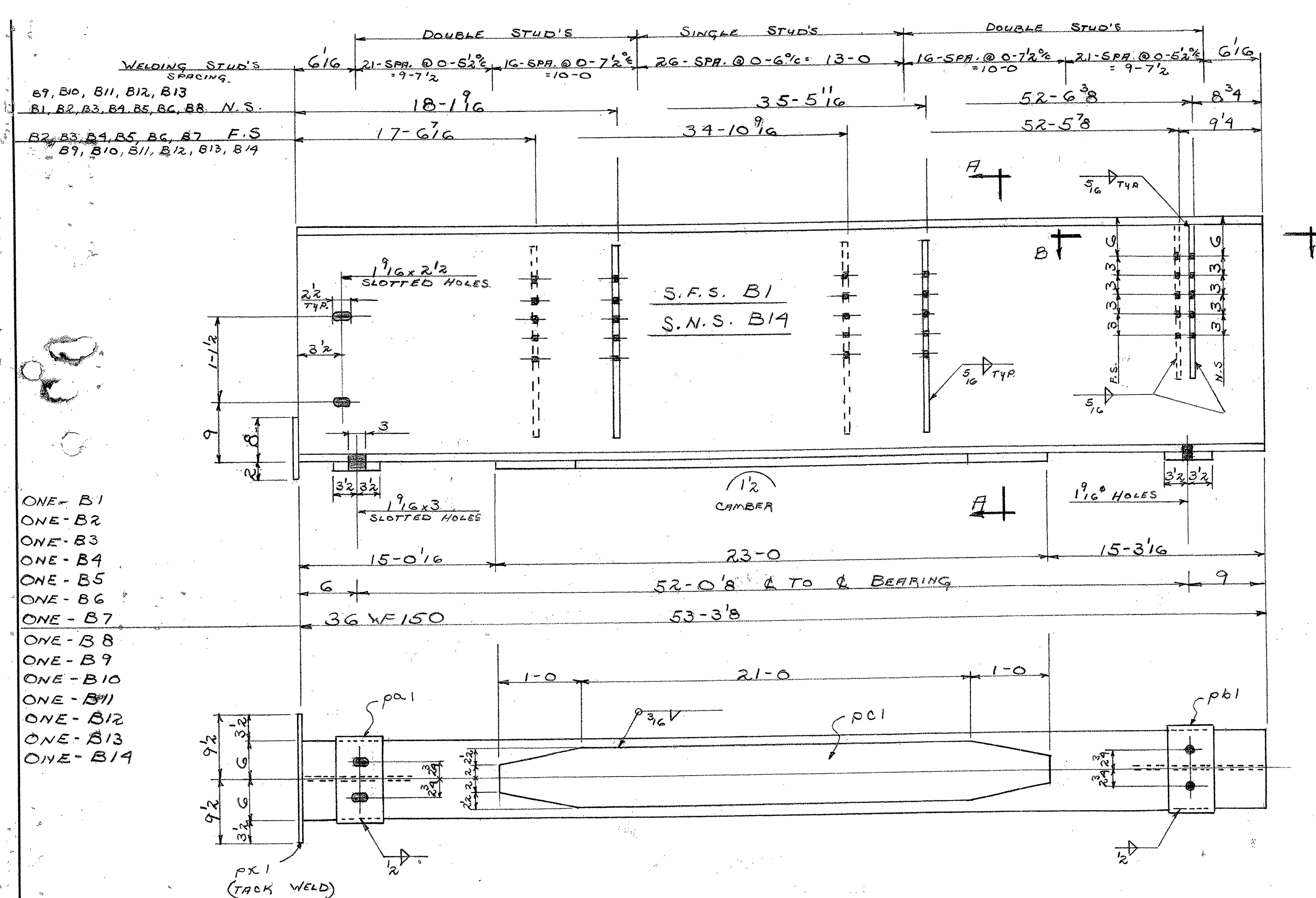
DETAIL #1
SCALE: 3/16" = 1'-0"

NOTES:
1. For General Notes see Br. 1
2. For Lighting System Conduit Details see SB-21-56

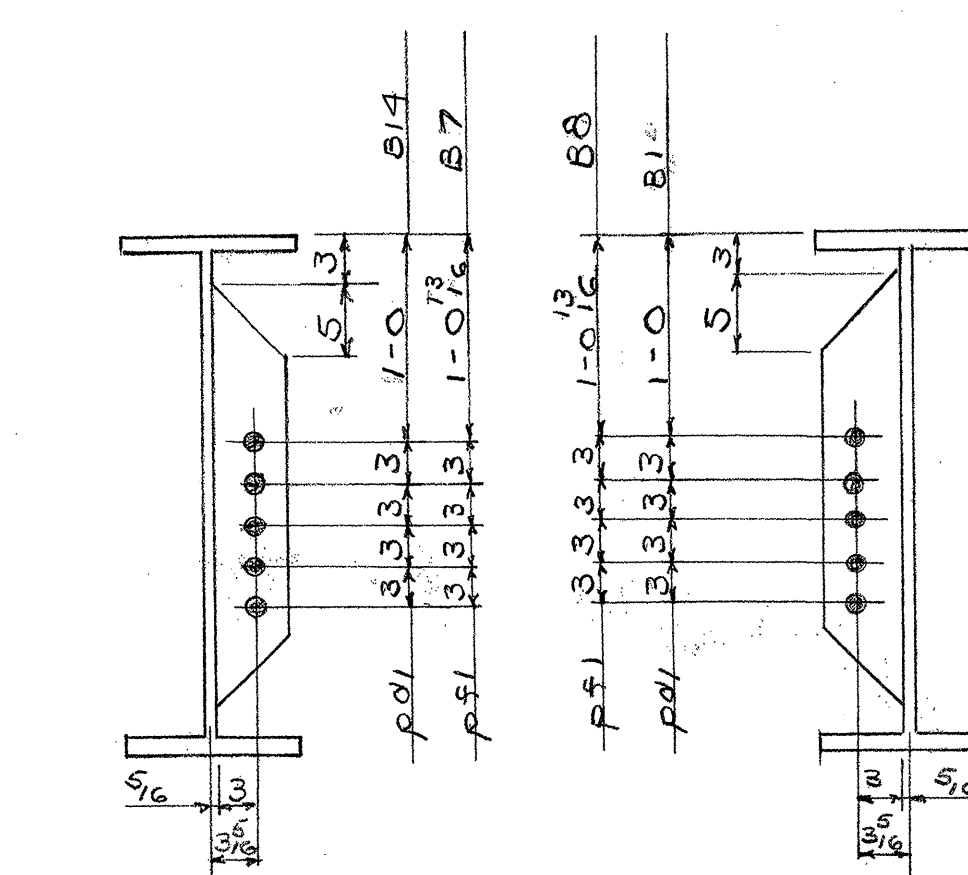
SOUTH BURLINGTON IM DECK (36)
FOR REFERENCE ONLY - BRIDGE 68
SHEET 68 OF 75

STATE OF VERMONT DEPARTMENT OF HIGHWAYS	
INTERSTATE PROJECT IN THE TOWNS OF SOUTH BURLINGTON	
UNDERPASS STA. 2101+78.29 BURLINGTON INTERCHANGE UTILITIES & DETAILS	
BOSWELL ENGINEERING CO. RIDGEFIELD PARK, N.J.	
DRAWN BY: D.S.	IN CHARGE: A.J.L.
CHECKED BY: A.J.L.	DATE: _____
SCALE: As Shown	
PROJECT NO. 1 89-3 (12)	SHEET 158 OF 175

Item	No. Pieces	Size	Length	Mark	Type	A	B	C	D	E	F	G	H	J	K	R	O	Item	No. Pieces	Size	Length	Mark	Type	A	B	C	D	E	F	G	H	J	K	R	O	
SPAN #1																		PIER #2																		
1	216	#5	17'-3"	1S1A	Str.													82																		
2	216	#5	31'-3"	1S1B	Str.													83																		
3	216	#5	20'-9"	1S1C	Str.													84																		
4	216	#5	27'-9"	1S1D	Str.													85																		
5	328	#4	27'-9"	1S2	Str.													86																		
6	56	#6	28'-0"	1S3	Str.													87																		
7	70	#4	8'-11"	1S4	S3	5"	1'-6"	5'-1"	1'-6"				5"					88	120	#8	23'-10"	2P7	Str.													
8	56	#5	22'-9"	1S5	Str.													89	42	#4	11'-6"	2P8	TI	5"	2'-8"	2'-8"	2'-8"	2'-8"	5"							
9	76	#4	7'-6"	1S6A	S2	5"	3'-0"	8"	3'-0"				5"					90																		
10	74	#4	4'-2"	1S6P	S10													91																		
11	58	#6	3'-0"	1S7	I	8"	1'-8"						8"					92																		
12	70	#4	4'-7"	1S11	S3	5"	1'-2"	1'-0"	1'-2"				5"					93																		
13	24	#5	2'-3"	1S12	Str.													94																		
14	4	#5	1'-4"	1S13	Str.													95																		
SPAN #2																		PIER #3																		
17	*297	#5	17'-3"	2S1A	Str.													96																		
18	296	#5	31'-3"	2S1B	Str.													97																		
19	296	#5	20'-9"	2S1C	Str.													98																		
20	296	#5	27'-9"	2S1D	Str.													99	120	#8	26'-7"	3P7	Str.													
21	*493	#4	26'-0"	2S2	Str.													100	96	#4	8'-4"	3P9	TI	5"	1'-6"	2'-3"	1'-6"	2'-3"	5"							
22	*85	#6	26'-3"	2S3	Str.													101	96	#4	9'-6"	3P10	TI	5"	2'-8"	1'-8"	2'-8"	1'-8"	5"							
SPAN #3																		WEST ABUTMENT																		
23	100	#4	8'-11"	2S4	S3	5"	1'-6"	5'-1"	1'-6"				5"					102																		
24	48	#5	22'-9"	2S5	Str.													103																		
25	74	#4	4'-2"	2S6P	S10													104	*51	#6	5'-6"	WA1	Str.													
26	100	#4	4'-7"	2S11	S3	5"	1'-2"	1'-0"	1'-2"				5"					105	*25	#7	24'-11"	WA2	Str.													
SPAN #4																		EAST ABUTMENT																		
33	236	#5	17'-3"	4S1A	Str.													106																		
34	236	#5	31'-3"	4S1B	Str.													107																		
35	236	#5	20'-9"	4S1C	Str.													108																		
36	236	#5	27'-9"	4S1D	Str.													109																		
37	328	#4	30'-3"	4S2	Str.													110																		
38	56	#6	30'-6"	4S3	Str.													111																		
39	76	#4	8'-11"	4S4	S3	5"	1'-6"	5'-1"	1'-6"				5"					112																		
40	56	#5	22'-9"	4S5	Str.													113																		
41	76	#4	7'-6"	4S6A	S2	5"	3'-0"	8"	3'-0"				5"					114																		
42	74	#4	4'-2"	4S6P	S10													115																		
43	58	#6	3'-0"	4S7	I	8"	1'-8"						8"					116																		
44	76	#4	4'-7"	4S11	S3	5"	1'-2"	1'-0"	1'-2"				5"					117																		
45	24	#5	2'-3"	4S12	Str.													118																		
46	4	#5	1'-4"	4S13	Str.													119																		
PIER #1																		For detail of Approach Slab reinforcing steel see sheet BR. 12.																		
51	172	#6	8'-6"	1P1	Str.													120																		
52	34	#11	20'-5"	1P2	Str.													121																		
53	26	#11	17'-9"	1P3	Str.													122																		
54	*27	#11	13'-9"	1P4	Str.													123																		
55	52	#9	23'-1"	1P5	Str.													124																		
56	120	#8	7'-0"	1P6	2	1'-5"	5'-7"						0					125																		
57	120	#8	25'-1"	1P7	Str.													126																		
58	48	#4	11'-6"	1P8	TI	5"	2'-8"	2'-8"	2'-8"	2'-8"			5"					127																		
59	84	#4	8'-4"	1P9	TI	5"	1'-6"	2'-3"	1'-6"	2'-3"			5"					128																		
60	84	#4	9'-6"	1P10	TI	5"	2'-8"	1'-8"	2'-8"	1'-8"			5"					129																		
61	8	#11	18'-0"	1P11	2	1'-5"	16'-7"						0					130																		
62	4	#11	11'-9"	1P12	2	1'-5"	10'-4"						0					131																		
63	8	#10	11'-4"	1P13	Str.													132																		
64	*9	#8	4'-0"	1P14	Str.													133																		
65	8	#11	19'-1"	1P15	2	1'-5"	17'-8"											134																		
66	4	#11	12'-11"	1P16	2	1'-5"	11'-6"											135																		
67	*9	#10	12'-6"	1P17	Str.													136																		
68	*9	#9	18'-10"	1P18	Str.													137																		
69	8	#9	25'-1"	1P19	Str.													138																		
70	8	#6	7'-9"	1P20	14	2'-9"	5'-0"	0	0	0			4'-10"				139																			
71	16	#5	23																																	

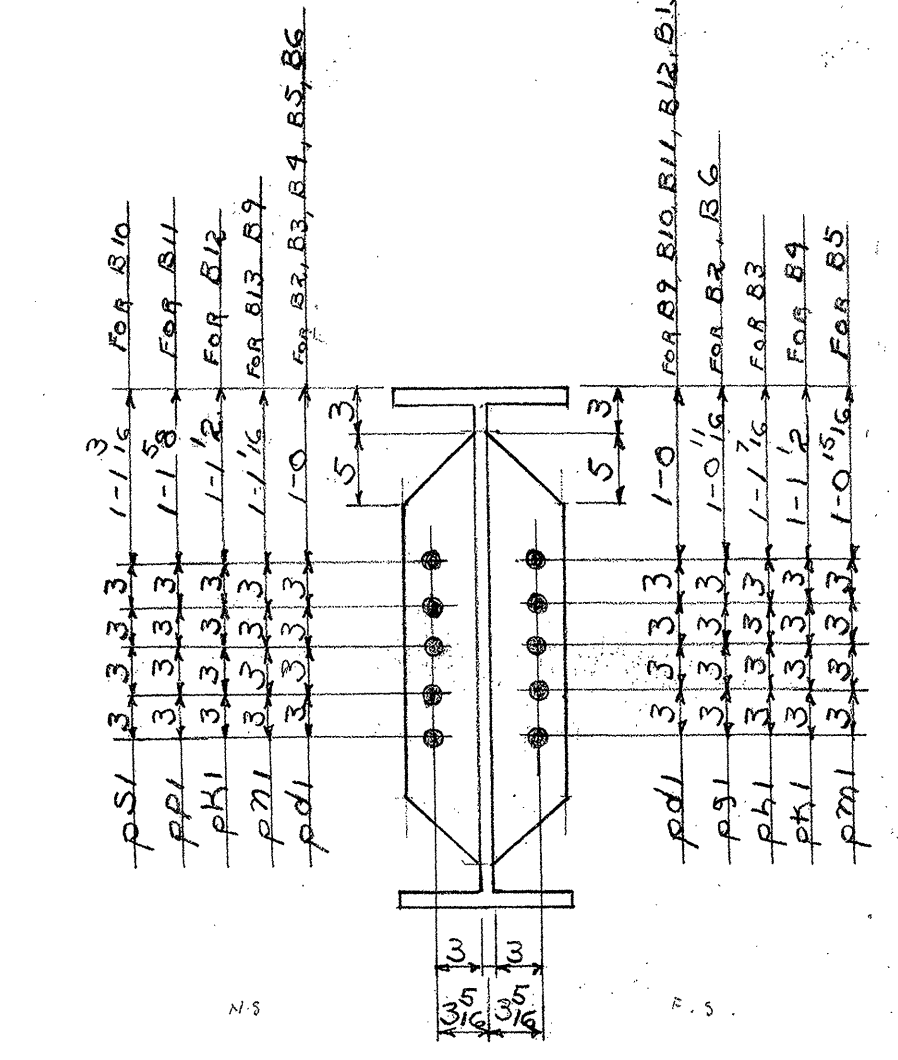


- ONE - B1
- ONE - B2
- ONE - B3
- ONE - B4
- ONE - B5
- ONE - B6
- ONE - B7
- ONE - B8
- ONE - B9
- ONE - B10
- ONE - B11
- ONE - B12
- ONE - B13
- ONE - B14



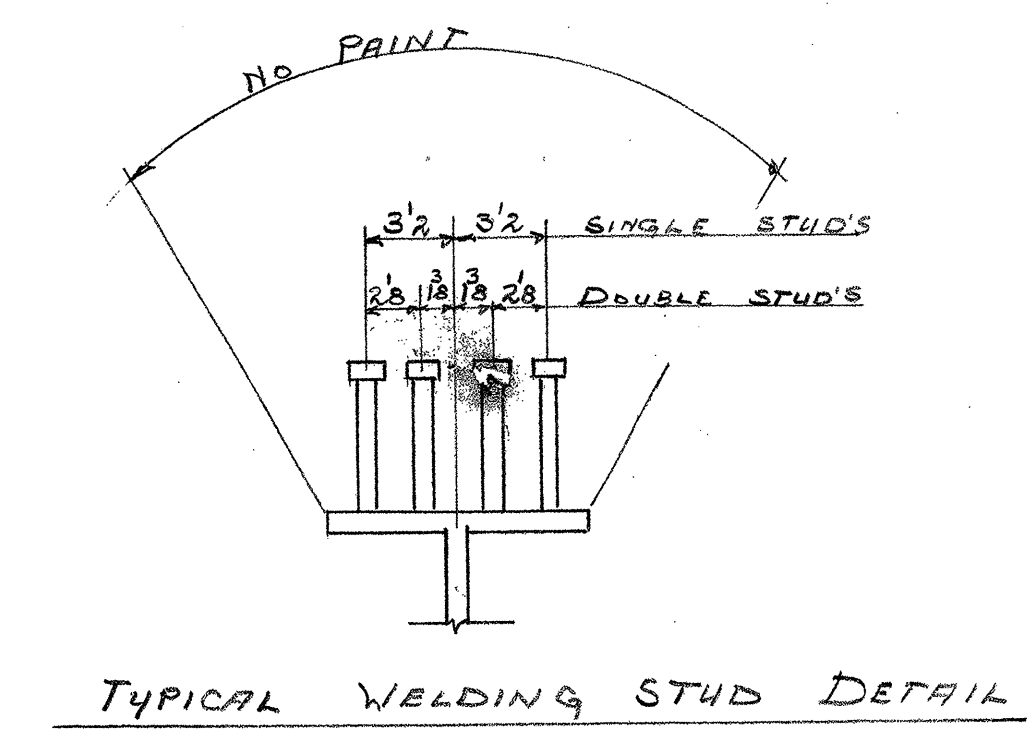
FOR B7 & B14

FOR B1 & B8

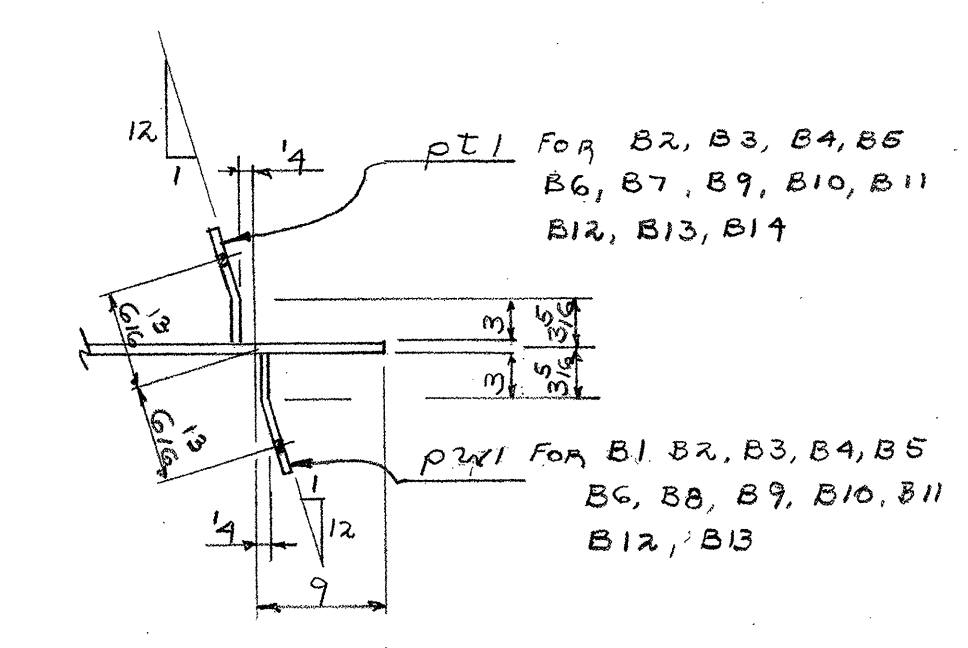


FOR B2, B3, B4, B5, B6, B9, B10, B11, B12, B13

SECTION A-A



TYPICAL WELDING STUD DETAIL



SECTION B-B

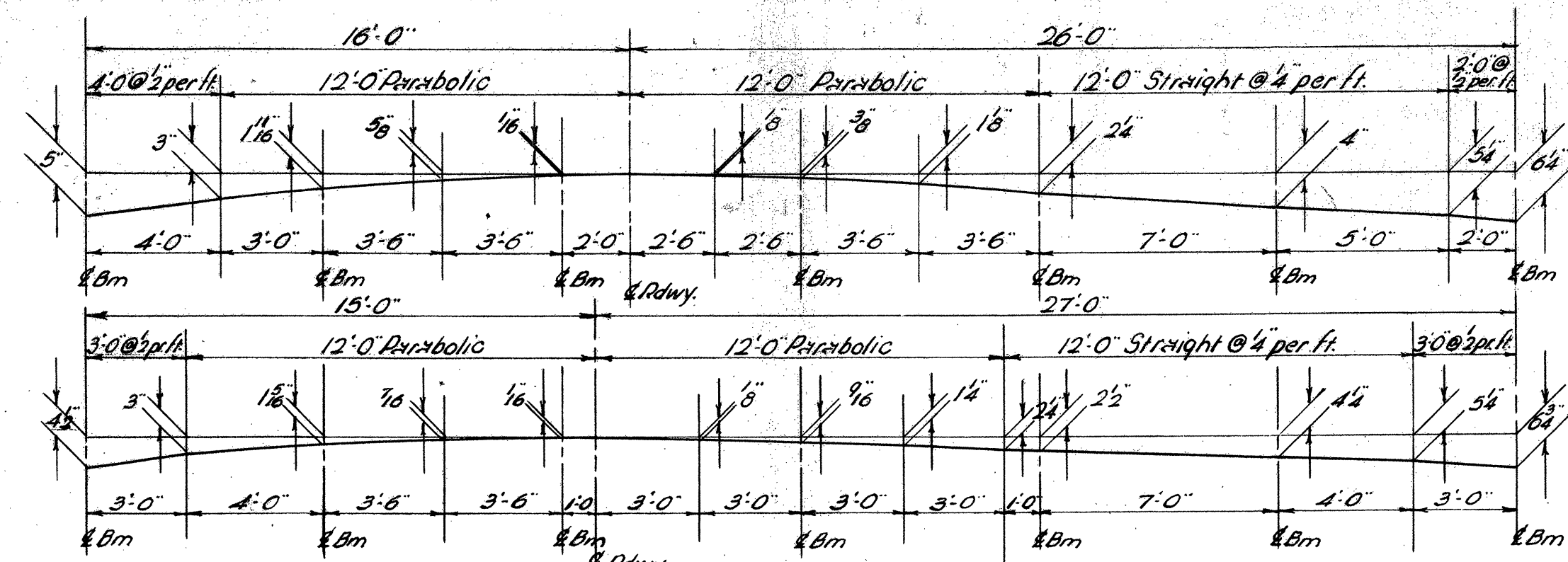
BILL OF MATERIAL					
NO.	MARK	DESCRIPTION	LENGTH	WEIGHT	
PIECES			FT. IN.		
14	B1, B14	36W 150	53 3/8	10.46	10.46
14	pa1	Sole R 7x1	1 1	1.00	1.00
14	pb1	do.	1 1	1.00	1.00
14	pc1	R 9x 5/8	23 0	1.00	1.00
24	pd1	BAR 5x 1/2	2 0	1.00	1.00
4	pe1	do.	2 0	1.00	1.00
4	pf1	do.	2 0	1.00	1.00
2	pg1	do.	2 0	1.00	1.00
2	ph1	do.	2 0	1.00	1.00
1	pi1	do.	2 0	1.00	1.00
2	pj1	do.	2 0	1.00	1.00
4	pk1	do.	2 0	1.00	1.00
2	pl1	do.	2 0	1.00	1.00
2	pm1	do.	2 0	1.00	1.00
2	pn1	do.	2 0	1.00	1.00
2	po1	do.	2 0	1.00	1.00
2	pp1	do.	2 0	1.00	1.00
2	pq1	do.	2 0	1.00	1.00
12	pr1	BENT 8x 1/2	2 0	1.00	1.00
12	ps1	do.	2 0	1.00	1.00
14	pt1	R 10x 1/4	1 7	1.00	1.00
		2 FILLET WELD	32 9	1.00	1.00
		5/8 FILLET WELD	360 0	1.00	1.00
		3/4 FILLET WELD	653 4	1.00	1.00
		2 OF 1/2 PAINT		1.00	1.00
		CONT. G1-382-1		1.00	1.00
		WELDING STUDS		1.00	1.00
		3/4 WELDING STUDS	0 62	1.00	1.00

SOUTH BURLINGTON 10 DECK(60)
FOR REFERENCE ONLY - BRIDGE 68
SHEET 68C OF 75

APPROVED BY ARCHITECT 7-24-61

VERMONT STRUCTURAL STEEL CORPORATION			
BURLINGTON, VT.			
DATE	PROJECT	INTERSTATE BRIDGE I 89-3 (12)	PRINT RECORD
DRAWN BY H. G. 20-6	LOCATION	WILLISTON RD. INTERCHANGE	NO. FOR DATE
CHKD BY W. T. 6-22-61	CUSTOMER	E. T. O'NEILL & SON, CONST. CORP.	3 APP 6-26
HOLDS 16 1/2 AS NOTED	ARCHITECT	STATE OF VT. DEPT. OF HIGHWAYS	3 APP 7-13
RIVETS	JOB NO.	G1-382 STR.	3 APP 7-14
PAINT R.L. (VT. SPEC.)	SHEET NO.	1	
		G1-382-1 WELDING STUDS	

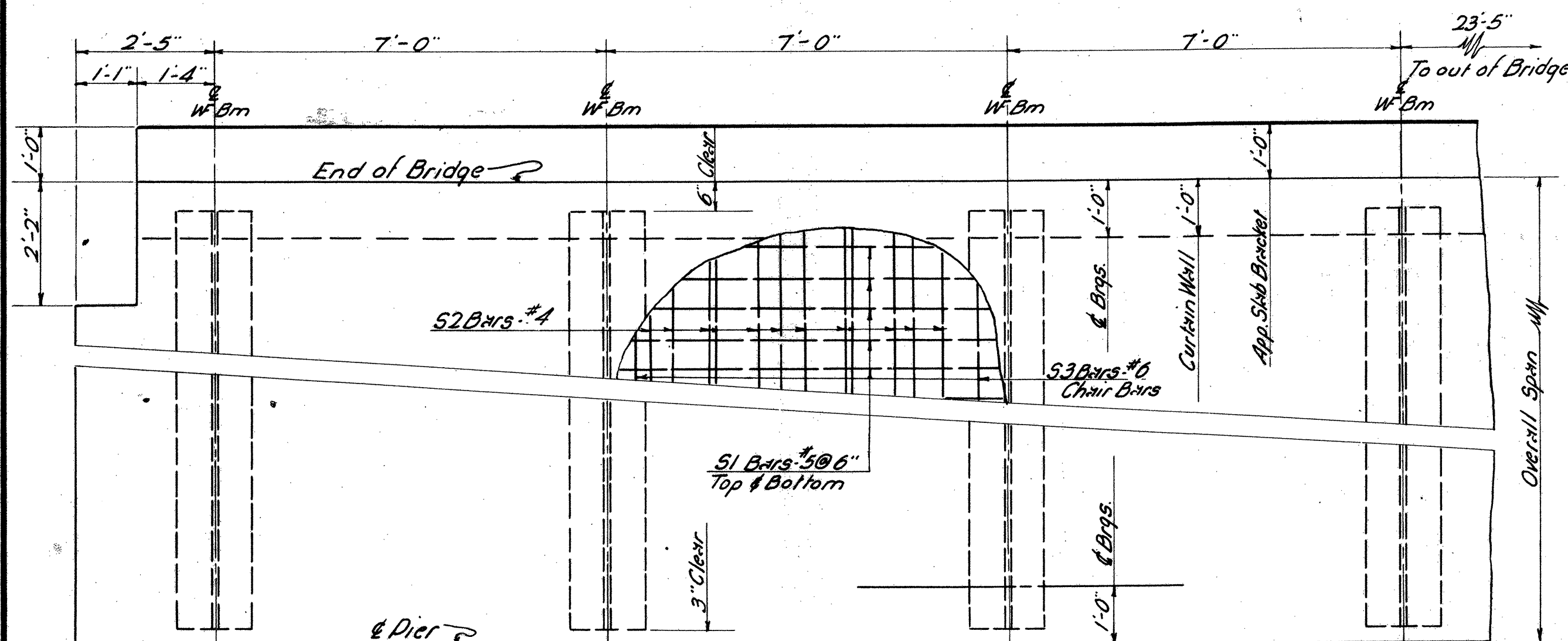
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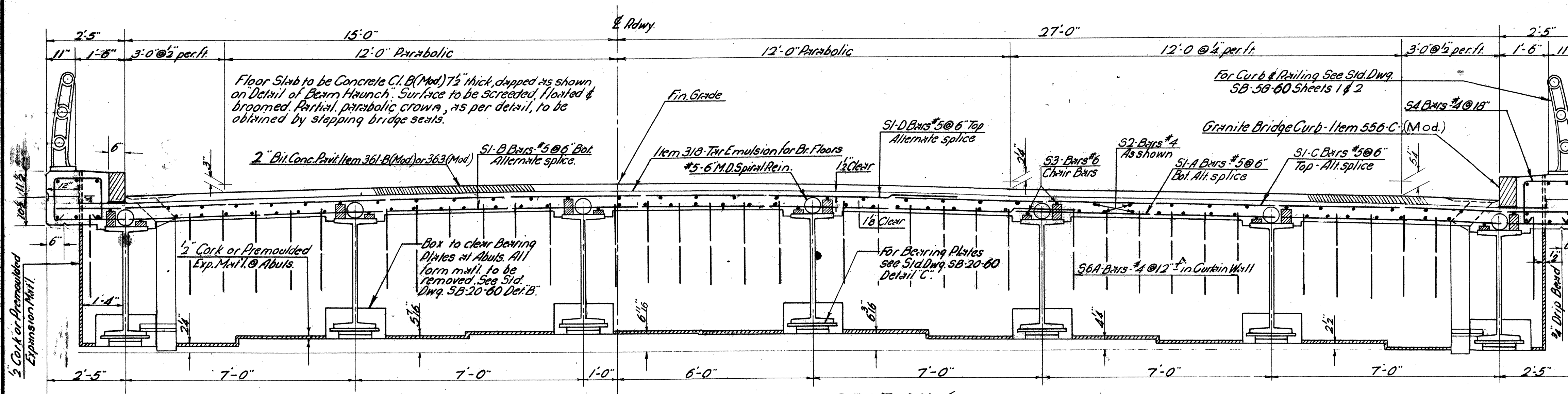
DETAIL OF PARTIAL PARABOLIC CROWN OF SLAB

SHORT STRUCTURE

LONG STRUCTURE



PARTIAL PLAN



TYPICAL SECTION (LONG STRUCTURE)

TABLE OF QUANTITIES FOR SINGLE (SQUARE) SPAN

Span - Out to Out	99'-0"	94'-0"	89'-0"	84'-0"	79'-0"	74'-0"	69'-0"	64'-0"	59'-0"	54'-0"	49'-0"	44'-0"	39'-0"	34'-0"
Span - E to E Bearings	97'-0"	92'-0"	87'-0"	82'-0"	77'-0"	72'-0"	67'-0"	62'-0"	57'-0"	52'-0"	47'-0"	42'-0"	37'-0"	32'-0"
Length of Beams	98'-0"	93'-0"	88'-0"	83'-0"	78'-0"	73'-0"	68'-0"	63'-0"	58'-0"	53'-0"	48'-0"	43'-0"	38'-0"	33'-0"
Size W Beams	36W300	36W300	36W300	36W245	36W194	36W170	36W160	36W150	36W150	36W150	36W150	36W150	33W130	30W116
Lgth. & Size Bot. Cover R	6'-0" 1/2"	5'-0" 1/2"	4'-0" 1/2"	3'-0" 1/2"	2'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"
Lgth. & Size Top Cover R	6'-0" 1/2"	5'-0" 1/2"	4'-0" 1/2"	3'-0" 1/2"	2'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"	1'-0" 1/2"
Dead Load Deflection	3"	2 1/2"	2 1/2"	2 1/2"	1 1/2"	1 1/2"	1 1/2"	1"	7/8"	5/8"	1/2"	3/8"	1/4"	1/4"
Diameter of Spiral Bars	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
Mean Diameter of Spiral	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"
Spiral Pitch 0'-10' From Brng.	Double @ 5"	Double @ 5"	Double @ 6"	Double @ 5 1/2"	Double @ 5"	Double @ 5"	Double @ 5"	Double @ 5"	Double @ 5 1/2"	Double @ 5 1/2"	Double @ 5 1/2"	Double @ 5 1/2"	Double @ 5 1/2"	Double @ 5 1/2"
" 10'-20' or E Span	Double @ 6 1/2"	Double @ 6 1/2"	Double @ 7"	Double @ 6 1/2"	Double @ 6 1/2"	Double @ 6 1/2"	Double @ 6 1/2"	Double @ 6 1/2"	Double @ 7"	Double @ 7"	Double @ 7"	Double @ 7"	Double @ 7"	Double @ 7"
" 20'-30' " " "	4 1/2"	4"	4 1/2"	4"	4 1/2"	4"	4 1/2"	4"	5"	5 1/2"	6"	6 1/2"	6"	6"
" 30'-40' " " "	5 1/2"	5 1/2"	5 1/2"	5 1/2"	6"	6"	6"	7 1/2"	7 1/2"	7 1/2"	7 1/2"	7 1/2"	7 1/2"	7 1/2"
" 40'-E Span	7"	7"	8"	8"	8"	8"	8"	8"	8"	8"	8"	8"	8"	8"
Lgth. of 3/4" Studs (Alt. to Spirals)	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"
Total Struct. Steel (1 Span) (lbs)	269,740	237,590	218,700	172,520	138,420	115,910	97,140	82,550	72,740	65,018	58,080	52,730	39,290	30,930
Reinforcing Bars - S1-A	198	188	178	168	158	148	138	128	118	108	98	88	78	68
" S1-B	198	188	178	168	158	148	138	128	118	108	98	88	78	68
" S1-C	198	188	178	168	158	148	138	128	118	108	98	88	78	68
" S1-D	198	188	178	168	158	148	138	128	118	108	98	88	78	68
" S2	264	264	264	264	264	264	264	176	176	176	176	176	176	88
" S3	42	42	42	42	42	42	42	28	28	28	28	28	28	14
" S4	128	122	114	108	102	94	88	82	74	68	62	54	48	42
" S5	32	32	32	32	32	32	32	32	32	32	32	32	32	32
" S6A	76	76	76	76	76	76	76	76	76	76	76	76	76	76
" S7	62	62	62	62	62	62	62	62	62	62	62	62	62	62
Total Weight Reinf. Bars (lbs)	30,140	28,710	27,290	25,840	24,400	22,280	21,530	19,900	18,460	17,030	15,600	14,160	12,710	11,080
Approx. Weight Spiral Reinf. (lbs)	3,570	3,530	3,180	3,310	3,250	3,070	2,920	2,740	2,600	2,360	2,170	Non Composite	Non Composite	Non Composite
Total Concrete Class B (Cu. yds)	151	144	137	131	124	117	110	103	95	89	82	75	67	59
Total Weight Bitum. Conc. Pavt. (Tons)	59	56	53	50	47	44	41	38	35	32	29	26	23	20
Tar Emulsion for Bridge Floors (Gals)	185	176	166	157	148	138	129	120	110	101	92	82	73	64
Approx. Quantity 1/2" x 6 1/2" Studs	4,150	4,050	3,650	3,800	3,750	3,500	3,300	3,100	3,000	2,700	2,500	Non Composite	Non Composite	Non Composite

REINFORCING STEEL SCHEDULE

S1-A #5	17'-3"	Straight	S1-B #5	31'-3"	Straight
S1-C #5	20'-9"	Straight	S1-D #5	27'-9"	Straight
S5 #5	23'-3"	Straight			
Span	S2-#4	S3-#6	S6A-#4	S4-#4	S6A-#4
	Straight Length	Straight Length	B & D	T.L. = 5'-3"	T.L. Varies
34	33'-6"	33'-6"	2'-6"	B = 1'-6"	A = 5' G = 5"
39	20'-3"	20'-6"	2'-9"	D = 1'-6"	A = 5' G = 5"
44	22'-9"	23'-0"	3'-0"	C = 1'-5"	H = 3' I = 3' J = 3'
49	25'-3"	25'-6"	3'-0"		
54	27'-9"	28'-0"	3'-0"		
59	30'-3"	30'-6"	3'-0"		
64	32'-9"	33'-0"	3'-0"		
69	34'-3"	34'-6"	3'-2"		
74	36'-0"	36'-3"	3'-2"		
79	37'-6"	38'-0"	3'-3"		
84	39'-3"	39'-6"	3'-3"		
89	41'-0"	41'-3"	3'-3"		
94	42'-6"	43'-0"	3'-4"		
99	44'-3"	44'-6"	3'-4"		

Revisions & Corrections
Revised July 1962

Drawn By: A.B.M. 6-17-60
Traced By: A.B.M. 6-17-60
Checked By: R.T.B. & R.S.H. July 1960

Correct: 13 July 1960
Bridge Engineer
Approved: 13 July 1960
Chief Engineer

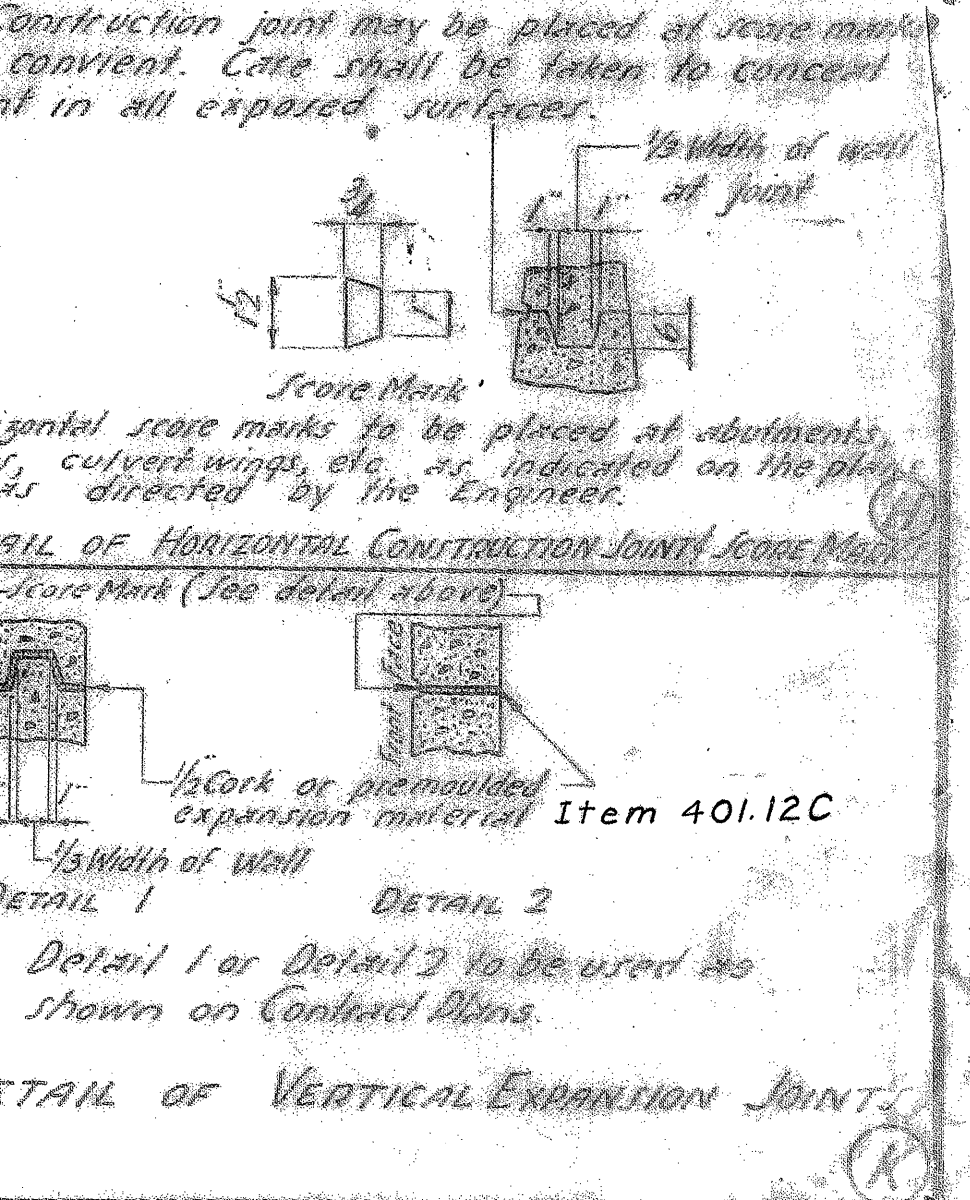
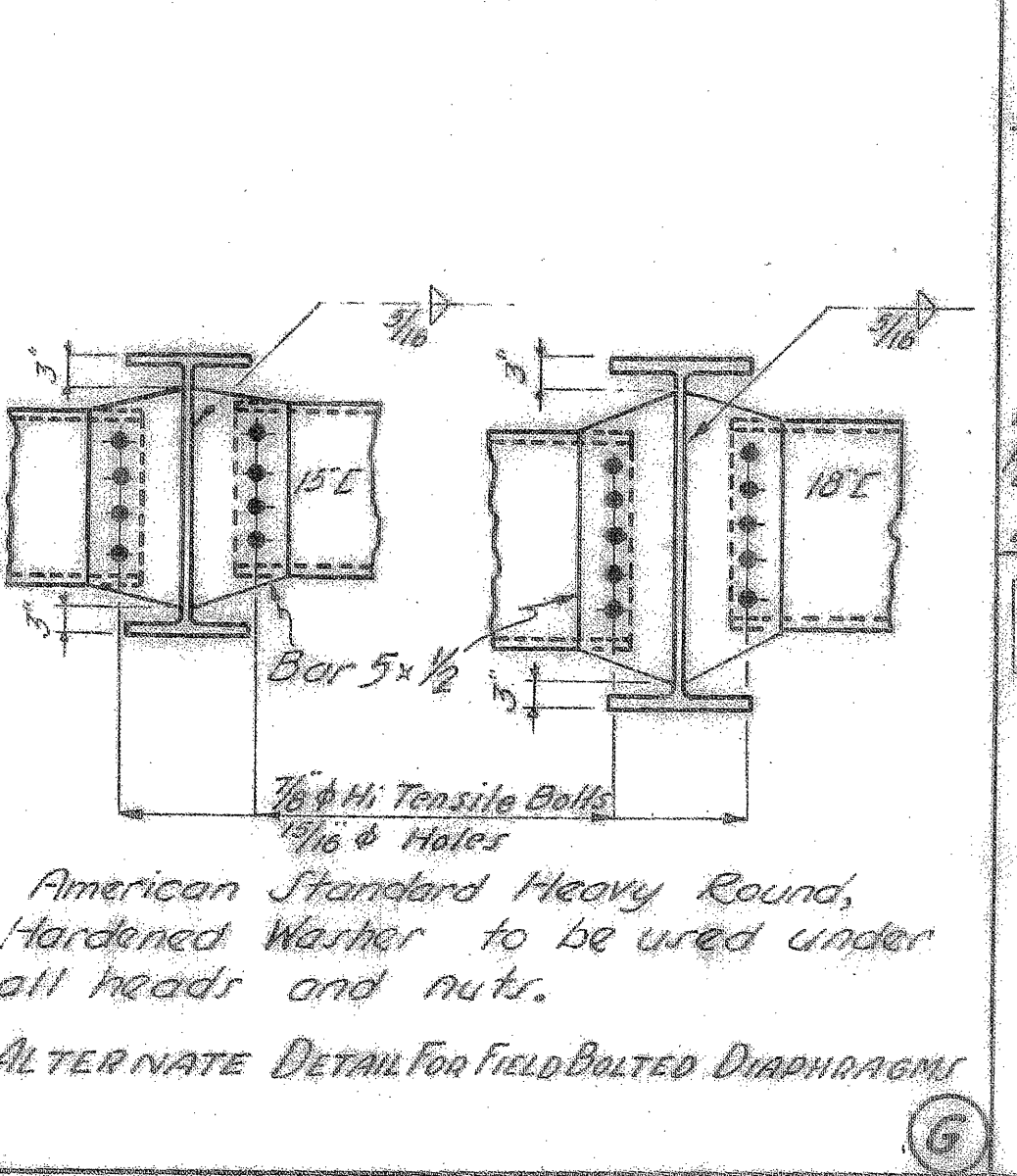
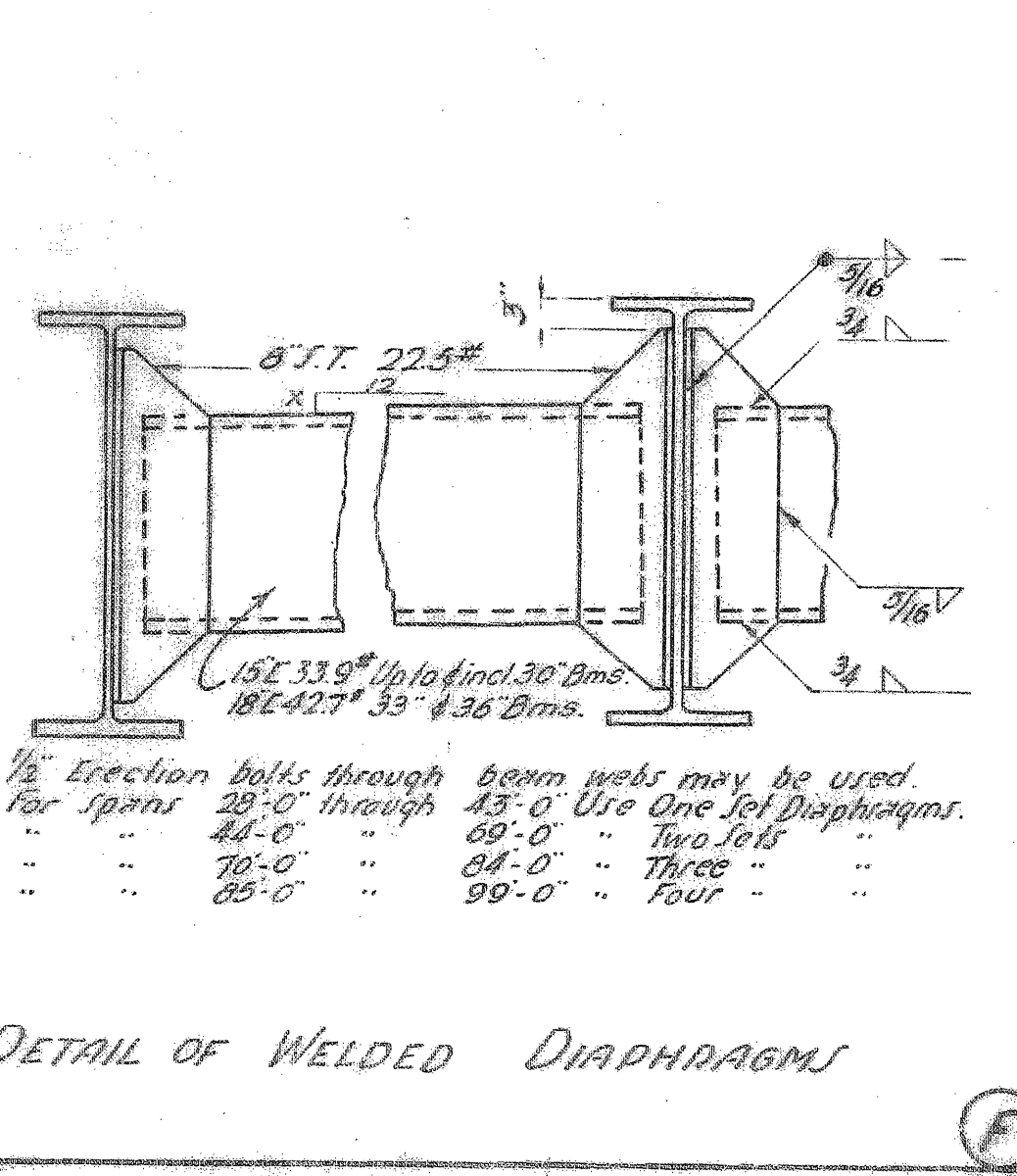
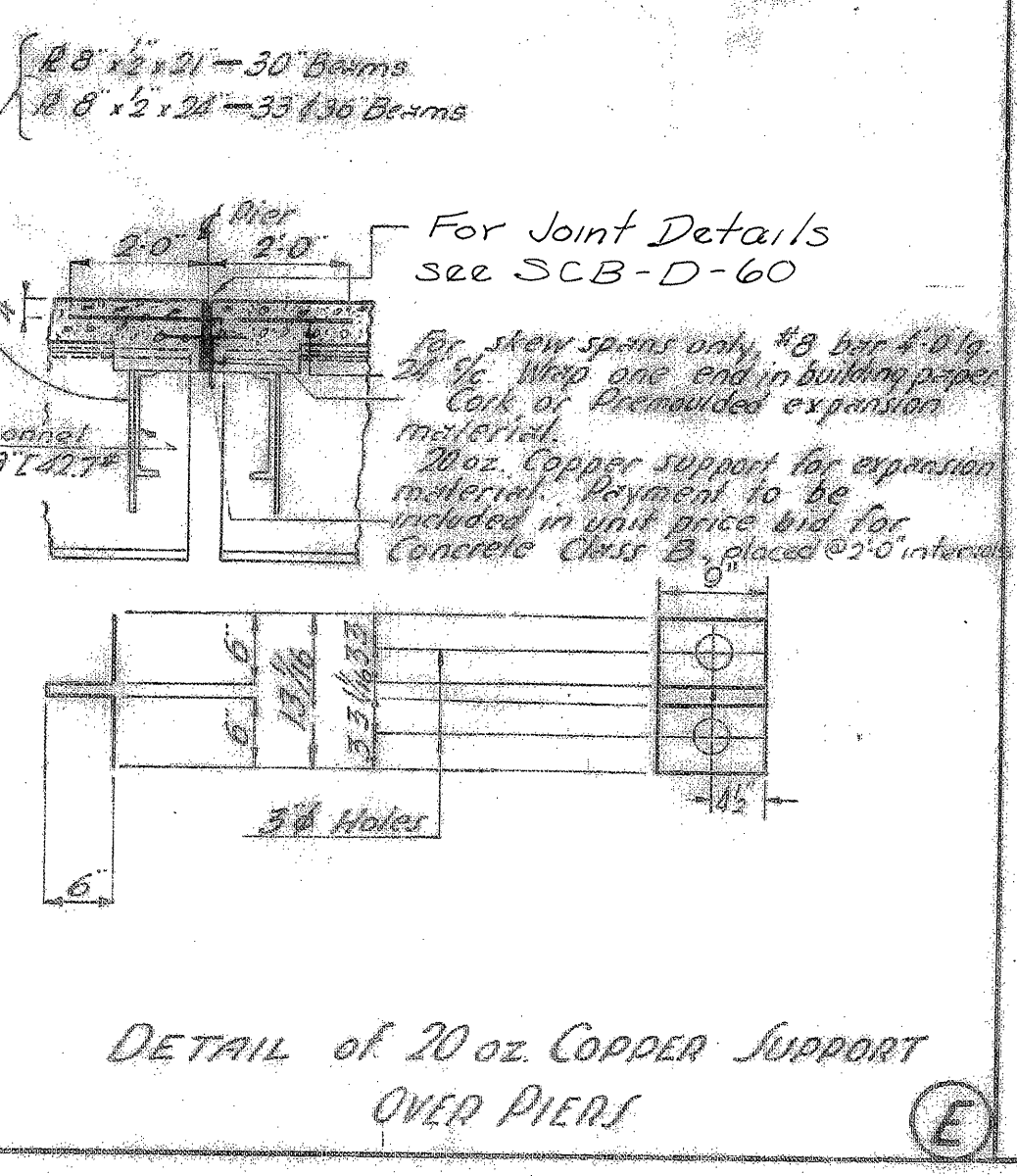
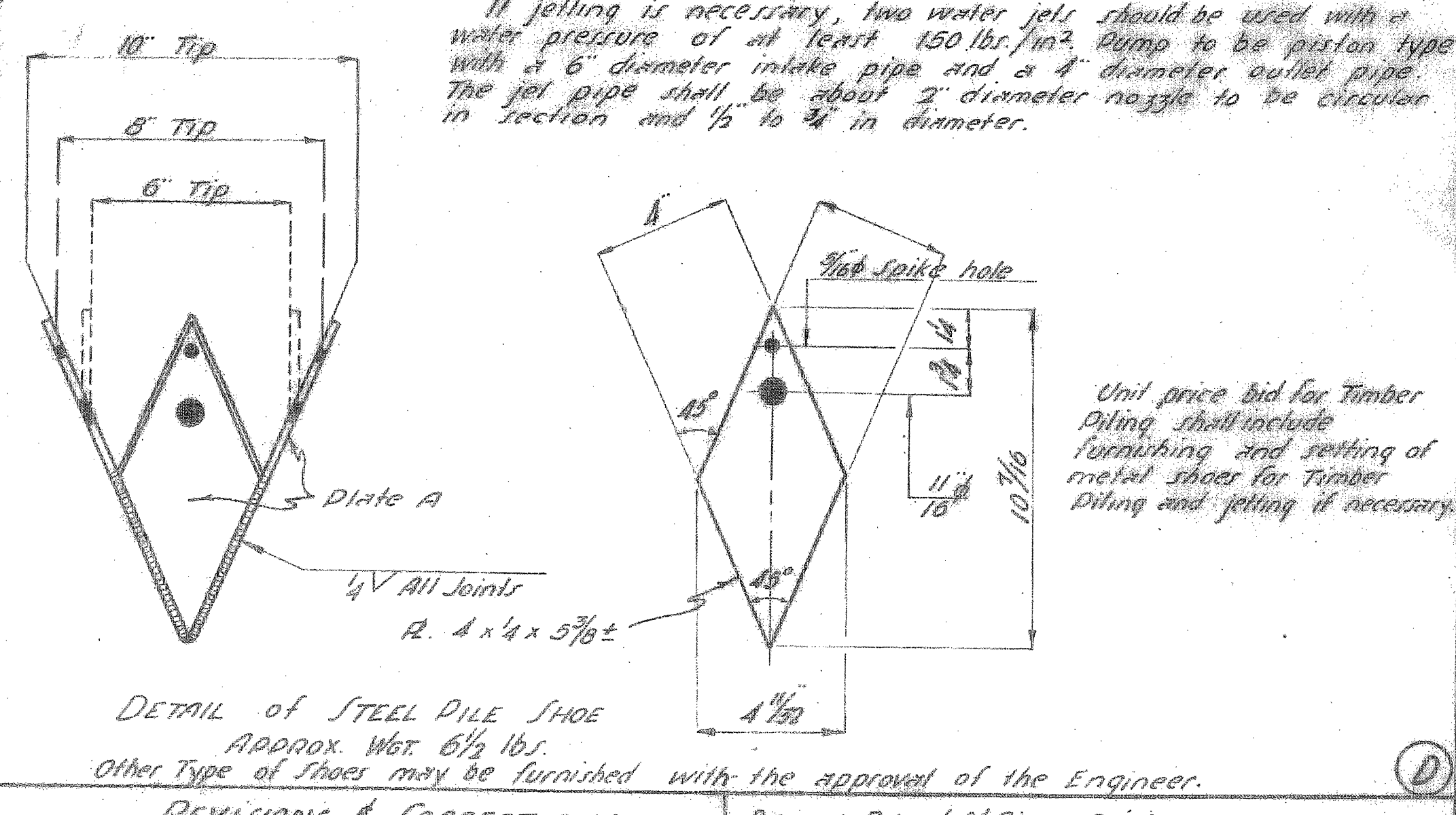
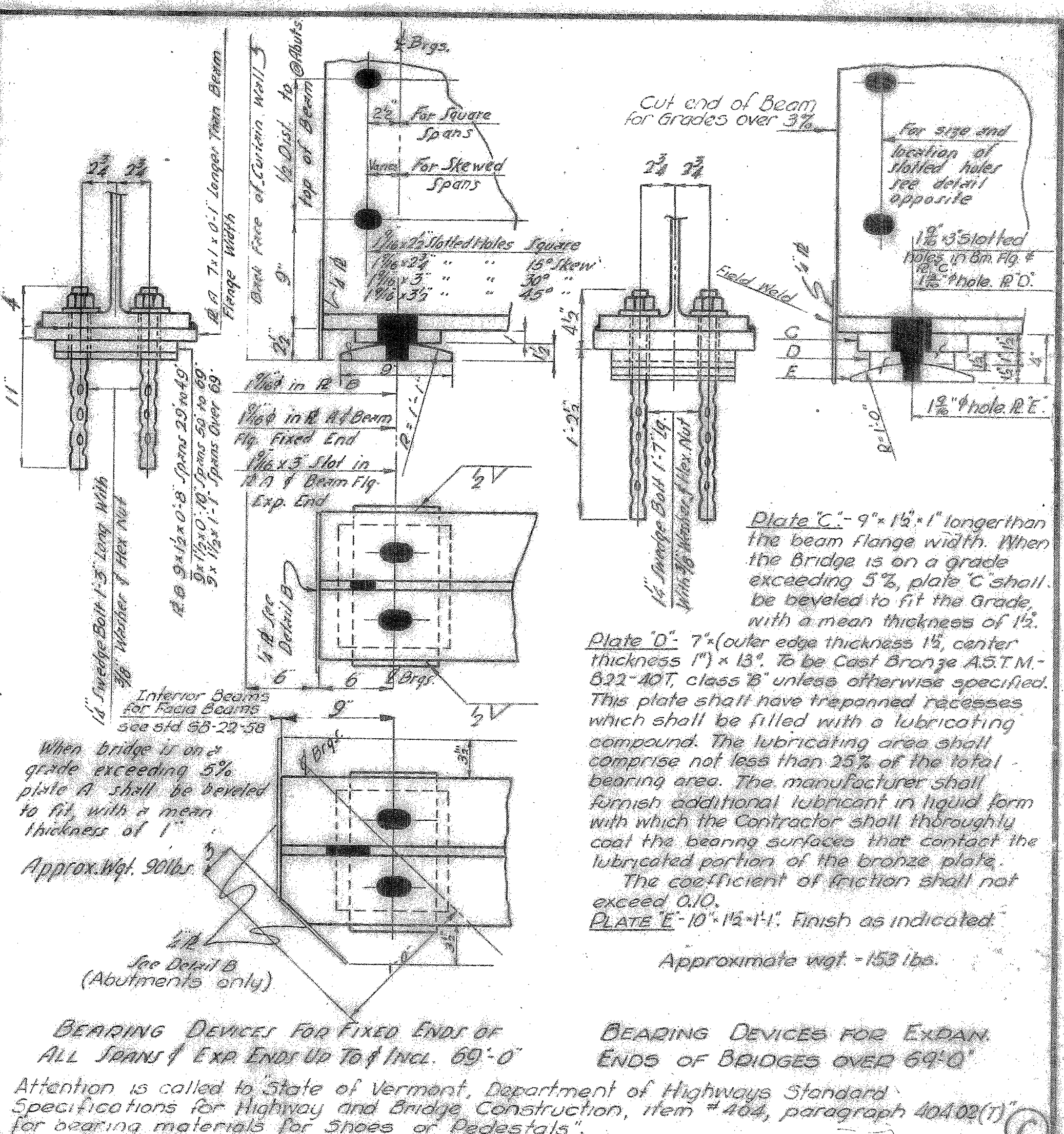
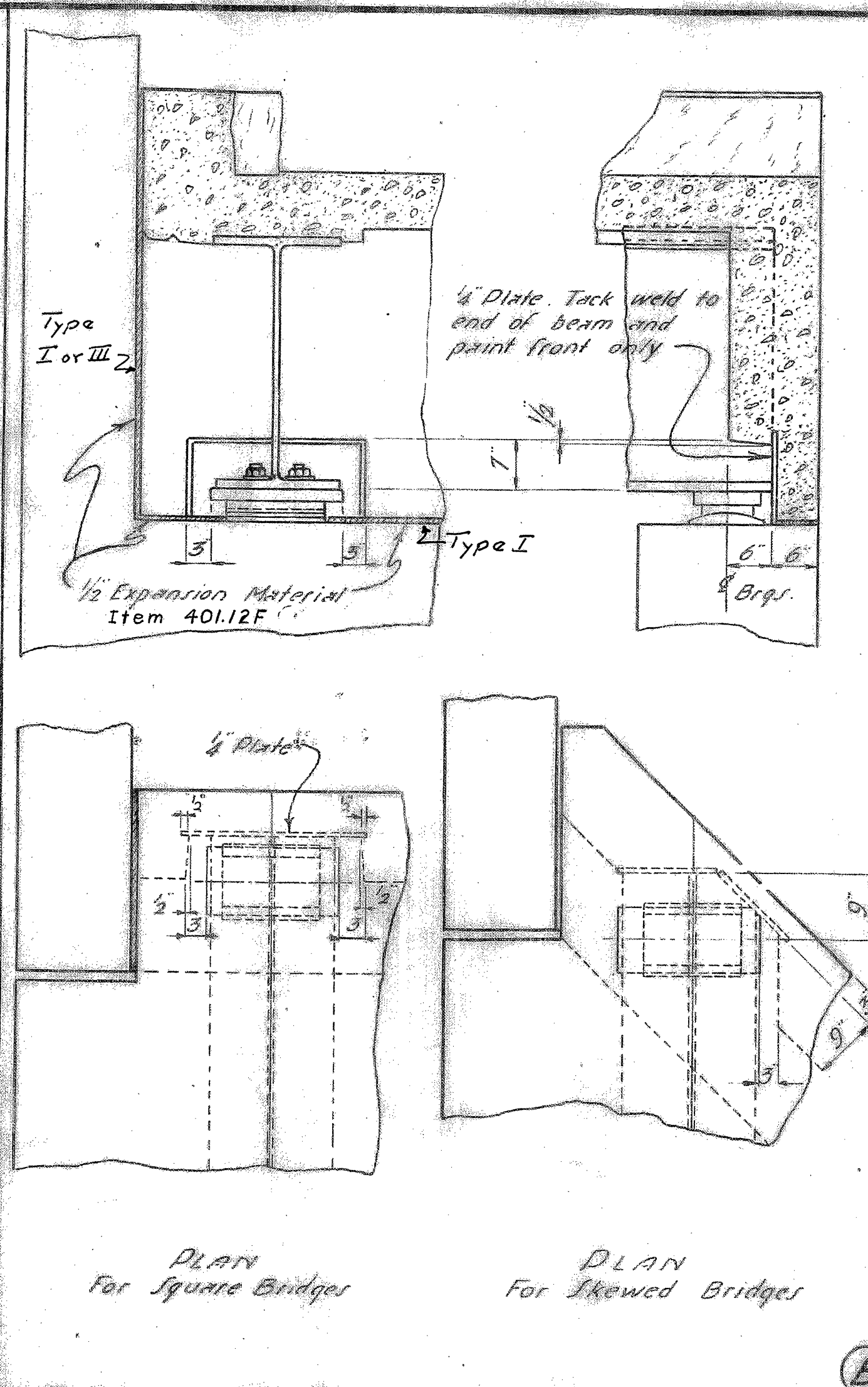
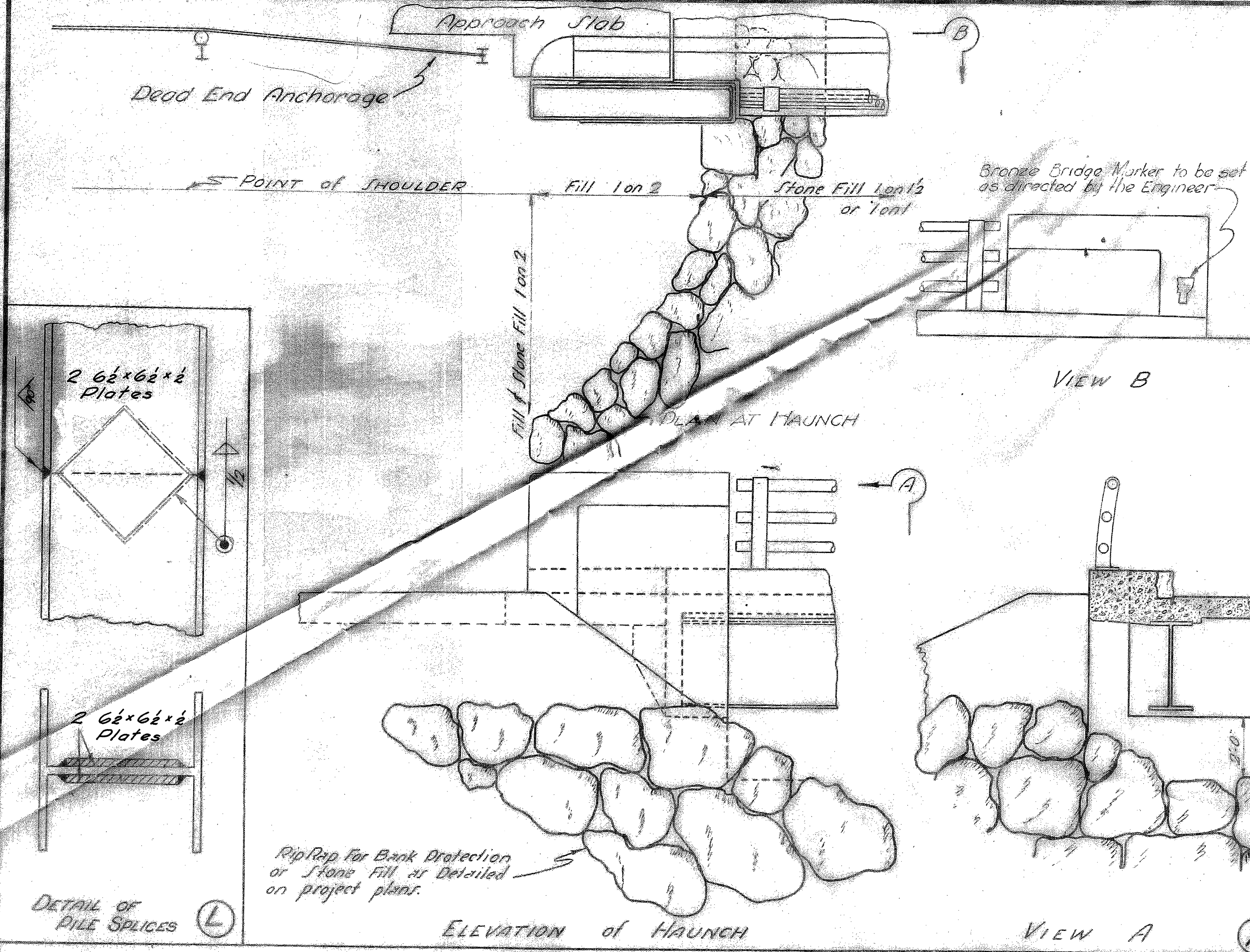
TYPICAL SECTION, PLAN VIEW, & QUANTITIES
42 FOOT ROADWAY W/ BEAM BRIDGES

34-44 NON COMPOSITE, 49-99 COMPOSITE
FOR ADDITIONAL DETAILS SEE STANDARD SCB-D-60

DEPARTMENT OF HIGHWAY
STANDARD STRUCTURES

SCB-42-60

SOUTH BURLINGTON IM DECK(36)
FOR REFERENCE ONLY - BRIDGE 68
SHEET 72 OF 75



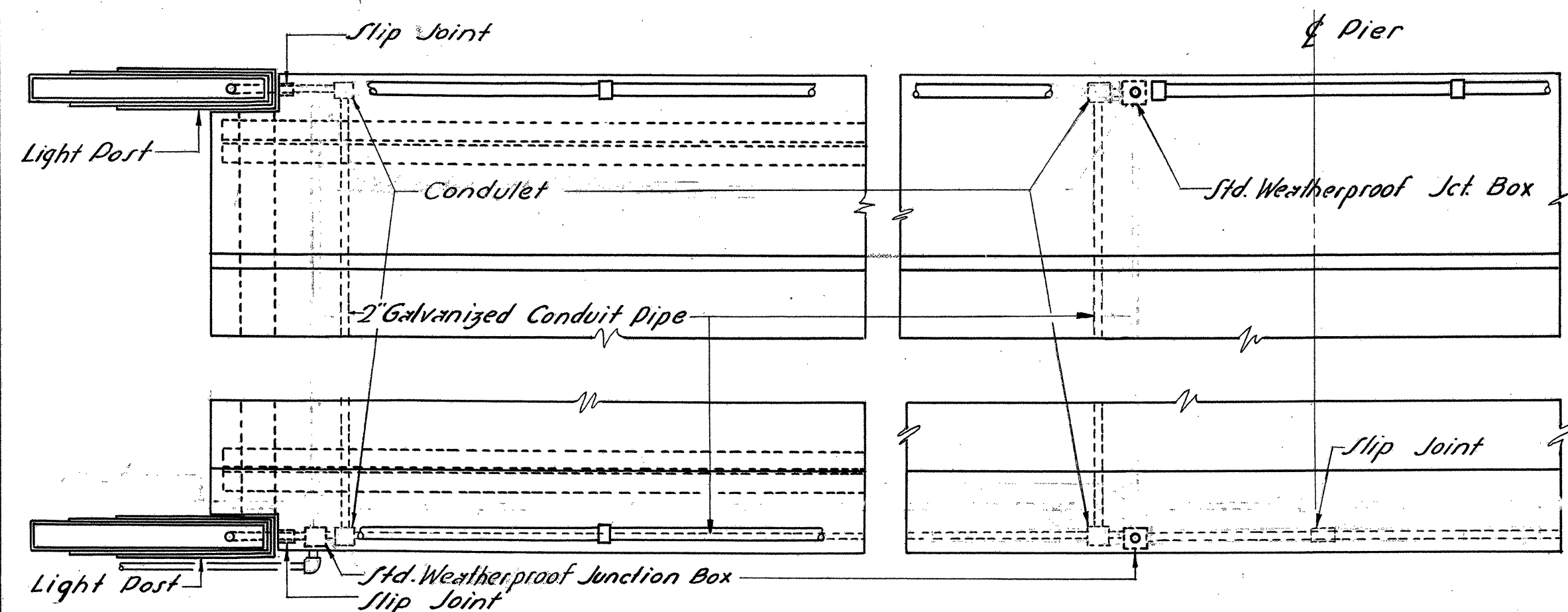
CONSTRUCTION DETAILS FOR W BEAM BRIDGES

DEPARTMENT OF HIGHWAYS
STANDARD STRUCTURES

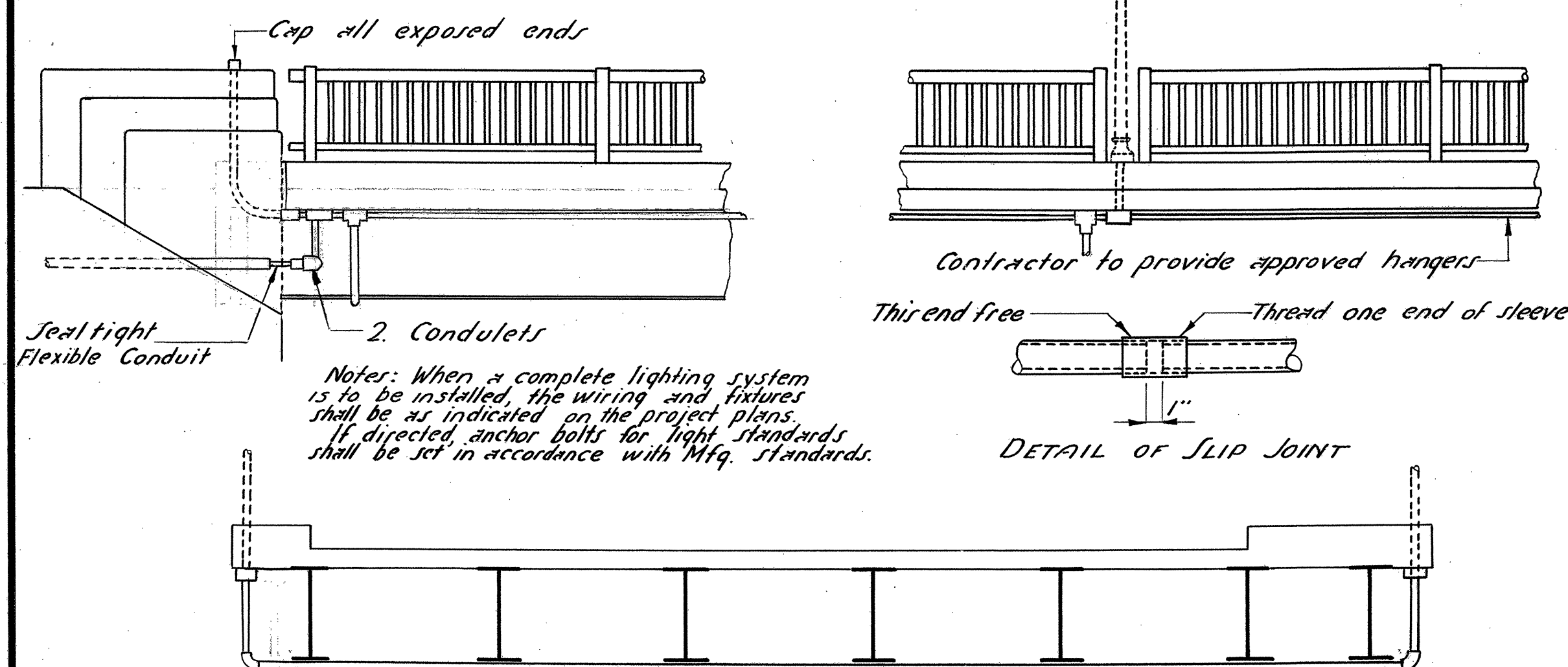
SB-20-60

SOUTH BURLINGTON IM DECK(36)
FOR REFERENCE ONLY - BRIDGE 68
SHEET 73 OF 75

OFFICE COPY

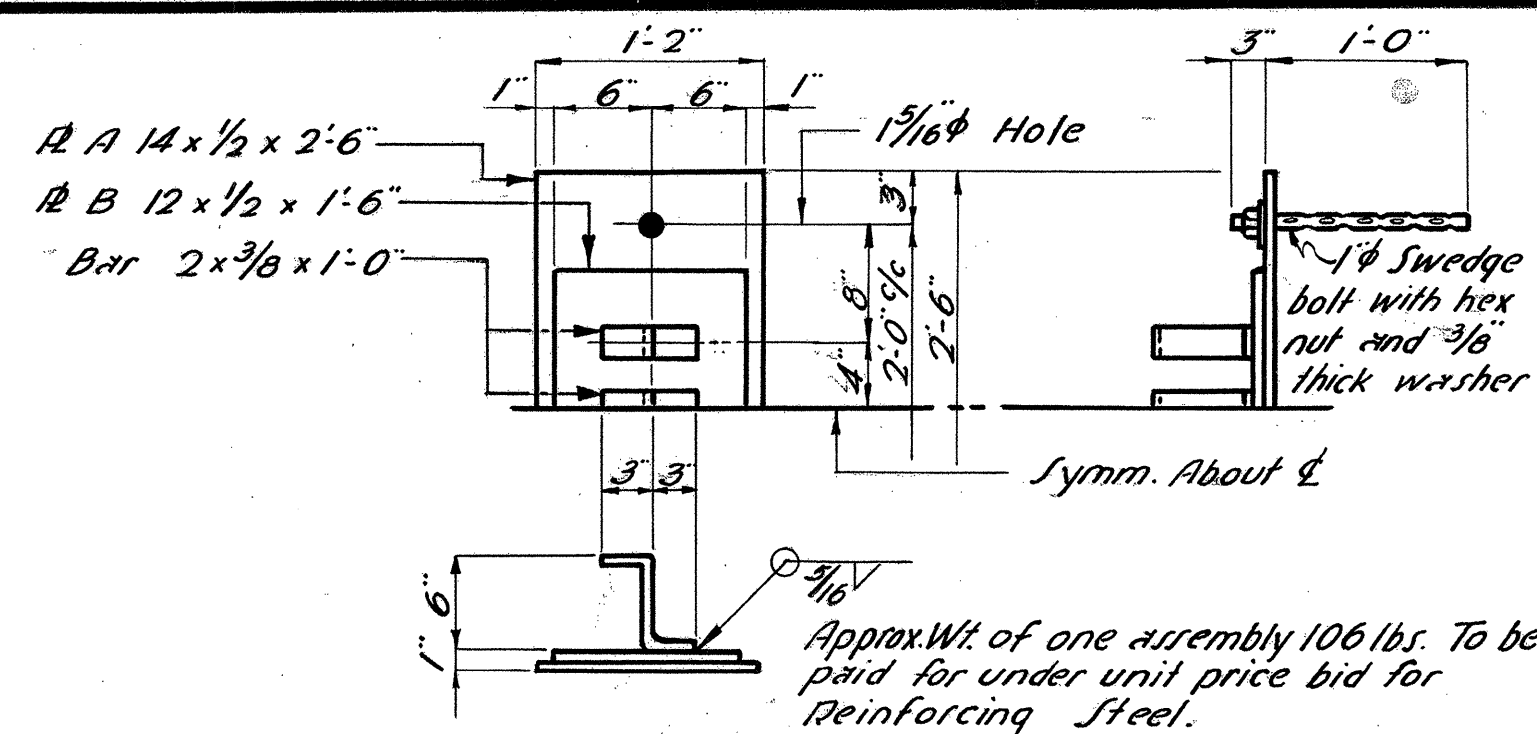


DIAGRAMMATIC LAYOUT OF LIGHTING SYSTEM
See project plans for exact location



SECTION ACROSS ROADWAY

DETAILS FOR CONDUIT FOR LIGHTING SYSTEM



Coat bottom of A, B & contact part of A with graphite. All surfaces which will be exposed after erection are to be painted, one coat of red lead and oil and one coat of approved graphite paint.

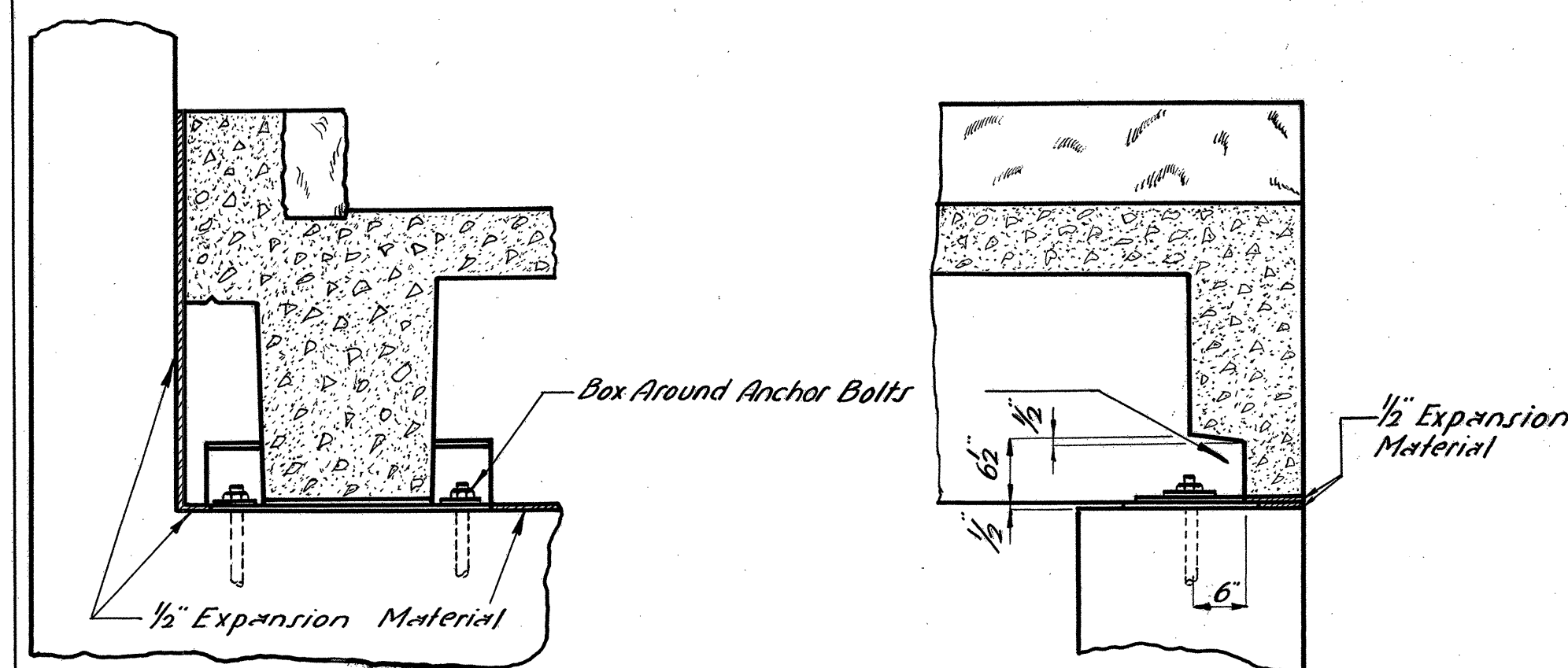
SLIDING PLATE EXPANSION DEVICE FOR SQUARE T-BEAM BRIDGES

Details not shown and notes similar to those given for square spans.

Tabular length of plates given as this dimension for net weight. Overall length for A being C+D, and G+H for B.

Angle	Size A	Size B	Approx. Wt.	K	A	B	C	D	E	F	G	H
15°	14 x 1/2 x 2'-7"	12 x 1/2 x 1'-6 3/8"	109	1'-0 1/2"	1'-2 1/2"	0'-8"	2'-7"	0'-3 3/4"	1'-0 1/2"	0'-4 3/4"	0'-3 3/4"	1'-6 3/8"
30°	14 x 1/2 x 2'-10 7/8"	12 x 1/2 x 1'-8 3/4"	120	1'-1 1/8"	1'-4 1/4"	1'-5 1/4"	2'-10 3/8"	0'-8"	1'-1 1/8"	0'-10 5/8"	0'-6 3/8"	1'-8 3/4"
45°	14 x 1/2 x 3'-6 1/2"	12 x 1/2 x 2'-1 1/2"	143	1'-4 1/8"	1'-7 3/4"	2'-6"	3'-6 1/2"	1'-2"	1'-4 3/8"	1'-6"	1'-0"	2'-1 1/2"
60°	14 x 1/2 x 5'-0"	12 x 1/2 x 3'-0"	196	2'-0"	2'-4"	4'-4"	5'-0"	2'-0 1/4"	2'-0"	2'-7 1/4"	1'-8 3/4"	3'-0"

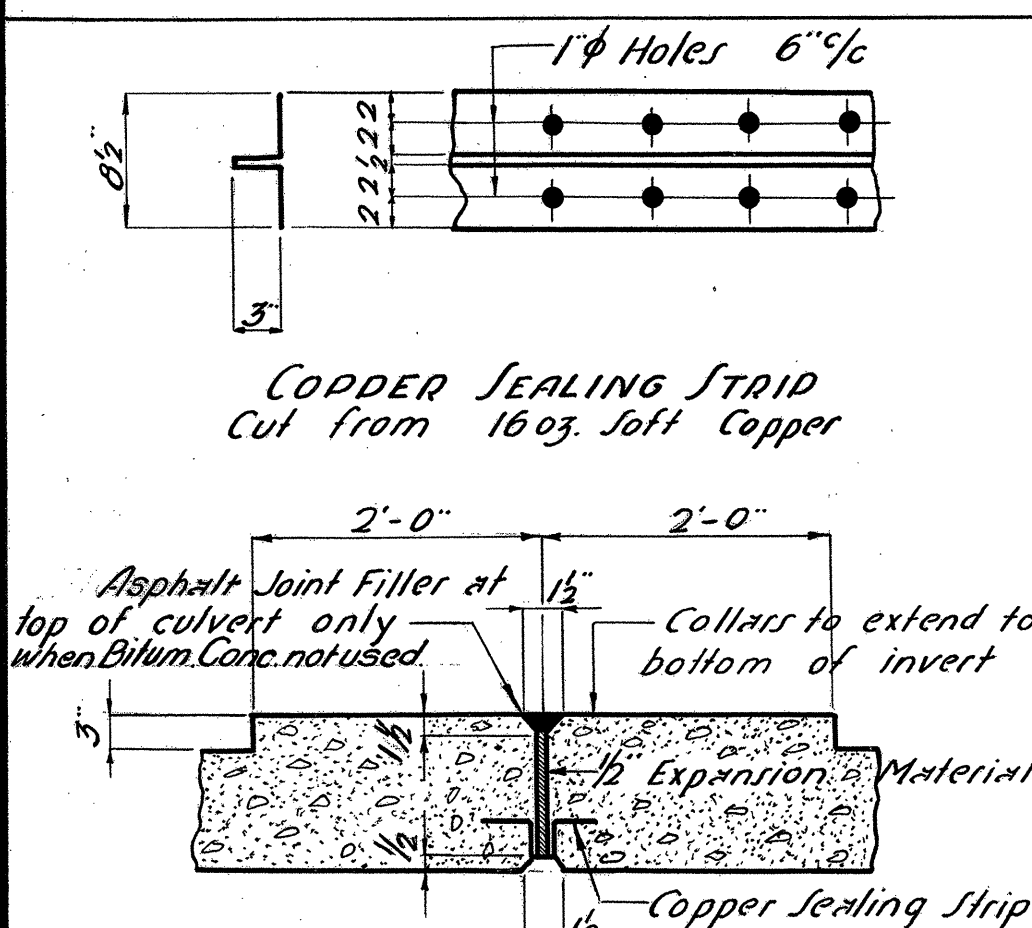
SLIDING PLATE EXPANSION DEVICE FOR SKEW T-BEAM BRIDGES



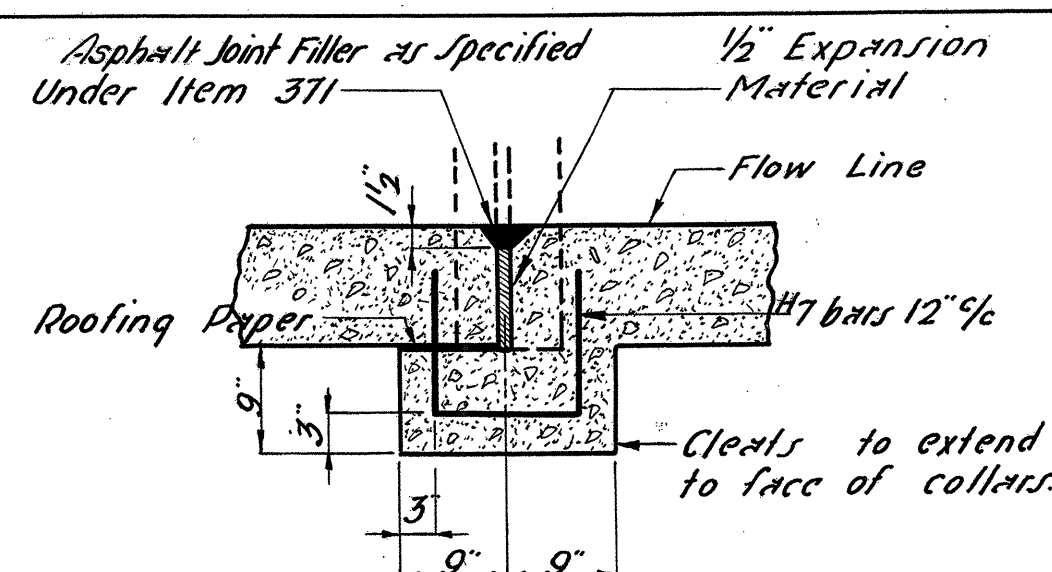
SQUARE BRIDGES

SKEWED BRIDGES

DETAILS FOR EXPANSION END OF T-BEAM BRIDGES



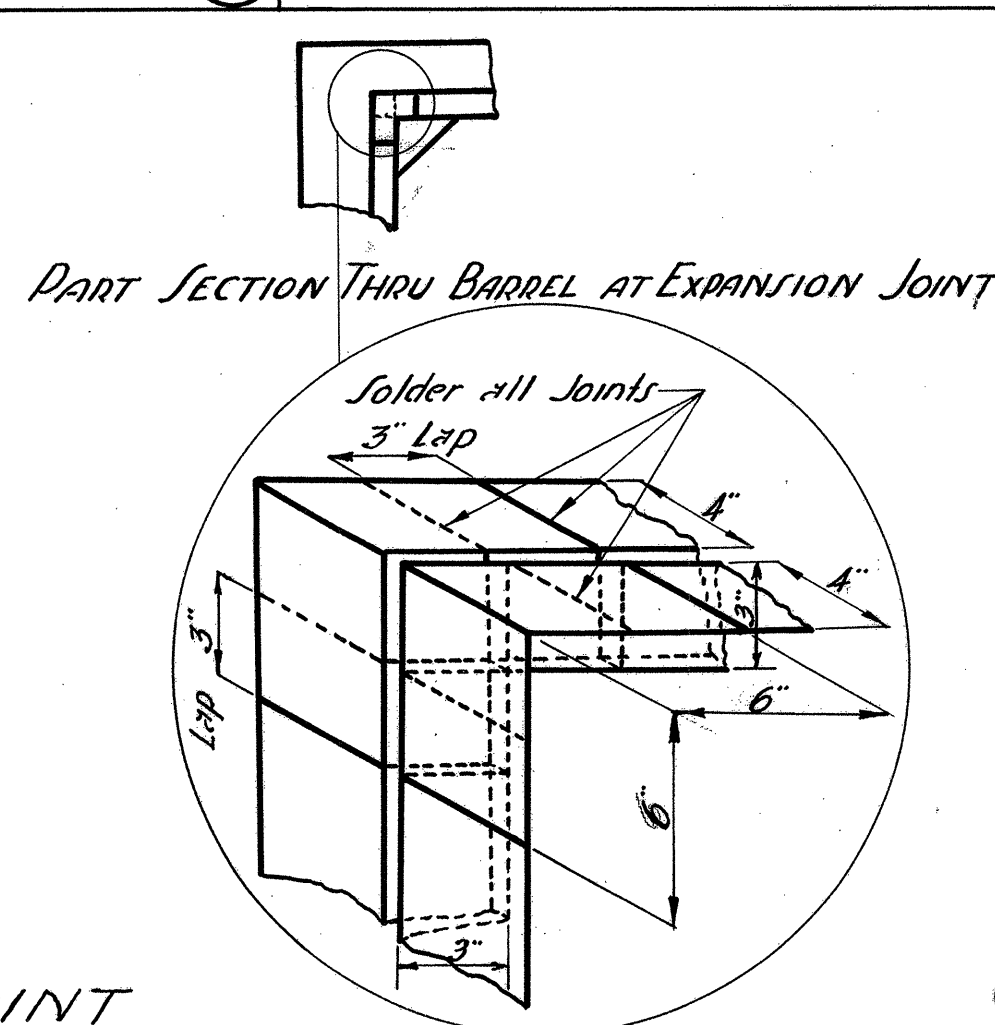
SECTION THRU TOP SLAB OR SIDEWALLS



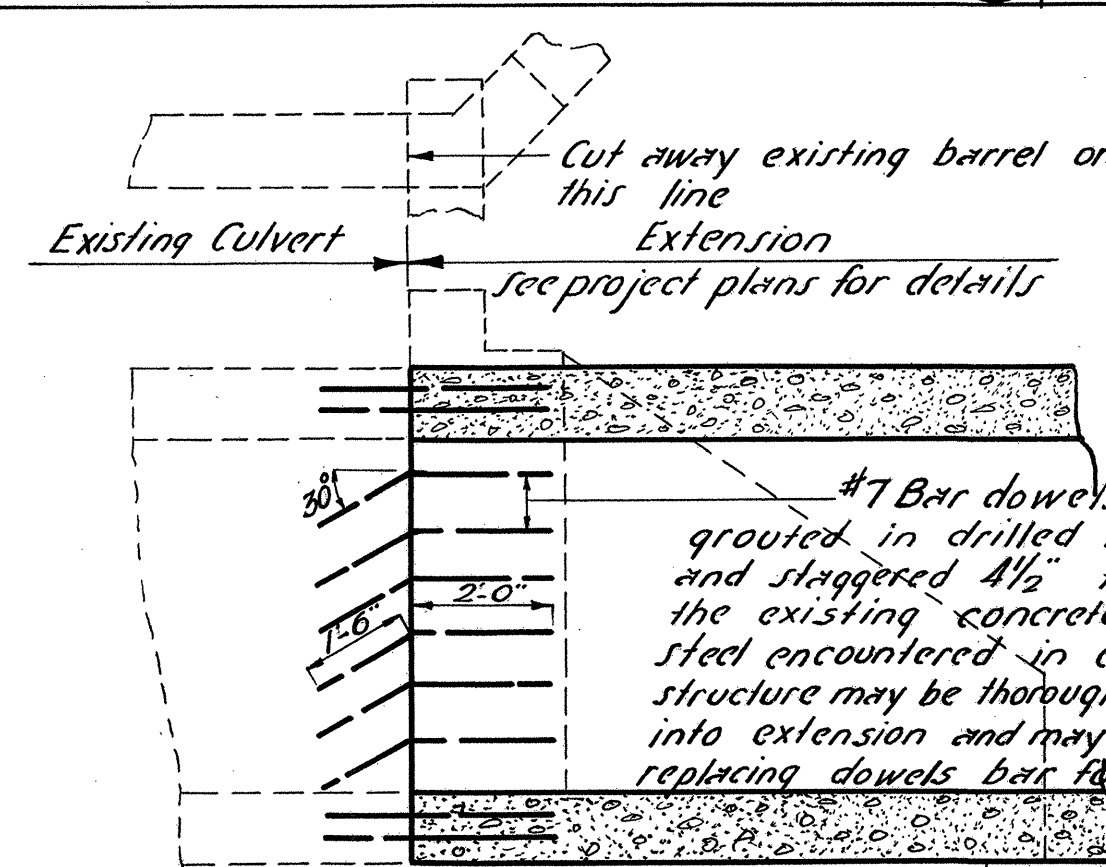
SECTION THROUGH EXPANSION JOINT ACROSS INVERT

Asphalt joint filler, copper sealing strip, expansion material, and all labor and materials necessary to install same shall be included in the unit price bid for concrete class B.

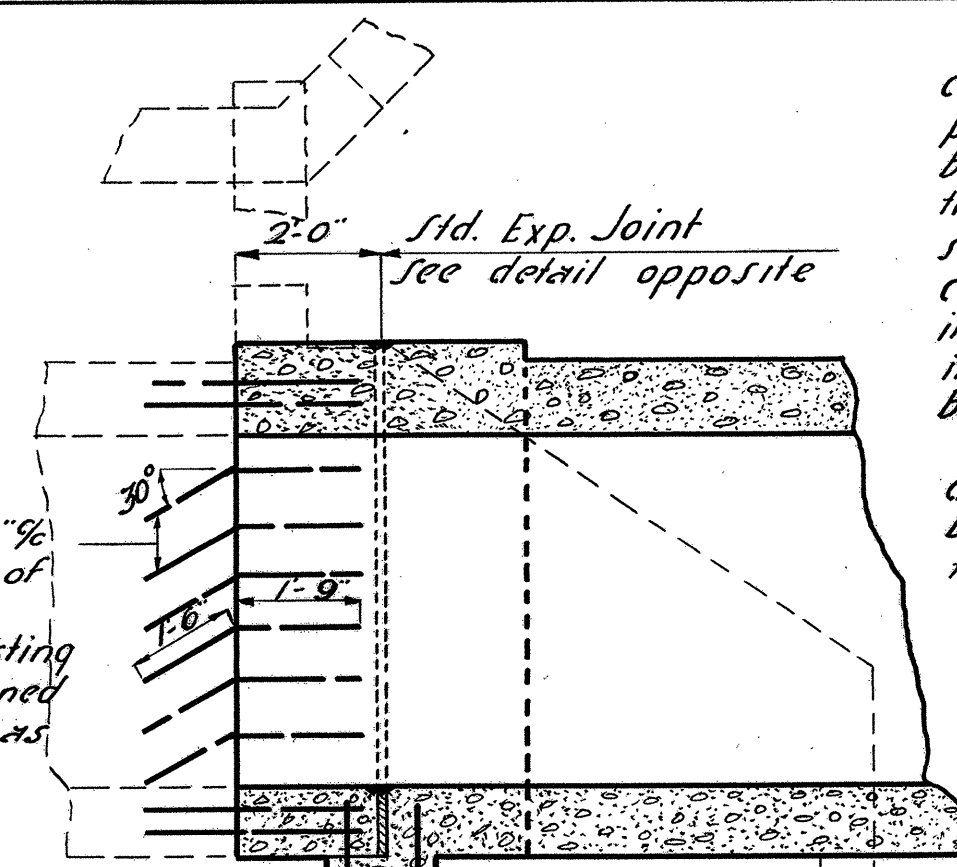
DETAILS OF EXPANSION JOINT



PART SECTION THRU BARREL AT EXPANSION JOINT



TYPICAL CONNECTION WITHOUT EXPANSION JOINT



TYPICAL CONNECTION WITH EXPANSION JOINT

To be used when the distance from the center of the existing culvert or from an expansion joint therein to the end of the new culvert exceeds 45 feet.

If walls slab or invert of existing culvert are thicker than indicated on the project plans, then the extensions may be thickened accordingly as directed by the Engineer in the field, but in no case shall the extension be thinner than called for on the project plans. Fillets in the extension shall be tapered to meet inside lines of existing culvert at the beginning of the extension.

Drilling, placing, and grouting of dowels to be included in unit price bid for concrete class B. Dowels to be paid for as Reinforcing Steel.

REVISIONS & CORRECTIONS
Changed Bit Joint Filler to Asphalt Joint Filler 9-16-58

DRAWN BY L.M.B. 5-56
TRACED BY C.B. 5-58
CHECKED BY L.L. 5-56

CORRECT June 11, 1956
A.D. 5-56
BRIDGE ENGINEER

APPROVED June 11, 1956
H.E. 5-56
CHIEF ENGINEER

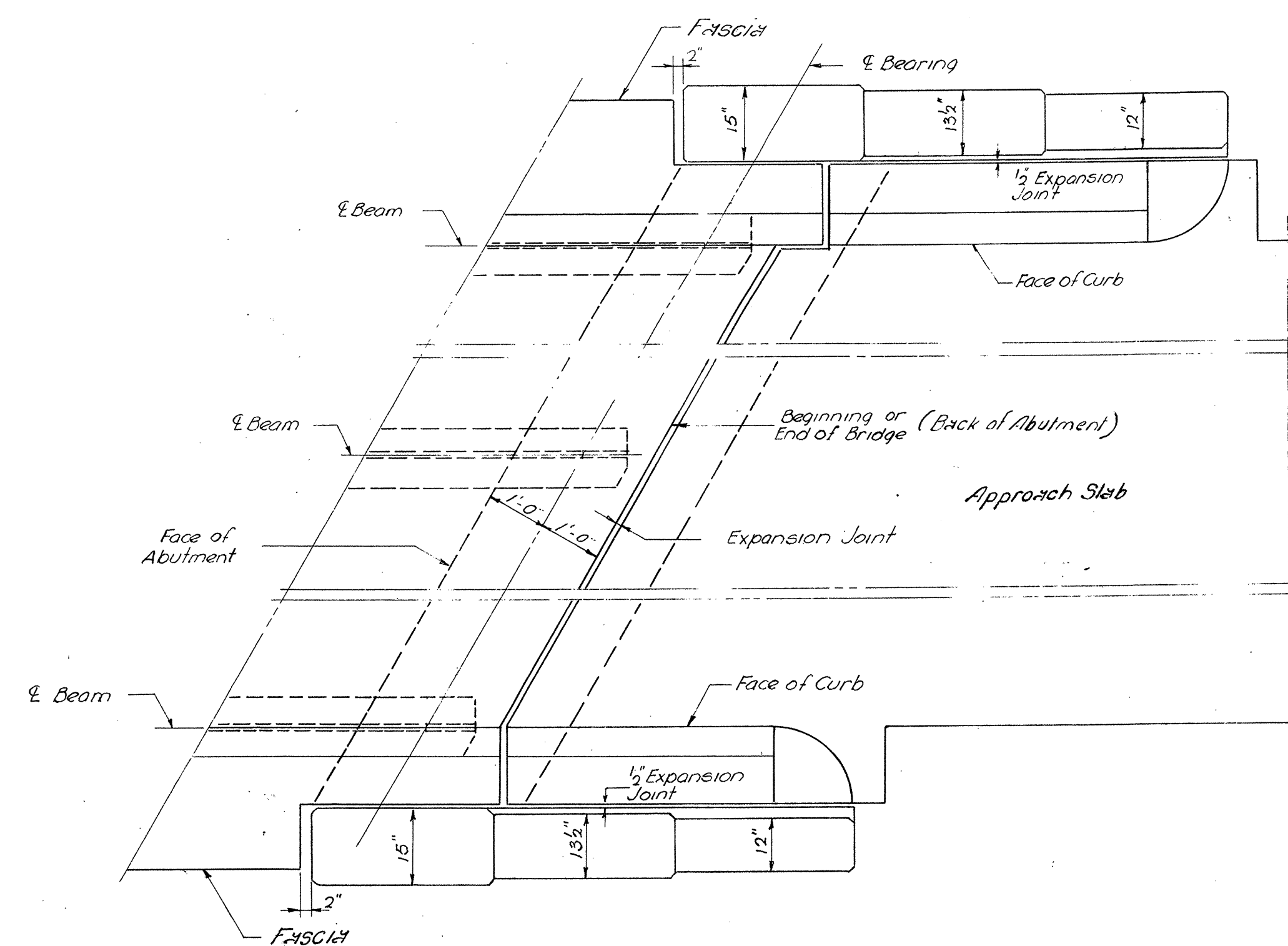
CONSTRUCTION DETAILS FOR T-BEAM BRIDGES DETAILS FOR CONDUIT FOR LIGHTING SYSTEMS DETAILS FOR REINFORCED CONCRETE BOXES

DEPARTMENT OF HIGHWAYS
STANDARD STRUCTURES

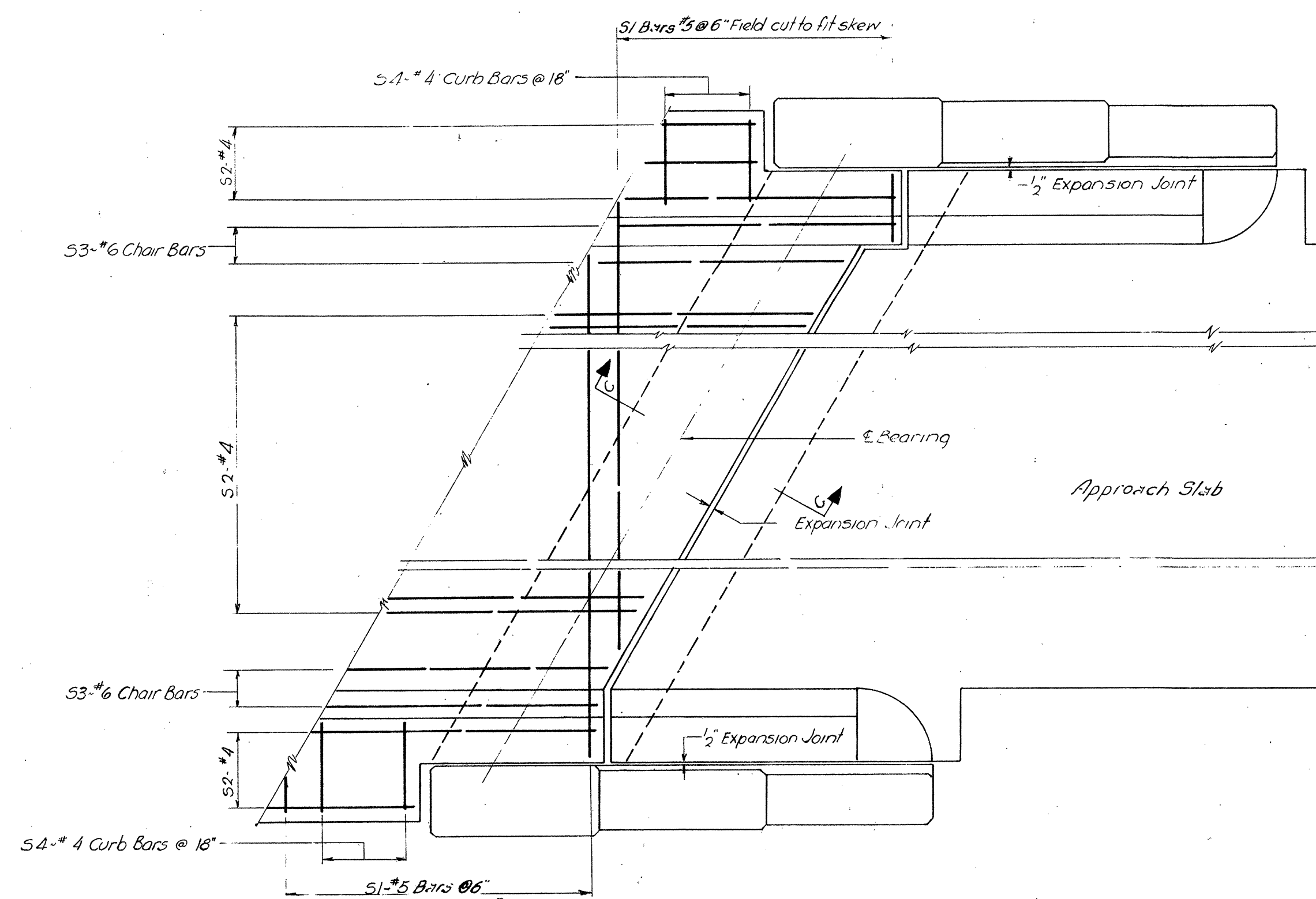
SB-21-56

SOUTH BURLINGTON IM DECK (36)
FOR REFERENCE ONLY - BRIDGE 68
SHEET 74 OF 75

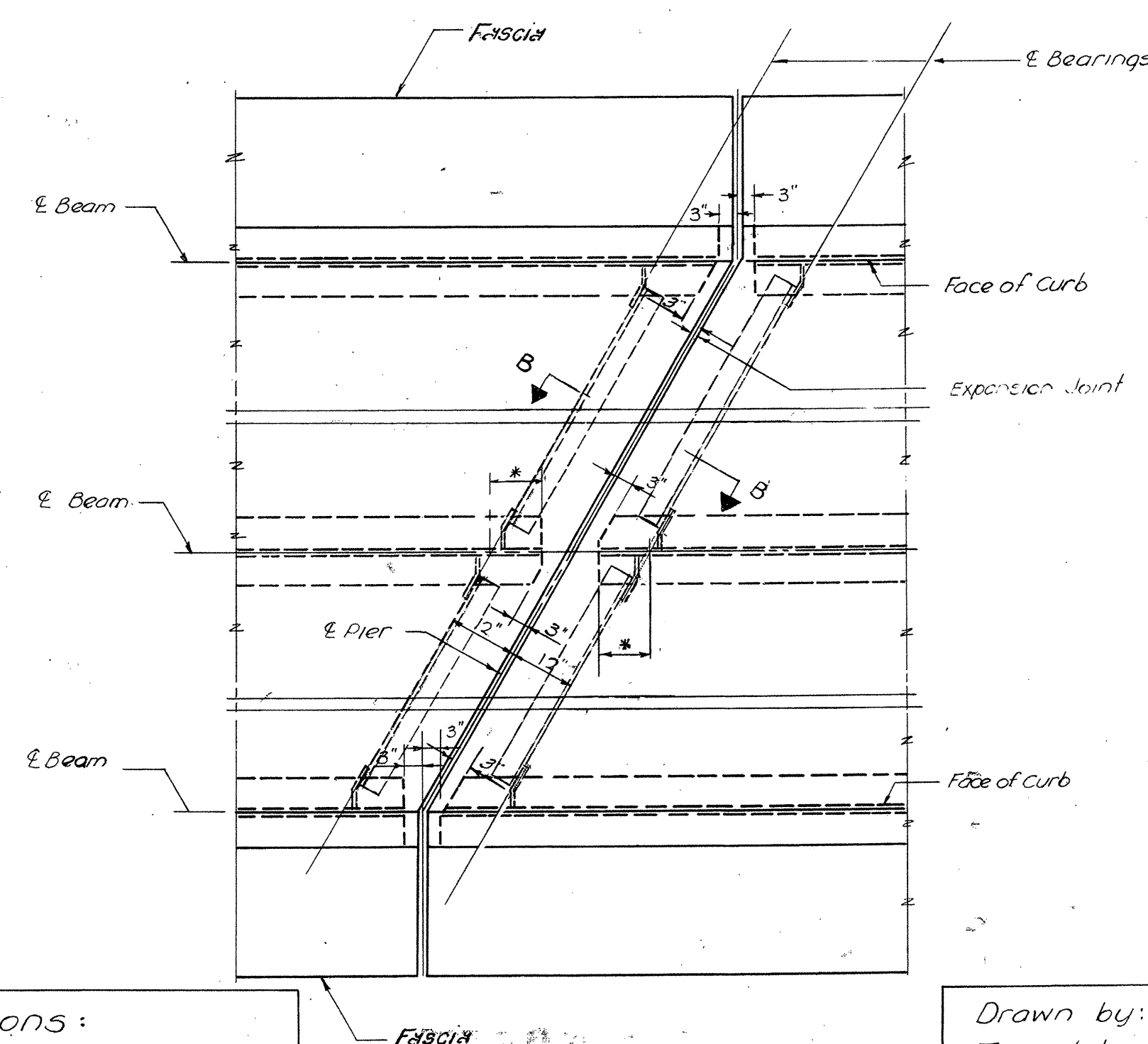
GENERAL NOTES



PLAN AT ABUTMENT
Scale $\frac{1}{2}" = 1'-0"$

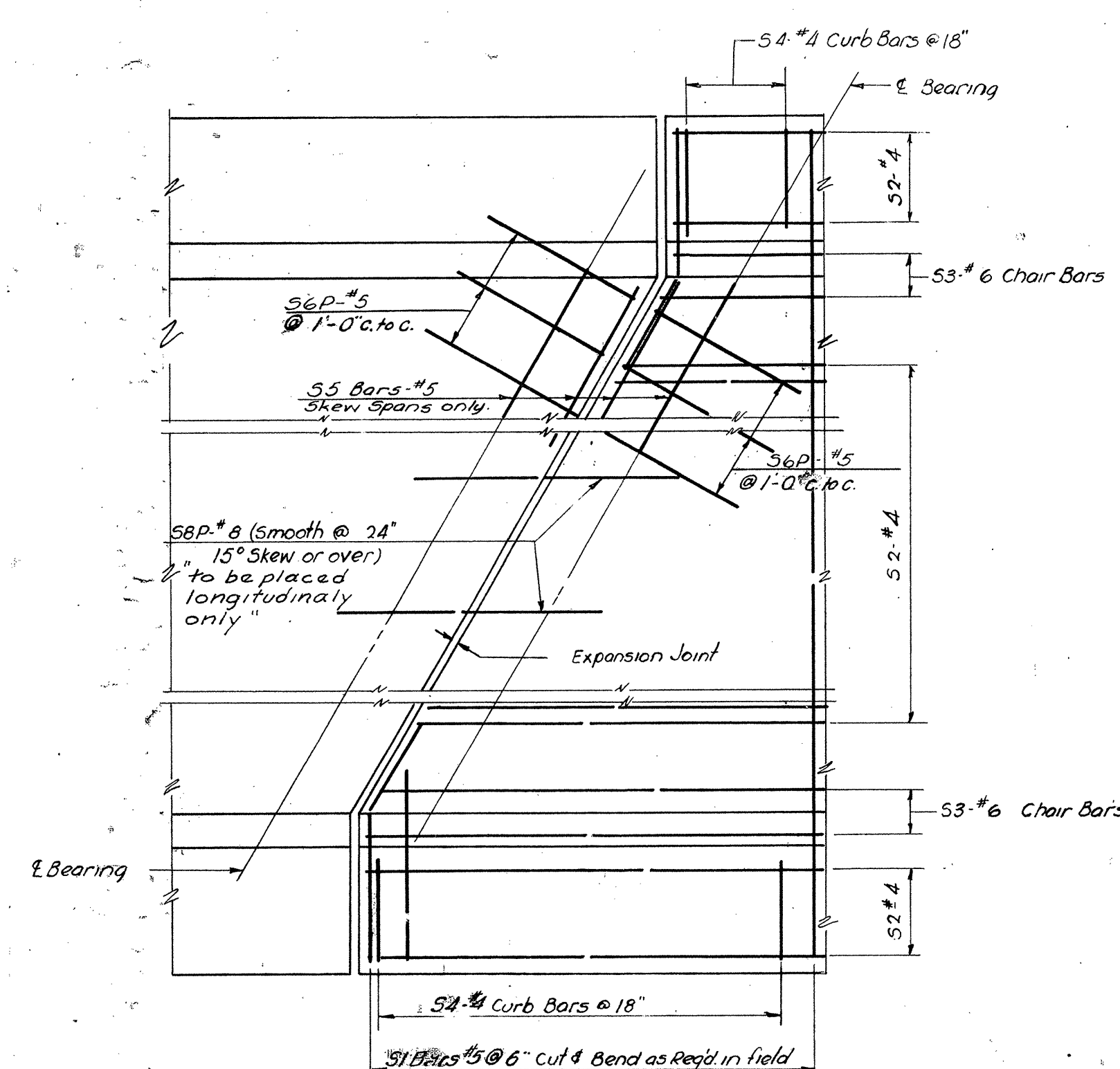


REINFORCEMENT LAYOUT AT ABUTMENT
Scale $\frac{1}{2}" = 1' - 0"$

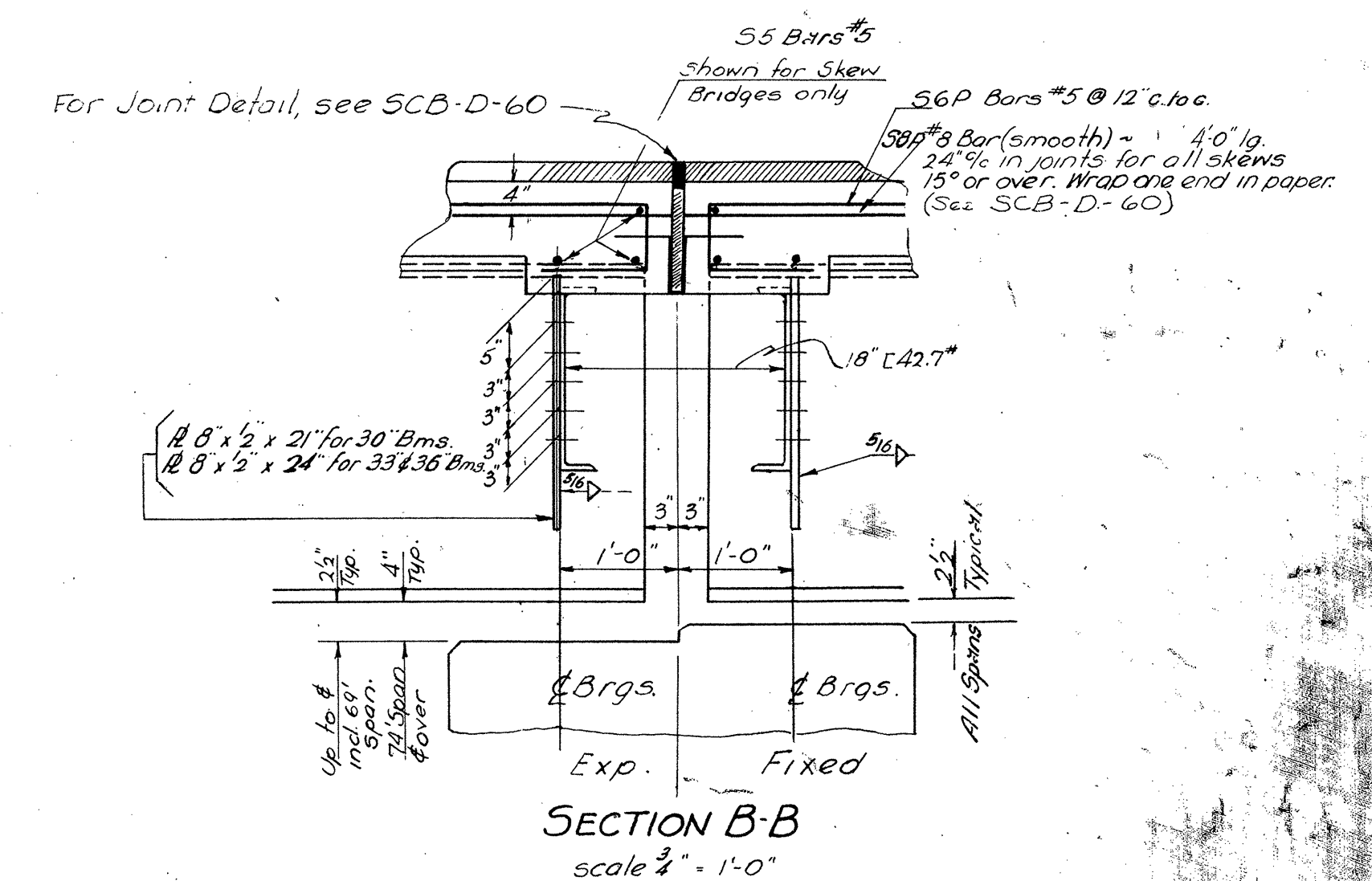


PLAN AT PIER
Scale $\frac{1}{2}" = 1' - 0"$

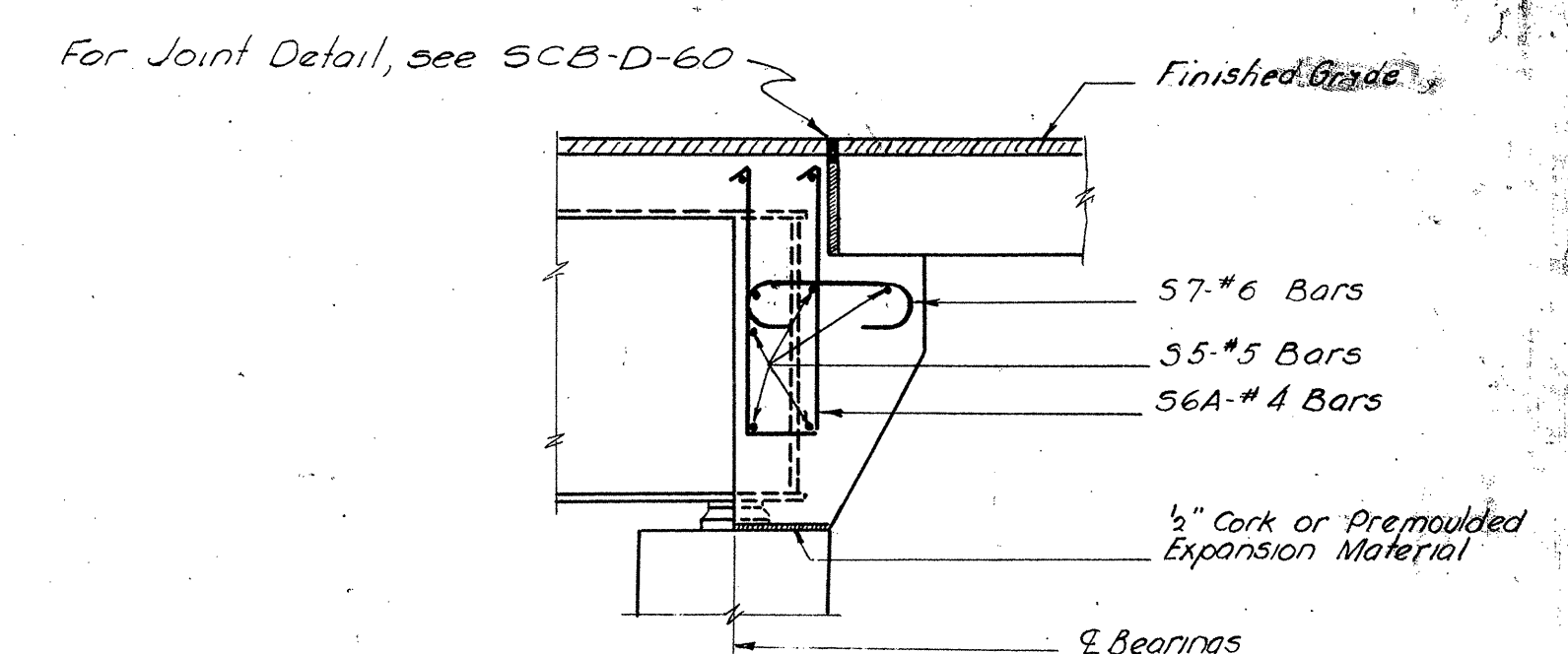
* This dimension varies according to the skew. See Standards SCB-D-60



REINFORCEMENT LAYOUT AT PIER
Scale 1/2" = 1'-0"



SECTION B-B
scale $\frac{3}{4}" = 1'-0"$



SECTION C-C
scale 1/2" = 1'-0"

Revisions & Corrections:

Remove # 4 Bar Sec BB
Added General Note
Corrected Joint Detail
Added note to 38 bars

9/26/60
10/6/60
12-2-60
3-2-61

Drawn by: H.W.S. June 1960
Traced by: H.W.S. June 1960
Checked by R.S.H. & R.T.B. June 1960

Correct₂. 13 July 1960

AmBorm
Bridge Engineer

Approved: 13 July 1960
C. S. Bishop
Chief Engineer

DETAIL OF EXPANSION JOINT OVER PIERS AND AT ABUTMENTS

DEPARTMENT OF HIGHWAYS
STANDARD STRUCTURES

SOUTH BURLINGTON IM DECK(36)
FOR REFERENCE ONLY - BRIDGE 68
SHEET 75 OF 75

SB-22-60

SHERWARD G. FARNSWORTH, P.E.
Project Manager - Structures Section
VERMONT AGENCY OF TRANSPORTATION
National Life Building - Drawer 33
MONTPELIER, VERMONT 05633-6001
Telephone (802) 828-3874 Fax (802) 828-3566

TO: STEVE W. JOHNSON, P.E.
Senior Project Engineer
Vanasse Hangen Brustlin, Inc.
Six Bedford Farms, Kilton Road
BEDFORD, NH 03110

LETTER OF TRANSMITTAL

DATE: 2-13-2002
CONTRACT No.
PROJECT Name: SR BURLINGTON
PROJECT NO: IM 0209(36)

WE ARE SENDING TO YOU THE FOLLOWING:

☒ ATTACHED	☐ UNDER SEPARATE COVER VIA	☐ BY FAX
☐ DRAWINGS	☒ PRINTS ☐ SAMPLE ☐ PLANS	Fax Number
☐ COPY OF LETTER	☐ CHANGE ORDER ☐ OTHER	Total number of sheets being Faxed

COPIES	DATE	NO.	DESCRIPTION
1	2/12/02	1	ROW PLANS FOR CONDUIT ACCESS GATES. Sheet 1 to 6 of 6 1- Full size 1- Half size

THESE ARE TRANSMITTED	AS CHECKED BELOW	
☐ FOR APPROVAL	☐ APPROVAL AS SUBMITTED	☐ RESUBMIT ☐ COPIES FOR
☒ FOR YOUR USE	☐ APPROVED AS NOTED	☐ SUBMIT ☐ COPIES FOR
☒ AS REQUESTED	☐ RETURNED FOR CORRECTIONS	☐ RETURN ☐ CORRECTED
☐ FOR REVIEW AND COMMENT	☐ OTHER	☐ PRINTS RETURNED AFTER
☐ FOR BIDS DUE		

REMARKS:

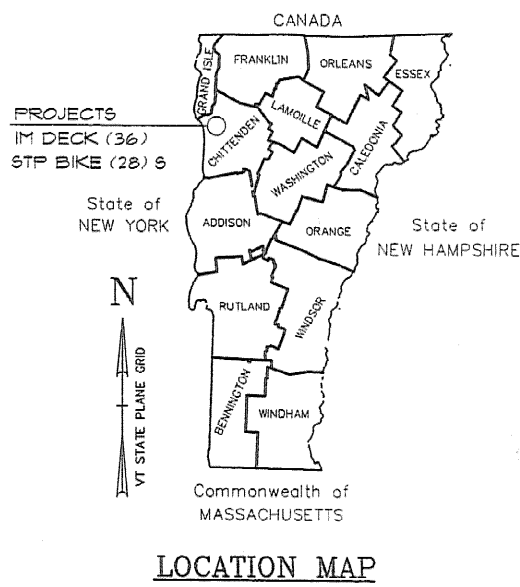
COPY TO: BOB SUTHER - SIGNED: Sherward Farnsworth
ATT: DAVE HOSHINS
PRG, FILE SHERWARD.FARNSWORTH@state.vt.us

STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT

CITY OF SOUTH BURLINGTON
COUNTY OF CHITTENDEN



R.O.W. PLANS

IM DECK (36) STP BIKE (28) S

ROUTE NO. : 1-89	BRIDGE NO. : 68	PROJECT LOCATION:	U.S. 2 (WILLISTON RD.) OVER I-89
PROJECT LOCATION:	U.S. 2 (WILLISTON RD.) OVER I-89	PROJECT DESCRIPTION:	CONSTRUCT SIDEWALK AND BIKEWAY ALONG U.S. 2 BETWEEN STA. 21+00 AND 36+61
PROJECT DESCRIPTION:	INSTALL TRAFFIC CONTROL, REHABILITATE STRUCTURE, REMOVE TRAFFIC CONTROL	LENGTH OF PROJECT:	1561.00'
LENGTH OF STRUCTURE:	261.00'		
LENGTH OF PROJECT:	1723.00'		
LENGTH OF R.O.W. PROJECT:	1141'11"		

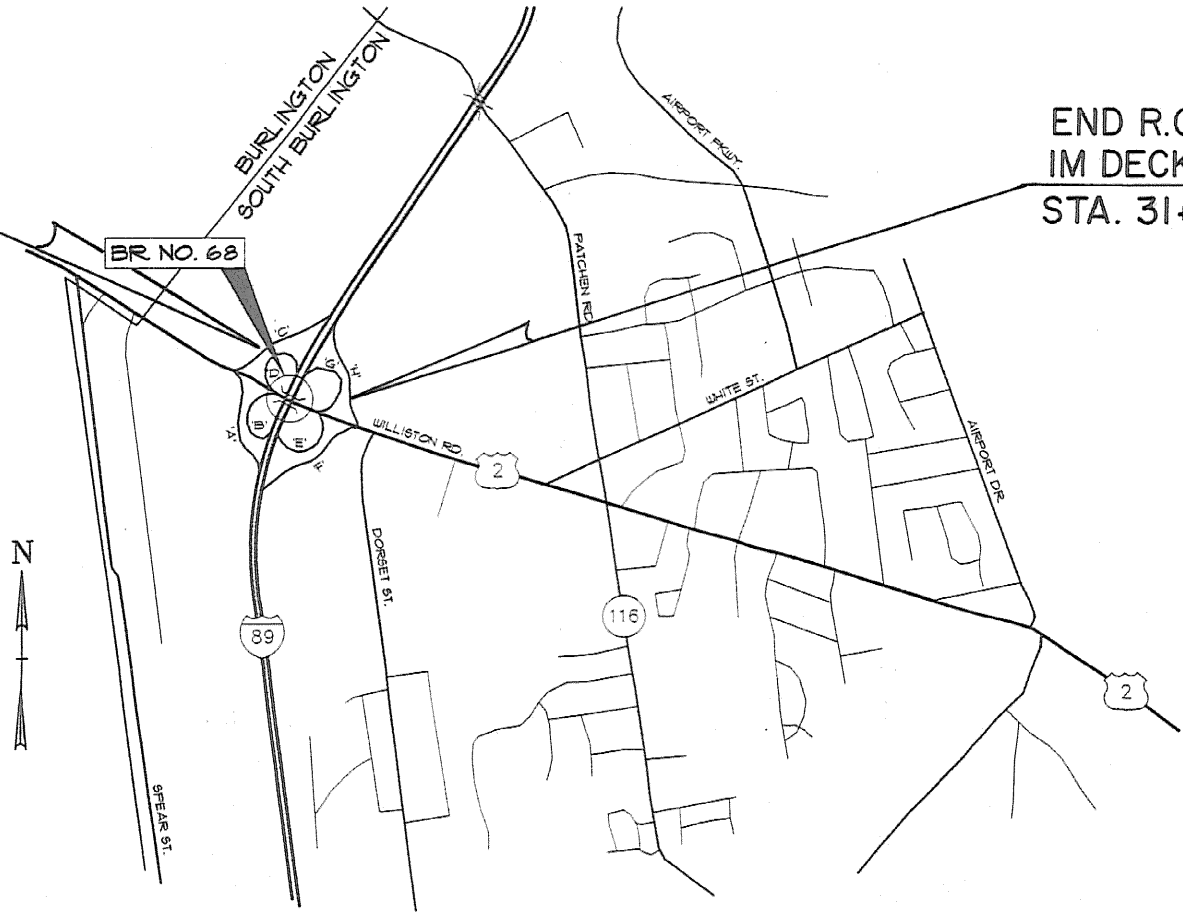
BEGIN R.O.W. PROJECT
IM DECK (36)
STA. 20+13 11' LT.

END R.O.W. PROJECT
IM DECK (36)
STA. 31+67 60' LT.

CONVENTIONAL SIGNS

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

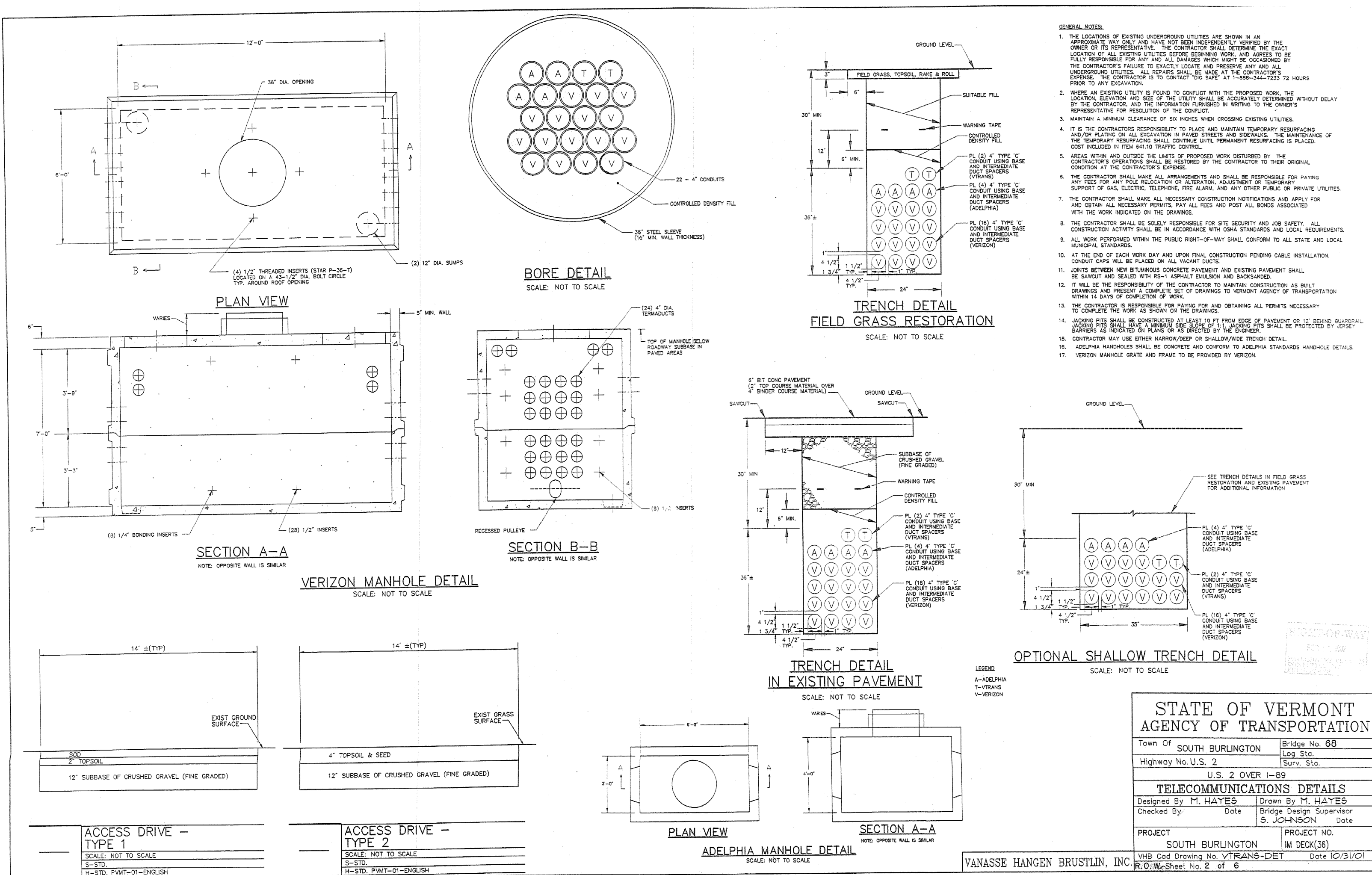
DATUM	
VERTICAL	N/A
HORIZONTAL	N/A



THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE CHIEF ENGINEER. CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1980, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON MARCH 15, 1980. FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

VANASSE HANGEN BRUSTLIN, INC.

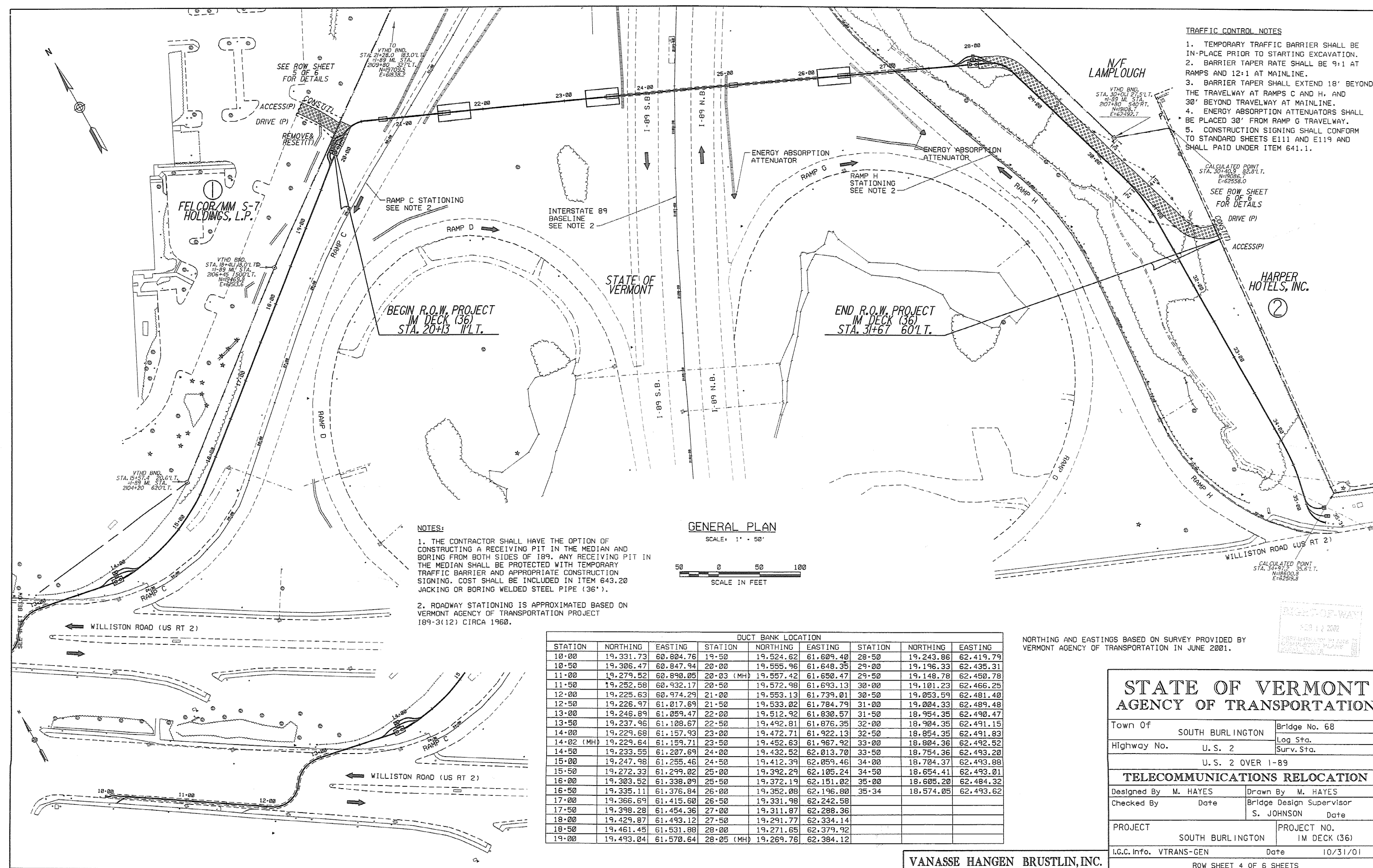
APPROVED:	DATE: 12/6/84
DIRECTOR OF PROJECT DEVELOPMENT	
APPROVED:	DATE: 1/6/85
Chief, Right of Way	
PROJECT: SOUTH BURLINGTON IM DECK(36)	
SOUTH BURLINGTON STP BIKE (28)S	
R.O.W. SHEET 1 OF 6 SHEETS	

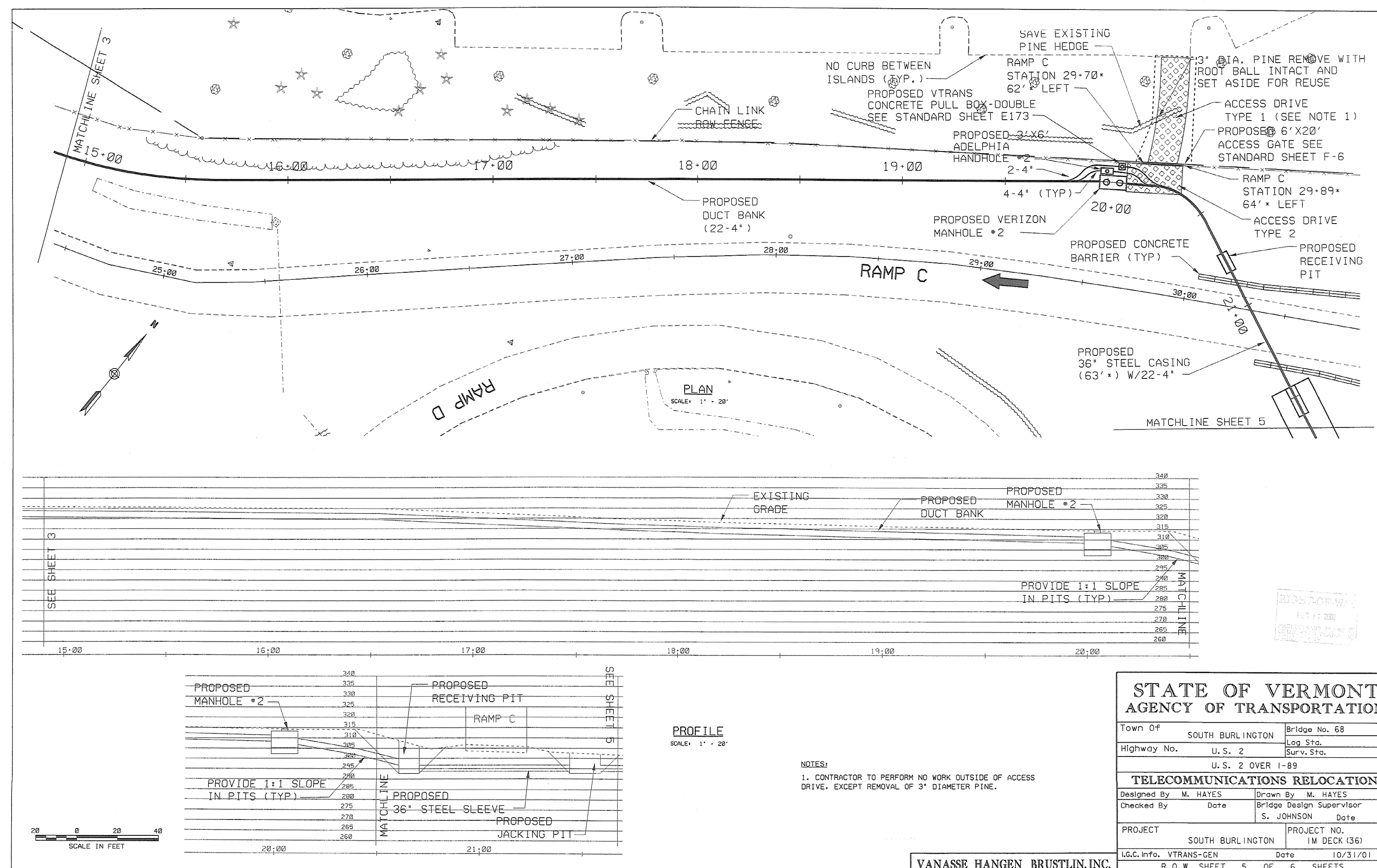


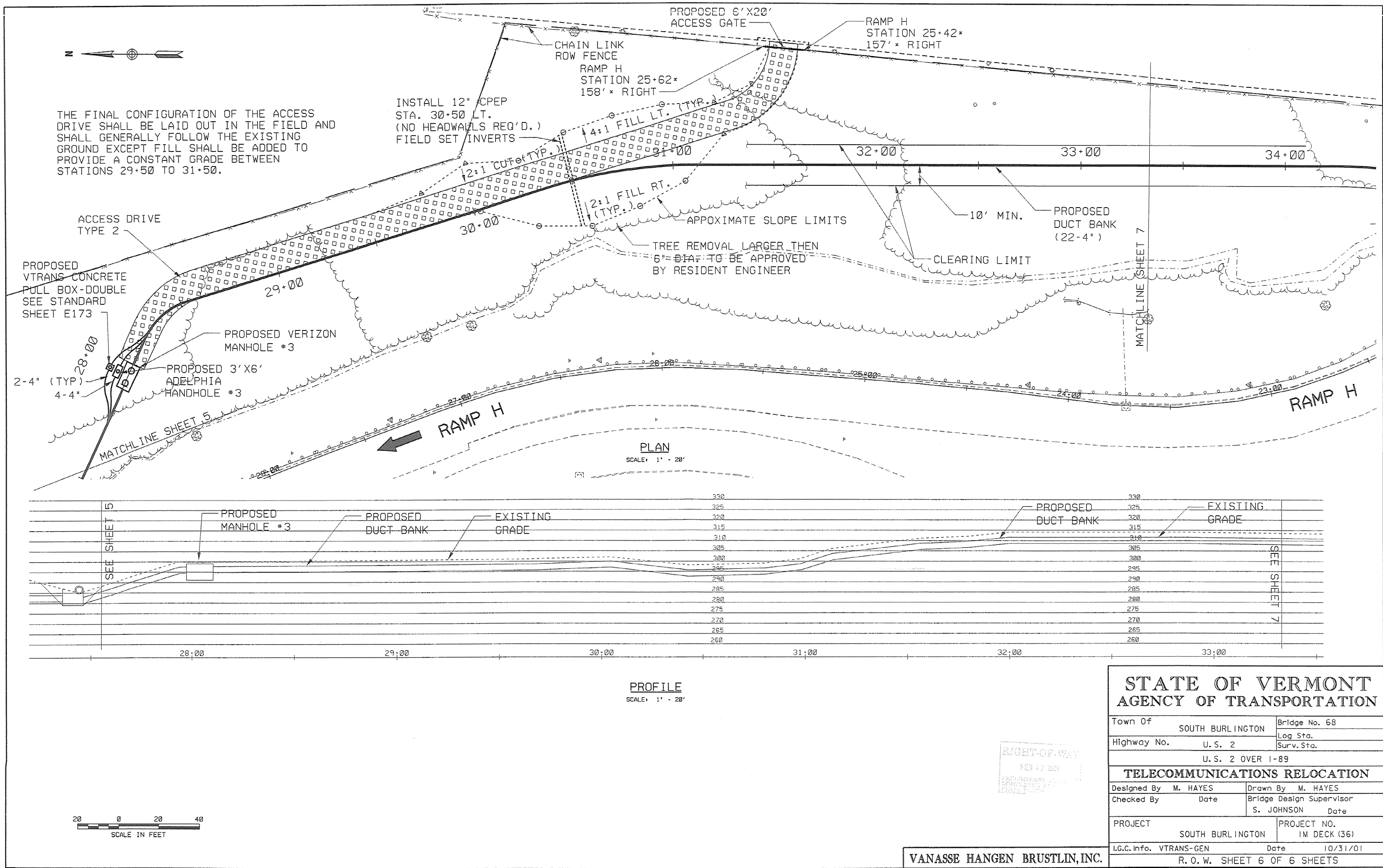
**STATE OF VERMONT
AGENCY OF TRANSPORTATION
RIGHT OF WAY PLANS
DETAIL SHEET**

R. O. W. PLANS

SOUTH BURLINGTON
IM DECK (36)
SHEET 3 OF 6









PROJECT DEVELOPMENT DIVISION – Structures Section

TO: DISTRIBUTION LIST

FROM: Sherward G. Farnsworth, P.E., Project Manager *Sof*

DATE: October 1, 2001

SUBJECT: Semi-Final Plans - South Burlington IM DECK(36) I-89, Exit 14
Relocation of Verizon conduit's and future relocation of Aldelphia's conduits from Williston Road bridge over I-89 >>>> Duct Bank Relocation <<<<

Final line and grade have been established for the relocation of Verizon conduits and future relocation of Aldelphia's conduits from Williston Road Bridge over I-89.

Attached are Semi-Final Plans showing relocated duct bank relocations. Also attached is the scope of work, estimated quantities, and specifications for duct bank conduit, manholes, and sleeves under roadway.

- Details that are missing from plans but will be added to final set are:
1. Stationing to Ramps C & H and main line to tie in ROW fence 12 foot openings and conduit crossings.
 2. Optional trench details for 6 wide by 4 high conduits under road or grass areas so that a trench box is not needed to install conduits.
 3. Vermont State plain grid coordinates for conduit locations.
 4. Details for Alelphia and State of Vermont pull boxes.
 5. Adding note giving the contractor the option of boring receiving pit in I-89 median and boring from NB side.
 6. Adding stationing to conduit profile views, estimated/final quantities, and minimum steel sleeve gauge.

DISTRIBUTION LIST:

- _X_ DTA Richard Hosking, District # 5. One set of plans is attached for your review and comment.
- _X_ Environmental Services Engineer, John Narowski. One set of plans is attached for your review and comment.
- _X_ Chief of Utilities & Permits, Al Wright – ATT: Pete Dye Two sets of plans are attached for your review and comment.
- _X_ Chief of Right-of-Way Section, Allen Blake - One set of plans is attached for your review and comment.
- _X_ Regional Construction Engineer, Alan Campo - One set of plans is attached for your review and comment.
- _X_ Resident Engineer, Bob Suckert - Two sets of plans are attached for your review and comment. Please share one with contractor.
- _X_ FHWA Bridge Engineer, Mike Canavan – One set of plans and estimate are attached for your review and comment.
- X_ VERIZON – Gary Sundbery and Mary Groom – One set of plans for each of you are attached for your review and comment.
- X_ ALDELPHIA Green Mt. System – Wayne Deslaurier – One set of plans are attached for your review and comment.

We are on a fast track to install these conduits this fall. Therefore we would like your review comments no later then Tuesday, Oct 9, 2001, noontime. These comments should be faxed to me at 802-828-3566 or email at Sherward.Farnsworth@state.vt.us. If you have any questions I can be reached at 802-828-3874. I will not be in on 10/8/01.

Attachment: VHB Plans, specs, and quantities

Cc JB McCarthy w/Est. & plans, Steve Johnson-VHB, Central files, Project file, Chrono

CONSTRUCTION QUANTITY ESTIMATE - DUCT BANK RELOCATION			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
201.11	CLEARING & GRUBBING	ACRE	1
220.10	SAWING BITUMINOUS CONCRETE PAVEMENT	LF	650
301.26	SUBBASE OF CRUSHED GRAVEL (FINE GRADED)	CY	115
406.25	BITUMINOUS CONCRETE PAVEMENT (PG64-28)	TON	55
541.21	CONCRETE VAULT (MOD. - TELEPHONE)	EA	3
541.21	CONCRETE VAULT (MOD. - CATV)	EA	4
616.40	REMOVING AND RESETTNG CURB	LF	10
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	SY	6
620.16	GATE FOR CHAIN LINK FENCE, 6 FEET (MOD.)	LF	24
621.90	TEMPORARY TRAFFIC BARRIER	LF	1,600
624.20	DUCTS, CONCRETE ENCASED (MOD. - DUCT BANK)	LF	1,860
624.20	DUCTS, CONCRETE ENCASED (MOD. - DUCT BANK, ROADWAY)	LF	330
624.20	DUCTS, CONCRETE ENCASED (MOD. - DUCT BANK, THROUGH SLEEVE)	LF	370
625.10	SLEEVES FOR UTILITIES (MOD. - JACK AND BORE)	LF	370
630.10	UNIFORMED TRAFFIC OFFICER	HR	150
641.10	TRAFFIC CONTROL	LS	1
651.15	SEED	LB	6
651.30	SODDING	SY	130
651.35	TOPSOIL	CY	140
678.25	PULL BOX	EA	4

SCOPE OF WORK

The work under this Contract consists of the construction of approximately 2600 feet of 4" PVC Duct Bank in the City of South Burlington, Vermont. The work includes the installation of Manholes and Handholes along the proposed Duct Bank. The proposed route will be located within the Highway Right Of Way and the City Roadway Layout. Installation of a Steel Sleeve, by Auger Boring, will be required beneath the Interstate roadways.

All work done under this Contract shall be in conformance with the Vermont Agency of Transportation Standard Specifications for Construction, 1990 Edition, the Supplemental Specifications, Construction Standards, the 2000 Manual on Uniform Traffic Control, and the American Standards for Nursery Stock (ANSI-Z60.1-1990), as amended, the Plans, and these Special Provisions.

The General Conditions, Supplementary Conditions and Special Provisions shall take precedence over the General Requirements of Division 100 of the Standard Specifications.

WORK SCHEDULE

No work shall be done on Saturdays, Sundays or holidays or on the day before or the day after a long weekend which involves a holiday without prior approval by the Engineer.

Work on Williston Road with lane closure will be permitted from 7 PM to 6 AM. One lane closures for work on the Interstate will be permitted between 7 PM and 6 AM, in accordance with the traffic control procedures.

PROVISIONS FOR TRAVEL AND PROSECUTION OF THE WORK
(Supplementing Subsection 104.04)

Before starting any work under this Contract, the Contractor shall prepare, and submit to the Engineer for approval, a plan (based on the Contract traffic management plans) that indicates the traffic routing proposed by the Contractor during the various stages and time periods of the work and the temporary barricades, signs, drums and other traffic control devices to be employed during each stage and time period of the work to maintain traffic and access to abutting properties.

Particular care shall be taken to establish and maintain methods and procedures that will not create unnecessary or unusual hazards to public safety. Traffic control devices required only during working hour operations shall be removed at the end of each working day.

Signs having messages that are irrelevant to normal traffic conditions shall be removed or properly covered at the end of each work period. Signs shall be kept clean at all times and legends shall be distinctive and unmarred.

PUBLIC SAFETY AND CONVENIENCE (Supplementing Subsection 107.07)

The Contractor shall provide necessary access for fire apparatus and other emergency vehicles through the work zones to abutting properties at all times.

At the end of each working day where trenches in areas of public travel are covered with steel plates, each edge of the plates shall be either beveled or protected by a bituminous concrete ramp at a slope of 2 feet horizontally to 1 inch vertically. Any temporary patching material may be used to construct the ramps. The cost of necessary patching materials, and their maintenance and removal, will be considered incidental to the item involved with no separate payment.

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10-1-2001

Sweeping and cleaning of surfaces beyond the limits of the project required to clean up material caused by spillage or vehicular tracking during the various phases of the work shall be considered as incidental to the work being performed under the Contract and there will be no additional compensation.

PROTECTION OF UTILITIES AND PROPERTY (Supplementing Subsection 107.13)

The Contractor, in constructing or installing facilities alongside or near sanitary sewers, storm drains, water or gas pipes, electric or telephone conduits, poles, sidewalks, walls, vaults or other structures shall sustain them securely in place, cooperating with the officers and agents of the various utility companies and municipal departments which control them, so that the services of these structures shall be maintained. The Contractor shall also be responsible for the repair or replacement of any damage to such structures caused by construction, and shall leave them in the same condition as they existed prior to commencement of the work. In case of damage to utilities, the Contractor shall promptly notify the utility owner and shall, if requested by the Engineer, furnish labor and equipment to work temporarily under the utility owner's direction in providing access to the utility. Pipes or other structures damaged by the operation of the Contractor may be repaired by the Department or by the utility owner which suffers the loss. The cost of such repairs shall be paid by the Contractor, without compensation therefor.

If, as the work progresses, it is found that any of the utility structures are so placed as to render it impracticable, in the judgment of the Engineer, to do the work called for under this Contract, the Contractor shall protect and maintain the services in such utilities and structures and the Engineer will, as soon thereafter as reasonable, cause the position of the utilities to be changed or take such other actions deemed suitable and proper.

If live service connections are to be interrupted by excavations of any kind, the Contractor shall not break the service until new services are provided. Abandoned services shall be plugged off or otherwise made secure.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals for doing all the work involved in protecting or repairing property as specified in this section, shall be considered included in the prices paid for the various Contract items of work and no additional compensation will be allowed therefore.

2022
10-1-2001

SECTION 541- PRECAST CONCRETE MANHOLES AND HANDHOLES

SECTION 541- PRECAST CONCRETE MANHOLES AND HANDHOLES, is hereby made a new section of the specifications, superceding all previous editions and their modifications.

541.01. DESCRIPTION. This work shall consist of manufacturing, transporting, and placing precast concrete utility manholes and handholes as specified in the contract. The type, size, details and locations of the vaults shall be as shown on the plan or established by the Engineer.

541.02. MATERIALS. Materials shall meet the requirements of the following subsections of Division 700- Materials:

Portland Cement	701.02
Air-Entraining Portland Cement	701.03
High Early Strength Portland Cement	701.04
Fine Aggregate for Concrete	704.01
Coarse Aggregate for Concrete	704.02
Mortar, Type IV	707.03
Bar Reinforcement	713.01
Air-Entraining Admixtures	725.02(b)
Retarding Admixtures	725.02(c)
Water Reducing Admixtures	725.02(f)
Water Reducing and Retarding Admixtures	725.02(g)
Water	745.01

Unless otherwise specified in the contract all bar reinforcements shall conform to the requirements of AASHTO M31-94 Grade 60, and all mesh shall conform to AASHTO M53M/M55-94.

Concrete shall meet the requirements of Concrete Class A, Section 501.

Concrete for precast utility vaults shall have a compressive strength at 28 days, as determined in accordance with AASHTO T22, of not less than 5000 psi. Where a 28 day test results as defined herein or in the contract is below specified strength, all concrete represented by that test shall be unacceptable for the requirements of this specification, and the Engineer reserves the right to reject all members containing that substrength concrete. The cement factor in mix design shall be not less than 611 lb. per cubic yard of concrete. The percent of air entrainment shall be 6.0 with a tolerance of plus or minus one percent and the slump shall be between one and three inches.

The proposed concrete mix design, including performance history and all requests for variance from the material requirements of these specifications, shall be submitted for approval in accordance with these specifications. Six weeks may be required for testing and approval of the mix design.

To check the Fabricator's mix design, test specimens of concrete may be required to be made from the aggregate, cement and admixtures which he/she proposes to use. The Fabricator shall furnish, at their own expense, whatever quantities of these materials may be required for the tests.

Any admixture containing calcium chloride shall not be used. Type II or Type III Portland Cement may be used. Only one type of cement and only one source of that type shall be used for anyone structure.

VERIZON MANHOLES. Utility Manholes shall be precast units meeting the requirements for H-20 wheel loads, 30% impact and soil pressure of 130 lbs/ft3. The vaults shall be fabricated to the sizes detailed on the plans.

1 OF 0
10-1-2001

They shall be designed for tongue-and-groove placement between upper and lower sections with a mastic sealant between sections (Rotondo Model #998-547-509, or equal). Other references that apply to the utility holes but not limited to the following: ASTM A153, A48, A123, ACI301, 318, 347 and CRSI. The complete utility manhole shall include a 36" diameter cast iron reversible frames and covers (Neenah 5900-J or equal) .The top of the cover shall have a logo in stand-up letters to read "TELEPHONE"

The Contractor shall install the frame to accommodate the distance from the top of manhole to the finish surface, including throats and extensions. The precast throats shall be 36" inside diameter opening to match utility hole with 8" thick wall. Wherever utility holes are located in streets, the throat shall be concrete from the top of the utility hole up to 10" below finish grade. Adjustments for finish grade from the top of the concrete to cover ring shall be accomplished with mortared brick. A sealant shall be applied to all joint locations (throat-utility hole, throat-brick, brick-covering) .Elsewhere the throat from the top of utility hole to the ring shall be concrete with a sealant provided between the throat, ring and top of utility hole. The concrete throat shall be installed so that the cover ring is flush with the finish surface. The actual height of the throat shall be determined on location prior to construction of forms. Further, each vault shall have one (1), 12" diameter sump hole directly under a 36" diameter hole in the roof. The floor of the utility hole shall slope towards the sump hole at the rate of 1/8" per 1' -0".

All vaults shall be equipped with 1-1/4" galvanized shank pulling eyes with 2" eye and 4" square washer on each side of the walls each wall opposite conduit penetrations. The pulling eye shall be suitable for a minimum 15,200 lbs @ 180 degree pull, and 3800 lbs @ 90 degree pull. Also, the vaults shall be manufactured with conduit penetration knockouts, (Condux Formex Duct Terminators or equal) and waterproof duct plugs for all ducts. A break membrane shall be on all terminators connected to ducts.

CATV HANDHOLES. Utility Handholes shall be precast units meeting the requirements for H-20 wheel loads, 30% impact and soil pressure of 130 lbs/ft3. The Handholes shall be heavy duty adjust to grade type composite concrete box with collar and cover 3'X6'X4' deep (CDR Systems Corporation, Menlo Park, California - CDR Model or equal)

The complete utility hole shall include a 36" diameter cast iron reversible frame and cover (Neenah 5900-J or equal) .The top of the cover shall have a logo in stand-up letters to read "CATV"

The Contractor shall install the frame to accommodate the distance from the top of manhole to the finish surface, including throats and extensions. The handhole shall be equipped with 1-1/4" galvanized shank pulling eyes with 2" eye and 4" square washer on each side of the walls.

541.03. DESIGN AND DRAWINGS. The Fabricator shall submit concrete mix design, design calculations, and working drawings in accordance with subsection 105.03. The precast concrete utility manholes and handholes shall be designed for 0' to 5' of earth cover, high water table at finish grade, and H-20 wheel loads in accordance with the current AASHTO Standard Specifications for Highway Bridges and shall be designed to protect against buoyancy.

541.04. QUALITY CONTROL. The Fabricator shall demonstrate a level of quality control testing that satisfies the Agency as to his/her ability and commitment to produce concrete to the requirements of this specification. A satisfactory program of quality control shall include gradation and moisture determinations of the aggregates, as well as slump, air content, and strength determinations of the concrete. These tests shall be performed at regular and suitable

intervals and actively used to maintain the quality of the concrete within the specified requirements.

541.05. INSPECTION. Materials furnished and the work performed under this Section shall be inspected by the Agency or their approved representative. The Engineer shall have the authority to reject any material or work which does not meet the requirements of these specifications. Advance notification of at least three weeks must be provided by the Fabricator to the Agency concerning his/her intention to commence work.

541.06. CONCRETE TESTING.

General. Precast manholes and handholes shall be manufactured in a plant which maintains a quality control laboratory complete with equipment for measuring the properties of fresh and hardened concrete. As a minimum, the laboratory shall be equipped with a compression testing machine, curing room or chamber, apparatus for measuring slump and air entrainment, and a complete sets of aggregate sieves and sieve shakers. The compression testing machine shall be calibrated yearly by an independent laboratory using equipment which is certified by the National Bureau of Standards.

Testing of Compressive Strength. Specimens shall be six inch by twelve inch standard cylinders, made by the Fabricator in accordance with AASHTO T23. Fabrication of test specimens shall conform to AASHTO M20S and shall be supplied by the Fabricator. For each member the Fabricator shall make for the Agency the following minimum number of specimens:

Four specimens to determine compliance with the 28-day strength requirement. The specimens shall be cured under the same conditions as the member from the time of casting until member is removed from the form. At that time, the specimens shall be moved to storage where curing shall continue under standard conditions in accordance with AASHTO T23. These specimens shall be retained by the Fabricator for testing by the Agency.

The average of the compressive strength of each of two specimens shall constitute a test result. Specimens shall be tested either at the Materials and Research Division Central Laboratory, or at the manufacturer's plant laboratory. An Agency representative shall witness all tests.

541.07. CURING. The precast vaults shall be cured for sufficient length of time so that the concrete will develop 5000psi strength in 28 days or less. Anyone of the following methods of curing or combinations thereof may be used;

Steam Curing. The vaults may be low pressure, steam-cured by a system that will maintain a moist atmosphere.

Water Curing. The vaults may be water-cured by any method that will keep the sections moist.

Membrane Curing. A sealing membrane conforming to the requirements of AASHTO M48 may be applied and shall be left intact until the required concrete compressive strength is attained. The concrete temperature at the time of application shall be within 10°F of the atmospheric temperature. All surfaces shall be kept moist prior to the application of the compounds and shall be damp when the compound is applied.

541.08. HANDLING AND INSTALLATION. Care shall be taken during storage, hoisting, and handling of the precast units to prevent cracking or damage. No units shall be shipped until a

compressive strength of 5000psi has been attained. Units damaged by improper storing or handling shall be replaced by the Contractor at his/her expense.

Vaults shall be placed on approved level foundations as detailed on the plans or these specifications. The Contractor shall install the frame and cover. The conduit shall be brought into the vault as shown on the plans and as directed by the Engineer with concurrence of the utility company inspector.

Excavation for vaults shall be to the required depth and shall include 6" beneath the floor, and twelve (12) inches beyond the perimeter of the floor, for a level, compacted base of material specified on the plans.

All excavation shall be confined to as little surface area as possible, keeping within all applicable safety requirements.

All frame and covers shall be constructed to final grade unless otherwise directed by the Engineer.

At manhole and handhole locations, conduits shall maintain a minimum separation of at least 3 inches of clearance from the outside surfaces of the vault walls, floor or roof and power or other foreign conduits. A minimum of 12 inches of clearance shall separate gas, water, oil mains,. etc. from the outside surfaces of vault walls, floor or roof.

541.09. METHODS OF MEASUREMENT. The quantity to be measured for payment will be the number of the type and size of precast concrete utility vaults specified, complete and accepted in place.

541.10. BASIS OF PAYMENT. Precast concrete utility vaults will be paid for at the contract unit price each for the type specified, which price shall be full compensation for detailing, fabricating, quality control testing, furnishing, transporting, handling and installing the material specified, including the concrete, reinforcement, manhole necks, manhole frames and covers, and any other material contained within, or attached to the unit(s), and the furnishing of all labor, tools, equipment, and incidentals necessary to complete the installation of the work specified including but not limited to, excavation and backfill.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
541.21	Concrete Vault (Mod. - Telephone)	Each
541.21	Concrete Vault (Mod. - CATV)	Each

SECTION 620 - FENCES

620.10 BASIS OF PAYMENT, is hereby modified by deleting paragraph three and replacing it with the following:

Payment at the unit price for installation of new gates in existing fence lines shall include removal of existing fencing, and posts, adding new posts, brace rods, truss rods, gate frames, fabric ties, and all incidentals and appurtenances necessary to complete the work as detailed in the plans and standards.

Payment will be made under:

Pay Item		Pay Unit
620.16	Gate for Chain - Link Fence, 6 Feet (Mod.)	Linear Foot

SECTION 624 – UNDERGROUND UTILITY SYSTEMS

SECTION 624 – UNDERGROUND UTILITY SYSTEMS, is hereby made a new section of the specifications, superceding all previous editions and their modifications.

624.01, DESCRIPTION This work shall consist of the construction of cable telephone underground conduit systems, an underground television conduit system and a VTans underground conduit system. This work shall also include conduit termination in this specification.

All work described above shall be in accordance with these specifications and in conformity with the lines, grades, dimensions, locations and details shown on the plans or established by the Engineer. The terms "Duct" and "Conduit" are used interchangeably in this specification.

Verizon shall provide a full time inspector when necessary during excavation, installation and backfill operation. Prior to backfilling trenches the Contractor shall notify the Engineer and Verizon (tel. 802-263-0702). Inspections will be scheduled for the construction of the new conduit system location and depth. All work must be accepted by Verizon and the engineer. Non-complying construction will be brought into compliance as directed at the expense of the Contractor. It is the responsibility of the installer to notify the Engineer and Verizon prior to backfilling. If notice is not given, Verizon (though approval of the Engineer) shall have the right to require any or all work to be exposed for visual inspection at the expense of the Contract.

624.02, MATERIALS:

CATV Conduit: (size noted on the plans)
PVC Schedule 40 Heavy Wall Rigid Conduit, conforming to subsection 710.06 of Division 700 - Materials, and to NEMA Standard TC-2.

Verizon Conduit: (size noted on the plans)
PVC Schedule 40 Heavy Wall Rigid Conduit, conforming to subsection 710.06 of Division 700 - Materials, and to NEMA Standard TC-2.

Vermont Agency of Transportation Conduit: (size noted on the plans)
PVC Schedule 40 Heavy Wall Rigid Conduit, conforming to subsection 710.06 of Division 700 - Materials ,and to NEMA Standard TC-2.

Conduit Spacers: Interlocking high-density polyethylene module spacers for direct burial including base pad, base spacer, intermediate modules and module cap as required. Spacer systems to be used as noted on the plans. Other systems may be used subject to approval by the Engineer.

Controlled Density Fill - Excavatable: The Contractor shall be responsible for producing a mix design meeting the requirements of this section. Controlled density fill is to be batched at a ready mix plant and is to be used at a slump of approximately 10 to 12 inches. It shall be flowable, require no vibration and after it has been placed can be excavated by hand tools and/or small machines. Compressive strength at 28 days shall be a minimum of 30 psi and a maximum of 80 psi; compressive strength at 90 days shall be less than 200 psi. Materials shall meet the requirements of the following Sections of Division 700 - Materials.

Portland Cement	701.02
Portland-Pozzolan Cement	701.05
Fine Aggregate for Concrete	704.01
Air-Entraining Admixtures	725.02(b)
Water	745.01

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The mix design shall be submitted for approval and shall be accompanied by compression test data at 90 days for at least five cylinders cast with the proposed mix design. Cylinders shall be prepared in accordance with ASTM D 4832. At the Engineer's discretion, evidence of successful past performance for a proposed mix design may be accepted in lieu of compression tests.

624.03. GENERAL. Verizon representative shall inform the Engineer of any improper construction techniques and/or inferior materials observed during their inspections. The engineer shall have the authority to reject any material or work which does not meet the requirements of these specifications. The Contractor shall request the services of DIG SAFE and where needed UVM "DIG SAFE" for the purposes of utility location.

The conduit system shall be constructed in a continuous manner, from cable vault to cable vault, rather than in segments.

624.04. EXCAVATION. The conduit trench shall be excavated to the required depth and to a width sufficient to install the conduit. Method of installation shall be in accordance with conduit manufacturer's specifications and recommendations.

Where an existing utility is found to conflict with the proposed work, the location, elevation and size of the utility shall be accurately determined without delay by the Contractor and the information shall be furnished, in writing, to the Engineer for resolution of the conflict. Excavation for handholes shall be to the required depth and shall include 6-inch depth beneath the bottom for a level compacted sand base.

All excavation shall be confined to as little surface area as possible, keeping within all applicable safety requirements.

624.05. INSTALLATION OF CONDUIT. Conduit shall not be placed until the trench has been approved by the Engineer. Also, prior to backfilling conduits, the Contractor shall contact (through the Engineer) Verizon for inspection and approval.

The conduits shall be placed in accordance with the configuration(s) shown on the plans, with spacers placed as indicated. Joints for conduit shall be made with the type of joint cement supplied and recommended by the conduit manufacturer.

Where conduit is stubbed, caps shall be provided. After backfilling, the end of the stub shall be prominently marked.

No preformed bends are required. No heat source or additional tools shall be used. The CATV conduit shall be installed with minimum bends in such a manner as to insure that during the coaxial cable installation no cable is subjected to pulling tensions greater than the following maximums:

For .500" cable 200 lbs.
For .750" cable 420 lbs.

Verizon conduit bends shall be as noted on the plans.

Random conduits shall be mandreled, at the direction of the Engineer, with a 4-inch diameter solid mandrel.

Mandrel the four corners plus one conduit in each intermediate tier of the conduit structure.

Conduit spacers, as approved, must be used to insure 1-inch separation between conduits. Spacers to be place at 6-foot intervals or as recommended by the conduit manufacturer, and not more than 2 feet from manhole walls.

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Rubber type conduit plugs or PVC plastic caps, as approved by the engineer, shall be placed in all conduits which are terminated in vaults, closures, etc.

The Contractor shall furnish and install a nylon pull cord, which is rated at 500 lbs. Minimum tension, in all conduits. The pull cords shall be installed and the completed ducts shall be capped and plugged as directed by the Engineer with concurrence of the utility company inspector. The installed conduit shall be inspected and approved by the Engineer before backfilling.

The Contractor shall install plastic warning tape, describing buried lines and cables, along entire length of duct bank. The warning tape shall be placed 12" above the top of conduit.

Plastic duct joints shall be made watertight by the use of a brush applied comment as recommended by the manufacturer.

Duct bends required for passing duct under existing line of duct banks shall be made up by the use of 22 degree or 30 degree elbows. Field bends shall be avoided whenever possible.

Ducts entering manhole or vault walls shall terminate with bell ends grouted into manhole or vault wall. Entry into existing manholes shall be accomplished by use of core drill.

Ducts entering existing manhole shall be grouted in place with minimum 2500 psi concrete. All existing cables and equipment in a manhole shall be protected from possible damage. All work in existing manholes shall be coordinated and approved by Verizon.

Prior to pouring controlled density fill (CDF), the duct shall be securely anchored to prevent movement during the pour. Anchors shall be within 2 ft and on each side of a joint, at each end of a bend, and at a maximum distance of 10 ft between anchors.

The Contractor shall confirm, before placing duct lines, that the surface on which CDF is to be poured is undisturbed original ground or firmly compacted earth free from voids, rock or rubble.

Where a new entry for conduit must be made into the wall of an existing vault, the Contractor shall core drill or otherwise remove the concrete to provide a neat opening of the size shown on the plans. Conduit entry shall be done as provided in the previous paragraph. Conduit shall be grouted in place. No entry into existing vaults shall be allowed without the presence or permission of the utility company inspector.

All frame and covers shall be constructed to final grade unless otherwise directed by the Engineer.

624.06. BACKFILL. All Duct Banks shall be backfilled with CDF to the elevations shown on the plans. After the CDF has cured for a minimum of 24 hours and has obtained sufficient strength to support the weight of foot traffic without deformation for earthen backfill or vehicle traffic for paving operations, approved material shall be placed over the encased ducts. The material shall be brought to subgrade beneath roadway, grass belt, sidewalk, bike path, and any other paved or gravel areas. For grassed areas the material shall be brought to within three inches of the finished grade, a three inch layer of topsoil placed and the area seeded and mulched in accordance with the applicable requirements of Section 651. Paved, concrete or gravel areas shall be replaced in kind as directed by the Engineer.

Controlled Density Fill shall be pumped into the sleeved duct bank to fill the spaces between the ducts and sleeve.

624.07. ADJACENT UTILITIES. In excavating for conduits, the Contractor shall be attentive to the adjacent utilities with respect to type of materials, size, age, condition, type of construction, couplings and joints and pressure within. These factors shall determine the allowable separation. Damage to other utilities shall be repaired by the Contractor at his expense.

0 0F/0

When crossing foreign structures, the conduit shall be located either above or below the foreign structure depending on grade. The minimum separation between utility conduit systems and other conduit systems or foreign pipes such as water, gas mains, etc., shall be at least 6 inches of clearance when crossing and 12 inches when paralleling.

At vault and other locations, conduit shall maintain a minimum separation of at least 3 inches of clearance from the outside surfaces of the vault walls, floor or roof and power or other foreign conduits.

When crossing water laterals to hydrants, if lateral valve is located between the main and hydrant, the conduit shall be located so as to provide a minimum of 12 inches clearance from the valve.

When a condition is encountered other than above, such as the requirement for rerouting or relocation of another utility, bypasses, etc., the Engineer shall be notified immediately of consultation and agreement with both utility companies involved.

624.08. METHOD OF MEASUREMENT: The quantity of Ducts Concrete Encased- Duct Bank, Ducts Concrete Encased -Duct Bank Roadway, and Ducts Concrete Encased -Duct Bank Through Sleeve will be paid for at the contract unit price per linear foot. Measurement for Duct Banks will be made along the centerline of the main duct bank from the face of Verizon Manhole #116B to the face of Verizon Manhole #119A. No deduction shall be made for the length through intermediate manholes and no additional measurement shall be made for the two and four duct runs to handholes off the centerline of the main duct bank.

624.09. BASIS OF PAYMENT: The accepted quantities of each type duct bank will be paid at the contract unit price per unit for the item specified in the contract, which price shall be full compensation for furnishing, transporting, handling and installing the conduit material (including conduit, conduit spacers, transition couplings, elbows and other fittings, caps, plugs, pulling wire, marking tape, and all other material needed for a complete direct burial duct system), controlled density fill, and concrete grout, including but not limited to excavation and backfill, loading and transporting to the job site all materials required, disposal of unused materials off-site, making new entries into existing vaults and the furnishing of labor, tools, equipment and incidentals necessary to complete the work. Any additional depth of excavation required to construct conduit under other utilities, and the cost thereof, shall be included.

Backfill above the level of the controlled density fill will be paid at the unit prices of the following items as applicable: Topsoil, Subbase of Crushed Gravel (Fine Graded), Bituminous Concrete Pavement (PG 64-28), and Portland Cement Concrete Sidewalk, 5 inch.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
624.20	Ducts, Concrete Encased (Mod. - Duct Bank)	Linear Foot
624.20	Ducts, Concrete Encased (Mod. - Duct Bank, Roadway)	Linear Foot
624.20	Ducts, Concrete Encased (Mod. - Duct Bank, Through Sleeve)	Linear Foot

SECTION 625 - SLEEVES FOR UTILITIES

625.03. INSTALLATION, is hereby modified by deleting paragraph one and two and replacing them with the following:

Sleeves shall be installed by boring or drilling, jetting or jacking without boring will not be permitted. Before any work has begun within the limits of operation, the CONTRACTOR shall have assembled all tools, materials, and equipment which will be required. When the CONTRACTOR has started the boring and jacking operations, he will proceed in a continuous operation without stopping.

During boring and jacking, the pavement shall not be disturbed. sleeve pipe shall be positively joined in accordance with standard procedures.

After the sleeve has been installed, the boring operation trenches or pits shall be backfilled in layers not exceeding 8" compacted depth, with each layer thoroughly compacted. Any surplus material shall be disposed off-site.

Submittals: The Contractor shall submit a detailed work plan to the Engineer for approval a minimum of 2 weeks prior to commencing construction. The work plan shall describe the proposed means and methods including; equipment design, equipment dimensions, methods of operation, methods of dealing with obstructions, proposed materials, equipment layout, procedures and manpower schedule for use in the pipe casing installation.

625.05. BASIS OF PAYMENT, is hereby modified by deleting paragraph two and three and replacing them with the following:

Excavation and backfill of trenches and boring or jacking pits for the placement of sleeves shall not be paid separately, but shall be included in the unit price for this item.

Payment will be made under:

Pay Item	Pay Unit
625.10 Sleeves for Utilities (Mod. – Jack and Bore)	Linear Foot

ADDITIONAL SPEC TO FOLLOW TO RESIDENT ENGINEER/CONTRACTOR
A. DTA,
SGP
10/1/2001

**B PLASTIC POLYVINYL CHLORIDE (PVC)
AND B POLYPROPYLENE CONDUIT
CONCRETE ENCASED
MAIN CONDUIT**

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1.04 The B plastic conduit (thin wall) is made of virgin PVC with expanded bell on one end. It is fully compatible with B or C polypropylene conduit.

1.05 The B polypropylene conduit (rust colored) has an expanded bell on one end to fit the barrel of the mating conduit. The polypropylene conduit is fully compatible with B or C plastic conduit.

1.06 Section 622-100-010 outlines the various permits that may be required before start of construction.

1.07 When laying conduit, labor-saving equipment such as excavators, concrete cutting machines, etc, should be utilized to reduce trench opening time, minimize physical effort, and provide overall economy.

1.08 To ascertain that conduit has been properly laid, the conduit work should be inspected throughout the construction period by a thoroughly trained inspector who is completely familiar with job and construction specifications. The inspector should confirm that the conduit run is in the correct location, proper conduit depth is maintained, the trench bottom is level, no cracked or broken duct sections are used, all joints are properly made, horizontal and vertical alignment is maintained, the conduit is properly encased in concrete, selected backfill is used, and all specifications are met. In the event that underground obstructions or special field conditions require minor deviations from work plans, the inspector should note such changes with appropriate measurements on his copy of the work print for future posting to permanent records.

1.09 To facilitate subsequent cable placing operations, particular care should be taken concerning

1.01 This section covers the methods of laying concrete encased 4-inch diameter B plastic and B polypropylene conduit encased.

1.02 This section is being reissued to add reference to the B polypropylene conduit. Since this issue is a general revision, no revision arrows have been used to denote significant changes.

1.03 The B plastic PVC and B polypropylene conduit are 4-inch (id), single-bore conduit intended for use in single- or multiple-duct construction with concrete encasement. They can be used in structures such as bridges, viaducts, etc, where they can be cast in the concrete of the structure.

**Reprinted to comply with modified final judgement.

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ing direction changes and the construction of joints. Curves, sweeps, and grade changes should be detailed on the work print. The ideal conduit structure is one that is essentially straight and level between manholes but allows grading for drainage into manholes. Direction changes should be as gradual as possible.

1.10 The types and uses of plastic conduit, couplings, and bends are covered in Section 622-020-100.

2. PRECAUTIONS

2.01 Both the cement used to join plastic PVC conduit and the adhesive used to join polypropylene conduit contains materials that are toxic and highly flammable. Concentrated vapors can be harmful and explosive. The following precautions must be observed when using or storing each of these materials.

- (a) Do not use near heat, sparks, or flames.
- (b) Use with adequate ventilation. Forced ventilation shall always be used to ventilate manholes whenever anyone is working in the manhole. See Section 620-140-501.
- (c) Standard manhole testing procedures shall be used for testing the manhole atmosphere.
- (d) Avoid breathing vapors and prolonged contact of these materials with the skin. After use, wash hands thoroughly. Do not take internally. In case of contact with eyes, flush immediately with water and get medical attention.
- (e) Do not leave the cement containers where they can be exposed to contact by the public.
- (f) When not in use, close containers tightly.
- (g) Dispose of used containers as outlined in local practices. Do not pour the contents of these containers into manholes, manhole excavations, or conduit excavations. Do not discard these containers in incinerators, refuse piles, etc.
- (h) A natural bristle brush must be used to apply the cement. Synthetic bristles will dissolve in these materials.

2.02 The requirements for shoring excavations as specified in Section 622-020-020 shall be observed.

2.03 Safety headgear and eye protection should be worn at all times when trenching and when handling or laying conduit.

2.04 Where blasting is necessary, it shall be done only by a licensed contractor.

2.05 At the excavation site, particularly near natural gas areas, landfills, and similar areas, the excavation should be tested for gas by following the procedures for testing manholes, as covered in Section 620-140-501.

2.06 The applicable precautions covered in Sections 620-102-010 and 622-100-010 shall be considered a part of this section and shall be observed.

3. HANDLING

3.01 If practical, distribute the conduit along the route of the trench, as shown in Fig. 1. Where conduit cannot be distributed along the trench, route delivery and storage procedures should be determined locally.

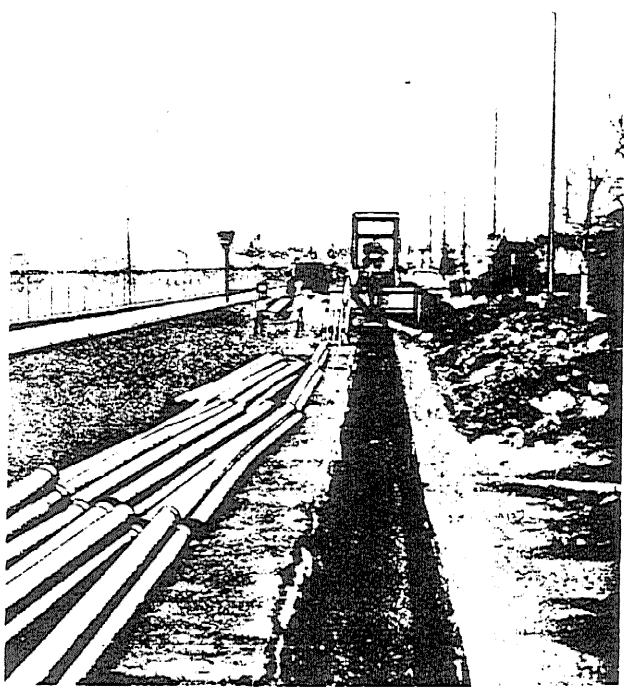


Fig. 1 —Conduit Along Trench Site

3.02 Do not let banded or single units of conduit drop in a free fall.

3.03 When moving or carrying conduit, be careful not to strike the ends against a hard surface. Damage to the ends can cause defective joints.

3.04 Both PVC and polypropylene have a tendency to assume the shape of whatever they are resting on, particularly when the storage area is warm. Store both types of conduit in accordance with the following:

(a) Conduit should be stored in the shipping pallet. Individual pallets should be stacked frame on top of frame to transfer the weight of the conduit to the pallet frame.

(b) When stacking loose conduit, place the conduit in a tightly packed orderly arrangement with all pieces oriented in the same direction.

(1) *Outside:* Place on a smooth surface of soil or sand.

(2) *Inside:* Place on a smooth level floor.

(c) Do not stack higher than 5 feet.

(d) Do not place wood strips under stacks of conduit.

(e) Conduit to be stored for more than 30 days should be protected from direct sunlight.

(f) If possible, store conduit in a cool location.

4. TRENCHING

4.01 In most cases, the trench sidewalls will act as a form for the concrete encasement of the conduit. The trench width should be no wider than is necessary to provide a minimum of 1-1/2 inches of concrete along each side of the duct structure. An excess width of even a few inches can greatly increase the amount of concrete required to complete the encasement.

4.02 Pavement should be carefully cut mechanically to prevent unnecessary widths at the top of the trench and thus reduce the amount of surface that must be repaved.

4.03 The total width of the trench will depend upon the number of ducts placed plus horizontal separation between ducts. The total depth of the trench will depend upon the number of ducts, vertical separation (if required) between ducts, and the depth of cover (Section 919-240-100).

4.04 Table A indicates the trench width, concrete depth, and volume of concrete required for various duct formations where there is no vertical separation and 1-inch horizontal separation between ducts. Figure 2 illustrates a nine-duct formation of this type in a straight conduit section.

TABLE A
8 PLASTIC PVC AND 8
POLYPROPYLENE CONDUIT
NO VERTICAL SEPARATION
TRENCH DIMENSIONS

DUCT FORMATION		TRENCH WIDTH	CONCRETE DEPTH	APPROX CU
NO.	NO.	(NOTE 1)	(NOTE 2)	YDS CONCRETE
WIDE	HIGH	(INCHES)	(INCHES)	PER 100 TRENCH FEET
3	2	18-1/2	12-1/2	3-1/2
3	3	18-1/2	17	4-1/2
3	4	18-1/2	21-1/2	5-1/2
4	2	23-1/2	12-1/2	4-1/2
4	3	23-1/2	17	6
4	4	23-1/2	21-1/2	7

Note 1: Includes 1-1/2 inches from each side of duct formation to trench wall and 1 inch between ducts.

Note 2: Includes 1-1/2 inches below bottom tier and 2 inches above top tier.

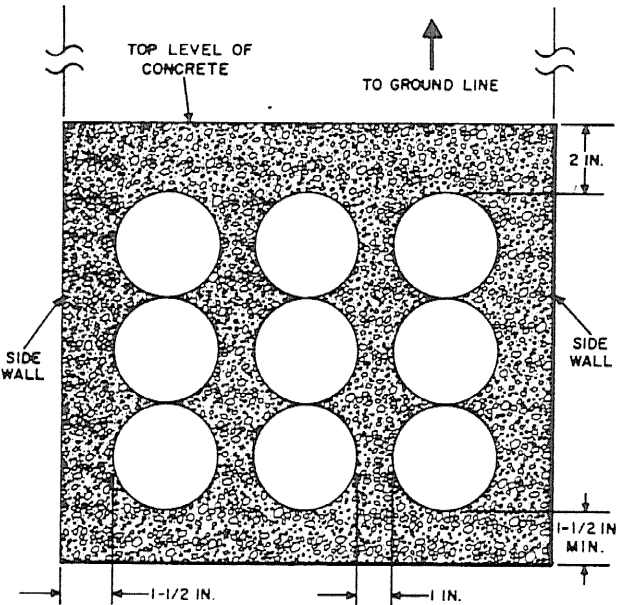


Fig. 2—Trench Dimensions—No Vertical Separation

 For formations not listed in Table A, the approximate cubic yards of concrete required per 100 trench feet can be obtained with the following formula:

Formula: $V = [9.2WH + 9H + 18.7W + 7]0.026$
V = volume of concrete (cubic yards/100 trench feet)
W = number of ducts wide
H = number of ducts high
Example: Duct formation 5 wide by 10 high
 $[(9.2 \times 5 \times 10) + (9 \times 10) + (18.7 \times 5) + 7]0.026$
 $[460 + 90 + 93.5 + 7]0.026$
 $[650.5 \times 0.026] = 16.9$ cubic yards.

4.05 Table B indicates the trench width, concrete depth, and volume of concrete required for various duct formations where there is 1-inch vertical and horizontal separation between ducts. Figure 3 illustrates a nine-duct formation of this type in a straight conduit section or at curves and grade changes.

TABLE B				
8 PLASTIC PVC AND 8 POLYPROPYLENE CONDUIT 1-INCH VERTICAL SEPARATION TRENCH DIMENSIONS				
DUCT FORMATION		TRENCH WIDTH	CONCRETE DEPTH	APPROX CU
NO.	NO.	(NOTE 1)	(NOTE 2)	YDS CONCRETE
WIDE	HIGH	(INCHES)	(INCHES)	PER 100 TRENCH FEET
3	2	18-1/2	12-1/2	4
3	3	18-1/2	19	5
3	4	18-1/2	24-1/2	6-1/2
4	2	23-1/2	12-1/2	5
4	3	23-1/2	19	6-1/2
4	4	23-1/2	24-1/2	8-1/2

Note 1: Includes 1-1/2 inches from each side of duct formation to trench wall and 1 inch between ducts.

Note 2: Includes 1-1/2 inches below bottom tier, 2 inches above top tier, and 1 inch between top ducts.

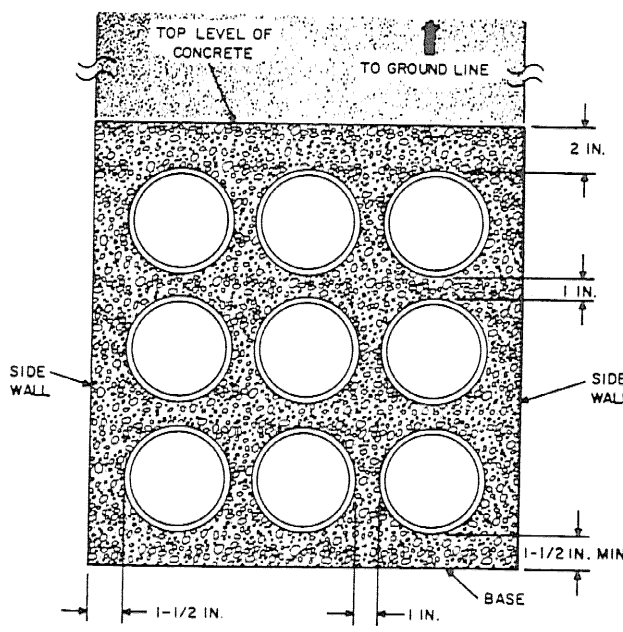


Fig. 3—Trench Dimensions—1-Inch Vertical and Horizontal Separation



For formations not listed in Table B, the approximate cubic yards of concrete required per 100 trench feet can be obtained with the following formula:

Formula: $V = [13.8WH + 10.7H + 13.4W + 4]0.026$

V = volume of concrete (cubic yards/100 trench feet)

W = number of ducts wide

H = number of ducts high

Example: Duct formation 5 wide by 10 high

$[(13.8 \times 5 \times 10) + (10.7 \times 10) + (13.4 \times 5) + 4]0.026$

$[690 + 107 + 67 + 4]0.026$

$[868 \times 0.026] = 22.6$ cubic yards.

5. LAYING CONDUIT



At the trench site, examine each conduit length and remove all mud and other debris such as lath, paper, stones, etc, from the ducts before placing them in the trench.

5.01 Place and join the duct sections in the trench. Lengths shorter than 5 feet should not be used at manholes or the cable entrance facility. Do not run polypropylene conduit into buildings.



Use only cement suitable for the kind of duct material being used; cement containers for use with ABS are marked for use with ABS; similarly marked are the containers to

be used with PVC. Use only the adhesive supplied with B polypropylene conduit on polypropylene conduit. Solvent cement which is shipped with ABS and PVC conduit must not be used with polypropylene conduit.

5.02 Join the conduit as follows (Fig. 4):

(1) Wipe any mud or dirt from the end of the duct and from the inside of the coupling or bell.

(2) Apply cement to the **spigot end** of the duct with a natural bristle brush up to the insertion depth line.

(3) Polypropylene conduit has been designed with an interference fit bell and spigot joint. If the spigot does not seat in the bell to the insertion line drive the conduit home using a mallet and a wooden block as a buffer.

Note: If PVC cement seizes before the spigot end is fully seated, use a handsaw to cut out the defective joint. If polypropylene adhesive dries on the spigot end before the joint is made recast the spigot end and insert into bell to complete joint.

5.03 The PVC cement and polypropylene adhesive should each have about the same consistency as oil base house paint. If it becomes too thick, discard and open a new can. When using polypropylene conduit and if immediate joint strength is required (eg, at field bends and manhole terminators), apply a thin coating of adhesive to the inside of the mating bell (or terminator). Allow a minimum of 5 minutes for adhesive to dry before completing the joint following Steps (2) and (3) of paragraph 5.02.

SECTION 622-340-200

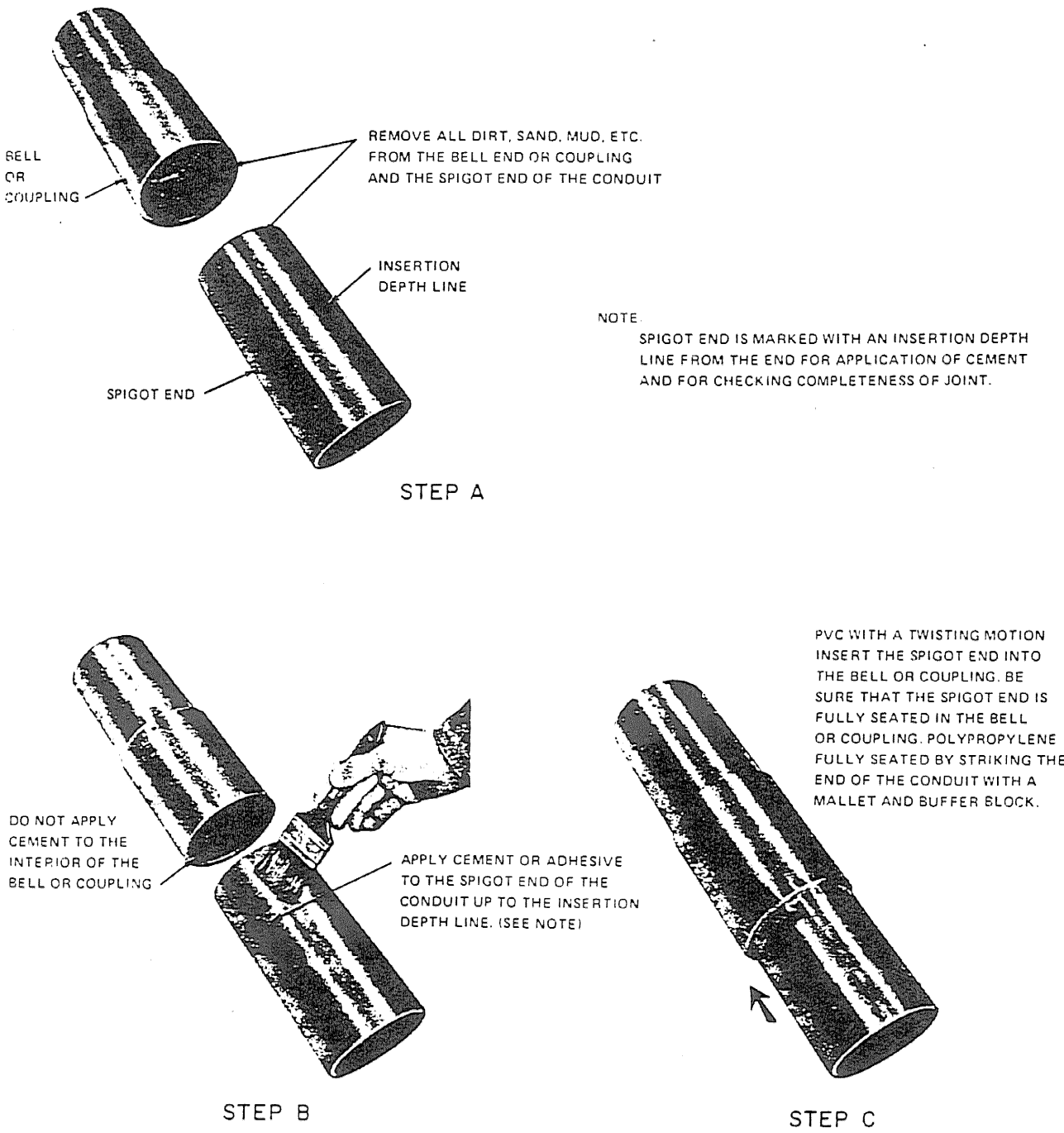


Fig. 4—Joining Conduit

SECTION 622-340-200

5.05 In straight sections up to and including three tiers high, stack the ducts one upon the other with no vertical separation. A minimum separation of 1 inch between vertical columns is obtained by use of temporary fork-type separators (Fig. 6). A monolithic (single pour) concrete encasement may be made with this duct formation.

(1) Place a wood or plastic strip approximately every 4 feet along the trench bottom so as to provide a minimum of 1-1/2 inches of clearance between the first tier of ducts and the trench bottom.

(2) Build up the duct structure in full formation; ie, when each tier of full lengths is laid 20 to 60 feet in the trench, place the second tier, and then the third tier. As the ducts are laid, do not follow deviations in trench alignment to maintain side clearance. Lay the duct as straight as possible, even though it may reduce side clearance for short distances. This is important to ensure against excessive pulling loads when placing cable.

(3) To provide the required horizontal separation between vertical columns of ducts, and from the trench sidewalls during construction, place locally fabricated separators. These should be on not more than 8-foot centers (Fig. 6).

5.06 In straight sections over three tiers high, either of two arrangements can be used, depending on the concrete encasing procedure:

(a) A monolithic (single pour) concrete encasement can be made in duct formations up to and including ten tiers high, provided that a minimum horizontal and vertical separation of 1 inch is obtained between adjacent ducts. These separations can be obtained by using permanent, commercially available plastic spacers. A minimum of 1-1/2 inches clearance is required between the first tier of ducts and the trench bottom.

(1) The base spacers should be placed along the trench bottom at intervals of not more than 8 feet. Set the first tier of ducts into the spacer grooves. Then place a tier of intermediate spacers, then the second tier of ducts, etc, and finally the spacer over the top tier, making cer-

tain that each tier of spacers is securely locked to the next lower tier. If the formation will exceed ten tiers, place approximately one-half the total number of tiers but not more than ten so that the concrete can be poured in successive stages.

(2) Where the formation will be wider than the maximum width of spacer available, slightly offset groups of four unit spacers in the same tier.

(b) The ducts can be stacked one upon the other up to four tiers high, with a minimum clearance of 1 inch between vertical columns obtained by the use of temporary fork-type separators. Place a wood or plastic strip approximately every 4 feet along the trench bottom so as to provide a minimum of 1-1/2 inches of clearance between the first tier of ducts and the trench bottom. The concrete is then poured to encase to the top of the third tier; then up to three additional tiers can be added. Where the duct structure is wider than the maximum width of spacer available, slightly offset groups of four unit spacers in the same tier. Always provide a cap spacer tier over the top tier of conduit to help prevent duct flotation.

5.07 At Bends, Sweeps, or Grade Changes: At bends having radii of 80 feet or less, or at grade changes of 20 percent (11.3 degrees) or more, permanent spacers are required to provide a minimum horizontal and vertical separation of 1 inch between adjacent ducts and a minimum clearance of 1-1/2 inches between the first tier of ducts and the trench bottom. The spacers should be located on not more than 8-foot centers and should be held in place with reinforcing rods driven 6 to 12 inches into the ground. A monolithic (single pour) concrete encasement can be made, provided the formation does not exceed ten tiers high. If the formation will exceed ten tiers, place approximately one-half the total number of tiers, but not more than ten, so the concrete can be poured in successive stages.

ISS 4, SECTION 622-340-200

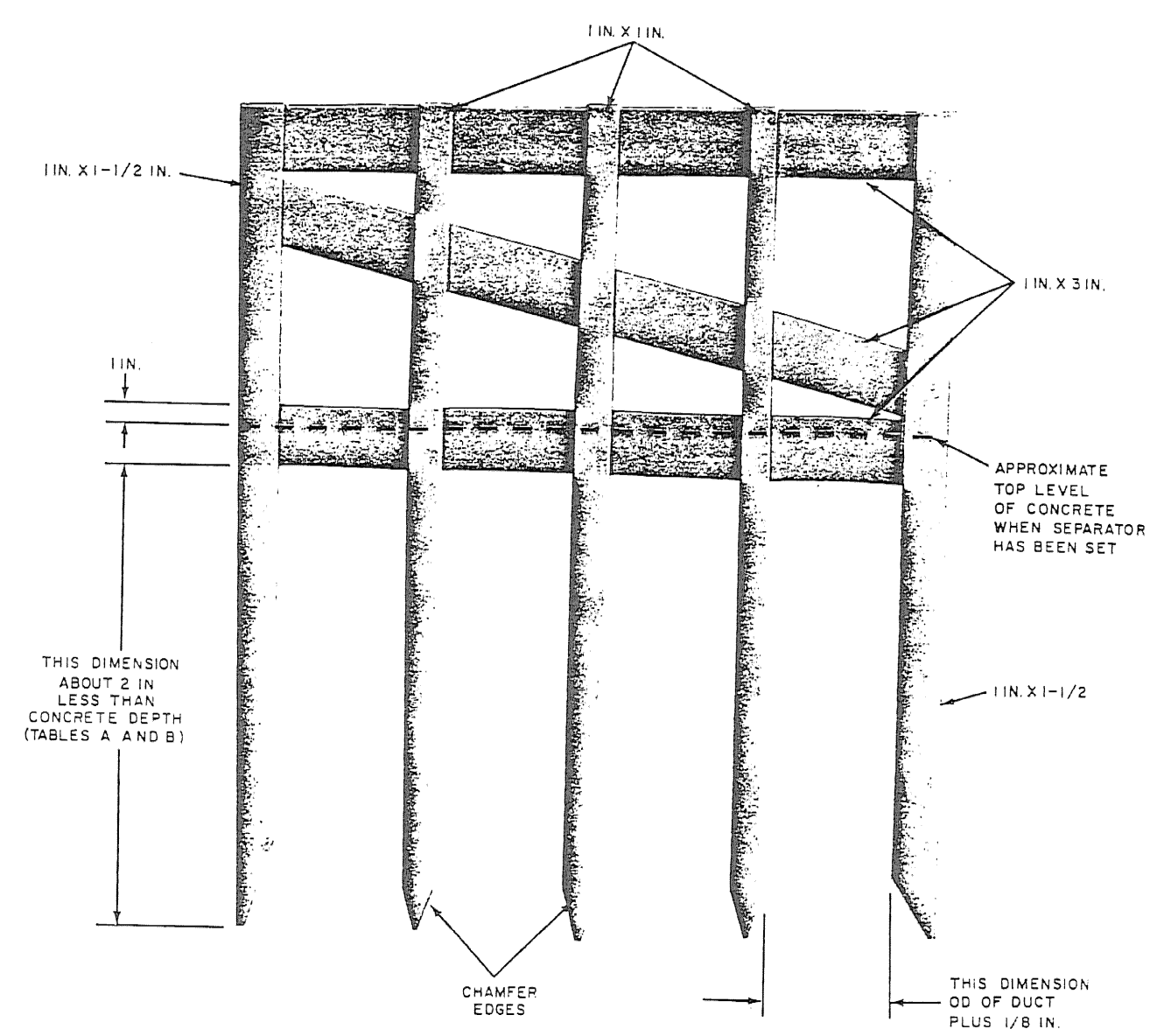


Fig. 6—Fork-Type Separator

5.08 Straight lengths of conduit can be used to construct horizontal or vertical bends or sweeps with a radius of 40 feet or more. Duct joints for the entire bend section should be made outside the trench at least 2 hours before placing to help ensure an effective joint. An example of a partially completed bend constructed with straight lengths of conduit is shown in Fig. 7.

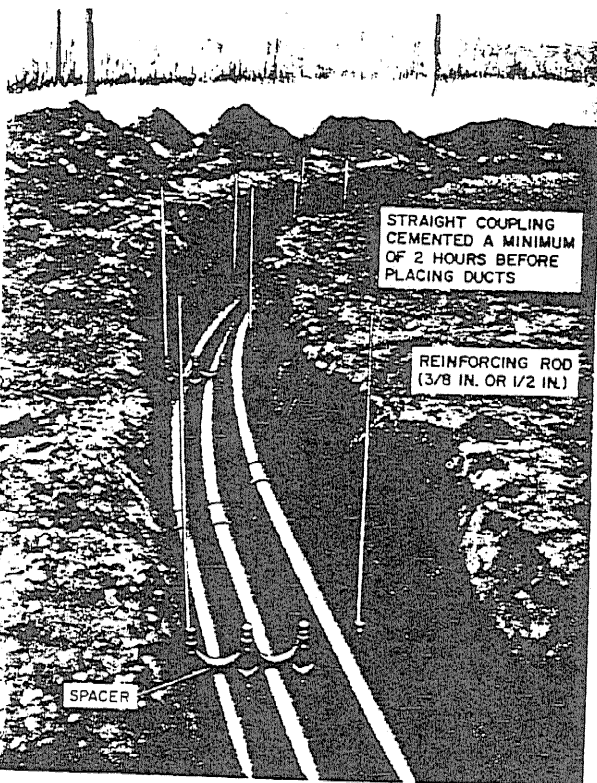


Fig. 7—Partially Completed Bend

When constructing bends with the bend segments, assemble the components on a flat surface alongside the trench to be sure the completed bend lies in a single plane.

5.09 The preformed 7-degree and 30-degree, 15-foot radius bend segments should be used to construct bends where a direction change with a radius of less than 40 feet is needed. The bend segments may be used singly or in combination to achieve the required direction change.

5.10 For mainline conduit, never use less than a 15-foot radius bend.

5.11 When it is necessary to stop construction in a section, 4-inch universal plugs can be used to temporarily seal the ducts against mud, dirt, etc (Fig. 8). Such plugs also can be used to advantage during manhole construction to keep duct entrances at manholes free of debris.

6. ENCASING

6.01 The concrete used to encase conduit is described in Section 622-020-020. It has a nominal compression strength of 2500 pounds per square inch. The slump should be 9 inches. It is important to use concrete of this type in order to permit adequate distribution and ensure proper support of the conduit. When the mix is too dry, flow to the bottom and between the layers of the duct formation will be difficult. When it is too wet, the ducts will float.

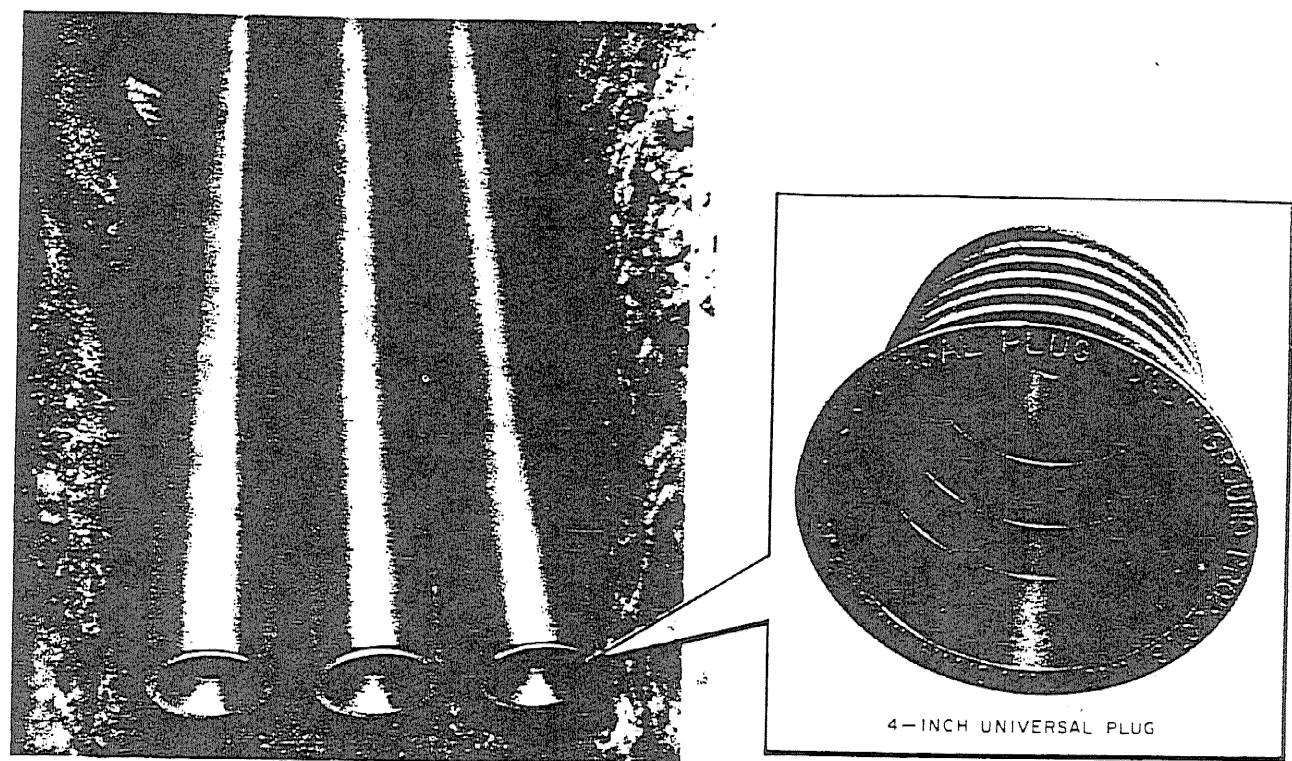


Fig. 8—Ducts Temporarily Plugged

6.02 When pouring concrete, adjust the delivery chute so the fall of concrete into the trench is as short as practicable. Use a splash board to divert the flow of concrete away from the trench sides to avoid dislodging soil and stones.

6.03 Encasement can begin as soon as enough of the duct structure has been completed so that pouring the concrete will not interfere with placing the conduit. Encase the conduit structure by pouring the concrete toward the free ends of the ducts. As the concrete is poured, use slicing bars or other similar tools to work the concrete down the sides of the formation and between ducts. It should be possible to see the concrete flowing along the bed of the trench just ahead of the point where it falls from the chute. This will assure the required minimum of 1-1/2 inches of concrete between the first tier of ducts and the bottom of the trench.

6.04 If separators are used, leave the separators in place until the concreting has been completed for at least 10 feet beyond the separator. When removing the separator, rock it slightly from side to side to ensure a good flow of concrete. Fill any remaining voids. Weights or ties should not be necessary to keep the ducts from floating if the separators are constructed so the lower crosspieces bear on the top duct. The lower crosspiece of the separator can be used as an approximate measure for the 2-inch cover required over the ducts.

6.05 To ensure complete encasement, use the methods described in the following paragraphs.

Formations With No Vertical Separation (Stacked With Separation Between Vertical Columns)

(a) **Three Ducts High:** Pour the concrete in a single pour to provide a 2-inch top cover. Work concrete down the sides of the formation and between the vertical columns.

SECTION 622-340-200

(b) **Four or More Ducts High:** Stack ducts four tiers high. Pour the concrete to encase to the top of the third tier. Raise the separators and add up to three additional tiers. Pour concrete to encase three tiers. Continue adding tiers until structure is complete, encasing three tiers at a time. On final pour, provide a 2-inch top cover.

Formations With Vertical and Horizontal Separation Between Ducts

(a) **Ten or Fewer Ducts High:** Where there is vertical and horizontal separation of 1 inch or more between the ducts and the duct structure is ten or fewer ducts high, a monolithic (single pour) encasement can be made. Work the concrete sufficiently to be assured of a good flow of concrete around the individual ducts. Pour sufficient concrete to provide a 2-inch top cover.

(b) **Eleven or More Ducts High:** Where there is vertical and horizontal separation of 1 inch or more between the ducts and the duct structure is more than ten ducts high, place half the total number of tiers and pour concrete to the bottom of the top tier. Place the remaining tiers and pour sufficient concrete to provide a 2-inch top cover. If the duct structure is more than 20 tiers high, place any number of tiers that is convenient but does not exceed ten. Encase to the bottom of the top tier. Place and encase successive portions of the duct structure. In all cases, work the concrete sufficiently to be assured of a good flow of concrete around the individual ducts.

7. BACKFILLING

7.01 Before backfilling, allow the concrete to cure for 1 to 2 hours. Because of the limited stiffness of the plastic conduit, it is important to allow sufficient time for the encasing concrete to develop some strength before backfill is placed. If the 1- to 2-hour waiting period will cause problems in some sections of the conduit run because of traffic, place temporary load-bearing plates over the trench or use C plastic conduit so backfill can be placed as soon as the concrete has been poured. Protect the concrete from weather—from drying too rapidly as well as from freezing (Section 622-020-020).

7.02 The first 12 inches of fill should be sand or other granular material. This fill should be thoroughly tamped using lightweight equipment, such as pneumatic or vibrating tampers. Complete the backfill with selected materials free of large stones, frozen material, etc.

8. MANDERELING

8.01 After backfilling, but before any required repaving begins, pull a D conduit mandrel (Fig. 9) through selected ducts. The mandrel will pass a curve of 15-foot radius. The conduit structure should be mandreled as follows:

(a) **Ten Ducts or Less:** Mandrel two diametrically opposite ducts.

(b) **Eleven Through Twenty Ducts:** Mandrel the four corners and a center duct.

(c) **Twenty-one or More Ducts:** Mandrel the four corner ducts plus one duct in each intermediate tier.

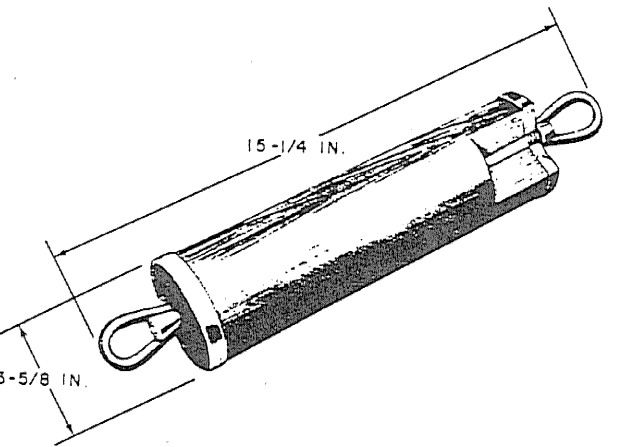


Fig. 9—D Conduit Mandrel

8.02 If the mandrel fails to pass through the duct being tested, either the duct is obstructed or misaligned, or the curve has too small a radius. The conduit must be exposed and the defect corrected. Encase the duct with concrete, backfill, and repeat the mandrel test in that unit of conduit.

9. PLUGGING DUCTS

9.01 At the completion of a manhole section, ducts are to be sealed, where required, in accordance with Section 628-220-200. Where duct sealing is not mandatory, it may be desirable, at local option, to

close each duct entrance with a 4-inch universal plug to keep the duct clean.

9.02 If ducts are dead-ended short of a terminating point with the intention of extending the run at a later date, they are to be sealed with solid rubber conduit plugs.

9.03 At the close of each work day, install temporary plugs, such as 4-inch universal plugs, in the ducts to keep out foreign materials.

AS-BUILT/RECORD DRAWINGS

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	FINAL
201.11	CLEARING & GRUBBING (INCLUDING INDIVIDUAL TREES AND STUMPS)	ACRE	1	
203.15	COMMON EXCAVATION	CY	250	
301.25	SUBBASE OF CRUSHED GRAVEL (FINE GRADED)	CY	350	
406.25	BITUMINOUS CONCRETE PAVEMENT (PS&A-25)	TON	60	
541.21	CONCRETE VAULT (MOD - TELEPHONE)	EA	3	
541.21	CONCRETE VAULT (MOD - CATV)	EA	4	
601.0415	18" DIOSP. D284 (2 - 7/8 x 1/2)	LF	48	
616.40	REMOVING AND RESETTING CURB	LF	10	
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 3" THK	SY	8	
620.15	GATE FOR CHAIN LINK FENCE, 8 FEET (MOD.)	LF	40	
621.57	ENERGY ABSORPTION ATTENUATOR	EA	2	
621.60	TEMPORARY TRAFFIC BARRIER	LF	843	
624.20	DUCTS, CONCRETE ENCASED (MOD - DUCT BANK - 18 TO 22)	LF	1,860	
624.20	DUCTS, CONCRETE ENCASED (MOD - DUCT BANK, ROADWAY - 18 TO 22)	LF	350	
624.20	DUCTS, CONCRETE ENCASED (MOD - DUCT BANK, THROUGH SLEEVES - 18 TO 22)	LF	315	
630.10	UNIFORMED TRAFFIC OFFICER	HR	150	
635.10	MOBILIZATION - MOD 1	LS	1	
641.10	TRAFFIC CONTROL - MOD 2	LS	1	
643.20	JACKING OR BORING WELDED STEEL PIPE (36")	LF	370	
651.15	SEED	LB	10	
651.15	FERTILIZER	LB	70	
651.20	AGRICULTURAL LIMESTONE	TON	0.3	
651.30	SODDING	SY	90	
651.35	TRIPKIL	CY	75	
676.27	PULL BOX - DOUBLE	EA	4	

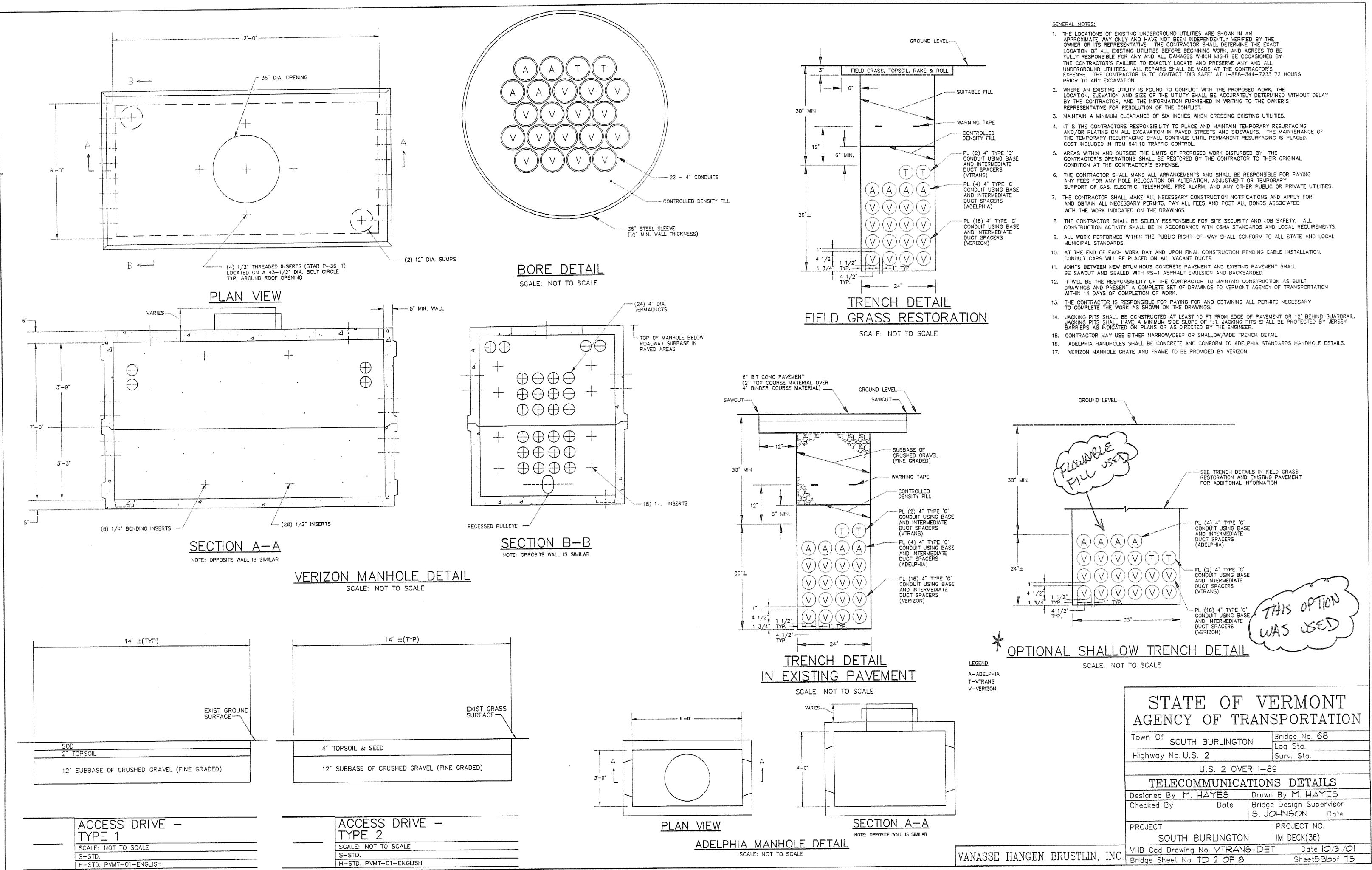
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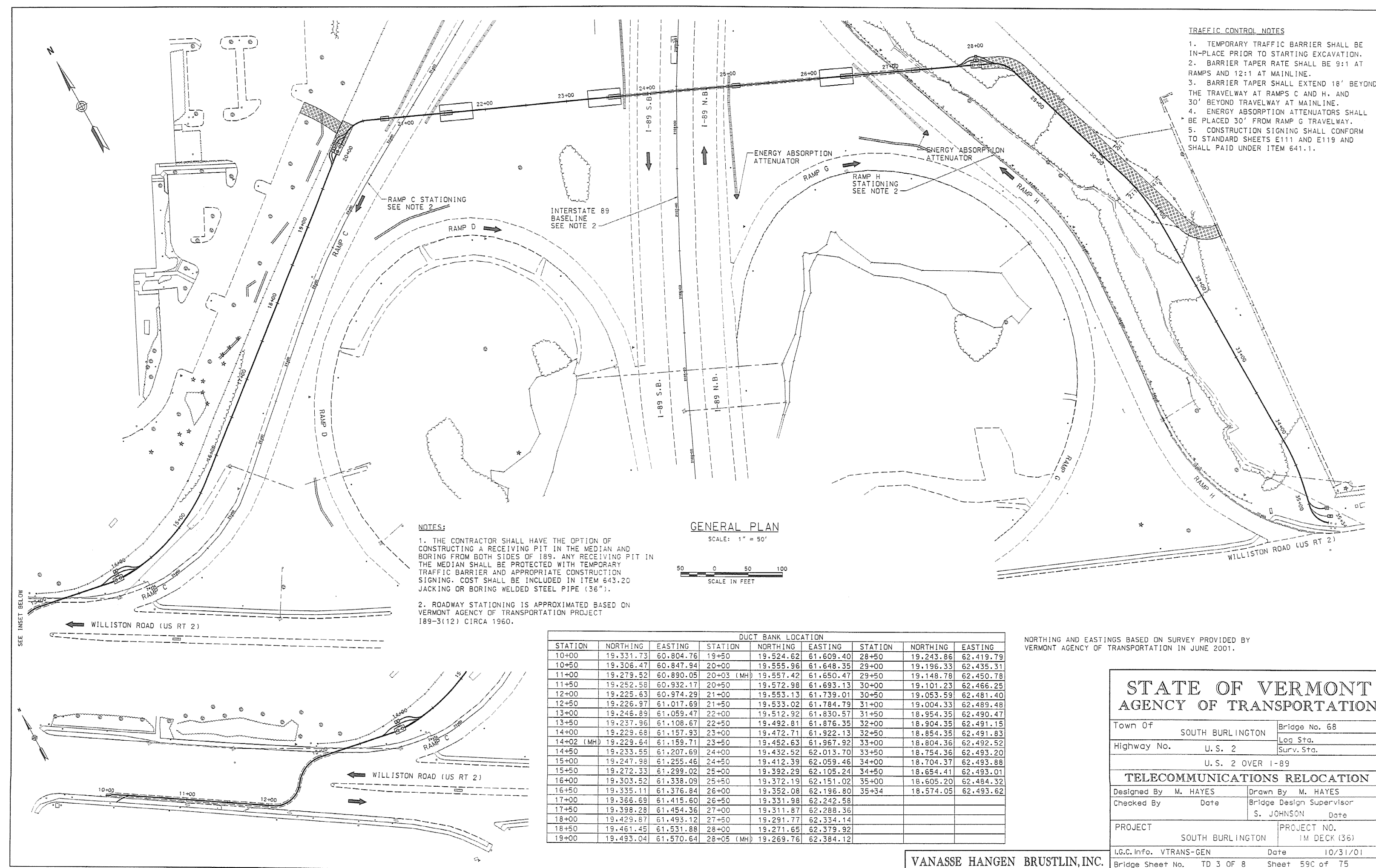
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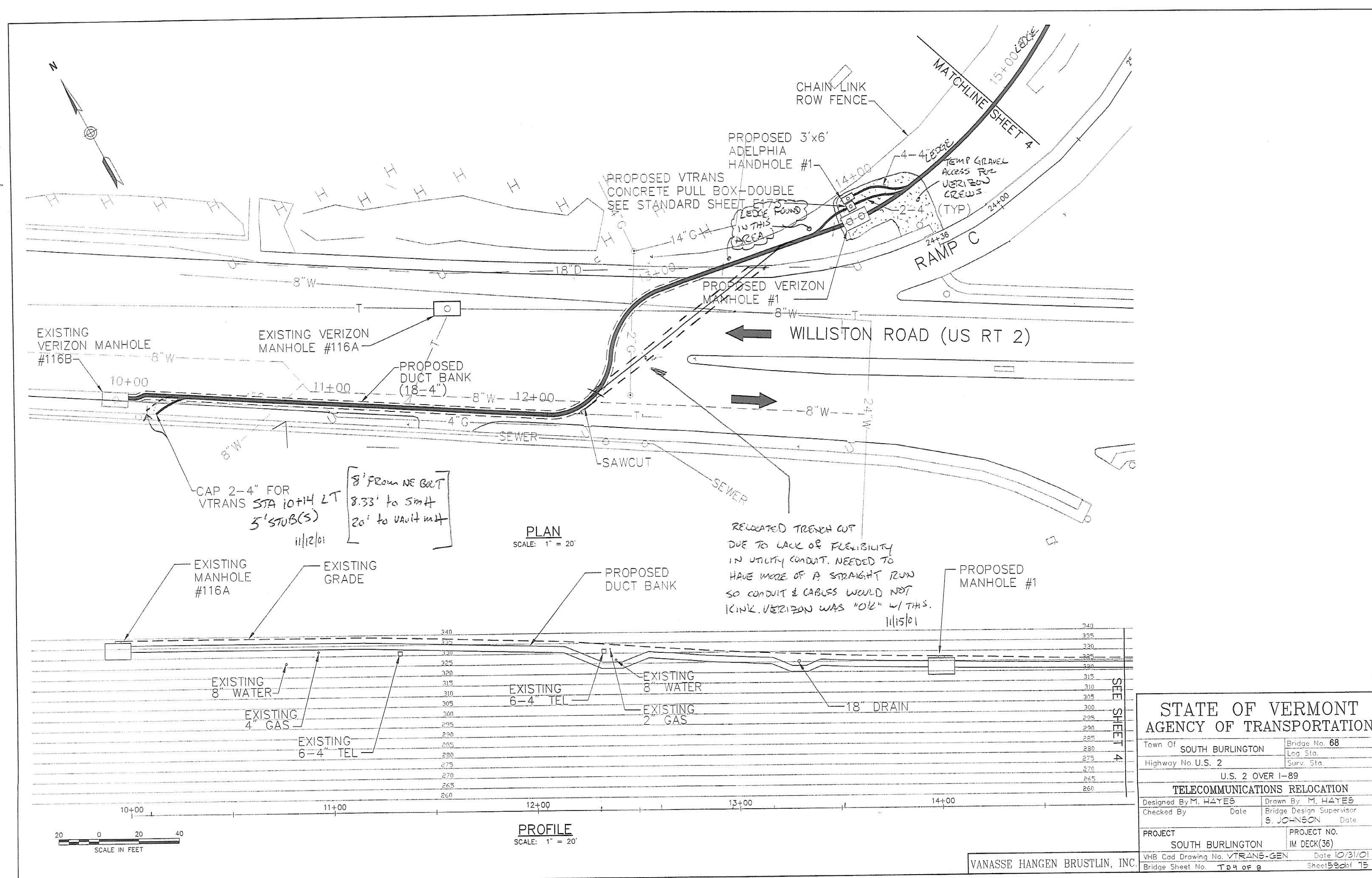
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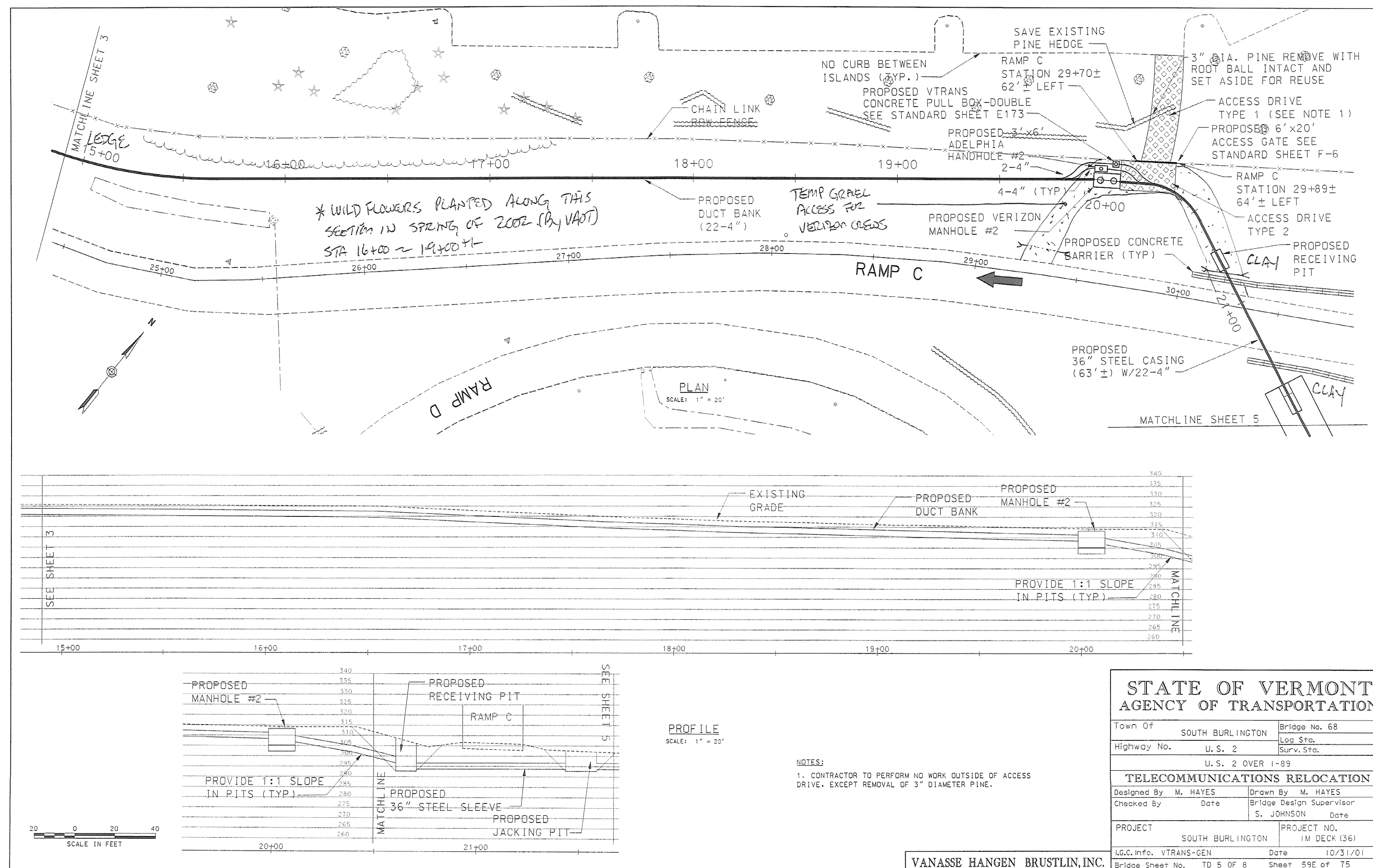
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PLANS 10/31/01

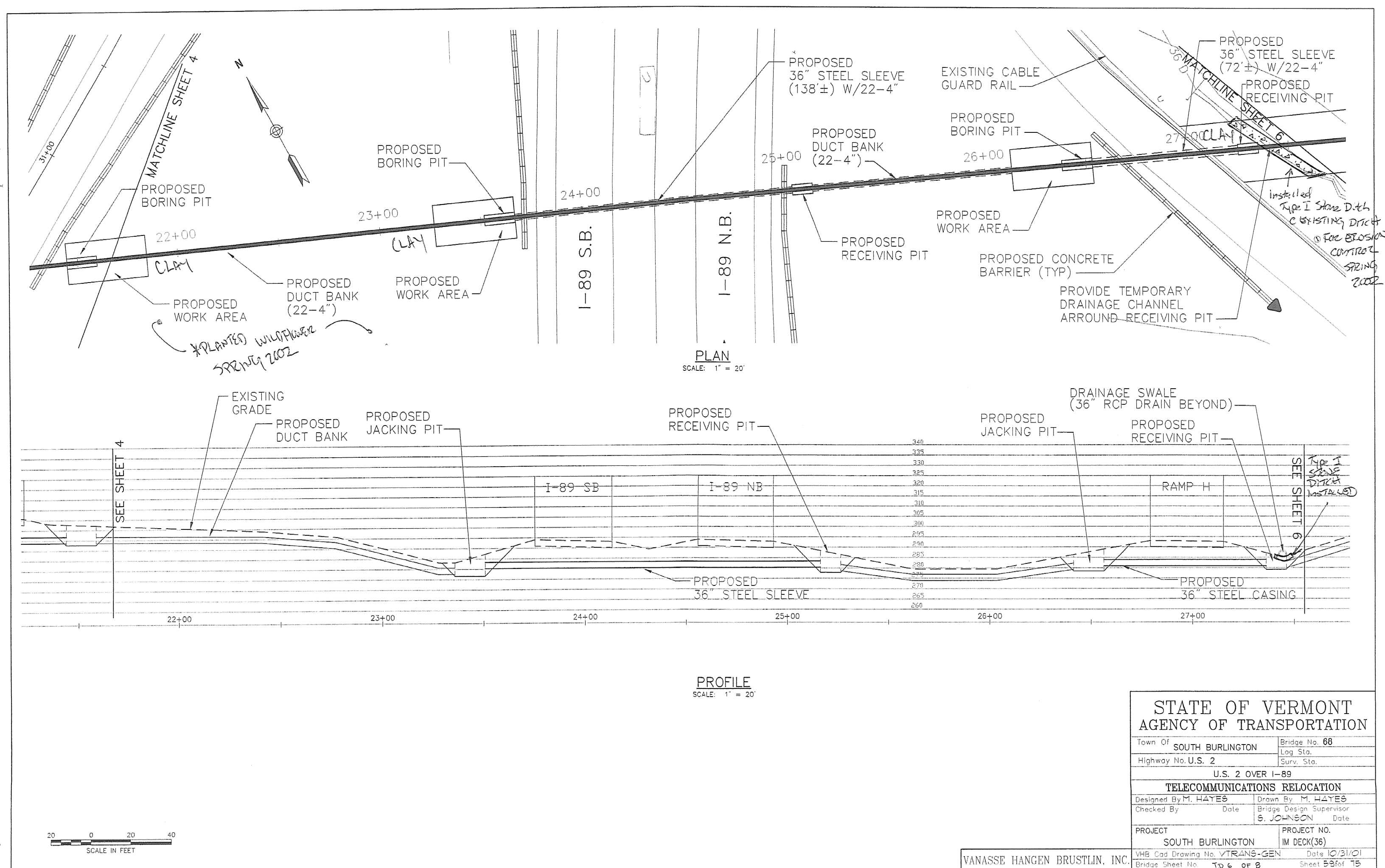
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Town Of SOUTH BURLINGTON	Bridge No. 68
Highway No. U.S. 2	Loop Sta.
U.S. 2 OVER I-89	
TELECOMMUNICATIONS DETAILS	
Designed By M. HAYES	Drawn By M. HAYES
Checked By	Date Bridge Design Supervisor
S. JOHNSON	
PROJECT	PROJECT NO.
SOUTH BURLINGTON	MI DECK(36)
VHB Cod Drawing No. VTrans-Telecomant	Date 10/31/01
Bridge Sheet No. TD 1 OF 8	Sheet B58 of 75

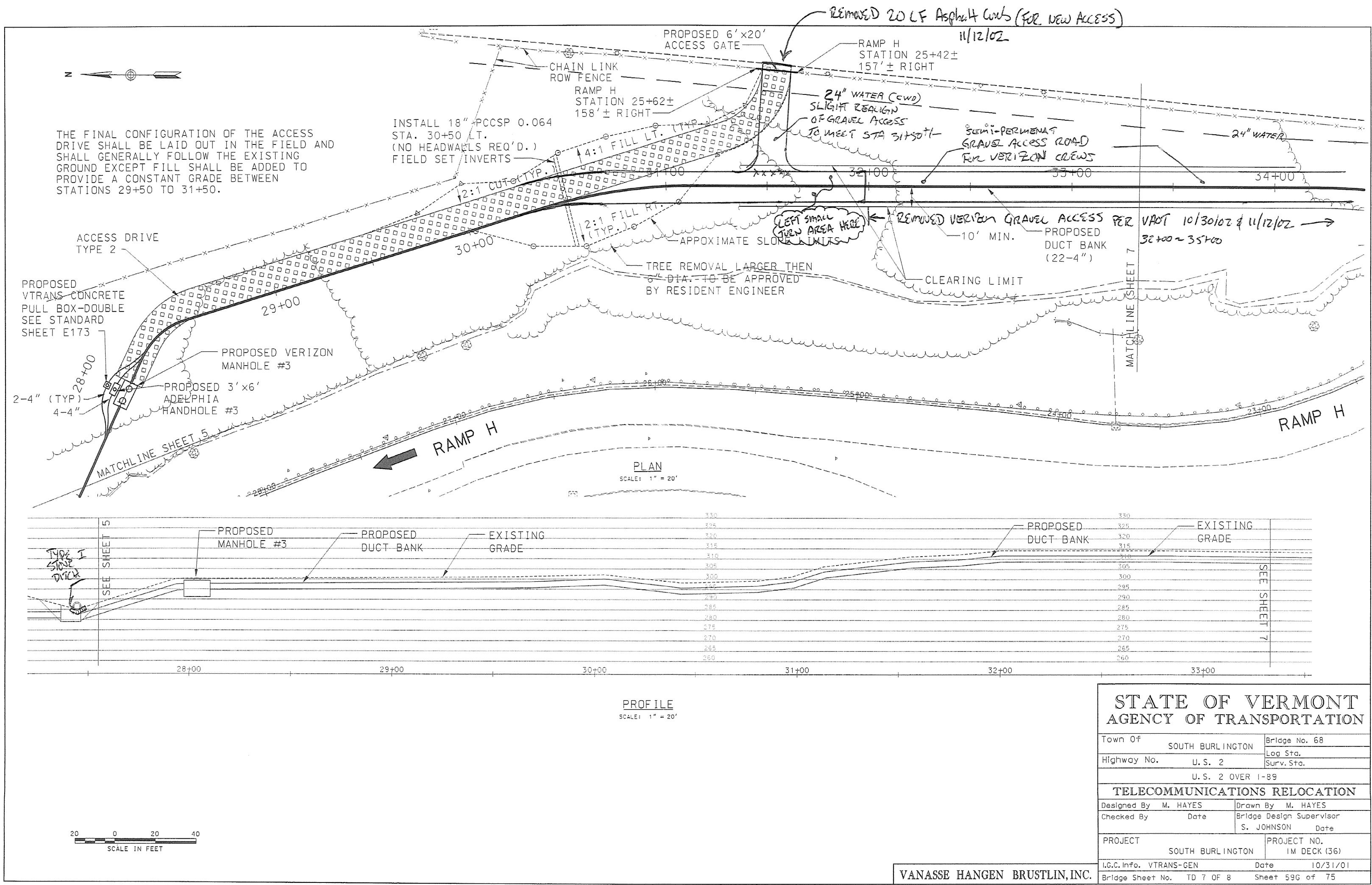


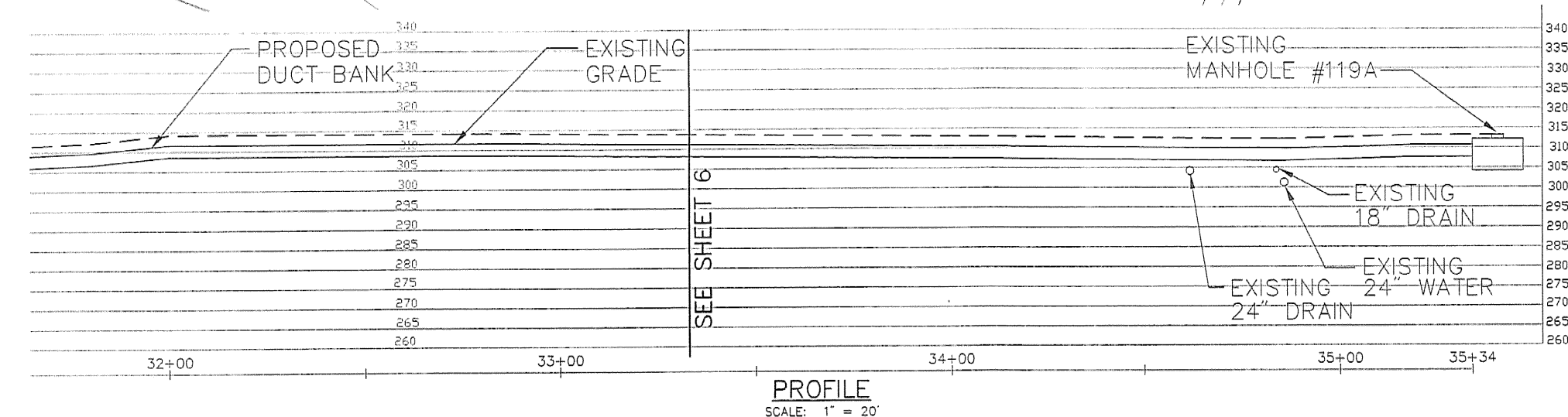
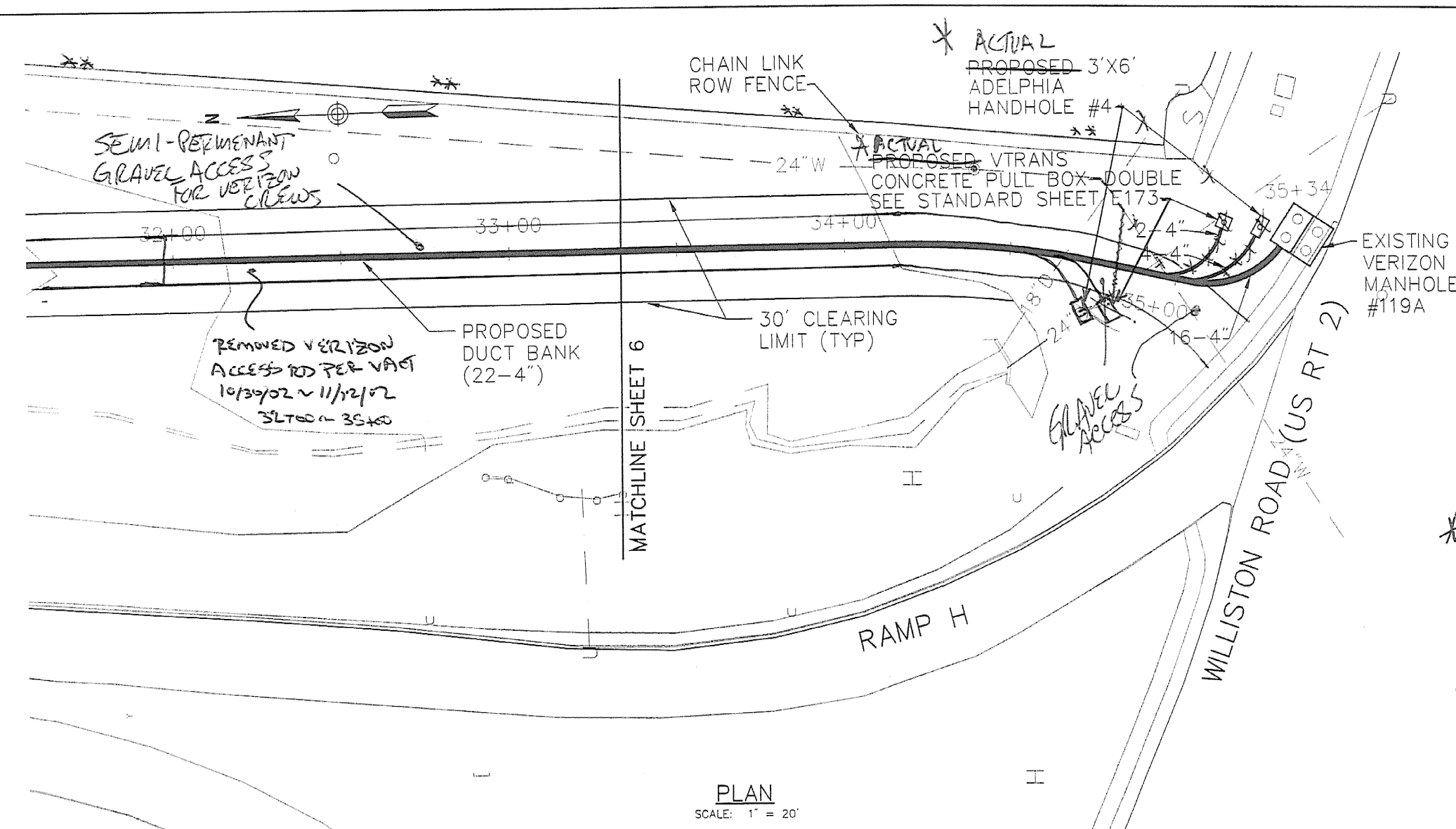












* FIELD CONDITIONS GAVENED THE
NEED TO RELOCATE THE CATV &
VADT HANDHOLDS TO CLEAR
EXISTING 8\"/>

** Holiday Inn Maintenance Cleared brush along
Row Fence 10/02. Saw Left Remainder
of Maple logs from clearing operations for
Holiday Inn @ their Request (11/12/02)

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of SOUTH BURLINGTON	Bridge No. 68
Highway No. U.S. 2	Loc. Sta.
U.S. 2 OVER I-89	
TELECOMMUNICATIONS RELOCATION	
Designed By M. HAYES	Drawn By M. HAYES
Checked By	Bridge Design Supervisor
	S. JOHNSON
PROJECT	PROJECT NO.
SOUTH BURLINGTON	IN DECK(35)
MBL (as Drawing No. VTRANS-GEN	Date 02/01
Bridge Sheet No. 1 of 3	Sheet 5 of 15

SOUTH BURLINGTON
IM DECK (36)
UTILITY STAKEOUT

DAVE HOSKING
10/23/01

FOR UTILITY DUST BANK
CONSTRUCTION

#	NORTHINGS	EASTINGS	ELEV.	DESC.
1	19709.8499	61835.1770	312.890	'HVCTRL
2	18832.3418	61630.1310	332.200	'HVCTRL
3	19043.2313	61168.3588	337.500	'HVCTRL
4	18829.3407	61624.5572	330.770	'HVCTRL
5	18709.8905	61894.4721	326.120	'HVCTRL
20	18866.4915	61179.6047	328.829	'HVCTRL
30	19275.0775	61039.0093	341.186	'HVCTRL
31	19409.4257	61347.0395	331.660	'HVCTRL
32	19588.1616	61519.6638	319.115	'HVCTRL
33	19760.7107	61688.5056	316.187	'HVCTRL
34	19709.7579	61835.1641	312.893	'HVCTRL
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41	19310.8805	61472.0105	323.220	'HVCTRL
42	19375.2736	61754.0091	306.921	'HVCTRL
43	19171.5994	61848.5160	301.790	'HVCTRL
44	19234.0415	62039.9038	296.325	'HVCTRL
45	19341.4913	62290.3197	291.027	'HVCTRL
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48	18828.6901	62385.5657	307.990	'HVCTRL
49	18720.8346	62387.1219	309.443	'HVCTRL
50	18652.8806	62420.4555	309.476	'HVCTRL
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52	19091.2935	62574.8767	312.757	'HVCTRL
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101	19306.4533	60847.9600	338.626	'CL 10+50 NAILPVT
102	19279.5233	60890.0349	338.417	'CL 11+00 NAILPVT
103	19252.5853	60932.1898	338.306	'CL 11+50 NAILPVT
104	19225.6146	60974.2713	338.286	'CL 12+00 NAILPVT
105	19226.9373	61017.6761	338.572	'CL 12+50 NAILPVT
106	19246.8968	61059.4645	337.951	'CL 13+00 NAILPVT
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108	19229.7233	61157.8190	340.140	'CL 14+00 T.WIT
109	19229.7291	61159.4749	340.233	'CL 14+02 MH TWIT
110	19233.5804	61207.8977	336.912	'CL 14+50 T.WIT
111	19247.9937	61255.6471	333.102	'CL 15+00 T.WIT
112	19272.2417	61293.2345	331.394	'CL 15+50 T.WIT
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142	19148.7674	62450.6527	305.859	!CL 29+50 T.WIT
143	19101.3106	62466.0453	306.385	!CL 30+00 T.WIT
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STANDARD SHEETS

E-III 03-11-97
E-II9 08-08-95
E-173 08-09-95
F6 06-01-94

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	FINAL
201.11	CLEARING & GRUBBING (INCLUDING INDIVIDUAL TREES AND STUMPS)	ACRE	1	
203.15	COMMON EXCAVATION	CY	260	
301.26	SUBBASE OF CRUSHED GRAVEL (FINE GRADED)	CY	330	
406.25	BITUMINOUS CONCRETE PAVEMENT (PG64-28)	TON	60	
541.21	CONCRETE VAULT (MOD.-TELEPHONE)	EA	3	
541.21	CONCRETE VAULT (MOD.-CATV)	EA	4	
601.0415	18" PCCSP 0.064 (2 - 2/3 x 1/2)	LF	46	
616.40	REMOVING AND RESETTING CURB	LF	10	
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	SY	6	
620.16	GATE FOR CHAIN LINK FENCE, 6 FEET (MOD.)	LF	40	
621.57	ENERGY ABSORPTION ATTENUATOR	EA	2	
621.90	TEMPORARY TRAFFIC BARRIER	LF	840	
624.20	DUCTS, CONCRETE ENCASED (MOD.-DUCT BANK-18 TO 22)	LF	1,860	
624.20	DUCTS, CONCRETE ENCASED (MOD.-DUCT BANK, ROADWAY-18 TO 22)	LF	330	
624.20	DUCTS, CONCRETE ENCASED (MOD.-DUCT BANK, THROUGH SLEEVE-18 TO 22)	LF	370	
630.10	UNIFORMED TRAFFIC OFFICER	HR	150	
635.10	MOBLIZATION - MOD.2	LS	1	
641.10	TRAFFIC CONTROL-MOD 2	LS	1	
643.20	JACKING OR BORING WELDED STEEL PIPE (36")	LF	370	
651.15	SEED	LB	10	
651.18	FERTILIZER	LB	70	
651.20	AGRICULTURAL LIMESTONE	TON	0.3	
651.30	SODDING	SY	90	
651.35	TOPSOIL	CY	75	
678.27	PULL BOX-DOUBLE	EA	4	

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SOUTH BURLINGTON	Bridge No. 68
Highway No. U.S. 2	Log Sta.
	Surv. Sta.

U.S. 2 OVER I-89

TELECOMMUNICATIONS DETAILS

Designed By M. HAYES	Drawn By M. HAYES
Checked By Date	Bridge Design Supervisor S. JOHNSON Date

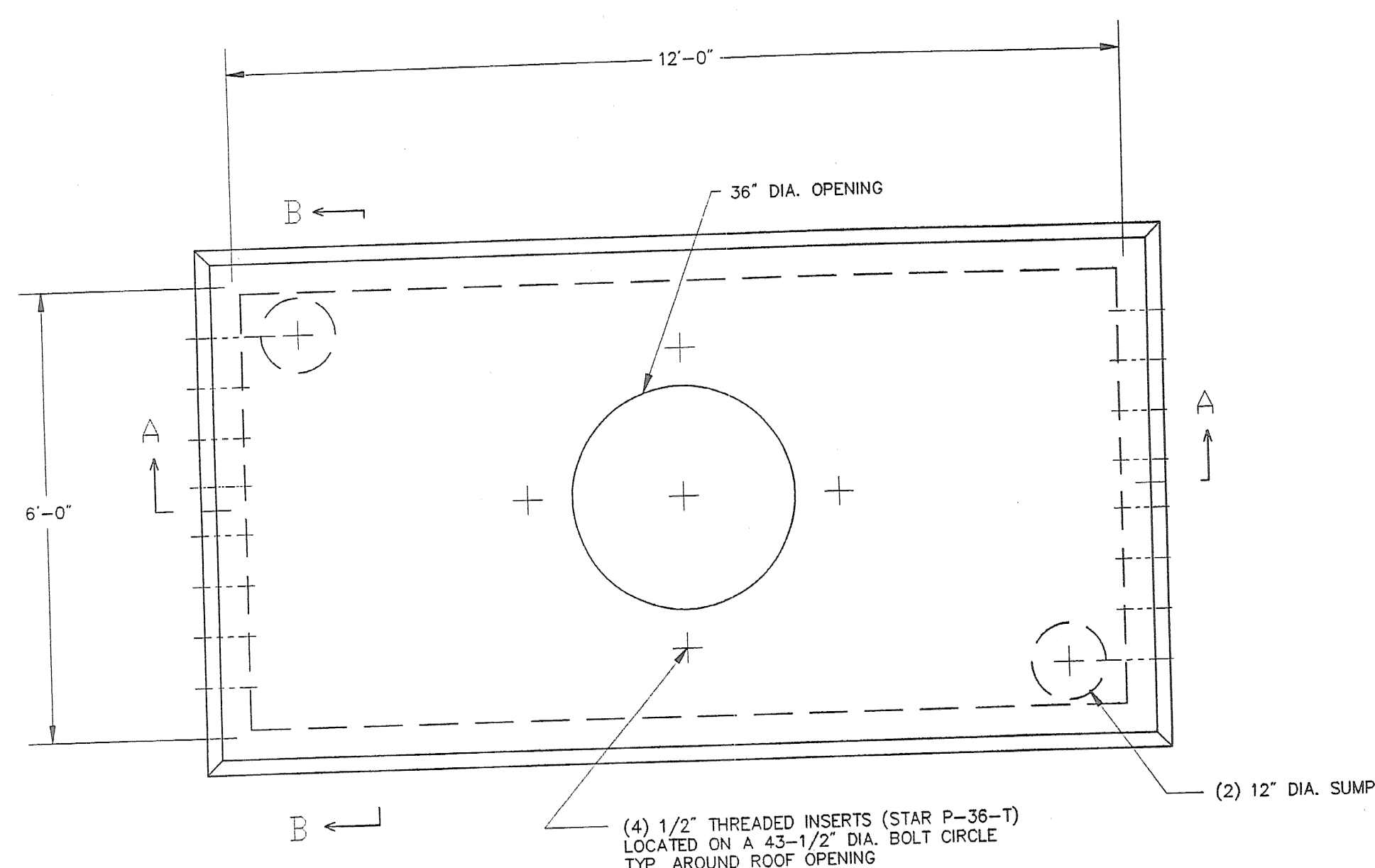
PROJECT SOUTH BURLINGTON	PROJECT NO. IM DECK(36)
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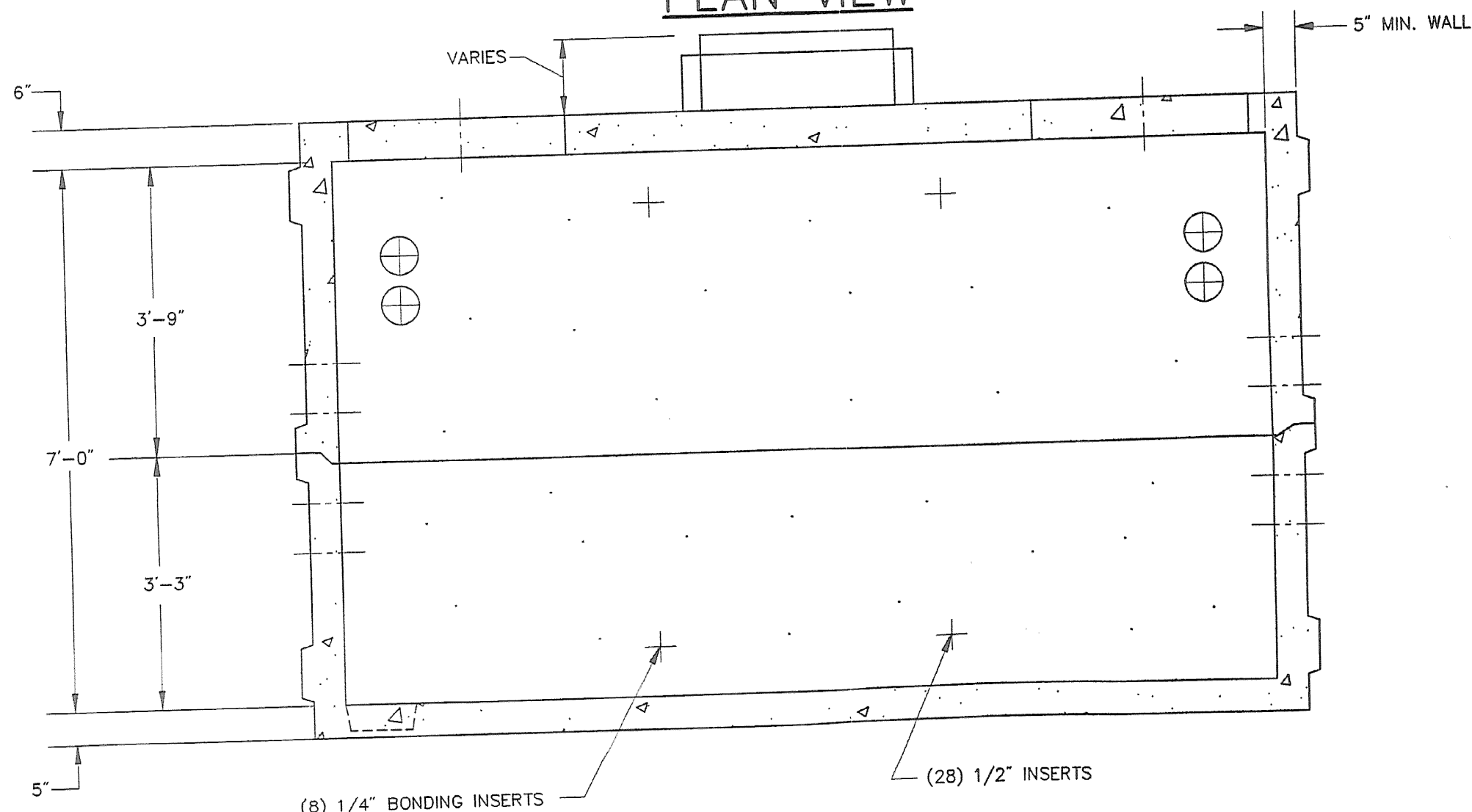
VHB Cad Drawing No. VTrans-Telecomant	Date 10/31/01
Bridge Sheet No. TD 1 OF 8	Sheet 59 of 75

GENERAL NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE BEGINNING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. ALL REPAIRS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR IS TO CONTACT "DIG SAFE" AT 1-888-344-7233 72 HOURS PRIOR TO ANY EXCAVATION.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR RESOLUTION OF THE CONFLICT.
3. MAINTAIN A MINIMUM CLEARANCE OF SIX INCHES WHEN CROSSING EXISTING UTILITIES.
4. IT IS THE CONTRACTORS RESPONSIBILITY TO PLACE AND MAINTAIN TEMPORARY RESURFACING AND/OR PLATING ON ALL EXCAVATION IN PAVED STREETS AND SIDEWALKS. THE MAINTENANCE OF THE TEMPORARY RESURFACING SHALL CONTINUE UNTIL PERMANENT RESURFACING IS PLACED. COST INCLUDED IN ITEM 641.10 TRAFFIC CONTROL.
5. AREAS WITHIN AND OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
6. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS AND SHALL BE RESPONSIBLE FOR PAYING ANY FEES FOR ANY POLE RELOCATION OR ALTERATION, ADJUSTMENT OR TEMPORARY SUPPORT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PUBLIC OR PRIVATE UTILITIES.
7. THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY PERMITS, PAY ALL FEES AND POST ALL BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS.
8. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. ALL CONSTRUCTION ACTIVITY SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
9. ALL WORK PERFORMED WITHIN THE PUBLIC RIGHT-OF-WAY SHALL CONFORM TO ALL STATE AND LOCAL MUNICIPAL STANDARDS.
10. AT THE END OF EACH WORK DAY AND UPON FINAL CONSTRUCTION PENDING CABLE INSTALLATION, CONDUIT CAPS WILL BE PLACED ON ALL VACANT DUCTS.
11. JOINTS BETWEEN NEW BITUMINOUS CONCRETE PAVEMENT AND EXISTING PAVEMENT SHALL BE SAWCUT AND SEALED WITH RS-1 ASPHALT EMULSION AND BACKSANDS.
12. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN CONSTRUCTION AS BUILT DRAWINGS AND PRESENT A COMPLETE SET OF DRAWINGS TO VERMONT AGENCY OF TRANSPORTATION WITHIN 14 DAYS OF COMPLETION OF WORK.
13. THE CONTRACTOR IS RESPONSIBLE FOR PAYING FOR AND OBTAINING ALL PERMITS NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE DRAWINGS.
14. JACKING PITS SHALL BE CONSTRUCTED AT LEAST 10 FT FROM EDGE OF PAVEMENT OR 12' BEHIND GUARDRAIL. JACKING PITS SHALL HAVE A MINIMUM SIDE SLOPE OF 1:1. JACKING PITS SHALL BE PROTECTED BY JERSEY BARRIERS AS INDICATED ON PLANS OR AS DIRECTED BY THE ENGINEER.
15. CONTRACTOR MAY USE EITHER NARROW/DEEP OR SHALLOW/WIDE TRENCH DETAIL.
16. ADELPHIA HANDHOLES SHALL BE CONCRETE AND CONFORM TO ADELPHIA STANDARDS HANDHOLE DETAILS.
17. VERIZON MANHOLE GRATE AND FRAME TO BE PROVIDED BY VERIZON.

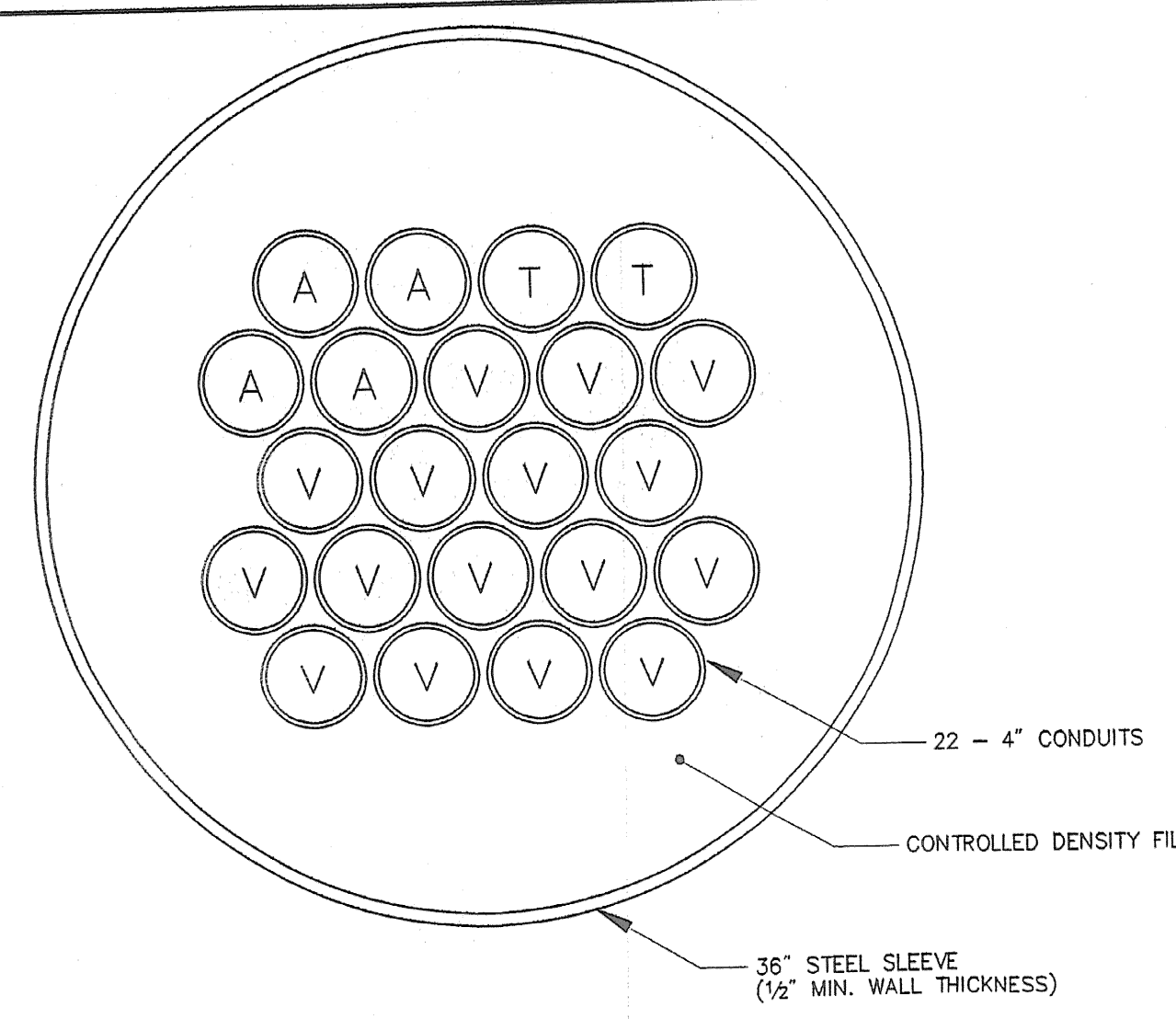


PLAN VIEW

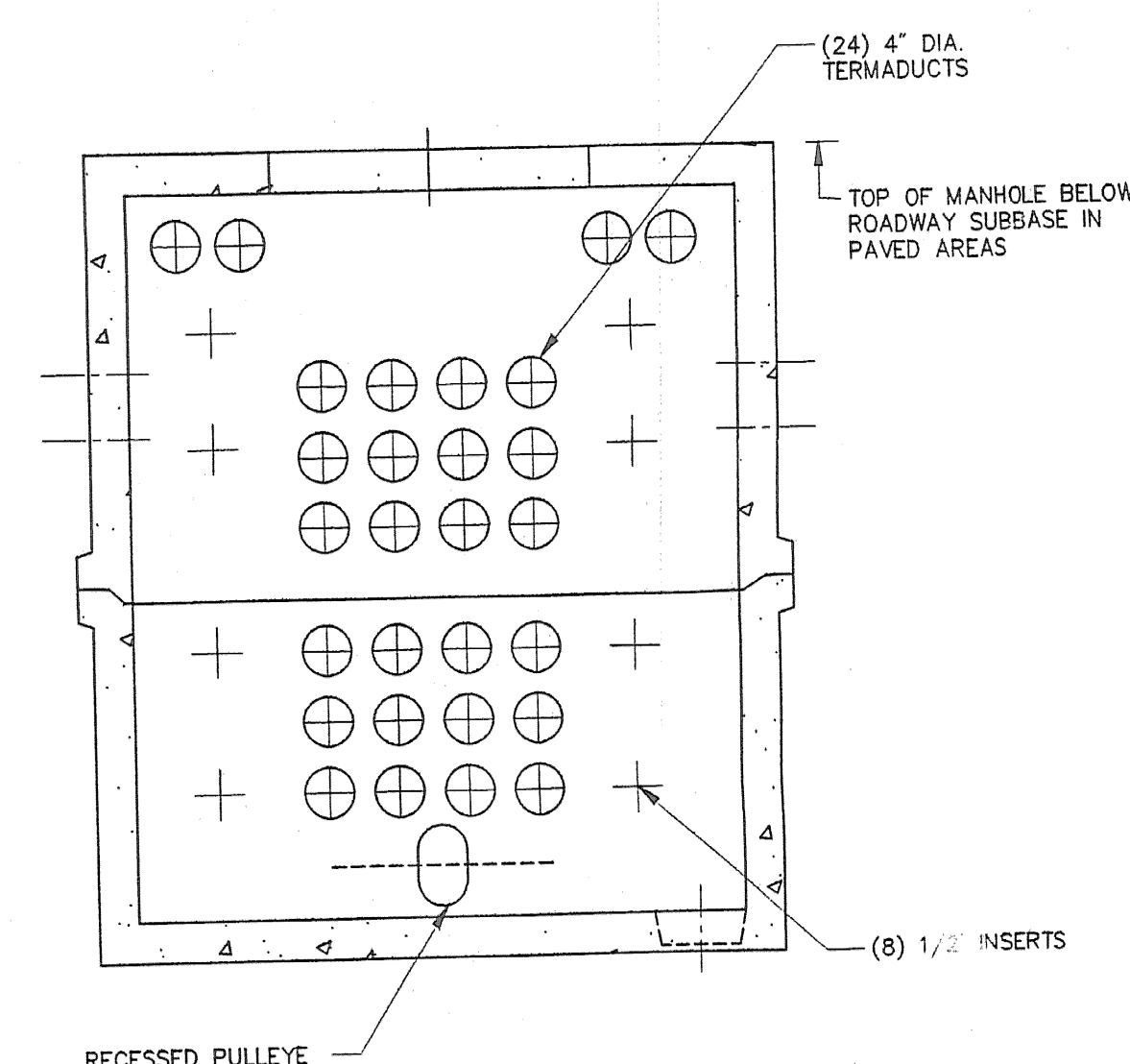


SECTION A-A
NOTE: OPPOSITE WALL IS SIMILAR

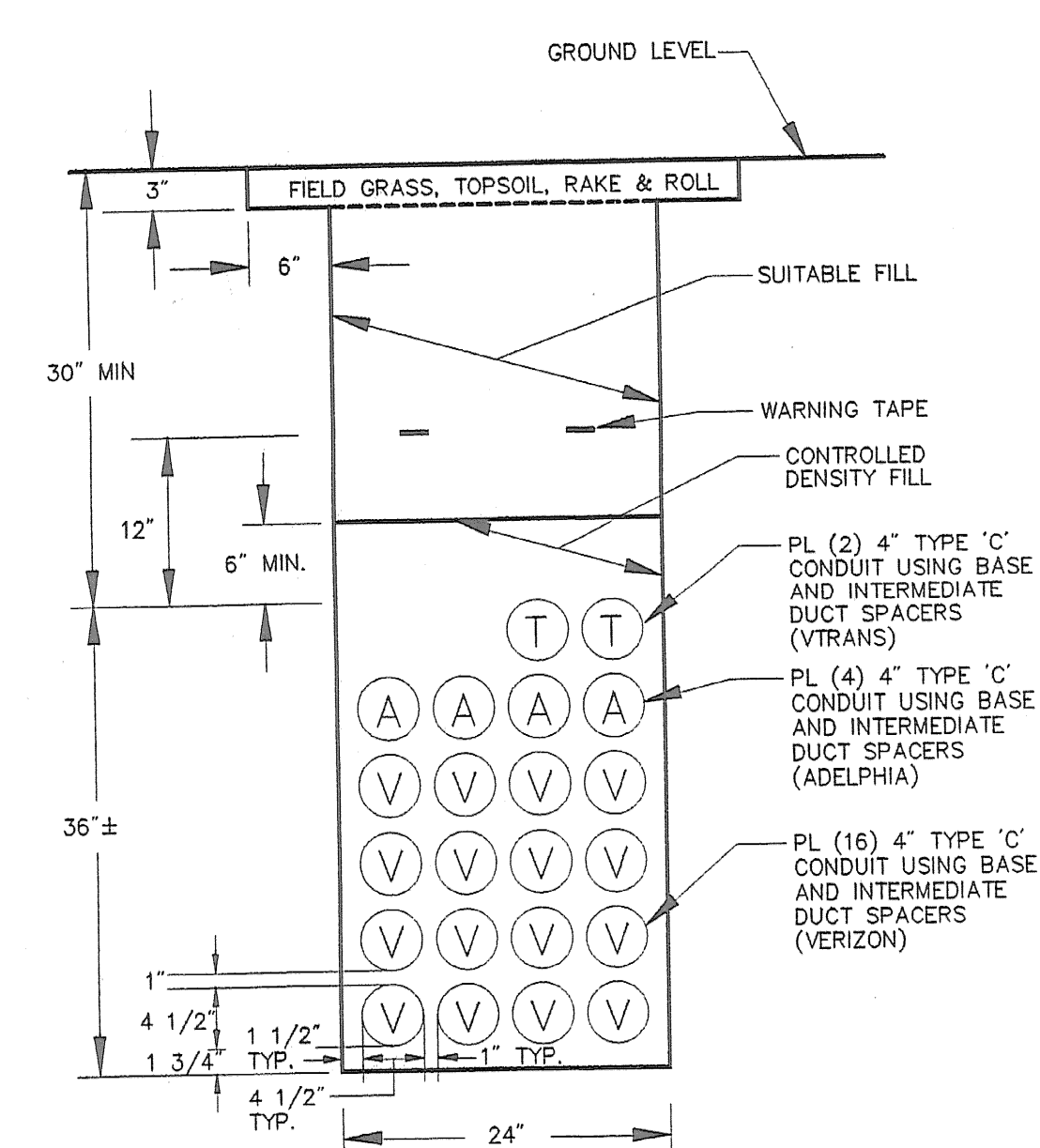
VERIZON MANHOLE DETAIL
SCALE: NOT TO SCALE



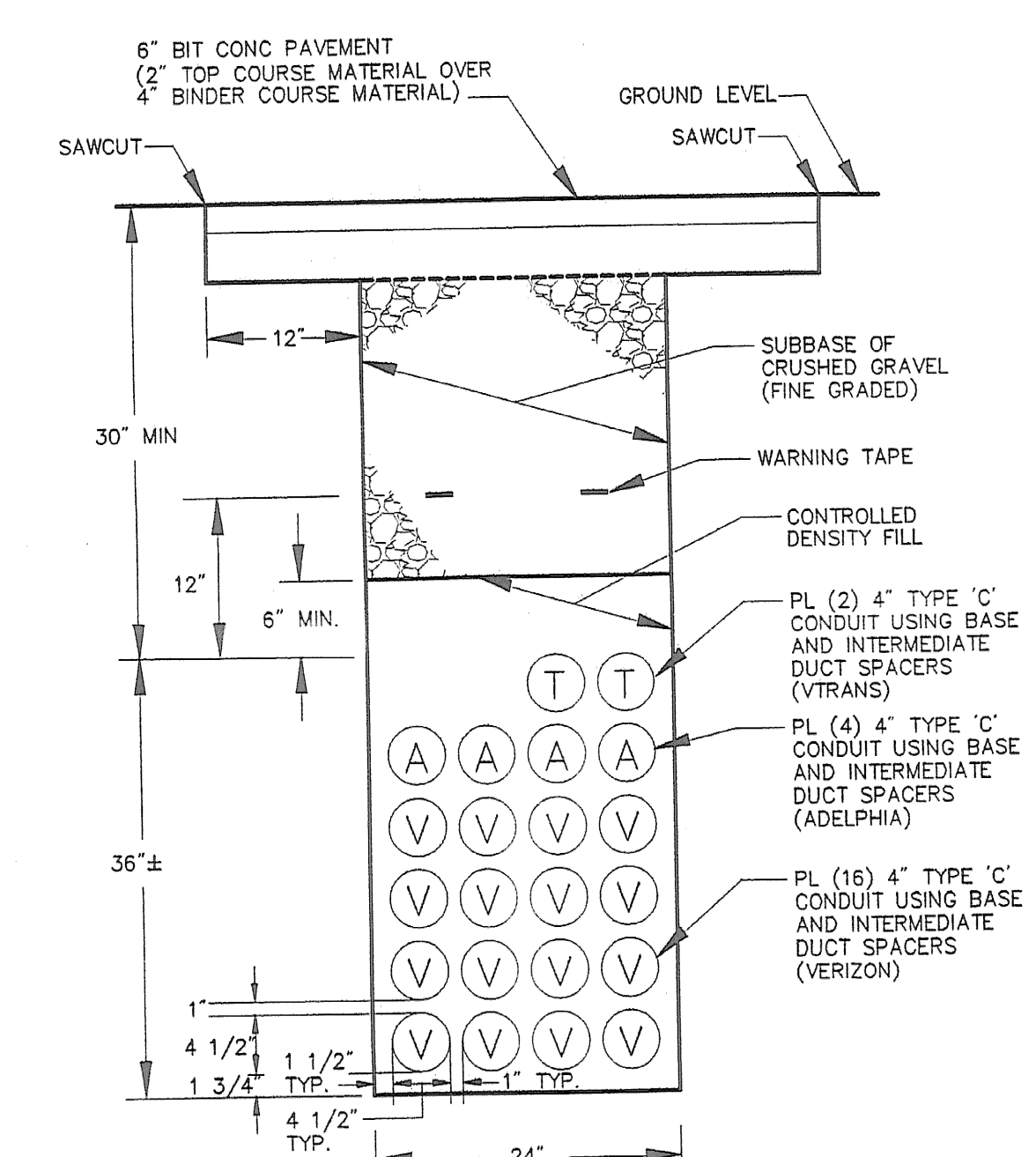
BORE DETAIL
SCALE: NOT TO SCALE



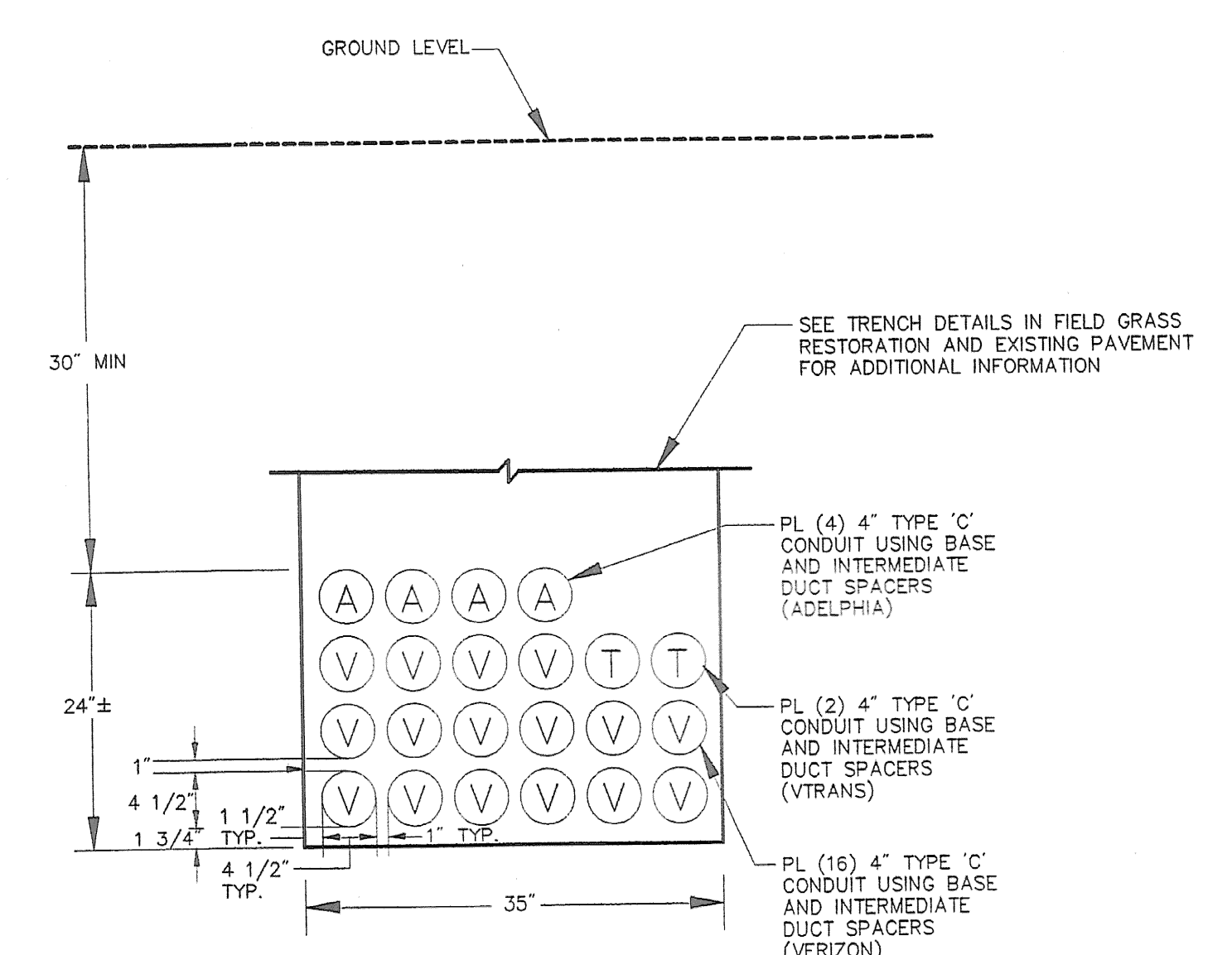
SECTION B-B
NOTE: OPPOSITE WALL IS SIMILAR



**TRENCH DETAIL
FIELD GRASS RESTORATION**
SCALE: NOT TO SCALE

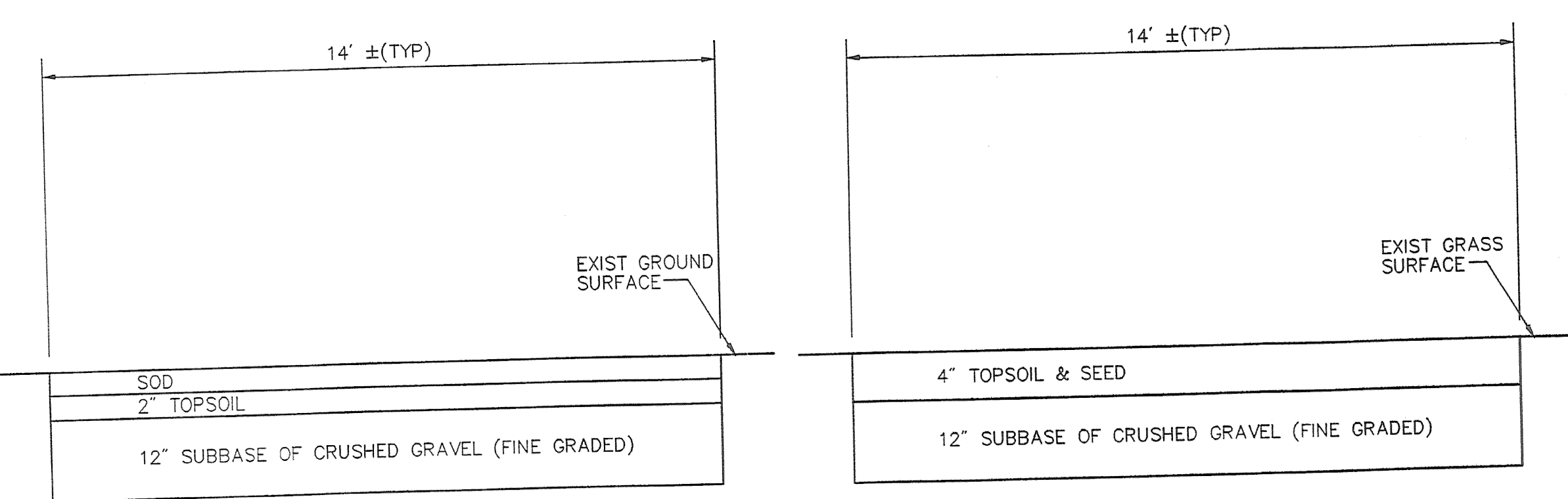


**TRENCH DETAIL
IN EXISTING PAVEMENT**
SCALE: NOT TO SCALE



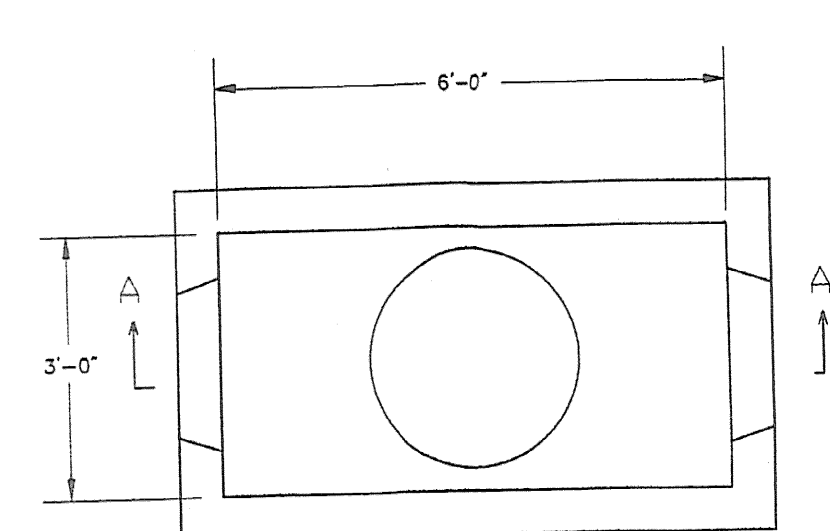
OPTIONAL SHALLOW TRENCH DETAIL
SCALE: NOT TO SCALE

LEGEND
A-ADELPHIA
T-TTRANS
V-VERIZON



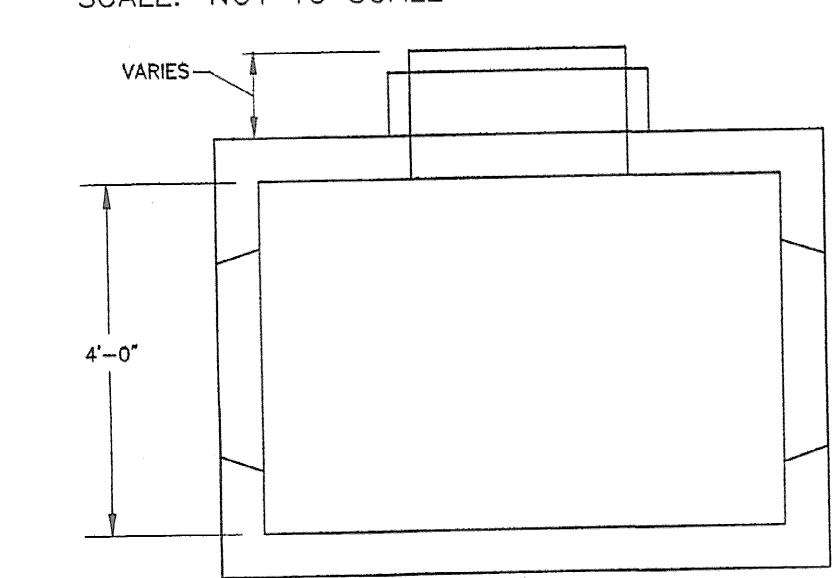
**ACCESS DRIVE -
TYPE 1**
SCALE: NOT TO SCALE
S-STD.
H-STD. PVMT-01-ENGLISH

**ACCESS DRIVE -
TYPE 2**
SCALE: NOT TO SCALE
S-STD.
H-STD. PVMT-01-ENGLISH



PLAN VIEW

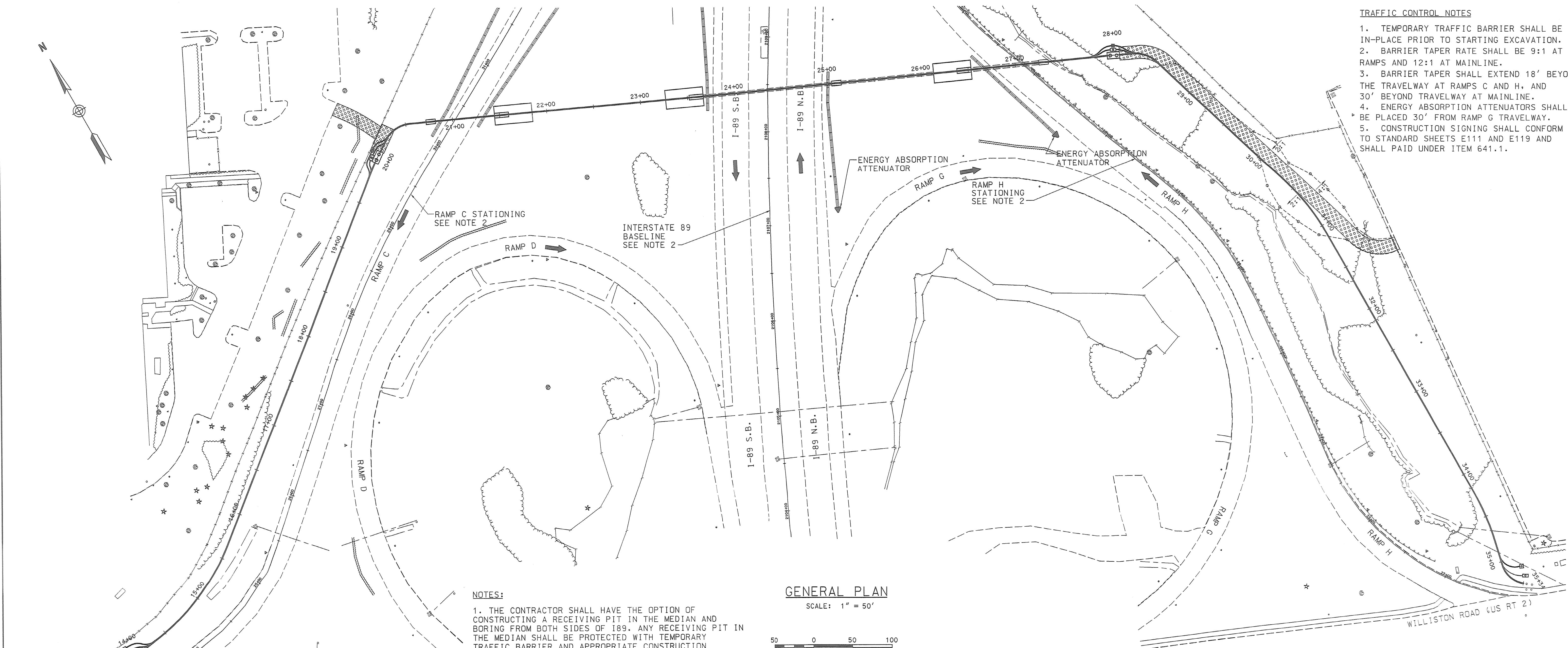
ADELPHIA MANHOLE DETAIL
SCALE: NOT TO SCALE



SECTION A-A
NOTE: OPPOSITE WALL IS SIMILAR

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
TELECOMMUNICATIONS DETAILS			
Designed By	M. HAYES	Drawn By	M. HAYES
Checked By		Date	
		Bridge Design Supervisor	S. JOHNSON
		Date	
PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK(36)
VHB Cad Drawing No.	VTRANS-DET	Date	10/31/01
Bridge Sheet No.	TD 2 OF 8	Sheet	59 of 75

VANASSE HANGEN BRUSTLIN, INC.



- TRAFFIC CONTROL NOTES**
1. TEMPORARY TRAFFIC BARRIER SHALL BE IN-PLACE PRIOR TO STARTING EXCAVATION.
 2. BARRIER TAPER RATE SHALL BE 9:1 AT RAMP AND 12:1 AT MAINLINE.
 3. BARRIER TAPER SHALL EXTEND 18' BEYOND THE TRAVELWAY AT RAMP C AND H, AND 30' BEYOND TRAVELWAY AT MAINLINE.
 4. ENERGY ABSORPTION ATTENUATORS SHALL BE PLACED 30' FROM RAMP G TRAVELWAY.
 5. CONSTRUCTION SIGNING SHALL CONFORM TO STANDARD SHEETS E111 AND E119 AND SHALL PAID UNDER ITEM 641.1.

NOTES:

1. THE CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING A RECEIVING PIT IN THE MEDIAN AND BORING FROM BOTH SIDES OF I-89. ANY RECEIVING PIT IN THE MEDIAN SHALL BE PROTECTED WITH TEMPORARY TRAFFIC BARRIER AND APPROPRIATE CONSTRUCTION SIGNING. COST SHALL BE INCLUDED IN ITEM 643.20 JACKING OR BORING WELDED STEEL PIPE (36").

2. ROADWAY STATIONING IS APPROXIMATED BASED ON VERMONT AGENCY OF TRANSPORTATION PROJECT I89-3(12) CIRCA 1960.

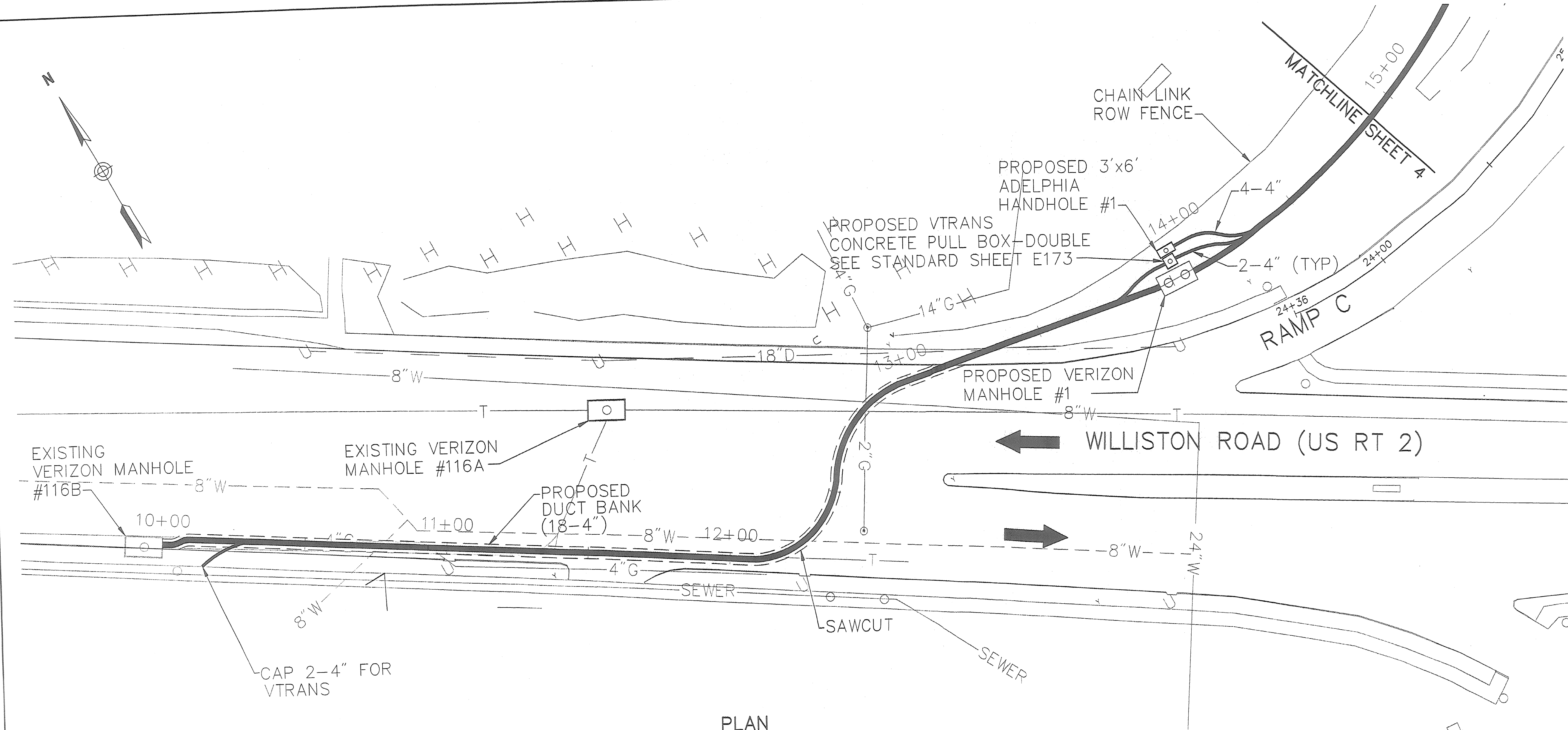
GENERAL PLAN
SCALE: 1" = 50'
50 0 50 100
SCALE IN FEET

DUCT BANK LOCATION								
STATION	NORTHING	EASTING	STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
10+00	19,331.73	60,804.76	19+50	19,524.62	61,609.40	28+50	19,243.86	62,419.79
10+50	19,306.47	60,847.94	20+00	19,555.96	61,648.35	29+00	19,196.33	62,435.31
11+00	19,279.52	60,890.05	20+03 (MH)	19,557.42	61,650.47	29+50	19,148.78	62,450.78
11+50	19,252.58	60,932.17	20+50	19,572.98	61,693.13	30+00	19,101.23	62,466.25
12+00	19,225.63	60,974.29	21+00	19,553.13	61,739.01	30+50	19,053.59	62,481.40
12+50	19,226.97	61,017.69	21+50	19,533.02	61,784.79	31+00	19,004.33	62,489.48
13+00	19,246.89	61,059.47	22+00	19,512.92	61,830.57	31+50	18,954.35	62,490.47
13+50	19,237.96	61,108.67	22+50	19,492.81	61,876.35	32+00	18,904.35	62,491.15
14+00	19,229.68	61,157.93	23+00	19,472.71	61,922.13	32+50	18,854.35	62,491.83
14+02 (MH)	19,229.64	61,159.71	23+50	19,452.63	61,967.92	33+00	18,804.36	62,492.52
14+50	19,233.55	61,207.69	24+00	19,432.52	62,013.70	33+50	18,754.36	62,493.20
15+00	19,247.98	61,255.46	24+50	19,412.39	62,059.46	34+00	18,704.37	62,493.88
15+50	19,272.33	61,299.02	25+00	19,392.29	62,105.24	34+50	18,654.41	62,493.01
16+00	19,303.52	61,338.09	25+50	19,372.19	62,151.02	35+00	18,605.20	62,484.32
16+50	19,335.11	61,376.84	26+00	19,352.08	62,196.80	35+34	18,574.05	62,493.62
17+00	19,366.69	61,415.60	26+50	19,331.98	62,242.58			
17+50	19,398.28	61,454.36	27+00	19,311.87	62,288.36			
18+00	19,429.87	61,493.12	27+50	19,291.77	62,334.14			
18+50	19,461.45	61,531.88	28+00	19,271.65	62,379.92			
19+00	19,493.04	61,570.64	28+05 (MH)	19,269.76	62,384.12			

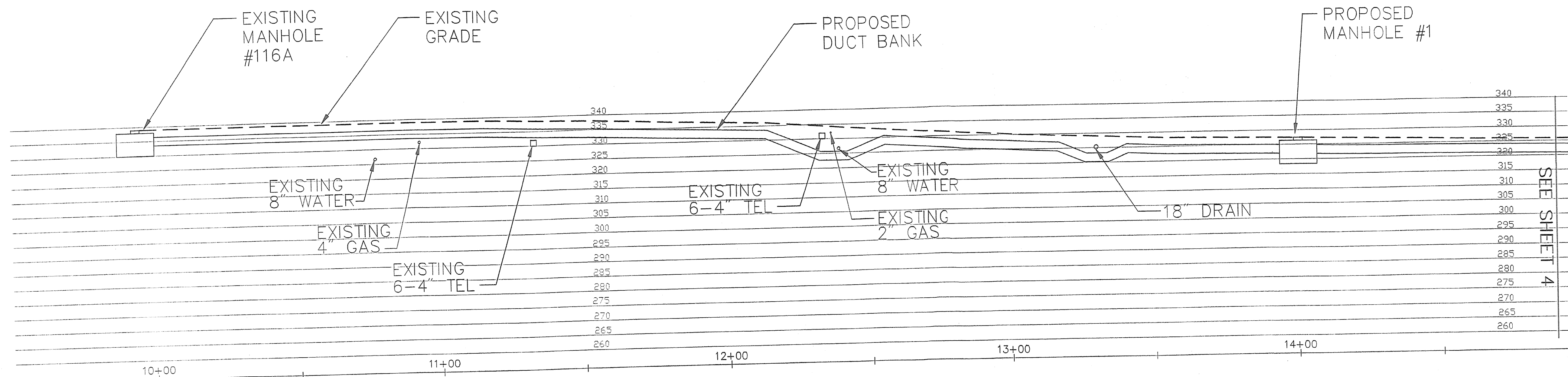
NORTHING AND EASTINGS BASED ON SURVEY PROVIDED BY VERMONT AGENCY OF TRANSPORTATION IN JUNE 2001.

STATE OF VERMONT			
AGENCY OF TRANSPORTATION			
Town Of	SOUTH BURLINGTON	Bridge No. 68	
Highway No.	U. S. 2	Log Sta.	
		Surv. Sta.	
U. S. 2 OVER I-89			
TELECOMMUNICATIONS RELOCATION			
Designed By	M. HAYES	Drawn By	M. HAYES
Checked By	Date	Bridge Design Supervisor	S. JOHNSON
		Date	
PROJECT	SOUTH BURLINGTON		PROJECT NO.
			IM DECK (36)
I.G.C. Info.	VTRANS-GEN	Date	10/31/01
Bridge Sheet No.	TD 3 OF 8	Sheet	59C of 75

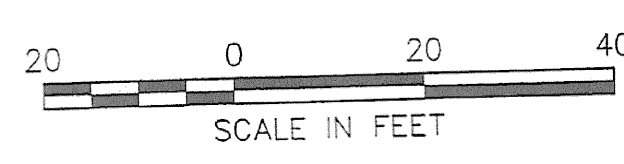
VANASSE HANGEN BRUSTLIN, INC.



PLAN
SCALE: 1" = 20'

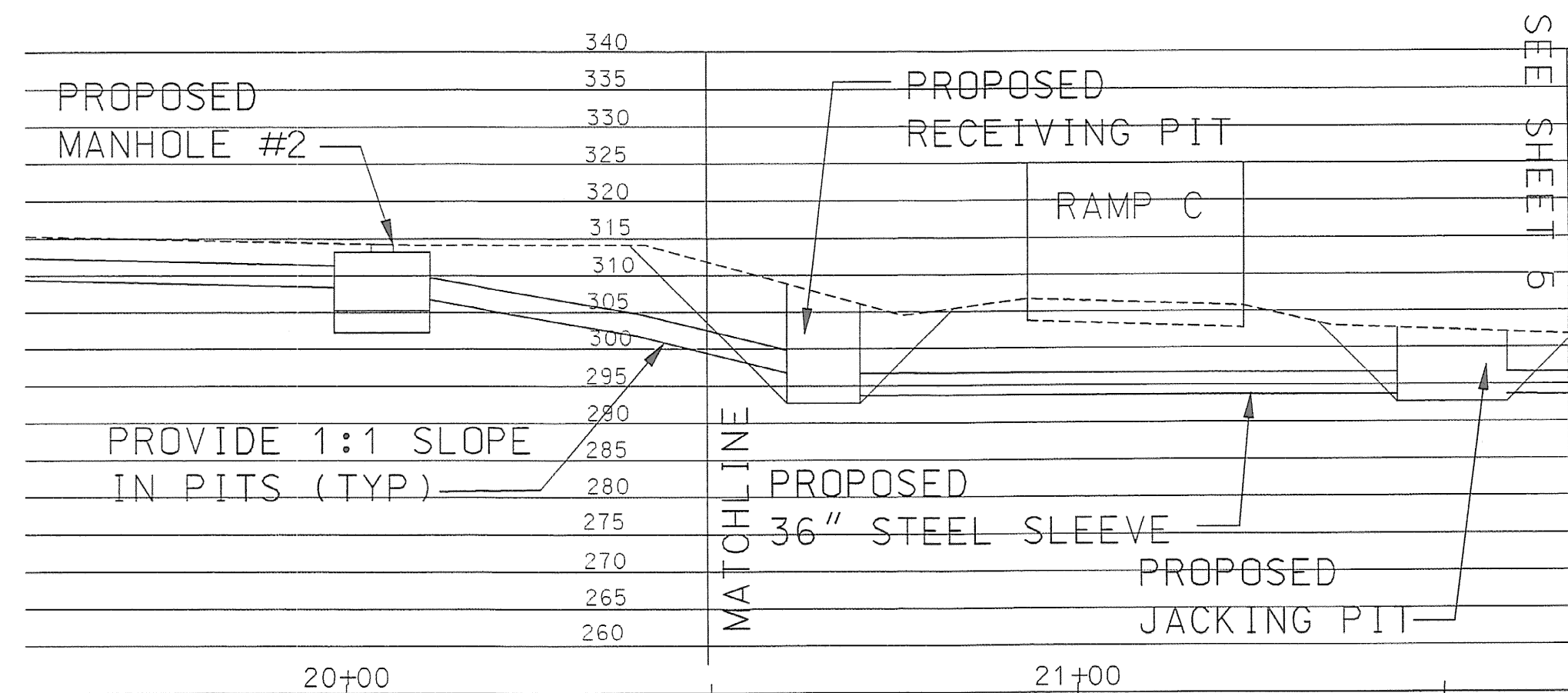
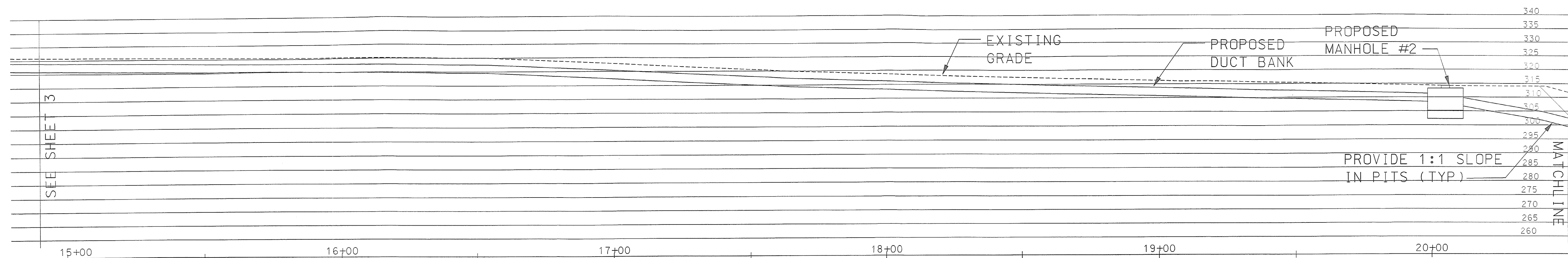
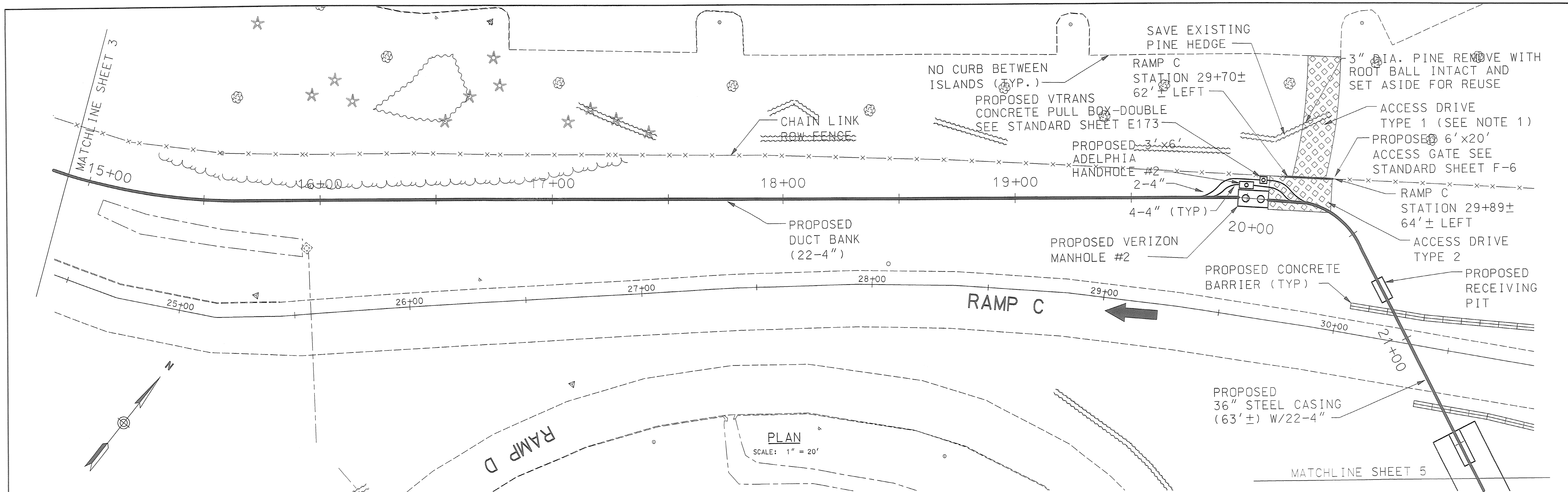


PROFILE
SCALE: 1" = 20'



STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
Town Of SOUTH BURLINGTON	Bridge No. 68
Highway No. U.S. 2	Log Sta.
Surv. Sta.	
U.S. 2 OVER I-89	
TELECOMMUNICATIONS RELOCATION	
Designed By M. HAYES	Drawn By M. HAYES
Checked By	Bridge Design Supervisor
Date	S. JOHNSON Date
PROJECT	PROJECT NO.
SOUTH BURLINGTON	IM DECK(36)
VHB Cad Drawing No. VTRANS-GEN	Date 10/31/01
Bridge Sheet No. T04 of 8	Sheet 59 of 75

VANASSE HANGEN BRUSTLIN, INC.



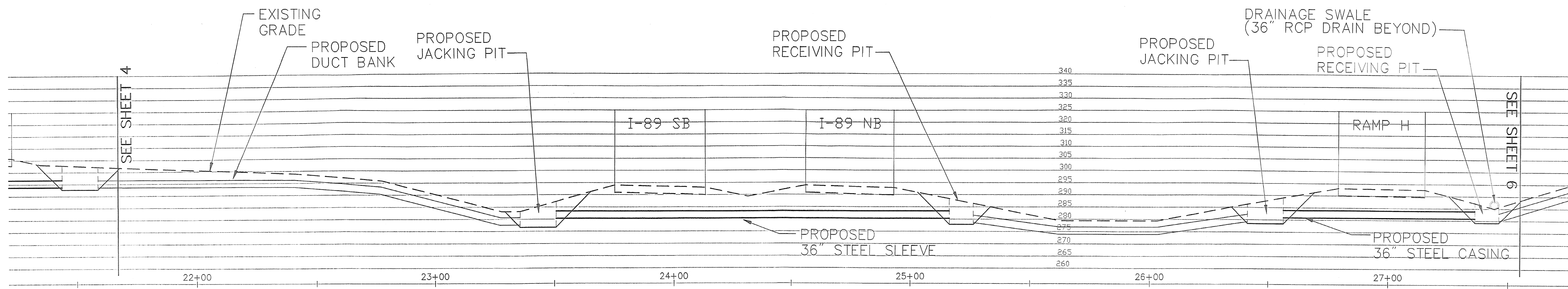
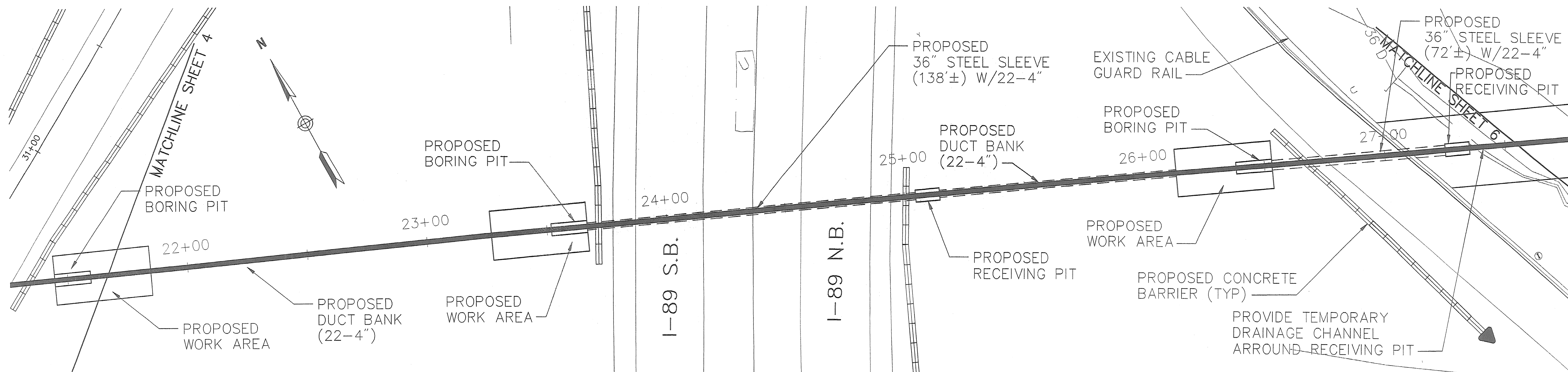
PROFILE
SCALE: 1" = 20'

NOTES:
1. CONTRACTOR TO PERFORM NO WORK OUTSIDE OF ACCESS DRIVE, EXCEPT REMOVAL OF 3" DIAMETER PINE.

STATE OF VERMONT AGENCY OF TRANSPORTATION

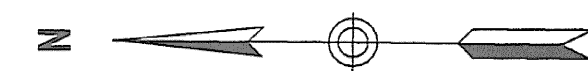
Town Of	SOUTH BURLINGTON	Bridge No. 68
Highway No.	U.S. 2	Log Sta.
	U.S. 2 OVER I-89	Surv. Sta.
TELECOMMUNICATIONS RELOCATION		
Designed By	M. HAYES	Drawn By M. HAYES
Checked By	Date	Bridge Design Supervisor S. JOHNSON Date
PROJECT	SOUTH BURLINGTON	PROJECT NO. IM DECK (36)
I.G.C. Info.	VTRANS-GEN	Date 10/31/01
Bridge Sheet No.	TD 5 OF 8	Sheet 59E of 75

VANASSE HANGEN BRUSTLIN, INC.

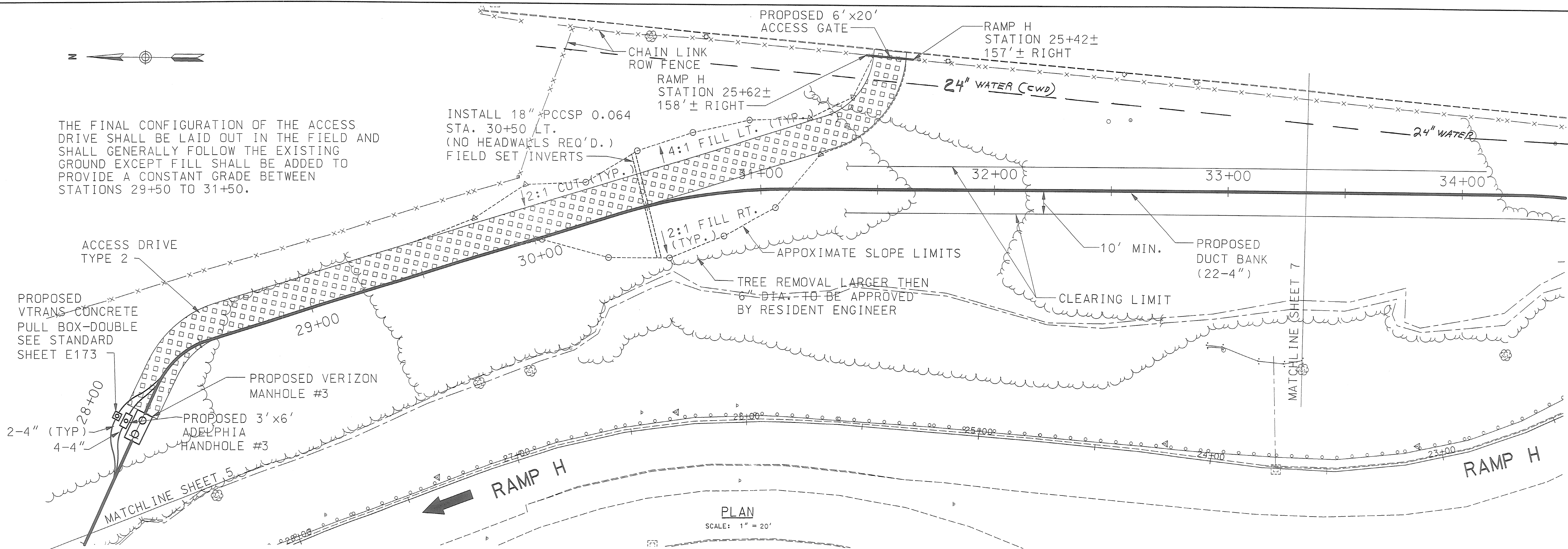


VANASSE HANGEN BRUSTLIN, INC.

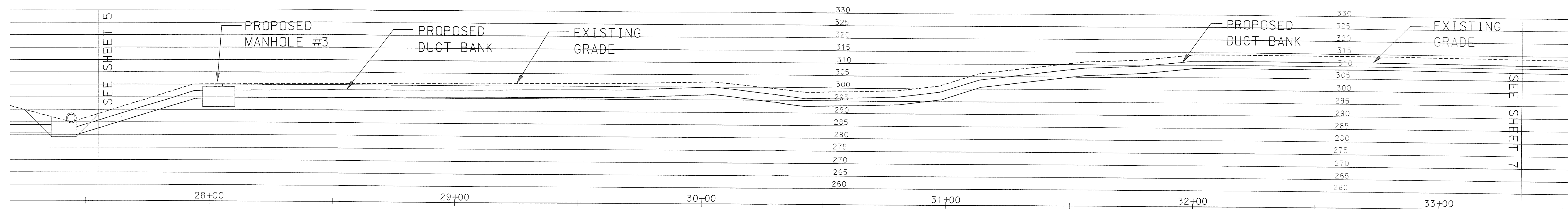
STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
TELECOMMUNICATIONS RELOCATION			
Designed By M. HAYES		Drawn By M. HAYES	
Checked By	Date	Bridge Design Supervisor	Date
		S. JOHNSON	
PROJECT		PROJECT NO.	
SOUTH BURLINGTON		IM DECK(36)	
VHB Cad Drawing No. VTRAN5-GEN		Date 10/31/01	
Bridge Sheet No. 26 OF 8		Sheet 59 of 75	



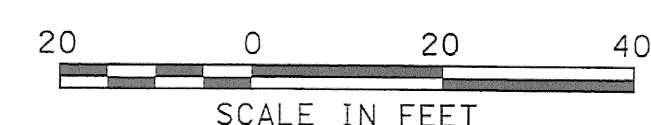
THE FINAL CONFIGURATION OF THE ACCESS DRIVE SHALL BE LAID OUT IN THE FIELD AND SHALL GENERALLY FOLLOW THE EXISTING GROUND EXCEPT FILL SHALL BE ADDED TO PROVIDE A CONSTANT GRADE BETWEEN STATIONS 29+50 TO 31+50.



PLAN
SCALE: 1" = 20'



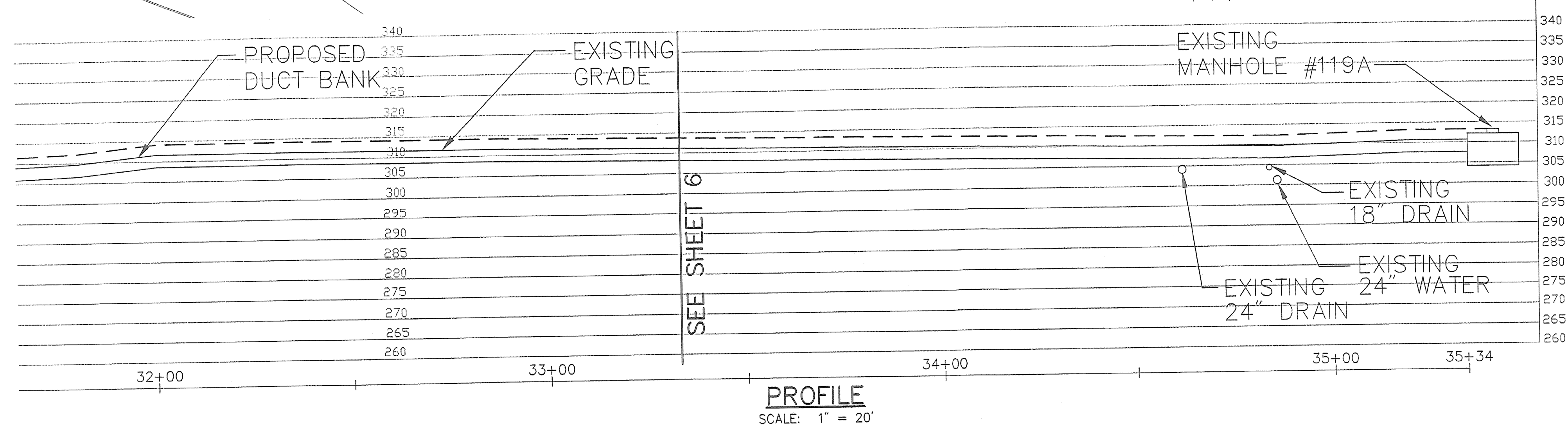
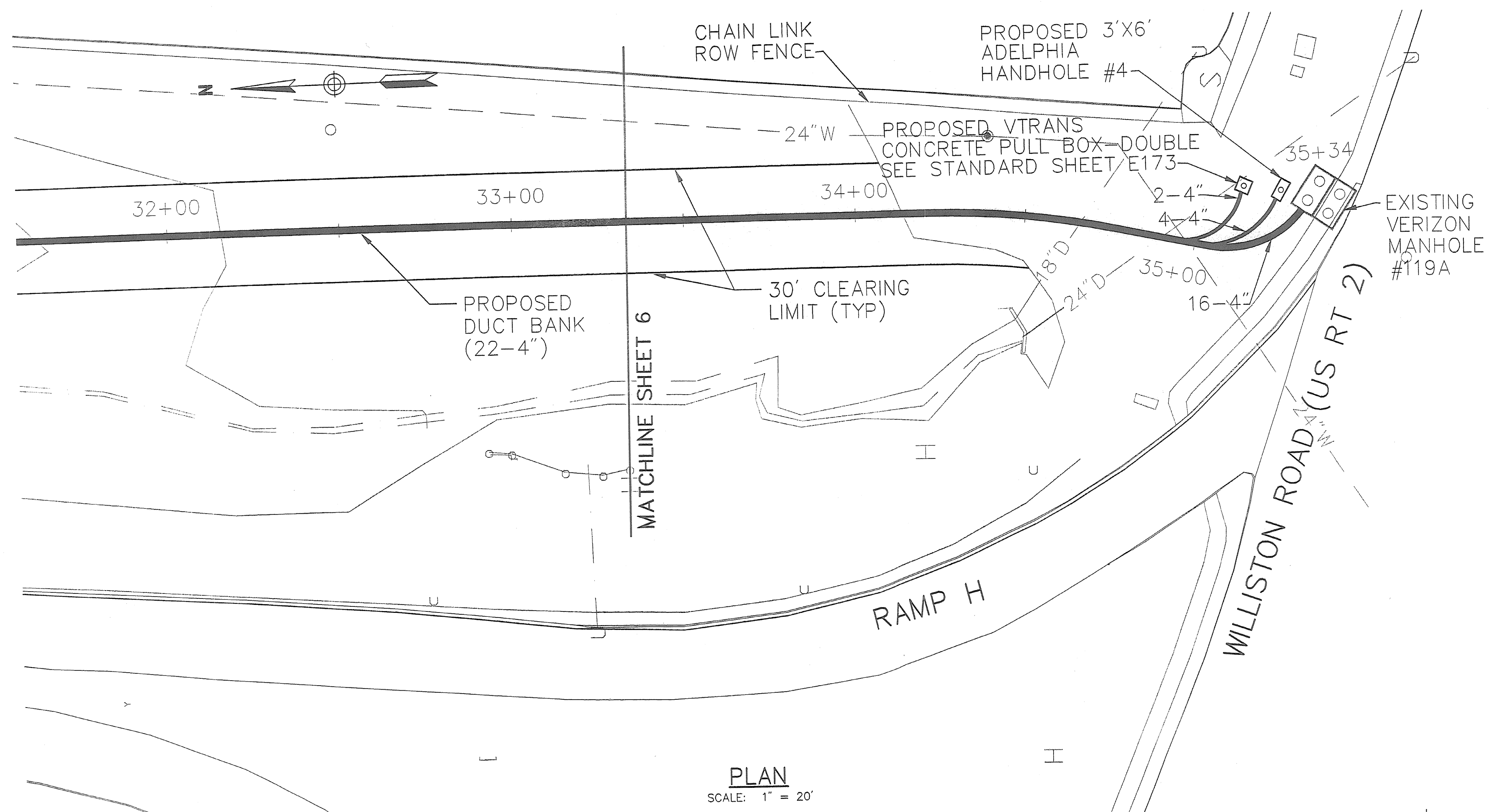
PROFILE
SCALE: 1" = 20'



STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U. S. 2	Log Sta.	
	U. S. 2 OVER I-89	Surv. Sta.	
TELECOMMUNICATIONS RELOCATION			
Designed By	M. HAYES	Drawn By	M. HAYES
Checked By	Date	Bridge Design Supervisor	S. JOHNSON Date
PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK (36)
I.G.C. Info.	VTRANS-GEN	Date	10/31/01
Bridge Sheet No.	TD 7 OF 8	Sheet	596 of 75

VANASSE HANGEN BRUSTLIN, INC.



STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of SOUTH BURLINGTON Bridge No. 68
Highway No. U.S. 2 Log Sta.
Surv. Sta.

U.S. 2 OVER I-89

TELECOMMUNICATIONS RELOCATION

Designed By M. HAYES Drawn By M. HAYES
Checked By Date Bridge Design Supervisor
S. JOHNSON Date

PROJECT SOUTH BURLINGTON PROJECT NO.
IM DECK(36)

VHB Cad. Drawing No. VTRANS-GEN Date 10/31/01
Bridge Sheet No. TP 8 OF 8 Sheet 53 of 75

VANASSE HANGEN BRUSTLIN, INC.

5.04 At the manhole or cable entrance facility, separate the ducts vertically and horizontally by a minimum of 2 inches (Fig. 5). Separation between ducts can be obtained with preformed, plastic spacers. Do not use wood for spacers. Join the conduit to duct terminators in the wall using the cement (or adhesive) supplied with the conduit. If the conduit is to be cast into the manhole (CEF) wall, attach the duct terminators to the termination end of the conduit prior to encasement in the wall. Place wooden bulkheads in front of the ducts inside the manhole to prevent the flow of concrete into the manhole, and pour concrete (2500 psi, 3/8-inch aggregate, 9-inch slump) around the ducts outside the manhole. To prevent the concrete from flowing along the trench, ei-

ther backfill or place a wooden form 12 to 18 inches from the manhole end wall. Pour the concrete to a minimum depth of 2 inches above the duct entrance.



Before pouring concrete at the duct entrance, remove all dirt, mud, etc., from the area of the end wall where the concrete will contact the wall. To prevent concrete from entering the ducts, seal each duct with a conduit plug.

Note: Section 622-512-200 outlines the special methods recommended for sealing conduit entrances into manholes.

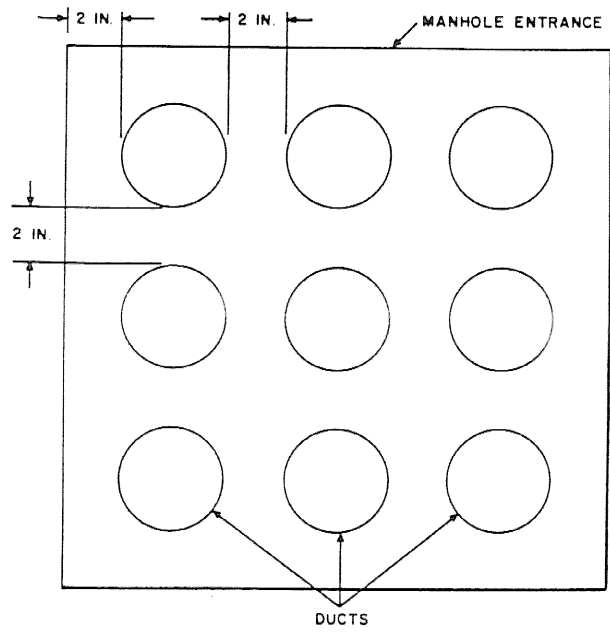
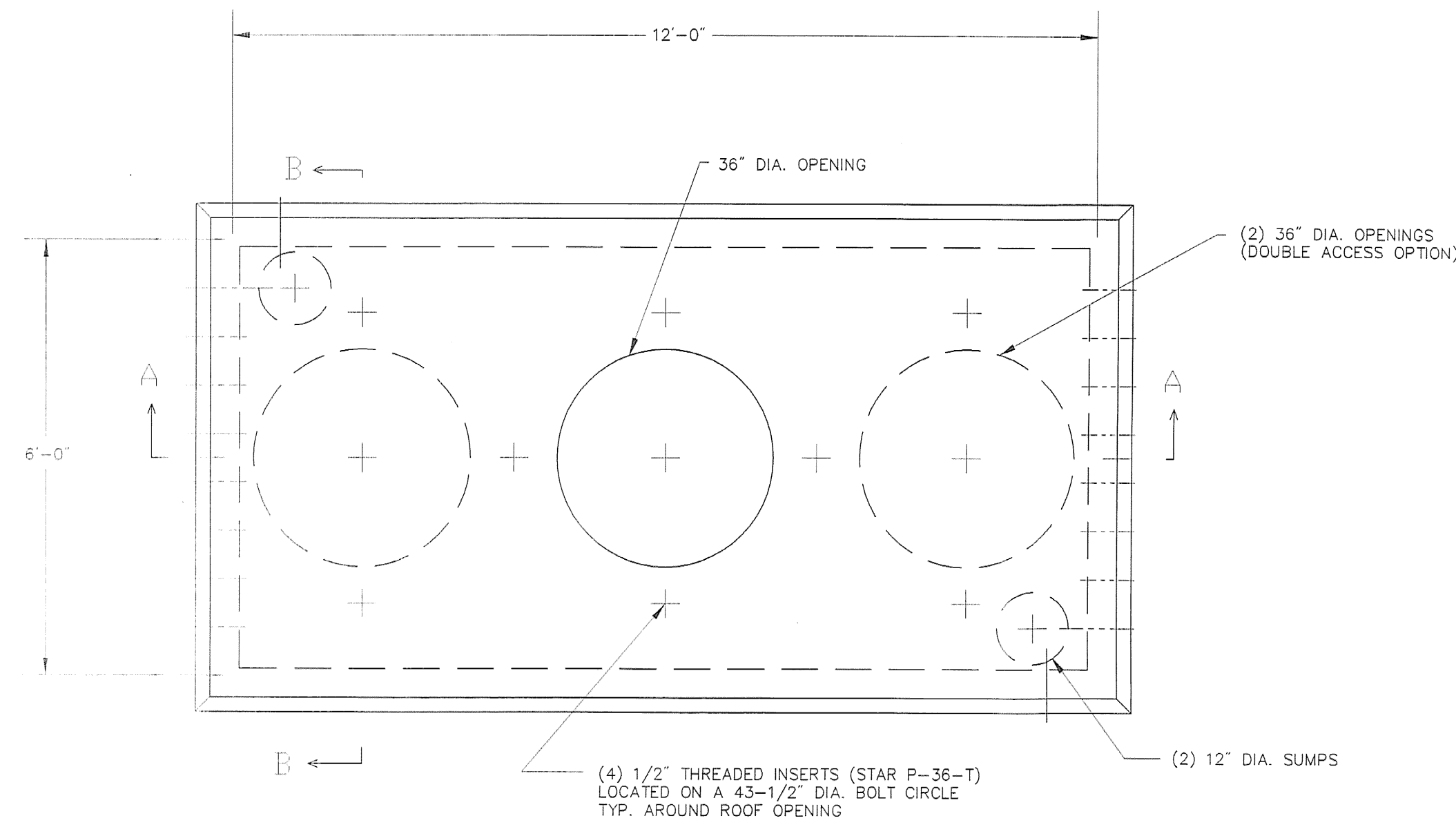
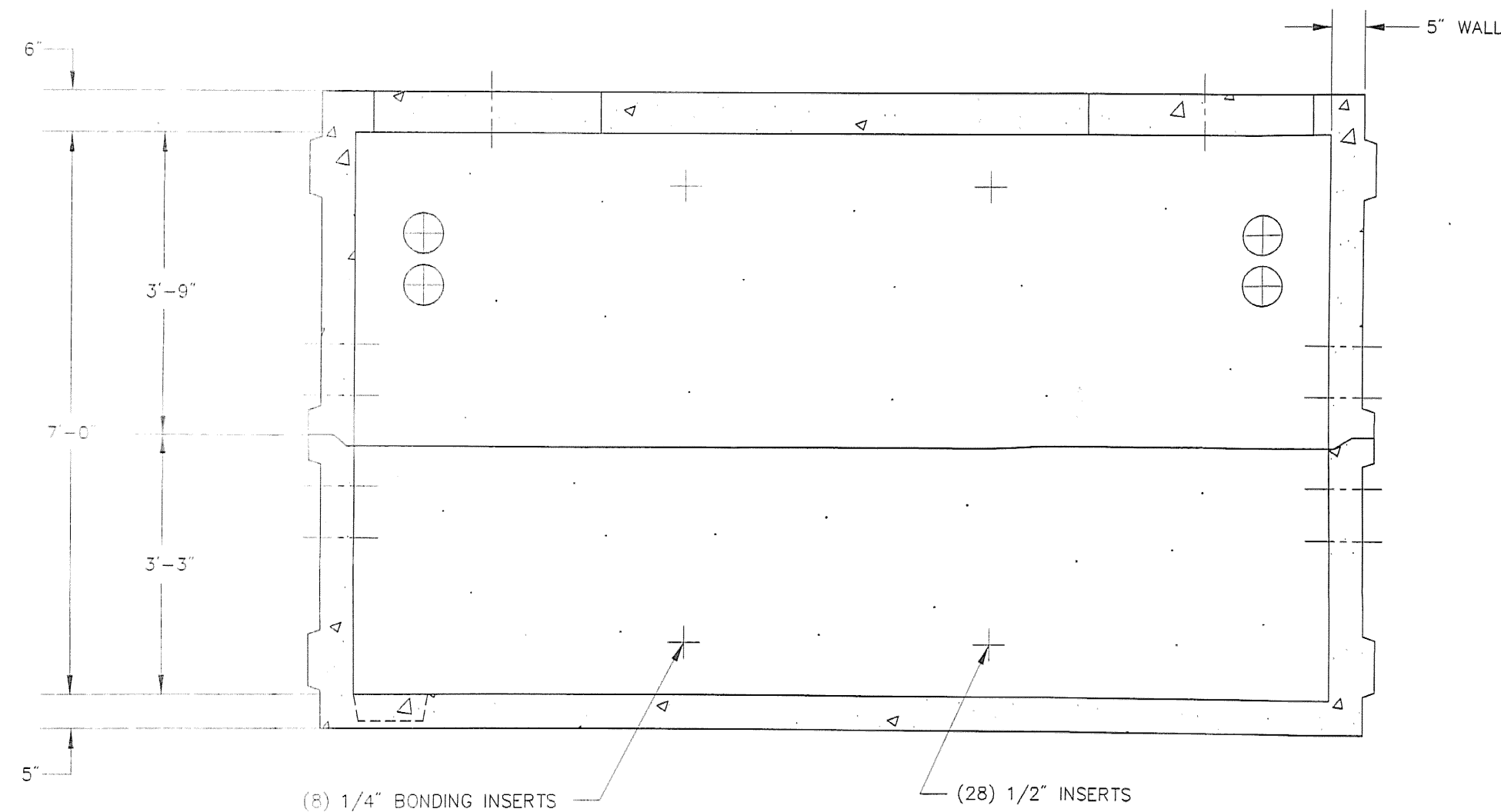


Fig. 5—Separation of Ducts of Manhole and Cable Vault Entrances

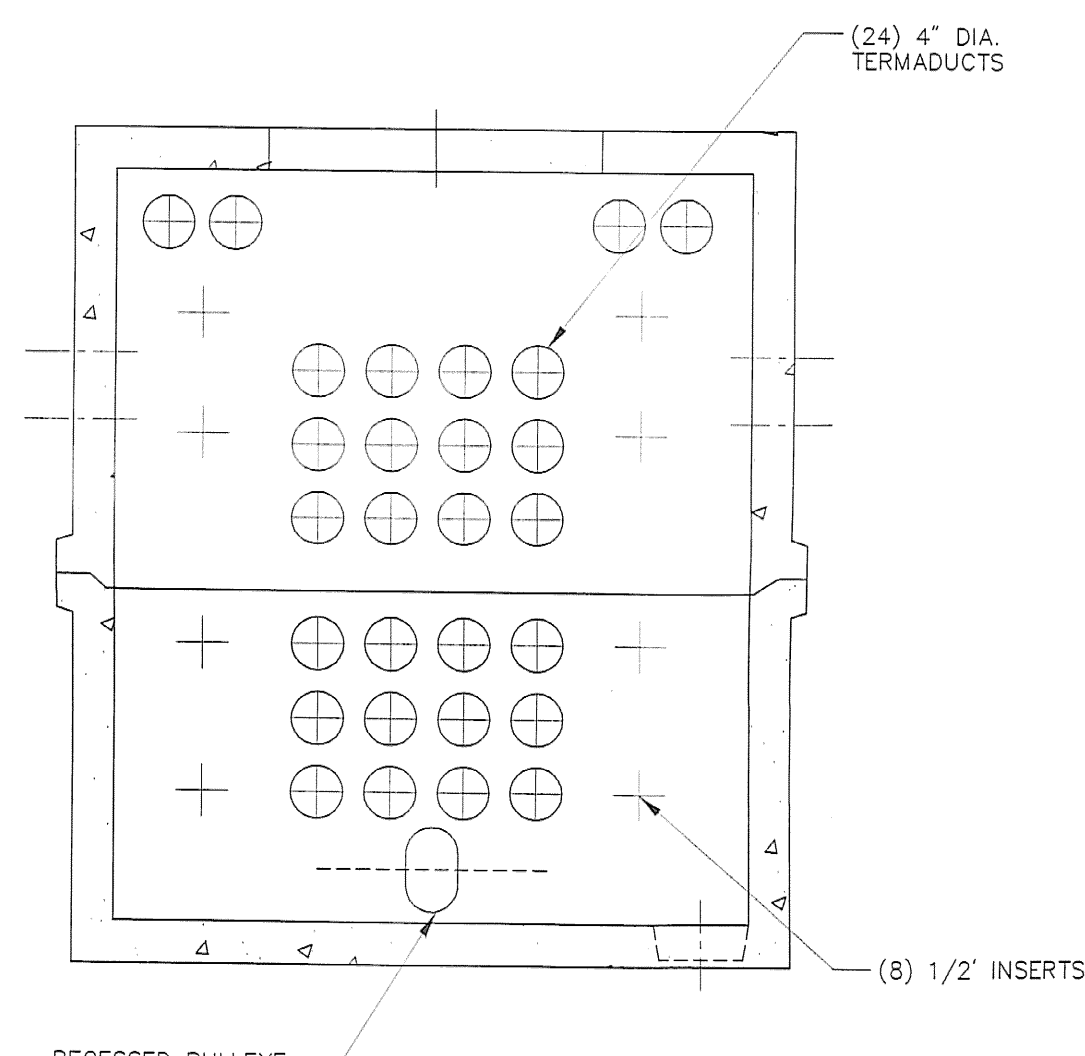


PLAN VIEW



SECTION A-A

NOTE: OPPOSITE WALL IS SIMILAR

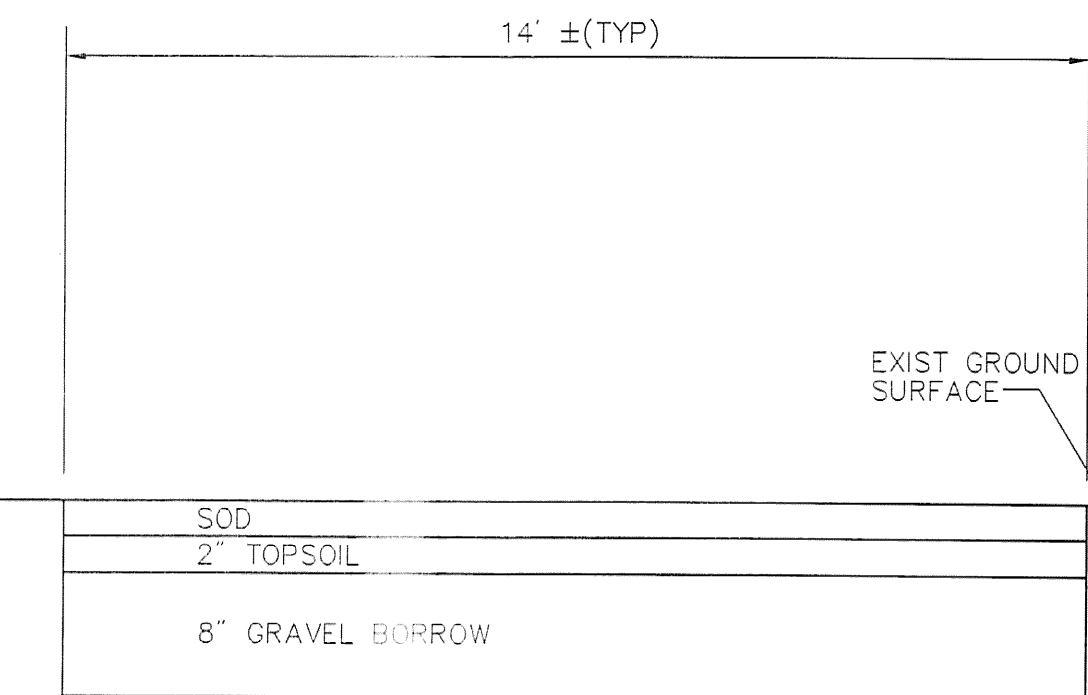


SECTION B-B

NOTE: OPPOSITE WALL IS SIMILAR

VERIZON MANHOLE DETAIL

SCALE: NOT TO SCALE

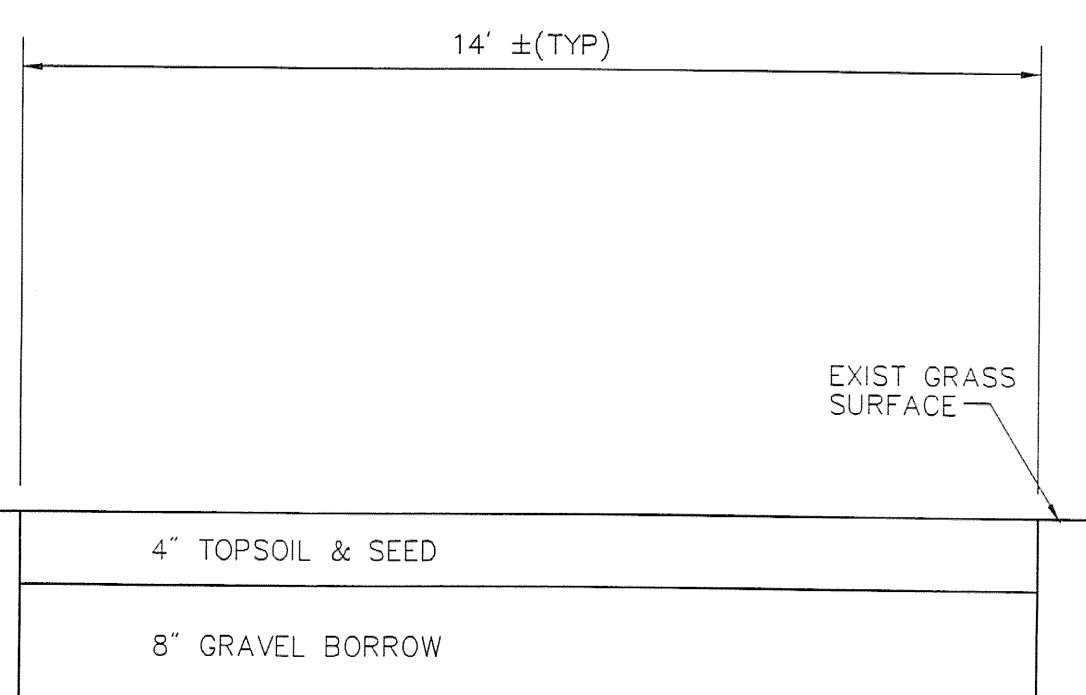


ACCESS DRIVE -
TYPE 1

SCALE: NOT TO SCALE

S-STD.

H-STD. PVMT-01-ENGLISH

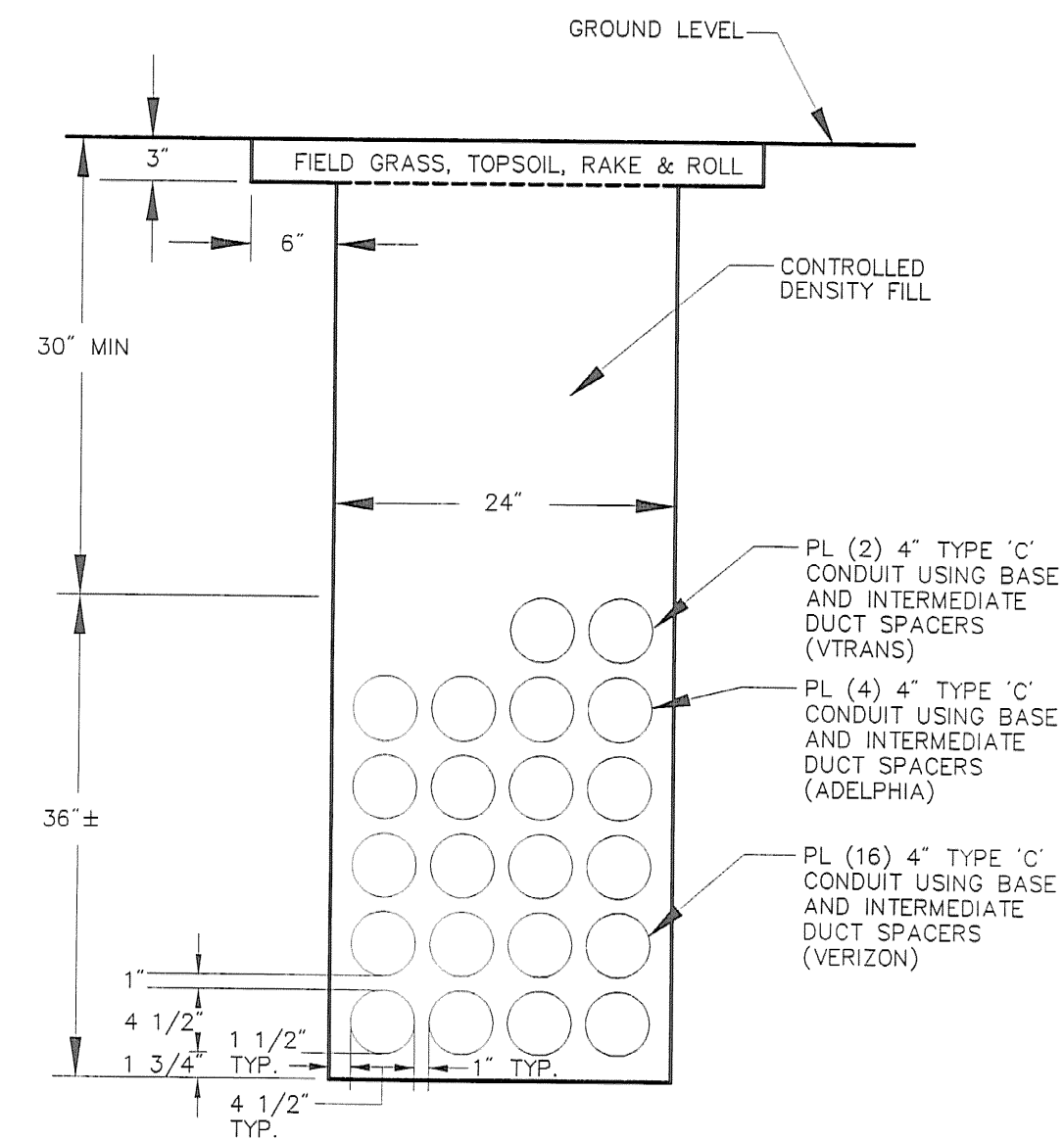


ACCESS DRIVE -
TYPE 2

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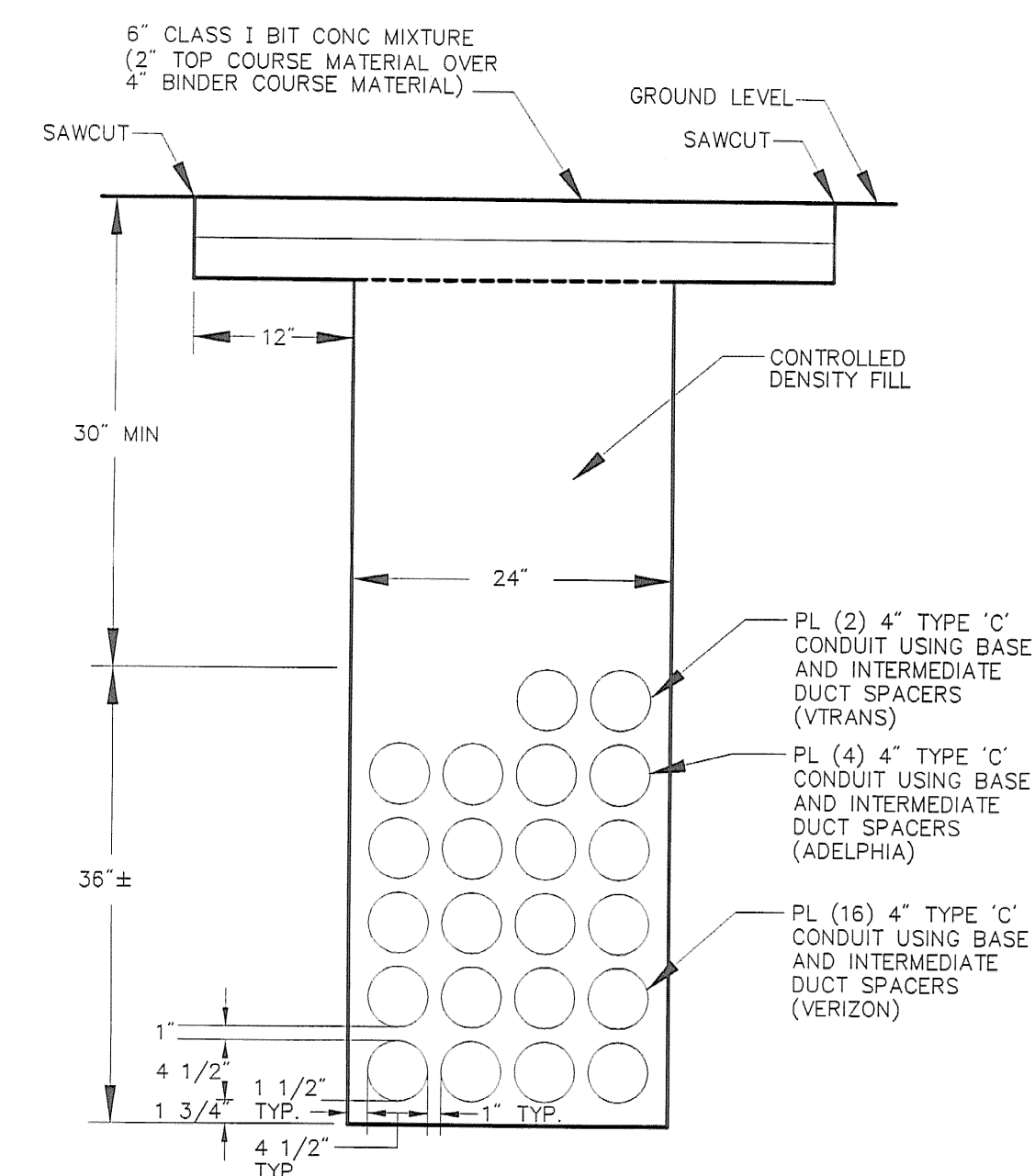
S-STD.

H-STD. PVMT-01-ENGLISH



TRENCH DETAIL
FIELD GRASS RESTORATION

SCALE: NOT TO SCALE

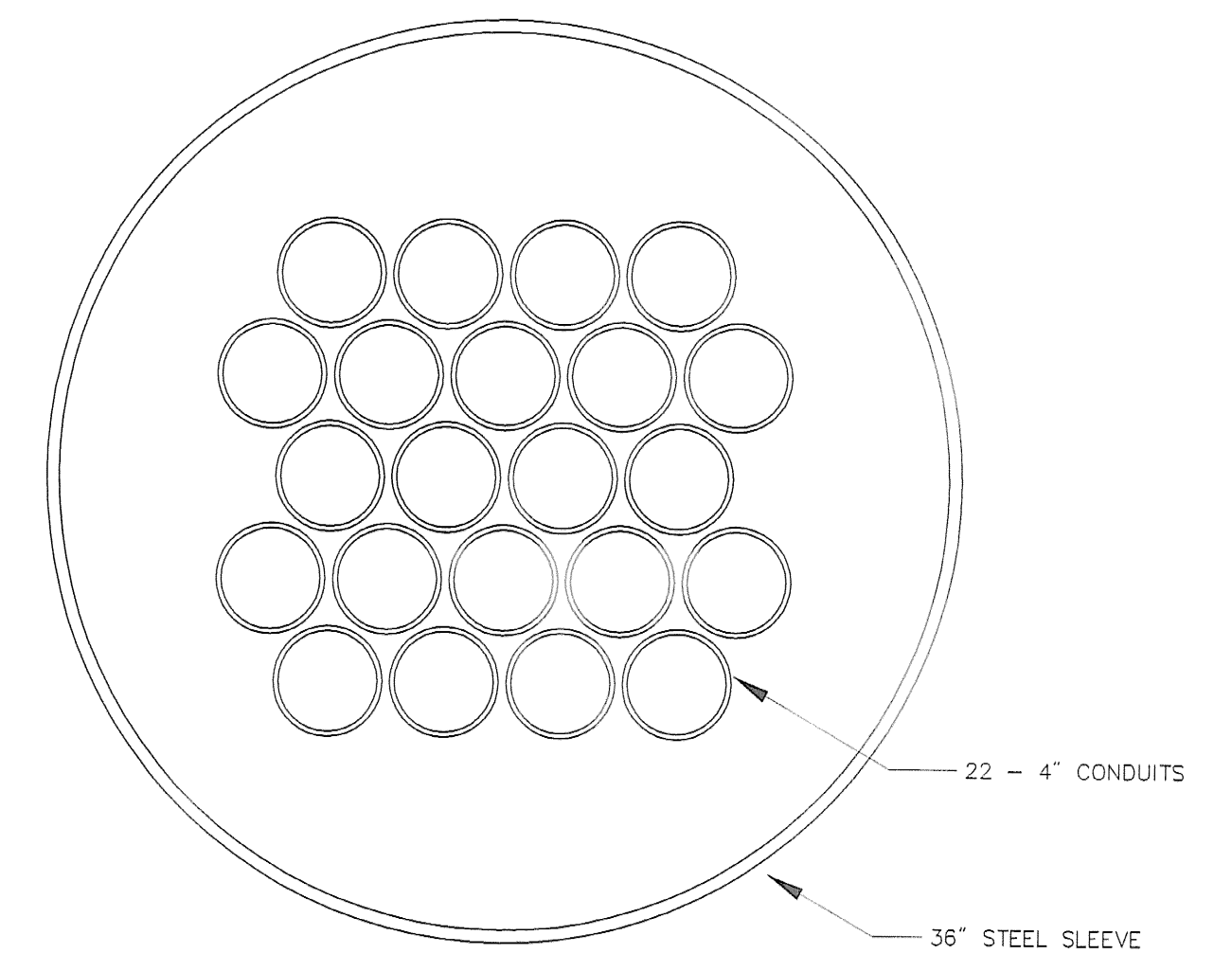


TRENCH DETAIL
IN EXISTING PAVEMENT

SCALE: NOT TO SCALE

GENERAL NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE BEGINNING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. ALL REPAIRS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR IS TO CONTACT "DIG SAFE" AT 1-888-344-7233 72 HOURS PRIOR TO ANY EXCAVATION.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR RESOLUTION OF THE CONFLICT.
3. MAINTAIN A MINIMUM CLEARANCE OF SIX INCHES WHEN CROSSING EXISTING UTILITIES.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN TEMPORARY RESURFACING AND/OR PLATING ON ALL EXCAVATION IN PAVED STREETS AND SIDEWALKS. THE MAINTENANCE OF THE TEMPORARY RESURFACING SHALL CONTINUE UNTIL PERMANENT RESURFACING IS PLACED.
5. AREAS WITHIN AND OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
6. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS AND SHALL BE RESPONSIBLE FOR PAYING ANY FEES FOR ANY POLE RELOCATION OR ALTERATION, ADJUSTMENT OR TEMPORARY SUPPORT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PUBLIC OR PRIVATE UTILITIES.
7. THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY PERMITS, PAY ALL FEES AND POST ALL BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS.
8. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. ALL CONSTRUCTION ACTIVITY SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
9. ALL WORK PERFORMED WITHIN THE PUBLIC RIGHT-OF-WAY SHALL CONFORM TO ALL LOCAL MUNICIPAL STANDARDS.
10. AT THE END OF EACH WORK DAY AND UPON FINAL CONSTRUCTION PENDING CABLE INSTALLATION, CONDUIT CAPS WILL BE PLACED ON ALL VACANT DUCTS.
11. JOINTS BETWEEN NEW BITUMINOUS CONCRETE PAVEMENT AND EXISTING PAVEMENT SHALL BE SAWCUT AND SEALED WITH RS-1 ASPHALT EMULSION AND BACKSANDS.
12. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN CONSTRUCTION AS BUILT DRAWINGS AND PRESENT A COMPLETE SET OF DRAWINGS TO LEVEL 3 COMMUNICATIONS, LLC, WITHIN 14 DAYS OF COMPLETION OF WORK.
13. THE CONTRACTOR IS RESPONSIBLE FOR PAYING FOR AND OBTAINING ALL PERMITS NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE DRAWINGS.
14. JACKING PITS SHALL BE CONSTRUCTED AT LEAST 10 FT FROM EDGE OF PAVEMENT. JACKING PITS SHALL HAVE A MINIMUM SIDE SLOPE OF 1:1. JACKING PITS SHALL BE PROTECTED BY JERSEY BARRIERS AS INDICATED ON PLANS OR AS DIRECTED BY THE ENGINEER.



BORE DETAIL

SCALE: NOT TO SCALE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No. U.S.	2	Log. Sta.	
		Surv. Sta.	

U.S. 2 OVER I-89

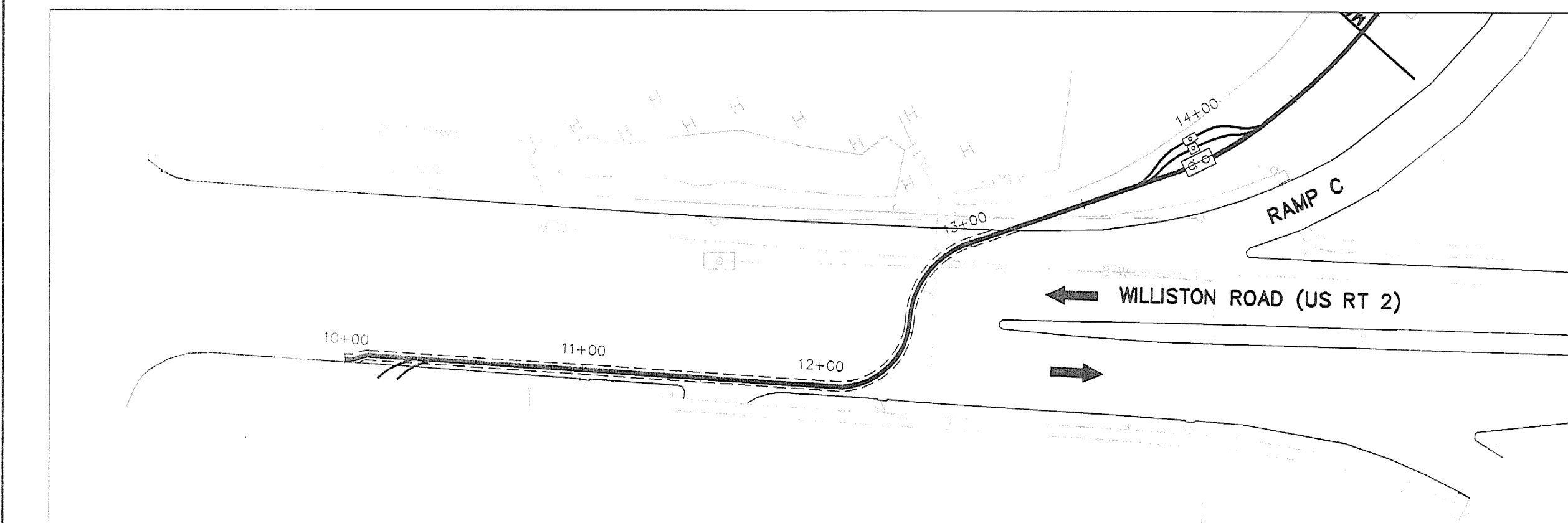
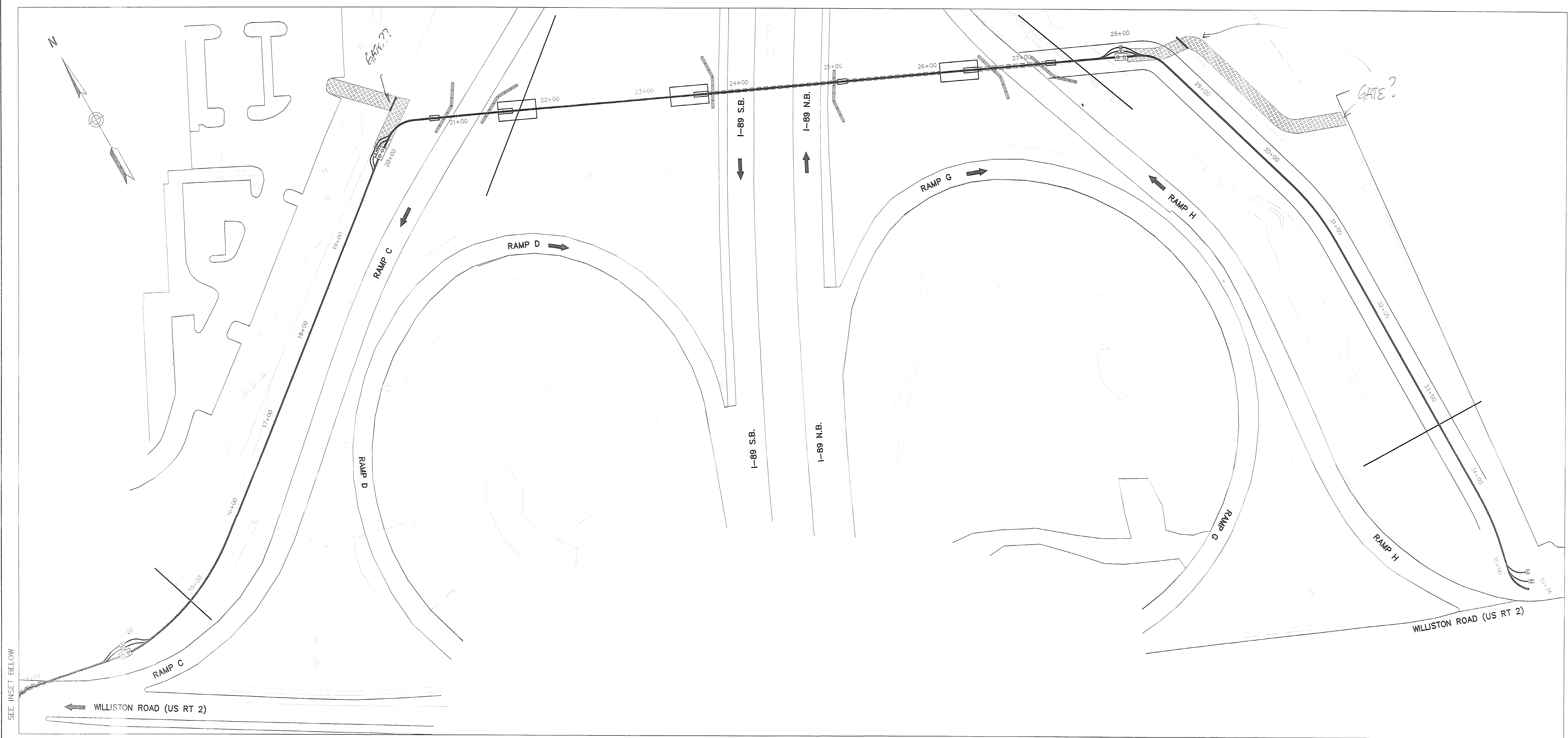
TELECOMMUNICATIONS DETAILS

Designed By	M. HAYES	Drawn By	M. HAYES
Checked By		Date	
		Bridge Design Supervisor	S. JOHNSON
		Date	

PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK(36)
---------	------------------	-------------	-------------

VHB Cod Drawing No.	VTRANS-DET	Date	9/24/01
Bridge Sheet No.		Sheet	1 of 7

VANASSE HANGEN BRUSTLIN, INC.



GENERAL PLAN

SCALE: 1" = 50'

GENERAL NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE BEGINNING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. ALL REPAIRS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR IS TO CONTACT "DIG SAFE" AT 1-888-344-7233 72 HOURS PRIOR TO ANY EXCAVATION.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR RESOLUTION OF THE CONFLICT.
3. MAINTAIN A MINIMUM CLEARANCE OF TWELVE INCHES WHEN CROSSING EXISTING UTILITIES.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN TEMPORARY RESURFACING AND/OR PLATING ON ALL EXCAVATION IN PAVED STREETS AND SIDEWALKS. THE MAINTENANCE OF THE TEMPORARY RESURFACING SHALL CONTINUE UNTIL PERMANENT RESURFACING IS PLACED.
5. AREAS WITHIN AND OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
6. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS AND SHALL BE RESPONSIBLE FOR PAYING ANY FEES FOR ANY POLE RELOCATION OR ALTERATION, ADJUSTMENT OR TEMPORARY SUPPORT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PUBLIC OR PRIVATE UTILITIES.
7. THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY PERMITS, PAY ALL FEES AND POST ALL BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS.
8. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. ALL CONSTRUCTION ACTIVITY SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
9. ALL WORK PERFORMED WITHIN THE PUBLIC RIGHT-OF-WAY SHALL CONFORM TO ALL LOCAL MUNICIPAL STANDARDS.
10. AT THE END OF EACH WORK DAY AND UPON FINAL CONSTRUCTION PENDING CABLE INSTALLATION, CONDUIT CAPS WILL BE PLACED ON ALL VACANT DUCTS.
11. JOINTS BETWEEN NEW BITUMINOUS CONCRETE PAVEMENT AND EXISTING PAVEMENT SHALL BE SAWCUT AND SEALED WITH RS-1 ASPHALT EMULSION AND BACKSANDS.
12. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN CONSTRUCTION AS BUILT DRAWINGS AND PRESENT A COMPLETE SET OF DRAWINGS TO VERMONT AGENCY OF TRANSPORTATION WITHIN 14 DAYS OF COMPLETION OF WORK.
13. THE CONTRACTOR IS RESPONSIBLE FOR PAYING FOR AND OBTAINING ALL PERMITS NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE DRAWINGS.
14. JACKING PITS SHALL BE CONSTRUCTED AT LEAST 10 FT FROM EDGE OF PAVEMENT. JACKING PITS SHALL HAVE A MINIMUM SIDE SLOPE OF 1:1. JACKING PITS SHALL BE PROTECTED BY JERSEY BARRIERS AS INDICATED ON PLANS OR AS DIRECTED BY THE ENGINEER.



VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT AGENCY OF TRANSPORTATION

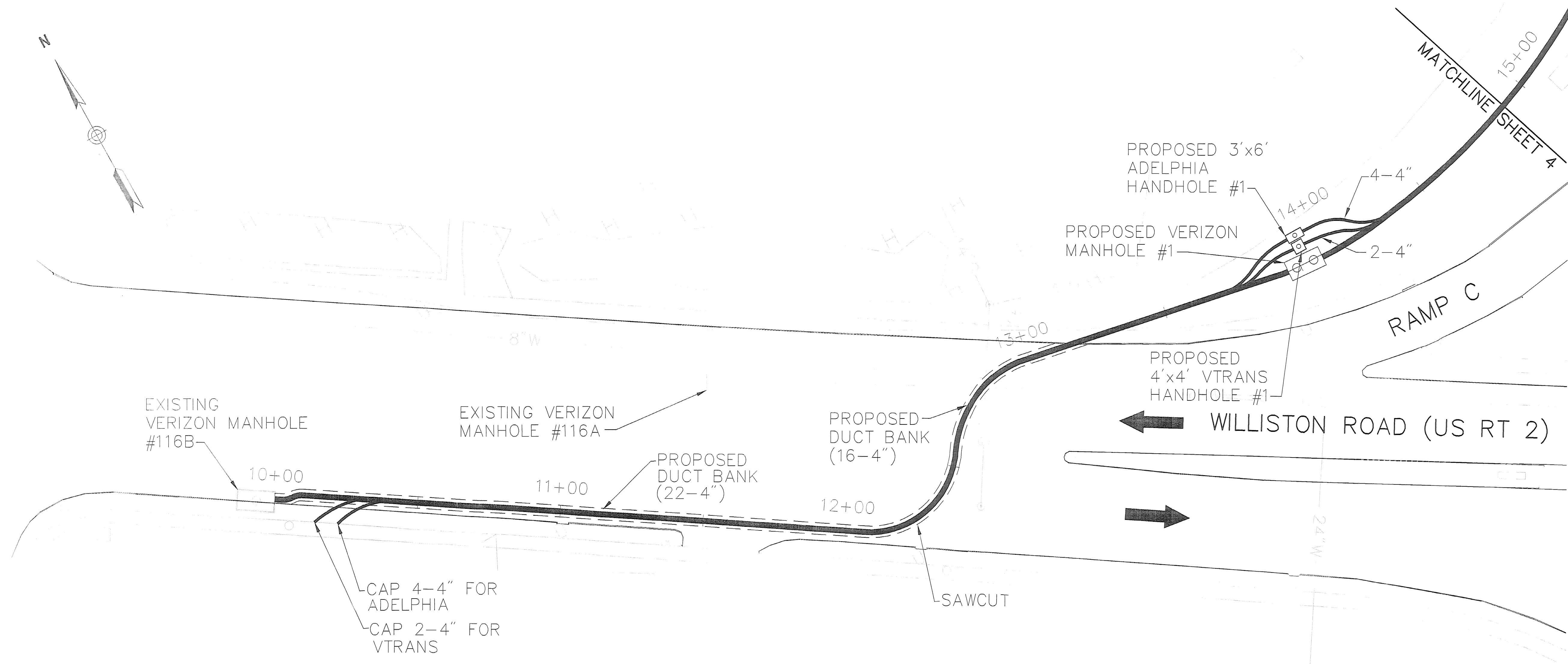
Town Of SOUTH BURLINGTON Bridge No. 68
Highway No. U.S. 2 Log Sta.
Surv. Sta.

U.S. 2 OVER I-89

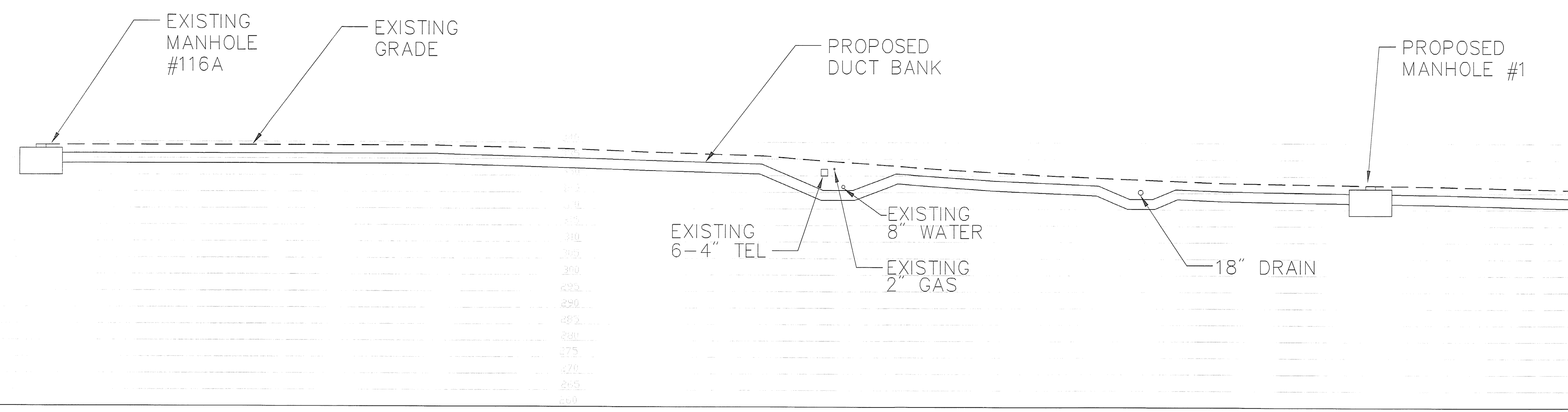
TELECOMMUNICATIONS RELOCATION

Designed By M. HAYES Drawn By M. HAYES
Checked By Date Bridge Design Supervisor
S. JOHNSON Date

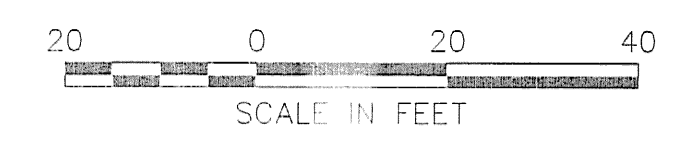
PROJECT SOUTH BURLINGTON PROJECT NO.
IM DECK(36)
VHB Cad Drawing No. VTRAN6-GEN Date 9/24/01
Bridge Sheet No. Sheet 2 of 7



PLAN
SCALE: 1" = 20'

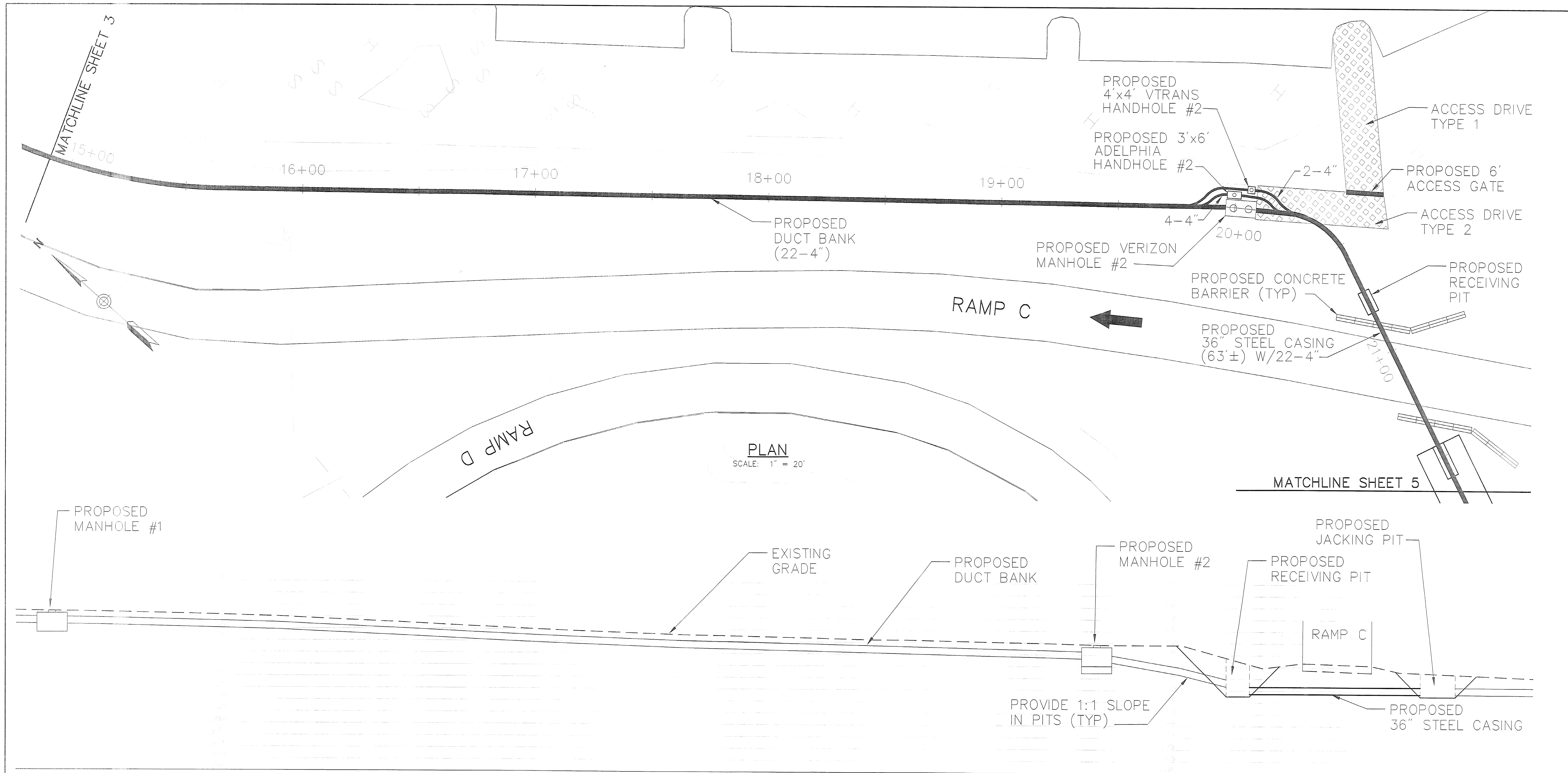


PROFILE
SCALE: 1" = 20'



STATE OF VERMONT			
AGENCY OF TRANSPORTATION			
Town Of SOUTH BURLINGTON		Bridge No. 68	
Highway No. U.S. 2		Log. Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
TELECOMMUNICATIONS RELOCATION			
Designed By M. HAYES		Drawn By M. HAYES	
Checked By		Bridge Design Supervisor	
Date		S. JOHNSON	
		Date	
PROJECT		PROJECT NO.	
SOUTH BURLINGTON		IM DECK(36)	
VHB Cad Drawing No. VTRANS-GEN		Date 9/24/01	
Bridge Sheet No.		Sheet 3 of 7	

VANASSE HANGEN BRUSTLIN, INC.

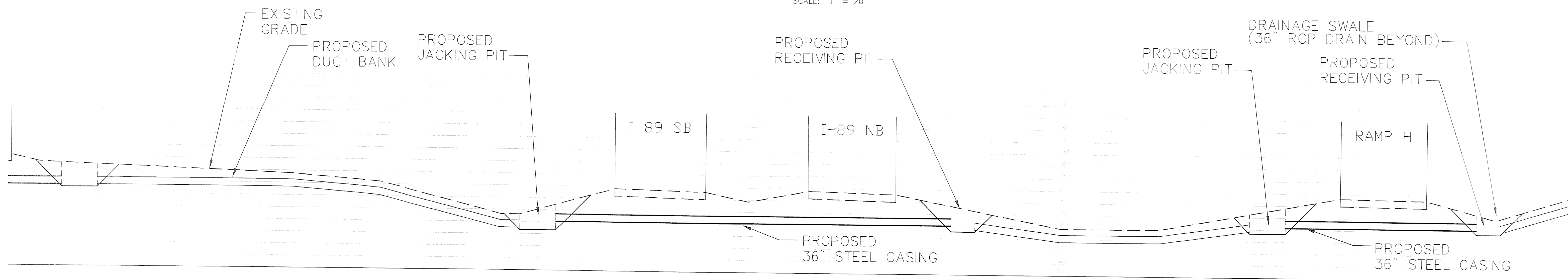
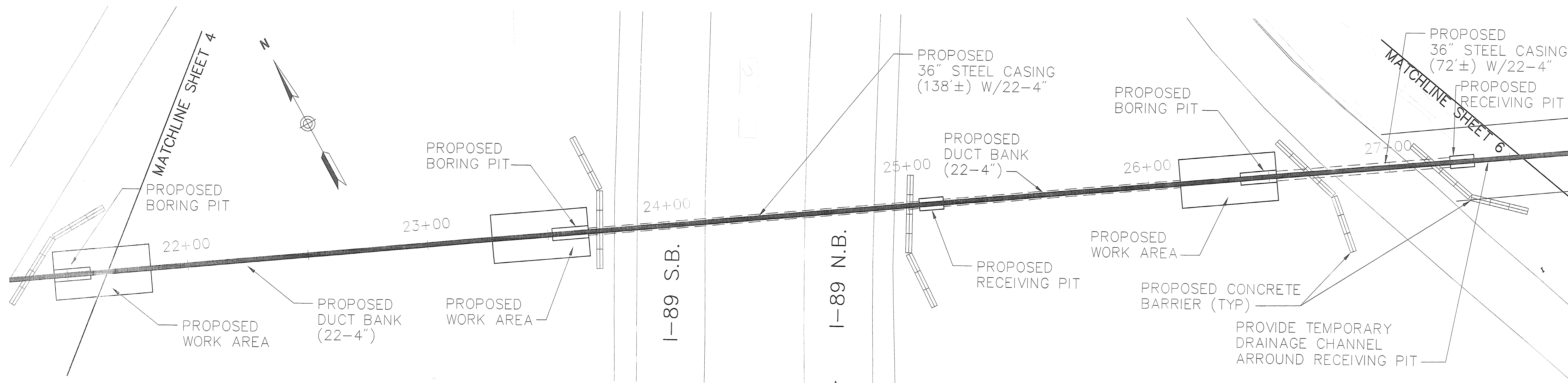


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SCALE IN FEET

VANASSE HANGEN BRUSTLIN, INC.

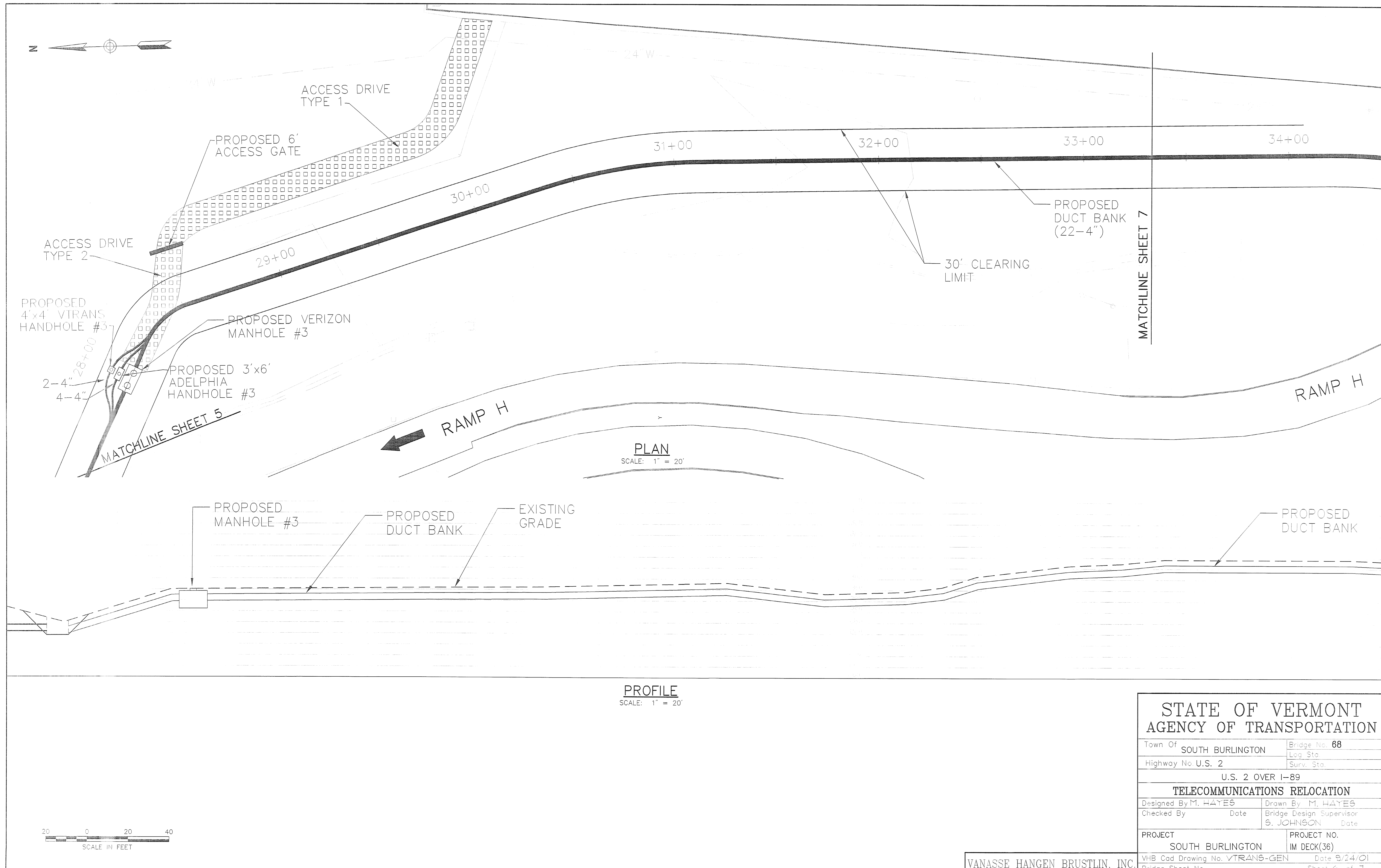
STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
TELECOMMUNICATIONS RELOCATION			
Designed By	M. HAYES	Drawn By	M. HAYES
Checked By		Bridge Design Supervisor	S. JOHNSON
Date		Date	
PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK(36)
VHB Cod. Drawing No.	VTRANS-GEN	Date	9/24/01
Bridge Sheet No.		Sheet	4 of 7



VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT			
AGENCY OF TRANSPORTATION			
Town Of		Bridge No. 68	
SOUTH BURLINGTON		Log Sta.	
Highway No. U.S. 2		Surv. Sta.	
U.S. 2 OVER I-89			
TELECOMMUNICATIONS RELOCATION			
Designed By M. HAYES		Drawn By M. HAYES	
Checked By		Bridge Design Supervisor	
Date		S. JOHNSON Date	
PROJECT		PROJECT NO.	
SOUTH BURLINGTON		IM DECK(36)	
VHB Cad Drawing No. VTRANS-GEN		Date 9/24/01	
Bridge Sheet No.		Sheet 5 of 7	



STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of SOUTH BURLINGTON Bridge No. 68

Highway No. U.S. 2 Log. Sta. Surv. Sta.

U.S. 2 OVER I-89

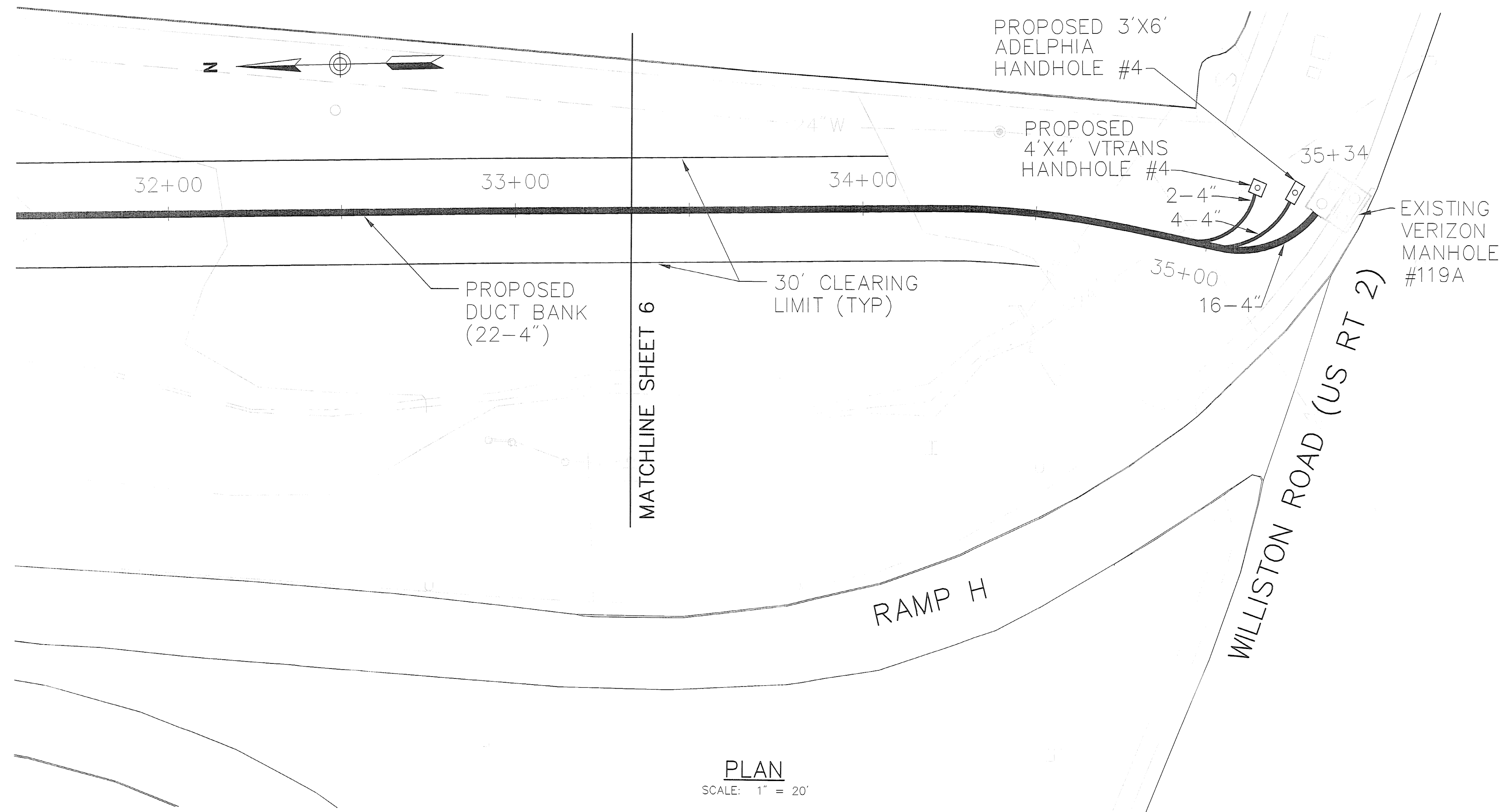
TELECOMMUNICATIONS RELOCATION

Designed By M. HAYES Drawn By M. HAYES
 Checked By Date Bridge Design Supervisor
 S. JOHNSON Date

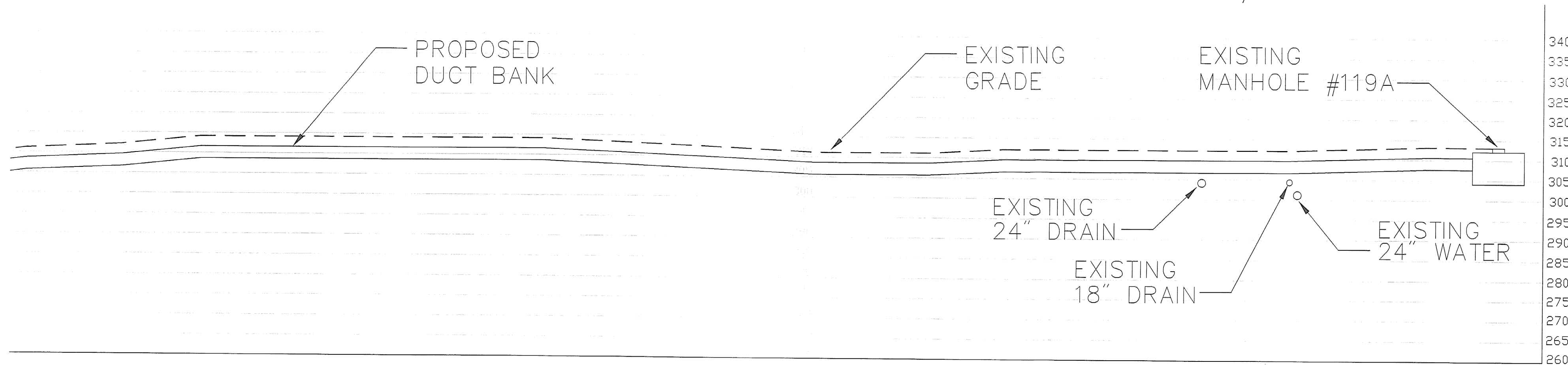
PROJECT SOUTH BURLINGTON PROJECT NO.
 IM DECK(36)

VHB Cad Drawing No. VTRANS-GEN Date 9/24/01
 Bridge Sheet No. Sheet 6 of 7

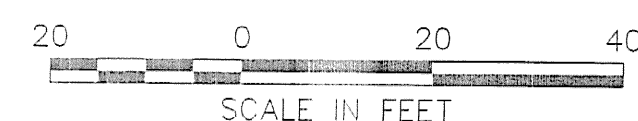
VANASSE HANGEN BRUSTLIN, INC.



PLAN
SCALE: 1" = 20'



PROFILE
SCALE: 1" = 20'



VANASSE HANGEN BRUSTLIN, INC.

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	
U.S. 2 OVER I-89			
TELECOMMUNICATIONS RELOCATION			
Designed By	M. HAYES	Drawn By	M. HAYES
Checked By		Bridge Design Supervisor	S. JOHNSON
		Date	
PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK(36)
VHB Cad Drawing No.	VTRANS-GEN	Date	9/24/01
Bridge Sheet No.		Sheet	7 of 7

Transportation
Land Development
Environmental Services

Kilton Road
Six Bedford Farms, Suite 607
Bedford, NH 03110-6572
603 644 0888
FAX 603 644 2385

TRANSMITTAL

To: Robert Suckert, PE, Resident Engineer
Vermont Agency of Transportation
209 South Pinnacle Ridge Road
Waterbury, VT 05676

Date: July 5, 2000

VHB
Project No.: 50929

Re: South Burlington IM DECK 36 Bridge No. 68
and STP BIKE (28) S

We are sending you:

☒ Attached

☐ Under Separate cover via Regular Mail the following items:

☐ Shop drawings

☐ Prints

☐ Plans

☐ Diskettes

☐ Specifications

☐ Copy of Letter

☐ Change Order

☐ Other

Copies	Date	No.	Description
1	6-27-00		Structural Drawings for Bridge Shoring Sheet S1 -Sections and Details

These are transmitted as checked below:

☐ Reviewed as required by the construction contract documents and approved, but only for conformance to the design concept of the work, and subject to further limitations and requirements contained in the construction contract documents.

☐ Rejected

☐ Revise and Resubmit

☒ Furnish as Corrected

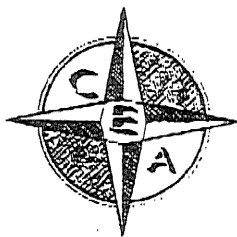
Copy to: VTrans Resident Engineer, Robert E. Suckert, P.E. w/prints
Contractor, J.A. McDonald, Inc. w/prints
Civil Engineering Associates w/prints
VTrans Consultant Project Manager , Sherward Farnsworth, PE w/prints
VHB Project Manager, Steve Johnson, PE ,VHB Project File

By: Athanasia S. Robinson, VHB Inc.

Athanasia S. Robinson

7-1 2000 10:32PM FROM

P. 1



CIVIL ENGINEERING ASSOCIATES, INC.

928 Falls Road
P.O. Box 485
Shelburne, VT 05482

Phone: 802-985-2323
Fax: 802-985-2271
E-Mail: cca@together.net

July 5, 2000

Mr. Steve Johnson
Vanasse, Hangen, Brustlin, Inc.
Six Bedford Farms, Kilton Road
Bedford, New Hampshire 03110

**Subject: South Burlington IM Deck
End Support for Existing Stringers**

Dear Steve:

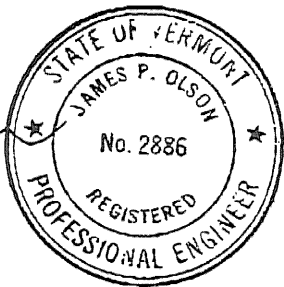
As a follow-up to your conversation with Lyn Wheatley, we are submitting the following description for securing the bridge stringers on the top of the temporary support frames.

1. One end of each set of stringers will be "fixed" to the beam seat (stub columns) with two heavy duty C-clamps (Proto model 6-HDL shown on attached sheet). Lateral restraint at this "fixed" end will be a 6-inch length of minimum 1/2 inch thick steel welded to the top of the stub column bearing plate adjacent to stringer bottom flange.
2. The "free" end will be restrained against vertical and lateral movement by the detail shown as "E" on our drawing S1 revised June 27, 2000.

Please call either Lyn Wheatley or me if you have any questions or if you require additional information.

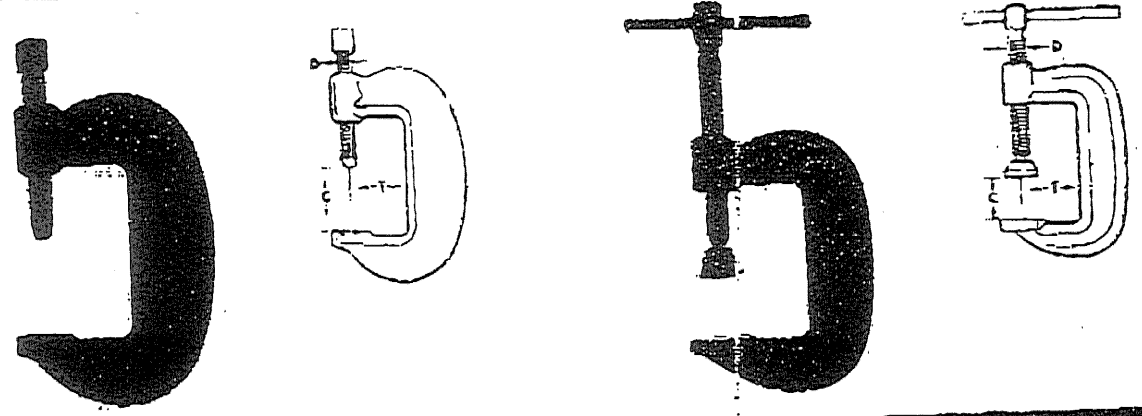
Very truly yours,

James P. Olson
James P. Olson, P.E.



JPO:pao
Enclosure

PROTO



C-CLAMPS—EXTRA HEAVY SERVICE
STANDARD SCREW

- Standard C-clamp design
- Heavy-duty threaded hub provides maximum screw support
- Forcing screws have a square head to be turned with a wrench
- Forcing screws have a hardened tip

No.	C	T	D	Min. Test Load Pounds	$\frac{1}{2}$ "
0-HD	0"-1/4"	3/8"	3/8"	2,800	0.4
1-HD	0"-1/4"	3/8"	3/8"	5,600	0.7
1 1/2-HD	0"-1/4"	1 1/8"	1"	20,000	10.1

CID A-A-429C

C-CLAMPS—HEAVY SERVICE STANDARD SCREW

- Designed for heavy service applications where the strength of the extra heavy duty C-clamp is not required
- Clamps have a high strength steel frame with a hardened forcing screw
- Forcing screws are lined with impact resistant pins

No.	C	T	D	Min. Test Load Pounds	$\frac{1}{2}$ "
102SS	0"-2"	1 1/2"	3/4"	7,300	1.3
103SS	0"-3"	1 1/2"	3/4"	8,750	2.6
104SS	0"-4 1/2"	2"	3/4"	10,000	4.1
106SS	2"-6"	2 1/4"	3/4"	11,250	5.9
108SS	4"-8"	2 1/4"	3/4"	12,500	8.0
110SS	6"-10"	2 1/4"	3/4"	13,750	11.6
112SS	8"-12"	2 1/4"	3/4"	15,000	15.8
115SS	10"-15"	2 1/4"	3/4"	16,250	18.2
118SS	12"-18"	2 1/4"	3/4"	17,500	

CID A-A-429C

C-CLAMPS—EXTRA HEAVY SERVICE
FULL LENGTH SCREW

- Full length forcing screws provide greater capacity with the maximum capacity always being "T"
- Strongest T-clamp design
- Heavy-duty threaded hub provides maximum screw support
- Forcing screws have a square head to be turned with a wrench
- Forcing screws have a hardened tip

No.	C	T	D	Min. Test Load Pounds	$\frac{1}{2}$ "
2-HDL	0"-2 1/2"	1 1/2"	3/4"	12,500	3.4
3-HDL	0"-3 1/2"	2"	3/4"	16,250	6.1
4-HDL	0"-4 1/2"	2 1/4"	1"	20,000	10.3
5-HDL	0"-5 1/2"	2 1/4"	1 1/4"	23,800	14.2
6-HDL	0"-6 1/2"	3 1/4"	1 1/4"	27,500	20.2
8-HDL	0"-8 1/2"	4 1/4"	1 1/2"	31,250	28.1
10-HDL	0"-10 1/2"	5 1/4"	1 3/4"	35,000	32.3

CID A-A-429C

C-CLAMPS—STANDARD SERVICE DEEP THROAT
FULL LENGTH SCREW

- Standard service deep throat C-clamp to the minimum depth required
- Maximized for strength and hard use
- Forcing screw has heavy rolled flange should allow the screw to turn easily under pressure and is for easy removal
- Forcing screw has a sliding T handle and an impact resistant pad
- Full length forcing screws provide greater capacity with the maximum capacity always being "T"

No.	C	T	D	Min. Test Load Pounds	$\frac{1}{2}$ "
402	0"-2"	2"	3/4"	3,500	1.3
403	0"-3"	2 1/4"	3/4"	3,500	2.0
404	0"-4"	2 1/4"	3/4"	5,500	2.5
406	0"-6"	3 1/4"	3/4"	6,500	5.0
408	0"-8"	4 1/4"	3/4"	6,500	7.0
410	0"-10"	5 1/4"	3/4"	8,000	10.5
412	0"-12"	5 1/4"	3/4"	9,500	15.5

TABLE NO.1 - PRO-POXY 300 FAST TENSION VALUES (lbs) FOR
THREADED ROD INSTALLED IN NORMAL WEIGHT CONCRETE ^{1,2,3,4,5,6}

Anchor Diameter (Inches)	Bit Diameter (Inches)	Embedment (Inches)	Ultimate Bond Strength (lbs)				Allowable Steel Strength (lbs)		
			Concrete Strength, f'c				A36	A307	300 Series
			2000 psi	2500 psi	4000 psi	5500 psi			
3/8	7/16	3-3/8	6530	7300	8250	9200	2110	4550	3100
3/8	9/16	3-3/8	8550	9560			2110	4550	3100
3/8	7/16	5-5/8	9820	10980	11360	11740	2110	4550	3100
1/2	9/16	4-1/2	9430	10540	11730	12920	3750	8100	5680
1/2	11/16	4-1/2	13090	14640			3750	8100	5680
1/2	9/16	7-1/2	13110	14660	17010	19360	3750	8100	5680
5/8	3/4	5-5/8	13240	14800	18870	22940	5880	12660	9040
5/8	7/8	5-5/8	20880	23340			5880	12660	9040
5/8	3/4	9-3/8	19280	21560	26260	30960	5880	12660	9040
3/4	7/8	6-3/4	20020	22380	25870	29360	8460	18220	11290
3/4	1	6-3/4	26700	29850			8460	18220	11290
3/4	7/8	11-1/4	27120	30320	34340	38360	8460	18220	11290
7/8	1	7-7/8	20420	22830	29235	35640	11500	24800	15580
7/8	1-1/8	7-7/8	32520	36360			11500	24800	15580
7/8	1	13-1/8	26670	29820			11500	24800	15580
1	1-1/8	9	20840	23300	28780	34260	15020	32400	20440
1	1-1/4	9	36440	40740			15020	32400	20440
1	1-1/8	15	34650	38340			15020	32400	20440
1-1/4	1-3/8	11-1/4	33240	37160	46760	56360	23480	50610	32700
1-1/4	1-3/8	18	44880	50180			23480	50610	32700

¹ The tabulated shear and tension values are for anchors installed in normal weight concrete having reached the designated ultimate compressive strength at the time of installation. Linear interpolation may be used for concrete strengths between those listed.

² Spacing and edge distance shall be in accordance with Table No. 5.

³ For other steel grades compare allowable tension values with table bond values and us the lesser. Stainless steel values are based on ASTM F 593, cold worked condition strength.

⁴ Allowable loads may be increased by 33-1/3% for short term loading due to earthquakes or wind.

⁵ 2000 psi ultimate loads were determined in accordance with Section 7.5 of ICBO-ES AC-58, by multiplying 2500 psi test results by a reduction factor of (2000/2500) ^ 1/2= 0.894.

⁶ Pro-Poxy 300 Fast is recognized for installation in water-filled or moist holes, for use in locations subject to severe exterior weathering conditions and for resisting tension and shear loads due to earthquake and wind.

TABLE NO.2 - PRO-POXY 300 FAST ALLOWABLE SHEAR VALUES FOR
THREADED ROD INSTALLED IN MINIMUM 2000 PSI CONCRETE ^{1,2,3,4,5}

Anchor Diameter (Inches)	Ba Diameter (Inches)	Embedment (Inches)	Allowable Steel Strength (lbs)		
			A36 A307	A193 B7	300 Series Stainless
3/8	7/16	3-3/8	1080	2350	1565
1/2	9/16	4-1/2	1930	4170	2900
5/8	3/4	5-5/8	3030	6520	4660
3/4	7/8	6-3/4	4360	9390	5880
7/8	1	7-7/8	5930	12780	8170
1	1-1/8	9	7740	16690	10730
1-1/4	1-3/8	11-1/4	12100	26070	17340

¹ The tabulated shear and tension values are for anchors installed in normal weight concrete having reached a minimum ultimate compressive strength f_c of 2000 psi at the time of installation.

² Spacing and edge distance shall be in accordance with Table No. 5.

³ Stainless steel values are based on ASTM F-353, cold worked condition strength.

⁴ Allowable loads may be increased by 33-1/3% for short term loading due to earthquakes or wind. A 36 & A 307 values must be used instead of listed values for higher strength steels for these loading conditions.

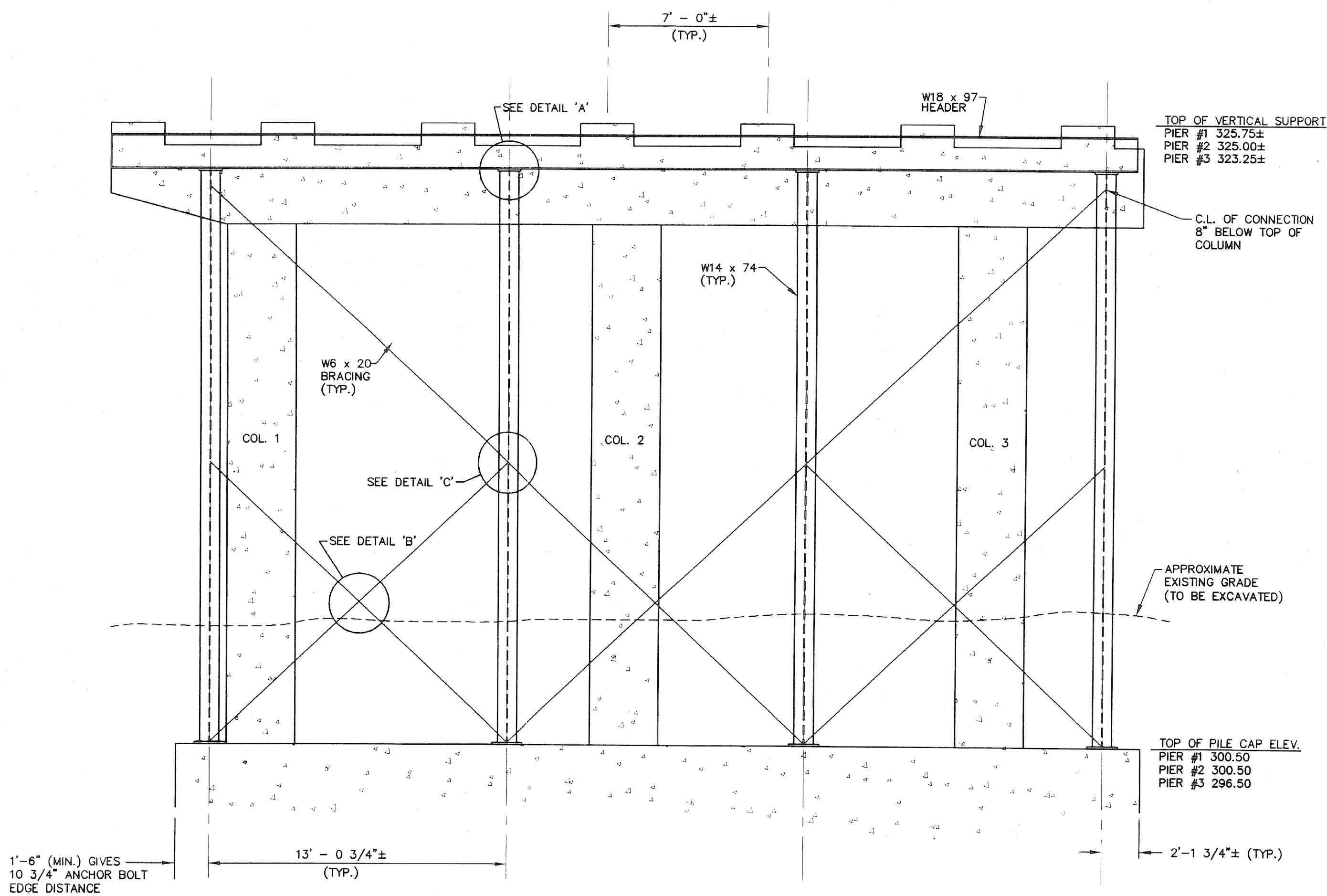
⁵ Pro-Poxy 300 Fast is recognized for installation in water-filled or moist holes, for use in locations subject to severe exterior weathering conditions and for resisting tension and shear loads due to earthquake and wind.

TABLE NO.5 - PRO-POXY 300 FAST
ALLOWABLE SPACING AND EDGE DISTANCE
(D = Anchor Diameter)

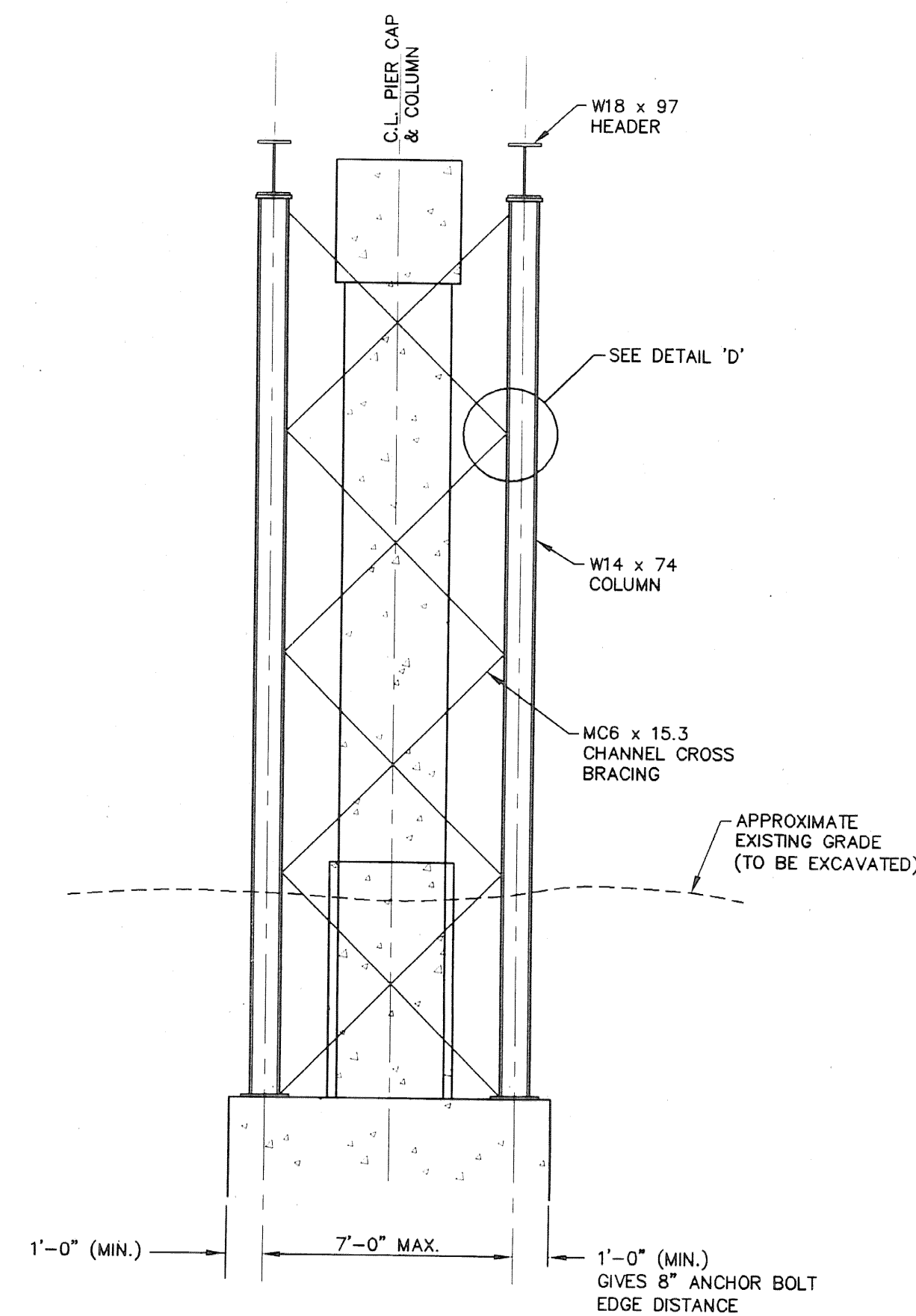
	DISTANCE FOR FULL ANCHOR CAPACITY (Critical Distance) ¹	DISTANCE FOR REDUCED ANCHOR CAPACITY	REDUCTION FACTOR ²
Edge Distance - Tension Loads	12D	4D	.70
Spacing Between Anchors	24D	8D	.90
Edge Distance - Shear Loads	12D	4D	.26

¹ The listed values are the minimum distances required to obtain the load values in Table Nos. 1, 2 & 3.
² Load values in the tables are multiplied by the reduction factor when anchors are installed at the reduced distances. Use linear interpolation for spacing and edge distances between listed values.

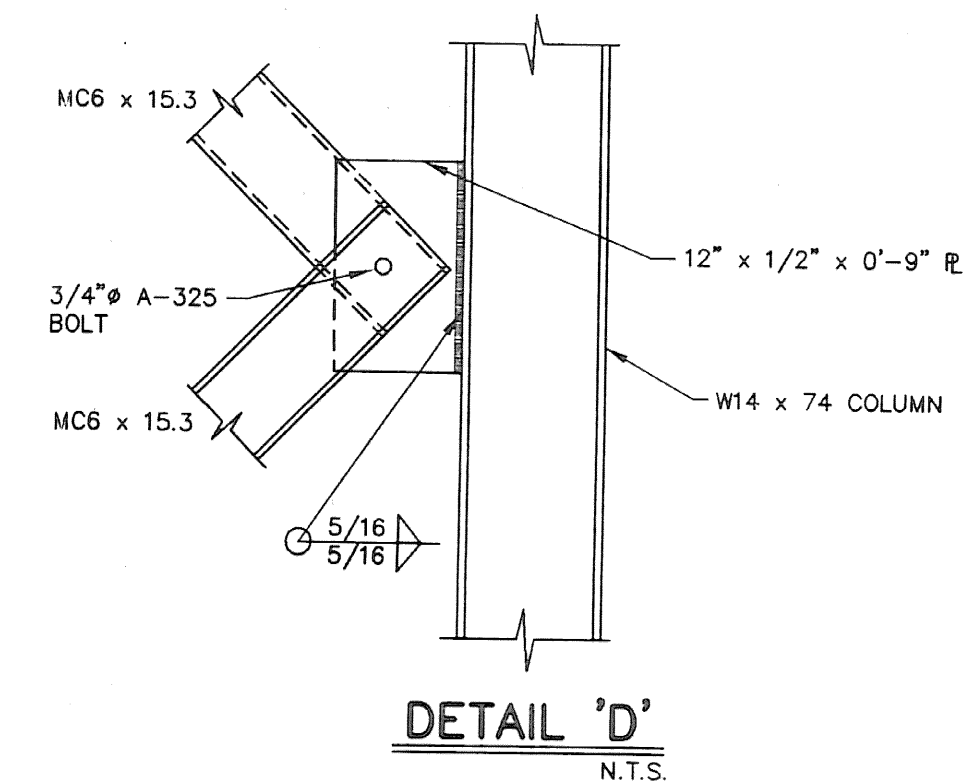
Example (2500 psi concrete 7/8" diameter hole)			
Anchor Diameter	Embedment Depth	Edge Distance	Ultimate Load
5/8"	5-5/8"	12D (7-1/2")	23,340 lbs (from Table #1)
5/8"	5-5/8"	4D (2-1/2")	16,340 lbs (23,340 ^{from Table 1} X .70 ^{reduction factor from Table 5}) (Value from Table 1 X Reduction factor from Table 5)



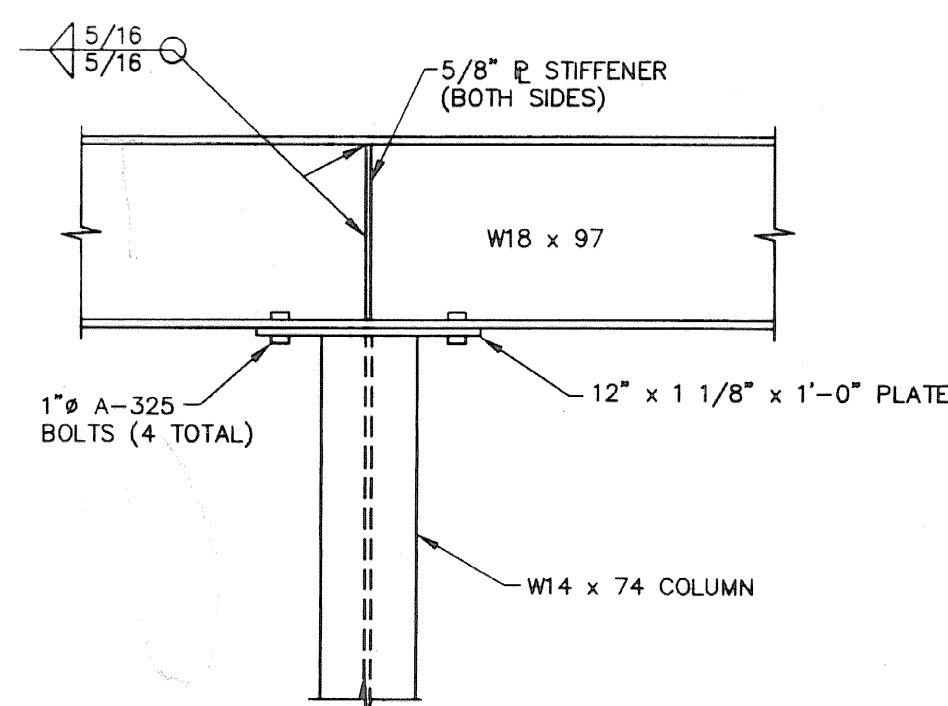
TYPICAL FRAME LAYOUT FOR SUPPORT
1/4" = 1'-0"



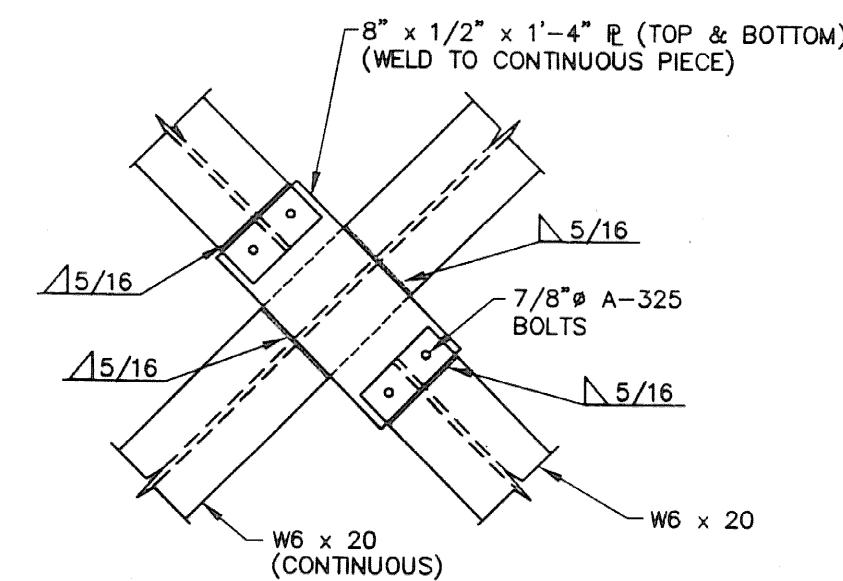
BRACING SCHEME E-W DIRECTION
1/4" = 1'-0"



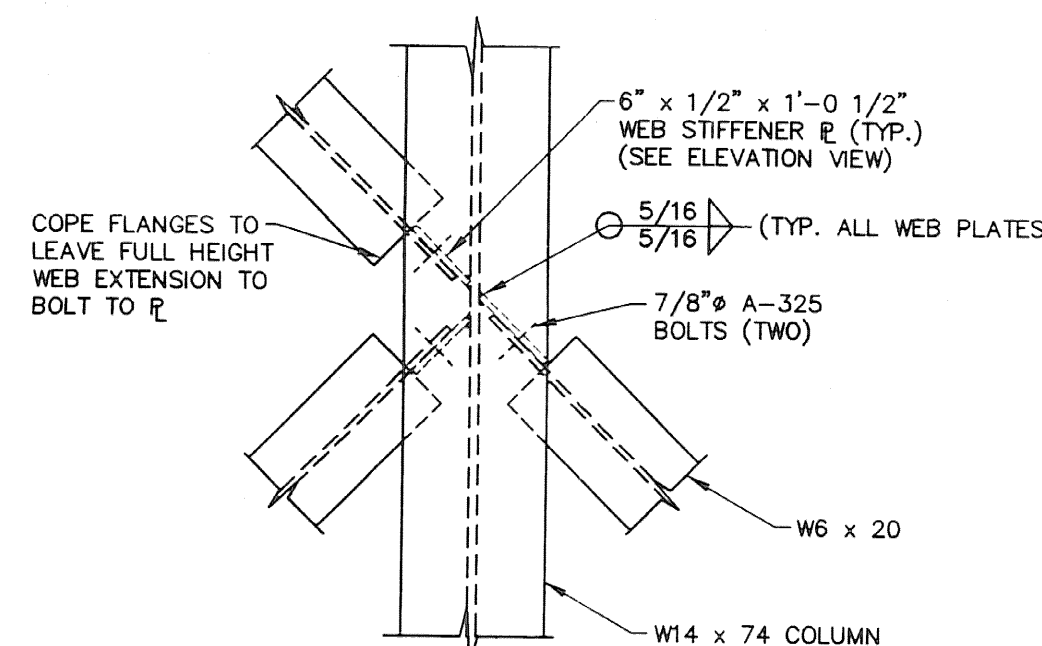
DETAIL 'D'
N.T.S.



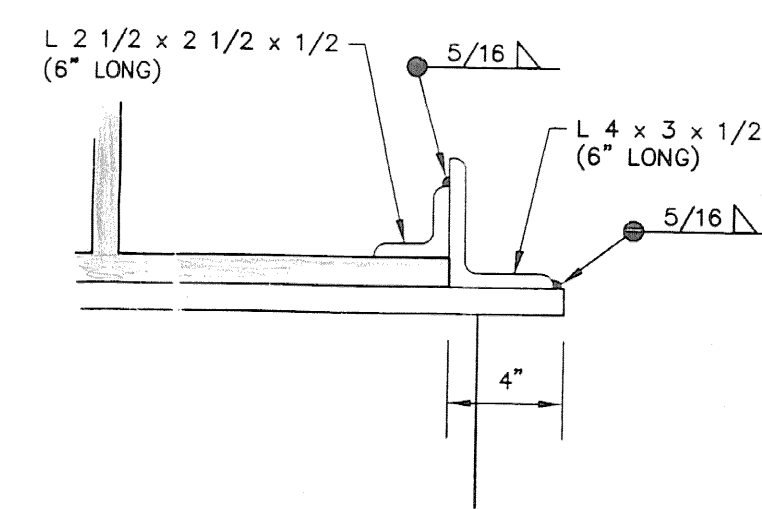
DETAIL 'A'
N.T.S.



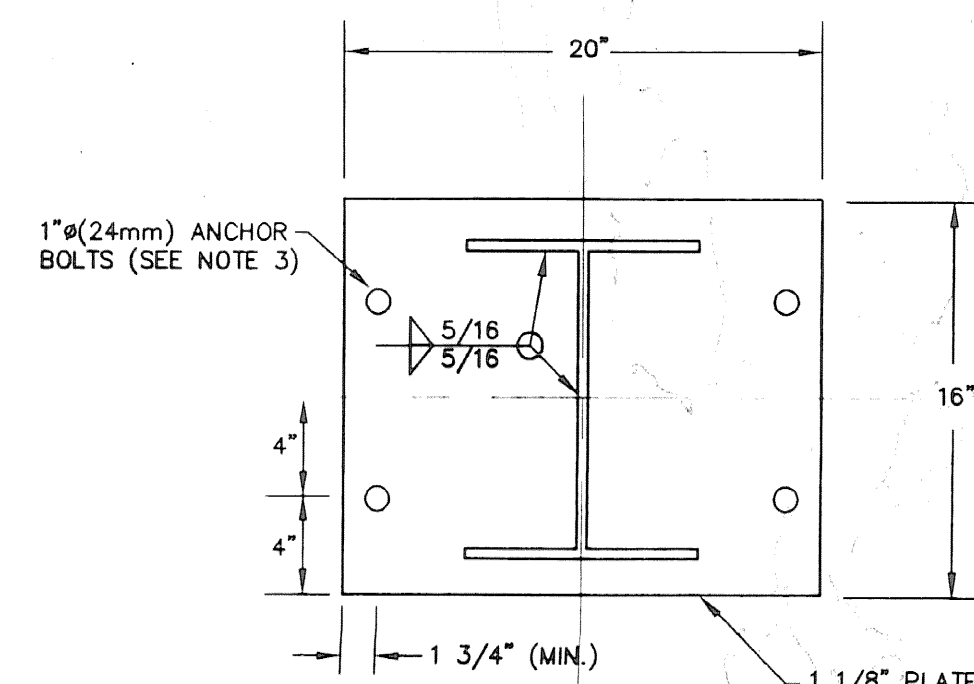
DETAIL 'B'
N.T.S.



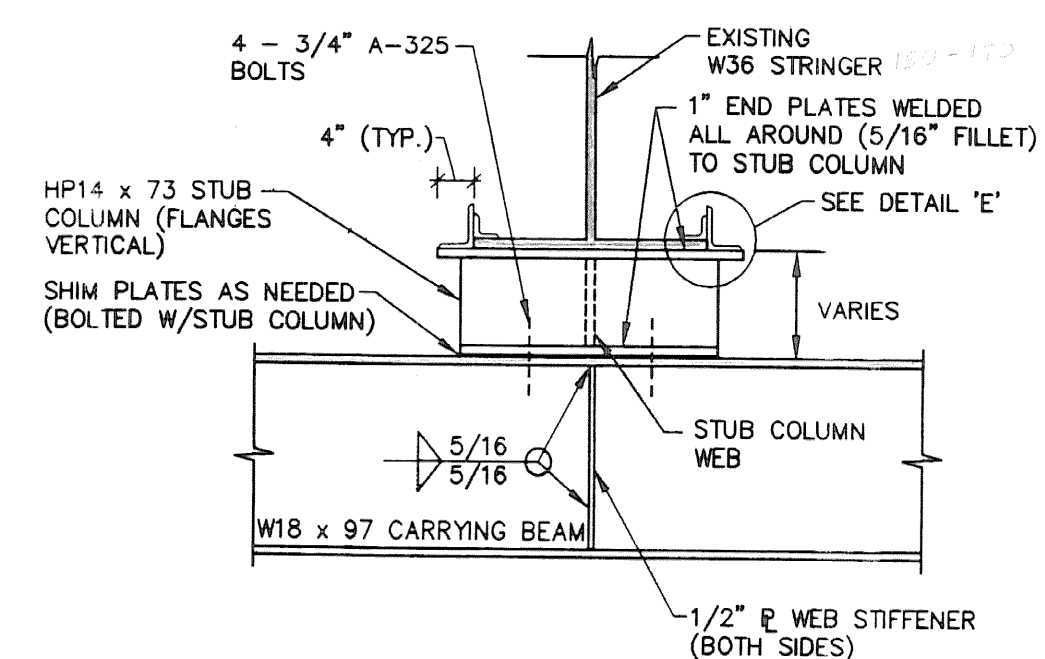
DETAIL 'C'
N.T.S.



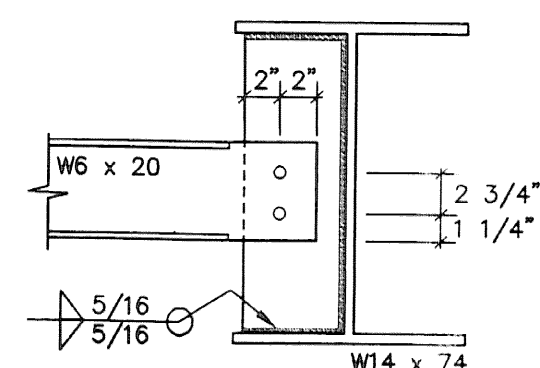
DETAIL 'E'
N.T.S.



BASE PLATE DETAIL
N.T.S.



DETAIL @ GIRDER (STRINGER) SUPPORT
N.T.S.



ELEVATION VIEW @ DETAIL 'C'
N.T.S.

NOTES:

- ALL STEEL SECTIONS TO BE A-36 GRADE.
- ALL MEASUREMENTS TO BE FIELD VERIFIED.
- COLUMN BASEPLATES FOR TEMPORARY SUPPORTS TO BE ATTACHED TO EXISTING PILE CAP WITH 1" DIA. A193-B7 THREADED ROD (4 @ EACH COLUMN) INSTALLED TO A MINIMUM EMBEDMENT OF 9 INCHES USING PRO-POXY 300 FAST ADHESIVE. MINIMUM RECOMMENDED EDGE DISTANCE BY SUPPLIER IS 4 DIAMETERS AND FULL CAPACITY ACHIEVED AT 12 DIAMETERS. PRO-RATED FOR 8 DIAMETERS, AS SHOWN ON THE PLANS, THE ALLOWABLE PULL-OUT CAPACITY IS 6100 LBS. PER ROD AND ALLOWABLE SHEAR CAPACITY IS 8620 LBS. PER ROD. THESE ALLOWABLE LOADS MEET VERTICAL AND HORIZONTAL LOAD REQUIREMENTS.
- EXISTING STRINGERS TO BE SECURED TO SUPPORTING BEAM OR STUB COLUMN BY HOLD-DOWN ANGLES OVER BOTTOM FLANGE OF STRINGER.
- JACKING MAY BE ACCOMPLISHED BY TEMPORARILY REPLACING END MC18 x 42.7 DIAPHRAGM BEAM WITH A W18 x 97 JACKING BEAM BOLTED TO DIAPHRAGM PLATES WELDED TO STRINGERS.
- ONE UPPER BRACE (SEE TYPICAL FRAME LAYOUT DETAIL) MAY BE TEMPORARILY REMOVED TO PERMIT ACCESS TO WORK SPACE AT PIER VERTICAL COLUMNS.
- NO MORE THAN TWO OF FOUR LINES OF E-W BRACING (SEE BRACING SCHEME E-W DIRECTION) MAY BE TEMPORARILY REMOVED FOR ACCESS TO WORK SPACE.
- ALL WELDS ARE 5/16" FILLET WELDS USING E70XX ELECTRODES.

3A. Refer to attached anchor bolt requirements for further information.

Refer to attached letter dated 7/5/00 for fixed end information.

SITE ENGINEER:



CIVIL ENGINEERING ASSOCIATES, INC.
P.O. BOX 485 SHELBURNE, VT 05482
802-985-2323 FAX: 802-985-2271 e-mail: cea@together.net

DRAWN

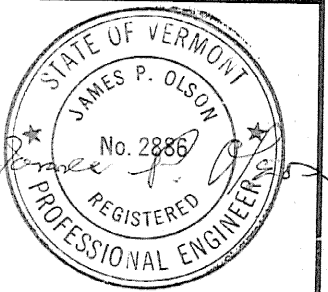
PJM

CHECKED

JPO

APPROVED

JPO



PROJECT:

J.A. McDONALD

**WILLISTON ROAD
BRIDGE SHORING
AT I-89**

SO. BURLINGTON, VERMONT

SUBMITTAL REVIEW

☐ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE CONSTRUCTION CONTRACT DOCUMENTS AS SET FORTH IN DIVISION _____, DIVISION _____, SECTION _____, AND SHEET _____ OF THE PLANS, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS IN THE CONSTRUCTION CONTRACT DOCUMENTS.	
☐ REJECTED	☐ REVISE AND RESUBMIT
☒ FURNISH AS CORRECTED	
CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR COMPLIANCE WITH THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS REVIEW IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE CONSTRUCTION CONTRACT DOCUMENTS AS SET FORTH IN DIVISION _____, DIVISION _____, SECTION _____, AND SHEET _____ OF THE PLANS, AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATING WORK WITH THAT OF OTHER TRADES, AND PERFORMING WORK IN A SAFE AND SATISFACTORY MANNER.	
VHB Vansasse-Hangen Brustin, Inc. Engineers, Planners, and Scientists 66 Spaulding Parkway, Milton Rd. Bedford, NH 03110 603-644-0888	Job Number: 50929 Reviewed By: ASR Date: 7-5-00

DATE	CHECKED	REVISION
6/27/00	JPO	GENERAL REVISIONS, ADDED DETAIL 'E', ADDED DIMENSIONS.

**SECTIONS
and DETAILS**

DATE
6/7/2000

SCALE
AS SHOWN

PROJ. NO.
00195

DRAWING NUMBER

S1

VHB

Transportation
Land Development
Environmental Services

Kilton Road
Six Bedford Farms, Suite 607
Bedford, NH 03110-6532
603 644 0825
FAX 603 644 2385

Vanasse Hangen Brustlin, Inc.

TRANSMITTAL

To: Robert Suckert, PE, Resident Engineer
Vermont Agency of Transportation
209 South Pinnacle Ridge Road
Waterbury, VT 05676

Date: 6-19-00

VHB
Project No.: 50929

Re: South Burlington IM DECK 36 Bridge No. 68
and STP BIKE (28) S

The Following details as outlined below, Item No. 531.10 Description Bearing Device Assembly for the above project transmitted with your letter dated 6-5-00 have been reviewed and are being returned herewith:

We are sending you:

☒ Attached

☐ Under Separate cover via Regular Mail the following items:

☒ Shop drawings

☐ Prints

☐ Plans

☐ Diskettes

☒ Specifications

☐ Copy of Letter

☐ Change Order

☐ Other

Copies	Date	No.	Description
as noted below	6/5/00	3342	Item 531.10 Cosmec Preformed Fabric Pad Bearings
as noted below	6/5/00	3343	Item 531.10 Cosmec Rocker Bearings
as noted below			Item 531.10 Welding and Bonding Procedures

These are transmitted as checked below:

☐ Reviewed as required by the construction contract documents and approved, but only for conformance to the design concept of the work, and subject to further limitations and requirements contained in the construction contract documents.

☐ Rejected

☐ Revise and Resubmit

☒ Furnish as Corrected

REMARKS:

There shall be no fabrication done until all drawings and welding procedures are approved or approved as noted. You must provide written notice to the Vermont Agency of Transportation (VTrans) Structures Section office as to the date fabrication represented by these drawings will begin. That notice must be received at least seven days prior to that date, as per Specifications 506.03. Any material fabricated prior to the notification date is subject to rejection without further cause.

Copy to:

VTrans Resident Engineer, Robert E. Suckert, P.E. w/prints **

Contractor, J.A. McDonald, Inc. w/prints **

Subcontractor, Cosmec - letter only

VTrans Construction Section - letter only

VTrans Consultant Project Manager, Sherward Farnsworth, PE w/prints **

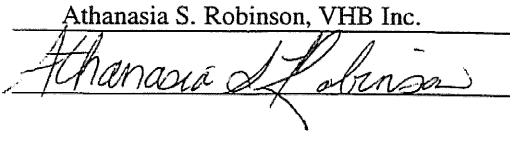
VTrans Materials & Research Section (C&IA Unit) - letter only

VTrans Structures Section - Shop Inspector - Jeff Clark w/ prints **

VHB Project Manager, Steve Johnson, PE, VHB Project File

By:

Athanasia S. Robinson, VHB Inc.



** Attachments: One set of prints (and welding and/or bonding procedures).

V.T. A.O.T.
IM Deck (36)

COSMEC, INC.
70 SOUTH STREET
WALPOLE, MA 02081
PH# 508-668-6600
FAX# 508-660-1022

EMS-QC-110
V.A.O.T.
RECEIVED
CK'D BY _____ CK'D BY JWC
JUN 13 2000
RESUBMIT _____ APPROVED ✓
BY _____ DATE 6-14-00

ENGINEERING AND MANUFACTURING STANDARD
PTFE FACING AND STEEL
OR PREFORMED FABRIC SUBSTRATE
SURFACE PREPARATION AND ADHESIVE PROCEDURE

RECEIVED
JUN 19 2000
VHB, Inc.

The PTFE facing shall be prepared for bonding to a substrate material by chemically etching the face to be bonded using the sodium ammonia process.

The mating surface of the substrate shall be prepared for bonding using a three-step process as follows:

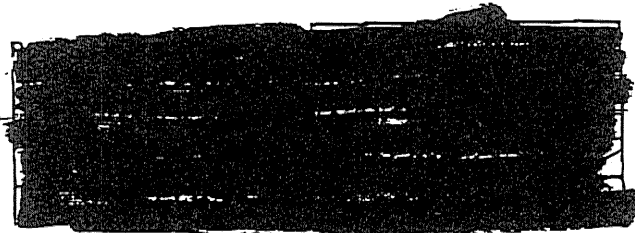
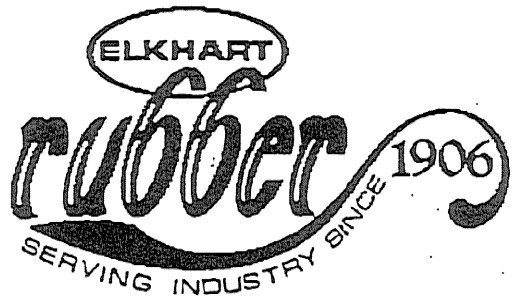
1. preliminary degrease using methyl ethyl ketone.
2. mechanically roughen to approx. 125 RMS and thoroughly brush and clean for final degreasing.
3. final degrease using methyl ethyl ketone

The PTFE and substrate mating surfaces shall be clean and dry with final degreasing performed within 30 minutes of bonding. Adhesive shall consist of a two-part epoxy adhesive system conforming to Military Specification MMM-A-134

The adhesive shall be applied to the full area of the contact surface in an even manner so as to establish a glue line not less than .002 inch nor more than .010 inch thick. Surfaces being bonded are to be assembled immediately with open assembly time not to exceed 20 minutes.

The PTFE material shall be greater in width and length than the substrate material by at least ½ inch when bonded. The PTFE shall be applied with contact starting at one edge and with contact progressing across entire bonded surface to eliminate air entrapment. The PTFE is to be in full contact with the steel or preformed fabric substrate. Curing of the bond shall be done under pressure of approx. 2-100 psi for 10-12 hours at approx. 70°F or other schedules as established by the manufacturer of the adhesive.

The PTFE shall be carefully trimmed to the same size as the substrate after bond curing and all bonds shall be visually inspected for bond retention.



VT. A.O.T.
PROJECT # 1M DECK 36
ITEM # 531.10

5/13/99

To: Naji @ Cosmec, Inc., Walpole, MA
From: Darren Spurgeon @ Elkhart Industries, High Point, NC
Re: Neoprene/Fabric Bearing Pads

RECEIVED
JUN 08 2000
VHB, Inc.

Dear Naji,

In regards to the process of making our bearing pads, I hope this information will be of service.

Elkhart Industries' "Yellow" Preformed fabric pads are constructed of alternating layers of AASHTO-spec Neoprene and heavy weight cotton duck fabric. They are built up from pre-forms of both materials. The pads are inserted into a steam press once the correct number of layers are added. Once inserted into our steam press, using a combination of 2,100 PSI and varying combinations of steam and time, these pads are cured into the final product. We are able to maintain exacting tolerances on the thickness by using different sizes and thicknesses of metal forms to stop the press from squeezing the material too tightly together. Once the material air-cools, the pieces are trimmed to the desired size and shipped.

Elkhart Industries' bearing pads meet both AASHTO 18.10.2, and 18.4.10.1, Div. II and Mil-C-882-B specifications, and certificates of conformance and test results are provided with each shipment if needed.

The total number of fabric ply will vary with the thickness of the finished pads. The number of ply will determine the final stiffness and hardness of the product. The relative stiffness of the finished pad is exponentially proportional to the number of plies. Thus a hypothetical 1/2" thick pad with 35 plies cannot be converted to a 1" thick pad with 70 plies. This would make the pad much too stiff. In other words, the thicker the pad, the fewer number of plies per inch.

05/13/1999 11:09 ELKHART RUBBER + 15025601022 NO.039 002



VT. A.O.T.
PROJECT # 1M DELK 36
ITEM # 531.10

In regards to your specific request, the 1-1/2" thick pads requested will contain 96 plies of cotton duck.

I hope this helps you and provides the necessary information. Unfortunately, the temperature and time needed to cure the sheets is proprietary information, and I am not free to disclose this information. If you require any further information on this subject, please contact me at (800)222-5678. I look forward to your call.

Best regards,

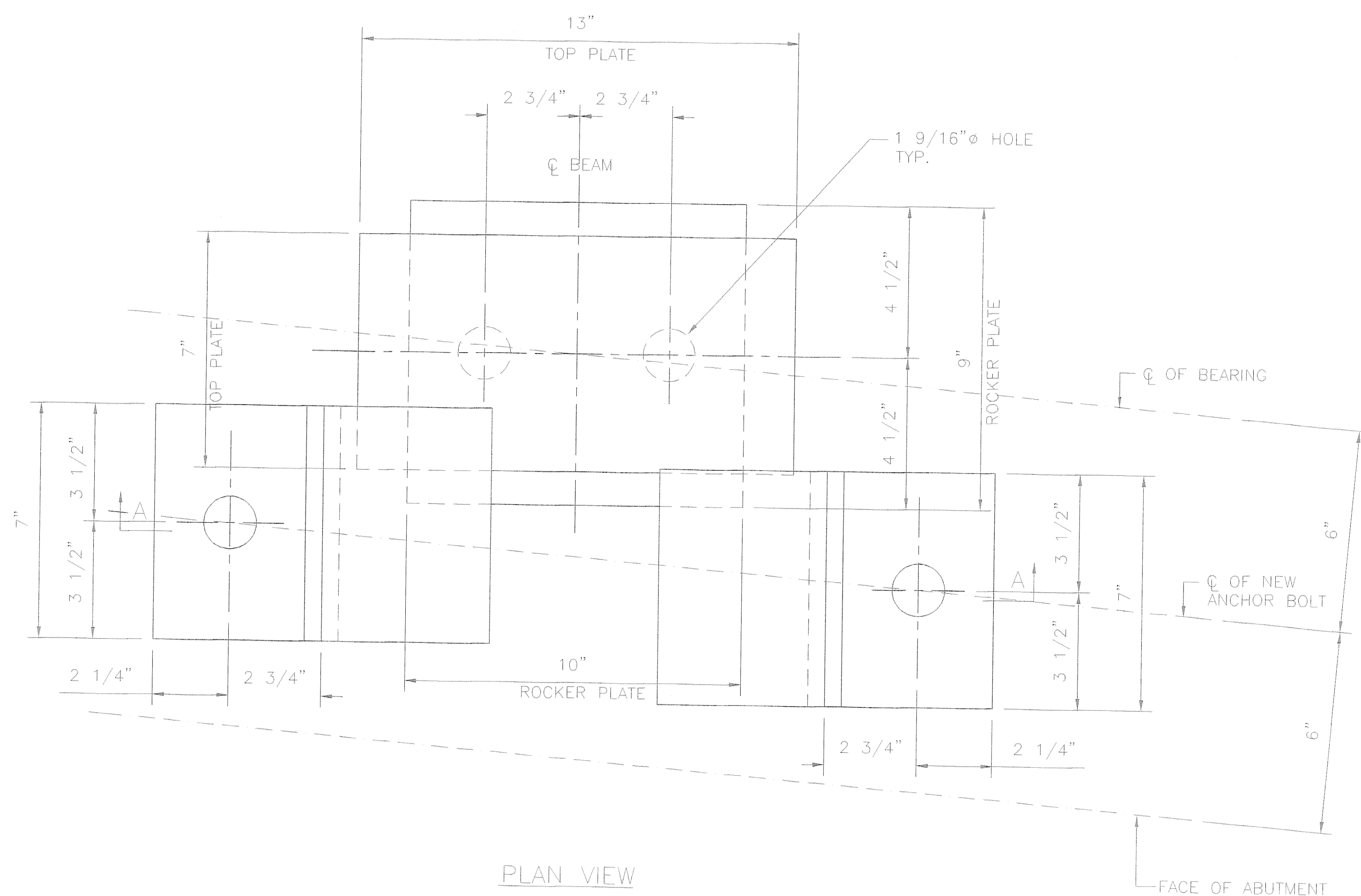
Darren Spurgeon
Darren Spurgeon
Sales Coordinator

cc: Jim Gregory

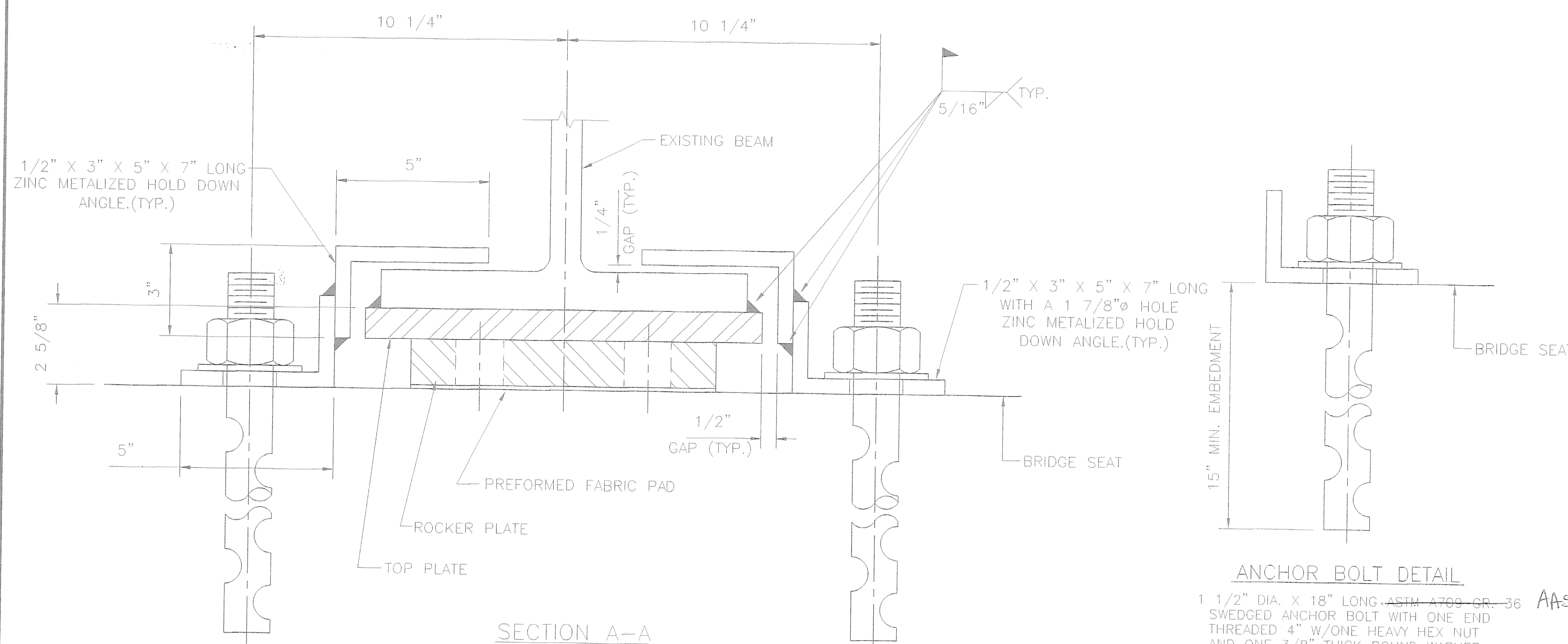
V.A.O.T.
RECEIVED
CND BY _____ OKD BY *JWC*
JUN 13 2000
RESUBMIT _____ APPROVED *✓*
BY _____ DATE *6-14-00*

Page 1 of 1

DATE 6-14-00



PLAN VIEW
EXPANSION BEARING
LOCATION: ABUTMENT 1, BEAM LINE 14
QUANTITY: 1

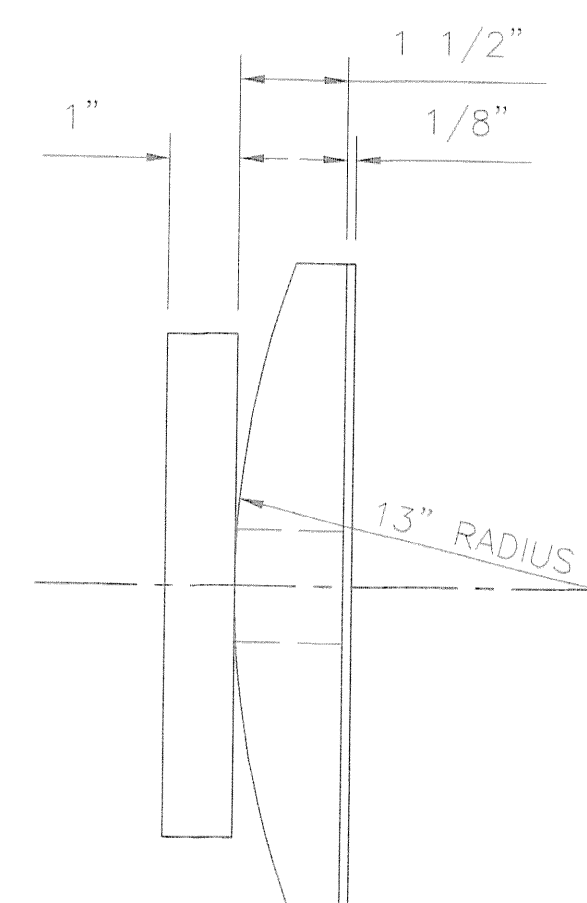


SECTION A-A

ANCHOR BOLT DETAIL

1 1/2" DIA. X 18" LONG, ASTM A709 GR. 36
SWEDGED ANCHOR BOLT WITH ONE END
THREADED 4" W/ ONE HEAVY HEX NUT
AND ONE 3/8" THICK ROUND WASHER
W/ 1 5/8" HOLE - ALL GALVANIZED

NUTS SHALL BE PLACED
FINGER TIGHT AND ANCHOR BOLT
THREADS BURRED TO PREVENT
REMOVAL OF NUT (TYP.)



ELEVATION

- Contractor responsible to verify dimensions of existing plates before ordering new plates.
- Shim Plates, if required shall be galvanized or metalized.

BEARING NOTES

- ALL MATERIALS USED IN THE FABRICATION OF THESE BEARINGS SHALL BE MADE IN THE U.S.A.
- BEARINGS ARE TO BE SHIPPED AS COMPLETE UNITS, STEEL BANDED, AND SHALL BE WRAPPED TO PROTECT FROM MOISTURE AND DIRT DURING TRANSIT AND STORAGE.
- LOCATION OF FABRICATION PLANT - 70 SOUTH STREET, WALPOLE, MA 02081
- COSMEC, INC. REPRESENTATIVE - MR. WILLIAM BURHOE (508) 668-6600
- AT NO TIME MAY ANY BEARINGS BE DISASSEMBLED WITHOUT AUTHORIZATION FROM COSMEC, INC.
- BEARINGS SHALL BE STORED IN A CLEAN, DRY, LEVEL UPRIGHT POSITION.
- Prior to galvanizing or metalizing, all corners and edges of steel plates, shapes, etc. shall be ground to a 1/16 inch radius.

MATERIALS

STEEL - AASHTO M-183 GRADE 36 (ASTM A709 GR. 36) ZINC METALIZED AND SEALED WITH AN APPROVED SEALANT.

STAINLESS STEEL - ASTM A240 TYPE 304, (20 RMS) FINISH

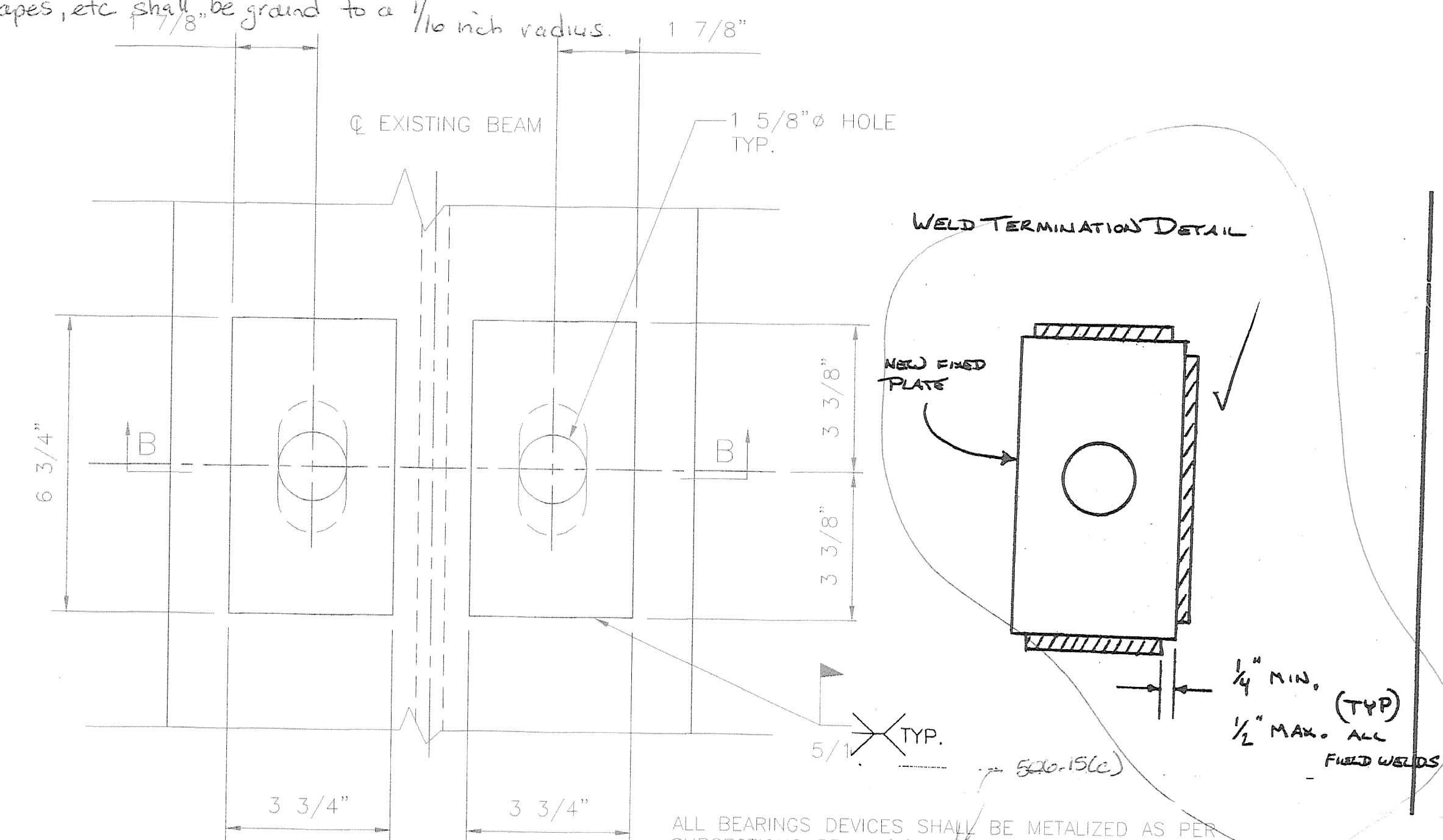
PREFORMED FABRIC PAD - AASHTO DIV. II SPEC. 18.4.10.1

PTFE - ASTM D1457 (UNFILLED) and requirements 731.04 of Vermont Standard Spec.

ANCHOR BOLTS, NUTS & WASHERS - SEE DETAIL

Nuts - Heavy Hex Nut ASTM A307

Washers - AASHTO M183



ALL BEARINGS DEVICES SHALL BE METALIZED AS PER SUBSECTIONS 531.04(b) OR 516.16(a) & (b). BEARINGS SHALL BE SEALED WITH AN APPROVED SEALER AS SPECIFIED IN STANDARD SPEC. SUBSECTION 506.15(b). AREAS OF METALIZING DAMAGED BY FIELD WELDING OR HANDLING SHALL BE PAINTED WITH AN APPROVED SEALANT IN ACCORDANCE WITH STANDARD SPEC. SUBSECTION 708.02(d).

PLAN VIEW

MODIFY EXISTING EXPANSION BEARING TO FIXED BEARING
LOCATION: ABUTMENT 1, BEAM LINE 1 THRU 13
QUANTITY: 13

NEW NUTS SHALL BE PLACED
FINGER TIGHT AND ANCHOR BOLT
THREADS BURRED TO PREVENT
REMOVAL OF NUT (TYP.)

NEW NUT AND 3/8" THICK ROUND
WASHER W/ 1 5/8" HOLE
(GALV.) ON EXISTING BOLT

NEW FIXED PLATE (GALV.)
1 1/2" X 3 3/4" X 6 3/4"

EXISTING BEAM
TO REMAIN

EXISTING BEARING
TO REMAIN

EXISTING 1 1/4" DIA.
ANCHOR BOLTS TO REMAIN

SECTION B-B

SHOP DRAWING REVIEW

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

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

VHB Vanessa Hanger Brustlin, Inc.
Engineers, Planners, and Scientists
Six Bedford Farms, 4000 Rd.
Bedford, NH 02822 603 844 0808

Job Number: 50939
Reviewed By: ASP
Date: 6-19-00

STATE OF VERMONT AGENCY OF TRANSPORTATION

U.S. 2 OVER I-89
TOWN OF SOUTH BURLINGTON
PROJECT NO. IM DECK (36)

ITEM NO. 531.10
BRIDGE NO.68

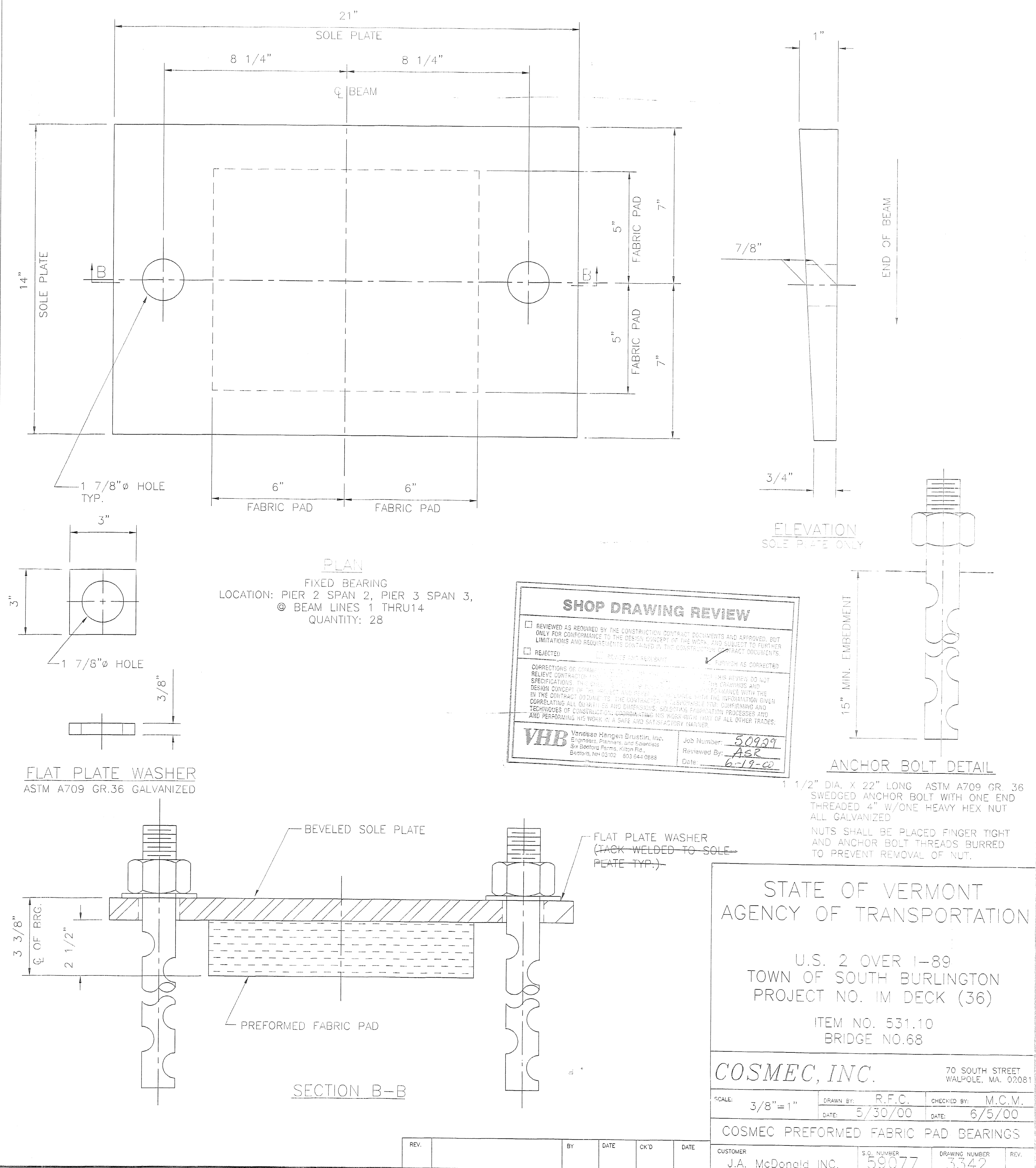
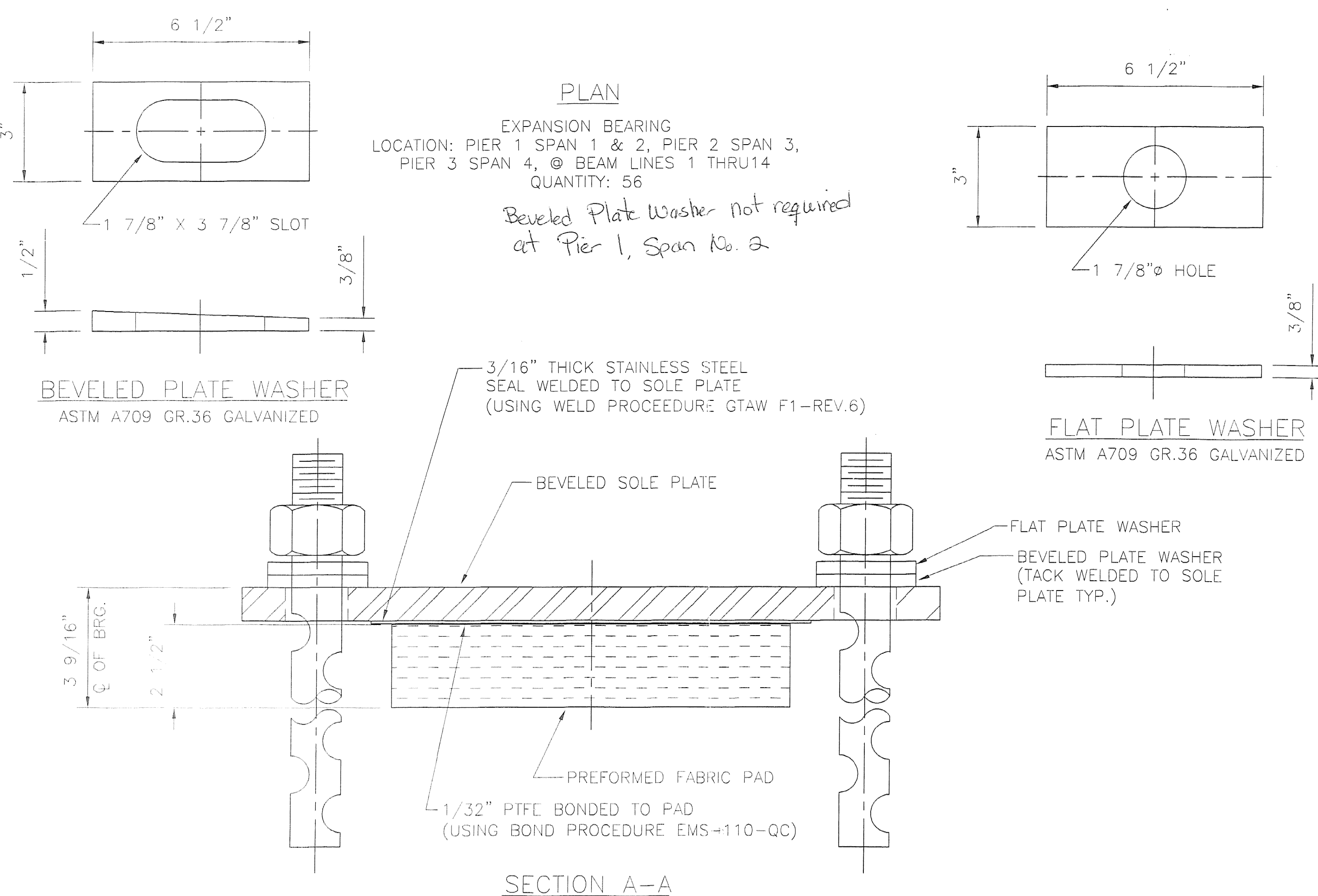
COSMEC, INC.

70 SOUTH STREET
WALPOLE, MA 02081

SCALE: 3/8" = 1" DRAWN BY: R.F.C. CHECKED BY: M.C.M.
DATE: 5/30/00 DATE: 6/5/00

COSMEC ROCKER BEARINGS

CUSTOMER: J.A. McDonald INC. S.O. NUMBER: 59077 DRAWING NUMBER: 3343 REV.





Vanasse Hangen Brustlin, Inc.

TRANSMITTAL

Transportation
Land Development
Environmental Services

Kilton Road
Six Bedford Farms, Suite 607
Bedford, NH 03110-6512
603.644.0888
FAX: 603.644.2385

To: Robert Suckert, PE, Resident Engineer
Vermont Agency of Transportation
209 South Pinnacle Ridge Road
Waterbury, VT 05676

Date: March 27, 2001

VHB
Project No.: 50929

Re: South Burlington IM DECK 36 Bridge No. 68
and STP BIKE (28) S

The Following details as outlined below, Item No. 506.60 Description Structural Steel for the above project transmitted with your letter dated 1/25/01 have been reviewed and are being returned herewith:

We are sending you: ☒ Attached ☐ Under Separate cover via Regular Mail the following items:

☒ Shop drawings ☐ Prints ☐ Plans ☐ Diskettes ☐ Specifications ☐ Copy of Letter ☐ Change Order

Copies	Date	No.	Description
as noted below	1/25/01		Revised Shop Drawings for New Diaphragms

These are transmitted as checked below:

☐ Reviewed as required by the construction contract documents and approved, but only for conformance to the design concept of the work, and subject to further limitations and requirements contained in the construction contract documents. ☐ Rejected ☐ Revise and Resubmit ☒ Furnish as Corrected

REMARKS: Shop drawing review completed after field confirmation of the final diaphragm location
from Bob Suckert on March 19, 2001

Copy to: Contractor, J.A. McDonald, Inc. - w/attach.
Subcontractor - Casco Bay- Letter Only
VTrans Resident Engineer, Robert E. Suckert, -w/ attach.
VTrans Consultant Project Manager, Sherward Farnsworth, PE -
letter w/attach.
VTrans-Shop Inspector-Jeff Clark - Letter only
VTrans - Materials & Research- Letter only
VTrans- Construction Section- Letter only

Athanasia S. Robinson
Athanasia S. Robinson

LETTER OF TRANSMITTAL

TO WAMPASS HAWAIIAN BELTSTAIN, INC.
SIX BEDDED FARMS, KUNIA ROAD
KEDDIE, NH 05110-6532

DATE: JANUARY 25 1968	JOB NO. 50929
ATTENTION: STATE TOWN	
RE: SOUTH RIVERVIEW TOWN OF BRIDGE No 68 & STP BRIDGE (CB) S	

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☒ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION	RECEIVED BY
220	1/25/61		NEW DIAPHRAGMS	1581 X 6 1000
				VHS, INC.

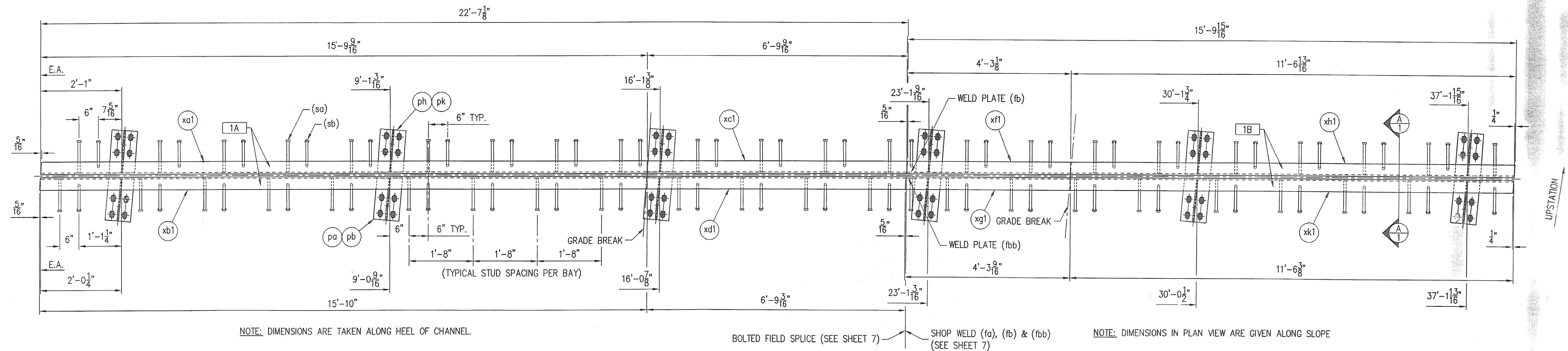
☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____, 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

[illegible]

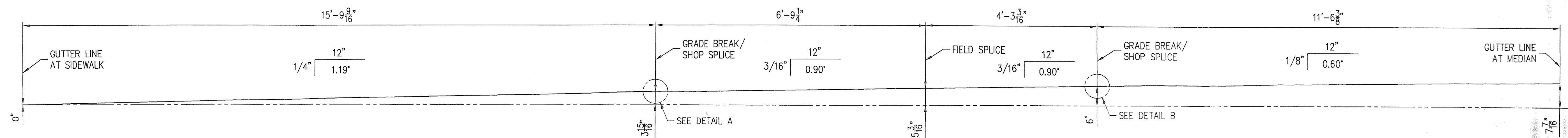
COPY TO _____

SIGNED: M. Brubaker

If enclosures are not as noted, kindly notify us at once.



PLAN VIEW - EXPANSION JOINT
(PIER 1 - WESTBOUND)



ELEVATION VIEW
(ELEVATIONS TAKEN ALONG C OF JOINT)

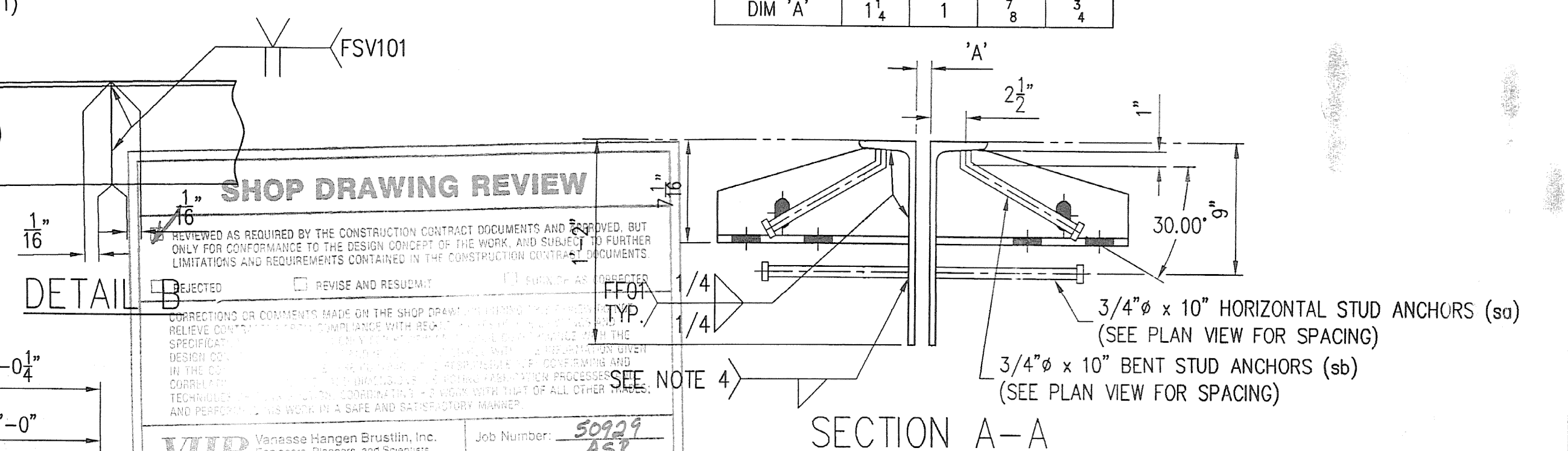
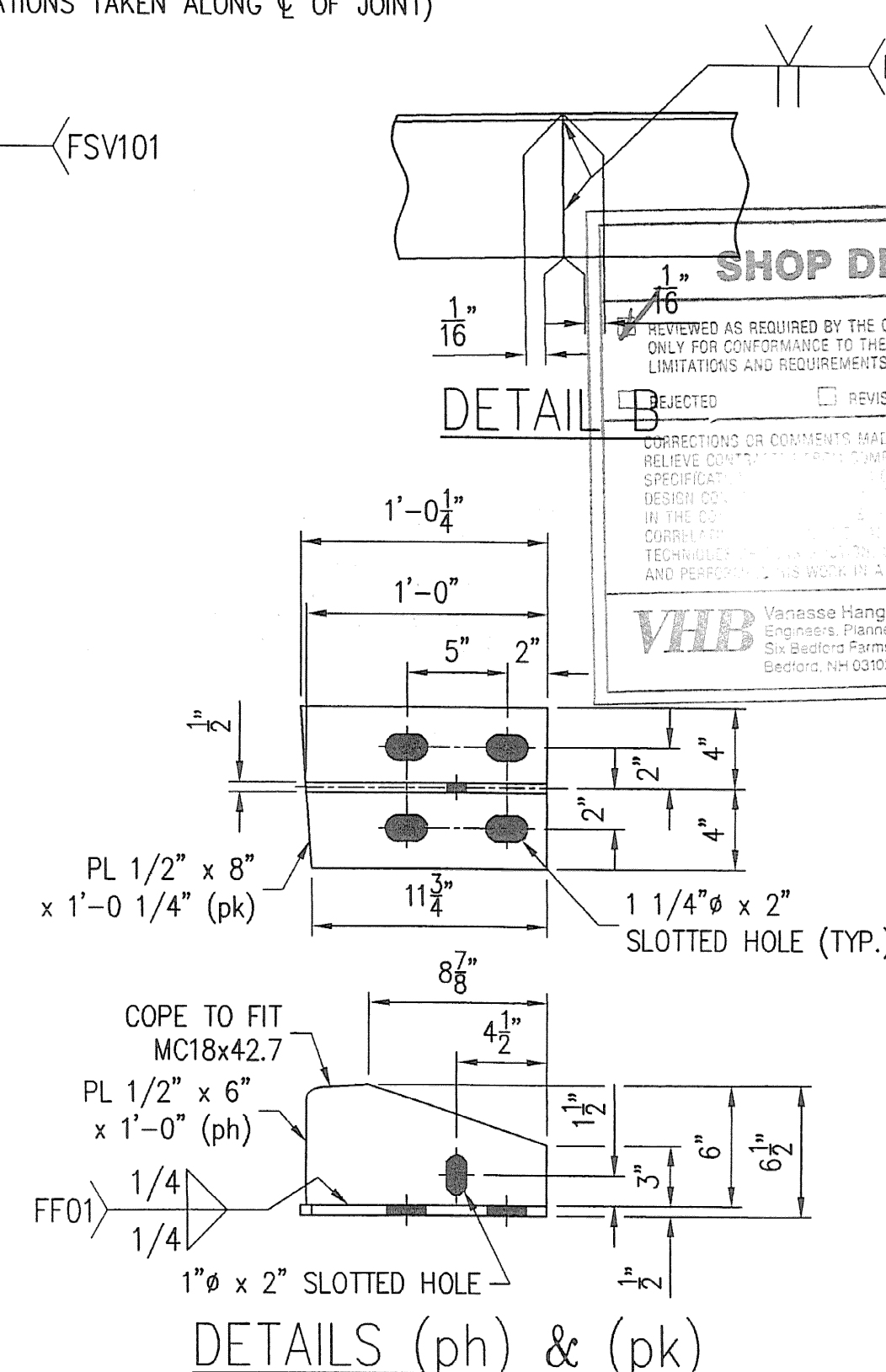
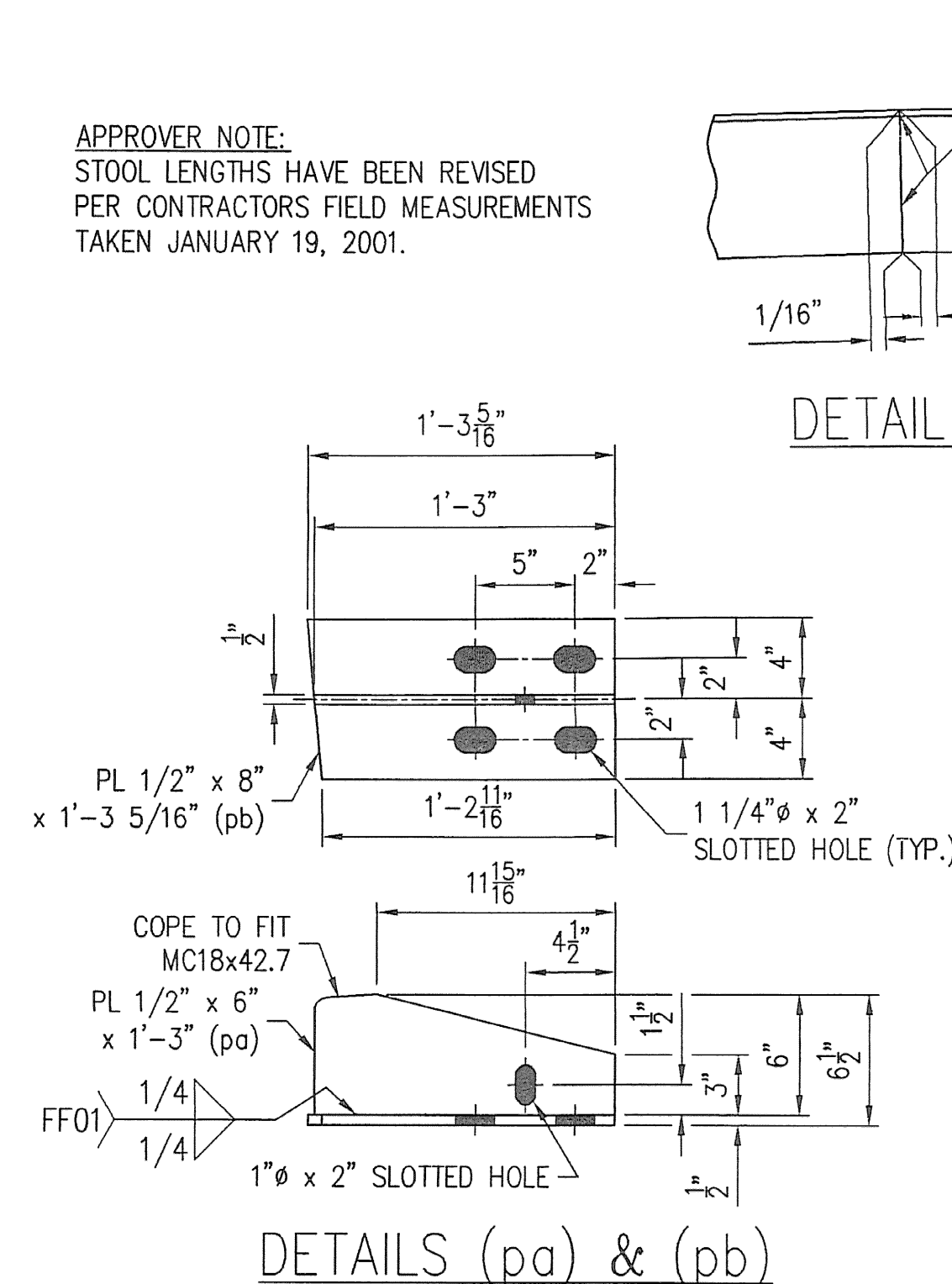
TEMPERATURE ADJUSTING CHART - PIER 1				
TEMPERATURE	45°	60°	75°	90°
DIM 'A'	1 1/4"	1"	7/8"	3/4"

SEE SHEET 7 FOR GENERAL NOTES

LINE NO.	DESCRIPTION	LENGTH	MK	REMARKS	WGHT.
1	EXPANSION JOINT ASS'Y		1A	HDG	
2	MC18x42.7	15'-9 9/16"	xa1	REMOVE FLANGE	11-8
3	MC18x42.7	15'-10"	xb1	REMOVE FLANGE	11-8
4	MC18x42.7	6'-9 9/16"	xc1	REMOVE FLANGE	11-8
5	MC18x42.7	6'-9 9/16"	xd1	REMOVE FLANGE	11-8
6	PL 1/2" x 6"	1'-3"	pa	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
7	PL 1/2" x 8"	1'-3 5/16"	pb	SHAPE CUT	19-16
8	PL 1/2" x 6"	1'-0"	ph	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
9	PL 1/2" x 8"	1'-0 1/4"	pk	SHAPE CUT	19-16
10	WS 3/4" x 10"		sa	26	29-19
11	WS 3/4" x 10"		sb	25 / BEND	29-19
12					
13					
14					
15	EXPANSION JOINT ASS'Y		1B	HDG	
16	MC18x42.7	4'-3 1/8"	xf1	REMOVE FLANGE	11-8
17	MC18x42.7	4'-3 3/8"	xg1	REMOVE FLANGE	11-8
18	MC18x42.7	11'-6 13/16"	xh1	REMOVE FLANGE	11-8
19	MC18x42.7	11'-6 3/8"	xk1	REMOVE FLANGE	11-8
20	PL 1/2" x 6"	1'-3"	pa	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
21	PL 1/2" x 8"	1'-3 5/16"	pb	SHAPE CUT	19-16
22	PL 1/2" x 6"	1'-0"	ph	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
23	PL 1/2" x 8"	1'-0 1/4"	pk	SHAPE CUT	19-16
24	WS 3/4" x 10"		sa	18	29-19
25	WS 3/4" x 10"		sb	18 / BEND	29-19
26	FB 1/4" x 2"	0'-2"	fa		16-29
27	FB 1/4" x 4"	1'-0"	fb		16-36
28	FB 1/4" x 4"	1'-0"	fb		16-36
29					
30					
31					
32					
33					

CONTRACTOR NOTE:
ALL SURFACES OF STEEL DECK JOINTS WHICH ARE TO HAVE CONCRETE PLACED AGAINST THEM, SHALL BE COATED WITH EPOXY BONDING COMPOUND. EPOXY BONDING COMPOUND TO BE PROVIDED BY THE CONTRACTOR.

APPROVER NOTE:
STOOL LENGTHS HAVE BEEN REVISED PER CONTRACTORS FIELD MEASUREMENTS TAKEN JANUARY 19, 2001.

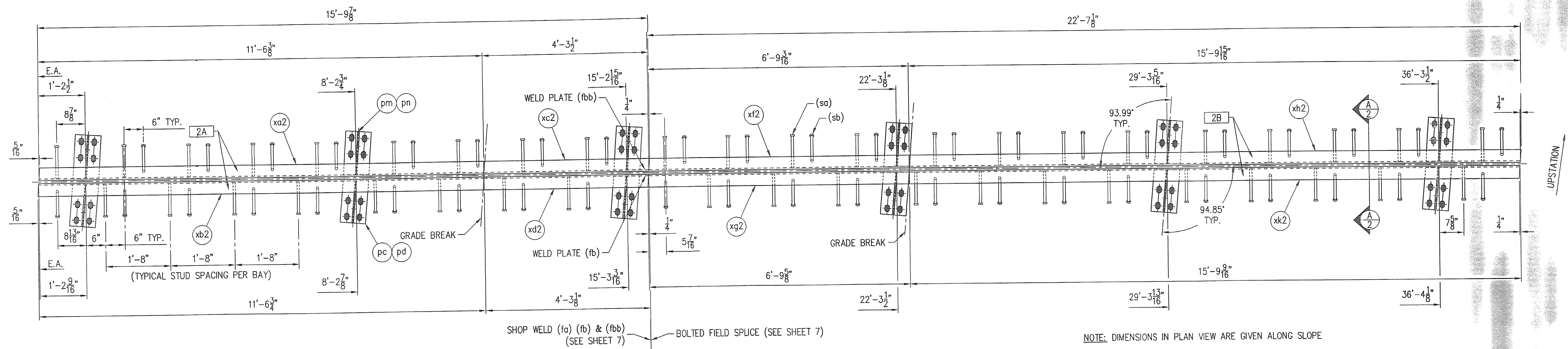


SHOP DRAWING REVIEW

REVISIONS OR COMMENTS MADE ON THE SHOP DRAWING SHALL BE MADE IN THE MARGINS OF THE DRAWING. NO REVISIONS SHALL BE MADE IN THE BODY OF THE DRAWING. ANY REVISIONS SHALL BE MADE IN THE MARGINS OF THE DRAWING. ANY REVISIONS SHALL BE MADE IN THE MARGINS OF THE DRAWING.

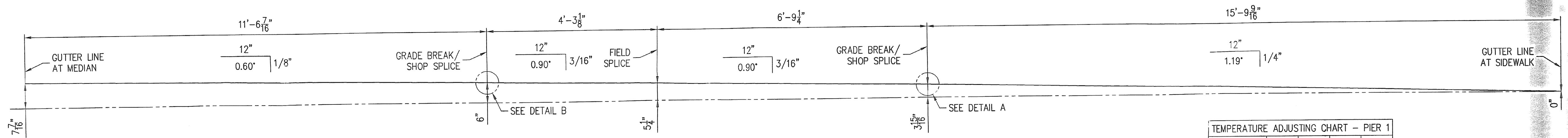
DESIGNED BY: *ASR*
CHECKED BY: *ASR*
DATE: 8/26/01

GENERAL REVISION PER APPROVAL.		1/22/01	SLB
REV.	DESCRIPTION	DATE	INT.
1	ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.		
LEWIS ENGINEERING COMPANY 4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000			
PROJECT		BRIDGE NO. 68 SOUTH BURLINGTON U.S. 2 OVER I-93	
STATE PROJECT		IM DECK (36)	
FEDERAL PROJECT			
CUSTOMER		J A McDONALD	
LOCATION		CHITTENDEN COUNTY, VERMONT	
DESCRIPTION		EXPANSION JOINT DETAILS WESTBOUND AT PIER 1	
W.P. chkd		JDK	
Drawn By		SLB	
Chkd. By		AJC	
Date:		11/21/01	
SHEET NO. 1 OF 8		Job. No. : 978.1049.1	



NOTE: DIMENSIONS ARE TAKEN ALONG HEEL OF CHANNEL.

PLAN VIEW - EXPANSION JOINT
(PIER 1 - EASTBOUND)



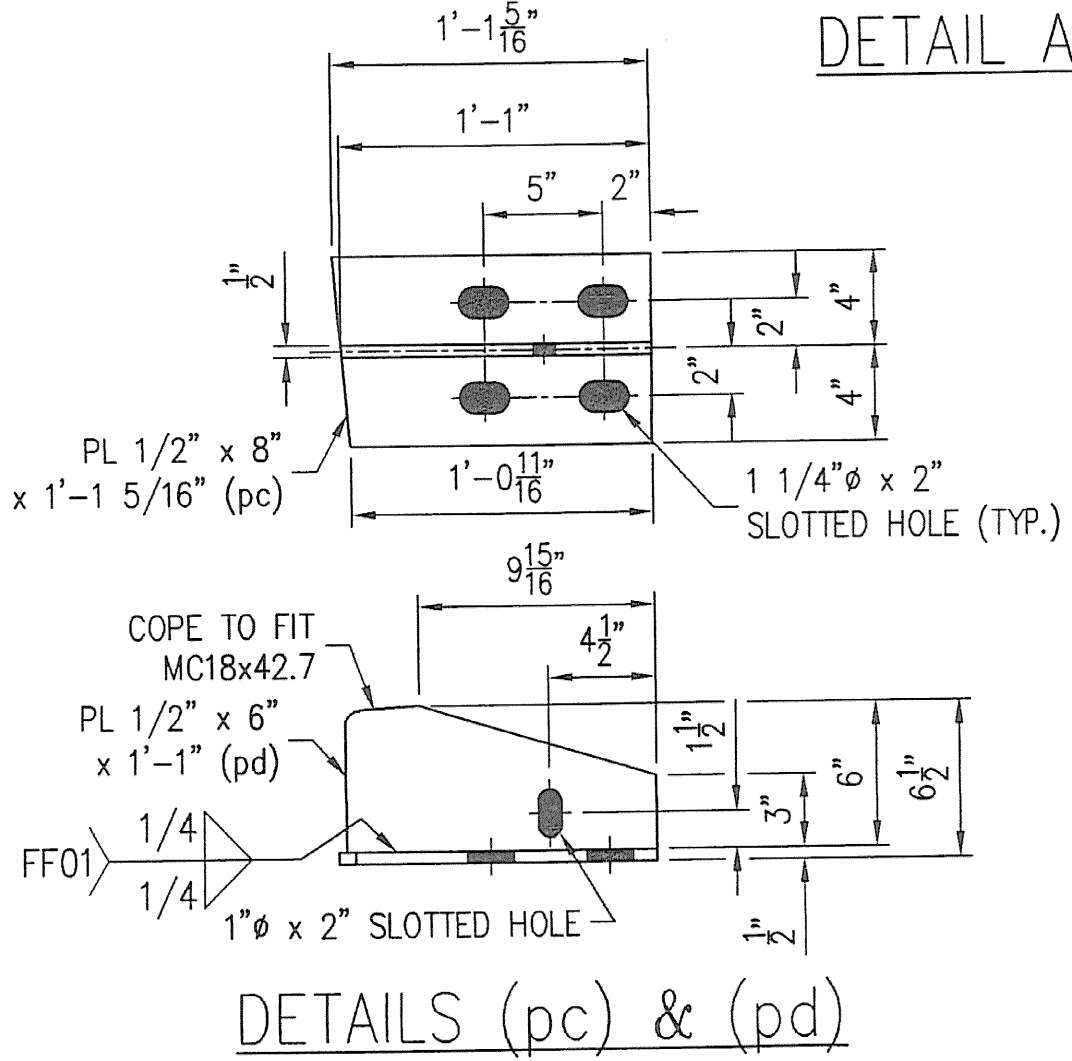
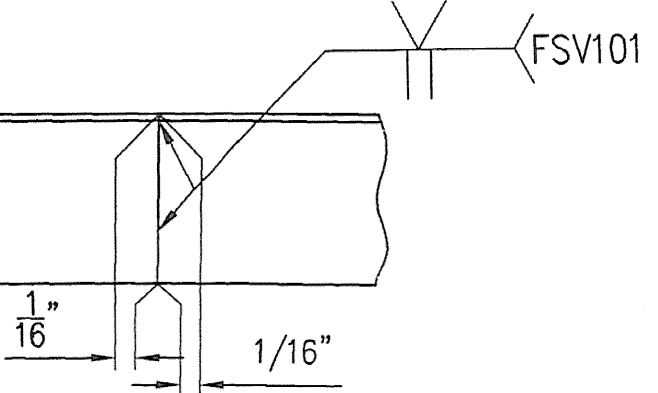
TEMPERATURE ADJUSTING CHART - PIER 1				
TEMPERATURE	45°	60°	75°	90°
DIM 'A'	1 1/4	1	7/8	3/4

SEE SHEET 7 FOR GENERAL NOTES

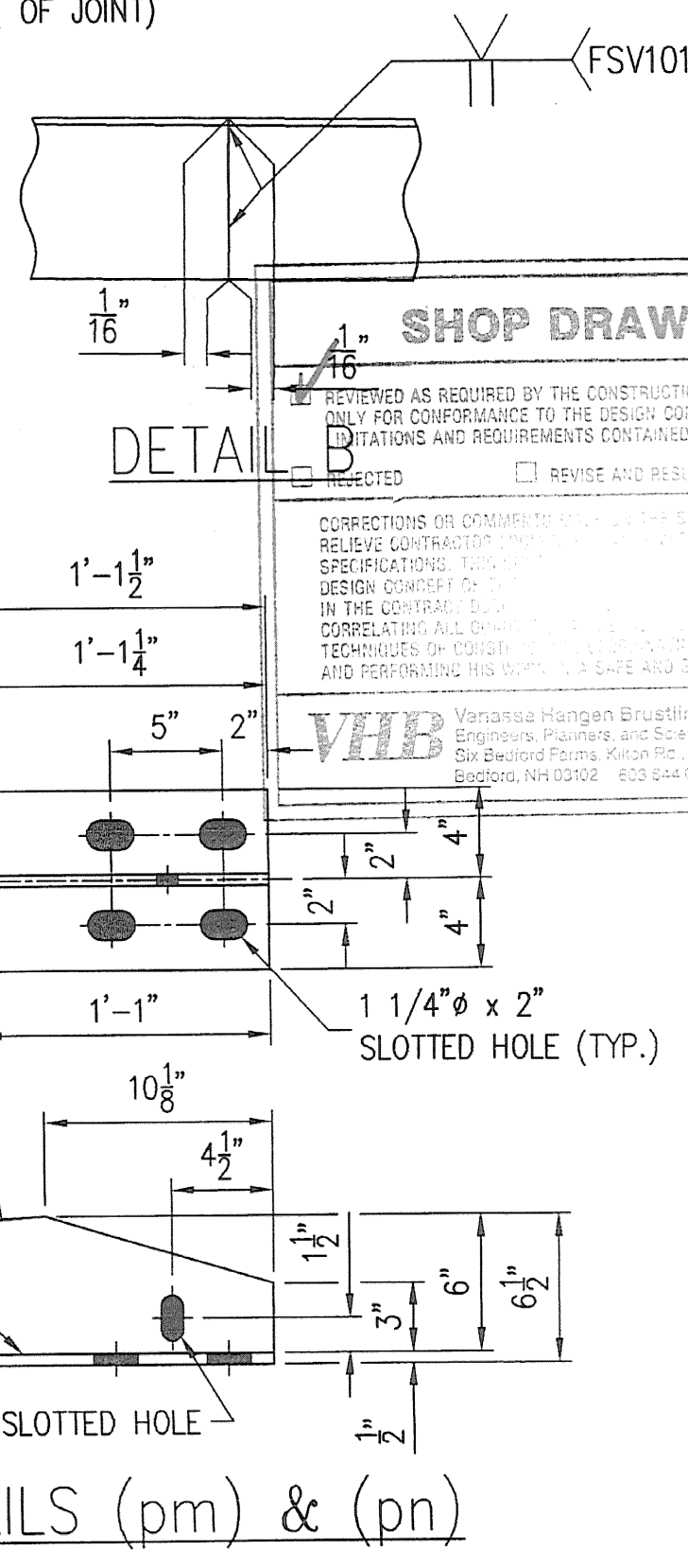
LINE	NO.	DESCRIPTION	LENGTH	MK	REMARKS	WGHT.
1	1	EXPANSION JOINT ASS'Y		2A	HDG	
2	1	MC18x42.7	11'-6 3/8"	xa2	REMOVE FLANGE	11-8
3	1	MC18x42.7	11'-6 3/8"	xb2	REMOVE FLANGE	11-8
4	1	MC18x42.7	4'-3 1/2"	xc2	REMOVE FLANGE	11-8
5	1	MC18x42.7	4'-3 1/2"	xd2	REMOVE FLANGE	11-8
6	3	PL 1/2 x 8	1'-1 1/8"	pc	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
7	3	PL 1/2 x 6	1'-1 1/8"	pd	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
8	3	PL 1/2 x 8	1'-1 1/8"	pm	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
9	3	PL 1/2 x 6	1'-1 1/8"	pn	SHAPE CUT	19-16
10	18	WS 3/4 x 10		sa		29-19
11	18	WS 3/4 x 10		sb	17 / BEND	29-19
12	2	FB 1/4 x 2	0'-2	fa		16-29
13	1	FB 1/4 x 4	1'-0	fb		16-36
14	1	FB 1/4 x 4	1'-0	fbb		16-36
15						
16						
17	1	EXPANSION JOINT ASS'Y		2B	HDG	
18	1	MC18x42.7	6'-9 3/8"	xf2	REMOVE FLANGE	11-8
19	1	MC18x42.7	6'-9 3/8"	xg2	REMOVE FLANGE	11-8
20	1	MC18x42.7	15'-9 15/16"	xh2	REMOVE FLANGE	11-8
21	1	MC18x42.7	15'-9 15/16"	xk2	REMOVE FLANGE	11-8
22	3	PL 1/2 x 8	1'-1 1/8"	pc	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
23	3	PL 1/2 x 6	1'-1	pd	SHAPE CUT	19-16
24	3	PL 1/2 x 8	1'-1 1/2"	pm	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
25	3	PL 1/2 x 6	1'-1 1/2"	pn	SHAPE CUT	19-16
26	26	WS 3/4 x 10		sa		29-19
27	27	WS 3/4 x 10		sb	26 / BEND	29-19
28						
29						
30						
31						
32						
33						

CONTRACTOR NOTE:
ALL SURFACES OF STEEL DECK JOINTS WHICH ARE TO HAVE CONCRETE PLACED AGAINST THEM, SHALL BE COATED WITH EPOXY BONDING COMPOUND. EPOXY BONDING COMPOUND TO BE PROVIDED BY THE CONTRACTOR.

APPROVER NOTE:
STOOL LENGTHS HAVE BEEN REVISED PER CONTRACTORS FIELD MEASUREMENTS TAKEN JANUARY 19, 2001.



ELEVATION VIEW
(ELEVATIONS TAKEN ALONG C OF JOINT)



SHOP DRAWING REVIEW

REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED FOR THE PROJECT. THIS REVIEW IS LIMITED TO THE DESIGN CONCEPT OF THE WORK AND DOES NOT CONSTITUTE A GUARANTEE OF THE ACCURACY OF THE INFORMATION PROVIDED OR THE QUALITY OF THE WORK. THE REVIEWER ASSUMES NO LIABILITY FOR ANY ERRORS OR OMISSIONS IN THE DRAWINGS OR FOR ANY DAMAGE TO PERSONS OR PROPERTY ARISING FROM THE USE OF THE DRAWINGS.

REVISIONS:

NO.	DESCRIPTION	DATE
1	REVISED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED FOR THE PROJECT.	11/28/00

SECTION A-A

3/4" x 10" HORIZONTAL STUD ANCHORS (sa)
(SEE PLAN VIEW FOR SPACING)

3/4" x 10" BENT STUD ANCHORS (sb)
(SEE PLAN VIEW FOR SPACING)

30.00'

GENERAL REVISION PER APPROVAL.

REV.	DESCRIPTION	DATE	BY
1	GENERAL REVISION PER APPROVAL.	1/22/01	SLJ

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY

4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000

PROJECT - BRIDGE NO. 68 SOUTH BURLINGTON U.S. 2 OVER I-89

STATE PROJECT - IM DECK (36)

FEDERAL PROJECT -

CUSTOMER - J A McDONALD

LOCATION - CHITTENDEN COUNTY, VERMONT

DESCRIPTION - EXPANSION JOINT DETAILS EASTBOUND AT PIER 1

W.P. chk'd By SLJ

Drawn By SLJ

Chk'd By AJC

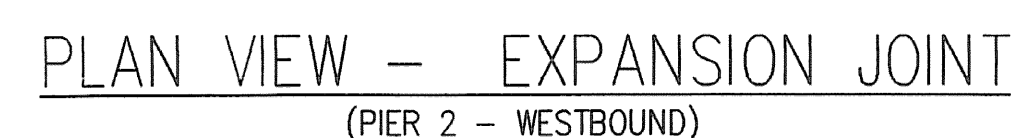
Date: 11/21/00

FOR DATE

PRINTS ISSUED

SHEET NO. 2 OF 8

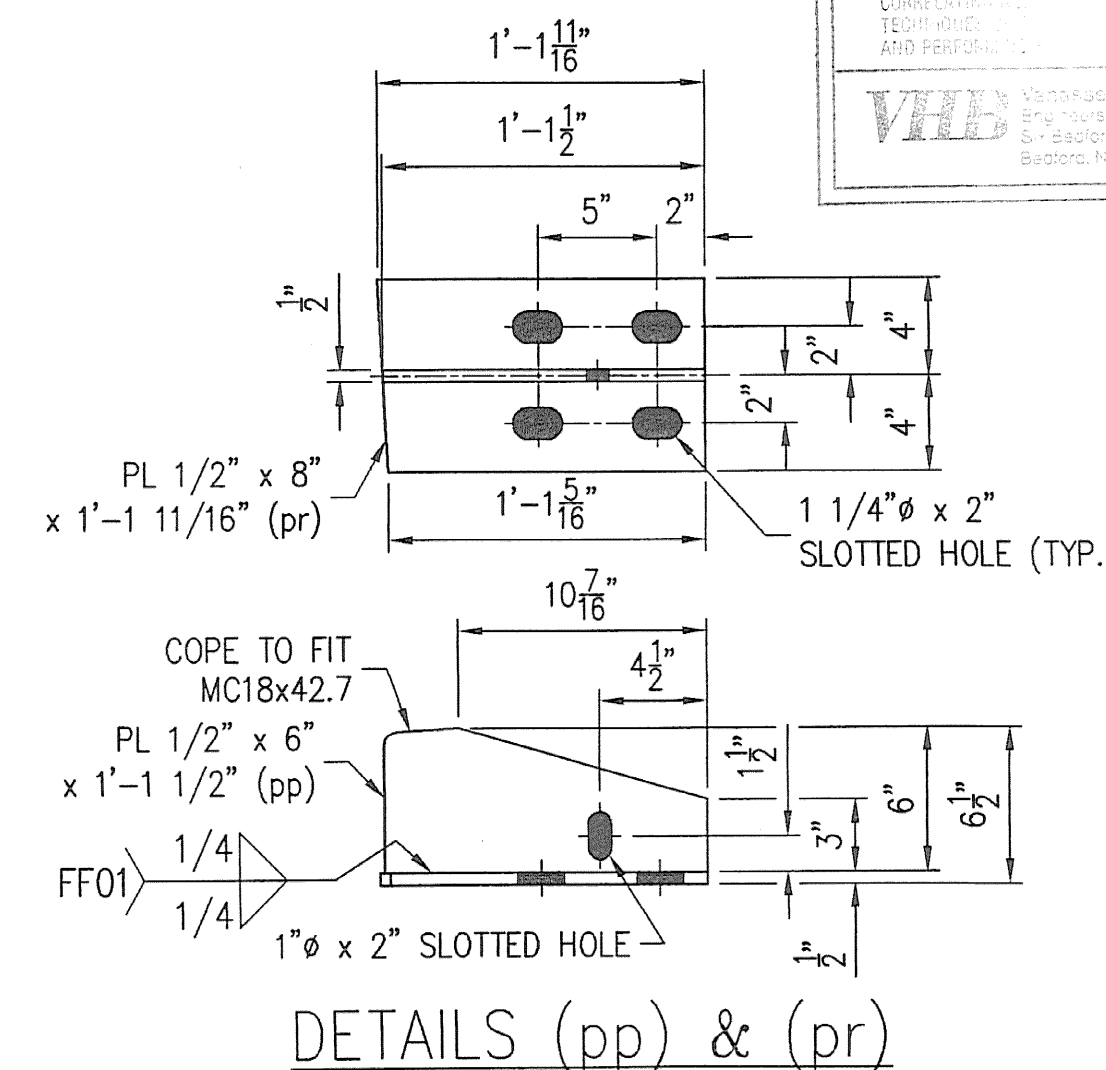
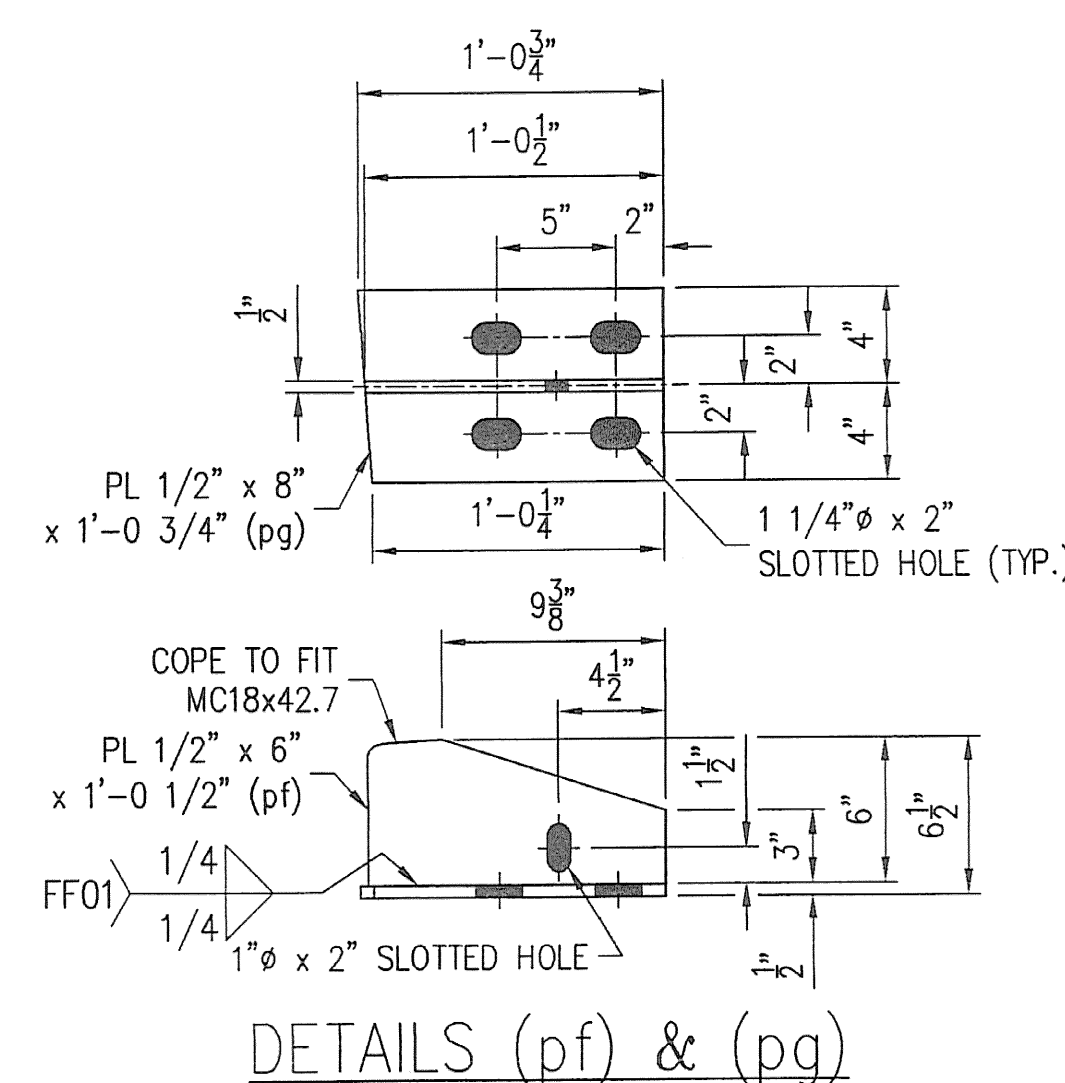
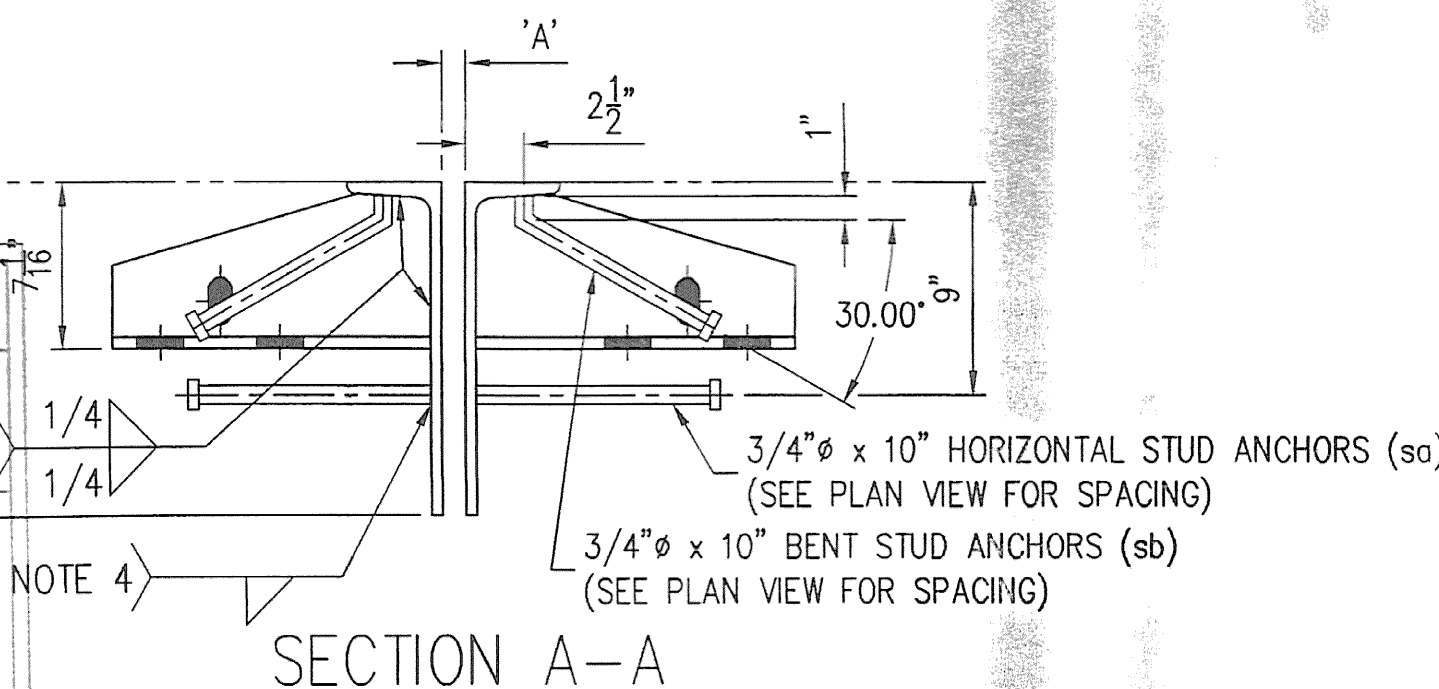
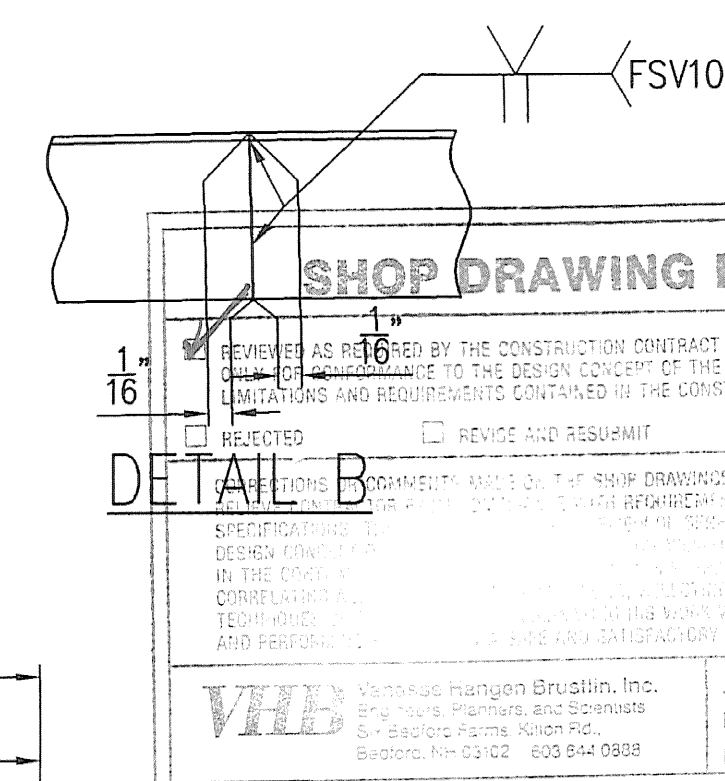
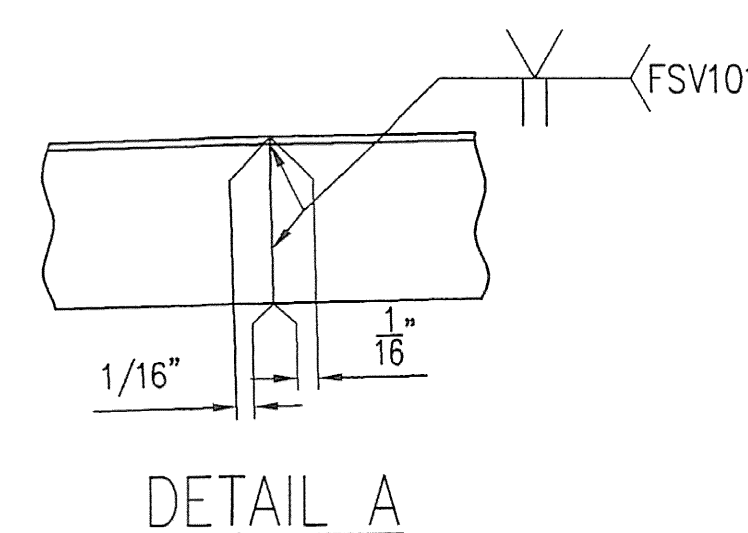
Job. No. : 978.1049.1

SEE SHEET 7 FOR GENERAL NOTES

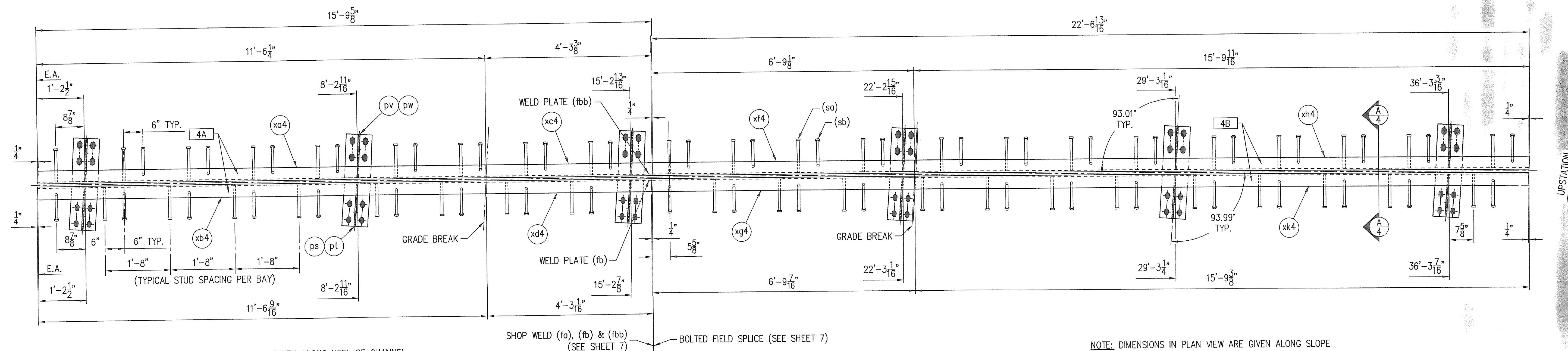
LINE	NO. REQ'D.	DESCRIPTION	LENGTH	MK	REMARKS	WGHT.	
1	1	EXPANSION JOINT ASS'Y		3A	HDG		
2	1	MC18x42.7	15'-9 $\frac{1}{4}$	xa3	REMOVE FLANGE		11-8
3	1	MC18x42.7	15'-9 $\frac{5}{8}$	xb3	REMOVE FLANGE		11-8
4	1	MC18x42.7	6'-9 $\frac{1}{2}$	xc3	REMOVE FLANGE		11-8
5	1	MC18x42.7	6'-9 $\frac{1}{8}$	xd3	REMOVE FLANGE		11-8
6	3	PL $\frac{1}{2}$ x 6	1'-0 $\frac{1}{2}$	pf	SHAPE CUT / COPE TO FIT MC	8x42.7	19-16
7	3	PL $\frac{1}{2}$ x 8	1'-0 $\frac{3}{4}$	pg	SHAPE CUT		19-16
8	3	PL $\frac{1}{2}$ x 6	1'-1 $\frac{1}{2}$	pp	SHAPE CUT / COPE TO FIT MC	8x42.7	19-16
9	3	PL $\frac{1}{2}$ x 8	1'-1 $\frac{11}{16}$	pr	SHAPE CUT		19-16
10	27	WS $\frac{3}{4}$ x 10		sa	26		29-19
11	26	WS $\frac{3}{4}$ x 10		sb	25 / BEND		29-19
12							
13							
14							
15							
16							
17	1	EXPANSION JOINT ASS'Y		3B	HDG		
18	1	MC18x42.7	4'-3	xf3	REMOVE FLANGE		11-8
19	1	MC18x42.7	4'-3 $\frac{3}{8}$	xg3	REMOVE FLANGE		11-8
20	1	MC18x42.7	11'-6 $\frac{1}{2}$	yh3	REMOVE FLANGE		11-8
21	1	MC18x42.7	11'-6 $\frac{1}{4}$	zk3	REMOVE FLANGE		11-8
22	3	PL $\frac{1}{2}$ x 6	1'-0 $\frac{1}{2}$	pf	SHAPE CUT / COPE TO FIT MC	8x42.7	19-16
23	3	PL $\frac{1}{2}$ x 8	1'-0 $\frac{1}{4}$	pg	SHAPE CUT		19-16
24	3	PL $\frac{1}{2}$ x 6	1'-1 $\frac{1}{4}$	pp	SHAPE CUT / COPE TO FIT MC	8x42.7	19-16
25	3	PL $\frac{1}{2}$ x 8	1'-1 $\frac{1}{16}$	pr	SHAPE CUT		19-16
26	19	WS $\frac{3}{4}$ x 10		sa	18		29-19
27	19	WS $\frac{3}{4}$ x 10		sb	18 / BEND		29-19
28	2	FB $\frac{1}{4}$ x 2	0'-2	fa			16-29
29	1	FB $\frac{1}{4}$ x 4	1'-0	fb			16-30
30	1	FB $\frac{1}{4}$ x 4	1'-0	fb			16-30
31							
32							
33							

CONTRACTOR NOTE:
ALL SURFACES OF STEEL DECK JOINTS WHICH
ARE TO HAVE CONCRETE PLACED AGAINST THEM,
SHALL BE COATED WITH EPOXY BONDING COMPOUND.
EPOXY BONDING COMPOUND TO BE PROVIDED BY THE
CONTRACTOR.

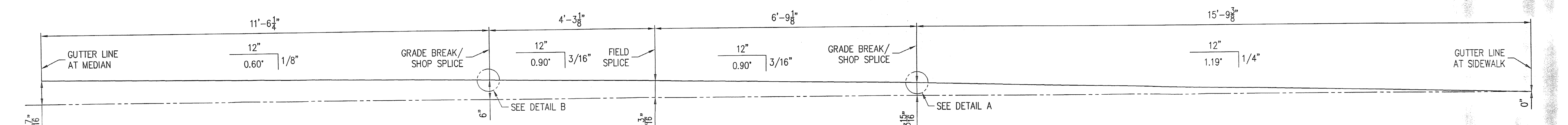
APPROVER NOTE:
STOOL LENGTHS HAVE BEEN REVISED
PER CONTRACTORS FIELD MEASUREMENTS
TAKEN JANUARY 19, 2001.



Date: 03/24/08 Reviewed By: <i>2/28/08</i> Date: <i>2/28/08</i>		GENERAL REVISION PER APPROVAL.		1/22/01 DATE
REV.	DESCRIPTION	ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.		DATE
PRELIM	11/28/00	 LEWIS ENGINEERING COMPANY 4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000 		
SHOP		PROJECT — BRIDGE NO. 68 SOUTH BURLINGTON U.S. 2 OVER I-89 STATE PROJECT — IM DECK (36) FEDERAL PROJECT —		
APPROVAL	11/28/00	CUSTOMER — J A McDONALD LOCATION — CHITTENDEN COUNTY, VERMONT DESCRIPTION — EXPANSION JOINT DETAILS WESTBOUND AT PIER 2		<i>CRK</i> W.P. Chk'd JAK Drawn By SLB Chk'd. By AJC Date: 11/21/00
DIST.				
CUST.				
FOR DATE				
PRINTS ISSUED		SHEET NO. 3 OF 8		Job. No. : 978.1049.



PLAN VIEW - EXPANSION JOINT
(PIER 2 - EASTBOUND)



ELEVATION VIEW
(ELEVATIONS TAKEN ALONG C OF JOINT)

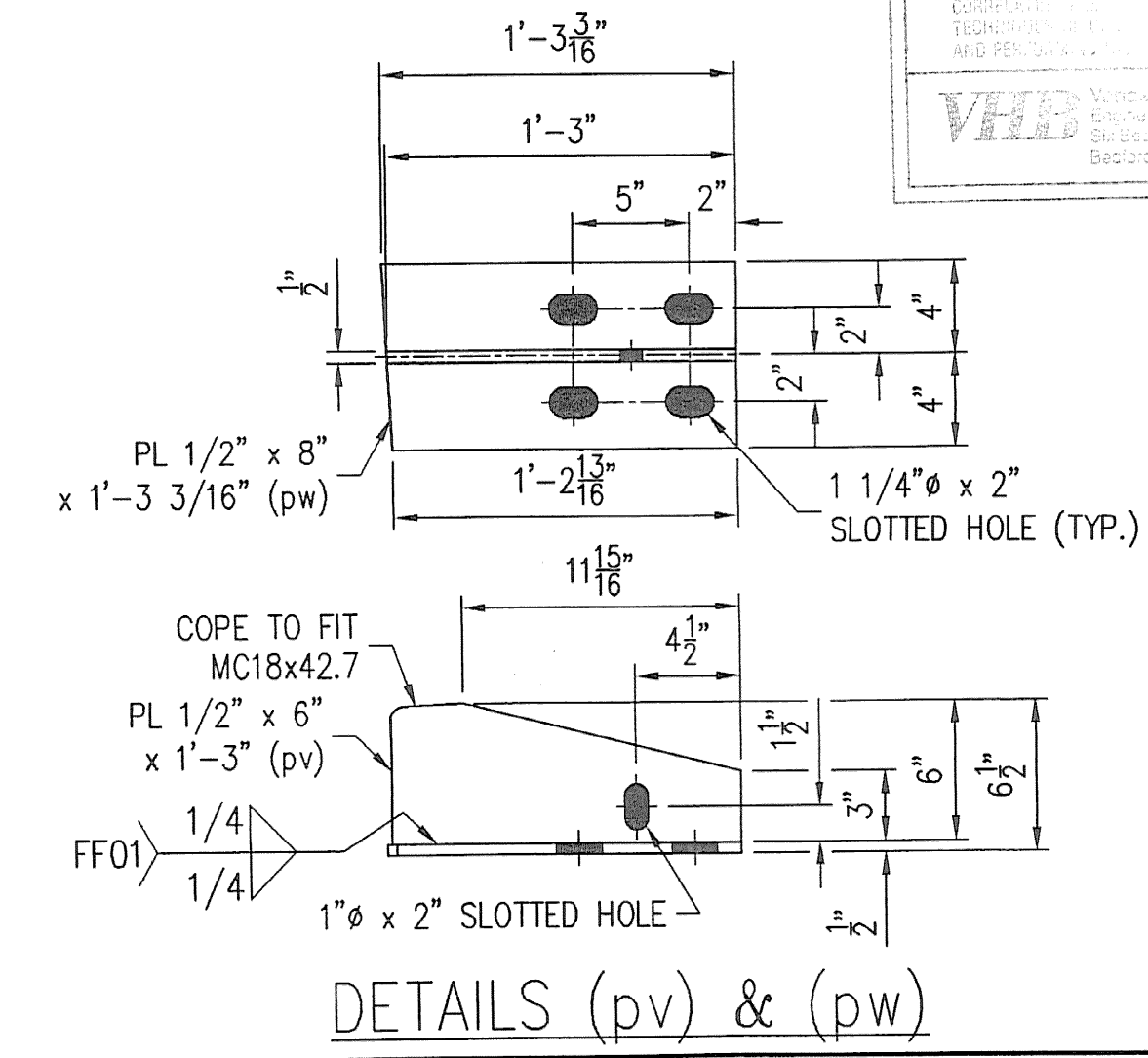
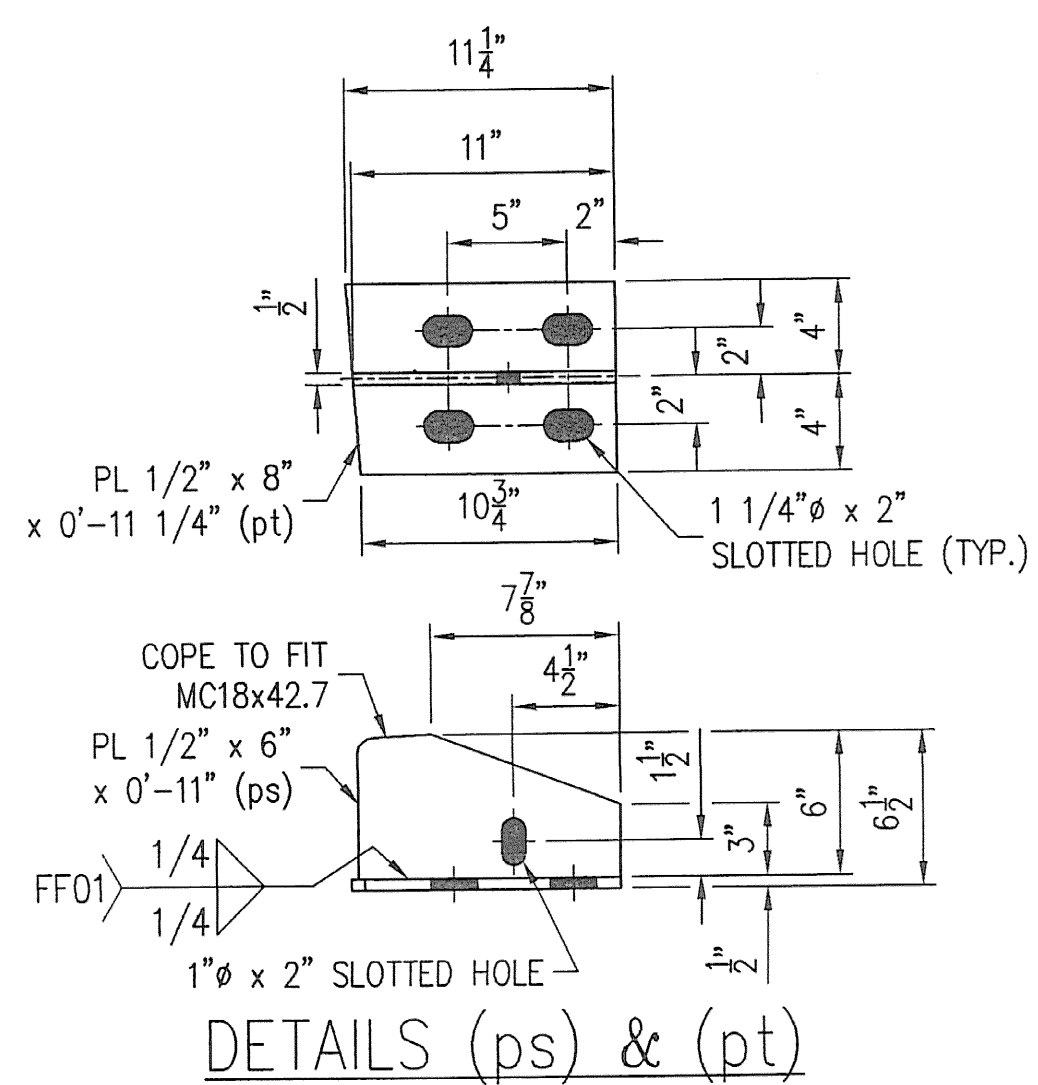
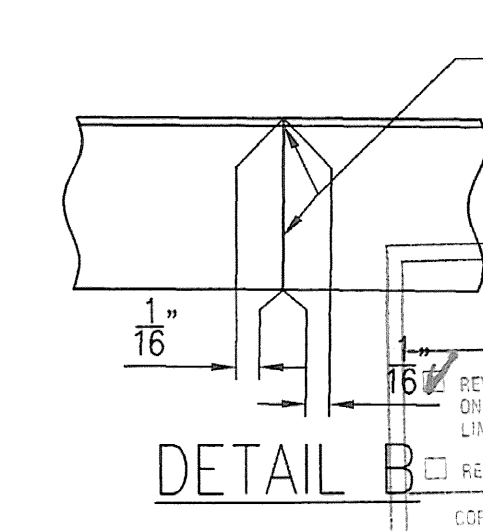
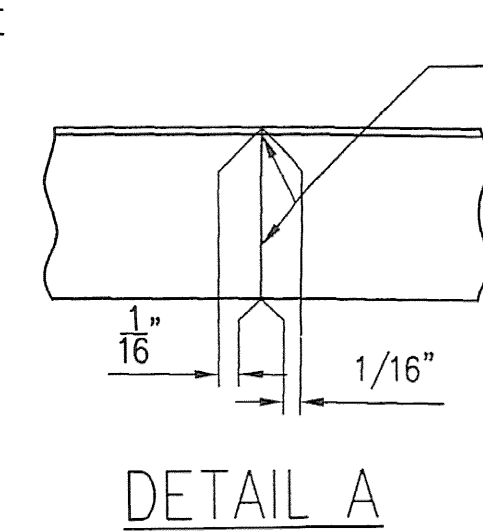
TEMPERATURE ADJUSTING CHART - PIER 2				
TEMPERATURE	45°	60°	75°	90°
DIM 'A'	1	7/8	7/8	3/4

SEE SHEET 7 FOR GENERAL NOTES

LINE	NO. REQ'D.	DESCRIPTION	LENGTH	MK	REMARKS	WGHT.
1	1	EXPANSION JOINT ASS'Y		4A	HOG	
2	1	MC18x42.7	11'-6 1/4"	xa4	REMOVE FLANGE	11-8
3	1	MC18x42.7	11'-6 1/16"	xb4	REMOVE FLANGE	11-8
4	1	MC18x42.7	4'-3 3/8"	xc4	REMOVE FLANGE	11-8
5	1	MC18x42.7	4'-3 1/16"	xd4	REMOVE FLANGE	11-8
6	3	PL 1/2 x 6	0'-11"	ps	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
7	3	PL 1/2 x 8	0'-11 1/4"	pt	SHAPE CUT	19-16
8	3	PL 1/2 x 6	1'-3"	pv	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
9	3	PL 1/2 x 8	1'-3 3/16"	pw	SHAPE CUT	19-16
10	18	WS 3/4 x 10		sa	17	29-19
11	18	WS 3/4 x 10		sb	17 / BEND	29-19
12	2	FB 1/4 x 2	0'-2"	fa		16-29
13	1	FB 1/4 x 4	1'-0"	fb		16-36
14	1	FB 1/4 x 4	1'-0"	fbb		16-36
15						
16						
17						
18						
19	1	EXPANSION JOINT ASS'Y		4B	HOG	
20	1	MC18x42.7	6'-9 9/16"	xf4	REMOVE FLANGE	11-8
21	1	MC18x42.7	6'-9 1/16"	xg4	REMOVE FLANGE	11-8
22	1	MC18x42.7	15'-9 11/16"	xh4	REMOVE FLANGE	11-8
23	1	MC18x42.7	15'-9 3/8"	xk4	REMOVE FLANGE	11-8
24	3	PL 1/2 x 6	0'-11"	ps	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
25	3	PL 1/2 x 8	0'-11 1/4"	pt	SHAPE CUT	19-16
26	3	PL 1/2 x 6	1'-3"	pv	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
27	3	PL 1/2 x 8	1'-3 3/16"	pw	SHAPE CUT	19-16
28	26	WS 3/4 x 10		sa	25	29-19
29	27	WS 3/4 x 10		sb	26 / BEND	29-19
30						
31						
32						
33						

CONTRACTOR NOTE:
ALL SURFACES OF STEEL DECK JOINTS WHICH ARE TO HAVE CONCRETE PLACED AGAINST THEM, SHALL BE COATED WITH EPOXY BONDING COMPOUND. EPOXY BONDING COMPOUND TO BE PROVIDED BY THE CONTRACTOR.

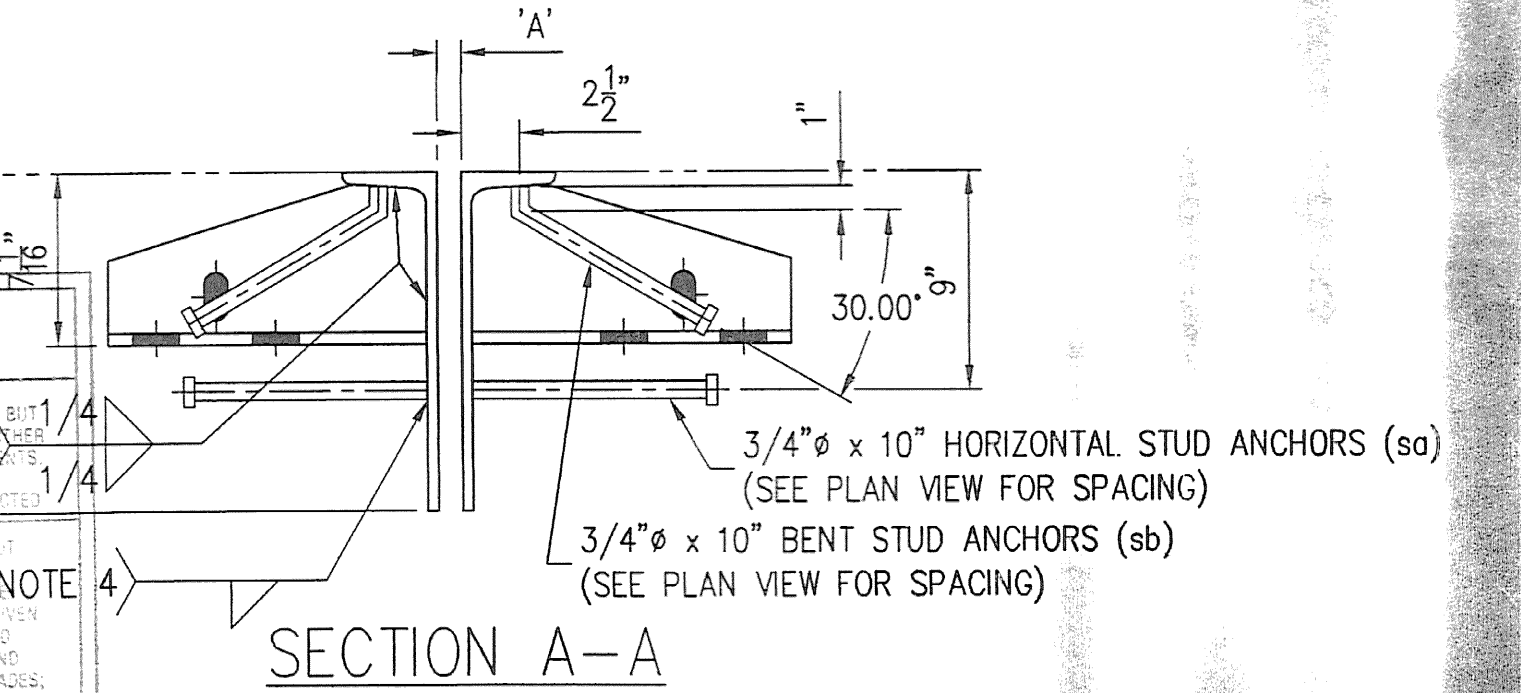
APPROVER NOTE:
STOOL LENGTHS HAVE BEEN REVISED PER CONTRACTOR'S FIELD MEASUREMENTS TAKEN JANUARY 19, 2001.



SHOP DRAWING REVIEW

REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK. THIS REVIEW DOES NOT CONSTITUTE A GUARANTEE OF THE ACCURACY OF THE INFORMATION CONTAINED HEREIN. THE REVIEWER'S RESPONSIBILITY IS LIMITED TO THE REVIEW OF THE SHOP DRAWING FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE WORK. THE REVIEWER IS NOT RESPONSIBLE FOR THE DESIGN OF THE WORK OR FOR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN.

REVIEWED BY: [Signature] DATE: 2/2/01



GENERAL REVISION PER APPROVAL.

REV.	DESCRIPTION	DATE	BY
1	GENERAL REVISION PER APPROVAL.	1/22/01	SLB

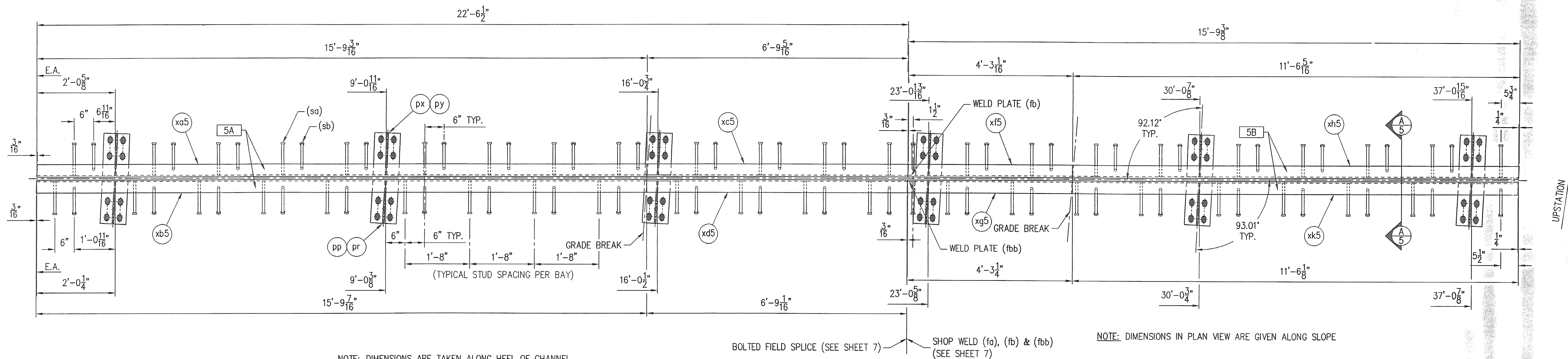
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000

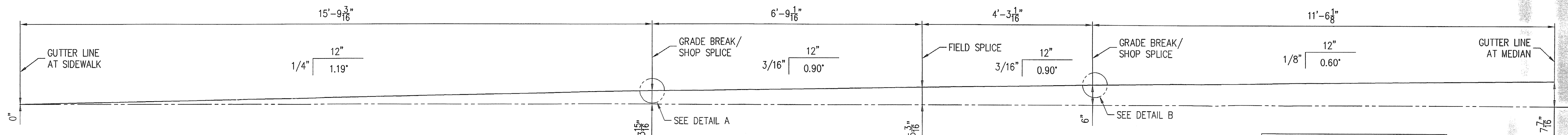
PROJECT - BRIDGE NO. 68 SOUTH BURLINGTON U.S. 2 OVER I-89
STATE PROJECT - IM DECK (36)
FEDERAL PROJECT -
CUSTOMER - J A McDONALD
LOCATION - CHITTENDEN COUNTY, VERMONT
DESCRIPTION - EXPANSION JOINT DETAILS EASTBOUND AT PIER 2

W.P. chkd. [Signature]
Drawn By [Signature]
Chkd. By [Signature]
Date: 11/21/00

SHEET NO. 4 OF 8 Job. No.: 978.1049.1



PLAN VIEW - EXPANSION JOINT
(PIER 3 - WESTBOUND)



ELEVATION VIEW
(ELEVATIONS TAKEN ALONG C OF JOINT)

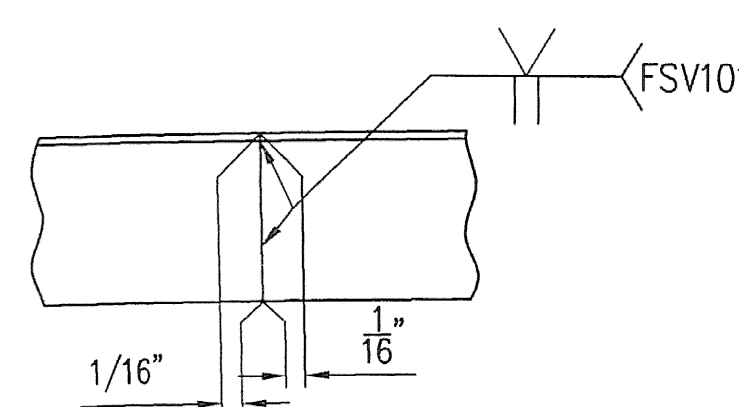
TEMPERATURE ADJUSTING CHART - PIER 3				
TEMPERATURE	45°	60°	75°	90°
DIM 'A'	1	7/8	7/8	3/4

SEE SHEET 7 FOR GENERAL NOTES

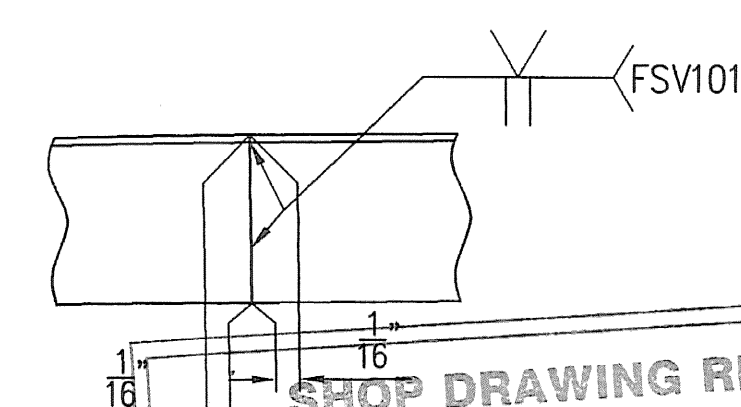
LINE	NO. REQ'D.	DESCRIPTION	LENGTH	MK	REMARKS	WGHT.
1	1	EXPANSION JOINT ASS'Y		5A	HDC	
2	1	MC18x42.7	15'-9 3/16"	xa5	REMOVE FLANGE	11-8
3	1	MC18x42.7	15'-9 3/16"	xb5	REMOVE FLANGE	11-8
4	1	MC18x42.7	6'-9 5/16"	xc5	REMOVE FLANGE	11-8
5	1	MC18x42.7	6'-9 5/16"	xd5	REMOVE FLANGE	11-8
6	3	PL 1/2 x 6	1'-1 1/16"	pp	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
7	3	PL 1/2 x 8	1'-1 1/16"	pr	SHAPE CUT	19-16
8	3	PL 1/2 x 6	1'-1 1/16"	px	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
9	3	PL 1/2 x 8	1'-1 1/16"	py	SHAPE CUT	19-16
10	27	WS 3/4 x 10		sa	26	29-19
11	26	WS 3/4 x 10		sb	25 / BEND	29-19
12						
13						
14						
15						
16						
17	1	EXPANSION JOINT ASS'Y		5B	HDC	
18	1	MC18x42.7	4'-3 1/16"	xf5	REMOVE FLANGE	11-8
19	1	MC18x42.7	4'-3 1/16"	xg5	REMOVE FLANGE	11-8
20	1	MC18x42.7	11'-6 3/16"	yh5	REMOVE FLANGE	11-8
21	1	MC18x42.7	11'-6 3/16"	xk5	REMOVE FLANGE	11-8
22	3	PL 1/2 x 6	1'-1 1/16"	pp	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
23	3	PL 1/2 x 8	1'-1 1/16"	pr	SHAPE CUT	19-16
24	3	PL 1/2 x 6	1'-1 1/16"	px	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
25	3	PL 1/2 x 8	1'-1 1/16"	py	SHAPE CUT	19-16
26	19	WS 3/4 x 10		sa	18	29-19
27	19	WS 3/4 x 10		sb	18 / BEND	29-19
28	2	FB 1/4 x 2	0'-2	fa		16-29
29	1	FB 1/4 x 4	1'-0	fb		16-36
30	1	FB 1/4 x 4	1'-0	fbb		16-36
31						
32						
33						

CONTRACTOR NOTE:
ALL SURFACES OF STEEL DECK JOINTS WHICH ARE TO HAVE CONCRETE PLACED AGAINST THEM, SHALL BE COATED WITH EPOXY BONDING COMPOUND. EPOXY BONDING COMPOUND TO BE PROVIDED BY THE CONTRACTOR.

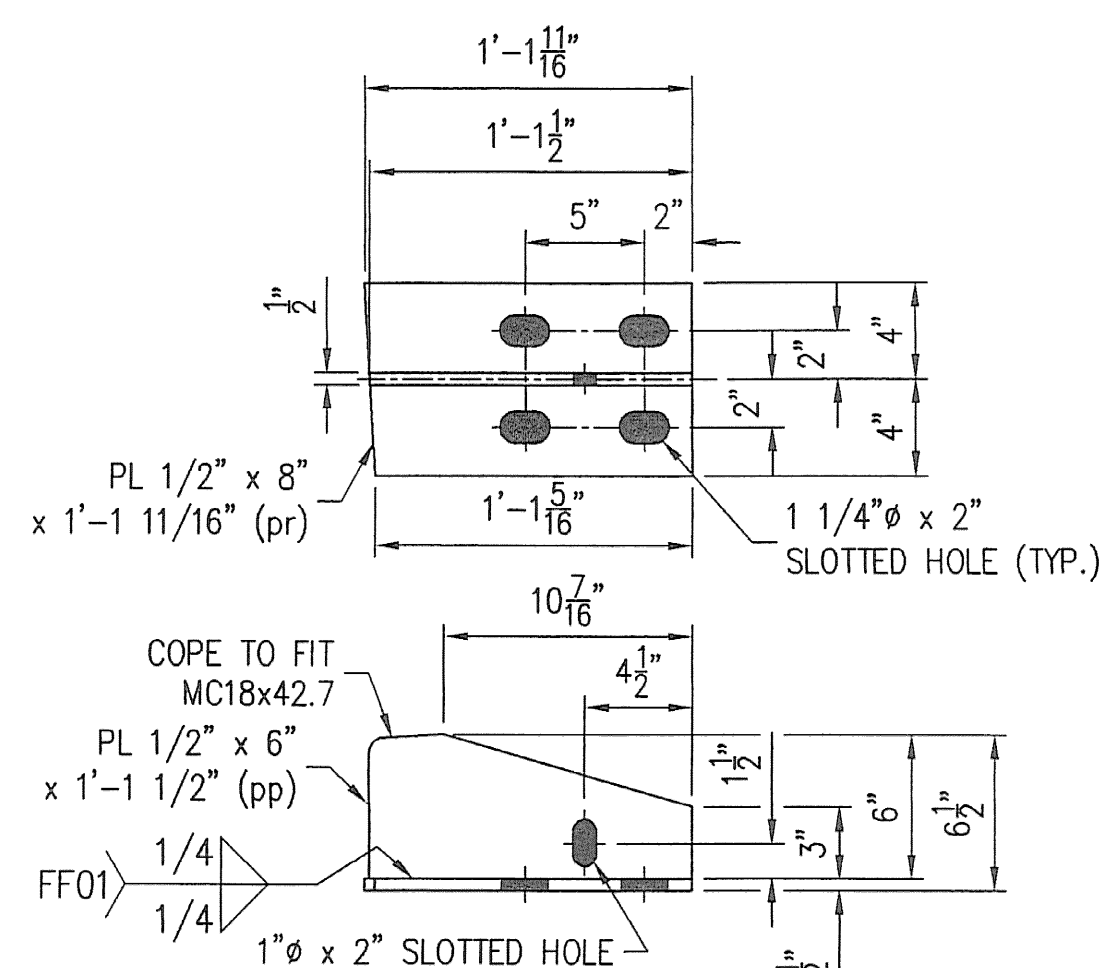
APPROVER NOTE:
STOOL LENGTHS HAVE BEEN REVISED PER CONTRACTORS FIELD MEASUREMENTS TAKEN JANUARY 19, 2001.



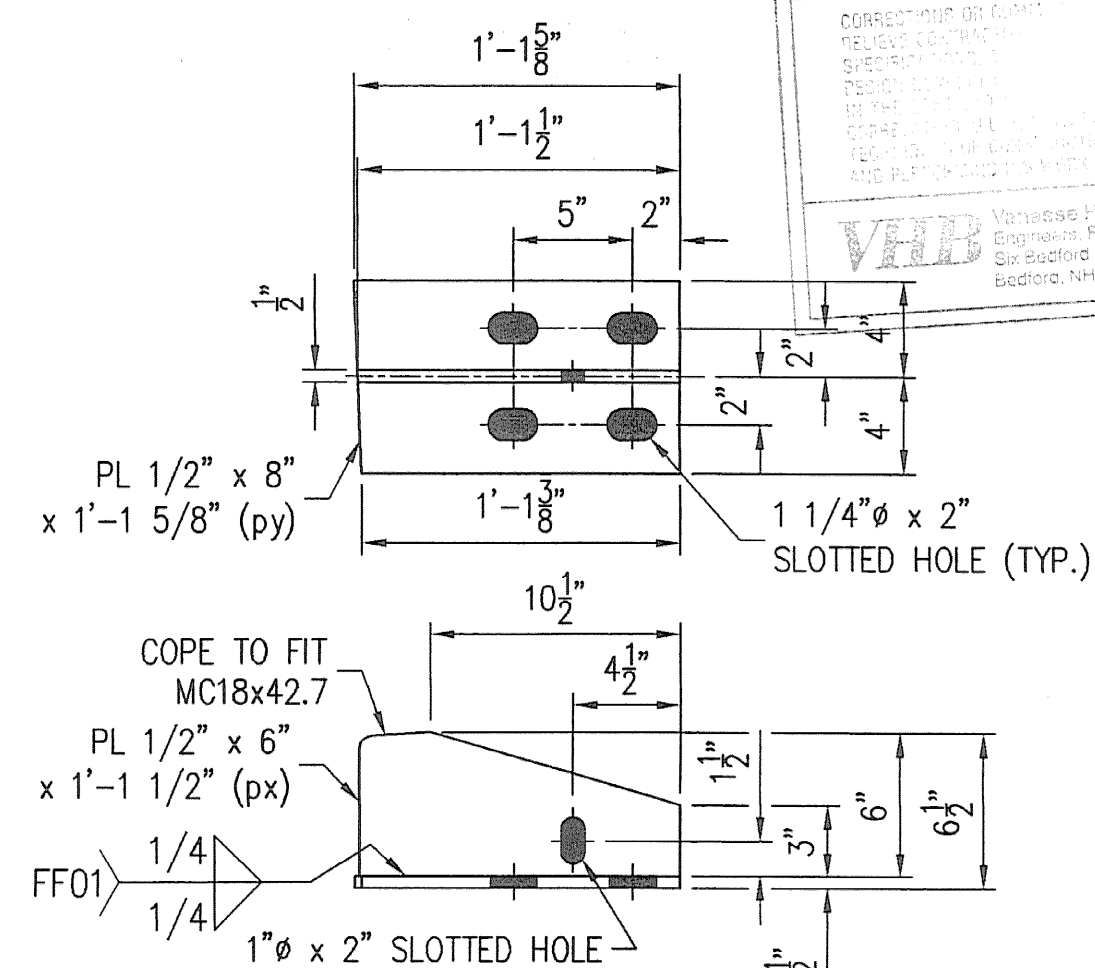
DETAIL A



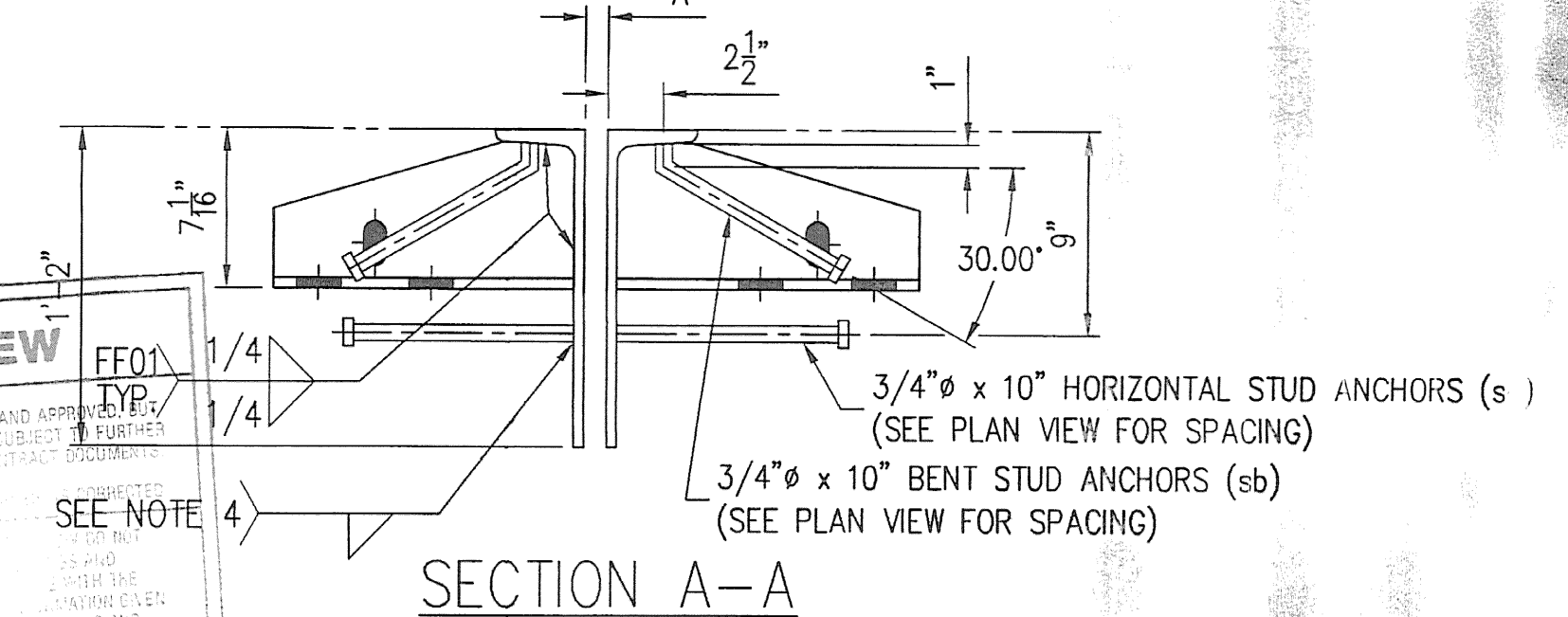
DETAIL B



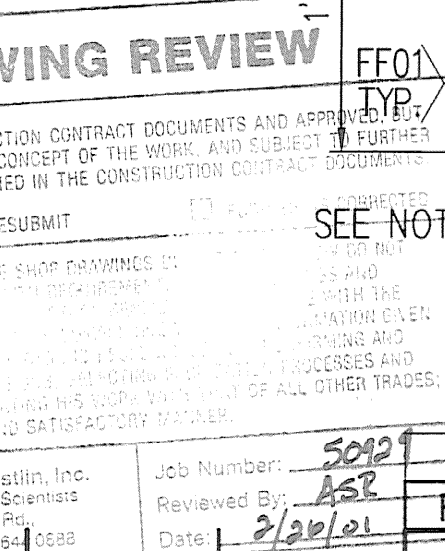
DETAILS (pp) & (pr)



DETAILS (px) & (py)



SECTION A-A

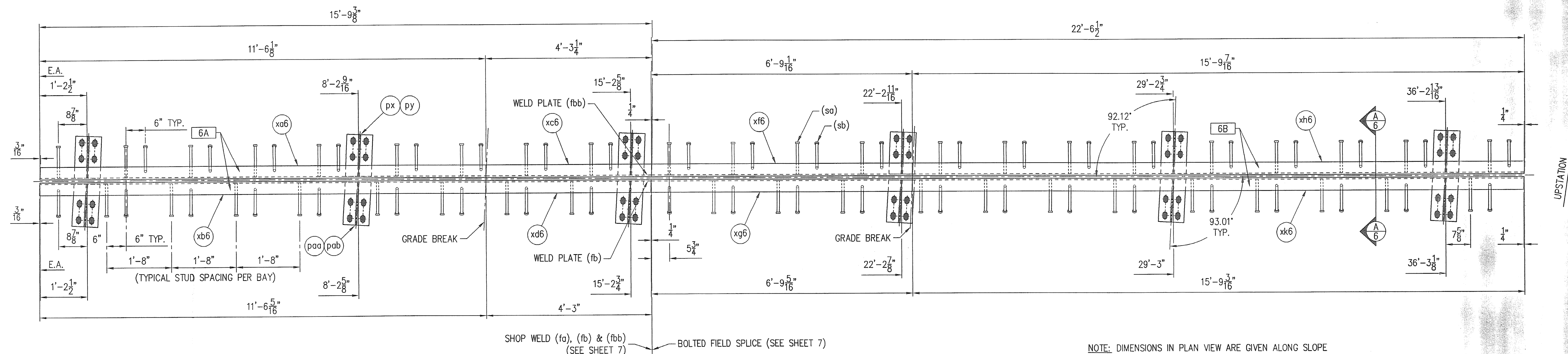


REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL	1/22/01	SLB
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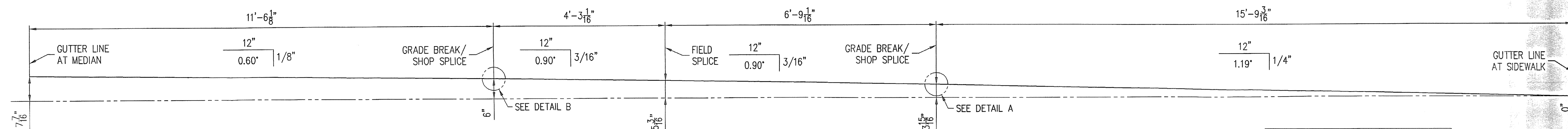
PROJECT	BRIDGE NO. 68 SOUTH BURLINGTON U.S. 2 OVER I-8
STATE PROJECT	IM DECK (36)
FEDERAL PROJECT	
CUSTOMER	J A McDONALD
LOCATION	CHITTENDEN COUNTY, VERMONT
DESCRIPTION	EXPANSION JOINT DETAILS WESTBOUND AT PIER 3
W.P. chkd	JDA
Drawn By	SLB
Chkd. By	A
Date	11/21/01

PRELIM	11/28/00
SHOP	
APPROVAL	11/28/00
DIST.	
CUST.	
FOR DATE	
PRINTS ISSUED	

SHEET NO.	5 OF 8
Job. No.	978.104.1

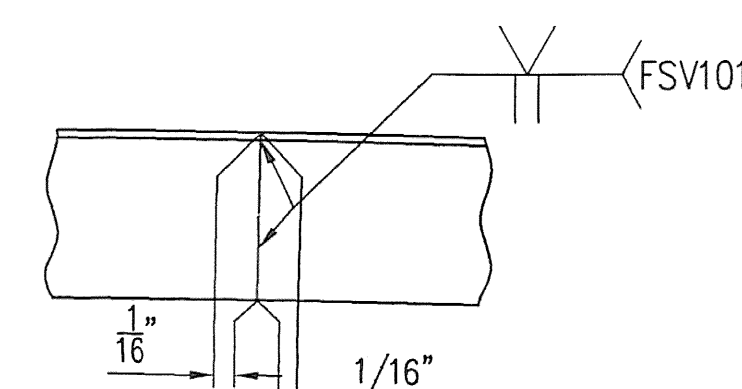


PLAN VIEW - EXPANSION JOINT
(PIER 3 - EASTBOUND)

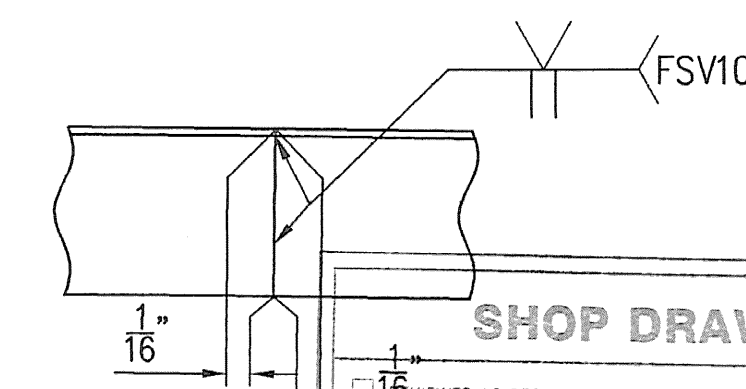


ELEVATION VIEW
(ELEVATIONS TAKEN ALONG C/L OF JOINT)

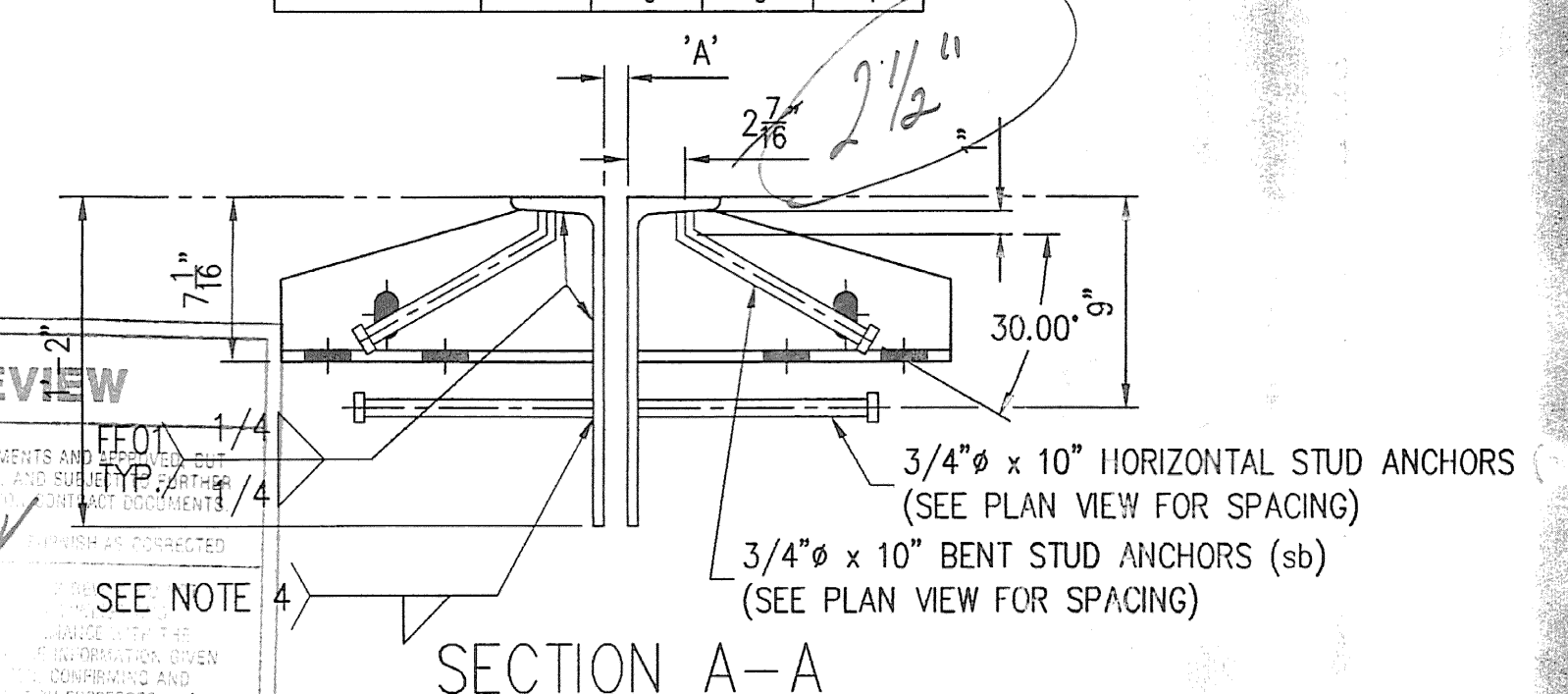
TEMPERATURE ADJUSTING CHART - PIER 3				
TEMPERATURE	45°	60°	75°	90°
DIM 'A'	1	7/8	7/8	3/4



DETAIL A



DETAIL B



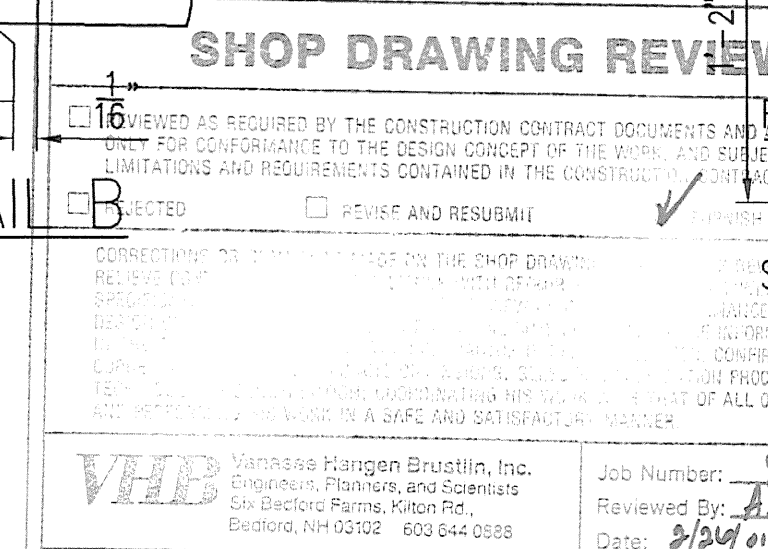
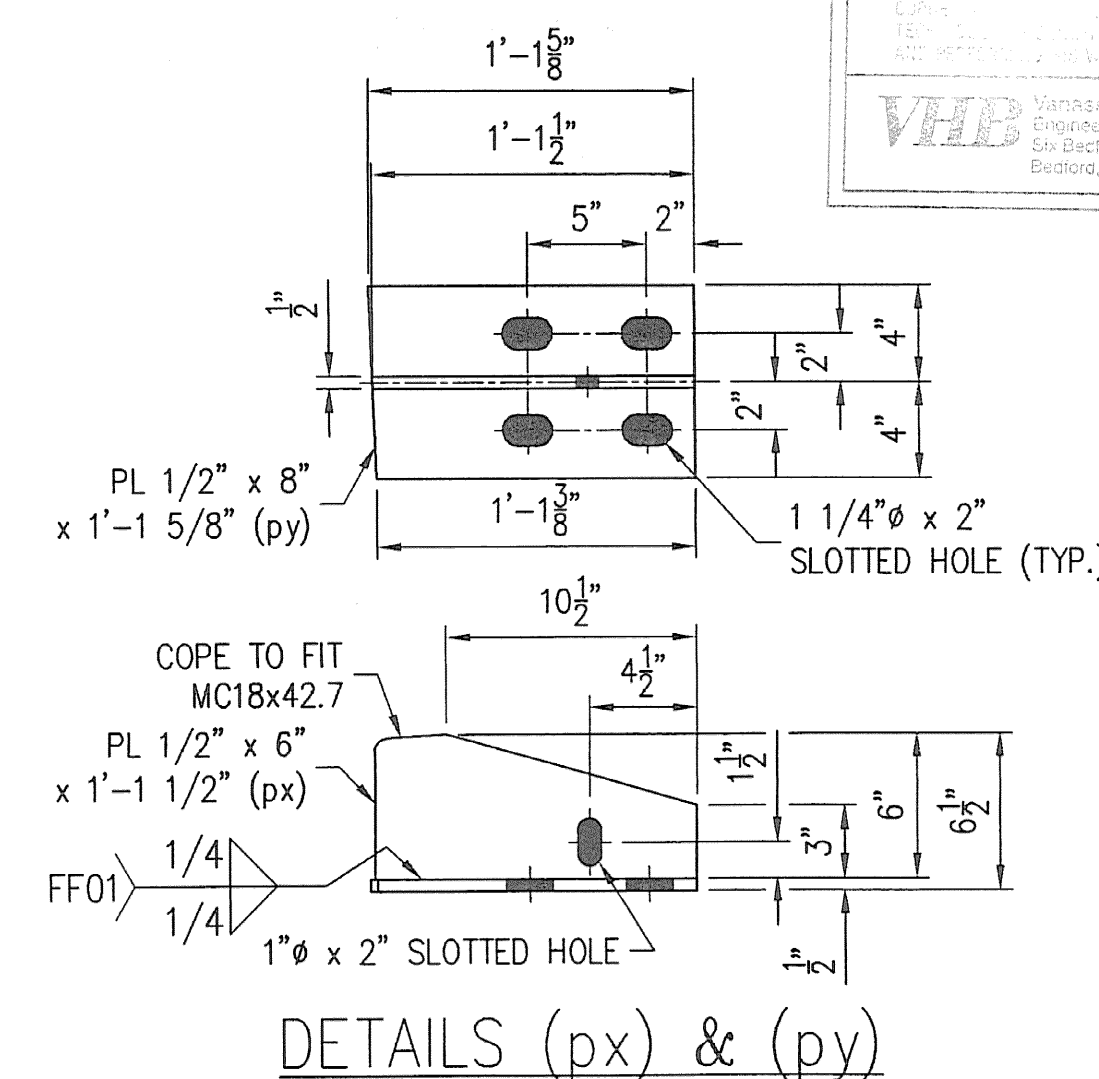
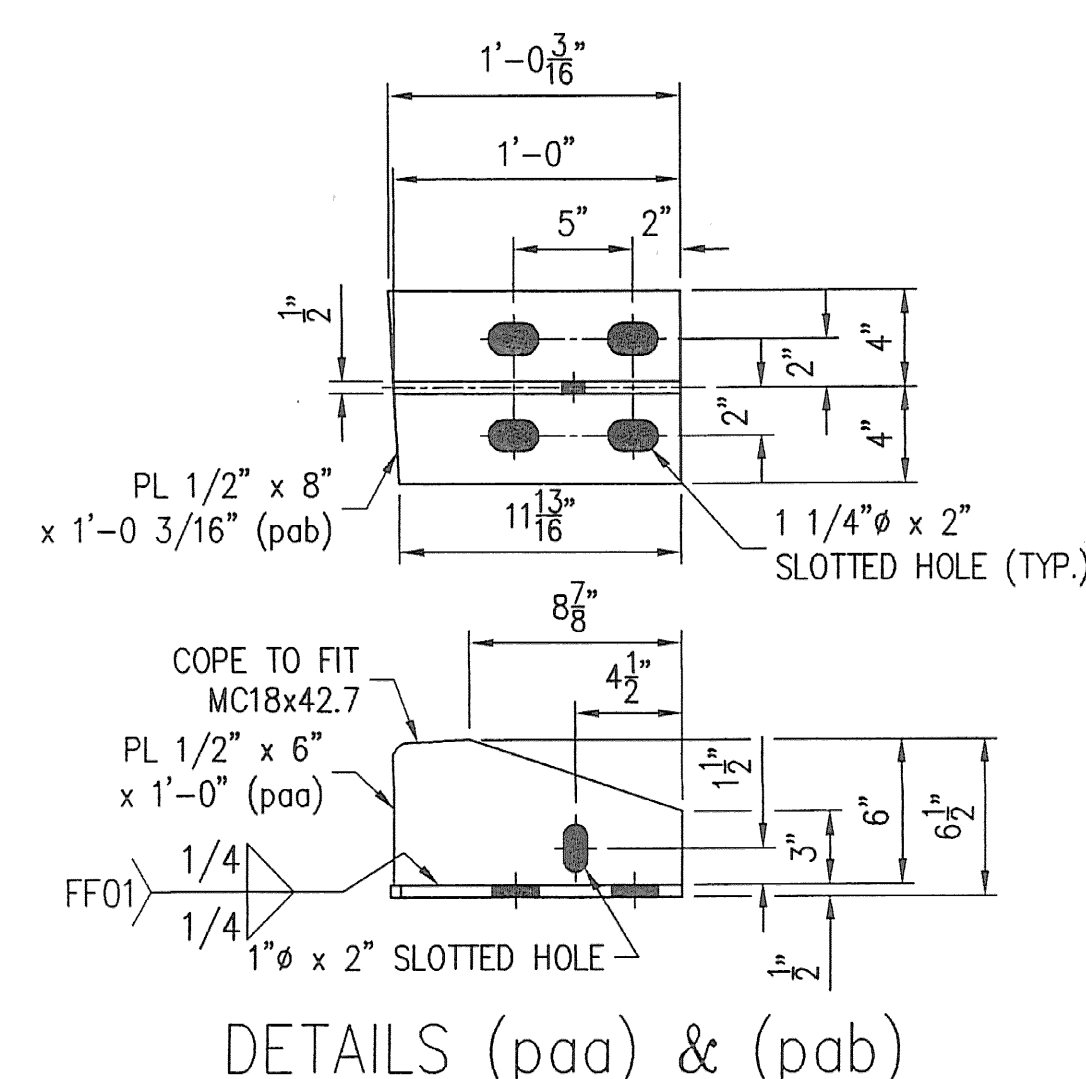
SECTION A-A

SEE SHEET 7 FOR GENERAL NOTES

LINE	NO. REQ'D.	DESCRIPTION	LENGTH	MK	REMARKS	WGHT.
1	1	EXPANSION JOINT ASS'Y		6A	HDC	
2	1	MC18x42.7	11'-6 1/8"	xa6	REMOVE FLANGE	11-8
3	1	MC18x42.7	11'-6 1/8"	xb6	REMOVE FLANGE	11-8
4	1	MC18x42.7	4'-3 1/4"	xc6	REMOVE FLANGE	11-8
5	1	MC18x42.7	4'-3"	xd6	REMOVE FLANGE	11-8
6	3	PL 1/2" x 6"	1'-1 1/2"	px	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
7	3	PL 1/2" x 6"	1'-1 1/2"	py	SHAPE CUT	19-16
8	3	PL 1/2" x 6"	1'-0"	paa	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
9	3	PL 1/2" x 6"	1'-0 3/16"	pab	SHAPE CUT	19-16
10	18	WS 3/4" x 10"		sa	17	29-19
11	18	WS 3/4" x 10"		sb	17 / BEND	29-19
12	2	FB 1/4" x 2"	0'-2"	fa		16-29
13	1	FB 1/4" x 4"	1'-0"	fb		16-36
14	1	FB 1/4" x 4"	1'-0"	fbb		16-36
15						
16						
17						
18						
19	1	EXPANSION JOINT ASS'Y		6B	HDC	
20	1	MC18x42.7	6'-9 1/16"	xf6	REMOVE FLANGE	11-8
21	1	MC18x42.7	6'-9 1/16"	xg6	REMOVE FLANGE	11-8
22	1	MC18x42.7	15'-9 7/16"	xh6	REMOVE FLANGE	11-8
23	1	MC18x42.7	15'-9 3/16"	xk6	REMOVE FLANGE	11-8
24	3	PL 1/2" x 6"	1'-1 1/2"	px	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
25	3	PL 1/2" x 6"	1'-1 1/2"	py	SHAPE CUT	19-16
26	3	PL 1/2" x 6"	1'-0"	paa	SHAPE CUT / COPE TO FIT MC18x42.7	19-16
27	3	PL 1/2" x 6"	1'-0 3/16"	pab	SHAPE CUT	19-16
28	26	WS 3/4" x 10"		sa	25	29-19
29	27	WS 3/4" x 10"		sb	26 / BEND	29-19
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31						
32						
33						

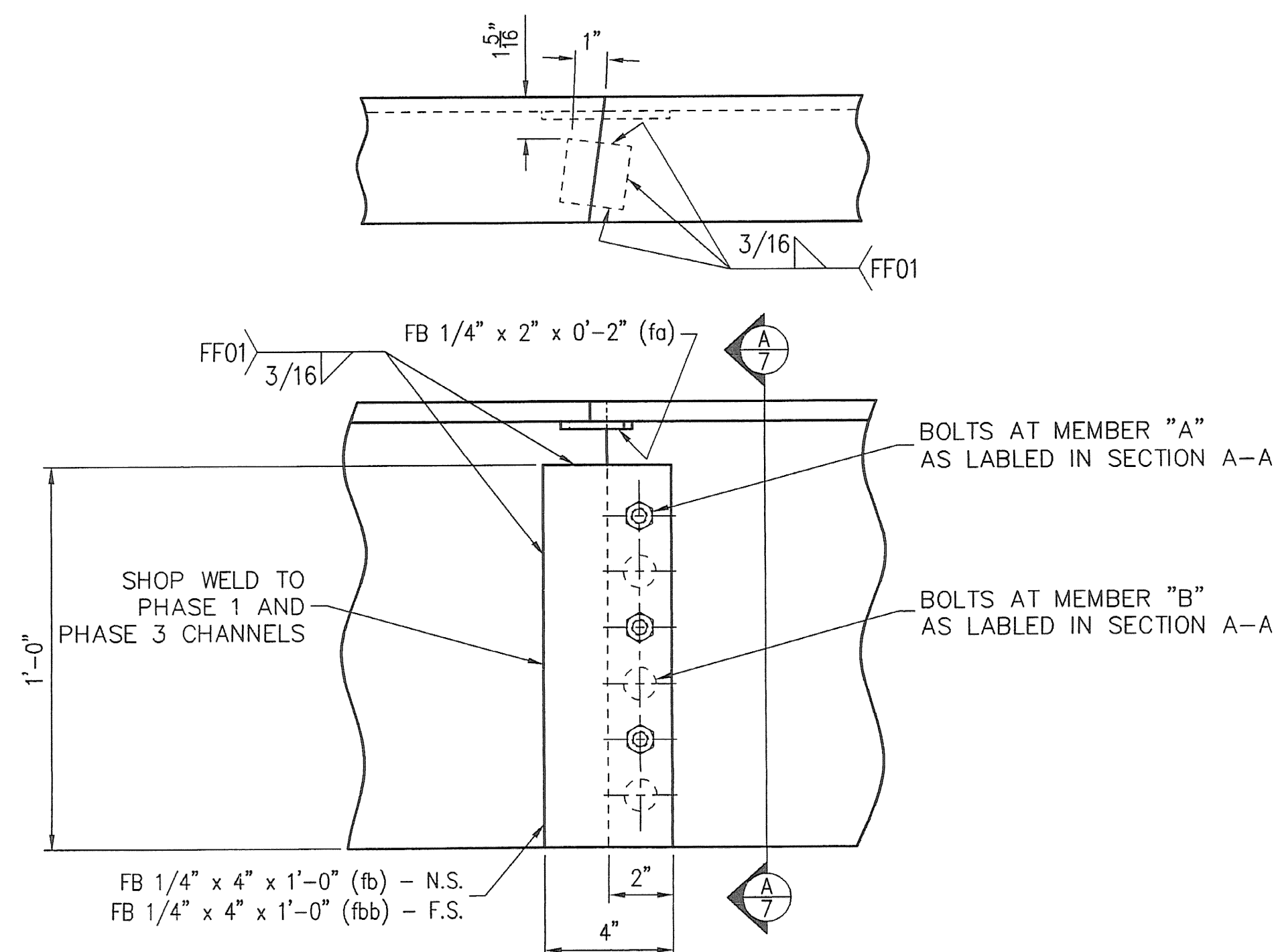
CONTRACTOR NOTE:
ALL SURFACES OF STEEL DECK JOINTS WHICH ARE TO HAVE CONCRETE PLACED AGAINST THEM, SHALL BE COATED WITH EPOXY BONDING COMPOUND. EPOXY BONDING COMPOUND TO BE PROVIDED BY THE CONTRACTOR.

APPROVER NOTE:
STOOL LENGTHS HAVE BEEN REVISED PER CONTRACTOR'S FIELD MEASUREMENTS TAKEN JANUARY 19, 2001.



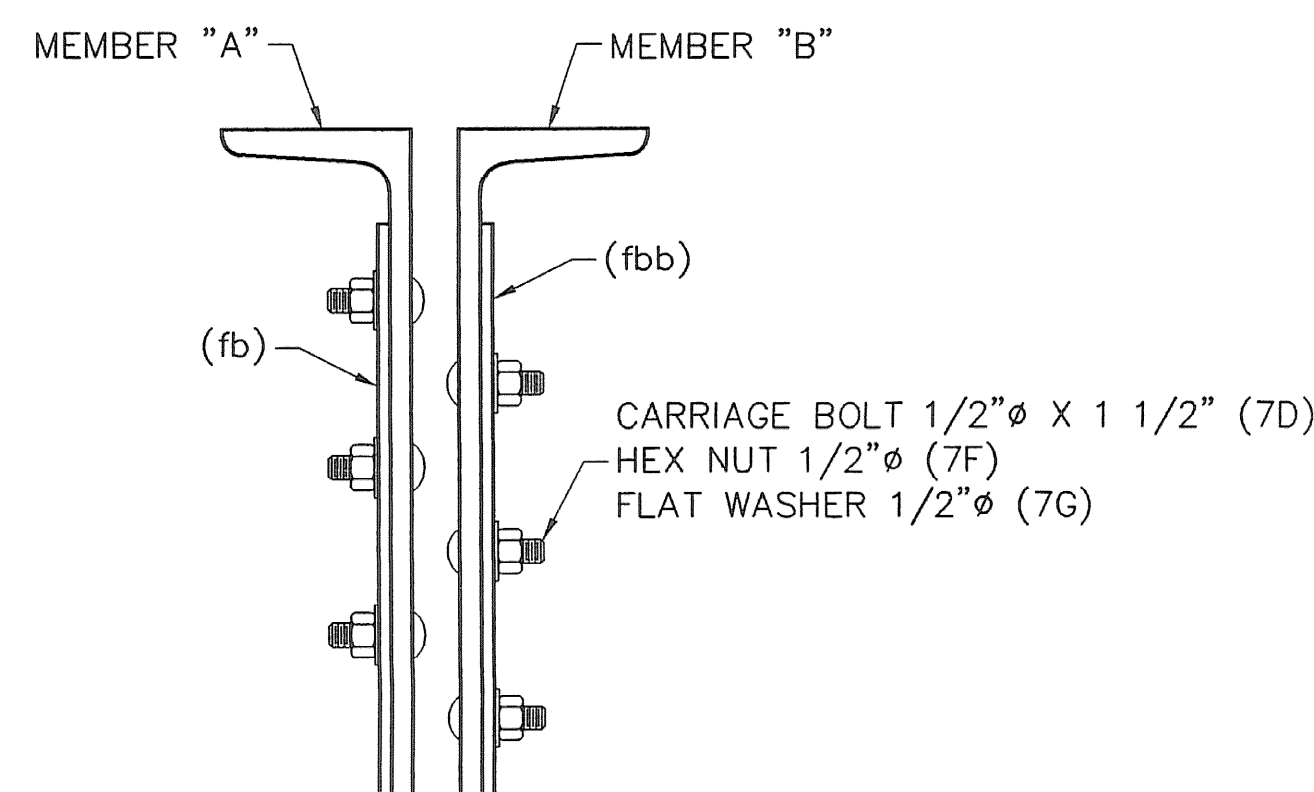
REV.	DESCRIPTION	DATE	BY
1	GENERAL REVISION PER APPROVAL.	1/22/01	SLB
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LEWIS ENGINEERING COMPANY			
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000			
PROJECT	BRIDGE NO. 68 SOUTH BURLINGTON U.S. 2 OVER I-8		
STATE PROJECT	IM DECK (36)		
FEDERAL PROJECT			
CUSTOMER	J A McDONALD		
LOCATION	CHITTENDEN COUNTY, VERMONT		
DESCRIPTION	EXPANSION JOINT DETAILS EASTBOUND AT PIER 3		
W.P. chk'd	JDK		
Drawn By	SLB		
Chk'd. By	AJC		
Date:	11/21/00		
SHEET NO.	6	OF	8
Job. No. :	978.104.1		

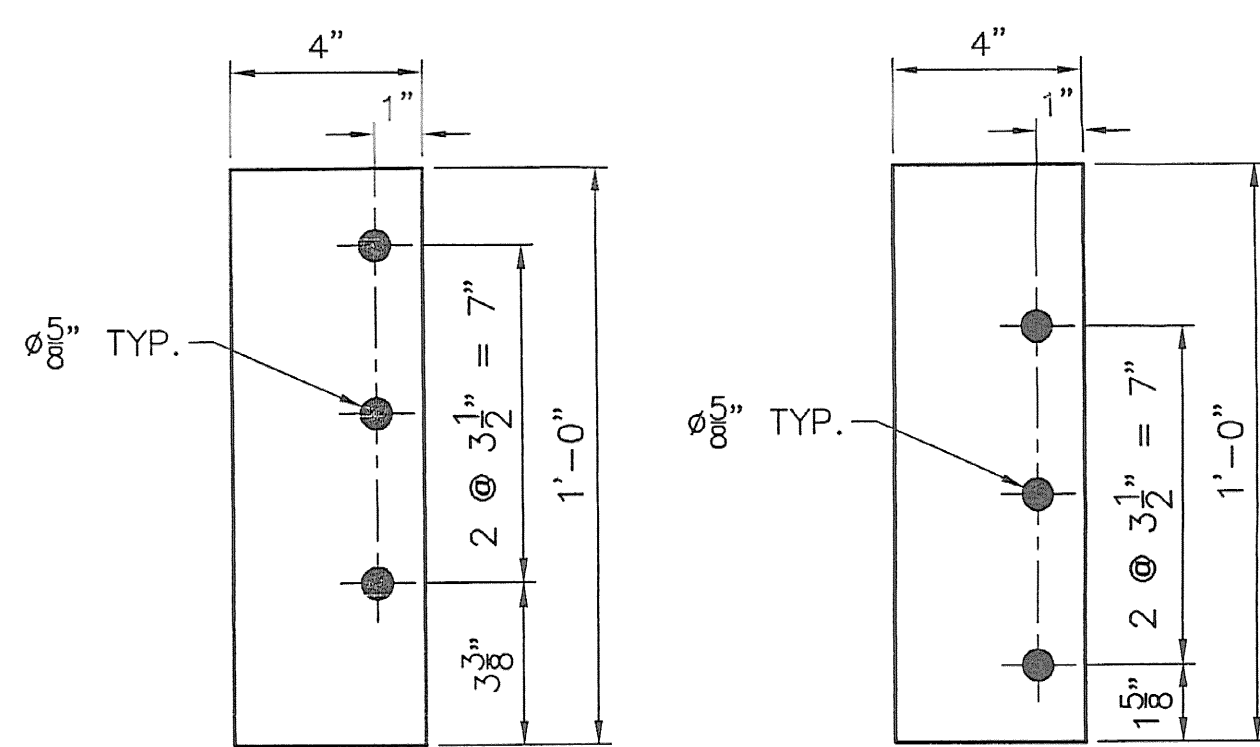


BOLTED FIELD SPLICE DETAIL

SHOP WELD (fo) & (fb) TO
6A, 5B, 4A, 3B, 2A & 1B

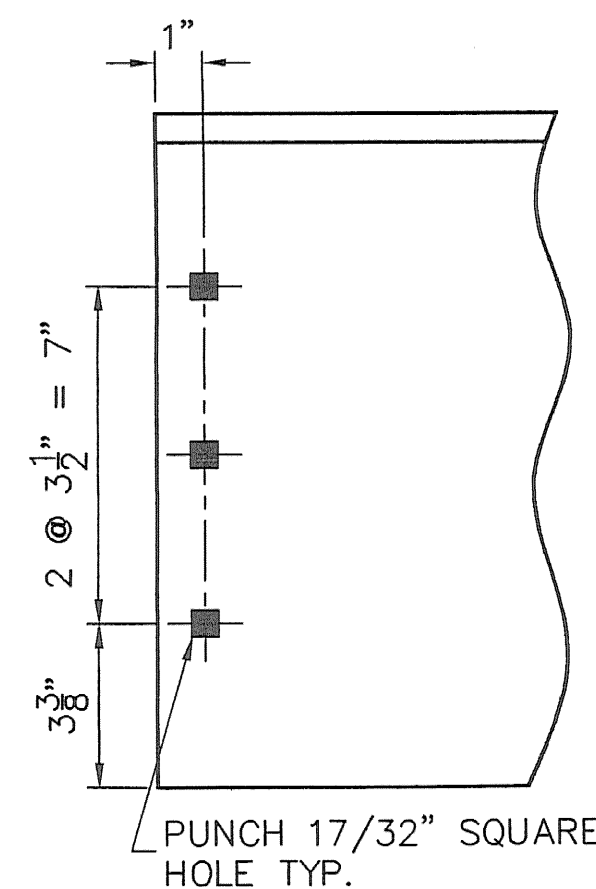


SECTION A-A



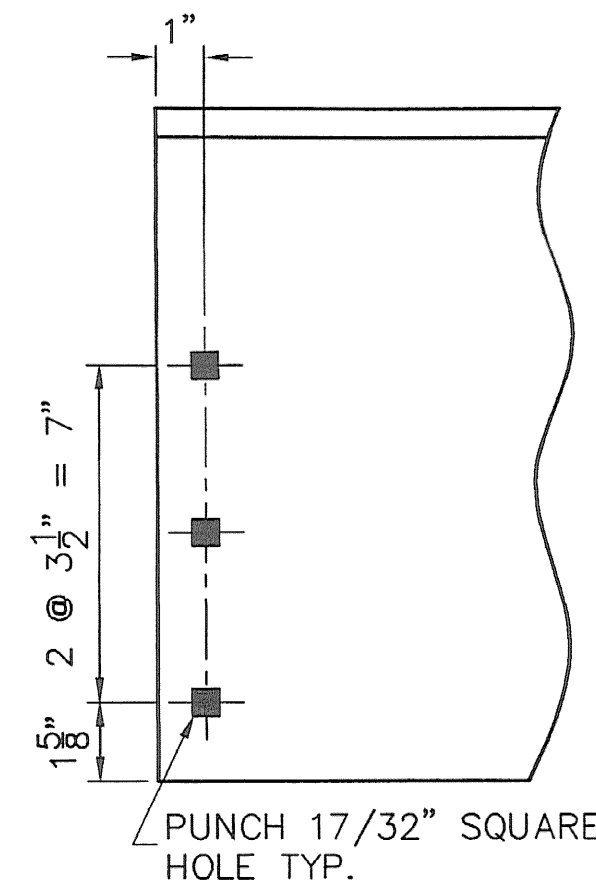
DETAIL (fb)

DETAIL (fbb)



END PREP FOR BOLTED FIELD SPLICE DETAIL

PREP THE ENDS OF (xc1), (xc2), (xc3), (xc4), (xc5) & (xc6)

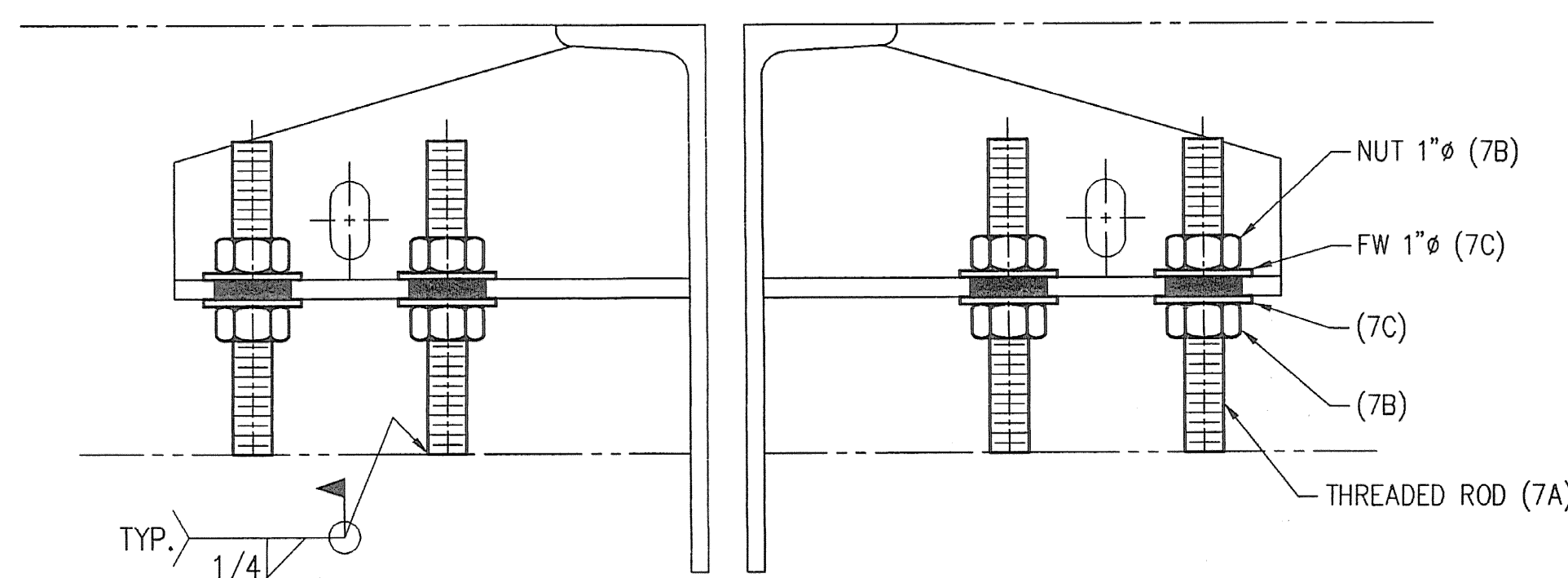


END PREP FOR BOLTED FIELD SPLICE DETAIL

PREP THE ENDS OF (xd1), (xd2), (xd3), (xd4), (xd5) & (xd6)

GENERAL NOTES:

- 1) ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO "STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION" DATED 1990, ITS LATEST REVISIONS AND THE SPECIAL PROVISIONS.
- 2) STEEL SHALL CONFORM TO AASHTO M270 GRADE 36, U.N.O. STEEL SHALL BE GALVANIZED PER SECTION 506.15(c) OF THE GENERAL SPECIAL PROVISIONS AND ASTM A123.
- 3) WELDING SHALL MEET THE REQUIREMENTS OF THE ANSI/AASHTO/AWS D 1.5 BRIDGE WELDING CODE AS MODIFIED BY STANDARD SPECIFICATIONS.
- 4) ALL STUD ANCHORS SHALL CONFORM TO AASHTO M169 (ASTM-A108 GRADES 1010 TO 1020) STEEL. ALL STUD ANCHORS TO BE ELECTRIC ARC END-WELDED WITH COMPLETE FUSION. STUDS AND STUD WELDING SHALL CONFORM TO SECTION 7 OF THE ANSI/AASHTO/AWS D1.5-95 BRIDGE WELDING CODE. REPAIR WELD STUDS USING FF-STUD-REP-01 OR SM-STUD-REP-01.
- 5) ALL HARDWARE TO BE GALVANIZED PER ASTM A153.
- 6) PRIOR TO GALVANIZING, ALL CORNERS AND EDGES OF STEEL PLATES, SHAPES, ETC., SHALL BE GROUNDED TO A 1/16" RADIUS PER SECTION 506.14(c).
- 7) ANY GALVANIZED COATING DAMAGED DURING FIELD WELDING OR FROM OTHER CAUSES MUST BE REPAIRED IN ACCORDANCE WITH ASTM-A780.
- 8) DS BROWN IS TO SUPPLY ONLY THE PARTS SHOWN ON THESE DRAWINGS. ALL OTHER MATERIALS TO BE PROVIDED BY OTHERS.
- 9) JOINTS SHALL BE SHOP ASSEMBLED AND Banded PRIOR TO SHIPPING. JOINTS SHALL BE SHIPPED IN PAIRS.
- 10) SHOP INSPECTION BY VAOT.



TYPICAL SECTION OF JOINT @ GIRDER

LINE NO.	REQD.	DESCRIPTION	LENGTH	MK	REMARKS	WGHT.
1	288	THREADED ROD		7A	HDG	
2	288	RB 1 CONT THRD	0'-8"	7A		1.27
3						
4		FIELD BOLTS :				
5	588	HN 1 HVY A563DH HDG		7B	576	25-66
6	588	FW 1 F436 HDG		7C	576	27-15
7	37	MB 1/2 x 1 1/2 CARRIAGE		7D	36	
8	37	HN 1/2 HVY A563DH HDG		7F	36	25-3
9	37	FW 1/2 F436 HDG		7G	36	27-3
10						
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SHOP DRAWING REVIEW	
REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE REVIEW CONCEPT OF THE WORK, AND NOT FOR THE DESIGN LIMITATIONS AND REQUIREMENTS CAPTAINED IN THE GENERAL CONTRACT AND SPECIFICATIONS.	
REJECTED	NEEDS AND COMMENTS
CONSTRUCTION REVIEWED BY: [Signature] DESIGN REVIEWED BY: [Signature] DATE: 11/22/01	
Job Number: 50929 Reviewed By: ASR Date: 11/22/01	

REV.	DESCRIPTION	DATE	BY
1	GENERAL REVISION PER APPROVAL.	1/22/01	SLB

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

PRELIM	11/28/00
SHOP	
APPROVAL	11/28/00
DIST.	
CUST.	
FOR	DATE
PRINTS ISSUED	

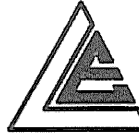
LEWIS ENGINEERING COMPANY	
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000	
PROJECT	BRIDGE NO. 68 SOUTH BURLINGTON U.S. 2 OVER I-8
STATE PROJECT	IM DECK (36)
FEDERAL PROJECT	
CUSTOMER	J A McDONALD
LOCATION	CHITTENDEN COUNTY, VERMONT
DESCRIPTION	EXPANSION JOINT DETAILS
W.P. chkd JUK Drawn By SLB Chkd By ASR Date: 11/21/01	
SHEET NO. 7 OF 8	Job. No. : 978.104.1

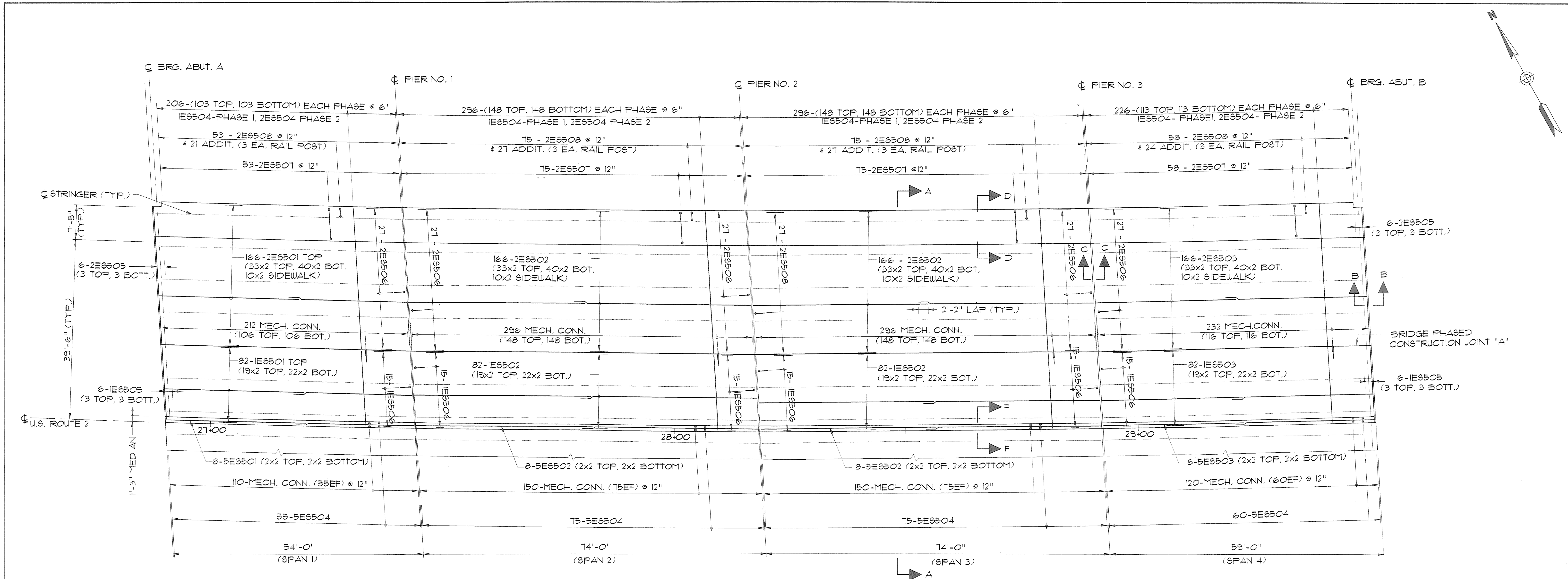


THIS SHEET IS FOR SHOP USE ONLY

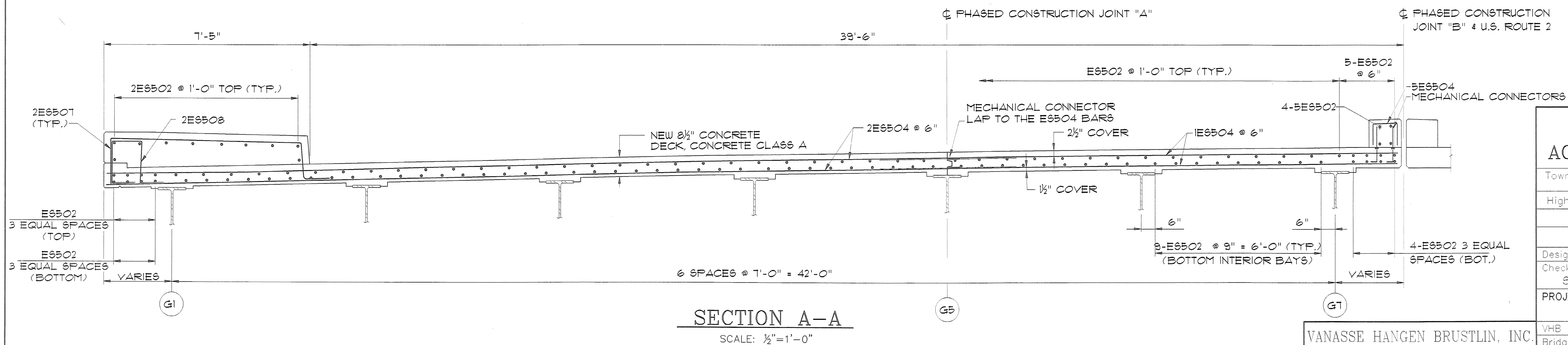
SHOP NOTE:
ALL DIMENSIONS ARE GIVEN ALONG C OF JOINT.

SHOP DRAWING REVIEW	
☒ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.	
☐ REJECTED	☐ REVISE AND REPERMIT
CORRECTIONS OR COMMENTS MUST BE MADE AND APPROVED BY THE DESIGNER. THE DESIGNER'S REVIEW OF THE SHOP DRAWING IS LIMITED TO THE DESIGN CONCEPT OF THE WORK AND DOES NOT CONSTITUTE A GUARANTEE OF THE ACCURACY OF THE SHOP DRAWING. THE DESIGNER'S REVIEW IS LIMITED TO THE DESIGN CONCEPT OF THE WORK AND DOES NOT CONSTITUTE A GUARANTEE OF THE ACCURACY OF THE SHOP DRAWING. THE DESIGNER'S REVIEW IS LIMITED TO THE DESIGN CONCEPT OF THE WORK AND DOES NOT CONSTITUTE A GUARANTEE OF THE ACCURACY OF THE SHOP DRAWING.	
Job Number: 50929	
Reviewed By: ASB	
Date: 2/24/01	

REV.	DESCRIPTION	DATE	INT.
	ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.		
 LEWIS ENGINEERING COMPANY 4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000			
PROJECT — BRIDGE NO. 68 SOUTH BURLINGTON I-8			
STATE PROJECT — IM DECK (36)			
FEDERAL PROJECT —			
CUSTOMER — J A McDONALD			
LOCATION — CHITTENDEN COUNTY, VERMONT			
DESCRIPTION — EXPANSION JOINT DETAILS			
W.P. chkd. NR			
Drawn By: SL			
Chkd. By: ASB			
Date: 11/21/00			
SHEET NO. 8 OF 8		Job. No. : 978.10491	



PARTIAL PLAN
 SCALE: 1"=10'-0"
 (PHASE 1 & 2 SHOWN, PHASE 3 & 4 SIMILAR)



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

SHEETS 11A, 11B AND 11C SHOW
 DECK REPLACEMENT REINFORCING.
 REFER TO OTHER CONTRACT SHEETS
 FOR ADDITIONAL INFORMATION.
 CONFLICTS BETWEEN THESE DRAWINGS
 AND OTHER CONTRACT DRAWINGS
 SHALL BE BROUGHT TO THE ATTENTION
 OF THE RESIDENT ENGINEER.

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of	SOUTH BURLINGTON	Bridge No.	68
Highway No.	U.S. 2	Log Sta.	
		Surv. Sta.	

U.S. 2 OVER I-89

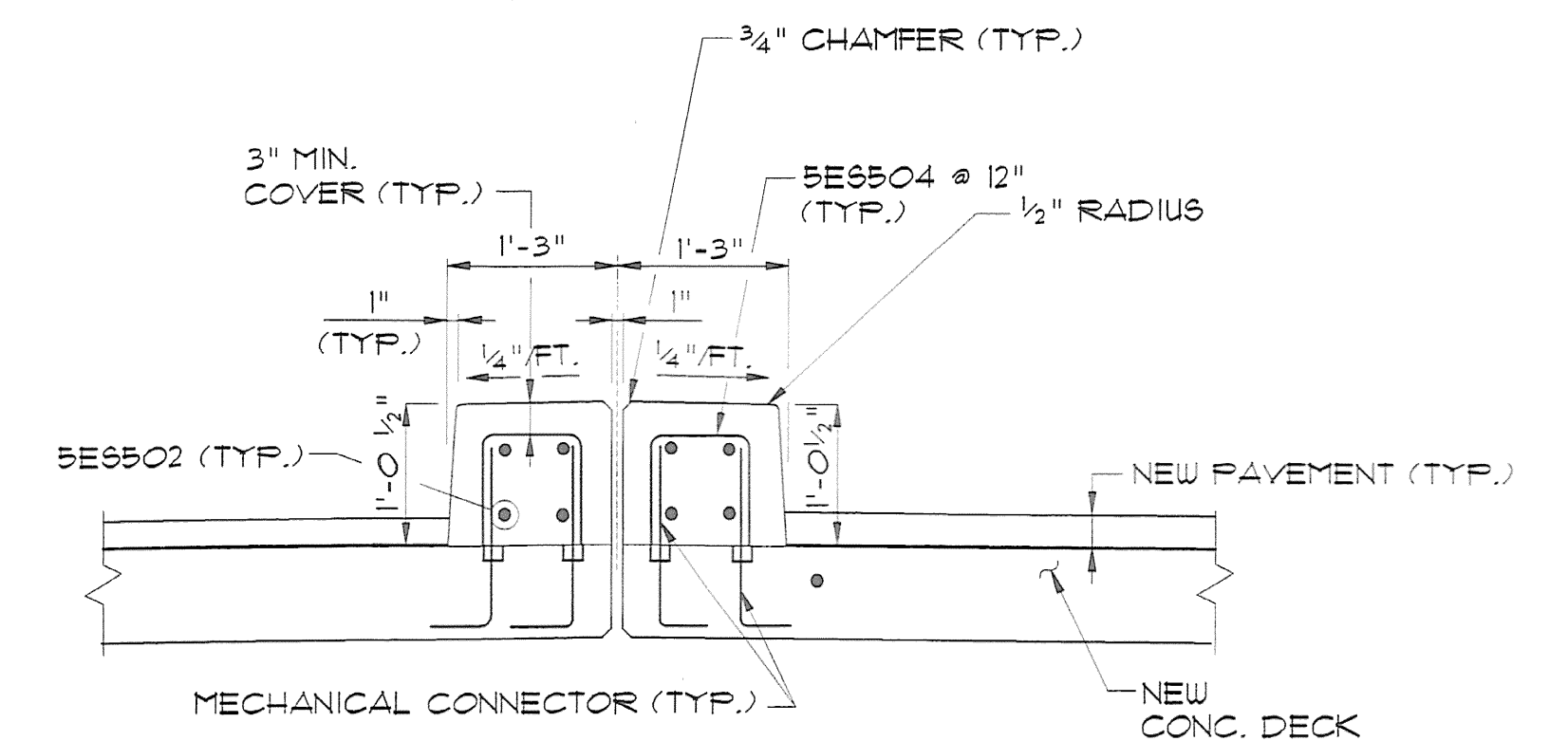
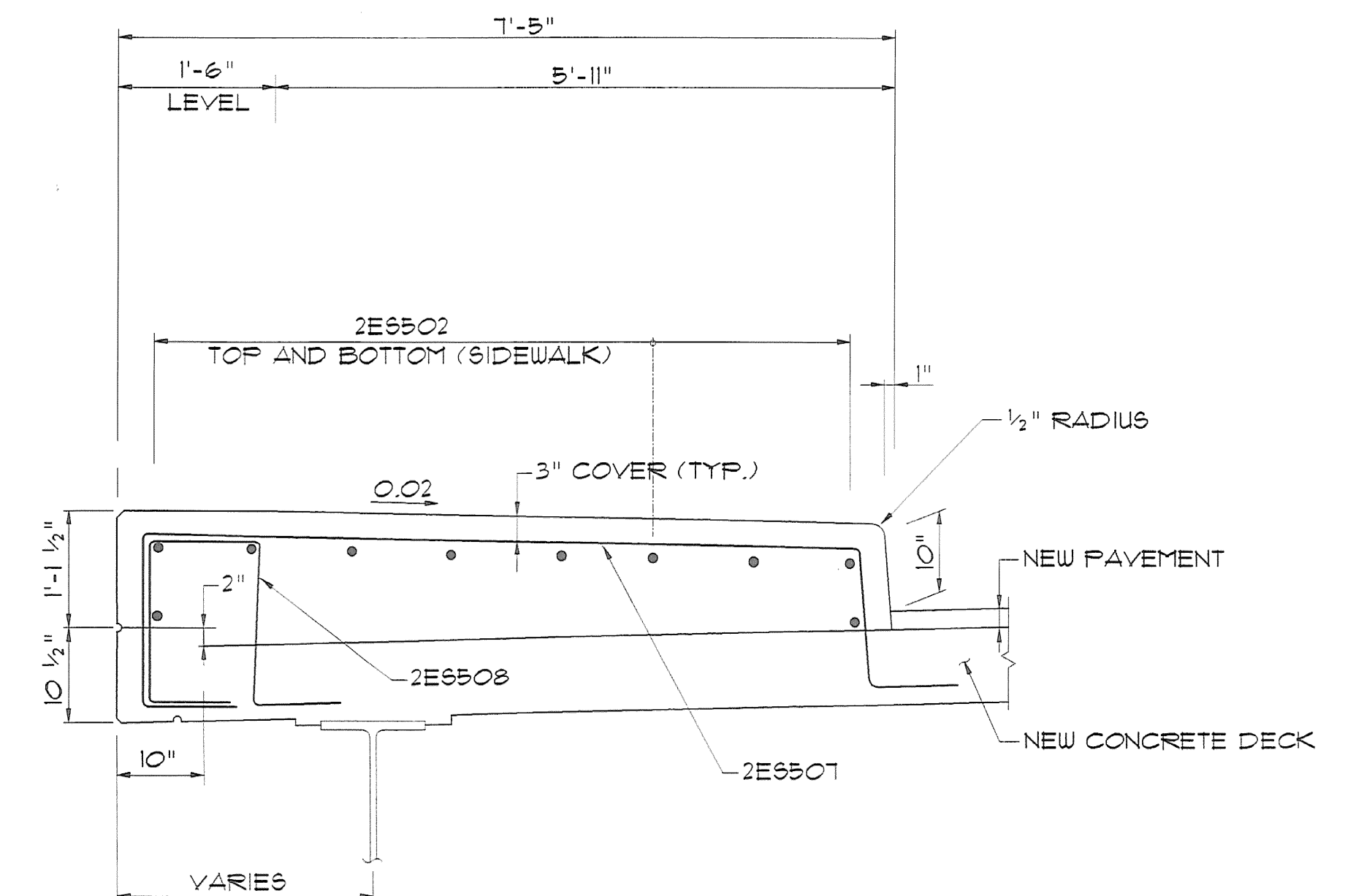
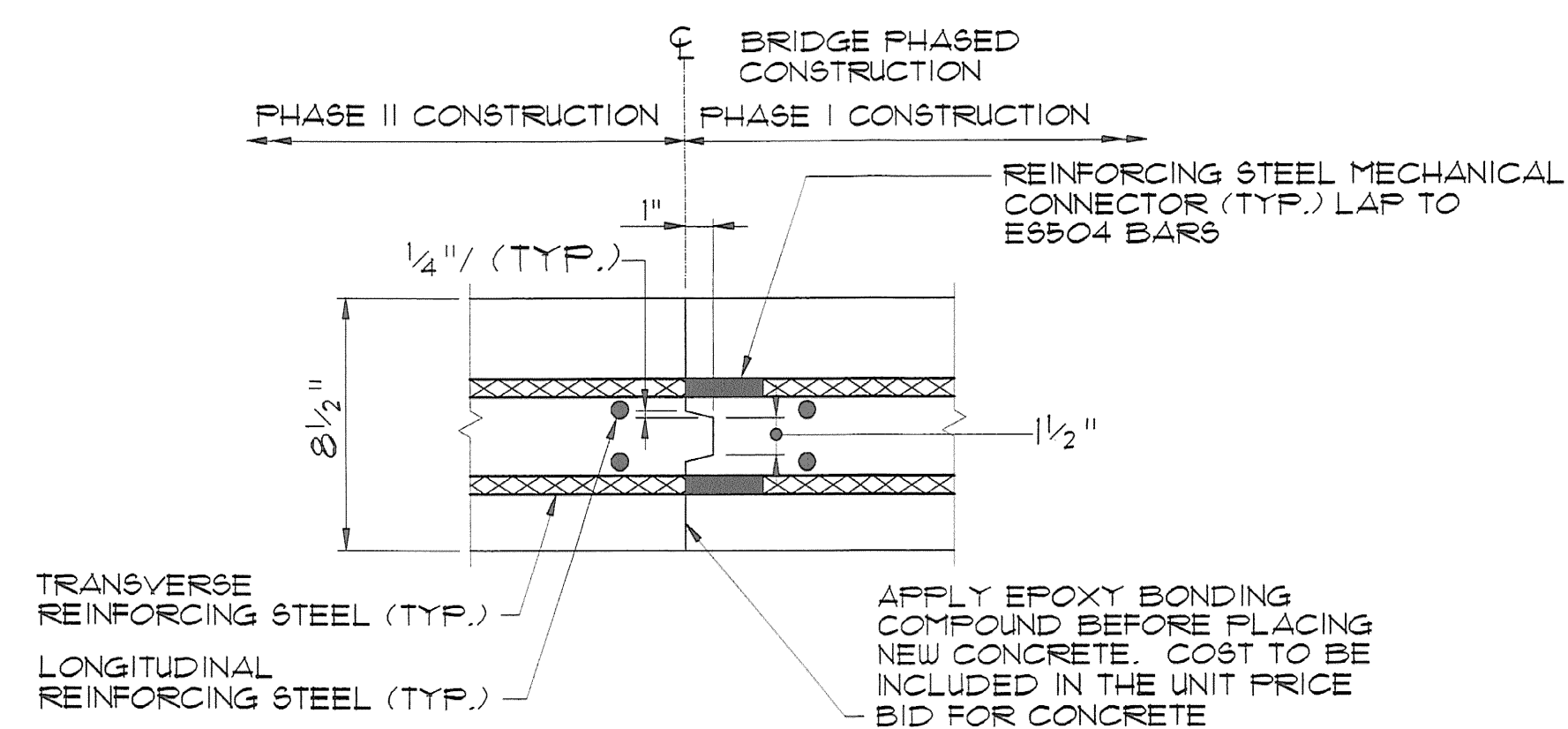
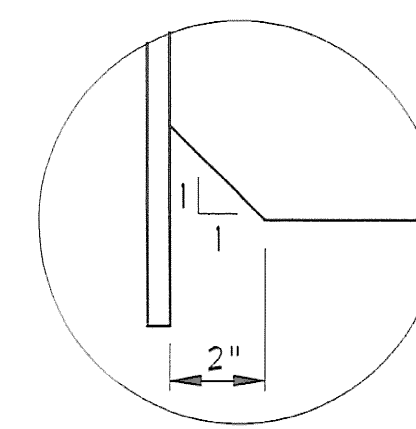
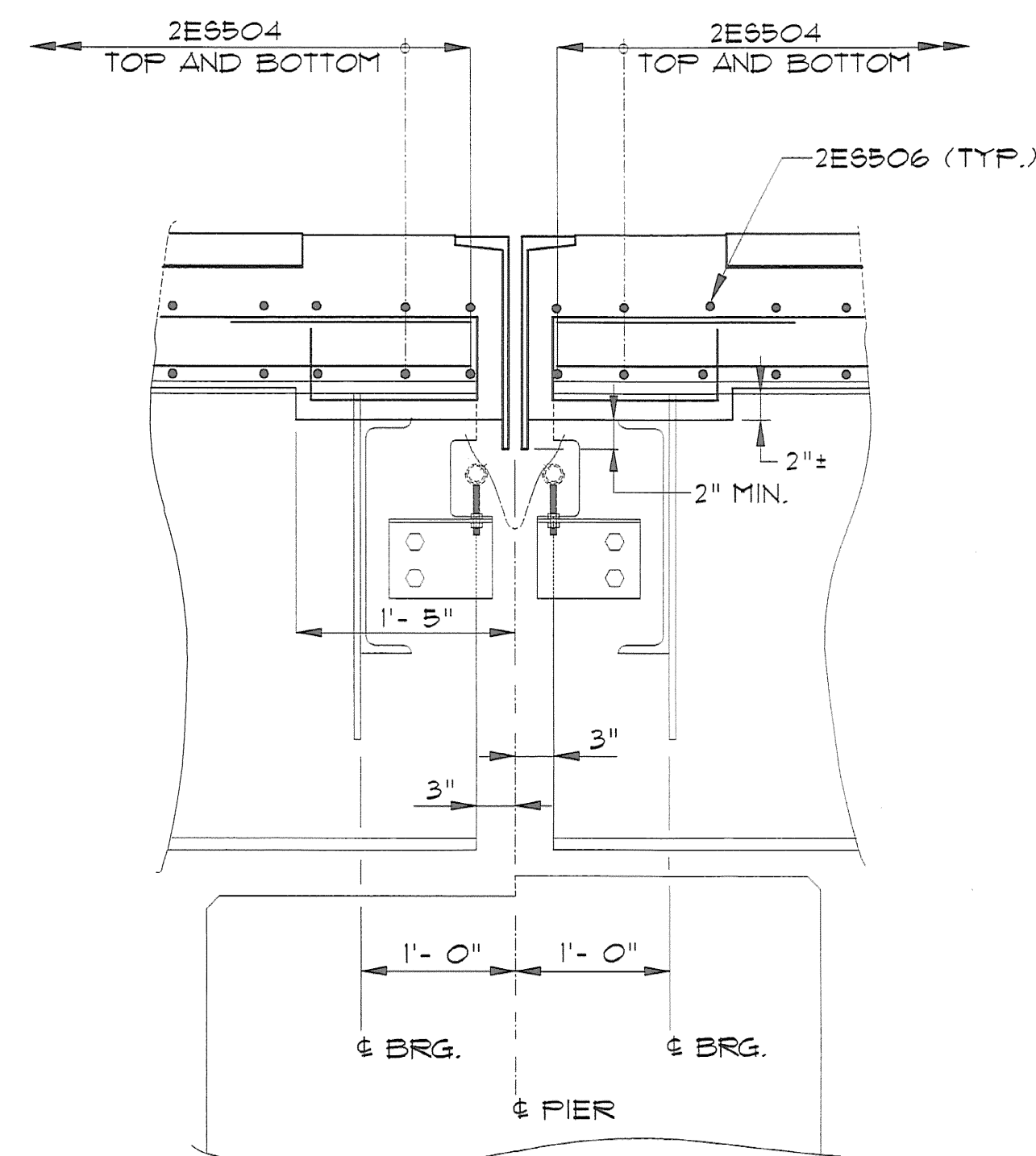
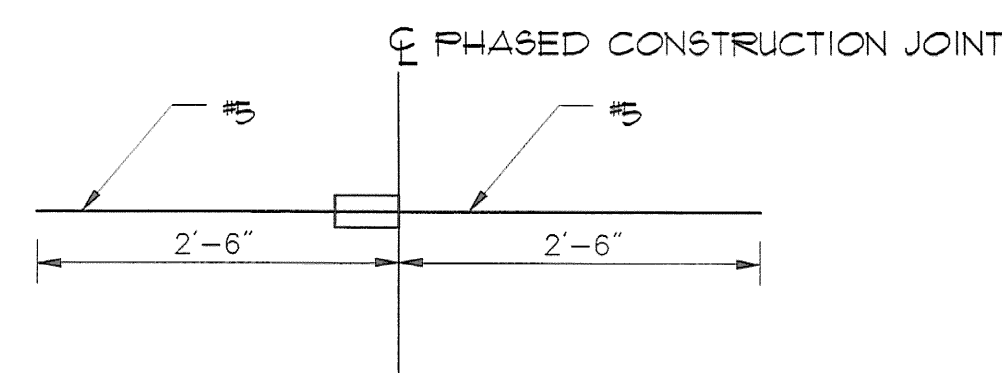
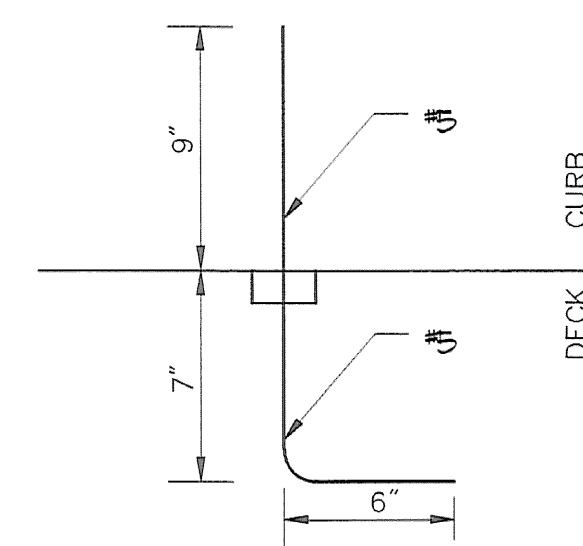
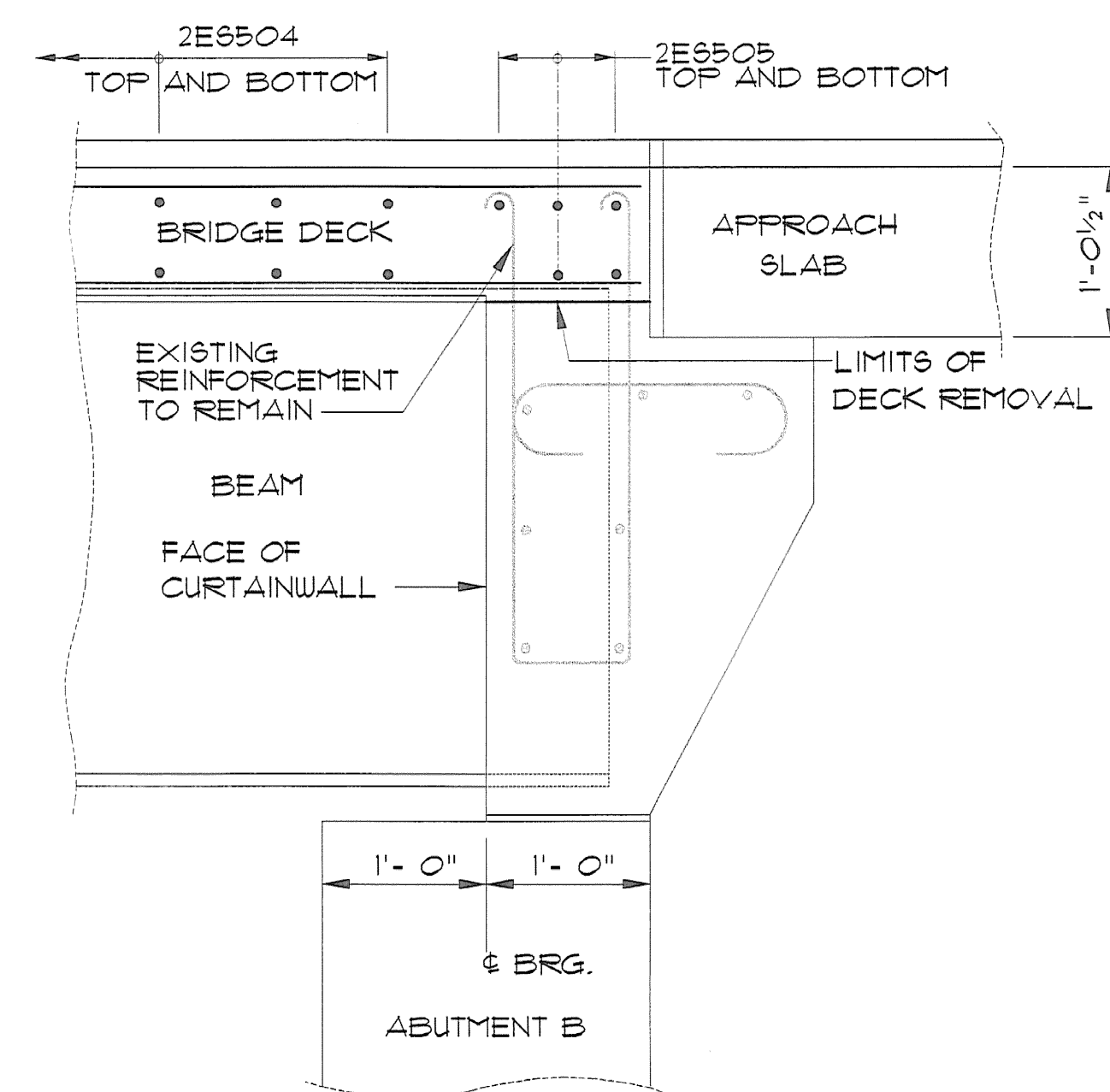
DECK REINFORCEMENT PLAN

Designed By	A. ROBINSON	Drawn By	M. LANDREY
Checked By	S. JOHNSON	Date	5/9/01
		Bridge Design Supervisor	S. JOHNSON
		Date	5/9/01

PROJECT	SOUTH BURLINGTON	PROJECT NO.	IM DECK (36)
---------	------------------	-------------	--------------

VHB Cod. Drawing No.	50929FRM	Date	5/9/01
Bridge Sheet No.		Sheet	11A of 15

VANASSE HANGEN BRUSTLIN, INC.



SHEETS 11A, 11B AND 11C SHOW
DECK REPLACEMENT REINFORCING.
REFER TO OTHER CONTRACT SHEETS
FOR ADDITIONAL INFORMATION.
CONFLICTS BETWEEN THESE DRAWINGS
AND OTHER CONTRACT DRAWINGS
SHALL BE BROUGHT TO THE ATTENTION
OF THE RESIDENT ENGINEER.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SOUTH BURLINGTON	Bridge No. 68
Highway No. U.S. 2	Log Sta.
	Surv. Sta.

U.S. 2 OVER 1-89

REINFORCEMENT DETAILS

Designed By	A. ROBINSON	Drawn By	M. LANDREY
Checked By	Date	Bridge Design Supervisor	
S. JOHNSON	5/9/01	S. JOHNSON	Date 5/9/01

PROJECT	PROJECT NO.
SOUTH BURLINGTON	IM DECK (36)

VHB Cad Drawing No. 50929DET2	Date 5/9/01
Bridge Sheet No.	Sheet 11B of 75

VANASSE HANGEN BRUSTLIN, INC.

VHB

Transportation
Land Development
Environmental Services

Kiln Road
Six Bedford Farms, Suite 607
Bedford, NH 03110-6532
603 644 0888
FAX: 603 644 2385

Yanasse Hangen Brustlin, Inc.

TRANSMITTAL

To: Robert Suckert, PE, Resident Engineer
Vermont Agency of Transportation
209 South Pinnacle Ridge Road
Waterbury, VT 05676

Date: 1-19-01

VHB
Project No.: 50929

Re: South Burlington IM DECK 36 Bridge No. 68
and STP BIKE (28) S

The Following details as outlined below, Item No. 525.34, Description Bridge Railing NETC 4 Rail, for the above project transmitted with your letter dated October 26 2000, have been reviewed and are being returned herewith:

We are sending you: ☒ Attached ☐ Under Separate cover via Regular Mail the following items:

☒ Shop drawings ☐ Prints ☐ Plans ☐ Diskettes ☐ Specifications ☐ Copy of Letter ☐ Change Order

☐ Other

Copies	Date	No.	Description
as noted below	10/6/00		Bridge Rail Shop Drawings

These are transmitted as checked below:

☒ Reviewed as required by the construction contract documents and approved, but only for conformance to the design concept of the work, and subject to further limitations and requirements contained in the construction contract documents. ☐ Rejected ☐ Revise and Resubmit ☐ Furnish as Corrected

REMARKS: There shall be no fabrication done until all drawings and welding procedures are approved or approved as noted. You must provide written notice to the Vermont Agency of Transportation (VTrans) Structures Section office as to the date fabrication represented by these drawings will begin. That notice must be received at least seven days prior to that date, as per Specifications 506.03. Any material fabricated prior to the notification date is subject to rejection without further cause.

Copy to: VTrans Resident Engineer, Robert E. Suckert, P.E. w/prints
Contractor, J.A. McDonald, Inc w/prints
Subcontractor: F.R. Lafayette w/prints
VTrans Consultant Project Manager, Sherward Farnsworth, PE w/prints
VTrans Structures Section – Shop Inspector – Jeff Clark – w/prints
VTrans Construction Section – letter only
VTrans Materials & Research Section (C&IA Unit) – letter only

By: Athanasia S. Robinson, VHB
Athanasia S. Robinson

VHB Project Manager, Steve Johnson, PE, VHB Project File

F. R. Lafayette,
Inc.

F. R. LAFAYETTE, INC.
12 KELLOGG RD
ESSEX JCT.
VERMONT 05452

Phone: 802-878-5341
Fax: 802-878-2041

Thursday, January 11, 2001

RECEIVED

Vanasse Hangen Brustlin, Inc.
Attn.: Athanasia Robinson
Six Bedford Farms, Kilton Road
Bedford, NH 03110

JAN 1 6 2001

VHB, Inc.

Re: So. Burlington IM DECK(36)

Athanasia,

This letter is in response to the letter dated October 30, 2000, in which you asked for field verification of rail layout.

Robert Suckert, resident engineer on above mentioned project, and myself field verified the items listed below on January 10, 2001.

- The proposed bridge rail layout and approach rail layout has been field verified as shown on sheet 26 of the contract plans.
- The post locations on the wingwalls meet the minimum requirements as shown on Detail A, Sheet 26.

If you have any questions please feel free to contact me at the above noted number. Thank you.

Brent Tewksbury

Brent L. Tewksbury
Project Manager



Vanasse Hangen Brustlin, Inc.

Kilton Road
Six Bedford Farms, Suite 607
Bedford, New Hampshire 03110-6532
603 644-0888
FAX 603 644-2385

FAX
Transmittal

Deliver To:	Robert Suckert, Resident Engineer	From:	Athanasia Robinson
Company:	Vermont Agency of Transportation	VHB Project No.:	50929 IM DECK (36) So. Burlington VT Br. 68 US 2 over I-89
Telephone No.:	1-(802)-658-6870	FAX No.:	1-(802) 658-6874
Original of Telecopy:	Will not be sent	Date and Time:	October 30, 2000
Total Number of Pages (Including Transmittal Form): 2			

Bob,
I received a letter from the rail subcontractor at Lafayette Co.(attached) in response to VHB's previous request for field verification of the rail layout.

In order to clarify the information needed to complete our review, I have outlined them below.
Please forward a copy of this fax transmittal to the contractor for his response.

The contractor should respond by fax/letter that the following has been performed so we can finalize our review of the rail shop drawings.

- The proposed bridge rail layout and approach rail layout has been field verified as shown on sheet 26 of the contract plans.
- The configuration of the offset block has been determined from contractor's field measurements. (OK – noted on plans)
- The post locations on the wingwalls meet the minimum requirements as shown on Detail A-Sheet 26 of 75.

Once we have received this information, we will complete our review.

Athanasia Robinson
Athanasia Robinson
Structural Engineer

VHB, Inc.
Cc: Sherward Farnsworth, PE., VTrans (Fax. No. 1-802-828-3566)
Steve Johnson, PE., VHB, Proj. Folder, Proj. File

F. R. LAFAYETTE
INC.

F. R. LAFAYETTE, INC.
32 KELLOGG RD
ESSEX JCT.
VERMONT 05452

Phone: 802 878-5341
Fax: 802 878-2041

RECEIVED

OCT 30 2000

VHB, Inc.

October 26, 2000

Vanasse Hangen Brustlin, Inc
Attn: Steve Johnson
Six Bedford Farms, Kilton Road
Bedford, NH 03110

Re: So Burlington IM DECK(36)

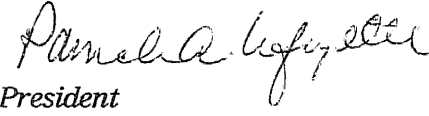
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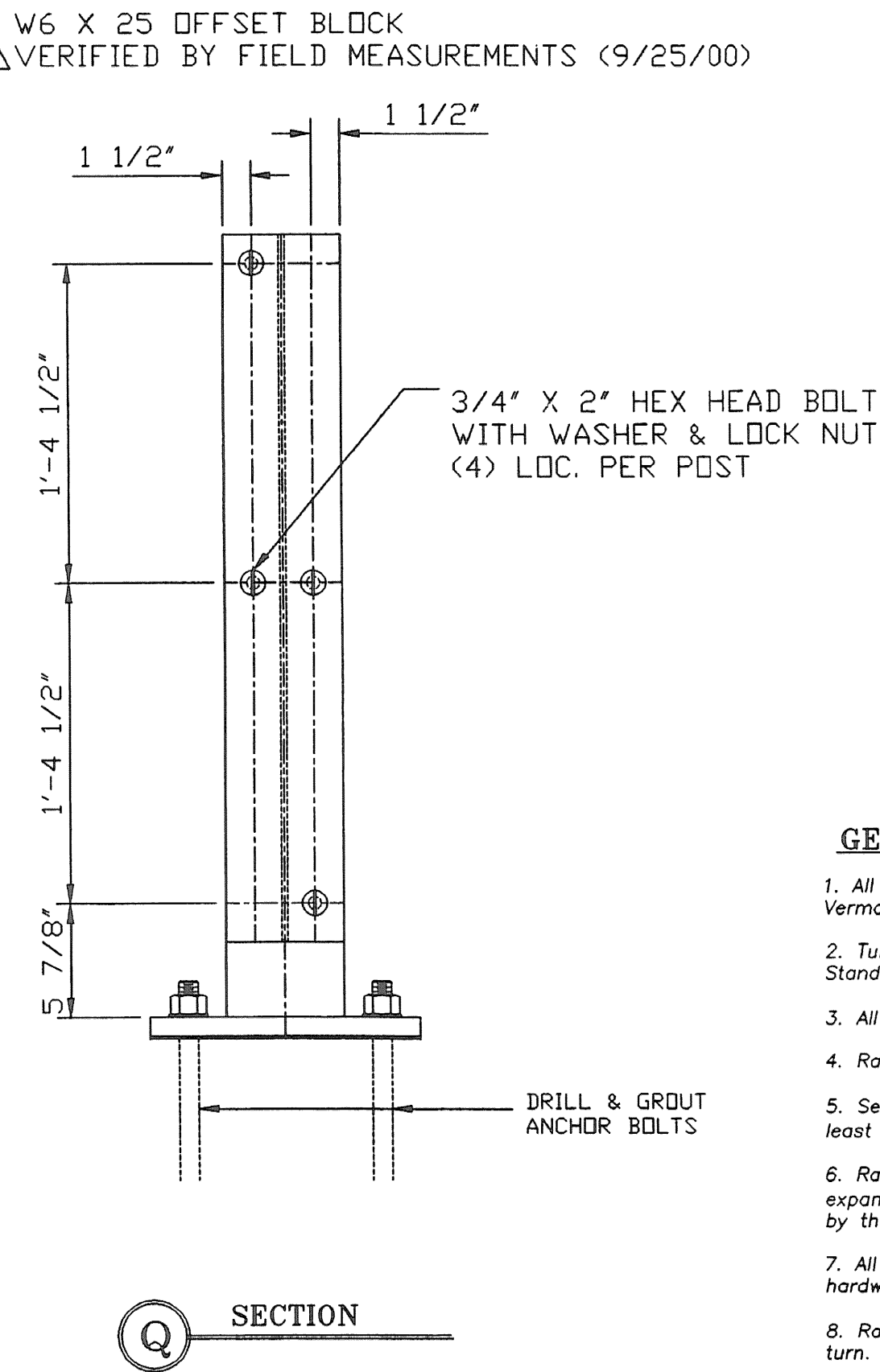
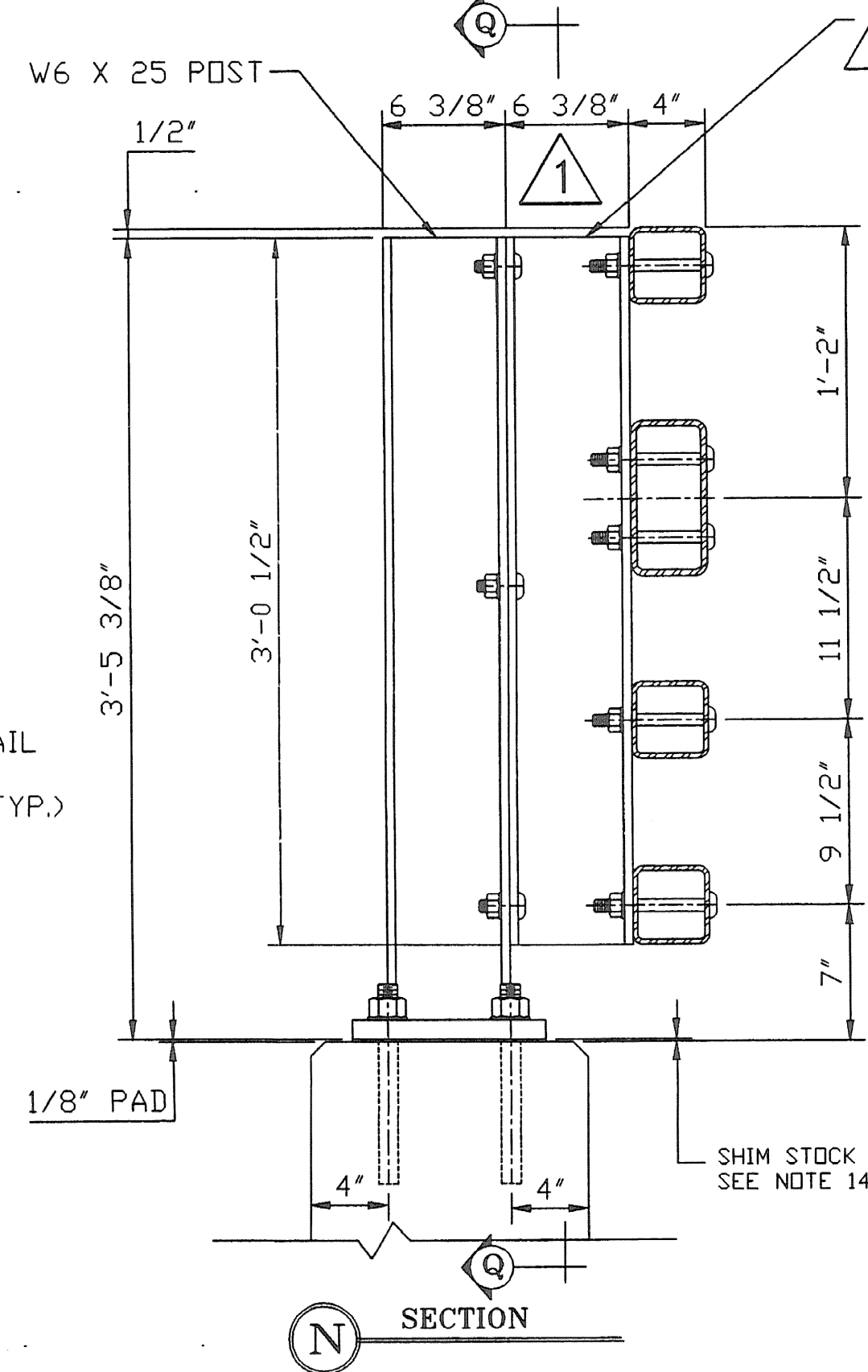
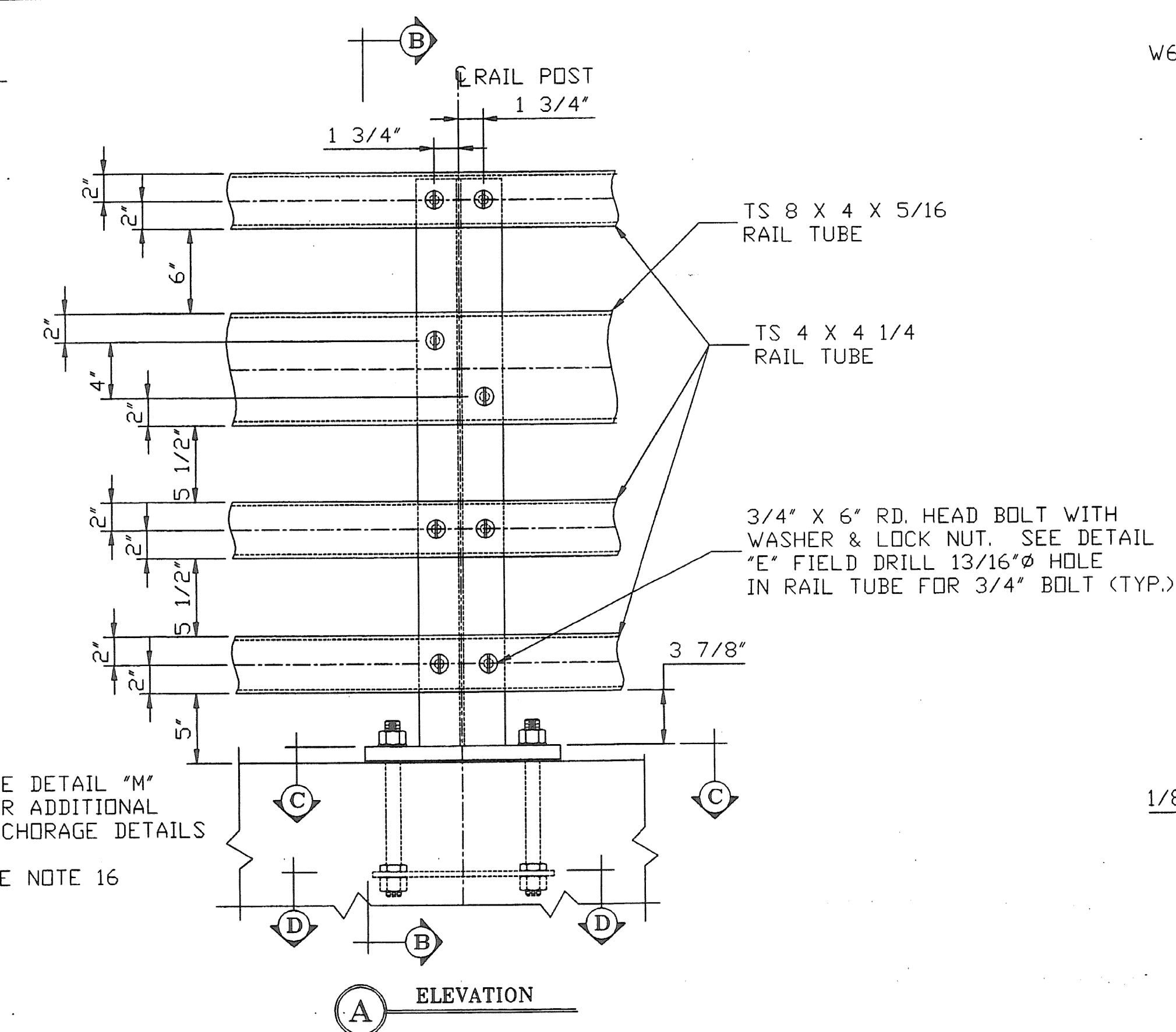
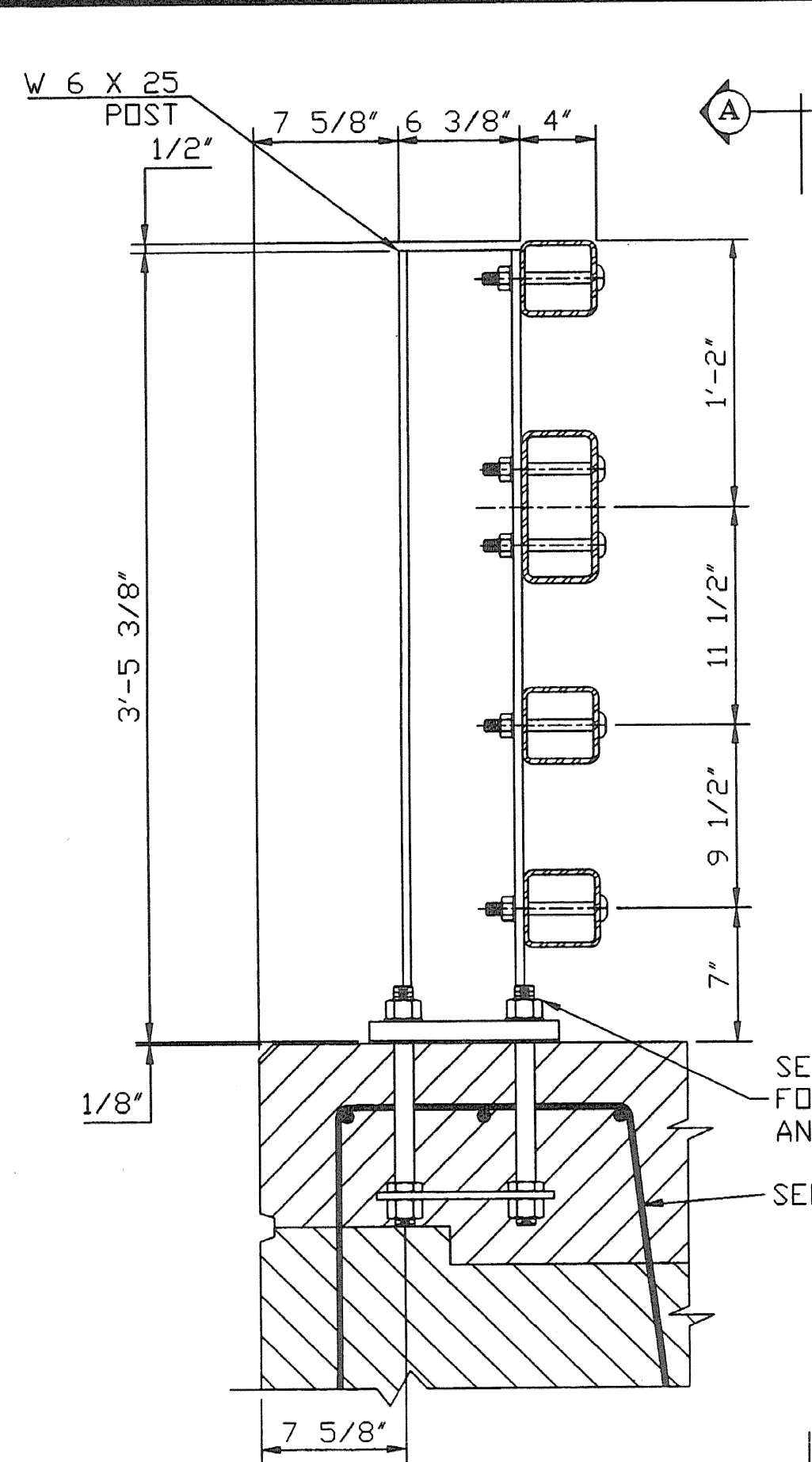
Please be advised that we field verified dimensions that were in question on the original shop drawings

If you have any questions please feel free to contact me at the above noted number.

Thank you.

Very truly yours,


President



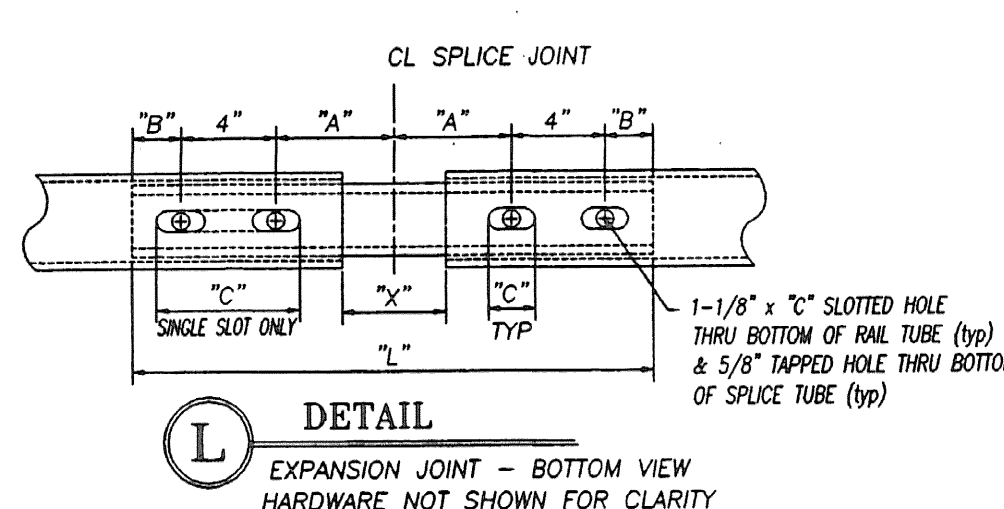
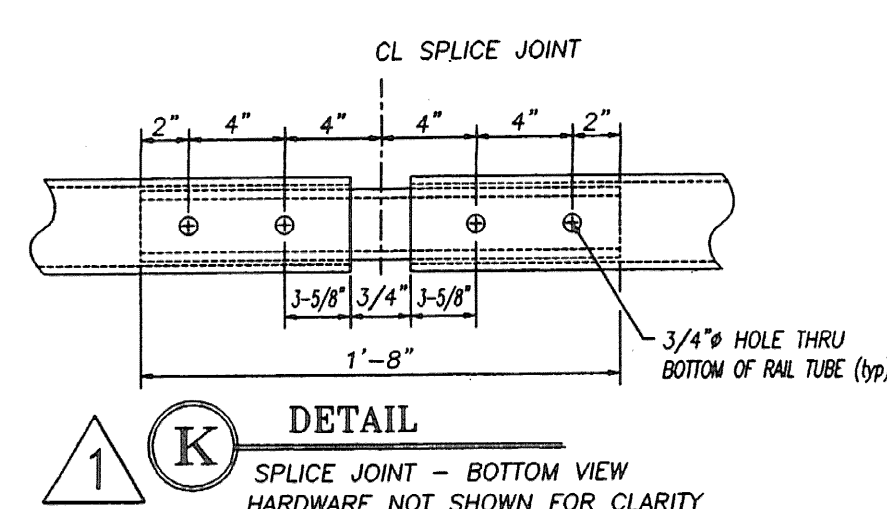
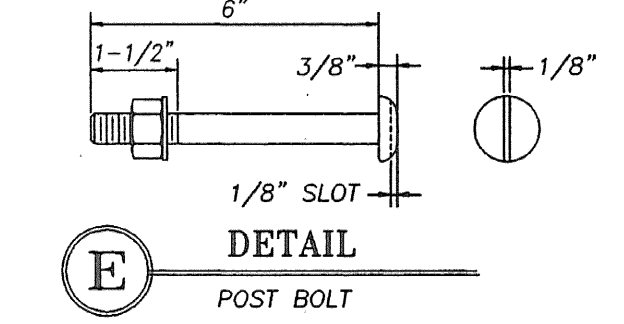
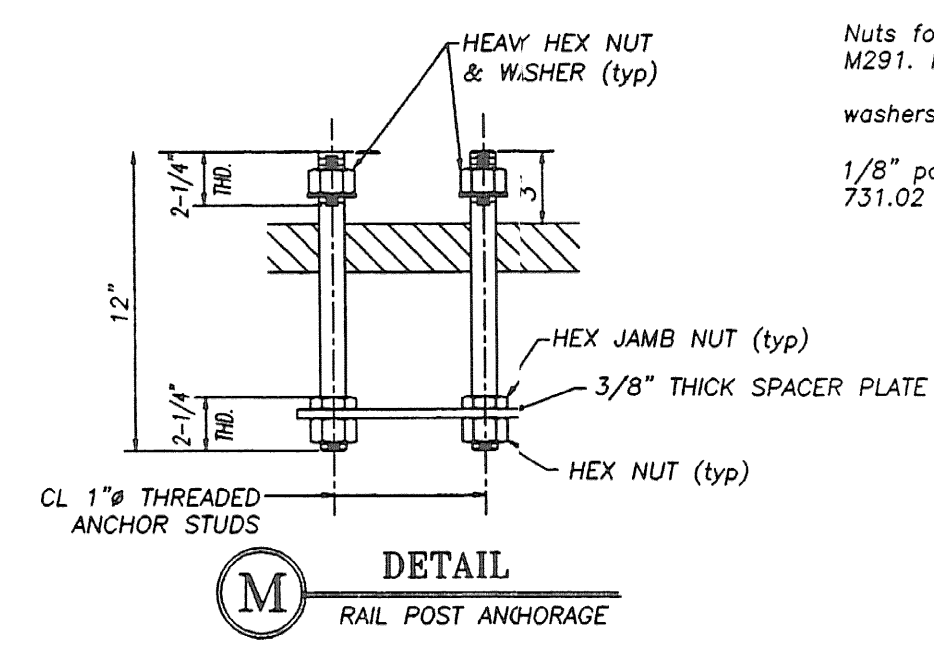
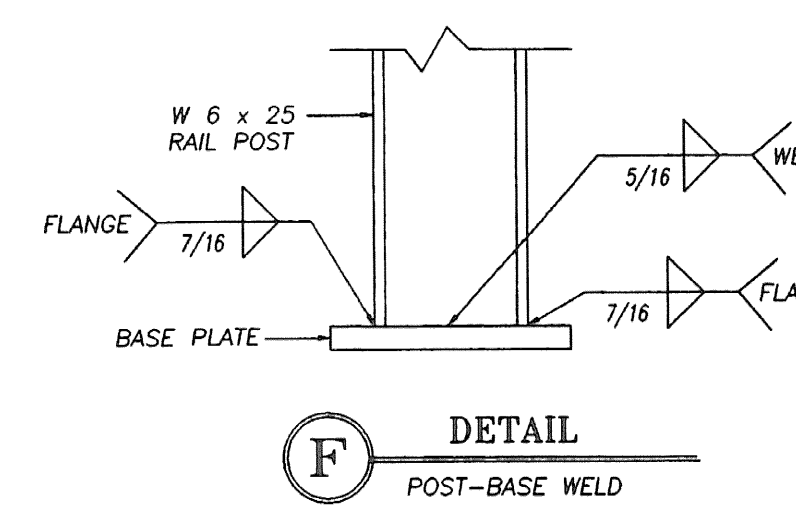
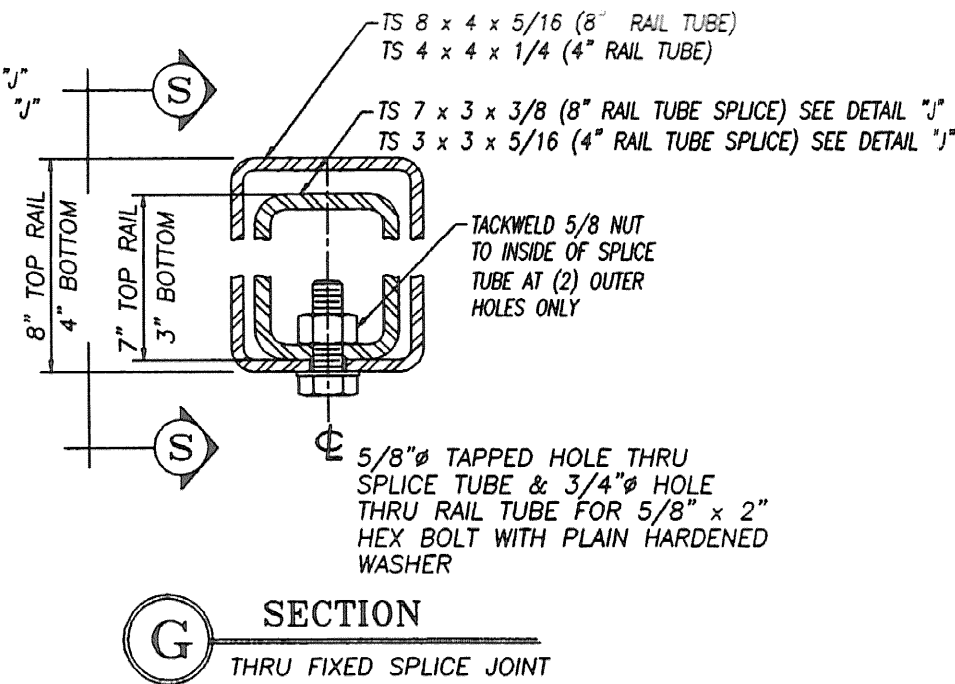
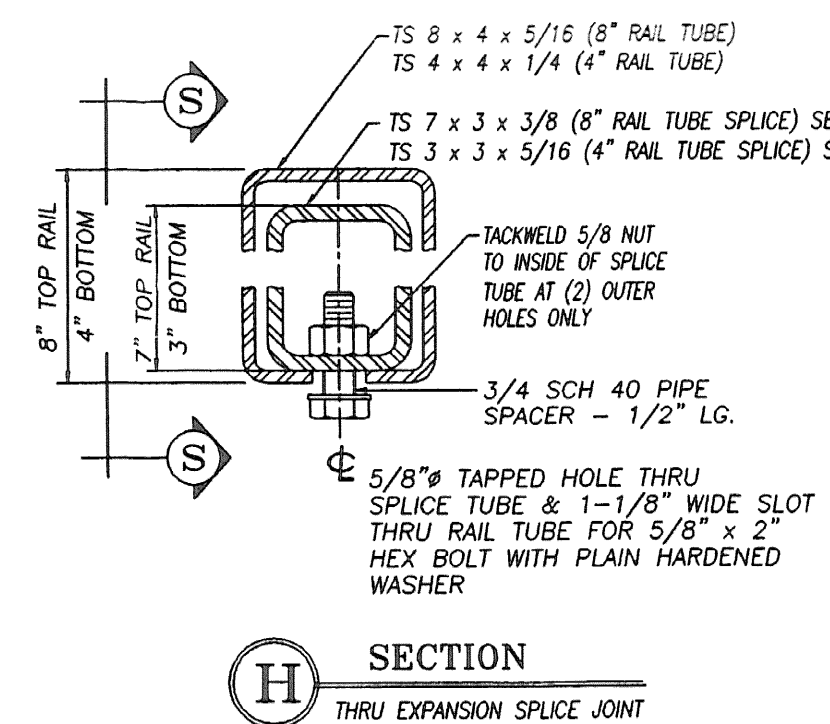
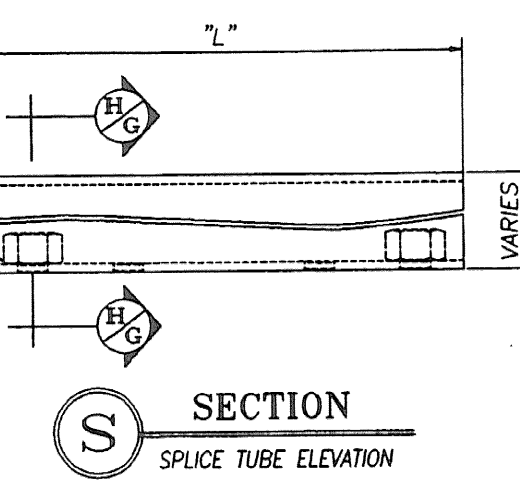
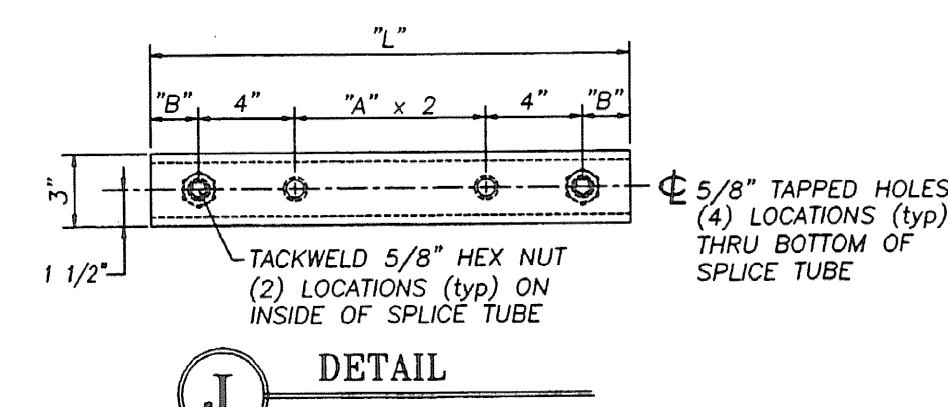
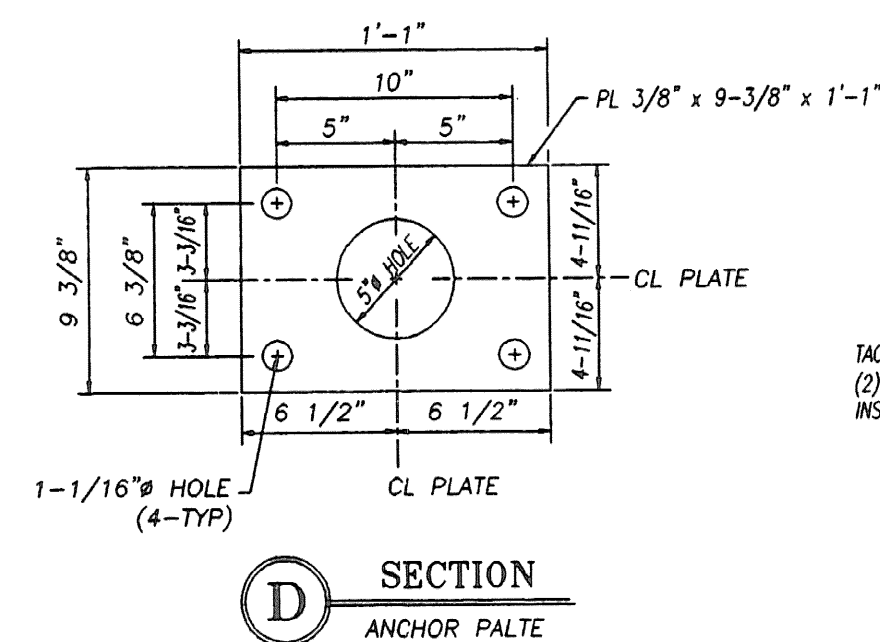
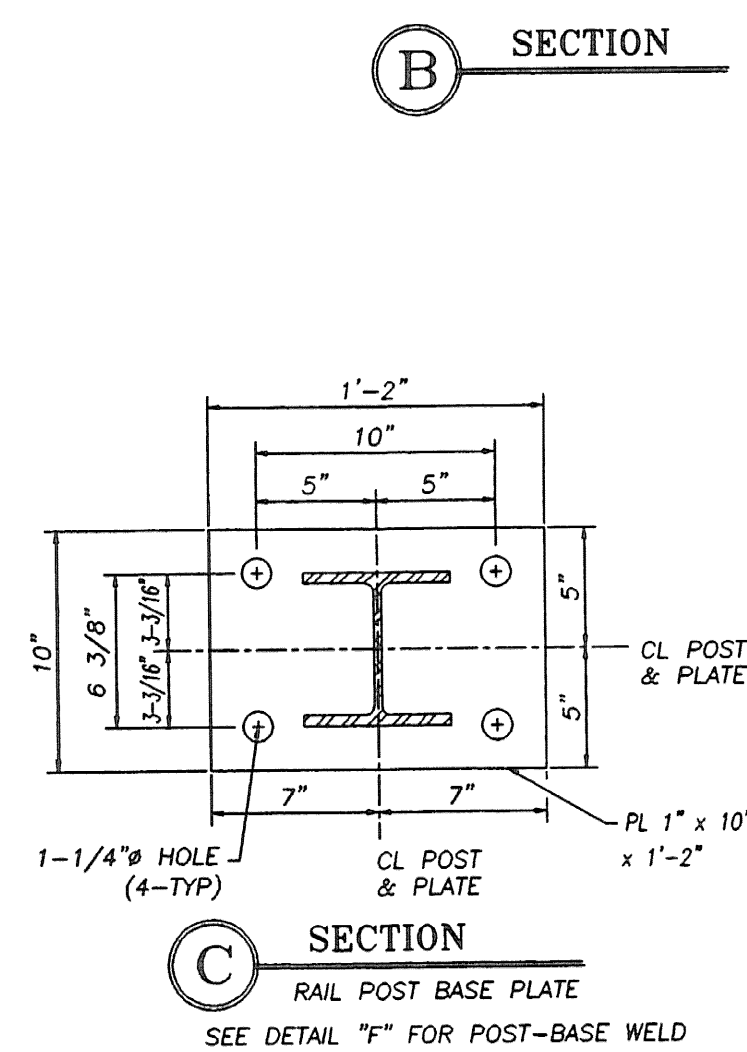
BILL OF MATERIAL			
Mk.	Qty.	Description	Total wgt.
66	1	RAIL POST W 6 x 25 WITH BASE PLATE	
8	1	SPEC. END POST W 6 x 25 W/BASE PLATE & OFFSET BLOCK	
66	1	ANCHORAGE ASSEMBLY WITH PLATE, (4) ANCH STUDS & HARDWARE	
8	1	DRILL & GROUT ANCHOR W/(4) STUDS & HARDWARE	
2	1	RAIL TUBE (TS 8 x 4 x 5/16) x 16'-7 1/2" OAL	
6	1	RAIL TUBE (TS 8 x 4 x 5/16) x 23'-11" OAL	
12	1	RAIL TUBE (TS 8 x 4 x 5/16) x 23'-11" OAL (EXP. END)	
4	1	RAIL TUBE (TS 8 x 4 x 5/16) x 21'-0" OAL	
6	1	RAIL TUBE (TS 4 x 4 x 1/4) x 16'-7 1/2" OAL	
18	1	RAIL TUBE (TS 4 x 4 x 1/4) x 23'-11" OAL	
36	1	RAIL TUBE (TS 4 x 4 x 1/4) x 23'-11" OAL (EXP. END)	
12	1	RAIL TUBE (TS 4 x 4 x 1/4) x 21'-0" OAL	
16	1	8" RAIL SPLICE TUBE (FIXED)	
48	1	4" RAIL SPLICE TUBE (FIXED)	
6	1	8" RAIL SPLICE TUBE (EXPANSION JOINT)	
18	1	4" RAIL SPLICE TUBE (EXPANSION JOINT)	
74	1	1/8" THICK BEARING PAD	
592	1	3/4 x 6" RD. HEAD BOLT WITH WASHER & LOCKNUT	
352	1	5/8 x 2" HEX HEAD BOLT WITH HARDENED WASHER	
96	1	3/4 SCH 40 SPACER PIPE 1/2" LONG	
32	1	3/4 x 2" HEX HEAD BOLT WITH WASHER & LOCKNUT	

GENERAL ERECTION NOTES

- All work and materials shall conform to the provisions of Section 525 - Railings of the Vermont Standard Specifications for Construction.
- Tubing & posts shall meet the requirements of Section 732 - Railing materials of the Standard Specifications for Construction.
- All exposed cut or sheared edges shall be ground to a 1/16" radius & be free of burrs.
- Rail posts shall be set normal to grade.
- Sections of rail bar shall be attached to a minimum of two (2) posts and preferably to at least four (4) posts.
- Rail bar expansion joints shall be provided in any rail bay spanning a superstructure expansion joint. Expansion joint width shall be "x" at 45° F and will be adjusted in the field by the engineer.
- All parts shall be galvanized after fabrication in accordance with AASHTO M111, except that hardware shall meet the requirements of AASHTO M232.
- Rail posts anchoring nuts shall be tightened to a snug-tight fit and given an additional 1/8 turn.
- Rail bars shall be attached using 3/4" full diameter body head bolts AASHTO M164 (Type-I) inserted through the face of the bar. Holes in post shall be 1/16" larger than the bolt size.
- Holes in rails for attachment to posts will be field-drilled. Holes shall be coated with an approved zinc-rich paint prior to erection.
- Radiused rails (if required) will be shop-curved. No field-bending of rail tubes.
- The drop-weight tear test in section 732 shall not apply to the structure tubing on this standard.
- New bridge rail posts on existing wingwalls shall include offset blocks to accommodate the proposed face of rail. The configuration of the offset block(s) shall be determined from field measurements. New rail posts shall be positioned on existing wingwalls so that the rail post anchor bolts are at least 4 inches away from the front face and back face of the existing wingwall masonry as shown on this sheet.
- New bridge rail post on existing wingwalls require a single shim plate between the 1/8" bearing pad and the railpost base plate. The shim plate thickness shall be determined from field measurements based on the increase in finished grade of the sidewalk and the existing elevation of the wingwall. Anchor bolt lengths for posts on wingwalls shall be adjusted to compensate for shim plate thickness.

MATERIALS

Rail bars.....ASTM A500 GR B or ASTM A501
 Rail posts.....ASTM A709 GR 50
 All other shapes & plates.....ASTM A709 GR 50
 Anchor studs.....ASTM A449
 All other bolts [unless noted].....AASHTO M164, TYPE I
 Nuts for ASTM A307 bolts & AASHTO M164 bolts shall comply with AASHTO M291. Nuts for anchor studs shall comply with ASTM A563.
 Washers shall comply with ASTM F436
 1/8" pad shall comply with standard specification subsection 731.01 or 731.02 of Vermont Standard Specifications.



SPLICE & EXPANSION JOINT TABLE					
"T"	"A"	"B"	"C"	"L"	"X"
SPLICE	4"	2"	20"	3/4"	
<4"	4"	2"	20"	2-1/2"	
>4" < 6-1/2"	5-1/2"	2-3/8"	3-1/2"	23-3/4"	4"
>6-1/2" < 9"	6-1/2"	3-3/8"	9"	27-3/4"	5"
>9" < 13"	8-1/2"	4-3/8"	11"	33-3/4"	7"

"T" = TOTAL REQUIRED MOVEMENT
 "X" = SINGLE SLOT

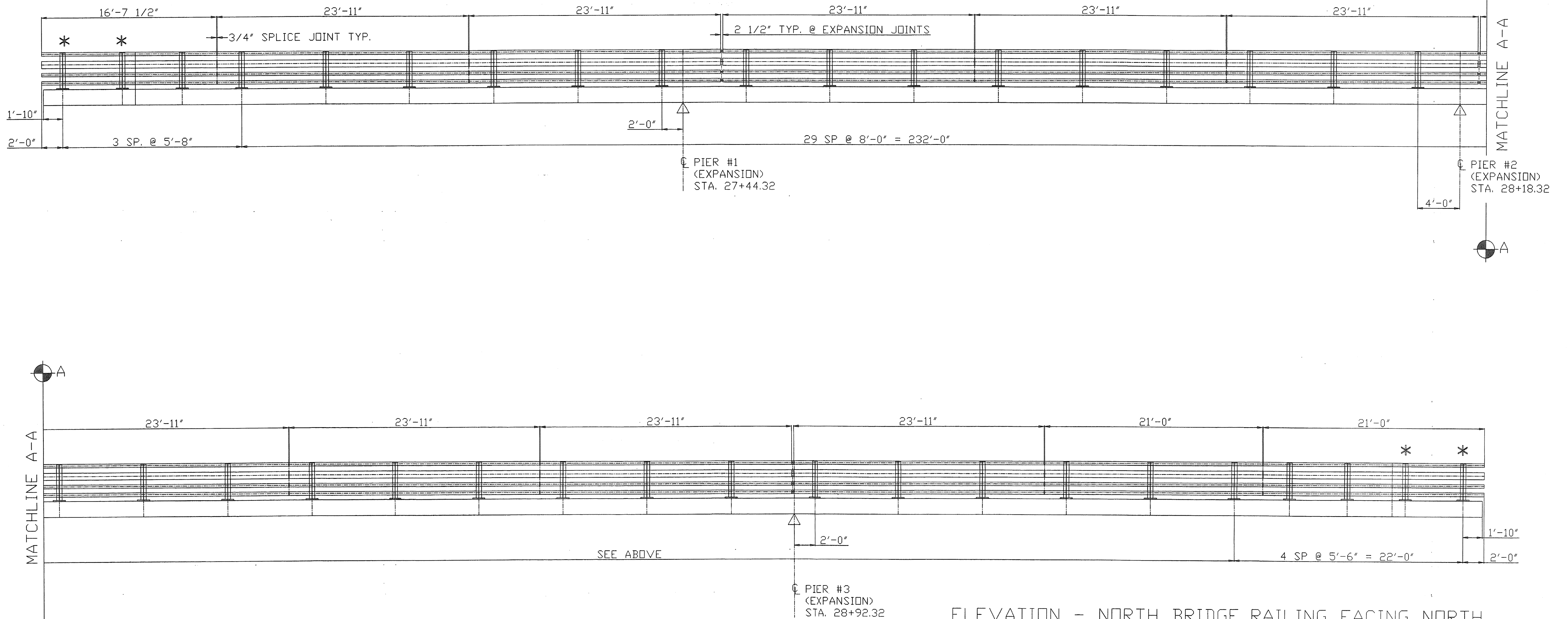
REVISIONS		
No.	Remarks	Date
0	Initial submittal	8/1/00
1	MISC CORRECTIONS, FIELD VERIFICATION	10/6/00

SHOP DRAWING REVIEW	
☒ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS. ☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED	CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW, IF NOT REVIEWED CONTRADICTOR FROM CONFORMANCE WITH REQUIREMENTS OF THE DRAWING, ARE SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL CONFORMANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES, AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER. VHB Vanessa Hengen Brustin, Inc. Engineers, Planners, and Scientists Six Bedford Farms, Kilton Rd., Bedford, NH 03110 603 844 0888
Job Number: 509339 Reviewed By: A.S.R. Date: 1-19-01	

HIGHWAY SAFETY CORP.	
GLASTONBURY, CT	
ITEM 525.34 - BRIDGE RAILING - NETC 4 RAIL	DRAWN P. VUKAS
CITY OF SOUTH BURLINGTON US ROUTE 20VER I-89 @ EXIT 14 IM DECK(36) BRIDGE #68	CHECKED Paul R.
DATE 07-31-00	SCALE NONE
HSC REFERENCE NO. 1213	SIZE D REVISION 1
GENERAL CONTRACTOR	SHEET NO. 2 of 2
SUB CONTRACTOR F.R. LAFAYETTE, INC.	

BILL OF MATERIAL			
Mk.	Qty.	Description	Total wgt.

1 * - DENOTES SPECIAL WING WALL POST SEE SECTION "N" PAGE 2/2
VERIFIED BY FIELD MEASUREMENTS 9/25/00



ELEVATION - NORTH BRIDGE RAILING FACING NORTH
SOUTH BRIDGE RAILING SIMILAR
TOTAL PAY LIMIT ITEM 525.34(BRIDGE RAILING - 4 RAIL) = 550 LF

THE BRIDGE RAIL LAYOUT SHOWN IS BASED ON INFORMATION FROM EXISTING PLANS.
THE CONTRACTOR SHALL VERIFY THE PROPOSED BRIDGE RAIL LAYOUT PRIOR TO THE
FABRICATION OF BRIDGE RAIL.

REVISIONS		
No.	Remarks	Date
0	Initial submittal	8/7/00
1	misc corrections, field verification	10/6/00

SHOP DRAWING REVIEW	
☒ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS. ☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FORWARDED AS CORRECTED	
CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWING SHALL BE MADE IN THE MARGINS OF THE DRAWING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY APPROVALS FROM THE DESIGNER AND THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY APPROVALS FROM THE DESIGNER AND THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY APPROVALS FROM THE DESIGNER AND THE OWNER.	
VHB Vannoy Hagan Brunson, Inc. Engineers, Planners and Scientists 500 Main Street, Suite 200 Boston, MA 02102	Job Number: 50929 Reviewed By: ASB Date: 1-19-01

HIGHWAY SAFETY CORP.	
GLASTONBURY, CT	
ITEM 525.34 - BRIDGE RAILING - NETC 4 RAIL	
CITY OF SOUTH BURLINGTON US ROUTE 20VER I-89 @ EXIT 14 IM DECK(36) BRIDGE #68	DRAWN P. VUKAS CHECKED <i>Paul R.</i> DATE 07-23-00 SCALE NONE HSC REFERENCE NO. 1213 GENERAL CONTRACTOR SUB CONTRACTOR F.R. LAFAYETTE, INC.
SIZE D REVISION 1 SHEET NO. 1 of 2	



Transportation
Land Development
Environmental Services

Kilton Road
Six Bedford Farms, Suite 607
Bedford, NH 03110-4532
603 644 1885
FAX: 603 644 2385

Yvanasse Hangen Brustlin, Inc.

TRANSMITTAL

To: Robert Suckert, PE, Resident Engineer
Vermont Agency of Transportation
209 South Pinnacle Ridge Road
Waterbury, VT 05676

Date: 1-19-01	VHB Project No.: 50929
Re: South Burlington IM DECK 36 Bridge No. 68 and STP BIKE (28) S	

The Following details as outlined below, Item No.621.73 ,Description Guardrail Approach Section NETC 4 Rail for the above project transmitted with your letter dated September 8, 2000 have been reviewed and are being returned herewith:

We are sending you: ☒ Attached ☐ Under Separate cover via Regular Mail the following items:

☒ Shop drawings ☐ Prints ☐ Plans ☐ Diskettes ☐ Specifications ☐ Copy of Letter ☐ Change Order

☐ Other _____

Copies	Date	No.	Description
as noted below	9/8/00		Bridge Approach Rail Shop Drawings

These are transmitted as checked below:

☐ Reviewed as required by the construction contract documents and approved, but only for conformance to the design concept of the work, and subject to further limitations and requirements contained in the construction contract documents. ☐ Rejected ☐ Revise and Resubmit ☒ Furnish as Corrected

REMARKS: There shall be no fabrication done until all drawings and welding procedures are approved or approved as noted. You must provide written notice to the Vermont Agency of Transportation (VTrans) Structures Section office as to the date fabrication represented by these drawings will begin. **That notice must be received at least seven days prior to that date, as per Specifications 506.03. Any material fabricated prior to the notification date is subject to rejection without further cause.**

Copy to: VTrans Resident Engineer, Robert E. Suckert, P.E. w/prints
Contractor, J.A. McDonald, Inc w/prints
Subcontractor: F.R. Lafayette w/prints By:
VTrans Consultant Project Manager , Sherward Farnsworth, PE w/prints
VTrans Structures Section – Shop Inspector – Jeff Clark – w/prints
VTrans Construction Section - letter only
VTrans Materials & Research Section (C&IA Unit) – letter only

VHB Project Manager, Steve Johnson, PE ,VHB Project File

Ashangia S. Robinson, VHB
Ashangia Robinson

**F. R. LAFAYETTE,
INC.**

F. R. LAFAYETTE, INC.
31 KELLOGG RD.
ESSEX JCT.
VERMONT 05452

Phone: 802 878-5341
Fax: 802 878-2041

RECEIVED

SEP 11 2000

VHB, Inc.

September 8, 2000

Vanasse Hangen Brustlin, Inc
Attn: Steve Johnson
Six Bedford Farms, Kilton Road
Bedford, NH 03110

Re: So Burlington IM DECK(36)

Gentlemen:

The enclosed shop drawings are being submitted for approval. Please return approved shop drawings to F. R. Lafayette, Inc. as soon as possible. .

If you have any questions please feel free to contact me at the above noted number.

Thank you.

Very truly yours,

F. R. Lafayette

President

REVISIONS		
No.	Remarks	Date
0	Initial submittal	9/1/00