

INDEX OF SHEETS	
SHEET NO.	TITLE
1	TITLE SHEET
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STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT SPRINGFIELD—HARTFORD WINDSOR COUNTY

BEGINNING AT A POINT ON INTERSTATE 91 AT THE EXISTING MILE MARK 41.90+
AND PROCEEDING NORTHERLY ALONG INTERSTATE 91 FOR 28.10+ MILES
TO EXISTING MILE MARK 70.00+ TERMINATING AT THE SOUTHERN
END OF BRIDGE NO. 43S & 43N (I-91 OVER U.S. ROUTE 5)

WORK ON THIS PROJECT WILL INCLUDE GUARD RAIL REPLACEMENT, DRAINAGE UPGRADING,
REMOVAL AND/OR REPLACEMENT OF TRAFFIC CONTROL DEVICES, SLOPE FLATTENING, TRAFFIC
BARRIER REMOVAL, BRIDGE Pylon REMOVAL AND BRIDGE RAILING REPLACEMENT
LENGTH OF PROJECT - 28.10+ MILES

RECORD PLANS AND MATERIAL SUPPLIERS
 CONTRACT DATED: NOV. 12, 1985. CONTRACTOR: EARTH CONST. GROTON, VT.
 CONSTRUCTION BEGAN: APR. 2, 1986
 CONSTRUCTION SUSPENDED: JAN. 23, 1987
 CONSTRUCTION RESUMED: APR. 3, 1987
 CONSTRUCTION COMPLETED: SEPT. 21, 1987
 RECORD PLANS: ROBERT E. SMITH

BITUMINOUS CONCRETE PAVEMENT: F.W. WHITCOMB CONST. CORP.,
 REINFORCING STEEL: K. ROSS BLDG. SUPPLY CHARLESTON, N.H.
 CO. INC. LEBANON, N.H.

SEED, FERTILIZER, LIME: OLD FOX CHEMICAL, INC. LYNDONVILLE, VT.
 EARTH BORROW: TRI-STATE PIT HARTLAND VT.

CONC. (CLASS AA, A, B): MILLER READY MIX, W. LEBANON, N.H.
 CRUSHED STONE SHOULDERS: F.W. WHITCOMB WALPOLE, N.H.

WATER REPELLENT & JOINT SEALER: SONNEBORN BLDG. PRODUCTS
 MESPETH, N.Y.

ACCPMP, 8" CARRIER PIPE: LANE METAL PRODUCTS BALLSTON
 SPA, N.Y.

EPOXY MORTAR COMPOUND: DURAL INTERNATIONAL CORP.
 DEER PARK NY.

BRIDGE RAILING (3 RAIL ALUM.), BRIDGE RAILING (GALVANIZED BOX BEAM)
 APR RAIL (2 RAIL ALUM.): L.B. FOSTER PITTSBURG, PA.

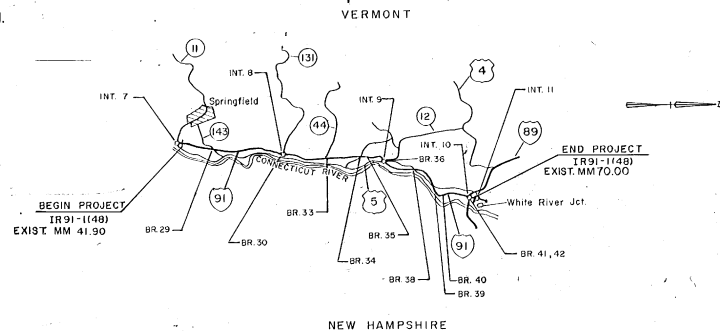
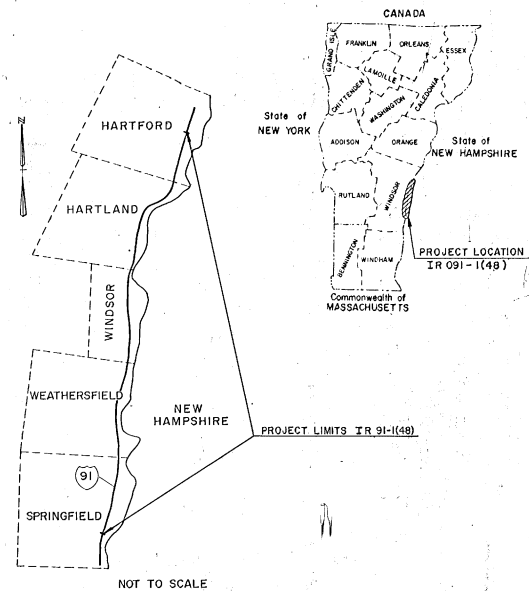
GUARD RAIL (3 CABLE): ASSEMBLY SPECIALTY PRODUCTS, INC. CLEVELAND, OHIO

GUARD RAIL (ST. BEAM W/ST. POST TYPE II), GUARD RAIL (ST. BEAM W/WOOD
 POST, TYPE II), ANCHORS FOR ST. BEAM: HIGHWAY SAFETY DESIGN
 & FABRICATIONS CORP., GLASTENBURY, CONN.

TRAFFIC SIGNS & POSTS: FRANKLIN STEEL, FRANKLIN PENN.

STREET LIGHTING: ENGINEER ASSOC., BURLINGTON, VT.

TREATED TIMBER CURB: PORTEC, NO. BILLERICA MASS.



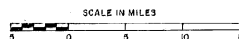
ABBREVIATIONS

S.B.G.R.	STEEL BEAM GUARDRAIL
C.G.R.	CABLE GUARDRAIL
B.C.T.	BREAKAWAY CABLE TERMINAL
S.B.	SOUTHBOUND
N.B.	NORTHBOUND
G.R.	GUARDRAIL
P.C.	POINT OF CURVATURE
P.T.	POINT OF TANGENCY
L.F.	LINEAR FEET
D.I.	DROP INLET
P.O.T.	POINT ON TANGENT
P.O.C.	POINT ON CURVE
L.S.P.	LIGHT STEEL POSTS
W.P.	WOOD POSTS
B.B.G.R.	BOX BEAM GUARDRAIL

COUNTY LINE	---
TOWN LINE	----
LIMITS OF ACCESS	---X---
POINT OF ACCESS	X
FENCE LINE	=====
STONE WALL	-----
TRAVELED #2
RAILROAD	====
SURVEY LINE	-----
CULVERT	-----
POWER POLE	○
TELEPHONE POLE	○
TREES	○
CONTROL OF ACCESS	---
PROPERTY LINE	---
ROW TAKING LINE	---
SLOPE RIGHTS	○
TOP OF CUT	△
TOE OF SLOPE	○

CONVENTIONAL SIGNS

STEEL BEAM GUARDRAIL w/ STEEL POSTS	=====
STEEL BEAM GUARDRAIL w/ WOOD POSTS	=====
BOX BEAM w/ STEEL POSTS	=====
3 CABLE GUARDRAIL	=====



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 Highway and Bridge Construction dated March, 1978, as approved by the Federal Highway Administration on October 27, 1978 for use on this project, including all subsequent revisions and such revised specifications and special provisions as are incorporated in these plans.

SUBMITTED BY ORDER OF THE STATE TRANSPORTATION BOARD	
APPROVED: <i>Robert E. Smith</i>	DATE: 8-5-85
CHIEF ENGINEER	
DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
APPROVED: _____	DATE: _____
DIVISION ADMINISTRATOR	
SAFETY PROJECT: SPRINGFIELD-HARTFORD NR IR 91-1(48)	
SHEET 1 OF SHEETS	

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SHEET NO.	DESCRIPTION	DATE	SHEET NO.	DESCRIPTION	DATE	SHEET NO.	DESCRIPTION	DATE
1	TITLE SHEET		103-118	STRUCTURE PLANS		167	E-25 TYPE 'C' TUBULAR SUPPORT	6-17-81R
2	INDEX OF SHEETS		119	BLANK		168	E-26 TYPE 'F' SLIP BASE	7-28-81
3,3A	SUMMARY OF QUANTITIES		120-121	MINNESOTA BULLNOSE GUARDRAIL TREATMENT @ TWIN BRIDGES		169	E-27 SIGN PLACEMENT - INTERSTATE	1-24-83R
4	DRAINAGE TABLE		122	CROSS SECTIONS - SIGN POSTS		170	E-29 SIGN PLACEMENT - OTHER	8-25-81R
5	BLANK		123-132	CROSS SECTIONS @SLOPE FLATTENING, U-TURNS & BRIDGE PIERS		171	BLANK	
6-10	GUARDRAIL TABLES		133-138	BLANK		172	E-30 DELINEATORS & MILEPOSTS	2-23-84R
11	GRANITE SLOPE REMOVAL @ RAMP GORES					173	E-31 MILE MARKERS	8-12-81R
12	U-TURN/SLOPE FLATTENING TABLES					174	E-32 DELINEATORS ON BRIDGE RAIL	1-10-74
13	TRAFFIC ITEM SUMMARY SHEET		139	B-5 EMBANKMENT BENCHING	12-6-71	175	E-39 STREET LIGHTING	6-17-85R
14-16	GUARDRAIL DETAILS		140	B-17 U-TURN GRADING	12-16-80R	176	E-50 PAVEMENT MARKING	3-16-82R
17	BLANK							
18	MISCELLANEOUS DETAILS		141	C-1 TREATED TIMBER CURB	12-16-80R	177	G-1 GUARD RAIL - STEEL BEAM W/ STEEL POST	12-21-84R
19	BLANK		142	D-3 TREATED GUTTERS	4-27-73R	178	G-1B GUARD RAIL - BOX BEAM W/ STEEL POST	12-21-84R
20-22	MAINTENANCE OF TRAFFIC TRAFFIC ITEM SHEETS		143	D-4 METAL END SECTIONS WATERFALL TREATMENT	7-24-73R	179	G-1D GUARD RAIL - STEEL BEAM	12-21-84R
23,24,24A	a) GENERAL NOTES & DETAILS		144	D-6 REINFORCED CONC. DROP INLET WITH GRATE	4-4-73R	180	G-6 GUARD RAIL - 3 CABLE W/LT. STEEL POSTS	6-11-84R
25-30	b) SIGN PANEL DETAILS		145	D-10 CONCRETE END SECTIONS TYPE 'B' GRATE IFRAME	11-14-72R	181	G-8A GUARD RAIL - 2 RAIL ALUMINUM / STEEL BEAM	7-1-78R
			146	E-2 CONSTRUCTION SIGNS	3-4-81R	182	G-9 ALUMINUM APPROACH RAIL	12-16-80R
31-32	BLANK		147	E-6 CONSTRUCTION SIGNS	4-1-80R	183	BLANK	
33-60	MAINLINE PLAN SHEETS		148	E-7A BREAKAWAY BARRIER	1-3-85R	184	G-14 B.C.T. FOR WOOD POSTS	12-21-84R
61	BLANK		149	E-8 CONSTRUCTION SIGN LAYOUT	6-15-83R	185	G-15 B.C.T. FOR STEEL POSTS	12-21-84R
62-71	MAINLINE SIGN TABLES		150	BLANK		186	G-16 TERMINAL CONNECTOR - STEEL BEAM	11-25-80R
72	BLANK							
73-80	INTERCHANGE 8 PLAN SHEETS & SIGN TABLES		151	E-11 INTERSTATE ROUTE MARKERS	5-9-74R	187	BLANK	
			152	E-12 US ROUTE MARKERS	12-3-82R	188	T-1 TEMPORARY EROSION CONTROL DETAILS	12-7-76R
81-88	INTERCHANGE 9 PLAN SHEETS & SIGN TABLES		153	E-13 STATE ROUTE MARKERS	12-2-82R	189	T-2 TEMPORARY EROSION CONTROL DETAILS	7-5-72
89	BLANK		154	E-14 GUIDE SIGNS	3-3-83	190	SCB-DI-75 DETAILS OF W BEAM BRIDGES	9-14-81R
90-96	INTERCHANGE 10 PLAN SHEETS & SIGN TABLES		155	E-14B GENERAL SERVICE SIGNS	3-3-83R	191,192	SB-DI-71(112) ALUMINUM BRIDGE RAILING DETAILS	7-1-77R
			156	E-15 REGULATORY SIGNS	7-2-84R			
			157	E-15A REGULATORY SIGNS	7-18-84			
			158	E-15B REGULATORY SIGNS	12-27-84R	193	SB-D4A-B2 GALVANIZED BOX BEAM BRIDGE RAILING	12-13-84R
			159	E-15C REGULATORY SIGNS	7-18-84			
97	BLANK		160	E-19 WARNING SIGNS	4-16-85R			
98-99	LIGHTING PLANS		161	E-19A WARNING SIGNS	10-3-84			
100	BLANK		162	E-19B WARNING SIGNS	2-19-85R			
101	MILE MARKER LOCATION TABLE							
102	BLANK							
			163	E-23 GUIDE SIGN ASSEMBLIES	2-10-83R			
			164	E-24 TYPE 'B' BREAKAWAY	5-29-79R			
			165	E-24A TYPE 'A' FLANGED CHANNEL	1-8-81R			
			166	E-24B TEE BAR MOUNTING	4-28-78			

IN CHARGE OF :
 DESIGNED BY :
 CHECKED BY :

VERMONT AGENCY OF TRANSPORTATION			
SAFETY PROJECT			
SPRINGFIELD — HARTFORD			
IR 91 — 1(48)			
McFARLAND-JOHNSON ENGINEERS, INC.		NEW YORK	
BINGHAMTON		SHEET	
SCALE	DATE	2	OF

QUANTITY SUMMARY
SHT PAGE 103

APPROXIMATE SUMMARY OF QUANTITIES

EROSION CONTROL	R.O.W.	# BRIDGE	ROADWAY	QUANTITIES GRAND TOTAL	UNIT	ITEMS	ITEM NO.	
			20	20	EA	REMOVING SMALL TREES (EST)	20175	
			100	100	EA	REMOVAL OF EXIST'G PAVT MARKINGS	20278	
			20	20	EA	PARTIAL REMOVAL OF STRUCTURE	20379	
			124,438	124,438	LF	REMOVAL/DISPOVAL OF EXIST'G GUARDRAIL	20340	
			6,148	6,148	LF	REMOVAL OF EXIST'G BRIDGE RAILING	20448	
			880	880	LF	REMOVAL OF EXIST'G GRANITE CURB	20455	
			200	200	CY	COMMON EXCAVATION	20310	
			74.70	74.70	CY	EARTH BORROW	20330	
			151	151	CY	TRENCH EXCAVATION OF EARTH	20420	
			52	52	CY	TRENCH EXCAVATION OF ROCK	20421	
			50	50	CY	GRANULAR BACKFILL FOR STRUCTURES	20430	
			1,154	1,154	CY	SUBBASE OF CRUSHED GRAVEL	20125	
			10	10	CY	SUBBASE OF CRUSHED GRAVEL (EST)	20126	
			200	200	CY	SOLID ROCK EXCAV (EST)	20319	
			18,513	18,513	CY	CRUSHED STONE SHOULDERS	40675	
			137	137	TON	BITUMINOUS CONC PAVT TYPE III	40625	
			10	10	CY	CONCRETE, CLASS AA (EST)	20119	
			42	42	CY	CONCRETE, CLASS A	20120	
			5	5	CY	CONCRETE, CLASS B	20129	
			3540	431	3471	LB	REINFORCING STEEL	20175
			20	20	QAL	WATER REPELLANT	20110	
			44	44	LF	18" ACCOMP T-O.0164"	201152	
			204	204	LF	18" ACCOMP T-O.0181"	201153	
			4	4	LF	30" ACCOMP T-O.014"	201154	
			0	0	LF	30" ACCOMP T-O.013"	201155	
			34	34	LF	18" R.C.P CLASS III	201156	
			36	36	LF	24" R.C.P CLASS III	201157	
			0	0	LF	30" R.C.P CLASS III	201158	
			8	8	LF	36" R.C.P CLASS III	201159	
			2	2	EA	1/2" METAL END SECTION, T-O.004"	201160	
			2	2	EA	1/2" METAL END SECTION, T-O.004"	201161	
			1	1	EA	3/4" METAL END SECTION, T-O.014"	201162	
			0	0	EA	1/4" R.P END SECTION, CLASS III	201163	
			2	2	EA	1/4" R.P END SECTION, CLASS III	201164	
			1	1	EA	3/8" R.P END SECTION, CLASS III	201165	
			1	1	EA	3/8" R.P END SECTION, CLASS III	201166	
			50	50	LF	RELAYING PIPE CULVERT, 24" DIA	201170	
			4	4	EA	CHANGING ELEV OF D15, C&S OR MHS	20440	
			3	3	EA	REPAIRING GUTTER BASIN TOPS	20441	
			3	3	EA	CAPPING EXIST'G DROP INLETS (EST)	20442	
			1	1	EA	CAST IRON GRATE W/ FRAME TYPE A	20443	
			100	100	LF	W/ UNDERDRAIN CAP PIPE (EST)	20444	
			1	1	HR	ALUMINUM RAILING, TYPE I	201180	
			60	60	CY	STONE FILL, TYPE II	20111	
			13	13	EA	JOINT SEALER POLYURETHANE	20428	
			75	75	QAL	EPOXY MORTAR COMPOUND (EST)	20435	
			100	100	LF	TREATED TIMBER CURB (EST)	20436	
			279	279	LF	BRIDGE RAIL - 3 RAIL ALUMINUM	20120	
			6439	6439	LF	BRIDGE RAIL - GALVANIZED BOX BEAM	20120	
			514	432	LF	APPR RAILING (2 RAIL ALUMINUM)	20145	
			8340	8340	LF	GR 30 CAL W/LIGHT STEEL POSTS	20121	
			13165	13165	LF	GR 30 CAL W/STEEL POSTS, TYPE II	20122	
			1364	1364	LF	GR 30 CAL W/ WOOD POSTS, TYPE II	20123	
			825	825	LF	REMOVAL & RESETTING GUARDRAIL	20155	
			32	32	EA	ANCH FOR 3 CGR W/ LIGHT STEEL OR WOOD POSTS	20160	
			756	756	EA	ANCH FOR 3BGR W/ STEEL, LIGHT STEEL OR WOOD POSTS	20172	
			3	3	EA	BCT FOR GR 3BGR W/ WOOD POSTS, TYPE II	20177	
			139	139	EA	BCT FOR 3 BGR W/ STEEL POSTS TYPE II	20178	
			32	32	EA	GR APPR SECTION, TYPE I	20190	
			24	24	EA	GR APPR SECTION, TYPE II	20191	
			5000	5000	LF	ADJUSTING HEIGHT OF ENBL D.R. (EST)	20215	
			100	100	HR	UNIFORMED TRAFFIC OFFICERS	20310	
			1500	1500	HR	UNIFORMED TRAFFIC OFFICERS	20310	
			1	1	LB	FIELD OFFICE - ENGINEERS	20310	
			3000	3000	HR	EMPLOYEE TRAINERS (3 TRAINEE)	20310	
			7	7	LF	MOBILIZATION	20310	
			1	1	LF	TRAFFIC CONTROL	20410	
			100	100	LF	4" YELLOW LINES (EST)	20411	
			570	570	LF	PAINTING CURB	20421	
			2	2	EA	ARROW MARKINGS (EST)	20422	
			2	2	EA	HANDICAP PARKING SYMBOL	20423	
			2730	2730	LF	4" WHITE LINES	20430	
			100	100	LF	4" WHITE LINES (EST)	20430	
			832	832	LF	RESTORATION OF EXISTING G.R. (EST)	20435	
			1500	1500	LF	FERTILIZER	20115	
			7	7	TON	AGRICULTURAL LIMESTONE	20120	
			900	900	TON	HAY MULCH	20125	
			150	150	CY	TOPSOIL	20130	
			1744	1744	SY	EROSION MATTING (EST)	20430	
			2471	2471	SF	TRAFFIC SIGNS, TYPE 'A'	20120	
			237	237	SF	TRAFFIC SIGNS, TYPE 'B'	20120	
			10,193	10,193	LB	TRAFFIC SIGN POSTS, TYPE 'A'	20120	
			4,108	4,108	LB	TRAFFIC SIGN POSTS, TYPE 'B'	20120	
			3384	3384	LB	TRAFFIC SIGN POSTS, TYPE 'C'	20120	
			4	4	EA	FOUNDATION TYPE 'B' 24" DIA	20121	
			5	5	LF	REMOVING SIGNS	20125	
			180	180	SF	ERECTING SALVAGED SIGNS, TYPE 'A'	20125	
			1744	1744	EA	DELINEATORS	20120	

QUANTITY SHEET

STATE OF VERMONT DEPARTMENT OF HIGHWAYS

SPRINGFIELD-HARTFORD PROJECT NO. IR 91-1(48)

SUMMARY SHEET NO. _____ OF _____ 19

DETAILED SUMMARY OF QUANTITIES		
QUANTITIES	UNIT	ITEMS
		REMOVAL/DISPOVAL OF EXIST'G GR - ITEM 20340
18,608	LF	MAINLINE GR QUANTITY SHT
2,890	LF	SIDELINE GR QUANTITY SHT
124,438	LF	TOTAL
		COMMON EXCAVATION - ITEM 20315
448	CY	UTURN SLOPE FLATTENING QUANTITY SHT
120	CY	GRANITE SLOPE CURB REMOVAL SHT
568	CY	TOTAL
		CRUSHED STONE SHOULDERS - ITEM 40615
17,823	CY	MAINLINE GR QUANTITY SHT
628	CY	SIDELINE GR QUANTITY SHT
8	CY	GRANITE SLOPE CURB REMOVAL SHT
18,513	CY	TOTAL
		BIT CONC. PAVT TYPE III - ITEM 40625
125	TON	UTURN SLOPE FLATTENING QUANTITY SHT
12	TON	GRANITE SLOPE CURB REMOVAL SHT
137	TON	TOTAL
		REINFORCING STEEL - ITEM 20175
431	LB	DRAINAGE DETAIL QUANTITY SHT
3540	LB	STRUCTURE QUANTITY SUMMARY SHT
3471	LB	TOTAL
		APPR RAILING (2 RAIL ALUMINUM) - ITEM 20145
432	LF	MAINLINE GR QUANTITY SHT
514	LF	STRUCTURE QUANTITY SUMMARY SHT
946	LF	TOTAL
		GR 30 CAL W/LIGHT STEEL POSTS - ITEM 20121
6040	LF	MAINLINE GR QUANTITY SHT
2,390	LF	SIDELINE GR QUANTITY SHT
8,430	LF	TOTAL
		GR 30 CAL W/STEEL POSTS, TYPE II - ITEM 20122
12,051	LF	MAINLINE GR QUANTITY SHT
3,905	LF	SIDELINE GR QUANTITY SHT
15,956	LF	TOTAL
		GR 30 CAL W/ WOOD POSTS, TYPE II - ITEM 20123
744	LF	MAINLINE GR QUANTITY SHT
575	LF	SIDELINE GR QUANTITY SHT
1309	LF	TOTAL
		ANCHOR FOR 3 CGR W/ LIGHT STEEL OR WOOD POSTS - ITEM 20160
20	EA	MAINLINE GR QUANTITY SHT
0	EA	SIDELINE GR QUANTITY SHT
32	EA	TOTAL
		ANCHOR FOR 3BGR W/ STEEL, LIGHT STEEL OR WOOD POSTS - ITEM 20172
152	EA	MAINLINE GR QUANTITY SHT
3	EA	SIDELINE GR QUANTITY SHT
156	EA	TOTAL

DETAILED SUMMARY OF QUANTITIES		
QUANTITIES	UNIT	ITEMS
		BCT FOR GR 3BGR W/ STEEL POSTS TYPE II - ITEM 20178
137	EA	MAINLINE GR QUANTITY SHT
2	EA	SIDELINE GR QUANTITY SHT
139	EA	TOTAL
		SEED - ITEM 20110
112	LB	UTURN SLOPE FLATTENING QUANTITY SHT
8	LB	GRANITE SLOPE CURB REMOVAL SHT
40	LB	GR DETAIL SHT #16
40	LB	EST FOR TEMPORARY EROSION CONTROL
200	LB	TOTAL
		FERTILIZER - ITEM 20115
432	LB	UTURN SLOPE FLATTENING QUANTITY SHT
70	LB	GRANITE SLOPE CURB REMOVAL SHT
387	LB	GR DETAIL SHT #16
155	LB	EST FOR TEMPORARY EROSION CONTROL
1500	LB	TOTAL
		AGRICULTURAL LIMESTONE - ITEM 20120
3.7	TON	UTURN SLOPE FLATTENING QUANTITY SHT
0.4	TON	GRANITE SLOPE CURB REMOVAL SHT
1.4	TON	GR DETAIL SHT
1.5	TON	EST FOR TEMPORARY EROSION CONTROL
7.0	TON	TOTAL
		HAY MULCH - ITEM 20125
3.7	TON	UTURN SLOPE FLATTENING QUANTITY SHT
0.4	TON	GRANITE SLOPE CURB REMOVAL SHT
1.4	TON	GR DETAIL SHT #16
1.5	TON	EST FOR TEMPORARY EROSION CONTROL
7.0	TON	TOTAL
		TOPSOIL - ITEM 20130
493	CY	UTURN SLOPE FLATTENING QUANTITY SHT
40	CY	GRANITE SLOPE CURB REMOVAL SHT
181	CY	GR DETAIL SHT #16
900	CY	EST FOR TEMPORARY EROSION CONTROL
2014	CY	TOTAL

TYPE OF CONSTRUCTION			
STATIONS	PAVEMENT WIDTHS	EQUATIONS	TYPE OF CONSTRUCTION
			FROM TO
TOTALS			
LENGTH OF PROJECT			
STATIONS	FEET	MILES	REMARKS
TOTALS			
SAFETY PROJECT		SPRINGFIELD-HARTFORD IR 91-1(48)	

IN CHARGE OF: **P.H. RAL**
 DESIGNED BY: **J.T. E.F.H.**
 CHECKED BY: **C.F.W.**

MAINLINE GUARD RAIL SUMMARY

MILE MARKER	STATION	LOCATION	REMOVAL				INSTALLATION												REMARKS														
			GUARD RAIL		CURB		ITEM 621.21		ITEM 621.26		ITEM 621.28		ITEM 617.45		ITEM 621.55		ITEM 402.15			ITEM 301.26		ITEM 616.35		ITEM 621.66		ITEM 621.72		ITEM 621.78		ITEM 621.90		ITEM 621.91	
			QUAN.	TYPE	QUAN.	TYPE	ACTUAL (L.F.)	FACTORED (L.F.)	ACTUAL (L.F.)	FACTORED (L.F.)	ACTUAL (L.F.)	FACTORED (L.F.)	ITEM 617.45 (L.F.)	ITEM 621.55 (L.F.)	ITEM 402.15 (C.Y.)	ITEM 301.26 (C.Y.)	ITEM 616.35 (L.F.)	ITEM 621.66 (Ea.)		ITEM 621.72 (Ea.)	ITEM 621.78 (Ea.)	ITEM 621.90 (Ea.)	ITEM 621.91 (Ea.)	ITEM 621.91 (Ea.)	ITEM 621.91 (Ea.)	ITEM 621.91 (Ea.)	ITEM 621.91 (Ea.)	ITEM 621.91 (Ea.)	ITEM 621.91 (Ea.)	ITEM 621.91 (Ea.)			
	223+10-223+10	NB LT	480	CABLE			980	980					20																				
	223+20-223+20	SB RT	670	CABLE			600	600					42																				
	223+40-223+40	SB LT	1970	CABLE			2025	2025					140																				
	223+80-223+80	NB LT	1300	CABLE			1425	1425					127																				
	226+10-226+10	NB RT	140	CABLE			275	275					89																				
	226+10-226+10	SB LT	438	CABLE			1850	1850					195																				
	226+10-226+10	SB RT	145	STEEL			1675	1575					182																				
	226+10-226+10	NB LT	170	STEEL			250	250					77																				
	226+10-226+10	NB RT	110	STEEL			230	260					85																				
	227+40-227+40	NB RT	925	CABLE			1350	1350					103																				
	228+10-228+10	NB LT	290	CABLE			330	330					79																				
	229+10-230+10	NB RT	400	CABLE		496	520						31		2																		
	229+10-230+10	SB LT	1000	CABLE			1075	1075					108																				
	231+10-232+10	SB LT	1100	CABLE			1075	1075					98																				
	231+10-231+10	SB RT	1670	CABLE			1875	1875					110																				
	231+10-231+10	NB LT	2300	CABLE			2325	2325					147																				
	232+10-234+10	SB LT	720	CABLE			950	950					123																				
	233+10-234+10	NB RT					625	625					67																				
	235+10-235+10	SB RT	306	CABLE		368	392						41		2																		
	236+10-237+10	NB RT	930	CABLE			1000	1000					104																				
	237+10-238+10	SB LT	1090	CABLE			1475	1475					108																				
	237+10-238+10	NB LT	913	CABLE			1725	1725					227																				
	238+10-238+10	SB RT					125	125					12																				
	238+10-238+10	SB LT	70	CABLE			125	125					10																				
	239+10-240+10	NB LT	1180	CABLE			1125	1125					52																				
	239+10-240+10	NB RT	40	CABLE			125	125					10																				
	240+10-240+10	NB LT	578	CABLE			580	550					78																				
	240+10-240+10	SB LT	25	STEEL																													
	245+10-245+10	NB RT	300	CABLE			580	550					85																				
	245+10-247+10	SB RT	1840	CABLE			1850	1850					127																				
	245+10-246+10	NB LT	1220	CABLE			1600	1600					106																				
	246+10-247+10	SB LT	496	CABLE			790	790					118																				
	246+10-247+10	NB RT	650	CABLE			775	775					103																				
	248+10-249+10	NB RT	840	CABLE		1008	1104						118		4																		
	249+10-249+10	SB RT	325	CABLE		400	424						83		2																		
	250+10-251+10	NB RT	1000	CABLE			1075	1075					108																				
	251+10-251+10	NB RT	1150	CABLE			1650	1650					171																				
	253+10-253+10	SB LT	1100	CABLE			1625	1625					167																				
	256+10-256+10	SB RT	230	CABLE			350	350					84																				
	256+10-256+10	NB LT	100	STEEL			125	125					66																				
	257+10-257+10	SB RT	100	STEEL			125	125					69																				
	257+10-258+10	NB LT	850	CABLE			1100	1100					131																				
	257+10-258+10	SB LT	998	CABLE			1200	1200					134																				
	257+10-259+10	SB RT	1840	CABLE			2225	2225					140																				
	257+10-259+10	NB RT	1600	CABLE			2025	2025					188																				
	259+10-259+10	NB LT	300	CABLE			500	500					102																				
	260+10-261+10	NB RT	610	CABLE			800	800					113																				
	260+10-261+10	SB RT	360	CABLE		416	440						44		2																		
	261+10-263+10	NB LT	1810	CABLE			1725	1725					190																				
	263+10-263+10	NB RT	440	CABLE			500	500					85																				
	264+10-264+10	NB RT	420	CABLE			625	625					104																				
	264+10-264+10	NB LT	280	CABLE			500	500					105																				
	264+10-264+10	SB RT	2970	CABLE			2875	2875					204																				
	264+10-264+10	SB LT	190	STEEL			100	100					62																				
	265+10-265+10	NB RT	630	CABLE			900	900					120																				
	SHEET TOTAL		4281				2880	4923					5369		12		47		45														

ITEM	DESCRIPTION	ITEM	DESCRIPTION
202.40	Removal and Disposal of Existing Guard Rail	621.78	Breakaway Cable Term. for Guard Rail Steel
402.15	Crushed Stone Underlayment		Beam w/ Steel Posts, Type II
301.26	Subbase Crushed Gravel (Fine Graded)	621.90	Guard Rail Approach Section, Type I
616.35	Treated Timber Curb	621.91	Guard Rail Approach Section, Type II
621.21	Guard Rail, 3 Cable w/ 1 Steel Post	617.45	Approach Railing (Two Rail Aluminum)
621.26	Guard Rail, 5th St. Beam w/ 5 Posts, Type II	621.55	Removal and Resetting Guardrail
621.28	Guard Rail, 5th St. Beam w/ Wood Posts, Type II		
621.66	Anchor for 3 Cable Guard Rail w/ 1st. or Wood Posts		
621.72	Anchor for 5th Beam Guard Rail w/ 1st. Lt. St. or Wood Posts		

NOTES:

- Removal and disposal of existing asphalt curb shall be incidental to guard rail removal.
- Treated timber curb shall be installed where existing asphalt curb is removed or as directed by the Resident Engineer.
- Before shop curving any Guardrail field measurements must be made.
- See Bridge Plans for bridge approaches. Item 621.90 and 621.91

VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND - JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE _____ DATE _____ SHEET _____ OF _____

MAINLINE GUARD RAIL SUMMARY

MILE MARKER	STATION	LOCATION	REMOVAL				INSTALLATION											REMARKS			
			GUARD RAIL		CURB		ITEM 621.21		ITEM 621.26		ITEM 621.28		ITEM 602.15	ITEM 301.26	ITEM 616.35	ITEM 621.66	ITEM 621.72		ITEM 621.78	ITEM 621.90	ITEM 621.91
			QUAN (L.F.)	TYPE	QUAN (L.F.)	TYPE	ACTUAL (L.F.)	FACTORED (L.F.)	ACTUAL (L.F.)	FACTORED (L.F.)	ACTUAL (L.F.)	FACTORED (L.F.)	(L.F.)	(CY)	(L.F.)	(Ea.)	(Ea.)		(Ea.)	(Ea.)	(Ea.)
	3044+80-3048+00	NB RT	188	CABLE			25	25					11								
	3049+01-3049+50	SB LT	140	STEEL			100	100					62								
	3066+20-3083+60	NB RT	1060	CABLE			1675	1675					200								
	3066+100-3067+00	SB LT	150	STEEL			250	250					81								
	3071+00-3073+20	NB RT	200	STEEL			225	225					64								
	3072+00-3074+70	SB LT	180	CABLE			225	225					73								
	3072+43-3073+43	NBLT	160	STEEL			100	100					62								
	3076+73-3100+00	SB LT	300	STEEL			325	325					73								
	3076+70-3077+40	SB RT	180	STEEL			625	625					10								
	3078+43-3078+00	NBLT					12.5	12.5					60								
	3078+73-3100+00	SB LT	300	STEEL			12.5	12.5					10								
	3078+70-3077+40	SB RT	35	CABLE			12.5	12.5					88								
	3078+42-3078+60	NB RT	410	CABLE			500	500					138								
	3123+80-3140+00	NB RT	1540	CABLE			1675	1675					210								
	3123+75-3124+75	SB RT	4270	CABLE			4100	4100					98								
	3136+20-3142+20	SB LT	400	CABLE			550	550					284								
	3143+75-3178+30	NB RT	2650	CABLE			3450	3450					77								
	3167+00-3174+10	SB RT	550	CABLE		512	536					2									
	3178+15-3187+80	SB LT	270	CABLE			975	975					183								
	3185+80-3187+20	NBLT	160	CABLE		144	168					2									
	3212+70-3214+15	NBLT	100	STEEL			125	125					60								
	3213+70-3215+15	SB LT	100	STEEL			125	125					60								
	3231+20-3242+70	NB RT	1090	CABLE			1150	1150					108								
	3232+30-3243+05	SB LT	1025	CABLE			1075	1075					104								
	3271+70-3273+70	NBLT	100	STEEL			200	200					79								
	3272+70-3277+70	NBLT	333	STEEL			700	700					132								
	3278+60-3277+80	SB LT	125	CABLE			425	425					113								
	3279+60-3277+80	SB RT	580	CABLE			625	625					88								
	3277+30-3292+70	NB RT	1175	CABLE			1875	1875					164								
	3285+25-3287+00	SB LT	110	CABLE			175	175					73								
	3287+10-3291+60	SB RT	150	CABLE		224	248					2									
	3304+00-3312+60	NBLT	810	CABLE			875	875					49								
	3319+70-3320+30	NB RT	220	CABLE			275	275					71								
	3339+35-3346+70	SB RT	735	CABLE									104								
	3348+100-3350+00	NB RT	325	CABLE			425	425					87								
	3367+00-3368+70	SB LT	100	STEEL			175	175					75								
	3367+80-3368+80	NBLT	100	STEEL			100	100					62								
	3367+70-3368+70	SB RT	140	STEEL			100	100					62								
	3369+20	NB RT											10								
	3372+70-3376+70	SB LT	340	CABLE			400	400					81								
	3373+60-3381+10	NB RT	540	CABLE			780	780					113								
	3379+00-3384+80	NBLT	400	CABLE			550	550					98								
	3381+10-3388+90	SB RT	575	CABLE		768	742					2									
	3388+30-3391+70	NBLT	260	CABLE			325	325					74								
	3390+80-3394+60	NB RT	300	CABLE			375	375					82								
	3408+00-3410+25	NB RT	475	CABLE			525	525					84								
	3408+100-3407+70	NBLT	180	CABLE		256	280					2									
	3407+00-3407+70	SB RT	130	CABLE		272	296					2									
	3420+30-3437+30	NB RT	1480	CABLE			1825	1825					121								
	3428+80-3438+20	SB LT	100	CABLE			600	600					145								
	3442+20-3444+20	NB RT	660	CABLE			700	700					89								
	3444+70-3449+20	SB LT	210	CABLE			650	650					139								
	3466+80-3476+00	SB LT	460	CABLE			550	550					157								
	3468+80-3477+20	NBLT	2510	CABLE			3125	3125					254								
	3482+80-3416+20	NBLT					325	325					112								
	3512+35-3516+35	NB RT	340	STEEL			400	400					81								
	3512+40-3517+40	SB LT	430	CABLE			500	500					84								
	3516+80	MEDIAN	200	STEEL					112.5	112.5	54		75							MINNESOTA BULLNOSE GUARDRAIL TREATMENT SEE SHT 121	
	SHEET TOTAL		27785				2320	34088				112.5	108	5365		12	43	42			

ITEM	DESCRIPTION	ITEM	DESCRIPTION
202.40	Removal and Disposal of Existing Guard Rail	621.78	Breakaway Cable Term for Guard Rail Steel
402.15	Crossed Storm Shoulder		Beam w/ Steel Posts, Type II
301.26	Subbase Crushed Gravel (Fine Graded)	621.90	Guard Rail Approach Section, Type I
416.35	Treated Timber Curb	621.91	Guard Rail Approach Section, Type II
621.21	Guard Rail, 3 Cable w/ U Steel Posts	617.45	Approach Railing (Two Rail Aluminum)
621.26	Guard Rail, 5/4 St Beam w/ St Posts, Type II	621.55	Removal and Resetting Guardrail
621.28	Guard Rail, 5/4 St Beam w/ Wood Posts, Type II		
621.66	Anchor for 3 Cable Guard Rail w/ U St. or Wood Posts		
621.72	Anchor for 5/4 Beam Guard Rail w/ St, Lt St. or Wood Posts		

NOTES:

- Removal and disposal of existing asphalt curb shall be incidental to guard rail removal.
- Treated timber curb shall be installed where existing Asphalt Curb is removed or as directed by the Resident Engineer.
- Before shop curving any Guardrail, field measurements must be made.
- See Bridge Plans for bridge approaches. Item 621.90 and 621.91.

VERMONT AGENCY OF TRANSPORTATION

**SAFETY PROJECT
SPRINGFIELD-HARTFORD
IR 91 - I(48)**

McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

SCALE: _____ DATE: _____ SHEET: 8 OF _____

IN CHARGE OF: B.H.
 DESIGNED BY: R.A.L.
 CHECKED BY: C.F.W.

MAINLINE GUARD RAIL SUMMARY

MILE MARKER	STATION	LOCATION	REMOVAL				INSTALLATION											REMARKS					
			GUARD RAIL		CURB		ITEM 621.21		ITEM 621.26		ITEM 621.28		ITEM 617.45	ITEM 621.55	ITEM 402.15	ITEM 301.26	ITEM 616.35		ITEM 621.66	ITEM 621.72	ITEM 621.78	ITEM 621.90	ITEM 621.91
			QUAN (L.F.)	TYPE	QUAN (L.F.)	TYPE	ACTUAL (L.F.)	FACTORED (L.F.)	ACTUAL (L.F.)	FACTORED (L.F.)	ACTUAL (L.F.)	FACTORED (L.F.)	(L.F.)	(L.F.)	(C.Y.)	(C.Y.)	(L.F.)		(Eo.)	(Eo.)	(Eo.)	(Eo.)	(Eo.)
	389+80	MEDIAN	170	STEEL					112.5	112.5	54		78										MINNESOTA BULLNOSE GUARDRAIL TREATMENT SEE SHT. 121
	3923+85-3924+10	SB RT					25	25			27		4										
	3927+85-3928+10	NB LT					25	25			27		4										
	3927+90-3930+40	NB RT	170	STEEL			250	250			27		191										
	3939+40-3939+10	NB RT	2090	CABLE			2425	2425					78										
	3939+80-3939+30	SB LT	40	STEEL			150	150					71										
	3939+50-3939+100	SB LT	390	CABLE			1225	1225					120										
	3939+60-3939+190	NB RT	1100	CABLE			850	850					103										
	3939+40-3939+180	SB LT	750	CABLE			1450	1450					181										
	3939+80-3939+130	NB RT	1170	CABLE			525	525					82										
	3939+120-3939+180	SB LT	490	CABLE			1125	1125					143										
	3939+100-3939+180	SB LT	790	CABLE			1200	1200					110										
	3939+130-3939+130	SB RT	1140	CABLE			1850	1850					125										
	3939+130-3939+180	SB LT	1480	CABLE			625	625					85										
	3939+130-3939+160	NB LT	460	CABLE			1225	1225					120										
	3939+160-3939+190	NB RT	420	CABLE			1225	1225					116										
	3939+180-3939+190	NB LT	480	CABLE			1025	1025					105										
	3939+160-3939+180	SB LT	960	CABLE			780	780					99										
	3939+180-3939+130	SB RT	900	CABLE			275	275					78										
	3939+110-3939+140	NB RT	200	STEEL			175	175					29										
	3939+100-3939+158	SB RT					400	400					44										
	3939+187-3939+180	SB RT	180	STEEL																			
	3939+140-3939+162	SB LT	40	CABLE			12.5	12.5					10										
	3939+20-3939+180	SB LT	200	CABLE			187.5	187.5					17										
	3939+138-3939+188	NB LT	250	STEEL			250	250					9										
	3939+110-3939+120	NB LT					12.5	12.5					12										
	3939+140-3939+180	SB LT	470	CABLE			590	590					30										MINNESOTA BULLNOSE GUARDRAIL TREATMENT SEE SHT. 121
	3939+190-3939+100	SB LT	628	CABLE			375	375					23										
	3939+140-3939+180	NB LT	100	STEEL			375	375					60										
	3939+100-3939+180	NB RT	10	STEEL			350	350					57										CONNECT TO EXISTING GUARDRAIL
	3939+160-3939+100	SB RT	100	STEEL			375	375					64										
	SHEET TOTAL		16440					19238		112.5	135		2338					24	18				
	MAINLINE TOTALS		118608				6040	134071		794	432	820	17023			26	152	137					

ITEM	DESCRIPTION	ITEM	DESCRIPTION
202.40	Removal and Disposal of Existing Guard Rail	621.74	Breakaway Cable Term. For Guard Rail Steel Beam w/ Steel Posts, Type II
402.15	Crushed Stone Shoulder	621.90	Guard Rail Approach Section, Type I
301.26	Subbase Crushed Gravel (Fine Graded)	621.91	Guard Rail Approach Section, Type II
616.35	Treated Timber Curb	617.45	Approach Railing (Two Rail Aluminum)
621.21	Guard Rail, 3 Cable w/ Lt. Steel Posts	621.59	Removal and Resetting Guardrail
621.26	Guard Rail, 5th St. Beam w/ St. Posts, Type II		
621.28	Guard Rail, 5th St. Beam w/ Wood Posts, Type II		
621.66	Anchor for 3 Cable Guard Rail w/ Lt. St. or Wood Posts		
621.72	Anchor for 5th St. Beam Guard Rail w/ St. Lt. St. or Wood Posts		

NOTES:

- Removal and disposal of existing asphalt curb shall be incidental to guard rail removal.
- Treated timber curb shall be installed where existing asphalt curb is removed or as directed by the Resident Engineer.
- Before shop curving any Guardrail field measurements must be made.
- See Bridge Plans for bridge approaches. Item 621.90 and 621.91.

VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD-HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

SCALE	DATE	SHEET
		9 OF

IN CHARGE OF: R.H.
 DESIGNED BY: R.A.L.
 CHECKED BY: C.F.W.
 DETAILED BY: L.T., E.F.H.

RAMP AND SIDELINE GUARDRAIL SUMMARY

STATION- LOCATION	REMOVAL				INSTALLATION														REMARKS									
	GUARDRAIL		CURB SEE NOTE 1		ITEM 621.21		ITEM 621.26		ITEM 621.28		ITEM 621.38		ITEM 621.45		ITEM 402.15	ITEM 301.26	ITEM 616.35	ITEM 621.66		ITEM 621.70	ITEM 621.72	ITEM 621.74	ITEM 621.77	ITEM 621.78	ITEM 621.90	ITEM 621.91		
	QUAN.	TYPE	QUAN.	TYPE	ACTUAL (L.F.)	FACTORED (L.F.)	ACTUAL (L.F.)	FACTORED (L.F.)	ACTUAL (L.F.)	FACTORED (L.F.)	ACTUAL (L.F.)	FACTORED (L.F.)	ACTUAL (L.F.)	FACTORED (L.F.)	(C.Y.)	(C.Y.)	(L.F.)	(Eo.)		(Eo.)	(Eo.)	(Eo.)	(Eo.)	(Eo.)	(Eo.)	(Eo.)	(Eo.)	
INTERCHANGE NO.8 RAMP 'C' 4+00 - 7+00, RT	300	CABLE				300	300								21					1							CONT'D FROM MAINLINE	
RAMP 'D' 2+90 - 1+00 RT	760	CABLE				828	828								86									1			CONT'D ONTO MAINLINE	
ROUTE 131 2+330(RT) - 2+180(RT)	200	CABLE						290	290						109											2		
25+10 (LT) - 27+60 (LT)	200	CABLE						290	290						109											2		
INTERCHANGE NO.9 RAMP 'N' RTE 8 36+50-A+240RT	1570	CABLE			1744	1870									87			4										USE 12'-0" POST SPACING AROUND CURVE ON RAMP A - 300' LEN.
1+90 - 16+50	410	CABLE			464	488									34			2										
ROUTE 8 32+15 - 32+70 RT								76	76						60											1		
INTERCHANGE NO.10 RAMP 'B' 3711 F03(W) - 8+60	875	CABLE				875	875								42					1								
1+30(LT) - 3+40(LT)	125	CABLE				225	225								69					1					1			
RAMP 'H' 2+50 (RT) - 1+50 (RT)	900	CABLE				800	800								30													TIE TO EXIST. STEEL BEAM CONT'D ON I-89
2+80(LT) - 8+00(LT)	330	CABLE				380	380								35					1								CONT'D ONTO MAINLINE
RAMP & SIDELINE TOTALS	5890				2358	3605		376						682			6			4			5		2			

ITEM	DESCRIPTION	ITEM	DESCRIPTION
202.40	Removal & Disposal of Exist Guardrail	621.72	Anchor for St Beam Guardrail w/ St, Lt or Wood Posts
402.15	Crushed Stone Shoulder	621.74	Terminal Cap for St Beam Guardrail
301.26	Subbase Crushed Gravel (Fine Graded)	621.77	Breakaway Cable Term for Guardrail
616.35	Treated Timber Curb	621.78	Steel Beam w/Wood Posts, Type II
621.21	Guardrail, 3 Cable w/Lt Steel Posts	621.90	Guardrail Approach Section, Type I
621.26	Guardrail, Std St Beam w/Steel Posts, Type II	621.91	Guardrail Approach Section, Type II
621.28	Guardrail, Std St Beam w/Wood Posts, Type II	621.78	Breakaway Cable Term for Guardrail
621.38	Guardrail, Hwy Div. St Beam w/Wood Posts, Type II	621.78	Steel Beam w/Steel Posts, Type II
621.66	Anchor for 3-Cable G.R. w/Lt St or Wood Posts	621.45	Guardrail, Box Beam w/Steel Posts
621.70	Anchor for St Beam Guardrail w/ St or Wood Posts at openings		

NOTES:

- Removal and disposal of existing asphalt curb shall be incidental to guardrail removal.
- Treated Timber Curb shall be installed where existing Asphalt Curb is removed or as Directed by the Resident Engineer.
- Before shop curving any Guardrail, field measurements must be made.

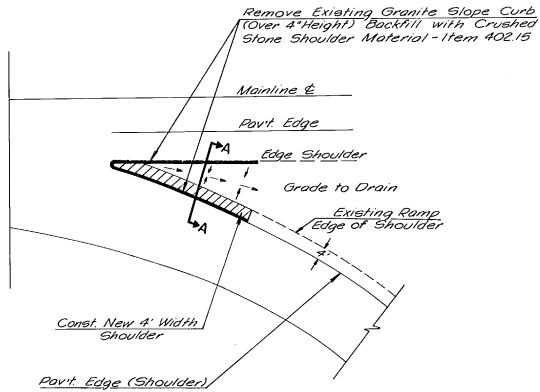
VERMONT AGENCY OF TRANSPORTATION

**SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)**

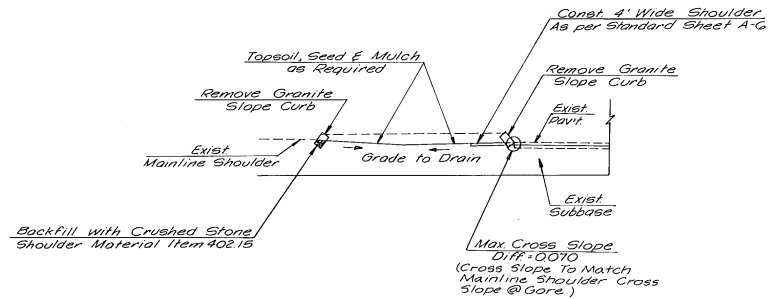
McFarland-Johnson Engineers, Inc.
BINGHAMTON NEW YORK

SCALE	DATE	10	SHEET OF
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IN CHARGE OF: B.J.H.
 DESIGNED BY: J.A.L.
 DETAILED BY: J.A.L., E.F.H.
 CHECKED BY: C.F.W.



**GRANITE SLOPE CURB REMOVAL
AT RAMP GORES (PLAN)**



SECTION 'A-A'

LOCATION	ITEM 202.55 (L.F.)	ITEM 203.15 (CY)	ITEM 402.15 (CY)	ITEM 406.25 (TON)	ITEM 651.10 (LB)	ITEM 651.15 (LB)	ITEM 651.20 (F)	ITEM 651.25 (T)	ITEM 653.10 (CY)
Exit Gore Int #8 N.B. ESB	220	30	2	3.5	2	19	0.1	0.1	10
Exit Gore Int #9 N.B. ESB	220	30	2	3.5	2	19	0.1	0.1	10
Exit Gores Int #10 N.B.	220	30	2	3.5	2	19	0.1	0.1	10
Exit Gores Int #10 S.B.	220	30	2	3.5	2	19	0.1	0.1	10
Totals	880	120	8	140	8	76	0.4	0.4	40

ITEM	DESCRIPTION
202.55	Removal of Existing Curb
203.15	Common Excavation
402.15	Crushed Stone Shoulders
406.25	Bituminous Concrete Pavement 1 1/4" Thickness
651.10	Seed
651.15	Fertilizer
651.20	Agricultural Limestone
651.25	Hay Mulch
653.10	Topsoil

GRANITE SLOPE CURB REMOVAL AT
RAMP GORES

VERMONT AGENCY OF TRANSPORTATION

**SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)**

McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

SCALE DATE SHEET
11 OF



IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____
 DATE: _____

'U' TURN QUANTITY SHEET

NO.	STATION	DESCRIPTION	COMMON EXCAVATION			SEED (L.B.)	FERTILIZER (L.B.)	LIMESTONE (T)	MULCH (T)	TOPSOIL (CY)
			203.15 (CY)	204.20 (CY)	204.25 (CY)					
C-1	2293+70	GRADE SLOPE		407		8	64	0.25	0.25	33
C-2	2400+80	GRADE SLOPE		491		11	100	0.4	0.4	50
C-3	2338+25	GRADE SLOPE	300		843	6	52	0.2	0.2	27
C-4	2782+60	GRADE SLOPE	148	140	38.3	3	22	0.1	0.1	12
C-5	2983+50	GRADE SLOPE		70		5	37	0.15	0.15	19
C-8	3629+50	GRADE SLOPE		28		3	28	0.1	0.1	14
NOTE: SEE SHEETS 120-132 FOR GRADING DETAILS										
TOTALS			448	7156	1246	36	303	12	12	155

SLOPE FLATTENING QUANTITY SHEET

STATION	LOCATION	DESCRIPTION	COMMON EXCAVATION			SEED (L.B.)	FERTILIZER (L.B.)	LIMESTONE (T)	MULCH (T)	TOPSOIL (CY)
			203.30 (CY)	204.20 (CY)	204.25 (CY)					
3338+20-3344+25	98 RT.	FLATTEN SLOPE, TOPSOIL, SEED & MULCH		7470		70	629	2.5	2.5	338
NOTE: SEE SHEETS 123-125 FOR CROSS SECTIONS										
TOTALS				7470		70	629	2.5	2.5	338

ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
203.15	COMMON EXCAVATION	651.10	SEED		
203.30	EARTH BORROW	651.15	FERTILIZER		
204.20	GRANULAR BACKFILL FOR STRUCTURES	651.20	AGRICULTURAL LIMESTONE		
301.25	SUBBASE OF CRUSHED GRAVEL (COARSE GRADED)	651.25	HAY MULCH		
402.25	BITUMINOUS CONC. PAVEMENT, TYPE III - .3" THICK	653.10	TOP SOIL		

VERMONT AGENCY OF TRANSPORTATION
SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

SCALE: _____ DATE: _____ SHEET 12 OF _____

IN CHARGE OF: _____ DESIGNED BY: _____ CHECKED BY: _____ DATE: _____

TRAFFIC ITEM SUMMARY SHEET

ITEM NO.	DESCRIPTION	MAINLINE	INTER. 8	INTER. 9	INTER. 10	UNIT	TOTAL
646.35	4' WHITE LINES	—	—	—	2730	L.F.	2730
646.11	4' REFLECT YELLOW LINES	—	—	—	—	L.F.	—
675.20	TRAFFIC SIGNS, TYPE 'A'	1569	620	613	169	S.F.	2971
675.25	TRAFFIC SIGNS, TYPE 'B'	5797	60	60	120	S.F.	6237
675.35	TRAFFIC SIGN POSTS, TYPE 'A'	7610	1164	1056	923	LBS.	10753
675.36	TRAFFIC SIGN POSTS, TYPE 'B'	4408	—	—	—	LBS.	4408
675.37	TRAFFIC SIGN POST, TYPE 'C'	1311	808	913	352	LBS.	3384
675.41	FOUNDATION TYPE 'B' 24" DIA.	9	—	—	—	EA.	9
675.42	FOUNDATION TYPE 'B' 30" DIA.	—	—	—	—	EA.	—
675.51	REMOVING SIGNS	8300*	780*	970*	425*	S.F.	10445*
675.55	SETTING SALVAGED POSTS	1	2	2	—	EA.	5
675.60	ERECTING SALVAGED SIGNS, TYPE 'A'	180	—	—	—	S.F.	180
646.75	8' WHITE LINES	100	—	—	—	L.F.	100
676.10	DELINEATORS	1585	47	58	104	EA.	1794
676.12	REMOVAL OF DELINEATORS & POSTS	1950	36	59	153	EA.	2198
676.15	REMOVE & REPLACE DELINEATOR UNITS (MOD.)	150	—	—	—	EA.	150
646.21	PAINTING CURBS	—	150	420	—	L.F.	570
646.25	HANDICAP PARKING SYMBOL	2	—	—	—	EA.	2
646.22	ARROW MARKINGS (EST.)	—	—	—	—	EA.	2
676.11	DELINEATORS WITH SALVAGED POSTS (EST.)	—	—	—	—	EA.	50

*FOR CONTRACTOR'S REFERENCE ONLY

IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____
 DATE: _____

VERMONT AGENCY OF TRANSPORTATION

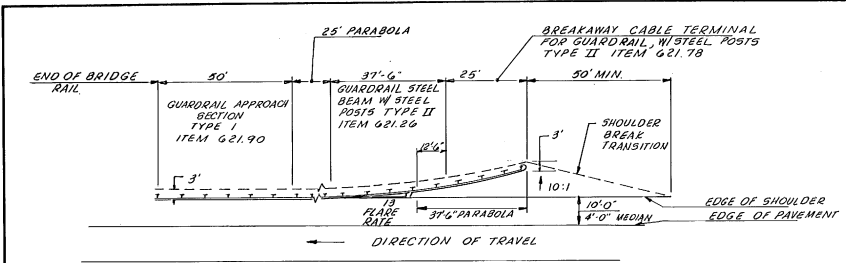
SAFETY PROJECT
SPRINGFIELD-HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

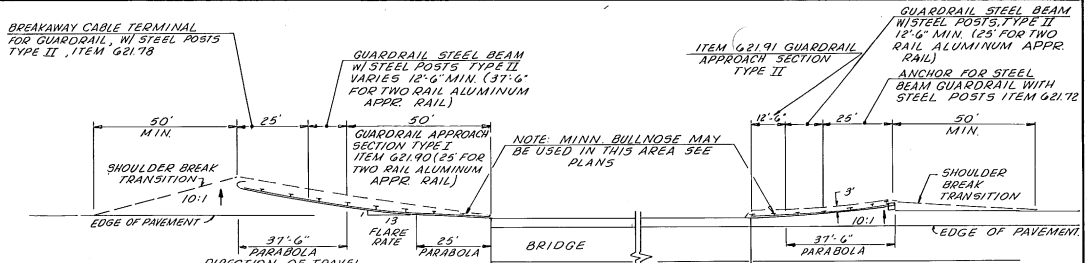
SCALE NONE	DATE	SHEET 13 OF
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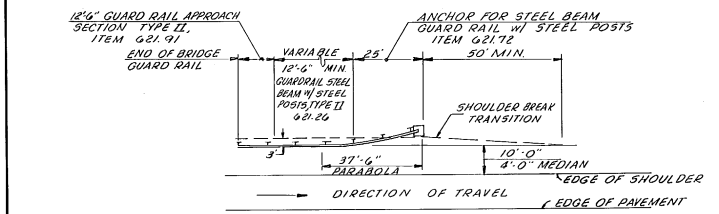
IN CHARGE OF: _____
 CHECKED BY: _____
 DESIGNED BY: _____
 DATE: _____



WORK THIS DETAIL WITH STD. SHEETS G15, B-17, G-1
APPROACH END - BRIDGE W/SHOULDERS
(STEEL BEAM GUARDRAIL)

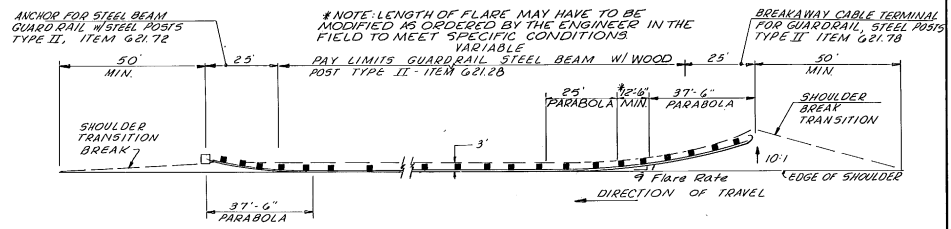


GUARDRAIL ON BRIDGE WITHOUT SHOULDER
(STEEL BEAM GUARDRAIL)

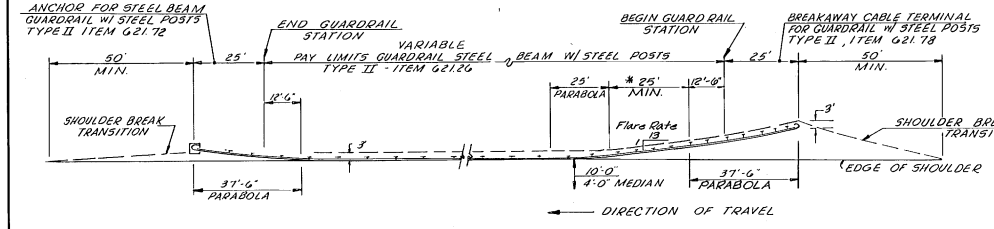


WORK THIS DETAIL WITH STD. SHEETS G-1, B-17
TRAILING END - BRIDGE W/SHOULDERS
(STEEL BEAM GUARDRAIL)

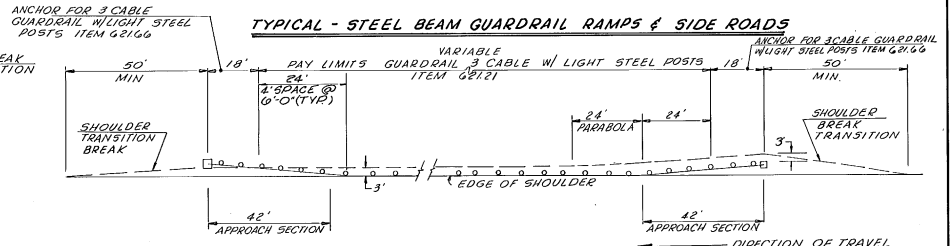
*NOTE: THE LENGTH OF FLARE MAY HAVE TO BE MODIFIED AS ORDERED BY THE ENGINEER IN THE FIELD TO MEET SPECIFIC CONDITIONS.



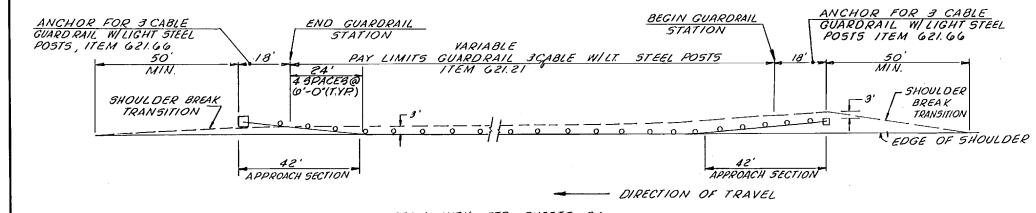
TYPICAL - STEEL BEAM GUARDRAIL RAMPS & SIDE ROADS



WORK THIS DETAIL WITH STD. SHEETS G-1, G-15
TYPICAL - STEEL BEAM GUARDRAIL

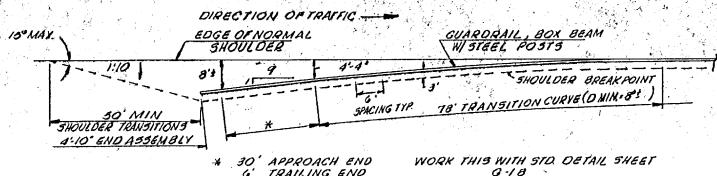


TYPICAL - 3 CABLE GUARDRAIL RAMPS & SIDE ROADS

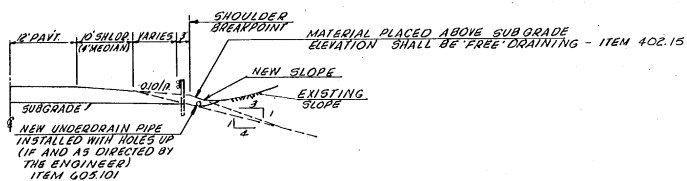


WORK THIS DETAIL WITH STD. SHEETS G-6
TYPICAL - THREE CABLE GUARDRAIL

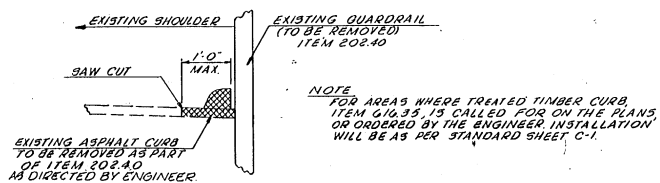
VERMONT AGENCY OF TRANSPORTATION			
SAFETY PROJECT			
SPRINGFIELD - HARTFORD			
IR 91 - 1(48)			
McFARLAND-JOHNSON ENGINEERS, INC.		NEW YORK	
SCALE	DATE	SHEET	14 OF
NO SCALE			



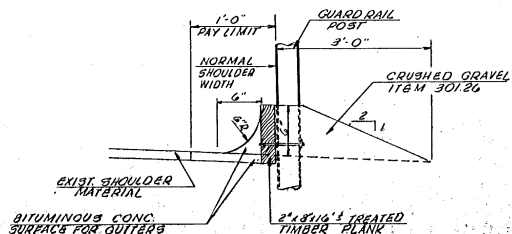
**PLAN OF FLARED APPROACH
FOR BOX BEAM GUARDRAIL
(SIDEWAYS ONLY)**



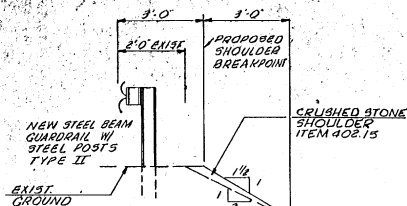
**SECTION A-A
DETAIL OF SHOULDER TREATMENT
AT GUARDRAIL WIDENING AREA.**



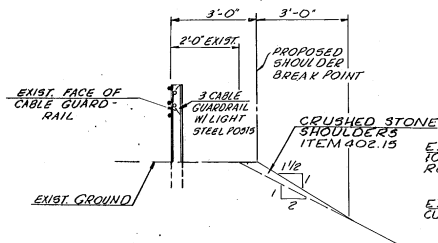
EXISTING CURB REMOVAL



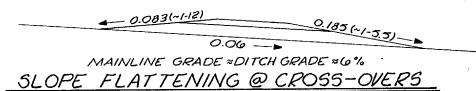
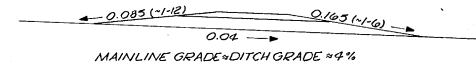
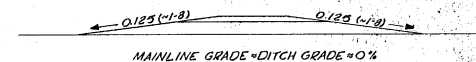
TIMBER CURB INSTALLATION



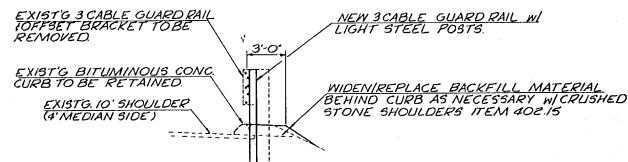
**SLOPE FATTENING DETAIL
FOR STEEL BEAM GUARDRAIL**



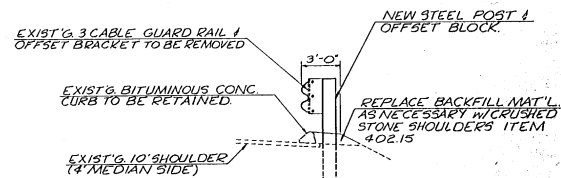
**SLOPE FATTENING DETAIL
FOR 3 CABLE GUARDRAIL**



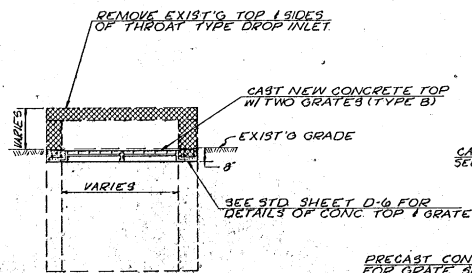
SLOPE FLATTENING @ CROSS-OVERS



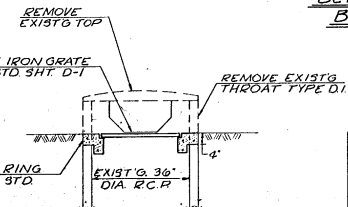
**DETAIL-NEW 3 CABLE GUARD RAIL WITH
BITUMINOUS CURB RETAINED**



**DETAIL NEW S.B.G.R. GUARD RAIL WITH
BITUMINOUS CURB RETAINED**



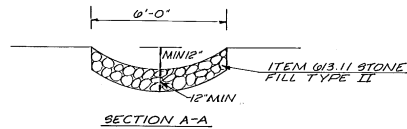
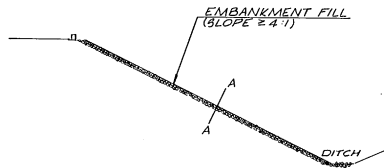
**DETAIL OF MODIFICATIONS TO THROAT
TYPE DROP INLET (RECTANGULAR)**



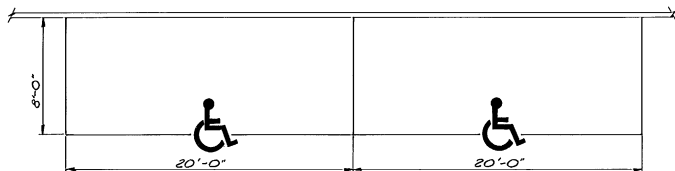
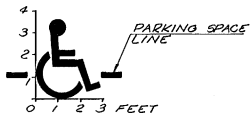
**DETAIL OF MODIFICATIONS TO THROAT
TYPE DROP INLET (CIRCULAR)**

VERMONT AGENCY OF TRANSPORTATION			
SAFETY PROJECT SPRINGFIELD - HARTFORD IR 91 - 1 (48)			
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK			
SCALE	DATE	SHEET	15 OF 21

IN CHARGE OF
DESIGNED BY
CHECKED BY

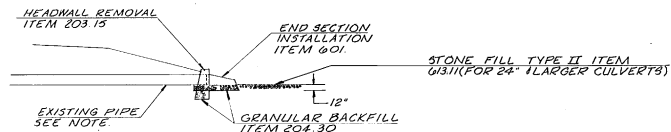
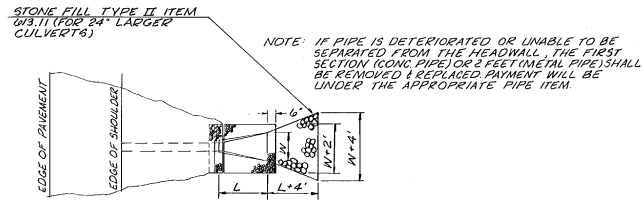


**DETAIL OF EMBANKMENT
TREATED GUTTER**



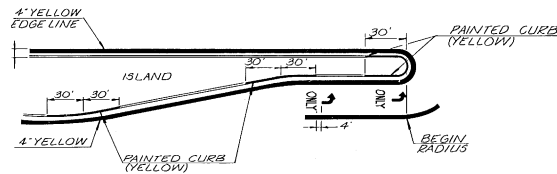
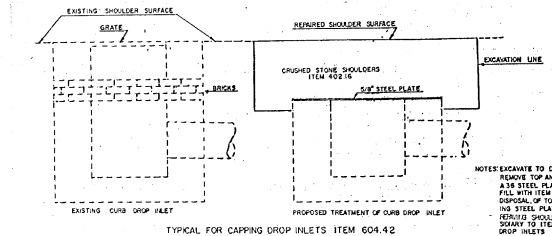
**DETAIL OF HANDICAPPED SYMBOL
FOR PAVEMENT MARKING**

NOT TO SCALE



**HEADWALL REMOVAL / END SECTION
INSTALLATION**

NOT TO SCALE



TURN LANE & PAINTED CURB DETAIL

NOT TO SCALE

MISCELLANEOUS DETAILS

VERMONT AGENCY OF TRANSPORTATION

**SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)**

McFARLAND-JOHNSON ENGINEERS, INC. NEW YORK

SCALE DATE SHEET 18 OF




IN CHARGE OF: _____
DESIGNED BY: _____
CHECKED BY: _____

SECTION 641 TRAFFIC SIGNS SUMMARY SHEET

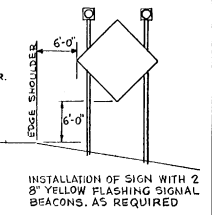
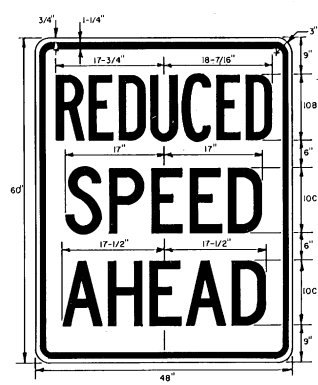
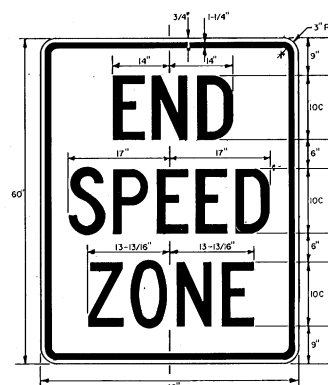
MAINLINE

RAMP

IDENTIFICATION	NUMBER OF SIGNS	SIZE		TEXT	FOR SIGN DETAIL, SEE STANDARD OR SHEET NUMBER
		WIDTH	HEIGHT		
	2	4	4	LEFT LANE CLOSED 1 MILE	E-8
	6 <i>OR AS REQUIRED</i>	18"	8"	RIGHT	E-8
	2	4	4	LEFT LANE CLOSED 1/2 MILE	E-8
	2	4	5	REDUCED SPEED AHEAD	
	2 <i>OR AS REQUIRED</i>	4	4	LEFT LANE CLOSED 1000 FEET	E-8
	2	4	4		E-8
	2	4	4		E-8
	AS REQUIRED	4	5	DO NOT PASS	
	AS REQUIRED	4	5	SPEED LIMIT 40	E-15B
	1	4	5	END SPEED ZONE	
	2	4	4	ROAD CONSTRUCTION AHEAD	E-2
	2	5	3	ROAD CONSTRUCTION NEXT --- MILES	E-2
	1	4	4		E-6

IDENTIFICATION	NUMBER OF SIGNS	SIZE		TEXT	FOR SIGN DETAIL, SEE STANDARD OR SHEET NUMBER
		WIDTH	HEIGHT		
	AS REQUIRED	4	4	LEFT LANE CLOSED AHEAD	E-8
	AS REQUIRED	18"	8"	RIGHT	E-8
	AS REQUIRED	4	4		E-6

SIGN NOTES: TRAFFIC SIGNS SHOWN ON THIS SHEET ARE TO BE SUBSIDIARY TO ITEM 641, TRAFFIC CONTROL. ADDITIONAL SIGNS, IF REQUIRED, THAT ARE NOT DETAILED WILL BE PAID AS ITEM 675.20 OR 675.25 AS DIRECTED BY THE ENGINEER.
PROJECT SIGNS AS PER STANDARD E-2 AND E-6 WILL BE REQUIRED TO ESTABLISH PROJECT LIMITS AND AS RAMP SIGNING.
SIGNS MAY BE ERECTED ON FLANGED CHANNEL STEEL POSTS OR BREAKAWAY WOODEN POSTS.
* SIZE = 3 LBS/FT - MAXIMUM



COLORS: LEGEND - BLACK (NON-REFLECTORIZED)
BACKGROUND - WHITE (REFLECTORIZED)
(SEE STANDARD SHEET E-16 FOR MATERIAL SPECIFICATIONS)

SECTION 641 TRAFFIC SIGN SUMMARY SHEET MAINLINE TRAFFIC CONTROL PLAN	SAFETY PROJECT	
	SURVEYED BY _____	DATE _____
	DRAWN BY RPR	DATE 2-82
	TRACED BY LCG	DATE 6-82
	SPRINGFIELD - HARTFORD	
PROJ. No IR 091-(148)	SHEET 20 OF _____	

NOTES:

When working at or near the exit or entrance ramps, Uniformed Traffic Officers shall be used to assist in controlling Traffic Lane closure signs shall be installed on entrance ramps.

Exit ramps shall have traffic lanes delineated with 28" cones to indicate desired vehicle path. Taper lengths shall be at least 320 feet. Cone spacing shall be 40 feet. Cones shall be weighted at the base to prevent overturning and kept clean. Signs H-1 and H-3 will be in conformity with Standard E-2. All others will be moveable and will be removed during non-working hours.

* During periods of poor visibility, steady burn yellow lights mounted on Channelizing Devices will be used in place of cones.

All signs will be placed before any work is begun or equipment put on roadway.

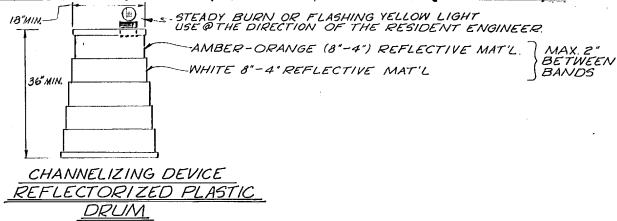
Contractor shall have Chan Devices and signs for left side closure and right side closure on project before starting construction.

Work crews' private vehicles will not be parked in or around working area. Contractor will provide parking for work crews' vehicles off project.

Uniformed Traffic Officers will park their vehicles on the shoulder away from traffic.

Existing speed limit signs in reduced speed area will be covered during construction.

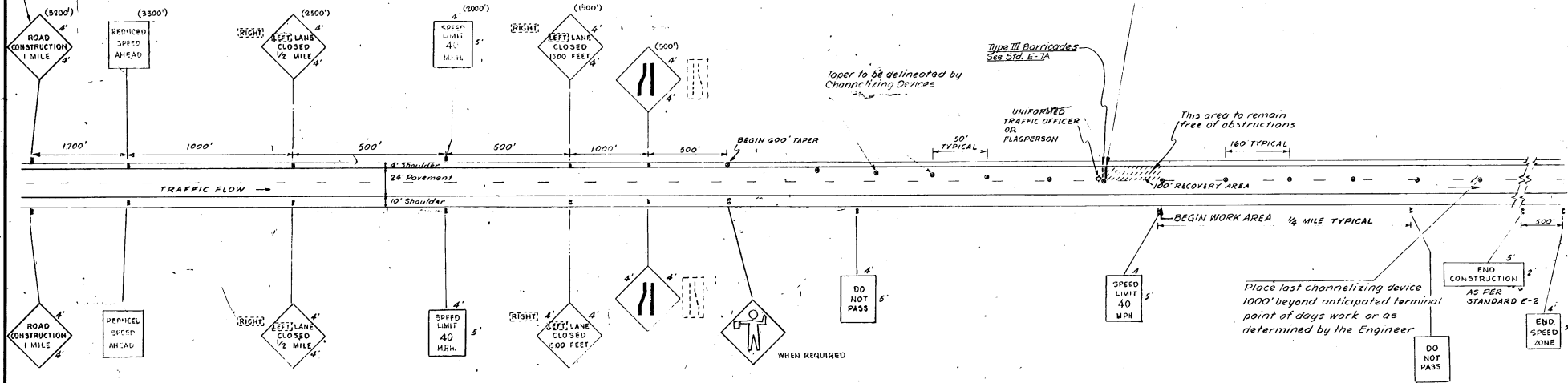
Channelizing devices other than cones or type III barricades (quad) will be allowed as long as they conform to the MUTCD and are approved for use by the Resident Engineer.



Flashing Arrow Board (48" x 96" minimum size) to be placed at end of 600' taper. The flashing arrow shall be mounted on a breakaway or yielding system.

See Special Provisions for additional information on flashing arrow board

SIGN H-1 SEE STANDARD SHEET E-2



Type III Barricades See Std. E-1A

Taper to be delineated by Channelizing Devices

UNIFORMED TRAFFIC OFFICER OR FLAGPERSON

This area to remain free of obstructions 160' TYPICAL

BEGIN WORK AREA 1/4 MILE TYPICAL

Place last channelizing device 1000' beyond anticipated terminal point of days work or as determined by the Engineer

"SPEED LIMIT 40" to be installed at 1/2 mile increments for entire work area. "DO NOT PASS" signs will be erected immediately in advance of, and throughout, the length of the work area, halfway between adjacent speed limit signs

Refer to Project Special Provisions for speed zone enactment. Refer to Uniform Traffic Control Devices Manual for tapers not in the speed zone area.

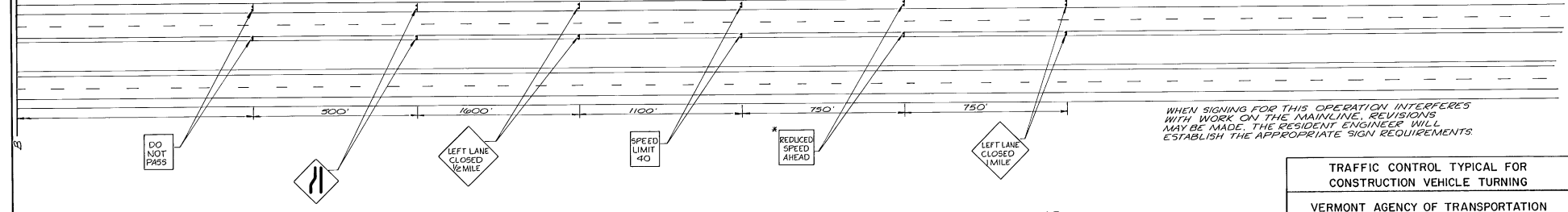
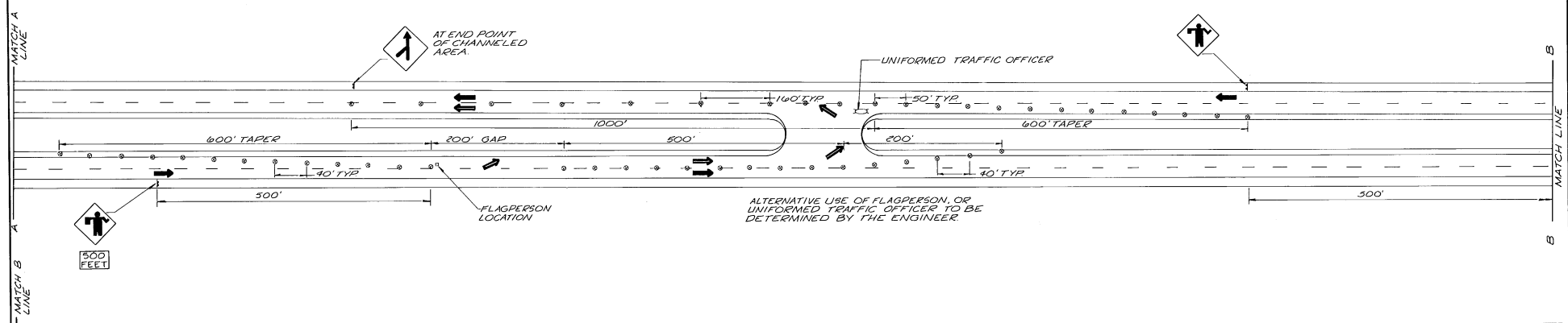
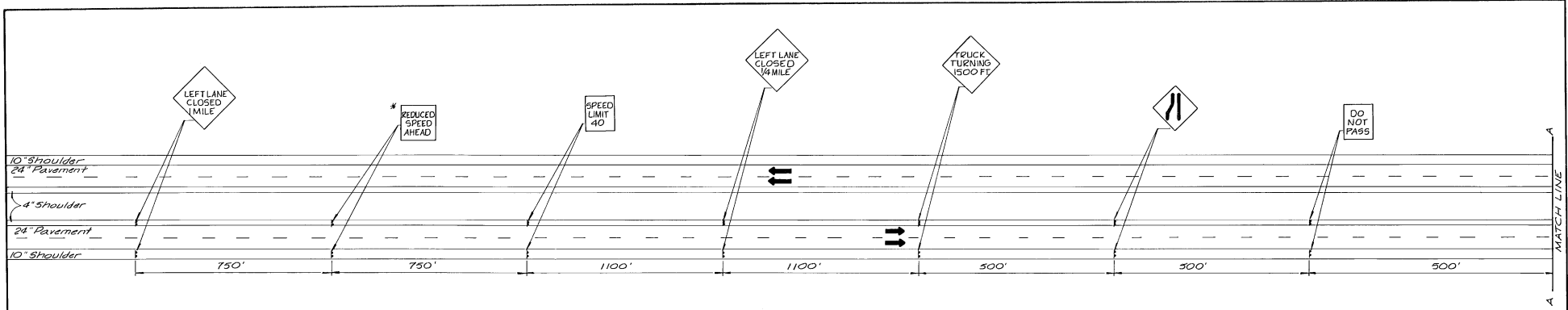
The "SPEED LIMIT 40", "DO NOT PASS" and "END SPEED ZONE" signs shall be located to the left hand side of the road when work is being done on the right hand lane.

The "SPEED LIMIT 40" and other related signs shall be removed or covered when work is not in progress.

NOT TO SCALE

DATUM	_____
VERTICAL	_____
HORIZONTAL	_____

SPRINGFIELD - HARTFORD	
MAINLINE TRAFFIC CONTROL PLAN	
SURVEYED BY	DATE
DRAWN BY SHM	DATE 3/8/82
TRACED BY	DATE
PROJ. NO IR 091-1(48)	
SHEET 21 OF	



WHEN SIGNING FOR THIS OPERATION INTERFERES WITH WORK ON THE MAINLINE, REVISIONS MAY BE MADE. THE RESIDENT ENGINEER WILL ESTABLISH THE APPROPRIATE SIGN REQUIREMENTS.

*SPEED LIMIT REDUCTIONS MUST BE APPROVED BY THE STATE TRAFFIC COMMITTEE PRIOR TO SIGN ERECTION REQUESTS SHALL BE MADE PRIOR TO THE PRE-CONSTRUCTION CONFERENCE

NOTE: LEGAL SPEED LIMIT = 40 M.P.H.

- LEGEND**
- THROUGH TRAFFIC
 - ⇄ CONSTRUCTION VEHICLES
 - ⊗ CHANNELIZING DEVICE

TRAFFIC CONTROL TYPICAL FOR CONSTRUCTION VEHICLE TURNING			
VERMONT AGENCY OF TRANSPORTATION			
SAFETY PROJECT			
SPRINGFIELD - HARTFORD			
IR 91 - 1 (48)			
McFARLAND-JOHNSON ENGINEERS, INC.		NEW YORK	
BINGHAMTON	DATE	SHEET	22 OF

IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____

GENERAL NOTES AND DETAILS SHEET

TRAFFIC ITEMS

Locations of signs etc. shown by mile marker are approximate in all cases.

Sign and/or post sizes found at time of construction may vary from plan information due to maintenance replacement etc. When payment is contingent on existing size or location all measurements should be verified in the field by the Resident Engineer.

Sign post lengths are not indicated on the sign summary sheets. The proper type and size of post for each location is shown by an X in the appropriate column. The Resident Engineer will determine the length of post required for each sign installation site. Refer to Std. Sht. E-23 thru E-29 for sign clearance and installation details.

SALVAGE SIGNS - All existing signs are to be examined by the Resident Engineer and the Contractor prior to commencing work on project. At that time the Resident Engineer may direct the Contractor to use a new sign in place of a salvage sign if, in his opinion, the salvage sign is not in adequate condition to warrant re-use. Payment for such replacement will be at the contract unit bid price for Type "A" or Type "B" signs.

All signs found suitable for salvage and re-use on the project shall be removed from their mounting, transported and stored with sufficient care to insure protection of the sign face. Any sign indicated for salvage which, in the opinion of the Resident Engineer, is rendered unsuitable for re-use thru mishandling shall be replaced at the contractor's expense.

Salvage signs shall be thoroughly cleaned prior to re-erection. Payment for cleaning salvage signs to be subsidiary to other items.

Type "A" signs at interchanges and rest areas will be secured with vandalproof fastenings of a type approved by the Agency of Transportation. "Stop" signs (with or without "A" or "B" assemblies) shall be installed as per Std. Sht. E-29 & Detail Sheet # of "Wrong Way" signs on ramps should be placed 250' from the intersecting roadway.

All signs of entrance gores to be checked for proper clearance per Std. Sht. E-21. Non-conforming signs will be repositioned to obtain proper horizontal clearance. Payment for work will be as for Salvage Sign if no other pay item is indicated. New posts may be required. Where gore slope edging is removed signs will also be checked for vertical clearance and may require vertical repositioning, payment to be subsidiary to Traffic Signs, section 675.

Signs noted as "drill" are to have the posts drilled as per Std. Sht. E-25 to increase yielding capability under impact. Drilling to be performed as subsidiary to Traffic Signs, Section 675.

TYPE I DELINEATORS should be placed on the outside of ramp curves at the spacing shown on the chart and placed at 100' spacing on tangent on the right side of the ramp.

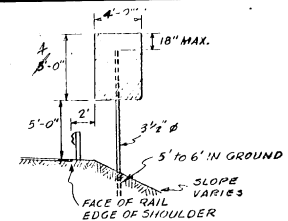
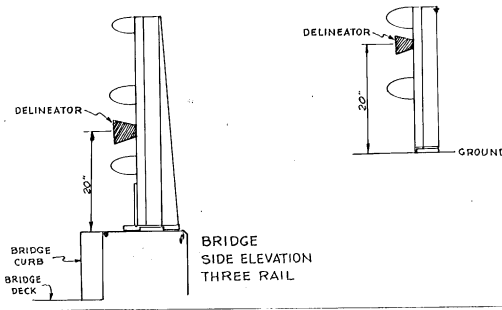
SUGGESTED SPACING FOR HIGHWAY DELINEATORS ON HORIZONTAL CURVES

Radius of Curve (in feet)	Spacing on Outside of Curve (in feet)	Approx. Speed
50	20	
150	30	25 M.P.H.
200	35	
250	40	30 M.P.H.
300	45	
400	50	40 M.P.H.
500	65	
600	70	
700	80	50 M.P.H.
800	85	
900	85	
1000	90	
TANGENT	100	

TYPE III DELINEATORS shall begin at the "Wrong Way" signs located on the off ramp and extend every 50' to a point not less than 25' from the intersecting roadway. The "Wrong Way" signs are usually 250' from the intersecting roadway.

Final placement of delineators to be determined by the Resident Engineer based on Std. Sht. E-30. Spacing shown on the plans is for estimating purposes only.

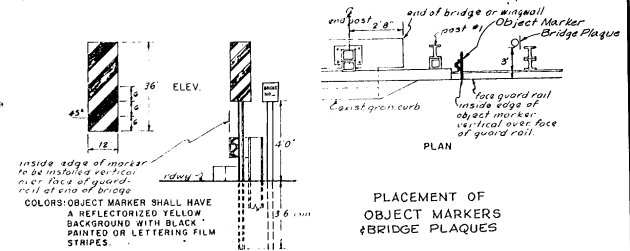
DELINEATOR FOR EXISTING BRIDGE RAIL: See Std. Sht. G-1 for delineator detail. Delineator units shall be attached to the post with two self tapping screws # 8 x 3/4". Payment shall be for each delineator installed. The item for payment shall be 676.15, Remove and Replace Delineator, Units (Modified). The item is modified as there are no existing delineators to remove. Amber delineators are to be mounted on the driver's left side with white delineators on the right side. Delineator spacing should be 30'± and is intended to simulate the same delineation found on steel beam guard rail. The quantity of each is estimated.



**TYPICAL PLACEMENT
STORM SIGN**

Sign to be mounted on post with rotatable mount. Sign will be located 2'-0" from edge of shoulder and/or face of guard-rail so sign may be rotated by vehicle mounted personnel as conditions require.

If proper mounting height cannot be obtained using salvage post (see 18" allowance at top of sign) a new post may be placed, payment as a Type "C" post. New fittings, if required, will be paid for as subsidiary to other items.



OBJECT MARKER & BRIDGE PLAQUES

MATERIALS: THE SIGN BASE MATERIAL USED FOR THIS SIGN MAY BE EITHER 5/8" HIGH DENSITY PLYWOOD OR 5/16" FLAT SHEET ALUMINUM WITH A REFLECTORIZED SHEETING BACKGROUND.

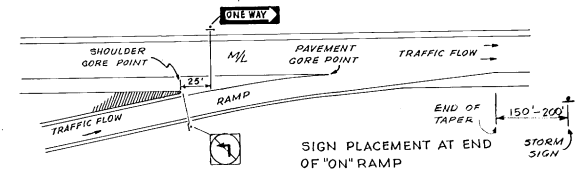
SEE SHEET 30 FOR BRIDGE PLAQUE DETAIL. SEE SHEET 24A FOR ADDITIONAL NOTES.

On the sign summary sheets signs shown as ○ or □ indicate shields on rectangular panels, thus, □ □, and are for independent use on route marker assemblies for directional or confirmational guidance. Shields without a rectangular background are only used on Type "B" signs for route indication. Interstate shields do not have a rectangular background for either use.

Blue and green delineators on posts indicating the beginning and end of guard rail shall be removed with the guard rail removal as subsidiary to that item.

Mainline delineator and post removal quantity is based on mathematical calculation, not actual count. Removal of delineators in interchange areas is based on a field count and includes the appropriate accel. and decel. lanes and tapers with quantities shown on the interchange delineator sheet.

SIGN IDENTIFICATION: All new signs installed as part of this project shall be stamped on the back with Vermont Agency of Transportation initials, month and year of sign fabrication and route where sign is installed. The letters and numbers shall be 1" high and penetrate approximately 1/2 the thickness of sign material or 1/8" maximum. Example: VAOT 06/84 U.S.7



All removed signs, clamps, and posts which are not indicated for salvage and reuse on the project will be carefully stockpiled in one place for retrieval by State Forces.

ALL SIGNS TO BE REINSTALLED IN THEIR EXISTING LOCATION UNLESS OTHERWISE INDICATED.

VISIBILITY REQUIREMENTS: Unobstructed sight lines of 1500' on Interstate Rtes and 500' on U.S. and State Rtes. must be provided for signs. Any necessary removal of obstructing vegetation shall be paid for as subsidiary to other items.

GENERAL NOTES & DETAILS

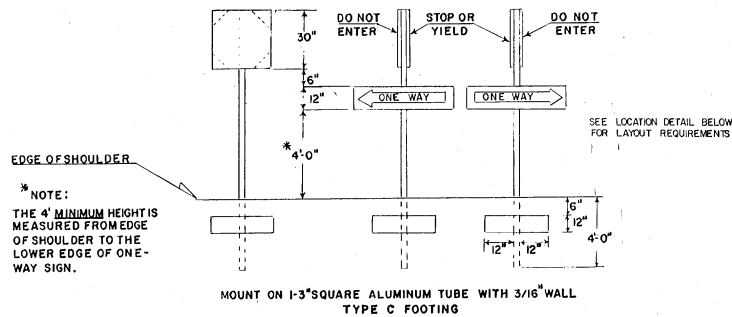
SPRINGFIELD - HARTFORD

SURVEYED BY _____ DATE _____
DRAWN BY _____ DATE _____
TRACED BY _____ DATE _____

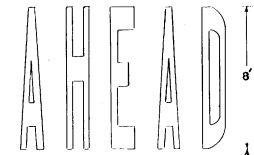
PROJ. NO. IR 091-(48)

SHEET 23 OF _____

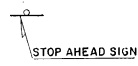
"A" ASSEMBLY (STOP SIGN)
 "B" ASSEMBLY (YIELD SIGN)



REGULATORY SIGN ASSEMBLY DETAIL



NOTE:
 SEE STANDARD E-50
 FOR LETTERING DETAIL.



WORD MARKING LAYOUT DETAIL

Milepost markers required - 42 ⇒ 70 N.B. & S.B. Refer to Std. Sht. E-31 for details. All milepost markers will show one or two digits and measure 12" x 24" or 12" x 36" respectively. Signs shall be paid as Traffic Signs, Type "A", Item 675.20. Posts shall be paid as Traffic Sign Posts, Type "A", Item 675.35 (posts @ 2 lb./ft.)

Type I, II or III delineators with or without milepost plaques or mileposts without reflectors to be paid for complete and in place as Delineators, Item 676.10. The Resident Engineer may indicate existing posts of proper length and sound condition to be salvaged and payment will be for Delineators with Salvaged Posts, Item 676.11 each, complete and in place. Refer to Std. Sht. E-30.

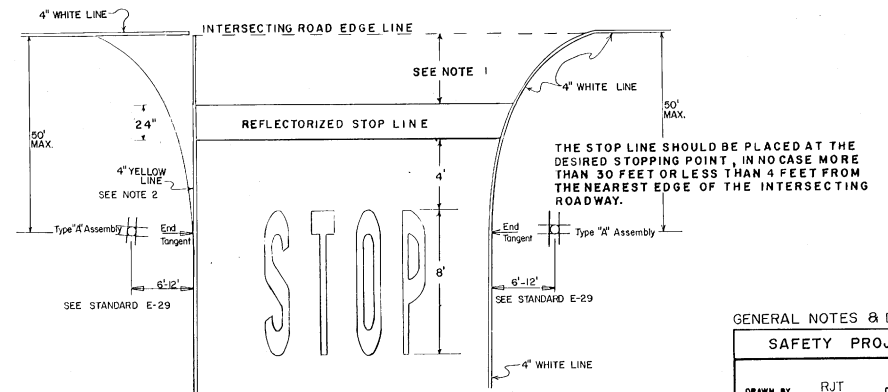
Milepost markers 42 ⇒ 70 shall be placed as shown on sheet 101. Delineators w/ mile plaques shall then be placed accordingly.

NOTE 1. ALL PAVEMENT MARKING IS TO PAID FOR AS TEMPORARY PAVEMENT MARKING.

NOTE 2. THE 4" YELLOW LINE IS TO BE ON TANGENT AND IS TO INTERSECT THE ROADWAY EDGE AT THE RESULTING ANGLE. USE OF A RADIUS AT THIS EDGE LINE JUNCTION SHOULD BE AVOIDED, IF POSSIBLE.

NOTE 3. FINAL APPROVAL OF THE RESIDENT ENGINEER WILL BE NECESSARY PRIOR TO APPLYING ANY PAINT.

NOTE 4. ALL EXISTING MARKINGS MUST BE REMOVED AS DIRECTED, NOT PAINTED OVER.



PAVEMENT MARKING & SIGN LOCATION DETAILS

GENERAL NOTES & DETAILS

SAFETY PROJECT

DRAWN BY RJT DATE 5-83
 TRACED BY DATE
 SPRINGFIELD - HARTFORD
 PROJ. NO. IR 091-1(48)
 SHEET 24 OF

NOTES

- GENERAL ALL LOCATIONS OF WORK ARE BY EXISTING MILE MARKER (OR CENTERLINE STATION). THE NEW MILE MARKER LOCATIONS ARE REFERENCED BY STATION TO THE EXISTING MILE MARKER LOCATIONS IN THE MILE MARKER LOCATION TABLE (SEE INDEX OF PLANS). THESE LOCATIONS ARE SUBJECT TO FINAL APPROVAL BY THE RESIDENT ENGINEER.
- GENERAL ALL WORK SHALL BE LAID OUT IN THE FIELD SUFFICIENTLY IN ADVANCE OF INSTALLATION TO ALLOW FOR APPROVAL BY THE RESIDENT ENGINEER.
- SIGNS ALL EXIST'G MILE MARKERS, MILE POSTS & DELINEATORS SHALL REMAIN IN PLACE UNTIL ALL OTHER WORK INCLUDING NEW DELINEATION & MILE MARKER PLACEMENT IS COMPLETE.
- SIGNS AFTER ALL OTHER WORK IS COMPLETE, EXIST'G DELINEATORS, MILE POSTS & MILE MARKERS ARE TO BE REMOVED. THE REMOVED UNITS SHALL BE STOCKPILED IN DESIGNATED AREAS FOR PICK UP BY THE STATE FORCES.
- SIGNS GENERALLY, ALL STATE OWNED SIGNS & POSTS THROUGHOUT THE PROJECT ARE TO BE REMOVED & STOCKPILED AT DESIGNATED LOCATIONS FOR PICK UP BY STATE FORCES. EXCEPTIONS WILL BE NOTED ON THE PLANS, IN THE SPECIAL PROVISIONS OR INDICATED BY THE RESIDENT ENGINEER. ANY SIGNS & POSTS ERRONEOUSLY REMOVED BY THE CONTRACTOR SHALL BE REPLACED WITH NEW UNITS @ THE CONTRACTOR'S EXPENSE.
- SIGNS MILE POST MARKERS WHICH FALL WITHIN THE AREAS OF BRIDGE RAIL SHALL BE MOUNTED TO THE TOP RAIL. MOUNTING SHALL BE SIMILAR TO THAT SHOWN ON STD SHEET E-32 & AS APPROVED BY THE RESIDENT ENGINEER. PAYMENT WILL BE AS FOR A STANDARD GROUND MOUNTED MILE POST.
- SIGNS EXIST'G BRIDGE RAILING WHICH IS TO REMAIN WILL REQUIRE NEW OR REPLACEMENT DELINEATORS. INSTALLATION WILL BE @ THE LOCATIONS SHOWN ON STD SHEET SB-25-76. SCREENS SHALL BE 3/8" X 3/4" SELF TAPPING STAINLESS STEEL. PAYMENT WILL BE UNDER ITEM 670.15.
- SIGNS BLUE & GREEN DELINEATORS @ THE ENDS OF GUARD RAIL SHALL NOT BE INSTALLED IN THIS CONTRACT. REMOVAL OF EXIST'G BLUE & GREEN DELINEATORS WILL BE CONSIDERED SUBSIDIARY TO PAY ITEM 202.40, REMOVAL & DISPOSAL OF EXIST'G GUARD RAIL.
- SIGNS ALL STORM SIGN POSTS & MOUNTING HARDWARE ARE TO BE SALVAGED & REUSED @ EXIST'G OR NEW LOCATIONS AS SHOWN ON THE PLANS. IF NEW POSTS & FITTINGS ARE NEEDED, THEY SHALL BE PAID FOR AS A TYPE 'C' POST.
- SIGNS IT IS INTENDED TO ADD, OR IMPROVE PAVEMENT MARKINGS GENERALLY FROM THE EXIT/ENTRANCE RAMP GORE TO THE SIDE ROAD INTERSECTIONS. PAYMENT WILL BE MADE UNDER ITEM 646. TEMPORARY PAVEMENT MARKINGS LAYOUT WILL BE AS SHOWN ON THE PLANS, STD SHEET E-50 & MISC. DETAIL SHEET.
- SIGNS ALL LOCALLY OWNED SIGNS MOUNTED ON STATE OWNED SIGN ASSEMBLIES SHALL BE CAREFULLY REMOVED & STORED FOR RETURN TO THE OWNER BY THE STATE.
- SIGNS IN REST AREAS SIGNS MAY BE MOUNTED ON LIGHT POLES WHERE POSSIBLE. MAXIMUM SIGN SIZE SHALL BE 3' MAXIMUM DIMENSION IN HORIZONTAL OR VERTICAL DIRECTION. PAYMENT SHALL BE FOR A TYPE 'A' SIGN PLUS ONE SQUARE FOOT FOR MOUNTING HARDWARE.
- GUARD RAIL GUARD RAIL LOCATIONS ARE TO BE VERIFIED IN THE FIELD.
- BRIDGES THE EXIST'G BRIDGE RAILING ON BRIDGES 33, 39 & 40 IS TO REMAIN ONLY THE APPROACH RAILING IS TO BE WORKED ON AS SHOWN ON THE PLANS.
- BRIDGE PLAQUES SHALL BE MOUNTED ON A 20 LB/FT TYPE 'A' POST. MOUNTING HEIGHT SHALL BE THE SAME AS A TYPE 'I' DELINEATOR. MOUNTING LOCATION SHALL BE @ THE RIGHT ROADSIDE EDGE @ OR NEAR THE BEGINNING OF THE BRIDGE IN THE DIRECTION OF TRAVEL (SEE SHEET 22). PAYMENT SHALL BE UNDER TRAFFIC SIGNS, TYPE A, ITEM 675.20.

SEEDING

TURF ESTABLISHMENT SHALL CONTAIN THE FOLLOWING:

ITEM 651.10 SEED (lbs.)

WEIGHT (%)	lbs/Ac.	NAME	PURITY (%)	GERM. (%)
3.33	2	CROWN VETCH	97	75
20.00	30	CREeping RED FESCUE	99	85
2.33	2	TIMOTHY	99	85
10.67	10	PERENNIAL RYE GRASS (VAR PENNIPINE)	95	85
8.34	5	ALFALFA (VAR SAGANAC)	99	85
8.33	5	BIRDFOOT TREFOIL (VAR EMPIRE)	98	85
5.00	3	HIGHLAND BENTGRASS	92	85
100.00	60			

THE SEED MIXTURE SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT & SHALL BE FREE FROM ALL NOXIOUS WEED SEED.

ITEM 651.15 FERTILIZER (lbs.)

NITROGEN 10%, PHOSPHOROUS 20%, POTASH 10%; APPLICATION SHALL BE @ THE RATE OF 200 lbs./Ac.

ITEM 651.20 AGRICULTURAL LIMESTONE (TON)

APPLICATION SHALL BE @ THE RATE OF 2 TONS PER ACRE OVER THE AREAS TO BE SEED.

ITEM 651.25 HAY MULCH (TON)

HAY MULCH SHALL BE APPLIED @ THE RATE OF 2 TONS PER ACRE, OR AS MODIFIED BY THE RESIDENT ENGINEER. EMULSIFIED ASPHALT SHALL BE USED TO ANCHOR THE HAY. APPLICATIONS SHALL BE @ THE RATE OF 200 GALLONS PER ACRE OR AS MODIFIED BY THE ENGINEER.

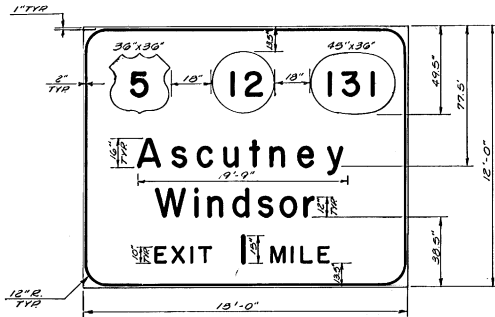
GENERAL NOTES

VERMONT AGENCY OF TRANSPORTATION

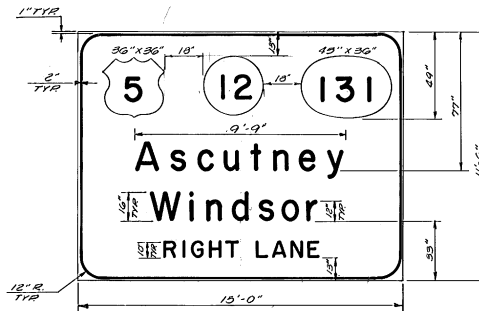
**SAFETY PROJECT
SPRINGFIELD-HARTFORD
IR 91 - 1 (48)**

McFARLAND-JOHNSON ENGINEERS, INC.		
BINGHAMTON	NEW YORK	
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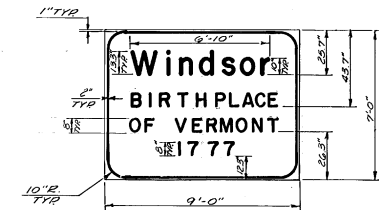
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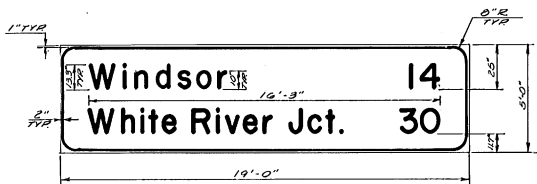
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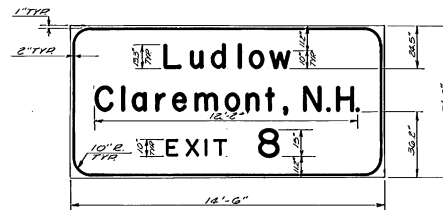
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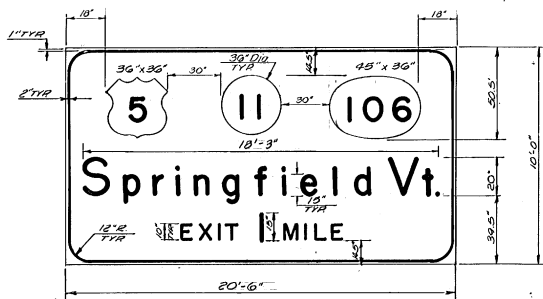
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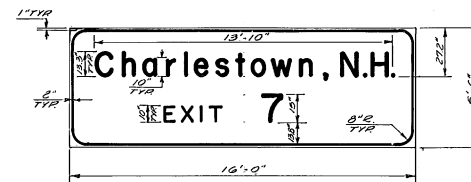
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TEXT NO. 10 N.B.
TEXT NO. 32 S.B.



TEXT NO. 6 S.B.



TEXT NO. 4 S.B.

NOTES

MATERIALS FOR GUIDE AND REST AREA SIGNS.
SIGN BASE MATERIAL: Sign base material shall be compatible with existing mounting hardware and may be any of the following:
A. Acrylic Overlay Plywood, 3/4" minimum thickness
B. Extruded Aluminum Panels
C. Formed Galvanized Steel Panels
TEXT, BORDER, SYMBOLS AND BACKGROUND shall be high intensity reflective sheeting.

COLORS
Signs shall have a white text on green background unless otherwise noted. The green shall conform with the Standard Color Tolerance Charts as approved by the U.S. Department of Transportation, FHWA. Route symbols shall be their standard color. Rest Area signs shall have a blue background.

LETTERING - See Standard Sheet No. E-14

DESIGN - See Standard Sheet No. E-14

SPECIFICATIONS - See Standard Sheet No. E-14 (except see above note Re: text, border, etc.)

SIGN PANEL DETAILS

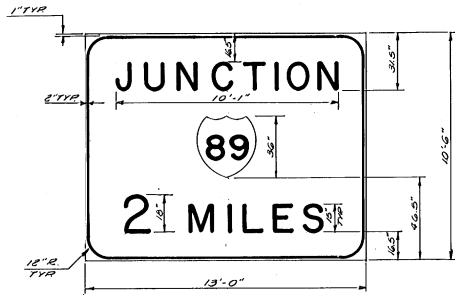
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SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1 (48)

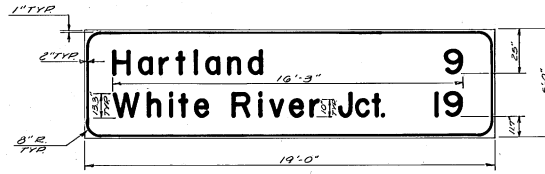
McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

SCALE NONE DATE SHEET 25 OF

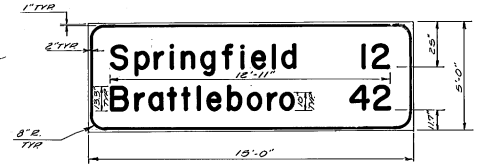




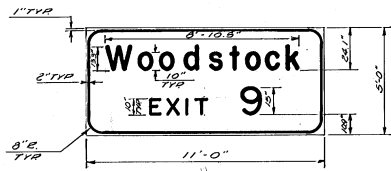
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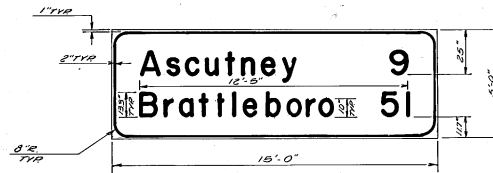
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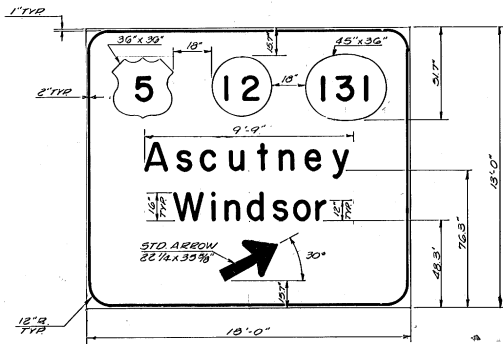
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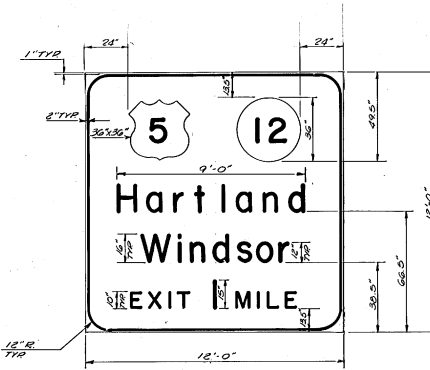
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TEXT NO. 49 S.B.



TEXT NO. 17 N.B.



TEXT NO. 46 N.B.
TEXT NO. 68 S.B.

NOTES

MATERIALS FOR GUIDE AND REST AREA SIGNS.
SIGN BASE MATERIAL: Sign base material shall be compatible with existing mounting hardware and may be any of the following:
A. Acrylic Overlay Plywood, 3/4" minimum thickness
B. Extruded Aluminum Panels
C. Formed Galvanized Steel Panels

TEXT, BORDER, SYMBOLS AND BACKGROUND shall be high intensity reflective sheeting.

COLORS
Signs shall have a white text on green background unless otherwise noted. The green shall conform with the Standard Color Tolerance Charts as approved by the U.S. Department of Transportation, FHWA. Route symbols shall be their standard color. Rest Area signs shall have a blue background.

LETTERING - See Standard Sheet No. E-14
DESIGN - See Standard Sheet No. E-14
SPECIFICATIONS - See Standard Sheet No. E-14 (except see above note Re: text, border, etc.)

SIGN PANEL DETAILS

VERMONT AGENCY OF TRANSPORTATION

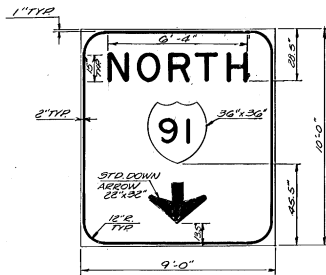
SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

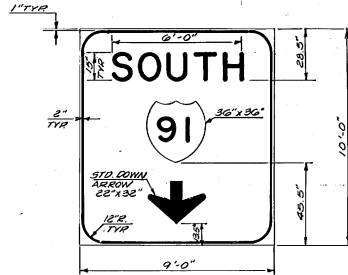
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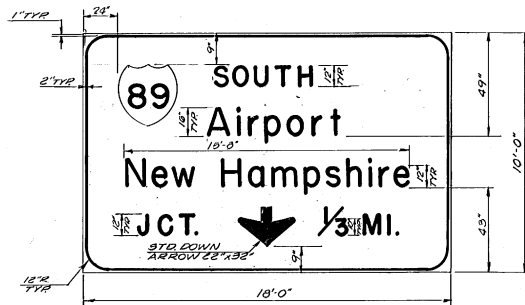
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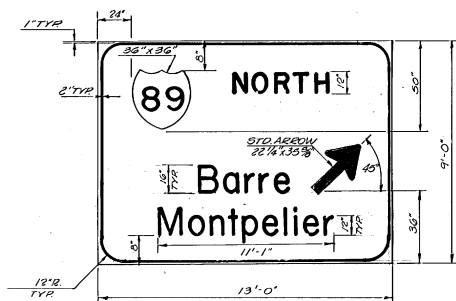
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95 N.B.



TEXT NO. 106 S.B.



TEXT NO. 107 S.B.



TEXT NO. 108 S.B.

NOTES

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LETTERING - See Standard Sheet No. E-14

DESIGN - See Standard Sheet No. E-14

SPECIFICATIONS - See Standard Sheet No. E-14 (except see above note for: text, border, etc.)

SIGN PANEL DETAILS

VERMONT AGENCY OF TRANSPORTATION

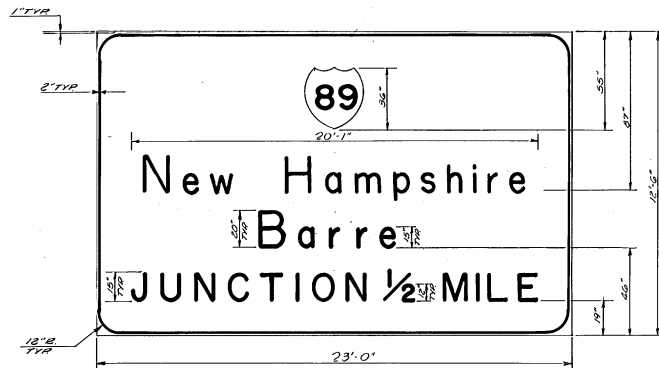
SAFETY PROJECT
SPRINGFIELD — HARTFORD
IR 91 — 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

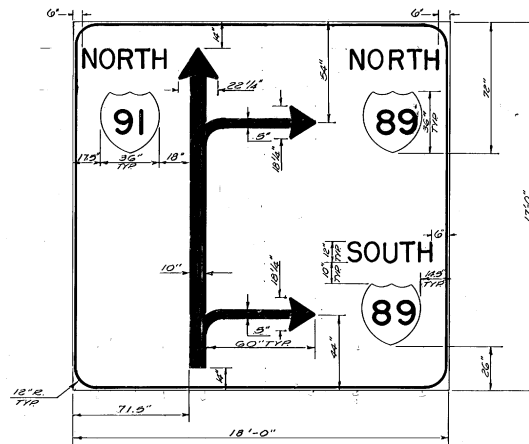
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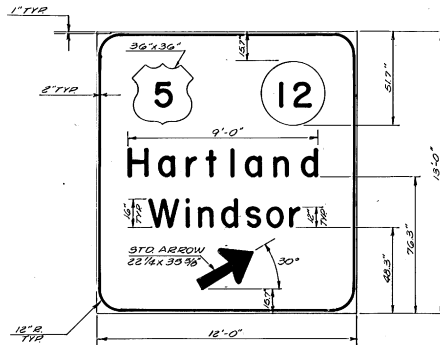
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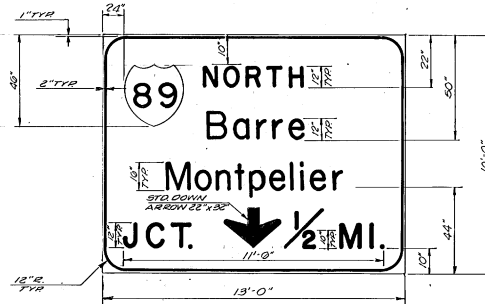
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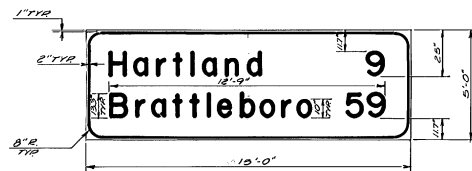
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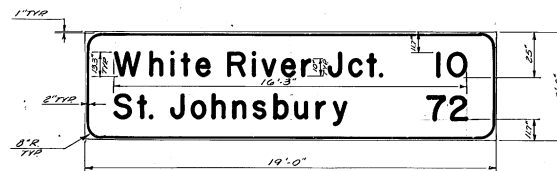
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TEXT NO. 64 S.B.



TEXT NO. 89 N.B.



TEXT NO. 77 S.B.



TEXT NO. 63 N.B.

NOTES

MATERIALS FOR GUIDE AND REST AREA SIGNS.
SIGN BASE MATERIAL: Sign base material shall be compatible with existing mounting hardware and may be any of the following:
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C. Formed Galvanized Steel Panels

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Route symbols shall be their standard color. Rest Area signs shall have a blue background.

LETTERING - See Standard Sheet No. E-14

DESIGN - See Standard Sheet No. E-14

SPECIFICATIONS - See Standard Sheet No. E-14 (except see above note Re: text, border, etc.)

SIGN PANEL DETAILS

VERMONT AGENCY OF TRANSPORTATION

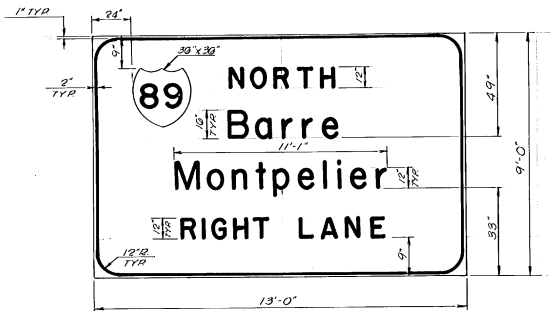
SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

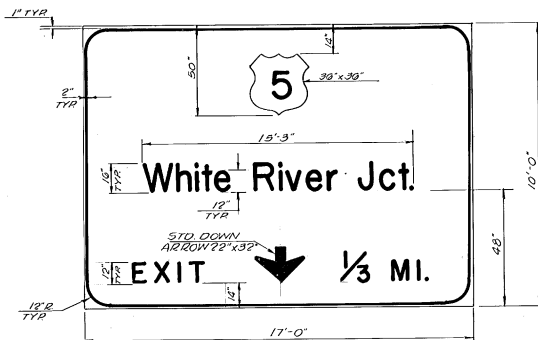
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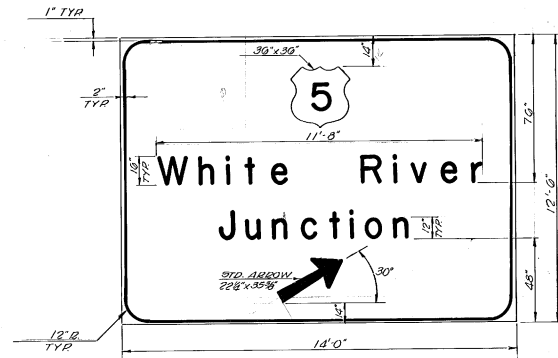
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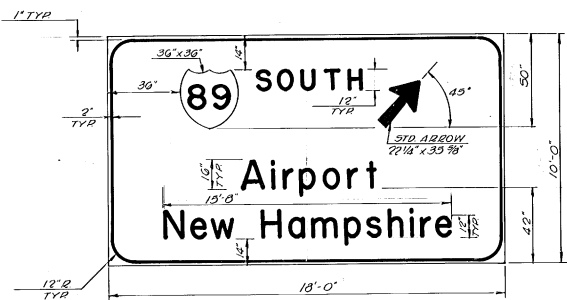
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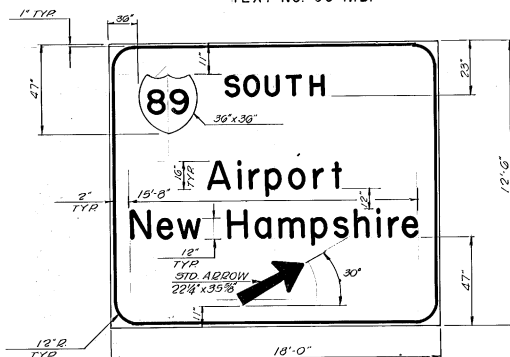
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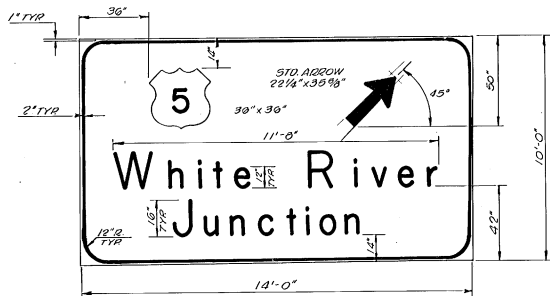
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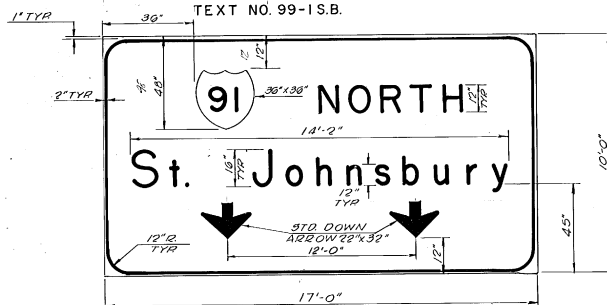
TEXT NO. 90 N.B.



TEXT NO. 99-1 S.B.



TEXT NO. 104 N.B.



TEXT NO. 103 N.B.

NOTES

MATERIALS FOR GUIDE AND REST AREA SIGNS
SIGN BASE MATERIAL: Sign base material shall be compatible with existing mounting hardware and may be any of the following:
A. Acrylic Overlay Plywood, 3/4" minimum thickness
B. Extruded Aluminum Panels
C. Formed Galvanized Steel Panels

TEXT, BORDER, SYMBOLS AND BACKGROUND shall be high intensity reflective sheeting.

COLORS
Signs shall have a white text on green background unless otherwise noted. The green shall conform with the Standard Color Tolerance Charts as approved by the U.S. Department of Transportation, FHWA. Route symbols shall be their standard color. Rest Area signs shall have a blue background.

LETTERING - See Standard Sheet No. E-14

DESIGN - See Standard Sheet No. E-14

SPECIFICATIONS - See Standard Sheet No. E-14 (except see above note Re: text, border, etc.)

SIGN PANEL DETAILS

VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

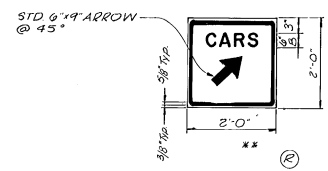
SCALE	DATE	SHEET
NONE		29 OF



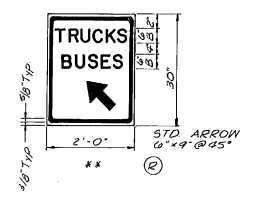
IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____
 86-3376-1

IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____

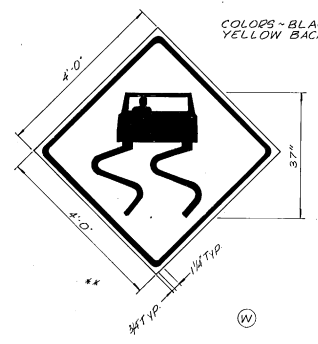
COLOPS-WHITE ON BLUE (REFLECT)



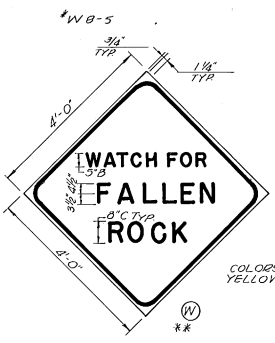
COLOPS-WHITE ON BLUE (REFLECT)



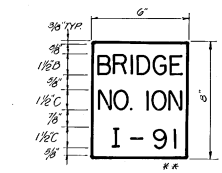
COLOPS-BLACK ON YELLOW BACKGROUND



COLOPS-LEGEND 4
 BORDER GREEN WHITE
 SYMBOL ON BLUE BACK
 GROUND BACKGROUND WHITE



COLOPS-BLACK ON YELLOW BACKGROUND



TYPICAL BRIDGE PLAQUE
 DETAIL
 COLOPS-WHITE ON GREEN
 BACKGROUND (REFLECT)

LEGEND

- (C) GUIDE SIGN - SEE STANDARD SHEET E-14
- (R) REGULATORY SIGN - SEE STANDARD SHEETS E-15, E-15A, B, C
- (W) WARNING SIGN - SEE STANDARD SHEETS E-19, E-19A & B
- (S) SERVICE SIGN - SEE STANDARD SHEET E-23

* NUMBER AND LETTER IDENTIFICATION CORRESPONDS TO STANDARD HIGHWAY SIGNS AS SPECIFIED IN THE MUTCD. SEE SAS FOR FURTHER DETAIL.

** SIGNS @ MULTIPLE LOCATIONS

NOTE: ALL TEXT, BORDERS & BACKGROUNDS WILL BE REFLECTORIZED IN THE EXCEPTION OF BLACK.

SIGN PANEL DETAILS

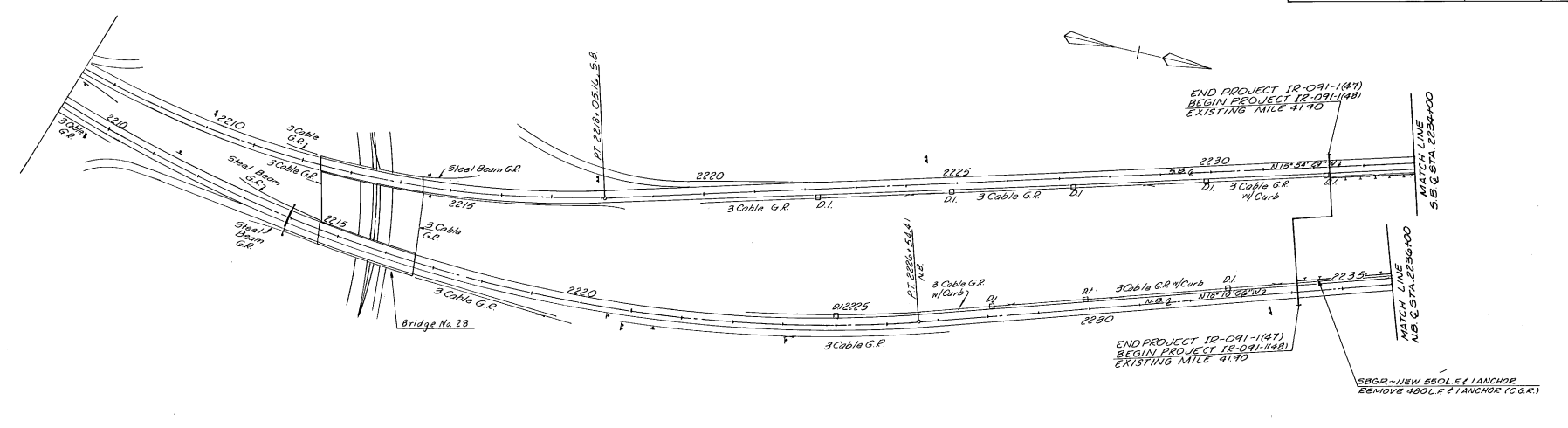
VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - I(48)

MCFARLAND JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK		
SCALE NONE	DATE JULY, 1984	

ITEM 676.12
 N.B. STA. 2234+00 - 2236+00 NORTHBOUND 1
 S.B. STA. 2232+30 - 2234+00 SOUTHBOUND 2

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)		
TYPE I WITH MILE POST PLAQUE (WHITE)	1	1
MILE POST WITHOUT REFLECTOR		
TYPE II DELINEATOR		

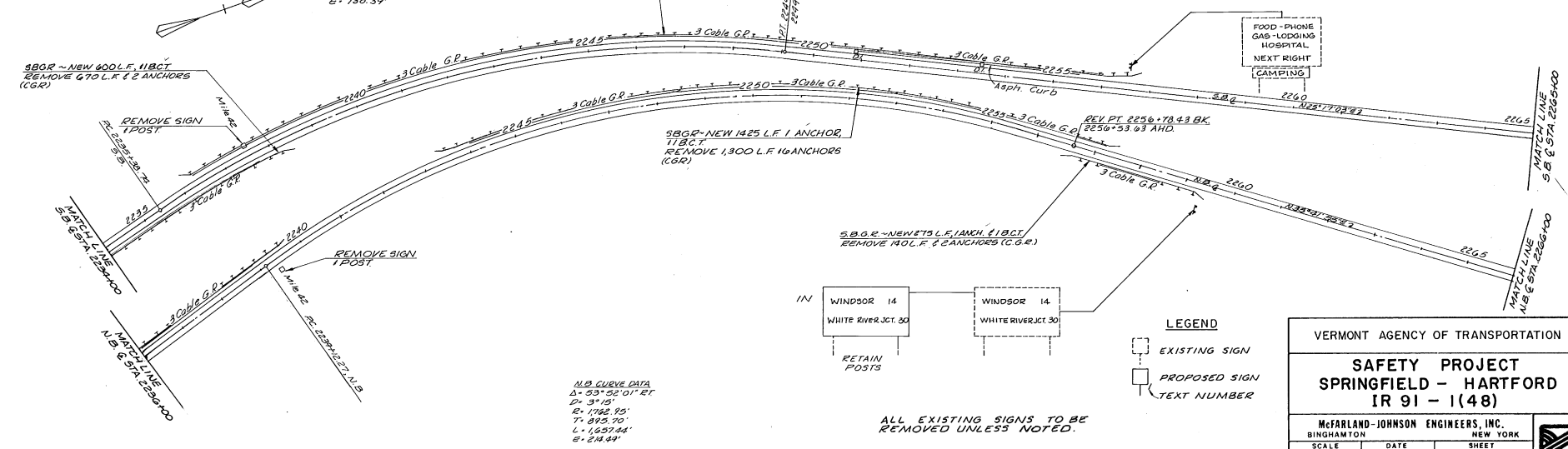


S.B. CURVE DATA
 Δ = 41° 11' 35" RT.
 D = 3° 0'
 R = 1,909.86'
 T = 711.74'
 L = 1,373.01'
 E = 130.39'

SBGR - NEW 8025 L.F. 1 ANCHOR
 11 B.C.T.
 REMOVE 1,970 L.F. 18 ANCHORS
 (C.G.R.)

ITEM 676.12
 N.B. STA. 2236+00 - 2266+00 NORTHBOUND 21
 S.B. STA. 2234+00 - 2266+00 SOUTHBOUND 17

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	5	2
TYPE I WITH MILE POST PLAQUE (WHITE)	4	9
MILE POST WITHOUT REFLECTOR	7	2
TYPE II DELINEATOR		



N.B. CURVE DATA
 Δ = 53° 52' 01" RT.
 D = 3° 15'
 R = 1,762.75'
 T = 825.70'
 L = 1,037.84'
 E = 214.44'

ALL EXISTING SIGNS TO BE
 REMOVED UNLESS NOTED.

VERMONT AGENCY OF TRANSPORTATION

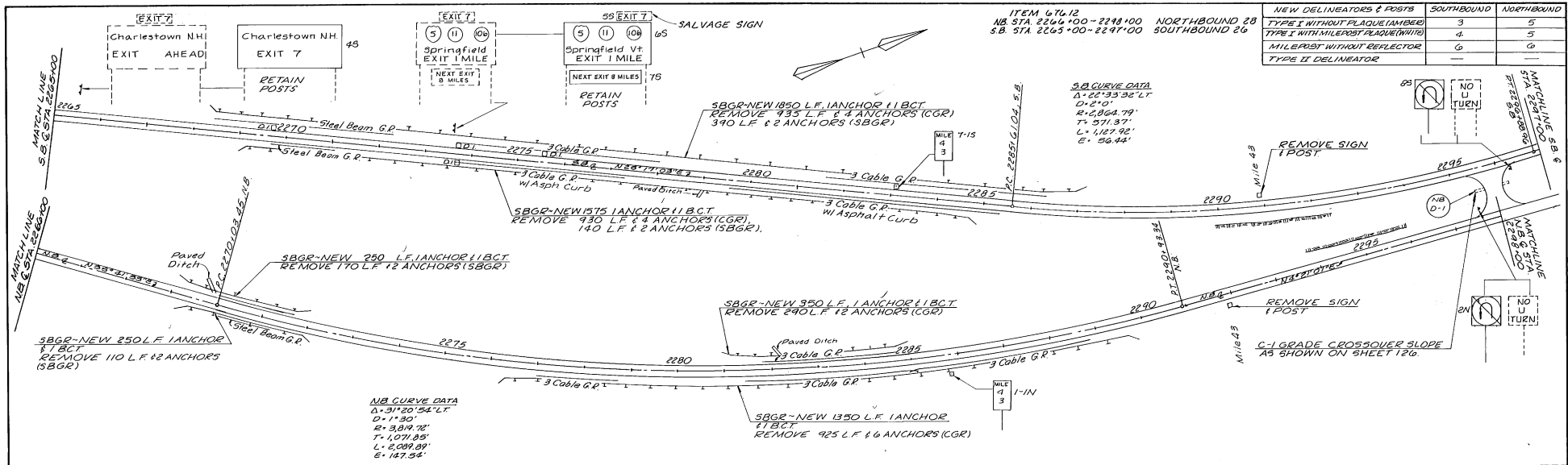
**SAFETY PROJECT
 SPRINGFIELD - HARTFORD
 IR 91 - 1(48)**

McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

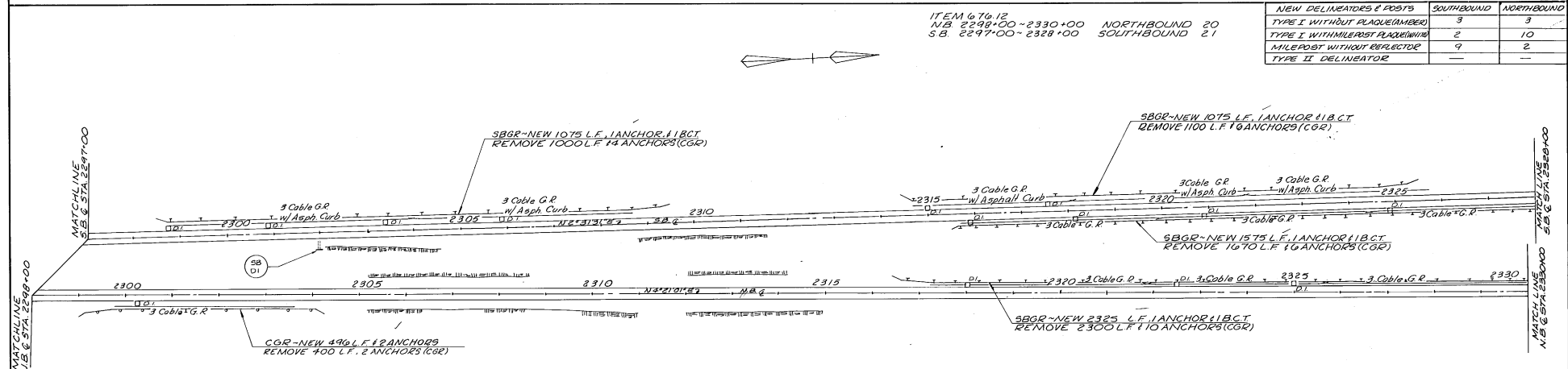
SCALE 1" = 100' DATE JULY, 1984 SHEET 33 OF

IN CHARGE OF: [Signature]
 DESIGNED BY: [Signature]
 CHECKED BY: [Signature]

IN CHARGE OF: R.V.H.
 DESIGNED BY: _____
 CHECKED BY: _____



NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	3	5
TYPE I WITH MILEPOST PLAQUE (WHITE)	4	5
MILEPOST WITHOUT REFLECTOR	6	6
TYPE II DELINEATOR	—	—



NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	3	3
TYPE I WITH MILEPOST PLAQUE (WHITE)	2	10
MILEPOST WITHOUT REFLECTOR	9	2
TYPE II DELINEATOR	—	—

LEGEND
 EXISTING SIGN
 PROPOSED SIGN
 TEXT NUMBER

ALL EXISTING SIGNS (POSTS) TO BE REMOVED UNLESS NOTED.

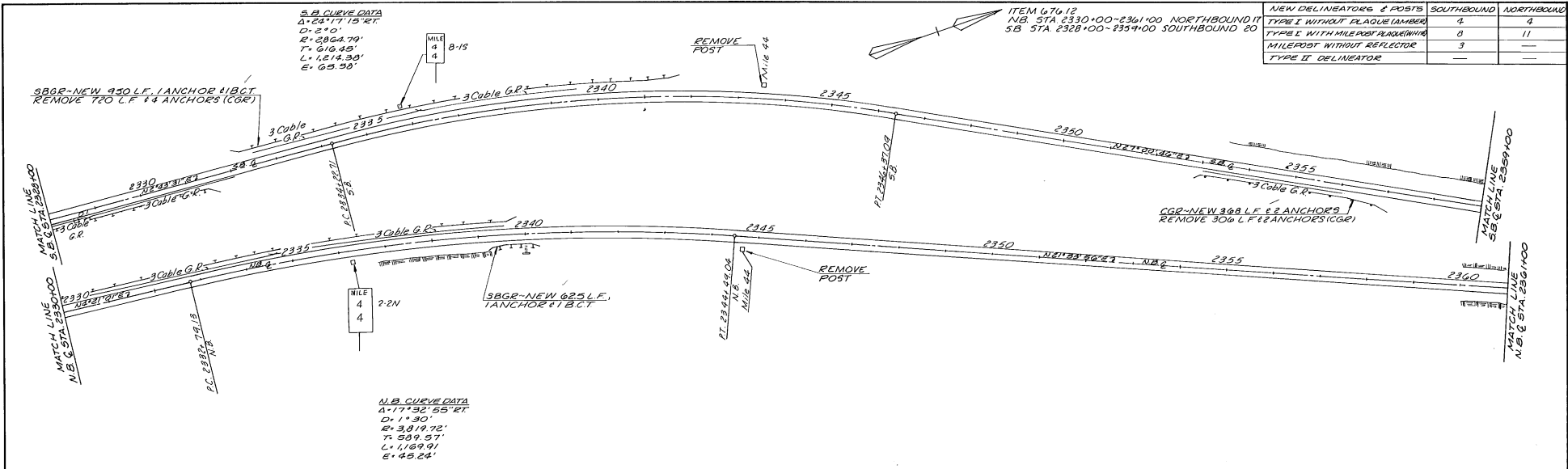
VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE 1" = 100'	DATE	SHEET 34 OF
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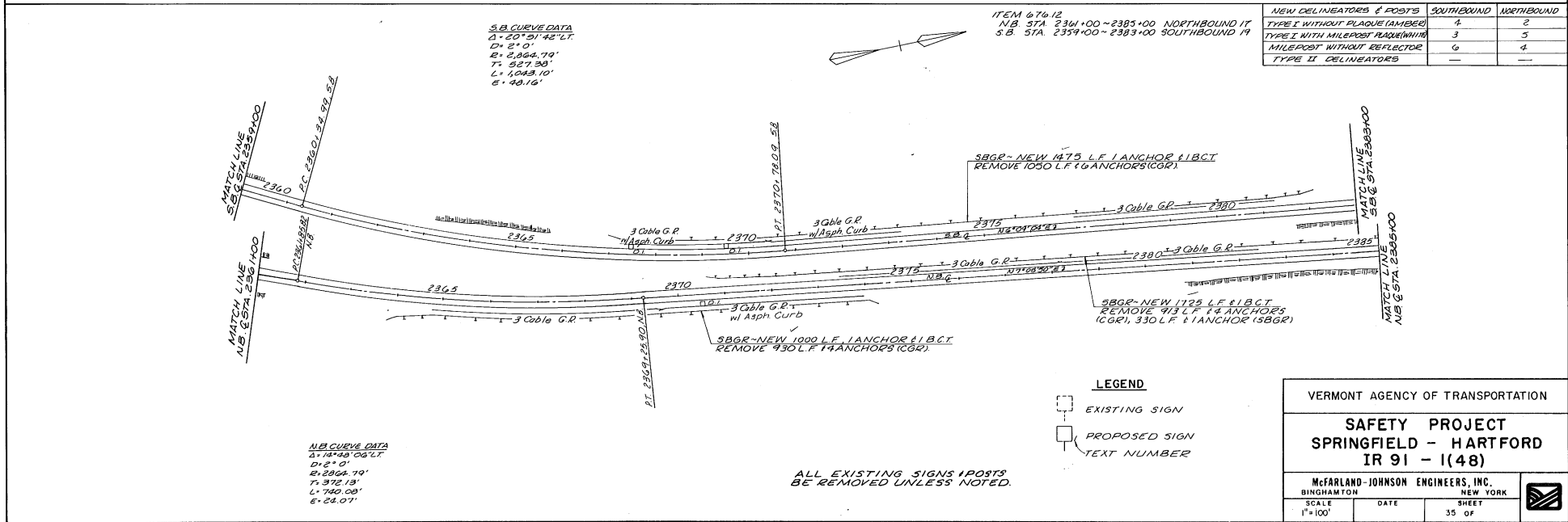
IN CHARGE OF :
DESIGNED BY :
CHECKED BY :



S.B. CURVE DATA
 $\Delta = 24^{\circ}17'15''$
 $D = 2^{\circ}0'$
 $R = 2364.79'$
 $T = 616.45'$
 $L = 1,214.33'$
 $E = 65.30'$

N.B. CURVE DATA
 $\Delta = 17^{\circ}32'55''$
 $D = 1^{\circ}30'$
 $R = 3,819.72'$
 $T = 509.57'$
 $L = 1,169.91'$
 $E = 45.24'$

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	4	4
TYPE I WITH MILEPOST PLAQUE (NH)	0	11
MILEPOST WITHOUT REFLECTOR	3	—
TYPE II DELINEATOR	—	—



S.B. CURVE DATA
 $\Delta = 20^{\circ}51'45''$
 $D = 2^{\circ}0'$
 $R = 2,964.79'$
 $T = 527.30'$
 $L = 1,043.10'$
 $E = 40.16'$

N.B. CURVE DATA
 $\Delta = 15^{\circ}40'00''$
 $D = 1^{\circ}0'$
 $R = 2,864.79'$
 $T = 372.13'$
 $L = 940.08'$
 $E = 24.07'$

ITEM 676.12
 NB STA 2361+00 ~ 2385+00 NORTHBOUND IT
 S.B. STA 2359+00 ~ 2383+00 SOUTHBOUND 19

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	4	2
TYPE I WITH MILEPOST PLAQUE (NH)	3	5
MILEPOST WITHOUT REFLECTOR	6	4
TYPE II DELINEATORS	—	—

LEGEND
 [] EXISTING SIGN
 [] PROPOSED SIGN
 [] TEXT NUMBER

ALL EXISTING SIGNS (POSTS) BE REMOVED UNLESS NOTED.

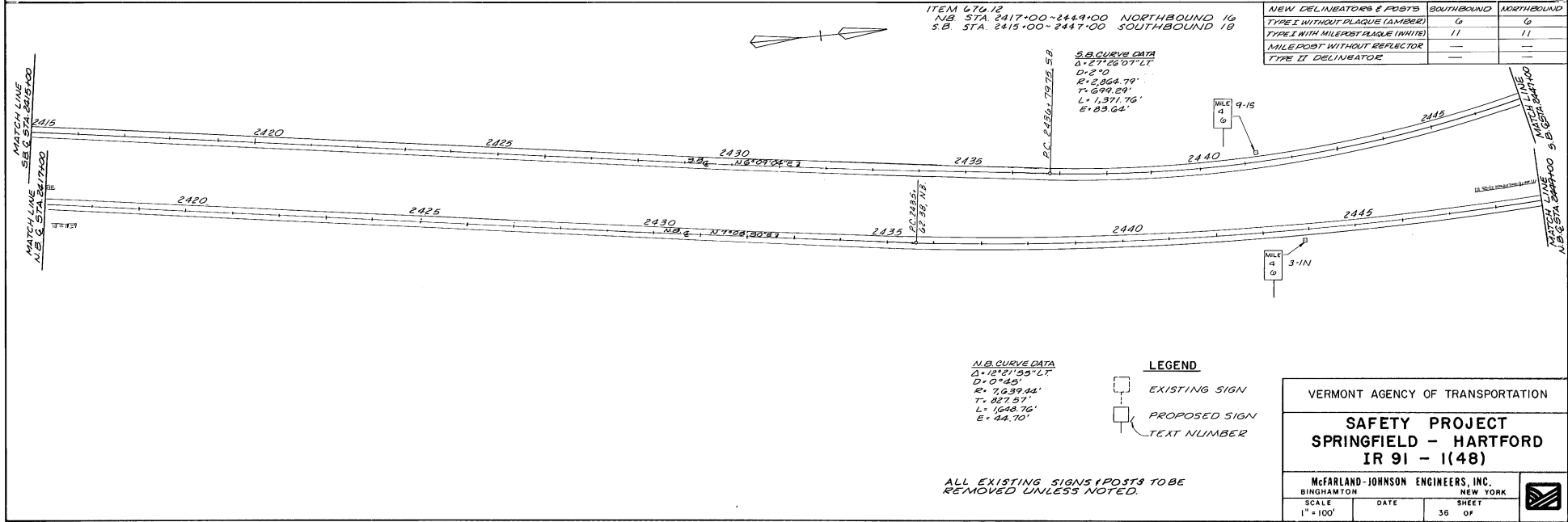
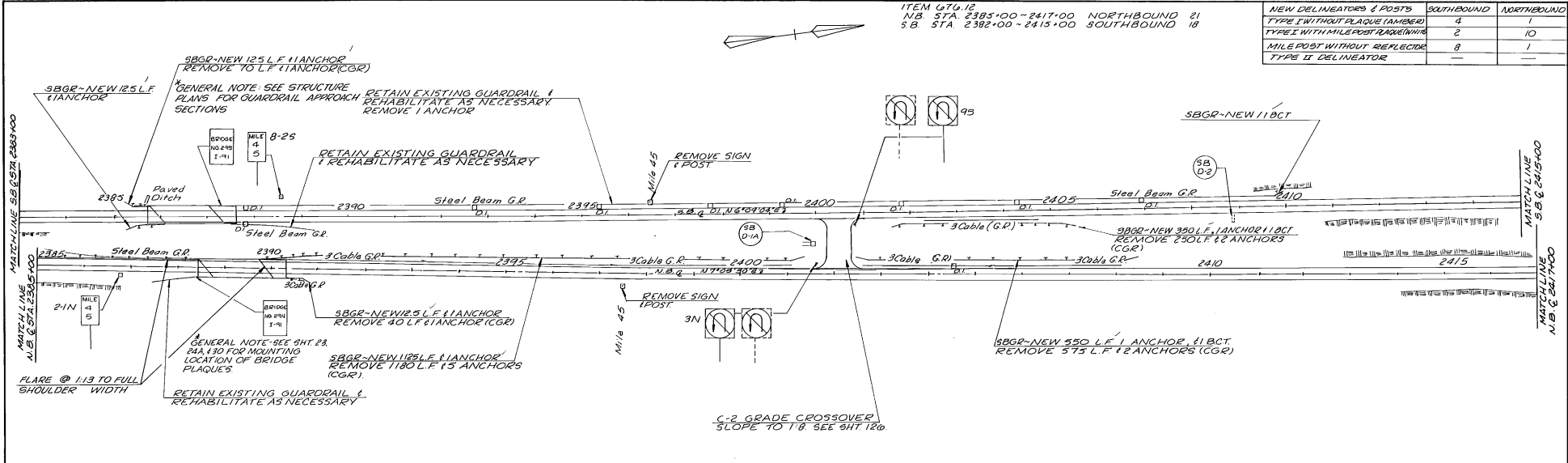
VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - I(48)

McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE: 1"=100'
 DATE: _____ SHEET: 35 OF _____

IN CHARGE OF :
DESIGNED BY :
CHECKED BY :



VERMONT AGENCY OF TRANSPORTATION

**SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)**

McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

SCALE 1" = 100'

DATE _____ SHEET 36 OF _____

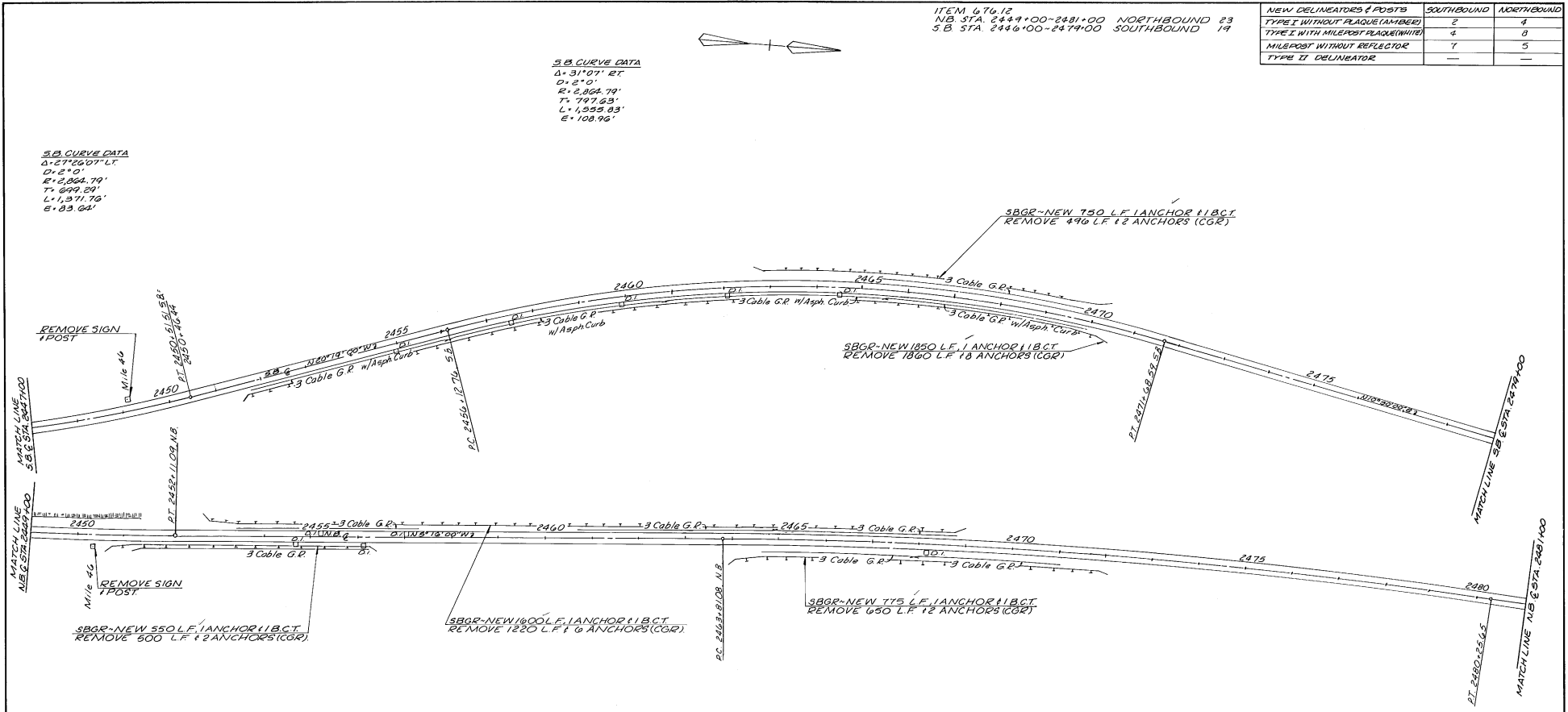
IN CHARGE OF : _____
 DESIGNED BY : _____
 STALLED BY : _____
 CHECKED BY : _____

ITEM 676.12
 NB STA 2449+00-2481+00 NORTHBOUND 23
 S.B. STA 2446+00-2479+00 SOUTHBOUND 19

NEW DELINEATORS / POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	2	4
TYPE I WITH MILEPOST PLAQUE (WHITE)	4	8
MILEPOST WITHOUT REFLECTOR	7	5
TYPE II DELINEATOR	—	—

S.B. CURVE DATA
 $\Delta = 31^{\circ}07' RT$
 $D = 2^{\circ}0'$
 $R = 2,968.79'$
 $T = 797.63'$
 $L = 1,555.83'$
 $E = 108.96'$

S.B. CURVE DATA
 $\Delta = 27^{\circ}26'07" LT$
 $D = 2^{\circ}0'$
 $R = 2,968.79'$
 $T = 699.29'$
 $L = 1,371.76'$
 $E = 83.64'$



N.B. CURVE DATA
 $\Delta = 12^{\circ}21'55" LT$
 $D = 0^{\circ}45'$
 $R = 76,594.84'$
 $T = 827.57'$
 $L = 1,648.76'$
 $E = 44.70'$

N.B. CURVE DATA
 $\Delta = 0^{\circ}13'22" RT$
 $D = 0^{\circ}30'$
 $R = 11,489.16'$
 $T = 823.60'$
 $L = 1,644.57'$
 $E = 29.68'$

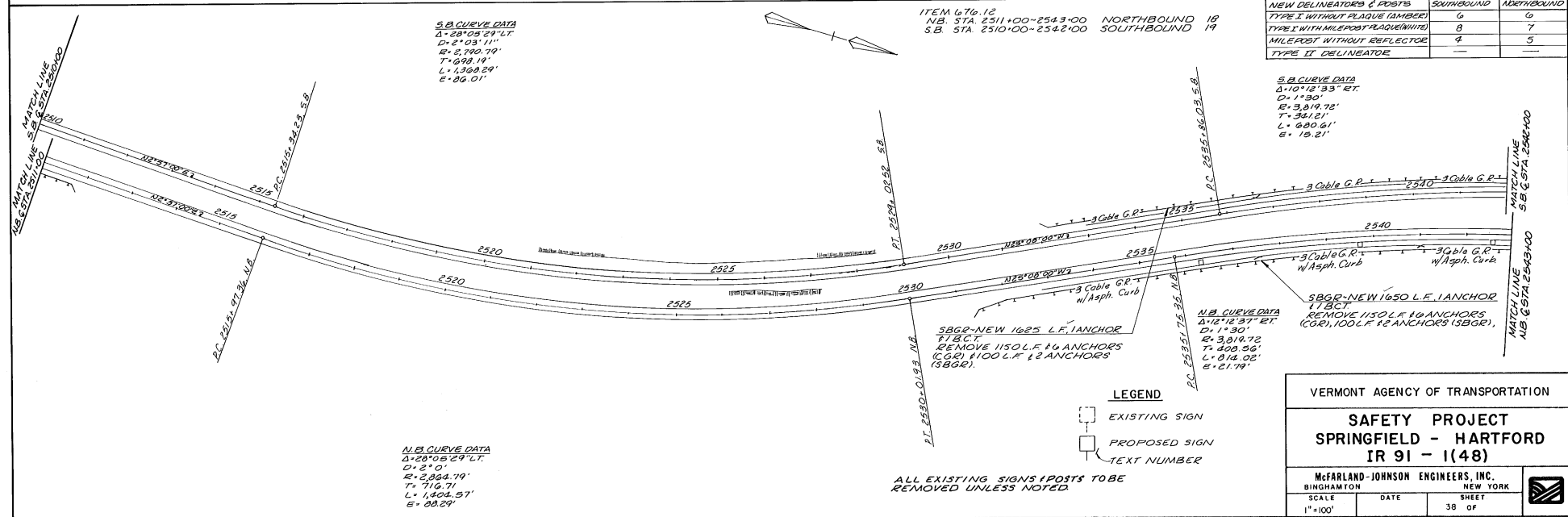
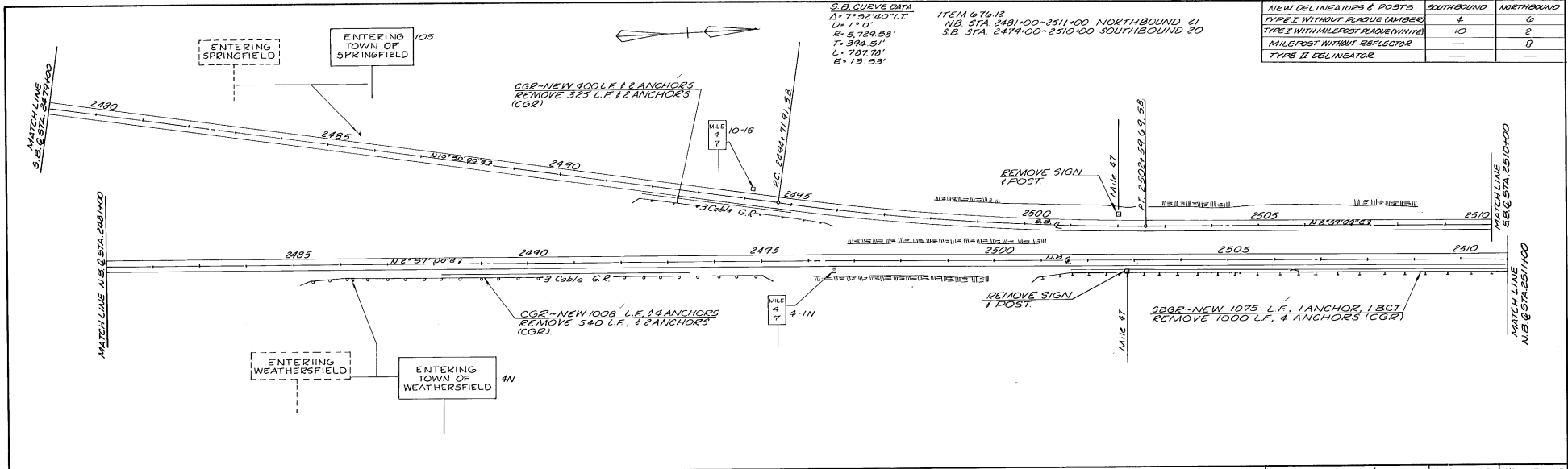
LEGEND

- EXISTING SIGN
- PROPOSED SIGN
- TEXT NUMBER

ALL EXISTING SIGNS / POSTS TO BE REMOVED UNLESS NOTED.

VERMONT AGENCY OF TRANSPORTATION	
SAFETY PROJECT SPRINGFIELD - HARTFORD IR 91 - I(48)	
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK	
SCALE 1"=100'	DATE
SHEET 37 OF	

IN CHARGE OF :
DESIGNED BY :
CHECKED BY :



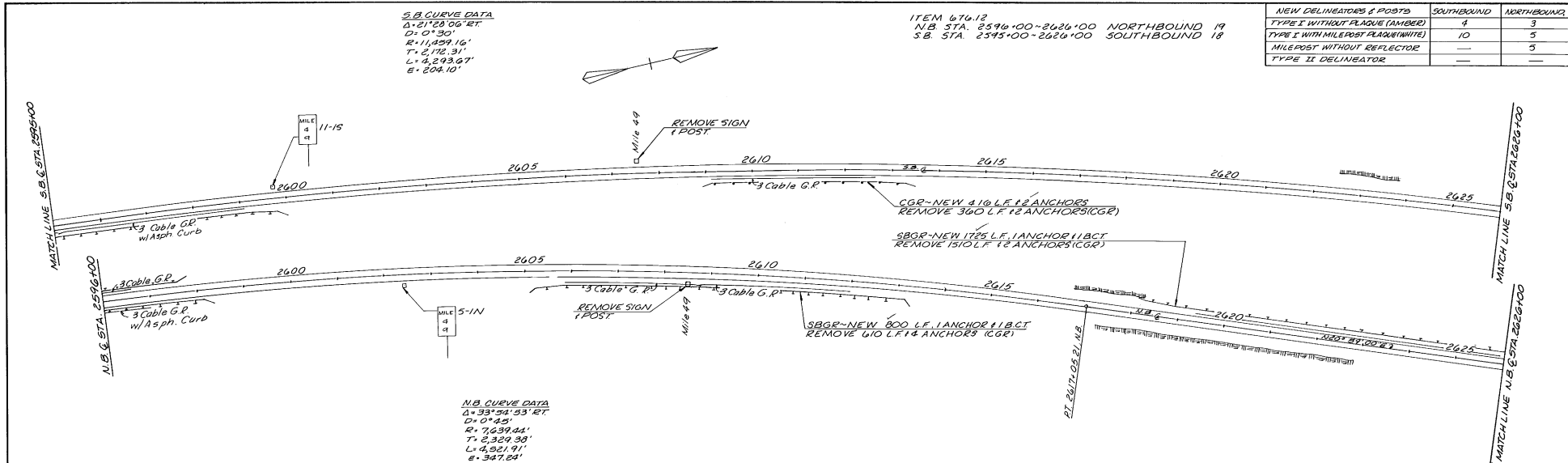
VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE	DATE	SHEET
1"=100'		38 OF

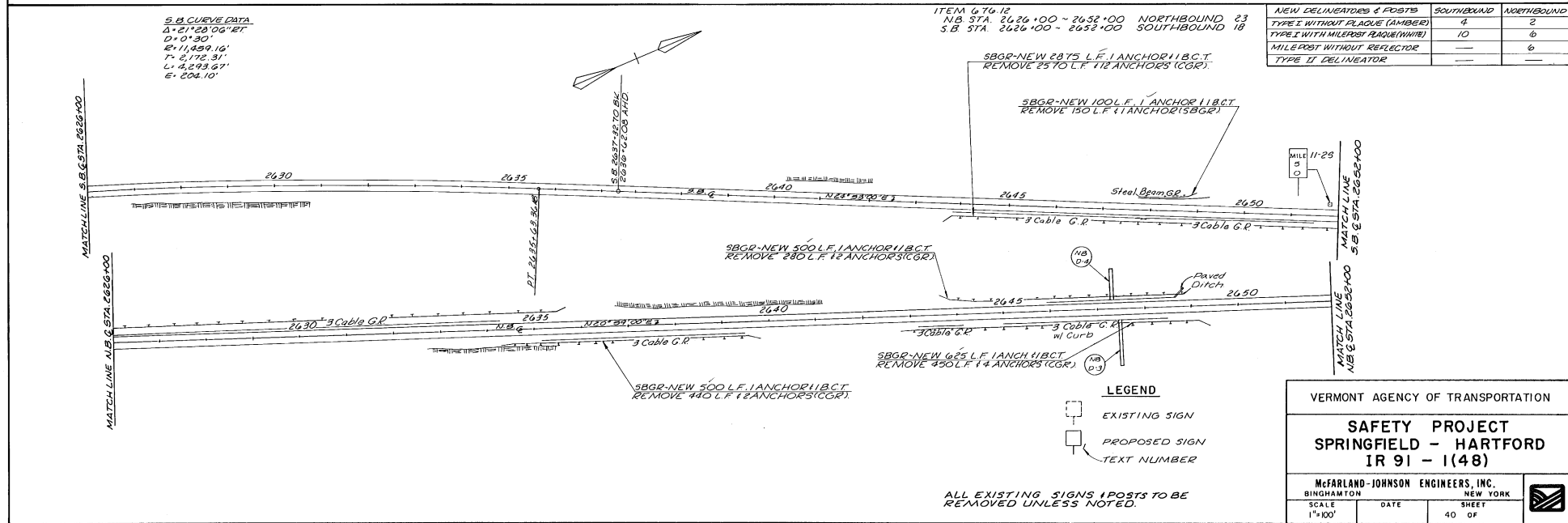
IN CHARGE OF : _____
 DESIGNED BY : _____
 CHECKED BY : _____
 DATE : _____



S.B. CURVE DATA
 $\Delta = 21^{\circ}28'06''$ RT
 $D = 0^{\circ}30'$
 $R = 11,829.16'$
 $T = 2,172.31'$
 $L = 4,293.67'$
 $E = 204.10'$

ITEM 67612
 N.B. STA. 2596+00 - 2626+00 NORTHBOUND 19
 S.B. STA. 2595+00 - 2626+00 SOUTHBOUND 18

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	4	3
TYPE I WITH MILEPOST PLAQUE (WHITE)	10	5
MILEPOST WITHOUT REFLECTOR	—	5
TYPE II DELINEATOR	—	—






S.B. CURVE DATA
 $\Delta = 21^{\circ}28'06''$ RT
 $D = 0^{\circ}30'$
 $R = 11,829.16'$
 $T = 2,172.31'$
 $L = 4,293.67'$
 $E = 204.10'$

ITEM 67612
 N.B. STA. 2626+00 - 2652+00 NORTHBOUND 23
 S.B. STA. 2626+00 - 2652+00 SOUTHBOUND 18

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	4	2
TYPE I WITH MILEPOST PLAQUE (WHITE)	10	6
MILEPOST WITHOUT REFLECTOR	—	6
TYPE II DELINEATOR	—	—

LEGEND

 EXISTING SIGN
 PROPOSED SIGN
 TEXT NUMBER

ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED.

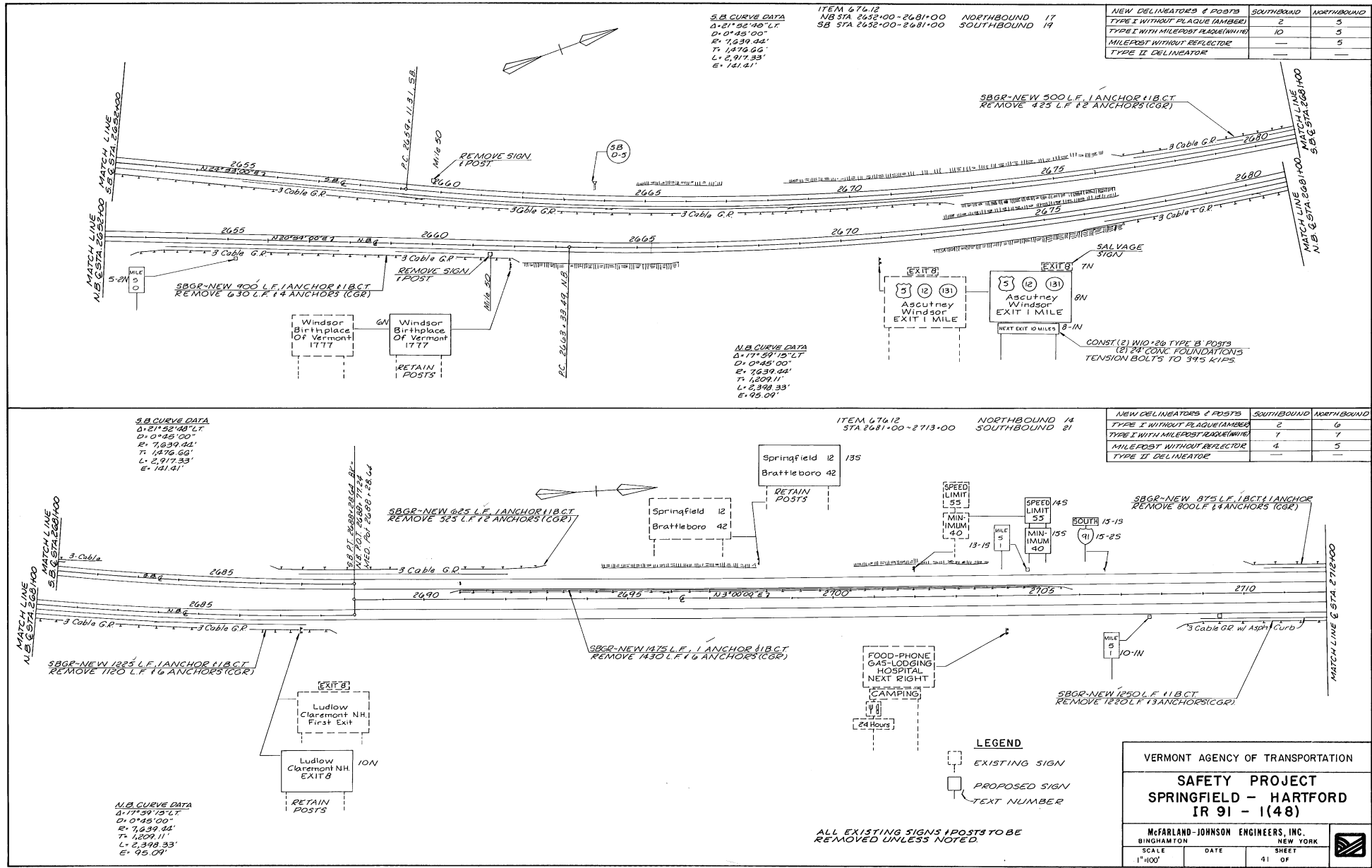
VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE: 1"=100'
 DATE: _____ SHEET: 40 OF _____

IN CHARGE OF :
 DESIGNED BY :
 CHECKED BY :



ITEM 676.12
 NB STA 2655+00 - 2681+00 NORTHBOUND 17
 SB STA 2655+00 - 2681+00 SOUTHBOUND 19

S.B. CURVE DATA
 Δ: 21° 52' 48" L.T.
 D: 0° 45' 00"
 E: 7,639.44'
 T: 1,476.66'
 L: 2,917.33'
 E: 141.41'

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	2	3
TYPE I WITH MILEPOST PLAQUE (WHITE)	10	5
MILEPOST WITHOUT REFLECTOR	—	5
TYPE II DELINEATOR	—	—

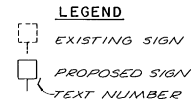
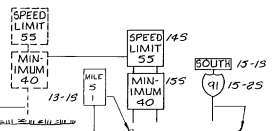
N.B. CURVE DATA
 Δ: 17° 59' 15" L.T.
 D: 0° 45' 00"
 E: 7,639.44'
 T: 1,209.11'
 L: 2,398.33'
 E: 95.09'

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	2	6
TYPE I WITH MILEPOST PLAQUE (WHITE)	7	7
MILEPOST WITHOUT REFLECTOR	4	3
TYPE II DELINEATOR	—	—

ITEM 676.12
 STA 2681+00 - 2713+00
 NORTHBOUND 14
 SOUTHBOUND 21

S.B. CURVE DATA
 Δ: 21° 52' 48" L.T.
 D: 0° 45' 00"
 E: 7,639.44'
 T: 1,476.66'
 L: 2,917.33'
 E: 141.41'

N.B. CURVE DATA
 Δ: 17° 59' 15" L.T.
 D: 0° 45' 00"
 E: 7,639.44'
 T: 1,209.11'
 L: 2,398.33'
 E: 95.09'



ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED.

VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

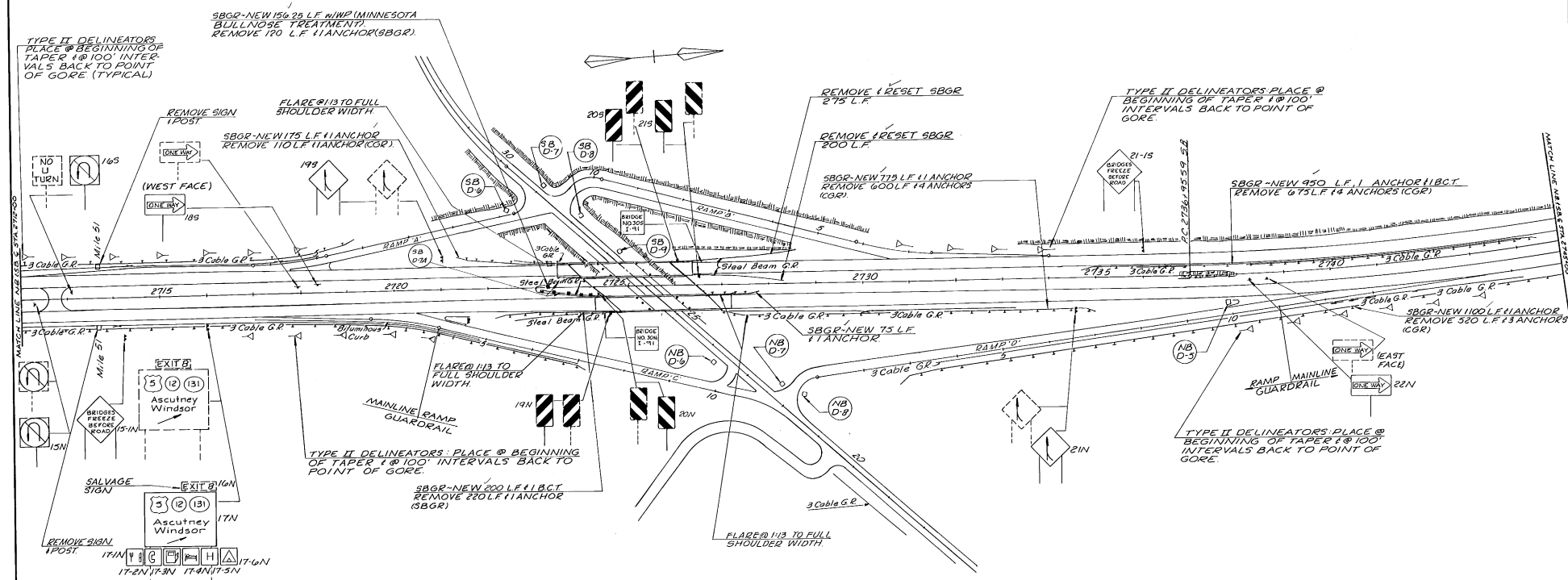
McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE: 1"=400'

DATE: _____ SHEET: 41 OF _____

ITEM 6.74.12 NORTHBOUND 23
 STA. 2712+00-2745+00 SOUTHBOUND 28

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (NUMBER)	3	5
TYPE I WITH MILEPOST PLAQUE (WHITE)	5	1
MILEPOST WITHOUT REFLECTOR	4	8
TYPE II DELINEATOR	11	11



IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____
 DATE: _____

FOR INTERCHANGE SIGNING, DELINEATORS,
 DRAINAGE & GUARDRAIL SEE SHEETS 73-75.

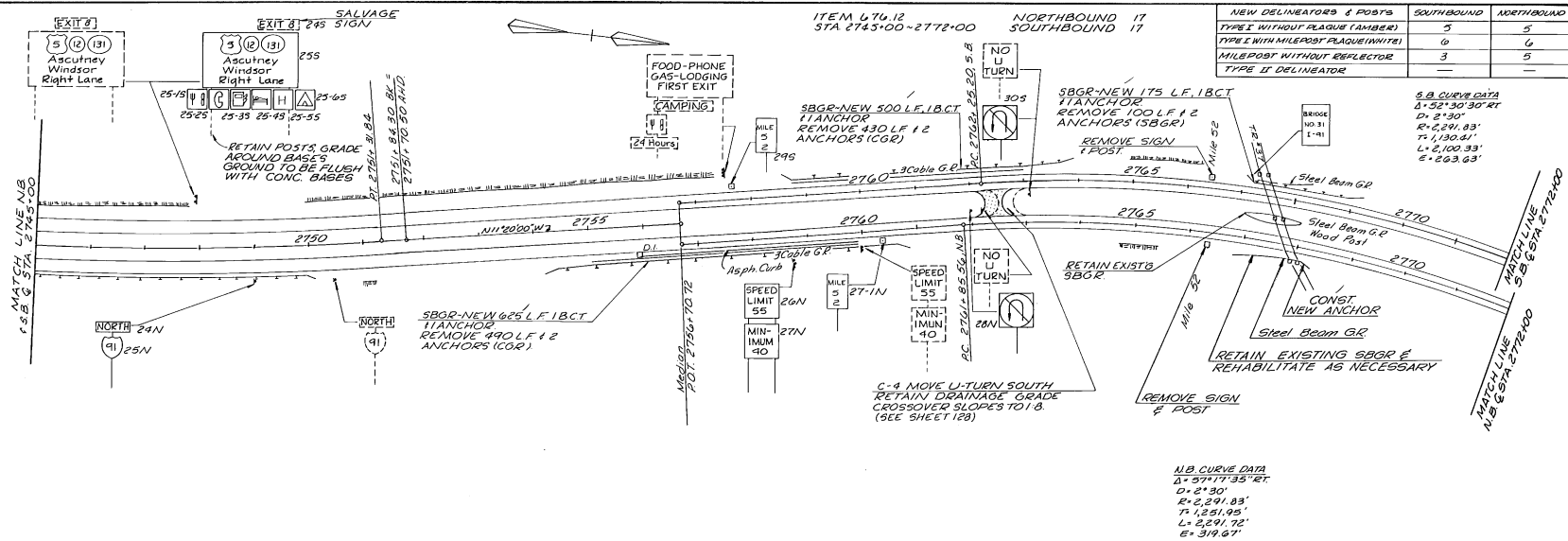
LEGEND

- EXISTING SIGN
- PROPOSED SIGN
- TEXT NUMBER

ALL EXISTING SIGNS & POSTS TO BE
 REMOVED UNLESS NOTED.

VERMONT AGENCY OF TRANSPORTATION		
SAFETY PROJECT SPRINGFIELD - HARTFORD IR 91 - 1(48)		
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK		
SCALE AS SHOWN	DATE JULY, 1984	SHEET 42 OF

G CURVE DATA
 Δ=142°18'17"
 D=1°00'
 E=5,729.58'
 T=720.64'
 L=1,433.83'
 E=45.15'

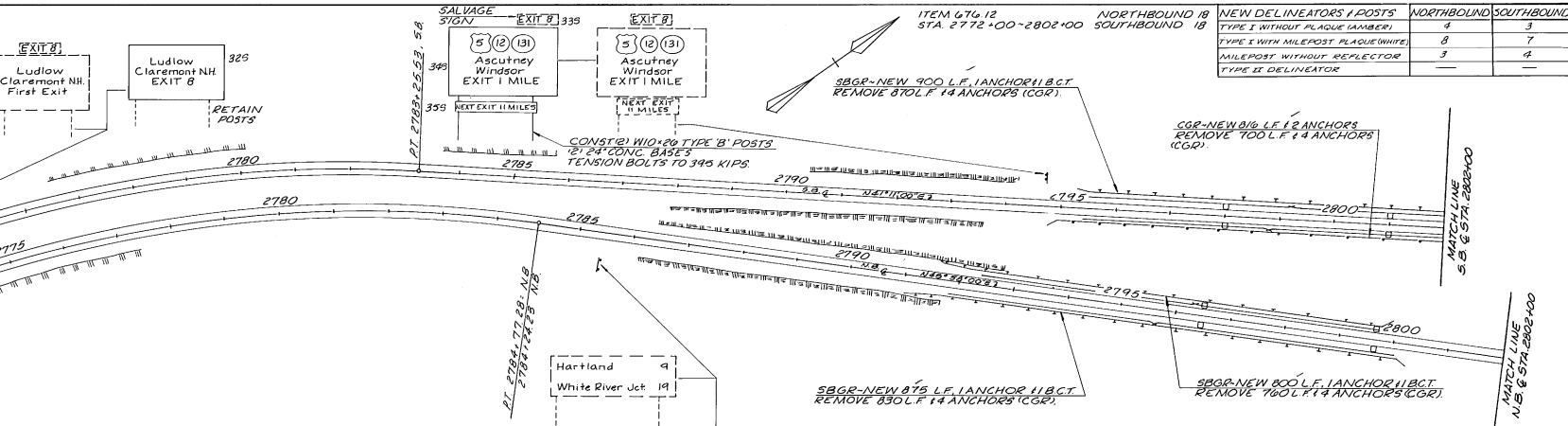


NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	5	5
TYPE I WITH MILEPOST PLAQUE (WHITE)	6	6
MILEPOST WITHOUT REFLECTOR	3	5
TYPE II DELINEATOR	—	—

S.B. CURVE DATA
 Δ=21°30'30"RT
 D=2°30'
 E=2,291.83'
 T=1,130.61'
 L=2,100.33'
 E=223.63'

N.B. CURVE DATA
 Δ=97°17'35"RT
 D=2°30'
 E=2,291.83'
 T=1,251.95'
 L=2,291.72'
 E=319.67'

S.B. CURVE DATA
 Δ=52°30'30"RT
 D=2°30'
 E=2,291.83'
 T=1,130.61'
 L=2,100.33'
 E=223.63'



NEW DELINEATORS & POSTS	NORTHBOUND	SOUTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	4	3
TYPE I WITH MILEPOST PLAQUE (WHITE)	8	7
MILEPOST WITHOUT REFLECTOR	3	4
TYPE II DELINEATOR	—	—

CGR-NEW 816 LF 1.2 ANCHORS (CGR)
 REMOVE 700 LF & 4 ANCHORS (CGR)

SBGR-NEW 875 LF 1.8 ANCHOR 11 BCT
 REMOVE 830 LF & 14 ANCHORS (CGR)

LEGEND

- EXISTING SIGN
- PROPOSED SIGN
- TEXT NUMBER

RETAIN LEFT POST, RESET RIGHT POST SPACING TO 11'-6" @ TO 6'. CONST. NEW 24' CONC. FOUNDATION.

ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED.

N.B. CURVE DATA
 Δ=57°17'35"RT
 D=2°30'
 E=2,291.83'
 T=1,251.95'
 L=2,291.72'
 E=319.67'

VERMONT AGENCY OF TRANSPORTATION

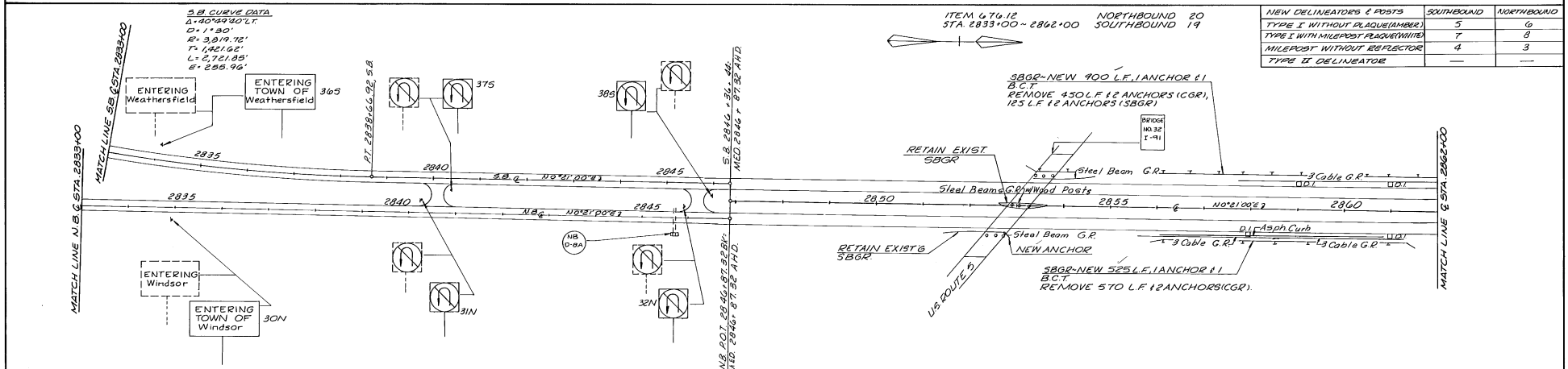
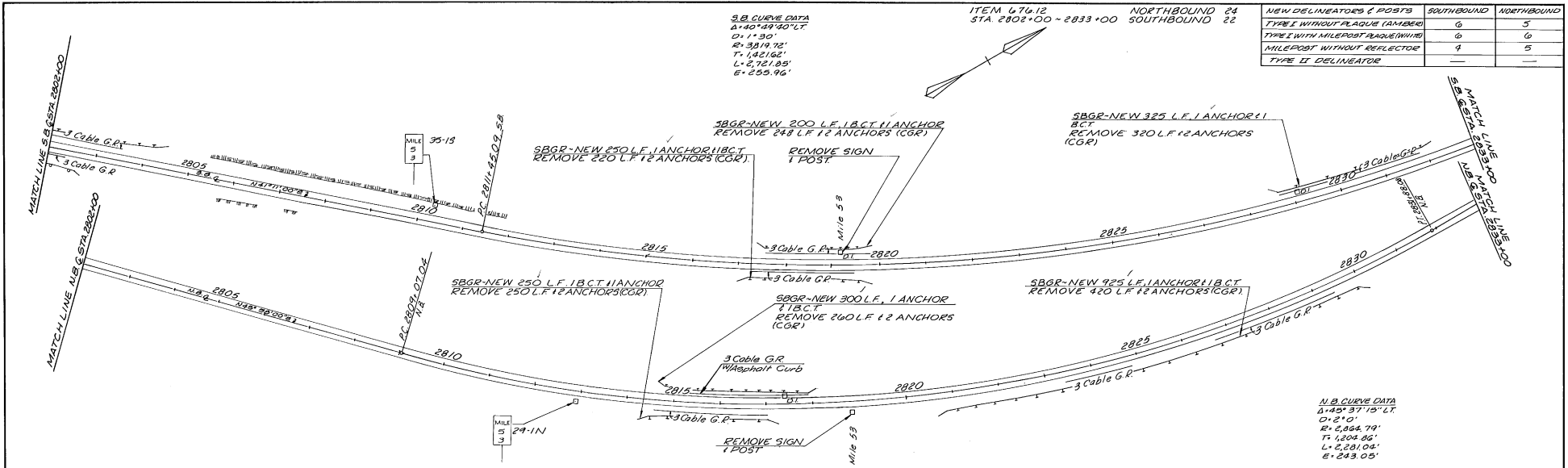
SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE: DATE: SHEET: 43 OF

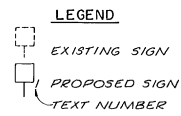
IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____

IN CHARGE OF :
DESIGNED BY :
CHECKED BY :



NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	6	5
TYPE I WITH MILEPOST PLAQUE (WHITE)	6	6
MILEPOST WITHOUT REFLECTOR	4	5
TYPE II DELINEATOR	—	—

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	5	6
TYPE I WITH MILEPOST PLAQUE (WHITE)	7	8
MILEPOST WITHOUT REFLECTOR	4	3
TYPE II DELINEATOR	—	—



ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED.

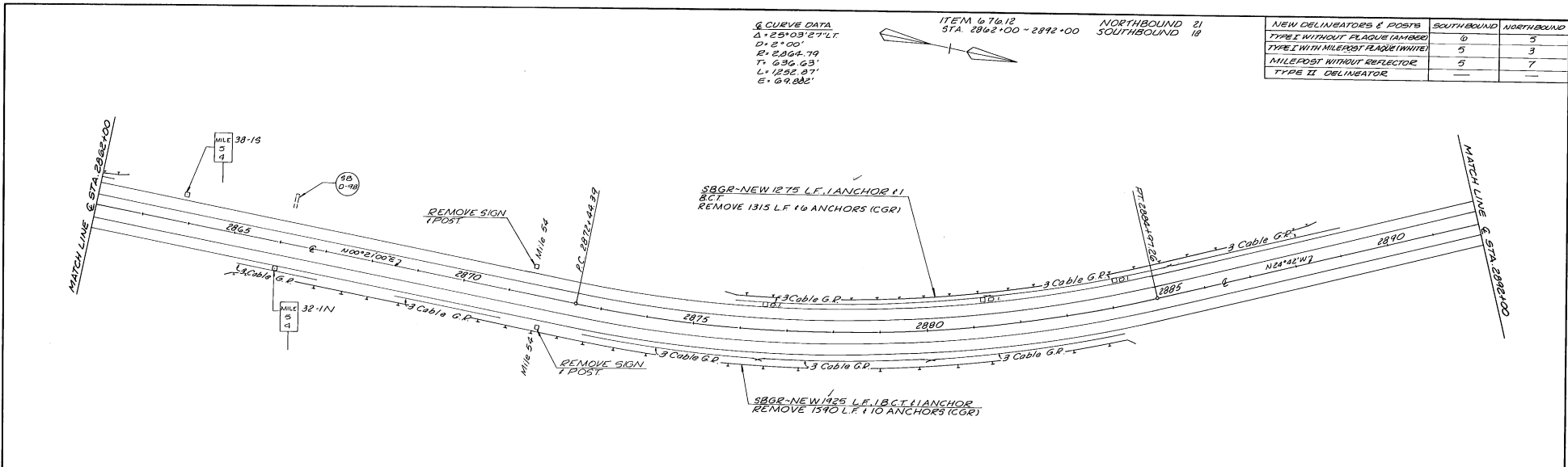
VERMONT AGENCY OF TRANSPORTATION

**SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)**

McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

SCALE DATE SHEET
44 OF

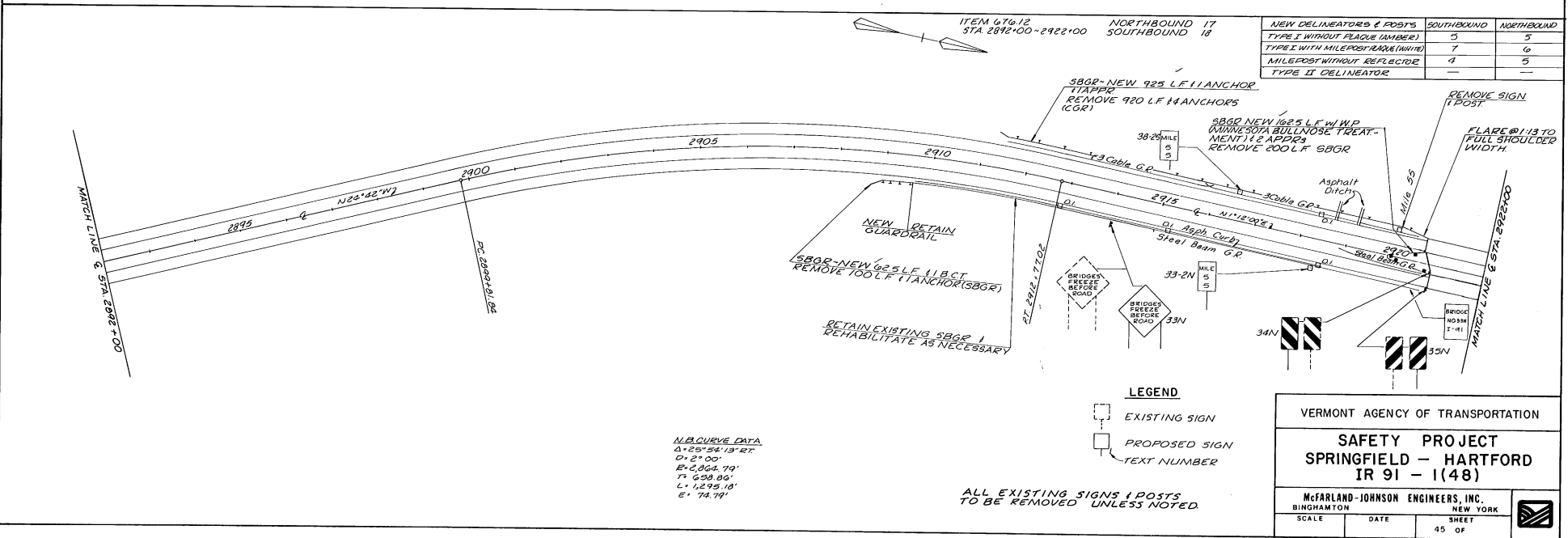
IN CHARGE OF: _____
 DESIGNED BY: _____
 DETAILED BY: _____
 CHECKED BY: _____



G.CURVE DATA
 $\Delta = 125^{\circ}03'27''$
 $D = 2^{\circ}00'$
 $R = 2864.79'$
 $T = 636.63'$
 $L = 1292.87'$
 $E = 69.882'$

ITEM 67612
 STA. 2862+00 - 2892+00
 NORTHBOUND 21
 SOUTHBOUND 18

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT FLAG (AMBER)	0	5
TYPE I WITH MILEPOST FLAG (WHITE)	5	3
MILEPOST WITHOUT REFLECTOR	5	7
TYPE II DELINEATOR	—	—



ITEM 67612
 STA. 2892+00 - 2922+00
 NORTHBOUND 17
 SOUTHBOUND 18

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT FLAG (AMBER)	5	5
TYPE I WITH MILEPOST FLAG (WHITE)	7	6
MILEPOST WITHOUT REFLECTOR	4	5
TYPE II DELINEATOR	—	—

N.B. CURVE DATA
 $\Delta = 25^{\circ}54'19''$
 $D = 2^{\circ}00'$
 $R = 2864.79'$
 $T = 636.63'$
 $L = 1292.87'$
 $E = 74.79'$

ALL EXISTING SIGNS & POSTS
 TO BE REMOVED UNLESS NOTED

LEGEND

- EXISTING SIGN
- PROPOSED SIGN
- TEXT NUMBER

VERMONT AGENCY OF TRANSPORTATION

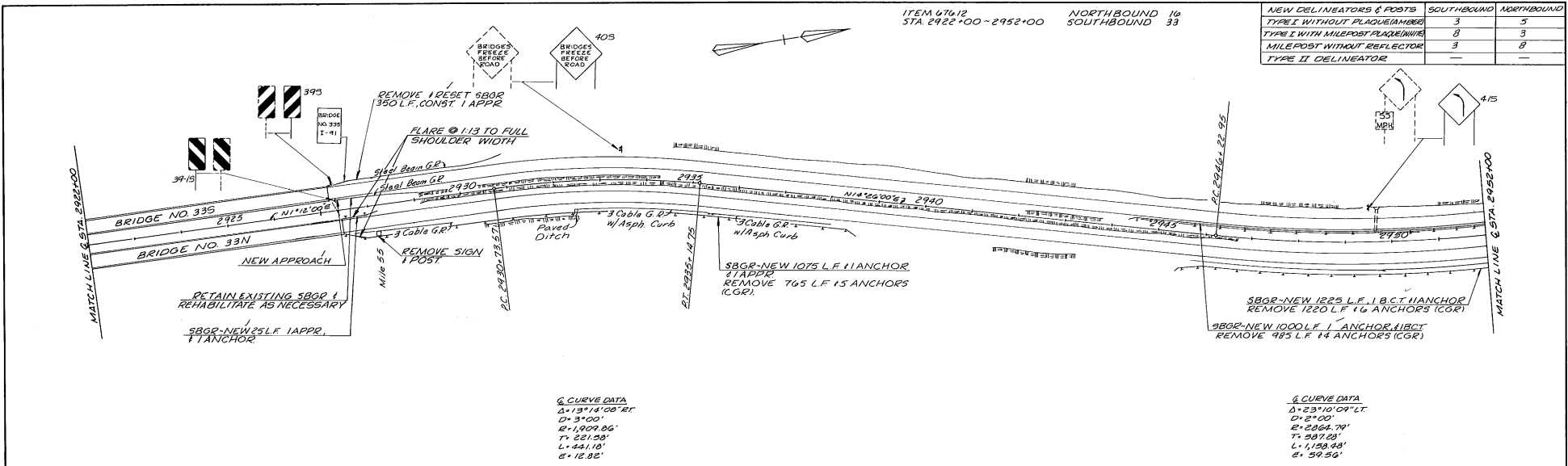
SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE	DATE	SHEET
		45 OF

ITEM 67612 NORTHBOUND 10
STA. 2922+00 - 2952+00 SOUTHBOUND 33

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	3	5
TYPE I WITH MILEPOST PLAQUE (WHITE)	8	3
MILEPOST WITHOUT REFLECTOR	3	8
TYPE II DELINEATOR	—	—

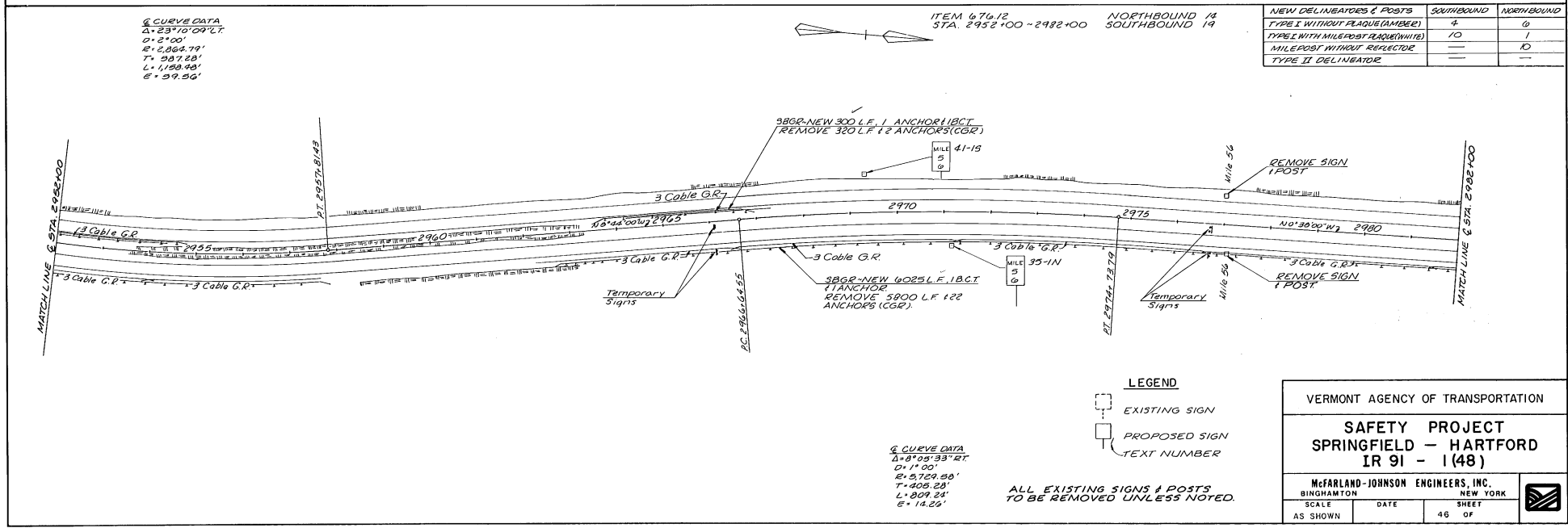


Q CURVE DATA
 $\Delta = 13^{\circ}14'08''$ RT
 $D = 3100'$
 $E = 1909.86'$
 $T = 221.20'$
 $L = 441.10'$
 $E = 15.82'$

Q CURVE DATA
 $\Delta = 23^{\circ}10'09''$ LT
 $D = 2100'$
 $E = 2864.79'$
 $T = 287.20'$
 $L = 1158.98'$
 $E = 52.56'$

ITEM 67612 NORTHBOUND 14
STA. 2952+00 - 2982+00 SOUTHBOUND 19

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	4	0
TYPE I WITH MILEPOST PLAQUE (WHITE)	10	1
MILEPOST WITHOUT REFLECTOR	—	10
TYPE II DELINEATOR	—	—



Q CURVE DATA
 $\Delta = 9^{\circ}05'33''$ RT
 $D = 1100'$
 $E = 5729.20'$
 $T = 408.20'$
 $L = 809.34'$
 $E = 14.26'$

ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED.

LEGEND

- EXISTING SIGN
- PROPOSED SIGN
- TEXT NUMBER

VERMONT AGENCY OF TRANSPORTATION

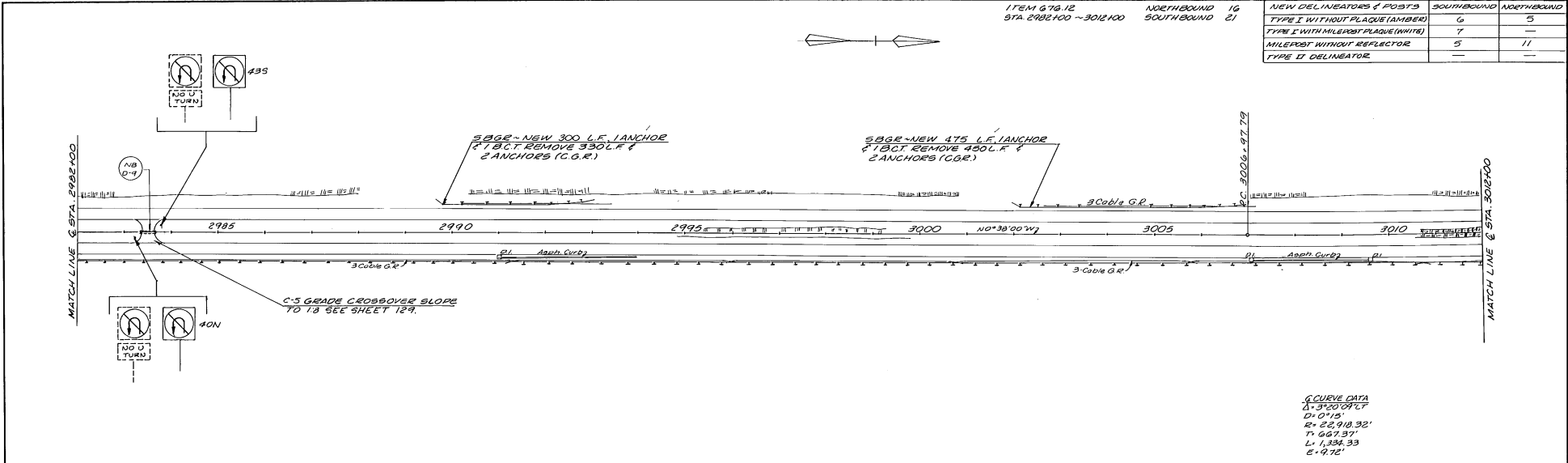
SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE AS SHOWN	DATE	SHEET 46 OF
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IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____

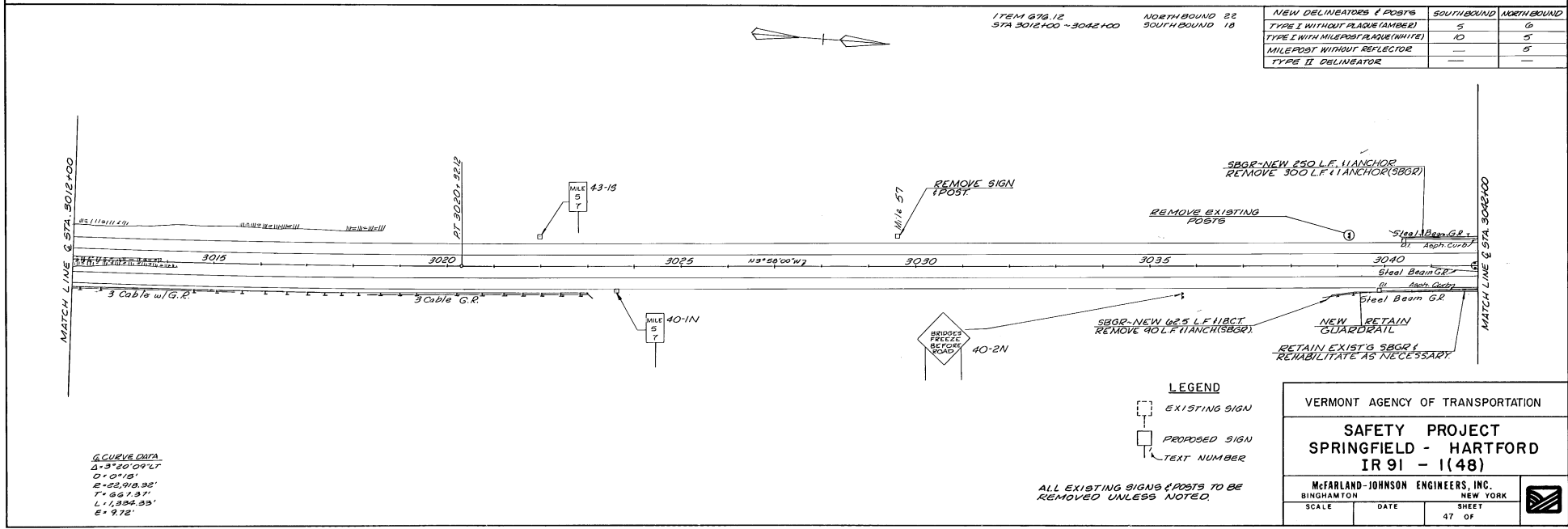
IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____



ITEM 676.12 NORTHBOUND 16
 STA 2985+00 ~ 3010+00 SOUTHBOUND 21

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	6	5
TYPE I WITH MILEPOST PLAQUE (WHITE)	7	—
MILEPOST WITHOUT REFLECTOR	5	11
TYPE II DELINEATOR	—	—

G CURVE DATA
 $\Delta = 3^{\circ}20'00''$
 $D = 0'15''$
 $R = 22,918.32'$
 $T = 667.37'$
 $L = 1,334.33'$
 $E = 9.72'$



ITEM 676.12 NORTHBOUND 22
 STA 3015+00 ~ 3040+00 SOUTHBOUND 18

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	5	6
TYPE I WITH MILEPOST PLAQUE (WHITE)	10	5
MILEPOST WITHOUT REFLECTOR	—	5
TYPE II DELINEATOR	—	—

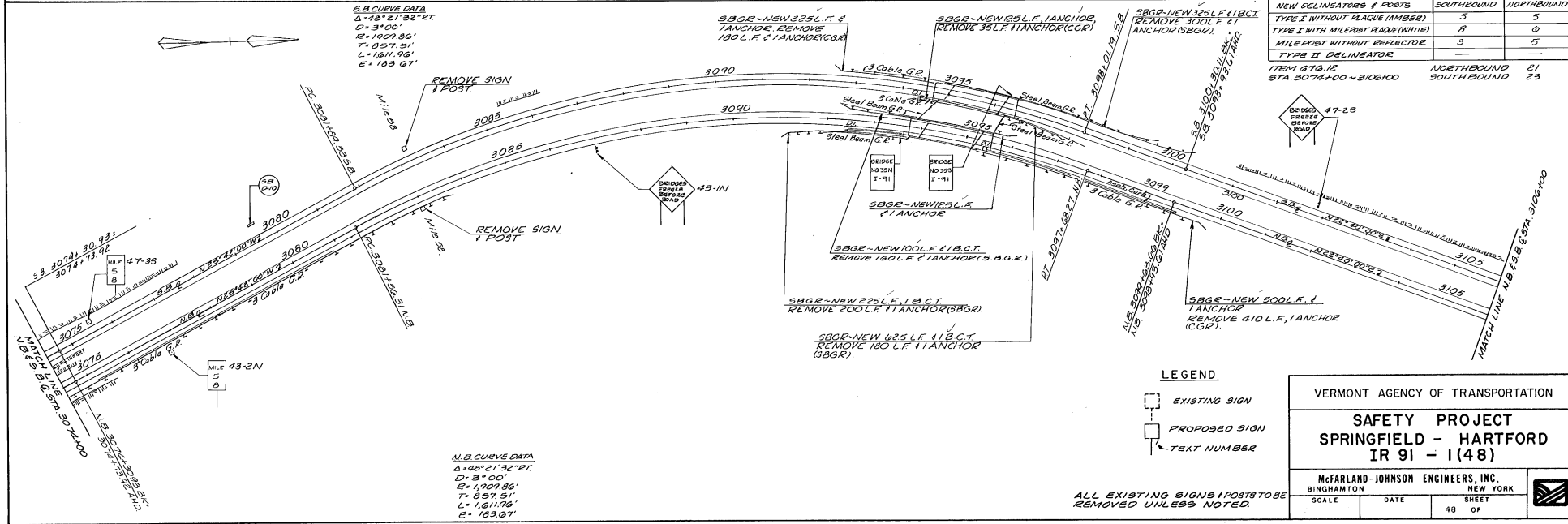
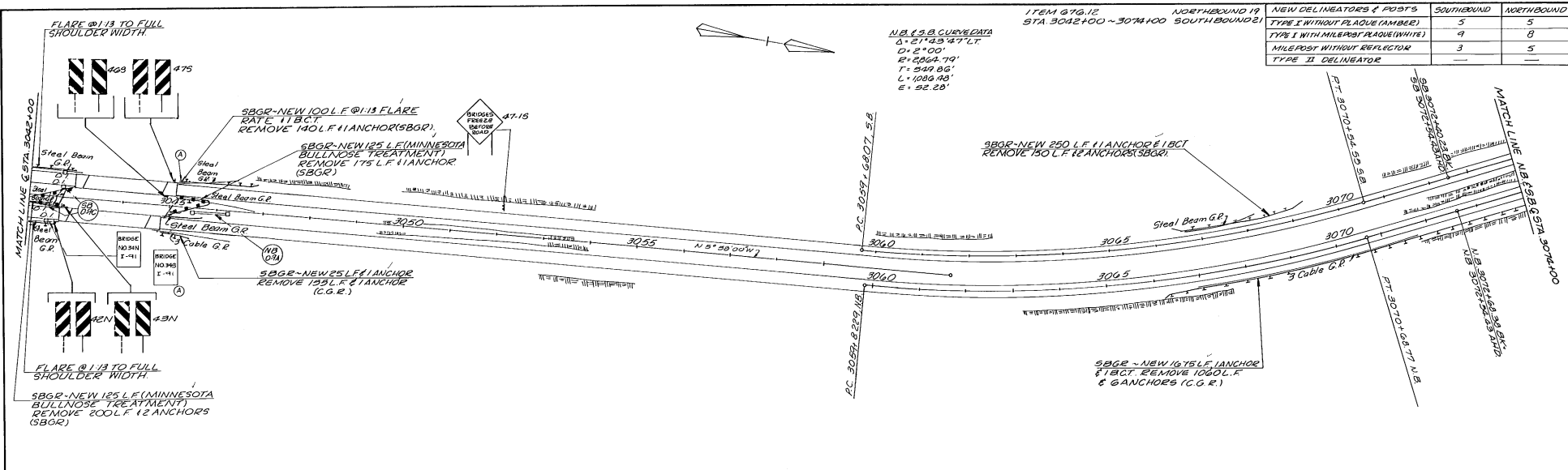
G CURVE DATA
 $\Delta = 3^{\circ}20'00''$
 $D = 0'15''$
 $R = 22,918.32'$
 $T = 667.37'$
 $L = 1,334.33'$
 $E = 9.72'$

LEGEND
 EXISTING SIGN
 PROPOSED SIGN
 TEXT NUMBER

ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED.

VERMONT AGENCY OF TRANSPORTATION	
SAFETY PROJECT SPRINGFIELD - HARTFORD IR 91 - 1(48)	
MCFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK	
SCALE	DATE
SHEET 47 OF	

IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____



NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	5	5
TYPE I WITH MILEPOST PLAQUE (WHITE)	4	6
MILEPOST WITHOUT REFLECTOR	3	5
TYPE II DELINEATOR	—	—

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	5	5
TYPE I WITH MILEPOST PLAQUE (WHITE)	8	6
MILEPOST WITHOUT REFLECTOR	3	5
TYPE II DELINEATOR	—	—

ITEM 676.12 NORTHBOUND 21
 STA 3074+00 ~ 3106+00 SOUTH BOUND 23

LEGEND

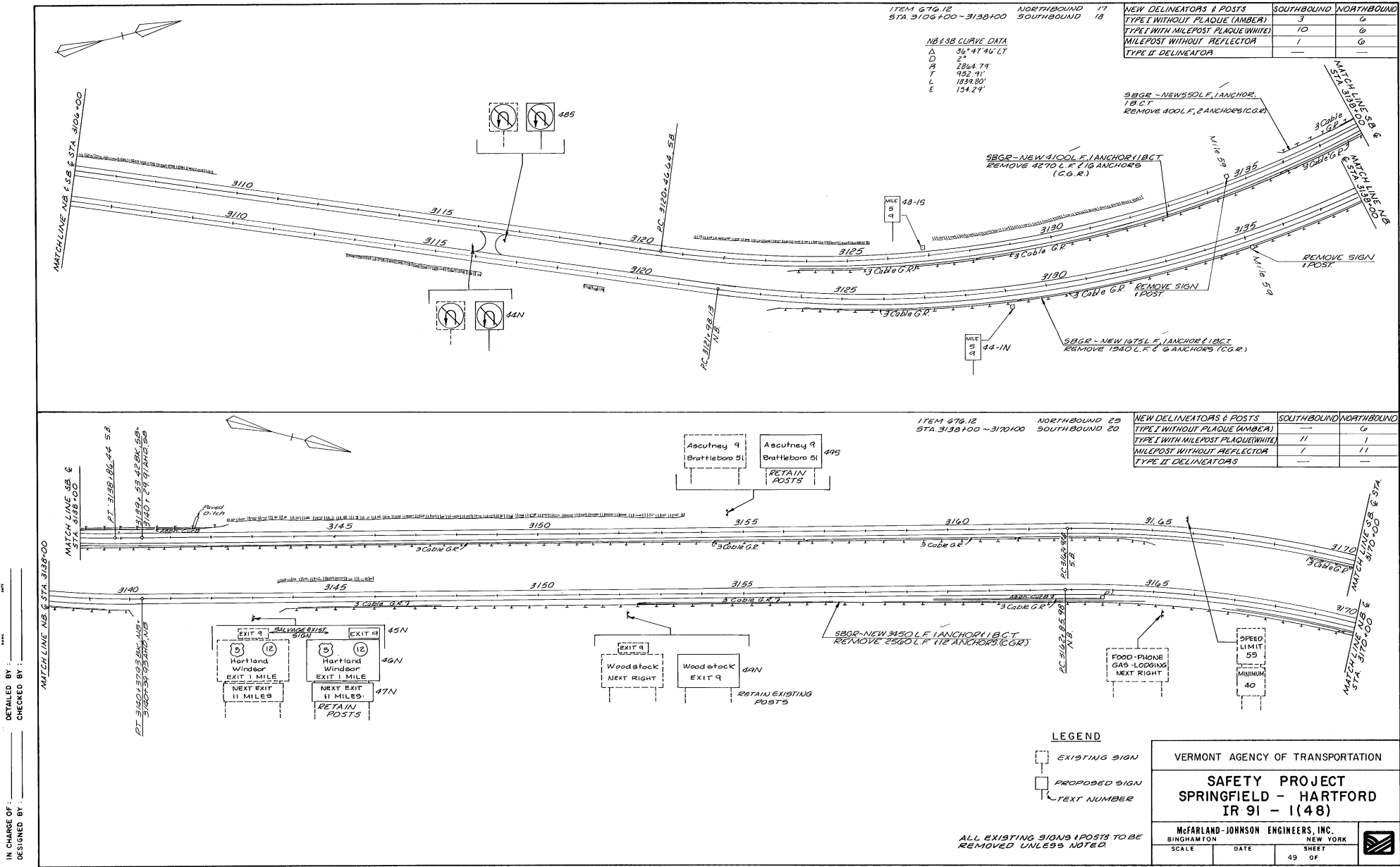
- EXISTING SIGN
- PROPOSED SIGN
- TEXT NUMBER

VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON	NEW YORK	
SCALE	DATE	SHEET 48 OF

ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED.



ITEM 676.12 NORTHBOUND 17
 STA 3106+00 - 3138+00 SOUTHBOUND 18

NB & SB CURVE DATA
 Δ 36° 47' 46" LT
 D 2"
 R 2864.79'
 T 952.91'
 L 1889.80'
 E 154.23'

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	3	6
TYPE I WITH MILEPOST PLAQUE (WHITE)	10	6
MILEPOST WITHOUT REFLECTOR	1	6
TYPE II DELINEATOR	—	—

ITEM 676.12 NORTHBOUND 20
 STA 3138+00 - 3170+00 SOUTHBOUND 20

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	—	6
TYPE I WITH MILEPOST PLAQUE (WHITE)	11	1
MILEPOST WITHOUT REFLECTOR	1	11
TYPE II DELINEATOR	—	—

IN CHARGE OF :
 DESIGNED BY :
 CHECKED BY :

ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED.

- LEGEND**
- EXISTING SIGN
 - PROPOSED SIGN
 - TEXT NUMBER

VERMONT AGENCY OF TRANSPORTATION

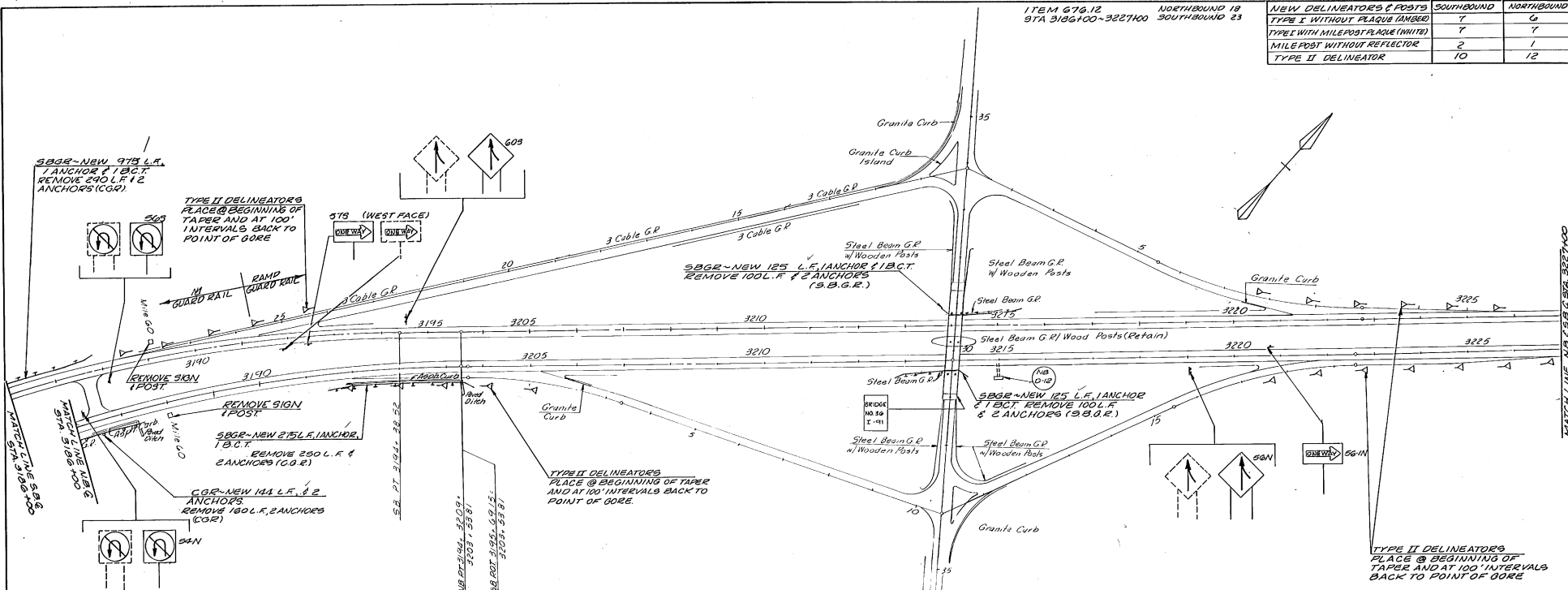
SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE	DATE	SHEET
		49 OF

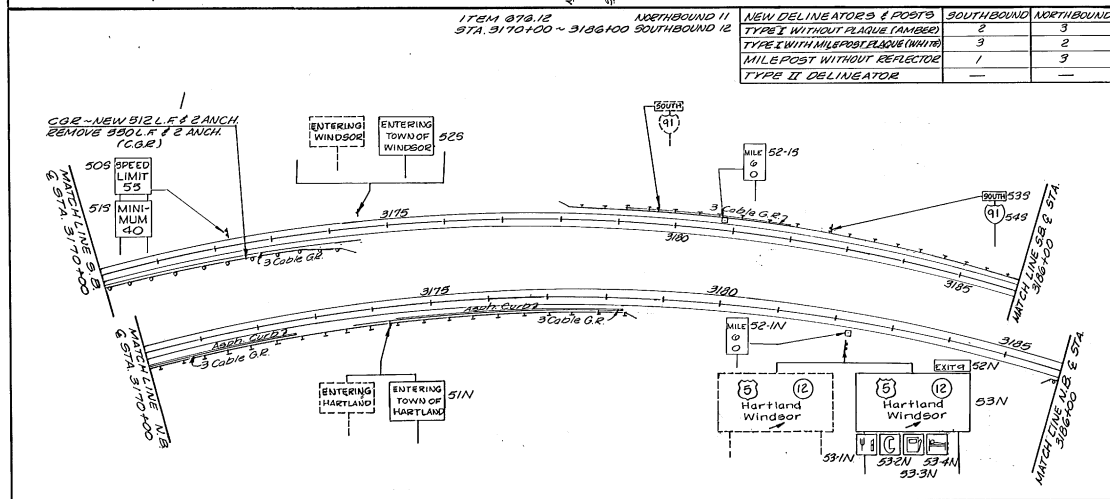
ITEM 874.12 NORTHBOUND 18
 STA 3186+00 - 3227+00 SOUTHBOUND 23

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	7	0
TYPE I WITH MILEPOST PLAQUE (WHITE)	7	7
MILE POST WITHOUT REFLECTOR	2	1
TYPE II DELINEATOR	10	12



ITEM 874.12 NORTHBOUND 11
 STA. 3170+00 - 3186+00 SOUTHBOUND 12

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	2	3
TYPE I WITH MILEPOST PLAQUE (WHITE)	3	2
MILE POST WITHOUT REFLECTOR	1	3
TYPE II DELINEATOR	—	—



LEGEND

- EXISTING SIGN
- PROPOSED SIGN
- TEXT NUMBER

VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

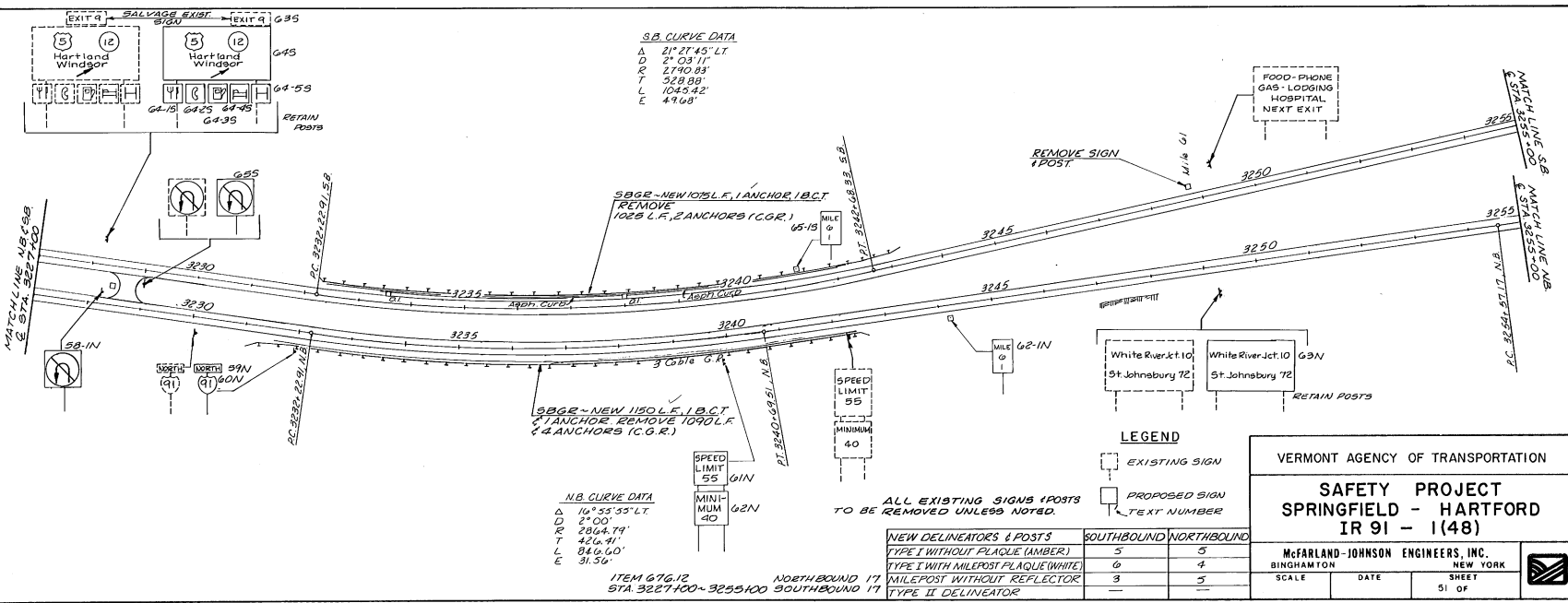
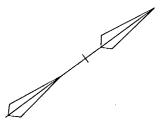
McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE DATE SHEET
 JULY, 1984 50 OF

IN CHARGE OF DESIGNED BY
 DETAILED BY
 CHECKED BY

ALL EXISTING SIGNS I POSTS TO BE REMOVED UNLESS NOTED.

IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____



S.B. CURVE DATA
 A 21° 27' 45" LT
 D 2100'
 R 2740.83'
 T 528.88'
 L 1045.42'
 E 49.68'

N.B. CURVE DATA
 Δ 16° 55' 33" LT
 D 2100'
 R 2864.74'
 T 426.41'
 L 846.60'
 E 31.56'

ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED.

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I (WITHOUT PLAQUE NUMBER)	3	3
TYPE I WITH MILEPOST PLAQUE (WHITE)	0	4
MILEPOST WITHOUT REFLECTOR	3	3
TYPE II DELINEATOR	—	—

LEGEND
 [Symbol] EXISTING SIGN
 [Symbol] PROPOSED SIGN
 [Symbol] TEXT NUMBER

VERMONT AGENCY OF TRANSPORTATION

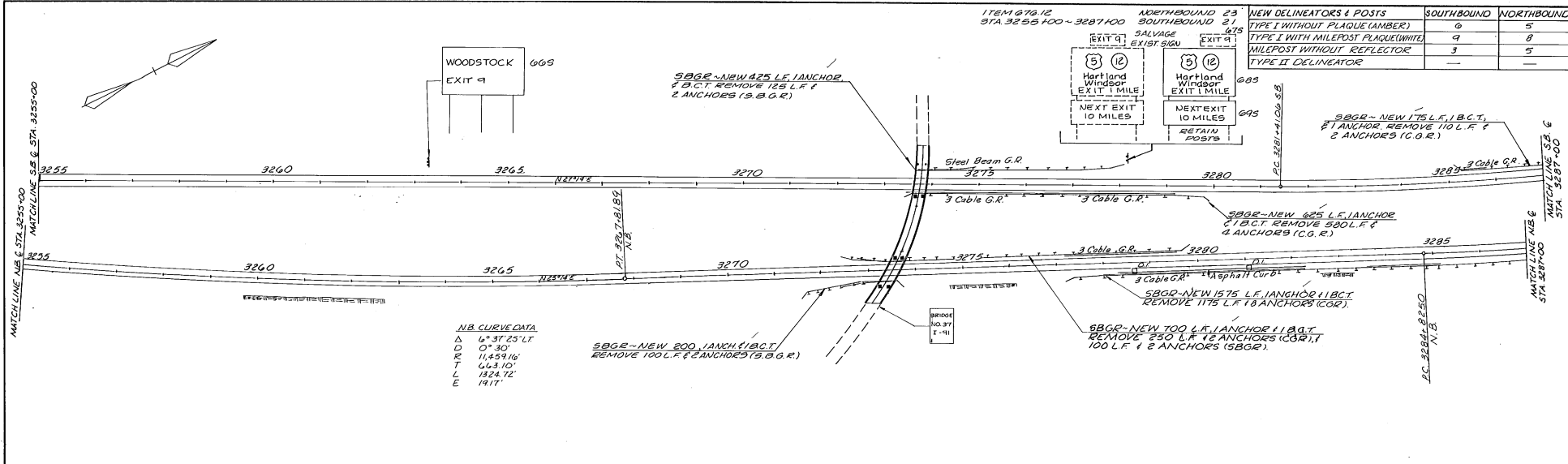
**SAFETY PROJECT
 SPRINGFIELD - HARTFORD
 IR 91 - 1(48)**

McfARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE	DATE	SHEET
		51 OF

ITEM 676.12 NORTHBOUND 17
 STA 3227+00 - 3255+00 SOUTHBOUND 17

IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____

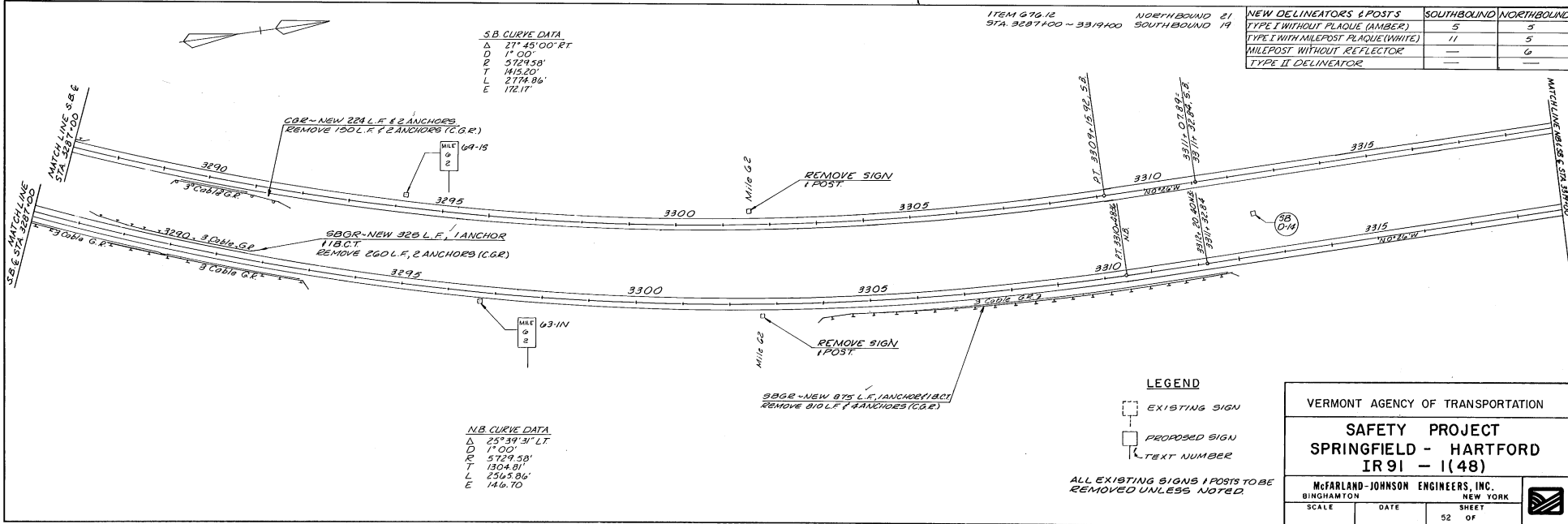


NB CURVE DATA

Δ	6° 37' 25" LF
D	0° 30'
R	11,459.16'
T	665.10'
L	1324.72'
E	1917'

NEW DELINEATORS & POSTS

	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	0	5
TYPE I WITH MILEPOST PLAQUE (WHITE)	9	8
MILEPOST WITHOUT REFLECTOR	3	5
TYPE II DELINEATOR	—	—



S.B. CURVE DATA

Δ	27° 45' 00" RT
D	1° 00'
R	5729.58'
T	1304.81'
L	2545.86'
E	17617'

NEW DELINEATORS & POSTS

	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	5	5
TYPE I WITH MILEPOST PLAQUE (WHITE)	11	5
MILEPOST WITHOUT REFLECTOR	—	6
TYPE II DELINEATOR	—	—

LEGEND

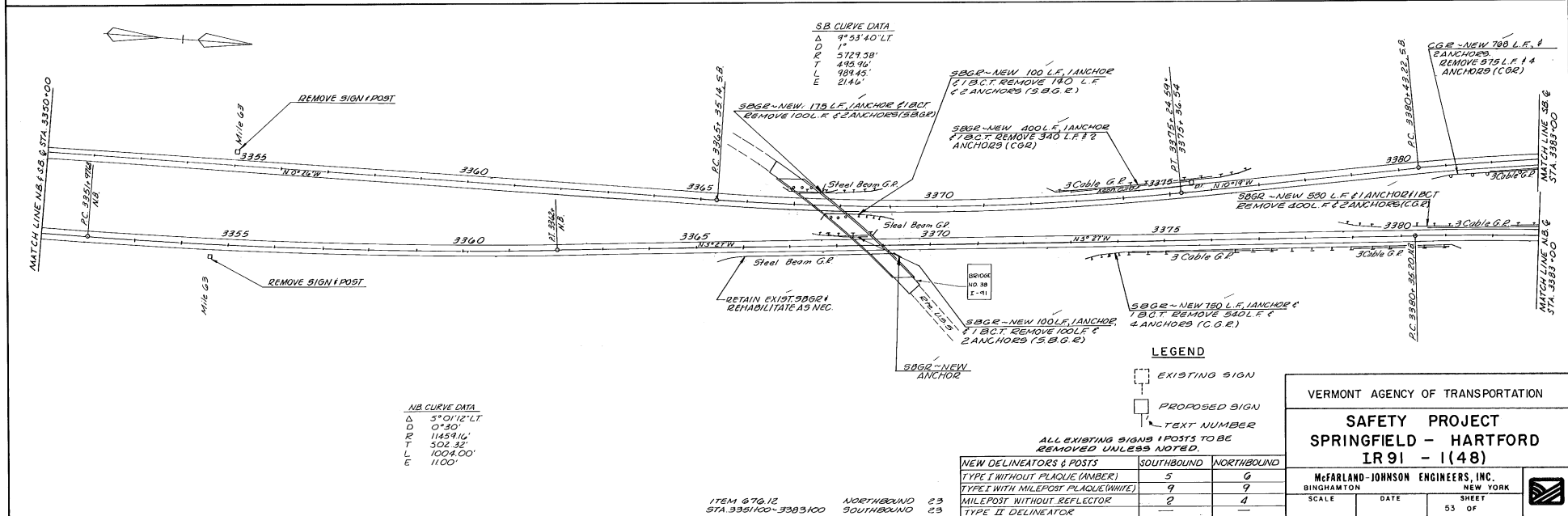
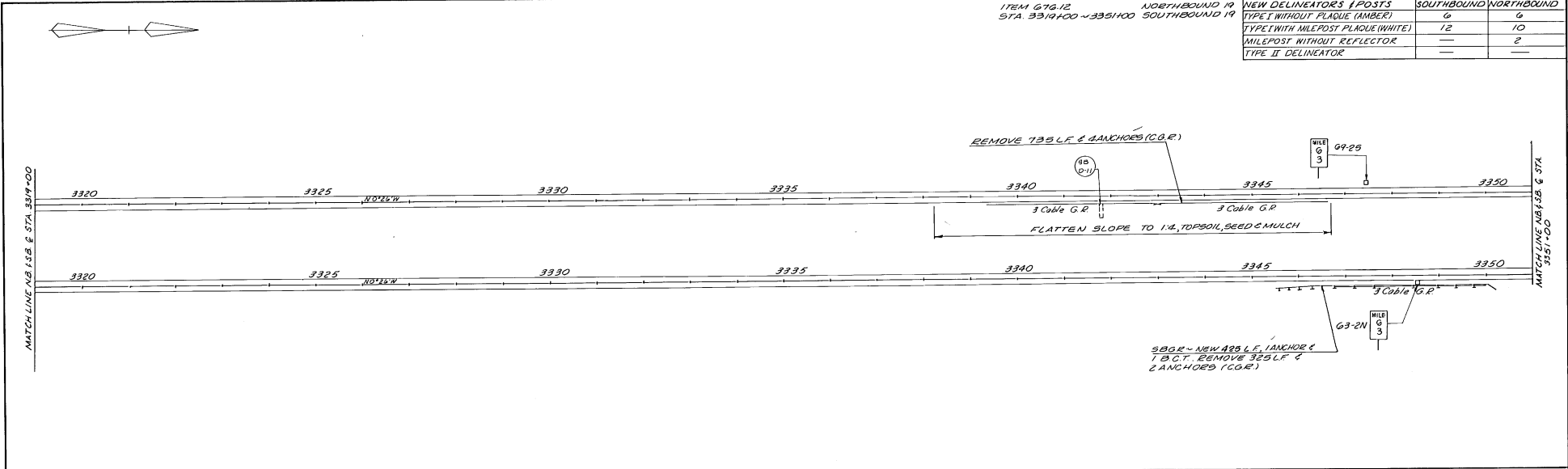
- EXISTING SIGN
- PROPOSED SIGN
- TEXT NUMBER

ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED.

VERMONT AGENCY OF TRANSPORTATION		
SAFETY PROJECT		
SPRINGFIELD - HARTFORD		
IR 91 - 1(48)		
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK		
SCALE	DATE	SHEET 52 OF

ITEM 676.12 NORTHBOUND 19
STA 3314+00 ~ 3351+00 SOUTHBOUND 19

NEW DELINEATORS / POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	6	6
TYPE I WITH MILEPOST PLAQUE (WHITE)	12	10
MILEPOST WITHOUT REFLECTOR	—	2
TYPE II DELINEATOR	—	—



SB CURVE DATA

L	9°53'40" LT
D	1"
R	5729.98'
T	495.90'
L	489.45'
E	214.6'

NB CURVE DATA

L	5°01'12" LT
D	0°30"
R	11459.16'
T	502.32'
L	1004.00'
E	1100'

LEGEND

- EXISTING SIGN
- PROPOSED SIGN
- TEXT NUMBER

ALL EXISTING SIGNS / POSTS TO BE REMOVED UNLESS NOTED.

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	5	6
TYPE I WITH MILEPOST PLAQUE (WHITE)	9	9
MILEPOST WITHOUT REFLECTOR	2	4
TYPE II DELINEATOR	—	—

VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

SCALE DATE SHEET
53 OF

IN CHARGE OF: _____
DESIGNED BY: _____
CHECKED BY: _____

ITEM 676.12 NORTHBOUND 23
STA 3351+00 ~ 3383+00 SOUTHBOUND 23

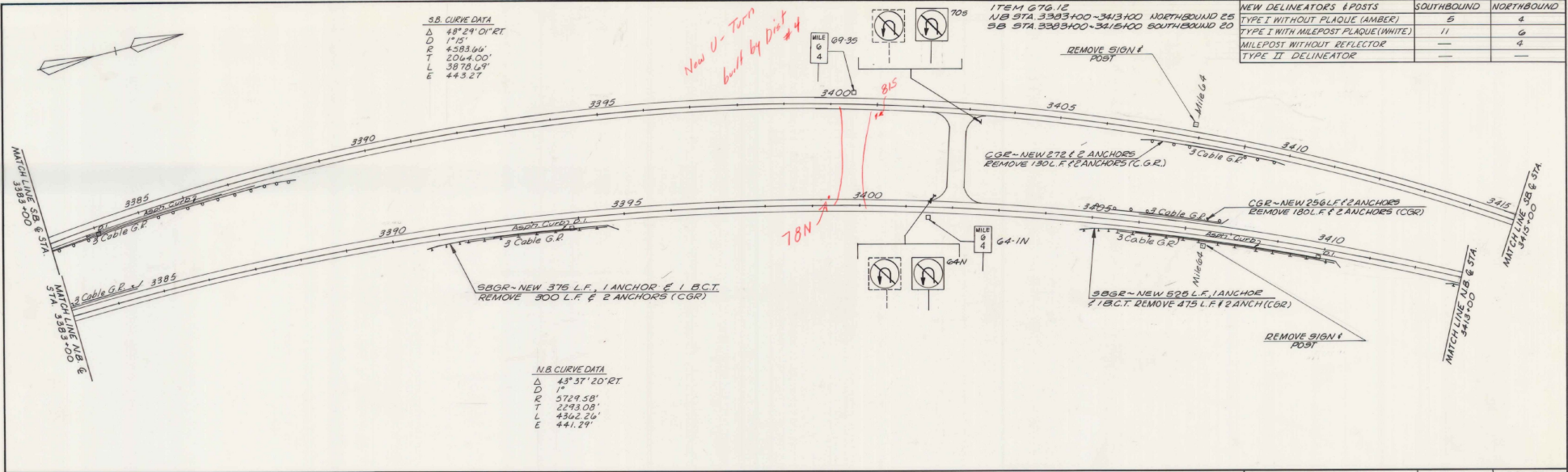
S.B. CURVE DATA
 Δ 48°29'01"RT
 D 1"15'
 R 4583.06'
 T 2044.00'
 L 3878.69'
 E 443.27'

N.B. CURVE DATA
 Δ 43°37'20"RT
 D 1"15'
 R 5729.58'
 T 2793.08'
 L 4362.26'
 E 441.29'

ITEM 676.12
 N.B. STA. 3383+00 - 3413+00 NORTHBOUND 25
 S.B. STA. 3383+00 - 3413+00 SOUTHBOUND 20

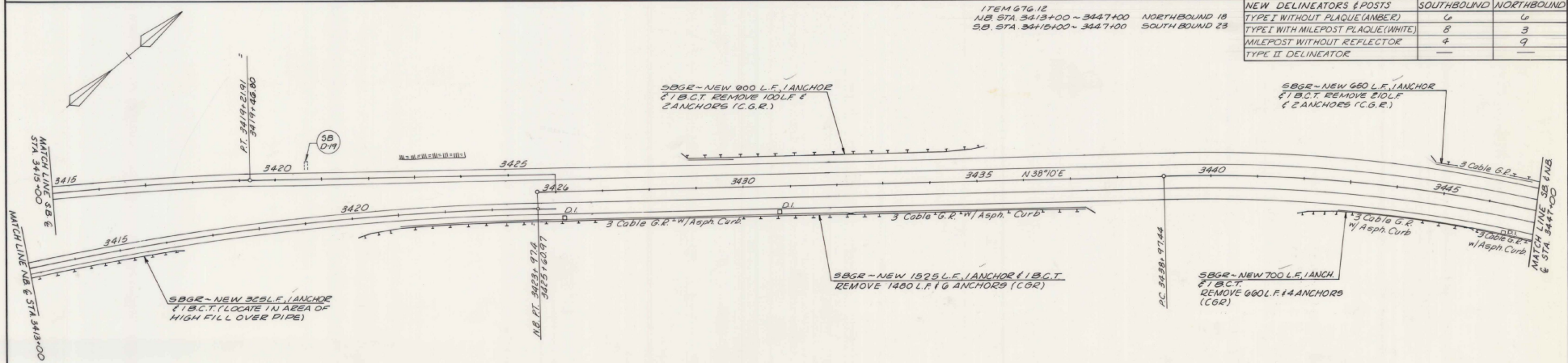
NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	5	4
TYPE I WITH MILEPOST PLAQUE (WHITE)	11	6
MILEPOST WITHOUT REFLECTOR	—	4
TYPE II DELINEATOR	—	—

New U-Turn built by Dist #4



ITEM 676.12
 N.B. STA. 3413+00 - 3447+00 NORTHBOUND 18
 S.B. STA. 3413+00 - 3447+00 SOUTHBOUND 23

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	6	4
TYPE I WITH MILEPOST PLAQUE (WHITE)	8	3
MILEPOST WITHOUT REFLECTOR	4	9
TYPE II DELINEATOR	—	—



LEGEND

- EXISTING SIGN
- PROPOSED SIGN
- TEXT NUMBER

ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED

VERMONT AGENCY OF TRANSPORTATION

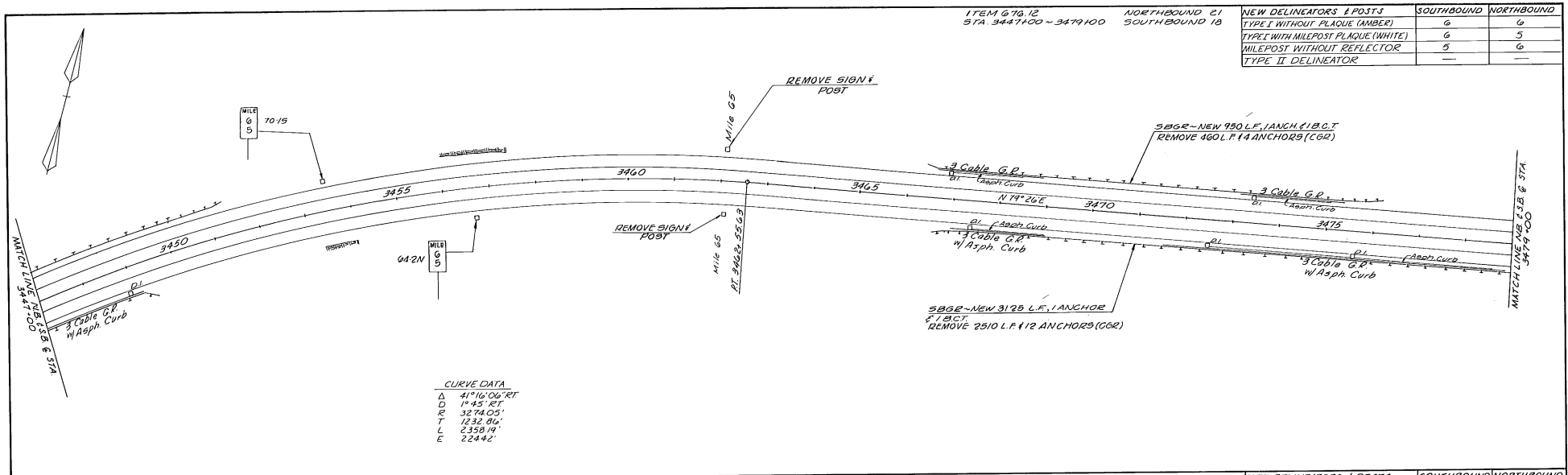
SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE DATE SHEET
 54 OF

IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____

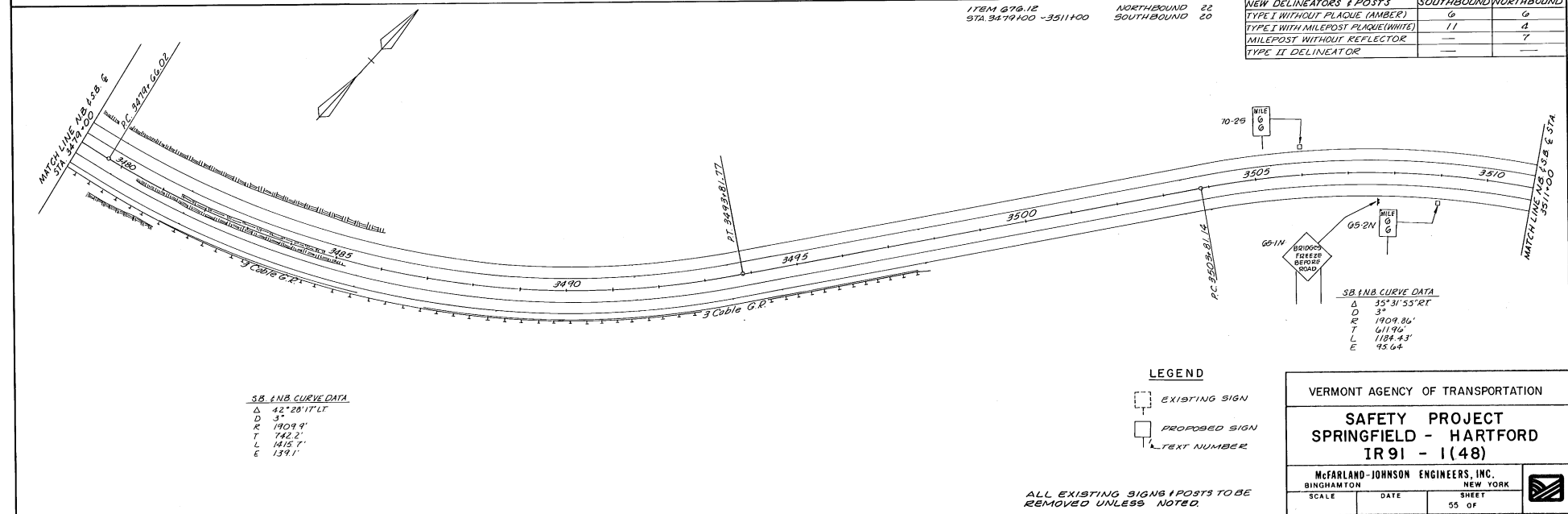
IN CHARGE OF :
DESIGNED BY :
CHECKED BY :



CURVE DATA

Δ	41°16'06" RT
D	1445.21'
R	3274.05'
T	1232.06'
L	2350.14'
E	224.42'

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	6	6
TYPE I WITH MILEPOST PLAQUE (WHITE)	6	5
MILEPOST WITHOUT REFLECTOR	5	6
TYPE II DELINEATOR	—	—



SB INB CURVE DATA

Δ	42°28'11" LT
D	3'
R	1909.9'
T	742.2'
L	1415.7'
E	159.1'

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	6	6
TYPE I WITH MILEPOST PLAQUE (WHITE)	11	4
MILEPOST WITHOUT REFLECTOR	—	7
TYPE II DELINEATOR	—	—

LEGEND

- EXISTING SIGN
- PROPOSED SIGN
- TEXT NUMBER

ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED.

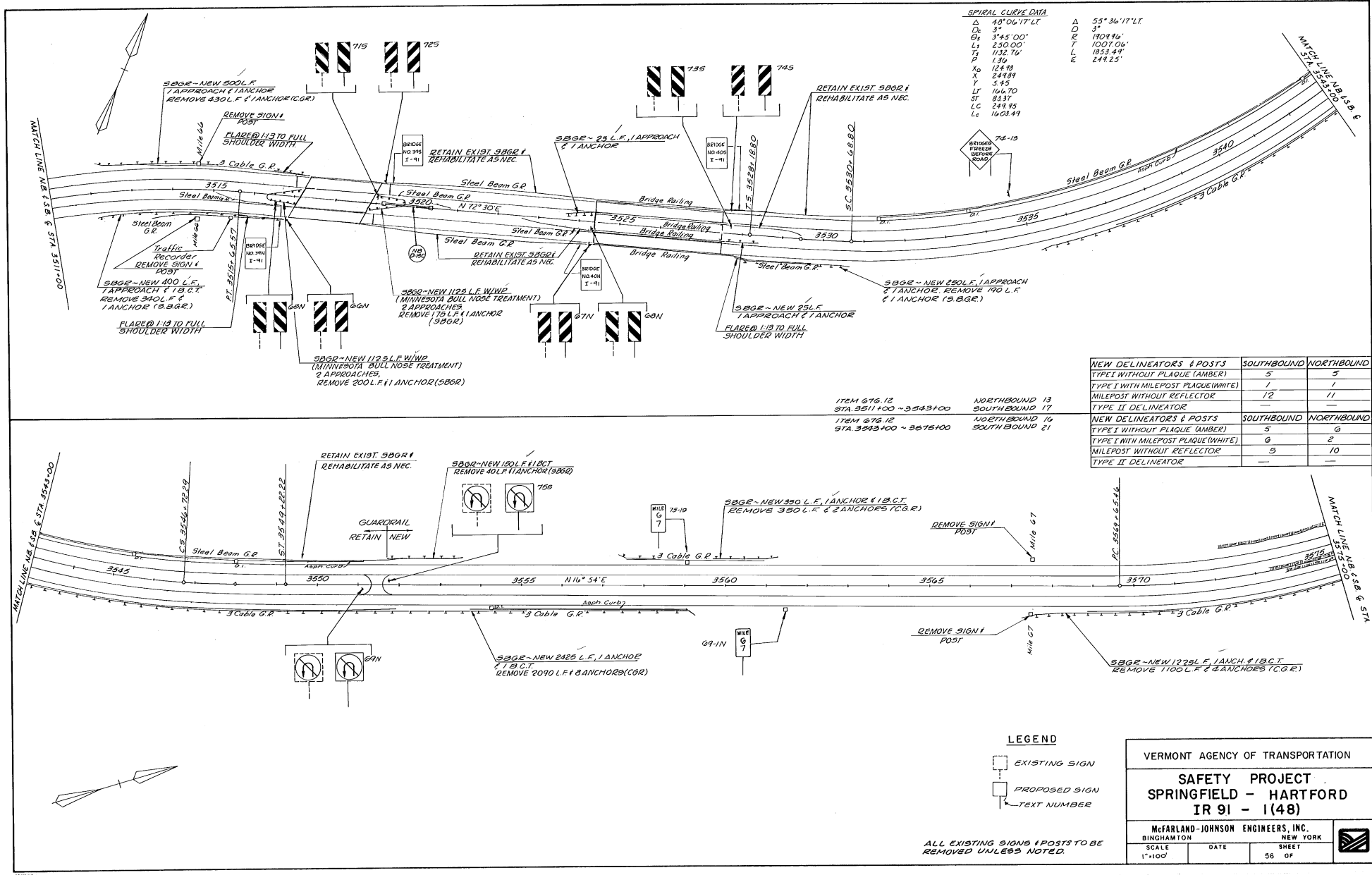
VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

SCALE	DATE	SHEET
		55 OF

IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____



SPIRAL CURVE DATA

Δ	49° 06' 17" LT	A	55° 36' 17" LT
Qs	35'	D	3'
Os	3° 45' 00"	R	190996'
L1	250.00'	T	1007.06'
Ts	1132.76'	L	1833.44'
P	1.36	E	249.25'
Xo	124.98		
X	249.99		
Y	3.95		
LT	166.70		
ST	83.35		
LC	249.95		
Lc	1603.44		

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	5	5
TYPE I WITH MILEPOST PLAQUE (WHITE)	1	1
MILEPOST WITHOUT REFLECTOR	12	11
TYPE II DELINEATOR	—	—
NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	5	6
TYPE I WITH MILEPOST PLAQUE (WHITE)	0	2
MILEPOST WITHOUT REFLECTOR	5	10
TYPE II DELINEATOR	—	—

ITEM 676.12
 STA 3511+00 ~ 3543+00
 NORTHBOUND 13
 SOUTHBOUND 17

ITEM 676.12
 STA 3543+00 ~ 3575+00
 NORTHBOUND 16
 SOUTHBOUND 21

LEGEND

	EXISTING SIGN
	PROPOSED SIGN
	TEXT NUMBER

VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

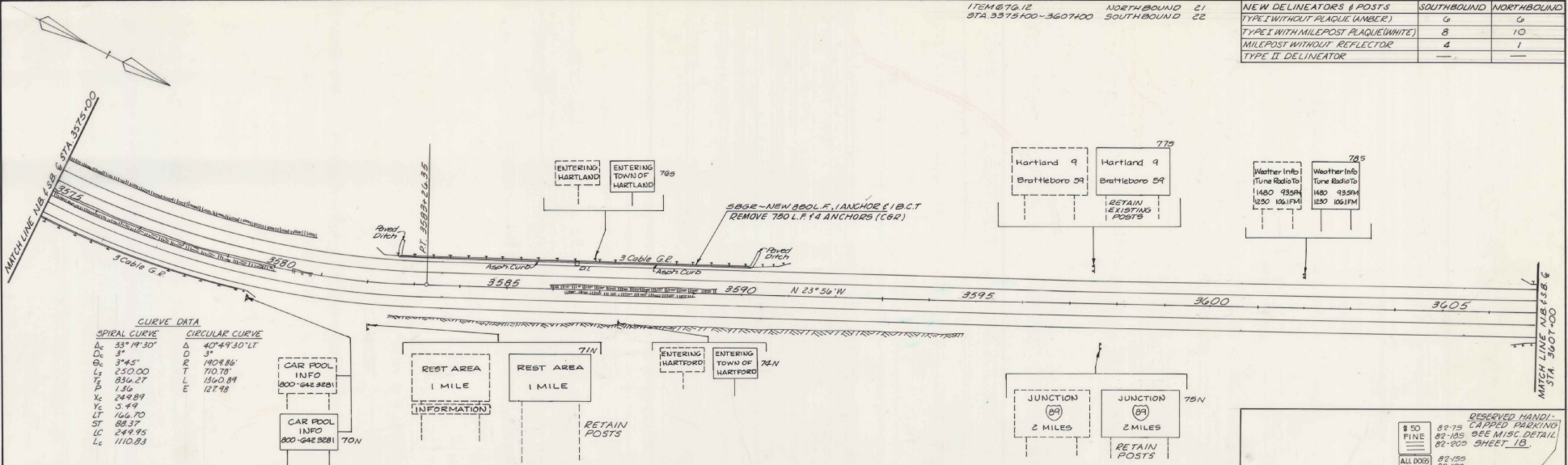
McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE	DATE	SHEET
1"=100'		56 OF

ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED.

ITEM 676.12 NORTHBOUND 21
STA 3315+00 - 3607+00 SOUTHBOUND 22

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	6	6
TYPE I WITH MILEPOST PLAQUE (WHITE)	8	10
MILEPOST WITHOUT REFLECTOR	4	1
TYPE II DELINEATOR	—	—



CURVE DATA

SPIRAL CURVE	CIRCULAR CURVE
A 33°19'30"	Δ 40°49'30"LT
D 3'	D 3'
Gc 3°45'	R 1909.86'
Ls 250.00'	T 70.78'
Pe 836.27'	L 1360.89'
S 1.36'	E 127.98'
K 249.89'	
Yc 5.49'	
Lt 166.70'	
St 88.37'	
Lc 249.95'	
Lc 1110.83'	

S.B. CURVE DATA

Δ 48°01'04"RT
D 2'
R 2864.74'
T 1273.02'
L 2405.89'
E 272.53'

N.B. CURVE DATA

Δ 48°22'44"RT
D 2'
R 2864.74'
T 1286.05'
L 2418.95'
E 272.74'

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	6	6
TYPE I WITH MILEPOST PLAQUE (WHITE)	4	2
MILEPOST WITHOUT REFLECTOR	3	5
TYPE II DELINEATOR	11	7

LEGEND

- PROHIBITED REST AREA
- EXISTING SIGN
- PROPOSED SIGN
- TEXT NUMBER
- TEXT NUMBER REMOVE AND LOCATION

ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED

VERMONT AGENCY OF TRANSPORTATION

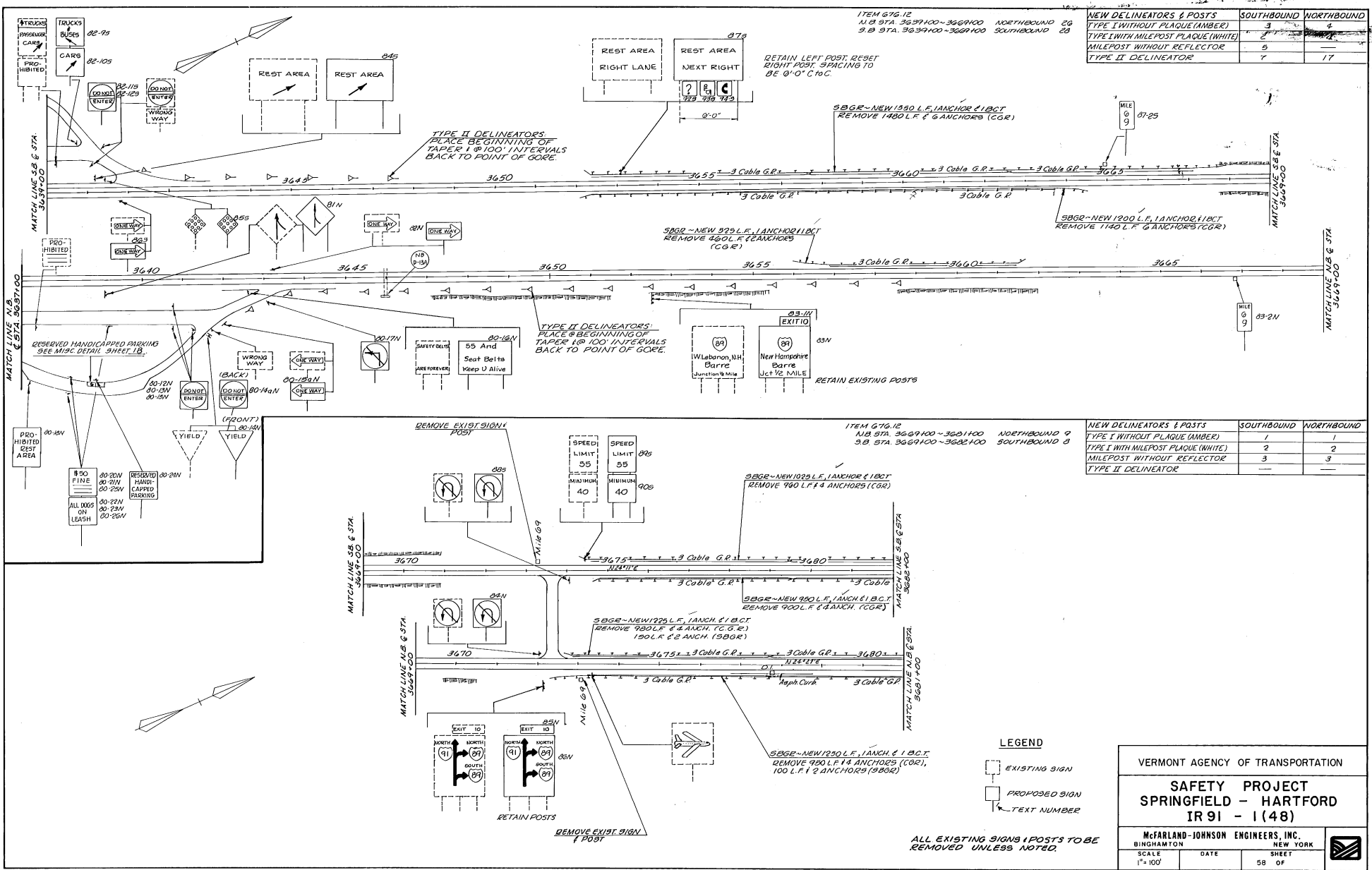
SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

SCALE DATE SHEET
57 OF

IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____

IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____



ITEM 676.12
 N.B STA. 3657100-3669100 NORTHBOUND 28
 S.B STA. 3639100-3669100 SOUTHBOUND 28

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	3	4
TYPE I WITH MILEPOST PLAQUE (WHITE)	2	2
MILEPOST WITHOUT REFLECTOR	5	—
TYPE II DELINEATOR	7	17

ITEM 676.12
 N.B STA. 3669100-3681100 NORTHBOUND 9
 S.B STA. 3669100-3681100 SOUTHBOUND 9

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	1	1
TYPE I WITH MILEPOST PLAQUE (WHITE)	2	2
MILEPOST WITHOUT REFLECTOR	3	3
TYPE II DELINEATOR	—	—

LEGEND

- EXISTING SIGN
- PROPOSED SIGN
- TEXT NUMBER

ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED.

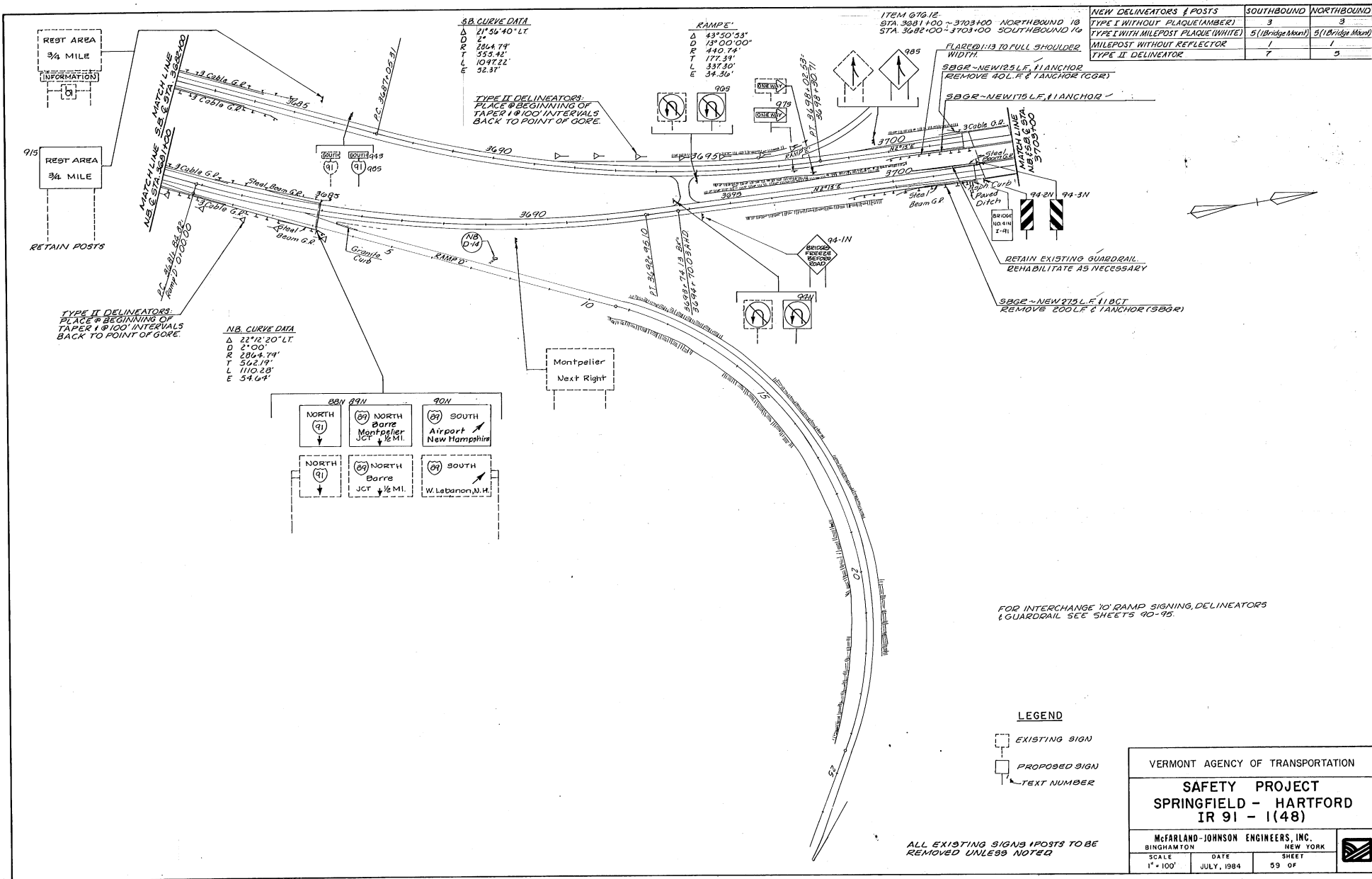
VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1 (48)

McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE: 1"=100'
 DATE: _____
 SHEET: 58 OF _____

IN CHARGE OF: _____
 DESIGNED BY: _____
 DETAILED BY: _____
 CHECKED BY: _____



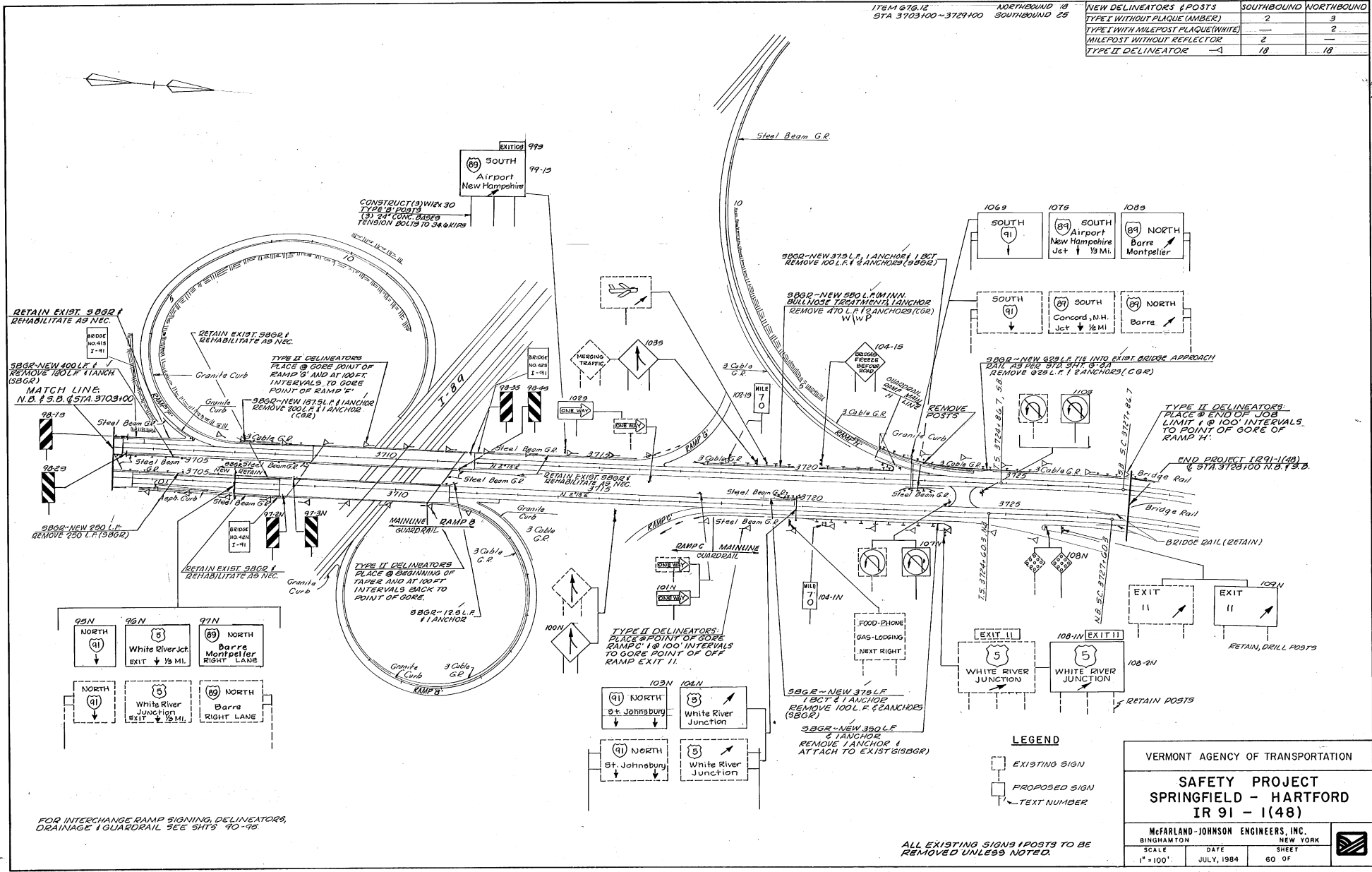
VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)

McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK		
SCALE 1" = 100'	DATE JULY, 1984	

ITEM 618.12 NORTHBOUND 18
STA 3703100-3729100 SOUTHBOUND 25

NEW DELINEATORS & POSTS	SOUTHBOUND	NORTHBOUND
TYPE I WITHOUT PLAQUE (AMBER)	2	3
TYPE I WITH MILEPOST PLAQUE (WHITE)	—	2
MILEPOST WITHOUT REFLECTOR	2	—
TYPE II DELINEATOR	10	18



RETAIN EXIST. SBGR I REHABILITATE AS NEC.

RETAIN EXIST. SBGR I REHABILITATE AS NEC.

SBGR-NEW 400 L.F. REMOVE 180 L.F. LANCE (SBGR)

MATCH LINE N.B. & S.B. @ STA. 3703100

TYPE II DELINEATORS PLACE @ GORE POINT OF RAMP 'B' AND AT 100 FT INTERVALS TO GORE POINT OF RAMP 'E'

SBGR-NEW 187.5 L.F. LANCHOR REMOVE 200 L.F. LANCHOR (CGR)

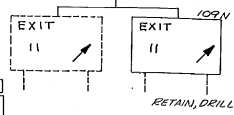
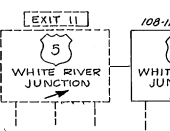
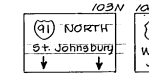
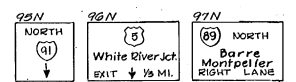
RETAIN EXIST. SBGR I REHABILITATE AS NEC.

TYPE II DELINEATORS PLACE @ BEGINNING OF RAMP 'C' & AT 100 FT INTERVALS BACK TO POINT OF GORE.

TYPE II DELINEATORS PLACE @ POINT OF GORE RAMP 'C' & AT 100' INTERVALS TO GORE POINT OF OFF RAMP EXIT II.

TYPE II DELINEATORS PLACE @ END OF JOB LIMIT & AT 100' INTERVALS TO POINT OF GORE OF RAMP 'H'

END PROJECT 1291-1(48) @ STA. 3728100 N.B. & S.B.



LEGEND

- EXISTING SIGN
- PROPOSED SIGN
- TEXT NUMBER

VERMONT AGENCY OF TRANSPORTATION

**SAFETY PROJECT
SPRINGFIELD - HARTFORD
IR 91 - 1(48)**

McFarland-Johnson Engineers, Inc.
BINGHAMTON NEW YORK

SCALE	DATE	SHEET
1" = 100'	JULY, 1984	60 OF

ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED.

IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____
 OK FILED BY: _____

FOR INTERCHANGE RAMP SIGNING, DELINEATORS, DRAINAGE & GUARDRAIL SEE SHTS. 90-95

IN CHARGE OF: R.H.H.
 DESIGNED BY: G.R.H.
 CHECKED BY: C.W.E., G.R.H.

STATION AND/OR MILE MARKER	LOCATION NUMBER *	TEXT NUMBER	TEXT	MUTCD AND/OR VERMONT STD. SHEET	TYPE	EXISTING SIGNS					INSTALLED SIGNS					EXISTING POSTS					NEW AND SALVAGED POSTS					NOTES			
						SIZES	AREA (SF)	RE-MOVE	SAL-VAGE	RE-TAIN	SIZES	AREA (SF)	NEW	SAL-VAGE	NUMBER OF POSTS	TYPE	RE-MOVE	SAL-VAGE	RE-TAIN	DRILL	TYPE 'A' (FLNGD. CHANN)			TYPE 'C' (ALUM. TUBE)					
																					2.0 lb/ft	2.5 lb/ft	3.0 lb/ft	3" Dia.	4" Dia.		3" SQ		
3597+65	N.B.Rt.	75N		See Sign Detail Sht. 29	B						13'x105'	365	1														Retain Existing Posts		
3597+50	S.B.Lt.	77S		See Sign Detail Sht. 28	B						15'x8'	75	1														Retain Existing Posts		
3602+00	S.B.Lt.	78S		Vt.E-14	B						9'x55'	495	1																
3617+25	N.B.Rt.	76N		Vt.E-14	B						10'x5'	50	1																
3617+25 (CONT'D BELOW)	N.B.Rt.	72N		Vt.E-14B	A						2'x2'	4	1																
		78N		Vt.E-15C	A						3'x3'	9	1																
3628+90	N.B.Lt.	81S		Vt.E-16C	A						3'x3'	9	1																
3630+10	S.B.Rt.	82S		Vt.E-16C	A						3'x3'	9	1																
3631+70	S.B.Rt.	82S	ONE WAY	Vt.E-16B	A						3'x1'	3	1															Rest Area Southbound	
3632+75	S.B.Lt.	82-15		Vt.E-16C	A						2'x2'	4	1																Rest Area Southbound
3633+20	S.B.Lt.	82-35	ONE WAY	Vt.E-16B	A						3'x1'	3	1																Rest Area Southbound
3633+35	S.B.Lt.	82-25		Vt.E-14	A						4'x3'	12	1																Rest Area Southbound
3634+00	S.B.Lt.	82-45	Yield Sign	Vt.E-15C	A						3'x3'	4	1																Rest Area Southbound
3635+10	S.B.Lt.	82-55		Vt.E-15C	A						25'x25'	625	1																Rest Area Southbound
3635+10	S.B.Lt.	82-65		Vt.E-16C	A						25'x25'	625	1																Rest Area Southbound
3636+85	S.B.Lt.	82-75		Vt.E-16B	A						25'x25'	625	1																Rest Area Southbound
3636+85	S.B.Lt.	82-185		Vt.E-15B	A						2'x2'	4	1																Rest Area Southbound
3636+30	S.B.Lt.	83S		Vt.E-19	A						4'x4'	16	1																Rest Area Southbound
3637+50	S.B.Lt.	82-165		See Sign Detail Sht. 30	A						1'x1.5'	1.5	1																Rest Area Southbound
3638+55	S.B.Lt.	82-175		Vt.E-15B	A						25'x20'	5	1																Rest Area Southbound
3637+60	S.B.Lt.	82-185		Vt.E-15B	A						25'x25'	625	1																Rest Area Southbound
3637+95	S.B.Lt.	82-195		Vt.E-15B	A						2'x2'	4	1																Rest Area Southbound
3637+95	S.B.Lt.	82-205		Vt.E-15B	A						25'x25'	625	1																Rest Area Southbound
3637+95	S.B.Lt.	82-215		Vt.E-15B	A						2'x2'	4	1																Rest Area Southbound
3637+25	N.B.Rt.	77N		Vt.E-14B	A						2'x2'	4	1																
3638+80	S.B.Lt.	82-85		Vt.E-15B	A						25'x25'	625	1																Rest Area Southbound
3634+35	N.B.Lt.	80N	ONE WAY	Vt.E-15B	A						3'x1'	3	1																Rest Area Southbound
3636+85	N.B.Rt.	80-1N		Vt.E-19B	A						15'x1.5'	22.5	1																Rest Area Northbound
3639+30	N.B.Rt.	80-2N		Vt.E-14	B						65'x6.5'	422.5	1																Rest Area Northbound
3635+20	N.B.Rt.	80-5N		Vt.E-15C	A						25'x25'	625	1																Rest Area Northbound
3635+40	N.B.Rt.	80-4N		Vt.E-15C	A						25'x25'	625	1																Rest Area Northbound
3635+65	N.B.Rt.	80-6N		See Sign Detail Sht. 30	A						2'x2'	4	1																Rest Area Northbound
3636+40	N.B.Rt.	80-7N		See Sign Detail Sht. 30	A						2'x2.5'	5	1																Rest Area Northbound
3636+40	N.B.Rt.	80-10N		Vt.E-15B	A						25'x20'	5	1																Rest Area Northbound
3637+25	N.B.Rt.	80-18N		Vt.E-15B	A						25'x20'	5	1																Rest Area Northbound
3639+30	S.B.Lt.	82-95		See Sign Detail Sht. 30	A						2'x2.5'	5	1																Rest Area Northbound
3639+30	S.B.Lt.	82-105		See Sign Detail Sht. 30	A						2'x2'	4	1																Rest Area Northbound

* Location Referenced from Individual Travel Lanes in the direction of Stationing

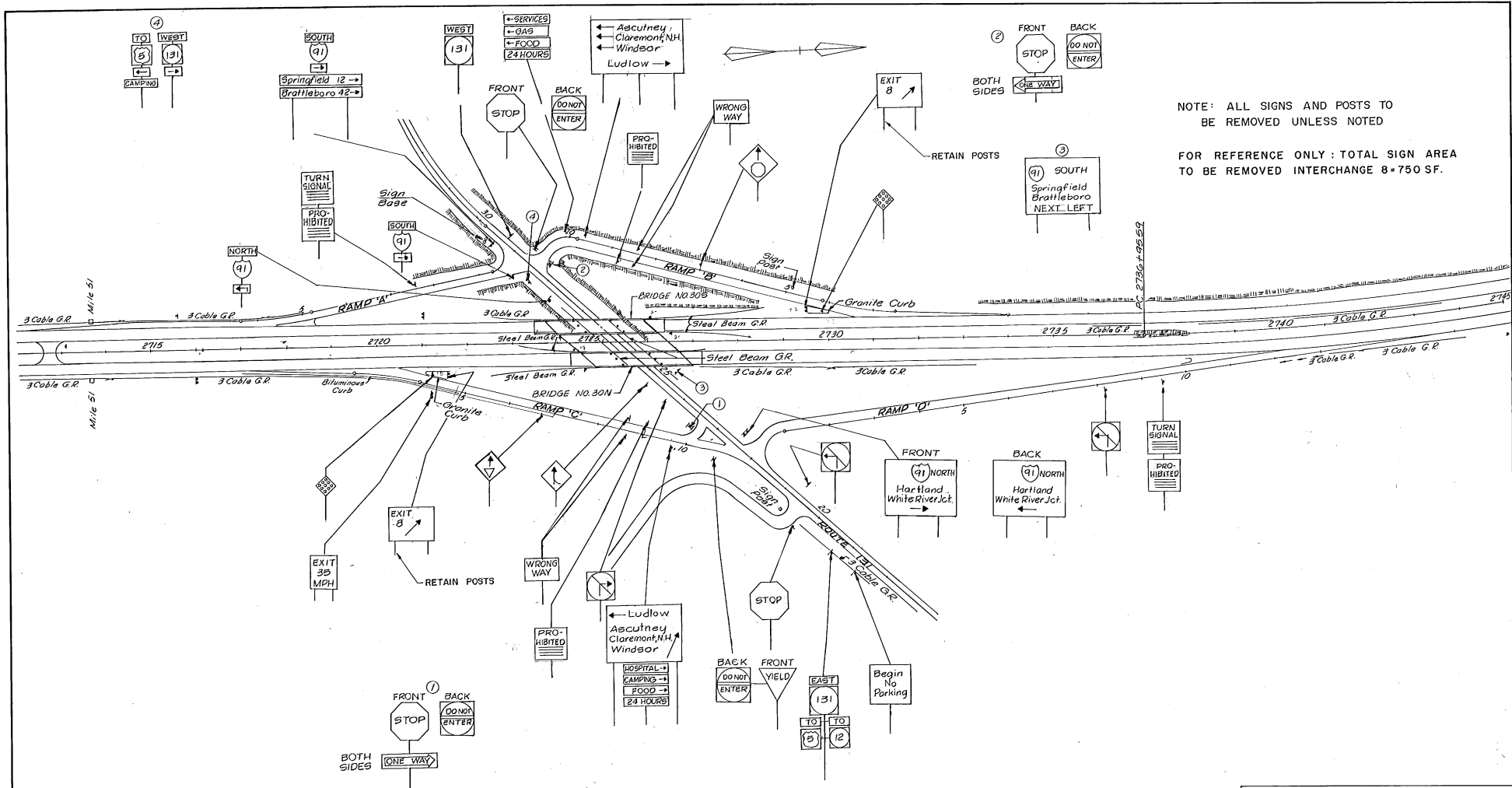
SHEET TOTALS	A										174																		
B																													
RUNNING TOTALS	A										10480																		
B											18052																		
											3007																		

SIGNING TABLE					
MAINLINE N.B. AND S.B.					
VERMONT AGENCY OF TRANSPORTATION					
SAFETY PROJECT					
SPRINGFIELD-HARTFORD					
IR 91 - 1(48)					
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK					
SCALE NONE	DATE	SHEET 66	OF		

IN CHARGE OF: R.J.H.
 DESIGNED BY: GRH.
 DETAILED BY: I.A.L.
 CHECKED BY: C.F.W., GRH.

STATION AND/OR MILE MARKER	LOCATION NUMBER *	TEXT	TEXT	MUTCD AND/OR VERMONT STD. SHEET	TYPE	EXISTING SIGNS					INSTALLED SIGNS				EXISTING POSTS				NEW AND SALVAGED POSTS					NOTES										
						SIZES	AREA (SF)	RE-MOVE	SAL-VAGE	RE-TAIN	SIZES	AREA (SF)	NEW	SAL-VAGE	NUMBER OF POSTS	TYPE	RE-MOVE	SAL-VAGE	RE-TAIN	DRILL	TYPE 'A' (FLNGD. CHANN.)				TYPE 'C' (ALUM. TUBE)									
																					2.0 lb/ft	3.0 lb/ft	3.5 lb/ft		3" Dia.	4" Dia.	3" Sq							
2285+81	N.B.Rt.	1-1N		Vt.E-31	A						1'x3'	3	1														1	12						See Page 101 For Mile Marker Descriptions
2283+08	S.B.Lt.	7-1S																									12							
2336+28	N.B.Rt.	2-1N																									10							
2335+82	S.B.Lt.	8-1S																									12							
2386+75	N.B.Rt.	2-2N																									12							
2388+60	S.B.Lt.	8-2S																									10							
2443+90	N.B.Rt.	3-1N																									12							
2441+26	S.B.Lt.	9-1S																									12							
2496+56	N.B.Rt.	4-1N																									10							
2494+19	S.B.Lt.	10-1S																									10							
2549+51	N.B.Rt.	4-2N																									12							
2546+87	S.B.Lt.	10-2S																									12							
2602+41	N.B.Rt.	5-1N																									12							
2599+71	S.B.Lt.	11-1S																									12							
2655+20	N.B.Rt.	5-2N																									12							
2651+82	S.B.Lt.	11-2S																									12							
2707+69	N.B.Rt.	10-1N																									12							
2704+73	S.B.Lt.	13-1S																									12							
2760+86	N.B.Rt.	27-1N																									12							
2757+64	S.B.Lt.	29S																									12							
2812+90	N.B.Rt.	29-1N																									10							
2810+32	S.B.Lt.	35-1S																									10							
2866+02	N.B.Rt.	32-1N																									10							
2863+83	S.B.Lt.	38-1S																									10							
2918+39	N.B.Rt.	33-2N																									12							
2916+55	S.B.Lt.	38-2S																									12							
2971+19	N.B.Rt.	35-1N																									10							
2969+30	S.B.Lt.	41-1S																									10							
3023+60	N.B.Rt.	40-1N																									10							
3022+00	S.B.Lt.	43-1S																									12							
3076+79	N.B.Rt.	43-2N																									10							
3075+53	S.B.Lt.	47-3S																									12							
3129+12	N.B.Rt.	44-1N																									12							
3126+85	S.B.Lt.	48-1S																									10							
3182+23	N.B.Rt.	52-1N																									12							
3180+79	S.B.Lt.	52-1S																									12							
3244+15	N.B.Rt.	62-1N																									10							
3241+25	S.B.Lt.	66-1S									1'x3'	3	1														1	10						

IN CHARGE OF: R.J.H.
 DESIGNED BY: C.F.W. GRH.
 DETAILED BY: J.A.T.
 CHECKED BY: M.W.F. R.A.L.



NOTE: ALL SIGNS AND POSTS TO BE REMOVED UNLESS NOTED

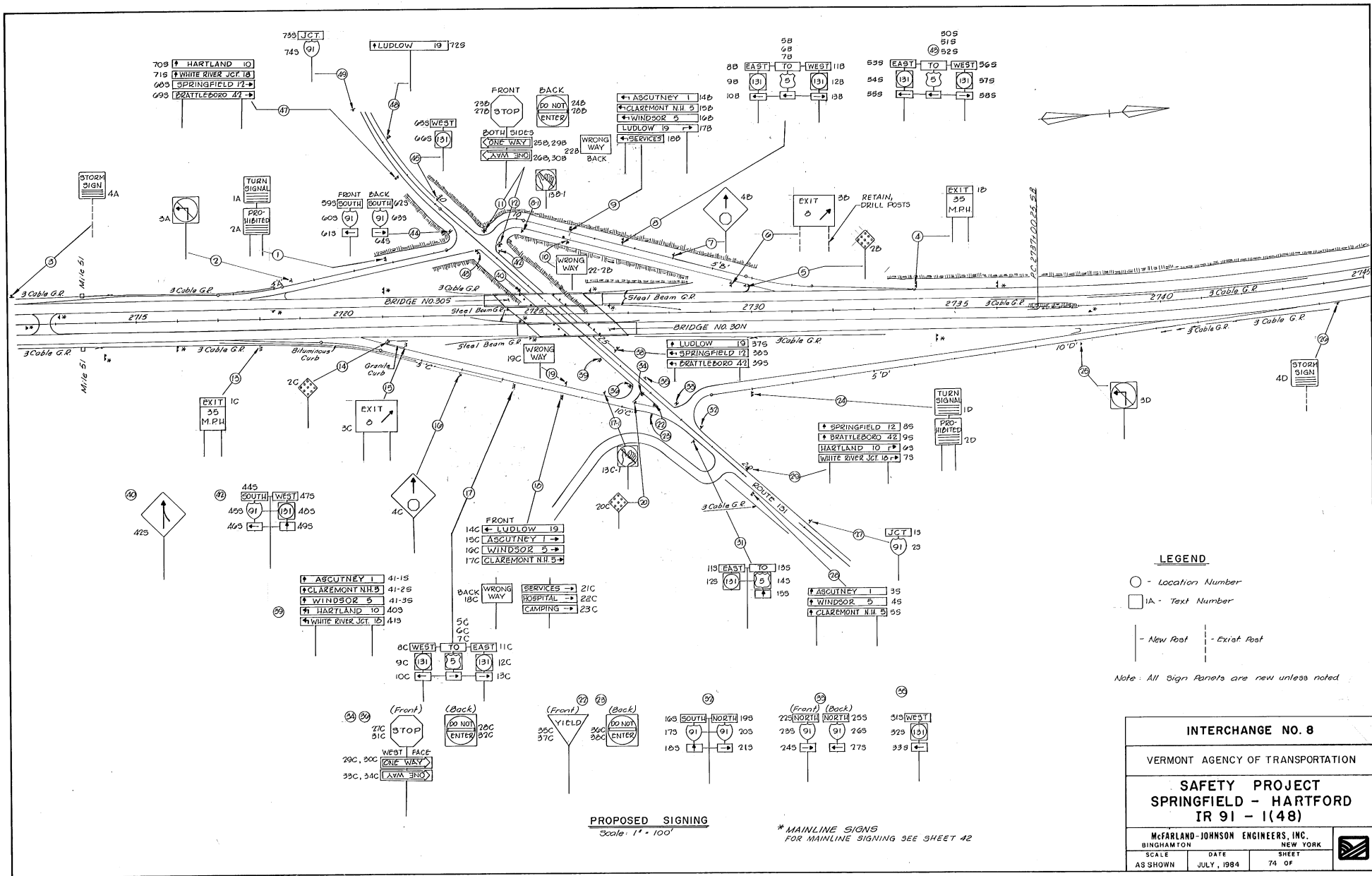
FOR REFERENCE ONLY: TOTAL SIGN AREA TO BE REMOVED INTERCHANGE 8 = 750 SF.

EXISTING SIGNS
 Plan Scale 1"=100'

FOR MAINLINE SIGNING
 SEE SHEET 42

INTERCHANGE NO. 8			
VERMONT AGENCY OF TRANSPORTATION			
SAFETY PROJECT SPRINGFIELD - HARTFORD IR 91 - 1(48)			
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK			
SCALE AS SHOWN	DATE JULY, 1984	SHEET 73 OF	

IN CHARGE OF : _____
 DESIGNED BY : _____
 CHECKED BY : _____
 DATE : _____



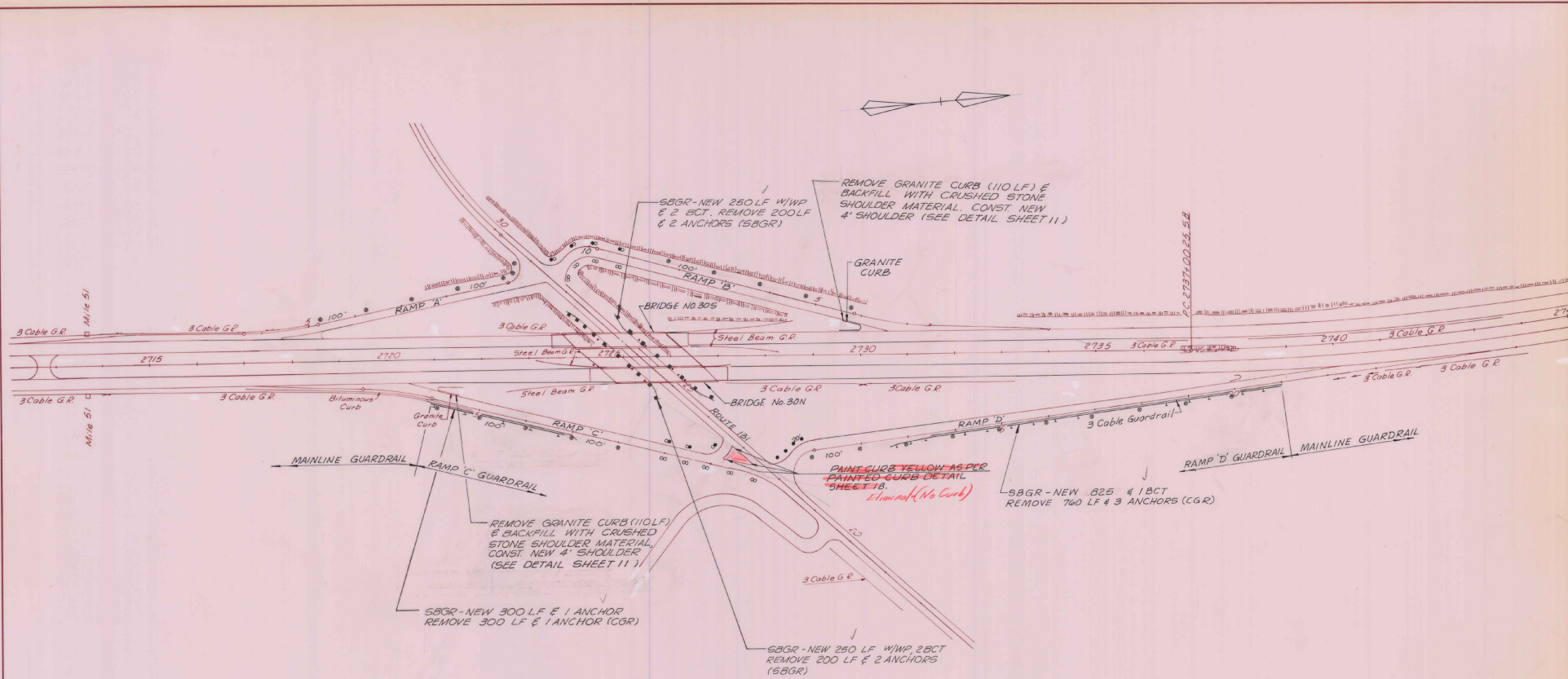
PROPOSED SIGNING
 Scale: 1" = 100'

* MAINLINE SIGNS
 FOR MAINLINE SIGNING SEE SHEET 42

LEGEND
 ○ - Location Number
 □ IA - Text Number
 - - - New Post - - - Existing Post
 Note: All Sign Panels are new unless noted

INTERCHANGE NO. 8			
VERMONT AGENCY OF TRANSPORTATION			
SAFETY PROJECT			
SPRINGFIELD - HARTFORD			
IR 91 - 1(48)			
McFARLAND-JOHNSON ENGINEERS, INC.		NEW YORK	
SCALE	DATE	SHEET	AS SHOWN
AS SHOWN	JULY, 1984	74 OF	74 OF

IN CHARGE OF: _____
 DETAILED BY: _____
 DESIGNED BY: _____
 CHECKED BY: _____



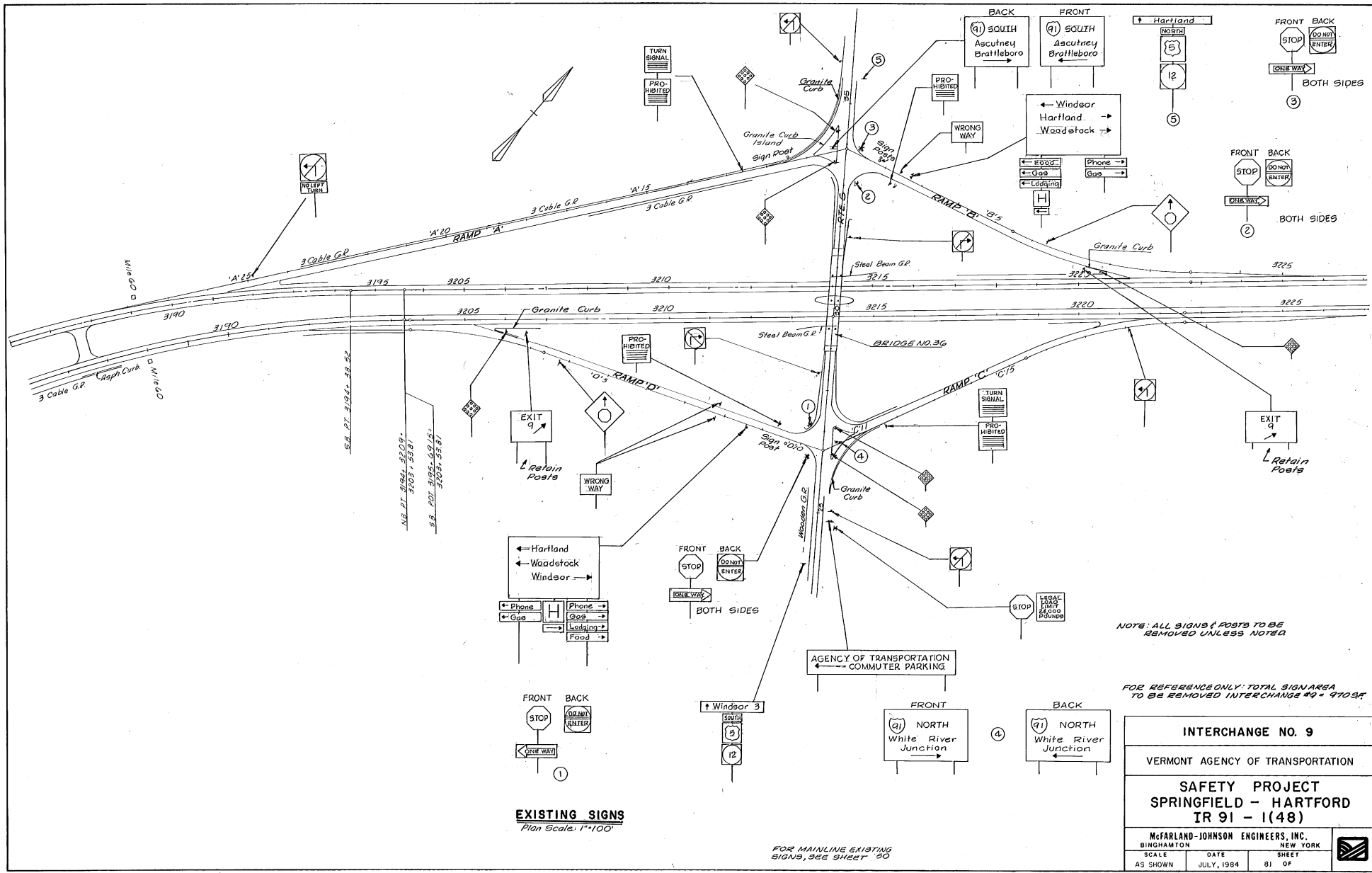
PAVEMENT MARKING, GUARDRAIL & DELINEATOR PLAN
 Scale: 1"=100'

- DELINEATOR REMOVAL (ITEM 676.12) 36 EA.
 DELINEATORS (Item 676.10)
- White Type I 27 EA.
 - Yellow Type I 4 EA.
 - Type III Yellow & Red 7 EA.
 - Type III White & Red 9 EA.

FOR MAINLINE GUARDRAIL
 SEE SHEET 42

INTERCHANGE NO. 8	
VERMONT AGENCY OF TRANSPORTATION	
SAFETY PROJECT SPRINGFIELD - HARTFORD IR 91 - 1(48)	
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK	
SCALE AS SHOWN	DATE JULY, 1984
SHEET 75	OF OF

IN CHARGE OF: R.J.H. DETAILED BY: M.A.L.
 DESIGNED BY: C.F.W., G.R.H. CHECKED BY: M.W.F., R.A.L.



EXISTING SIGNS
 Plan Scale: 1"=100'

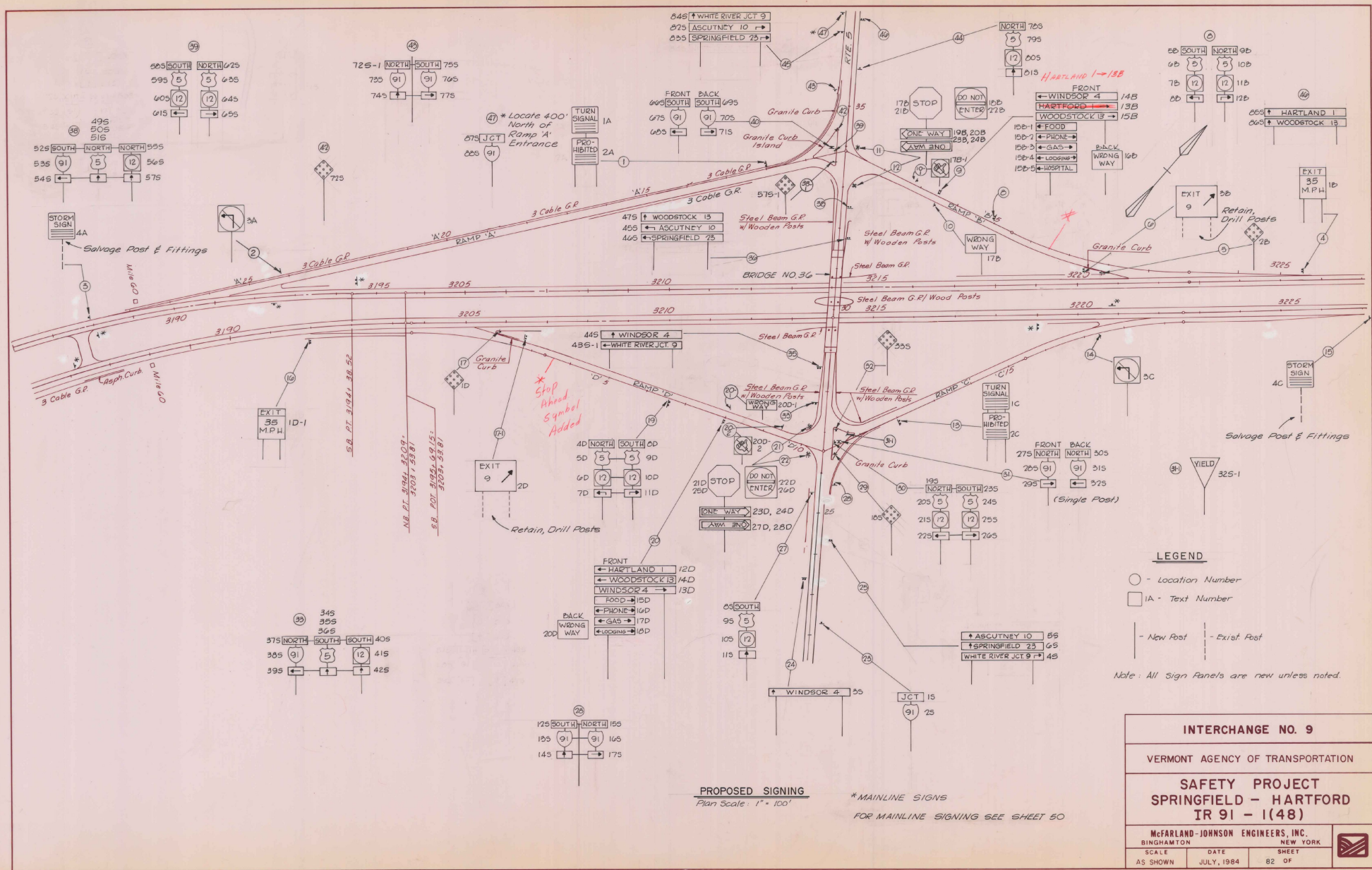
FOR MAINLINE EXISTING SIGNS, SEE SHEET 90

NOTE: ALL SIGNS & POSTS TO BE REMOVED UNLESS NOTED

FOR REFERENCE ONLY: TOTAL SIGN AREA TO BE REMOVED INTERCHANGE #9 = 970SF

INTERCHANGE NO. 9	
VERMONT AGENCY OF TRANSPORTATION	
SAFETY PROJECT SPRINGFIELD - HARTFORD IR 91 - 1(48)	
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK	
SCALE AS SHOWN	DATE JULY, 1984
SHEET 81 OF	

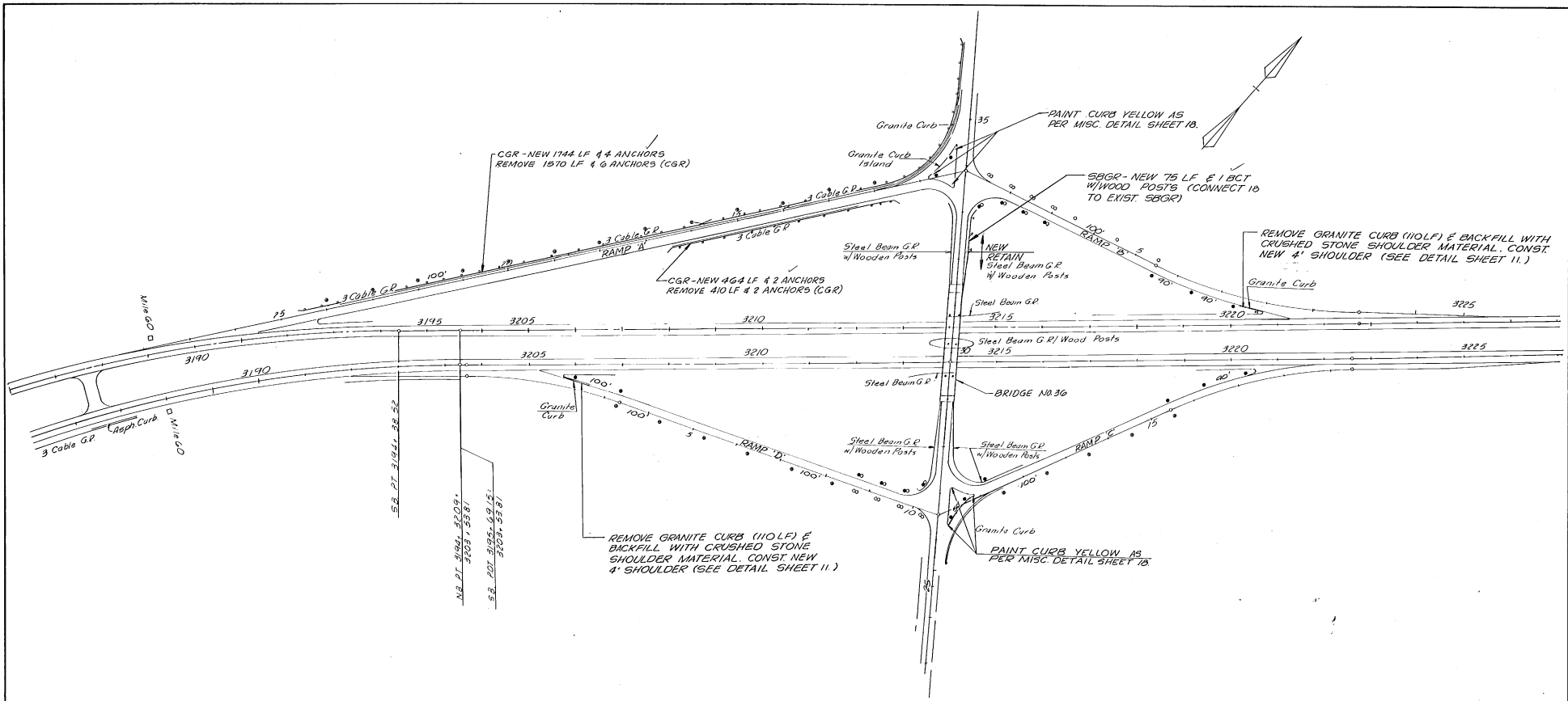
IN CHARGE OF: _____
 DETAILED BY: _____
 DESIGNED BY: _____
 CHECKED BY: _____



PROPOSED SIGNING
 Plan Scale: 1" = 100'
 *MAINLINE SIGNS
 FOR MAINLINE SIGNING SEE SHEET 50

INTERCHANGE NO. 9		
VERMONT AGENCY OF TRANSPORTATION		
SAFETY PROJECT		
SPRINGFIELD - HARTFORD		
IR 91 - 1(48)		
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK		
SCALE	DATE	SHEET
AS SHOWN	JULY, 1984	82 OF

IN CHARGE OF: _____
 DESIGNED BY: _____
 CHECKED BY: _____



PAVEMENT MARKING, GUARDRAIL & DELINEATOR PLAN
 SCALE: 1"=100'

FOR MAINLINE GUARDRAIL & TYPE II DELINEATORS
 SEE SHEET 50.

- DELINEATOR REMOVAL (ITEM 676.12) 59 EA.
 DELINEATORS (ITEM 676.10)
- ⊙ WHITE TYPE I 27 EA.
 - YELLOW TYPE I 15 EA.
 - ⊙ TYPE III YELLOW & RED 8 EA.
 - ⊙ TYPE III WHITE & RED 8 EA.

INTERCHANGE NO. 9	
VERMONT AGENCY OF TRANSPORTATION	
SAFETY PROJECT SPRINGFIELD - HARTFORD IR 91 - 1(48)	
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK	
SCALE AS SHOWN	DATE JULY, 1984
SHEET 83 OF	


IN CHARGE OF: R.J.H.
 DESIGNED BY: G.R.H.
 DETAILED BY: J.A.T.
 CHECKED BY: C.W.G.R.H.

STATION AND/OR MILE MARKER	LOCATION NUMBER	TEXT NUMBER	TEXT	MUTCD AND/OR VERMONT STD. SHEET	TYPE	EXISTING SIGNS					INSTALLED SIGNS				EXISTING POSTS					NEW AND SALVAGED POSTS				NOTES	
						SIZES	AREA (SF)	RE-MOVE	SAL-VAGE	RE-TAIN	SIZES	AREA (SF)	NEW	SAL-VAGE	NUMBER OF POSTS	TYPE	RE-MOVE	SAL-VAGE	RE-TAIN	DRILL	TYPE 'A' (FLNGD. CHANN)				TYPE 'C' (ALUM. TUBE)
																					2 1/2" Dia.	3" Dia.	4" Dia.		3" Sq
12+00	1	1A		V.H.E-15B	A						3'X3'	9	1								2				
		2A		V.H.E-15B	A						3'X3'	9	1												
	24+20	3A		V.H.E-15C	A						2'X2'	4	1								1				
		4A		V.H.E-19	A						4'X5'	20	1	1	3 1/2" φ		1								
	318B+00	3	4A		V.H.E-19	A						4'X5'	20	1											2
	322B+80	4	1B		V.H.E-19	A						4'X5'	20	1											2
2+15	5	2B		V.H.E-19B	A						15'X15'	225	1							1					
2+50	6	3B		V.H.E-14	B						6'X5'	30	1	2	4" φ 'C'										
5+05	8	5B		V.H.E-12	A						2'X11'	2	1											2	
		6B		V.H.E-12	A						2'X2'	4	1												
		7B		V.H.E-13	A						2'X2'	4	1												
		8B		V.H.E-13	A						21"X15"	22	1												
		9B		V.H.E-12	A						2'X11'	2	1												
		10B		V.H.E-12	A						2'X2'	4	1												
		11B		V.H.E-13	A						2'X2'	4	1												
		12B		V.H.E-13	A						21"X15"	22	1												
6+50	9	13B		V.H.E-23	A						6'-0"X10'	5	1											2	
		14B		V.H.E-23	A						6'-0"X10'	5	1												
		15B		V.H.E-23	A						6'-0"X10'	5	1												
		15B-1		V.H.E-23	A						36"X75"	19	1												
		15B-2		V.H.E-23	A						36"X75"	19	1												
		15B-3		V.H.E-23	A						36"X75"	19	1												
		15B-4		V.H.E-23	A						36"X75"	19	1												
		15B-5		V.H.E-23	A						36"X75"	19	1												
16B		V.H.E-15C	A						3'X2'	6	1														
6+50	10	17B		V.H.E-15C	A						3'X2'	6	1										1		
7+20	10-1	17B-1		V.H.E-15C	A						2'X2'	4	1										1		
8+80	11	17B		V.H.E-15C	A						25'X25'	625	1												
		18B		V.H.E-15C	A						25'X25'	625	1												
		19B	← ONE WAY	V.H.E-15B	A						3'X11'	3	1												
		23B	ONE WAY →	V.H.E-15B	A						3'X11'	3	1												
8+60	12	21B		V.H.E-15C	A						25'X25'	625	1											1	
		22B		V.H.E-15C	A						25'X25'	625	1												
		20B	← ONE WAY	V.H.E-15B	A						3'X11'	3	1												
		24B	ONE WAY →	V.H.E-15B	A						3'X11'	3	1												
			CONT'D. NEXT SHEET																						
TOTALS					A					166										4		4	4	2	
					B					30															

SIGNING TABLE			
INTERCHANGE NO. 9			
VERMONT AGENCY OF TRANSPORTATION			
SAFETY PROJECT			
SPRINGFIELD-HARTFORD			
IR 91 - 1(48)			
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK			
SCALE NONE	DATE	SHEET 84	OF OF

IN CHARGE OF: R.H.
 DESIGNED BY: GRH
 DETAILED BY: L.A.
 CHECKED BY: CEW, GRH

STATION AND/OR MILE MARKER	LOCATION NUMBER	TEXT NUMBER	TEXT	MUTCD AND/OR VERMONT STD. SHEET	TYPE	EXISTING SIGNS					INSTALLED SIGNS				EXISTING POSTS					NEW AND SALVAGED POSTS					NOTES					
						SIZES	AREA (SF)	RE-MOVE	SAL-VAGE	RE-TAIN	SIZES	AREA (SF)	NEW	SAL-VAGE	NUMBER OF POSTS	TYPE	RE-MOVE	SAL-VAGE	RE-TAIN	DRILL	TYPE 'A' (FLNGD. CHANN.)		TYPE 'C' (ALUM. TUBE)							
																					2 1/2" Dia.	3" Dia.	4" Dia.	3" SQ						
27+70	33	345		Vt.E-12	A						2'x1'	2	/																	
		355		Vt.E-12	A						2'x2'	4	/																	
		365	↑	Vt.E-13	A						21"X15"	22	/																	
		375		Vt.E-11	A						2'x1'	2	/																	
		385		Vt.E-11	A						2'x2'	4	/																	
		395	←	Vt.E-11	A						21"X15"	22	/																	
		405		Vt.E-13	A						2'x1'	2	/																	
		415		Vt.E-13	A						2'x1'	4	/																	
		425	↑	Vt.E-13	A						21"X15"	22	/																	
27+00	31-1	325-1	Yield Sign Triangle	Vt.E-19C	A						3'x3'	4	/																	
28+60	35	435-1		Vt.E-23	A						6'-0"x10"	5	/																	
		445		Vt.E-23	A						6'-0"x10"	5	/																	
		455		Vt.E-23	A						6'-0"x10"	5	/																	
31+70	36	465		Vt.E-23	A						6'-0"x10"	5	/																	
		465		Vt.E-23	A						6'-0"x10"	5	/																	
		475		Vt.E-23	A						6'-0"x10"	5	/																	
32+50	38	495		Vt.E-12	A						2'x1'	2	/																	
		505		Vt.E-12	A						2'x2'	4	/																	
		515	↑	Vt.E-13	A						21"X15"	22	/																	
		525		Vt.E-11	A						2'x1'	2	/																	
		535		Vt.E-11	A						2'x2'	4	/																	
		545	←	Vt.E-11	A						21"X15"	22	/																	
		555		Vt.E-13	A						2'x1'	2	/																	
		565		Vt.E-13	A						2'x2'	4	/																	
		575	↑	Vt.E-13	A						21"X15"	22	/																	
33+60	38-1	575-1		Vt.E-19B	A						15'X15'	225	/																	
33+90	39	585		Vt.E-12	A						2'x1'	2	/																	
		595		Vt.E-12	A						2'x2'	4	/																	
		605		Vt.E-13	A						2'x2'	4	/																	
		615	←	Vt.E-13	A						21"X15"	22	/																	
		625		Vt.E-12	A						2'x1'	2	/																	
		635		Vt.E-12	A						2'x2'	4	/																	
		645		Vt.E-13	A						2'x2'	4	/																	
				655	→	Vt.E-13	A						21"X15"	22	/															
			CONT'D NEXT SHEET																											
TOTALS					A						105																			
					B																									

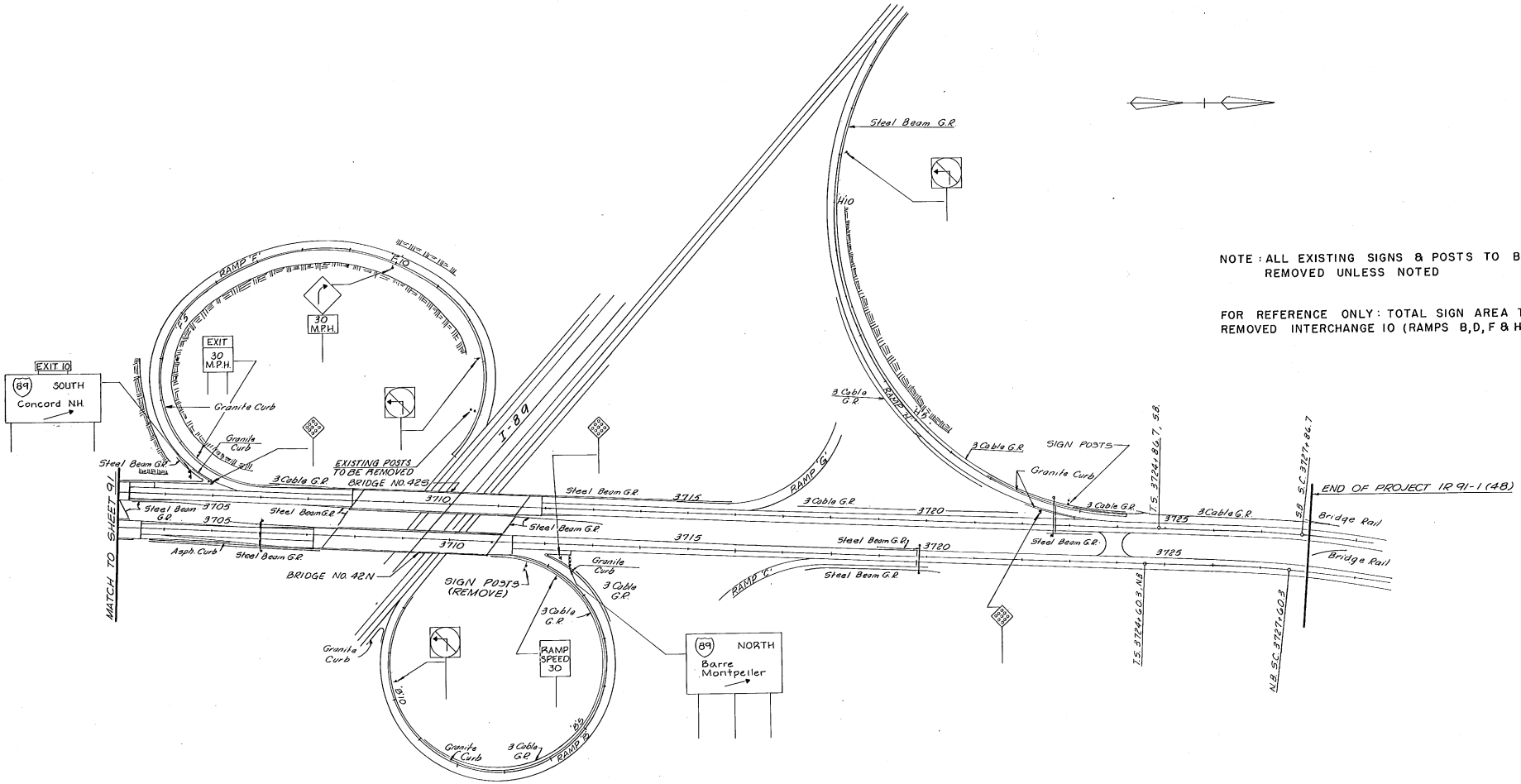
SIGNING TABLE			
INTERCHANGE NO. 9			
VERMONT AGENCY OF TRANSPORTATION			
SAFETY PROJECT			
SPRINGFIELD-HARTFORD			
IR 91 - 1(48)			
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK		NEW YORK	
SCALE NONE	DATE	SHEET 87 OF	

IN CHARGE OF: BAH
 DESIGNED BY: GRH
 DETAILED BY: LAL
 CHECKED BY: CFW, GRH

STATION AND/OR MILE MARKER	LOCATION NUMBER	TEXT NUMBER	TEXT	MUTCD AND/OR VERMONT STD. SHEET	U L C F	EXISTING SIGNS					INSTALLED SIGNS				EXISTING POSTS					NEW AND SALVAGED POSTS						NOTES		
						SIZES	AREA (SQ)	RE-MOVE	SAL-VAGE	RE-TAIN	SIZES	AREA (SQ)	NEW	SAL-VAGE	NUMBER OF POSTS	TYPE	RE-MOVE	SAL-VAGE	RE-TAIN	DRILL	TYPE 'A' (FLNGD. CHANN)			TYPE 'C' (ALUM. TUBE)				
																					2 1/2" Dia.	3" Dia.	4" Dia.	3" Dia.	4" Dia.		5" Dia.	
33+90	40	668		V.E-11	A						2'X1'	2	1													SIGNS MOUNTED BACK TO BACK		
		678		V.E-11	A						2'X2'	4	1															
		688	←	V.E-11	A						21"X15"	22	1															
		698		V.E-11	A						2'X1'	2	1															
		708		V.E-11	A						2'X2'	4	1															
		718	→	V.E-11	A						21"X15"	22	1															
34+40	42	728		V.E-19B	A						15'X15'	225	1															
35+40	43	728-1		V.E-11	A						2'X1'	2	1															
		738		V.E-11	A						2'X2'	4	1															
		748	↑	V.E-11	A						21"X15"	22	1															
		758		V.E-11	A						2'X1"	2	1															
		768		V.E-11	A						2'X2'	4	1															
		778	→	V.E-11	A						21"X15"	22	1															
35+90	44	788		V.E-12	A						2'X1'	2	1															
		798		V.E-12	A						2'X2'	4	1															
		808		V.E-13	A						2'X2'	4	1															
		818	↑	V.E-13	A						21"X15"	22	1															
36+25	45	828		V.E-23	A						6'0"X10'	5	1															
		838		V.E-23	A						6'0"X10'	5	1															
		848		V.E-23	A						6'0"X10'	5	1															
37+15	46	858		V.E-23	A						6'0"X10'	5	1															
		868		V.E-23	A						6'0"X10'	5	1															
37+30	47	878		V.E-11	A						21"X15"	22	1															
		888		V.E-11	A						2'X2'	4	1															
TOTALS					A																							
					B																							

SIGNING TABLE			
INTERCHANGE NO. 9			
VERMONT AGENCY OF TRANSPORTATION			
SAFETY PROJECT			
SPRINGFIELD-HARTFORD			
IR 91 - 1(48)			
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK			
SCALE NONE	DATE	SHEET 88	OF OF

IN CHARGE OF _____
 DESIGNED BY _____
 CHECKED BY _____



NOTE: ALL EXISTING SIGNS & POSTS TO BE REMOVED UNLESS NOTED

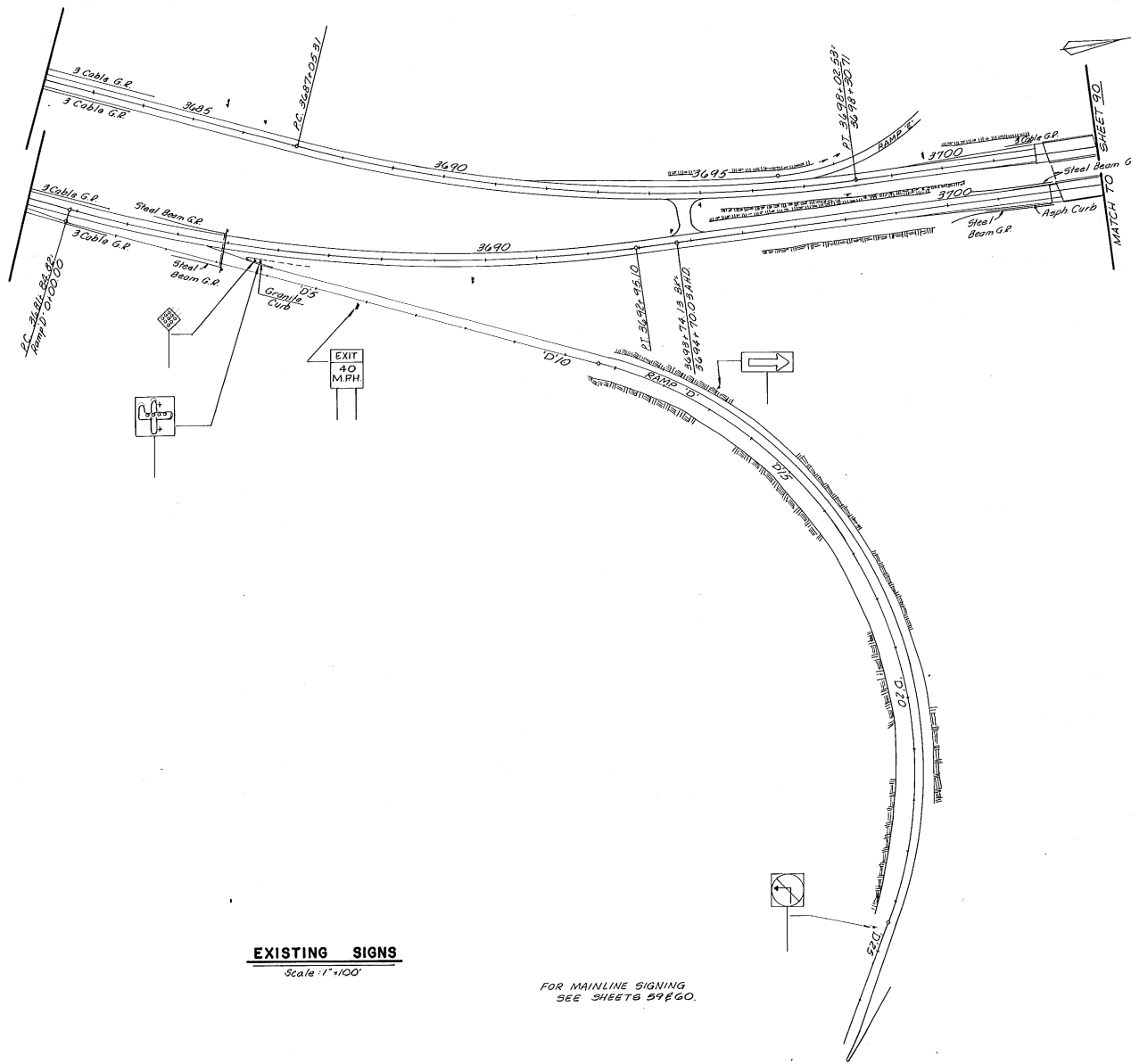
FOR REFERENCE ONLY: TOTAL SIGN AREA TO BE REMOVED INTERCHANGE 10 (RAMPS B, D, F & H) = 425 S.F.

EXISTING SIGNS
 Scale: 1" = 100'

FOR MAINLINE SIGNING
 SEE SHEETS 89 & 60.

INTERCHANGE NO. 10		
VERMONT AGENCY OF TRANSPORTATION		
SAFETY PROJECT SPRINGFIELD - HARTFORD IR 91 - 1(48)		
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK		
SCALE AS SHOWN	DATE JULY, 1984	SHEET 90 OF

IN CHARGE OF: _____
 DESIGNED BY: _____
 DETAILED BY: _____
 CHECKED BY: _____



NOTE: ALL EXISTING SIGNS AND POSTS TO BE REMOVED UNLESS NOTED
 FOR REFERENCE ONLY: TOTAL SIGN AREA TO BE REMOVED INTERCHANGE 10 (RAMPS B,D,F&H)=425 S.F.

EXISTING SIGNS
 Scale: 1"=100'

FOR MAINLINE SIGNING
 SEE SHEETS 59E&G.

INTERCHANGE NO. 10			
VERMONT AGENCY OF TRANSPORTATION			
SAFETY PROJECT			
SPRINGFIELD - HARTFORD			
IR 91 - 1(48)			
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK			
SCALE	DATE	SHEET	
AS SHOWN	JULY, 1984	91 OF	

IN CHARGE OF : _____
 DESIGNED BY : _____
 CHECKED BY : _____

* MAINLINE SIGNS
 FOR MAINLINE SIGNING SEE SHEETS 59 & 60.

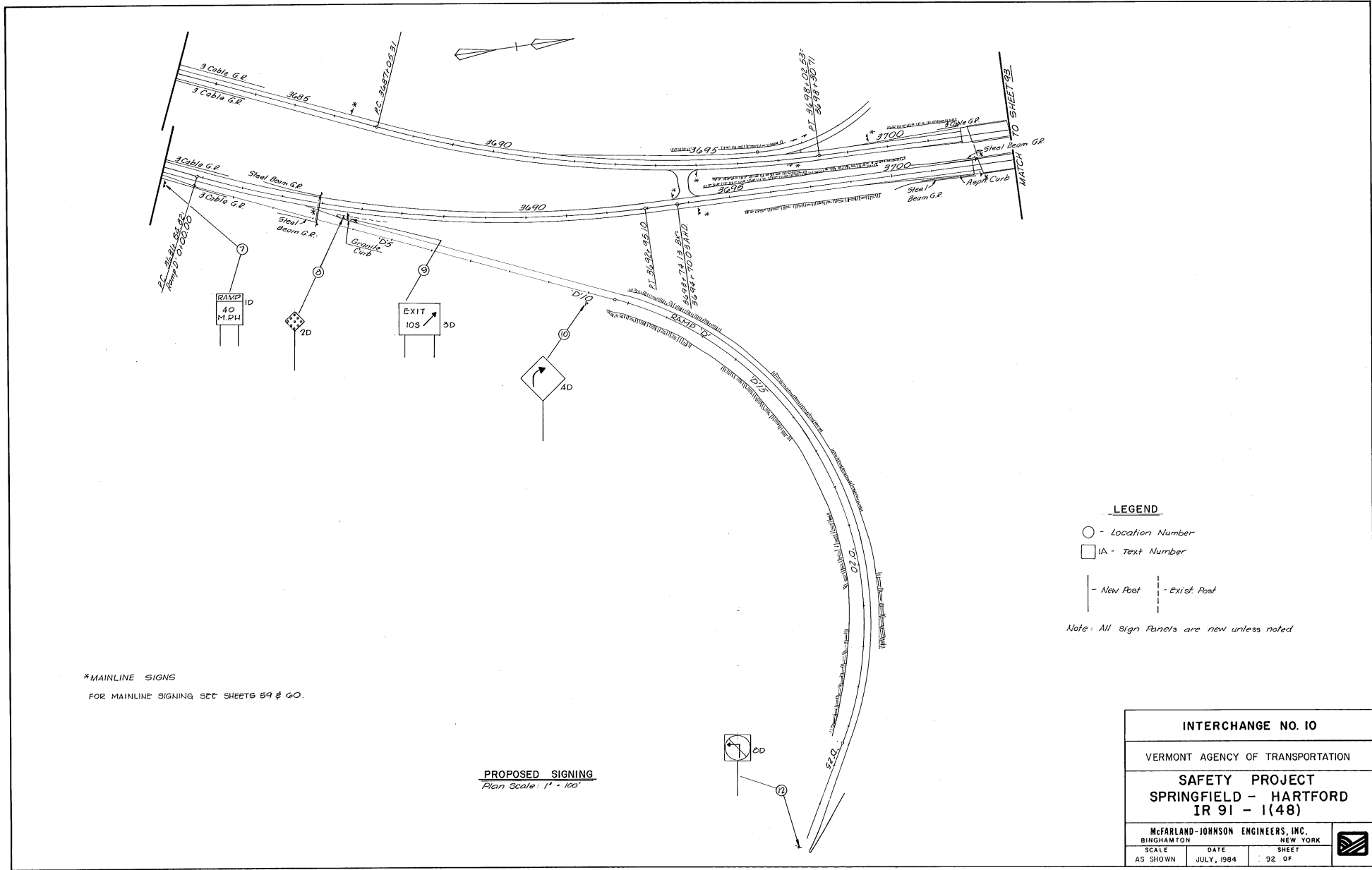
PROPOSED SIGNING
 Plan Scale: 1" = 100'

LEGEND

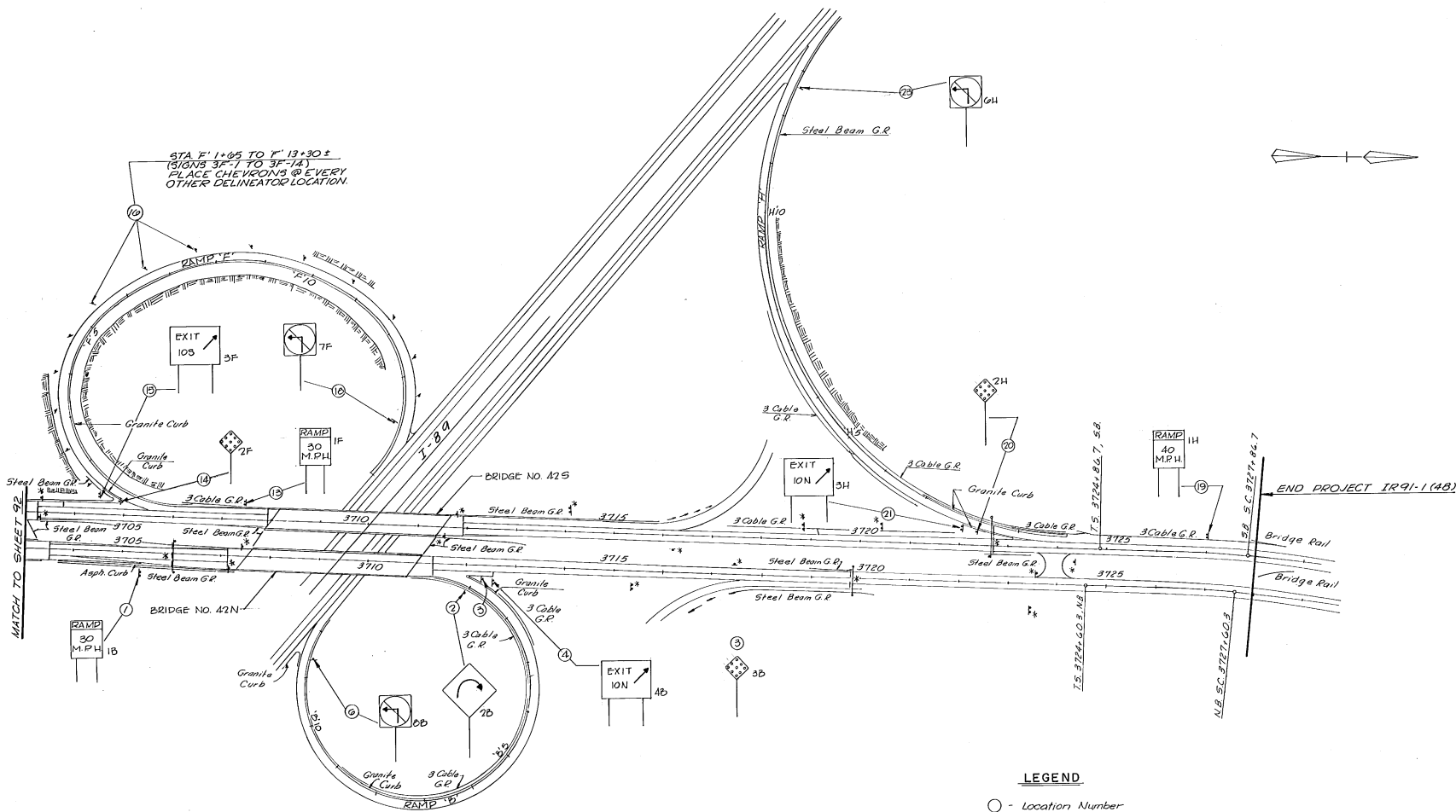
- - Location Number
- IA - Text Number
- New Post - - - - - Exist. Post

Note: All Sign Panels are new unless noted

INTERCHANGE NO. 10		
VERMONT AGENCY OF TRANSPORTATION		
SAFETY PROJECT SPRINGFIELD - HARTFORD IR 91 - 1(48)		
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON, NEW YORK		
SCALE AS SHOWN	DATE JULY, 1984	SHEET 92 OF



IN CHARGE OF: _____
 DESIGNED BY: _____
 DETAILED BY: _____
 CHECKED BY: _____



STA 1+05 TO 1+30 ±
 (SIGNS 3F-1 TO 3F-14)
 PLACE CHEVRONS @ EVERY
 OTHER DELINEATOR LOCATION.

PROPOSED SIGNING

Plan Scale: 1" = 100'

*MAINLINE SIGNS
 FOR MAINLINE SIGNING
 SEE SHEETS 59 & 60

LEGEND

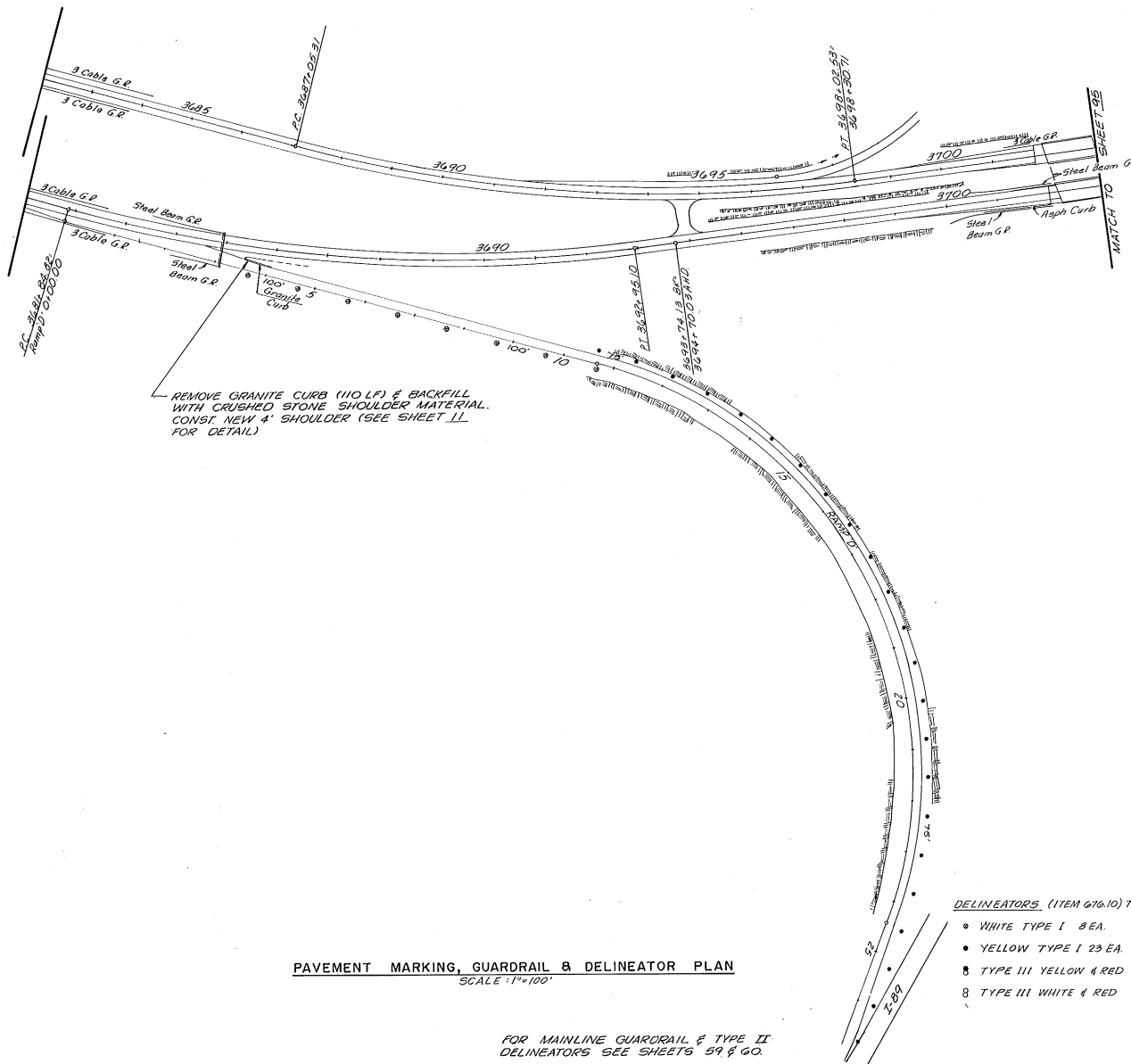
- - Location Number
- 1A - Text Number

- New Post
- - - Exist Post

Note: All Sign Panels are new unless noted

INTERCHANGE NO. 10		
VERMONT AGENCY OF TRANSPORTATION		
SAFETY PROJECT		
SPRINGFIELD - HARTFORD		
IR 91 - 1(48)		
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK		
SCALE AS SHOWN	DATE JULY, 1984	SHEET 93 OF

IN CHARGE OF : _____
 DESIGNED BY : _____
 DETAILED BY : _____
 CHECKED BY : _____



REMOVE GRANITE CURB (110 LF) & BACKFILL WITH CRUSHED STONE SHOULDER MATERIAL. CONST NEW 4' SHOULDER (SEE SHEET 11 FOR DETAIL)

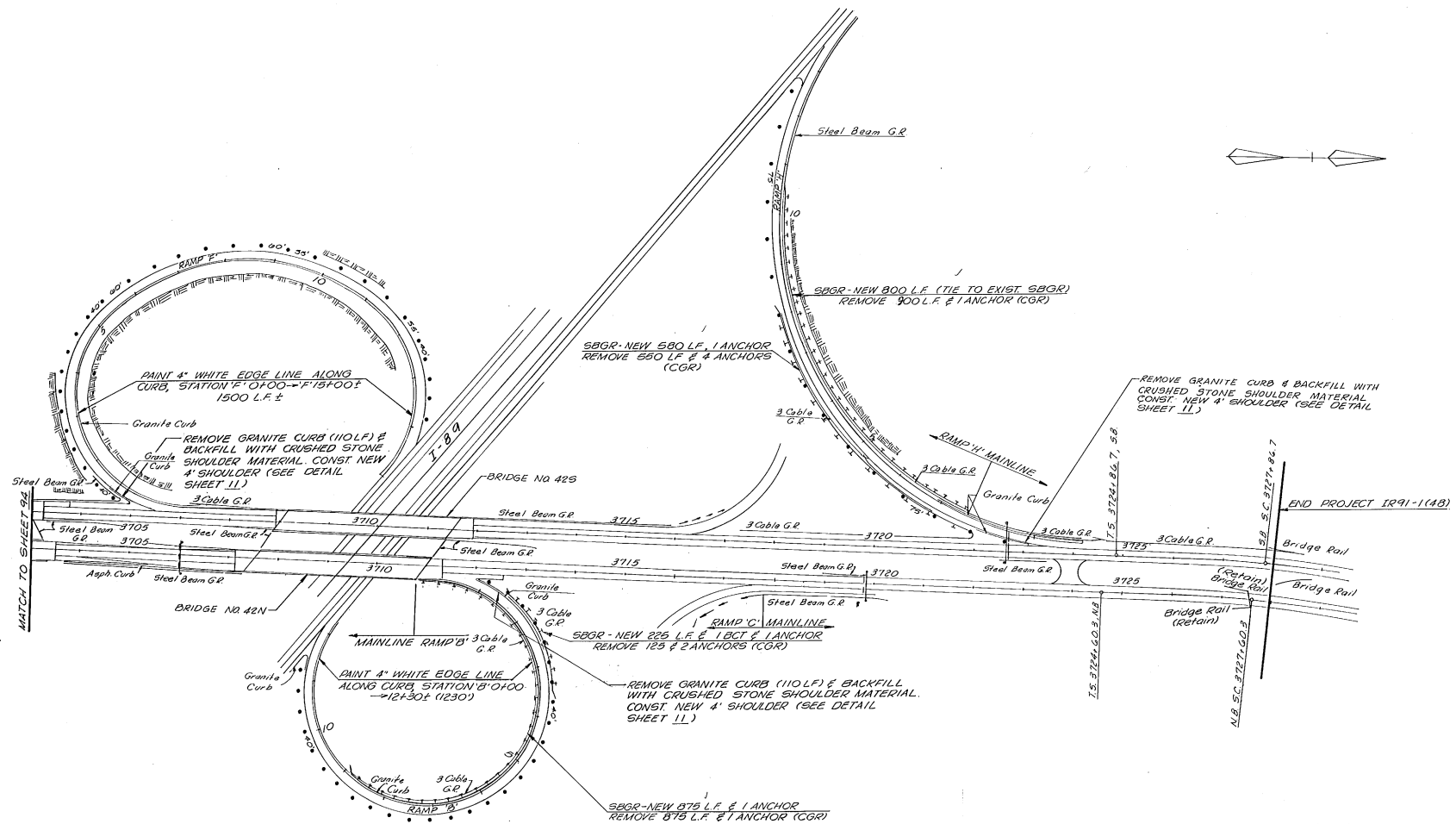
PAVEMENT MARKING, GUARDRAIL & DELINEATOR PLAN
 SCALE: 1"=100'

FOR MAINLINE GUARDRAIL & TYPE II DELINEATORS SEE SHEETS 59 & 60.

- DELINEATORS (ITEM 676.10) This Sheet Only**
- WHITE TYPE I 8EA.
 - YELLOW TYPE I 23 EA.
 - TYPE III YELLOW & RED 0
 - TYPE III WHITE & RED 0

INTERCHANGE NO. 10		
VERMONT AGENCY OF TRANSPORTATION		
SAFETY PROJECT SPRINGFIELD - HARTFORD IR 91 - 1(48)		
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK		
SCALE AS SHOWN	DATE JULY, 1984	SHEET 94 OF

IN CHARGE OF : _____
 DESIGNED BY : _____
 CHECKED BY : _____



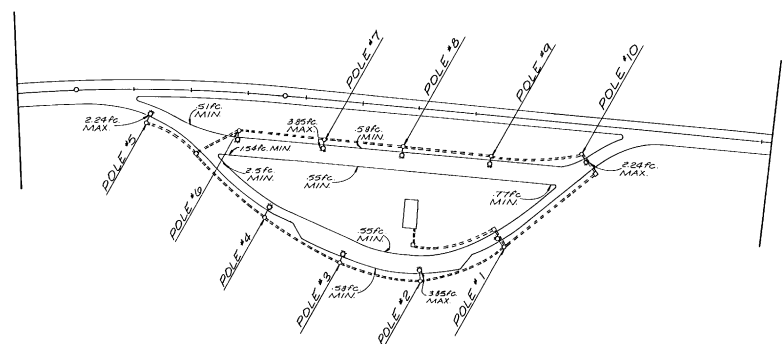
PAVEMENT MARKING, GUARDRAIL & DELINEATOR PLAN
 SCALE 1"=100'

- DELINATOR REMOVAL (ITEM 676.12) 153 EA.
 (TOTAL RAMP'S B, D, F & H)
- DELINEATORS (ITEM 676.10) This sheet only
- WHITE TYPE I OEA.
 - YELLOW TYPE I 73EA.
 - TYPE III YELLOW & RED 0
 - TYPE III WHITE & RED 0

FOR MAINLINE GUARDRAIL & TYPE II DELINEATORS
 SEE SHEETS 69 & 60.

INTERCHANGE NO. 10		
VERMONT AGENCY OF TRANSPORTATION		
SAFETY PROJECT SPRINGFIELD - HARTFORD IR 91 - 1(48)		
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK		
SCALE AS SHOWN	DATE JULY, 1984	SHEET 95 OF

IN CHARGE OF : _____
 DESIGNED BY : _____
 CHECKED BY : _____
 DATE : _____

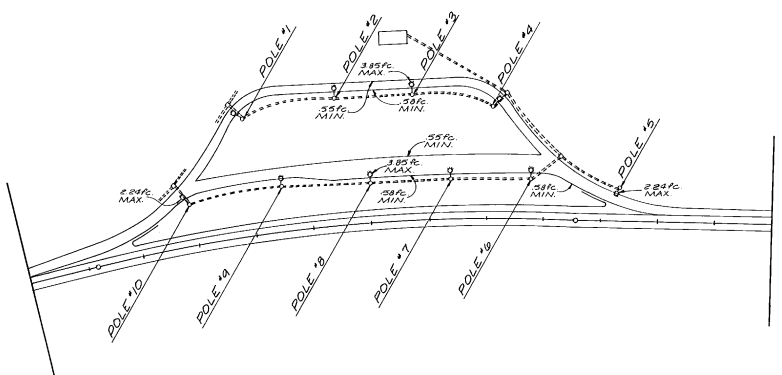


N.B.-REST AREA MILE 68±

N.B.-REST AREA MILE 68±			
POLE NO.	LOCATION	LENGTH OF POLE - ARM	LUMINAIRE WATTS -TYPE
1	EXISTING	EXISTING	250 MC-III
2	"	"	"
3	"	"	"
4	"	"	"
5	"	"	150 MC-II
6	"	"	250 MC-III
7	"	30' 6"	"
8	"	EXISTING	"
9	"	"	"
10	"	"	150 MC-II

* INDICATES POLE REMOVED BECAUSE OF DAMAGE (TO BE REPLACED IN KIND.) REMOVE DAMAGED CONCRETE BASE & REPLACE WITH NEW BASE. REPAIR OR REPLACE CONDUIT & INSTALL NEW CONDUCTORS TO POLE #6 & POLE #8.

WORK TO BE PERFORMED BY CONTRACTOR
 THE CONTRACTOR SHALL 1.) REPLACE IN KIND AND ERECT THE MISSING POLE. 2.) DISCONNECT AND REMOVE EXISTING LUMINAIRES AND INSTALL NEW 105 LUMINAIRES. 3.) FURNISH AND INSTALL THE WIRING AND RELATED MATERIAL FOR THE NEW POLE AND ELSEWHERE IF REQUIRED. 4.) REPLACE OR LEVEL EXISTING REINFORCED CONCRETE BASES IF REQUIRED. 5.) PLUMB EXISTING POLES IF REQUIRED. 6.) INSTALL METAL TAGS TO THE HANDHOLE OF THE NEW AND EXISTING POLES WITH INFORMATION AS INDICATED IN THE NOTES. 7.) REPAIR OR REPLACE ANY FAULTY MATERIAL WHICH MAY HINDER THE SAFETY OR OPERATION OF THE COMPLETED SYSTEM. 8.) REPLACE IN KIND MISSING BOLT CAPS.



S.B.-REST AREA MILE 68±

S.B.-REST AREA MILE 68±			
POLE NO.	LOCATION	LENGTH OF POLE - ARM	LUMINAIRE WATTS -TYPE
1	EXISTING	EXISTING	250 MC-III
2	"	"	"
3	"	"	"
4	"	"	"
5	"	"	150 MC-II
6	"	"	250 MC-III
7	"	"	"
8	"	"	"
9	"	"	"
10	"	"	150 MC-II

SEE SHEET NO.99 FOR PHOTOMETRICS, GENERAL NOTES, DESIGN PARAMETERS, & MISCELLANEOUS DETAILS.

LIGHTING PLAN			
VERMONT AGENCY OF TRANSPORTATION			
SAFETY PROJECT SPRINGFIELD — HARTFORD IR 91 — 1 (48)			
McFARLAND-JOHNSON ENGINEERS, INC. BINGHAMTON NEW YORK			
SCALE	DATE	SHEET	
		98 OF	

STREET LIGHTING - GENERAL NOTES

THE FOLLOWING NOTES APPLY TO ALL THREE REST AREAS UNLESS OTHERWISE NOTED.

REINFORCED CONCRETE BASES

THE CENTER LINE OF CONCRETE BASES FOR STREET LIGHT POLES SHALL BE APPROXIMATELY 4" OFF THE EDGE OF SHOULDER OR FACE OF CURB UNLESS OTHERWISE NOTED.

THE TOP OF THE BASES SHALL BE SCORED TO SHOW THE LOCATION OF COMPONENT(S). SEE THIS SHEET FOR DETAILS.

CONCRETE BASES SHALL HAVE A MINIMUM OF 6" EARTH EMBEDMENT IN LEVEL GROUND. WHEN INSTALLED IN SLOPING GROUND, THE GREATEST EXPOSED HEIGHT TO KEEP ALL OF THE TOP ABOVE GROUND MUST BE DOUBLED AND THEN ADDED TO THE MINIMUM DEPTH FOR THE TOTAL BASE HEIGHT. THE BASE SIZE SHALL BE 2' X 6' FOR 4"-8" ARMS AND 2'-1/2" X 8' FOR ARMS LONGER THAN 8'. ALSO USE 2'-1/2" DIAMETER CONCRETE BASE FOR POLES HAVING A TRANSFORMER BASE. MAXIMUM PROJECTION OF BASES ABOVE GROUND SHALL BE 4". CARE SHALL BE TAKEN WHERE BASES AND CHAIRS STRUCTURES ARE CLOSE TOGETHER.

EACH CONCRETE BASE SHALL INCLUDE THE FOLLOWING:

FOUR ONE INCH DIAMETER ANCHOR BOLTS WITH NUTS AND WASHERS, CONDUIT SWEEPS AS NEEDED FOR INDICATED CIRCUITS, 5/8" X 3'-0" COPPER CLAD GROUND ROD WITH CLAMP AND COPPER GROUND WIRE TO THE ALUMINUM POLE. (NO ALUMINUM GROUND WIRE) ALL EXPOSED METAL HARDWARE EXCEPT WIRE SHALL BE GALVANIZED OR STAINLESS STEEL.

ALL ANCHOR BOLTS FOR STREET LIGHT POLES BESIDE EITHER RAMP OR MAIN-LINE ROADWAY SHALL BE ON AN 11.5 INCH DIAMETER CIRCLE AND SQUARE TO THE ROADWAY OR AS INDICATED ON THE PLANS. WHERE TRANSFORMER BASES ARE USED, THE BOLTS SHALL BE SET 45° FROM SQUARE AND A 15 INCH DIAMETER BOLT CIRCLE FOR THE BASE SHALL BE USED. SEE SKETCH BULLOW.

GROUNDING

EACH METAL LIGHT POLE SHALL BE GROUNDED BY BOTH A GROUND ROD AT THE POLE BASE AND A CONTINUOUS GROUNDING CIRCUIT BACK TO A CIRCUIT PROTECTIVE DEVICE. ALUMINUM SHALL NOT BE USED FOR GROUND WIRE. ALL GROUNDING WIRE SHALL BE GREENTH EXCEPT BETWEEN A BASE AND ITS GROUND ROD. THE COVERINGS SHALL BE GREEN.

POLES, ANCHOR BASES AND ARMS

NO POLE SHAFT WALL THICKNESS SHALL BE LESS THAN 0.188". ALL POLES SHALL HAVE 3/4" O.D. BOTTOM DIMENSION.

ALL NEW STREET LIGHT POLES AND LUMINAIRE ARMS SHALL BE ALUMINUM IN ACCORDANCE WITH SUBSECTION 753.00(3). INDICATED MOUNTING HEIGHTS ON THESE PLANS ARE LUMINAIRE HEIGHTS CONSISTING OF ACTUAL POLE HEIGHT PLUS LUMINAIRE ARM RISE ABOVE POLE TOP. (EXAMPLE: 28' POLE PLUS 2' ARM RISE = 30'

LUMINAIRE HEIGHT = MOUNTING HEIGHT ON THESE PLANS). 3" DIA. POLES HAVE BASES WITH SLOTS FOR 4 ONE INCH DIA. ANCHOR BOLTS ON AN 11 TO 12 INCH CIRCLE. ALL LIGHT POLE BASES (EXCEPT ON BRIDGES) SHALL HAVE FRANGIBLE OR BREAKAWAY DESIGN. THEY SHALL YIELD OR BREAKAWAY WITH A CHANGE IN VEHICLE MOMENTUM OF LESS THAN 1,100 POUND-SECONDS WHEN STRUCK BY 2,250 POUNDS AT 20 MPH TO 50 MPH.

ONE INCH DIA. GALVANIZED OR STAINLESS STEEL BOLTS SHALL BE USED TO ATTACH POLES TO TRANSFORMER BASES. WHEN IMPACT SAFETY COUPLINGS OR LEVELING NUTS ARE USED UNDER A POLE BASE, THE SPACE SHALL BE ENCLOSED BY A METAL SKIRT. NO POLE SHALL BE INSTALLED WITHOUT A LUMINAIRE.

ALL 6" OR LONGER POLE ARMS SHALL BE OF THE TRUSS TYPE. THE TOP MEMBER SHALL BE GALVANIZED AND MINIMUM 3/4" DIAMETER BUBBLE WITH A 0.188" WALL. THE BOTTOM MEMBER SHALL BE 2" SCHEDULE 40 PIPE.

ARMS MOUNTED ON POLES WITH TRANSFORMER BASES SHALL BE ATTACHED 45° FROM SQUARE SO AS TO BE SQUARE TO THE ROAD. SEE NOTE ABOVE ON ANCHOR BOLT ALIGNMENT.

ALL STREET LIGHTING POLES SHALL HAVE A METAL TAG ATTACHED TO THE HANDHOLE WITH THE POLE NUMBER, VOLTAGE AND TYPE OF LAMP. EXAMPLE: 28-150V-4PS. (4PS = HIGH PRESSURE SODIUM) MINIMUM LETTER SIZE 1/2 INCH HIGH. PAINT FOR TAGS SHALL BE SUBORDINANT TO ITEM 679-15, STREET LIGHTING.

WIRING

USE #10 AWG STRANDED COPPER WIRE ON EACH POLE BETWEEN THE POLE BASE AND THE LUMINAIRE. THESE POLE WIRES SHALL BE EARLY DISCONNECTED AT THE HANDHOLE BY THE USE OF WATER TIGHT WIRE PLUGS. THE POWER INPUT WIRE SHALL BE FUSED ON THE LOAD SIDE. THE FUSE SHALL BE RATED AT 1.5 TIMES THE MAXIMUM LOAD. COPPER WIRE SHALL HAVE TYPE BOM INSULATION OR EQUIVALENT.

LUMINAIRES

LUMINAIRES SHALL BE DESIGNED FOR STREET LIGHTING AND THE INDICATED LIGHT DISTRIBUTION. THEY SHALL INCLUDE AN ALUMINUM HOUSING WITH POWER DOOR AND ASTRODOME PHOTO-ELECTRIC CONTROL. A CARBONAL FILTER OPTICAL ASSEMBLY, 90° CUTOFF AND 240 VOLT REGULATOR BALLAST. THE BALLAST SHALL BE MATED TO ITS STARTING CIRCUIT. THE BALLAST ASSEMBLY SHALL BE MOUNTED ON A QUICK DISCONNECT TRAY ON THE POWER DOOR FOR EASY ACCESS AND REMOVAL. WIRING SHALL BE HEAT, BURNED AND KEPT AWAY FROM ACCESS HEAT.

LIGHT DISTRIBUTIONS ARE BASED ON GENERAL ELECTRIC PHOTOMETRIC DATA DRAWINGS (#35-17553 DATED 12-79, #35-17729 DATED 8-83) AND #35-177213 DATED 8-83).

THE INSTALLED LUMINAIRE LIGHT UTILIZATION AND MINIMUM FOOT CANDLES ON THE ROADWAY AND SHOULDER SHALL BE AT LEAST AS GREAT AS INDICATED BY THE ABOVE PHOTOMETRICS.

50% OF THE SODIUM STREET LIGHT LAMPS SHALL CONTINUE TO OPERATE AFTER 24,000 NIGHT TIME HOURS OF USE. LAMP DEPRECIATION IS BASED ON 24,000 HOURS WITH 10 HOURS PER DAY.

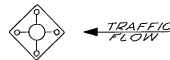
GENERAL

ALL ELECTRICAL MATERIAL AND ELECTRICAL WORK SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE, STATE AND LOCAL CODES AND BE APPROVED BY THE AREA ELECTRICAL INSPECTOR.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE NEW LUMINAIRES THRU THE CONSTRUCTION PERIOD UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE BID PRICE SHALL INCLUDE ALL MAINTENANCE COSTS.

NOTES

- IF ANY OF THE EXISTING ELECTRICAL MATERIAL, WIRING, WYE OR DISCONNECT PLUGS, OR CIRCUIT BREAKERS ARE FOUND TO BE DEFECTIVE, THEY SHALL BE REPLACED IN KIND OR BY MATERIAL MEETING THE SAME SPECIFICATION AND CODES. AT THE DISCRETION OF THE RESIDENT ENGINEER. PAYMENT OF THIS WILL BE SUBORDINANT TO ITEM 679-15, STREET LIGHTING.
- THE CONTRACTOR SHALL REMOVE EXISTING LUMINAIRES AND CONTACT THE DISTRICT ADMINISTRATOR SO STATE FORCES CAN PICK UP THE MATERIAL AT A PRE-ARRANGED TIME AND PLACE.

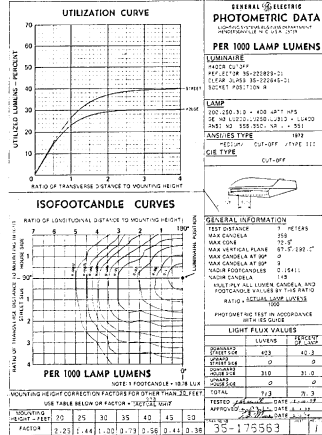
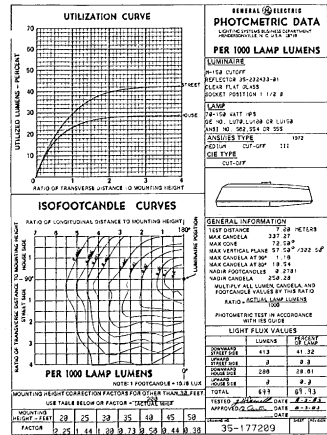
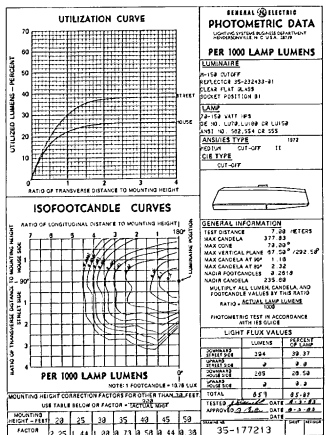
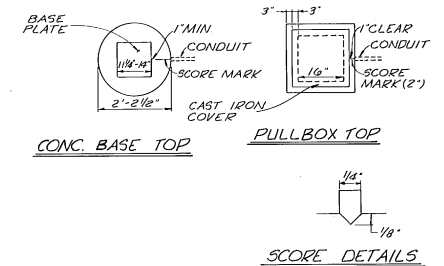


TRANSFORMER BASE MOUNTING DETAIL

STREET LIGHTING DESIGN PARAMETERS

- AVERAGE MAINTAINED ILLUMINATION:
 - ENTRANCE - 0.6 FC. MIN.
 - PARKING AREA - 1.0 FC. MIN.
- FILTERED LUMINAIRE: 0.95
- LAMP DEPRECIATION: 0.75 @ 24000 HRS
- COMBINED LAMP FACTOR: (30/100)²
- MOUNTING HEIGHT FACTOR: (30/100)²
- UNIFORMITY RATIO: 4:1 MAX.
- MINIMUM FOOTCANDLES ON ACCESS AND PARKING AREA: 0.20 MIN.

PHOTOMETRICS ARE FOR DESIGN PURPOSES ONLY. THE INSTALLED LUMINAIRE LIGHT UTILIZATION & MINIMUM FOOTCANDLES ON THE ROADWAY/PARKING AREA SHALL BE AT LEAST AS GREAT AS INDICATED ON THE PHOTOMETRIC.



MISC. LIGHTING

VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT

SPRINGFIELD - HARTFORD

IR 91 - 1 (48)

McFARLAND-JOHNSON ENGINEERS, INC.
BINGHAMTON NEW YORK

SCALE DATE SHEET

99 OF

IN CHARGE OF: _____
DESIGNED BY: _____
CHECKED BY: _____

IN CHARGE OF : _____
 DESIGNED BY : _____
 CHECKED BY : _____
 DATE : _____
 DATE : _____

EXISTING MILE POST	NORTHBOUND MAINLINE			SOUTHBOUND MAINLINE		
	EXIST MILE POST STATION	NEW MILE POST STATION	NEW MILE POST STATION <i>REMARKS</i>	EXIST MILE POST STATION	NEW MILE POST STATION	NEW MILE POST STATION <i>REMARKS</i>
43	2291+95	2293+81	<i>2294+01</i>	2290+85	2283+08	<i>2283+08</i>
44	2344+65	2336+28	<i>2337+23</i>	2343+55	2335+82	<i>2336+54</i>
45	2397+50	2386+75	<i>on bridge</i>	2396+45	2388+80	<i>2389+41</i>
46	2450+30	2443+90	<i>2443+09</i>	2449+15	2441+26	<i>2442+33</i>
47	2502+85	2496+56	<i>2496+85</i>	2502+00	2494+19	<i>2495+08</i>
48	2555+70	2549+51	<i>2549+71</i>	2554+70	2546+87	<i>2546+56</i>
49	2608+50	2602+41	<i>2601+73</i>	2607+55	2599+71	<i>2600+72</i>
50	2661+40	2655+20	<i>2654+44</i>	2659+80	2651+82	<i>2652+78</i>
51	2713+70	2707+69	<i>2706+89</i>	2713+70	2704+73	<i>2705+63</i>
52	2766+30	2760+36	<i>2759+44</i>	2766+30	2757+64	<i>2758+51</i>
53	2818+85	2812+90	<i>2811+56</i>	2819+20	2810+32	<i>2811+88</i>
54	2871+85	2866+02	<i>2864+98</i>	2871+50	2863+83	<i>2863+65</i>
55	2928+16	2918+39	<i>2917+62</i>	2920+08	2916+55	<i>2919+45</i>
56	Sign Missing	2971+19	<i>2970+41</i>	2977+40	2969+30	<i>2970+49</i>
57	Sign Missing	3023+80	<i>3023+49</i>	3029+65	3022+00	<i>3024+27</i>
58	3083+00	3076+79	<i>3076+44</i>	3083+25	3075+53	<i>3077+72</i>
59	3135+05	3129+12	<i>3128+76</i>	3134+60	3126+85	<i>3126+21</i>
60	3188+00	3182+23	<i>3181+65</i>	3189+15	3180+79	<i>3182+72</i>
61	Sign Missing	3244+15	<i>3243+88</i>	3248+70	3241+25	<i>3243+56</i>
62	Sign Missing	3290+09	<i>3296+64</i>	3301+55	3294+17	<i>3296+46</i>
63	3354+60	3348+52	<i>3348+50</i>	3355+05	3347+43	<i>3349+62</i>
64	3407+40	3401+48	<i>3401+41</i>	3407+85	3400+49	<i>3402+64</i>
65	3462+10	3456+68	<i>3456+40</i>	3462+10	3453+50	<i>3455+40</i>
66	3514+60	3508+98	<i>3509+33</i>	3514+60	3506+00	<i>3508+23</i>
67	3567+50	3561+45	<i>3561+67</i>	3567+50	3559+03	<i>3561+65</i>
68	3620+30	3614+06	<i>3614+89</i>	3620+35	3612+38	<i>3614+85</i>
69	Sign Missing	3666+83	<i>3669+92</i>	Sign Missing	3664+96	<i>3667+44</i>
70	Sign Missing	3720+53		Sign Missing	3718+16	

MILE MARKER LOCATION TABLE

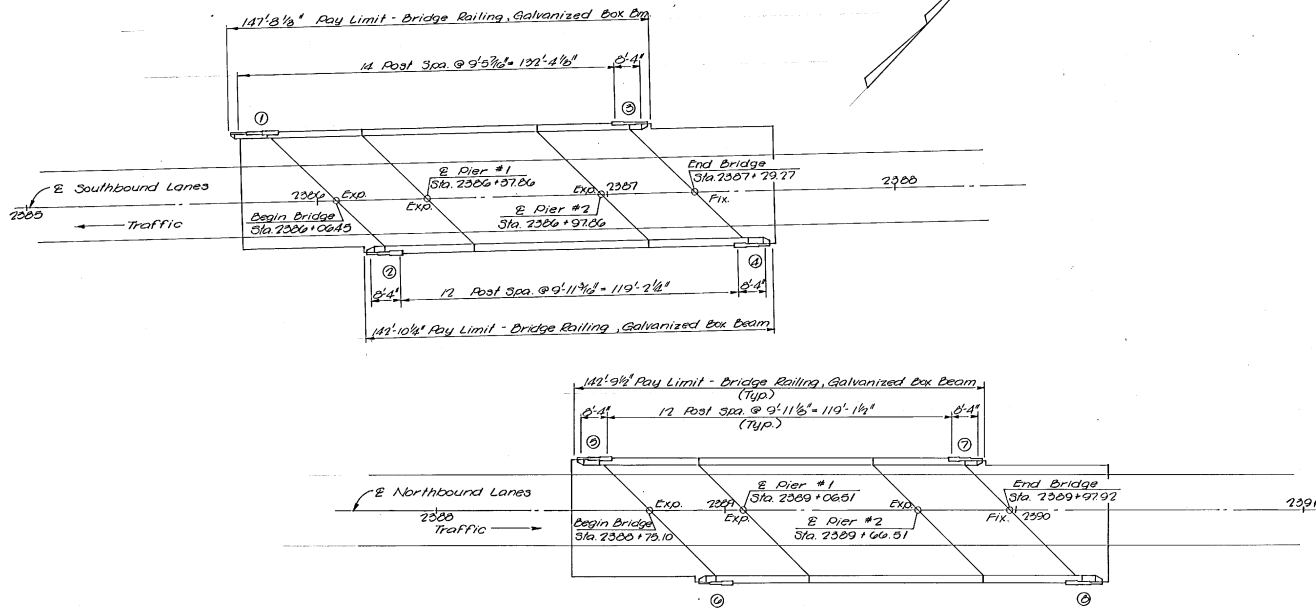
VERMONT AGENCY OF TRANSPORTATION

SAFETY PROJECT
SPRINGFIELD — HARTFORD
IR 91 — I (48)

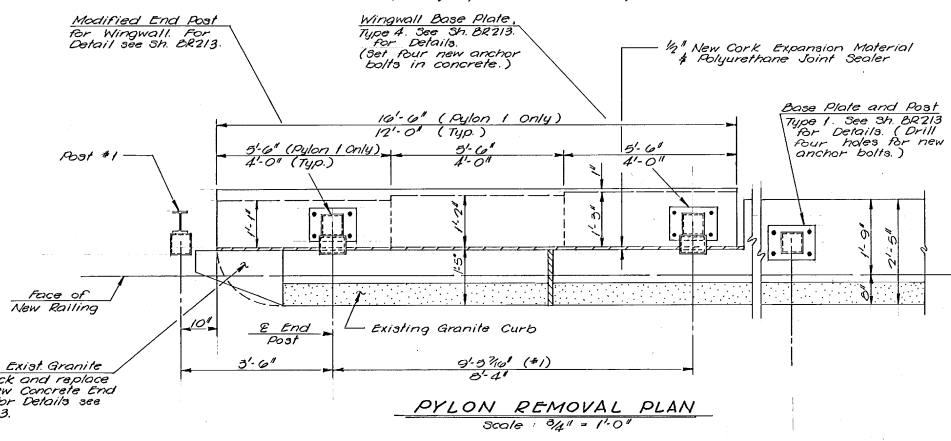
McFARLAND-JOHNSON ENGINEERS, INC.
 BINGHAMTON NEW YORK

SCALE DATE SHEET
 101 OF





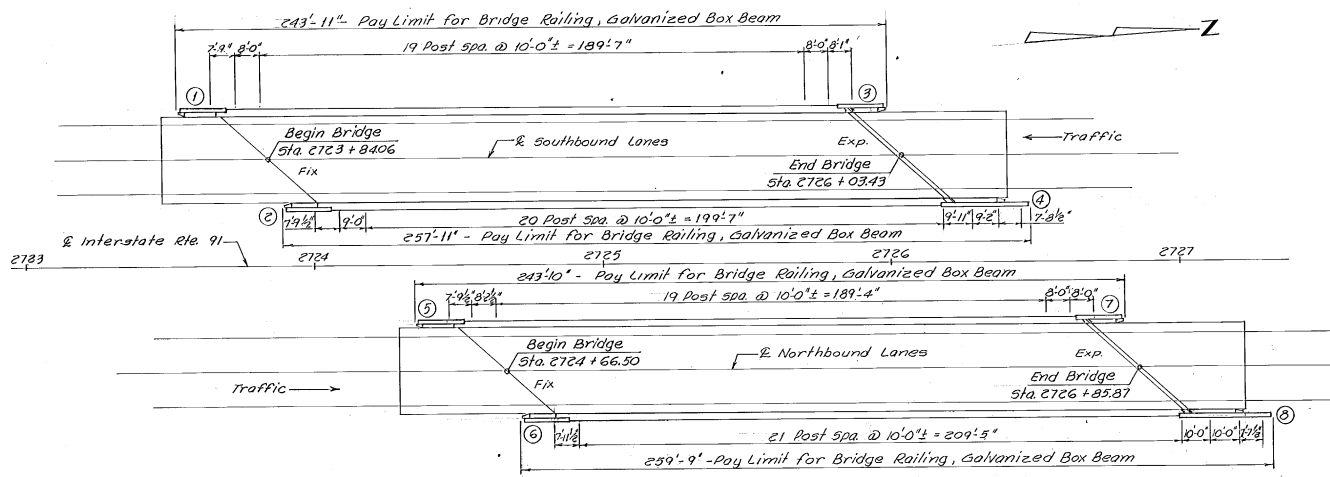
RAILING PLAN
 Scale: 1" = 20'-0"
 (Railing Expansion Joints: 1 1/2')



PYLON REMOVAL PLAN
 Scale: 3/4" = 1'-0"

BRIDGE RAILING - GALVANIZED BOX BEAM
 NORTHBOUND - STA. 2388 + 08 RT. - STA. 2390 + 31 RT.
 STA. 2388 + 49 LT. - STA. 2389 + 92 LT.
 SOUTHBOUND - STA. 2386 + 14 RT. - STA. 2387 + 57 RT.
 STA. 2385 + 68 LT. - STA. 2387 + 16 LT.

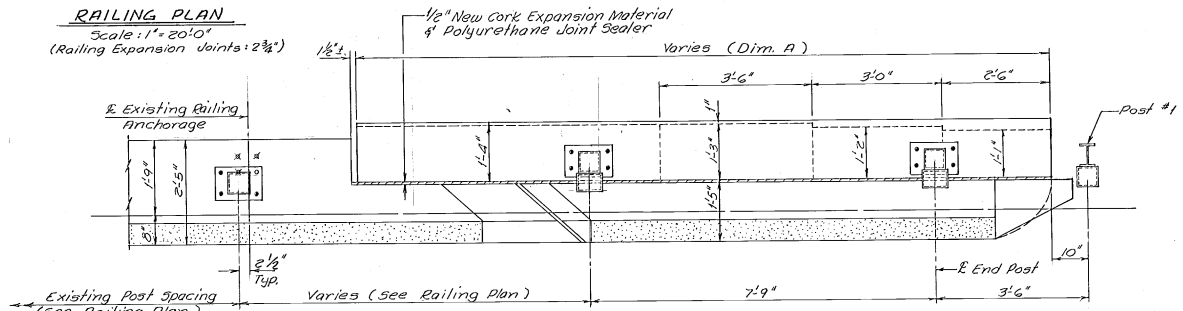
STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
TOWN OF SPRINGFIELD	Bridge No. 29 NB#58
HIGHWAY NO. INTERSTATE 91	Log Sta. _____
OVER VERMONT ROUTE 143	
RAILING PLAN	
Designed by CMK	Drawn by CMK
Checked by JEM date 7/84	Bridge Design Supervisor _____ date _____
PROJECT SPRINGFIELD-HARTFORD	PROJECT NO. IR 91-1 (48)
Bridge Sheet No. BR202	Sheet 104 of _____



- Dim. A**
- ① 14'-11"
 - ② 14'-11 1/2"
 - ③ 16'-0 1/2"
 - ④ 30'-0"
 - ⑤ 14'-11 1/2"
 - ⑥ 15'-0"
 - ⑦ 16'-0"
 - ⑧ 32'-0"

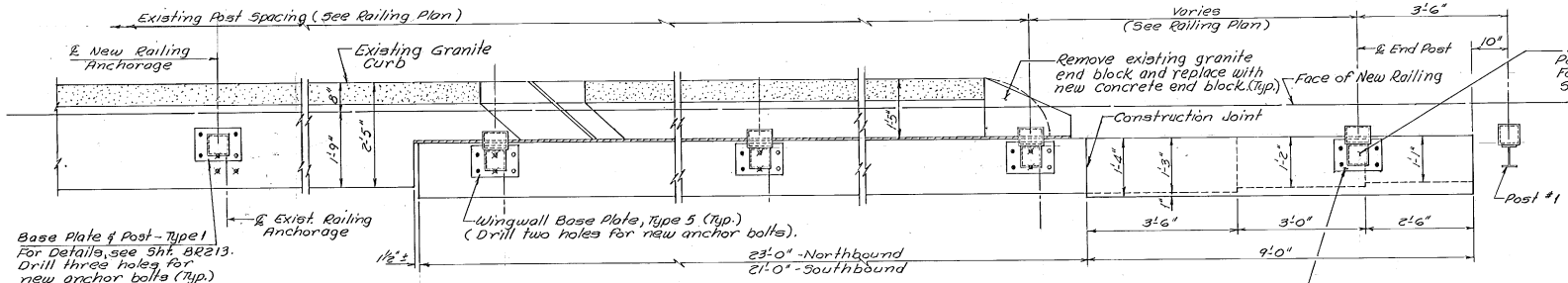
BRIDGE RAILING - GALVANIZED BOX BEAM
 NORTHBOUND - STA. 2724 + 72 RT. - STA. 2727 + 32 RT.
 STA. 2724 + 36 LT. - STA. 2726 + 80 LT.
 SOUTHBOUND - STA. 2723 + 90 RT. - STA. 2726 + 48 RT.
 STA. 2723 + 53 LT. - STA. 2725 + 97 LT.

RAILING PLAN
 Scale: 1" = 20'-0"
 (Railing Expansion Joints: 2 3/4")



PYLON REMOVAL PLAN
 (TYPICAL EXCEPT AS SHOWN)
 Scale: 3/4" = 1'-0"

Note:
 ○ Denotes exist, anchor bolts reused.
 ✕ Denotes exist, anchor bolts removed.
 * Denotes new anchor bolts.

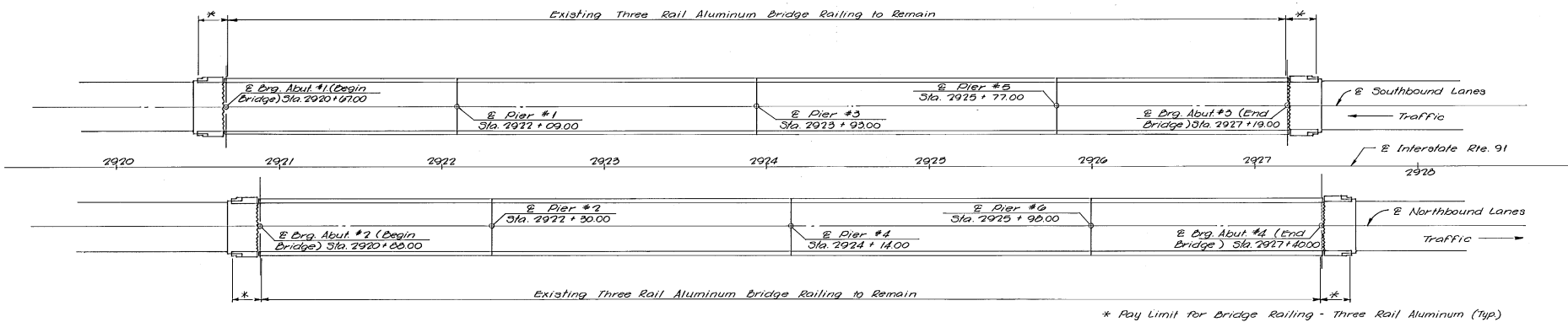


PYLON REMOVAL PLAN - N.E. WINGWALLS
 Scale: 3/4" = 1'-0"

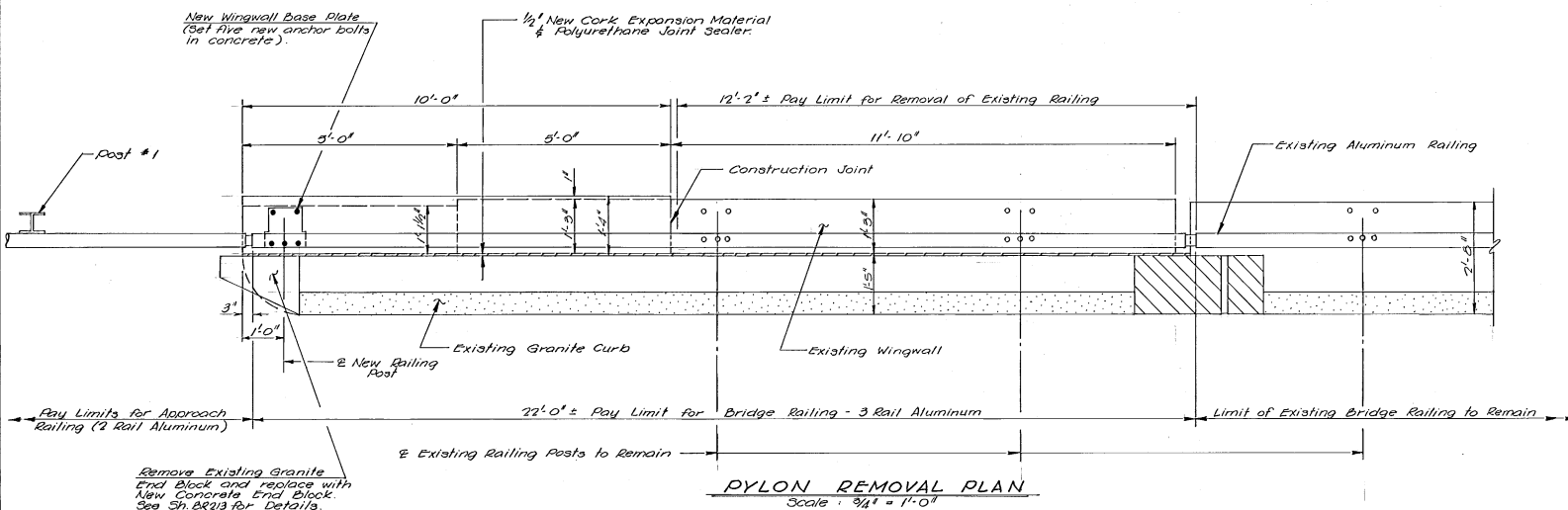
Base Plate of Post - Type 1
 For Details, see Sht. BR213.
 Drill three holes for new anchor bolts (Typ.)

Wingwall Base Plate, Type 5
 (Typ.) For Details see Sht. BR213
 (Sht. Four new anchor bolts in concrete).

STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
TOWN OF WEATHERSFIELD	Bridge No. 30 S.B.F.H.B.
HIGHWAY NO. INTERSTATE RTE. 91	Log Sta.
	Survey Sta. M.M. 5125
OVER VT. ROUTE 131	
RAILING PLAN	
Designed by W.J.E.	Drawn by M.J.K.
Checked by J.E.M. date 7/84	Bridge Design Supervisor W.T.S. date
PROJECT SPRINGFIELD-HARTFORD	PROJECT NO. IR 91-1(48)
Bridge Sheet No. BR203	Sheet 105 of



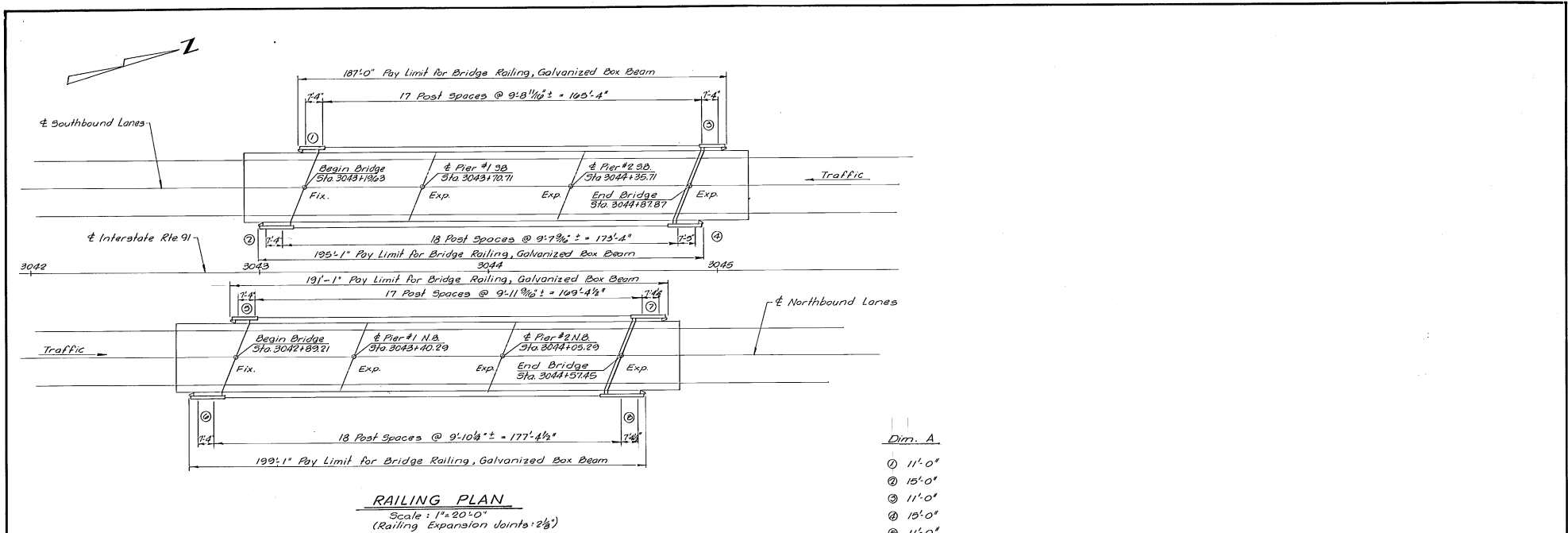
* Pay Limit for Bridge Railing - Three Rail Aluminum (Typ.)



- Notes:
1. For details of Aluminum Railing, see Standard Sheets SB-R1-71 (Sheets 1 & 2 of 2).
 2. For details of Aluminum Approach Railing, see Standard Sheet G-6A.
 3. ○ Denotes existing anchor bolts.
● Denotes new anchor bolts.

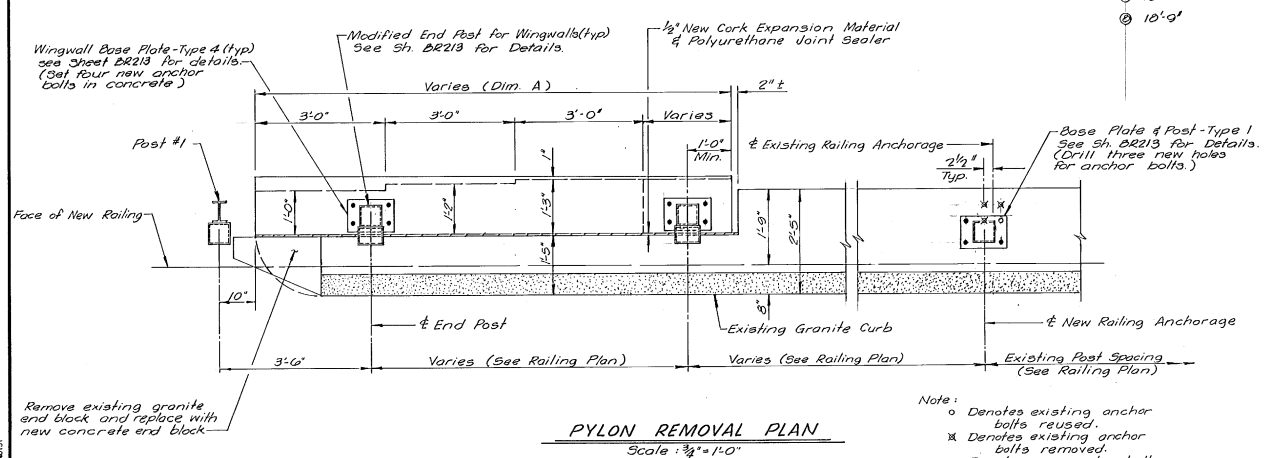
STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
TOWN OF WINDSOR	Bridge No. 33 NB130
HIGHWAY NO. INTERSTATE RTE. 91	Log Sta. See Sta. M.M. 55.05
OVER VT #44 & MILL BROOK	
RAILING PLAN	
Designed by CMK	Drawn by CMK
Checked by JEM date 7/24	Bridge Design Supervisor WTS date
PROJECT SPRINGFIELD-HARTFORD	PROJECT NO. IR 91-1(48)
Bridge Sheet No. 52204	Sheet 100 of

DATE PLOTTED: 04/13/11 09:55



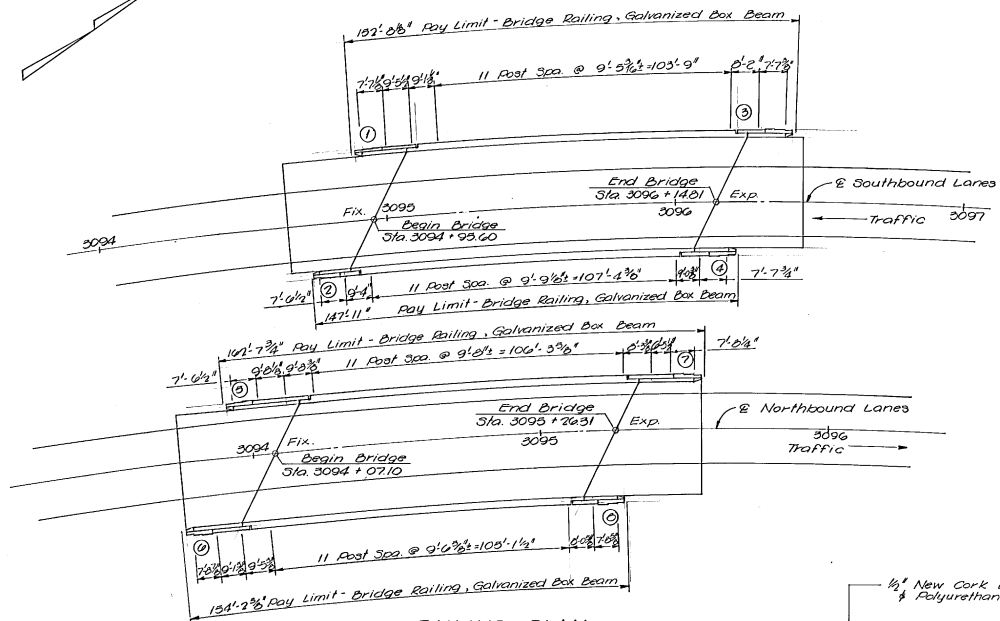
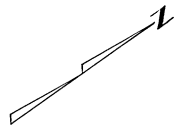
- Dim. A
- ① 11'-0"
 - ② 15'-0"
 - ③ 11'-0"
 - ④ 15'-0"
 - ⑤ 11'-0"
 - ⑥ 15'-0"
 - ⑦ 15'-0"
 - ⑧ 10'-0"

BRIDGE RAILING - GALVANIZED BOX BEAM
 NORTHBOUND STA 3042+69 RT. ~ STA 3044+68 RT.
 STA 3042+86 LT. ~ STA 3044+77 LT.
 SOUTHBOUND STA 3042+99 RT. ~ STA 3044+94 RT.
 STA 3043+71 LT. ~ STA 3045+04 LT.



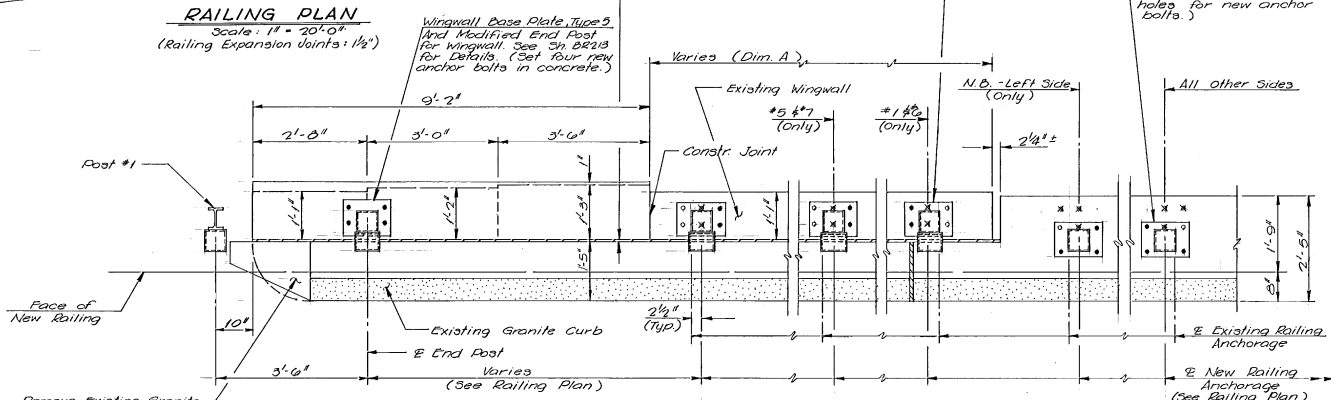
- Note:
- Denotes existing anchor bolts reused.
 - ✕ Denotes existing anchor bolts removed.
 - Denotes new anchor bolts.

STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
TOWN OF WINDSOR	Bridge No. 24 NB108
HIGHWAY NO. INTERSTATE RIE/91	Log Sta. _____
OVER WINDSOR TR #5	
RAILING PLAN	
Designed by J.E.M.	Drawn by J.E.M.
Checked by M.J.K. date 7/82	Bridge Design Supervisor W.T.S. date
PROJECT SPRINGFIELD-HARTFORD, IR 91-1(48)	PROJECT NO. _____
Bridge Sheet No. B228	Sheet 107 of _____



BRIDGE RAILING - GALVANIZED BOX BEAM
 NORTHBOUND - STA. 3093 + 75 RT. - STA. 3095 + 29 RT.
 STA. 3093 + 93 LT. - STA. 3095 + 56 LT.
 SOUTHBOUND - STA. 3094 + 72 RT. - STA. 3096 + 19 RT.
 STA. 3094 + 90 LT. - STA. 3096 + 43 LT.

- Dim. A**
- ① 11'-11 1/2"
 - ② 6'-0 3/8"
 - ③ 8'-0 3/8"
 - ④ 7'-11 1/2"
 - ⑤ 14'-9 3/4"
 - ⑥ 12'-11 1/2"
 - ⑦ 14'-10 1/4"
 - ⑧ 7'-10 1/2"



Wingwall Base Plate, Type 5 See Sh. BR213 for Details. (Drill two holes for new anchor bolts.)

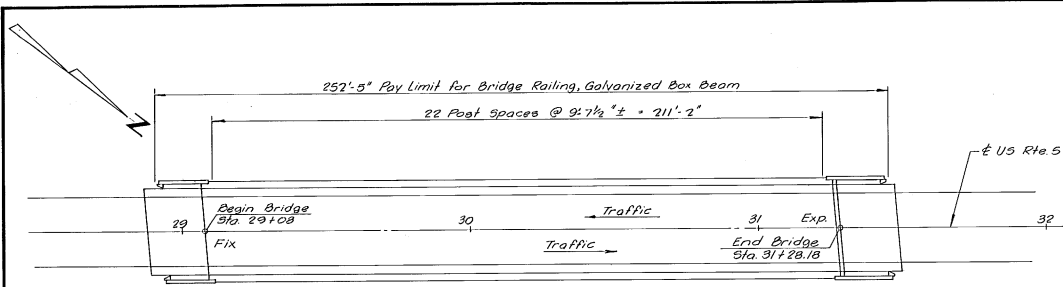
Base Plate and Post, Type 1, See Sh. BR213 for Details. (Drill three holes for new anchor bolts.)

Note:
 ○ Denotes existing anchor bolts reused.
 ✕ Denotes existing anchor bolts removed.
 ● Denotes new anchor bolts.

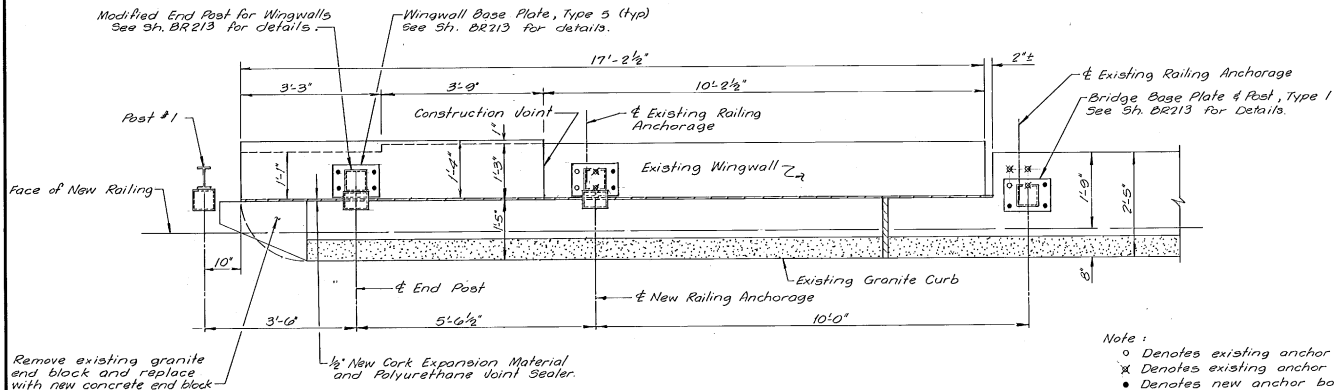
Remove Existing Granite End Block and replace with New Concrete End Block See Sh. BR213 for Details.

PYLON REMOVAL PLAN
 Scale: 3/4" = 1'-0"

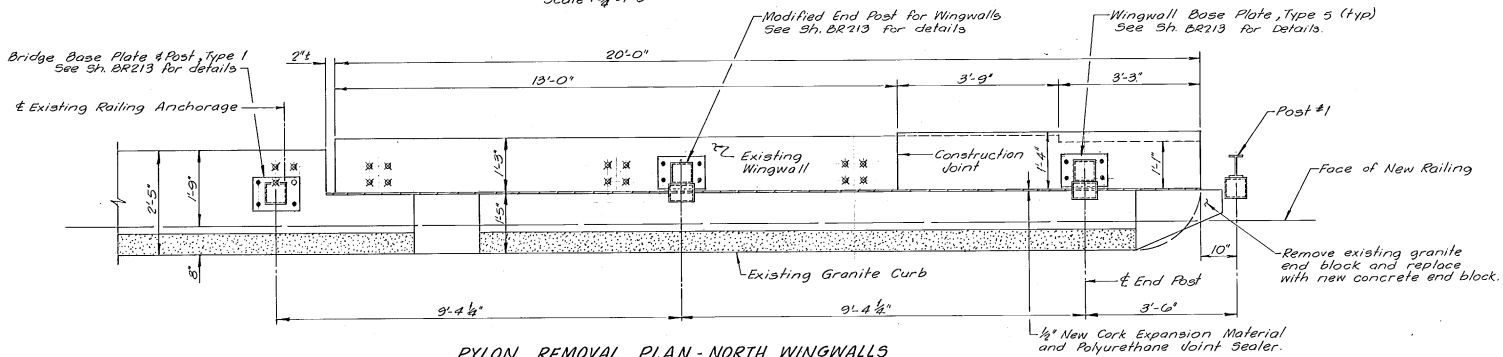
STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
TOWN OF HARTLAND	Bridge No. 35 NB + 32
HIGHWAY NO. INTERSTATE RTE. 91	Log Sta. See Sta. MM 58.25
OVER WINDSOR COUNTY ROAD	
RAILING PLAN	
Designed by CMK	Drawn by CMK
Checked by MJK date 7/02	Bridge Design Supervisor WTS date
PROJECT SPRINGFIELD - HARTFORD	PROJECT NO. TR 91-1(48)
Bridge Sheet No. BR206	Sheet 108 of



RAILING PLAN
Scale: 1" = 20'-0"
(Railing Expansion Joints: 2 3/4")



PYLON REMOVAL PLAN - SOUTH WINGWALLS
Scale: 3/8" = 1'-0"

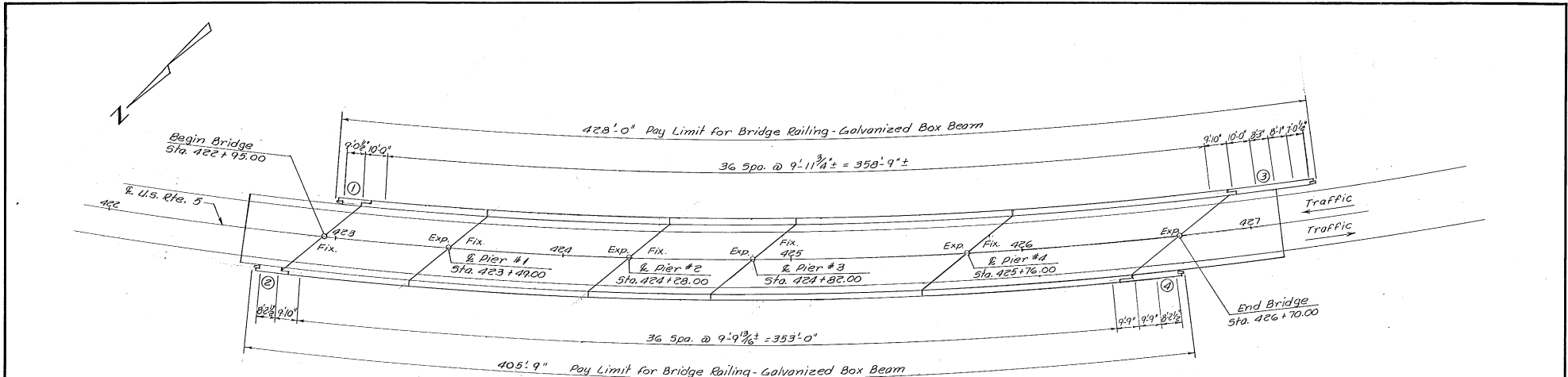


PYLON REMOVAL PLAN - NORTH WINGWALLS
Scale: 3/8" = 1'-0"

BRIDGE RAILING GALVANIZED BOX BEAM
STA 28+94 RT. ~ STA 31+48 RT.
STA 28+91 LT. ~ STA 31+45 LT.

Note:
○ Denotes existing anchor bolts reused.
✕ Denotes existing anchor bolts removed.
● Denotes new anchor bolts.

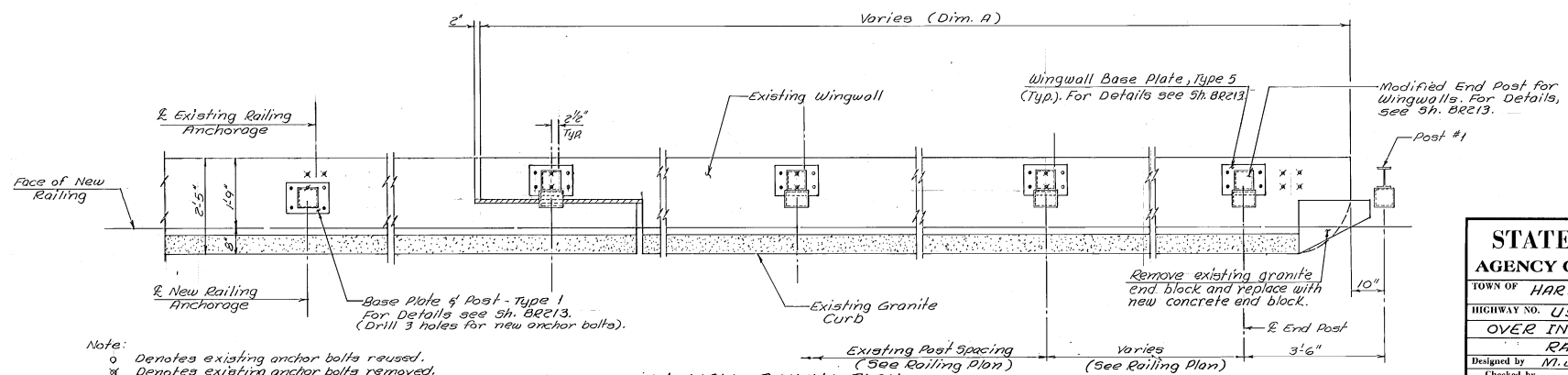
STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
TOWN OF HARTLAND	Bridge No. 36
HIGHWAY NO. US ROUTE 5	Log Sta. Station M.M. 60.33
OVER INTERSTATE ROUTE 91	
RAILING PLAN	
Designed by J.E.M.	Drawn by J.E.M.
Checked by C.M.K.	Bridge Design Supervisor
date 7/84	date W.T.S.
PROJECT SPRINGFIELD-HARTFORD	PROJECT NO. 1R 91-1(48)
Bridge Sheet No. 02707	Sheet 109 of



RAILING PLAN
Scale: 1"=20'-0"

- Dim. A**
- ① 14'-0"
 - ② 14'-0"
 - ③ 38'-0"
 - ④ 27'-0"

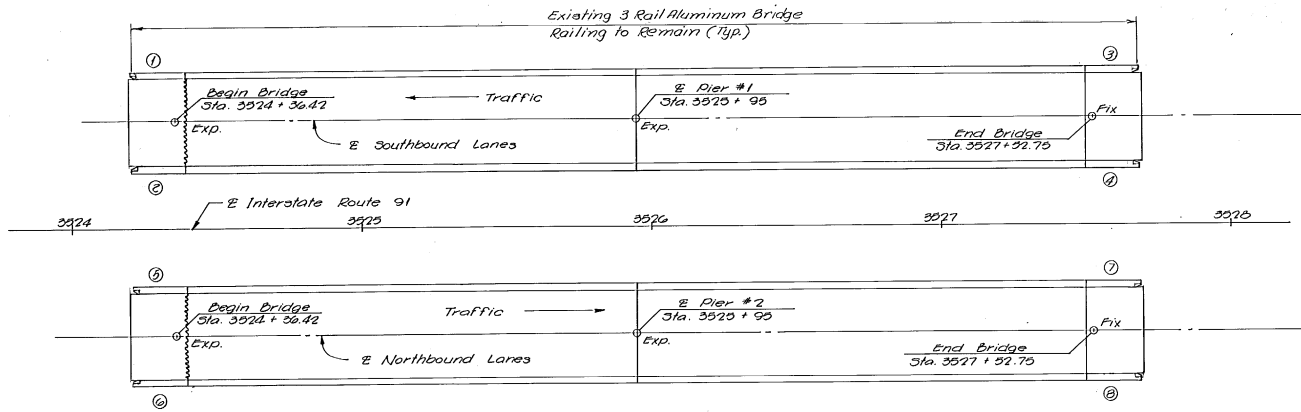
BRIDGE RAILING - GALVANIZED BOX BEAM
 STA. 422+67 RT. - STA. 426+73 RT.
 STA. 422+99 LT. - STA. 427+27 LT.



WINGWALL RAILING PLAN
Scale: 3/4"=1'-0"

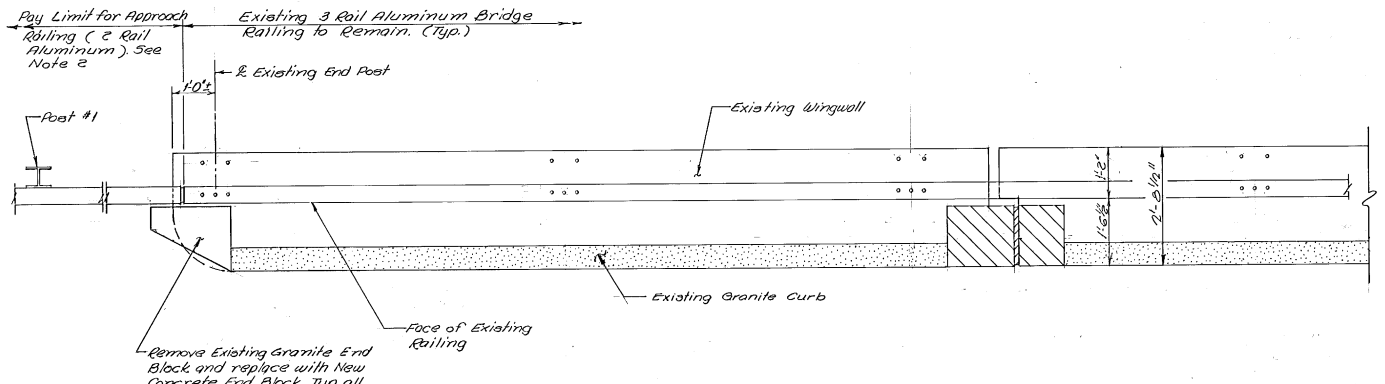
- Note:**
- Denotes existing anchor bolts reused.
 - × Denotes existing anchor bolts removed.
 - Denotes new anchor bolts.

STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
TOWN OF HARTLAND	Bridge No. 38
HIGHWAY NO. US 5	Log Sta. MM63.25
OVER INTERSTATE RTE. 91	
RAILING PLAN	
Designed by M.J.K.	Drawn by M.J.K.
Checked by C.M.K. date 7/84	Bridge Design Supervisor W.T.S. date
PROJECT SPRINGFIELD-HARTFORD IR 91-1 (48)	PROJECT NO.
Bridge Sheet No. B2208	Sheet 110 of



RAILING PLAN
Scale: 1" = 20'-0"

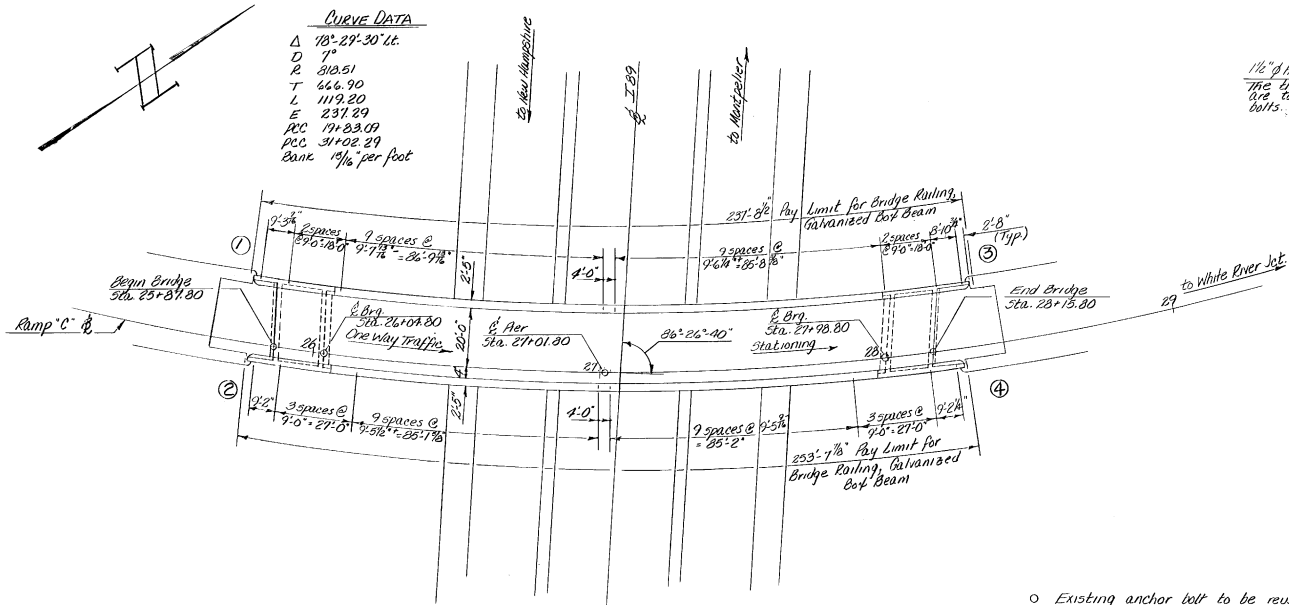
- Notes:
1. For details of Aluminum Approach Railing, see Standard Sheet G-8A.
 2. Wingwall 2, 7' x 8', requires a New Approach Railing (2 rail aluminum). All other existing approach railing (2 rail aluminum) to remain.



WINGWALL PLAN
Scale: 3/4" = 1'-0"

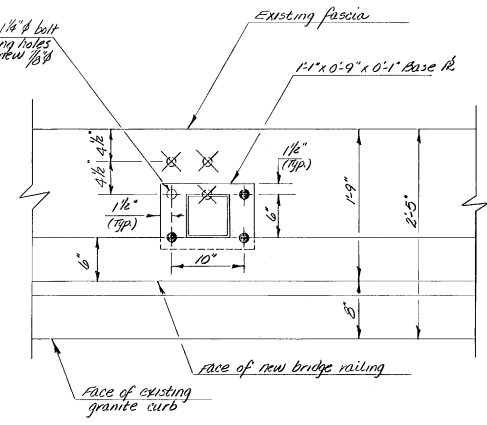
STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
TOWN OF HARTLAND	Bridge No. 40NB#38
HIGHWAY NO. INTERSTATE RTE 91	Log Sta.
	Surv. Sta. MM 66.20
OVER THE OTTAUQUECHEE RIVER	
RAILING PLAN	
Designed by CMK	Drawn by CMK
Checked by MJK date 7/04	Bridge Design Supervisor WTS date
PROJECT SPRINGFIELD-HARTFORD	PROJECT NO. 1R 91-1(48)
Bridge Sheet No. BR 210	Sheet 112 of

CURVE DATA
 Δ 18°-29'-30".16
 D 1"
 R 210.51
 T 666.90
 L 1119.20
 E 237.29
 PCC 17+23.09
 PCC 31+02.29
 Bank 1 1/2" per foot



RAILING PLAN
 1" = 20'-0"

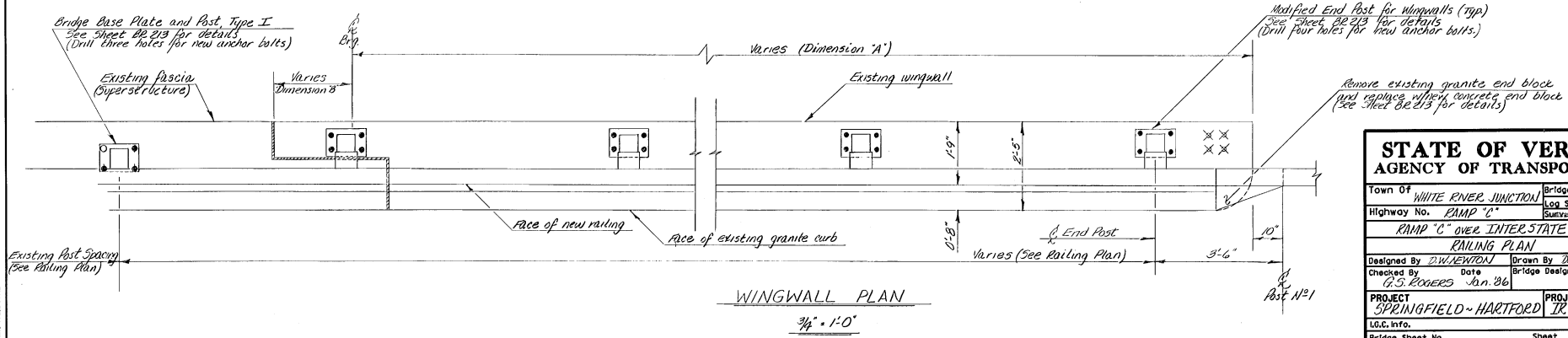
1/2" dia hole for existing 1/4" dia bolt
 The three (3) remaining holes
 are to be 1/8" dia for new 1/8"
 bolts.



**TYPE I
 BASE PLATE DETAILS**
 1/8" = 1'-0"

- Existing anchor bolt to be reused.
- New anchor bolt
- ✕ Existing anchor bolt to be removed.

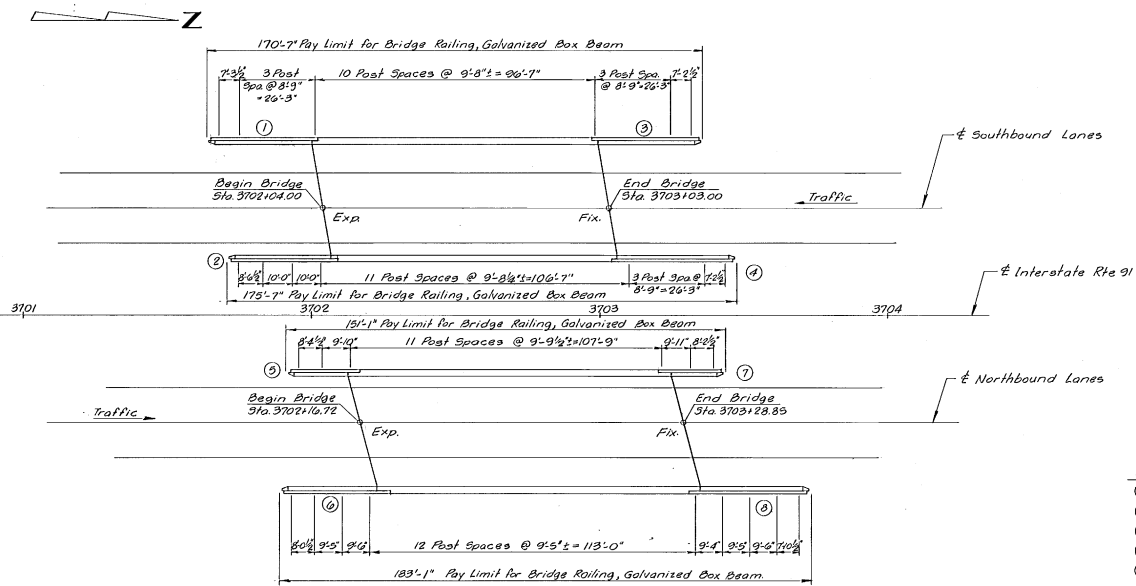
Dimension "A"	Dimension "B"
① 21'-0"	① 1'-11 3/8"
② 29'-0"	② 2'-3 3/4"
③ 21'-0"	③ 1'-11 1/2"
④ 29'-0"	④ 2'-3 1/2"



WINGWALL PLAN
 3/4" = 1'-0"

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of WHITE RIVER JUNCTION	Bridge No. 3 (I-89)
Highway No. RAMP "C"	Log Sta. Survs Sta. MM 045
RAMP "C" OVER INTERSTATE 89 (NB & SB)	
RAILING PLAN	
Designed By D.W. NEWTON	Drawn By D.W. NEWTON
Checked By G.S. ROGERS	Date Jan 86
PROJECT SPRINGFIELD-HARTFORD PROJECT NO. TR 91-1(48)	
L.G.C. Info.	
Bridge Sheet No.	Sheet of

DRAWING 44-232-644Z



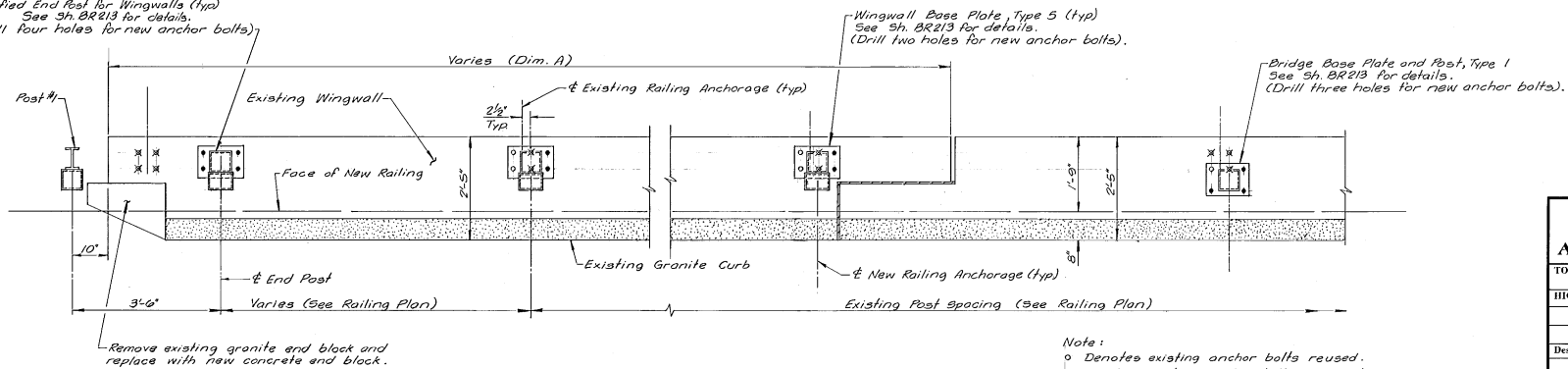
BRIDGE RAILING - GALVANIZED BOX BEAM

NORTHBOUND - STA 3701+90 RT ~ STA 3703+73 RT
 STA 3701+92 LT ~ STA 3703+43 LT
 SOUTHBOUND - STA 3701+71 RT ~ STA 3703+47 RT
 STA 3701+64 LT ~ STA 3703+85 LT

RAILING PLAN
 Scale: 1" = 20'-0"
 (Railing Expansion Joints: 1 3/8" NB, 1/4" SB.)

- DIM. A'**
- ① 37'-0"
 - ② 37'-0"
 - ③ 37'-0"
 - ④ 42'-0"
 - ⑤ 24'-0"
 - ⑥ 37'-0"
 - ⑦ 22'-0"
 - ⑧ 41'-0"

Modified End Post for Wingwalls (typ)
 See Sh. BR213 for details.
 (Drill four holes for new anchor bolts)

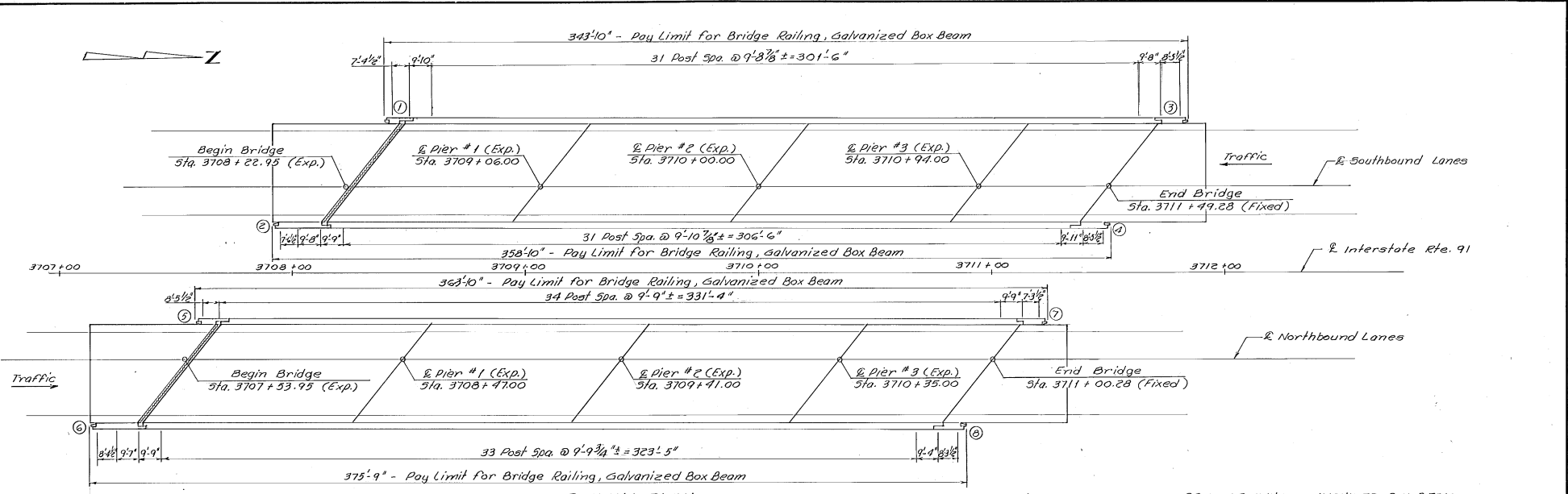


WINGWALL PLAN
 Scale: 3/4" = 1'-0"

Note:

- o Denotes existing anchor bolts reused.
- x Denotes existing anchor bolts removed.
- Denotes new anchor bolts.

STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
TOWN OF WHITE RIVER JCT.	Bridge No. 41 NB 298
Highway No. INTERSTATE Rte 91	Log Sta. MM 69.55
OVER RAMP 'C'	
RAILING PLAN	
Designed by J.E.M.	Drawn by J.E.M.
Checked by M.J.K. date 7/84	Bridge Design Supervisor W.T.S. date
PROJECT SPRINGFIELD-HARTFORD	PROJECT NO. IR 91-1(48)
Bridge Sheet No. BR 211	Sheet 113 of

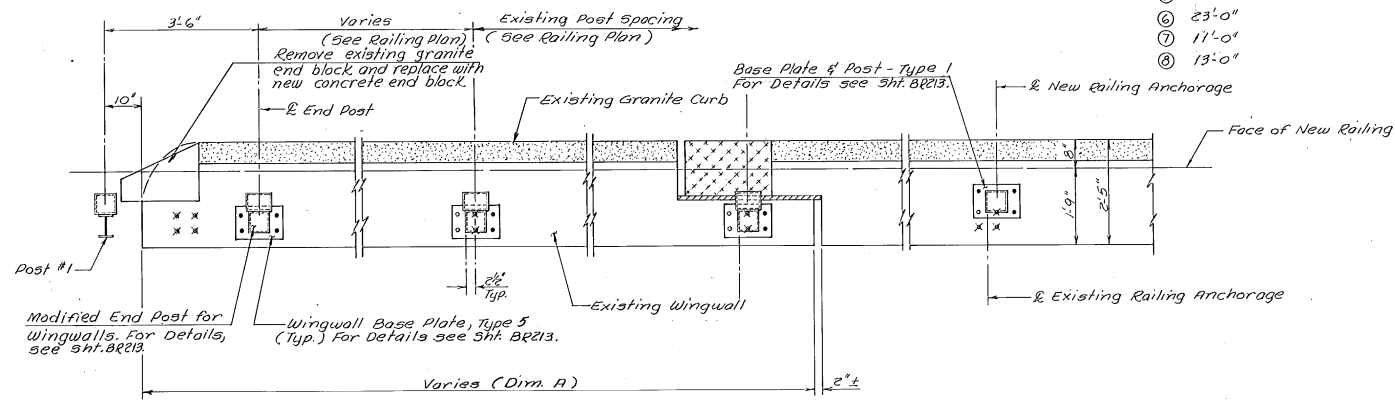


RAILING PLAN
 Scale: 1" = 20'-0"
 (Railing Expansion Joints: 4 3/8" NB., 4 1/2" SB.)

- Dim. A
- ① 11'-0"
 - ② 23'-0"
 - ③ 13'-0"
 - ④ 16'-0"
 - ⑤ 13'-0"
 - ⑥ 23'-0"
 - ⑦ 11'-0"
 - ⑧ 13'-0"

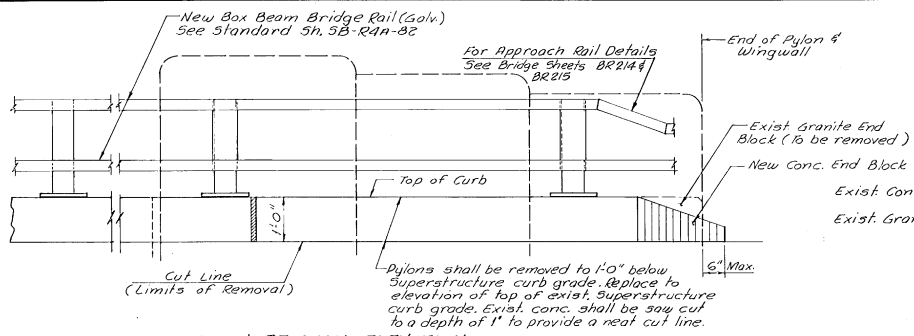
BRIDGE RAILING - GALVANIZED BOX BEAM
 NORTHBOUND - STA. 3707 + 14 RT. - STA. 3710 + 90 RT.
 STA. 3707 + 59 LT. - STA. 3711 + 23 LT.
 SOUTHBOUND - STA. 3707 + 92 RT. - STA. 3711 + 51 RT.
 STA. 3708 + 40 LT. - STA. 3711 + 84 LT.

Note:
 ○ Denotes existing anchor bolts reused.
 ✕ Denotes existing anchor bolts removed.
 ● Denotes new anchor bolt.

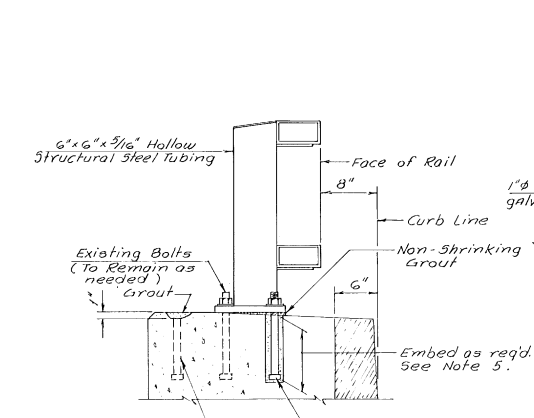


WINGWALL PLAN
 Scale: 3/4" = 1'-0"

STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
TOWN OF HARTFORD	Bridge No. 42NB43B
HIGHWAY NO. INTERSTATE RTE. 91	Log Sta. Sta. N.M. 69.80
OVER INTERSTATE RTE. 89	
RAILING PLAN	
Designed by M.J.K.	Drawn by M.J.K.
Checked by C.M.K.	Bridge Design Supervisor
date 7/84	date W.T.S.
PROJECT SPRINGFIELD-HARTFORD	PROJECT NO. 1R 91-1 (48)
Bridge Sheet No. BR212	Sheet 114 of



PYLON REMOVAL ELEVATION
Not to scale

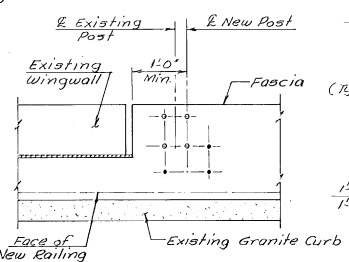


RAIL POST ON BRIDGE
Scale: 1 1/2" = 1'-0"

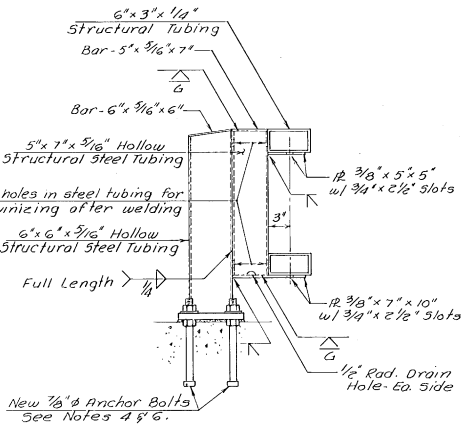
Cut existing bolts to 1" below top of conc. Fill with Non-shrinking Grout. (Typ. all areas where existing bolts are not utilized).

Note: Use existing front bolt as rear anchor where applicable. See bolt layout on Railing Plans. Drill and grout 3 new anchor bolts as shown. Cut existing bolts not used to 1" below top of concrete and fill with non-shrinking grout.

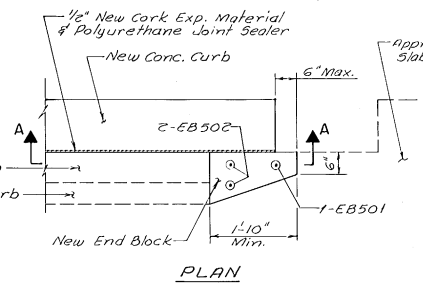
• - Denotes Existing Bolts
•• - Denotes New Anchor Bolts



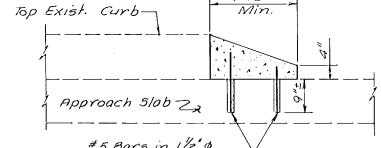
ANCHOR BOLT LAYOUT
Scale: 3/4" = 1'-0"



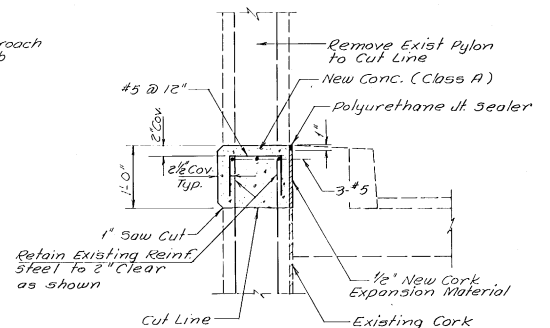
MODIFIED RAIL POST ON WINGWALLS
Scale: 1 1/2" = 1'-0"



SECTION A-A END BLOCK DETAILS
Scale: 3/4" = 1'-0"



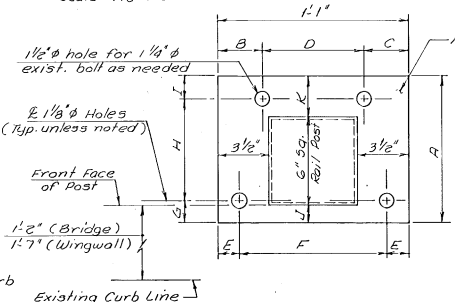
NEW ANCHOR BOLT DETAIL
Scale: 3" = 1'-0"



SECTION THROUGH NEW CURB
Scale: 1" = 1'-0"

NOTES

1. For Post Details and related notes not shown on these plans, see Standard Sheet 3B-R4A-82.
2. New A.S.T.M. A449 7/8" anchor bolts used on the structure shall be furnished with one nut and one washer. Bolts, nuts and washers shall be furnished under Item 617.30, Bridge Railing - Galvanized Box Beam.
3. Grout new bolts with Epoxy Bonding Compound. Drill holes shall be 1 3/4" dia. Drilling and grouting new anchor bolts shall be Subsidiary to Bridge Railing, Galvanized Box Beam.
4. Anchor bolts on the wingwalls are to be cast in the concrete unless noted otherwise. The posts are to be set so that the new face of railing aligns with that on the superstructure.
5. A minimum pullout strength of 30,000 pounds shall be attained on the new bolts. A sample grouted bolt will be tested before materials are approved for use and then random bolts will be field tested by the Engineer to insure this strength is being attained.
6. Anchor bolts that are to be cast in new concrete on the wingwalls shall be furnished with two nuts and one washer.



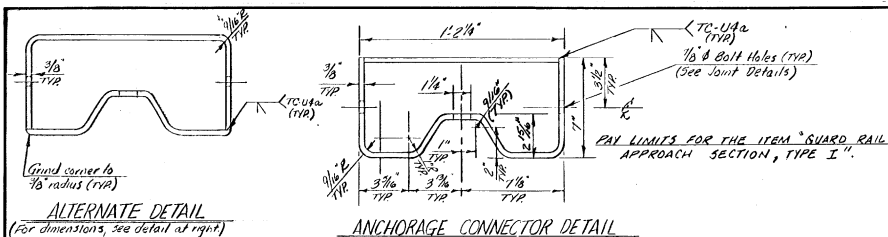
BASE PLATE DETAIL
Scale: 3" = 1'-0"

BASE PLATE DIMENSIONS											
TYPE	A	B	C	D	E	F	G	H	I	J	K
1	9"	1 1/2"	1 1/2"	10"	1 1/2"	10"	1 1/2"	6"	1 1/2"	1 1/2"	1 1/2"
2	10"	1 1/2"	1 1/2"	10"	1 1/2"	10"	3 1/2"	3"	1 1/2"	1"	3"
3	9"	1 1/2"	1 1/2"	10"	1 1/2"	10"	1 1/2"	6"	1 1/2"	1"	2 1/2"
4	9"	1 1/2"	1 1/2"	10"	1 1/2"	10"	2 1/2"	5"	1 1/2"	1"	2 1/2"
5	9"	1 1/2"	1 1/2"	10"	1 1/2"	10"	3"	4 1/2"	1 1/2"	1 1/2"	1 1/2"

STATE OF VERMONT
AGENCY OF TRANSPORTATION

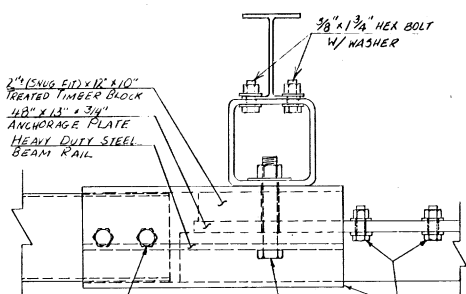
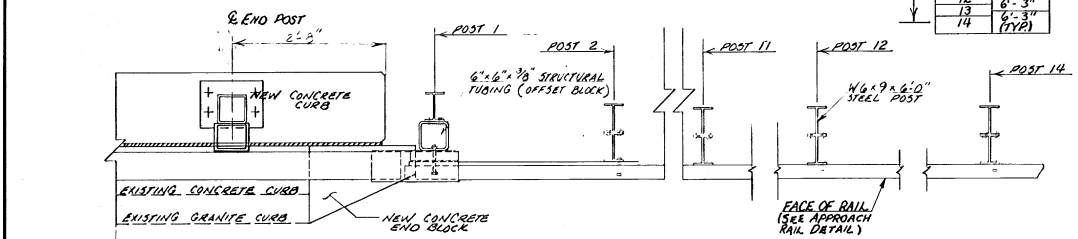
TOWN OF _____ Bridge No. _____
 Highway No. INTERSTATE 91 Log Sta. _____
 POST AND CURB DETAILS

Designed by J.E.M. Drawn by M.J.K.
 Checked by J.E.M. date 7/84 Bridge Design Supervisor
 PROJECT 3 SPRINGFIELD-HARTFORD 12 91-1(48) date
 Bridge Sheet No. BR213 Sheet 115 of

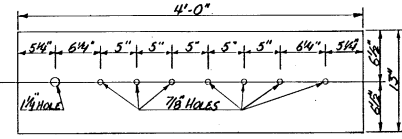
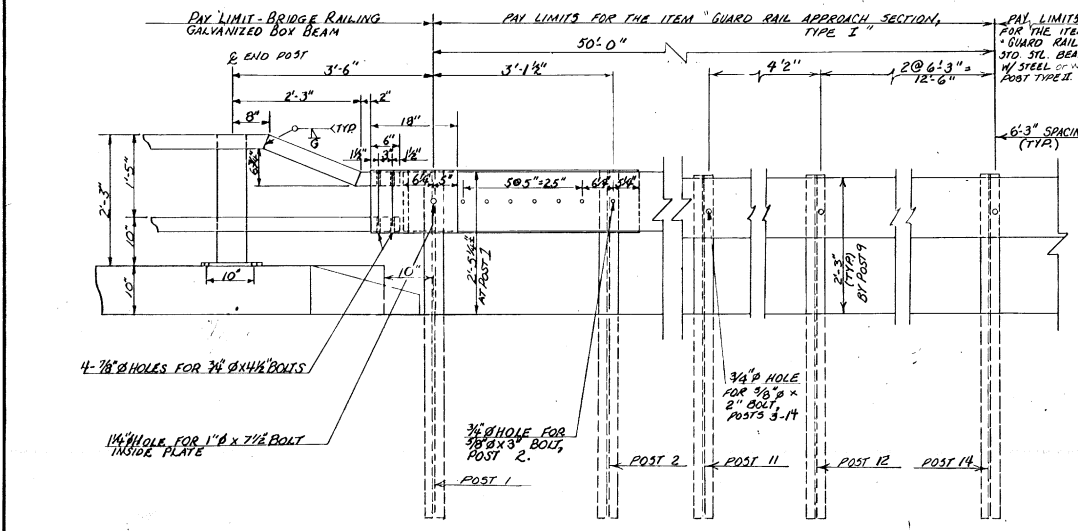
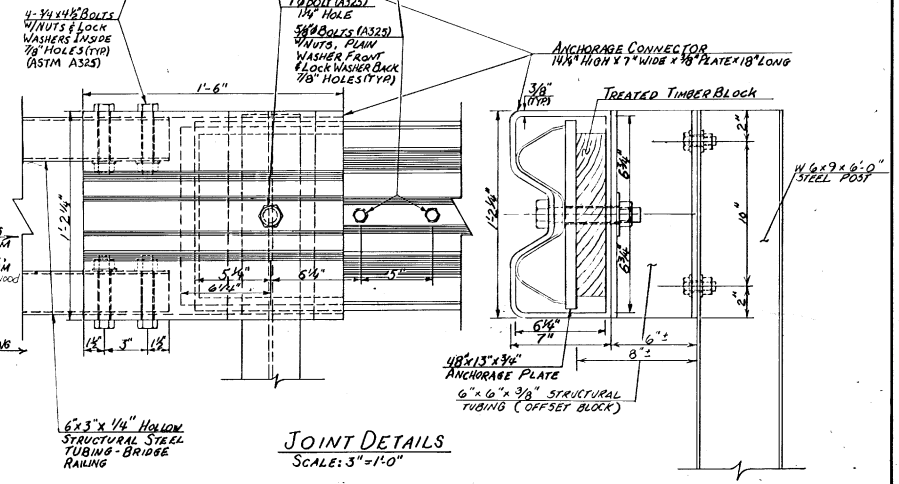


POST NO.	SPACING
1	3'-6"
2	3'-11 1/2"
3	3'-11 1/2"
4	3'-11 1/2"
5	3'-11 1/2"
6	3'-11 1/2"
7	3'-11 1/2"
8	3'-11 1/2"
9	4'-0"
10	4'-0"
11	4'-0"
12	4'-0"
13	6'-3" (TYP)
14	6'-3" (TYP)

ALTERNATE DETAIL
(For dimensions, see detail at right)



- NOTES**
- SEE STANDARD SB-RHA-32 FOR ADDITIONAL BRIDGE RAIL DETAILS.
 - NET USE.
 - THERE SHALL BE A MINIMUM OF 50 FEET OF 10 GAGE STEEL BEAM RAIL FROM THE END OF THE BRIDGE.
 - SPLICES SHALL LAP IN THE DIRECTION OF TRAFFIC FLOW.
 - ALL ETS SHALL BE A 325 HEX HEAD WITH WASHER.
- ALL HARDWARE TO BE GALVANIZED TO ASTM 153.
- 6-SEE STANDARD G-1 FOR ADDITIONAL GUARD RAIL DETAILS.
- 7-ANCHORAGE CONNECTOR AND ANCHORAGE PLATE SHALL BE A36 STEEL GALVANIZED TO ASTM A123, AFTER FABRICATION.
- 8-THE FIRST 14 POSTS, OFFSET BLOCKS, 50' HD. STEEL BEAM RAIL, ANCHORAGE CONNECTOR, ANCHORAGE PLATE, TIMBER BLOCK, AND ALL CONNECTOR HARDWARE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "GUARD RAIL APPROACH SECTION, TYPE I" AS SHOWN ON THE ELEVATION VIEW ON THIS SHEET.



STATE OF VERMONT
AGENCY OF TRANSPORTATION

DOWN OF _____ Bridge No. _____
HIGHWAY NO. _____ Log Sta. _____
Mile Sta. _____

BRIDGE APPROACH RAIL DETAILS
STEEL BEAM TO BOX BEAM

Designed by R.S.H. G.S.R. Drawn by S.B. G.L.D.

Checked by G.S. ROGERS date 11/83 Bridge Design Supervisor FW Balkum date 12/83

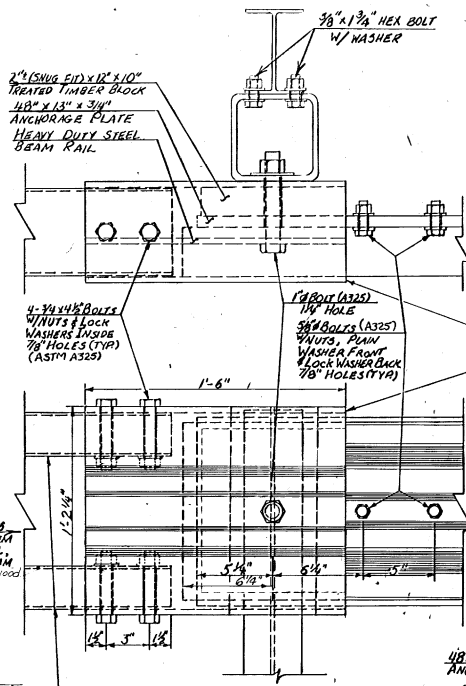
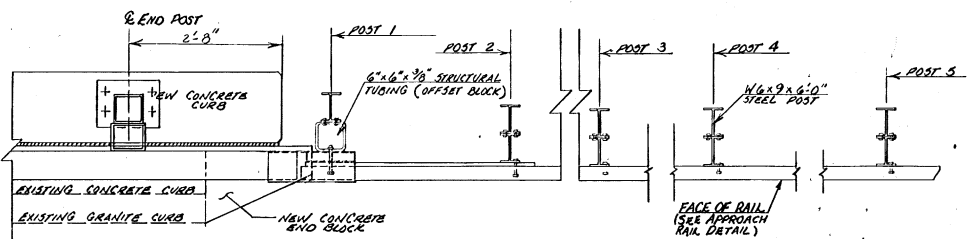
PROJECT NO. SPRINGFIELD - HARTFORD PROJECT NO. 11R 91-1(48)

Bridge Sheet No. BR214 Sheet 116 of 116

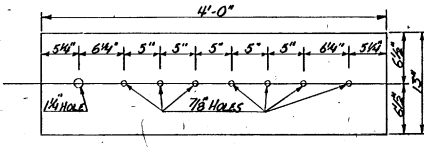
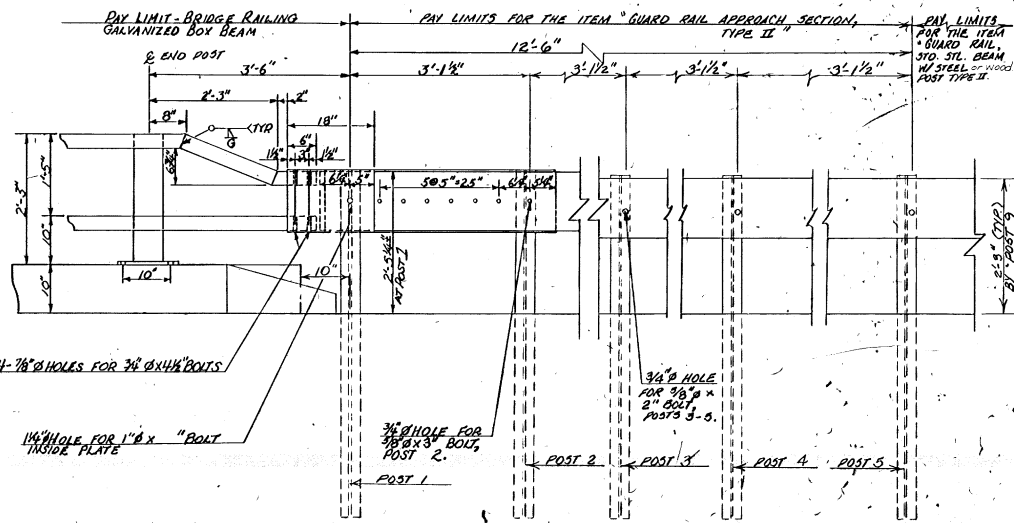
GUARD RAIL APPROACH SECTION, TYPE I DETAILS

POST NO.	SPACING
END POST	3'-6"
1	3'-1 1/2"
2	3'-1 1/2"
3	3'-1 1/2"
4	3'-1 1/2"
5	3'-1 1/2"

PAY LIMITS FOR THE ITEM "GUARD RAIL APPROACH SECTION, TYPE II".



- NOTES**
- 1- SEE STANDARD SB-RHA-B2 FOR ADDITIONAL BRIDGE RAIL DETAILS.
 - 2- NOT USED.
 - 3- THERE SHALL BE A MINIMUM OF 12 FEET OF 12 GAGE STEEL BEAM USED FROM THE END OF THE BRIDGE.
 - 4- SPLICES SHALL LAP IN THE DIRECTION OF TRAFFIC FLOW.
 - 5- ALL BOLTS SHALL BE 1/2" HEX WELD WITH WASHER.
- ALL HARDWARE TO BE GALVANIZED TO ASTM 153.
- 6- SEE STANDARD G-1 FOR ADDITIONAL GUARD RAIL DETAILS.
 - 7- ANCHORAGE CONNECTOR AND ANCHORAGE PLATE SHALL BE A36 STEEL GALVANIZED TO ASTM A123, AFTER FABRICATION.
 - 8- THE FIRST 5 POSTS, OFFSET BLOCKS, 2" STD. STEEL BEAM RAIL, ANCHORAGE CONNECTOR, ANCHORAGE PLATE, TIMBER BLOCK, AND ALL CONNECTOR HARDWARE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "GUARD RAIL APPROACH SECTION, TYPE II" AS SHOWN ON THE ELEVATION VIEW ON THIS SHEET.

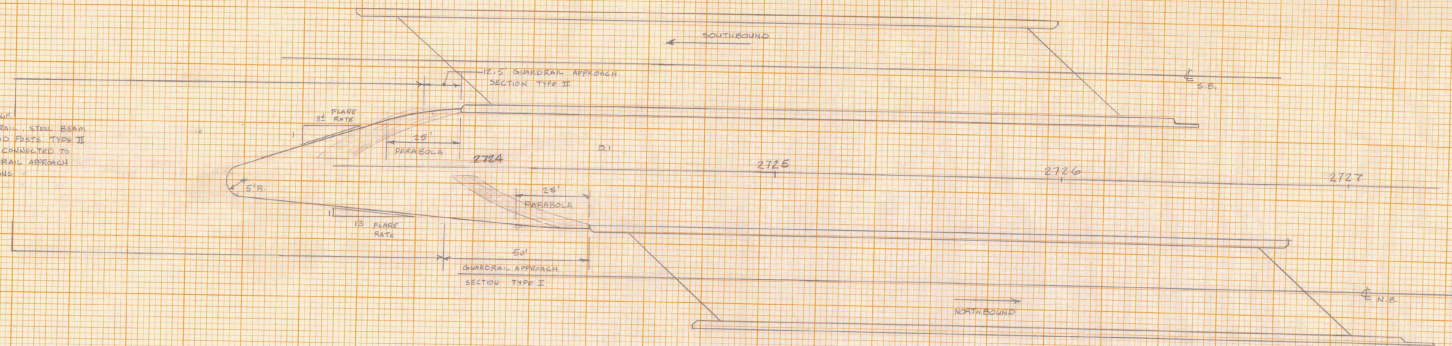


**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

TOWN OF _____	Bridge No. _____
HIGHWAY NO. _____	Log Sta. _____
_____	Surv. Sta. _____
BRIDGE APPROACH RAIL DETAILS STEEL BEAM TO BOX BEAM	
Designed by RSH/g.s.r.	Drawn by STB/g.c.d.
Checked by G.S. ROBERTS date 11/83	Bridge Design Supervisor F.W. Bolkm date 12/83
PROJECT SPRINGFIELD-HARTFORD	PROJECT NO. TR 91-1 (AB)
Bridge Sheet No. BR218	Sheet 117 of 117

GUARD RAIL APPROACH SECTION, TYPE II DETAILS

DATE: _____
 BY: _____
 APPROVED: _____
 PROJECT NO. _____
 SHEET NO. _____

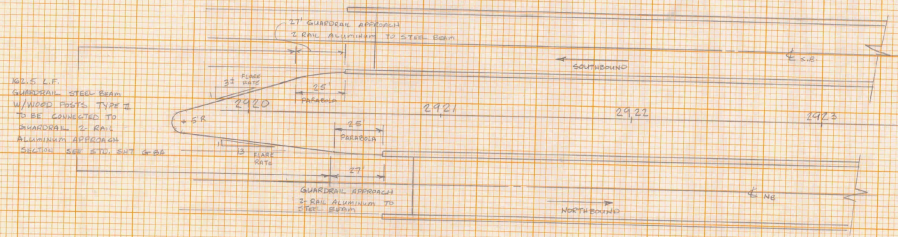


MINNESOTA BULLNOSE GUARDRAIL TREATMENT @ BRIDGES 30N & 30S

STA 2725 +00 ±
 SCALE IN FEET
 0 30

ITEM	QUANTITY	UNIT	AMOUNT
ITEM 402.15	1	1000 L.F.	1000
ITEM 402.35	1	1000 L.F.	1000
ITEM 402.10	1	1000 L.F.	1000
ITEM 402.25	1	1000 L.F.	1000
ITEM 402.15	1	1000 L.F.	1000
ITEM 402.25	1	1000 L.F.	1000
ITEM 402.15	1	1000 L.F.	1000
ITEM 402.25	1	1000 L.F.	1000
ITEM 402.15	1	1000 L.F.	1000
ITEM 402.25	1	1000 L.F.	1000

DATE: _____
 BY: _____
 APPROVED: _____
 PROJECT NO. _____
 SHEET NO. _____



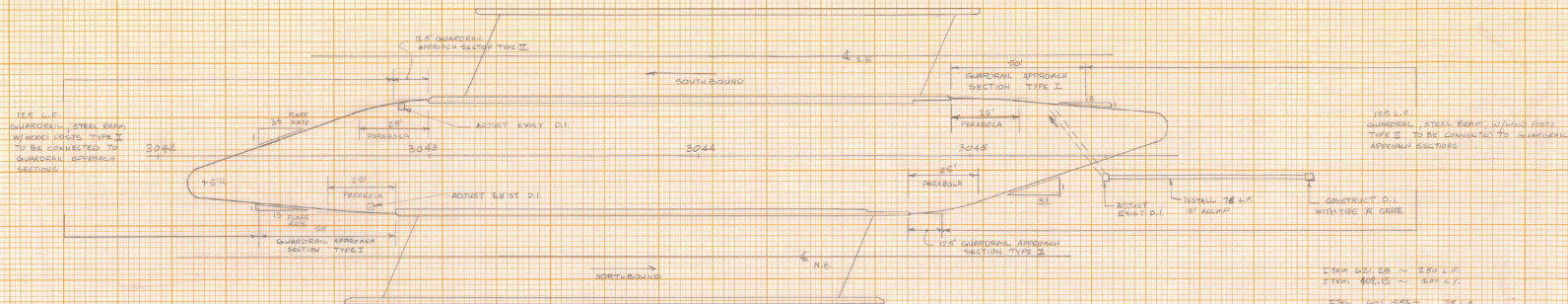
MINNESOTA BULLNOSE GUARDRAIL TREATMENT @ BRIDGES 32N & 32S

STA 2923 +00 ±
 SCALE IN FEET
 0 30

ITEM	QUANTITY	UNIT	AMOUNT
ITEM 402.15	1	1000 L.F.	1000
ITEM 402.35	1	1000 L.F.	1000
ITEM 402.10	1	1000 L.F.	1000
ITEM 402.25	1	1000 L.F.	1000
ITEM 402.15	1	1000 L.F.	1000
ITEM 402.25	1	1000 L.F.	1000
ITEM 402.15	1	1000 L.F.	1000
ITEM 402.25	1	1000 L.F.	1000
ITEM 402.15	1	1000 L.F.	1000
ITEM 402.25	1	1000 L.F.	1000

MINNESOTA GUARDRAIL@BRIDGES
 SAFETY PROJECT
 SPRINGFIELD-HARTFORD
 IR-91-1(48)

DATE	
BY	
REVISIONS	
NO.	DESCRIPTION
1	
2	
3	
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5	
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8	
9	
10	

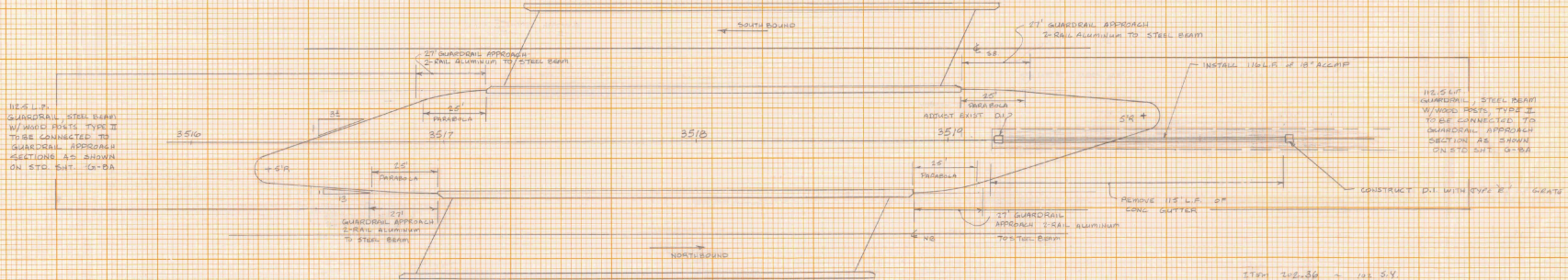


MINNESOTA BULLNOSE GUARDRAIL TREATMENT @ BRIDGES 34N & 34S

STA 3044 TO 3045
SCALE IN FEET
0 30

ITEM 601.28	24\"/>
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DATE	
BY	
REVISIONS	
NO.	DESCRIPTION
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	



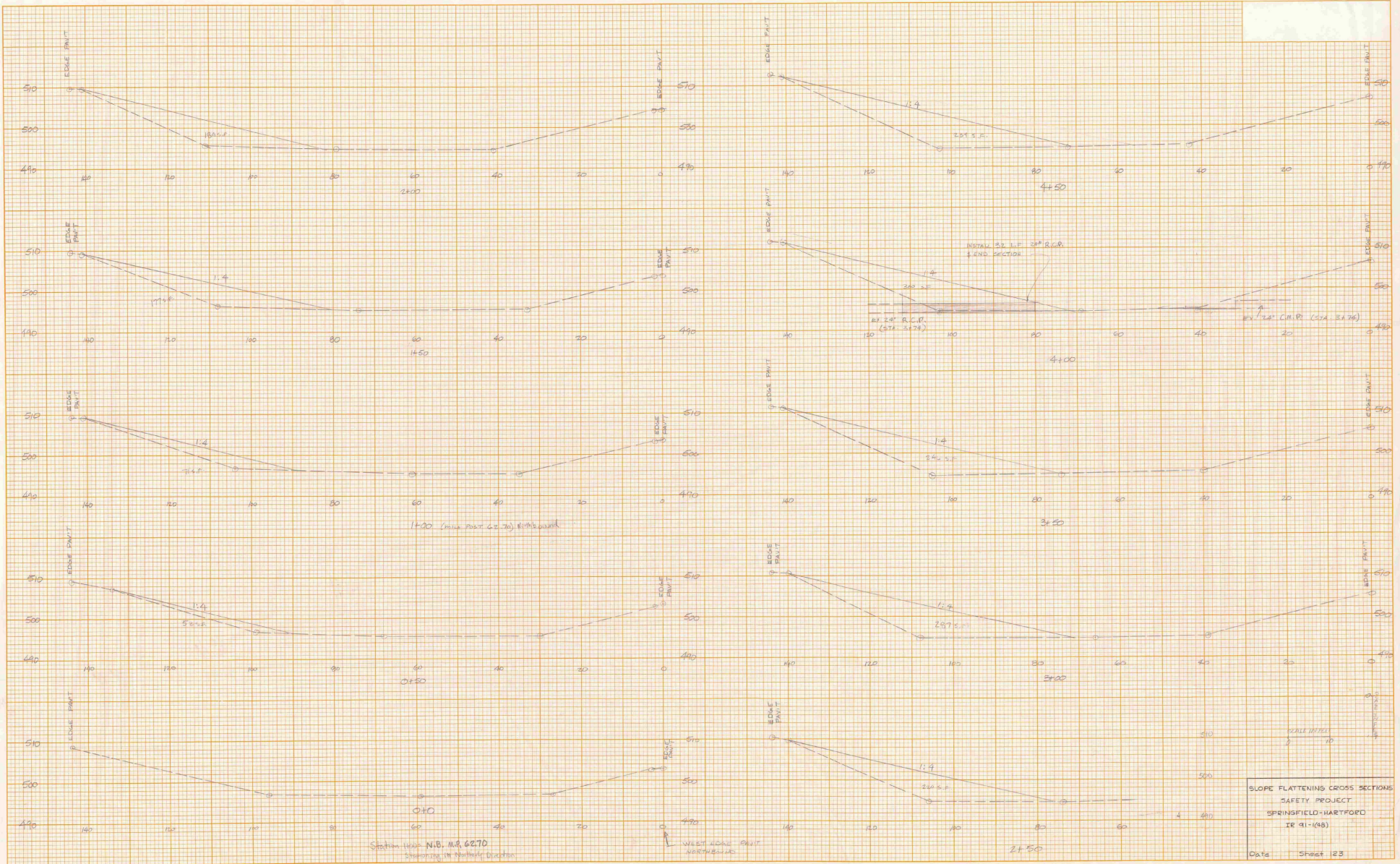
MINNESOTA BULLNOSE GUARDRAIL TREATMENT @ BRIDGES 35N & 35S

STA 3510 TO 3512
SCALE IN FEET
0 30

ITEM 302.36	18\"/>
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DATE	
BY	
DESIGNED BY	
CHECKED BY	
APPROVED BY	
SCALE	

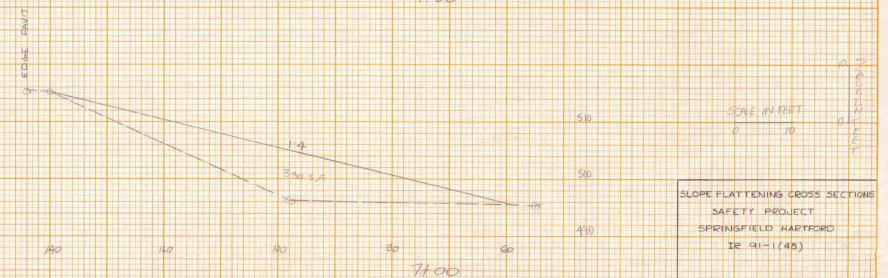
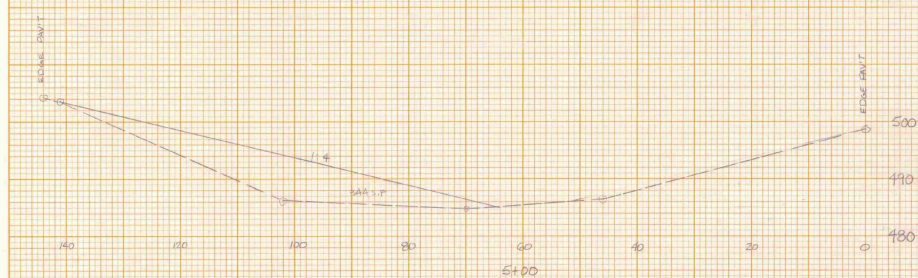
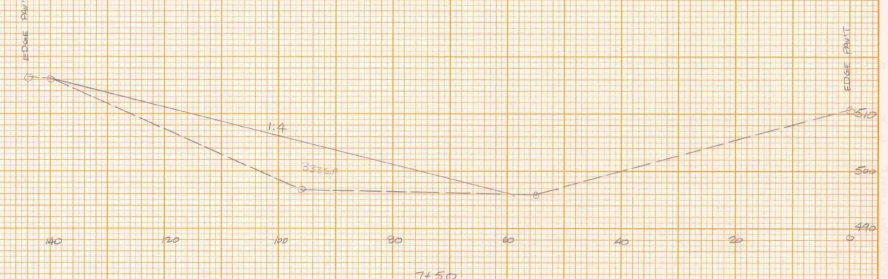
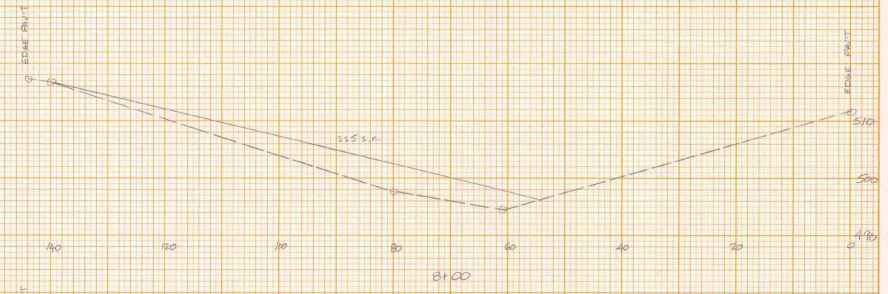
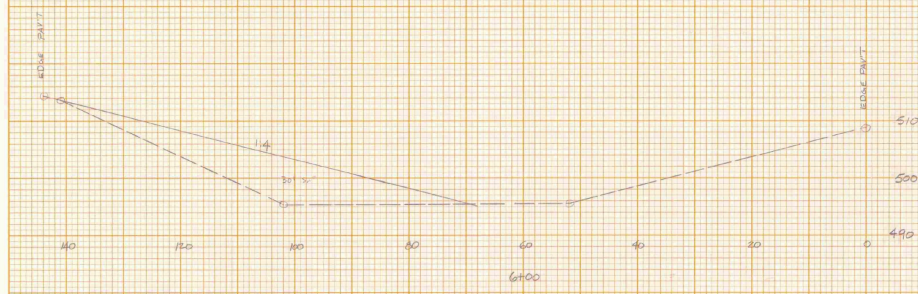
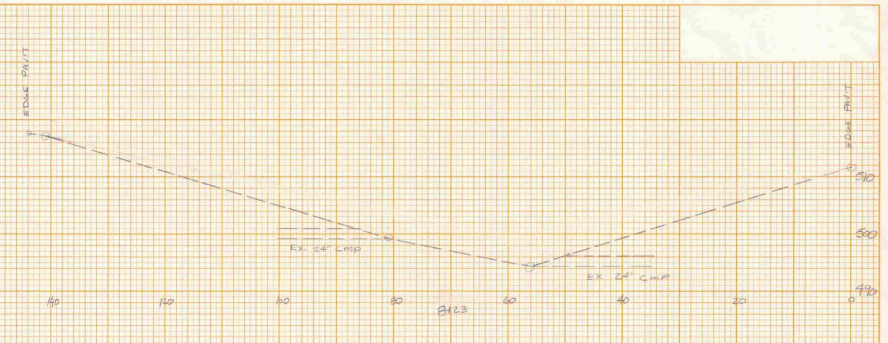
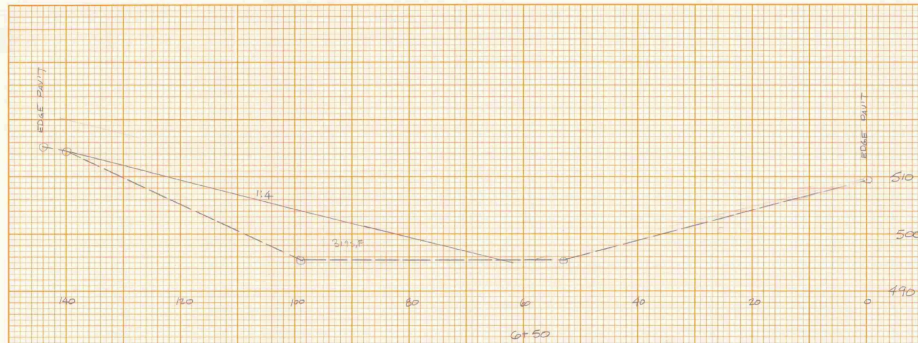
DATE	
BY	
DESIGNED BY	
CHECKED BY	
APPROVED BY	
SCALE	



SLOPE FLATTENING CROSS SECTIONS
 SAFETY PROJECT
 SPRINGFIELD-HARTFORD
 IR 91-08
 Date Sheet 23

DATE _____
 BY _____
 PROJECT NO. _____
 SHEET NO. _____
 DRAWN BY _____
 CHECKED BY _____
 DATE _____

DATE _____
 BY _____
 PROJECT NO. _____
 SHEET NO. _____
 DRAWN BY _____
 CHECKED BY _____
 DATE _____

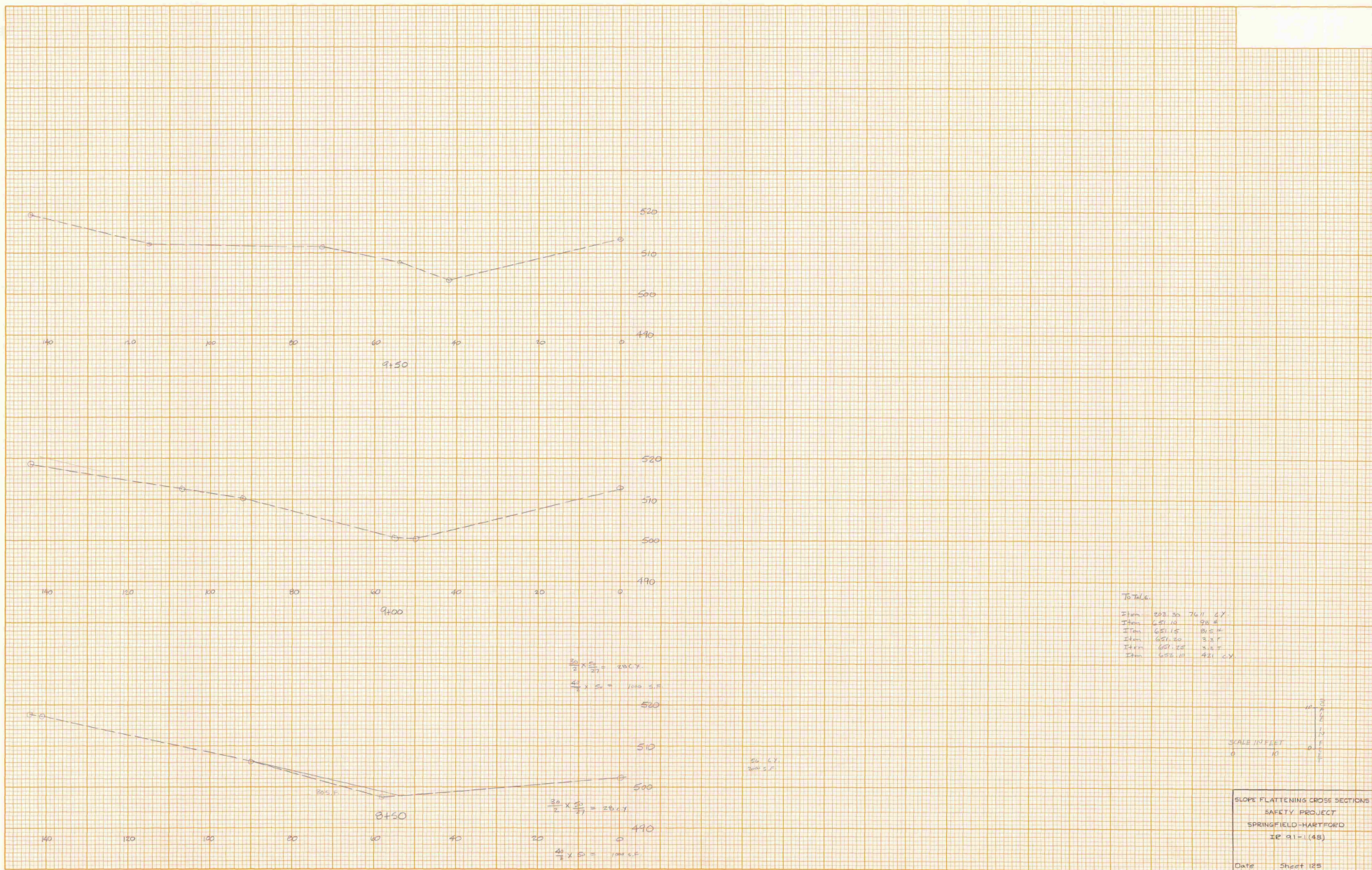


SCALE IN FEET
 1" = 10'
 1" = 10'

SLOPE FLATTENING CROSS SECTIONS
 SAFETY PROJECT
 SPRINGFIELD HARTFORD
 IR 91-1(45)
 DATE _____ SHEET 124

DATE	
BY	
REVISIONS	
NO.	
DATE	
BY	
REVISIONS	
NO.	

DATE	
BY	
REVISIONS	
NO.	
DATE	
BY	
REVISIONS	
NO.	



DATA

Item	203.20	76.1	47
Item	681.14	88.8	
Item	681.14	88.8	
Item	687.40	83.8	
Item	687.88	83.8	
Item	682.11	42.1	47

SCALE 1" = 10 FEET

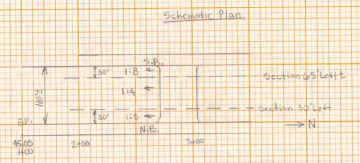
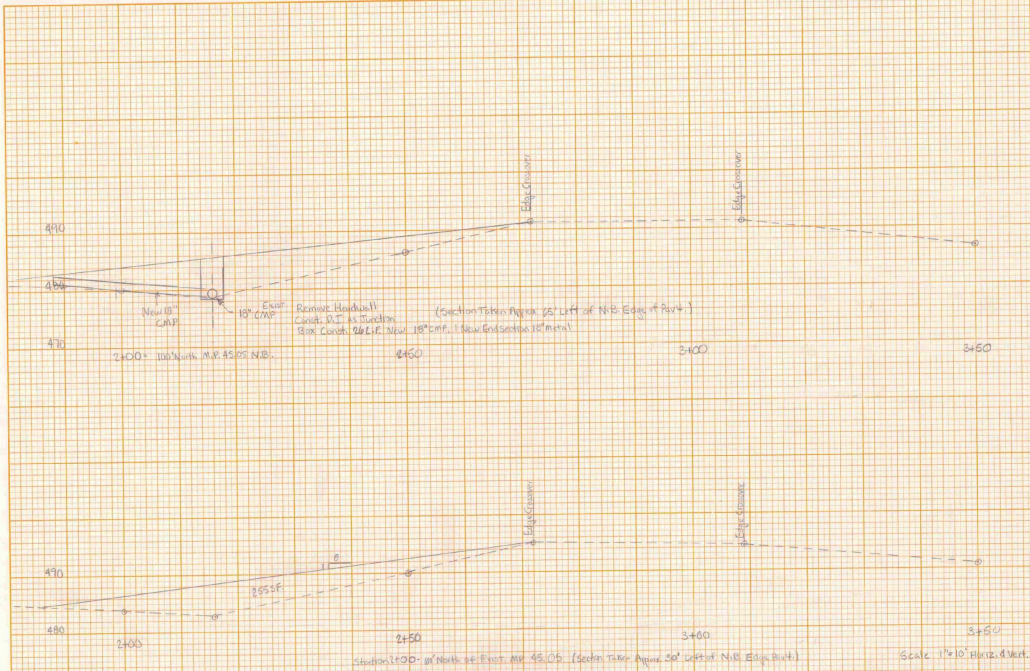
0 10

3
2
1
0
1
2
3

SLOPE FLATTENING CROSS SECTIONS
 SAFETY PROJECT
 SPRINGFIELD-HARTFORD
 I.E. 91-(148)
 DATE 5/27/15

DATE	
BY	
PROJECT	
CONTRACT	
NO.	
DATE	
BY	
PROJECT	
CONTRACT	
NO.	
DATE	
BY	

DATE	
BY	
PROJECT	
CONTRACT	
NO.	
DATE	
BY	
PROJECT	
CONTRACT	
NO.	
DATE	
BY	



TOTALS

Station	2+00.00	489.00
Station	2+50.00	491.00
Station	3+00.00	493.00
Station	3+50.00	495.00
Station	4+00.00	497.00
Station	4+50.00	499.00
Station	5+00.00	501.00

Vertical Curve

$$\frac{0.1255}{2} \times 240^2 = 1410.8$$

$$\frac{2.54235}{2} \times 240 = 292.68 + 196.24 = 488.92$$

$$\frac{2.7510}{2} \times 240 = 162.64$$

Answer: Elevation at end of 240' slope allowed outside clear zone!

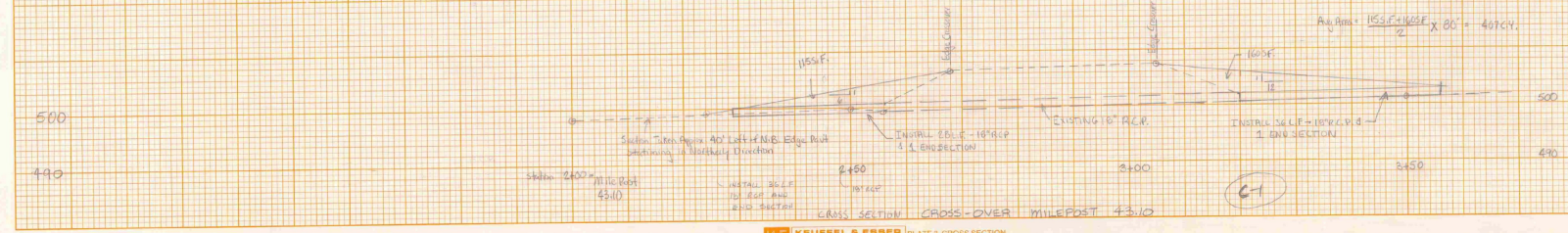
CROSS SECTIONS - CROSS-OVER MILEPOST 45.05 (C-2)

TOTALS

Station	2+00.00	497.00
Station	2+50.00	499.00
Station	3+00.00	501.00
Station	3+50.00	503.00
Station	4+00.00	505.00
Station	4+50.00	507.00
Station	5+00.00	509.00

SCALE 1/4" = 1' FEET

Answer: $\frac{1.554165}{2} \times 240^2 = 467.64$



CROSS SECTION - CROSS-OVER MILEPOST 43.00 (C-1)

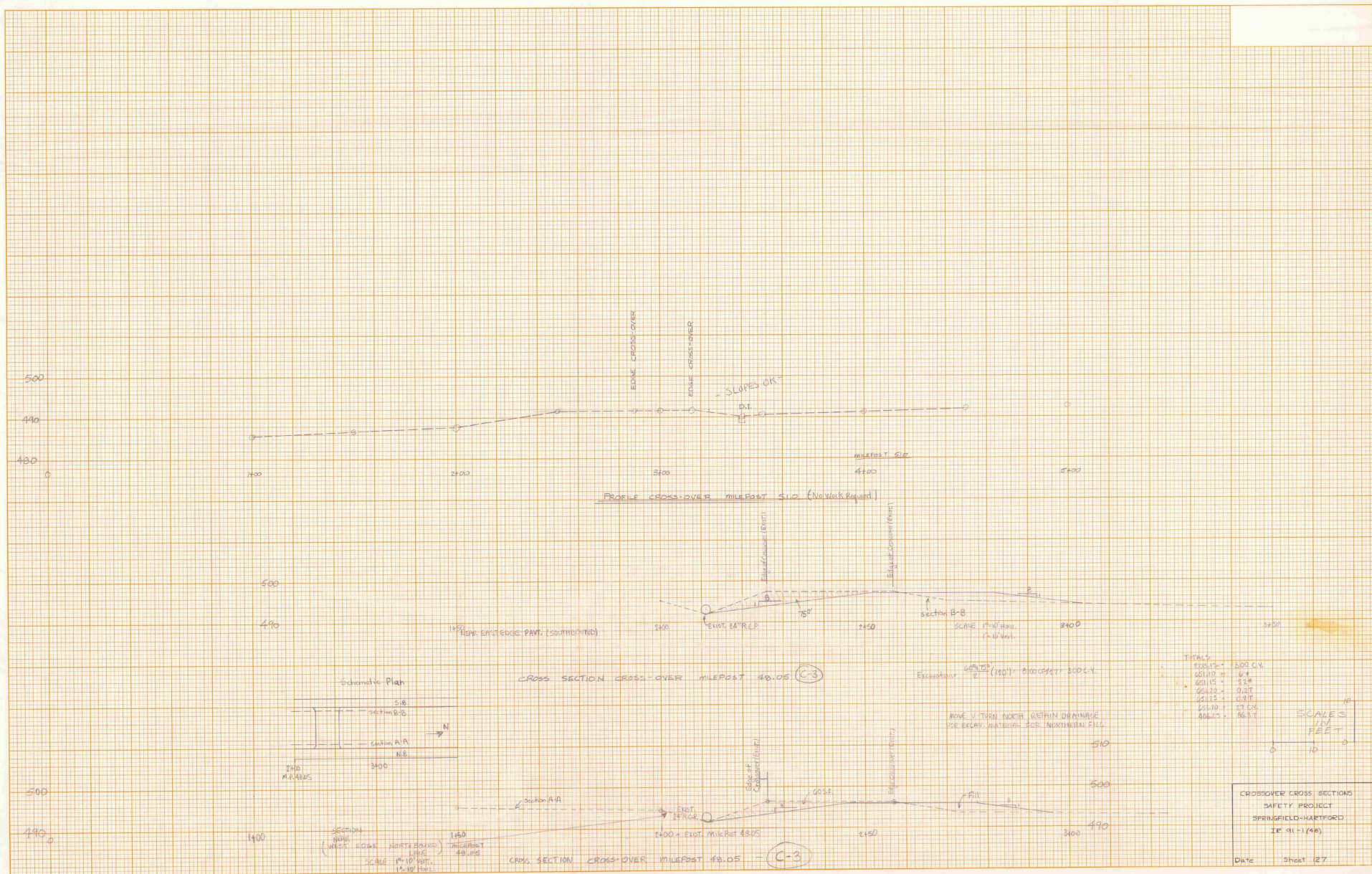
CROSSOVER CROSS SECTIONS SAFETY PROJECT SPRINGFIELD-HARTFORD

IR 91-1(48)

DATE Sheet 126

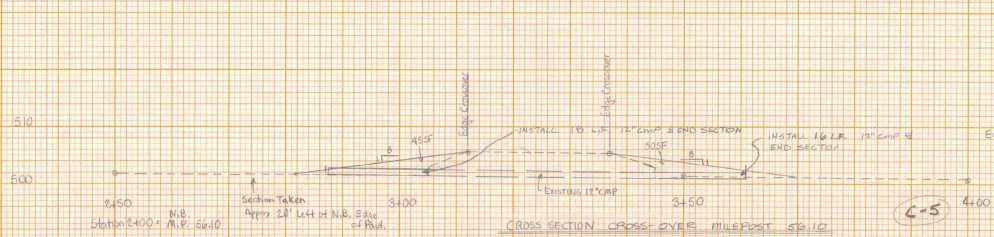
DATE	
BY	
PROJECT	
SECTION	
SCALE	
DATE	

DATE	
BY	
PROJECT	
SECTION	
SCALE	
DATE	



DATE	
BY	
PROJECT	
LOCATION	
SCALE	
DATE	
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PROJECT	
LOCATION	
SCALE	

DATE	
BY	
PROJECT	
LOCATION	
SCALE	
DATE	
BY	
PROJECT	
LOCATION	
SCALE	



10
 SCALES
 IN
 FEET
 0 10 0

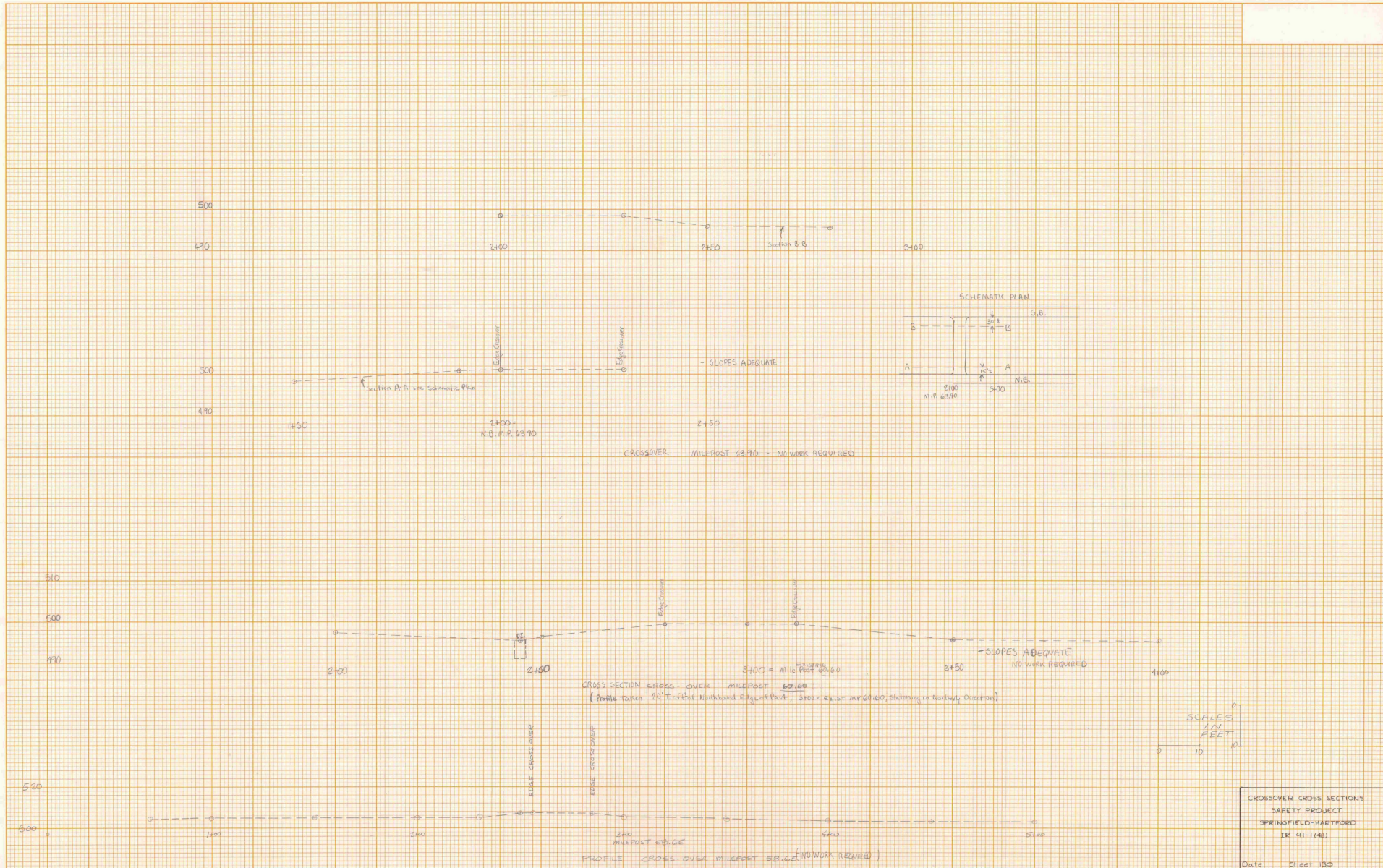
Totals		
Item	Quantity	Vol.
Fill	681.00	58
Excav	681.00	58
Gravel	681.00	58
Gravel	681.00	58
Gravel	681.00	58
Gravel	681.00	58
Gravel	681.00	58
Gravel	681.00	58
Gravel	681.00	58
Gravel	681.00	58

CROSSOVER CROSS SECTIONS
 SAFETY PROJECT
 SPRINGFIELD-HARTFORD
 IR 91-1(48)

Date Sheet 129

DATE	
BY	
PROJECT	
PLANTING	
UTILITY	
WATER	
SEWER	
ROAD	
RAIL	
OTHER	

DATE	
BY	
PROJECT	
PLANTING	
UTILITY	
WATER	
SEWER	
ROAD	
RAIL	
OTHER	



CROSSOVER CROSS SECTIONS
SAFETY PROJECT
SPRINGFIELD-HARTFORD
IR 91-1(48)
Date: Sheet 180

HANGER 393

INITIALS

#122302-01

PHASE 1-INTERSTATE

Transportation

Vermont Agency of

SPRINGFIELD-HARTFORD

IR 091-1(42)

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Vermont Agency of
Transportation
PHASE 1-INTERSTATE
#122302-01
INITIALS
HANGER 399 ONE

PAID 1985
2 of 2

SPRINGFIELD - HARTFORD
IR 091-1(48)

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