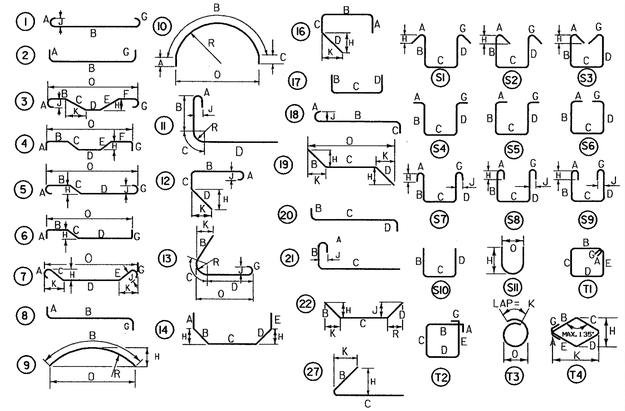
BRIDGE 50 NORTH

	ITEM	NO. OF PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	1	APPROACH SLAB 1 (50N)																
✱	2	27	5	30' - 0"	E1AS501	STR.												
✱	3	27	5	18' - 5"	E1AS502	STR.												
	4	24	8	2' - 6"	E1AS801	19		0' - 10"	1' - 8"	0' - 0"								2' - 3"
△	5	45	9	25' - 9"	E1AS901	1	1' - 3"	24' - 6"					0' - 0"		1' - 0"			
	6	APPROACH SLAB 2 (50N)																
✱	7	27	5	30' - 0"	E2AS501	STR.												
✱	8	27	5	18' - 5"	E2AS502	STR.												
	9	24	8	2' - 6"	E2AS801	19		0' - 10"	1' - 8"	0' - 0"								2' - 3"
△	10	45	9	25' - 9"	E2AS901	1	1' - 3"	24' - 6"					0' - 0"		1' - 0"			
	11	SUPERSTRUCTURE (50N)																
	12	742	5	35' - 6"	ES501	STR.												
✱▲	13	983	5	35' - 6"	ES502	STR.												
	14	653	5	4' - 11"	ES503	S5	0' - 6"	1' - 3"	1' - 5"	1' - 3"			0' - 6"					
	15	2	5	31' - 0"	ES511	STR.												
✱	16	3	5	21' - 0"	ES512	STR.												
	17	34	5	6' - 0"	ES513	16	0' - 10"	2' - 2"	0' - 10"	2' - 2"				0' - 0"		2' - 2"		
	18	12	5	9' - 10"	ES514	STR.												
	19	6	5	3' - 7"	ES515	STR.												
✱	20	91	6	22' - 5"	ES601	STR.												
✱	21	91	6	23' - 5"	ES602	STR.												
	22	CURTAIN WALL (50N)																
▲	23	20	5	10' - 6"	ECW504	STR.												
✱	24	37	5	12' - 4"	ECW505	S5	2' - 2"	3' - 6"	1' - 2"	3' - 4"			2' - 2"					
	25	45	5	2' - 11"	ECW506	1	0' - 7"	1' - 9"					0' - 7"					
	26	8	5	3' - 11"	ECW507	19		2' - 2"	1' - 9"	0' - 0"								3' - 4"
✱	27	19	5	23' - 9"	ECW508	STR.												
	28	2	5	4' - 9"	ECW509	S5	1' - 3"	0' - 9"	1' - 0"	0' - 6"			1' - 3"					
✱	29	4	5	10' - 3"	ECW510	S5	2' - 2"	2' - 5"	1' - 2"	2' - 4"			2' - 2"					
	30	2	5	5' - 4"	ECW511	S5	1' - 3"	0' - 9"	1' - 8"	0' - 6"			1' - 3"					
	31	ABUTMENT 1 (50N)																
	32	45	5	4' - 7"	E1A501	21	0' - 7"	2' - 0"	2' - 0"									
	33	45	5	3' - 6"	E1A502	17		1' - 6"	2' - 0"	0' - 0"								
▲	34	25	5	13' - 3"	E1A503	STR.												
	35	11	5	11' - 3"	E1A512	STR.												
	36	11	5	10' - 3"	E1A513	STR.												
✱	37	12	5	7' - 6"	E1A514	STR.												
	38	10	5	4' - 1"	E1A515	17		1' - 6"	1' - 1"	1' - 6"								
✱	39	26	5	7' - 6"	E1A517	17		3' - 0"	1' - 6"	3' - 0"								
	40	25	5	4' - 3"	E1A518	17		1' - 6"	2' - 9"	0' - 0"								
✱	41	75	5	5' - 3"	E1A519	17		1' - 6"	3' - 9"	0' - 0"								
▲	42	10	5	11' - 3"	E1A520	STR.												
	43	ABUTMENT 2 (50N)																
	44	20	5	17' - 9"	E2A501	STR.												
	45	20	5	23' - 0"	E2A502	STR.												
	46	41	5	6' - 1"	E2A503	21	0' - 7"	4' - 4"	1' - 3"						0' - 5"			
▲	47	39	5	8' - 4"	E2A504	19		2' - 7"	5' - 9"	0' - 0"								7' - 7"
	48	41	5	3' - 6"	E2A505	STR.												
▲	49	41	5	6' - 1"	E2A506	S10		2' - 2"	1' - 10"	2' - 2"								
	50	41	5	5' - 6"	E2A507	17		2' - 4"	0' - 10"	2' - 4"								
▲	51	87	5	3' - 7"	E2A508	17		1' - 6"	2' - 1"	0' - 0"								
	52	1	5	7' - 10"	E2A509	19		2' - 1"	5' - 9"	0' - 0"								7' - 3"
	53	1	5	6' - 9"	E2A510	19		2' - 1"	4' - 8"	0' - 0"								6' - 2"
✱	54	19	5	9' - 9"	E2A511	STR.												
▲	55	22	5	26' - 3"	E2A512	STR.												
	56	6	5	7' - 6"	E2A513	STR.												
	57	6	5	6' - 0"	E2A514	STR.												
	58	9	5	4' - 7"	E2A515	17		1' - 9"	1' - 1"	1' - 9"								
	59	6	5	4' - 6"	E2A516	19		2' - 3"	2' - 3"	0' - 0"								3' - 10"
	60	37	5	7' - 6"	E2A517	17		3' - 0"	1' - 6"	3' - 0"								
	61	37	5	4' - 3"	E2A518	17		1' - 6"	2' - 9"	0' - 0"								
	62	110	5	5' - 3"	E2A519	17		1' - 6"	3' - 9"	0' - 0"								
✱▲	63	11	5	26' - 0"	E2A520	STR.												
	64	8	5	4' - 6"	E2A521	27		2' - 3"	2' - 3"	0' - 0"								
	65	18	5	8' - 0"	E2A522	STR.												
	66	15	5	12' - 9"	E2A524	STR.												
▲	67	10	5	8' - 6"	E2A525	STR.												
	68	PIER CAP 1 (50N)																
✱	69	9	5	22' - 9"	E1P501	STR.												
	70	72	5	11' - 1"	E1P502	T1	0' - 5 1/2"	2' - 7"	2' - 6"	2' - 7"	2' - 6"		0' - 5 1/2"					
✱	71	9	5	10' - 3"	E1P503	10		2' - 6"	5' - 3"	2' - 6"							1' - 8"	3' - 4"
△	72	6	7	20' - 0"	E1P701	STR.												
✱	73	6	8	31' - 6"	E1P801	STR.												
✱	74	6	8	19' - 3"	E1P802	STR.												
✱	75	11	9	28' - 10"	E1P901	2	2' - 9"	26' - 1"										
	76	8	9	12' - 11"	E1P902	2	2' - 9"	10' - 2"										
✱	77	5	9	33' - 0"	E1P903	STR.												
	78	PIER CAP 2 (50N)																
✱	79	9	5	22' - 9"	E2P501	STR.												
	80	72	5	11' - 1"	E2P502	T1	0' - 5 1/2"	2' - 7"	2' - 6"	2' - 7"	2' - 6"		0' - 5 1/2"					
✱	81	9	5	10' - 3"	E2P503	10		2' - 6"	5' - 3"	2' - 6"							1' - 8"	3' - 4"
△	82	6	7	20' - 0"	E2P701	STR.												
✱	83	6	8	31' - 6"	E2P801	STR.												
✱	84	6	8	19' - 3"	E2P802	STR.												
	85	10	9	28' - 10"	E2P901	2	2' - 9"	26' - 1"										
✱	86	9	9	12' - 11"	E2P902	2	2' - 9"	10' - 2"										
✱	87	5	9	33' - 0"	E2P903	STR.												
	88																	
	89																	
	90																	

BRIDGE 50 SOUTH

	ITEM	NO. OF PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	1	APPROACH SLAB 1 (50S)																
✱	2	27	5	30' - 0"	E1AS501	STR.												
✱	3	27	5	18' - 5"	E1AS502	STR.												
	4	24	8	2' - 6"	E1AS801	19		0' - 10"	1' - 8"	0' - 0"								2' - 3"
△	5	45	9	25' - 9"	E1AS901	1	1' - 3"	24' - 6"					0' - 0"		1' - 0"			
	6	APPROACH SLAB 2 (50S)																
✱	7	27	5	30' - 0"	E2AS501	STR.												
✱	8	27	5	18' - 5"	E2AS502	STR.												
	9	24	8	2' - 6"	E2AS801	19		0' - 10"	1' - 8"	0' - 0"								2' - 3"
△	10	45	9	25' - 9"	E2AS901	1	1' - 3"	24' - 6"					0' - 0"		1' - 0"			
	11	SUPERSTRUCTURE (50S)																
	12	742	5	34' - 0"	ES501	STR.												
▲	13	902	5	34' - 0"	ES502	STR.												
	14	614	5	4' - 11"	ES503	S5	0' - 6"	1' - 3"	1' - 5"	1' - 3"			0' - 6"					
✱	15	3	5	33' - 0"	ES511	STR.												
	16	2	5	21' - 6"	ES512	STR.												
	17	34	5	6' - 0"	ES513	16	0' - 10"	2' - 2"	0' - 10"	2' - 2"				0' - 0"		2' - 2"		
✱	18	13	5	10' - 4"	ES514	STR.												
	19	6	5	3' - 10"	ES515	STR.												
✱	20	91	6	22' - 5"	ES601	STR.												
✱	21	91	6	23' - 5"	ES602	STR.												
	22	CURTAIN WALL (50S)																
▲	23	20	5	10' - 4"	ECW504	STR.												
✱	24	37	5	12' - 7"	ECW505	S5	2' - 2"	3' - 8"	1' - 2"	3' - 5"			2' - 2"					
	25	45	5	2' - 11"	ECW506	1	0' - 7"	1' - 9"					0' - 7"					
	26	8	5	3' - 11"	ECW507	19		2' - 2"	1' - 9"	0' - 0"								3' - 4"
✱	27	19	5	23' - 9"	ECW508	STR.												
	28	2	5	4' - 9"	ECW509	S5	1' - 3"	0' - 9"	1' - 0"	0' - 6"			1' - 3"					
✱	29	3	5	10' - 5"	ECW510	S5	2' - 2"	2' - 7"	1' - 2"	2' - 4"			2' - 2"					
	30	2	5	5' - 4"	ECW511	S5	1' - 3"	0' - 9"	1' - 8"	0' - 6"			1' - 3"					
	31	ABUTMENT 1 (50S)																
	32	20	5	18' - 6"	E1A501	STR.												
	33	20	5	23' - 3"	E1A502	STR.												
	34	43	5	6' - 1"	E1A503	21	0' - 7"	4' - 4"	1' - 3"						0' - 5"			
▲	35	41	5	8' - 4"	E1A504	19		2' - 7"	5' - 9"	0' - 0"								7' - 7"
	36	43	5	3' - 6"	E1A505	STR.												
	37	43	5	6' - 6"	E1A506	S10		2' - 4"	1' - 10"	2' - 4"								
	38	43	5	5' - 6"	E1A507	17		2' - 4"	0' - 10"	2' - 4"								
▲	39	92	5	3' - 7"	E1A508	17		1' - 6"	2' - 1"	0' - 0"								
	40	1	5	6' - 9"	E1A509	19		2' - 1"	4' - 8"	0' - 0"								6' - 2"
✱	41	2	5	7' - 10"	E1A510	19		2' - 1"	5' - 9"	0' - 0"								7' - 3"
▲	42	18	5	10' - 6"	E1A511	STR.												
▲	43	22	5	11' - 6"	E1A512	STR.												
	44	6	5	7' - 3"	E1A513	STR.												
	45	6	5	5' - 9"	E1A514	STR.												
	46	10	5	4' - 7"	E1A515	17		1' - 9"	1' - 1"	1' - 9"								
	47	6	5	5' - 0"	E1A516	19		2' - 6"	2' - 6"	0' - 0"								4' - 3"
	48	22	5	8' - 0"	E1A517	17		3' - 3"	1' - 6"	3' - 3"								
	49	22	5	4' - 6"	E1A518	17		1' - 6"	3' - 0"	0' - 0"								
	50	68	5	5' - 6"	E1A519	17		1' - 6"	4' - 0"	0' - 0"								
▲	51	10	5	11' - 6"	E1A520	STR.												
	52	6	5	4' - 6"	E1A521	27		2' - 3"	2' - 3"	0' - 0"								
✱	53	19	5	8' - 9"	E1A522	STR.												
	54	15	5	13' - 6"	E1A524	STR.												
▲	55	10	5	8' - 6"	E1A525	STR.												
	56	ABUTMENT 2 (50S)																
	57	39	5	4' - 7"	E2A501	21	0' - 7"	2' - 0"	2' - 0"									
	58	39	5	3' - 6"	E2A502	17		1' - 6"	2' - 0"	0' - 0"								
✱▲	59	26	5	13' - 0"	E2A503	STR.												
	60	11	5	11' - 0"	E2A512	STR.												
	61	11	5	11' - 0"	E2A513	STR.												
	62	12	5	7' - 6"	E2A514	STR.												
	63	12	5	4' - 1"	E2A515	17		1' - 6"	1' - 1"	1' - 6"								
	64	24	5	8' - 0"	E2A517	17		3' - 3"	1' - 6"	3' - 3"								
	65	24	5	4' - 6"	E2A518	17		1' - 6"	3' - 0"	0' - 0"								
	66	72	5	5' - 6"	E2A519	17		1' - 6"	4' - 0"	0' - 0"								
✱▲	67	11	5	11' - 0"	E2A520	STR.												
	68	PIER CAP 1 (50S)																
✱	69	9	5	22' - 9"	E1P501	STR.												
	70	72	5	11' - 1"	E1P502	T1	0' - 5 1/2"	2' - 7"	2' - 6"	2' - 7"	2' - 6"		0' - 5 1/2"					
✱	71	9	5	10' - 3"	E1P503	10		2' - 6"	5' - 3"	2' - 6"							1' - 8"	3' - 4"
△	72	6	7	20' - 0"	E1P701	STR.												
✱	73	6	8	31' - 6"	E1P801	STR.												
✱	74	6	8	19' - 3"	E1P802	STR.												
✱	75	11	9	28' - 10"	E1P901	2	2' - 9"	26' - 1"										
✱	76	9	9	12' - 11"	E1P902	2	2' - 9"	10' - 2"										
	77	4	9	33' - 0"	E1P903	STR.												
	78	PIER CAP 2 (50S)																
✱	79	9	5	22' - 9"	E2P501	STR.												
	80	72	5	11' - 1"	E2P502	T1	0' - 5 1/2"	2' - 7"	2' - 6"	2' - 7"	2' - 6"		0' - 5 1/2"					
✱	81	9	5	10' - 3"	E2P503	10		2' - 6"	5' - 3"	2' - 6"							1' - 8"	3' - 4"
△	82	6	7	20' - 0"	E2P701	STR.												
✱	83	6	8	31' - 6"	E2P801	STR.												
✱	84	6	8	19' - 3"	E2P802	STR.												
	85	10	9	28' - 10"	E2P901	2	2' - 9"	26' - 1"										
✱	86	9	9	12' - 11"	E2P902	2	2' - 9"	10' - 2"										
✱	87	5	9	33' - 0"	E2P903	STR.												
	88																	
	89																	
	90																	



NOTES:

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31(ASTM A 615-91). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER 'D' OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.

LEGEND

▲ DENOTES BARS TO BE CUT IN THE FIELD.

✱ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.

△ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.

"E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.

ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT (POUNDS PER FOOT)	NOMINAL DIMENSIONS ROUND SECTION: DIAMETER (INCHES)	CROSS SECTIONAL AREA (SQ. INCHES)	PERIMETER (INCHES)
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of MIDDLESEX-BOLTON	Bridge No. 50N&S
Highway No. I-89	Log Sta. / Surv. Sta.
I-89 OVER U.S. ROUTE 2	

REINFORCING STEEL SCHEDULE (50N&S)

Designed By P.W. SZUSTAK	Drawn By R.A. BOTZENHART
Checked By J.P. HALSTEAD Date 10/99	Bridge Design Supervisor J.P. HALSTEAD Date 10/99
PROJECT MIDDLESEX-BOLTON	PROJECT NO. IM-089-2(26)
TVGA CAD Drawing No. reinf50	Date 10/99
Bridge Sheet No. BR50-14	Sheet 98 of 307

TVGA ENGINEERING, SURVEYING, P.C.