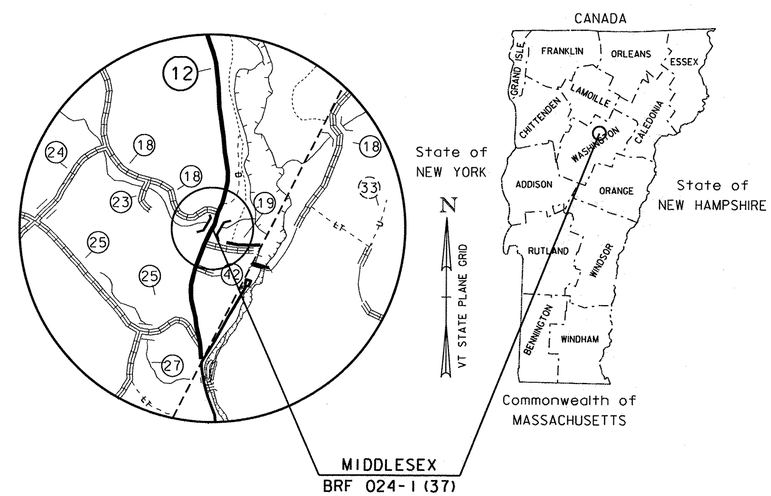
STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF MIDDLESEX

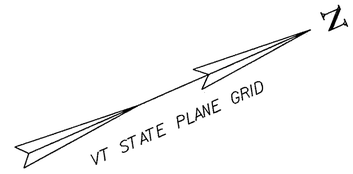
COUNTY OF WASHINGTON

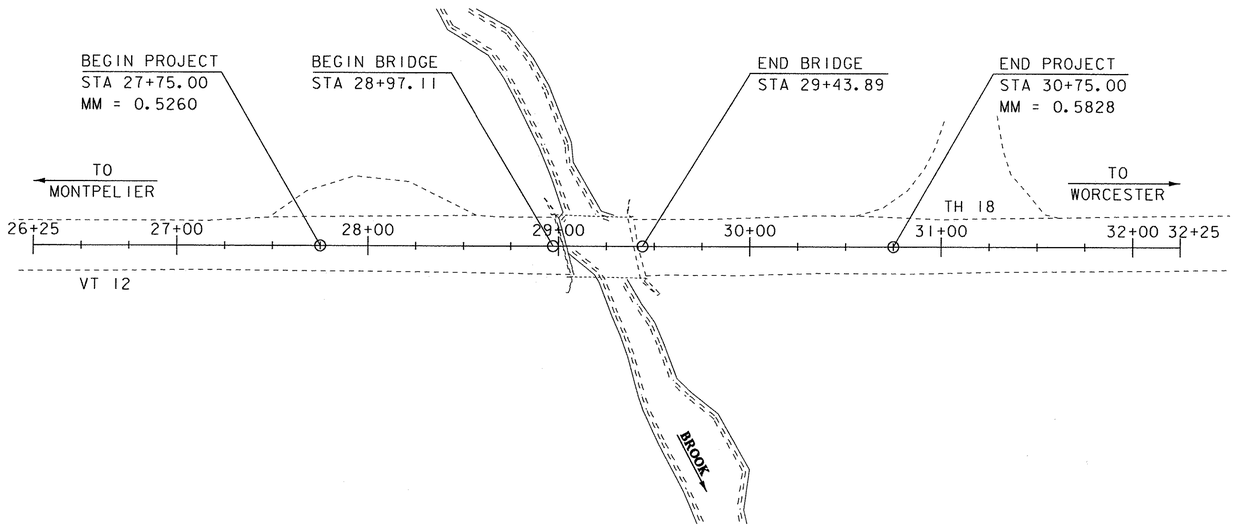
ROUTE NO : VT 12 (RURAL MAJOR COLLECTOR) BRIDGE NO : 77

PROJECT LOCATION : ON VT 12, BEGINNING AT A POINT 0.53 MILES NORTH OF THE MONTPELIER-MIDDLESEX TOWN LINE AND EXTENDING APPROXIMATELY 0.06 MILES IN A NORTHERLY DIRECTION

PROJECT DESCRIPTION : THE PROJECT WILL CONSIST OF THE REPLACEMENT OF THE EXISTING STRUCTURE WITH RELATED APPROACH AND CHANNEL WORK.

LENGTH OF STRUCTURE :	46.78 FEET.
LENGTH OF ROADWAY :	253.22 FEET.
LENGTH OF PROJECT :	300.00 FEET.





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

QUALITY ASSURANCE PROGRAM : LEVEL	2
SURVEYED BY :	R. GILMAN
SURVEYED DATE :	01/10/2011
DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD-83 (07)

DIRECTOR OF PROJECT DELIVERY
APPROVED _____ DATE 1/9/2015

PROJECT MANAGER : CAROLYN CARLSON, P.E.

PROJECT NAME : MIDDLESEX
PROJECT NUMBER : BRF 024-1(37)

SHEET 1 OF 46 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version 11.06.15

LRFD

INDEX OF SHEETS

PLAN SHEETS

STANDARDS LIST

STRUCTURAL DETAIL SHEETS

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2016	3400	420	59	4.4	170
2036	3700	450	59	6.7	280

20 year ESAL for flexible pavement from 2016 to 2036 : 605000

40 year ESAL for flexible pavement from 2016 to 2056 : 1428000

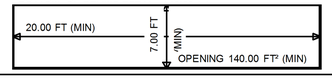
Design Speed : 50 mph

AS BUILT "REBAR" DETAIL

LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

TEMPORARY BRIDGE PROFILE ALONG TEMP CL

BOTTOM OF BEAMS ELEV. = 719.50 FT



FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: June 2014

DRAINAGE AREA : 1.0 sq. mi.
CHARACTER OF TERRAIN : Hilly to mountainous, forested, rural
STREAM CHARACTERISTICS : Steep, alluvial
NATURE OF STREAMBED : Coarse gravel, cobbles, boulders

PEAK FLOW DATA

Q 2.33 =	60 cfs	Q 50 =	240 cfs
Q 10 =	140 cfs	Q 100 =	290 cfs
Q 25 =	200 cfs	Q 500 =	410 cfs

DATE OF FLOOD OF RECORD Unknown
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: Unknown
NATURAL STREAM VELOCITY : @ Q50= 17.7 fps
ICE CONDITIONS : Moderate
DEBRIS: Moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes
IS ORDINARY RISE RAPID? Yes
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
IF YES, DESCRIBE:

WATERSHED STORAGE: <1%
HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single span rolled beam bridge
YEAR BUILT: 1919, Reconstructed in 1981
CLEAR SPAN(NORMAL TO STREAM): 34'
VERTICAL CLEARANCE ABOVE STREAMBED: ~5'
WATERWAY OF FULL OPENING: 92 sq. ft.
DISPOSITION OF STRUCTURE: Replace
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings

WATER SURFACE ELEVATIONS AT:

Q2.33 =	718.8'	VELOCITY =	9.9 fps
Q10 =	719.5'	"	12.4 fps
Q25 =	719.9'	"	13.4 fps
Q50 =	720.2'	"	13.9 fps
Q100 =	720.5'	"	14.5 fps

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: N/A
RELIEF ELEVATION: 725.1'
DISCHARGE OVER ROAD @Q100: N/A

UPSTREAM STRUCTURE

TOWN: Middlesex DISTANCE: 2250'
HIGHWAY # : TH 23 STRUCTURE #:
CLEAR SPAN: CLEAR HEIGHT:
YEAR BUILT: FULL WATERWAY:
STRUCTURE TYPE: 8' x 6' CMPA

DOWNSTREAM STRUCTURE

TOWN: Middlesex DISTANCE: 700'
HIGHWAY # : STRUCTURE #:
CLEAR SPAN: CLEAR HEIGHT:
YEAR BUILT: FULL WATERWAY:
STRUCTURE TYPE: Wrightsville Reservoir

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A STR.	4A STR.	5A SEMI
TONNAGE	**20**	**36**	**36**	**66**	**30**	**34.5**	**38**
INVENTORY	1.98	1.19					
POSTING							
OPERATING	2.58	1.55	2.73	1.43	1.9	1.73	2.18
COMMENTS:							

PILE DRIVING AND TESTING REQUIREMENTS

1. NOMINAL PILE DRIVING CAPACITY — Rndr: **432.00 KIP**
2. PILE TEST RESISTANCE FACTOR — ϕ: **0.65**

PROPOSED STRUCTURE

STRUCTURE TYPE: Single Span Rolled Beam Bridge

CLEAR SPAN(NORMAL TO STREAM): 44'
VERTICAL CLEARANCE ABOVE STREAMBED: ~7'
WATERWAY OF FULL OPENING: 175 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	718.8'	VELOCITY=	9.5 fps
Q10 =	719.5'	"	12.1 fps
Q25 =	720.0'	"	13.1 fps
Q50 =	720.2'	"	13.5 fps
Q100 =	720.5'	"	14. 0 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: N/A
RELIEF ELEVATION: 726.6'
DISCHARGE OVER ROAD @Q100: N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 723.4'
VERTICAL CLEARANCE: @ Q50 = 3.2'

SCOUR: 1' contraction scour at Q100 and Q500

REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW:	2 cfs	DEPTH OR ELEVATION:
ORDINARY LOW WATER:	1 cfs	<0.5'
ORDINARY HIGH WATER:	30 cfs	1'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Steel Beam
CLEAR SPAN (NORMAL TO STREAM): 20'
VERTICAL CLEARANCE ABOVE STREAMBED: El. 719.5' minimum
WATERWAY AREA OF FULL OPENING: ~140 sq. ft.

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TWO-WAY TRAFFIC ON A TEMPORARY BRIDGE.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT REQUIRED.
4. THE APPROACHES FOR THE TEMPORARY BRIDGE SHALL BE PAVED.

DESIGN VALUES

1. DESIGN LIVE LOAD		HL-93
2. FUTURE PAVEMENT	d_p:	---
3. DESIGN SPAN	L:	45.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	---
5. PRESTRESSING STRAND	f_y:	---
6. PRESTRESSED CONCRETE STRENGTH	f'_c:	---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	---
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f'_c:	---
9. CONCRETE, HIGH PERFORMANCE CLASS A	f'_c:	4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B	f'_c:	3.5 KSI
11. CONCRETE, CLASS C	f'_c:	---
12. REINFORCING STEEL	f_y:	60 KSI
13. STRUCTURAL STEEL AASHTO M270 (GALVANIZED)	f_y:	50 KSI
14. SOIL UNIT WEIGHT	γ:	0.140 KCF
15. NOMINAL BEARING RESISTANCE OF SOIL	q_n:	4.0 KSF
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	0.45
17. NOMINAL BEARING RESISTANCE OF ROCK	q_n:	---
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
19. NOMINAL AXIAL PILE RESISTANCE	q_p:	432.0 KIPS
20. PILE YIELD STRENGTH ASTM A572	f_y:	50 KSI
21. PILE SIZE		HP 12X 84
22. EST. PILE LENGTH ABUTMENT # 1	L_p:	30 FT
23. EST. PILE LENGTH ABUTMENT # 2	L_p:	55 FT
24. PILE RESISTANCE FACTOR	ϕ:	0.65
25. LATERAL PILE DEFLECTION	Δ:	---
26. BASIC WIND SPEED	V_{3s}:	---
27. MINIMUM GROUND SNOW LOAD	p_g:	---
28. SEISMIC DATA PGA: 15 %g	S_s:	---
	S_1:	---

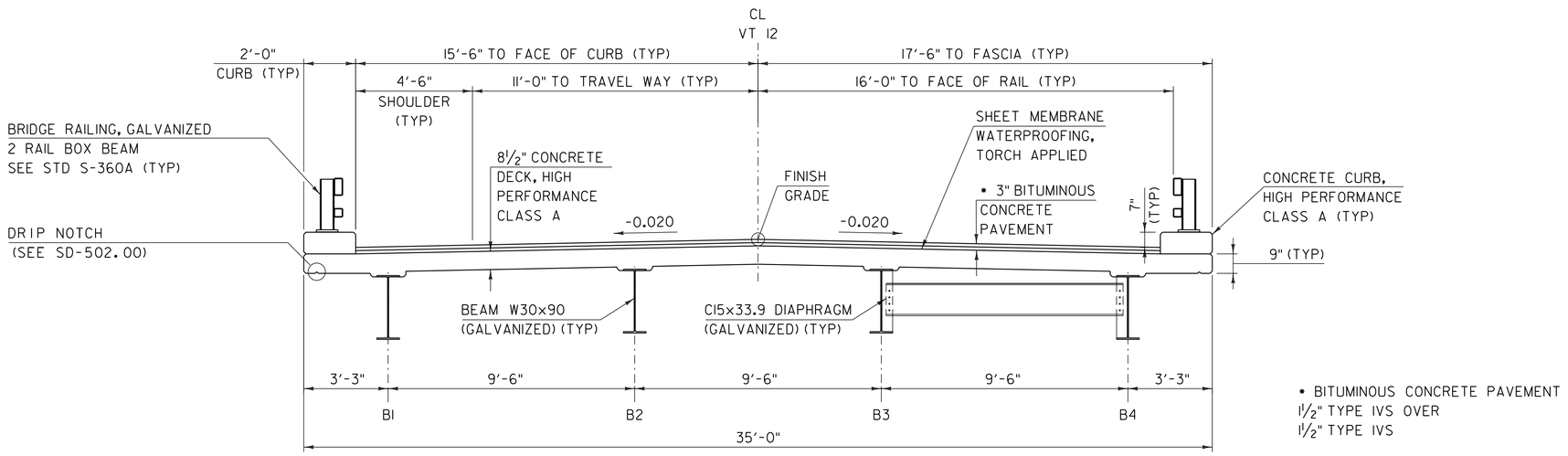
PROJECT NAME: **MIDDLESEX**
PROJECT NUMBER: **BRF 024-1(37)**

FILE NAME: **10c220pi.dgn**
PROJECT LEADER: **C. CARLSON**
DESIGNED BY: **H. SALLS**
PRELIMINARY INFORMATION

PLOT DATE: 2/6/2015
DRAWN BY: **C. BURRALL**
CHECKED BY: **H. SALLS**
SHEET 2 OF 46

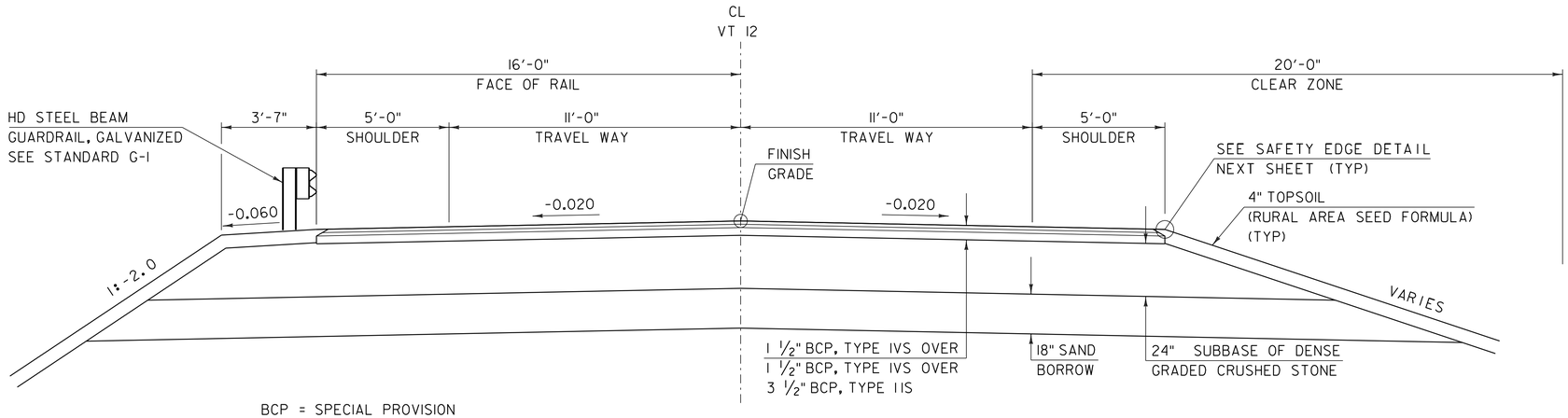
MATERIAL TOLERANCES
(IF USED ON PROJECT)

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



• BITUMINOUS CONCRETE PAVEMENT
1 1/2" TYPE IVS OVER
1 1/2" TYPE IVS

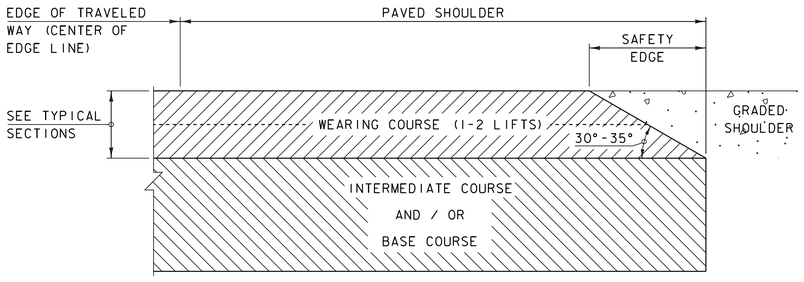
BRIDGE TYPICAL SECTION
SCALE 3/8" = 1'-0"



BCP = SPECIAL PROVISION
(BITUMINOUS CONCRETE
PAVEMENT, SMALL QUANTITY)

ROADWAY TYPICAL SECTION
SCALE 3/8" = 1'-0"

PROJECT NAME:	MIDDLESEX
PROJECT NUMBER:	BRF 024-1(37)
FILE NAME: s10c220typ.dgn	PLOT DATE: 02-FEB-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
TYPICAL SECTIONS 1	SHEET 3 OF 46

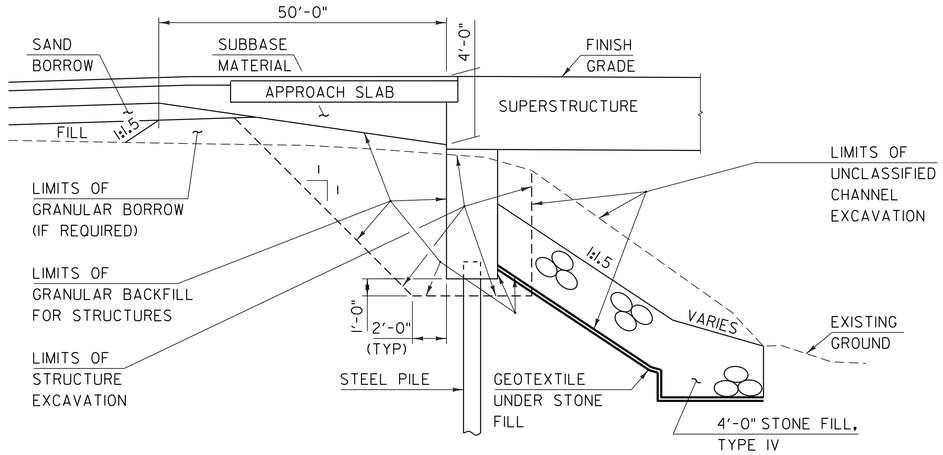


SAFETY EDGE DETAIL

NOT TO SCALE

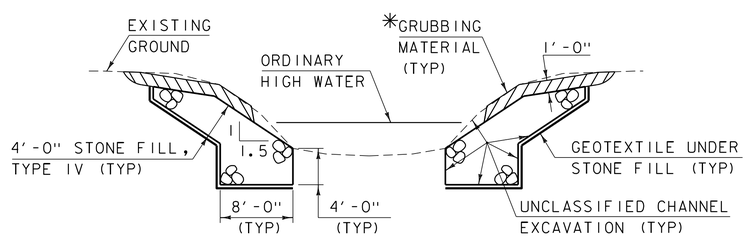
1. THE EDGE OF PAVEMENT SHALL BE FORMED IN SUCH A WAY THAT THE BITUMINOUS CONCRETE PAVEMENT IS EXTRUDED OR COMPRESSED TO FORM THE 30 TO 35 DEGREE ANGLE. DEVICES THAT SIMPLY STRIKE-OFF THE MIX WITHOUT PROVIDING ANY COMPACTION EFFORT WILL NOT BE ALLOWED.

2. THE PAVED SHOULDER EXTENDS FROM THE EDGE OF TRAVELED WAY TO THE EDGE OF THE WEARING COURSE, INCLUDING THE "SAFETY EDGE".



ABUTMENT EARTHWORK TYPICAL SECTION

NOT TO SCALE



TYPICAL CHANNEL SECTION

NOT TO SCALE

*WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.

PROJECT NAME:	MIDDLESEX
PROJECT NUMBER:	BRF 024-1(37)
FILE NAME: s10c220typ.dgn	PLOT DATE: 02-FEB-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
TYPICAL SECTIONS 2	SHEET 4 OF 46

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE VERMONT AGENCY OF TRANSPORTATION 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE 2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, AND THEIR LATEST REVISIONS.

2. THE BRIDGE IS DESIGNED FOR HL-93 LIVE LOADING.

3. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.

4. ITEM 653.50 “BARRIER FENCE” SHALL BE USED TO ESTABLISH A BARRIER AROUND HISTORIC FLOOD PLAQUE AND BOULDER LOCATED AT STA 27+19.87 OFFSET 29.88 FEET RIGHT FROM THE VT12 MAINLINE.

5. THE EXISTING STRUCTURAL STEEL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE REMOVED EXISTING STRUCTURAL STEEL.

6. DUE TO STABILITY CONCERNS AT THE ABUTMENTS DURING THE ERECTION OF THE SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT THE ERECTION PLAN A MINIMUM OF 30 WORKING DAYS PRIOR TO ERECTING THE SUPERSTRUCTURE.

EARTHWORK

7. REMOVAL OF THE EXISTING STRUCTURE SHALL BE PAID UNDER ITEM 529.15, “REMOVAL OF STRUCTURE". THIS WORK SHALL INCLUDE REMOVAL OF ANY PORTIONS OF THE EXISTING STRUCTURE THAT FALL OUTSIDE THE LIMITS OF ANY OF THE EXCAVATION ITEMS.

8. EXCAVATION OF SOILS TO THE LIMITS SHOWN ON THE TYPICAL ABUTMENT SECTION SHALL BE PAID FOR UNDER ITEM 204.25, “STRUCTURE EXCAVATION" AND ITEM 203.27, "UNCLASSIFIED CHANNEL EXCAVATION". ANY EXCAVATION OUTSIDE THESE LIMITS, WHICH IS NOT REMOVAL OF STRUCTURE, WILL BE AT THE CONTRACTOR'S EXPENSE.

9. “STONE FILL, TYPE IV” UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE SUPERSTRUCTURE IS SET.

10. BACKFILL BEHIND THE ABUTMENTS SHALL NOT BE PLACED HIGHER THAN THE BRIDGE SEATS UNTIL THE ABUTMENTS AND DECK CONSTRUCTION ARE COMPLETED. THE DIFFERENCE IN ELEVATION OF FILL BEHIND THE ABUTMENTS AT ANY TIME DURING BACKFILLING OPERATIONS SHALL NOT EXCEED 2 FEET.

11. THE AREA DISTURBED BY THE TWO-WAY TEMPORARY BRIDGE SHALL BE SEEDED AND MULCHED AFTER ALL THE FILL IS REMOVED TO THE ORIGINAL GROUND SURFACE. THE COST OF THE SEED, FERTILIZER, ETC. WILL BE PAID FOR UNDER THEIR RESPECTIVE BID ITEMS.

CONCRETE AND REINFORCING STEEL

12. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH BY 1 INCH, UNLESS OTHERWISE NOTED.

13. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

14. ITEM 501.33, “HIGH PERFORMANCE CONCRETE, CLASS A“ SHALL BE USED FOR THE DECK, CURBS AND INTEGRAL ABUTMENT CURTAIN WALL AND WING WALLS ABOVE THE PILE CAP CONSTRUCTION JOINT.

15. ITEM 501.34, “HIGH PERFORMANCE CONCRETE, CLASS B” SHALL BE USED FOR APPROACH SLABS AND ALL SUBSTRUCTURE BELOW THE PILE CAP CONSTRUCTION JOINT.

16. ITEM 514.10, "WATER REPELLENT, SILANE”, SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON THE BRIDGE SUPERSTRUCTURE, INCLUDING THE CURBS, AND SUBSTRUCTURE, WITH THE EXCEPTION OF THE BOTTOM OF THE DECK BETWEEN THE DRIP NOTCHES.

17. THE TOP SURFACE OF THE PILE CAP SHALL BE GIVEN A FLOAT FINISH TO GRADE. THE CONCRETE WITHIN THE REINFORCING CAGE SHALL BE ROUGHENED BY RAKING PARALLEL TO THE FACE OF THE ABUTMENT TO AN AMPLITUDE OF 1/2 INCH. THE CONCRETE OUTSIDE THE REINFORCING CAGE SHALL REMAIN SMOOTH.

18. ALL REINFORCING STEEL IN THE DECK, CURBS, AND SUBSTRUCTURE ABOVE THE PILE CAP CONSTRUCTION JOINT, INCLUDING WINGWALLS, SHALL MEET THE REQUIREMENTS FOR LEVEL II CORROSION RESISTANCE IN ACCORDANCE WITH SECTION 507. ALL OTHER REINFORCING STEEL SHALL MEET THE REQUIREMENTS FOR LEVEL I CORROSION RESISTANCE. PAYMENT WILL BE MADE UNDER THE APPROPRIATE SECTION 507 CONTRACT ITEM.

19. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:
    SPACING: +/- 1 INCH
    CLEARANCE: +/- 1/4 INCH

STRUCTURAL STEEL

20. ALL NEW STRUCTURAL STEEL SHALL CONFORM TO AASHTO M 270M/M 270, GRADE 50 AND SHALL BE PAID FOR UNDER ITEM 506.50 “STRUCTURAL STEEL, ROLLED BEAM (GALVANIZED)”.

21. STRUCTURAL STEEL MEMBERS DESIGNATED “CVN” IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01 OF THE STANDARD SPECIFICATIONS.

22. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.

23. BEAM WEBS AND DIAPHRAGMS SHALL BE PLUMB IN FINAL POSITION.

24. CONNECTIONS NOT SHOWN IN THE PLANS SHALL BE DETAILED BY THE FABRICATOR IN THE FABRICATION DRAWINGS.

25. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH SUBSECTION 726.08.

26. AFTER THE SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF BEAMS SHALL BE TAKEN FOR USE IN DETERMINING THE FINAL GRADE AND HAUNCH DEPTHS.

27. FLEMING BRACKETS OR SIMILAR FALSE WORK, AS REQUIRED BY DESIGN, SHALL HAVE A MAXIMUM SPACING OF 4'-0". THE BRACKETS SHALL BEAR NEAR THE BOTTOM FLANGE AND IN NO CASE SHALL THEY BEAR ABOVE THE BOTTOM QUARTER OF THE WEB. THE DESIGN OF FALSEWORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

28. FILL ANY BOLT HOLES IN THE WEBS OF THE BEAMS NOT OTHERWISE FILLED WITH BUTTON HEAD OR HEX HEAD BOLTS MEETING AASHTO M164 TYPE I. TIGHTEN THE BOLTS IN ACCORDANCE WITH SUBSECTION 506.19.

H-PILES

29. TO PREVENT DAMAGE TO THE PILES, PILE SHOES ARE REQUIRED AND SHALL CONFORM TO SUBSECTION 505.04 (f).

30. A MINIMUM OF ONE DYNAMIC PILE TEST, ITEM 505.45 “DYNAMIC PILE LOADING TEST”, SHALL BE CONDUCTED PER ABUTMENT. THE NOMINAL PILE DRIVING RESISTANCE FOR EACH PILE IS 432 KIPS. A PILE RESISTANCE FACTOR OF 0.65 WAS USED BASED ON THE DYNAMIC TESTING REQUIREMENT.

31. THE TOPS OF THE PILES AFTER DRIVING SHALL NOT VARY FROM THE POSITION SHOWN ON THE PLANS BY MORE THAN 3 INCHES. THE PILE ORIENTATION SHALL NOT VARY BY MORE THAN 5 DEGREES. THE CONTRACTOR SHALL DEMONSTRATE TO THE SATISFACTION OF THE ENGINEER HOW THE TOLERANCES WILL BE MET. THESE MEASURES SHALL BE DEMONSTRATED IN A SUBMITTAL TO BE ACCEPTED BEFORE PILE DRIVING COMMENCES.

32. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AND ARE SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY. PILES SHALL HAVE A MINIMUM EMBEDMENT OF 30 FT MEASURED FROM THE BOTTOM OF THE PILE CAP OR BE DRIVEN TO BEDROCK.

33. THE DAM SAFETY ENGINEER OF THE AGENCY OF NATURAL RESOURCES SHALL BE NOTIFIED AT LEAST 5 DAYS PRIOR TO ANY PILE DRIVING ACTIVITY.
    STEVE BUSHMAN: SECTION CHIEF- DAM SAFETY ENGINEER
    (802)-490-6229

TRAFFIC CONTROL

34. TRAFFIC SHALL BE MAINTAINED ON A TWO-WAY TEMPORARY BRIDGE PLACED DOWNSTREAM OF THE EXISTING BRIDGE.

35. THE TEMPORARY BRIDGE APPROACHES SHALL BE PAVED.

36. FULL ACCESS TO ALL SIDE ROADS AND DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 641.10 “TRAFFIC CONTROL.”

37. ALL SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD. WHERE CONFLICTS EXIST BETWEEN THE MUTCD AND THE PLANS, THE MUTCD SHALL GOVERN. FOR ADDITIONAL SIGNING DETAILS AND REQUIREMENTS SEE THE T SERIES OF THE CONTRACT STANDARD DRAWINGS.

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: s10c220gen.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
PROJECT NOTES

PLOT DATE: 06-FEB-2015
DRAWN BY: C. BURRALL
CHECKED BY: H. SALLS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES

ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS
1			
1580			
		250	
600			
1			
		580	
		380	
530			
1070			
20			
9			
1			
		94	
		119	
		1	
		340	
		2	
		21800	
		12951	
		20943	
		1	
		19	
		68	
		162	
		68	
		94	
1			
		1	
		8	
1			
		230	
160			
66			
3			
1			
4			
245			
100			
800			
			1

TOTALS

GRAND TOTAL	FINAL
1	
1580	
250	
600	
1	
580	
380	
530	
1070	
20	
9	
1	
94	
119	
1	
340	
2	
21800	
12951	
20943	
1	
19	
68	
162	
68	
94	
1	
1	
8	
1	
230	
160	
66	
3	
1	
4	
245	
100	
800	
1	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER	ROUND
LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10	
CY	COMMON EXCAVATION	203.15	
CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27	
CY	SAND BORROW	203.31	
CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	
CY	STRUCTURE EXCAVATION	204.25	
CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	
SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10	
CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35	
CY	AGGREGATE SURFACE COURSE	401.10	
CWT	EMULSIFIED ASPHALT	404.65	
LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50	
CY	CONCRETE, HIGH PERFORMANCE CLASS A	501.33	
CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34	
LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10	
LF	STEEL PILING, HP 12 X 84	505.165	
EACH	DYNAMIC PILE LOADING TEST	505.45	
LB	STRUCTURAL STEEL, ROLLED BEAM (GALVANIZED)	506.50	
LB	REINFORCING STEEL, LEVEL I	507.11	
LB	REINFORCING STEEL, LEVEL II	507.12	
LS	SHEAR CONNECTORS (352 - 7/8" X 7")	508.15	
GAL	WATER REPELLENT, SILANE	514.10	
LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10	
SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20	
LF	JOINT SEALER, HOT POURED	524.11	
LF	BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM	525.33	
LS	TWO-WAY TEMPORARY BRIDGE (480 SF - EST.)	528.11	
EACH	REMOVAL OF STRUCTURE (1408 SF - EST.)	529.15	
EACH	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	531.17	
TON	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15	
CY	STONE FILL, TYPE IV	613.13	
LF	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28	
LF	HD STEEL BEAM GUARDRAIL, GALVANIZED	621.21	
EACH	MANUFACTURED TERMINAL SECTION, FLARED	621.50	
EACH	ANCHOR FOR STEEL BEAM RAIL	621.60	
EACH	GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM	621.72	
LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80	
HR	UNIFORMED TRAFFIC OFFICERS	630.10	
HR	FLAGGERS	630.15	
LS	FIELD OFFICE, ENGINEERS	631.10	

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
		EARTHWORKS SUMMARY
		FILL AVAILABLE
1106	CY	COMMON EXCAVATION (1580 x .7)
75	CY	UNCLASSIFIED CHANNEL EXCAVATION (250 x 0.3)
174	CY	STRUCTURE EXCAVATION (580 x 0.3)
5	CY	ROUNDING
1360	**CY**	**TOTAL FILL AVAILABLE**
		FILL REQUIRED
138	CY	FACTORED FILL (120 x 1.15)
2	CY	ROUNDING
140	**CY**	**TOTAL FILL REQUIRED**
1220	**CY**	**TOTAL WASTE**
		N.A.B.I. = NOT A BID ITEM

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: s10c220qs.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
QUANTITY SHEET 1

PLOT DATE: 13-JAN-2015
DRAWN BY: C. BURRALL
CHECKED BY: H. SALLS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES

ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS
			1
			1
			3000
1			
1			
940			
910			
		210	
	175		
	84		
	40		
	30		
	200		
	1		
	1		
	210		
	60		
	1		
	10		
	1		
	1280		
	30		
	24		
	950		
22			
50			
4			
1			
7			
1			
1			
550			

TOTALS

GRAND TOTAL	FINAL
1	
1	
3000	
1	
1	
940	
910	
210	
175	
84	
40	
30	
200	
1	
1	
210	
60	
1	
10	
1	
1280	
30	
24	
950	
22	
50	
4	
1	
7	
1	
1	
550	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER	ROUND
LS	TESTING EQUIPMENT, CONCRETE	631.16	
LS	TESTING EQUIPMENT, BITUMINOUS	631.17	
DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26	
LS	MOBILIZATION/DEMOBILIZATION	635.11	
LS	TRAFFIC CONTROL	641.10	
LF	4 INCH WHITE LINE	646.20	
LF	4 INCH YELLOW LINE	646.21	
SY	GEOTEXTILE UNDER STONE FILL	649.31	
SY	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515	
SY	GEOTEXTILE FOR FILTER CURTAIN	649.61	
LB	SEED	651.15	
LB	SEED, WINTER RYE	651.17	
LB	FERTILIZER	651.18	
TON	AGRICULTURAL LIMESTONE	651.20	
TON	HAY MULCH	651.25	
CY	TOPSOIL	651.35	
SY	GRUBBING MATERIAL	651.40	
LS	EPSC PLAN	652.10	
HR	MONITORING EPSC PLAN	652.20	
LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30	
SY	TEMPORARY EROSION MATTING	653.20	
CY	VEHICLE TRACKING PAD	653.35	
LF	BARRIER FENCE	653.50	
LF	PROJECT DEMARCATION FENCE	653.55	
SF	TRAFFIC SIGNS, TYPE A	675.20	
LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341	
EACH	REMOVING SIGNS	675.50	
LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50	
EACH	SPECIAL PROVISION (CPM SCHEDULE)	900.620	
LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY)(N.A.B.I.)	900.650	
LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT)(N.A.B.I.)	900.650	
TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680	

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
		N.A.B.I. = NOT A BID ITEM

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: s10c220qs.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
QUANTITY SHEET 2

PLOT DATE: 13-JAN-2015
DRAWN BY: C. BURRALL
CHECKED BY: H. SALLS
SHEET 7 OF 46

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE QUANTITY SHEET 1

SUMMARY OF BRIDGE QUANTITIES				TOTALS	DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES		
SUPERSTRUCTURE	APPROACH SLAB 1	APPROACH SLAB 2	ABUTMENT 1	ABUTMENT 2	BRIDGE TOTAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS
			108	142	250	CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27			
			270	310	580	CY	STRUCTURE EXCAVATION	204.25			
			177	203	380	CY	GRANULAR BACKFILL FOR STRUCTURES	204.30			
50			22	22	94	CY	CONCRETE, HIGH PERFORMANCE CLASS A	501.33			
	29.5	29.5	30	30	119	CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34			
			0.5	0.5	1	LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10			
			120	220	340	LF	STEEL PILING, HP 12 X 84	505.165			
			1	1	2	EACH	DYNAMIC PILE LOADING TEST	505.45			
21800					21800	LB	STRUCTURAL STEEL, ROLLED BEAM (GALVANIZED)	506.50			
	3661	3556	2890	2844	12951	LB	REINFORCING STEEL, LEVEL I	507.11			
14839	137	130	2927	2910	20943	LB	REINFORCING STEEL, LEVEL II	507.12			
1					1	LS	SHEAR CONNECTORS (352 - 7/8" X 7")	508.15			
7			6	6	19	GAL	WATER REPELLENT, SILANE	514.10			
			34	34	68	LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10			
			81	81	162	SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20			
			34	34	68	LF	JOINT SEALER, HOT POURED	524.11			
94					94	LF	BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM	525.33			
1					1	EACH	REMOVAL OF STRUCTURE (1408 SF - EST.)	529.15			
			4	4	8	EACH	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	531.17			
			115	115	230	CY	STONE FILL, TYPE IV	613.13			
			107	103	210	SY	GEOTEXTILE UNDER STONE FILL	649.31			

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: s10c220qs.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
BRIDGE QUANTITY SHEET

PLOT DATE: 13-JAN-2015
DRAWN BY: C. BURRALL
CHECKED BY: H. SALLS
SHEET 8 OF 46

GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

THE SYMBOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOGY. THE SYMBOLOGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLOGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R.O.W. ABBREVIATIONS (CODES) & SYMBOLS

POINT	CODE	DESCRIPTION
	CH	CHANNEL EASEMENT
	CONST	CONSTRUCTION EASEMENT
	CUL	CULVERT EASEMENT
	D&C	DISCONNECT & CONNECT
	DIT	DITCH EASEMENT
	DR	DRAINAGE EASEMENT
	DRIVE	DRIVEWAY EASEMENT
	EC	EROSION CONTROL
	HWY	HIGHWAY EASEMENT
	I&M	INSTALL & MAINTAIN EASEMENT
	LAND	LANDSCAPE EASEMENT
	R&RES	REMOVE & RESET
	R&REP	REMOVE & REPLACE
	SR	SLOPE RIGHT
	UE	UTILITY EASEMENT
	(P)	PERMANENT EASEMENT
	(T)	TEMPORARY EASEMENT
■	BNDNS	BOUND SET
⧈	BNDNS	BOUND TO BE SET
●	IPNS	IRON PIN SET
◎	IPNS	IRON PIN TO BE SET
⊠	CALC	EXISTING ROW POINT
○	PROW	PROPOSED ROW POINT
[LENGTH]		LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT	CODE	DESCRIPTION
	APL	BOUND APPARENT LOCATION
	BM	BENCHMARK
	BND	BOUND
	CB	CATCH BASIN
	COMB	COMBINATION POLE
	DITHR	DROP INLET THROATED DNC
	EL	ELECTRIC POWER POLE
	FPOLE	FLAGPOLE
	GASFIL	GAS FILLER
	GP	GUIDE POST
	GSO	GAS SHUT OFF
	GUY	GUY POLE
	GUYW	GUY WIRE
	GV	GATE VALUE
	H	TREE HARDWOOD
	HCTRL	CONTROL HORIZONTAL
	HVCTRL	CONTROL HORIZ. & VERTICAL
	HYD	HYDRANT
	IP	IRON PIN
	IPIPE	IRON PIPE
	LI	LIGHT - STREET OR YARD
	MB	MAILBOX
	MH	MANHOLE (MH)
	MM	MILE MARKER
	PM	PARKING METER
	PMK	PROJECT MARKER
	POST	POST STONE/WOOD
	RRSIG	RAILROAD SIGNAL
	RRSL	RAILROAD SWITCH LEVER
	S	TREE SOFTWOOD
	SAT	SATELLITE DISH
	SHRUB	SHRUB
	SIGN	SIGN
	STUMP	STUMP
	TEL	TELEPHONE POLE
	TIE	TIE
	TSIGN	SIGN W/DOUBLE POST
	VCTRL	CONTROL VERTICAL
	WELL	WELL
	WSO	WATER SHUT OFF

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADUIS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

UTILITY SYMBOLOGY

UNDERGROUND UTILITIES

- UGU — UTILITY (GENERIC-UNKNOWN)
- UT — TELEPHONE
- UE — ELECTRIC
- UC — CABLE (TV)
- UEC — ELECTRIC+CABLE
- UET — ELECTRIC+TELEPHONE
- UCT — CABLE+TELEPHONE
- UECT — ELECTRIC+CABLE+TELEP.
- G — GAS LINE
- W — WATER LINE
- S — SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

- AGU — UTILITY (GENERIC-UNKNOWN)
- T — TELEPHONE
- E — ELECTRIC
- C — CABLE (TV)
- EC — ELECTRIC+CABLE
- ET — ELECTRIC+TELEPHONE
- AER E&T — ELECTRIC+TELEPHONE
- CT — CABLE+TELEPHONE
- ECT — ELECTRIC+CABLE+TELEP.
- UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOGY

- CZ — CLEAR ZONE
- PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

- TOP OF CUT SLOPE
- TOE OF FILL SLOPE
- STONE FILL
- BOTTOM OF DITCH ℄
- CULVERT PROPOSED
- STRUCTURE SUBSURFACE
- PDF — PDF — PROJECT DEMARCATION FENCE
- BF — BF — BARRIER FENCE
- TREE PROTECTION ZONE (TPZ)
- STRIPING LINE REMOVAL
- SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINES

- TOWN LINE — TOWN BOUNDARY LINE
- COUNTY LINE — COUNTY BOUNDARY LINE
- STATE LINE — STATE BOUNDARY LINE
- PROPOSED STATE R.O.W. (LIMITED ACCESS)
- PROPOSED STATE R.O.W.
- STATE ROW (LIMITED ACCESS)
- STATE ROW
- TOWN ROW
- PERMANENT EASEMENT LINE (P)
- TEMPORARY EASEMENT LINE (T)
- SURVEY LINE
- P/L — PROPERTY LINE (P/L)
- SR SR SR — SLOPE RIGHTS
- 6f — 6f — 6F PROPERTY BOUNDARY
- 4f — 4f — 4F PROPERTY BOUNDARY
- HAZ — HAZ — HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

- FILTER CURTAIN
- SILT FENCE
- SILT FENCE WOVEN WIRE
- CHECK DAM
- DISTURBED AREAS REQUIRING RE-VEGETATION
- EROSION MATTING

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLOGY

ENVIRONMENTAL RESOURCES

- WETLAND BOUNDARY
- RIPARIAN BUFFER ZONE
- WETLAND BUFFER ZONE
- SOIL TYPE BOUNDARY
- T&E — THREATENED & ENDANGERED SPECIES
- HAZ — HAZ — HAZARDOUS WASTE AREA
- AG — AGRICULTURAL LAND
- HABITAT — FISH & WILDLIFE HABITAT
- FLOOD PLAIN — FLOOD PLAIN
- OHW — ORDINARY HIGH WATER (OHW)
- STORM WATER
- USDA FOREST SERVICE LANDS
- WILDLIFE HABITAT SUIT/CONN

ARCHEOLOGICAL & HISTORIC

- ARCH — ARCHEOLOGICAL BOUNDARY
- HISTORIC DIST — HISTORIC DISTRICT BOUNDARY
- HISTORIC — HISTORIC AREA
- (H) HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

- ROAD EDGE PAVEMENT
- ROAD EDGE GRAVEL
- DRIVEWAY EDGE
- DITCH
- FOUNDATION
- FENCE (EXISTING)
- FENCE WOOD POST
- FENCE STEEL POST
- GARDEN
- ROAD GUARDRAIL
- RAILROAD TRACKS
- CULVERT (EXISTING)
- STONE WALL
- WALL
- WOOD LINE
- BRUSH LINE
- HEDGE
- BODY OF WATER EDGE
- LEDGE EXPOSED

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: sl0c220legend.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
CONVENTIONAL SYMBOLOGY LEGEND

PLOT DATE: 13-JAN-2015
DRAWN BY: R. PELLETT
CHECKED BY: H. SALLS
SHEET 9 OF 46

GPS CONTROL POINTS

HVCTRL #1

DAM AZ MK
NORTH = 659959.426
EAST = 1621056.096
ELEV. = 714.466

GENERAL LOCATION, MIDDLESEX, VT.

TO REACH FROM THE INTERSECTION OF US ROUTE 2 (MEMORIAL DRIVE) AND VT ROUTE 12 (MAIN STREET) IN MONTPELIER, GO NORTHEAST ALONG MAIN STREET FOR 0.5 MI (0.8 KM) TO THE INTERSECTION OF SPRING STREET LEFT AT A ROTARY INTERSECTION. TURN LEFT AND GO NORTHWEST ALONG SPRING STREET FOR 0.05 MI (0.1 KM) TO ITS INTERSECTION WITH ELM STREET (VT ROUTE 12). TURN RIGHT AND GO NORTHEAST ALONG VT ROUTE 12 FOR 3.6 MI (5.8 KM) TO THE INTERSECTION OF HORN OF THE MOON ROAD RIGHT. TURN RIGHT AND GO EAST ALONG HORN OF THE MOON ROAD FOR 0.25 MI (0.4 KM) TO THE Y-INTERSECTION OF A DRIVE RIGHT CONTINUING ALONG THE HEIGHT OF THE DAM. BEAR RIGHT AND GO EAST ALONG THE DRIVE FOR ABOUT 40 M (131.2 FT) TO THE SITE OF THE MARK ON THE LEFT, ABOUT 50 M (164.0 FT) WEST OF A CHAIN-LINK FENCE LINE AT THE WEST EDGE OF THE SPILLWAY. THE MARK IS SET FLUSH WITH THE GROUND SURFACE IN THE TOP OF A 0.7 M (2.3 FT) X 0.4 M (1.3 FT) BOULDER. IT IS 4.5 M (14.8 FT) NORTH OF AND ABOUT 0.3 M (1.0 FT) LOWER THAN THE CENTERLINE OF THE DRIVE, 13.4 M (44.0 FT) SOUTH OF THE CENTERLINE OF HORN OF THE MOON ROAD, 5.5 M (18.0 FT) NORTHWEST OF POLE NO L87/R1, 10.5 M (34.4 FT) NORTHEAST OF A STRAIN POLE, 18.2 M (59.7 FT) EAST OF THE WEST END OF A CABLE GUARD RAIL AND 1.2 M (3.9 FT) NORTH OF THE GUARD RAIL.

HVCTRL #2

WRIGHT
NORTH = 664651.890
EAST = 1620232.433
ELEV. = 647.270

GENERAL LOCATION, MIDDLESEX, VT.

TO REACH FROM THE INTERSECTION OF US ROUTE 2 (MEMORIAL DRIVE) AND VT ROUTE 12 (MAIN STREET) IN MONTPELIER, GO NORTHEAST ALONG MAIN STREET FOR 0.5 MI (0.8 KM) TO THE INTERSECTION OF SPRING STREET LEFT AT A ROTARY INTERSECTION. TURN LEFT AND GO NORTHWEST ALONG SPRING STREET FOR 0.05 MI (0.1 KM) TO ITS INTERSECTION WITH ELM STREET (VT ROUTE 12). TURN RIGHT AND GO NORTHEAST ALONG VT ROUTE 12 FOR 4.3 MI (6.9 KM) TO THE INTERSECTION OF THE GATED ENTRANCE DRIVE TO THE WRIGHTSVILLE DAM BOAT LAUNCH RIGHT. TURN RIGHT AND FOLLOW THE DRIVE FOR ABOUT 0.2 MI (0.3 KM) TO THE BOAT LAUNCH RAMP ON THE RIGHT. CONTINUE STRAIGHT AHEAD AND GO NORTH ALONG THE DRIVE (NOW THE ROADBED FOR THE FORMER VT ROUTE 12) FOR ABOUT 75 M (246.1 FT) TO A PARKING AREA AND THE ENTRANCE TO A DIM TRAIL RIGHT. PARK VEHICLE AND WALK EASTERLY ALONG THE TRAIL FOR ABOUT 30 M (98.4 FT) AND THEN SOUTHERLY FOR ANOTHER 30 M (98.4 FT) TO THE SITE OF THE MARK. THE MARK IS SET 15 CM (6 INCHES) BELOW GROUND SURFACE IN THE TOP OF A FENO STYLE MONUMENT. IT IS 31.3 M (102.7 FT) EAST OF AND ABOUT 0.5 M (1.6 FT) LOWER THAN THE CENTERLINE OF THE DRIVE, 27.0 M (88.6 FT) SOUTH OF A 10 CM (4 INCH) WHITE BIRCH WITH TRIANGULAR BLAZE, 18.7 M (61.4 FT) SOUTH-SOUTHWEST OF A 15 CM (6 INCH) SWAMP MAPLE WITH TRIANGULAR BLAZE IN A CLUMP OF FOUR, 15.6 M (51.2 FT) NORTHWEST OF A 50 CM (20 INCH) TWIN-TRUNKED MAPLE NEAR THE WATERS EDGE, 16.2 M (53.1 FT) SOUTH-SOUTHEAST OF A 15 CM (6 INCH) TWIN-TRUNKED APPLE WITH TRIANGULAR BLAZE AND 0.2 M (0.7 FT) WEST OF A FIBERGLASS WITNESS POST.

TRAVERSE TIES

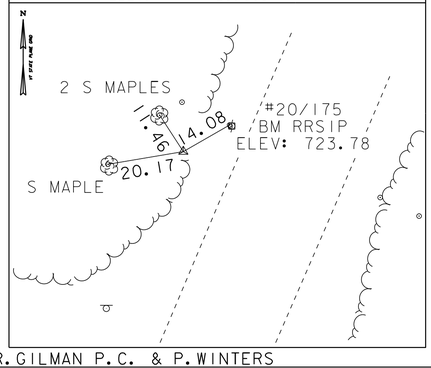
HVCTRL #3

NORTH = 660343.699
EAST = 1619763.487
ELEV. = 728.389

NOT TIED

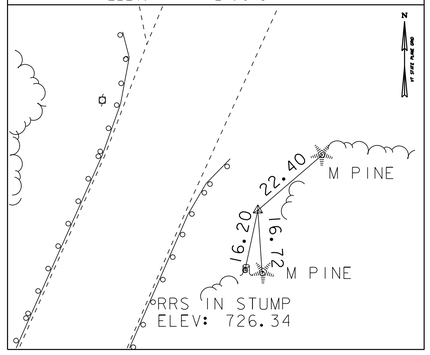
HVCTRL #4

NORTH = 661038.506
EAST = 1620017.348
ELEV. = 725.663



HVCTRL #5

NORTH = 660565.676
EAST = 1619873.812
ELEV. = 724.019



NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

* MAIN TRAVERSE COMPLETED 1/10/2011 BY R. GILMAN P.C. & P. WINTERS

ALIGNMENT TIES

ALIGMENT NAME: VT12PROP

POINT	STATION	NORTHING	EASTING
POB	26+25.00	660490.99	1619808.12
POE	32+25.00	661039.73	1620050.78

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (07)
ADJUSTMENT COMPASS

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: sl0c220tie.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
TIE SHEET

PLOT DATE: 13-JAN-2015
DRAWN BY: R. BULLOCK
CHECKED BY: H. SALLS
SHEET 10 OF 46

CAST-IN-PLACE CONCRETE CURB, TYPE B
STA 28+60.00 - STA 29+00.00 LT
STA 28+63.00 - STA 29+03.00 RT
STA 29+38.00 - STA 29+78.00 LT
STA 29+50.00 - STA 29+90.00 RT

REMOVAL AND DISPOSAL OF GUARDRAIL
STA 28+37.79 - STA 29+05.13 RT
STA 28+55.75 - STA 28+96.94 LT
STA 29+41.53 - STA 30+06.03 LT
STA 29+46.89 - STA 30+14.07 RT

PAVED APRON
STA 30+70.75 - 31+50.00 LT

HD STEEL BEAM GUARDRAIL, GALVANIZED
STA 28+49.62 - STA 28+61.96 LT
STA 29+67.15 - STA 30+17.15 LT

ANCHOR FOR STEEL BEAM RAIL
STA 28+56.80 LT

MANUFACTURED TERMINAL SECTION, FLARED
STA 28+34.75 - STA 28+73.84 RT
STA 30+17.15 - STA 30+56.28 LT
STA 29+79.01 - STA 30+18.14 RT

GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM
STA 28+61.96 - STA 28+91.29 LT
STA 28+73.84 - STA 29+02.94 RT
STA 29+38.06 - STA 29+67.15 LT
STA 29+49.71 - STA 29+79.01 RT

BRIDGE RAIL, GALVANIZED 2 RAIL BOX BEAM
STA 28+91.29 - STA 29+38.06 LT
STA 29+02.94 - STA 29+49.71 RT

N
VT STATE PLANE GRID

BM ELEV 723.777
RR SPIKE
IN POLE

BEGIN APPROACH
STA 26+75.00

BEGIN PROJECT
STA 27+75.00

BEGIN BRIDGE
STA 28+97.11

END BRIDGE
STA 29+43.89

END PROJECT
STA 30+75.00

SEE SHEET 13 FOR
UTILITY RELOCATION DETAILS

END APPROACH
STA 31+75.00

EXISTING R.O.W.

TH 18

VT 12
TO MONTPELIER

N 23°51'20.52" E

VT 12
TO WORCESTER

26+25 27+00 28+00 29+00 30+00 31+00 32+00 32+25

100+00

S 86°08'39" E

101+00

102+00

103+00

HVCTRL

COMB POLE #17/172

AER E&T

CZ

M PINE

TEL

COMB POLE #17&#19

COMB POLE #20/175

TIE DIST

11.46 IS TIE DIST

GUYW

GUYP

BOULDER WITH PLAQUE FLOOD

16.20 TIE DIST TO BM

M PINE 16.72 TIE DIST

M PINE 22.40 TIE DIST

TREE

TEMPORARY SUPPORT

EXISTING R.O.W.

BM ELEV 726.343
RR SPIKE
IN TOP OF STUMP

LIMITS OF TEMPORARY DETOUR

C/L TEMPORARY ALIGNMENT

BROOK

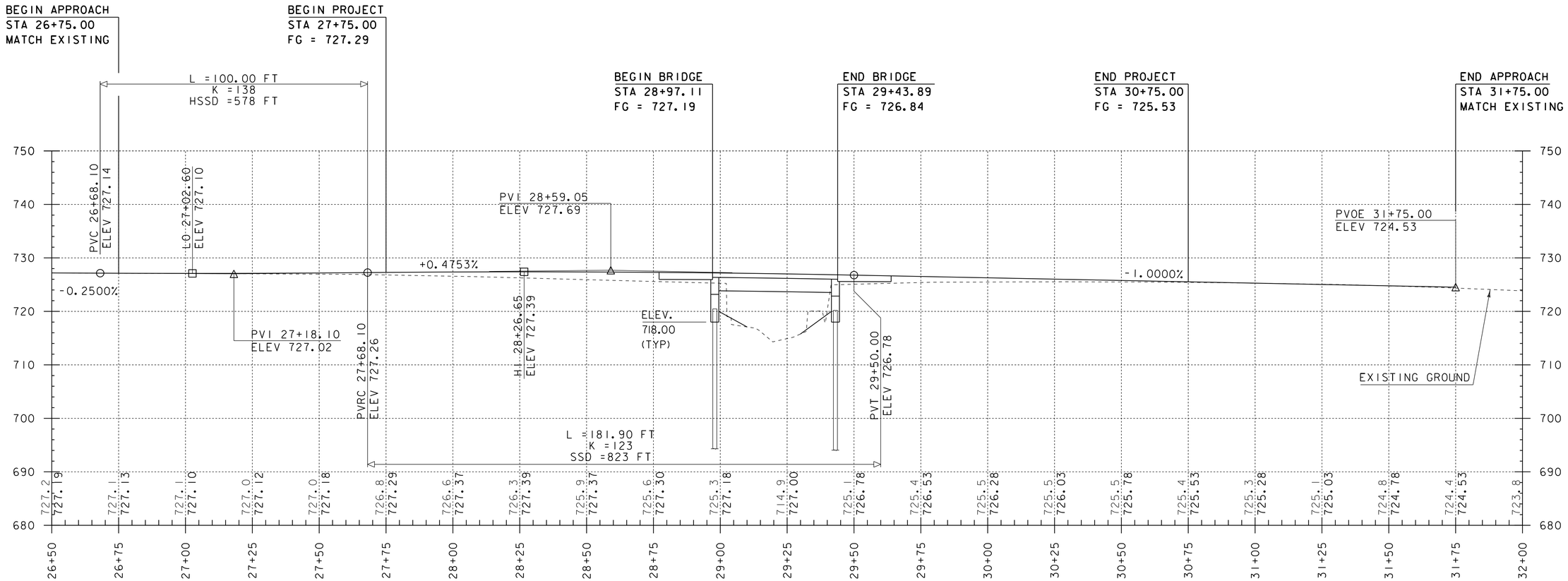
EXISTING BRIDGE DATA
SINGLE SPAN ROLLED BEAM
BUILT - 1919, REHAB 1981
OVERALL LENGTH - 44'-0"
SPAN LENGTH - 42'-0"
CURB - 0'-0"
ROADWAY WIDTH - 27'-0"
OUT TO OUT WIDTH - 31'-5"

SCALE 1" = 20'-0"
20 0 20

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: sl0c220bdr.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
LAYOUT

PLOT DATE: 13-JAN-2015
DRAWN BY: R. PELLETT
CHECKED BY: H. SALLS
SHEET 11 OF 46



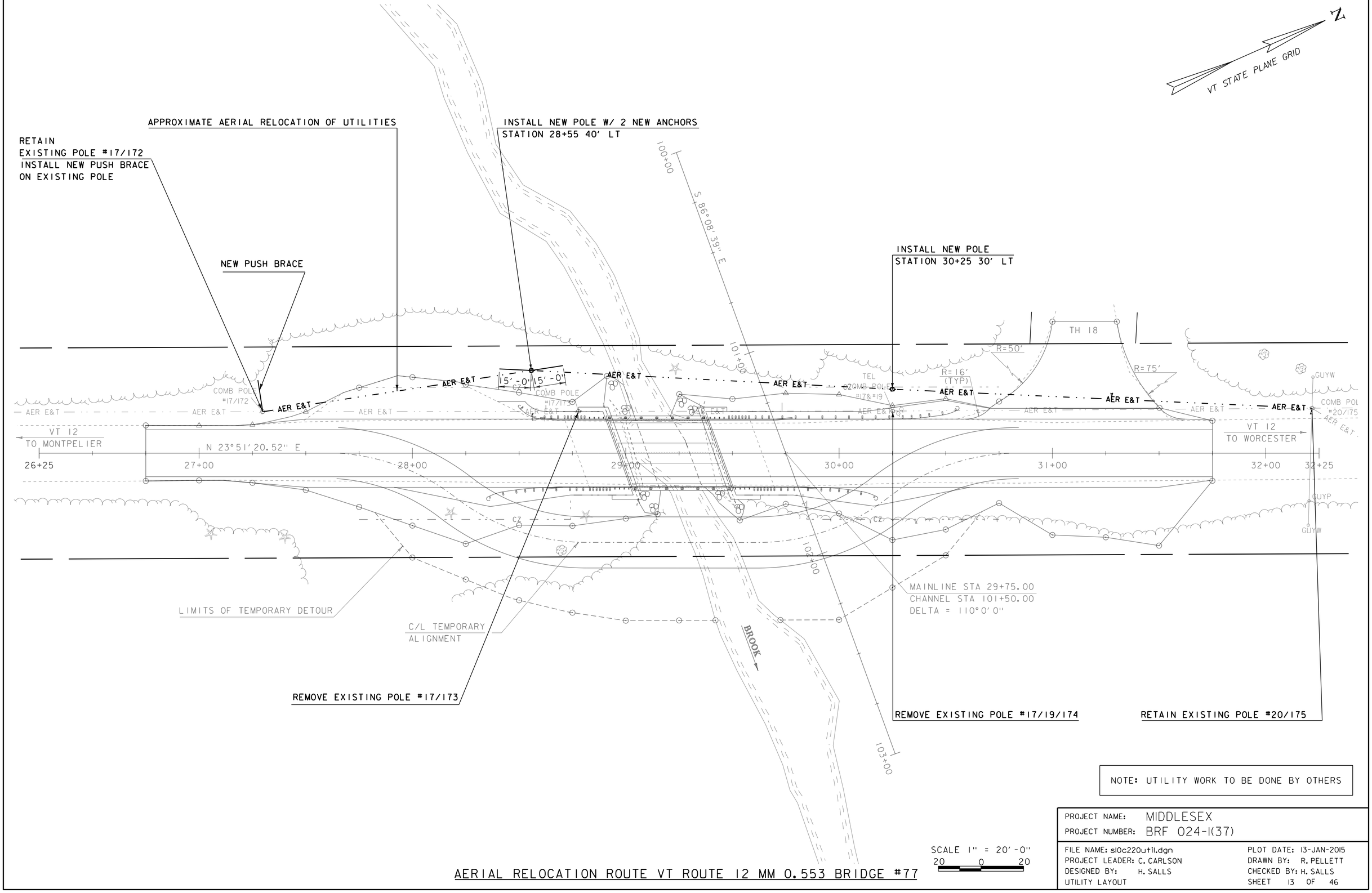
VT 12 PROFILE

HORIZONTAL SCALE 1" = 20'-0"
VERTICAL SCALE 1" = 10'-0"

THE GRADES SHOWN TO THE NEAREST TENTH ARE THE ORIGINAL GROUND ELEVATIONS ALONG THE PROPOSED ALIGNMENT.

THE GRADES SHOWN TO THE NEAREST HUNDREDTH ARE THE FINISH GRADES ALONG THE PROPOSED ALIGNMENT.

PROJECT NAME:	MIDDLESEX
PROJECT NUMBER:	BRF 024-1(37)
FILE NAME: s10c220pro.dgn	PLOT DATE: 13-JAN-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
VT 12 PROFILE	SHEET 12 OF 46



AERIAL RELOCATION ROUTE VT ROUTE 12 MM 0.553 BRIDGE #77

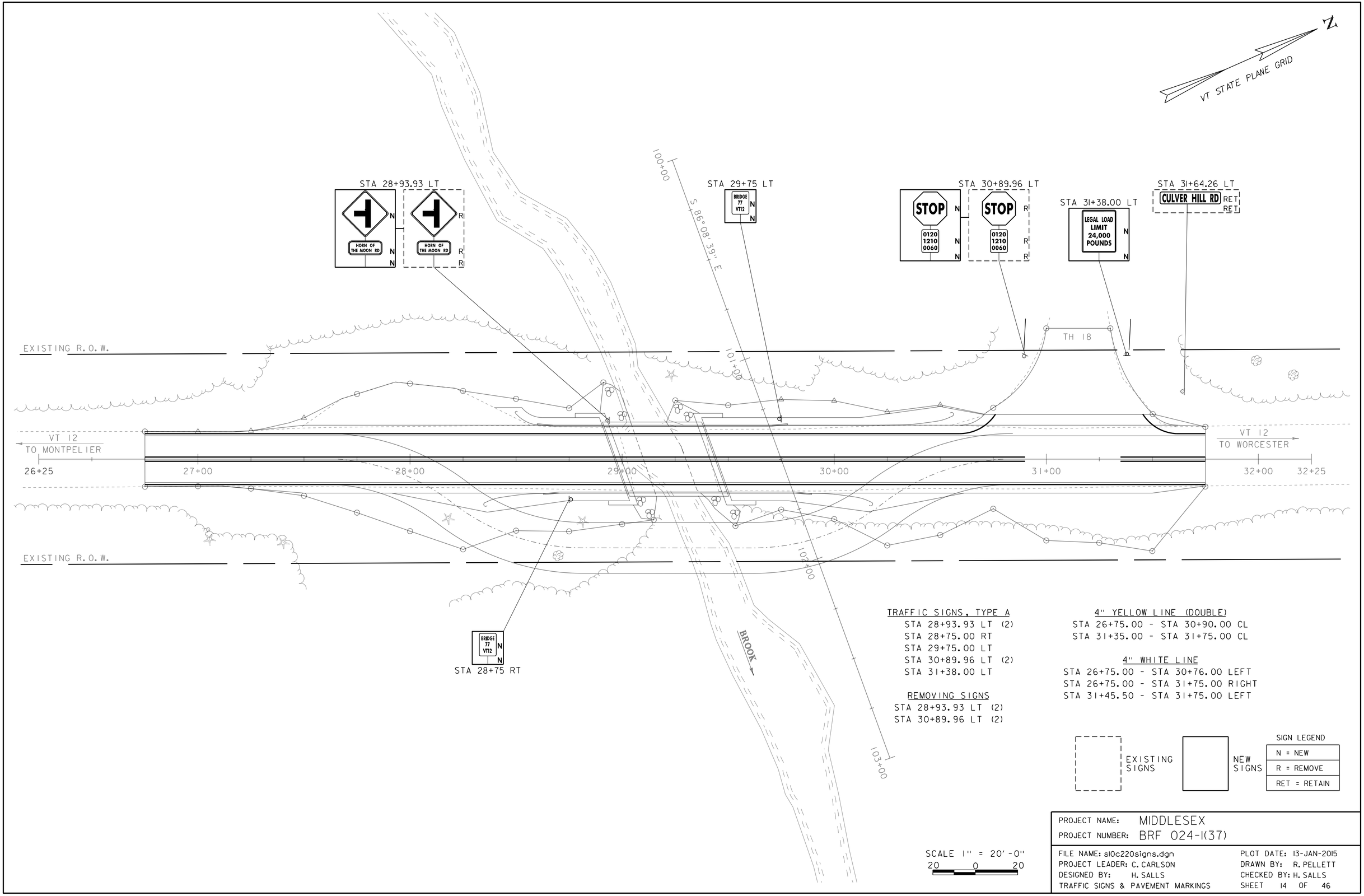
SCALE 1" = 20'-0"
20 0 20

NOTE: UTILITY WORK TO BE DONE BY OTHERS

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: s10c220util.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
UTILITY LAYOUT

PLOT DATE: 13-JAN-2015
DRAWN BY: R. PELLETT
CHECKED BY: H. SALLS
SHEET 13 OF 46



TRAFFIC SIGNS, TYPE A

STA 28+93.93 LT (2)
STA 28+75.00 RT
STA 29+75.00 LT
STA 30+89.96 LT (2)
STA 31+38.00 LT

REMOVING SIGNS

STA 28+93.93 LT (2)
STA 30+89.96 LT (2)

4" YELLOW LINE (DOUBLE)

STA 26+75.00 - STA 30+90.00 CL
STA 31+35.00 - STA 31+75.00 CL

4" WHITE LINE

STA 26+75.00 - STA 30+76.00 LEFT
STA 26+75.00 - STA 31+75.00 RIGHT
STA 31+45.50 - STA 31+75.00 LEFT

EXISTING SIGNS

NEW SIGNS

SIGN LEGEND

N = NEW
R = REMOVE
RET = RETAIN

SCALE 1" = 20'-0"
20 0 20

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

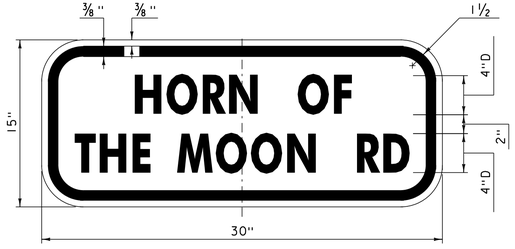
FILE NAME: s10c220signs.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
TRAFFIC SIGNS & PAVEMENT MARKINGS

PLOT DATE: 13-JAN-2015
DRAWN BY: R. PELLETT
CHECKED BY: H. SALLS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS			NEW & SALVAGED SIGNS				EXIST POST		NEW SIGN POSTS																				SIGN REQUIRED	REMARKS	SIGN DETAIL	
		EA	WIDTH (in)	HEIGHT (in)	"A"	"B"	SALV SIGN	SALV TIS	RETAIN	SALVAGE	NO. OF POSTS	FLANGED CHANNEL lb/ft			SQUARE STEEL (in) lb/ft			ANCHOR	SLEEVE	TUBULAR ALUMINUM Ø (in) lb/ft			FOUNDATION	TUBULAR STEEL Ø (in) lb/ft				W-SHAPE STEEL FTG. SIZE		WEIGHT	POST SIZE			DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
												1.12	2.0	3.0	1.75	2.0	2.5			3.0	4.0	4.0 MOD		3.0	3.5	4.0	5.0	24"	30"						
															1.88	2.42	3.35			1.3	1.7	1.7		7.6	9.0	10.8	14.6								
28+75.00 RT	BRIDGE 77 VT12	1	6	8	0.33						1					X		X															VD-701		T-42
28+93.93 LT		1	30	30	6.25						1					X		X															W2-2		E-155
	HORN OF THE MOON RD	1	30	15	3.13						-					-		-															W16-8p	THIS SHEET	
29+75.00 LT	BRIDGE 77 VT12	1	6	8	0.33						1					X		X															VD-701		T-42
30+89.96 LT	STOP	1	30	30	6.25						1					X		X															R1-1		E-143
	0120 1210 0060	1	6	10	0.42						1					-		-															VD-700		T-44
31+38.00 LT	LEGAL LOAD LIMIT 24,000 POUNDS	1	24	30	5.00						1					X		X															VR-017		E-141



W16-8p

COLORS: LEGEND - BLACK
BACKGROUND - YELLOW (RETROREFLECTIVE)

DIMENSIONS WILL MATCH SISTER SIGN
APPROACH FROM OPPOSITE DIRECTION

SHS = STANDARD HIGHWAY SIGNS BOOK

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD.

								FT	FT	FT	FT	FT 50	FT	EA	LB	LB	LB		LB	LB	LB	LB										
TOTALS	SF 21.71	SF	EA.	SF		FT		FT 50		LB		EA.		LB				EA.	EA.	LB												

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: sl0c220signs.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
TRAFFIC SIGN SUMMARY

PLOT DATE: 06-FEB-2015
DRAWN BY: R. PELLETT
CHECKED BY: H. SALLS
SHEET 15 OF 46

SOIL CLASSIFICATION

AASHTO	
A1	Gravel and Sand
A3	Fine Sand
A2	Silty or Clayey Gravel and Sand
A4	Silty Soil - Low Compressibility
A5	Silty Soil - Highly Compressible
A6	Clayey Soil - Low Compressibility
A7	Clayey Soil - Highly Compressible

ROCK QUALITY DESIGNATION

R.Q.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard

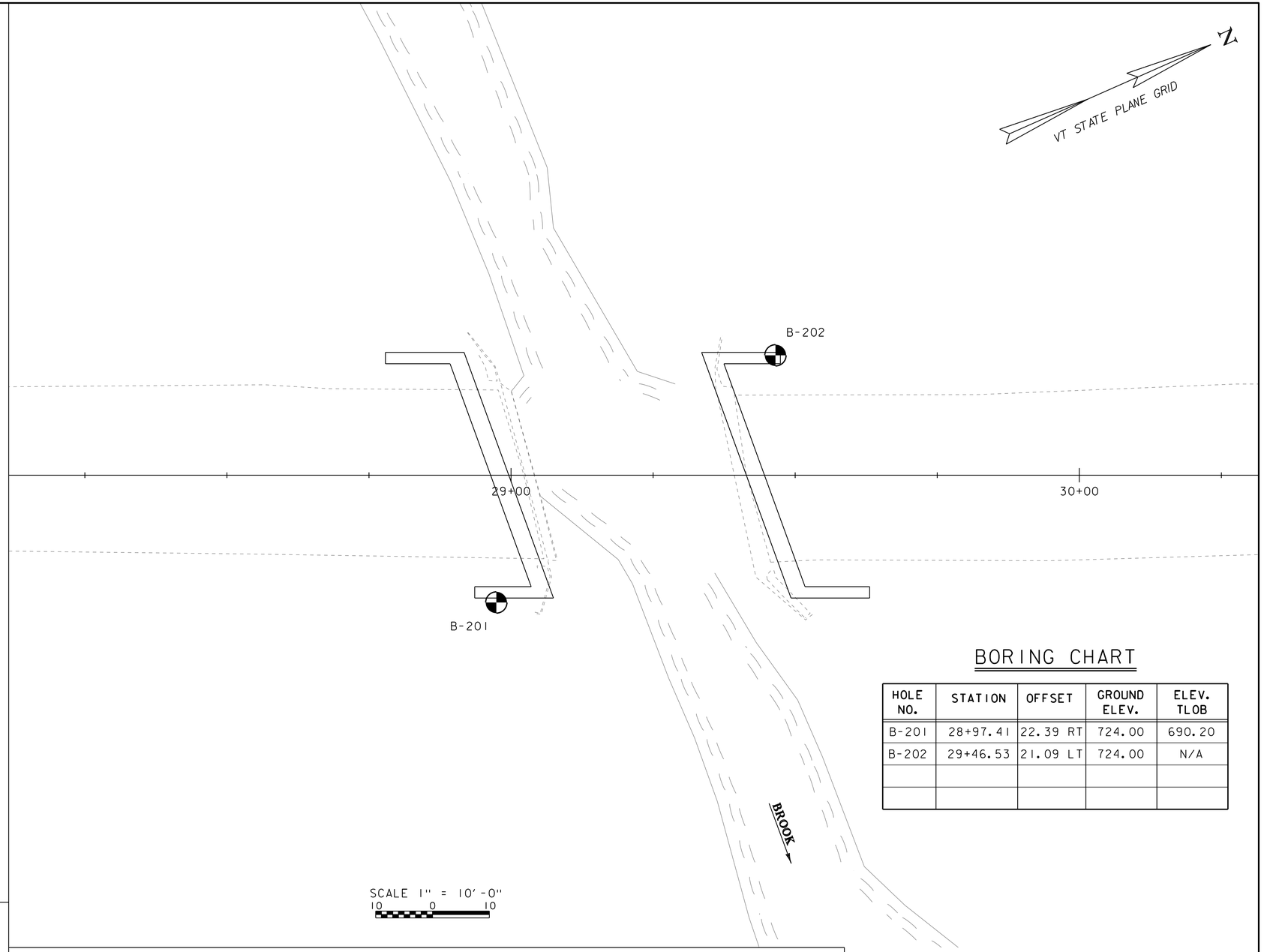
CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

COMMONLY USED SYMBOLS

▼	Water Elevation
⊗	Standard Penetration Boring
⊕	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per Foot For: 2" O.D. Sampler 1 3/8" I.D. Sampler Hammer Weight Of 140 Lbs. Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 1 1/8"
BX	Core Size 1 5/8"
NX	Core Size 2 1/8"
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
Si	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	Top of Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
RQD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)
VTSPG	NAD83 - See Note 7

COLOR			
blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gry	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		



SCALE 1" = 10'-0"
10 0 10

BORING CHART

HOLE NO.	STATION	OFFSET	GROUND ELEV.	ELEV. TLOB
B-201	28+97.41	22.39 RT	724.00	690.20
B-202	29+46.53	21.09 LT	724.00	N/A

DEFINITIONS (AASHTO)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.

BOULDER - A rock fragment with an average dimension > 12 inches.

COBBLE - Rock fragments with an average dimension between 3 and 12 inches.

GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).

SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).

SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.

HARDPAN - Extremely dense soil, cemented layer, not softened when wet.

MUCK - Soft organic soil (containing > 10% organic material.

MOISTURE CONTENT - Weight of water divided by dry weight of soil.

FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.

STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.

DIP - Inclination of bed with a horizontal plane.

GENERAL NOTES

1. The subsurface explorations shown herein were made between 01/18/12 and 01/31/12 by the Agency.

2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.

3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.

4. Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.

5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.

6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.

7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: sl0c220bor.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
BORING INFORMATION

PLOT DATE: 13-JAN-2015
DRAWN BY: R. PELLETT
CHECKED BY: H. SALLS
SHEET 16 OF 46

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH SECTION
SUBSURFACE INFORMATION

BORING LOG

MIDDLESEX
BRF 024-1(37)
VT-12 BR-77

Boring No.: **B-201**
Page No.: 1 of 1
Pin No.: 10C220
Checked By: NSM

Boring Crew: GARROW, SALISBURY, PORTER
Date Started: 1/18/12 Date Finished: 1/25/12
VTSPG NAD83: N 660731.08 ft E 1619938.77 ft
Station: 28+97.41 Offset: 22.39
Ground Elevation: 724.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig: CME 45C TRACK	C_e = 1.34	

Groundwater Observations

Date	Depth (ft)	Notes
01/24/12	33.2	AM

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec.; % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-2-4, GrSa, brn, Moist, Rec. = 0.8 ft				WH-2-3-R (5)	16.6	26.8	55.1	18.1
		Field Note:, NXDC, Cobbles								
		Field Note:, No Recovery. Stone in sampler				8-5-2-2 (7)				
BOTTOM OF PILE CAP ELEV. 718.00										
5										
		Field Note:, NXDC, Cobbles								
		A-2-4, GrSiSa, brn, Moist, Rec. = 1.5 ft				9-16-19-22 (35)	13.9	27.8	38.7	33.5
10										
		Field Note:, NXDC, Cobbles								
		A-1-b, SiSaGr, brn, Moist, Rec. = 0.6 ft				10-27-52-41 (79)	8.0	53.5	26.3	20.2
15										
		Field Note:, NXDC, Boulder								
		A-1-b, SiGrSa, brn, MTW, Rec. = 1.1 ft				4-10-18-17 (28)	10.8	38.5	38.9	22.6
20										
		Visual Classification, SiGrSa, brn, MTW, Rec. = 0.5 ft, Similar material as 19-21 ft.				R@6.0"	11.0			
		Field Note:, NXDC, Boulder								
25										
		A-1-b, SiGrSa, brn, MTW, Rec. = 1.2 ft				13-23-25-22 (48)	10.8	35.9	39.5	24.6
30										
		A-1-b, GrSa, brn, MTW, Rec. = 0.3 ft				8-R@3.5"	11.3	36.5	48.5	15.0
ESTIMATED PILE TIP ELEV. 690.00										
35		33.8 ft - 35.2 ft, Grayish green, Chlorite-plagioclase-quartz-muscovite Schist, Moderately hard, Unweathered, Good rock, NXMDC, RMR = 79	1 (75)	100 (100)	6 4	Top of Bedrock @ 33.8 ft				
		35.2 ft - 38.8 ft, Grayish green, Chlorite-plagioclase-quartz-muscovite Schist, Moderately hard, Unweathered, Good rock, NXMDC, RMR = 79	2 (75)	94 (94)	12 13 11 6					
40		38.8 ft - 43.8 ft, Grayish green, Chlorite-plagioclase-quartz-muscovite Schist, Moderately hard, Unweathered, Good rock, NXMDC, RMR = 76	3 (75)	92 (74)	9 9 18 9 9					
45		Hole stopped @ 43.8 ft								

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 MIDDLESEX BRF 024-1(37).GPJ VERMONT AOT.GDT 10/28/14

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH SECTION
SUBSURFACE INFORMATION

BORING LOG

MIDDLESEX
BRF 024-1(37)
VT-12 BR-77

Boring No.: **B-202**
Page No.: 1 of 1
Pin No.: 10C220
Checked By: NSM

Boring Crew: GARROW, SALISBURY, PORTER
Date Started: 1/26/12 Date Finished: 1/31/12
VTSPG NAD83: N 660793.58 ft E 1619918.87 ft
Station: 29+46.53 Offset: -21.09
Ground Elevation: 724.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig: CME 45C TRACK	C_e = 1.34	

Groundwater Observations

Date	Depth (ft)	Notes
01/30/12	29.4	AM

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		Field Note:, NXDC, Sand, No Recovery.							
		A-1-b, SaGr, brn, Moist, Rec. = 1.2 ft	1-3-5-4 (8)	15.4	41.4	39.7	18.9		
BOTTOM OF PILE CAP ELEV. 718.00									
		Field Note:, NXDC, Gravel, No Recovery.							
		A-1-b, GrSa, brn, Moist, Rec. = 1.5 ft	12-20-19-17 (39)	16.0	36.9	45.4	17.7		
10									
		Field Note:, NXDC, Cobbles							
		A-4, Si, gry, Moist, Rec. = 1.5 ft	3-3-2-3 (5)	40.4	0.3	2.2	97.5	38	6
		A-4, GrSaSi, brn, Moist, Rec. = 1.5 ft	10-11-14-16 (25)	13.3	23.8	35.5	40.7		
20									
		Field Note:, NXDC, Gravel, No Recovery.	16-19-17-15 (36)						
		Field Note:, NXDC, Cobbles							
		A-1-b, SiGrSa, gry, Moist, Rec. = 1.0 ft, Broken rock was within sample.	8-16-22-R@2.5"	7.5	38.7	39.9	21.4		
30		Field Note:, NXDC, Cobbles							
		Field Note:, NXDC, Cobbles							
		A-2-4, GrSiSa, brn, Moist, Rec. = 0.9 ft	5-5-6-8 (11)	13.1	20.1	46.0	33.9		
		Field Note:, NXDC, Cobbles							
40		Field Note:, NXDC, Cobbles							
		A-2-4, SaSiGr (HP), gry, MTD, Rec. = 1.2 ft	32-40-30-R@0.0"	8.5	36.9	27.8	35.3		
		Field Note:, NXDC, Gravel, No Recovery.							
		A-4, GrSaSi (HP), gry, MTD, Rec. = 0.5 ft	R@6.0"	9.1	20.0	38.7	41.3		
50		Hole stopped @ 48.5 ft No Ledge to Depth.							

ESTIMATED PILE TIP ELEV. 665.00

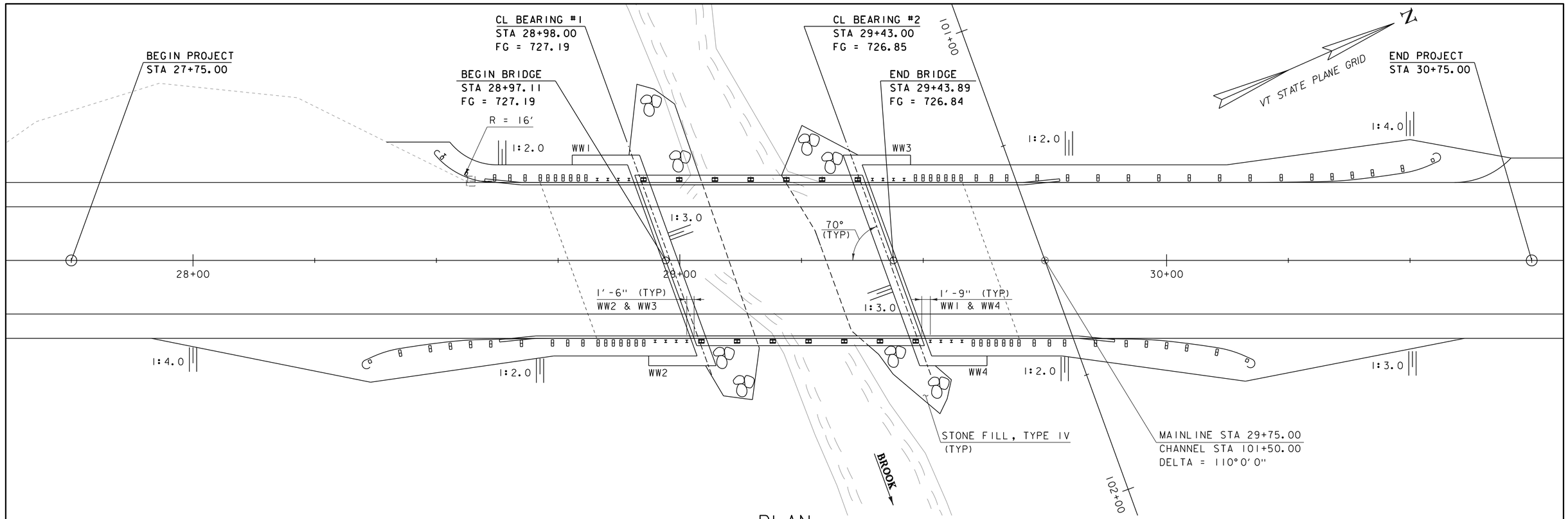
Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 MIDDLESEX BRF 024-1(37).GPJ VERMONT AOT.GDT 10/28/14

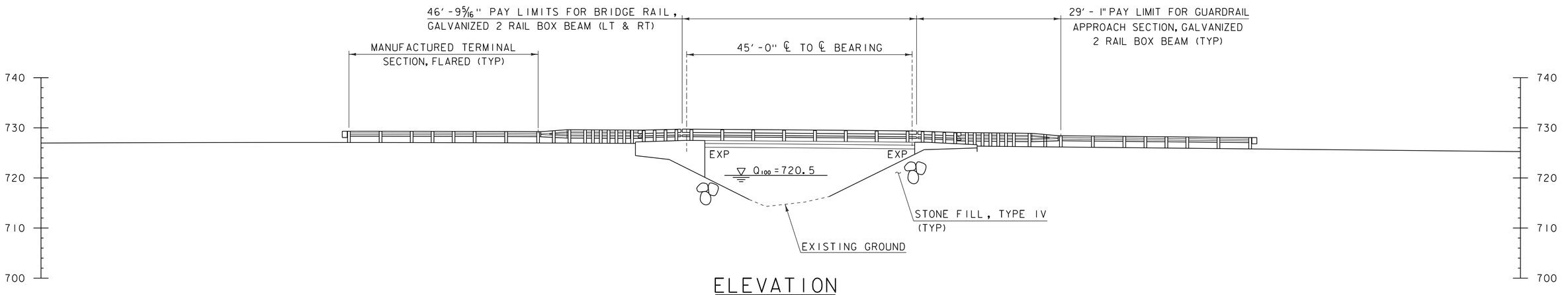
PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: s10c220bor.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: MATERIALS & RESEARCH
BORING LOGS

PLOT DATE: 13-JAN-2015
DRAWN BY: C. BURRALL
CHECKED BY: H. SALLS
SHEET 17 OF 46



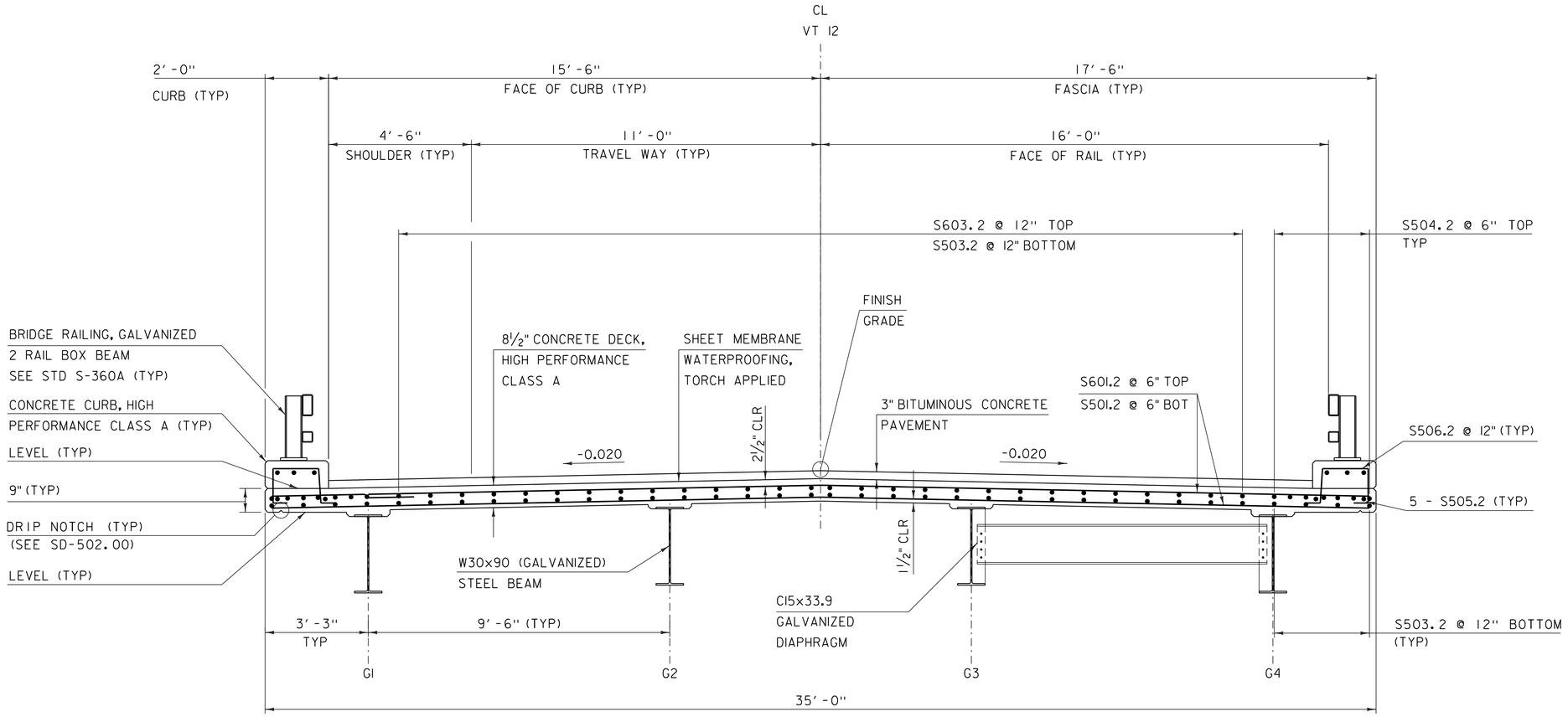
PLAN



ELEVATION

SCALE 1" = 10'-0"
10 0 10

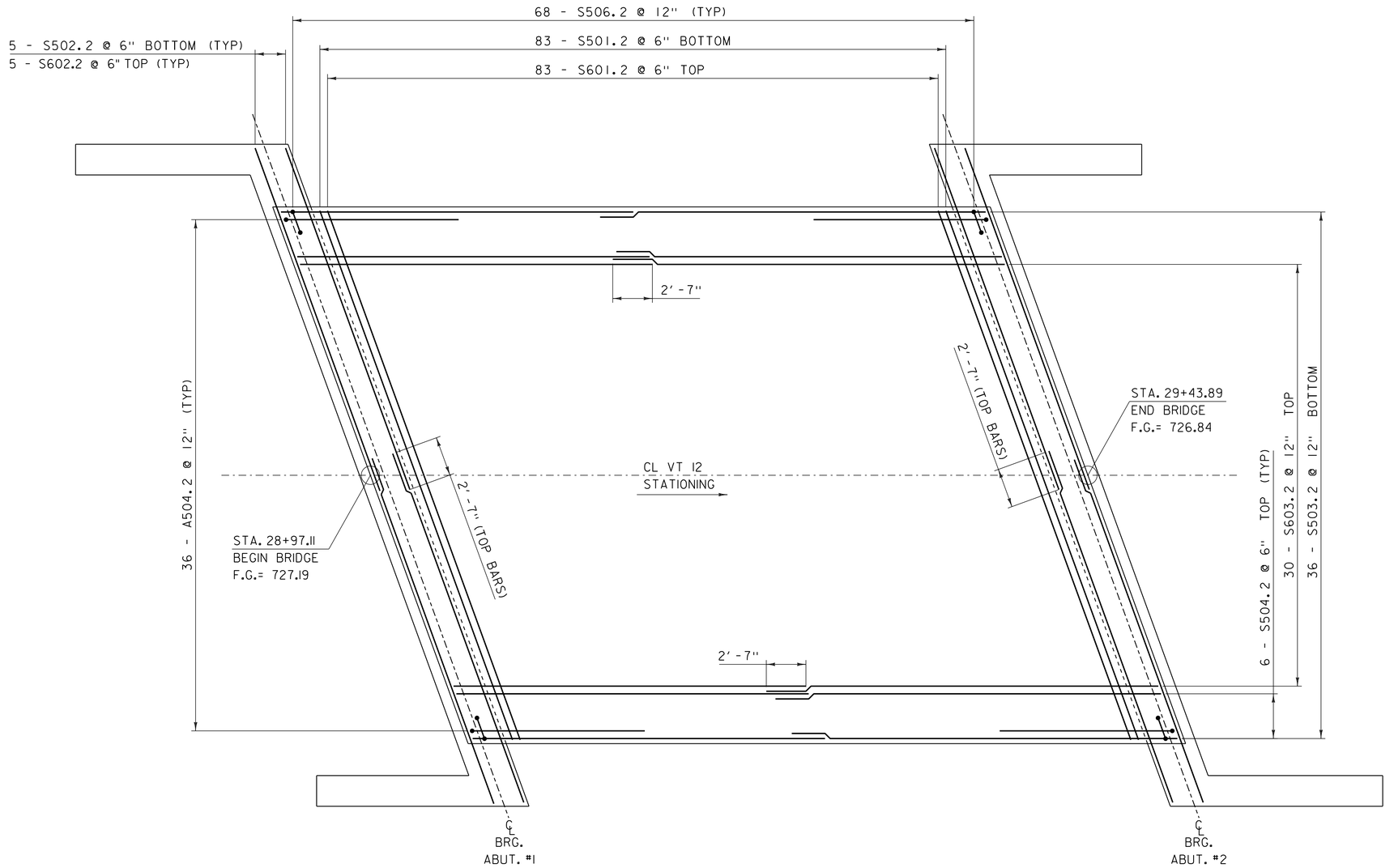
PROJECT NAME:	MIDDLESEX
PROJECT NUMBER:	BRF 024-1(37)
FILE NAME: sl0c220pe.dgn	PLOT DATE: 13-JAN-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
PLAN & ELEVATION	SHEET 18 OF 46



DECK REINFORCING SECTION

SCALE ½" = 1′-0"

PROJECT NAME:	MIDDLESEX
PROJECT NUMBER:	BRF 024-1(37)
FILE NAME: sl0c220sup.dgn	PLOT DATE: 13-JAN-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: C. BURRALL
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
DECK REINFORCING SECTION	SHEET 19 OF 46



DECK REINFORCING PLAN

SCALE 1/4"=1'-0"

NOTES:

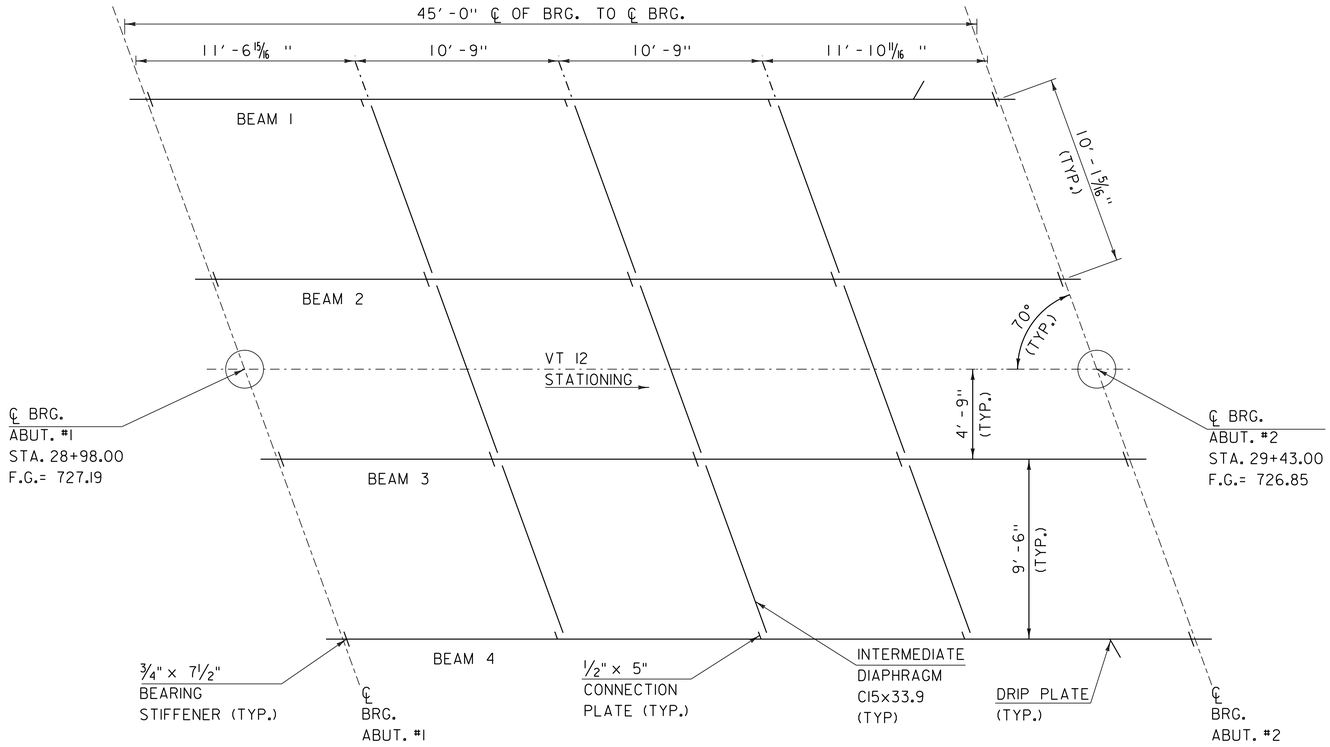
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

ALL REINFORCEMENT FOR BRIDGE RAIL NOT SHOWN FOR CLARITY SEE STD S-360A.

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

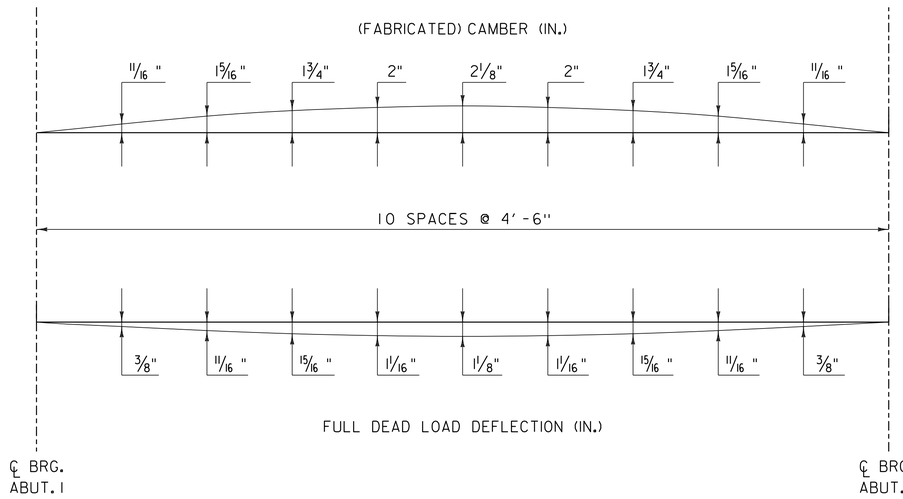
FILE NAME: s10c220sup.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
DECK REINFORCING PLAN

PLOT DATE: 13-JAN-2015
DRAWN BY: C. BURRALL
CHECKED BY: H. SALLS
SHEET 20 OF 46



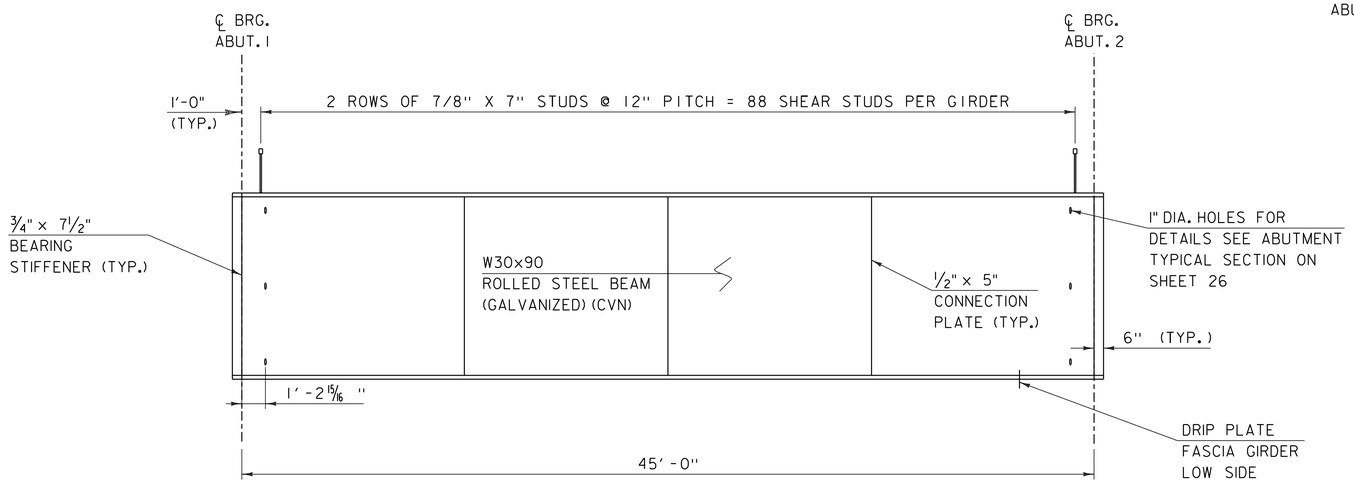
FRAMING PLAN

SCALE 1/4″ = 1′-0″



CAMBER AND DEAD LOAD DEFLECTION

HORIZONTAL SCALE 1/4″ = 1′-0″
VERTICAL SCALE 2″ = 1′-0″



GIRDER ELEVATION

HORIZONTAL SCALE 1/4″ = 1′-0″
VERTICAL SCALE 1″ = 1′-0″

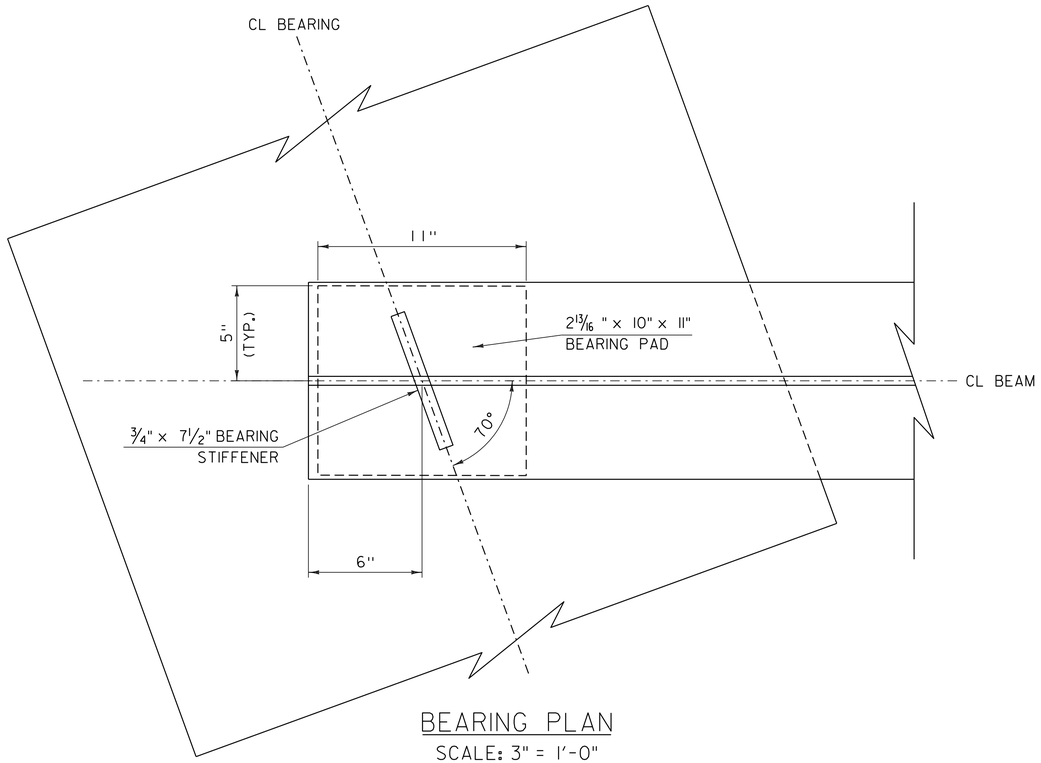
NOTES:

1. SEE STRUCTURES DETAIL SHEET SD-601 FOR DRIP PLATE DETAILS.
2. SEE STRUCTURES DETAIL SHEET SD-602 FOR DIAPHRAGM, CONNECTION PLATE, AND STIFFENER DETAILS.
3. DEAD LOAD DEFLECTION INCLUDES: BEAM, DIAPHRAGMS, DECK & BRIDGE RAIL.
4. CVN - SHALL MEET CHARPY V-NOTCH REQUIREMENTS FOR MAIN MEMBERS AS SPECIFIED IN SECTION 714.

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

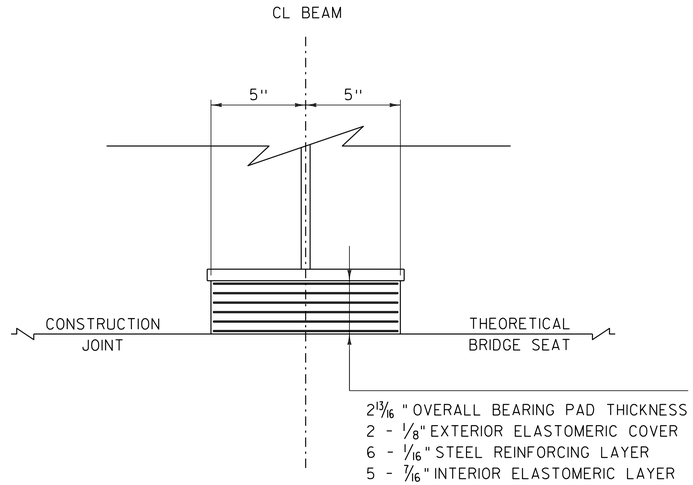
FILE NAME: s10c220sup.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
FRAMING PLAN

PLOT DATE: 13-JAN-2015
DRAWN BY: C. BURRALL
CHECKED BY: H. SALLS
SHEET 21 OF 46



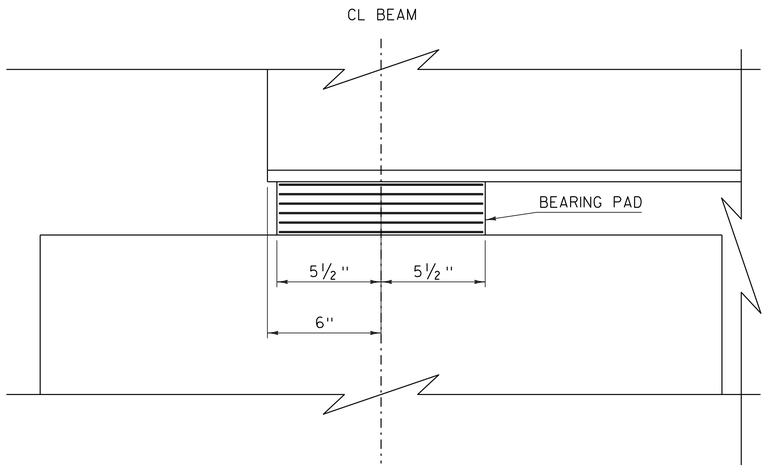
BEARING PLAN

SCALE: 3" = 1'-0"



BEARING SECTION

SCALE: 3" = 1'-0"



BEARING ELEVATION

SCALE: 3" = 1'-0"

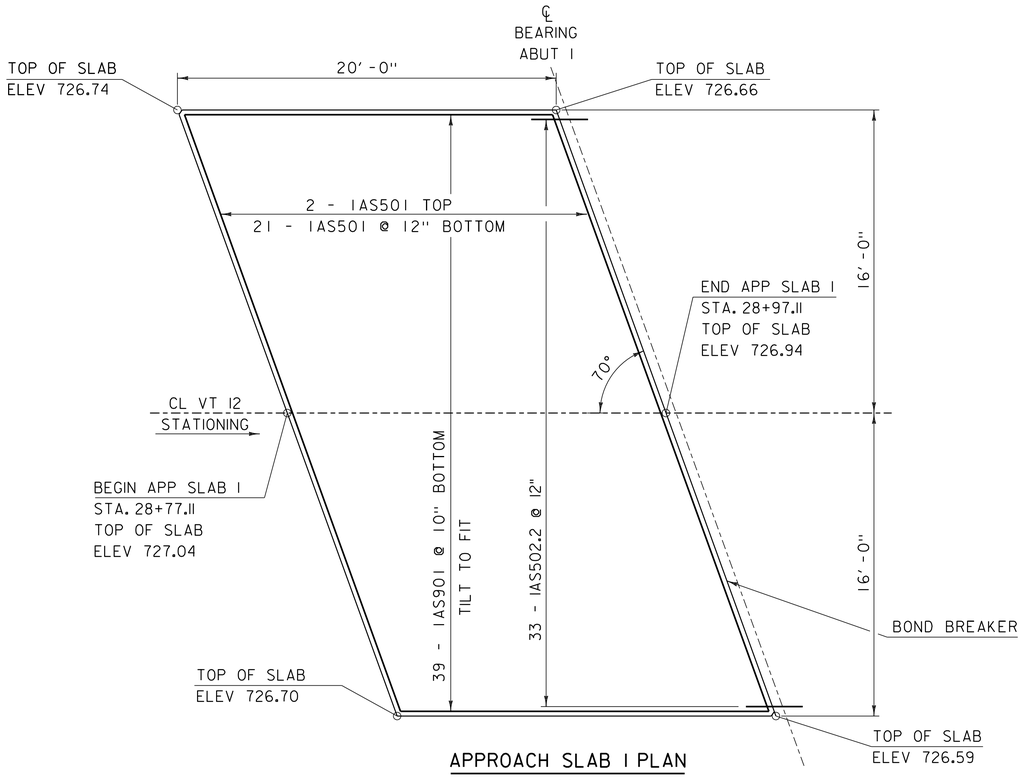
BEARING DEVICE NOTES

1. BEARINGS SHALL BE PAID FOR UNDER ITEM 531.17 "BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD" AND SHALL CONFORM TO APPLICABLE SUBSECTIONS OF SECTIONS 531 AND 731.

2. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMERIC SHALL BE STEEL MEETING ASTM A36. ALL INTERNAL STEEL PLATES SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST, AND MILL SCALE. THE PLATES SHALL BE FREE OF SHARP EDGES AND BURRS.

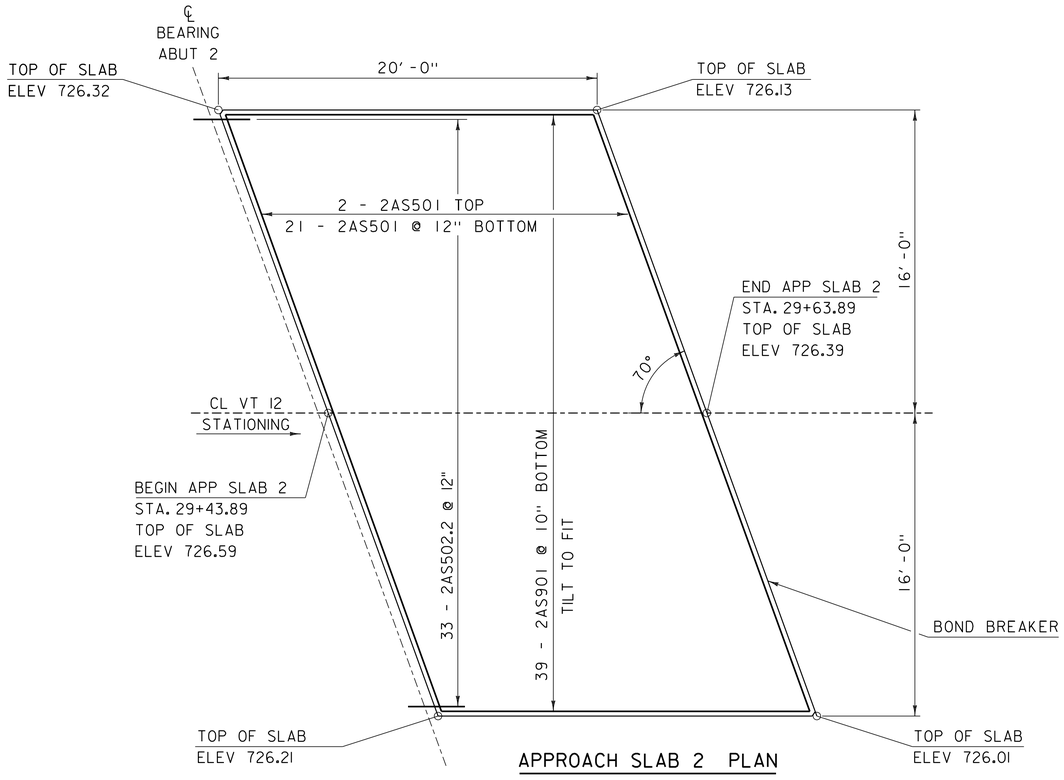
3. STEEL REINFORCED ELASTOMERIC PAD BEARINGS SHALL HAVE A MINIMUM OF 1/8" EDGE SEAL OF ELASTOMER INTEGRAL WITH THE BEARING OVER ALL INTERNAL PLATES.

PROJECT NAME:	MIDDLESEX
PROJECT NUMBER:	BRF 024-1(37)
FILE NAME: sl0c220sup.dgn	PLOT DATE: 13-JAN-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: C. BURRALL
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
BEARING DETAILS	SHEET 22 OF 46



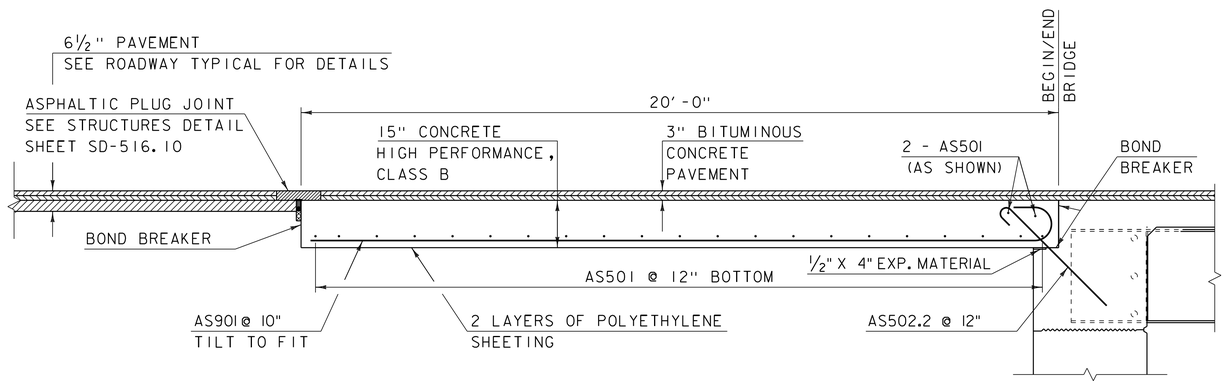
APPROACH SLAB 1 PLAN

SCALE 1/4" = 1'-0"



APPROACH SLAB 2 PLAN

SCALE 1/4" = 1'-0"



APPROACH SLAB DETAIL

SCALE 1/2" = 1'-0"

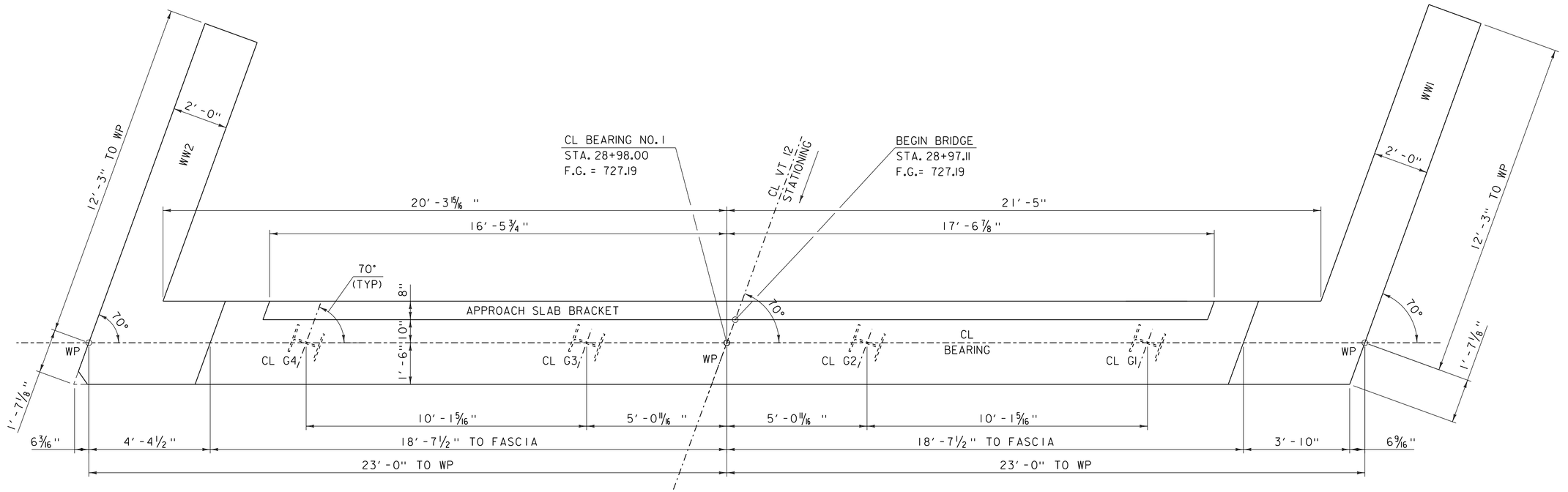
NOTES:

1. COMPACT THE SUBBASE IN THE AREA UNDER THE APPROACH SLAB TO A SMOOTH SURFACE.
2. MATERIAL FOR POLYETHYLENE SHEETING SHALL MEET THE REQUIREMENTS OF SUBSECTION 725.01(c) OF THE STANDARD SPECIFICATIONS. PLACE THE SHEETING ON TOP OF THE FINISHED SUBBASE FOR THE FULL LENGTH AND WIDTH OF THE APPROACH SLAB, AS SHOWN IN THE APPROACH SLAB DETAIL. LAP SHEETING AT LEAST 24 INCHES. PAYMENT INCIDENTAL TO ITEM 501.34 "CONCRETE, HIGH PERFORMANCE CLASS B".
3. POUR APPROACH SLAB CONCRETE IN THE EARLY MORNING BEFORE THE SUPERSTRUCTURE EXPANDS.
4. APPLY 2 COATS TAR EMULSION. PAYMENT INCIDENTAL TO ITEM 501.34 "CONCRETE, HIGH PERFORMANCE CLASS B".

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

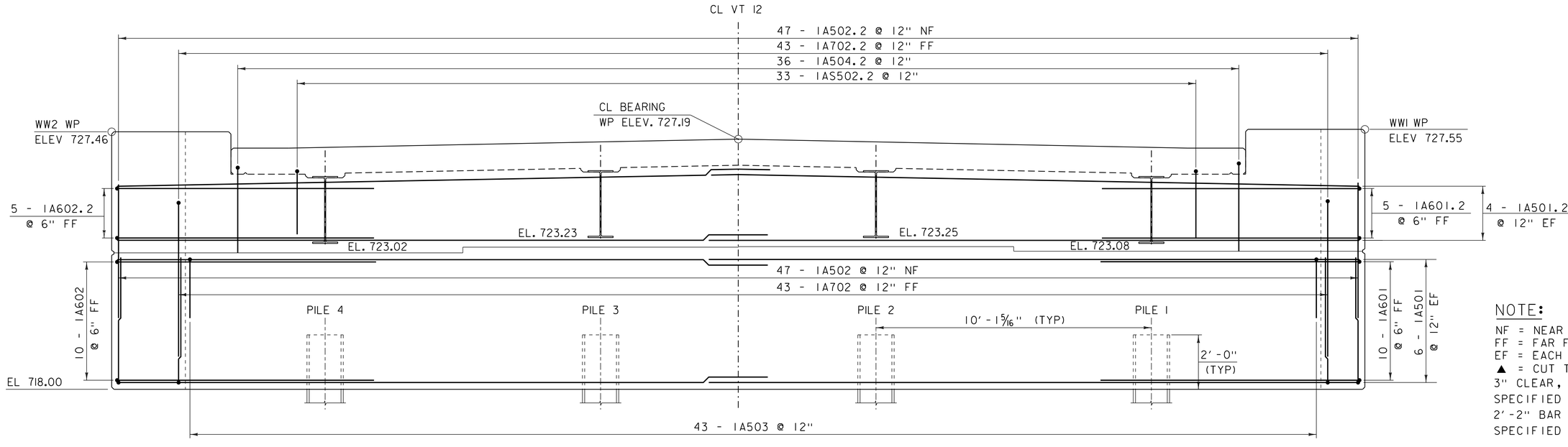
FILE NAME: sl0c220sup.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
APPROACH SLAB DETAILS

PLOT DATE: 13-JAN-2015
DRAWN BY: C. BURRALL
CHECKED BY: H. SALLS
SHEET 23 OF 46



ABUTMENT NO. 1 PLAN

SCALE 1/2"=1'-0"



ABUTMENT NO. 1 ELEVATION

SCALE 1/2"=1'-0"

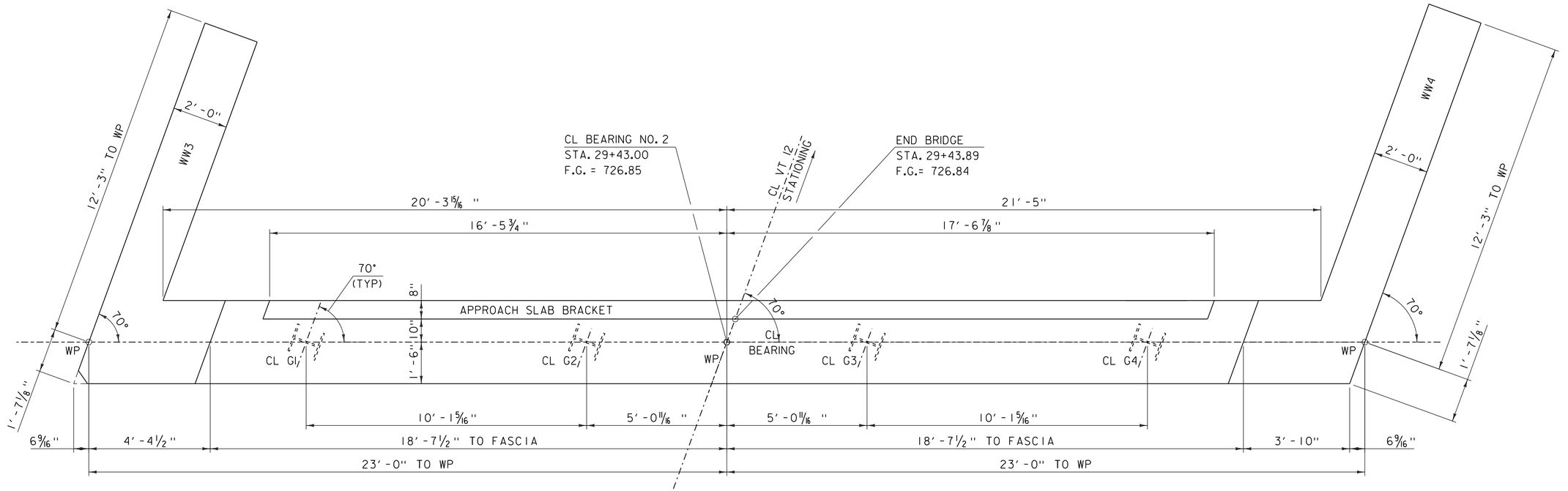
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

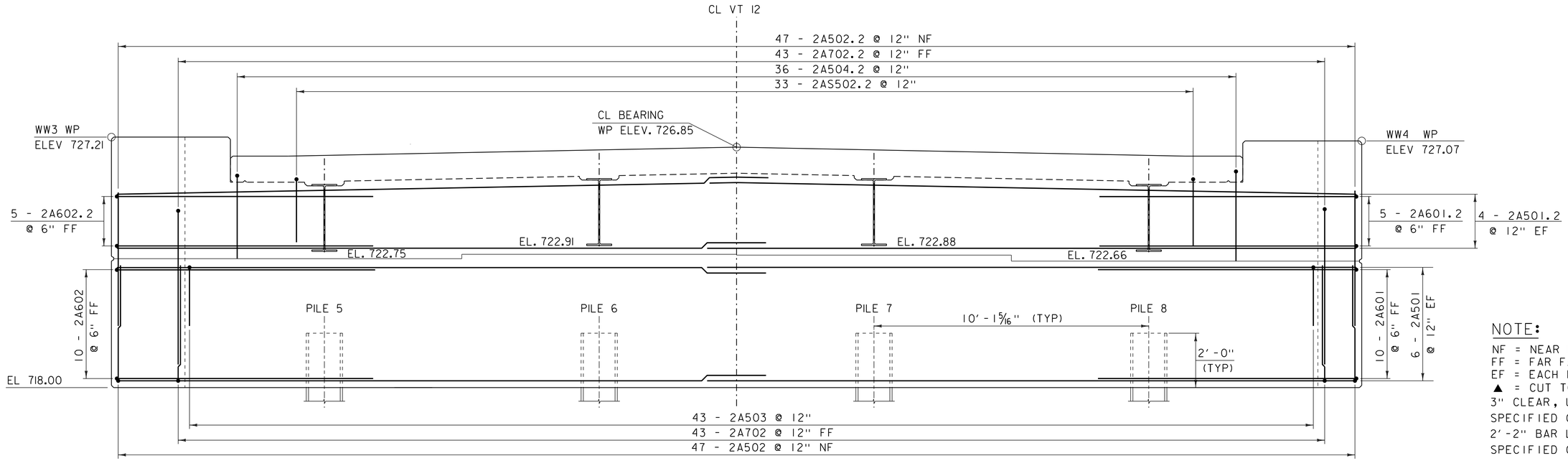
FILE NAME: sl0c220sub.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
ABUTMENT #1 PLAN AND ELEVATION

PLOT DATE: 06-FEB-2015
DRAWN BY: C. BURRALL
CHECKED BY: H. SALLS
SHEET 24 OF 46



ABUTMENT NO. 2 PLAN

SCALE 1/2"=1'-0"



ABUTMENT NO. 2 ELEVATION

SCALE 1/2"=1'-0"

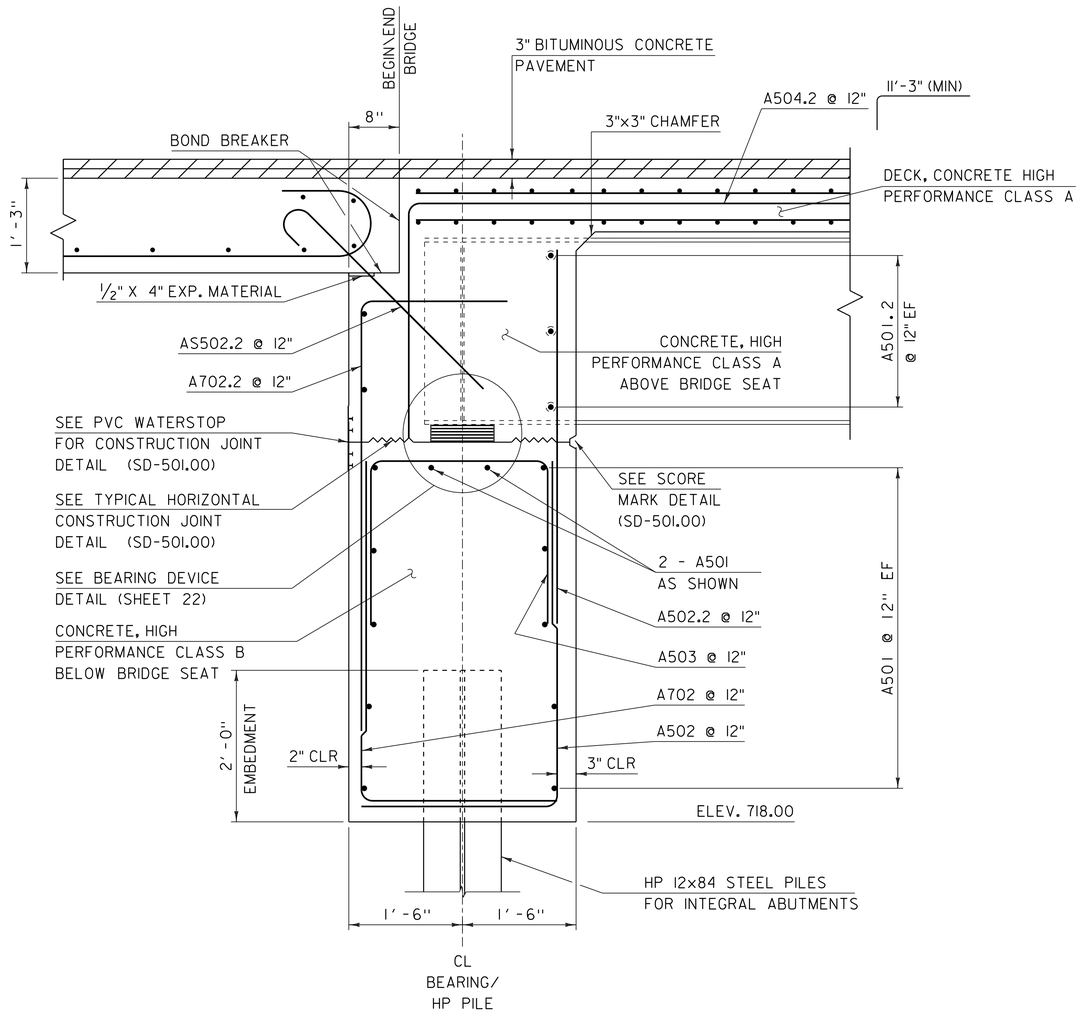
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: s10c220sub.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
ABUTMENT #2 PLAN AND ELEVATION

PLOT DATE: 06-FEB-2015
DRAWN BY: C. BURRALL
CHECKED BY: H. SALLS



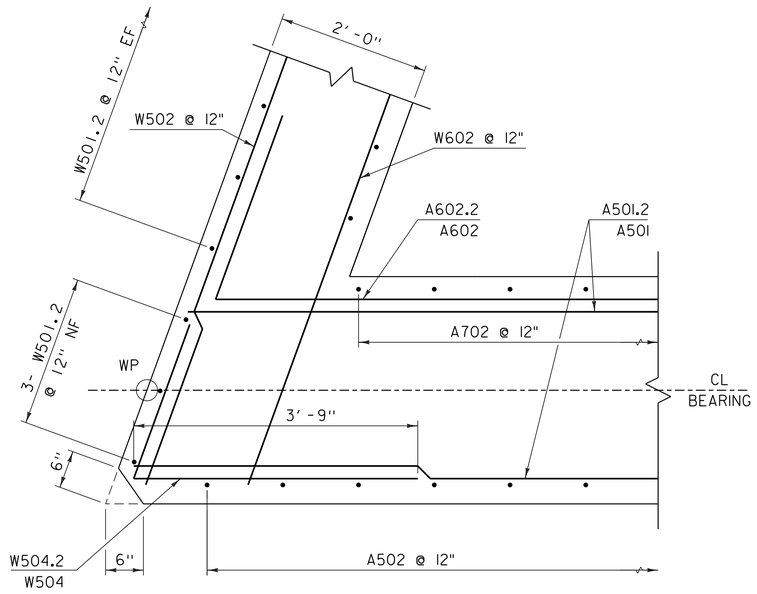
ABUTMENT TYPICAL

SCALE 1"=1'-0"

NOTE:

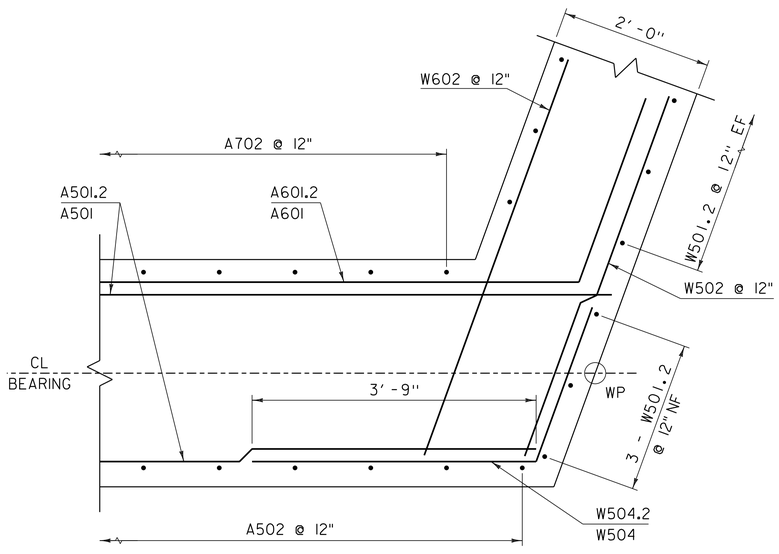
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME:	MIDDLESEX
PROJECT NUMBER:	BRF 024-1(37)
FILE NAME: s10c220sub.dgn	PLOT DATE: 06-FEB-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: C. BURRALL
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
ABUTMENT TYPICAL	SHEET 26 OF 46



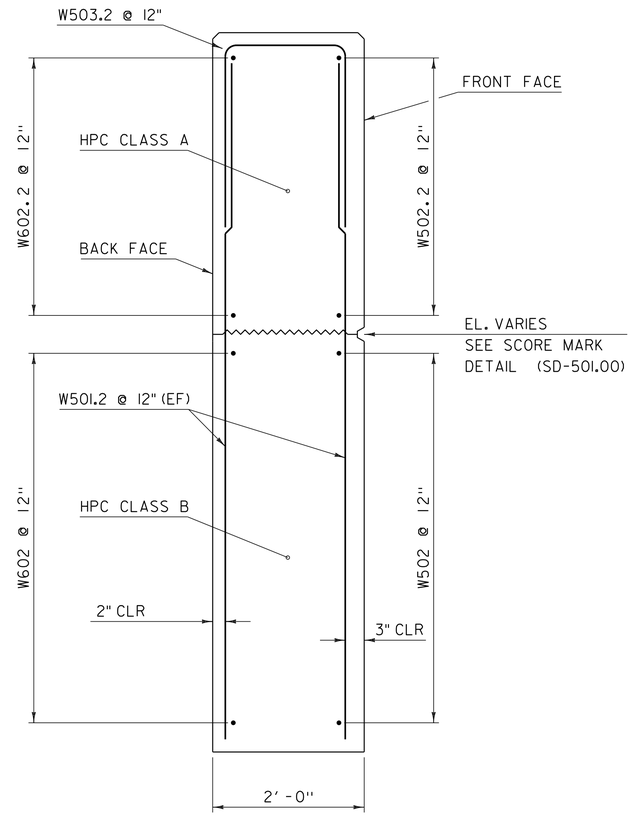
WINGWALLS 2 AND 3 CORNER DETAIL

SCALE 1"=1'-0"



WINGWALLS 1 AND 4 CORNER DETAIL

SCALE 1"=1'-0"



WINGWALL TYPICAL SECTION

SCALE 1"=1'-0"

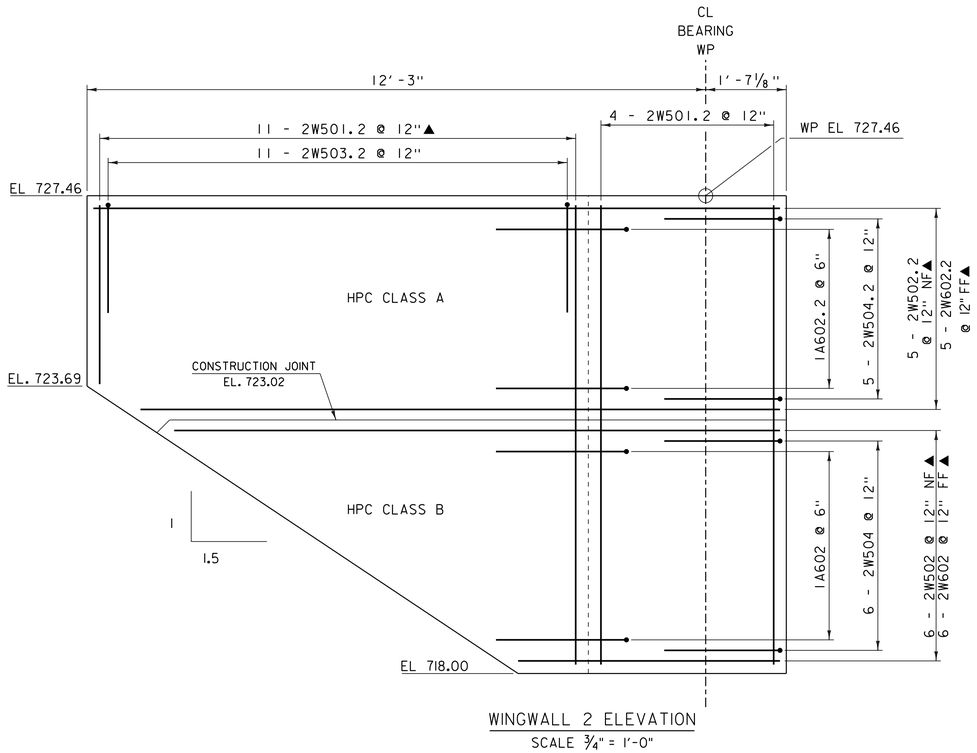
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

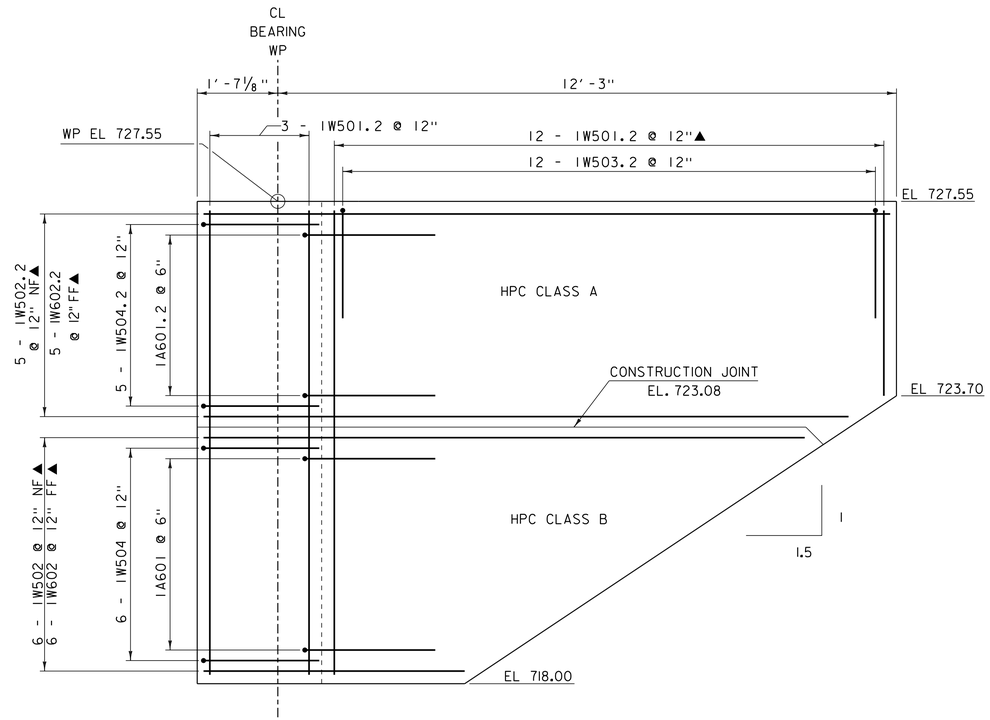
PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: sl0c220sub.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
WINGWALL DETAILS

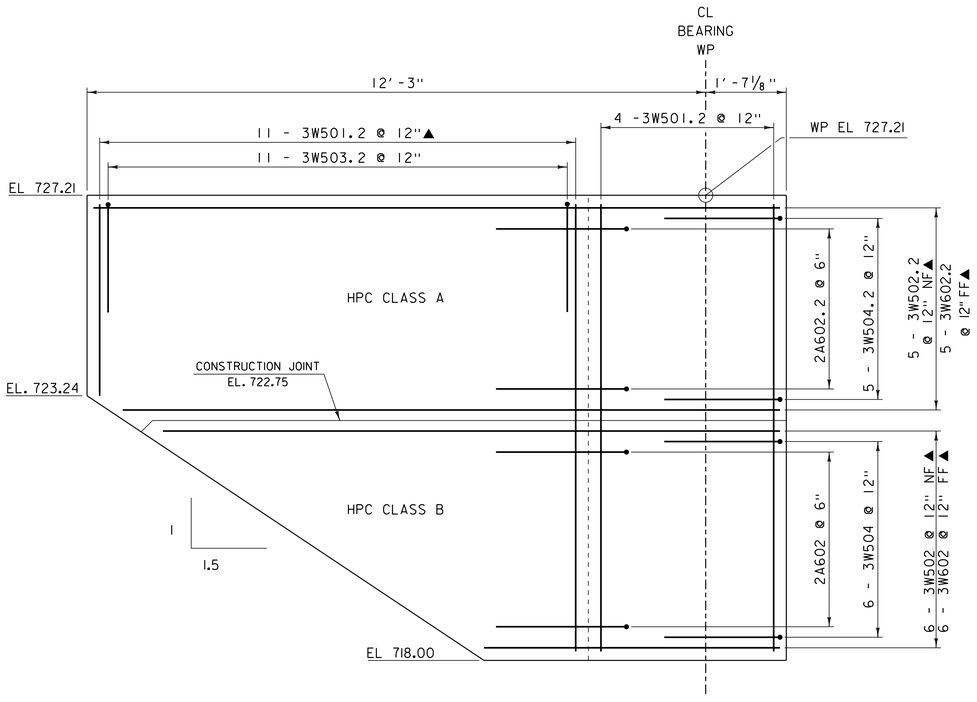
PLOT DATE: 06-FEB-2015
DRAWN BY: C. BURRALL
CHECKED BY: H. SALLS
SHEET 27 OF 46



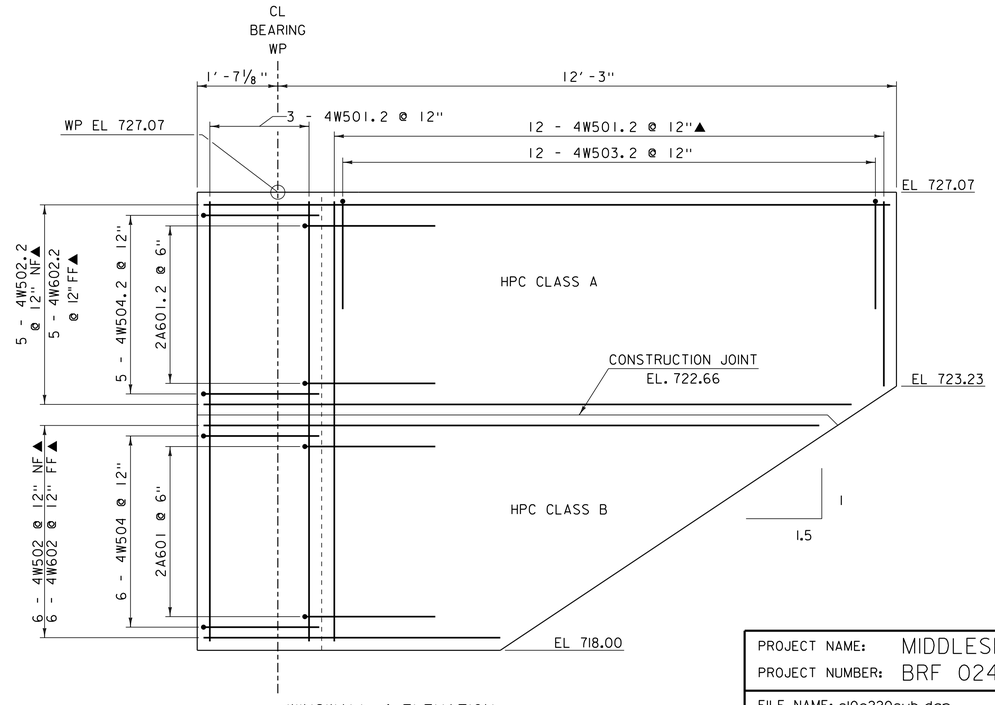
WINGWALL 2 ELEVATION
SCALE ¾" = 1'-0"



WINGWALL 1 ELEVATION
SCALE ¾" = 1'-0"



WINGWALL 3 ELEVATION
SCALE ¾" = 1'-0"



WINGWALL 4 ELEVATION
SCALE ¾" = 1'-0"

NOTE:
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: sl0c220sub.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
WINGWALL ELEVATIONS

PLOT DATE: 06-FEB-2015
DRAWN BY: C. BURRALL
CHECKED BY: H. SALLS
SHEET 28 OF 46

STATE OF VERMONT
AGENCY OF TRANSPORTATION

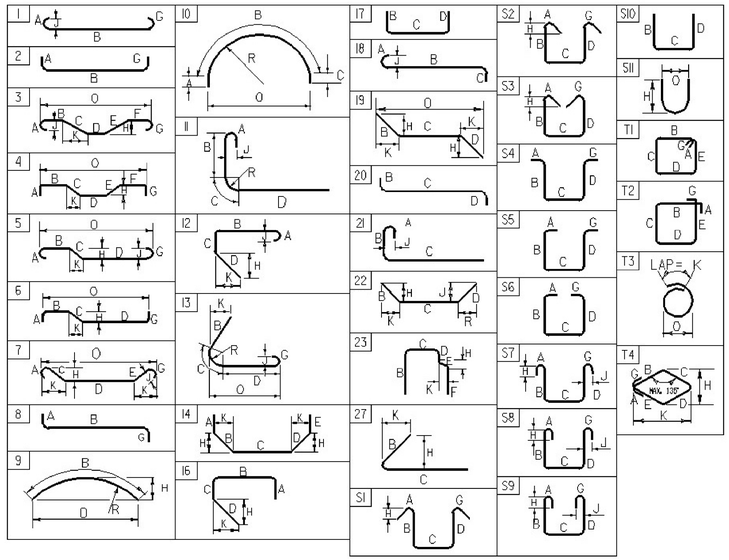
REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
DECK																	
	83	5	36'- 9"	S501.2	STR	36'- 9"											
✳	21	5	23'- 10"	S502.2	STR	23'- 10"											
	72	5	24'- 3"	S503.2	STR	24'- 3"											
	24	5	24'- 3"	S504.2	STR	24'- 3"											
	20	5	24'- 3"	S505.2	STR	24'- 3"											
	136	5	4'- 8"	S506.2	S5	0'- 6"	0'- 13"	1'- 6"	0'- 13"			0'- 6"					
	83	6	36'- 9"	S601.2	STR	36'- 9"											
✳	21	6	24'- 0"	S602.2	STR	24'- 0"											
	60	6	24'- 5"	S603.2	STR	24'- 5"											
APPROACH SLAB 1																	
✳	24	5	33'- 6"	1AS501	STR	33'- 6"											
✳	40	9	20'- 9"	1AS901	1	1'- 3"	19'- 6"					---		0'- 11"			
△	35	5	3'- 9"	1AS502.2	1	0'- 7"	3'- 2"					---		0'- 5"			
APPROACH SLAB 2																	
	23	5	33'- 6"	2AS501	STR	33'- 6"											
	39	9	20'- 9"	2AS901	1	1'- 3"	19'- 6"					---		0'- 11"			
	33	5	3'- 9"	2AS502.2	1	0'- 7"	3'- 2"					---		0'- 5"			
ABUTMENT 1																	
	28	5	23'- 10"	1A501	STR	23'- 10"											
▲	47	5	7'- 4"	1A502	17		2'- 7"	4'- 9"	---								
	43	5	6'- 11"	1A503	S10		2'- 2"	2'- 7"	2'- 2"								
	10	6	12'- 1"	1A601	19		2'- 7"	9'- 6"	---				2'- 5"		0'- 11"		
	10	6	12'- 1"	1A602	27		2'- 7"	9'- 6"					2'- 5"		0'- 11"		
▲	43	7	7'- 4"	1A702	17		2'- 7"	4'- 9"	---								
	16	5	23'- 10"	1A501.2	STR	23'- 10"											
	47	5	4'- 11"	1A502.2	STR	4'- 11"											
	36	5	14'- 5"	1A504.2	2	11'- 3"	3'- 2"					---					
✳	6	6	12'- 1"	1A601.2	19		2'- 7"	9'- 6"	---				2'- 5"		0'- 11"		
	5	6	12'- 1"	1A602.2	27		2'- 7"	9'- 6"					2'- 5"		0'- 11"		
✳	44	7	7'- 11"	1A702.2	17		2'- 2"	5'- 9"	---								
WINGWALL 1																	
✳ ▲	7	5	13'- 4"	1W502	STR	13'- 4"											
	6	5	5'- 11"	1W504	19		2'- 2"	3'- 9"	---				2'- 0"		0'- 9"		
✳ ▲	7	6	13'- 4"	1W602	STR	13'- 4"											
✳ ▲	16	5	9'- 0"	1W501.2	STR	9'- 0"											
▲	5	5	13'- 4"	1W502.2	STR	13'- 4"											
	12	5	5'- 11"	1W503.2	S10		2'- 2"	1'- 7"	2'- 2"								
	5	5	5'- 11"	1W504.2	19		2'- 2"	3'- 9"	---				2'- 0"		0'- 9"		
▲	5	6	13'- 4"	1W602.2	STR	13'- 4"											
WINGWALL 2																	
▲	6	5	13'- 4"	2W502	STR	13'- 4"											
	6	5	5'- 11"	2W504	27		2'- 2"	3'- 9"					2'- 0"		0'- 9"		
▲	6	6	13'- 4"	2W602	STR	13'- 4"											
▲	15	5	9'- 0"	2W501.2	STR	9'- 0"											
▲	5	5	13'- 4"	2W502.2	STR	13'- 4"											
	11	5	5'- 11"	2W503.2	S10		2'- 2"	1'- 7"	2'- 2"								
	5	5	5'- 11"	2W504.2	27		2'- 2"	3'- 9"					2'- 0"		0'- 9"		
▲	5	6	13'- 4"	2W602.2	STR	13'- 4"											

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
ABUTMENT 2																	
	28	5	23'- 10"	2A501	STR	23'- 10"											
▲	47	5	7'- 0"	2A502	17		2'- 7"	4'- 5"	---								
	43	5	6'- 11"	2A503	S10		2'- 2"	2'- 7"	2'- 2"								
	10	6	12'- 1"	2A601	19		2'- 7"	9'- 6"	---						2'- 5"		0'- 11"
	10	6	12'- 1"	2A602	27		2'- 7"	9'- 6"							2'- 5"		0'- 11"
▲	43	7	7'- 0"	2A702	17		2'- 7"	4'- 5"	---								
	16	5	23'- 10"	2A501.2	STR	23'- 10"											
	47	5	4'- 11"	2A502.2	STR	4'- 11"											
	36	5	14'- 5"	2A504.2	2	11'- 3"	3'- 2"					---					
✳	6	6	12'- 1"	2A601.2	19		2'- 7"	9'- 6"	---						2'- 5"		0'- 11"
	5	6	12'- 1"	2A602.2	27		2'- 7"	9'- 6"							2'- 5"		0'- 11"
✳	44	7	7'- 11"	2A702.2	17		2'- 2"	5'- 9"	---								
WINGWALL 3																	
✳ ▲	7	5	13'- 4"	3W502	STR	13'- 4"											
	6	5	5'- 11"	3W504	27		2'- 2"	3'- 9"							2'- 0"		0'- 9"
✳ ▲	7	6	13'- 4"	3W602	STR	13'- 4"											
✳ ▲	16	5	8'- 9"	3W501.2	STR	8'- 9"											
▲	5	5	13'- 4"	3W502.2	STR	13'- 4"											
	11	5	5'- 11"	3W503.2	S10		2'- 2"	1'- 7"	2'- 2"								
	5	5	5'- 11"	3W504.2	27		2'- 2"	3'- 9"							2'- 0"		0'- 9"
▲	5	6	13'- 4"	3W602.2	STR	13'- 4"											
WINGWALL 4																	
▲	6	5	13'- 4"	4W502	STR	13'- 4"											
	6	5	5'- 11"	4W504	19		2'- 2"	3'- 9"	---						2'- 0"		0'- 9"
▲	6	6	13'- 4"	4W602	STR	13'- 4"											
▲	15	5	8'- 7"	4W501.2	STR	8'- 7"											
▲	5	5	13'- 4"	4W502.2	STR	13'- 4"											
	11	5	5'- 11"	4W503.2	S10		2'- 2"	1'- 7"	2'- 2"								
	5	5	5'- 11"	4W504.2	19		2'- 2"	3'- 9"	---						2'- 0"		0'- 9"
▲	5	6	13'- 4"	4W602.2	STR	13'- 4"											

~ 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-SI). 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 WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS-ROUND SECTION DIAMETER INCHES	AREA SQUARE 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	2.04	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.14
#9	3.400	1.13	1.00	3.54
#10	4.3	1.270	1.27	3.990
#11	5.31	1.410	1.56	4.430
#14	7.65	1.69	2.25	5.32
#18	13.60	2.26	4.00	7.09

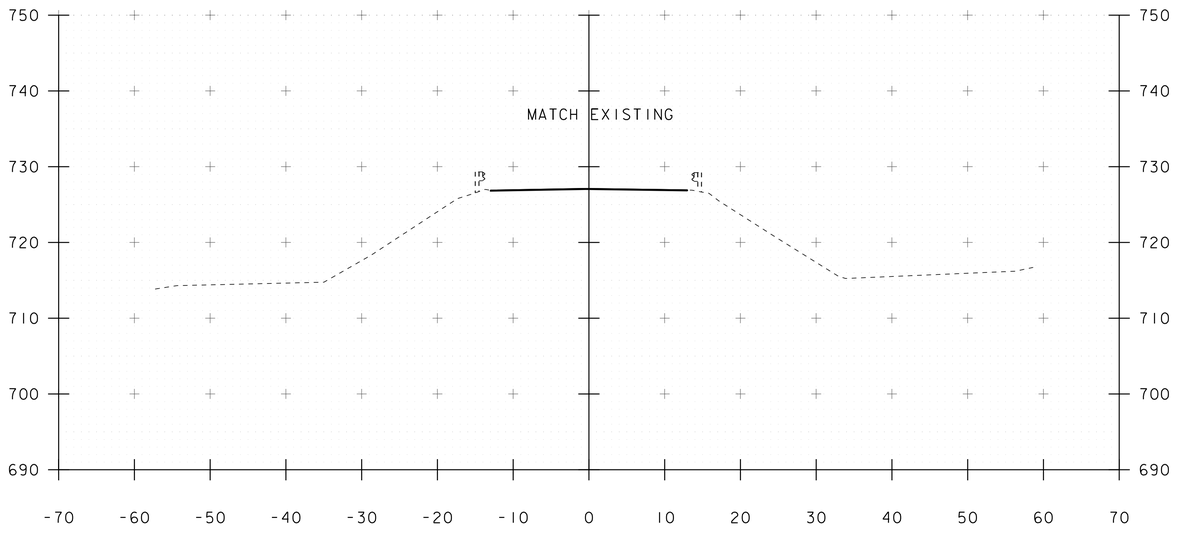
~ REINFORCING STEEL CORROSION RESISTANCE LEVEL ~

THE REINFORCING STEEL MARKS IN THIS SCHEDULE INDICATE THE REQUIRED BAR CORROSION RESISTANCE LEVEL. CORROSION RESISTANCE LEVEL IS DENOTED WITH A ,2 FOR LEVEL TWO SUFFIX OR ,3 FOR LEVEL THREE SUFFIX ,1 FOR LEVEL ONE IS TO BE OMITTED. THE BAR MATERIAL TYPE AND BAR STEEL GRADE PROVIDED FOR EACH CORROSION LEVEL WILL BE RECORDED ON THE PLAN SET PI SHEET FOR AS-BUILT RECORD PLAN ARCHIVES.

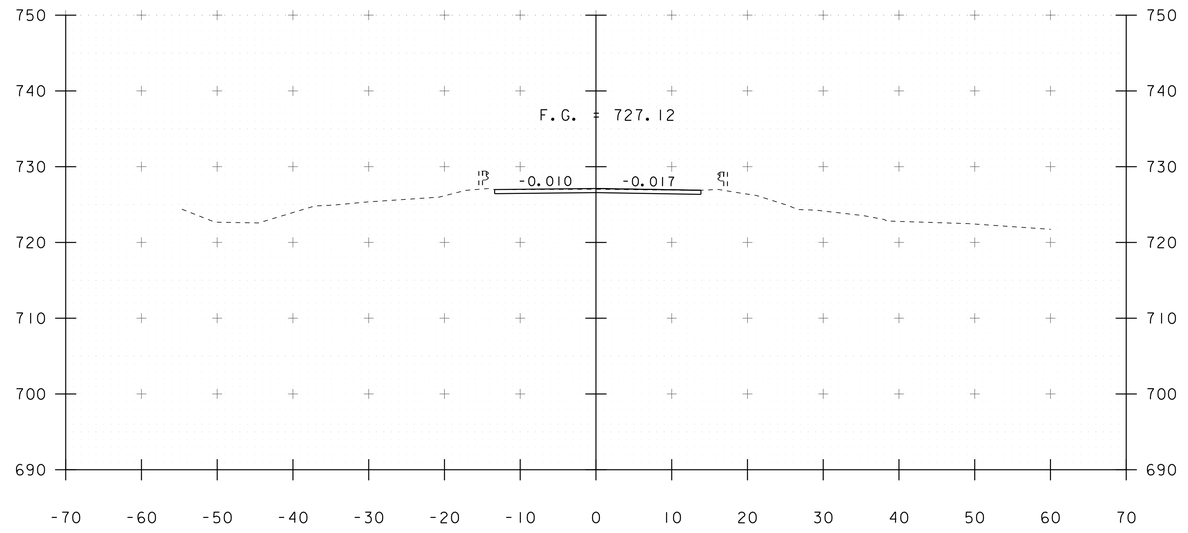
PROJECT NAME: **MIDDLESEX**
PROJECT NUMBER: **BRF 024-1(37)**

FILE NAME: **s10c220rss.xls**
PROJECT MANAGER: **C. CARLSON**
DESIGNED BY: **H. SALLS**
REINFORCING STEEL SCHEDULE

PLOT DATE: **1/13/2015**
DRAWN BY: **C. BURRALL**
CHECKED BY: **H. SALLS**
SHEET 29 OF 46



26+75
BEGIN APPROACH



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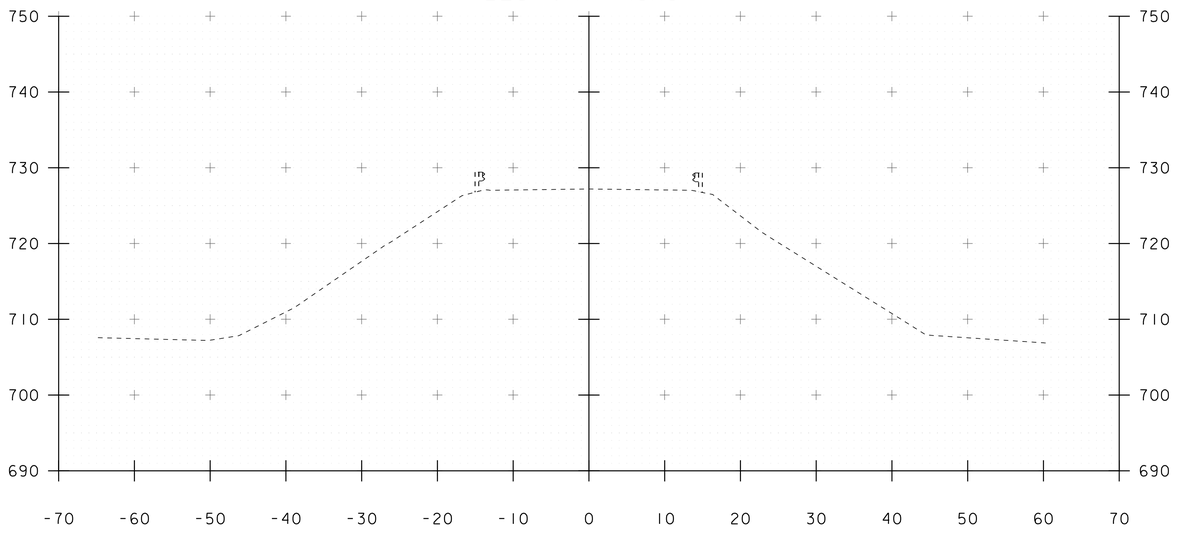

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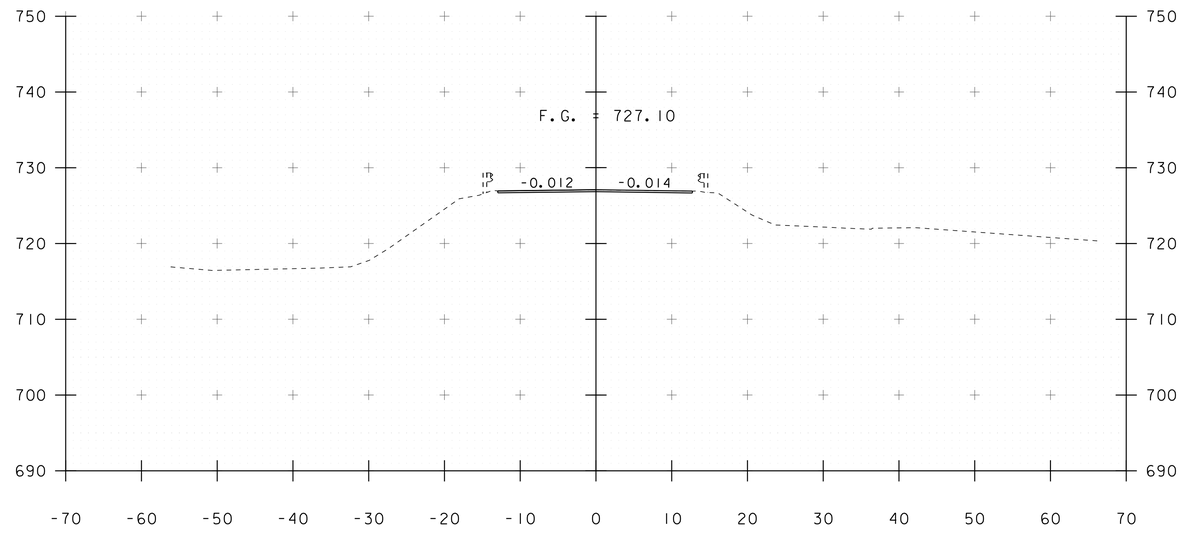
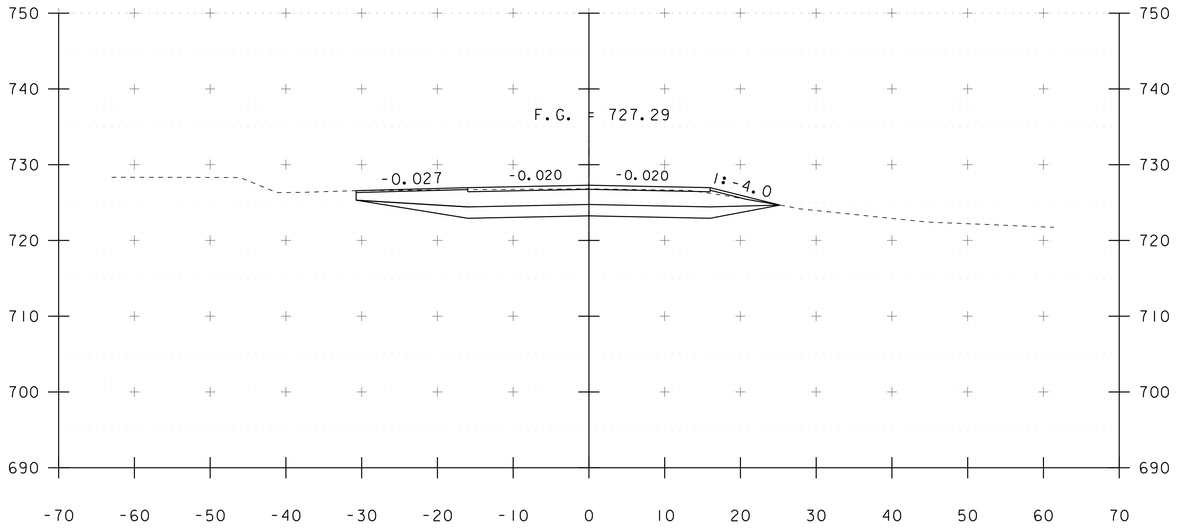


27+00

STA. 26+50 TO STA. 27+25

PROJECT NAME: MIDDLESEX	
PROJECT NUMBER: BRF 024-1(37)	
FILE NAME: s10c220xs.dgn	PLOT DATE: 13-JAN-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
VT 12 CROSS SECTIONS 1	SHEET 30 OF 46



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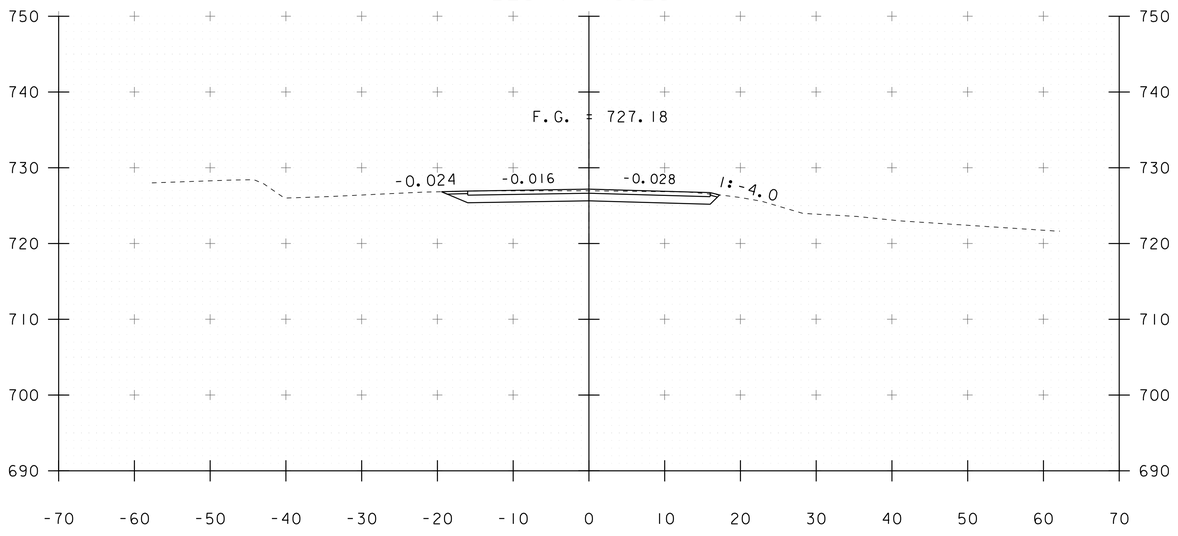

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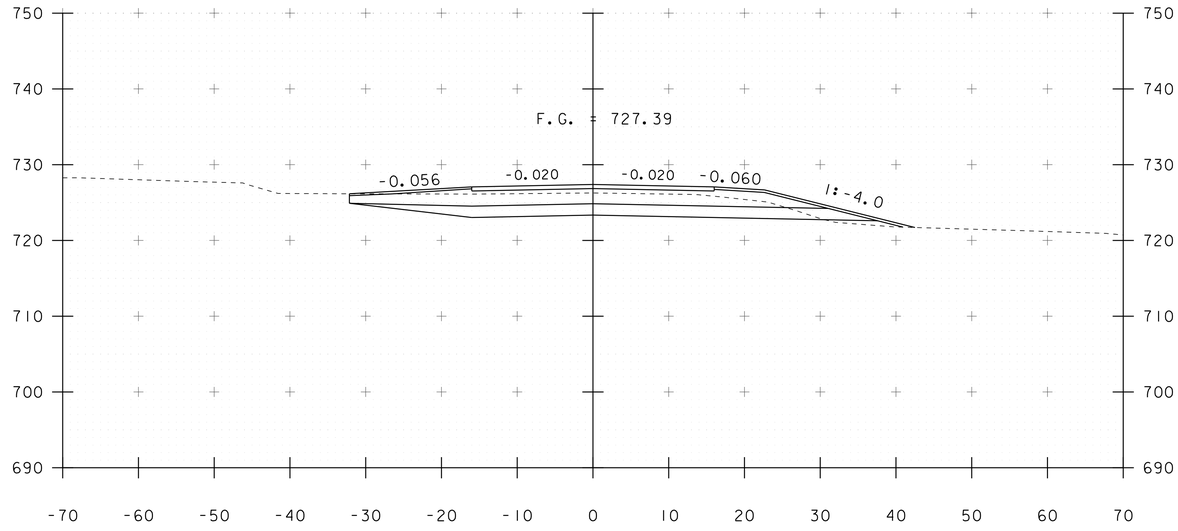
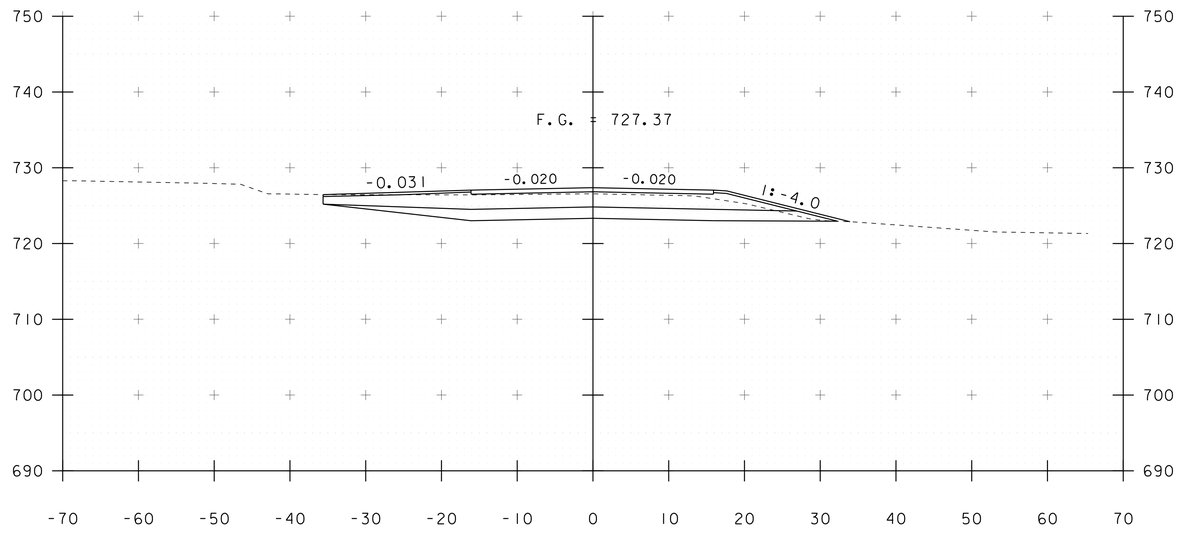


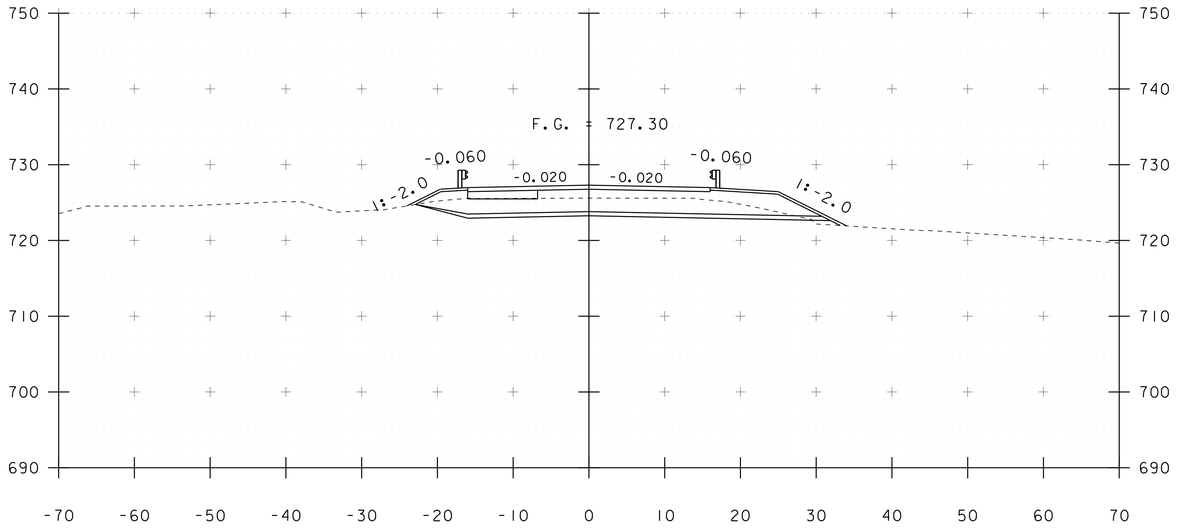
28+25



28+00

STA. 27+50 TO STA. 28+25

PROJECT NAME: MIDDLESEX	
PROJECT NUMBER: BRF 024-1(37)	
FILE NAME: s10c220xs.dgn	PLOT DATE: 13-JAN-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
VT 12 CROSS SECTIONS 2	SHEET 31 OF 46



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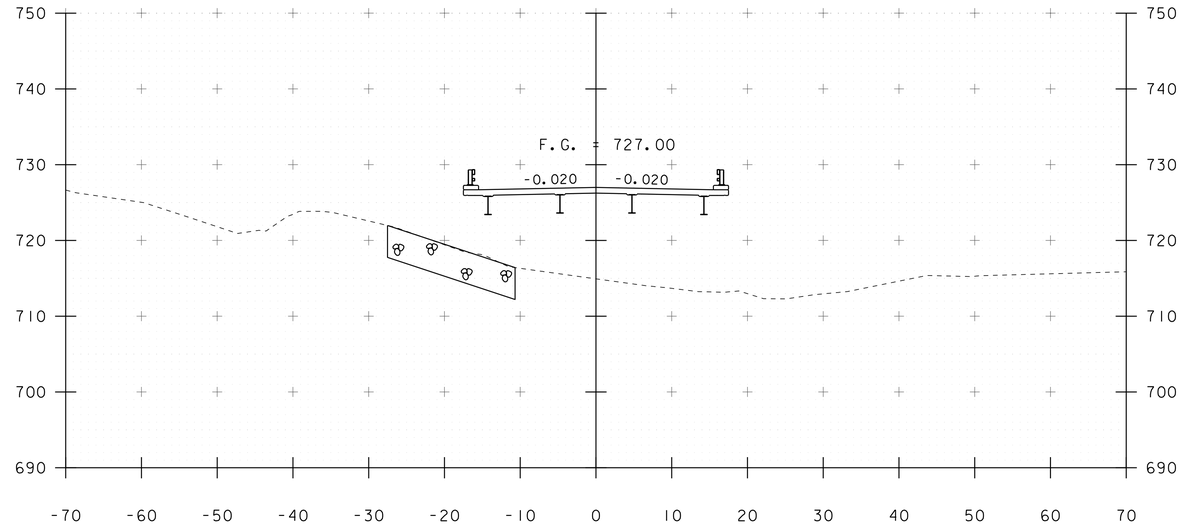
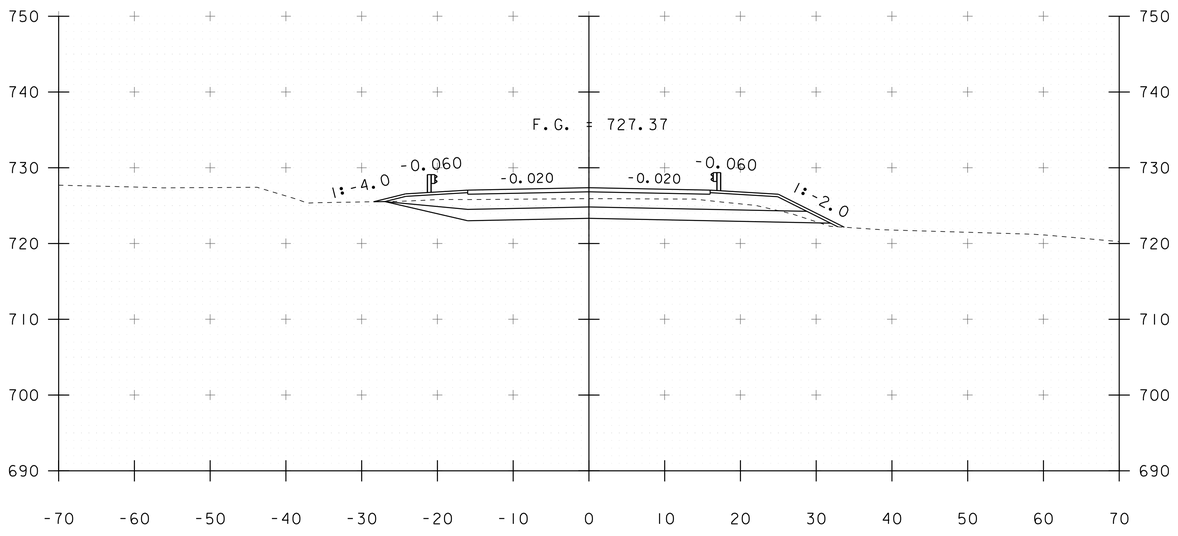


29+25



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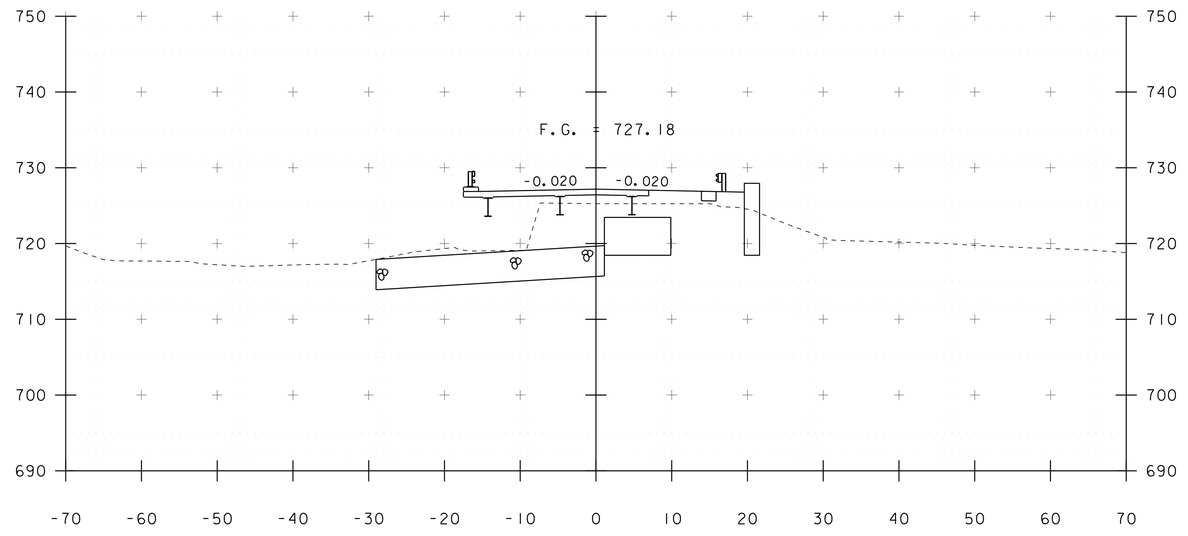


29+00

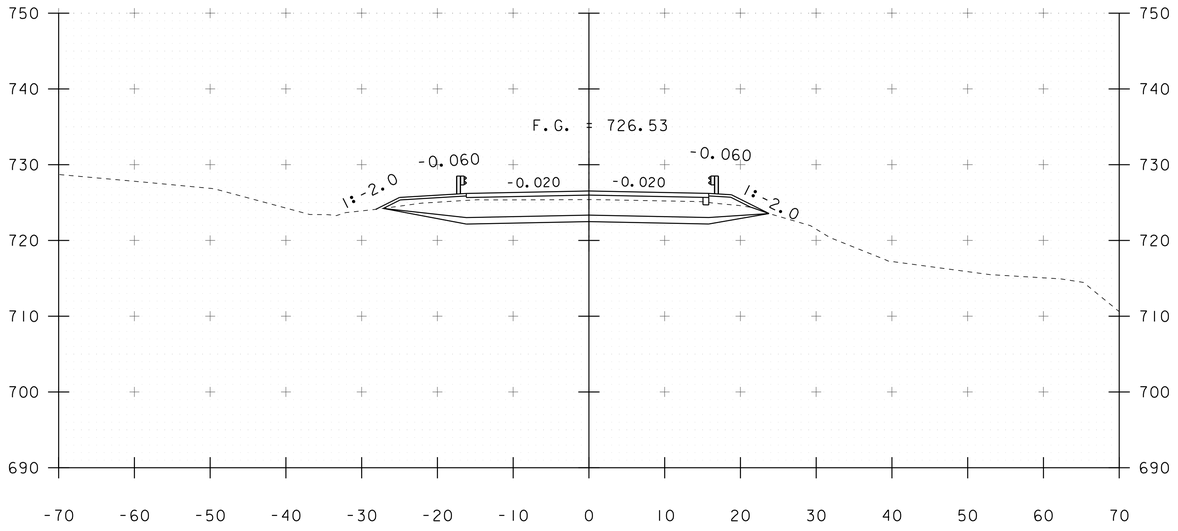
BEGIN BRIDGE STA 28+97.11

STA. 28+50 TO STA. 29+25

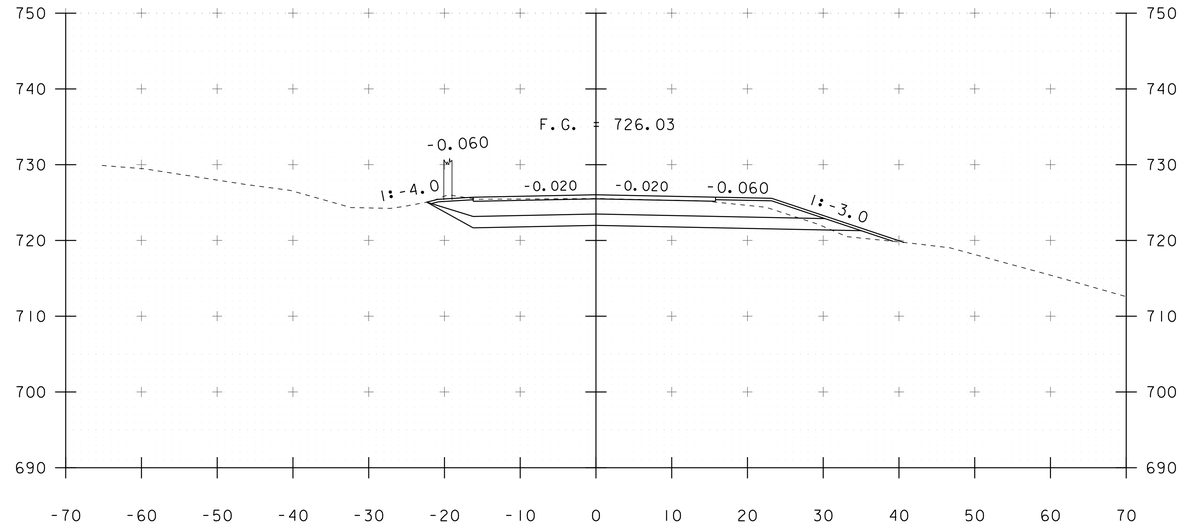
PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: s10c220xs.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
VT 12 CROSS SECTIONS 3

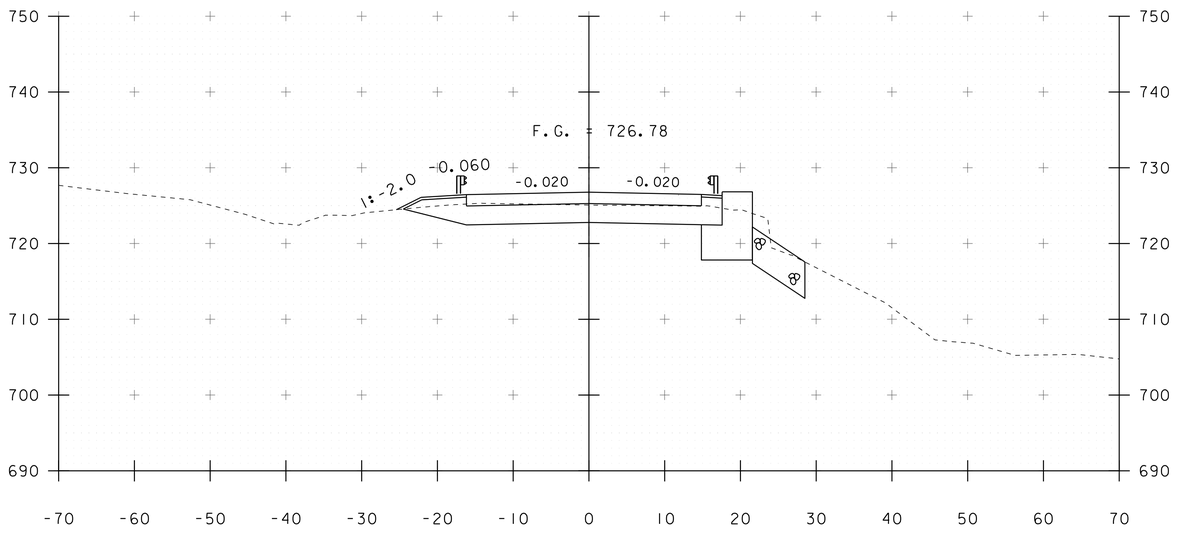
PLOT DATE: 13-JAN-2015
DRAWN BY: R. PELLETT
CHECKED BY: H. SALLS



29+75

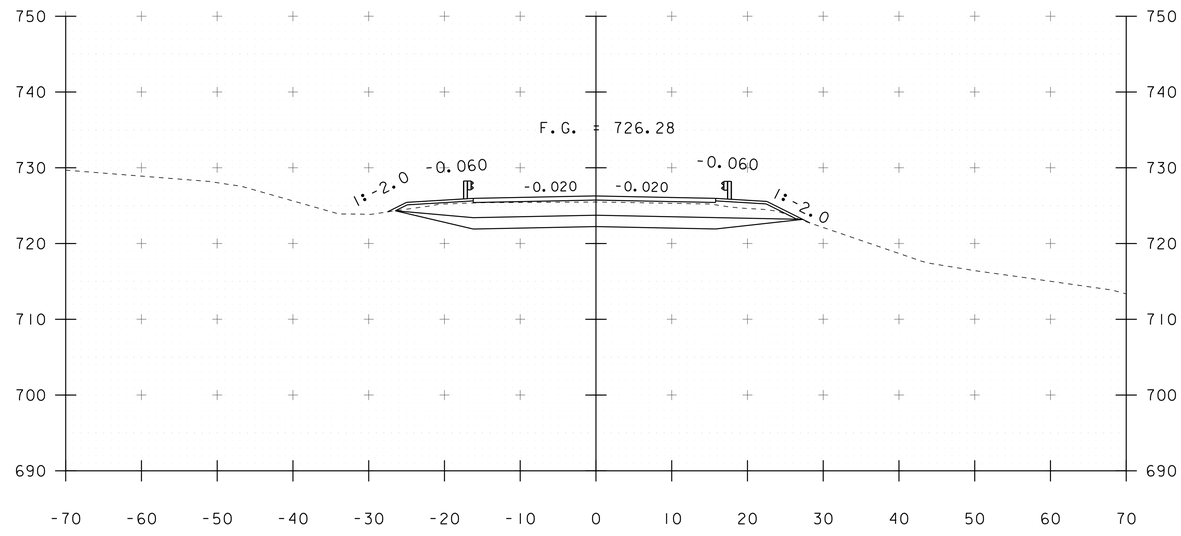


30+25



29+50

END BRIDGE STA 29+43.89



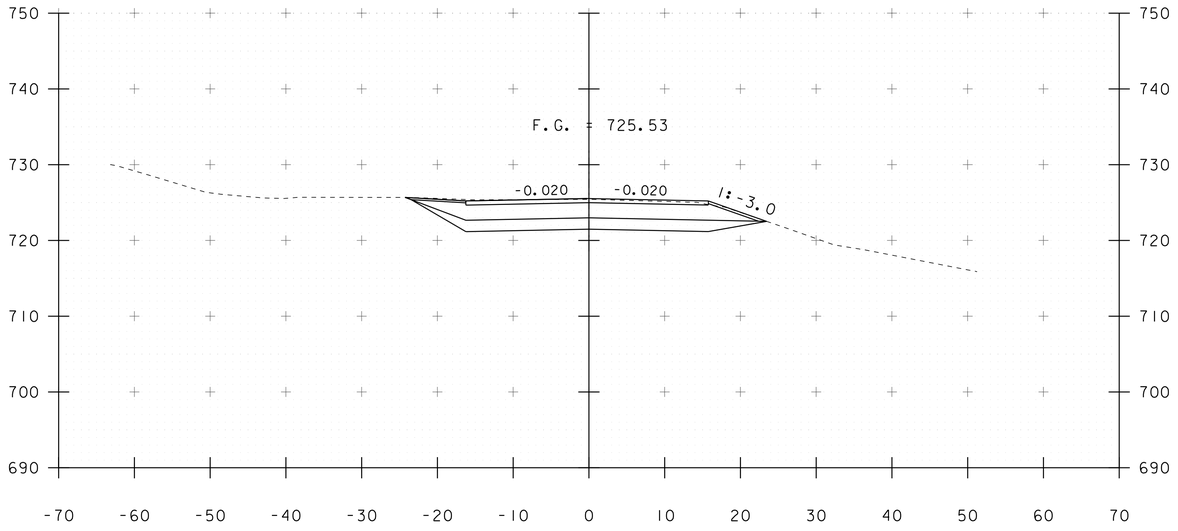
30+00

STA. 29+50 TO STA. 30+25

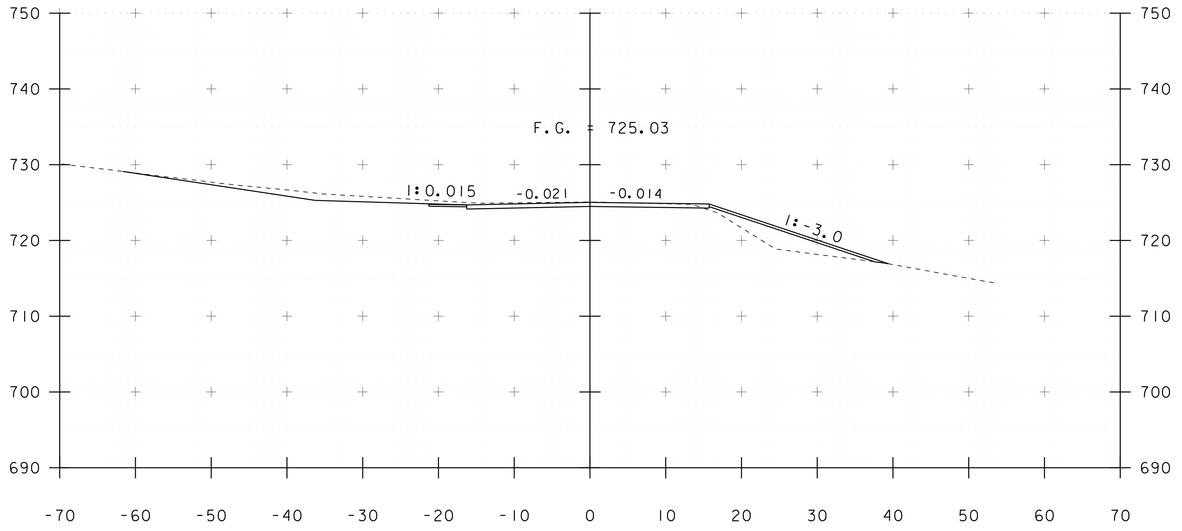
PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: s10c220xs.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
VT 12 CROSS SECTIONS 4

PLOT DATE: 13-JAN-2015
DRAWN BY: R. PELLETT
CHECKED BY: H. SALLS
SHEET 33 OF 46



30+75
END PROJECT



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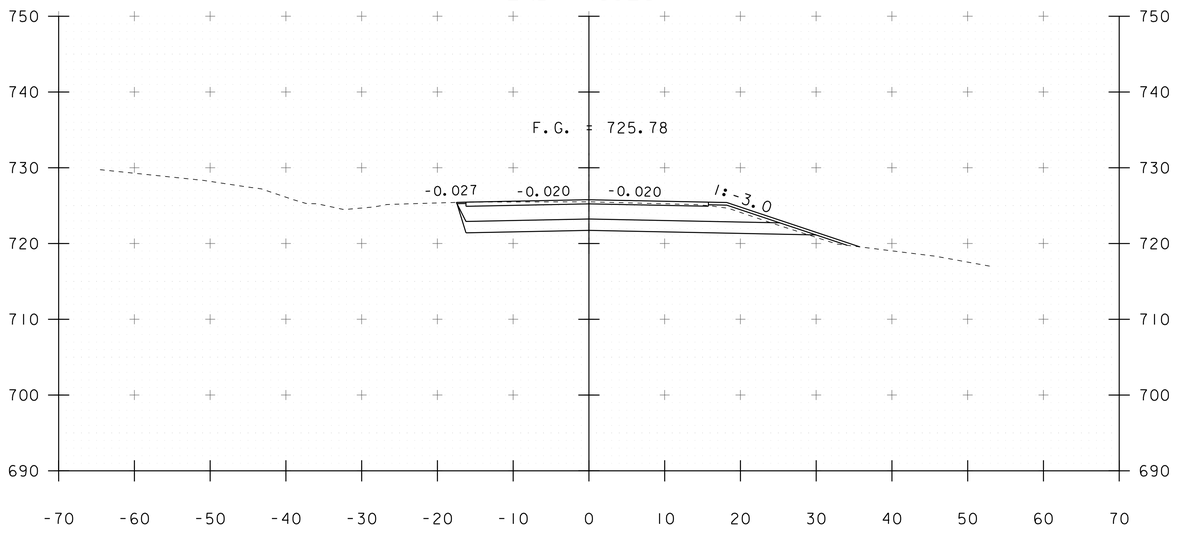
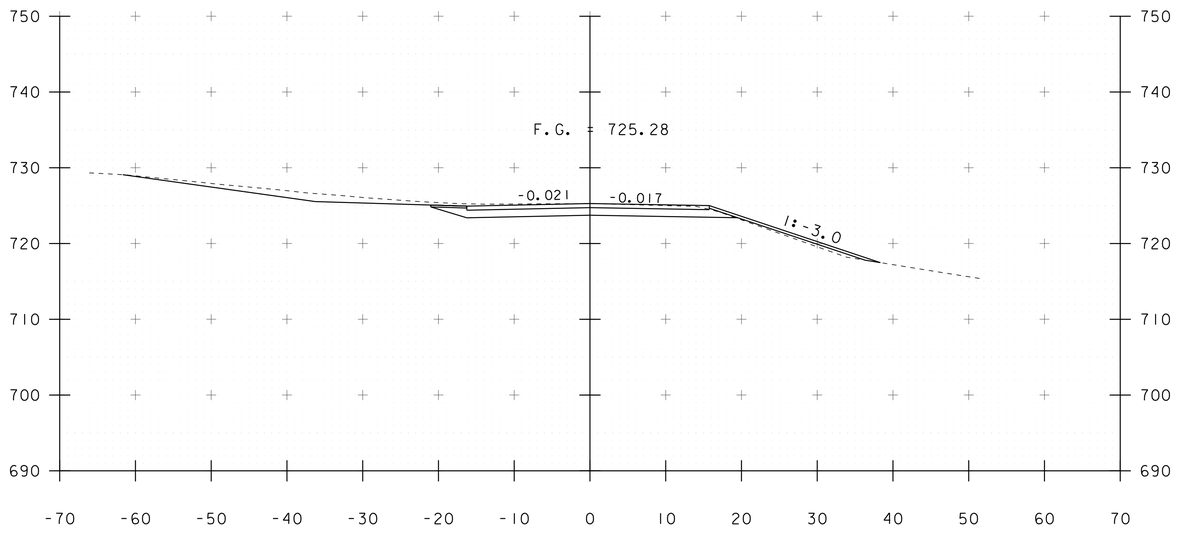


30+50



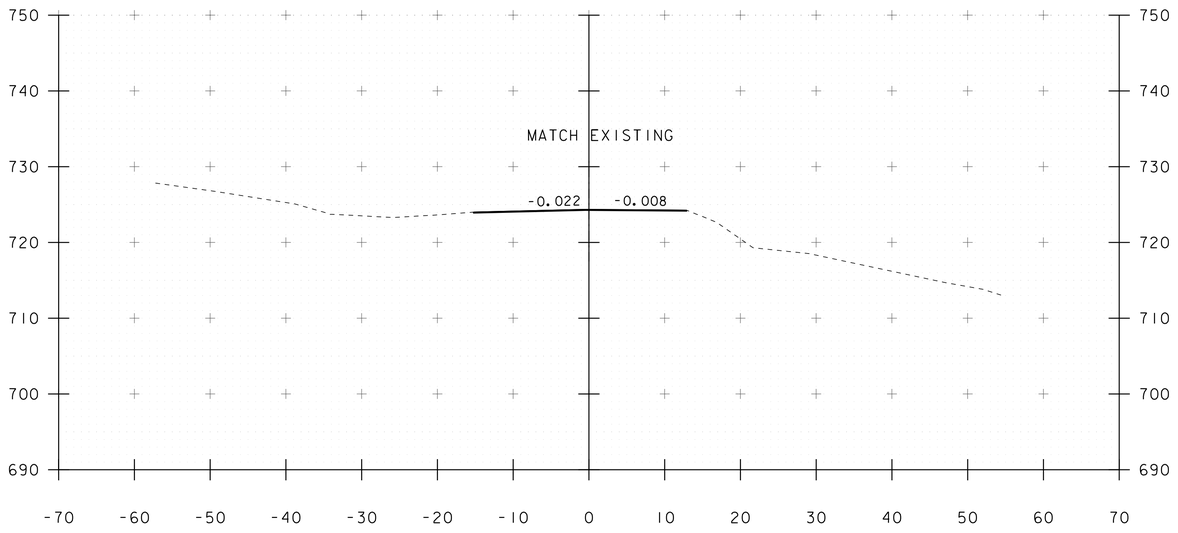
31+00

STA. 30+50 TO STA. 31+25

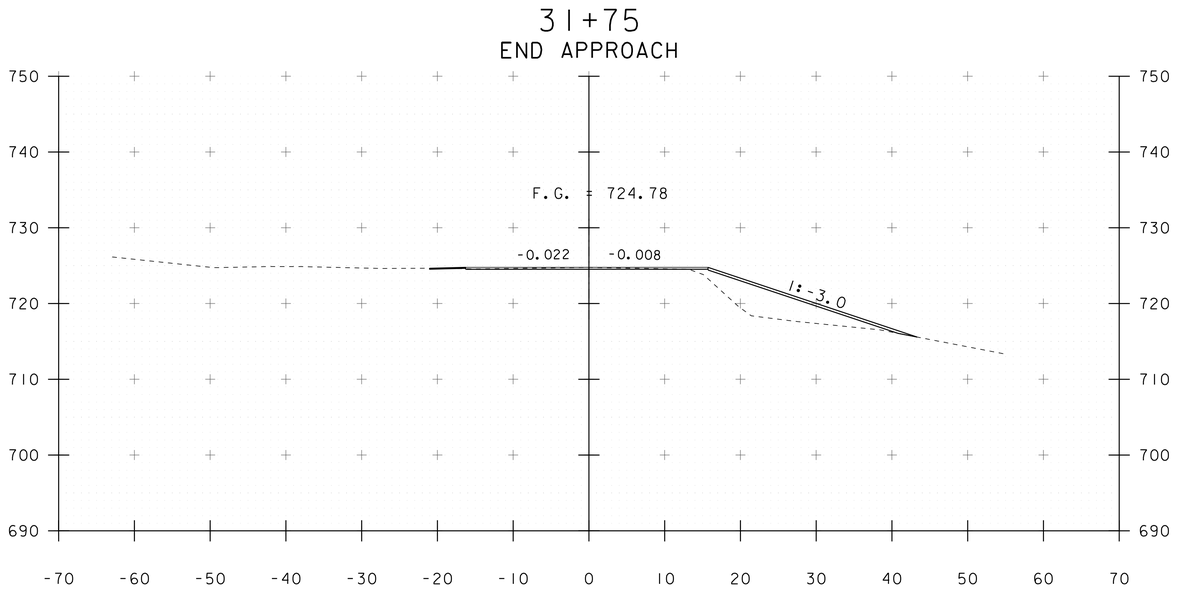
PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: s10c220xs.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
VT 12 CROSS SECTIONS 5

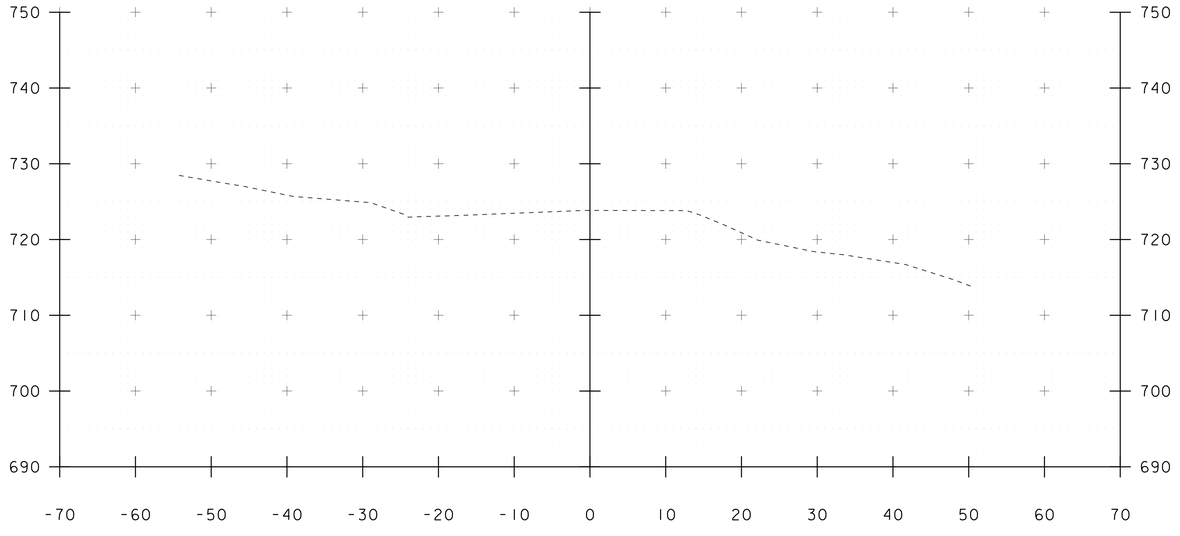
PLOT DATE: 13-JAN-2015
DRAWN BY: R. PELLETT
CHECKED BY: H. SALLS
SHEET 34 OF 46



31+75
END APPROACH



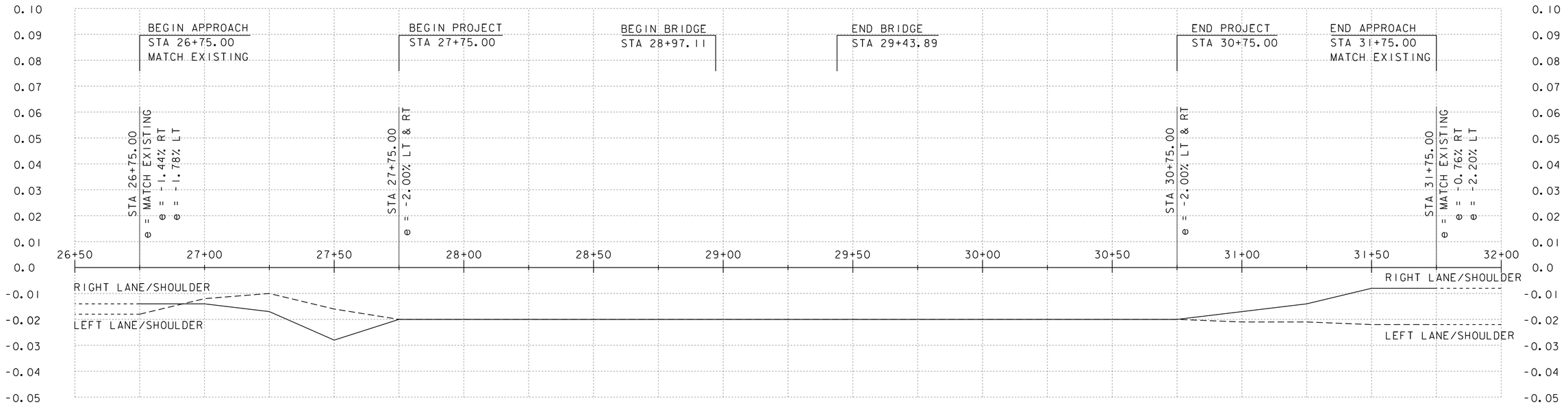
31+50



32+00

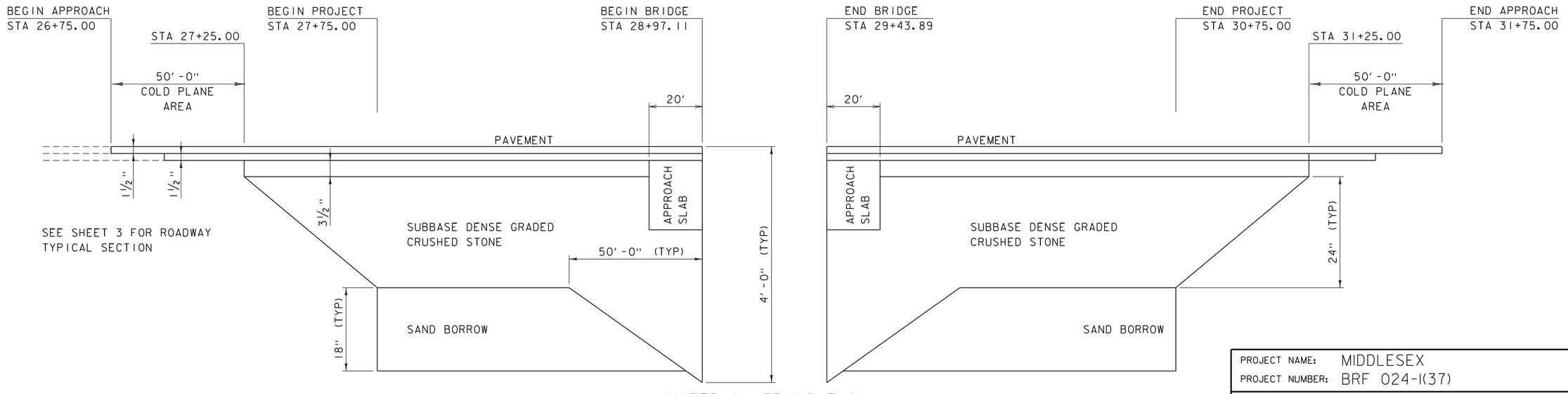
STA. 31+50 TO STA. 32+00

PROJECT NAME:	MIDDLESEX
PROJECT NUMBER:	BRF 024-1(37)
FILE NAME: sl0c220xs.dgn	PLOT DATE: 13-JAN-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
VT 12 CROSS SECTIONS 6	SHEET 35 OF 46



BANKING DIAGRAM

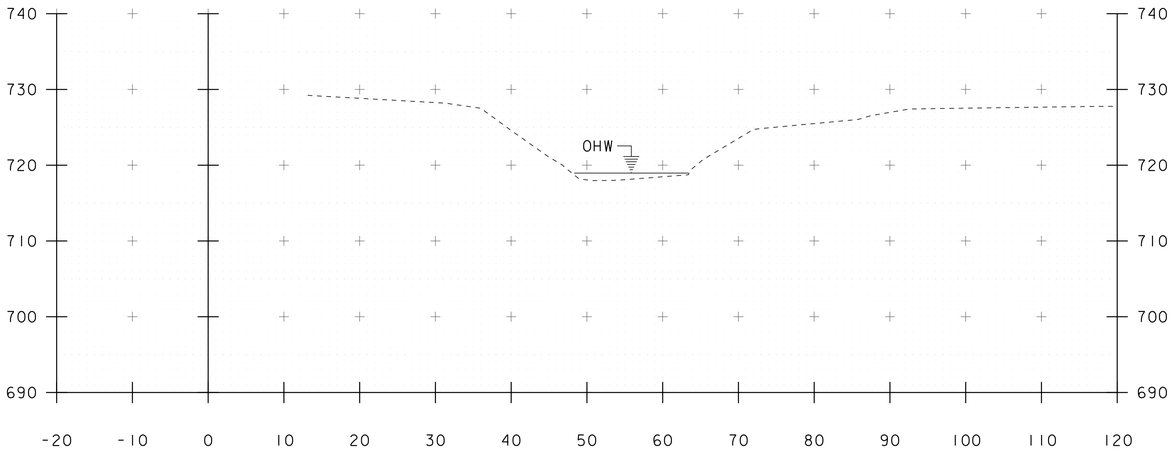
HOR. SCALE 1" = 20'-0"
NO VERT. SCALE



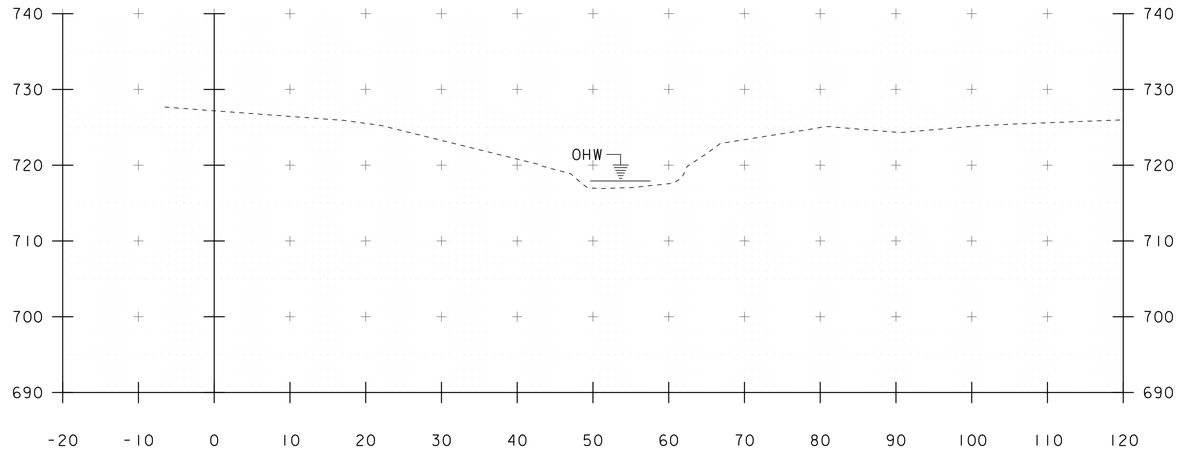
MATERIAL TRANSITION

HOR. SCALE 1" = 20'-0"
NO VERT. SCALE

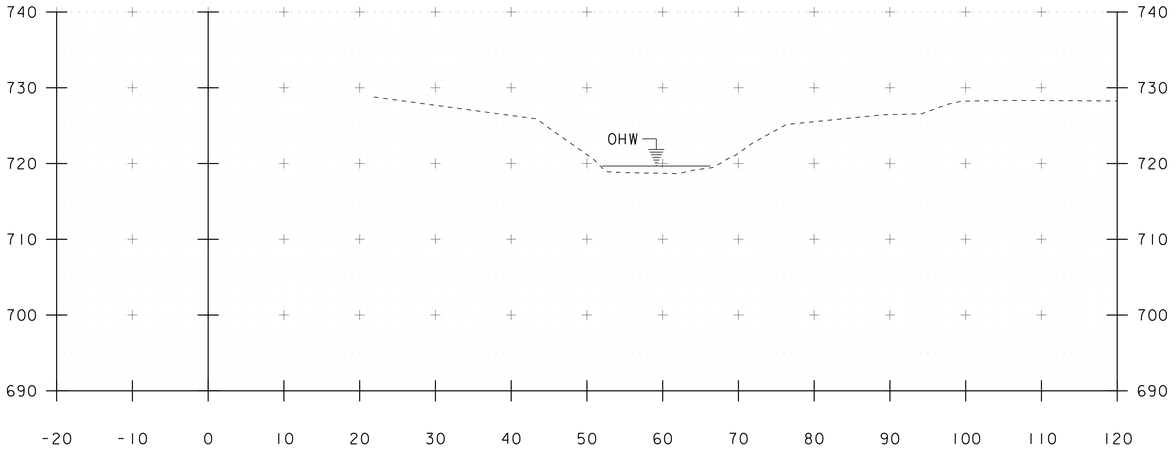
PROJECT NAME:	MIDDLESEX
PROJECT NUMBER:	BRF 024-1(37)
FILE NAME: sl0c220xs.dgn	PLOT DATE: 13-JAN-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
BANKING & MATERIAL TRANSITION	SHEET 36 OF 46



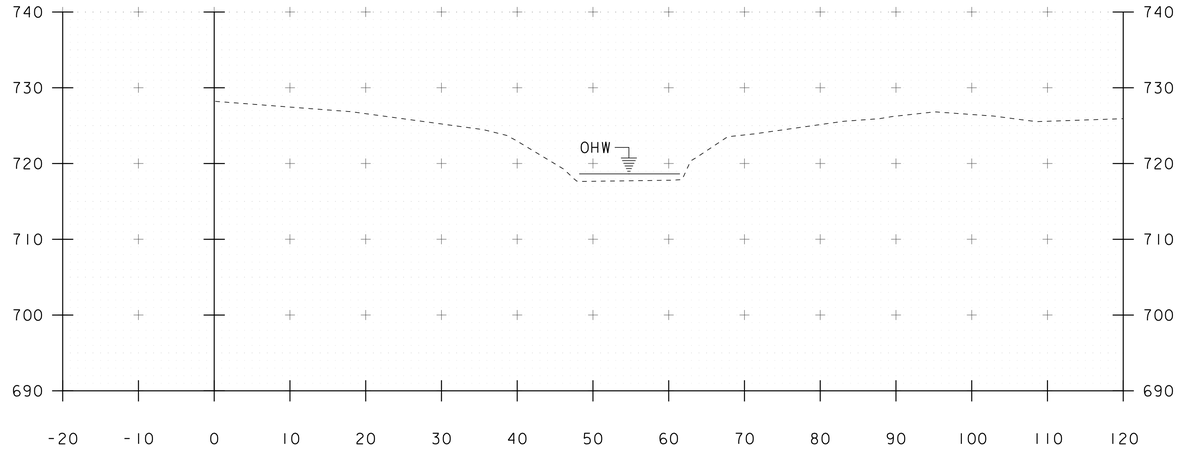
100+50



100+80



100+25



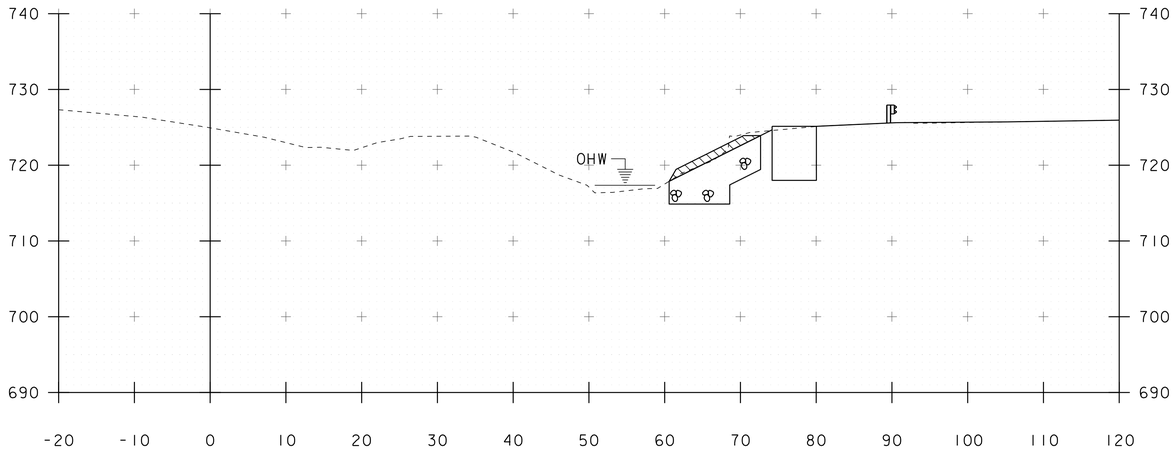
100+70

STA. 100+25 TO STA. 100+80

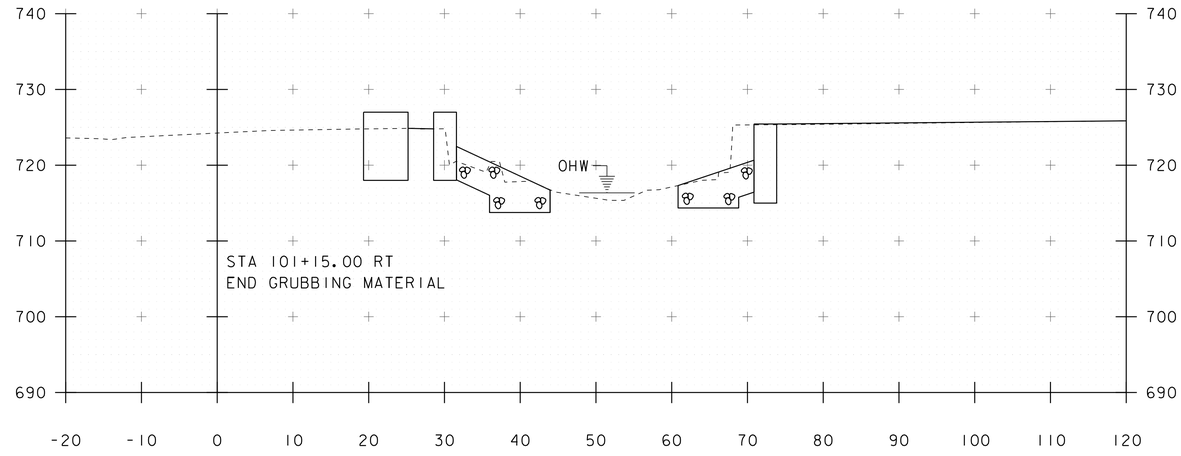
PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: sl0c220xs.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
CHANNEL CROSS SECTIONS 1

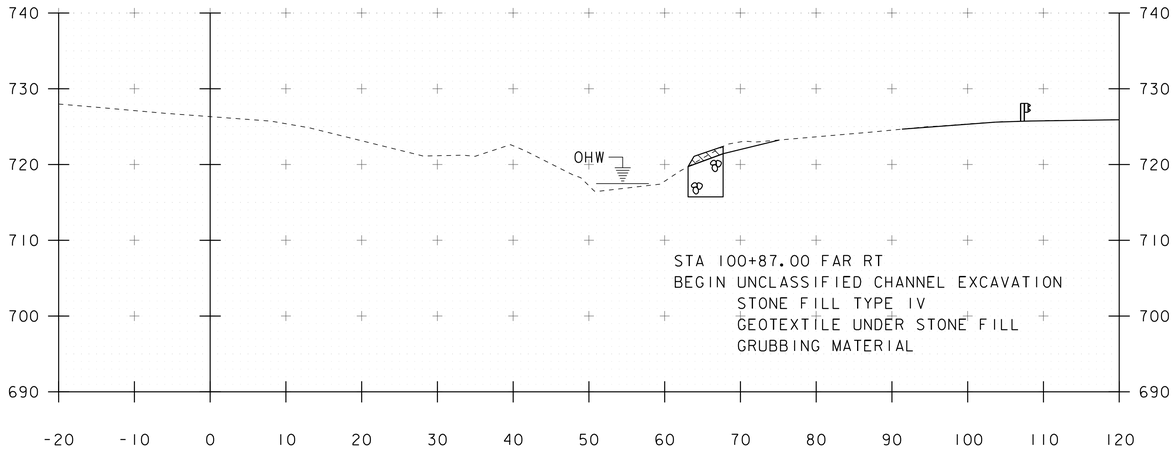
PLOT DATE: 13-JAN-2015
DRAWN BY: R. PELLETT
CHECKED BY: H. SALLS
SHEET 37 OF 46



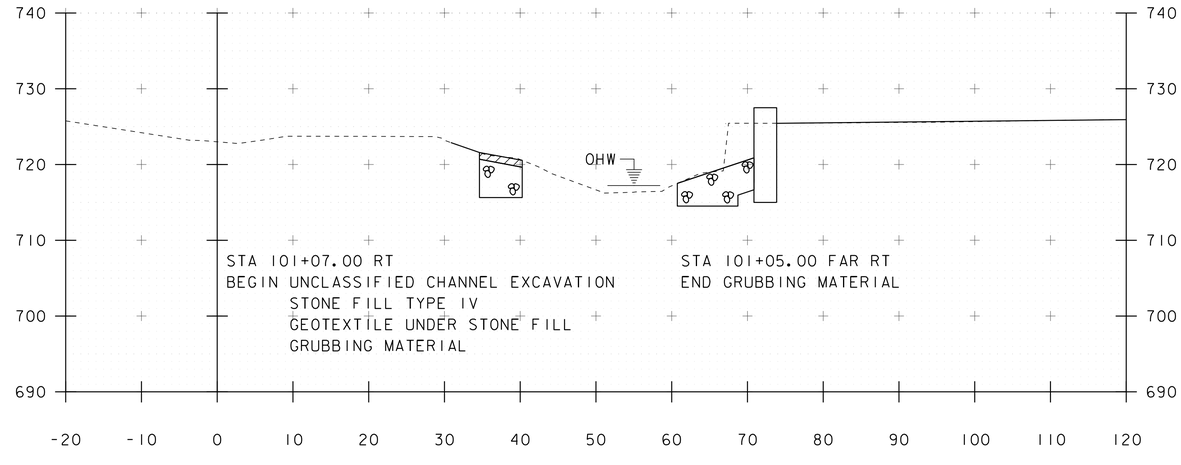
101+00



101+20



100+90



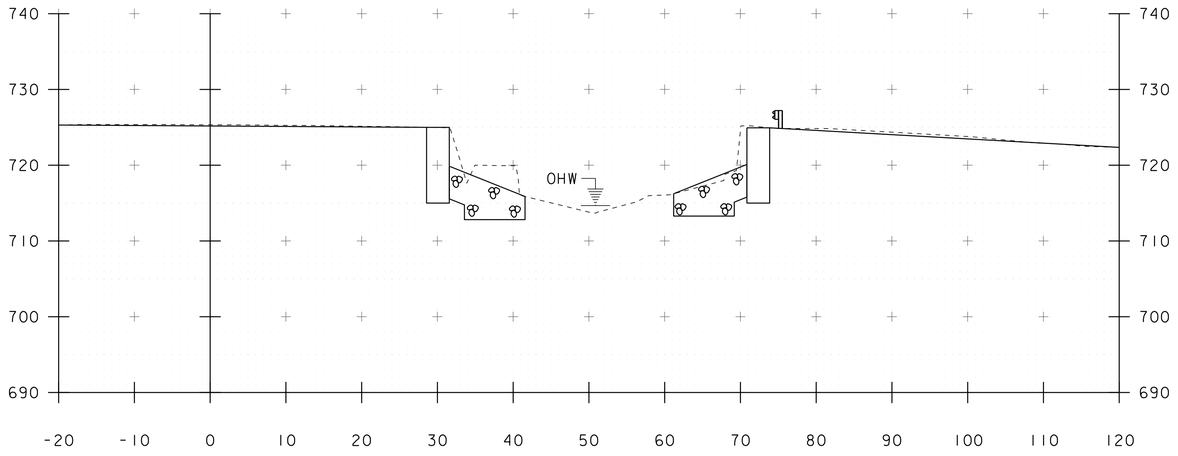
101+10

STA. 100+90 TO STA. 101+20

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: sl0c220xs.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
CHANNEL CROSS SECTIONS 2

PLOT DATE: 13-JAN-2015
DRAWN BY: R. PELLETT
CHECKED BY: H. SALLS
SHEET 38 OF 46



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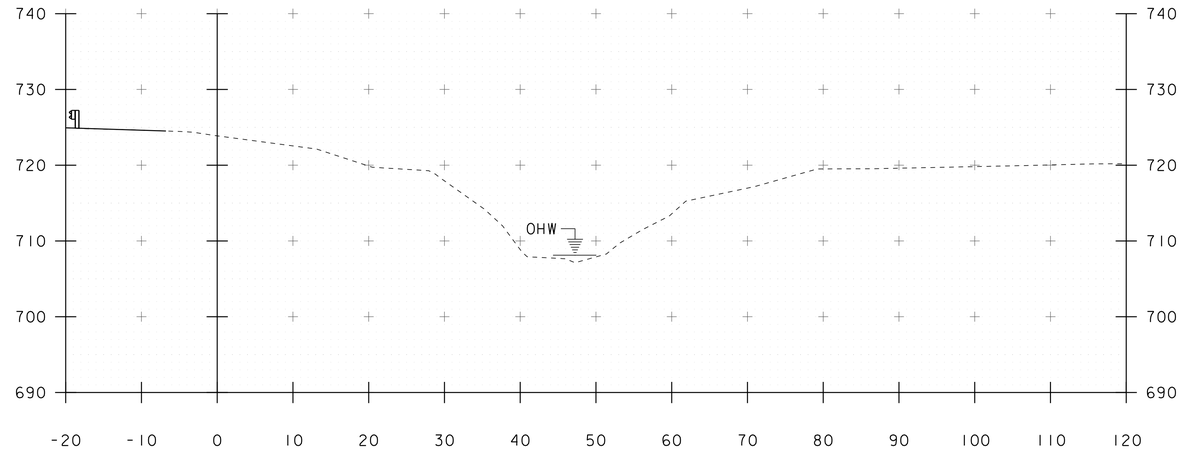
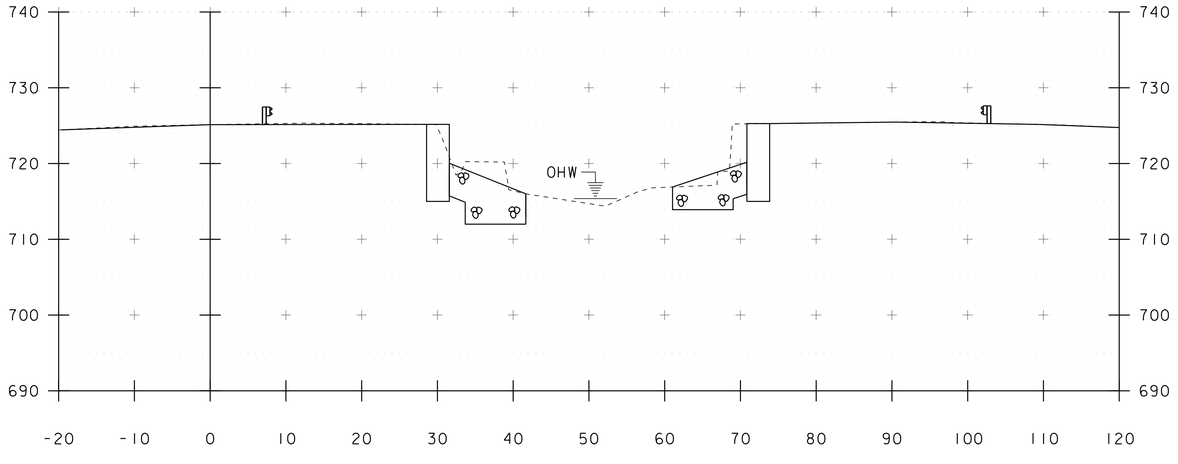
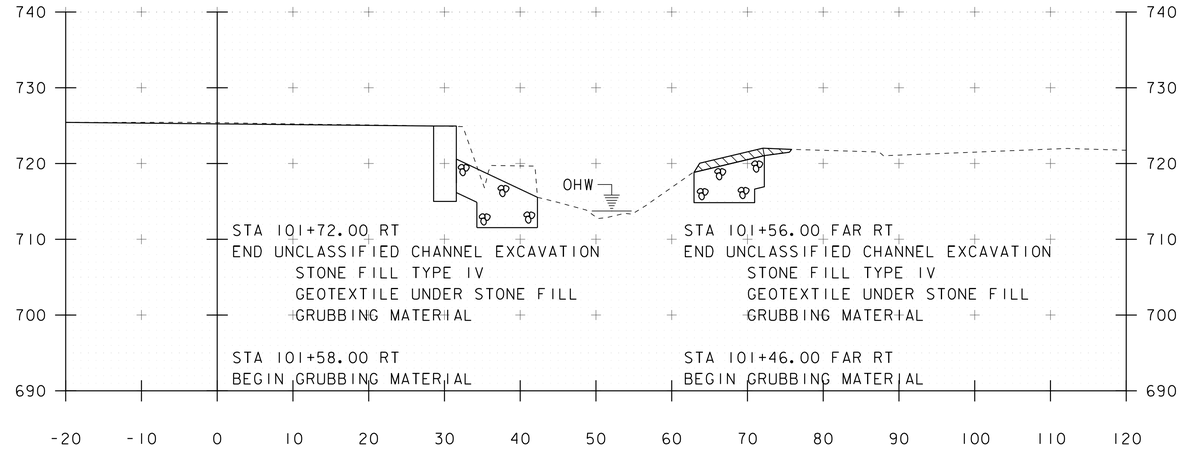


101+75



101+30



101+50

STA. 101+30 TO STA. 101+75

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: sl0c220xs.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
CHANNEL CROSS SECTIONS 3

PLOT DATE: 13-JAN-2015
DRAWN BY: R. PELLETT
CHECKED BY: H. SALLS
SHEET 39 OF 46

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL OF EXISTING BRIDGE 77, WHICH WILL BE REPLACED WITH A CONCRETE DECK & STEEL BEAM SUPERSTRUCTURE SPANNING 46.78 FEET OVER UNNAMED BROOK, ON NEW ABUTMENTS ALONG THE SAME ALIGNMENT, INCLUDING RELATED APPROACH AND CHANNEL WORK. BRIDGE 77 IS LOCATED IN THE TOWN OF MIDDLESEX, ON VT ROUTE 12, APPROXIMATELY AT THE INTERSECTIONS OF VT ROUTE 12 AND TOWN HIGHWAY 18.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.63 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS A SADDLE THAT IS MOSTLY WELL ESTABLISHED FOREST. VT ROUTE 12, AN UNNAMED BROOK, AND ROAD (TH 18) ARE WITHIN THE PROJECT SITE.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROOK IS CLASSIFIED AS STEEP, ALLUVIAL WITH COARSE GRAVEL, COBBLES AND BOULDERS. THE TRIBUTARY AREA AT THE BRIDGE IS 1.0 $MILE^2$. DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE COULD RECEIVE RUNOFF WATER FROM A FEW NEARBY SLOPES.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING BRIDGE. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE IV AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF WINDSOR, VERMONT. SOILS ON THE PROJECT SITE ARE BUXON SILT LOAM, 25% TO 45% SLOPES, “K FACTOR” = 0.32 AND COLONEL FINE SANDY LOAM, 8% TO 15% SLOPES, “K FACTOR” = 0.20. THE SOILS ARE CONSIDERED MODERATELY ERODIBLE DUE TO SIGNIFICANT SLOPES.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:
0.0-0.23 = LOW EROSION POTENTIAL
0.24-0.36 = MODERATE EROSION POTENTIAL
0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: NO
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: BROOK
WETLANDS: NO

1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFIC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTOR’S PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

THE PROJECT AREA IS RELATIVELY FLAT. THEREFORE IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

(NOT ANTICIPATED FOR THIS PROJECT)

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

(NOT ANTICIPATED FOR THIS PROJECT)

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

(NOT ANTICIPATED FOR THIS PROJECT)

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

1.5.2 OFF-SITE ACTIVITIES

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SUBSECTIONS 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

PROJECT NAME:	MIDDLESEX
PROJECT NUMBER:	BRF 024-1(37)
FILE NAME: sl0c220erodtls.dgn	PLOT DATE: 13-JAN-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
EPSC NARRATIVE	SHEET 40 OF 46

N

VT STATE PLANE GRID

39C - COLTON GRAVELLY SAND
WITH 8% TO 15% SLOPES
"K FACTOR" = 0.17

19C - COLONEL FINE SANDY LOAM
WITH 8% TO 15% SLOPES
"K FACTOR" = 0.20

41E - BUXON SILT LOAM
WITH 25% TO 45% SLOPES
"K FACTOR" = 0.32

BEGIN APPROACH
STA 26+75.00

BEGIN PROJECT
STA 27+75.00

BEGIN BRIDGE
STA 28+97.11

END BRIDGE
STA 29+43.89

END PROJECT
STA 30+75.00

END APPROACH
STA 31+75.00

EXISTING R.O.W.

VT 12
TO MONTPELIER

VT 12
TO WORCESTER

TH 18

26+25 27+00 28+00 29+00 30+00 31+00 32+00 32+25

HABITAT

BROOK

HVCTRL

COMB POLE #17/173

COMB POLE #17&#19

COMB POLE #20/175

TEL

GUYW

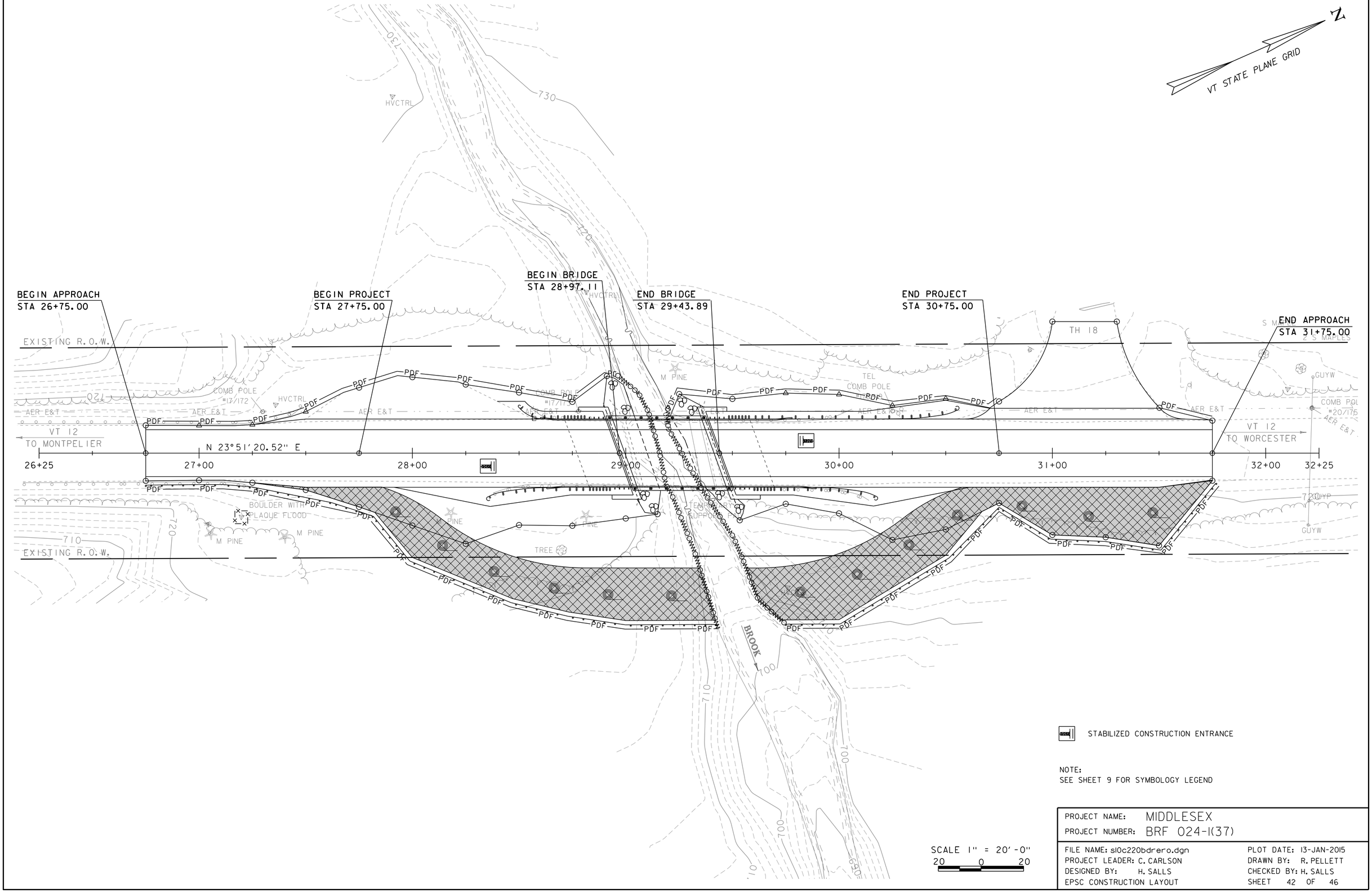
M PINE

TREE

BOULDER WITH PLAQUE FLOOD

SCALE 1" = 20'-0"
20 0 20

PROJECT NAME:	MIDDLESEX
PROJECT NUMBER:	BRF 024-1(37)
FILE NAME: sl0c220bdrero.dgn	PLOT DATE: 13-JAN-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
EPSC EXISTING LAYOUT	SHEET 41 OF 46

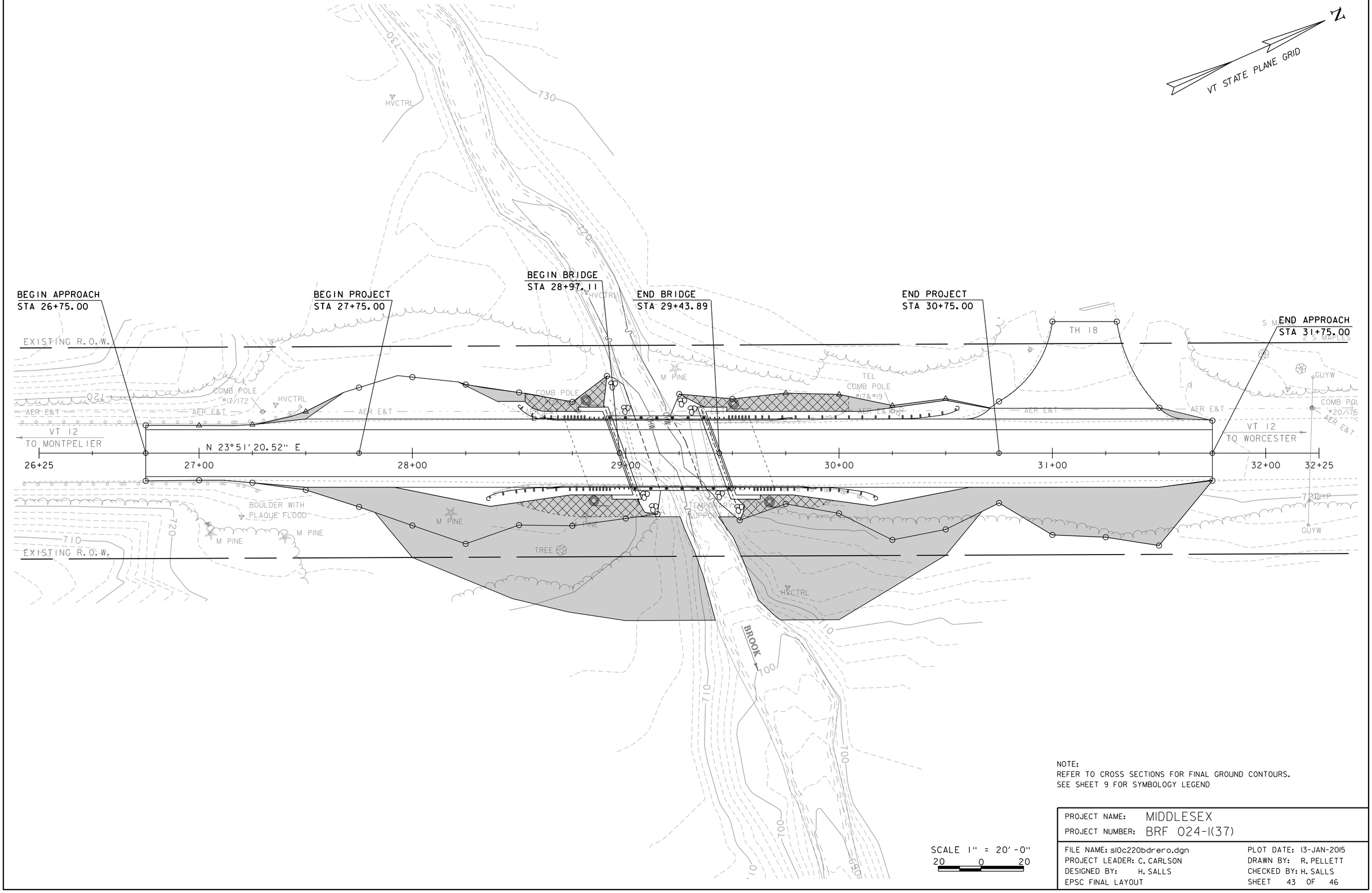


STABILIZED CONSTRUCTION ENTRANCE

NOTE:
SEE SHEET 9 FOR SYMBOLOGY LEGEND

SCALE 1" = 20'-0"
20 0 20

PROJECT NAME:	MIDDLESEX
PROJECT NUMBER:	BRF 024-1(37)
FILE NAME: sl0c220bdrero.dgn	PLOT DATE: 13-JAN-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
EPSC CONSTRUCTION LAYOUT	SHEET 42 OF 46

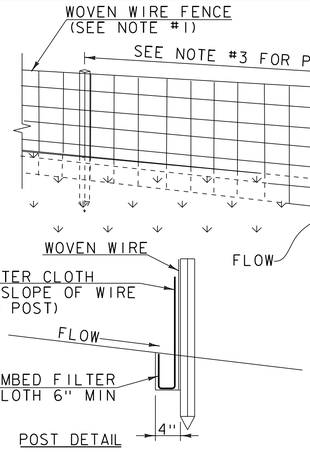


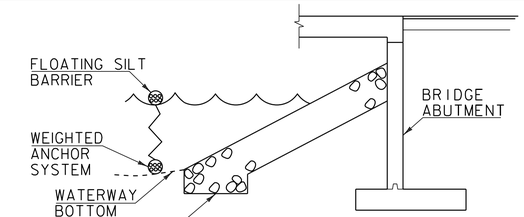
NOTE:
REFER TO CROSS SECTIONS FOR FINAL GROUND CONTOURS.
SEE SHEET 9 FOR SYMBOLOGY LEGEND

SCALE 1" = 20'-0"
20 0 20

PROJECT NAME:	MIDDLESEX
PROJECT NUMBER:	BRF 024-1(37)

FILE NAME: sl0c220bdrero.dgn	PLOT DATE: 13-JAN-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: H. SALLS	CHECKED BY: H. SALLS
EPSC FINAL LAYOUT	SHEET 43 OF 46





CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR ~~GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) OR~~ GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

REVISIONS	
MARCH 21, 2008	WHF
DECEMBER 11, 2008	WHF
JANUARY 13, 2009	WHF

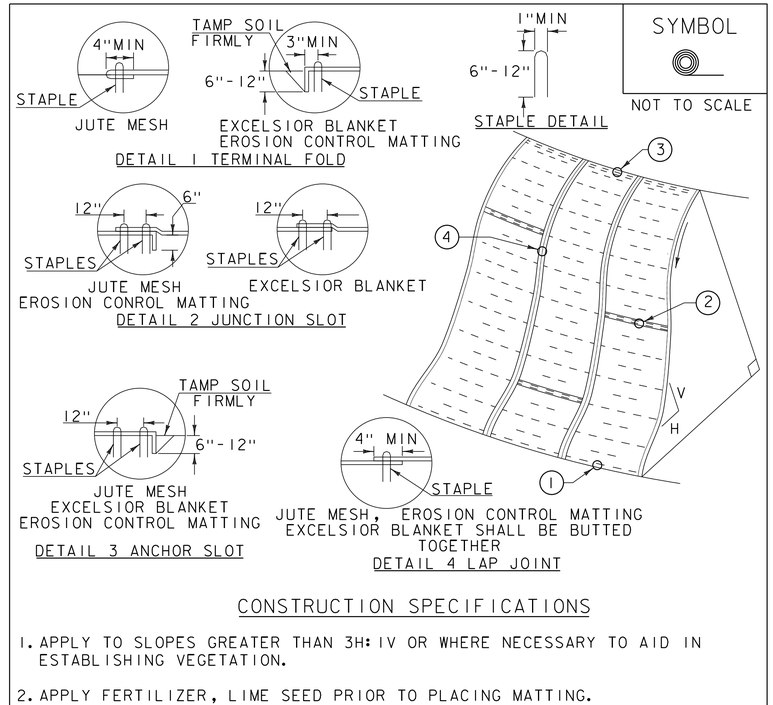
CONSTRUCTION SPECIFICATIONS

1. FILTER CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY, OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN 1.5 FEET/SECOND.
2. MAXIMUM 100' LENGTH BETWEEN ANCHORS.
3. LAST SECTION SHALL TERMINATE A MINIMUM OF 10' BEYOND LIMIT OF DISTURBANCE.
4. THE WEIGHTED ANCHOR SYSTEM SHALL BE A TYPE WHICH ALLOWS THE CURTAIN TO CONFORM TO THE BOTTOM OF THE WATERWAY.
5. THE CURTAIN SHALL BE REMOVED BY SLOWLY PULLING TOWARD THE SHORE MINIMIZING THE ESCAPE OF SEDIMENTS INTO WATERWAY.

FILTER CURTAIN

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.61).

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF
SEPTEMBER 4, 2009	WHF



CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H: 1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR ~~PERMANENT EROSION MATTING (PAY ITEM 653.21).~~

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

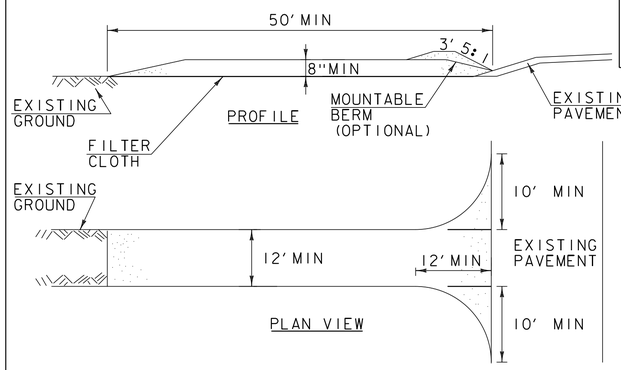
PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: s10c220erodtls.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
EPSC DETAILS (1)

PLOT DATE: 13-JAN-2015
DRAWN BY: R. PELLETT
CHECKED BY: H. SALLS
SHEET 44 OF 46

SYMBOL

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
3. THICKNESS- NOT LESS THAN 8".
4. WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STABILIZED CONSTRUCTION ENTRANCE

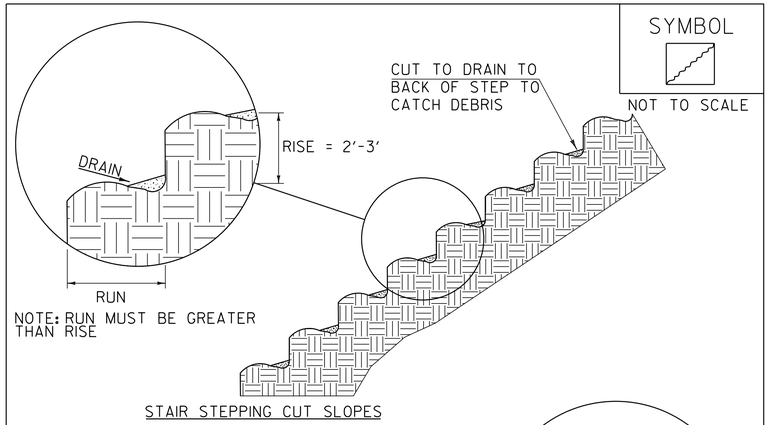
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.

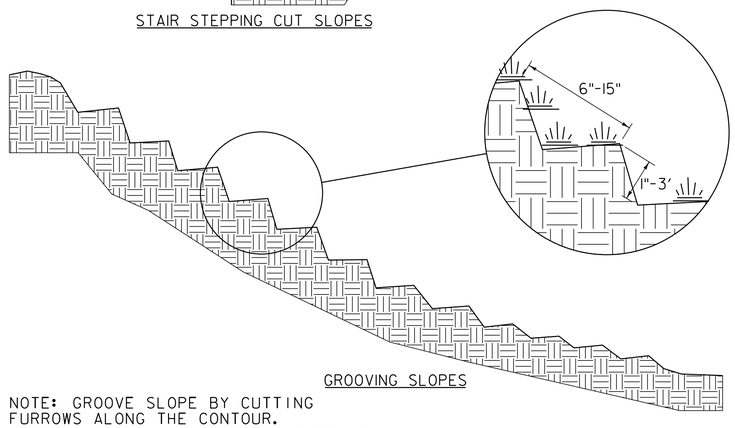
REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

SYMBOL

NOT TO SCALE



STAIR STEPPING CUT SLOPES



GROOVING SLOPES

NOTE: GROOVE SLOPE BY CUTTING FURROWS ALONG THE CONTOUR. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND RETAIN LIME, FERTILIZER AND SEED.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SURFACE ROUGHENING

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF

VAOT RURAL AREA MIX

	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
37.5%	22.5	45	CREEPING RED FESCUE	85%	98%
37.5%	22.5	45	TALL FESCUE	90%	95%
5.0%	3	6	RED TOP	90%	95%
15.0%	9	18	BIRDSFOOT TREFOIL	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	85%	95%
100%	60	120			

VAOT URBAN AREA MIX

	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
42.5%	34	68	CREEPING RED FESCUE	85%	98%
10.0%	8	16	PERENNIAL RYE GRASS	90%	95%
42.5%	34	68	KENTUCKY BLUE GRASS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	85%	95%
100%	80	160			

SOIL AMENDMENT GUIDANCE

FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	*FOLLOW*	PELLETIZED	*FOLLOW*
500 LBS/AC	*MANUFACTURER*	2 TONS/AC	*MANUFACTURER*

CONSTRUCTION GUIDANCE

1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
7. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED
8. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 ~~FOR SEED (PAY ITEM 651.15)~~

REVISIONS	
JUNE 23, 2009	WHF
JANUARY 15, 2010	WHF
FEBRUARY 16, 2011	WHF

PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: s10c220erodtls.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
EPSC DETAILS (2)

PLOT DATE: 13-JAN-2015
DRAWN BY: R. PELLETT
CHECKED BY: H. SALLS

CAST-IN-PLACE CONCRETE CURB, TYPE B
STA 28+60.00 - STA 29+00.00 LT
STA 28+63.00 - STA 29+03.00 RT
STA 29+38.00 - STA 29+78.00 LT
STA 29+50.00 - STA 29+90.00 RT

REMOVAL AND DISPOSAL OF GUARDRAIL
STA 28+37.79 - STA 29+05.13 RT
STA 28+55.75 - STA 28+96.94 LT
STA 29+41.53 - STA 30+06.03 LT
STA 29+46.89 - STA 30+14.07 RT

PAVED APRON
STA 30+70.75 - 31+50.00 LT

HD STEEL BEAM GUARDRAIL, GALVANIZED
STA 28+49.62 - STA 28+61.96 LT
STA 29+67.15 - STA 30+17.15 LT

ANCHOR FOR STEEL BEAM RAIL
STA 28+56.80 LT

MANUFACTURED TERMINAL SECTION, FLARED
STA 28+34.75 - STA 28+73.84 RT
STA 30+17.15 - STA 30+56.28 LT
STA 29+79.01 - STA 30+18.14 RT

GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM
STA 28+61.96 - STA 28+91.29 LT
STA 28+73.84 - STA 29+02.94 RT
STA 29+38.06 - STA 29+67.15 LT
STA 29+49.71 - STA 29+79.01 RT

BRIDGE RAIL, GALVANIZED 2 RAIL BOX BEAM
STA 28+91.29 - STA 29+38.06 LT
STA 29+02.94 - STA 29+49.71 RT

N
VT STATE PLANE GRID

END R.O.W. PROJECT
BRF 024-1(37)
STA 31+15 61.68' LT

APPROXIMATE AERIAL RELOCATION OF UTILITIES
RETAIN EXISTING POLE #17/172
INSTALL NEW PUSH BRACE ON EXISTING POLE
NEW PUSH BRACE
INSTALL NEW POLE W/ 2 NEW ANCHORS STATION 28+55 40' LT
INSTALL NEW POLE STATION 30+25 30' LT
BM ELEV 723.777 RR SPIKE IN POLE

BEGIN APPROACH STA 26+75.00
N 660477.76 E 1619665.10 27+00.00, 49.67 LT
BEGIN PROJECT STA 27+75.00
BEGIN BRIDGE STA 28+97.11
END BRIDGE STA 29+43.89
END PROJECT STA 30+75.00
N 661037.80 E 1619993.34 32+00.00, 51.75 LT
END APPROACH STA 31+75.00

(2) TOWN OF MIDDLESEX
APPROACH (T)

N23°37'2"E
S 86°08'39" E
100+00
101+00
N 23°51'20.52" E
VT 12 TO MONTPELIER
VT 12 TO WORCESTER
26+25 27+00 28+00 29+00 30+00 31+00 32+00 32+25

HVCTRL, AER E&T, PDF, COMB POLE #17/172, COMB POLE #17/173, COMB POLE #17/175, TEL, CZ, M PINE, TREE, BOULDER WITH PLAQUE FLOOD, TEMPORARY SUPPORT PAD, HYDE, BROOK, GUYP, GUYW, S MAPLE 20.7 TIE DIST, 2 S MAPLES 11.46 IS TIE DIST, 14.08 IS TIE DIST

16.20 TIE DIST TO BM
M PINE 16.72 TIE DIST
M PINE 22.40 TIE DIST

BM ELEV 726.343 RR SPIKE IN TOP OF STUMP
N 660539.63 E 1619883.57 27+00.00, 49.33 RT
N 660997.57 E 1620084.33 32+00.00, 47.73 RT

BEGIN R.O.W. PROJECT
BRF 024-1(37)
STA. 27+95 48.94' RT

(1) **STATE OF VERMONT ACTING BY AND THROUGH THE AGENCY OF NATURAL RESOURCES**

DETOUR(T)

REMOVE EXISTING POLE #17/173
REMOVE EXISTING POLE #17/19/174
RETAIN EXISTING POLE #20/175

LINES SHOWN ON THIS PLAN AS EXISTING PROPERTY LINES P/L ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO THE STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

RIGHT - OF - WAY DETAIL SHEET

TABLE OF PROPERTY ACQUISITION

PARCEL NO.	PROPERTY OWNER	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKE AREA±	REMAINDER AREA±	RIGHT TYPE	(T)(P)	AREA ±	RECORDING DATA TITLE	DATE	TOWN / CITY	BOOK	PAGE	REMARKS
1	STATE OF VERMONT ACTING BY AND THROUGH THE AGENCY OF NATURAL RESOURCES	1	27+95 RT	30+56 LT			DETOUR	T	0.15A						6,633 SF±; INCL. PDF & EC
2	TOWN OF MIDDLESEX	1	31+15 LT				APPROACH	T	332 SF						

TABLE OF REVISIONS

REVISION NO.	SHEET NO.	DESCRIPTION	DATE

FOR R.O.W. USE ONLY

SCALE 1" = 20'-0"
20 0 20

NOTE: UTILITY WORK TO BE DONE BY OTHERS

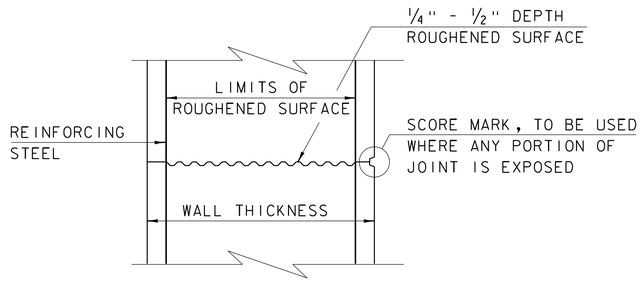
PROJECT NAME: MIDDLESEX
PROJECT NUMBER: BRF 024-1(37)

FILE NAME: NAME$DGN
PROJECT LEADER: C. CARLSON
DESIGNED BY: H. SALLS
R.O.W. INFORMATION SHEET

PLOT DATE: 13-JAN-2015
DRAWN BY: J. BLANCHARD
CHECKED BY: R. CLOUTIER
SHEET 46 OF 46

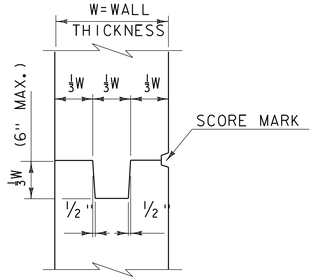
CONCRETE GENERAL NOTES

1. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1"
2. REINFORCING STEEL SIZE AND SPACING SHOWN IN THE PLANS IS BASED ON 60 KSI STEEL, UNLESS NOTED OTHERWISE. WITH THE ENGINEER'S PERMISSION, BAR SIZE AND SPACING MAY BE MODIFIED ACCORDING TO THE LATEST AASHTO LRFD BRIDGE DESIGN SPECIFICATION AND STRUCTURES DESIGN MANUAL WHEN USING HIGHER STRENGTH STEEL.

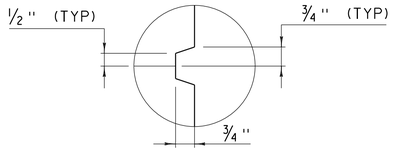


TYPICAL HORIZONTAL CONSTRUCTION JOINT
(NOT TO SCALE)

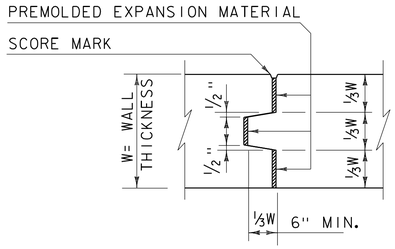
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



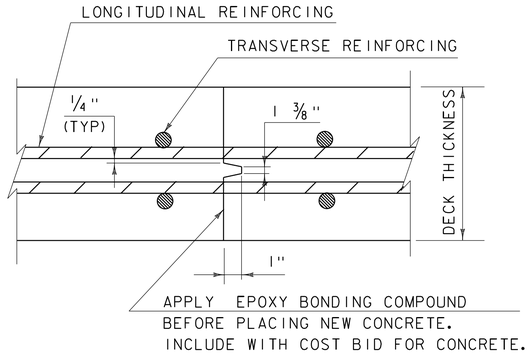
TYPICAL CONCRETE CONSTRUCTION JOINT
(NOT TO SCALE)



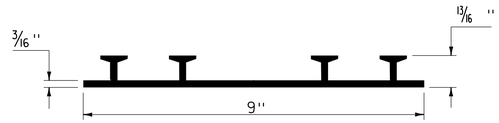
SCORE MARK DETAIL
(NOT TO SCALE)



TYPICAL CONCRETE EXPANSION JOINT
(NOT TO SCALE)



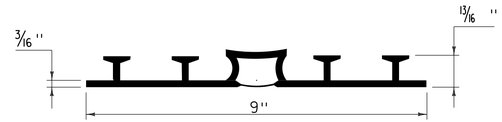
TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS
(NOT TO SCALE)



P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS
(NOT TO SCALE)

PAYMENT FOR THE P.V.C. WATERSTOP SHALL BE INCIDENTAL TO THE UNIT BID PRICE FOR THE ADJACENT CONCRETE.

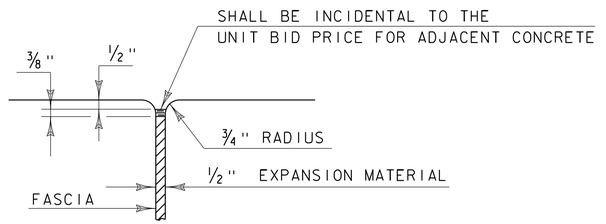
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



P.V.C. WATERSTOP FOR EXPANSION JOINTS
(NOT TO SCALE)

PAYMENT FOR THE P.V.C. WATERSTOP SHALL BE INCIDENTAL TO THE UNIT BID PRICE FOR THE ADJACENT CONCRETE.

OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



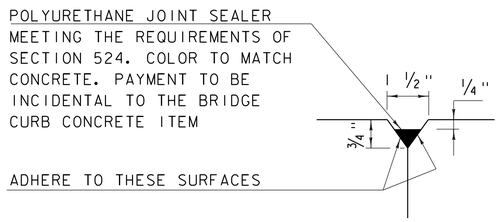
JOINT BETWEEN FASCIA AND WINGWALL
(NOT TO SCALE)

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
FEBRUARY 9, 2012	REBAR SUBSTITUTION ALLOWANCE ADDED TO CONCRETE GENERAL NOTES.

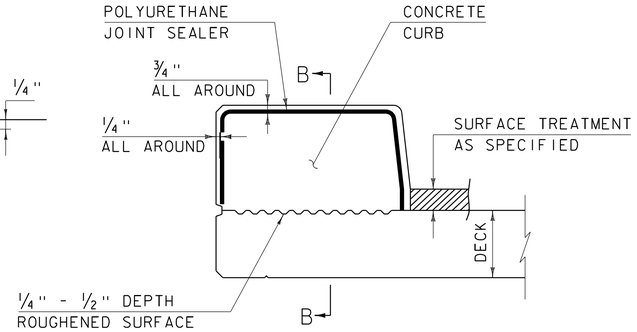
CONCRETE DETAILS AND NOTES

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL
SD-501.00

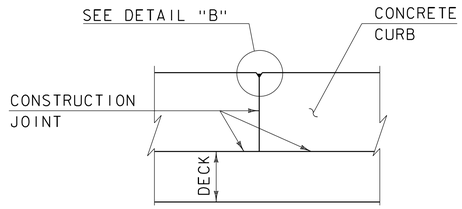


DETAIL "B"
(NOT TO SCALE)

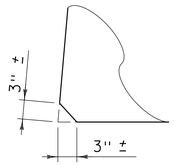


CONCRETE CURB JOINT SECTION
(NOT TO SCALE)

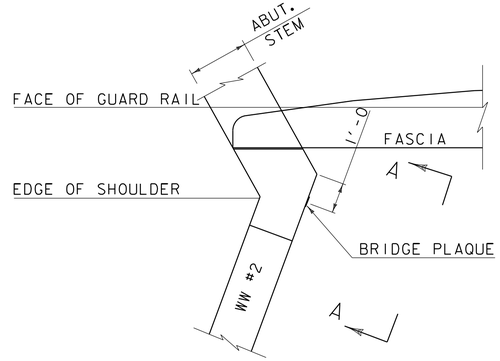
1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION



SECTION B - B
(NOT TO SCALE)



ACUTE ANGLE CLIP DETAIL
(NOT TO SCALE)



PLAN

CONCRETE CURB JOINT NOTES

1. CONCRETE CURBS MAY BE PLACED IN ONE CONTINUOUS OPERATION IF AN APPROVED SHRINKAGE REDUCING ADMIXTURE LISTED IN THE SPECIAL PROVISIONS IS USED WITH THE CONCRETE MIX DESIGN. PAYMENT FOR THE SHRINKAGE REDUCING ADMIXTURE WILL BE INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM.

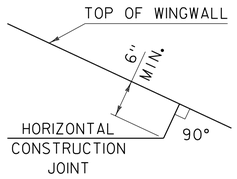
2. IF THE CONTRACTOR CHOOSES NOT TO USE AN APPROVED SHRINKAGE REDUCING ADMIXTURE, THE CURBS SHALL BE CONSTRUCTED WITH CONSTRUCTION JOINTS SPACED AT A MAXIMUM OF 15'-0" CENTER TO CENTER AND 2'-0" MINIMUM FROM THE CENTER OF NEAREST BRIDGE RAILING POST.

3. ON MULTI-SPAN CONTINUOUS SUPERSTRUCTURES, REGARDLESS OF WHETHER APPROVED SHRINKAGE REDUCING ADMIXTURE IS USED, CURB JOINTS SHALL BE LOCATED OVER THE CENTERLINE OF PIERS AND 7'-0" EACH SIDE OF THE CENTERLINE OF EACH PIER.

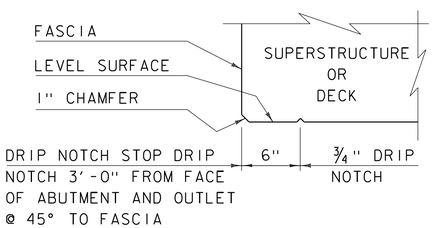
4. WHEN CURB JOINTS ARE USED THE CURBS SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOUR DELAY BETWEEN ADJACENT PLACEMENTS.

5. LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THROUGH CURB CONSTRUCTION JOINTS. CURB STIRRUP BARS SHALL BE TURNED AS NECESSARY TO MAINTAIN COVER IN THE FLARED CURB ENDS.

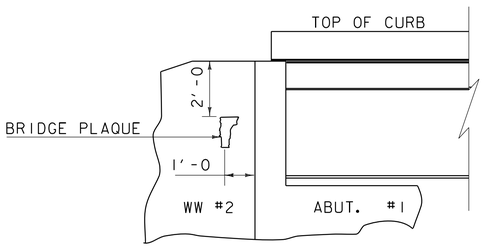
6. THE JOINT SPACING AND DETAILS SHOWN SHALL APPLY TO SIDEWALKS WHEN SHOWN IN THE PLANS.



HORIZONTAL WINGWALL CONSTRUCTION JOINT
(NOT TO SCALE)



DRIP NOTCH DETAIL
(NOT TO SCALE)



VIEW "A - A"

BRIDGE PLAQUE
(NOT TO SCALE)

THE BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AT ABUTMENT #1 ON THE RIGHT SIDE AS SHOWN OR AS DIRECTED BY THE ENGINEER.

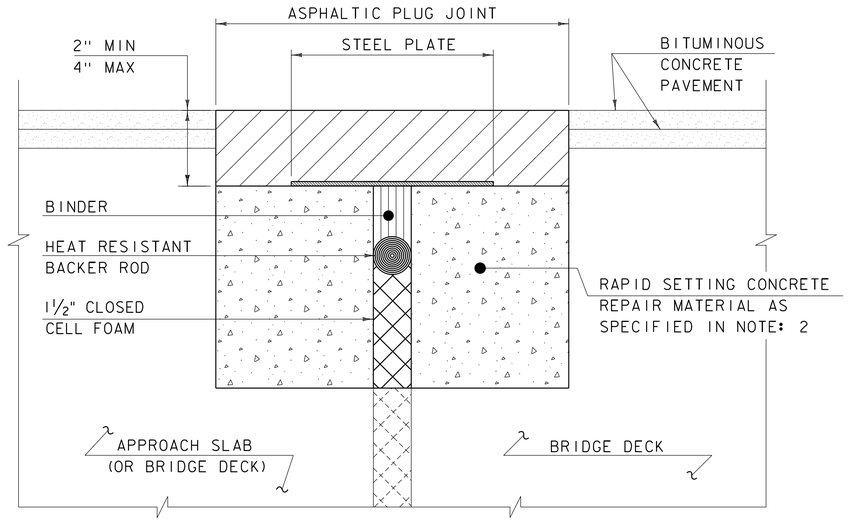
PAYMENT FOR INSTALLATION OF THE BRIDGE PLAQUE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
JUNE 4, 2010	MODIFIED AND ADDED TWO DETAILS
OCTOBER 10, 2012	MODIFIED HORZ. JOINT WINGWALL ADD 6" MIN. DIMENSION

CONCRETE DETAILS AND NOTES

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL
SD-502.00



ASPHALTIC PLUG JOINT DETAIL - REHAB

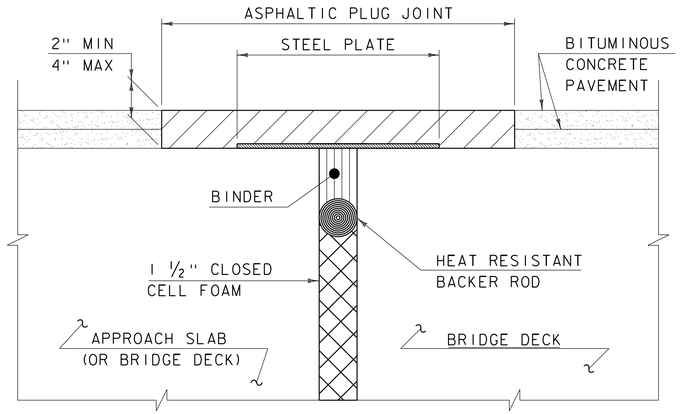
NOTES:

1. THE CONTRACTOR SHALL REMOVE ALL ASPHALTIC PLUG JOINT MATERIAL AND DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER. REMOVAL OF THE FIRST 4 INCHES OF MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG. ANY REMOVAL OF MATERIAL GREATER THAN 4 INCHES SHALL BE INCLUDED IN THE BID PRICE OF ITEM 580.20 RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.

2. THE CONTRACTOR SHALL REPLACE REMOVED MATERIAL THAT IS LESS THAN 4" FROM FINISHED GRADE WITH ASPHALTIC PLUG JOINT MATERIAL MEETING THE REQUIREMENTS OF SUBSECTION 707.15. ALL REMOVED MATERIAL THAT IS GREATER THAN 4 INCHES FROM FINISHED GRADE SHALL BE REPLACED WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.

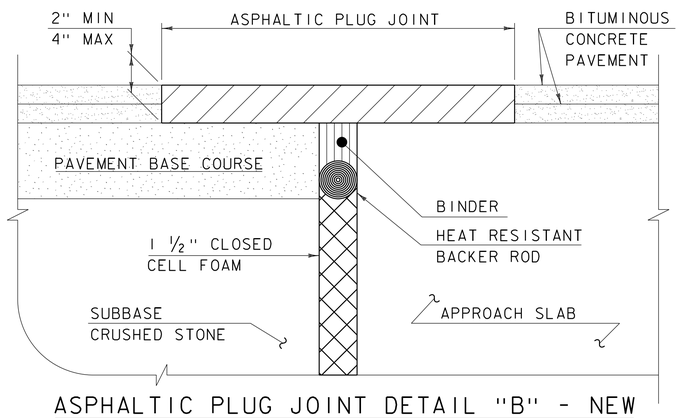
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.

4. PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER. THE STEEL PLATES MAY BE OMITTED WHERE THE ENGINEER DETERMINES THAT THE APPROACH SLAB OR BRIDGE DECK WILL PROVIDE INADEQUATE SUPPORT AND WHERE VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.



ASPHALTIC PLUG JOINT DETAIL "A" - NEW

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



ASPHALTIC PLUG JOINT DETAIL "B" - NEW

ASPHALTIC PLUG JOINT NOTES

INSTALLATION:

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

WEATHER LIMITATIONS

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

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

DETAILS ON THIS SHEET ARE NOT TO SCALE.

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

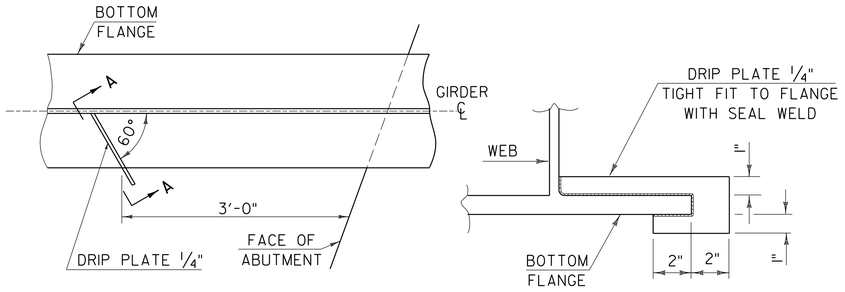
BRIDGE JOINT
ASPHALTIC PLUG

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - DIVISION

STRUCTURES DETAIL
SD-516.10

STRUCTURAL STEEL GENERAL NOTES:

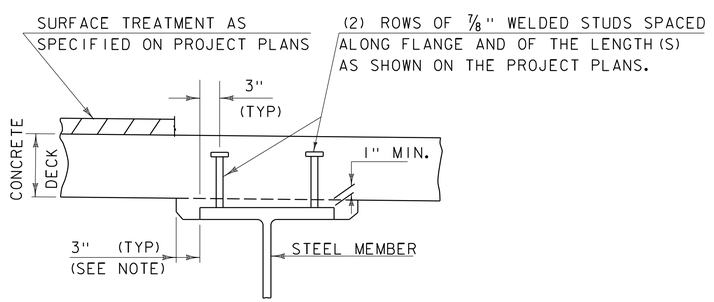
1. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH-STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SUBSECTION 506.19, UNLESS OTHERWISE SPECIFIED.
2. ALL HOLES IN THE WEBS OF THE FASCIA GIRDERS THAT ARE NOT OTHERWISE FILLED, SHALL BE FILLED WITH EITHER BUTTON HEAD OR HEX HEAD BOLTS. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19.
3. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.
4. ANY CONNECTIONS THAT ARE NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.
5. STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01 OF THE STANDARD SPECIFICATIONS.
6. ENDS OF GIRDERS ARE TO BE VERTICAL IN THEIR FINAL POSITION.
7. AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF THE GIRDERS SHALL BE TAKEN AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING FINISHED GRADES.



PLAN DRIP PLATE

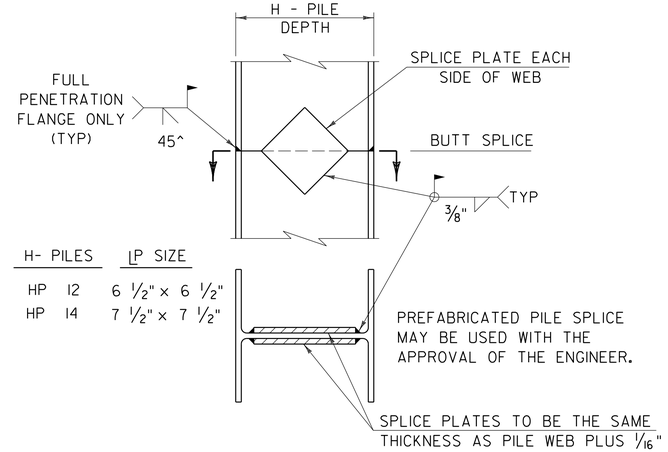
SECTION A - A

NOTE: DRIP PLATES SHALL BE PLACED ON OUTSIDE EDGE OF FASCIA GIRDERS ON THE HIGH SIDE OF ALL PIERS AND ABUTMENTS OR AS INDICATED ON PROJECT PLANS.



NOTE:
THE 3" HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES. ANY VOIDS RESULTING FROM FORMING SYSTEM ELEMENTS SHALL BE FILLED WITH JOINT SEALER, POLYURETHANE MEETING THE REQUIREMENTS OF SECTION 524. THE COST OF THE JOINT SEALER, POLYURETHANE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

HAUNCH AND SHEAR CONNECTOR DETAIL



H- PILES	LP SIZE
HP 12	6 1/2" x 6 1/2"
HP 14	7 1/2" x 7 1/2"

DETAIL OF PILE SPLICE

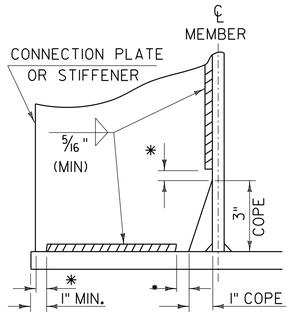
DETAILS ON THIS SHEET ARE "NOT TO SCALE" UNLESS NOTED OTHERWISE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
JUNE 4, 2010	MODIFIED NOTES

STRUCTURAL STEEL DETAILS & NOTES

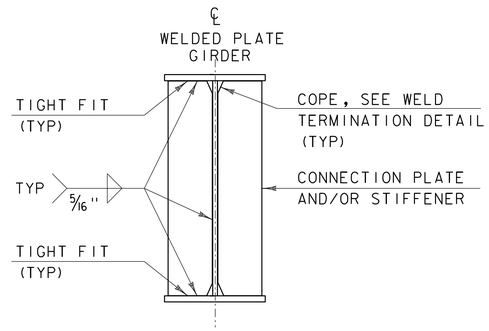
VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL
SD-601.00



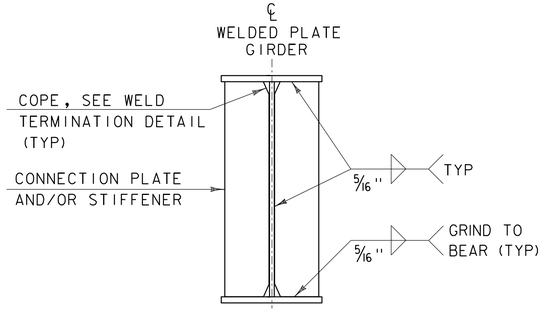
WELD TERMINATION AND COPING DETAILS FOR STEEL MEMBERS

*NO WELD FOR 3/8" MIN. 7/8" MAX. (EXCEPT MUST MAINTAIN 1" MINIMUM FROM EDGE OF FLANGE)

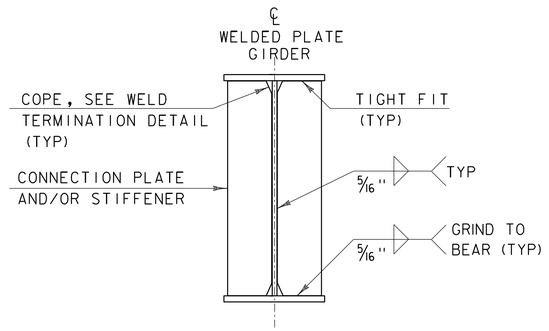


INTERMEDIATE CONNECTION PLATES AND/OR STIFFENERS FOR WELDED PLATE GIRDERS

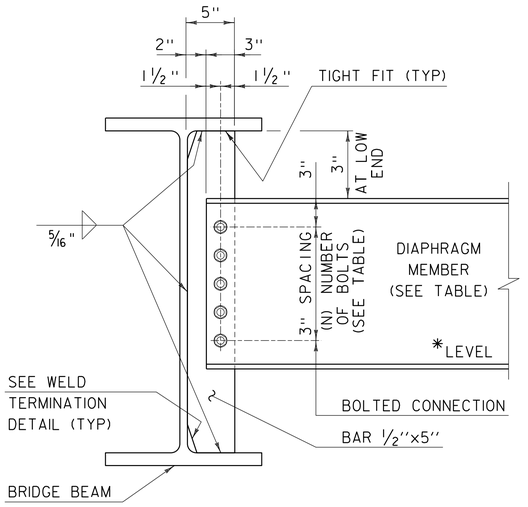
INTERMEDIATE DETAIL IS ONLY USED WHEN PLATE DOES NOT OCCUR AT AN ABUTMENT OR PIER.



ABUTMENT BEARING STIFFENERS AND/OR CONNECTION PLATES FOR WELDED PLATE GIRDERS



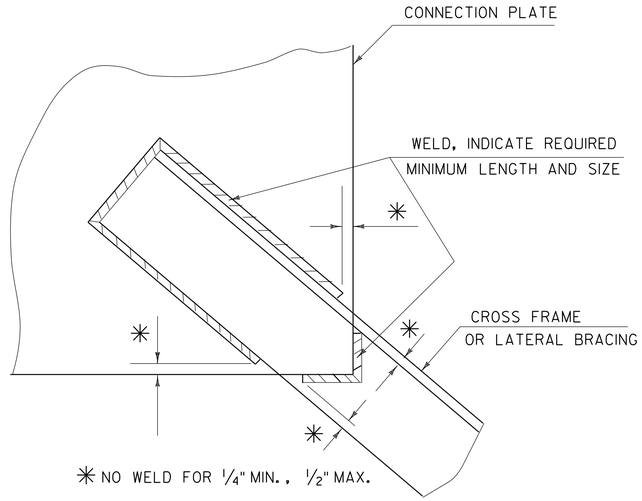
PIER BEARING STIFFENERS AND/OR CONNECTION PLATES FOR WELDED PLATE GIRDERS



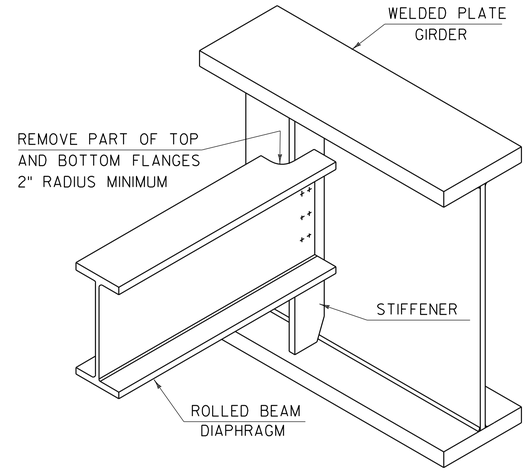
DEPTH		DIAPHRAGM MEMBER	(N) BOLTS
ROLLED BEAM	24" 30"	C15x33.9	4
	31" 36"	MC18x42.7	5
	37" 42"	W21x44	6
PLATE GIRDER WEB	31" 36"	W27x84	7
	37" 42"	W33x118	9
	43" 48"	W36x135	10

INTERMEDIATE DIAPHRAGMS FOR 24" TO 48" BRIDGE BEAMS

* IF CLEARANCE CANNOT BE MET, DIAPHRAGM MAY BE SLOPED.



WELD LOCATION DETAIL AT CROSS FRAMES AND LATERAL BRACING



SEE CONTRACT DRAWINGS FOR SIZES OF MEMBERS AND CONNECTION DETAILS

ROLLED BEAM USED AS DIAPHRAGM

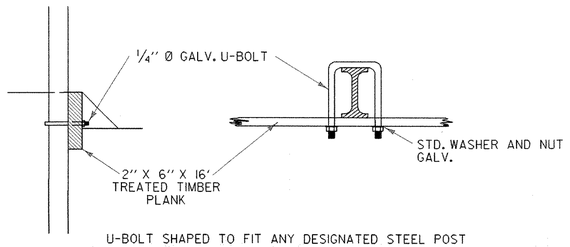
DETAILS ON THIS SHEET ARE "NOT TO SCALE" UNLESS NOTED OTHERWISE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
MAY 2, 2011	ADD INTERMEDIATE DIAPHRAGMS DETAIL & ADD NOT TO SCALE NOTE

STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES

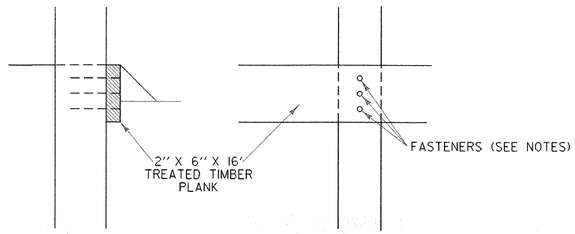
VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL SD-602.00



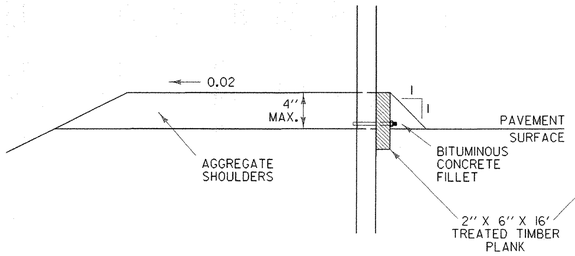
U-BOLT SHAPED TO FIT ANY DESIGNATED STEEL POST

WITH STEEL POSTS

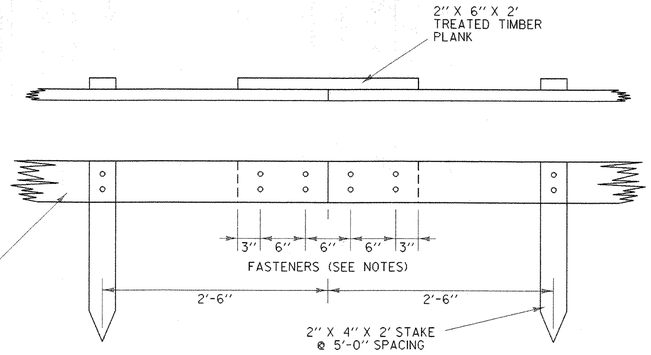


WITH WOOD POSTS (EXISTING CONDITION)

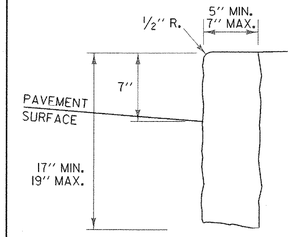
TREATED TIMBER CURB



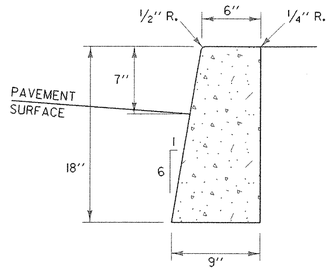
BITUMINOUS CONCRETE FILLET DETAIL



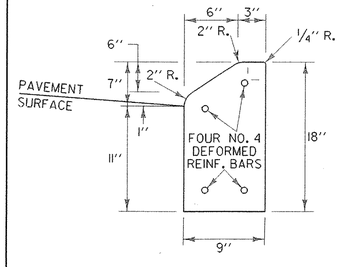
SPLICE DETAIL



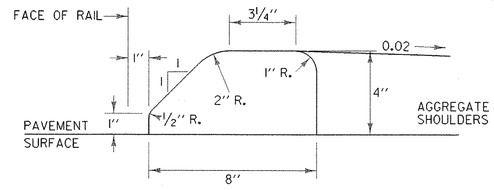
VERTICAL GRANITE CURB



CAST IN PLACE CONCRETE CURB, TYPE B

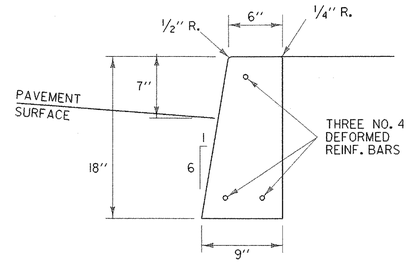


PRECAST REINFORCED CONCRETE CURB, TYPE A

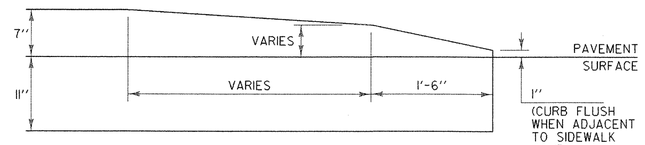


USE ONLY WITH STEEL BEAM GUARDRAIL

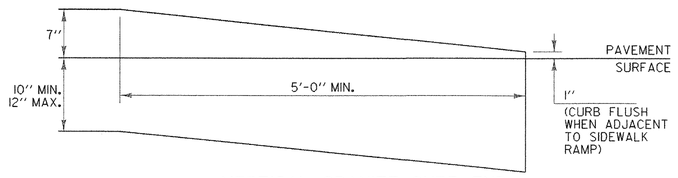
BITUMINOUS CONCRETE CURB, TYPE A



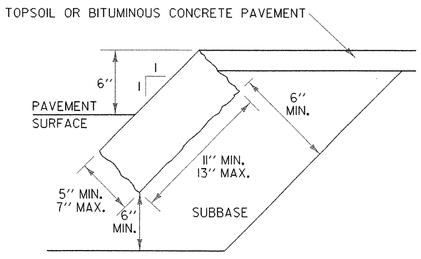
PRECAST REINFORCED CONCRETE CURB, TYPE B



CONCRETE CURB END



VERTICAL GRANITE CURB END



EDGING TO BE PLACED PRIOR TO PLACING TOP SURFACE COURSE.

GRANITE SLOPE EDGING

GENERAL NOTES:

1. HEIGHT OF REVEAL OF CURB SHALL NOT EXCEED FOUR INCHES WHERE DESIGN OR POSTED SPEED IS EQUAL TO OR GREATER THAN 40 MPH AND WHEN INSTALLED WITH GUARDRAIL (STANDARD SHAPE TO BE BURIED TO THIS DEPTH).
2. WHEN CONCRETE SIDEWALK IS CONSTRUCTED ADJACENT TO CONCRETE OR VERTICAL GRANITE CURB, ASPHALT TREATED FELT SHALL BE PLACED BETWEEN THE SIDEWALK AND CURB FOR THE TOTAL DEPTH OF THE SIDEWALK.
3. FASTENERS (20d NAILS OR SCREWS) SHALL BE CORROSION RESISTANT TO THE TREATED LUMBER.
4. FOR SPECIFICATIONS FOR EXPANSION/CONTRACTION JOINTS AND LENGTHS OF SECTIONS, SEE SECTION 616.
5. JOINTS BETWEEN CURB SECTIONS SHALL BE MORTARED IN CONFORMANCE WITH SECTION 616.
6. BITUMINOUS CONCRETE AND TREATED TIMBER CURB SHALL BE IN CONFORMANCE WITH SECTION 616.
7. TWO INCH MINIMUM CLEARANCE FROM FACE OF CONCRETE TO EDGE OF REINFORCING STEEL.

OTHER STDS. REQUIRED: **NONE**

REVISIONS AND CORRECTIONS

FEB. 11, 2008 - ORIGINAL APPROVAL DATE

APPROVED

Kevin S. Marshia
ROADWAY, TRAFFIC & SAFETY ENGINEER

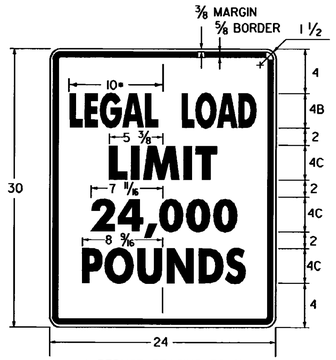
DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter
FEDERAL HIGHWAY ADMINISTRATION

CURBING

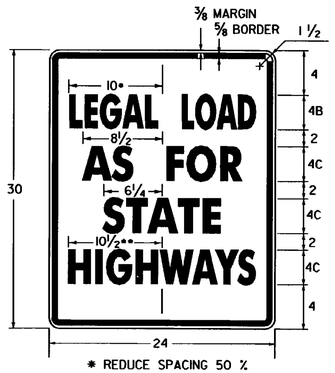
VERMONT AGENCY OF TRANSPORTATION

STANDARD C-10



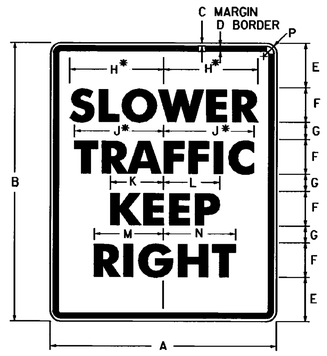
* REDUCE SPACING 50 %
LINE 3 ALTERNATE - **16,000**

VR-017



* REDUCE SPACING 50 %
** REDUCE SPACING 38 %

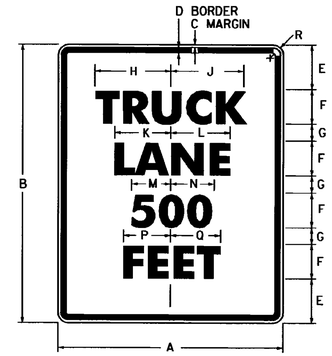
VR-079



* REDUCE SPACING 25 %

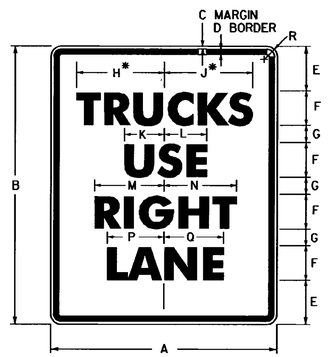
R4-3

SIGN	DIMENSIONS (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
STD.	24	30	3/8	5/8	3 5/8	4D	2 1/4	9 3/4	10	6	6 9/16	7 1/8	7 5/8	1 1/2
EXPWY.	36	48	5/8	7/8	6	6D	4	14 5/8	15	9	9 13/16	10 11/16	11 3/8	2 1/4
FWY.	48	60	3/4	1 1/4	7 1/4	8D	4 1/2	19 1/2	20	12	13 1/8	14 1/4	15 1/4	3



R4-6

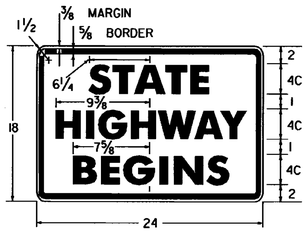
SIGN	DIMENSIONS (INCHES)														
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
STD.	24	30	3/8	5/8	3 5/8	4E	2 1/4	9 13/16	9 11/16	7 13/16	7 11/16	5 11/16	5 13/16	6 7/8	7 1/16	1 1/2
EXPWY.	36	48	5/8	7/8	6	6E	4	14 3/4	14 1/2	11 5/16	11 1/2	8 1/2	8 3/4	10 5/16	10 5/8	2 1/4
FWY.	48	60	3/4	1 1/4	7 1/4	8E	4 1/2	19 5/8	19 3/8	15 1/8	15 3/8	11 3/8	11 5/8	13 3/4	14 1/8	3



* REDUCE SPACING 32 %

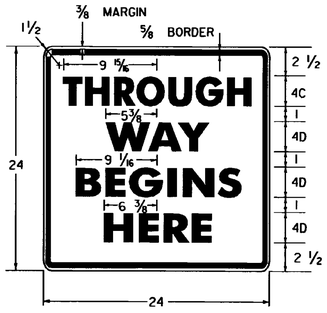
R4-5

SIGN	DIMENSIONS (INCHES)															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
STD.	24	30	3/8	5/8	3 5/8	4D	2 1/4	9 9/16	9 3/16	4 3/4	5	7 1/8	7 5/8	6 1/4	6 5/8	1 1/2
EXPWY.	36	48	5/8	7/8	6	6D	4	14 5/16	13 13/16	7 1/8	7 1/2	10 11/16	11 3/8	9 3/8	9 15/16	2 1/4
FWY.	48	60	3/4	1 1/4	7 1/4	8D	4 1/2	19 1/8	18 3/8	9 1/2	10	14 1/4	15 1/4	12 1/2	13 1/4	3



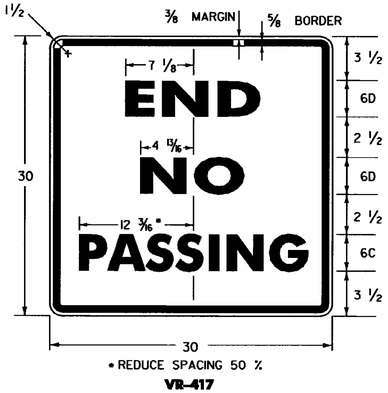
VR-039

VR-038



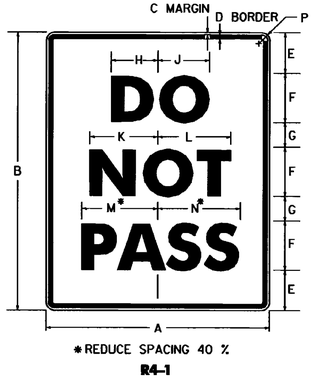
VR-041

VR-040



* REDUCE SPACING 50 %

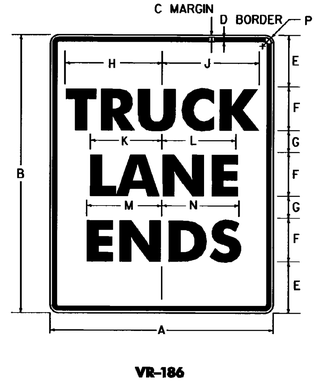
VR-417



*REDUCE SPACING 40 %

R4-1

SIGN	DIMENSIONS (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
STD.	24	30	3/8	5/8	3 1/2	6D	2 1/2	4 11/16	5	7 1/8	7 3/8	9 3/8	9 3/4	1 1/2
EXPWY.	36	48	5/8	7/8	7	8D	5	6 1/4	6 5/8	9 1/2	9 3/4	12 1/2	13	2 1/4
FWY.	48	60	3/4	1 1/4	8	10D	7	7 3/4	8 5/8	11 7/8	12 1/4	15 5/8	16 1/4	3



VR-186

SIGN	DIMENSIONS (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
STD.	24	30	3/8	5/8	3 1/2	6C	2 1/2	10 1/4	10 3/16	7 3/4	7 3/4	7 15/16	8	1 1/2
EXPWY.	36	48	5/8	7/8	7	8C	5	13 11/16	13 5/8	10 3/8	10 5/8	10 11/16	10 11/16	2 1/4
FWY.	48	60	3/4	1 1/4	8	10D	7	20 5/8	20 5/8	15 3/8	15 5/8	16 1/16	16 1/16	3

GENERAL:

1. ALL DIMENSIONS IN INCHES.

COLORS:

THE REGULATORY SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT ON REFLECTORIZED WHITE BACKGROUND, UNLESS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND APPROVED BY THE DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

MATERIALS:

THE SIGN BASE MATERIALS USED FOR REGULATORY SIGNS SHOWN ON THIS SHEET MAY BE ANY OF THE FOLLOWING OF THE MINIMUM THICKNESS NOTED.

	24'' X 18'', 24'' X 24'', 24'' X 30'', 30'' X 30''	36'' X 48'', 48'' X 60''
FLAT SHEET ALUMINUM	0.080''	0.100''
HIGH DENSITY OVERLAID PLYWOOD	1/2''	5/8''
GALVANIZED FLAT SHEET STEEL	16 GAGE	14 GAGE

THE REFLECTIVE MATERIAL FOR GROUND MOUNTED SIGNS SHALL BE AASHTO TYPE II OR III WHITE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE THE TEXT OF THE SIGNS MAY BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. HAND PAINTING MUST BE COMPARABLE IN QUALITY TO THE RESULTS OBTAINED BY SILK SCREENING.

SPECIFICATIONS:

REGULATORY SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR TRAFFIC SIGNS.

TEXT DESIGN:

LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM WITH THE ''STANDARD ALPHABET FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS'' AND DESIGNS PRESCRIBED IN THE STANDARD HIGHWAY SIGNS AS SPECIFIED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

OTHER STDS.: NONE REQUIRED

REVISIONS AND CORRECTIONS

OCT. 30, 1987 - DATE OF ORIGINAL ISSUE
SEPT. 20, 1995 - ADDED AND DELETED SIGN DETAIL, ADDED SIGN ID NUMBERS, MINOR NOTE REVISIONS.

APPROVED FOR THIS PROJECT AND/OR DESIGN IMPLEMENTATION. FHWA FINAL APPROVAL PENDING.

APPROVED

Gordon H. MacArthur
DIRECTOR OF ENGINEERING

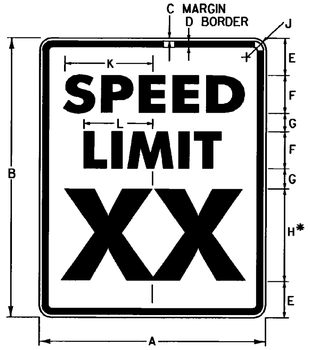
David A. Ross
TRAFFIC AND SAFETY ENGINEER

REGULATORY SIGN DETAILS

/traf/std/stdel41.dgn : stdel41.1

VERMONT AGENCY OF TRANSPORTATION

STANDARD
E-141



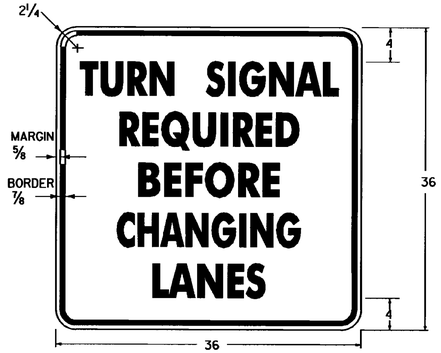
* OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE.

R2-1

SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	L
MIN	18	24	3/8	5/8	3	3E	2	8E	1 1/2	7 3/16	5 1/2
STD	24	30	3/8	5/8	4	4E	2	10E	1 1/2	9 3/16	7 5/16
EXPWY	36	48	5/8	7/8	6	6E	5	14E	2 1/4	14 3/8	11
FWY	48	60	3/4	1 1/4	8	8E	4	20E	3	19 1/8	14 5/8

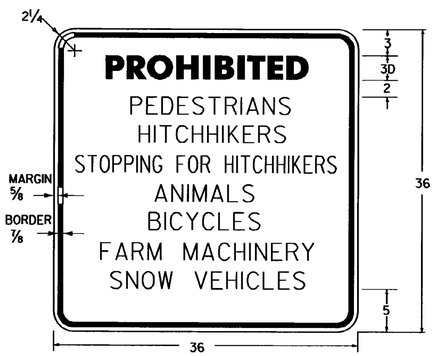
TO BE USED WITH "SPEED LIMIT 55" OR "65" FWY SIGN ONLY

VR-141



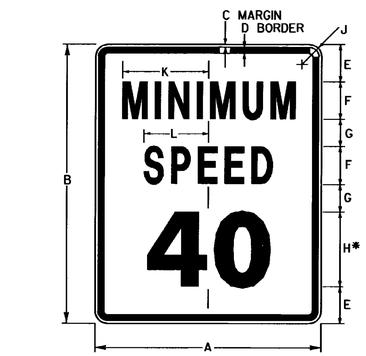
TEXT 4"C; SPACING 2"

VR-002



TEXT 2"C, SPACING 1 1/2", EXCEPT WHERE NOTED.

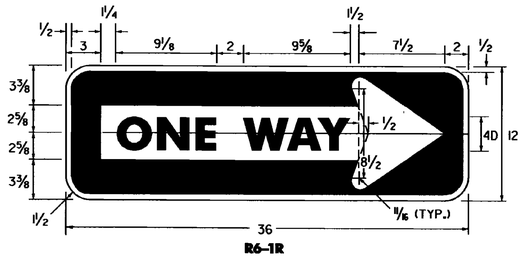
VR-046



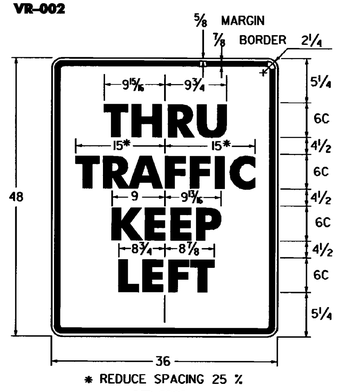
* OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE.

R2-4

SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	L
STD	24	30	3/8	5/8	4	4E	2	10E	1 1/2	9 3/16	6 5/8
EXPWY	36	48	5/8	7/8	6	6E	5	14E	2 1/4	13 3/4	10 3/16
FWY	48	60	3/4	1 1/4	8	8E	4	20E	3	18 3/8	13 5/8

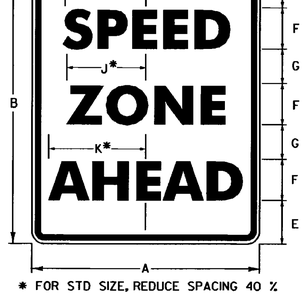


R6-1R



* REDUCE SPACING 25 %

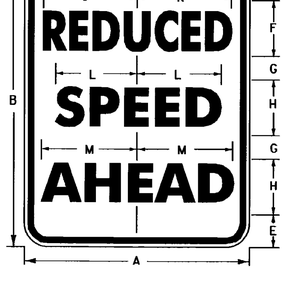
VR-118L



* FOR STD SIZE, REDUCE SPACING 40 %

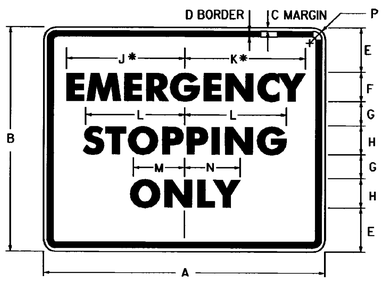
R2-5C

SIGN	DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L	
MIN.	18	24	3/8	5/8	3 1/2	4C	2 1/2	6 5/16	5 1/2	7	1 1/2	
STD.	24	30	3/8	5/8	3 1/2	6C	2 1/2	9 3/16	7 5/16	9 3/4	1 1/2	
EXPWY.	36	48	5/8	7/8	7	8C	5	13 5/8	11 1/16	14	2 1/4	
FWY.	48	60	3/4	1 1/4	9	10C	6	17	13 15/16	17 1/2	3	



R2-5A

SIGN	DIMENSIONS (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	
MIN.	18	24	3/8	5/8	3 1/2	4B	2 1/2	4C	6 7/8	7	6 5/16	7	1 1/2	
STD.	24	30	3/8	5/8	3 1/2	6B	2 1/2	6C	10	10 3/4	9 3/16	9 3/4	1 1/2	
EXPWY.	36	48	5/8	7/8	7	8B	5	8C	14 1/4	14 3/4	13 5/8	14	2 1/4	
FWY.	48	60	3/4	1 1/4	9	10B	6	10C	17 3/4	18 7/16	17	17 1/2	3	



* FOR FWY SIZE, REDUCE SPACING 50 %

R8-7

SIGN	DIMENSIONS (INCHES)														
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	
EXPWY.	30	24	3/8	5/8	3 1/2	4C	2 1/2	4D	12 1/2	13	12 3/4	6 7/16	7	1 1/2	
FWY.	48	36	5/8	7/8	5	6D	4	6D	20 7/16	21 1/8	19 1/8	10 1/16	10 5/16	2 1/4	

GENERAL:

1. ALL DIMENSIONS IN INCHES.

COLORS:

THE REGULATORY SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT ON REFLECTORIZED WHITE BACKGROUND, UNLESS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND APPROVED BY THE DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

MATERIALS:

THE SIGN BASE MATERIALS USED FOR REGULATORY SIGNS SHOWN ON THIS SHEET MAY BE ANY OF THE FOLLOWING OF THE MINIMUM THICKNESS NOTED.

	18'' X 24''	24'' X 30'' 30'' X 24''	36'' X 12'' 36'' X 36'' 36'' X 48'' 48'' X 36'' 48'' X 48'' 48'' X 60''
FLAT SHEET ALUMINUM	0.060''	0.080''	0.100''
HIGH DENSITY OVERLAID PLYWOOD	1/2''	1/2''	5/8''
GALVANIZED FLAT SHEET STEEL	18 GAGE	16 GAGE	14 GAGE

THE REFLECTIVE MATERIAL FOR GROUND MOUNTED SIGNS SHALL BE AASHTO TYPE II OR III WHITE REFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE TEXT OF THE SIGNS MAY BE LETTERING FILM, SILK SCREENED OR HAND PAINTED. HAND PAINTING MUST BE COMPARABLE IN QUALITY TO THE RESULTS OBTAINED BY SILK SCREENING.

SPECIFICATIONS:

REGULATORY SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR TRAFFIC SIGNS.

TEXT DESIGN:

LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM WITH THE ''STANDARD ALPHABET FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS'' AND DESIGNS PRESCRIBED IN THE STANDARD HIGHWAY SIGNS AS SPECIFIED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

OTHER STDS. : NONE REQUIRED

REVISIONS AND CORRECTIONS

OCT. 30, 1987 - DATE OF ORIGINAL ISSUE
SEPT. 20, 1995 - ADDED AND DELETED SIGN DETAILS, ADDED SIGN ID NUMBERS, MINOR NOTE REVISIONS.

APPROVED FOR THIS PROJECT AND/OR DESIGN IMPLEMENTATION. FHWA FINAL APPROVAL PENDING.

APPROVED

Gordon D. MacArthur
DIRECTOR OF ENGINEERING

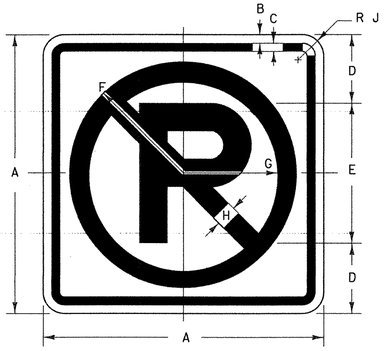
David A. Ross
TRAFFIC AND SAFETY ENGINEER

REGULATORY SIGN DETAILS

/traf/std/stdel42.dgn : stdel42.l

VERMONT AGENCY OF TRANSPORTATION

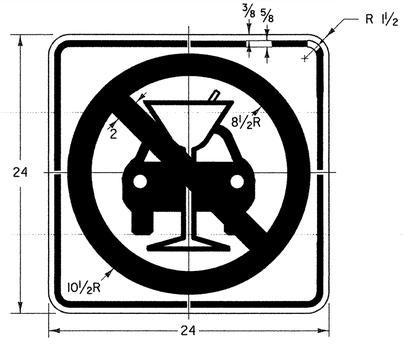
STANDARD
E-142



R8-3A

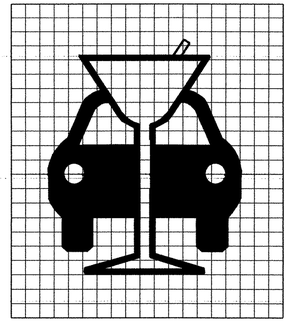
COLORS:
CIRCLE AND DIAGONAL - RED (RETROREFL)
SYMBOL AND BORDER - BLACK (NON - REFL)
BACKGROUND - WHITE (RETROREFL)

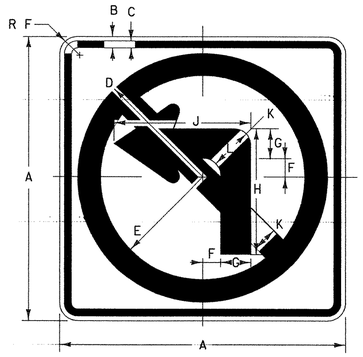
SIGN	DIMENSIONS (INCHES)								
	A	B	C	D	E	F	G	H	J
URBAN MIN. AND STD.	12	3/8	3/8	3	6E(M)	4 7/8	3 7/8	1	1 1/2
RURAL MIN. AND STD.	24	3/8	5/8	6	12E(M)	10 1/2	8 1/2	2	1 1/2
EXPWY.	36	5/8	7/8	9	18E(M)	15 3/4	12 3/4	3	2 1/4
FWY.	48	3/4	1 1/4	12	24E(M)	21	17	4	3



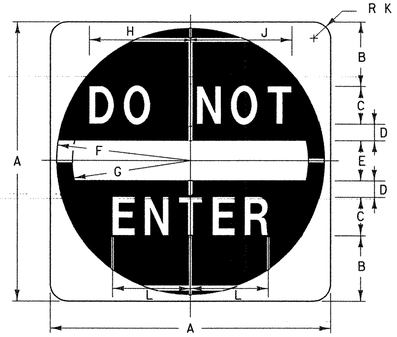
VR-654

COLORS:
CIRCLE AND DIAGONAL - RED (RETROREFL)
SYMBOL AND BORDER - BLACK (NON - REFL)
BACKGROUND - WHITE (RETROREFL)





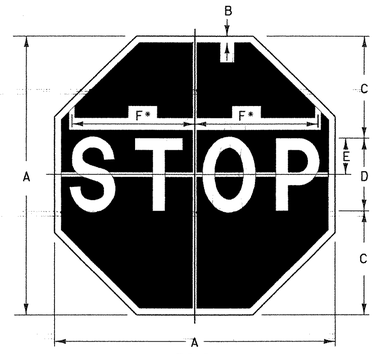
R3-2



R5-1

COLORS:
SYMBOL - RED (RETROREFL)
LEGEND AND BACKGROUND - WHITE (RETROREFL)

SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	L
MIN. AND STD.	30	6 1/2	4D	2	5	14 1/2	12 1/2	9 3/4	10	1 7/8	7 7/8
EXPWY.	36	7 1/2	5D	2 1/2	6	17 1/2	15	12	12 3/8	2 1/4	9 13/16
SPECIAL	48	11	6D	3	8	23 1/2	20	14 1/2	15	3	11 3/4

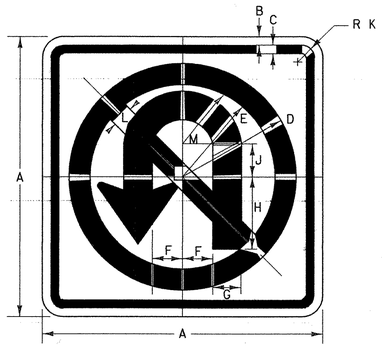


R1-1

• REDUCE SPACING 40 %

COLORS:
LEGEND - WHITE (RETROREFL)
BACKGROUND - RED (RETROREFL)

SIGN	DIMENSIONS (INCHES)					
	A	B	C	D	E	F
PATH	18	3/8	6	6C	3	7 3/4
MIN.	24	5/8	8	8C	4	10
STD.	30	3/4	10	10C	5	12 1/2
EXPWY.	36	7/8	12	12C	6	15
SPECIAL	48	1 1/4	16	16C	8	20

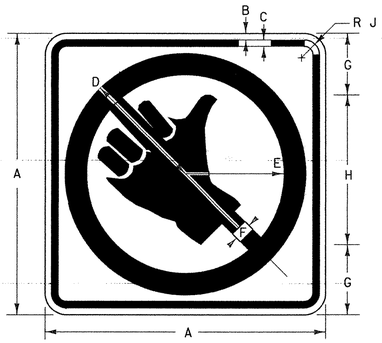


R3-4

SEE STANDARD E-151 FOR ARROW DETAIL

COLORS:
CIRCLE AND DIAGONAL - RED (RETROREFL)
ARROW AND BORDER - BLACK (NON - REFL)
BACKGROUND - WHITE (RETROREFL)

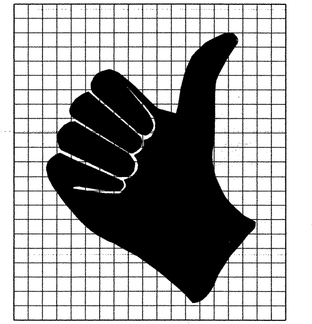
SIGN	DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L	M
MIN. AND STD.	24	3/8	5/8	10 1/2	8 1/2	2 1/2	2 1/2	6	2 1/4	1 1/2	2	5
SPECIAL	30	1/2	3/4	13 1/8	10 5/8	3 1/8	3 1/8	7 1/2	2 13/16	1 7/8	2 1/2	6 1/4
EXPWY.	36	5/8	7/8	15 3/4	12 3/4	3 3/4	3 3/4	9	3 3/8	2 1/4	3	7 1/2
SPECIAL	48	3/4	1 1/4	21	17	5	5	12	4 1/2	3	4	10

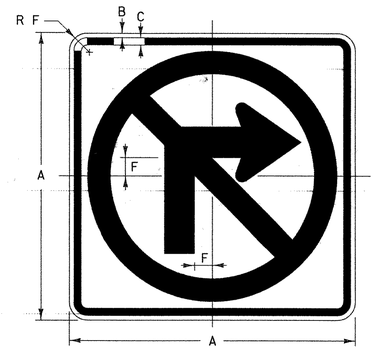


R9-4A

COLORS:
CIRCLE AND DIAGONAL - RED (RETROREFL)
SYMBOL AND BORDER - BLACK (NON - REFL)
BACKGROUND - WHITE (RETROREFL)

SIGN	DIMENSIONS (INCHES)							
	A	B	C	D	E	F	G	H	J
MIN.	18	3/8	5/8	7 1/8	6 3/8	1 1/2	3 3/4	10 1/2	1 1/2
STD.	24	3/8	5/8	10 1/2	8 1/2	2	5	14	1 1/2



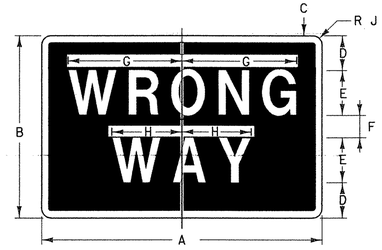


R3-1

NOTE
SEE STANDARD E-151 FOR ARROW DETAIL
USE SAME ARROW DETAIL FOR R3-1 AND R3-2

COLORS:
CIRCLE AND DIAGONAL - RED (RETROREFL)
ARROW AND BORDER - BLACK (NON - REFL)
BACKGROUND - WHITE (RETROREFL)

SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	L
MIN. AND STD.	24	3/8	5/8	10 1/2	8 1/2	1 1/2	2 1/2	10 1/2	11 1/2	2	1/2
SPECIAL	30	1/2	3/4	13 1/8	10 5/8	1 7/8	3 1/8	13 1/8	14 1/2	2 1/2	5/8
EXPWY.	36	5/8	7/8	15 3/4	12 3/4	2 1/4	3 3/4	15 3/4	17 1/4	3	3/4
SPECIAL	48	3/4	1 1/4	21	17	3	5	21	23	4	1



R5-1A

COLORS:
LEGEND - WHITE (RETROREFL)
BACKGROUND - RED (RETROREFL)

SIGN	DIMENSIONS (INCHES)								
	A	B	C	D	E	F	G	H	J
STD.	36	24	3/4	4 1/2	6D	3	13 5/16	8 1/16	1 1/2
SPECIAL	42	30	7/8	5	8D	4	17 3/4	10 3/4	1 7/8

(ALL DIMENSIONS SHOWN IN INCHES EXCEPT WHERE NOTED)

NOTES

DESIGN

LETTERS, DIGITS, ARROWS, SPACING AND TEXT DIMENSIONS SHALL CONFORM WITH THE "STANDARD HIGHWAY SIGNS BOOK" AND DESIGNS PRESCRIBED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) ADOPTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION (FHWA). SEE STANDARD E-144 FOR ARROWHEAD DETAILS.

MATERIALS

THE SIGN BASE MATERIALS USED FOR REGULATORY SIGNS SHOWN ON THIS SHEET MAY BE ANY OF THE FOLLOWING OF THE MINIMUM THICKNESS NOTED.

	12" X 12" 18" X 18"	24" X 24" 30" X 18" 30" X 30"	36" X 24" 36" X 36" 42" X 30"	48"X48"
FLAT SHEET ALUMINUM	0.060"	0.080"	0.100"	0.125"

REFLECTORIZATION

THE BACKGROUND RETROREFLECTIVE MATERIAL SHALL BE ASTM TYPE III OR TYPE VIII RETROREFLECTIVE SHEETING APPLIED TO THE ENTIRE BACKGROUND OF THE SIGN. THE BLACK PORTIONS OF SIGNS MAY BE LETTERING FILM OR SILK SCREENED.

COLORS

THE REGULATORY SIGNS SHOWN ON THIS SHEET SHALL BE AS DETAILED FOR EACH SIGN. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

SPECIFICATIONS

REGULATORY SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR CONSTRUCTION "TRAFFIC SIGNS".

OTHER STDS. REQUIRED: E-144, E-151

REVISIONS AND CORRECTIONS

OCT. 30, 1987 - DATE OF ORIGINAL ISSUE
SEPT. 20, 1995 - ADDED AND DELETED SIGN DETAILS, ADDED SIGN ID NUMBERS, MINOR NOTE REVISIONS.
JUNE 15, 2004 - CHANGED REFLECTIVE SHEETING TO TYPE III OR TYPE VIII

APPROVED

DIRECTOR OF PROGRAM DEVELOPMENT

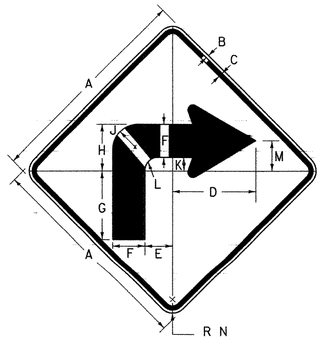
TRAFFIC OPERATIONS ENGINEER

FEDERAL HIGHWAY ADMINISTRATION

REGULATORY SIGN DETAILS

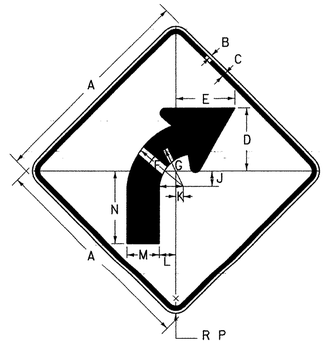
VERMONT AGENCY OF TRANSPORTATION

STANDARD
E-143



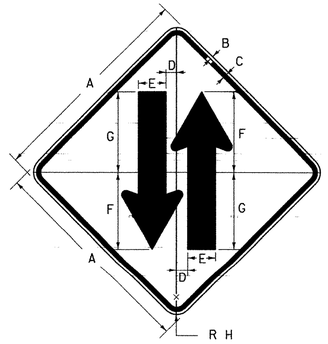
W1-1R

SIGN	DIMENSIONS (INCHES)												
	A	B	C	D	E	F	G	H	J	K	L	M	N
PATH	18	3/8	5/8	7 1/4	2 1/4	2 5/8	5 7/8	3 3/4	1 7/8	1	5/8	2 1/2	1 1/2
MIN.	24	3/8	5/8	9 5/8	3	3 1/2	7 3/4	5	2 1/2	1 1/2	1 5/16	3 1/4	1 1/2
STD.	30	1/2	3/4	12	3 3/4	4 3/8	9 11/16	6 1/4	3	1 7/8	1	4 1/16	1 7/8
EXPWY.	36	5/8	7/8	14 3/8	4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	2 1/4	1 1/4	4 7/8	2 1/4
SPECIAL	48	3/4	1 1/4	19 3/16	6	7	15 1/2	10	4 7/8	3	1 5/8	6 1/2	3



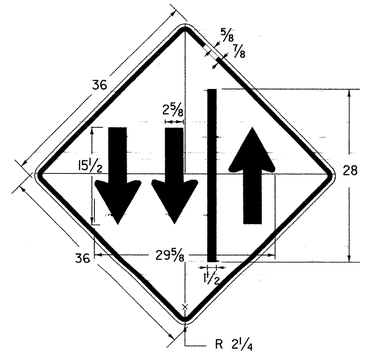
W1-2R

SIGN	DIMENSIONS (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
PATH	18	3/8	5/8	5 3/8	5 1/2	6	4 3/4	3 3/8	1 3/4	1 1/4	2	2 5/8	6 1/4	1 1/2
MIN.	24	3/8	5/8	7 1/8	7 1/4	8	6 1/4	4 1/2	2 11/32	1 3/4	2 3/4	3 1/2	8 1/4	1 1/2
STD.	30	1/2	3/4	8 7/8	9 1/16	10	7 13/16	5 5/8	2 15/16	2 3/16	3 7/16	4 3/8	10 5/16	1 7/8
EXPWY.	36	5/8	7/8	10 5/8	10 7/8	12	9 3/8	6 3/4	3 1/2	2 5/8	4 1/8	5 1/4	12 3/8	2 1/4
SPECIAL	48	3/4	1 1/4	14 3/16	14 1/2	16	12 1/2	9	4 11/16	3 1/2	5 1/2	7	16 1/2	3

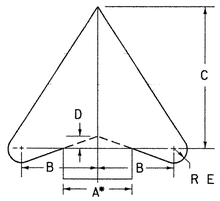


W6-3

SIGN	DIMENSIONS (INCHES)							
	A	B	C	D	E	F	G	H
MIN.	30	1/2	3/4	2 7/16	3 3/4	11 1/4	10 5/8	1 7/8
STD.	36	5/8	7/8	2 15/16	4 1/4	13 1/2	12 3/4	2 1/4
SPECIAL	48	3/4	1 1/4	3 7/8	6	18	17	3

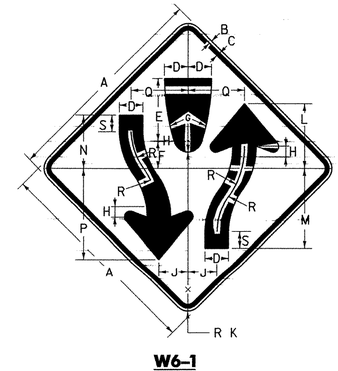


VW-029



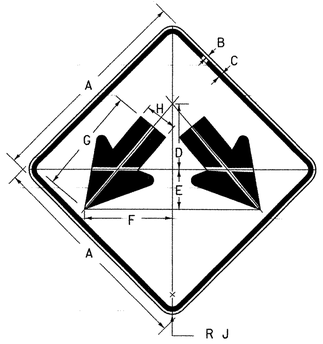
*SEE SIGN DETAIL FOR APPROPRIATE WIDTH

DIMENSIONS (INCHES)				
A	B	C	D	E
2	2 5/16	4 1/16	5/16	3/8
2 1/4	2 5/8	4 1/2	3/8	7/16
2 1/2	2 7/8	5 1/16	3/8	1/2
2 5/8	3	5 1/4	3/8	1/2
2 3/4	3 3/16	5 5/16	7/16	9/16
3	3 1/2	6 1/8	7/16	9/16
3 1/8	3 5/8	6 3/8	1/2	5/8
3 1/4	3 3/4	6 5/8	1/2	5/8
3 5/16	3 13/16	6 11/16	1/2	11/16
3 1/2	4	7 1/8	9/16	11/16
3 3/4	4 5/16	7 5/8	9/16	3/4
4	4 5/8	8 1/8	5/8	13/16
4 1/16	4 3/4	8 1/4	5/8	13/16
4 1/4	4 7/8	8 5/8	5/8	13/16
4 3/8	5	8 7/8	11/16	7/8
4 1/2	5 3/16	9 1/8	11/16	7/8
4 3/4	5 7/16	9 5/8	3/4	1
4 7/8	5 5/8	9 7/8	3/4	1
5	5 3/4	10 1/8	3/4	1
5 1/4	6	10 5/8	13/16	1 1/16
5 1/2	6 3/8	11 1/8	7/8	1 1/8
5 3/4	6 5/8	11 11/16	7/8	1 1/8
6	6 7/8	12 3/16	15/16	1 3/16
6 1/2	7 1/2	13 3/16	1	1 5/16
7	8	14 3/16	1 1/16	1 3/8
7 1/2	8 5/8	15 3/16	1 1/8	1 1/2
8	9 3/16	16 1/4	1 1/4	1 5/8



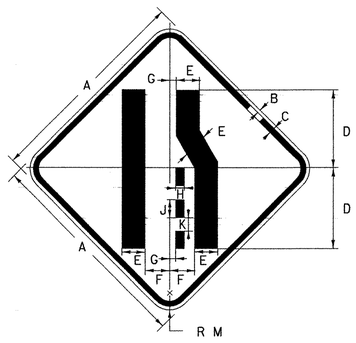
W6-1

SIGN	DIMENSIONS (INCHES)															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
MIN.	30	1/2	3/4	3 5/16	8 5/16	4 1/8	25	1 11/16	4 1/8	1 7/8	10	11 5/16	7 15/16	13 11/16	7 7/8	8 5/16	2 1/16
STD. & EXPWY.	36	5/8	7/8	4	10	5	30	2	5	2 1/4	12	14	9 1/2	16 1/2	9 1/2	10	2 1/2
SPECIAL	48	3/4	1 1/4	5 1/4	13 1/8	6 5/16	39 5/16	2 5/8	6 5/16	3	16	18 11/16	12 11/16	22	12 7/16	13 1/8	3 5/16



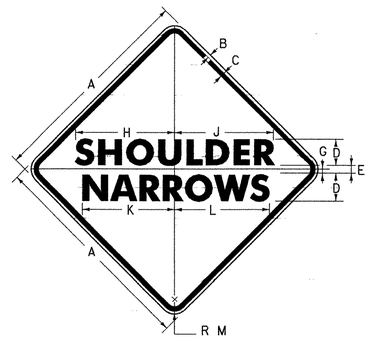
W12-1

SIGN	DIMENSIONS (INCHES)								
	A	B	C	D	E	F	G	H	J
STD. & MIN.	24	3/8	5/8	8	4 1/8	9 3/4	11 5/8	3 1/8	1 1/2
SPECIAL	30	1/2	3/4	10	5 1/4	12 3/8	14 11/16	4	1 7/8
SPECIAL	36	5/8	7/8	12	6 1/8	14 5/8	17 1/2	4 3/4	2 1/4



W4-2

SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	L
MIN.	30	1/2	3/4	10	3 3/8	4 3/16	7/8	1 1/2	2 1/2	1 1/4	1 7/8
STD. & EXPWY.	36	5/8	7/8	12	4	5	1	1 3/4	3	1 1/2	2 1/4
FWY.	48	3/4	1 1/4	16	5 3/8	6 11/16	1 1/4	2 3/8	4	2	3



VW-619

SIGN	DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L	M
MIN & STD.	36	5/8	7/8	5C	3	6D	1	13 11/16	13 1/16	17 5/8	18 1/4	21 1/4
EXPWY.	48	3/4	1 1/4	7D	3 1/2	7D	1	23 13/16	23 7/8	21 1/2	21 9/16	3

(ALL DIMENSIONS SHOWN IN INCHES EXCEPT WHERE NOTED)

NOTES

DESIGN

LETTERS, DIGITS, ARROWS, SYMBOLS, SPACING, AND TEXT DIMENSIONS SHALL CONFORM WITH THE "STANDARD HIGHWAYS SIGNS BOOK" AND DESIGNS PRESCRIBED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) ADOPTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION (FHWA).

MATERIALS

THE SIGN BASE MATERIALS USED FOR THE WARNING SIGNS SHOWN ON THIS SHEET MAY BE ANY OF THE FOLLOWING, OF THE MINIMUM THICKNESS NOTED.

	18" x 18"	24" x 24" 24" x 12" 30" x 30"	36" x 18" 36" x 36"	48" x 48"
FLAT SHEET ALUMINUM	0.060"	0.080"	0.100"	0.125"

REFLECTORIZATION

THE BACKGROUND RETROREFLECTIVE MATERIAL SHALL BE ASTM TYPE III, TYPE VIII OR TYPE IX RETROREFLECTIVE SHEETING APPLIED TO THE ENTIRE SIGN.
THE TEXT, BORDER AND SYMBOLS SHALL BE LETTERING FILM OR SILK SCREENED.

COLORS

ALL THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT AND SYMBOLS ON RETROREFLECTORIZED YELLOW BACKGROUND UNLESS OTHERWISE NOTED. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

SPECIFICATIONS

WARNING SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR CONSTRUCTION "TRAFFIC SIGNS".

OTHER STDS. REQUIRED:

REVISIONS AND CORRECTIONS

OCT. 31, 1987 - DATE OF ORIGINAL ISSUE

AUG. 08, 1995 - MISC. NOTE CHANGES AND ADDED I.D. NUMBERS TO EACH DETAIL.

MAY 01, 2004 - CHANGED REFLECTIVE SHEETING TO TYPE III ADDED PATH DIMENSIONS AND VW-029 SIGN

APPROVED

DIRECTOR OF PROGRAM DEVELOPMENT

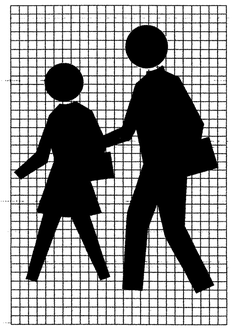
TRAFFIC OPERATIONS ENGINEER

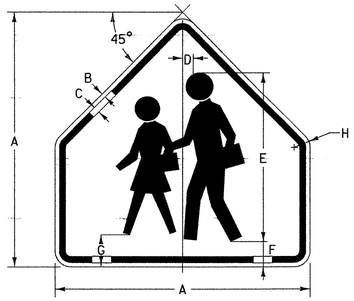
FEDERAL HIGHWAY ADMINISTRATION

WARNING SIGNS DETAIL

VERMONT AGENCY OF TRANSPORTATION

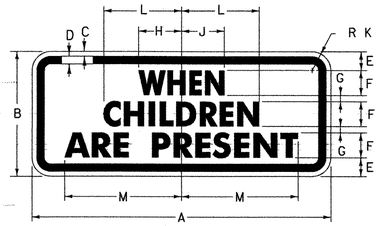
STANDARD E-151





S1-1

SIGN	DIMENSIONS (INCHES)							
	A	B	C	D	E	F	G	H
MIN./STD.	30	1/2	3/4	2	20	3	3 3/4	1 7/8
EXPWY.	36	5/8	7/8	2 1/2	24	3 1/2	4 1/2	2 1/4
SPECIAL	48	3/4	1 1/4	3 1/4	32	5	6	3

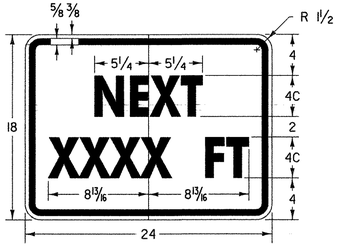


S4-2

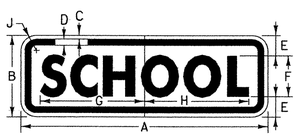
COLORS:

BORDER AND LEGEND - BLACK (NON-REFL)
BACKGROUND - WHITE (RETROREFLECTIVE)

SIGN	DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L	M
MIN./STD.	24	10	3/8	5/8	1 1/2	2D	1/2	3 1/2	3 5/16	1 1/2	6 1/4	9 5/16
EXPWY.	36	15	5/8	7/8	2 1/4	3D	3/4	5 3/16	5 1/8	2 1/4	9 3/8	14
SPECIAL	48	20	3/4	1 1/4	3	4D	1	7	6 5/8	3	12 1/2	18 5/8

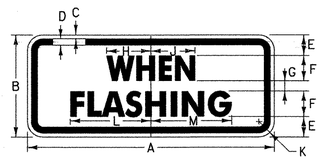


W16-4



S4-3

SIGN	DIMENSIONS (INCHES)								
	A	B	C	D	E	F	G	H	J
MIN./STD.	24	8	3/8	5/8	2	4D	10	10 1/4	1 1/2
EXPWY.	36	12	5/8	7/8	3	6D	15	15 3/8	2 1/4
SPECIAL	48	16	3/4	1 1/4	4	8D	20	20 1/2	3

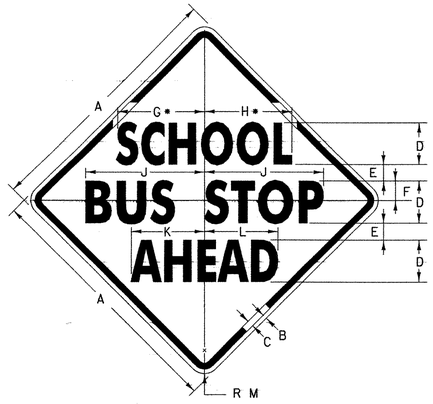


S4-4

COLORS:

BORDER AND LEGEND - BLACK (NON-REFL)
BACKGROUND - WHITE (RETROREFLECTIVE)

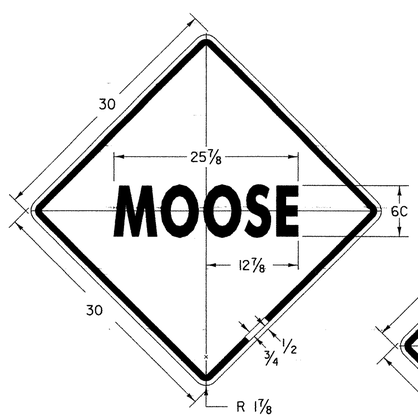
SIGN	DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L	M
MIN./STD.	24	10	3/8	5/8	2	2 1/2D	1	4 3/8	4 1/4	1 1/2	7 5/8	8 1/16
EXPWY.	36	15	5/8	7/8	2 3/4	4D	1 1/2	6 5/16	6 13/16	2 1/4	12 3/16	12 5/16
SPECIAL	48	20	3/4	1 1/4	4	5D	2	8 3/4	8 1/2	3	15 1/4	16 1/8

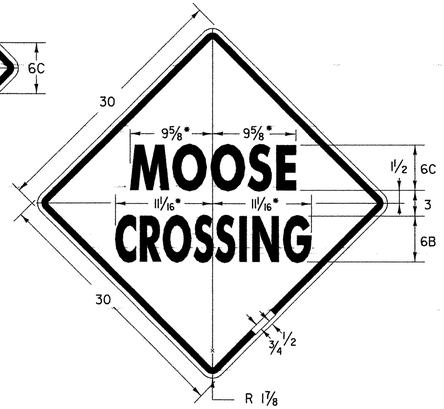


S3-1

* REDUCE SPACING 13½%

SIGN	DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L	M
MIN./STD.	30	1/2	3/4	5C	2	2 1/2	.10	10 1/2	.14	8 1/4	9	1 7/8
SPECIAL	36	5/8	7/8	6C	3	3	11 3/4	12 3/4	17	10	11	2 1/4

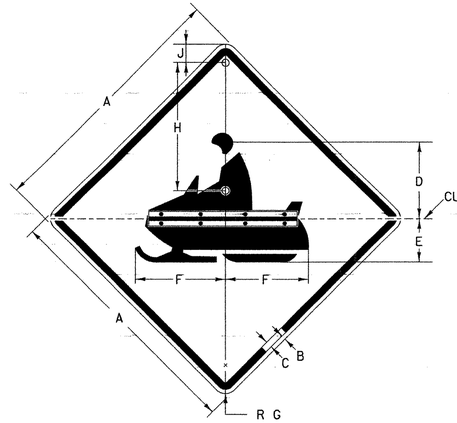




VW-001

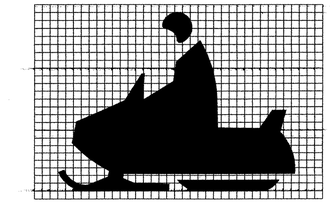
VW-000

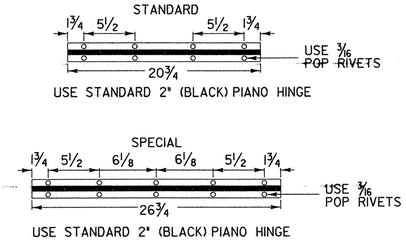
(ALL DIMENSIONS SHOWN IN INCHES EXCEPT WHERE NOTED)



W11-6H

SIGN	DIMENSIONS (INCHES)								
	A	B	C	D	E	F	G	H	J
STD.	30	1/2	3/4	11 7/16	5 5/16	12 11/16	1 7/8	14	2 1/2
SPECIAL	36	5/8	7/8	14 1/8	6 3/4	15 1/4	2 1/4	19	2 1/2





HINGE DETAILS

NOTES

DESIGN

LETTERS, DIGITS, ARROWS, SYMBOLS, SPACINGS, AND TEXT DIMENSIONS SHALL CONFORM WITH THE "STANDARD HIGHWAY SIGNS BOOK" AND DESIGNS PRESCRIBED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) ADOPTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION (FHWA).

MATERIALS

THE SIGN BASE MATERIALS USED FOR THE WARNING SIGNS SHOWN ON THIS SHEET MAY BE ANY OF THE FOLLOWING, OF THE MINIMUM THICKNESS NOTED.

	24" X 8" 24" X 10" 24" X 18" 24" X 24" 30" X 30"	36" X 12" 36" X 15" 36" X 36"	48" X 16" 48" X 20"
FLAT SHEET ALUMINUM	0.080"	0.100"	0.125"

REFLECTORIZATION

THE BACKGROUND RETROREFLECTIVE MATERIAL SHALL BE ASTM TYPE III, TYPE VIII OR TYPE IX RETROREFLECTIVE SHEETING APPLIED TO THE ENTIRE SIGN. THE TEXT, BORDER AND SYMBOLS SHALL BE LETTERING FILM OR SILK SCREENED.

COLORS

ALL THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT AND SYMBOLS ON RETROREFLECTORIZED YELLOW BACKGROUND UNLESS OTHERWISE NOTED. FLUORESCENT YELLOW-GREEN BACKGROUND SHALL BE USED WITH SCHOOL WARNING SIGNS. THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

SPECIFICATIONS

WARNING SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR CONSTRUCTION "TRAFFIC SIGNS".

OTHER STDS. E-142 REQUIRED:

REVISIONS AND CORRECTIONS

AUG. 08, 1995 - DATE OF ORIGINAL ISSUE
JAN. 15, 1997 - ADDED HINGE DETAIL
MAY 01, 2004 - CHANGED COLOR FOR SCHOOL WARNING SIGN CHANGED REFLECTIVE SHEETING TO TYPE III, TYPE VIII OR TYPE IX

APPROVED

DIRECTOR OF PROGRAM DEVELOPMENT

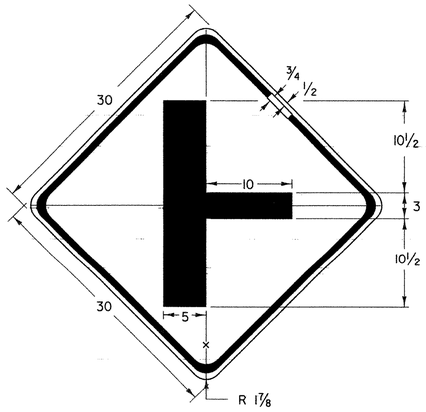
TRAFFIC OPERATIONS ENGINEER

FEDERAL HIGHWAY ADMINISTRATION

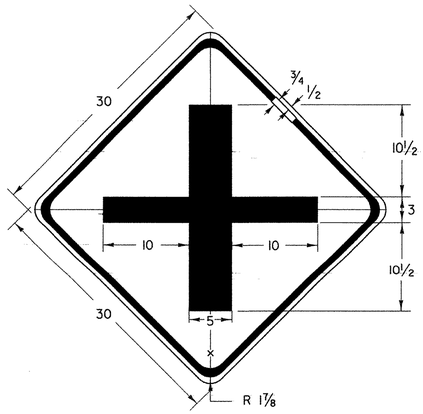
WARNING SIGN DETAILS

VERMONT AGENCY OF TRANSPORTATION

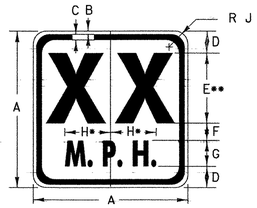
STANDARD
E-153



W2-2M



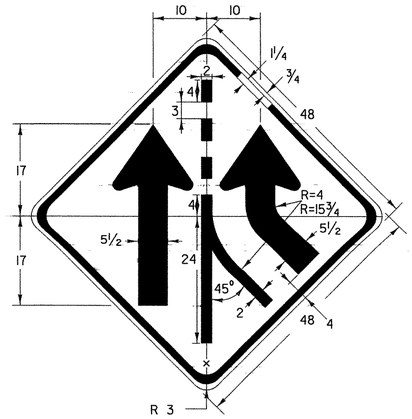
W2-1M



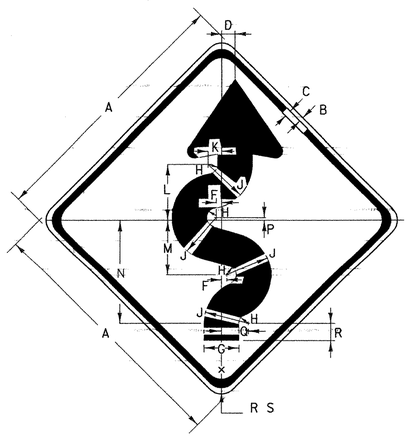
W13-1

* INCREASE SPACING 100%
** OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE

SIGN	DIMENSIONS (INCHES)								
	A	B	C	D	E	F	G	H	J
STD.	18	3/8	5/8	2 1/2	8E	2	3E	5 5/16	1 1/2
SPECIAL	24	3/8	5/8	3 5/8	10E	2 3/4	4E	7 1/16	1 1/2



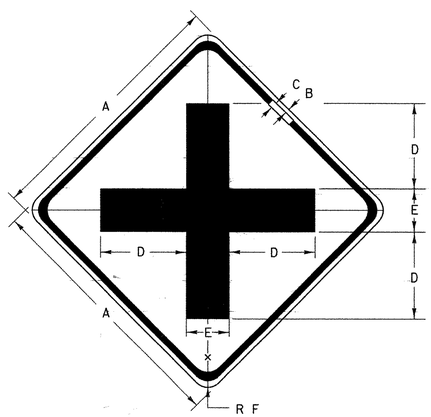
W4-3



W1-5

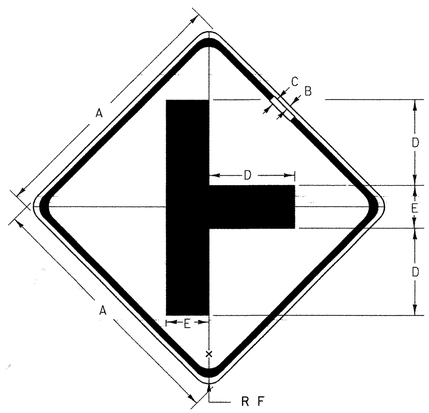
SIGN	DIMENSIONS (INCHES)																	
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	
PATH	18	3/8	5/8	1	9 5/8	3/8	2 1/2	5/8	3	1	4	4	8 5/8	1/4	2	1 1/4	1 1/2	
MIN.	24	3/8	5/8	1 1/4	12 3/4	1/2	3 1/4	7/8	4 1/8	1 1/4	5 3/16	5 1/4	11 3/8	1/4	2 1/2	1 19/32	1 1/2	
STD.	30	1/2	3/4	1 19/16	15 15/16	5/8	4 1/16	1 3/32	5 5/32	1 9/16	6 3/64	6 9/16	14 1/32	5/16	3 1/8	2	1 7/8	
EXPWY.	36	5/8	7/8	1 7/8	19 1/8	3/4	4 7/8	1 5/16	6 3/16	1 7/8	7 5/32	7 7/8	17 1/16	3/8	3 3/4	2 29/32	2 1/4	
SPECIAL	48	3/4	1 1/4	2 1/2	25 1/2	1	6 1/2	1 3/4	8 1/4	2 1/2	10 3/8	10 1/2	22 3/4	1/2	5	3 3/16	3	

STATE ROUTE /MINOR TOWN HIGHWAY INTERSECTION SIGNS (TYP.)



W2-1

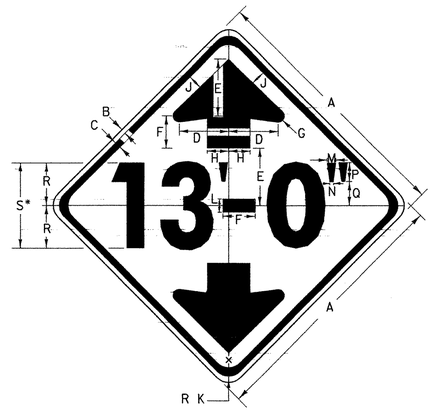
SIGN	DIMENSIONS (INCHES)					
	A	B	C	D	E	F
PATH	18	3/8	5/8	6	3	1 1/2
MIN.	24	3/8	5/8	8	4	1 1/2
STD.	30	1/2	3/4	10	5	1 7/8
EXPWY.	36	5/8	7/8	12	6	2 1/4
SPECIAL	48	3/4	1 1/4	16	8	3



W2-2

SIGN	DIMENSIONS (INCHES)					
	A	B	C	D	E	F
PATH	18	3/8	5/8	6	3	1 1/2
MIN.	24	3/8	5/8	8	4	1 1/2
STD.	30	1/2	3/4	10	5	1 7/8
EXPWY.	36	5/8	7/8	12	6	2 1/4
SPECIAL	48	3/4	1 1/4	16	8	3

STATE ROUTE /STATE ROUTE OR MAJOR TOWN HIGHWAY INTERSECTION SIGNS (TYP.)



W12-2

* OPTICALLY SPACE VERTICAL CLEARANCE ABOUT VERTICAL CENTERLINE (WHERE 10" IS USED IN VERT. CLEARANCE, USE SERIES C NUMERALS)

SIGN	DIMENSIONS (INCHES)																	
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	
MIN.	30	1/2	3/4	5 3/4	6 5/8	3 3/4	3/4	2 1/2	1 11/16	1 7/8	1 9/16	1	7/16	2 1/4	3 5/16	5	10D	
STD. & EXPWY.	36	5/8	7/8	6 7/8	8	4 1/2	1	3	2	2 1/4	1 7/8	1 1/4	1/2	2 3/4	4	6	12D	
FWY.	48	3/4	1 1/4	9 3/16	10 5/8	5 7/8	1 5/16	4	2 5/8	3	2 7/16	1 5/8	5/8	3 5/8	5 1/2	8	16D	

(ALL DIMENSIONS SHOWN IN INCHES EXCEPT WHERE NOTED)

NOTES

DESIGN

LETTERS, DIGITS, ARROWS, SYMBOLS, SPACINGS, AND TEXT DIMENSIONS SHALL CONFORM WITH THE "STANDARD HIGHWAY SIGNS BOOK" AND DESIGNS PRESCRIBED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) ADOPTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION (FHWA). SEE STANDARD SHEET E-151 FOR ARROWHEAD DETAILS.

MATERIALS

THE SIGN BASE MATERIALS USED FOR THE WARNING SIGNS SHOWN ON THIS SHEET MAY BE ANY OF THE FOLLOWING, OF MINIMUM THICKNESS NOTED.

	18" X 18"	24"X24" 30"X30"	36"X36"	48"X48"
FLAT SHEET ALUMINUM	0.060"	0.080"	0.100"	0.125"

REFLECTORIZATION

THE BACKGROUND RETROREFLECTIVE MATERIAL SHALL BE ASTM TYPE III, TYPE VIII OR TYPE IX RETROREFLECTIVE SHEETING APPLIED TO THE ENTIRE SIGN.
THE TEXT, BORDER AND SYMBOLS SHALL BE LETTERING FILM OR SILK SCREENED.

COLORS

ALL THE WARNING SIGNS SHOWN ON THIS SHEET SHALL HAVE BLACK TEXT AND SYMBOLS ON RETROREFLECTORIZED YELLOW BACKGROUND UNLESS OTHERWISE NOTED.
THE COLORS SHALL CONFORM WITH THE COLORS ADOPTED BY AASHTO AND APPROVED BY THE FHWA.

SPECIFICATIONS

WARNING SIGNS SHALL MEET THE VERMONT STANDARD SPECIFICATIONS FOR CONSTRUCTION "TRAFFIC SIGNS".

OTHER STDS. REQUIRED: E-151

REVISIONS AND CORRECTIONS

AUG. 08, 1995 - DATE OF ORIGINAL ISSUE
MAY 01, 2004 - CHANGED REFLECTIVE SHEETING TO TYPE III MINOR NOTE CHANGES

APPROVED

DIRECTOR OF PROGRAM DEVELOPMENT

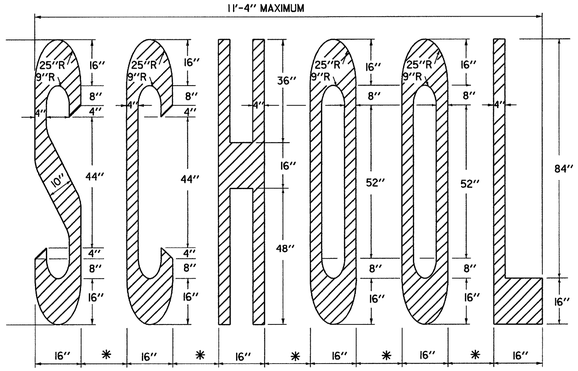
TRAFFIC OPERATIONS ENGINEER

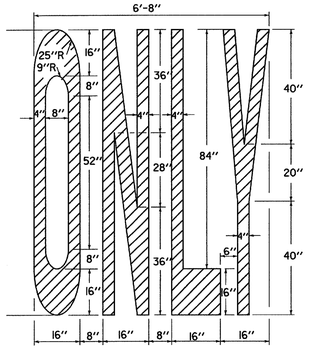
FEDERAL HIGHWAY ADMINISTRATION

WARNING SIGN DETAILS

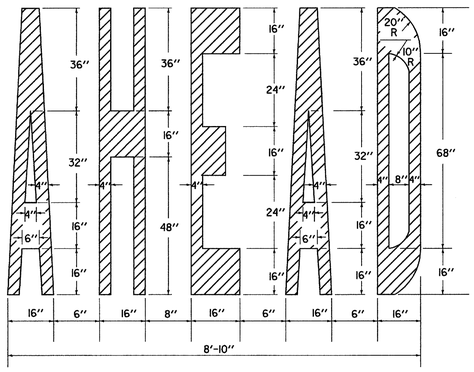
VERMONT AGENCY OF TRANSPORTATION

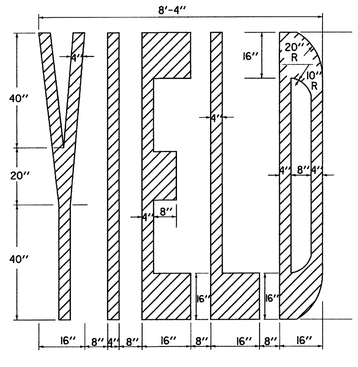
STANDARD
E-155

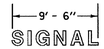




* (4''-8'') - ADJUST TO AVAILABLE PAVEMENT WIDTH



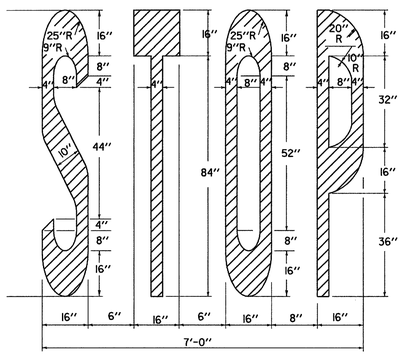




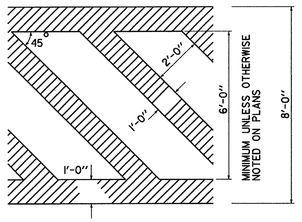
6" LETTER SPACING

LETTER HEIGHT

DIMENSIONS ARE FOR 8' - 4" LETTER HEIGHTS. A LESSER HEIGHT OF 8' - 0" IS ACCEPTABLE AS LONG AS THE DIMENSIONS ARE PROPORTIONAL TO THE DETAILS SHOWN SEE NOTE BELOW.

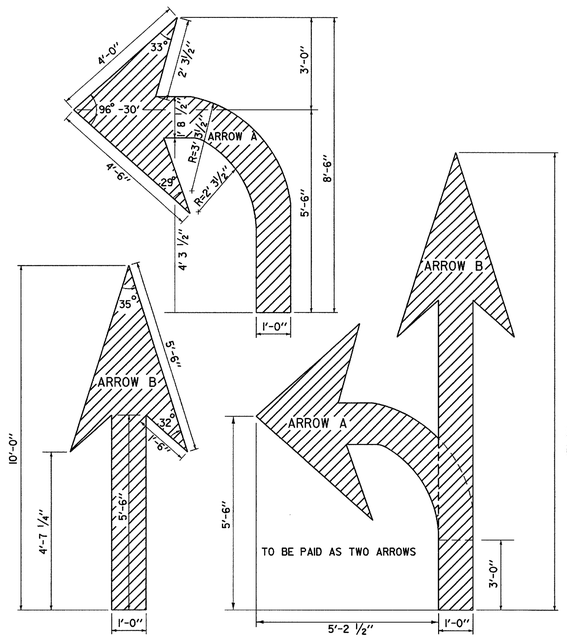


THE LETTER "G" PERTAINS TO THE WORD "SIGNAL" FOR OTHER LETTERS, SEE ABOVE.

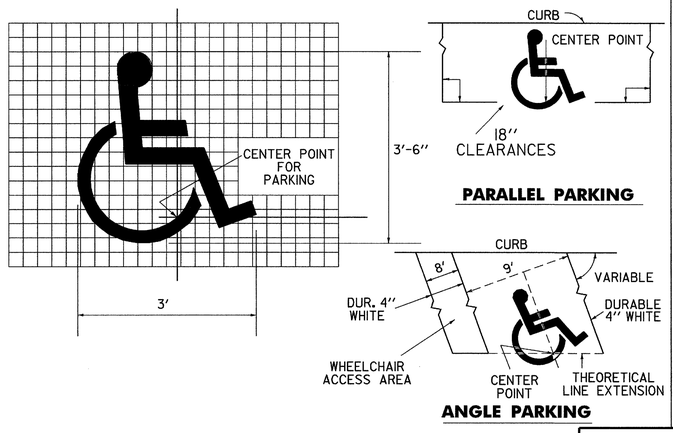


ARROWS AND WORD MARKINGS THAT CONFORM TO THE DIMENSIONS SHOWN ON THIS SHEET OR AS DETAILED IN THE BOOKLET ENTITLED "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (CURRENT EDITION) PREPARED BY THE FEDERAL HIGHWAY ADMINISTRATION WILL BE ACCEPTABLE.

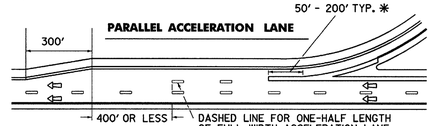
LETTER IN WORD MARKING AND CROSSWALK DETAILS



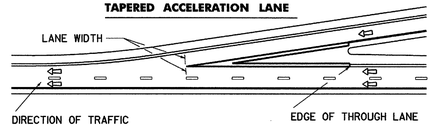
ARROW DETAILS

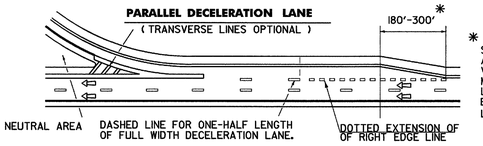


HANDICAPPED PAVEMENT MARKING DETAILS

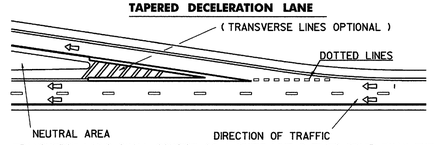


* USE LONGER LENGTH TO EMPHASIZE SITUATIONS WHERE THE CROSSING REQUIRES UNUSUAL CARE SUCH AS HIGH VOLUME MERGE AREAS.





* SHORTER TAPERS GIVE A BETTER TARGET VALUE, HOWEVER ALIGNMENT MAY DICTATE A LONGER TAPER. RESIDENT ENGINEER SHALL ESTIMATE LENGTH.

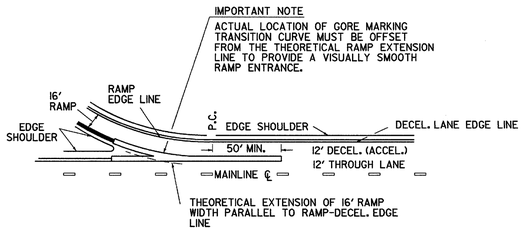


TRANSVERSE LINES SHALL CONSIST OF A WHITE LINE 2 TIMES WIDER THAN THE MAIN LINE MARKING WIDTH SPACED 5'-0" C-C AND SET AT 45° TO MAIN LINE EDGE LINES. THESE MARKINGS SHALL BE USED TO INCREASE VISIBILITY DUE TO DIFFICULT VERTICAL OR HORIZONTAL ALIGNMENT, AS DIRECTED BY THE RESIDENT ENGINEER.

LEGEND

RAMP MARKINGS

- WHITE LINES
- YELLOW LINES
- CHANNELIZATION WHITE LINES
- WHITE DOTTED LINES (2' SOLID - 4' GAP)
- DIRECTION OF TRAFFIC FLOW



DETAIL - GORE MARKING TRANSITION CURVE

THIS SHEET IS NOT TO SCALE

OTHER STDS. REQUIRED

REVISIONS AND CORRECTIONS

SEPT. 10, 1987 - DATE OF ORIGINAL ISSUE
JAN. 23, 1989 - ADDED DOTTED LINES, "SIGNAL" DIMENSIONS, CLARIFIED LETTER HEIGHT.
AUG. 18, 1995 - MISC. NOTE CHANGES
FEB. 1, 1999 - CHANGED NOTES FOR ACCELERATION & DECELERATION LANES

APPROVED

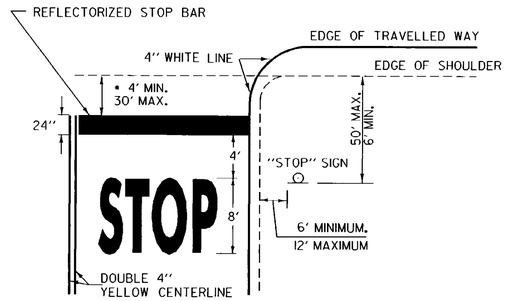
Robert F. Stallter Actg.
DIRECTOR OF PROJECT DEVELOPMENT

PAVEMENT MARKING DETAILS

/traf/std/stdel91.dgn/stdel91.1

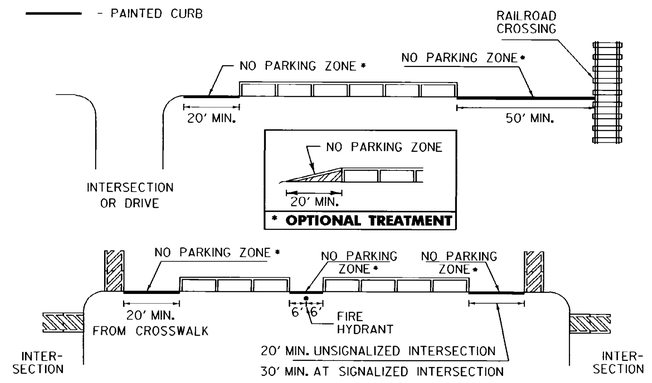
VERMONT AGENCY OF TRANSPORTATION

STANDARD E-191

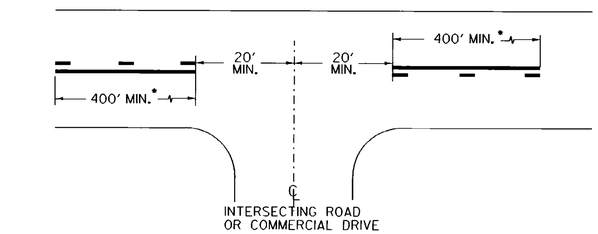


• THE "DESIRED STOPPING POINT" IS THE LOCATION BASED ON SITE CONDITIONS THAT BEST ALLOWS THE STOPPED VEHICLE TO VIEW THE APPROACHING TRAFFIC.

STOP BAR LAYOUT



NO PARKING LAYOUT DETAILS



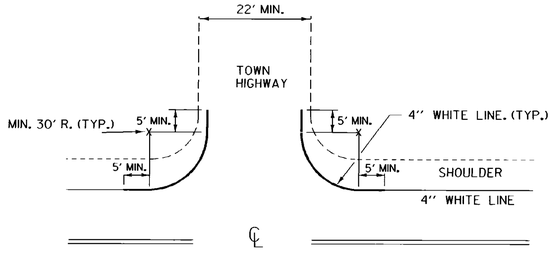
• THE SOLID LINE SHALL BE PAIRED WITH EITHER A SOLID OR DASHED LINE DEPENDING ON SIGHT DISTANCE AVAILABILITY IN THE OPPOSING DIRECTION. ADJUSTMENTS TO THE 40 FOOT CENTERLINE OPENING MAY BE MADE TO ACCOMMODATE SKEWED INTERSECTIONS.

CENTERLINE BREAKES:

A. AT ALL STATE HIGHWAYS AND TOWN HIGHWAYS, INCLUDING CLASS 4 TH'S. THAT HAVE STOP AND LEGAL LOAD LIMIT SIGNS INSTALLED

B. COMMERCIAL DRIVES:
1. WHERE A SEPERATE TURN LANE EXISTS ON THE MAIN LINE (LT. OR RT.)
2. SIGNIFICANT TRAFFIC VOLUMES EXISTS.
3. IF MOTORISTS NEED ASSISTANCE TO DEFINE ENTRANCE POINTS.

CENTERLINE LAYOUT

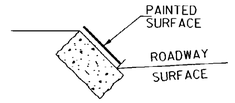


EDGELINES SHALL BE APPLIED TO ALL STATE HIGHWAYS AND SHOULD BE MAINTAINED AT A CONSTANT DISTANCE FROM THE CENTERLINE UNLESS PAVEMENT WIDTH INCREASES TO ALLOW WIDER LANES.

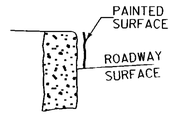
APPLY EDGELINE AS DETAILED ON ALL PAVED CLASS 1 & CLASS 2 TOWN HIGHWAYS AND ANY CLASS 3 TOWN HIGHWAY 22 FEET OR MORE IN WIDTH.

IF MIN. 30 FOOT RADIUS CANNOT BE OBTAINED, OR THE TOWN HIGHWAY IS NOT PAVED, BREAK THE EDGELINE USING AN 80 FOOT GAP AT INTERSECTION.

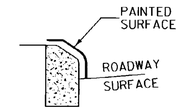
EDGELINE LAYOUTS



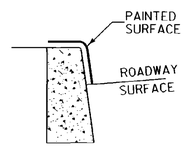
GRANITE SLOPE EDGING



VERTICAL GRANITE CURB

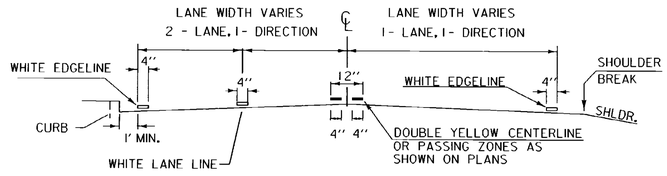


TYPE A (CONCRETE)

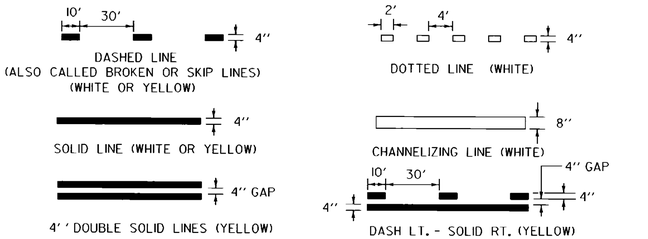


TYPE B (CONCRETE)

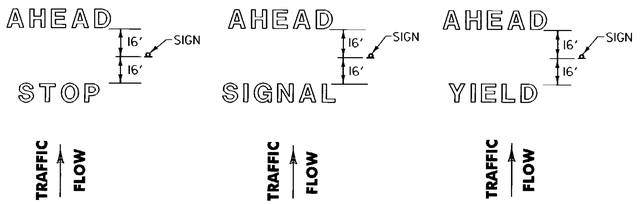
PAINTED CURB



PAVEMENT MARKING PLACEMENT DETAIL

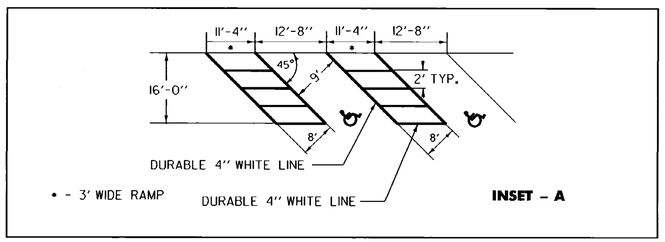


PAVEMENT MARKING LINE DETAILS



LETTER IN WORD MARKING SPACING DETAIL

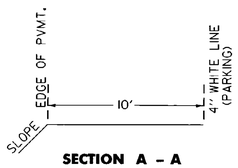
NOTE: SINGLE WORDS CENTERED ON SIGN ie: SCHOOL OR YIELD



INSET - A

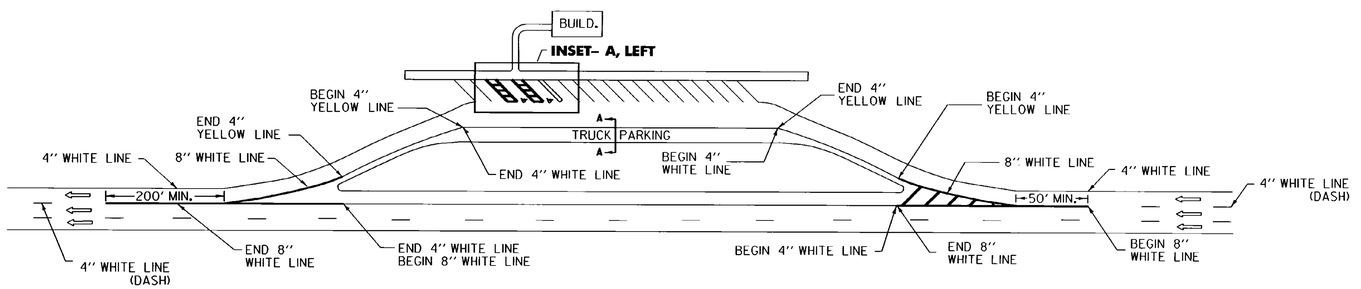
NOTE:

SEE STANDARD SHEET E-191 FOR HANDICAP SYMBOL POSITIONING AND DETAIL.



SECTION A - A

TRUCK PARKING DETAIL



REST AREA PARKING DETAILS

THIS SHEET IS NOT TO SCALE

OTHER STDS. E - 191, E - 192 REQUIRED

REVISIONS AND CORRECTIONS

AUG. 18, 1995 - DATE OF ORIGINAL ISSUE

APPROVED FOR THIS PROJECT AND/OR DESIGN IMPLEMENTATION. FHWA FINAL APPROVAL PENDING.

APPROVED

DIRECTOR OF ENGINEERING

TRAFFIC AND SAFETY ENGINEER

PAVEMENT MARKING DETAILS

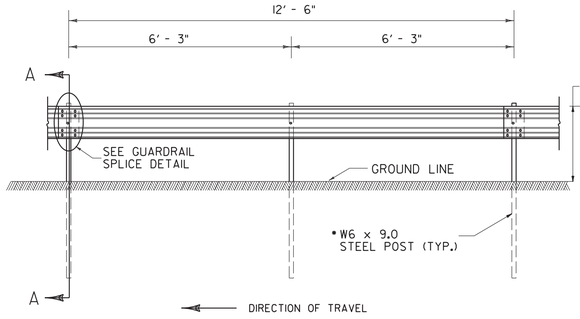
/traf/std/stdel93.dgn/stdel93.i

VERMONT AGENCY OF TRANSPORTATION

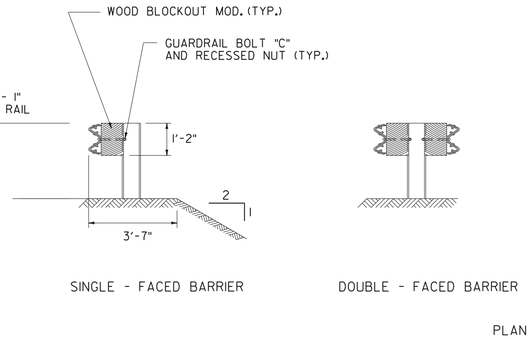
STANDARD

E-193

"W" BEAM GUARDRAIL WITH STEEL POSTS



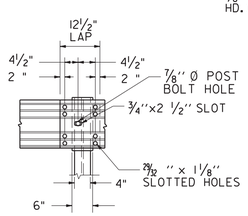
ELEVATION FROM ℄ OF ROAD



SINGLE - FACED BARRIER

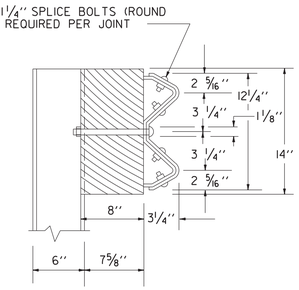
DOUBLE - FACED BARRIER

SECTION A -A



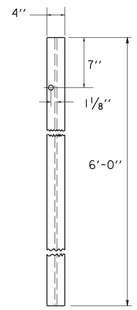
ELEVATION

PLAN

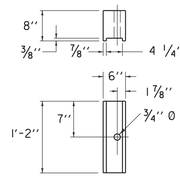


SECTION

GUARDRAIL SPLICE DETAIL



FRONT FACE STEEL POST

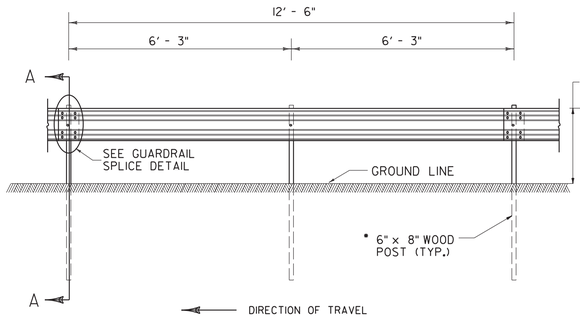


POST FACE
MODIFIED WOOD BLOCKOUT- ROUTED
6" X 8" X 1'-2"
FOR USE W/ STEEL POSTS ONLY

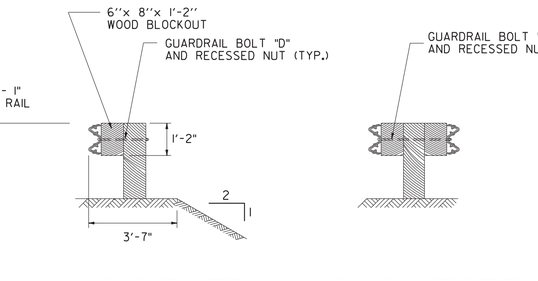
NOTES:

1. BLOCKS SHALL BE MADE OF TIMBER WITH A STRESS GRADE OF 1200 PSI OR MORE. TESTING SHALL BE IN ACCORDANCE WITH WEST COAST LUMBER INSPECTION BUREAU, SOUTHERN PINE INSPECTION BUREAU OR OTHER APPROPRIATE ASSOCIATION. TIMBER FOR BLOCKS SHALL BE ROUGH SAWN (UNPLANED) WITH DIMENSIONS INDICATED. THE SIZE TOLERANCE OF ROUGH SAWN BLOCKS IN THE DIRECTION OF THE BOLT HOLES SHALL BE NOT MORE THAN +/- ¼".
2. SUPPLY WOOD BLOCKS PER AASHTO M 168.
3. TREAT WITH PRESERVATIVE PER AASHTO M 133.
4. BLOCKOUTS MAY ALSO BE MADE OF APPROVED ALTERNATIVE MATERIAL.

"W" BEAM GUARDRAIL WITH WOOD POSTS



ELEVATION FROM ℄ OF ROAD

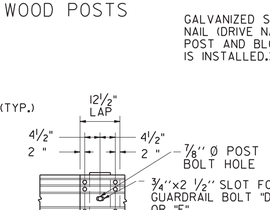


SINGLE - FACED BARRIER

DOUBLE - FACED BARRIER

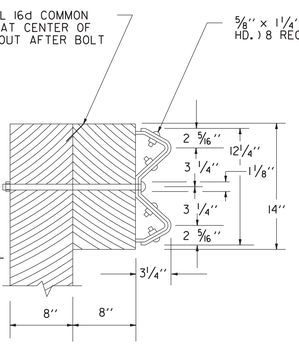
• NOTE : UNLESS OTHERWISE SPECIFIED ON PLANS

SECTION A -A



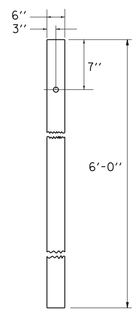
ELEVATION

PLAN

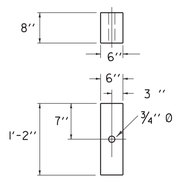


SECTION

GUARDRAIL SPLICE DETAIL



FRONT FACE WOOD POST

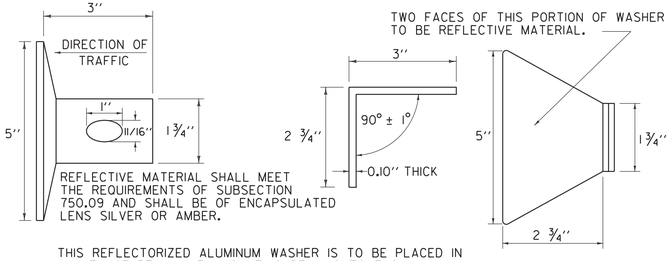


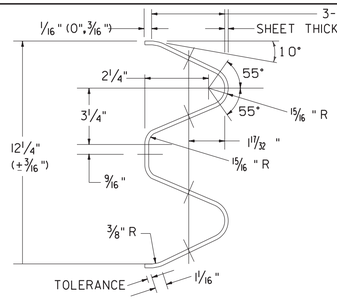
POST FACE
WOOD BLOCKOUT
6" X 8" X 1'-2"

NOTES:

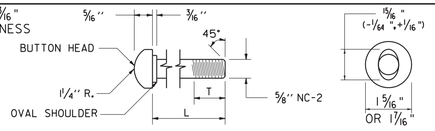
1. BLOCKS SHALL BE MADE OF TIMBER WITH A STRESS GRADE OF 1200 PSI OR MORE. TESTING SHALL BE IN ACCORDANCE WITH WEST COAST LUMBER INSPECTION BUREAU, SOUTHERN PINE INSPECTION BUREAU OR OTHER APPROPRIATE ASSOCIATION. TIMBER FOR BLOCKS SHALL BE ROUGH SAWN (UNPLANED) WITH DIMENSIONS INDICATED. THE SIZE TOLERANCE OF ROUGH SAWN BLOCKS IN THE DIRECTION OF THE BOLT HOLES SHALL BE NOT MORE THAN +/- ¼".
2. SUPPLY WOOD BLOCKS PER AASHTO M 168.
3. TREAT WITH PRESERVATIVE PER AASHTO M 133.
4. BLOCKOUTS MAY ALSO BE MADE OF APPROVED ALTERNATIVE MATERIAL.

GUARDRAIL DELINEATOR



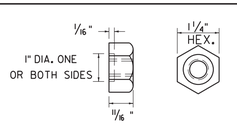


ARTBA RE-3[2@6'-3"=12'-6" CLASS A, TYPE 11-73
TYPICAL GUARDRAIL SECTION

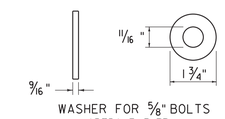


GUARDRAIL BOLT

GUARDRAIL BOLTS				FASTENER USED IN	
BOLT DES.	ARTBA REF. NO.	L	T (MIN.)	STEEL POSTS	WOOD POSTS
"A"	F-3[1¼]-76	1¼"	1"	X	X
"C"	F-3[9½]-76	9½"	1¾"	X	
"D"	F-3[18]-76	18"	2½"		X
"F"	F-3[25]-76	25"	2"		X



RECESSED NUT FOR GUARDRAIL BOLT



WASHER FOR ⅝" BOLTS
ARTBA F-13-73
NOTE: WASHER IS USED UNDER RECESSED NUT WHERE GUARDRAIL BOLT IS USED WITH WOOD POSTS.

GENERAL NOTES:

1. GUARDRAIL SHALL MEET THE REQUIREMENTS OF AASHTO M 180, CLASS A, TYPE I, UNLESS OTHERWISE DESIGNATED.
2. GUARDRAIL SHALL BE SINGLE FACED UNLESS OTHERWISE DESIGNATED.
3. GUARDRAIL SECTIONS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW FOR THE LANE NEAREST THE GUARDRAIL.
4. FOR DESCRIPTION AND SPECIFICATION OF PARTS IDENTIFIED BY (ARTBA ...) AND OTHER DETAILS OF POSTS, POST ACCESSORIES, FASTENERS & RAIL ELEMENTS, SEE AASHTO-AGC-ARTBA JOINT TASK FORCE NO. 13, TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE", LATEST EDITION.
5. STANDARD STEEL BEAM TO BE 1/8" AND THE HEAVY DUTY TO BE 5/64 " THICK.

OTHER STANDARD REQUIRED: G-1d

REVISIONS AND CORRECTIONS

JUNE 1, 1994 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.

JAN. 3, 2000 - UPDATED TO REFLECT METRIC STD. CHANGES

FEB. 10, 2014 - UPDATED TO REFLECT GUARDRAIL HEIGHT OF 29"; AS NOTED IN FHWA LETTER DATED MAY 17, 2010

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

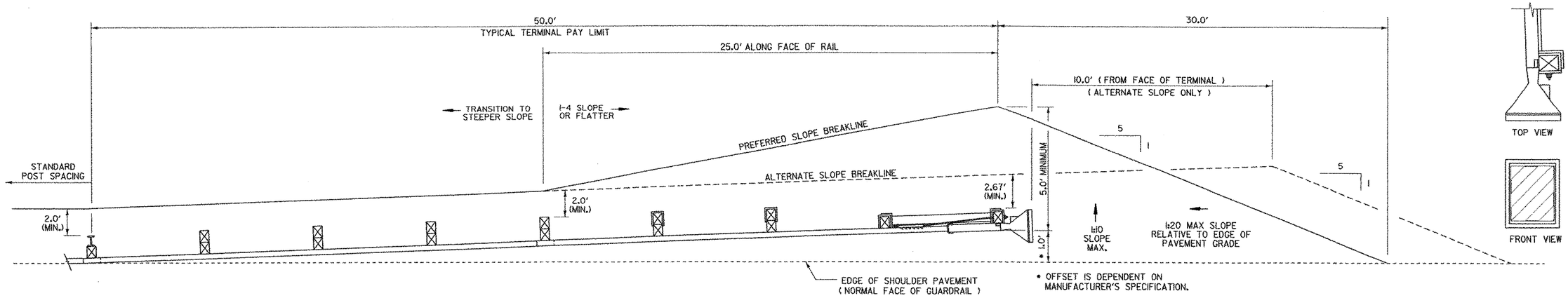
FEDERAL HIGHWAY ADMINISTRATION

STEEL BEAM GUARDRAIL WITH STEEL POSTS
STEEL BEAM GUARDRAIL WITH WOOD POSTS

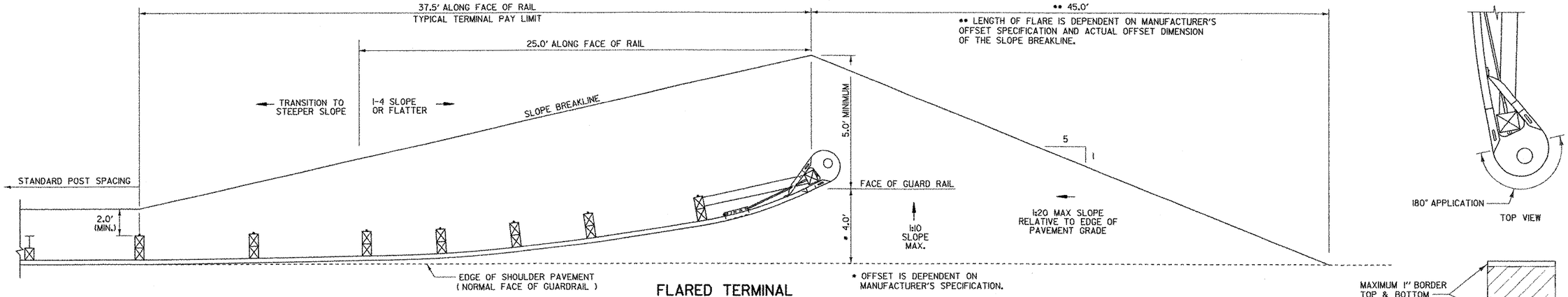
VERMONT AGENCY OF TRANSPORTATION

STANDARD

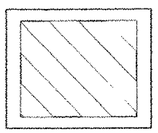
G-1



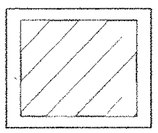
TANGENTIAL TERMINAL



FLARED TERMINAL



ORIENTATION OF REFLECTIVE SHEETING FOR LEFT SIDE OF ROAD HAZARD.



ORIENTATION OF REFLECTIVE SHEETING FOR RIGHT SIDE OF ROAD HAZARD.

GENERAL NOTES

(1) THE AREA IMMEDIATELY BEHIND AND BEYOND THE TERMINAL SHOULD BE REASONABLY TRAVERSABLE AND FREE FROM FIXED-OBJECT HAZARDS TO THE EXTENT PRACTICABLE. IF A CLEAR RUNOUT PATH IS NOT ATTAINABLE, THIS AREA SHOULD AT LEAST BE SIMILAR IN CHARACTER TO UPSTREAM/UNSHIELDED ROADSIDE AREAS.

(2) REFLECTIVE SHEETING SHALL BE PLACED ON THE TERMINAL END OF ALL TANGENT END TERMINALS. THIS SHALL BE OBJECT MARKER MATERIAL (TYPE 3 - STRIPED MARKER OM-3L AND OM-3R) CONSISTING OF A SQUARE OR RECTANGULAR SHAPE WITH ALTERNATING BLACK AND RETROREFLECTIVE YELLOW STRIPES SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES TOWARDS TRAFFIC. THE MINIMUM WIDTH OF THE YELLOW STRIPE SHALL BE 3 INCHES. THE DIMENSIONS OF THE MARKER SHALL EXTEND FOR THE FULL WIDTH OF THE FACE PLATE ON THE TERMINAL HEAD AND BE SUFFICIENT IN HEIGHT (DEPENDENT ON THE TYPE OF END TERMINAL AND HEAD SIZE). REFLECTIVE MATERIAL SHALL MEET THE REQUIREMENTS OF SUBSECTION 750.08 (B)(3) TYPE III OR HIGHER (AASHTO M 268 (ASTM 4956)). THE COST SHALL BE INCLUDED IN THE COST OF THE END TERMINAL.

(3) REFLECTIVE SHEETING SHALL BE PLACED ON THE END OF FLARED TERMINALS WHICH ARE LOCATED 6 FEET OR LESS FROM THE EDGE OF SHOULDER (NORMAL FACE OF GUARDRAIL. THIS SHALL BE THE SAME OBJECT MARKER MATERIAL SPECIFIED IN NOTE 2. THE COST OF THE REFLECTIVE SHEETING SHALL BE INCLUDED IN THE COST OF THE END TERMINAL.

(4) FOR THE FLARED TERMINAL, WITH AN OFFSET BETWEEN 4 FEET AND 6 FEET FROM THE NORMAL FACE OF GUARDRAIL, THE FOLLOWING SHALL PERTAIN; A REFLECTIVE BUTTON, MOUNTED ON A STANDARD DELINEATOR POST, SHALL BE INSTALLED AT THE NORMAL FACE OF GUARDRAIL, DIRECTLY OPPOSITE THE LEAD END OF THE TERMINAL. THE BUTTON SHALL BE WHITE FOR THE RIGHT SIDE OF THE ROAD AND YELLOW FOR THE LEFT SIDE. ANY DELINEATORS INSTALLED SHALL BE PAID FOR BY THE APPROPRIATE PAY ITEMS.

NOT TO SCALE

REVISIONS AND CORRECTIONS

OCT. 21, 1998 ORIGINAL APPROVAL

NOV. 15, 2002 MODIFIED SLOPE BREAKLINE, REFLECTIVE SHEETING ADDED

APPROVED

DIRECTOR OF PROJECT DEVELOPMENT

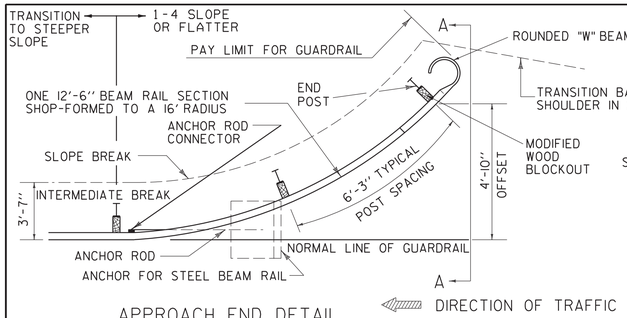
ROADWAY DESIGN ENGINEER

FEDERAL HIGHWAY ADMINISTRATION

GENERIC PLANS FOR GUARDRAIL END TERMINALS

VERMONT AGENCY OF TRANSPORTATION

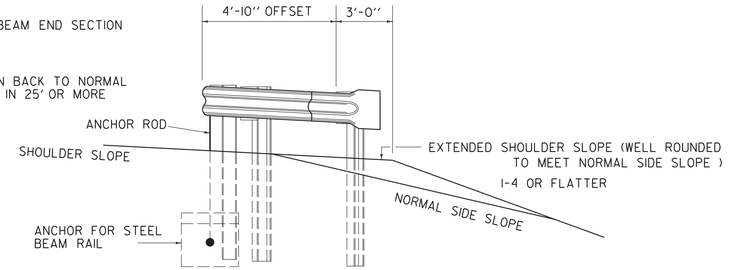
STANDARD G-19



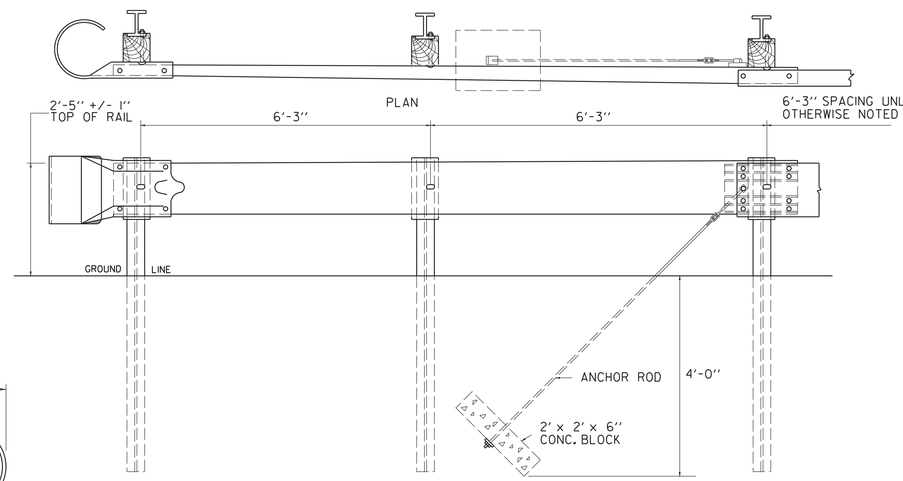
APPROACH END DETAIL

NHS APPROVED FOR USE WHERE DESIGN SPEED IS 40 OR LESS MPH

NON-NHS APPROVED FOR USE WHERE DESIGN SPEED IS 50 OR LESS MPH

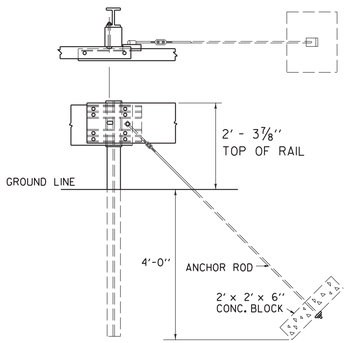


SECTION A-A

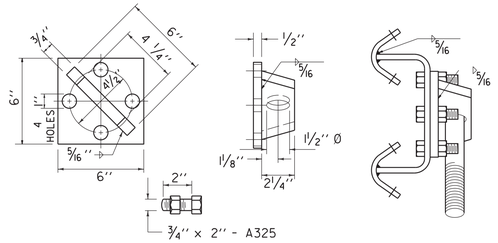


ASSEMBLY ELEVATION

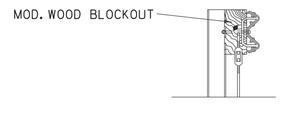
TRAILING END TERMINAL FOR USE ON ONE-WAY HIGHWAYS

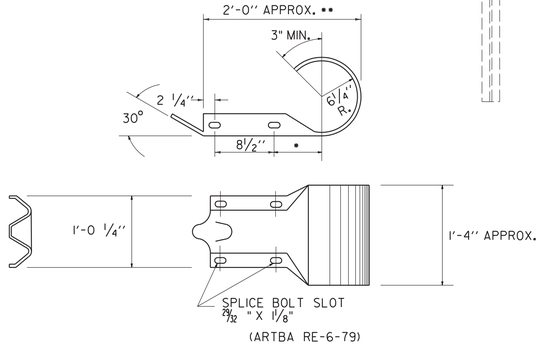


ANCHOR ROD



ANCHOR ROD CONNECTOR





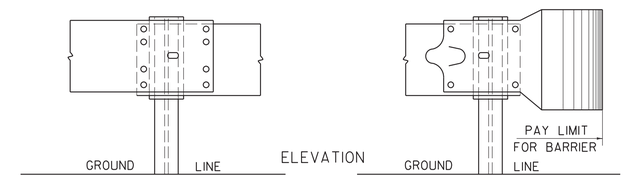
(ARTBA RE-6-79)

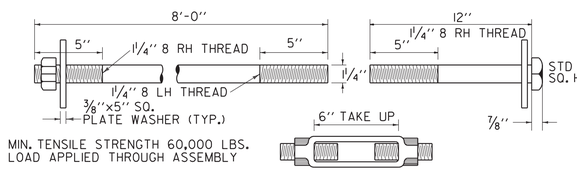
ROUNDED "W" BEAM END SECTION

• THIS DIMENSION IS 7½" IN RE-7-79. IF THE DIMENSION IS USED IN THIS PART, IT WILL GIVE AN ACCEPTABLE OVERALL LENGTH (••) OF APPROXIMATELY 2'- 11/2."

GENERAL NOTES:

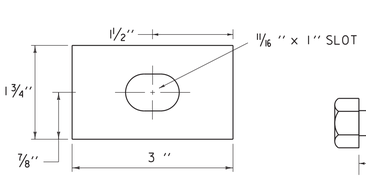
1. ALL METAL PARTS SHALL BE GALVANIZED
2. ALL WOOD POSTS SHALL BE GIVEN A PRESERVATIVE TREATMENT
3. DETAILS PERTINENT TO THE STANDARD INSTALLATION OF "W" BEAM SECTIONS WILL BE FOUND ON STANDARD DRAWING G-1.
4. FOR DESCRIPTION AND SPECIFICATIONS OF PARTS IDENTIFIED BY "(ARTBA...)" AND OTHER DETAILS OF POSTS, POST ACCESSORIES, FASTENERS AND RAIL ELEMENTS, SEE AASHTO-AGC-ARTBA JOINT TASK FORCE NO. 13, TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE", LATEST EDITION.
5. THE TRANSITION FROM THE APPROACH END TO THE STANDARD STEEL BEAM GUARDRAIL SHALL BE 25'-0" UNLESS OTHERWISE SPECIFIED.
6. WHEN STANDARD STEEL BEAM CONNECTS TO BRIDGE APPROACH RAIL OF A DIFFERENT HEIGHT THE LENGTH NEEDED TO TRANSITION THE HEIGHT OF STANDARD STEEL BEAM TO MATCH THE BRIDGE APPROACH RAIL SHALL BE 25'-0" UNLESS OTHERWISE SPECIFIED.
7. WHEN STANDARD STEEL BEAM CONNECTS TO A MANUFACTURED TERMNAL SECTION OF A DIFFERENT HEIGHT THE LENGTH NEEDED TO TRANSITION THE HEIGHT OF STANDARD STEEL BEAM TO MATCH THE MANUFACTURED TERMINAL SECTION SHALL BE 25'-0" UNLESS OTHERWISE SPECIFIED.





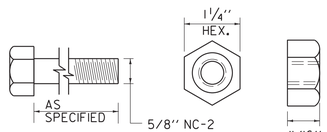
MIN. TENSILE STRENGTH 60,000 LBS. LOAD APPLIED THROUGH ASSEMBLY

TURNBUCKLE



RECTANGULAR GUARDRAIL PLATE WASHER

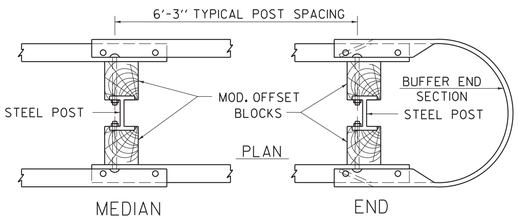
(ARTBA F-12-73)



5/8" HEX NUT AND BOLT "F"

(ARTBA F-8-76)

FASTENER DETAILS



STEEL BEAM MEDIAN BARRIER

NOTE: TO BE USED OUTSIDE CLEAR ZONE ONLY.

OTHER STANDARD REQUIRED: G-1

REVISIONS AND CORRECTIONS

JUNE 1, 1994 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.

JAN. 3, 2000 - UPDATED TO REFLECT METRIC STD. CHANGES

FEB. 10, 2014 - UPDATED TO REFLECT GUARDRAIL HEIGHT OF 29"; AS NOTED IN FHWA LETTER DATED MAY 17, 2010

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

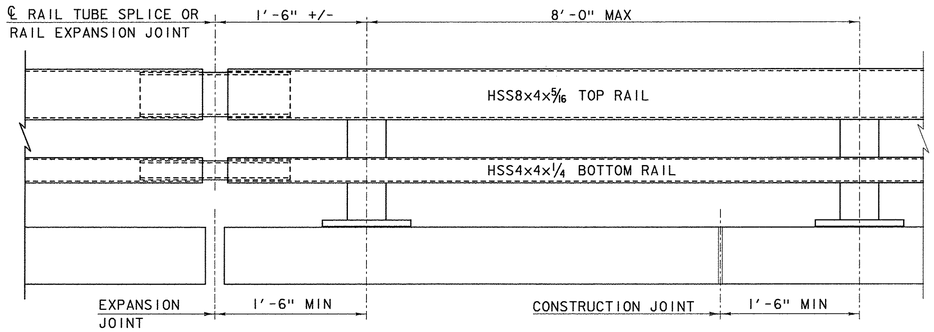
FEDERAL HIGHWAY ADMINISTRATION

STEEL BEAM GUARDRAIL APPROACH END TERMINAL
STEEL BEAM GUARDRAIL TRAILING END TERMINAL
ANCHOR FOR STEEL BEAM GUARDRAIL
STEEL BEAM MEDIAN BARRIER

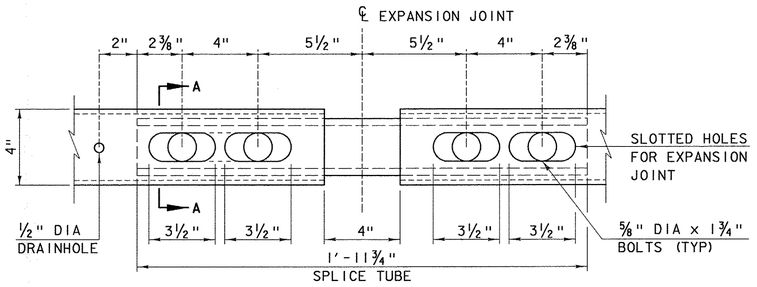
VERMONT AGENCY OF TRANSPORTATION

STANDARD

G-1d

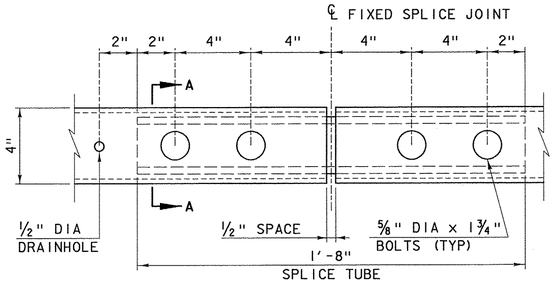


BRIDGE RAILING ELEVATION



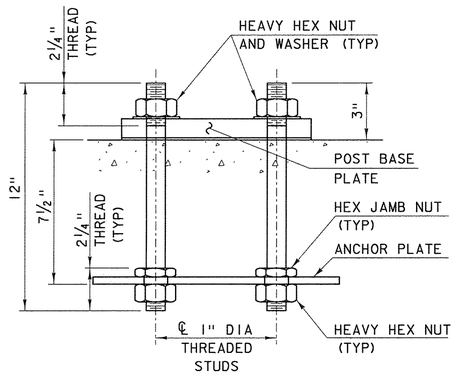
EXPANSION JOINT DETAIL

(BOTTOM VIEW)

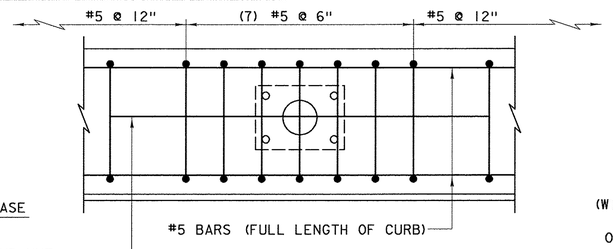


FIXED SPLICE JOINT DETAIL

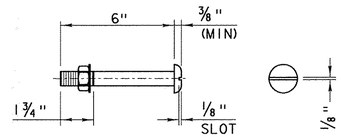
(BOTTOM VIEW)



RAIL POST ANCHORAGE

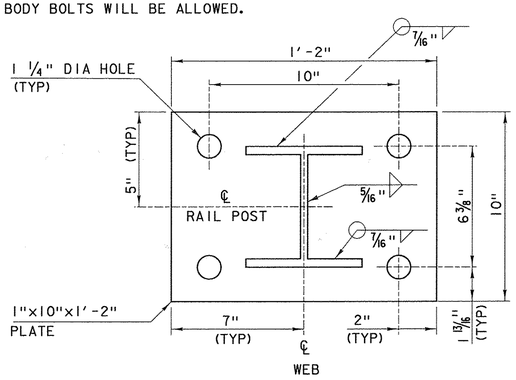


CURB REINFORCING PLAN

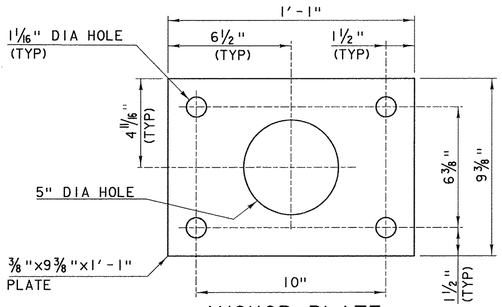


3/4" DIA A449 (TYPE 1) ROUND HEAD BOLT

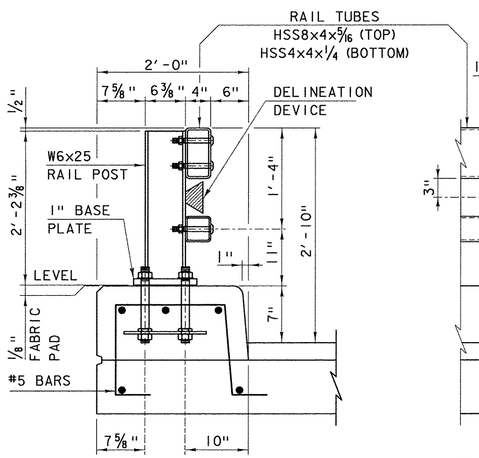
(WITH WASHER AND PREVAILING TORQUE TYPE LOCK NUT)
(SEE NOTE #8)
ONLY FULL DIAMETER BODY BOLTS WILL BE ALLOWED.



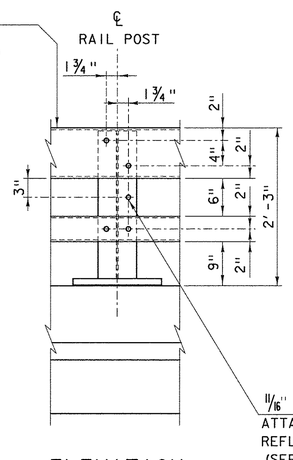
POST BASE PLATE



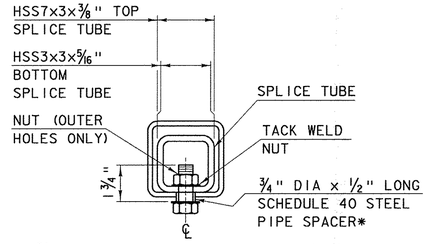
ANCHOR PLATE



TYPICAL SECTION



ELEVATION



5/8" DIA TAPPED HOLE IN SPLICE TUBE
1 1/8"x3 1/2" SLOT* OR 3/4" DIA HOLE**
IN RAIL TUBE FOR 5/8" DIA
BOLT AND PLAIN HARDENED WASHER

A-A RAIL TUBE SPLICE AND RAIL EXPANSION JOINT SECTION

*EXPANSION JOINT
** SPLICE

11/16" DIA HOLE FOR ATTACHMENT OF REFLECTOR UNITS (SEE NOTE #1 ON STANDARD S-363)

NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.
2. PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/16".
3. ALL POSTS SHALL BE SET NORMAL TO GRADE.
4. SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO BRIDGE RAIL POSTS AND PREFERABLY TO AT LEAST FOUR POSTS.
5. RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING THE END OF AN INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPERSTRUCTURE EXPANSION JOINTS. EXPANSION JOINT WIDTH SHALL BE 4" AT 45°F AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
6. HOLES IN RAILS FOR RAIL TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
7. RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
8. RAIL TUBES SHALL BE ATTACHED USING 3/4" FULL DIAMETER BODY ASTM A 449 (TYPE 1) ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE TUBE. HOLES IN POSTS SHALL BE 1/16" LARGER THAN THE BOLT SIZE.
9. ANY BENDING OF RAIL SHALL BE DONE AT A FABRICATION PLANT ACCORDING TO A PROCEDURE PROVIDED BY THE FABRICATOR.
10. THE MINIMUM DISTANCE FROM THE POST TO AN EXPANSION JOINT SHALL BE DETERMINED BY THE MINIMUM EDGE DISTANCE OF 5" FROM ANY ANCHOR STUD TO THE END OF THE SLAB, OR TO THE EXPANSION JOINT RECESS POUR, IF ONE IS USED.
11. SEE STANDARD DRAWING G-1 FOR DETAILS OF DELINEATORS. A DELINEATOR SHALL BE INSTALLED AT 30 FOOT SPACING OR THE NEAREST POST. WHITE IS TO BE INSTALLED ON THE DRIVER'S RIGHT. FOR ONE WAY BRIDGES, YELLOW IS TO BE INSTALLED ON THE DRIVER'S LEFT. PAYMENT SHALL BE INCIDENTAL TO OTHER ITEMS.
12. THIS RAILING MEETS THE REQUIREMENTS FOR A TL-4 SERVICE LEVEL.

OTHER STDS. REQUIRED: G-1

REVISIONS AND CORRECTIONS

DECEMBER 14, 2009 - ORIGINAL APPROVAL DATE
APRIL 23, 2012 - GENERAL UPDATE 2012

APPROVED

STRUCTURES PROGRAM MANAGER

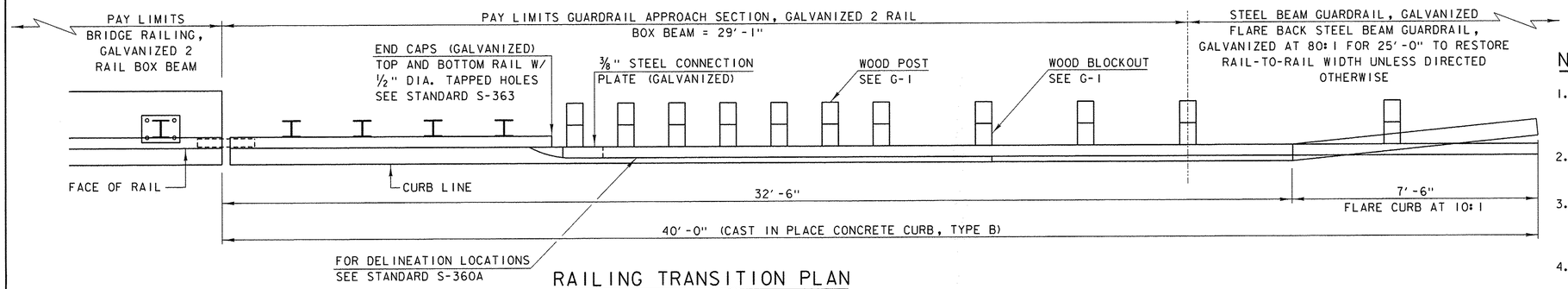
DIRECTOR OF PROGRAM DEVELOPMENT

FEDERAL HIGHWAY ADMINISTRATION

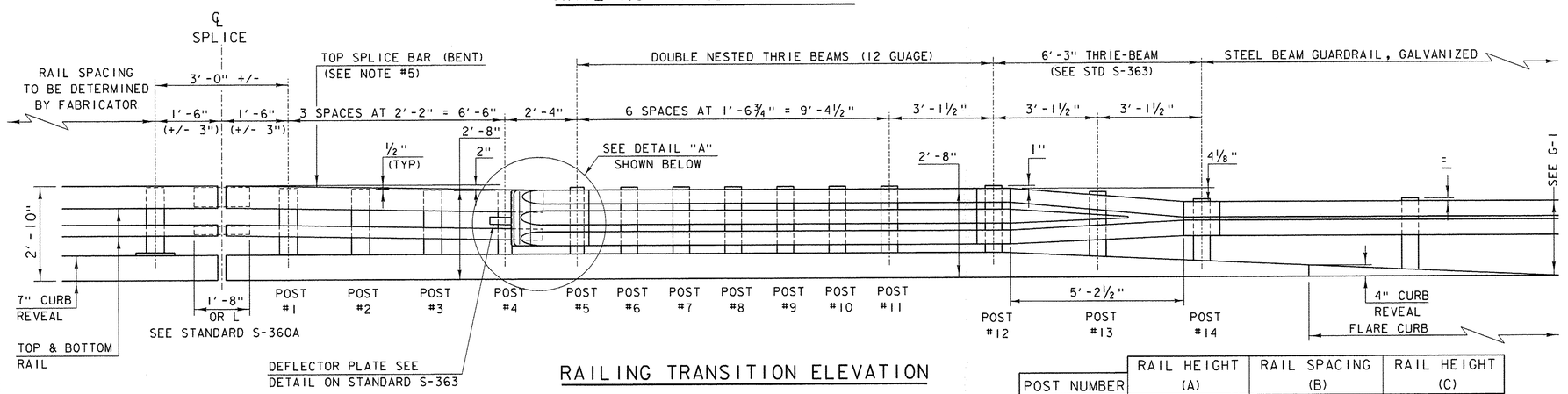
BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM

VERMONT AGENCY OF TRANSPORTATION

STANDARD S-360A



RAILING TRANSITION PLAN

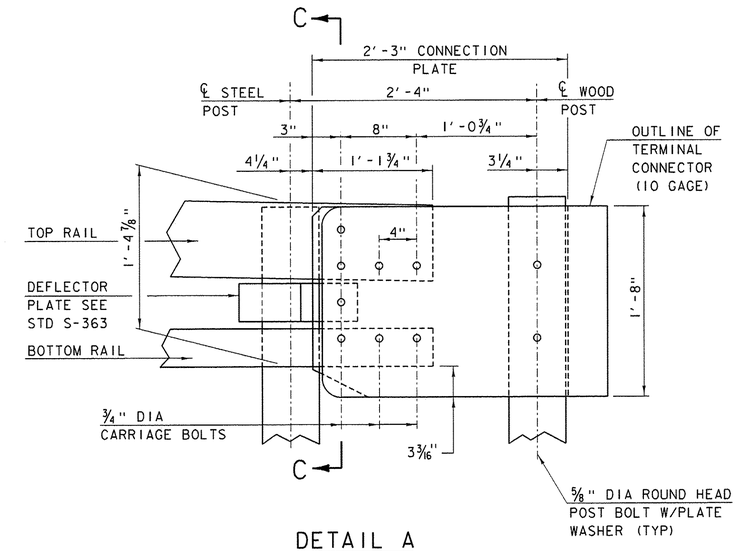


RAILING TRANSITION ELEVATION

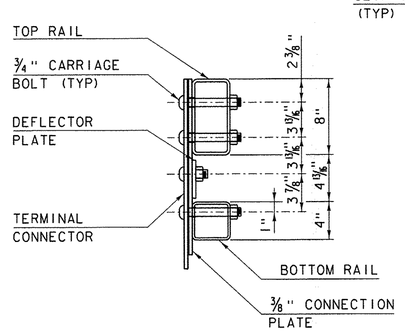
POST NUMBER	RAIL HEIGHT (A)	RAIL SPACING (B)	RAIL HEIGHT (C)
1	2'-9½"	1'-3¾"	1'-5¾"
2	2'-9"	1'-3½"	1'-5½"
3	2'-8½"	1'-3⅜16"	1'-5⅝16"
4	2'-8"	1'-2⅞"	1'-5⅛"

NOTES

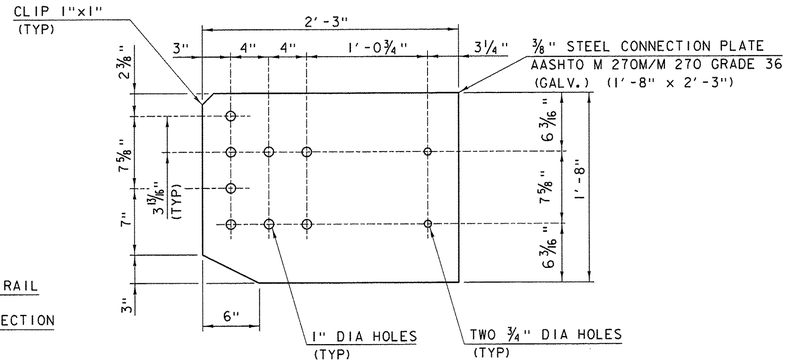
1. PAYMENT FOR GUARDRAIL APPROACH SECTION - GALVANIZED 2 RAIL BOX BEAM SHALL INCLUDE THE TERMINAL CONNECTOR, THE CONNECTION PLATE, THE DEFLECTOR PLATE, RAIL, POSTS, BLOCKS AND ATTACHMENT HARDWARE.
2. ALL APPROACH RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW.
3. TUBE AND STEEL POST MATERIALS, DIMENSION SIZES AND NOTES SHALL BE THE SAME AS THOSE OF THE BRIDGE RAIL, UNLESS OTHERWISE NOTED.
4. APPROACH RAIL BOLTS SHALL BE ASTM A307 GRADE A AND NUTS SHALL BE AASHTO M291 (ASTM A563 GRADE A OR BETTER) (GALVANIZED). WASHERS SHALL BE ASTM F844.
5. WELD TOP SPLICE BAR TO FIT BEND. USE COMPLETE PENETRATION WELD (B-U2).



DETAIL A



SECTION C-C (CONNECTION PLATE)



CONNECTION PLATE

RAIL POST SECTION (POSTS 1-4)

OTHER STDS. REQUIRED: **G-1, S-363**

REVISIONS AND CORRECTIONS

DECEMBER 14, 2009 - ORIGINAL APPROVAL DATE
APRIL 23, 2012 - GENERAL UPDATE 2012

APPROVED

Wm. Michael Hedges
STRUCTURES ENGINEER

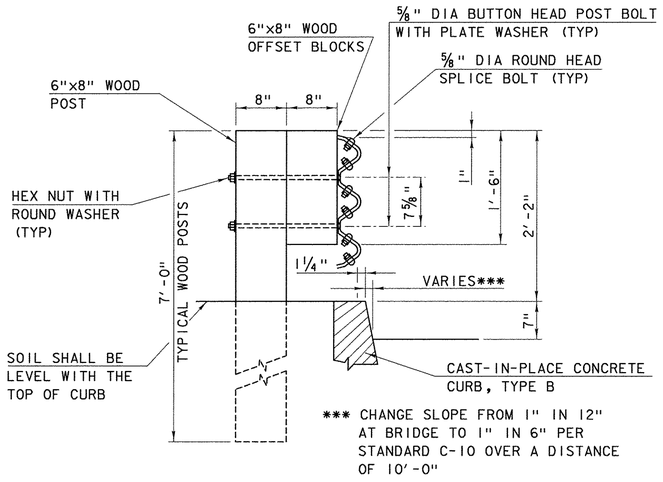
Richard Taitt
DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter
FEDERAL HIGHWAY ADMINISTRATION

GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM

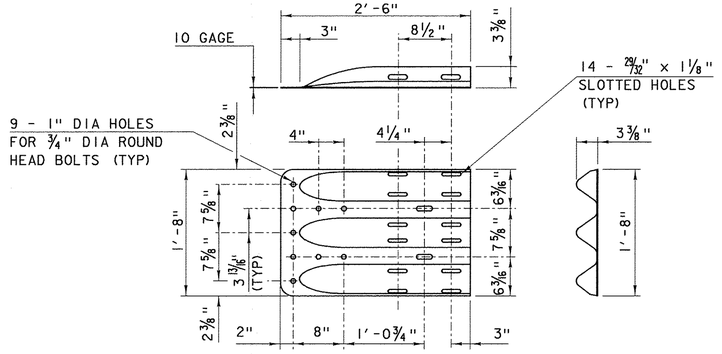
VERMONT AGENCY OF TRANSPORTATION

STANDARD
S-360B



*** CHANGE SLOPE FROM 1" IN 12" AT BRIDGE TO 1" IN 6" PER STANDARD C-10 OVER A DISTANCE OF 10'-0"

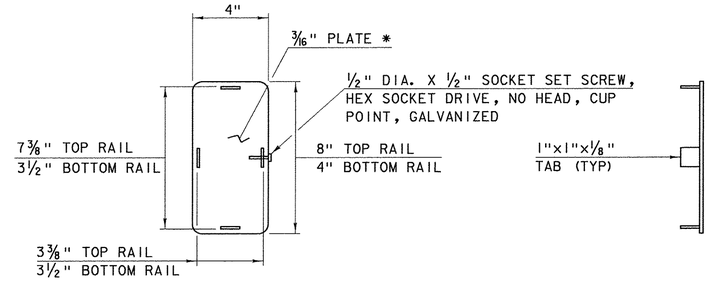
WOOD POST AND THRIE-BEAM RAIL ASSEMBLY



THRIE-BEAM TERMINAL CONNECTOR (HM-TF-13/RE-67)

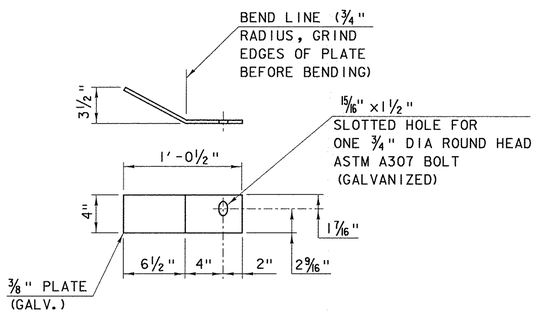
NOTES

1. DELINEATOR DEVICES SHALL BE INSTALLED PER BRIDGE RAIL AND OR GUARDRAIL STANDARD REQUIREMENTS.
2. ON BRIDGES WITH A SIDEWALK, DELINEATORS ARE NOT TO BE INSTALLED ON THE SIDEWALK SIDE OF THE BRIDGE.

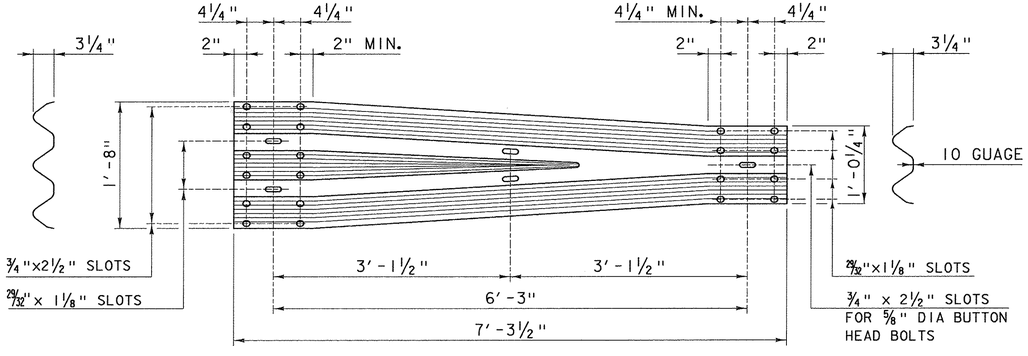


END CAP DETAIL

* ROUND CORNERS 1/2" RADIUS (TYP)



DEFLECTOR PLATE DETAIL



THRIE-BEAM TO STANDARD STEEL BEAM TRANSITION SECTION (HM-TF-13/RE-69)

OTHER STDS. REQUIRED: C-10

REVISIONS AND CORRECTIONS

DECEMBER 14, 2009 - ORIGINAL APPROVAL DATE
APRIL 23, 2012 - GENERAL UPDATE 2012

APPROVED

Wm. Michael Hedges
STRUCTURES ENGINEER

Richard Hebert
DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter
FEDERAL HIGHWAY ADMINISTRATION

THRIE BEAM TO STANDARD STEEL BEAM TRANSITION SECTION

VERMONT AGENCY OF TRANSPORTATION

STANDARD
S-363

1. TRAFFIC CONTROL DEVICES NOT DETAILED IN THE VERMONT AGENCY OF TRANSPORTATION (VAOT) ''STANDARD DRAWINGS'' OR THE PROJECT PLANS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON TRAFFIC CONTROL DEVICES" (MUTCD) AND THE ''STANDARD HIGHWAY SIGNS AND MARKINGS'' BOOK (SHSM) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).

2. CONSTRUCTION SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES, DURING PERIODS OF INACTIVITY OR UPON COMPLETION OF THE WORK. EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER.

3. CONSTRUCTION SIGN COVERS SHALL CONSIST OF A PANEL, PAINTED FLAT BLACK, THE SAME SIZE AS THE SIGN IT COVERS. THE PANEL SHALL BE OF WOOD, PLYWOOD, HARDBOARD OR ANY MATERIAL SATISFACTORY TO THE ENGINEER. NO MATERIAL WILL BE APPROVED THAT WILL DETERIORATE BY EXPOSURE TO THE WEATHER DURING THE PROJECT. MOUNTING OF THE PANEL SHALL BE DONE IN SUCH A WAY AS NOT TO DAMAGE THE SIGN FACE MATERIAL.

4. SIGNS SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION SATISFACTORY TO THE ENGINEER. THEY SHALL BE KEPT PLUMB AND LEVEL, AND ALWAYS PRESENT A NEAT APPEARANCE. DAMAGED, DEFACED OR DIRTY SIGNS SHALL BE REPAIRED, CLEANED OR REPLACED AS ORDERED BY THE ENGINEER.

5. NO CROSS-BRACING OR BACK-BRACING TO KEEP POSTS PLUMB WILL BE ALLOWED. CONCRETE FOUNDATIONS, COLLARS OR SOIL BEARING PLATES ARE NOT PERMITTED. CONSTRUCTION SIGNS SHALL BE PLACED ON TWO POSTS.

6. CONSTRUCTION SIGNS INSTALLED ON POSTS SHALL BE SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST FIVE FEET ABOVE THE EDGE OF PAVEMENT AND THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST SIX FEET OUTSIDE THE SHOULDER POINT, FOUR FEET OUTSIDE GUARDRAIL, OR TWO FEET OUTSIDE CURBING OR SIDEWALK. THE INSTALLATION OF SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER. IN URBAN AREAS, THE BOTTOM OF THE SIGN SHALL BE AT LEAST SEVEN FEET ABOVE THE SIDEWALK OR EDGE OF PAVEMENT, WHICHEVER IS HIGHER.

7. PORTABLE SIGNS SHALL BE PLACED ON THE EDGE OF ROADWAY AND A MINIMUM OF ONE FOOT ABOVE THE TRAVELED WAY. ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED. WHEN PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACE SHALL BE ABOVE THE TOP OF THE GUARDRAIL.

8. SIGNS SHALL BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER.

9. ROLL UP CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING THE "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE VI AND TYPE VII UNLESS OTHERWISE NOTED.

10. SOLID SUBSTRATE CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING THE "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE VIII OR IX REQUIREMENTS UNLESS OTHERWISE NOTED.

11. WHERE CONSTRUCTION SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARDRAIL OR OTHER APPROVED TRAFFIC BARRIERS, ALL SIGN STANDS AND POST INSTALLATIONS SHALL MEET "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 OR THE AASHTO "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH). THE APPROPRIATE RESOURCE SHALL BE DETERMINED AS DESCRIBED IN THE MASH PUBLICATION. NO SIGN POSTS SHALL EXTEND OVER THE TOP OF THE SIGN INSTALLED ON SAID POSTS. WHEN ANCHORS ARE INSTALLED, STUBS SHALL NOT BE GREATER THAN FOUR INCHES ABOVE EXISTING GROUND.

12. ROADWAY AND SHOULDER WIDTHS DEPICTED ON THE STANDARD DRAWINGS MAY VARY.

13. THESE STANDARD DRAWINGS ARE INTENDED TO SERVE AS VTRANS STANDARD OPERATING PROCEDURE. IT IS NOTED THAT COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL WORK ZONE MAY BE MODIFIED DUE TO FIELD CONDITIONS, AT THE DISCRETION OF THE ENGINEER.

OTHER STDS. REQUIRED: **NONE**

REVISIONS AND CORRECTIONS

AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

FEDERAL HIGHWAY ADMINISTRATION

TRAFFIC CONTROL GENERAL NOTES

VERMONT AGENCY OF TRANSPORTATION

STANDARD

T-1

LEGEND

(A) ROAD WORK AHEAD — W20-1

(B) ROAD WORK 500 FT — W20-1

(C) SIDE ROAD WORK AHEAD — VC-869

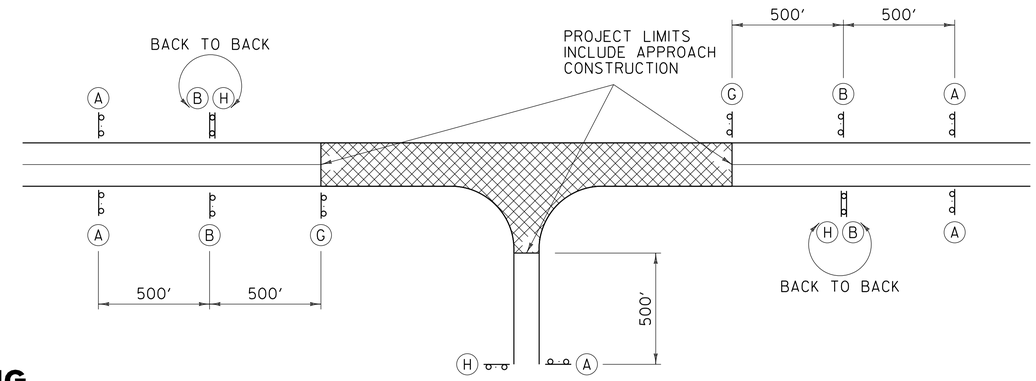
(D) SIDE ROAD WORK 500 FT — VC-869

(E) SIDE ROAD WORK LEFT — VC-869

(F) SIDE ROAD WORK RIGHT — VC-869

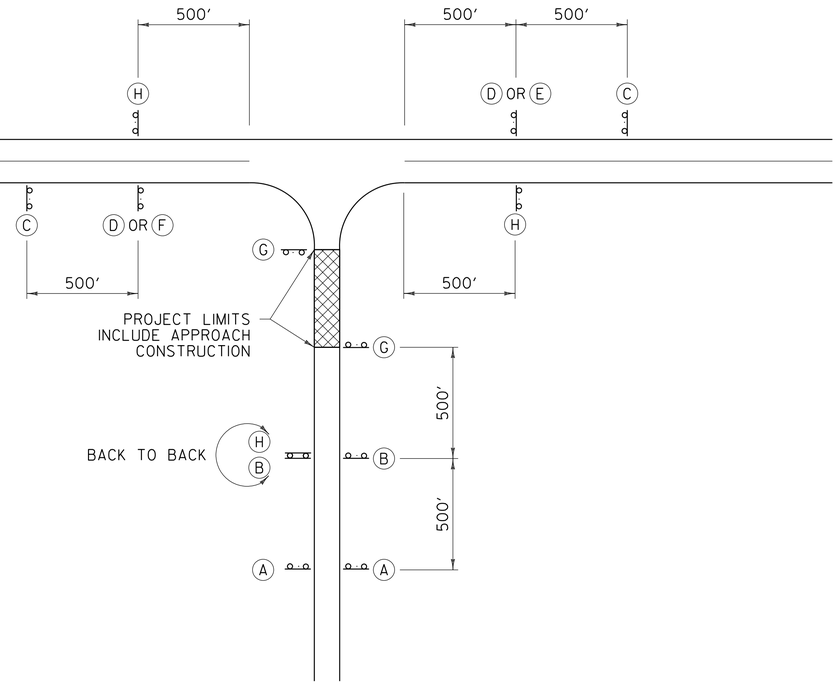
(G) ROAD WORK NEXT XX MILES — G20-1

(H) END ROAD WORK — G20-2



TYPICAL APPROACH SIGNING

FIELD CONDITIONS MAY DICTATE THE ACTUAL PLACEMENT.



SIDE ROAD APPROACH SIGNING

TO BE USED WHEN CONSTRUCTION IS UP TO 1000 FEET FROM THE INTERSECTION. FIELD CONDITIONS MAY DICTATE THE ACTUAL PLACEMENT.

GENERAL NOTES:

1. SIGNS SHOWN ON THIS SHEET ARE INTENDED FOR USE IN PROVIDING ADVANCE WARNING AND INFORMATION ON CONSTRUCTION PROJECTS OVER WHICH TRAFFIC WILL BE MAINTAINED. WHEN ADDITIONAL APPROACH SIGNS OR OTHER TYPES OF ADVANCE SIGNING OR CONTROL ARE NECESSARY, THE PLANS AND/OR THE SPECIFICATIONS FOR THAT PROJECT WILL GIVE THE DETAILS OF THE SIGNS AND DEVICES REQUIRED. FOR ON-PROJECT CONSTRUCTION SIGNS, REFER TO APPROPRIATE STANDARD SHEETS.
2. THE ''ROAD WORK NEXT XX MILES'' SIGN (G20-1) SHALL BE INSTALLED IN ADVANCE OF TEMPORARY TRAFFIC CONTROL ZONES THAT ARE MORE THAN TWO MILES IN LENGTH OR AS DIRECTED BY THE ENGINEER. DISTANCES SHALL BE STATED TO THE NEAREST WHOLE MILE.
3. SIGNS SHALL BE LOCATED AS DETAILED ON THIS SHEET OR AS OTHERWISE SHOWN ON THE PLANS. THEY SHALL APPEAR AT EACH END OF THE HIGHWAY UNDER CONSTRUCTION AND ON ALL INTERSECTING PUBLIC HIGHWAYS. THE ENGINEER SHALL DETERMINE THE EXACT LOCATIONS.

OTHER STDS. REQUIRED: **T–1, T–28**

REVISIONS AND CORRECTIONS

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APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

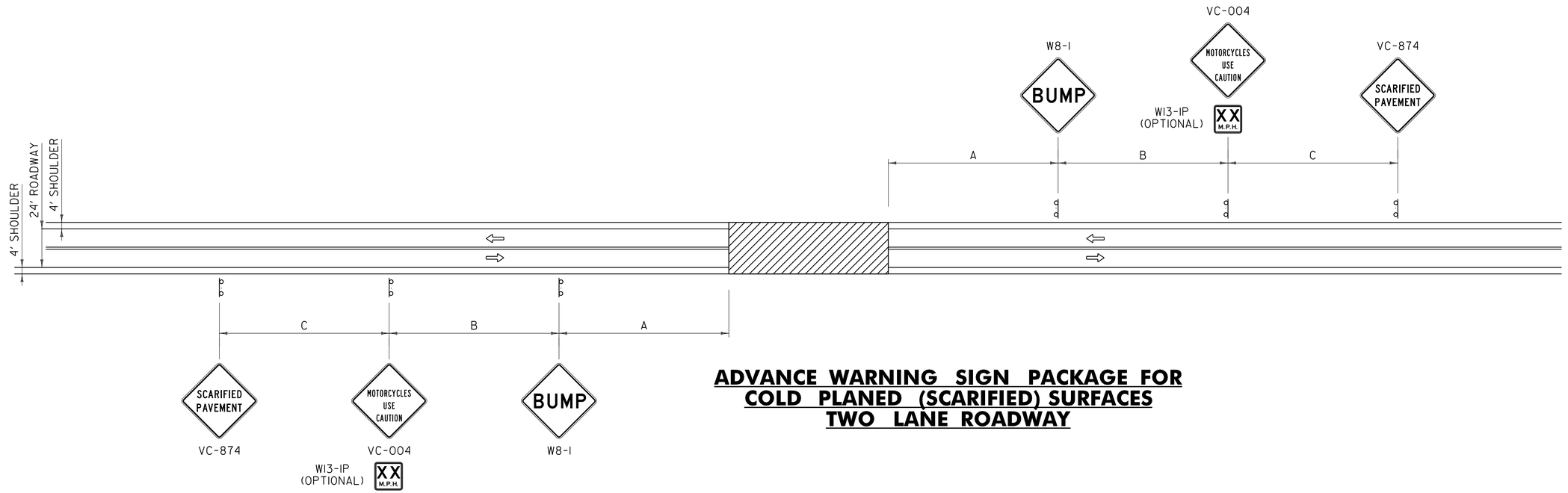
Mark D. Richter

FEDERAL HIGHWAY ADMINISTRATION

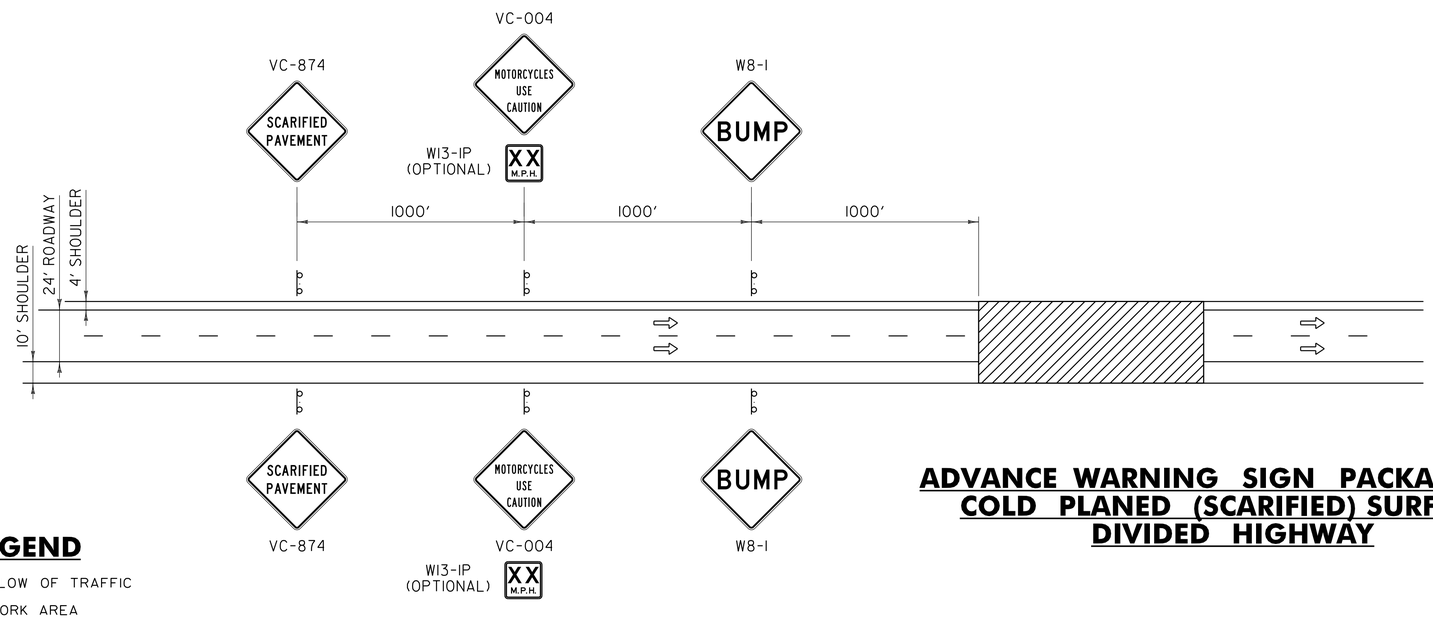
CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING

VERMONT AGENCY OF TRANSPORTATION

STANDARD T-10



ADVANCE WARNING SIGN PACKAGE FOR COLD PLANED (SCARIFIED) SURFACES TWO LANE ROADWAY



ADVANCE WARNING SIGN PACKAGE FOR COLD PLANED (SCARIFIED) SURFACES DIVIDED HIGHWAY

LEGEND

⇨ FLOW OF TRAFFIC

WORK AREA

GENERAL NOTES:

1. THE BUMP SIGN MAY BE ELIMINATED WHEN THERE IS NO BUMP. WHEN THE CONTRACTOR IS WORKING IN THE CONSTRUCTION AREA, THE APPROPRIATE ADVANCED WARNING SIGN PACKAGE SHALL BE USED. SEE THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) FOR ADDITIONAL INFORMATION.
2. GATE POSTING OF SIGNS IS AN OPTION AS DETERMINED BY THE ENGINEER FOR TWO LANE ROADWAY WHEN PASSING, TURNING OR CLIMBING LANES LIMIT VISIBILITY.
3. FOR DIMENSIONS A, B AND C, REFER TO THE MUTCD. USE TABLE 6C-1 (RECOMMENDED ADVANCE WARNING SIGN MINIMUM SPACING), FOR SIGN SPACING.

OTHER STDS. REQUIRED: T–1, T–28

REVISIONS AND CORRECTIONS

AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

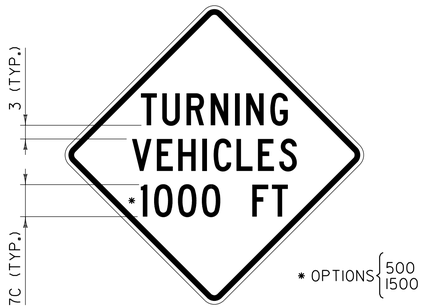
FEDERAL HIGHWAY ADMINISTRATION

TRAFFIC CONTROL MISCELLANEOUS DETAILS

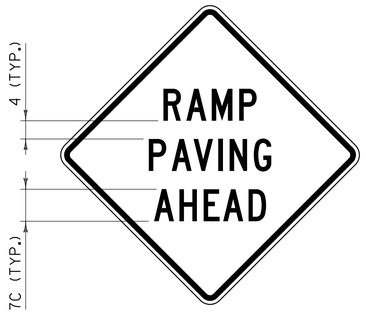
VERMONT AGENCY OF TRANSPORTATION

STANDARD

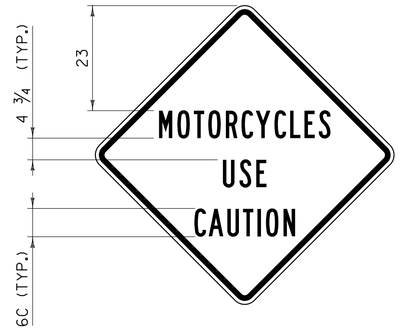
T-17



VC–001



VC–003



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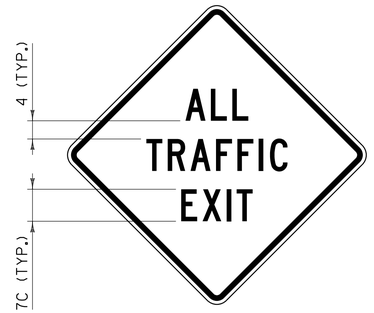

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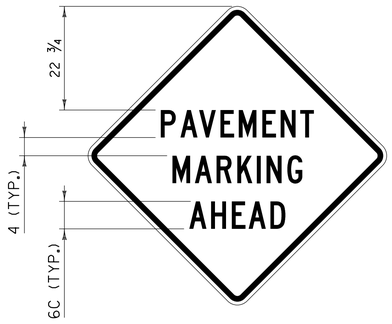
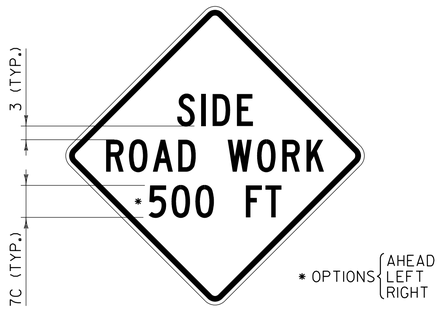


VC–813



VC–869

VC–874

GENERAL NOTES:

1. COLORS FOR SIGNS SHALL BE BLACK LEGEND AND BORDER ON FLUORESCENT ORANGE BACKGROUND.
2. CONSTRUCTION SIGNS SHALL BE 48 INCH BY 48 INCH. IF SOLID SUBSTRATE SIGNS ARE USED, SIGNS SHALL HAVE CORNERS ROUNDED TO A THREE INCH RADIUS.
3. SIGNS SHALL HAVE 1 1/4 INCH WIDE BORDERS THAT ARE INDENTED 3/4 INCH FROM THE EDGE OF THE SIGN.
4. SIGNS SHALL HAVE THE LEGEND CENTERED HORIZONTALLY AND VERTICALLY ON THE SIGN UNLESS OTHERWISE INDICATED.
5. ALL DIMENSIONS SHOWN IN INCHES.

OTHER STDS. REQUIRED: T–1

REVISIONS AND CORRECTIONS

AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

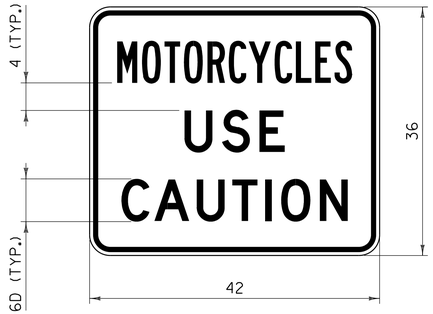
FEDERAL HIGHWAY ADMINISTRATION

CONSTRUCTION SIGN DETAILS

VERMONT AGENCY OF TRANSPORTATION

STANDARD

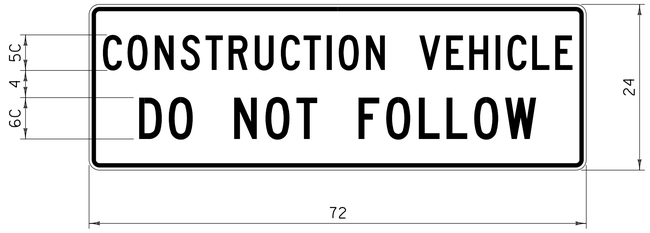
T-28



VC–004P

NOTES:

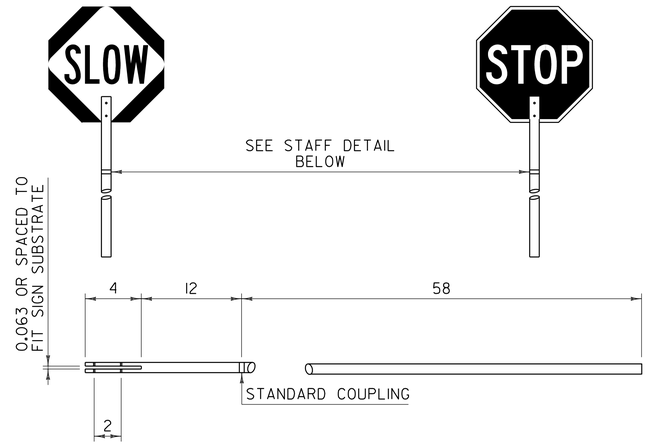
1. CORNERS SHALL BE ROUNDED TO A THREE INCH RADIUS.
2. THE BORDER SHALL BE ¾ INCH WIDE WITH A ½ INCH INDENT FROM THE EDGE OF THE SIGN.
3. "MOTORCYCLES" SHALL HAVE A SPECIFIED WIDTH OF 34 INCHES.
4. "USE" SHALL HAVE A SPECIFIED WIDTH OF 14 ½ INCHES.
5. "CAUTION" SHALL HAVE A SPECIFIED WIDTH OF 32 ¾ INCHES.
6. SIGN SHALL ONLY BE INSTALLED AS A SUPPLEMENTAL TO A PARENT WARNING SIGN AND SHALL NOT BE INSTALLED BY ITSELF.



VC–007

NOTES:

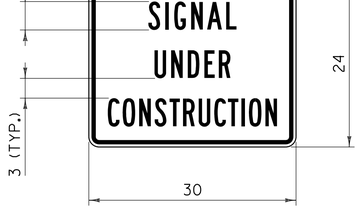
1. CORNERS SHALL BE ROUNDED TO A 1½ INCH RADIUS.
2. THE BORDER SHALL BE ⅝ INCH WIDE WITH A ⅜ INCH INDENT FROM THE EDGE OF THE SIGN.
3. "CONSTRUCTION VEHICLE" SHALL HAVE A SPECIFIED WIDTH OF 68 INCHES.
4. "DO NOT FOLLOW" SHALL HAVE A SPECIFIED WIDTH OF 57 ½ INCHES.
5. SIGN SHALL BE MOUNTED IN A CONSPICUOUS LOCATION ON THE REAR OF THE CONSTRUCTION VEHICLE.
6. THE SIGN SHALL BE MOUNTED AS NOT TO INTERFERE WITH THE VISIBILITY OF DIRECTIONAL SIGNALS OR TAIL LIGHTS AS REQUIRED BY LAW.
7. SIGN SHALL BE COVERED OR REMOVED WHEN NOT IN USE.



STOP–SLOW PADDLE & STAFF DETAIL

NOTES:

1. REFER TO THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOK (SHSM) "TEMPORARY TRAFFIC CONTROL - WARNING SIGNS" FOR THE STOP-SLOW PADDLE DESIGN.
2. COLORS FOR THE SLOW SIDE OF THE PADDLE SHALL BE BLACK LEGEND AND BORDER ON A FLUORESCENT ORANGE DIAMOND WITH RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING AASHTO M 268 [ASTM D 4956] TYPE VII, VIII OR IX REQUIREMENTS.
3. COLORS FOR THE STOP SIDE OF THE PADDLE SHALL BE WHITE RETROREFLECTIVE LEGEND AND BORDER ON A RED RETROREFLECTIVE OCTAGON. BOTH COLORS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING AASHTO M 268 [ASTM D 4956] TYPE III.
4. SIGN SUBSTRATE MATERIALS SHALL BE ALUMINUM, ACRYLONITRILE BUTADIENE STYRENE (ABS) PLASTIC OR EQUIVALENT.
5. THE STAFF MAY BE RIGID ABS PLASTIC OR WOOD WITH A ONE TO 1½ INCH DIAMETER.
6. SIGNS SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION SATISFACTORY TO THE ENGINEER. THEY SHALL BE COMPLETELY VISIBLE TO APPROACHING TRAFFIC AT ALL TIMES. THEY SHALL BE KEPT PLUMB AND LEVEL, AND ALWAYS PRESENT A NEAT APPEARANCE. DAMAGED, DEFACED OR DIRTY SIGNS SHALL BE REPAIRED, CLEANED OR REPLACED AS ORDERED BY THE ENGINEER.



VC–820

NOTES:

1. CORNERS SHALL BE ROUNDED TO A 1½ INCH RADIUS.
2. THE BORDER SHALL BE ⅝ INCH WIDE WITH A ⅜ INCH INDENT FROM THE EDGE OF THE SIGN.
3. "SIGNAL" SHALL HAVE A SPECIFIED WIDTH OF 12 ¾ INCHES.
4. "UNDER" SHALL HAVE A SPECIFIED WIDTH OF 11 INCHES.
5. "CONSTRUCTION" SHALL HAVE A SPECIFIED WIDTH OF 24 ½ INCHES.
6. SIGN SHALL ONLY BE INSTALLED AS A SUPPLEMENTAL TO A PARENT WARNING SIGN AND SHALL NOT BE INSTALLED BY ITSELF.

GENERAL NOTES:

1. ALL LEGEND SHALL BE CENTERED VERTICALLY AND HORIZONTALLY UNLESS OTHERWISE NOTED.
2. COLORS FOR SIGNS SHALL BE BLACK LEGEND AND BORDER ON FLUORESCENT ORANGE BACKGROUND UNLESS OTHERWISE NOTED.
3. ALL DIMENSIONS IN INCHES.

OTHER STDS. REQUIRED: T–1

REVISIONS AND CORRECTIONS

AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

FEDERAL HIGHWAY ADMINISTRATION

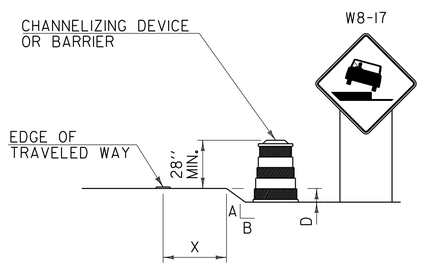
CONSTRUCTION SIGN DETAILS

VERMONT AGENCY OF TRANSPORTATION

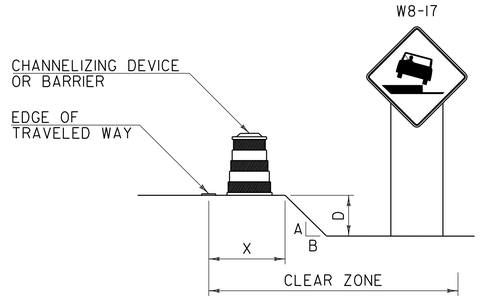
STANDARD

T-30

DROP-OFF ADJACENT TO TRAVELED WAY



TYPE 1

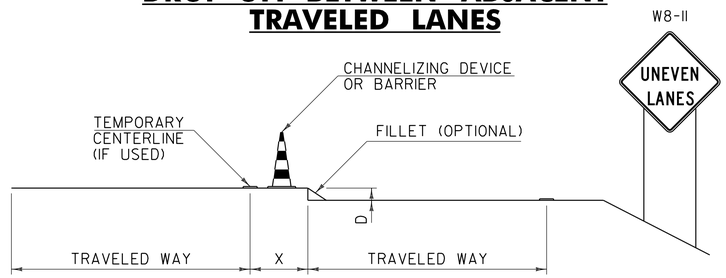


TYPE 2

NOTES:

1. CHANNELIZING DEVICES OR BARRIER SHOULD BE PLACED TO MAXIMIZE THE WIDTH OF THE TRAVELED WAY.
2. SEE CHART "A" FOR SPECIFIC REQUIREMENTS.
3. IF THE DROP-OFF REQUIRES CHANNELIZING DEVICES TO REMAIN IN PLACE OVERNIGHT, THEN "SHOULDER DROP-OFF SYMBOL" (W8-17) SIGNS SHOULD BE INSTALLED.

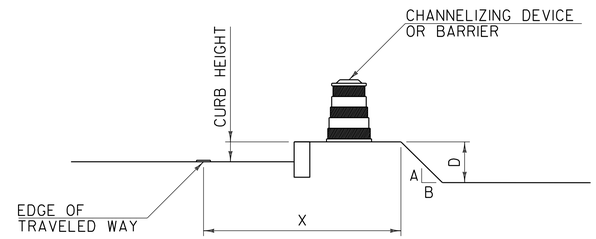
DROP-OFF BETWEEN ADJACENT TRAVELED LANES



NOTES:

1. WHENEVER A LONGITUDINAL DROP-OFF BETWEEN ADJACENT TRAVELED LANES IS TO BE LEFT OVERNIGHT, THEN "UNEVEN LANES" (W8-11) SIGNS AND CHANNELIZING DEVICES SHOULD BE INSTALLED.
2. IF REQUIRED, THE CHANNELIZING DEVICES USED SHOULD BE THOSE WHICH MAXIMIZE THE WIDTH OF THE TRAVELED LANE (I.E. CONES, VERTICAL PANELS OR TUBULAR MARKERS).
3. A BITUMINOUS CONCRETE FILLET WITH A 1.5:1 SLOPE MAY BE USED IN PLACE OF CHANNELIZING DEVICES, HOWEVER THE "UNEVEN LANES" (W8-11) SIGNS SHOULD STILL BE INSTALLED.
4. SEE CHART "A" FOR SPECIFIC REQUIREMENTS.

DROP-OFF BEYOND SHOULDER OR CURB



NOTES:

1. USE CHART "A" FOR VERTICAL CURBS UNDER SIX INCHES, MOUNTABLE CURBS OR ROADWAYS WITH A POSTED SPEED ABOVE 40 MPH.
2. USE CHART "B" FOR VERTICAL CURBS SIX INCHES OR GREATER.

CHART "A"
ALL SPEEDS WITH NO CURB OR MOUNTABLE CURB

X (FEET)	DROP (D) (INCHES)	A:B SLOPE	RECOMMENDED DEVICE
0 TO 4'	LESS THAN 2"	ANY	NONE
	2" TO 6"	1:1.5 OR FLATTER	NONE
		STEEPER THAN 1:1.5	CHANNELIZING DEVICE
	GREATER THAN 6"	1:3 OR FLATTER	NONE
		STEEPER THAN 1:3	BARRIER
4' TO 10'	LESS THAN 6"	ANY	NONE
	6" TO 12"	1:3 OR FLATTER	NONE
		STEEPER THAN 1:3	BARRIER
	GREATER THAN 12"	1:3 OR FLATTER	NONE
		STEEPER THAN 1:3	BARRIER
10' TO CZ	LESS THAN OR EQUAL TO 12"	ANY	NONE
	GREATER THAN 12"	1:3 OR FLATTER	NONE
		STEEPER THAN 1:3	BARRIER

NOTES:

1. THE MINIMUM CLEAR ZONE FOR FREEWAYS IS TO BE DETERMINED PER THE CURRENT AASHTO ROADSIDE DESIGN GUIDE. ALL OTHER HIGHWAYS WILL BE DETERMINED PER THE CURRENT "VERMONT STATE STANDARDS" BOOK.
2. CHANNELIZING DEVICES MAY BE USED INSTEAD OF BARRIER FOR SHORT TERM OPERATIONS.
3. ON BORDERLINE CONDITIONS, THE ENGINEER SHOULD DETERMINE WHICH TREATMENT IS ADEQUATE FOR THE EXISTING CONDITIONS.

CHART "B"
40 MPH OR LESS WITH VERTICAL CURB

X (FEET)	DROP (D) (INCHES)	DEVICE REQUIRED
0-10'	LESS THAN OR EQUAL TO 12"	NONE
0-10'	GREATER THAN 12"	CHANNELIZING DEVICE
GREATER THAN 10'	ANY	NONE

GENERAL NOTES:

1. THESE CONDITIONS AND TREATMENTS ARE ONLY PART OF THE TRAFFIC CONTROL SYSTEM AND SHOULD BE USED IN ADDITION TO THE PROPER WORK ZONE SIGNING.
2. THE FOLLOWING ARE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) COMPLIANT CHANNELIZING DEVICES:

   A. VERTICAL PANEL
   B. TYPE I OR TYPE II BARRICADE
   C. PLASTIC DRUM
   D. CONE - WHERE APPLICABLE
   E. TUBULAR MARKERS

   IF CHANNELIZING DEVICES ARE REQUIRED TO STAY IN PLACE DURING NIGHTTIME HOURS, THEY SHALL BE STABILIZED WHILE UNATTENDED IN ACCORDANCE WITH THE MUTCD.
3. WHERE BARRIER IS NECESSARY, THE BARRIER SHALL BE TAPERED BEYOND THE CLEAR ZONE. WHEN THE BARRIER CANNOT BE TAPERED BEYOND THE CLEAR ZONE, A MUTCD COMPLIANT END TREATMENT SHALL BE USED. BARRIER AND END TREATMENT SHALL MEET "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 OR THE "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH). THE APPROPRIATE RESOURCE SHALL BE DETERMINED AS DESCRIBED IN THE MASH PUBLICATION.
4. CHANNELIZING DEVICE SPACING ALONG A LONGITUDINAL DROP-OFF (TANGENT) SHALL BE AS FOLLOWS:

   TANGENT - CHANNELIZING DEVICES SHALL BE SPACED "2S" ("S" IS EQUAL TO THE POSTED SPEED LIMIT IN FEET) APART.
5. "LOW SHOULDER" (W8-9) AND "SHOULDER DROP-OFF SYMBOL" (W8-17) SIGNS, WHEN USED, SHOULD BEGIN PRIOR TO THE DROP-OFF CONDITION AND SHOULD BE REPEATED EVERY 1500 FEET.

OTHER STDS. REQUIRED: **T-1**

REVISIONS AND CORRECTIONS

AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

FEDERAL HIGHWAY ADMINISTRATION

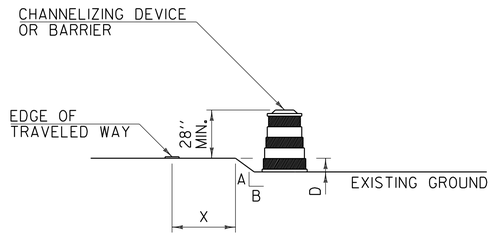
CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS

VERMONT AGENCY OF TRANSPORTATION

STANDARD

T-35

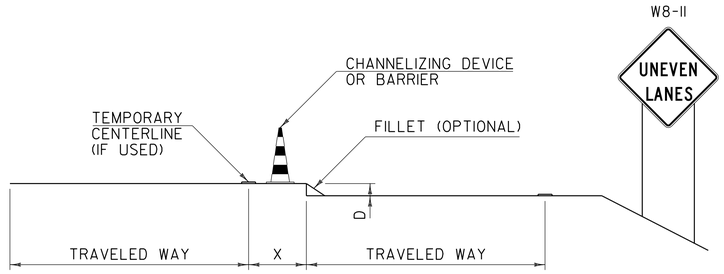
DROP-OFF ADJACENT TO TRAVELED WAY



NOTES:

1. CHANNELIZING DEVICES SHOULD BE PLACED TO MAXIMIZE THE WIDTH OF THE TRAVELED WAY.
2. SEE CHART "A" FOR SPECIFIC REQUIREMENTS.
3. IF THE DROP-OFF REQUIRES CHANNELIZING DEVICES TO REMAIN IN PLACE OVERNIGHT, THEN "LOW SHOULDER" (W8-9) OR "SHOULDER DROP-OFF SYMBOL" (W8-17) SIGNS SHOULD BE INSTALLED.

DROP-OFF BETWEEN ADJACENT TRAVELED LANES



NOTES:

1. WHENEVER A LONGITUDINAL DROP-OFF BETWEEN ADJACENT TRAVELED LANES IS TO BE LEFT OVERNIGHT, THEN "UNEVEN LANES" (W8-11) SIGNS AND CHANNELIZING DEVICES SHOULD BE INSTALLED.
2. IF REQUIRED, THE CHANNELIZING DEVICES USED SHALL BE THOSE WHICH MAXIMIZE THE WIDTH OF THE TRAVELED LANE (I.E. CONES, VERTICAL PANELS OR TUBULAR MARKERS).
3. A BITUMINOUS CONCRETE FILLET WITH A 1.5:1 SLOPE MAY BE USED IN PLACE OF CHANNELIZING DEVICES, HOWEVER THE "UNEVEN LANES" (W8-11) SIGNS SHOULD STILL BE INSTALLED.
4. SEE CHART "A" FOR SPECIFIC REQUIREMENTS.

CHART "A"
ALL SPEEDS WITH NO CURB

X (FEET)	DROP (D) (INCHES)	A:B SLOPE	DEVICE REQUIRED
0 TO 4'	LESS THAN 2"	ANY	NONE
	2" TO 6"	1:1.5 OR FLATTER	NONE
		STEEPER THAN 1:1.5	CHANNELIZING DEVICE
	GREATER THAN 6"	1:3 OR FLATTER	NONE
		STEEPER THAN 1:3	BARRIER
4' TO 10'	LESS THAN 6"	ANY	NONE
	6" TO 12"	1:3 OR FLATTER	NONE
		STEEPER THAN 1:3	BARRIER

NOTE:

1. ON BORDERLINE CONDITIONS, THE ENGINEER SHOULD DETERMINE WHICH TREATMENT IS ADEQUATE FOR THE EXISTING CONDITIONS.

GENERAL NOTES:

1. THESE CONDITIONS AND TREATMENTS ARE ONLY PART OF THE TRAFFIC CONTROL SYSTEM AND SHOULD BE USED IN ADDITION TO THE PROPER WORK ZONE SIGNING.
2. THE FOLLOWING ARE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) COMPLIANT CHANNELIZING DEVICES:

   A. VERTICAL PANEL
   B. TYPE I OR TYPE II BARRICADE
   C. PLASTIC DRUM
   D. CONE - WHERE APPLICABLE
   E. TUBULAR MARKERS

   IF CHANNELIZING DEVICES ARE REQUIRED TO STAY IN PLACE DURING NIGHTTIME HOURS, THEY SHALL BE STABILIZED WHILE UNATTENDED IN ACCORDANCE WITH THE MUTCD.
3. WHERE BARRIER IS NECESSARY, THE BARRIER SHALL BE TAPERED BEYOND THE CLEAR ZONE. WHEN THE BARRIER CANNOT BE TAPERED BEYOND THE CLEAR ZONE, A MUTCD COMPLIANT END TREATMENT SHALL BE USED. BARRIER AND END TREATMENT SHALL MEET "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 OR THE "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH). THE APPROPRIATE RESOURCE SHALL BE DETERMINED AS DESCRIBED IN THE MASH PUBLICATION.
4. CHANNELIZING DEVICE SPACING ALONG A LONGITUDINAL DROP-OFF (TANGENT) SHALL BE AS FOLLOWS:

   TANGENT - CHANNELIZING DEVICES SHALL BE SPACED "2S" ("S" IS EQUAL TO THE POSTED SPEED LIMIT IN FEET) APART.
5. "LOW SHOULDER" (W8-9) AND "SHOULDER DROP-OFF SYMBOL" (W8-17) SIGNS, WHEN USED, SHOULD BEGIN PRIOR TO THE DROP-OFF CONDITION AND SHOULD BE REPEATED EVERY 1500 FEET.

OTHER STDS. REQUIRED: **T-1**

REVISIONS AND CORRECTIONS

AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

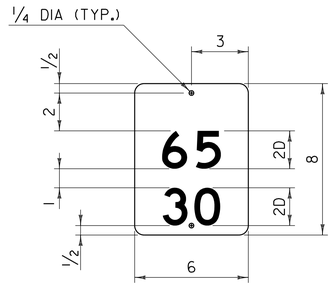
FEDERAL HIGHWAY ADMINISTRATION

CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS FOR PAVING

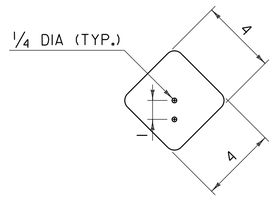
VERMONT AGENCY OF TRANSPORTATION

STANDARD

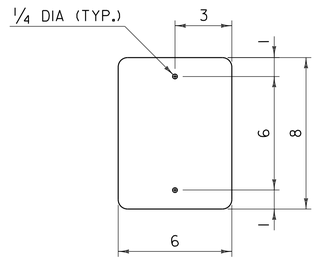
T-36



INTERSTATE MILEPOST PLAQUE



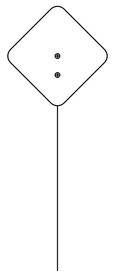
TYPE I DELINEATOR



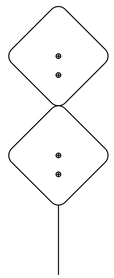
TYPE II DELINEATOR

GENERAL NOTES:

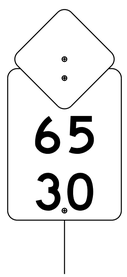
1. THE FIRST LINE OF TEXT ON INTERSTATE MILEPOST PLAQUES INDICATES THE WHOLE NUMBER MILEAGE FROM THE BEGINNING OF A ROUTE. MILEAGE IS ALWAYS MEASURED TRAVELING FROM THE SOUTH TO NORTH OR FROM THE WEST TO EAST. THE ROUTE DIRECTION IS ESTABLISHED USING THE VERMONT AGENCY OF TRANSPORTATION (VAOT) ROUTE LOGS.
2. THE SECOND LINE OF TEXT ON INTERSTATE MILEPOST PLAQUES INDICATES THE ADDITIONAL MILEAGE, IN HUNDREDTHS, FROM THE BEGINNING OF A ROUTE. MILEAGE IS ALWAYS MEASURED TRAVELING FROM THE SOUTH TO NORTH OR FROM THE WEST TO EAST. THE ROUTE DIRECTION IS ESTABLISHED USING THE VAOT ROUTE LOGS.
3. THE INTERSTATE MILEPOST PLAQUE SHALL BE GREEN RETROREFLECTIVE LEGEND ON A WHITE RETROREFLECTIVE BACKGROUND AND SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE III.
4. ALL LINES OF TEXT SHALL BE CENTERED HORIZONTALLY AND SHALL BE AS IDENTIFIED IN THE PLANS.
5. THE INTERSTATE MILEPOST PLAQUE AND DELINEATOR BASE MATERIAL SHALL BE 0.063 INCH FLAT SHEET ALUMINUM.
6. CORNERS SHALL BE ROUNDED TO A 1/2 INCH RADIUS.
7. A TYPE III DELINEATOR CONSISTS OF A TYPE I DELINEATOR FACING THE NORMAL DIRECTION OF TRAVEL AND A SINGLE RED TYPE I DELINEATOR FACING THE OPPOSITE DIRECTION. THE WHITE DELINEATOR AND RED DELINEATOR COMBINATION IS PLACED ON THE DRIVER'S RIGHT AND THE AMBER DELINEATOR AND RED DELINEATOR COMBINATION ON THE DRIVER'S LEFT.
8. DELINEATORS SHALL HAVE WHITE, GREEN, OR BLUE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING AASHTO M 268 ASTM D 4956 TYPE III, OR RED OR YELLOW RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING AASHTO M 268 ASTM D 4956 TYPE VII, VIII, OR IX.
9. A SINGLE 14 GAGE, 1.75 INCH SQUARE STEEL POST AND 12 GAGE, TWO INCH SQUARE ANCHOR SHALL BE USED FOR INSTALLATION. THE ANCHOR SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
10. THE TOP OF POST SHALL BE ONE INCH ABOVE THE UPPER HOLE FOR ALL TYPE I DELINEATORS.
11. THE TOP OF POST SHALL BE FLUSH WITH THE TOP OF ALL TYPE II DELINEATORS.
12. ALL DIMENSIONS SHOWN IN INCHES.



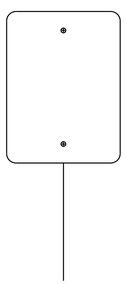
TYPE I



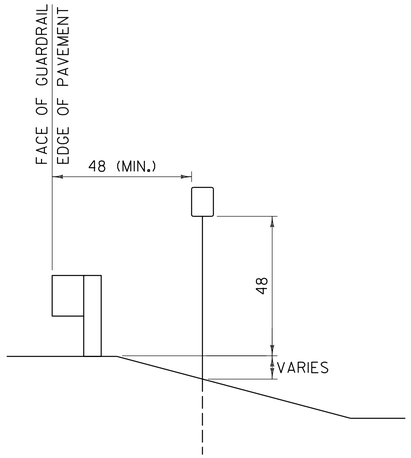
TYPE I – U-TURNS



WHITE TYPE I WITH MILEPOST PLAQUE



TYPE II



INSTALLATION DETAIL*

• INSTALLATION DETAIL APPLICABLE TO ALL DELINEATOR ASSEMBLIES

OTHER STDS. REQUIRED: T–45

REVISIONS AND CORRECTIONS

JAN. 2, 2013 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

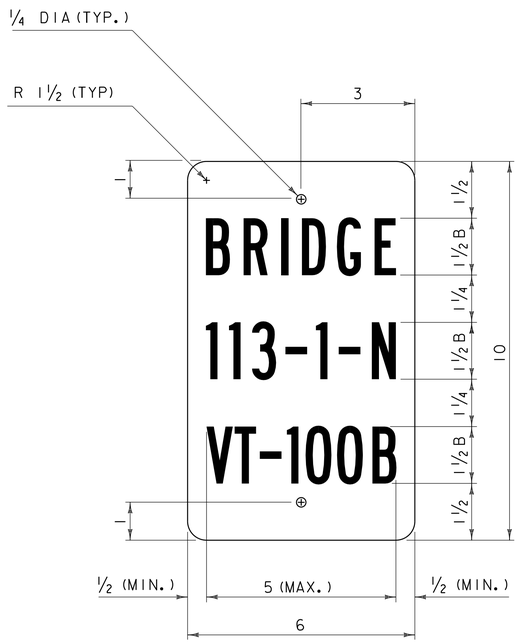
FEDERAL HIGHWAY ADMINISTRATION

DELINEATORS AND MILEPOSTS

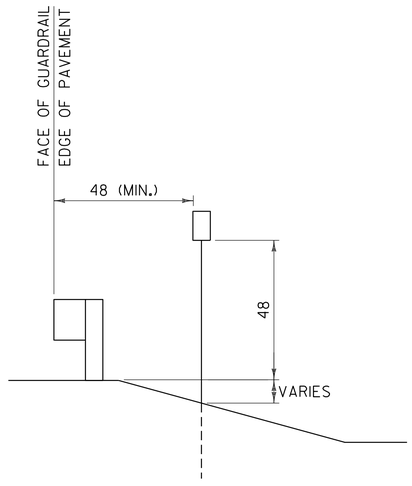
VERMONT AGENCY OF TRANSPORTATION

STANDARD

T-40



VD-701



VD-701 INSTALLATION DETAIL

GENERAL NOTES:

1. BRIDGE NUMBER PLAQUES ARE TO BE INSTALLED ALONG THE FEDERAL AID HIGHWAY SYSTEM INCLUDING ALL STATE HIGHWAYS AND TOWN HIGHWAYS ON THE FEDERAL AID HIGHWAY SYSTEM.
2. BRIDGE NUMBER PLAQUES SHALL BE LOCATED ON BOTH BRIDGE APPROACHES AT THE NEAREST VISIBLE LOCATION.
3. THE SIGN BASE MATERIAL SHALL BE 0.063 INCH FLAT SHEET ALUMINUM.
4. THE SIGN SHALL BE WHITE RETROREFLECTIVE LEGEND ON A GREEN RETROREFLECTIVE BACKGROUND, BOTH SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE III.
5. THE SECOND LINE OF TEXT INDICATES THE BRIDGE NUMBER. THE BRIDGE NUMBER CAN BE OBTAINED USING THE VERMONT AGENCY OF TRANSPORTATION (VAOT) ROUTE LOGS OR BY CONSULTING WITH THE VAOT STRUCTURES SECTION.
6. THE THIRD LINE OF TEXT INDICATES THE STATE ROUTE NUMBER. IN ALL CASES THIS WILL BE DEPICTED USING THE LETTER ABBREVIATION, FOLLOWED BY A HYPHEN, FOLLOWED BY THE ROUTE NUMBER. FOR EXAMPLE US ROUTE 2 WOULD BE IDENTIFIED USING US-2.
7. THE SECOND AND THIRD LINES OF TEXT SHALL BE CENTERED HORIZONTALLY AND SHALL BE AS DEFINED IN THE PLANS.
8. A SINGLE 14 GAGE, 1.75 INCH SQUARE STEEL POST AND 12 GAGE, TWO INCH SQUARE ANCHOR SHALL BE USED FOR INSTALLATION. THE ANCHOR SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
9. ALL DIMENSIONS SHOWN IN INCHES.

OTHER STDS. REQUIRED: **T-45**

REVISIONS AND CORRECTIONS

APRIL 9, 2014 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

FEDERAL HIGHWAY ADMINISTRATION

BRIDGE NUMBER PLAQUE

VERMONT AGENCY OF TRANSPORTATION

STANDARD

T-42

1 - ADDISON	2 - BENNINGTON	3 - CALEDONIA	4 - CHITTENDEN	5 - ESSEX	6 - FRANKLIN	7 - GRAND ISLE	8 - LAMOILLE
0101 ADDISON	0201 ARLINGTON	0301 BARNET	0401 BOLTON	0501 AVERILL	0601 BAKERSFIELD	0701 ALBURGH	0801 BELVIDERE
0102 BRIDPORT	0202 BENNINGTON	0302 BURKE	0402 BUELS GORE	0502 AVERYS GORE	0602 BERKSHIRE	0702 GRAND ISLE	0802 CAMBRIDGE
0103 BRISTOL	0203 DORSET	0303 DANVILLE	0403 BURLINGTON	0503 BLOOMFIELD	0603 ENOSBURG	0703 ISLE LA MOTTE	0803 EDEN
0104 CORNWALL	0204 GLASTENBURY	0304 GROTON	0404 CHARLOTTE	0504 BRIGHTON	0604 FAIRFAX	0704 NORTH HERO	0804 ELMORE
0105 FERRISBURGH	0205 LANDGROVE	0305 HARDWICK	0405 COLCHESTER	0505 BRUNSWICK	0605 FAIRFIELD	0705 SOUTH HERO	0805 HYDE PARK
0106 GOSHEN	0206 MANCHESTER	0306 KIRBY	0406 ESSEX	0506 CANAAN	0606 FLETCHER		0806 JOHNSON
0107 GRANVILLE	0207 PERU	0307 LYNDON	0407 HINESBURG	0507 CONCORD	0607 FRANKLIN		0807 MORRISTOWN
0108 HANCOCK	0208 POWNAL	0308 NEWARK	0408 HUNTINGTON	0508 EAST HAVEN	0608 GEORGIA		0808 STOWE
0109 LEICESTER	0209 READSBORO	0309 PEACHAM	0409 JERICHO	0509 FERDINAND	0609 HIGHGATE		0809 WATERVILLE
0110 LINCOLN	0210 RUPERT	0310 RYEGATE	0410 MILTON	0510 GRANBY	0610 MONTGOMERY		0810 WOLCOTT
0111 MIDDLEBURY	0211 SANDGATE	0311 ST JOHNSBURY	0411 RICHMOND	0511 GUILDHALL	0611 RICHFORD		
0112 MONKTON	0212 SEARSBURG	0312 SHEFFIELD	0412 ST GEORGE	0512 LEMINGTON	0612 ST ALBANS CITY		
0113 NEW HAVEN	0213 SHAFTSBURY	0313 STANNARD	0413 SHELBURNE	0513 LEWIS	0613 ST ALBANS TOWN		
0114 ORWELL	0214 STAMFORD	0314 SUTTON	0414 SO BURLINGTON	0514 LUNENBURG	0614 SHELDON		
0115 PANTON	0215 SUNDERLAND	0315 WALDEN	0415 UNDERHILL	0515 MAIDSTONE	0615 SWANTON		
0116 RIPTON	0216 WINHALL	0316 WATERFORD	0416 WESTFORD	0516 NORTON			
0117 SALISBURY	0217 WOODFORD	0317 WHEELOCK	0417 WILLISTON	0517 VICTORY			
0118 SHOREHAM			0418 WINOOSKI	0518 WARNERS GRANT			
0119 STARKSBORO				0519 WARREN GORE			
0120 VERGENNES							
0121 WALTHAM							
0122 WEYBRIDGE							
0123 WHITING							

9 - ORANGE	10 - ORLEANS	11 - RUTLAND	12 - WASHINGTON	13 - WINDHAM	14 - WINDSOR
0901 BRADFORD	1001 ALBANY	1101 BENSON	1201 BARRE CITY	1301 ATHENS	1401 ANDOVER
0902 BRAINTREE	1002 BARTON	1102 BRANDON	1202 BARRE TOWN	1302 BRATTLEBORO	1402 BALTIMORE
0903 BROOKFIELD	1003 BROWNINGTON	1103 CASTLETON	1203 BERLIN	1303 BROOKLINE	1403 BARNARD
0904 CHELSEA	1004 CHARLESTON	1104 CHITTENDEN	1204 CABOT	1304 DOVER	1404 BETHEL
0905 CORINTH	1005 COVENTRY	1105 CLARENDON	1205 CALAIS	1305 DUMMERSTON	1405 BRIDGEWATER
0906 FAIRLEE	1006 CRAFTSBURY	1106 DANBY	1206 DUXBURY	1306 GRAFTON	1406 CAVENDISH
0907 NEWBURY	1007 DERBY	1107 FAIR HAVEN	1207 E MONTPELIER	1307 GUILFORD	1407 CHESTER
0908 ORANGE	1008 GLOVER	1108 HUBBARDTON	1208 FAYSTON	1308 HALIFAX	1408 HARTFORD
0909 RANDOLPH	1009 GREENSBORO	1109 IRA	1209 MARSHFIELD	1309 JAMAICA	1409 HARTLAND
0910 STRAFFORD	1010 HOLLAND	1110 MENDON	1210 MIDDLESEX	1310 LONDONDERRY	1410 LUDLOW
0911 THETFORD	1011 IRASBURG	1111 MIDDLETOWN SPRINGS	1211 MONTPELIER	1311 MARLBORO	1411 NORWICH
0912 TOPSHAM	1012 JAY	1112 MT HOLLY	1212 MORETOWN	1312 NEWFANE	1412 PLYMOUTH
0913 TUNBRIDGE	1013 LOWELL	1113 MT TABOR	1213 NORTHFIELD	1313 PUTNEY	1413 POMFRET
0914 VERSHIRE	1014 MORGAN	1114 PAWLET	1214 PLAINFIELD	1314 ROCKINGHAM	1414 READING
0915 WASHINGTON	1015 NEWPORT CITY	1115 PITTSFIELD	1215 ROXBURY	1315 SOMERSET	1415 ROCHESTER
0916 WEST FAIRLEE	1016 NEWPORT TOWN	1116 PITTSFORD	1216 WAITSFIELD	1316 STRATTON	1416 ROYALTON
0917 WILLIAMSTOWN	1017 TROY	1117 POULTNEY	1217 WARREN	1317 TOWNSHEND	1417 SHARON
	1018 WESTFIELD	1118 PROCTOR	1218 WATERBURY	1318 VERNON	1418 SPRINGFIELD
	1019 WESTMORE	1119 RUTLAND CITY	1219 WOODBURY	1319 WARDSBORO	1419 STOCKBRIDGE
		1120 RUTLAND TOWN	1220 WORCESTER	1320 WESTMINSTER	1420 WEATHERSFIELD
		1121 KILLINGTON		1321 WHITINGHAM	1421 WESTON
		1122 SHREWSBURY		1322 WILMINGTON	1422 WEST WINDSOR
		1123 SUDBURY		1323 WINDHAM	1423 WINDSOR
		1124 TINMOUTH			1424 WOODSTOCK
		1125 WALLINGFORD			
		1126 WELLS			
		1127 WEST HAVEN			
		1128 WEST RUTLAND			

COUNTY AND TOWN DESIGNATIONS

9020 BARNET STATE HIGHWAY
9025 BENNINGTON NORTH STATE HIGHWAY
9030 BERLIN STATE HIGHWAY
9090 BRATTLEBORO STATE HIGHWAY
9150 CASTLETON STATE HIGHWAY
9180 COVENTRY STATE HIGHWAY
9210 FAIR HAVEN STATE HIGHWAY
9240 FAIRLEE STATE HIGHWAY
9270 FERRISBURGH STATE HIGHWAY
9330 MAIDSTONE STATE HIGHWAY
9360 MIDDLESEX STATE HIGHWAY
9390 MONTPELIER STATE HIGHWAY
9420 MONTPELIER JUNCTION STATE HIGHWAY
9430 NEWBURY STATE HIGHWAY
9480 NORTON STATE HIGHWAY
9540 NORWICH STATE HIGHWAY
9600 PUTNEY STATE HIGHWAY
9630 QUECHEE STATE HIGHWAY
9720 ST ALBANS STATE HIGHWAY SOUTH
9730 ST JOHNSBURY STATE HIGHWAY
9750 SOUTH ALBURGH STATE HIGHWAY
9840 WESTMINSTER STATE HIGHWAY
9870 WILDER STATE HIGHWAY
9900 WINHALL STATE HIGHWAY
9990 WEST RUTLAND - RUTLAND (BUSINESS US-4)
9991 BELLOWS FALLS SOI17 (ROCK - WEST ST)
9992 BELLOWS FALLS SOI17 (BRIDGE ST)
9993 BURLINGTON (ALTERNATE US-7)
9994 DERBY (ALTERNATE US-5)
9995 MONTPELIER (BUSINESS US-2)
9996 NEWPORT (ALTERNATE US-5)
9997 ST JOHNSBURY (ALTERNATE US-5)
9998 SO BURLINGTON - KENNEDY DRIVE

NAMED STATE AND TOWN HIGHWAYS ROUTE NUMBERS

GENERAL NOTES:

1. MILEMARKERS ARE TO BE INSTALLED ALONG THE FEDERAL AID HIGHWAY SYSTEM INCLUDING ALL STATE HIGHWAYS AND TOWN HIGHWAYS ON THE FEDERAL AID HIGHWAY SYSTEM.

2. MILEMARKERS WILL NORMALLY BE INSTALLED AT EACH 0.20 MILE INTERVAL, ALTERNATING SIDES OF THE ROAD, RESULTING IN A SIGN FACING TRAFFIC EACH 0.40 MILES. A MILEMARKER WILL ALSO BE INSTALLED AT EACH INTERSECTION, ON THE SAME POST AS THE STOP SIGN (MILEMARKER TO BE PLACED PARALLEL TO MAINLINE TRAVELED WAY, VISIBLE TO TRAFFIC). ANY MILEMARKER LOCATION FALLING WITHIN 0.05 MILE OF AN INTERSECTION WILL BE OMITTED. WHEN THE NORMAL LOCATION OF A MILEMARKER IS UNDESIRABLE, SUCH AS ON A LAWN, DRIVEWAY, OR LEDGE, AN ATTEMPT WILL BE MADE TO LOCATE IT ON THE OPPOSITE SIDE OF THE ROAD. IF NO SUITABLE LOCATION CAN BE FOUND WITHIN 20 FEET OF THE NORMAL LOCATION, IT MAY BE OMITTED.

3. ON CLASS 1 TOWN HIGHWAYS OR OTHER CONGESTED LOCATIONS MILEMARKERS WILL ONLY BE INSTALLED ON EXISTING SIGN POSTS AND WILL CARRY THE ACTUAL MILEAGE TO THAT LOCATION. A MILEMARKER LOCATED EVERY 0.10 MILES IS DESIRABLE THROUGH THESE LOCATIONS.

4. THE FIRST LINE OF TEXT ON MILEMARKERS INDICATE THE STATE ROUTE NUMBER. THE FOURTH NUMERAL BEING THE CORRESPONDING ROUTE NUMBER LETTER DESIGNATION. FOR EXAMPLE US-2 (WHICH HAS NO LETTER DESIGNATION) WOULD BE IDENTIFIED USING 0020 AND VT-100B WOULD BE IDENTIFIED USING 1002. FOR ANY NAMED FEDERAL AID HIGHWAY SYSTEM HIGHWAYS, THE FOUR DIGIT ROUTE NUMBER (9000 SERIES) LISTED UNDER "NAMED STATE AND TOWN HIGHWAYS ROUTE NUMBERS" SHALL BE UTILIZED.

5. THE SECOND LINE OF TEXT ON MILEMARKERS INDICATE THE COUNTY AND TOWN. THE COUNTY IS INDICATED IN THE FIRST AND SECOND NUMERALS AND THE TOWN IN THE THIRD AND FOURTH NUMERALS. THE APPROPRIATE FOUR DIGIT DESIGNATIONS ARE LISTED PER TOWN, UNDER "COUNTY AND TOWN DESIGNATIONS."

6. THE THIRD LINE OF TEXT ON MILEMARKERS INDICATE THE MILEAGE, IN HUNDREDTHS, FROM THE TOWN LINE OR BEGINNING OF A ROUTE. MILEAGE IS ALWAYS MEASURED TRAVELING FROM THE SOUTH TO NORTH OR FROM THE WEST TO EAST. THE ROUTE DIRECTION IS ESTABLISHED USING THE VERMONT AGENCY OF TRANSPORTATION (VAOT) ROUTE LOGS.

7. THE SIGN BASE MATERIAL SHALL BE 0.063 INCH FLAT SHEET ALUMINUM.

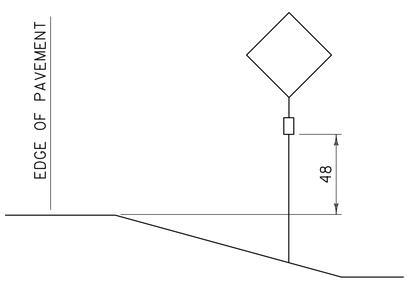
8. THE SIGN SHALL BE WHITE RETROREFLECTIVE LEGEND ON A GREEN RETROREFLECTIVE BACKGROUND, BOTH SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE III.

9. CORNERS SHALL BE ROUNDED TO A ½ INCH RADIUS.

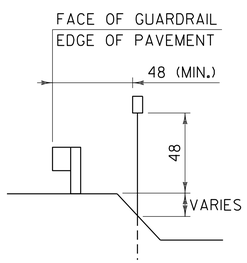
10. ALL LINES OF TEXT SHALL BE CENTERED HORIZONTALLY AND SHALL BE AS IDENTIFIED IN THE PLANS. THE THREE LINES OF TEXT WILL EACH CONTAIN FOUR NUMERALS.

11. WHEN INSTALLED ON ITS OWN POST, A SINGLE 14 GAGE, 1.75 INCH SQUARE STEEL POST AND 12 GAGE, 2 INCH SQUARE ANCHOR SHALL BE USED FOR INSTALLATION. THE ANCHOR SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

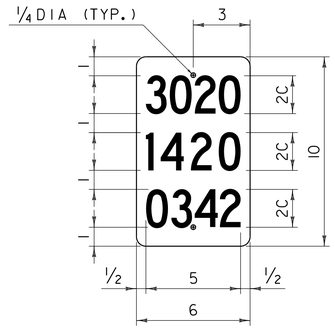
12. ALL DIMENSIONS SHOWN IN INCHES.



VD-700 INSTALLATION DETAIL SUPPLEMENTARY SIGN



VD-700 INSTALLATION DETAIL



VD-700

OTHER STDS. REQUIRED: T-45

REVISIONS AND CORRECTIONS

APRIL 9, 2014 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

FEDERAL HIGHWAY ADMINISTRATION

MILEMARKER DETAILS STATE AND TOWN HIGHWAYS

VERMONT AGENCY OF TRANSPORTATION

STANDARD T-44

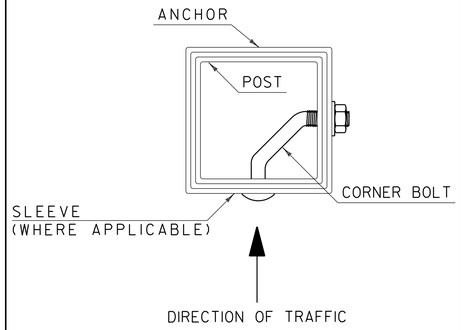
POST AND ANCHOR SELECTION CHART

POST SIZE (IN.)	POST THICKNESS (IN.)	POST WEIGHT (LBS/FT.)	POST GAGE	SECTION MODULUS (IN.³)	ONE POST SV	TWO POST SV	THREE POST SV	POSTS PERMITTED IN 8' PATH	ANCHOR SIZE (IN.)	ANCHOR GAGE	MINIMUM ANCHOR LENGTH
1.75	.083	1.88	14	0.222	45	90	135	TWO	2.00	12	30
2.00	.109	2.42	12	0.393	80	160	240	TWO	2.25	12	48
2.50	.109	3.35	12	0.673	137	274	411	ONE	3.00	7	48

NOTES:

1. ALL SIGN POSTS SHALL HAVE 7/16 INCH HOLES EVERY ONE INCH ON CENTER (ALL FOUR SIDES).
2. THE NUMBER OF SIGN POSTS PERMITTED WITHIN AN EIGHT FOOT PATH ASSUMES THAT THE SIGN ASSEMBLY IS NOT PROTECTED BY GUARDRAIL OR IS LOCATED WITHIN A GUARDRAIL'S DEFLECTION DISTANCE DETERMINED PER THE CURRENT "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) ROADSIDE DESIGN GUIDE. ADDITIONAL POSTS MAY BE INSTALLED USING SLIP BASES THAT MEET "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 OR THE AASHTO "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH). THE APPROPRIATE RESOURCE SHALL BE DETERMINED AS DESCRIBED IN THE MASH PUBLICATION.
3. TO USE THE SELECTION VALUE (SV) COLUMNS IN THE TABLE ABOVE, MULTIPLY A SIGN'S SURFACE AREA IN SQUARE FEET (H x L) BY THE SIGN'S HEIGHT IN FEET MEASURED FROM THE GROUND TO THE CENTROID OF THE SIGN ASSEMBLY (h). THIS RESULT MUST BE LESS THAN OR EQUAL TO THE CORRESPONDING SELECTION VALUE. NOTE THAT FOR SIGNS WITH MULTIPLE POSTS, THE LARGEST HEIGHT DIMENSION SHALL BE USED TO CALCULATE THE POST SELECTION VALUE.
4. THE DESIGN CRITERIA UTILIZED IN SIGN POST AND ANCHOR SELECTION IS AS FOLLOWS: WIND SPEED OF 70 MPH (10 YEAR MEAN RECURRENCE INTERVAL), WIND PRESSURE OF 19 PSF, STEEL MINIMUM YIELD OF 55,000 PSI, AND AN ALLOWABLE STRESS OF 1.4 (0.60 FY).

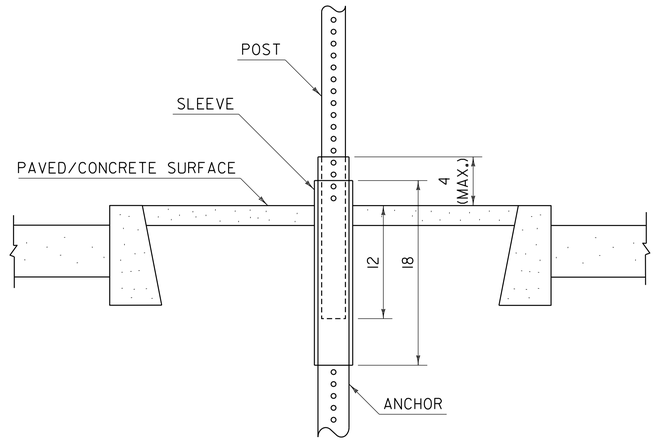
CORNER BOLT INSTALLATION DETAIL



NOTES:

1. CORNER BOLTS SHALL BE 5/16 INCH DIAMETER WITH 18 THREADS PER INCH AND DIMENSIONS SHALL BE DETERMINED BASED ON THE OUTERMOST DIMENSION OF THE SLEEVE, ANCHOR OR POST. THREAD EXPOSURE MUST EXCEED THE CORRESPONDING NUT WIDTH. THE CORNER BOLT AND CORRESPONDING HARDWARE SHALL BE ZINC PLATED, MEETING OR EXCEEDING THE REQUIREMENTS OF THE "AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) A307.

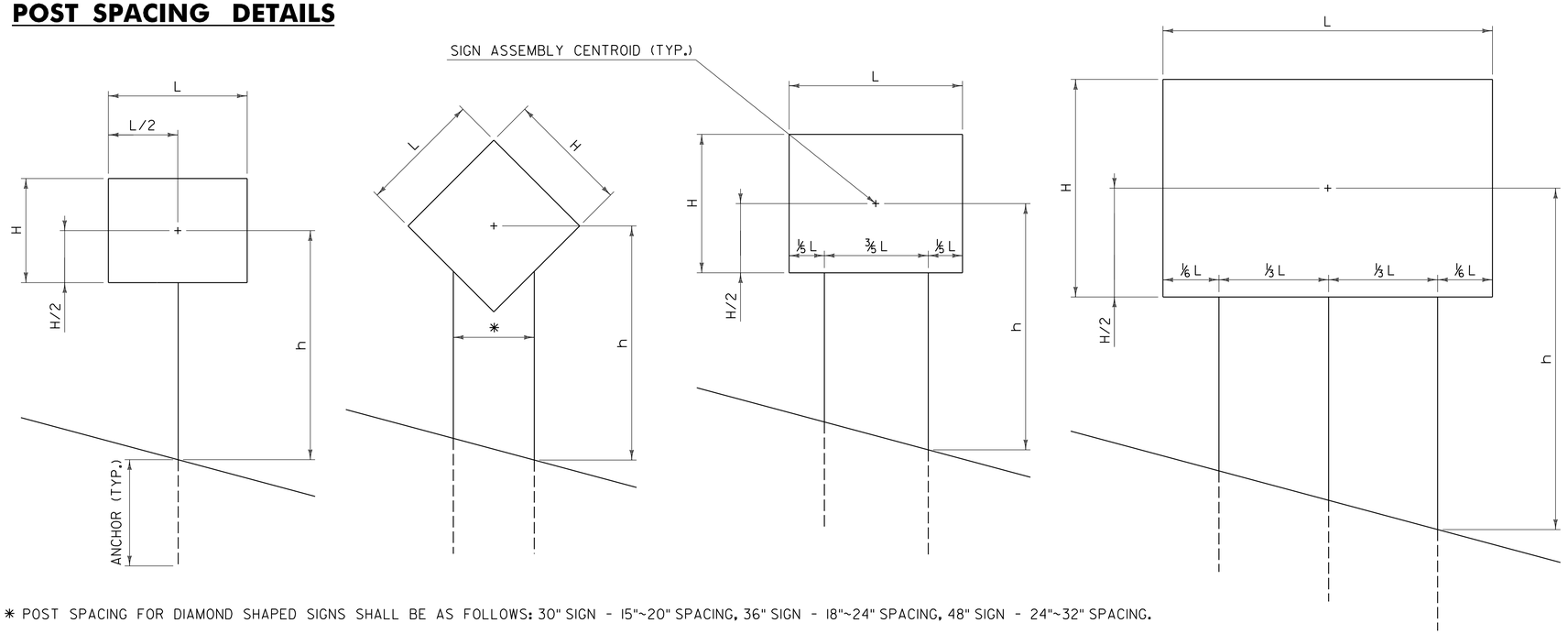
SLEEVE /ANCHOR INSTALLATION DETAIL



NOTES:

1. A SLEEVE SHALL BE INSTALLED FOR SIGN INSTALLATIONS IN CONCRETE OR PAVEMENT.
2. THE SLEEVE SHALL BE 18 INCHES MINIMUM IN LENGTH.
3. THREE INCH SLEEVES THAT DO NOT HAVE HOLES WILL REQUIRE THAT 7/16 INCH HOLES ARE DRILLED TO FACILITATE CONNECTIONS.
4. REFER TO CURRENT EDITION OF THE "VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION" FOR MATERIAL REQUIREMENTS.

POST SPACING DETAILS



* POST SPACING FOR DIAMOND SHAPED SIGNS SHALL BE AS FOLLOWS: 30" SIGN - 15"~20" SPACING, 36" SIGN - 18"~24" SPACING, 48" SIGN - 24"~32" SPACING.

GENERAL NOTES:

1. ALL SQUARE TUBE STEEL POSTS AND ANCHORS SHALL BE FORMED INTO A SIZE AND SHAPE IN SUCH A MANNER THAT NEITHER FLASH NOR WELD SHALL INTERFERE WITH THE TELESCOPING PROPERTIES, NOR DAMAGE THE GALVANIZING.
2. ANCHORS MAY BE DRIVEN OR SET INTO A DUG HOLE AND BACKFILLED. IF DRIVEN, A DRIVING CAP SHALL BE USED. THE DUG HOLE INSTALLATION METHOD SHALL BE UTILIZED IN AREAS WITH POOR SOIL CONDITIONS OR AS DIRECTED BY THE ENGINEER. BACKFILL SHALL BE COMPACTED AS DIRECTED BY THE ENGINEER.
3. THE TOPS OF SIGN POSTS SHALL BE AT OR NEAR THE TOP OF SIGN. THE POST SHALL NOT EXTEND ABOVE THE TOP OF SIGN.
4. SIGN POSTS SHALL BE INSTALLED A MINIMUM OF ONE FOOT BELOW GROUND, INSIDE THE ANCHOR. THE LENGTH OF ANCHOR EXPOSED ABOVE GROUND SHALL NOT EXCEED FOUR INCHES.
5. ALL DIMENSIONS SHOWN IN INCHES.

OTHER STDS. REQUIRED: **NONE**

REVISIONS AND CORRECTIONS

JAN. 2, 2013 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

FEDERAL HIGHWAY ADMINISTRATION

SQUARE TUBE SIGN POST AND ANCHOR

VERMONT AGENCY OF TRANSPORTATION

STANDARD

T-45