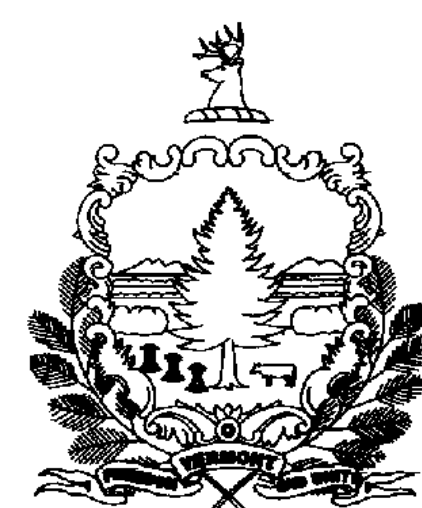
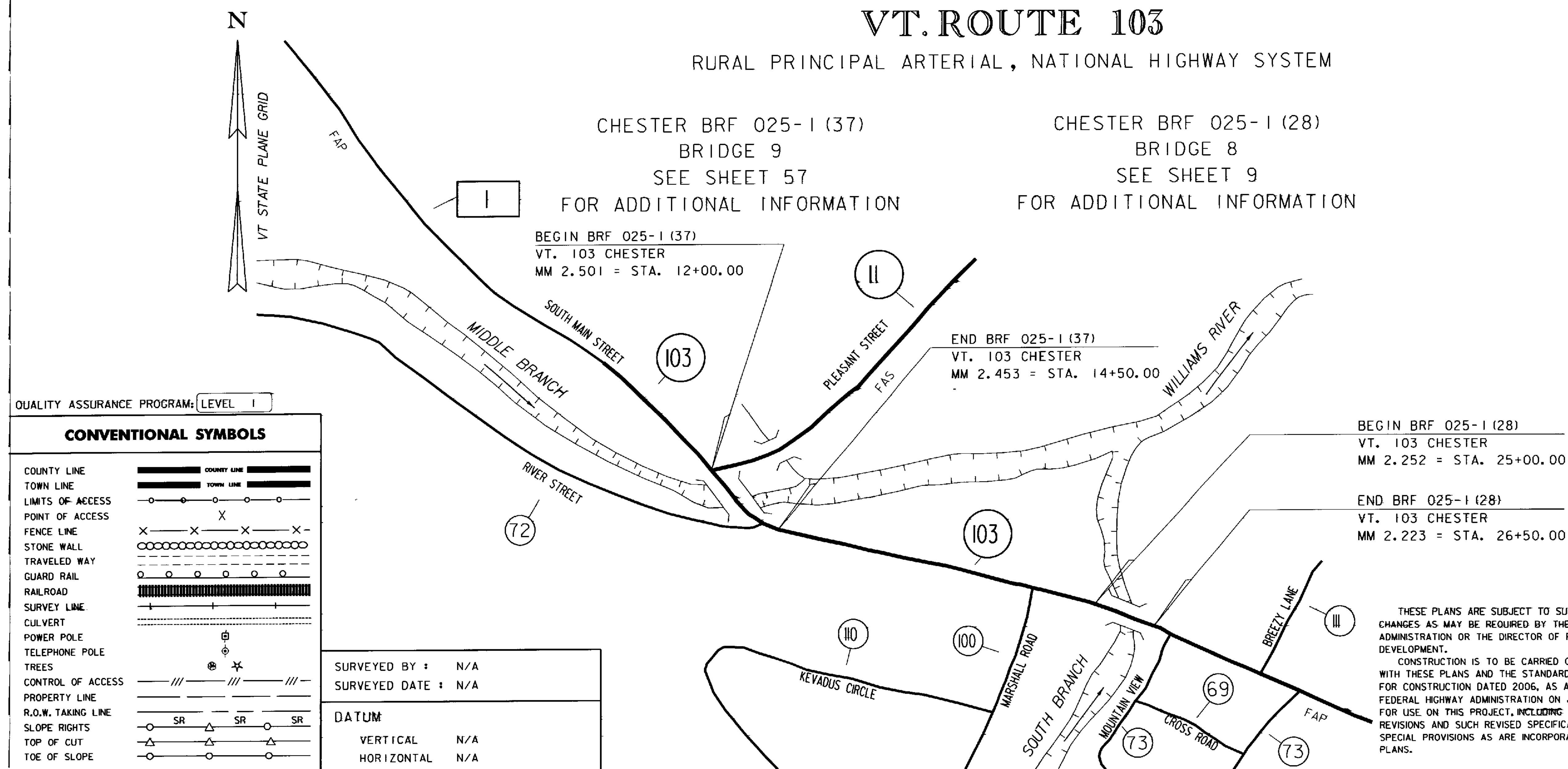


STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF CHESTER
COUNTY OF WINDSOR
VT. ROUTE 103

Map of Vermont showing county boundaries and names. The map is oriented with North at the top. To the north is Canada, to the east is the State of New Hampshire, and to the south is the Commonwealth of Massachusetts. The counties shown are Grand Isle, Franklin, Orleans, Essex, CATTENONK, LAMOILLE, WASHINGTON, CALEDONIA, ADDISON, ORANGE, RUTLAND, WINDSOR, BENNINGTON, and BRIGHAM. A circle is drawn around the town of BRIGHAM. A north arrow and the text "VT STATE PLANE GRID" are located to the left of the map. A line points from the text "Commonwealth of MASSACHUSETTS" to the southern border of the state.



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STRUCTURES DETAILS

- | | | |
|-----------|---|-----------|
| SD-501.00 | CONCRETE DETAILS AND NOTES | 4/22/2010 |
| SD-502.00 | CONCRETE DETAILS AND NOTES | 4/22/2010 |
| SD-516.10 | BRIDGE JOINT ASPHALTIC PLUG DETAIL SHEET | 4/22/2010 |
| SD-601.00 | STRUCTURAL STEEL DETAILS & NOTES | 4/22/2010 |
| SD-602.00 | STRUCTURAL STEEL PLATE GIRDER DETAILS & NOTES | 4/22/2010 |

STANDARDS

- | | | |
|--------|---|------------|
| B-71 | RESIDENTIAL AND COMMERCIAL DRIVES | 7/8/2005 |
| C-2A | PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK ADJACENT TO CURB | 10/14/2005 |
| C-3A | SIDEWALK RAMPS | 3/10/2008 |
| C-10 | CURBING | 2/11/2008 |
| D-1 | PRECAST REINFORCED CONCRETE DROP INLET DETAILS | 6/1/1994 |
| E-100 | CONSTRUCTION APPROACH SIGNS | 1/2/2004 |
| E-102 | CONSTRUCTION SIGN DETAILS | 6/30/2003 |
| E-102A | CONSTRUCTION SIGN DETAILS | 5/1/2004 |
| E-106 | TRAFFIC CONTROL - MISCELLANEOUS DETAILS | 3/1/2004 |
| E-107 | DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS | 6/30/2003 |
| E-107A | BREAKAWAY BARRICADE DETAILS | 6/8/2009 |
| E-110 | MAJOR MAINTENANCE OPERATION LANE CLOSURE | 8/8/1995 |
| E-121 | STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD | 8/8/1995 |
| E-123 | GUIDE SIGN PLACEMENT - MISCELLANEOUS DETAILS | 3/16/2004 |
| E-127 | ROUTE MARKINGS AT RURAL INTERSECTIONS | 8/8/1995 |
| E-134 | BRIDGE NUMBER PLAQUE | 8/8/1995 |
| E-136B | STATE ROUTE MARKER SIGN DETAILS | 8/8/1995 |
| E-141 | REGULATORY SIGN DETAILS | 9/20/1995 |
| E-160 | FLANGED CHANNEL STEEL SIGN POST | 5/20/1999 |
| E-164 | SQUARE STEEL SIGN POST | 6/8/2009 |
| E-191 | PAVEMENT MARKING DETAILS | 2/1/1999 |
| E-193 | PAVEMENT MARKING DETAILS | 8/18/1995 |
| G-1 | STEEL BEAM GUARDRAIL WITH STEEL POSTS :: STEEL BEAM GUARDRAIL WITH WOOD POSTS | 1/3/2000 |
| G-1D | STEEL BEAM GUARDRAIL (40MPH & LESS) :: HEAVY DUTY STEEL BEAM GUARDRAIL :: STEEL BEAM MEDIAN BARRIER :: ANCHOR FOR STEEL BEAM RAIL | 1/3/2000 |

PROJECT NAME: CHESTER & CHESTER	
PROJECT NUMBER: BRF 025-1(28) & BRF 025-1(37)	
FILE NAME: 84e061\CompositeExcel.dgn	PLOT DATE: 20-SEP-2010
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY: D.D.BEARD
DESIGNED BY: R.S.YOUNG	CHECKED BY: E.R.CHARBONNEAU
INDEX OF SHEETS	SHEET 2 OF 124

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS					DETAILED SUMMARY OF QUANTITIES			
ROADWAY (BRIDGE 8)	TRAINING (BRIDGE 8)	EROSION CONTROL (BRIDGE 8)	BRIDGE NO. 8	FULL C.E. ITEMS (BRIDGE 8)	ROADWAY (BRIDGE 9)	TRAINING (BRIDGE 9)	EROSION CONTROL (BRIDGE 9)	BRIDGE NO. 9	FULL C.E. ITEMS (BRIDGE 9)	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS		
0.5					0.5					1		LS	CLEARNG AND GRUBBING, NCLUDING INDIVIDUAL TREES AND STUMPS	201.10						
320					1050					1370		CY	COMMON EXCAVATION	203.15						
			180					575		755		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27						
					115					115		CY	TRENCH EXCAVATION OF EARTH	204.20						
					5					5		CY	TRENCH EXCAVATION OF ROCK	204.21						
1					1					2		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22						
			255					285		540		CY	STRUCTURE EXCAVATION	204.25						
			85					175		260		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30						
340					690					1030		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10						
240					1050					1290		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35						
4					12					16		CWT	EMULSIFIED ASPHALT	404.65						
175					715					890		TON	BITUMINOUS CONCRETE PAVEMENT	406.25						
1					1					2		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50						
			55							55		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34						
			90							90		LF	PRE-EXCAVATION OF INTEGRAL ABUTMENT PILES	503.20						
			1							1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING (BRIDGE 8)	504.10						
								1		1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING (BRIDGE 9)	504.10						
			120					650		770		LF	STEEL PILING FOR INTEGRAL ABUTMENTS, HP 12 X 84	505.265						
			1					2		3		EACH	DYNAMIC PILE LOADING TEST	505.45						
								252300		252300		LB	STRUCTURAL STEEL, CURVED PLATE GIRDER	506.56						
			2060							2060		LB	REINFORCING STEEL	507.15						
			72							72		LF	DRILLING AND GROUTING DOWELS	507.16						
			1200					13285		14465		LB	EPOXY COATED REINFORCING STEEL	507.17						
								1		1		LS	SHEAR CONNECTORS (1684 - 7/8" X 7")	508.15						
			190							190		LF	GROUTING SHEAR KEYS	510.24						
			16					35		51		GAL	WATER REPELLENT, SILANE	514.10						
								100		100		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10						
			220					465		685		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20						
			75					90		165		LF	JOINT SEALER, HOT POURED	524.11						
			1							1		EACH	REMOVAL OF STRUCTURE (1300 SF - EST.)	529.15						
								1		1		EACH	REMOVAL OF STRUCTURE (4985 SF - EST.)	529.15						
			16							16		EACH	BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD	531.11						
								14		14		EACH	BEARING DEVICE ASSEMBLY, INTEGRAL ABUTMENT	531.14						
								1		1		LS	PRECAST CONCRETE STRUCTURE (8" DECK SLABS)	540.10						
			1							1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #1 BRIDGE 8)	540.10						
								1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #1 BRIDGE 9)	540.10						
			1							1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #2 BRIDGE 8)	540.10						
								1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #2 BRIDGE 9)	540.10						

PROJECTNAME: CHESTER & CHESTER	
PROJECTNUMBER: BRF 025-1(28) & BRF 025-1(37)	
FILENAME: M:\86041\Composites\excel.dgn	PLOT DATE: 09/20/2010
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY: D.D.BEARD
DESIGNED BY: R.S.YOUNG	CHECKED BY: E.R.CHARBONNE
COMPOSITE QUANTITY SHEET #1	SHEET 3 OF 124

STATE OF VERMONT AGENCY OF TRANSPORTATION										QUANTITY SHEET 2									
SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
ROADWAY (BRIDGE 8)	TRAINING (BRIDGE 8)	EROSION CONTROL (BRIDGE 8)	BRIDGE NO. 8	FULL C.E. ITEMS (BRIDGE 8)	ROADWAY (BRIDGE 9)	TRAINING (BRIDGE 9)	EROSION CONTROL (BRIDGE 9)	BRIDGE NO. 9	FULL C.E. ITEMS (BRIDGE 9)	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS	
													BEGIN OPTION AA						
					84					84		LF	18" CAAP .060 (2-2/3 X 1/2)	601.0215					
					84					84		LF	18" PCCSP .064 (2-2/3 X 1/2)	601.0415					
					84					84		LF	18" CPEP	601.0915					
													END OPTION AA						
					1					1		EACH	PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE	604.18					
					2					2		EACH	CHANGING ELEVATION OF DROP INLETS, CATCH BASINS, OR MANHOLES	604.40					
					1					1		EACH	CHANGING ELEVATION OF SEWER MANHOLES	604.42					
		10					10			20		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25					
1					1					2		TON	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15					
		10					10			20		CY	STONE FILL, TYPE I	613.10					
			140							140		CY	STONE FILL, TYPE III	613.12					
								635		635		CY	STONE FILL, TYPE IV	613.13					
51					105					156		LF	PRECAST REINFORCED CONCRETE CURB, TYPE B	616.26					
35					35					70		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	618.10					
					4					4		SF	DETECTABLE WARNING SURFACE	618.30					
					133					133		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED	621.21					
4										4		EACH	MANUFACTURED TERMINAL SECTION, TANGENT (TL-2)	621.51					
					4					4		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60					
182					210					392		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80					
360					530					890		LF	TEMPORARY TRAFFIC BARRIER	621.90					
1										1		EACH	ADJUST ELEVATION OF VALVE BOX	629.20					
90					90					180		HR	UNIFORMED TRAFFIC OFFICERS	630.10					
450					720					1170		HR	FLAGGERS	630.15					
				0.5					0.5	1		LS	FIELD OFFICE, ENGINEERS	631.10					
				0.5					0.5	1		LS	TESTING EQUIPMENT, CONCRETE	631.16					
				0.5					0.5	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17					
				1500					1500	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26					
	260					260				520		HR	EMPLOYEE TRAINEESHIP	634.10					
0.5					0.5					1		LS	MOBILIZATION/DEMOBILIZATION	635.11					
1										1		LS	TRAFFIC CONTROL	641.10					
0.5					0.5					1		LS	PUBLIC RELATIONS OFFICER	641.12					
4										4		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15					
500					970					1470		LF	4 INCH WHITE LINE	646.20					
500					890					1390		LF	4 INCH YELLOW LINE	646.21					
					76					76		LF	DURABLE 24 INCH STOP BAR	646.480					
					8					8		EACH	DURABLE LETTER OR SYMBOL	646.490					
					72					72		LF	DURABLE CROSSWALK MARKING	646.500					
500					1570					2070		LF	TEMPORARY 4 INCH WHITE LINE	646.600					
500					1665					2165		LF	TEMPORARY 4 INCH YELLOW LINE	646.610					
																PROJECT NAME: CHESTER & CHESTER			
																PROJECT NUMBER: BRF 025-1(28) & BRF 025-1(37)			
																FILE NAME: M:\86e041\Compositeexcel.dgn		PLOT DATE: 09/20/2010	
																PROJECT LEADER: C.P.WILLIAMS		DRAWN BY: D.D.BEARD	
																DESIGNED BY: R.S.YOUNG		CHECKED BY: E.R.CHARBONNE	
																COMPOSITE QUANTITY SHEET #2		SHEET 4 OF 124	

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

QUANTITY SHEET 3

[illegible]

PROJECTNAME:	CHESTER & CHESTER		
PROJECTNUMBER:	BRF 025-1(28) & BRF 025-1(37)		
FILENAME: M:\86041\Composites\excel.dgn	PLOT DATE:	09/20/2010	
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY:	D.D.BEARD	
DESIGNED BY: R.S.YOUNG	CHECKED BY:	E.R.CHARBONNE	
COMPOSITE QUANTITY SHEET #3	SHEET 5	OF 124	

TRAFFIC CONTROL NOTES:

TRAFFIC WILL BE MAINTAINED ON A REGIONAL DETOUR VIA VT RT 11 BETWEEN CHESTER AND SPRINGFIELD AND INTERSTATE 91 BETWEEN EXITS 6 AND 7.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DETOUR AND CONSTRUCTION SIGNING. THE EXACT LOCATION WILL BE COORDINATED BETWEEN THE RESIDENT ENGINEER AND THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH M.U.T.C.D.

TRAFFIC CONTROL WARNING SIGNS SHALL BE PROVIDED PER STANDARDS E-100, E-102 AND E-102A. ADDITIONAL PROJECT CONSTRUCTION SIGNS SHALL BE INSTALLED AS REQUIRED BY THE RESIDENT ENGINEER. ALL ON AND OFF PROJECT SIGNS AND BARRICADES AS REQUIRED FOR THE DETOUR AND/OR ORDERED BY THE RESIDENT ENGINEER WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PAID FOR UNDER THE ITEM 641.10, "TRAFFIC CONTROL". ALL SIGNS AND BARRICADES SHALL BE INSPECTED DAILY AND REPAIRED AS NECESSARY. ALL SIGNS AND BARRICADES SHALL BE CLEARED OF DUST AND DEBRIS WEEKLY.

PORTABLE CHANGEABLE MESSAGE SIGNS "PCMS" SHALL BE PLACED AT THE APPROXIMATE LOCATIONS SHOWN ON THE PLANS OR WHERE DESIGNATED BY THE RESIDENT ENGINEER. TWO SIGNS SHALL BE PLACED AT THE PROJECT LOCATION 14 DAYS PRIOR TO THE START OF CONSTRUCTION TO WARN OF THE IMPENDING DETOURS. THESE SHALL THEN BE REMOVED AND DEPLOYED TO THE LOCATIONS SHOWN ONCE CONSTRUCTION HAS BEGUN. PAYMENT FOR THESE SIGNS SHALL BE INCLUDED IN ITEM 641.15 "PORTABLE CHANGEABLE MESSAGE SIGN"

THE STATE ROUTE MARKERS USED FOR THE DETOUR AS SHOWN ON THE PLANS, SHALL FOLLOW STANDARDS E-127 AND E-136B. THESE SIGNS SHALL BE REMOVED AT THE END OF THE CONSTRUCTION PERIOD. THESE SIGNS AND THEIR REMOVAL SHALL BE PAID FOR UNDER ITEM 641.10 "TRAFFIC CONTROL"

ITEM 641.12 "PUBLIC RELATIONS OFFICER" SHALL BE USED FOR THE COORDINATION OF DETOUR INFORMATION AND TRAFFIC DELAYS FOR THE PUBLIC.

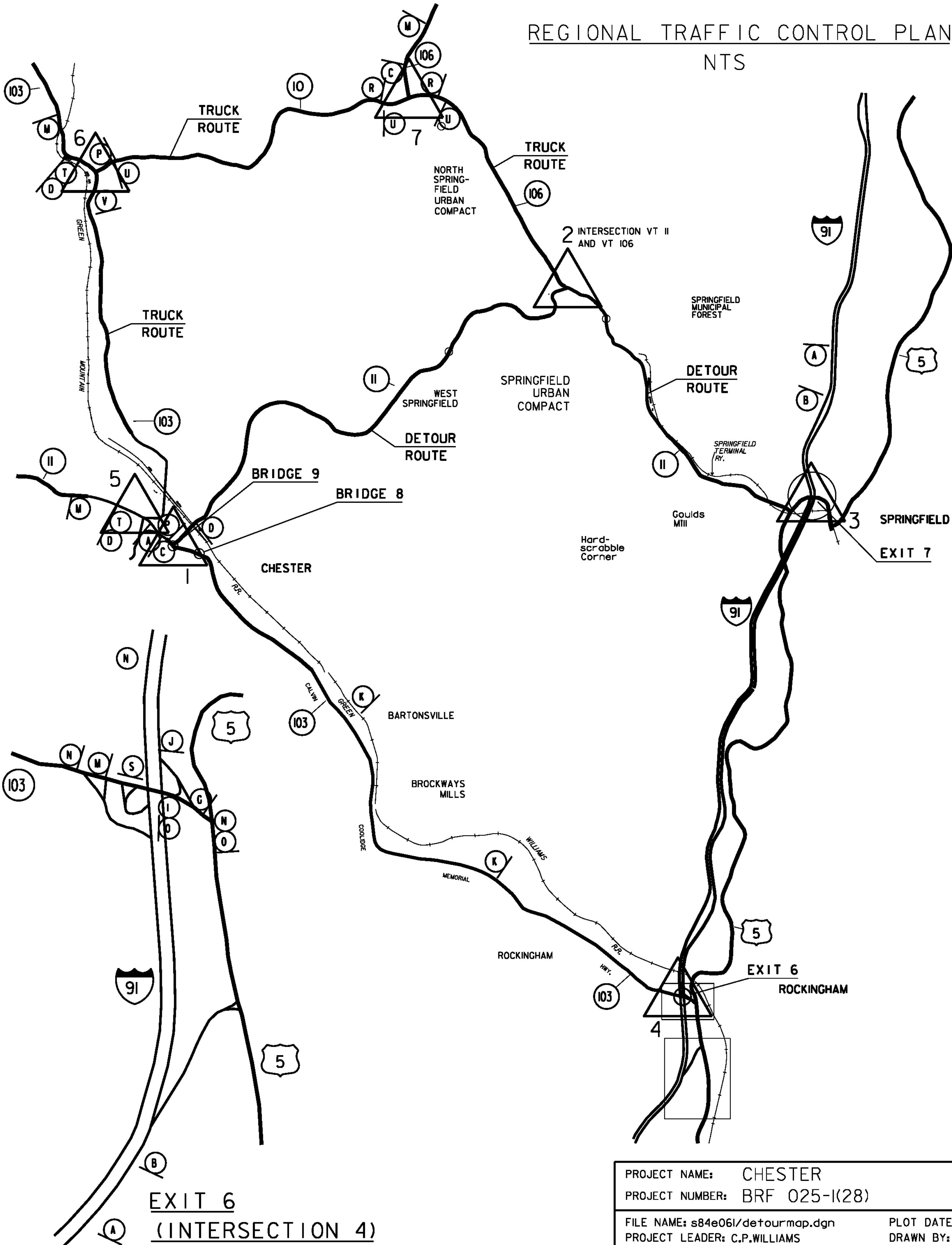
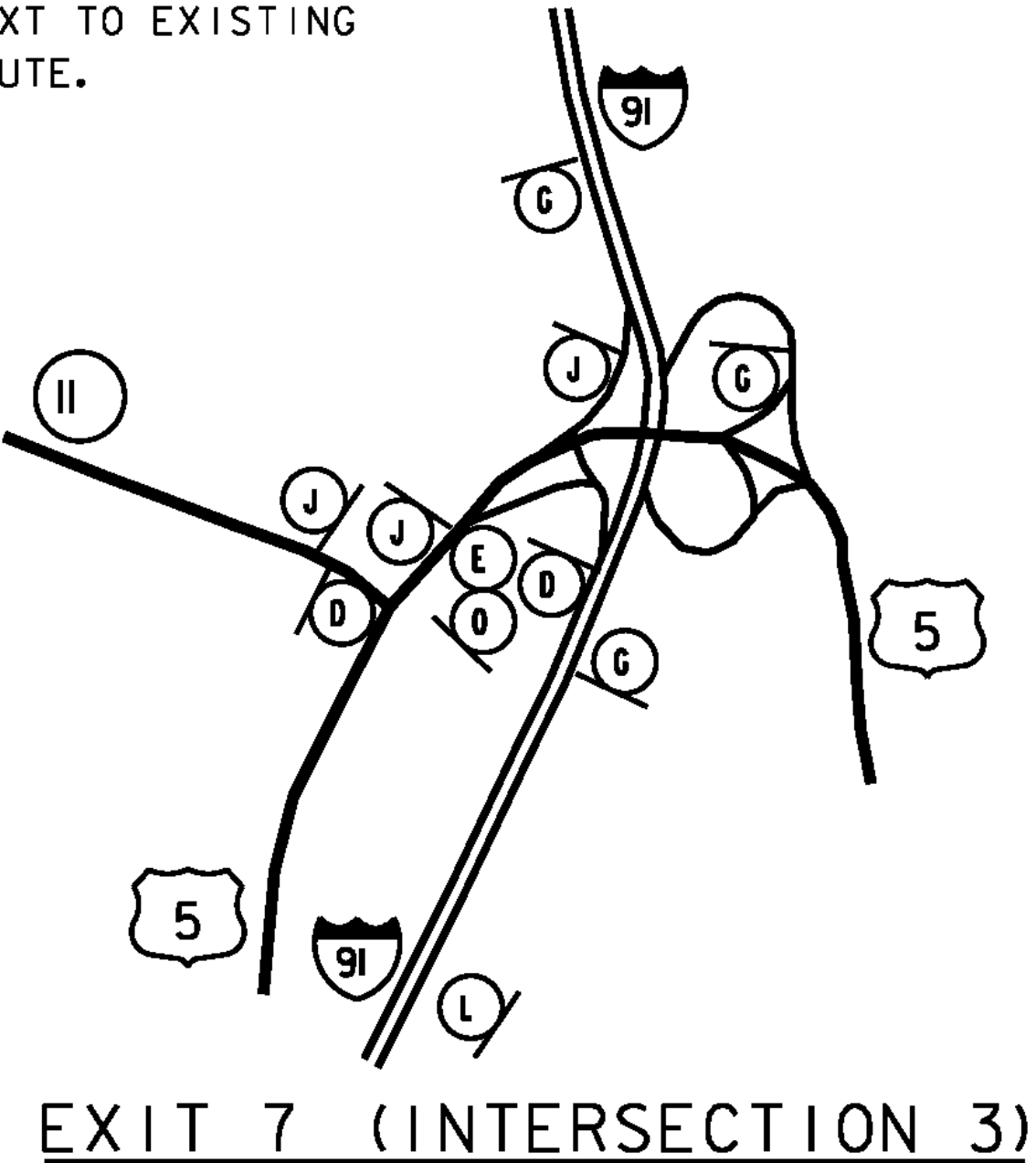
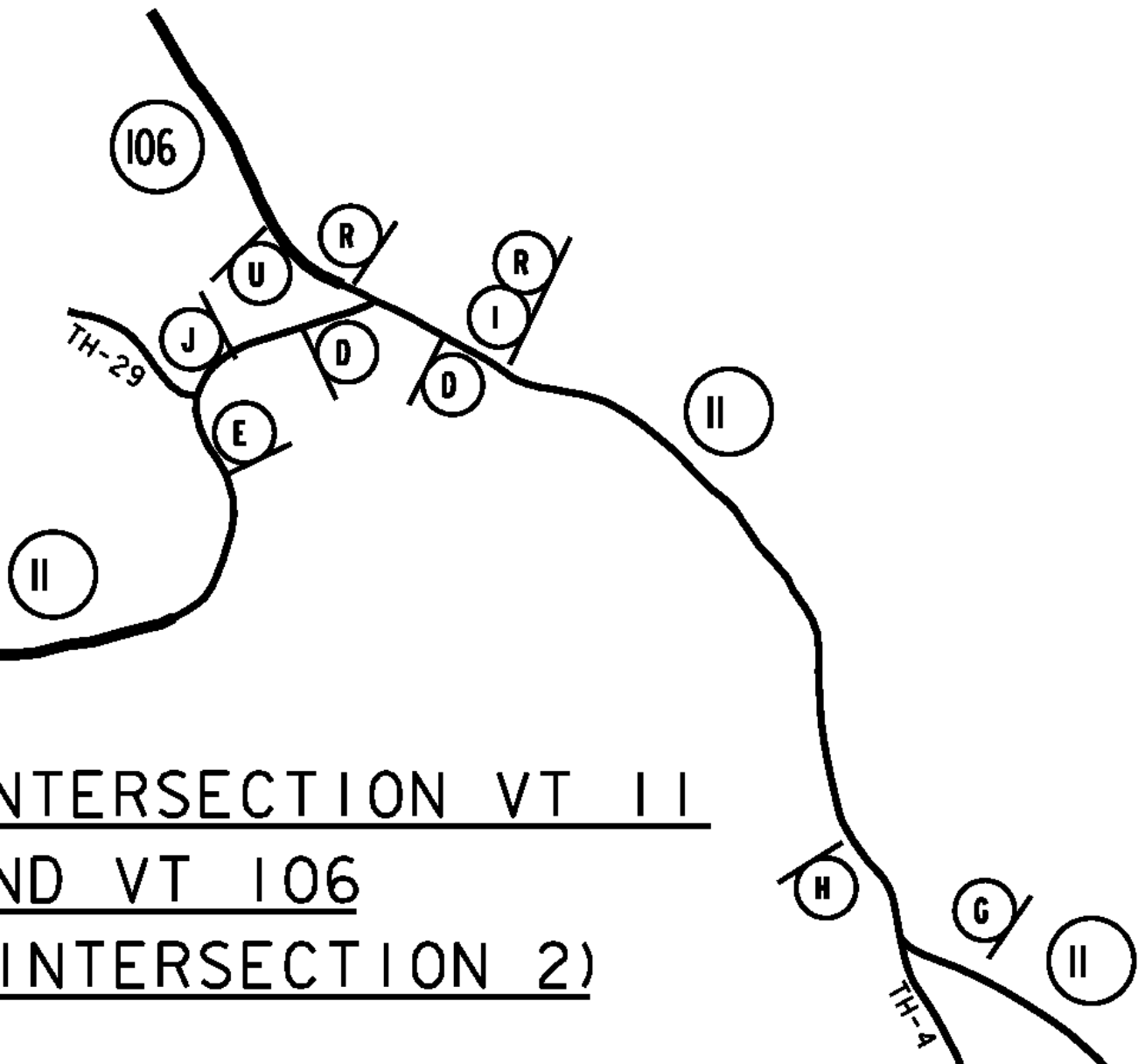
ACCESS TO ALL EXISTING DRIVES AND SIDE ROADS SHALL BE MAINTAINED AT ALL TIMES DURING ALL PHASES OF CONSTRUCTION.

INSTALLATION OF DETOUR SIGNS SHALL NOT BLOCK ANY EXISTING TRAFFIC CONTROL SIGN ASSEMBLIES AND SHALL MODIFY OR BE PLACED ADJACENT TO EXISTNG SIGN ASSEMBLIES WHEN POSSIBLE. THE CONTRACTOR SHALL WHENEVER POSSIBLE MAINTAIN AT LEAST 200 FEET BETWEEN SIGN ASSEMBLIES.

EXISTING SIGNS THAT ARE IN CONFLICT WITH THE TRAFFIC FLOW OF THE DETOUR SHALL BE REMOVED OR COVERED BY THE CONTRACTOR. ALL SIGNS REMOVED OR COVERED SHALL BE REPLACED OR UNCOVERED WHEN THE TRAFFIC CONTROL PLAN IS DISASSEMBLED. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 641.10 "TRAFFIC CONTROL"

CONTACT DIG-SAFE AT 1-888-344-7233 PRIOR TO BREAKING GROUND TO INSTALL ANY SIGN POSTS.

DETOUR CONFIRMATION SIGNS "D" & "J" SHALL BE PLACED NEXT TO EXISTING CONFIRMATION SIGNS ALONG THE DETOUR ROUTE AND TRUCK ROUTE.



PROJECT NAME:	CHESTER	PLOT DATE:	20-SEP-2010
PROJECT NUMBER:	BRF 025-1(28)	DRAWN BY:	M.FESSEL
FILE NAME:	s84e061/detourmap.dgn	CHECKED BY:	R.S.YOUNG
PROJECT LEADER:	C.P.WILLIAMS	REGIONAL DETOUR MAP	SHEET 6 OF 124
DESIGNED BY:	R.S.YOUNG		

DETOUR SIGN PLACEMENT:

1△ VT-103 SOUTHBOUND	B "A", PCMS, "BRIDGE CLOSED, VT-103 CHESTER, JUNE XX TO AUGUST XX. "
	B "C", "DETOUR SOUTH VT-103 "
VT-11 EASTBOUND	A "D", "DETOUR SOUTH VT-103 "
VT-11 WESTBOUND	A "P", "END DETOUR NORTH VT-103 "
2△ VT-11 EASTBOUND	B "D", "DETOUR SOUTH VT-103 "
	B "E", "DETOUR SOUTH VT-103 "
	A "D", "DETOUR SOUTH VT-103 "
	A "H", "DETOUR SOUTH VT-103 "
VT-11 WESTBOUND	B "G", "DETOUR NORTH VT-103 "
	B "I", "DETOUR NORTH VT-103 "
	B "R", "TRUCK ROUTE, DETOUR NORTH VT-103 "
	A "J", "DETOUR NORTH VT-103 "
VT-106 SOUTHBOUND	B "U", "TRUCK ROUTE, DETOUR SOUTH VT-103 "
VT-106 NORTHBOUND	A "R", "TRUCK ROUTE, DETOUR NORTH VT-103 "
3△ EXIT 7 - I-91 SOUTH	B "A", PCMS, "BRIDGE CLOSED, VT-103 CHESTER, JUNE XX TO AUGUST XX. "
	B "B", *, "ROCKINGHAM USE EXIT 6, VT-103 THRU TRAFFIC, USE EXIT 7 "
	B "C", *, "DETOUR NORTH VT-103 " (BEFORE OFF RAMP)
	B "J", "DETOUR NORTH VT-103 " (OFF RAMP)
	A "D", *, "DETOUR SOUTH VT-103 "
VT-11 WESTBOUND	A "J", "DETOUR NORTH VT-103 "
EXIT 7 - I-91 NORTH	B "L", PCMS,"VT-103, THRU TRAFFIC, USE EXIT 7 "
	B "C", *, "DETOUR NORTH VT-103 " (BEFORE RAMP)
	B "C", *, "DETOUR NORTH VT-103 " (ON RAMP)
VT-11 EASTBOUND	B "D", "DETOUR SOUTH VT-103 "
	B "E", "DETOUR SOUTH VT-103 "
	B "O", "INTERSTATE WEIGHT LIMITS APPLY"
VT-103 NORTHBOUND	BETWEEN EXIT 6 AND BRIDGE 8
	"K", "BRIDGE CLOSED X MILES AHEAD LOCAL TRAFFIC ONLY"
	"K", "BRIDGE CLOSED X MILES AHEAD LOCAL TRAFFIC ONLY"
	X IS LOCATION SPECIFIC, 1 SET EVERY 3 MILES FROM BRIDGE 8

4△ EXIT 6 - I-91 NORTH	B "A", PCMS, "BRIDGE CLOSED, VT-103 CHESTER, JUNE XX TO AUGUST XX. "
	B "B", *, "ROCKINGHAM USE EXIT 6, VT-103 THRU TRAFFIC, USE EXIT 7 "
	A "J", *, "DETOUR NORTH VT-103 "
VT-103 NORTHBOUND	B "G", "DETOUR NORTH VT-103 "
	B "N", "VT103, THRU TRAFFIC, DETOUR VIA I-91N TO EXIT 7 "
	B "O", "INTERSTATE WEIGHT LIMITS APPLY"
	A "M", "BRIDGE CLOSED, VT103 CHESTER, SOUTH OF JCT VT 11, X/XX TO X/XX "
	A "N", "VT103, THRU TRAFFIC, DETOUR VIA I-91N TO EXIT 7 "
VT-103 SOUTHBOUND	B "I", "DETOUR NORTH VT-103 "
	B "O", "INTERSTATE WEIGHT LIMITS APPLY"
I-91 SOUTH	B "N", *, "VT103, THRU TRAFFIC, DETOUR VIA I-91N TO EXIT 7 "
	A "S", *, "END DETOUR SOUTH VT-103 "
5△ VT-11 EASTBOUND	B "M", "BRIDGE CLOSED, VT103 CHESTER, SOUTH OF JCT VT 11, X/XX TO X/XX "
	B "T", "TRUCK ROUTE, DETOUR SOUTH VT-103 "
	B "D", "DETOUR SOUTH VT-103 "
6△ VT-103 SOUTHBOUND	B "M", "BRIDGE CLOSED, VT103 CHESTER, SOUTH OF JCT VT 11, X/XX TO X/XX "
	B "T", "TRUCK ROUTE, DETOUR SOUTH VT-103 "
	B "D", "DETOUR SOUTH VT-103 "
VT-103 NORTHBOUND	B "V", "TRUCK ROUTE, DETOUR SOUTH VT-103 "
VT-10 EASTBOUND	A "U", "TRUCK ROUTE, DETOUR SOUTH VT-103 "
VT-10 WESTBOUND	B "P", "END DETOUR NORTH VT-103 "
7△ VT-106 SOUTHBOUND	B "M", "BRIDGE CLOSED, VT103 CHESTER, SOUTH OF JCT VT 11, X/XX TO X/XX "
	B "C", "DETOUR SOUTH VT-103 "
	A "U", "TRUCK ROUTE, DETOUR SOUTH VT-103 "
VT-106 NORTHBOUND	B "R", "TRUCK ROUTE, DETOUR NORTH VT-103 "
VT-10 EASTBOUND	B "U", "TRUCK ROUTE, DETOUR SOUTH VT-103 "
VT-10 WESTBOUND	A "R", "TRUCK ROUTE, DETOUR NORTH VT-103 "

LEGEND

- A - PLACE SIGN AFTER INTERSECTION
- B - PLACE SIGN BEFORE INTERSECTION
- * - SIGN SHALL MEET FREEWAY OR SPECIAL SIZE REQUIREMENTS

PROJECT NAME: CHESTER	
PROJECT NUMBER: BRF 025-1(37)	
FILE NAME: s84e061/s95bl68detour.dgn	PLOT DATE: 20-SEP-2010
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S.YOUNG
DETOUR NOTES	SHEET 7 OF 124

A (3) PORTABLE CHANGABLE SIGN - PHASE 1 PORTABLE CHANGABLE SIGN - PHASE 2 * M=MONTH D=DAY	B (2) ROCKINGHAM USE EXIT 6 VT 103 THRU TRAFFIC USE EXIT 7 TO VT II B/W	C (2) DETOUR SOUTH VERMONT 103 B/O G/W G/W B/O	D (14) DETOUR SOUTH VERMONT 103 B/O G/W G/W B/O	E (2) DETOUR SOUTH VERMONT 103 B/O G/W G/W B/O	F (0) DETOUR SOUTH VERMONT 103 B/O G/W G/W B/O
	L (1) VT 103 THRU TRAFFIC USE EXIT 7 PORTABLE CHANGABLE SIGN - PHASE 1 PORTABLE CHANGABLE SIGN - PHASE 2	G (5) DETOUR NORTH VERMONT 103 B/O G/W G/W B/O	H (2) DETOUR SOUTH VERMONT 103 B/O G/W G/W B/O	I (2) DETOUR NORTH VERMONT 103 B/O G/W G/W B/O	J (14) DETOUR NORTH VERMONT 103 B/O G/W G/W B/O
K (2) BRIDGE CLOSED X MILES AHEAD LOCAL TRAFFIC ONLY B/W	M (4) BRIDGE CLOSED VT-103 CHESTER S. OF JCT VT-11 X/XX TO X/XX B/W	N (3) VT-103 THRU TRAFFIC DETOUR VIA I-9IN TO EXIT 7 B/W	O (3) INTERSTATE WEIGHT LIMITS APPLY B/W	P (2) END DETOUR NORTH VERMONT 103 B/O G/W G/W	
Q (0) NOT USED	R (4) TRUCK ROUTE DETOUR NORTH VERMONT 103 B/O B/O G/W G/W B/O	S (1) END DETOUR SOUTH VERMONT 103 B/O G/W G/W	T (2) TRUCK ROUTE DETOUR SOUTH VERMONT 103 B/O B/O G/W G/W B/O	U (4) TRUCK ROUTE DETOUR SOUTH VERMONT 103 B/O B/O G/W G/W B/O	V (1) TRUCK ROUTE DETOUR SOUTH VERMONT 103 B/O B/O G/W G/W B/O

SIGN COLORS
B/W: BLACK LETTERING ON WHITE BACKGROUND
G/W: GREEN LETTERING ON WHITE BACKGROUND
B/O: BLACK LETTERING ON ORANGE BACKGROUND

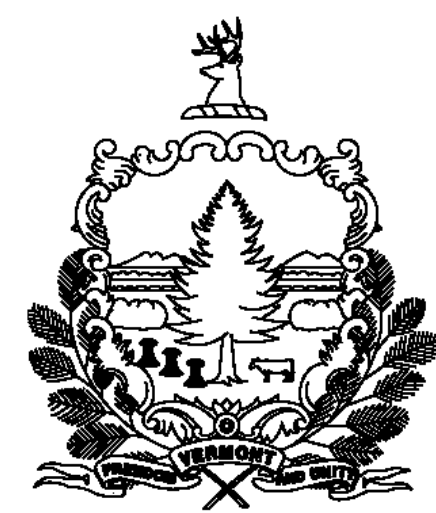
THE ESTIMATED NUMBER OF EACH SIGN PACKAGE REQUIRED IS
REPRESENTED BY THE NUMBER UNDERNEATH EACH LETTER DESIGNATOR.

SUGGESTED NONSTANDARD SIGN SIZES

SIGN	ROAD TYPE	WIDTH	HEIGHT	LETTER SIZE
B	INTERSTATE	11'	7'	10 D
M	CONVENTIONAL	8'	4'	7 D
N	INTERSTATE	11'	7'	10 D
N	CONVENTIONAL	8'	4'	7 D
O	CONVENTIONAL	8'	3'	7 D

PROJECT NAME: CHESTER	
PROJECT NUMBER: BRF 025-1(37)	
FILE NAME: s84e061/s95bl68detour.dgn	PLOT DATE: 20-SEP-2010
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S.YOUNG
DETOUR SIGNS	SHEET 8 OF 124

STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF CHESTER

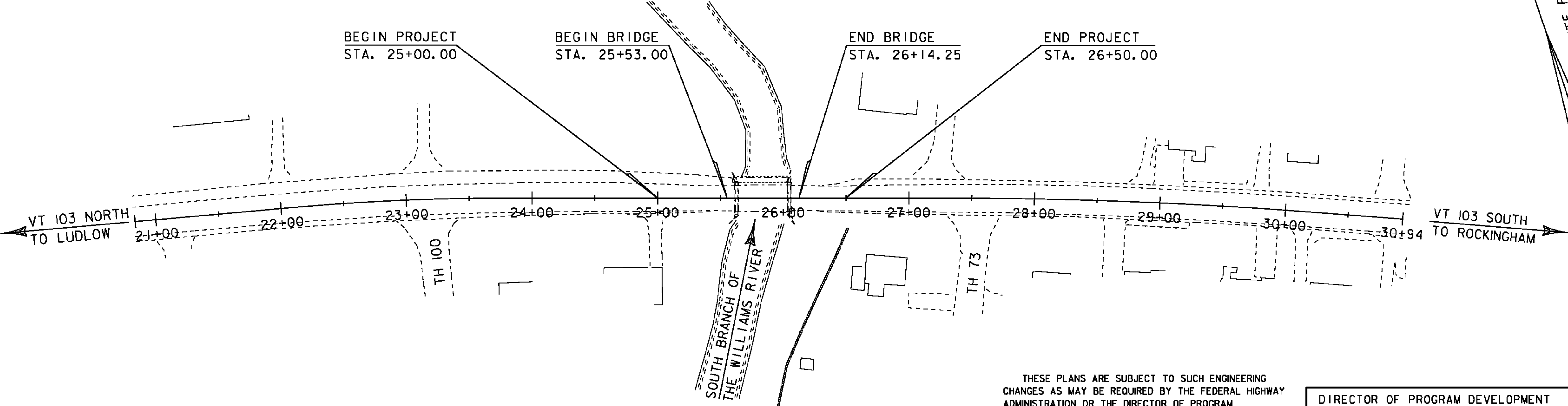
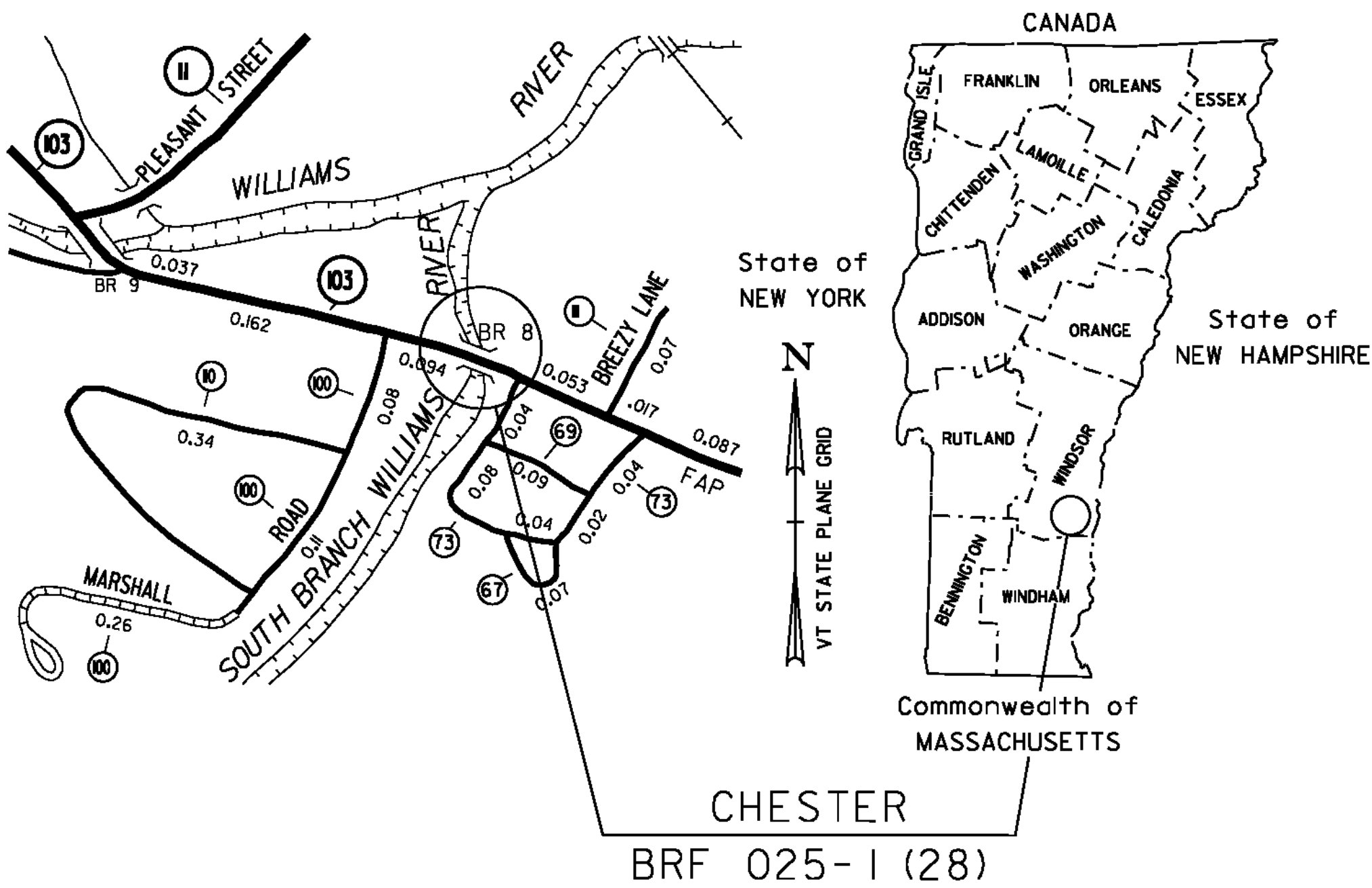
COUNTY OF WINDSOR

ROUTE NO : VT 103 RURAL PRINCIPAL ARTERIAL NATIONAL HIGHWAY SYSTEM BRIDGE NO : 8

PROJECT LOCATION : 0.27 MILES SOUTHEAST OF JUNCTION WITH VT ROUTE 11 (PLEASANT STREET)

PROJECT DESCRIPTION : THE PROJECT SHALL CONSIST OF THE REPLACEMENT OF THE EXISTING
STRUCTURE WITH A NEW STRUCTURE INCLUDING RELATED ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE : 61.25 FEET.
LENGTH OF ROADWAY : 88.75 FEET.
LENGTH OF PROJECT : 150.00 FEET.



QUALITY ASSURANCE PROGRAM: LEVEL 1

CONVENTIONAL SYMBOLS

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

SURVEYED BY : GILMAN
SURVEYED DATE : 09/08/98

DATUM
VERTICAL : NAVD 88
HORIZONTAL : NAD 83 (92)

SCALE 1" = 50'-0"

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING
CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY
ADMINISTRATION OR THE DIRECTOR OF PROGRAM
DEVELOPMENT.
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE
WITH THESE PLANS AND THE STANDARD SPECIFICATIONS
FOR CONSTRUCTION DATED 2006, AS APPROVED BY THE
FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006
FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT
REVISIONS AND SUCH REVISED SPECIFICATIONS AND
SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE
PLANS.

PLOTTED 20-SEP-2010

DIRECTOR OF PROGRAM DEVELOPMENT

APPROVED _____ DATE _____

PROJECT MANAGER : C.P. WILLIAMS

PROJECT NAME : CHESTER
PROJECT NUMBER : BRP 025-1 (28)

SHEET 9 OF 124 SHEETS

PRELIMINARY INFORMATION SHEET (BRIDGE)

LRFD

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PLAN SHEETS

STANDARDS LIST

HYDROLOGIC DATA

Date: Jan. 8, 2009

DRAINAGE AREA : 11.0 sq. mi.

CHARACTER OF TERRAIN : Hilly to mountainous, mostly forested.

STREAM CHARACTERISTICS : Sinuous, slightly incised with a wide floodplain.

NATURE OF STREAMBED : Mostly cobbles with some gravel.

PEAK FLOW DATA

Q 2.33 = 700 cfs

Q 10 = 1600 cfs

Q 25 = 2100 cfs

Q 50 = 2570 cfs

Q 100 = 3080 cfs

Q 500 = 4510 cfs

DATE OF FLOOD OF RECORD : September 1938

ESTIMATED DISCHARGE: Unknown

WATER SURFACE ELEV.: Unknown

NATURAL STREAM VELOCITY: @ Q50 = 8.9 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 steel beam bridge with concrete deck

YEAR BUILT: 1924

CLEAR SPAN(NORMAL TO STREAM): 39'

VERTICAL CLEARANCE ABOVE STREAMBED: 7'

WATERWAY OF FULL OPENING: 240 sq. ft.

DISPOSITION OF STRUCTURE: Remove and replace

TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings.

WATER SURFACE ELEVATIONS AT:

Q2.33 = 573.9'

Q10 = 575.6'

Q25 = 576.3'

Q50 = 577.4'

Q100 = 577.5'

VELOCITY = 7.1 fps

" 10.8 fps

" 9.4 fps

" 6.6 fps

" 7.7 fps

LONG TERM STREAMBED CHANGES: None noted.

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes

FREQUENCY: Between Q10 and Q25

RELIEF ELEVATION: 576.1'

DISCHARGE OVER ROAD @Q100: 1840 cfs

UPSTREAM STRUCTURE

TOWN: Chester

DISTANCE: 5,500'

HIGHWAY #: T.H. 3, VT Route 35 & FAS 0125

STRUCTURE #: 7

CLEAR SPAN: 72'

CLEAR HEIGHT: 7.5'

YEAR BUILT: 1949

FULL WATERWAY:

STRUCTURE TYPE: Single span steel beam bridge

DOWNSTREAM STRUCTURE

TOWN: Confluence with Middle Branch Williams River

DISTANCE: 600'

HIGHWAY #:

STRUCTURE #:

CLEAR SPAN:

CLEAR HEIGHT:

YEAR BUILT:

FULL WATERWAY:

STRUCTURE TYPE:

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	HL-93	HL-93	3S2	6 AXLE	3A STR	4A STR	5A SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY	1.44	1.08					
POSTING							
OPERATING	1.87	1.39	1.74	1.04	1.35	1.22	1.42
COMMENTS:							

PILE DRIVING AND TESTING REQUIREMENTS

1. NOMINAL PILE DRIVING CAPACITY

2. PILE TEST RESISTANCE FACTOR

3. MAXIMUM PILE TIP ELEVATION

4. SEE GENERAL NOTES FOR REQUIRED PILE PENETRATION ELEVATIONS.

Reqd: 245.00 KIP

φ: 0.65

SEE BELOW

FINAL HYDRAULIC REPORT

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span pre-cast concrete beam bridge

CLEAR SPAN(NORMAL TO STREAM): 53'

VERTICAL CLEARANCE ABOVE STREAMBED: 7'

WATERWAY OF FULL OPENING: 290 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 = 573.9'

Q10 = 575.5'

Q25 = 576.3'

Q50 = 576.8'

Q100 = 577.2'

VELOCITY= 7.3 fps

" 10.4 fps

" 8.4 fps

" 6.8 fps

" 5.8 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes

FREQUENCY: Between Q10 and Q25

RELIEF ELEVATION: 576.1'

DISCHARGE OVER ROAD @Q100: 1700 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 577.1'

VERTICAL CLEARANCE: @ Q50 = 0.3'

SCOUR: Less than 1' of contraction scour up to Q500.

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW: 20 cfs DEPTH OR ELEVATION: 0.5'

ORDINARY LOW WATER: 10 cfs 2.0'

ORDINARY HIGH WATER: 300 cfs

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge required. Traffic will use an offsite detour.

CLEAR SPAN (NORMAL TO STREAM):

VERTICAL CLEARANCE ABOVE STREAMBED:

WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.

2. TRAFFIC SIGNALS ARE NOT NECESSARY.

3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	d _p : 0.0 INCH
3. DESIGN SPAN	L: 56.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: ---
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f _y : 270 KSI
6. PRESTRESSED CONCRETE STRENGTH	f' _c : 8.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f' _{cr} : 6.0 KSI
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f' _c : --- KSI
9. CONCRETE, HIGH PERFORMANCE CLASS A	f' _c : --- KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B	f' _c : 3.5 KSI
11. CONCRETE, CLASS C	f' _c : --- KSI
12. REINFORCING STEEL	f _y : 60 KSI
13. STRUCTURAL STEEL AASHTO M270	f _y : ---
14. SOIL UNIT WEIGHT	γ: 0.140 KCF
15. NOMINAL BEARING RESISTANCE OF SOIL	q _n : --- KSF
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
17. NOMINAL BEARING RESISTANCE OF ROCK	q _n : 120.0 KSF
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: 0.45
19. NOMINAL AXIAL PILE RESISTANCE	q _p : 245.0 KIPS
20. PILE YIELD STRENGTH ASTM A572	f _y : 50 KSI
21. PILE SIZE	HP 12X 84
22. EST. PILE LENGTH	L _p : 18 FT
23. PILE RESISTANCE FACTOR	φ: 0.65
24. LATERAL PILE DEFLECTION	Δ: ---
25. BASIC WIND SPEED	V _{3s} : ---
26. MINIMUM GROUND SNOW LOAD	p _g : ---
27. SEISMIC DATA	PGA: --- S ₁ : ---

PROJECT NAME: CHESTER

PROJECT NUMBER: BRF 025-1(28)

FILE NAME: s84e061excel.dgn PLOT DATE: 9/28/2010

PROJECT LEADER: C.P.WILLIAMS DRAWN BY: M.FESSEL

DESIGNED BY: R.S.YOUNG CHECKED BY: H.I.SALLS

BRIDGE #8 PRELIMINARY INFORMATION SHEET SHEET 10 OF 124

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	20 year ESAL for flexible pavement from 2013 to 2033 : 5927000	
2013	7200	1100	50	8.3	730	40 year ESAL for flexible pavement from 2013 to 2053 : 13731000	
2033	8600	1300	50	10.8	1100	Design Speed : 30 mph	

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006, AND ITS LATEST REVISIONS, THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2007, AND ITS LATEST REVISIONS, AND PCI NORTHEAST’S NEXT D STANDARDS DATED JANUARY 2010.
2. THE BRIDGE IS DESIGNED FOR HL-93 LIVE LOAD.
3. EXISTING SIGNS NOT REUSED SHALL REMAIN PROPERTY OF THE STATE OF VERMONT. THESE SIGNS SHALL BE STOCKPILED ON THE PROJECT SITE AND THEN LOADED ON A TRUCK SUPPLIED BY DISTRICT 2. CONTACT DTA. TAMMY ELLIS AT (802) 254-5011 TO ARRANGE REMOVAL FROM THE PROJECT SITE.
4. ITEM 529.15 “REMOVAL OF STRUCTURE” SHALL BE USED FOR REMOVAL OF THE EXISTING STRUCTURE INCLUDING THE SUPERSTRUCTURE, AND ANY PORTION OF THE ABUTMENTS OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION. THE ABUTMENTS SHALL BE REMOVED TO ELEVATION 573 FEET.
5. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
6. THE LARGE PINE TREE AT STATION 25+55 LEFT SHALL BE REMOVED. THE BRANCHES OF THE TWO ASH TREES AT STATION 26+06 LEFT SHALL BE TRIMMED BACK BEHIND THE R.O.W. LINE. THIS WORK SHALL BE PAID UNDER ITEM 201.10 “CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS”.
7. THE SIDEWALK AND RAMPS LOCATED OFF THE BRIDGE SHALL BE CONSTRUCTED ACCORDING TO STANDARD C-2A. SIDEWALK AND RAMPS SHALL BE PAID FOR UNDER THE ITEM 618.10, “PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH.”
8. THE CONTRACTOR SHALL BE MADE AWARE THAT EXISTING WATER AND SEWER LINES ARE WITHIN THE CONSTRUCTION LIMITS OF BRIDGE 8. SEE SPECIAL PROVISIONS.

EARTHWORK AND RELATED ITEMS

9. THE “STONE FILL, TYPE III” UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW BEAMS ARE SET.
10. “STONE FILL, TYPE I” SHALL BE USED FOR EROSION CONTROL AS SHOWN ON THE PLANS AND/OR AT THE DISCRETION OF THE RESIDENT ENGINEER.

PILES

11. THE PILES SHALL BE HP 12 X 84.
12. PILE SHOES SHALL BE REQUIRED AND SHALL CONFORM TO SECTION 505.04(e).
13. 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 HOW THE TOLERANCES WILL BE MET TO THE SATISFACTION OF THE ENGINEER REGARDLESS OF INSTALLATION METHOD.
14. THE PILES SHALL BE EMBEDDED IN THE GROUND A MINIMUM OF 18 FEET BELOW THE BOTTOM OF PILE CAP OR TO BEDROCK. THE PILES SHALL BE DRIVEN TO A NOMINAL RESISTANCE OF 245 KIPS AS DETERMINED BY THE RESULTS OF DYNAMIC TESTING, AS INTERPRETED BY THE RESIDENT ENGINEER.
15. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY.
16. TO ENSURE THAT THE NOMINAL RESISTANCE HAS BEEN ATTAINED AND TO PREVENT THE OVERSTRESSING OF THE PILES DURING DRIVING OPERATIONS, DYNAMIC TESTING SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 505.04 (c) - 2 OF THE STANDARD SPECIFICATIONS. PAYMENT FOR PILE TESTING SHALL BE MADE UNDER ITEM 505.45 “DYNAMIC PILE LOADING TEST”. A MINIMUM OF ONE DYNAMIC PILE TEST SHALL BE CONDUCTED ON THE FIRST PILE DRIVEN FOR ABUTMENT NO. 1, FOR A TOTAL OF 1 TEST. MORE TESTS MAY BE REQUIRED BY THE RESIDENT ENGINEER.
17. DUE TO THE PRESENCE OF BOULDERS THE CONTRACTOR MAY PRE-EXCAVATE MATERIAL TO BEDROCK PRIOR TO DRIVING PILES.

• IF PILES ARE DRIVEN AFTER PRE-EXCAVATION THEN THE DYNAMIC TESTING NEED NOT BE PERFORMED.

• IF PILES ARE DRIVEN WITHOUT PRE-EXCAVATION, THE CONTRACTOR SHALL DEMONSTRATE AN INCREASED ABILITY TO STAY WITHIN THE LOCATION, ROTATION, AND VERTICALLY TOLERANCES.

18. PAYMENT FOR PRE-EXCAVATION SHALL BE UNDER ITEM 503.20, “PRE-EXCAVATION OF INTEGRAL ABUTMENT PILES”. CASINGS NEED NOT BE USED. SEE GENERAL SPECIAL PROVISIONS.
- CONCRETE
19. THE FOOTING AT ABUTMENT # 2 SHALL BE HIGH PERFORMANCE CONCRETE, CLASS B.
20. WATER REPELLENT, SILANE, SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.
21. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:

SPACING: +/- 1 INCH

CLEARANCE: +/- 1/4 INCH

PRECAST ABUTMENTS AND POST-TENSIONING

22. IF VERTICAL CONSTRUCTION JOINTS ARE REQUIRED BY THE CONTRACTOR FOR SHIPMENT OF THE ABUTMENTS, THEN THE SECTIONS SHALL BE KEYED AND MATCH CAST. A JOINT DETAIL SHALL BE SHOWN ON THE FABRICATION DRAWINGS.
23. ANY POST-TENSIONING STRANDS AND CONDUIT SHALL ADHERE TO THE REQUIREMENTS OF SECTION 510. GALVANIZED ANCHOR ASSEMBLIES, CONDUIT, AND POST-TENSIONING STRANDS SHALL BE INCLUDED UNDER ITEM 540.10, “PRECAST CONCRETE STRUCTURE (ABUTMENT #1 BRIDGE 8) AND/OR “PRECAST CONCRETE STRUCTURE (ABUTMENT #2 BRIDGE 8)” AS APPROPRIATE.
24. GALVANIZE ANCHOR ASSEMBLIES AFTER FABRICATION ACCORDING TO AASHTO M232M/M 232.
25. DESIGN VALUES

A. CONCRETE COMPRESSIVE STRENGTH: f’c = 5000 PSI.

B. POST-TENSIONING STRANDS: 0.5 INCH DIAMETER, 270 KSI, LOW RELAXATION 7-WIRE STRANDS.

C. ASSUMED MODULUS OF ELASTICITY IS 28,500 KSI.

D. THERE SHALL BE 2 STRANDS PER CONDUIT.

E. THE JACKING FORCE PER STRAND = 32 KIPS

F. REINFORCING STEEL SHALL BE EPOXY COATED.
26. GROUT FOR THE ABUTMENT # 1 CAVITIES SHALL MEET THE REQUIREMENTS OF SELF-CONSOLIDATING CONCRETE. SEE SPECIAL PROVISIONS. ALL COSTS ASSOCIATED WITH GROUTING THE CAVITIES SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 540.10, “PRECAST CONCRETE STRUCTURE (ABUTMENT #1 BRIDGE 8).”
27. GROUT FOR ABUTMENT #2 SHALL MEET THE REQUIREMENTS OF SECTION 510.13. THE GROUT AND PLASTIC SHIMS SHALL BE INCIDENTAL TO ITEM 540.10, “PRECAST CONCRETE STRUCTURE (ABUTMENT #2 BRIDGE 8).”
28. PROPOSED SEQUENCE OF CONSTRUCTION

ABUTMENT #1

- A. PREPARE AND GRADE FOUNDATION TO REQUIRED ELEVATION.
- B. DRIVE PILES.
- C. PLACE PRECAST ABUTMENTS AND INSTALL TRANSVERSE STRANDS (IF MORE THAN ONE UNIT). USE A CALIBRATED JACK TO TENSION TO 3 KIPS TO REMOVE SAG.
- D. GROUT VERTICAL SHEAR KEY
- E. GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1000 psi BASED ON MANUFACTURER’S RECOMMENDATIONS, PRIOR TO STRESSING. THE GROUT NEED NOT BE CURED FOR THREE DAYS PRIOR TO COMMENCING OF POST-TENSIONING.
- F. PROVIDE APPROPRIATE CUBE MOLDS AS DESCRIBED IN AASHTO T106 FOR 3 SETS OF 3 DAY CUBES, 3 SETS OF 28 DAY CUBES, AND A MINIMUM OF 3 MORE CUBES TO TEST FOR THE 1000 psi MINIMUM.
- G. STRESS POST-TENSIONING STRANDS USING A CALIBRATED JACK OPERATED BY QUALIFIED PERSONNEL, WHO HAVE PREVIOUS EXPERIENCE IN POST-TENSIONING.
- H. GROUT PILE CAVITIES.
- I. BACKFILL.

ABUTMENT #2

- A. PREPARE BEDROCK FOR FOOTING PLACEMENT.
- B. PLACE CAST-IN-PLACE FOOTING. MEMBRANE FORMING CURING COMPOUND AS SPECIFIED IN SUBSECTION 501.17(b)(6) WILL BE ALLOWED TO CURE THE FOOTING CONCRETE.
- C. PLACE ABUTMENT STEM ONCE FOOTING CONCRETE HAS OBTAINED 75 PERCENT OF THE COMPRESSIVE STRENGTH SPECIFIED IN TABLE 501.03A.
- D. GROUT VERTICAL CONSTRUCTION JOINT (IF PRESENT). GROUT BOTTOM OF STEM. GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 2000 psi BASED ON MANUFACTURER’S RECOMMENDATIONS, PRIOR TO BACKFILLING.
- E. PROVIDE APPROPRIATE CUBE MOLDS AS DESCRIBED IN AASHTO T106 FOR 3 SETS OF 3 DAY CUBES, 3 SETS OF 28 DAY CUBES, AND A MINIMUM OF 3 MORE CUBES TO TEST FOR THE 2000 psi MINIMUM.
- F. BACKFILL.

ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED FOR APPROVAL BY THE PROJECT MANAGER.

NEXT D BEAMS

29. NEXT D BEAMS ARE A NONPROPRIETARY SHAPE DEVELOPED BY PCI NORTHEAST (PCINE). STANDARDIZED SECTION PROPERTIES AND DETAILS MAY BE FOUND AT HTTP://WWW.PCINE.ORG.
30. DESIGN VALUES

A. CONCRETE COMPRESSIVE STRENGTH: f’c = 8000 PSI.

B. CONCRETE COMPRESSIVE STRENGTH AT RELEASE: f’ci = 6000 PSI

C. PRESTRESSING STRANDS: .6 INCH DIAMETER, 270 KSI, LOW-RELAXATION 7-WIRE STRANDS

D. ASSUMED MODULUS OF ELASTICITY IS 28,500 KSI.

E. THE JACKING FORCE PER STRAND = 47 KIPS

F. SERVICE LOADS

MEMBER MOMENT627 K-FT

SUPERIMPOSED DEAD LOAD MOMENT280 K-FT

LIVE LOAD AND IMPACT MOMENT1228 K-FT

DEAD LOAD REACTION65 KIPS

LIVE LOAD AND IMPACT REACTION99 KIPS

TOTAL REACTION164 KIPS

FINAL CAMBER1 9/16 INCHES
31. THE CURTAIN WALLS SHALL BE CAST ONTO THE ENDS OF THE NEXT D BEAMS BY THE PRESTRESS CONCRETE FABRICATOR. THE CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 540. PAYMENT FOR THE CURTAIN WALLS SHALL BE INCLUDED IN ITEM 900.640, “SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAMS)(NEXT 28 D).“
32. ENDS OF FLANGES IN CONTACT WITH GROUT SHALL BE SANDBLASTED PRIOR TO DELIVERY AND POWER WASHED WITH WATER PRIOR TO ERECTION OF THE BEAMS.
33. FILL FLANGE CONNECTION WITH TYPE IV MORTAR ACCORDING TO SECTION 510. MORTAR SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 7000 PSI AND SHALL BE EXTENDED WITH AGGREGATE. GROUTING SHALL BE PAID FOR UNDER ITEM 510.24, “GROUTING SHEAR KEYS.”
34. METHOD OF FORMING FLANGE CONNECTION SHALL BE DETERMINED BY THE CONTRACTOR. THE FORMS SHALL BE REMOVABLE AND ABLE TO ACCOMMODATE DIFFERENTIAL CAMBER. FORM SUPPORTS SHALL NOT PENETRATE THROUGH THE TOP OF POUR UNLESS APPROVED BY THE ENGINEER.
35. THE FABRICATOR MAY ALTER THE DESIGN AS DETAILED IN THESE PLANS TO ACCOMMODATE THEIR SPECIFIC OPERATION. THIS ALTERATION MUST BE DESIGNED BY A PROFESSIONAL ENGINEER AND MEET THE ABOVE CRITERIA.
36. PROPOSED SEQUENCE OF CONSTRUCTION

A. LAY OUT WORKING LINES THE ENTIRE WIDTH OF THE BRIDGE ALONG CENTERLINE OF BEARING MEASURED FROM A SINGLE WORKING POINT. THE WORKING LINES SHALL BE BASED ON THE NOMINAL BEAM WIDTHS.

B. VERIFY THE BEAM SEAT ELEVATIONS AND TAKE CORRECTIVE ACTION IF NECESSARY.

C. INSTALL BEARINGS

D. ERECT THE BEAMS TO FIT WITHIN THE WORKING LINES. PLACE CLOSED CELL FOAM BETWEEN CURTAIN WALL AND ABUTMENT.

E. CONSTRUCT FORMS FOR THE FLANGE AND CURTAIN WALL CONNECTION POURS.

F. GROUT CONNECTIONS BETWEEN BEAMS AND CURE.

G. BACKFILL AND PREPARE GRADE FOR APPROACH SLABS.
- ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED FOR APPROVAL BY THE PROJECT MANAGER.
- SUBSTRUCTURES ON BEDROCK
37. FOOTINGS OR SUBFOOTINGS FOR SUBSTRUCTURES FOUNDED ON BEDROCK SHALL BE PLACED ON CLEAN COMPETENT ROCK. ALL LOOSE ROCK AND DEBRIS SHALL BE REMOVED.

38. UPON COMPLETION OF THE EXCAVATION FOR SUBSTRUCTURES FOUNDED ON BEDROCK AND PRIOR TO PLACING FORMWORK, THE RESIDENT ENGINEER SHALL NOTIFY THE PROJECT MANAGER AND THE VTRANS STATE GEOLOGIST. THE GEOLOGIST WILL DETERMINE IF THE BEDROCK IS COMPETENT TO OBTAIN THE NOMINAL BEARING RESISTANCE AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE GEOLOGIST 72 HOURS PRIOR TO WHEN THE ANALYSIS WILL BE NEEDED.

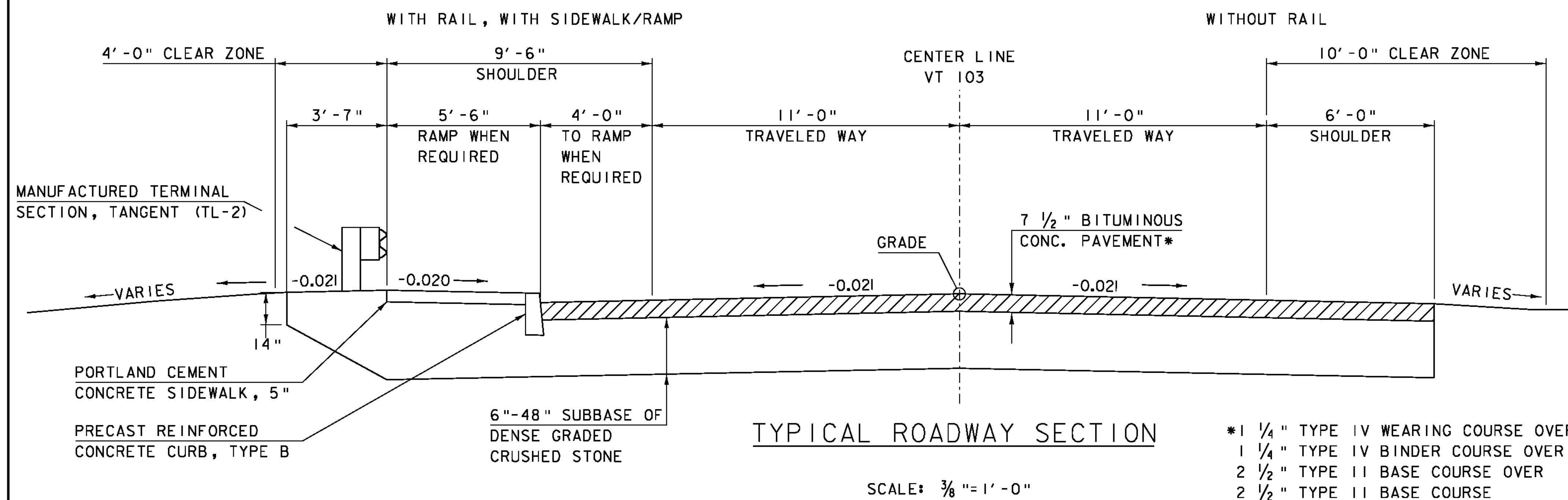
39. ANY BEDROCK THAT NEEDS TO BE REMOVED SHALL BE PAID FOR WITH THE CORRESPONDING EXCAVATION ITEM INCLUDED IN THE CONTRACT. OVERBREAKAGE BEYOND THE AVERAGE MAXIMUM ALLOWANCE SPECIFIED IN SUBSECTIONS 204.09(B)(1) WILL BE AT THE CONTRACTOR'S EXPENSE.
- | | |
|----------------------------------|------------------------|
| PROJECT NAME: CHESTER | |
| PROJECT NUMBER: BRF 025-I(28) | |
| FILE NAME: s84e06I/Str/notes.dgn | PLOT DATE: 20-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS | DRAWN BY: M.FESSEL |
| DESIGNED BY: R.S.YOUNG | CHECKED BY: R.S.YOUNG |
| BRIDGE 8 GENERAL NOTES | SHEET II OF 124 |

STATE OF VERMONT AGENCY OF TRANSPORTATION												QUANTITY SHEET 1														
SUMMARY OF ESTIMATED QUANTITIES												TOTALS		DESCRIPTIONS						DETAILED SUMMARY OF QUANTITIES						
							ROADWAY		TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS					
0.5													0.5		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10									
320													320		CY	COMMON EXCAVATION	203.15									
											180		180		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27									
1													1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22									
											255		255		CY	STRUCTURE EXCAVATION	204.25									
											85		85		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30									
							340						340		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10									
							240						240		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35									
							4						4		CWT	EMULSIFIED ASPHALT	404.65									
							175						175		TON	BITUMINOUS CONCRETE PAVEMENT	406.25									
							1						1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50									
											55		55		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34									
											90		90		LF	PRE-EXCAVATION OF INTEGRAL ABUTMENT PILES	503.20									
											1		1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING (BRIDGE 8)	504.10									
											120		120		LF	STEEL PILING FOR INTEGRAL ABUTMENTS, HP 12 X 84	505.265									
											1		1		EACH	DYNAMIC PILE LOADING TEST	505.45									
							2060						2060		LB	REINFORCING STEEL	507.15									
							72						72		LF	DRILLING AND GROUTING DOWELS	507.16									
							1200						1200		LB	EPOXY COATED REINFORCING STEEL	507.17									
							190						190		LF	GROUTING SHEAR KEYS	510.24									
							16						16		GAL	WATER REPELLENT, SILANE	514.10									
							220						220		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20									
							75						75		LF	JOINT SEALER, HOT POURED	524.11									
							1						1		EACH	REMOVAL OF STRUCTURE (1300 SF - EST.)	529.15									
							16						16		EACH	BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD	531.11									
							1						1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #1 BRIDGE 8)	540.10									
							1						1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #2 BRIDGE 8)	540.10									
										10			10		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25									
							1						1		TON	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15									
										10			10		CY	STONE FILL, TYPE I	613.10									
											140		140		CY	STONE FILL, TYPE III	613.12									
							51						51		LF	PRECAST REINFORCED CONCRETE CURB, TYPE B	616.26									
							35						35		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	618.10									
							4						4		EACH	MANUFACTURED TERMINAL SECTION, TANGENT (TL-2)	621.51									
							182						182		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80									
							360						360		LF	TEMPORARY TRAFFIC BARRIER	621.90									
							1						1		EACH	ADJUST ELEVATION OF VALVE BOX	629.20									
							90						90		HR	UNIFORMED TRAFFIC OFFICERS	630.10									
							450						450		HR	FLAGGERS	630.15									
												0.5	0.5		LS	FIELD OFFICE, ENGINEERS	631.10									
																				PROJECT NAME: CHESTER						
																				PROJECT NUMBER: BRF 025-1(28)						
																				FILE NAME: s84e081excel.dgn						
																				PLOT DATE: 09/20/2010						
																				PROJECT LEADER: C.P.WILLIAMS						
																				DRAWN BY: D.D.BEARD						
																				DESIGNED BY: R.S.YOUNG						
																				CHECKED BY: R.S.YOUNG						
																				QUANTITY SHEET #1						
																				SHEET 12 OF 124						

STATE OF VERMONT AGENCY OF TRANSPORTATION												QUANTITY SHEET 2											
SUMMARY OF ESTIMATED QUANTITIES												TOTALS		DESCRIPTIONS						DETAILED SUMMARY OF QUANTITIES			
							ROADWAY		TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS		
260													0.5	0.5		LS	TESTING EQUIPMENT, CONCRETE	631.16					
													0.5	0.5		LS	TESTING EQUIPMENT, BITUMINOUS	631.17					
													1500	1500		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26					
														260		HR	EMPLOYEE TRAINEESHIP	634.10					
			0.5									0.5			LS	MOBILIZATION/DEMOBILIZATION	635.11						
			1									1			LS	TRAFFIC CONTROL	641.10						
			0.5									0.5			LS	PUBLIC RELATIONS OFFICER	641.12						
			4									4			EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15						
			500									500			LF	4 INCH WHITE LINE	646.20						
			500									500			LF	4 INCH YELLOW LINE	646.21						
			500									500			LF	TEMPORARY 4 INCH WHITE LINE	646.600						
			500									500			LF	TEMPORARY 4 INCH YELLOW LINE	646.610						
											210	210			SY	GEOTEXTILE UNDER STONE FILL	649.31						
										30		30			SY	GEOTEXTILE FOR SILT FENCE	649.51						
										50		50			SY	GEOTEXTILE FOR FILTER CURTAIN	649.61						
										10		10			LB	SEED	651.15						
										20		20			LB	FERTILIZER	651.18						
										1		1			TON	AGRICULTURAL LIMESTONE	651.20						
										1		1			TON	HAY MULCH	651.25						
										10		10			CY	TOPSOIL	651.35						
										65		65			SY	GRUBBING MATERIAL	651.40						
										1		1			LS	EPSC PLAN (BRIDGE 8)	652.10						
										8		8			HR	MONITORING EPSC PLAN	652.20						
										1		1			LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30						
										65		65			SY	TEMPORARY EROSION MATTING	653.20						
										16		16			CY	VEHICLE TRACKING PAD	653.35						
										220		220			LF	BARRIER FENCE	653.50						
										210		210			LF	PROJECT DEMARCATION FENCE	653.55						
										0.66		0.66			SF	TRAFFIC SIGNS, TYPE A	675.20						
										20		20			LF	FLANGED CHANNEL SIGN POST	675.301						
										8		8			EACH	REMOVING SIGNS	675.50						
											10	10			CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT)	900.608						
										4		4			EACH	SPECIAL PROVISION (GUARDRAIL APPROACH SECTION TO CONCRETE BRIDGE RAILING)(TL-2)	900.620						
											2	2			EACH	SPECIAL PROVISION (PRECAST APPROACH SLAB, SUPER-SLAB)(BRIDGE 8)	900.620						
											122.5	122.5			LF	SPECIAL PROVISION (BRIDGE RAILING, TEXAS)	900.640						
											253	253			LF	SPECIAL PROVISION (PRESTRESSED CONCRETE, NEXT D BEAMS)(NEXT 28 D)	900.640						
										1		1			LU	SPECIAL PROVISION (INCENTIVE / DISINCENTIVE) (BRIDGE 8) (N.A.B.I.)	900.650						
																			PROJECT NAME: CHESTER PROJECT NUMBER: BRF 025-1(28) FILE NAME: s84e061exsol.dgn PLOT DATE: 09/20/2010 PROJECT LEADER: C.P.WILLIAMS DRAWN BY: D.D.BEARD DESIGNED BY: R.S.YOUNG CHECKED BY: R.S.YOUNG QUANTITY SHEET #2 SHEET 13 OF 124				

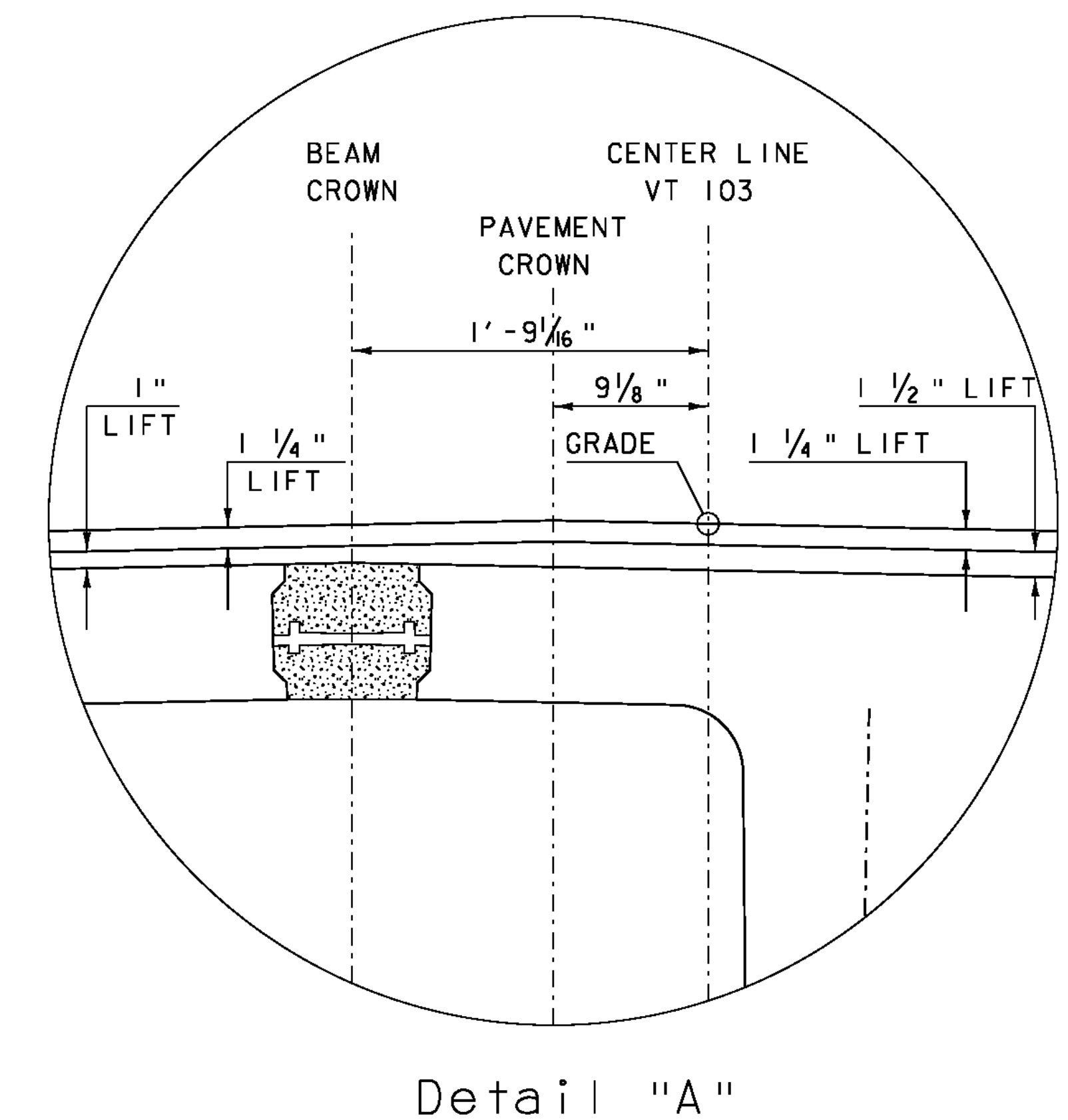
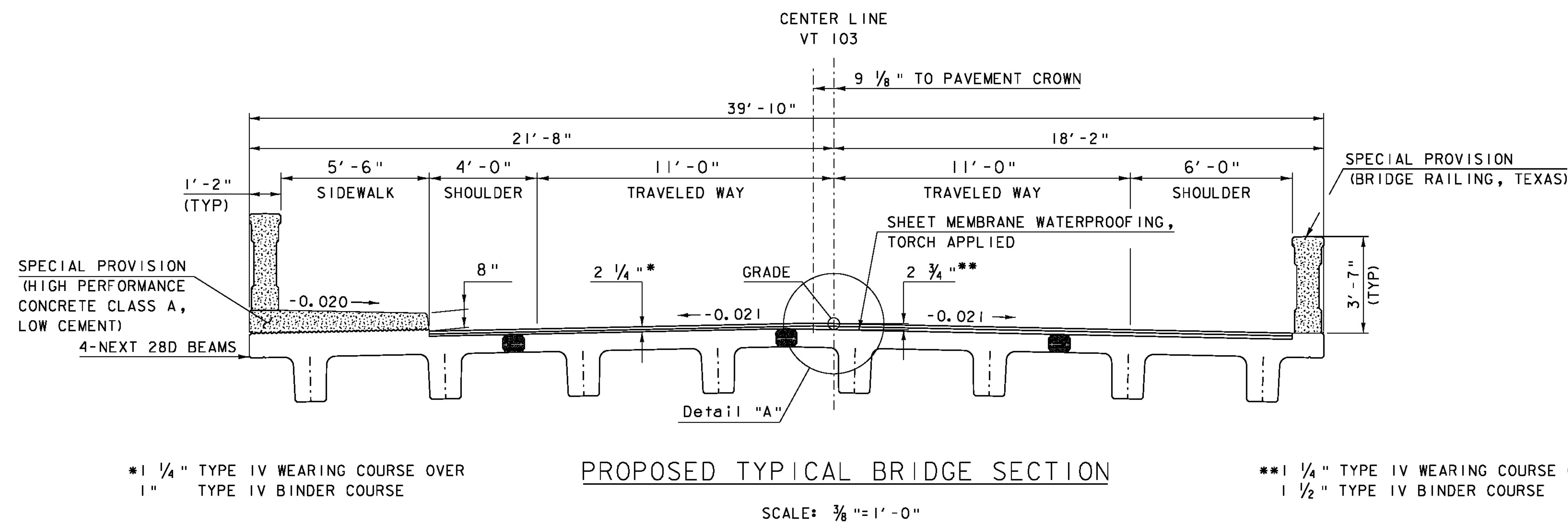
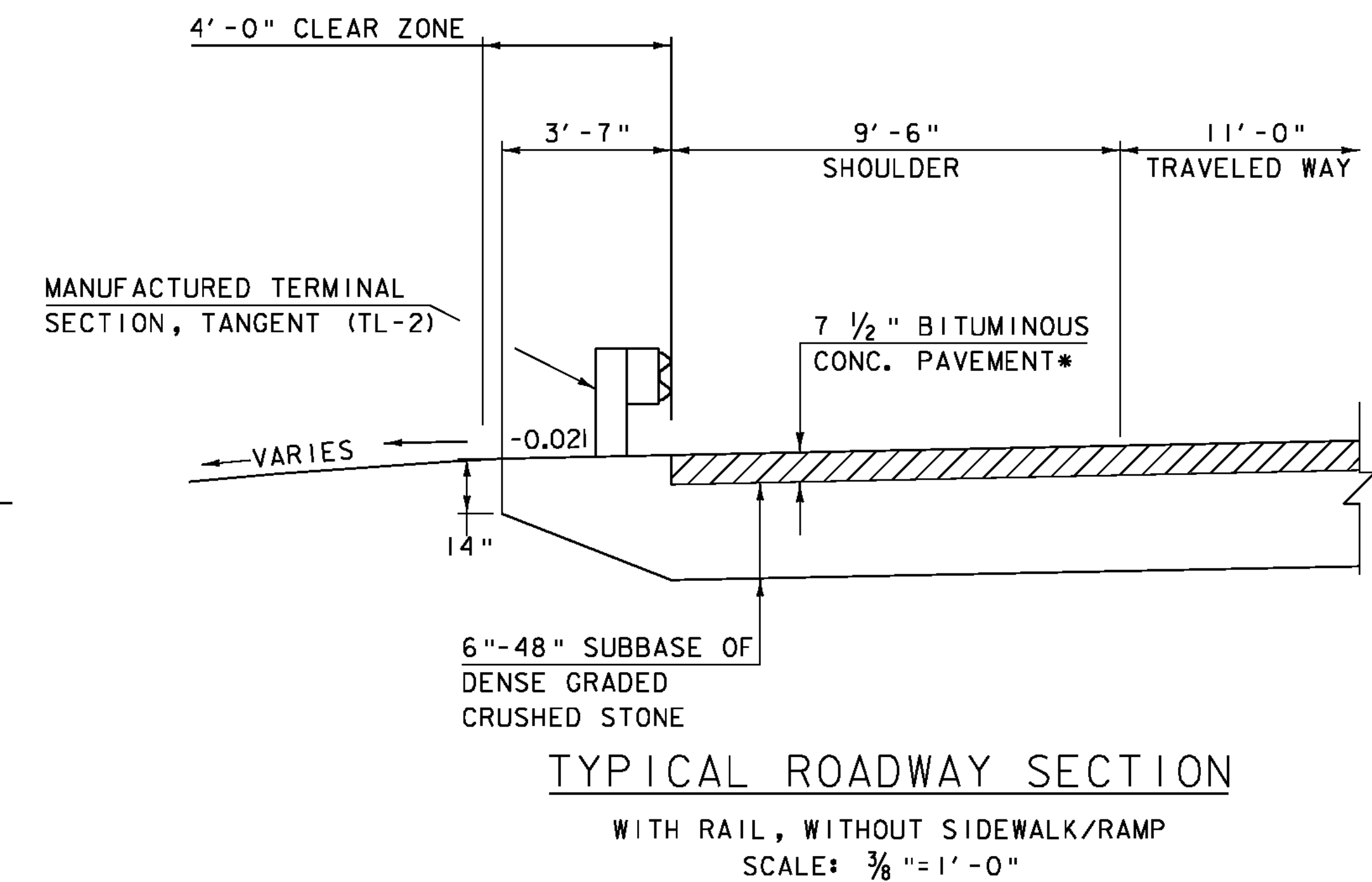
BRIDGE QUANTITY SHEET 1

[illegible]



```
*1 1/4 " TYPE IV WEARING COURSE OVER
1 1/4 " TYPE IV BINDER COURSE OVER
2 1/2 " TYPE II BASE COURSE OVER
2 1/2 " TYPE II BASE COURSE
```

NOTE:
PAVEMENT SHALL BE A MARSHALL MIX PAID
FOR UNDER THE ITEM 406.25, "BITUMINOUS CONCRETE PAVEMENT".



MATERIAL TOLERANCES
(IF USED ON PROJECT)

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

SCALE $\frac{3}{8}" = 1' - 0$

PROJECT NAME:	CHESTER
PROJECT NUMBER:	BRF 025-1(28)

FILE NAME: 84e061/Str/typ.dgn	PLOT DATE: 20-SEP-2010
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S.YOUNG
BRIDGE 8 TYPICAL SECTIONS	SHEET 15 OF 124

GPS CONTROL POINTS

HVCTRL #1

DOTTAVIO AZ MK
NORTH = 273787.07
EAST = 1619869.46
ELEV. = 577.75

GENERAL LOCATION, 10.4 MI (16.7 KM) NORTHWEST OF BELLOWS FALLS, 6 MI (9.7 KM) SOUTHWEST OF SPRINGFIELD AND 5.5 MI (8.9 KM) NORTH OF GRAFTON. TO REACH FROM THE JUNCTION OF VT ROUTE 103 AND VT ROUTE 11 (EAST) IN CHESTER PROCEED SOUTHEAST ON VT ROUTE 103 FOR .8 MI (1.3 KM) TO THE MARK ON THE RIGHT (WEST). THE MARK IS 75.5 FT (23.0 M) SOUTHEAST OF THE SOUTHEAST CORNER OF THE PUTNEY PASTA BUILDING, 70 FT (21.3 M) SOUTH OF A SEWER MANHOLE, 48 FT (14.6 M) WEST OF AND LEVEL WITH THE CENTERLINE OF ROUTE 103, 14 FT (4.3 M) SOUTHEAST OF A FIRE HYDRANT AND 8.5 FT (2.6 M) EAST OF UTILITY POLE NUMBER 3/88/3/40 AND A FIBERGLASS WITNESS POST. OWNERSHIP UNKNOWN.

HVCTRL #2

DOTTAVIO
NORTH = 275233.88
EAST = 1619439.55
ELEV. = 563.37

GENERAL LOCATION, 10.7 MI (17.2 KM) NORTHWEST OF BELLOWS FALLS, 6 MI (9.7 KM) SOUTHWEST OF SPRINGFIELD AND 5.5 MI (8.9 KM) NORTH OF GRAFTON. TO REACH FROM THE JUNCTION OF VT ROUTE 103 AND VT ROUTE 11 (EAST) IN CHESTER PROCEED SOUTHEAST ON VT ROUTE 103 FOR .5 MI (0.8 KM) TO THE MARK ON THE RIGHT (WEST). THE MARK IS 64 FT (19.5 M) NORTHEAST OF THE NORTHEAST CORNER OF DIAMOND JIMS LOG CABIN RESTAURANT, 34.5 FT (10.5 M) WEST OF AND 1 FT (0.3 M) HIGHER THAN THE CENTERLINE OF ROUTE 103, 19 FT (5.8 M) SOUTH OF THE CENTERLINE OF THE NORTHERLY PAVED DRIVE ENTRANCE TO THE SAID RESTAURANT, 10 FT (3.0 M) NORTH OF THE NORTHEAST CORNER OF A PAVED PARKING LOT, AND 6.2 FT (1.9 M) NORTHEAST OF UTILITY POLE NUMBER 79-1 AND A FIBERGLASS WITNESS POST. OWNERSHIP RAY DOTTA VIO, PHONE NO. (802) 875-4040.

TRAVERSE TIES

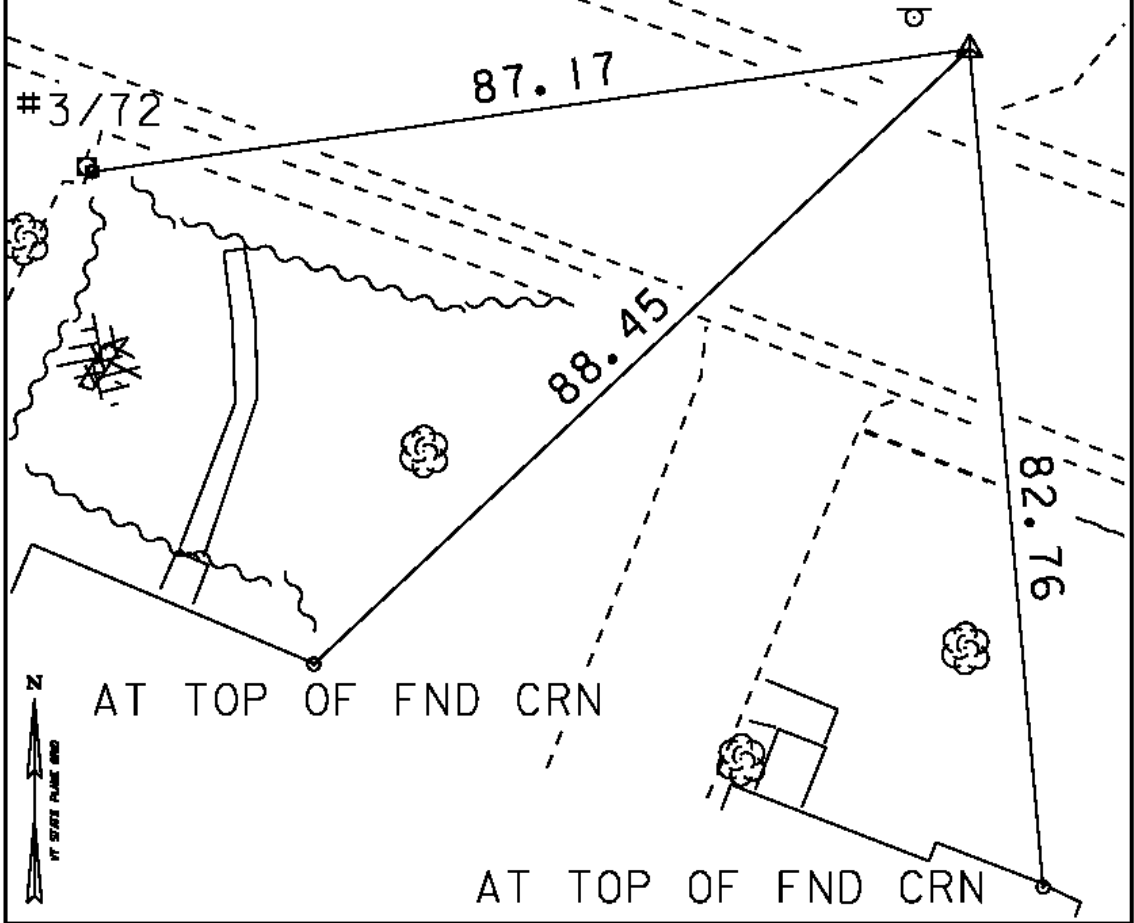
HVCTRL #3

NORTH = 275583.42
EAST = 1618985.42
ELEV. = 568.66

PK Nail
not Tied

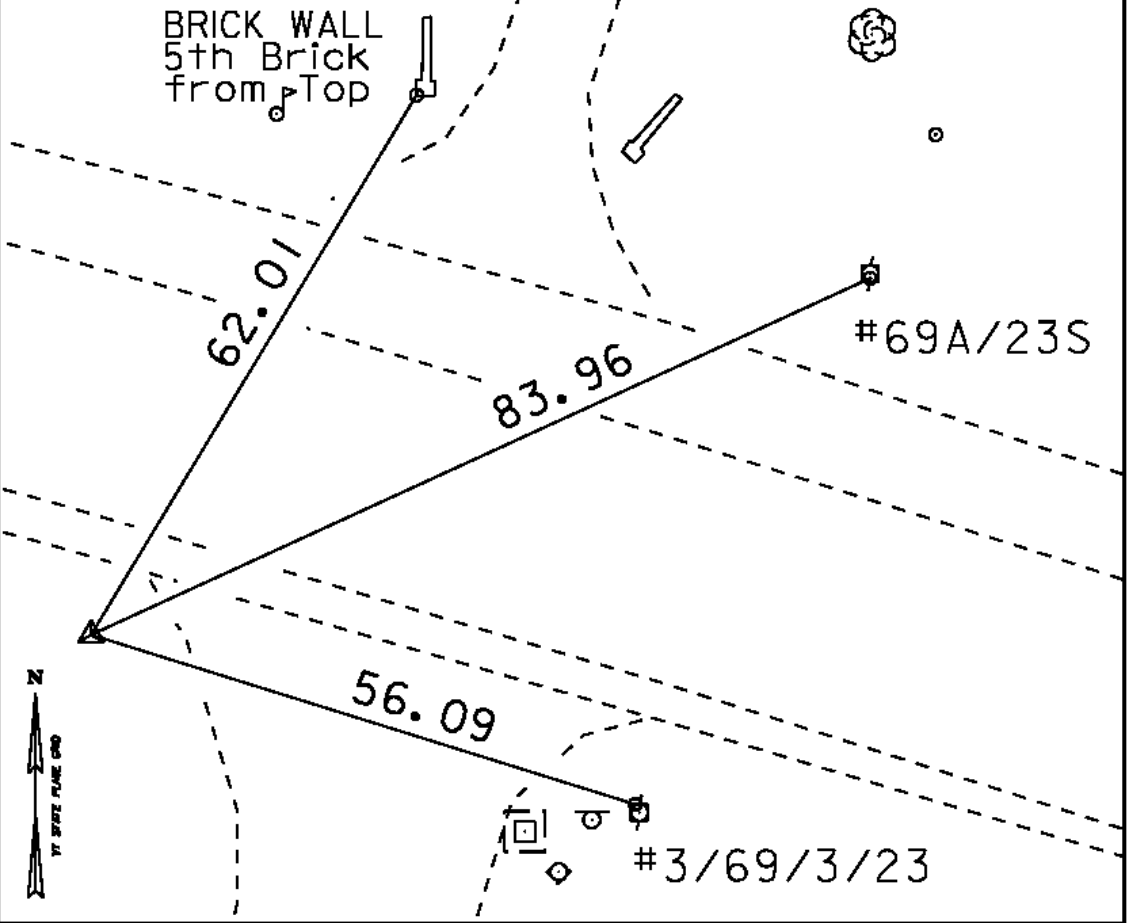
HVCTRL #4

NORTH = 275824.63
EAST = 1618453.45
ELEV. = 577.79



HVCTRL #5

NORTH = 275970.12
EAST = 1617888.75
ELEV. = 575.35



NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

* Main Traverse Completed 09/08/98 by R.Gilman P.C. & T.Companion

ALIGNMENT COORD

* CURVE DATA CURRENT AS OF 8/18/2010

ALIGNMENT COORDINATES			
VT RT 103			
	STATION	NORTHING	EASTING
POB	20+83.44	276042.5407	1617696.8364
PC #1	22+09.30	276012.9376	1617816.1631
PT #1	23+79.43	275965.6128	1617982.5237
PC #2	27+27.76	275853.8874	1618312.4494
PT #2	30+16.56	275751.0095	1618582.2270
POE	30+39.64	275720.8416	1618653.1603
CHANNEL			
	STATION	NORTHING	EASTING
POB	10+00.00	275828.9628	1618152.2252
POE	11+75.00	275994.7169	1618208.3552

CURVE (1)
DELTA = 5°06'14" RT
D = 3°00'00"
R = 1909.86'
T = 85.12'
L = 170.13'
E = 1.90'

CURVE (2)
DELTA = 4°19'55" RT
D = 1°30'00"
R = 3819.72'
T = 144.47'
L = 288.80'
E = 2.73'

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (92)
ADJUSTMENT	Compass

PROJECT NAME: Chester
PROJECT NUMBER: BRF 025-1(28)S

FILE NAME: 84e061\survey\84e061.t.dgn
PROJECT LEADER:
DESIGNED BY:
BRIDGE 8 TIE SHEET
PLOT DATE: 20-SEP-2010
DRAWN BY: R. Bullock
CHECKED BY:
SHEET 16 OF 124

CONSTRUCT 5' PAVED APRON
STA 24+98 RT - 12' WIDTH

REMOVAL AND DISPOSAL OF GUARDRAIL

STA 25+11 LT - 25+61 LT
STA 26+06 LT - 26+57 LT
STA 25+23 RT - 25+61 RT
STA 26+07 RT - 26+45 RT

REMOVE GRAVEL BAR

STA 10+41 RT - 10+61 RT

SPECIAL PROVISION (GUARDRAIL APPROACH
SECTION TO CONCRETE BRIDGE RAILING) (TL-2)
STA 25+41.50 LT - 25+53.00 LT
STA 26+14.25 LT - 26+25.75 LT
STA 25+41.50 RT - 25+53.00 RT
STA 26+14.25 RT - 26+25.75 RT

REMOVING SIGNS

STA 22+56 RT
STA 25+59 LT
STA 25+59 RT
STA 25+61 RT
STA 26+07 LT
STA 26+07 RT
STA 26+13 LT

TRAFFIC SIGNS, TYPE A

STA 25+49 RT
STA 26+19 LT

ADJUST ELEVATION
OF VALVE BOX
STA 26+31 RT

REMOVING LARGE TREES

STA 25+55 LT
TRIM TREES
STA 26+06 LT

4" WHITE LINE
STA 24+50.00 LT - 27+00.00 LT
STA 24+50.00 RT - 27+00.00 RT

4" YELLOW LINE
STA 24+50.00 - 27+00.00 (CL DOUBLE)
MANUFACTURED TERMINAL SECTION, TANGENT (TL-2)
STA 25+14.60 LT - 25+41.50 LT
STA 26+25.75 LT - 26+52.65 LT
STA 25+14.60 RT - 25+41.50 RT
STA 26+25.75 RT - 26+52.65 RT

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
STA 25+28.00 LT - 25+53.00 LT
STA 26+14.25 LT - 26+40.00 LT

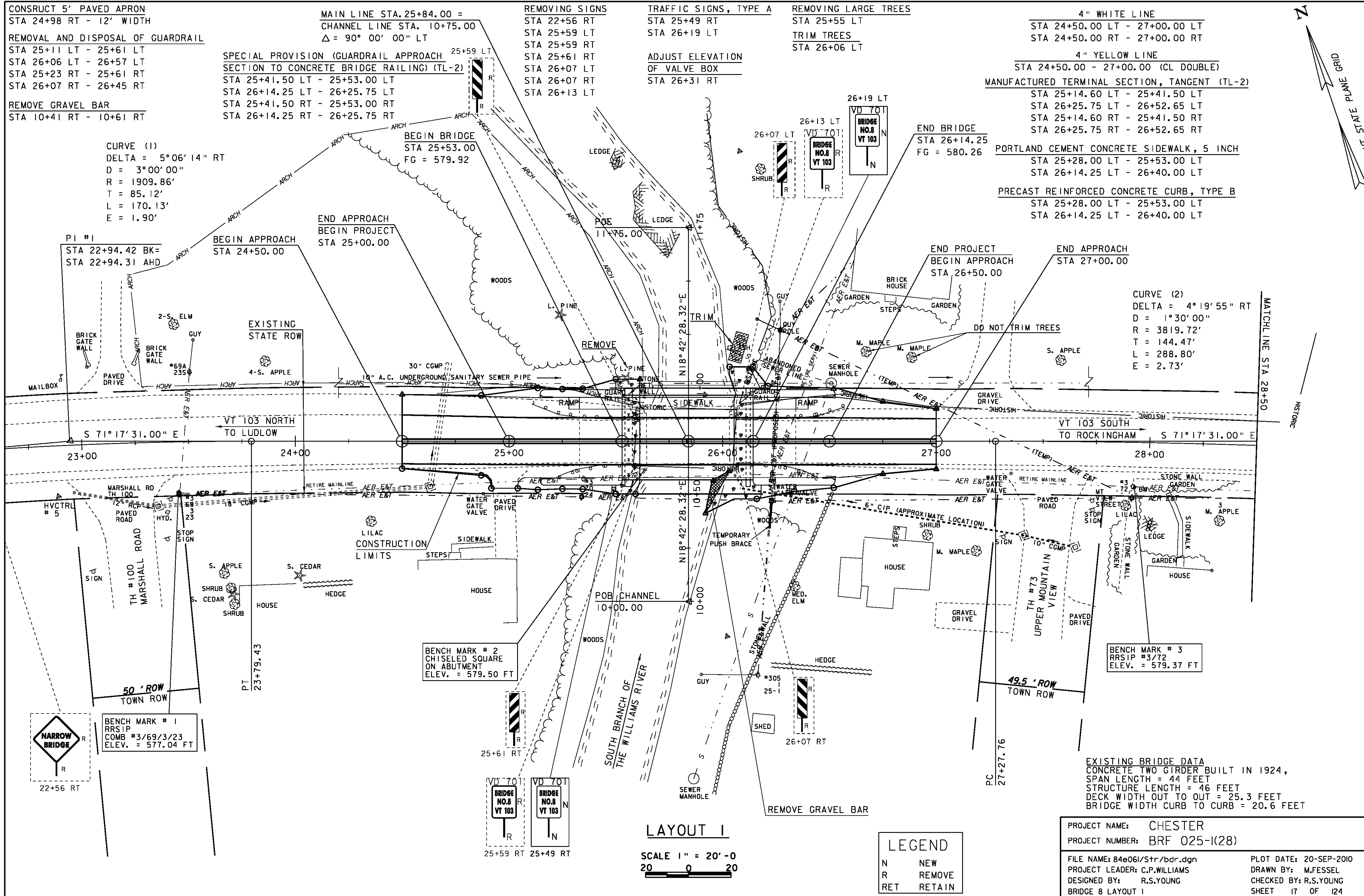
PRECAST REINFORCED CONCRETE CURB, TYPE B
STA 25+28.00 LT - 25+53.00 LT
STA 26+14.25 LT - 26+40.00 LT

CURVE (1)
DELTA = 5°06'14" RT
D = 3°00'00"
R = 1909.86'
T = 85.12'
L = 170.13'
E = 1.90'

END APPROACH
BEGIN PROJECT
STA 25+00.00

BEGIN APPROACH
STA 24+50.00

CURVE (2)
DELTA = 4°19'55" RT
D = 1°30'00"
R = 3819.72'
T = 144.47'
L = 288.80'
E = 2.73'



LAYOUT 1

SCALE 1" = 20' - 0
20 0 20

LEGEND

N NEW
R REMOVE
RET RETAIN

PROJECT NAME: CHESTER
PROJECT NUMBER: BRF 025-1(28)

FILE NAME: 84e061/Str/bdr.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: R.S.YOUNG
BRIDGE 8 LAYOUT 1

PLOT DATE: 20-SEP-2010
DRAWN BY: M.FESSEL
CHECKED BY: R.S.YOUNG
SHEET 17 OF 124

EXISTING BRIDGE DATA
CONCRETE TWO GIRDER BUILT IN 1924,
SPAN LENGTH = 44 FEET
STRUCTURE LENGTH = 46 FEET
DECK WIDTH OUT TO OUT = 25.3 FEET
BRIDGE WIDTH CURB TO CURB = 20.6 FEET

A diagram showing a diamond-shaped sign with the text "NARROW BRIDGE" inside. Above the sign, a dashed line indicates a truck with a height of 28+64 LT. To the right of the sign, a vertical line with a right-angle symbol indicates a narrow lane.

MATCHLINE STA 28+50

$$\begin{array}{r} \text{POE} \\ \hline 30 + 93.64 \end{array}$$

MAILBOX
SIGN

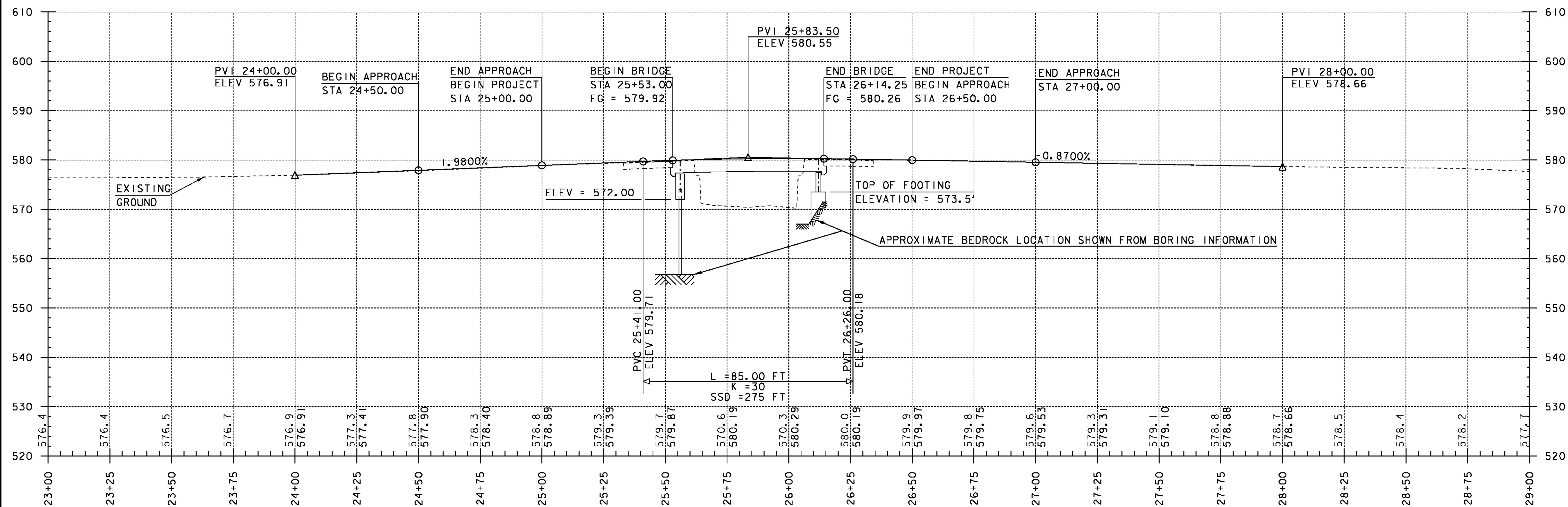
VT 103 SOUTH
TO ROCK INGHAM

$$30+94$$
$$\frac{30+16.56}{P1}$$

SCALE 1" = 20'-0"

PLOT DATE: 20-SEP-2010
DRAWN BY: M.FESSEL
CHECKED BY: R.S.YOUNG
SHEET 18 OF 124

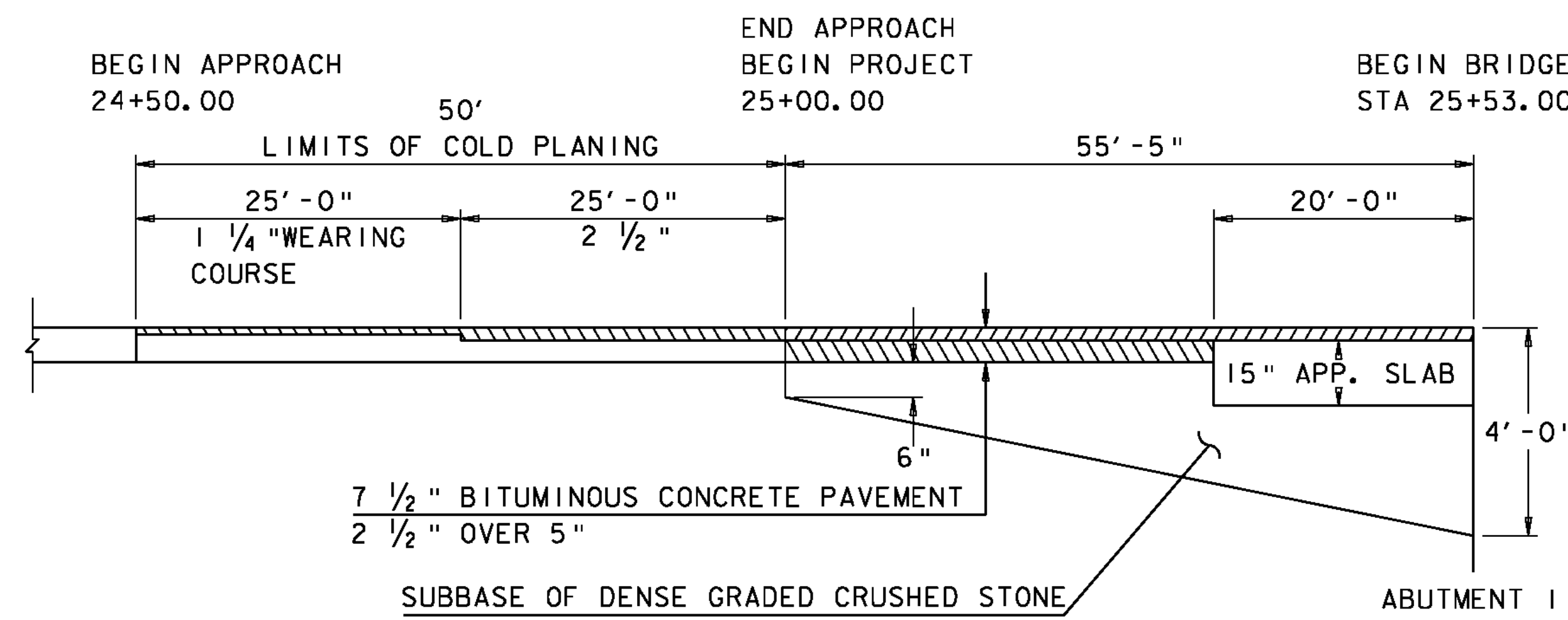
VT103 PROFILE



NOTES:

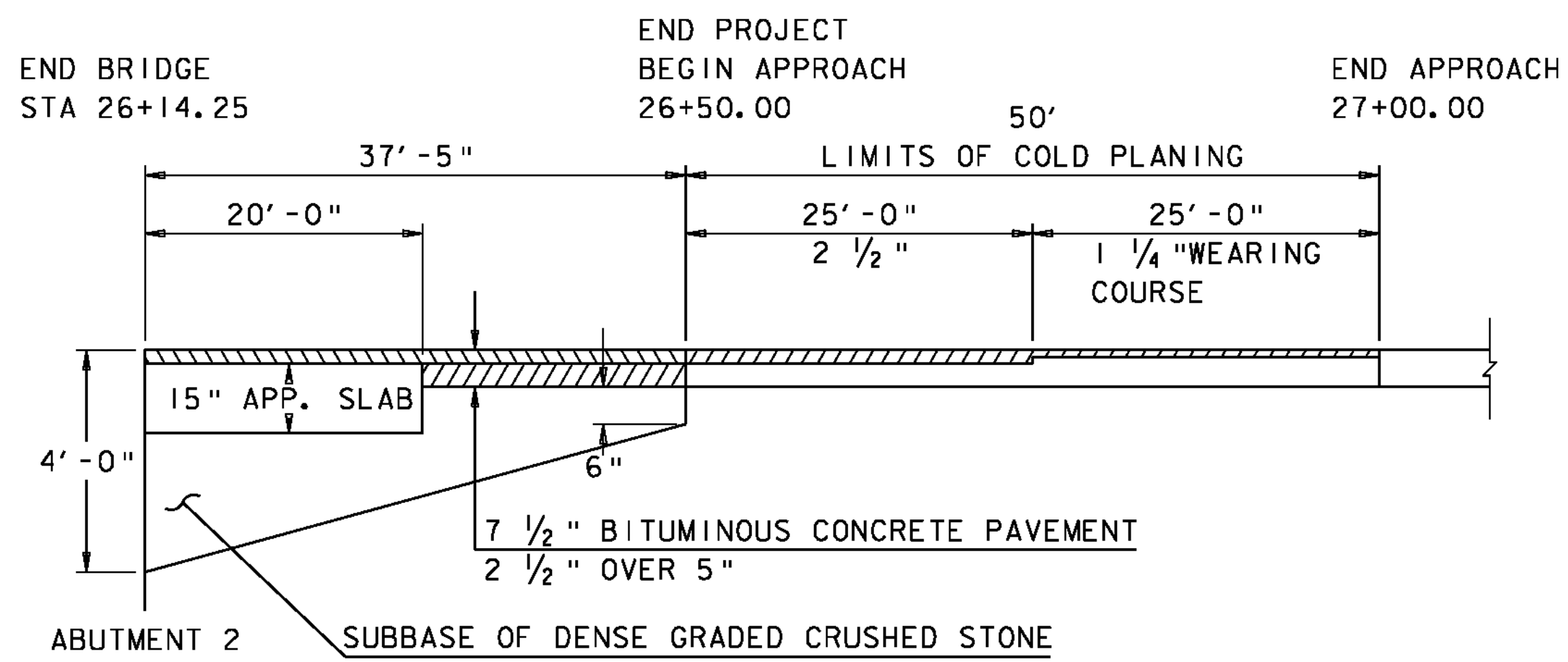
GRADES SHOWN TO THE NEAREST TENTH
ARE EXISTING GROUND ALONG C.

GRADES SHOWN TO THE NEAREST
HUNDREDTH ARE FINISH GRADE ALONG C.



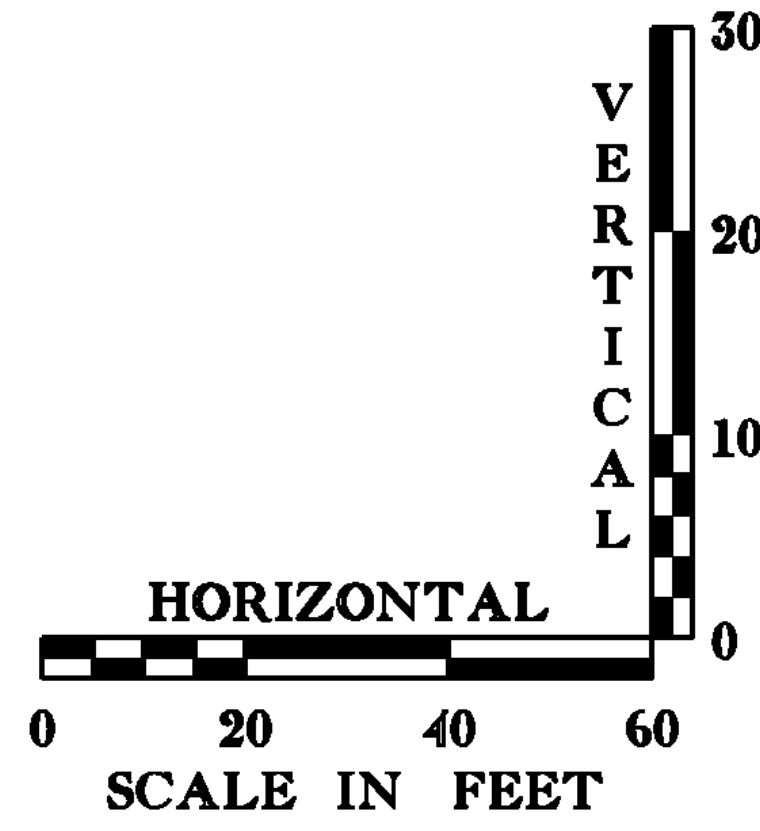
BEGIN PROJECT MATERIAL TRANSITION

NOT TO SCALE

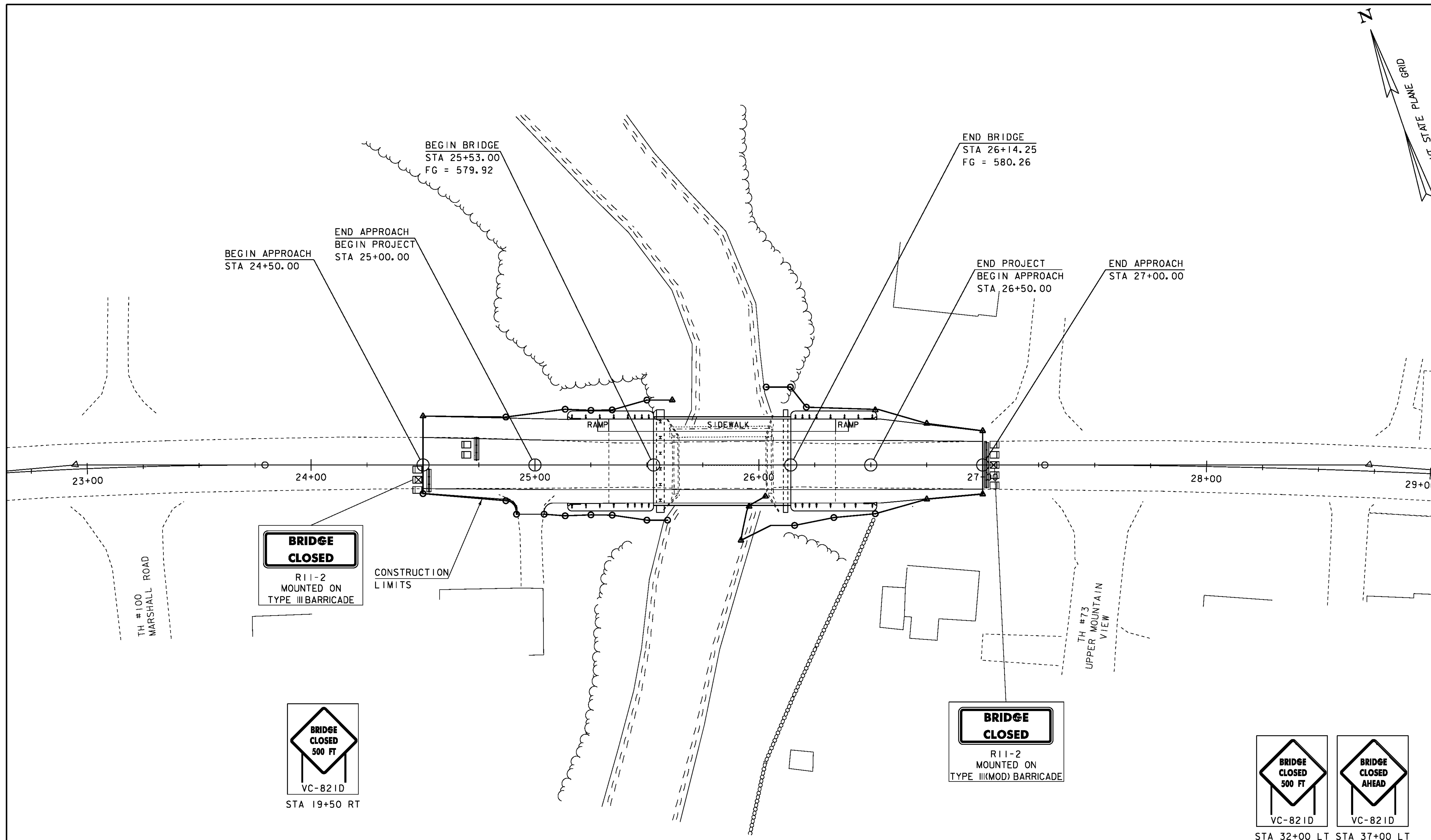


END PROJECT MATERIAL TRANSITION

NOT TO SCALE



PROJECT NAME:	CHESTER	FILE NAME:	84e061/Str/s84e061pro.dgn	PLOT DATE:	20-SEP-2010
PROJECT NUMBER:	BRF 025-1(28)	PROJECT LEADER:	C.P.WILLIAMS	DRAWN BY:	M.FESSEL
		DESIGNED BY:	R.S.YOUNG	CHECKED BY:	R.S.YOUNG
		BRIDGE 8 PROFILE SHEET		SHEET	19 OF 124

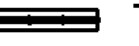


- NOTE: 1: THE CONTRACTOR SHALL PROVIDE TEMPORARY TRAFFIC BARRIER AS POSITIVE PROTECTION DURING THE BRIDGE CLOSURE. PAYMENT SHALL BE UNDER 621.90 "TEMPORARY TRAFFIC BARRIER"
- 2: ANY LINE STRIPING TARGETS USED SHALL BE INCIDENTAL TO ITEM 641.10 "TRAFFIC CONTROL".

TRAFFIC CONTROL LAYOUT

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

LEGEND

-  TYPE III BARRICADE
-  TYPE III (MOD) BARRICADE
-  TEMPORARY TRAFFIC BARRIER

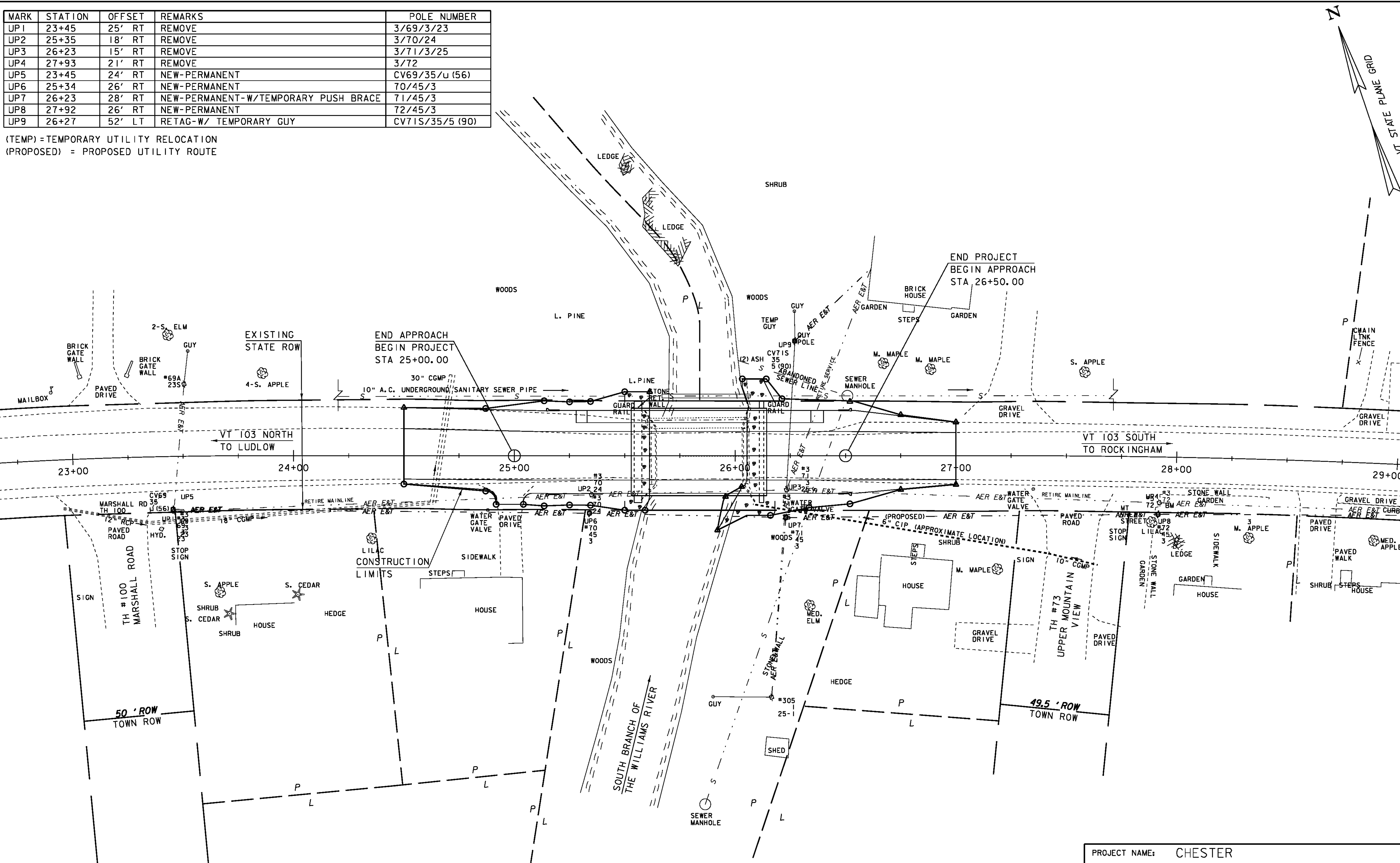
PROJECT NAME: CHESTER
PROJECT NUMBER: BRF 025-1(28)

FILE NAME: s84e061traffic.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: R.S.YOUNG
BRIDGE 8 TRAFFIC CONTROL LAYOUT

PLOT DATE: 20-SEP-2010
DRAWN BY: M.FESSEL
CHECKED BY: R.S.YOUNG
SHEET 20 OF 124

MARK	STATION	OFFSET	REMARKS	POLE NUMBER
UP1	23+45	25' RT	REMOVE	3/69/3/23
UP2	25+35	18' RT	REMOVE	3/70/24
UP3	26+23	15' RT	REMOVE	3/71/3/25
UP4	27+93	21' RT	REMOVE	3/72
UP5	23+45	24' RT	NEW-PERMANENT	CV69/35/U (56)
UP6	25+34	26' RT	NEW-PERMANENT	70/45/3
UP7	26+23	28' RT	NEW-PERMANENT-W/TEMPORARY PUSH BRACE	71/45/3
UP8	27+92	26' RT	NEW-PERMANENT	72/45/3
UP9	26+27	52' LT	RETAG-W/ TEMPORARY GUY	CV71S/35/5 (90)

(TEMP) = TEMPORARY UTILITY RELOCATION
 (PROPOSED) = PROPOSED UTILITY ROUTE



UTILITIES RELOCATION

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

PROJECT NAME: CHESTER
 PROJECT NUMBER: BRF 025-1(28)

FILE NAME: 84e061/Str/bdr_Utillities.dgn PLOT DATE: 20-SEP-2010
 PROJECT LEADER: C.P.WILLIAMS DRAWN BY: M.FESSEL
 DESIGNED BY: R.S.YOUNG CHECKED BY: R.S.YOUNG
 BRIDGE 8 UTILITIES RELOCATION SHEET 21 OF 124

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 3/8"
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
Sl	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	To 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)

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	mtc	Multicolored
or	Orange		

BORING CHART

HOLE NO.	VTSPG		GROUND ELEV.	ELEV. TLOB
	NORTHING	EASTING		
B-101	275912.98	1618215.49	579.4	567.4
B-102	275889.36	1618144.32	577.89	556.19
B-103	275937.37	1618152.19	579.3	557.5
B-104	275873.99	1618197.81	576.67	566.97
B-201	275906.47	1618144.69	580.20	556.70
B-202	275894.16	1618205.98	580.50	571.4

BORING PLAN

SCALE 1" = 20' -0
20 0 20

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

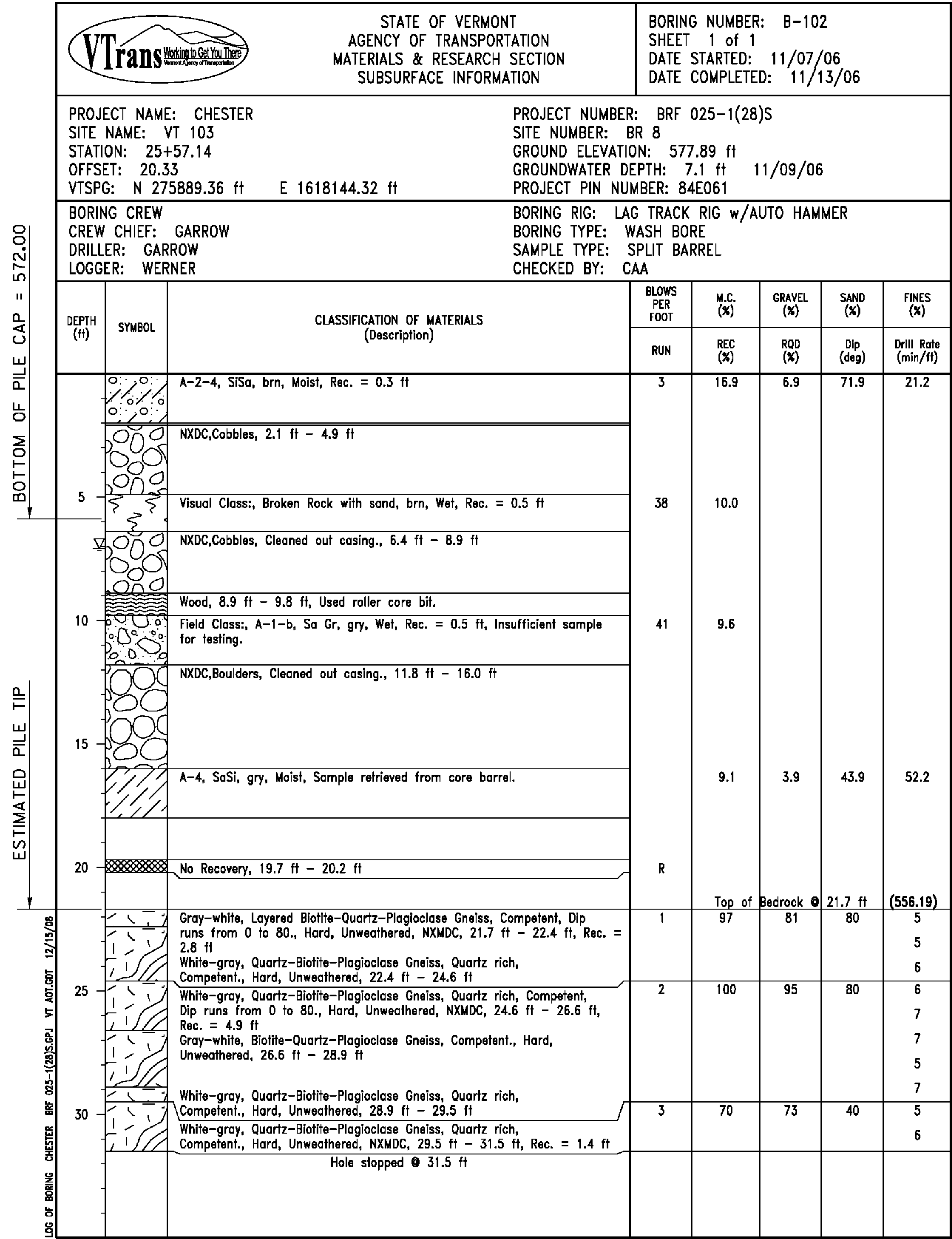
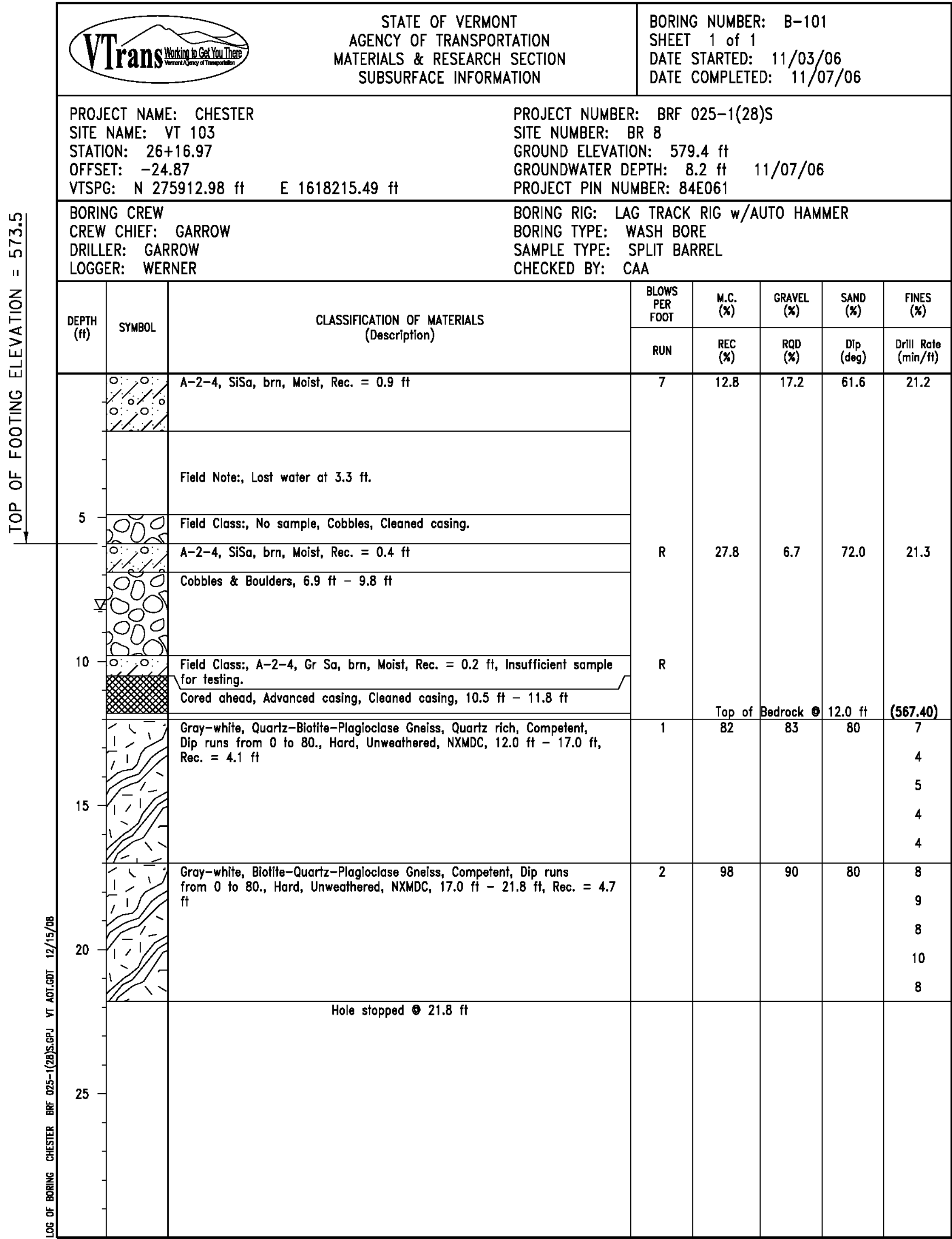
- The subsurface explorations shown herein were made between 11/03/06 and 01/22/09 by the Agency.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- 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.
- 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.
- 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.
- 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.

PROJECT NAME: CHESTER

PROJECT NUMBER: BRF 025-1 (28)

FILE NAME: s84e061bor.dgn
PROJECT LEADER: C. P. WILLIAMS
DESIGNED BY: R. S. YOUNG
BORING INFORMATION SHEET

PLOT DATE: 20-SEP-2010
DRAWN BY: M. FESSEL
CHECKED BY: R. S. YOUNG
SHEET 22 OF 124





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

BORING NUMBER: B-103
SHEET 1 of 1
DATE STARTED: 11/14/06
DATE COMPLETED: 11/14/06

PROJECT NAME: CHESTER
SITE NAME: VT 103
STATION: 25+49.19
OFFSET: -27.67
VTSFG: N 275937.37 ft E 1618152.19 ft

PROJECT NUMBER: BRF 025-1(28)S
SITE NUMBER: BR 8
GROUND ELEVATION: 579.3 ft
GROUNDWATER DEPTH: 8.3 ft 11/14/06
PROJECT PIN NUMBER: 84E061

BORING CREW
CREW CHIEF: GARROW
DRILLER: GARROW
LOGGER: WERNER

BORING RIG: LAG TRACK RIG w/AUTO HAMMER
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: CAA

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	W.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
			RUN	REC (%)	RQD (%)	Dip (deg)	Drill Rate (min/ft)
5		A-2-4, GrSa, brn, Moist, Rec. = 0.7 ft	20	19.4	24.9	58.6	16.5
		Cobbles, No Recovery, 2.0 ft - 9.8 ft, Cleaned out casing.					
10		A-1-b, GrSa, brn, Wet, Rec. = 0.9 ft	22	12.8	46.5	47.1	6.4
		Field Note: Cleaned out casing					
15		A-1-b, SaGr, brn, Wet, Rec. = 0.8 ft	22	10.9	47.2	44.6	8.2
		Field Note: Cleaned out casing					
20		A-2-4, GrSiSa (HP), gry, Moist, Rec. = 1.0 ft	R	9.5	25.1	41.8	33.1
		Field Note: Cleaned out casing					
25		Gray-white, Layered Biotite-Quartz-Plagioclase Gneiss, Competent, Dip runs from 0 to 40., Hard, Unweathered, NXMDC, 21.8 ft - 23.2 ft, Rec. = 4.7 ft	1	96	93	40	6
		White-gray, Quartz-Biotite-Plagioclase Gneiss, Quartz rich, Competent,, Hard, Unweathered, 23.2 ft - 26.7 ft					7
							7
							5
							6
30		White-gray, Quartz-Biotite-Plagioclase Gneiss, Quartz rich, Competent, Dip runs from 0 to 40., Hard, Unweathered, NXMDC, 26.7 ft - 31.6 ft, Rec. = 4.6 ft	2	94	70	40	5
							6
							7
							7
							6
		Hole stopped @ 31.6 ft					

LOG OF BORING CHESTER BRF 025-1(28)S.GPJ VT AUT.GDT 12/15/08

BOTTOM OF PILE CAP = 572.00
 ESTIMATED PILE TIP



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

BORING NUMBER: B-104
 SHEET 1 of 1
 DATE STARTED: 11/15/06
 DATE COMPLETED: 11/15/06

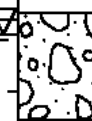
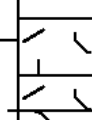
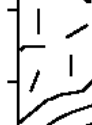
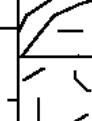
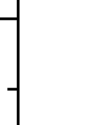
PROJECT NAME: CHESTER
 SITE NAME: VT 103
 STATION: 26+12.73
 OFFSET: 17.73
 VTSPG: N 275873.99 ft E 1618197.81 ft

PROJECT NUMBER: BRF 025-1(28)S
 SITE NUMBER: BR 8
 GROUND ELEVATION: 576.67 ft
 GROUNDWATER DEPTH: 5.2 ft 11/15/06
 PROJECT PIN NUMBER: 84E061

BORING CREW
 CREW CHIEF: GARROW
 DRILLER: GARROW
 LOGGER: WERNER

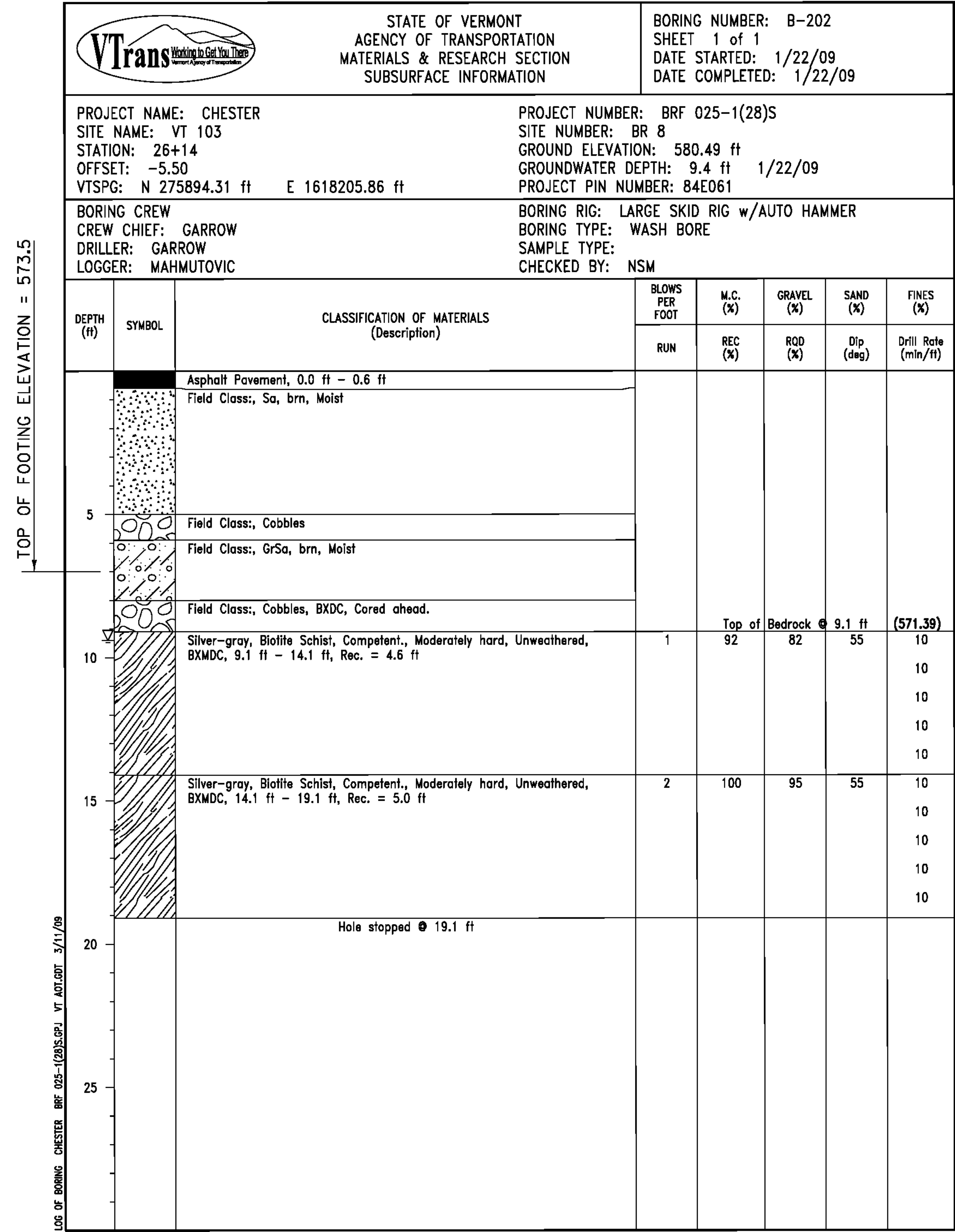
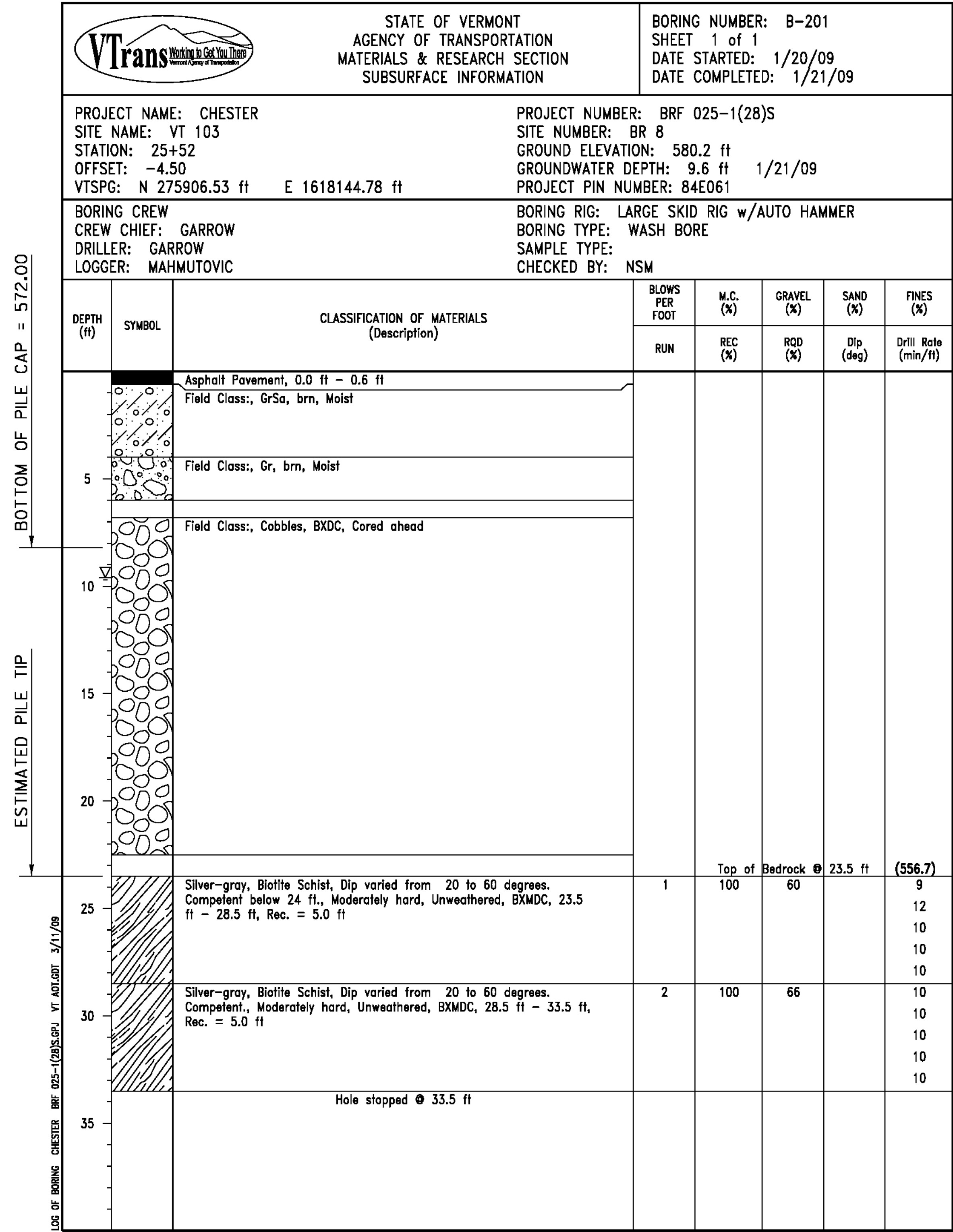
BORING RIG: LAG TRACK RIG w/AUTO HAMMER
 BORING TYPE: WASH BORE
 SAMPLE TYPE: SPLIT BARREL
 CHECKED BY: CAA

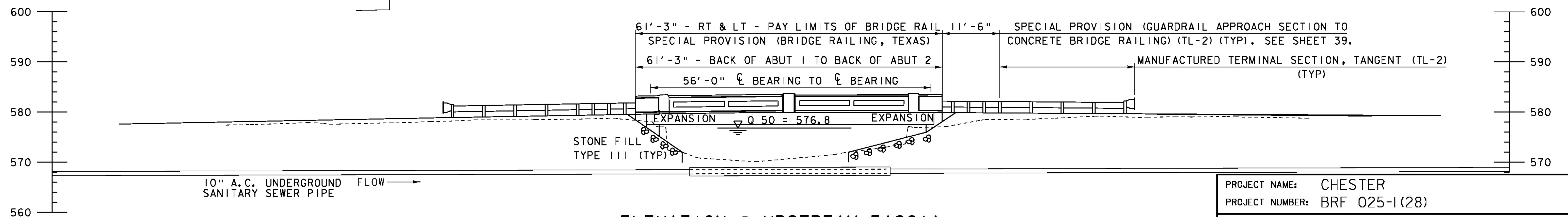
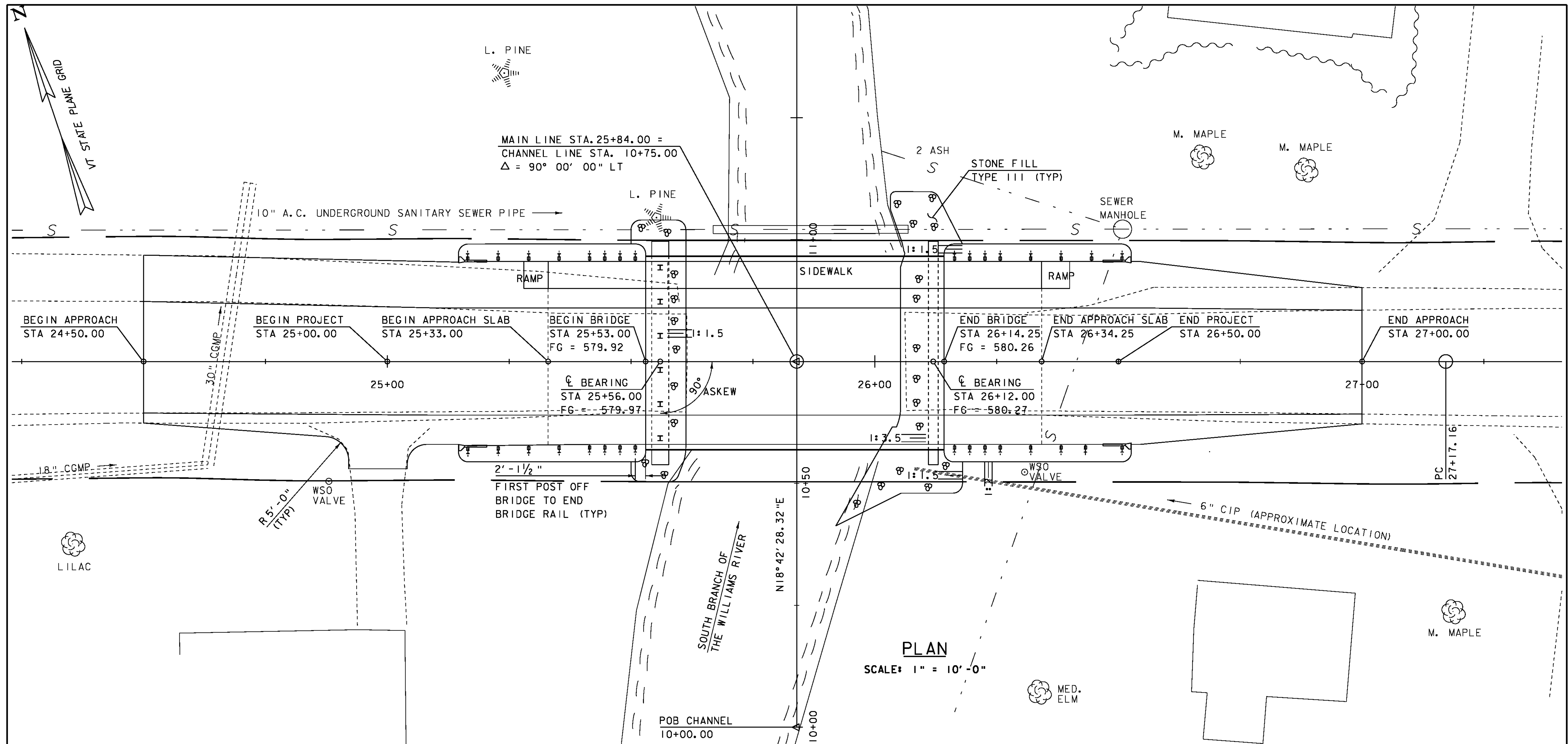
TOP OF FOOTING ELEVATION = 573.5
 ↓

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
			RUN	REC (%)	RQD (%)	Dip (deg)	Drill Rate (min/ft)
		A-2-4, GrSa, brn, Moist, Rec. = 0.7 ft	3	17.8	20.8	64.8	14.4
5		Field Class., A-1-b, Gr Sa with Wood, Rec. = 0.3 ft, Insufficient sample for testing.	4				
10		Gray-white, Biotite-Quartz-Plagioclase Gneiss, Competent, Dip runs from 0 to 80., Hard, Unweathered, NXMDC, 9.7 ft - 10.5 ft, Rec. = 0.8 ft	1	100	100	80	8
		Gray-white, Biotite-Quartz-Plagioclase Gneiss, Competent, Dip runs from 0 to 80., Hard, Unweathered, NXMDC, 10.5 ft - 11.0 ft, Rec. = 4.9 ft	2	100	73	80	9
		Quartz vein., 11.0 ft - 12.4 ft					9
		Gray-white, Biotite-Quartz-Plagioclase Gneiss, Competent, Hard, Unweathered, 12.4 ft - 15.4 ft					6
15		Gray-white, Biotite-Quartz-Plagioclase Gneiss, Competent, Dip runs from 0 to 80., Hard, Unweathered, NXMDC, 15.4 ft - 17.7 ft, Rec. = 3.6 ft	3	92	79	80	6
		Quartz vein., 17.7 ft - 18.0 ft					5
		Biotite-Quartz-Plagioclase Gneiss, 18.0 ft - 18.4 ft					5
		Quartz vein., 18.4 ft - 19.3 ft					6
20		Hole stopped @ 19.3 ft					
25							

LOG OF BORING CHESTER BRF 025-1(28)S.GP.1 VT LOT 607 12/15/08

PROJECT NAME: CHESTER	
PROJECT NUMBER: BRF 025-1(28)	
FILE NAME: 84e061/Str/s84e061bor.dgn	PLOT DATE: 20-SEP-2010
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY: M&R LAB
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S.YOUNG
BRIDGE 8 BORING LOGS 2	SHEET 24 OF 124



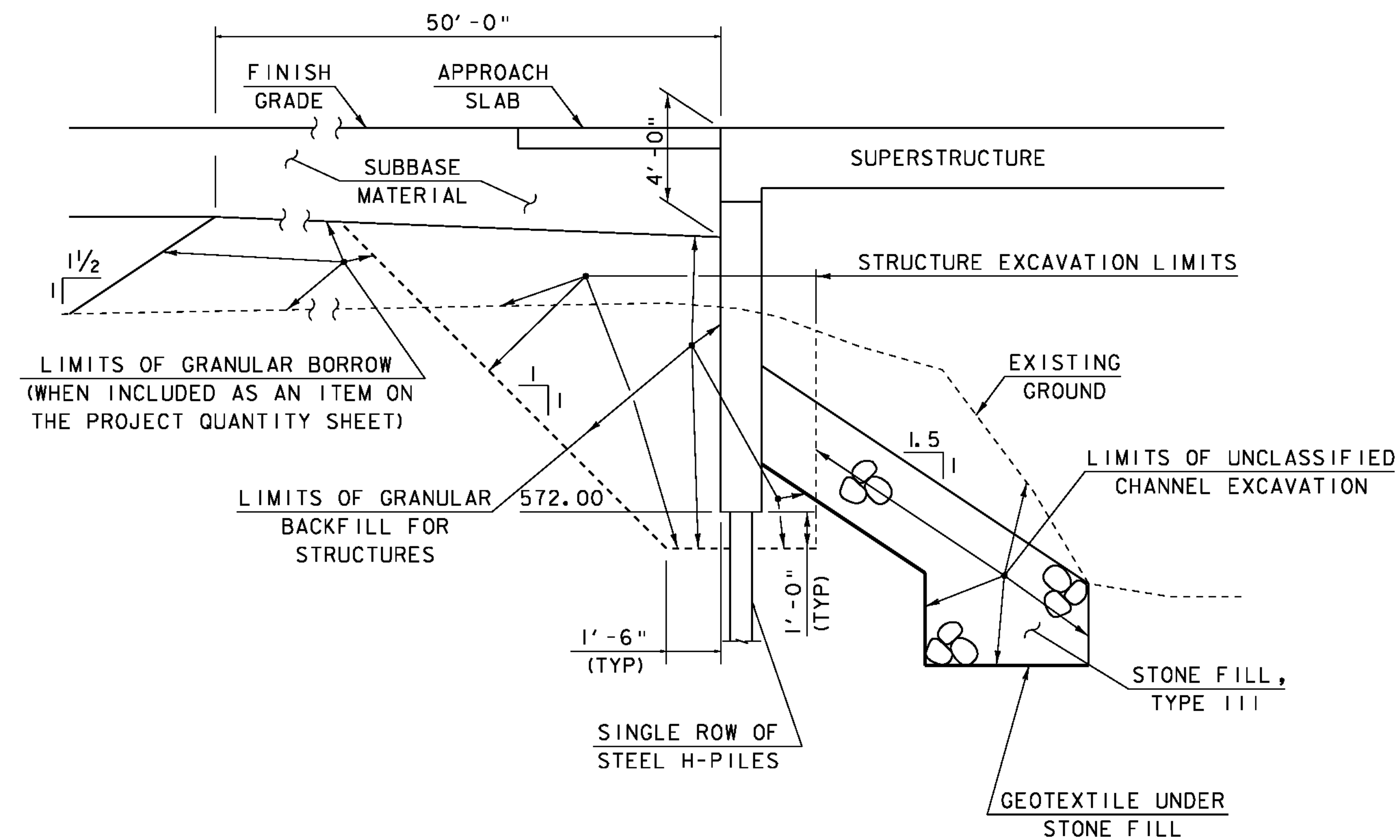


PROJECT NAME: CHESTER
PROJECT NUMBER: BRF 025-1(28)

FILE NAME: 84e061/Str/s84e061pe.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: R.S.YOUNG
BRIDGE 8 PLAN AND ELEVATION

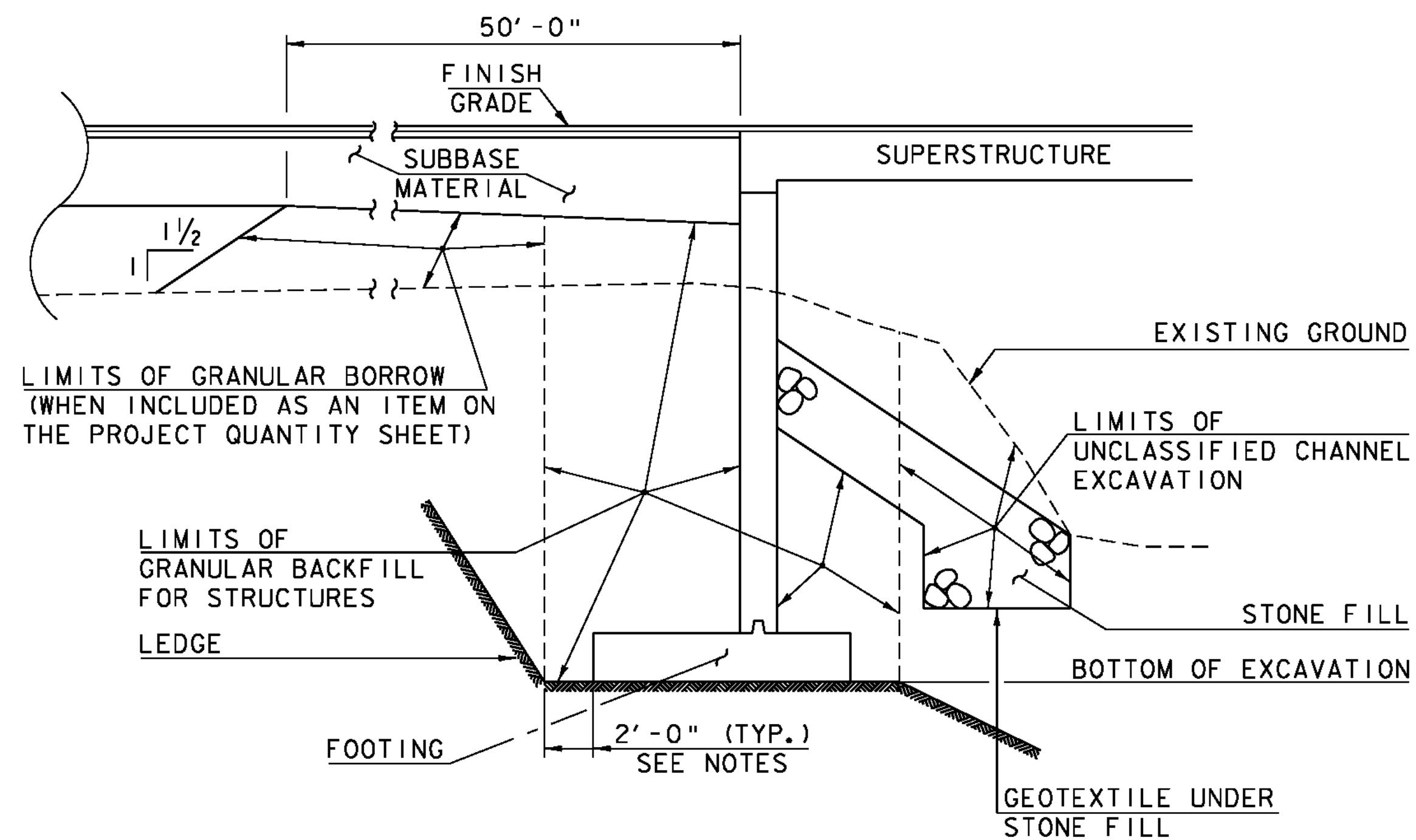
PLOT DATE: 20-SEP-2010
DRAWN BY: M.FESSEL
CHECKED BY: R.S.YOUNG
SHEET 26 OF 124

SCALE 1" = 10'-0"

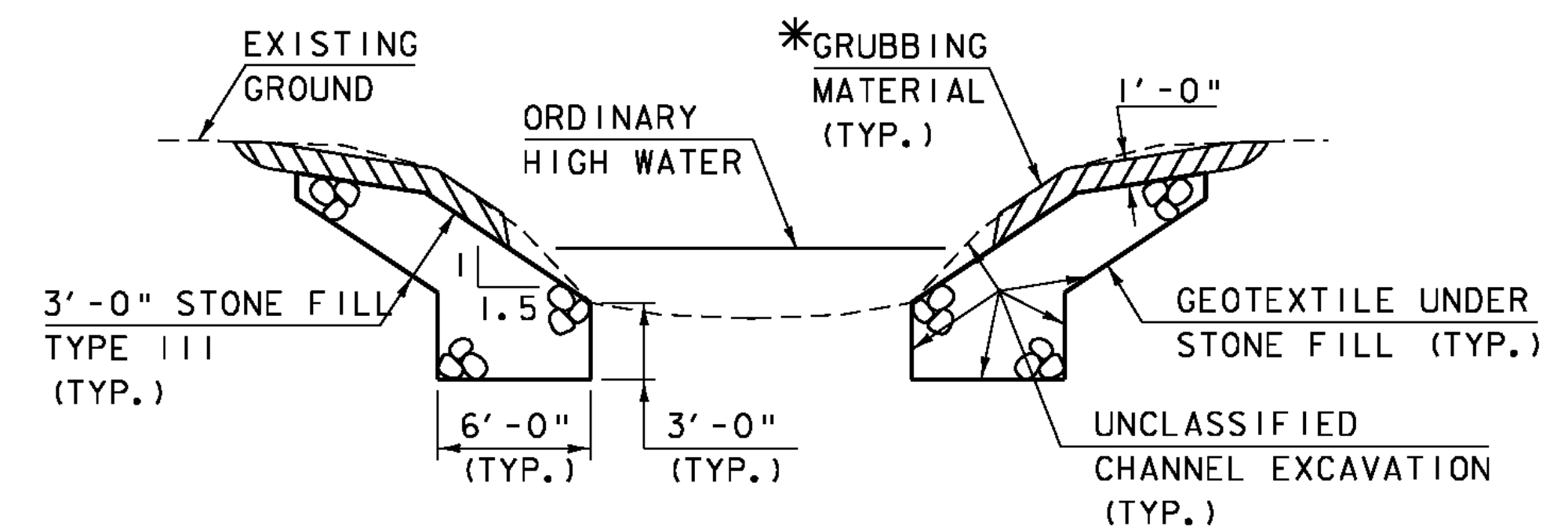


TYPICAL INTEGRAL ABUTMENT SECTION
(NOT TO SCALE)

NOTE. ACTUAL EXCAVATION LIMITS SHALL BE DETERMINED BY THE CONTRACTOR. HOWEVER, ONLY THE EXCAVATION BETWEEN THE LIMITS SHOWN WILL BE PAID FOR UNDER ITEM 204.25 "STRUCTURE EXCAVATION".

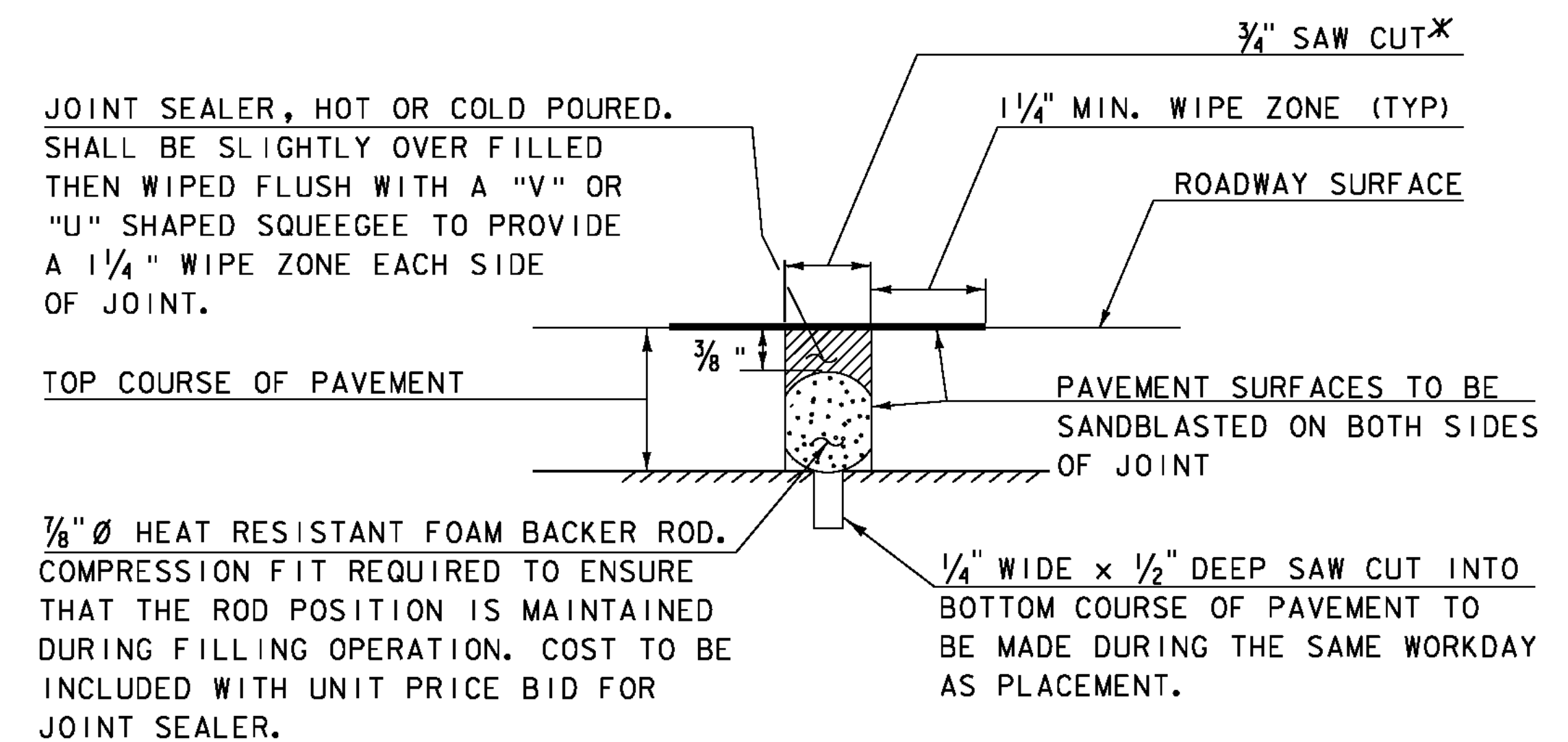


EARTHWORK SECTION
(NOT TO SCALE)



TYPICAL CHANNEL SECTION
(NOT TO SCALE)

*GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.

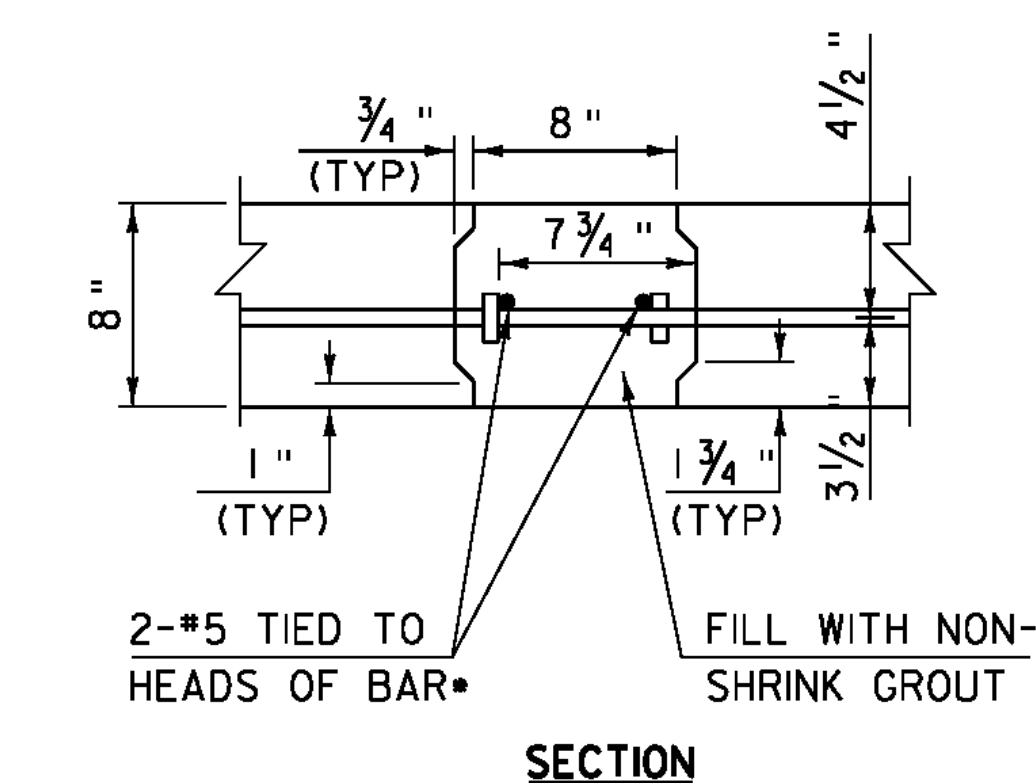
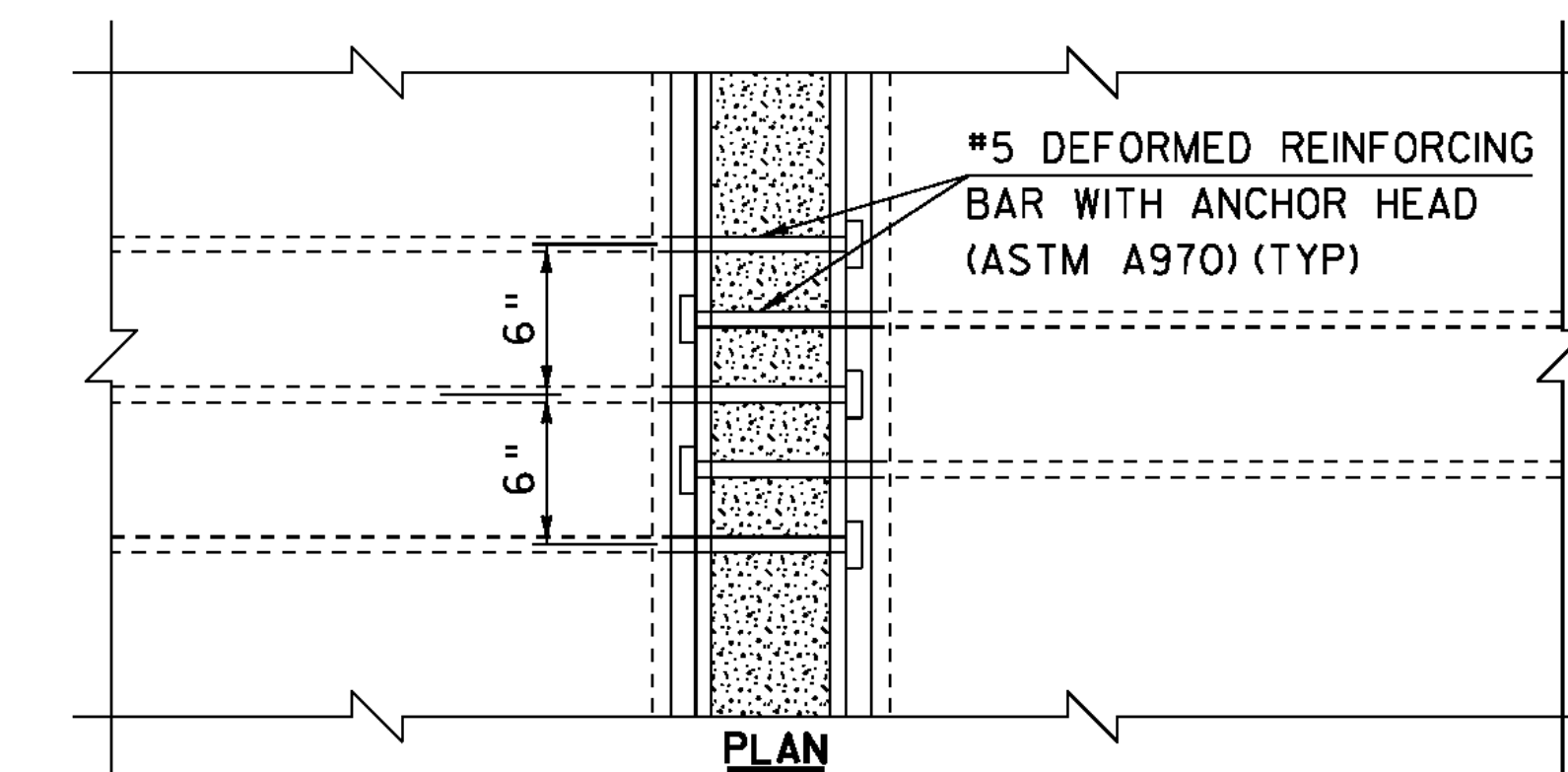


SAWED PAVEMENT JOINT DETAIL
(NOT TO SCALE)

*JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUTS WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER.

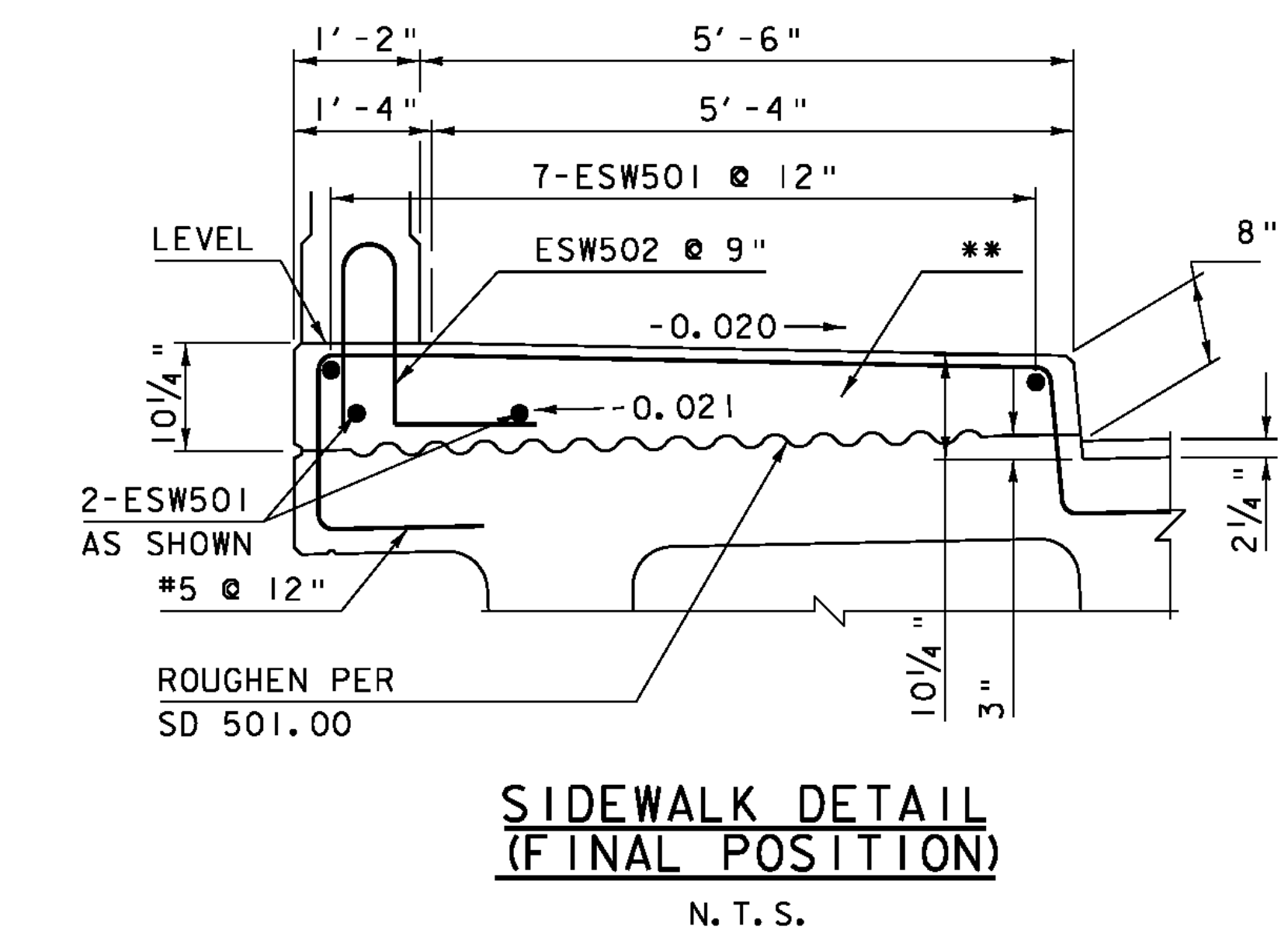
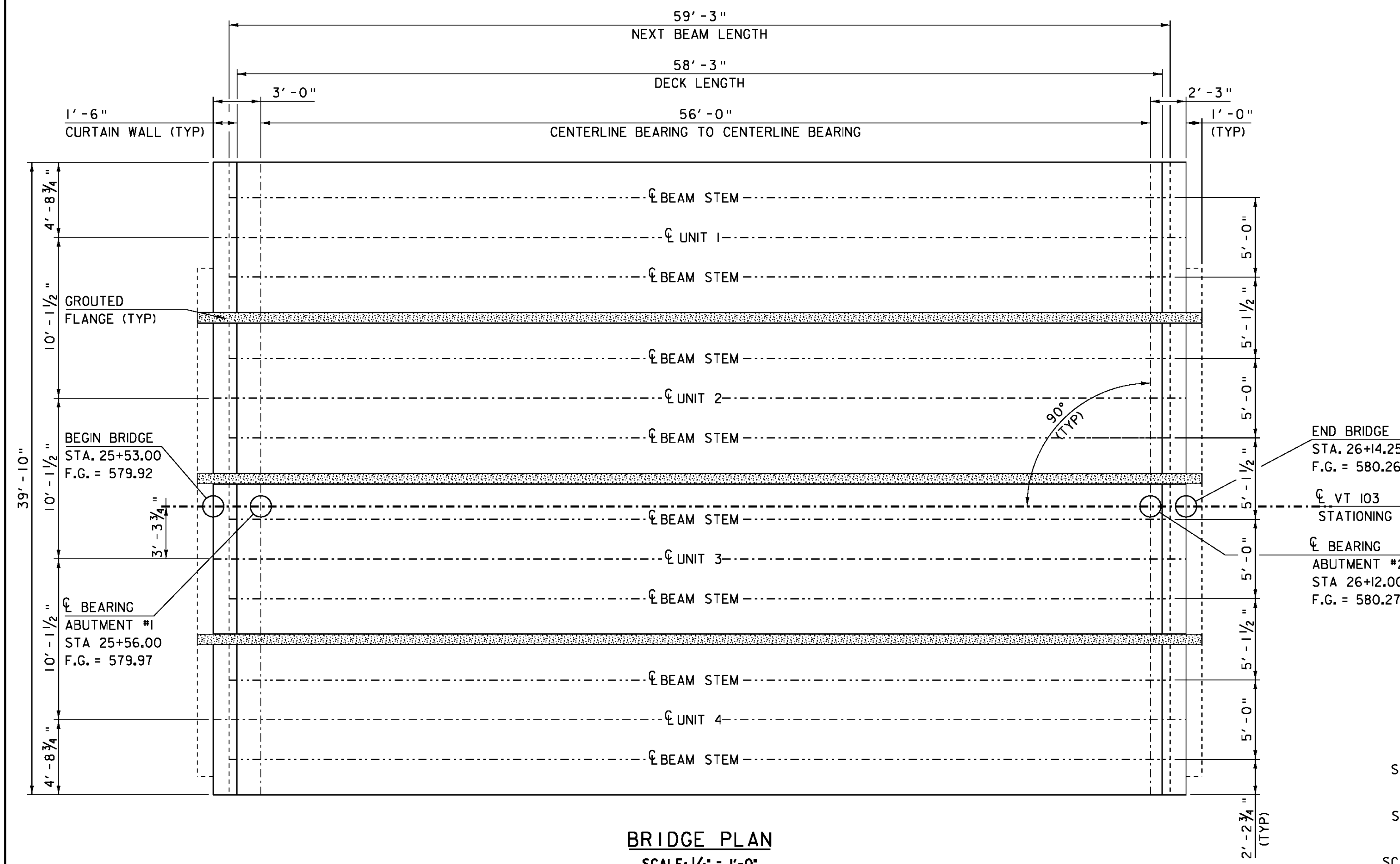
PROJECT NAME: CHESTER
PROJECT NUMBER: BRF 025-1(28)

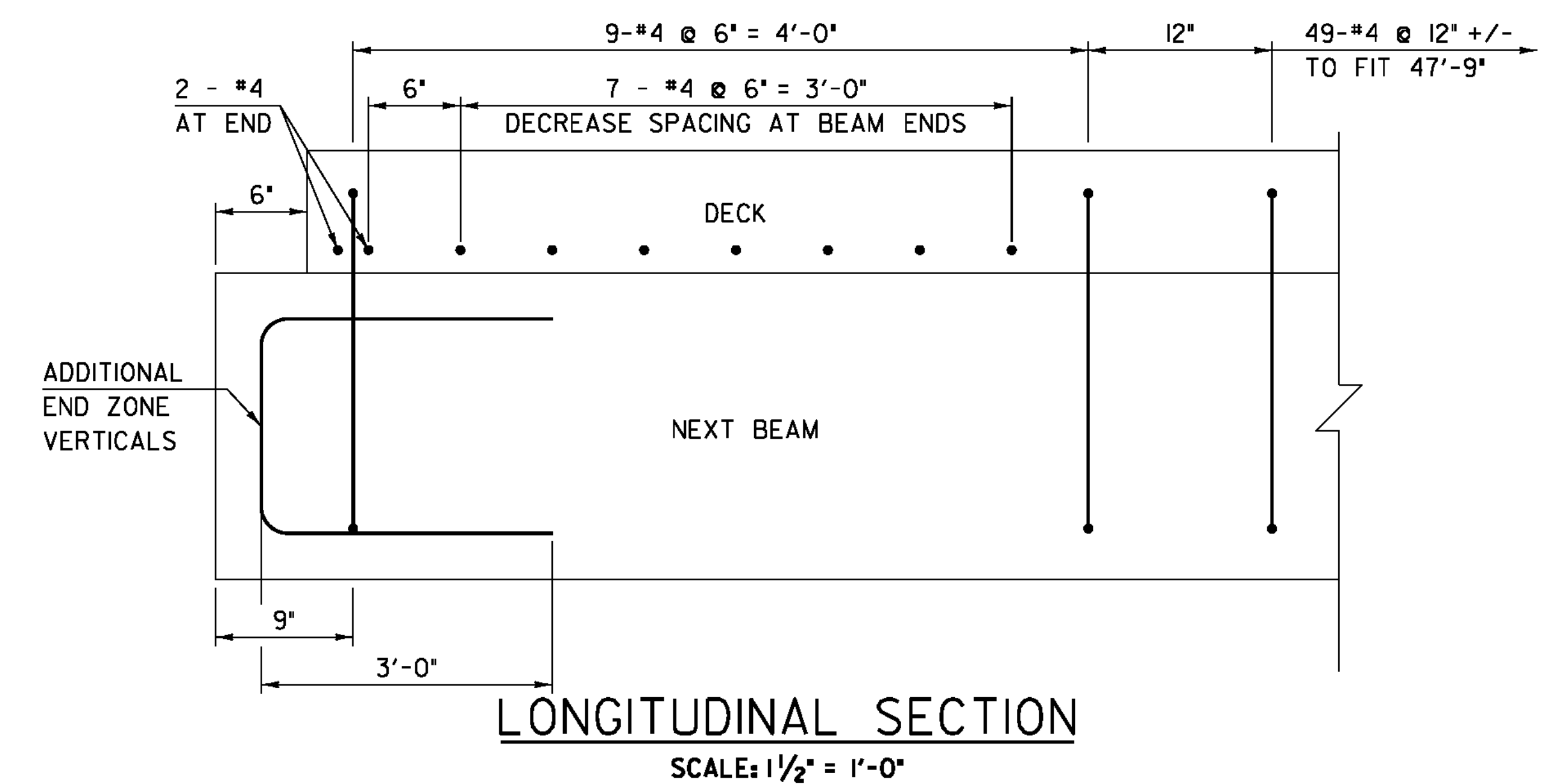
FILE NAME: 84e061/Str/84e061details.dgn PLOT DATE: 20-SEP-2010
PROJECT LEADER: C.P.WILLIAMS DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG CHECKED BY: R.S.YOUNG
BRIDGE 8 MISCELLANEOUS DETAILS SHEET 27 OF 124



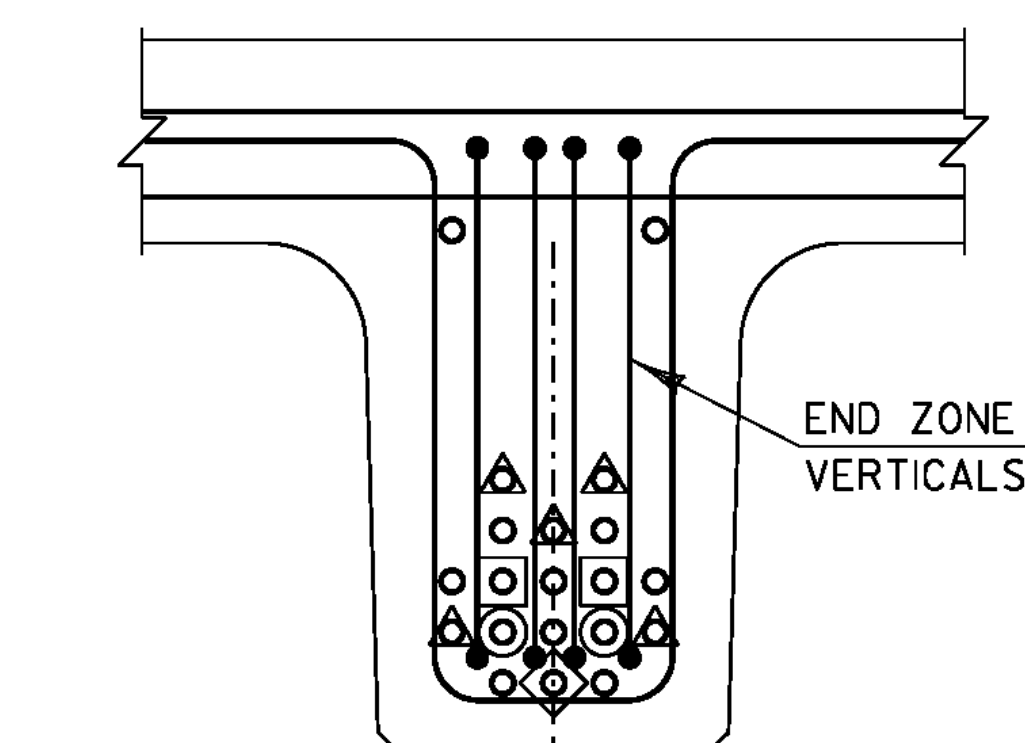
*TWO #5 BARS SHALL BE PLACED AS SHOWN ALONG ENTIRE LENGTH OF JOINT. PAYMENT SHALL BE INCIDENTAL TO SPECIAL PROVISION (PRESTRESSED CONCRETE, NEXT D BEAMS) (NEXT 28 D).

**SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT)



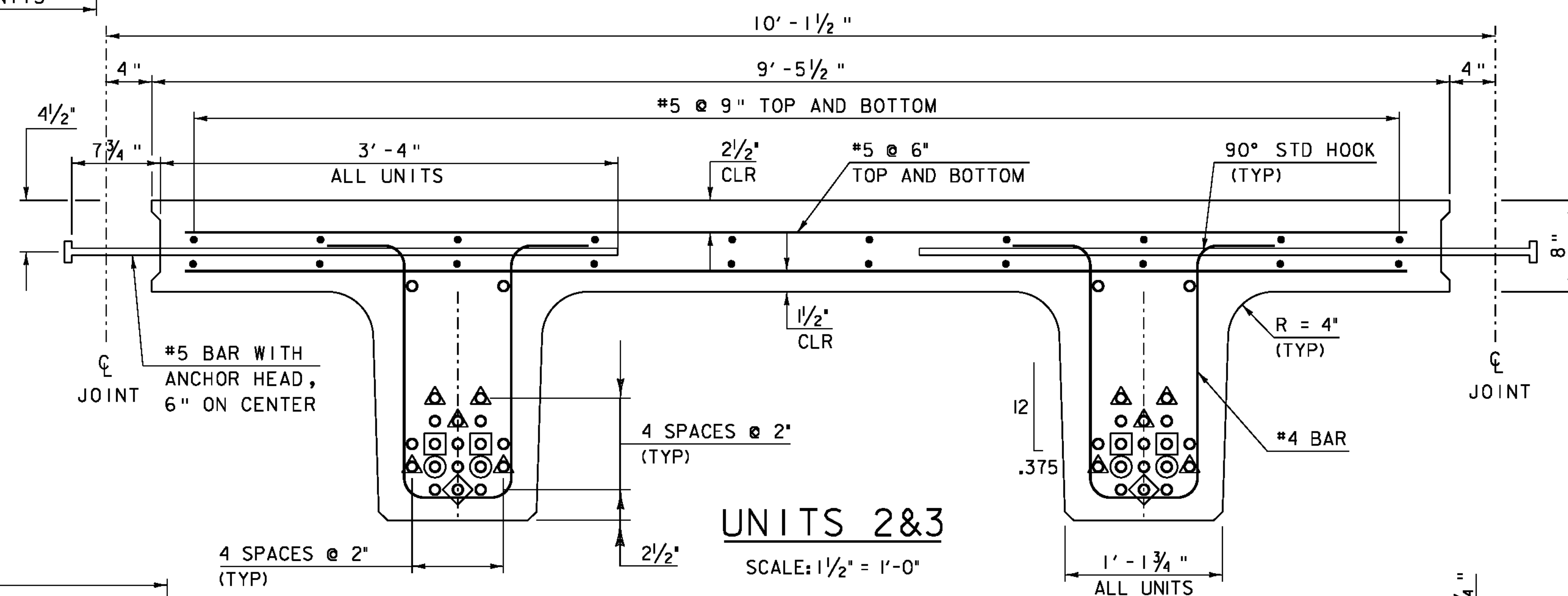


LONGITUDINAL SECTION
SCALE: 1 1/2" = 1'-0"

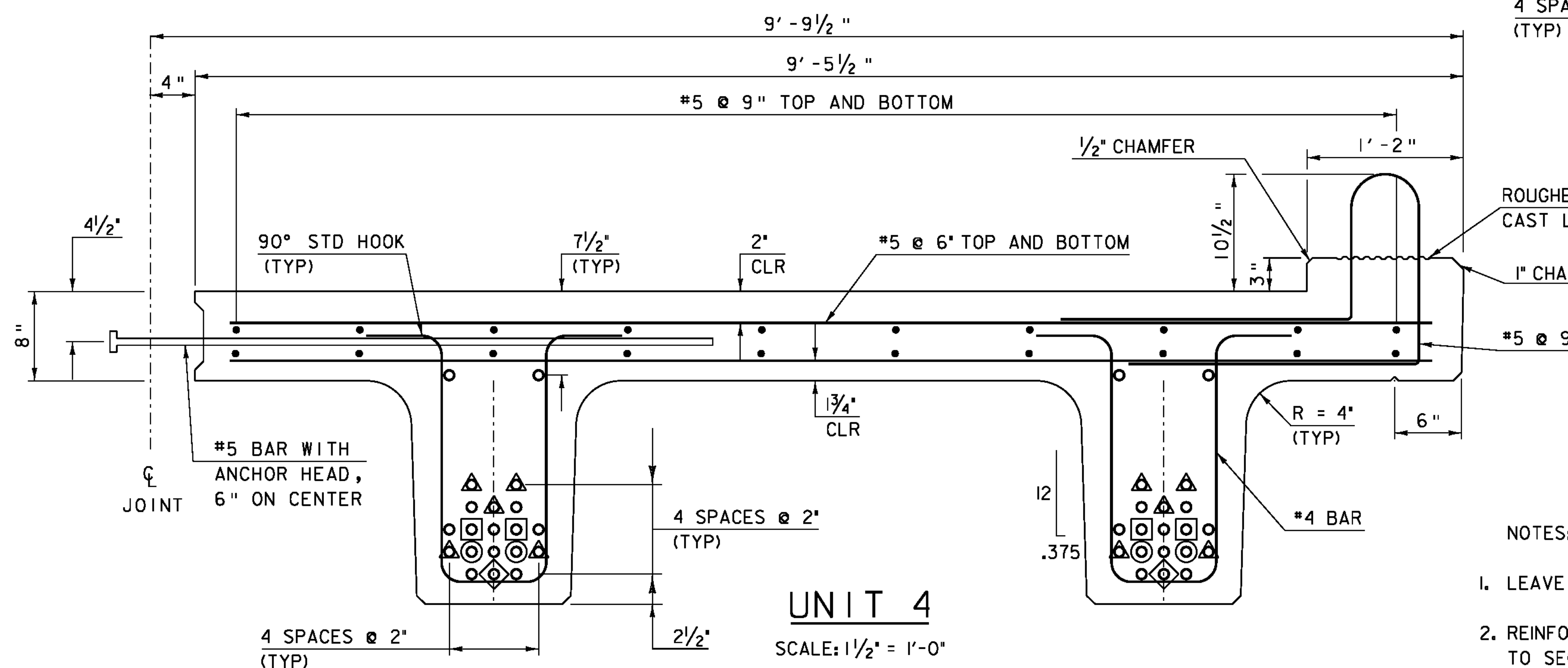


END SECTION
SCALE: $1\frac{1}{2}" = 1'-0"$

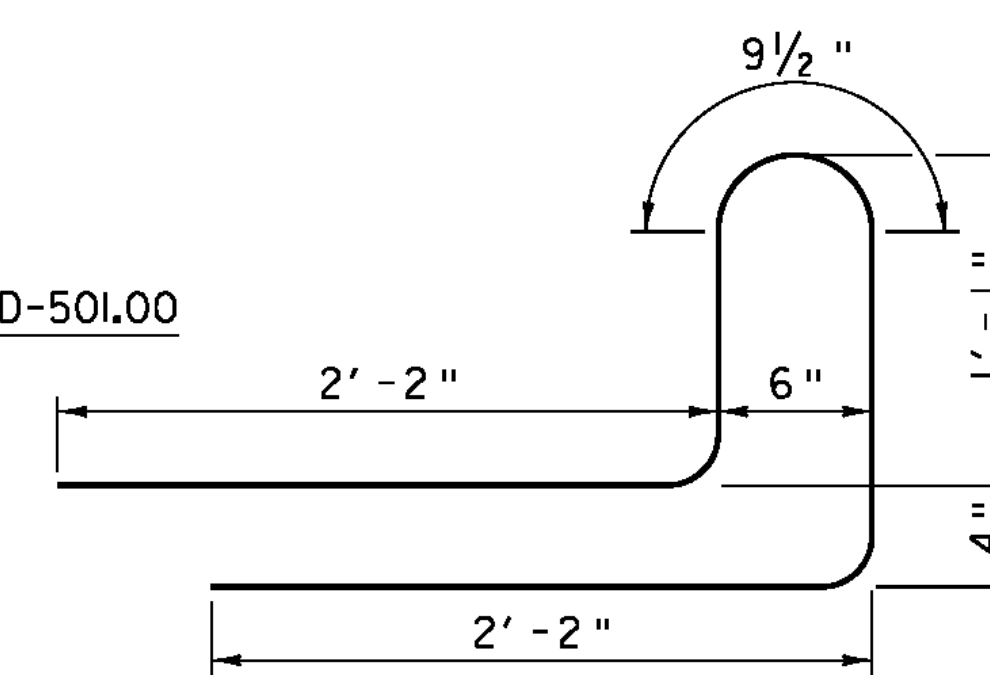
- ◇ - DEBONDED 12'
 ○ - DEBONDED 8'
 □ - DEBONDED 4'
 △ - DEBONDED 6'



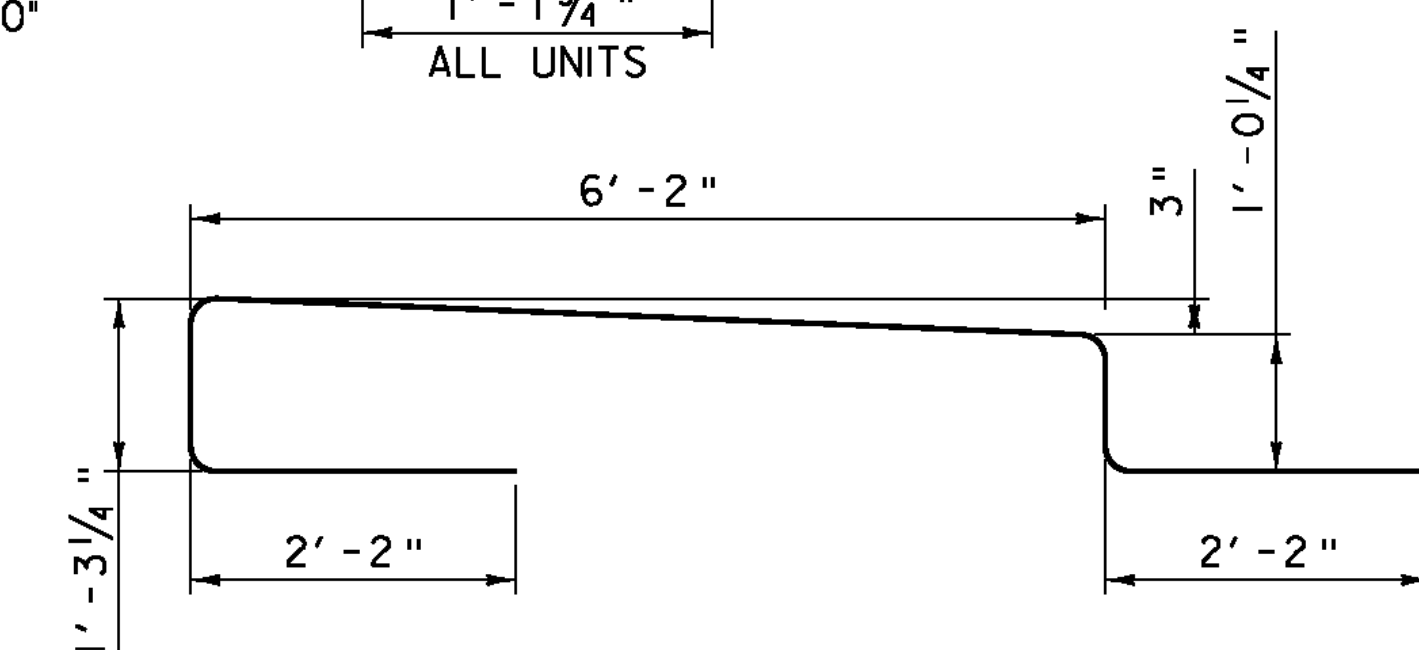
UNITS 2&3
SCALE: 1 1/2" = 1'-0"



UNIT 4
SCALE: 1 1/2" = 1'-0"



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



SIDEWALK BAR
SCALE: $\frac{3}{4}" = 1'-0"$

NOTES:

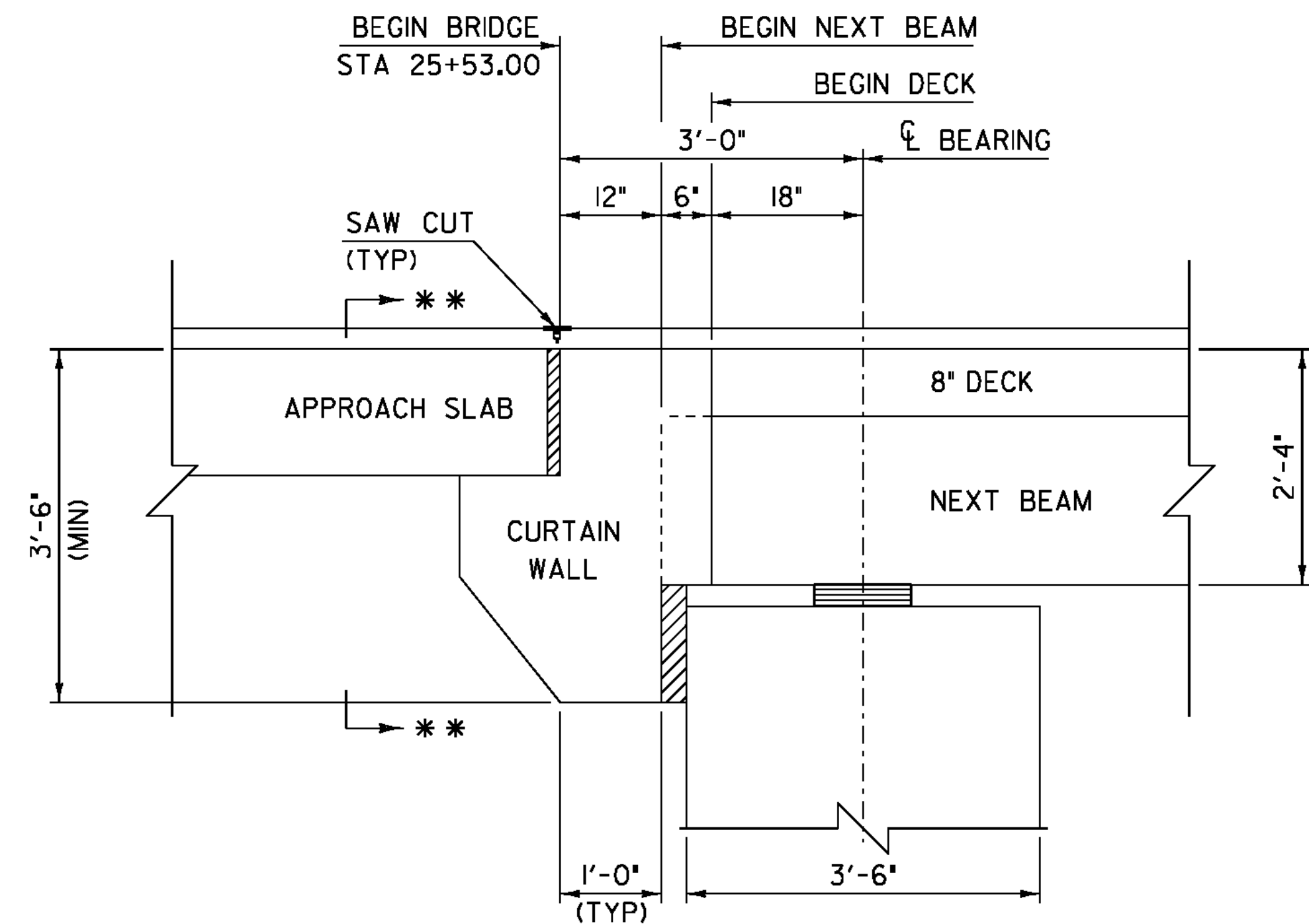
1. LEAVE SIX STRANDS 1'-6" LONG AS SHOWN ON SHEET 30
2. REINFORCING STEEL SHALL BE EPOXY COATED ACCORDING TO SECTION 713.07.

SCALE $\frac{3}{4}$ " = 1'-0"

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

PROJECT NAME:	CHESTER
PROJECT NUMBER:	BRF 025-1(28)

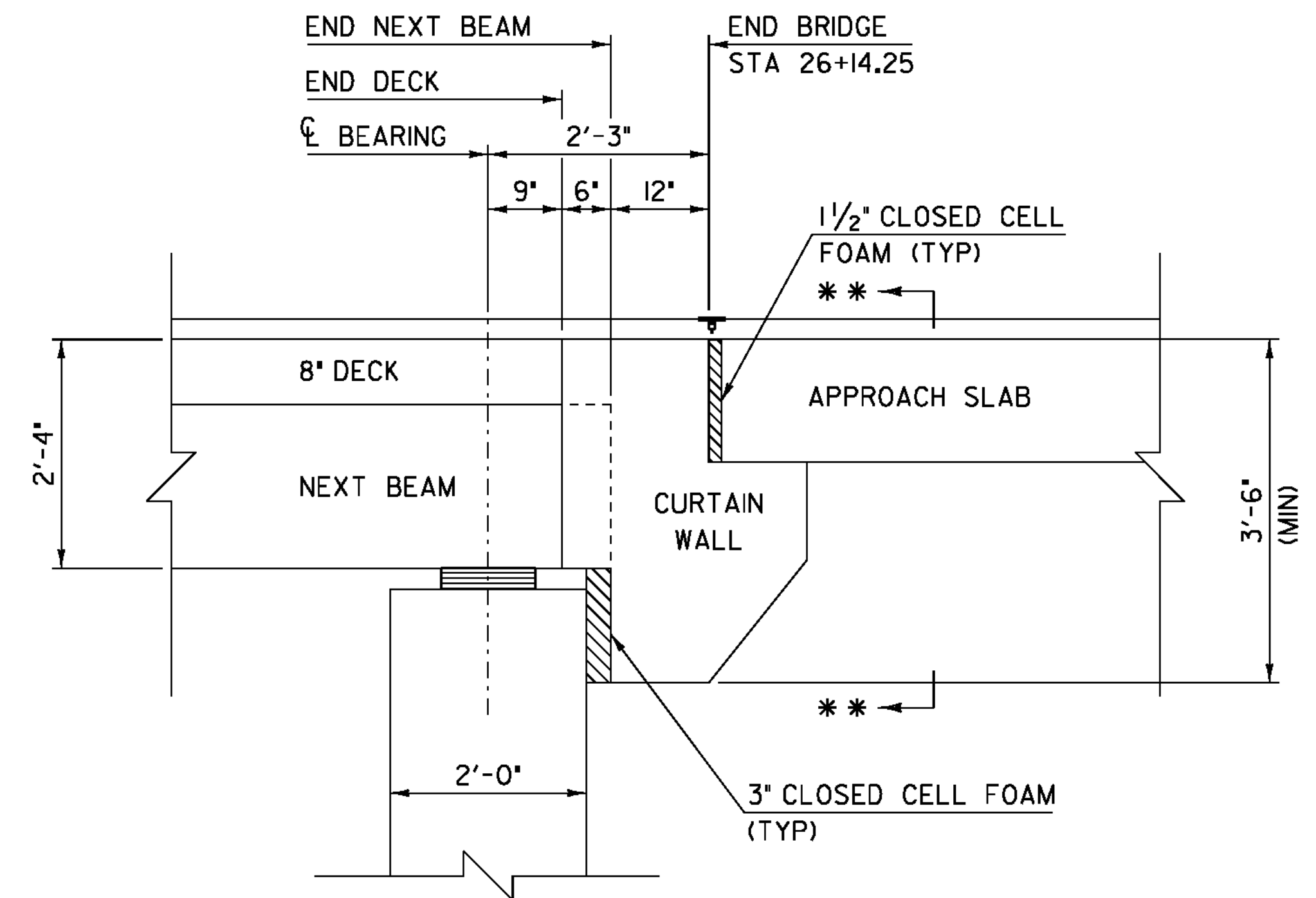
FILE NAME: 84e061/Str/84e061sup.dgn	PLOT DATE: 20-SEP-2010
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S.YOUNG
BRIDGE 8 NEXT BEAM TYPICAL SECTIONS	SHEET 29 OF 124



BRIDGE END DETAIL ABUTMENT 1

SCALE: $\frac{3}{4}$ " = 1'-0"

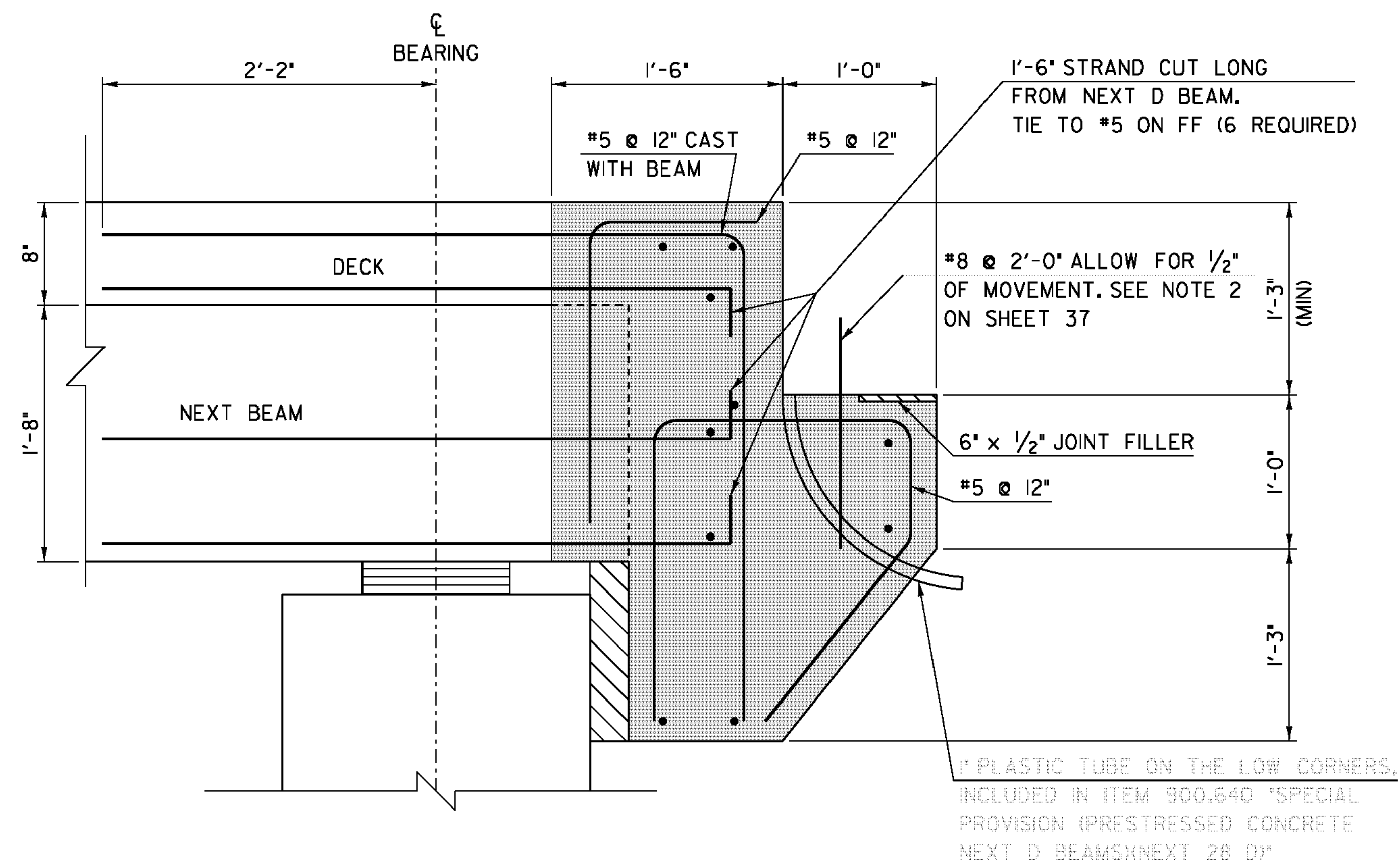
** SEE SHEET 31 FOR CURTAIN WALL END VIEWS



BRIDGE END DETAIL ABUTMENT 2

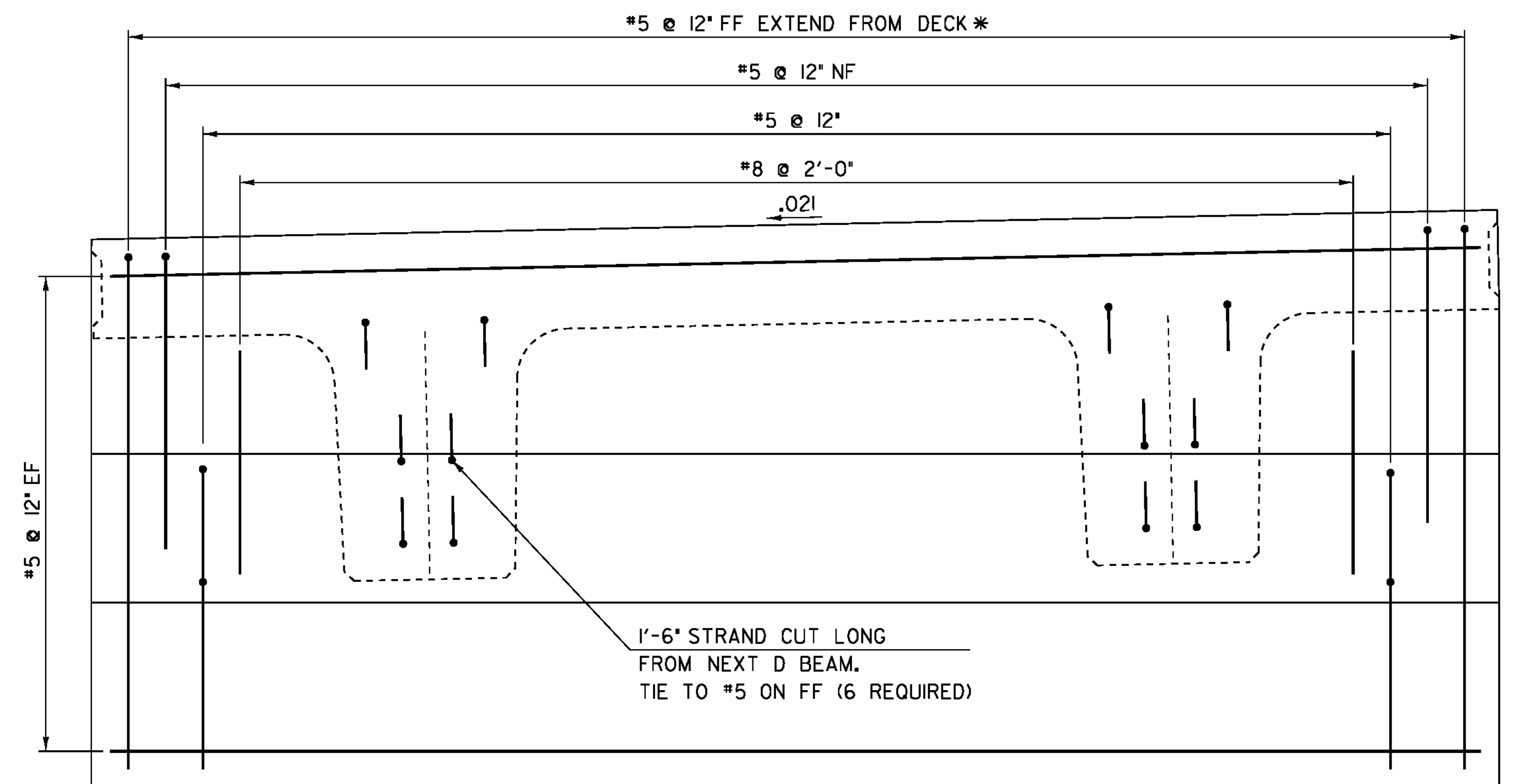
SCALE: $\frac{3}{4}$ " = 1'-0"

* 12 ADDITIONAL BARS SHALL BE USED AT THE JOINT LOCATIONS. PAYMENT SHALL BE INCIDENTAL TO ITEM 900.640 SPECIAL PROVISION (PRESTRESSED CONCRETE, NEXT D BEAMS)(NEXT 28 D)



PRECAST CONCRETE CURTAIN WALL REINFORCING TYPICAL

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



PRECAST CONCRETE CURTAIN WALL REINFORCING ELEV.

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

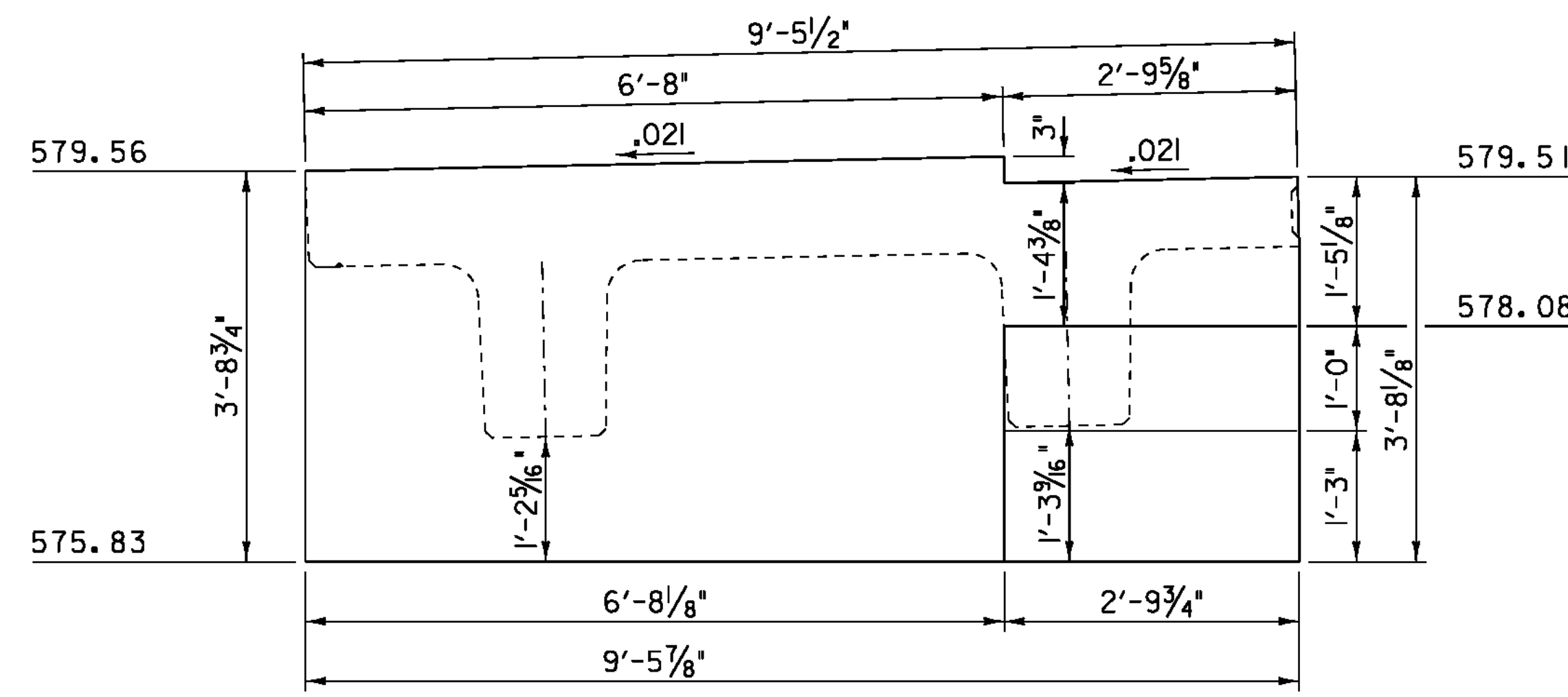
SCALE $\frac{3}{4}$ " = 1'-0"

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

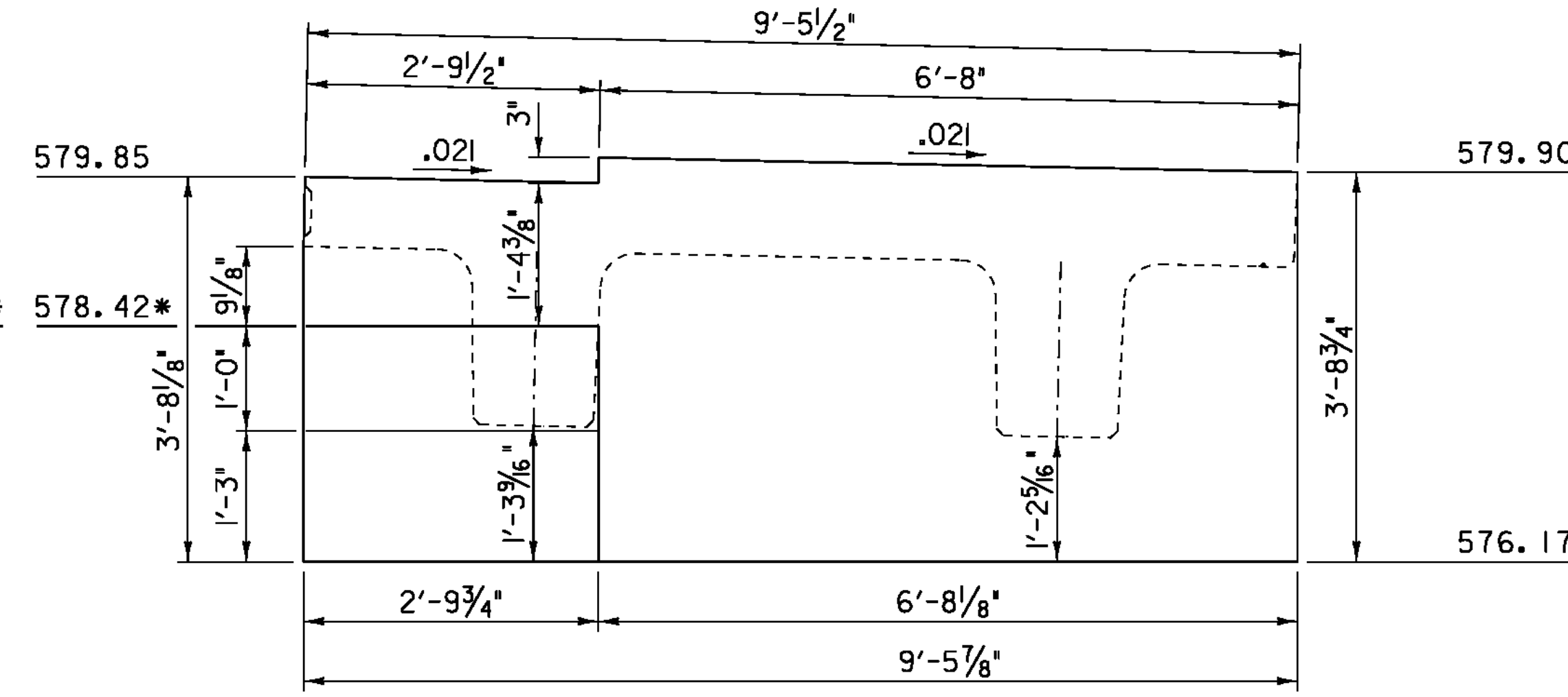
PROJECT NAME: CHESTER
PROJECT NUMBER: BRF 025-1(28)

FILE NAME: 84e061/Str/sub.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: R.S.YOUNG
BRIDGE 8 BRIDGE END DETAILS

PLOT DATE: 20-SEP-2010
DRAWN BY: M.FESSEL
CHECKED BY: R.S.YOUNG
SHEET 30 OF 124



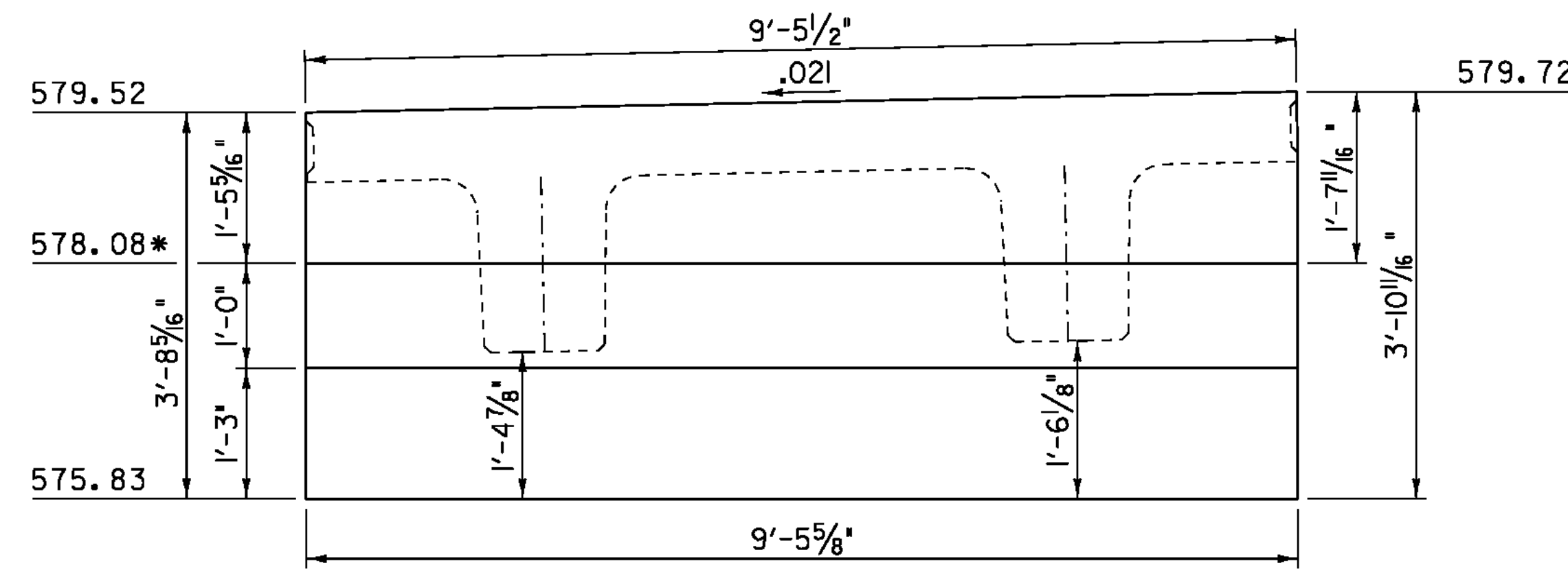
ABUTMENT #1, UNIT 1



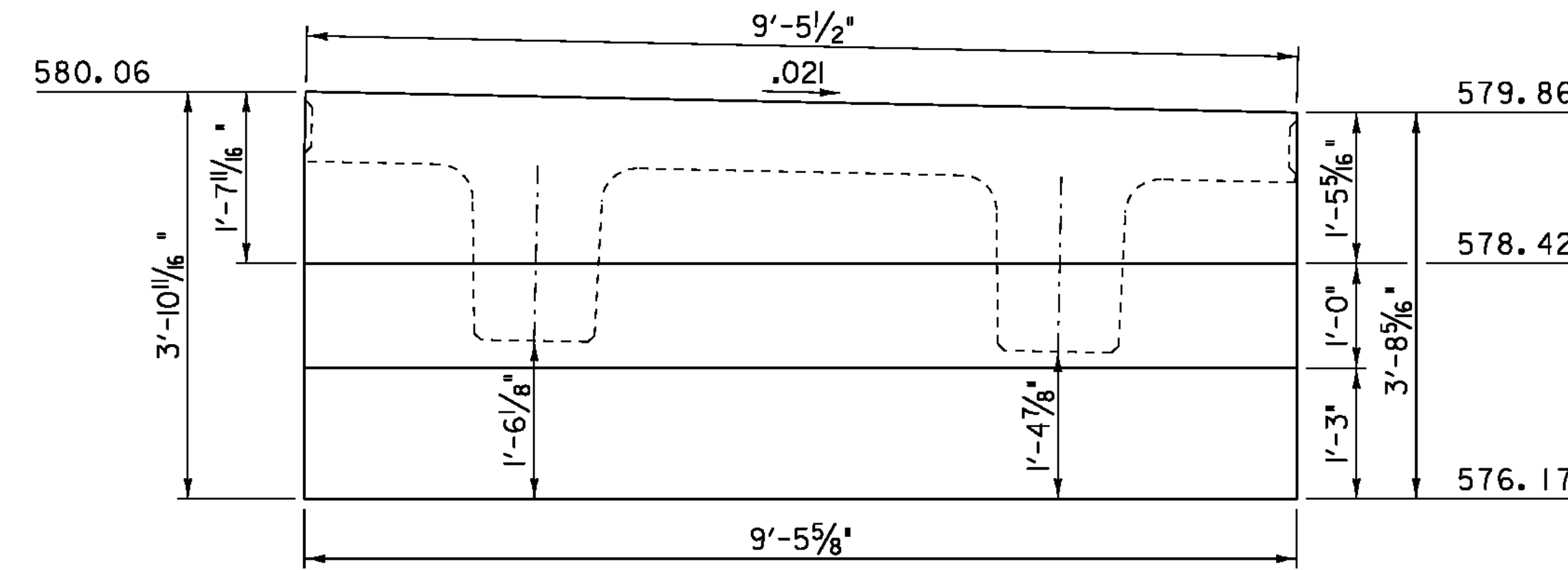
ABUTMENT #2, UNIT 1

* APPROACH SLAB SEAT ELEVATIONS

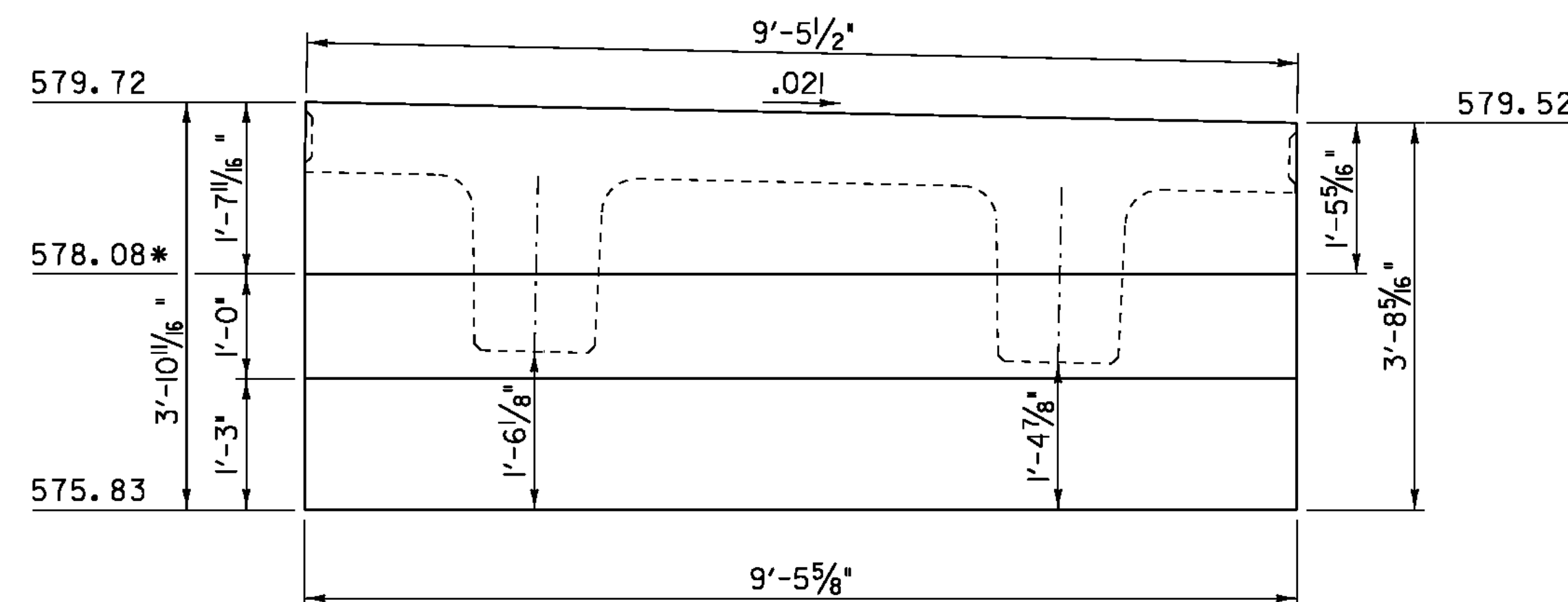
NOTE:
SEAT ELEVATIONS MAY BE ADJUSTED WHEN THE FINAL APPROACH SLAB DIMENSIONS AND CONNECTION DETAILS HAVE BEEN DETERMINED. SEE NOTE 2 SHEET 37.



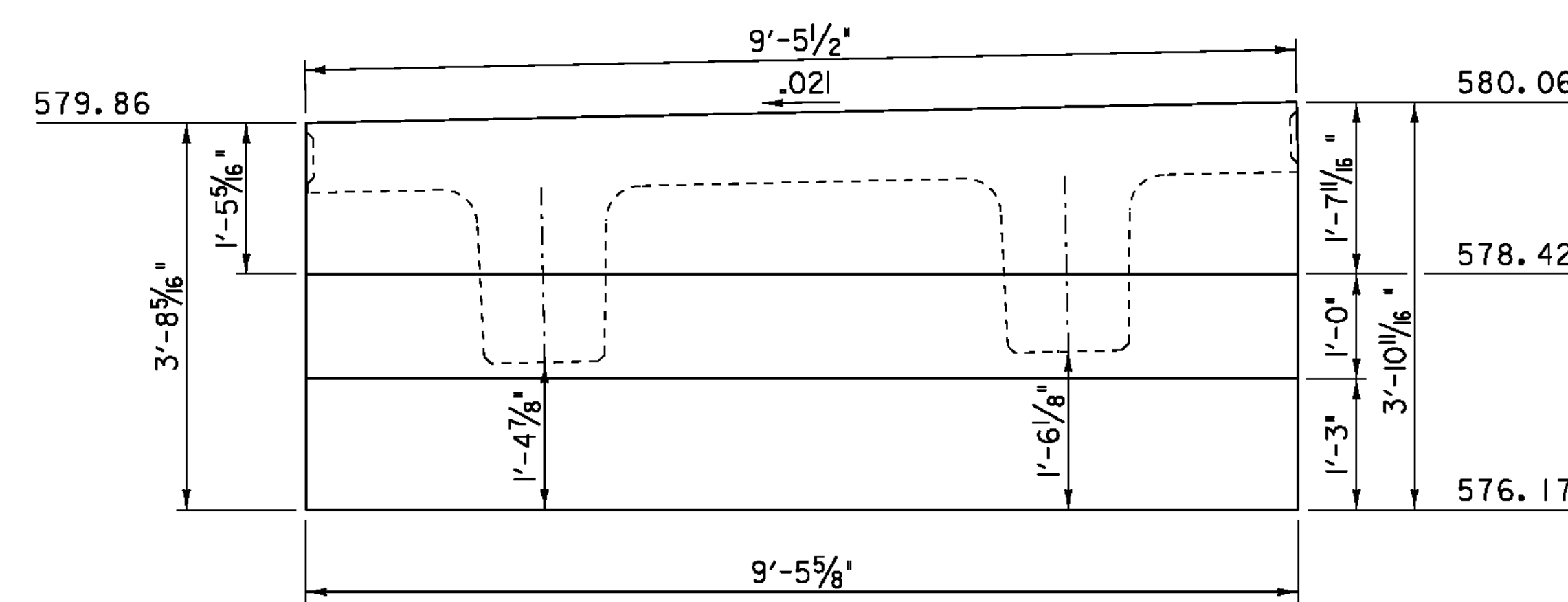
ABUTMENT #1, UNIT 2



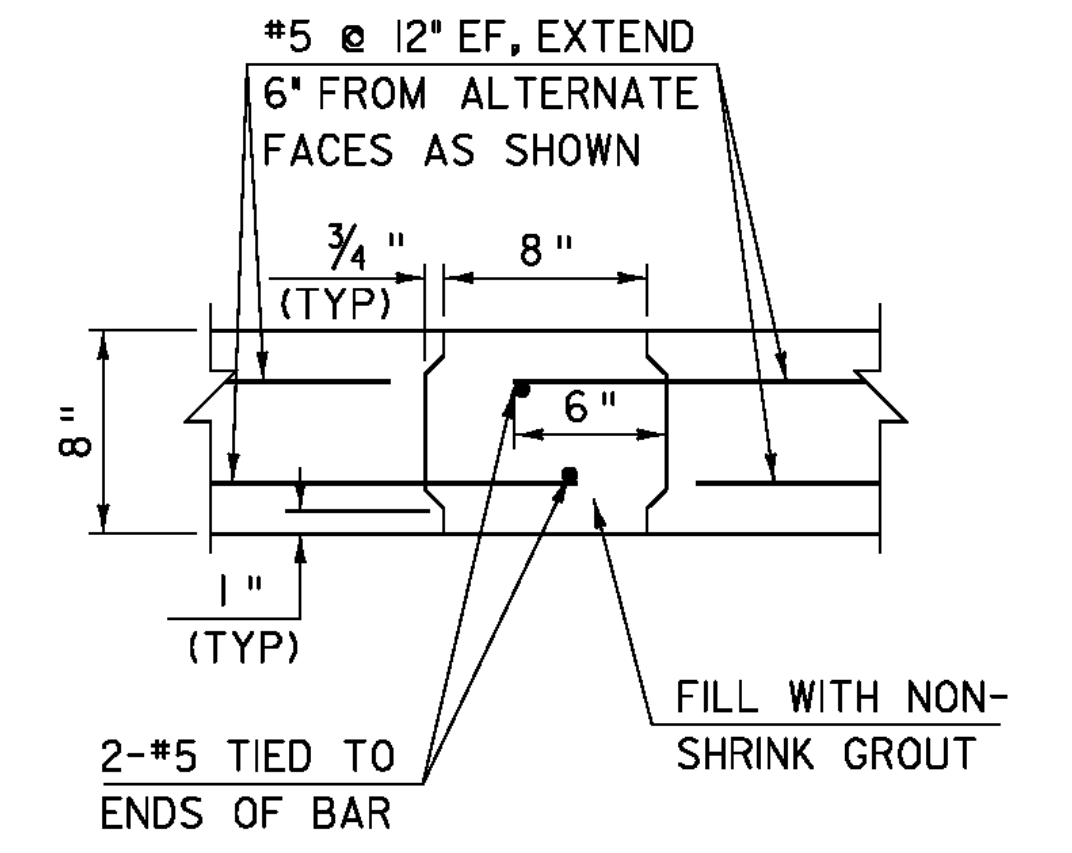
ABUTMENT #2, UNIT 2



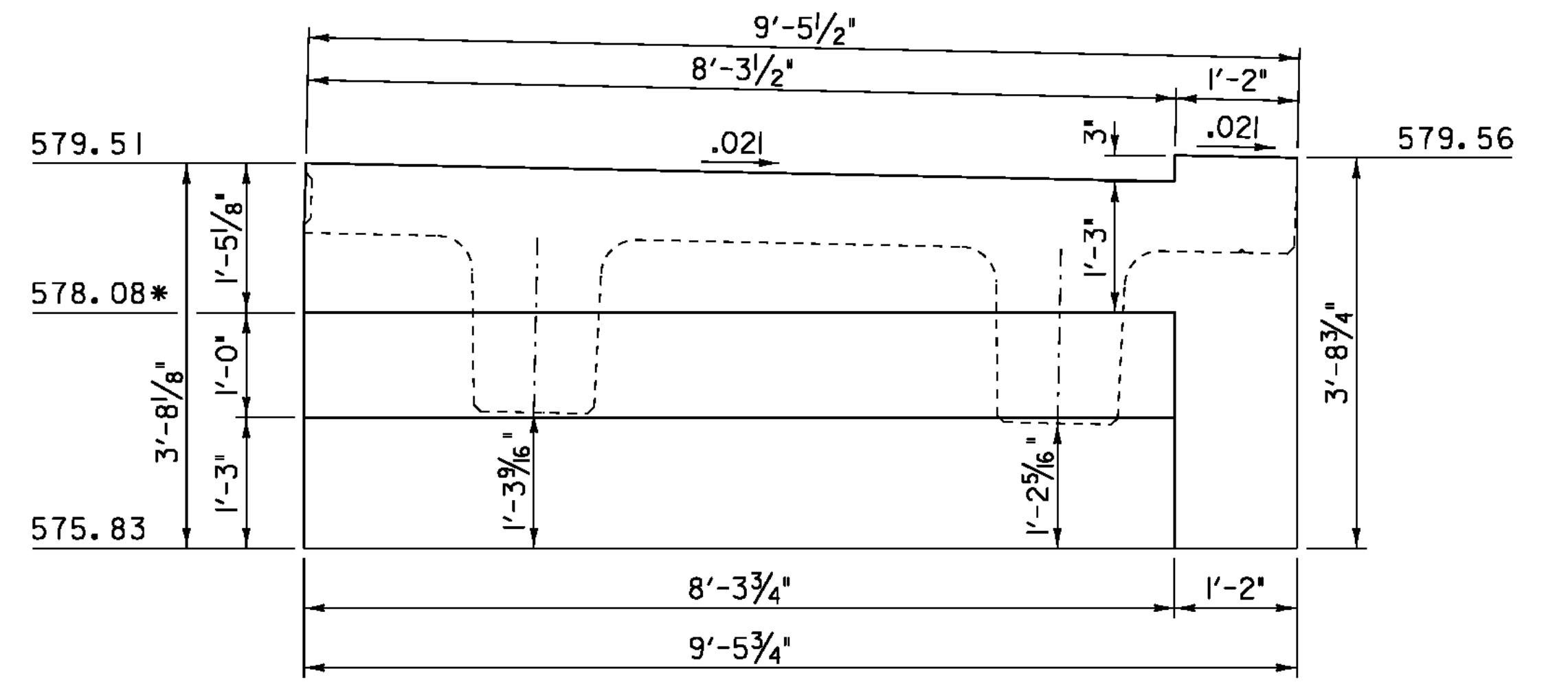
ABUTMENT #1, UNIT 3



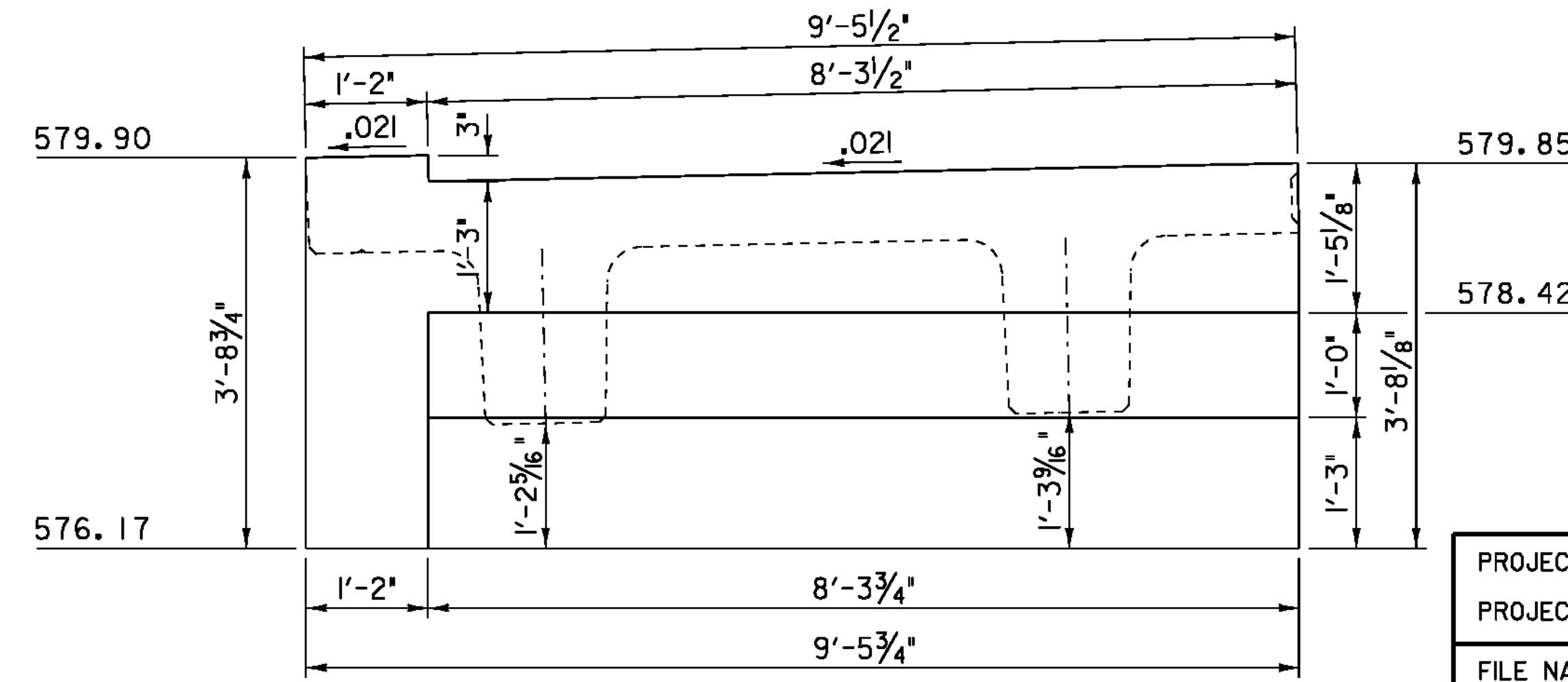
ABUTMENT #2, UNIT 3



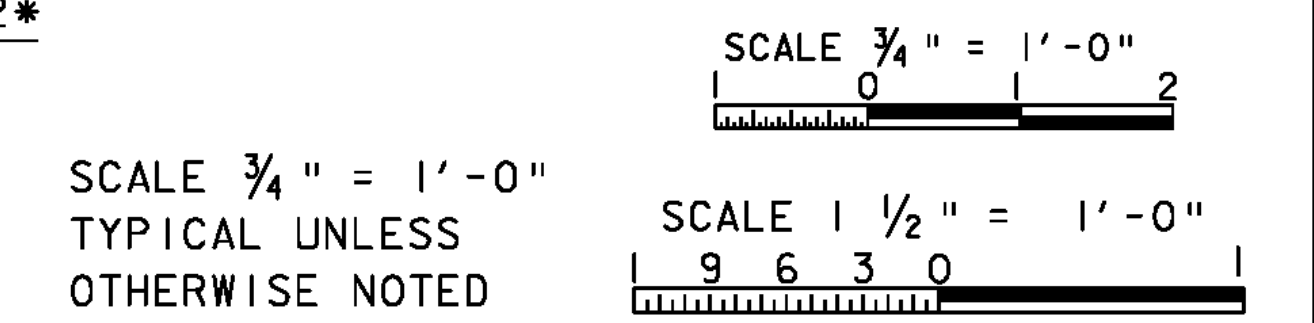
CURTAIN WALL CONNECTION DETAILS
SCALE: 1/2" = 1'-0"



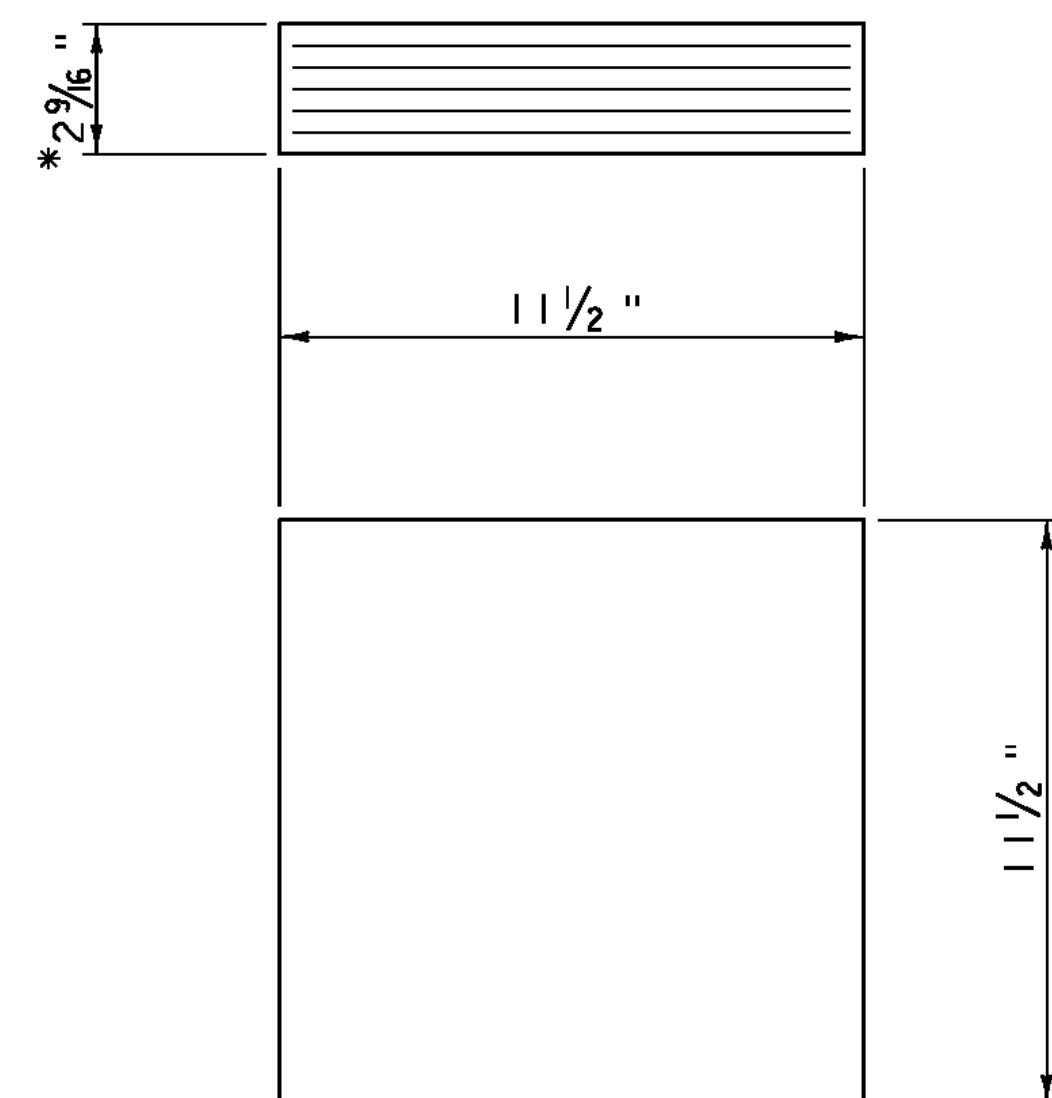
ABUTMENT #1, UNIT 4



ABUTMENT #2, UNIT 4



PROJECT NAME:	CHESTER	PLOT DATE:	21-SEP-2010
PROJECT NUMBER:	BRF 025-1(28)	DRAWN BY:	D.D.BEARD
FILE NAME:	84e061/Structures/sub.dgn	CHECKED BY:	R.S.YOUNG
PROJECT LEADER:	C.P.WILLIAMS	SHEET	31 OF 124
DESIGNED BY:	H.I. SALLS		
BRIDGE 8 CURTAIN WALL DETAILS			



ELASTOMERIC BEARING DETAIL

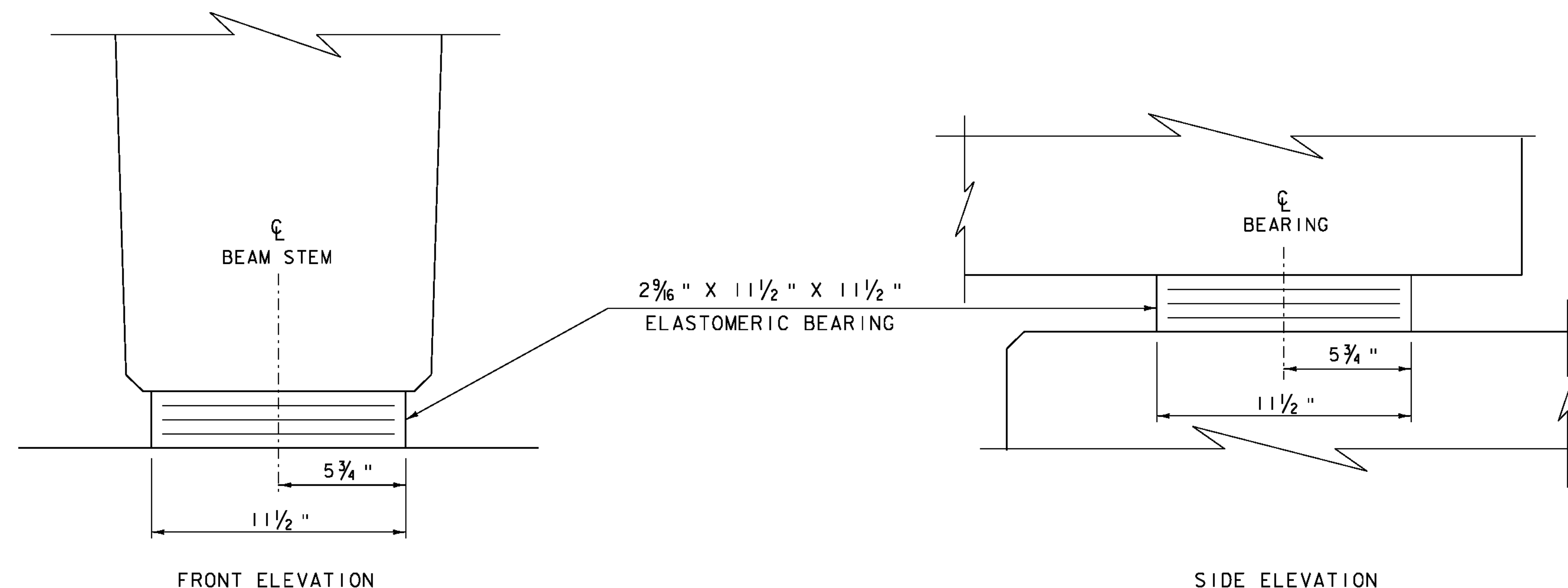
- * 2 - 1/8 " EXTERIOR LAYERS OF ELASTOMER
- 4 - 1/2 " INTERIOR LAYERS OF ELASTOMER
- 5 - 1/16 " STEEL REINFORCING PLATES

SCALE 3" = 1'-0"

Design Load (kip)	Service Limit State	Vertical	Max	91.7
			Min	41.0
			Permanent	41.8
	Strength Limit State		Transverse	----
			Longitudinal	----
Translation (in)	Service Limit State	Irreversible	Transverse	0
			Longitudinal	1/16
			Reversible	3/16
	Strength Limit State		Transverse	----
			Longitudinal	----
Rotation (rad)	Service Limit State	Irreversible	Transverse	0.000
			Longitudinal	0.033
			Reversible	0.000
	Strength Limit State		Transverse	0.000
			Longitudinal	0.007

BEARING NOTES

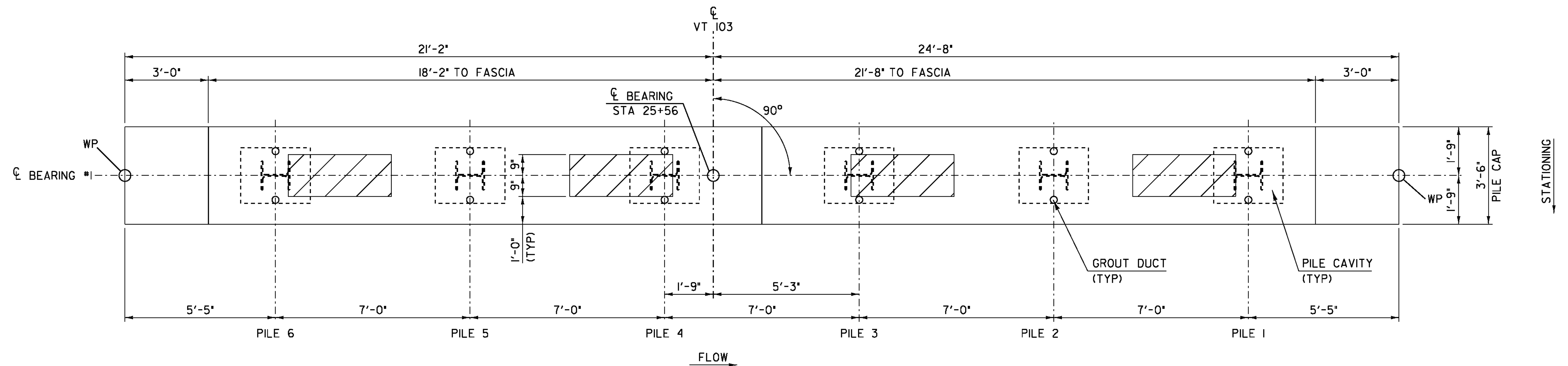
1. BEARINGS SHALL CONFORM TO THE APPLICABLE SUBSECTIONS OF STANDARD SPECIFICATIONS SECTIONS 531 AND 731.
2. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMER SHALL BE STEEL AASHTO M270M/M270 GRADE 36. ALL INTERNAL STEEL PLATES SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST AND MILL SCALE. THE PLATES SHALL BE FREE OF SHARP EDGES AND BURRS.
3. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM 1/8 " EDGE SEAL OF ELASTOMER INTEGRAL WITH BEARING OVER ALL INTERNAL PLATES.
4. THE ELASTOMER WAS DESIGNED WITH A SHEAR MODULUS OF 100 PSI +/- 15%
5. THE ELASTOMER SHALL MEET THE REQUIREMENTS OF LOW TEMPERATURE ZONE D, GRADE 4.
6. THE CONCRETE UNDER THE BEARING DEVICE SHALL BE LEVEL.
7. ALL DESIGNS DONE FOR THE BEARINGS SHALL BE PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 4TH EDITION AND ITS LATEST REVISIONS.
8. ALTERNATE CONFIGURATIONS FOR BEARINGS MAY BE SUBMITTED FOR APPROVAL. ANY ALTERNATE SUBMITTED SHALL BE DESIGNED AND CERTIFIED TO MEET THE DESIGN LOADS AND CRITERIA SHOWN ON THE PLANS.
9. BRIDGE SEAT ELEVATIONS MAY BE REVISED TO ACCOMMODATE AN ALTERNATIVE CONFIGURATION.
10. THE CONTRACTOR IS ADVISED TO HAVE A MINIMUM OF 16 - 1/4 "x12 1/2 "x12 1/2 " GALVANIZED STEEL SHIMS AVAILABLE FOR USE FOR ELEVATION ADJUSTMENTS UPON THE SETTING OF THE SUPERSTRUCTURE UNITS. THE SHIMS SHALL BE FABRICATED ACCORDING TO SECTION 531 AND SHALL BE INCLUDED UNDER ITEM 531.11,"BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD".



ELASTOMERIC BEARING DETAILS

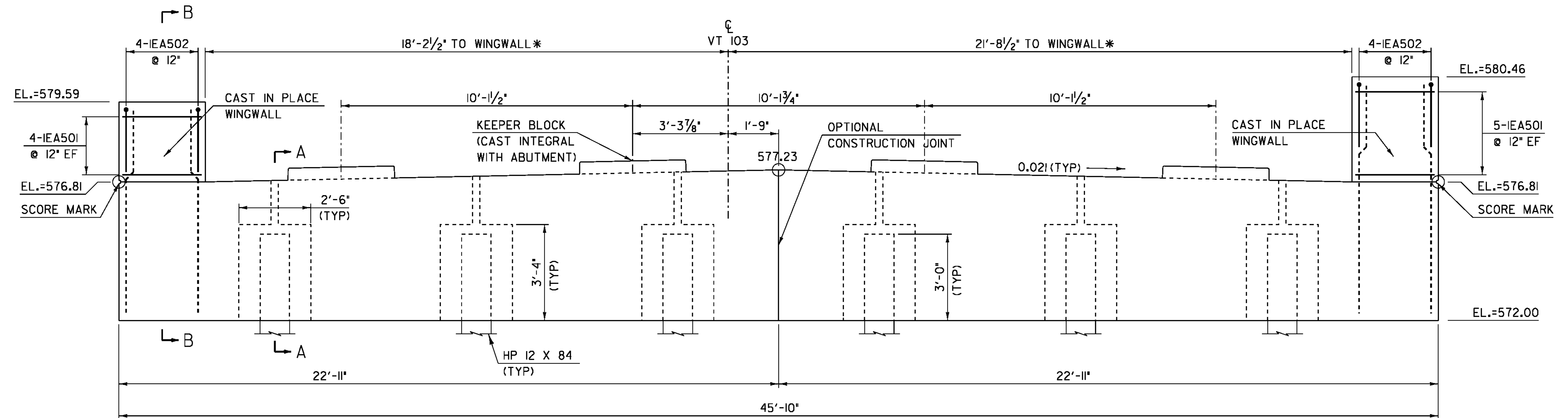
SCALE 3" = 1'-0"

PROJECT NAME: CHESTER	
PROJECT NUMBER: BRF 025-1(28)	
FILE NAME: 84e061/Str/84e061details.dgn	PLOT DATE: 20-SEP-2010
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S.YOUNG
BRIDGE 8 ELASTOMERIC BEARING DETAILS	SHEET 32 OF 124



ABUTMENT I PLAN VIEW

SCALE 1/2" = 1'-0"



ABUTMENT I ELEVATION VIEW

SCALE 1/2" = 1'-0"

SEE SHEET 34
FOR SECTIONS 'A-A' & 'B-B'

* PROVIDE 1/2" PREFORMED JOINT FILLER
BETWEEN FASCIA AND WINGWALLS

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.

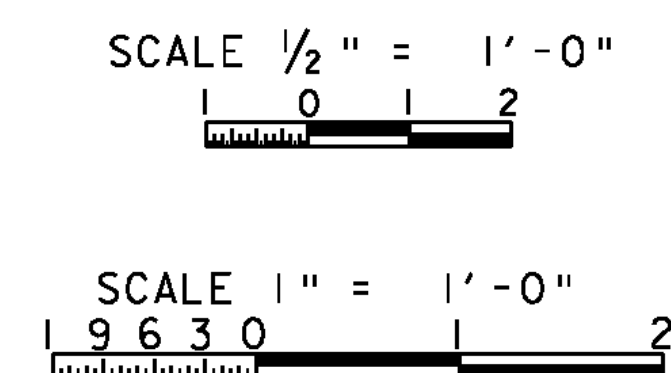
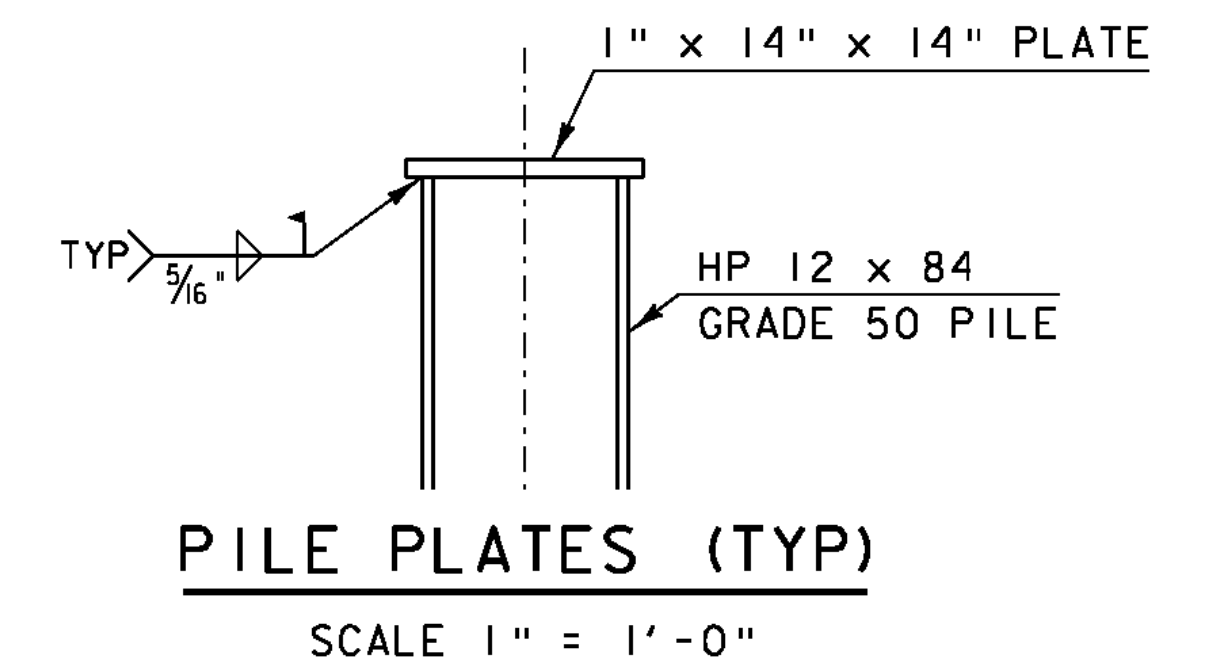
SCALE 1/2" = 1'-0"
0 1 2

PROJECT NAME: CHESTER
PROJECT NUMBER: BRF 025-1(28)

FILE NAME: 84e061/str/sub.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: R.S.YOUNG
BRIDGE 8 ABUTMENT I DETAILS

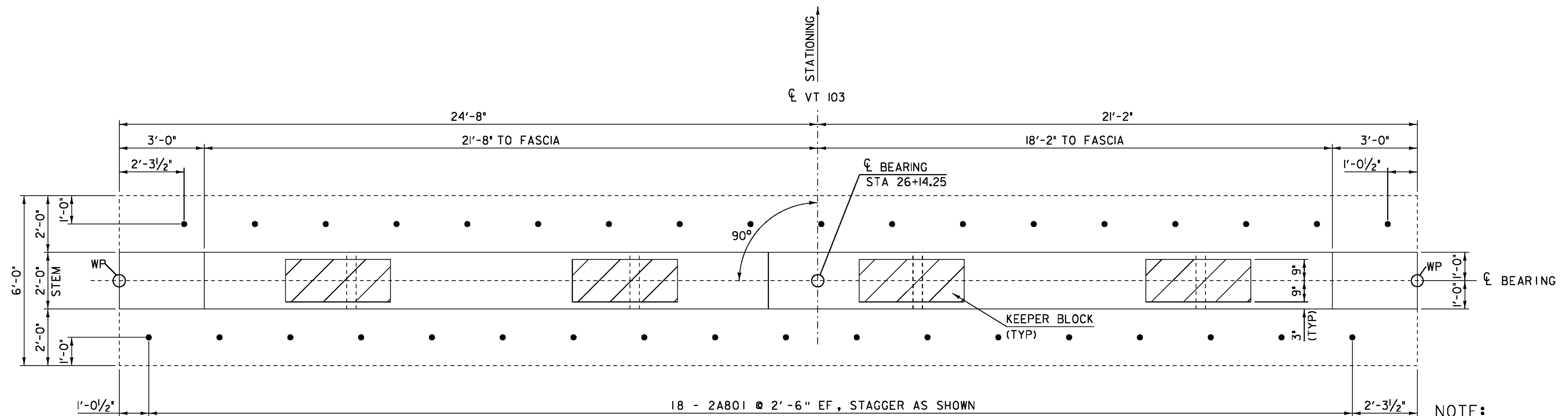
PLOT DATE: 20-SEP-2010
DRAWN BY: M.FESSEL
CHECKED BY: R.S.YOUNG
SHEET 33 OF 124

REINFORCING FOR THE PRECAST ABUTMENTS SHALL BE EPOXY COATED ACCORDING TO SUBSECTION 713.07



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: CHESTER	
PROJECT NUMBER: BRF 025-1(28)	
FILE NAME: 84e061/str/sub.dgn	PLOT DATE: 20-SEP-2010
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S.YOUNG
BRIDGE 8 ABUTMENT 1 SECTIONS	SHEET 34 OF 124

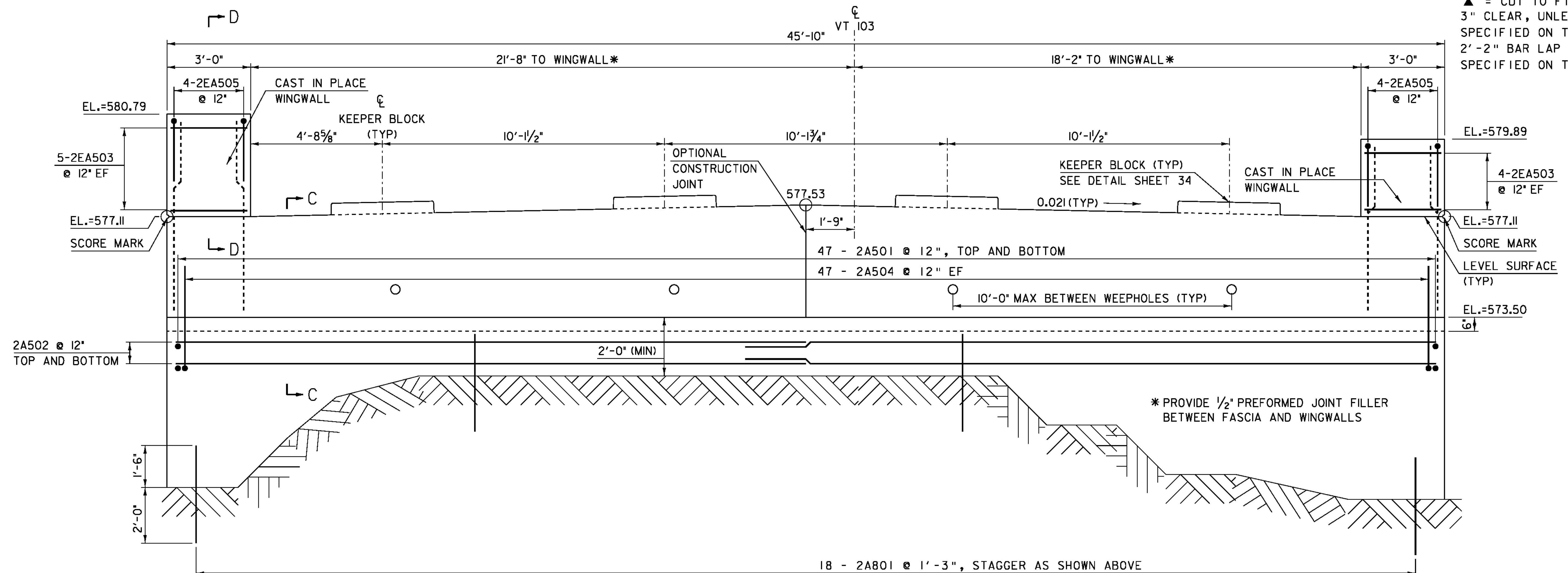


ABUTMENT 2 PLAN VIEW

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.



ABUTMENT 2 ELEVATION VIEW

SCALE 1/2" = 1'-0"

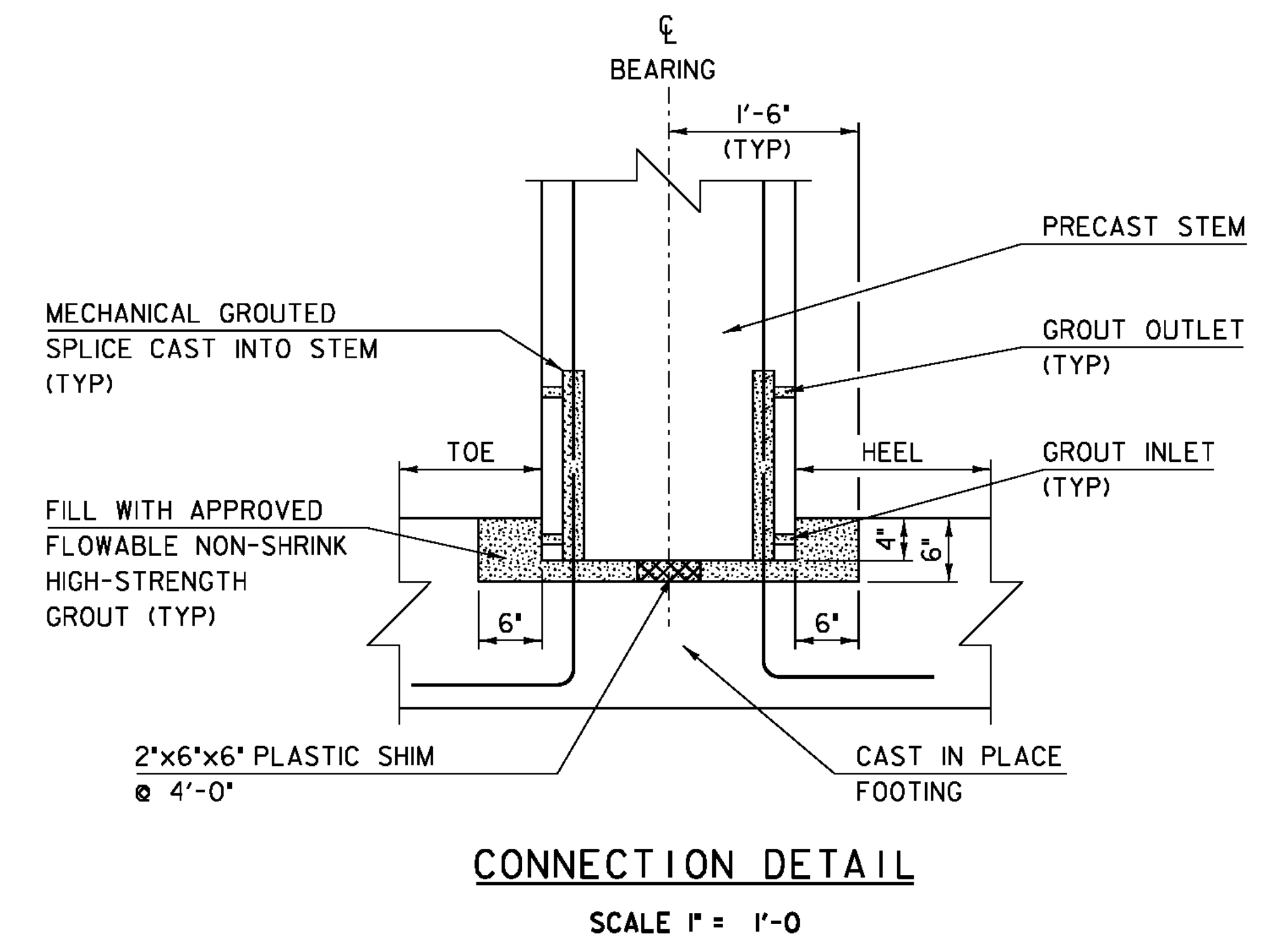
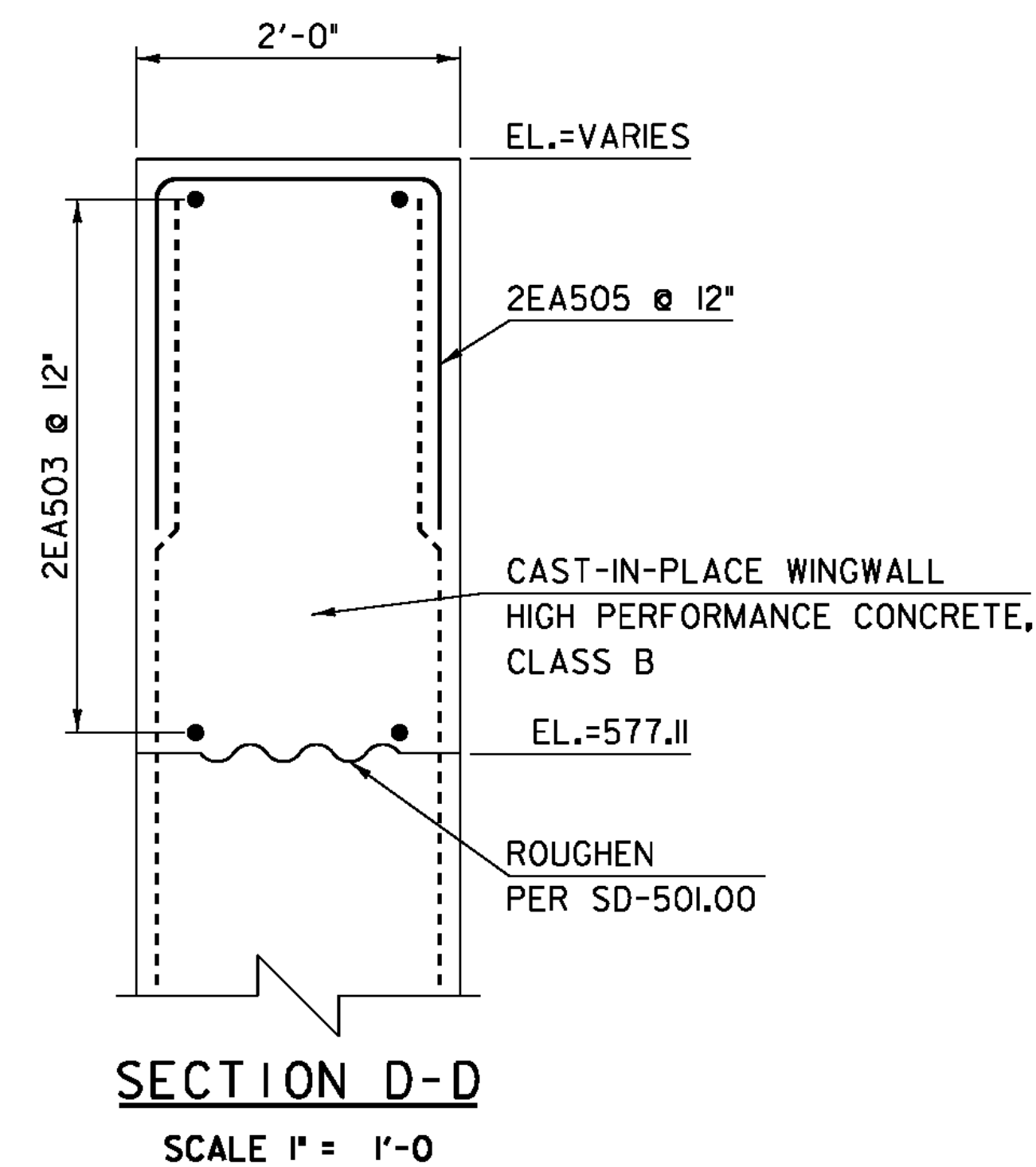
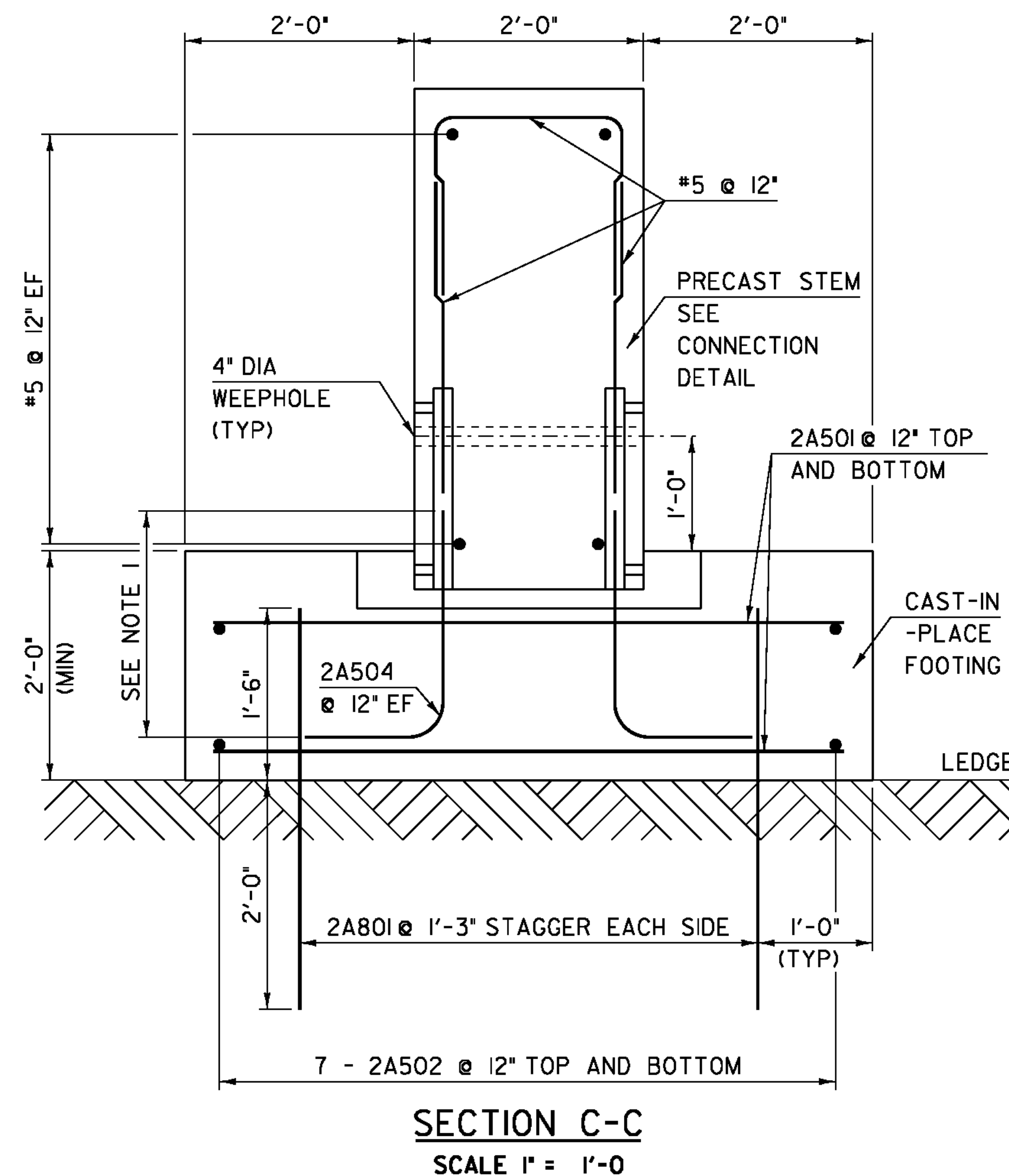
SEE SHEET 36
FOR SECTIONS 'C-C' & 'D-D'

SCALE 1/2" = 1'-0"

PROJECT NAME: CHESTER
PROJECT NUMBER: BRF 025-1(28)

FILE NAME: 84e061/Str/sub.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: R.S.YOUNG
BRIDGE 8 ABUTMENT 2 DETAILS

PLOT DATE: 20-SEP-2010
DRAWN BY: M.FESSEL
CHECKED BY: R.S.YOUNG
SHEET 35 OF 124

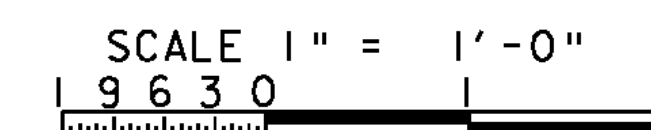


NOTES:

1. LEG LENGTH SHALL MEET THE REQUIREMENTS OF THE MECHANICAL GROUTED CONNECTION, 3'-0" LEG IS PROVIDED FOR ESTIMATING PURPOSES.
2. DURING FABRICATION OF THE PRECAST STEM A TEMPLATE SHALL BE CREATED BY THE STEM FABRICATOR TO LOCATE THE MECHANICAL GROUT CONNECTORS. THE TEMPLATE SHALL BE USED FOR FIELD PLACEMENT OF THE VERTICAL FOOTING REINFORCEMENT TO BE INCERTED INTO THE MECHANICAL GROUT CONNECTORS.
3. THE CONNECTION FROM THE PRECAST STEM TO THE FOOTING SHALL BE INCLUDED IN THE FABRICATION DRAWINGS. THE MECHANICAL GROUTED CONNECTION SHALL MEET THE REQUIREMENTS OF ASTM 1034 AND SHALL HAVE A YEILD STRENGTH OF 125% OF THE REINFORCING STEEL YIELD STRENGTH .
4. SEE GENERAL NOTES FOR ADDITIONAL FABRICATION, CONSTRUCTION,AND SEQUENCE NOTES.
5. REINFORCING FOR THE PRECAST STEM SHALL BE EPOXY COATED ACCORDING TO SUBSECTION 713.07.
6. THE NUMBER OF DOWELS TO BE DRILLED AND GROUTED WAS DETERMINED ASSUMING THE BEDROCK TO BE SMOOTH AND AT AN INCLINE OF 45 DEGREES. THE NUMBER OF DOWELS MAY BE REDUCED WITH APPROVAL OF THE PROJECT MANAGER ONCE BEDROCK IS EXPOSED AND THE ACTUAL SURFACE ROUGHNESS AND PROFILE IS DETERMINED.

NOTE:

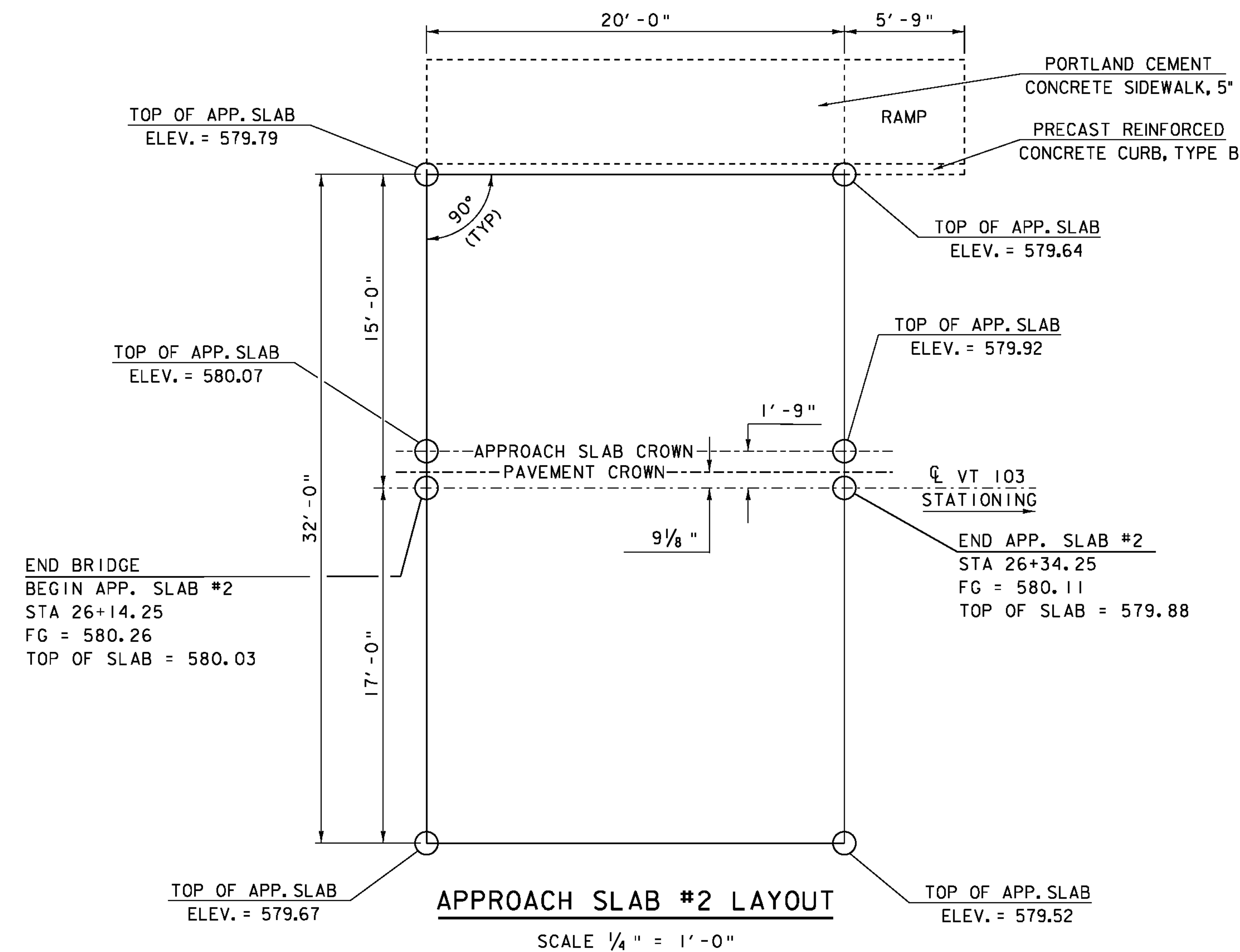
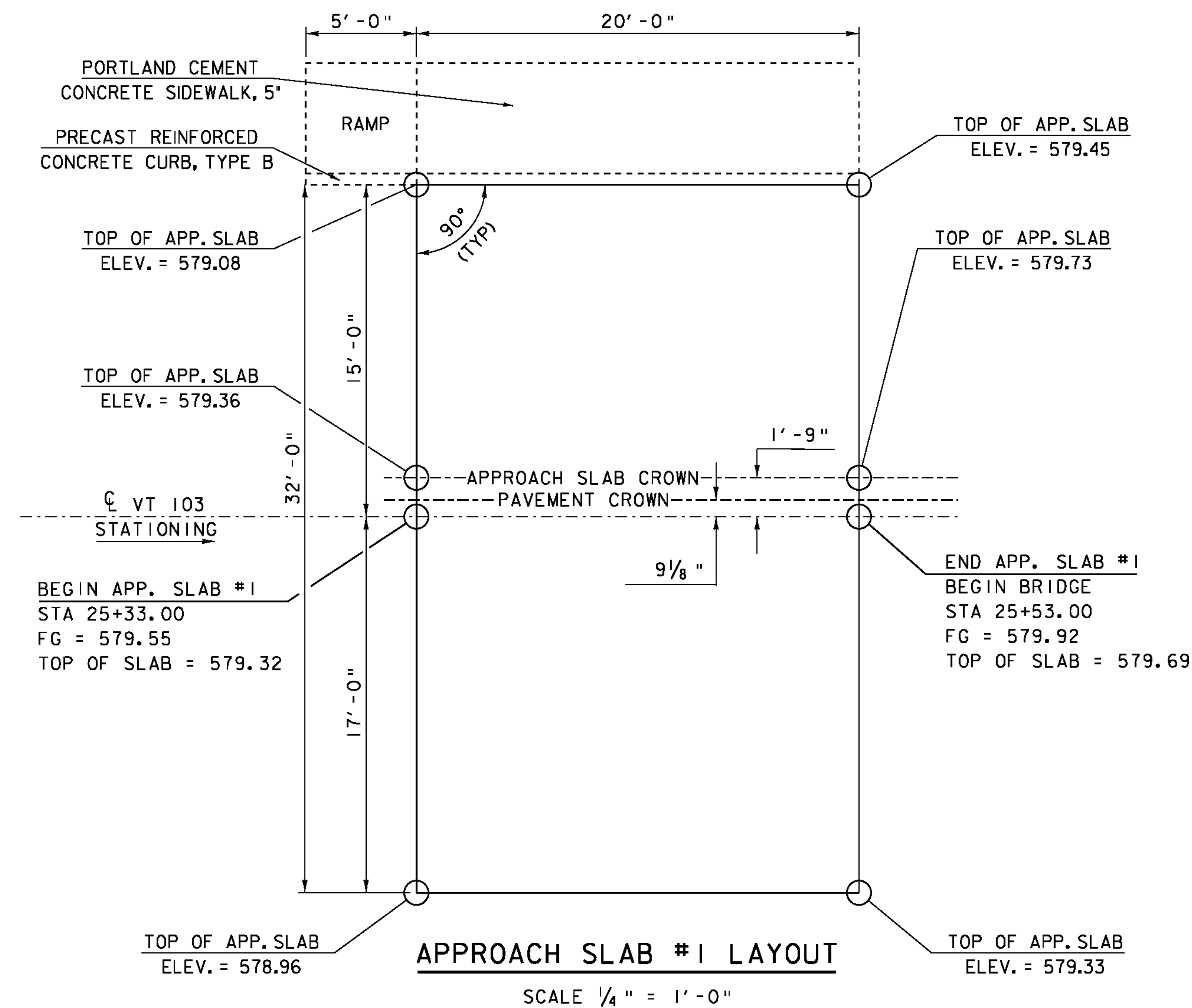
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.



PROJECT NAME: CHESTER
PROJECT NUMBER: BRF 025-1(28)

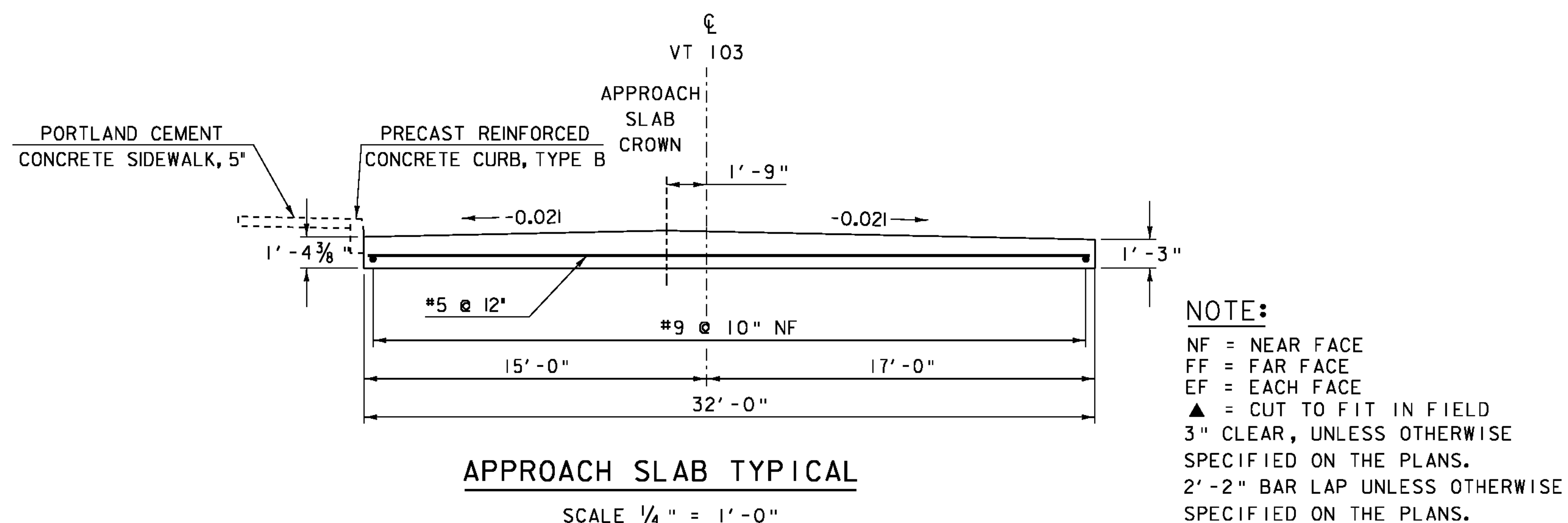
FILE NAME: 84e061/str/sub.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: R.S.YOUNG
BRIDGE 8 ABUTMENT 2 SECTIONS

PLOT DATE: 20-SEP-2010
DRAWN BY: M.FESSEL
CHECKED BY: R.S.YOUNG
SHEET 36 OF 124



NOTES:

1. THE APPROACH SLABS SHALL BE THE SUPER-SLAB SYSTEM FOR FORT MILLER.
2. THE CONNECTION DETAIL TO THE APPROACH SLAB BRACKET SHALL BE COORDINATED BETWEEN PRECAST FABRICATORS. THE DETAILS SHALL BE SHOWN ON THE FABRICATION DRAWINGS.
3. THE LOCATION OF CONSTRUCTION JOINTS NEEDED FOR SHIPMENT OF THE APPROACH SLABS SHALL BE DETERMINED BY THE FABRICATOR. THREE LONGITUDINAL JOINTS ARE ALLOWED AND SHALL BE DESIGNED TO PROVIDE ADAQUATE SHEAR RESISTANCE. THE CONNECTION DETAILS SHALL BE SHOWN ON THE FABRICATION DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING UNIFORM CONTACT BETWEEN THE APPROACH SLABS AND THE SUBBASE MATERIAL TO THE SATISFACTION OF THE ENGINEER. THE DRAWINGS SHALL INDICATE THE MEANS AND METHODS NECESSARY TO INSTALL THE APPROACH SLABS TO THE ELEVATIONS SPECIFIED.
5. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING APPROACH SLABS TO RESIST LIFTING STRESSES. INSTALLATION SEQUENCE AND LIFTING PLAN SHALL BE SHOWN ON THE CONSTRUCTION DRAWINGS. THE REINFORCING STEEL IN THE FINAL CONDITION SHALL BE SHOWM ON THE CONSTRUCTION DRAWING, INCLUDING THE REINFORCING STEEL FOR PICK POINTS AND TO ACCOMIDATE SHIPPING.
6. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
7. PAYMENT FOR THE APPROACH SLABS, ALL LABOR, TOOLS, AND MATERIALS NEEDED FOR PLACEMENT SHALL BE INCLUDED UNDER ITEM 900.620 "SPECIAL PROVISION (PRECAST APPROACH SLAB, SUPER-SLAB) (BRIDGE 8)".

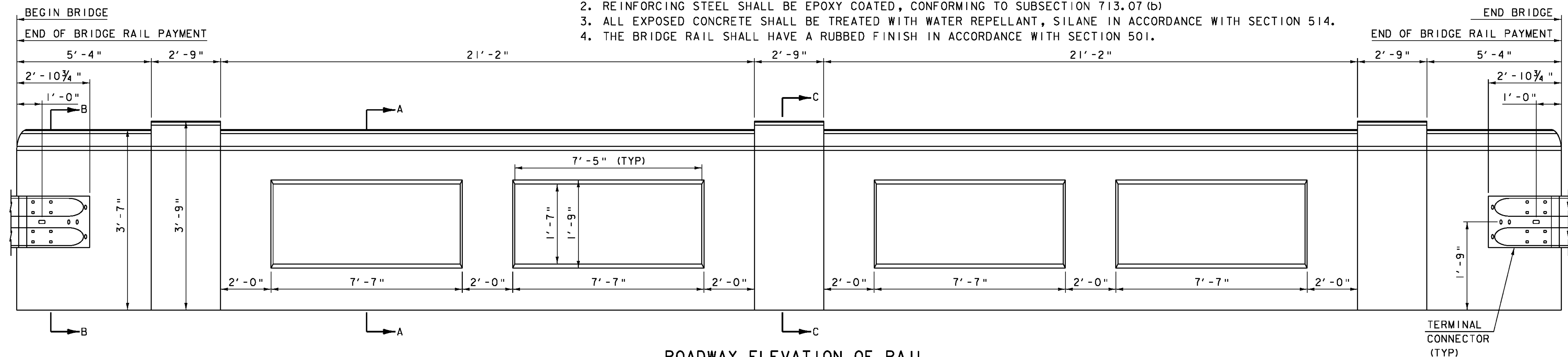


SCALE 1/4" = 1'-0"
1 0 2 4 6

PROJECT NAME: CHESTER
PROJECT NUMBER: BRF 025-1(28)

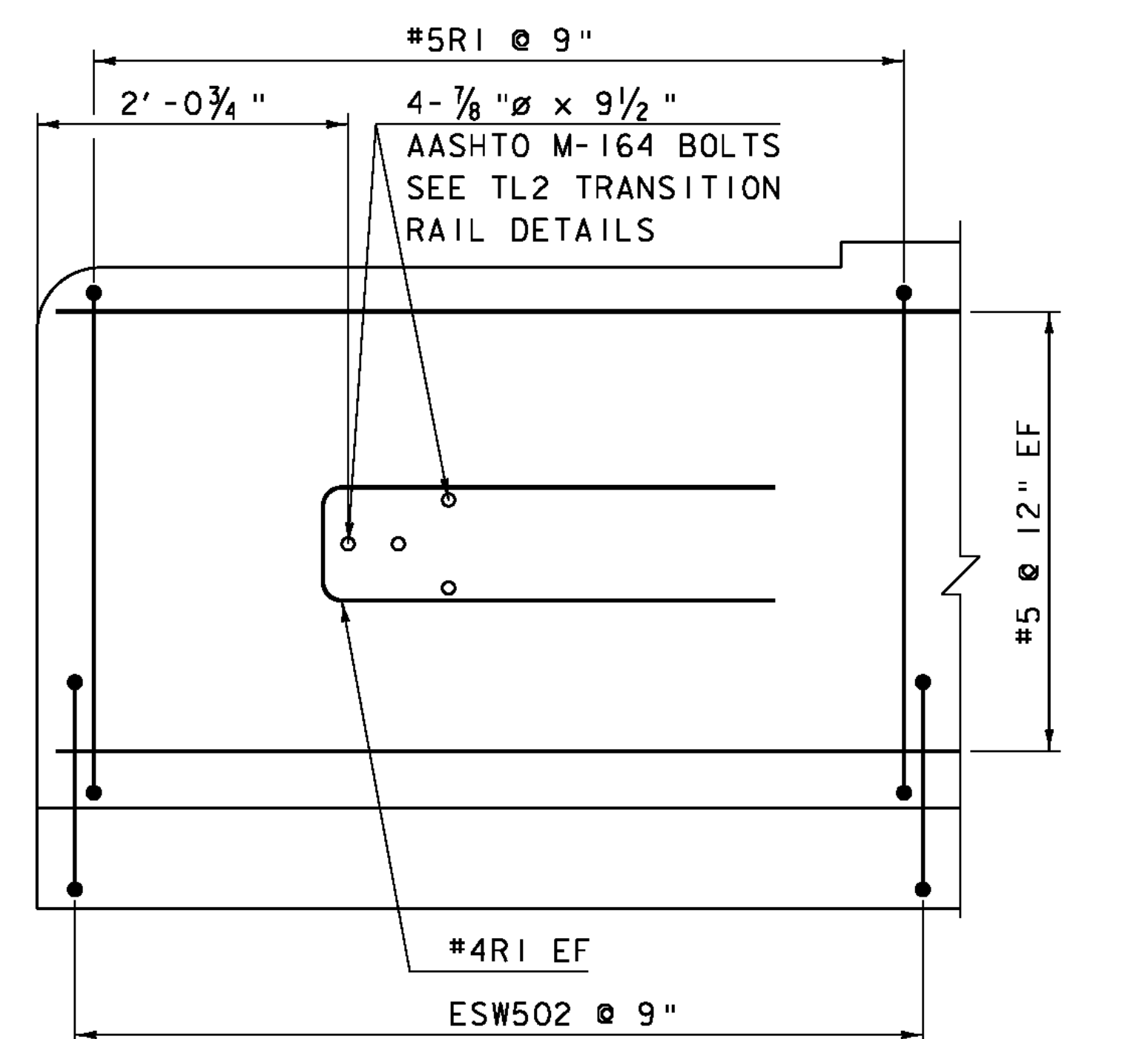
FILE NAME: 84e061\84e064slab.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: R.S.YOUNG
BRIDGE 8 PRECAST APPROACH SLAB DETAILS SHEET 37 OF 124
PLOT DATE: 20-SEP-2010
DRAWN BY: M.FESSEL
CHECKED BY: R.S.YOUNG

- NOTE: 1. BRIDGE RAIL SHALL BE PAID FOR UNDER ITEM 900.640 "SPECIAL PROVISION (BRIDGE RAILING, TEXAS)"
 2. REINFORCING STEEL SHALL BE EPOXY COATED, CONFORMING TO SUBSECTION 713.07 (b)
 3. ALL EXPOSED CONCRETE SHALL BE TREATED WITH WATER REPELLANT, SILANE IN ACCORDANCE WITH SECTION 514.
 4. THE BRIDGE RAIL SHALL HAVE A RUBBED FINISH IN ACCORDANCE WITH SECTION 501.



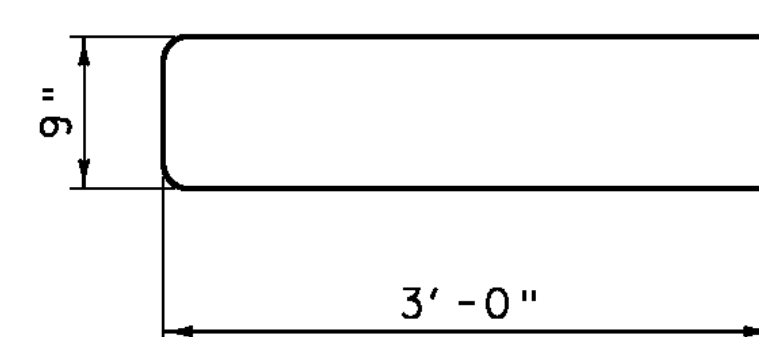
ROADWAY ELEVATION OF RAIL

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



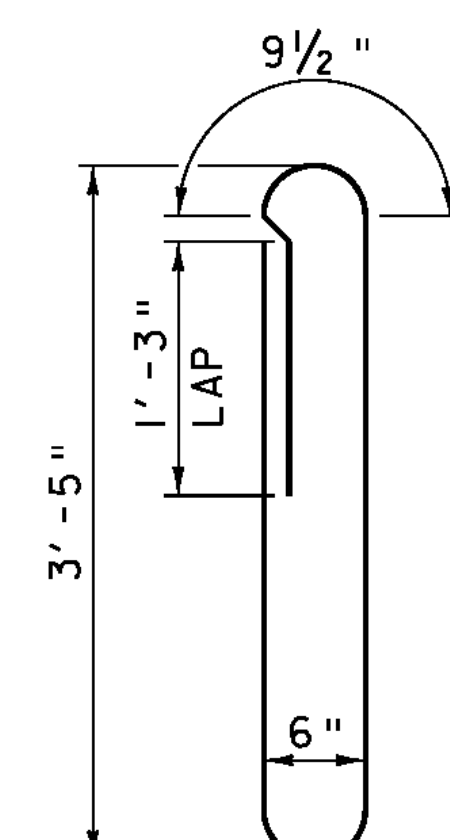
TYPICAL REINFORCING PLACEMENT

SCALE 1" = 1'-0"



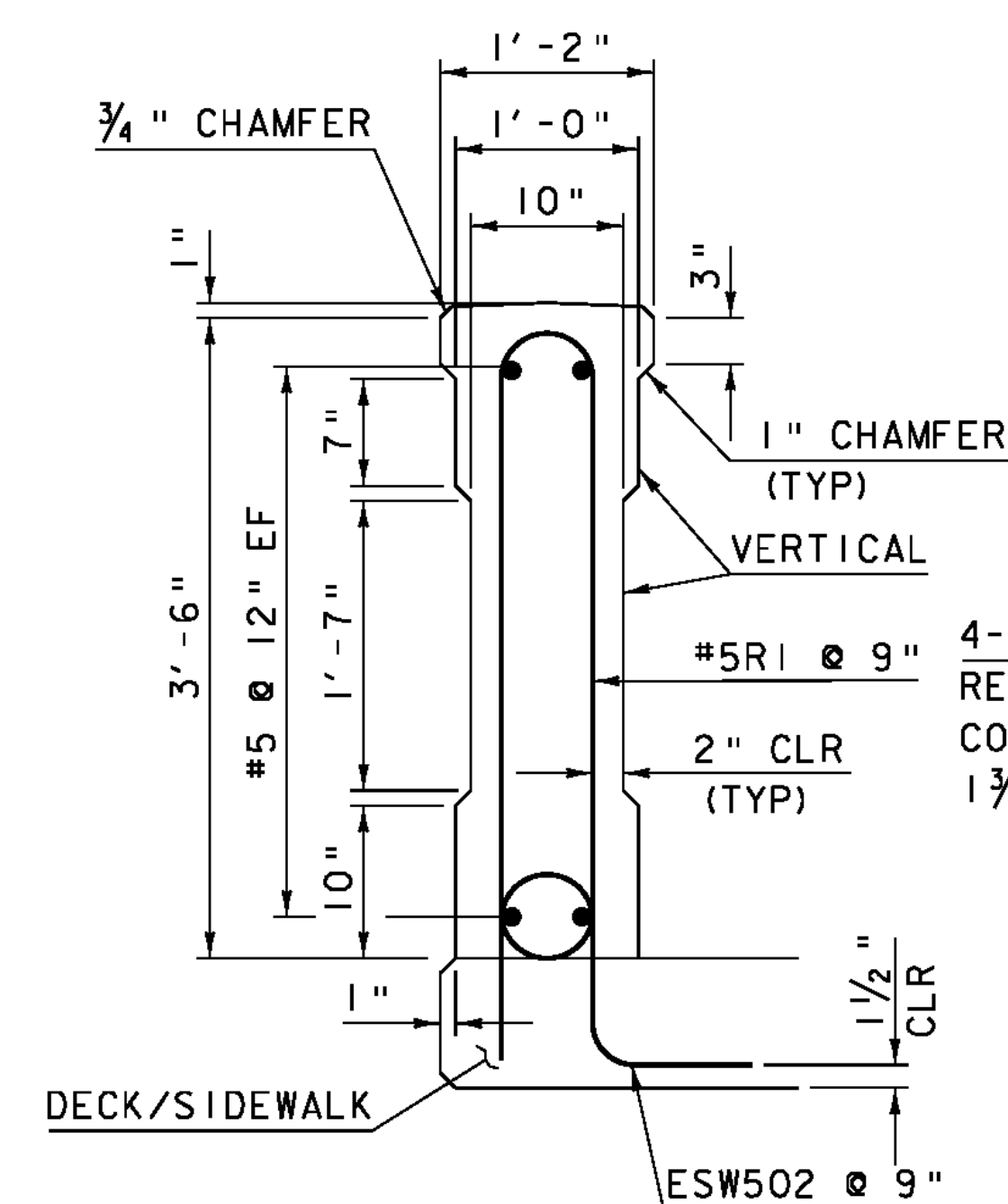
BAR #4RI

SCALE 1" = 1'-0"
 8 - REQUIRED



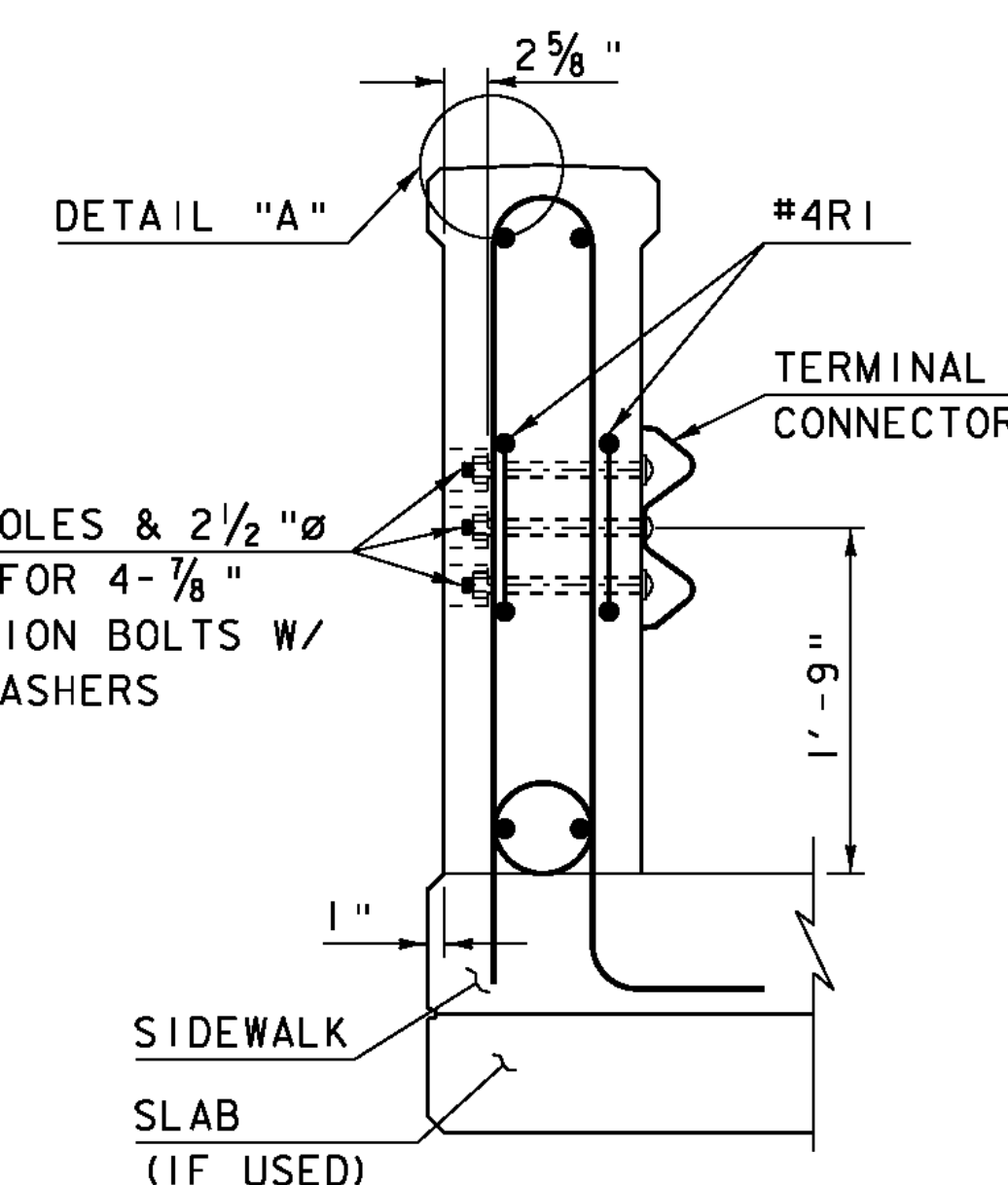
BAR #5RI

SCALE 1" = 1'-0"
 164 - REQUIRED



SECTION A-A

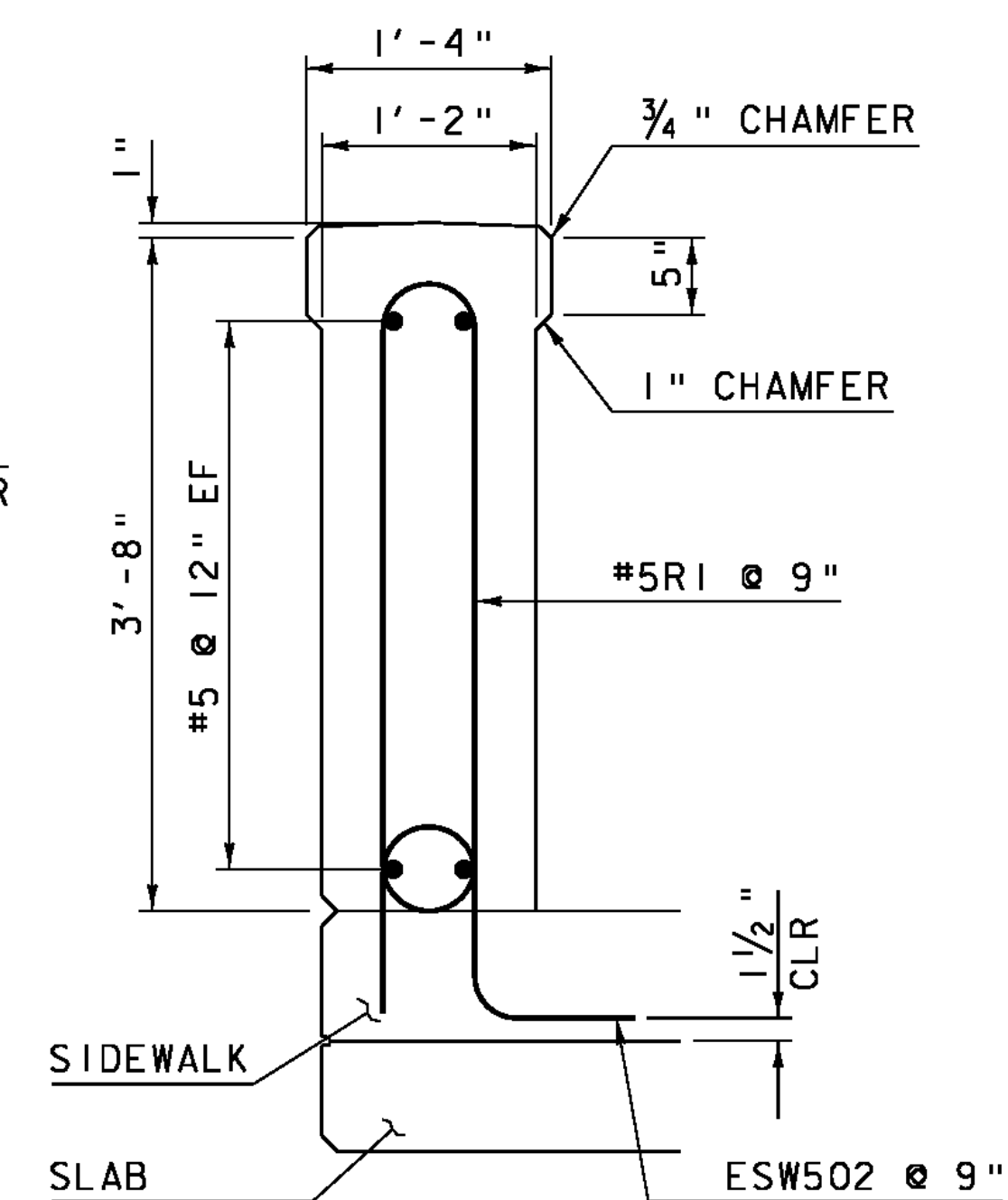
SCALE 1" = 1'-0"



SECTION B-B

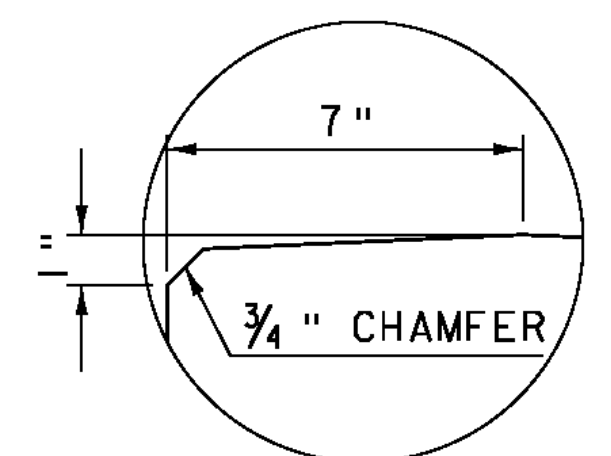
SCALE 1" = 1'-0"

HOLES AND RECESSES ARE TO BE FORMED OR CORED, PERCUSSION DRILLING IS NOT PERMITTED.



SECTION C-C

SCALE 1" = 1'-0"



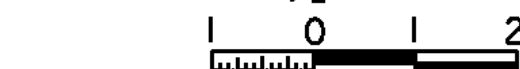
DETAIL "A"

SCALE 3" = 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.

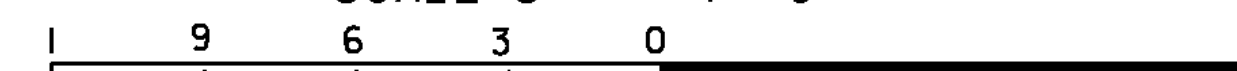
SCALE 1/2" = 1'-0"



SCALE 1" = 1'-0"



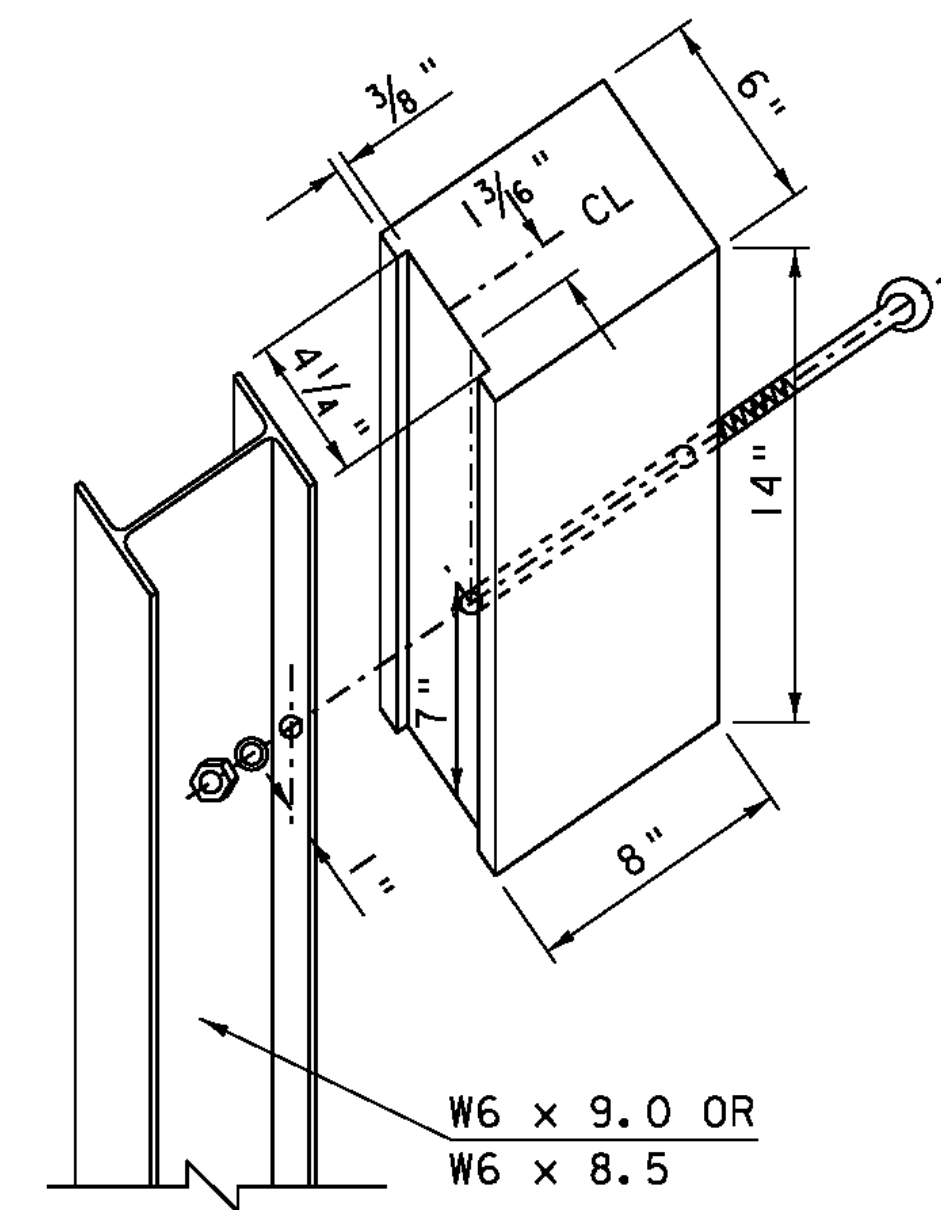
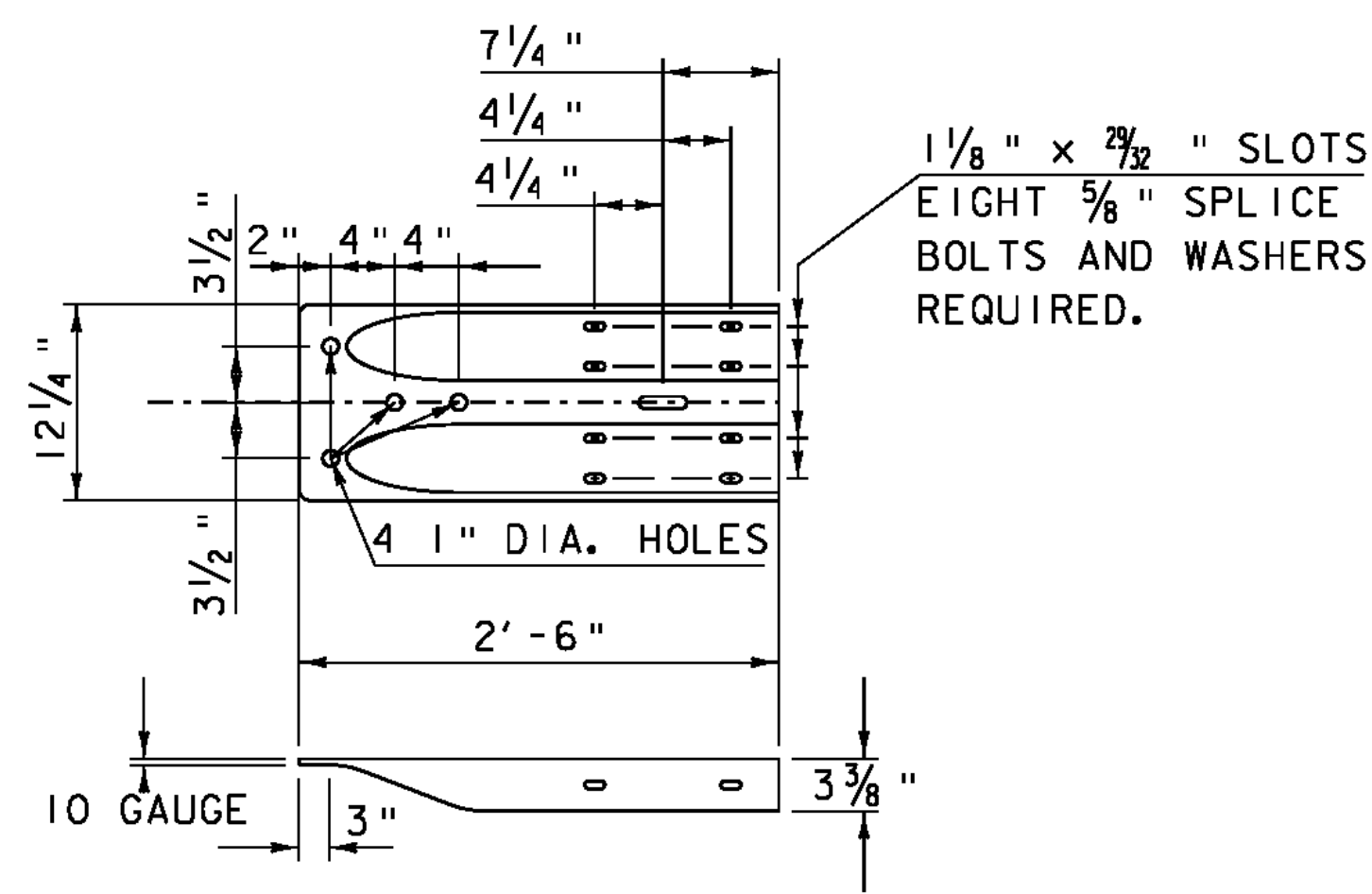
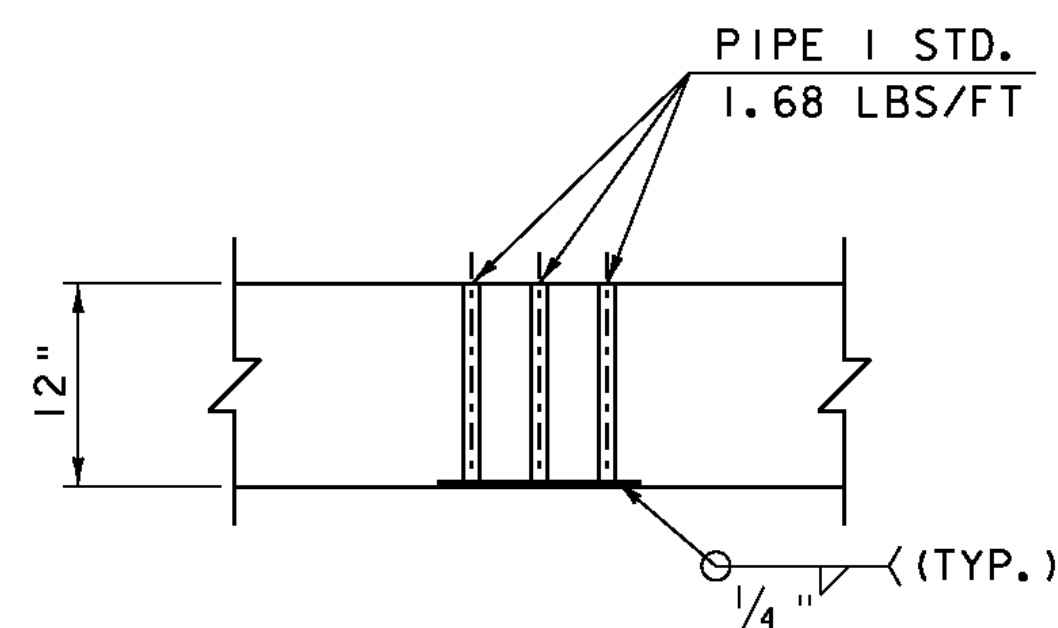
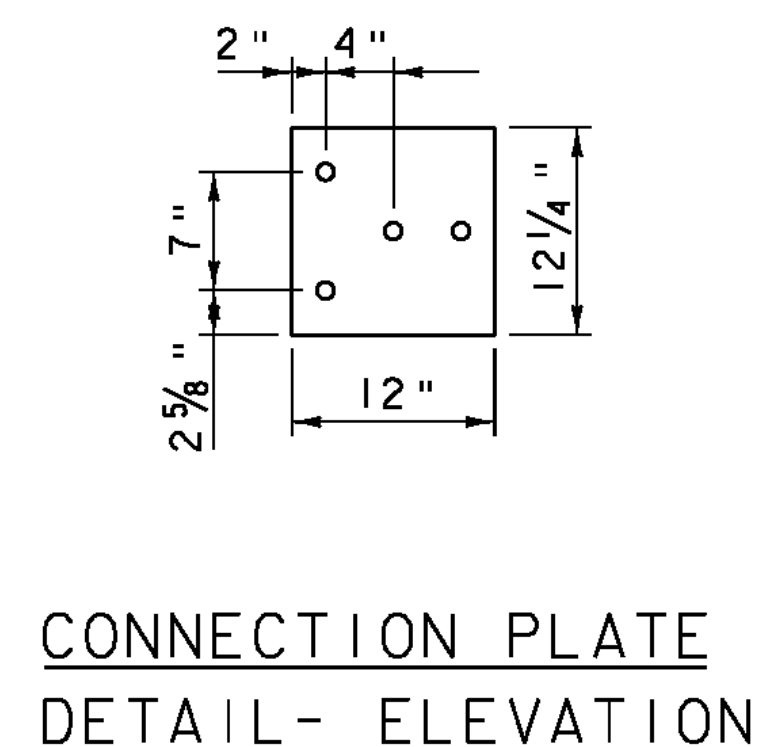
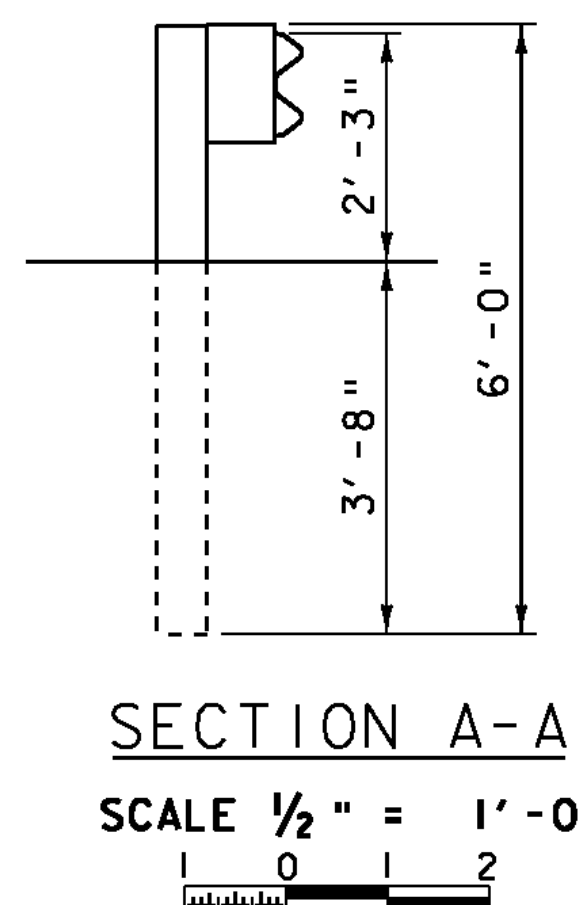
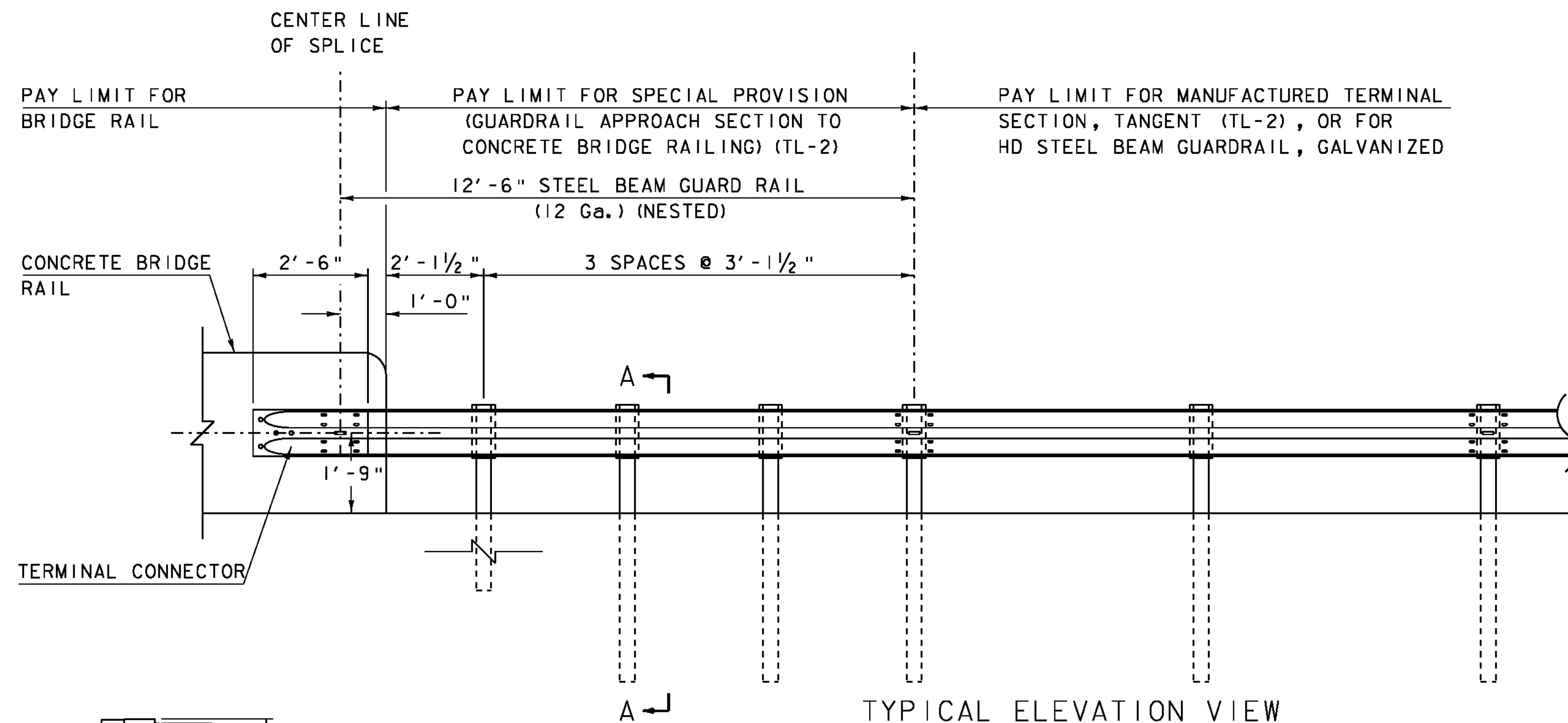
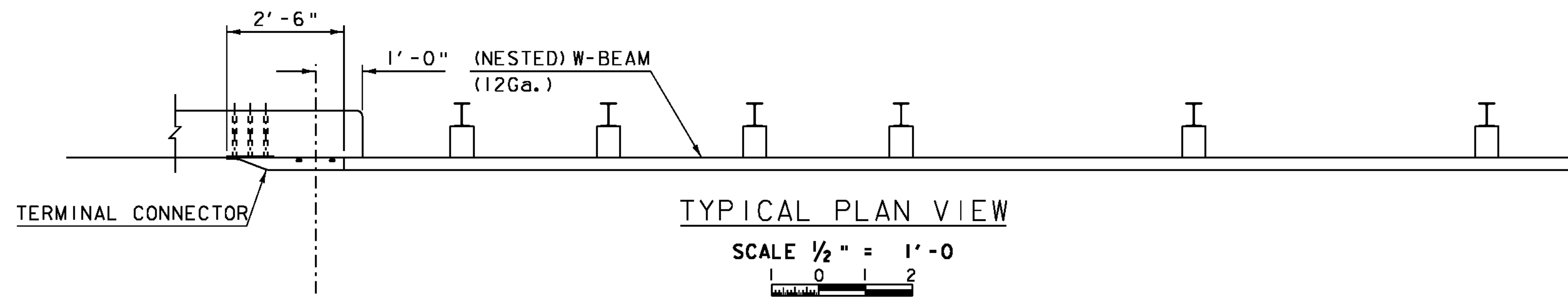
SCALE 3" = 1'-0"



PROJECT NAME: CHESTER
 PROJECT NUMBER: BRF 025-1(28)

FILE NAME: 84e061\84e061rail.dgn
 PROJECT LEADER: C.P.WILLIAMS
 DESIGNED BY: R.S.YOUNG
 BRIDGE 8 BRIDGE RAIL DETAIL

PLOT DATE: 20-SEP-2010
 DRAWN BY: D.D.BEARD
 CHECKED BY: E.R.CHARBONNEAU
 SHEET 38 OF 124



BLOCKOUT TO
POST DETAIL
NTS

THE USE OF THIS RAILING IS RESTRICTED
TO DESIGN SPEEDS OF 45 MPH OR LESS.

GENERAL NOTES

1. A COMPOSITE MATERIAL POST AND/OR BLOCKOUT FROM THE APPROVED PRODUCTS LIST MAY BE SUBSTITUTED FOR A POST AND/OR BLOCKOUT OF SIMILAR DIMENSIONS.
2. REFER TO STANDARD DRAWINGS G-1 AND G-1D FOR ADDITIONAL DETAILS.
3. THE TERMINAL CONNECTOR SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 900.620 "SPECIAL PROVISION (GUARDRAIL APPROACH SECTION TO CONCRETE BRIDGE RAILING) (TL-2)". THE CONNECTION PLATE SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 900.640 "SPECIAL PROVISION (BRIDGE RAILING, TEXAS)".
4. ON THE SIDEWALK SIDE OF THE BRIDGE THE APPROACH RAIL HEIGHT SHALL TRANSITION FROM 2'-3" REFERENCED FROM THE SIDEWALK TO 2'-3" REFERENCED FROM GRADE IN 37'-6".

PROJECT NAME: CHESTER
PROJECT NUMBER: BRF 025-1(28)

FILE NAME: s84e061rail.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: R.S.YOUNG
TL-2 TRANSITION RAIL DETAILS

PLOT DATE: 20-SEP-2010
DRAWN BY: M.FESSEL
CHECKED BY: R.S.YOUNG
SHEET 39 OF 124

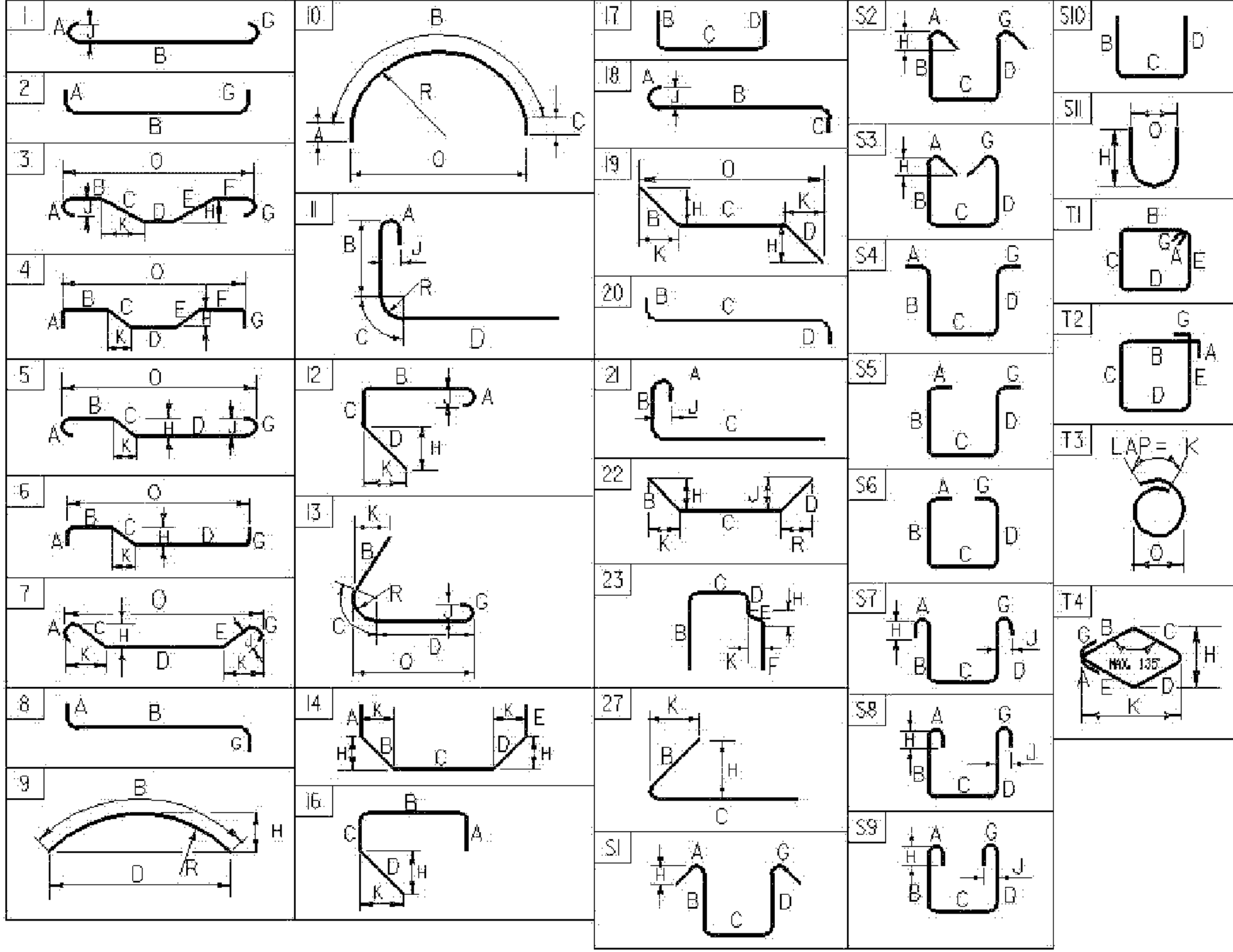
TRAFFIC SIGN SUMMARY SHEET

--

REINFORCING STEEL SCHEDULE

~ 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.
0. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
1. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



PROJECT NAME: CHESTER	
PROJECT NUMBER: BRF 025-1(28)	
FILE NAME: s84e061excel.dgn	PLOT DATE: 9/15/2010
PROJECT MANAGER: C.P.WILLIAMS	DRAWN BY: D.D.BEARD
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S.YOUNG
BRIDGE 8 REINFORCING STEEL SCHEDULE	SHEET 41 OF 124

CONSTRUCT 5' PAVED APRON
STA 24+98 RT - 12' WIDTH

REMOVAL AND DISPOSAL OF GUARDRAIL

STA 25+11 LT - 25+61 LT
STA 26+06 LT - 26+57 LT
STA 25+23 RT - 25+61 RT
STA 26+07 RT - 26+45 RT

REMOVE GRAVEL BAR
STA 10+41 RT - 10+61 RT

SPECIAL PROVISION (GUARDRAIL APPROACH
SECTION TO CONCRETE BRIDGE RAILING) (TL-2)

STA 25+41.50 LT - 25+53.00 LT
STA 26+14.25 LT - 26+25.75 LT
STA 25+41.50 RT - 25+53.00 RT
STA 26+14.25 RT - 26+25.75 RT

REMOVING SIGNS

STA 22+56 RT
STA 25+59 LT
STA 25+59 RT
STA 25+61 RT
STA 26+07 LT
STA 26+07 RT
STA 26+13 LT

TRAFFIC SIGNS, TYPE A

STA 25+49 RT
STA 26+19 LT

ADJUST ELEVATION
OF VALVE BOX
STA 26+31 RT

REMOVING LARGE TREES

STA 25+55 LT
TRIM TREES
STA 26+06 LT

4" WHITE LINE
STA 24+50.00 LT - 27+00.00 LT
STA 24+50.00 RT - 27+00.00 RT

4" YELLOW LINE
STA 24+50.00 - 27+00.00 (CL DOUBLE)
MANUFACTURED TERMINAL SECTION, TANGENT (TL-2)
STA 25+14.60 LT - 25+41.50 LT
STA 26+25.75 LT - 26+52.65 LT
STA 25+14.60 RT - 25+41.50 RT
STA 26+25.75 RT - 26+52.65 RT

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
STA 25+28.00 LT - 25+53.00 LT
STA 26+14.25 LT - 26+40.00 LT

PRECAST REINFORCED CONCRETE CURB, TYPE B
STA 25+28.00 LT - 25+53.00 LT
STA 26+14.25 LT - 26+40.00 LT

CURVE (1)
DELTA = 5°06'14" RT
D = 3°00'00"
R = 1909.86'
T = 85.12'
L = 170.13'
E = 1.90'

BEGIN APPROACH
STA 24+50.00

END APPROACH
BEGIN PROJECT
STA 25+00.00

BEGIN BRIDGE
STA 25+53.00
FG = 579.92

END BRIDGE
STA 26+14.25
FG = 580.26

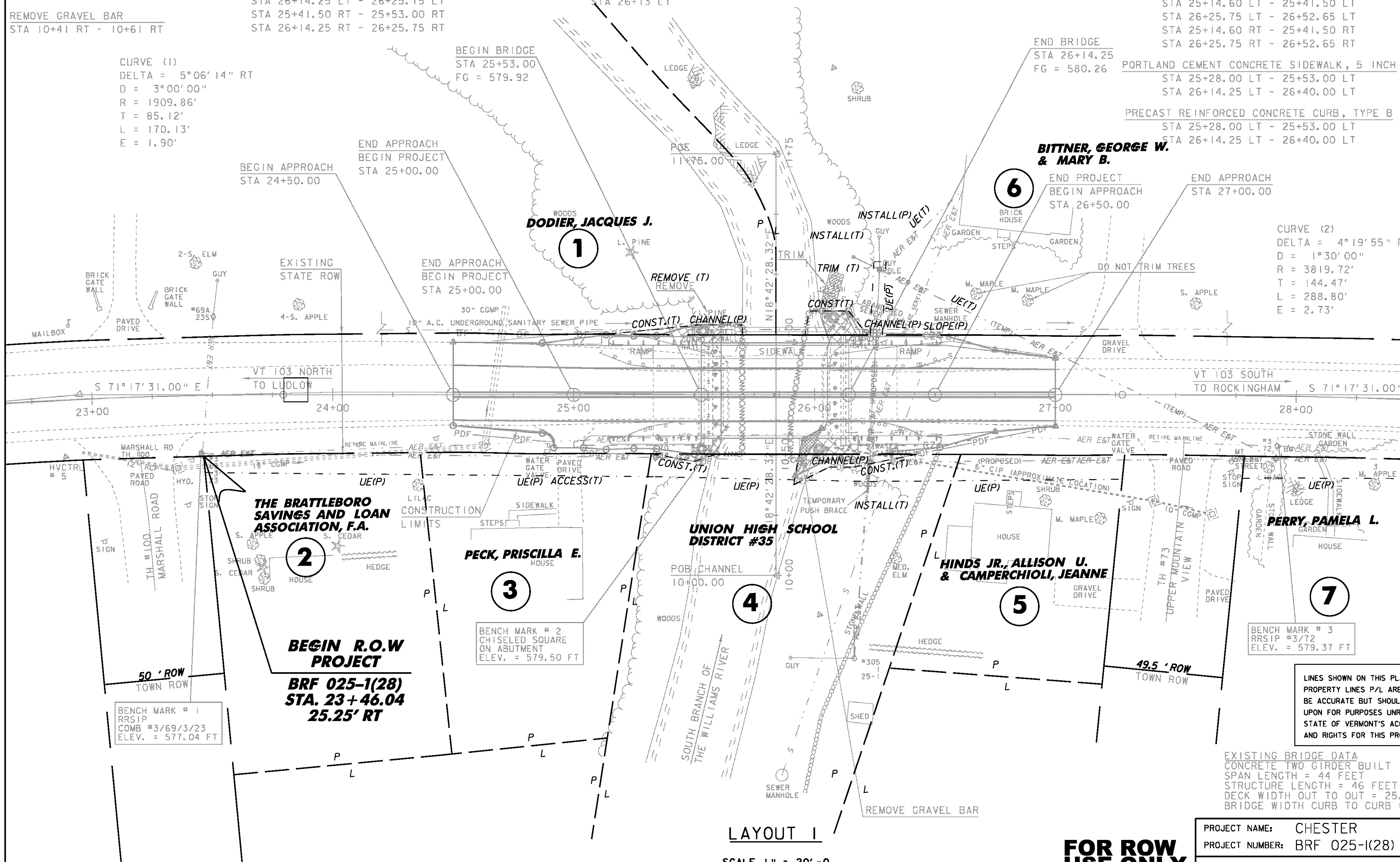
**BITTNER, GEORGE W.
& MARY B.**

END PROJECT
BEGIN APPROACH
STA 26+50.00

END APPROACH
STA 27+00.00

CURVE (2)
DELTA = 4°19'55" RT
D = 1°30'00"
R = 3819.72'
T = 144.47'
L = 288.80'
E = 2.73'

MATCH LINE STA 28+50 TO ROW SHEET 17 OF 17 SHEETS



**THE BRATTLEBORO
SAVINGS AND LOAN
ASSOCIATION, F.A.**

PECK, PRISCILLA E.

**UNION HIGH SCHOOL
DISTRICT #35**

**HINDS JR., ALLISON U.
& CAMPERCHIOLI, JEANNE**

PERRY, PAMELA L.

**BEGIN R.O.W
PROJECT
BRF 025-1(28)
STA. 23+46.04
25.25' RT**

BENCH MARK # 1
RRSIP
COMB #3/69/3/23
ELEV. = 577.04 FT

BENCH MARK # 2
CHISELED SQUARE
ON ABUTMENT
ELEV. = 579.50 FT

BENCH MARK # 3
RRSIP #3/72
ELEV. = 579.37 FT

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.

EXISTING BRIDGE DATA
CONCRETE TWO GIRDER BUILT IN 1924,
SPAN LENGTH = 44 FEET
STRUCTURE LENGTH = 46 FEET
DECK WIDTH OUT TO OUT = 25.3 FEET
BRIDGE WIDTH CURB TO CURB = 20.6 FEET

LAYOUT 1

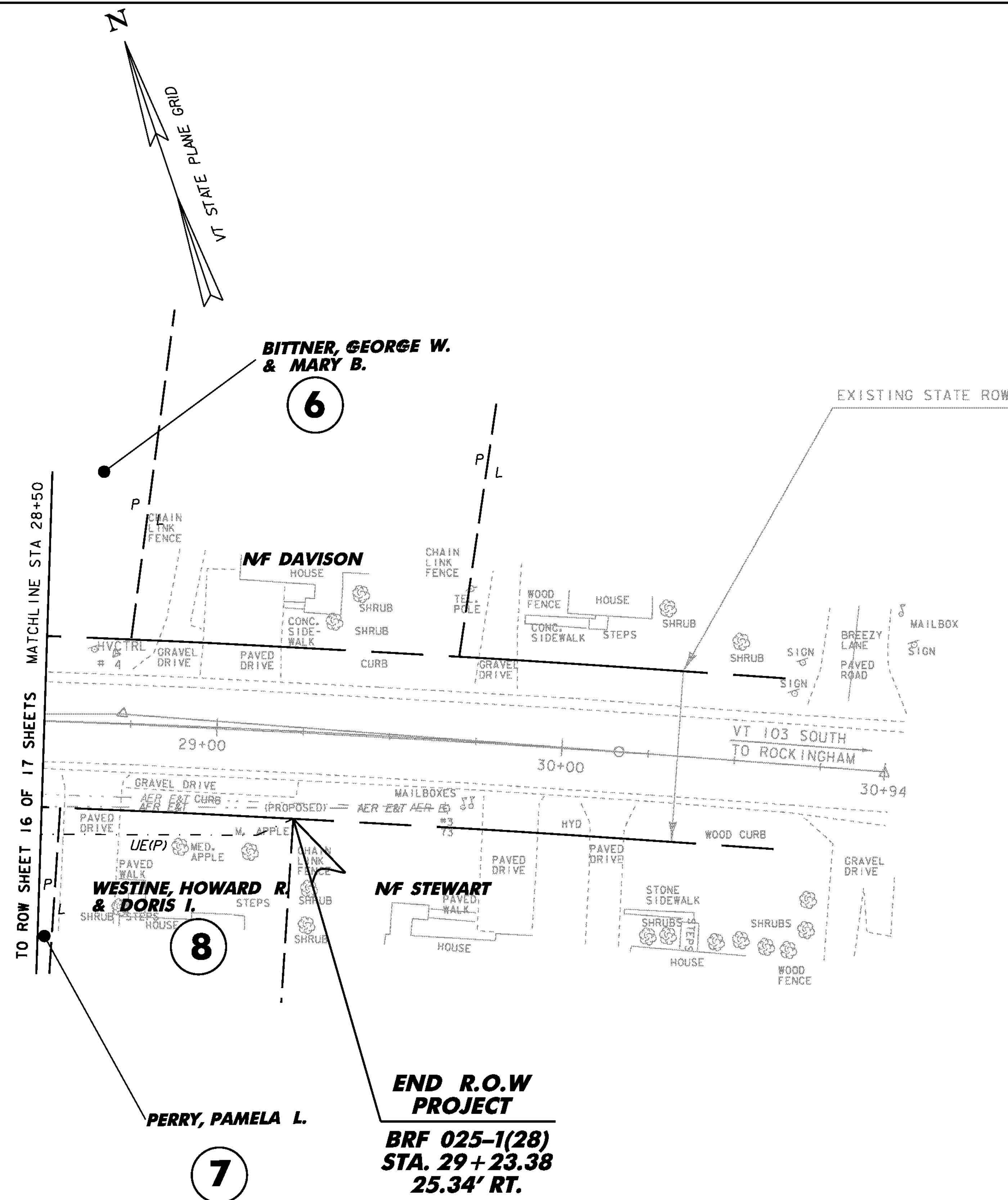
SCALE 1" = 20' - 0
20 0 20

**FOR ROW
USE ONLY**

PROJECT NAME: CHESTER
PROJECT NUMBER: BRF 025-1(28)

FILE NAME: 84e061/Str/bdr.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: R.S.YOUNG
ROW SHEET 16 OF 17 SHEETS

PLOT DATE: 20-SEP-2010
DRAWN BY: M.FESSEL
CHECKED BY: R.S.YOUNG
SHEET 42 OF 124



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.

LAYOUT 2

SCALE 1" = 20' -0

20 0 20

FOR ROW USE ONLY

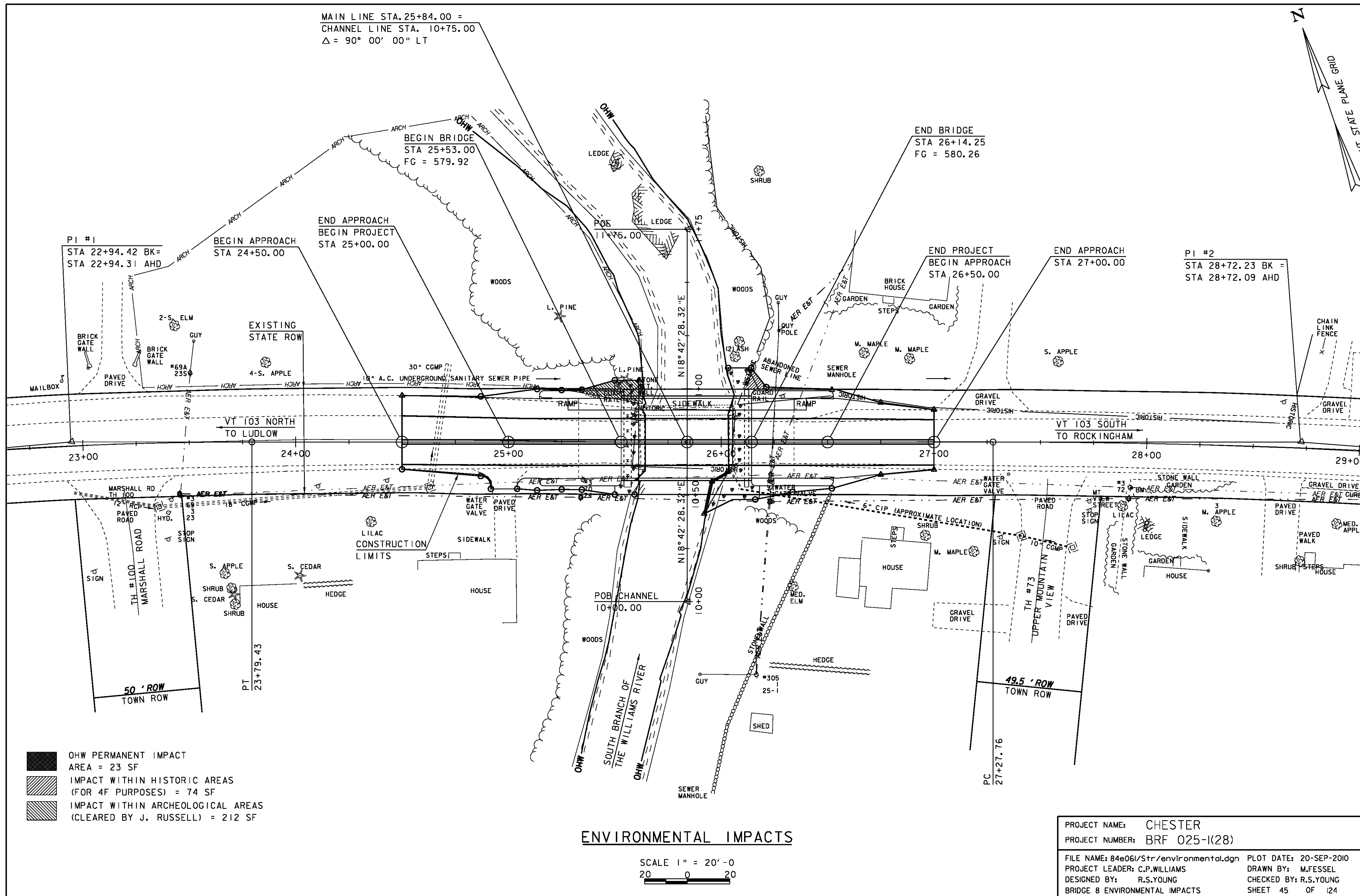
PROJECT NAME: CHESTER	
PROJECT NUMBER: BRF 025-1(28)	
FILE NAME: 84e061/Str/bdr.dgn	PLOT DATE: 20-SEP-2010
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S.YOUNG
ROW SHEET 17 OF 17 SHEETS	SHEET 43 OF 124

RIGHT - OF - WAY DETAIL SHEET

[illegible]

EC -EROSION CONTROL
(P) -PERMANENT
(T) -TEMPORARY
DR. -DRAINAGE RIGHT
DIT. -DITCHING RIGHT
CH. -CHANNEL RIGHT
DRIVE -DRIVE RIGHT
CUL. -CULVERT RIGHT
C&T -CLEARING & TRIMMING RIGHT
SR -SLOPE RIGHT
UE -UTILITY EASEMENT

PROJECT NAME: CHESTER	
PROJECT NUMBER: BRF 025-1(28)	
FILE NAME: r84e061detail.xls	PLOT DATE:
PROJECT LEADER: C. WILLIAMS	DRAWN BY: MT
DESIGNED BY: R. YOUNG	CHECKED BY: JB
ROW SHEET 15 OF 17	SHEET 44 OF 124



EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL AND REPLACEMENT OF BRIDGE 8, LOCATED ON VT 103 IN CHESTER, WINDSOR COUNTY, VERMONT. THE NEW BRIDGE WILL BE A PRECAST CONCRETE GIRDER CONSTRUCTION, SPANNING 56 FEET OVER THE SOUTH BRANCH OF THE WILLIAMS RIVER. THE WORK WILL ALSO INCLUDE RELATED APPROACH AND CHANNEL WORK. THE ROAD WILL BE CLOSED DURING CONSTRUCTION. TRAFFIC WILL BE REROUTED WITH A REGIONAL DETOUR-SEE PLANS.

NOTE: AREA OF DISTURBANCE SHALL INCLUDE LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, INCLUDING ANY WASTE, STAGING AND BORROW AREAS WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.23 ACRES.

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

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE PROJECT SITE IS LOCATED WITHIN A RURAL VILLAGE SETTING WITH MULTIPLE HOUSES AND BUILDINGS IN CLOSE PROXIMITY TO ONE ANOTHER. THERE ARE OVERHEAD UTILITIES WHICH WILL BE RELOCATED PRIOR TO CONSTRUCTION.

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

THE SOUTH BRANCH OF THE WILLIAMS RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE RIVER IS CLASSIFIED AS SINUOUS, SLIGHTLY INCISED, WITH A WIDE FLOODPLAIN. THE STREAM BED CONSISTS OF MOSTLY COBBLES WITH SOME GRAVEL. THE TRIBUTARY AREA AT THE BRIDGE CROSSING IS 11.0 SQUARE MILES. THERE ARE A NUMBER OF DROP INLETS ON SITE DRAINING FROM THE ROADWAY TO THE RIVER.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD TREES, BRUSH AND GRASS. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS AFFECTED BY REMOVAL AND REPLACEMENT OF BRIDGE # 8. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE III 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. SOIL ON THE PROJECT SITE IS URBAN LAND-COLTON-CROGHAN COMPLEX, 0% TO 8% SLOPES, “K FACTOR” = 0.24/0.17.
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: YES - THE BRIDGE IS HISTORICAL ALONG WITH SOME PROPERTY ON THE NORTHEAST SIDE OF THE BRIDGE. THERE ARE ARCHEOLOGICAL AREAS ON THE NORTHWEST SIDE OF THE BRIDGE WHICH ARE TO BE AVOIDED DURING CONSTRUCTION.
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: SOUTH BRANCH WILLIAMS RIVER
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 THAT CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED. PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES. BARRIER FENCE (BF) SHALL BE USED TO DELINEATE THE AREA OF HISTORICAL AND ARCHEOLOGICAL SIGNIFIGANCE

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.

PHASING PLAN

1.4.3 SITE ENTRANCE/EXIT STABILIZATION
TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MNIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTORS PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES. LOCATIONS TO BE DETERMINED BY THE CONTRACTOR.

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

FILTER CURTAIN WILL 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 CONSTRUCITON SITE.

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

1.4.6 SLOW DOWN CHANNELIZED RUNOFF
CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSIIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

STONE CHECK DAMS ARE 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.

UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE III AS SPECIFIED ON THE PLANS.

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.

THE USE OF COFFERDAMS IS NOT ANTICIPATED.

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.

1.5.1 CONSTRUCTION SEQUENCE

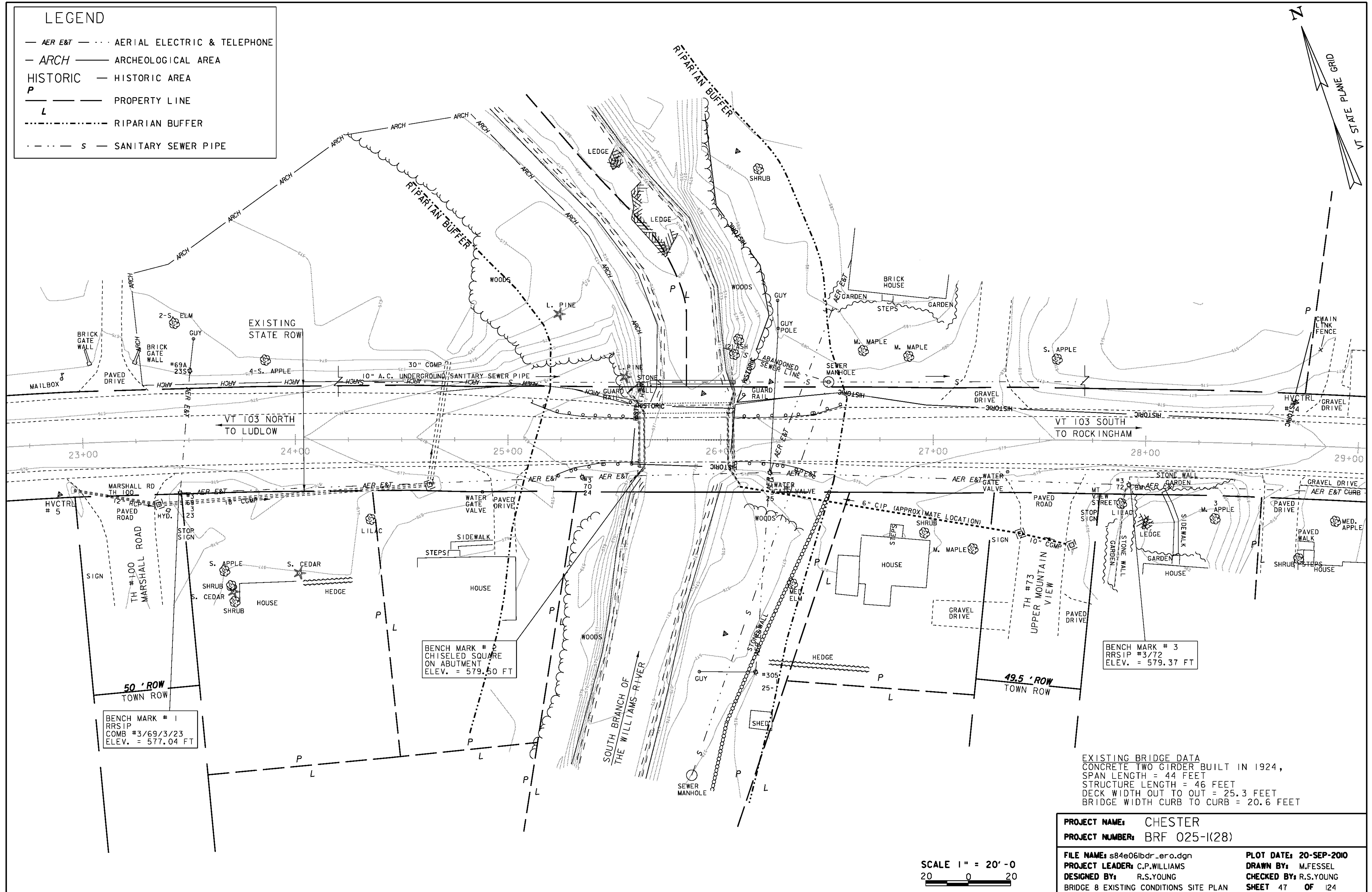
1.5.2 OFF-SITE ACTIVITIES
IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SUBSECTIONS 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

1.5.3 UPDATES

PROJECT NAME: CHESTER	
PROJECT NUMBER: BRF 025-I(28)	
FILE NAME: s84e06lepscnnarrative.dgn	PLOT DATE: 20-SEP-2010
PROJECT LEADER: C.P.WILLIAMS	DRAWN BY: M.FESSEL
DESIGNED BY: R.S.YOUNG	CHECKED BY: R.S.YOUNG
BRIDGE 8 EPSC NARRATIVE	SHEET 46 OF 124

LEGEND

- AER E&T — AERIAL ELECTRIC & TELEPHONE
- ARCH — ARCHEOLOGICAL AREA
- HISTORIC — HISTORIC AREA
- P — PROPERTY LINE
- L — RIPARIAN BUFFER
- S — SANITARY SEWER PIPE



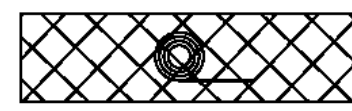
PROJECT NAME: CHESTER
PROJECT NUMBER: BRF 025-1(28)

FILE NAME: s84e06lbr_ero.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: R.S.YOUNG
BRIDGE 8 EXISTING CONDITIONS SITE PLAN

PLOT DATE: 20-SEP-2010
DRAWN BY: M.FESSEL
CHECKED BY: R.S.YOUNG
SHEET 47 OF 124

SCALE 1" = 20' - 0
20 0 20

LEGEND



EROSION MATTING

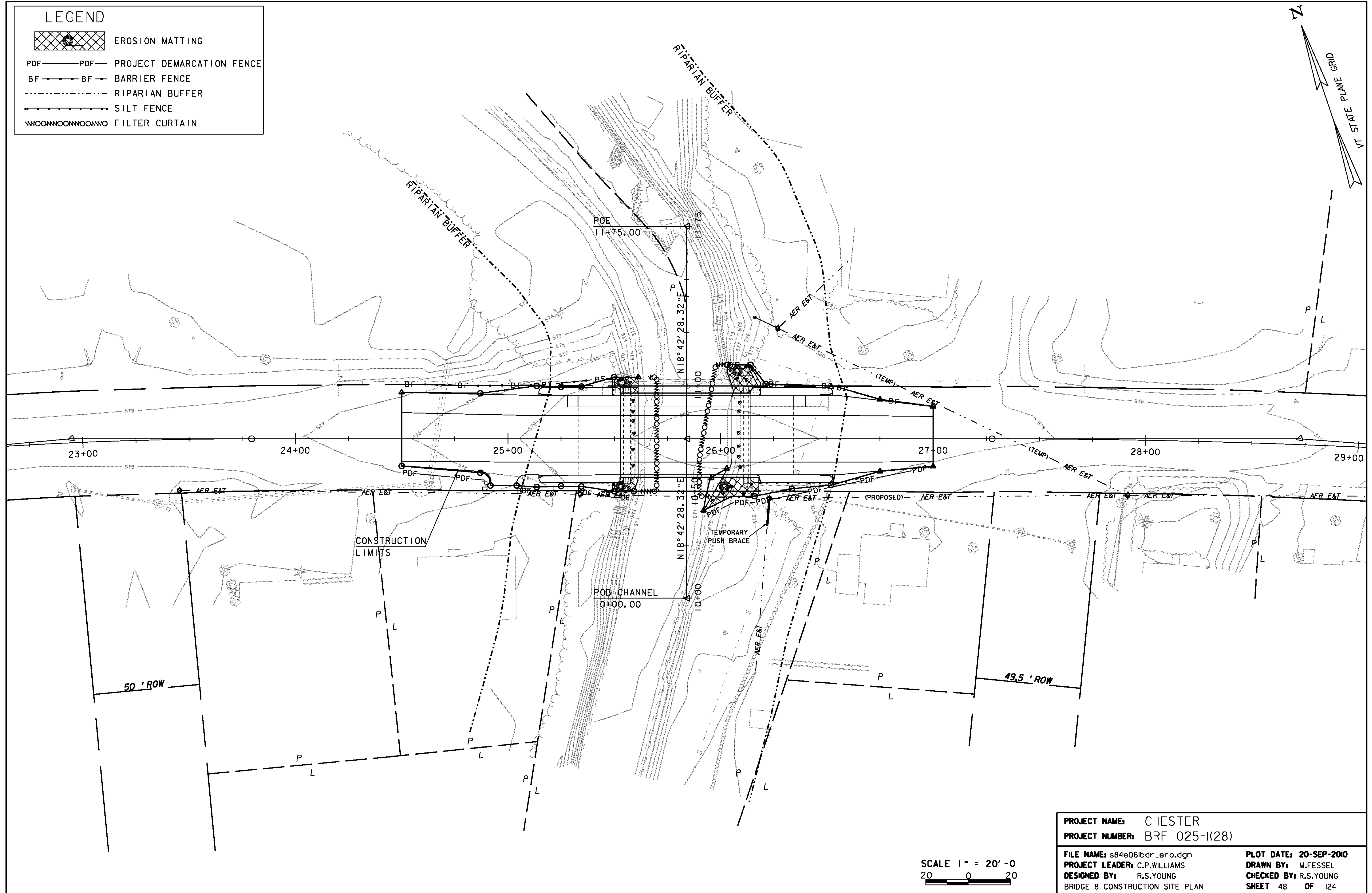
PDF — PDF — PROJECT DEMARCATION FENCE

BF — BF — BARRIER FENCE

--- RIPARIAN BUFFER

--- SILT FENCE

~~~~~ FILTER CURTAIN



PROJECT NAME: CHESTER  
PROJECT NUMBER: BR 025-1(28)

FILE NAME: s84e06lbr\_ero.dgn  
PROJECT LEADER: C.P. WILLIAMS  
DESIGNED BY: R.S. YOUNG  
BRIDGE 8 CONSTRUCTION SITE PLAN

PLOT DATE: 20-SEP-2010  
DRAWN BY: M. FESSEL  
CHECKED BY: R.S. YOUNG  
SHEET 48 OF 124

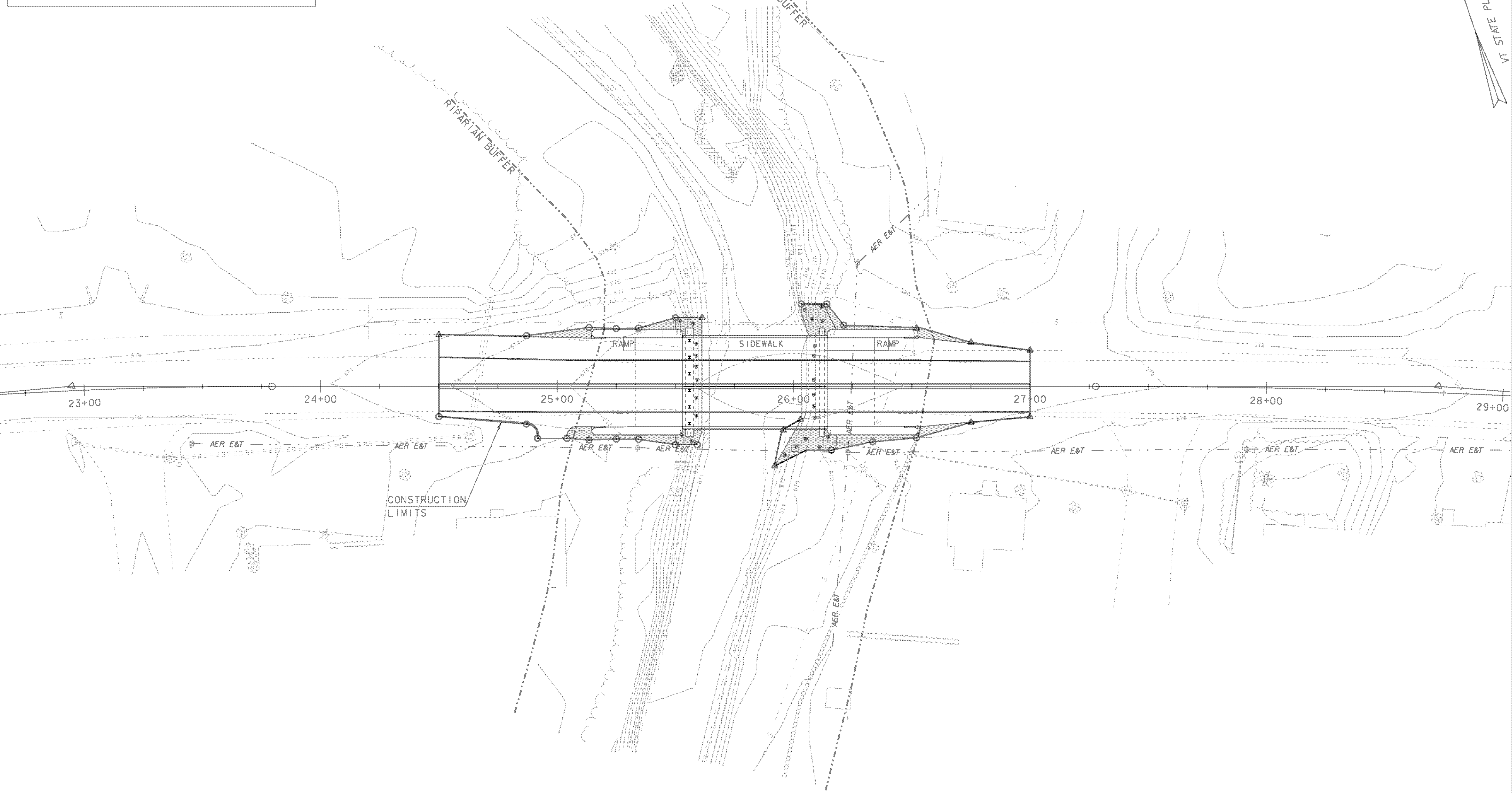
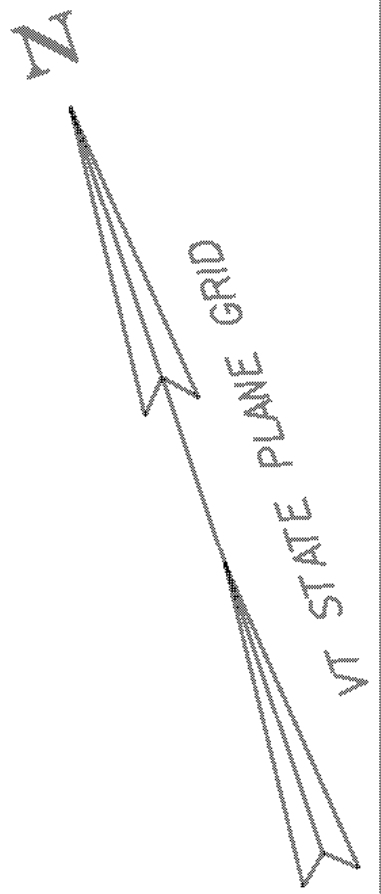
SCALE 1" = 20'-0"  
20 0 20

LEGEND

----- RIPARIAN BUFFER ZONE

 EROSION MATTING

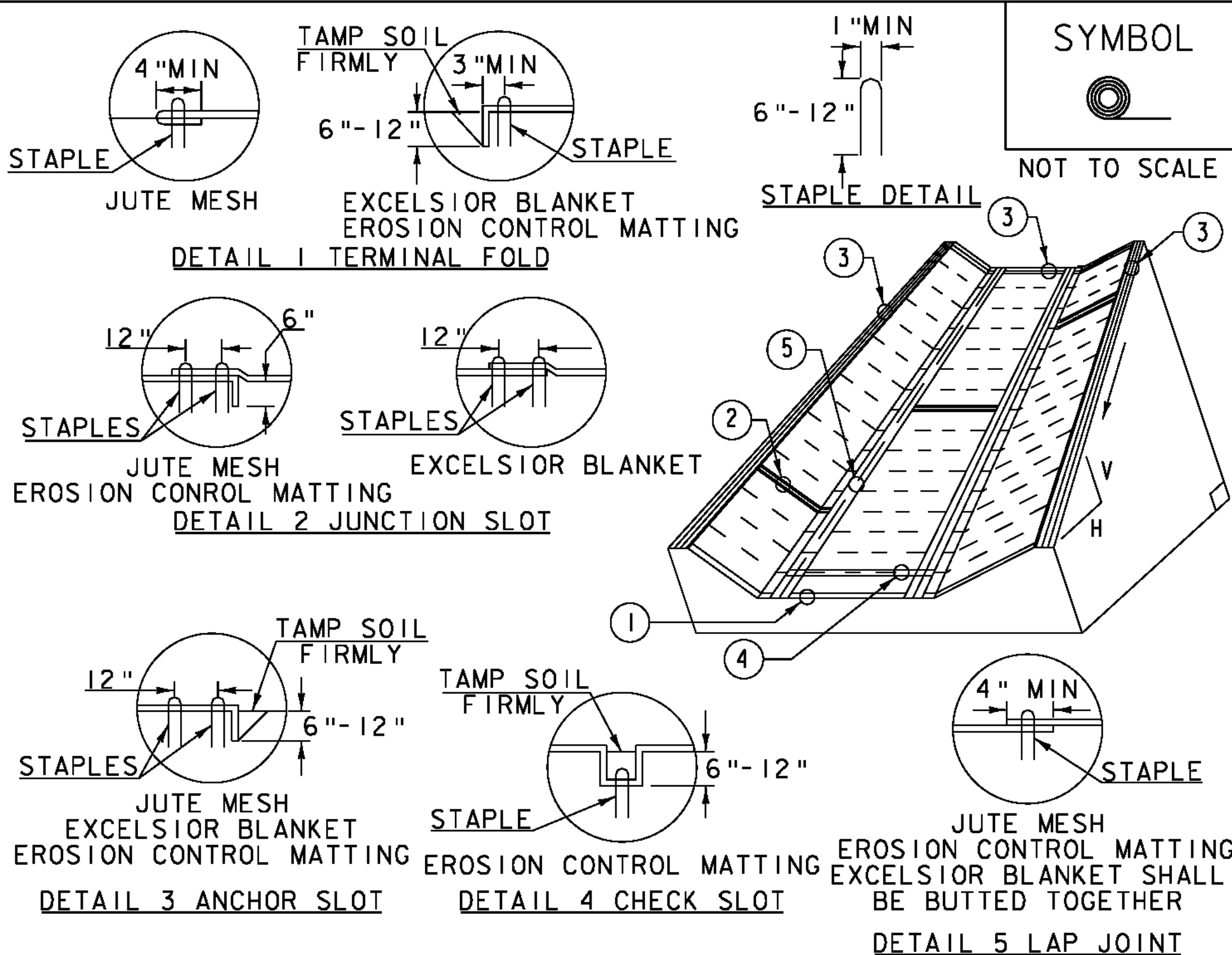
 SEED AND MULCH



SCALE 1" = 20'-0"

20 0 20

|                                     |                   |             |             |
|-------------------------------------|-------------------|-------------|-------------|
| PROJECT NAME:                       | CHESTER           | PLOT DATE:  | 20-SEP-2010 |
| PROJECT NUMBER:                     | BRF 025-1(28)     | DRAWN BY:   | M.FESSEL    |
| FILE NAME:                          | s84e06lbr_ero.dgn | CHECKED BY: | R.S.YOUNG   |
| PROJECT LEADER:                     | C.P.WILLIAMS      | SHEET       | 49 OF 124   |
| DESIGNED BY:                        | R.S.YOUNG         |             |             |
| BRIDGE 8 FINAL CONDITIONS SITE PLAN |                   |             |             |



CONSTRUCTION SPECIFICATIONS

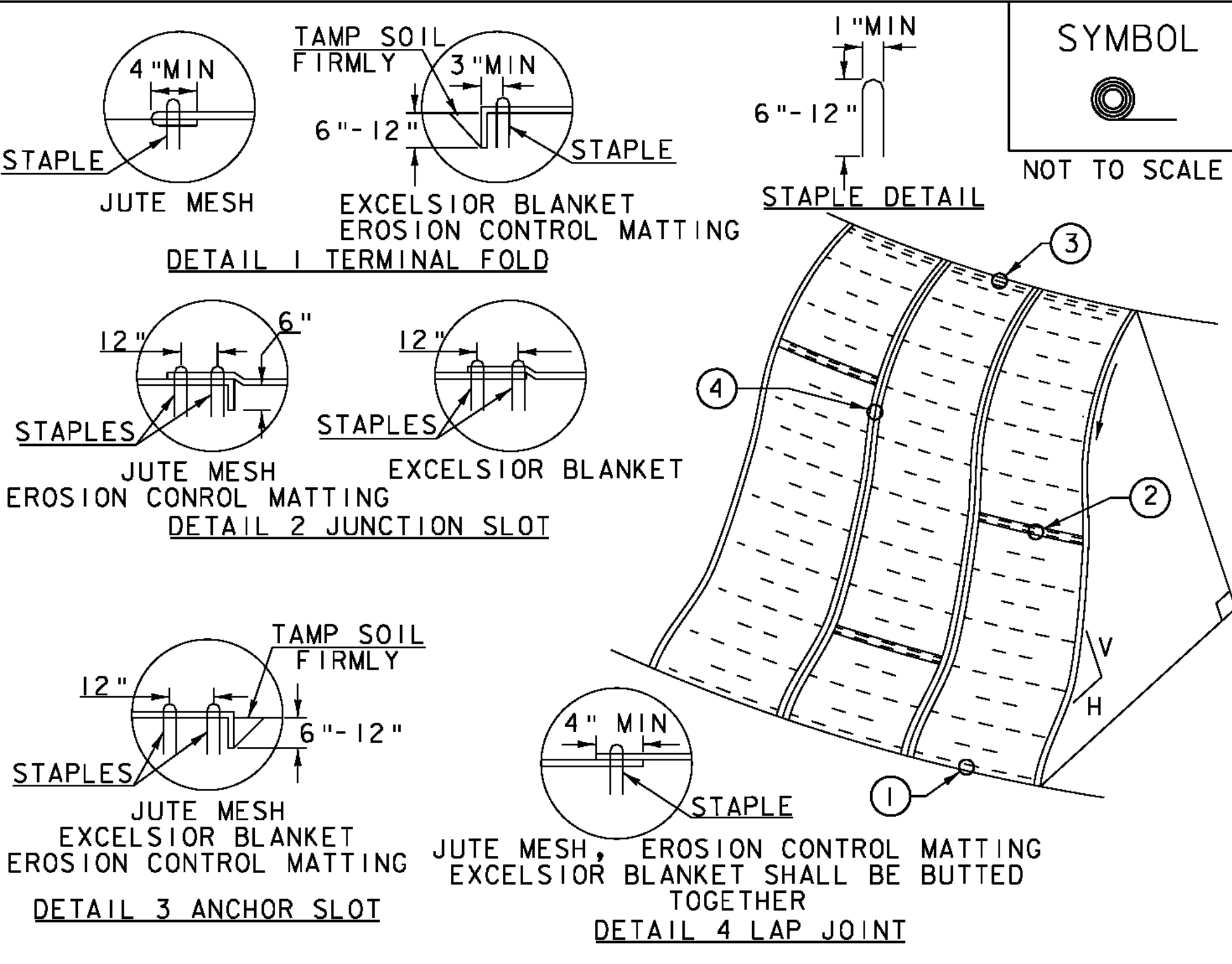
1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO 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) DITCH

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 653.20).

| REVISIONS        |     |  |
|------------------|-----|--|
| MARCH 8, 2007    | JMF |  |
| APRIL 16, 2007   | WHF |  |
| JANUARY 13, 2009 | WHF |  |



CONSTRUCTION SPECIFICATIONS

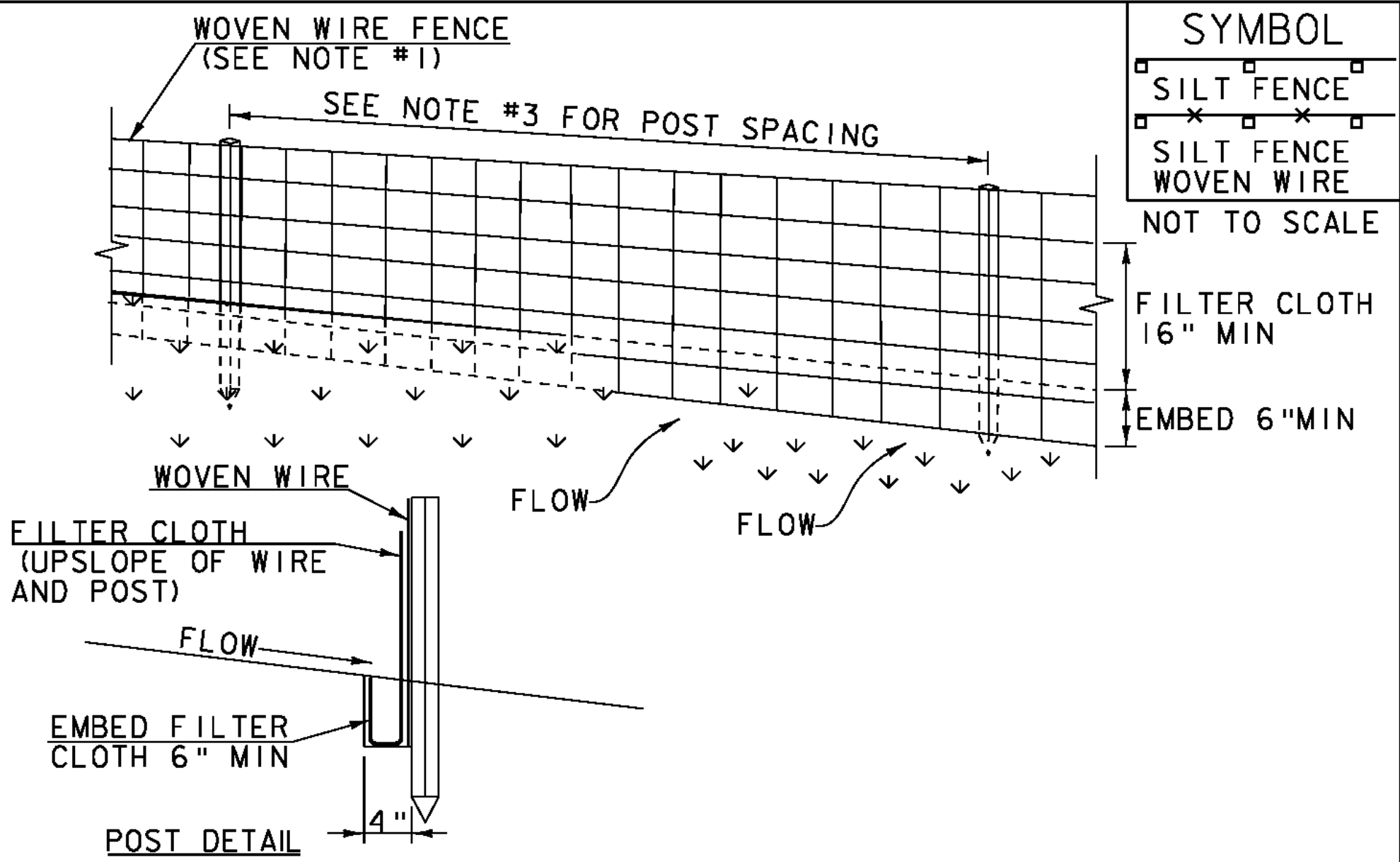
1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 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 653.20).

| REVISIONS        |     |  |
|------------------|-----|--|
| APRIL 16, 2007   | JMF |  |
| JANUARY 13, 2009 | WHF |  |



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, MIRAFIL100X, 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.

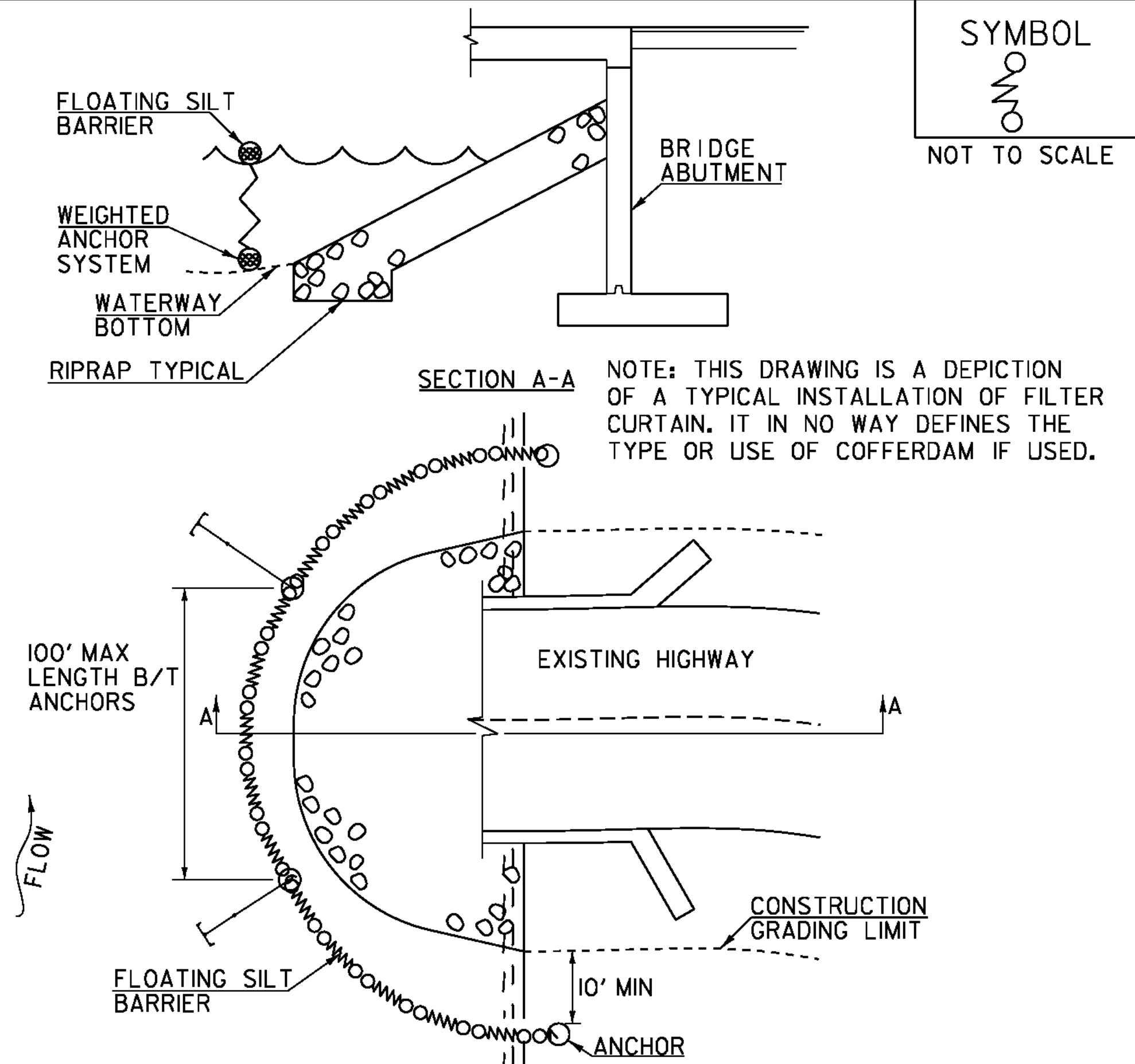
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

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

PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(28)

FILE NAME: s84e061erodetails.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
BRIDGE 8 EROSION CONTROL DETAILS I

PLOT DATE: 20-SEP-2010  
DRAWN BY: M.FESSEL  
CHECKED BY: R.S.YOUNG  
SHEET 50 OF 124



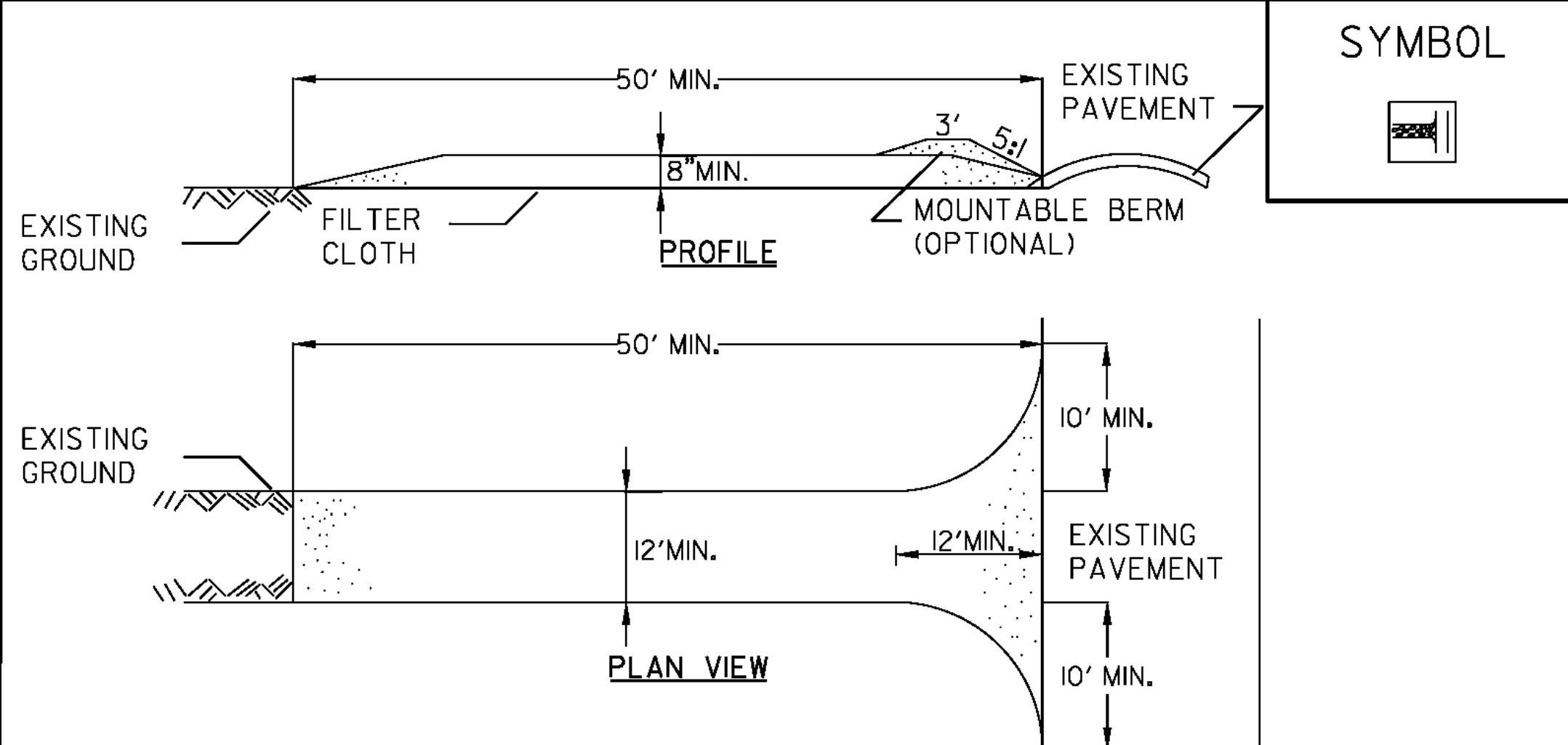
## CONSTRUCTION SPECIFICATIONS

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

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.6I).



## CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 1-4" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH APPLIES).
3. THICKNESS - NOT LESS THAN EIGHT (8) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT 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

|                  |     |
|------------------|-----|
| REVISIONS        |     |
| FEBRUARY 9, 2007 | WHF |
| MARCH 8, 2007    | JMF |
|                  |     |
|                  |     |
|                  |     |

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

THIS ITEM SHALL BE PAID FOR UNDER ITEM  
653.35 VEHICLE TRACKING PAD

| 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       |                     |        |          |

## GENERAL GUIDANCE

| FERTILIZER |           | LIME       |            |
|------------|-----------|------------|------------|
| BROADCAST  | HYDROSEED | BROADCAST  | HYDROSEED  |
| 10-20-10   | 19-19-19  | PELLETIZED | LIQUID     |
| 500 LBS/AC |           | 2 TONS/AC  | 4.4 GAL/AC |

## 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.

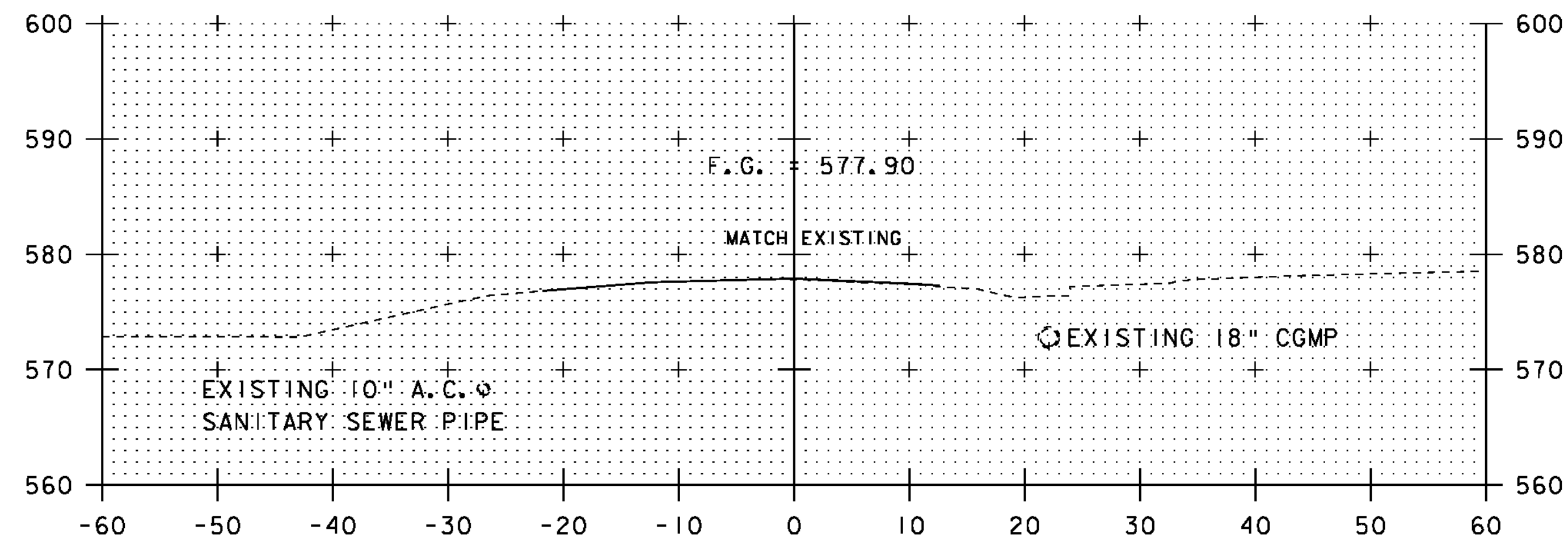
ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MAUAL FOR  
ROADWAYS AND TRANSPORTATION FACILITIES

## TURF ESTABLISHMENT

|                  |     |
|------------------|-----|
| REVISIONS        |     |
| JUNE 23, 2009    | WHF |
| JANUARY 15, 2010 | WHF |

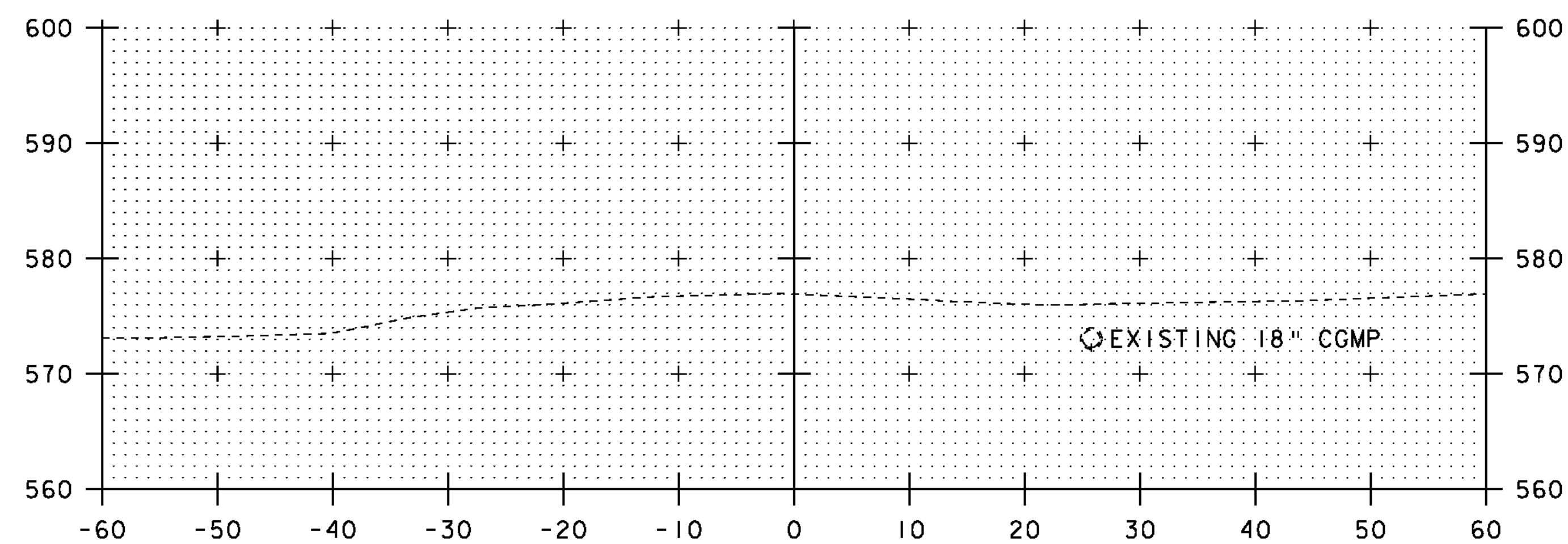
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|-----------------|---------------|
| PROJECT NAME:   | CHESTER       |
| PROJECT NUMBER: | BRF 025-1(28) |

|                                    |                        |
|------------------------------------|------------------------|
| FILE NAME: s84e061erodetails.dgn   | PLOT DATE: 20-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS       | DRAWN BY: M.FESSEL     |
| DESIGNED BY: R.S.YOUNG             | CHECKED BY: R.S.YOUNG  |
| BRIDGE 8 EROSION CONTROL DETAILS 2 | SHEET 51 OF 124        |

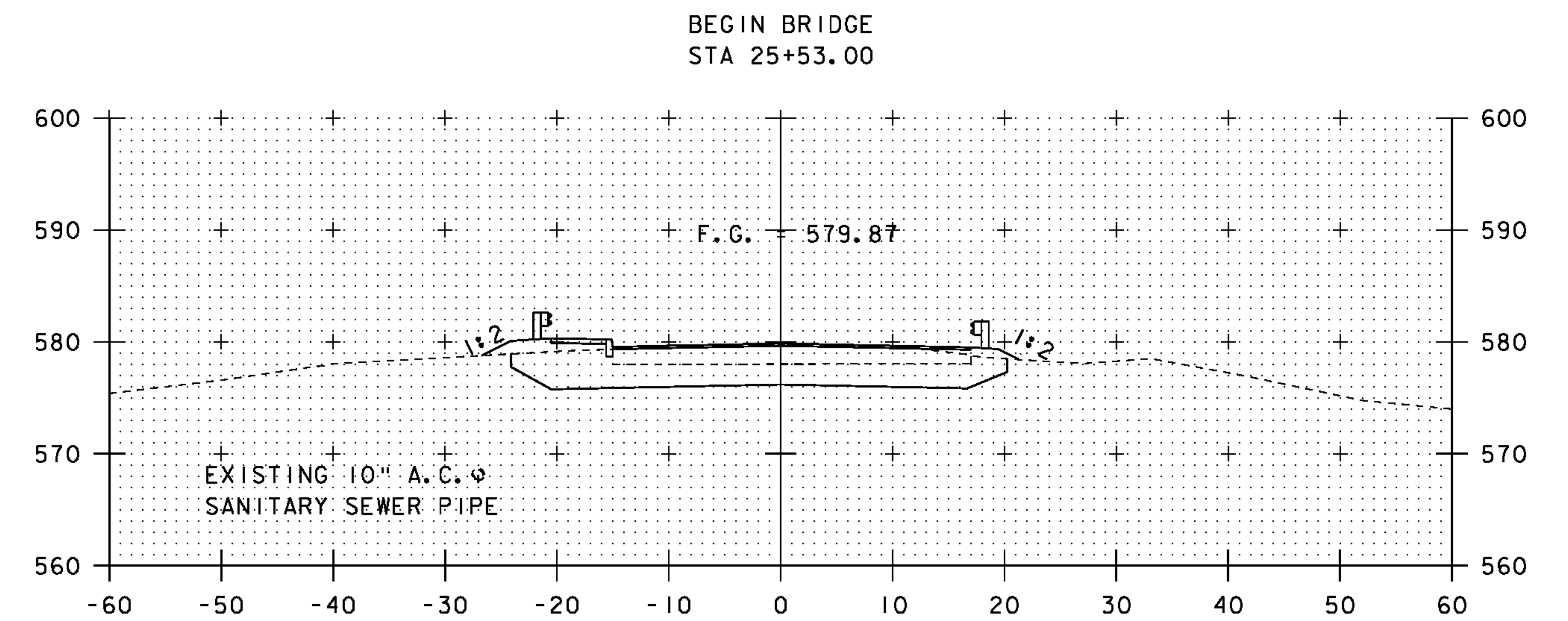


24+50

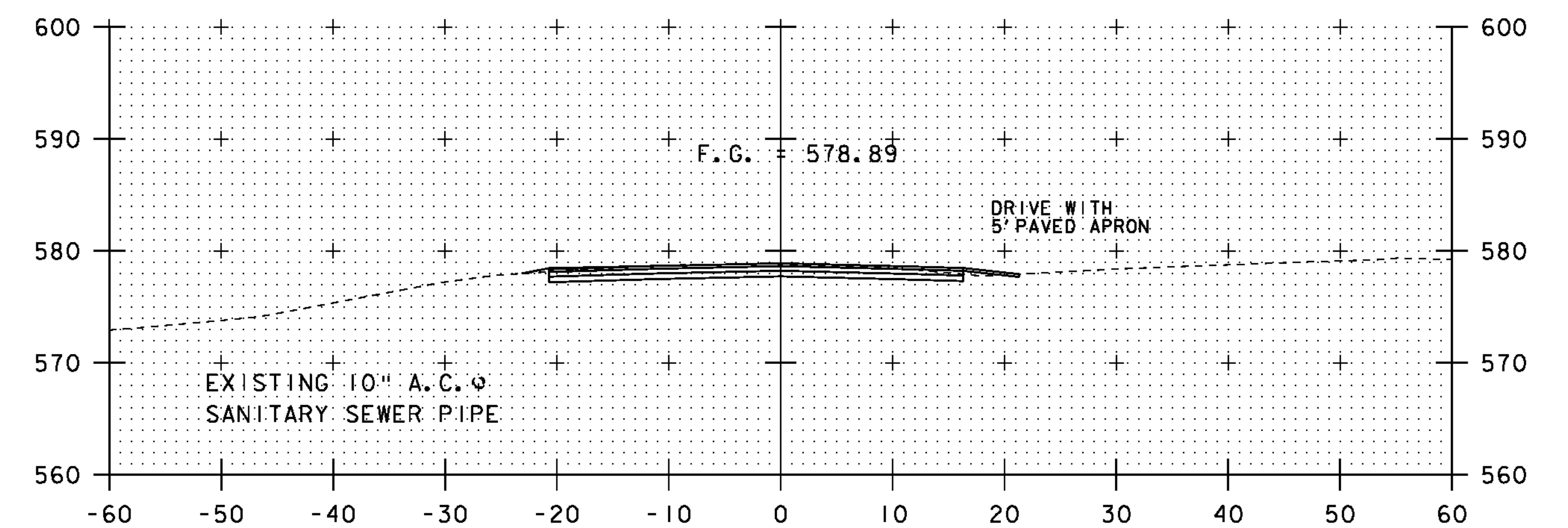
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STA 24+50.00



24+00



25+50



25+00

BEGIN PROJECT

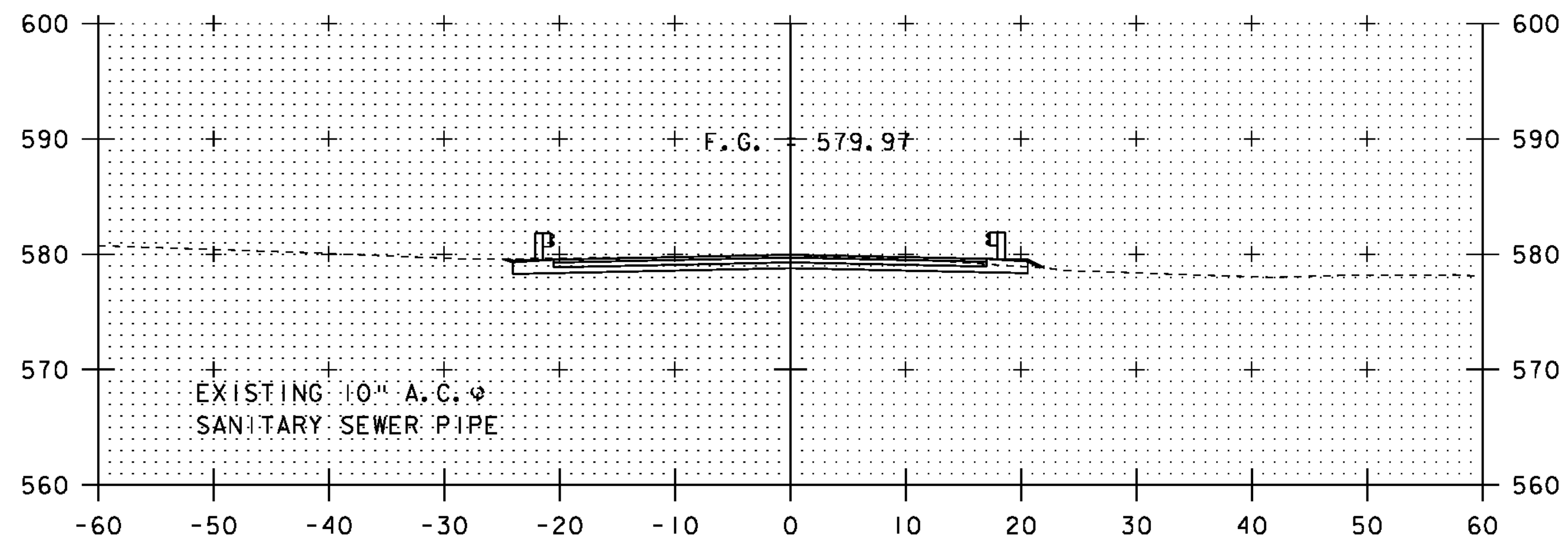
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10 0 10

STA. 24+00 TO STA. 25+50

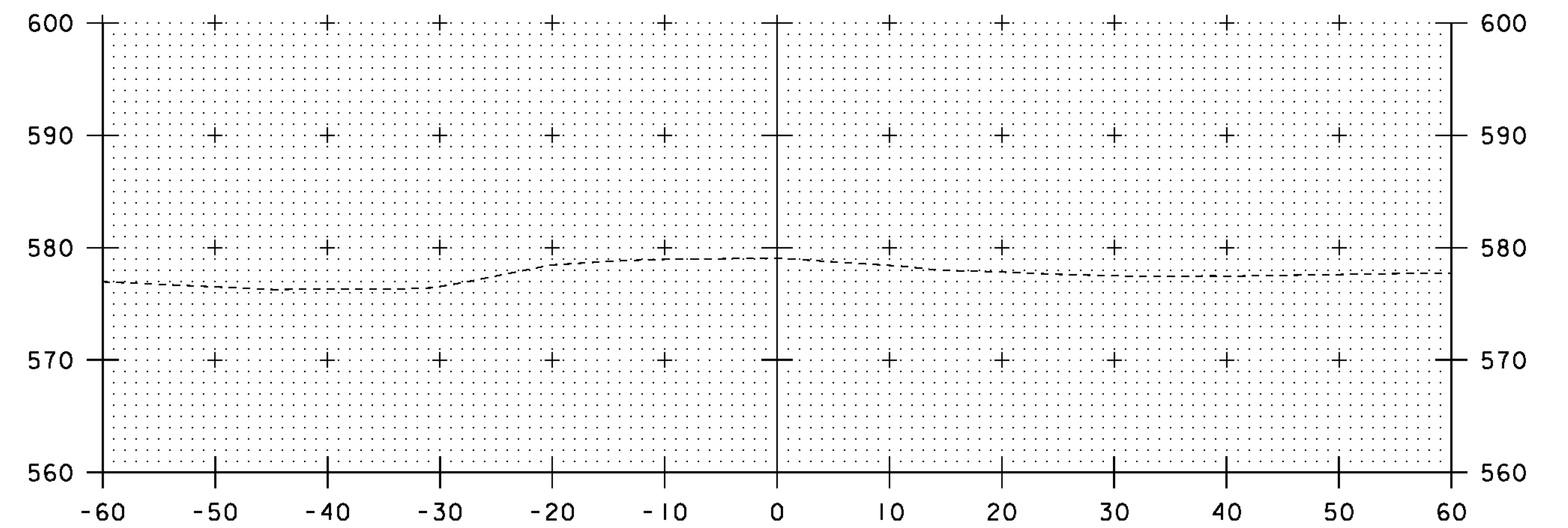
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PROJECT NUMBER: BRF 025-1(28)

FILE NAME: s84e061/Str/xsl.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
BRIDGE 8 MAINLINE CROSS SECTIONS 1

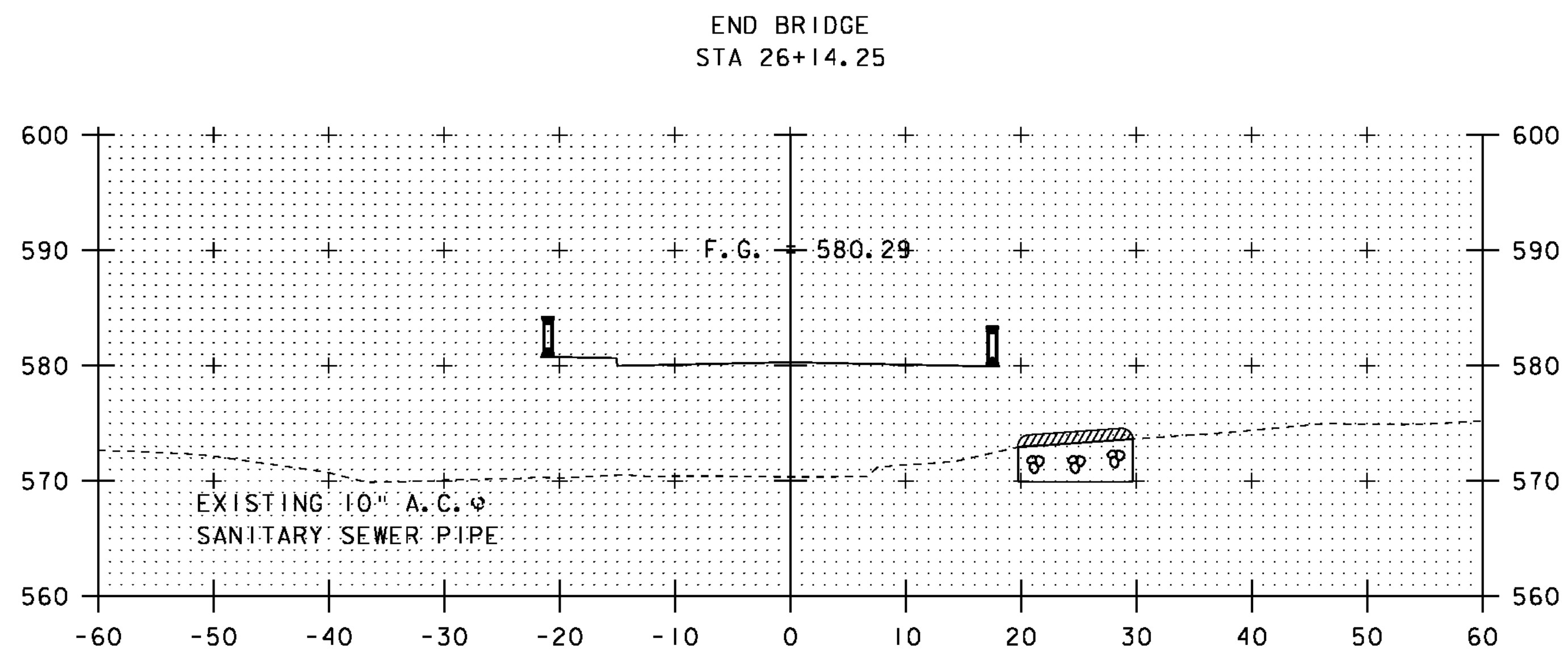
PLOT DATE: 20-SEP-2010  
DRAWN BY: M.FESSEL  
CHECKED BY: R.S.YOUNG  
SHEET 52 OF 124



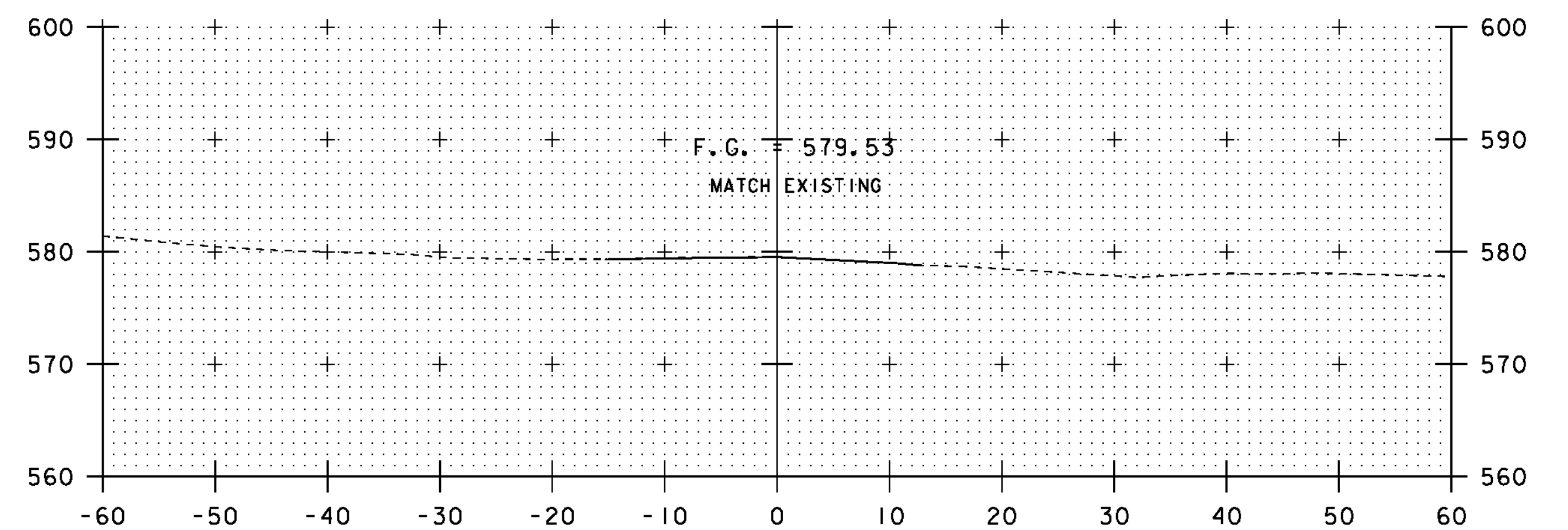
26+50  
END PROJECT  
STA 26+50.00



27+50



26+00



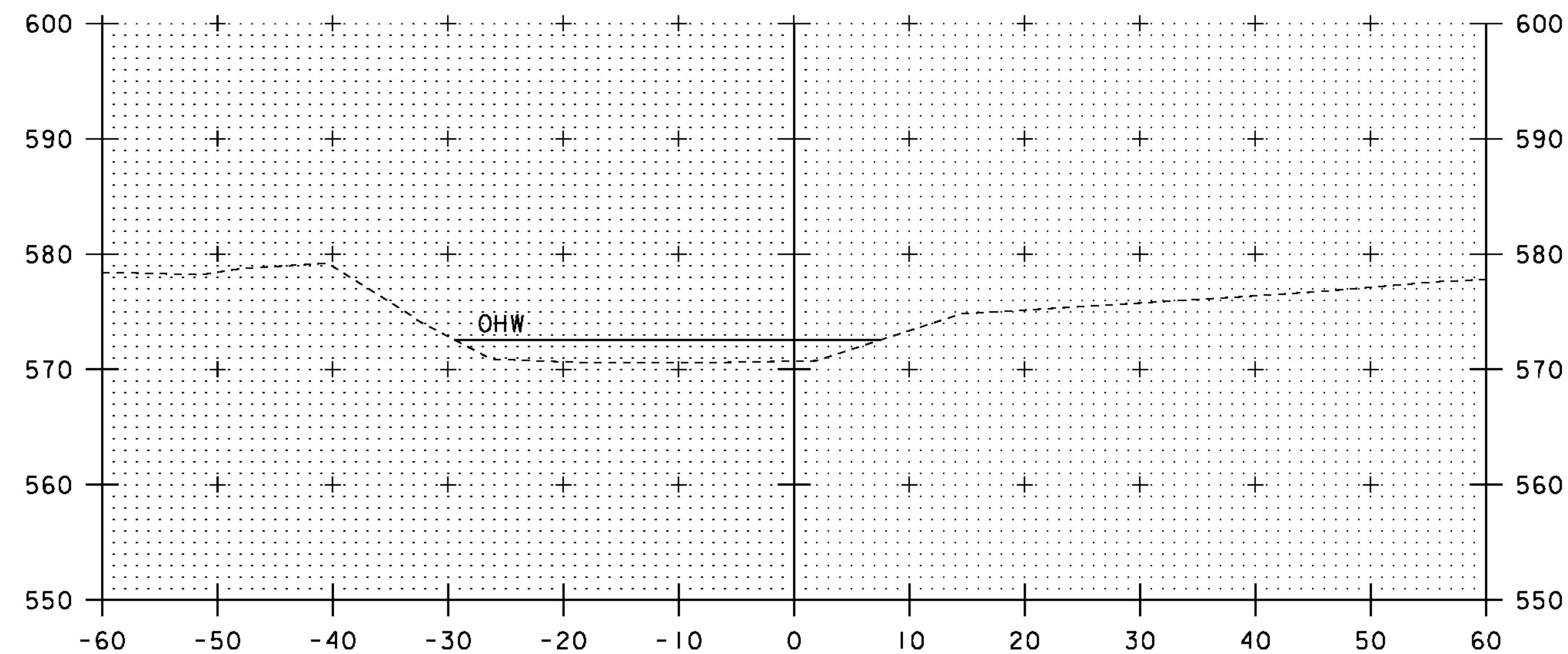
27+00

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STA 27+00.00

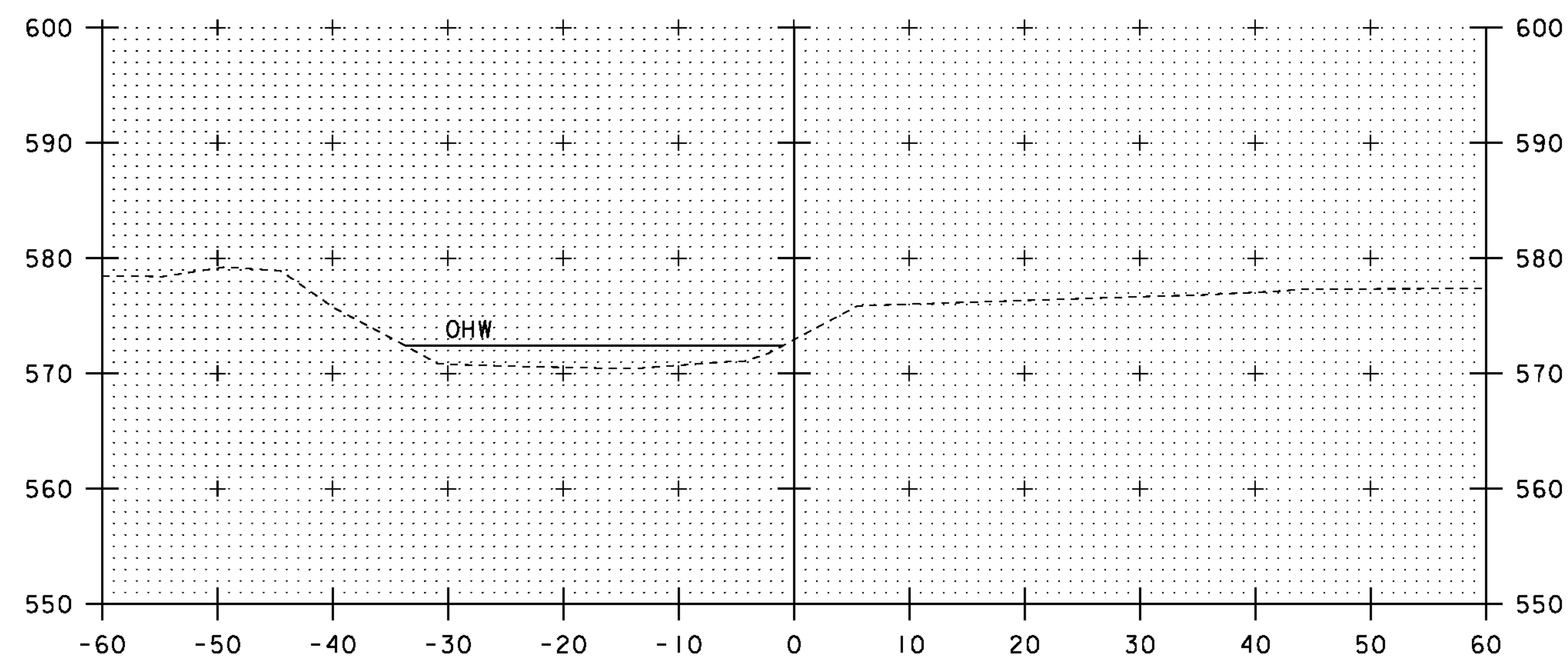
SCALE 1" = 10' - 0"  
10 0 10

STA. 26+00 TO STA. 27+50

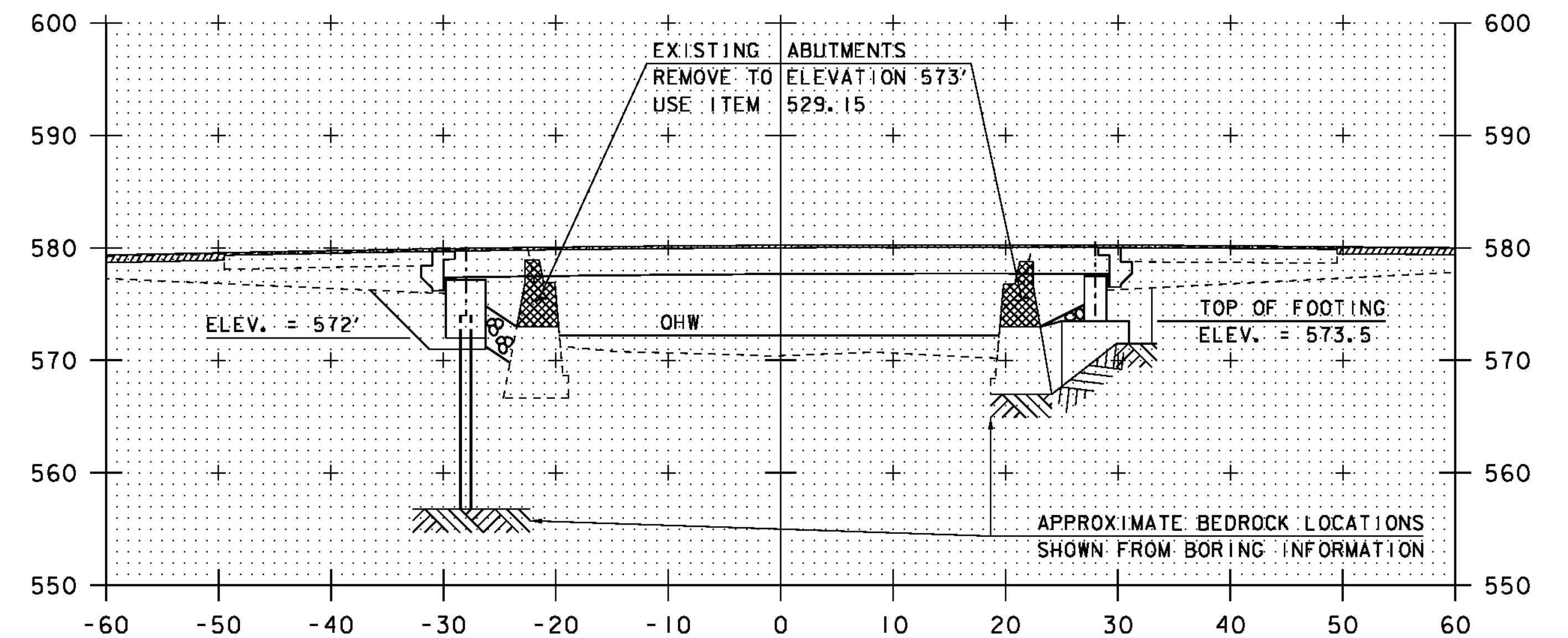
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| PROJECT NUMBER: BRF 025-1(28)      |                        |
| FILE NAME: s84e061/Str/xsl.dgn     | PLOT DATE: 20-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS       | DRAWN BY: M.FESSEL     |
| DESIGNED BY: R.S.YOUNG             | CHECKED BY: R.S.YOUNG  |
| BRIDGE 8 MAINLINE CROSS SECTIONS 2 | SHEET 53 OF 124        |



10+25



10+00

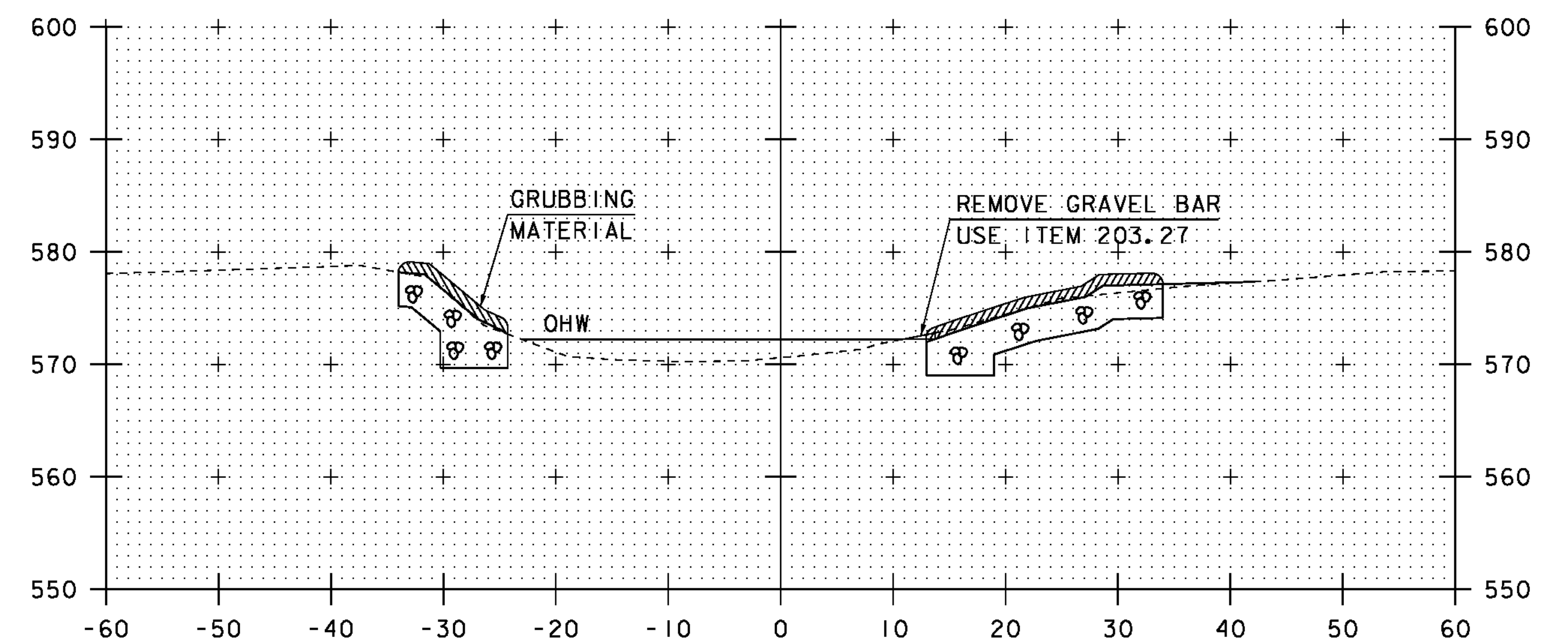


10+75

BEGIN STONE FILL, TYPE III  
GEOTEXTILE UNDER STONE FILL  
GRUBBING MATERIAL  
UNCLASSIFIED CHANNEL EXCAVATION  
STA 10+50.35 LT

END GRUBBING MATERIAL  
STA 10+57.00 LT AND RT

END REMOVAL OF GRAVEL BAR  
STA 10+61.00 RT



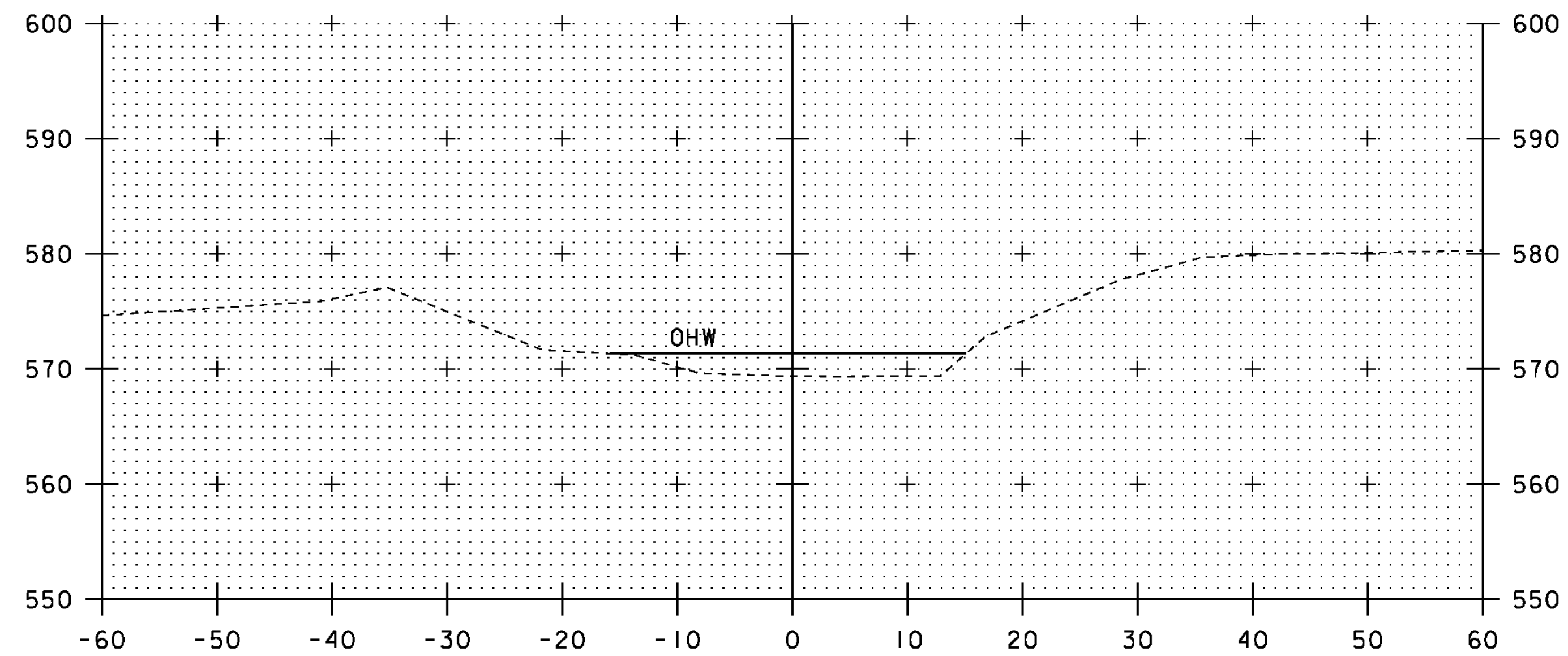
10+50

BEGIN REMOVAL OF GRAVEL BAR  
STONE FILL, TYPE III  
GEOTEXTILE UNDER STONE FILL  
GRUBBING MATERIAL  
STA 10+41.30 RT  
UNCLASSIFIED CHANNEL EXCAVATION  
STA 10+48.00 RT

SCALE 1" = 10' - 0  
10 0 10

STA. 10+00 TO STA. 10+75

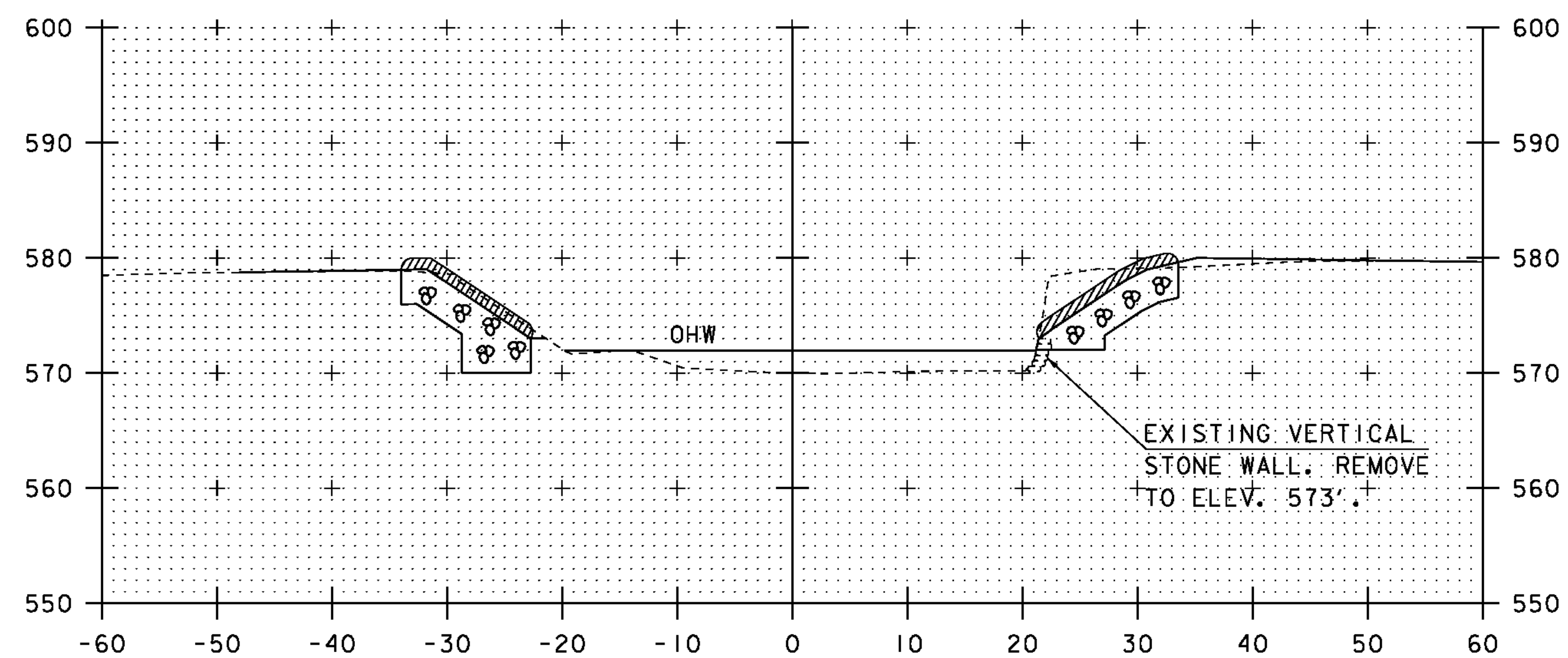
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|-----------------------------------|------------------------|
| PROJECT NAME: CHESTER             |                        |
| PROJECT NUMBER: BRF 025-1(28)     |                        |
| FILE NAME: s84e061/Str/xsl.dgn    | PLOT DATE: 20-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS      | DRAWN BY: M.FESSEL     |
| DESIGNED BY: R.S.YOUNG            | CHECKED BY: R.S.YOUNG  |
| BRIDGE 8 CHANNEL CROSS SECTIONS I | SHEET 54 OF 124        |



END STONE FILL, TYPE III  
GEOTEXTILE UNDER STONE FILL  
GRUBBING MATERIAL  
UNCLASSIFIED CHANNEL EXCAVATION  
STA 11+04.00 LT

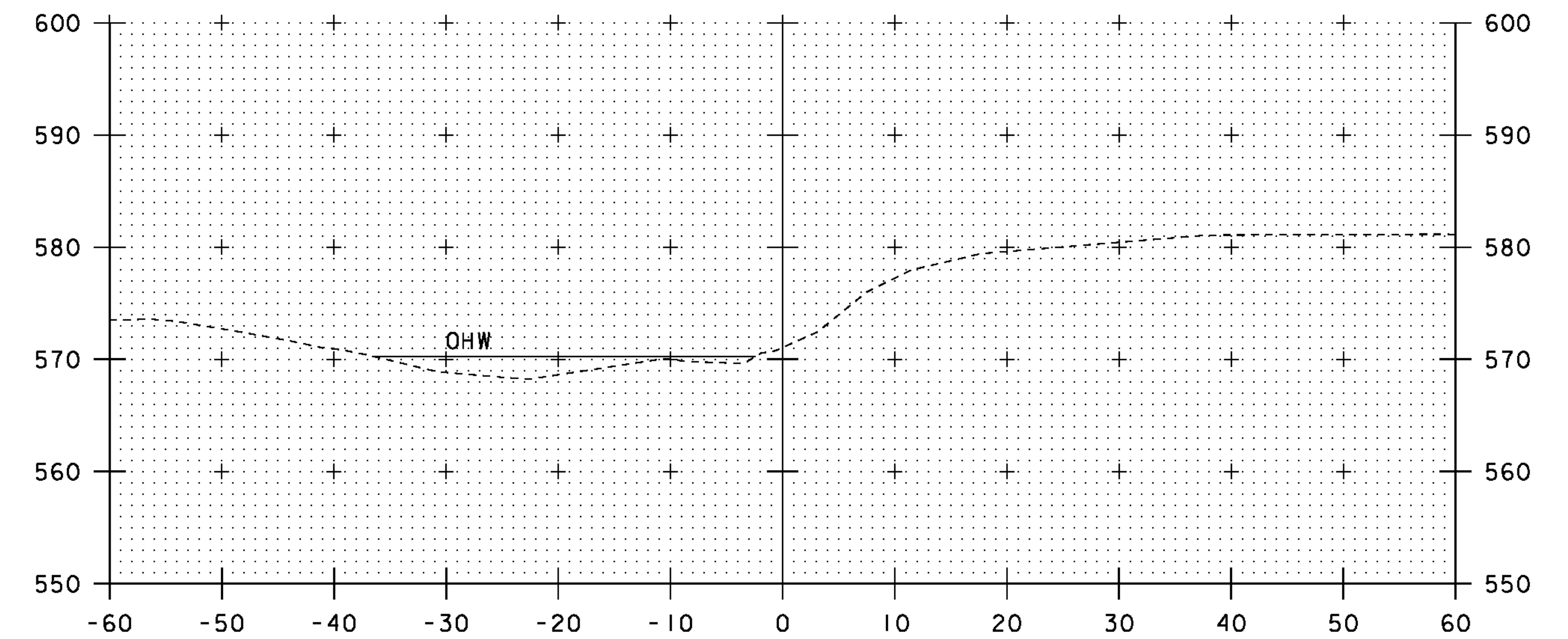
11+25

END STONE FILL, TYPE III  
GEOTEXTILE UNDER STONE FILL  
GRUBBING MATERIAL  
UNCLASSIFIED CHANNEL EXCAVATION  
STA 11+10.00 RT

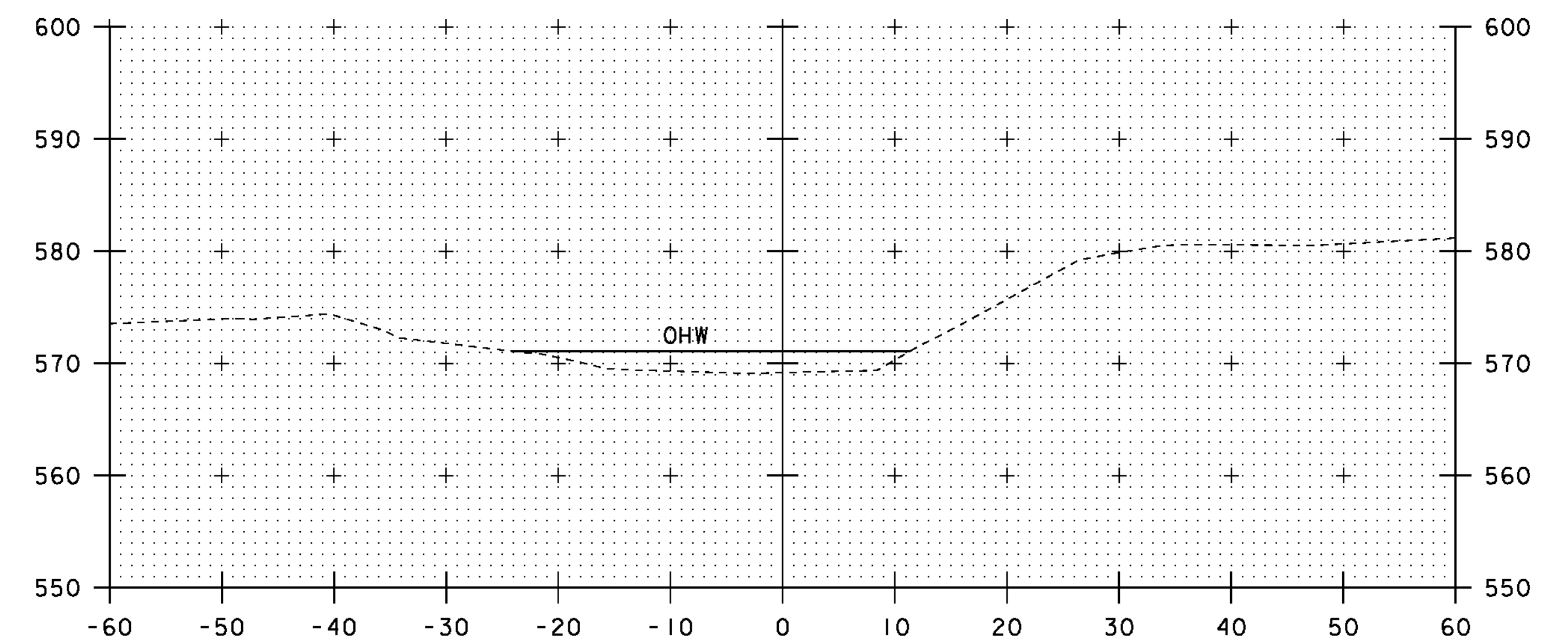


BEGIN GRUBBING MATERIAL  
STA 10+96.50 LT AND RT

11+00



11+75



11+50

SCALE 1" = 10' - 0  
10 0 10

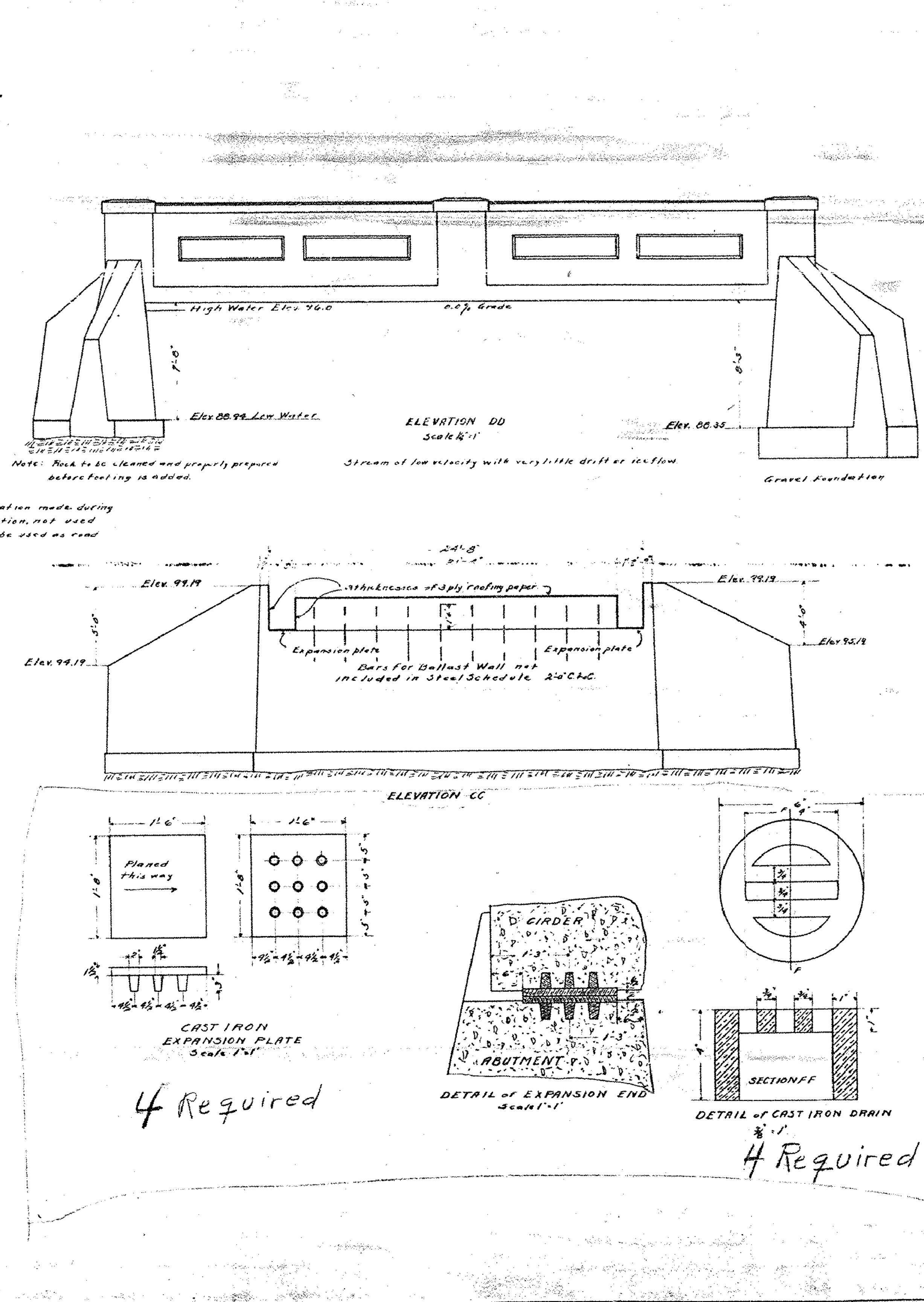
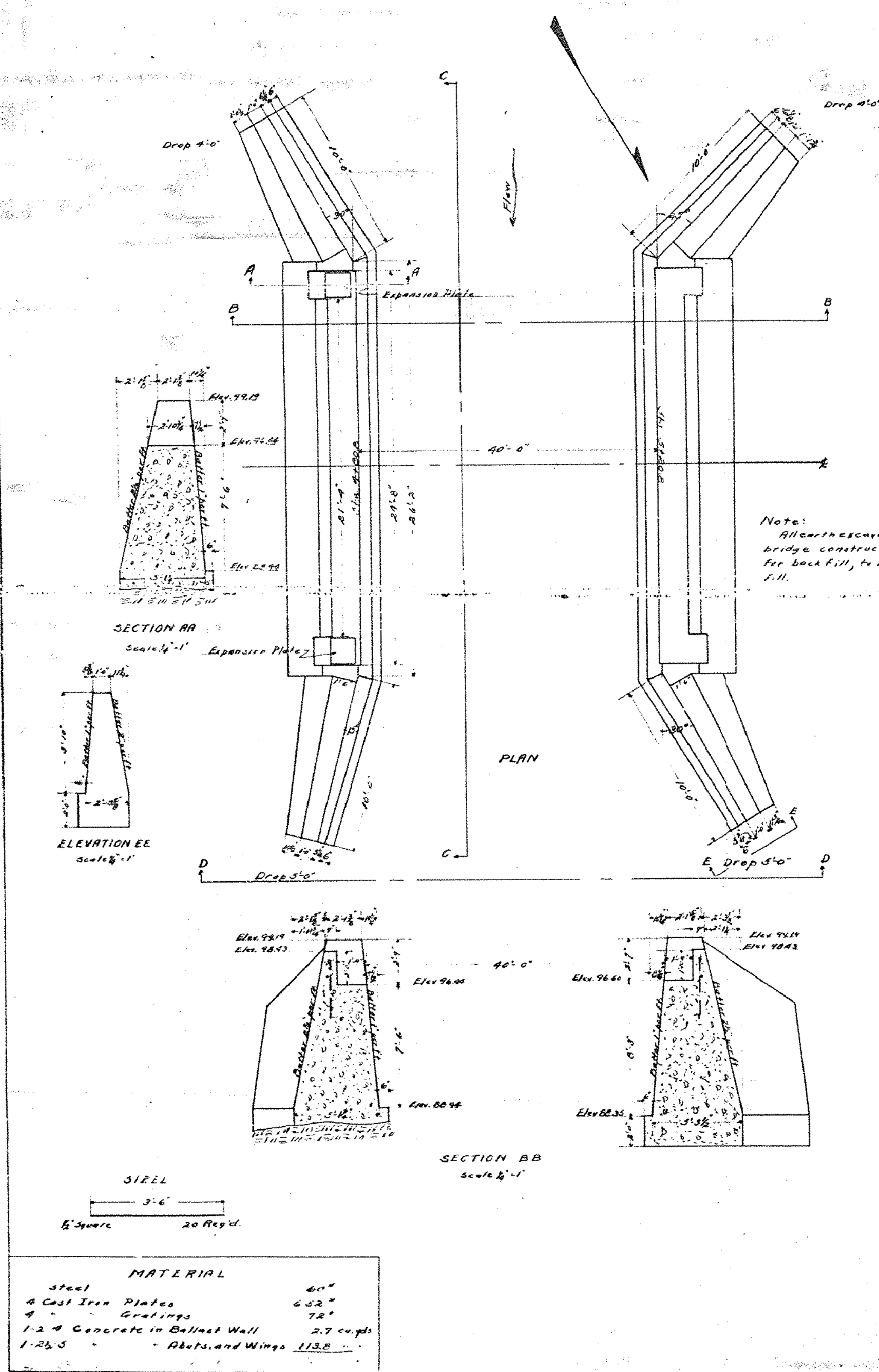
STA. 11+00 TO STA. 11+75

PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(28)

FILE NAME: s84e061/Str/xsl.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
BRIDGE 8 CHANNEL CROSS SECTIONS 2

PLOT DATE: 20-SEP-2010  
DRAWN BY: M.FESSEL  
CHECKED BY: R.S.YOUNG  
SHEET 55 OF 124

| U.S. ROAD | STATE | FED. AID | FISCAL | SHEET | TOTAL |
|-----------|-------|----------|--------|-------|-------|
| 11.0      | VT.   | 46       | 2      | 2     | 2     |



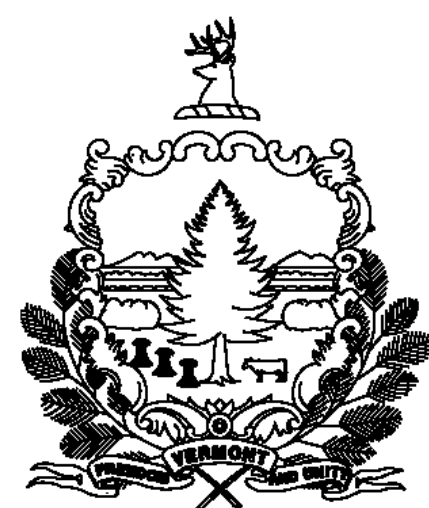
PLAN  
of  
ABUTMENTS  
BRIDGE STA 5+00  
FED. AID PROJECT NO. 46  
CHESTER, VT.  
OVER S.B. Williams  
Brook.

BR. NO. 8  
Designed by A.J. Hennels 1/10/23  
Drawn by G.L. Field 1/11/23  
Traced by G.L.F. 1/24/23  
Checked by A.J.A. 2/1/23  
Series F No. 46 Filed  
Sheet 4 of 7

N. T. S.

|                          |                             |
|--------------------------|-----------------------------|
| PROJECT NAME:            | CHESTER                     |
| PROJECT NUMBER:          | BRF 025-1(28)               |
| FILE NAME:               | 84e061/Str/s84e061scans.dgn |
| PROJECT LEADER:          | C.P. WILLIAMS               |
| DESIGNED BY:             |                             |
| BRIDGE 8 REFERENCE PLANS |                             |
| PLOT DATE:               | 20-SEP-2010                 |
| DRAWN BY:                |                             |
| CHECKED BY:              |                             |
| SHEET                    | 56 OF 124                   |

STATE OF VERMONT  
AGENCY OF TRANSPORTATION

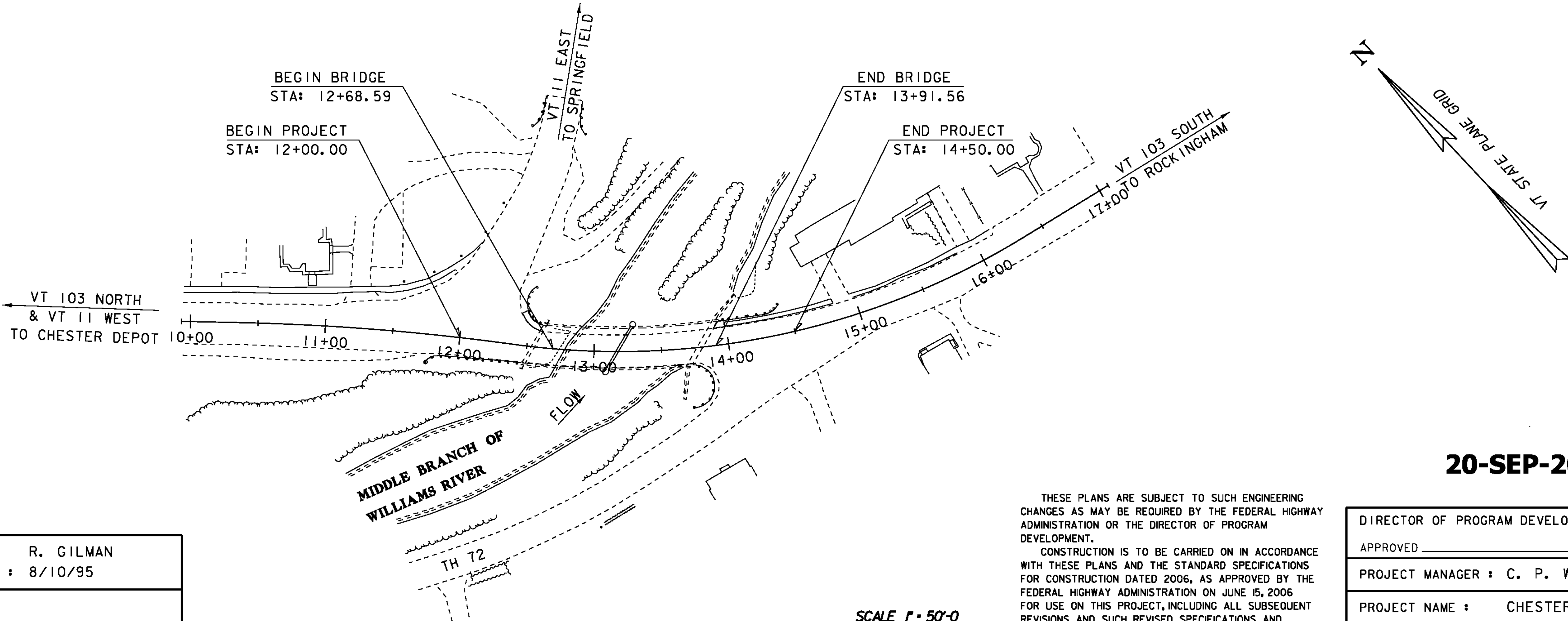
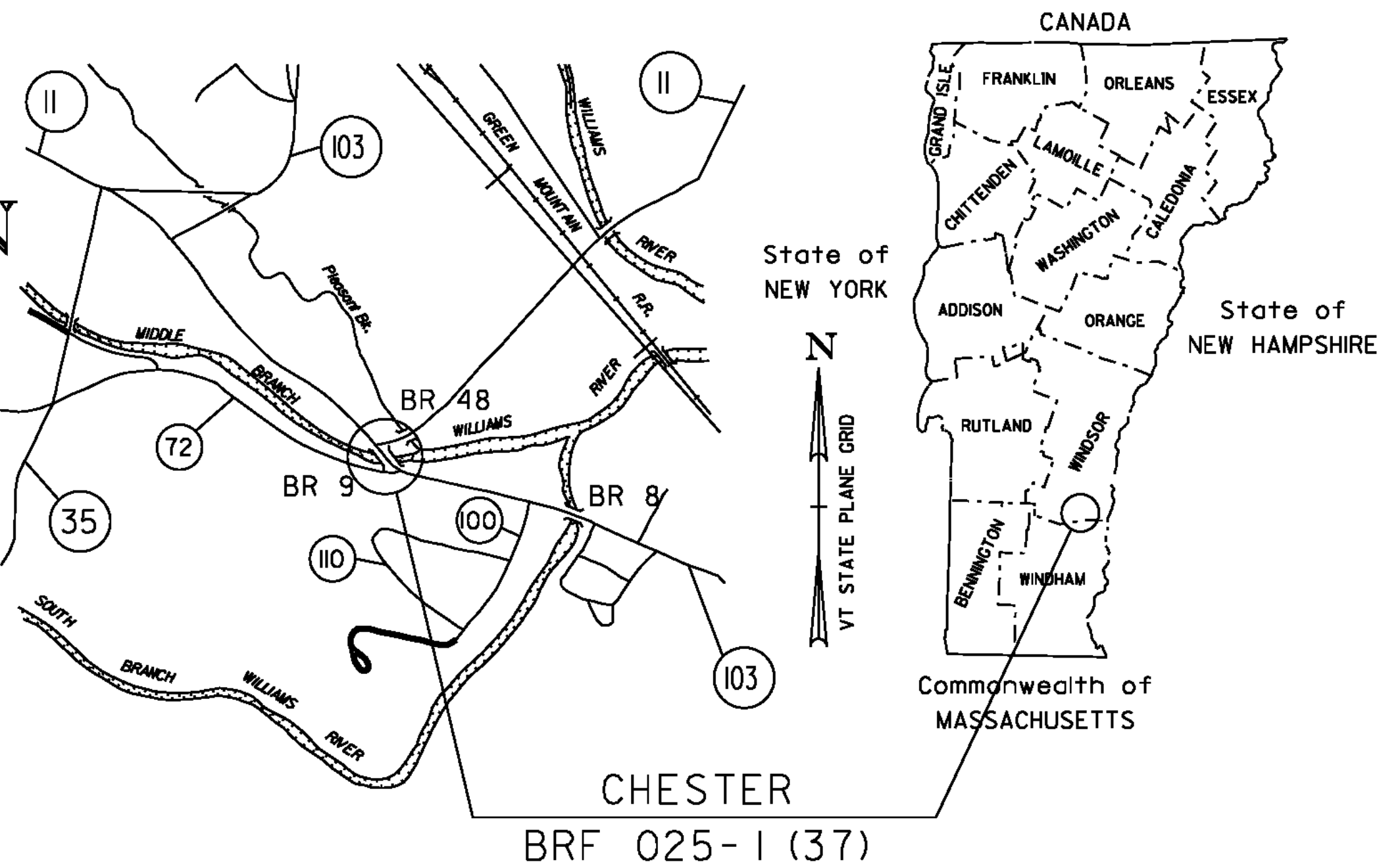


PROPOSED IMPROVEMENT  
BRIDGE PROJECT

TOWN OF CHESTER  
COUNTY OF WINDSOR

ROUTE NO: VT RT 103, PRINCIPAL ARTERIAL, NATIONAL HIGHWAY SYSTEM, BRIDGE 9

PROJECT LOCATION: BEGINNING AT APPROXIMATELY THE JUNCTION OF VT 103 AND VT 11 (PLEASANT ST.),  
AND EXTENDING SOUTHEAST ALONG VT 103 FOR 250 FT.  
PROJECT DESCRIPTION: THE PROJECT SHALL CONSIST OF THE REPLACEMENT OF THE EXISTING STRUCTURE  
WITH A NEW STRUCTURE, INCLUDING RELATED ROADWAY AND CHANNEL WORK  
LENGTH OF STRUCTURE: 122.97 FEET  
LENGTH OF ROADWAY: 127.03 FEET  
LENGTH OF PROJECT: 250.00 FEET



QUALITY ASSURANCE PROGRAM: LEVEL 1

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

|                         |           |
|-------------------------|-----------|
| SURVEYED BY : R. GILMAN |           |
| SURVEYED DATE : 8/10/95 |           |
| DATUM                   |           |
| VERTICAL                | NAVD 88   |
| HORIZONTAL              | NAD 83/92 |

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.  
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

20-SEP-2010

|                                  |      |
|----------------------------------|------|
| DIRECTOR OF PROGRAM DEVELOPMENT  |      |
| APPROVED                         | DATE |
| PROJECT MANAGER : C. P. WILLIAMS |      |
| PROJECT NAME : CHESTER           |      |
| PROJECT NUMBER : BRF 025-1 (37)  |      |
| SHEET 57 OF 124 SHEETS           |      |

| INDEX OF SHEETS |       |       |      |        |        | FINAL HYDRAULIC REPORT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |  |  |  |  |                |       |  |  |  |  |  |  |      |       |     |        |        |        |         |         |    |    |    |    |    |      |    |           |      |      |  |  |  |  |  |         |  |  |  |  |  |  |  |           |      |      |      |      |      |      |      |           |   |  |  |  |  |  |  |
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| PLAN SHEETS     |       |       |      |        |        | STANDARDS LIST                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |  |  |  |  |                |       |  |  |  |  |  |  |      |       |     |        |        |        |         |         |    |    |    |    |    |      |    |           |      |      |  |  |  |  |  |         |  |  |  |  |  |  |  |           |      |      |      |      |      |      |      |           |   |  |  |  |  |  |  |
|                 |       |       |      |        |        | <div>HYDROLOGIC DATA</div> <div>Date: December 2008</div> <div>DRAINAGE AREA : 33.5 sq. mi.</div> <div>CHARACTER OF TERRAIN : Hilly to mountainous, mixed use, mostly rural</div> <div>STREAM CHARACTERISTICS : Sinuous, incised</div> <div>NATURE OF STREAMBED : Mostly gravel, cobbles</div> <div>PEAK FLOW DATA</div> <div>Q 2.33 = 1650 cfs</div> <div>Q 10 = 3450 cfs</div> <div>Q 25 = 4400 cfs</div> <div>Q 50 = 5525 cfs</div> <div>Q 100 = 6600 cfs</div> <div>Q 500 = 9250 cfs</div> <div>DATE OF FLOOD OF RECORD 1938</div> <div>ESTIMATED DISCHARGE: unknown</div> <div>WATER SURFACE ELEV.: unknown</div> <div>NATURAL STREAM VELOCITY: @ Q50 = 11.3 fps</div> <div>ICE CONDITIONS : moderate</div> <div>DEBRIS: little to moderate</div> <div>DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? yes</div> <div>IS ORDINARY RISE RAPID? yes</div> <div>IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? no</div> <div>IF YES, DESCRIBE: N/A</div> <div>WATERSHED STORAGE: 1%</div> <div>HEADWATERS: UNIFORM: X</div> <div>IMMEDIATELY ABOVE SITE:</div> <div>EXISTING STRUCTURE INFORMATION</div> <div>STRUCTURE TYPE: 2-span continuous rolled beam</div> <div>YEAR BUILT: 1935</div> <div>CLEAR SPAN(NORMAL TO STREAM): 2 spans @ 62' = 124' (111' normal clear span)</div> <div>VERTICAL CLEARANCE ABOVE STREAMBED: 10'</div> <div>WATERWAY OF FULL OPENING: 850 sq. ft.</div> <div>DISPOSITION OF STRUCTURE: Remove</div> <div>TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings</div> <div>WATER SURFACE ELEVATIONS AT:</div> <div>Q2.33 = 578.5'</div> <div>Q10 = 578.5'</div> <div>Q25 = 579.4'</div> <div>Q50 = 580.4'</div> <div>Q100 = 581.3'</div> <div>VELOCITY = 7.6 fps</div> <div>" 9.5 fps</div> <div>" 10.1 fps</div> <div>" 10.7 fps</div> <div>" 11.3 fps</div> <div>LONG TERM STREAMBED CHANGES: None noted</div> <div>IS THE ROADWAY OVERTOPPED BELOW Q100: No</div> <div>FREQUENCY: N/A</div> <div>RELIEF ELEVATION: 582.4'</div> <div>DISCHARGE OVER ROAD @Q100: N/A</div> <div>UPSTREAM STRUCTURE</div> <div>TOWN: Chester</div> <div>DISTANCE: 2,350'</div> <div>HIGHWAY #: VT 35 (TH 3) FAS 0125</div> <div>STRUCTURE #: 9</div> <div>CLEAR SPAN: 14'</div> <div>CLEAR HEIGHT: 14'</div> <div>YEAR BUILT: 1940</div> <div>FULL WATERWAY: 14'</div> <div>STRUCTURE TYPE: Single span steel beam bridge</div> <div>DOWNSTREAM STRUCTURE</div> <div>TOWN: Chester</div> <div>DISTANCE: 2,070'</div> <div>HIGHWAY #: Green Mountain Railway Bridge</div> <div>STRUCTURE #:</div> <div>CLEAR SPAN: 14'</div> <div>CLEAR HEIGHT: 14'</div> <div>YEAR BUILT: 1940</div> <div>FULL WATERWAY: 14'</div> <div>STRUCTURE TYPE: 14'</div> <div>LRFR LOAD RATING FACTORS</div> <table><thead><tr><th rowspan="2">LOADING LEVELS</th><th colspan="7">TRUCK</th></tr><tr><th>H-20</th><th>HL-93</th><th>3S2</th><th>6 AXLE</th><th>3A STR</th><th>4A STR</th><th>5A SEMI</th></tr></thead><tbody><tr><td>TONNAGE</td><td>20</td><td>36</td><td>36</td><td>66</td><td>30</td><td>34.5</td><td>38</td></tr><tr><td>INVENTORY</td><td>3.35</td><td>2.35</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>POSTING</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>OPERATING</td><td>4.34</td><td>3.05</td><td>2.84</td><td>1.81</td><td>2.99</td><td>2.84</td><td>2.63</td></tr><tr><td>COMMENTS:</td><td colspan="7">0</td></tr></tbody></table> <div>1. NOMINAL PILE DRIVING CAPACITY</div> <div>2. PILE TEST RESISTANCE FACTOR</div> <div>3. MAXIMUM PILE TIP ELEVATION</div> <div>4. SEE GENERAL NOTES FOR REQUIRED PILE PENETRATION ELEVATIONS</div> <div>555.00 KIP</div> <div>0.65</div> <div>SEE BELOW</div> <div>PILE DRIVING AND TESTING REQUIREMENTS</div> <div>PROJECT NAME: CHESTER</div> <div>PROJECT NUMBER: BRF 025-1(37)</div> <div>FILE NAME: 95b168/95b168excel.dgn</div> <div>PLOT DATE: 9/17/2010</div> <div>PROJECT LEADER: C.P. WILLIAMS</div> <div>DRAWN BY: H.I. SALLS</div> <div>DESIGNED BY: H.I. SALLS</div> <div>CHECKED BY: R.S. YOUNG</div> <div>BRIDGE 9 PRELIMINARY INFORMATION SHEET</div> <div>SHEET 58 OF 124</div> |         |  |  |  |  | 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 | 3.35 | 2.35 |  |  |  |  |  | POSTING |  |  |  |  |  |  |  | OPERATING | 4.34 | 3.05 | 2.84 | 1.81 | 2.99 | 2.84 | 2.63 | COMMENTS: | 0 |  |  |  |  |  |  |
| 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       | 3.35  | 2.35  |      |        |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |  |  |  |  |                |       |  |  |  |  |  |  |      |       |     |        |        |        |         |         |    |    |    |    |    |      |    |           |      |      |  |  |  |  |  |         |  |  |  |  |  |  |  |           |      |      |      |      |      |      |      |           |   |  |  |  |  |  |  |
| POSTING         |       |       |      |        |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |  |  |  |  |                |       |  |  |  |  |  |  |      |       |     |        |        |        |         |         |    |    |    |    |    |      |    |           |      |      |  |  |  |  |  |         |  |  |  |  |  |  |  |           |      |      |      |      |      |      |      |           |   |  |  |  |  |  |  |
| OPERATING       | 4.34  | 3.05  | 2.84 | 1.81   | 2.99   | 2.84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2.63    |  |  |  |  |                |       |  |  |  |  |  |  |      |       |     |        |        |        |         |         |    |    |    |    |    |      |    |           |      |      |  |  |  |  |  |         |  |  |  |  |  |  |  |           |      |      |      |      |      |      |      |           |   |  |  |  |  |  |  |
| COMMENTS:       | 0     |       |      |        |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |  |  |  |  |                |       |  |  |  |  |  |  |      |       |     |        |        |        |         |         |    |    |    |    |    |      |    |           |      |      |  |  |  |  |  |         |  |  |  |  |  |  |  |           |      |      |      |      |      |      |      |           |   |  |  |  |  |  |  |
| TRAFFIC DATA    |       |       |      |        |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |  |  |  |  |                |       |  |  |  |  |  |  |      |       |     |        |        |        |         |         |    |    |    |    |    |      |    |           |      |      |  |  |  |  |  |         |  |  |  |  |  |  |  |           |      |      |      |      |      |      |      |           |   |  |  |  |  |  |  |
| YEAR            | ADT   | DHV   | % D  | % T    | ADTT   | 20 year ESAL for flexible pavement from 2013 to 2033 : 5927000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |  |  |  |  |                |       |  |  |  |  |  |  |      |       |     |        |        |        |         |         |    |    |    |    |    |      |    |           |      |      |  |  |  |  |  |         |  |  |  |  |  |  |  |           |      |      |      |      |      |      |      |           |   |  |  |  |  |  |  |
| 2013            | 7200  | 1100  | 50   | 8.3    | 730    | 40 year ESAL for flexible pavement from 2013 to 2053 : 13731000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |  |  |  |  |                |       |  |  |  |  |  |  |      |       |     |        |        |        |         |         |    |    |    |    |    |      |    |           |      |      |  |  |  |  |  |         |  |  |  |  |  |  |  |           |      |      |      |      |      |      |      |           |   |  |  |  |  |  |  |
| 2033            | 8600  | 1300  | 50   | 10.8   | 1100   | Design Speed : 30 mph                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |  |  |  |  |                |       |  |  |  |  |  |  |      |       |     |        |        |        |         |         |    |    |    |    |    |      |    |           |      |      |  |  |  |  |  |         |  |  |  |  |  |  |  |           |      |      |      |      |      |      |      |           |   |  |  |  |  |  |  |

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2007, AND ITS LATEST REVISIONS.
2. THE BRIDGE WAS DESIGNED FOR THE HL-93 LIVE LOAD WITH NO ALLOWANCE FOR FUTURE PAVEMENT.
3. EXISTING SIGNS NOT REUSED SHALL REMAIN PROPERTY OF THE STATE OF VERMONT. THESE SIGNS SHALL BE STOCKPILED ON THE PROJECT SITE AND THEN LOADED ON A TRUCK SUPPLIED BY DISTRICT 2. CONTACT D.T.A. TAMMY ELLIS AT (802) 254-5011 TO ARRANGE REMOVAL FROM THE PROJECT SITE.
4. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE
5. ITEM 529.15 “REMOVAL OF STRUCTURE” SHALL BE USED FOR REMOVAL OF THE EXISTING STRUCTURE INCLUDING THE SUPERSTRUCTURE, PIER, AND ABUTMENTS OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION. THE PIER SHALL BE REMOVED TO ELEVATION 570.00 FEET, ABUTMENT #1 SHALL BE REMOVED TO ELEVATION 582.00 FEET, AND ABUTMENT #2 SHALL BE REMOVED TO ELEVATION 574.00 FEET.
6. THE CONTRACTOR SHALL BE MADE AWARE THAT EXISTING WATER AND SEWER LINES ARE WITHIN THE CONSTRUCTION LIMITS OF BRIDGE 9. SEE SPECIAL PROVSIONS.

EARTHWORK AND RELATED ITEMS

7. TEMPORARY CONSTRUCTION FILLS WITHIN THE WATERCOURSE FOR ANY PURPOSE SHALL CONSIST OF CLEAN STONE FILL ONLY. NO OTHER FILLING IN THE STREAM SHALL OCCUR WITHOUT THE APPROVAL OF THE STREAM ALTERATION ENGINEER.
8. THE “STONE FILL, TYPE IV” UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW STEEL GIRDERS ARE SET.
9. “STONE FILL, TYPE I” SHALL BE USED FOR EROSION CONTROL AS SHOWN IN THE PLANS AND/OR AT THE DISCRETION OF THE RESIDENT ENGINEER. PAYMENT FOR MATERIAL AND PLACEMENT SHALL BE MADE UNDER ITEM 613.10, “STONE FILL, TYPE I”.

PILES

10. THE PILES SHALL BE HP 12 x 84.
11. PILE SHOES SHALL BE REQUIRED AND SHALL CONFORM TO SECTION 505.04(e).
12. PILES SHALL BE DRIVEN WITHIN 3 INCHES OF THE LOCATION SHOWN ON THE PLANS. THE PILE ORIENTATION SHALL NOT VARY BY MORE THAN 5 DEGREES. THE CONTRACTOR SHALL DEMONSTRATE HOW THE TOLERANCE WILL BE MET TO THE SATISFACTION OF THE RESIDENT ENGINEER.
13. TO ENSURE THAT THE NOMINAL CAPACITY HAS BEEN ATTAINED AND TO PREVENT THE OVERSTRESSING OF THE PILES DURING DRIVING OPERATIONS, DYNAMIC TESTING SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 505.04 (c) - 2 OF THE STANDARD SPECIFICATIONS. PAYMENT FOR PILE TESTING SHALL BE MADE UNDER ITEM 505.45 “DYNAMIC PILE LOADING TEST”. A MINIMUM OF ONE DYNAMIC PILE TEST SHALL BE CONDUCTED ON THE FIRST PILE DRIVEN FOR EACH SUBSTRUCTURE UNIT, FOR A TOTAL OF 2 TESTS. MORE TESTS MAY BE REQUIRED BY THE RESIDENT ENGINEER.
14. THE PILES SHALL BE DRIVEN TO A NOMINAL RESISTANCE OF 555 KIPS, AS DETERMINED BY THE RESULTS OF DYNAMIC TESTING, AS INTERPRETED BY THE RESIDENT ENGINEER. HOWEVER, THE PILES SHALL BE DRIVEN TO A MINIMUM DEPTH OF 23 FEET BELOW THE BOTTOM OF THE PILE CAP ELEVATION.
15. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED TO BE AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTH MAY VARY.

STEEL

16. THE EXISTING STRUCTRAL STEEL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHELL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDELING 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.

CONCRETE

17. CONCRETE USED FOR THE DECK CLOSURE POUR AND CURTAIN WALL SHALL BE SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT).
18. WATER REPELLENT, SILANE, SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.
19. FLEMING BRACKETS OR SIMILAR FALSEWORK SHALL BE SPACED AS REQUIRED BY DESIGN, BUT SHALL BE LIMITED TO A MAXIMUM SPACING OF 4 FEET. THE DESIGN OF FALSEWORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
20. ALL SUPERSTRUCTURE REINFORCING STEEL SHALL BE EPOXY COATED.
21. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:

SPACING: +/- 1 INCH

CLEARANCE: +/- 1/4 INCH

PRECAST CONCRETE DECK SLABS AND POST-TENSIONING

22. DESIGN VALUES

A. CONCRETE COMPRESSIVE STRENGTH: f’c = 5000 psi.

B. POST-TENSIONING STRANDS: 0.5 INCH DIAMETER, 270 ksi, LOW RELAXATION 7-WIRE STRANDS.

C. ASSUMED MODULUS OF ELASTICITY IS 28,500 Ksi.

D. THERE SHALL BE 3 STRANDS PER CONDUIT.

E. DESIGN BASED ON THE FOLLOWING POST-TENSION CONDUIT PARAMETERS:

COEFFICIENT OF FRICTION = 0.23

WOBBLE FRICTION COEFFICIENT = 0.0002/FT

IF THE PROPOSED CONDUIT DOES NOT MEET THESE VALUES, THEN THE CONTRACTOR SHALL ADJUST THE JACKING FORCE TO PRODUCE THE FINAL POST-TENSIONING FORCE LISTED BELOW.

F. THE JACKING FORCE PER STRAND = 32 KIPS

G. THE FINAL FORCE PER STRAND = 29 KIPS (AFTER ALL LOSSES DUE TO FRICTION, ANCHORAGE SET AND ELASTIC SHORTENING).
23. ALL DECK PANELS SHALL BE CAST FOR A MINIMUM OF 56 DAYS PRIOR TO POST TENSIONING.
24. DECK PANELS MUST BE ALLOWED TO SLIDE ON GIRDERS DURING POST TENSIONING.
25. CONDUIT SHALL BE GROUTED AFTER POST-TENSIONING. THE GROUT SHALL BE A NON-BLEEDING GROUT MEETING THE REQUIREMENTS OF ASTM C 1107 (GRADE C).
26. POST-TENSIONING AND GROUTING SHALL BE PERFORMED BY QUALIFIED PERSONEL WITH PREVIOUS EXPERIENCE IN PRE-CAST DECK PLACEMENT.
27. SHEAR KEY FACES SHALL BE SANDBLASTED PRIOR TO DELIVERY AND PRESSURE WASHED WITH WATER PRIOR TO ERECTION OF THE SLABS.
28. BEGIN POST TENSIONING AT THE CENTER OF PANELS. DO NOT ALLOW MORE THAN 12.5% OF THE POST TENSIONING FORCE TO BE ECCENTRIC AT ANY TIME. SUBMIT STRESSING SEQUENCE TO THE PROJECT MANAGER AS PART OF THE ERECTION PLAN.
29. THE CONTRACTOR IS RESPONSIBLE FOR DESIGN OF ALL LIFTING POINTS, POST TENSIONING ELEMENTS IN THE ANCHORAGE ZONE AND ADDITIONAL REINFORCEMENT IN THE ANCHORAGE ZONE (REQUIRED FOR SPLITTING, BURSTING, SPALLING, ETC.) INCLUDING THE LOCAL ZONE (REGION IMMEDIATELY SURROUNDING THE POST TENSIONING DEVICE). THE CONTRACTOR IS RESPONSIBLE FOR CONSIDERATION OF ADDITIONAL STRESSES DUE TO HANDLING. DESIGN MUST CONFORM TO AASHTO LRFD SPECIFICATIONS.
30. GALVANIZE BEARING PLATE ANCHOR HEADS AND METAL TRUMPETS AT ANCHORAGES ACCORDING TO MANUFACTURER’S RECOMMENDATIONS. DO NOT GALVANIZE STRAND GRIPPING WEDGES.
31. POST-TENSIONING STRANDS AND CONDUIT SHALL MEET THE REQUIREMENTS OF SECTION 510.
32. ANCHOR ASSEMBLIES, CONDUIT, GROUT FOR THE CONDUIT, MECHANICAL CONNECTORS, AND POST-TENSIONING STRANDS SHALL BE INCLUDED IN ITEM 540.10, “PRECAST CONCRETE STRUCTURE (8” DECK SLABS).”
33. PROPOSED SEQUENCE OF CONSTRUCTION:

A. ERECT DECK SLABS.

B. ADJUST SLABS TO GRADE USING LEVELING DEVICES. ALL LEVELING BOLTS SHALL BE TORQUED TO APPROXIMATELY THE SAME VALUE WITHIN 20 PERCENT

C. INSTALL POST-TENSIONING STRANDS LOOSE IN CONDUIT AND SEAL CONDUIT.

D. PLACE GROUT IN TRANSVERSE JOINTS ONLY. THE GROUT SHALL BE RODDED OR VIBRATED TO ENSURE ALL VOIDS ARE FILLED.

- E. GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1000 psi BASED ON MANUFACTURER’S RECOMMENDATIONS, PRIOR TO STRESSING. THE GROUT NEED NOT BE CURED FOR THREE DAYS PRIOR TO THE COMMENCING OF POST-TENSIONING.
- F. PROVIDE APPROPRIATE CUBE MOLDS AS DESCRIBED IN AASHTO T106 FOR 3 SETS OF 3 DAY CUBES, 3 SETS OF 28 DAY CUBES, AND A MINIMUM OF 3 MORE CUBES TO TEST FOR THE 1000 psi MINIMUM.
- G. STRESS POST-TENSIONING STRANDS USING A CALIBRATED JACK.
- H. INSTALL SHEAR CONNECTORS.
- I. GROUT POST-TENSIONING CONDUIT, SHEAR CONNECTOR POCKETS, AND HAUNCHES BETWEEN GIRDERS AND THE BOTTOM OF THE DECK.
- J. POUR THE CLOSURE POUR CONCRETE.
- K. LEVELING BOLTS MAY BE REMOVED. GROUT BOLT RECESS.

ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED FOR APPROVAL BY THE PROJECT MANAGER.

PRECAST ABUTMENTS AND POST-TENSIONING

34. IF VERTICAL CONSTRUCTION JOINTS ARE REQUIRED BY THE CONTRACTOR FOR SHIPMENT OF THE ABUTMENTS, THEN THE SECTIONS SHALL BE KEYED AND MATCH CAST. A JOINT DETAIL SHALL BE SHOWN ON THE FABRICATION DRAWINGS.
35. ANY POST-TENSIONING STRANDS AND CONDUIT SHALL ADHERE TO THE REQUIREMENTS OF SECTION 510. ANCHOR ASSEMBLIES, CONDUIT, AND POST-TENSIONING STRANDS SHALL BE INCLUDED IN ITEM 540.10, “PRECAST CONCRETE STRUCTURE (ABUTMENT #1 BRIDGE 9)” AND 540.10, “PRECAST CONCRETE STRUCTURE (ABUTMENT #2 BRIDGE 9).”
36. GALVANIZE POST-TENSIONING ANCHOR ASSEMBLIES AFTER FABRICATION ACCORDING TO MANUFACTURER’S RECOMMENDATIONS.
37. DESIGN VALUES

A. CONCRETE COMPRESSIVE STRENGTH: f’c = 5000 psi.

B. POST-TENSIONING STRANDS: 0.5 INCH DIAMETER, 270 ksi, LOW RELAXATION 7-WIRE STRANDS.

C. ASSUMED MODULUS OF ELASTICITY IS 28,500 Ksi.

D. THERE SHALL BE 2 STRANDS PER CONDUIT.

E. THE JACKING FORCE PER STRAND = 33 KIPS

F. REINFORCING STEEL SHALL BE EPOXY COATED.
38. GROUT FOR THE ABUTMENT CAVITIES SHALL MEET THE REQUIREMENTS OF SELF-CONSOLIDATING CONCRETE. SEE SPECIAL PROVISIONS. ALL COSTS ASSOCIATED WITH GROUTING THE CAVITIES SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 540.10, “PRECAST CONCRETE STRUCTURE (ABUTMENT #1 BRIDGE 9)” AND 540.10, “PRECAST CONCRETE STRUCTURE (ABUTMENT #2 BRIDGE 9).”
39. PROPOSED SEQUENCE OF CONSTRUCTION

A. PREPARE AND GRADE FOUNDATION TO REQUIRED ELEVATION.

B. DRIVE PILES

C. PLACE PRECAST ABUTMENTS AND INSTALL TRANSVERSE STRANDS (IF MORE THAN ONE SUBSTRUCTURE UNIT). USE A CALIBRATED JACK TO TENSION TO 3 KIPS TO REMOVE SAG.

D. GROUT VERTICAL SHEAR KEY

E. GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1000 psi BASED ON MANUFACTURER’S RECOMMENDATIONS, PRIOR TO STRESSING. THE GROUT NEED NOT BE CURED FOR THREE DAYS PRIOR TO COMMENCING OF POST-TENSIONING.

F. PROVIDE APPROPRIATE CUBE MOLDS AS DESCRIBED IN AASHTO T106 FOR 3 SETS OF 3 DAY CUBES, 3 SETS OF 28 DAY CUBES, AND A MINIMUM OF 3 MORE CUBES TO TEST FOR THE 1000 psi MINIMUM.

G. STRESS POST-TENSIONING STRANDS USING A CALIBRATED JACK OPERATED BY QUALIFIED PERSONNEL WITH PERVIOUS EXPERIENCE IN POST-TENSIONING.

H. GROUT PILE CAVITIES.

I. BACKFILL ABUTMENTS IN COORDINATION WITH RETAINING WALL BACKFILL.

ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED FOR APPROVAL BY THE PROJECT MANAGER.

PROJECT NAME: CHESTER

PROJECT NUMBER: BRF 025-1(37)

FILE NAME: 95b168\s95b168gennotes.dgn

PLOT DATE: 20-SEP-2010

PROJECT LEADER: C.P.WILLIAMS

DRAWN BY: D.D.BEARD

DESIGNED BY: R.S.YOUNG

CHECKED BY: R.S.YOUNG

BRIDGE 9 GENERAL NOTES

SHEET 59 OF 124

| STATE OF VERMONT<br>AGENCY OF TRANSPORTATION |  |  |  |  |  |  |         |          |                    |        |                     |             |       | QUANTITY SHEET 1 |                                                              |             |       |                                      |      |                                                 |    |                     |  |  |  |
|----------------------------------------------|--|--|--|--|--|--|---------|----------|--------------------|--------|---------------------|-------------|-------|------------------|--------------------------------------------------------------|-------------|-------|--------------------------------------|------|-------------------------------------------------|----|---------------------|--|--|--|
| SUMMARY OF ESTIMATED QUANTITIES              |  |  |  |  |  |  |         |          |                    |        |                     | TOTALS      |       | DESCRIPTIONS     |                                                              |             |       |                                      |      | DETAILED SUMMARY OF QUANTITIES                  |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | ROADWAY | TRAINING | EROSION<br>CONTROL | BRIDGE | FULL C & E<br>ITEMS | GRAND TOTAL | FINAL | UNIT             | ITEMS                                                        | ITEM NUMBER | ROUND | QUANTITIES                           | UNIT | ITEMS                                           |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 0.5     |          |                    |        |                     | 0.5         |       | LS               | CLEARNG AND GRUBBING, NCLUDING INDIVIDUAL TREES AND STUMPS   | 201.10      |       |                                      |      | EARTHWORKS SUMMARY                              |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 1050    |          |                    |        |                     | 1050        |       | CY               | COMMON EXCAVATION                                            | 203.15      |       |                                      |      | FILL AVAILABLE                                  |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 575    |                     | 575         |       | CY               | UNCLASSIFIED CHANNEL EXCAVATION                              | 203.27      |       | 320                                  | CY   | COMMON EXCAVATION ( 320 x 1.0)                  |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                     |             |       | CY               | TRENCH EXCAVATION OF EARTH                                   | 204.20      |       | 54                                   | CY   | CHANNEL EXCAVATION ( 180 x 0.3)                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 115     |          |                    |        |                     | 115         |       | CY               | TRENCH EXCAVATION OF EARTH                                   | 204.20      |       | 0                                    | CY   | UNDERDRAIN EXCAVATION ( 0 x 0.9)                |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 5       |          |                    |        |                     | 5           |       | CY               | TRENCH EXCAVATION OF ROCK                                    | 204.21      |       | 76.5                                 | CY   | STRUCTURE EXCAVATION ( 255 x 0.3)               |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                     |             |       | CY               | TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)           | 204.22      |       | 0                                    | CY   | TRENCH EXCAVATION OF EARTH ( 0 x 0.9)           |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 285    |                     | 285         |       | CY               | STRUCTURE EXCAVATION                                         | 204.25      |       | 4.5                                  | CY   | ROUNDING                                        |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 175    |                     | 175         |       | CY               | GRANULAR BACKFILL FOR STRUCTURES                             | 204.30      |       | 455                                  | CY   | TOTAL FILL AVAILABLE                            |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 690     |          |                    |        |                     | 690         |       | SY               | COLD PLANING, BITUMINOUS PAVEMENT                            | 210.10      |       |                                      |      | FILL REQUIRED                                   |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 1050    |          |                    |        |                     | 1050        |       | CY               | SUBBASE OF DENSE GRADED CRUSHED STONE                        | 301.35      |       | 1                                    | CY   | PLANMETERED FILL ( 1 CY EARTH + 0 CY GRANULAR ) |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 12      |          |                    |        |                     | 12          |       | CWT              | EMULSIFIED ASPHALT                                           | 404.65      |       | 1.15                                 | CY   | FACTORED FILL ( x1.15)                          |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 715     |          |                    |        |                     | 715         |       | TON              | BITUMINOUS CONCRETE PAVEMENT                                 | 406.25      |       | 3.85                                 | CY   | ROUNDING                                        |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 1       |          |                    |        |                     | 1           |       | LU               | PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)                  | 406.50      |       |                                      |      | 5                                               | CY | TOTAL FILL REQUIRED |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 1      |                     | 1           |       | LS               | FURNISHING EQUIPMENT FOR DRIVING PILING (BRIDGE 9)           | 504.10      |       | 450                                  | CY   | TOTAL WASTE                                     |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 650    |                     | 650         |       | LF               | STEEL PILING FOR INTEGRAL ABUTMENTS, HP 12 X 84              | 505.265     |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 2      |                     | 2           |       | EACH             | DYNAMIC PILE LOADING TEST                                    | 505.45      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 252300 |                     | 252300      |       | LB               | STRUCTURAL STEEL, CURVED PLATE GIRDER                        | 506.56      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 13265  |                     | 13265       |       | LB               | EPOXY COATED REINFORCING STEEL                               | 507.17      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 1      |                     | 1           |       | LS               | SHEAR CONNECTORS (1684 - 7/8" X 7")                          | 508.15      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 35     |                     | 35          |       | GAL              | WATER REPELLENT, SILANE                                      | 514.10      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 100    |                     | 100         |       | LF               | BRIDGE EXPANSION JOINT, ASPHALTIC PLUG                       | 516.10      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 465    |                     | 465         |       | SY               | SHEET MEMBRANE WATERPROOFING, TORCH APPLIED                  | 519.20      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 90     |                     | 90          |       | LF               | JOINT SEALER, HOT POURED                                     | 524.11      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 1      |                     | 1           |       | EACH             | REMOVAL OF STRUCTURE (4985 SF - EST.)                        | 529.15      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 14     |                     | 14          |       | EACH             | BEARING DEVICE ASSEMBLY, INTEGRAL ABUTMENT                   | 531.14      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 1      |                     | 1           |       | LS               | PRECAST CONCRETE STRUCTURE (8" DECK SLABS)                   | 540.10      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 1      |                     | 1           |       | LS               | PRECAST CONCRETE STRUCTURE (ABUTMENT #1 BRIDGE 9)            | 540.10      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 1      |                     | 1           |       | LS               | PRECAST CONCRETE STRUCTURE (ABUTMENT #2 BRIDGE 9)            | 540.10      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                     |             |       |                  | BEGIN OPTION AA                                              |             |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 84      |          |                    |        |                     | 84          |       | LF               | 18" CAAP .060 (2-2/3 X 1/2)                                  | 601.0215    |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 84      |          |                    |        |                     | 84          |       | LF               | 18" PCCSP .064 (2-2/3 X 1/2)                                 | 601.0415    |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 84      |          |                    |        |                     | 84          |       | LF               | 18" CPEP                                                     | 601.0915    |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                     |             |       |                  | END OPTION AA                                                |             |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 1       |          |                    |        |                     | 1           |       | EACH             | PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE  | 604.18      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 2       |          |                    |        |                     | 2           |       | EACH             | CHANGING ELEVATION OF DROP INLETS, CATCH BASINS, OR MANHOLES | 604.40      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 1       |          |                    |        |                     | 1           |       | EACH             | CHANGING ELEVATION OF SEWER MANHOLES                         | 604.42      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          | 10                 |        |                     | 10          |       | HR               | ALL PURPOSE EXCAVATOR RENTAL, TYPE I                         | 608.25      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  | 1       |          |                    |        |                     | 1           |       | TON              | DUST AND ICE CONTROL WITH CALCIUM CHLORIDE                   | 609.15      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          | 10                 |        |                     | 10          |       | CY               | STONE FILL, TYPE I                                           | 613.10      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 635    |                     | 635         |       | CY               | STONE FILL, TYPE IV                                          | 613.13      |       |                                      |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                     |             |       |                  |                                                              |             |       | PROJECT NAME: CHESTER                |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                     |             |       |                  |                                                              |             |       | PROJECT NUMBER: BRF 025-1(37)        |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                     |             |       |                  |                                                              |             |       | FILE NAME: s95b168quantitysheets.dgn |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                     |             |       |                  |                                                              |             |       | PROJECT LEADER: C.P.WILLIAMS         |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                     |             |       |                  |                                                              |             |       | DESIGNED BY: R.S.YOUNG               |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                     |             |       |                  |                                                              |             |       | QUANTITY SHEET #1                    |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                     |             |       |                  |                                                              |             |       | PLOT DATE: 09/20/2010                |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                     |             |       |                  |                                                              |             |       | DRAWN BY: D.D.BEARD                  |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                     |             |       |                  |                                                              |             |       | CHECKED BY: R.S.YOUNG                |      |                                                 |    |                     |  |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                     |             |       |                  |                                                              |             |       | SHEET 60 OF 124                      |      |                                                 |    |                     |  |  |  |

| STATE OF VERMONT<br>AGENCY OF TRANSPORTATION |  |  |  |  |  |  |         |          |                    |        |                    |             |       | QUANTITY SHEET 2 |                                           |             |       |                                    |      |       |                       |  |  |
|----------------------------------------------|--|--|--|--|--|--|---------|----------|--------------------|--------|--------------------|-------------|-------|------------------|-------------------------------------------|-------------|-------|------------------------------------|------|-------|-----------------------|--|--|
| SUMMARY OF ESTIMATED QUANTITIES              |  |  |  |  |  |  |         |          |                    |        |                    | TOTALS      |       | DESCRIPTIONS     |                                           |             |       | DETAILED SUMMARY OF QUANTITIES     |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | ROADWAY | TRAINING | EROSION<br>CONTROL | BRIDGE | FULL C.E.<br>ITEMS | GRAND TOTAL | FINAL | UNIT             | ITEMS                                     | ITEM NUMBER | ROUND | QUANTITIES                         | UNIT | ITEMS |                       |  |  |
|                                              |  |  |  |  |  |  | 105     |          |                    |        |                    | 105         |       | LF               | PRECAST REINFORCED CONCRETE CURB, TYPE B  | 616.26      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 35      |          |                    |        |                    | 35          |       | SY               | PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH | 618.10      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 4       |          |                    |        |                    | 4           |       | SF               | DETECTABLE WARNING SURFACE                | 618.30      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 133     |          |                    |        |                    | 133         |       | LF               | HD STEEL BEAM GUARDRAIL, GALVANIZED       | 621.21      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 4       |          |                    |        |                    | 4           |       | EACH             | ANCHOR FOR STEEL BEAM RAIL                | 621.60      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 210     |          |                    |        |                    | 210         |       | LF               | REMOVAL AND DISPOSAL OF GUARDRAIL         | 621.80      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 530     |          |                    |        |                    | 530         |       | LF               | TEMPORARY TRAFFIC BARRIER                 | 621.90      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 90      |          |                    |        |                    | 90          |       | HR               | UNIFORMED TRAFFIC OFFICERS                | 630.10      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 720     |          |                    |        |                    | 720         |       | HR               | FLAGGERS                                  | 630.15      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        | 0.5                | 0.5         |       | LS               | FIELD OFFICE, ENGINEERS                   | 631.10      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        | 0.5                | 0.5         |       | LS               | TESTING EQUIPMENT, CONCRETE               | 631.16      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        | 0.5                | 0.5         |       | LS               | TESTING EQUIPMENT, BITUMINOUS             | 631.17      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        | 1500               | 1500        |       | DL               | FIELD OFFICE TELEPHONE (N.A.B.I.)         | 631.26      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         | 260      |                    |        |                    | 260         |       | HR               | EMPLOYEE TRAINEESHIP                      | 634.10      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 0.5     |          |                    |        |                    | 0.5         |       | LS               | MOBILIZATION/DEMObILIZATION               | 635.11      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 0.5     |          |                    |        |                    | 0.5         |       | LS               | PUBLIC RELATIONS OFFICER                  | 641.12      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 970     |          |                    |        |                    | 970         |       | LF               | 4 INCH WHITE LINE                         | 646.20      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 890     |          |                    |        |                    | 890         |       | LF               | 4 INCH YELLOW LINE                        | 646.21      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 76      |          |                    |        |                    | 76          |       | LF               | DURABLE 24 INCH STOP BAR                  | 646.480     |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 8       |          |                    |        |                    | 8           |       | EACH             | DURABLE LETTER OR SYMBOL                  | 646.490     |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 72      |          |                    |        |                    | 72          |       | LF               | DURABLE CROSSWALK MARKING                 | 646.500     |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 1570    |          |                    |        |                    | 1570        |       | LF               | TEMPORARY 4 INCH WHITE LINE               | 646.600     |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 1665    |          |                    |        |                    | 1665        |       | LF               | TEMPORARY 4 INCH YELLOW LINE              | 646.610     |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  | 165     |          |                    |        |                    | 165         |       | SF               | PAVEMENT MARKING MASK                     | 646.86      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          |                    | 675    |                    | 675         |       | SY               | GEOTEXTILE UNDER STONE FILL               | 649.31      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 120                |        |                    | 120         |       | SY               | GEOTEXTILE FOR SILT FENCE                 | 649.51      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 380                |        |                    | 380         |       | SY               | GEOTEXTILE FOR FILTER CURTAIN             | 649.61      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 20                 |        |                    | 20          |       | LB               | SEED                                      | 651.15      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 80                 |        |                    | 80          |       | LB               | FERTILIZER                                | 651.18      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 1                  |        |                    | 1           |       | TON              | AGRICULTURAL LIMESTONE                    | 651.20      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 1                  |        |                    | 1           |       | TON              | HAYMULCH                                  | 651.25      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 30                 |        |                    | 30          |       | CY               | TOPSOIL                                   | 651.35      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 75                 |        |                    | 75          |       | SY               | GRUBBING MATERIAL                         | 651.40      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 1                  |        |                    | 1           |       | LS               | EPSC PLAN (BRIDGE 9)                      | 652.10      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 15                 |        |                    | 15          |       | HR               | MONITORING EPSC PLAN                      | 652.20      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 1                  |        |                    | 1           |       | LU               | MAINTENANCE OF EPSC PLAN (N.A.B.I.)       | 652.30      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 580                |        |                    | 580         |       | SY               | TEMPORARY EROSION MATTING                 | 653.20      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 16                 |        |                    | 16          |       | CY               | VEHICLE TRACKING PAD                      | 653.35      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 4                  |        |                    | 4           |       | EACH             | INLET PROTECTION DEVICE, TYPE I           | 653.40      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          | 60                 |        |                    | 60          |       | LF               | BARRIER FENCE                             | 653.50      |       |                                    |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                    |             |       |                  |                                           |             |       | PROJECT NAME: CHESTER              |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                    |             |       |                  |                                           |             |       | PROJECT NUMBER: BRF 025-1(37)      |      |       |                       |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                    |             |       |                  |                                           |             |       | FILE NAME: s95b168quantysheets.dgn |      |       | PLOT DATE: 09/20/2010 |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                    |             |       |                  |                                           |             |       | PROJECT LEADER: C.P.WILLIAMS       |      |       | DRAWN BY: D.D.BEARD   |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                    |             |       |                  |                                           |             |       | DESIGNED BY: R.S.YOUNG             |      |       | CHECKED BY: R.S.YOUNG |  |  |
|                                              |  |  |  |  |  |  |         |          |                    |        |                    |             |       |                  |                                           |             |       | QUANTITY SHEET #2                  |      |       | SHEET 61 OF 124       |  |  |

## QUANTITY SHEET 3

[illegible]

|                                      |                       |
|--------------------------------------|-----------------------|
| PROJECT NAME: CHESTER                |                       |
| PROJECT NUMBER: BRF 025-1(37)        |                       |
| FILE NAME: s856158quantitysheets.dgn | PLOT DATE: 09/20/2010 |
| PROJECT LEADER: C.P.WILLIAMS         | DRAWN BY: D.D.BEARD   |
| DESIGNED BY: R.S.YOUNG               | CHECKED BY: R.S.YOUNG |
| QUANTITY SHEET #3                    | SHEET 62 OF 124       |

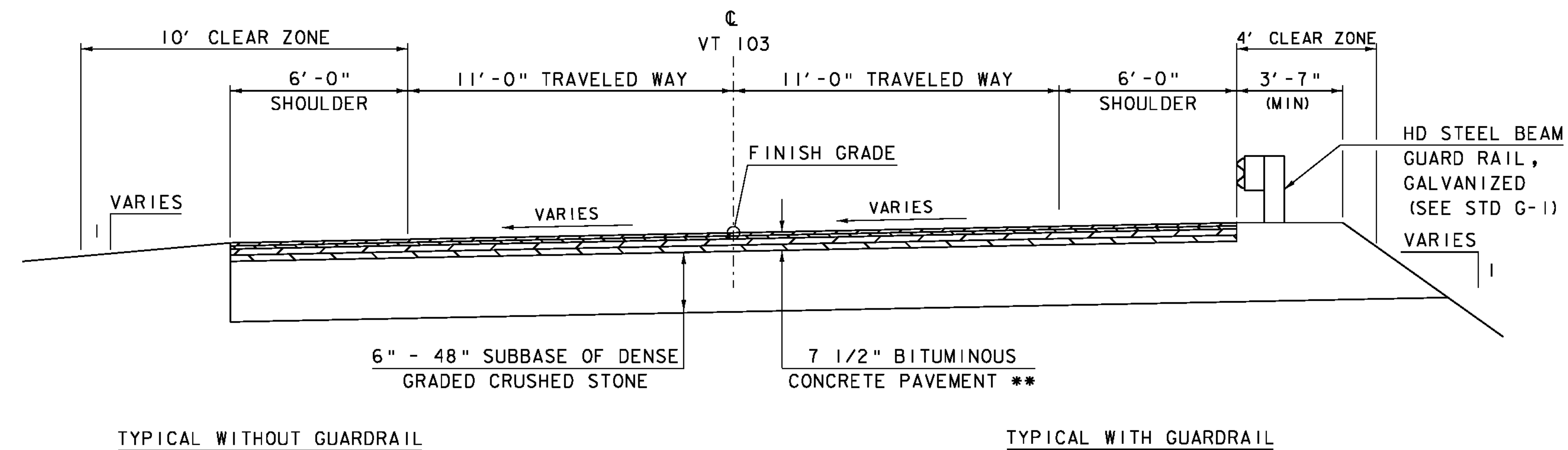
# BRIDGE QUANTITY SHEET 1

[illegible]

|                          |                          |             |            |
|--------------------------|--------------------------|-------------|------------|
| PROJECT NAME:            | CHESTER                  |             |            |
| PROJECT NUMBER:          | BRF 025-1(37)            |             |            |
| FILE NAME:               | s85b168quantkysheets.dgn | PLOT DATE:  | 09/20/2010 |
| PROJECT LEADER:          | C.P.WILLIAMS             | DRAWN BY:   | D.D.BEARD  |
| DESIGNED BY:             | R.S.YOUNG                | CHECKED BY: | R.S.YOUNG  |
| BRIDGE QUANTITY SHEET #1 |                          | SHEET       | 63 OF 124  |

# DRAINAGE DETAIL SHEET

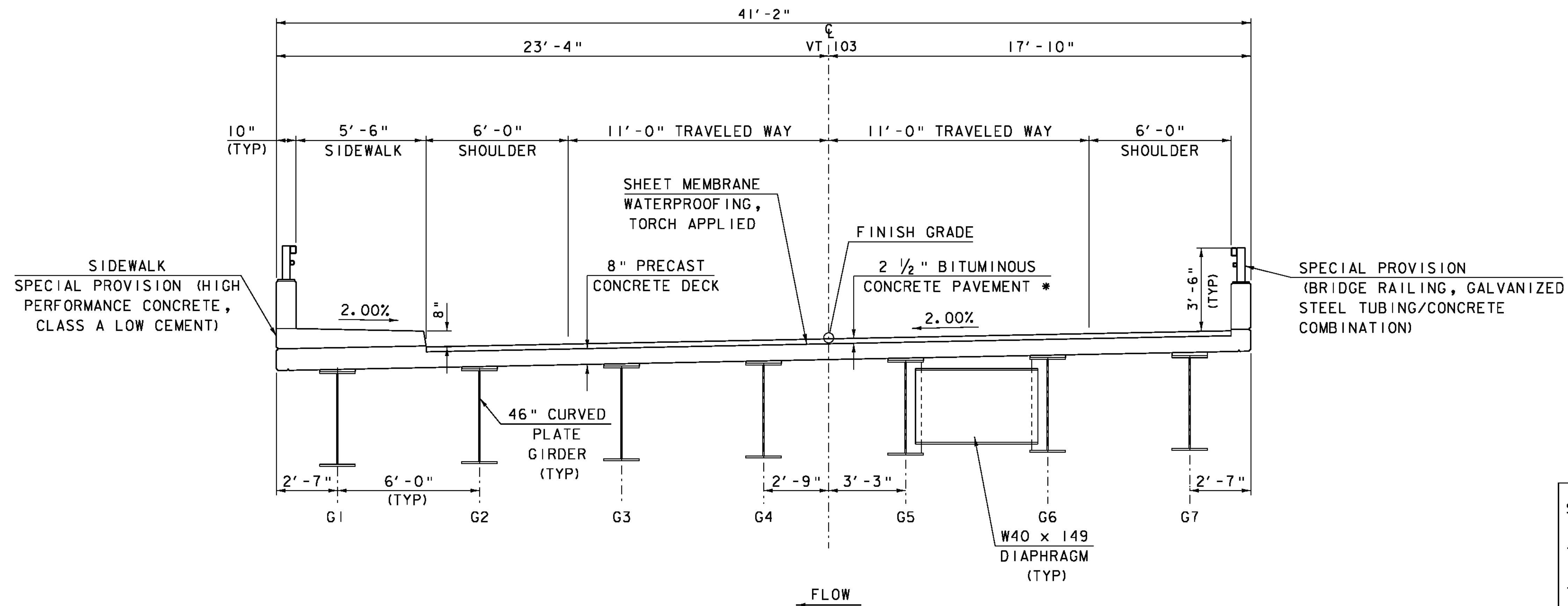
|  |                                |                            |             |                 |
|--|--------------------------------|----------------------------|-------------|-----------------|
|  | PROJECT NAME:                  | CHESTER                    |             |                 |
|  | PROJECT NUMBER:                | BRF 025-1(37)              |             |                 |
|  | FILE NAME:                     | M:\95b168\s95b168excel.dgn | PLOT DATE:  | 9/13/2010       |
|  | PROJECT LEADER:                | C.P.WILLIAMS               | DRAWN BY:   | D.D.BEARD       |
|  | DESIGNED BY:                   | R.S.YOUNG                  | CHECKED BY: | H.J.SALLS       |
|  | BRIDGE 9 DRAINAGE DETAIL SHEET |                            |             | SHEET 64 OF 124 |



**TYPICAL ROADWAY SECTION**  
SCALE 1" = 3'-0"

\*\* 1/4" TYPE IV OVER  
1/4" TYPE IV OVER  
2 1/2" TYPE II OVER  
2 1/2" TYPE II

NOTE:  
PAVEMENT SHALL BE A MARSHALL MIX PAID  
FOR UNDER THE ITEM 406.25, "BITUMINOUS CONCRETE PAVEMENT".



\* 1/4" TYPE IV OVER  
1/4" TYPE IV  
NOTE: ALL TRANSVERSE  
DIMENSIONS ARE RADIAL

**MATERIAL TOLERANCES**  
(IF USED ON PROJECT)

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

PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

FILE NAME: Structures\s95b168typ.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: H.J.SALLS  
BRIDGE 9 TYPICAL SECTIONS

PLOT DATE: 20-SEP-2010  
DRAWN BY: D.D.BEARD  
CHECKED BY: R.S.YOUNG  
SHEET 65 OF 124

SCALE 1" = 3'-0"  
3 0 3

GPS CONTROL POINTS

HVCTRL #1

DOTTAVID AZ  
NORTH = 273787.07  
EAST = 1619869.4  
ELEV. = 577.75

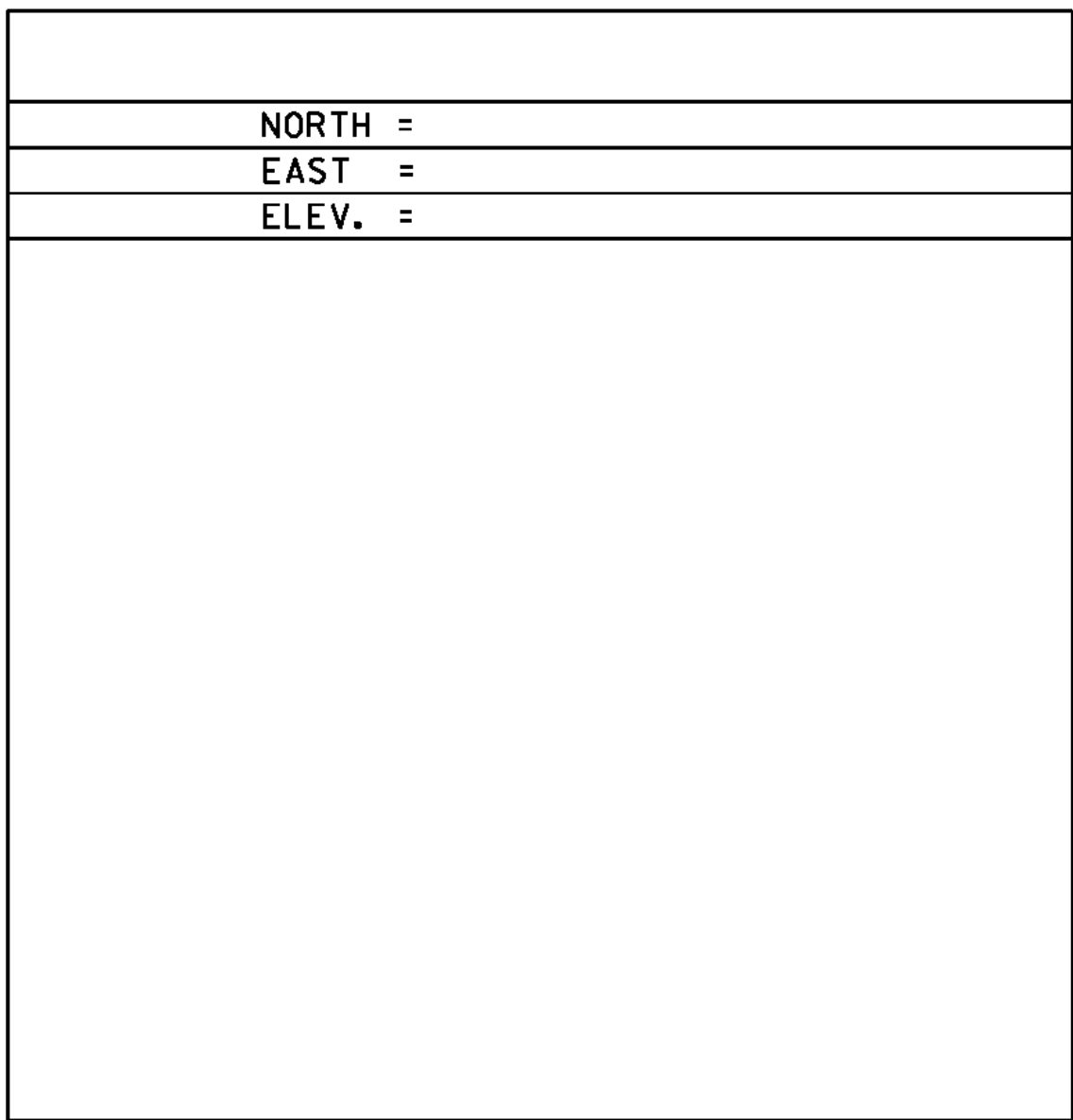
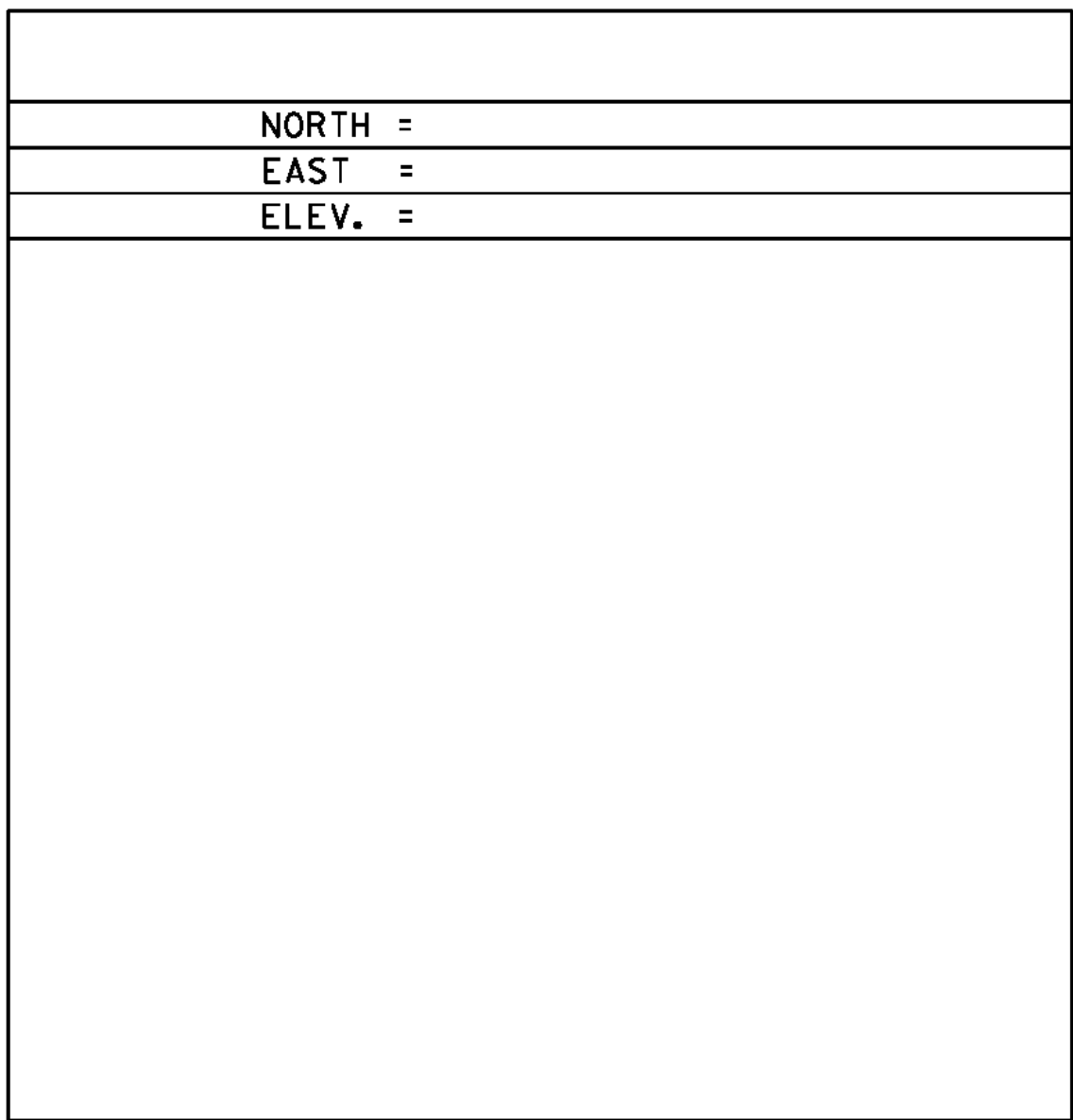
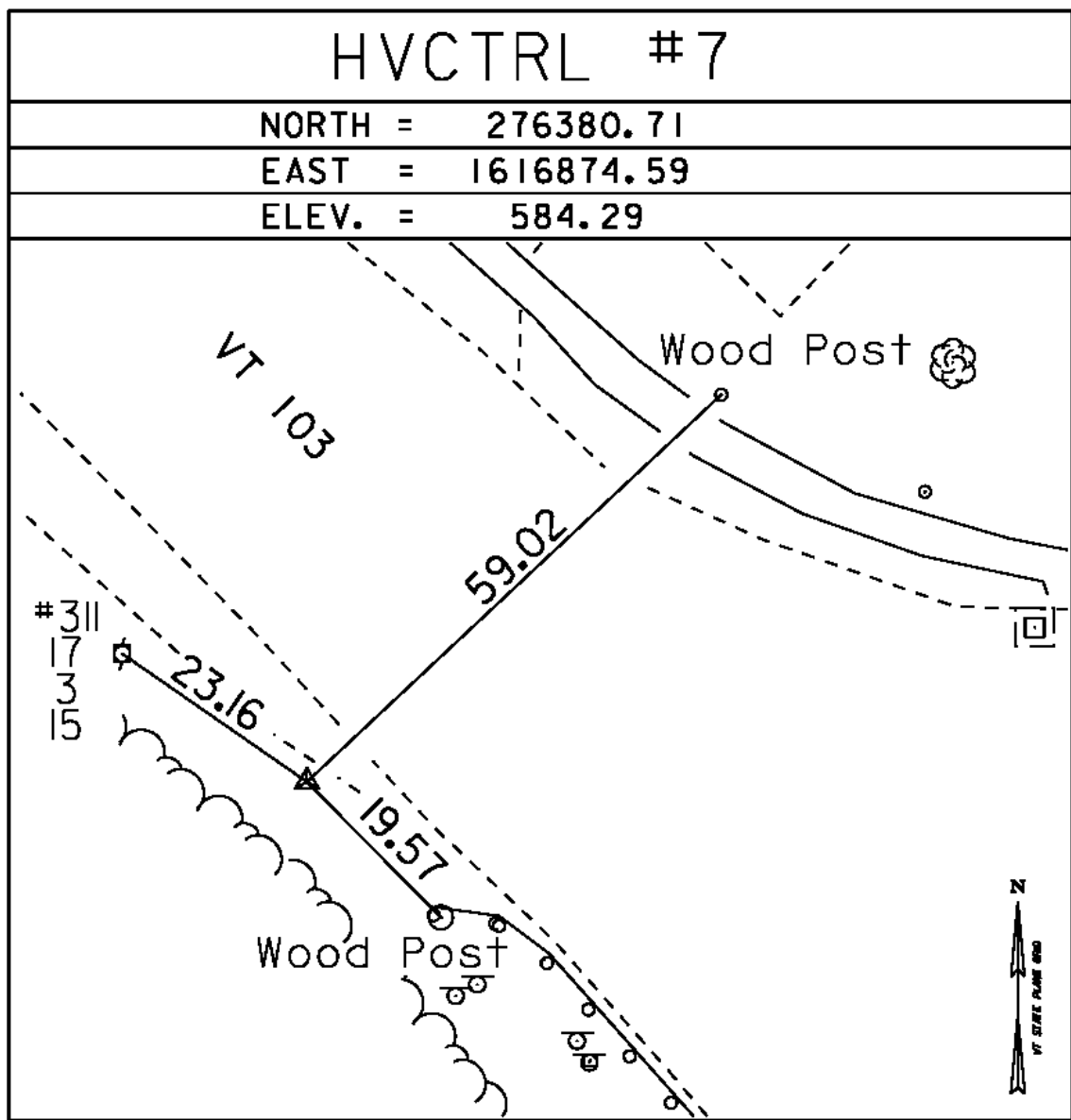
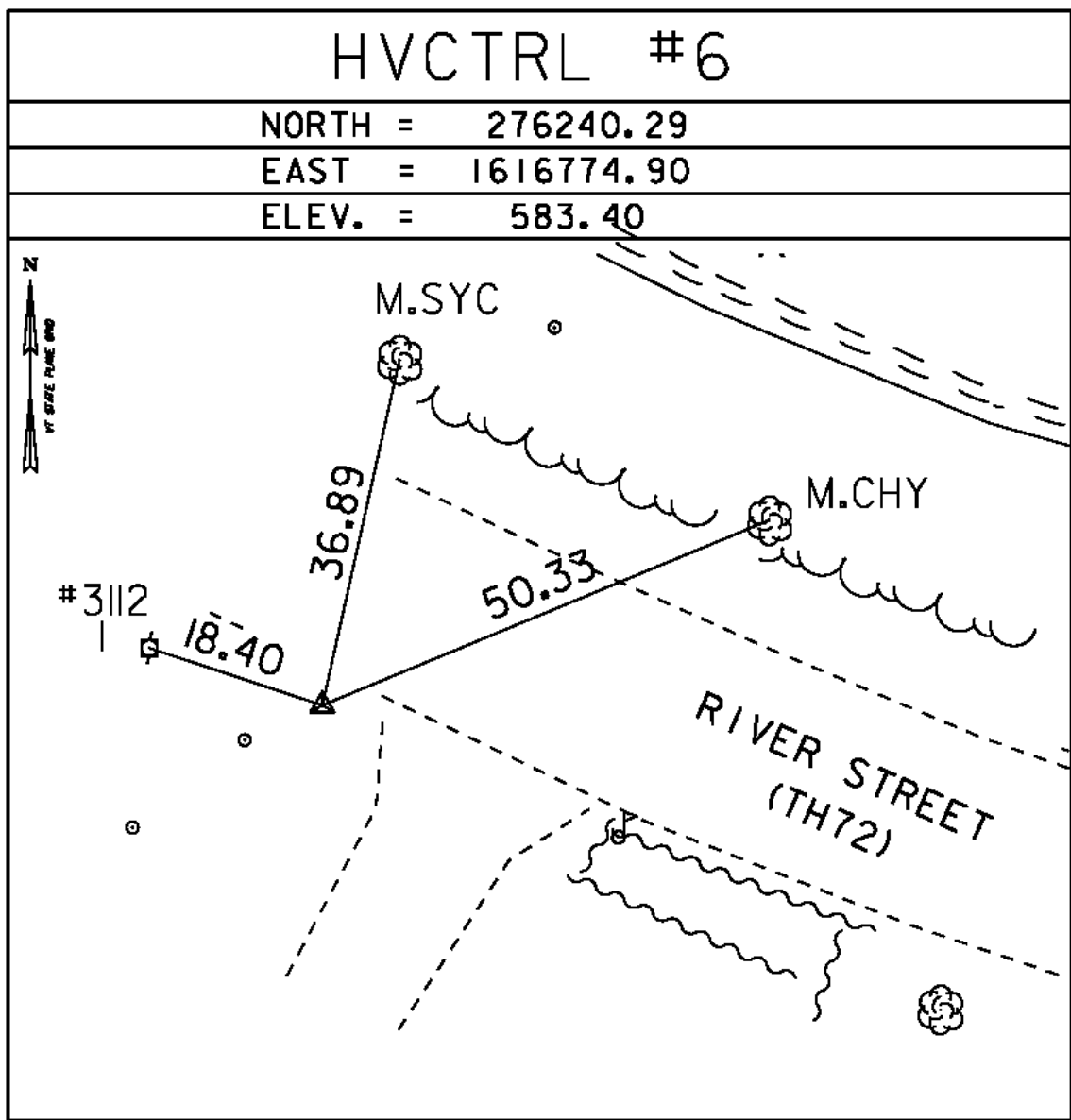
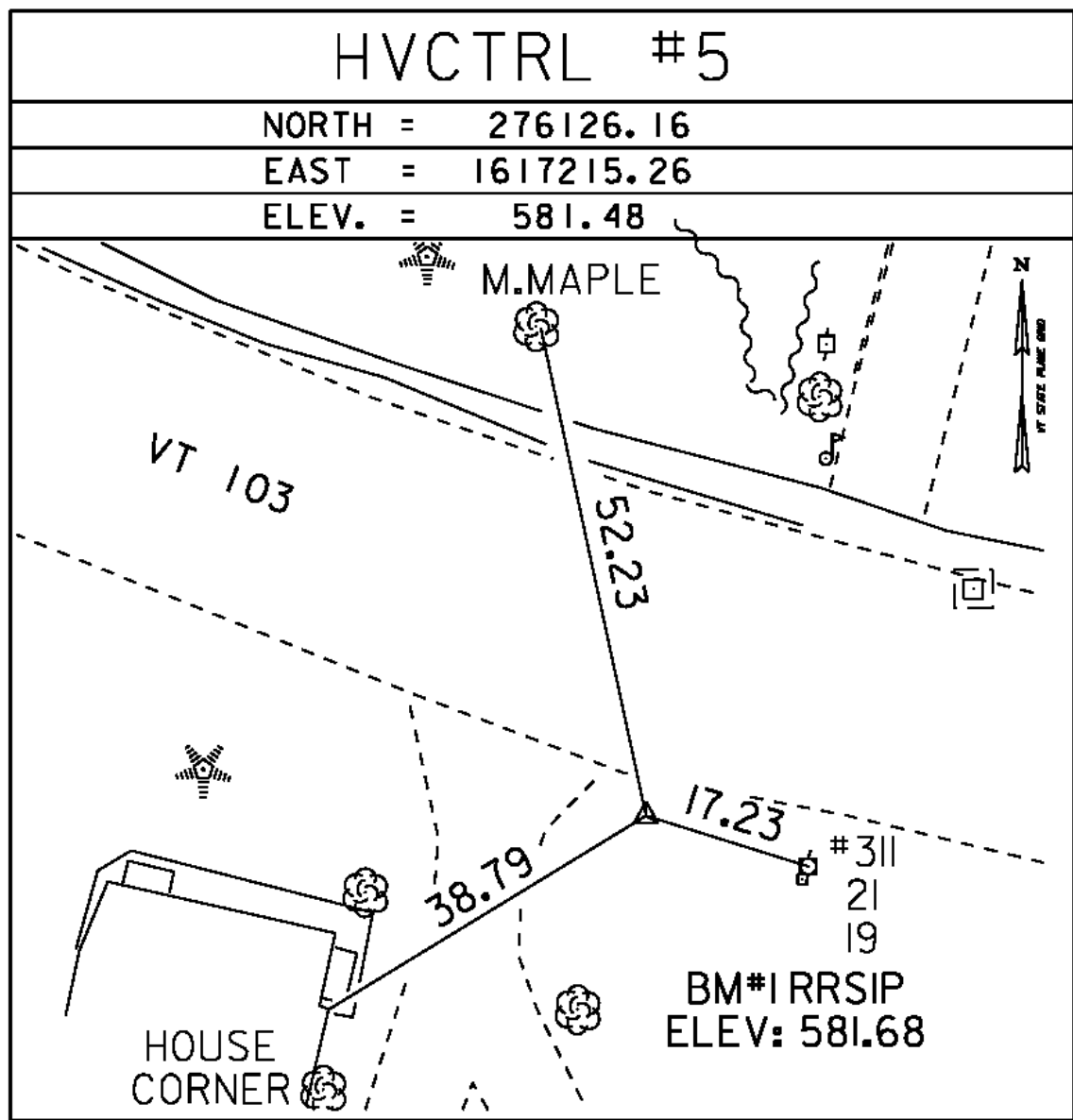
GENERAL LOCATION, 10.4 MI (16.7 KM) NORTHWEST OF BELLOWS FALLS, 6 MI (9.7 KM) SOUTHWEST OF SPRINGFIELD AND 5.5 MI (8.9 KM) NORTH OF GRAFTON. TO REACH FROM THE JUNCTION OF VT ROUTE 103 AND VT ROUTE 11 (EAST) IN CHESTER PROCEED SOUTHEAST ON VT ROUTE 103 FOR .8 MI (1.3 KM) TO THE MARK ON THE RIGHT (WEST). THE MARK IS 75.5 FT (23.0 M) SOUTHEAST OF THE SOUTHEAST CORNER OF THE PUTNEY PASTA BUILDING, 70 FT (21.3 M) SOUTH OF A SEWER MANHOLE, 48 FT (14.6 M) WEST OF AND LEVEL WITH THE CENTERLINE OF ROUTE 103, 14 FT (4.3 M) SOUTHEAST OF A FIRE HYDRANT AND 8.5 FT (2.6 M) EAST OF UTILITY POLE NUMBER 3/88/3/40 AND A FIBERGLASS WITNESS POST. OWNERSHIP UNKNOWN.

HVCTRL #2

DOTTAVID  
NORTH = 275233.89  
EAST = 1619439.55  
ELEV. = 563.37

GENERAL LOCATION, 10.7 MI (17.2 KM) NORTHWEST OF BELLOWS FALLS, 6 MI (9.7 KM) SOUTHWEST OF SPRINGFIELD AND 5.5 MI (8.9 KM) NORTH OF GRAFTON. TO REACH FROM THE JUNCTION OF VT ROUTE 103 AND VT ROUTE 11 (EAST) IN CHESTER PROCEED SOUTHEAST ON VT ROUTE 103 FOR .5 MI (0.8 KM) TO THE MARK ON THE RIGHT (WEST). THE MARK IS 64 FT (19.5 M) NORTHEAST OF THE NORTHEAST CORNER OF DIAMOND JIMS LOG CABIN RESTAURANT, 34.5 FT (10.5 M) WEST OF AND 1 FT (0.3 M) HIGHER THAN THE CENTERLINE OF ROUTE 103, 19 FT (5.8 M) SOUTH OF THE CENTERLINE OF THE NORTHERLY PAVED DRIVE ENTRANCE TO THE SAID RESTAURANT, 10 FT (3.0 M) NORTH OF THE NORTHEAST CORNER OF A PAVED PARKING LOT, AND 6.2 FT (1.9 M) NORTHEAST OF UTILITY POLE NUMBER 79-1 AND A FIBERGLASS WITNESS POST. OWNERSHIP RAY DOTTAVIO, PHONE NO. (802) 875-4040.

TRAVERSE TIES



\* Main traverse Completed 8/10/95 by R. Gilman P.C. & T. Companion

\* ALIGNMENT CURRENT AS OF 8/19/2010

ALIGNMENT COORD

VT 103 CURVE 1 DATA  
DELTA = 6°37'33"  
D = 3°15'00"  
R = 1762.95'  
T = 102.05'  
L = 203.87'  
E = 2.95'

VT 103 CURVE 2 DATA  
DELTA = 39°21'20"  
D = 10°00'00"  
R = 572.96'  
T = 204.90'  
L = 393.56'  
E = 35.54'

VT 11 CURVE 3 DATA  
DELTA = 19°18'18"  
D = 17°37'46"  
R = 325.00'  
T = 55.28'  
L = 109.50'  
E = 4.67'

VT 11 CURVE 4 DATA  
DELTA = 21°55'07"  
D = 90°00'00"  
R = 63.66'  
T = 12.33'  
L = 24.35'  
E = 1.18'

TH 72 CURVE 5 DATA  
DELTA = 18°38'52"  
D = 8°29'18"  
R = 675.00'  
T = 110.82'  
L = 219.69'  
E = 9.04'

TH 72 CURVE 6 DATA  
DELTA = 63°07'29"  
D = 163°42'08"  
R = 35.00'  
T = 21.50'  
L = 38.56'  
E = 6.08'

| ALIGNMENT COORDINATES |          |             |              |
|-----------------------|----------|-------------|--------------|
| VT RT 103             |          |             |              |
|                       | STATION  | NORTHING    | EASTING      |
| POB                   | 9+93.39  | 276512.1859 | 1616777.1664 |
| PC #1                 | 10+36.11 | 276482.3245 | 1616807.7253 |
| PRC#1                 | 12+39.98 | 276331.7350 | 1616944.9838 |
| PT #1                 | 16+33.54 | 276131.3473 | 1617274.7365 |
| POE                   | 17+07.45 | 276116.4750 | 1617347.1323 |
| VT RT 11              |          |             |              |
|                       | STATION  | NORTHING    | EASTING      |
| POB                   | 30+00.00 | 276439.0802 | 1617098.2569 |
| PC #2                 | 30+01.60 | 276438.1148 | 1617096.9746 |
| PT #2                 | 31+11.11 | 276388.0929 | 1617000.1456 |
| PC #3                 | 31+38.20 | 276379.8699 | 1616974.3304 |
| PT #3                 | 31+62.55 | 276368.2725 | 1616953.0839 |
| POE                   | 31+92.00 | 276349.5073 | 1616930.3902 |
| TH 72 (RIVER ROAD)    |          |             |              |
|                       | STATION  | NORTHING    | EASTING      |
| POB                   | 50+00.00 | 276256.3263 | 1616773.9325 |
| PC #4                 | 50+14.85 | 276249.9593 | 1616787.3506 |
| PT #4                 | 52+34.54 | 276189.4488 | 1616997.5338 |
| PC #5                 | 52+67.00 | 276185.6405 | 1617029.7724 |
| PT #5                 | 53+05.56 | 276201.0239 | 1617063.0264 |
| POE                   | 53+23.00 | 276215.5448 | 1617072.6785 |

|            |             |
|------------|-------------|
| DATUM      |             |
| VERTICAL   | NAVD 88     |
| HORIZONTAL | NAD 83 (92) |
| ADJUSTMENT | Compass     |

PROJECT NAME: Chester  
PROJECT NUMBER: BRF 025-1(37)

FILE NAME: 95b168\survey\95b168t1.dgn  
PROJECT LEADER: C.P. WILLIAMS  
DESIGNED BY: R.S. YOUNG  
TIE SHEET

PLOT DATE: 20-SEP-2010  
DRAWN BY: R. Bullock  
CHECKED BY: R.S. YOUNG  
SHEET 66 OF 124

SEE DRAINAGE DETAIL SHEET  
FOR DRAINAGE FLAG DESCRIPTIONS

REMOVAL OF EXISTING GUARD RAIL  
STA 11+74.90 RT - 12+47.15 RT  
STA 13+72.26 RT - 13+86.19 RT  
STA 12+46.39 LT - 12+60.27 LT  
STA 13+94.87 LT - 14+42.44 LT

HD STEEL BEAM GUARD RAIL,  
GALVANIZED  
STA 11+94.90 RT - 12+44.75 RT  
STA 31+40.00 LT - 12+57.54 LT  
STA 53+06.95 LT - 52+49.95 LT  
STA 14+26.01 LT - 14+38.85 LT

SPECIAL PROVISION (GUARDRAIL APPROACH  
SECTION TO CONCRETE BRIDGE RAILING) (TL-3)  
STA 12+44.75 RT - 12+62.25 RT  
STA 12+57.54 LT - 12+76.20 LT  
STA 14+06.65 LT - 14+26.01 LT

CONSTRUCT 5' PAVED APRON\*  
STA 14+49.83 RT 21' WIDE  
\* PAVEMENT FOR DRIVE SHALL  
BE ONE LIFT 3" THICK

SPECIAL PROVISION  
(BRIDGE RAIL, GALVANIZED STEEL  
TUBING/CONCRETE COMBINATION)  
STA 12+62.25 RT - 13+81.90 RT  
STA 12+76.20 LT - 14+06.65 LT

ANCHOR FOR STEEL BEAM GUARD RAIL  
STA 12+06.95 RT  
STA 14+26.01 LT  
STA 31+62.80 LT  
STA 52+60.35 LT

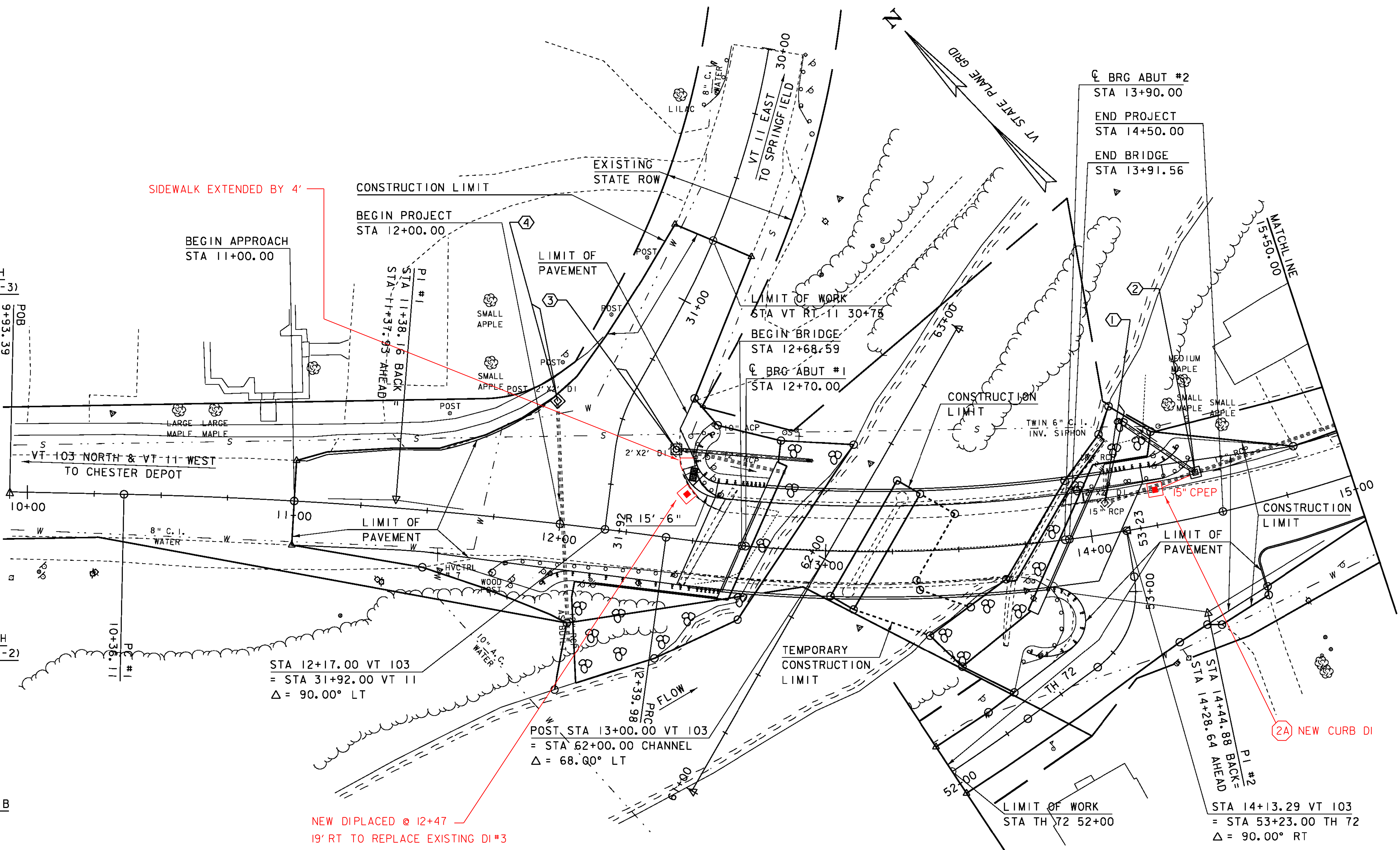
SPECIAL PROVISION (GUARDRAIL APPROACH  
SECTION TO CONCRETE BRIDGE RAILING) (TL-2)  
STA 13+81.90 RT - 13+91.10 RT

PORTLAND CEMENT CONCRETE SIDEWALK,  
5 INCH  
STA 12+42.99 LT - 12+76.61 LT  
STA 14+02.21 LT - 14+30.78 LT  
DETECTABLE WARNING SURFACE  
STA 12+46.00 LT

PRECAST REINFORCED CONCRETE CURB, TYPE B  
STA 12+50.82 RT - 12+62.28 RT  
STA 12+42.99 LT - 12+74.59 LT  
STA 14+02.21 LT - 14+30.78 LT

CHANGING ELEVATION OF SEWER MANHOLES  
STA 31+46.55 LT

CHANGING ELEVATION OF DROP INLETS,  
CATCH BASINS, OR MANHOLES  
STA 31+50.62 RT  
STA 31+56.80 LT

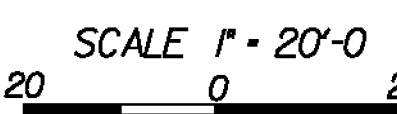


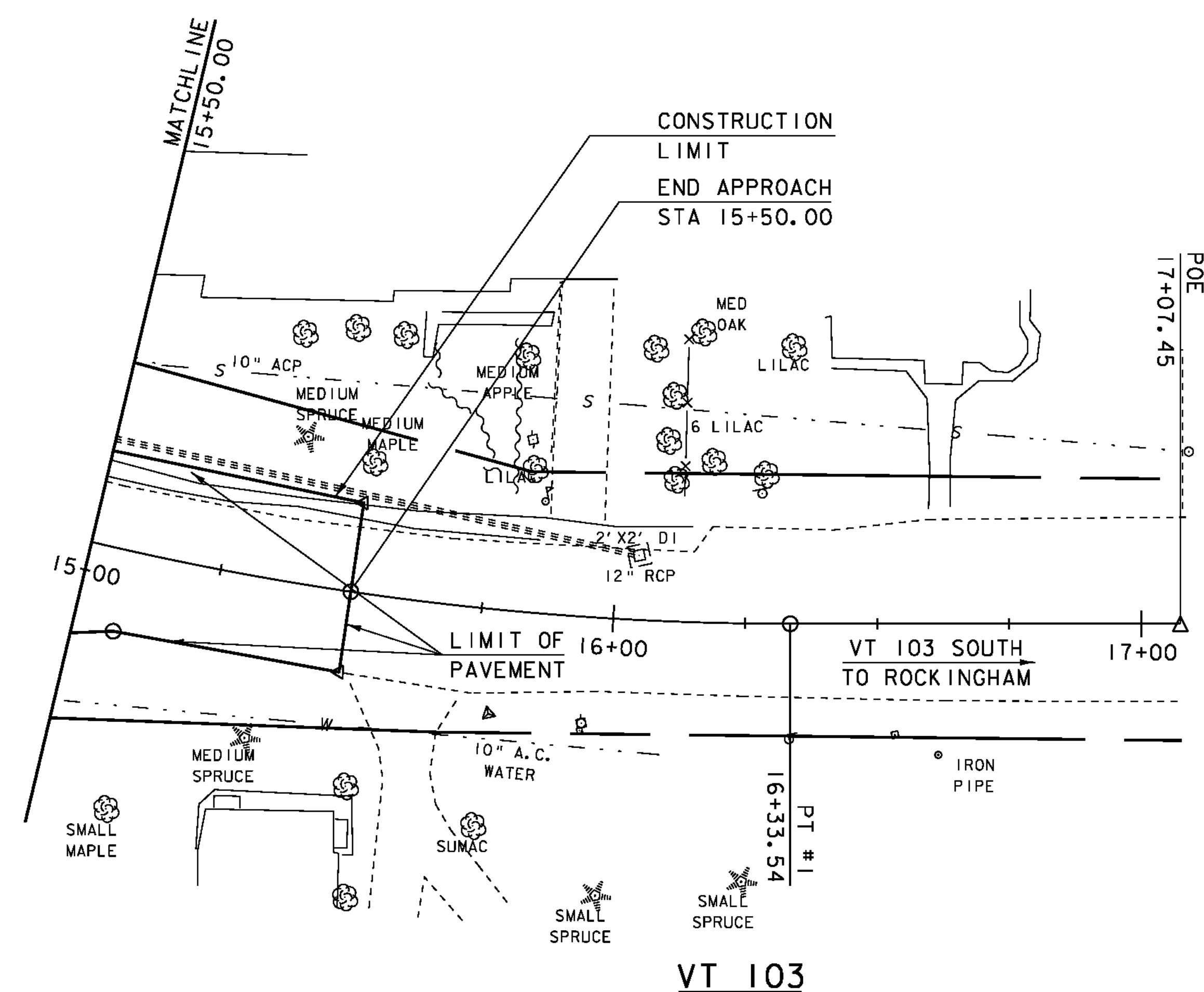
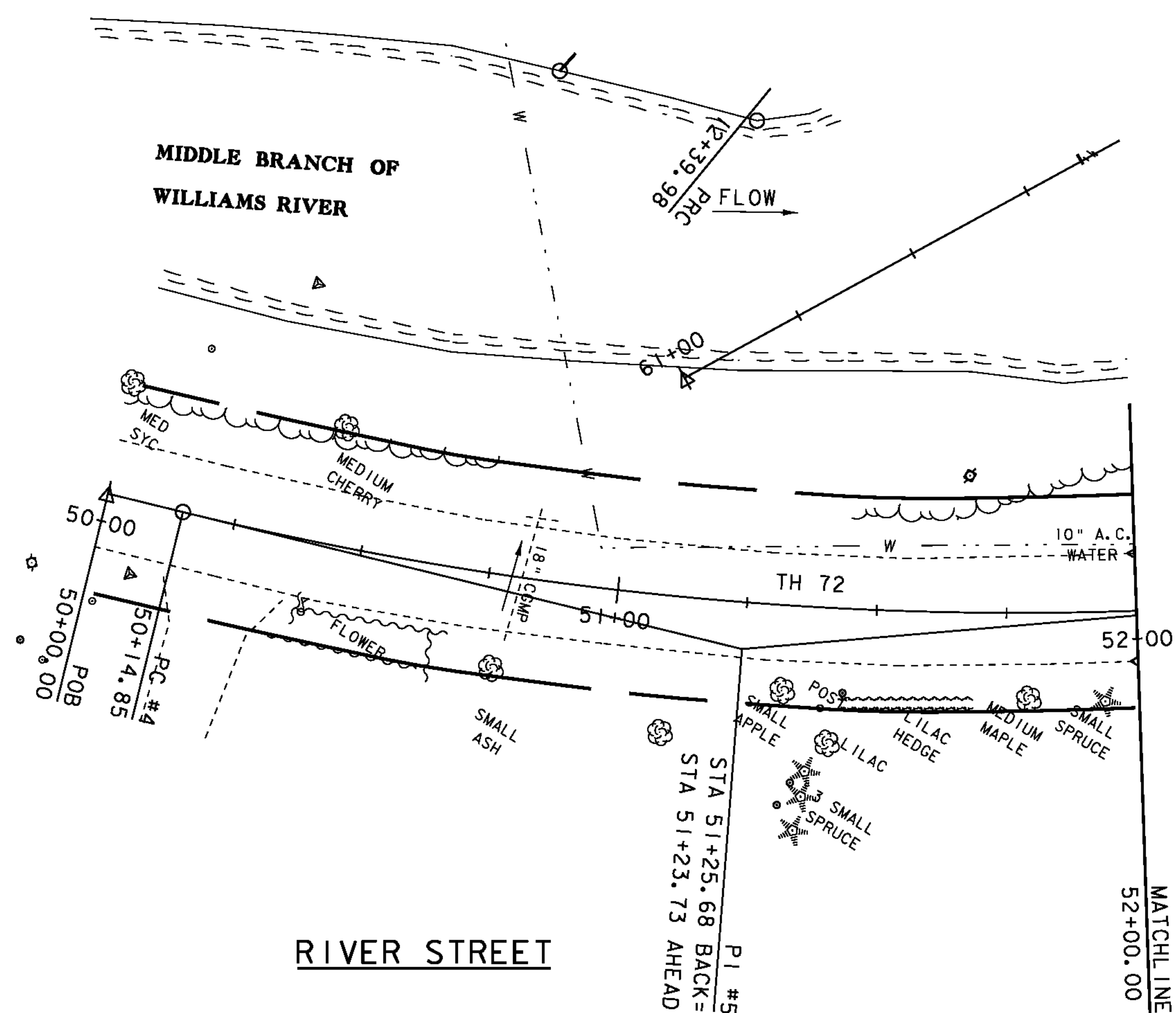
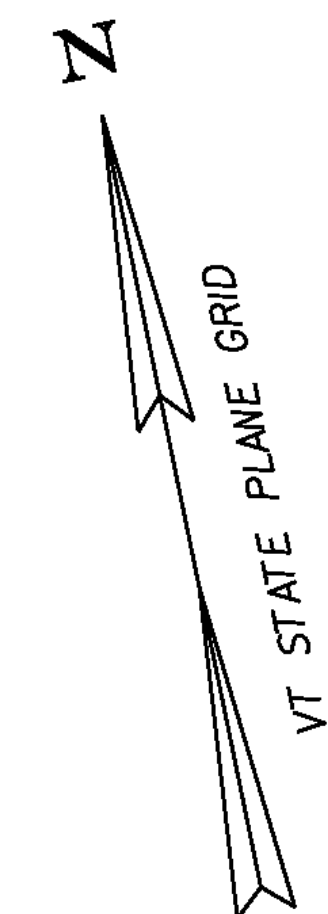
EXISTING BRIDGE INFO

TWO SPAN, ROLLED BEAM  
CONCRETE DECK  
CLEAR SPAN = 2 @ 62'  
128' OVERALL LENGTH  
24' ROADWAY  
10.0' TO STREAMBED  
BUILT 1935

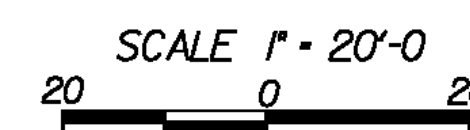
|                          |                      |
|--------------------------|----------------------|
| PROJECT NAME:            | CHESTER              |
| PROJECT NUMBER:          | BRF 025-1(37)        |
| FILE NAME:               | 95b168\95b168bdr.dgn |
| PROJECT LEADER:          | C.P.WILLIAMS         |
| DESIGNED BY:             | R.S.YOUNG            |
| BRIDGE 9 LAYOUT SHEET #1 |                      |
| PLOT DATE:               | 20-SEP-2010          |
| DRAWN BY:                | D.D.BEARD            |
| CHECKED BY:              | R.S.YOUNG            |
| SHEET 67                 | OF 124               |

LAYOUT #1



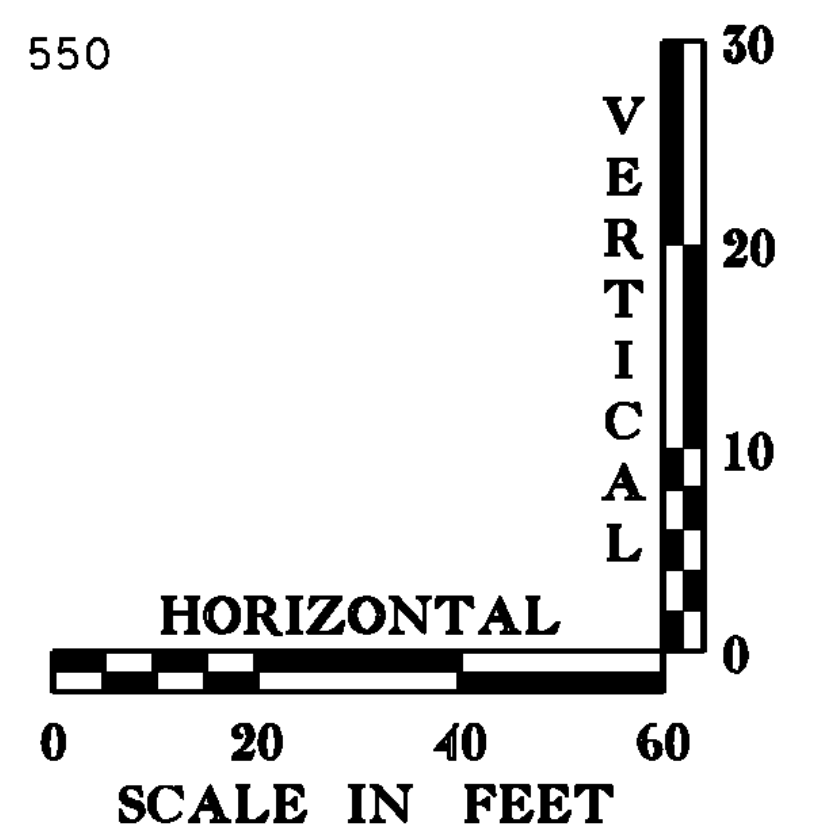
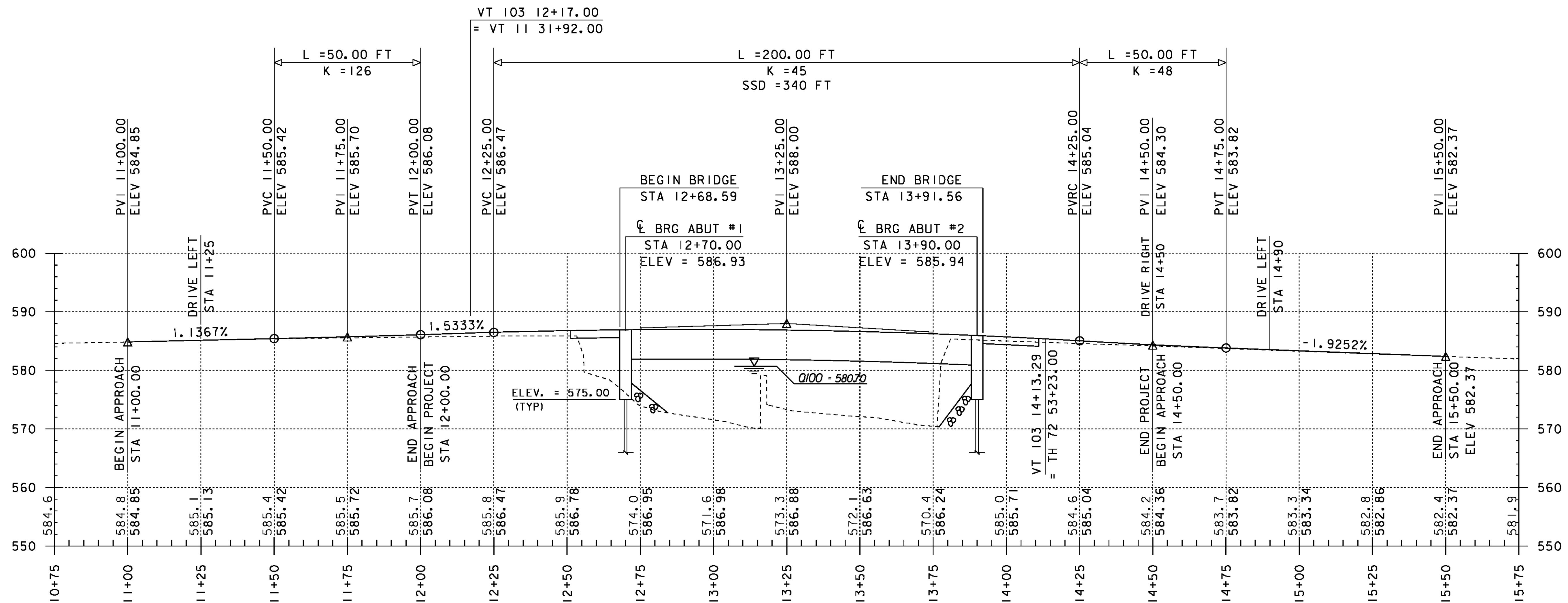


LAYOUT #2



|                                 |                        |
|---------------------------------|------------------------|
| PROJECT NAME: CHESTER           |                        |
| PROJECT NUMBER: BRF 025-I(37)   |                        |
| FILE NAME: 95b168\95b168bdr.dgn | PLOT DATE: 20-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS    | DRAWN BY: D.D.BEARD    |
| DESIGNED BY: R.S.YOUNG          | CHECKED BY: R.S.YOUNG  |
| BRIDGE 9 LAYOUT SHEET #2        | SHEET 68 OF 124        |





# VT RT 103 PROFILE

NOTE:

GRADES SHOWN TO THE NEAREST  
TENTH ARE EXISTING GROUND ALONG CL

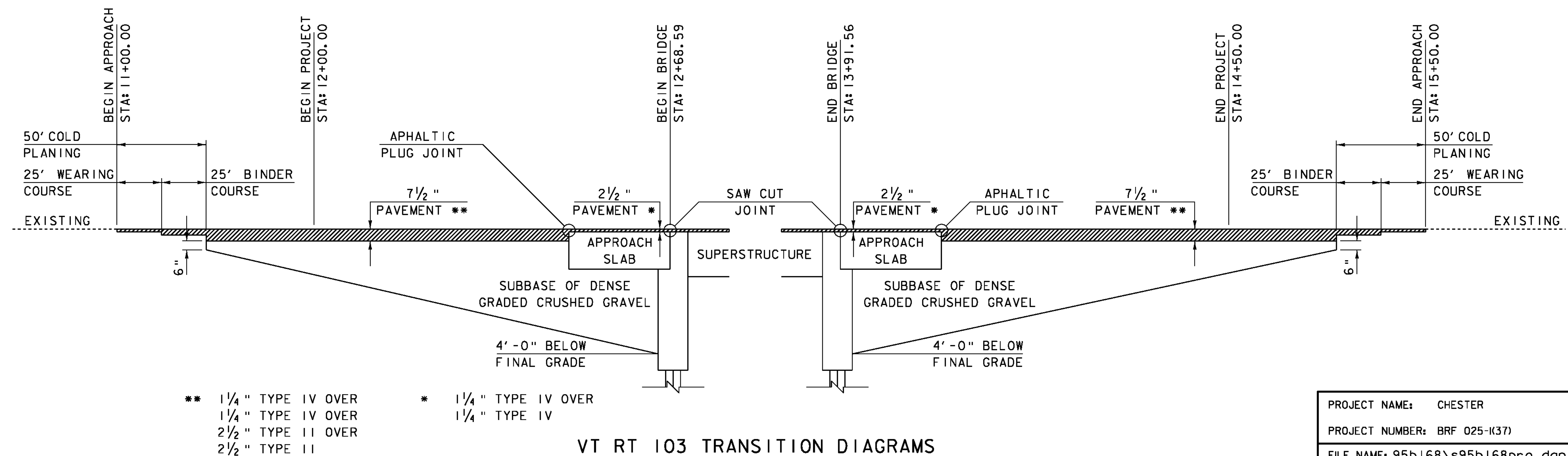
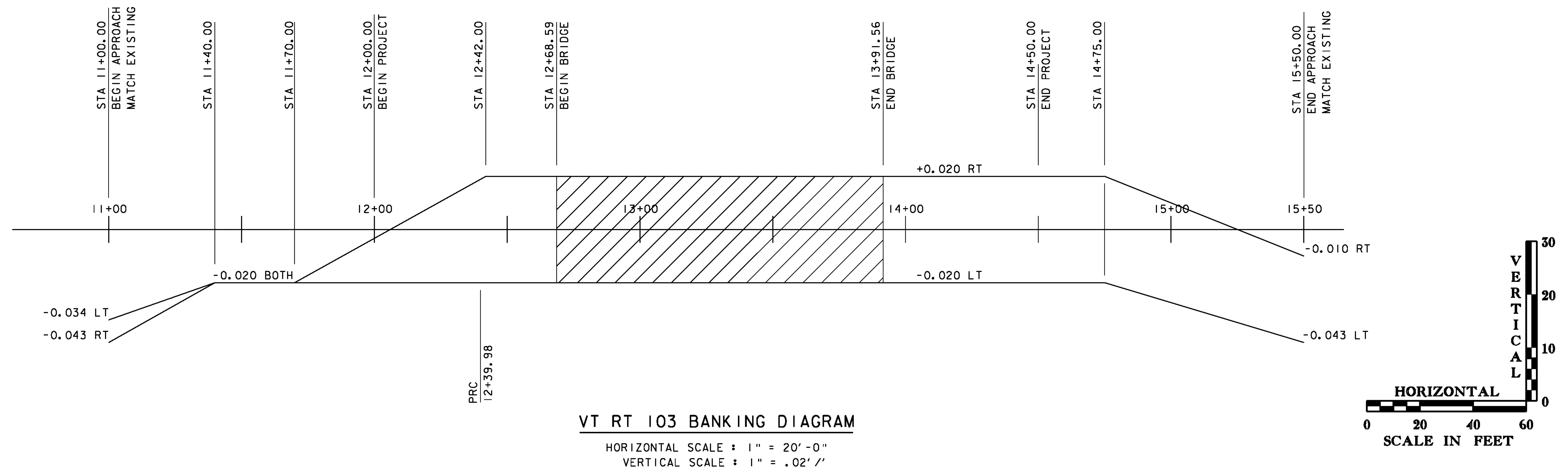
GRADES SHOWN TO THE NEAREST  
HUNDREDTH ARE FINISH GRADE ALONG CL

PROJECT NAME: CHESTER

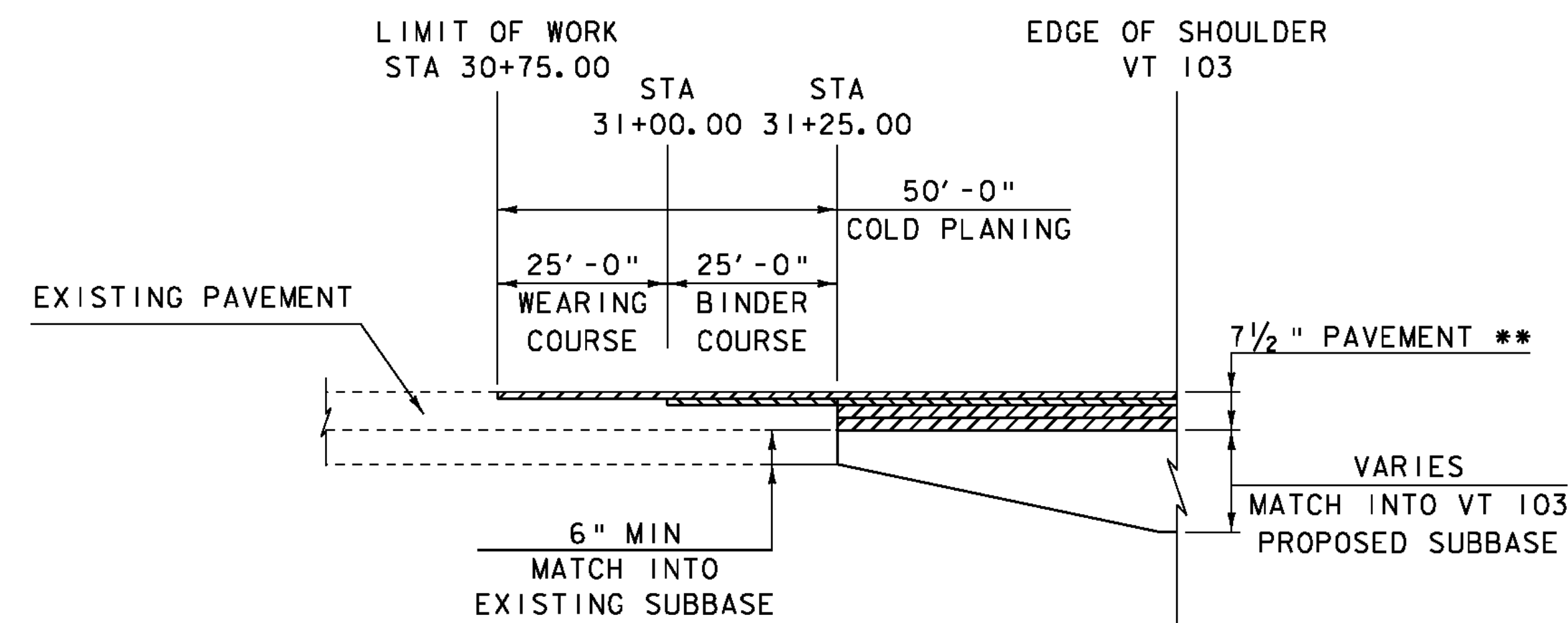
PROJECT NUMBER: BRF 025-I(37)

FILE NAME: 95b168\95b168pro.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
BRIDGE 9 PROFILE SHEET

PLOT DATE: 20-SEP-2010  
DRAWN BY: D.D.BEARD  
CHECKED BY: R.S.YOUNG  
SHEET 70 OF 124



|                                       |                       |
|---------------------------------------|-----------------------|
| PROJECT NAME:                         | CHESTER               |
| PROJECT NUMBER:                       | BRF 025-1(37)         |
| FILE NAME:                            | 95b168\s95b168pro.dgn |
| PROJECT LEADER:                       | C.P.WILLIAMS          |
| DESIGNED BY:                          | R.S.YOUNG             |
| BRIDGE 9 BANKING & TRANSITION DIAGRAM |                       |
| PLOT DATE:                            | 20-SEP-2010           |
| DRAWN BY:                             | D.D.BEARD             |
| CHECKED BY:                           | R.S.YOUNG             |
| SHEET 71                              | OF 124                |

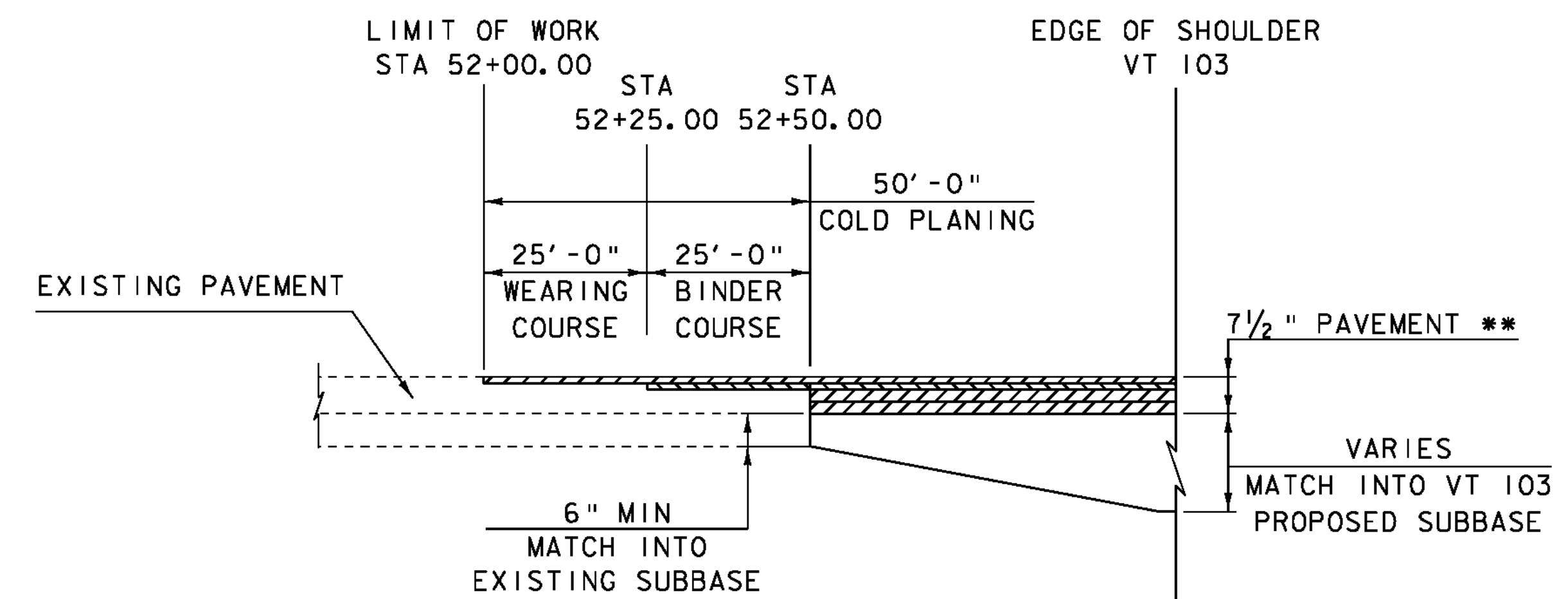


\*\* 1 1/4" TYPE IV OVER  
 1 1/4" TYPE IV OVER  
 2 1/2" TYPE II OVER  
 2 1/2" TYPE II

### VT RT II MATERIAL TRANSITION

HORIZONTAL SCALE: 1" = 20'-0"  
 VERTICAL SCALE: NOT TO SCALE

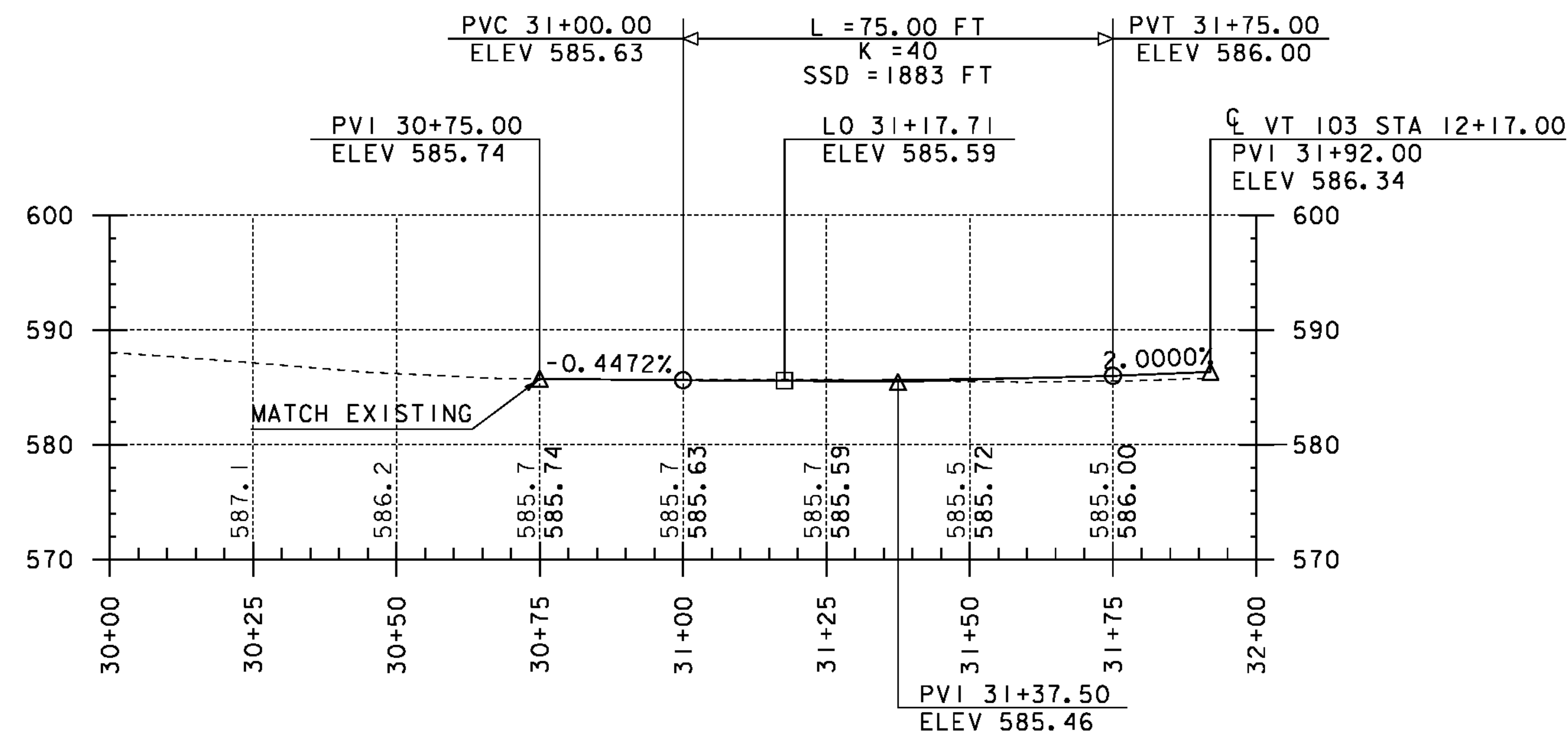
SCALE 1" = 20'-0"  
 20 0 20



### TH 72 MATERIAL TRANSITION

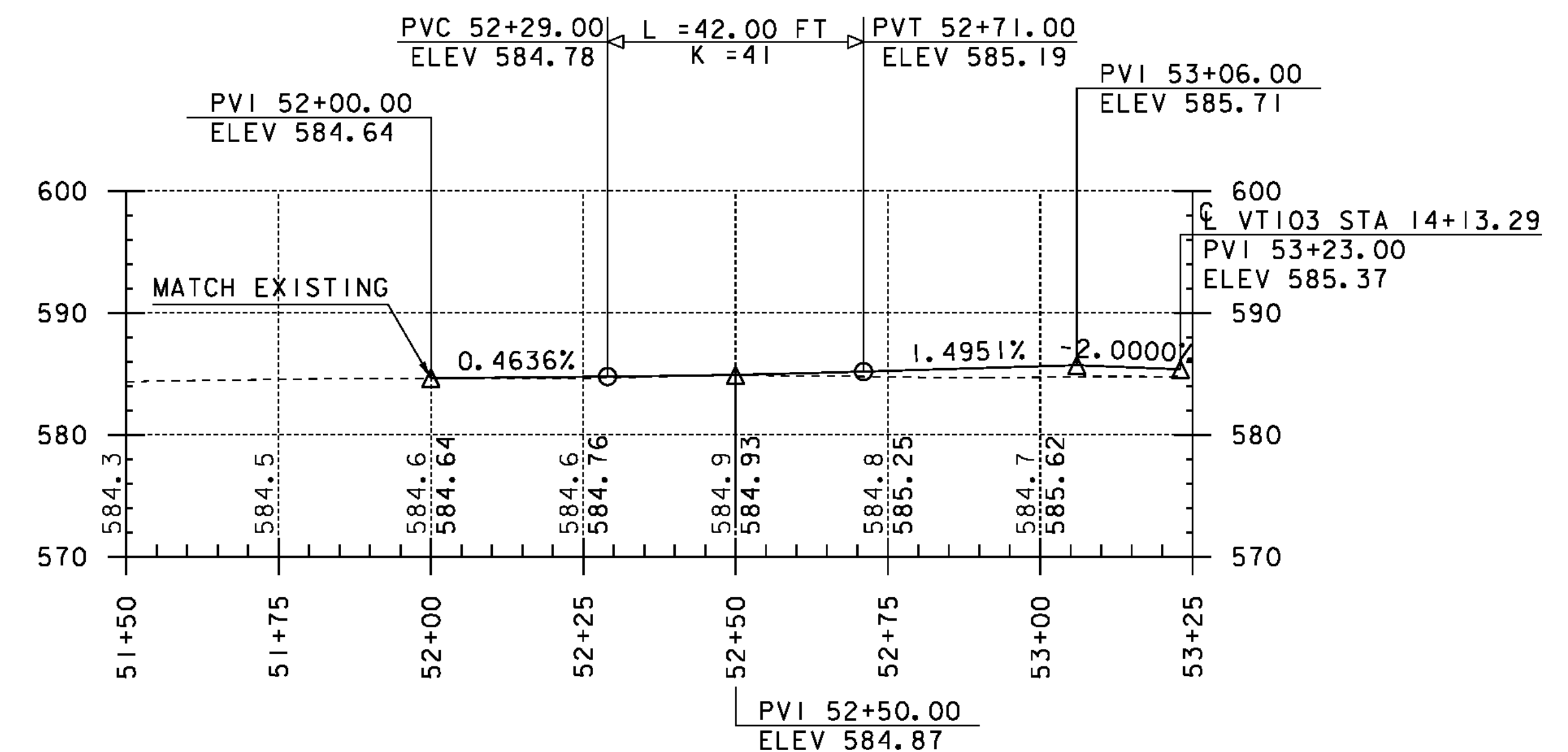
HORIZONTAL SCALE: 1" = 20'-0"  
 VERTICAL SCALE: NOT TO SCALE

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



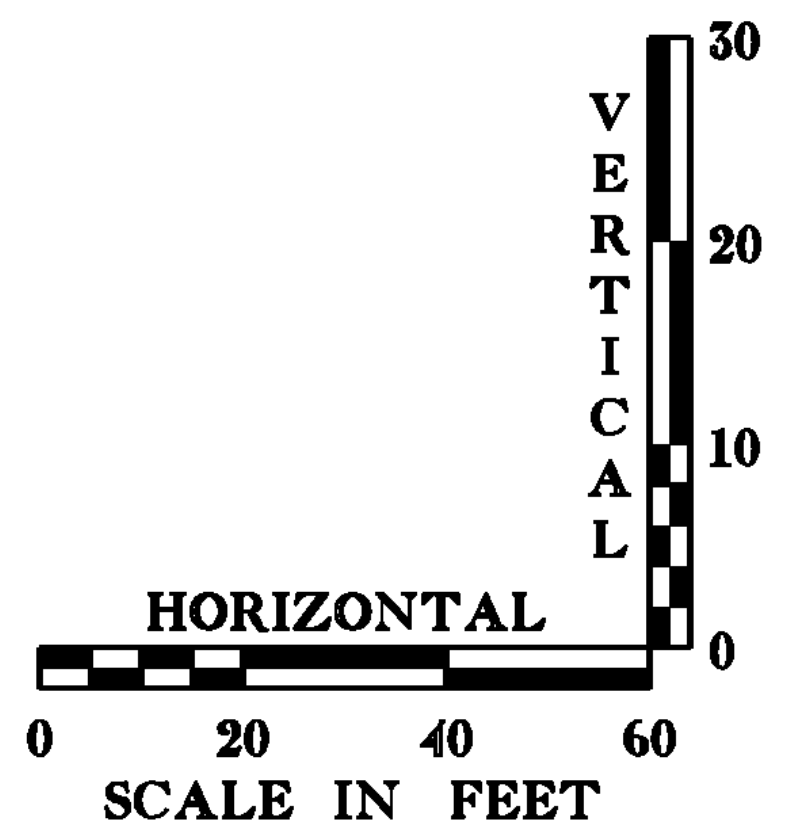
### VT RT II PROFILE

ALONG CL ALIGNMENT



### TH 72 PROFILE

ALONG CL ALIGNMENT



NOTE:

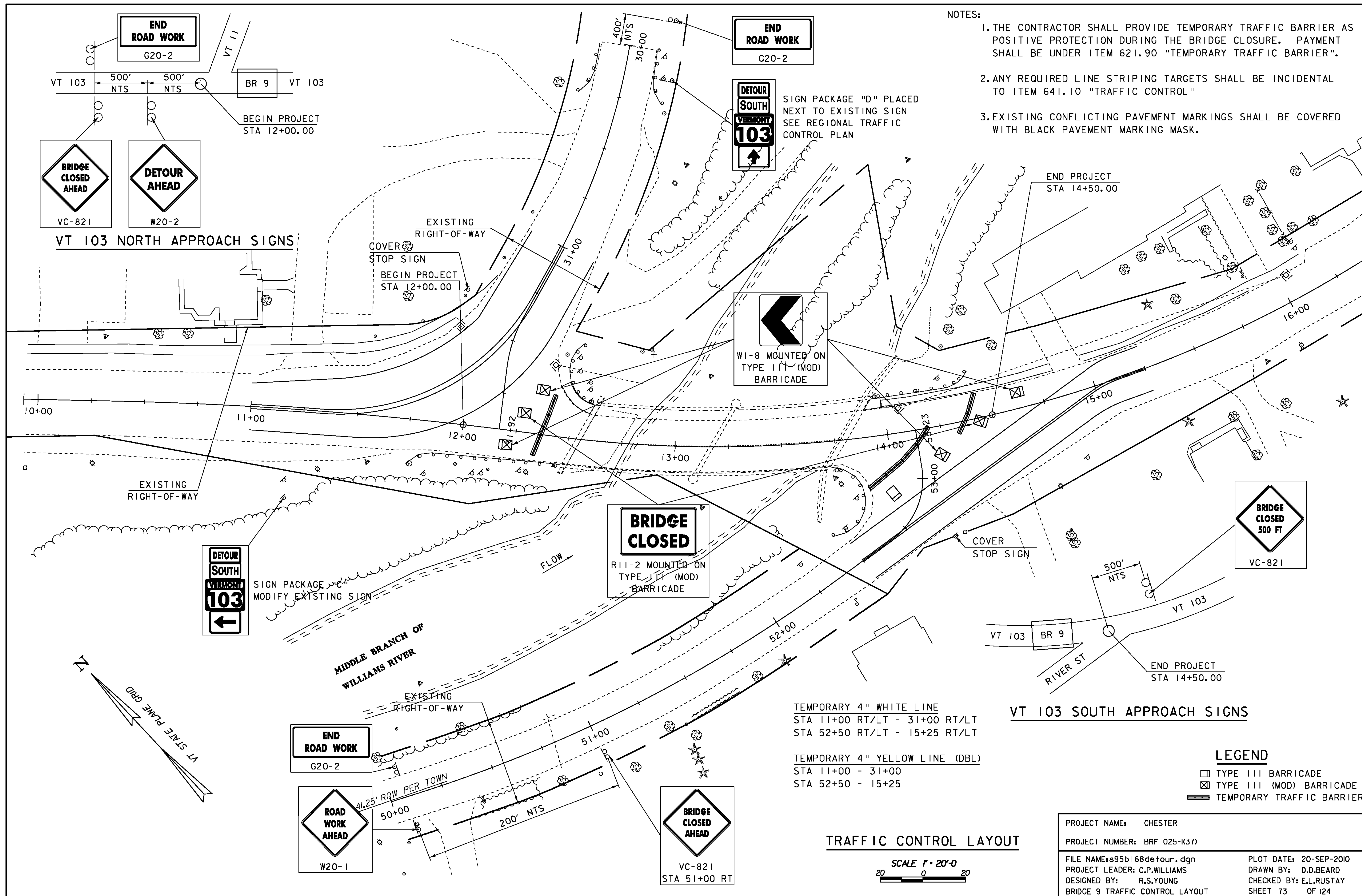
GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG CL

GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG CL

PROJECT NAME: CHESTER

PROJECT NUMBER: BRF 025-I(37)

FILE NAME: 95b168\s95b168pro.dgn PLOT DATE: 20-SEP-2010  
 PROJECT LEADER: C.P.WILLIAMS DRAWN BY: L.J.STONE  
 DESIGNED BY: H.L.SALLS CHECKED BY: R.S.YOUNG  
 BRIDGE 9 VT RT II& TH 72 PROFILE SHEET SHEET 72 OF 124



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        |

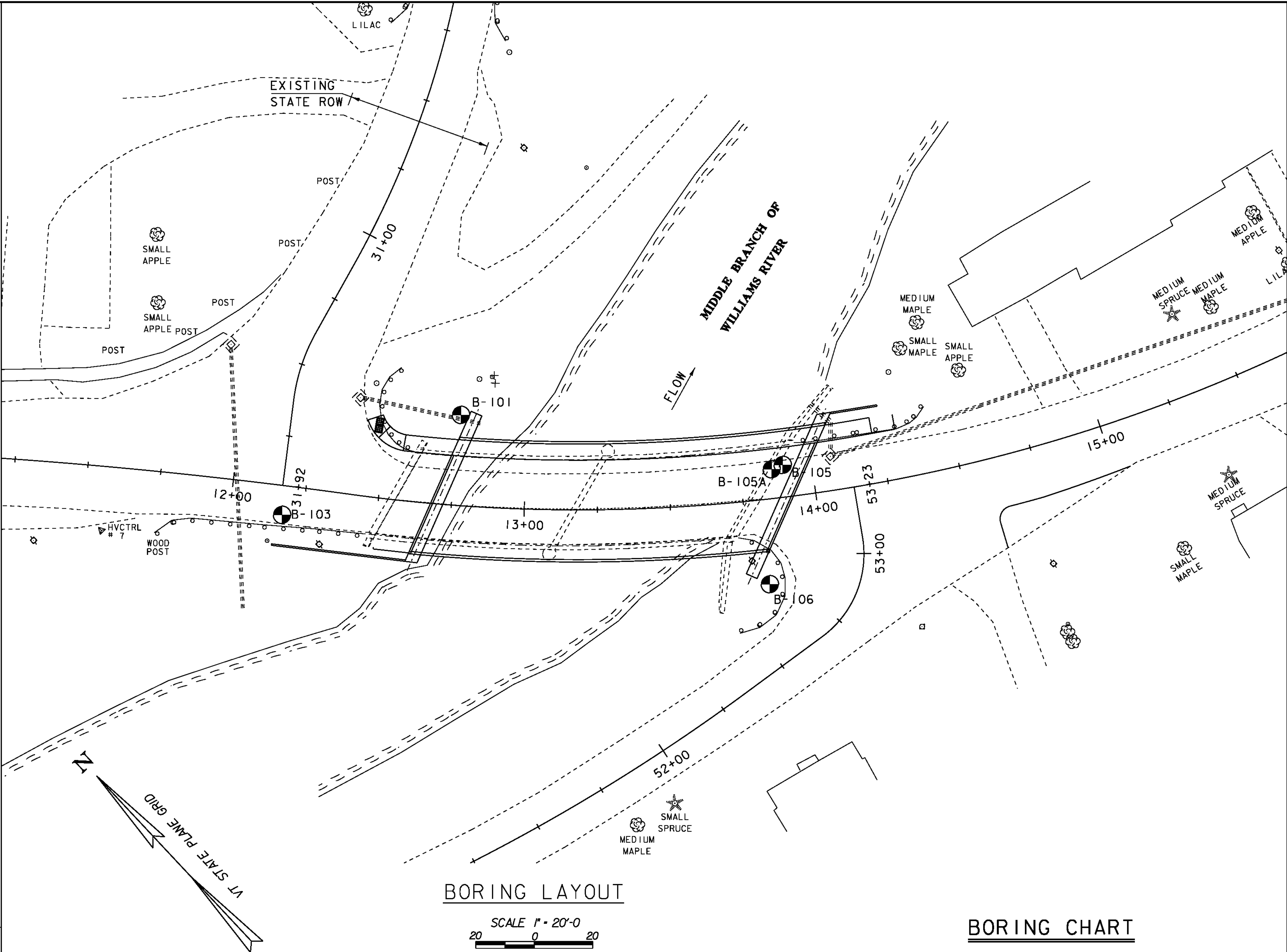
CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

| 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<br>Blow Count Per Foot For:<br>2" O.D. Sampler<br>1 3/8" I.D. Sampler<br>Hammer Weight Of 140 Lbs.<br>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 3/8"                                                                                                                                   |
| 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  | To 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)                                                                                                                                  |

| 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  | mtc | Multicolored |
| or    | Orange |     |              |



BORING LAYOUT

BORING CHART

| HOLE NO. | VTSPG     |            | STATION  | OFFSET | ELEV OF LEDGE |
|----------|-----------|------------|----------|--------|---------------|
|          | NORTHING  | EASTING    |          |        |               |
| B-101    | 276326.55 | 1616990.57 | 12+76.00 | -31.00 | 526.37        |
| B-103    | 276342.22 | 1616923.35 | 12+18.00 | 10.00  | 524.65        |
| B-105    | 276233.15 | 1617057.43 | 13+90.00 | -11.00 | UNK.          |
| B-105A   | 276236.57 | 1617053.20 | 13+86.00 | -10.00 | 524.20        |
| B-106    | 276215.83 | 1617021.04 | 13+81.00 | 29.00  | 526.78        |

PROJECT NAME: CHESTER

PROJECT NUMBER: BRF-025-I(37)

FILE NAME: b168\s95b168bor.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: H.J.SALLS  
BORING INFORMATION SHEET

PLOT DATE: 20-SEP-2010  
DRAWN BY: H.J.SALLS  
CHECKED BY: R.S. YOUNG  
SHEET 74 OF 124

GENERAL NOTES

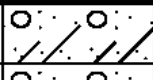
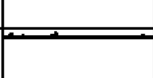
- The subsurface explorations shown herein were made between 02/03/09 and 04/09/09 by the Agency.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- 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.
- 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.
- 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.
- 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.

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.

BOTTOM OF PILE CAP = 575.00

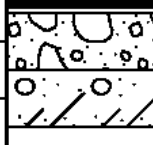
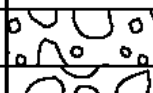
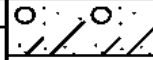
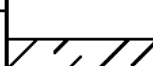
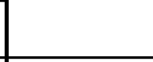
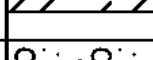
ESTIMATED PILE TIP

|                                        |                                                                                     | STATE OF VERMONT<br>AGENCY OF TRANSPORTATION<br>MATERIALS & RESEARCH SECTION<br>SUBSURFACE INFORMATION |                      | BORING NUMBER: B-101<br>SHEET 1 of 1<br>DATE STARTED: 2/03/09<br>DATE COMPLETED: 2/05/09                                                               |               |              |                        |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------------|
| PROJECT NAME: CHESTER<br>SITE NAME: VT-103<br>STATION: 12+76<br>OFFSET: -31.00<br>VTSPG: N 276326.55 ft E 1616990.57 ft |                                                                                     |                                                                                                        |                      | PROJECT NUMBER: BRF 025-1(37)SC<br>SITE NUMBER: BR-9<br>GROUND ELEVATION: 583.47 ft<br>GROUNDWATER DEPTH: 9.5 ft 2/04/09<br>PROJECT PIN NUMBER: 95B168 |               |              |                        |
| BORING CREW<br>CREW CHIEF: GARROW<br>DRILLER: GARROW<br>LOGGER: MAHMUTOVIC                                              |                                                                                     |                                                                                                        |                      | BORING RIG: LARGE SKID RIG w/AUTO HAMMER<br>BORING TYPE: WASH BORE<br>SAMPLE TYPE: SPLIT BARREL<br>CHECKED BY: NSM                                     |               |              |                        |
| DEPTH<br>(ft)                                                                                                           | SYMBOL                                                                              | CLASSIFICATION OF MATERIALS<br>(Description)                                                           | BLOWS<br>PER<br>FOOT | M.C.<br>(%)                                                                                                                                            | GRAVEL<br>(%) | SAND<br>(%)  | FINES<br>(%)           |
|                                                                                                                         |                                                                                     |                                                                                                        | RUN                  | REC<br>(%)                                                                                                                                             | RQD<br>(%)    | Dip<br>(deg) | Drill Rate<br>(min/ft) |
| 10                                                                                                                      |    | Visual Classification, A-2-4, GrSiSa with roots & leaves, brn, Moist, Rec. = 0.8 ft                    | 30                   | 29.8                                                                                                                                                   |               |              |                        |
|                                                                                                                         |                                                                                     | A-2-4, GrSa, brn, MTW, Rec. = 0.5 ft                                                                   | 16                   | 23.5                                                                                                                                                   | 23.4          | 58.6         | 18.0                   |
|                                                                                                                         |                                                                                     | A-1-b, SaGr, brn, MTW, Rec. = 0.7 ft                                                                   | 15                   | 18.8                                                                                                                                                   | 43.9          | 43.0         | 13.1                   |
|                                                                                                                         |                                                                                     | A-1-b, GrSa, brn, MTW, Rec. = 1.4 ft                                                                   | 12                   | 14.5                                                                                                                                                   | 32.7          | 57.4         | 9.9                    |
|                                                                                                                         |                                                                                     | A-1-a, SaGr, brn, Wei, Rec. = 1.0 ft                                                                   | 28                   | 19.0                                                                                                                                                   | 63.0          | 31.6         | 5.4                    |
|                                                                                                                         |                                                                                     | A-1-a, SaGr, brn, Wei, Rec. = 1.1 ft                                                                   | 41                   | 10.7                                                                                                                                                   | 61.7          | 26.7         | 11.6                   |
|                                                                                                                         |                                                                                     | A-4, GrSiSa, gry, MTW, Rec. = 1.2 ft                                                                   | 41                   | 14.8                                                                                                                                                   | 24.2          | 38.0         | 37.8                   |
|                                                                                                                         |                                                                                     | A-4, SaGrSi, gry, MTW, Rec. = 0.7 ft                                                                   | 25                   | 14.8                                                                                                                                                   | 37.1          | 23.4         | 39.5                   |
|                                                                                                                         |                                                                                     | A-4, SaSi, gry, MTW, Rec. = 1.4 ft                                                                     | 35                   | 17.0                                                                                                                                                   | 16.1          | 41.6         | 42.3                   |
|                                                                                                                         |                                                                                     | A-2-4, SiSa, gry, MTW, Rec. = 1.3 ft                                                                   | 43                   | 22.1                                                                                                                                                   | 0.7           | 68.7         | 30.6                   |
| 20                                                                                                                      |  | A-3, Sa, gry, MTW, Rec. = 1.7 ft                                                                       | 62                   | 17.8                                                                                                                                                   | 4.8           | 86.2         | 9.0                    |
|                                                                                                                         |                                                                                     |                                                                                                        |                      |                                                                                                                                                        |               |              |                        |
| 30                                                                                                                      |  | Field Class: BXMDC, Cobbles                                                                            |                      |                                                                                                                                                        |               |              |                        |
|                                                                                                                         |                                                                                     | Field Class: BXMDC, Boulder, Advanced casing.                                                          |                      |                                                                                                                                                        |               |              |                        |
|                                                                                                                         |                                                                                     |                                                                                                        |                      |                                                                                                                                                        |               |              |                        |
|                                                                                                                         |                                                                                     | Field Class: BXMDC, Cobbles, Advanced casing.                                                          |                      |                                                                                                                                                        |               |              |                        |
| 40                                                                                                                      |  | Field Note: No recovery, Appears to be cobbles and silt, Changed bit                                   | R                    |                                                                                                                                                        |               |              |                        |
|                                                                                                                         |                                                                                     |                                                                                                        |                      |                                                                                                                                                        |               |              |                        |
|                                                                                                                         |                                                                                     | A-1-a, SaGr, gry, MTW, Rec. = 0.4 ft, Broken rock was within sample.                                   | R                    | 8.3                                                                                                                                                    | 65.4          | 28.0         | 6.6                    |
|                                                                                                                         |                                                                                     |                                                                                                        |                      |                                                                                                                                                        |               |              |                        |
| 50                                                                                                                      |  | A-3, Sa, gry, MTW, Rec. = 0.3 ft                                                                       | R                    | 17.3                                                                                                                                                   | 0.8           | 92.2         | 7.0                    |
|                                                                                                                         |                                                                                     |                                                                                                        |                      |                                                                                                                                                        |               |              |                        |
|                                                                                                                         |                                                                                     | Field Note: No recovery, Appears to be sand                                                            | R                    |                                                                                                                                                        |               |              |                        |
| 60                                                                                                                      |  | Gray, Biotite Gneiss, Competent, Very hard, Unweathered, BXMDC, 57.1 ft - 62.1 ft, Rec. = 5.0 ft       | 1                    | 100                                                                                                                                                    | 48            | 20           | 14<br>12<br>12<br>12   |
|                                                                                                                         |                                                                                     | Gray, Biotite Gneiss, Competent, Very hard, Unweathered, BXMDC, 62.1 ft - 67.1 ft, Rec. = 5.0 ft       | 2                    | 100                                                                                                                                                    | 44            | 20           | 12<br>12<br>12<br>12   |
|                                                                                                                         |                                                                                     | Hole stopped @ 67.1 ft                                                                                 |                      |                                                                                                                                                        |               |              | 12<br>12               |

LOG OF BORING CHESTER BRF 025-1(37)SC.CP1 VT AOT.G0T 5/13/09

LOG OF BORING CHESTER BRF 025-1(37)SC.GPJ VT AOT.GDT 5/13/09

ESTIMATED PILE TIP

|                                     |                                                                                       | STATE OF VERMONT<br>AGENCY OF TRANSPORTATION<br>MATERIALS & RESEARCH SECTION<br>SUBSURFACE INFORMATION |                      | BORING NUMBER: B-103<br>SHEET 1 of 1<br>DATE STARTED: 3/20/09<br>DATE COMPLETED: 4/09/09                                                                |               |              |                        |
|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------------|
| PROJECT NAME: CHESTER<br>SITE NAME: VT-103<br>STATION: 12+18<br>OFFSET: 10.00<br>VTSPG: N 276342.22 ft E 1616923.35 ft |                                                                                       |                                                                                                        |                      | PROJECT NUMBER: BRF 025-1(37)SC<br>SITE NUMBER: BR-9<br>GROUND ELEVATION: 585.45 ft<br>GROUNDWATER DEPTH: 13.0 ft 4/08/09<br>PROJECT PIN NUMBER: 95B168 |               |              |                        |
| BORING CREW<br>CREW CHIEF: GARROW<br>DRILLER: GARROW<br>LOGGER: PORTER                                                 |                                                                                       |                                                                                                        |                      | BORING RIG: LAG TRACK RIG #09 w/AUTO HAMMER<br>BORING TYPE: WASH BORE<br>SAMPLE TYPE: SPLIT BARREL<br>CHECKED BY: NSM                                   |               |              |                        |
| DEPTH<br>(ft)                                                                                                          | SYMBOL                                                                                | CLASSIFICATION OF MATERIALS<br>(Description)                                                           | BLOWS<br>PER<br>FOOT | M.C.<br>(%)                                                                                                                                             | GRAVEL<br>(%) | SAND<br>(%)  | FINES<br>(%)           |
|                                                                                                                        |                                                                                       |                                                                                                        | RUN                  | REC<br>(%)                                                                                                                                              | RQD<br>(%)    | Dip<br>(deg) | Drill Rate<br>(min/ft) |
|                                                                                                                        |    | Asphalt Pavement, 0.0 ft - 0.8 ft                                                                      |                      |                                                                                                                                                         |               |              |                        |
|                                                                                                                        |                                                                                       | A-1-b, SaGr, brn, Moist, Rec. = 1.0 ft                                                                 | 37                   | 13.6                                                                                                                                                    | 48.3          | 39.3         | 12.4                   |
|                                                                                                                        |                                                                                       | A-2-4, GrSa, brn, Moist, Rec. = 1.0 ft, Advanced & cleaned out casing to 8.0 ft.                       | 7                    | 18.3                                                                                                                                                    | 27.7          | 54.2         | 18.1                   |
| 10                                                                                                                     |    | A-1-a, SaGr, brn, Moist, Rec. = 1.0 ft, Broken Rock was within sample.                                 | 40                   | 9.6                                                                                                                                                     | 62.1          | 30.7         | 7.2                    |
|                                                                                                                        |                                                                                       | BXDC, Cobbles, 10.0 ft - 11.0 ft                                                                       |                      |                                                                                                                                                         |               |              |                        |
|                                                                                                                        |    | A-2-4, GrSa, brn, Moist, Rec. = 1.5 ft                                                                 | 30                   | 13.5                                                                                                                                                    | 25.4          | 60.0         | 14.6                   |
|                                                                                                                        |                                                                                       |                                                                                                        |                      |                                                                                                                                                         |               |              |                        |
|                                                                                                                        |                                                                                       | BXDC, Cobbles, 18.0 ft - 20.0 ft                                                                       |                      |                                                                                                                                                         |               |              |                        |
| 20                                                                                                                     |  |                                                                                                        |                      |                                                                                                                                                         |               |              |                        |
|                                                                                                                        |                                                                                       | A-4, SaSi, gry, Moist, Rec. = 1.4 ft                                                                   | 44                   | 20.5                                                                                                                                                    | 5.1           | 30.6         | 64.3                   |
|                                                                                                                        |                                                                                       |                                                                                                        |                      |                                                                                                                                                         |               |              |                        |
| 30                                                                                                                     |  | A-2-4, GrSa, gry, Moist, Rec. = 1.2 ft, Broken Rock was within sample.                                 | 68                   | 14.1                                                                                                                                                    | 35.9          | 46.0         | 18.1                   |
|                                                                                                                        |                                                                                       |                                                                                                        |                      |                                                                                                                                                         |               |              |                        |
|                                                                                                                        |                                                                                       | A-4, SaGrSi, gry, Moist, Rec. = 1.4 ft, Broken Rock was within sample.                                 | 88                   | 12.8                                                                                                                                                    | 35.7          | 28.0         | 36.3                   |
| 40                                                                                                                     |  | Visual Classification, Very Fine Sand                                                                  |                      |                                                                                                                                                         |               |              |                        |
|                                                                                                                        |                                                                                       | BXMDC, Cobbles, 37.8 ft - 41.8 ft                                                                      |                      |                                                                                                                                                         |               |              |                        |
|                                                                                                                        |                                                                                       | Visual Classification, Appears to be Sand                                                              |                      |                                                                                                                                                         |               |              |                        |
| 50                                                                                                                     |  |                                                                                                        |                      |                                                                                                                                                         |               |              |                        |
|                                                                                                                        |                                                                                       | Visual Classification, Appears to be Silty Sand                                                        |                      |                                                                                                                                                         |               |              |                        |
|                                                                                                                        |                                                                                       |                                                                                                        |                      |                                                                                                                                                         |               |              |                        |
| 60                                                                                                                     |  | Gray, Biotite Gneiss, Competent, Very hard, Unweathered, BXMDC, 60.8 ft - 65.8 ft, Rec. = 4.8 ft       | 1                    | Top of Bedrock @ 96                                                                                                                                     | 58            | 60.8 ft 35   | 7<br>6<br>7<br>7<br>7  |
| 70                                                                                                                     |  | Hole stopped @ 65.8 ft                                                                                 |                      |                                                                                                                                                         |               |              |                        |
|                                                                                                                        |                                                                                       |                                                                                                        |                      |                                                                                                                                                         |               |              |                        |

LOG OF BORING CHESTER BRF 025-1(37)SC.CPJ VT.AUT.GDT 5/13/09

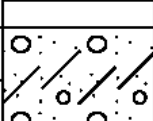
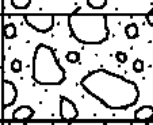
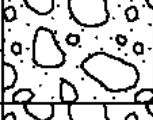
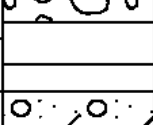
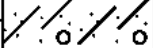
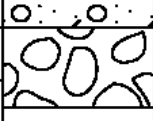
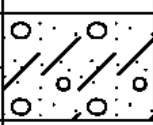
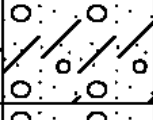
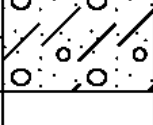
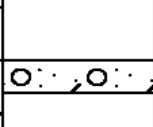
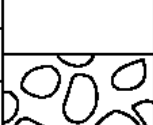
LOG OF BORING CHESTER BRF 025-1(37)SC.GPJ VT AOT.GDT 5/13/09

PROJECT NAME: CHESTER  
 PROJECT NUMBER: BRF 025-1(37)

FILE NAME: s95b168bor.dgn  
 PROJECT LEADER: C.P.WILLIAMS  
 DESIGNED BY: H.J.SALLS  
 BRIDGE 9 BORING LOG - SHEET 1

PLOT DATE: 20-SEP-2010  
 DRAWN BY: D.D.BEARD  
 CHECKED BY: R.S.YOUNG  
 SHEET 75 OF 124

BOTTOM OF PILE CAP = 575.00

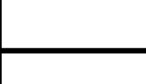
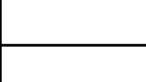
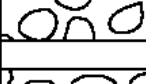
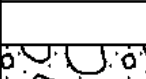
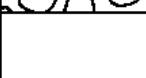
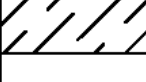
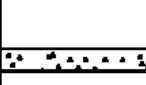
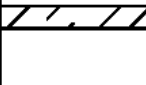
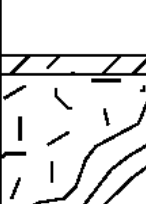
|                                        |                                                                                     | STATE OF VERMONT<br>AGENCY OF TRANSPORTATION<br>MATERIALS & RESEARCH SECTION<br>SUBSURFACE INFORMATION |                      | BORING NUMBER: B-105<br>SHEET 1 of 1<br>DATE STARTED: 2/11/09<br>DATE COMPLETED: 2/13/09                                                |               |             |              |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|--------------|
| PROJECT NAME: CHESTER<br>SITE NAME: VT-103<br>STATION: 13+90<br>OFFSET: -11.00<br>VTSPG: N 276233.15 ft E 1617057.43 ft |                                                                                     |                                                                                                        |                      | PROJECT NUMBER: BRF 025-1(37)SC<br>SITE NUMBER: BR-9<br>GROUND ELEVATION: 584.84 ft<br>GROUNDWATER DEPTH:<br>PROJECT PIN NUMBER: 95B168 |               |             |              |
| BORING CREW<br>CREW CHIEF: GARROW<br>DRILLER: GARROW<br>LOGGER: MAHMUTOVIC                                              |                                                                                     |                                                                                                        |                      | BORING RIG: LARGE SKID RIG w/AUTO HAMMER<br>BORING TYPE: WASH BORE<br>SAMPLE TYPE: SPLIT BARREL<br>CHECKED BY: NSM                      |               |             |              |
| DEPTH<br>(ft)                                                                                                           | SYMBOL                                                                              | CLASSIFICATION OF MATERIALS<br>(Description)                                                           | BLOWS<br>PER<br>FOOT | M.C.<br>(%)                                                                                                                             | GRAVEL<br>(%) | SAND<br>(%) | FINES<br>(%) |
|                                                                                                                         |    | Asphalt Pavement, 0.0 ft - 0.7 ft                                                                      |                      |                                                                                                                                         |               |             |              |
|                                                                                                                         |    | Field Note: No Recovery                                                                                | R                    |                                                                                                                                         |               |             |              |
|                                                                                                                         |    | BXDC, Concrete, 1.5 ft - 2.5 ft                                                                        |                      |                                                                                                                                         |               |             |              |
| 5                                                                                                                       |    | A-2-4, SiGrSa, gry, MTW, Rec. = 1.2 ft                                                                 | 49                   | 13.3                                                                                                                                    | 26.9          | 46.6        | 26.5         |
|                                                                                                                         |    | A-1-b, SaGr, gry, Wet, Rec. = 0.5 ft                                                                   | 13                   | 10.5                                                                                                                                    | 55.5          | 33.5        | 11.0         |
|                                                                                                                         |   | A-1-b, SaGr, gry, Wet, Rec. = 1.1 ft                                                                   | 22                   | 9.5                                                                                                                                     | 47.1          | 40.7        | 12.2         |
| 10                                                                                                                      |  | A-1-a, SaGr, gry, Wet, Rec. = 0.7 ft                                                                   | R                    | 9.7                                                                                                                                     | 63.9          | 25.9        | 10.2         |
|                                                                                                                         |  | Field Note: BXDC, Cleaned out casing to 10.5 ft.                                                       |                      |                                                                                                                                         |               |             |              |
|                                                                                                                         |  | A-2-4, GrSa, gry, Wet, Rec. = 0.4 ft                                                                   | 12                   | 15.1                                                                                                                                    | 32.8          | 49.9        | 17.3         |
| 15                                                                                                                      |  | Field Class: BXDC, Cobbles                                                                             |                      |                                                                                                                                         |               |             |              |
|                                                                                                                         |  | A-2-4, SiGrSa, gry, Wet, Rec. = 1.3 ft                                                                 | 43                   | 12.5                                                                                                                                    | 36.6          | 41.1        | 22.3         |
|                                                                                                                         |  | A-2-4, GrSiSa, gry, Wet, Rec. = 1.4 ft                                                                 | 64                   | 10.8                                                                                                                                    | 20.8          | 47.8        | 31.4         |
| 20                                                                                                                      |  | A-2-4, SiSa, gry, Wet, Rec. = 1.2 ft                                                                   | 34                   | 17.3                                                                                                                                    | 11.1          | 68.3        | 20.6         |
| 25                                                                                                                      |  | A-2-4, GrSa, gry, Wet, Rec. = 0.6 ft                                                                   | R                    | 13.2                                                                                                                                    | 32.6          | 54.8        | 12.6         |
| 30                                                                                                                      |  | Field Class: BXDC, Cobbles, Cored ahead.                                                               |                      |                                                                                                                                         |               |             |              |
| 35                                                                                                                      |  | Field Class: BXDC, Cobbles, Changed bit. Very hard drilling.                                           |                      |                                                                                                                                         |               |             |              |
|                                                                                                                         |  | Field Note: Casing broke off. About 5 ft of casing remains in hole.<br>Hole stopped @ 35.0 ft          |                      |                                                                                                                                         |               |             |              |

LOG OF BORING CHESTER BRF 025-1(37)SC.CP-1 VT AOT.G001 5/13/09

LOG OF BORING CHESTER BRF 025-1(37)SC.GPJ VT AOT.GDT 5/13/09

BOTTOM OF PILE CAP = 575.00

ESTIMATED PILE TIP

|                                      |                                                                                       | STATE OF VERMONT<br>AGENCY OF TRANSPORTATION<br>MATERIALS & RESEARCH SECTION<br>SUBSURFACE INFORMATION |                                                                                                                                                        | BORING NUMBER: B-105A<br>SHEET 1 of 1<br>DATE STARTED: 2/13/09<br>DATE COMPLETED: 3/18/09 |               |              |                           |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------|--------------|---------------------------|
| PROJECT NAME: CHESTER<br>SITE NAME: VT-103<br>STATION: 13+86<br>OFFSET: -10.00<br>VTSPG: N 276236.57 ft E 1617053.20 ft |                                                                                       |                                                                                                        | PROJECT NUMBER: BRF 025-1(37)SC<br>SITE NUMBER: BR-9<br>GROUND ELEVATION: 584.9 ft<br>GROUNDWATER DEPTH: 15.5 ft 3/18/09<br>PROJECT PIN NUMBER: 95B168 |                                                                                           |               |              |                           |
| BORING CREW<br>CREW CHIEF: GARROW<br>DRILLER: GARROW<br>LOGGER: MAHMUTOVIC                                              |                                                                                       |                                                                                                        | BORING RIG: LARGE SKID RIG w/AUTO HAMMER<br>BORING TYPE: WASH BORE<br>SAMPLE TYPE: SPLIT BARREL<br>CHECKED BY: NSM                                     |                                                                                           |               |              |                           |
| DEPTH<br>(ft)                                                                                                           | SYMBOL                                                                                | CLASSIFICATION OF MATERIALS<br>(Description)                                                           | BLOWS<br>PER<br>FOOT                                                                                                                                   | M.C.<br>(%)                                                                               | GRAVEL<br>(%) | SAND<br>(%)  | FINES<br>(%)              |
|                                                                                                                         |                                                                                       |                                                                                                        | RUN                                                                                                                                                    | REC<br>(%)                                                                                | ROD<br>(%)    | Dip<br>(deg) | Drill Rate<br>(min/ft)    |
| 10                                                                                                                      |    | BXDC, Cobbles, 2.5 ft - 9.5 ft                                                                         |                                                                                                                                                        |                                                                                           |               |              |                           |
|                                                                                                                         |    | BXDC, Cobbles, 13.0 ft - 14.0 ft                                                                       |                                                                                                                                                        |                                                                                           |               |              |                           |
| 20                                                                                                                      |   | BXDC, Cored ahead, 17.2 ft - 19.0 ft                                                                   |                                                                                                                                                        |                                                                                           |               |              |                           |
|                                                                                                                         |  | BXDC, Cored ahead, 19.1 ft - 21.0 ft                                                                   |                                                                                                                                                        |                                                                                           |               |              |                           |
| 30                                                                                                                      |  | BXDC, Cobbles, 22.5 ft - 24.0 ft                                                                       |                                                                                                                                                        |                                                                                           |               |              |                           |
|                                                                                                                         |  | BXDC, Boulder, 25.0 ft - 27.0 ft                                                                       |                                                                                                                                                        |                                                                                           |               |              |                           |
| 40                                                                                                                      |  | BXDC, Cobbles, 27.0 ft - 31.0 ft                                                                       |                                                                                                                                                        |                                                                                           |               |              |                           |
|                                                                                                                         |  | BXDC, Cored ahead, 33.5 ft - 35.0 ft                                                                   |                                                                                                                                                        |                                                                                           |               |              |                           |
| 40                                                                                                                      |  | A-1-b, GrSa, gry, Wet, Rec. = 0.9 ft                                                                   | R                                                                                                                                                      | 11.2                                                                                      | 42.4          | 42.9         | 14.7                      |
|                                                                                                                         |                                                                                       | Field Note: Pulled out casing. Changed bit. Changed casing from 4" to 3.5".                            |                                                                                                                                                        |                                                                                           |               |              |                           |
| 40                                                                                                                      |  | No Recovery, 40.0 ft - 41.0 ft                                                                         | R                                                                                                                                                      |                                                                                           |               |              |                           |
|                                                                                                                         |  | BXMDC, Cobbles, 41.0 ft - 42.5 ft                                                                      |                                                                                                                                                        |                                                                                           |               |              |                           |
| 50                                                                                                                      |  | A-4, SiSa, gry, Wet, Rec. = 0.6 ft                                                                     | 84                                                                                                                                                     | 21.5                                                                                      | 2.8           | 60.2         | 37.0                      |
|                                                                                                                         |  | A-3, Sa, gry, Wet, Rec. = 0.8 ft                                                                       | R                                                                                                                                                      | 23.6                                                                                      | 0.0           | 92.4         | 7.6                       |
| 60                                                                                                                      |  | A-4, SaSi, gry, MTW, Rec. = 0.6 ft                                                                     | R                                                                                                                                                      | 27.6                                                                                      | 0.0           | 26.7         | 73.3                      |
|                                                                                                                         |  | A-4, SaSi, gry, MTW, Rec. = 0.7 ft                                                                     | R                                                                                                                                                      | 22.5<br>Top of Bedrock @ 60.7 ft                                                          | 0.0           | 24.0         | 76.0                      |
| 70                                                                                                                      |  | Gray, Biotite Gneiss, Competent, Very hard, Unweathered, BXMDC, 60.7 ft - 65.7 ft, Rec. = 4.8 ft       | 1                                                                                                                                                      | 96                                                                                        | 60            | 35           | 5<br>5<br>10<br>10<br>12  |
|                                                                                                                         |  | Gray, Biotite Gneiss, Competent, Very hard, Unweathered, BXMDC, 65.7 ft - 70.7 ft, Rec. = 4.85 ft      | 2                                                                                                                                                      | 97                                                                                        | 70            | 35           | 7<br>11<br>10<br>12<br>18 |
| 70                                                                                                                      |                                                                                       | Hole stopped @ 70.7 ft                                                                                 |                                                                                                                                                        |                                                                                           |               |              |                           |

LOG OF BORING CHESTER BRF 025-1(37)SC.CPJ VT AOT.GDT 5/13/09

LOG OF BORING CHESTER BRF 025-1(37)SC.GPJ VT AOT.GDT 5/13/09

PROJECT NAME: CHESTER  
 PROJECT NUMBER: BRF 025-1(37)

FILE NAME: s95b168bor.dgn  
 PROJECT LEADER: C.P.WILLIAMS  
 DESIGNED BY: H.J.SALLS  
 BRIDGE 9 BORING LOG - SHEET 2

PLOT DATE: 20-SEP-2010  
 DRAWN BY: D.D.BEARD  
 CHECKED BY: R.S.YOUNG  
 SHEET 76 OF 124

BOTTOM OF PILE CAP = 575.00

ESTIMATED PILE TIP

|                                                                                                                        |        | STATE OF VERMONT<br>AGENCY OF TRANSPORTATION<br>MATERIALS & RESEARCH SECTION<br>SUBSURFACE INFORMATION     |                      | BORING NUMBER: B-106<br>SHEET 1 of 1<br>DATE STARTED: 2/09/09<br>DATE COMPLETED: 2/11/09                                                                |               |              |                            |           |           |
|------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|----------------------------|-----------|-----------|
| PROJECT NAME: CHESTER<br>SITE NAME: VT-103<br>STATION: 13+81<br>OFFSET: 29.00<br>VTSPG: N 276215.83 ft E 1617021.04 ft |        |                                                                                                            |                      | PROJECT NUMBER: BRF 025-1(37)SC<br>SITE NUMBER: BR-9<br>GROUND ELEVATION: 584.78 ft<br>GROUNDWATER DEPTH: 10.8 ft 2/10/09<br>PROJECT PIN NUMBER: 95B168 |               |              |                            |           |           |
| BORING CREW<br>CREW CHIEF: GARROW<br>DRILLER: GARROW<br>LOGGER: MAHMUTOVIC                                             |        |                                                                                                            |                      | BORING RIG: LARGE SKID RIG w/AUTO HAMMER<br>BORING TYPE: WASH BORE<br>SAMPLE TYPE: SPLIT BARREL<br>CHECKED BY: NSM                                      |               |              |                            |           |           |
| DEPTH<br>(ft)                                                                                                          | SYMBOL | CLASSIFICATION OF MATERIALS<br>(Description)                                                               | BLOWS<br>PER<br>FOOT | M.C.<br>(%)                                                                                                                                             | GRAVEL<br>(%) | SAND<br>(%)  | FINES<br>(%)               | LL<br>(%) | PI<br>(%) |
|                                                                                                                        |        |                                                                                                            | RUN                  | REC<br>(%)                                                                                                                                              | ROD<br>(%)    | Dip<br>(deg) | Drill Rate<br>(min/ft)     |           |           |
| 10                                                                                                                     |        | A-2-4, SiSa, brn, Moist, Rec. = 1.1 ft, Very strong petroleum odor.                                        | 49                   | 9.0                                                                                                                                                     | 17.6          | 58.9         | 23.5                       |           |           |
|                                                                                                                        |        | A-1-a, SaGr, brn, Moist, Rec. = 1.1 ft, Very strong petroleum odor.                                        | 14                   | 6.3                                                                                                                                                     | 52.1          | 41.4         | 6.5                        |           |           |
|                                                                                                                        |        | A-2-4, GrSa, brn, Moist, Rec. = 0.9 ft                                                                     | 13                   | 7.5                                                                                                                                                     | 30.3          | 56.0         | 13.7                       |           |           |
|                                                                                                                        |        | A-1-b, GrSa, brn, Moist, Rec. = 1.0 ft                                                                     | 18                   | 9.8                                                                                                                                                     | 37.7          | 45.5         | 16.8                       |           |           |
|                                                                                                                        |        | A-1-b, GrSa, brn, MTW, Rec. = 0.8 ft                                                                       | 27                   | 7.8                                                                                                                                                     | 44.7          | 44.9         | 10.4                       |           |           |
|                                                                                                                        |        | A-1-b, GrSa, brn, MTW, Rec. = 0.5 ft                                                                       | R                    | 10.9                                                                                                                                                    | 35.5          | 47.0         | 17.5                       |           |           |
|                                                                                                                        |        | BXDC, Boulder, 10.6 ft - 12.0 ft                                                                           | 23                   | 17.9                                                                                                                                                    | 21.8          | 63.5         | 14.7                       |           |           |
|                                                                                                                        |        | A-2-4, GrSa, gry, Wet, Rec. = 0.8 ft                                                                       | 9                    | 18.3                                                                                                                                                    | 32.2          | 59.4         | 8.4                        |           |           |
|                                                                                                                        |        | A-3, GrSa, gry, Wet, Rec. = 0.3 ft, There was one stone in sample.                                         | 25                   |                                                                                                                                                         |               |              |                            |           |           |
|                                                                                                                        |        | Field Note: No Recovery, Stone in sampler.                                                                 | 17                   | 16.1                                                                                                                                                    | 20.3          | 48.8         | 30.9                       |           |           |
| 20                                                                                                                     |        | A-2-4, GrSiSa, gry, Wet, Rec. = 0.9 ft                                                                     | 36                   | 18.8                                                                                                                                                    | 10.0          | 52.8         | 37.2                       | 39        | 15        |
|                                                                                                                        |        | A-4, SiSa, gry, Wet, Rec. = 1.5 ft                                                                         |                      |                                                                                                                                                         |               |              |                            |           |           |
|                                                                                                                        |        |                                                                                                            |                      |                                                                                                                                                         |               |              |                            |           |           |
|                                                                                                                        |        | A-4, SaSi, gry, Wet, Rec. = 1.6 ft                                                                         | 78                   | 20.2                                                                                                                                                    | 10.5          | 29.5         | 60.0                       |           |           |
| 30                                                                                                                     |        | A-6, SiCl, gry, Wet, Rec. = 0.7 ft                                                                         | 6                    | 35.1                                                                                                                                                    | 0.0           | 2.3          | 97.7                       |           |           |
|                                                                                                                        |        | BXDC, Boulder, 32.3 ft - 34.5 ft                                                                           |                      |                                                                                                                                                         |               |              |                            |           |           |
|                                                                                                                        |        |                                                                                                            |                      |                                                                                                                                                         |               |              |                            |           |           |
|                                                                                                                        |        | A-2-4, SiSa, gry, Wet, Rec. = 0.4 ft                                                                       | R                    | 12.1                                                                                                                                                    | 19.6          | 50.1         | 30.3                       |           |           |
| 40                                                                                                                     |        | A-2-4, SiSa, gry, Wet, Rec. = 0.4 ft                                                                       |                      |                                                                                                                                                         |               |              |                            |           |           |
|                                                                                                                        |        | BXMDC, Boulder, 38.8 ft - 41.8 ft                                                                          |                      |                                                                                                                                                         |               |              |                            |           |           |
|                                                                                                                        |        |                                                                                                            |                      |                                                                                                                                                         |               |              |                            |           |           |
|                                                                                                                        |        | A-2-4, GrSiSa, gry, Wet, Rec. = 0.5 ft                                                                     | R                    | 11.0                                                                                                                                                    | 26.6          | 43.8         | 29.6                       |           |           |
| 50                                                                                                                     |        | A-2-4, SiSa, gry, Wet, Rec. = 0.7 ft                                                                       |                      |                                                                                                                                                         |               |              |                            |           |           |
|                                                                                                                        |        |                                                                                                            |                      |                                                                                                                                                         |               |              |                            |           |           |
|                                                                                                                        |        | A-2-4, SiSa, gry, Wet, Rec. = 0.7 ft                                                                       | R                    | 20.1                                                                                                                                                    | 0.0           | 69.3         | 30.7                       |           |           |
|                                                                                                                        |        |                                                                                                            |                      |                                                                                                                                                         |               |              |                            |           |           |
| 60                                                                                                                     |        | A-2-4, SiSa, gry, Wet, Rec. = 0.7 ft                                                                       | R                    | 21.2                                                                                                                                                    | 0.8           | 74.2         | 25.0                       |           |           |
|                                                                                                                        |        |                                                                                                            |                      |                                                                                                                                                         |               |              |                            |           |           |
|                                                                                                                        |        | Black and gray, Biotite Gneiss, Competent, Very hard, Unweathered, BXMDC, 58.0 ft - 63.0 ft, Rec. = 4.9 ft | 1                    | 98                                                                                                                                                      | 52            | 20           | 6<br>10<br>10<br>10<br>10  |           |           |
|                                                                                                                        |        | Black and gray, Biotite Gneiss, Competent, Very hard, Unweathered, BXMDC, 63.0 ft - 68.0 ft, Rec. = 4.2 ft | 2                    | 84                                                                                                                                                      | 48            | 20           | 10<br>10<br>10<br>10<br>10 |           |           |
| 70                                                                                                                     |        | Hole stopped @ 68.0 ft                                                                                     |                      |                                                                                                                                                         |               |              | 9<br>8                     |           |           |

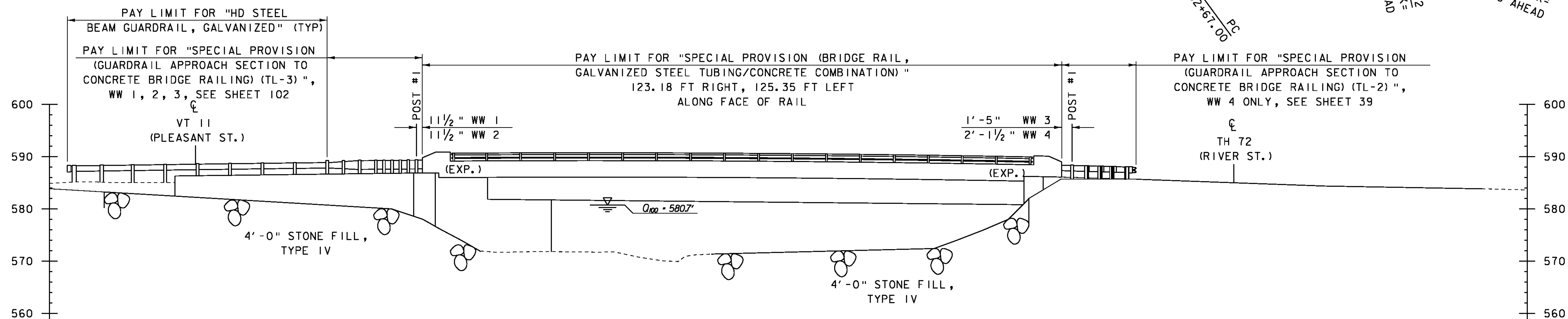
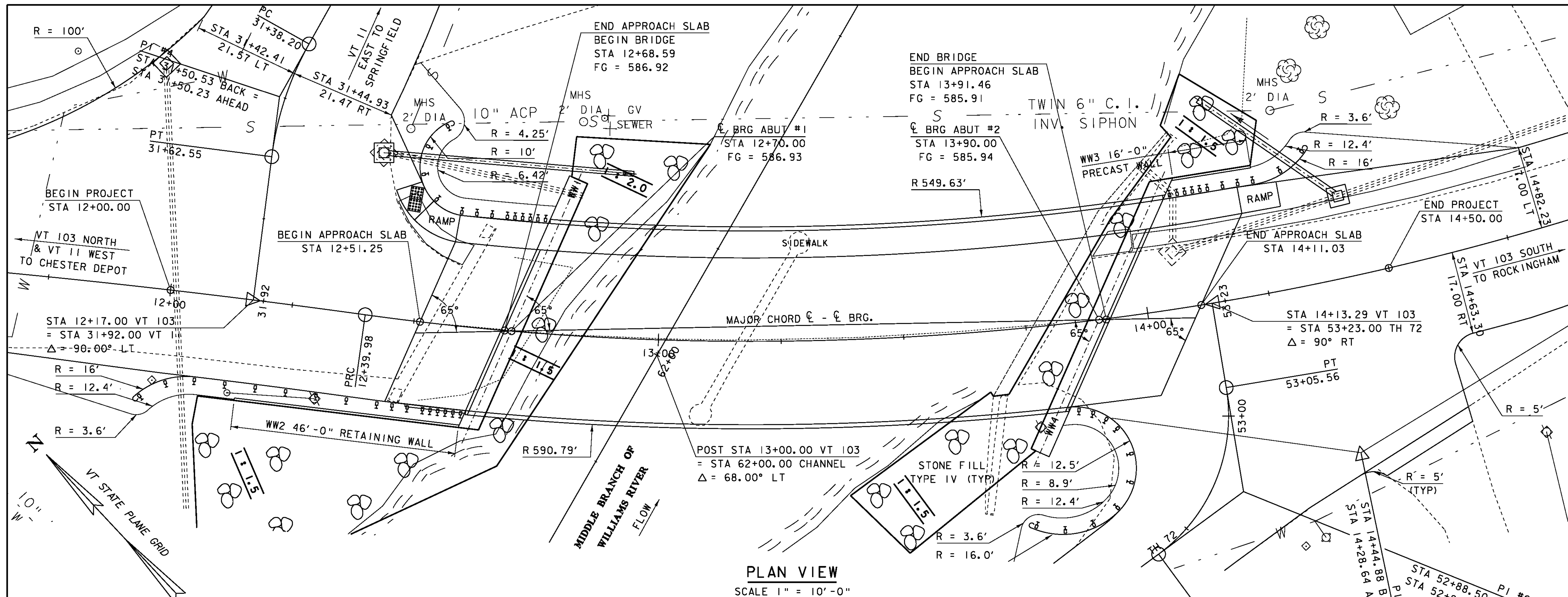
LOG OF BORING CHESTER BRF 025-1(37)SC.DPI VT.AOT.GDT 5/13/09

LOC OF BORING CHESTER BRF 025-1(37)SC.dgn VT AGT.BDT 5/13/09

PROJECT NAME: CHESTER  
 PROJECT NUMBER: BRF 025-1(37)

FILE NAME: s95b168bor.dgn  
 PROJECT LEADER: C.P.WILLIAMS  
 DESIGNED BY: H.J.SALLS  
 BRIDGE 9 BORING LOG - SHEET 3

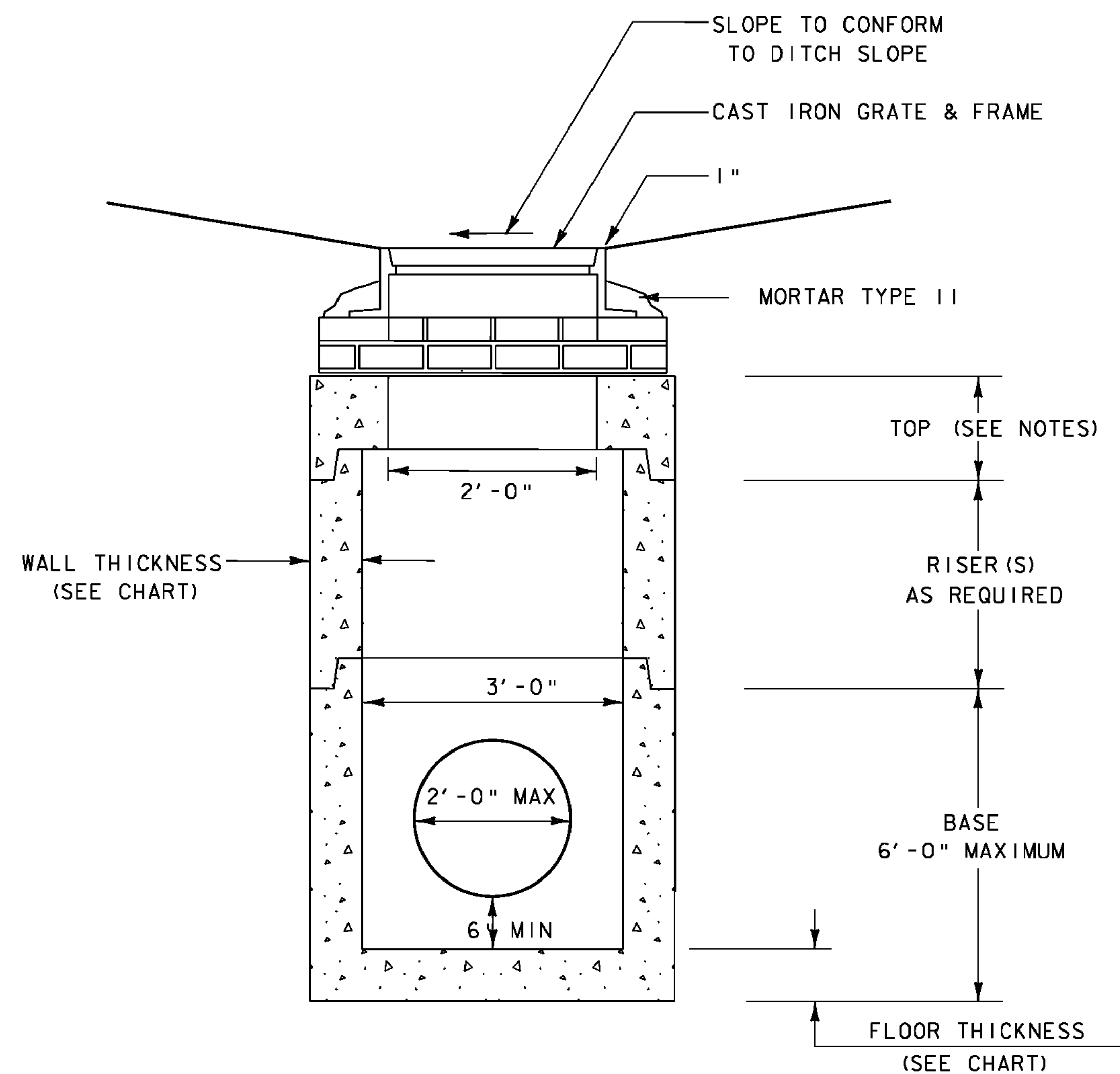
PLOT DATE: 20-SEP-2010  
 DRAWN BY: D.D.BEARD  
 CHECKED BY: R.S.YOUNG  
 SHEET 77 OF 124



|                               |                        |
|-------------------------------|------------------------|
| PROJECT NAME: CHESTER         |                        |
| PROJECT NUMBER: BRF 025-I(37) |                        |
| FILE NAME: s95b168pe.dgn      | PLOT DATE: 20-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS  | DRAWN BY: D.D.BEARD    |
| DESIGNED BY: R.S.YOUNG        | CHECKED BY: H.J.SALLS  |
| BRIDGE 9 PLAN AND ELEVATION   | SHEET 78 OF 124        |

SCALE 1" = 10'-0"

|                                     |                        |
|-------------------------------------|------------------------|
| FILE NAME: 95b168\s95b168+yp.dgn    | PLOT DATE: 20-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS        | DRAWN BY: D.D.BEARD    |
| DESIGNED BY: R.S.YOUNG              | CHECKED BY: R.S.YOUNG  |
| BRIDGE 9 MISCELLANEOUS DETAIL SHEET | SHEET 79 OF 124        |



**PRECAST DROP INLET  
IN DITCH**  
N. T. S.

## NOTES

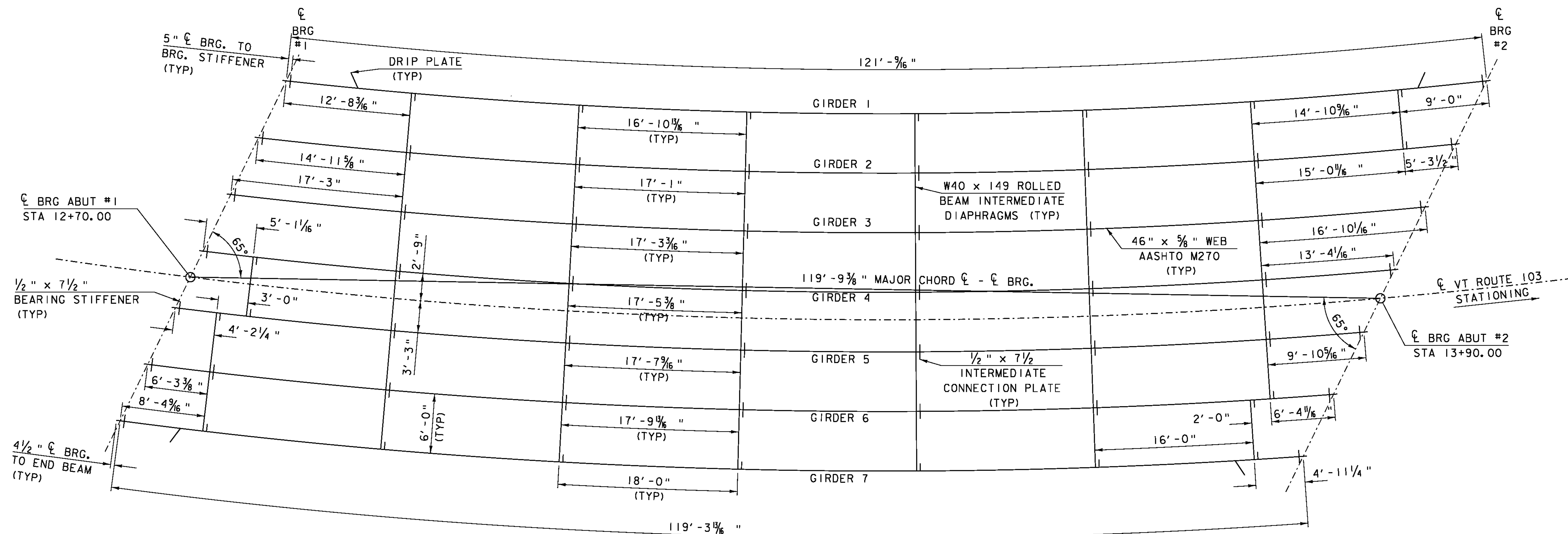
1. ALL PRECAST CONCRETE DROP INLETS AND CATCH BASINS SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH SUBSECTION 705.04.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL INVERT ELEVATIONS, PIPE SIZES AND LOCATIONS SHOWN PRIOR TO ORDERING THE PRECAST COMPONENTS.
3. SEE STANDARD D-16 FOR CAST IRON FRAME AND GRATE DETAILS.
4. THE TOP SECTIONS MAY BE EITHER THE FLAT TOPS AS SHOWN OR CONE SECTIONS. IF CONE SECTIONS ARE USED THEY MAY EITHER BE CONCENTRIC OR ECCENTRIC. PIPES ARE NOT TO ENTER CONE SECTIONS.
5. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 4" HIGH AT AN ANGLE OF 11 DEGREES CENTERED IN THE WIDTH OF THE JOINT. ALL SECTIONS SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT.
6. ALL SECTIONS WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 1'-0" OF OUTSIDE SURFACE BETWEEN HOLES. NO MORE THAN 75% OF A HORIZONTAL CROSS SECTION SHALL BE HOLES. HOLES SHALL BE NO CLOSER THAN 3" TO A JOINT.

## SIZING CHART

| DIAMETER           | WALL THICKNESS | FLOOR THICKNESS |
|--------------------|----------------|-----------------|
| 4' - 0" OR SMALLER | 5 1/4 "        | 6 "             |
| 5' - 0 "           | 6 "            | 8 "             |
| 6' - 0 "           | 7 "            | 8 "             |
| 7' - 0 "           | 8 "            | 10 "            |
| 8' - 0 "           | 9 1/4 "        | 10 "            |

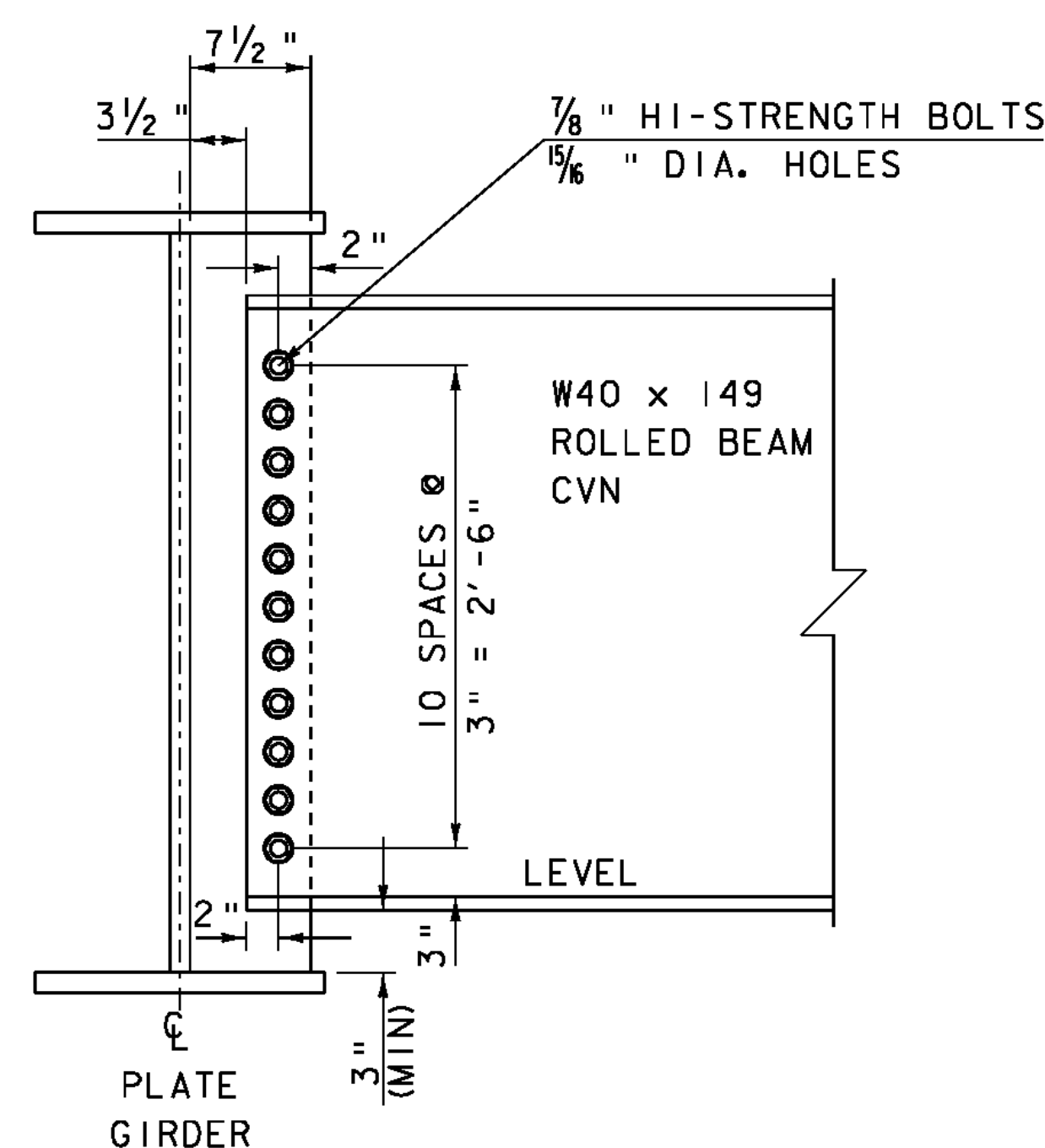
PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

|                                      |                        |
|--------------------------------------|------------------------|
| FILE NAME: 95b168\s95b168u+llity.dgn | PLOT DATE: 20-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS         | DRAWN BY: D.D.BEARD    |
| DESIGNED BY: R.S.YOUNG               | CHECKED BY: R.S.YOUNG  |
| PRECAST DROP INLET DETAILS           | SHEET 80 OF 124        |



# FRAMING PLAN

SCALE  $\frac{3}{16}$ " = 1'-0"



NOTE: CONTRACTOR MAY SUBMIT AN EQUIVALENT PLATE DIAPHRAGMS INSTEAD OF THE ROLLED BEAM

## INTERMEDIATE DIAPHRAGM DETAIL

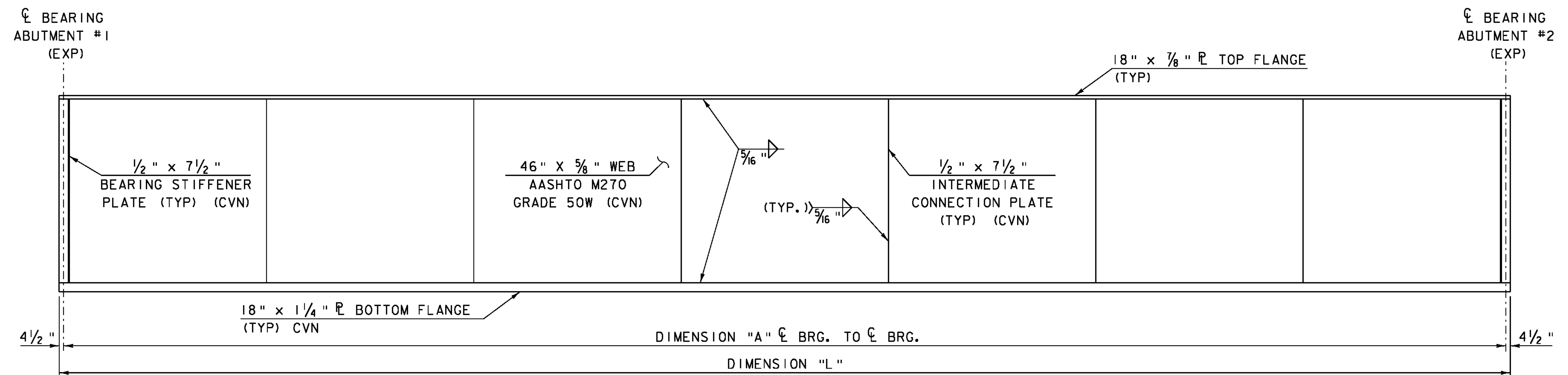
N. T. S.

NOTE: GIRDER 1 HAS A MAXIMUM SWEEP DISTANCE OF 3'-3  $\frac{3}{4}$ "  
 GIRDER 2 HAS A MAXIMUM SWEEP DISTANCE OF 3'-3  $\frac{1}{8}$ "  
 GIRDER 3 HAS A MAXIMUM SWEEP DISTANCE OF 3'-2  $\frac{1}{2}$ "  
 GIRDER 4 HAS A MAXIMUM SWEEP DISTANCE OF 3'-1  $\frac{15}{16}$ "  
 GIRDER 5 HAS A MAXIMUM SWEEP DISTANCE OF 3'-1  $\frac{3}{8}$ "  
 GIRDER 6 HAS A MAXIMUM SWEEP DISTANCE OF 3'-0  $\frac{13}{16}$ "  
 GIRDER 7 HAS A MAXIMUM SWEEP DISTANCE OF 3'-0  $\frac{1}{4}$ "  
 FIELD SPLICING OF NEW STEEL CURVED GIRDERS WILL NOT BE ALLOWED

SCALE  $\frac{3}{16}$ " = 1'-0"  
 0 2 4 6 8

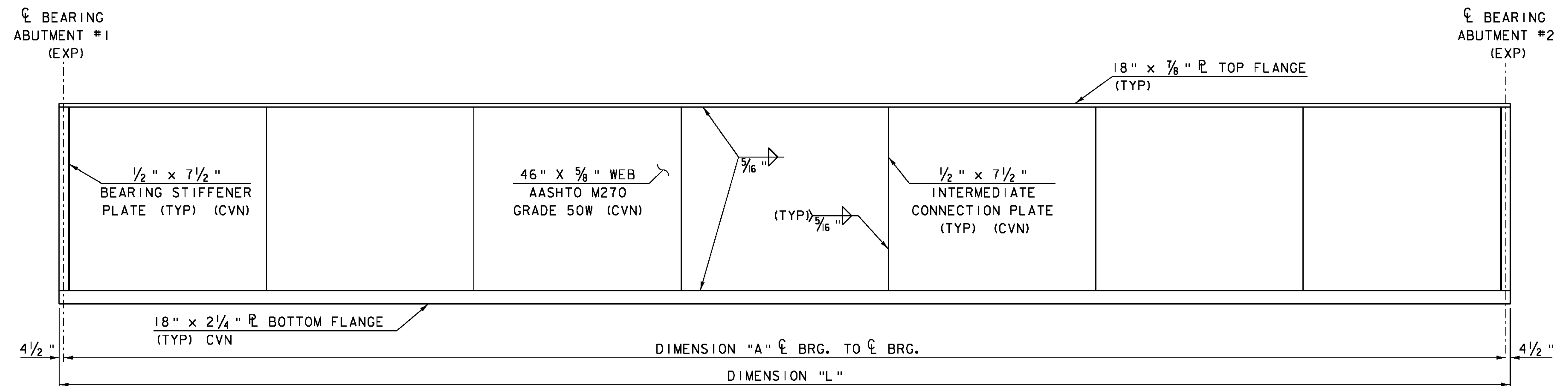
PROJECT NAME: CHESTER  
 PROJECT NUMBER: BRF 025-1(37)

FILE NAME: Structures\s95bl68sup.dgn PLOT DATE: 20-SEP-2010  
 PROJECT LEADER: C.P.WILLIAMS DRAWN BY: D.D.BEARD  
 DESIGNED BY: E.R.CHARBONNEAU CHECKED BY: R.S.YOUNG  
 BRIDGE 9 FRAMING PLAN SHEET 81 OF 124



### GIRDERS #1, 2, 3, & 4 ELEVATION

VERTICAL SCALE :  $\frac{3}{4}$ " = 1'-0"  
HORIZONTAL SCALE :  $\frac{3}{16}$ " = 1'-0"



### GIRDERS #5, 6, & 7 ELEVATION

VERTICAL SCALE :  $\frac{3}{4}$ " = 1'-0"  
HORIZONTAL SCALE :  $\frac{3}{16}$ " = 1'-0"

| GIRDER NUMBER | "A"     | "L"     | RADIUS  |
|---------------|---------|---------|---------|
| 1             | 121.05' | 121.80' | 552.21' |
| 2             | 120.73' | 121.48' | 558.21' |
| 3             | 120.42' | 121.17' | 564.21' |
| 4             | 120.13' | 120.88' | 570.21' |
| 5             | 119.85' | 120.60' | 576.21' |
| 6             | 119.58' | 120.33' | 582.21' |
| 7             | 119.31' | 120.06' | 588.21' |

1.DIMENSIONS SHOWN ARE ALONG THE ARC OF THE  $\phi$  OF THE GIRDER.

2.BEARING STIFFENERS SHALL BE PLUMB AND PERPENDICULAR TO THE WEB IN THEIR FINAL POSITION.

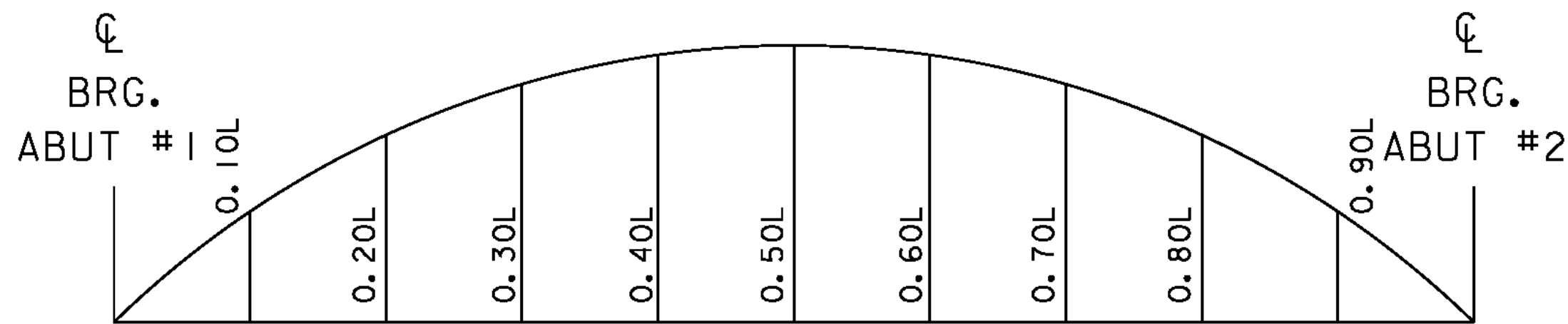
3.SHEAR STUDS SHALL BE PLACED AT BLOCKOUT LOCATIONS AFTER DECK PANEL INSTALLATION. SHEAR STUDS SHALL BE SPACED AT 18 INCHES IN THE CLOSURE POUR AREA.

SCALE  $\frac{3}{4}$ " = 1'-0"  
1 0 2 4 6 8

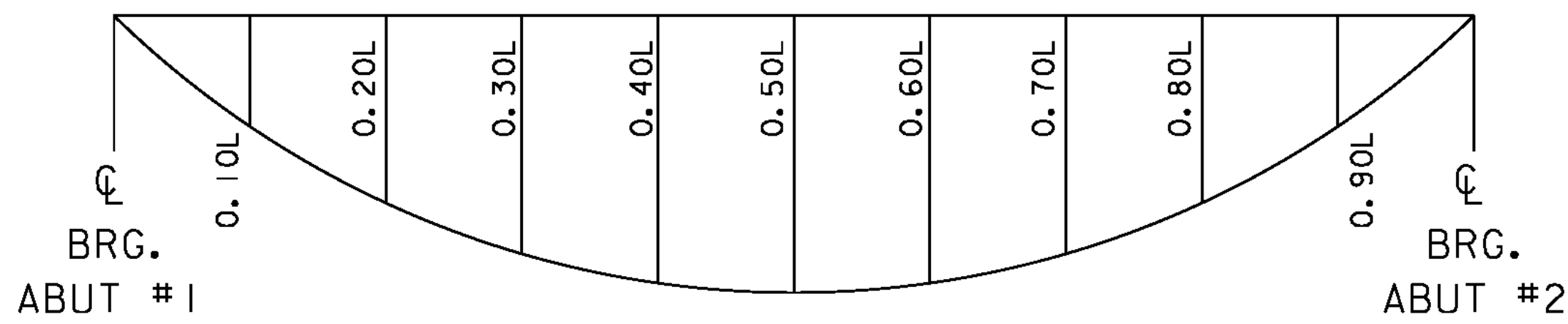
SCALE  $\frac{3}{16}$ " = 1'-0"  
1 0 2 4 6 8

PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

|                                      |                        |
|--------------------------------------|------------------------|
| FILE NAME: Structures\s95bl68sup.dgn | PLOT DATE: 20-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS         | DRAWN BY: D.D.BEARD    |
| DESIGNED BY: E.R.CHARBONNEAU         | CHECKED BY: R.S.YOUNG  |
| BRIDGE 9 GIRDER DETAILS              | SHEET 82 OF 124        |



CAMBER DIAGRAM  
SEE TABLES BELOW



DEAD LOAD DEFLECTION DIAGRAM  
SEE TABLES BELOW

| GIRDER 1                | .10L                              | .20L                             | .30L                             | .40L                            | .50L                              | .60L                             | .70L                             | .80L                             | .90L                            |
|-------------------------|-----------------------------------|----------------------------------|----------------------------------|---------------------------------|-----------------------------------|----------------------------------|----------------------------------|----------------------------------|---------------------------------|
| STEEL DEFLECTION        | 0 <sup>7</sup> / <sub>16</sub> "  | 0 <sup>7</sup> / <sub>8</sub> "  | 1 <sup>3</sup> / <sub>16</sub> " | 1 <sup>3</sup> / <sub>8</sub> " | 1 <sup>7</sup> / <sub>16</sub> "  | 1 <sup>7</sup> / <sub>16</sub> " | 1 <sup>1</sup> / <sub>4</sub> "  | 0 <sup>7</sup> / <sub>8</sub> "  | 0 <sup>1</sup> / <sub>2</sub> " |
| SLAB & SUPER DEFLECTION | 1 <sup>1</sup> / <sub>4</sub> "   | 2 <sup>5</sup> / <sub>16</sub> " | 3 <sup>3</sup> / <sub>16</sub> " | 3 <sup>3</sup> / <sub>4</sub> " | 3 <sup>5</sup> / <sub>16</sub> "  | 3 <sup>3</sup> / <sub>4</sub> "  | 3 <sup>3</sup> / <sub>16</sub> " | 2 <sup>3</sup> / <sub>8</sub> "  | 1 <sup>1</sup> / <sub>4</sub> " |
| TOTAL DEFLECTION        | 1 <sup>11</sup> / <sub>16</sub> " | 3 <sup>3</sup> / <sub>16</sub> " | 4 <sup>3</sup> / <sub>8</sub> "  | 5 <sup>1</sup> / <sub>8</sub> " | 5 <sup>3</sup> / <sub>8</sub> "   | 5 <sup>3</sup> / <sub>16</sub> " | 4 <sup>1</sup> / <sub>16</sub> " | 3 <sup>1</sup> / <sub>4</sub> "  | 1 <sup>3</sup> / <sub>4</sub> " |
| RESIDUAL CAMBER         | 1 <sup>3</sup> / <sub>4</sub> "   | 3 <sup>1</sup> / <sub>16</sub> " | 4 <sup>1</sup> / <sub>16</sub> " | 4 <sup>5</sup> / <sub>8</sub> " | 4 <sup>1</sup> / <sub>16</sub> "  | 4 <sup>5</sup> / <sub>8</sub> "  | 4 <sup>1</sup> / <sub>16</sub> " | 3 <sup>1</sup> / <sub>16</sub> " | 1 <sup>3</sup> / <sub>4</sub> " |
| TOTAL CAMBER            | 3 <sup>1</sup> / <sub>16</sub> "  | 6 <sup>1</sup> / <sub>4</sub> "  | 8 <sup>7</sup> / <sub>16</sub> " | 9 <sup>3</sup> / <sub>4</sub> " | 10 <sup>3</sup> / <sub>16</sub> " | 9 <sup>1</sup> / <sub>16</sub> " | 8 <sup>1</sup> / <sub>2</sub> "  | 6 <sup>5</sup> / <sub>16</sub> " | 3 <sup>1</sup> / <sub>2</sub> " |

| GIRDER 2                | .10L                              | .20L                              | .30L                             | .40L                            | .50L                             | .60L                              | .70L                             | .80L                              | .90L                            |
|-------------------------|-----------------------------------|-----------------------------------|----------------------------------|---------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|---------------------------------|
| STEEL DEFLECTION        | 0 <sup>1</sup> / <sub>2</sub> "   | 0 <sup>15</sup> / <sub>16</sub> " | 1 <sup>1</sup> / <sub>4</sub> "  | 1 <sup>1</sup> / <sub>2</sub> " | 1 <sup>9</sup> / <sub>16</sub> " | 1 <sup>3</sup> / <sub>8</sub> "   | 1 <sup>1</sup> / <sub>4</sub> "  | 0 <sup>15</sup> / <sub>16</sub> " | 0 <sup>1</sup> / <sub>2</sub> " |
| SLAB & SUPER DEFLECTION | 1 <sup>5</sup> / <sub>16</sub> "  | 2 <sup>1</sup> / <sub>16</sub> "  | 3 <sup>5</sup> / <sub>16</sub> " | 3 <sup>7</sup> / <sub>8</sub> " | 4 "                              | 3 <sup>15</sup> / <sub>16</sub> " | 3 <sup>5</sup> / <sub>16</sub> " | 2 <sup>3</sup> / <sub>8</sub> "   | 1 <sup>1</sup> / <sub>4</sub> " |
| TOTAL DEFLECTION        | 1 <sup>11</sup> / <sub>16</sub> " | 3 <sup>3</sup> / <sub>8</sub> "   | 4 <sup>9</sup> / <sub>16</sub> " | 5 <sup>3</sup> / <sub>8</sub> " | 5 <sup>9</sup> / <sub>16</sub> " | 5 <sup>5</sup> / <sub>16</sub> "  | 4 <sup>9</sup> / <sub>16</sub> " | 3 <sup>5</sup> / <sub>16</sub> "  | 1 <sup>3</sup> / <sub>4</sub> " |
| RESIDUAL CAMBER         | 1 <sup>3</sup> / <sub>4</sub> "   | 3 <sup>1</sup> / <sub>16</sub> "  | 4 <sup>1</sup> / <sub>16</sub> " | 4 <sup>5</sup> / <sub>8</sub> " | 4 <sup>1</sup> / <sub>16</sub> " | 4 <sup>5</sup> / <sub>8</sub> "   | 4 <sup>1</sup> / <sub>16</sub> " | 3 <sup>1</sup> / <sub>16</sub> "  | 1 <sup>3</sup> / <sub>4</sub> " |
| TOTAL CAMBER            | 3 <sup>9</sup> / <sub>16</sub> "  | 6 <sup>1</sup> / <sub>16</sub> "  | 8 <sup>5</sup> / <sub>8</sub> "  | 10 "                            | 10 <sup>3</sup> / <sub>8</sub> " | 9 <sup>15</sup> / <sub>16</sub> " | 8 <sup>5</sup> / <sub>8</sub> "  | 6 <sup>3</sup> / <sub>8</sub> "   | 3 <sup>1</sup> / <sub>2</sub> " |

| GIRDER 3                | .10L                              | .20L                             | .30L                              | .40L                             | .50L                              | .60L                              | .70L                              | .80L                             | .90L                              |
|-------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| STEEL DEFLECTION        | 0 <sup>9</sup> / <sub>16</sub> "  | 1 "                              | 1 <sup>3</sup> / <sub>8</sub> "   | 1 <sup>5</sup> / <sub>8</sub> "  | 1 <sup>11</sup> / <sub>16</sub> " | 1 <sup>9</sup> / <sub>16</sub> "  | 1 <sup>5</sup> / <sub>16</sub> "  | 1 "                              | 0 <sup>1</sup> / <sub>2</sub> "   |
| SLAB & SUPER DEFLECTION | 1 <sup>3</sup> / <sub>8</sub> "   | 2 <sup>3</sup> / <sub>16</sub> " | 3 <sup>1</sup> / <sub>16</sub> "  | 4 "                              | 4 <sup>1</sup> / <sub>8</sub> "   | 3 <sup>15</sup> / <sub>16</sub> " | 3 <sup>3</sup> / <sub>8</sub> "   | 2 <sup>3</sup> / <sub>8</sub> "  | 1 <sup>5</sup> / <sub>16</sub> "  |
| TOTAL DEFLECTION        | 1 <sup>15</sup> / <sub>16</sub> " | 3 <sup>9</sup> / <sub>16</sub> " | 4 <sup>15</sup> / <sub>16</sub> " | 5 <sup>5</sup> / <sub>8</sub> "  | 5 <sup>13</sup> / <sub>16</sub> " | 5 <sup>1</sup> / <sub>2</sub> "   | 4 <sup>11</sup> / <sub>16</sub> " | 3 <sup>3</sup> / <sub>8</sub> "  | 1 <sup>11</sup> / <sub>16</sub> " |
| RESIDUAL CAMBER         | 1 <sup>3</sup> / <sub>4</sub> "   | 3 <sup>1</sup> / <sub>16</sub> " | 4 <sup>1</sup> / <sub>16</sub> "  | 4 <sup>5</sup> / <sub>8</sub> "  | 4 <sup>9</sup> / <sub>16</sub> "  | 4 <sup>5</sup> / <sub>8</sub> "   | 4 <sup>1</sup> / <sub>16</sub> "  | 3 <sup>1</sup> / <sub>16</sub> " | 1 <sup>3</sup> / <sub>4</sub> "   |
| TOTAL CAMBER            | 3 <sup>11</sup> / <sub>16</sub> " | 6 <sup>5</sup> / <sub>8</sub> "  | 8 <sup>7</sup> / <sub>8</sub> "   | 10 <sup>1</sup> / <sub>4</sub> " | 10 <sup>5</sup> / <sub>8</sub> "  | 10 <sup>1</sup> / <sub>8</sub> "  | 8 <sup>3</sup> / <sub>4</sub> "   | 6 <sup>7</sup> / <sub>16</sub> " | 3 <sup>9</sup> / <sub>16</sub> "  |

| GIRDER 4                | .10L                            | .20L                              | .30L                             | .40L                             | .50L                               | .60L                              | .70L                              | .80L                             | .90L                              |
|-------------------------|---------------------------------|-----------------------------------|----------------------------------|----------------------------------|------------------------------------|-----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| STEEL DEFLECTION        | 0 <sup>5</sup> / <sub>8</sub> " | 1 <sup>1</sup> / <sub>8</sub> "   | 1 <sup>1</sup> / <sub>2</sub> "  | 1 <sup>3</sup> / <sub>4</sub> "  | 1 <sup>13</sup> / <sub>16</sub> "  | 1 <sup>11</sup> / <sub>16</sub> " | 1 <sup>7</sup> / <sub>16</sub> "  | 1 <sup>1</sup> / <sub>16</sub> " | 0 <sup>9</sup> / <sub>16</sub> "  |
| SLAB & SUPER DEFLECTION | 1 <sup>3</sup> / <sub>8</sub> " | 2 <sup>3</sup> / <sub>8</sub> "   | 3 <sup>9</sup> / <sub>16</sub> " | 4 <sup>1</sup> / <sub>8</sub> "  | 4 <sup>5</sup> / <sub>16</sub> "   | 4 <sup>1</sup> / <sub>16</sub> "  | 3 <sup>1</sup> / <sub>16</sub> "  | 2 <sup>1</sup> / <sub>16</sub> " | 1 <sup>1</sup> / <sub>4</sub> "   |
| TOTAL DEFLECTION        | 2 "                             | 3 <sup>3</sup> / <sub>4</sub> "   | 5 <sup>1</sup> / <sub>16</sub> " | 5 <sup>7</sup> / <sub>8</sub> "  | 6 <sup>1</sup> / <sub>8</sub> "    | 5 <sup>3</sup> / <sub>4</sub> "   | 4 <sup>1</sup> / <sub>8</sub> "   | 3 <sup>1</sup> / <sub>2</sub> "  | 1 <sup>13</sup> / <sub>16</sub> " |
| RESIDUAL CAMBER         | 1 <sup>3</sup> / <sub>4</sub> " | 3 <sup>1</sup> / <sub>16</sub> "  | 4 <sup>1</sup> / <sub>16</sub> " | 4 <sup>5</sup> / <sub>8</sub> "  | 4 <sup>13</sup> / <sub>16</sub> "  | 4 <sup>5</sup> / <sub>8</sub> "   | 4 <sup>1</sup> / <sub>16</sub> "  | 3 <sup>1</sup> / <sub>16</sub> " | 1 <sup>3</sup> / <sub>4</sub> "   |
| TOTAL CAMBER            | 3 <sup>3</sup> / <sub>4</sub> " | 6 <sup>15</sup> / <sub>16</sub> " | 9 <sup>1</sup> / <sub>8</sub> "  | 10 <sup>1</sup> / <sub>2</sub> " | 10 <sup>15</sup> / <sub>16</sub> " | 10 <sup>3</sup> / <sub>8</sub> "  | 8 <sup>15</sup> / <sub>16</sub> " | 6 <sup>9</sup> / <sub>16</sub> " | 3 <sup>9</sup> / <sub>16</sub> "  |

| GIRDER 5                | .10L                            | .20L                              | .30L                              | .40L                             | .50L                              | .60L                               | .70L                             | .80L                             | .90L                              |
|-------------------------|---------------------------------|-----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|------------------------------------|----------------------------------|----------------------------------|-----------------------------------|
| STEEL DEFLECTION        | 0 <sup>5</sup> / <sub>8</sub> " | 1 <sup>3</sup> / <sub>16</sub> "  | 1 <sup>5</sup> / <sub>8</sub> "   | 1 <sup>7</sup> / <sub>8</sub> "  | 1 <sup>15</sup> / <sub>16</sub> " | 1 <sup>13</sup> / <sub>16</sub> "  | 1 <sup>9</sup> / <sub>16</sub> " | 1 <sup>1</sup> / <sub>8</sub> "  | 0 <sup>9</sup> / <sub>16</sub> "  |
| SLAB & SUPER DEFLECTION | 1 <sup>1</sup> / <sub>2</sub> " | 2 <sup>11</sup> / <sub>16</sub> " | 3 <sup>11</sup> / <sub>16</sub> " | 4 <sup>1</sup> / <sub>4</sub> "  | 4 <sup>1</sup> / <sub>2</sub> "   | 4 <sup>1</sup> / <sub>4</sub> "    | 3 <sup>9</sup> / <sub>16</sub> " | 2 <sup>9</sup> / <sub>16</sub> " | 1 <sup>3</sup> / <sub>8</sub> "   |
| TOTAL DEFLECTION        | 2 <sup>1</sup> / <sub>8</sub> " | 3 <sup>7</sup> / <sub>8</sub> "   | 5 <sup>5</sup> / <sub>16</sub> "  | 6 <sup>1</sup> / <sub>8</sub> "  | 6 <sup>1</sup> / <sub>16</sub> "  | 6 <sup>1</sup> / <sub>16</sub> "   | 5 <sup>1</sup> / <sub>8</sub> "  | 3 <sup>1</sup> / <sub>16</sub> " | 1 <sup>15</sup> / <sub>16</sub> " |
| RESIDUAL CAMBER         | 1 <sup>3</sup> / <sub>4</sub> " | 3 <sup>1</sup> / <sub>16</sub> "  | 4 <sup>1</sup> / <sub>16</sub> "  | 4 <sup>5</sup> / <sub>8</sub> "  | 4 <sup>13</sup> / <sub>16</sub> " | 4 <sup>5</sup> / <sub>8</sub> "    | 4 <sup>1</sup> / <sub>16</sub> " | 3 <sup>1</sup> / <sub>16</sub> " | 1 <sup>3</sup> / <sub>4</sub> "   |
| TOTAL CAMBER            | 3 <sup>7</sup> / <sub>8</sub> " | 6 <sup>15</sup> / <sub>16</sub> " | 9 <sup>3</sup> / <sub>8</sub> "   | 10 <sup>3</sup> / <sub>4</sub> " | 11 <sup>1</sup> / <sub>4</sub> "  | 10 <sup>11</sup> / <sub>16</sub> " | 9 <sup>3</sup> / <sub>16</sub> " | 6 <sup>3</sup> / <sub>4</sub> "  | 3 <sup>1</sup> / <sub>16</sub> "  |

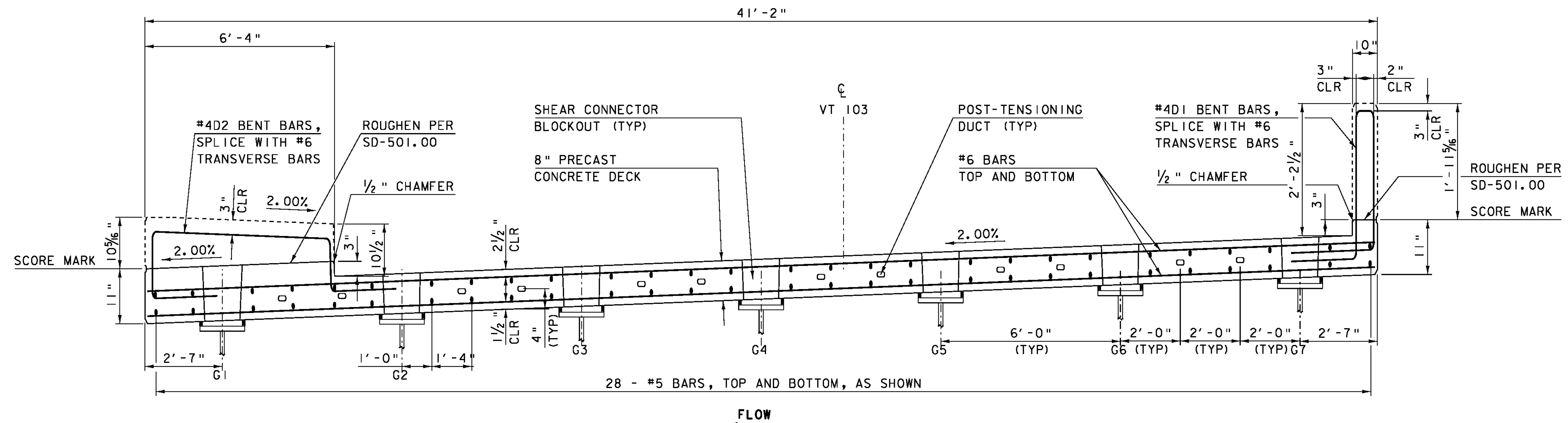
| GIRDER 6                | .10L                              | .20L                              | .30L                              | .40L                             | .50L                              | .60L                              | .70L                              | .80L                             | .90L                             |
|-------------------------|-----------------------------------|-----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|----------------------------------|----------------------------------|
| STEEL DEFLECTION        | 0 <sup>11</sup> / <sub>16</sub> " | 1 <sup>1</sup> / <sub>4</sub> "   | 1 <sup>3</sup> / <sub>4</sub> "   | 2 "                              | 2 <sup>1</sup> / <sub>8</sub> "   | 2 "                               | 1 <sup>11</sup> / <sub>16</sub> " | 1 <sup>3</sup> / <sub>16</sub> " | 0 <sup>5</sup> / <sub>8</sub> "  |
| SLAB & SUPER DEFLECTION | 1 <sup>1</sup> / <sub>2</sub> "   | 2 <sup>13</sup> / <sub>16</sub> " | 3 <sup>11</sup> / <sub>16</sub> " | 4 <sup>1</sup> / <sub>2</sub> "  | 4 <sup>5</sup> / <sub>8</sub> "   | 4 <sup>1</sup> / <sub>16</sub> "  | 3 <sup>3</sup> / <sub>4</sub> "   | 2 <sup>3</sup> / <sub>4</sub> "  | 1 <sup>7</sup> / <sub>16</sub> " |
| TOTAL DEFLECTION        | 2 <sup>3</sup> / <sub>16</sub> "  | 4 <sup>1</sup> / <sub>16</sub> "  | 5 <sup>9</sup> / <sub>16</sub> "  | 6 <sup>1</sup> / <sub>2</sub> "  | 6 <sup>3</sup> / <sub>4</sub> "   | 6 <sup>7</sup> / <sub>16</sub> "  | 5 <sup>7</sup> / <sub>16</sub> "  | 3 <sup>5</sup> / <sub>16</sub> " | 2 <sup>1</sup> / <sub>16</sub> " |
| RESIDUAL CAMBER         | 1 <sup>3</sup> / <sub>4</sub> "   | 3 <sup>1</sup> / <sub>16</sub> "  | 4 <sup>1</sup> / <sub>16</sub> "  | 4 <sup>5</sup> / <sub>8</sub> "  | 4 <sup>13</sup> / <sub>16</sub> " | 4 <sup>5</sup> / <sub>8</sub> "   | 4 <sup>1</sup> / <sub>16</sub> "  | 3 <sup>1</sup> / <sub>16</sub> " | 1 <sup>3</sup> / <sub>4</sub> "  |
| TOTAL CAMBER            | 3 <sup>15</sup> / <sub>16</sub> " | 7 <sup>1</sup> / <sub>8</sub> "   | 9 <sup>5</sup> / <sub>8</sub> "   | 11 <sup>1</sup> / <sub>8</sub> " | 11 <sup>9</sup> / <sub>16</sub> " | 11 <sup>1</sup> / <sub>16</sub> " | 9 <sup>1</sup> / <sub>2</sub> "   | 7 "                              | 3 <sup>1</sup> / <sub>16</sub> " |

| GIRDER 7                | .10L                              | .20L                              | .30L                             | .40L                              | .50L                               | .60L                              | .70L                              | .80L                             | .90L                             |
|-------------------------|-----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|------------------------------------|-----------------------------------|-----------------------------------|----------------------------------|----------------------------------|
| STEEL DEFLECTION        | 0 <sup>11</sup> / <sub>16</sub> " | 1 <sup>5</sup> / <sub>16</sub> "  | 1 <sup>9</sup> / <sub>16</sub> " | 2 <sup>1</sup> / <sub>8</sub> "   | 2 <sup>1</sup> / <sub>4</sub> "    | 2 <sup>3</sup> / <sub>16</sub> "  | 1 <sup>7</sup> / <sub>8</sub> "   | 1 <sup>3</sup> / <sub>8</sub> "  | 0 <sup>3</sup> / <sub>4</sub> "  |
| SLAB & SUPER DEFLECTION | 1 <sup>9</sup> / <sub>16</sub> "  | 2 <sup>15</sup> / <sub>16</sub> " | 4 "                              | 4 <sup>11</sup> / <sub>16</sub> " | 4 <sup>1</sup> / <sub>8</sub> "    | 4 <sup>5</sup> / <sub>8</sub> "   | 3 <sup>15</sup> / <sub>16</sub> " | 2 <sup>7</sup> / <sub>8</sub> "  | 1 <sup>9</sup> / <sub>16</sub> " |
| TOTAL DEFLECTION        | 2 <sup>1</sup> / <sub>4</sub> "   | 4 <sup>1</sup> / <sub>4</sub> "   | 5 <sup>9</sup> / <sub>16</sub> " | 6 <sup>9</sup> / <sub>16</sub> "  | 7 <sup>1</sup> / <sub>8</sub> "    | 6 <sup>13</sup> / <sub>16</sub> " | 5 <sup>13</sup> / <sub>16</sub> " | 4 <sup>1</sup> / <sub>4</sub> "  | 2 <sup>5</sup> / <sub>16</sub> " |
| RESIDUAL CAMBER         | 1 <sup>3</sup> / <sub>4</sub> "   | 3 <sup>1</sup> / <sub>16</sub> "  | 4 <sup>1</sup> / <sub>16</sub> " | 4 <sup>5</sup> / <sub>8</sub> "   | 4 <sup>13</sup> / <sub>16</sub> "  | 4 <sup>5</sup> / <sub>8</sub> "   | 4 <sup>1</sup> / <sub>16</sub> "  | 3 <sup>1</sup> / <sub>16</sub> " | 1 <sup>3</sup> / <sub>4</sub> "  |
| TOTAL CAMBER            | 4 "                               | 7 <sup>5</sup> / <sub>16</sub> "  | 9 <sup>7</sup> / <sub>8</sub> "  | 11 <sup>7</sup> / <sub>16</sub> " | 11 <sup>15</sup> / <sub>16</sub> " | 11 <sup>7</sup> / <sub>16</sub> " | 9 <sup>7</sup> / <sub>8</sub> "   | 7 <sup>5</sup> / <sub>16</sub> " | 4 <sup>1</sup> / <sub>16</sub> " |

PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

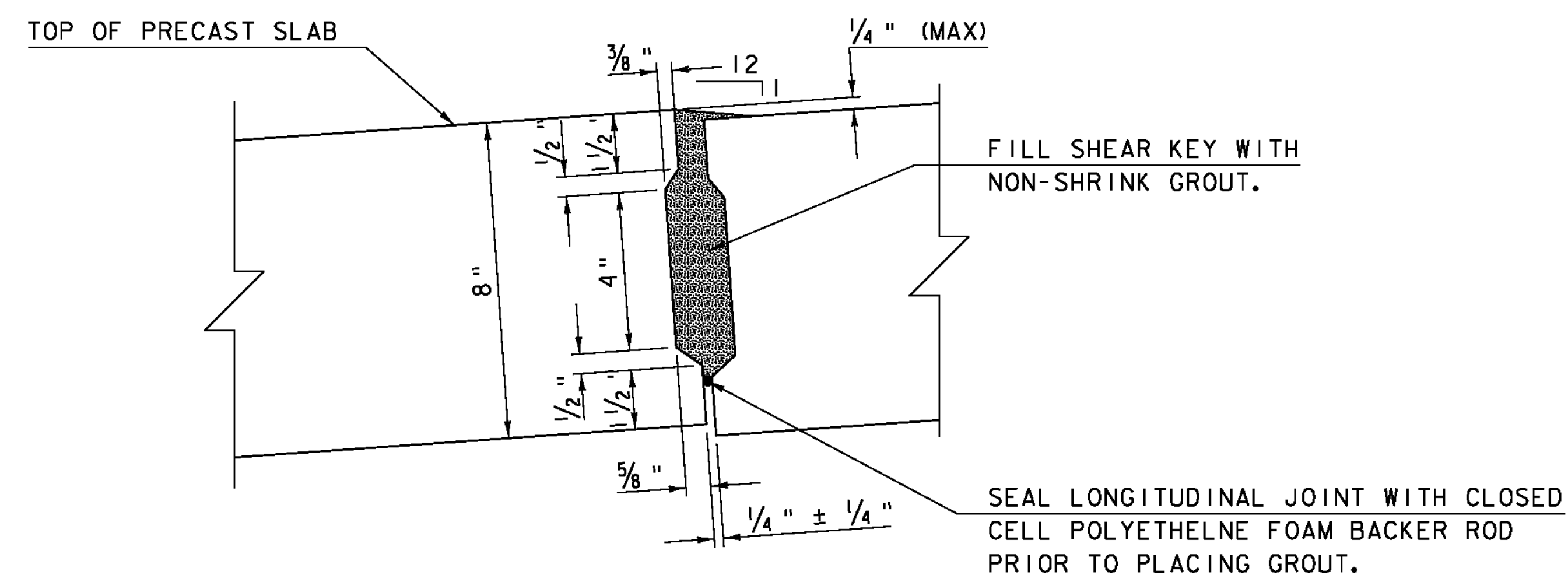
FILE NAME: Structures\s95bl68sup.dgn PLOT DATE: 20-SEP-2010  
PROJECT LEADER: C.P.WILLIAMS DRAWN BY: D.D.BEARD  
DESIGNED BY: E.R.CHARBONNEAU CHECKED BY: R.S.YOUNG  
BRIDGE 9 CAMBER AND DEFLECTION DETAILS SHEET 83 OF 124





### PRECAST SLAB TYPICAL SECTION

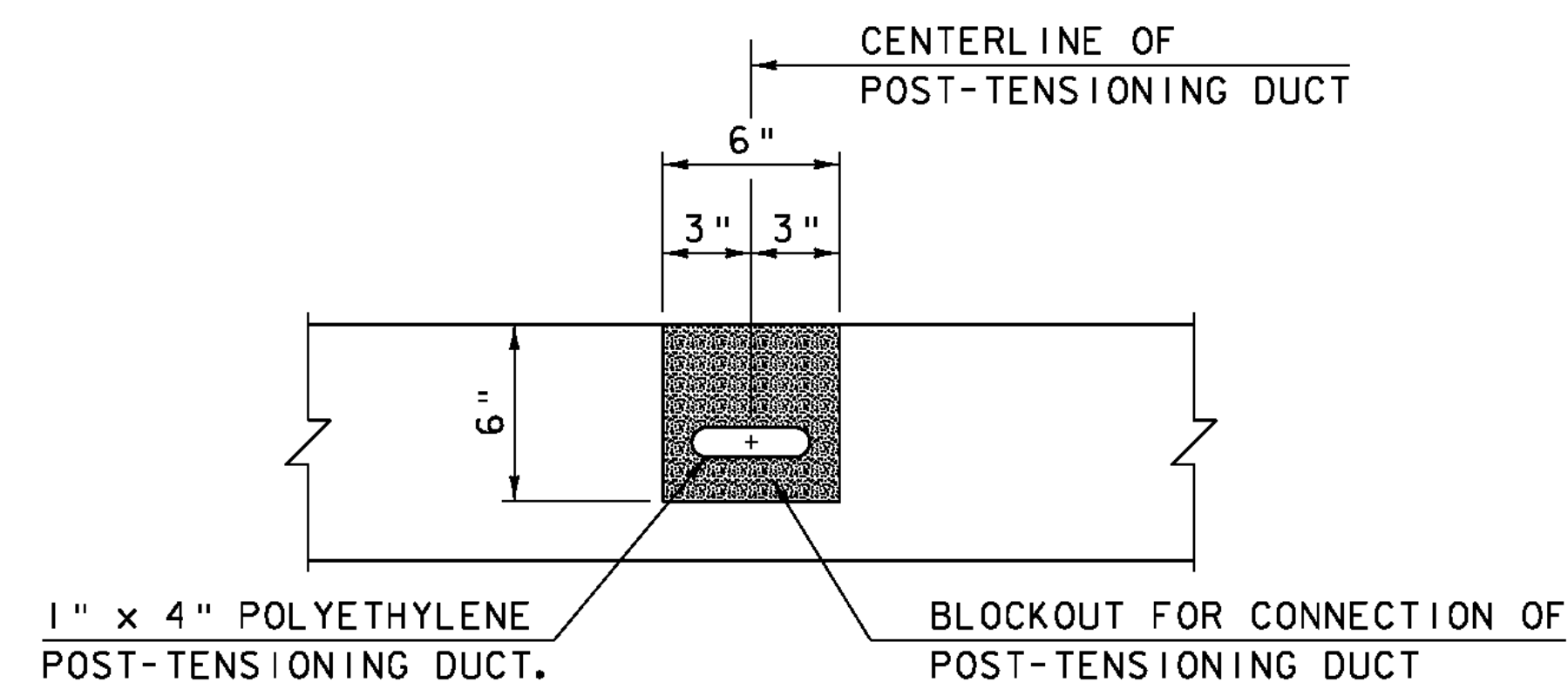
HORIZONTAL SCALE : 1/2" = 1'-0"  
VERTICAL SCALE : 1/4" = 1'-0"



### TRANSVERSE SHEAR KEY DETAILS

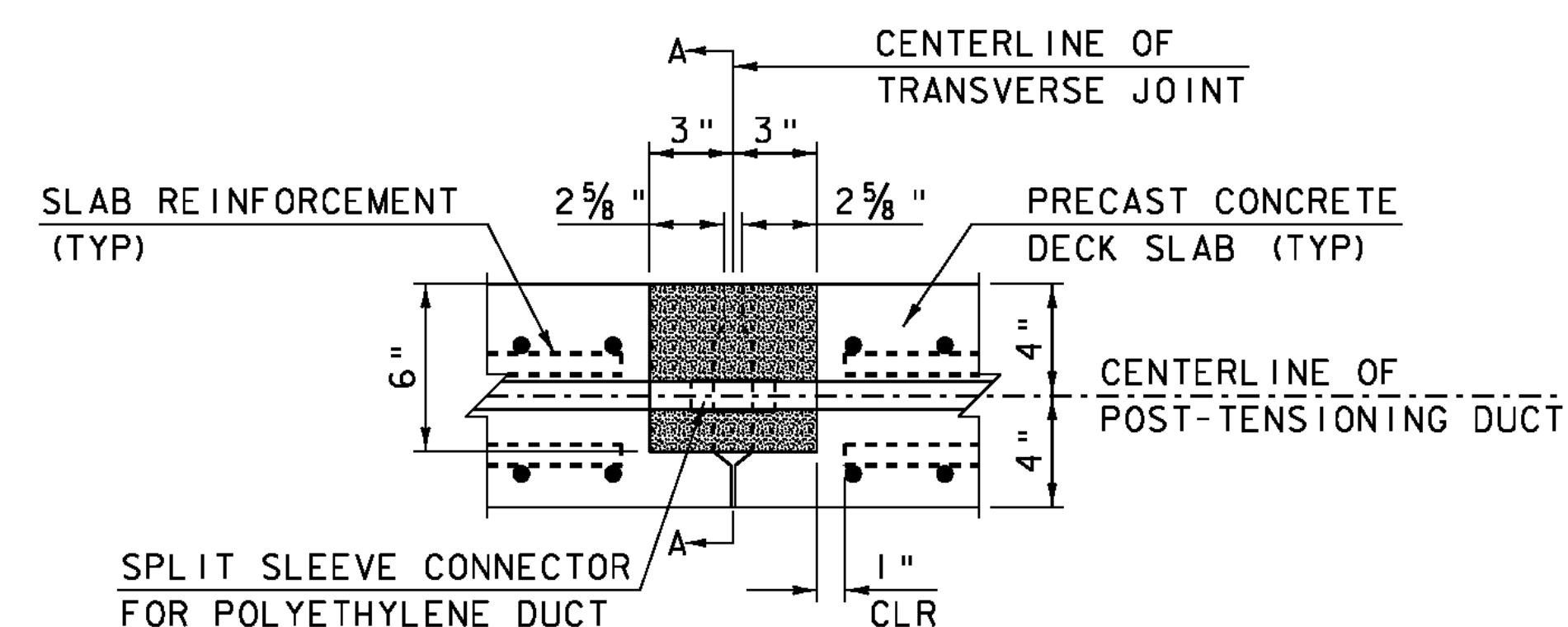
N. T. S.

- 1: THE SLAB SHALL BE PLACED AT THE NOMINAL SPACING SHOWN ON THE PLANS WITH A 1/4" WIDE GAP BETWEEN THE SLABS. THE WIDTH OF THIS GAP CAN VARY DUE TO TOLERANCES OF THE SLABS.
- 2: GROUT FOR SHEAR KEYS SHALL BE RODDED OR VIBRATED TO ENSURE THAT ALL VOIDS IN THE SHEAR KEYS ARE FILLED.
- 3: POST-TENSIONING DUCT SHOWN IS FOR 3 - 1/2" DIA. PRESTRESSING STRANDS. ALTERNATE DUCTS MAY BE USED. THE CONNECTION OF THE DUCT SHALL BE WATERTIGHT.
- 4: FILL BLOCKOUT WITH NON-SHRINK GROUT SIMULTANEOUSLY WITH THE TRANSVERSE SHEAR KEYS.
- 5: FORM SHEAR KEY ALONG INTERFACE OF PRECAST SLABS AND CLOSURE POUR.



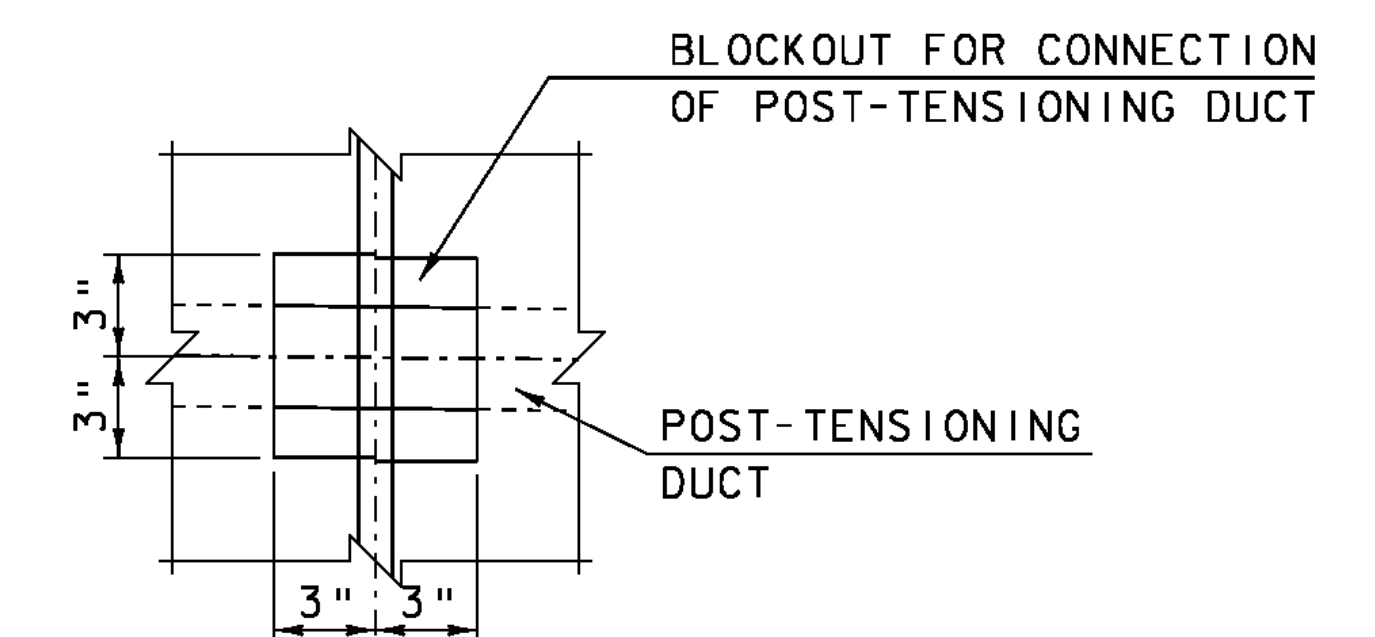
### SECTION "A-A"

N. T. S.



### TYPICAL SECTION-TRAVERSE DECK JOINT AT POST-TENSIONING DUCT

N. T. S.

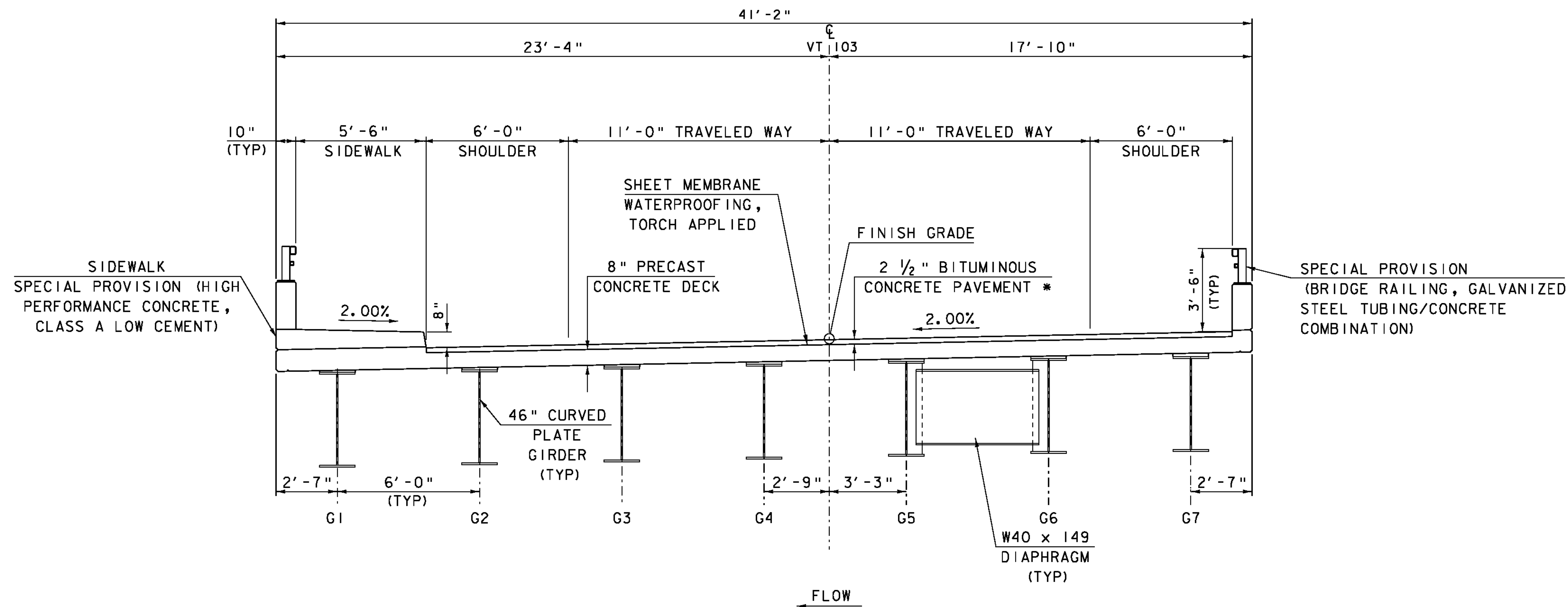


### PLAN - BLOCKOUT FOR POST-TENSIONING DUCT

N. T. S.

PROJECT NAME: CHESTER  
PROJECT NUMBER: BRP 025-1(37)

FILE NAME: Structures\s95bl68sup.dgn PLOT DATE: 20-SEP-2010  
PROJECT LEADER: C.P.WILLIAMS DRAWN BY: D.D.BEARD  
DESIGNED BY: E.R.CHARBONNEAU CHECKED BY: R.S.YOUNG  
BR9 PRECAST DECK REINFORCING TYP. SEC. SHEET 85 OF 124

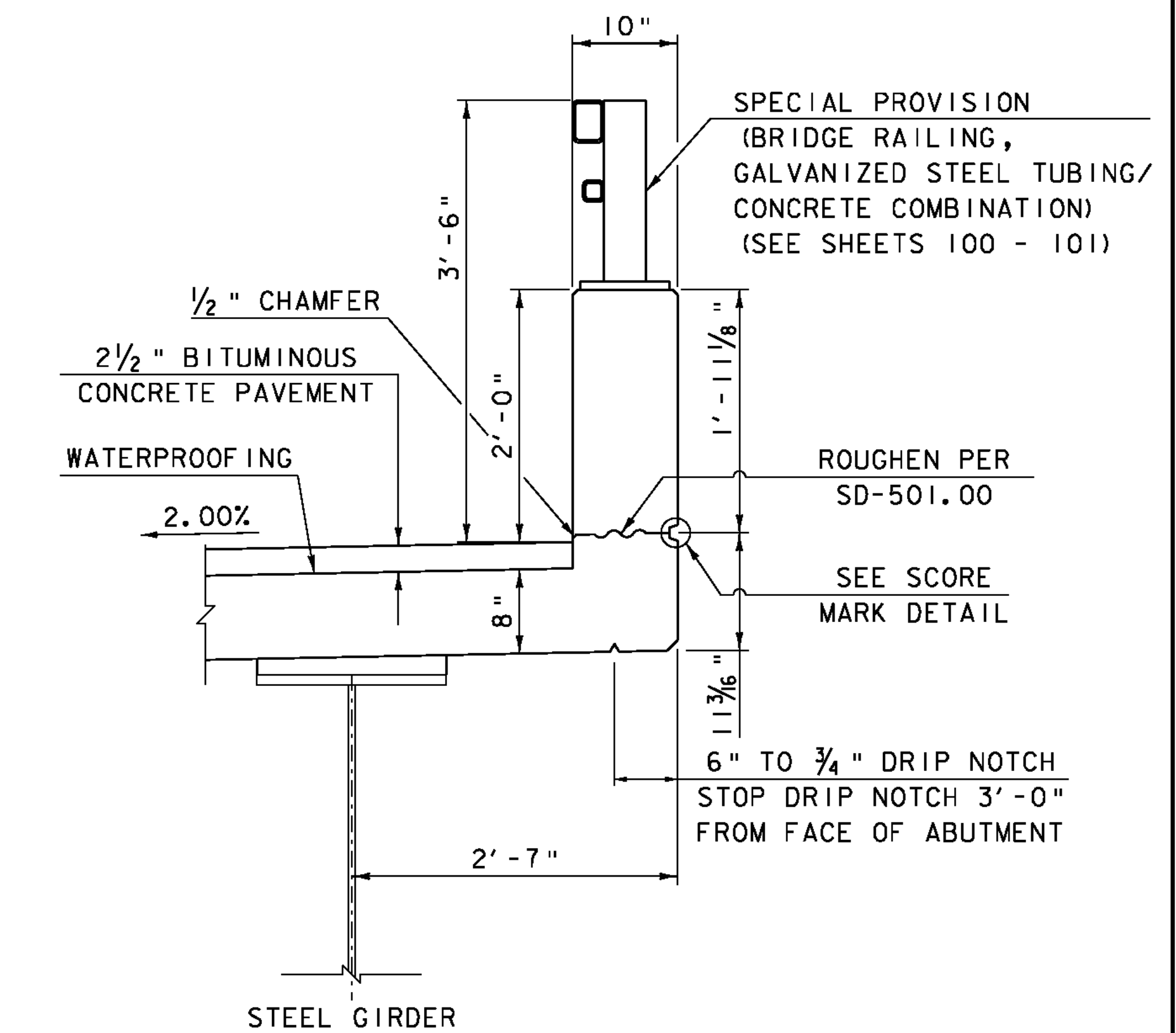


**TYPICAL BRIDGE SECTION**

SCALE 1" = 3'-0"

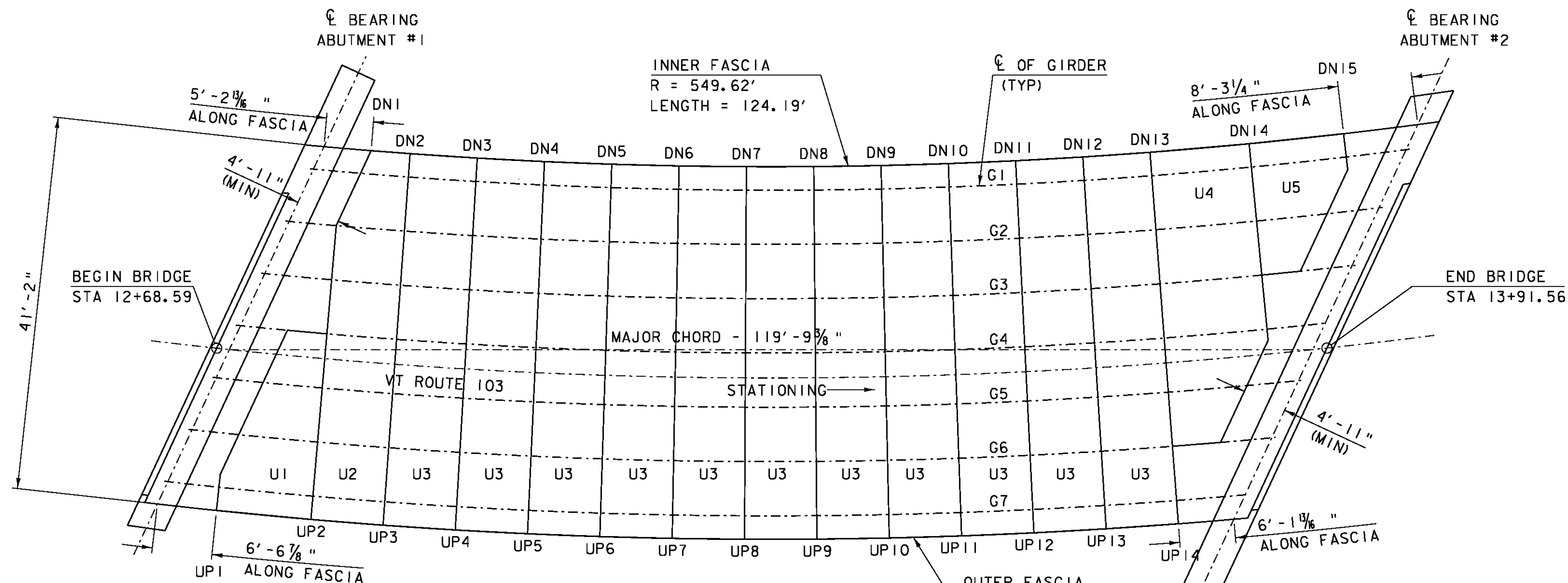
\* 1 1/4" TYPE IV OVER  
1 1/4" TYPE IV

NOTE: ALL TRANSVERSE  
DIMENSIONS ARE RADIAL



**TYPICAL RAIL W/O SIDEWALK**

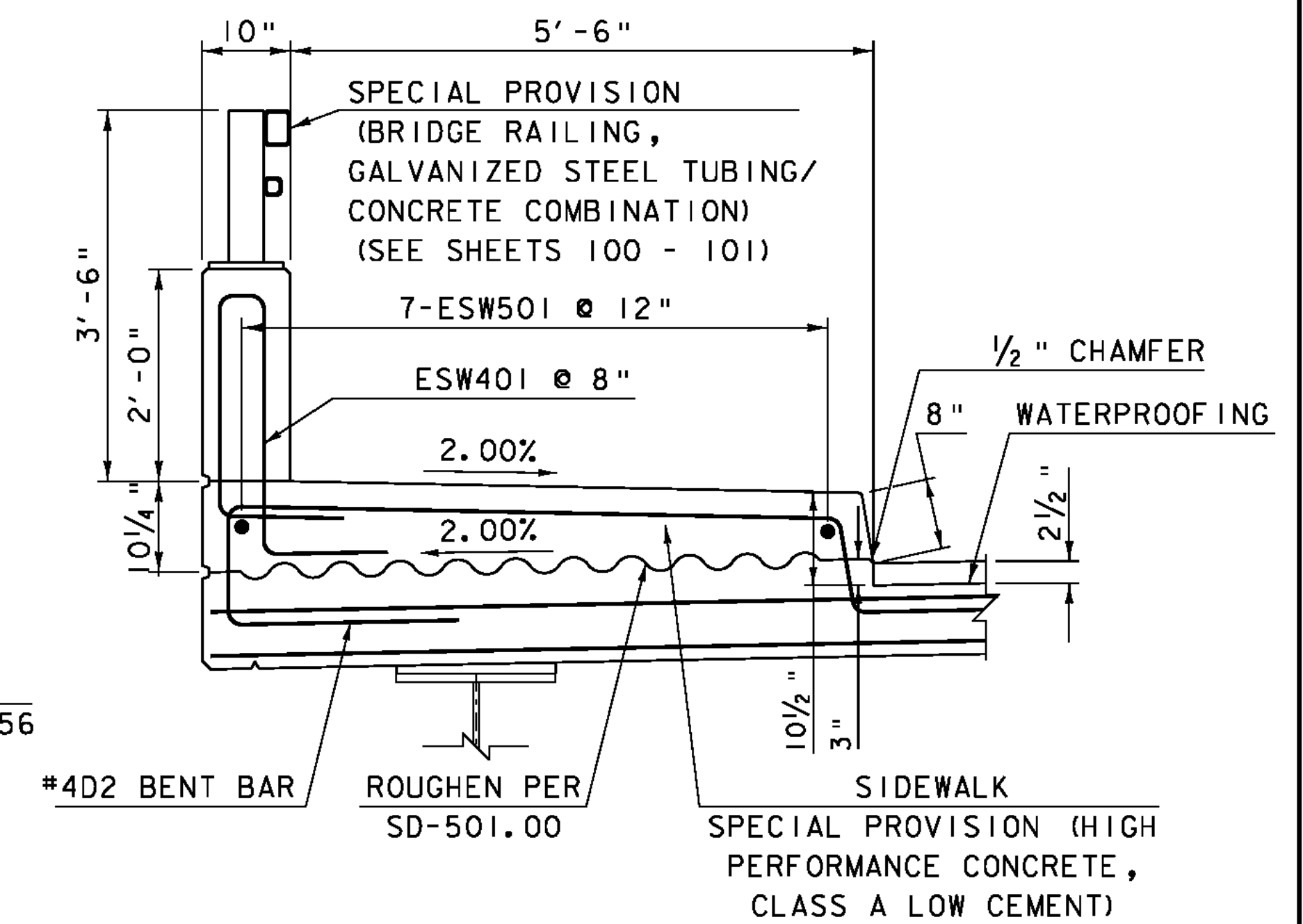
N. T. S.



**DECK LAYOUT**

SCALE 1/8" = 1'-0"

10 2 4 6 8



**TYPICAL RAIL WITH SIDEWALK**

N. T. S.

PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

FILE NAME: Structures\s95bl68sup.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: E.R.CHARBONNEAU  
BRIDGE 9 DECK LAYOUT DETAILS

PLOT DATE: 20-SEP-2010  
DRAWN BY: D.D.BEARD  
CHECKED BY: R.S.YOUNG  
SHEET 86 OF 124

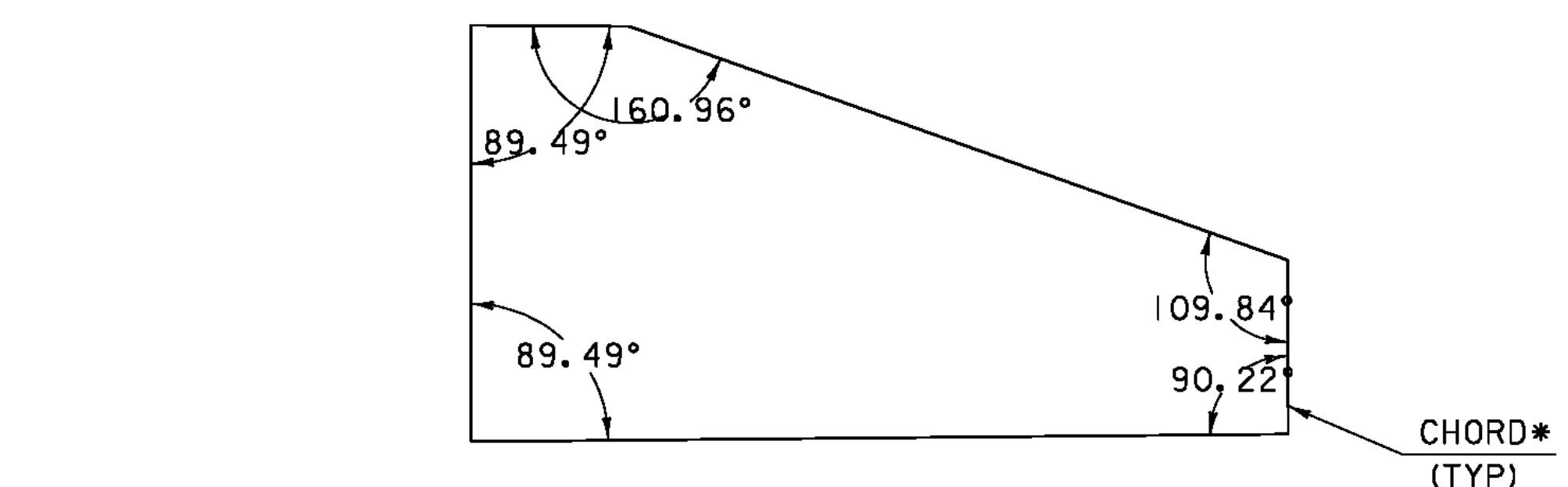


Diagram of a trapezoidal cross-section with dimensions and angles:

- Top width: 159.94
- Bottom width: 110.61
- Height: 89.61
- Left side angle:  $89.61^\circ$
- Right side angle:  $90.22^\circ$
- Top right corner angle:  $159.94^\circ$
- Bottom right corner angle:  $110.61^\circ$
- Label: CHORD\* (pointing to the left side)

\* ANGLES ARE IN REFERENCE TO THE CHORD BETWEEN POINTS OF CURVATURE AT THE CORNERS. THE SLAB FASCIAS SHALL BE FORMED RADIAL.

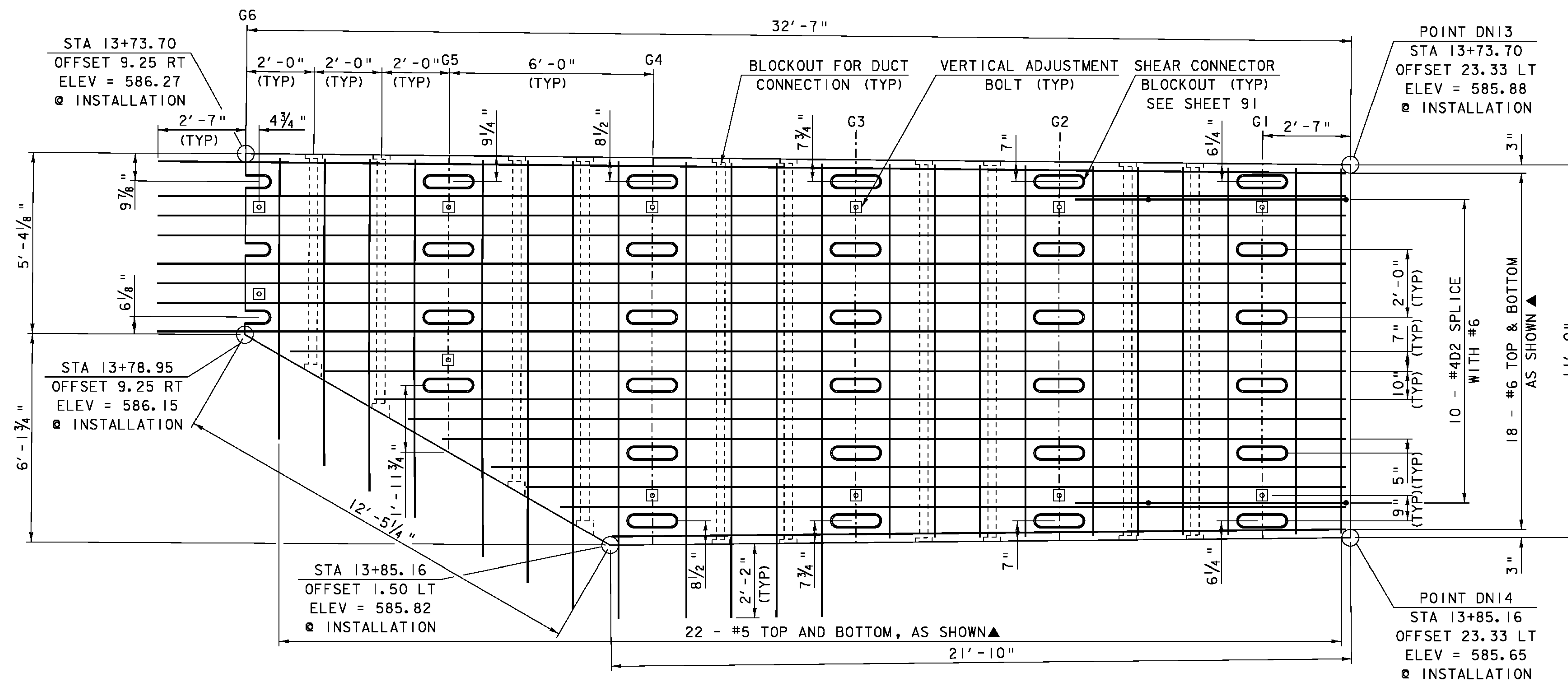
FLOW

**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.

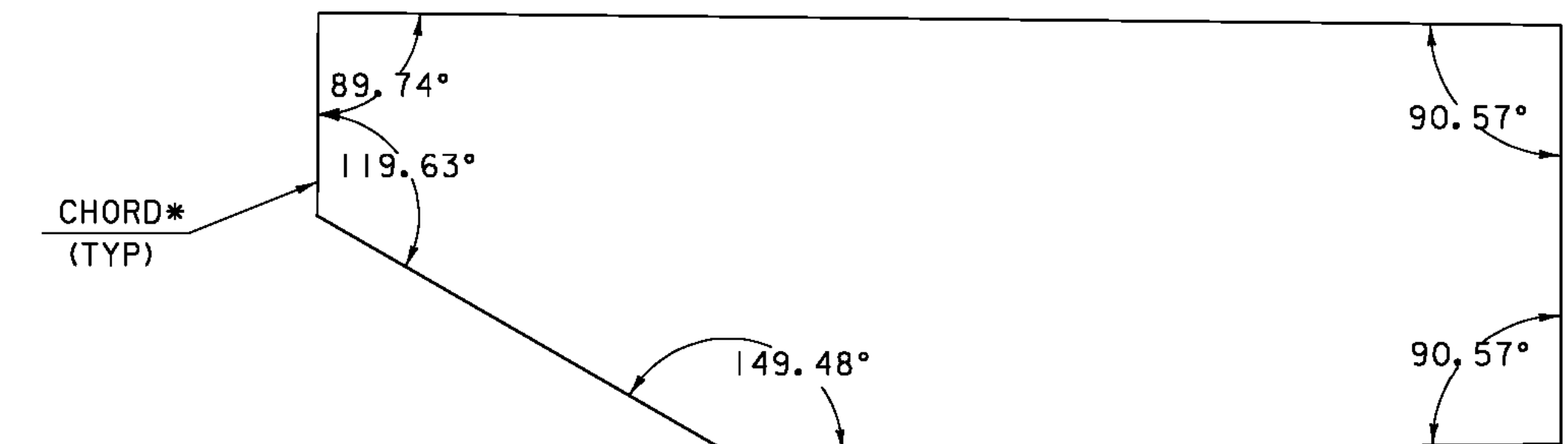
|                                        |                        |
|----------------------------------------|------------------------|
| PROJECT NAME: CHESTER                  |                        |
| PROJECT NUMBER: BRF 025-1(37)          |                        |
| FILE NAME: 95b168\95b168deckpanels.dgn | PLOT DATE: 21-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS           | DRAWN BY: D.D.BEARD    |
| DESIGNED BY: H.J.SALLS                 | CHECKED BY: R.S.YOUNG  |
| BRIDGE 9 PRECAST DECK SLAB DETAILS I   | SHEET 87 OF 124        |



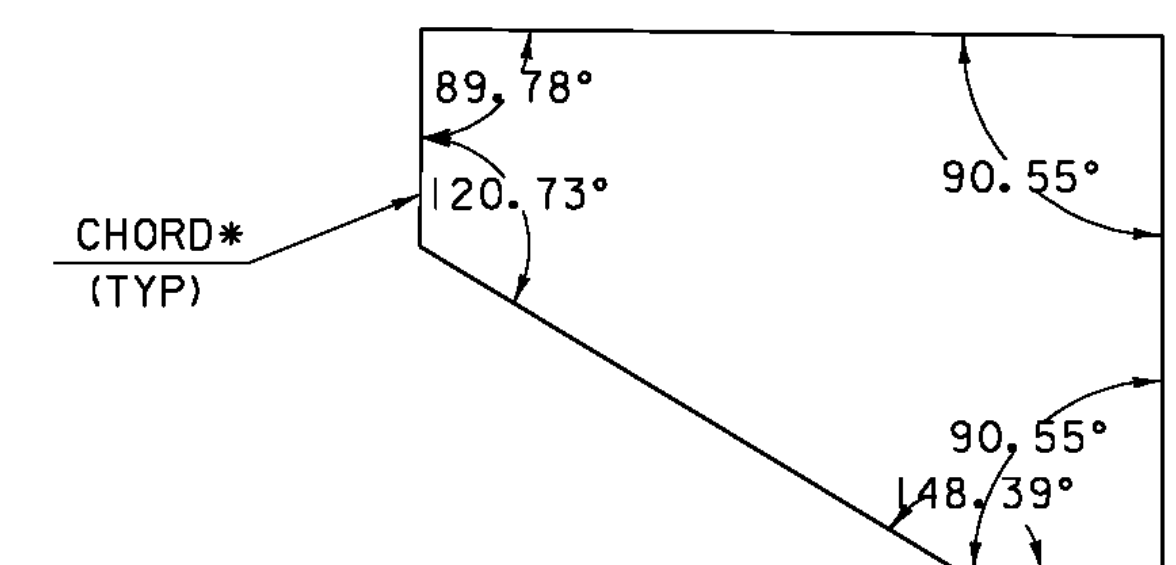


PRECAST SLAB U4 PLAN

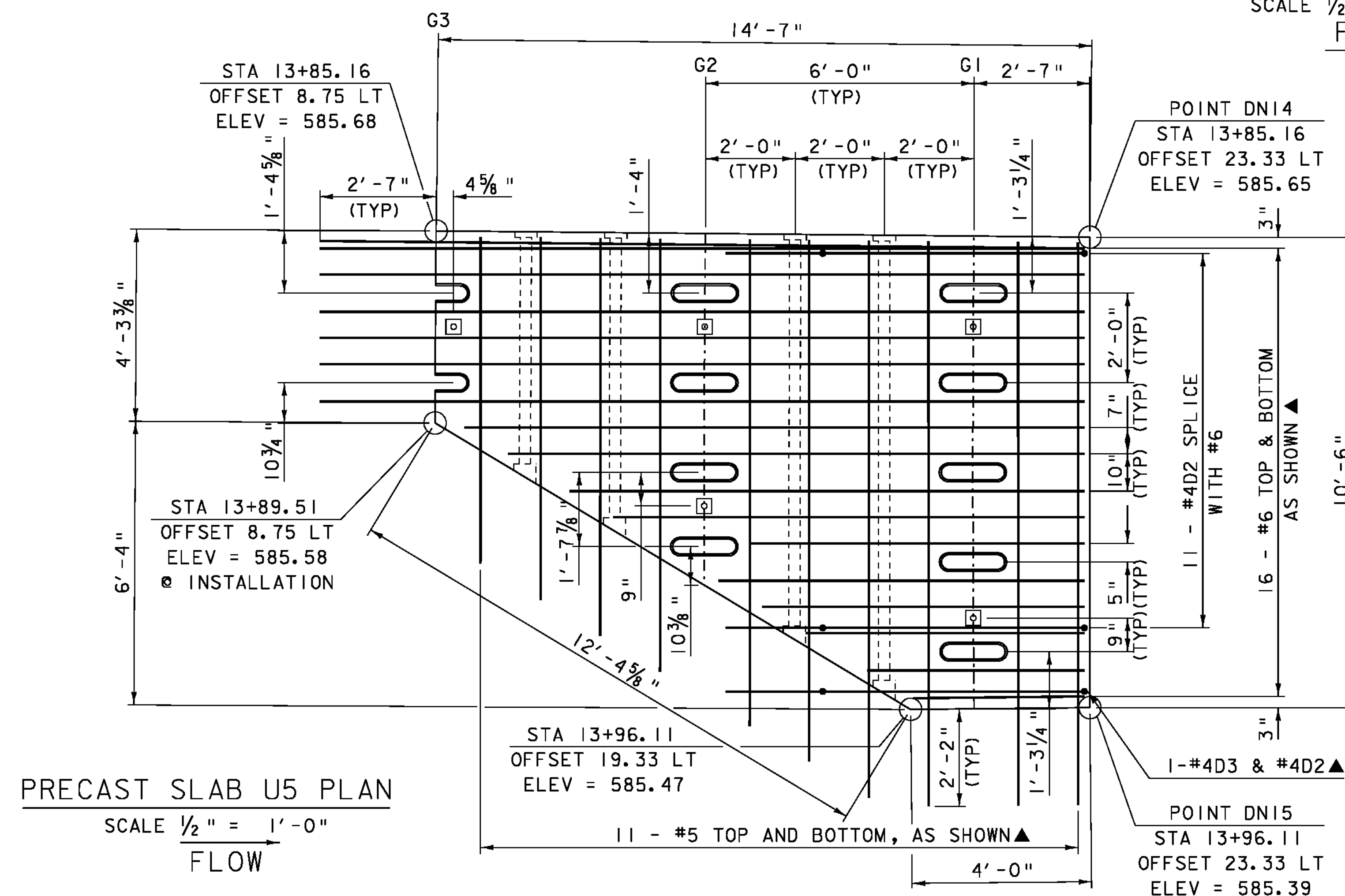
SCALE  $\frac{1}{2}$ " = 1'-0"  
FLOW



U14 ANGLES



U15 ANGLES



PRECAST SLAB U5 PLAN

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

NOTE:

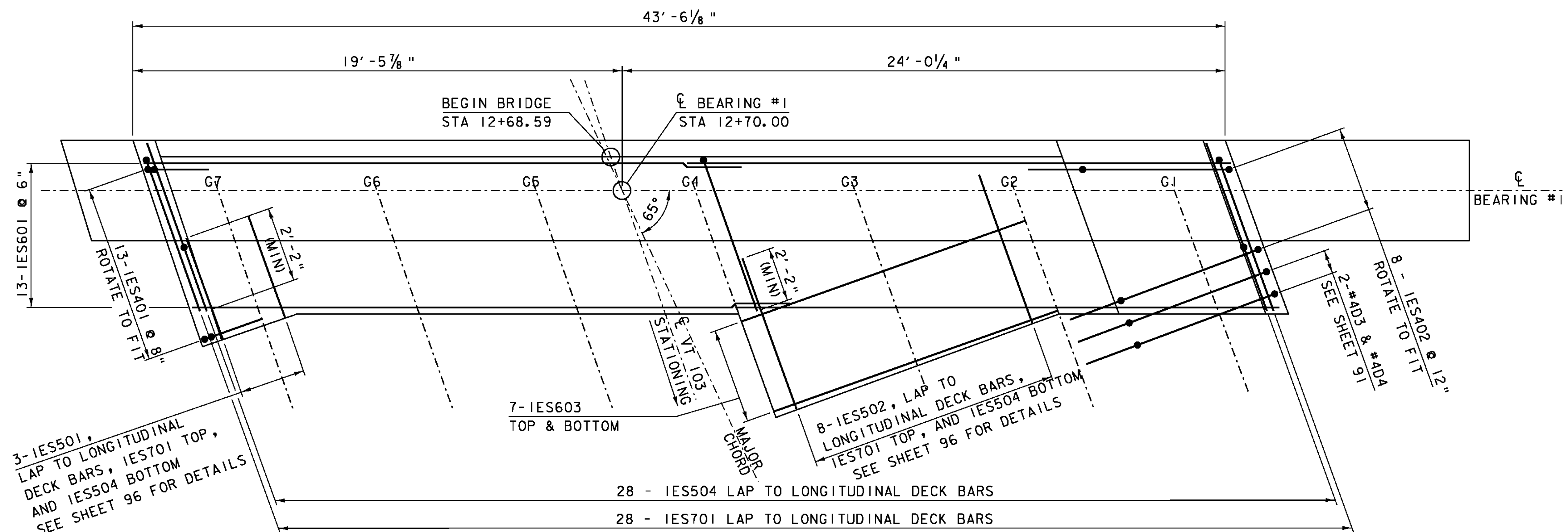
NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLEAR, UNLESS OTHERWISE  
SPECIFIED ON THE PLANS.  
2'-2" BAR LAP UNLESS OTHERWISE  
SPECIFIED ON THE PLANS.

\* ANGLES ARE IN REFERENCE TO THE CHORD BETWEEN POINTS OF CURVATURE  
AT THE CORNERS. THE SLAB FASCIAS SHALL BE FORMED RADIAL.

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

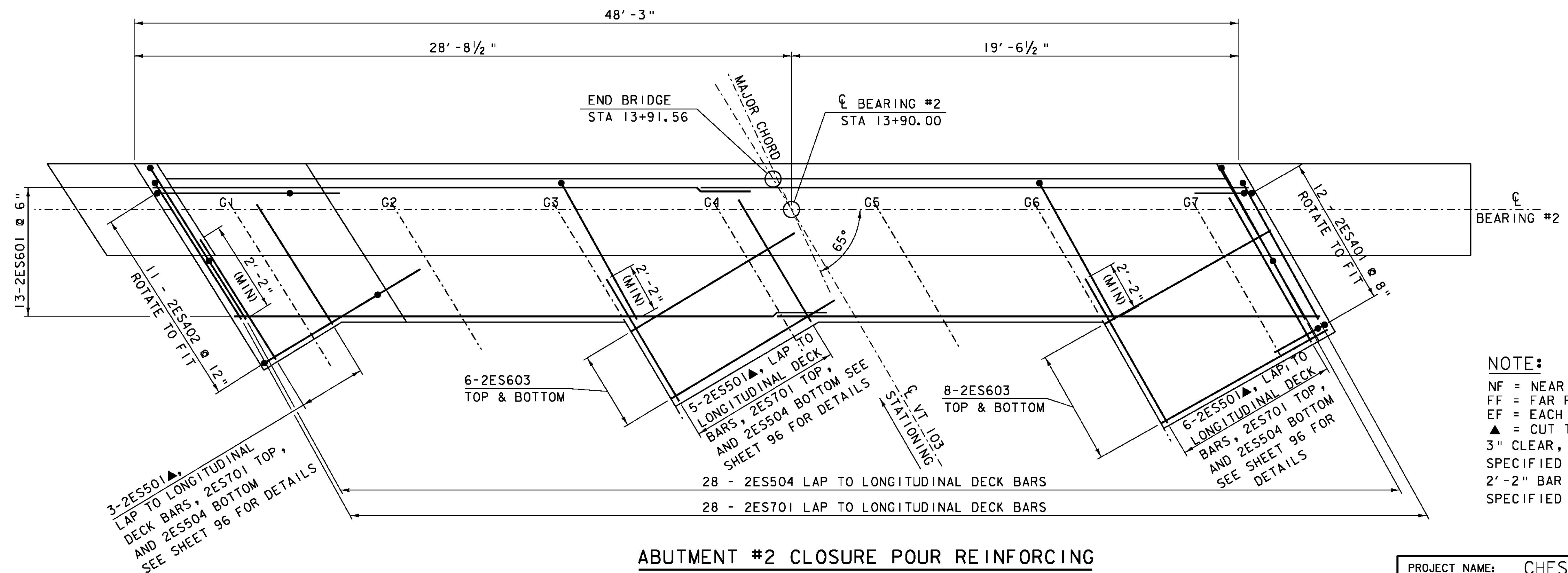
PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

FILE NAME: 95b168\95b168deckpanels.dgn PLOT DATE: 21-SEP-2010  
PROJECT LEADER: C.P.WILLIAMS DRAWN BY: D.D.BEARD  
DESIGNED BY: H.I.SALLS CHECKED BY: R.S.YOUNG  
BRIDGE 9 PRECAST DECK SLAB DETAILS 3 SHEET 89 OF 124



### ABUTMENT #1 CLOSURE POUR REINFORCING

SCALE  $\frac{3}{8}$ " = 1'-0"  
NOTE: REBAR IN PRECAST SLABS NOT SHOWN

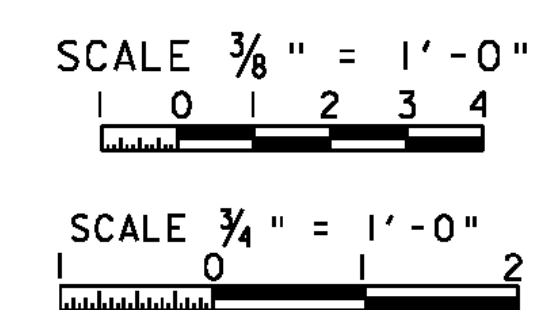


### ABUTMENT #2 CLOSURE POUR REINFORCING

SCALE  $\frac{3}{8}$ " = 1'-0"  
NOTE: REBAR IN PRECAST SLABS NOT SHOWN

#### NOTE:

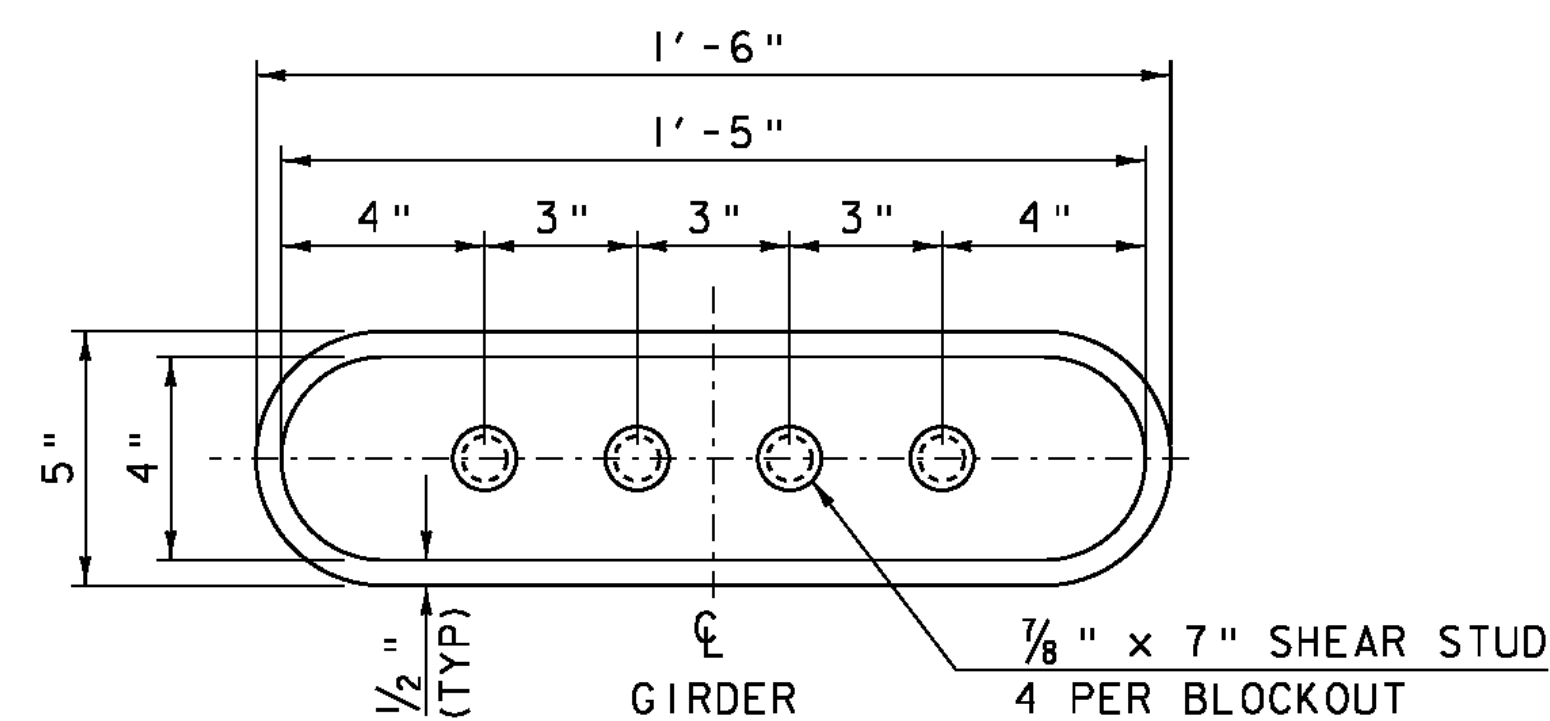
NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.



PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

FILE NAME: 95b168\95b168sub.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
BRIDGE 9 CLOSURE POUR DETAILS

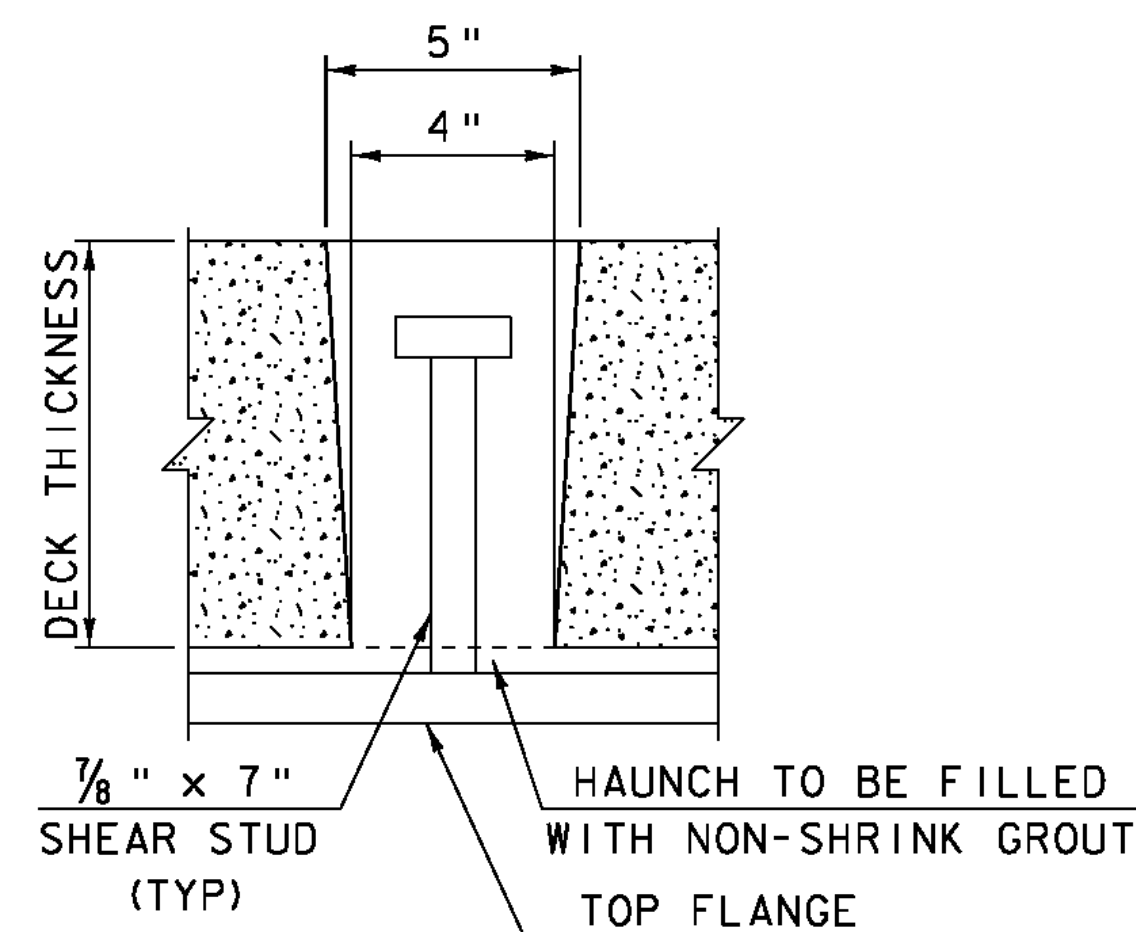
PLOT DATE: 20-SEP-2010  
DRAWN BY: D.D.BEARD  
CHECKED BY: R.S.YOUNG  
SHEET 90 OF 124



NOTE: ALTERNATE BLOCKOUTS MAY BE USED AS LONG AS THE NUMBER OF SHEAR STUDS PER GIRDER PER SLAB REMAINS THE SAME

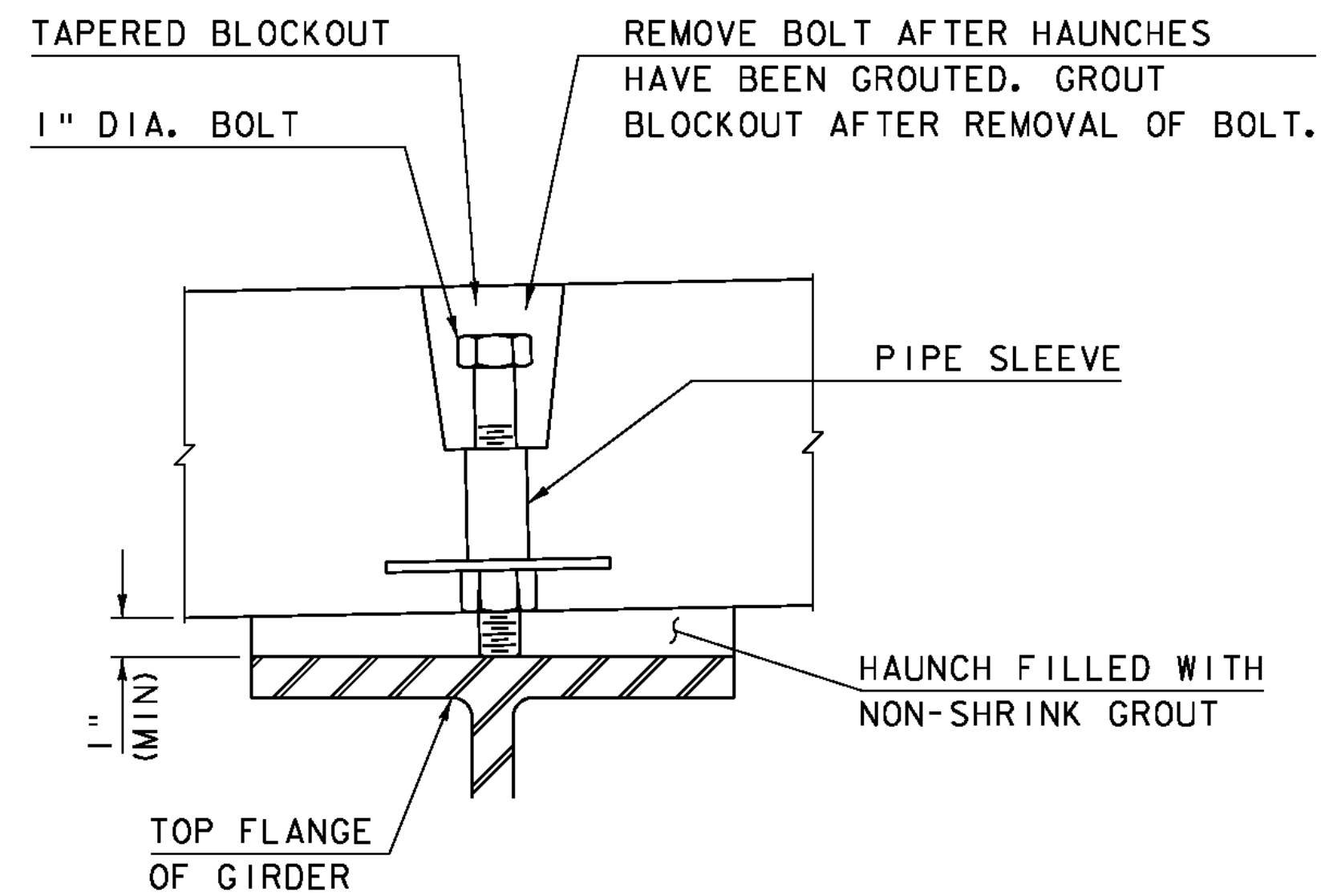
### SHEAR CONNECTOR BLOCKOUT DETAIL

SCALE 3" = 1'-0"



### SHEAR CONNECTOR BLOCKOUT SECTION

SCALE 3" = 1'-0"



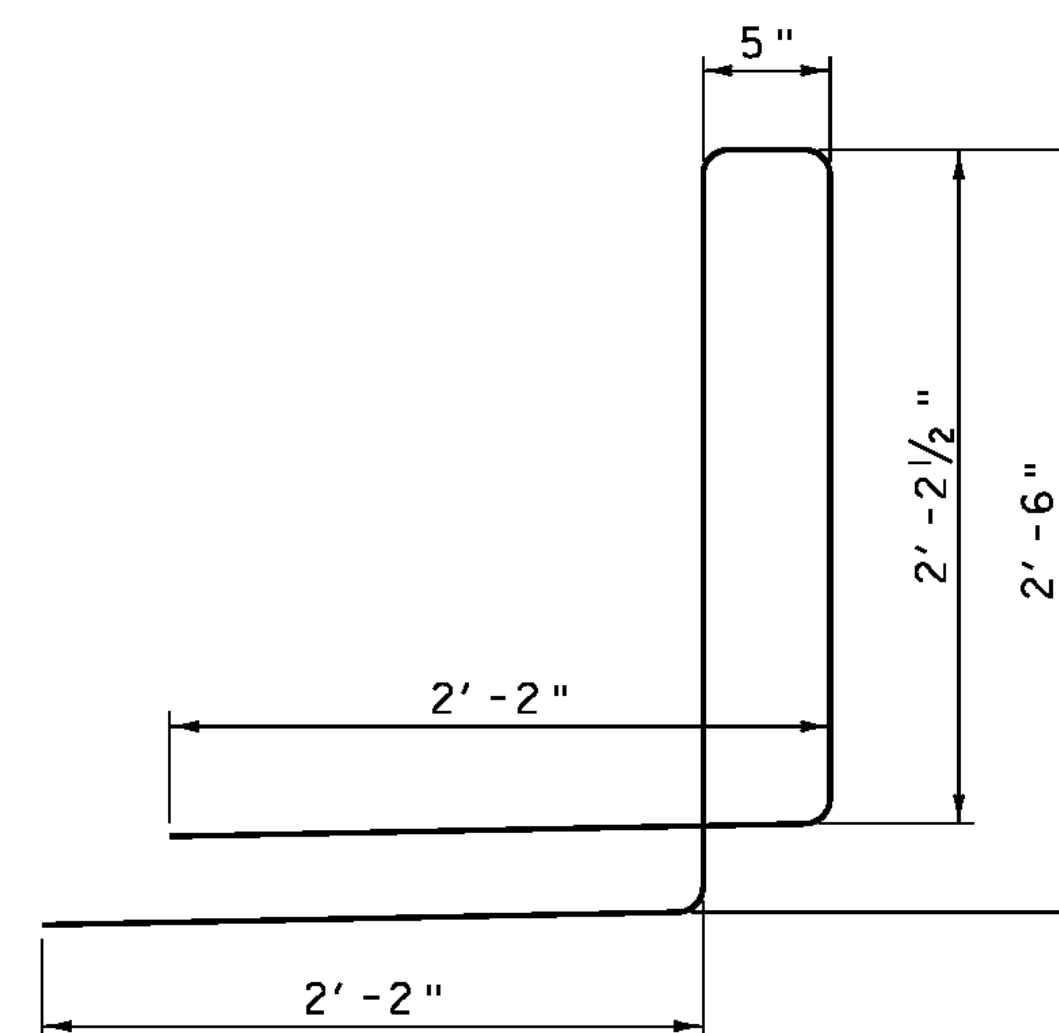
### VERTICAL ADJUSTMENT DETAIL

SCALE 3" = 1'-0"

### NOTES:

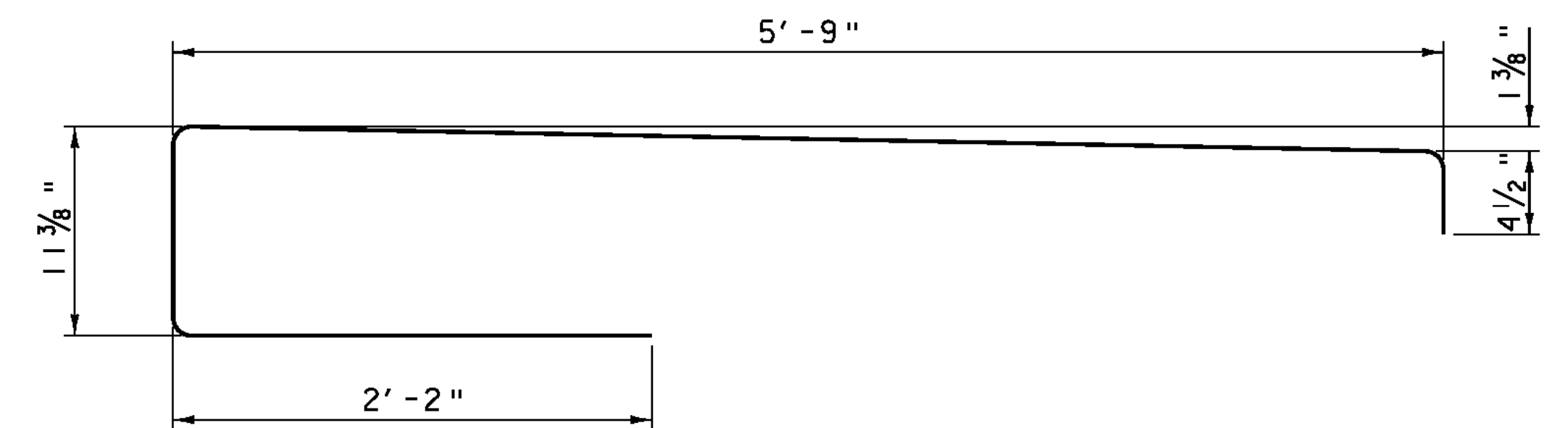
THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE LEVELING DEVICE BASED ON THE WEIGHT OF THE SLABS AND THE NUMBER OF DEVICES.

ALTERNATE DEVICES MAY BE SUBSTITUTED WITH APPROVAL FROM THE PROJECT MANAGER.



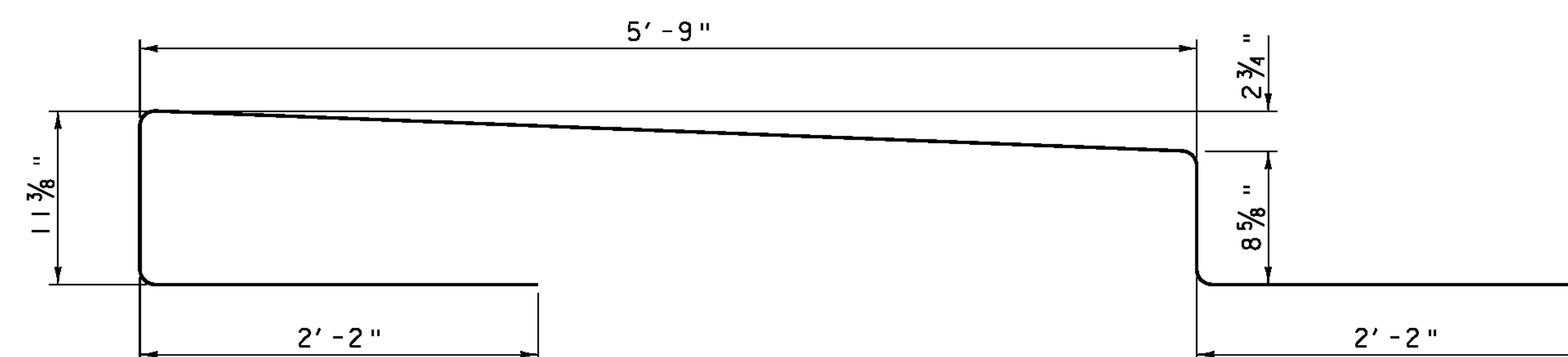
### BAR #4D1

(172 - REQUIRED)  
SCALE 6" = 1'-0"



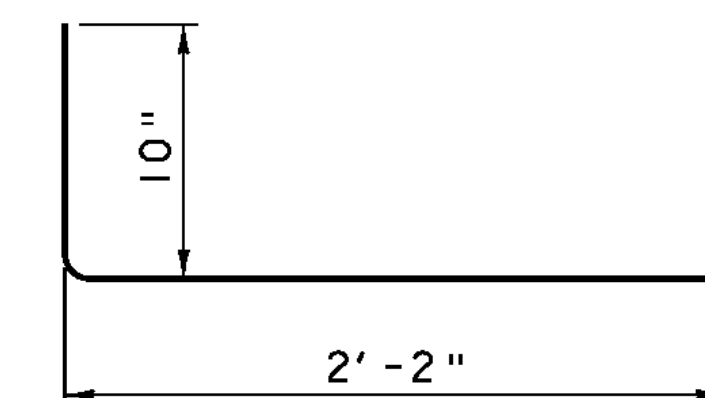
### BAR #4D4

(2 - REQUIRED)  
SCALE 6" = 1'-0"



### BAR #4D2

(114 - REQUIRED)  
SCALE 6" = 1'-0"

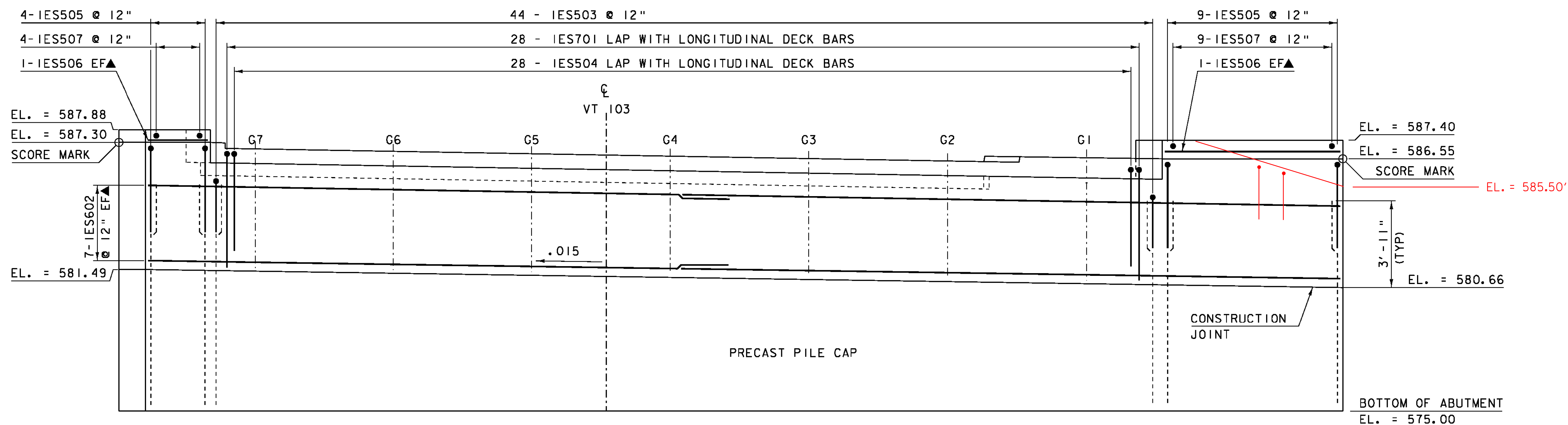
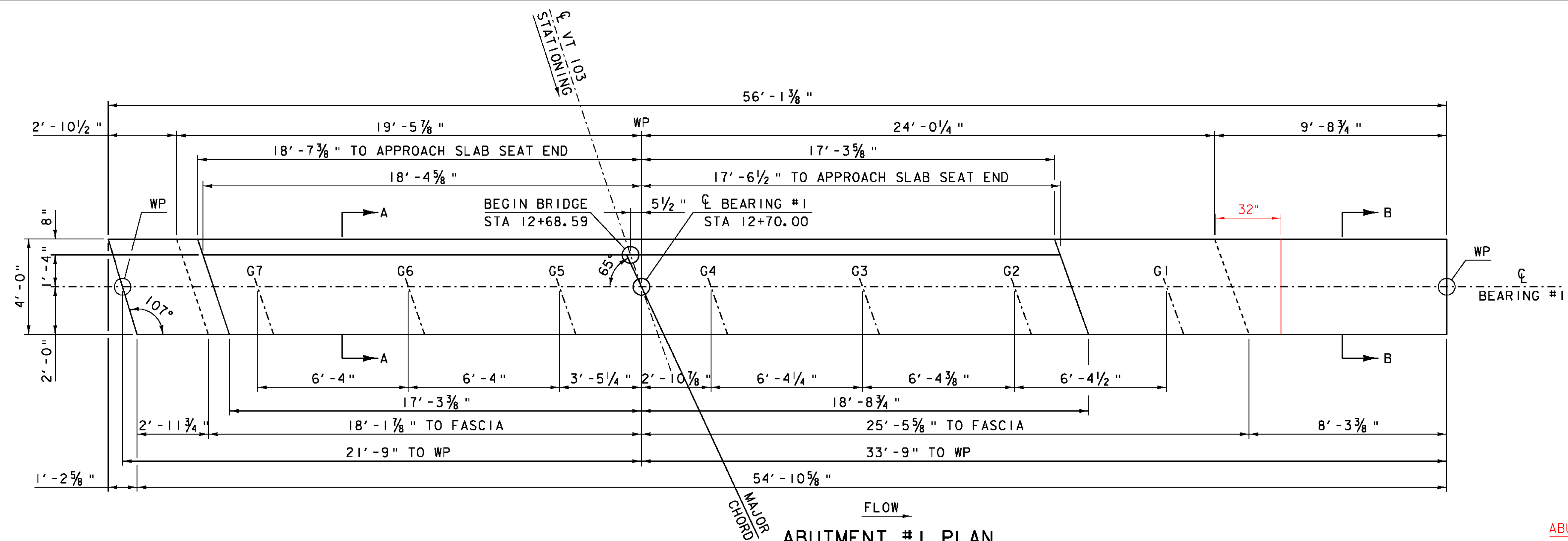


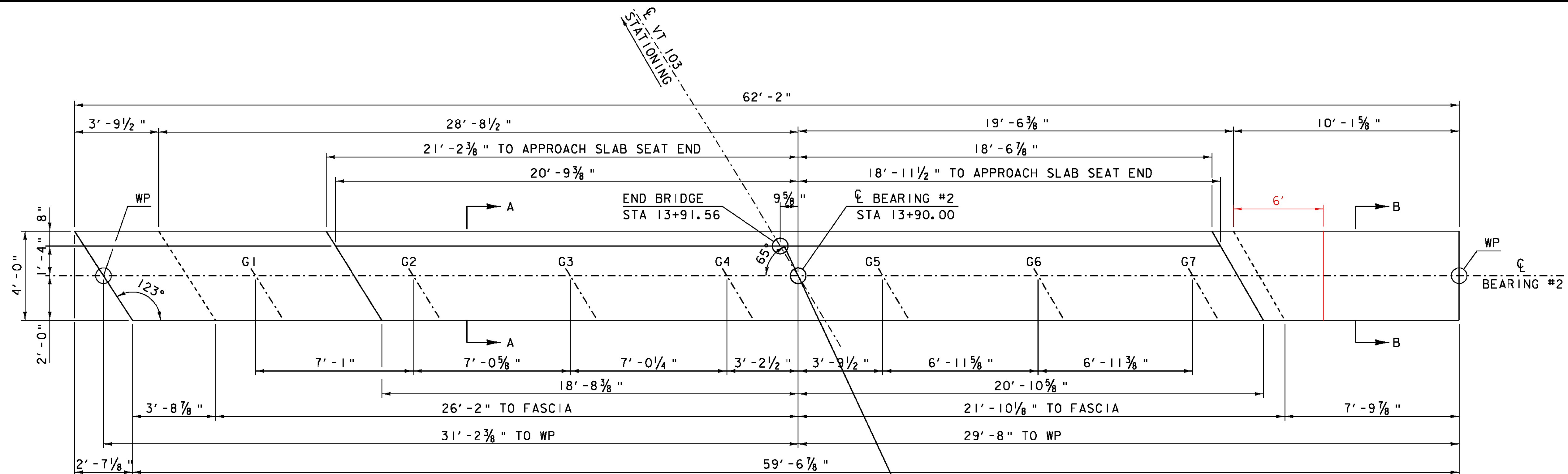
### BAR #4D3

(2 - REQUIRED)  
SCALE 6" = 1'-0"

PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

FILE NAME: 95b168\s95b168deckpanels.dgn PLOT DATE: 20-SEP-2010  
PROJECT LEADER: C.P.WILLIAMS DRAWN BY: D.D.BEARD  
DESIGNED BY: H.J.SALLS CHECKED BY: R.S.YOUNG  
BR9 PRECAST DECK MISCELLANEOUS DETAILS SHEET 91 OF 124





#### NOTE:

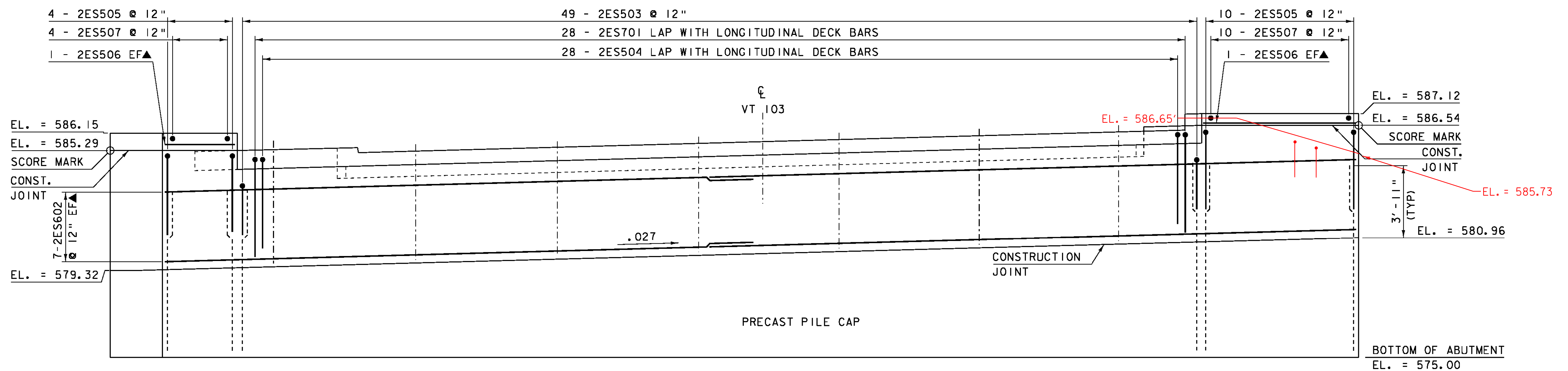
NF = NEAR FACE  
 FF = FAR FACE  
 EF = EACH FACE  
 ▲ = CUT TO FIT IN FIELD  
 3" CLEAR, UNLESS OTHERWISE  
 SPECIFIED ON THE PLANS.  
 2'-2" BAR LAP UNLESS OTHERWISE  
 SPECIFIED ON THE PLANS.

#### ABUTMENT #2 PLAN

SCALE 3/8" = 1'-0"

SEE SHEET 96 FOR SECTIONS "A-A" & "B-B"

ABUTMENT #2, WW4  
 FIELD CHANGES:  
 LOWERED CONCRETE HEIGHT  
 AND ANGLED WINGWALL



#### ABUTMENT #2 ELEVATION

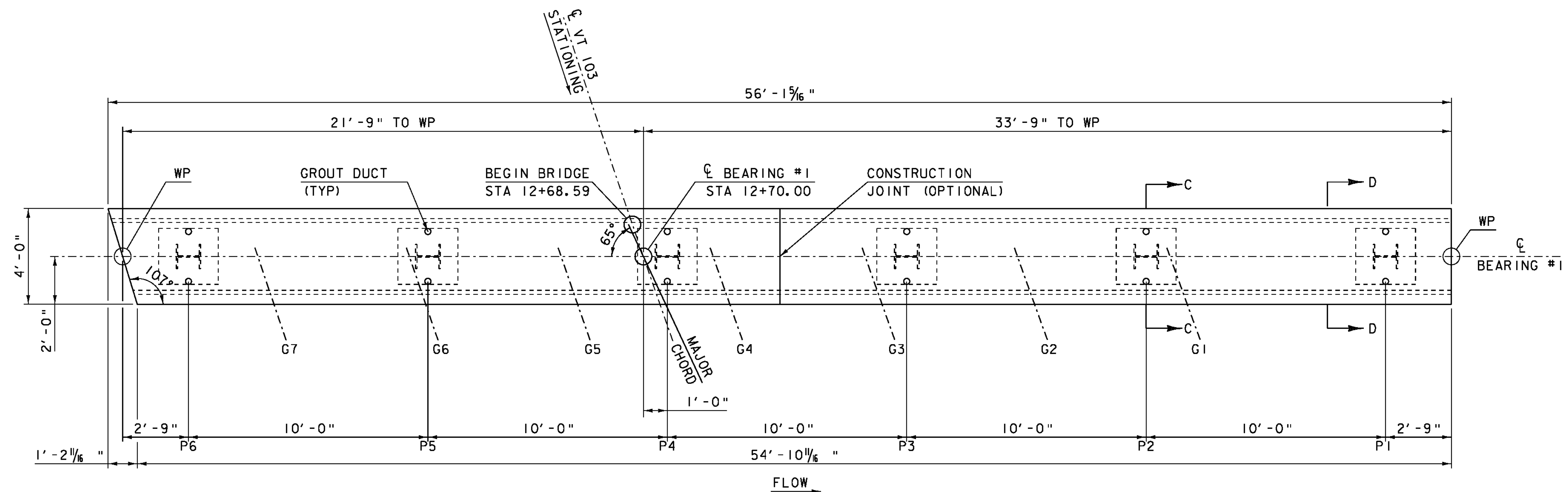
SCALE 3/8" = 1'-0"

SCALE 3/8" = 1'-0"  
 1 0 1 2 3 4

PROJECT NAME: CHESTER  
 PROJECT NUMBER: BRF 025-1(37)

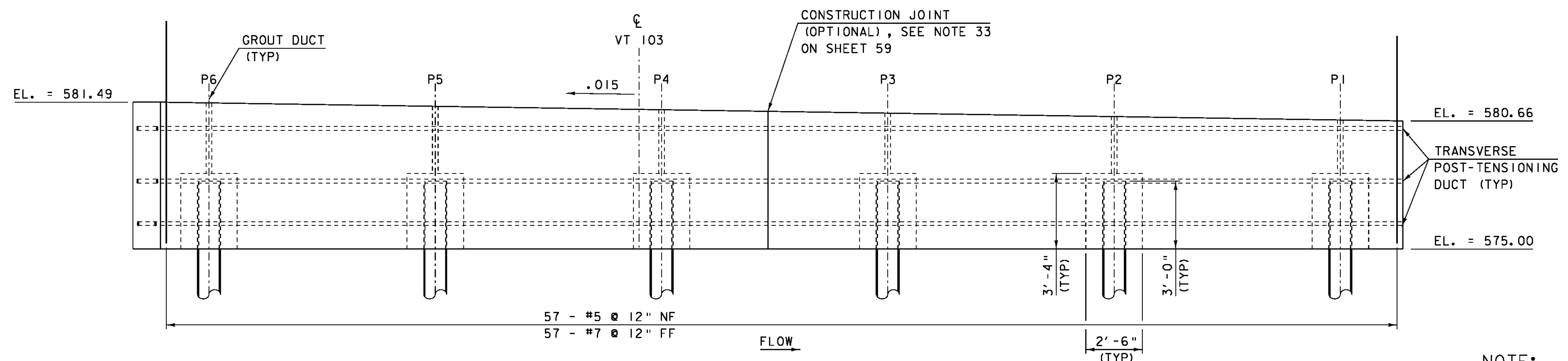
FILE NAME: 95b168\95b168sub.dgn  
 PROJECT LEADER: C.P.WILLIAMS  
 DESIGNED BY: R.S.YOUNG  
 BRIDGE 9 ABUTMENT 2 DETAILS

PLOT DATE: 20-SEP-2010  
 DRAWN BY: D.D.BEARD  
 CHECKED BY: R.S.YOUNG  
 SHEET 93 OF 124



**ABUTMENT #1 PILE CAP PLAN**

SCALE  $\frac{3}{8}$ " = 1'-0"



**ABUTMENT #1 PILE CAP ELEVATION**

SCALE  $\frac{3}{8}$ " = 1'-0"

**NOTES:**

1. ONCE PILES HAVE BEEN CUT TO THEIR FINAL ELEVATIONS, 1" x 14" x 14" STEEL PLATES SHALL BE WELDED TO THE TOP OF THE PILES. PAYMENT FOR THE PLATES SHALL BE INCIDENTAL TO ITEM 505.265 "STEEL PILING FOR INTEGRAL ABUTMENTS, HP 12 X 84"
2. PILE CAVITY GROUT (FILL AND VENT) DUCTS SHALL BE CORRUGATED.
3. SEE GENERAL NOTES FOR ADDITIONAL FABRICATION, CONSTRUCTION, AND SEQUENCE NOTES.
4. SEE SHEET 96 FOR SECTIONS "C-C" & "D-D"

**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.

SCALE  $\frac{3}{8}$ " = 1'-0"

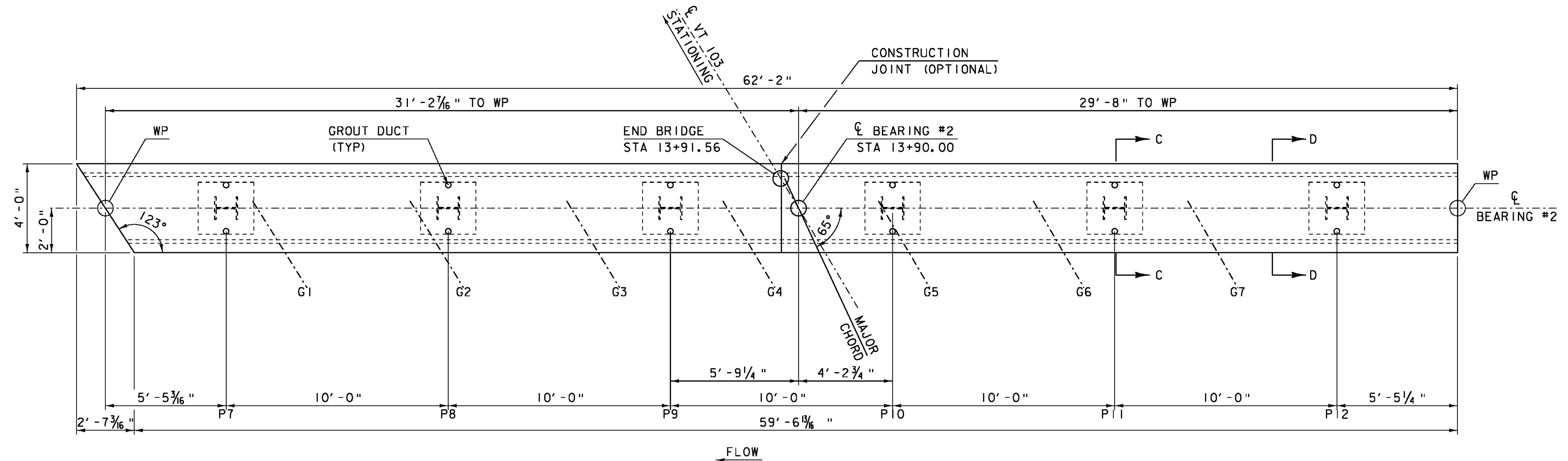


SCALE  $\frac{3}{4}$ " = 1'-0"



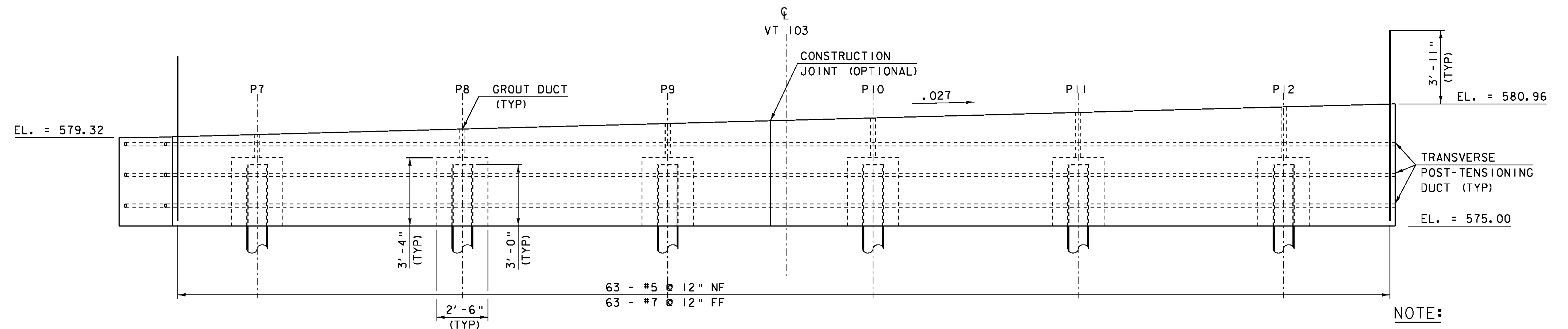
PROJECT NAME: CHESTER  
 PROJECT NUMBER: BRF 025-1(37)

|                                      |                        |
|--------------------------------------|------------------------|
| FILE NAME: 95b168\95b168sub.dgn      | PLOT DATE: 20-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS         | DRAWN BY: D.D.BEARD    |
| DESIGNED BY: R.S.YOUNG               | CHECKED BY: R.S.YOUNG  |
| BRIDGE 9 ABUTMENT 1 PRECAST PILE CAP | SHEET 94 OF 124        |



**ABUTMENT #2 PILE CAP PLAN**

SCALE  $\frac{3}{8}$ " = 1'-0"



**ABUTMENT #2 PILE CAP ELEVATION**

SCALE  $\frac{3}{8}$ " = 1'-0"

**NOTES:**

1. ONCE PILES HAVE BEEN CUT TO THEIR FINAL ELEVATIONS, 1" x 14" x 14" STEEL PLATES SHALL BE WELDED TO THE TOP OF THE PILES. PAYMENT FOR THE PLATES SHALL BE INCIDENTAL TO ITEM 505.265 "STEEL PILING FOR INTEGRAL ABUTMENTS, HP 12 X 84"
2. PILE CAVITY GROUT (FILL AND VENT) DUCTS SHALL BE CORRUGATED.
3. SEE GENERAL NOTES FOR ADDITIONAL FABRICATION, CONSTRUCTION, AND SEQUENCE NOTES.
4. SEE SHEET 96 FOR SECTIONS "C-C" & "D-D"

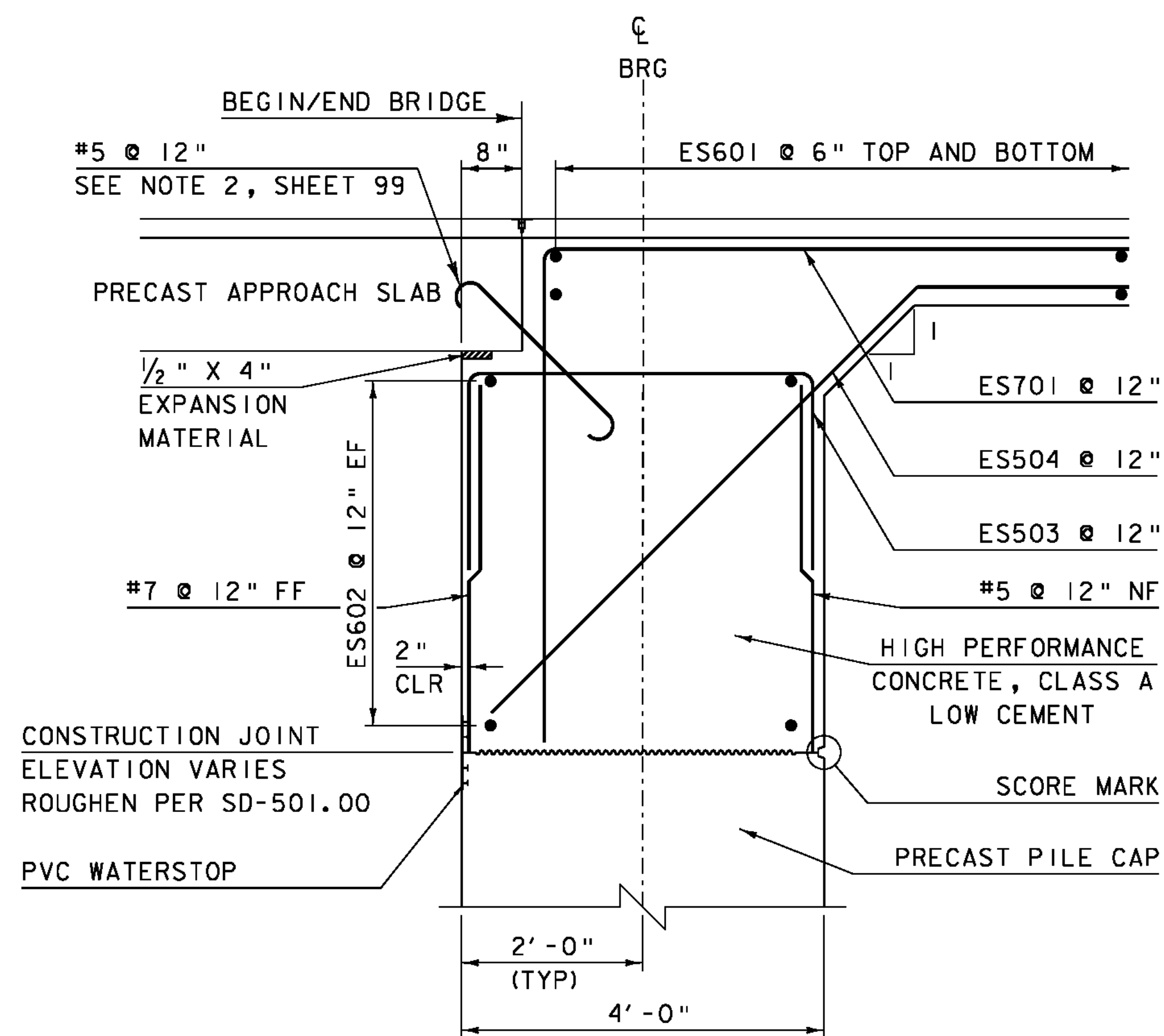
**NOTE:**

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.

SCALE  $\frac{3}{8}$ " = 1'-0"

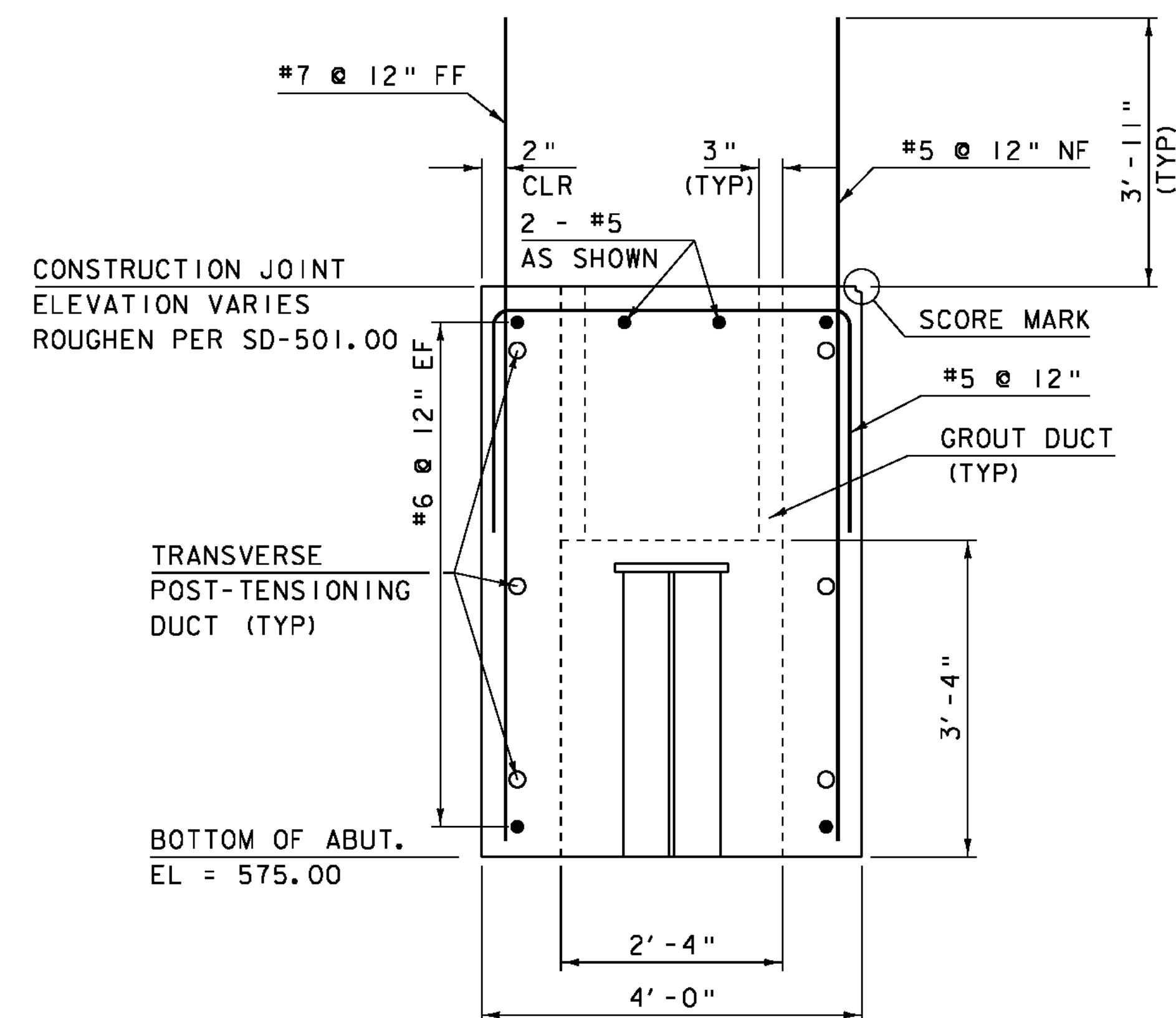
PROJECT NAME: CHESTER  
 PROJECT NUMBER: BRF 025-1(37)

FILE NAME: 95b168\s95b168sub.dgn PLOT DATE: 20-SEP-2010  
 PROJECT LEADER: C.P.WILLIAMS DRAWN BY: D.D.BEARD  
 DESIGNED BY: R.S.YOUNG CHECKED BY: R.S.YOUNG  
 BRIDGE 9 ABUTMENT 2 PRECAST PILE CAP SHEET 95 OF 124



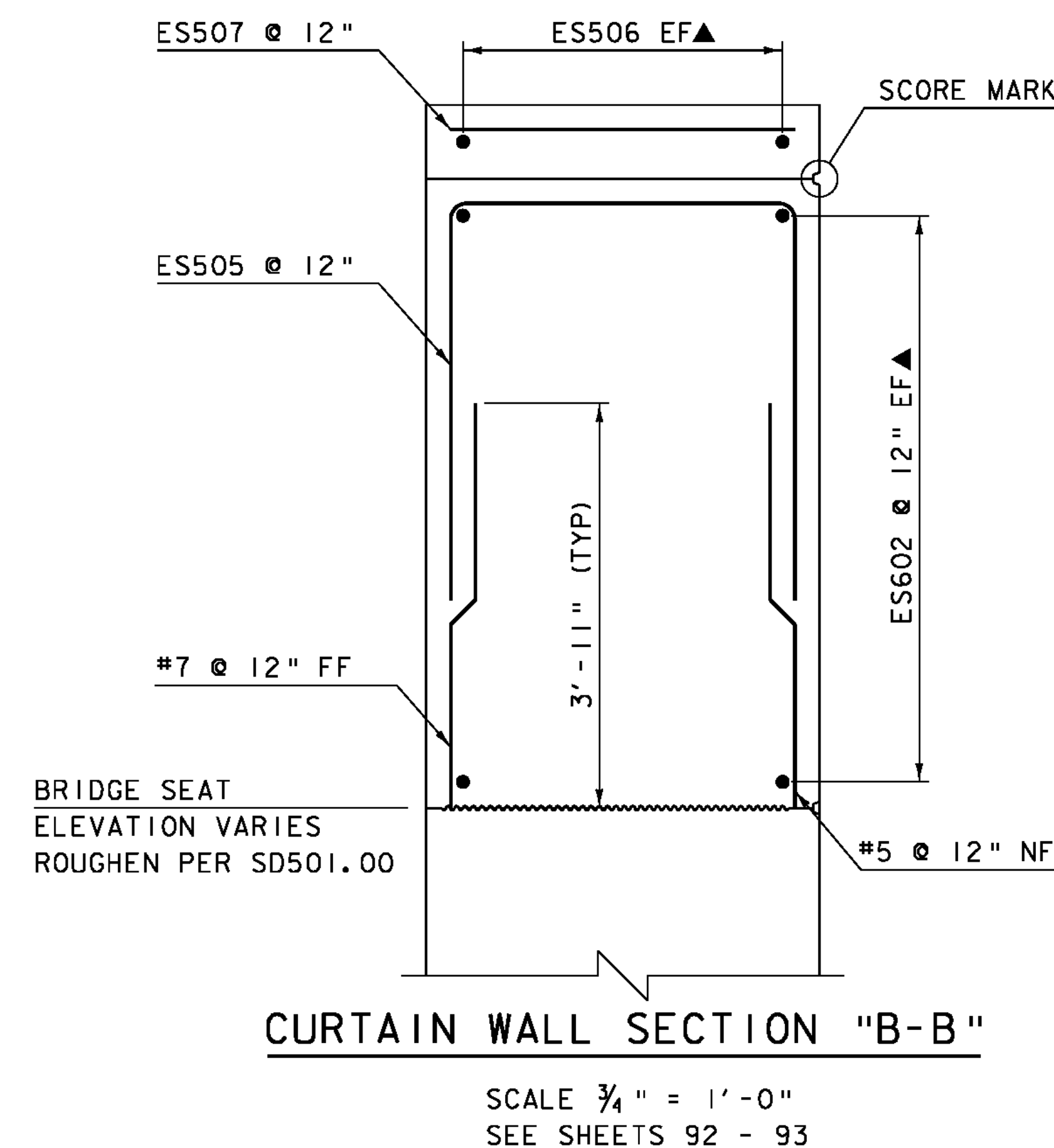
**CURTAIN WALL SECTION "A-A"**

SCALE 3/4" = 1'-0"  
SEE SHEETS 92 - 93

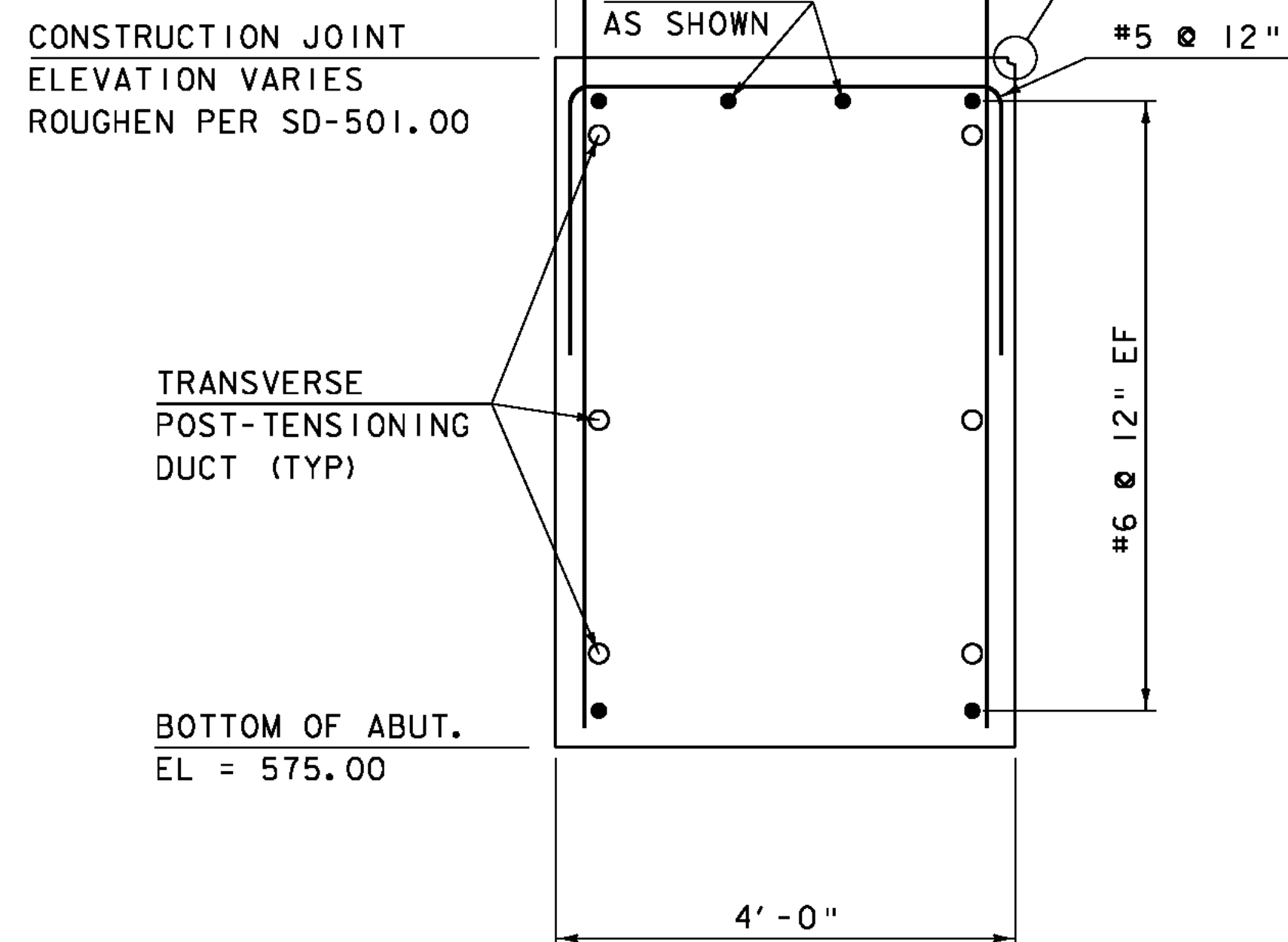


**PILE CAP SECTION "C-C"**

SCALE 3/4" = 1'-0"  
SEE SHEETS 94 - 95

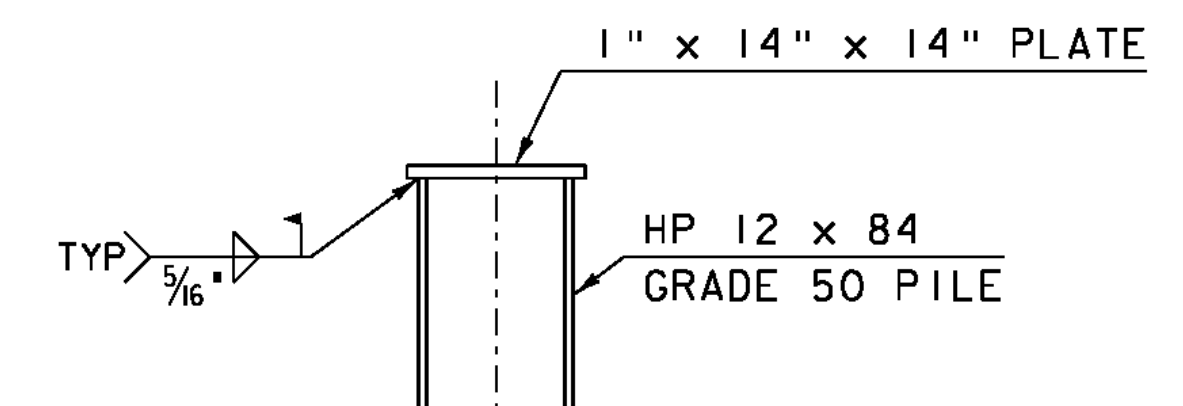


**CURTAIN WALL SECTION "B-B"**



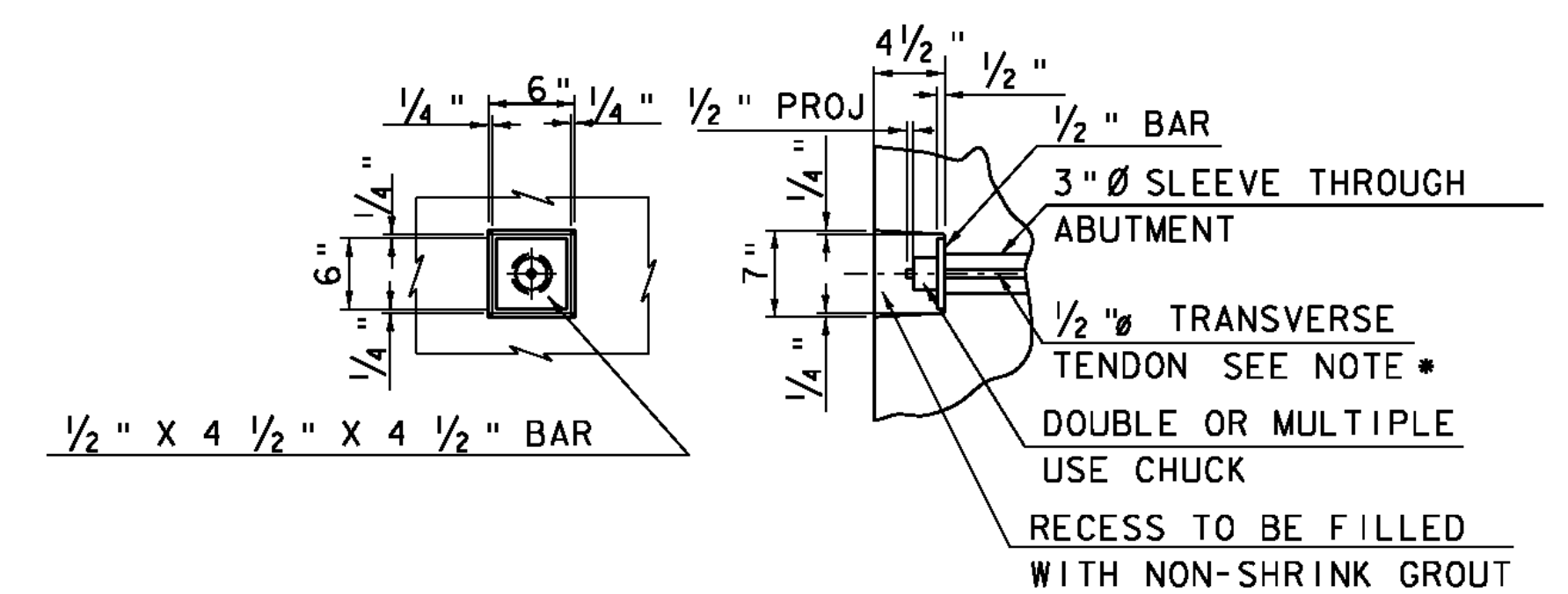
**PILE CAP SECTION "D-D"**

SCALE 3/4" = 1'-0"  
SEE SHEETS 94 - 95



**PILE PLATES (TYP)**

SCALE 3/4" = 1'-0"



**1/2" Ø TRANSVERSE TENDON DETAIL**

(NOT TO SCALE)

\* TRANSVERSE TIES SHALL BE COVERED BY SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF STRAND, EXCEPT AT ANCHORAGE LOCATIONS.

**NOTE:**

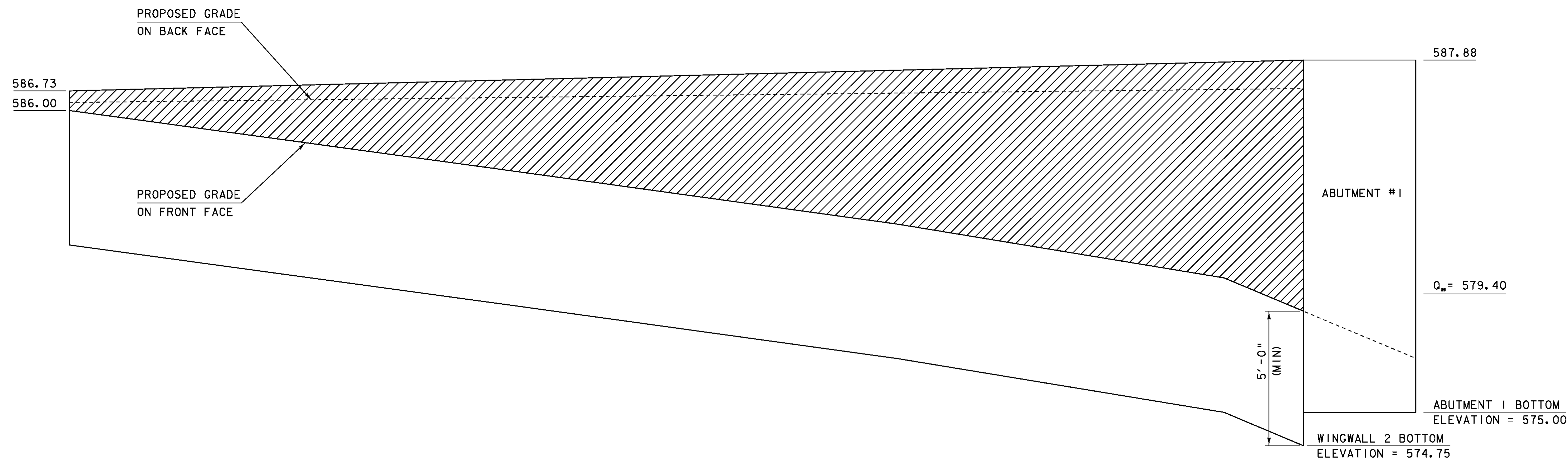
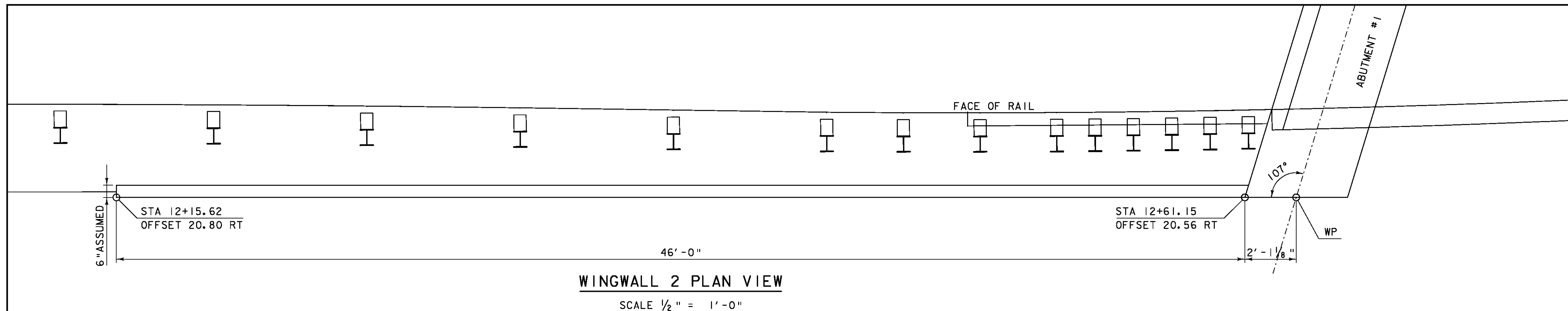
NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

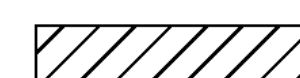
SCALE 3/4" = 1'-0"  
0 1 2

PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

FILE NAME: 95b168\95b168sub.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
BRIDGE 9 ABUTMENT SECTIONS

PLOT DATE: 20-SEP-2010  
DRAWN BY: D.D.BEARD  
CHECKED BY: R.S.YOUNG  
SHEET 96 OF 124



 PAY LIMITS OF ITEM 900.670 "SPECIAL PROVISION (RETAINING WALL)"

SEE SHEET 98 FOR  
ADDITIONAL INFORMATION  
AND TYPICAL SECTION

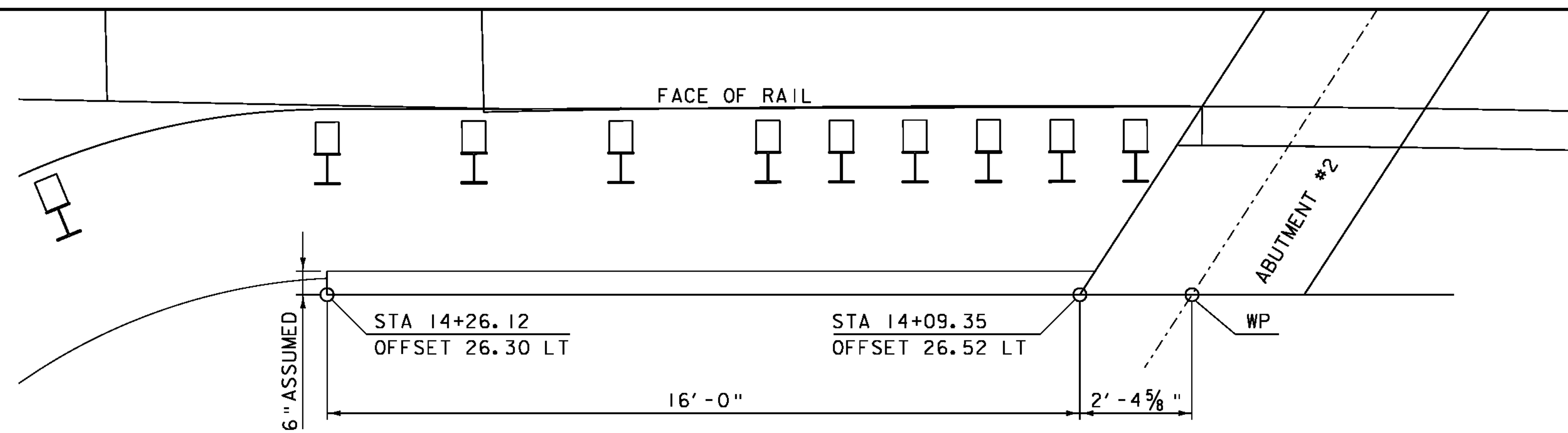
SCALE 1/2" = 1'-0"



PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

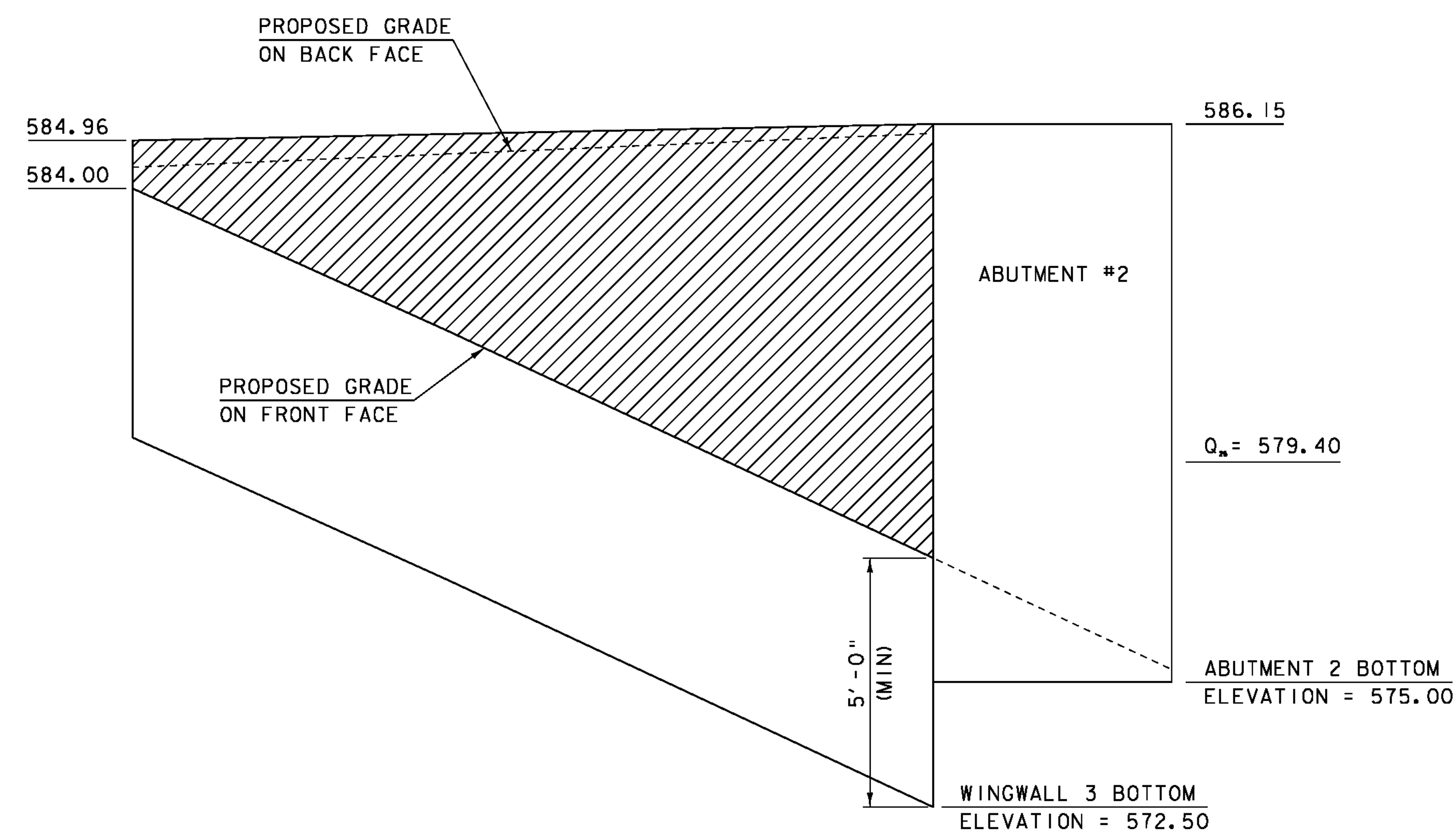
FILE NAME: 95b168\s95b168sub.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
BRIDGE 9 WINGWALL 2 DETAILS

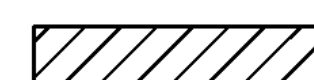
PLOT DATE: 21-SEP-2010  
DRAWN BY: D.D.BEARD  
CHECKED BY: E.R.CHARBONNEAU  
SHEET 97 OF 124



### WINGWALL 3 PLAN VIEW

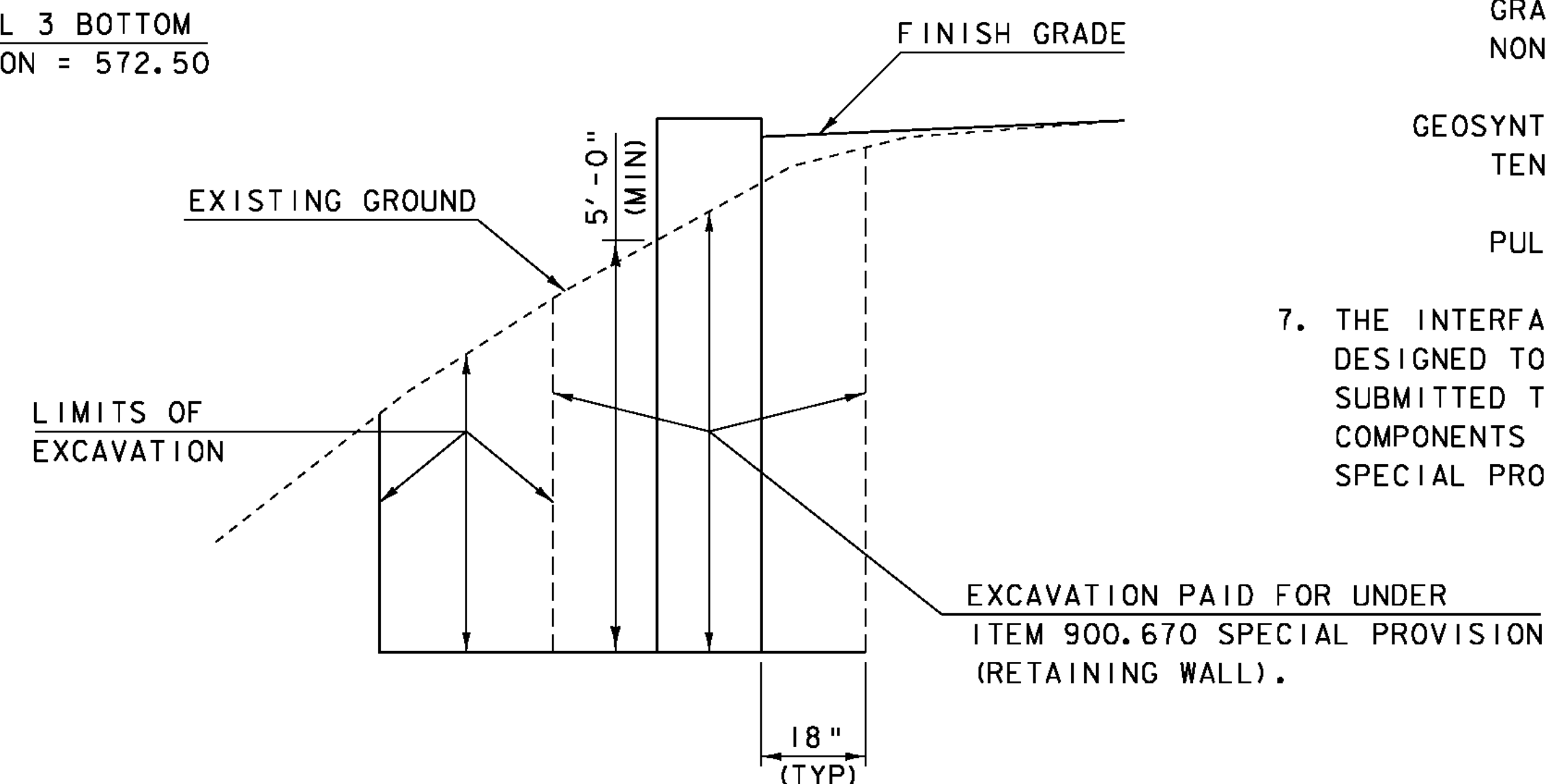
SCALE  $\frac{1}{2}$ " = 1'-0"



 PAY LIMITS OF ITEM 900.670 "SPECIAL PROVISION (RETAINING WALL)"

### WINGWALL 3 ELEVATION VIEW

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



### TYPICAL WINGWALL EXCAVATION DETAIL

N. T. S.

#### NOTES:

1. WINGWALL 2 AND WINGWALL 3 SHALL BE SELECTED FROM THE LIST OF WALLS ON THE APPROVED RETAINING WALL DOCUMENT AVAILABLE FROM VAOT MATERIALS & RESEARCH WEB SITE. THE RETAINING WALL SHALL HAVE CONCRETE FACING.
2. THE WALL SHALL BE PAID FOR UNDER ITEM 900.670 "SPECIAL PROVISION (RETAINING WALL)".
3. THE BOTTOM OF WALL SHALL BE A MINIMUM OF 5 FEET BELOW THE FINISH GRADE IN THE FRONT OF WALL.
4. THE WALL SHALL BE DESIGNED IN ACCORDANCE WITH 2007 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND ITS LATEST REVISIONS. THE DESIGN SHALL INCLUDE THE EFFECT OF ALL LOADS INCLUDING BUT NOT LIMITED TO LIVE LOAD, VEHICLE IMPACT ON ADJACENT GUARDRAIL AND POSTS, EARTH SURCHARGE, AND HYDROSTATIC PRESSURE.
5. THE TYPE OF WALL SELECTED SHALL BE COMPATIBLE WITH ADJACENT OBSTRUCTIONS SUCH AS DRAINAGE FEATURES AND GUARD RAIL POSTS. ANY CHANGES TO THE REINFORCING OR ANCHORING SYSTEM SHALL BE DETAILED IN THE FABRICATION DRAWINGS.
6. THE FOLLOWING SOIL PROPERTIES SHALL BE USED IN THE DESIGN OF WINGWALL 2 AND WINGWALL 3:

FOUNDATION SOIL DESIGN VALUES  
NOMINAL BEARING RESISTANCE: 8.9 KSF

FOUNDATION SOIL PARAMETERS  
UNIT WEIGHT: 120 PCF  
FRICTION ANGLE: 32°

RETAINED SOIL PARAMETERS  
UNIT WEIGHT: 130 PCF  
FRICTION ANGLE: 32°

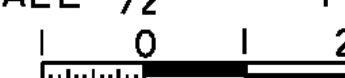
REINFORCED SOIL PARAMETERS (IF APPLICABLE)  
UNIT WIEGHT: 140 PCF  
FRICTION ANGLE: 34°

BEARING RESISTANCE FACTORS (STRENGTH LIMIT STATE)  
MSEW: 0.65  
GRAVITY/SEMI-GRAVITY (PROPRIETARY SYSTEM): 0.55  
NON-GRAVITY CANTILEVERED AND ANCHORED: 0.45

SLIDING RESISTANCE FACTORS  
MSEW: 1.0  
GRAVITY/SEMI-GRAVITY (PROPRIETARY SYSTEM): 1.0  
NON-GRAVITY CANTILEVERED AND ANCHORED: 0.8

GEOSYNTHETIC RESISTANCE FACTORS (IF APPLICABLE)  
TENSILE RESISTANCE OF GEOSYNTHETIC: 0.9  
REINFORCEMENT AND CONNECTORS  
PULLOUT RESISTANCE OF TENSILE REINFORCEMENT: 0.9

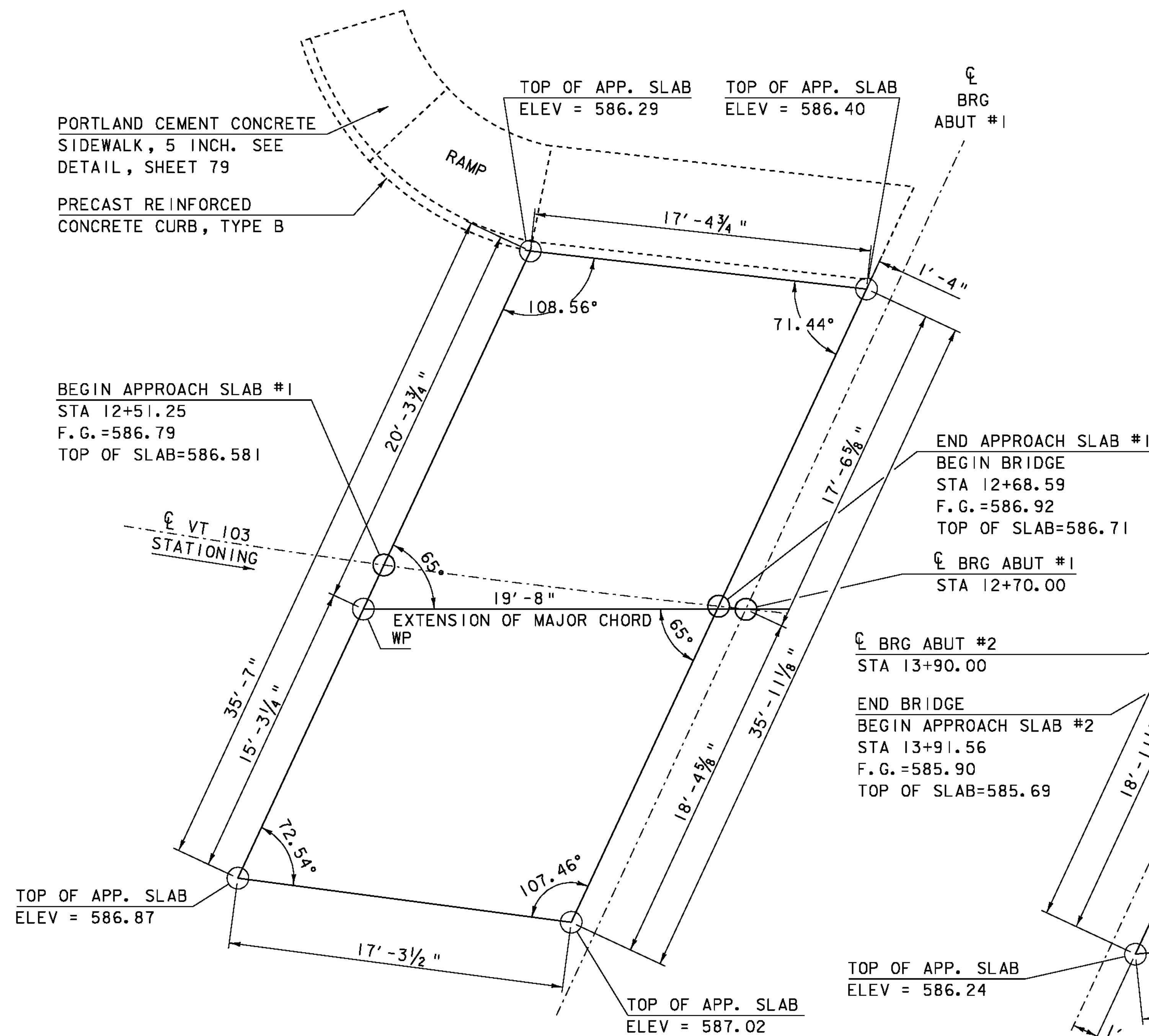
7. THE INTERFACE BETWEEN THE WINGWALL AND THE ABUTMENT STEM SHALL BE DESIGNED TO ALLOW 0.5 INCHES OF MOVEMENT. A JOINT DETAIL SHALL BE SUBMITTED TO THE PROJECT MANAGER FOR REVIEW AND APPROVAL. ALL COMPONENTS SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 900.670 SPECIAL PROVISION (RETAINING WALL).

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


PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

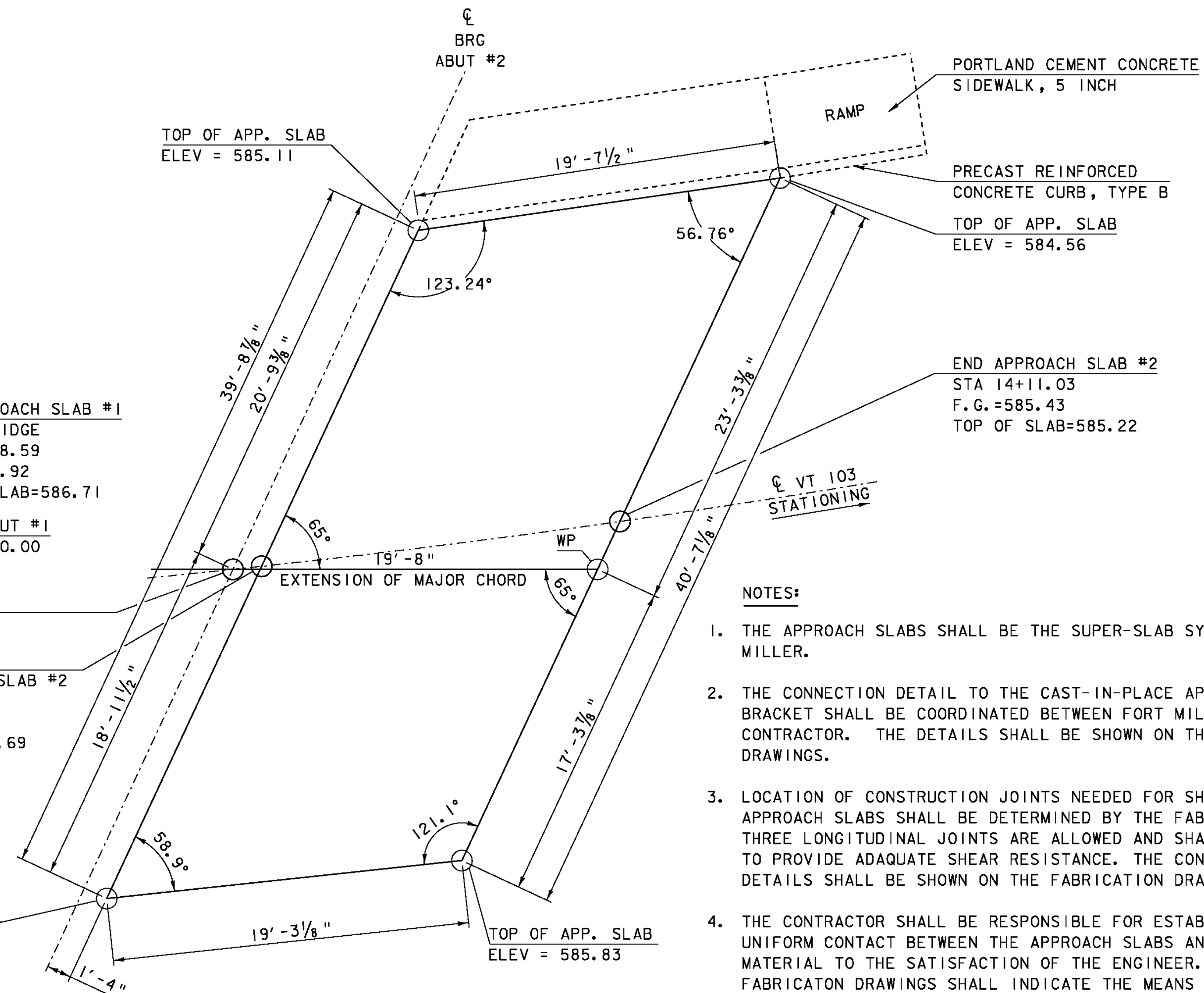
FILE NAME: 95bl68\s95bl68sub.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
BRIDGE 9 WINGWALL 3 DETAILS

PLOT DATE: 20-SEP-2010  
DRAWN BY: D.D.BEARD  
CHECKED BY: E.R.CHARBONNEAU  
SHEET 98 OF 124



**APPROACH SLAB #1 LAYOUT**

SCALE 1/4" = 1'-0"

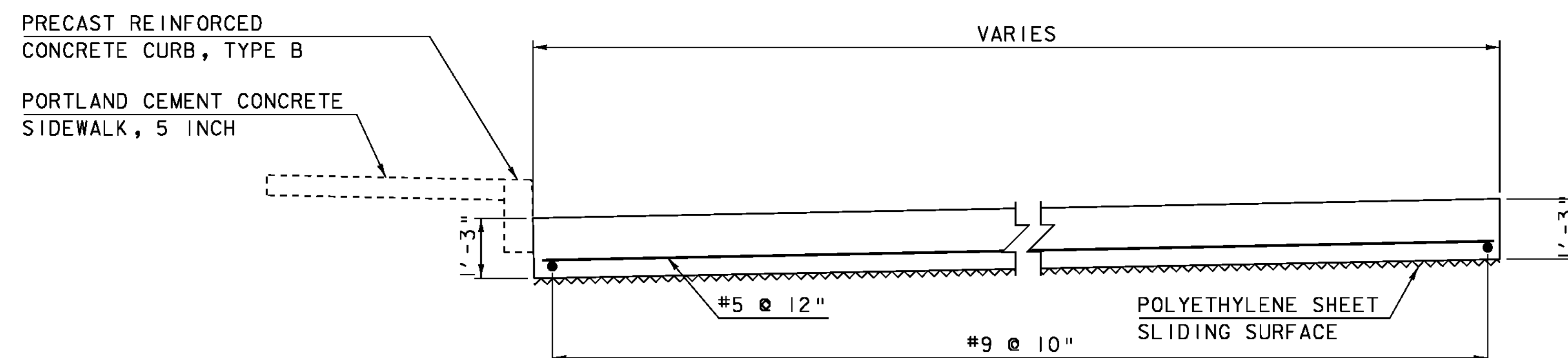


**APPROACH SLAB #2 LAYOUT**

SCALE 1/4" = 1'-0"

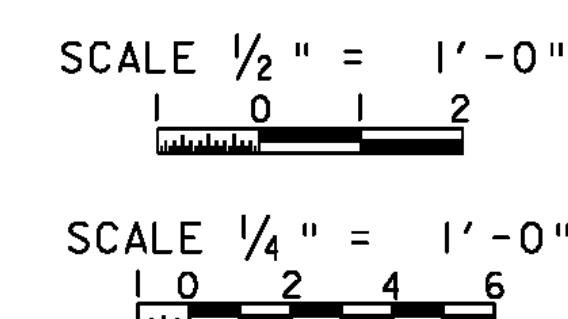
**NOTES:**

1. THE APPROACH SLABS SHALL BE THE SUPER-SLAB SYSTEM BY FORT MILLER.
2. THE CONNECTION DETAIL TO THE CAST-IN-PLACE APPROACH SLAB BRACKET SHALL BE COORDINATED BETWEEN FORT MILLER AND THE CONTRACTOR. THE DETAILS SHALL BE SHOWN ON THE FABRICATION DRAWINGS.
3. LOCATION OF CONSTRUCTION JOINTS NEEDED FOR SHIPMENT OF THE APPROACH SLABS SHALL BE DETERMINED BY THE FABRICATOR(S). THREE LONGITUDINAL JOINTS ARE ALLOWED AND SHALL BE DESIGNED TO PROVIDE ADAQUATE SHEAR RESISTANCE. THE CONNECTION DETAILS SHALL BE SHOWN ON THE FABRICATION DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING UNIFORM CONTACT BETWEEN THE APPROACH SLABS AND THE SUBBASE MATERIAL TO THE SATISFACTION OF THE ENGINEER. THE FABRICATON DRAWINGS SHALL INDICATE THE MEANS AND METHODS NECESSARY TO INSTALL THE APPROACH SLABS TO THE ELEVATIONS SPECIFIED.
5. A 10 MIL POLYETHYLENE SHEET SHALL BE PLACED UNDER THE SLAB TO ALLOW FOR SLIDING.
6. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING APPROACH SLABS TO RESIST LIFTING STRESSES. INSTALLATION SEQUENCE AND LIFTING PLAN SHALL BE SHOWN ON THE CONSTRUCTION DRAWINGS.
7. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
8. PAYMENT FOR THE APPROACH SLABS, POLYETHYLENE SHEET, ALL LABOR, TOOLS, AND MATERIALS NEEDED FOR PLACEMENT SHALL BE INCLUDED UNDER ITEM 900.620 "SPECIAL PROVISION (PRECAST APPROACH SLAB, SUPER-SLAB) (BRIDGE 9) "



**APPROACH SLAB TYPICAL**

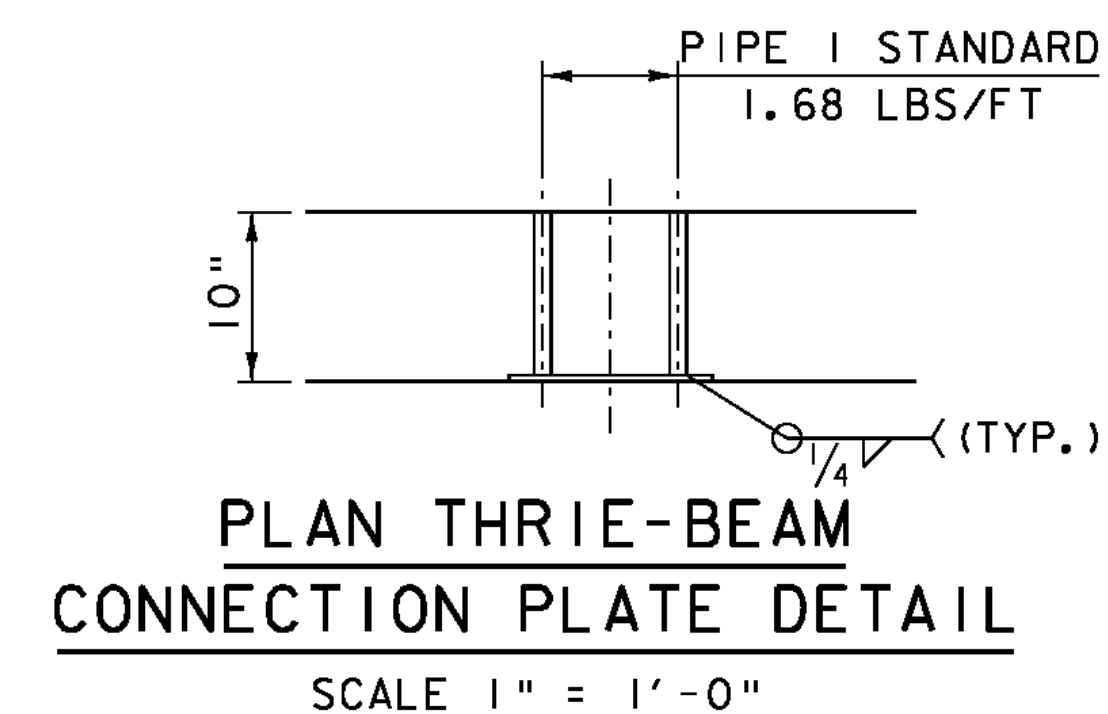
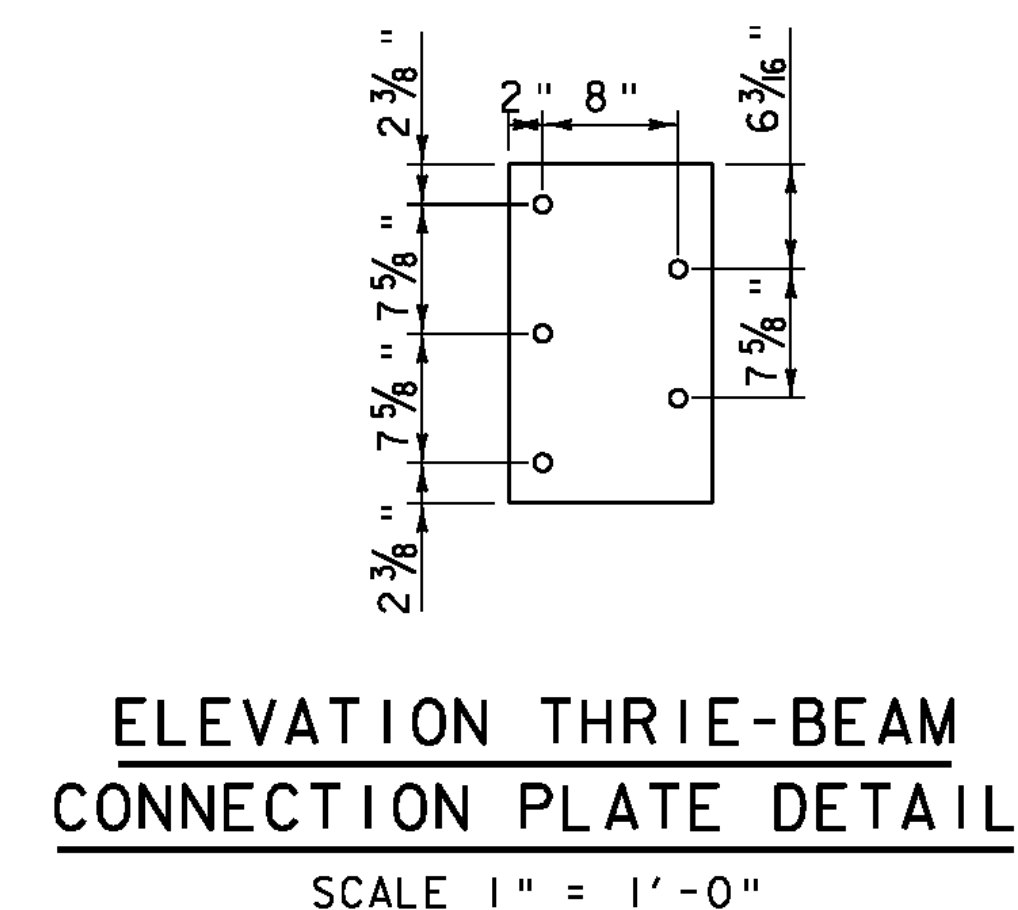
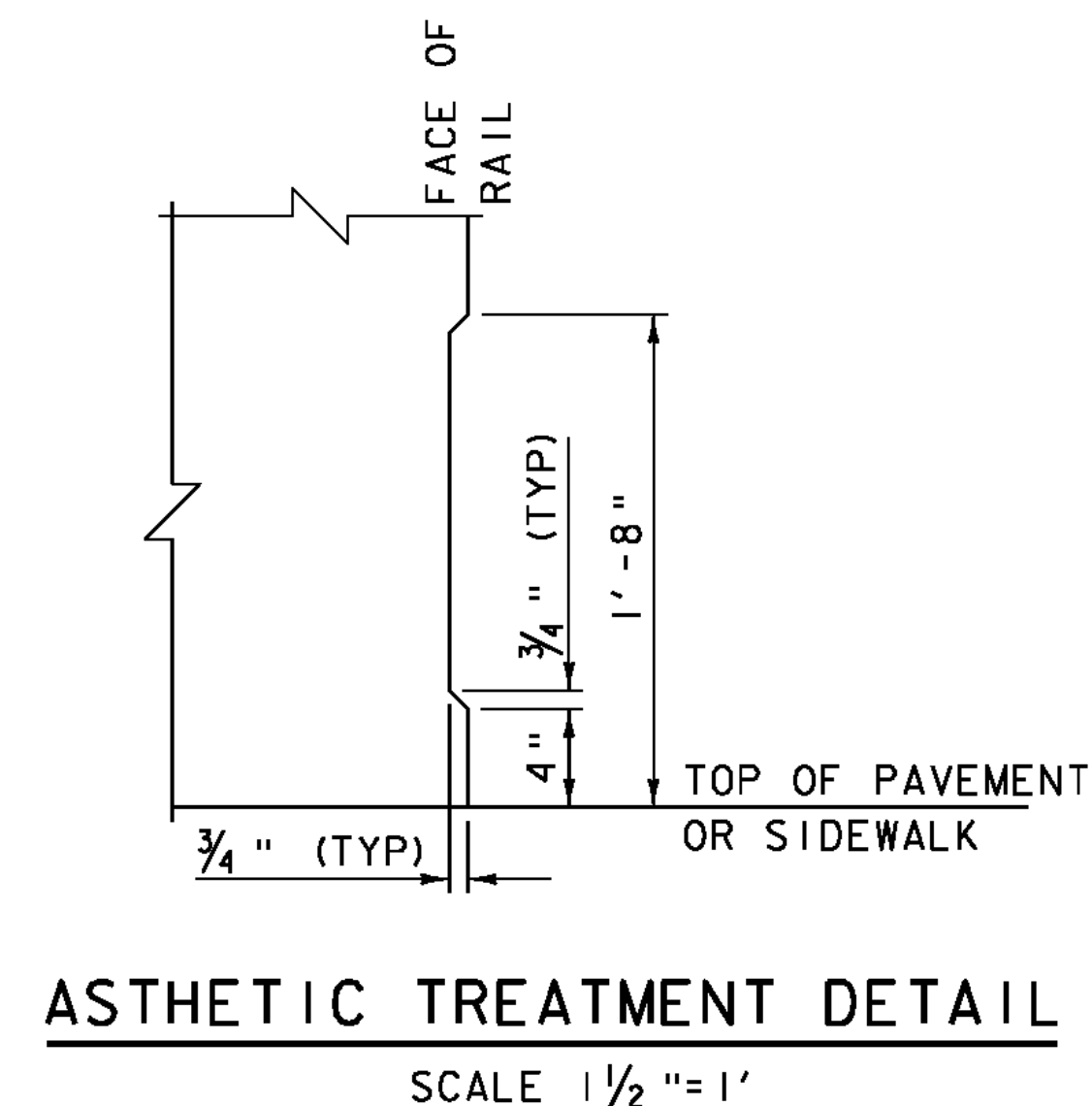
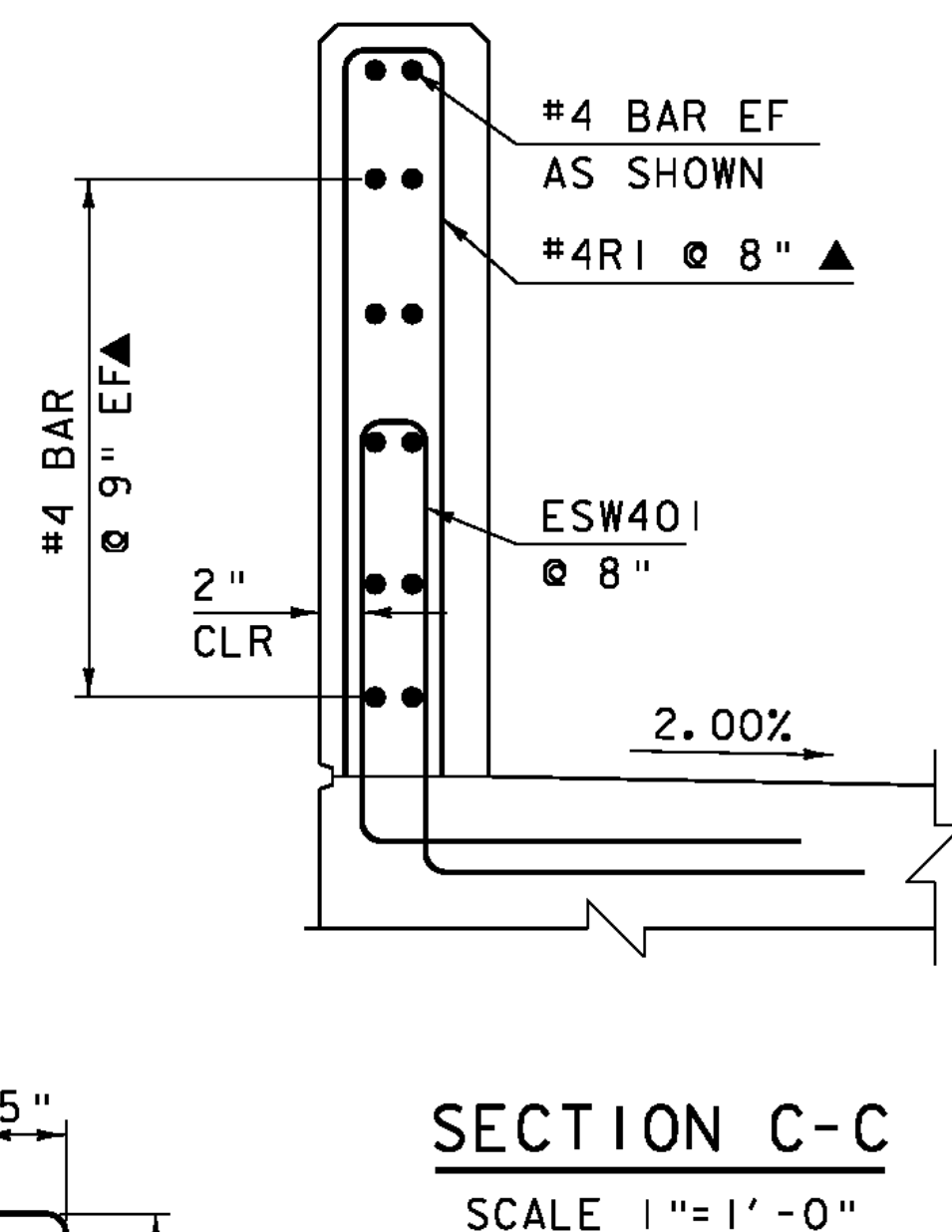
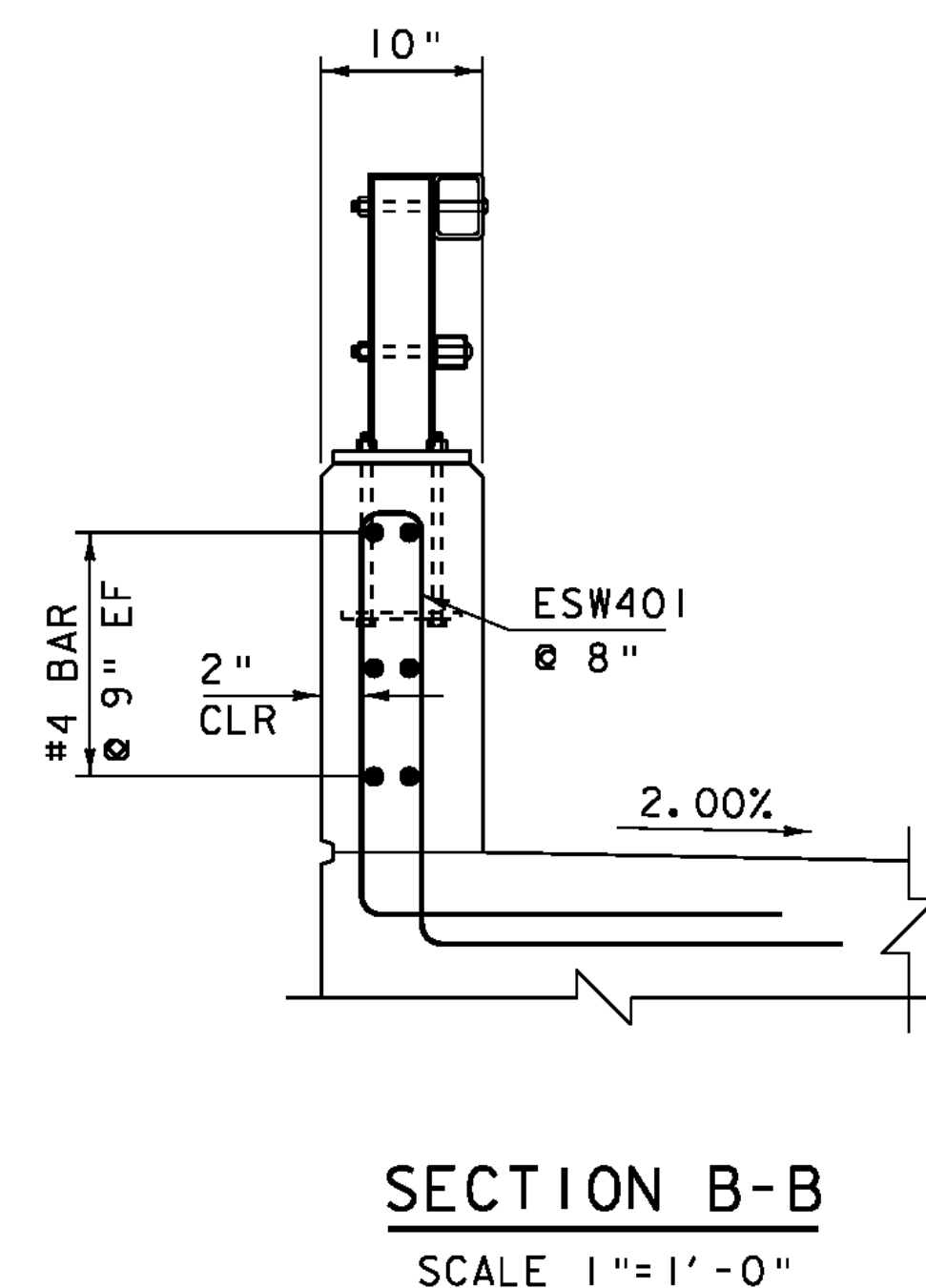
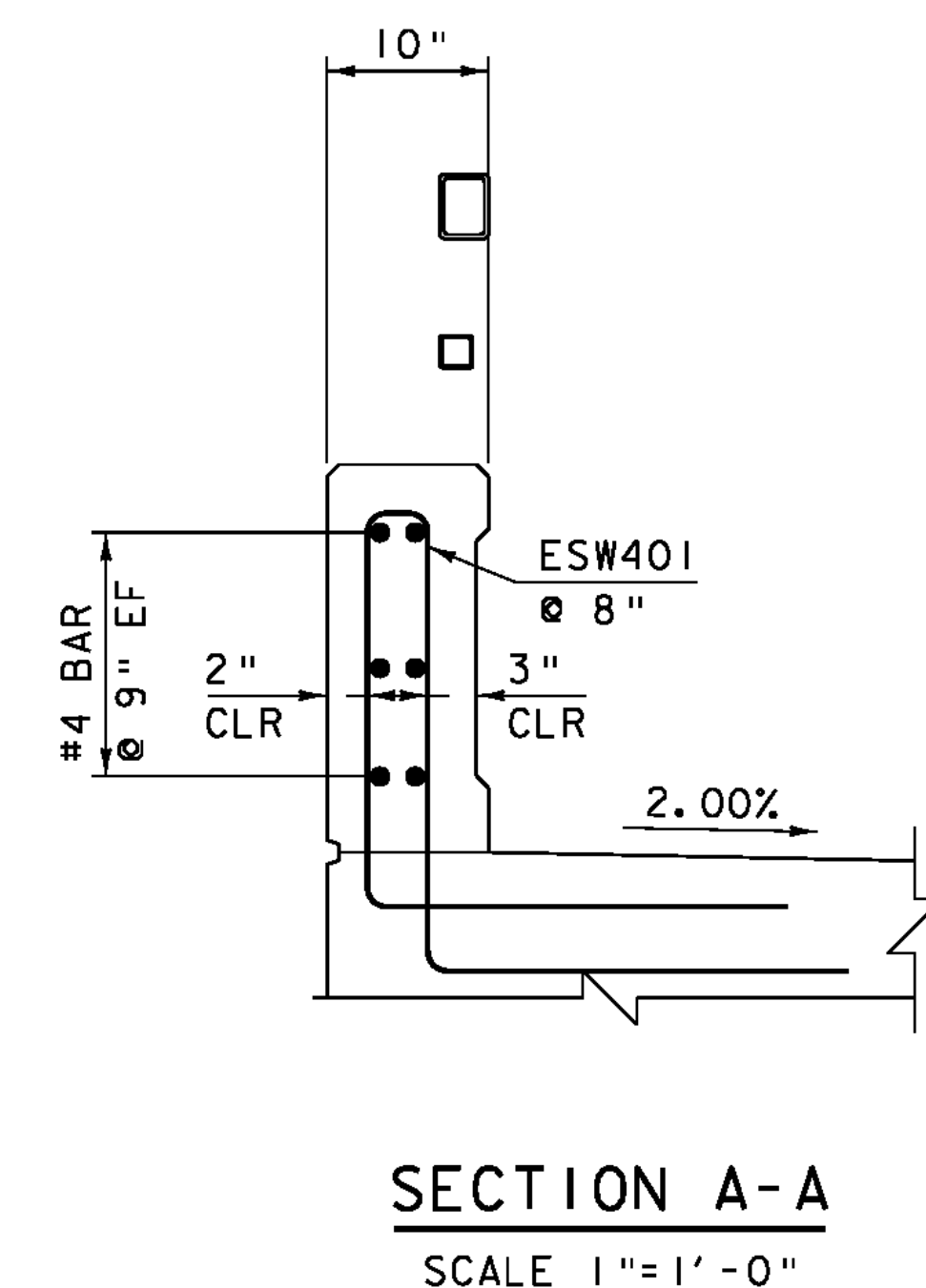
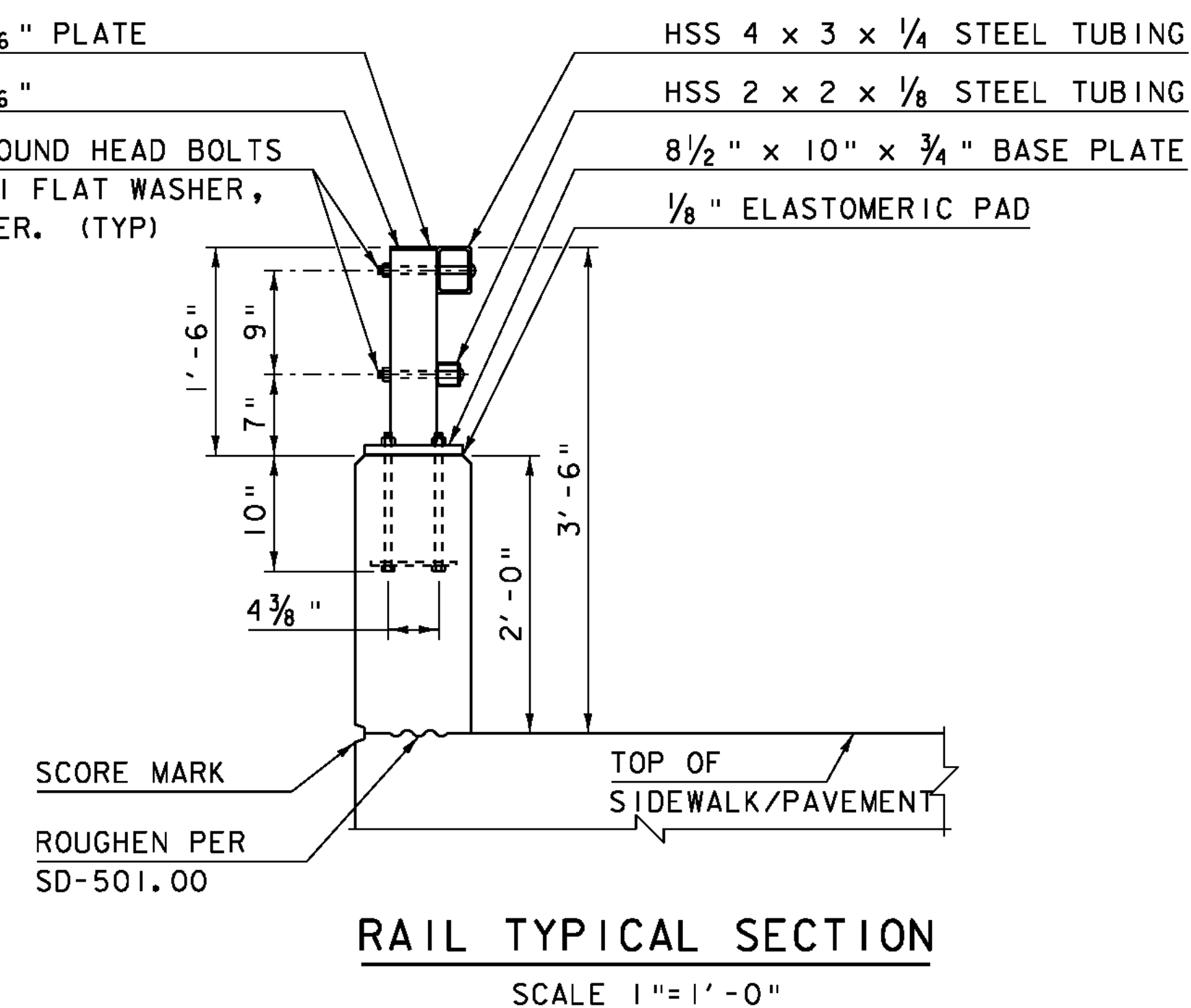
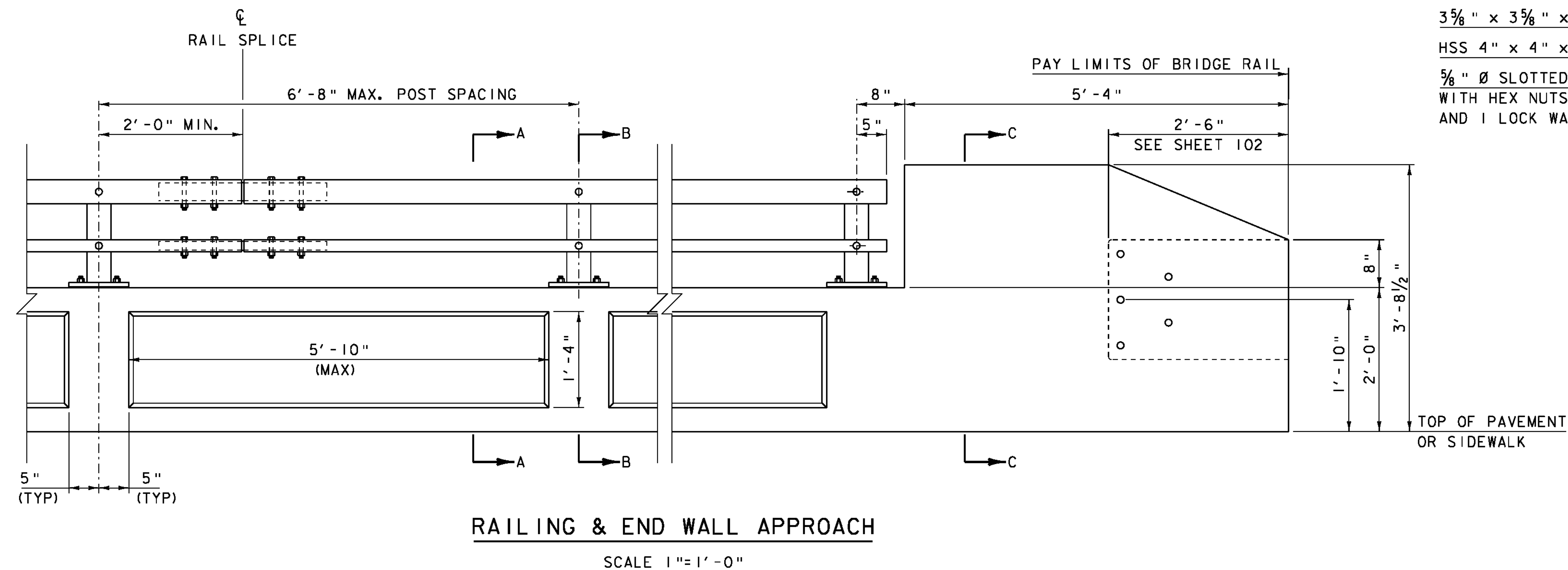
SCALE 1/2" = 1'-0"



PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

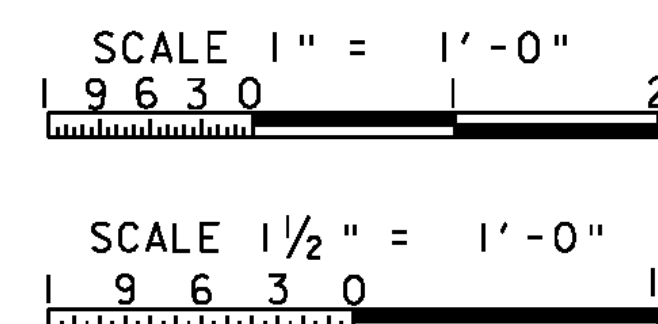
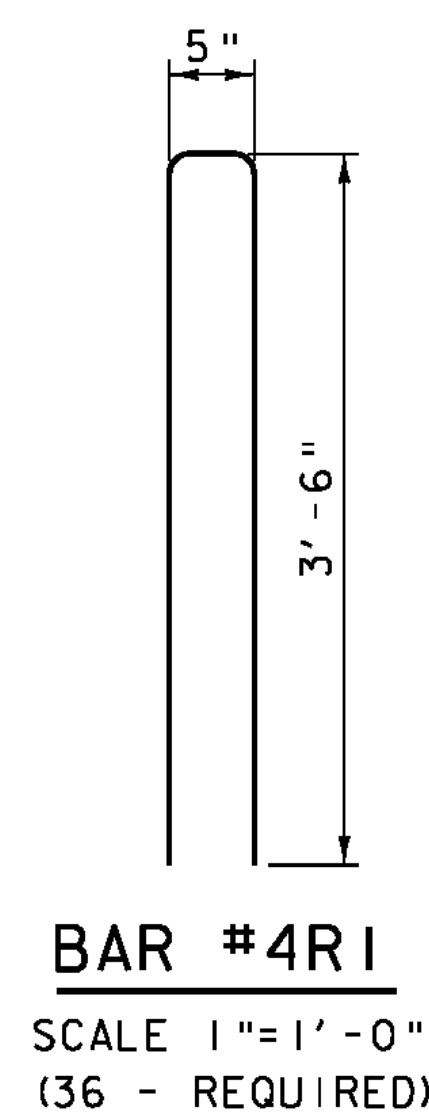
FILE NAME: 95bl68\s95bl68slab.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
BRIDGE 9 PRECAST APPROACH SLAB LAYOUT SHEET 99 OF 124

PLOT DATE: 21-SEP-2010  
DRAWN BY: D.D.BEARD  
CHECKED BY: R.S.YOUNG



NOTES:

- BRIDGE RAIL SHALL HAVE A RUBBED FINISH IN ACCORDANCE WITH SECTION 501.
- HOLES AND RECESSES ARE TO BE FORMED OR CORED, PERCUSSION DRILLING IS NOT ALLOWED



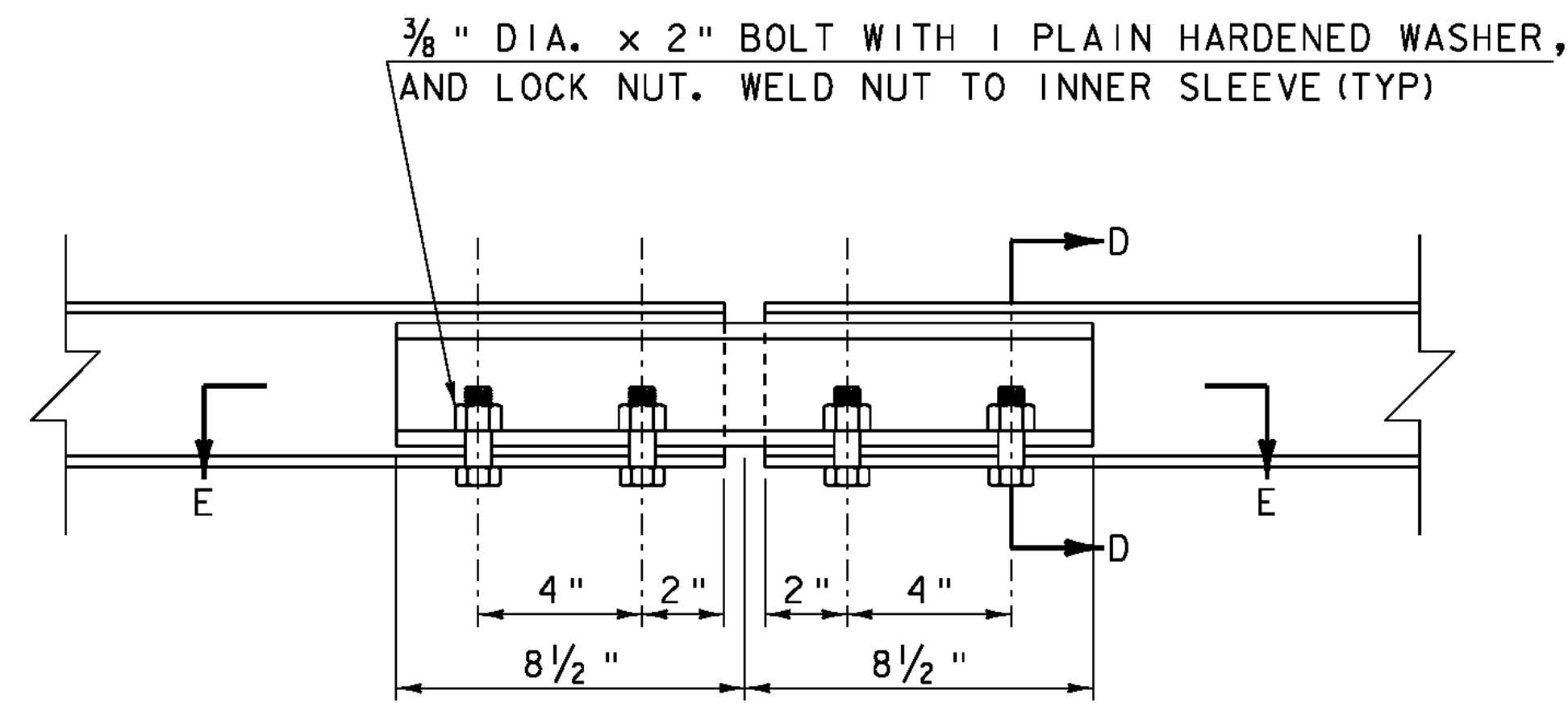
NOTE:

- 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.

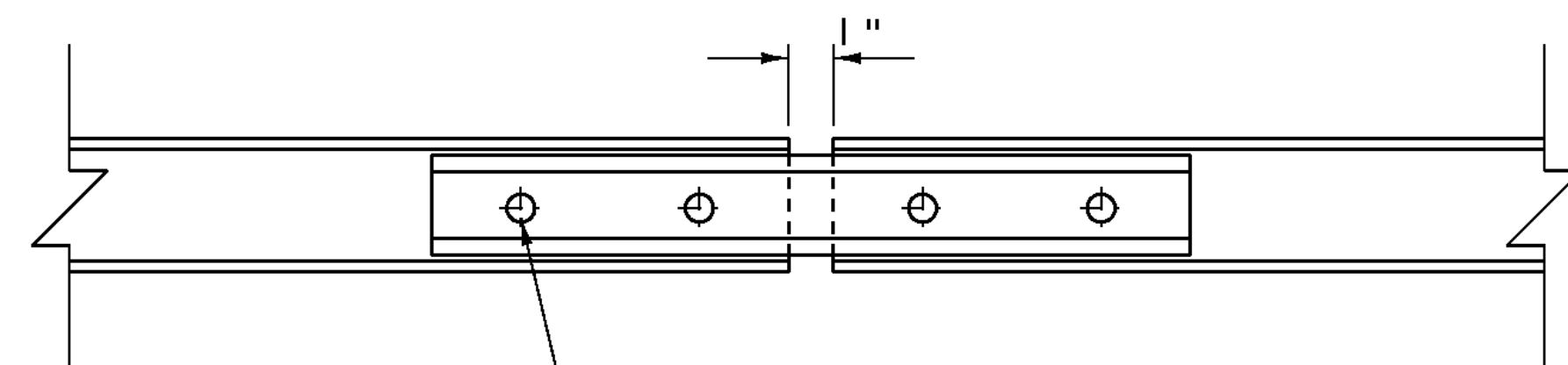
PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

FILE NAME: s95bl68rail.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
BRIDGE 9 BRIDGE RAIL DETAIL 1

PLOT DATE: 20-SEP-2010  
DRAWN BY: D.D.BEARD  
CHECKED BY: H.I.SALLS  
SHEET 100 OF 124

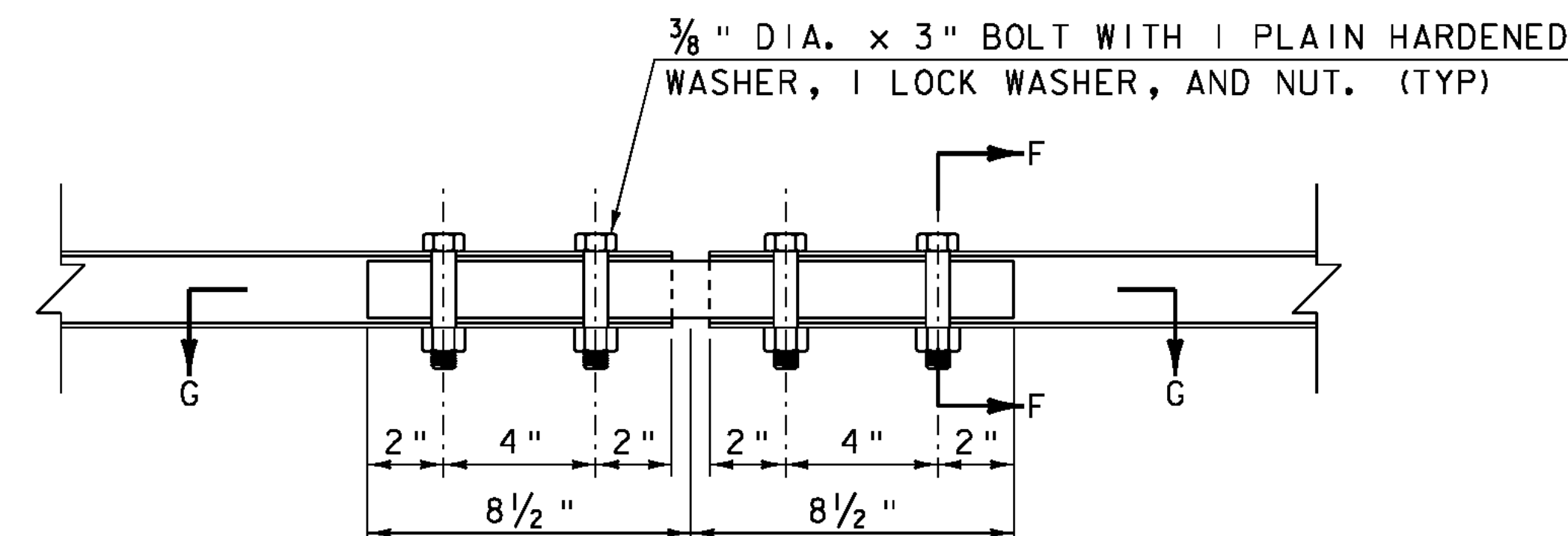


**TOP RAIL SPLICE DETAIL**

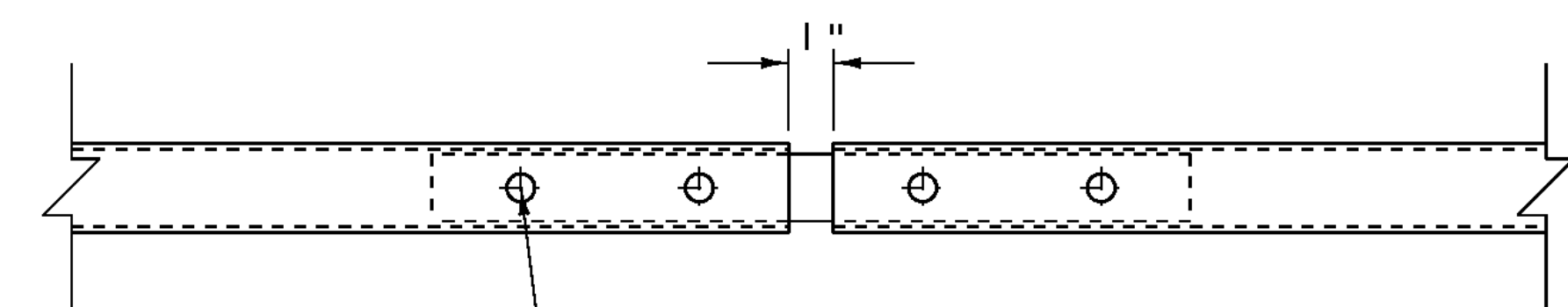


1/2" DIA. HOLE IN SPLICE ELEMENT  
AND HSS 4" x 3" x 1/4". (TYP)

**SECTION E-E**

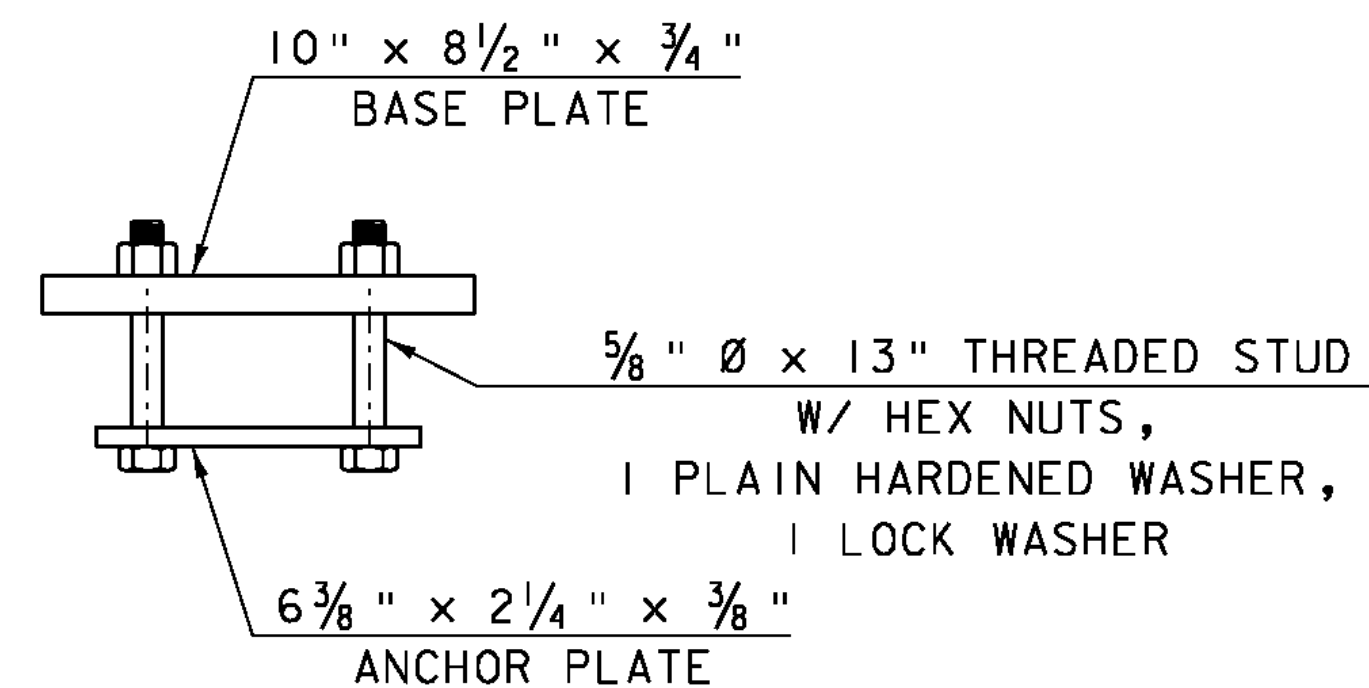


**BOTTOM RAIL SPLICE DETAIL  
ELEVATION VIEW**



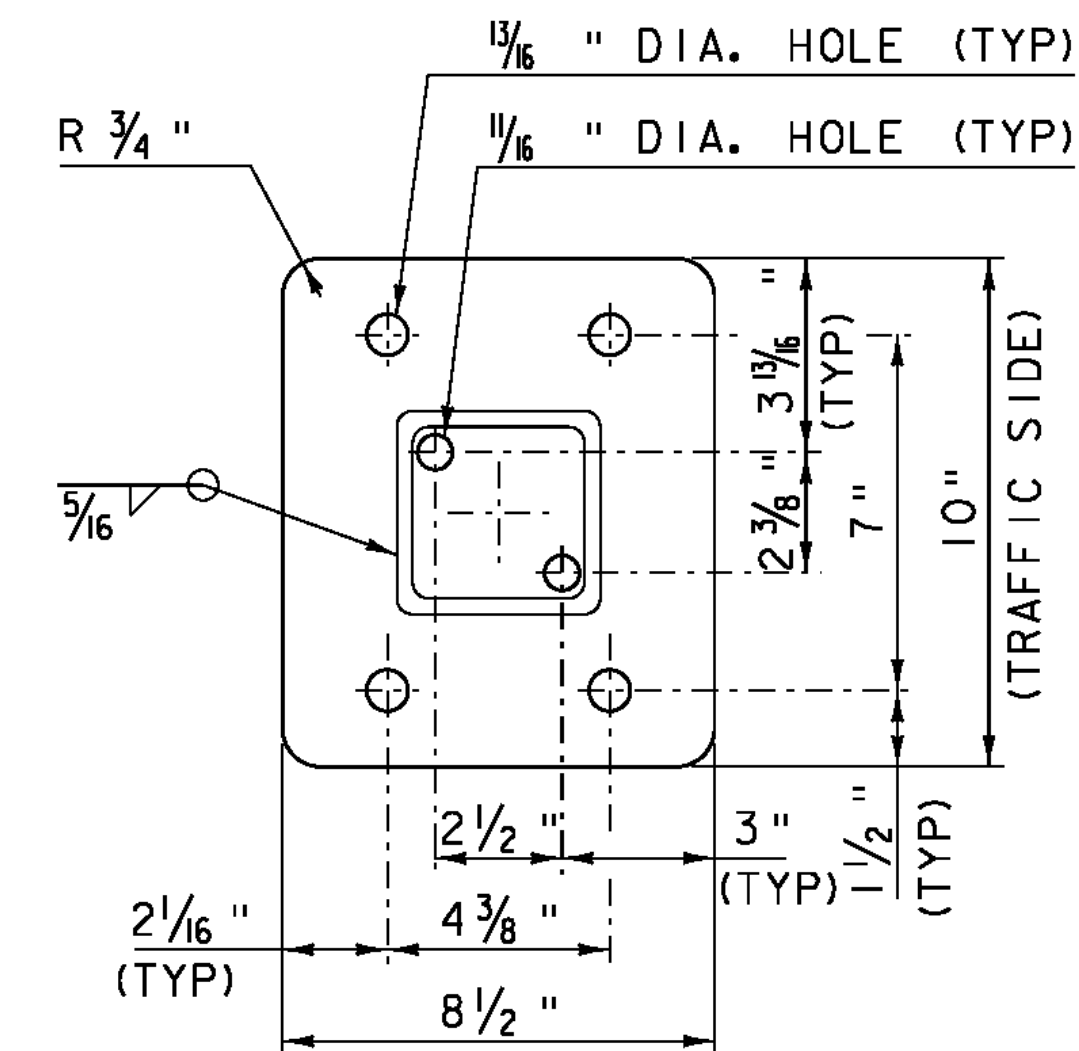
1/2" DIA. HOLE IN SPLICE ELEMENT  
AND HSS 2" x 2" x 1/8". (TYP)

**SECTION G-G**



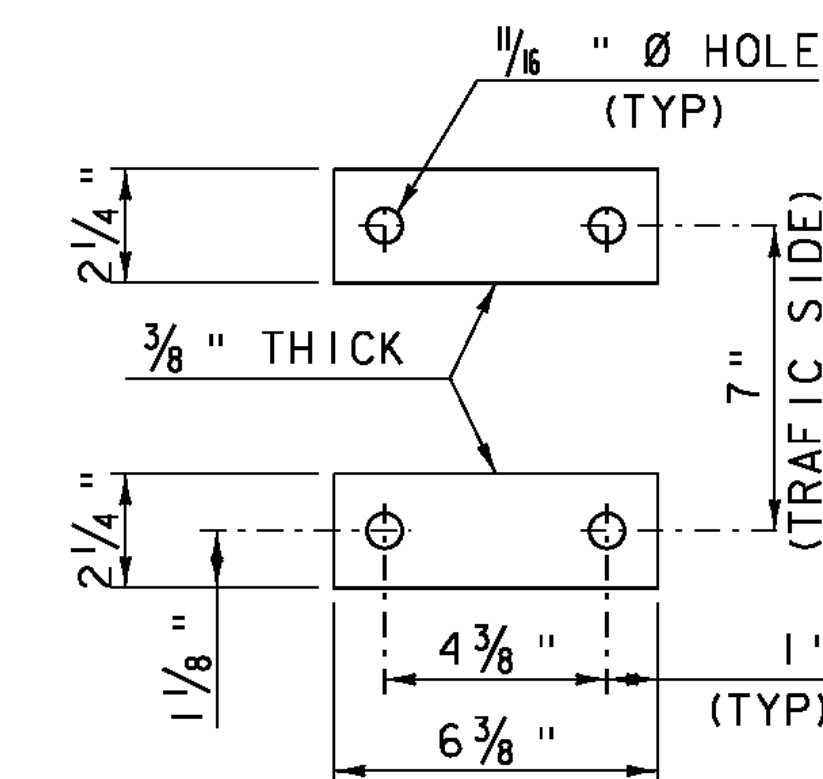
**RAIL POST ANCHORAGE**

N. T. S.



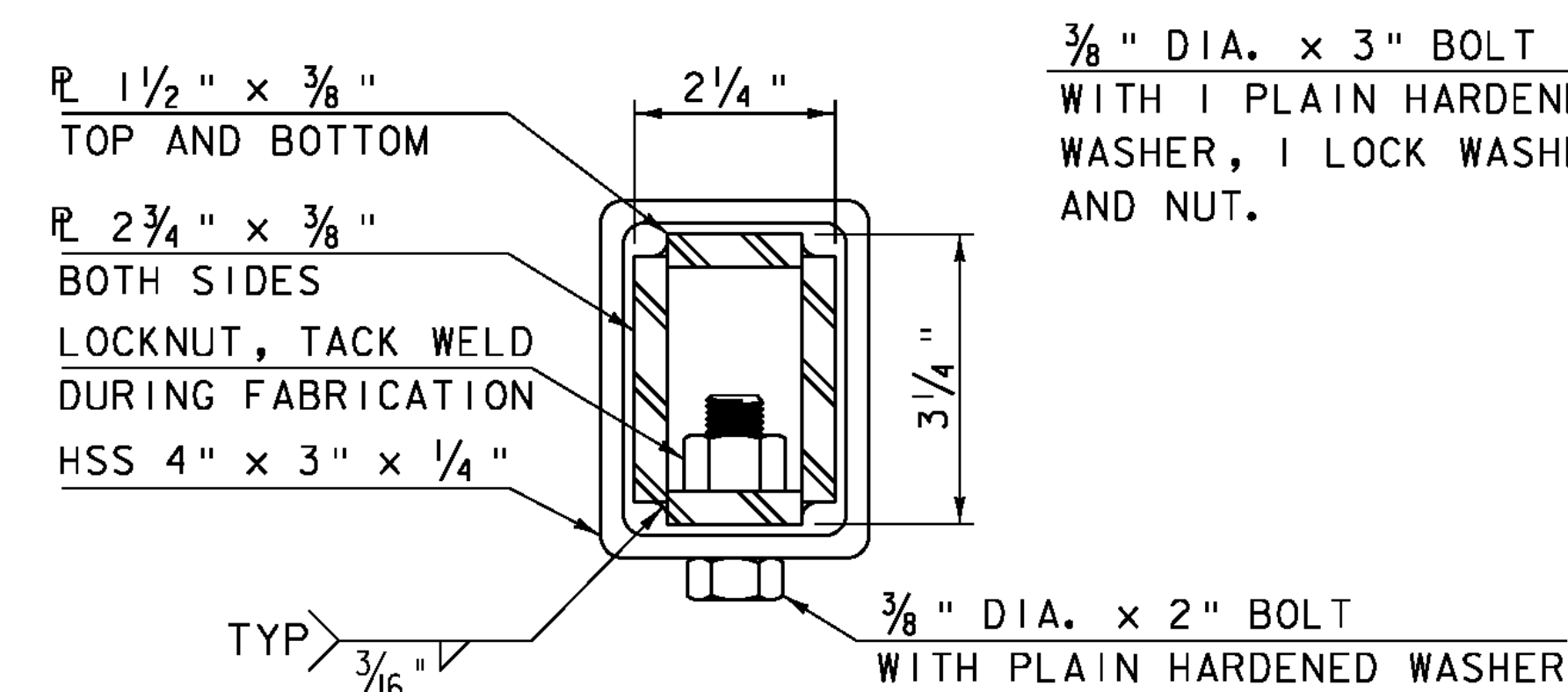
**BASE PLATE**

N. T. S.



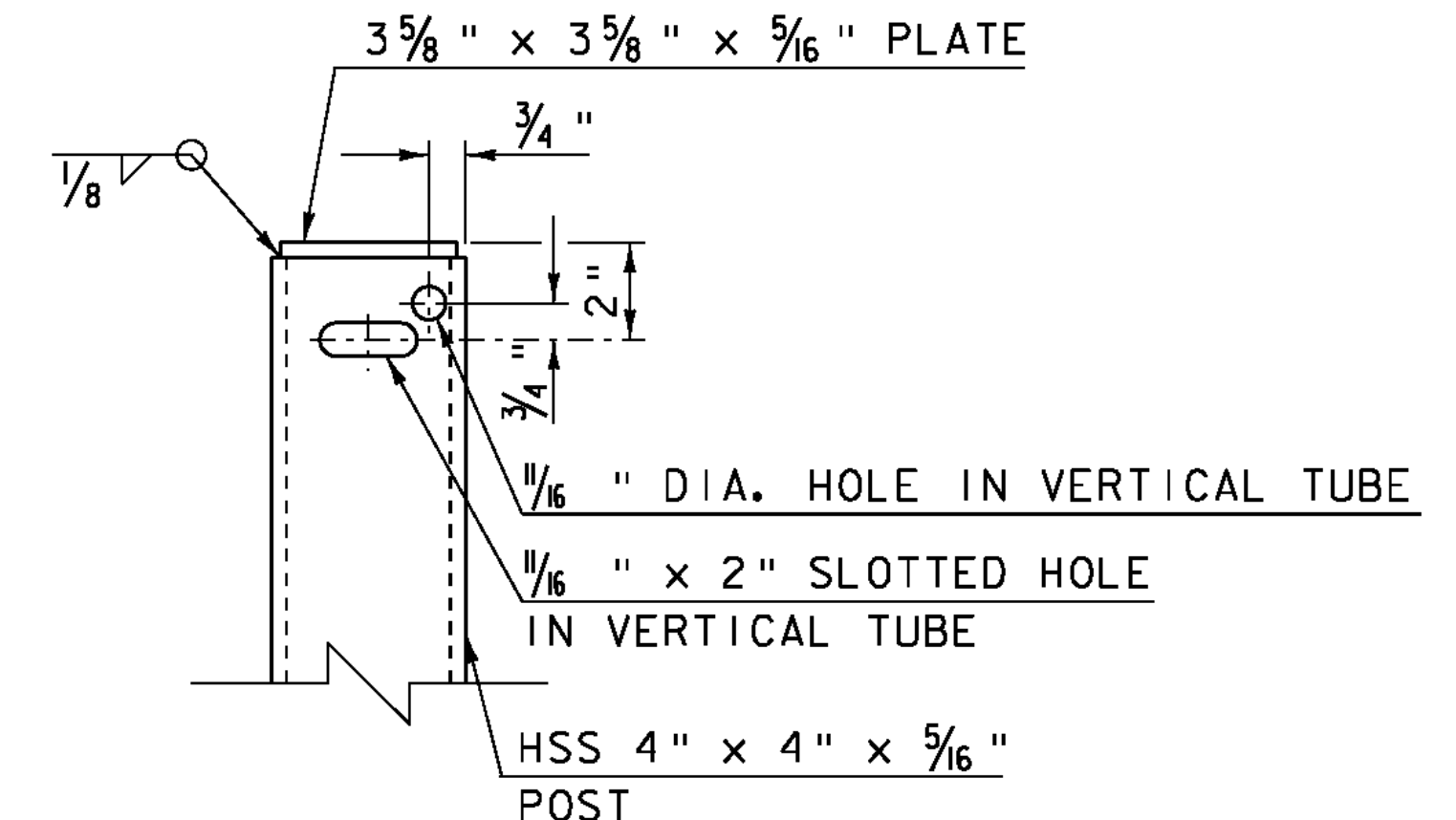
**ANCHOR PLATES**

N. T. S.



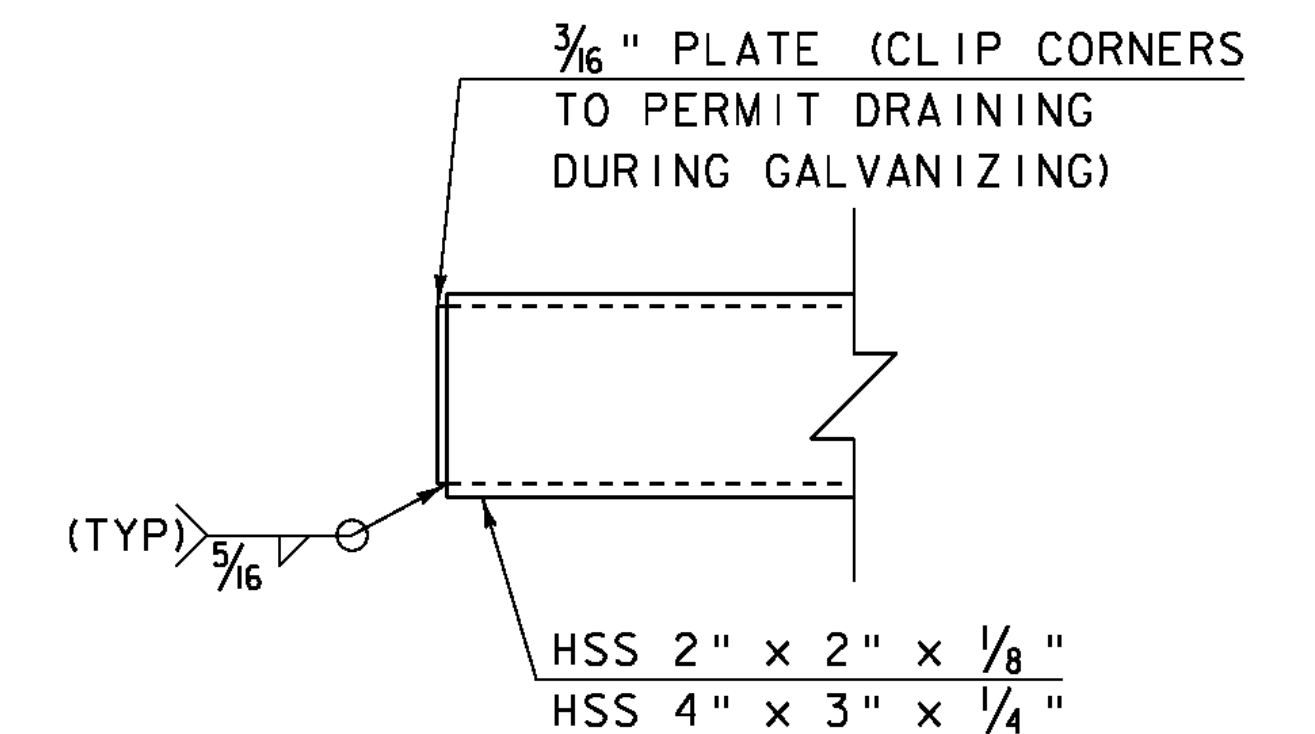
**SECTION D-D  
(INNER SLEEVE)**

N. T. S.



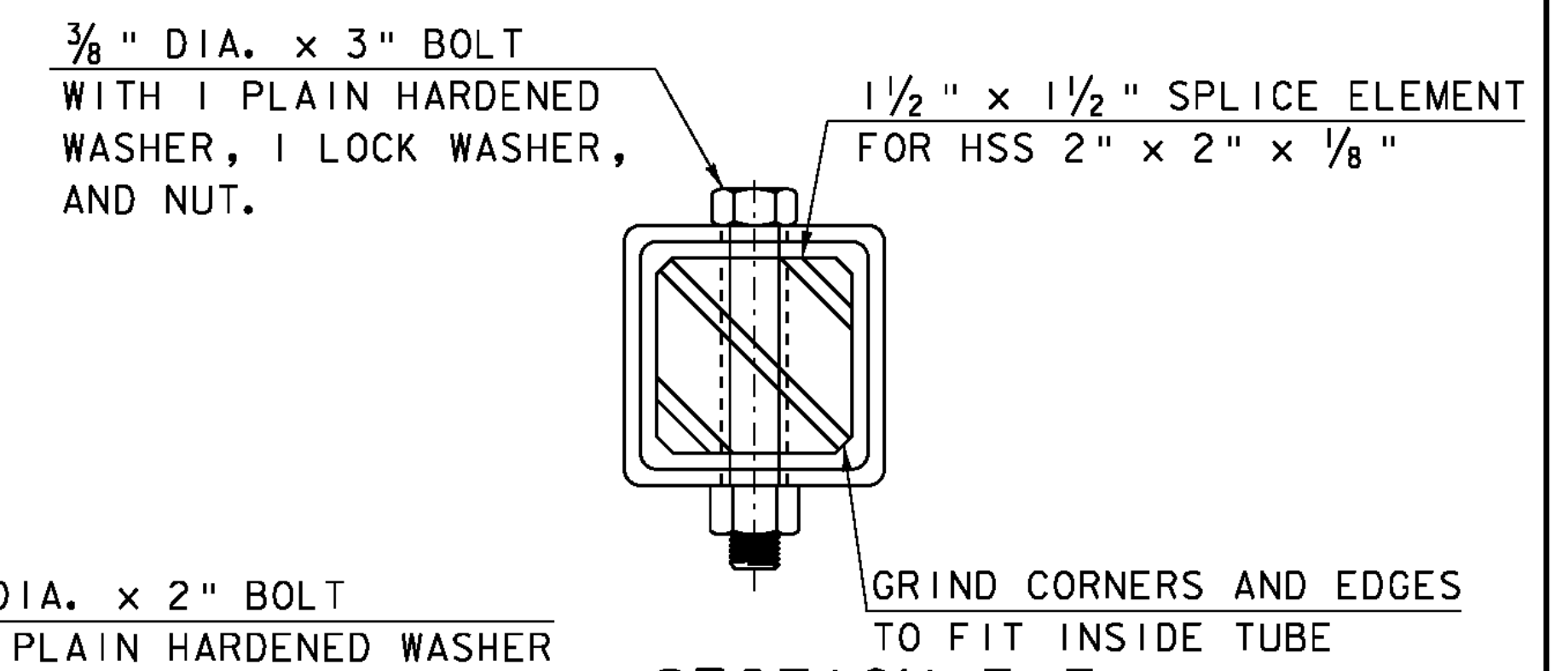
**VERTICAL TUBE DETAIL  
(FRONT VIEW)**

N. T. S.



**END OF RAIL DETAIL**

N. T. S.



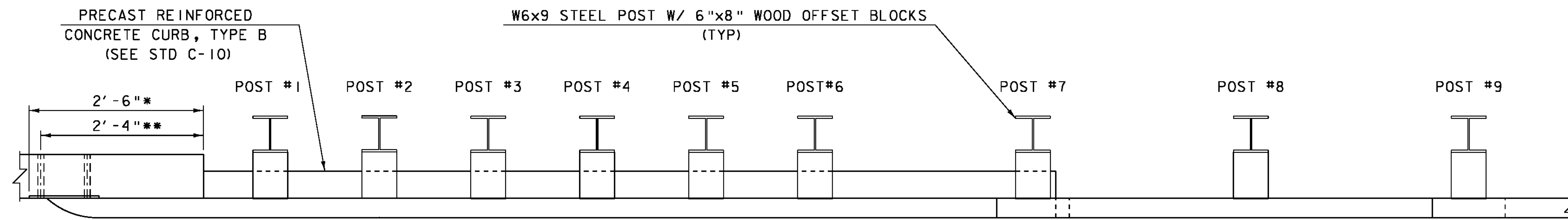
**SECTION F-F**

N. T. S.

PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

FILE NAME: s95bl68rail.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
BRIDGE 9 BRIDGE RAIL DETAIL 2

PLOT DATE: 20-SEP-2010  
DRAWN BY: D.D.BEARD  
CHECKED BY: H.I.SALLS  
SHEET 101 OF 124

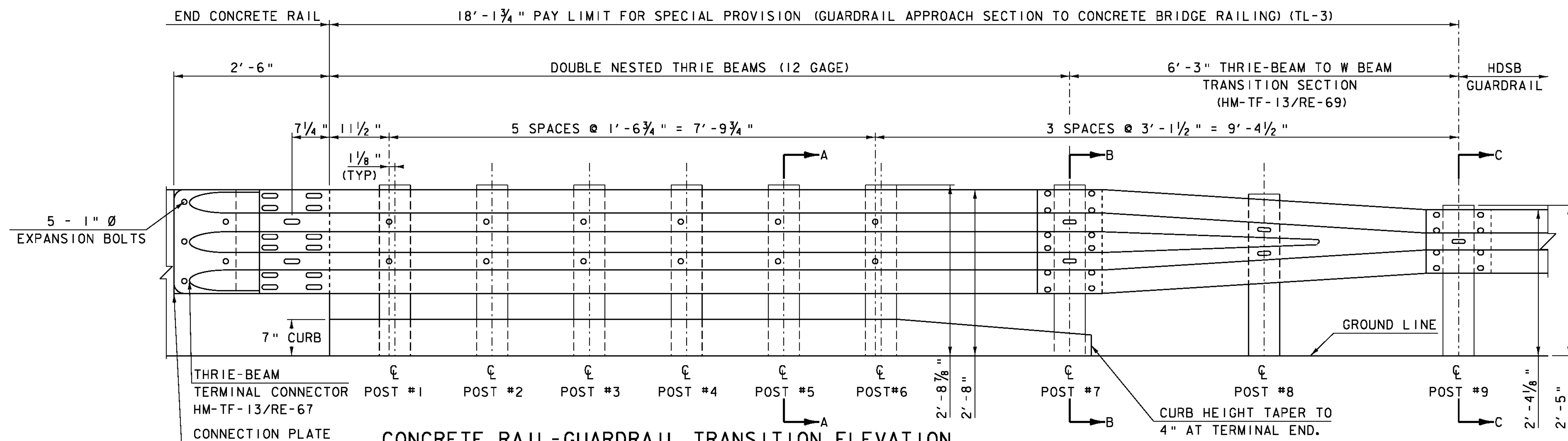


\* THIS DIMENSION WILL BE  
1'-11 1/2" ON WINGWALL #3

\*\* THIS DIMENSION WILL BE  
1'-9 1/2" ON WINGWALL #3

### CONCRETE RAIL-GUARDRAIL TRANSITION PLAN

SCALE 1" = 1'-0"



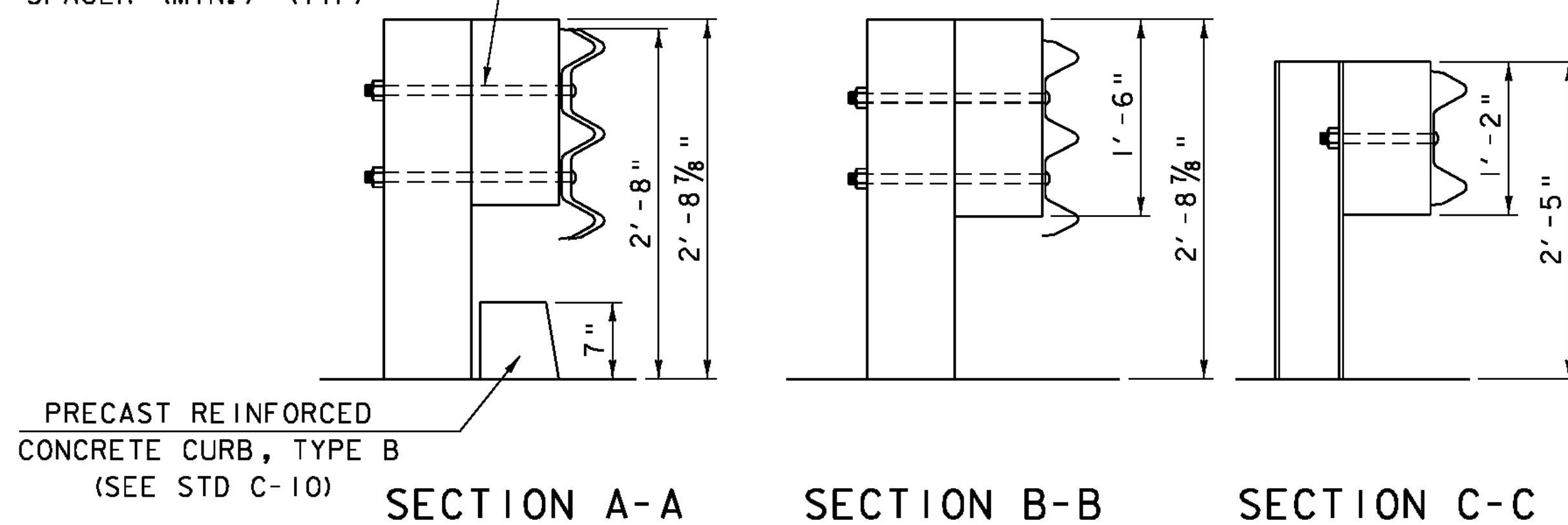
### CONCRETE RAIL-GUARDRAIL TRANSITION ELEVATION

SCALE 1" = 1'-0"

#### NOTE:

1. THRIE-BEAM TERMINAL CONNECTOR SHALL BE INCLUDED IN THE UNIT BID PRICE OF ITEM 900.620 SPECIAL PROVISION (GUARDRAIL APPROACH SECTION TO CONCRETE BRIDGE RAILING) (TL3). THE CONNECTION PLATE AND PIPE SHALL BE INCLUDED IN THE UNIT BID PRICE OF ITEM 900.640 SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION).
2. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, A COMPOSITE MATERIAL POST AND/OR BLOCKOUT FROM THE APPROVED PRODUCTS LIST MAY BE SUBSTITUTED FOR A POST AND/OR BLOCKOUT OF SIMILAR DIMENSIONS.
3. REFER TO STANDARD DRAWINGS G-1 AND G-1D FOR ADDITIONAL DETAILS.

5/8" POST BOLTS (A307) WITH  
1 3/4" O.D. WASHER AND NUT.  
5/8" DIA. HOLE IN POST AND  
SPACER (MIN.) (TYP)



#### SECTION A-A

#### SECTION B-B

#### SECTION C-C

SCALE 1" = 1'-0"  
1 9 6 3 0

PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

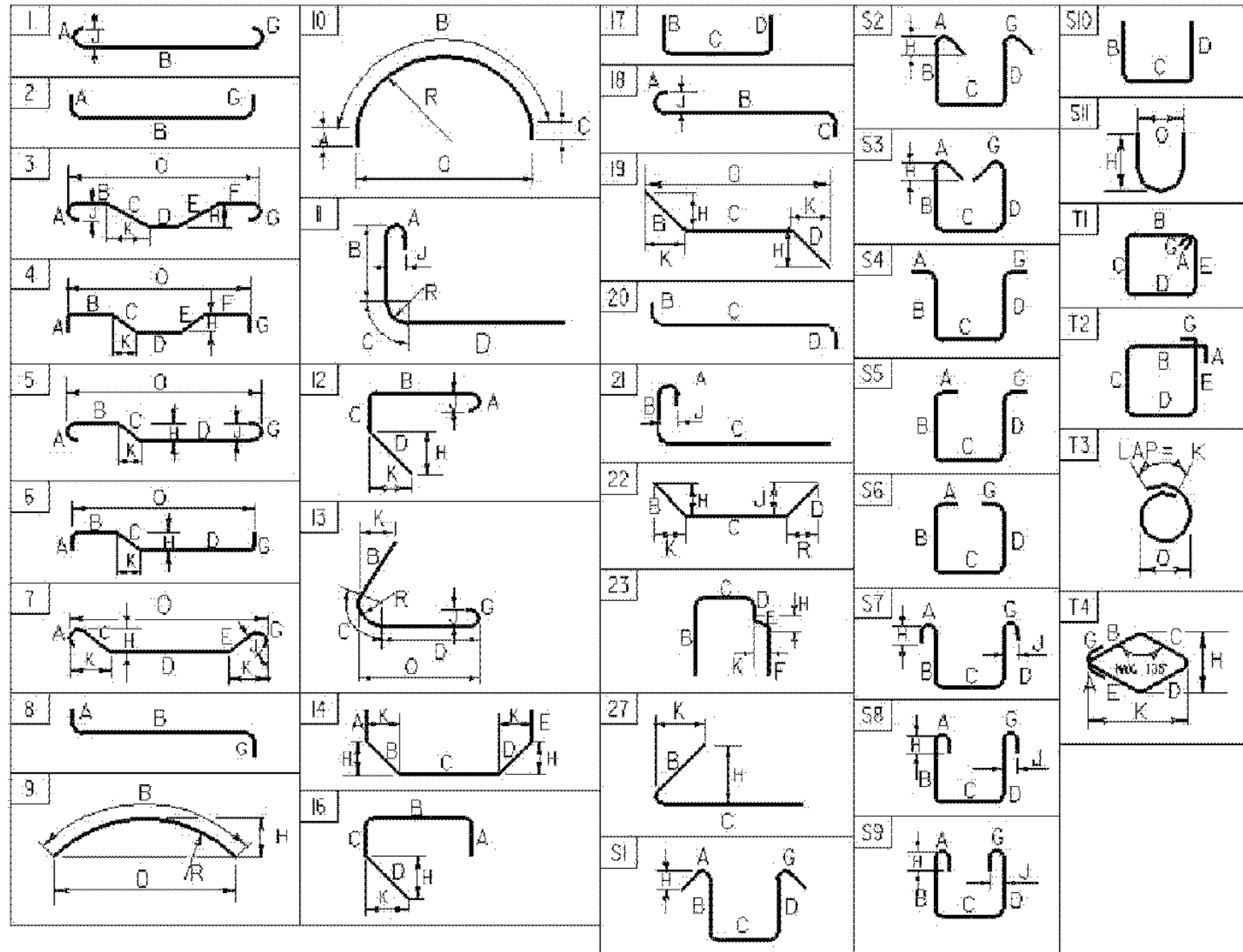
FILE NAME: s95b168rail.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
TL-3 TRANSITION RAIL DETAILS

PLOT DATE: 20-SEP-2010  
DRAWN BY: D.D.BEARD  
CHECKED BY: H.I.SALLS  
SHEET 102 OF 124

# REINFORCING STEEL SCHEDULE

[illegible]

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<br>REINFORCING BARS |                              |                                  |                             |                     |
|-----------------------------------|------------------------------|----------------------------------|-----------------------------|---------------------|
| BAR SIZE<br>DESIGNA-<br>TION      | WEIGHT<br>POUNDS<br>PER FOOT | NOMINAL DIMENSIONS FOUND SECTION |                             |                     |
|                                   |                              | DIAMETER<br>INCHES               | AREA<br>INCHES <sup>2</sup> | PERIMETER<br>INCHES |
| #3                                | 0.376                        | 0.375                            | 0.11                        | 1.178               |
| #4                                | 0.668                        | 0.500                            | 0.20                        | 1.571               |
| #5                                | 1.043                        | 0.625                            | 0.31                        | 1.963               |
| #6                                | 1.502                        | 0.750                            | 0.44                        | 2.356               |
| #7                                | 2.044                        | 0.875                            | 0.60                        | 2.749               |
| #8                                | 2.670                        | 1.000                            | 0.79                        | 3.142               |
| #9                                | 3.400                        | 1.128                            | 1.00                        | 3.544               |
| #10                               | 4.303                        | 1.270                            | 1.27                        | 3.990               |
| #11                               | 5.313                        | 1.410                            | 1.56                        | 4.430               |
| #14                               | 7.65                         | 1.693                            | 2.25                        | 5.32                |
| #18                               | 13.60                        | 2.257                            | 4.00                        | 7.09                |

|                                            |                                |                                |
|--------------------------------------------|--------------------------------|--------------------------------|
| PROJECT NAME:                              | <b>CHESTER</b>                 |                                |
| PROJECT NUMBER:                            | <b>BRF 025-1(37)</b>           |                                |
| <hr/>                                      |                                |                                |
| FILE NAME:                                 | <b>W95b168s95b168excel.dgn</b> | PLOT DATE: <b>8/31/2010</b>    |
| PROJECT MANAGER:                           | <b>C.P.WILLIAMS</b>            | DRAWN BY: <b>D.D.BEARD</b>     |
| DESIGNED BY:                               | <b>R.S.YOUNG</b>               | CHECKED BY: <b>R.S.YOUNG</b>   |
| <b>BRIDGE 9 REINFORCING STEEL SCHEDULE</b> |                                | SHEET <b>103</b> OF <b>124</b> |

REMOVING SIGNS

12+11.10 RT  
12+29.00 RT  
12+45.20 RT  
12+51.15 LT (X2)  
12+57.60 LT (X12)  
12+58.90 LT  
13+74.65 RT  
13+76.10 RT  
13+82.50 RT  
13+96.10 LT  
14+28.00 LT (X3)  
20+20.00 LT (NARROW BRIDGE)  
52+25.05 LT (X2)

TRAFFIC SIGNS, TYPE A

12+12.65 RT  
12+34.10 RT  
12+54.75 LT (X2)  
12+73.30 LT (X12)  
13+86.20 RT  
14+26.20 LT (X3)  
52+25.05 LT (X2)

SQUARE TUBE SIGN  
POST AND ANCHOR

12+12.65 RT (X2)  
12+34.10 RT  
12+54.75 LT  
12+73.30 LT (X2)  
13+86.20 RT  
14+26.20 LT  
52+25.05 LT

4" WHITE LINE  
11+00.00 LT - 30+75.00 RT  
11+00.00 RT - 13+93.40 RT  
30+75.00 LT - 15+50.00 LT  
14+57.50 RT - 15+50.00 LT  
4" YELLOW LINE (DBL)  
11+00.00 - 11+61.90 CL  
12+39.50 - 13+93.40 CL  
14+57.50 - 15+50.00 CL  
30+75.00 - 31+58.00 CL  
52+50.00 - 53+00.00 CL  
DURABLE 24" STOP BAR  
11+83.50 - 12+16.20 LT  
14+14.60 - 14+58.00 RT  
DURABLE LETTER OR SYMBOL  
12+05 LT (X4)  
14+20 RT (X4)  
DURABLE CROSSWALK MARKING  
11+68.70 - 12+41.70 LT

CROSSWALK  
NOT INSTALLED

SIGN NOT REUSED  
DUE TO CONDITION

TRAFFIC SIGNS AND PAVEMENT MARKINGS

NOTE: EXISTING SIGN POSTS  
MEET TEI 08-201

LEGEND

RET: RETAIN  
N: NEW  
R: REMOVE  
R&S: REMOVE AND SALVAGE  
S: SALVAGE SIGN  
B-B: BACK TO BACK

PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37)

FILE NAME: 95b168\95b168sign.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
BRIDGE 9 SIGNS AND PAVEMENT MARKINGS

PLOT DATE: 20-SEP-2010  
DRAWN BY: D.D.BEARD  
CHECKED BY: R.S.YOUNG  
SHEET 104 OF 124

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

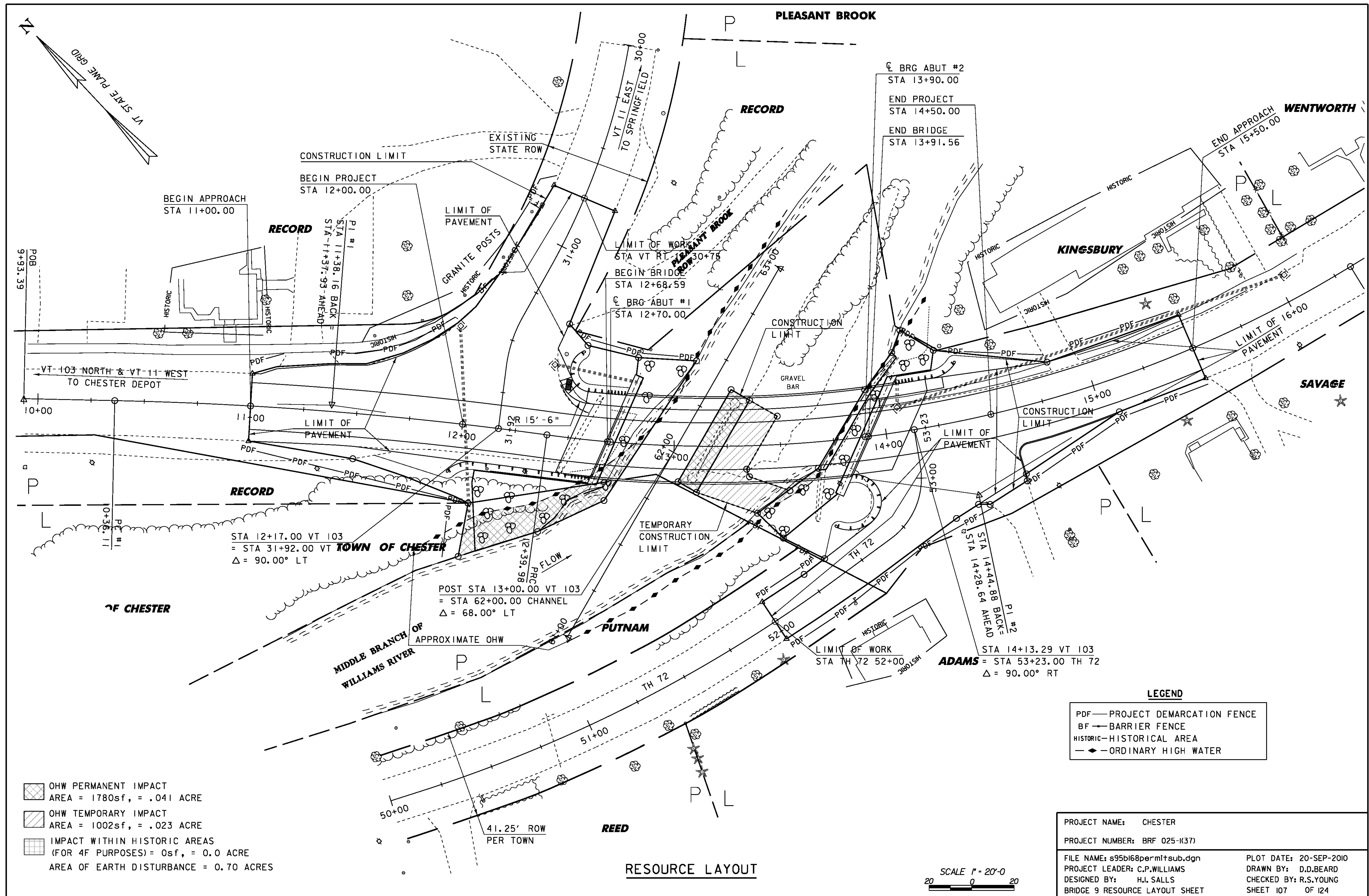
STATE OF VERMONT  
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

| MILEMARKER,<br>STATION,<br>OR<br>SIGN NUMBER                                                                                                                                                                                | SIGN<br>LEGEND                                                                      | SIGN<br>DIMENSIONS |                |                | NEW & SALVAGED SIGNS |     |              |             | EXIST<br>POST<br>RETAIN<br>SALVAGE |    | NO.<br>OF<br>POSTS | NEW SIGN POSTS  |      |      |              |       |       |       |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         |                                                        | REMARKS                                                                          | SIGN DETAIL  |       |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------|----------------|----------------|----------------------|-----|--------------|-------------|------------------------------------|----|--------------------|-----------------|------|------|--------------|-------|-------|-------|------------------|------------|-----------------|---------------|-------|-------|-------|---------------|-----------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------|--------------|-------|--|
|                                                                                                                                                                                                                             |                                                                                     |                    |                |                |                      |     |              |             |                                    |    |                    | FLANGED CHANNEL |      |      | SQUARE STEEL |       |       |       | TUBULAR ALUMINUM |            |                 | TUBULAR STEEL |       |       |       | W-SHAPE STEEL |           |       | DETAIL<br>IN<br>SHS                                                                                                                                                                               | DETAIL<br>ON SHEET<br>NUMBER | STD.<br>SHEET<br>NUMBER |                                                        |                                                                                  |              |       |  |
|                                                                                                                                                                                                                             |                                                                                     | EA                 | WIDTH<br>(in)  | HEIGHT<br>(in) | "A"                  | "B" | SALV<br>SIGN | SALV<br>TIS |                                    |    |                    | lb/ft           |      |      | in           |       |       | in    |                  |            | in              |               |       | in    |       |               | FTG. SIZE |       |                                                                                                                                                                                                   |                              |                         | WEIGHT                                                 |                                                                                  | POST<br>SIZE |       |  |
|                                                                                                                                                                                                                             |                                                                                     |                    |                |                |                      |     |              |             |                                    |    |                    | 1.12            | 2.0  | 3.0  | 1.75         | 2.0   | 2.5   | 3.0   | 4.0              | 4.0<br>MOD | FOUND-<br>ATION | 3.0           | 3.5   | 4.0   | 5.0   | 24"           | 30"       |       |                                                                                                                                                                                                   |                              |                         |                                                        |                                                                                  |              |       |  |
|                                                                                                                                                                                                                             |                                                                                     |                    |                |                |                      |     |              |             |                                    |    |                    | 1.88            | 2.42 | 3.35 | lb/ft        | lb/ft | lb/ft | lb/ft | lb/ft            | lb/ft      |                 | lb/ft         | lb/ft | lb/ft | lb/ft | lb/ft         | lb/ft     | lb/ft |                                                                                                                                                                                                   |                              |                         |                                                        |                                                                                  |              |       |  |
| OPTION ITEMS                                                                                                                                                                                                                |                                                                                     |                    |                |                |                      |     |              |             |                                    |    |                    |                 |      |      |              |       |       |       |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         |                                                        |                                                                                  |              |       |  |
| I2+I2.65 RT                                                                                                                                                                                                                 |    | I                  | 48             | 24             | 8                    |     |              |             |                                    |    | 2                  |                 |      |      |              | X     |       | X     |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         | WI-7                                                   | X                                                                                |              |       |  |
| I2+34.10 RT                                                                                                                                                                                                                 |    | I                  | 6              | 8              | .33                  |     |              |             |                                    |    | I                  |                 |      |      | X            |       |       | X     |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         | VD-701                                                 |                                                                                  |              | E-I34 |  |
| I2+54.75 LT                                                                                                                                                                                                                 |    | I                  | 42             | 12             | 3.5                  |     |              |             |                                    |    | I                  |                 |      |      |              | X     |       | X     |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         | D3-1<br>MOUNTED OVER RI-1                              | X                                                                                |              |       |  |
|                                                                                                                                                                                                                             |    | I                  | 42             | 12             | 3.5                  |     |              |             |                                    |    |                    |                 |      |      |              |       |       |       |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         | D3-1<br>MOUNTED OVER RI-1                              | X                                                                                |              |       |  |
| I2+73.30 LT                                                                                                                                                                                                                 |    | I                  | 24             | 12             | 2                    |     |              |             |                                    |    | 2                  |                 |      |      |              |       | X     | X     |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         | M3-1<br>GREEN ON WHITE SHEETING                        | X                                                                                |              |       |  |
|                                                                                                                                                                                                                             |    | I                  | 30             | 24             | 5                    |     |              |             |                                    |    |                    |                 |      |      |              |       |       |       |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         |                                                        |                                                                                  | E-I36B       |       |  |
|                                                                                                                                                                                                                             |    | 2                  | 21             | 15             | 2.2                  |     |              |             |                                    |    |                    |                 |      |      |              |       |       |       |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         | M6-3<br>GREEN ON WHITE SHEETING                        | X                                                                                |              |       |  |
|                                                                                                                                                                                                                             |  | I                  | 24             | 12             | 2                    |     |              |             |                                    |    |                    |                 |      |      |              |       |       |       |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         | M3-4<br>GREEN ON WHITE SHEETING                        | X                                                                                |              |       |  |
|                                                                                                                                                                                                                             |  | 3                  | 24             | 24             | 4                    |     |              |             |                                    |    |                    |                 |      |      |              |       |       |       |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         |                                                        |                                                                                  | E-I36B       |       |  |
|                                                                                                                                                                                                                             |  | 2                  | 24             | 12             | 2                    |     |              |             |                                    |    |                    |                 |      |      |              |       |       |       |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         | M3-2<br>GREEN ON WHITE SHEETING                        | X                                                                                |              |       |  |
|                                                                                                                                                                                                                             |  | 2                  | 21             | 15             | 2.2                  |     |              |             |                                    |    |                    |                 |      |      |              |       |       |       |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         | M6-1<br>GREEN ON WHITE SHEETING                        | X                                                                                |              |       |  |
| I3+86.20 RT                                                                                                                                                                                                                 |  | I                  | 42             | 12             | 3.5                  |     |              |             |                                    |    | I                  |                 |      |      |              | X     |       | X     |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         | D3-1                                                   | X                                                                                |              |       |  |
| I4+26.20 LT                                                                                                                                                                                                                 |  | I                  | 24             | 24             | 4                    |     |              |             |                                    |    | I                  |                 |      |      |              | X     |       | X     |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         | D9-2                                                   | X                                                                                |              |       |  |
|                                                                                                                                                                                                                             |  | I                  | 21             | 15             | 2.2                  |     |              |             |                                    |    |                    |                 |      |      |              |       |       |       |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         | M6-1 -<br>MOUNTED UNDER D9-2<br>WHITE ON BLUE SHEETING | X                                                                                |              |       |  |
|                                                                                                                                                                                                                             |  | I                  | 6              | 8              | .33                  |     |              |             |                                    |    |                    |                 |      |      |              |       |       |       |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         | VD-701 -<br>MOUNTED BELOW M6-1                         |                                                                                  |              | E-I34 |  |
|                                                                                                                                                                                                                             |                                                                                     |                    |                |                |                      |     |              |             |                                    |    |                    |                 |      |      |              |       |       |       |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         |                                                        |                                                                                  |              |       |  |
| FINAL POST LENGTHS ARE TO BE<br>DETERMINED IN THE FIELD. POST SIZES<br>ARE COMPUTED BASED ON INFORMATION<br>FURNISHED ON THE STANDARD SHEETS<br>AND VTRANS "SIGN POST DESIGN<br>GUIDELINE."<br>SHS = STANDARD HIGHWAY SIGNS |                                                                                     |                    | POST<br>TOTALS |                |                      |     |              |             |                                    |    | FT                 | FT              | FT   | FT   | FT           | FT    | EA    | LB    | LB               | LB         |                 | LB            | LB    | LB    | LB    |               |           |       | PROJECT NAME: CHESTER<br>PROJECT NUMBER: BRF 025-1(37)<br><br>FILE NAME: 95b168\95b168sign.dgn<br>PROJECT LEADER: C.P.WILLIAMS<br>DESIGNED BY: R.S.YOUNG<br>BRIDGE 9 TRAFFIC SIGN SUMMARY SHEET 1 |                              |                         |                                                        | PLOT DATE: 20-SEP-2010<br>DRAWN BY: D.D.BEARD<br>CHECKED BY:<br>SHEET 105 OF 124 |              |       |  |
|                                                                                                                                                                                                                             |                                                                                     |                    | SUB-<br>TOTAL  |                | SF                   | SF  | EA.          | SF          |                                    | FT |                    | FT              |      | LB   |              | EA.   | LB    |       | EA.              | EA.        | LB              |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         |                                                        |                                                                                  |              |       |  |
|                                                                                                                                                                                                                             |                                                                                     |                    | TOTALS         |                | SF                   | SF  | EA.          | SF          |                                    | FT |                    | FT              |      | LB   |              | EA.   | LB    |       | EA.              | EA.        | LB              |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         |                                                        |                                                                                  |              |       |  |
|                                                                                                                                                                                                                             |                                                                                     |                    |                |                |                      |     |              |             |                                    |    |                    |                 |      |      |              |       |       |       |                  |            |                 |               |       |       |       |               |           |       |                                                                                                                                                                                                   |                              |                         |                                                        |                                                                                  |              |       |  |

# TRAFFIC SIGN SUMMARY SHEET

[illegible]



EROSION CONTROL NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE #9, INCLUDING ALL OF ABUTMENT #1 AND ABUTMENT #2, ALONG WITH MINIMAL APPROACH AND CHANNEL WORK, INCLUDING THE REMOVAL OF AN EXISTING PIER. COFFERDAMS WILL NOT BE REQUIRED WITHIN THE WATERWAY. BRIDGE #9 IS LOCATED IN THE TOWN OF CHESTER ON VT RT 103 AT THE INTERSECTION OF VT RT 103 AND VT RT 11, AND SPANS THE MIDDLE BRANCH OF THE WILLIAMS RIVER. A TEMPORARY BRIDGE WILL NOT BE USED. THE NEW BRIDGE IS A CONCRETE DECK ON SEVEN STEEL BEAMS SPANNING 121 FEET, ALL SLOPES AND ALL VEGETATION WILL BE RETURNED TO THEIR ORIGINAL CONDITION THROUGH STANDARD SEED AND MULCH PRACTICES. STONE FILL TYPE IV WILL BE USED TO STABILIZE THE RIVER BANKS. EXISTING STONE FILL WILL BE STABILIZED, WITHIN THE STONE FILL LIMITS, AND WHERE DEEMED NECESSARY BY THE RESIDENT ENGINEER.

NOTE: AREA OF DISTURBANCE SHALL INCLUDE LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, INCLUDING ANY WASTE, STAGING AND BORROW AREAS WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS.

TOTAL AREA OF DISTURBANCE IS APPROXIMATELY .70 ACRES.

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

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE PROJECT SITE IS A FAIRLY LEVEL RESIDENTIAL AREA WITH PATCHES OF WOODED AREAS. THE LAND AT THE PROJECT SITE HAS LOW SLOPES WITH STEEP RIVER BANKS. THERE ARE A NUMBER OF HOMES AND BUILDINGS NEAR THE PROJECT SITE AND AN OVERHEAD POWER LINE THAT IS GOING TO BE RELOCATED. THERE IS ALSO A BURIED SEWER LINE THAT RUNS NEAR THE BRIDGE.

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

THE MIDDLE BRANCH OF THE WILLIAMS RIVER IS THE ONLY WATER SOURCE ON OR NEAR THE PROJECT LOCATION. THE RIVER IS CLASSIFIED AS SINUOUS, WITH A STABLE CHANNEL AND A STREAMBED MADE UP OF SANDY GRAVEL AND COBBLES. THE TRIBUTARY AREA AT THE BRIDGE CROSSING IS 33.5 SQ MILES. THIS RIVER DOES HAVE A TENDENCY OF RISING RAPIDLY.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA IS MADE UP OF GRASS AND MIXED TREES AND BUSHES. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS AFFECTED BY THE REMOVAL AND REPLACEMENT OF THE SUPERSTRUCTURE, ABUTMENTS AND PIER. AFTER THE PROJECT IS FINISHED THE SLOPES WILL BE STABILIZED WITH STONE FILL AND 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. SOIL ON THE PROJECT SITE IS COLTON-CROGHAN COMPLEX, 0% TO 8% SLOPES, THE SOIL HAS A “K FACTOR” = 0.24. THE SOIL IS CONSIDERED MODERATELY ERODABLE.

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: THERE ARE A SERIES OF FIVE GRANITE POSTS TO THE NORTH OF THE PROJECT THAT ARE HISTORIC. THERE ARE A NUMBER OF HOUSES IN THE VICINITY THAT ARE HISTORIC. NO HISTORIC AREAS ARE TO BE DISTURBED.  
PRIME AGRICULTURAL LAND: NO  
THREATENED AND ENDANGERED SPECIES: NO  
WATER RESOURCE: MIDDLE BRANCH OF THE WILLIAMS RIVER  
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 CONTROLS. 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 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 AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS THAT CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED: PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES. BARRIER FENCE (BF) WILL BE USED TO DELINEATE THE AREA OF HISTORICAL SIGNIFICANCE.

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.

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 STABILIZE CONSTRUCTION EXIT

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF INTO RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTERS PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS PROPOSED IN 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.

FILTER CURTAIN 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 DIVERT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELLING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

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

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

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

DI PROTECTION SHALL BE INSTALLED AS PROPOSED ON THE PLANS.

1.4.7 CONSTRUCT PERMANENT CONTROLS

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

1.4.8 STABILIZE EXPOSED SOILS

ALL AREAS OF DISTURBANCE MUST, AT A MINIMUM, HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE.

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 GREATER THAT 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<sup>TH</sup> THROUGH APRIL 15<sup>TH</sup>). 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 GREATER 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.

THE USE OF COFFERDAMS IS NOT ANTICIPATED ON 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.

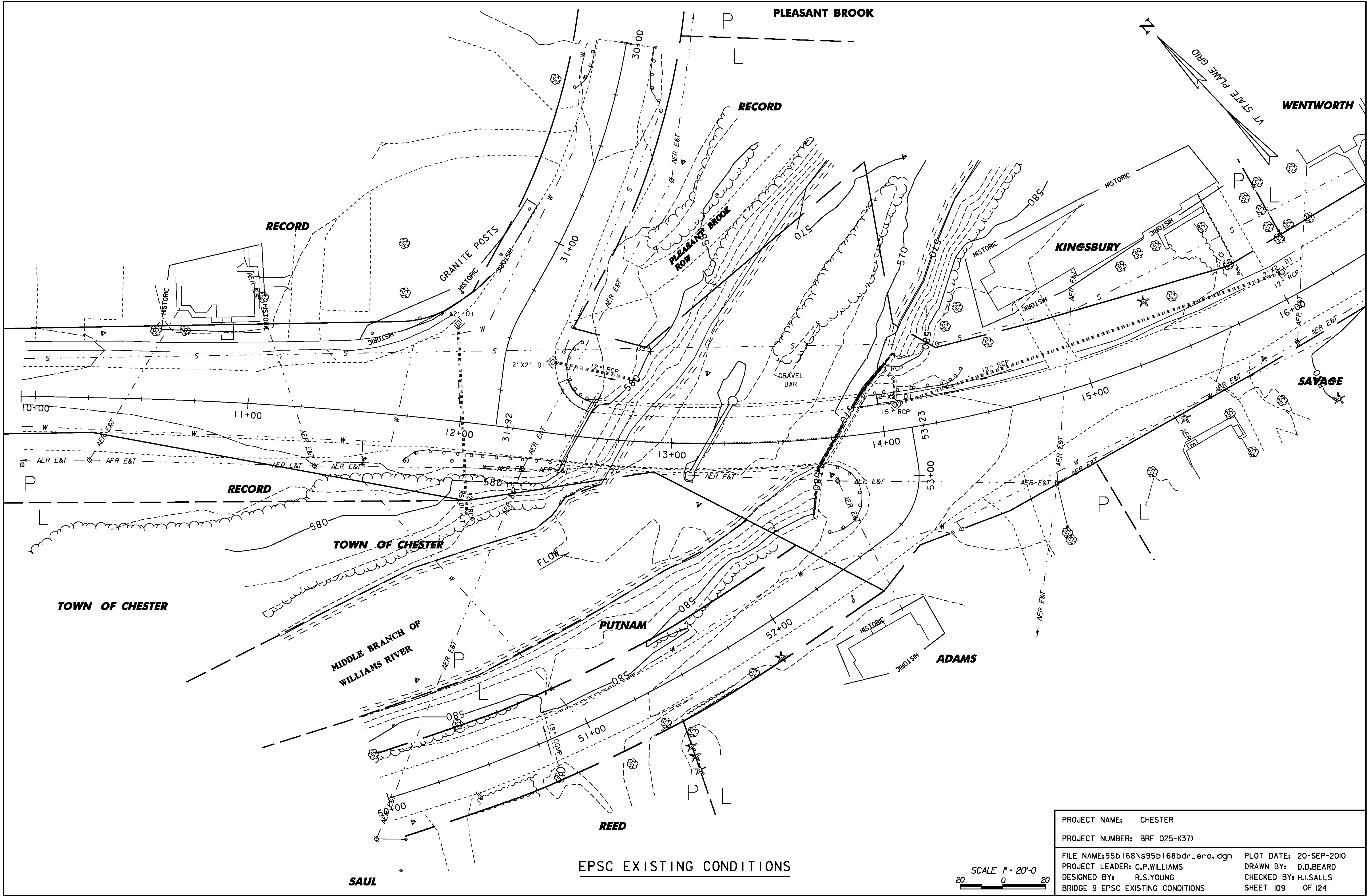
1.5.1 CONSTRUCTION SEQUENCE

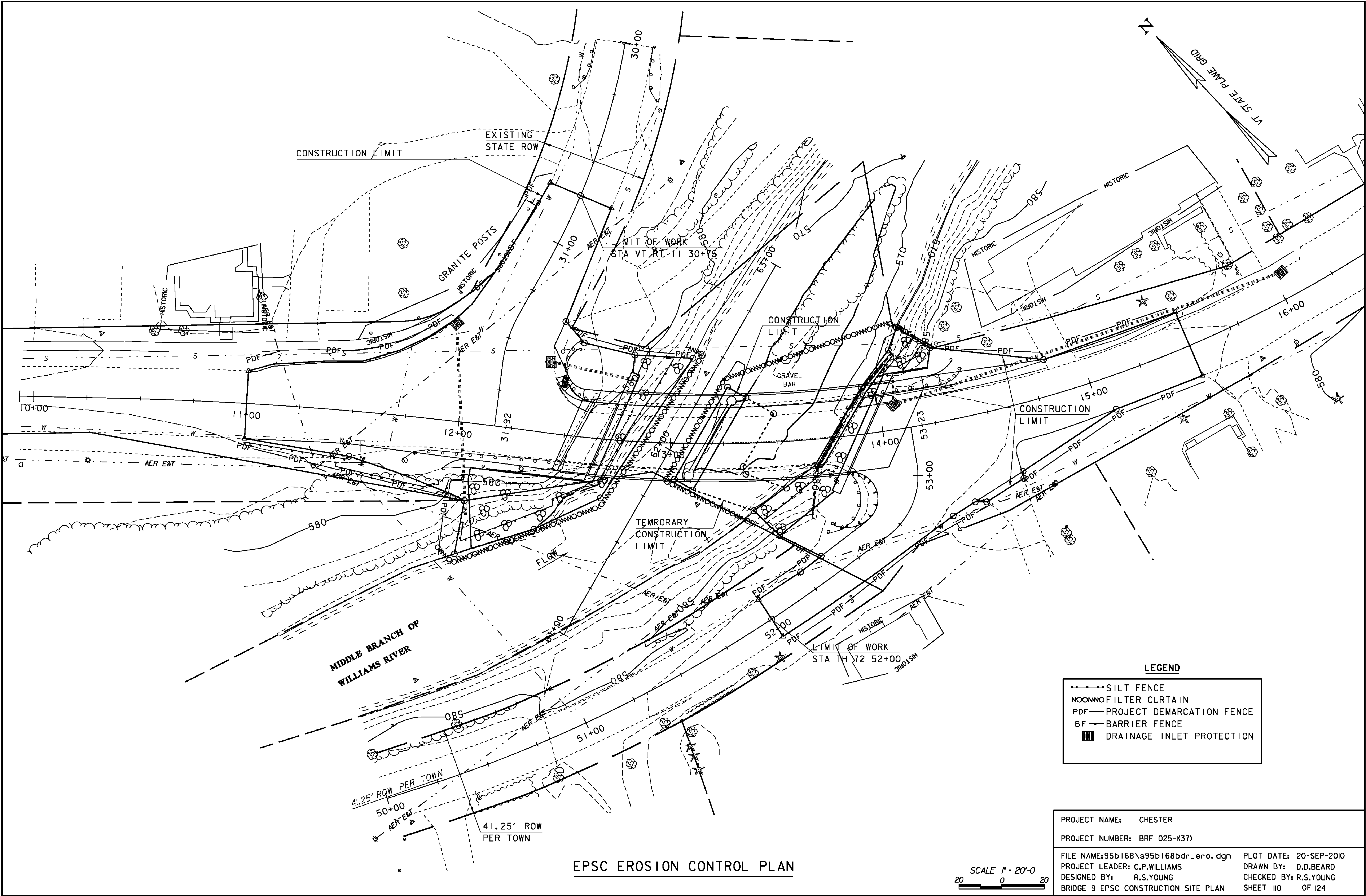
1.5.2 OFF-SITE ACTIVITIES

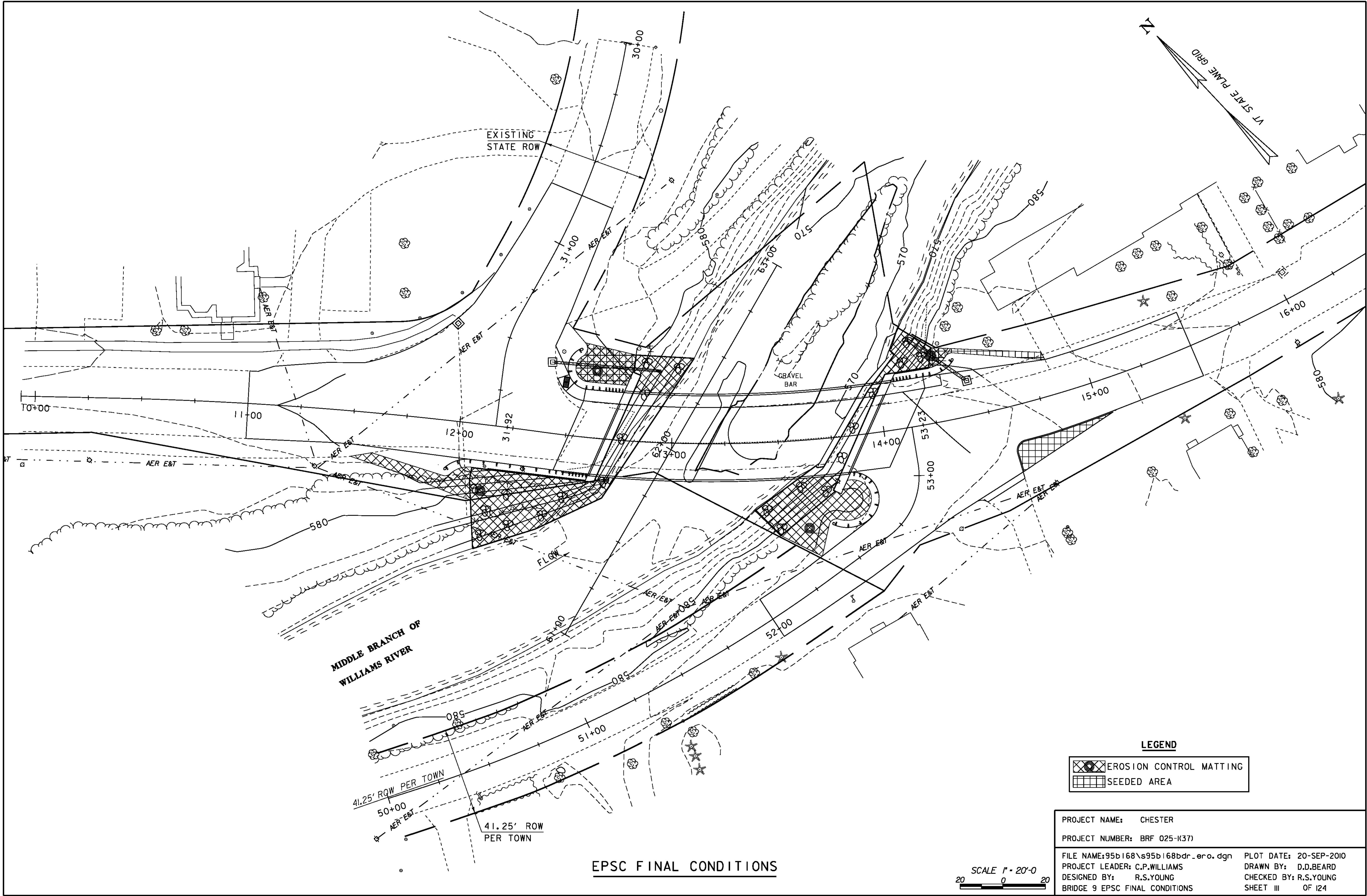
IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SUBSECTIONS 105.25 - 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

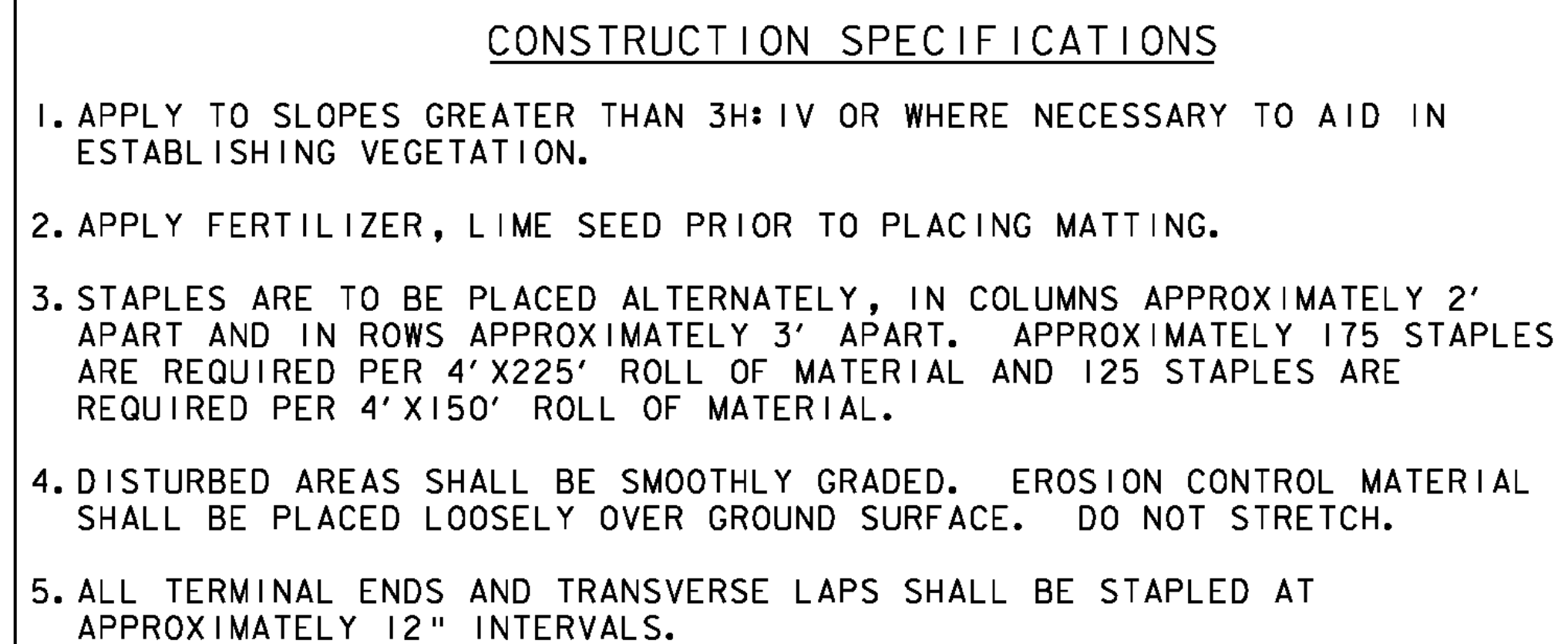
1.5.3 UPDATES

|                                    |                        |
|------------------------------------|------------------------|
| PROJECT NAME: CHESTER              |                        |
| PROJECT NUMBER: BRF 025-I(37)      |                        |
| FILE NAME: 95b168\s95b168ero.dgn   | PLOT DATE: 20-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS       | DRAWN BY: D.D.BEARD    |
| DESIGNED BY: R.S.YOUNG             | CHECKED BY: R.S.YOUNG  |
| BRIDGE 9 EROSION CONTROL NARRATIVE | SHEET 108 OF 124       |





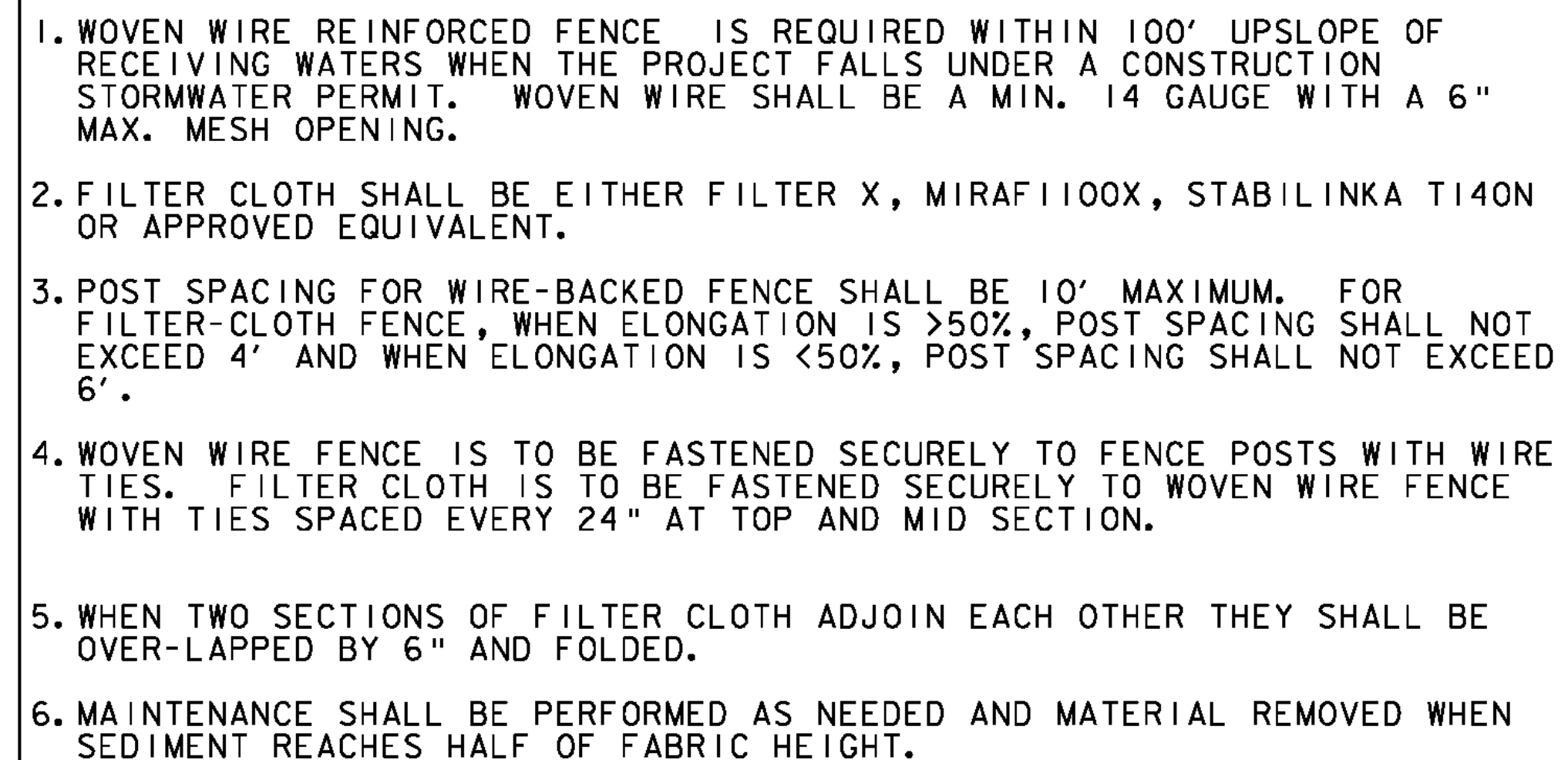




|                                                                                                                                               |                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC<br>ORIGINALLY DEVELOPED BY USDA-NRCS<br>VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION | ROLLED EROSION<br>CONTROL PRODUCT<br>(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 653.20). | <table border="1"> <tr> <th colspan="2">REVISIONS</th> </tr> <tr> <td>APRIL 16, 2007</td> <td>JMF</td> </tr> <tr> <td>JANUARY 13, 2009</td> <td>WHF</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table> | REVISIONS |  | APRIL 16, 2007 | JMF | JANUARY 13, 2009 | WHF |  |  |  |  |
| REVISIONS                                                                                                                                                                             |                                                                                                                                                                                                                                           |           |  |                |     |                  |     |  |  |  |  |
| APRIL 16, 2007                                                                                                                                                                        | JMF                                                                                                                                                                                                                                       |           |  |                |     |                  |     |  |  |  |  |
| JANUARY 13, 2009                                                                                                                                                                      | WHF                                                                                                                                                                                                                                       |           |  |                |     |                  |     |  |  |  |  |
|                                                                                                                                                                                       |                                                                                                                                                                                                                                           |           |  |                |     |                  |     |  |  |  |  |
|                                                                                                                                                                                       |                                                                                                                                                                                                                                           |           |  |                |     |                  |     |  |  |  |  |

|                  |     |
|------------------|-----|
| REVISIONS        |     |
| APRIL 16, 2007   | JMF |
| JANUARY 13, 2009 | WHF |
|                  |     |
|                  |     |

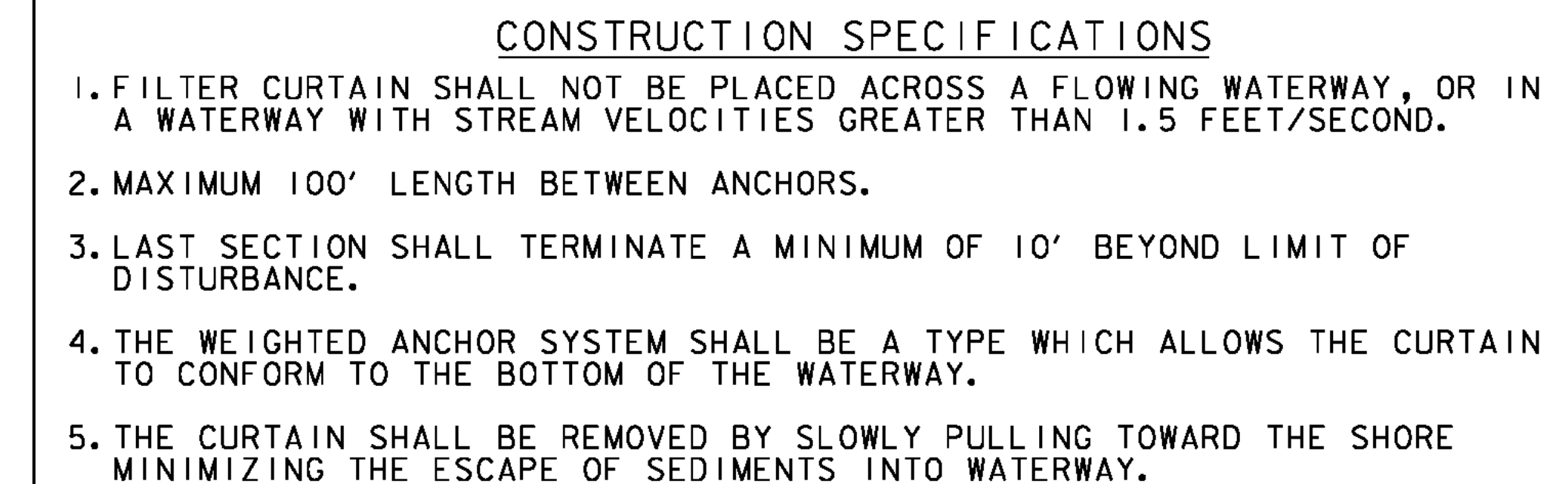


ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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 649.5) OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.51). | REVISION NO. 001  | WHF |
|                                                                                                                                                                                                             | DECEMBER 12, 2008 | WHF |
|                                                                                                                                                                                                             | JANUARY 13, 2009  | WHF |

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



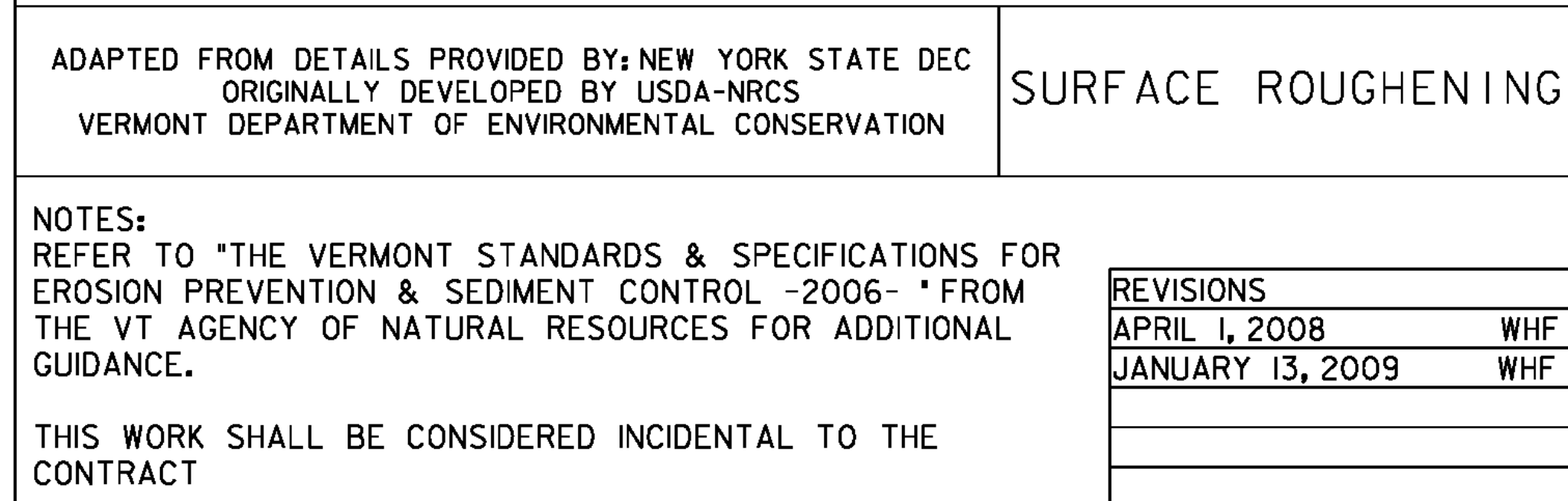
|  |                |
|--|----------------|
|  | FILTER CURTAIN |
|--|----------------|

|                                                                                                                  |                   |     |
|------------------------------------------------------------------------------------------------------------------|-------------------|-----|
| 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 |
|                                                                                                                  |                   |     |

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

|                                     |                        |
|-------------------------------------|------------------------|
| PROJECT NAME: CHESTER               |                        |
| PROJECT NUMBER: BRF 025-(K37)       |                        |
| FILE NAME: 95b168\s95b168erodet.dgn | PLOT DATE: 20-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS        | DRAWN BY: D.D.BEARD    |
| DESIGNED BY: R.S.YOUNG              | CHECKED BY: H.J.SALLS  |
| BRIDGE 9 EPSC DETAILS               | SHEET 112 OF 124       |





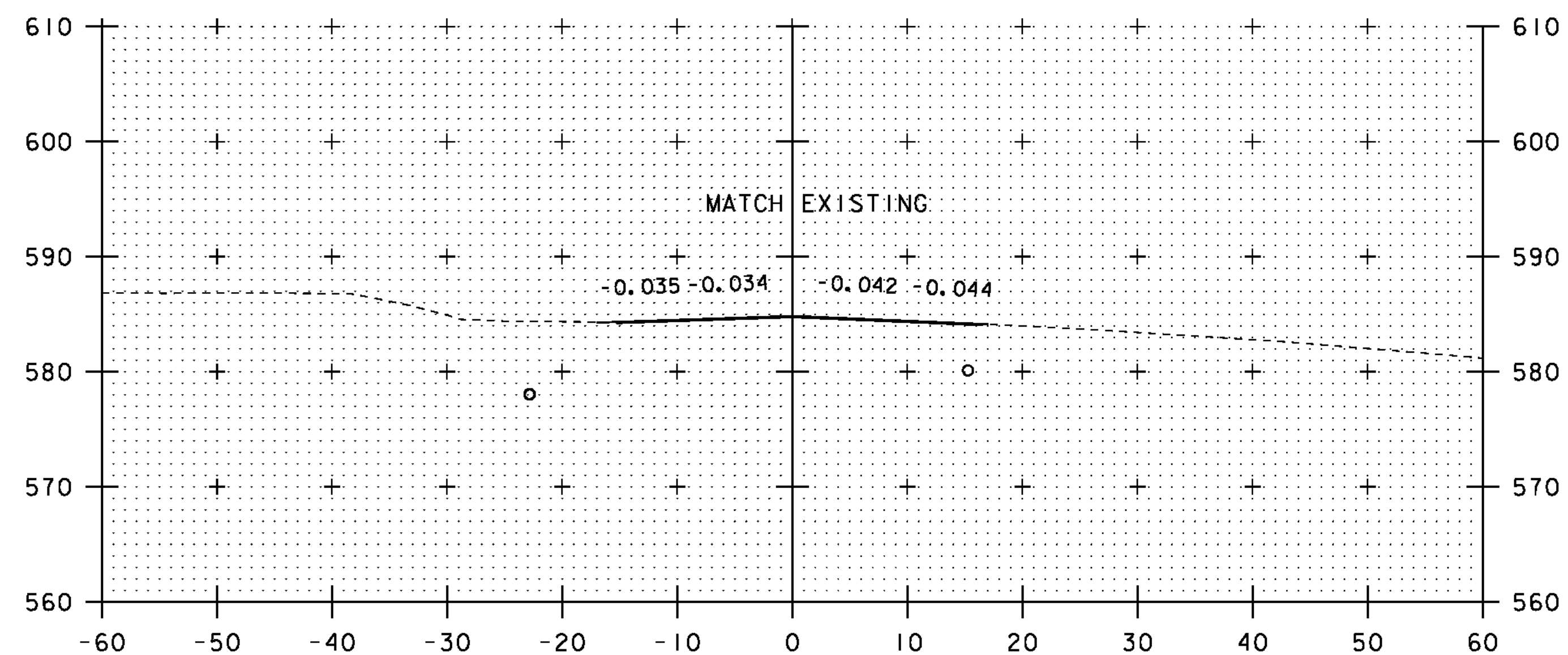
| VAOT RURAL AREA MIX |           |           |                     |        |          |
|---------------------|-----------|-----------|---------------------|--------|----------|
|                     | LBS/AC    |           |                     |        |          |
| % WEIGHT            | BROADCAST | 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       |                     |        |          |

| GENERAL GUIDANCE |           |            |            |
|------------------|-----------|------------|------------|
| FERTILIZER       |           | LIME       |            |
| BROADCAST        | HYDROSEED | BROADCAST  | HYDROSEED  |
| 10-20-10         | 19-19-19  | PELLETIZED | LIQUID     |
| 500 LBS/AC       |           | 2 TONS/AC  | 4.4 GAL/AC |

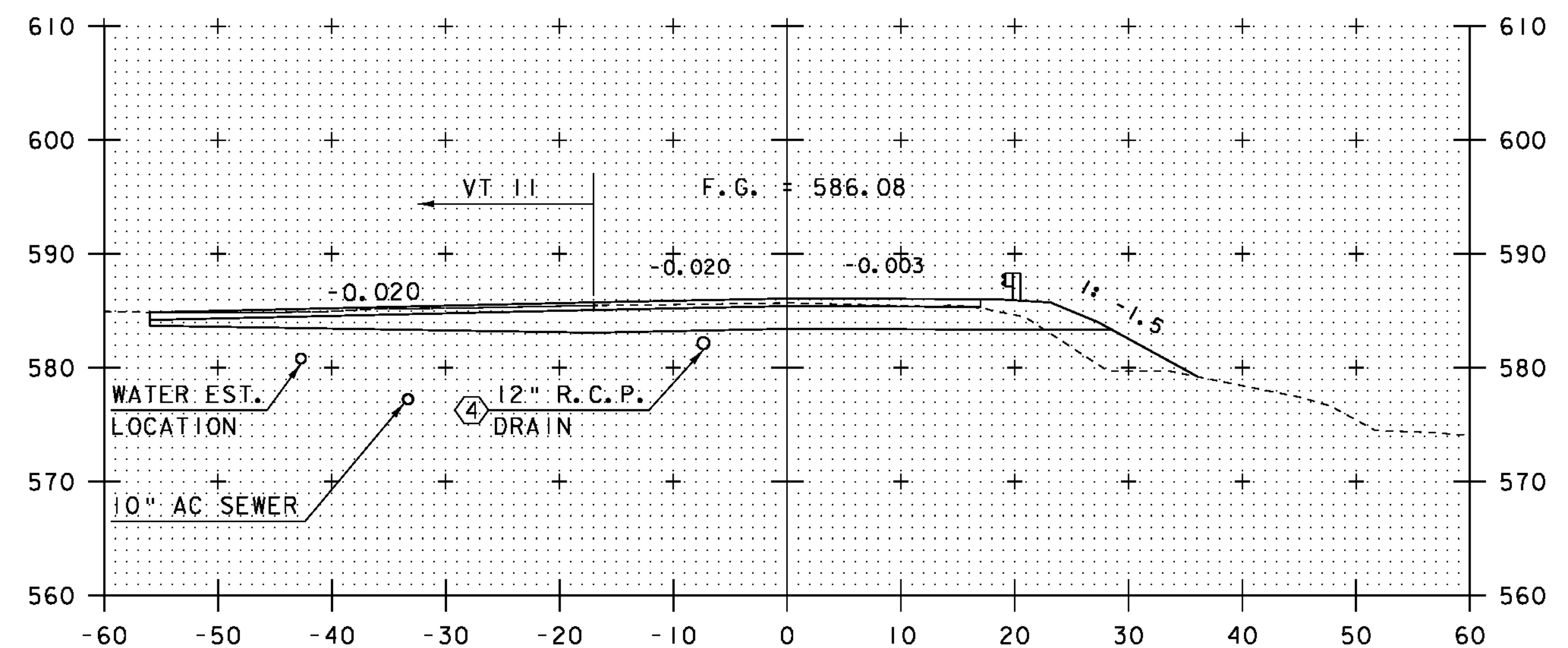
1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 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 MAUAL FOR<br>ROADWAYS AND TRANSPORTATION FACILITIES | TURF ESTABLISHMENT |     |
|                                                                                             | REVISIONS          |     |
|                                                                                             | JUNE 23, 2009      | WHF |
|                                                                                             | JANUARY 15, 2010   | WHF |
|                                                                                             |                    |     |
|                                                                                             |                    |     |
|                                                                                             |                    |     |



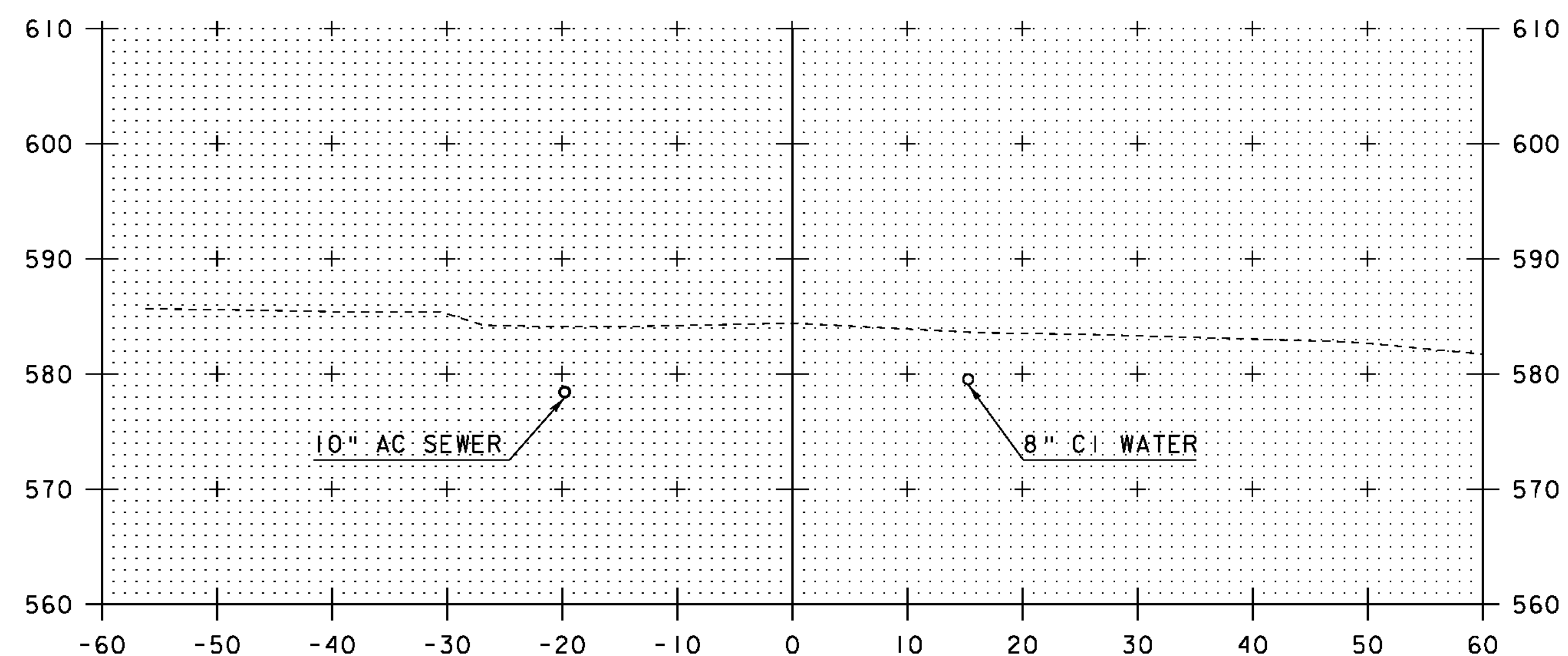
BEGIN APPROACH  
STATION 11+00.00

11+00

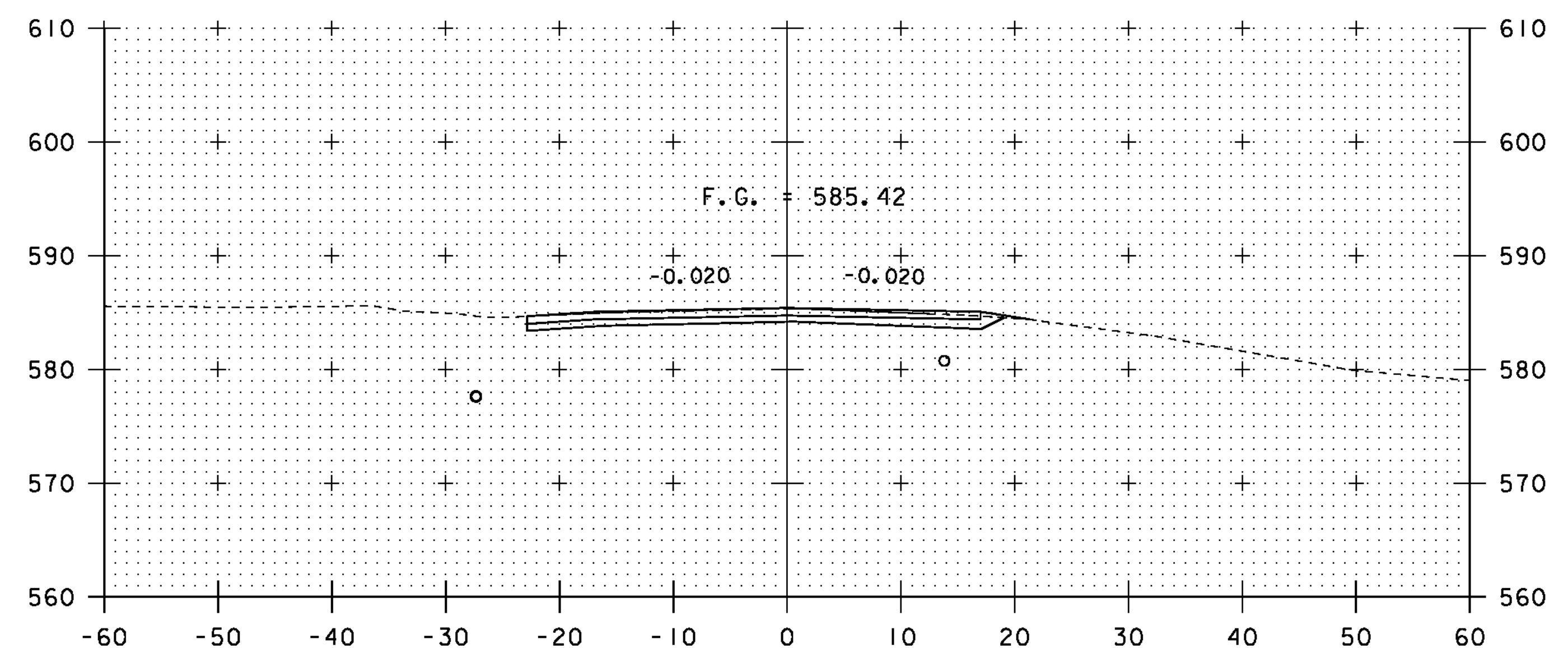


BEGIN PROJECT  
STATION 12+00.00

12+00



10+50



11+50

SCALE 1" = 10'-0"

STA. 10+50 TO STA. 12+00

PROJECT NAME: CHESTER

PROJECT NUMBER: BRF 025-1(37) SC

FILE NAME: s95b168xsl.dgn

PROJECT LEADER: C.P.WILLIAMS

DESIGNED BY: R.S.YOUNG

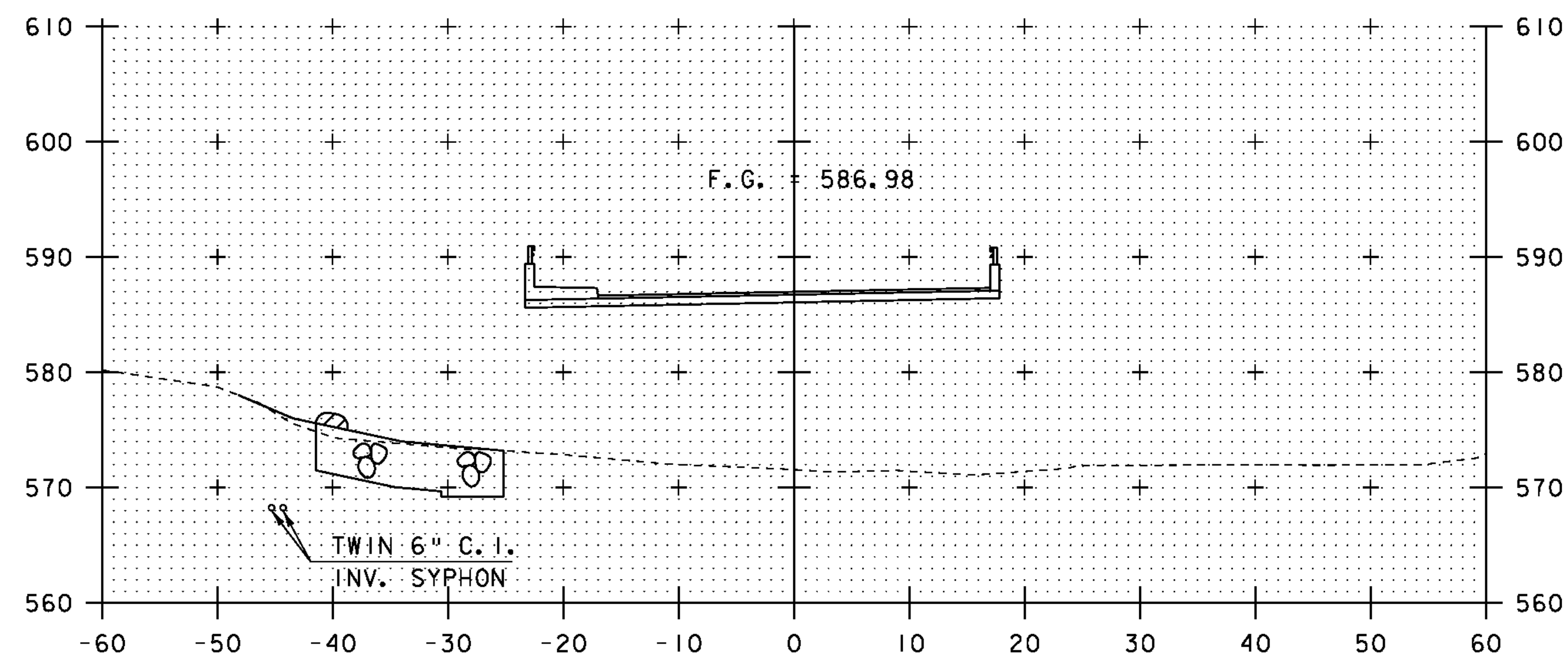
BRIDGE 9 MAINLINE CROSS SECTIONS

PLOT DATE: 20-SEP-2010

DRAWN BY: D.D.BEARD

CHECKED BY: R.S.YOUNG

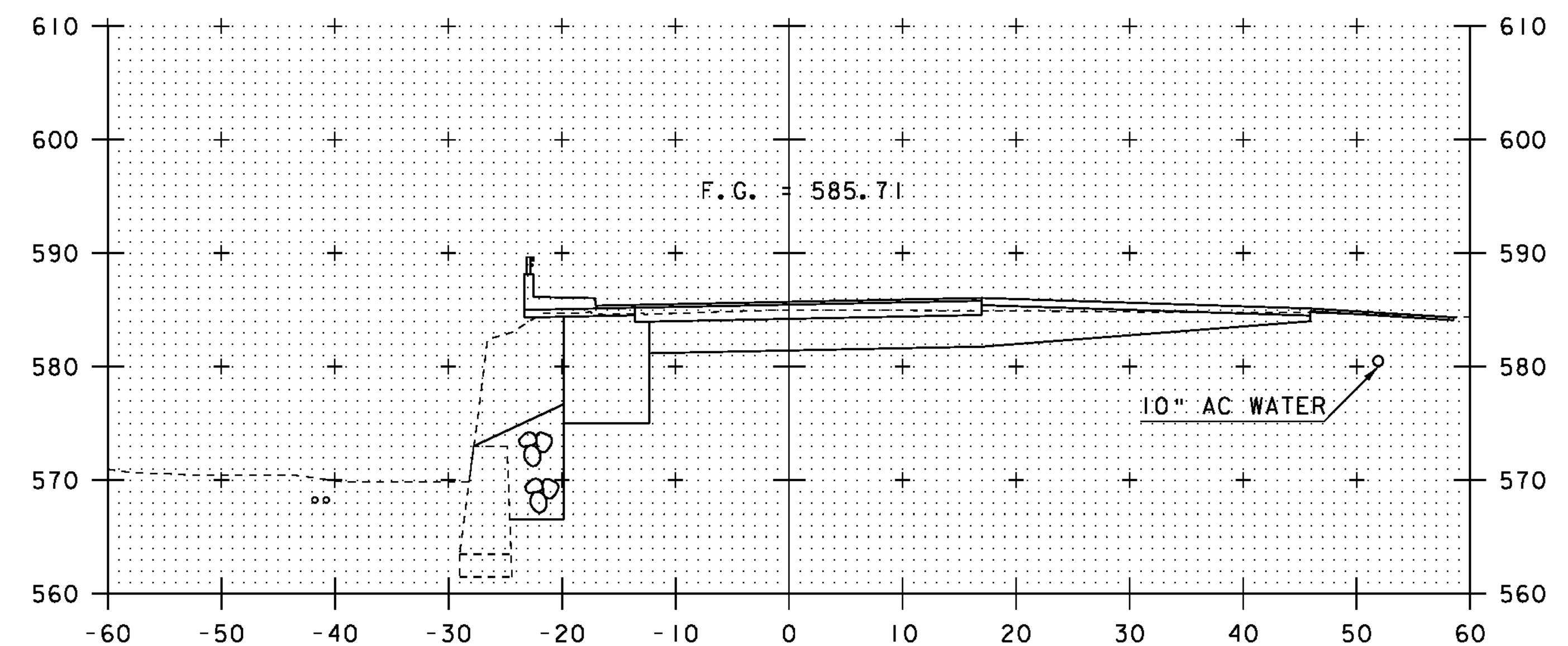
SHEET 115 OF 124



CL BEARING ABUTMENT #1  
STATION 12+70.00

13+00

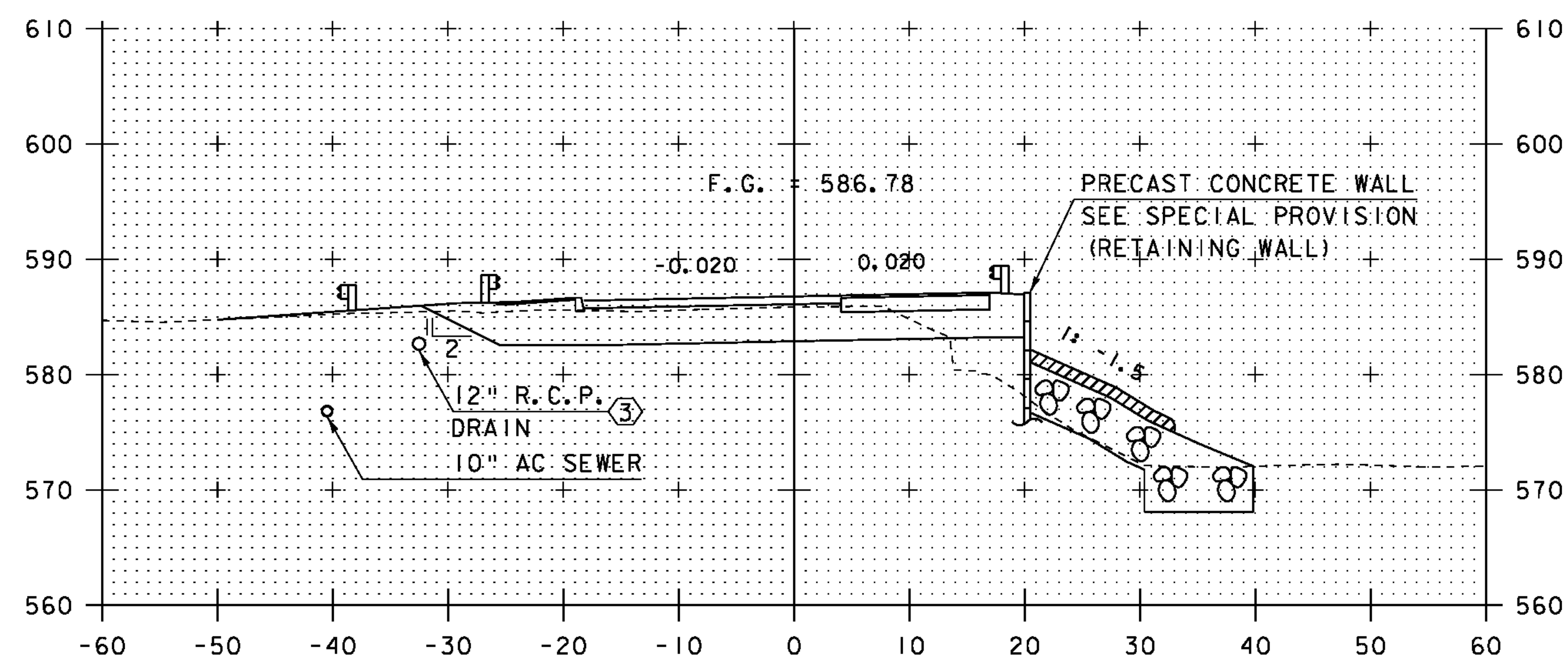
BEGIN BRIDGE  
STATION 12+68.59



CL BEARING ABUTMENT #2  
STATION 13+90.00

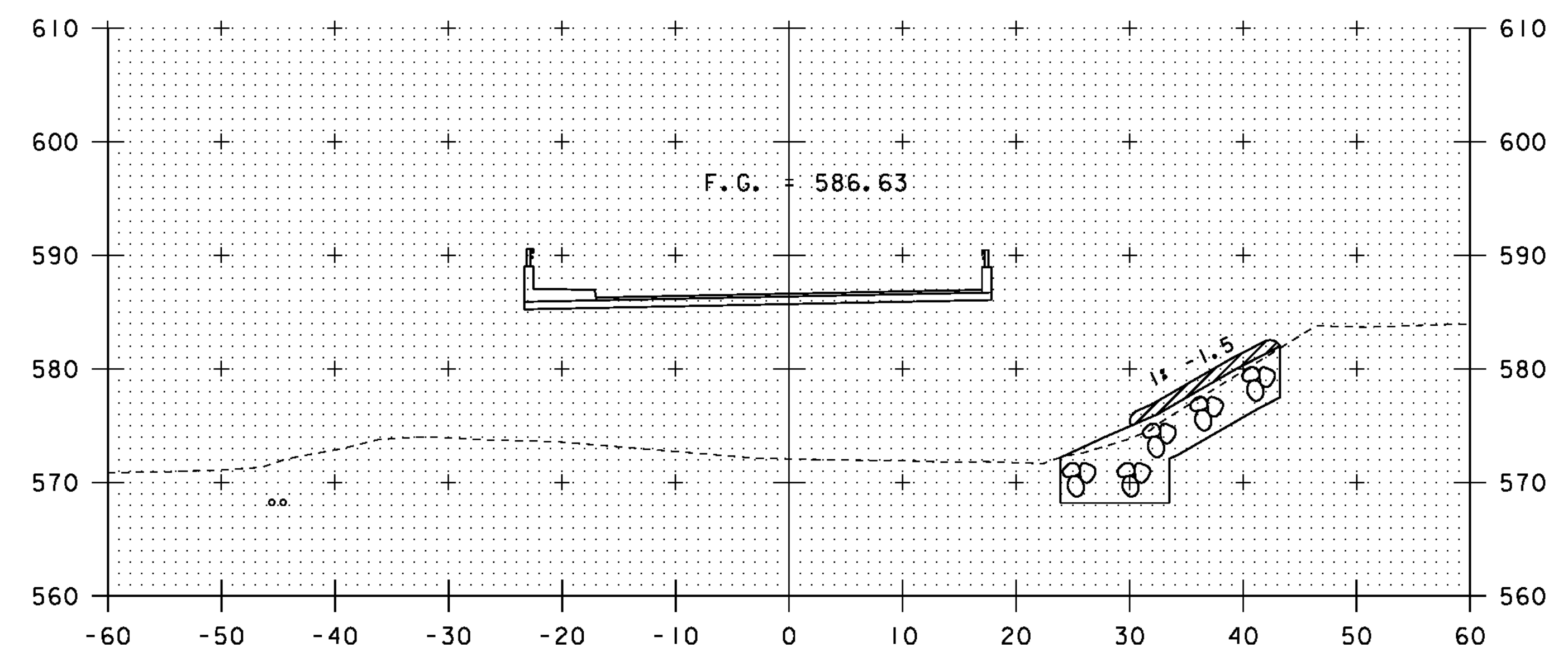
14+00

END BRIDGE  
STATION 13+91.56



12+50

③ INLET ELEV = 581.66  
OUTLET ELEV = 576.25 EST



13+50

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

STA. 12+50 TO STA. 14+00

PROJECT NAME: CHESTER

PROJECT NUMBER: BRF 025-I(37) SC

FILE NAME: s95b168xsl.dgn

PROJECT LEADER: C.P.WILLIAMS

DESIGNED BY: R.S.YOUNG

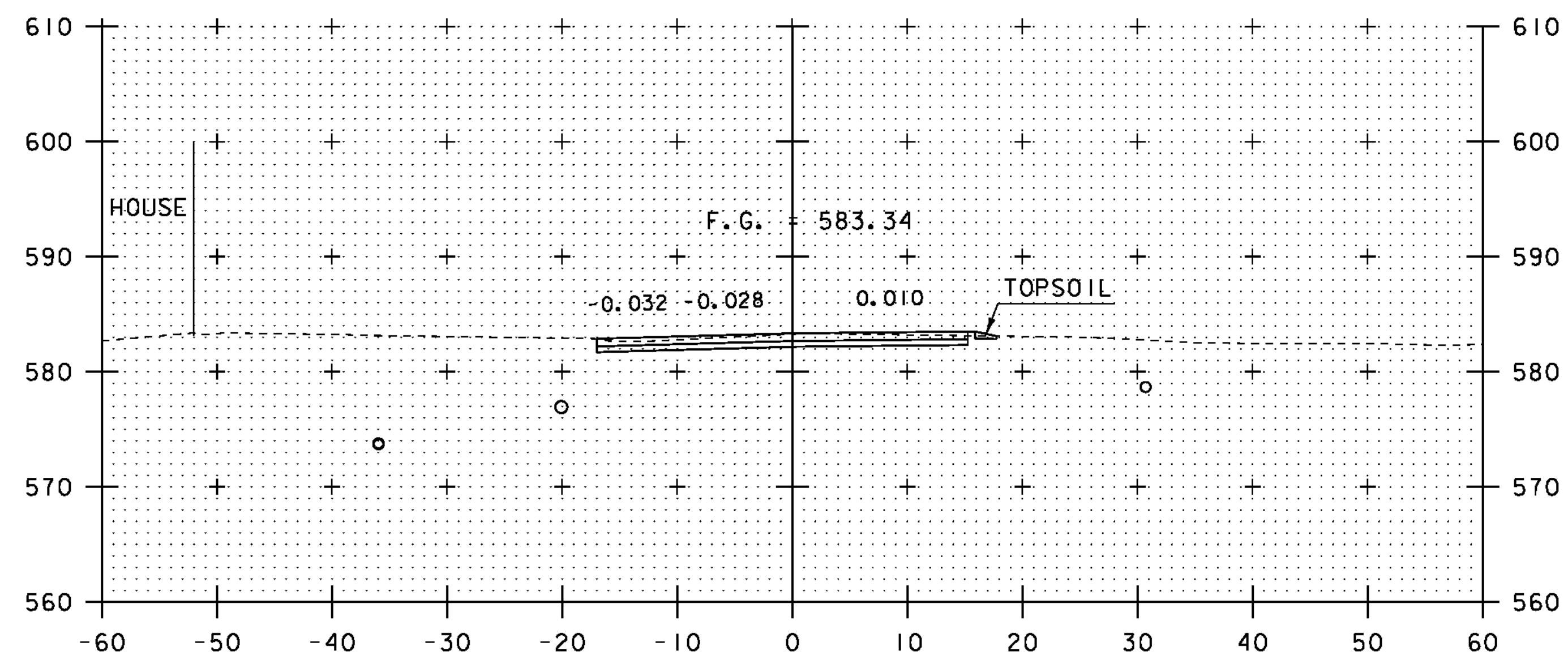
BRIDGE 9 MAINLINE CROSS SECTIONS

PLOT DATE: 20-SEP-2010

DRAWN BY: D.D.BEARD

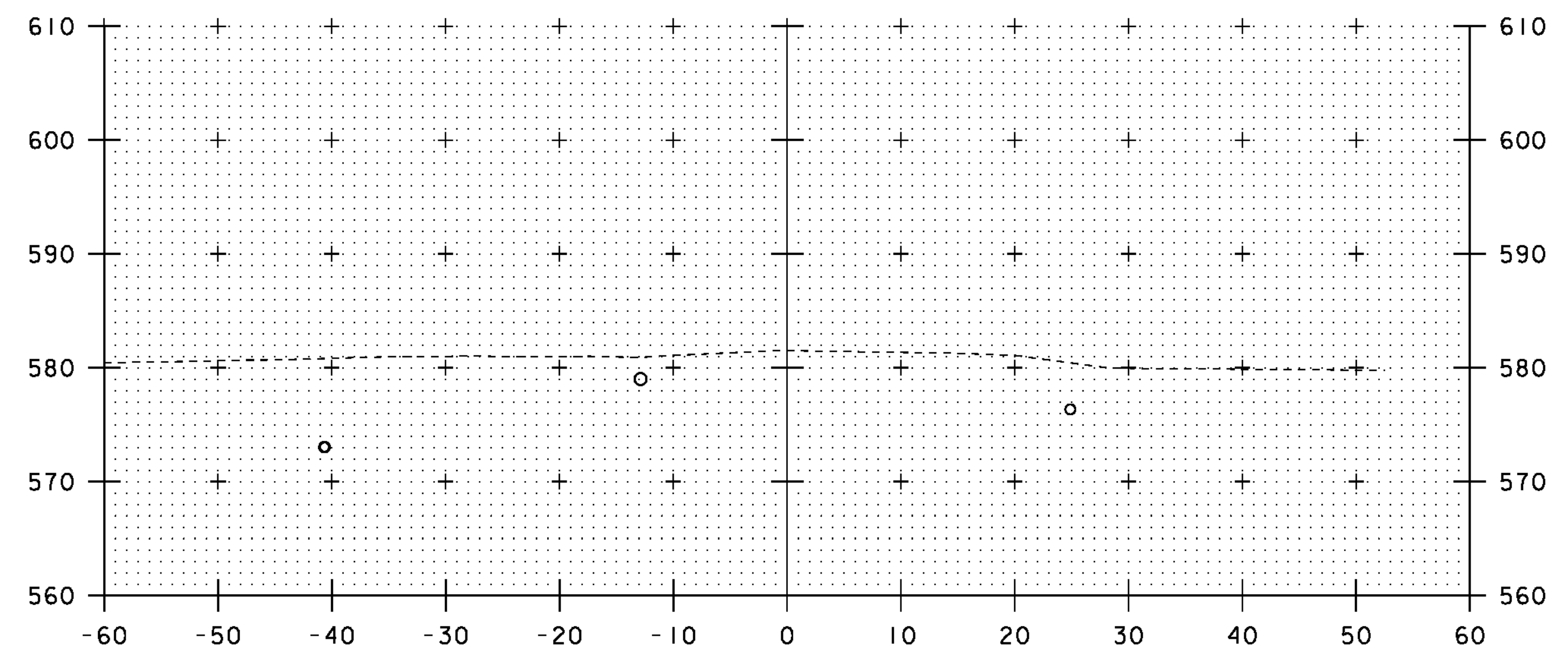
CHECKED BY: R.S.YOUNG

SHEET 116 OF 124

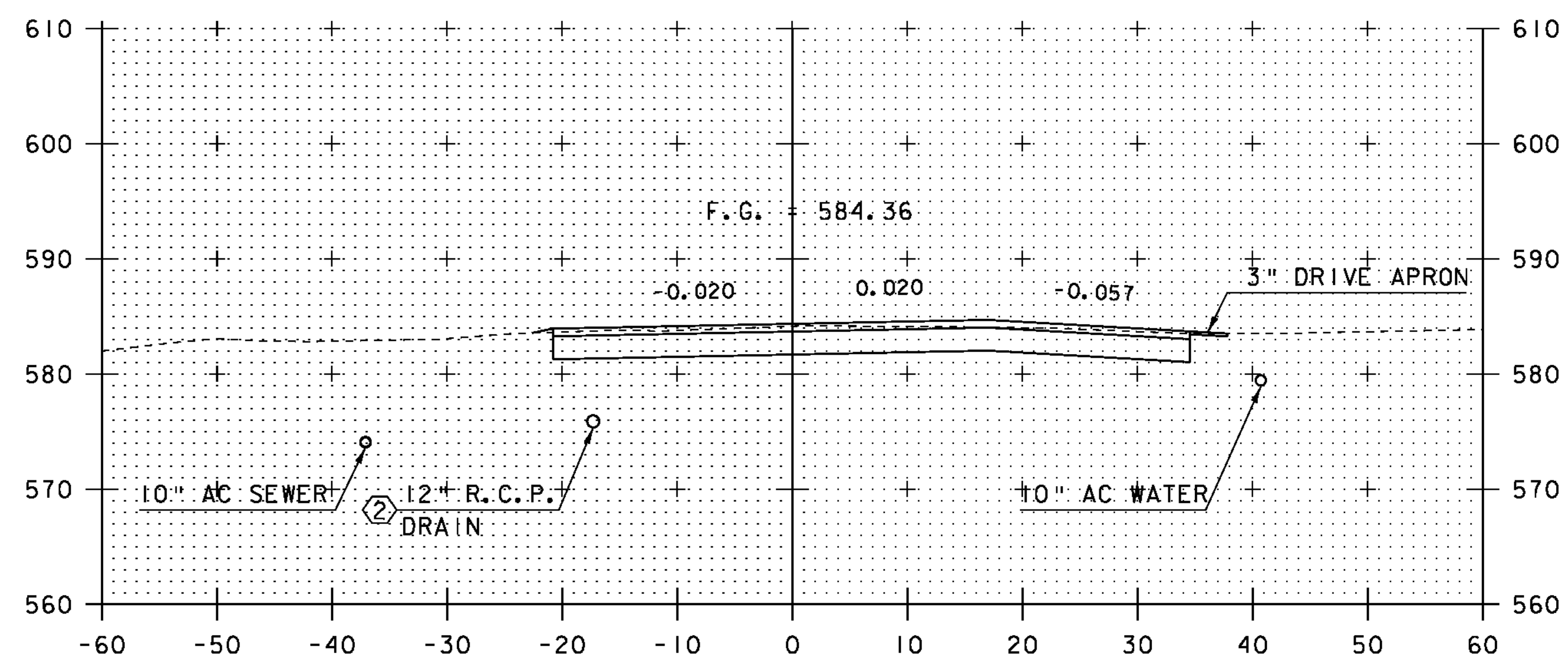


BEGIN 3" TOPSOIL  
STATION 14+58.50 RT

15+00



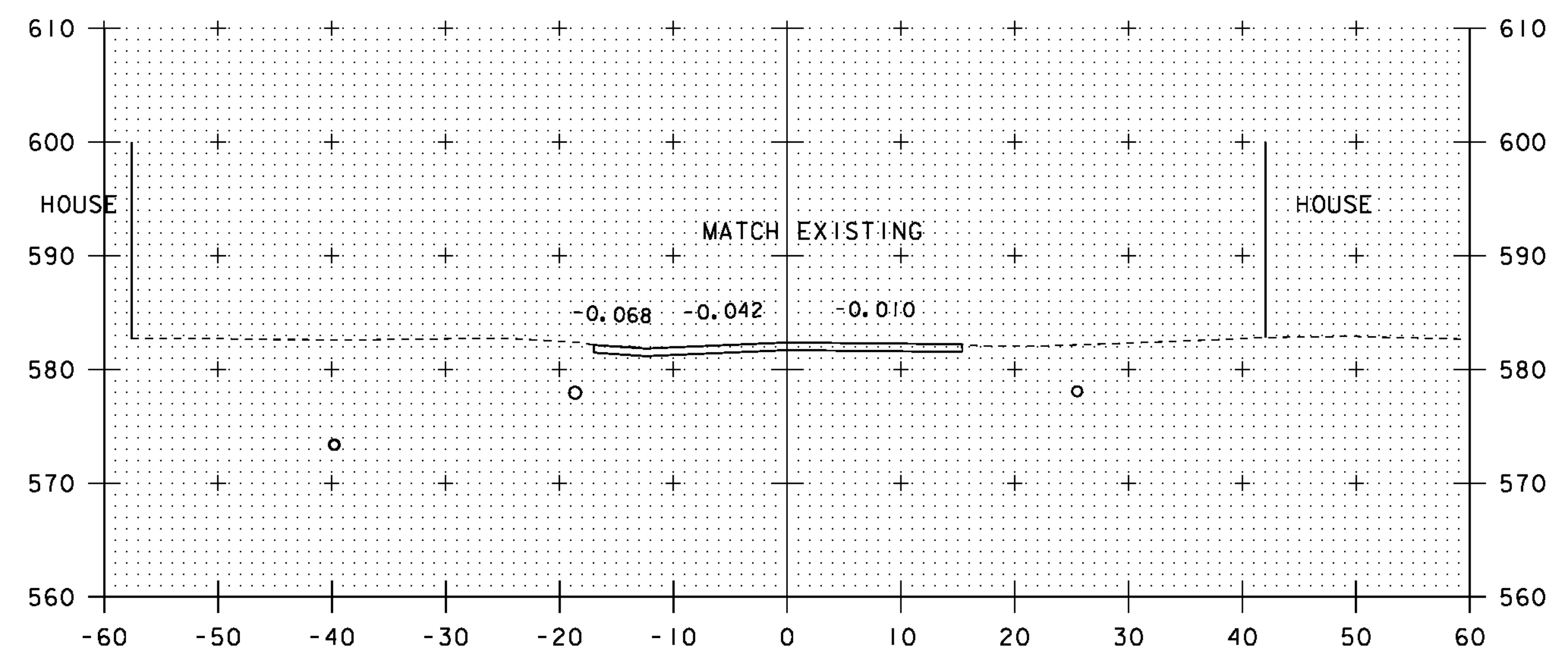
16+00



END PROJECT  
STATION 14+50.00

14+50

② STA 14+37.76 LT  
INLET ELEV = 575.00 EST  
OUTLET ELEV = 574.00 EST



END APPROACH  
STATION 15+50.00  
END 3" TOPSOIL  
STATION 15+07.65 RT

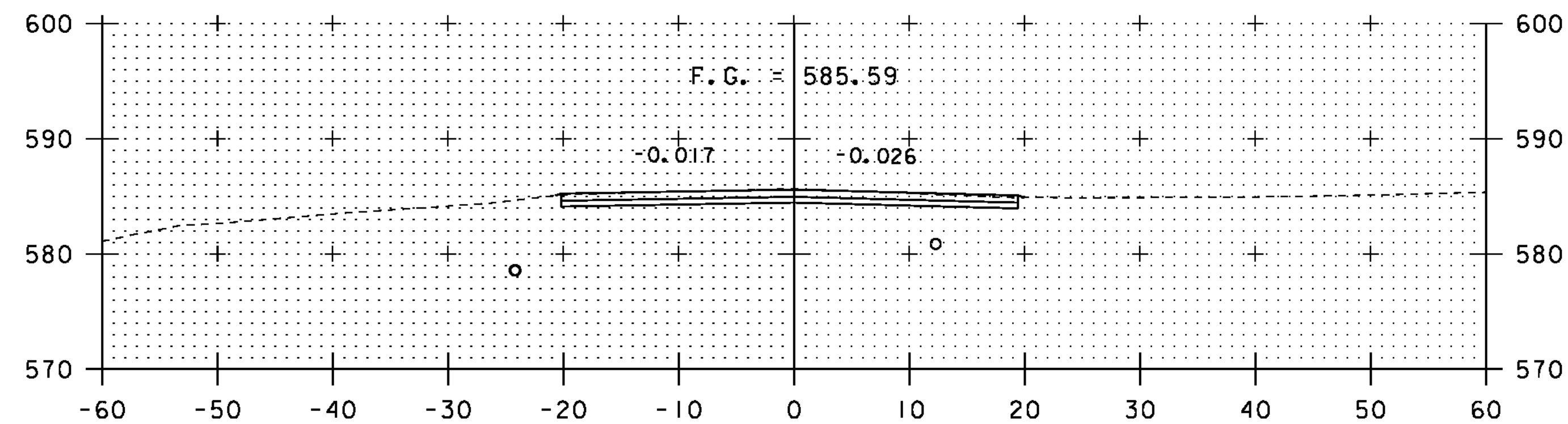
15+50

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

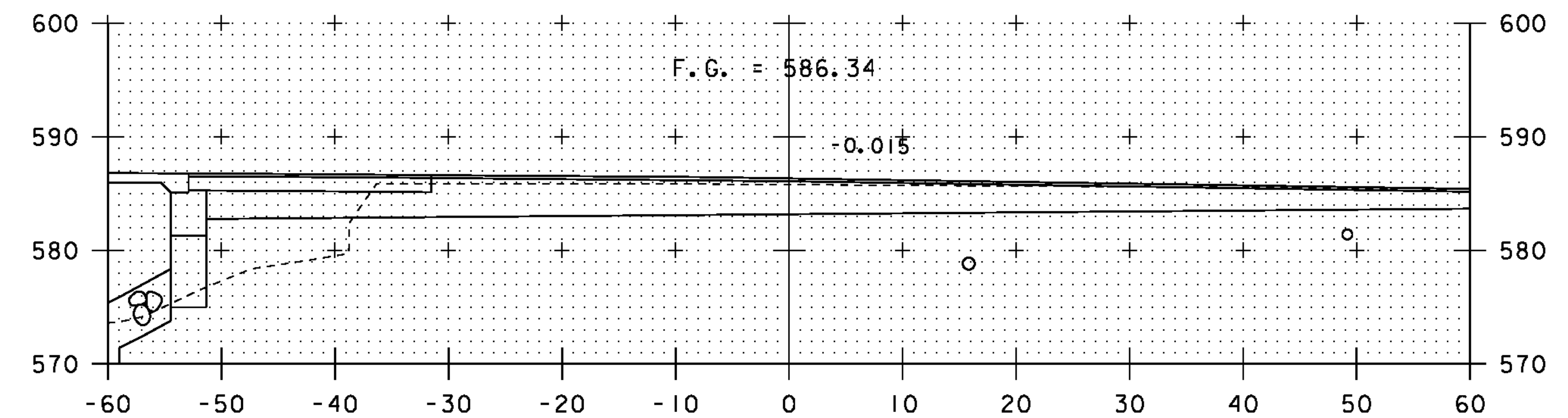
STA. 14+50 TO STA. 16+00

PROJECT NAME: CHESTER  
PROJECT NUMBER: BRF 025-1(37) SC  
FILE NAME: s95b168xsl.dgn  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
BRIDGE 9 MAINLINE CROSS SECTIONS

PLOT DATE: 20-SEP-2010  
DRAWN BY: D.D.BEARD  
CHECKED BY: R.S.YOUNG  
SHEET 117 OF 124

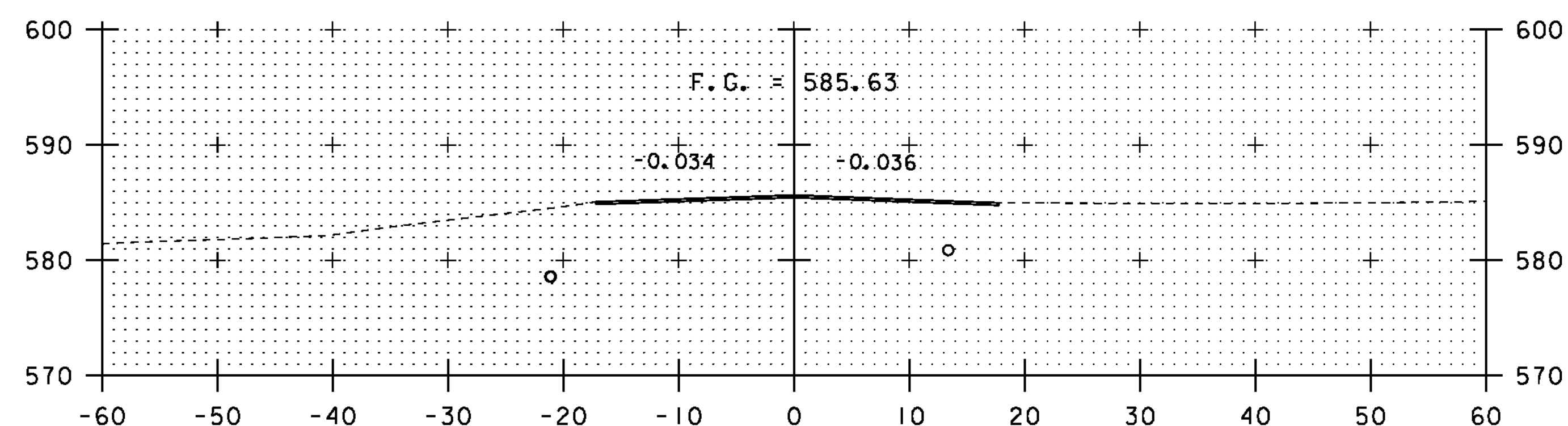


31+25

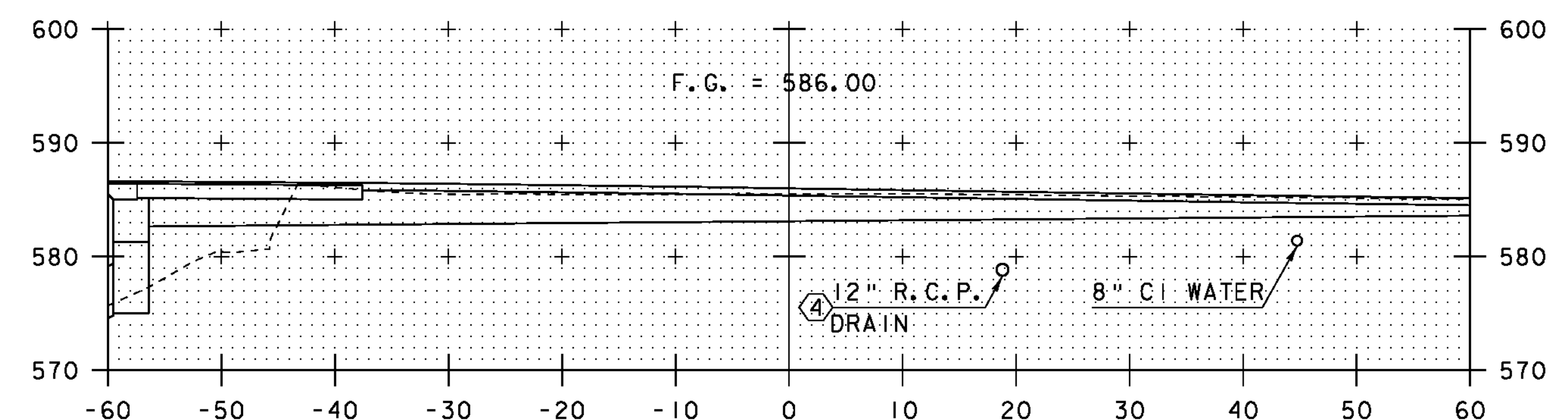


31+92

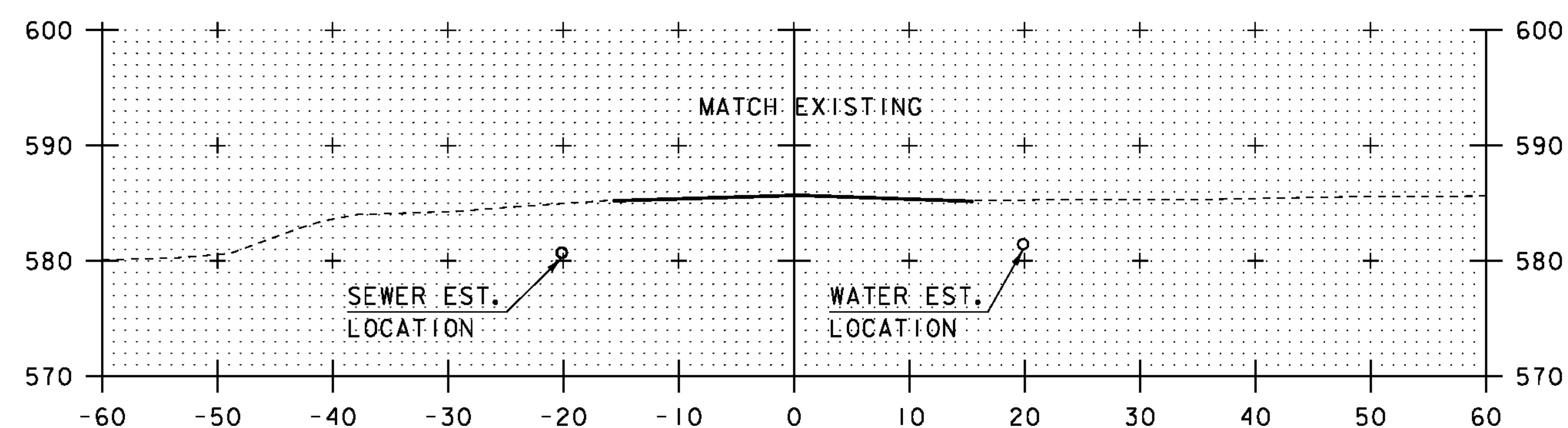
=STA 12+17.00 @ VT 103



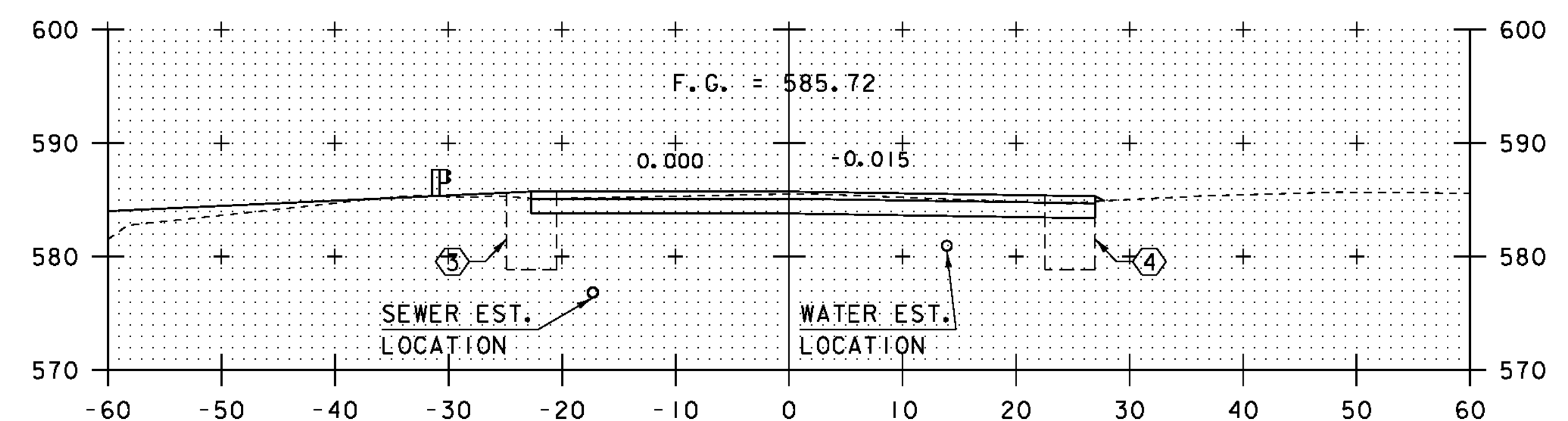
31+00



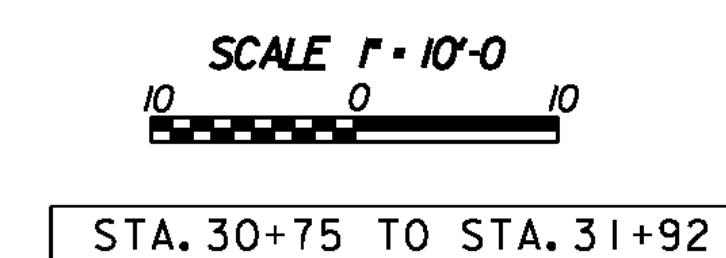
31+75



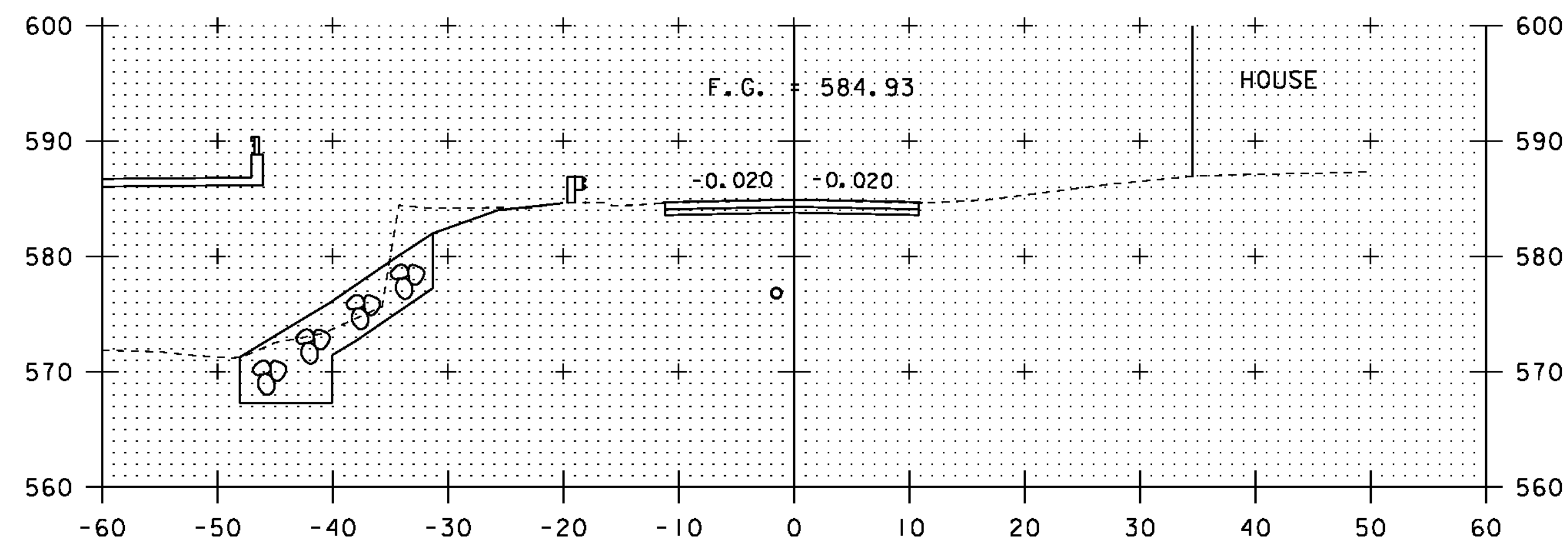
30+75



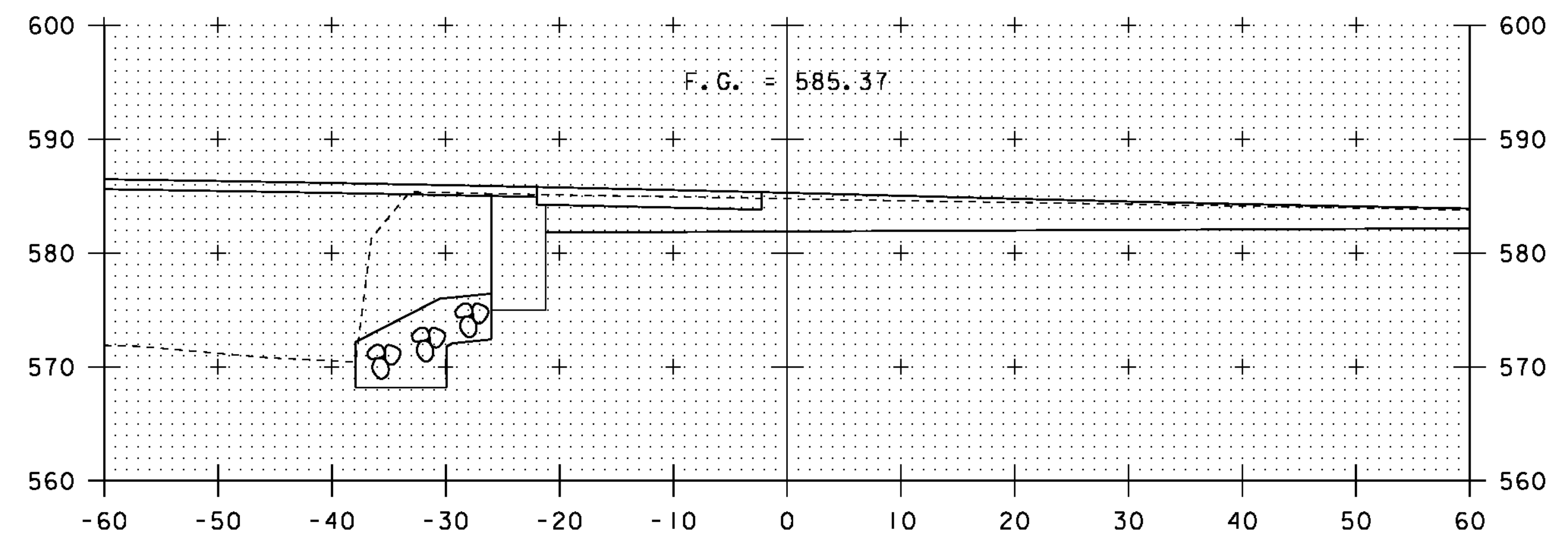
31+50



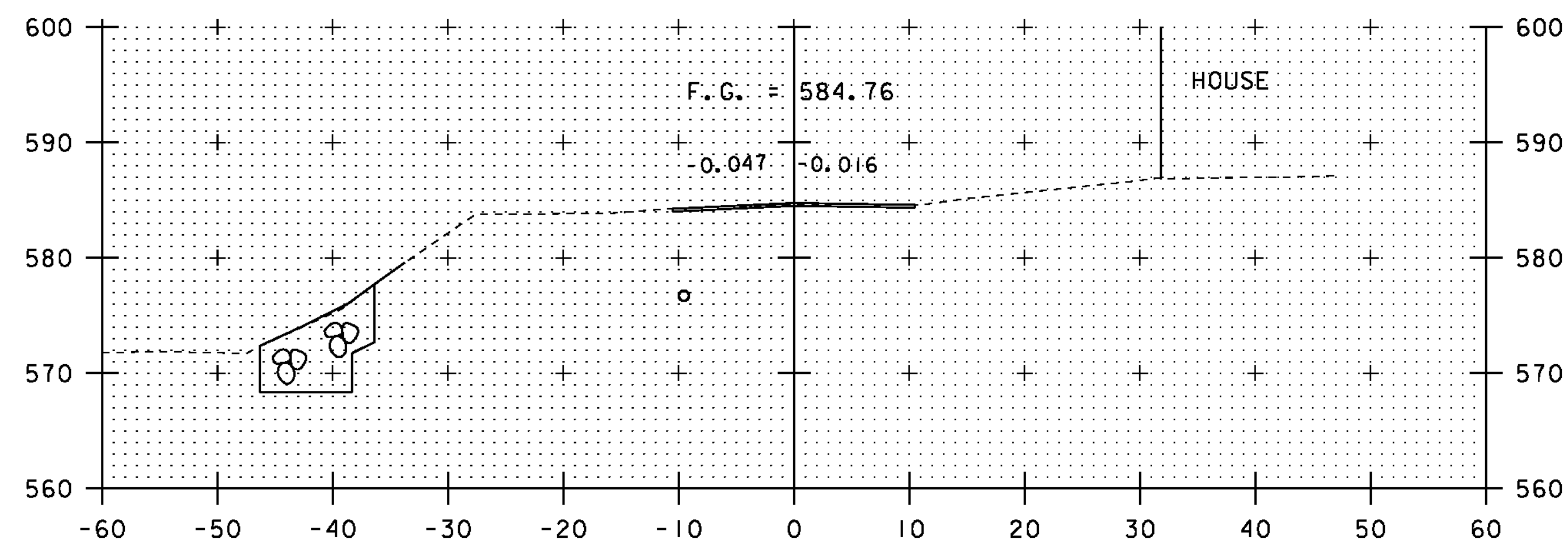
|                                  |                        |
|----------------------------------|------------------------|
| PROJECT NAME: CHESTER            |                        |
| PROJECT NUMBER: BRF 025-I(37) SC |                        |
| FILE NAME:                       | PLOT DATE: 20-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS     | DRAWN BY: D.D.BEARD    |
| DESIGNED BY: R.S.YOUNG           | CHECKED BY: R.S.YOUNG  |
| BRIDGE 9 VT RT 11 CROSS SECTIONS | SHEET 118 OF 124       |



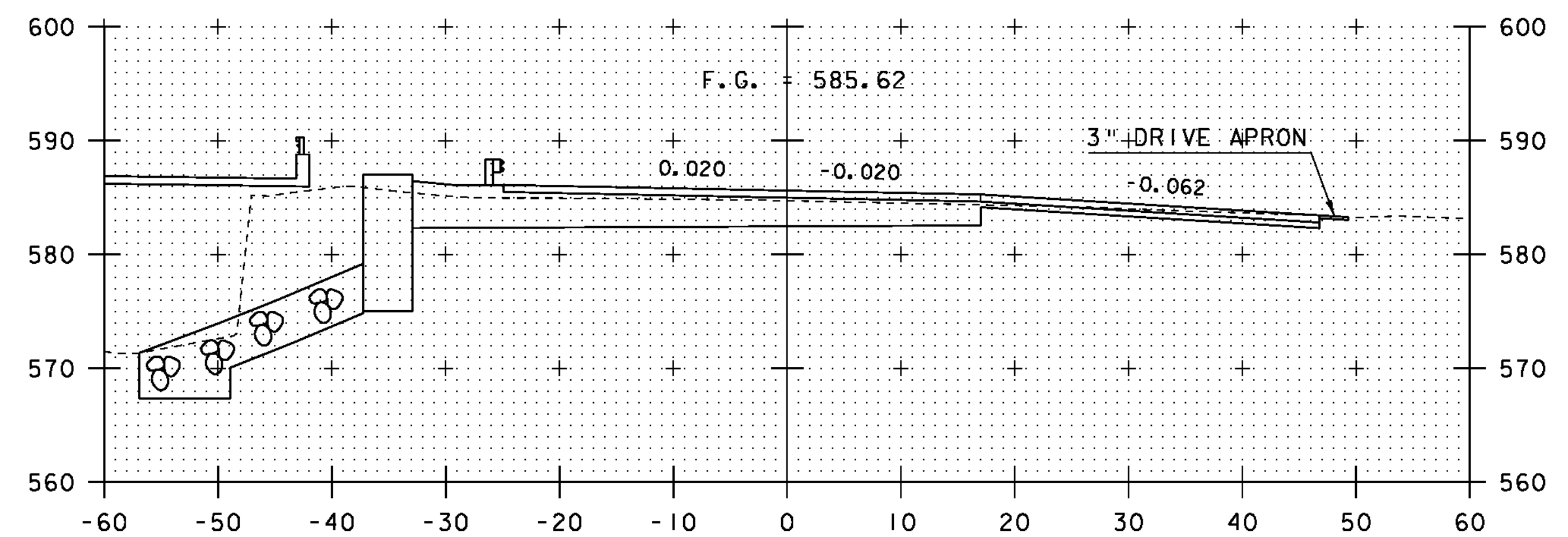
52+50



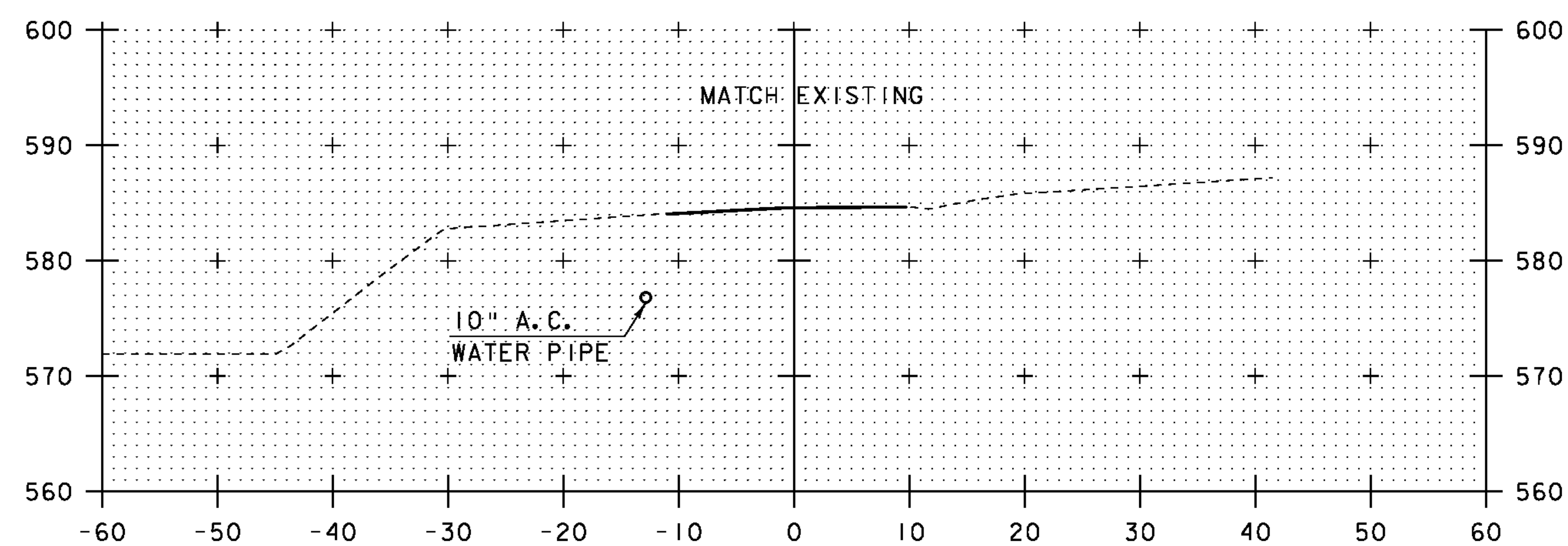
53+23  
=STA 14+13.29 @ VT 103



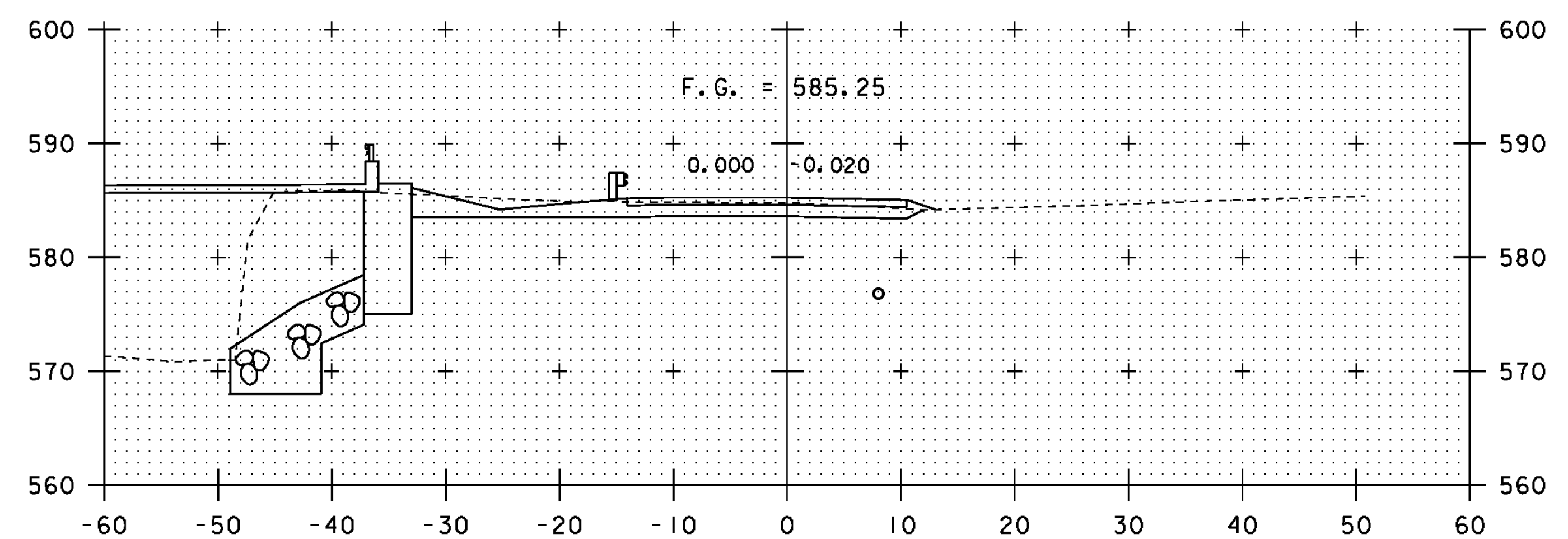
52+25



53+00



52+00



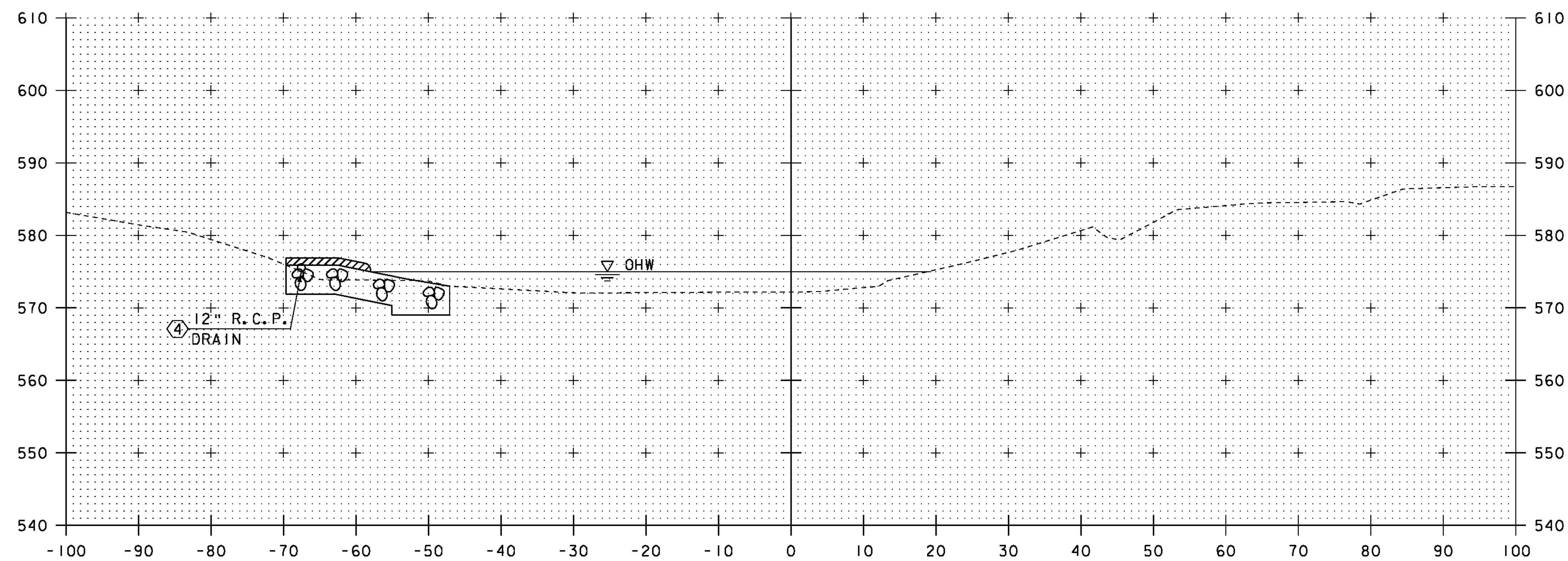
52+75

SCALE 1" = 10'-0"

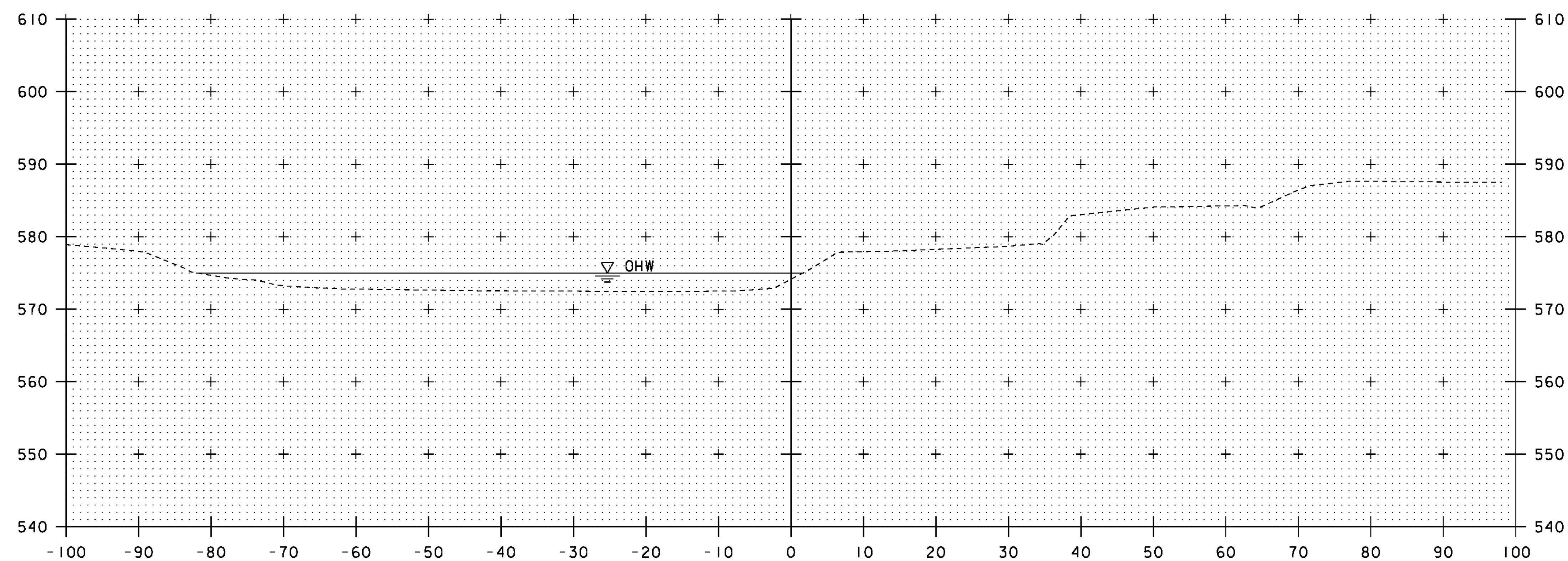
STA. 52+00 TO STA. 53+23

PROJECT NAME: CHESTER  
PROJECT NUMBER: BR 025-1(37) SC  
FILE NAME:  
PROJECT LEADER: C.P.WILLIAMS  
DESIGNED BY: R.S.YOUNG  
BRIDGE 9 TH 72 CROSS SECTIONS

PLOT DATE: 20-SEP-2010  
DRAWN BY: D.D.BEARD  
CHECKED BY: R.S.YOUNG  
SHEET 119 OF 124



61+25



61+00

STA: 61+06.80 LT  
BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
BEGIN GEOTEXTILE UNDER STONE FILL  
BEGIN STONE FILL TYPE IV  
BEGIN GRUBBING MATERIAL

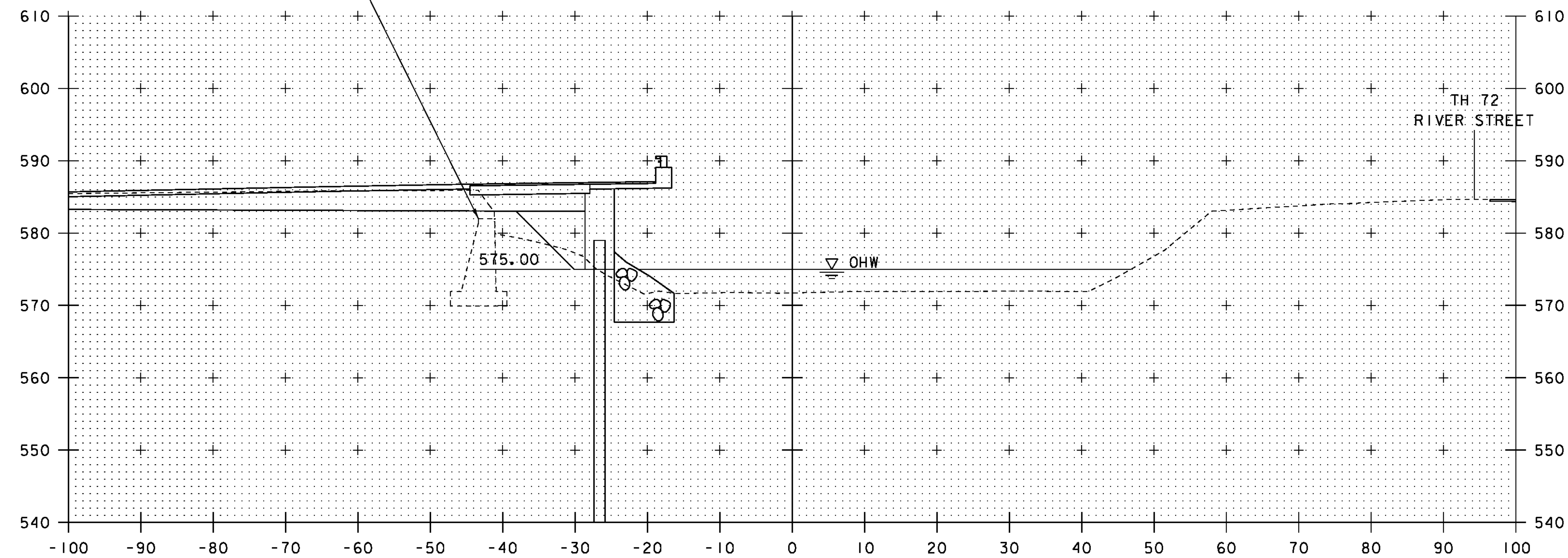
SCALE 1" = 10'-0"  
10 0 10

STA. 61+00 TO STA. 61+25

PROJECT NAME: CHESTER  
PROJECT NUMBER: BR 025-1(37) SC  
FILE NAME: s95b168xsl.dgn  
PROJECT LEADER: C.P. WILLIAMS  
DESIGNED BY: R.S. YOUNG  
BRIDGE 9 CHANNEL CROSS SECTIONS

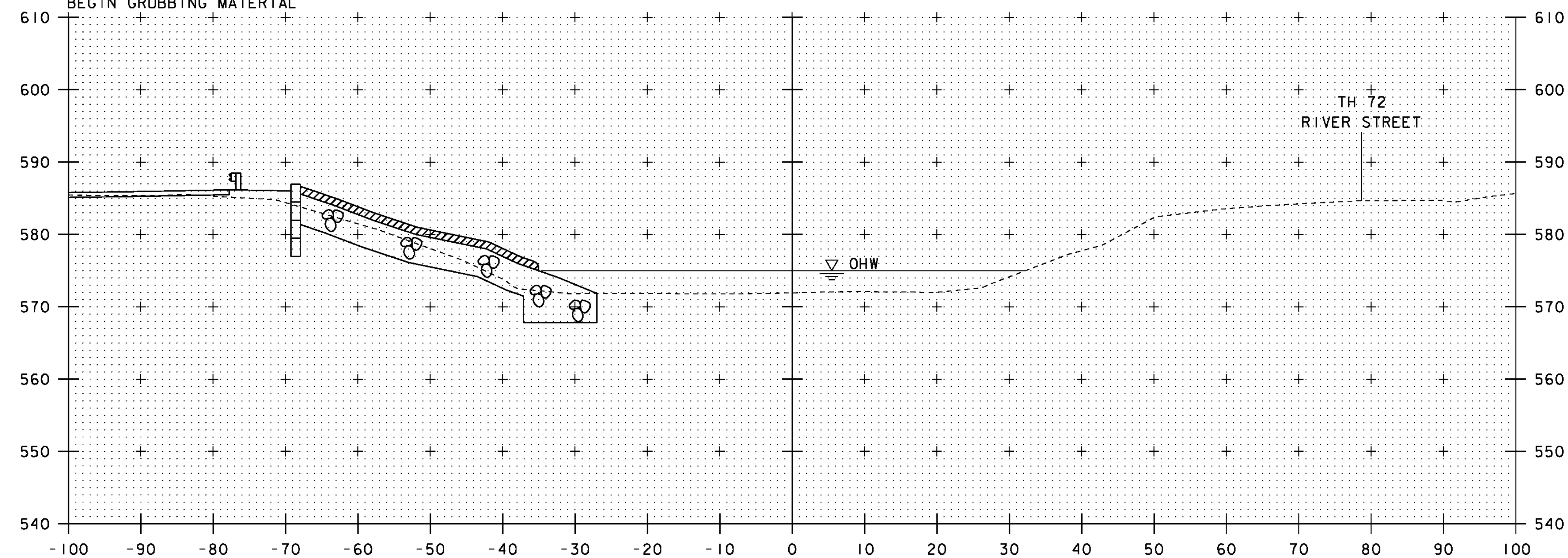
PLOT DATE: 20-SEP-2010  
DRAWN BY: D.D. BEARD  
CHECKED BY: R.S. YOUNG  
SHEET 120 OF 124

EXISTING ABUTMENT, REMOVE TO  
ELEVATION 582.00'. USE ITEM 529.15  
"REMOVAL OF STRUCTURE".



STA: 61+90.50 RT  
BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
BEGIN GEOTEXTILE UNDER STONE FILL  
BEGIN STONE FILL TYPE IV  
BEGIN GRUBBING MATERIAL

61+75



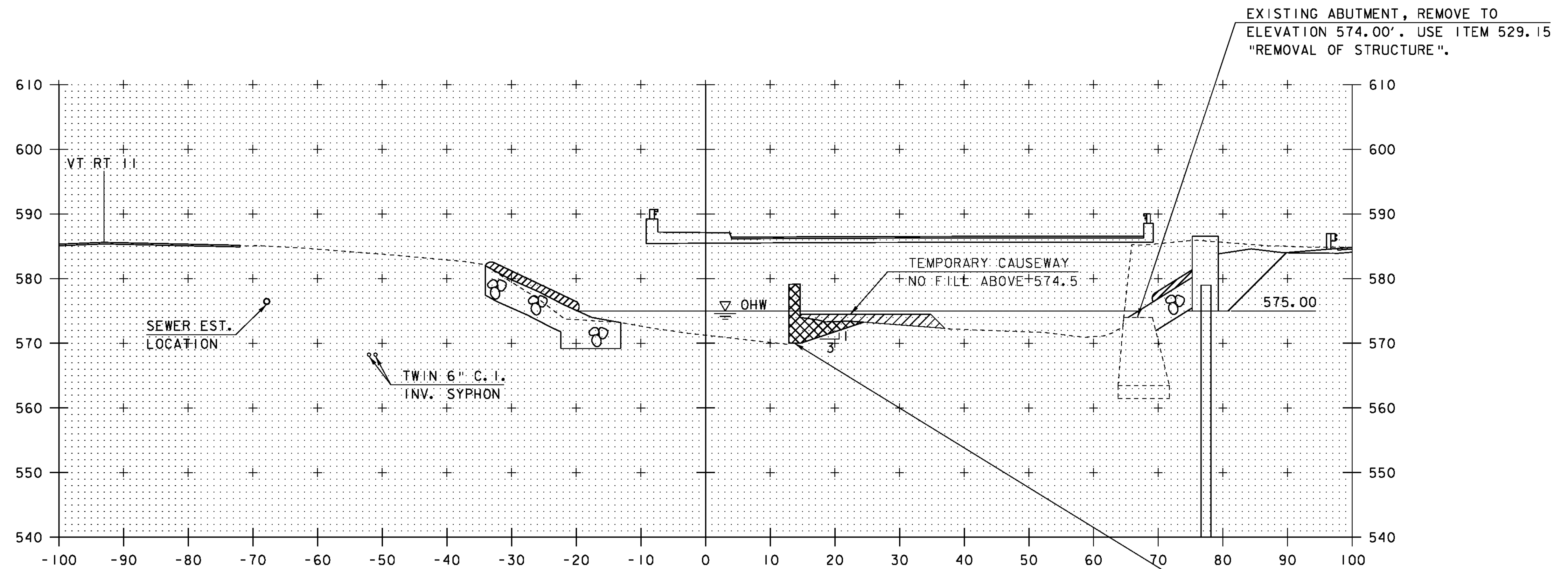
61+50

SCALE 1" = 10'-0"

STA. 61+50 TO STA. 61+75

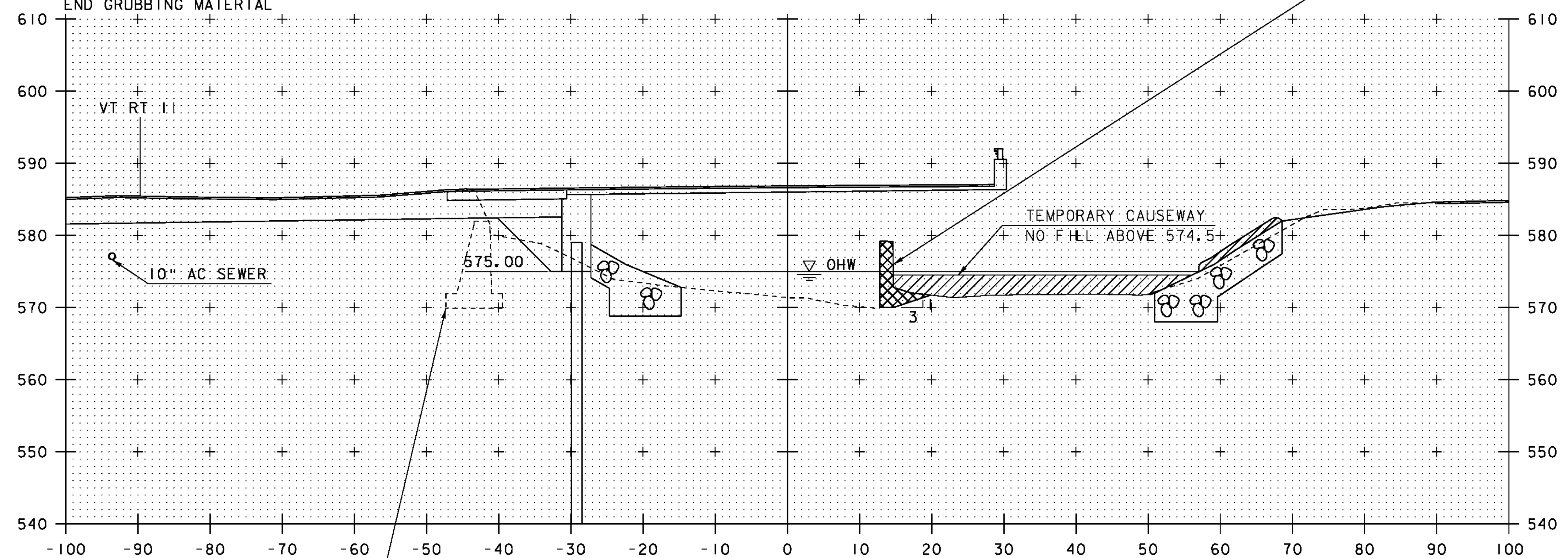
PROJECT NAME: CHESTER  
PROJECT NUMBER: BR 025-1(37) SC  
FILE NAME: s95b168xs2.dgn  
PROJECT LEADER: C.P. WILLIAMS  
DESIGNED BY: R.S. YOUNG  
BRIDGE 9 CHANNEL CROSS SECTIONS

PLOT DATE: 20-SEP-2010  
DRAWN BY: D.D. BEARD  
CHECKED BY: R.S. YOUNG  
SHEET 121 OF 124



STA: 62+42.70 LT  
END UNCLASSIFIED CHANNEL EXCAVATION  
END GEOTEXTILE UNDER STONE FILL  
END STONE FILL, TYPE IV  
END GRUBBING MATERIAL

REMOVE EXISTING PIER & STREAMBED MATERIAL INSIDE CROSS-HATCHED AREA. USE ITEM 529.15 "REMOVAL OF STRUCTURE" FOR PIER REMOVAL, AND ITEM 203.27 "UNCLASSIFIED CHANNEL EXCAVATION" FOR REMOVAL OF STREAMBED MATERIAL.



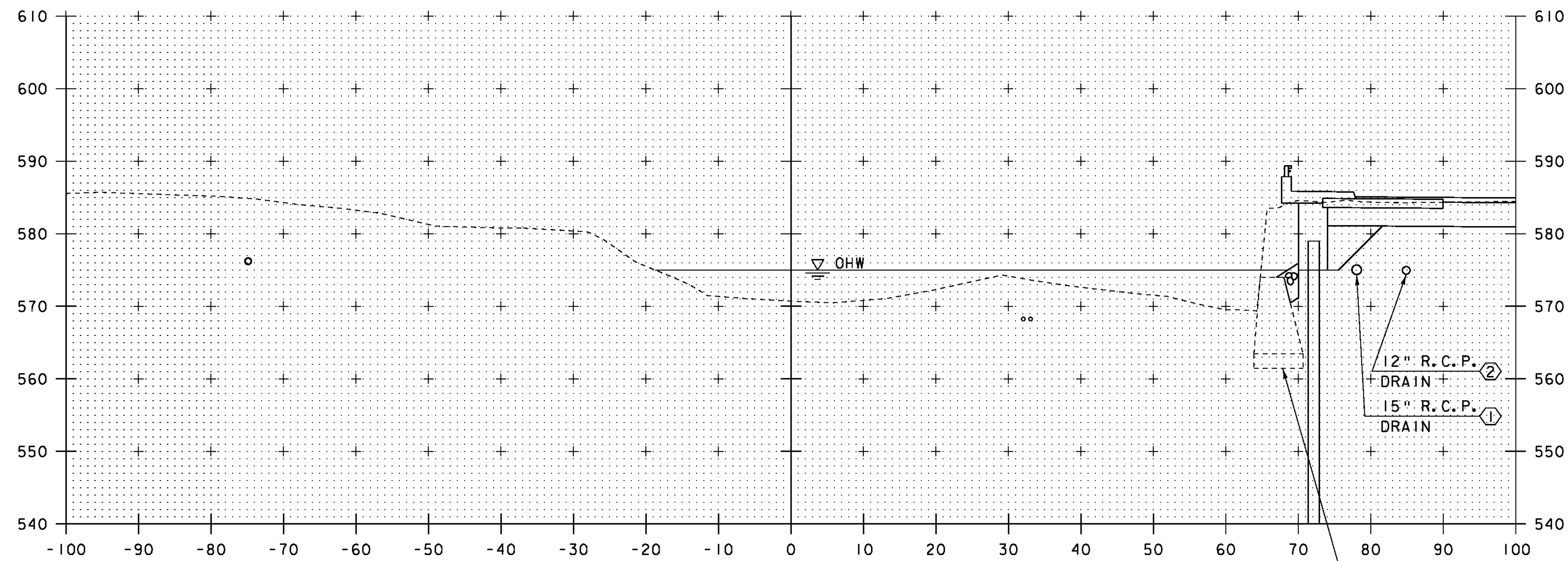
EXISTING ABUTMENT, REMOVE TO ELEVATION 582.00'. USE ITEM 529.15 "REMOVAL OF STRUCTURE".

SCALE 1" = 10'-0"

10 0 10

STA. 62+00 TO STA. 62+25

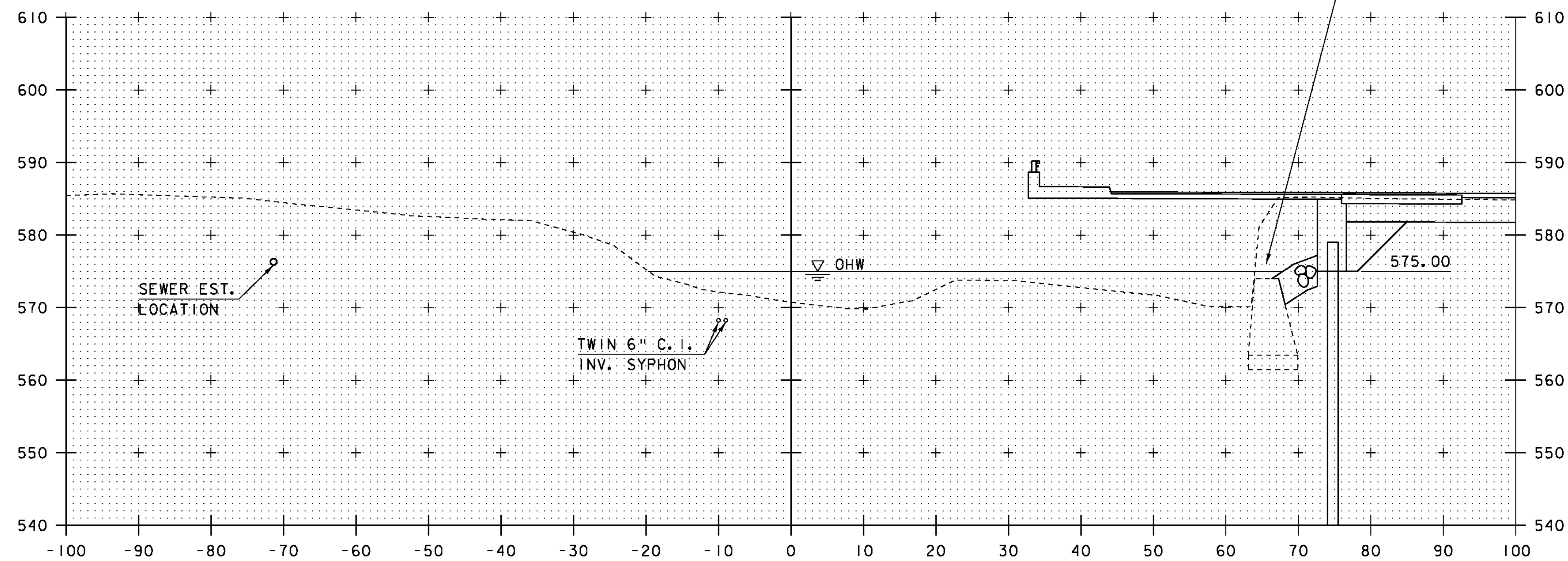
|                                  |                        |
|----------------------------------|------------------------|
| PROJECT NAME: CHESTER            | PLOT DATE: 20-SEP-2010 |
| PROJECT NUMBER: BRF 025-I(37) SC | DRAWN BY: D.D.BEARD    |
| FILE NAME: s95b168xs3.dgn        | CHECKED BY: R.S.YOUNG  |
| PROJECT LEADER: C.P.WILLIAMS     | SHEET 122 OF 124       |
| DESIGNED BY: R.S.YOUNG           |                        |
| BRIDGE 9 CHANNEL CROSS SECTIONS  |                        |



① TO BE REMOVED

62+75

EXISTING ABUTMENT, REMOVE TO  
ELEVATION 574.00'. USE ITEM 529.15  
"REMOVAL OF STRUCTURE".

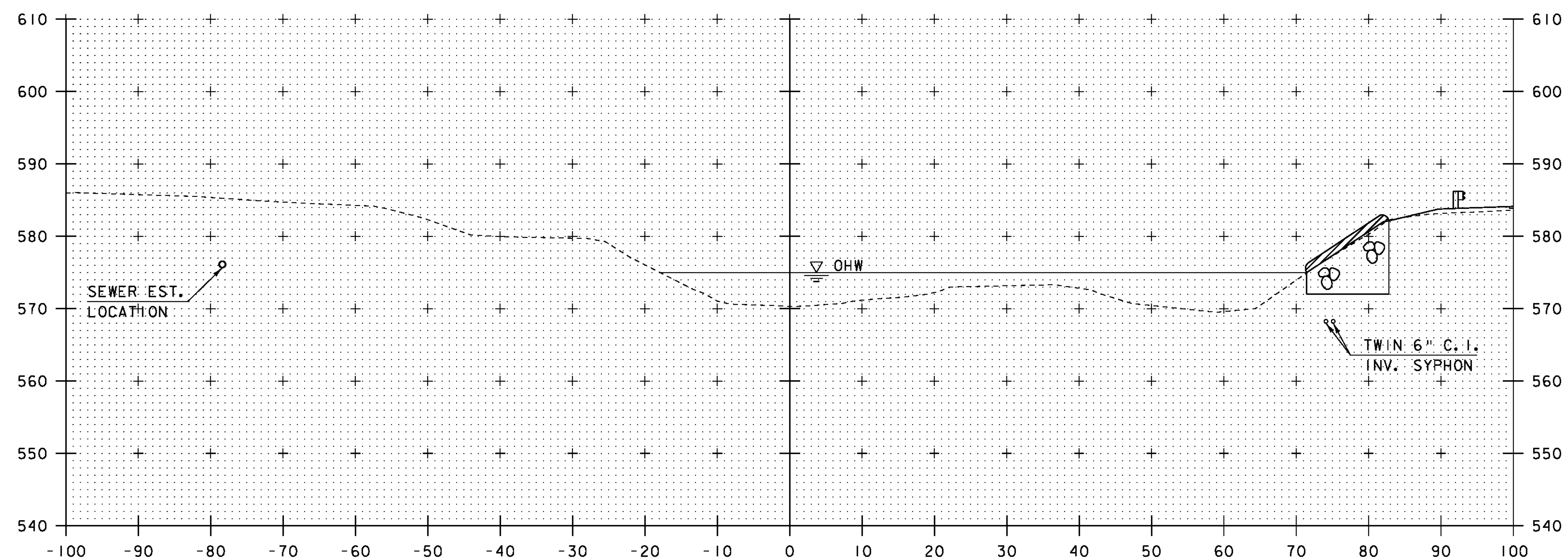


62+50

SCALE 1" = 10'-0"

STA. 62+50 TO STA. 62+75

|                 |                  |                                 |                |             |             |
|-----------------|------------------|---------------------------------|----------------|-------------|-------------|
| PROJECT NAME:   | CHESTER          | FILE NAME:                      | s95b168xs4.dgn | PLOT DATE:  | 20-SEP-2010 |
| PROJECT NUMBER: | BRF 025-I(37) SC | PROJECT LEADER:                 | C.P.WILLIAMS   | DRAWN BY:   | D.D.BEARD   |
|                 |                  | DESIGNED BY:                    | R.S.YOUNG      | CHECKED BY: | R.S.YOUNG   |
|                 |                  | BRIDGE 9 CHANNEL CROSS SECTIONS |                | SHEET 123   | OF 124      |



STA: 63+03.10 RT  
END UNCLASSIFIED CHANNEL EXCAVATION  
END GEOTEXTILE UNDER STONE FILL  
END STONE FILL, TYPE IV  
END GRUBBING MATERIAL

63+00

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

STA. 63+00 TO STA. 63+00

|                                  |                        |
|----------------------------------|------------------------|
| PROJECT NAME: CHESTER            |                        |
| PROJECT NUMBER: BRF 025-(K37) SC |                        |
| FILE NAME: s95b168xs5.dgn        | PLOT DATE: 20-SEP-2010 |
| PROJECT LEADER: C.P.WILLIAMS     | DRAWN BY: D.D.BEARD    |
| DESIGNED BY: R.S.YOUNG           | CHECKED BY: R.S.YOUNG  |
| BRIDGE 9 CHANNEL CROSS SECTIONS  | SHEET 124 OF 124       |