

SEE SHEET 2 FOR INDEX OF SHEETS
AND LIST OF STANDARDS

STATE OF VERMONT
AGENCY OF TRANSPORTATION



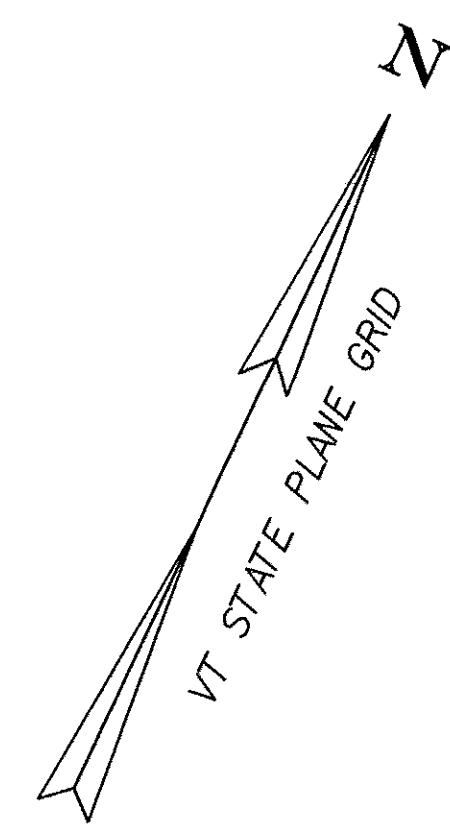
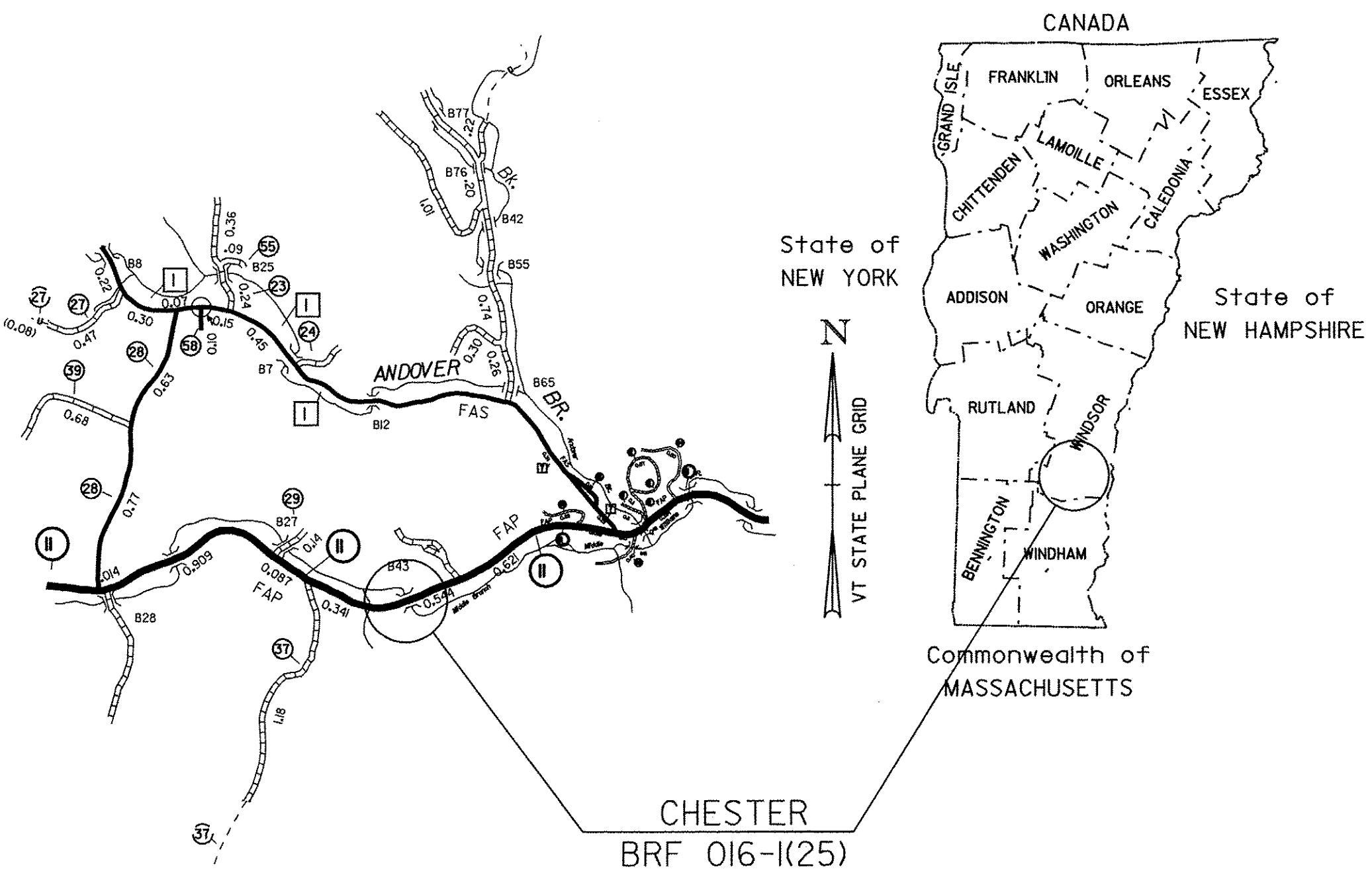
PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF CHESTER
COUNTY OF WINDSOR

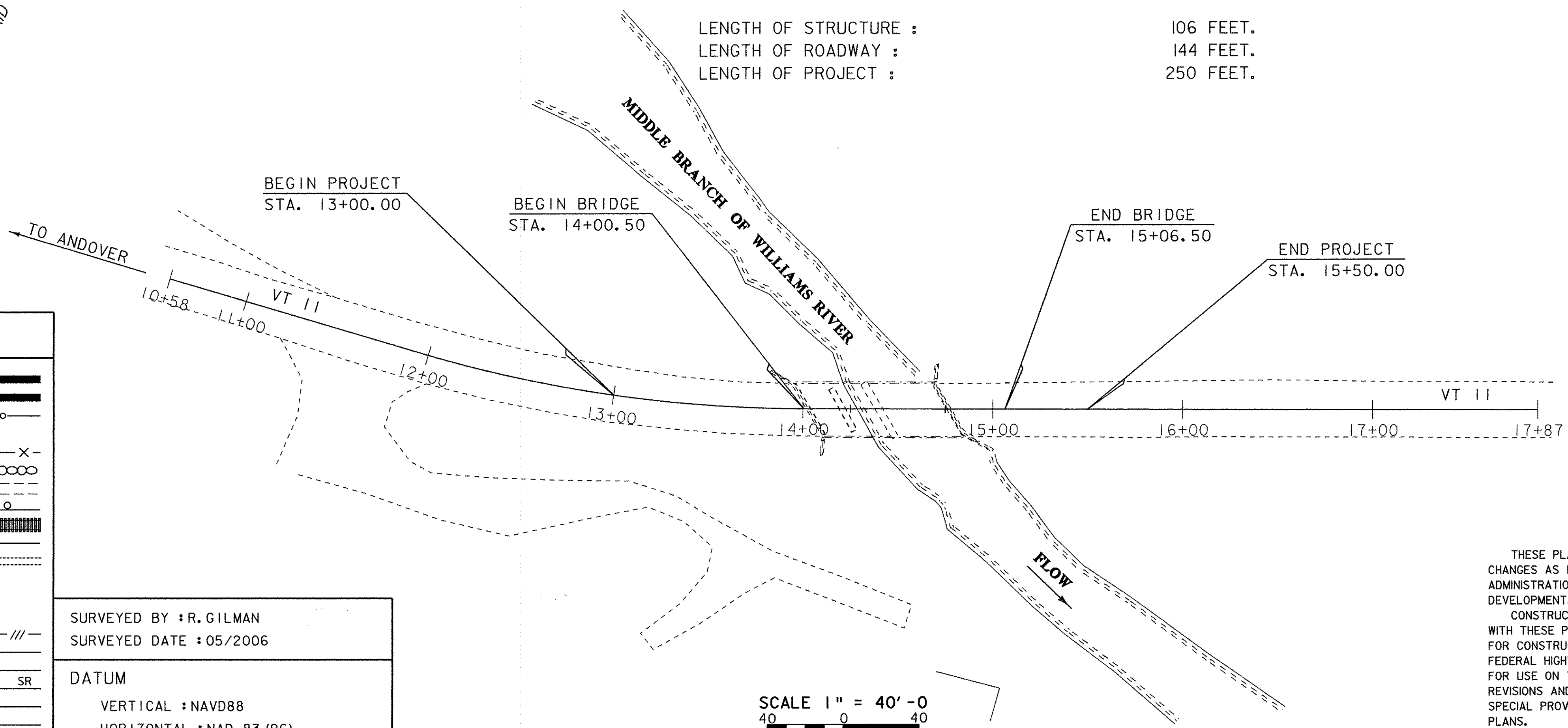
ROUTE NO : VT 11 MINOR ARTERIAL BRIDGE NO : 43

PROJECT LOCATION : BEGINNING APPROXIMATELY 1300 FEET EAST OF THE ANDOVER-CHESTER TOWN LINE AND PROCEEDING IN AN EASTERLY DIRECTION FOR 250 FEET.

PROJECT DESCRIPTION : REPLACEMENT OF EXISTING BRIDGE ALONG WITH NECESSARY APPROACH WORK



LENGTH OF STRUCTURE : 106 FEET.
LENGTH OF ROADWAY : 144 FEET.
LENGTH OF PROJECT : 250 FEET.



RECORD PLANS

CONTRACTOR: MILLER CONSTRUCTION, INC. - WINDSOR, VT

RESIDENT ENGINEER: JEREMY REED

CONSTRUCTION BEGAN: SEPTEMBER 29, 2008

CONSTRUCTION COMPLETE: DECEMBER 16, 2009

RECORD PLANS BY: JEREMY REED & AMOS KEMPTON

I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY *Jeremy Reed* RESIDENT ENGINEER
DATE 11/3/11

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

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 : 05/2006

DATUM
VERTICAL : NAVD88
HORIZONTAL : NAD 83 (96)

SCALE 1" = 40'-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.

DIRECTOR OF PROGRAM DEVELOPMENT

APPROVED *Paula Titone* DATE 2-22-08

PROJECT MANAGER : C.P. WILLIAMS

PROJECT NAME : CHESTER
PROJECT NUMBER : BRF 016-1 (25)

SHEET 1 OF 1 SHEETS

PRELIMINARY INFORMATION SHEET

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LIST OF STANDARDS

E-100	CONSTRUCTION APPROACH SIGNS	1/2/2004
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	1/2/2004
E-101	CONSTRUCTION SIGN DETAILS	5/30/2003
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	8/8/1995
E-120	STANDARD SIGN PLACEMENT - EXPRESSWAY & FREEWAY	8/8/1995
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	8/8/1995
E-134	BRIDGE NUMBER PLAQUE	8/8/1995
E-142	REGULATORY SIGN DETAILS	9/20/1995
E-143	REGULATORY SIGN DETAILS	6/15/2004
E-155	WARNING SIGN DETAILS	5/1/2004
E-160	FLANGED CHANNEL STEEL SIGN POST	5/20/1999
G-1	STEEL BEAM GUARDRAIL (50MPH & OVER) HEAVY DUTY STEEL BEAM GUARDRAIL TWISTED END TERMINAL	1/3/2000
G-1D	ANCHOR FOR STEEL BEAM RAIL STEEL BEAM GUARDRAIL (40MPH & LESS) HEAVY DUTY STEEL BEAM GUARDRAIL STEEL BEAM MEDIAN BARRIER ANCHOR FOR STEEL BEAM RAIL	1/3/2000
G-16	STEEL BEAM GUARDRAIL ATTACHMENTS TO EXISTING BRIDGE	6/1/1994
G-18	TERMINAL CONNECTOR FOR STEEL BEAM GUARDRAIL PRECAST CONCRETE TEMPORARY TRAFFIC BARRIER	6/1/1994

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: February 2007

DRAINAGE AREA : 13.7 sq. mi.

CHARACTER OF TERRAIN : Mountainous, mostly forested, narrow flood plain

STREAM CHARACTERISTICS : Sinuous, laterally unstable with alluvial channel boundaries

NATURE OF STREAMBED : Boulders, cobbles and gravel

PEAK FLOW DATA

Q 2.33 = 950 cfs

Q 50 = 2,980 cfs

Q 10 = 1,850 cfs

Q 100 = 3,560 cfs

Q 25 = 2,500 cfs

Q 500 = 5,240 cfs

DATE OF FLOOD OF RECORD : 1938

ESTIMATED DISCHARGE: unknown

WATER SURFACE ELEV.: unknown

NATURAL STREAM VELOCITY : @ Q50 = 11.0 fps

ICE CONDITIONS : Moderate

DEBRIS: Moderate

DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No

IS ORDINARY RISE RAPID? No

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: Concrete T-Beam w/Steel Beam

YEAR BUILT: 1933 - Reconstructed in 1974

CLEAR SPAN(NORMAL TO STREAM): 43'

VERTICAL CLEARANCE ABOVE STREAMBED: 12'

WATERWAY OF FULL OPENING: 420 sq. ft.

DISPOSITION OF STRUCTURE: Replace

TYPE OF MATERIAL UNDER SUBSTRUCTURE: See boring logs

WATER SURFACE ELEVATIONS AT:

Q2.33 = 931.3'

VELOCITY = 9.7 fps

Q10 = 933.2'

" 10.7 fps

Q25 = 934.3'

" 11.7 fps

Q50 = 935.0'

" 12.4 fps

Q100 = 937.1'

" 13.1 fps

LONG TERM STREAMBED CHANGES: Lateral instability evident from several point bars and cut banks located through the reach.

IS THE ROADWAY OVERTOPPED BELOW Q100: No

FREQUENCY: N/A

RELIEF ELEVATION: 938.6

DISCHARGE OVER ROAD @Q100: N/A

UPSTREAM STRUCTURE

TOWN: Andover

DISTANCE: 3.685'

HIGHWAY #: TH 29

STRUCTURE #: 27

CLEAR SPAN: 32'

CLEAR HEIGHT: 9'

YEAR BUILT: 1974

FULL WATERWAY: 280 sq. ft.

STRUCTURE TYPE: Steel Beam

DOWNSTREAM STRUCTURE

TOWN: Chester

DISTANCE: 6.603'

HIGHWAY #: TH 56

STRUCTURE #: 61

CLEAR SPAN: 26'

CLEAR HEIGHT: 7'

YEAR BUILT: 1974

FULL WATERWAY: 180 sq. ft.

STRUCTURE TYPE: Steel Beam

LFD LOAD RATING (TONS)							
LOADING LEVELS	TRUCK						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY	40	61					
POSTED	57	86	97		80	82	92
OPERATING		103	116	132	96	98	

TRAFFIC DATA					
YEAR	ADT	DHV	% D	% T	ADTT
2009	2700	305	58	12.5	420
2029	3300	370	58	17.7	720

20 year ESAL for flexible pavement from 2009 to 2029 : 3,669,000

40 year ESAL for flexible pavement from 2009 to 2049 : 8,842,000

Design Speed : 50 mph

PROPOSED STRUCTURE

STRUCTURE TYPE: Steel beam bridge

CLEAR SPAN(NORMAL TO STREAM): 52'

VERTICAL CLEARANCE ABOVE STREAMBED: 10'

WATERWAY OF FULL OPENING: 400 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 = 930.8'

VELOCITY= 9.2 fps

Q10 = 932.4'

" 10.9 fps

Q25 = 933.4'

" 12.0 fps

Q50 = 934.0'

" 12.6 fps

Q100 = 934.7'

" 13.3 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No

FREQUENCY: N/A

RELIEF ELEVATION: 938.6

DISCHARGE OVER ROAD @Q100: N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 935.3'

VERTICAL CLEARANCE: @ Q50 = 1.3'

SCOUR: 2.4' at Q500

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW: 30cfs

DEPTH OR ELEVATION: 1.0'

ORDINARY LOW WATER: 10 cfs

ORDINARY HIGH WATER: 410 cfs

3.0'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Two-way Temporary Bridge

CLEAR SPAN (NORMAL TO STREAM): 34'

VERTICAL CLEARANCE ABOVE STREAMBED: Low beam elev. = 934.0'

WATERWAY AREA OF FULL OPENING: 250 sq. ft.

ADDITIONAL INFORMATION

Temporary bridge for one season only. See sketch sheet 5.

DESIGN CRITERIA

1. DESIGN LIVE LOAD AASHTO HL-93
2. DESIGN SPAN 105'
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A
- ON LEDGE N/A
4. ALLOWABLE LOAD FOR PILING See General Notes Sheet
- PILE TYPE H 12 x 74
- ESTIMATED LENGTH 80 FT
5. STRUCTURAL STEEL AASHTO M270M/M270 GRADE 50W
6. REINFORCING STEEL GRADE 60
7. CONCRETE, HIGH PERFORMANCE CLASS A fc: 4000 psi
- CONCRETE, HIGH PERFORMANCE CLASS B fc: 3500 psi
8. DESIGN SOIL UNIT WEIGHT 140 pcf
9. DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL N/A

TRAFFIC MAINTENANCE

1. IS TRAFFIC TO BE MAINTAINED? YES
- IF YES, ON EXISTING STRUCTURE? NO
- OR ON TEMPORARY BRIDGE? YES
- ONE OR TWO-WAY TRAVEL? TWO-WAY
2. TRAFFIC CONTROL SIGNALS REQUIRED? NO
3. ARE SIDEWALKS REQUIRED? NO
- IF SO, ON WHAT SIDE?

PROJECT NAME: CHESTER

PROJECT NUMBER: BRF 016-1(25)

FILE NAME: s88b194excel.dgn

PLOT DATE: 2/14/2008

PROJECT LEADER: C.P.WILLIAMS

DRAWN BY: D.D.BEARD

DESIGNED BY: E.L.RUSTAY

CHECKED R.S.YOUNG

PRELIMINARY INFORMATION SHEET

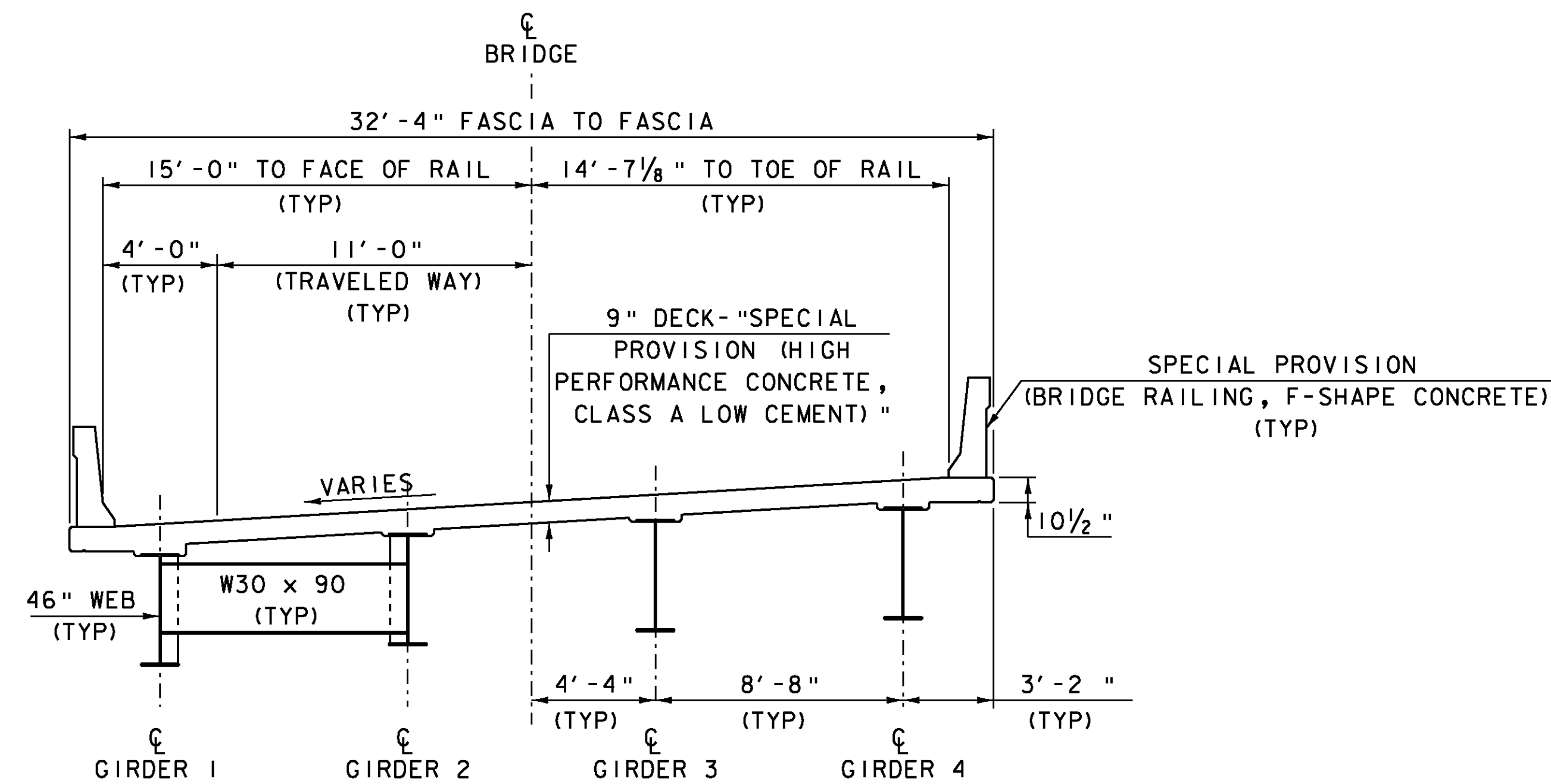
SHEET 2 OF 50

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
APP. SLAB #1	APP. SLAB #2	ABUT. #1	ABUT. #2	SUPER STRUCTURE	ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C.E ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
					1					1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10		EARTHWORKS SUMMARY		
					1020					1020		CY	COMMON EXCAVATION	203.15				
		90	730					820		820		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27		FILL AVAILABLE COMMON EXCAVATION: 1020 x1.0 UNCLASSIFIED CHANNEL EXCAVATION: 820 x0.3 STRUCTURE EXCAVATION: 370 x0.3		
					130					130		CY	SAND BORROW	203.31				
		180	190					370		370		CY	STRUCTURE EXCAVATION	204.25		1377	CY	TOTAL
		120	100					220		220		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
					700					700		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10		150	CY	FILL REQUIRED PLANMETERED FILL:
					720					720		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35		172.5	CY	FACTORED FILL: x1.15
					40					40		CY	AGGREGATE SURFACE COURSE	401.10		7.5	CY	ROUNDING
					5					5		CWT	EMULSIFIED ASPHALT	404.65		180	CY	TOTAL
					541					541		TON	BITUMINOUS CONCRETE PAVEMENT (PG58-28)	406.25		1197	CY	WASTE: 1377-180
		34	29					63		63		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34				
		0.5	0.5					1		1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10				
		320	320					640		640		LF	STEEL PILING FOR INTEGRAL ABUTMENTS, HP 12 X 74	505.26				
		1	1					2		2		EACH	DYNAMIC PILE LOADING TEST	505.45				
				102930				102930		102930		LB	STRUCTURAL STEEL, PLATE GIRDER	506.55				
3360	3360	10285	8510	37460				62975		62975		LB	EPOXY COATED REINFORCING STEEL	507.17				
				1				1		1		LS	SHEAR CONNECTORS (848 - 7/8" X 7")	508.15				
5	5	4	3	43				60		60		GAL	WATER REPELLENT, SILANE	514.10				
30	30							60		60		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
		32.5	32.5					65		65		LF	JOINT SEALER, HOT POURED	524.11				
					1					1		LS	TWO-WAY TEMPORARY BRIDGE (816 SF - EST.)	528.11				
								250		250		SY	REMOVAL OF BRIDGE PAVEMENT	529.10				
					1					1		EACH	REMOVAL OF STRUCTURE (2520 SF - EST.)	529.15				
		4	4					8		8		EACH	BEARING DEVICE ASSEMBLY, INTEGRAL ABUTMENT	531.14				
							10			10		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25				
							1			1		TON	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15				
							5			5		CY	STONE FILL, TYPE I	613.10				
		205	315					520		520		CY	STONE FILL, TYPE III	613.12				
					87.5					87.5		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED	621.21				
					4					4		EACH	MANUFACTURED TERMINAL SECTION, FLARED	621.50				
					375					375		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
					20					20		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
					360					360		HR	FLAGGERS	630.15				
									1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
									1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
									1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
									1	1		LU	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.25				
						520				520		HR	EMPLOYEE TRAINEESHIP	634.10				
					1					1		LS	MOBILIZATION/DEMOBILIZATION	635.11				

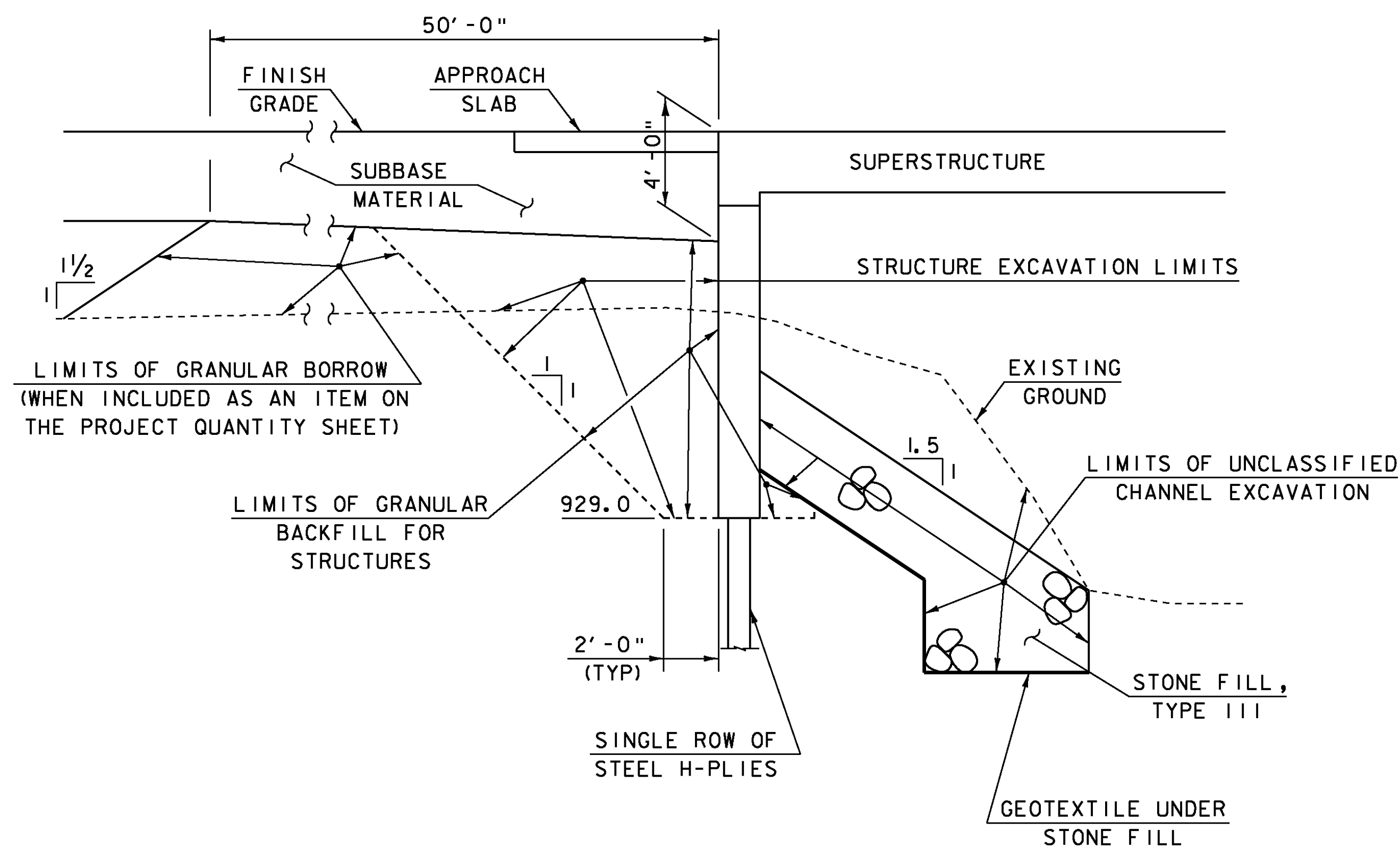
QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES											TOTALS		DESCRIPTIONS					DETAILED SUMMARY OF QUANTITIES					
APP. SLAB #1	APP. SLAB #2	ABUT. #1	ABUT. #2	SUPER STRUCTURE	ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS					
28	28				1					1		LS	TRAFFIC CONTROL	641.10									
					1250					1250		LF	DURABLE 4 INCH WHITE LINE, THERMOPLASTIC	646.402									
					1320					1320		LF	DURABLE 4 INCH YELLOW LINE, THERMOPLASTIC	646.412									
					320					320		SF	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85									
		240	370					610		610		SY	GEOTEXTILE UNDER STONE FILL	649.31									
							90			90		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61									
							30			30		LB	SEED	651.15									
							10			10		LB	SEED, WINTER RYE	651.17									
							200			200		LB	FERTILIZER	651.18									
							1			1		TON	AGRICULTURAL LIMESTONE	651.20									
							1			1		TON	HAY MULCH	651.25									
							110			110		CY	TOPSOIL	651.35									
							400			400		SY	GRUBBING MATERIAL	651.40									
							1			1		LS	EPSC PLAN	652.10									
							50			50		HR	MONITORING EPSC PLAN	652.20									
							1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30									
							930			930		SY	TEMPORARY EROSION MATTING	653.20									
							12			12		CY	TEMPORARY STONE CHECK DAM, TYPE I	653.25									
							31			31		CY	VEHICLE TRACKING PAD	653.35									
							1040			1040		LF	PROJECT DEMARCATION FENCE	653.55									
							0.33			0.33		SF	TRAFFIC SIGNS, TYPE A	675.20									
							8			8		LF	FLANGED CHANNEL SIGN POST	675.301									
							1			1		EACH	REMOVING SIGNS	675.50									
		35	34	102						227		227		CY					SPECIAL PROVISION (HP CONCRETE, CLASS A LOW CEMENT) (FPQ)	900.608			
							4					4		EACH					SPECIAL PROVISION (GR APPROACH SECTION TO F-SHAPE CONCRETE RAIL)	900.620			
					212					212		212		LF					SPECIAL PROVISION (BRIDGE RAILING, F-SHAPE CONCRETE)	900.640			
									135			135		SY					SPECIAL PROVISION (GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED)	900.675			
		70	70		360					500		500		SY					SPECIAL PROVISION (LONGITUDINAL DECK GROOVING)	900.675			
						</																	



BRIDGE TYPICAL SECTION

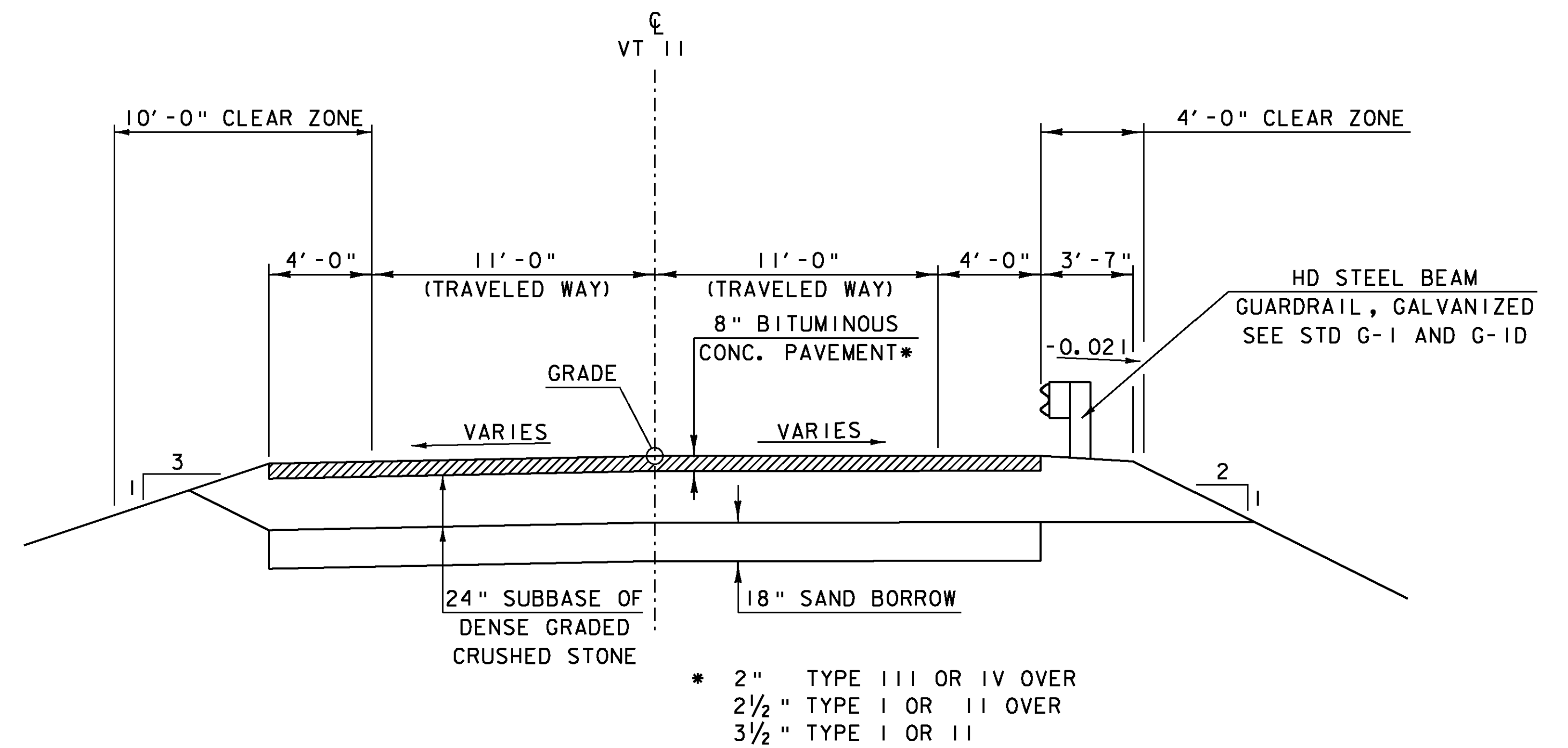
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1 0 2 4 6



TYPICAL INTEGRAL ABUTMENT SECTION

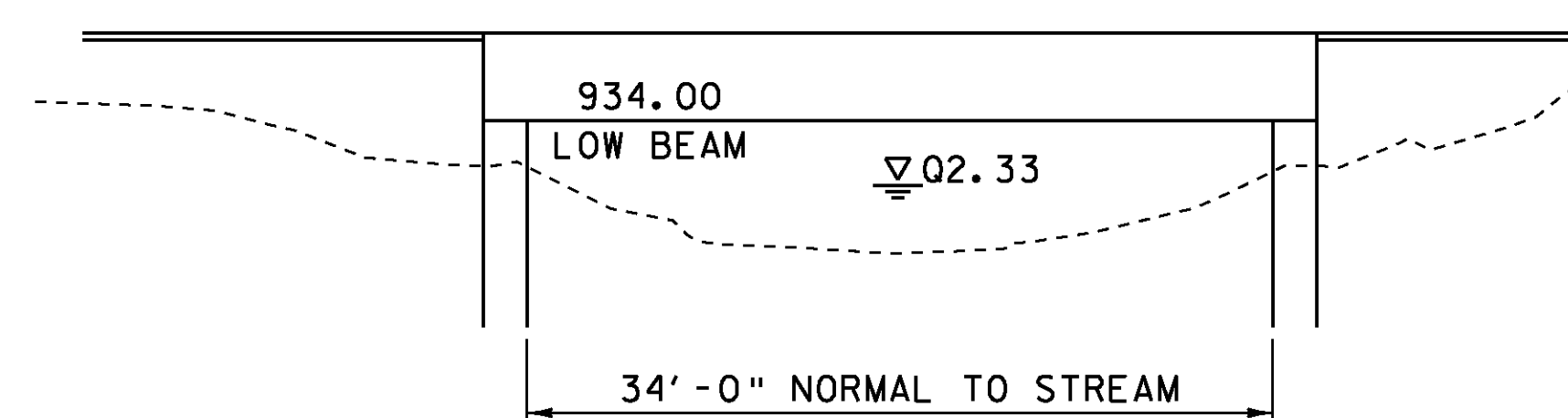
NOT TO SCALE

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



VT RTE. 11 TYPICAL SECTION

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



TEMPORARY DETOUR SKETCH

NOT TO SCALE

MATERIAL ITEM	TOLERANCE
PAVEMENT	± 1/4" TOTAL THICKNESS
AGGREGATE SURFACE COURSE	± 1/2"
BASE COURSE	± 1/2"
SUBBASE	± 1"
SAND BORROW	± 1"

PROJECT:	PROJECT NO.:
CHESTER	BRF 016-1 (25)
DESIGN FILE NAME: s88b194\Structures\s88b194typ.dgn	PLOT DATE: 16-MAR-2011
IPARM FILE NAME: s88b194typ.i	DRAWN BY: D.D.BEARD
DESIGNED BY: E.L.RUSTAY	CHECKED BY: R.S.YOUNG
SQUAD LEADER: C.P.WILLIAMS	SHEET: 5 OF 50
TYPICAL SECTIONS	

GPS CONTROL POINTS

HVCTRL #1

SKEET AZ MK
NORTH = 276537.75
EAST = 1593882.13
ELEV. = 926.44

GENERAL LOCATION, CHESTER VT. TO REACH FROM THE INTERSECTION OF VT ROUTE 35 (GRAFTON ROAD) VT ROUTE 11 (MAIN STREET) AND VT ROUTE 103 (DEPOT STREET) GO WEST ALONG VT ROUTE 11 FOR 4.6 MILES TO THE BROOKSIDE USED FURNITURE BUILDING ON THE LEFT AND THE SITE OF THE MARK ON THE LEFT, JUST EAST OF THE BUILDING. THE MARK IS SET 10 CM BELOW GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT. IT IS 6.8 M SOUTH SOUTHEAST OF AND ABOUT 0.5 M LOWER THAN THE CENTERLINE OF VT ROUTE 11 24.7 M EAST NORTHEAST OF THE NORTHEAST CORNER OF THE STORE 17.1 M EAST OF POLE # 1/167/2/162, 13.1 M NORTH OF THE CENTER OF THE SOUTH (OUTLET) END OF A 45 CM DIAMETER CULVERT WITH METAL DELINEATOR POST AND 21.6 M WEST OF POLE # 1/166/161 AND A FIBERGLASS WITNESS POST

HVCTRL #2

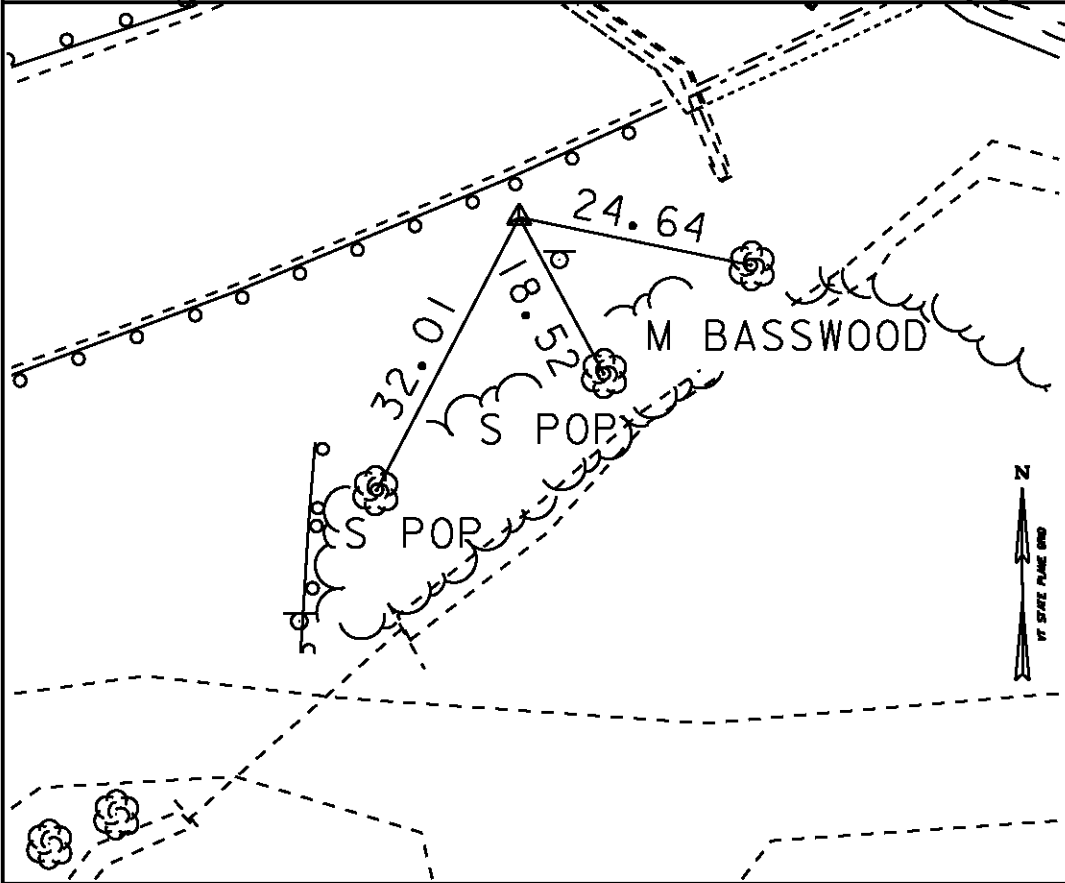
SKEET
NORTH = 275996.08
EAST = 1592376.65
ELEV. = 942.19

GENERAL LOCATION, CHESTER VT. TO REACH FROM THE INTERSECTION OF VT ROUTE 35 (GRAFTON ROAD) , VT ROUTE 11 (MAIN STREET) AND VT ROUTE 103 (DEPOT STREET) GO WEST ALONG VT ROUTE 11 FOR 4.9 MILES TO THE SITE OF THE MARK ON THE LEFT, JUST WEST OF THE GRAVEL DRIVE ENTRANCE TO THE CHESTER ROAD AND GUN CLUB AND OPPOSITE A LARGE GRAVEL PULLOUT. THE MARK IS SET 2 CM BELOW GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT. IT IS 7.4 M SOUTH OF AND ABOUT 0.5 M LOWER THAN THE CENTERLINE OF VT ROUTE 11, 35.6 M EAST OF POLE # 178/2/170, 29.3 M WEST NORTHWEST OF THE MOST NORTHERLY OF TWO POSTS FOR THE ROD AND GUN CLUB SIGN, 41.4 M WEST NORTHWEST OF POLE # 174A, AND 1.1 M NORTH OF A FIBERGLASS WITNESS POST.

TRAVERSE TIES

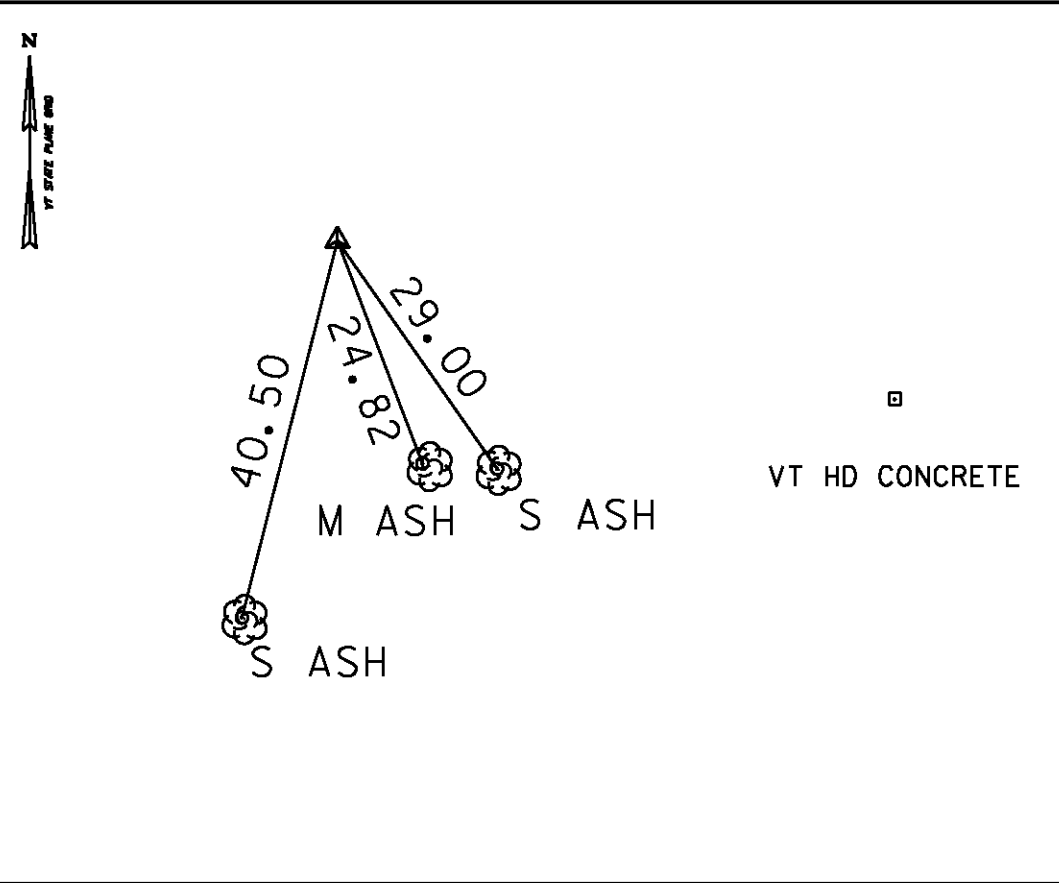
HVCTRL #3

NORTH = 276081.16
EAST = 1592733.33
ELEV. = 941.12



HVCTRL #4

NORTH = 276278.12
EAST = 1593158.37
ELEV. = 935.51



NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

* Main Traverse Completed 5/25/06 by R.Gilman P.C. & P.Winters

ALIGNMENT TIES

PC 11+94.79

NORTH = 276044.39
EAST = 1592539.52

PI 12+98.10

NORTH = 276059.67
EAST = 1592641.69

PT 14+00.00

NORTH = 276103.19
EAST = 1592735.39

POT 16+00

NORTH = 276187.44
EAST = 1592916.76

NORTH =
EAST =

DATUM

VERTICAL NAVD 88

HORIZONTAL NAD 83 (96)

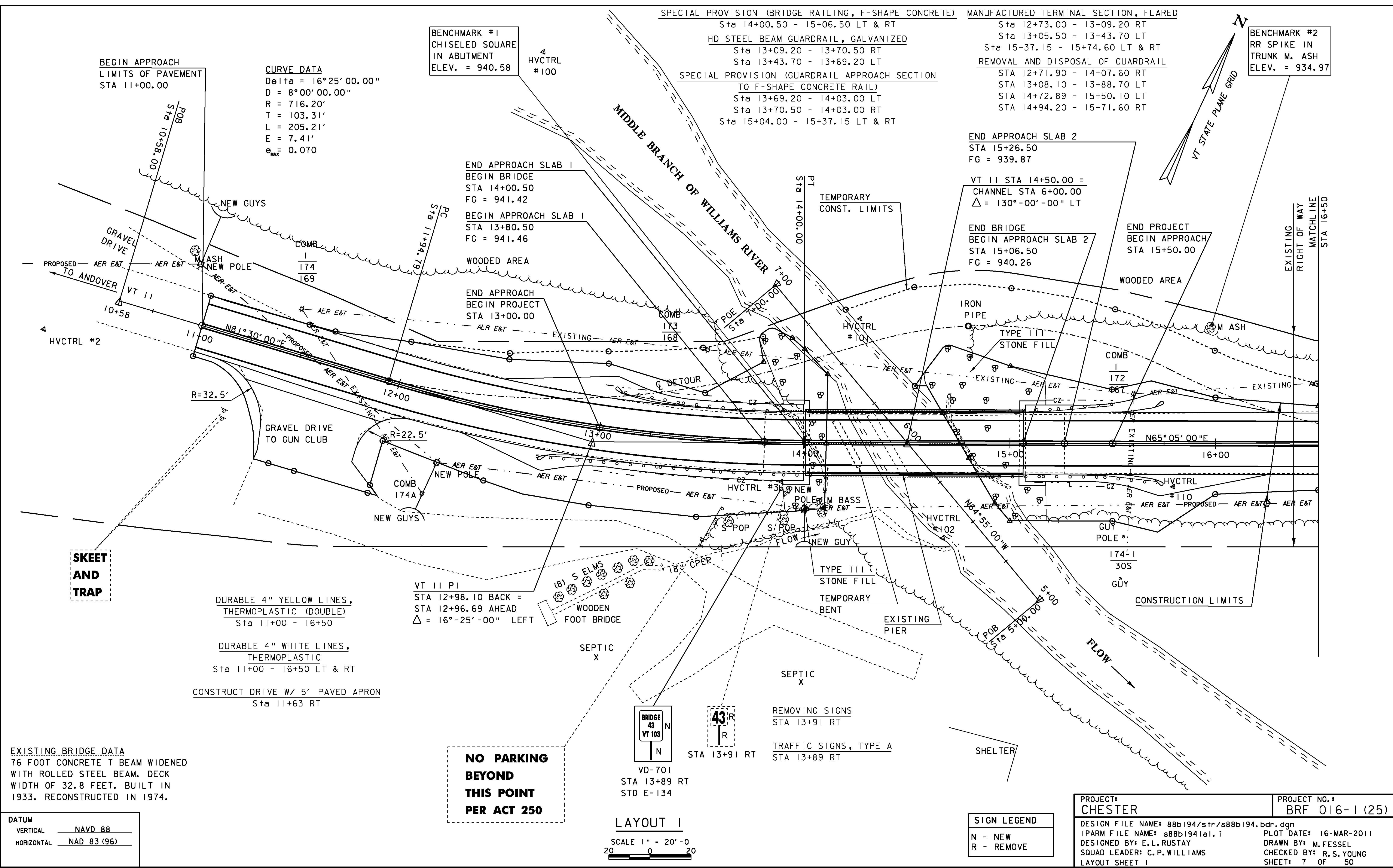
ADJUSTMENT Compass

PROJECT NAME: Chester

PROJECT NUMBER: BRF 016-1(25)

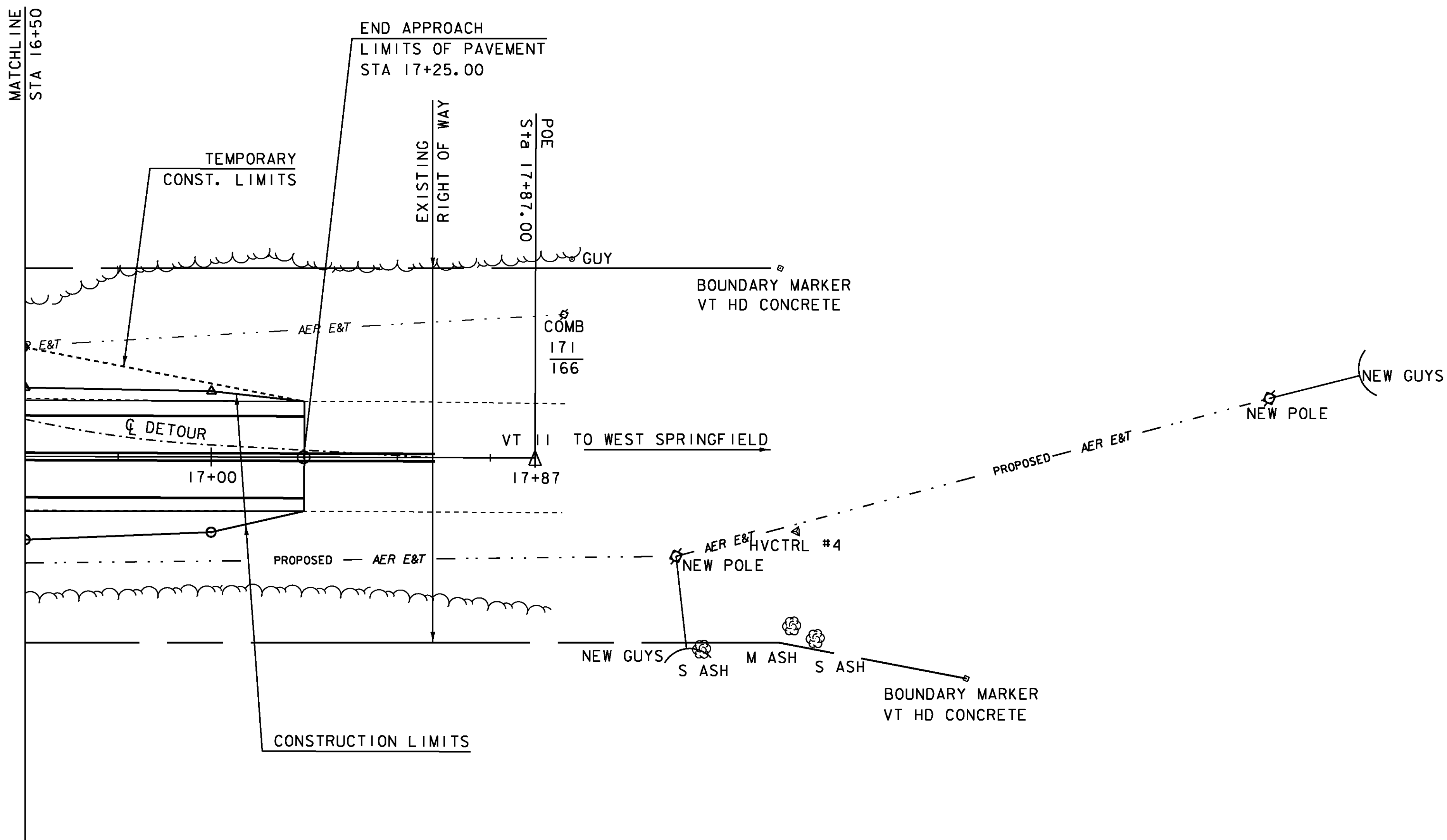
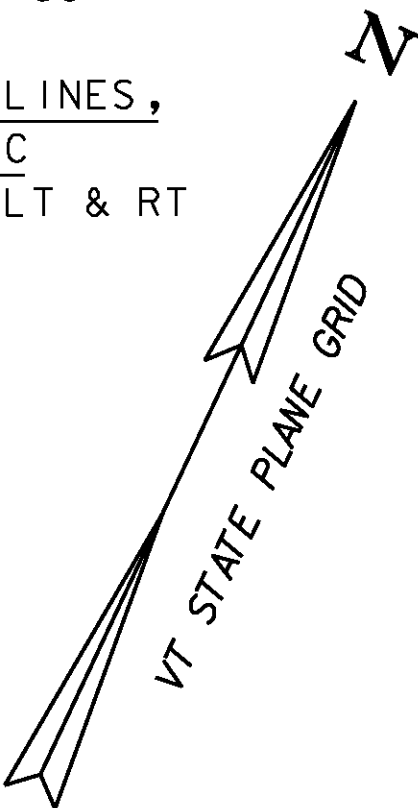
FILE NAME: 88b194\survey\x88b194+1.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: E.L.RUSTAY
TIE SHEET

PLOT DATE: 16-MAR-2011
DRAWN BY: R.Bullock
CHECKED BY: R.S.YOUNG
SHEET 6 OF 50



DURABLE 4" YELLOW LINES,
THERMOPLASTIC (DOUBLE)
Sta 16+50 - 17+60

DURABLE 4" WHITE LINES,
THERMOPLASTIC
Sta 16+50 - 17+25 LT & RT

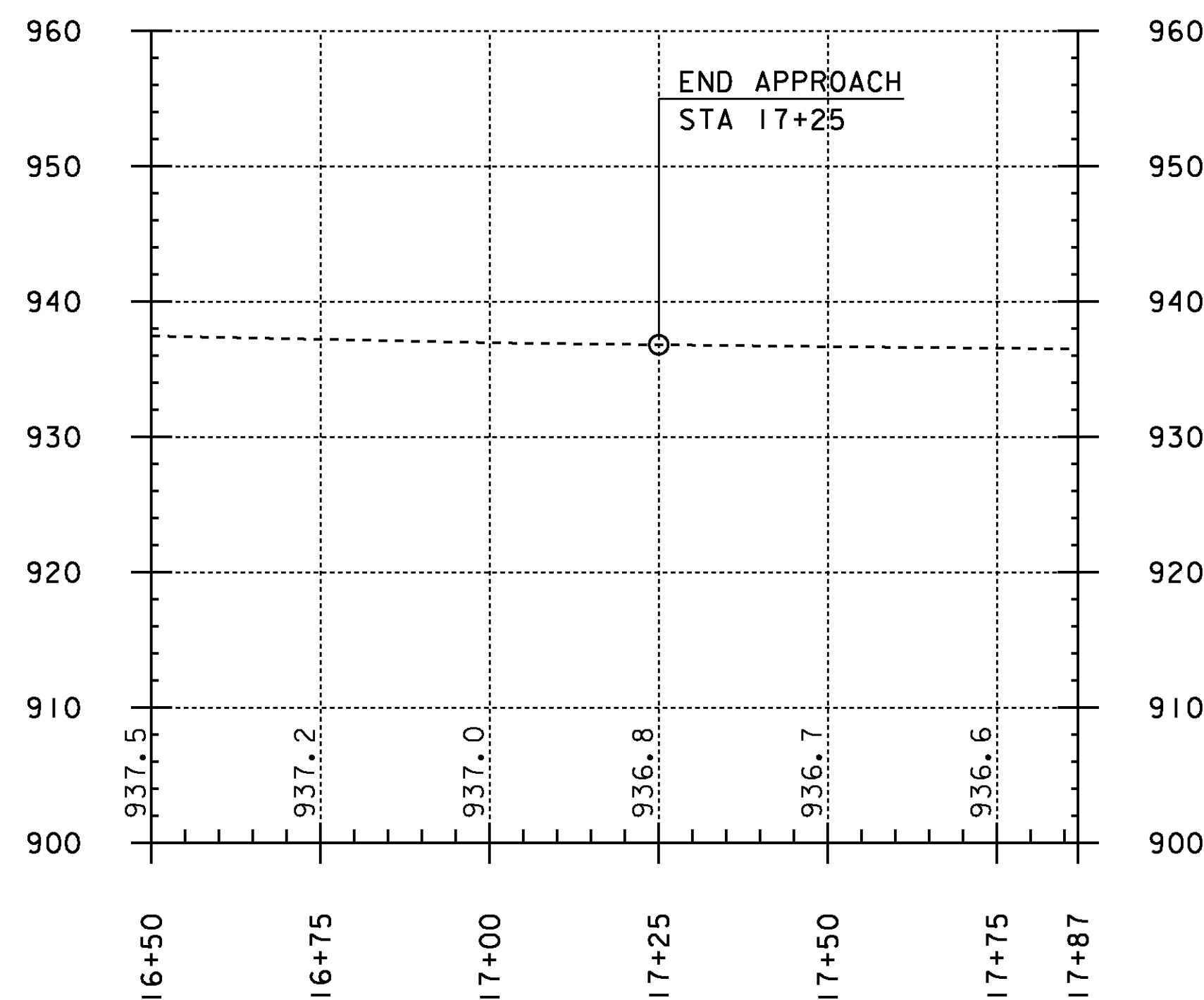
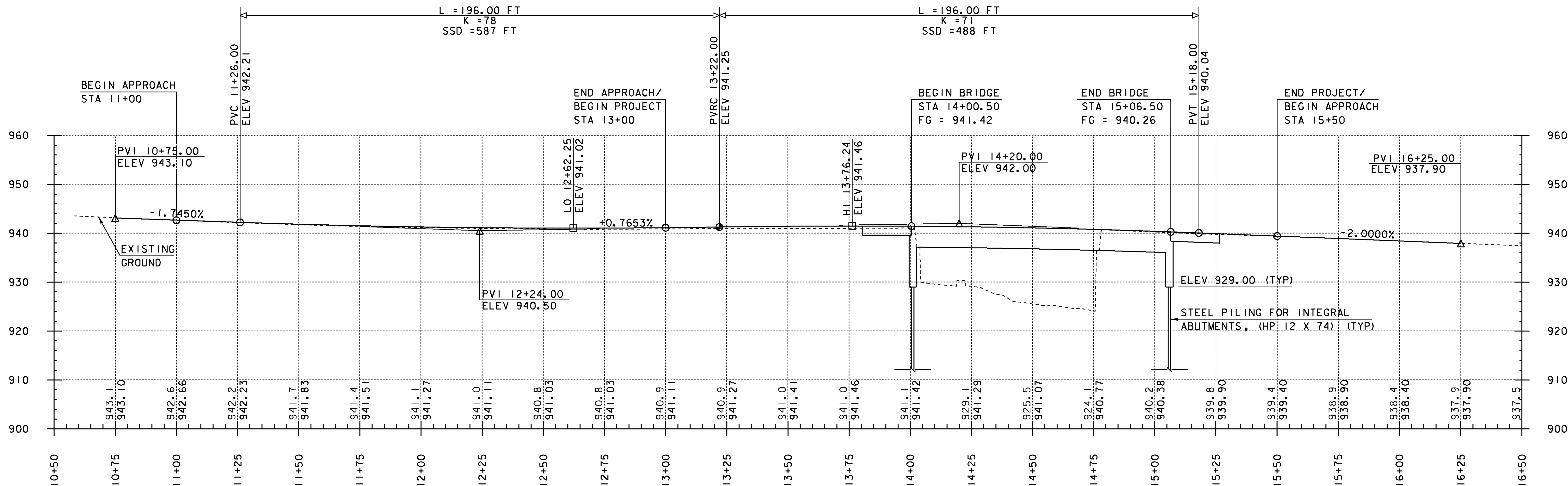


LAYOUT 2

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

PROJECT: CHESTER	PROJECT NO.: BRF 016 -1 (25)
DESIGN FILE NAME: 88b194/str/s88b194.bdr.dgn	PLOT DATE: 16-MAR-2011
IPARM FILE NAME: s88b1941a2.i	DRAWN BY: M.FESSEL
DESIGNED BY: E.L.RUSTAY	CHECKED BY: R.S.YOUNG
SQUAD LEADER: C.P.WILLIAMS	SHEET: 8 OF 50
LAYOUT SHEET 2	

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)

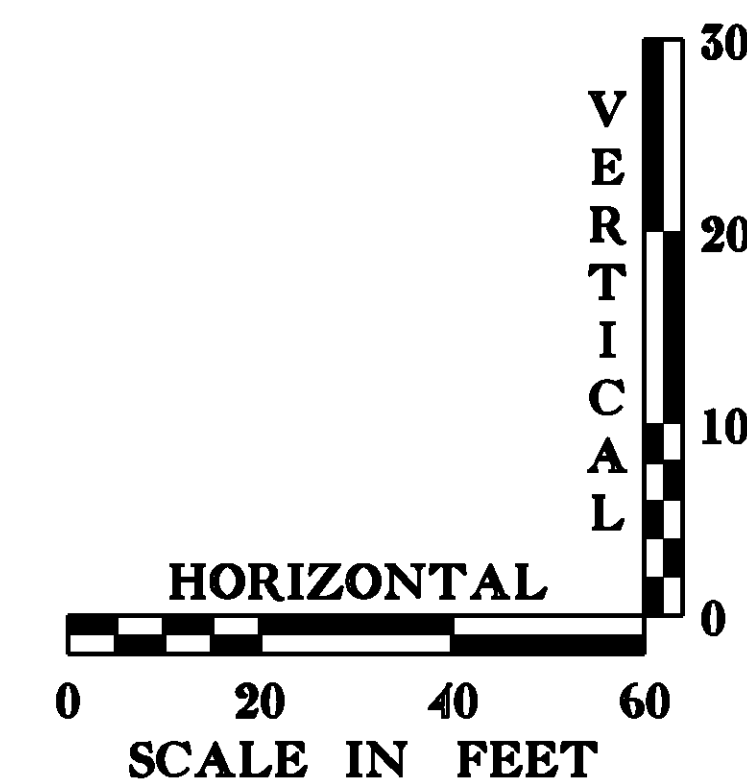


PROFILE VT 11

NOTES:

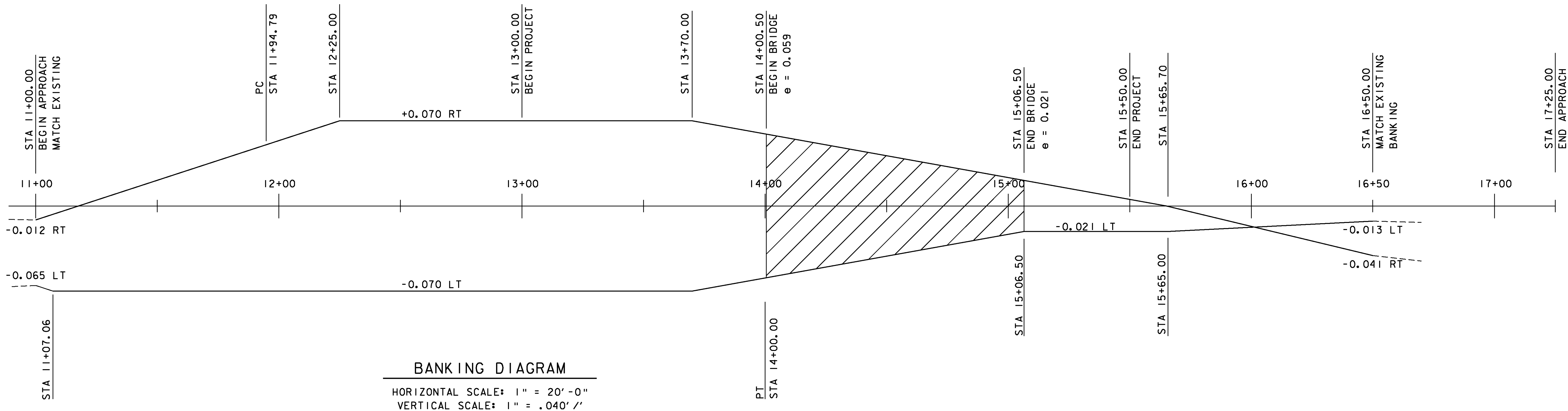
GRADES SHOWN TO THE NEAREST TENTH
ARE EXISTING GROUND ALONG ℓ .

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



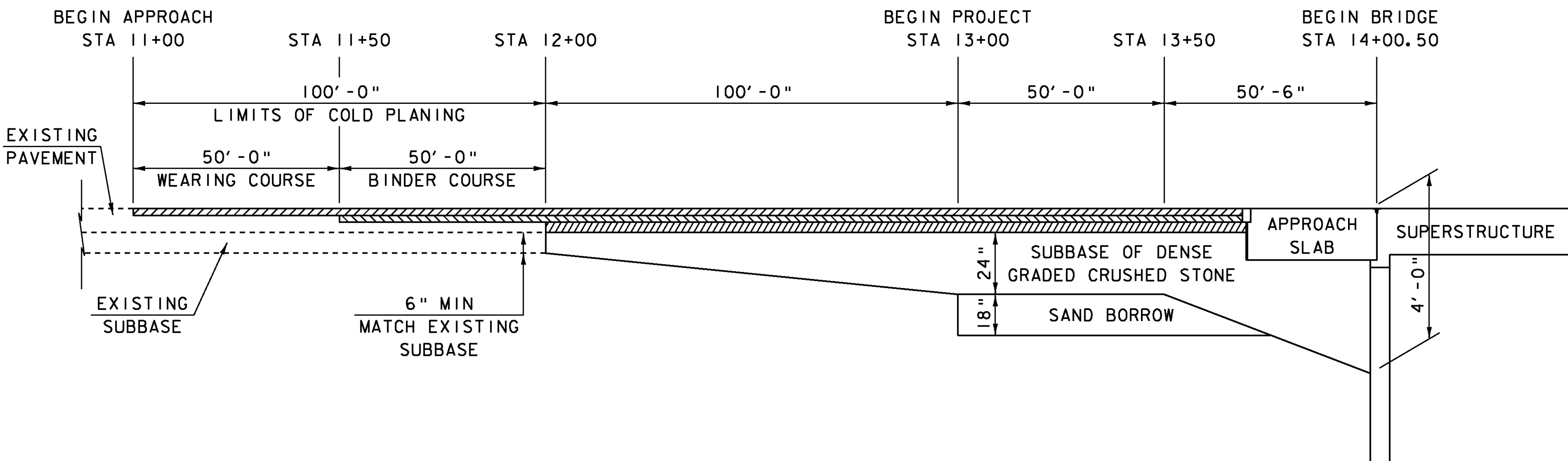
PROFILE VT 11

PROJECT:	CHESTER	PROJECT NO.:	BRF 016-1 (25)
DESIGN FILE NAME:	88b194/structures/s88b194prol.dgn	PLOT DATE:	16-MAR-2011
IPARM FILE NAME:	s88b194prol.dgn	DRAWN BY:	M. GAGULIC
DESIGNED BY:	E. L. RUSTAY	CHECKED BY:	R. S. YOUNG
SQUAD LEADER:	C. P. WILLIAMS	SHEET:	9 OF 50
VT 11 PROFILE			



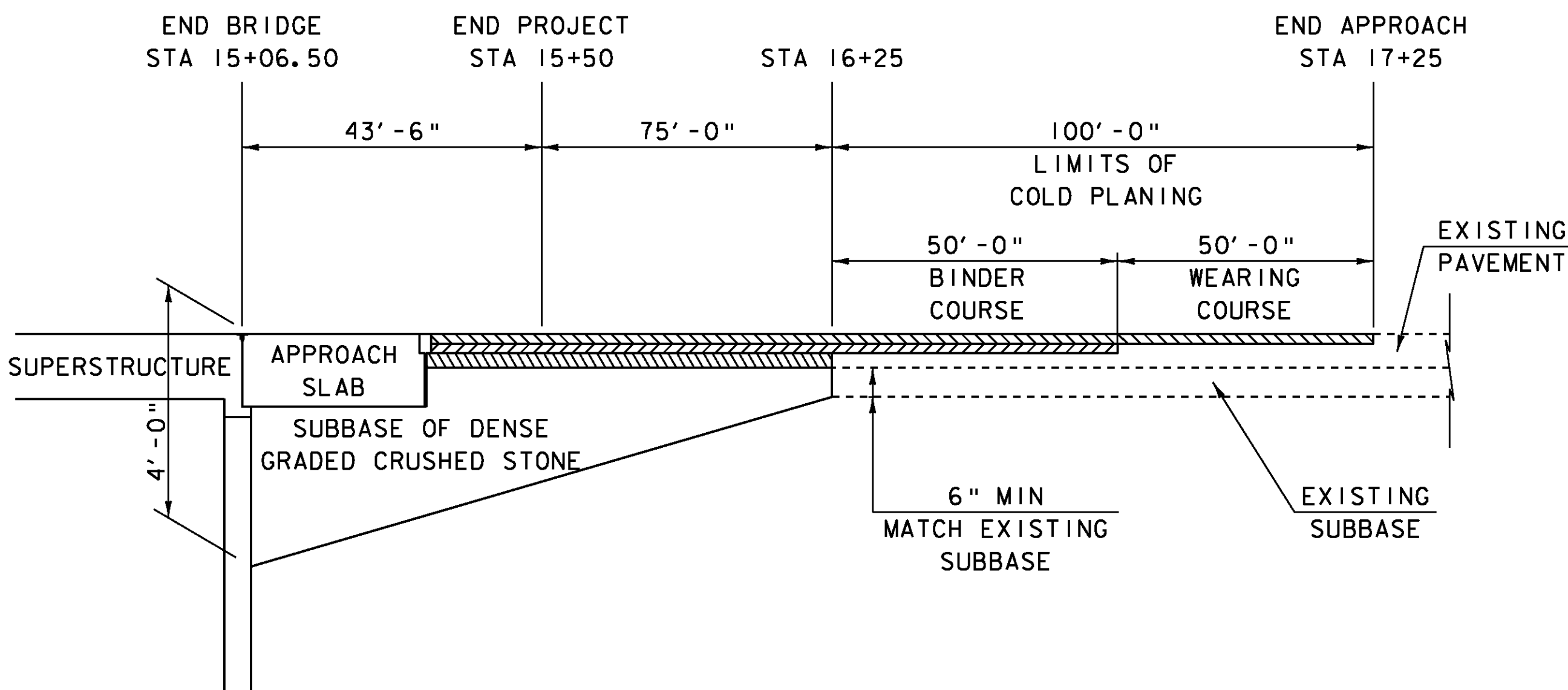
BANKING DIAGRAM

HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = .040' /'



BEGIN PROJECT MATERIAL TRANSITION

NOT TO SCALE



END PROJECT MATERIAL TRANSITION

NOT TO SCALE

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

PROJECT:	CHESTER	PROJECT NO.:	BRF 016-1 (25)
DESIGN FILE NAME:	88b194/structures/s88b194pro1.dgn	PLOT DATE:	16-MAR-2011
IPARM FILE NAME:	s88b194bank.dgn	DRAWN BY:	E.L.RUSTAY
DESIGNED BY:	E.L.RUSTAY	CHECKED BY:	R.S.YOUNG
SQUAD LEADER:	C.P.WILLIAMS		
BANKING DIAGRAM & TRANSITIONS		SHEET:	10 OF 50

REMOVAL OF EXISTING PAVEMENT MARKINGS

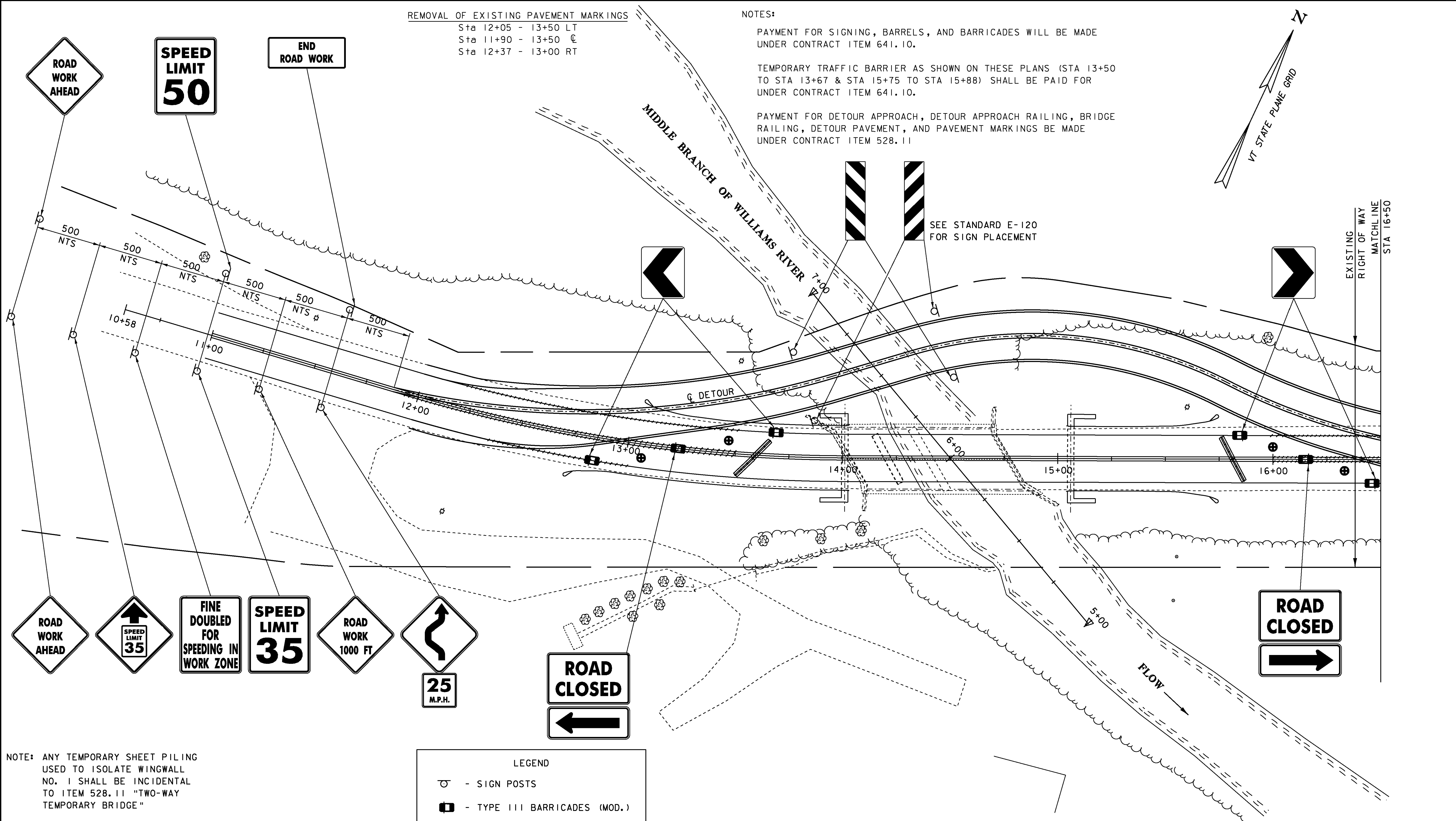
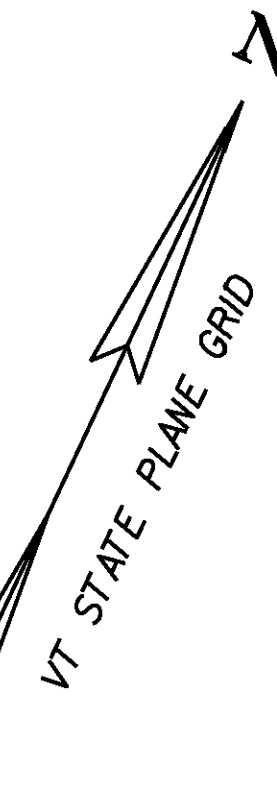
Sta 12+05 - 13+50 LT
Sta 11+90 - 13+50 C
Sta 12+37 - 13+00 RT

NOTES:

PAYMENT FOR SIGNING, BARRELS, AND BARRICADES WILL BE MADE UNDER CONTRACT ITEM 641.10.

TEMPORARY TRAFFIC BARRIER AS SHOWN ON THESE PLANS (STA 13+50 TO STA 13+67 & STA 15+75 TO STA 15+88) SHALL BE PAID FOR UNDER CONTRACT ITEM 641.10.

PAYMENT FOR DETOUR APPROACH, DETOUR APPROACH RAILING, BRIDGE RAILING, DETOUR PAVEMENT, AND PAVEMENT MARKINGS BE MADE UNDER CONTRACT ITEM 528.11



NOTE: ANY TEMPORARY SHEET PILING USED TO ISOLATE WINGWALL NO. 1 SHALL BE INCIDENTAL TO ITEM 528.11 "TWO-WAY TEMPORARY BRIDGE"

SEE GENERAL NOTES SHEET FOR MORE NOTES REGARDING TRAFFIC CONTROL.

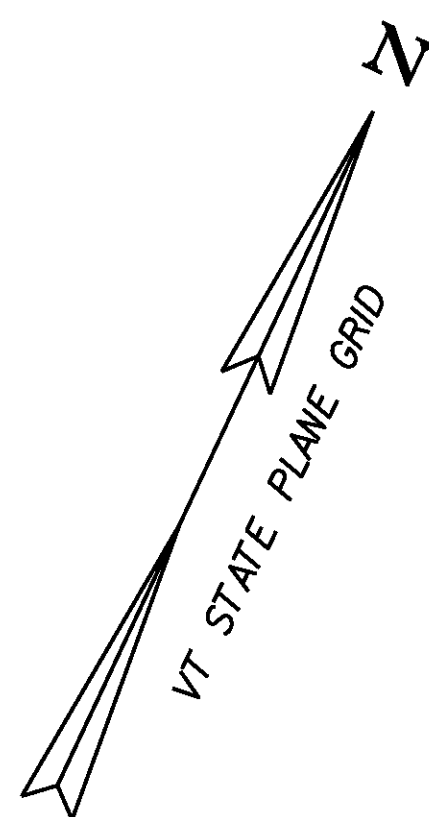
DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)

LEGEND	
	- SIGN POSTS
	- TYPE III BARRICADES (MOD.)
	- TEMP. TRAFFIC BARRIER
	- REFLECTORIZED BARREL
	- REMOVAL OF EXISTING PAVEMENT MARKINGS

DETOUR LAYOUT 1

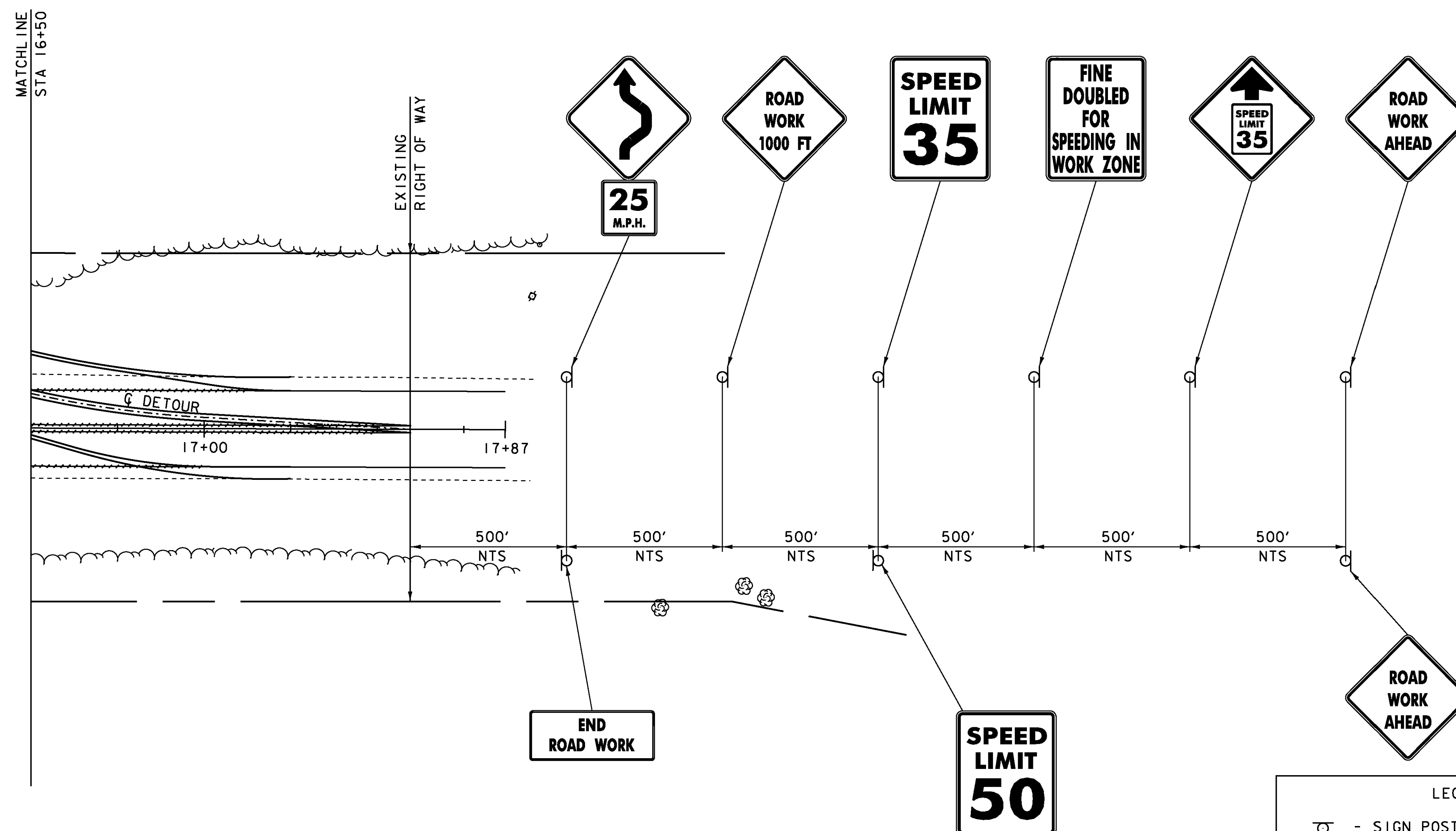
SCALE 1" = 20'-0"
20 0 20

PROJECT: CHESTER	PROJECT NO.: BRF 016-1 (25)
DESIGN FILE NAME: 88b194/str/s88b194nu1.dgn	PLOT DATE: 16-MAR-2011
IPARM FILE NAME: s88b194det1.i	DRAWN BY: D. D. BEARD
DESIGNED BY: E.L. RUSTAY	CHECKED BY: R.S. YOUNG
SQUAD LEADER: C.P. WILLIAMS	SHEET: 11 OF 50
DETOUR LAYOUT SHEET 1	



REMOVAL OF EXISTING PAVEMENT MARKINGS

Sta 16+00 - 17+25 LT
Sta 16+00 - 17+60 C
Sta 16+50 - 17+00 RT



DETOUR LAYOUT 2

SCALE 1" = 20'-0"

SEE GENERAL NOTES SHEET FOR MORE NOTES REGARDING TRAFFIC CONTROL.

PROJECT: CHESTER	PROJECT NO.: BRF 016 -1 (25)
DESIGN FILE NAME: 88b194/Structures/s88b194det.dgn	PLOT DATE: 16-MAR-2011
IPARM FILE NAME: s88b194det2.i	DRAWN BY: D. D. BEARD
DESIGNED BY: E. L. RUSTAY	CHECKED BY: R. S. YOUNG
SQUAD LEADER: C. P. WILLIAMS	SHEET: 12 OF 50
DETOUR LAYOUT SHEET 2	

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)

TRAFFIC SIGN SUMMARY SHEET

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

PROJECT:	CHESTER	PROJECT NO.:	BRF 016-1(25)
DESIGN FILE NAME:	M:\Projects\88b194\Structures\88b194notes.dgn		
IPARM FILE NAME:	s88b194tsa.i	PLOT DATE:	16-MAR-2011
DESIGNED BY:	E.L.RUSTAY	DRAWN BY:	M.FESSL
SQUAD LEADER:	C.P.WILLIAMS	CHECKED BY:	R.S.YOUNG
TRAFFIC SIGN SUMMARY SHEET		SHEET:	13 OF 50

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

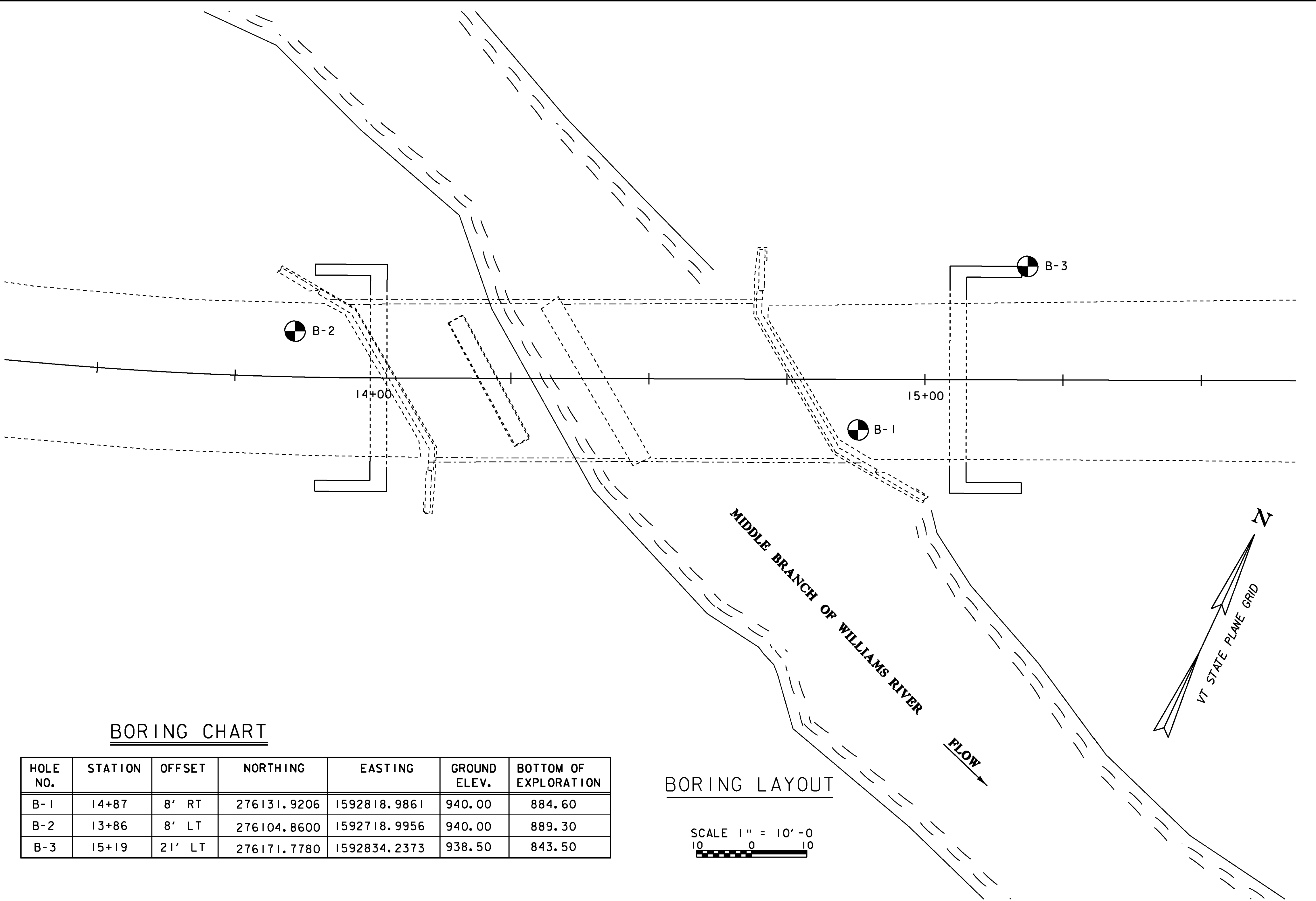
CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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)

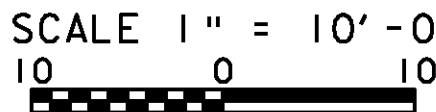
COLOR			
blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gr'y	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		



BORING CHART

HOLE NO.	STATION	OFFSET	NORTHING	EASTING	GROUND ELEV.	BOTTOM OF EXPLORATION
B-1	14+87	8' RT	276131.9206	1592818.9861	940.00	884.60
B-2	13+86	8' LT	276104.8600	1592718.9956	940.00	889.30
B-3	15+19	21' LT	276171.7780	1592834.2373	938.50	843.50

BORING LAYOUT



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 > 0.075" (#10 sieve).

SAND - Particles of rock < 0.075" (#10 sieve) and > 0.0025" (#200 sieve).

SILT - Soil < 0.0025" (#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 04/26/07 and 05/03/07 by SBJ Services, Inc.
- 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 judgement 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 judgement 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.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	CHESTER	Bridge No.	43
Highway No.	VT 11	Log Sta.	
		Surv. Sta.	
BORING INFORMATION SHEET			
Designed By	E. L. RUSTAY	Drawn By	M. FESSEL
Checked By	R. S. YOUNG	Date	12/07
		Bridge Design Supervisor	C. P. WILLIAMS
PROJECT	CHESTER	PROJECT NO.	BRF 016-1 (25)
I.G.C. Info.			
Bridge Sheet No.	Sheet 14 of 50		

GEODESIGN
INCORPORATED

VAOT

P.O. Box 699
Windsor, VT 05089
Phone: 802-674-2033/Fax: 802-674-5843

1233 Shelburne Rd., Suite E-1
So. Burlington, VT 05403
Phone: 802-652-5140

Boring Company:

SJB Services Inc.

Foreman:

Steve Wolkiewicz

GeoDesign Rep.:

Jacob Wirneth

Date Started:

April 27, 2007

Date Finished:

April 30, 2007

N. Coordinate:

276104.86

E. Coordinate:

1592718.9956

Ground Surface Elevation (feet):

940

Station:

13+86

Offset:

8 ft LT

Casing:

H.S.A.

Sampler:

SS

Date:

4/27/07

Depth (ft):

15.0

Elev. (ft):

925.0

Notes:

Refer to HTE Log

Type:

I.D.:

4.25 in.

Hammer Wt.:

NA

Hammer Fall:

NA

Rig Type:

CME 550X ATV

Hammer Type:

Automatic

Strata Description

Symbol

Sample Description

Depth & Elevation(feet)

Classification System: Burmister

0 - 7 Asphalt Base Course 939.

S1) Medium dense, brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt, dry.

3.5 Fill 936.

S2) Dense, piece of fractured coarse GRAVEL stuck in spoon tip.

7 Sand & gravel 933.

S3) Medium dense, brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt, dry.

15 Silty Sand 925.

S4) Medium dense, brown, fine to coarse SAND, little Silt, trace fine Gravel, moist.

20

S5) Dense, fine to coarse SAND and fine to coarse GRAVEL (fractured), trace Silt.

25

S6) Dense, gray, fine to medium SAND, and SILT, little (-) fine Gravel, (decomposed Rock), wet.

27 Glacial Till 913.

S7) Very dense, similar to S6.

S8) Very dense, gray, fine to coarse SAND, some decomposed Rock, little Silt, wet.

Remarks

Notes

1) Ground surface elevation estimated by GeoDesign. Boring coordinates derived from electronic site plans issued by VTrans.

2) Augered through 9 inches of asphalt prior to sampling S1.

3) Augers grinding and chatter from 2 feet to 3.5 feet deep.

4) Driller accidentally dropped rod with spoon while lowering into hole at S8, sunk in 6 inches.

5) Torque test on S8 sampler. Applied 85 ft-lbs but couldn't move it more.

6) Increased auger resistance with frequent chatter and grinding beginning at 27' deep.

Notes:

1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
A.C. = After coring; N.R. = Not Recorded.
3) Sample Type Coding: A=Auger; C=Cone; D=Driven; G=Grab; PS=Piston Sampler; SS=Split Barrel (Split Spoon); ST=Shelby Tube; V=Vane; WOH/H=Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-30%; Some = 30-50%; And = 50-90%

Boring No.:B-2

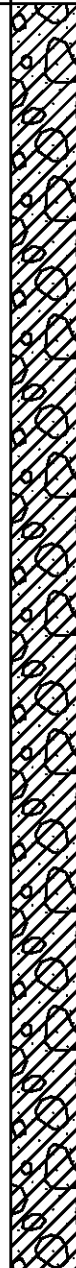
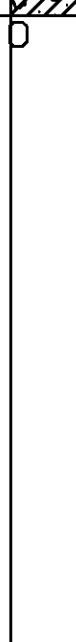
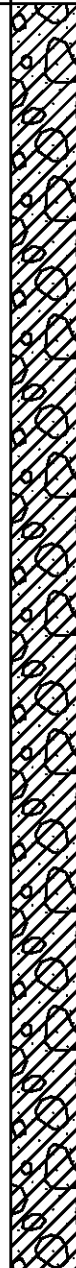
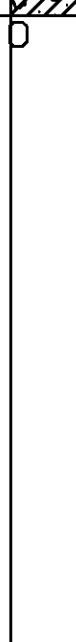
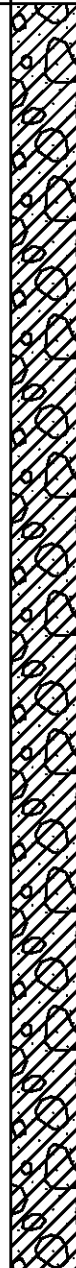
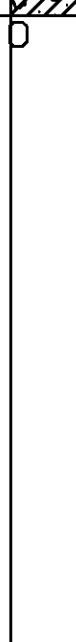
Page No.:1 of 2

File No.:750-05.2

Checked By:JAG

2/14/08

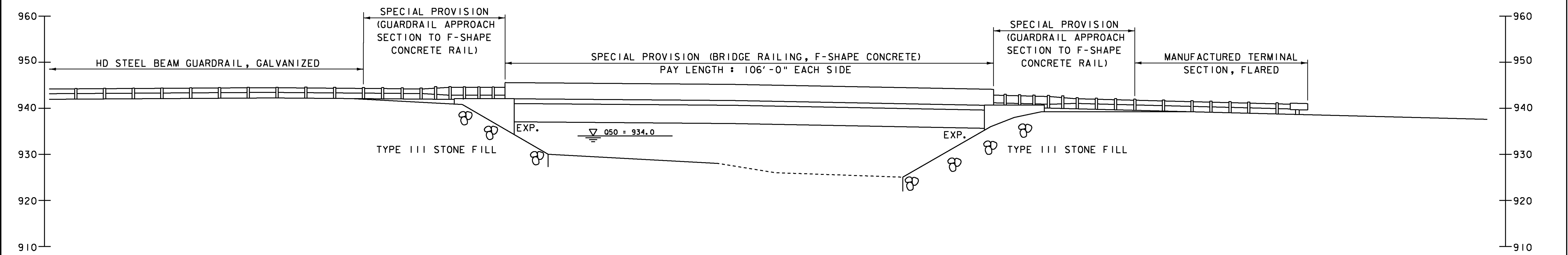
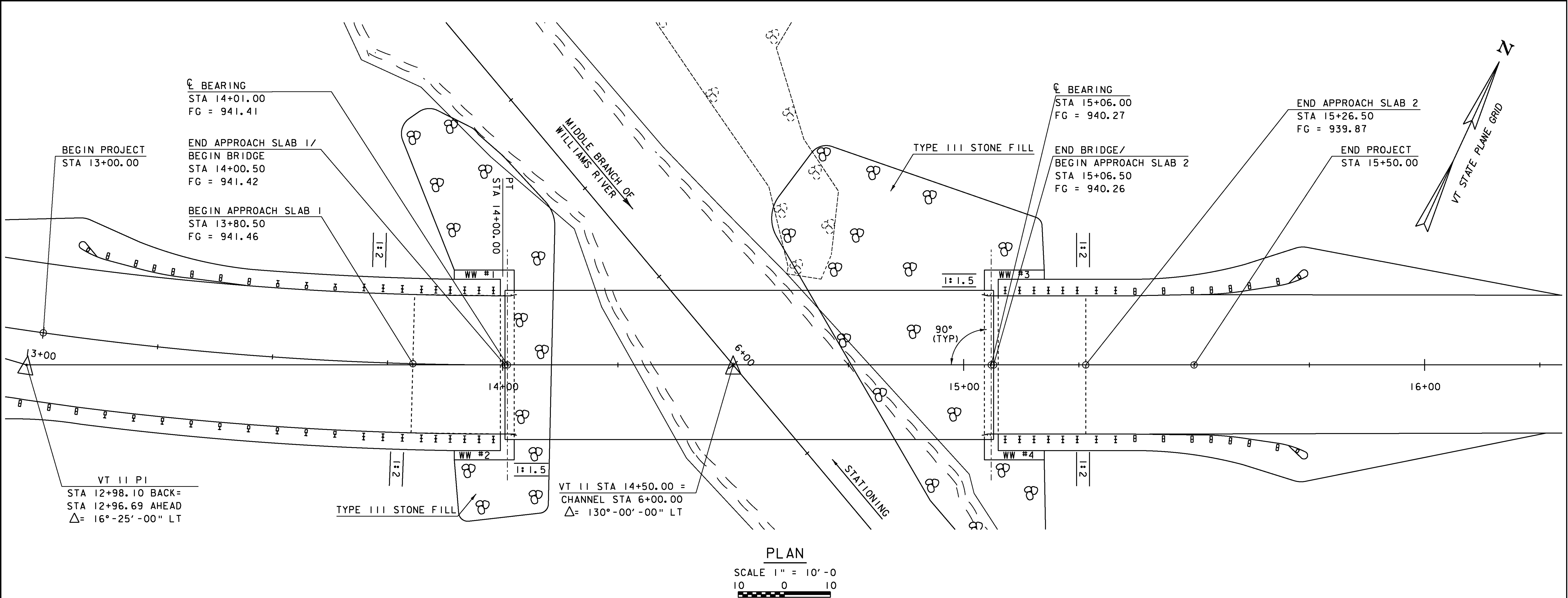
750-52.08J GEODESIGN STANDARD.GDT

 GEODESIGN INCORPORATED VAOT P.O. Box 699 Windsor, VT 05089 Phone: 802-674-2033/Fax: 802-674-5943 1233 Shelburne Rd., Suite E-1 So. Burlington, VT 05403 Phone: 802-652-5140										BORING LOG Project Name Chester Bridge BRFO16-1(25) Chester, VT				Boring No.: B-2 Page No.: 2 of 2 File No.: 750-05.2 Checked By: JAG																																																																																																																																																																																																																																																										
Boring Company: SJB Services Inc. Foreman: Steve Wolkiewicz GeoDesign Rep.: Jacob Wimeff Date Started: April 27, 2007 Date Finished: April 30, 2007 N. Coordinate: 276104.86 E. Coordinate: 1592718.9956 Ground Surface Elevation (feet): 940 Station: 13+86 Offset: 8 ft LT										Casing: H.S.A. Sampler: SS Type: 4.25 in. I.D.: 1.38 in. Hammer WL: NA 140 lbs 4/27/07 Hammer Fall: NA 30 in. 4/27/07 Rig Type: CME 550X ATV Hammer Type: Automatic		Groundwater Observations Date Depth (ft) Elev. (ft) Notes 4/27/07 15.0 925.0 Refer to HTE Log 4/27/07 20.2 919.8 for Groundwater Information.																																																																																																																																																																																																																																																												
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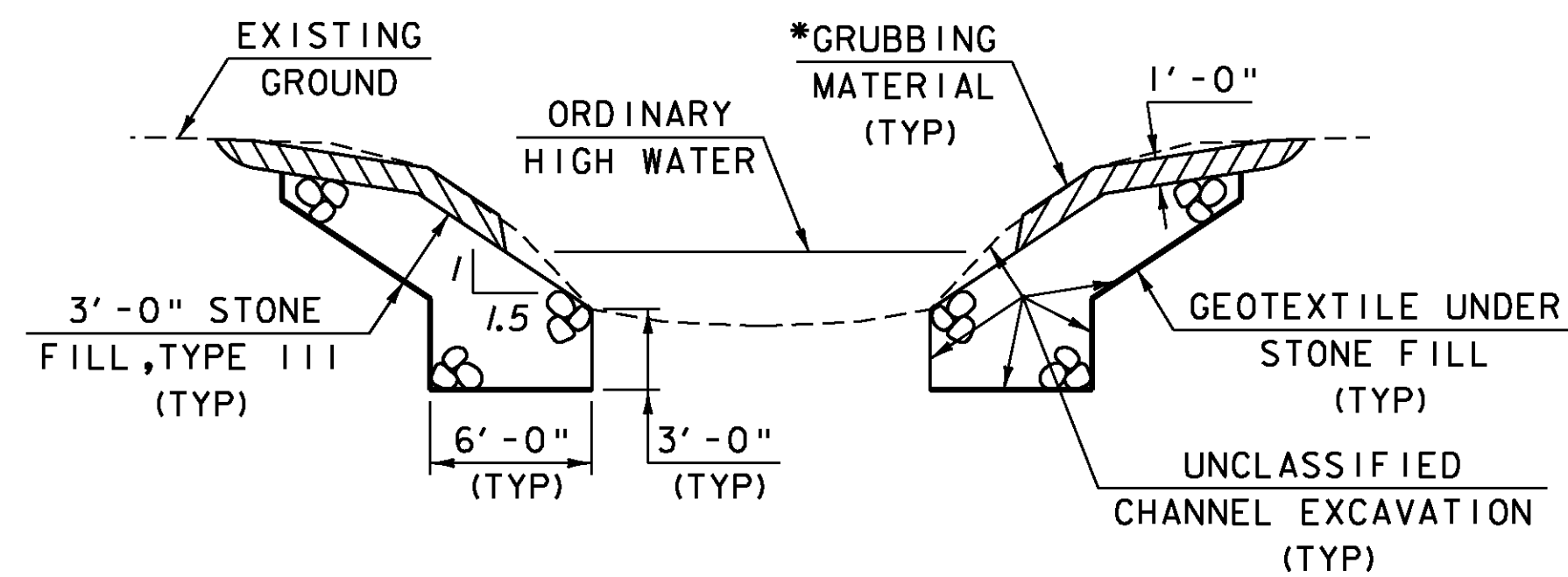
K ESTIMATED PILE TIP ELEVATION

 GEODESIGN INCORPORATED VAOT P.O. Box 699 Windsor, VT 05089 Phone: 802-674-2033/Fax: 802-674-5943 1233 Shelburne Rd., Suite E-1 So. Burlington, VT 05403 Phone: 802-652-5140										BORING LOG				Boring No.: B-3	
										Project Name				Page No.: 3 of 4	
										Chester Bridge BRF016-1(25) Chester, VT				File No.: 750-05.2 Checked By: JAG	
Boring Company: SJB Services Inc.										Casing: Sampler:		Groundwater Observations			
Foreman: Steve Wolkiewicz										Type: H.S.A. SS	Date	Depth (ft)	Elev. (ft)	Notes	
GeoDesign Rep.: Jacob Wimet										I.D.: 4.25 in. 1.38 in.					
Date Started: May 1, 2007 Date Finished: May 3, 2007										Hammer WL: NA 140 lbs	5/1/07	15.0	923.5	Refer to HTE Log	
N. Coordinate: 276171.778 E. Coordinate: 1592834.2373										Hammer Fall: NA 30 in.				for Groundwater	
Ground Surface Elevation (feet): 938.5										Rig Type: CME 550X ATV				Information.	
Station: 15+19 Offset: 21 ft LT										Hammer Type: Automatic					
Depth (ft)	Casing Blow/ft	Sample Information						Strata Description	Symbol	Sample Description					
		Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval				Coring Time (min./ft)	Moisture Content (%)			
0 - 6 6 - 12 12 - 18 18 - 24															
								Glacial Till (Continued)		of coarse GRAVEL in spoon tip.					
65															
70															
75															
80															
85															
88								Probable 850. bedrock (inferred From Roller Bit)							
90															
Remarks	8) Return water color change from rusty brown to tannish brown at approximately 63' deep with and increase in roller bit resistance. Infer still in Glacial Till due to the lack of ROCK in return water, cuttings. 9) Driller infers Siltier/ clayier Glacial Till beginning at approximately 66' deep due to spikes in the water back pressure. No noticable decrease in drilling resistance. Water return became grayer as well. 10) At approximately 72' deep water changed back to brownish in color with less water backpressure (less Silt). 11) Light grinding/ chatter from approximately 73' to 73.5' deep and 77' to 77.5' deep.														
Notes:	1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual. 2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made. A.C. = After coring; N.R. = Not Recorded. 3) Sample Type Coding: A=Auger; C=Core; D=Driven; G=Grab; PS=Piston Sampler; SS=Split Barrel (Split Spoon); ST=Shelby Tube; V=Vane; WOB/H=Weight of Rod/Hammer 4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-30%; And = 35-50%														
										Boring No.: B-3					

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Boring Company: SJB Services Inc.										Casing: Sampler:		Groundwater Observations			
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N. Coordinate: 276171.778 E. Coordinate: 1592834.2373										Hammer Fall: NA 30 in.				for Groundwater	
Ground Surface Elevation (feet): 938.5										Rig Type: CME 550X ATV				Information.	
Station: 15+19 Offset: 21 ft LT										Hammer Type: Automatic					
Depth (ft)	Casing Blow/ft	Sample Information						Strata Description	Symbol	Sample Description					
		Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval				Coring Time (min./ft)	Moisture Content (%)			
0 - 6 6 - 12 12 - 18 18 - 24															
		C1	C	60	37	90		Bedrock 84.8.		C1) Top 8": Fractured fine to coarse GRAVEL. Bottom 29": Silver gray with white quartz banding, hard, slightly weathered along fracture surfaces, moderately to widely jointed, poor quality micaceous SCHIST. Fractures 75o to 90o from horizontal.					
95								Bottom 84.3. of Exploration at 95.0 ft							
100															
105															
110															
115															
120															
Remarks	12) Grinding and chatter while roller bitting from 88' to 90' deep. Attempt core sample at 90' deep. Cased to 88' prior to coring. 13) Return water color changed to gray at approximately 91' deep.														
Notes:	1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual. 2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made. A.C. = After coring; N.R. = Not Recorded. 3) Sample Type Coding: A=Auger; C=Core; D=Driven; G=Grab; PS=Piston Sampler; SS=Split Barrel (Split Spoon); ST=Shelby Tube; V=Vane; WOB/H=Weight of Rod/Hammer 4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-30%; And = 35-50%														
										Boring No.: B-3					



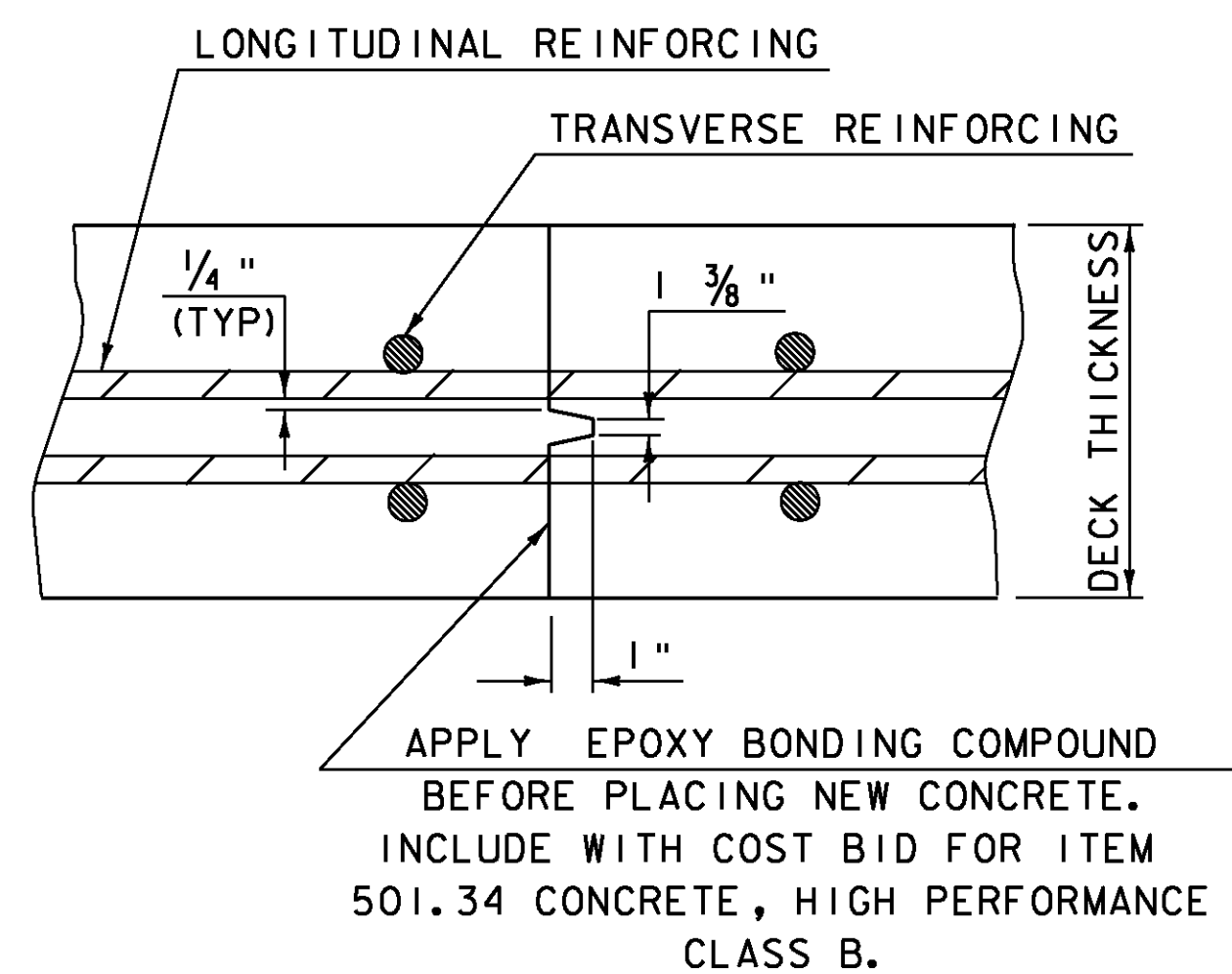
PROJECT: CHESTER	PROJECT NO.: BRF 016-1 (25)
DESIGN FILE NAME: 88b194\Structures\s88194pe.dgn	PLOT DATE: 16-MAR-2011
IPARM FILE NAME: s88194pe.i	DRAWN BY: D.D. BEARD
DESIGNED BY: E.L. RUSTAY	CHECKED BY: R.S. YOUNG
SQUAD LEADER: C.P. WILLIAMS	SHEET: 19 OF 50
PLAN AND ELEVATION	



TYPICAL CHANNEL SECTION

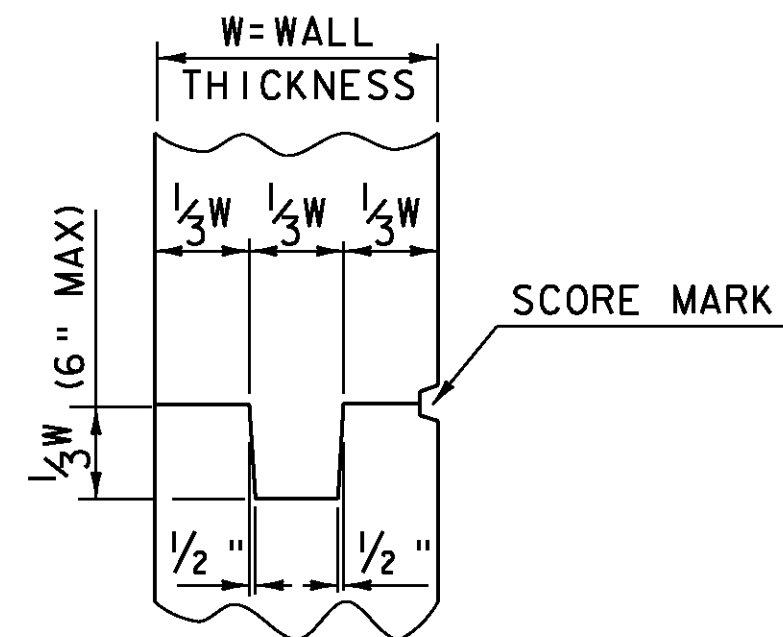
NTS

* 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.



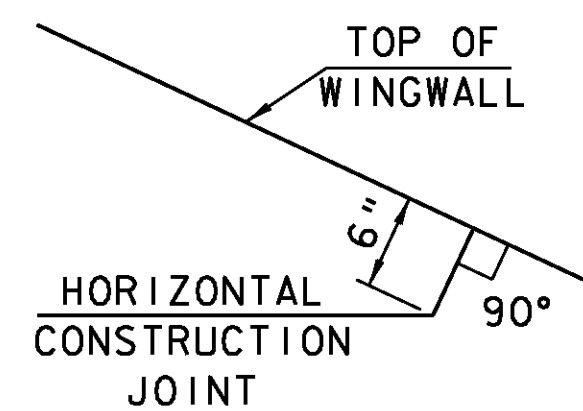
TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS

NTS



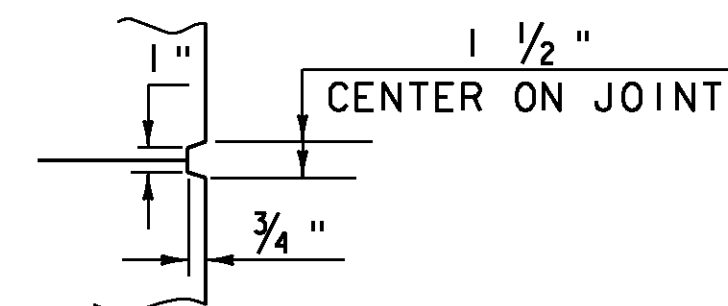
TYPICAL CONCRETE CONSTRUCTION JOINT

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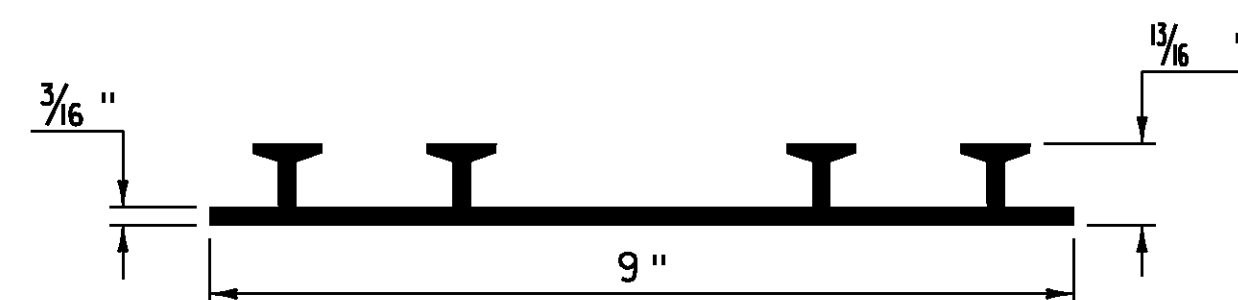
HORIZONTAL JOINT DETAIL

NTS



SCORE MARK DETAIL

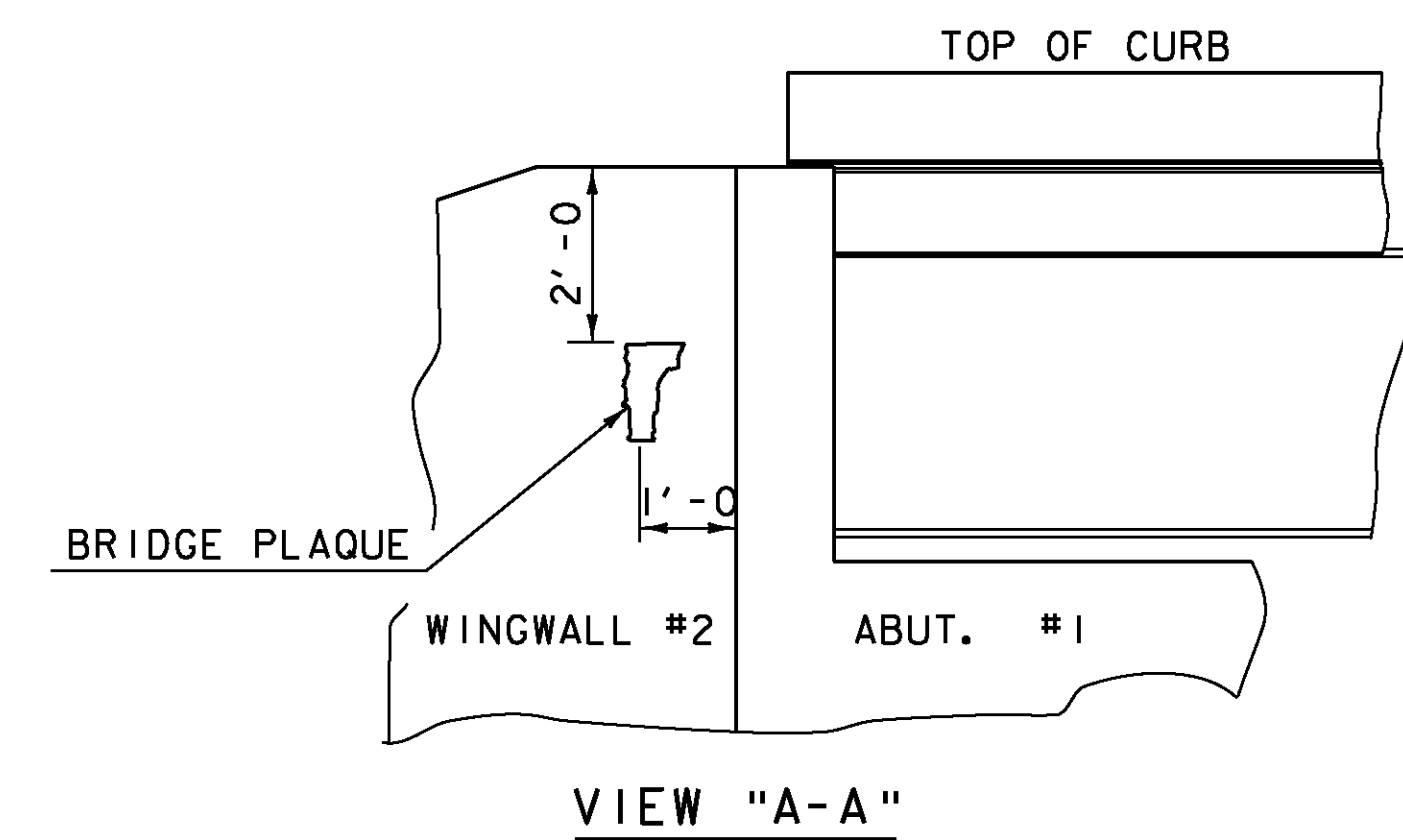
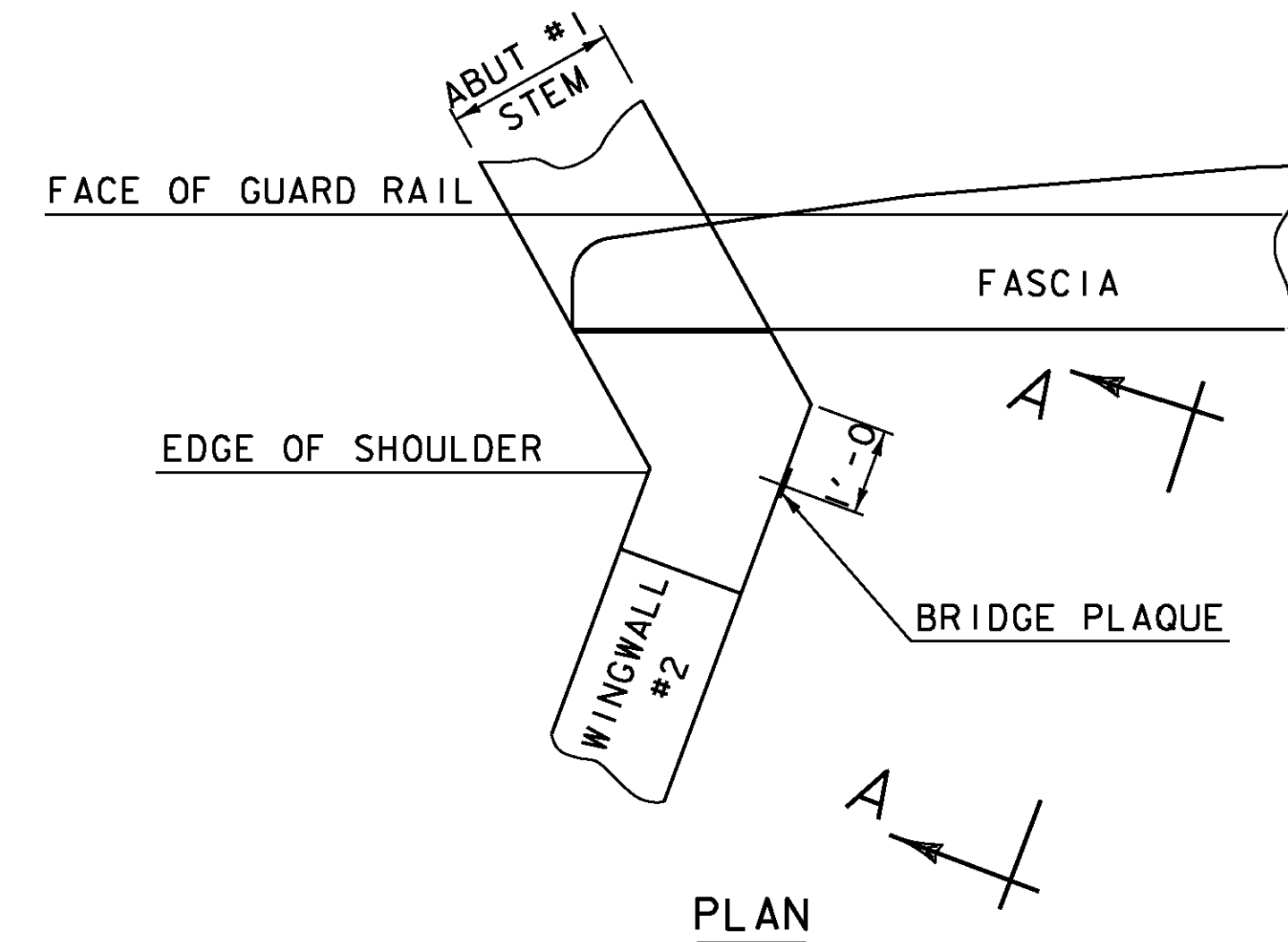
NTS



P. V. C. WATERSTOP FOR CONSTRUCTIN JOINTS

NTS

THE COSTS FOR P. V. C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 501.34 CONCRETE, HIGH PERFORMANCE CLASS B. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.



LOCATE BRIDGE PLAQUE

NTS

THE BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AT ABUTMENT #1 ON THE RIGHT SIDE AS SHOWN OR AS DIRECTED BY THE ENGINEER. BRIDGE PLAQUE WILL BE INCIDENTAL TO ITEM 501.34 CONCRETE, HIGH PERFORMANCE CLASS B.

PROJECT:	CHESTER	PROJECT NO.:	BRF 016-1 (25)
DESIGN FILE NAME:	Projects/88b194/structures/s88b194det.dgn		
IPARM FILE NAME:	s88b194misc det. i	PLOT DATE:	16-MAR-2011
DESIGNED BY:	H. I. SALLS	DRAWN BY:	H. I. SALLS
SQUAD LEADER:	C. P. WILLIAMS	CHECKED BY:	R. S. YOUNG
MISCELLANEOUS DETAILS		SHEET:	20 OF 50

ASPHALTIC PLUG BRIDGE JOINT

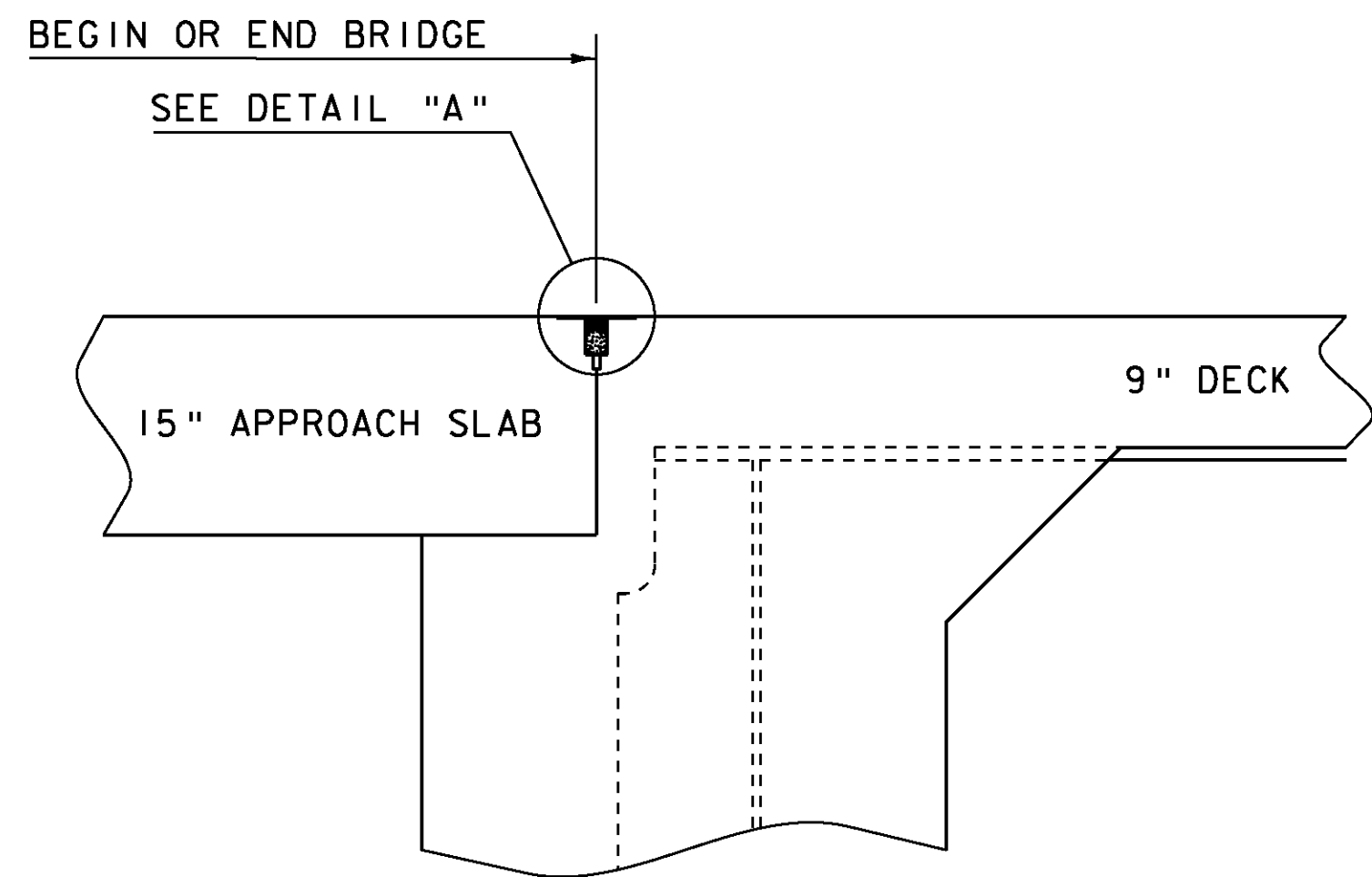
INSTALLATION

1. THE JOINT SHALL BE LOCATED CENTRALLY OVER THE APPROACH SLAB EXPANSION GAP MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.
2. THE APPROACH SLAB SHALL BE NOTCHED AS SHOWN ON THE PLANS.
3. THE JOINT AREA SHALL BE BLAST CLEANED OF DEBRIS AND ASPHALT. THE JOINT AREA SHALL BE THOROUGHLY DRIED USING HOT COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.
4. SPALLED AND DEFECTIVE CONCRETE SHALL BE REPAIRED WITH AN APPROVED MATERIAL AS AGREED UPON BY THE ENGINEER.
5. PROPERLY SIZED HEAT RESISTANT BACKER ROD SHALL BE PLACED IN THE MOVEMENT GAP ALLOWING FOR 1 inch +/- OF BINDER ABOVE THE ROD.
6. THE BINDER MATERIAL SHALL BE HEATED AND PLACED AS RECOMMENDED BY THE MANUFACTURER.
7. PLACE $\frac{1}{4}$ " THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER.
 - a. THE STEEL PLATES MAY BE OMITTED WHERE THE APPROACH SLAB IS COVERED WITH A STONE BASE OR BITUMINOUS PAVEMENT AND VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.
8. THE BINDER MATERIAL AND AGGREGATE SHALL BE HEATED AND MIXED AS RECOMMENDED BY THE MANUFACTURER.
9. THE INSTALLATION OF MATERIAL, COMPACTION, AND TOPCOATING SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
10. IMMEDIATELY AFTER TOPCOATING, AN ANTI-SKID MATERIAL SHALL BE CAST OVER THE JOINT TO REDUCE THE RISK OF TRACKING.
11. JOINT SHALL BE PROTECTED FROM TRAFFIC UNTIL THE MATERIAL HAS COOLED TO 125°F +/-.

WEATHER LIMITATIONS.

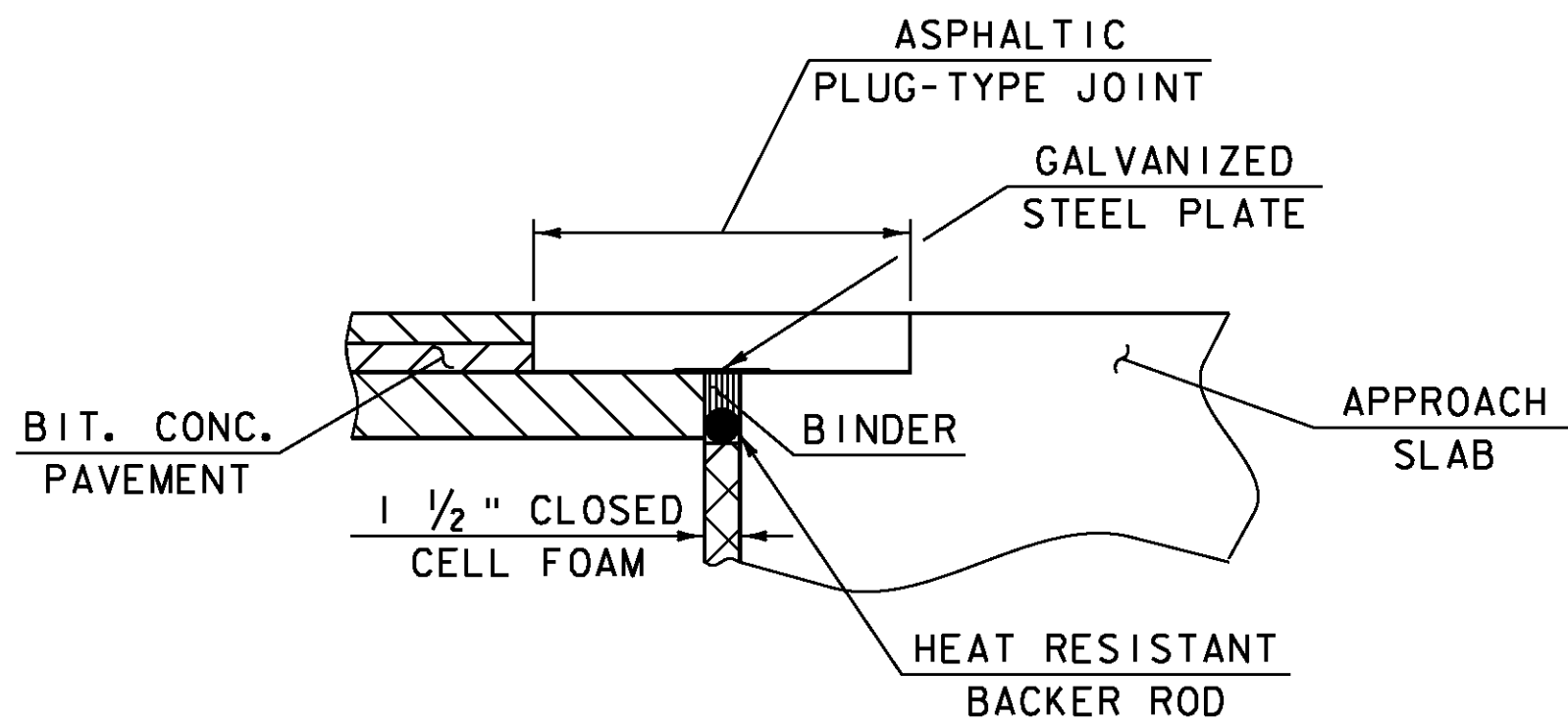
BINDER MATERIAL SHALL BE APPLIED ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL:

- (a) THE AMBIENT AIR TEMPERATURE IS AT LEAST 50°F AND RISING.
- (b) THE ROAD SURFACE IS SUFFICIENTLY DRY.
- (c) WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.



DETAIL FOR JOINT AT
BEGIN & END BRIDGE

NTS

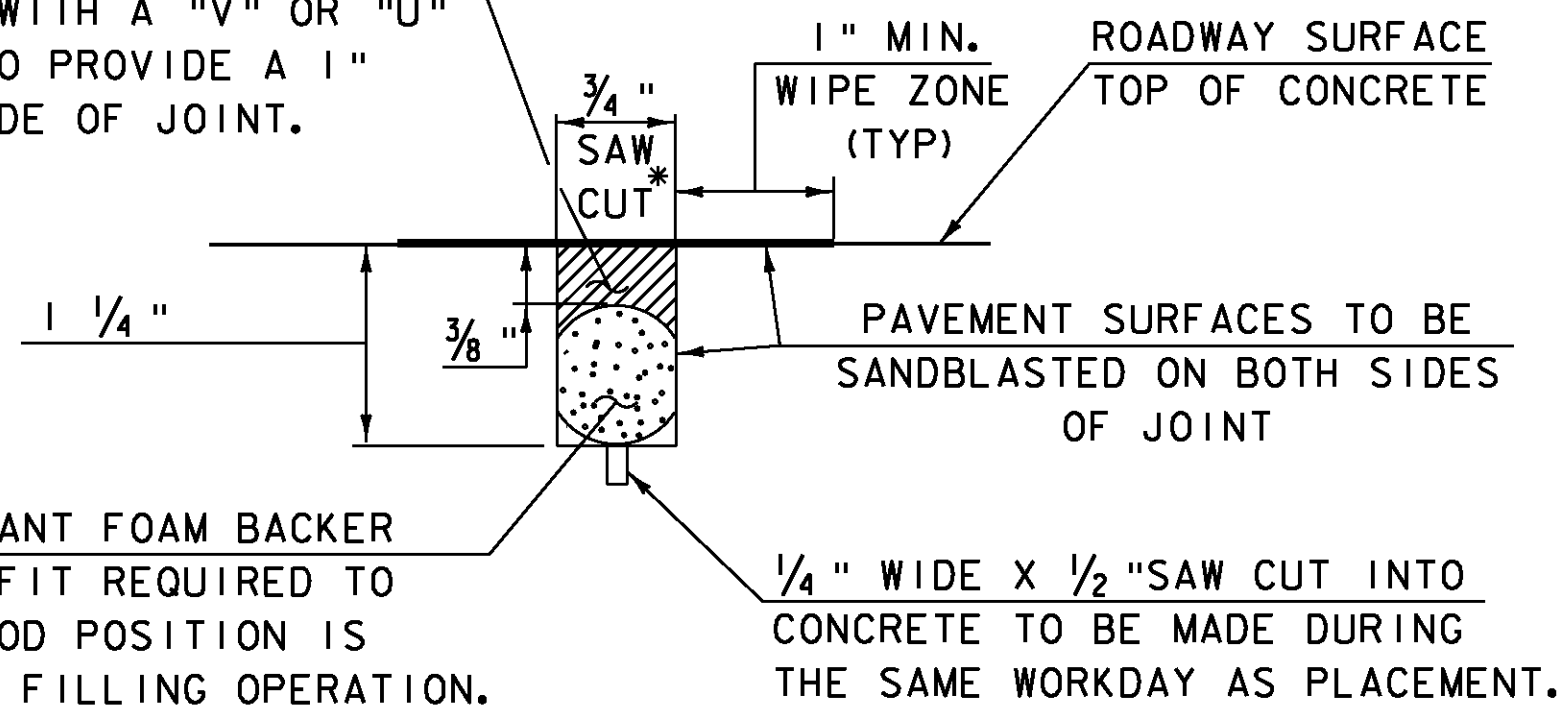


ASPHALTIC PLUG-TYPE

JOINT DETAIL

NTS

JOINT SEALER, HOT POURED,
SHALL BE SLIGHTLY OVER FILLED
THEN WIPED FLUSH WITH A "V" OR "U"
SHAPED SQUEEGEE TO PROVIDE A 1"
WIPE ZONE EACH SIDE OF JOINT.



DETAIL "A"

NTS

* JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, 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. SEE VT. SPECIFICATION 524.

PROJECT:	PROJECT NO.:
CHESTER	BRF 016-1 (25)
DESIGN FILE NAME: Projects/88b194/structures/s88b194det.dgn	
IPARM FILE NAME: s88b194jtdet.i	PLOT DATE: 16-MAR-2011
DESIGNED BY: H. I. SALLS	DRAWN BY: H. I. SALLS
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. S. YOUNG
MISCELLANEOUS JOINT DETAILS	SHEET: 21 OF 50

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 FOURTH EDITION, DATED 2007, AND ITS LATEST REVISIONS.
- 2. THE BRIDGE IS DESIGNED FOR HL-93 LIVE LOAD WITH AN ALLOWANCE FOR 3” OF 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 II. CONTACT DTA. WAYNE GAMMELL AT (802) 251-2001 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, TEMPORARY BENT, PIER AND ANY PORTION OF THE ABUTMENTS OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION. THE PIER AND ABUTMENT NO. 2 SHALL BE REMOVED TO THE TOP OF FOOTING ELEVATION OR 3 FEET BELOW STREAMBED, WHICHEVER IS HIGHER. ABUTMENT NO.1 SHALL BE REMOVED IN ITS ENTIRETY.
- 5. DURING CONSTRUCTION, TRAFFIC SHALL BE MAINTAINED ON A TWO-WAY TEMPORARY BRIDGE CONSTRUCTED UPSTREAM OF THE EXISTING STRUCTURE. THE TEMPORARY BRIDGE AND THE APPROACHES TO THE TEMPORARY BRIDGE SHALL BE PAVED WITH 3 INCHES OF PAVEMENT.
- 6. THE AREA DISTURBED BY THE TEMPORARY DETOUR SHALL BE SEEDED AND MULCHED AFTER ALL OF THE FILL IS REMOVED TO THE ORIGINAL GROUND SURFACE. THE COST OF THE SEED, FERTILIZER, AND MULCH WILL BE PAID FOR UNDER THE BID PRICE FOR THE RESPECTIVE ITEMS.
- 7. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.

EARTHWORK AND RELATED ITEMS

- 8. THE “STONE FILL, TYPE III” 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 ON THE PLANS AND AT THE DISCRETION OF THE RESIDENT ENGINEER.

STRUCTURAL STEEL

- 10. THE EXISTING STRUCTURAL STEEL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR’S USE OR DISPOSITION OF THE REMOVED EXISTING STRUCTURAL STEEL.
- 11. STRUCTURAL STEEL MEMBERS DESIGNATED “CVN” IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01 OF THE STANDARD SPECIFICATIONS.
- 12. ALL FIELD CONNECTIONS SHALL BE MADE USING 7/8 INCH BOLTS IN 15/16 INCH HOLES PER SECTION 506. ANY CONNECTIONS NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.
- 13. AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF THE GIRDERS SHALL BE TAKEN AS DIRECTED BY THE RESIDENT ENGINEER TO DETERMINE IF THE GIRDER ELEVATIONS NEED TO BE ADJUSTED AND FOR USE IN DETERMINING FINISHED GRADES.
- 14. 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.
- 15. ANY BOLT HOLES IN THE WEBS OF FASCIA GIRDERS NOT OTHERWISE FILLED SHALL BE FILLED WITH BUTTON HEAD OR HEX HEAD BOLTS. THE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19 OF THE STANDARD SPECIFICATIONS.

STRUCTRAL STEEL, H-PILE

- 16. THE PILES SHALL HP 12 X 74.
- 17. PILE SHOES SHALL BE REQUIRED AND SHALL CONFORM TO SECTION 505.
- 18. THE PILES SHALL BE DRIVEN TO A NOMINAL RESISTANCE OF 428 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 30 FEET BELOW THE BOTTOM OF STEM ELEVATION.
- 19. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED TO BE 80 FEET BELOW GRADE. THE ACTUAL IN PLACE LENGTHS MAY VARY.
- 20. 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.

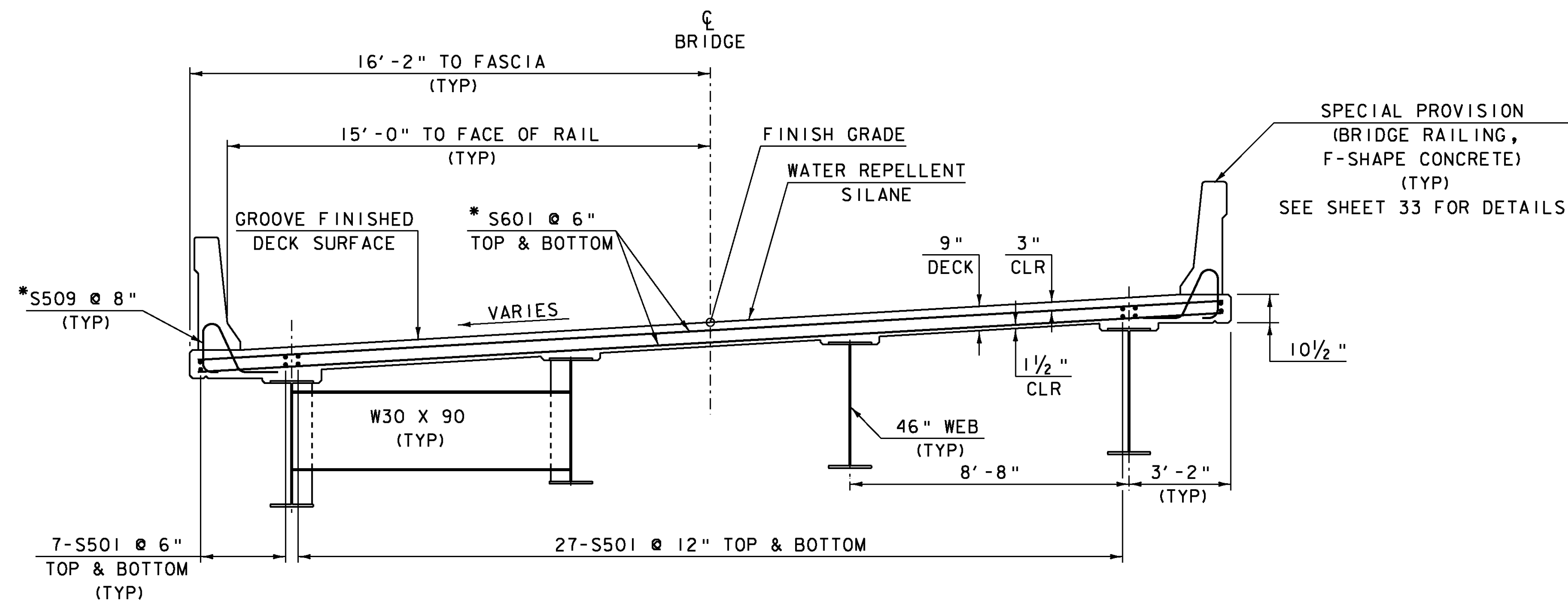
CONCRETE

- 21. SUBSTRUCTURE CONCRETE SHALL BE PAID FOR UNDER ITEM 501.34 “CONCRETE, HIGH PERFORMANCE CLASS B”. THE SUBSTRUCTURE SHALL INCLUDE THE STEM BELOW THE CONSTRUCTION JOINT AND THE PORTION OF THE WINGWALLS BELOW THE CONSTRUCTION JOINT. ITEM 900.608 “SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT)” SHALL BE USED TO PAY FOR THE DECK, THE STEM ABOVE THE CONSTRUCTION JOINT, THE WINGWALLS ABOVE THE CONSTRUCTION JOINT AND THE APPROACH SLABS. ITEM 900.640 “SPECIAL PROVISION (BRIDGE RAILING, F-SHAPE CONCRETE)” SHALL BE USED TO PAY FOR CONCRETE BRIDGE RAILING.
- 22. NO CONCRETE IN THE ABUMENTS OR WINGWALLS SHALL BE PLACED ABOVE THE BRIDGE SEAT ELEVATIONS UNTIL THE GIRDERS HAVE BEEN PROFILED AND THE FINISHED GRADE OF THE DECK HAS BEEN DETERMINED.
- 23. IN ACCORDANCE WITH SUBSECTION 506.23(A) OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION AND AS DIRECTED BY THE RESIDENT ENGINEER, THE CONTRACTOR SHALL TAKE MEASURES NECESSARY TO PROTECT ALL SUBSTRUCTURE CONCRETE FROM STAINING DUE TO OXIDE FORMATION ON THE STRUCTURAL STEEL PRIOR TO PLACEMENT OF THE DECK. THESE MEASURES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO ITEM 501.34 “CONCRETE, HIGH PERFORMANCE CLASS B”. ANY SUCH STAINING THAT OCCURS PRIOR TO DECK PLACEMENT SHALL BE REMOVED AT NO ADDITIONAL COST TO THE STATE.
- 24. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH X 1 INCH.
- 25. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES. THE DECK AND APPROACH SLAB SURFACES SHALL BE CLEANED BY BEING PRESSURE WASHED, AFTER GROOVING OPERATIONS, PRIOR TO TREATMENT. PRESSURE WASHING SHALL BE INCIDENTAL TO ITEM 514.10 “WATER REPELLENT, SILANE”.
- 26. THE TOP SURFACE OF THE PILE CAP SHALL BE GIVEN A FLOAT FINISH TO GRADE. THE CONCRETE WITHIN THE REINFORCING CAGE SHALL BE ROUGHENED BY RAKING PARALLEL TO THE FACE OF THE ABUTMENT TO AN AMPLITUDE OF 1/2 INCH. THE CONCRETE OUTSIDE THE REINFORCING CAGE SHALL REMAIN SMOOTH.
- 27. THE DECK AND APPROACH SLABS WILL HAVE A LOGITUDINAL GROOVED FINISH. THIS WORK WILL BE PAID FOR UNDER ITEM 900.675 “SPECIAL PROVISION (LONGITUDINAL DECK GROOVING)”.
- 28. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:
SPACING: +/- 1 INCH
CLEARANCE: +/- 1/4 INCH

TRAFFIC CONTROL

- 29. TEMPORARY APPROACH TRAFFIC SIGNS SHALL BE LOCATED ACCORDING TO VERMONT STATE STANDARD E-107 AND E-100A AND THE 2003 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- 30. FULL ACCESS TO ALL SIDE ROADS AND DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
- 31. FOR ADDITIONAL SIGNING INSTRUCTIONS SEE STDS E-100, E-100A, E-101, E-102A, E-106, AND E-142.
- 32. THE CONTRACTOR SHALL ERECT AND MAINTAIN ALL TEMPORARY SIGNS ON AND OFF-PROJECT ALONG WITH BARRICADES AS SHOWN IN THE PLANS AND AS DIRECTED BY THE RESIDENT ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 641.10 “TRAFFIC CONTROL”.
- 33. THE CONTRACTOR SHALL COVER OR REMOVE ANY SIGNS THAT CONTRADICT TEMPORARY TRAFFIC CONTROL SIGNS. ALL SIGNS REMOVED OR COVERED BY THE CONTRACTOR SHALL BE REPLACED OR UNCOVERED BY THE CONTRACTOR WHEN THE TRAFFIC CONTROL PLAN IS DISASSEMBLED. PAYMENT FOR REMOVAL AND REPLACEMENT, COVERING AND UNCOVERING OF SIGNS AND PLACEMENT AND REMOVAL OF TEMPORARY OVERLAYS SHALL BE INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL". ANY DAMAGE TO EXISTING SIGNS BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR WITH NO EXTRA COMPENSATION.
- 34. LIMITS OF TEMPORARY DETOUR MUST BE WITHIN THE RIGHT-OF-WAY. ALL WORK NECESSARY TO MEET THIS CONDITION WILL BE INCIDENTAL TO ITEM 528.11 “TWO-WAY TEMPORARY BRIDGE”.

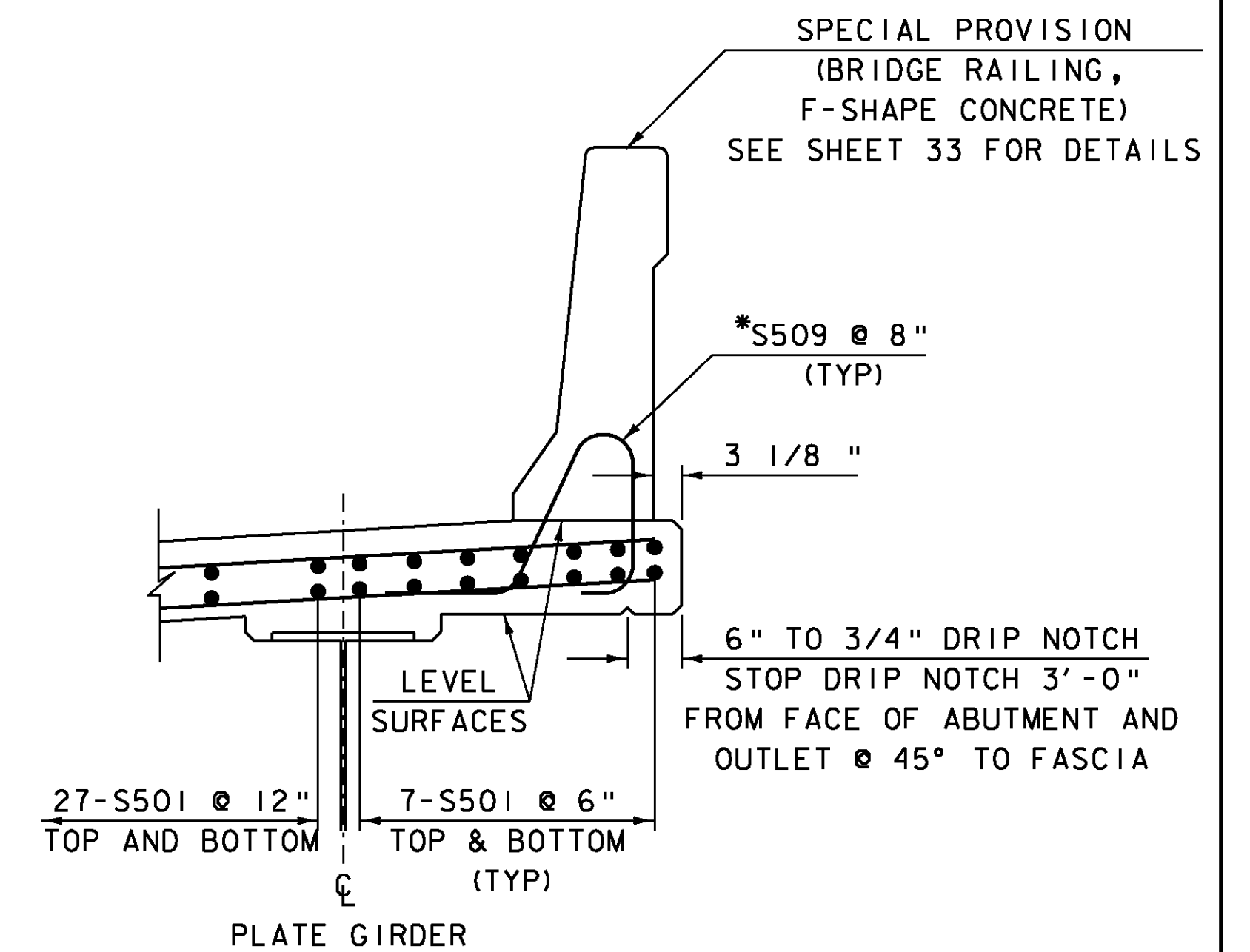
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CHESTER	BRF 016-1 (25)
DESIGN FILE NAME: 88b194\Structures\s88b194note.dgn	
IPARM FILE NAME: s88b194gen.i	PLOT DATE:
DESIGNED BY: E.L.RUSTAY	DRAWN BY: H.I.SALLS
SQUAD LEADER: C.P.WILLIAMS	CHECKED BY: R.S.YOUNG
GENERAL NOTES	SHEET: 22 OF 50



BRIDGE TYPICAL SECTION

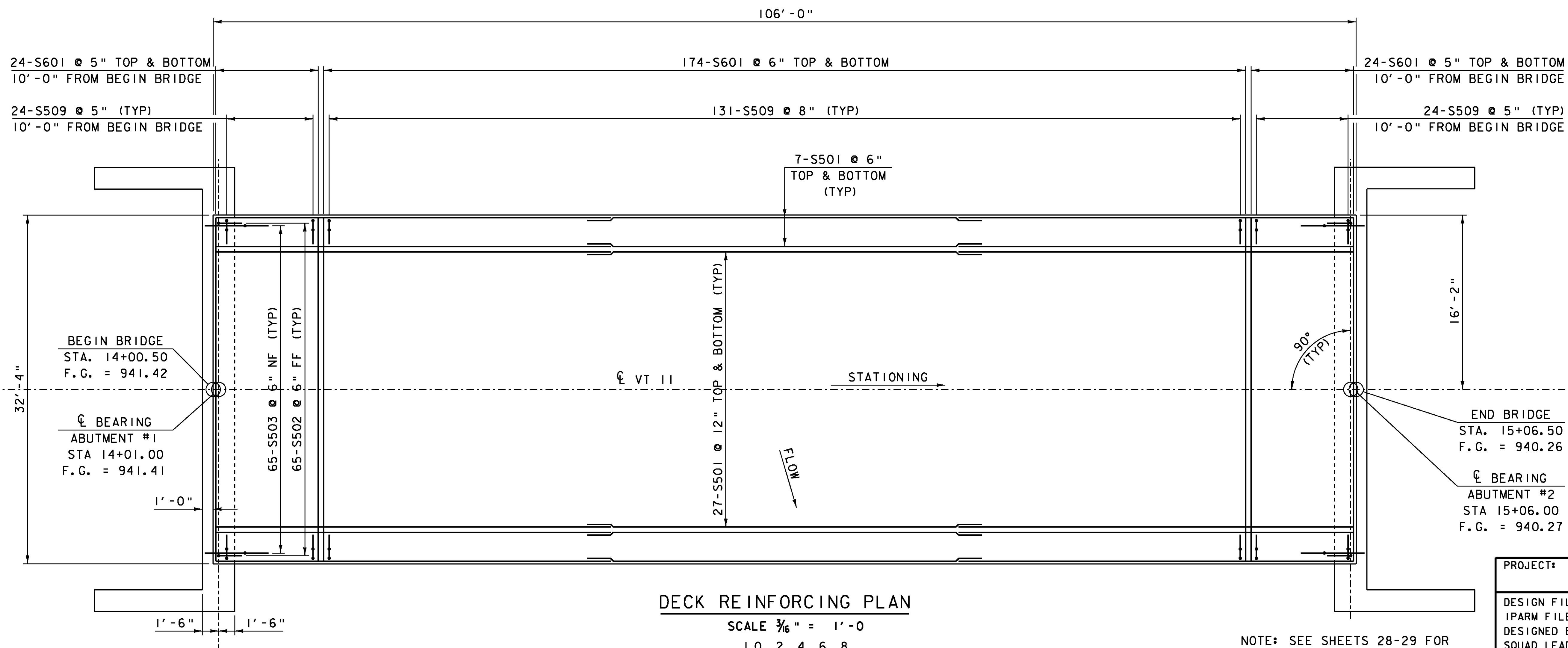
SCALE $\frac{3}{8}$ " = 1'-0"

*REDUCED SPACING IN DECK PLAN.



EDGE DETAIL

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



DECK REINFORCING PLAN

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

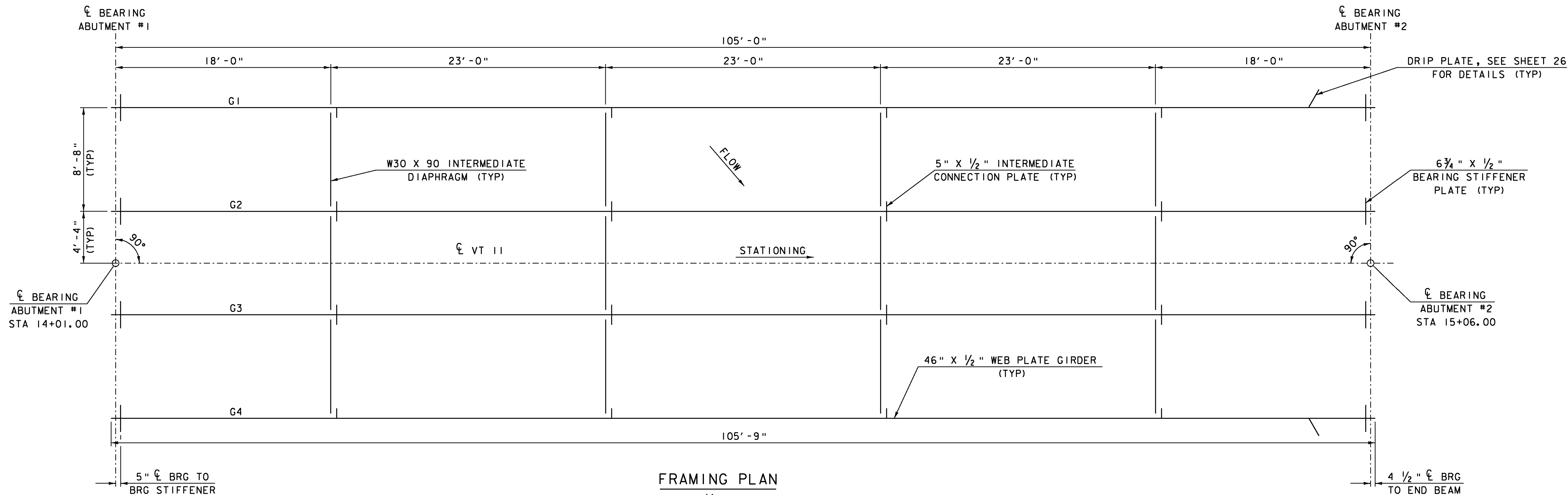
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NOTES:

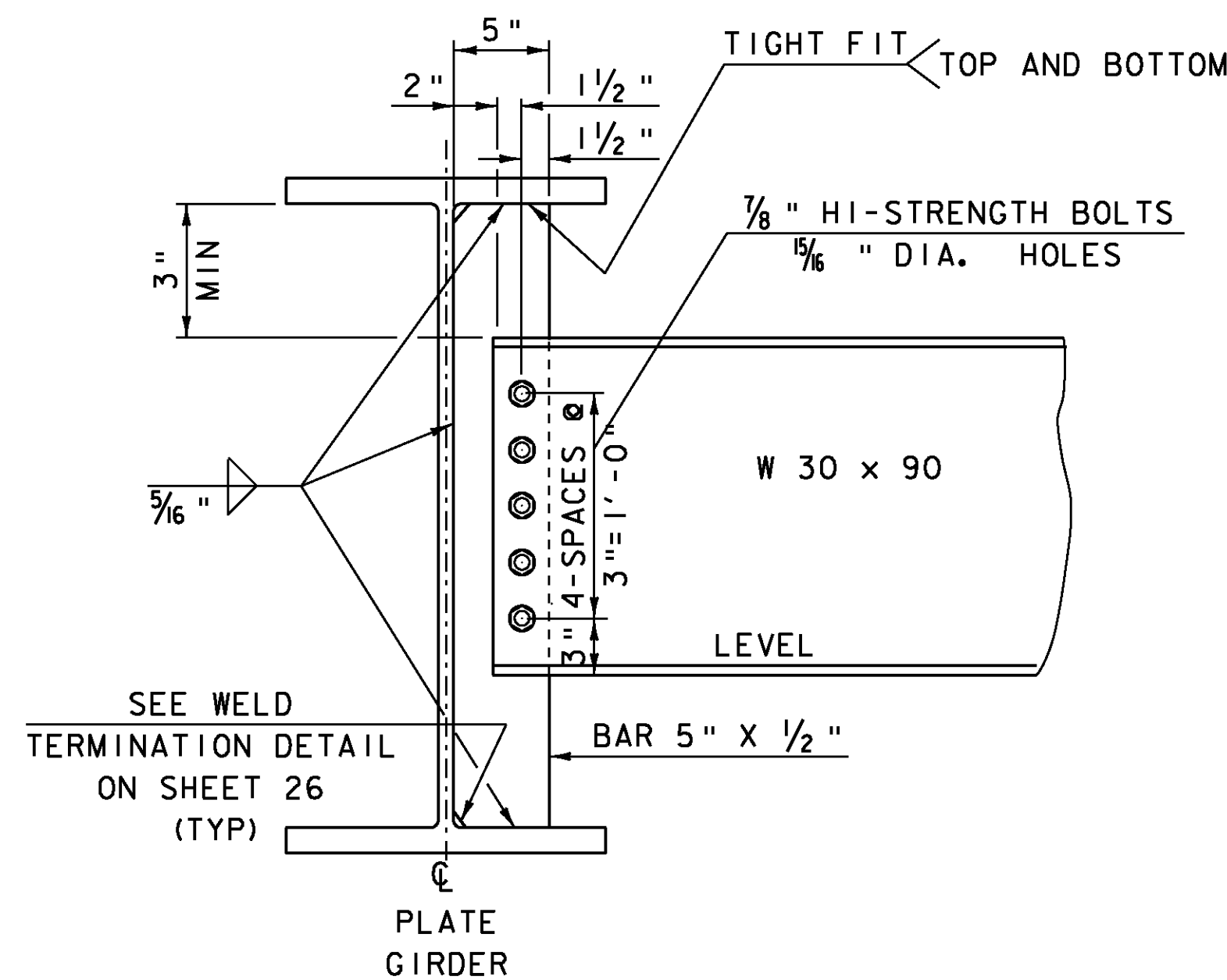
- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- ▲ = CUT TO FIT IN FIELD
- 3" CLEAR UNLESS OTHERWISE SPECIFIED ON THE PLANS
- ALL LAPS 2'-2" UNLESS OTHERWISE NOTED.
- ALL REINFORCING STEEL SHALL BE EPOXY COATED.

PROJECT:	CHESTER	PROJECT NO.:	BRF 016-1 (25)
DESIGN FILE NAME:	88b194\Structures\s88b194sup.dgn	IPARM FILE NAME:	s88b194deck rein.i
DESIGNED BY:	H. I. SALLS	DRAWN BY:	H. I. SALLS
SQUAD LEADER:	C. P. WILLIAMS	CHECKED BY:	R. S. YOUNG
DECK REINFORCING DETAILS		SHEET:	23 OF 50

NOTE: SEE SHEETS 28-29 FOR STEM STEEL REINFORCEMENT

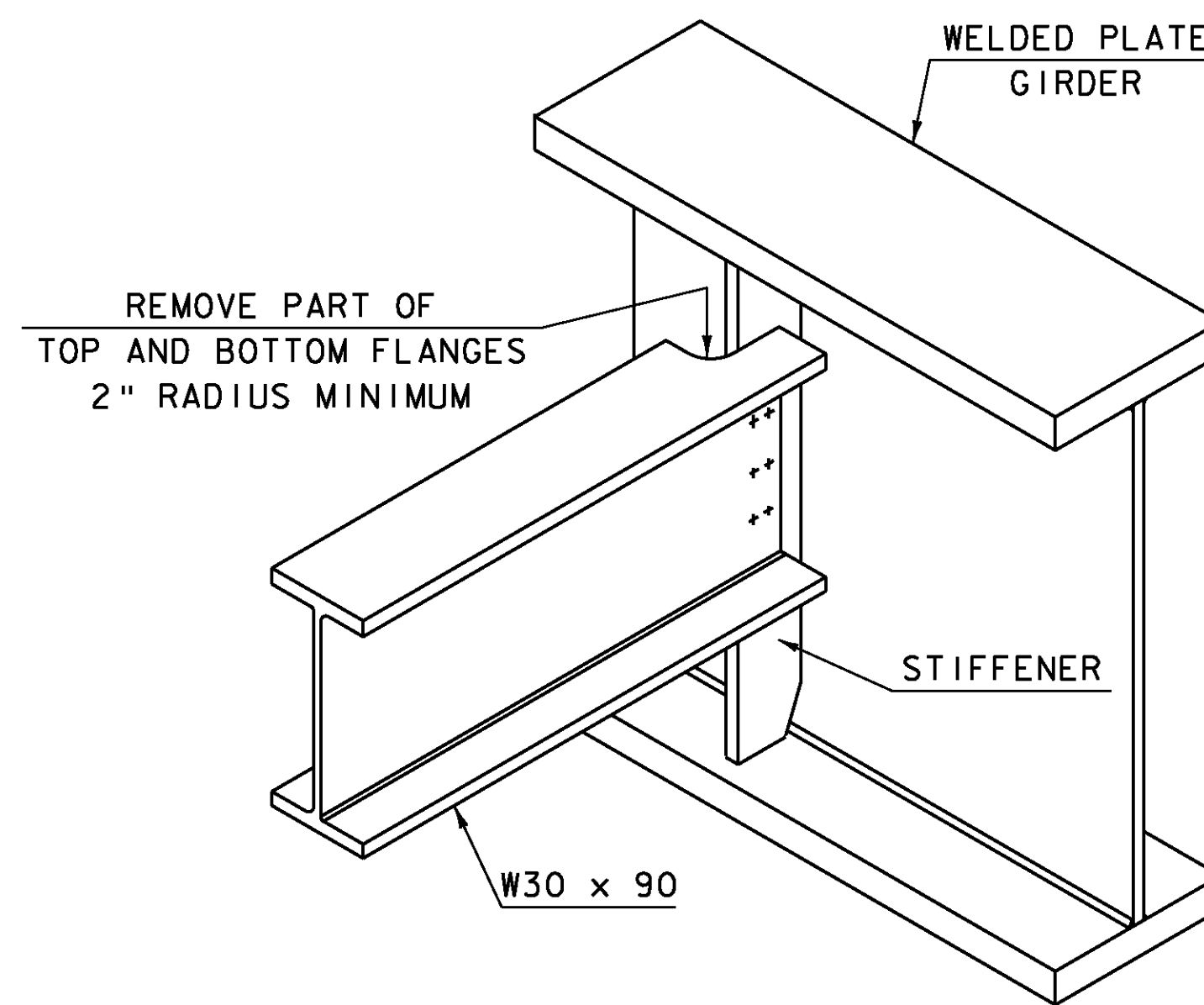


FRAMING PLAN
SCALE 1/4" = 1'-0"



NOTE: HI-STRENGTH BOLTS, NUTS AND WASHERS SHALL CONFORM TO AASHTO DESIGNATION M164.

INTERMEDIATE DIAPHRAGM DETAIL
NOT TO SCALE

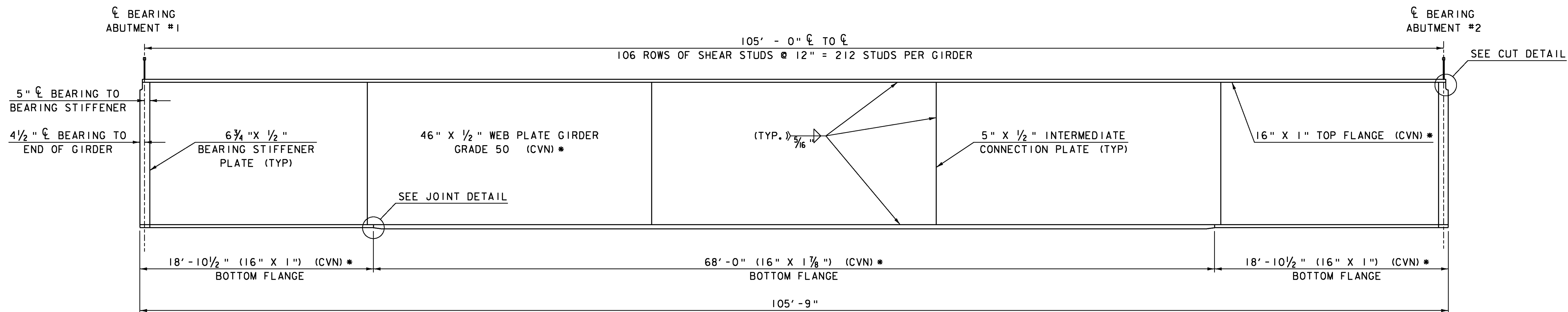


DIAPHRAGM CLIP DETAIL
NOT TO SCALE

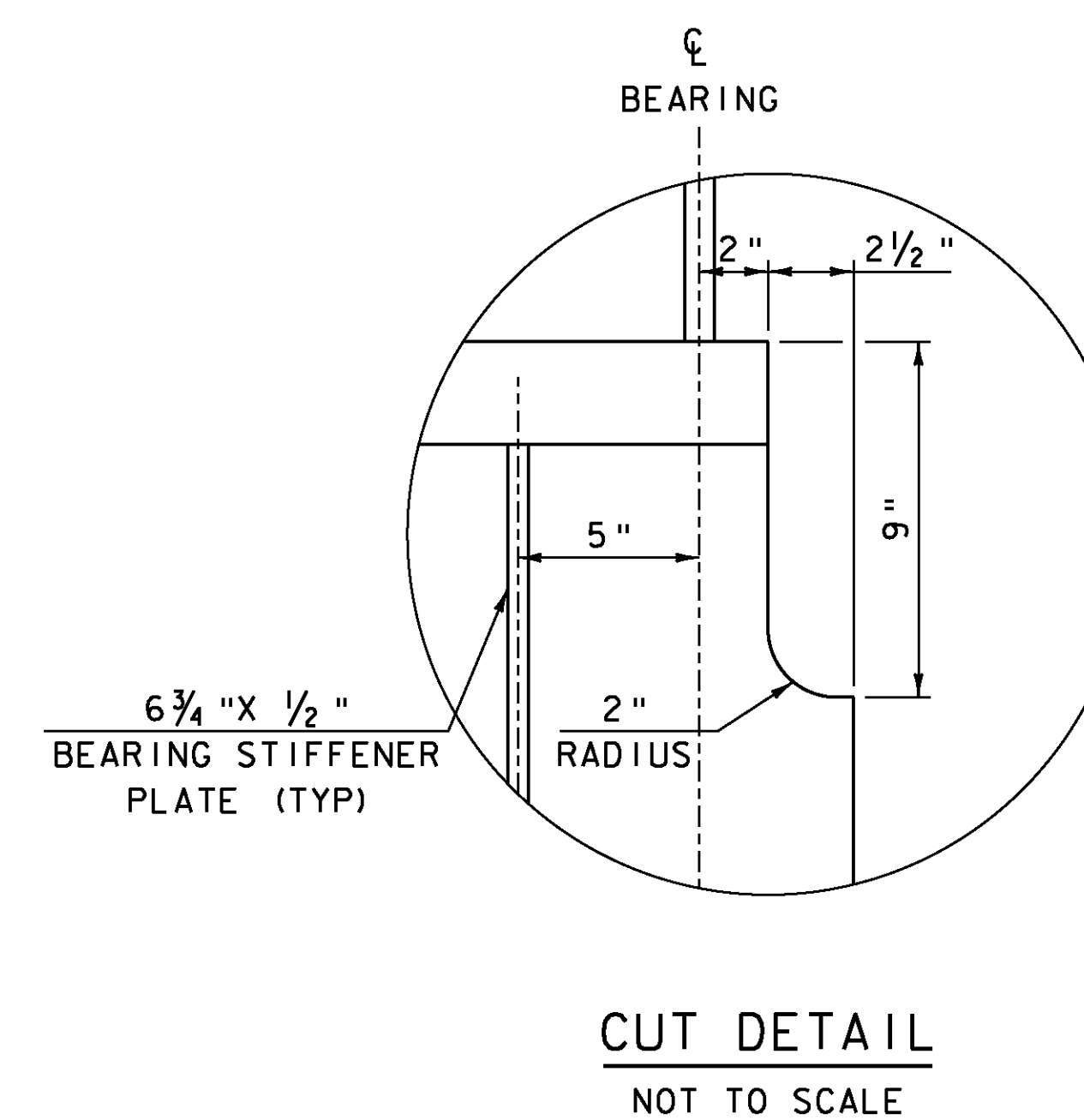
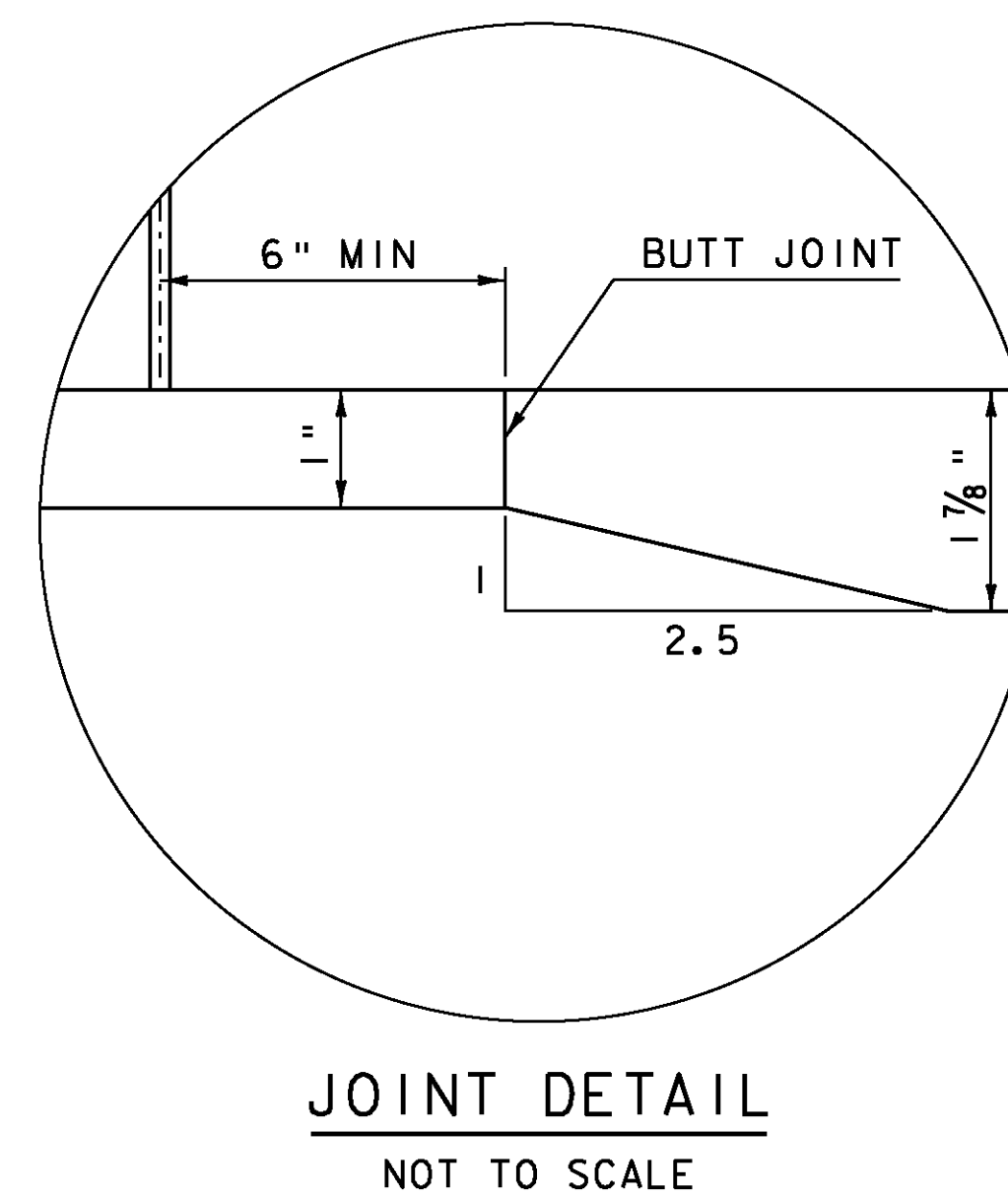
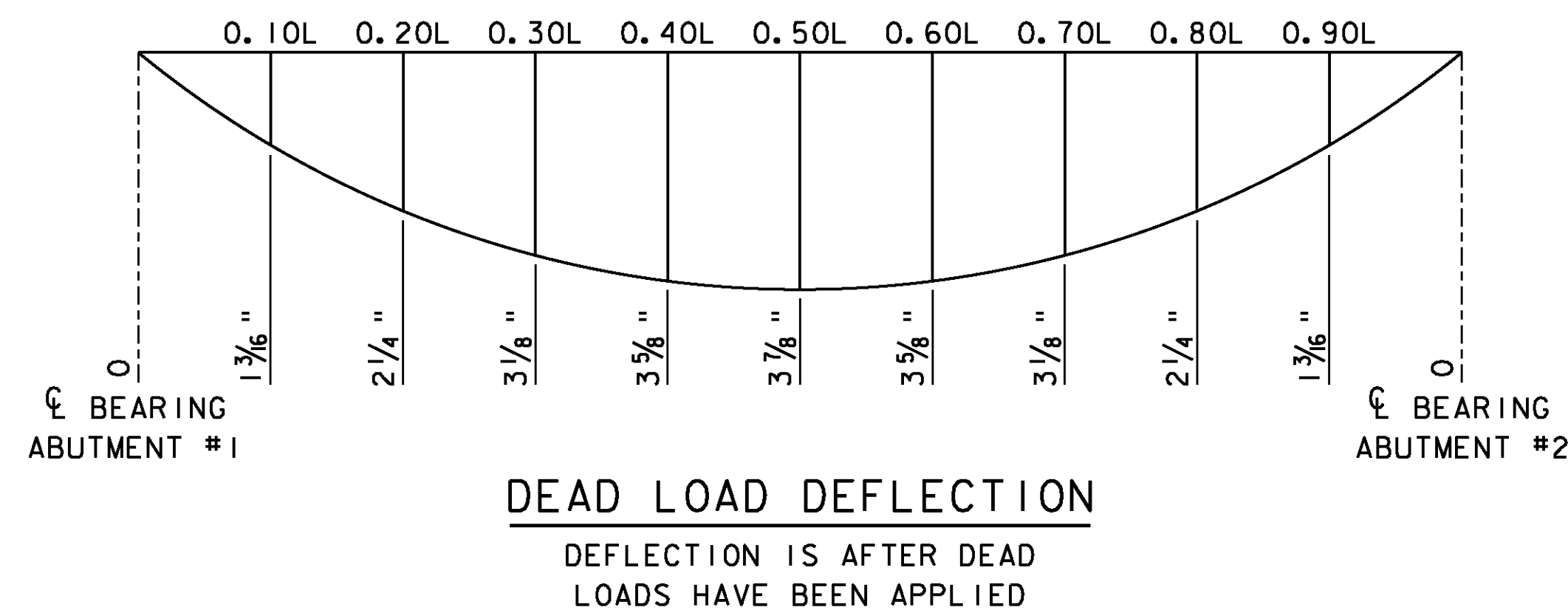
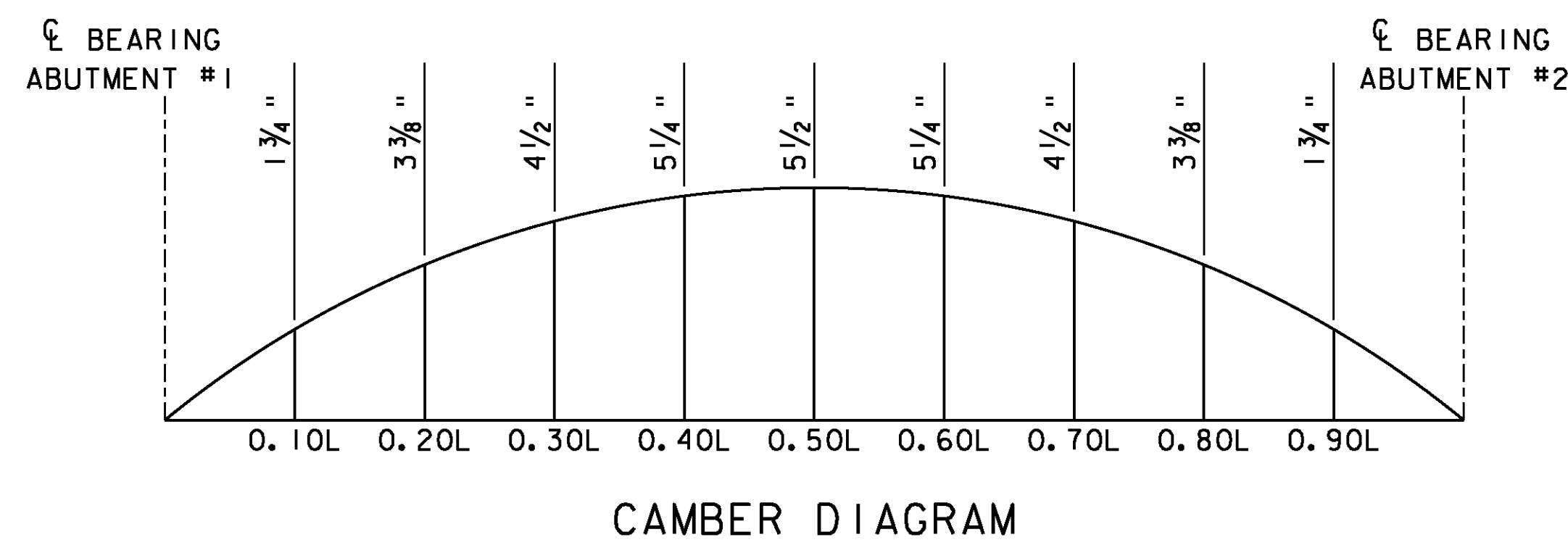
SCALE 1/4" = 1'-0"

1 0 2 4 6

PROJECT: CHESTER	PROJECT NO.: BRF 016-1 (25)
DESIGN FILE NAME: 88b194\Structures\s88b194sup.dgn	PLOT DATE: 16-MAR-2011
IPARM FILE NAME: s88b194frame.i	DRAWN BY: D.D. BEARD
DESIGNED BY: E.L. RUSTAY	CHECKED BY: R.S. YOUNG
SQUAD LEADER: C.P. WILLIAMS	SHEET: 24 OF 50
FRAMING PLAN	



GIRDER ELEVATION
VERTICAL SCALE: 3/4" = 1'-0"
HORIZONTAL SCALE: 1/4" = 1'-0"



- NOTES
- * (CVN) REQUIRES CHARPY V-NOTCH TESTING. SEE NOTE 11 ON GENERAL NOTES SHEET.

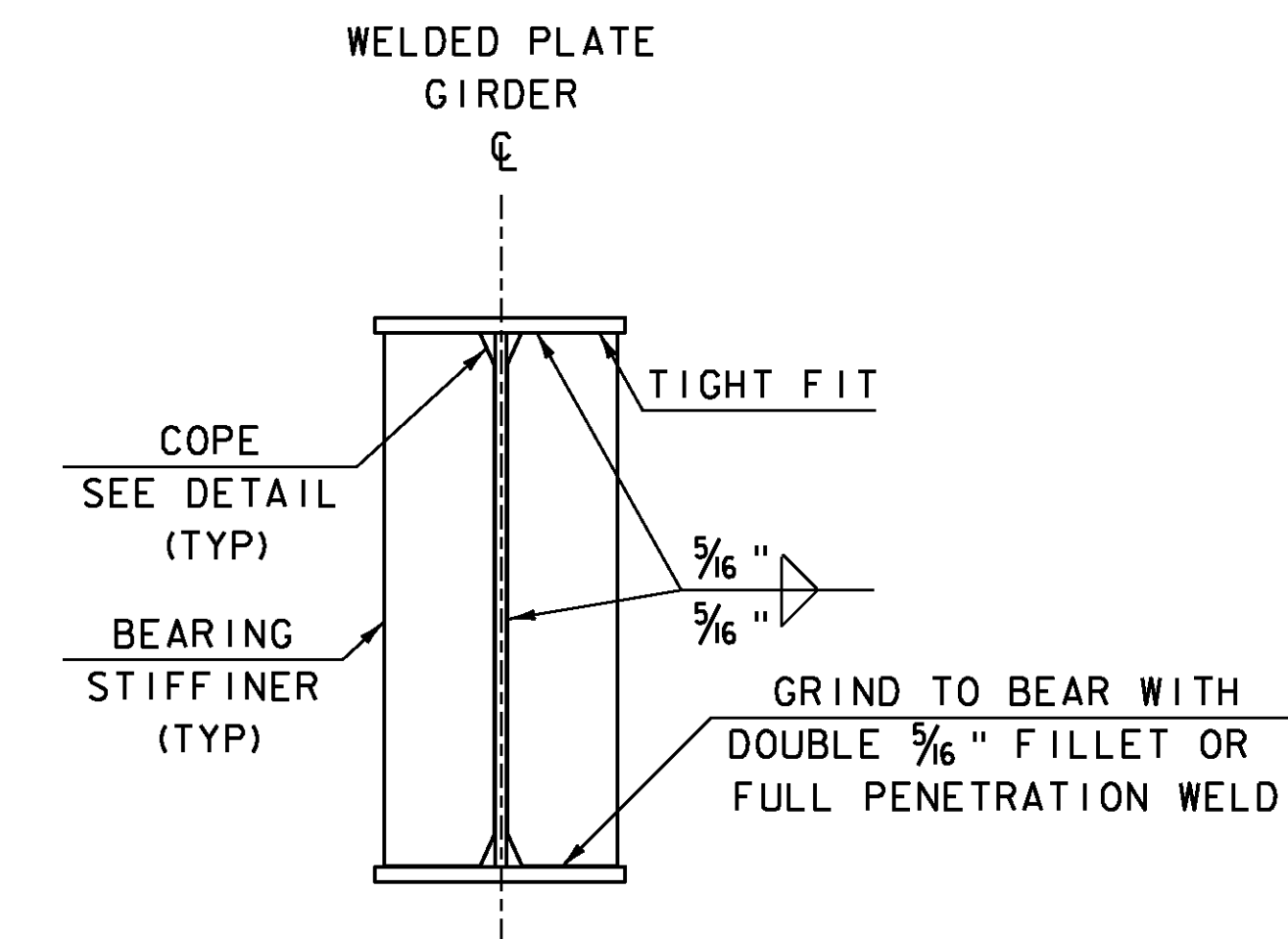
SCALE 3/4" = 1'-0"

1 0 1 2

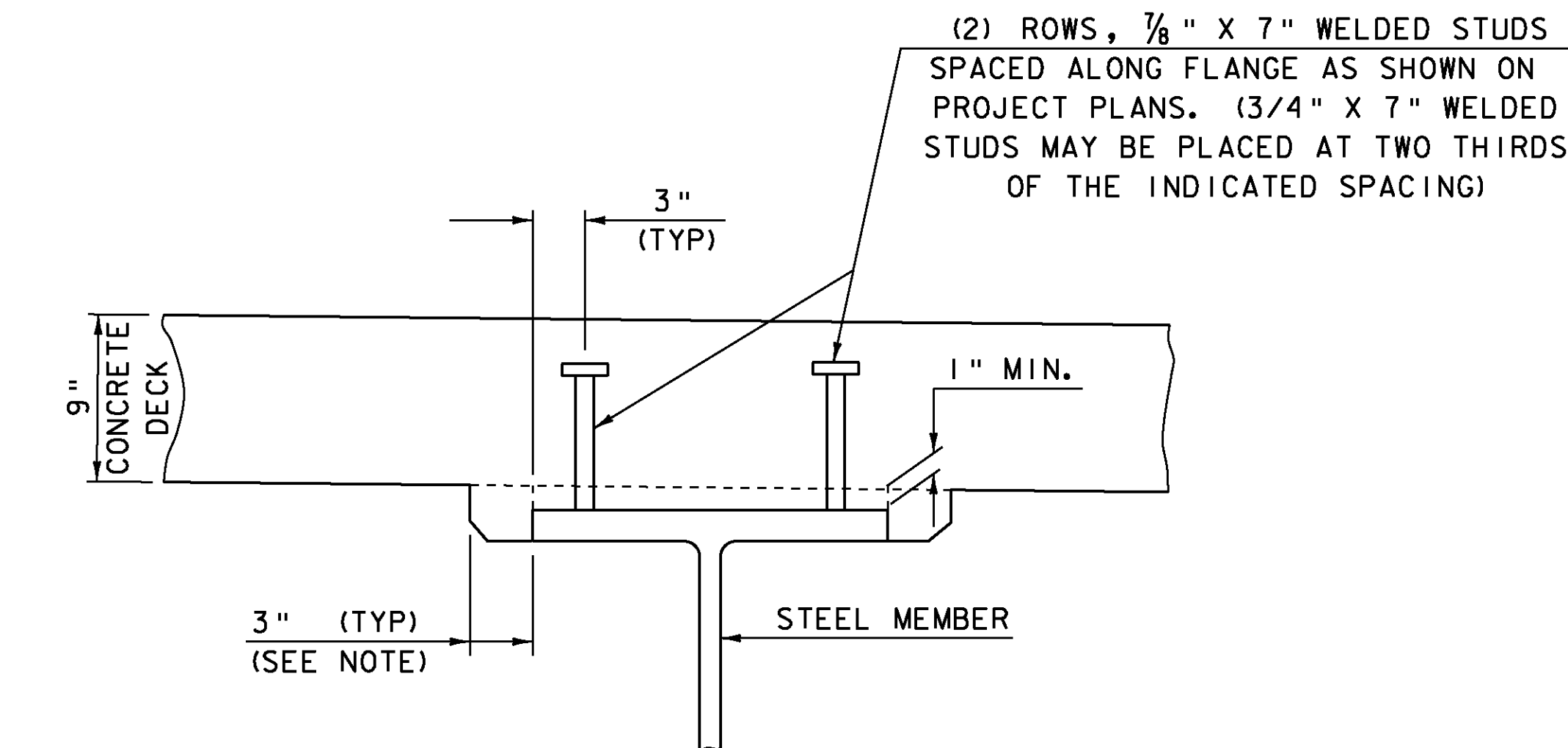
SCALE 1/4" = 1'-0"

1 0 2 4 6

PROJECT: CHESTER	PROJECT NO.: BRF 016-1 (25)
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IPARM FILE NAME: s88b194girder.i	DRAWN BY: D.D.BEARD
DESIGNED BY: E.L.RUSTAY	CHECKED BY: R.S.YOUNG
SQUAD LEADER: C.P.WILLIAMS	SHEET: 25 OF 50
GIRDER ELEVATION & CAMBER	

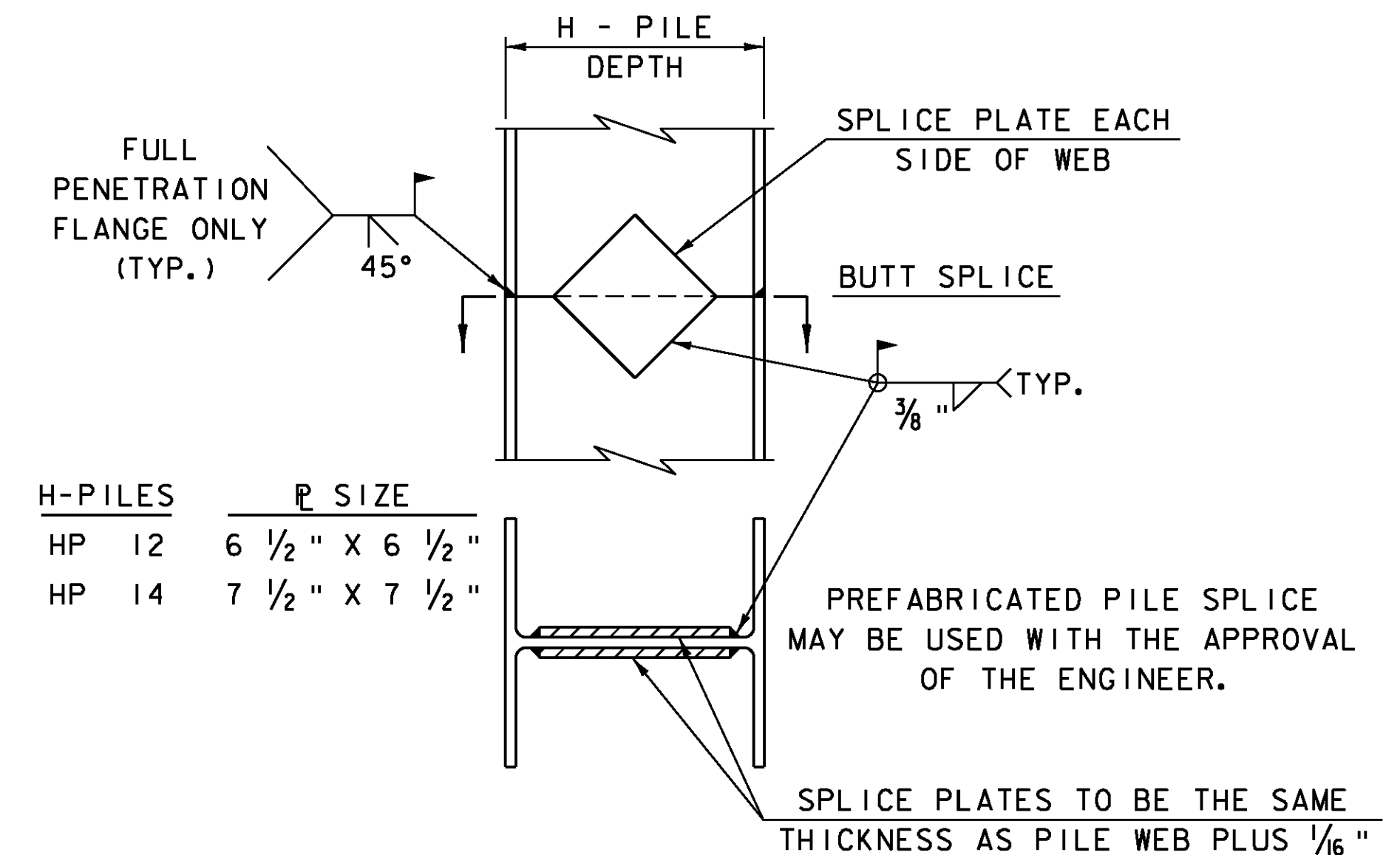


**ABUTMENT
BEARING STIFFENERS
FOR WELDED PLATE GIRDERS**
NTS

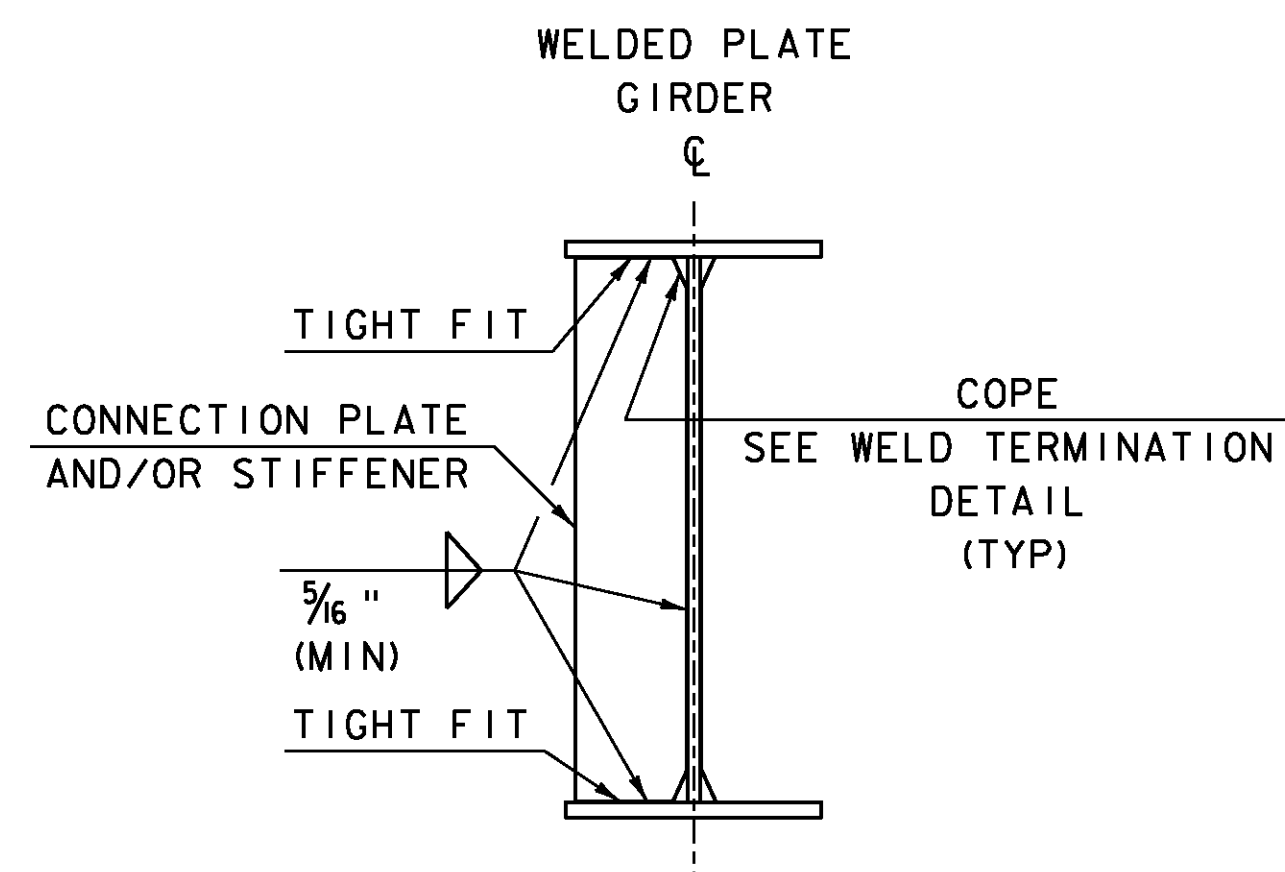


NOTE: THE 3" HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES. SYSTEMS SHALL BE SUBMITTED FOR APPROVAL TO THE STRUCTURES ENGINEER. ALL VOIDS SHALL BE FILLED WITH MORTAR, TYPE IV OR AN EQUIVALENT PRODUCT FROM THE APPROVED PRODUCTS LIST.

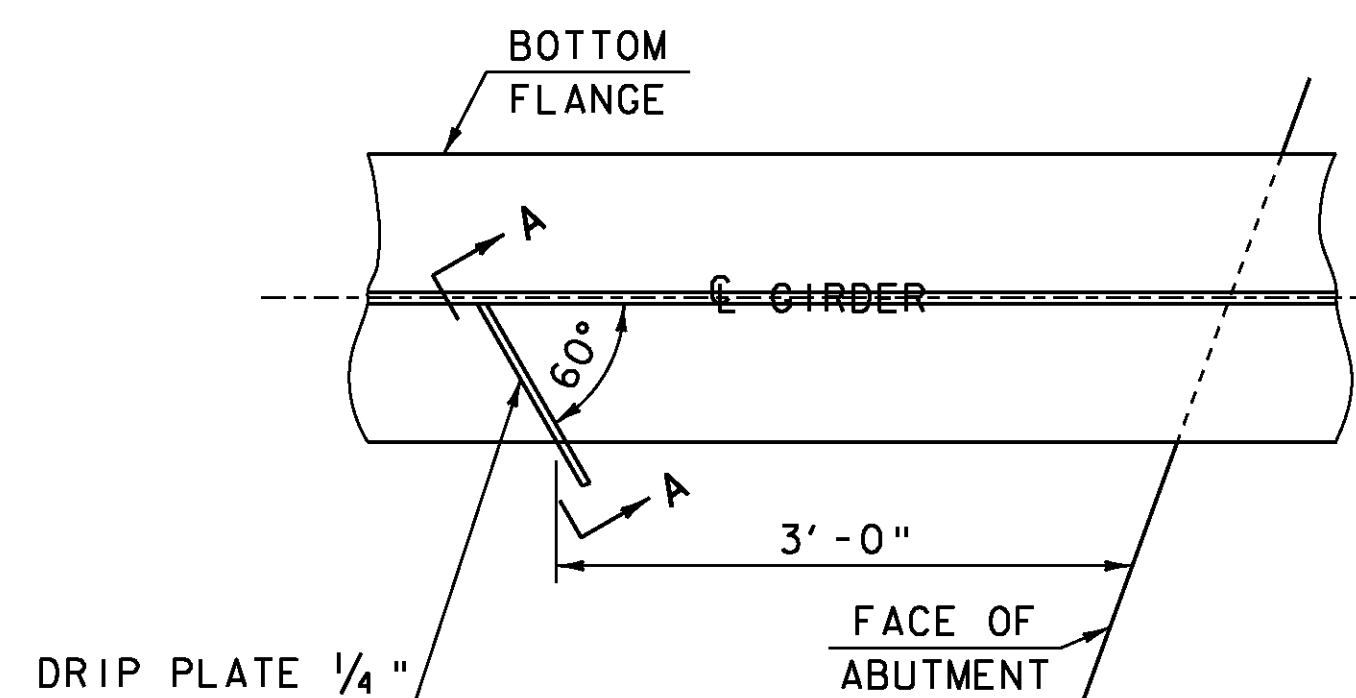
**HAUNCH AND SHEAR
CONNECTOR DETAILS**
NTS



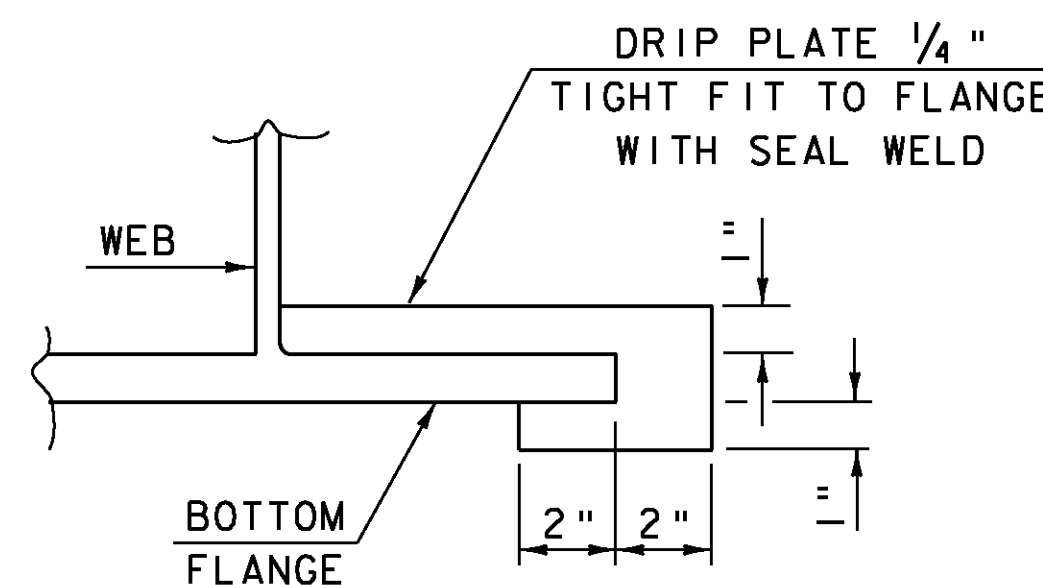
DETAIL OF PILE SPLICE
NTS



**INTERMEDIATE CONNECTION
PLATES AND/OR STIFFENERS
FOR WELDED PLATE GIRDERS**
NTS

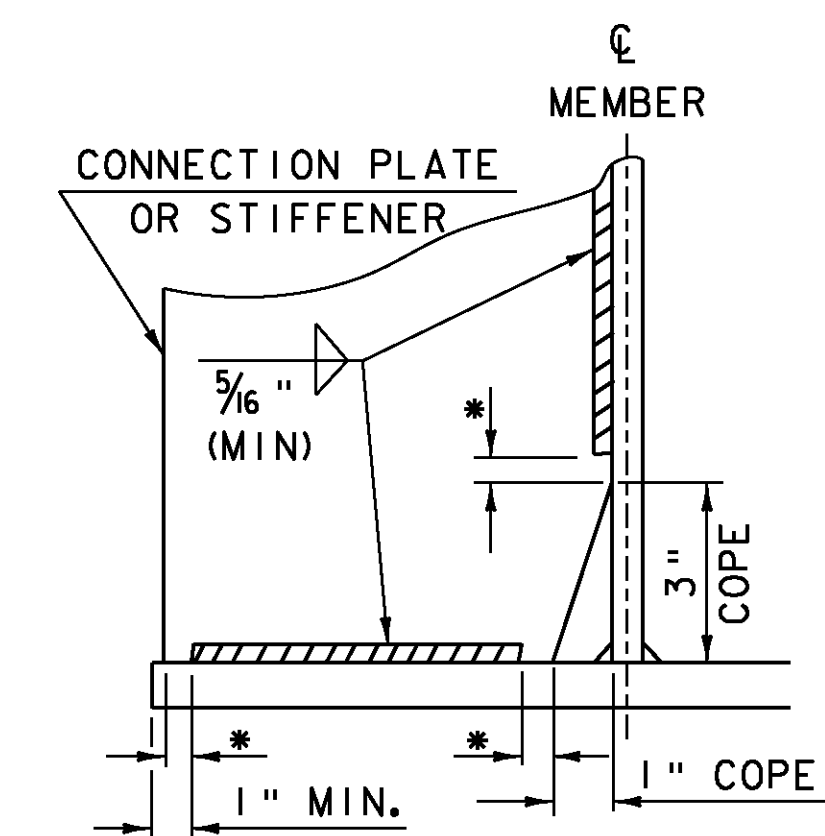


PLAN DRIP PLATE
NTS



SECTION A-A
NTS

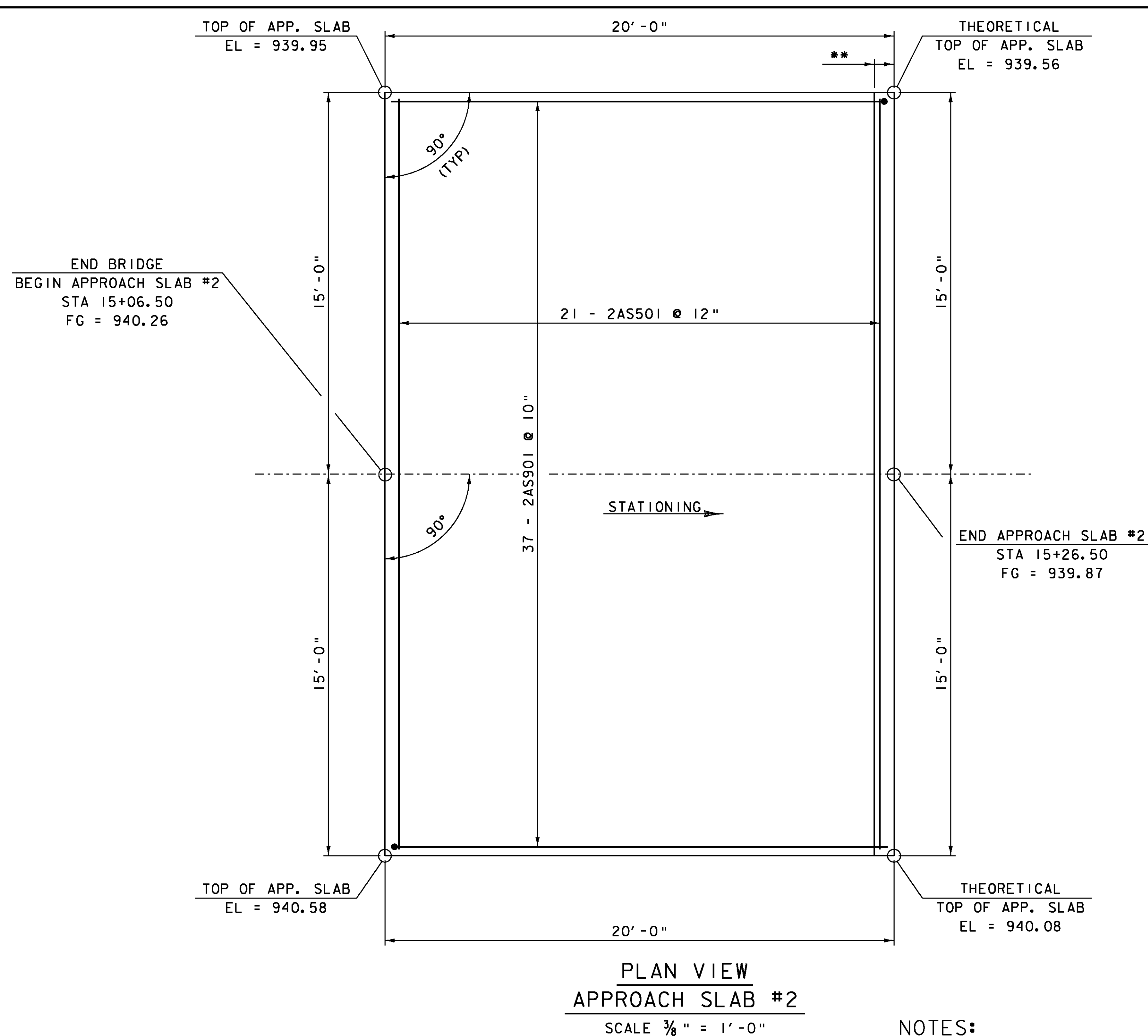
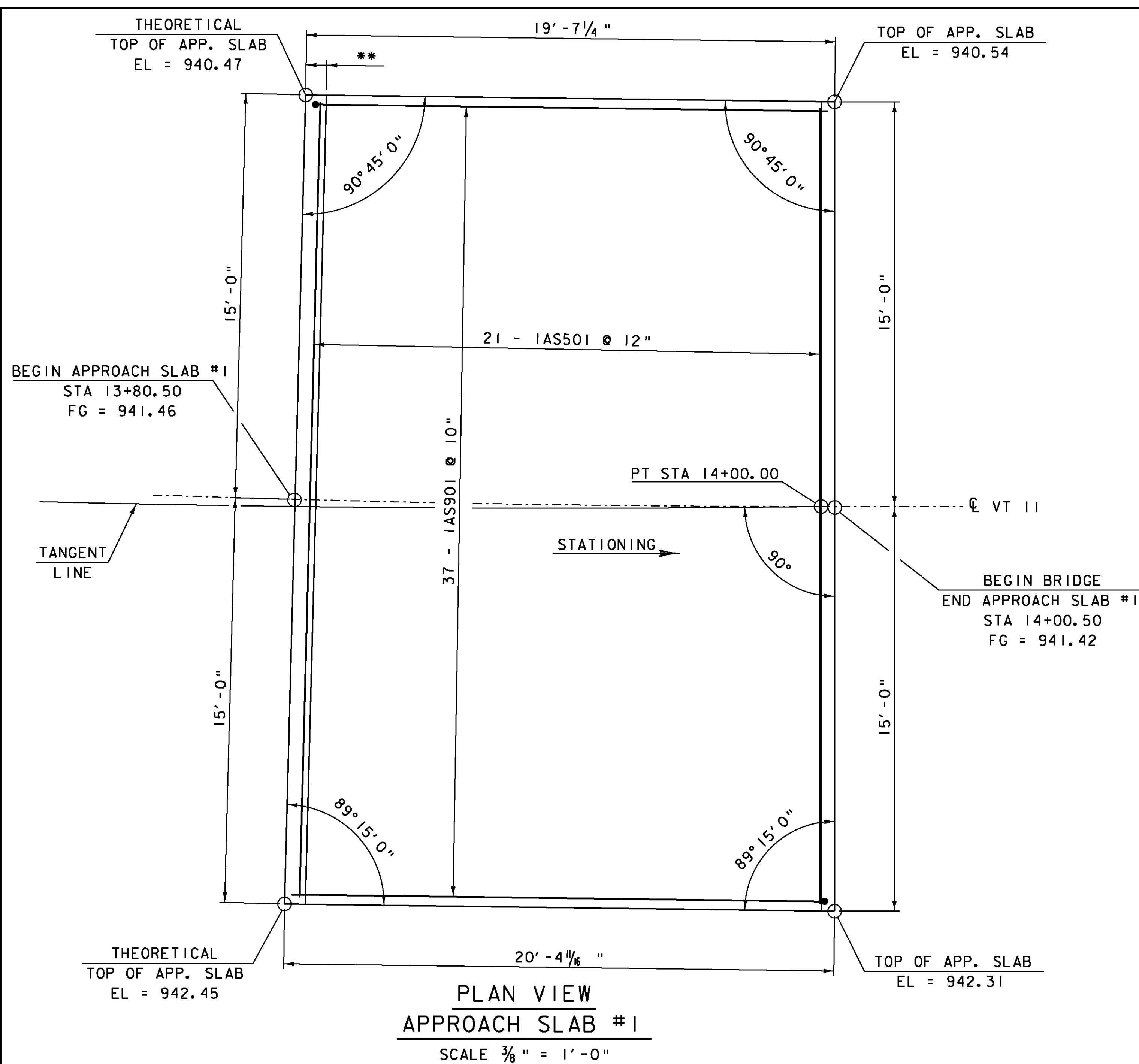
NOTE: DRIP PLATES SHALL BE PLACED ON OUTSIDE EDGE OF FASCIA GIRDERS ON THE HIGH SIDE OF ALL PIERS AND ABUTMENTS OR AS INDICATED ON PROJECT PLANS.



**WELD TERMINATION AND COPING
DETAILS FOR STEEL MEMBERS**
NTS

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

PROJECT:	PROJECT NO.:
CHESTER	BRF 016-1 (25)
DESIGN FILE NAME: Projects/88b194/structures/s88b194det.dgn	
IPARM FILE NAME: s88b194ssd.i	PLOT DATE: 16-MAR-2011
DESIGNED BY: H. I. SALLS	DRAWN BY: H. I. SALLS
SQUAD LEADER: C. P. WILLIAMS	CHECKED BY: R. S. YOUNG
STRUCTURAL STEEL DETAILS	SHEET: 26 OF 50



NOTES:

- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- ▲ = CUT TO FIT IN FIELD
- 3" CLEAR UNLESS OTHERWISE SPECIFIED ON THE PLANS
- ALL LAPS 2'-2" UNLESS OTHERWISE NOTED.
- ALL REINFORCING STEEL SHALL BE EPOXY COATED.

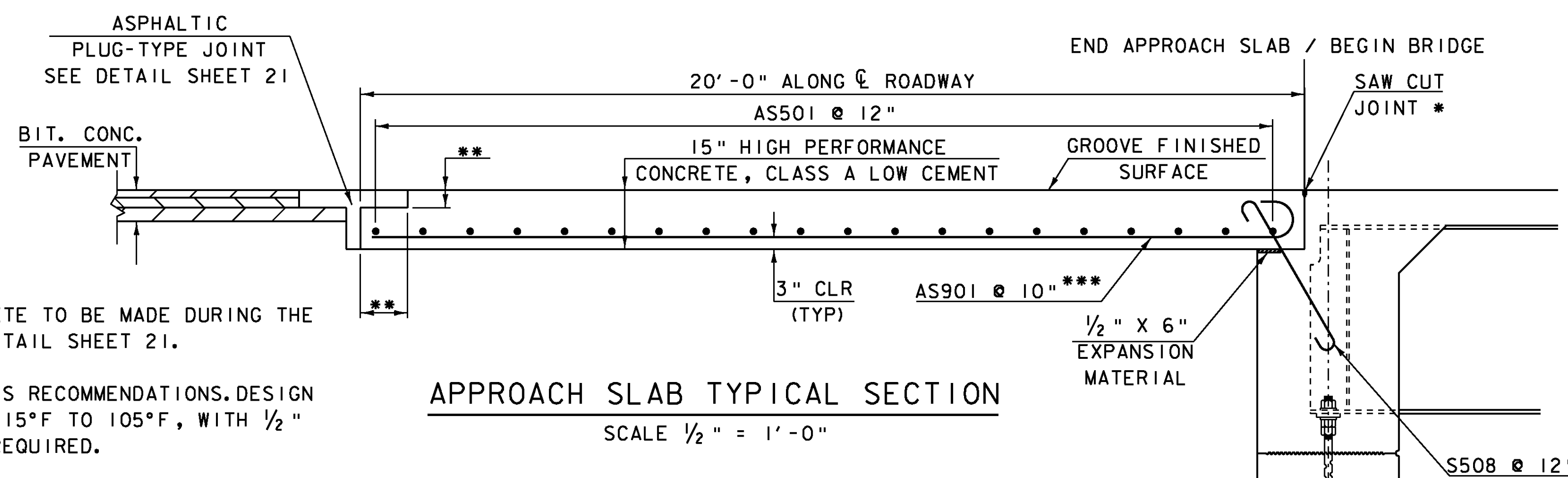
SCALE 1/2" = 1'-0"



SCALE 3/8" = 1'-0"



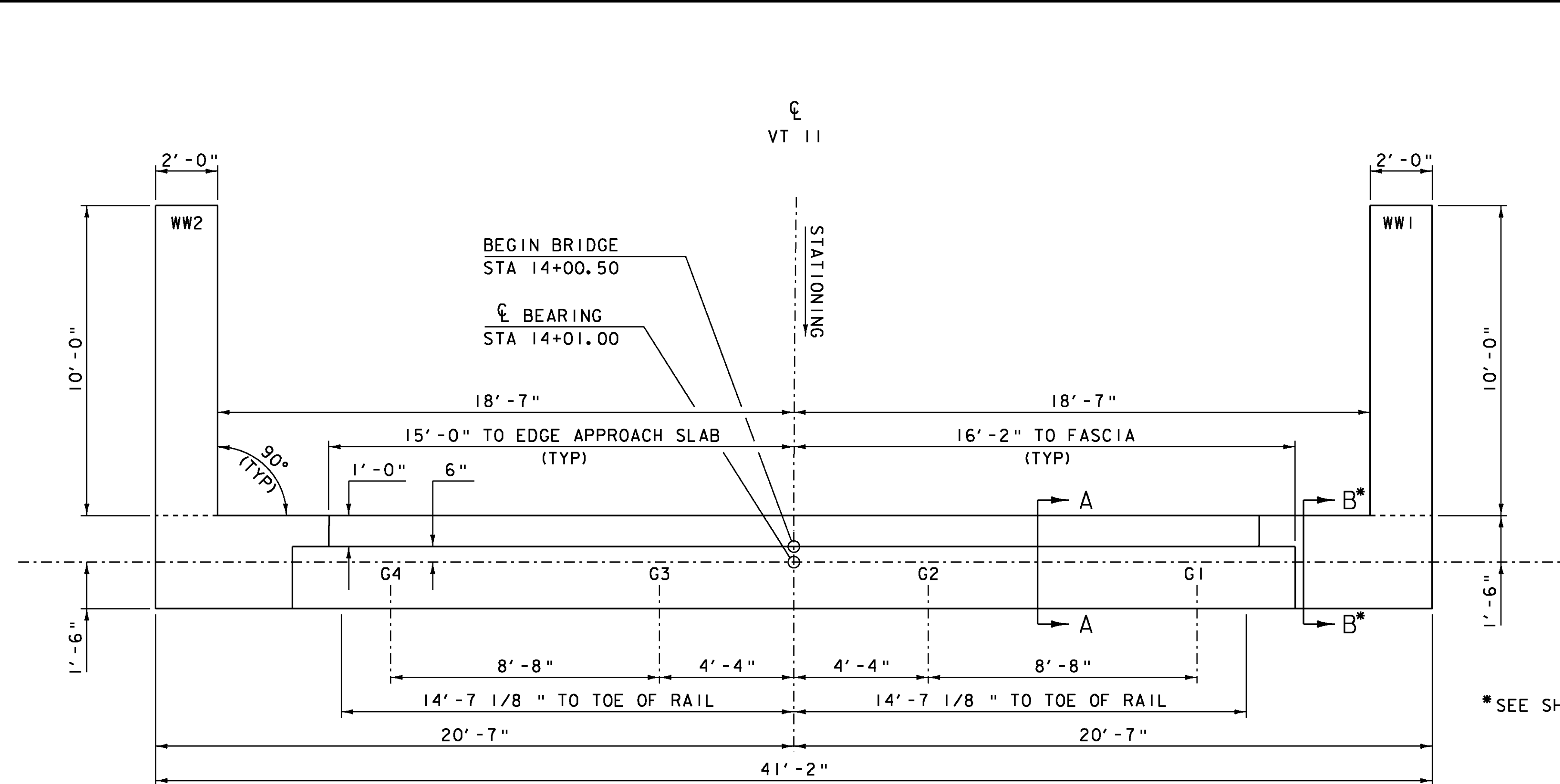
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DESIGN FILE NAME: 88b194\Structures\s88b194aps.dgn	PLOT DATE: 16-MAR-2011
IPARM FILE NAME: s88b194aps.i	DRAWN BY: E.L.RUSTAY
DESIGNED BY: E.L.RUSTAY	CHECKED BY: R.S.YOUNG
SQUAD LEADER: C.P.WILLIAMS	SHEET: 27 OF 50
APPROACH SLAB DETAILS	



* 1/4" WIDE X 1/2" SAW CUT INTO CONCRETE TO BE MADE DURING THE SAME WORKDAY AS PLACEMENT. SEE DETAIL SHEET 21.

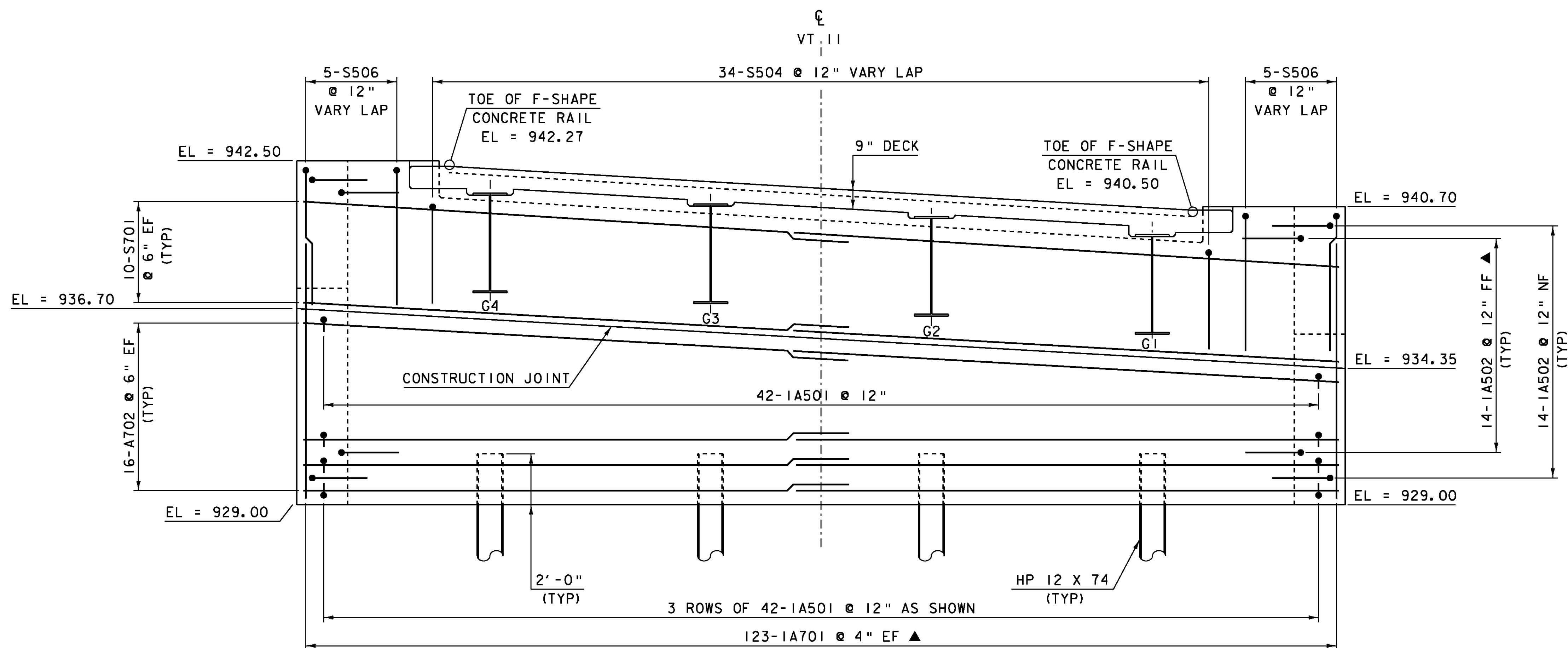
** DISTANCES PER JOINT MANUFACTURER'S RECOMMENDATIONS. DESIGN BASED ON TEMPERATURE RANGE FROM -15°F TO 105°F, WITH 1/2" EXPANSION. 9" MINIMUM BLOCKOUT REQUIRED.

*** TILT BAR TO MAINTAIN 3" CLR AT TOP.



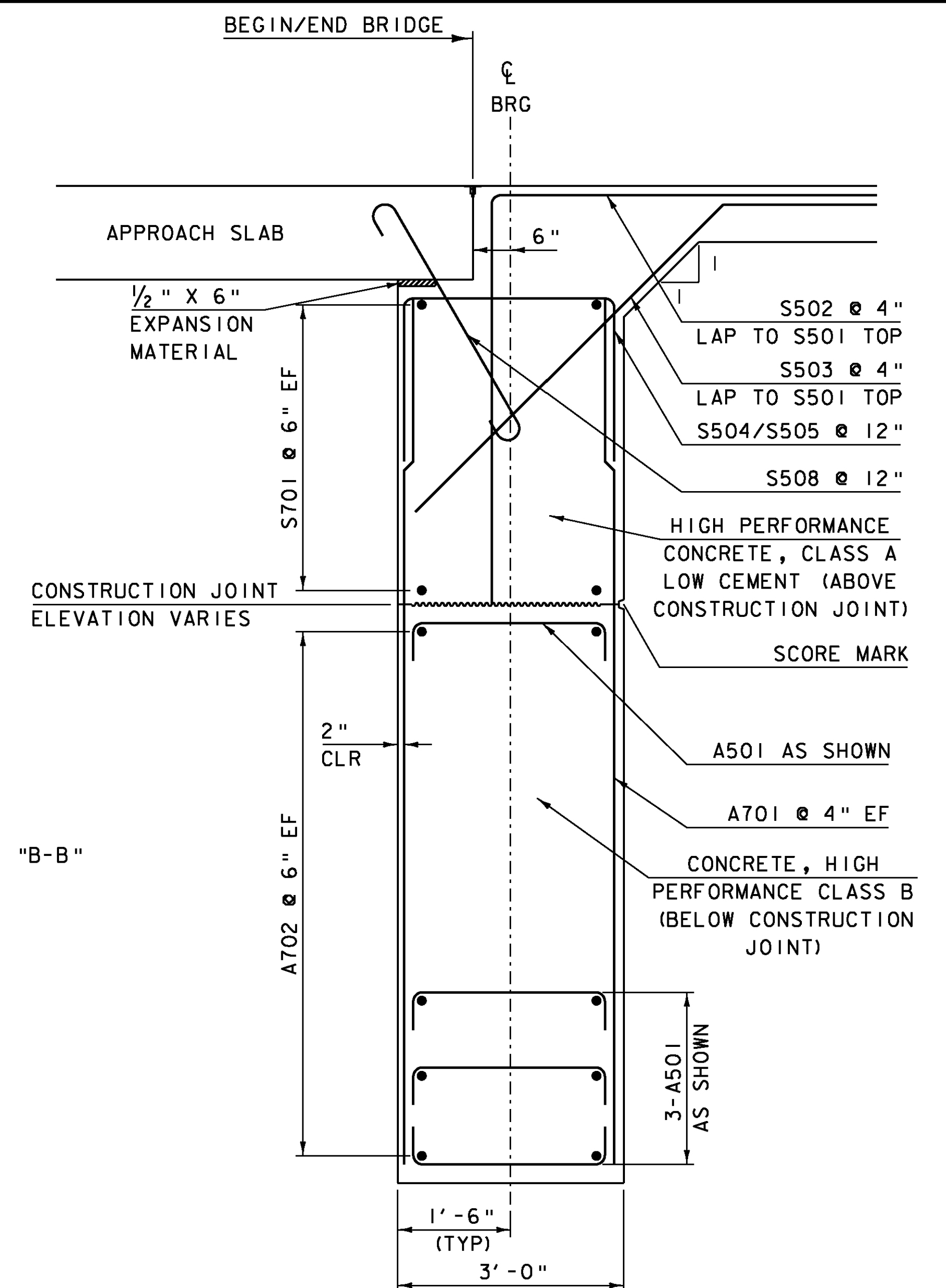
ABUTMENT #1 PLAN

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



ABUTMENT #1 ELEVATION

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



SECTION "A-A"
BRIDGE END DETAIL AND
ABUTMENT TYPICAL SECTION

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

NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR UNLESS OTHERWISE
SPECIFIED ON THE PLANS

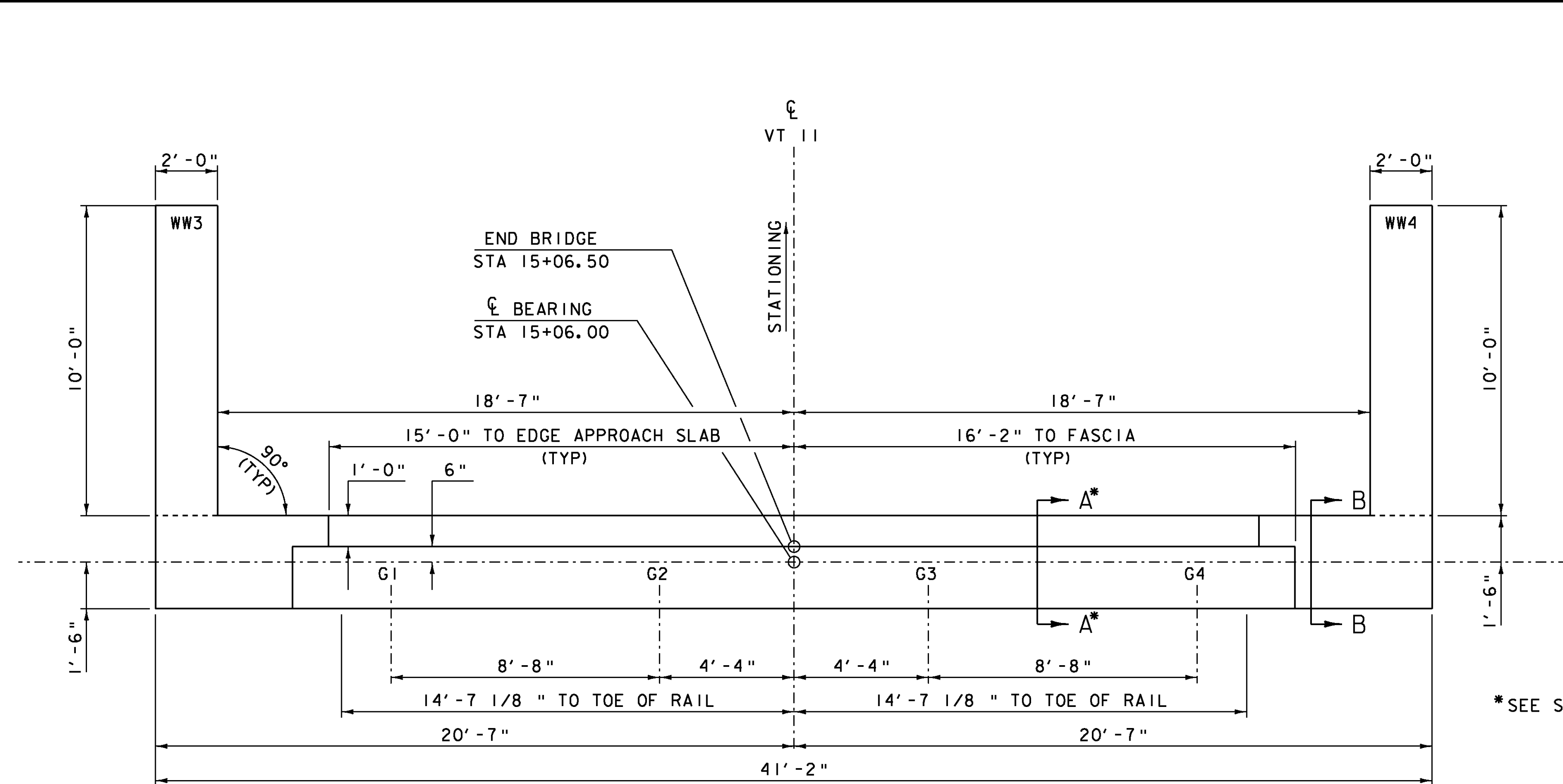
SCALE $\frac{3}{8}$ " = 1'-0"
1 0 1 2 3 4

ALL LAPS 2'-2" UNLESS
OTHERWISE NOTED.

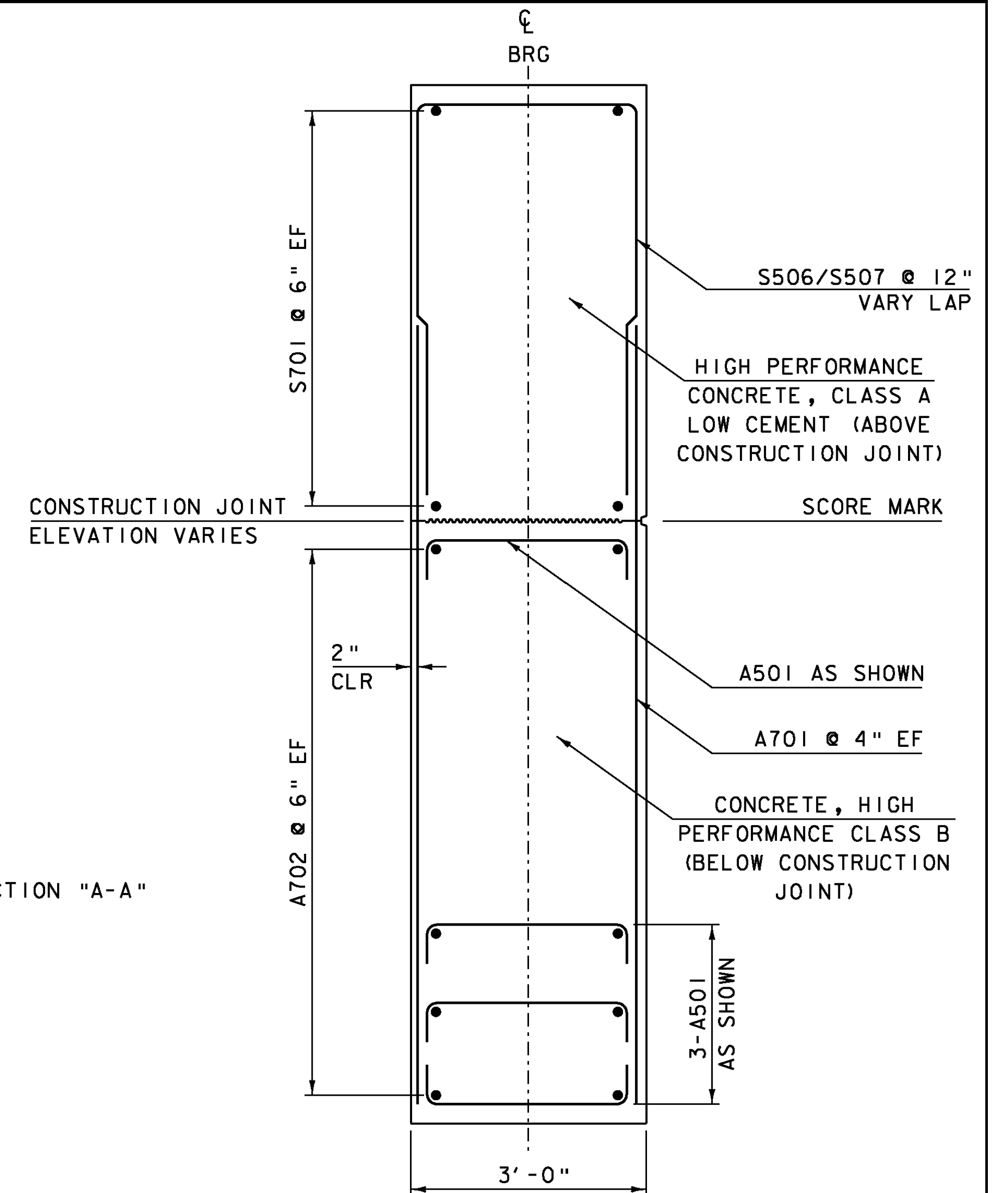
SCALE $\frac{3}{4}$ " = 1'-0"
1 0 1 2

ALL REINFORCING STEEL SHALL
BE EPOXY COATED.

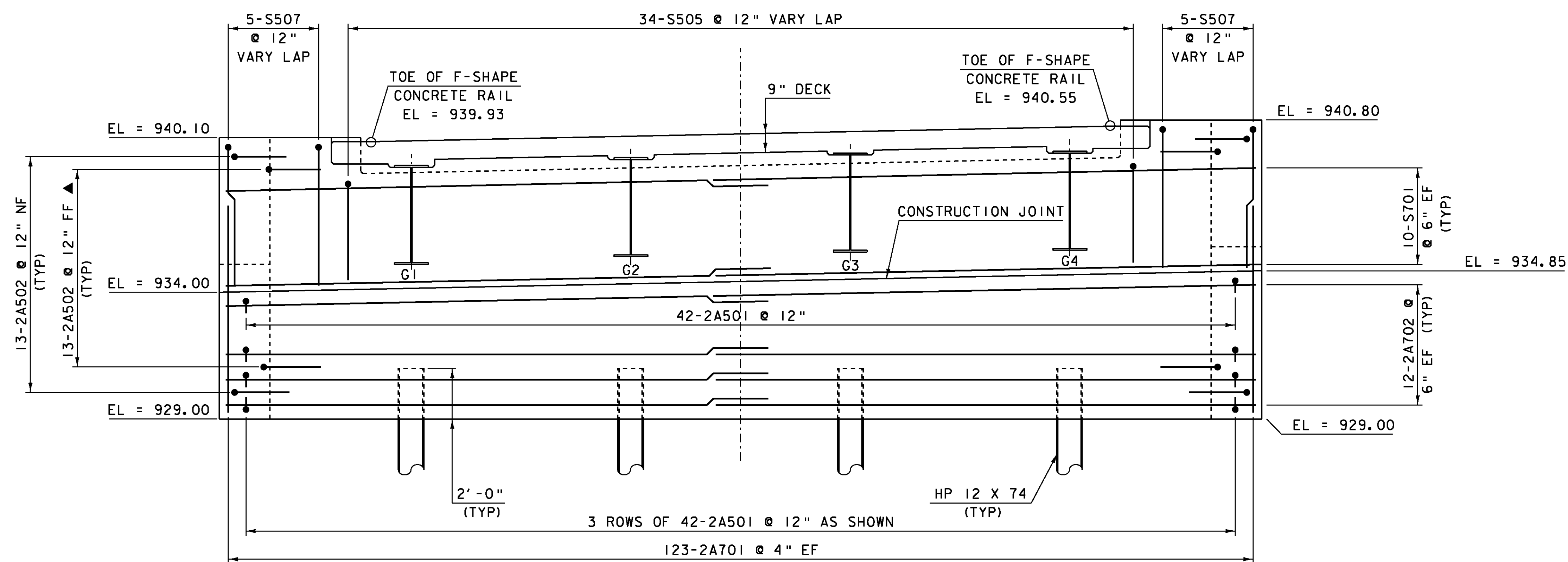
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CHESTER	BRF 016-1 (25)
DESIGN FILE NAME: 88b194\Structures\s88b194sub.dgn	PLOT DATE: 16-MAR-2011
IPARM FILE NAME: s88b194abut1.i	DRAWN BY: E.L.RUSTAY
DESIGNED BY: E.L.RUSTAY	CHECKED BY: R.S.YOUNG
SQUAD LEADER: C.P.WILLIAMS	SHEET: 28 OF 50
ABUTMENT #1 DETAILS	



ABUTMENT #2 PLAN
SCALE $\frac{3}{8}$ " = 1'-0"



SECTION "B-B"
SCALE $\frac{3}{4}$ " = 1'-0"
SEE SHEET 28 FOR SECTION "A-A"



ABUTMENT #2 ELEVATION
SCALE $\frac{3}{8}$ " = 1'-0"

NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

3" CLEAR UNLESS OTHERWISE SPECIFIED ON THE PLANS

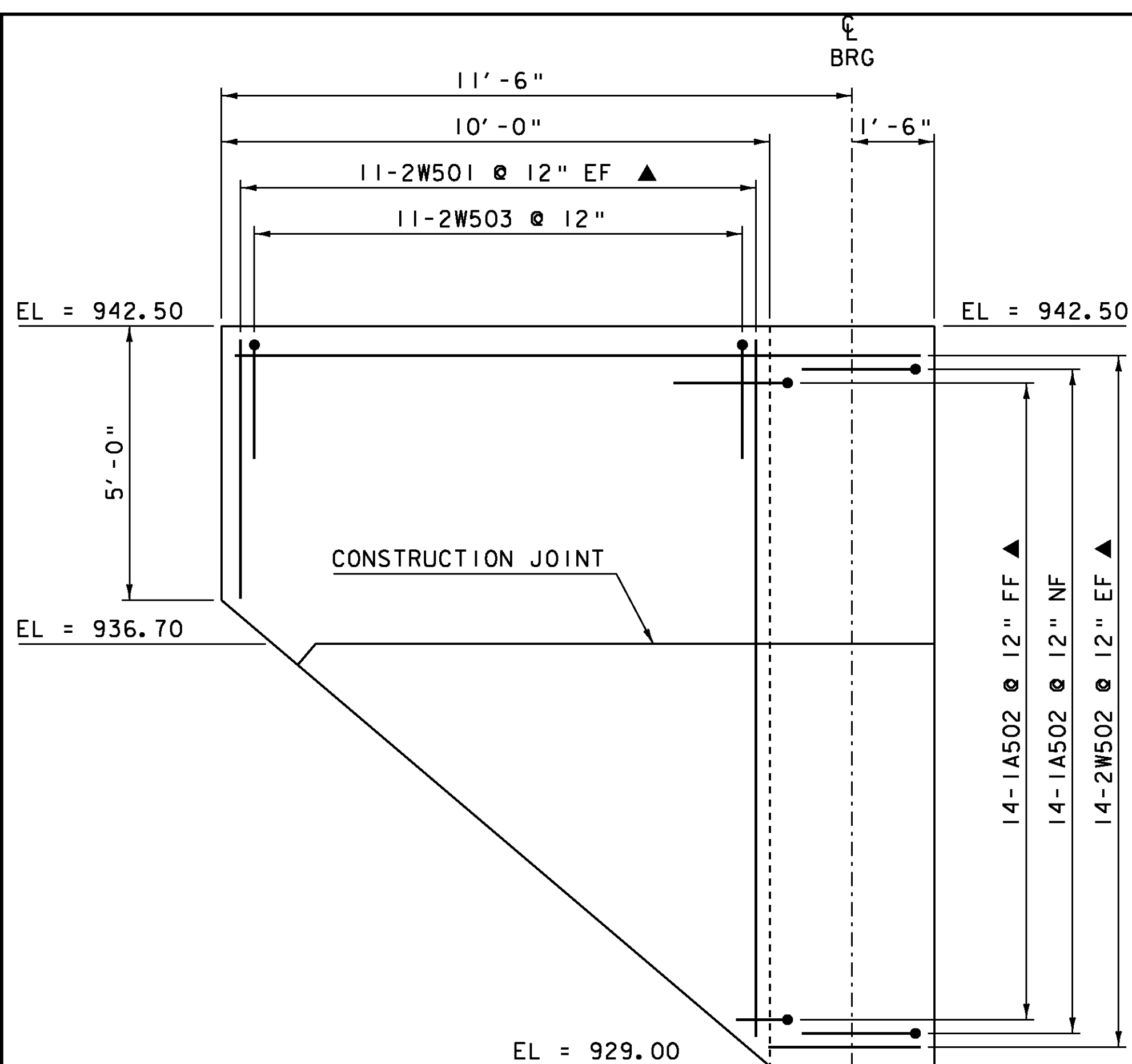
ALL LAPS 2'-2" UNLESS OTHERWISE NOTED.

ALL REINFORCING STEEL SHALL BE EPOXY COATED.

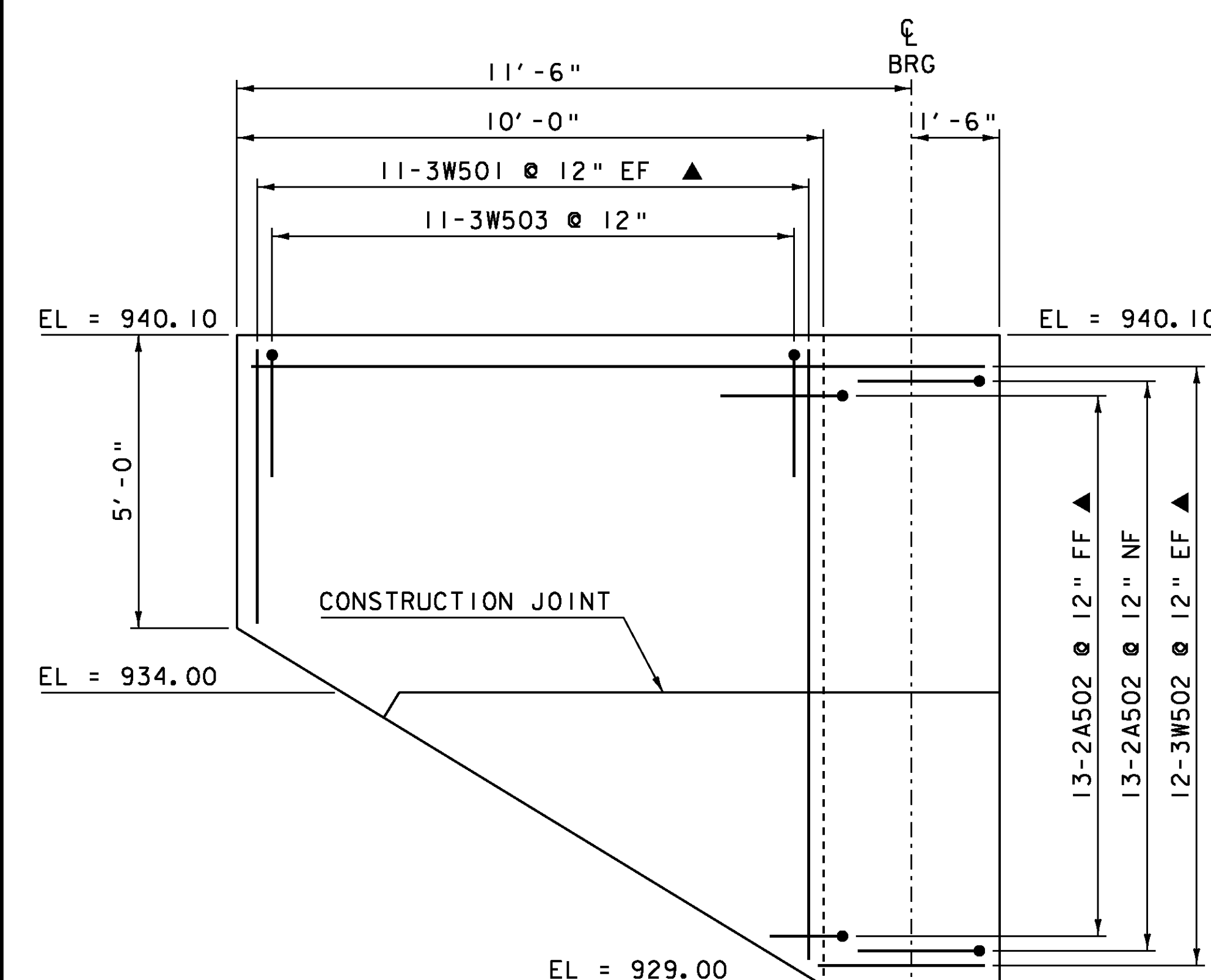
SCALE $\frac{3}{8}$ " = 1'-0"
1 0 1 2 3 4

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

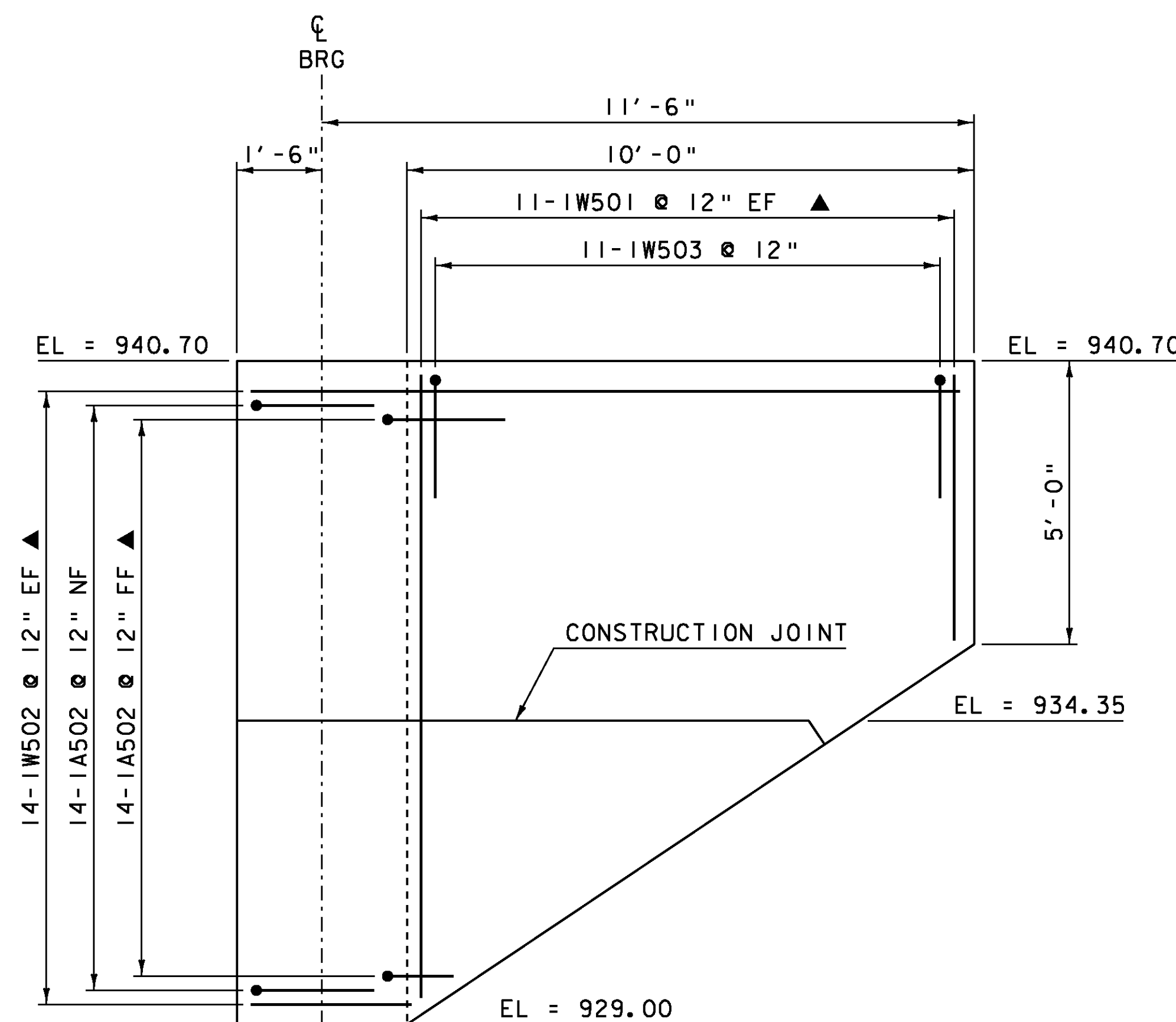
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DESIGN FILE NAME:	s88b194\Structures\s88b194sub.dgn	PLOT DATE:	16-MAR-2011
IPARM FILE NAME:	s88b194abut2.i	DRAWN BY:	E.L.RUSTAY
DESIGNED BY:	E.L.RUSTAY	CHECKED BY:	R.S.YOUNG
SQUAD LEADER:	C.P.WILLIAMS		
ABUTMENT #2 DETAILS		SHEET:	29 OF 50



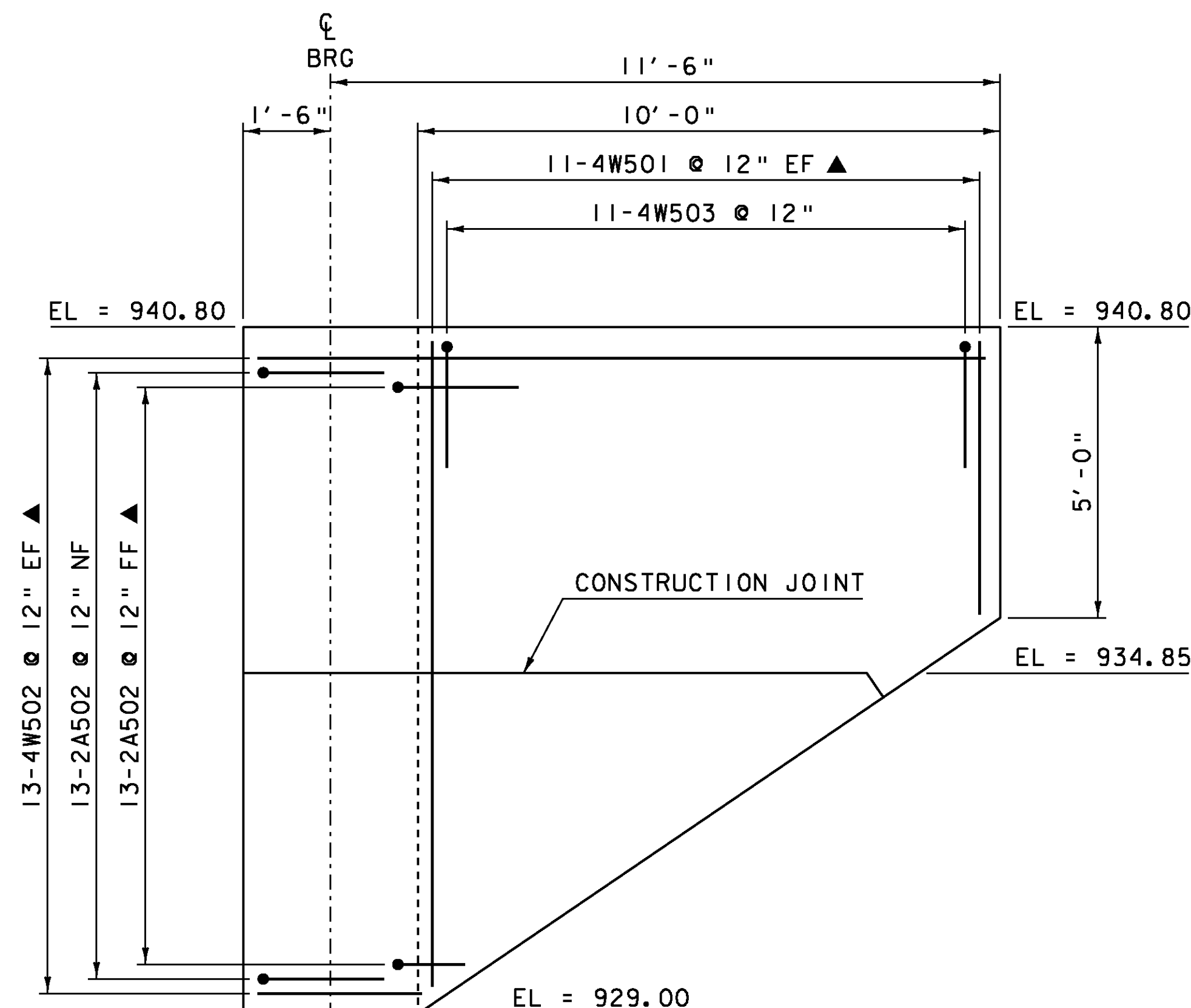
WINGWALL #2 ELEVATION
SCALE 1/2" = 1'-0"



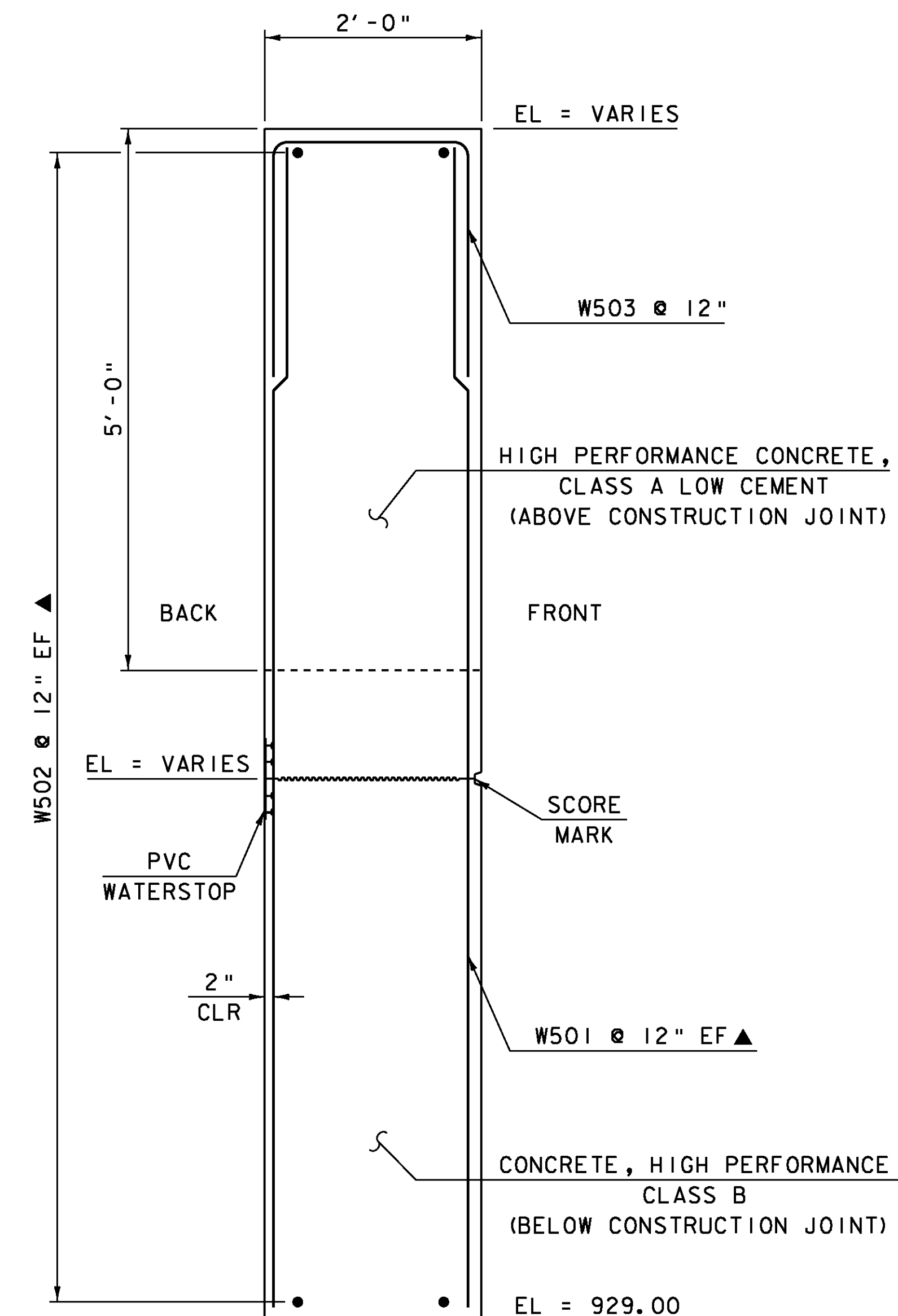
WINGWALL #3 ELEVATION
SCALE 1/2" = 1'-0"



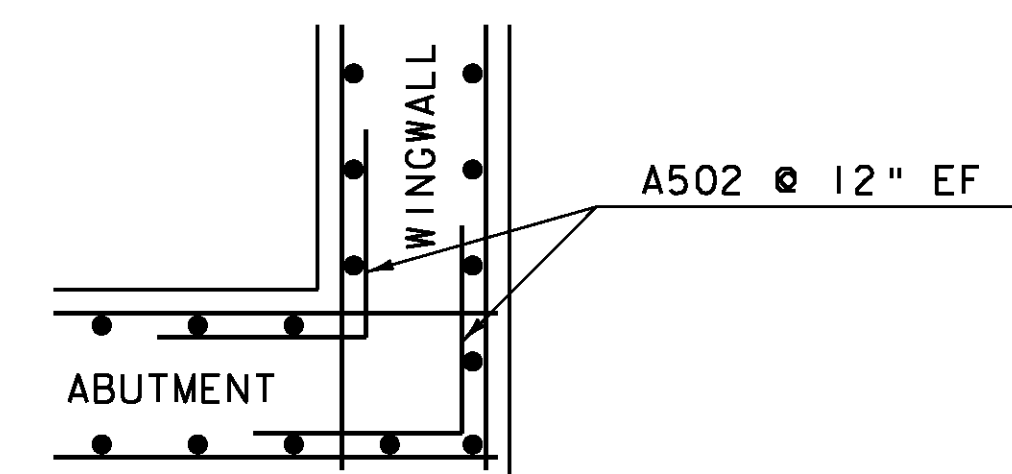
WINGWALL #1 ELEVATION
SCALE 1/2" = 1'-0"



WINGWALL #4 ELEVATION
SCALE 1/2" = 1'-0"



WINGWALL TYPICAL SECTION
SCALE 1" = 1'-0"



TYPICAL CORNER DETAIL
SCALE 1/2" = 1'-0"

NOTES:

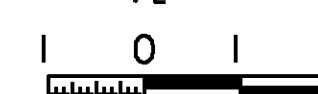
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR UNLESS OTHERWISE SPECIFIED ON THE PLANS

ALL LAPS 2'-2" UNLESS OTHERWISE NOTED.

ALL REINFORCING STEEL SHALL BE EPOXY COATED.

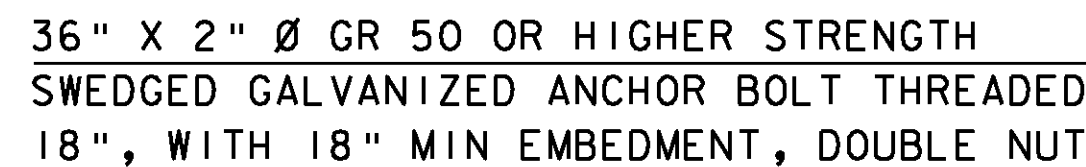
PROJECT: CHESTER	PROJECT NO.: BRF 016-1 (25)
DESIGN FILE NAME: s88b194\Structures\s88b194sub.dgn	PLOT DATE: 16-MAR-2011
IPARM FILE NAME: s88b194wwdet.i	DRAWN BY: E.L.RUSTAY
DESIGNED BY: E.L.RUSTAY	CHECKED BY: R.S.YOUNG
SQUAD LEADER: C.P.WILLIAMS	WINGWALL DETAILS
	SHEET: 30 OF 50

SCALE 1/2" = 1'-0"

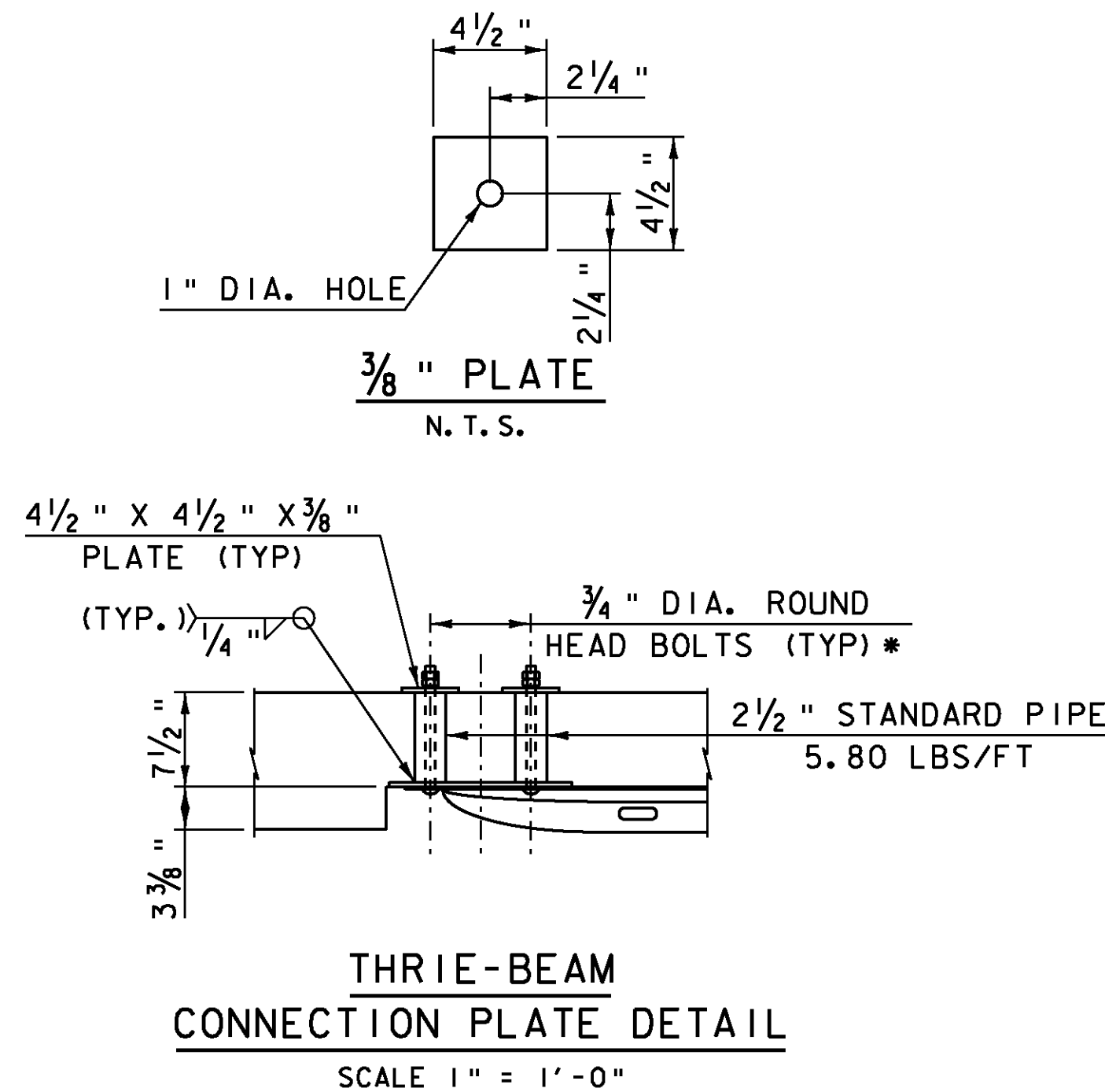
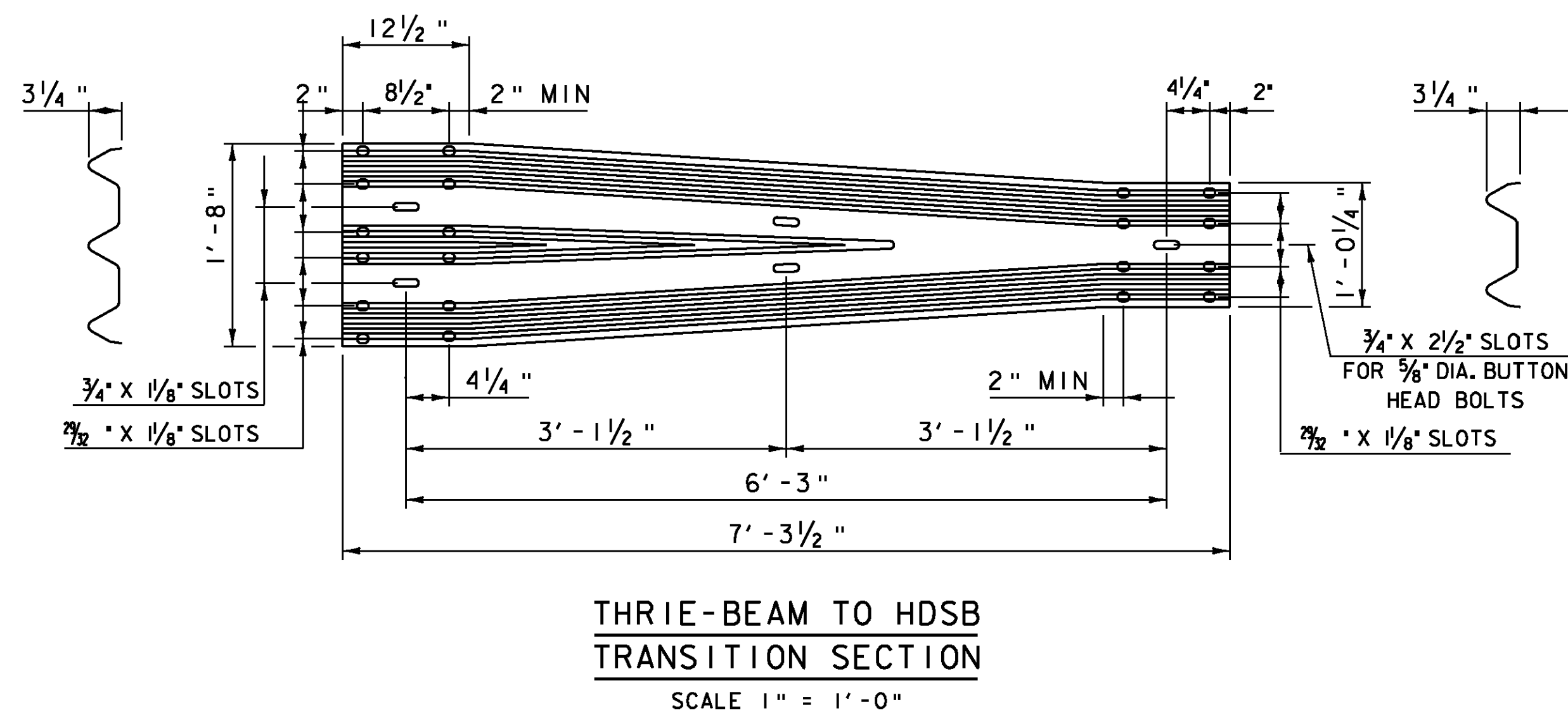
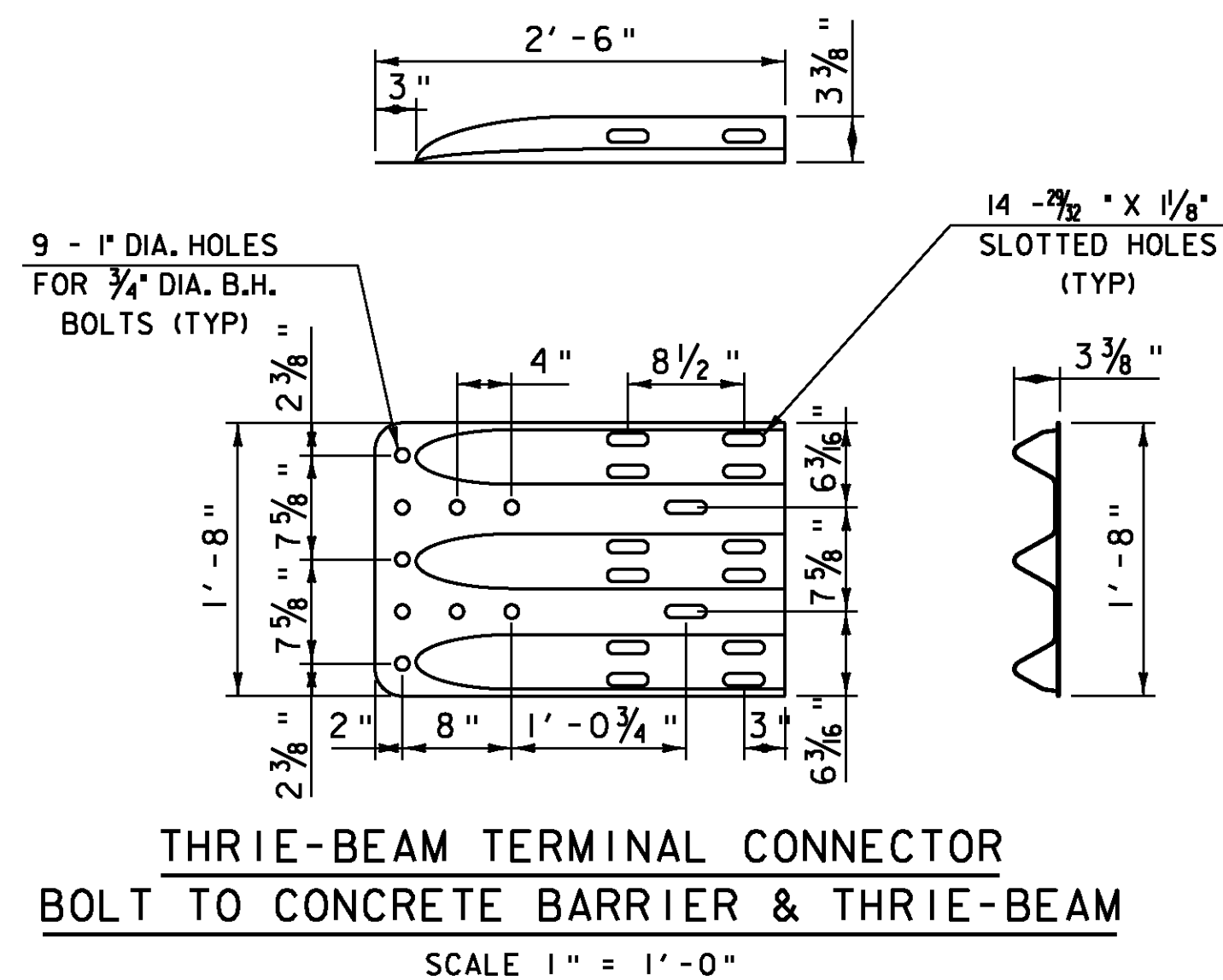


SCALE 1" = 1'-0"

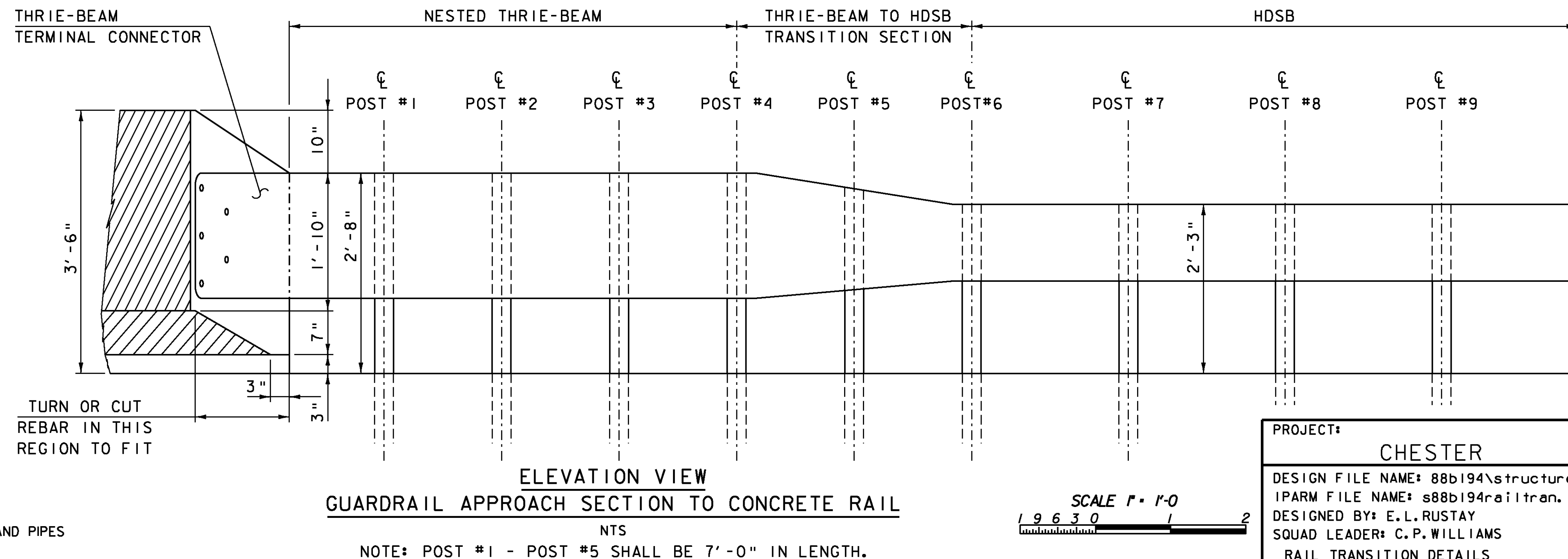
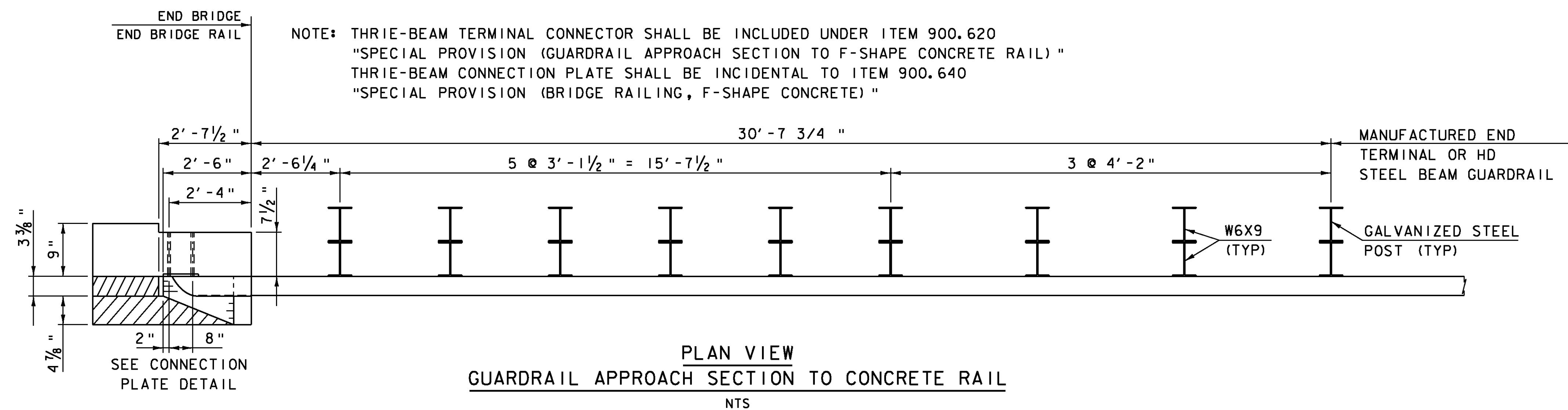
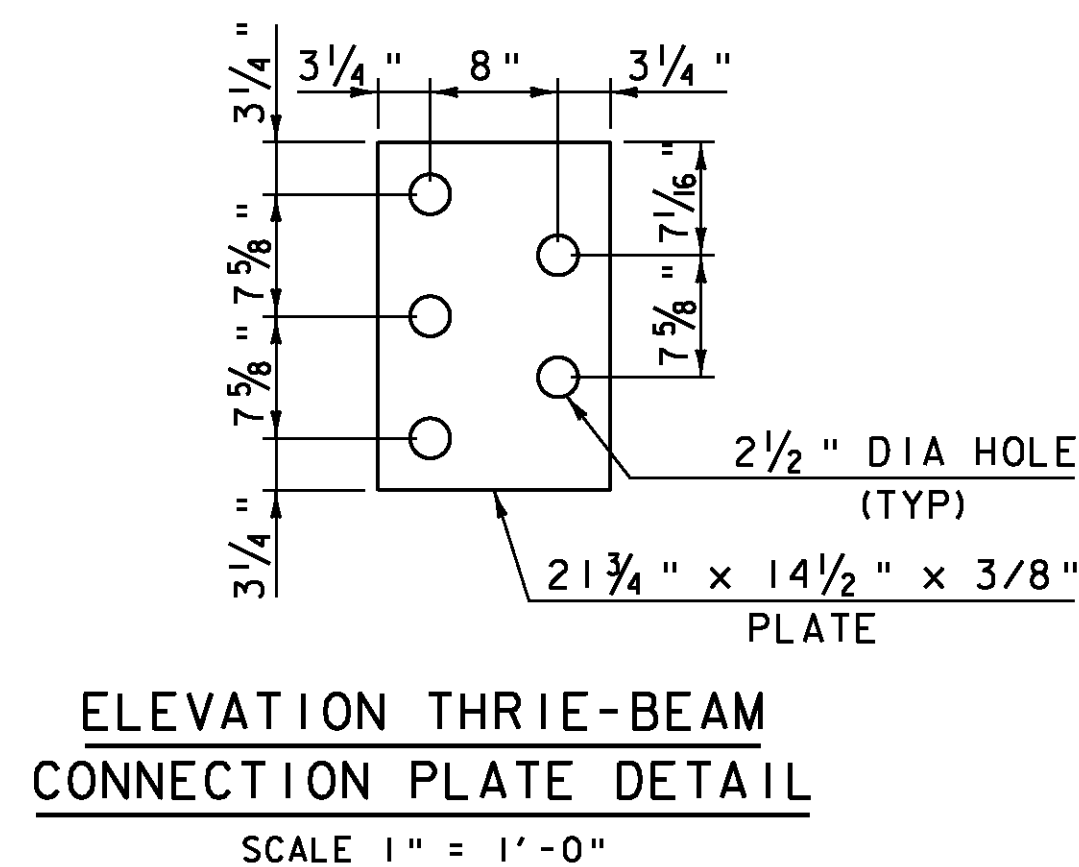




PROJECT: CHESTER	PROJECT NO.: BRF 016-1 (25)
DESIGN FILE NAME: 88b194\Structures\88b194sub.dgn IPARM FILE NAME: s88b194abut typ.i DESIGNED BY: E.L.RUSTAY SQUAD LEADER: C.P.WILLIAMS BEARING DETAILS	PLOT DATE: 16-MAR-2011 DRAWN BY: D.D.BEARD CHECKED BY: R.S.YOUNG SHEET: 31 OF 50



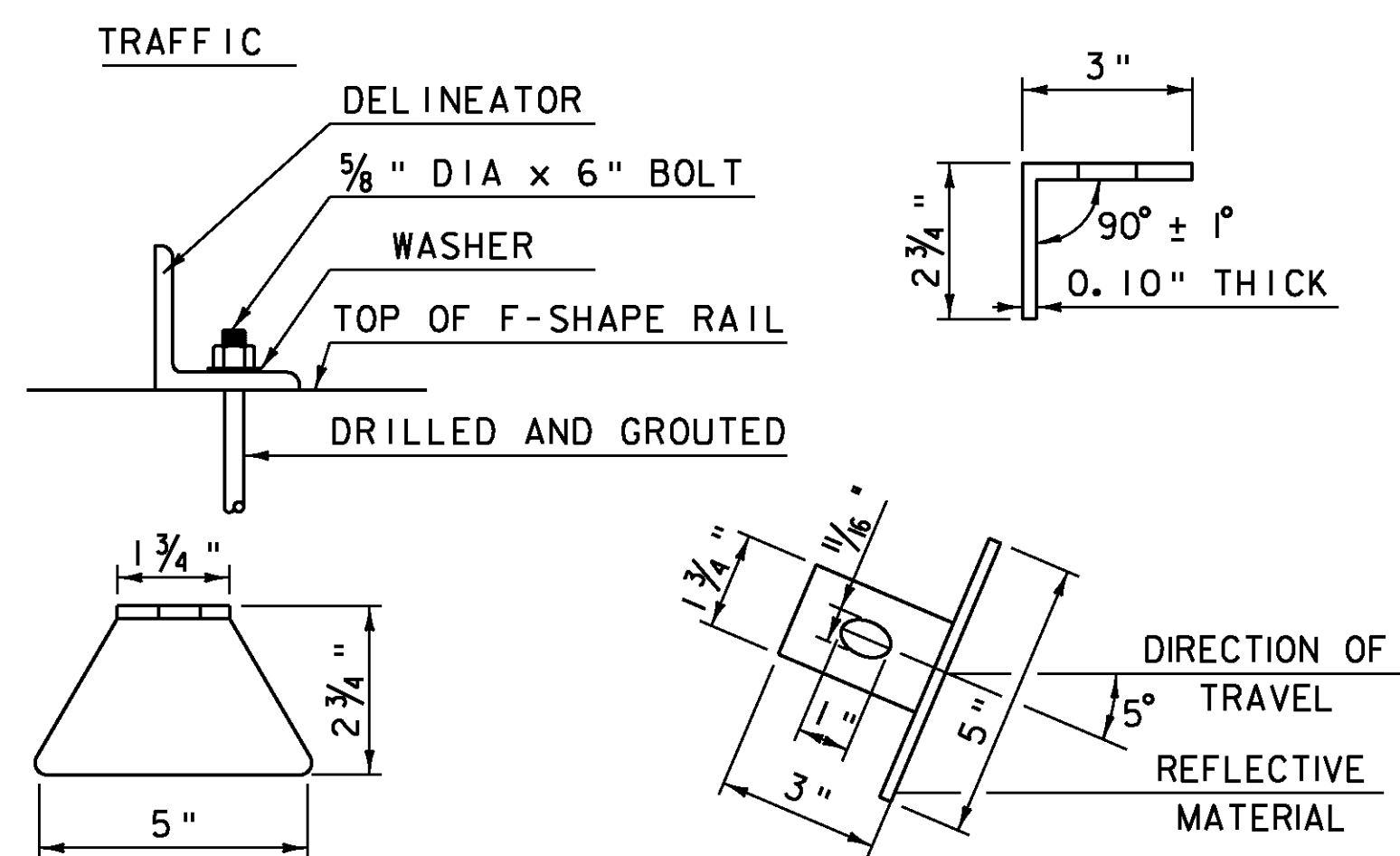
* BOLTS FOR THE THRIE-BEAM CONNECTION PLATE SHALL BE DOUBLE NUTTED. THE FIRST NUT SHALL BE BACKED OFF ENOUGH TO ALLOW HORIZONTAL MOVEMENT.



SCALE 1" = 1'-0"

PROJECT:	CHESTER	PROJECT NO.:	BRF 016-1 (25)
DESIGN FILE NAME:	88b194\structures\s88b194rail.dgn	PLOT DATE:	16-MAR-2011
IPARM FILE NAME:	s88b194railtran.i	DESIGNED BY:	E.L. RUSTAY
SQUAD LEADER:	C.P. WILLIAMS	DRAWN BY:	L. STONE
RAIL TRANSITION DETAILS		CHECKED BY:	R.S. YOUNG
		SHEET:	32 OF 50

NOTE:
PLATES SHALL BE ASTM A572, GRADE 50. STANDARD PIPE SHALL BE ASTM A500, GRADE B. PLATES AND PIPES SHALL BE GALVANIZED AFTER FABRICATION ACCORDING TO SUBSECTION 506.J5.

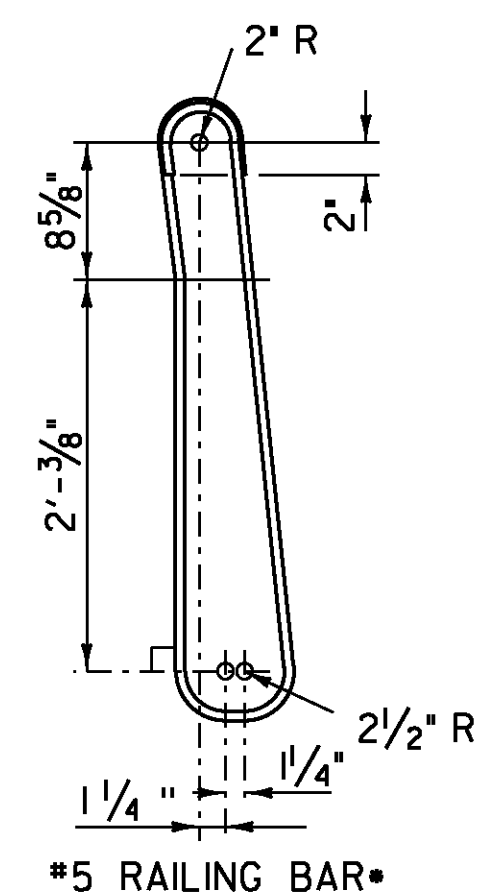


DELINEATOR NOTES

NTS

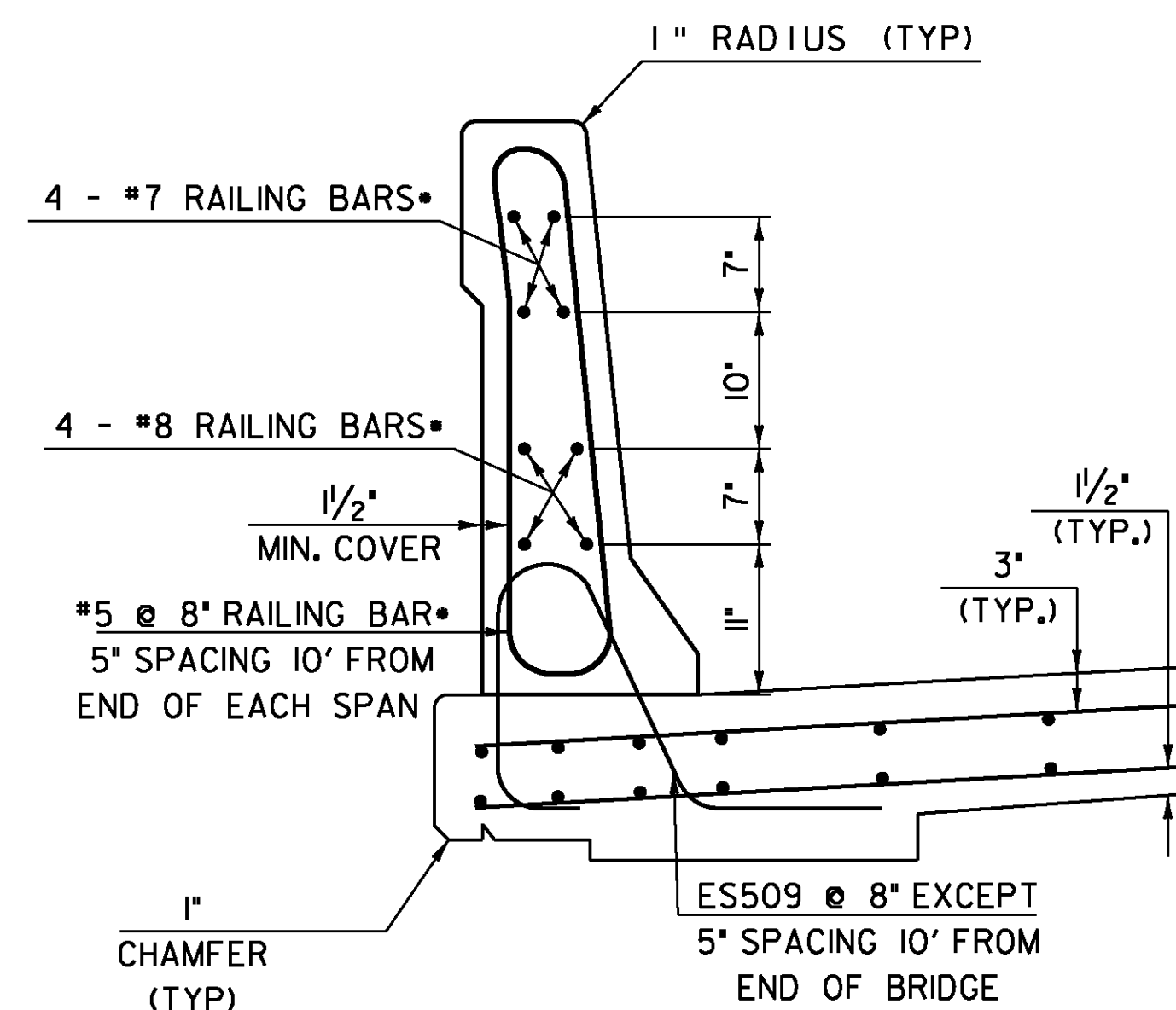
1. PAYMENT FOR DELINEATORS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM #900.640 SPECIAL PROVISION, (BRIDGE RAILING, F-SHAPE CONCRETE).

2. DELINEATORS SHALL BE EVENLY SPACED ACROSS THE ENTIRE LENGTH OF BRIDGE RAILING BUT NOT WITHIN 2' OF ANY JOINT OPENING NOR A SPACING OF MORE THAN 30'.

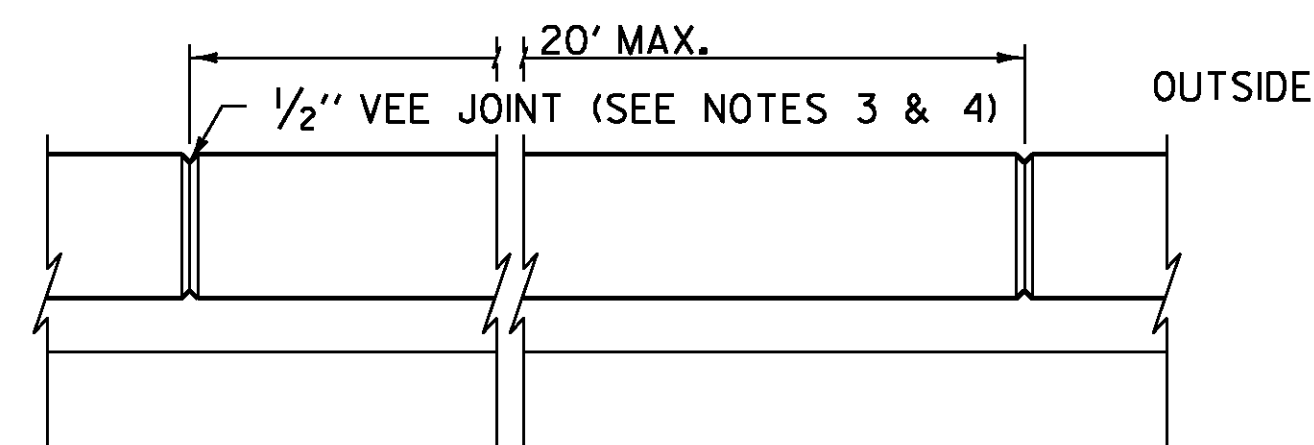


BAR BENDING DETAIL

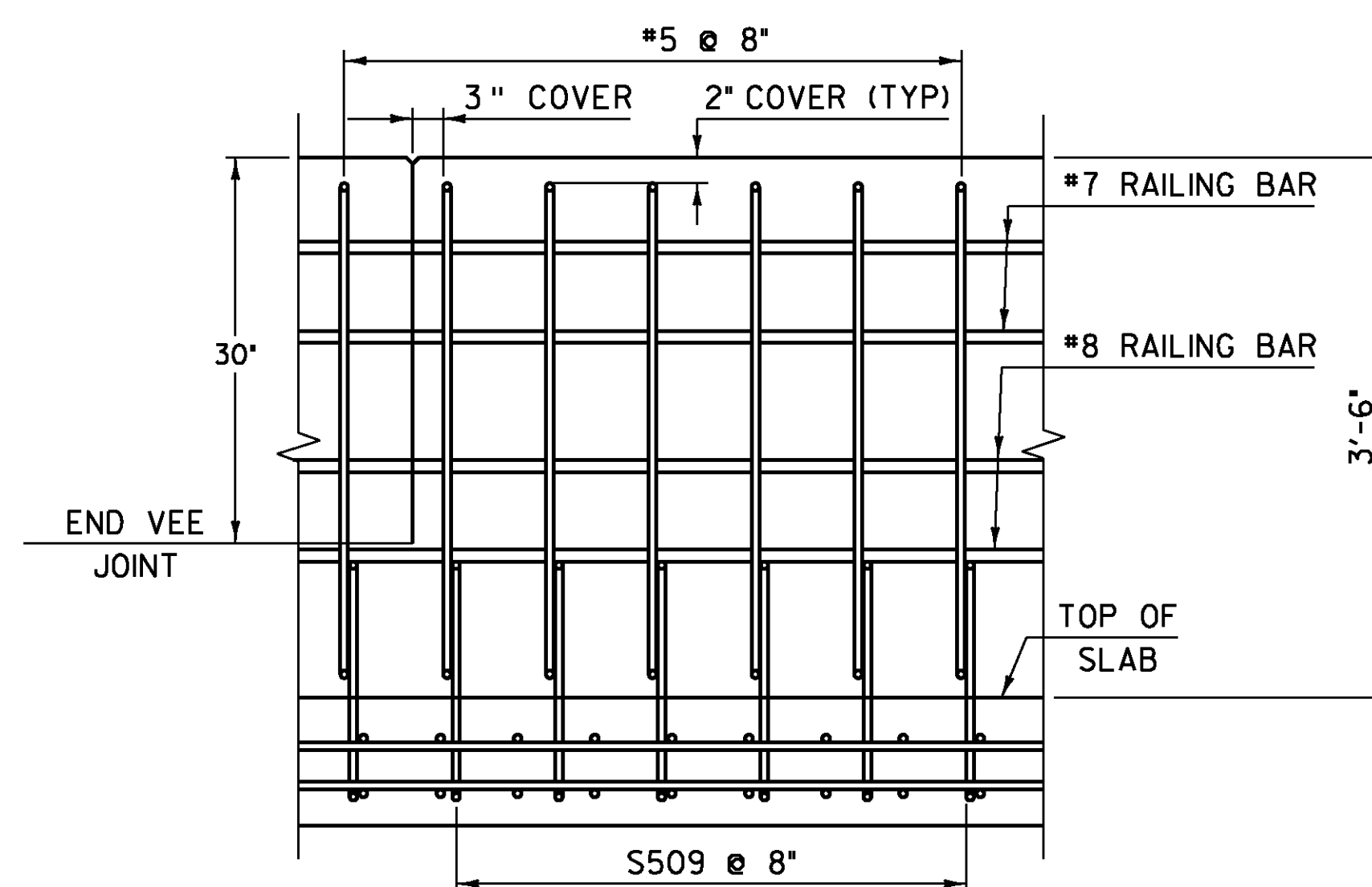
•THE RAILING BARS SHALL BE INCLUDED IN THE UNIT BID PRICE OF 900.640 "F-SHAPE CONCRETE RAIL".



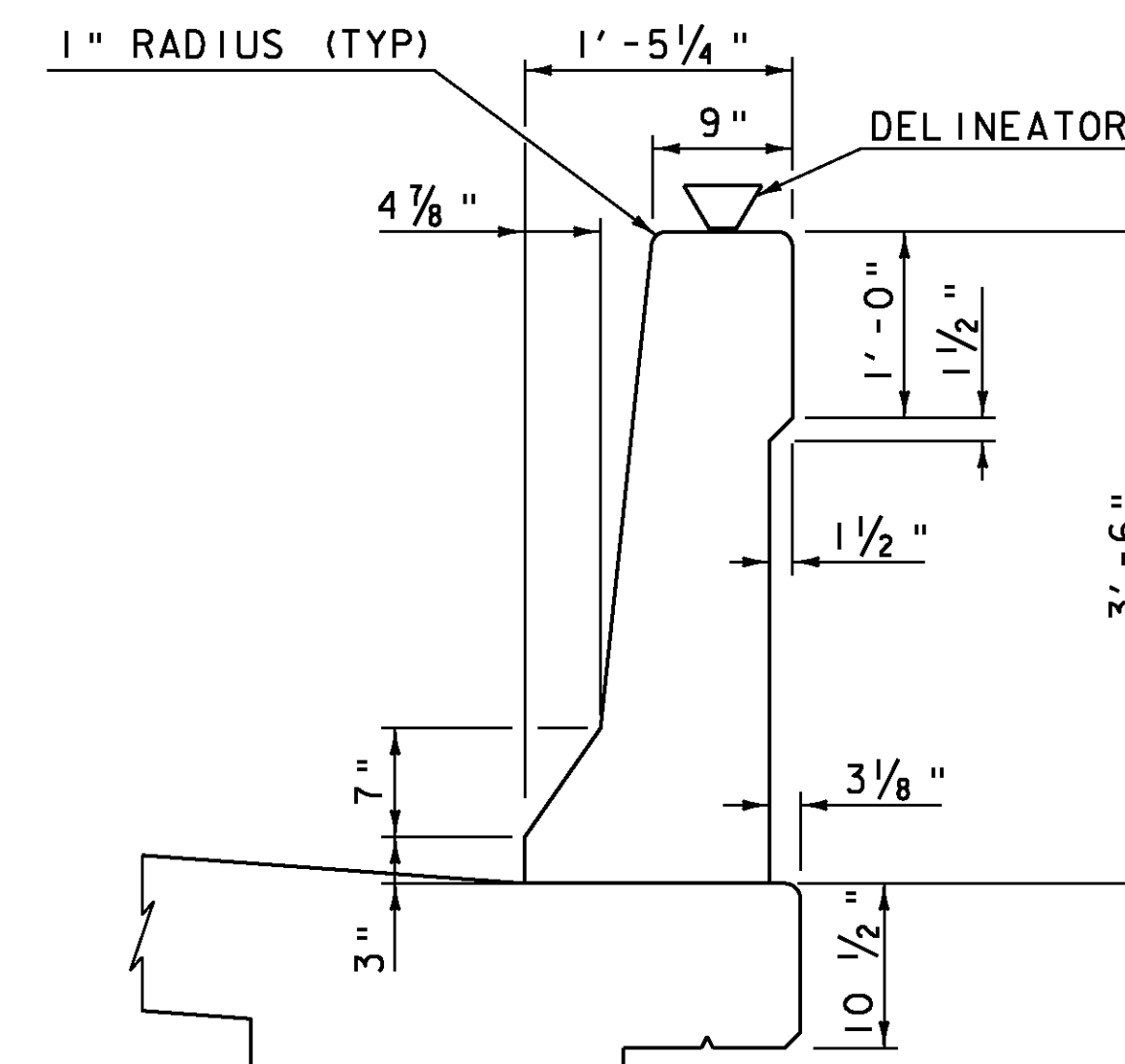
3'-6" HIGH F-SHAPE RAIL (SHOWING RAIL REINFORCEMENT)



PLAN VIEW OF PARAPET



ELEVATION (SHOWING PARAPET & DECK REINFORCEMENT)



F-SHAPE RAIL DETAIL ON BRIDGE

BRIDGE RAIL NOTES:

1. RAIL MEETS TEST LEVEL 5 REQUIREMENTS OF NCHRP REPORT 350.
2. MATERIAL REQUIREMENTS FOR BRIDGE RAIL ONLY:
 - REINFORCING STEEL SHALL BE EPOXY COATED, GRADE 60, CONFORMING TO SUBSECTIONS 713.01 AND 713.07 (b).
 - CONCRETE SHALL BE PER SPECIFICATION 900.640 SPECIAL PROVISION (BRIDGE RAILING, F-SHAPE CONCRETE).
3. 1/2" VEE JOINTS SHALL BE PROVIDED IN EACH FACE OF THE CONCRETE RAIL AT INTERVALS NOT TO EXCEED 20 FEET.
4. THE 1/2" VEE JOINT SHALL END 30" FROM THE TOP OF THE CONCRETE RAIL.
5. THE BAR BENDING DETAILS FOR THE REINFORCING STEEL FOR THE CONCRETE RAIL HAS BEEN SHOWN ON THIS SHEET. THE #7 AND #8 RAILING BARS SHALL BE CONTINUOUS THROUGH THE VEE JOINT FOR THE LENGTH OF THE BRIDGE.
6. LAP LENGTH FOR #7 BARS SHALL BE 3'-6". LAP LENGTH FOR #8 BARS SHALL BE 4'-7"

PROJECT:	CHESTER	PROJECT NO.:	BRF 016-1 (25)
DESIGN FILE NAME:	88b194\structures\88b194rail.dgn	PLOT DATE:	16-MAR-2011
IPARM FILE NAME:	88b194raildet.i	DRAWN BY:	L. STONE
DESIGNED BY:	E.L. RUSTAY	CHECKED BY:	R.S. YOUNG
SQUAD LEADER:	C.P. WILLIAMS		
BRIDGE RAIL DETAILS		SHEET:	33 OF 50

ALL DETAILS NOT TO SCALE

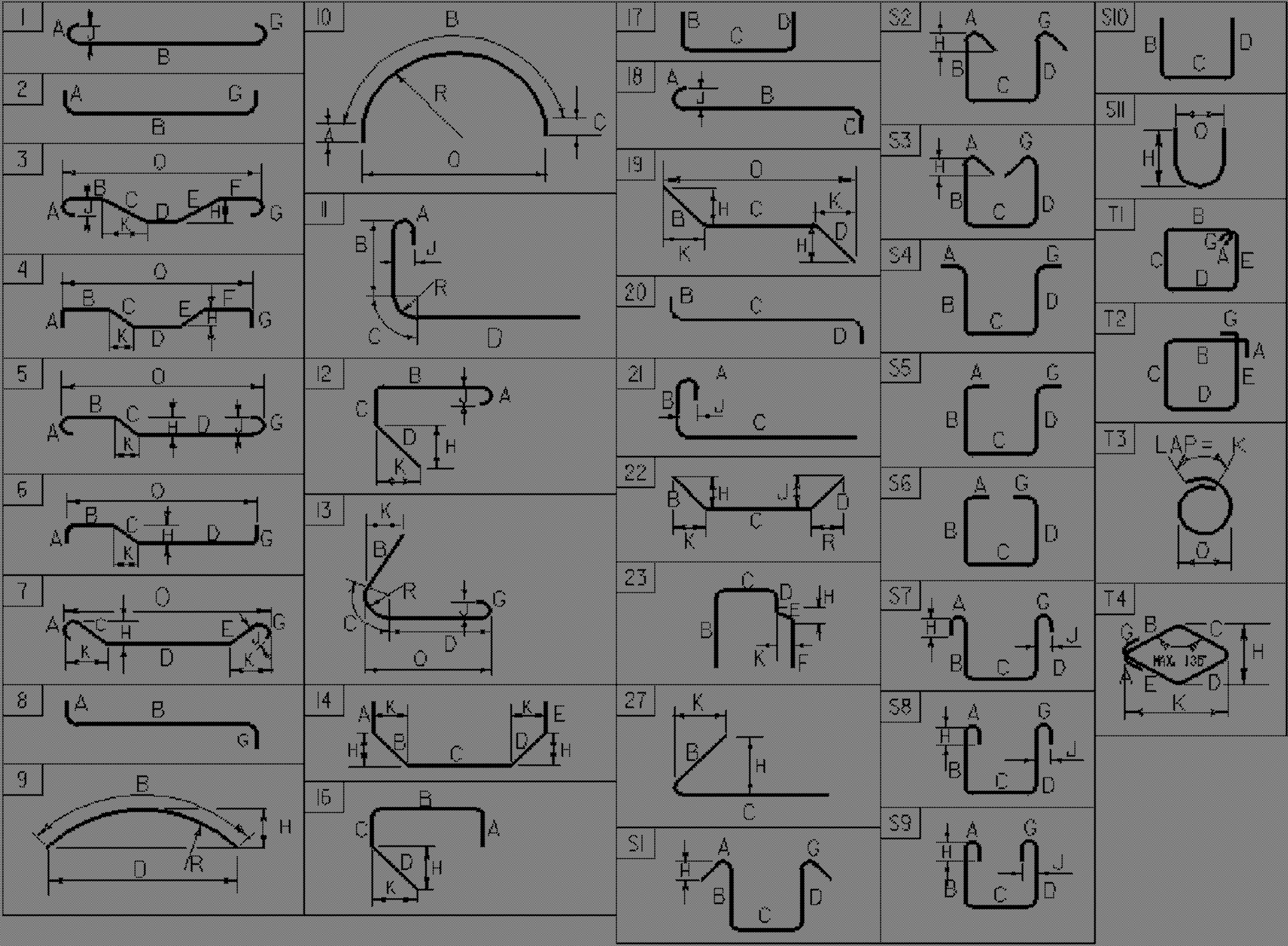
STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O	ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O		
APPROACH SLAB #1																																					
*	22	5	29'- 6"	1AS501	STR																																
*	38	9	20'- 9"	1AS901	1	1'- 3"	19'- 6"																														
APPROACH SLAB #2																																					
*	22	5	29'- 6"	2AS501	STR																																
*	38	9	20'- 9"	2AS901	1	1'- 3"	19'- 6"																														
DECK SLAB																																					
△	248	5	36'- 7"	S501	STR																																
	97	5	10'- 5"	S502	17							5'- 0"	5'- 3"																								
	97	5	8'- 2"	S503	22							2'- 2"	5'- 0"																								
	34	5	10'- 1"	S504	17							3'- 9"	2'- 7"	3'- 9"																							
	34	5	10'- 5"	S505	17							3'- 11"	2'- 7"	3'- 11"																							
	10	5	13'- 5"	S506	17							5'- 5"	2'- 7"	5'- 5"																							
	10	5	13'- 9"	S507	17							5'- 7"	2'- 7"	5'- 7"																							
	31	5	4'- 9"	S508	1	0'- 9"	3'- 3"					0'- 9"																									
	356	5	4'- 11"	S509	A							1'- 4"	0'- 10"	1'- 3"		1'- 3"	0'- 6"	1'- 6"		1'- 2"	0'- 3"	1'- 6"															
△	444	6	31'- 10"	S601	STR																																
△	42	7	22'- 1"	S701	STR																																
ABUTMENT #1																																					
	168	5	3'- 7"	1A501	17							0'- 6"	2'- 7"	0'- 6"																							
▲	56	5	4'- 4"	1A502	17							2'- 2"	2'- 2"																								
△ ▲	248	7	10'- 0"	1A701	STR																																
	64	7	22'- 1"	1A702	STR																																
WINGWALL #1																																					
* ▲	23	5	11'- 3"	1W501	STR																																
▲	28	5	12'- 6"	1W502	STR																																
	11	5	5'- 10"	1W503	17							2'- 2"	1'- 6"	2'- 2"																							
WINGWALL #2																																					
* ▲	23	5	13'- 0"	2W501	STR																																
▲	28	5	12'- 6"	2W502	STR																																
	11	5	5'- 10"	2W503	17							2'- 2"	1'- 6"	2'- 2"																							
ABUTMENT #2																																					
	168	5	3'- 7"	2A501	17							0'- 6"	2'- 7"	0'- 6"																							
▲	52	5	4'- 4"	2A502	17							2'- 2"	2'- 2"																								
△	248	7	8'- 2"	2A701	STR																																
	48	7	22'- 1"	2A702	STR																																
WINGWALL #3																																					
* ▲	23	5	10'- 7"	3W501	STR																																
▲	26	5	12'- 6"	3W502	STR																																
	11	5	5'- 10"	3W503	17							2'- 2"	1'- 6"	2'- 2"																							
WINGWALL #4																																					
* ▲	23	5	11'- 4"	4W501	STR																																
▲	26	5	12'- 6"	4W502	STR																																
	11	5	5'- 10"	4W503	17							2'- 2"	1'- 6"	2'- 2"																							

~ NOTES ~

- UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-S1). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
- 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".
- BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
- ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
- "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
- "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
- ▲ DENOTES BARS TO BE CUT IN FIELD.
- * DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
- △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
- E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



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

S509 - "A"
BAR BENDING DETAILS

NOTE: ALL REINFORCING STEEL IS EPOXY COATED

PROJECT NAME:	CHESTER
PROJECT NUMBER:	BRF 016-1(25)
FILE NAME: Structures\88b194\excel.dgn	PLOT DATE: 3/6/2008
PROJECT MANAGER: C.P.WILLIAMS	DRAWN BY: L.STONE
DESIGNED BY: L.STONE	CHECKED: E.L.RUSTAY
REINFORCING STEEL SCHEDULE	SHEET 34 OF 50

EROSION PREVENTION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

The project is located on VT Route 11 over the Middle Branch of the Williams River in Chester Vermont. The project involves the replacement of Bridge #43 and abutments with minor approach work on VT Route 11. The horizontal and vertical alignments are nearly the same as what currently exists. Traffic will be maintained on a two-way temporary bridge located upstream from the existing structure.

It is anticipated that this project will last one construction season.

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.

The area of disturbance is approximately 1.02 acres.

SITE INVENTORY AND ANALYSIS

OFF SITE DRAINAGE CHARACTERISTICS

The property surrounding the project site consists of well established vegetation, with moderate to steep sloping ground. The area north of the bridge is primarily woodlands with steep banks beyond the northern boundary of the project. Due to the nature of the surrounding terrain, runoff water entering the project site will be primarily limited to what is conveyed along roadway side slopes. The area south of the bridge is a Rod and Gun club and has drive culvert and a well established ditch conveying water to the river. The bridge project will not impact the culvert or ditch.

DRAINAGE, WATERWAYS, BODIES OF WATER:

The Middle Branch of the Williams River flows under the existing bridge. Limits of riparian buffer typically exist 50' from the edge of the river bank. There are no other bodies of water or wetlands within the project area. The Middle Branch of the Williams River is classified as sinuous, laterally unstable with alluvial channel boundaries. The stream bed consists of boulders, cobbles, and gravel. The contributing drainage area at the bridge crossing is 13.7 sq. mi.

TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES:

The topography of the project site is mountainous and mostly forested. The Chester Rod and Gun Club is located on the south side of VT Rte. 11. The property is primarily lawn and shrubs with a structure used as a shelter with picnic tables. There are two septic systems located on this property that will not be affected by the project. The driveway to the facility is gravel with a small parking lot. A culvert runs under the drive to a ditch that conveys water to the river. There are overhead utilities located on the north side of VT Rte. 11. The plan is to leave the utilities in place and require the contractor to work around them. There are no permanent impacts to the utilities.

VEGETATION: Other than the Rod and Gun club, the area surrounding the project is fairly wooded. Trees will be cut in the vicinity of the temporary bridge. However the majority of the trees located along the south side of the road will remain in place. The Rod and Gun club is mostly grass with a gravel parking area. Impact to vegetation will be limited to the disturbance caused by construction of new abutments and the construction of the temporary bridge. The slopes are currently stabilized with stone fill and vegetation.

SOILS: According to a soil survey completed by the United States Department of Agricultural Soil Conservation there is only one type of soil at this location. The soil is classified as Podunk Fine Sandy Loam, with a K-value equal to 0.24, slopes of 0-3% and part of hydrologic group B. Due to the low slope and stabilized forest in the area, the soil is classified as not highly erodable.

Generally, K-values indicate the following: 0.00 – 0.23 = low erodibility; 0.24 – 0.36 = moderate erodibility; 0.37 and higher = higher erodibility

SENSITIVE RESOURCE AREAS: No ‘Threatened & Endangered Species’ have been identified within the project limits. The Middle Branch of the Williams River is the only identified resource and there are no other wetlands in the project area.

PROXIMITY TO NATURAL OR MAN-MADE FEATURES: Disturbance of soils near natural or man-made waterways consists of the work necessary to construct two new concrete bridge abutments and applicable roadway approaches as well as the removal of the existing crossing. Disturbed stream banks will be stabilized with Stone Fill Type III, underlaid with geotextile fabric.

EROSION PREVENTION & SEDIMENT CONTROL

Refer to the low risk site handbook and appropriate detail sheets for each practice required on the project to include but not limited to:

Mark site boundaries with “Project Demarcation Fencing” denoted -PDF- on the plans, will be used to delineate the limits the contractor can access with construction equipment. This measure limits the area that can be disturbed and exposed to erosion.

Limit Disturbance Area by phasing earth disturbing activities through out the duration of the project.

Stabilized construction entrances to the project site, staging areas, as well as to waste and borrow areas shall be established. The minimum size of a stabilized construction entrance is 12’X50’ (3700’X15, 000). All surface water flowing to or diverted toward a construction entrance shall be piped under the stone. Pipes shall be appropriately sized for the contributing area, however, no pipe smaller then 6” (150) diameter shall be used. See EPSC Detail Sheet for materials and construction method to be utilized when constructing a stabilized entrance.

Install silt fence per the Erosion Control Detail Sheet. Silt fence shall be installed prior to any upslope earthwork.

Divert upland runoff using temporary swales as required.

Reduce flow velocities in temporary or permanent swales and ditches using stone check dams. Check dams will be installed per Erosion Control Detail Sheet. The check dams may be removed once the stone lining of the ditch is complete and the surrounding area stabilized.

Permanent Erosion Control measures include: Stone lining of the stream banks with Stone Fill, Type III as specified by VTrans Hydraulics personnel. This stone will protect the stream bank from erosion during design storm events. Grass or other suitable ground cover will be established outside of the roadway limits where stone lining has not been specified.

Stabilize exposed soils (temporary and final grade) by Seeding, mulching, and biodegradable erosion control matting or an equivalent product will be utilized on all slopes greater than 1:3 that are not lined with stone fill. Geotextile fabric is also required under all stone fill. These slopes shall be stabilized within 48 hours of reaching final grade or during intermittent phases of construction activity. Seeding and mulching shall also be applied immediately to all lawns disturbed beyond the work area delineated on these plans. Tracking of all exposed slopes, combined with temporary mulching, will also be utilized on a regular basis. Any slopes to be exposed for 48 hours prior to final grading shall be tracked and mulched. The forecast of rainfall events shall also trigger protection of exposed slopes. If rainfall is predicted the Contractor must stabilize the site accordingly prior to the forecasted event.

Winter Stabilization as required per Low Risk Handbook.

Temporary sediment settling basins may or may not be utilized on this project. If a sediment settling basin is to be used for dewatering a cofferdam, it should be sized based upon the following criteria: (See Sediment Settling Basin Sizing Criteria.) Special consideration must be given to the first pump-down of the cofferdams. This will contain the greatest volume of water with a high sediment load. The contractor may provide additional sediment traps within the Right – Of – Way if required or control the rate of draw-down. Additional sediment traps must be approved by the resident engineer.

Site Inspection shall be based on Permit authorization requirements.

GENERAL EROSION & SEDIMENT CONTROL GUIDELINES

The Erosion Control Plans are meant as a guideline for preventing erosion and controlling sediment transportation. The work outlined in this narrative consists of applying measures throughout the life of the project to control erosion and minimize the sediment into receiving waters. The measures include stabilization and structural practices, storm water controls and other pollution prevention controls. This document serves as a guide for the Contractor to make an Erosion Prevention and Sediment Control Plan which shall be submitted to the Construction Environmental Engineer for approval.

Coordinate the installation, use, and removal of erosion and sediment control measures with construction activities to ensure economical, effective and continuous erosion and sediment control. Employ temporary stabilization practices in incremental stages as construction proceeds. The contractor will use additional erosion control measures as necessitated by the sequence of construction and as directed be the engineer. See section 105.23 of the Vermont AOT Standard Specifications for Construction, dated 2006.

Install all erosion and sediment control measures as shown in the Erosion Control Plan or as directed by the engineer. Do not modify the type, size or location of any control or practice without approval of the engineer. All changes shall be approved by the Construction Environmental Engineer and also be noted on the plans, in the weekly inspection report, and reported to the appropriate authority in a timely manner.

Inspect all control measures weekly and after each rainfall event. Repair measures shall be taken as needed.

Preventing initial soil erosion is much more effective than treating eroded sediment. Therefore, stabilize all disturbed areas promptly after construction activity has temporarily or permanently ceased. Also, attempt to time all grading to minimize soil exposure. Temporary vegetation shall be established as noted in the plans and approved by the Construction Environmental Engineer. Perimeter control measures shall be installed following clearing, but prior to the start of any grubbing or grading activity, install other temporary controls in incremental stages as construction proceeds. These perimeter controls shall be maintained until the site is permanently stabilized to the satisfaction of the Engineer and on-site coordinator.

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.

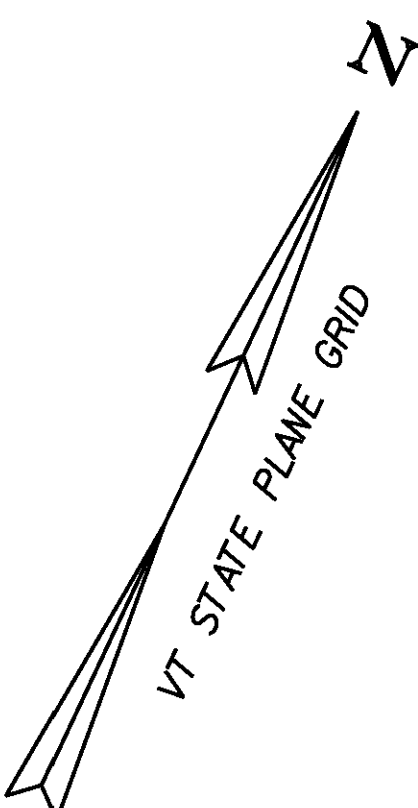
Control only sediment-laden runoff generated by the project site. Collect and route clean offsite runoff around or through the project site using diversion berms, diversion channels, culverts and/or temporary pipes.

Do not allow construction equipment to operate on the down slope side of perimeter control measures.

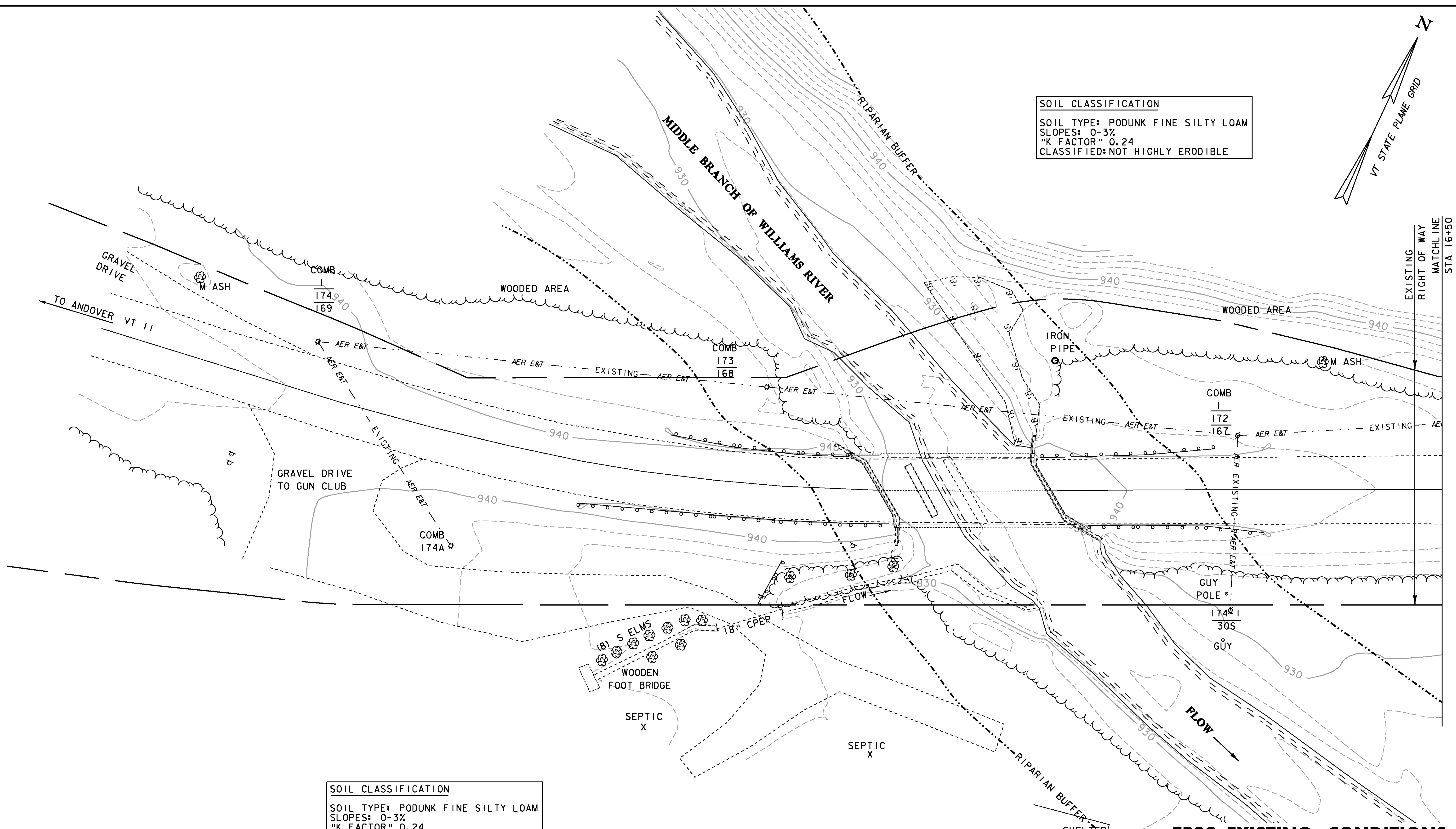
SEDIMENT SETTLING BASIN SIZING CRITERIA

PUMP FLOW RATE		REQUIRED SURFACE AREA		LENGTH WIDTH = 2:1			
Q (gpm)	Q (m^3/s)	(ft.^2)	(m^2)	L (ft)	W (ft)	L (m)	W (m)
50	0.0032	595	55	35.0	17.0	10.6	5.3
100	0.0063	1200	111	49.0	24.5	15.0	7.5
150	0.0095	1776	163	59.6	29.8	18.2	9.1
200	0.0126	2368	220	68.8	34.4	21.0	10.5
250	0.0158	2970	276	77.0	38.5	23.4	11.7
300	0.0189	3560	330	84.4	42.2	25.8	12.9
350	0.0221	4155	386	91.2	45.6	27.8	13.8

PROJECT:	CHESTER	PROJECT NO.:	BRF 016- I (25)
DESIGN FILE NAME:	88b194\structures\88b194excel.dgn	PLOT DATE:	16-MAR-2011
IPARM FILE NAME:	s88b194ecnr.i	DRAWN BY:	M.FESSEL
DESIGNED BY:	E.L.RUSTAY	CHECKED BY:	R.S.YOUNG
SQUAD LEADER:	C.P.WILLIAMS	EROSION CONTROL NARRATIVE	SHEET# 35 OF 50



SOIL CLASSIFICATION
SOIL TYPE: PODUNK FINE SILTY LOAM
SLOPES: 0-3%
"K FACTOR" 0.24
CLASSIFIED: NOT HIGHLY ERODIBLE

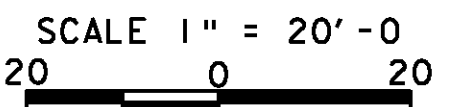


SOIL CLASSIFICATION
SOIL TYPE: PODUNK FINE SILTY LOAM
SLOPES: 0-3%
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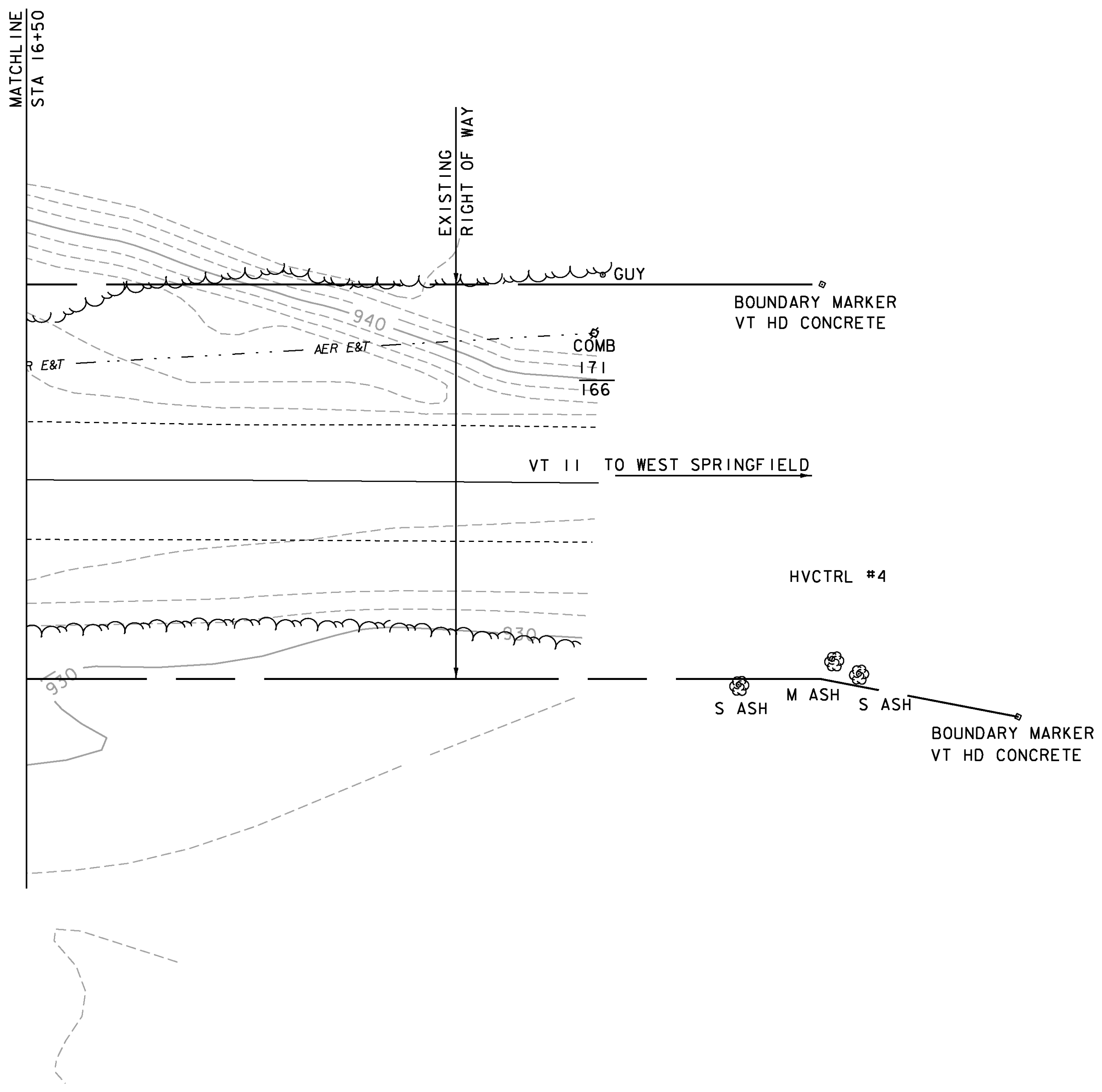
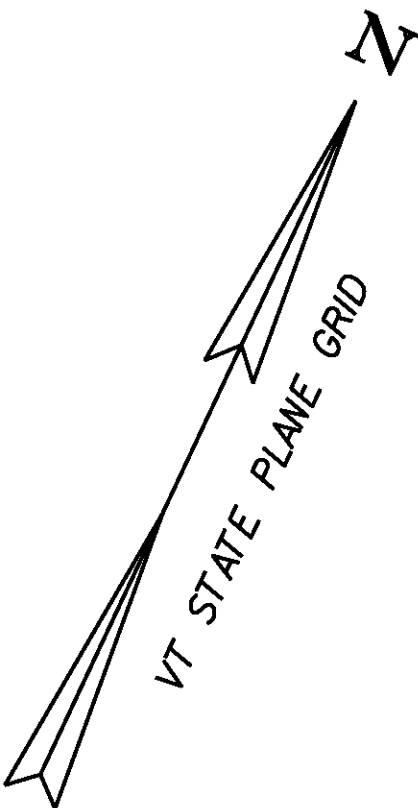
LEGEND	
	AER E&T
	AERIAL ELECTRIC & TELEPHONE
	RIPARIAN BUFFER ZONE

EPSC EXISTING CONDITIONS
SITE PLAN - SHEET 1

PROJECT: CHESTER	PROJECT NO.: BRF 016-1 (25)
DESIGN FILE NAME: 88b194/str/s88b194bdr_ero.dgn	PLOT DATE: 16-MAR-2011
IPARM FILE NAME: s88b194excon1.i	DRAWN BY: M. FESSEL
DESIGNED BY: E.L. RUSTAY	CHECKED BY: R.S. YOUNG
SQUAD LEADER: C.P. WILLIAMS	EPSC EXISTING CONDITIONS - SHEET 1
	SHEET: 36 OF 50



DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (96)



**EPSC EXISTING CONDITIONS
SITE PLAN SHEET - 2**

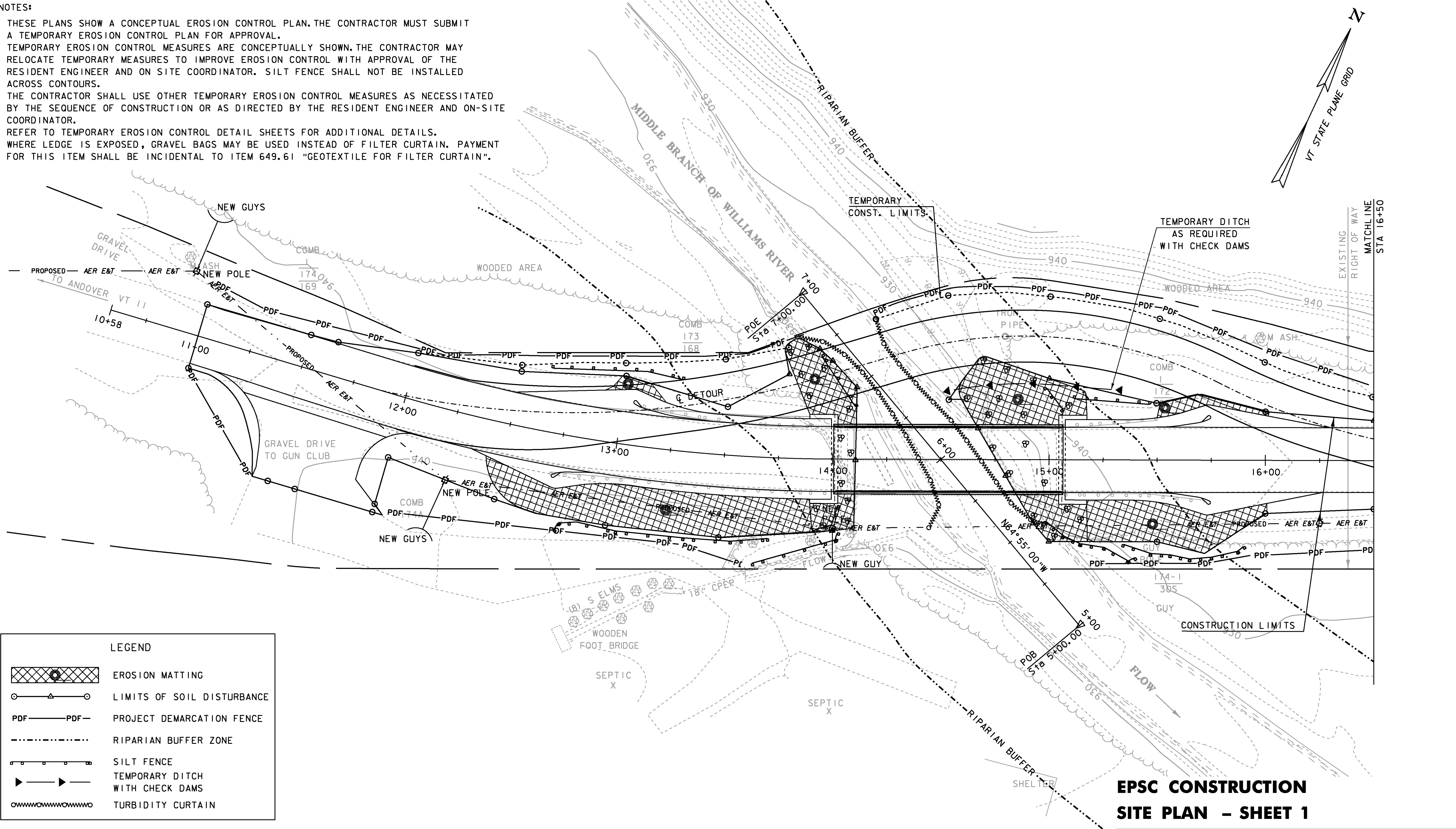
PROJECT: CHESTER	PROJECT NO.: BRF 016-1 (25)
DESIGN FILE NAME: 88b194/str/s88b194bdr_ero.dgn	PLOT DATE: 16-MAR-2011
IPARM FILE NAME: s88b194excon2.i	DRAWN BY: M. FESSEL
DESIGNED BY: K.M. HIGGINS	CHECKED BY: K.M. HIGGINS
SQUAD LEADER: C.P. WILLIAMS	SHEET: 37 OF 50
EPSC EXISTING CONDITIONS - SHEET 2	

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

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)

LEGEND
— AER E&T — · · · AERIAL ELECTRIC & TELEPHONE

- NOTES:
1. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN. THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION CONTROL PLAN FOR APPROVAL.
 2. TEMPORARY EROSION CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
 3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON-SITE COORDINATOR.
 4. REFER TO TEMPORARY EROSION CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.
 5. WHERE LEDGE IS EXPOSED, GRAVEL BAGS MAY BE USED INSTEAD OF FILTER CURTAIN. PAYMENT FOR THIS ITEM SHALL BE INCIDENTAL TO ITEM 649.61 "GEOTEXTILE FOR FILTER CURTAIN".



LEGEND

EROSION MATTING

LIMITS OF SOIL DISTURBANCE

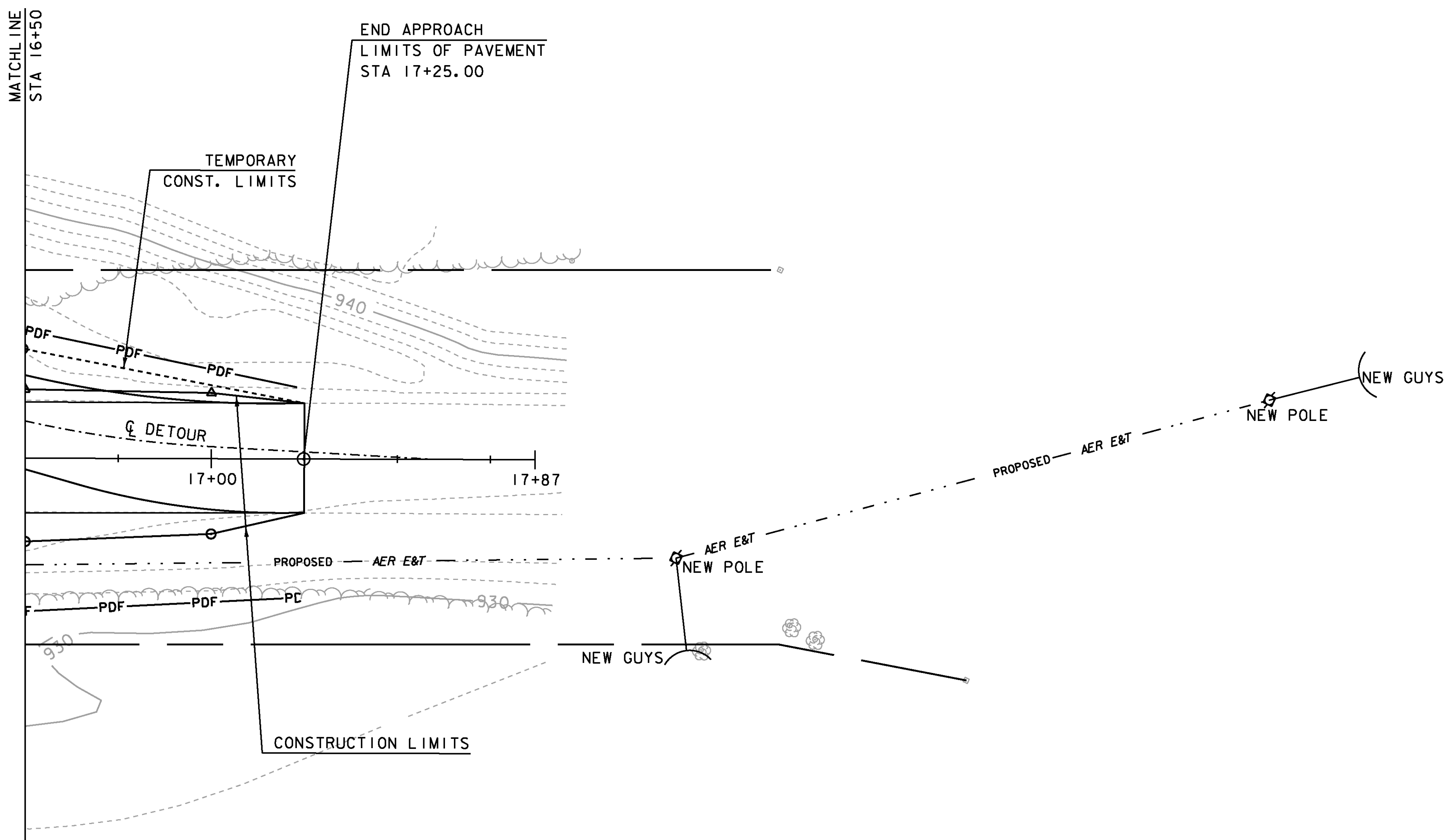
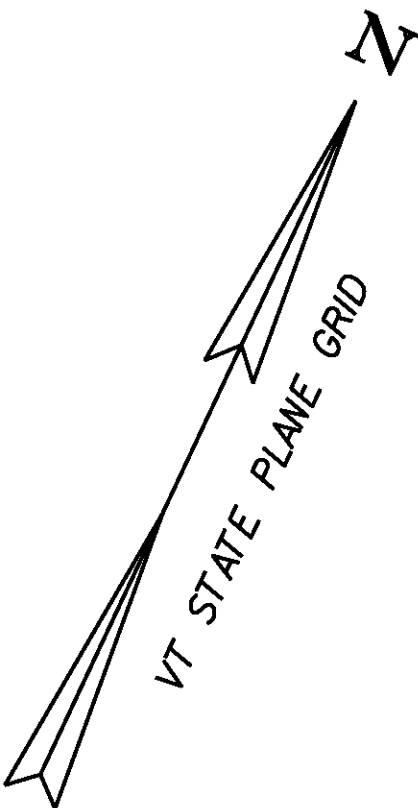
PROJECT DEMARCATION FENCE

RIPARIAN BUFFER ZONE

SILT FENCE

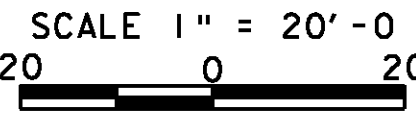
TEMPORARY DITCH WITH CHECK DAMS

TURBIDITY CURTAIN



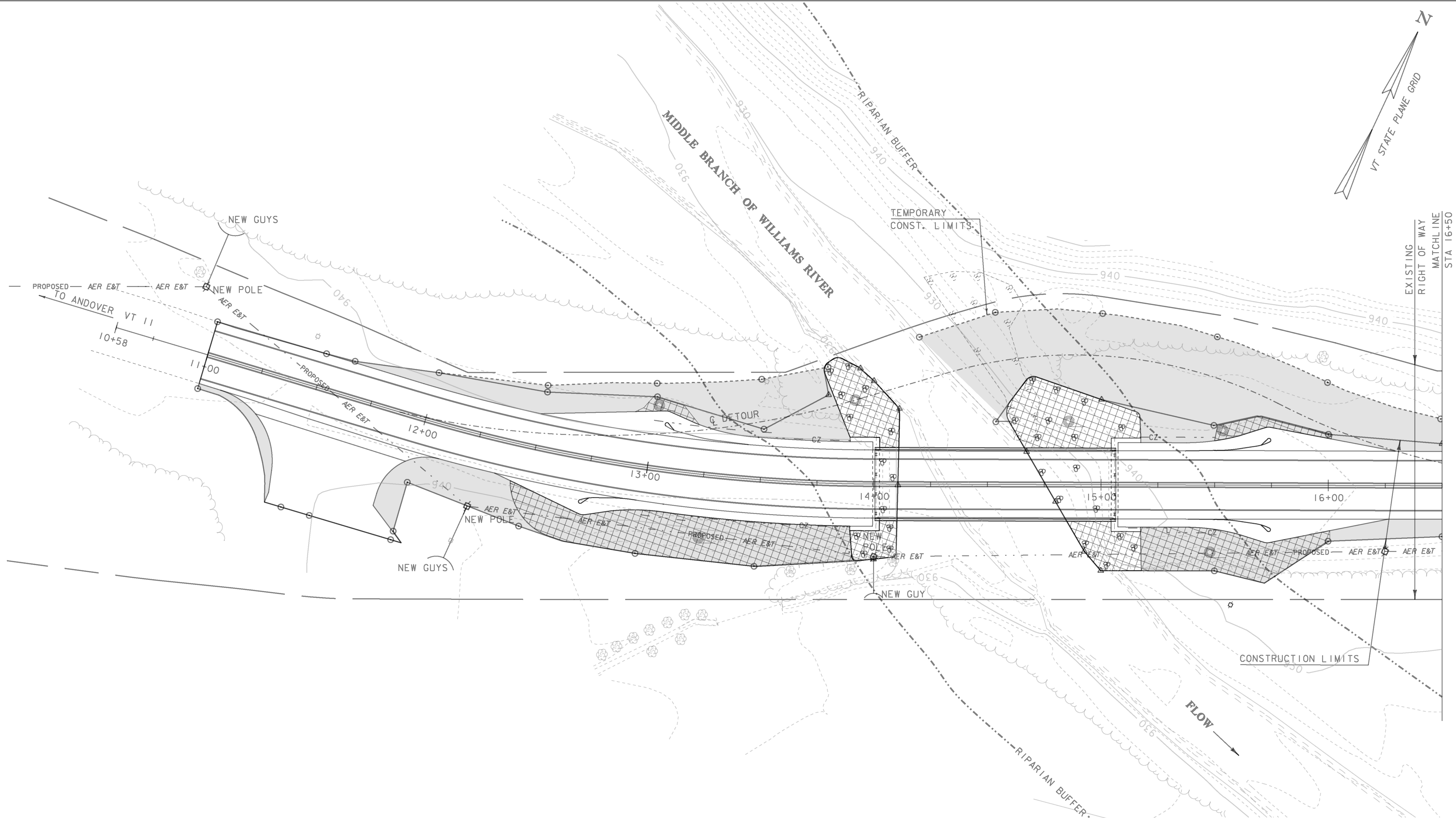
LEGEND		
		LIMITS OF SOIL DISTURBANCE
		PROJECT DEMARCATION FENCE

**EPSC CONSTRUCTION
SITE PLAN - SHEET 2**

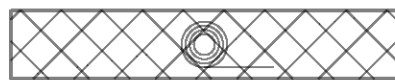


PROJECT: CHESTER		PROJECT NO.: BRF 016-1 (25)
DESIGN FILE NAME: 88b194/str/s88b194bdr_ero.dgn		
IPARM FILE NAME: s88b194ero2.i		PLOT DATE: 16-MAR-2011
DESIGNED BY: K.M.HIGGINS		DRAWN BY: M.FESSEL
SQUAD LEADER: C.P.WILLIAMS		CHECKED BY: K.M.HIGGINS
EPSC CONSTRUCTION PLAN - SHEET 2		SHEET: 39 OF 50

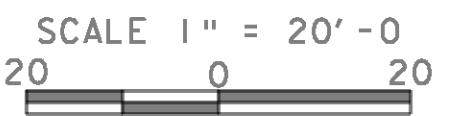
DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (96)



LEGEND

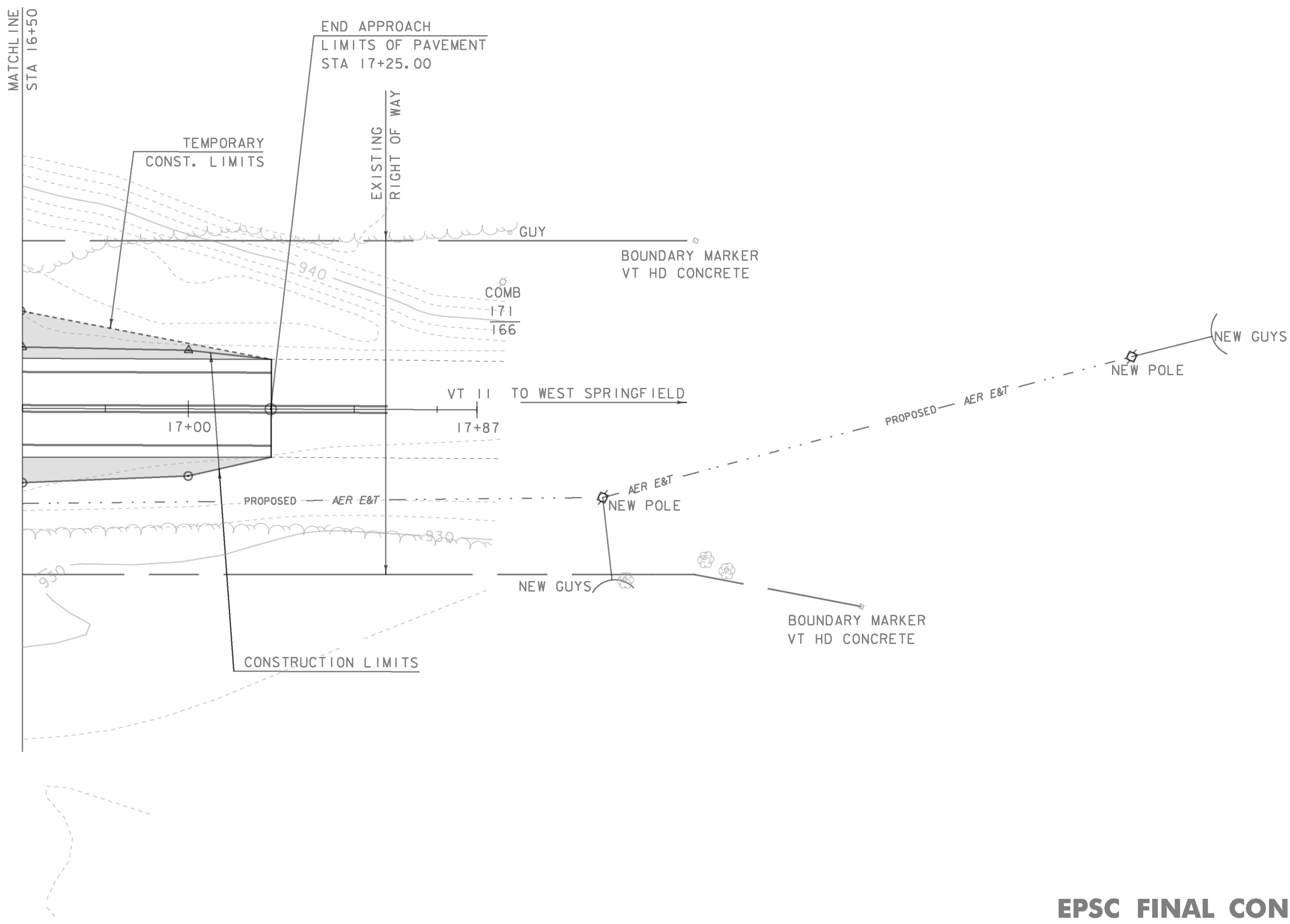
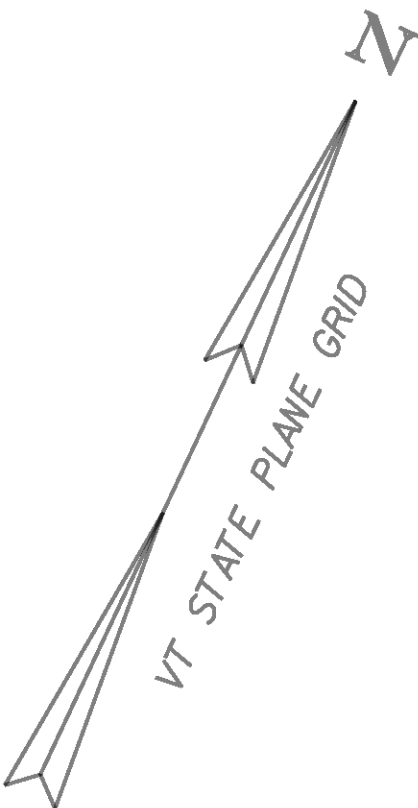
— AER E&T —	--- AERIAL ELECTRIC & TELEPHONE
----- RIPARIAN BUFFER	----- RIPARIAN BUFFER ZONE
	EROSION MATTING
	SEED AND MULCH

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)



**EPSC FINAL CONDITIONS
SITE PLAN - SHEET 1**

PROJECT: CHESTER	PROJECT NO.: BRF 016-1 (25)
DESIGN FILE NAME: 88b194/str/s88b194bdr_ero.dgn	PLOT DATE: 16-MAR-2011
IPARM FILE NAME: s88b194fincon1.i	DRAWN BY: M.FESSEL
DESIGNED BY: E.L.RUSTAY	CHECKED BY: R.S.YOUNG
SQUAD LEADER: C.P.WILLIAMS	SHEET: 40 OF 50
EPSC FINAL CONDITIONS - SHEET 1	

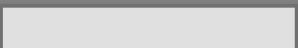


**EPSC FINAL CONDITIONS
SITE PLAN - SHEET 2**

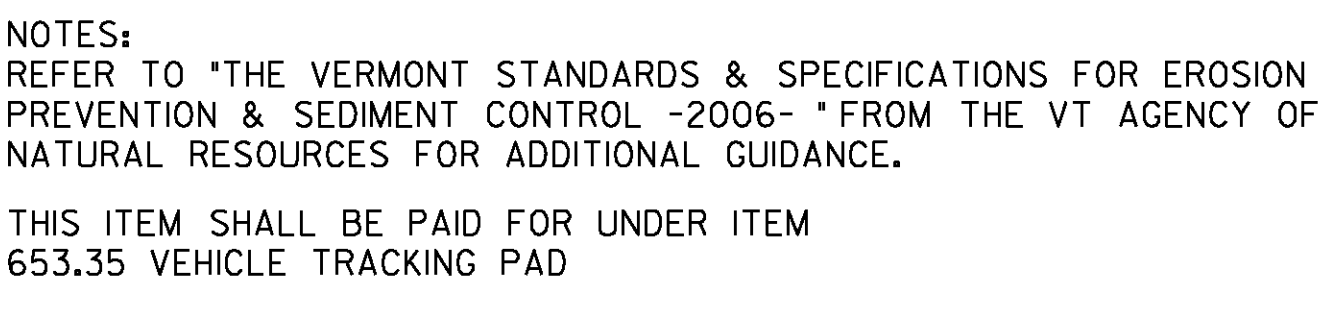
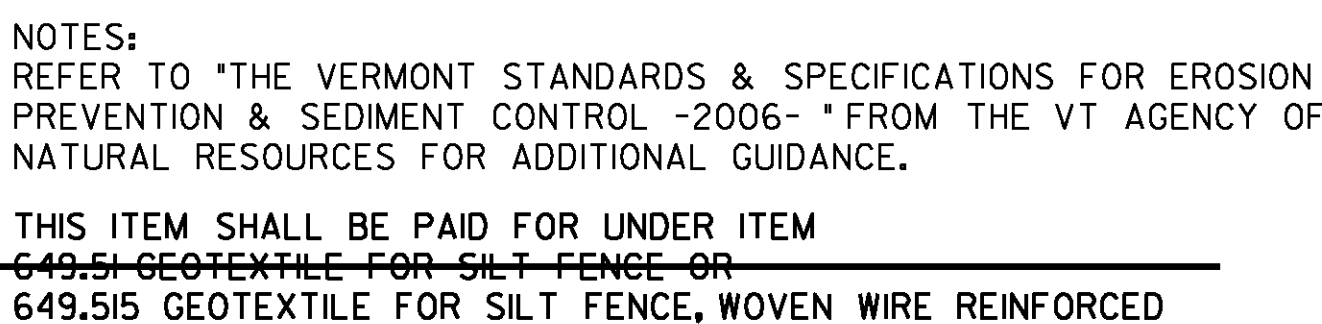
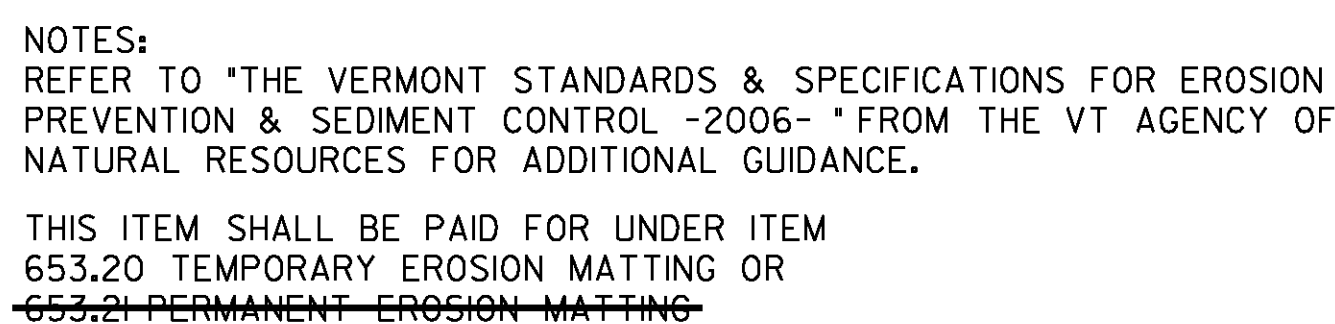
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DESIGN FILE NAME: 88b194/str/s88b194bdr_ero.dgn	PLOT DATE: 16-MAR-2011
IPARM FILE NAME: s88b194fincon2.i	DRAWN BY: M. FESSEL
DESIGNED BY: E.L. RUSTAY	CHECKED BY: R.S. YOUNG
SQUAD LEADER: C.P. WILLIAMS	SHEET: 41 OF 50
EPSC FINAL CONDITIONS - SHEET 2	



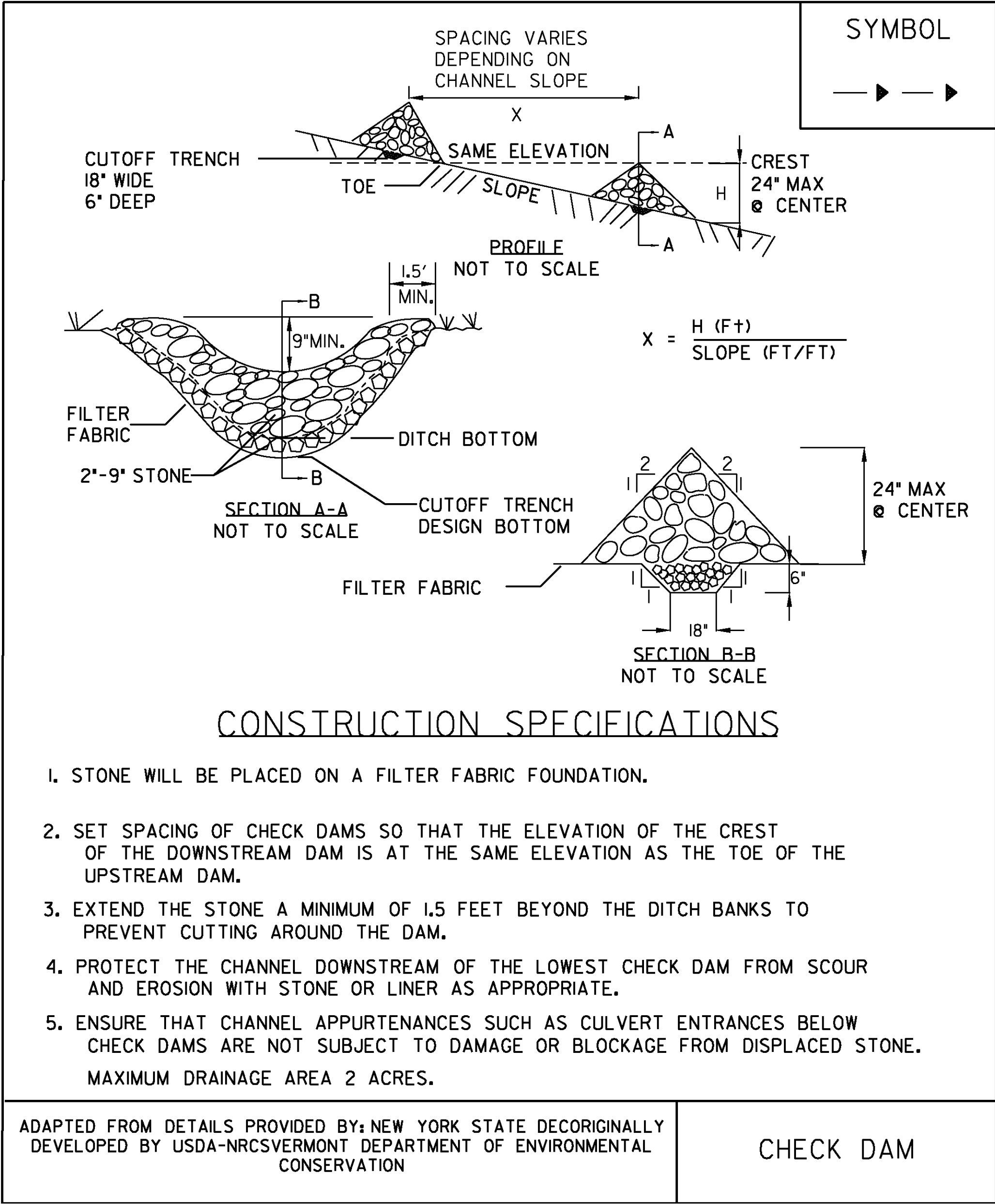
LEGEND

 SEED AND MULCH

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)



NTS

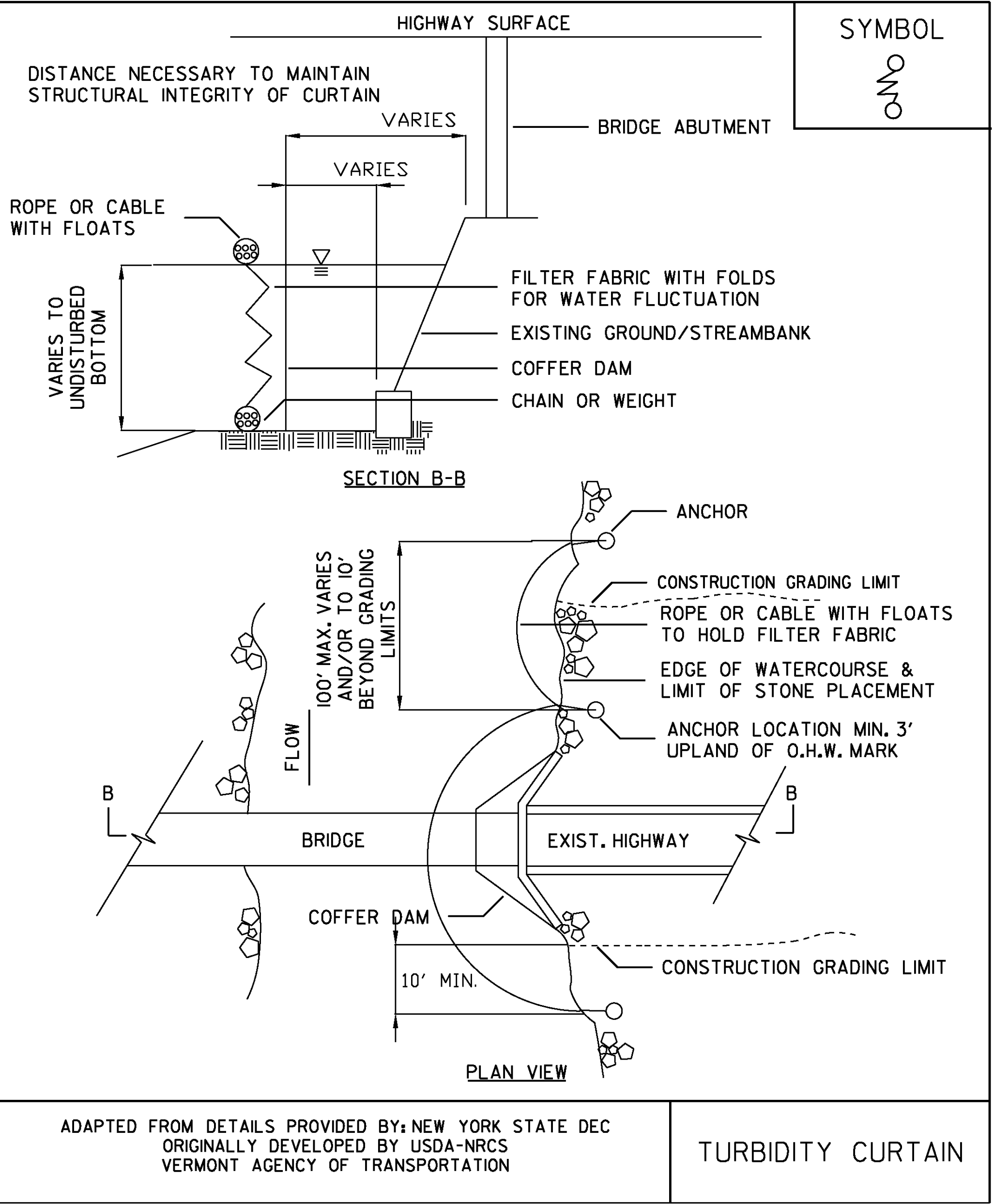


NOTES:

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 653.25 TEMPORARY STONE CHECK DAM, TYPE I

REVISIONS
MARCH 8, 2007 JMF



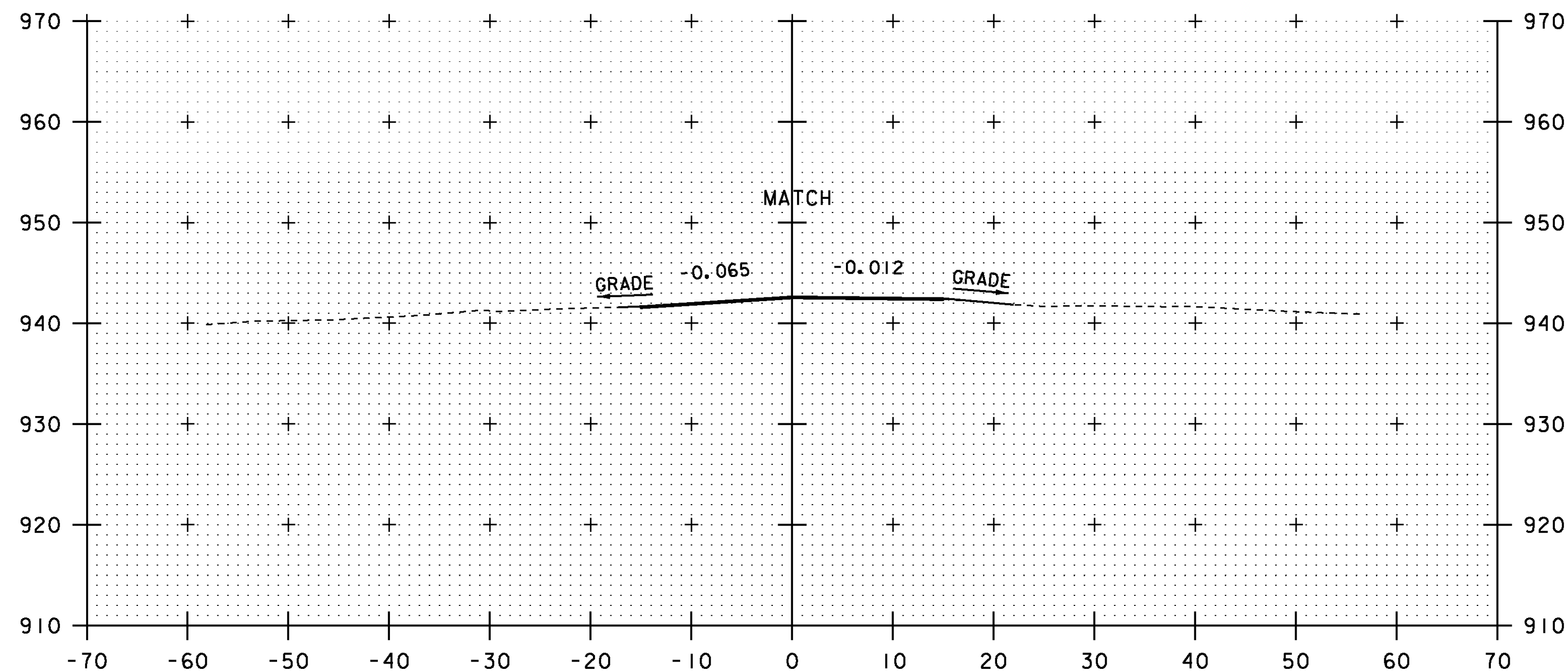
NOTES:

THIS ITEM SHALL BE PAID FOR UNDER ITEM 649.61 GEOTEXTILE FOR FILTER CURTAIN

EPSC DETAIL SHEETS

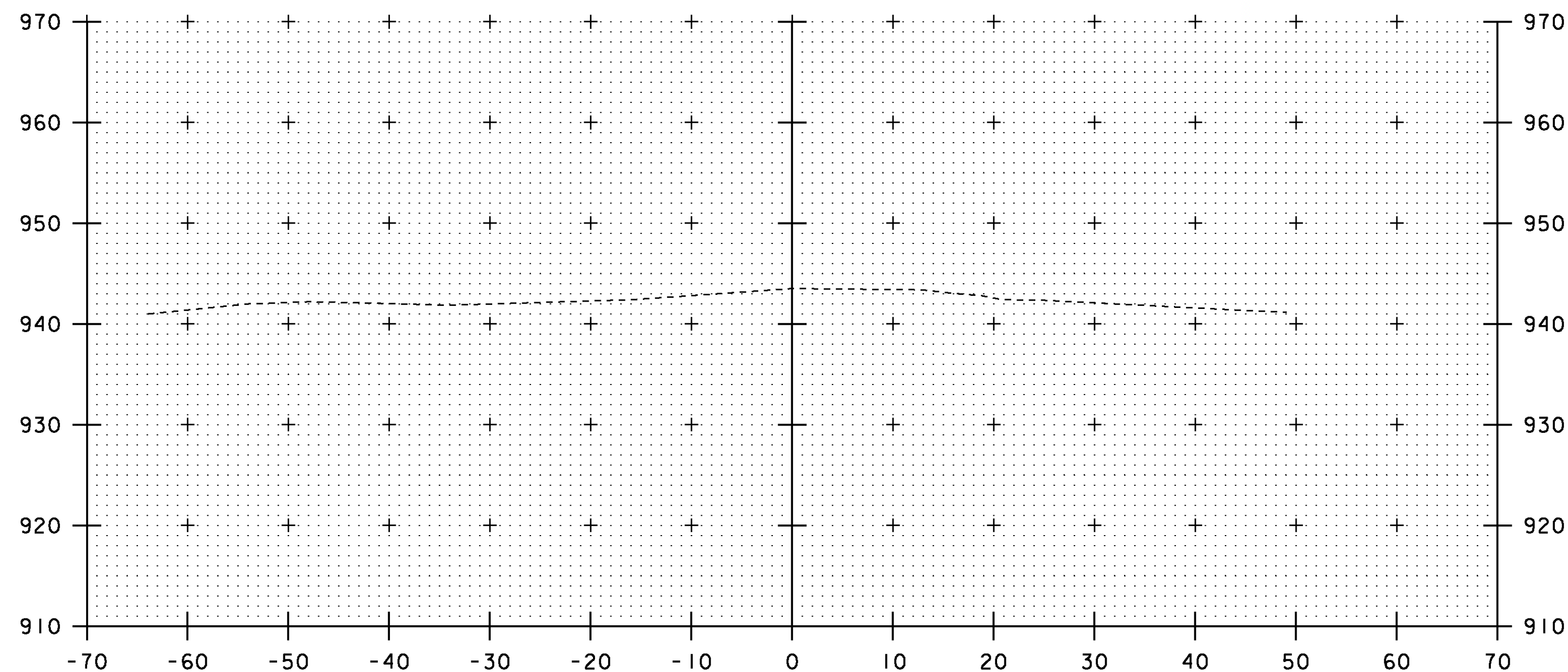
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DESIGN FILE NAME:	88b194\Structures\88b194erodet.dgn	PLOT DATE:	16-MAR-2011
IPARM FILE NAME:	88b194epsc2.i	DRAWN BY:	CONST. ENV. SECT.
DESIGNED BY:	CONST. ENV. SECTION	CHECKED BY:	R. S. YOUNG
SQUAD LEADER:	C. P. WILLIAMS	EROSION CONTROL DETAILS - SHEET 2	SHEET: 43 OF 50

NTS

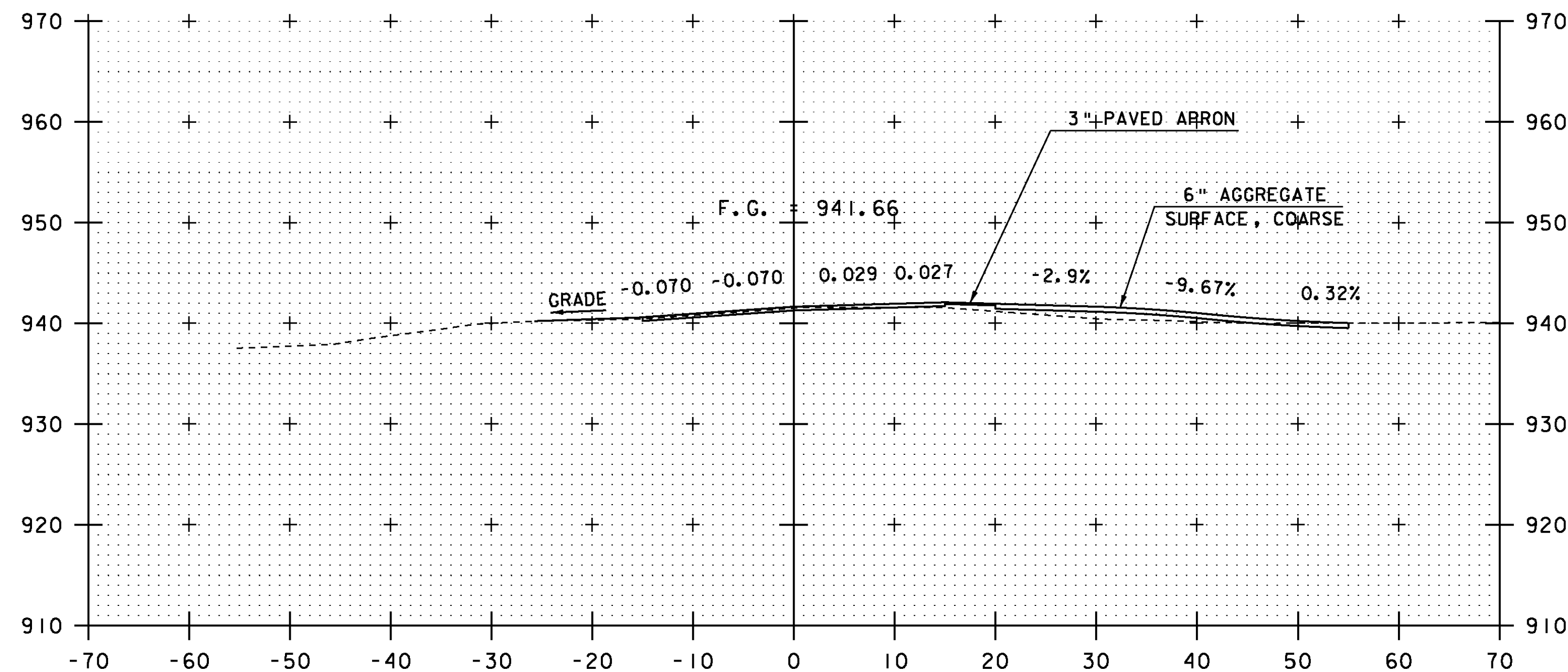


11+00

BEGIN APPROACH

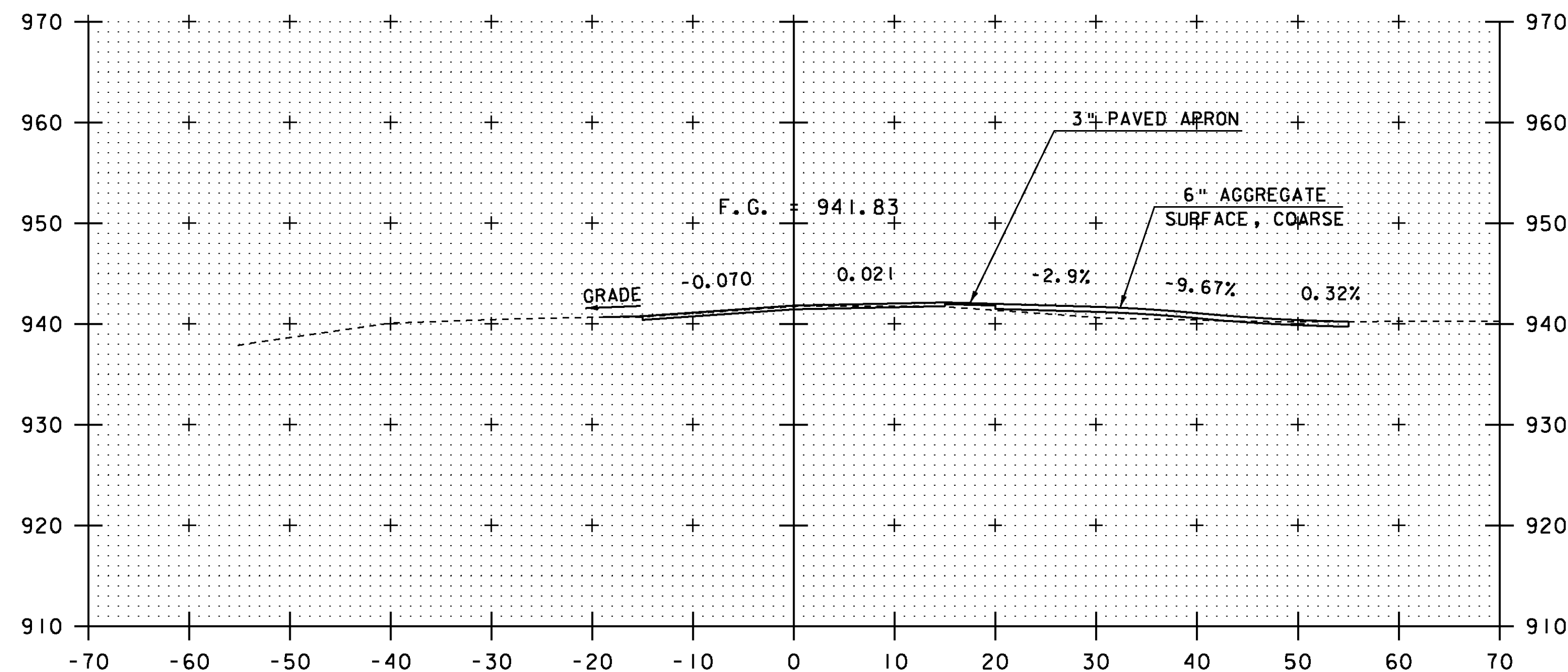


10+58



11+63

DRIVE RIGHT



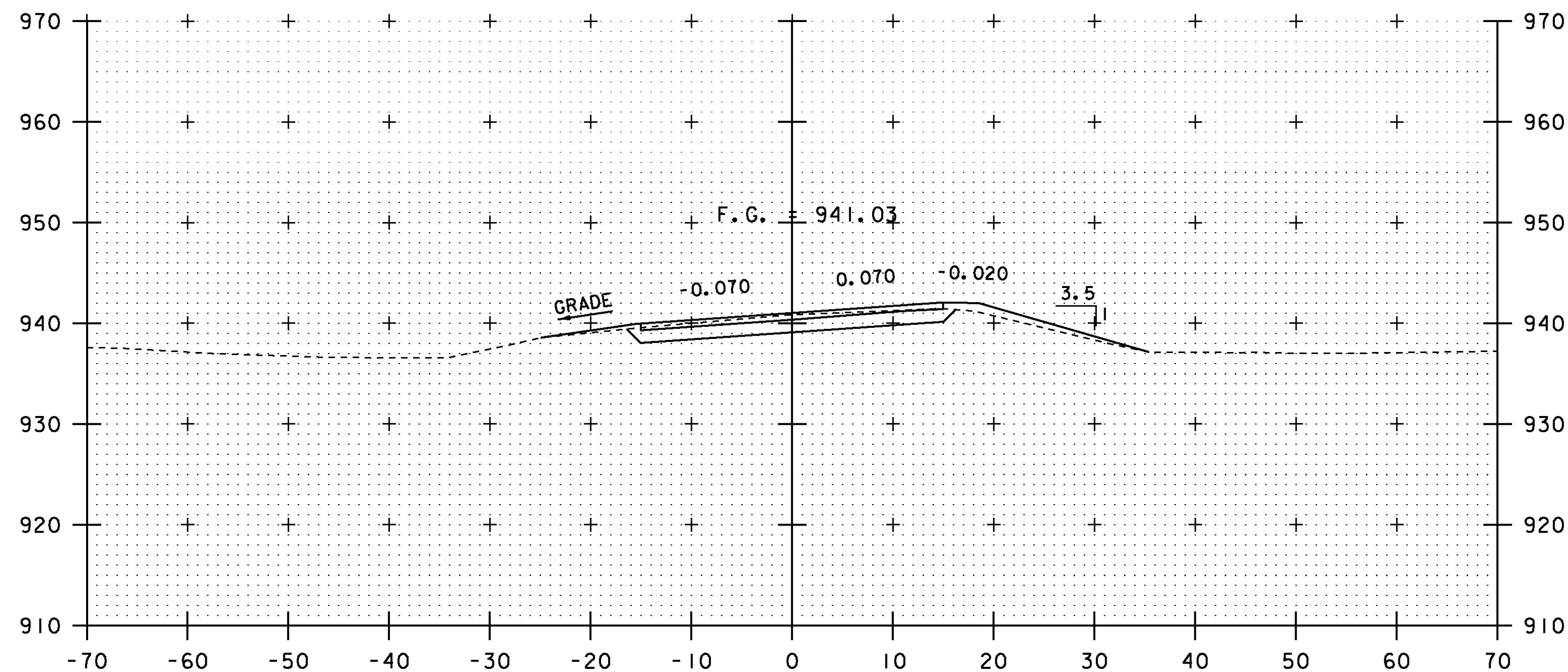
11+50

DRIVE RIGHT

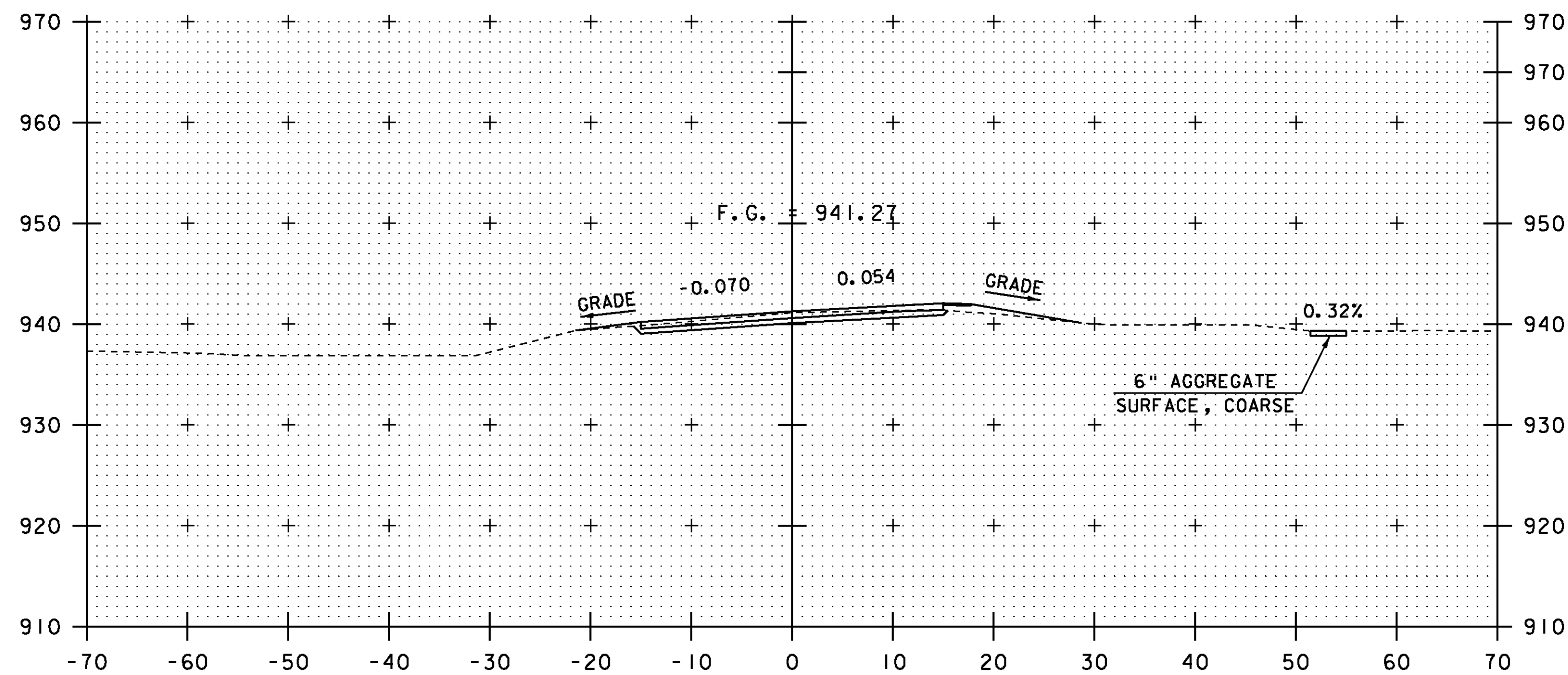
STA. 10+58 TO STA. 11+63

SCALE 1" = 10' - 0
10 0 10

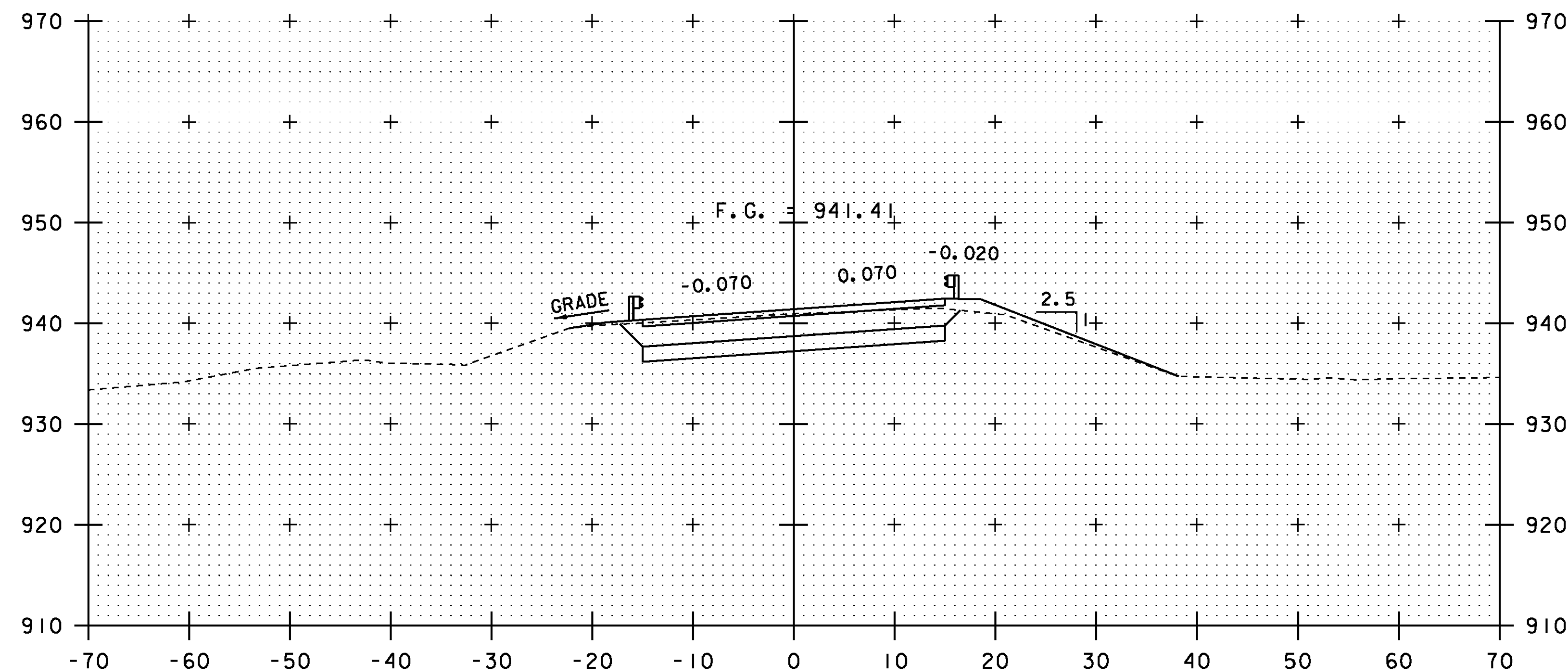
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IPARM FILE NAME:	s88b194m11.i	DRAWN BY:	M.FESSEL
DESIGNED BY:	E.L.RUSTAY	CHECKED BY:	R.S.YOUNG
SQUAD LEADER:	C.P.WILLIAMS		
MAINLINE CROSS SECTIONS			



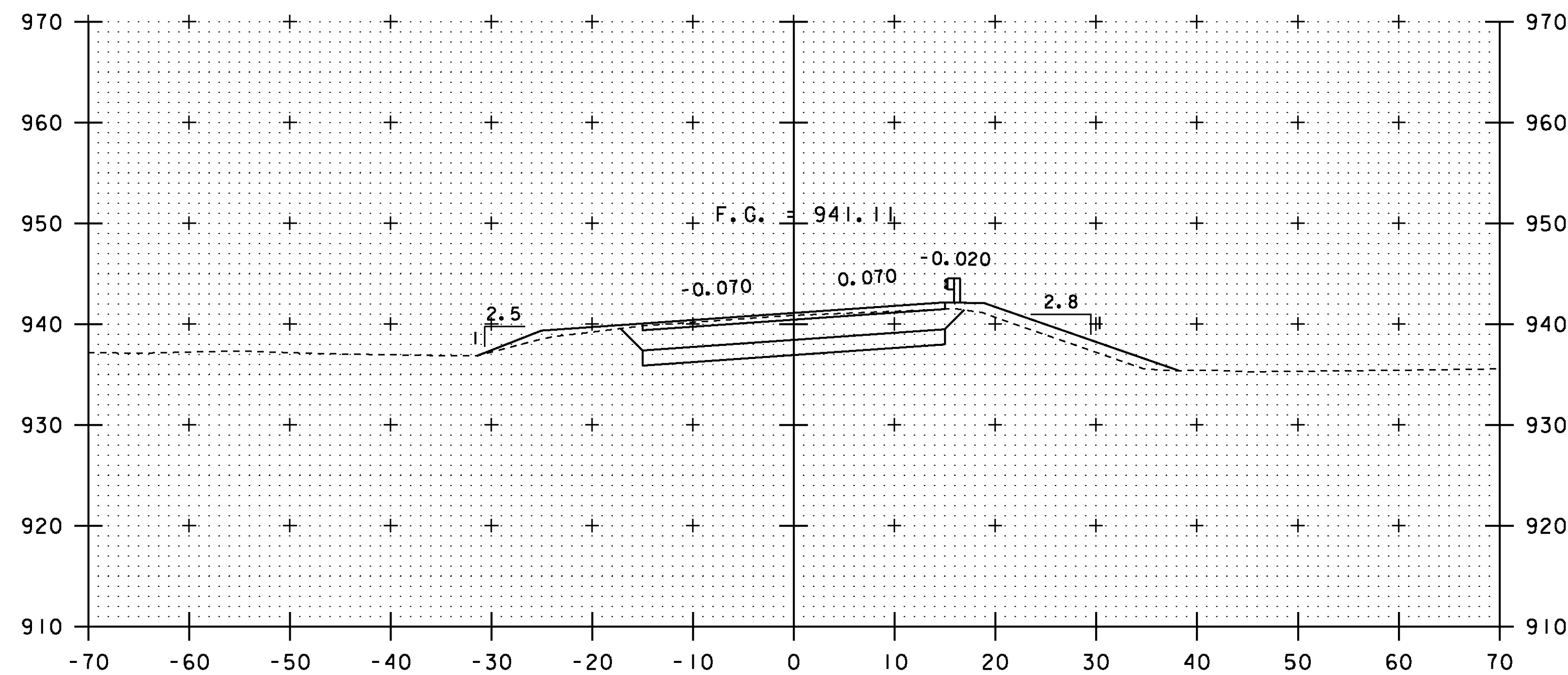
12+50



12+00
DRIVE RIGHT



13+50

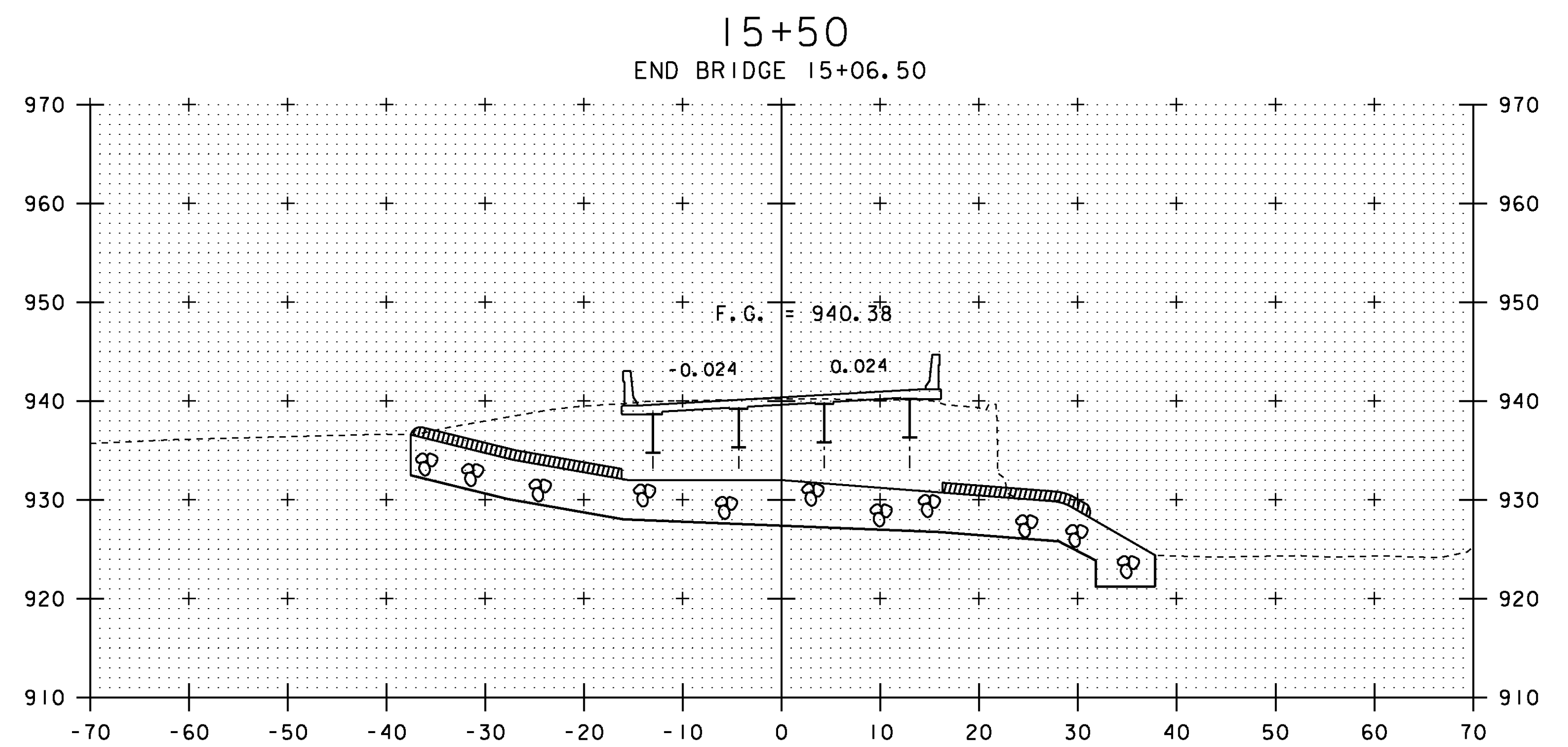
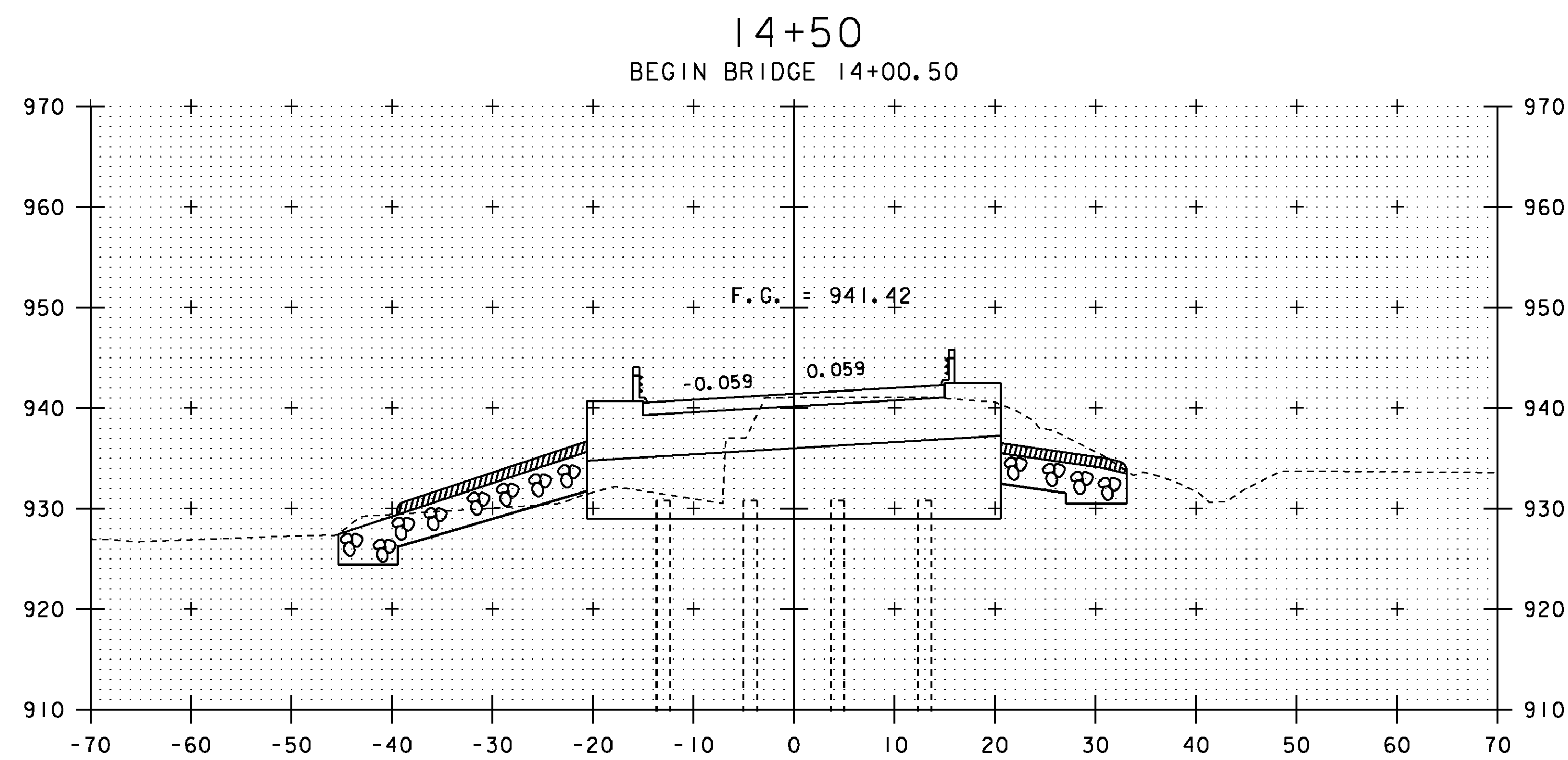
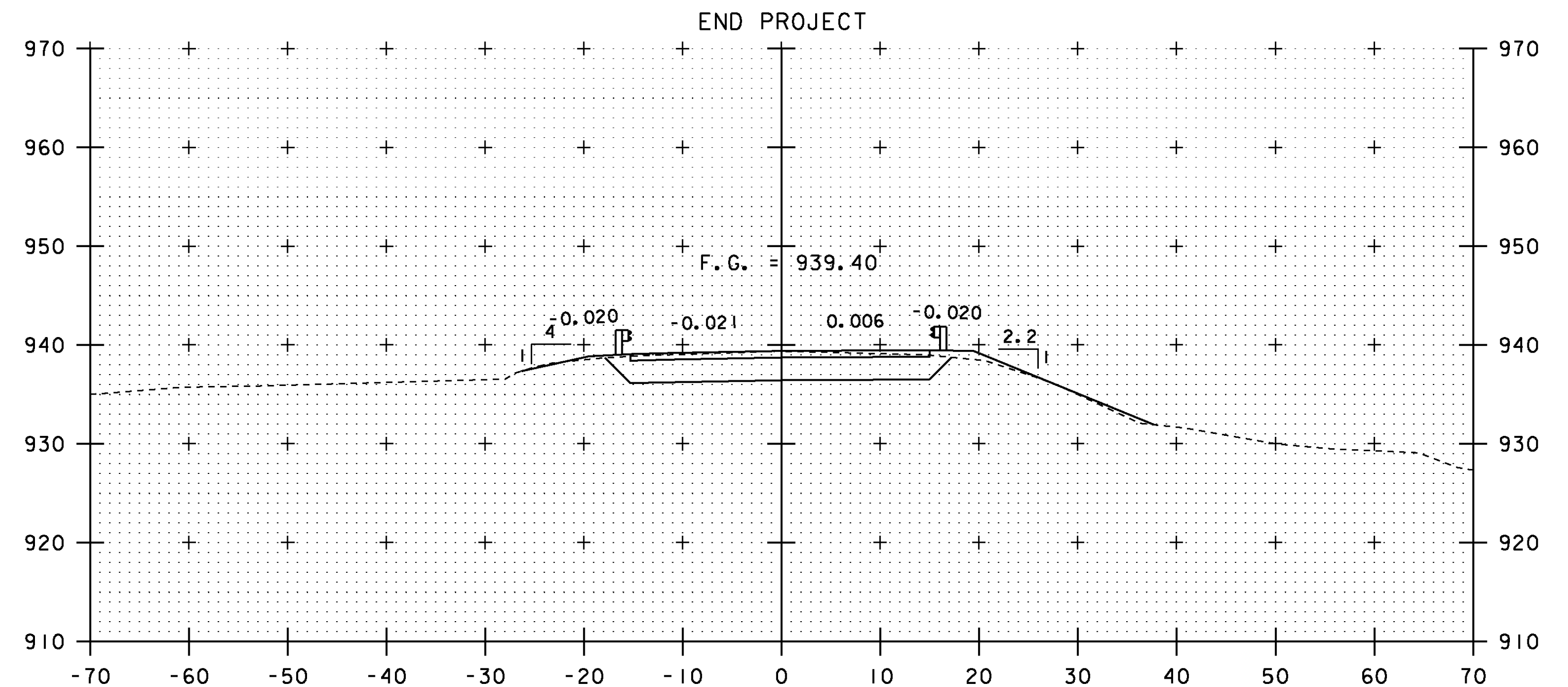
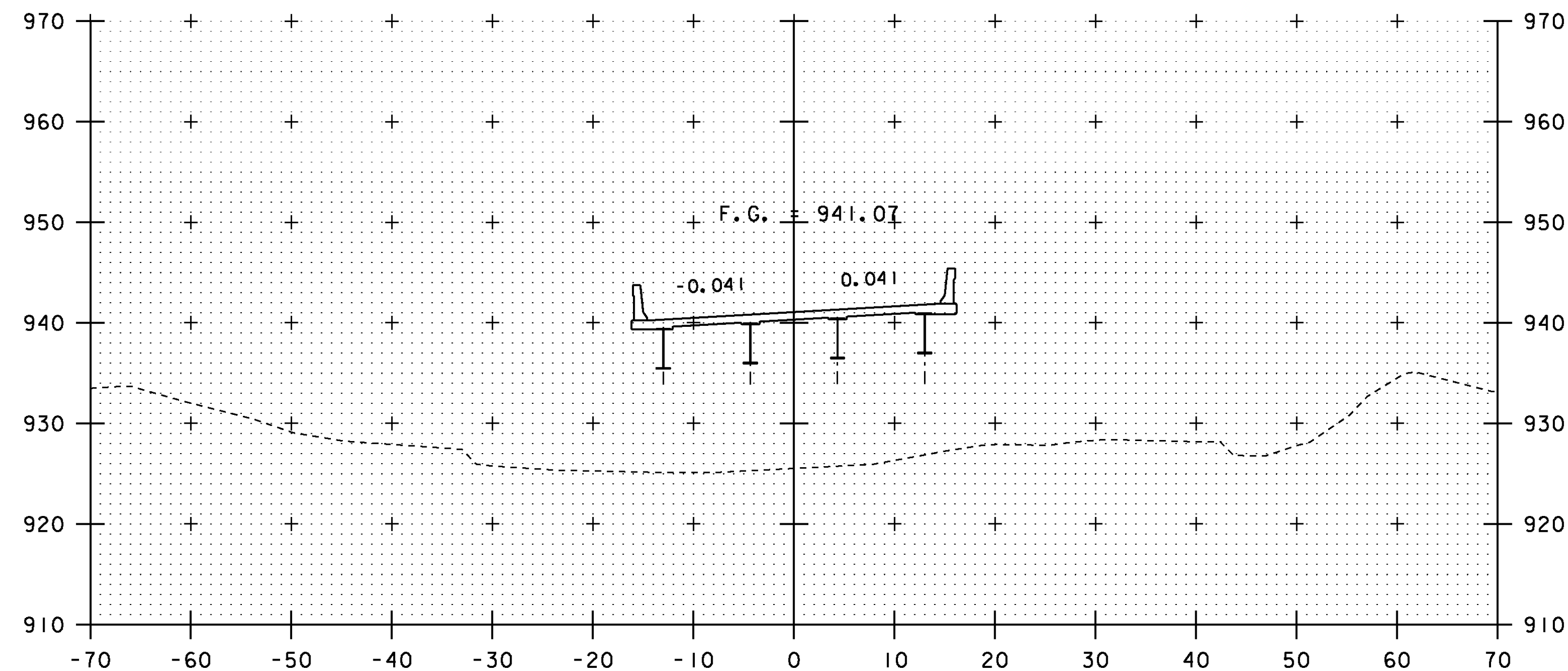


13+00
BEGIN PROJECT

STA. 12+00 TO STA. 13+50

SCALE 1" = 10' - 0
10 0 10

PROJECT:	CHESTER	PROJECT NO.:	BRF 016-1 (25)
DESIGN FILE NAME:	88b194/structures/s88b194xsl.dgn	PLOT DATE:	16-MAR-2011
IPARM FILE NAME:	s88b194m12.i	DRAWN BY:	M.FESSEL
DESIGNED BY:	E.L.RUSTAY	CHECKED BY:	R.S.YOUNG
SQUAD LEADER:	C.P.WILLIAMS	SHEET:	45 OF 50
MAINLINE CROSS SECTIONS			



14+00

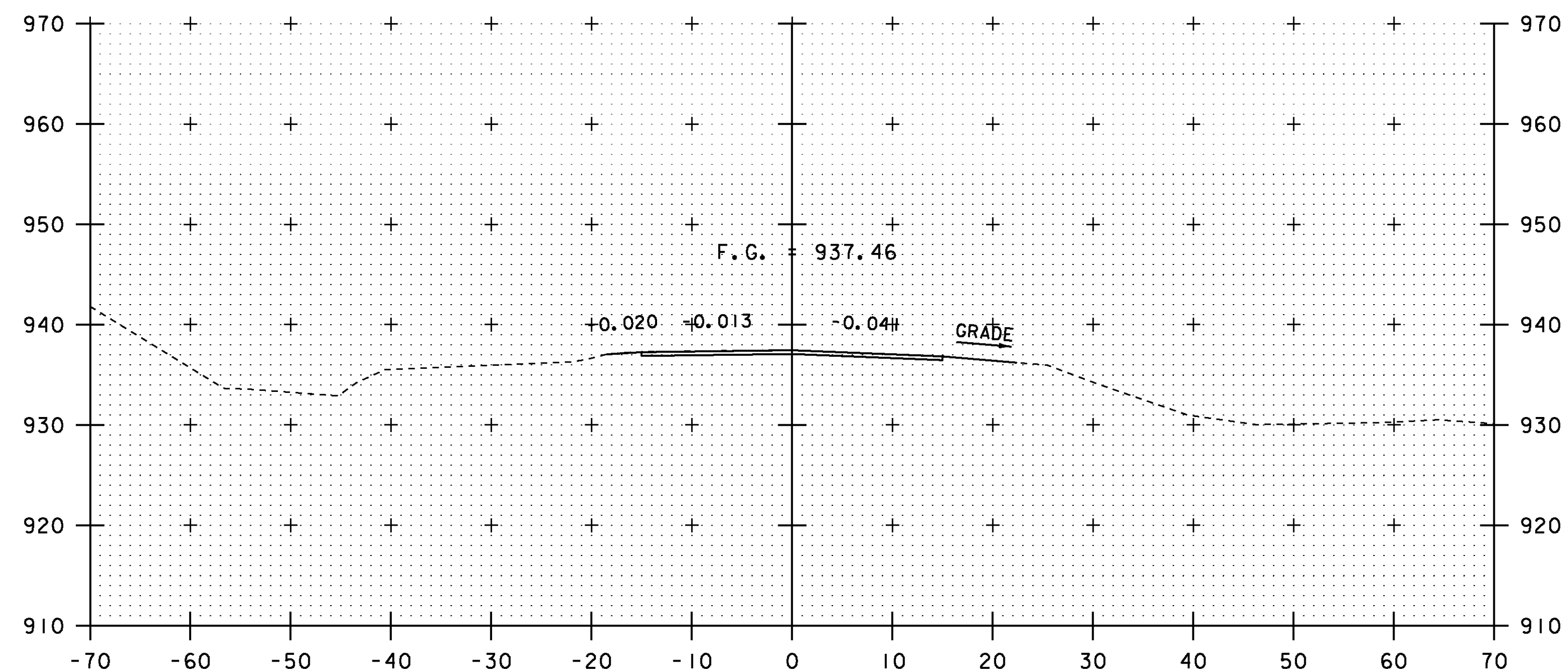
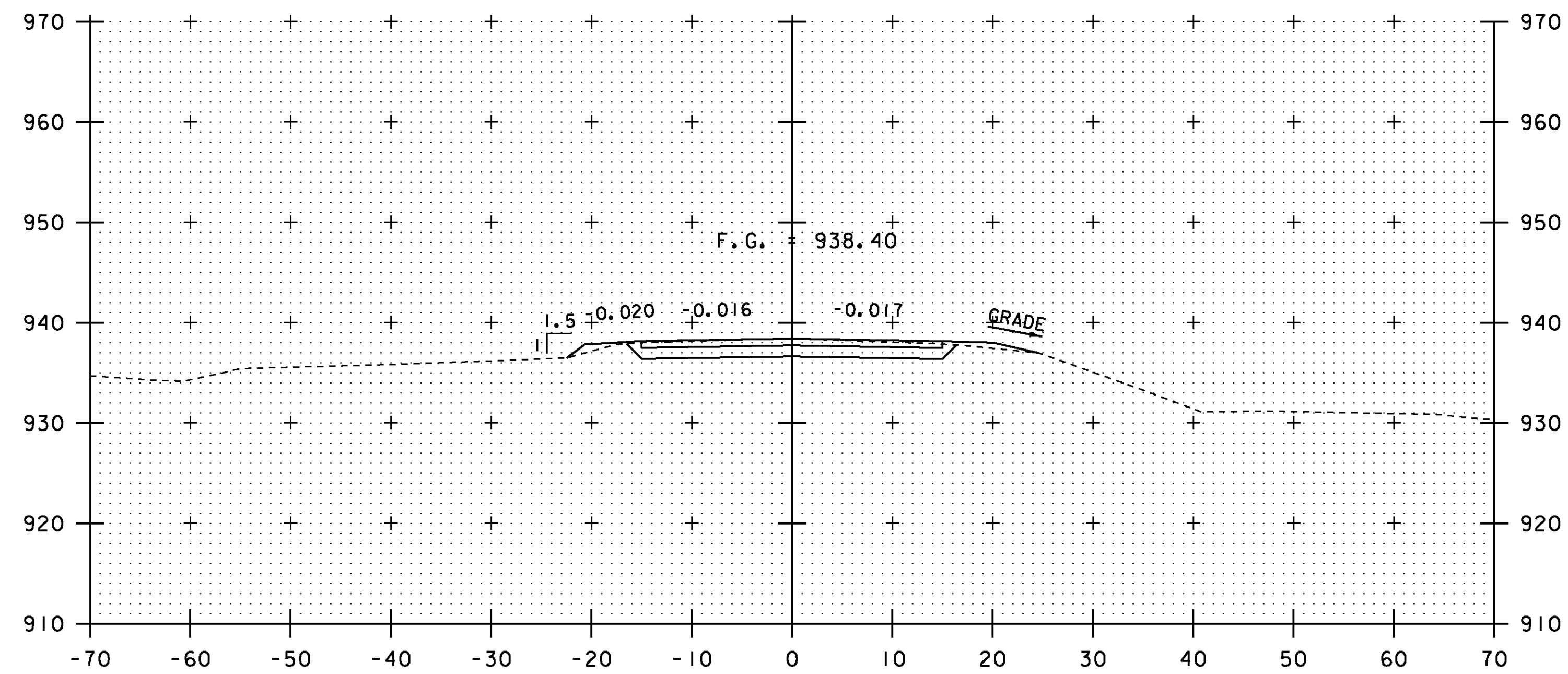
15+00

STA. 14+00 TO STA. 15+50

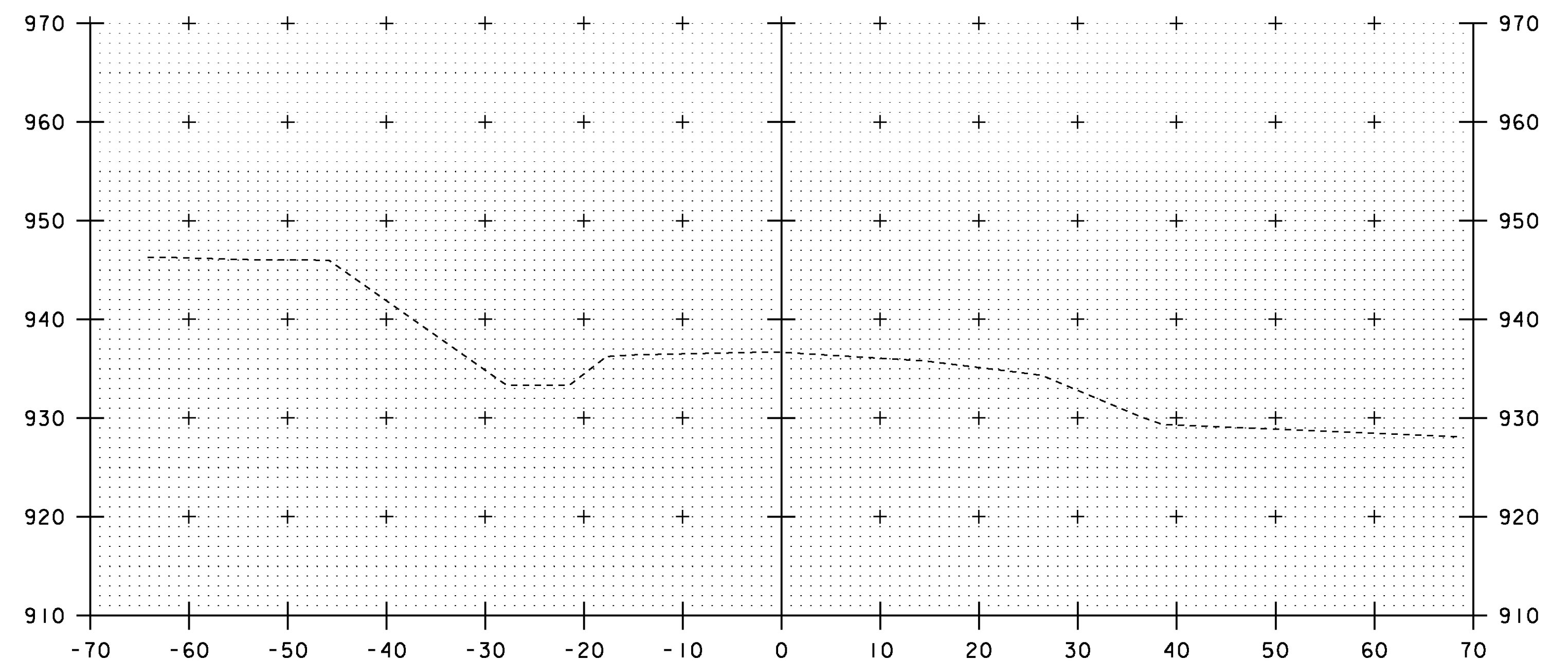
SCALE 1" = 10' - 0
10 0 10

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DESIGNED BY:	E.L.RUSTAY	CHECKED BY:	R.S.YOUNG
SQUAD LEADER:	C.P.WILLIAMS		
MAINLINE CROSS SECTIONS			

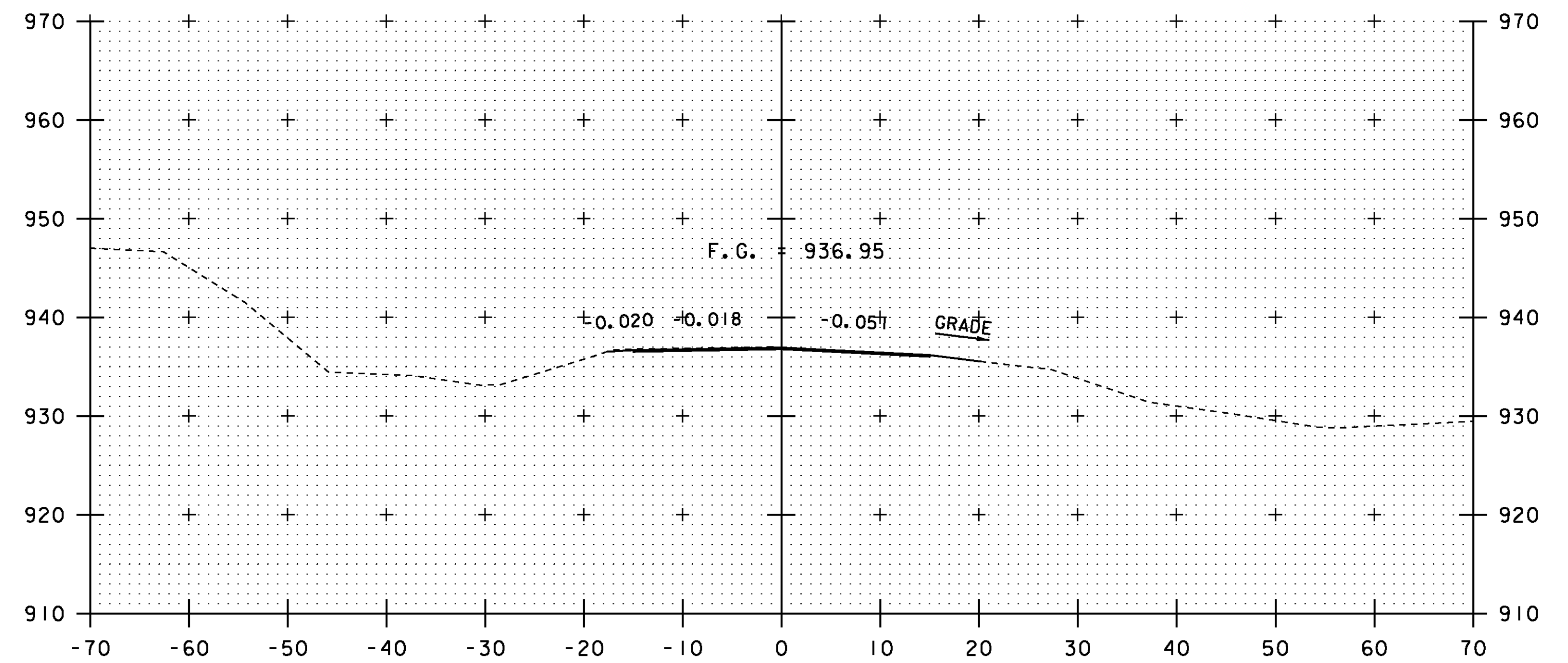
SHEET: 46 OF 50

 $16+50$ 

16+00

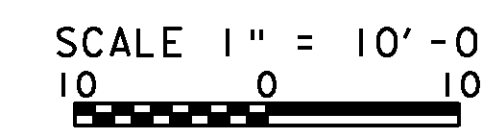
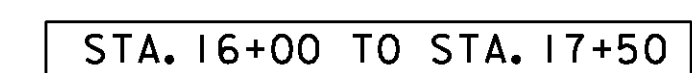
 $17+50$

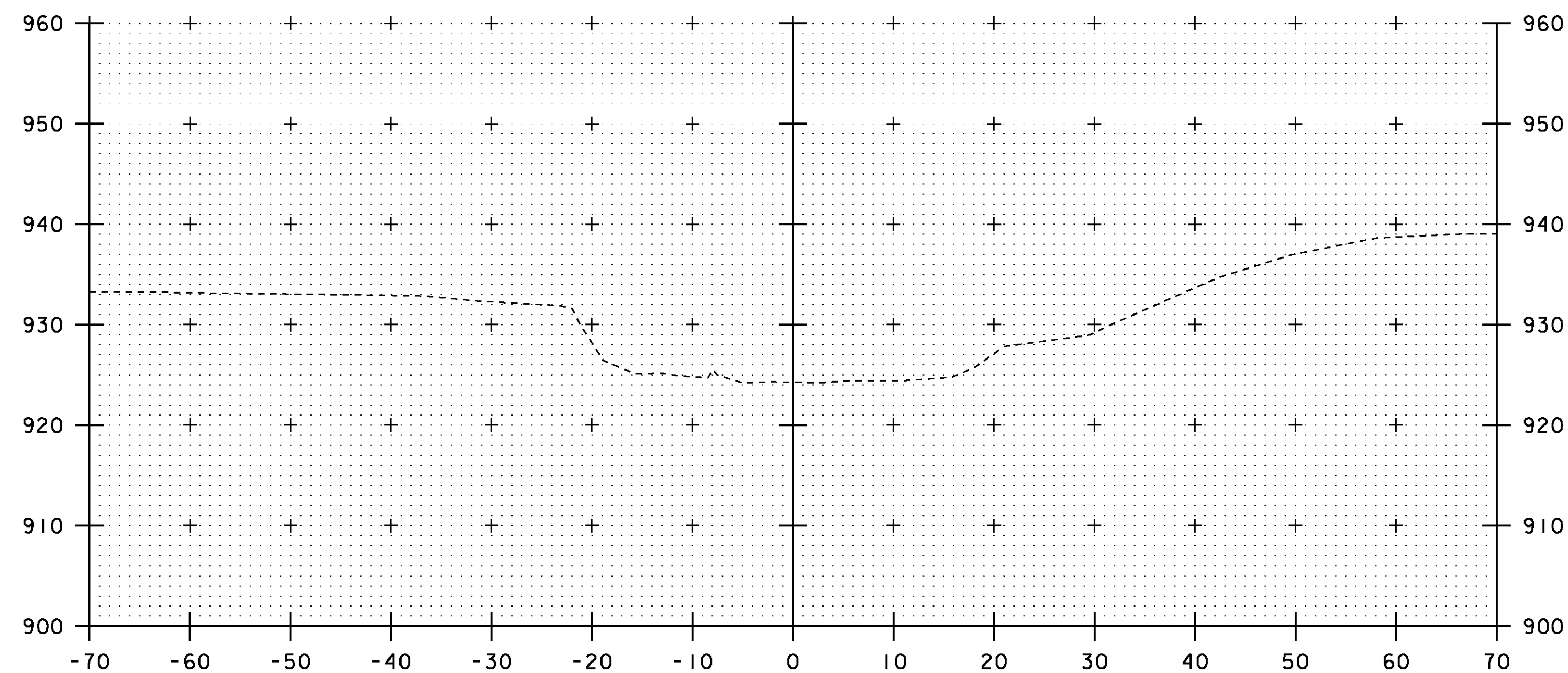
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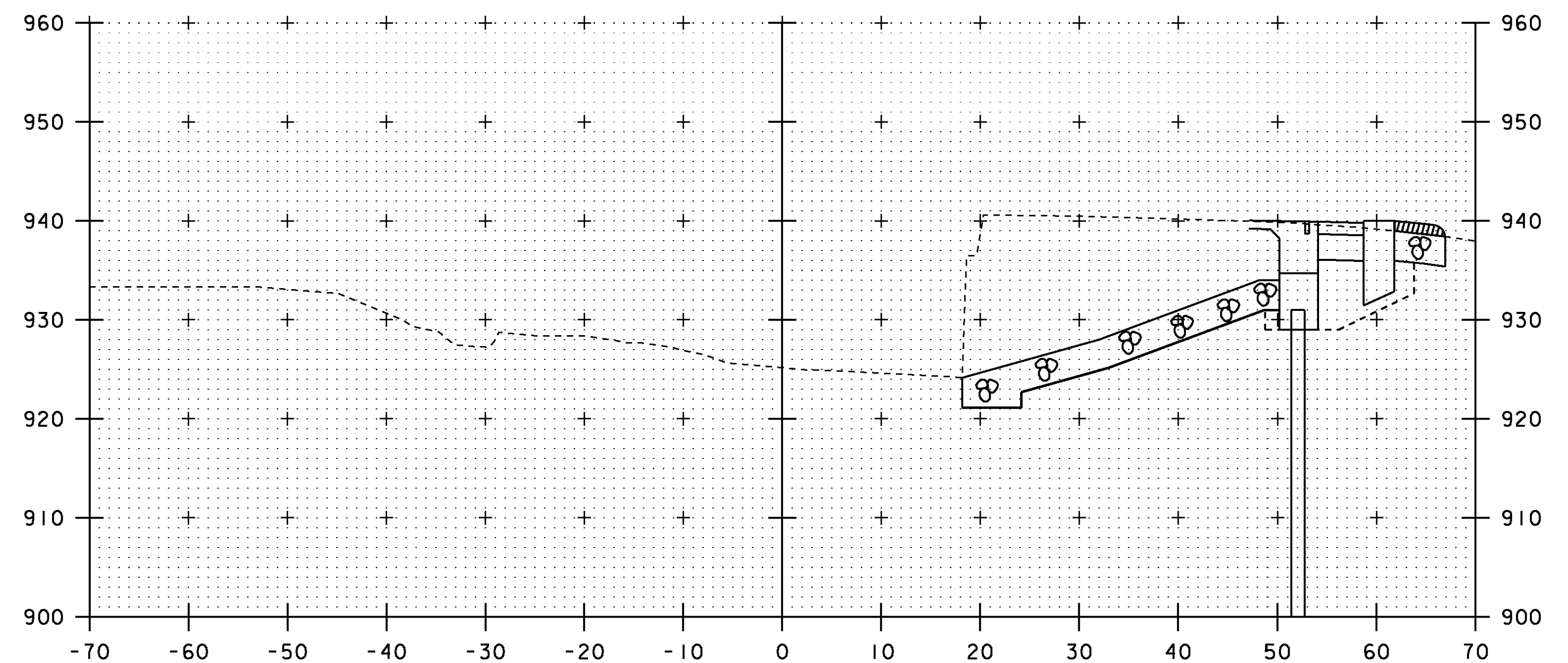
17+00

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CHESTER	BRF 016-1 (25)
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IPARM FILE NAME: 88b194m14.i	PLOT DATE: 16-MAR-2011
DESIGNED BY: E.L.RUSTAY	DRAWN BY: M.FESSEL
SQUAD LEADER: C.P.WILLIAMS	CHECKED BY: R.S. YOUNG
MAINLINE CROSS SECTIONS	SHEET: 47 OF 50

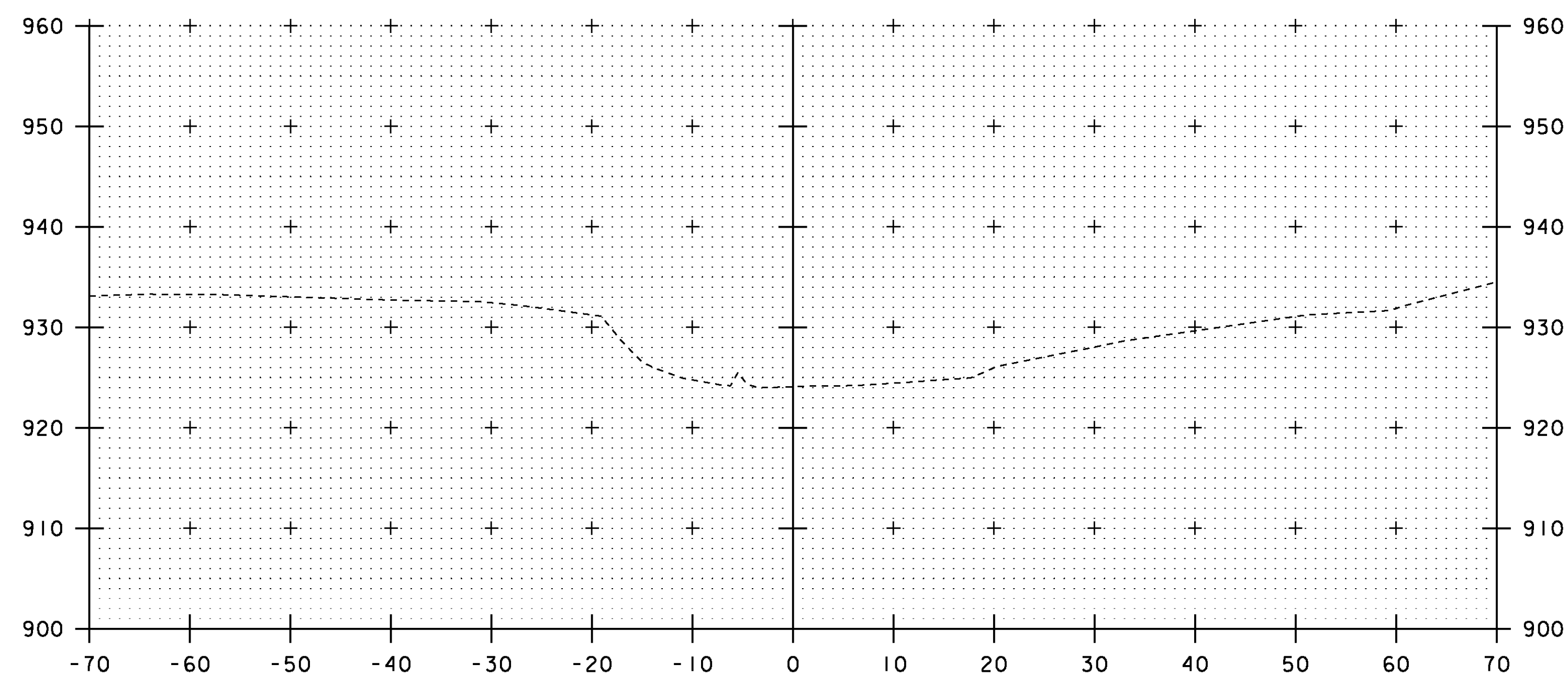




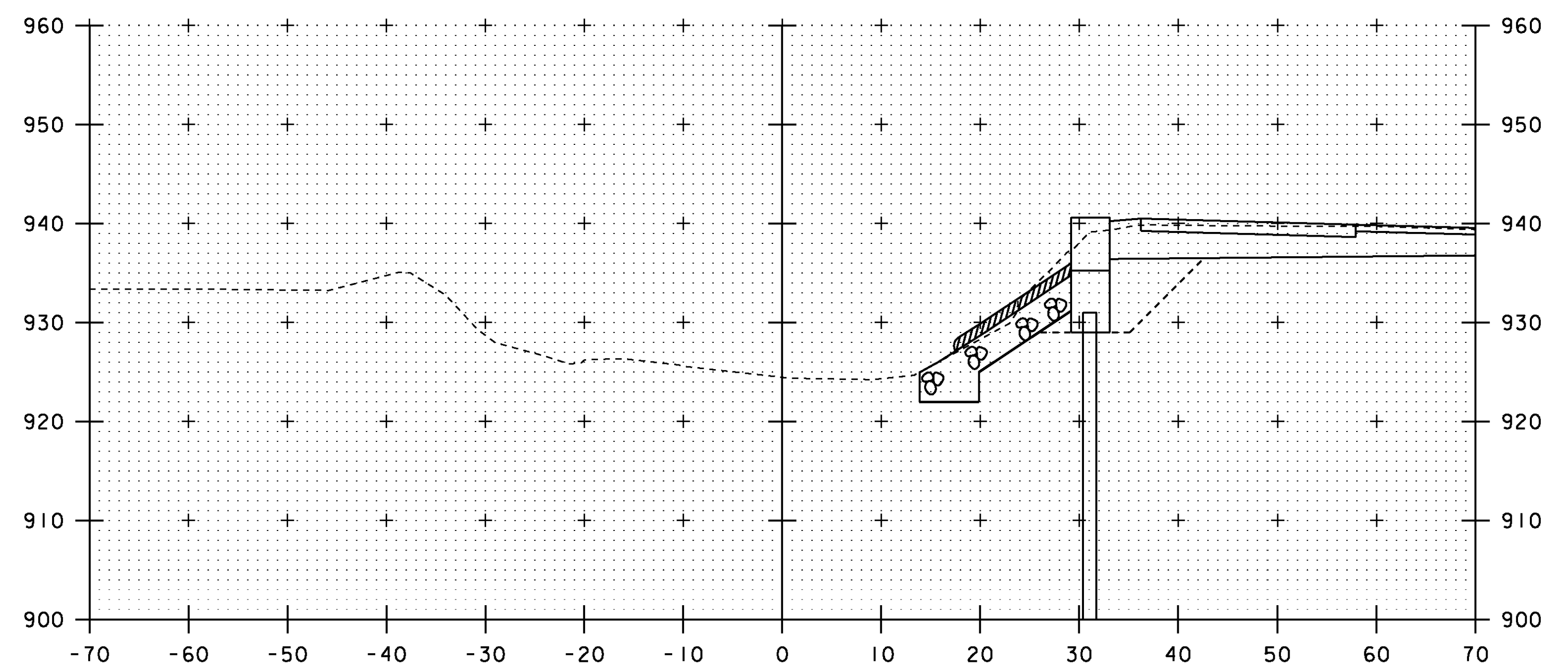
5+25



5+75



5+00



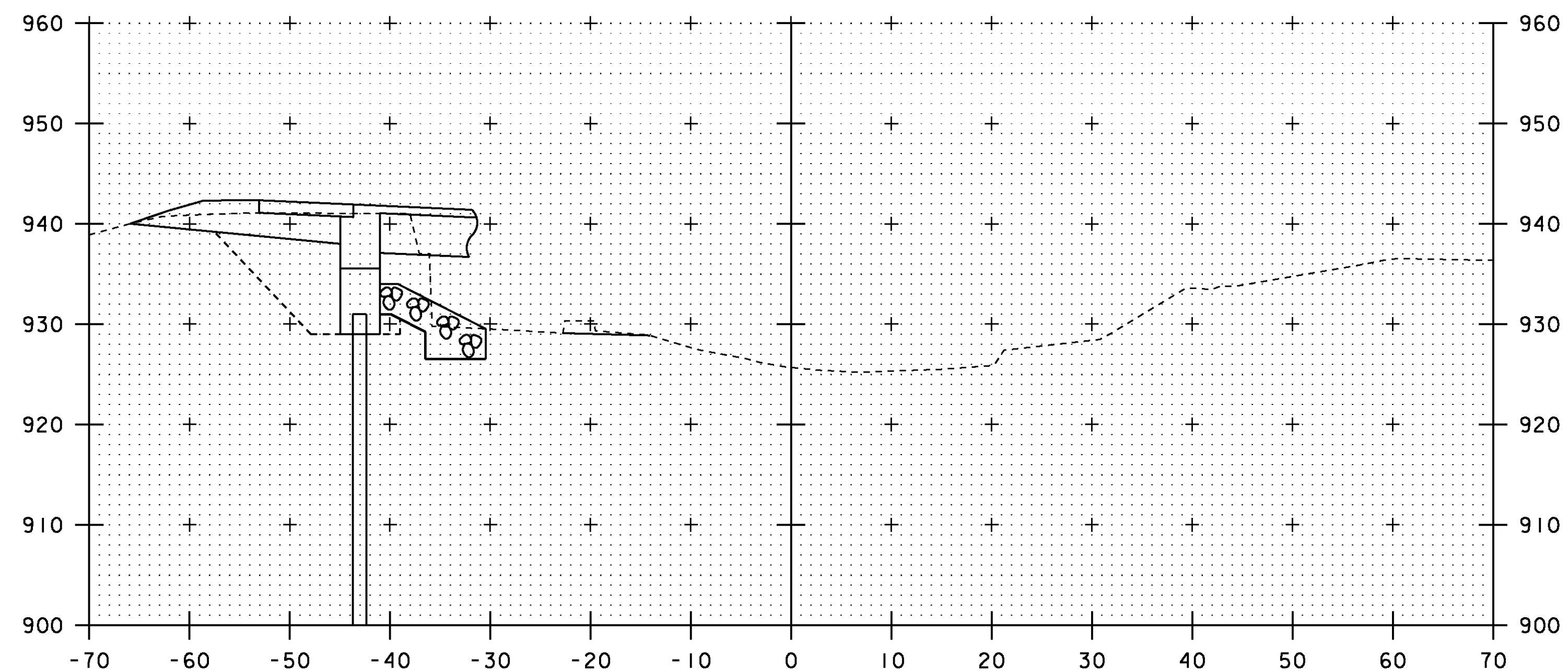
5+50

STA 5+27 RT
 BEGIN UNCLASSIFIED CHANNEL EXCAVATION
 BEGIN GEOTEXTILE UNDER STONE FILL
 BEGIN STONE FILL TYPE III
 BEGIN GRUBBING MATERIAL

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

STA. 5+00 TO STA. 5+75

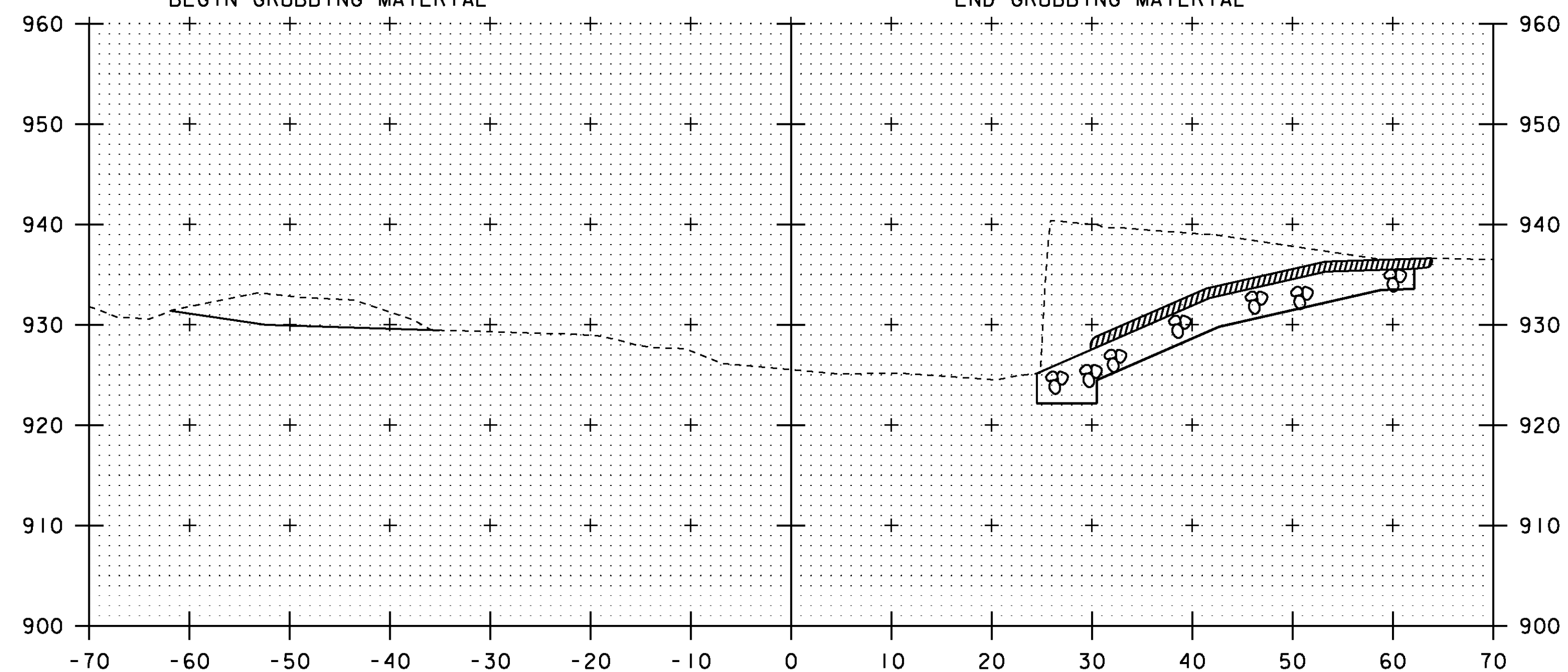
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IPARM FILE NAME:	s88b194chl.i	DRAWN BY:	M.FESSEL
DESIGNED BY:	E.L.RUSTAY	CHECKED BY:	R.S.YOUNG
SQUAD LEADER:	C.P.WILLIAMS	SHEET:	48 OF 50
CHANNEL CROSS SECTIONS			



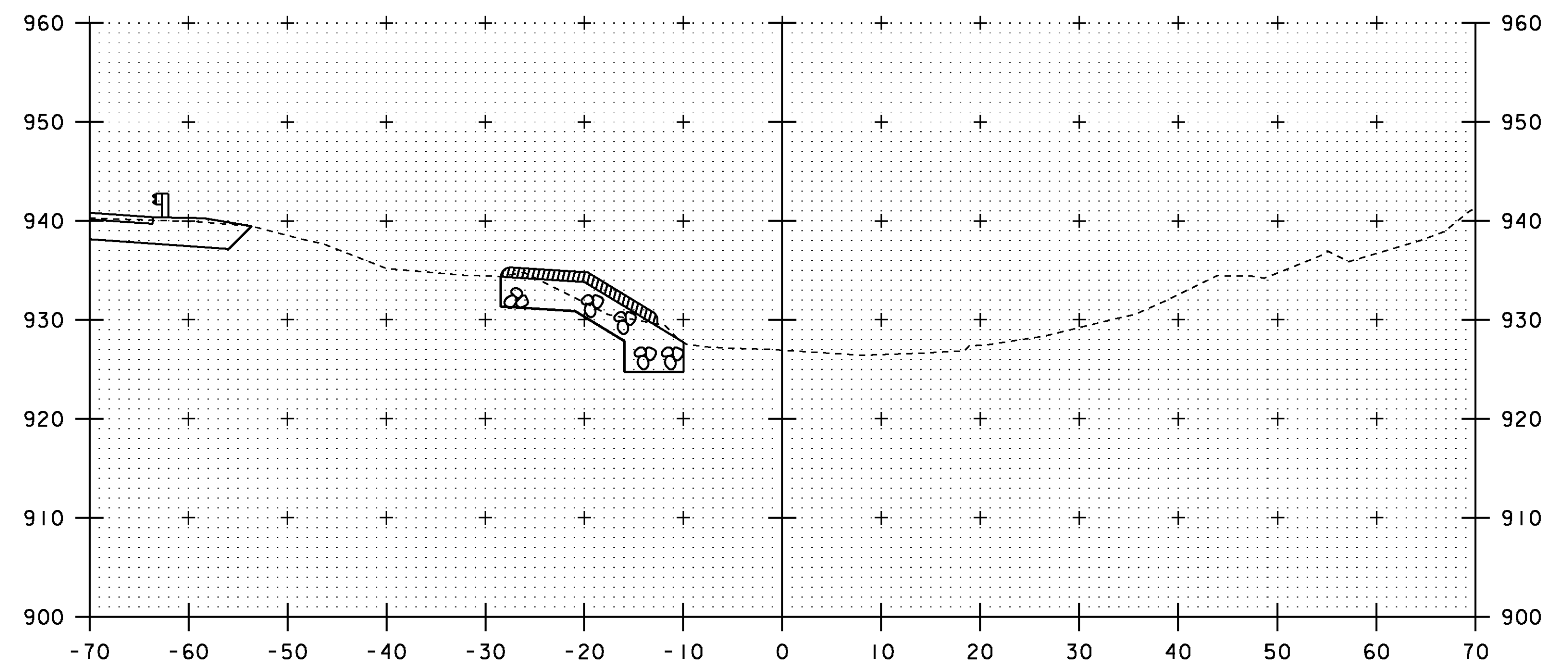
STA 6+02 LT
 BEGIN UNCLASSIFIED CHANNEL EXCAVATION
 BEGIN GEOTEXTILE UNDER STONE FILL
 BEGIN STONE FILL TYPE III
 BEGIN GRUBBING MATERIAL

6+25

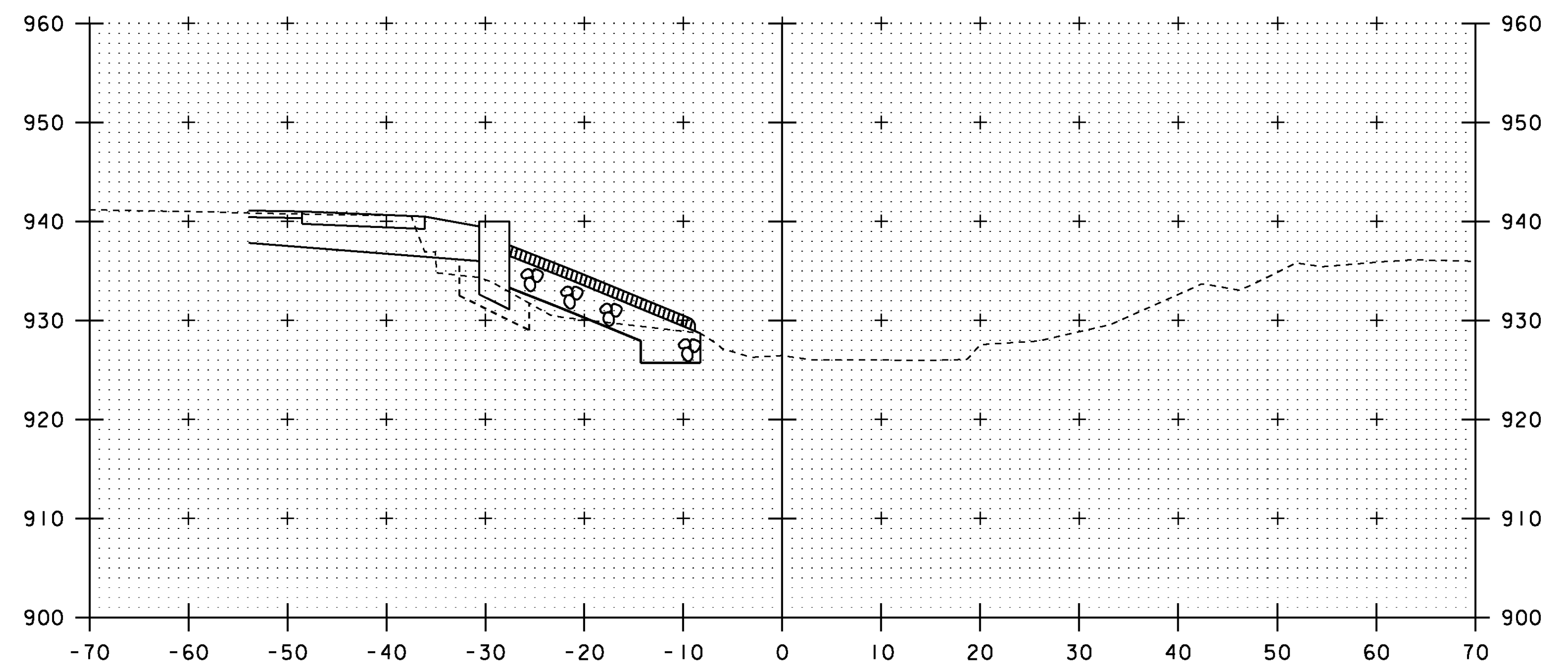
STA 6+24 RT
 END UNCLASSIFIED CHANNEL EXCAVATION
 END GEOTEXTILE UNDER STONE FILL
 END STONE FILL TYPE III
 END GRUBBING MATERIAL



6+00



6+75

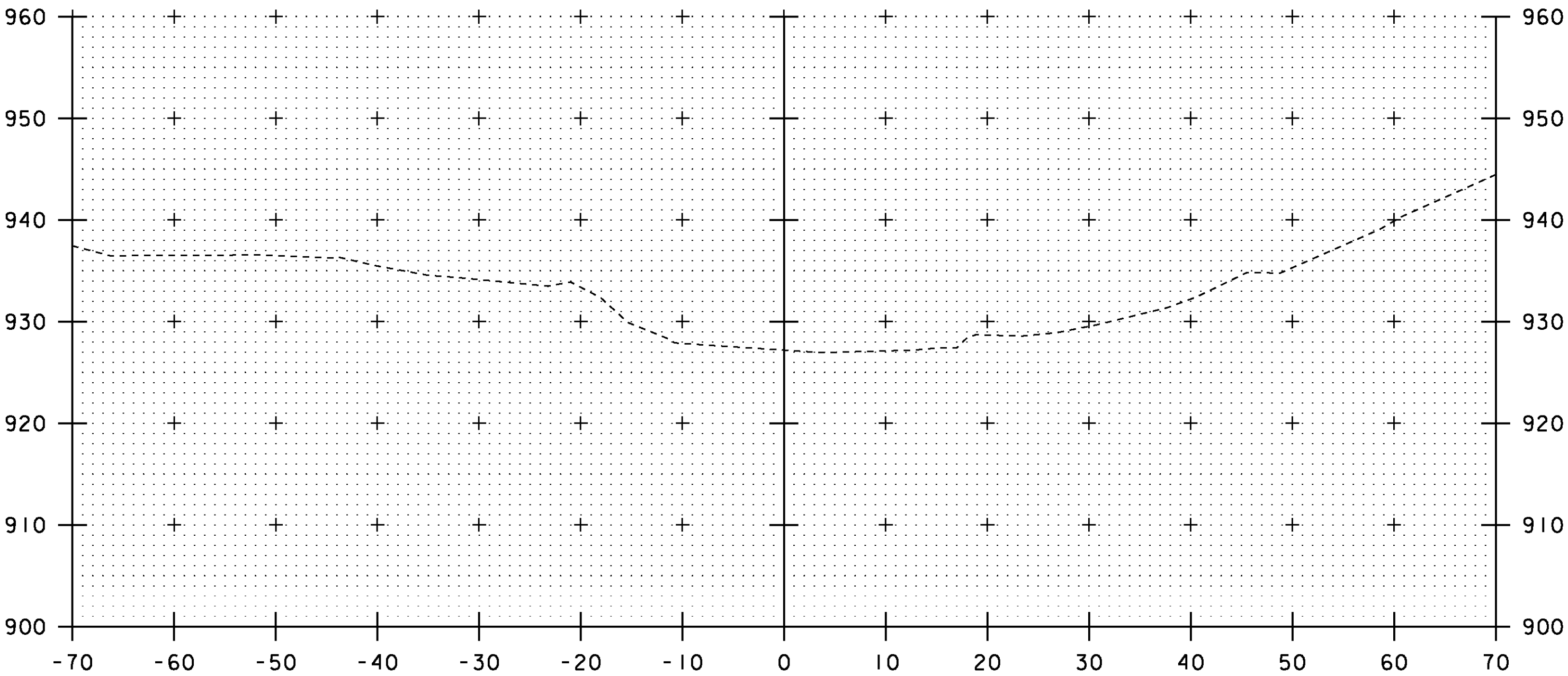


6+50

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

STA. 6+00 TO STA. 6+75

PROJECT:	CHESTER	PROJECT NO.:	BRF 016-1 (25)
DESIGN FILE NAME:	88b194/structures/s88b194xsl.dgn	PLOT DATE:	16-MAR-2011
IPARM FILE NAME:	s88b194ch2.i	DRAWN BY:	M.FESSEL
DESIGNED BY:	E.L.RUSTAY	CHECKED BY:	R.S.YOUNG
SQUAD LEADER:	C.P.WILLIAMS	SHEET:	49 OF 50
CHANNEL CROSS SECTIONS			



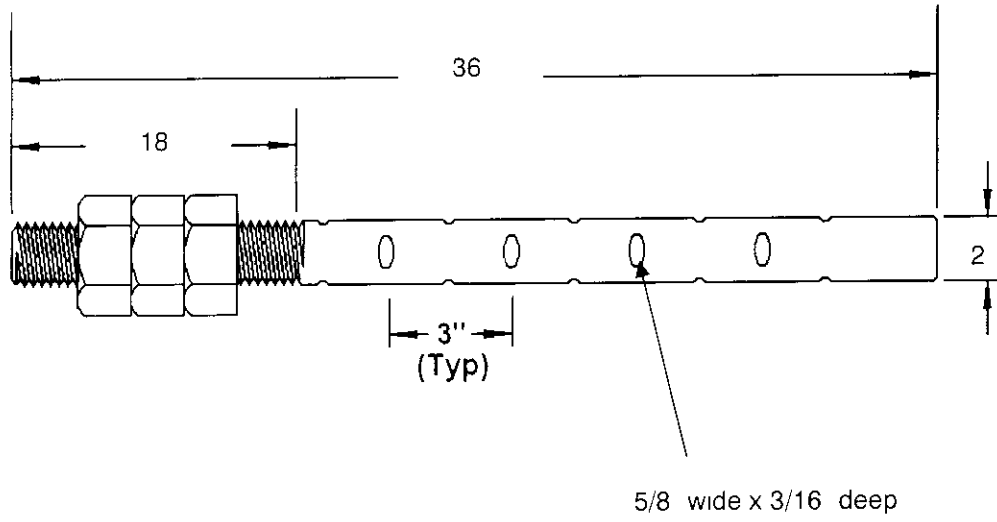
STA 6+86 LT
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END STONE FILL TYPE III
END GRUBBING MATERIAL

7+00

STA. 7+00 TO STA. 7+00

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

PROJECT:	CHESTER	PROJECT NO.:	BRF 016-1 (25)
DESIGN FILE NAME:	88b194/structures/s88b194xsl.dgn	PLOT DATE:	16-MAR-2011
IPARM FILE NAME:	s88b194ch3.i	DRAWN BY:	M.FESSEL
DESIGNED BY:	E.L.RUSTAY	CHECKED BY:	R.S.YOUNG
SQUAD LEADER:	C.P.WILLIAMS	SHEET:	50 OF 50
CHANNEL CROSS SECTIONS			



Quantity: 16

NOTES

Rod ASTM A572GR50
Nuts ASTM A563A Heavy Hex
Galvanizing Per ASTM A153



3441 NW Guam Street
Portland, OR 97210
P: 800-547-6758
F: 503-227-5488
www.portlandbolt.com

Job Name: Chester Vermont Bridge		
Customer: Miller Construction		
Revisions		
Sales Order Number		Quote Number
		24057
Sheet 1 of 3	Date	By
	6/5/2008	JNW



2-3/8 Dia Hole

1. *CPW* 11/13/19



3441 NW Guam Street
Portland, OR 97210
P 800-547-6758
F 503-227-5488
www.portlandbolt.com

By
JNW



Plate 1" Thick ASTM A36
Galvanizing Per ASTM A153
Plate edges not ground to 1/16 radius

Portland Bolt & Manufacturing Co

 3441 NW Guam Street
Portland, OR 97210
P 800-547-6758
F 503-227-5488
www.portlandbolt.com

Job Name Chester Vermont Bridge	
Customer Miller Construction	
Revisions	
Sales Order Number	Quote Number 24057
Sheet 3 of 3	Date 6/5/2008
	By JNW

CONSTRUCTION SPECIFICATIONS

- ## MATERIAL SPECIFICATIONS

- ## FABRICATION

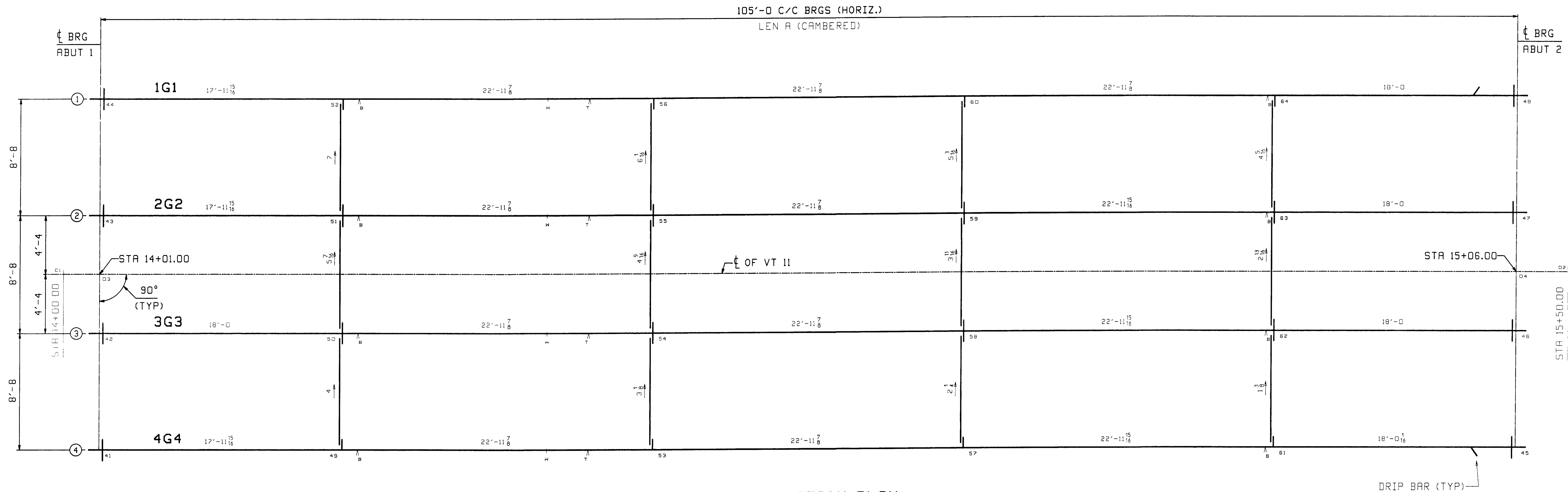
- WELDING

- ## CLEANING

- FIELD CONNECTIONS

- DETAIL "WS1"

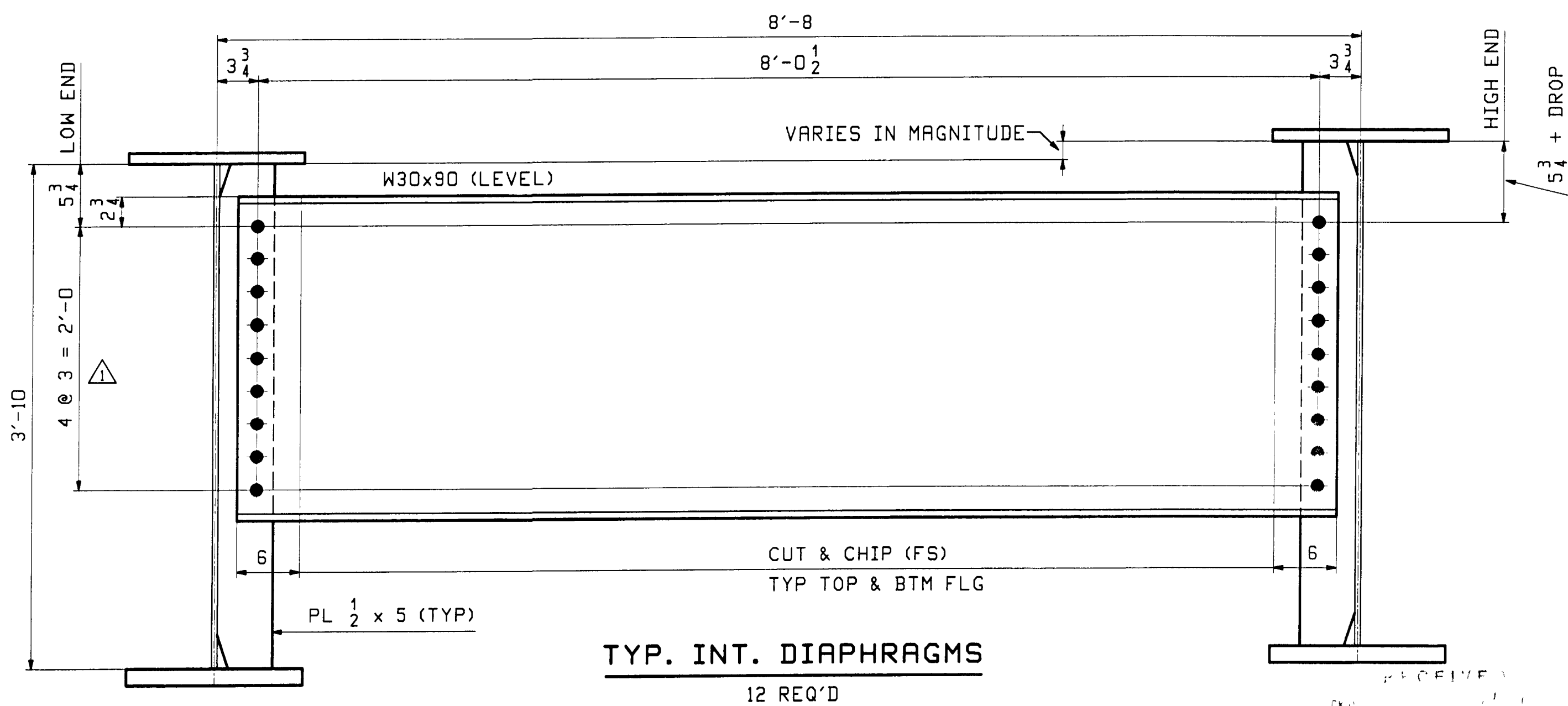
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A	6/18	REVISED NOTES	ZAD	WL				6/21/08	
REV.	DATE	REMARKS	DWN	CHK		APVL		SHOP	
MATERIAL	SURFACE PREP & PAINT	HOLE				SHOP BOLTS			
DESCRIPTION					GENERAL NOTES				
CASCO BAY STEEL STRUCTURES, INC 75 SPRING HILL ROAD SACO, MAINE 04072 PHONE (207) 282-7360 FAX (207) 282-1079									 TENSOR 2789
STRUCTURE ROUTE No VT 11 MINOR ARTERIAL BRIDGE NO 43 OVER MIDDLE BRANCH OF WILLIAMS RIVER TOWN OF CHESTER COUNTY OF WINDSOR						DRAWN JTB	DATE 05/01		
						CHCD JF	DATE 05/21		
LOCATION CHESTER, VT						JOB NO	DWG NO		
PROJ NO BR# 016-1(25)						369	GNI		
CUSTOMER VT DOT							REV	A	



CALCULATION PLAN

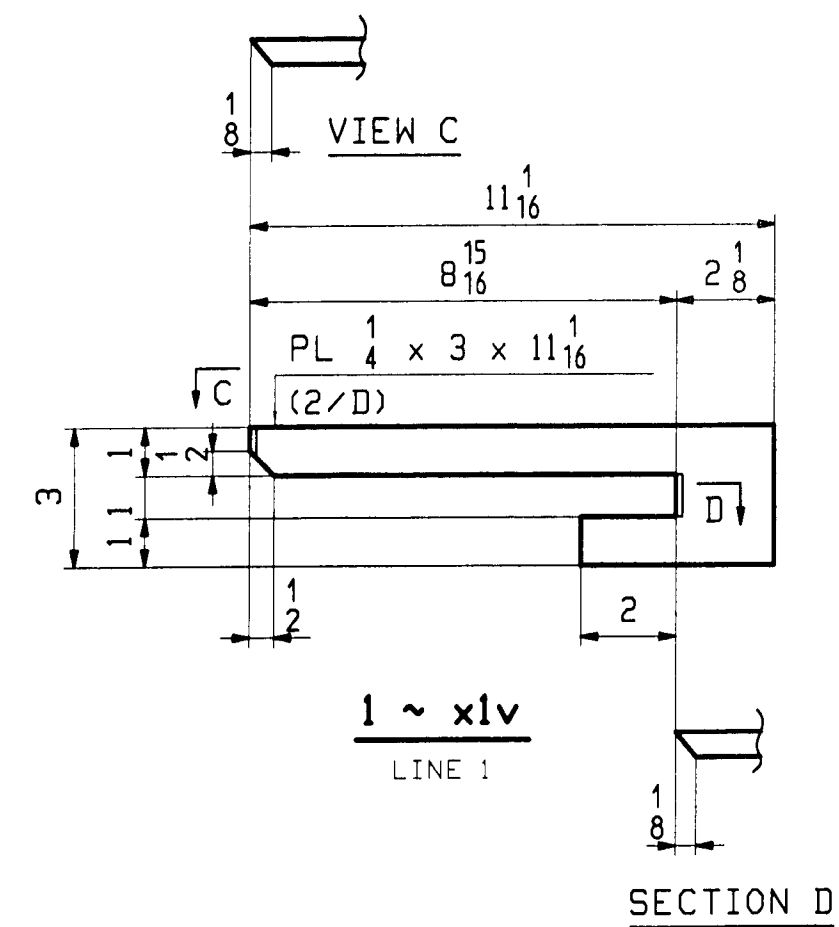
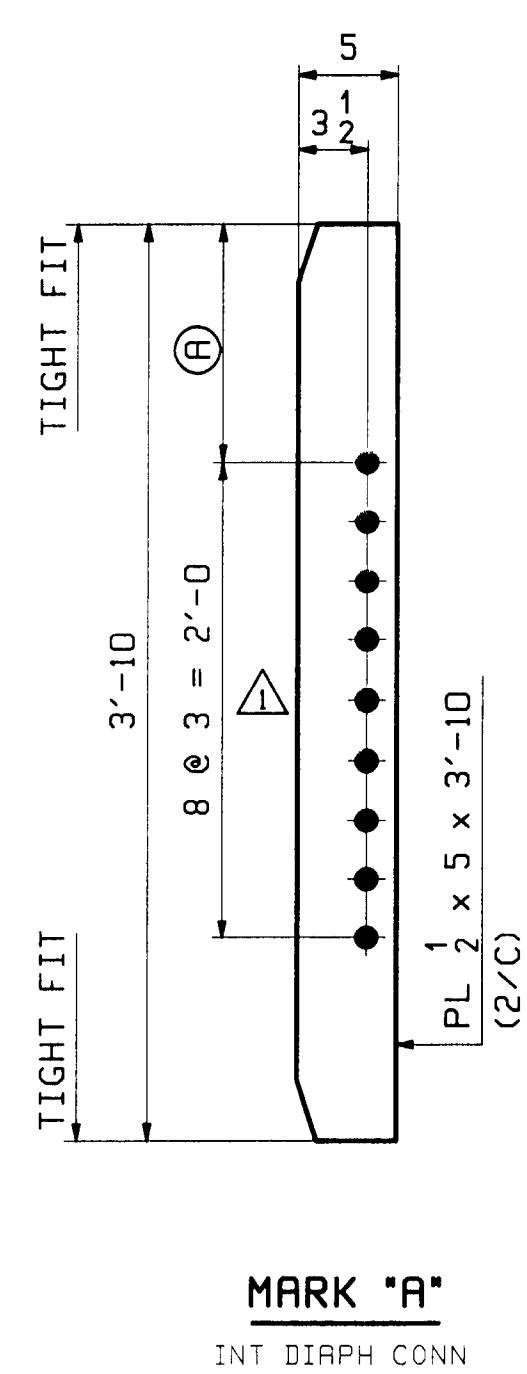
Line	LEN A	ABUT 1	ABUT 2
1	104'-11 9/16	- 0011	- 0111
2	104'-11 5/8	- 0044	- 0143
3	104'-11 1/16	- 0075	- 0174
4	104'-11 1/16	- 0107	- 0206

1. LONGITUDINAL DIMENSIONS ARE SLOPING ALONG BOTTOM OF WEBS WITH CORRECTIONS MADE FOR DL CAMBER & GRADE (UN).
2. TRANSVERSE DIMENSIONS ARE IN A HORIZONTAL PLANE (UN).
3. ARROW POINTS TOWARD LOW END OF MEMBER.
4. ENDS OF GIRDERS AND BRG STIFFENERS ARE VERTICAL AFTER DL ROTATION.
5. DIAPHRAGM STIFFENERS ARE NORMAL TO GRADE.
6. BOTTOM POINT NUMBERS = TOP POINT NUMBERS + 100



- NOTES:
1. MATERIAL SHALL BE ASTM A709 GRADE 50W.
2. ALL BOLT HOLES SHALL BE 15/16" Ø FOR 7/8" Ø HSB (UN).

6/16	Revise Bolts per design change	WL	WMJ	5/20/08	
0				6/20/08	
REV.	DATE	REMARKS	DWN	CHK	APVL
MATERIAL		SURFACE PREP & PAINT		HOLES	SHOP BOLTS
DESCRIPTION: CALCULATION PLAN					
CASCO BAY STEEL STRUCTURES, INC. 75 SPRING HILL ROAD SACO, MAINE 04072 PHONE (207) 282-7360 FAX. (207) 282-1179					
STRUCTURE: ROUTE No. VT 11 MINOR ARTERIAL BRIDGE NO. 43 OVER MIDDLE BRANCH OF WILLIAMS RIVER TOWN OF CHESTER COUNTY OF WINDSOR			DRAWN: JTB	DATE: 05/01	
LOCATION: CHESTER, VT			CHKD: JF	DATE: 05/21	
PROJ NO. BR 016-1(25)			JOB NO. 369	DWG NO. WS1	
CUSTOMER: VT AOT				REV.	Δ



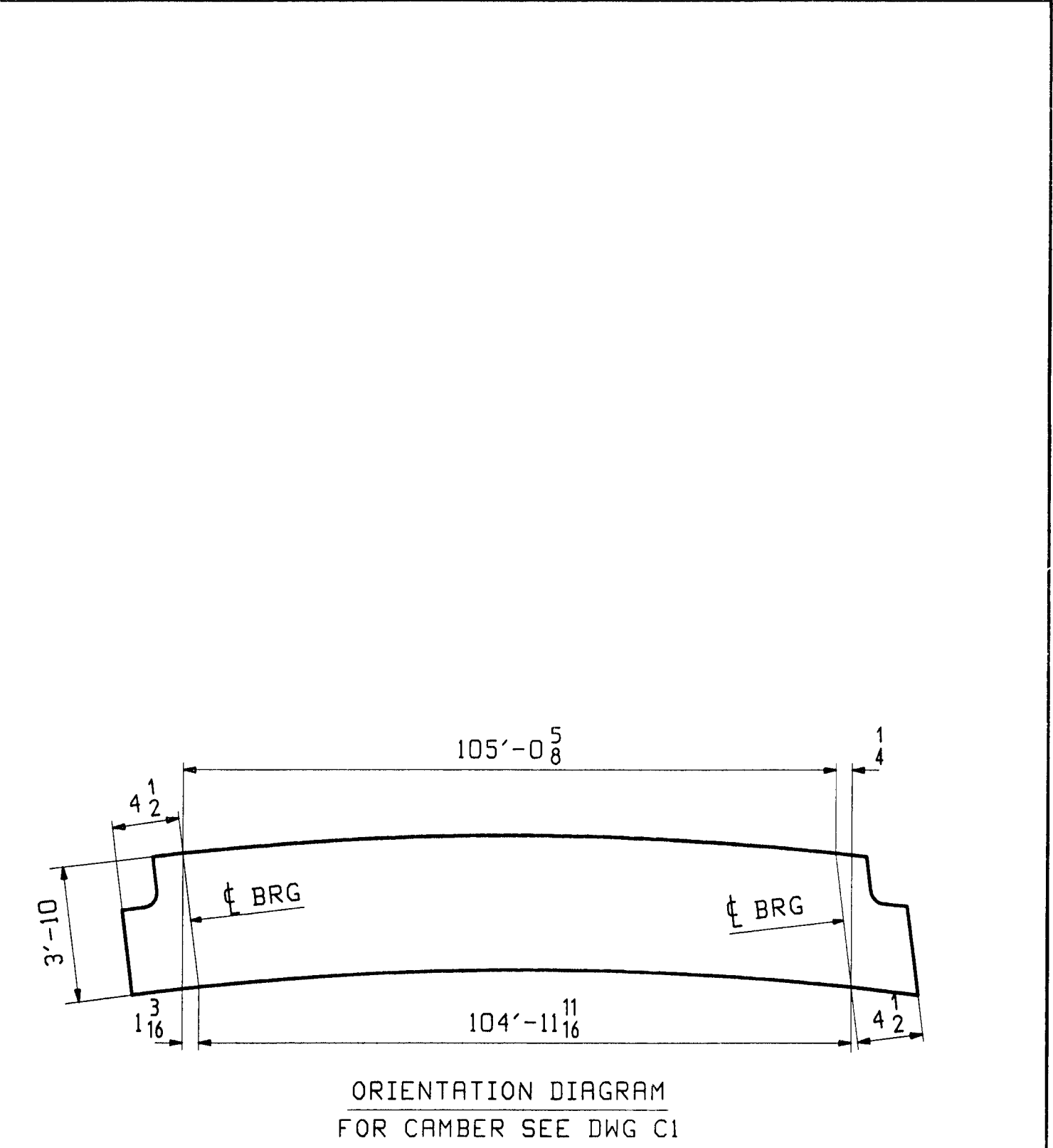
MARK "A"	QTY	Ⓐ	
x1b	12	5 $\frac{3}{4}$	LOW END
x1c	1	7 $\frac{1}{8}$	DROP 1 $\frac{3}{8}$
x1d	1	8	DROP 2 $\frac{1}{4}$
x1f	2	8 $\frac{3}{4}$	DROPS 2 $\frac{13}{16}$ & 3 $\frac{1}{8}$
x1g	2	9 $\frac{5}{8}$	DROPS 3 $\frac{11}{16}$ & 4
x1k	2	10 $\frac{3}{16}$	DROPS 4 $\frac{5}{16}$ & 9 $\frac{1}{16}$
x1m	2	11 $\frac{1}{16}$	DROPS 5 $\frac{3}{16}$ & 7 $\frac{1}{16}$
x1n	1	11 $\frac{13}{16}$	DROP 6 $\frac{1}{16}$
x1p	1	1'-0 $\frac{3}{4}$	DROP 7

NOTES:
ALL MATERIAL SHALL BE A709-50W.
ALL BOLT HOLES SHALL BE $\frac{15}{16}$ " $\emptyset$ FOR $\frac{7}{8}$ " $\emptyset$ HSB.
FOR GENERAL NOTES SEE DRAWING GNI.

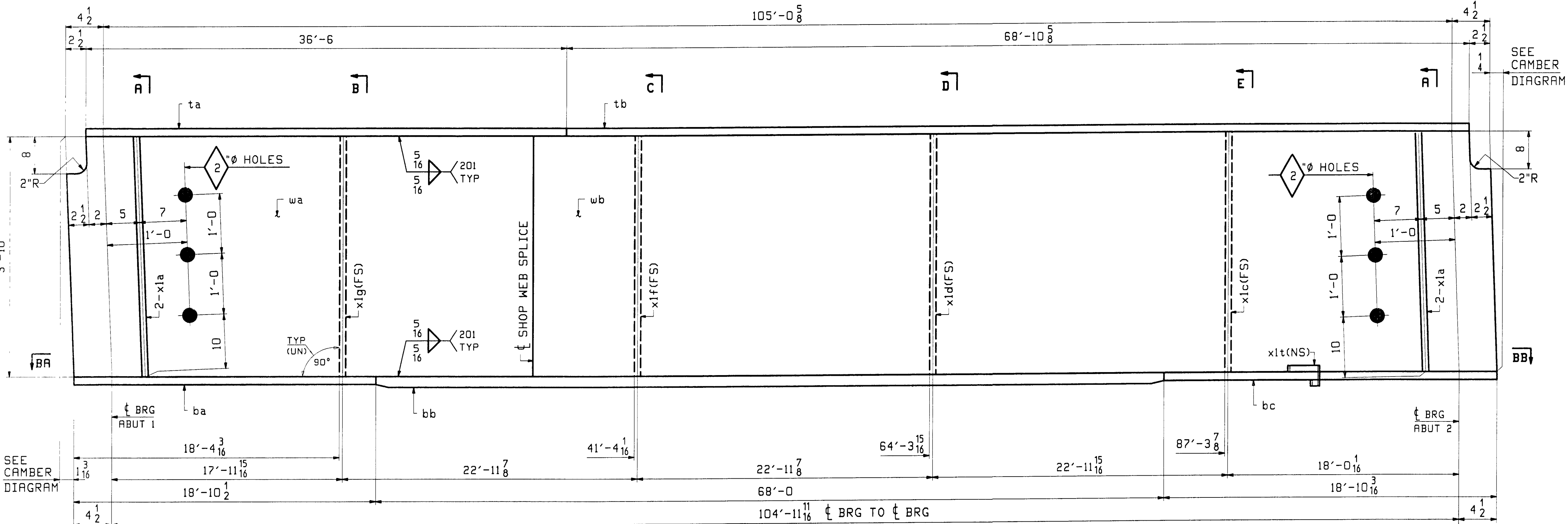
								5/28/08	
A	6/18	ADDED HOLES (INT. DIAPH.)			ZAD	WL	G/20/08		
REV. DATE		REMARKS			DWN	CHK	APVL	SHOP	
MATERIAL A709-50W		SURFACE PREP & PAINT AS NOTED ON GNI			HOLES 15 16 Ø		SHOP BOLTS NONE		
DESCRIPTION: GIRDER STANDARD DETAILS									
CASCO BAY STEEL STRUCTURES, INC. 15 SPRING HILL ROAD SACO, MAINE 04072 PHONE (207) 282-7360 FAX. (207) 282-1179								 TENSOR #789	
STRUCTURE: ROUTE NO VT 11 MINOR ARTERIAL BRIDGE NO 43 OVER MIDDLE RANCH OF WILLIAMS RIVER TOWN OF CHESTER COUNTY OF WINDSOR						DRAWN	DATE:		
						JTB	05/01		
						CHKD	DATE		
						JF	05/21		
LOCATION: CHERESTER, VT						JOB NO.		DWG NO.	
PROJ NO. BR F O I 6 - 1 (2 5)						369		X1	
CUSTOMER: VT AOT								REV. [triangle]	

Wed, Jun 18, 2008 06:29:15 PM /users/jots/cvts/xl Revi

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								369	4	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH		REMARKS	WT	PROCUREMENT NOTES
						FT	INCHES			
		4G4	1		GIRDER				23325	
1	L		1	wa	PL $\frac{1}{2}$ x 46	33	7 $\frac{3}{16}$	(A709-50WT2) (#2-3)		
1	J		1	wb	PL $\frac{1}{2}$ x 46	72	2 $\frac{15}{16}$	(A709-50WT2) (#2-3)		
1	E		1	ta	PL 1x16	36	6	(A709-50WT2) (#2-3)		
1	C		1	tb	PL 1x16	68	10 $\frac{5}{8}$	(A709-50WT2) (#2-3)		
1	G		1	ba	PL 1x16	18	10 $\frac{1}{2}$	(A709-50WT2) (#2-3)		
1	A		1	bc	PL $\frac{1}{8}$ x 16	68	0	(A709-50WT2) (#2-3)		
1	G		1	bc	PL 1x16	18	10 $\frac{3}{16}$	(A709-50WT2) (#2-3)		
2	B		4	xla	PL $\frac{1}{2}$ x 6 $\frac{3}{4}$	3	10	M/E		
2	C		1	xlc	PL $\frac{1}{2}$ x 5	3	10			
2	C		1	xld	PL $\frac{1}{2}$ x 5	3	10			
2	C		1	xlf	PL $\frac{1}{2}$ x 5	3	10			
2	C		1	xlg	PL $\frac{1}{2}$ x 5	3	10			
2	D		1	xlt	PL $\frac{1}{4}$ x 3	0	11 $\frac{1}{16}$			

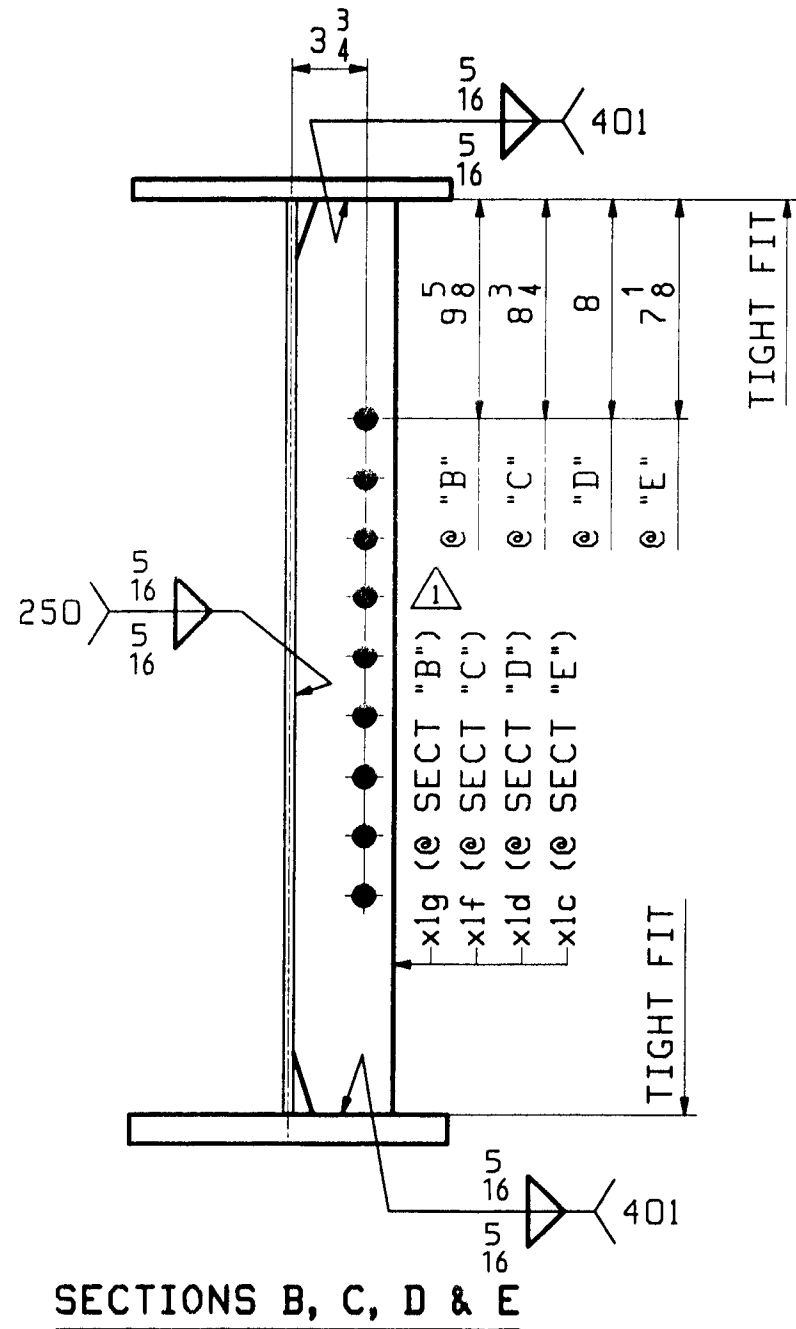
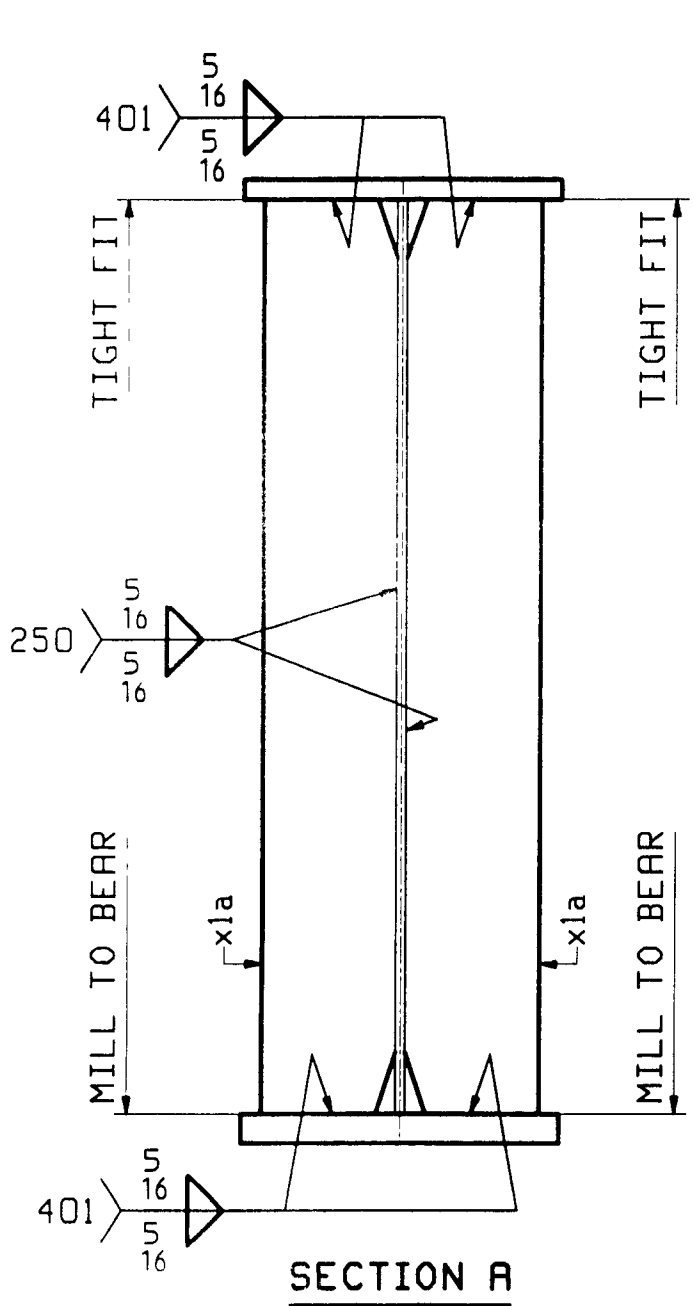
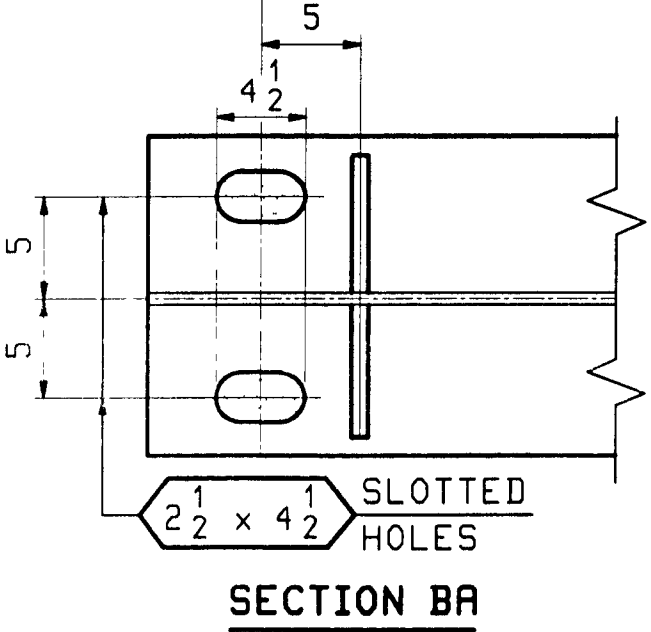
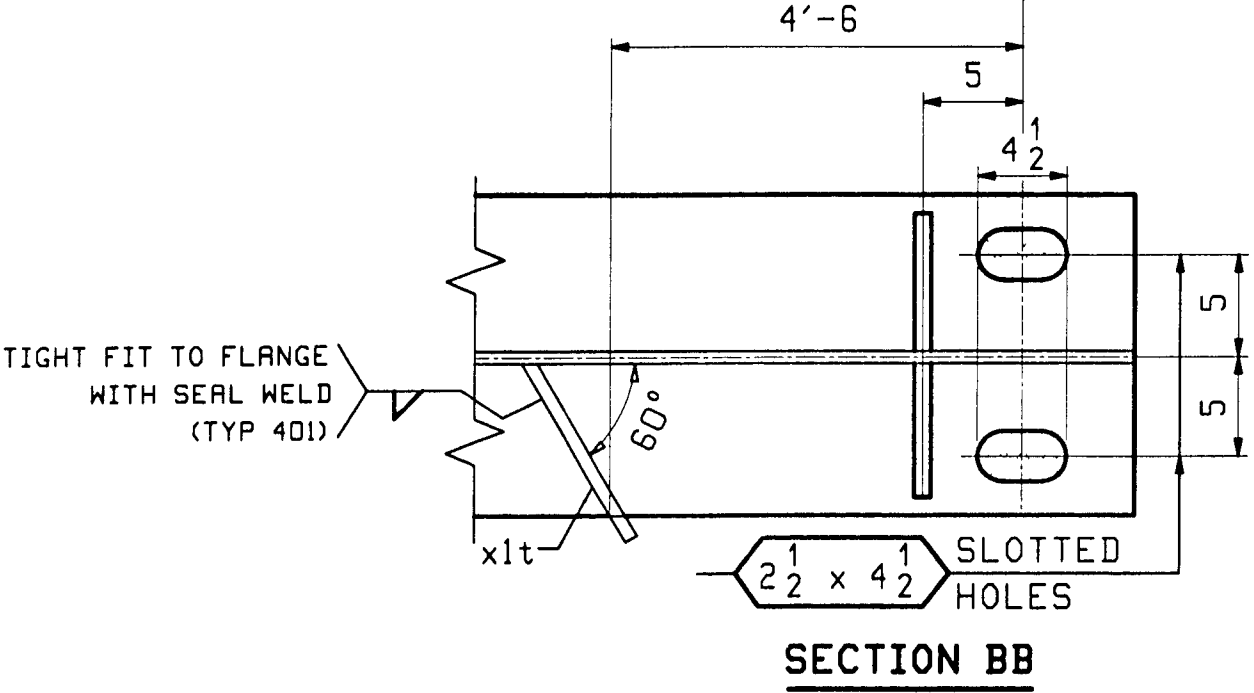


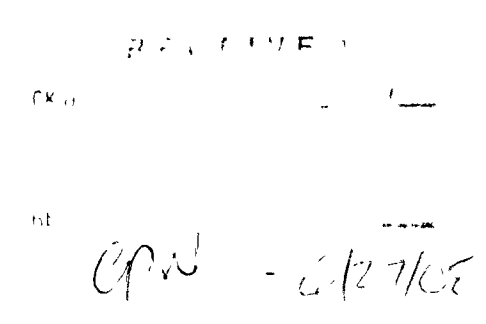
								5/25/08	
△	6/18	ADDED HOLES (STIFFENER)			ZAD	WL	6/26/08		
REV.	DATE	REMARKS			DWN	CHK	APVL	SHOP	
MATERIAL		SURFACE PREP & PAINT		HOLES		SHOP BOLTS.			
A709-50W (UN)		SEE DWG GNI		15/16" Ø		NONE			
DESCRIPTION: GIRDER - 4G4									
CASCO BAY STEEL STRUCTURES, INC.									
									
75 SPRING HILL ROAD					SACO, MAINE 04072				
PHONE (207) 282-7360					FAX: (207) 282-1179				
STRUCTURE: ROUTE No. VT 11 MINOR ARTERIAL BRIDGE No. 43 OVER MIDDLE BRANCH OF WILLIAMS RIVER TOWN OF CHESTER COUNTY OF WINDSOR						DRAWN: JTB		DATE: 05/01	
LOCATION: CHESTER, VT						CHKD: JF		DATE: 05/21	
PROJ NO. BR# 016-1(25)						JOB NO. 369		DWG NO. 4	
CUSTOMER: VT DOT								REV. △	



ONE - GIRDER - 4G4

FOR GIRDER STANDARDS SEE DRAWING X1.
FOR CAMBER & FLANGE DIAGRAMS SEE DRAWING C1.
FOR GENERAL NOTES & WELD PROCEDURES SEE DRAWING GNI.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.



[illegible]

Casco Bay Steel Structures, Inc.

5 Industry Road
South Portland, Maine 04106

Fax: (207) 772-0580

Phone: (207) 772-2533

WELDING PROCEDURE SPECIFICATION

Material specification ASTM A36 Gr 36-50-50W (250-345-345W)
Welding process Shielded Metal Arc welding (SMAW)
Manual or machine Manual
Position of welding Flat (1F), Horizontal (2F) Reverse
Filler metal specification AST/AWS A51-A52
Filler metal classification E7018-R01B C/CS - T02B
Flux NA Flow rate NA
Shielding gas NA
Single or multiple pass Single and multiple
Single or multiple arc Single
Welding current AC / DC
Polarity Straight / Reverse
Welding progression Next AWS specification
Root treatment Next AWS specification
Preheat and interpass temperature To 340 (9) 50 (10) 340 (11) To 140 (38) 70 (90) 180 (8) To 240 (35) 150 (65)
Postheat temperature NA
Heat Input Min NA Max NA Chester Vermont
By AWS 43 Preheat BRF 0161 (25)
CBS No 369

WELDING PROCEDURE

(Metric)		Welding current		Travel speed	AWS D1.5 Joint detail
Pass no	Electrode size	Amperes	Volts		
AS REQ	<u>7018</u>				<u>1F</u>
	<u>1/8</u>	70-170	22-26		
	<u>3/32</u>	120-225	22-26		
	<u>3/16</u>	170-300	24-27		
	<u>8018</u>				<u>2F</u>
	<u>1/8</u>	90-160	22-26		
	<u>3/32</u>	120-225	22-26		
	<u>3/16</u>	180-290	24-27		
	<u>7028</u>				
	<u>3/32</u>	170-270	22-26		
	<u>3/16</u>	210-330	24-27		

This procedure may vary due to torch, torch sequence, fit-up, pass size, etc., within the limitation of variables given in applicable codes or contract specifications.

Procedure no 401 Contractor Casco Bay Steel
Revision no 1 Authorized By Paul E. Hoodale
Form III 2 Date 3/2/00

Casco Bay Steel Structures, Inc.
75 Spring Hill Road
Saco, Maine 04072
Phone: (207) 282-7360 Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

Material specification ASTM A36 Gr36-50-50w (250-345-345w)
Welding process Submerged Arc welding - Auto (SAW)
Manual or machine Machine
Position of welding Flat (10)
Filler metal specification AWS A5.17 AWS A5.23
Filler metal classification FRAX-BN11K-NIL Lincoln
Flux 960 Flux - Lincoln Weld - LA-75 Electrode
Shielding gas Ar Flow rate NA
Single or multiple pass both
Single or multiple etc. single
Welding current Direct
Polarity Reverse Electrode Positive
Welding progression
Root treatment Meets AWS specification - Back gouge side 2
Preheat and interpass temperature 70-110 (110-150)
Postheat temperature NA
Heat Input Min 41.65 Max 65.45 PQR # 1-59.5 Chester Vermont
By N.C. 43 Proj. 16 BR F016-1(23)
CBS AC 369

(Metric)

WELDING PROCEDURE

Pass no	Electrode size	Welding current		Travel speed
		Amperes	Volts	
	5/32	60.5	29.5	18.5
		54.5	27.4	15.3
		To	To	To
		66.5	31.56	20.7
	3/9	60.5	29.5	457.2
		54.5	27.4	388.6
		To	To	To
		66.5	31.56	525.8

side #1

side #2

T1

1/2" To 1" 1/4 min

(2.7 To 25.4) (6)

1" To 1 1/2" 3/8 min

(35.4 To 38.1) (9.5)

1 1/2" To 2" 1/2 min

(38.1 To 50) (12)

This procedure may vary due to fabrication sequence, fit up, pass size, etc., within the limits of variables given in applicable A.W.S. codes or contract specifications

Procedure no 202

Revision no _____

Form III 2

Contractor Casco Bay Steel

Authorized By Paul E. Woodcock

Date 3/2/00

APPROVED

DATE

BY

CW

Casco Bay Steel Structures, Inc.

75 Spring Hill Road
Saco, Maine 04072

Phone: (207) 282-7360

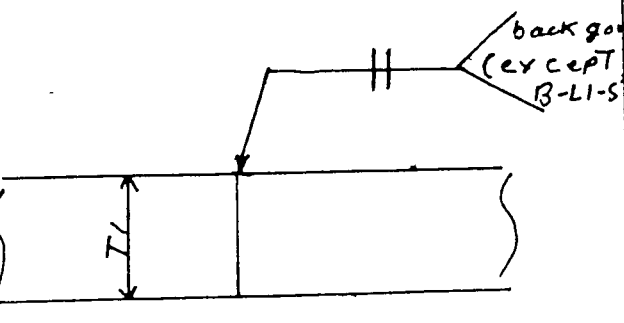
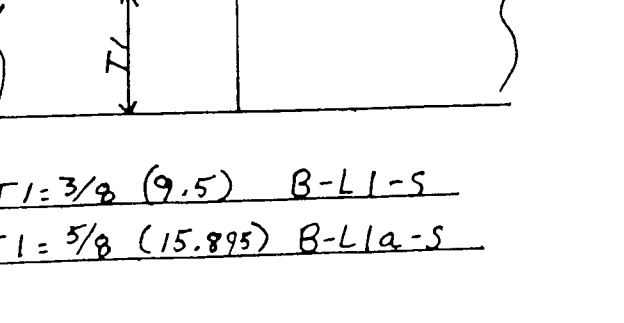
Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

Material specification ASTM A 209 Gr 36-50-50w (250-345-345w)
Welding process Submerged Arc welding - AUTO (SAW)
Manual or machine Machine
Position of welding Flat (1sa.2)
Filler metal specification AWS A5-17, AWS A5-23 LINCOLN
Filler metal classification E8A2-ENi1K-Ni1
Flux 960 Flux-Lincoln weld - LA-75 Electrode
Shielding gas Ar Flow rate NA
Single or multiple pass bath
Single or multiple arc single
Welding current Reverse Electrode Positive
Polarity Reverse
Welding progression Meet AWS Specification
Post treatment Meet AWS Specification
Preheat and interpass temperature 100 to 250 (190 to 300)
Postheat temperature NA
Heat Input Min 41.65 Max 65.45 PQR # 1-59.6

Chester Vermont
BRNO-43 Proj 16, BRFO16-105
CRSS No 369

WELDING PROCEDURE

Pass no	Electrode size	Welding current		Travel speed	Joint detail
		Amps	Volts		
5/32	605	29.5	29.5	18	
		54.5	27.4	15.3	
		66.5	31.56	20.7	
3/8	605	29.5	29.5	457.2	
		54.5	27.4	388.6	
		66.5	31.56	525.8	

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.S.M.E. codes or contract specifications

Procedure no 203

Revision no

Form III 2

Contractor Casco Bay Steel
Authorized By Paul E. Woodale
Date 3/2/00

Casco Bay Steel Structures, Inc.

75 Spring Hill Road
Saco Maine 04072

Phone: (207) 282-7360

Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

Material specification AWS D1.1-91 (or 36 (1983) or 36 (1993) or 36 (1994)
Welding process Shielded Metal Arc Welding
Manual or machine Manual
Position of welding Flat
Filler metal specification E 80T1-A1
Filler metal classification E 80T1-A1
Flux None
Shielding gas Argon Flow rate 35 CFH
Single or multiple pass Single
Single or multiple arc Single
Welding current 175-200
Polarity Reverse
Welding progression Backstep
Root treatment Grind
Preheat and interpass temperature 70-150
Postheat temperature None
Heat Input Min. 1.5 Max. 4.5
Welding PROCEDURE BRN 0.43 Pre. 16. BR Fe 16/12

Pass no	Electrode size	Welding current		Travel speed	Joint detail
		Amperes	Volts		
AS	1/8"	275	28.8	11.6	1F
		24.7	26.8	10.4	
		30.5	30.8	12.8	
		27.5	28.8	11.6	
R64	1/8"	24.7	26.8	10.4	2F
		30.5	30.8	12.8	
		27.5	28.8	11.6	
		24.7	26.8	10.4	

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.W.S. codes or contract specifications

Procedure no. 1
Revised on 1/1/91
Form 112
Contract Casco Bay Steel
Auth. AWI
Date 1/1/91

Casco Bay Steel Structures, Inc.

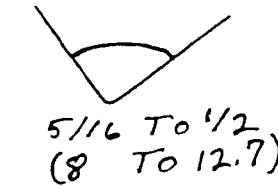
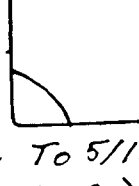
75 Spring Hill Road
Saco, Maine 04072

Phone: (207) 282-7360

Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

Material specification ASTM A36 Gr 36-50-50w (250-345-345w)
Welding process Submerged Arc Welding - Auto (SAW)
Manual or machine Machine Welding
Position of welding Flat (1F) Horizontal (2F) Vertical
Filler metal specification AWS A5-17, AWS A5-23
Filler metal classification E8018-Ni1 Lincoln
Flux 960 Flux - Lincoln Weld - LA-75 Electrode
Shielding gas NA Flow rate NA
Single or multiple pass both
Single or multiple arc single
Welding current Direct
Polarity Reverse Electrode Positive
Welding progression
Root treatment Meet AWS Specification
Preheat and interpass temperature To 3/4 (19)-50 (405) 3/4 (19) 1/2 (68) 70 (60) 1/2 (68) 70 (63) 150 (65)
Postheat temperature NA
Heat Input* Min 41-65 Max 65-45 PGR 1-59.5 Chester Vermont
Bravo 43 Proj 46 BRFO16-1(25)
CBS 16 369

WELDING PROCEDURE					Travel speed	Joint detail
Pass no	Electrode size	Amperes	Volts	Welding current		
	5/32	60.5	29.5	18.5	<u>1F</u>	 5/16 To 1/2 (8 To 12.7)
		54.5 To 66.5	27.4 To 31.5	15.3 To 20.7		
	3/9	60.5	29.5	45.2	<u>2F</u>	 1/4 To 5/16 (6 To 8)
		54.5 To 66.5	27.4 To 31.5	38.6 To 52.8		

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable AWS codes or contract specifications

Casco Bay Steel Structures, Inc.

75 Spring Hill Road
Saco, Maine 04072

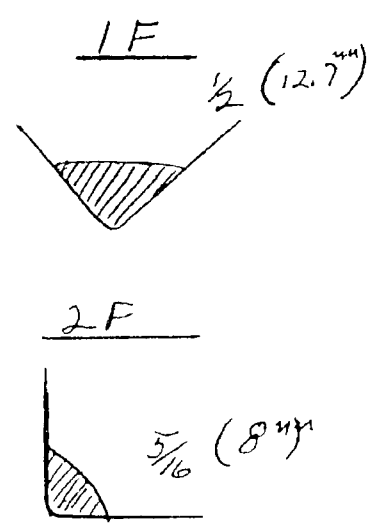
Phone: (207) 282-7360

Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

Material specification ASTM-A109/A109M = GR 250 (A36) - 345 (A50) - 345W (A50W)
Welding process Submerged Arc welding - Semi-Auto
Manual or machine machine
Position of welding Fillet weld - 1F - 2F
Filler metal specification AWS A5-17 - AWS A5-23
Filler metal classification EBA2-EX1K-V11 Lincoln
Flux 760 Lincoln Flux - Electrode LA-75 Lincoln
Shielding gas NA Flow rate NA
Single or multiple pass Single & multiple Electrode Ex. 1 1/4" - 254 mm
Single or multiple arc Single
Welding current Direct
Polarity DC E P
Welding progression _____
Root treatment wire brush - Grind - blast clean To AWS specification
Preheat and interpass temperature 1/4" (9) 50° (100°) 3/4" (9) To 1 1/2" (38) 70 (200°)
Postheat temperature NA 1 1/2" (38) to 2 1/2" (64) 150 (65) 2 1/2" (64) 225 (110)
Heat Input Min 50 KJ/in Max 79 KJ/in PQR 5 - 72 KJ/in, 2.8 KJ/mm CHASTEL Vermont

WELDING PROCEDURE

Pass no	Electrode size	Welding current		Travel speed	Joint detail
		Amps	Volts		
	3/32	505	33	14 IPM 356 mm/min	AWS D1.5 Joint detail Fillet 
		454	31	14 IPM	
		70	30	14 IPM	
		556	35	356 IPM	

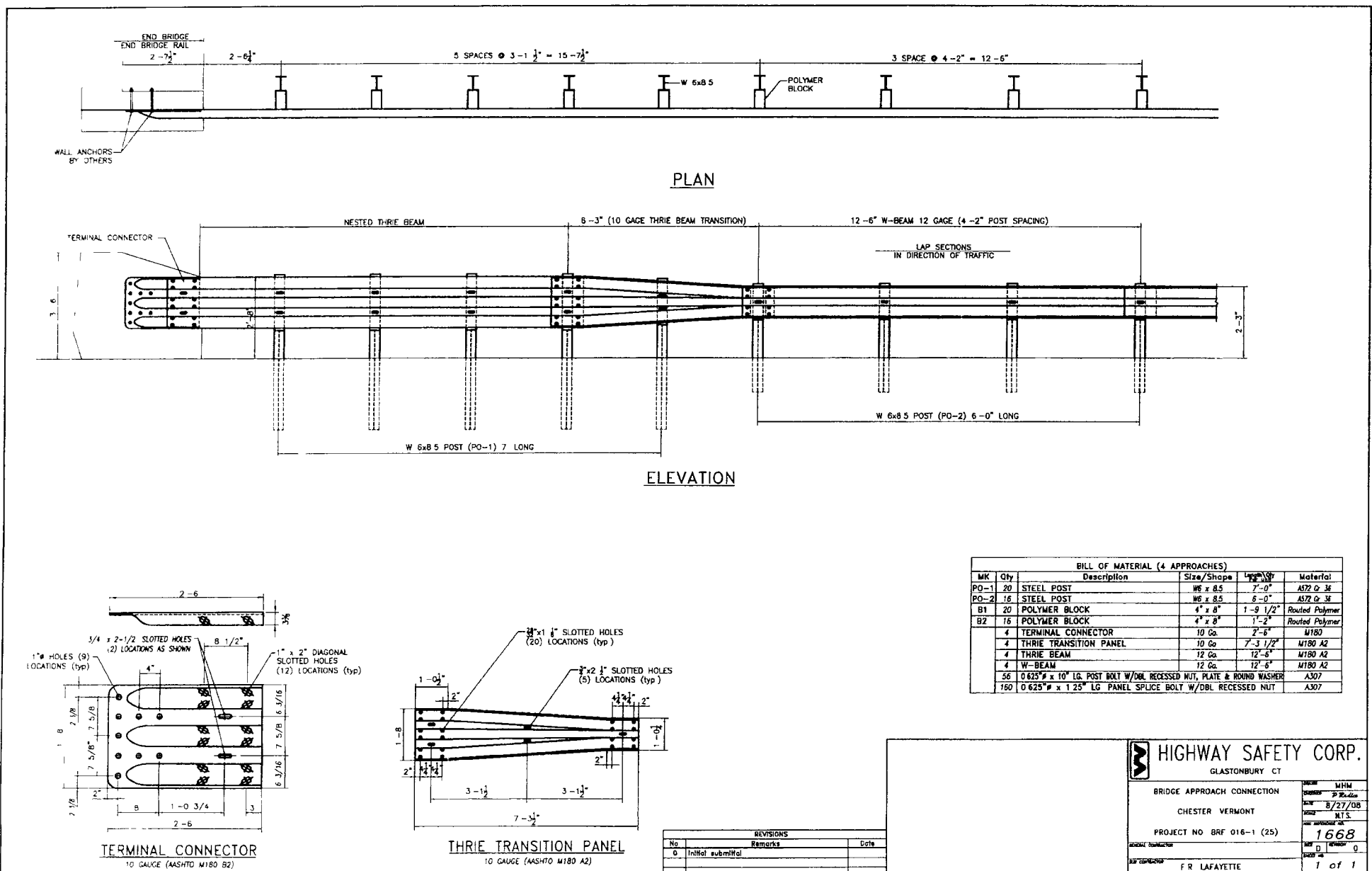
This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.W.S. codes or contract specifications

Procedure no 151 Contractor Casco Bay Steel
Revision no _____ Authorized By Paul E. Gagnier
Date 11-20-2002

Form III-2



CPW 10/1/08



Approved products listing

Date printed 4/16/2008
Last revision 4/15/2008

<u>Material Spec. No.</u>		728 01(d), Guard Rail Posts and Post Accessories - Alternate Blockouts		Certification required	None	Const. section nos.: 621
Product	Manufacturer	Distributor	Jurisdiction			Comments
Polymer Offset Blocks	Mondo Polymer Tech., Inc P.O. Box 250, State Rt 7 Reno, OH 45773-0250	Mondo Polymer Tech., Inc P.O. Box 250 Reno, OH 45773	Main	Research & Develop (802)828-2561		Recycled Polyethylene. Acceptable for use on steel post guard rail system installed on the Natural Highway System per FHWA letter of 03/27/2002
	Tel (888) 607-4790 FAX (740) 376-9960	Tel (888) 607-4790 FAX (740) 376-9960	Alt	N/A		

CPW 10/1/02

