

STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT BRIDGE PROJECT

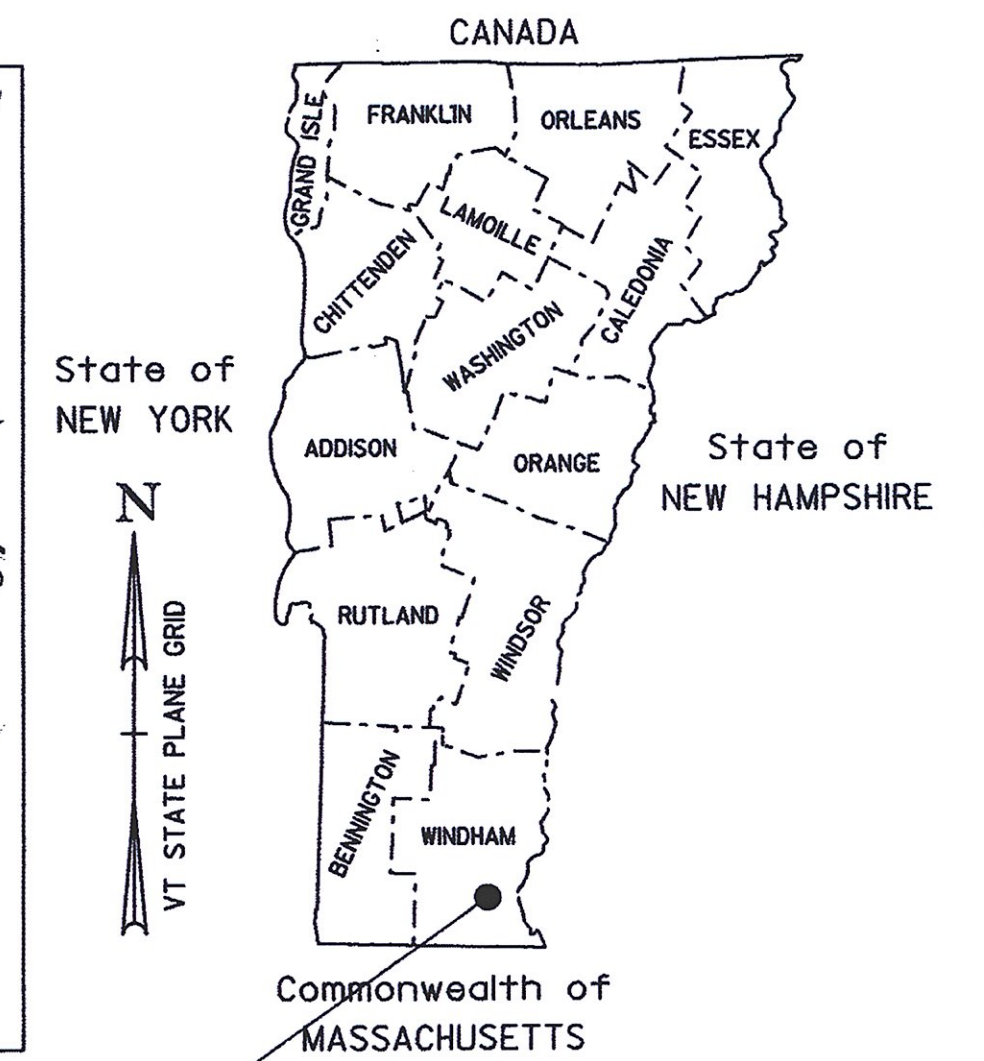
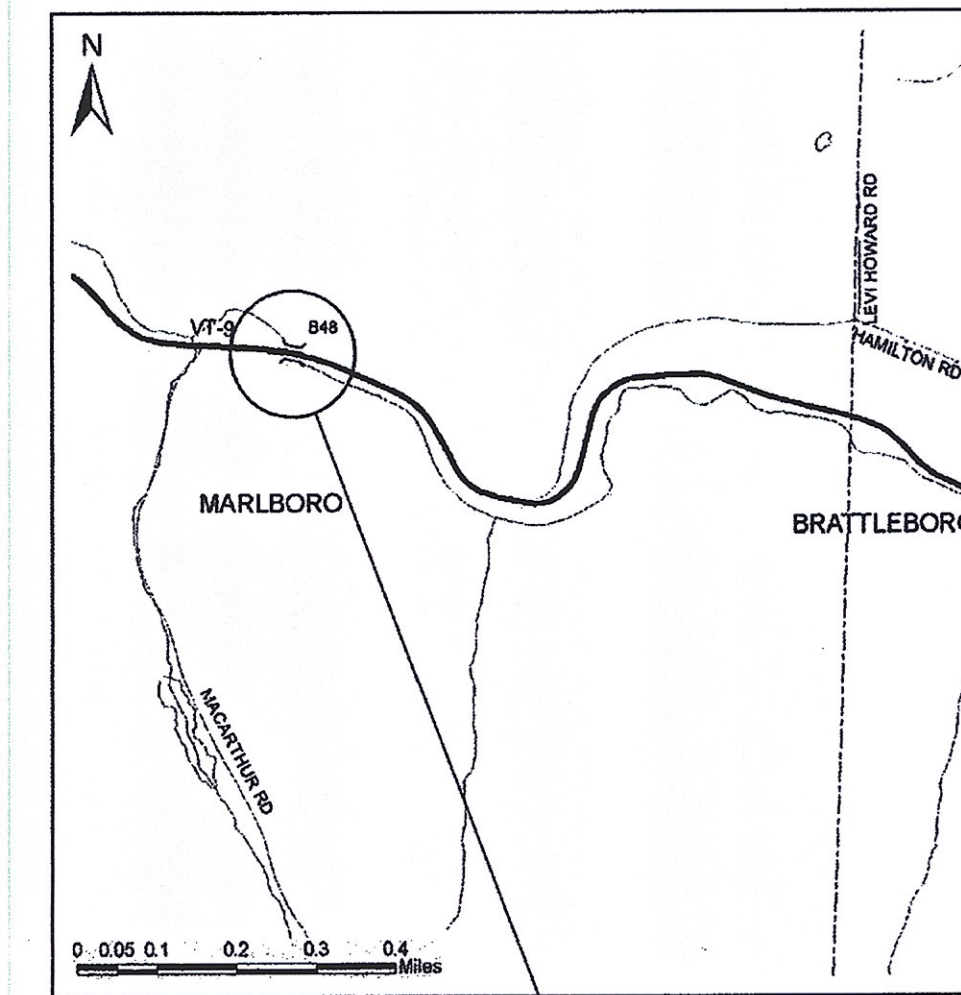
TOWN OF MARLBORO
COUNTY OF WINDHAM

ROUTE NO : VT 9, PRINCIPAL ARTERIAL-NHS BRIDGE NO : 48

PROJECT LOCATION: BEGINNING ON VT RT 9 APPROXIMATELY 0.870 MILES WESTERLY OF THE MARLBORO AND BRATTLEBORO TOWN LINE AND EXTENDING EASTERLY ALONG VT RT 9 FOR 200 FEET.

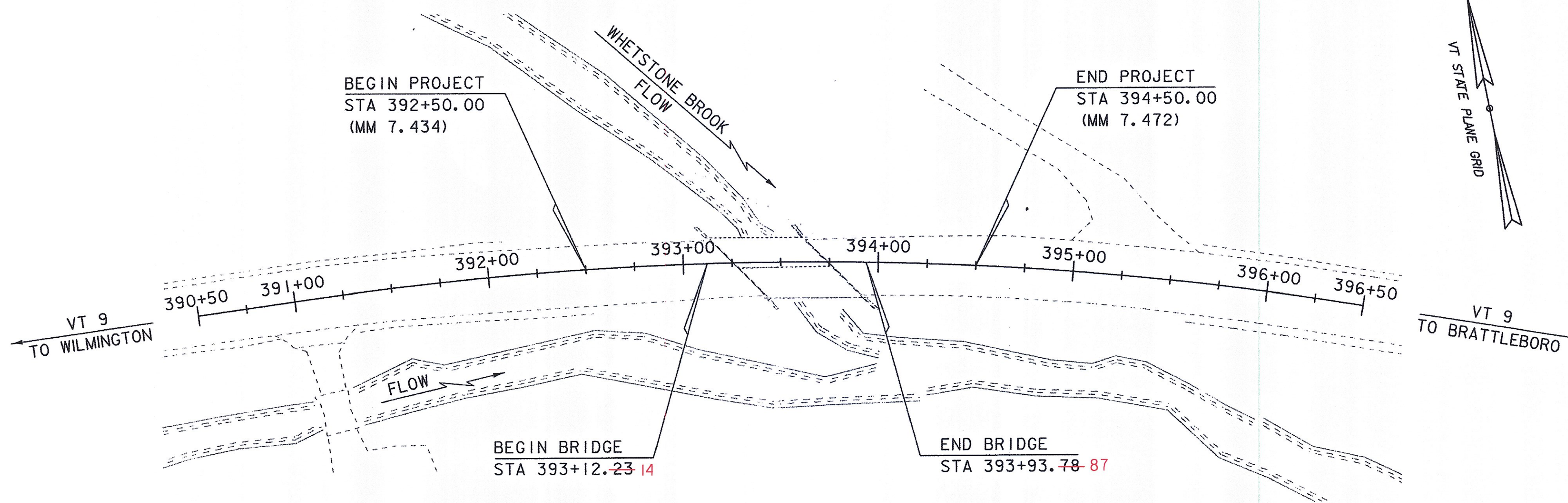
PROJECT DESCRIPTION: REPLACEMENT OF EXISTING BRIDGE WITH RELATED ROADWAY APPROACH AND CHANNEL WORK.

LENGTH OF STRUCTURE: 81.55 FEET
 LENGTH OF ROADWAY: 118.27 ~~118.45~~ FEET
 LENGTH OF PROJECT: 200.00 FEET



MARLBORO
BRF 010-1 (43)

RECORD PLANS	
CONTRACTOR:	RENAUD BROTHERS, INC. - VERNON, VT
RESIDENT ENGINEER:	RON LEMAIRE
CONSTRUCTION BEGAN:	APRIL 8, 2014
CONSTRUCTION COMPLETE:	NOVEMBER 6, 2014
RECORD PLANS BY:	RON LEMAIRE & JENNA HYDE
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.	
BY	RESIDENT ENGINEER
DATE	02/11/2016
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.	



QUALITY ASSURANCE PROGRAM: LEVEL 2

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 : 6/16/2011

DATUM
 VERTICAL NAVD 88
 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 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

DIRECTOR OF PROGRAM DEVELOPMENT
 APPROVED DATE 8-27-13
 PROJECT MANAGER : KRISTIN HIGGINS, P.E.
 PROJECT NAME : MARLBORO
 PROJECT NUMBER : BRF 010-1 (43)
 SHEET 1 OF 50 SHEETS

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FINAL HYDRAULIC REPORT

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STANDARDS LIST

C-10	CURBING	02-11-2008
E-100	CONSTRUCTION APPROACH SIGNS	01-02-2004
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	01-02-2004
E-101	CONSTRUCTION SIGN DETAILS	05-30-2003
E-102	CONSTRUCTION SIGN DETAILS	06-30-2003
E-102A	CONSTRUCTION SIGN DETAILS	05-01-2004
E-106	TRAFFIC CONTROL- MISCELLANEOUS DETAILS	03-01-2004
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	06-30-2003
E-107A	BREAKAWAY BARRICADE DETAILS	06-08-2009
E-108	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS	06-08-2009
E-108A	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS FOR PAVING	06-08-2009
E-110	MAJOR MAINTENANCE OPERATION LANE CLOSURE	08-08-1995
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
E-134	BRIDGE NUMBER PLAQUE	08-08-1995
E-138	MILE MARKER DETAILS - STATE & TOWN HIGHWAYS	05-30-2003
E-140	REGULATORY SIGN DETAILS	08-30-1996
E-164	SQUARE STEEL SIGN POST	06-08-2009
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	01-03-2000
G-4	PLANK RAIL, GUIDE POSTS, MARKER POSTS	06-01-1994
G-19	GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS	11-15-2002
S-360A	BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM	04-23-2012
S-360B	GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM	04-23-2012
S-363	THREE BEAM TO STANDARD STEEL BEAM TRANSITION SECTION	04-23-2012

- REVISED 4/8/2014
- REVISED 4/25/2014
- REVISED 4/29/2014
- REVISED 5/2/2014
- REVISED 5/6/2014
- REVISED 5/7/2014
- REVISED 5/8/2014

REPLACES SHEET 2 IN CONTRACT PLANS

STRUCTURES DETAILS

SD-501.00	CONCRETE DETAILS AND NOTES	04-07-2010
SD-502.00	CONCRETE DETAILS AND NOTES	05-04-2010
SD-516.10	BRIDGE JOINT ASPHALTIC PLUG	04-07-2010
SD-601.00	STRUCTURAL STEEL DETAILS & NOTES	05-04-2010
SD-602.00	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	04-02-2011

AS BUILT "REBAR" DETAIL		
LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	20 year ESAL for flexible pavement from 2014 to 2034 : 3994000
2014	5300	730	52	11.1	590	40 year ESAL for flexible pavement from 2014 to 2054 : 8745000
2034	5600	770	52	15.5	870	Design Speed : 50 mph

HYDROLOGIC DATA

Date: August 2013

DRAINAGE AREA : 3.3 sq. mi.
 CHARACTER OF TERRAIN : Mostly forested, rural, mountainous, ponds
 STREAM CHARACTERISTICS : Sinuous
 NATURE OF STREAMBED : Gravel and cobbles

PEAK FLOW DATA

Q 2.33 =	190 cfs	Q 50 =	590 cfs
Q 10 =	370 cfs	Q 100 =	680 cfs
Q 25 =	485 cfs	Q 500 =	880 cfs

DATE OF FLOOD OF RECORD : Unknown
 ESTIMATED DISCHARGE : Unknown
 WATER SURFACE ELEV. : Unknown
 NATURAL STREAM VELOCITY : @ Q50 = 9.9 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? Maybe
 IF YES, DESCRIBE : May be affected by confluence with downstream brook

WATERSHED STORAGE : 2% HEADWATERS: _____
 UNIFORM: X
 IMMEDIATELY ABOVE SITE: _____

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single span rolled beam bridge
 YEAR BUILT: 1940, reconstructed in 1969
 CLEAR SPAN(NORMAL TO STREAM): 36'
 VERTICAL CLEARANCE ABOVE STREAMBED: 7'
 WATERWAY OF FULL OPENING: 170 sq. ft.
 DISPOSITION OF STRUCTURE: Replace
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: Unknown

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1290.5'	VELOCITY =	6.2 fps
Q10 =	1291.5'	"	7.0 fps
Q25 =	1291.9'	"	7.8 fps
Q50 =	1292.2'	"	8.6 fps
Q100 =	1292.5'	"	9.3 fps

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: _____
 RELIEF ELEVATION: 1294.0'
 DISCHARGE OVER ROAD @Q100: N/A

UPSTREAM STRUCTURE

TOWN: Marlboro DISTANCE: 5000'
 HIGHWAY #: TH 20 STRUCTURE #: BR 11
 CLEAR SPAN: _____ CLEAR HEIGHT: _____
 YEAR BUILT: 1945 FULL WATERWAY: _____
 STRUCTURE TYPE: Timber

DOWNSTREAM STRUCTURE

TOWN: Marlboro DISTANCE: 80'
 HIGHWAY #: _____ STRUCTURE #: _____
 CLEAR SPAN: _____ CLEAR HEIGHT: _____
 YEAR BUILT: _____ FULL WATERWAY: _____
 STRUCTURE TYPE: Confluence with unnamed stream

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A STR.	4A STR.	5A SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY	2.96	1.43					
POSTING							
OPERATING	3.84	1.85	2.92	1.91	2.69	2.4	2.54
COMMENTS:							

PILE DRIVING AND TESTING REQUIREMENTS

- NOMINAL PILE DRIVING CAPACITY f_{nd} : ---
- PILE TEST RESISTANCE FACTOR ϕ : ---
- MAXIMUM PILE TIP ELEVATION ϕ : ---
- ALL PILES WILL BE SET IN PRE-EXCAVATED HOLES INTO BEDROCK. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span steel beam bridge

CLEAR SPAN(NORMAL TO STREAM): 60'
 VERTICAL CLEARANCE ABOVE STREAMBED: 6.1'
 WATERWAY OF FULL OPENING: 230 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1290.1'	VELOCITY =	5.8 fps
Q10 =	1291.0'	"	8.0 fps
Q25 =	1291.3'	"	9.4 fps
Q50 =	1291.6'	"	10.3 fps
Q100 =	1291.9'	"	10.8 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: _____
 RELIEF ELEVATION: 1294.0'
 DISCHARGE OVER ROAD @Q100: N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 1293.3'
 VERTICAL CLEARANCE: @Q50 = 1.7'

SCOUR: Contraction scour @Q100 = 1.0' and @Q500 = 1.5'

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW: 7 cfs DEPTH OR ELEVATION: _____
 ORDINARY LOW WATER: 3 cfs 0.5'
 ORDINARY HIGH WATER: 80 cfs 1.5'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: None
 CLEAR SPAN (NORMAL TO STREAM): _____
 VERTICAL CLEARANCE ABOVE STREAMBED: _____
 WATERWAY AREA OF FULL OPENING: _____

ADDITIONAL INFORMATION

Confluence with unnamed stream 80' downstream of bridge

TRAFFIC MAINTENANCE NOTES

- MAINTAIN ONE-WAY TRAFFIC ON THE EXISTING STRUCTURE.
- INSTALL AND MAINTAIN TRAFFIC SIGNALS.
- SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	d_p : 1.5 INCH
3. DESIGN SPAN	L : 80.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ : ---
5. PRESTRESSING STRAND	f_y : ---
6. PRESTRESSED CONCRETE STRENGTH	f'_c : ---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci} : ---
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f'_c : ---
9. CONCRETE, HIGH PERFORMANCE CLASS A	f'_c : 4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B	f'_c : 3.5 KSI
11. CONCRETE, CLASS C	f'_c : ---
12. REINFORCING STEEL	f_y : 60 KSI
13. STRUCTURAL STEEL AASHTO M270 (WEATHERING)	f_y : 50 KSI
14. SOIL UNIT WEIGHT	γ : 0.140 KCF
15. NOMINAL BEARING RESISTANCE OF SOIL	q_n : ---
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ : ---
17. NOMINAL BEARING RESISTANCE OF ROCK	q_n : 70.0 KSF
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ : 0.45
19. NOMINAL AXIAL PILE RESISTANCE	q_p : ---
20. PILE YIELD STRENGTH ASTM A572	f_y : 50 KSI
21. PILE SIZE	HP 10X57
22. EST. PILE LENGTH (AVERAGE)	L_p : 13 FT
23. PILE RESISTANCE FACTOR	ϕ : ---
24. LATERAL PILE DEFLECTION	Δ : ---
25. BASIC WIND SPEED	V_{3s} : ---
26. MINIMUM GROUND SNOW LOAD	p_g : ---
27. SEISMIC DATA	PGA : --- S_s : --- S_1 : ---

PROJECT NAME: MARLBORO

PROJECT NUMBER: BRF 010-1(43)

FILE NAME: s10b414pi.dgn PLOT DATE: 5/8/2014
 PROJECT LEADER: K. HIGGINS DRAWN BY: R. KLINFELTER
 DESIGNED BY: R. KLINFELTER CHECKED BY: J. SALVATORI
 PRELIMINARY INFORMATION SHEET SHEET 2 OF 50

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE VERMONT AGENCY OF TRANSPORTATION 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE 2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, AND THEIR LATEST REVISIONS.
2. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
3. NO ADJUSTMENTS TO THE BITUMINOUS WEARING SURFACE ON THE BRIDGE SHALL BE MADE TO ACCOUNT FOR THE DIFFERENCE BETWEEN DECK CAMBER AND THE THEORETICAL ROADWAY PROFILE. THE WEARING SURFACE SHALL BE SHIMMED TRANSVERSELY AS NECESSARY TO ACCOUNT FOR POTENTIAL DIFFERENTIAL CAMBER BETWEEN THE DECK CONSTRUCTION PHASES.
4. THERE ARE EXISTING AERIAL ELECTRIC AND TELEPHONE LINES THAT RUN PARALLEL TO VT 9 ON BOTH SIDES OF THE PROJECT THAT WILL BE MOVED TO THE NORTHERN SIDE. THE CONTRACTOR SHALL WORK AROUND AND PROTECT THESE LINES. SEE UTILITY SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

TRAFFIC CONTROL

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING THE TRAFFIC CONTROL PACKAGE IDENTIFYING THE CONSTRUCTION PROJECT BEFORE, DURING, AND AFTER THE EXISTING TRAFFIC PATTERN IS ALTERED. THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC CONTROL PLAN TO THE RESIDENT ENGINEER FOR ALL STAGES OF CONSTRUCTION, FOR APPROVAL PER SUBSECTION 105.03. ALL COSTS SHALL BE INCLUDED IN ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)". SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
6. ALL SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD. WHERE CONFLICTS EXIST, THE MUTCD SHALL GOVERN. FOR ADDITIONAL SIGNING INSTRUCTIONS SEE THE E SERIES OF THE STANDARDS.
7. ALL ITEMS REQUIRED TO IMPLEMENT THE CONTRACTOR'S TRAFFIC CONTROL PLAN WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED INCLUDED IN THE BID PRICE FOR ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
8. AT LEAST ONE PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) SHALL BE POSITIONED IN ADVANCE OF EACH APPROACH TO THE WORK ZONE ADVISING OF THE ACTIVITY AHEAD.

EARTHWORK

9. REMOVAL OF THE EXISTING STRUCTURE SHALL BE PAID FOR UNDER ITEM 529.15, "REMOVAL OF STRUCTURE". THIS WORK SHALL INCLUDE REMOVAL OF ANY PORTIONS OF THE EXISTING ABUTMENTS THAT FALL OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION.
10. THE "STONE FILL, TYPE III" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE GIRDERS ARE SET.

CONCRETE

11. TEST BARS SHALL BE PROVIDED IN ACCORDANCE WITH THE "VERMONT AGENCY OF TRANSPORTATION MATERIAL SAMPLING MANUAL" AVAILABLE ON THE AGENCY WEBSITE. A MINIMUM OF TWO TEST SECTIONS ARE REQUIRED FOR EACH SIZE, BRAND, AND GRADE OR TYPE OF REINFORCING. SEE THE MANUAL FOR ACCEPTABLE DIMENSIONS OF TEST SECTIONS.
12. TIE WIRES AND CHAIRS FOR REINFORCEMENT SHALL BE COMPOSED OF THE SAME MATERIAL AS ANY STEEL BEING CONTACTED OR SHALL BE PLASTIC.
13. ITEM 514.10, "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON THE BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE, WITH THE EXCEPTION OF THE BOTTOM OF THE DECK BETWEEN THE DRIP NOTCHES.
14. THE DECK, CURBS, AND ABUTMENTS & WINGWALLS ABOVE THE BRIDGE SEAT SHALL BE CONCRETE, HIGH PERFORMANCE CLASS A. THE APPROACH SLABS AND ABUTMENTS & WINGWALLS BELOW THE BRIDGE SEAT SHALL BE CONCRETE, HIGH PERFORMANCE CLASS B.
15. CONCRETE FOR THE DECK CLOSURE POUR SHALL MEET THE REQUIREMENTS OF ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".
16. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH X 1 INCH.
17. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".
18. FORMWORK FOR SURFACES THAT WILL BE IN CONTACT WITH DECK CLOSURE POUR SHALL BE TREATED WITH CONCRETE SURFACE RETARDER, OR SIMILAR, TO PROVIDE A ROUGHENED SURFACE; AND POWER WASHED WITH WATER PRIOR TO PLACEMENT OF CLOSURE POUR CONCRETE.
19. CONCRETE PORTIONS OF THE ABUTMENTS AND WINGWALLS ABOVE THE BRIDGE SEAT SHALL NOT BE PLACED UNTIL FINISH GRADES HAVE BEEN DETERMINED BY THE RESIDENT ENGINEER.
20. IN ACCORDANCE WITH SUBSECTION 506.23(A) 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.
21. THE DECK IS TO BE POURED IN ONE CONTINUOUS POUR WITH A MAXIMUM DURATION OF EIGHT HOURS FOR EACH PHASE OF CONSTRUCTION. IF CIRCUMSTANCES BEYOND THE CONTRACTOR'S CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A TRANSVERSE CONSTRUCTION JOINT SHALL BE USED BETWEEN ADJACENT POURS. A MINIMUM 96 HOUR DELAY BETWEEN ADJACENT POURS SHALL BE OBSERVED.
22. ALL REINFORCING STEEL IN THE DECK, CURBS, AND ABUTMENTS & WINGWALLS ABOVE THE BRIDGE SEAT SHALL MEET THE REQUIREMENTS FOR LEVEL III CORROSION RESISTANCE IN ACCORDANCE WITH SECTION 507. BARS DENOTED WITH A ".3" INDICATE LEVEL III CORROSION RESISTANCE.

23. REINFORCING STEEL IN THE APPROACH SLABS AND ABUTMENTS & WINGWALLS BELOW THE BRIDGE SEAT SHALL MEET THE REQUIREMENTS FOR LEVEL I CORROSION RESISTANCE IN ACCORDANCE WITH SECTION 507.

STRUCTURAL STEEL

24. STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01.
25. ANY HOLES IN THE WEBS OF FASCIA GIRDERS NOT OTHERWISE FILLED SHALL BE FILLED WITH BUTTON HEAD BOLTS. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19.
26. ANY CONNECTIONS NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE PROJECT MANAGER FOR APPROVAL.
27. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.
28. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SECTION 506 UNLESS OTHERWISE NOTED.
29. FLEMING BRACKETS OR SIMILAR FALSE WORK SHALL BE PLACED AT A MAXIMUM SPACING OF 4 FEET. THE BRACKETS SHALL BEAR NEAR THE BOTTOM FLANGE AND IN NO CASE SHALL THEY BEAR ABOVE THE BOTTOM QUARTER WEB.
30. AFTER THE GIRDERS HAVE BEEN ERECTED, ELEVATIONS SHALL BE TAKEN ALONG THE TOP OF THE GIRDERS AS DIRECTED BY THE RESIDENT ENGINEER, FOR USE IN DETERMINING THE FINISHED GRADE.
31. GIRDER WEBS AND CROSS FRAMES SHALL BE PLUMB IN FINAL POSITION.
32. ALL BOLTS SHALL BE TENSIONED BY THE DIRECT TENSION INDICATOR METHOD IN ACCORDANCE WITH SUBSECTION 506.19.

H-PILES

33. THE PILE LOCATIONS SHALL BE PRE-EXCAVATED WITH A MINIMUM PENETRATION OF 3 FEET INTO COMPETENT BEDROCK. THE MINIMUM REQUIRED PILE LENGTH IS 10 FEET. IF COMPETENT BEDROCK IS ENCOUNTERED SHALLOWER THAN 7 FEET BELOW THE BOTTOM OF THE PILE CAP, PRE-EXCAVATION TO A MINIMUM DEPTH OF 10 FEET BELOW THE PILE CAP IS REQUIRED.
34. ALL PRE-EXCAVATED HOLES SHALL BE 20 INCHES IN DIAMETER. THE ENTIRE PRE-EXCAVATED HOLE SHALL BE BACKFILLED WITH SAND AFTER THE PILE IS SET. SAND SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 703.03. REFER TO THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
35. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY.
36. THE TOPS OF THE PILES AFTER BACKFILLING WITH SAND SHALL NOT VARY FROM THE POSITION SHOWN ON THE PLANS BY MORE THAN 3 INCHES. THE PILE ORIENTATION SHALL NOT VARY BY MORE THAN 5 DEGREES. THE CONTRACTOR SHALL DEMONSTRATE TO THE SATISFACTION OF THE ENGINEER HOW THE TOLERANCES WILL BE MET. THESE MEASURES SHALL BE DEMONSTRATED IN A SUBMITTAL TO BE ACCEPTED BEFORE PILE PLACEMENT COMMENCES.
37. PRE-EXCAVATION IS REQUIRED AT ALL PILE LOCATIONS. PAYMENT SHALL BE PAID FOR UNDER ITEM 900.640, "SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENTS PILES, EARTH)" OR ITEM 900.640, "SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENTS PILES, ROCK)".

MISCELLANEOUS

38. ITEM 520.10, "MEMBRANE WATERPROOFING, SPRAY APPLIED" SHALL BE APPLIED TO THE BRIDGE DECK AS PER THE MANUFACTURER'S INSTRUCTIONS AND EXTEND ONTO THE APPROACH SLABS TWO FEET BEYOND THE BEGIN BRIDGE/END OF BRIDGE. IF TRAFFIC WILL BE DRIVING DIRECTLY ON THE MEMBRANE SURFACE, AN AGGREGATE WEARING SURFACE SHALL BE ADHERED TO THE TOP MEMBRANE COAT PER THE SPECIFICATIONS.
39. EXISTING CONDITIONS SHEET HAS BEEN INCLUDED FOR THE CONTRACTOR TO USE FOR SUBMITTALS.

△ - SHEET REVISED 5/7/2014.
REPLACES SHEET 3 IN CONTRACT PLANS.

PROJECT NAME:	MARLBORO
PROJECT NUMBER:	BRF 010-1(43)
FILE NAME:	sl0414gen.dgn
PLOT DATE:	07-MAY-2014
PROJECT LEADER:	K. HIGGINS
DRAWN BY:	K. FRIEDLAND
DESIGNED BY:	R. KLINEFELTER
CHECKED BY:	J. SALVATORI
GENERAL NOTES	SHEET 3 OF 50



QUANTITY SHEET 1

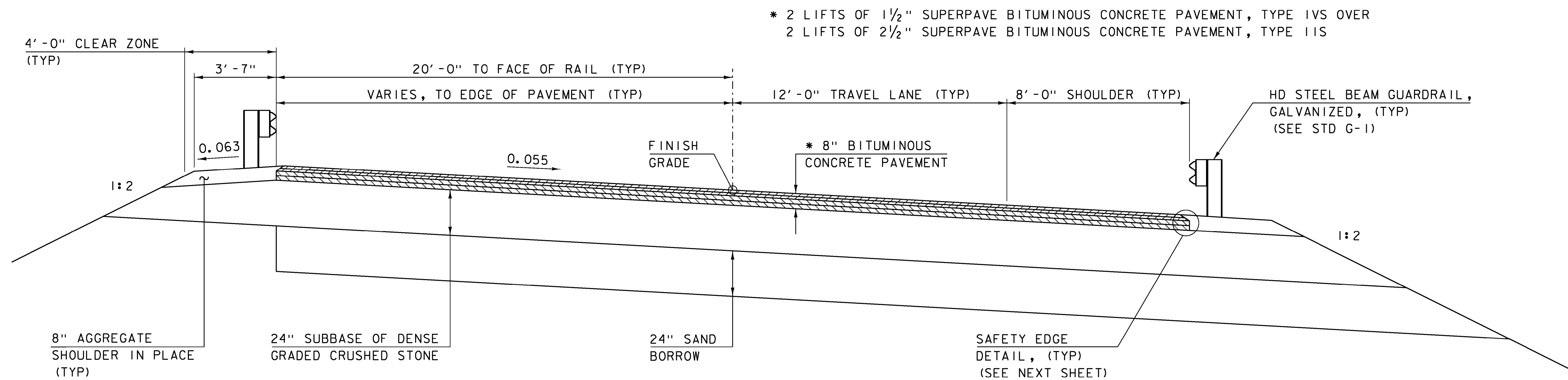
SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							1				1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				
							1300				1300		CY	COMMON EXCAVATION	203.15				
									1700		1700		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
							200				200		CY	SAND BORROW	203.31				
							1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
									550		550		CY	STRUCTURE EXCAVATION	204.25				
									325		325		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
							450				450		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
							850				850		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35				
							50				50		CY	AGGREGATE SHOULDERS, IN PLACE	402.10				
							8				8		CWT	EMULSIFIED ASPHALT	404.65				
							1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
											154		CY	CONCRETE, HIGH PERFORMANCE CLASS A (FPQ)	501.33				
											-1-0		LS	SHORING SUPERSTRUCTURE	502.10				
											209		CY	CONCRETE, HIGH PERFORMANCE CLASS B (FPQ)	501.34				
									156		156		LF	STEEL PILING, HP 10 X 57	505.12				
											101,000		LB	STRUCTURAL STEEL, PLATE GRINDER (FPQ)	506.55				
											500		LB	REINFORCING STEEL, LEVEL II	507.12				
											13,393		LB	REINFORCING STEEL, LEVEL I (FPQ)	507.11				
									-1500	52,093	4500	52,093	LB	REINFORCING STEEL, LEVEL III	507.13				
									15		15		GAL	WATER REPELLENT, SILANE	514.10				
									81		81		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
									371		371		SY	MEMBRANE WATERPROOFING, SPRAY APPLIED	520.10				
									81		81		LF	JOINT SEALER, HOT POURED	524.11				
									168		168		LF	BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM	525.33				
									1		1		LS	TWO-WAY TEMPORARY BRIDGE (ACT)	528.11				
									1		1		EACH	REMOVAL OF STRUCTURE (1,500 SF - EST)	529.15				
									24		24		EACH	BEARING DEVICE ASSEMBLY, PLAIN ELASTOMERIC PAD	531.16				
									12		12		EACH	BEARING DEVICE, STEEL REINFORCED ELASTOMERIC PAD	531.17				
									1		-1-0		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #1)	540.10				
									1		-1-0		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #2)	540.10				
									1		-1-0		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB #1)	540.10				
									1		-1-0		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB #2)	540.10				
								1			1		MGAL	DUST CONTROL WITH WATER	609.10				
									1150		1150		CY	STONE FILL, TYPE III	613.12				
														BEGIN OPTION AA					
							160				160		LF	PRECAST REINFORCED CONCRETE CURB, TYPE B	616.26				
							160				160		LF	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28				
														END OPTION AA					
							4				4		EACH	YIELDING MARKER POSTS	619.17				
							200				200		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED	621.21				
							4				4		EACH	MANUFACTURED TERMINAL SECTION, TANGENT	621.51				
							4				4		EACH	GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM	621.72				
							487.5				487.5		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
							200				200		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
							1000				1000		HR	FLAGGERS	630.15				

PROJECT NAME: MARLBORO
 PROJECT NUMBER: BRF 010-1 (43)
 FILE NAME: s10b414quantity.sheets.dgn PLOT DATE: 28-AUG-2013
 PROJECT LEADER: K. HIGGINS DRAWN BY: K. FRIEDLAND
 DESIGNED BY: R. KLINEFELTER CHECKED BY: J. SALVATORI
 QUANTITY SHEET 1 SHEET 4 OF 50

QUANTITY SHEET 2

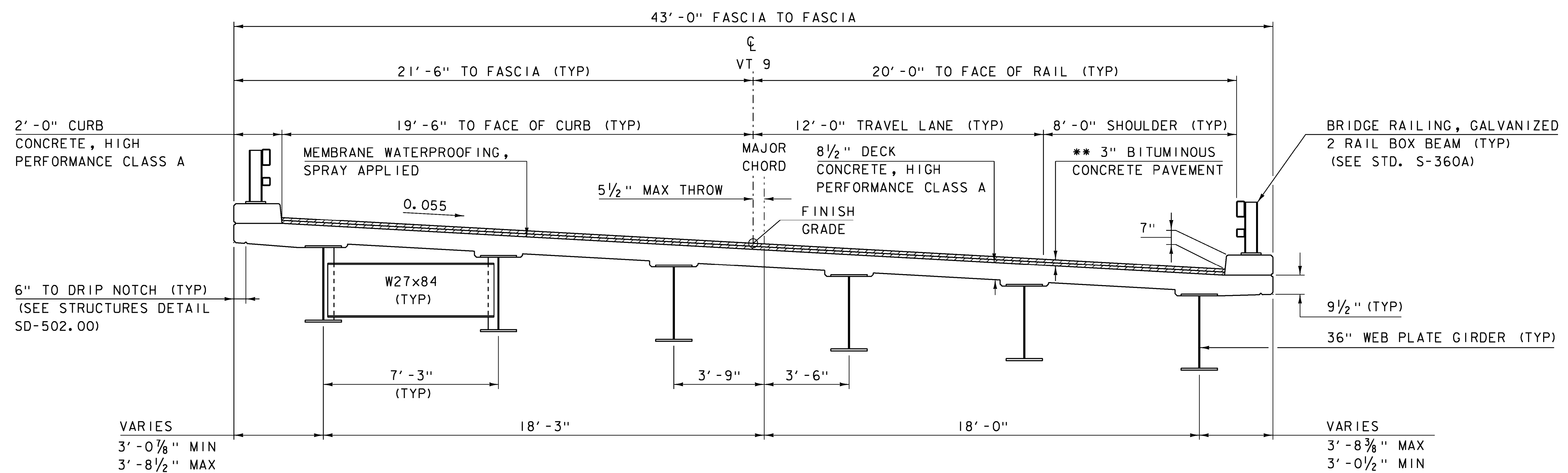
SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
										1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
										1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
										1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
										3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
							1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
							850				850		LF	4 INCH WHITE LINE	646.20				
							850				850		LF	4 INCH YELLOW LINE	646.21				
									1400		1400		SY	GEOTEXTILE UNDER STONE FILL	649.31				
								185			185		SY	GEOTEXTILE FOR SILT FENCE	649.51				
								225			225		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61				
								5			5		LB	SEED	651.15				
								5			5		LB	SEED, WINTER RYE	651.17				
								40			40		LB	FERTILIZER	651.18				
								1			1		TON	AGRICULTURAL LIMESTONE	651.20				
								1			1		TON	HAY MULCH	651.25				
								70			70		CY	TOPSOIL	651.35				
									775		775		SY	GRUBBING MATERIAL	651.40				
								1			1		LS	EPSC PLAN	652.10				
								40			40		HR	MONITORING EPSC PLAN	652.20				
								1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30				
								400			400		SY	TEMPORARY EROSION MATTING	653.20				
								90			90		CY	VEHICLE TRACKING PAD	653.35				
								600			600		LF	PROJECT DEMARCATION FENCE	653.55				
							0.66				0.66		SF	TRAFFIC SIGNS, TYPE A	675.20				
							89				89		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
							6				6		EACH	REMOVING SIGNS	675.50				
							4				4		EACH	ERECTING SALVAGED SIGNS	675.60				
									-27.31		-27.31		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPQ)	900.608				
									40		40		LF	SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENT PILES, EARTH)	900.640				
									110		110		LF	SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENT PILES, ROCK)	900.640				
											1		LS	SPECIAL PROVISION (CPM SCHEDULE)	900.645				
											1		LS	SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)	900.645				
											1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY)(N.A.B.I.)	900.650				
											1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT)(N.A.B.I.)	900.650				
									382		382.0		SY	SPECIAL PROVISION (PREFABRICATED BRIDGE UNIT SUPERSTRUCTURE)	900.675				
							470				470		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				
											1		LS	SUPPLEMENTAL AGREEMENT (900.645 SPECIAL PROVISIONS (TRAFFIC CONTROL, ALL-INCLUSIVE))	900.545				
											1		LU	SUPPLEMENTAL AGREEMENT (VAOT ENGINEERING)					

PROJECT NAME: MARLBORO
PROJECT NUMBER: BRF 010-1(43)
FILE NAME: s10b414quantity.sheets.dgn PLOT DATE: 19-SEP-2013
PROJECT LEADER: K. HIGGINS DRAWN BY: K. FRIEDLAND
DESIGNED BY: R. KLINEFELTER CHECKED BY: J. SALVATORI
QUANTITY SHEET 2 SHEET 5 OF 50



ROADWAY TYPICAL SECTION

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



** 2 LIFTS OF 1 1/2" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS

BRIDGE TYPICAL SECTION

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

△ - REVISED 4/8/2014.
REPLACES SHEET 6 IN CONTRACT PLANS.

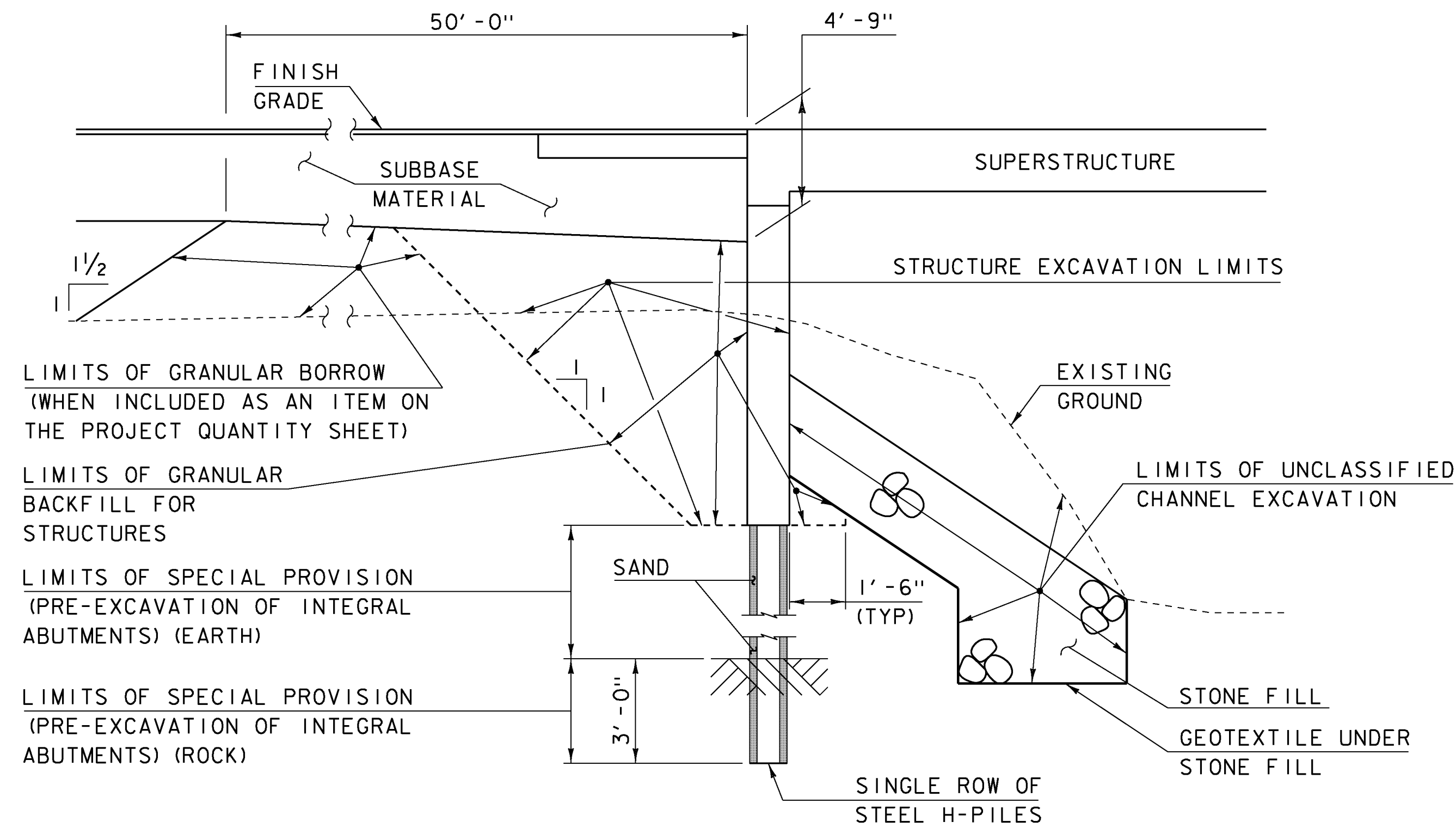
MATERIAL TOLERANCES
(IF USED ON PROJECT)

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

PROJECT NAME: MARLBORO
PROJECT NUMBER: BRF 010-1(43)

FILE NAME: sl0b414typ.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: R. KLINEFELTER
TYPICAL SECTIONS I

PLOT DATE: 08-APR-2014
DRAWN BY: K. FRIEDLAND
CHECKED BY: J. SALVATORI
SHEET 6 OF 50



LIMITS OF GRANULAR BORROW
(WHEN INCLUDED AS AN ITEM ON
THE PROJECT QUANTITY SHEET)

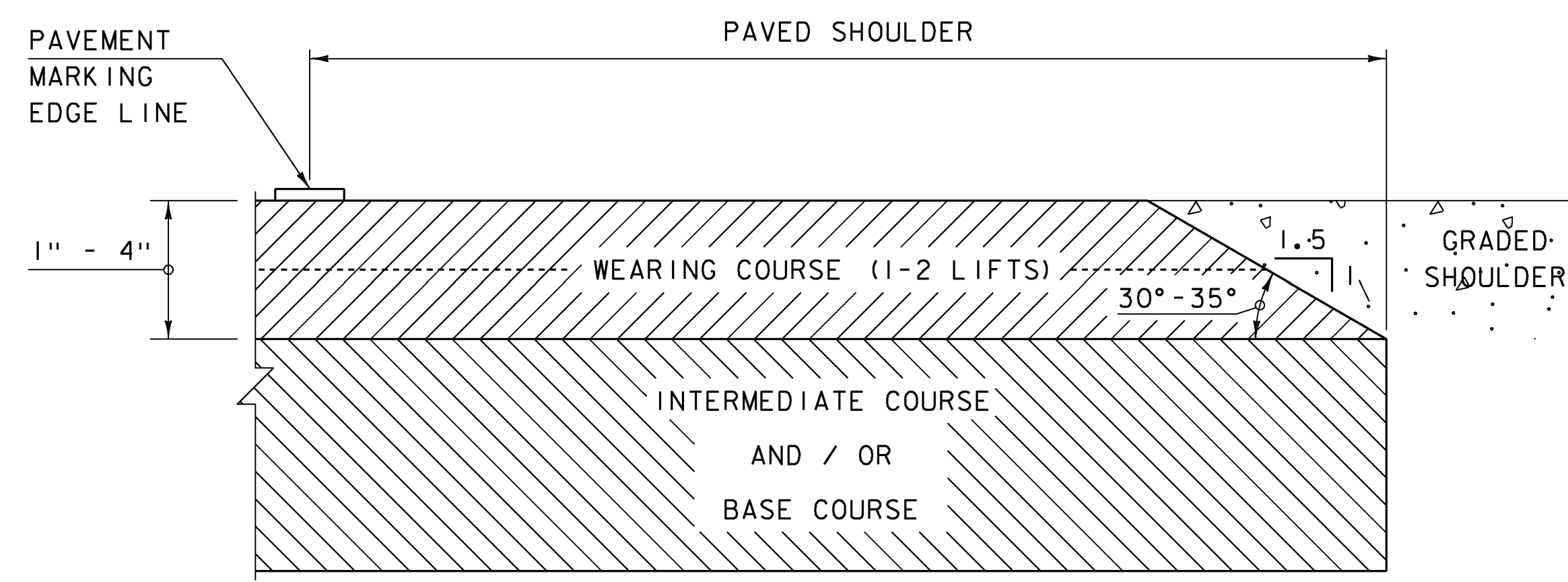
LIMITS OF GRANULAR
BACKFILL FOR
STRUCTURES

LIMITS OF SPECIAL PROVISION
(PRE-EXCAVATION OF INTEGRAL
ABUTMENTS) (EARTH)

LIMITS OF SPECIAL PROVISION
(PRE-EXCAVATION OF INTEGRAL
ABUTMENTS) (ROCK)

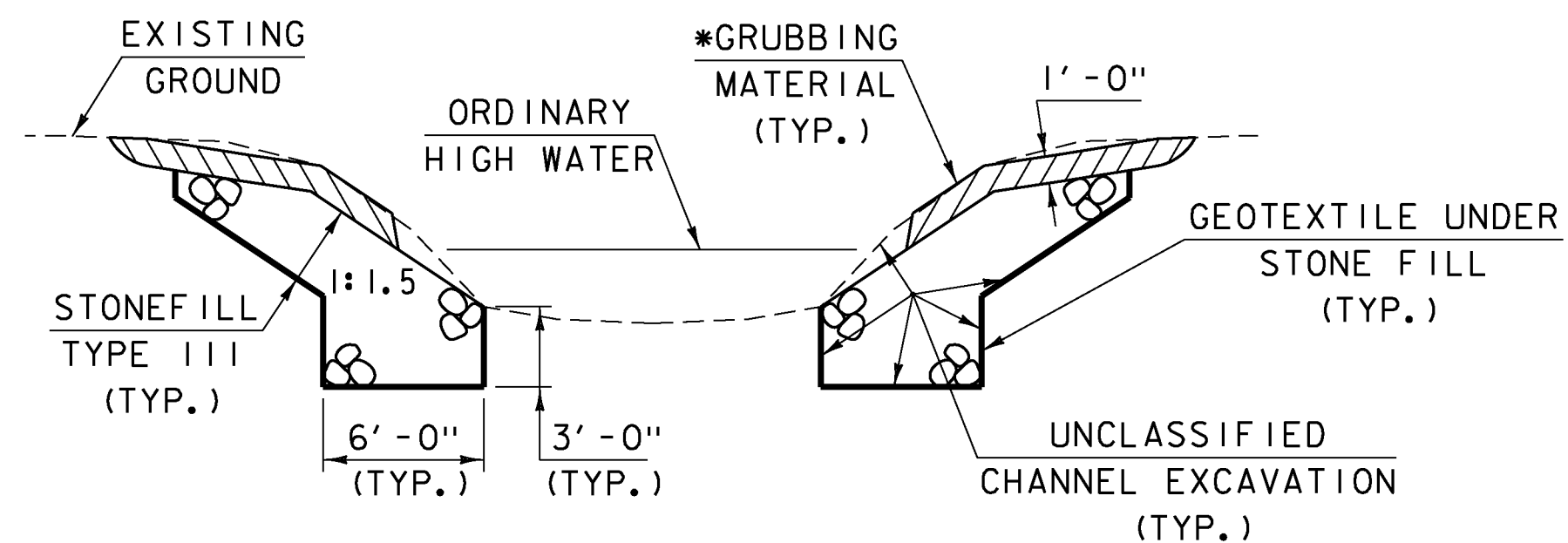
TYPICAL INTEGRAL ABUTMENT SECTION
NOT TO SCALE

ACTUAL LIMITS OF STRUCTURE 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". EXCAVATION BY THE CONTRACTOR OUTSIDE OF THESE LIMITS WILL BE AT THE EXPENSE OF THE CONTRACTOR.



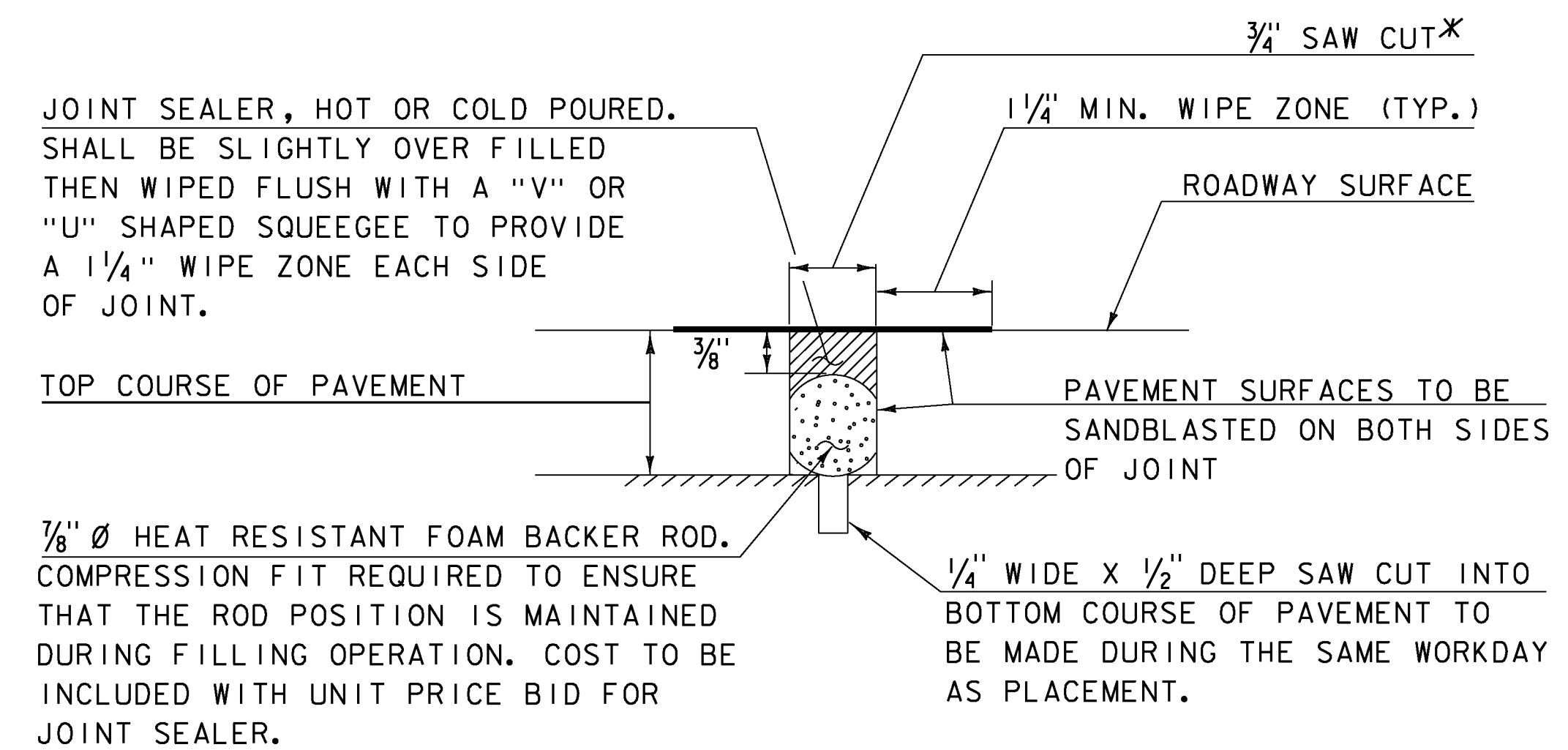
SAFETY EDGE DETAIL
NOT TO SCALE

NOTE: LEVELING COURSE MAY INCLUDE THE "SAFETY EDGE" AT THE CONTRACTOR'S CHOICE.



CHANNEL TYPICAL SECTION
NOT TO SCALE

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



SAWED PAVEMENT JOINT DETAIL
(NOT TO SCALE)

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

PROJECT NAME:	MARLBORO	PLOT DATE:	28-AUG-2013
PROJECT NUMBER:	BRF 010-1(43)	DRAWN BY:	K. FRIEDLAND
FILE NAME:	sl0b414typ.dgn	DESIGNED BY:	R. KLINEFELTER
PROJECT LEADER:	K. HIGGINS	CHECKED BY:	G. LAROCHE
TYPICAL SECTIONS 2		SHEET	7 OF 50

GPS CONTROL POINTS

HVCTRL #1

"D 14 RESET "
 N = 138636.34
 E = 1587856.07
 ELEV. = 1360.39

HVCTRL #8

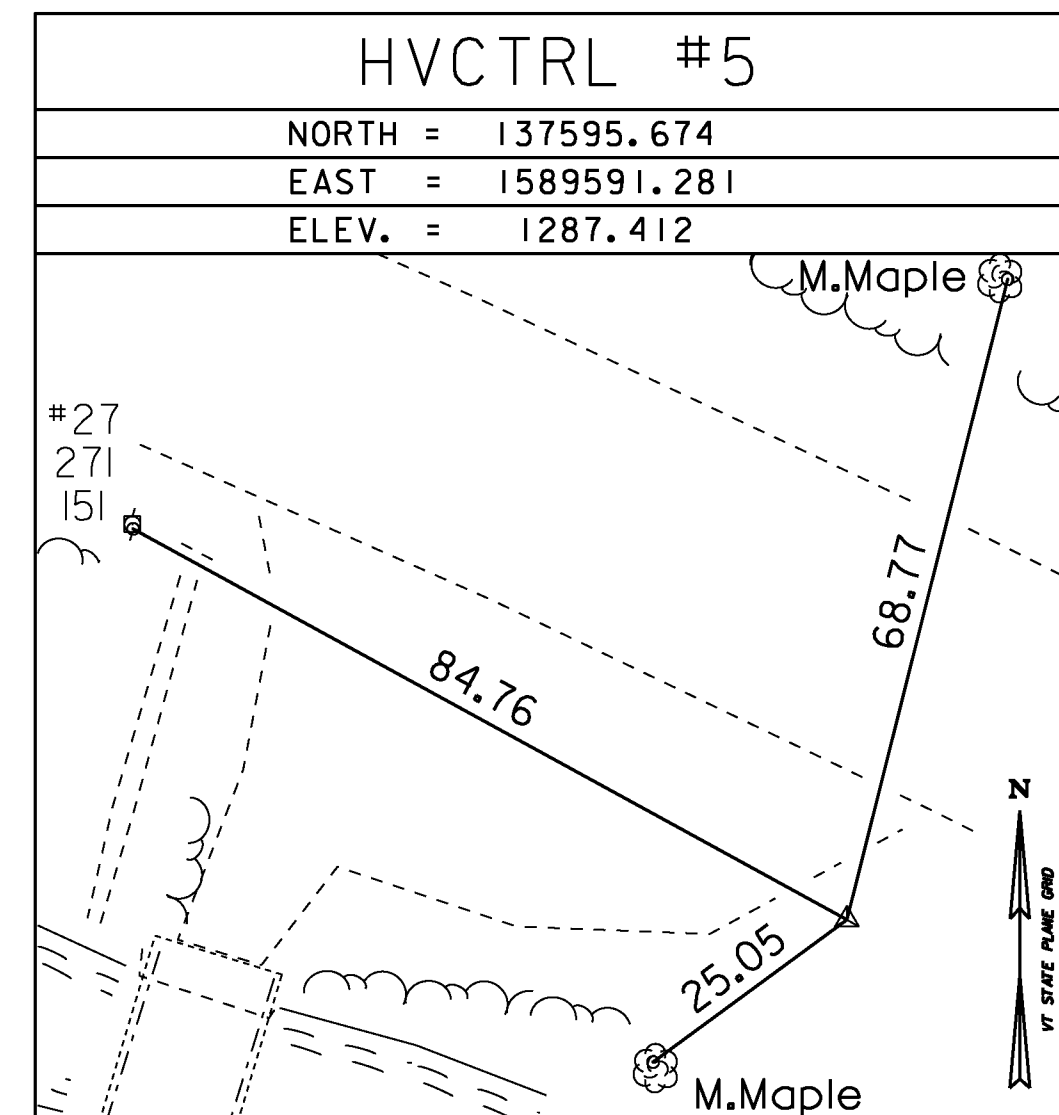
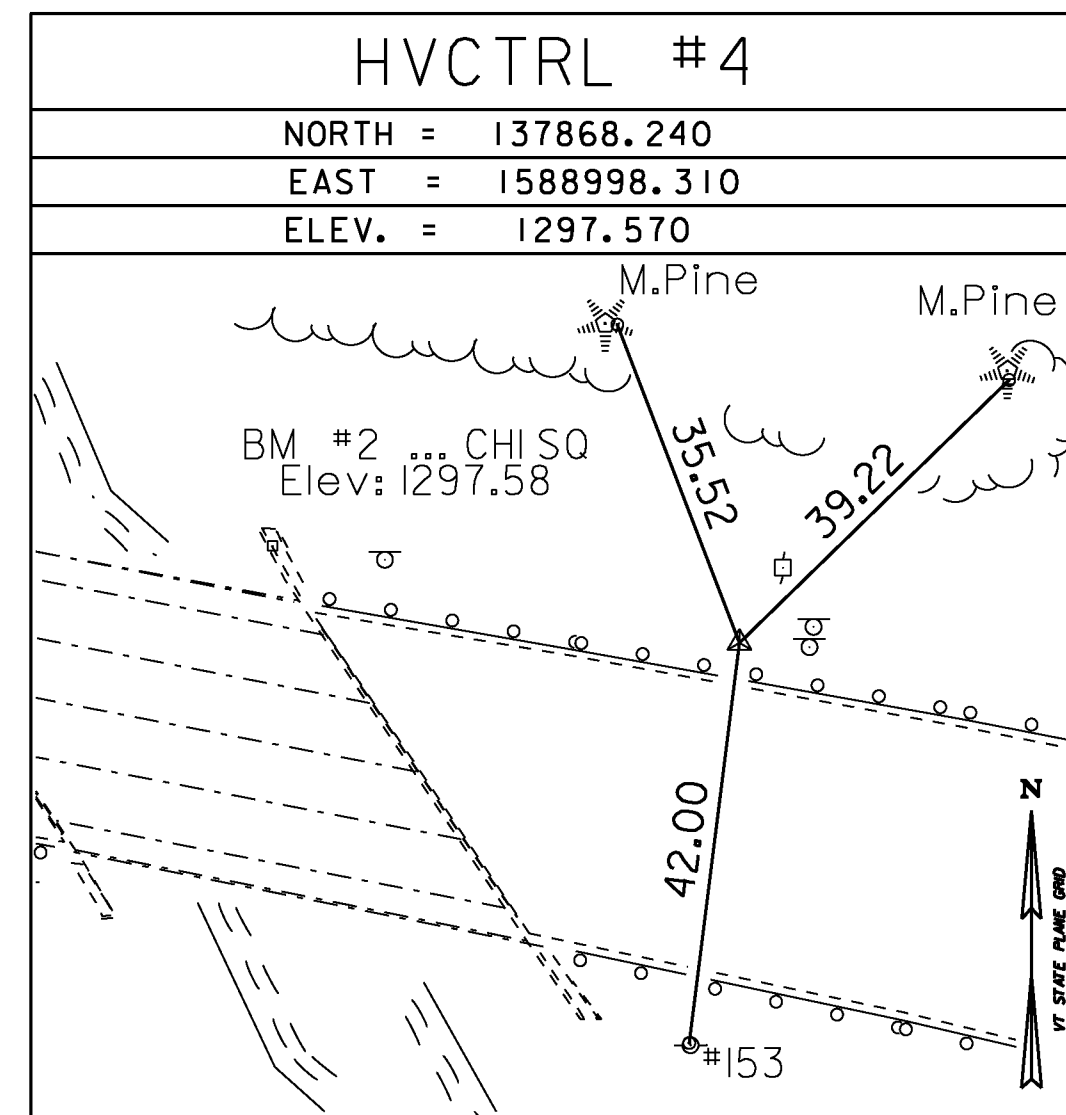
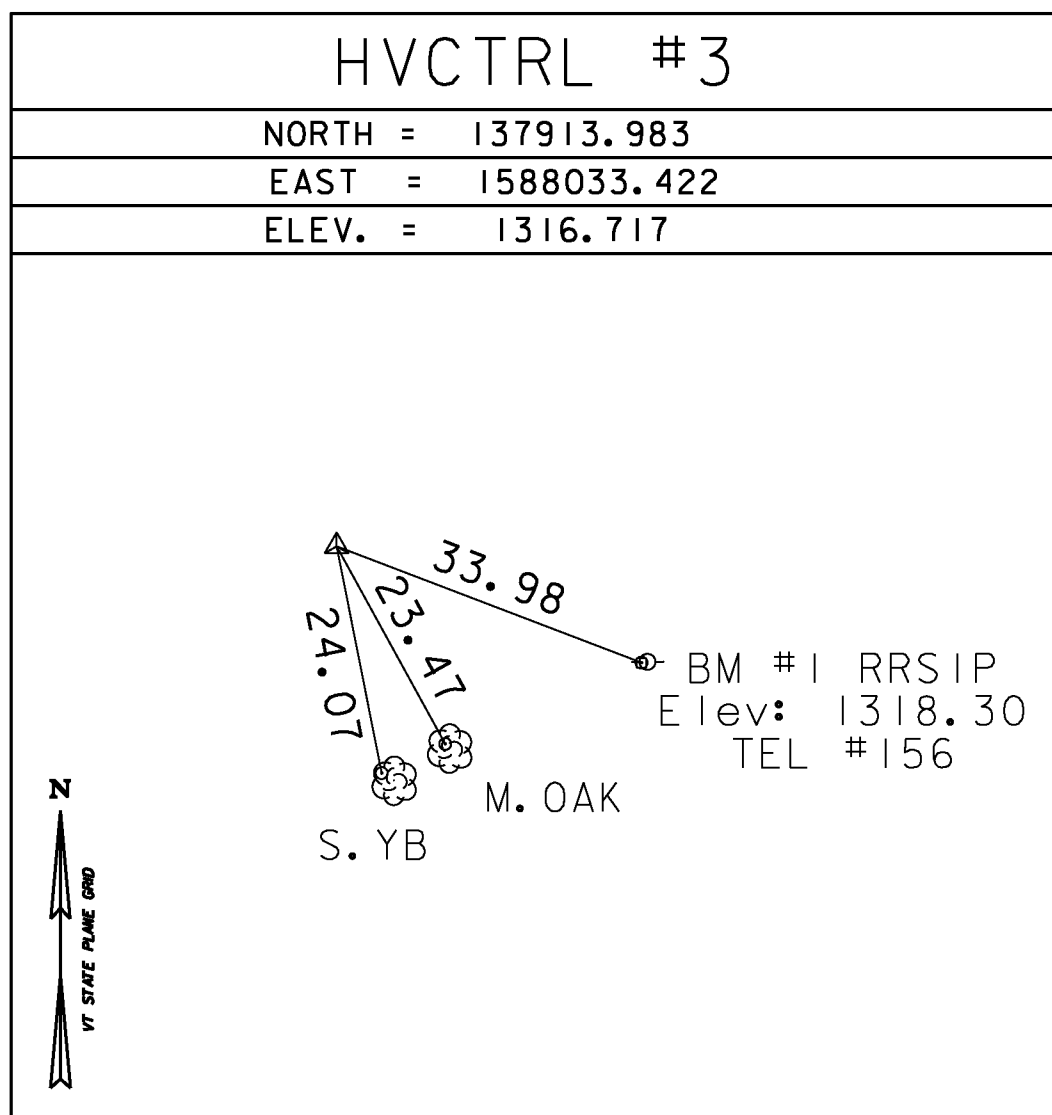
" TURNER "
 N = 137154.88
 E = 1590676.52
 ELEV. = 1271.37

TO REACH FROM THE EAST END OF THE VT ROUTE 9 BRIDGE OVER I-91 IN BRATTLEBORO GO WEST ALONG VT ROUTE 9 FOR 6.8 MI (10.9 KM) TO THE INTERSECTION OF ASPEN DRIVE OR WOLF ROAD RIGHT AND MCARTHUR ROAD LEFT. TURN RIGHT AND GO NORTH ALONG ASPEN DRIVE FOR 0.15 MI (0.24 KM) TO MR ESAUS 2 STORY WOOD FRAME HOUSE AND SITE OF MARK ON LEFT. THE MARK IS SET IN THE TOP OF A 4.8 M (15.7 FT) X 1.0 M (3.3 FT) ROCK OUTCROP WHICH PROJECTS 0.5 M (1.6 FT) ABOVE GROUND SURFACE IN A FLOWER BED. IT IS 26.8 M (87.9 FT) WEST OF AND ABOUT 2 M (6.6 FT) HIGHER THAN THE CENTERLINE OF ASPEN DRIVE, 7.1 M (23.3 FT) WEST OF THE CENTERLINE OF GRAVEL DRIVE TO THE HOUSE, 26.3 M (86.3 FT) SOUTH OF THE SOUTHEAST CORNER OF THE HOUSE, AND 4.4 M (14.4 FT) NORTHEAST OF THE NORTHEAST CORNER OF A GARAGE.

TO REACH FROM WEST END OF THE VT. ROUTE 9 BRIDEGS OVER I-91 GO WEST ALONG VT. ROUTE 9 FOR 6.4 MI (10.3 KM) TO THE INTERSECTION OF HAMILTON ROAD RIGHT. CONTINUE WEST TO FIND A SAFE TURN AROUND AND RETURN TO THE INTERSECTION OF HAMILTON ROAD LEFT. TURN LEFT AND GO NORTH ALONG HAMILTON ROAD FOR 0.05 MI (0.08 KM) TO THE MARK ON THE LEFT IN A LAWN. THE MARK IS SET IN THE TOP OF A 0.4 M (1.3 FT.) X 0.4 M (1.3 FT) ROCK OUTCROP WHICH IS FLUSH WITH THE GROUND SURFACE. IT IS 6.6 M (21.7 FT) WEST OF AND ABOUT 1.0 M (3.3 FT) HIGHER THAN THE CENTERLINE OF HAMILTON ROAD, 16.0 M (52.5 FT) SOUTHEAST OF A 35 CM MAPLE, 29.6 M (97.1 FT) NORTH OF THE END OF A STONEWALL, 39.0 M (128.0 FT) NORTHEAST OF THE NORTHEAST CORNER OF AN ATTACHED GARAGE, 11.0 M (36.1 FT) WEST OF A FIBERGLASS WITNESS POST.

• Description provided by Vermont Agency of Transportation Geodetic Unit

TRAVERSE TIES

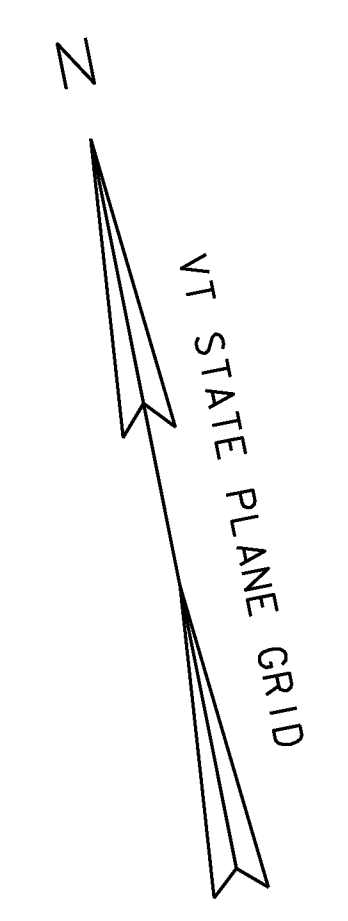
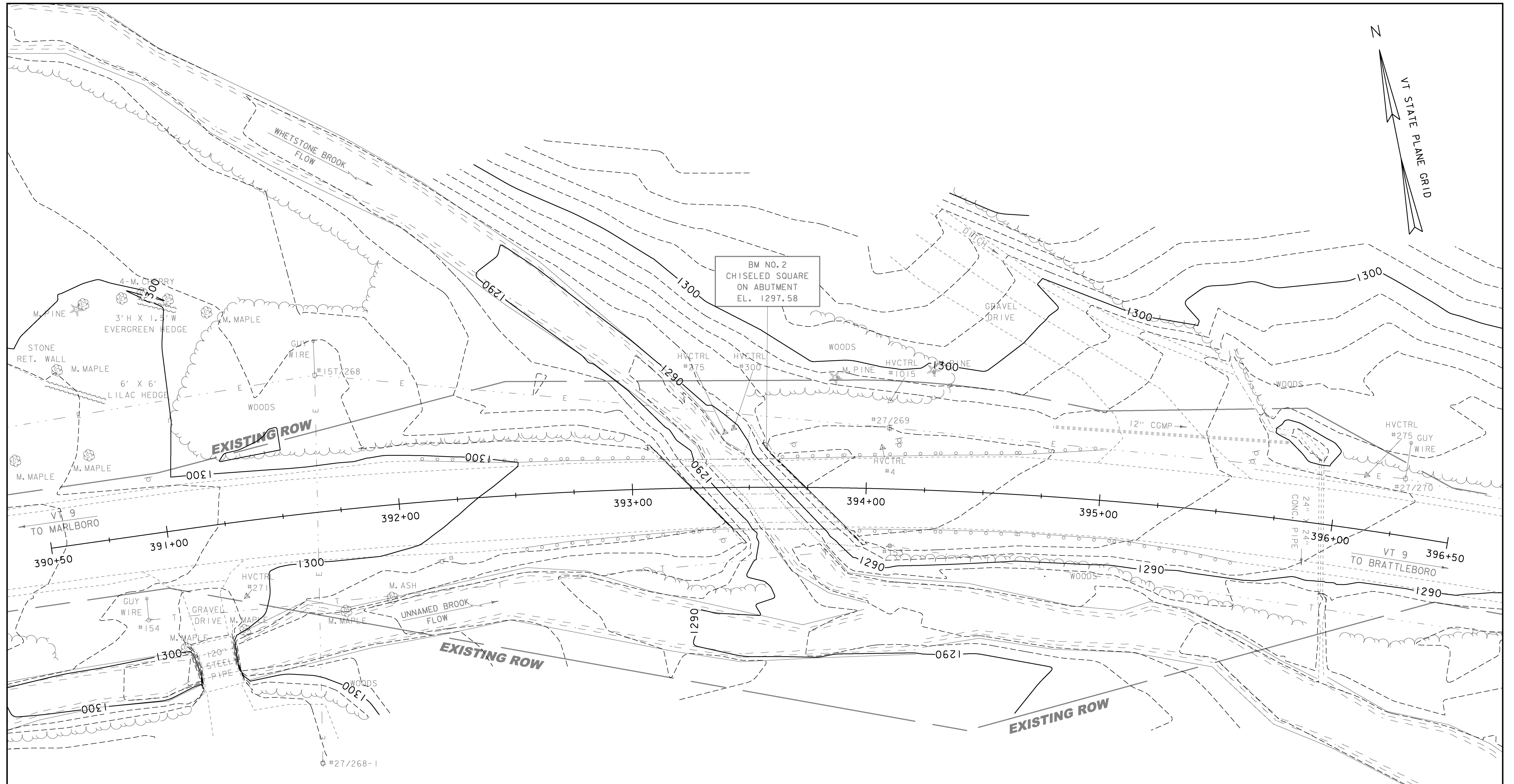


• Main Traverse Completed 10/27/98 by R. Gilman P.C. & T. Companion & G. Hitchcock [83b100]

ALIGNMENT TIES

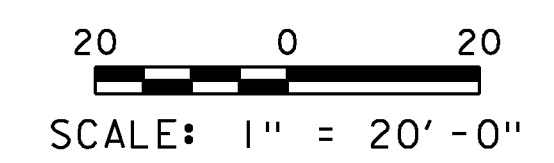
DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (96)
ADJUSTMENT	Compass

PROJECT NAME:	MARLBORO
PROJECT NUMBER:	BRF 010-1(43)
FILE NAME:	survey\10b4141.dgn
PROJECT LEADER:	K. HIGGINS
DESIGNED BY:	R. KLINEFELTER
TIE SHEET	
PLOT DATE:	28-AUG-2013
DRAWN BY:	R. BULLOCK
CHECKED BY:	G. LAROCHE
SHEET	9 OF 50



EXISTING BRIDGE DATA
 SINGLE SPAN ROLLED BEAM, CONCRETE DECK
 CONCRETE ABUTMENTS
 OVERALL LENGTH = 54'
 OVERALL WIDTH = 31.3'

EXISTING CONDITIONS



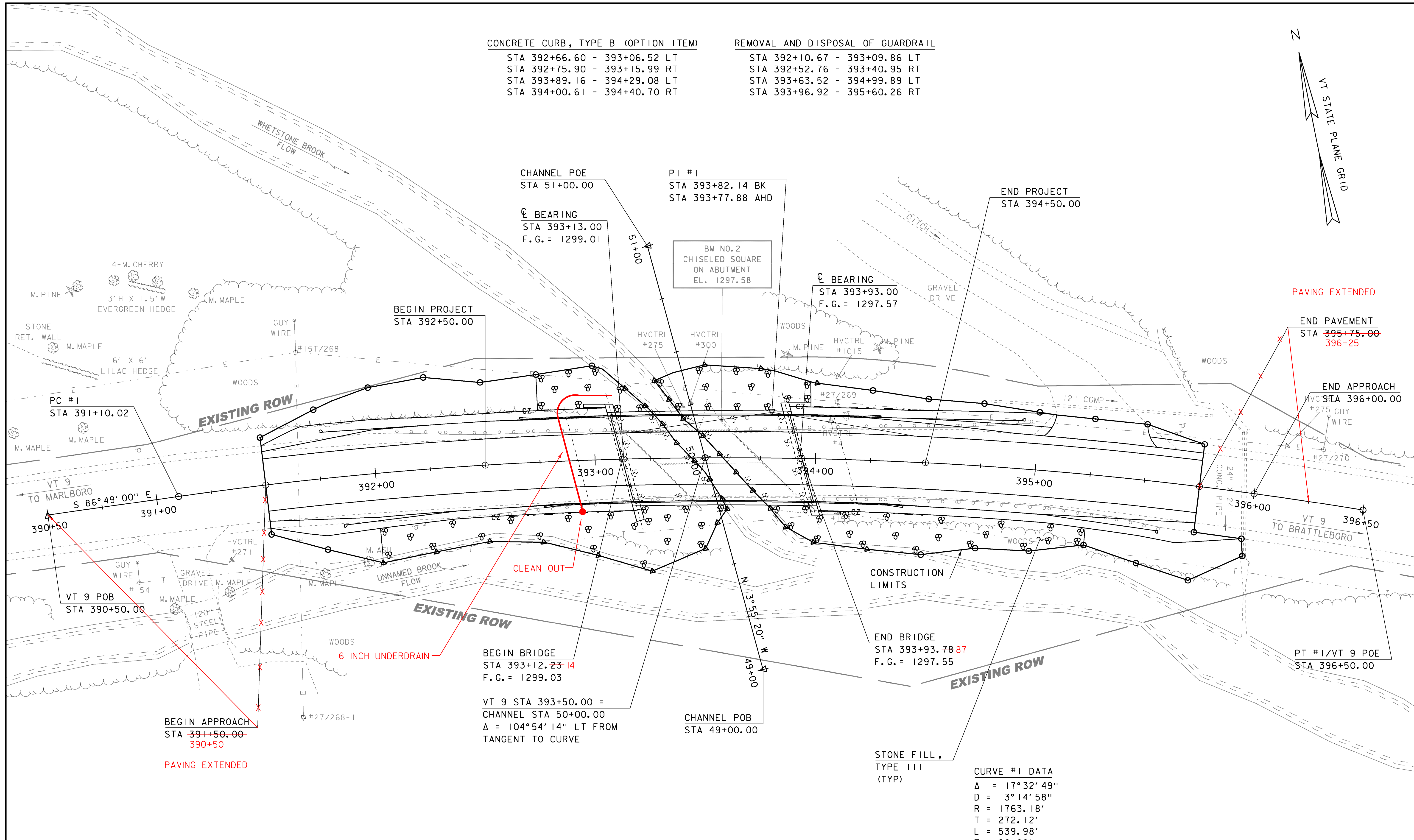
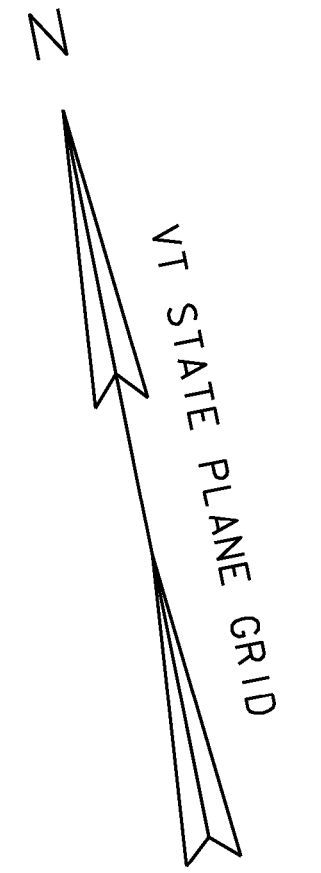
PROJECT NAME: MARLBORO	PROJECT NUMBER: BRF 010-1(43)
FILE NAME: s10b414existing_conditions.dgn	PLOT DATE: 28-AUG-2013
PROJECT LEADER: K. HIGGINS	DRAWN BY: K. FRIEDLAND
DESIGNED BY: R. KLINEFELTER	CHECKED BY: J. SALVATORI
EXISTING CONDITIONS	SHEET 10 OF 50

CONCRETE CURB, TYPE B (OPTION ITEM)

STA 392+66.60 - 393+06.52 LT
 STA 392+75.90 - 393+15.99 RT
 STA 393+89.16 - 394+29.08 LT
 STA 394+00.61 - 394+40.70 RT

REMOVAL AND DISPOSAL OF GUARDRAIL

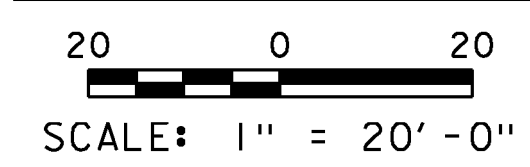
STA 392+10.67 - 393+09.86 LT
 STA 392+52.76 - 393+40.95 RT
 STA 393+63.52 - 394+99.89 LT
 STA 393+96.92 - 395+60.26 RT



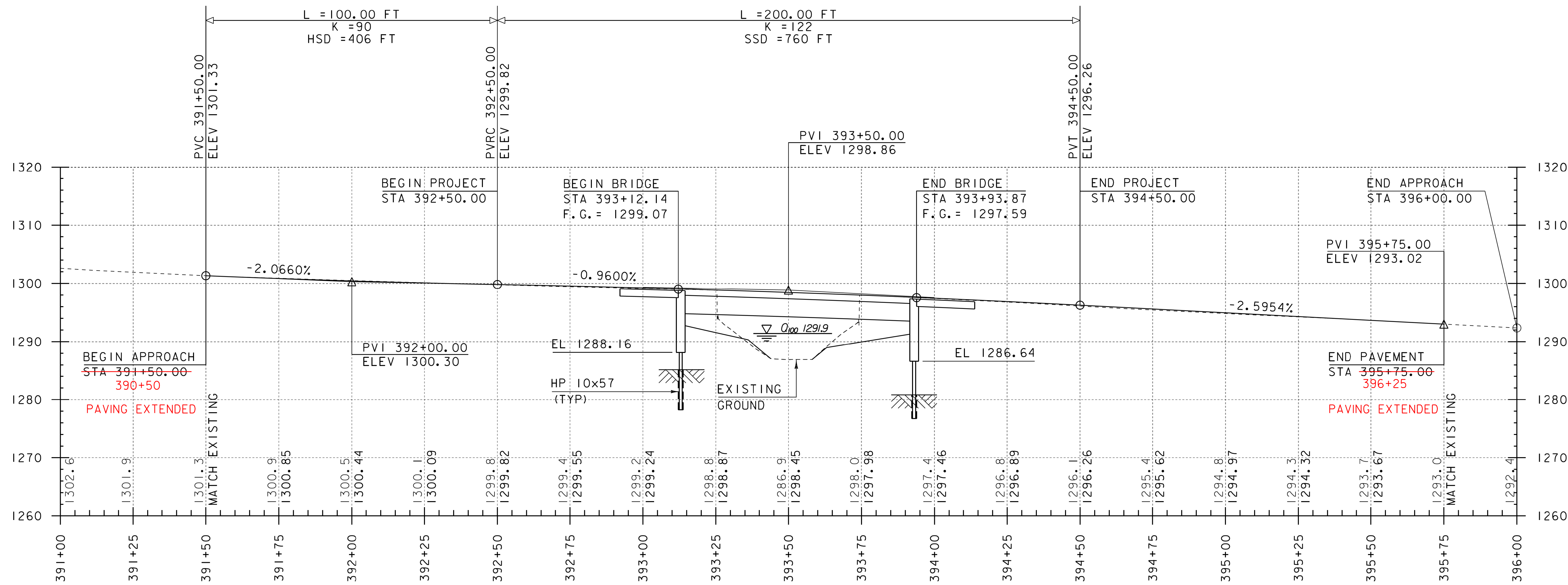
CURVE #1 DATA

Δ	= 17° 32' 49"
D	= 3° 14' 58"
R	= 1763.18'
T	= 272.12'
L	= 539.98'
E	= 20.88'

LAYOUT SHEET



PROJECT NAME: MARLBORO	
PROJECT NUMBER: BRF 010-1(43)	
FILE NAME: sl0b414bdr.dgn	PLOT DATE: 28-AUG-2013
PROJECT LEADER: K. HIGGINS	DRAWN BY: K. FRIEDLAND
DESIGNED BY: R. KLINEFELTER	CHECKED BY: G. LAROCHE
LAYOUT SHEET	SHEET 11 OF 50



NOTE:

ELEVATIONS SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG PROPOSED CENTERLINE.

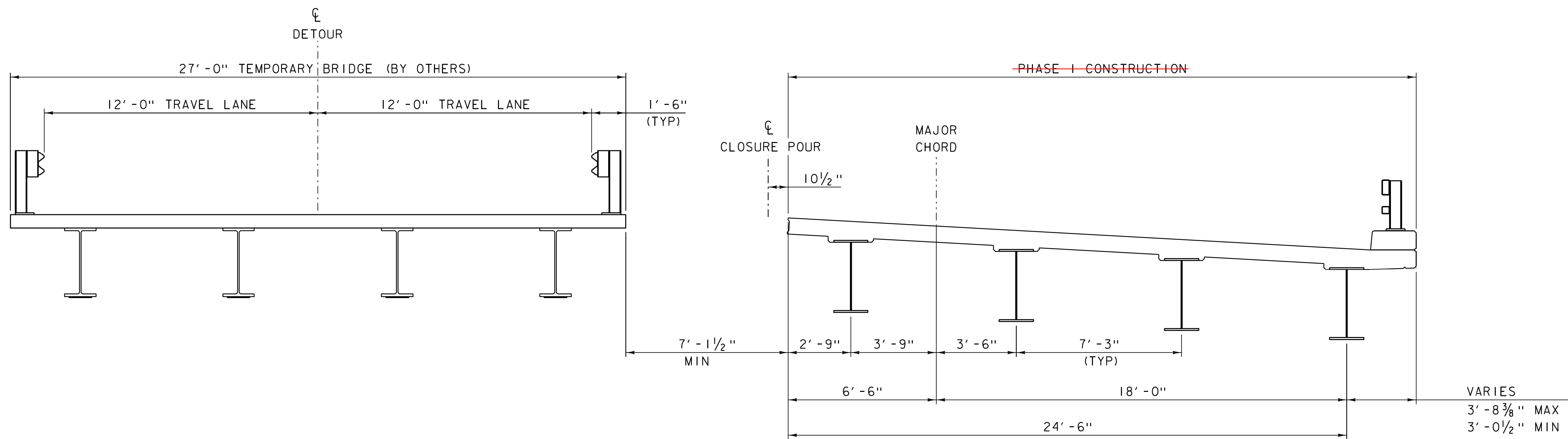
ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADES ALONG PROPOSED CENTERLINE.

MAINLINE PROFILE

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

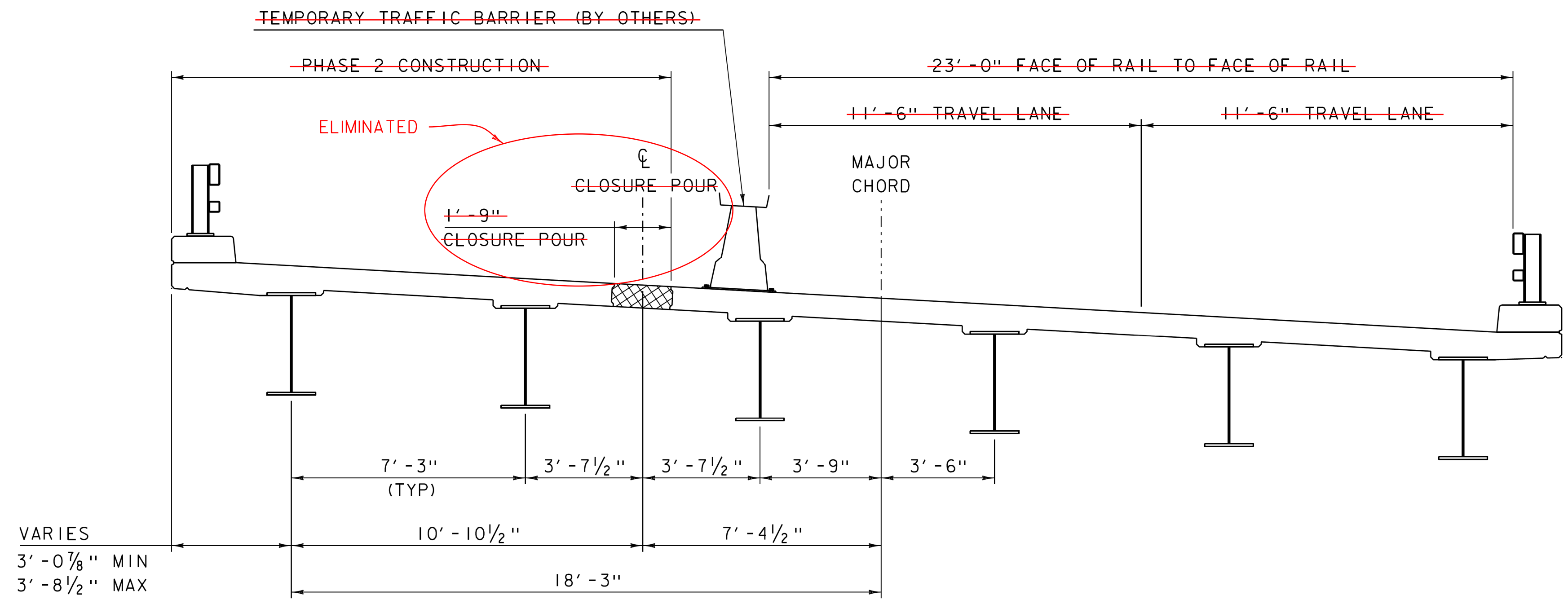
△ - SHEET REVISED 8/12/2014.
 REPLACES SHEET 12 IN CONTRACT PLANS.

PROJECT NAME:	MARLBORO
PROJECT NUMBER:	BRF 010-1(43)
FILE NAME:	s10b414pro.dgn
PROJECT LEADER:	K. HIGGINS
DESIGNED BY:	R. KLINEFELTER
MAINLINE PROFILE	
PLOT DATE:	12-AUG-2014
DRAWN BY:	R. KLINEFELTER
CHECKED BY:	J. SALVATORI
SHEET	12 OF 50



PHASE 1
SCALE: 3/8" = 1'-0"

VARIES
3'-8 3/8" MAX
3'-0 1/2" MIN



PHASE 2
SCALE: 3/8" = 1'-0"

CONTRACTOR WAS ABLE TO PLACE GIRDERS AND DECK WITHOUT PHASING. TRAFFIC WAS KEPT ON TEMPORARY BRIDGE THROUGHOUT. DECK WAS PLACED FULL WIDTH.

NOTE:

CENTERLINE RUMBLE STRIPS ARE CURRENTLY IN PLACE ON THIS PORTION OF VERMONT ROUTE 9. IF FINAL PHASING PLAN REQUIRES MASKING OF ANY EXISTING CENTERLINE PAVEMENT MARKINGS, THE RUMBLE STRIPS WILL HAVE TO BE FILLED. IF THIS OCCURS, THE RUMBLE STRIP SHALL BE RESTORED AT THE END OF CONSTRUCTION. PAYMENT WILL BE INCIDENTAL TO CONTRACT ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).

AS APPROVED, RUMBLE STRIPS WERE NOT RESTORED.

△ -SHEET REVISED 4/8/2014.
REPLACES SHEET 13 IN CONTRACT PLANS.

PROJECT NAME: MARLBORO	
PROJECT NUMBER: BRF 010-1(43)	
FILE NAME: s10b414phasewrk.dgn	PLOT DATE: 08-APR-2014
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. KLINEFELTER
DESIGNED BY: R. KLINEFELTER	CHECKED BY: J. SALVATORI
PHASE CONSTRUCTION DETAILS 1	SHEET 13 OF 50



THIS SHEET INTENTIONALLY LEFT BLANK

△ -SHEET ADDED 4/29/2014.
REPLACES SHEET 14 IN CONTRACT PLANS.

PROJECT NAME: MARLBORO
PROJECT NUMBER: BRF 010-1(43)

FILE NAME: sl0b414phasewrk.dgn	PLOT DATE: 29-APR-2014
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. KLINEFELTER
DESIGNED BY: R. KLINEFELTER	CHECKED BY: J. SALVATORI
BLANK	SHEET 14 OF 50



THIS SHEET INTENTIONALLY LEFT BLANK

⚠ -SHEET ADDED 4/29/2014.
REPLACES SHEET 15 IN CONTRACT PLANS.

PROJECT NAME: MARLBORO
PROJECT NUMBER: BRF 010-1(43)

FILE NAME: s10b414phase1.dgn	PLOT DATE: 29-APR-2014
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. KLINEFELTER
DESIGNED BY: R. KLINEFELTER	CHECKED BY: J. SALVATORI
BLANK	SHEET 15 OF 50



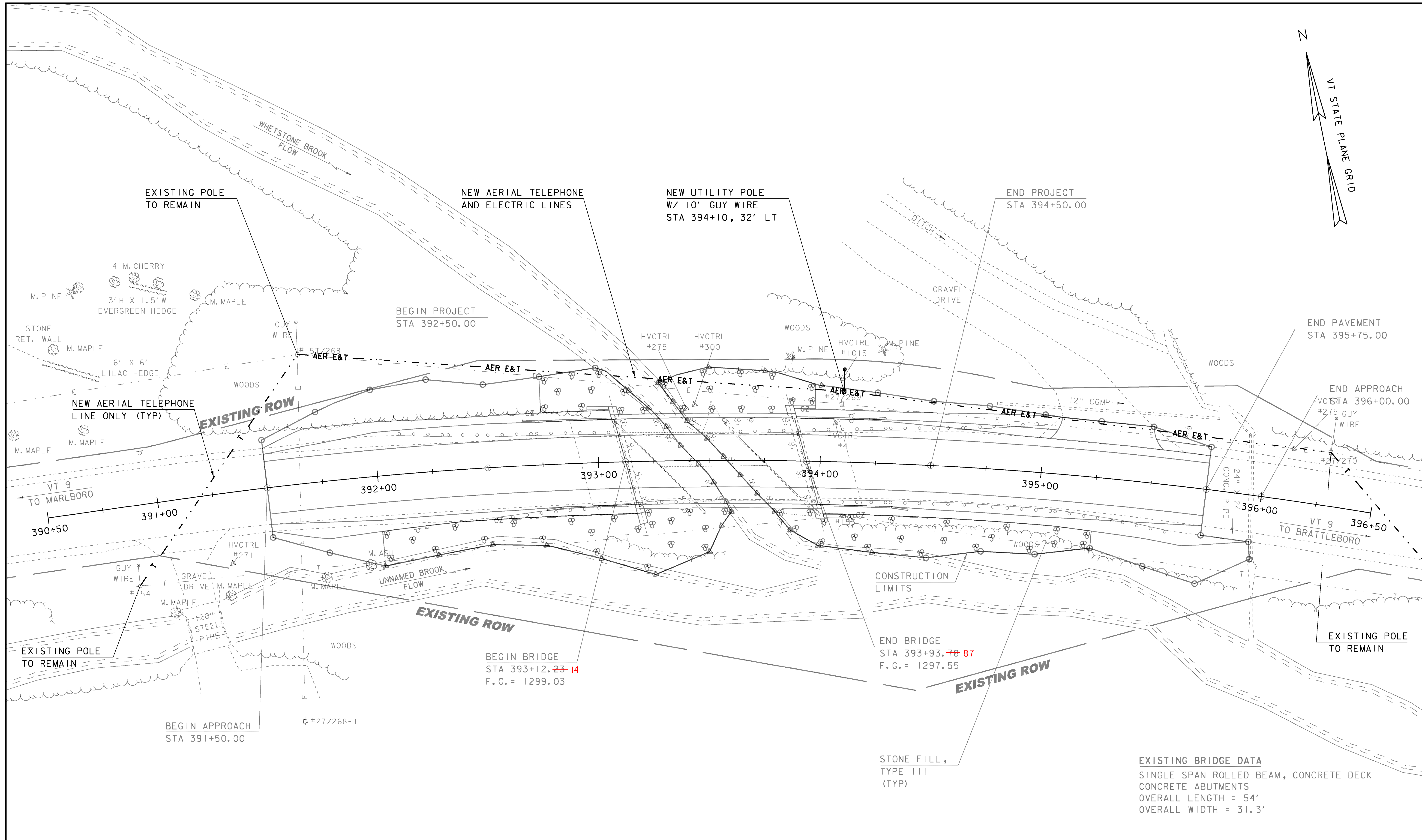
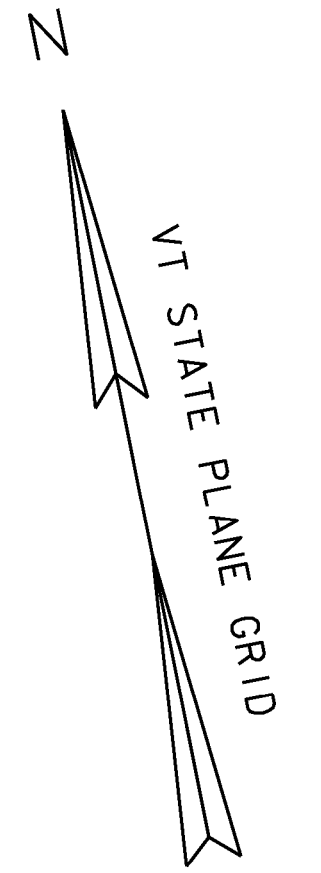
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△ -SHEET ADDED 4/29/2014.
REPLACES SHEET 16 IN CONTRACT PLANS.

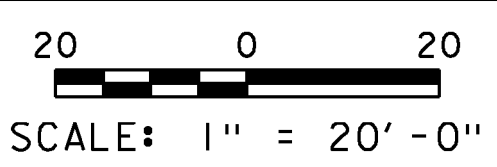
PROJECT NAME: MARLBORO
PROJECT NUMBER: BRF 010-1(43)

FILE NAME: s10b414phase2.dgn	PLOT DATE: 29-APR-2014
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. KLINEFELTER
DESIGNED BY: R. KLINEFELTER	CHECKED BY: J. SALVATORI
BLANK	SHEET 16 OF 50





PROPOSED UTILITY LAYOUT



PROJECT NAME: MARLBORO	
PROJECT NUMBER: BRF 010-1(43)	
FILE NAME: sl0b414bdr.dgn	PLOT DATE: 28-AUG-2013
PROJECT LEADER: K. HIGGINS	DRAWN BY: K. FRIEDLAND
DESIGNED BY: R. KLINEFELTER	CHECKED BY: G. LAROCHE
PROPOSED UTILITY LAYOUT	SHEET 17 OF 50

EXISTING BRIDGE DATA
 SINGLE SPAN ROLLED BEAM, CONCRETE DECK
 CONCRETE ABUTMENTS
 OVERALL LENGTH = 54'
 OVERALL WIDTH = 31.3'

REMOVING SIGNS

STA 392+16.30 RT (I)
 STA 329+20.35 RT (I)
 STA 393+38.55 RT (I)
 STA 393+68.95 LT (I)
 STA 394+13.60 LT (I)
 STA 395+63.73 LT (I)

TRAFFIC SIGNS, TYPE A

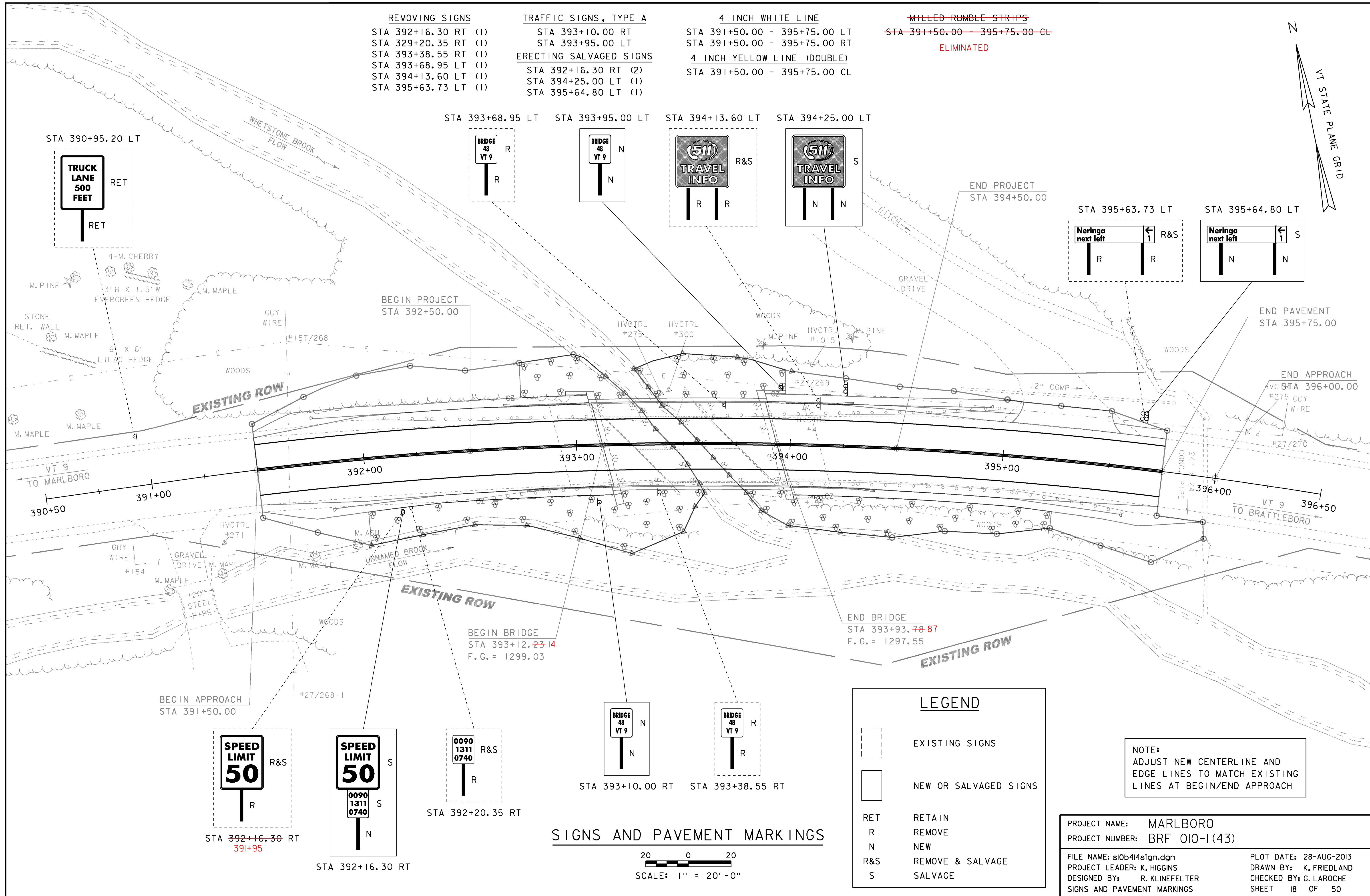
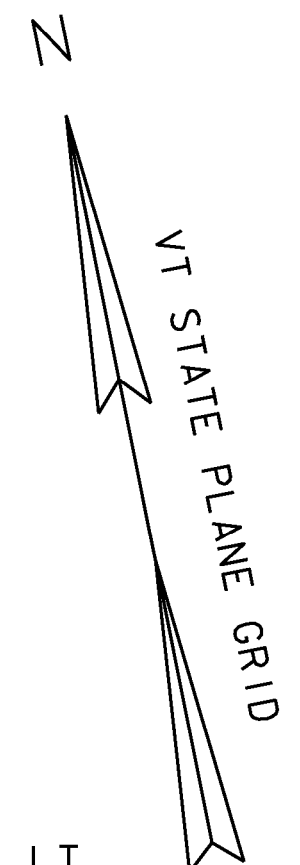
STA 393+10.00 RT
 STA 393+95.00 LT
ERECTING SALVAGED SIGNS
 STA 392+16.30 RT (2)
 STA 394+25.00 LT (I)
 STA 395+64.80 LT (I)

4 INCH WHITE LINE

STA 391+50.00 - 395+75.00 LT
 STA 391+50.00 - 395+75.00 RT
4 INCH YELLOW LINE (DOUBLE)
 STA 391+50.00 - 395+75.00 CL

MILLED RUMBLE STRIPS

~~STA 391+50.00 - 395+75.00 CL~~
ELIMINATED



BEGIN PROJECT
 STA 392+50.00

END PROJECT
 STA 394+50.00

END PAVEMENT
 STA 395+75.00

END APPROACH
 STA 396+00.00

BEGIN BRIDGE
 STA 393+12.23 14
 F.G. = 1299.03

END BRIDGE
 STA 393+93.78 87
 F.G. = 1297.55

BEGIN APPROACH
 STA 391+50.00

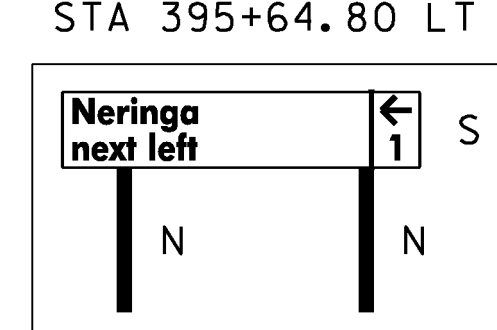
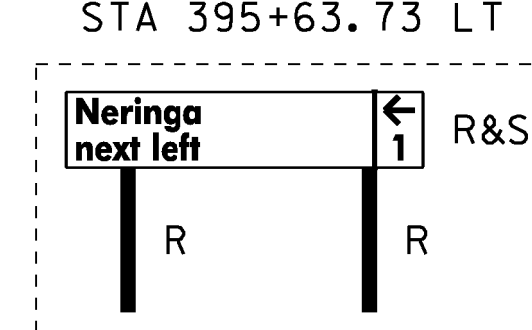
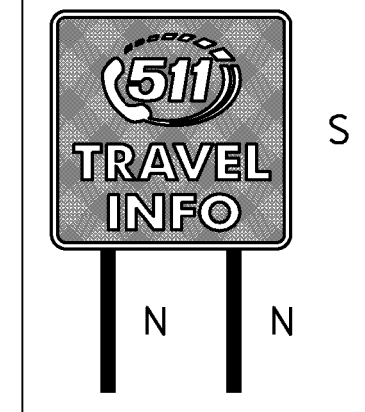
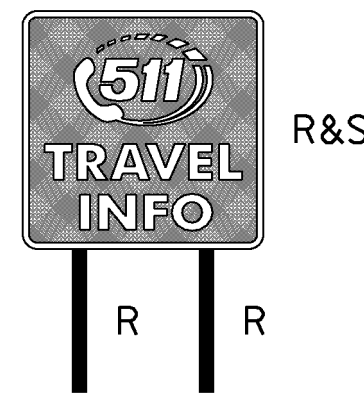
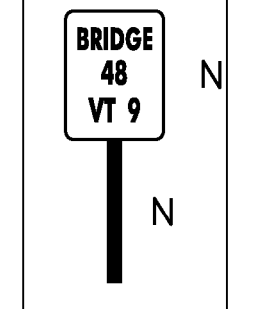
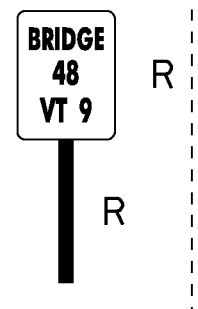
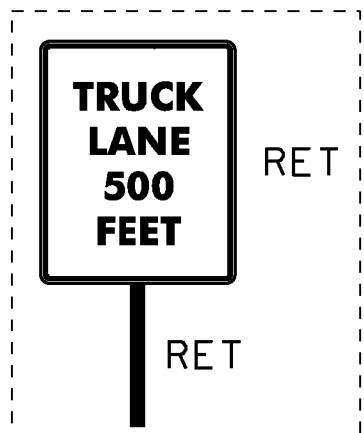
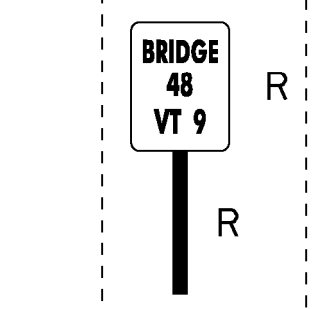
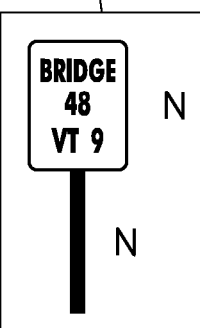
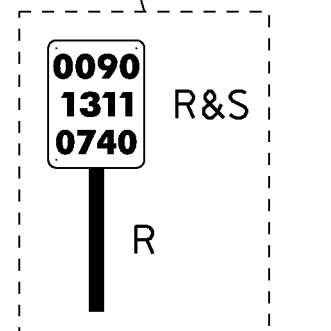
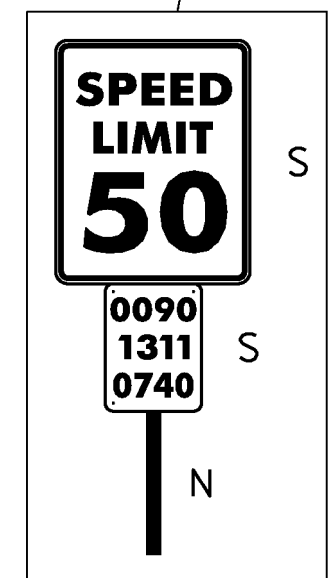
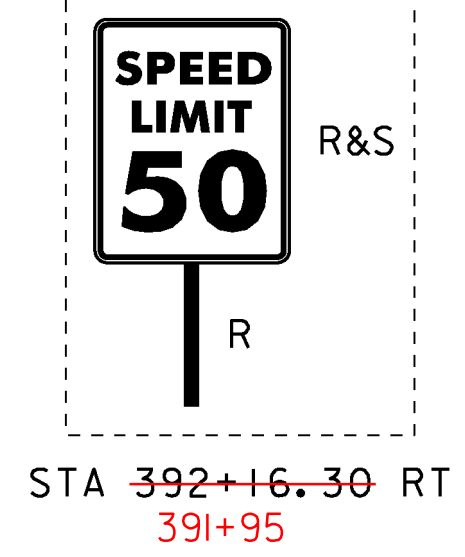
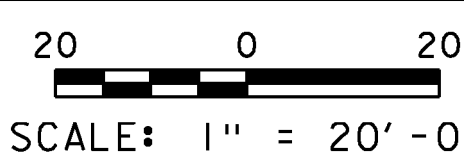
LEGEND

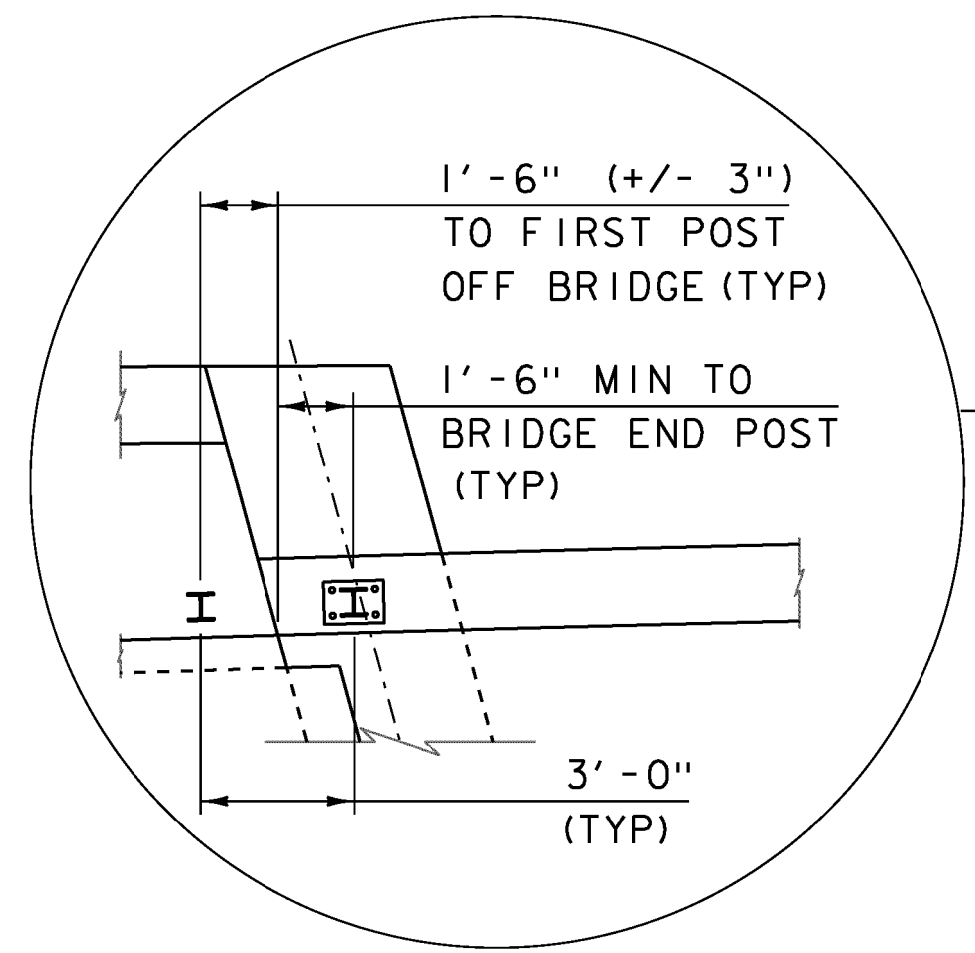
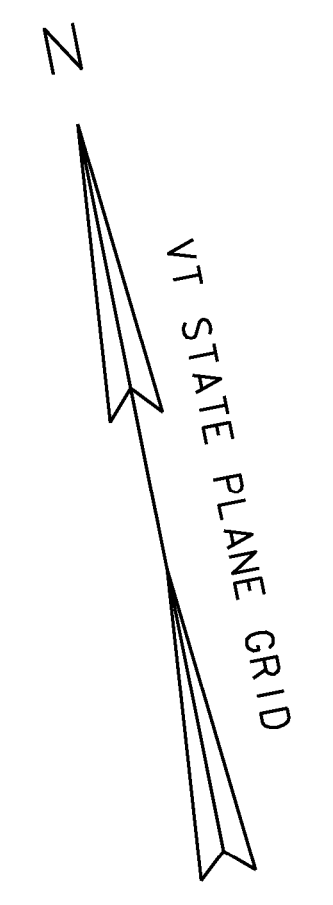
- EXISTING SIGNS
- NEW OR SALVAGED SIGNS
- RET RETAIN
- R REMOVE
- N NEW
- R&S REMOVE & SALVAGE
- S SALVAGE

NOTE:
 ADJUST NEW CENTERLINE AND
 EDGE LINES TO MATCH EXISTING
 LINES AT BEGIN/END APPROACH

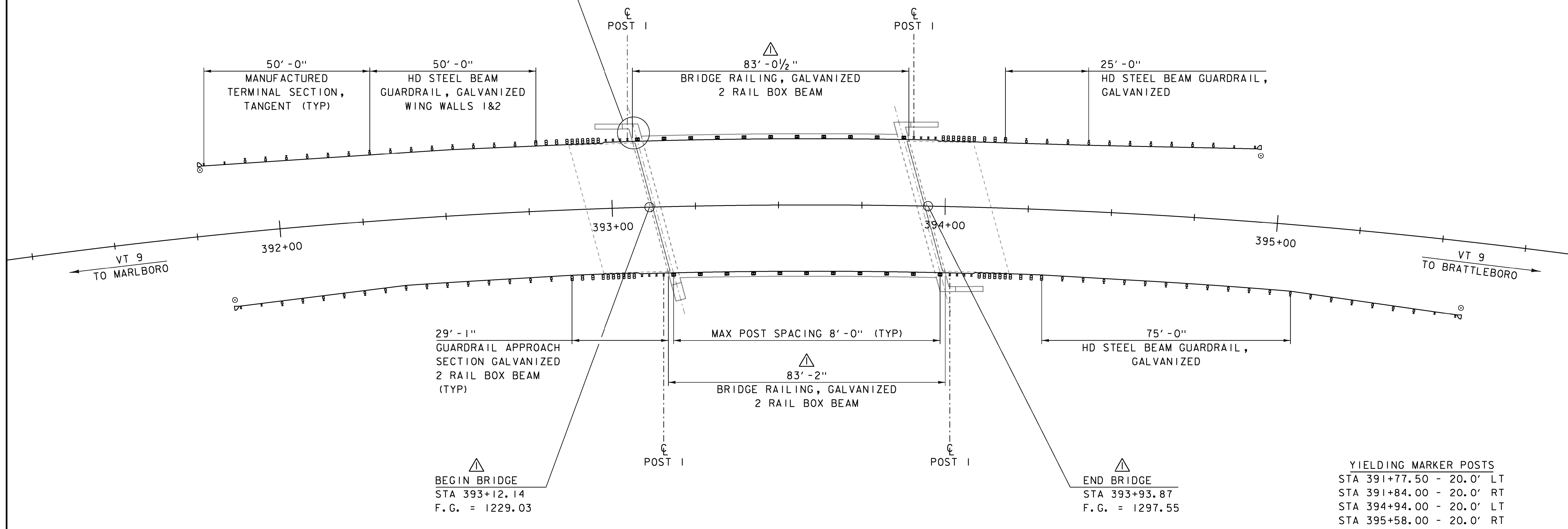
PROJECT NAME: MARLBORO
 PROJECT NUMBER: BRF 010-1(43)
 FILE NAME: s10b414sign.dgn
 PROJECT LEADER: K. HIGGINS
 DESIGNED BY: R. KLINEFELTER
 SIGNS AND PAVEMENT MARKINGS
 PLOT DATE: 28-AUG-2013
 DRAWN BY: K. FRIEDLAND
 CHECKED BY: G. LAROCHE
 SHEET 18 OF 50

SIGNS AND PAVEMENT MARKINGS





INSET "A"
NOT TO SCALE



NOTES:

- 1. SEE STANDARDS S-360A, S-360B, S-363, G-1 AND G-19.

RAIL LAYOUT SHEET

SCALE: 1" = 15'-0"

-REVISED 4/25/2014.
REPLACES SHEET 20 IN CONTRACT PLANS.

PROJECT NAME: MARLBORO	
PROJECT NUMBER: BRF 010-1(43)	
FILE NAME: sl0b414rail.dgn	PLOT DATE: 25-APR-2014
PROJECT LEADER: K. HIGGINS	DRAWN BY: K. FRIEDLAND
DESIGNED BY: R. KLINEFELTER	CHECKED BY: J. SALVATORI
RAIL LAYOUT SHEET	SHEET 20 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

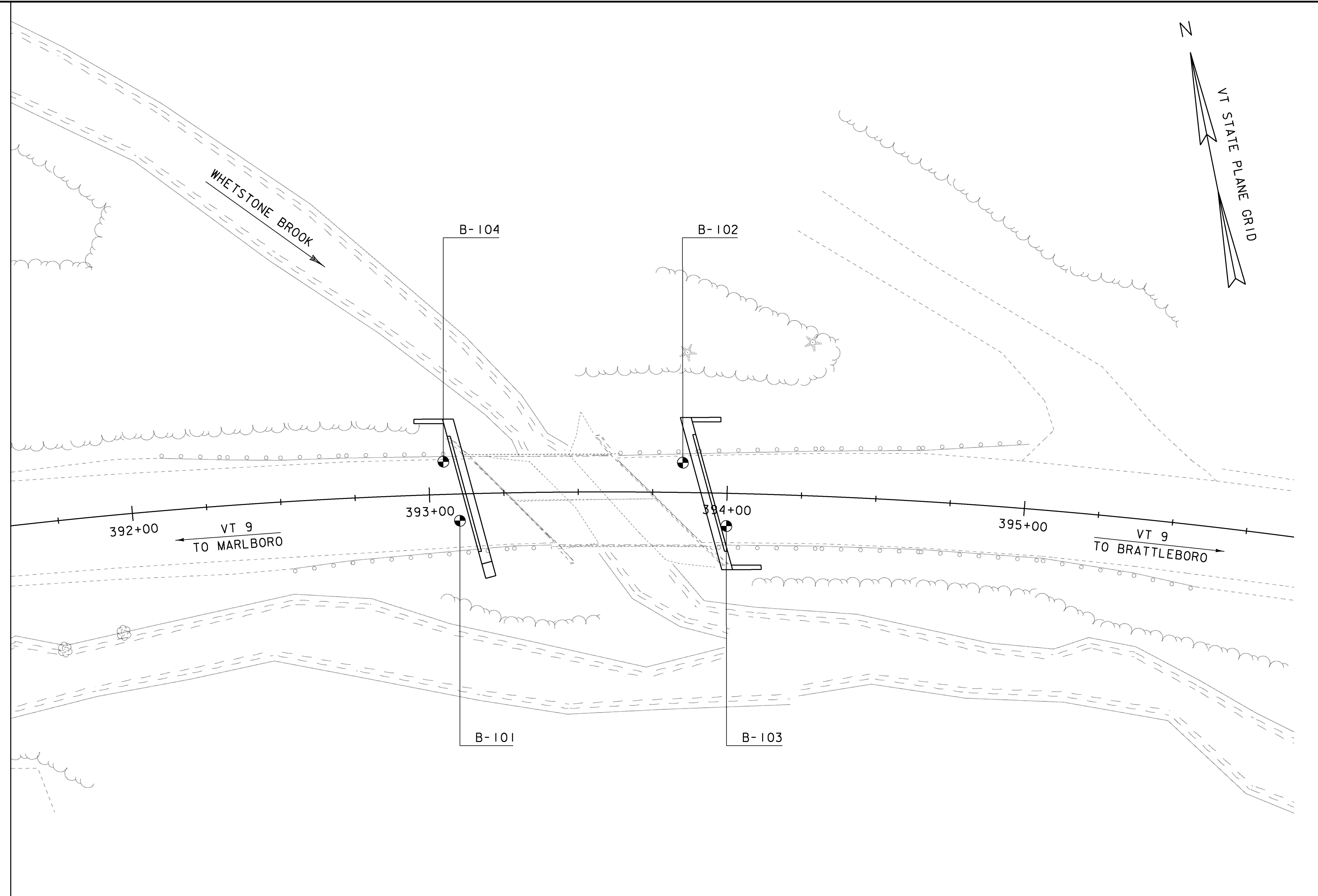
DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

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 1/2" 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 Top of Ledge Or Boulder
- NR No Recovery
- Rec. Recovery
- %Rec. Percent Recovery
- ROD Rock Quality Designation
- CBR California Bearing Ratio
- < Less Than
- > Greater Than
- R Refusal (N > 100)
- VTSPG NAD83 - See Note 7

COLOR

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



BORING LAYOUT SHEET

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

DEFINITIONS (AASHTO)

- BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.
- BOULDER - A rock fragment with an average dimension > 12 inches.
- COBBLE - Rock fragments with an average dimension between 3 and 12 inches.
- GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).
- SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).
- SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.
- CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.
- VARVED - Alternate layers of silt and clay.
- HARDPAN - Extremely dense soil, cemented layer, not softened when wet.
- MUCK - Soft organic soil (containing > 10% organic material).
- MOISTURE CONTENT - Weight of water divided by dry weight of soil.
- FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
- STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.
- DIP - Inclination of bed with a horizontal plane.

GENERAL NOTES

- The subsurface explorations shown herein were made between 7-30-12 and 8-1-12 by Terracon.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
- Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
- Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
- Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

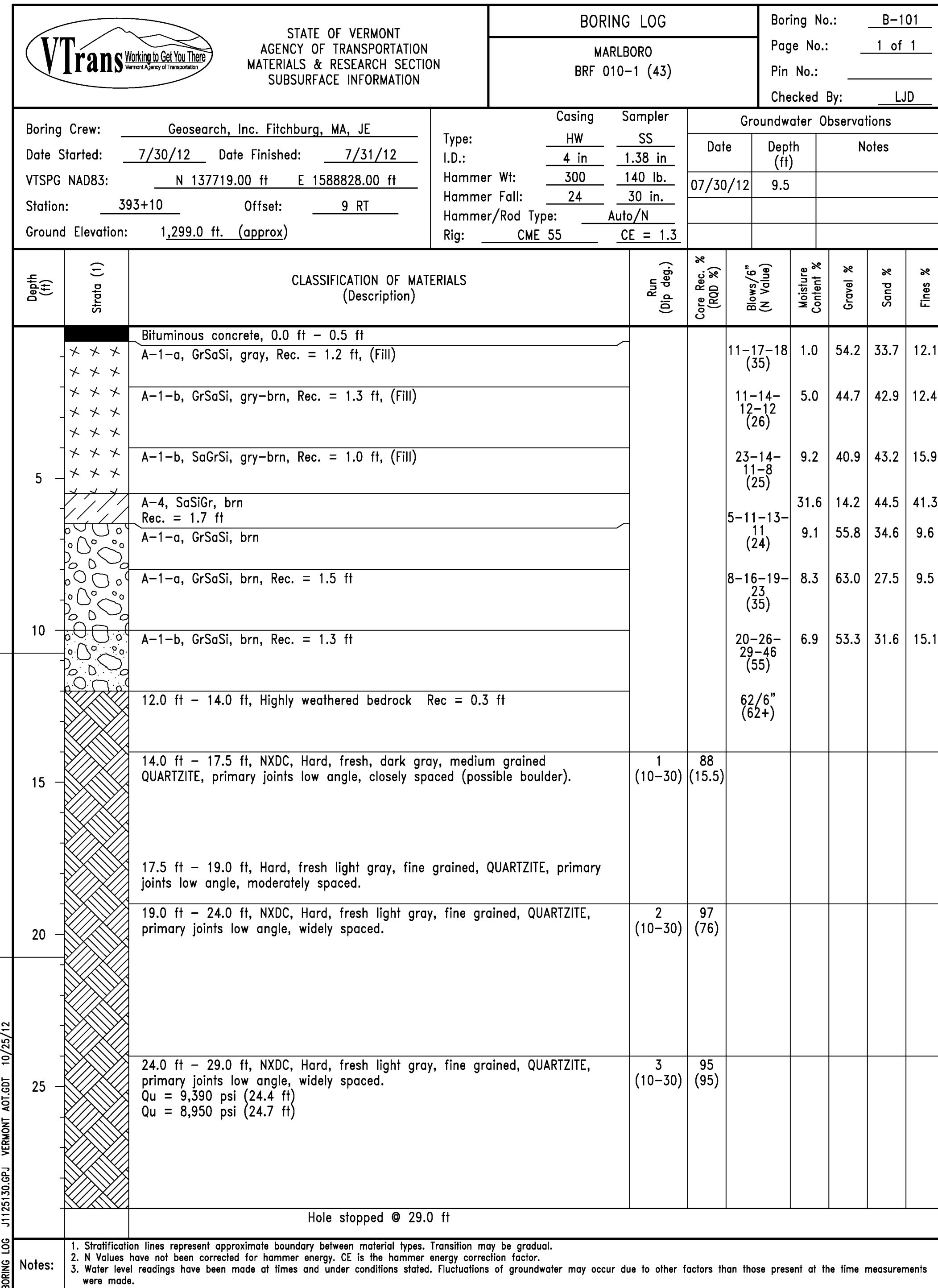
BORING CHART

HOLE NO.	SURV. STATION	OFFSET	GROUND ELEV.	ELEV. TLOB
B-101	393+10	9' RT	1299.00'	1285.00'
B-102	393+85	10' LT	1298.50'	1283.50'
B-103	394+00	11' RT	1297.00'	1278.00'
B-104	393+05	11' LT	1298.50'	1285.50'

PROJECT NAME: MARLBORO
 PROJECT NUMBER: BRF 010-1(43)

FILE NAME: slb414bor.dgn
 PROJECT LEADER: K. HIGGINS
 DESIGNED BY: R. KLINEFELTER
 BORING LAYOUT SHEET

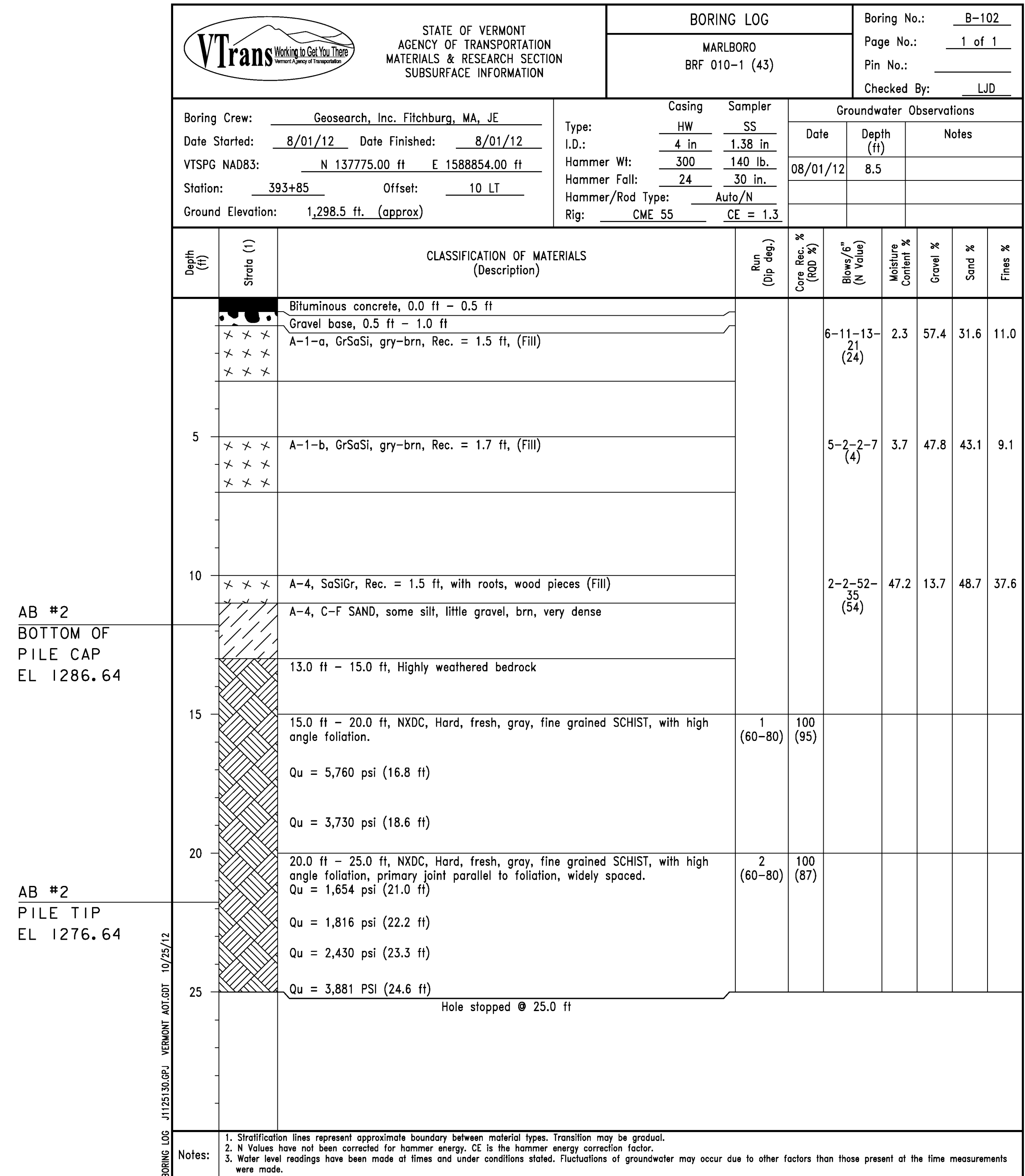
PLOT DATE: 28-AUG-2013
 DRAWN BY: K. FRIEDLAND
 CHECKED BY: G. LAROCHE
 SHEET 21 OF 50



AB #1
BOTTOM OF
PILE CAP
EL 1288.16

AB #1
PILE TIP
EL 1278.16

BORING LOG: J1125130.GPJ VERMONT AOT.GDT 10/25/12



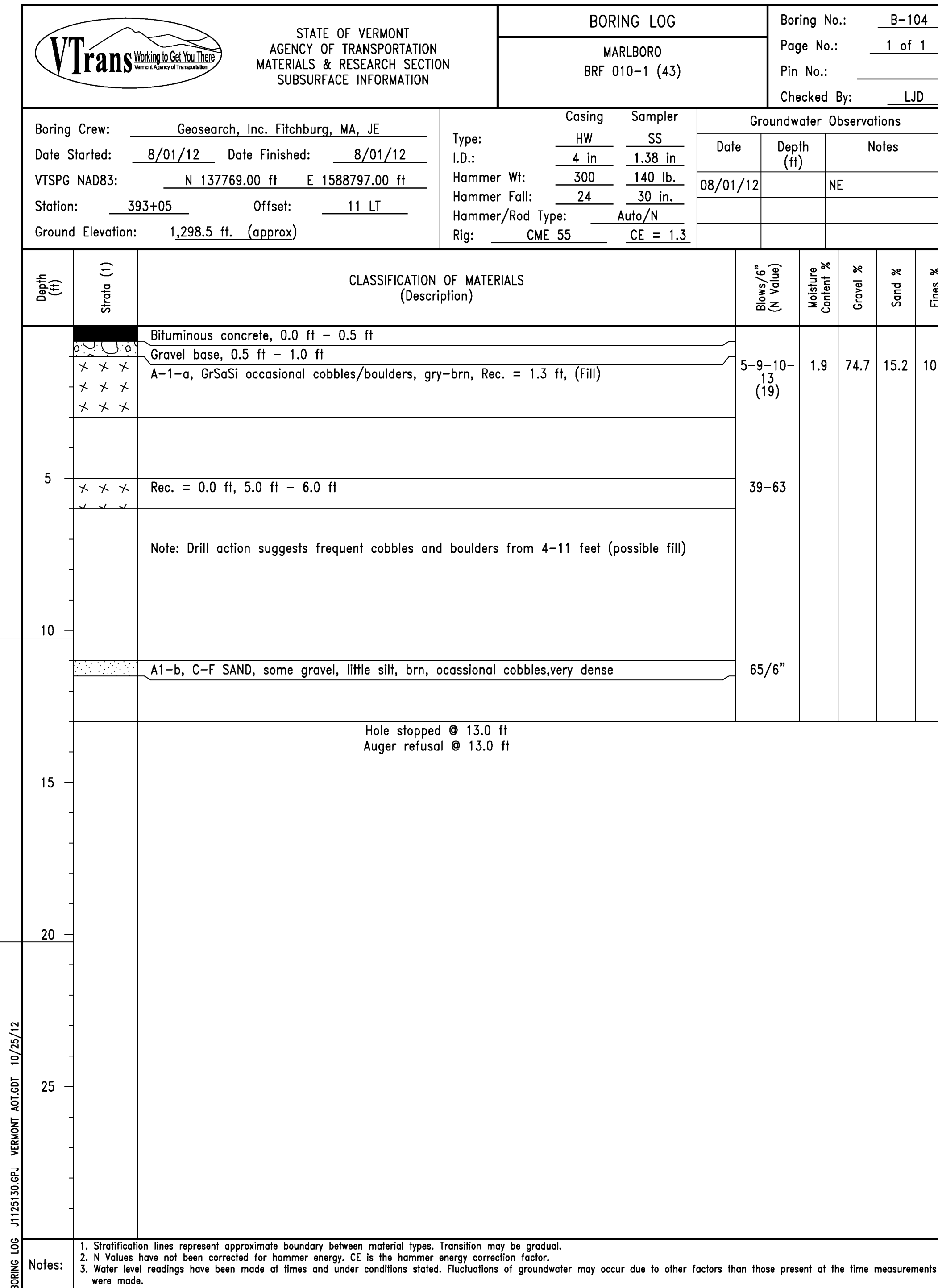
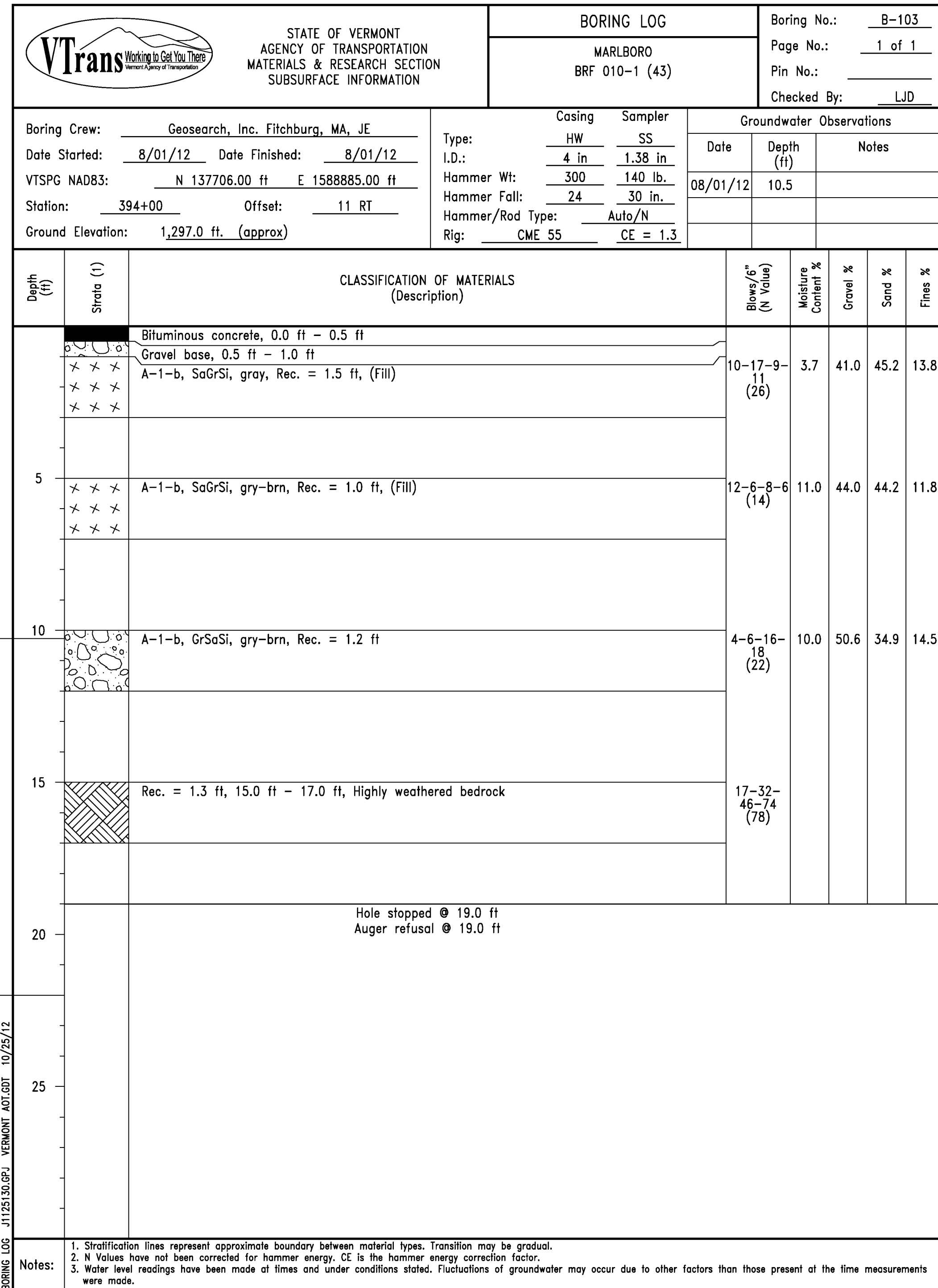
AB #2
BOTTOM OF
PILE CAP
EL 1286.64

AB #2
PILE TIP
EL 1276.64

BORING LOG: J1125130.GPJ VERMONT AOT.GDT 10/25/12

PROJECT NAME: MARLBORO
PROJECT NUMBER: BRF 010-1 (43)

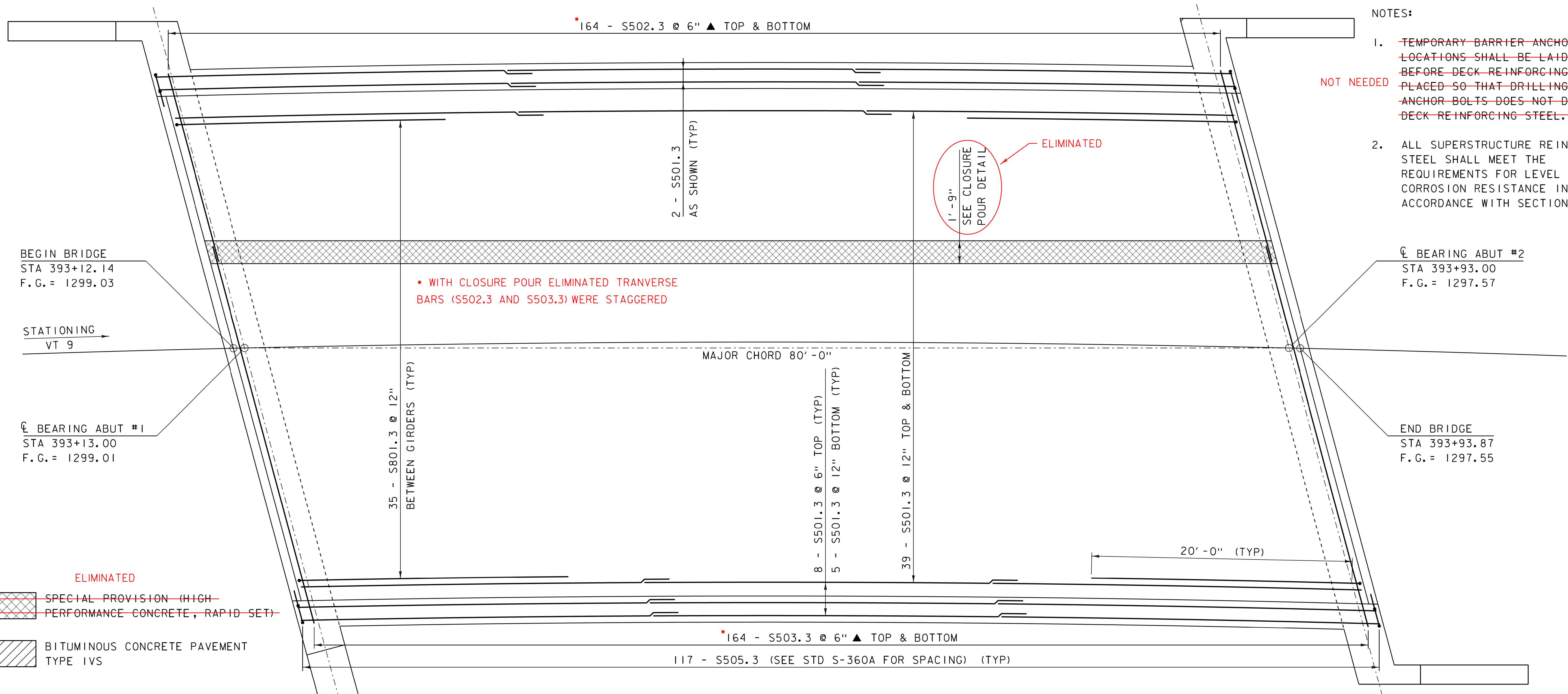
FILE NAME: slib414bor.dgn PLOT DATE: 28-AUG-2013
PROJECT LEADER: K. HIGGINS DRAWN BY: K. FRIEDLAND
DESIGNED BY: R. KLINEFLETER CHECKED BY: G. LAROCHE
BORING LOGS SHEET 22 OF 50



PROJECT NAME: MARLBORO
 PROJECT NUMBER: BRF 010-1 (43)

FILE NAME: slib414bor.dgn
 PROJECT LEADER: K. HIGGINS
 DESIGNED BY: R. KLINEFELTER
 BORING LOGS

PLOT DATE: 28-AUG-2013
 DRAWN BY: K. FRIEDLAND
 CHECKED BY: G. LAROCHE
 SHEET 23 OF 50



- NOTES:
- ~~TEMPORARY BARRIER ANCHOR LOCATIONS SHALL BE LAID OUT BEFORE DECK REINFORCING IS PLACED SO THAT DRILLING FOR ANCHOR BOLTS DOES NOT DAMAGE DECK REINFORCING STEEL.~~
NOT NEEDED
 - ALL SUPERSTRUCTURE REINFORCING STEEL SHALL MEET THE REQUIREMENTS FOR LEVEL III CORROSION RESISTANCE IN ACCORDANCE WITH SECTION 507.

BEGIN BRIDGE
STA 393+12.14
F.G. = 1299.03

STATIONING
VT 9

CL BEARING ABUT #1
STA 393+13.00
F.G. = 1299.01

CL BEARING ABUT #2
STA 393+93.00
F.G. = 1297.57

END BRIDGE
STA 393+93.87
F.G. = 1297.55

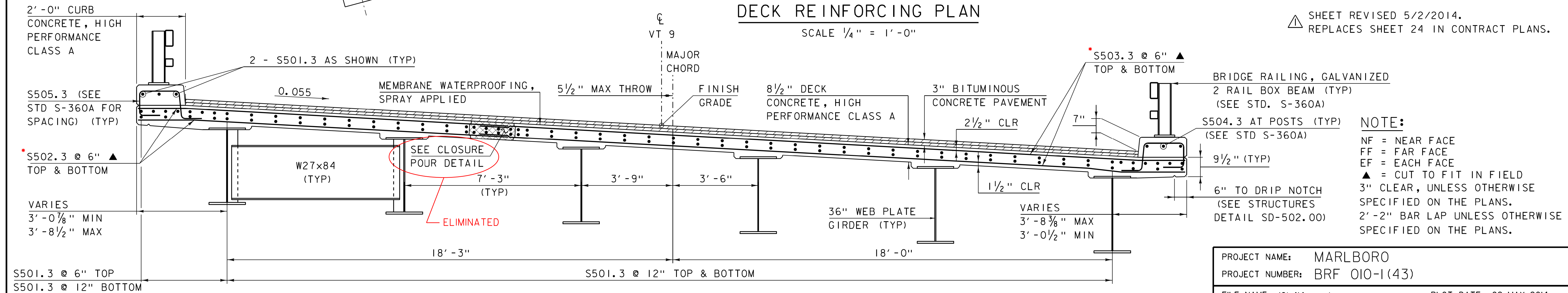
ELIMINATED

SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)

BITUMINOUS CONCRETE PAVEMENT TYPE IVS

DECK REINFORCING PLAN
SCALE 1/4" = 1'-0"

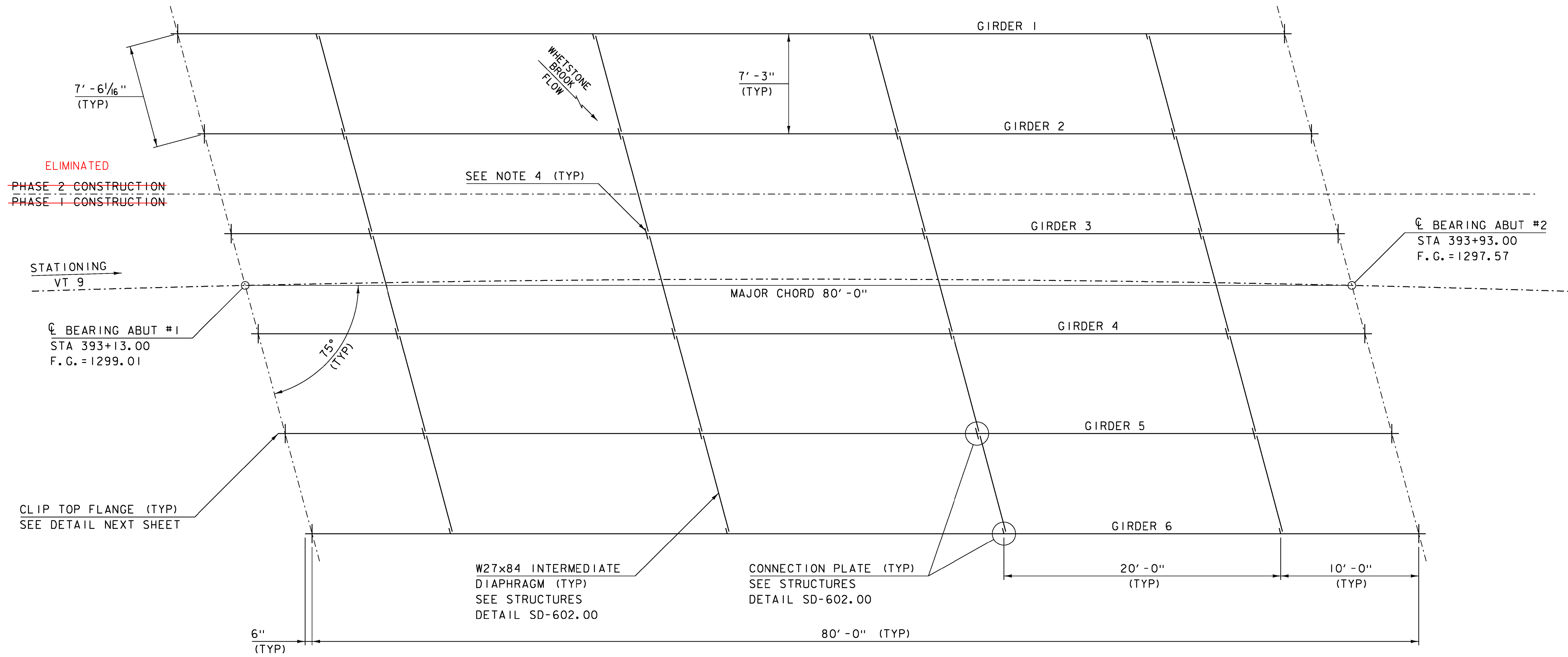
△ SHEET REVISED 5/2/2014.
REPLACES SHEET 24 IN CONTRACT PLANS.



TYPICAL DECK REINFORCEMENT
SCALE 1/2" = 1'-0"

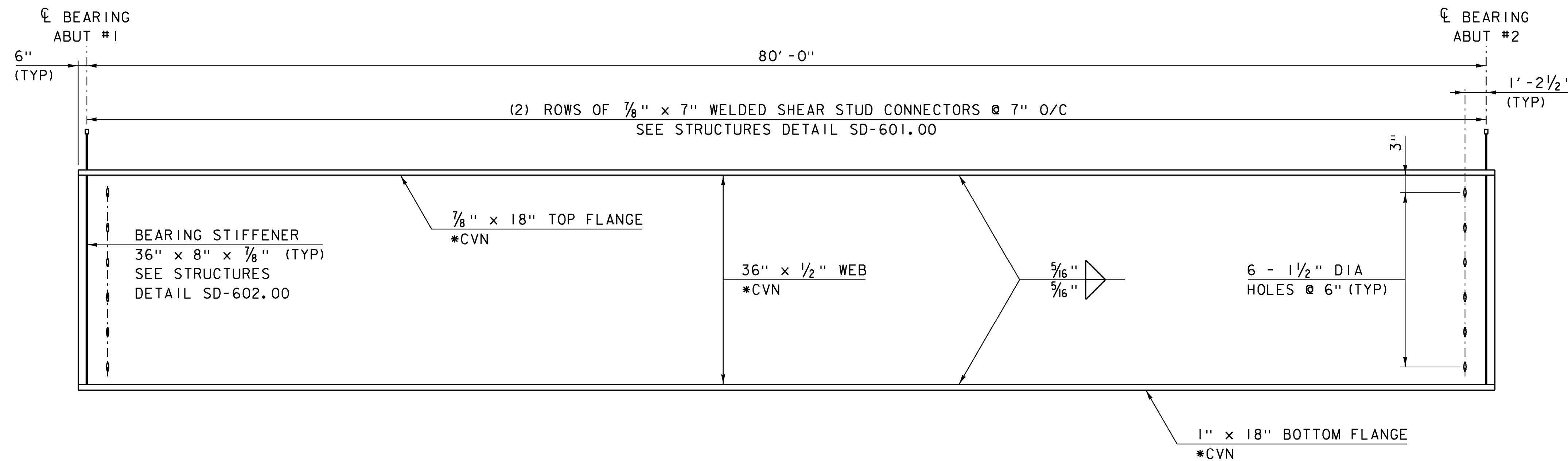
NOTE:
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME:	MARLBORO	FILE NAME:	s10b414sup.dgn	PLOT DATE:	02-MAY-2014
PROJECT NUMBER:	BRF 010-1(43)	PROJECT LEADER:	K. HIGGINS	DRAWN BY:	R. KLINEFELTER
		DESIGNED BY:	R. KLINEFELTER	CHECKED BY:	J. SALVATORI
		DECK REINFORCING PLAN			SHEET 24 OF 50



FRAMING PLAN

SCALE 1/4" = 1'-0"



TYPICAL GIRDER ELEVATION

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

NOTES:

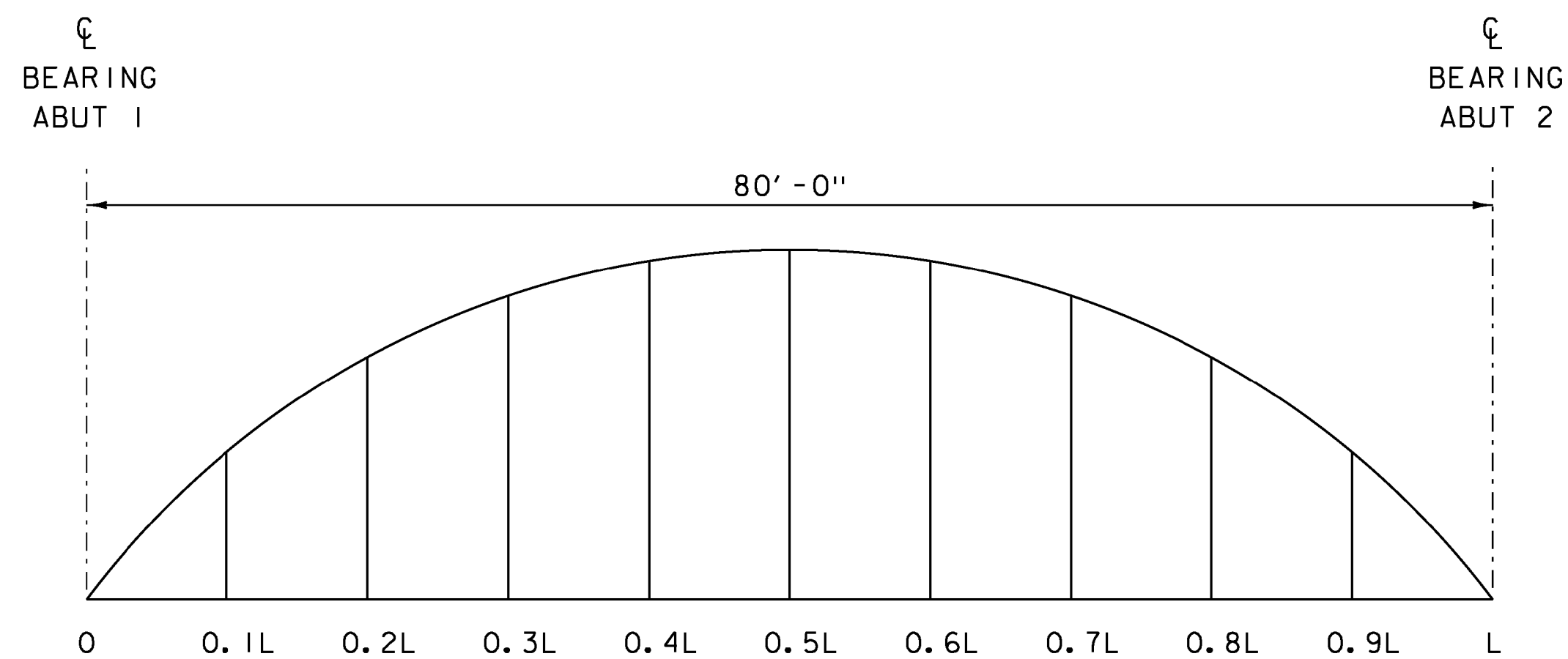
1. *CVN DENOTES THAT CHARPY V-NOTCH TEST IS REQUIRED.
2. ALL STEEL SHALL BE GRADE 50W.
3. PLACE DRIP PLATE ON LOW END OF EXTERIOR GIRDERS. SEE STRUCTURES DETAIL SD-601.00.
4. ~~BOLT HOLES SHALL BE OMITTED IN THE CONNECTION PLATES ON THE LEFT SIDE OF GIRDER 3. AFTER THE DIAPHRAGMS HAVE BEEN BOLTED TO GIRDER 2, BOLT HOLES IN THE GIRDER 3 CONNECTION PLATES SHALL BE FIELD DRILLED FOR PROPER FITUP.~~

ELIMINATED

△ -SHEET ADDED 4/8/2014.
REPLACES SHEET 25 IN CONTRACT PLANS.

PROJECT NAME: MARLBORO	
PROJECT NUMBER: BRF 010-I(43)	
FILE NAME: sl0b414fra.dgn	PLOT DATE: 08-APR-2014
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. KLINEFELTER
DESIGNED BY: R. KLINEFELTER	CHECKED BY: J. SALVATORI
FRAMING PLAN & GIRDER ELEVATION	SHEET 25 OF 50





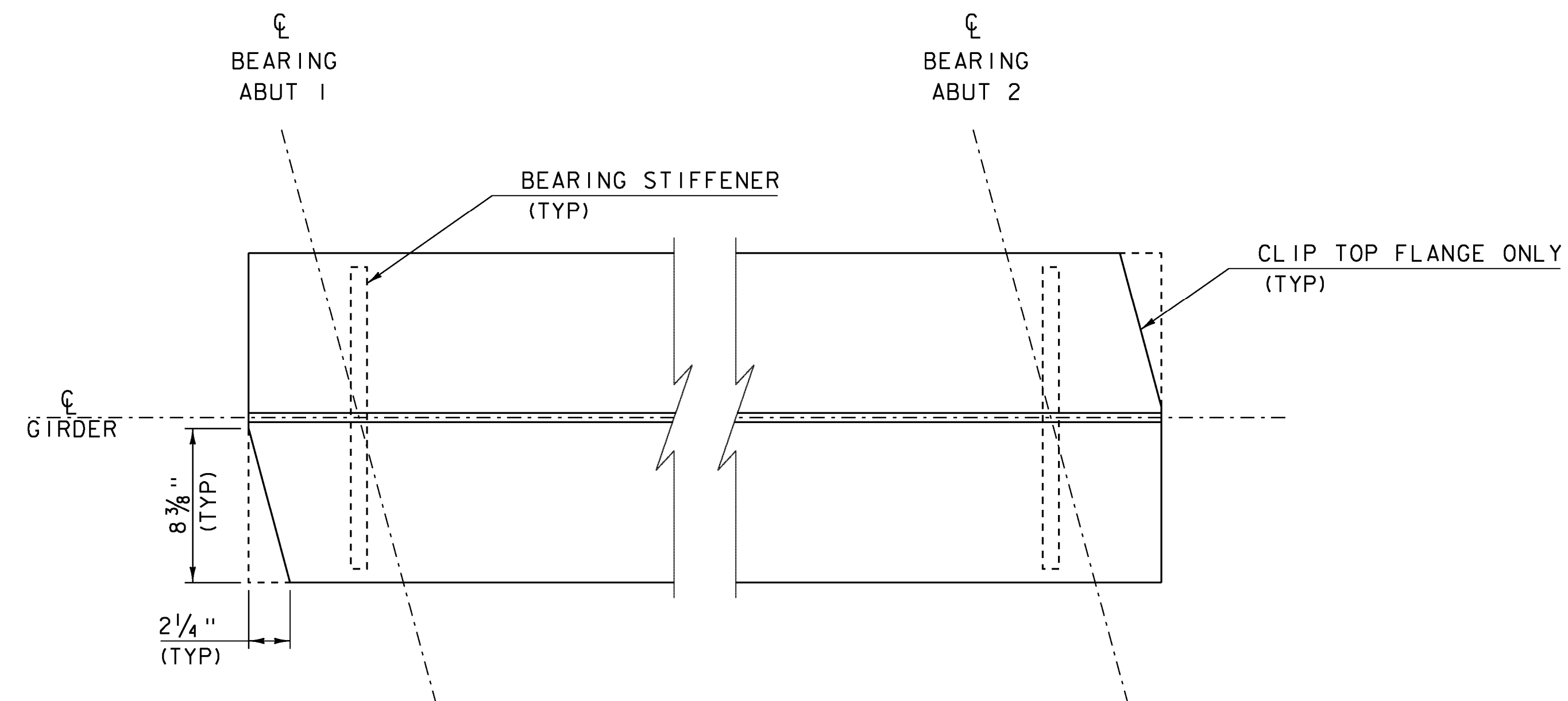
CAMBER DIAGRAM

NOT TO SCALE

	0	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	L
Steel Deflection	0	1/8	1/4	3/8	7/16	7/16	7/16	3/8	1/4	1/8	0
Slab & Super Deflection	0	3/4	1 7/16	1 15/16	2 1/4	2 3/8	2 1/4	1 15/16	1 7/16	3/4	0
Total Deflection	0	7/8	1 11/16	2 5/16	2 11/16	2 13/16	2 11/16	2 5/16	1 11/16	7/8	0
Residual Camber	0	3/8	5/8	13/16	15/16	1	15/16	13/16	5/8	3/8	0
Total Camber	0	1 1/4	2 5/16	3 1/8	3 5/8	3 13/16	3 5/8	3 1/8	2 5/16	1 1/4	0

CAMBER AND DEFLECTION

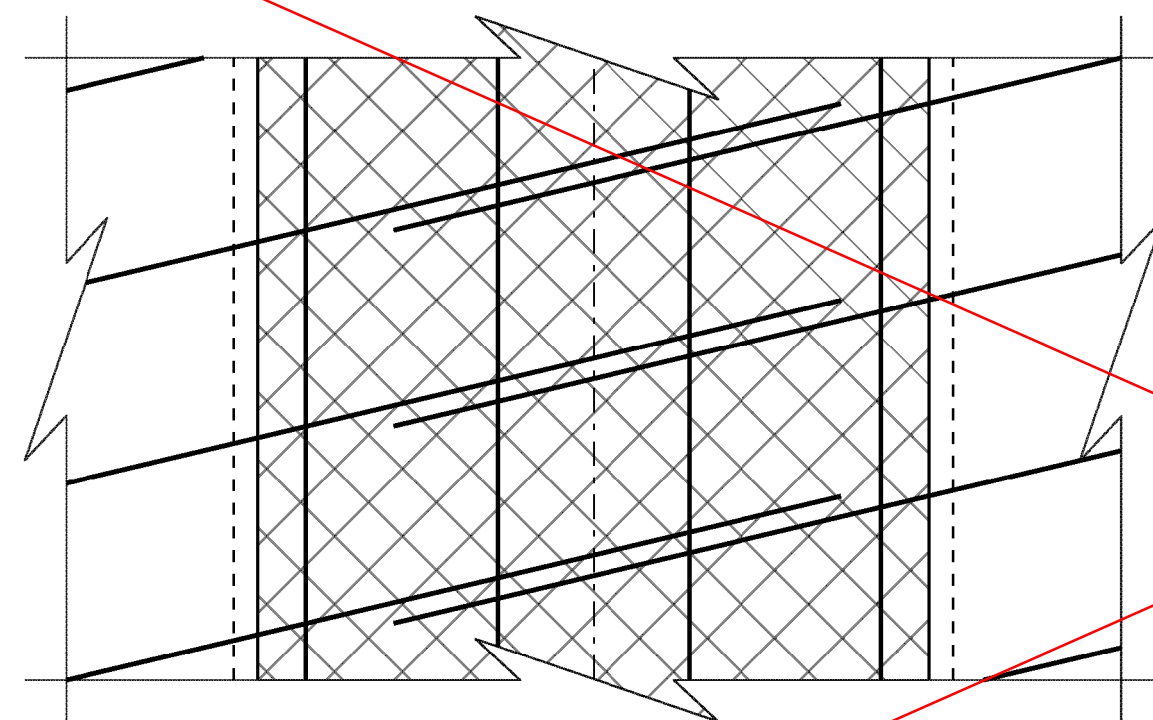
(INCHES)



TOP FLANGE CLIP DETAIL

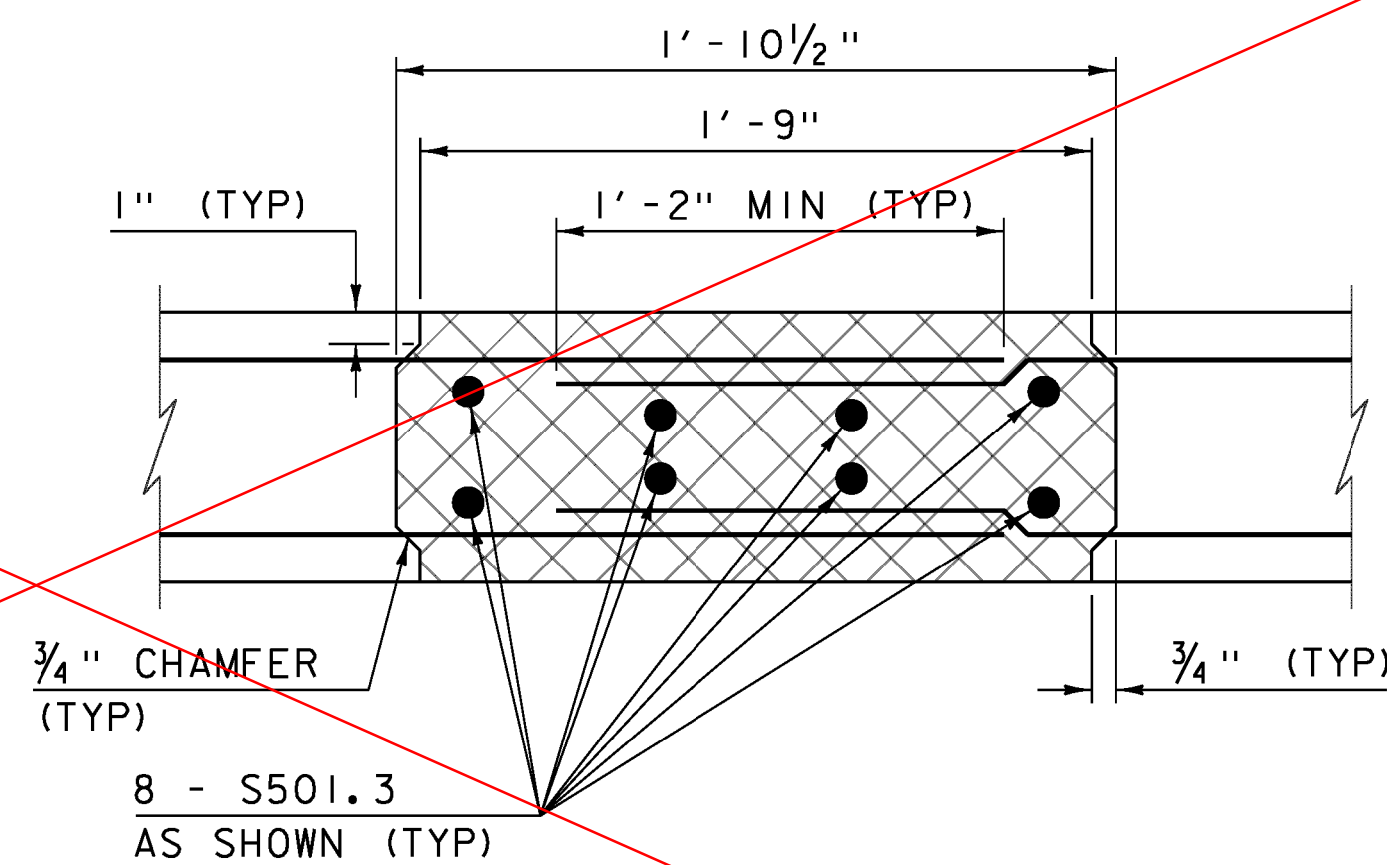
SCALE 1" = 2'-0"

ELIMINATED - DECK CONSTRUCTION FULL WIDTH



CLOSURE POUR DETAIL PLAN

SCALE 2" = 1'-0"



CLOSURE POUR DETAIL SECTION

SCALE 2" = 1'-0"

ELIMINATED

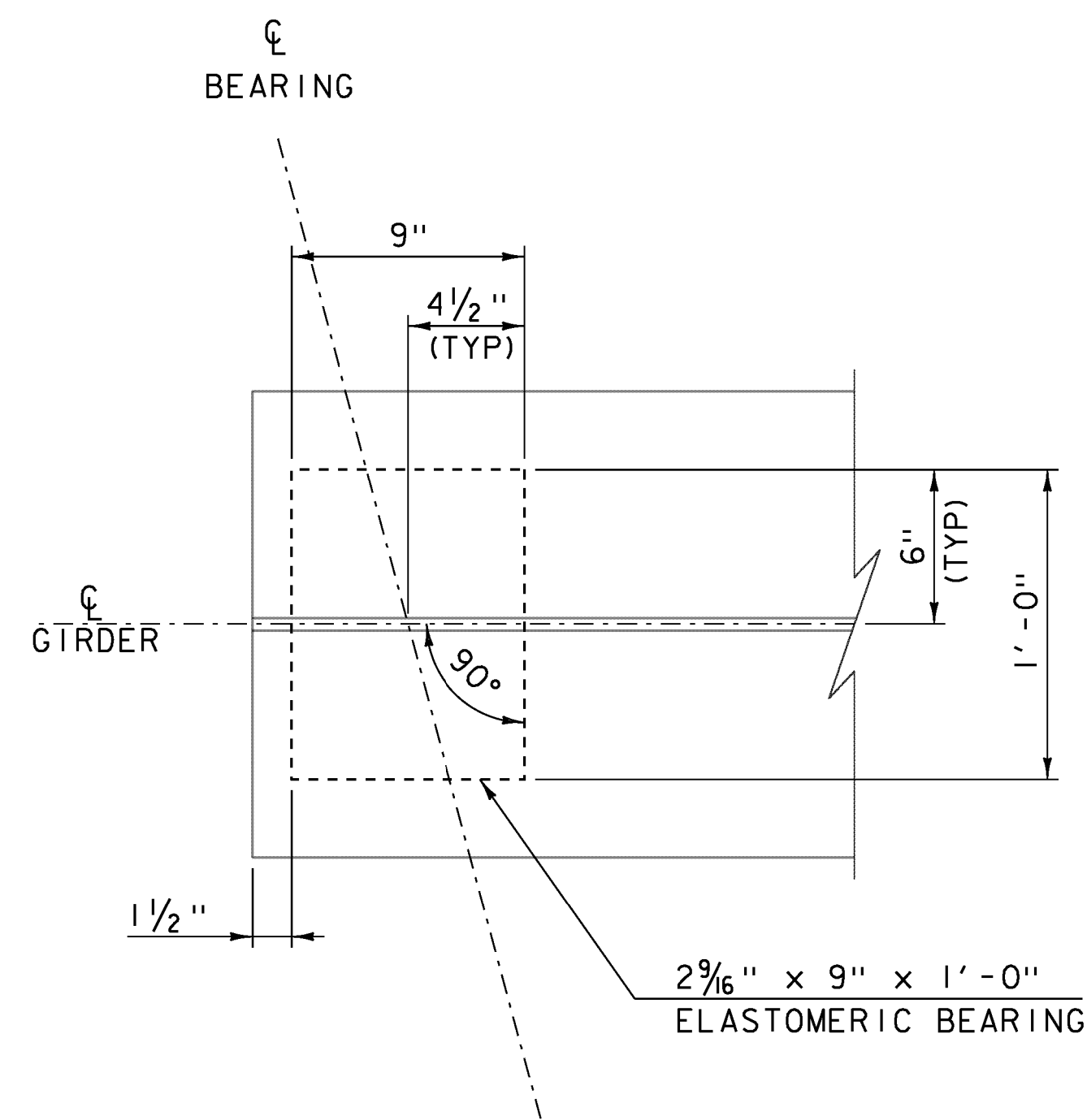
PHASED DECK CONSTRUCTION NOTES:

1. PHASE 2 DECK CONSTRUCTION INVOLVES ONLY TWO GIRDERS. THE CONTRACTOR SHALL DETERMINE IF ADDITIONAL TEMPORARY BRACING IS NEEDED TO PREVENT LATERAL MOVEMENT OF THE GIRDERS DURING THE PHASE 2 DECK PLACEMENT. IF USED, TEMPORARY BRACING MUST BE DESIGNED TO ALLOW FOR FREEDOM OF VERTICAL MOVEMENT SO THAT GIRDER DEFLECTION DUE TO THE DECK CONCRETE WILL OCCUR AS PREDICTED.
2. FOR PHASE 2 DECK CONSTRUCTION, ALL FORMWORK AND THE FINISHING MACHINE MUST BE COMPLETELY SUPPORTED BY THE PHASE 2 GIRDERS. THE PHASE 1 STRUCTURE SHALL NOT BE USED TO SUPPORT ANY PORTION OF THE FORMWORK OR FINISHING MACHINE.
3. DIAPHRAGMS BETWEEN GIRDERS 2 AND 3 ARE TO BE INSTALLED AFTER THE PHASE 2 DECK CURE PERIOD IS COMPLETE AND BEFORE THE DECK CLOSURE POUR.
4. REINFORCING STEEL IN THE CLOSURE POUR SHALL NOT BE TIED UNTIL AFTER THE PHASE 2 DECK CURE PERIOD IS COMPLETE.
5. FORMWORK FOR SURFACES ON THE DECK THAT WILL BE IN CONTACT WITH THE CLOSURE POUR SHALL BE TREATED WITH CONCRETE SURFACE RETARDER, OR SIMILAR, TO PROVIDE A ROUGHENED SURFACE. THE ROUGHENED SURFACES SHALL BE POWER WASHED WITH WATER PRIOR TO THE CLOSURE POUR.
6. THE METHOD OF FORMING THE DECK CLOSURE POUR SHALL BE DETERMINED BY THE CONTRACTOR. THE FORMS SHALL BE REMOVABLE AND ABLE TO ACCOMMODATE DIFFERENTIAL CAMBER. FORM SUPPORTS SHALL NOT BE ATTACHED TO ANY PART OF THE STRUCTURE BY DRILLING OR SIMILAR MEANS.

△ - SHEET ADDED 4/8/2014.
REPLACES SHEET 26 IN CONTRACT PLANS.

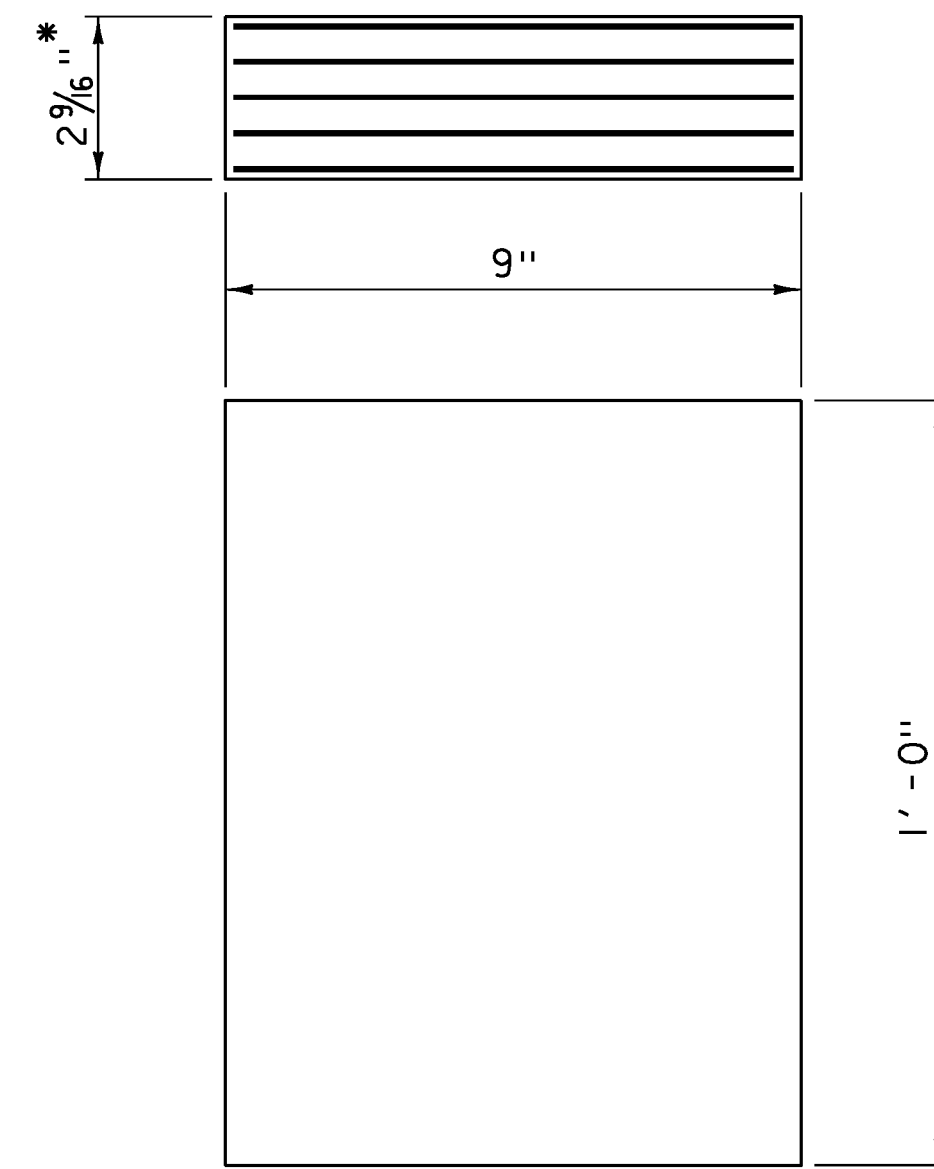
PROJECT NAME:	MARLBORO
PROJECT NUMBER:	BRF 010-1(43)
FILE NAME:	sl0b414sup.dgn
PROJECT LEADER:	K. HIGGINS
DESIGNED BY:	R. KLINEFELTER
CAMBER & DEFLECTION	
PLOT DATE:	08-APR-2014
DRAWN BY:	K. FRIEDLAND
CHECKED BY:	J. SALVATORI
SHEET	26 OF 50





ELASTOMERIC BEARING LAYOUT

SCALE 1" = 2'-0"



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

ELASTOMERIC BEARING DETAIL

SCALE 1" = 4'-0"

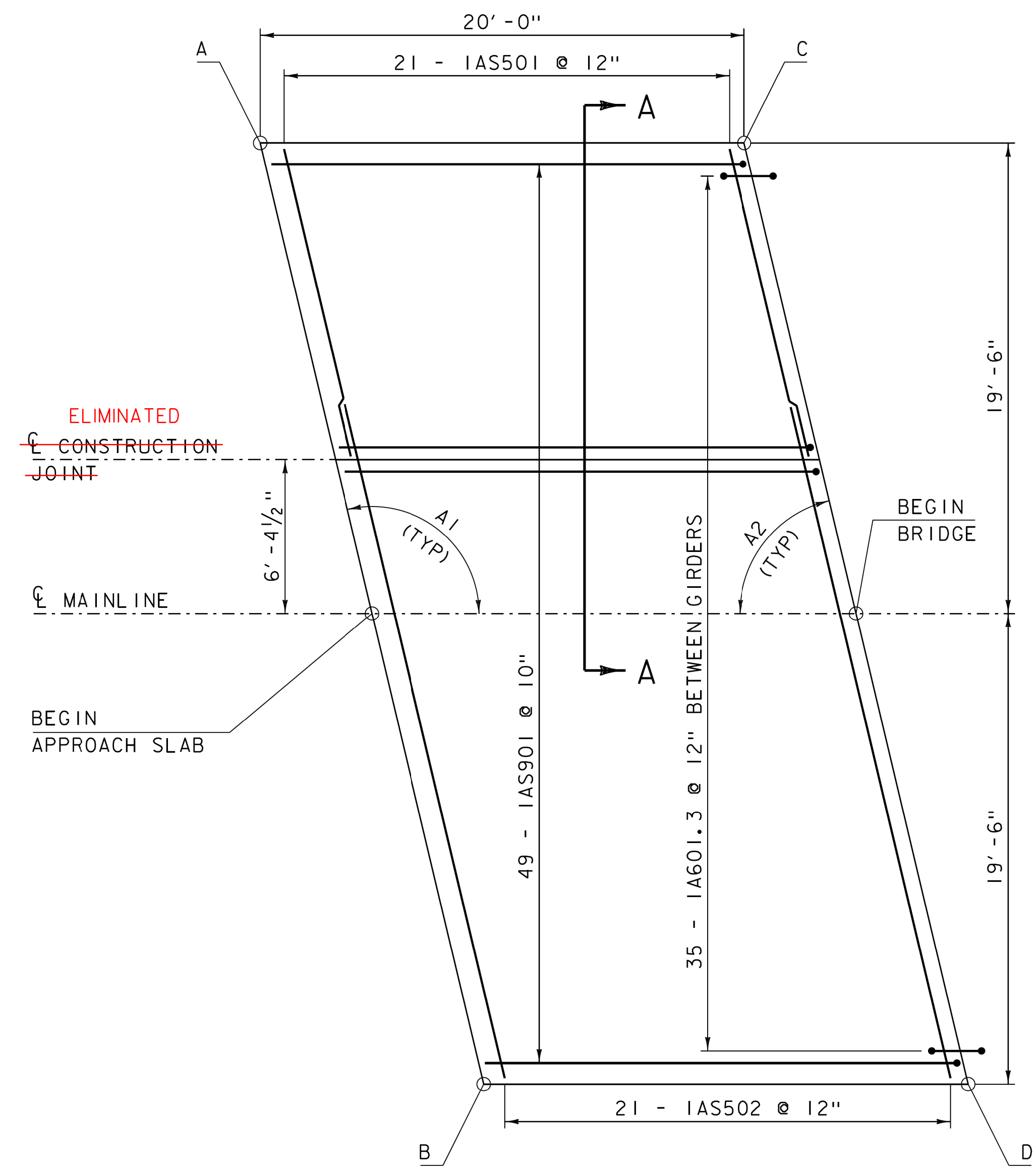
BEARING NOTES:

1. BEARINGS SHALL CONFORM TO THE APPLICABLE SUBSECTIONS OF SECTIONS 531 AND 731.
2. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMER SHALL BE STEEL MEETING THE REQUIREMENTS OF SUBSECTION 714.02. ALL INTERNAL STEEL PLATES SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST AND MILL SCALE. THE PLATES SHALL BE FREE OF SHARP EDGES AND BURRS.
3. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM 1/8" EDGE SEAL OF ELASTOMER INTEGRAL WITH BEARING OVER ALL INTERNAL PLATES.
4. THE ELASTOMER WAS DESIGNED WITH A SHEAR MODULUS OF 110 PSI +/- 15%.
5. THE CONCRETE UNDER THE BEARING DEVICE SHALL BE LEVEL.

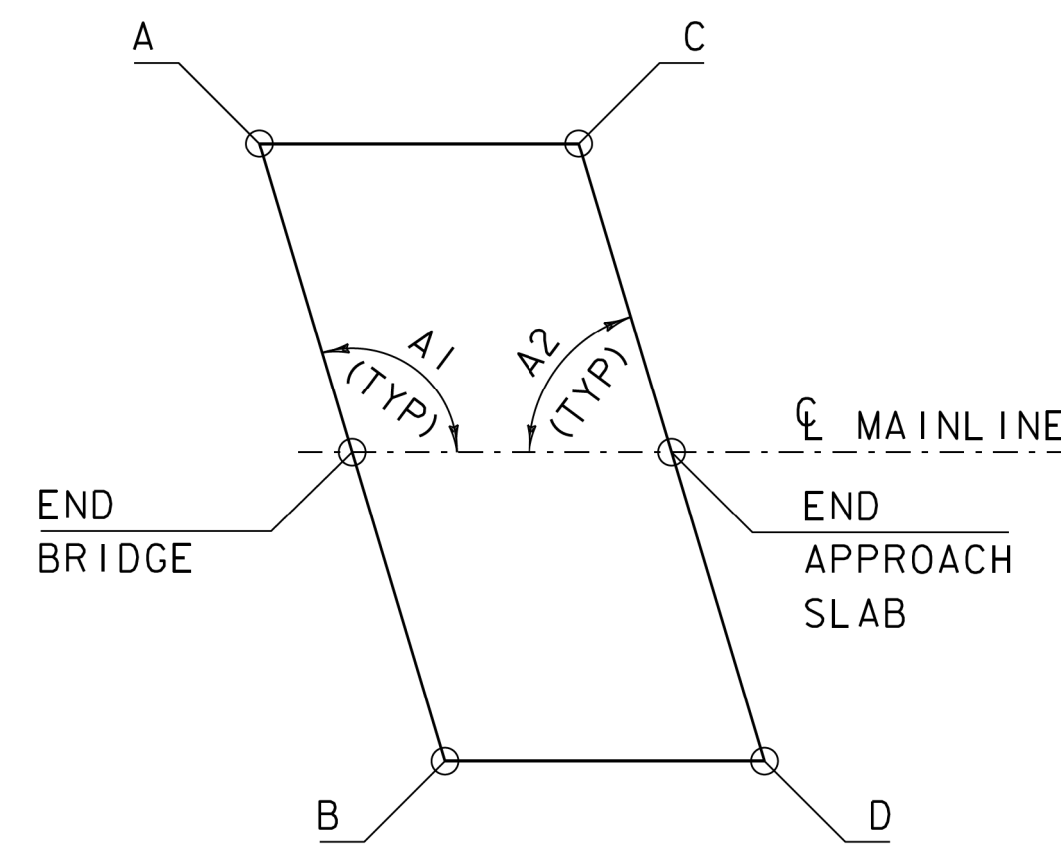
△ -SHEET ADDED 4/8/2014.
REPLACES SHEET 27 IN CONTRACT PLANS.

PROJECT NAME: MARLBORO	
PROJECT NUMBER: BRF 010-1(43)	
FILE NAME: sl0b414sup.dgn	PLOT DATE: 08-APR-2014
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. KLINEFELTER
DESIGNED BY: R. KLINEFELTER	CHECKED BY: J. GRIGAS
BEARING DETAILS	SHEET 27 OF 50

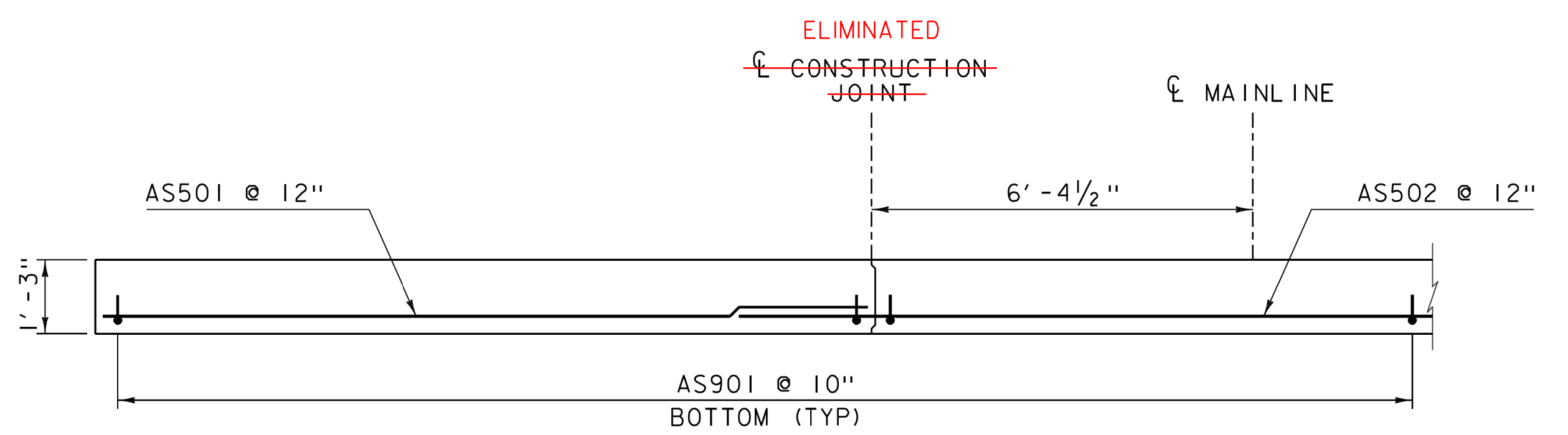




APPROACH SLAB #1 PLAN VIEW
SCALE 1/4" = 1'-0"

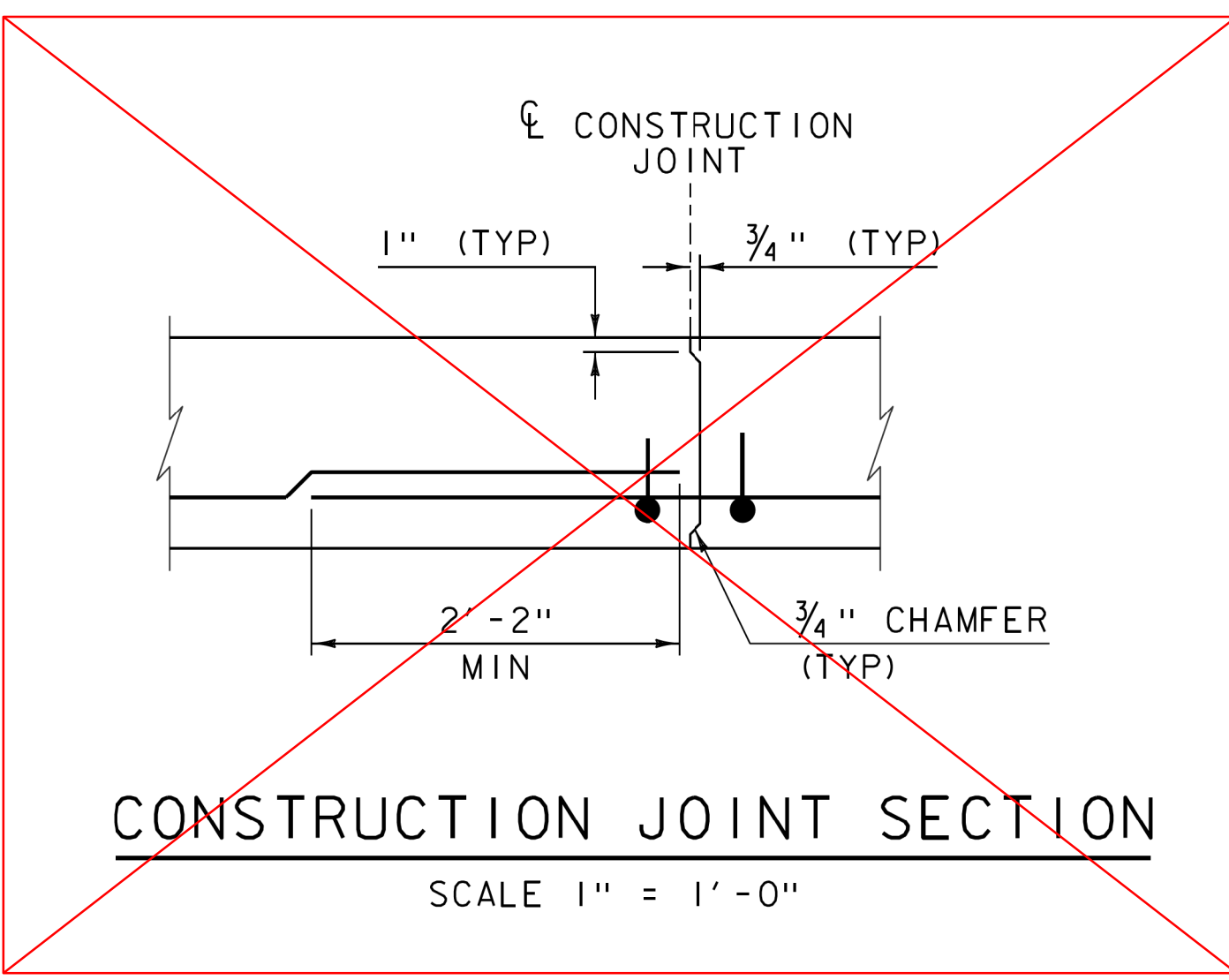


APPROACH SLAB #2 PLAN VIEW
NOT TO SCALE



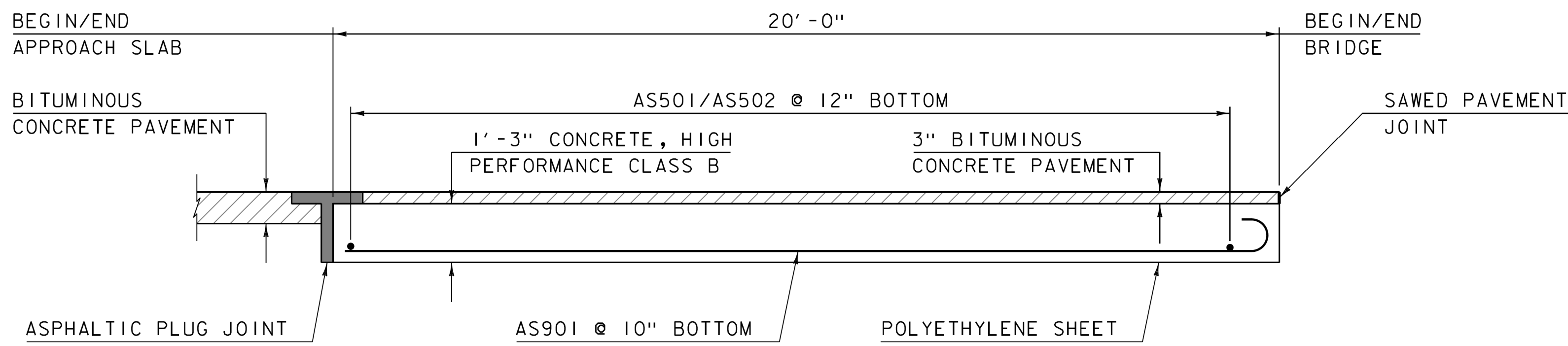
SECTION A-A
SCALE 1/2" = 1'-0"

APPROACH SLABS WERE PLACED FULL WIDTH,
TRANSVERSE REBAR - 1AS501 & 1AS502 WERE
STAGGERED



CONSTRUCTION JOINT SECTION
SCALE 1" = 1'-0"

NOTE:
1. REINFORCING STEEL FOR APPROACH SLAB #1 SHALL
BE SIMILAR TO APPROACH SLAB #2.



APPROACH SLAB ELEVATION VIEW
SCALE 1/2" = 1'-0"

APPROACH SLAB #1			
	STATION	OFFSET	ELEVATION
1A	392+87.68	-19.50	1300.19
BEGIN AS #1	392+92.14	CL	1299.06
1B	392+96.70	19.50	1297.93
1C	393+07.45	-19.50	1299.92
END AS #1	393+12.14	CL	1298.78
1D	393+16.94	19.50	1297.63

APPROACH SLAB #2			
	STATION	OFFSET	ELEVATION
2A	393+88.22	-19.50	1298.49
BEGIN AS #1	393+93.87	CL	1297.30
2B	393+99.65	19.50	1296.11
2C	394+07.98	-19.50	1298.06
END AS #2	394+13.87	CL	1296.86
2D	394+19.89	19.50	1295.65

APPROACH SLAB #1	A1	103°
	A2	77°

APPROACH SLAB #2	A1	107°
	A2	73°

APPROACH SLAB ELEVATIONS
ALL ELEVATIONS ARE TOP OF SLAB

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

△ SHEET REVISED 5/2/2014.
REPLACES SHEET 28 IN CONTRACT PLANS.

PROJECT NAME:	MARLBORO	FILE NAME:	s10b414opslab.dgn	PLOT DATE:	02-MAY-2014
PROJECT NUMBER:	BRF 010-1(43)	PROJECT LEADER:	K. HIGGINS	DRAWN BY:	R. KLINFELTER
		DESIGNED BY:	R. KLINFELTER	CHECKED BY:	J. SALVATORI
		APPROACH SLAB DETAILS			SHEET 28 OF 50

THIS SHEET INTENTIONALLY LEFT BLANK

△ -SHEET ADDED 4/25/2014.
REPLACES SHEET 30 IN CONTRACT PLANS.

PROJECT NAME: MARLBORO
PROJECT NUMBER: BRF 010-1(43)

FILE NAME: s10414sub_1.dgn	PLOT DATE: 25-APR-2014
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. KLINEFELTER
DESIGNED BY: R. KLINEFELTER	CHECKED BY: J. SALVATORI
BLANK	SHEET 30 OF 50



THIS SHEET INTENTIONALLY LEFT BLANK

△ -SHEET ADDED 4/25/2014.
REPLACES SHEET 31 IN CONTRACT PLANS.

PROJECT NAME: MARLBORO
PROJECT NUMBER: BRF 010-1(43)

FILE NAME: s10414sub_1.dgn	PLOT DATE: 25-APR-2014
PROJECT LEADER: K. HIGGINS	DRAWN BY: R. KLINEFELTER
DESIGNED BY: R. KLINEFELTER	CHECKED BY: J. SALVATORI
BLANK	SHEET 31 OF 50

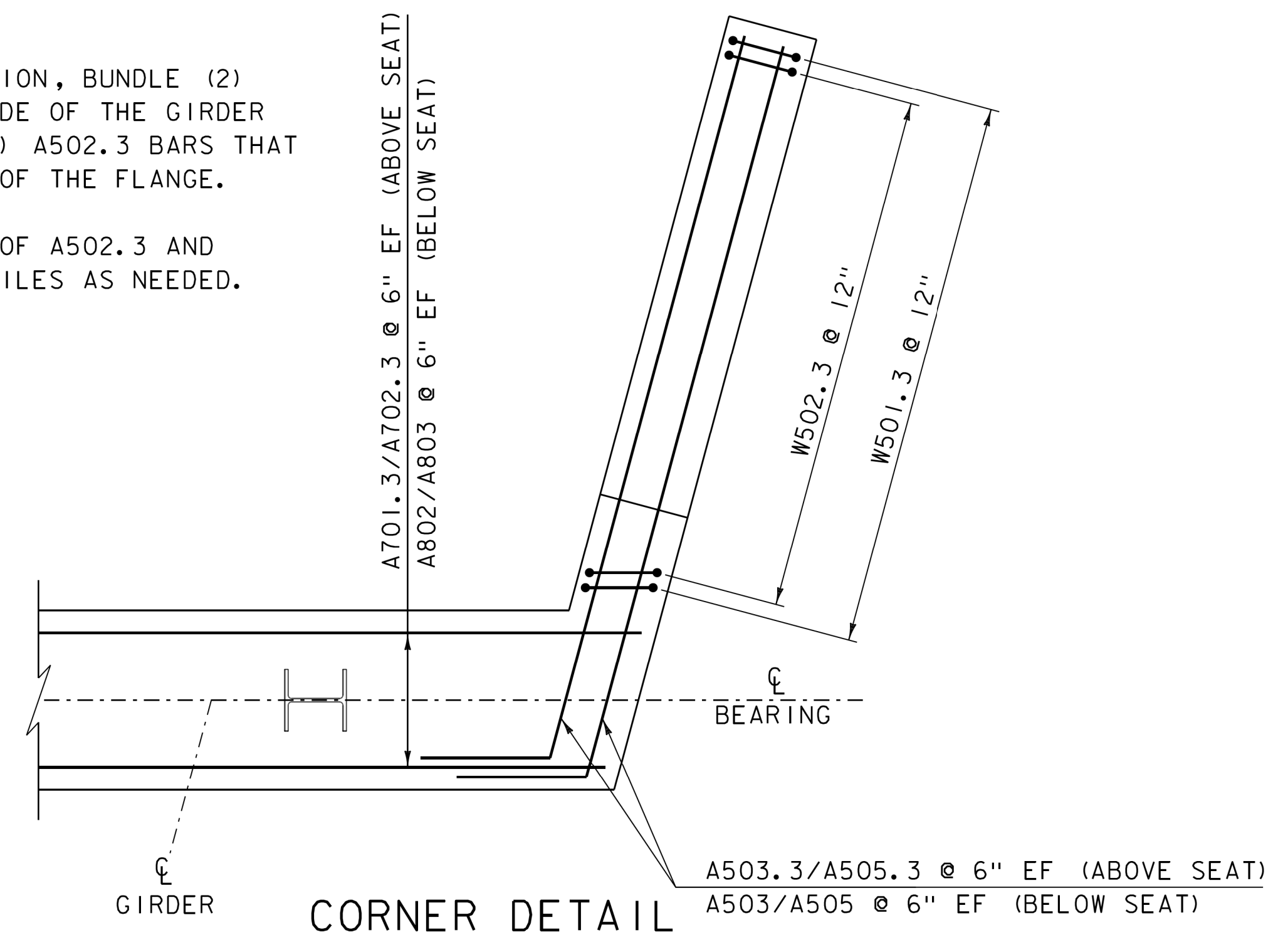


NOTES:

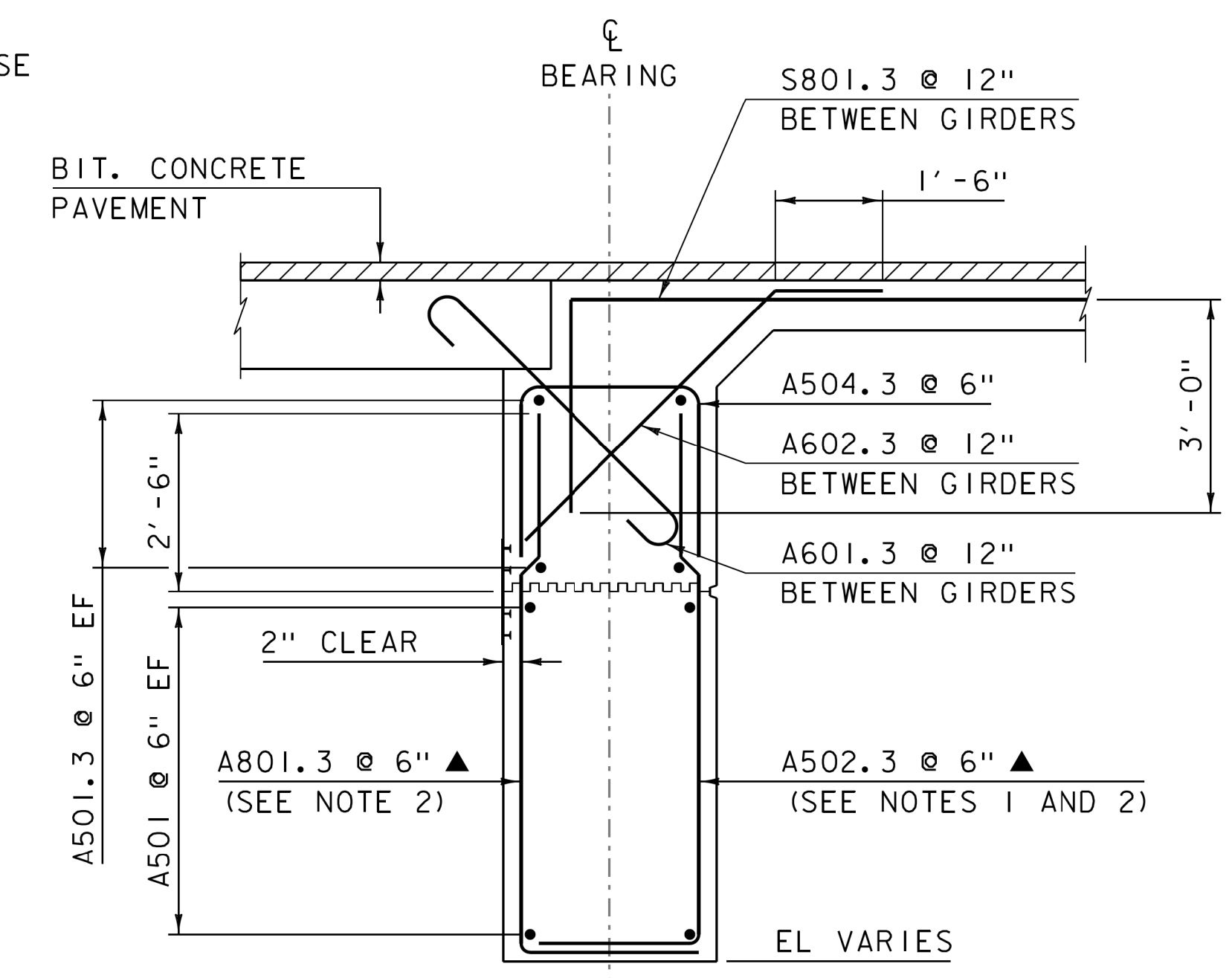
1. AT EACH GIRDER LOCATION, BUNDLE (2) A502.3 BARS ON EACH SIDE OF THE GIRDER FLANGE AND OMIT THE (2) A502.3 BARS THAT FALL WITHIN THE WIDTH OF THE FLANGE.
2. TURN THE BOTTOM LEG OF A502.3 AND A801.3 BARS TO CLEAR PILES AS NEEDED.

NOTE:

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



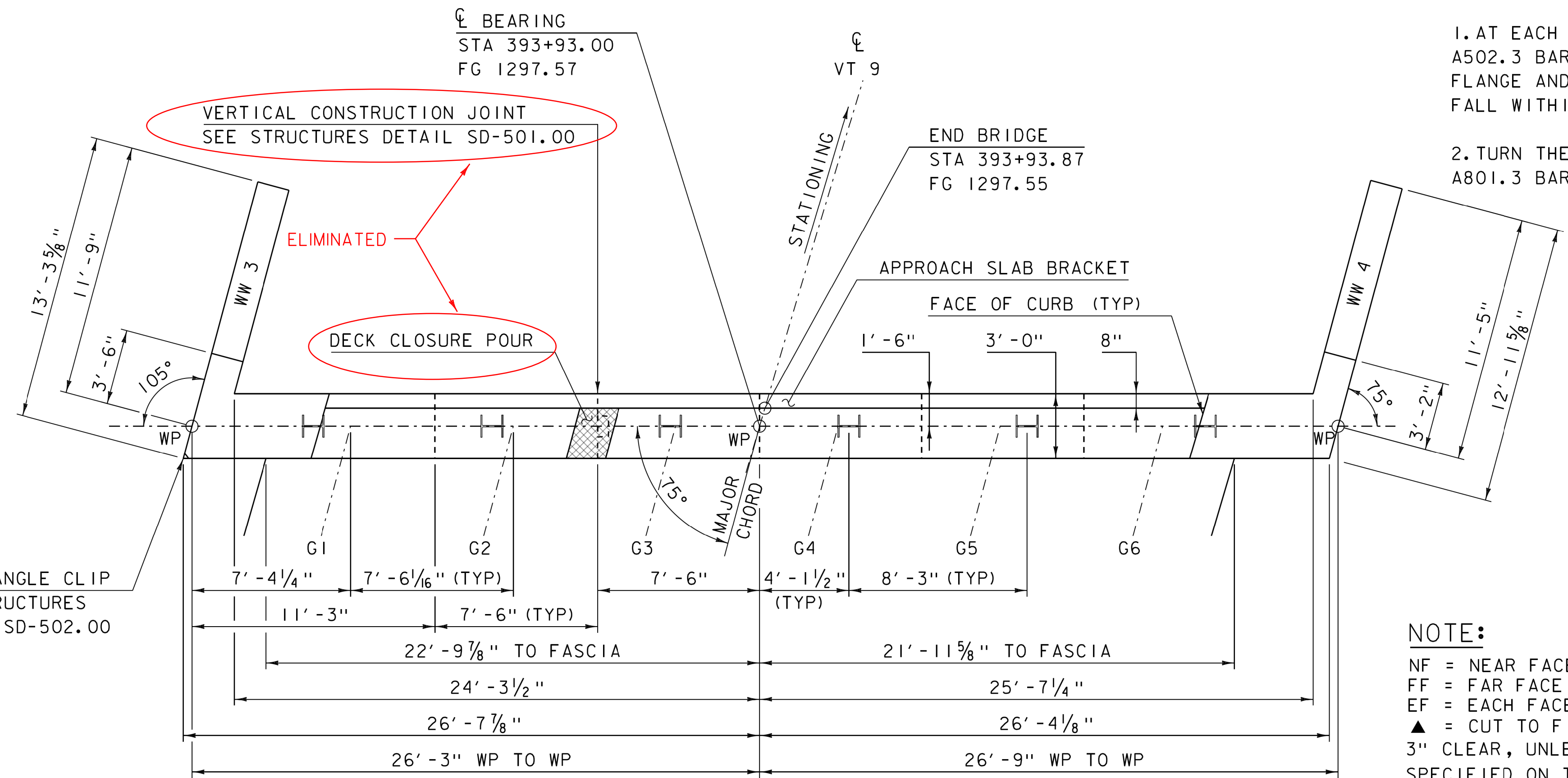
CORNER DETAIL
 SCALE 1/2" = 1'-0"



SECTION A-A
ABUTMENT REINFORCING TYPICAL
 SCALE 1/2" = 1'-0"

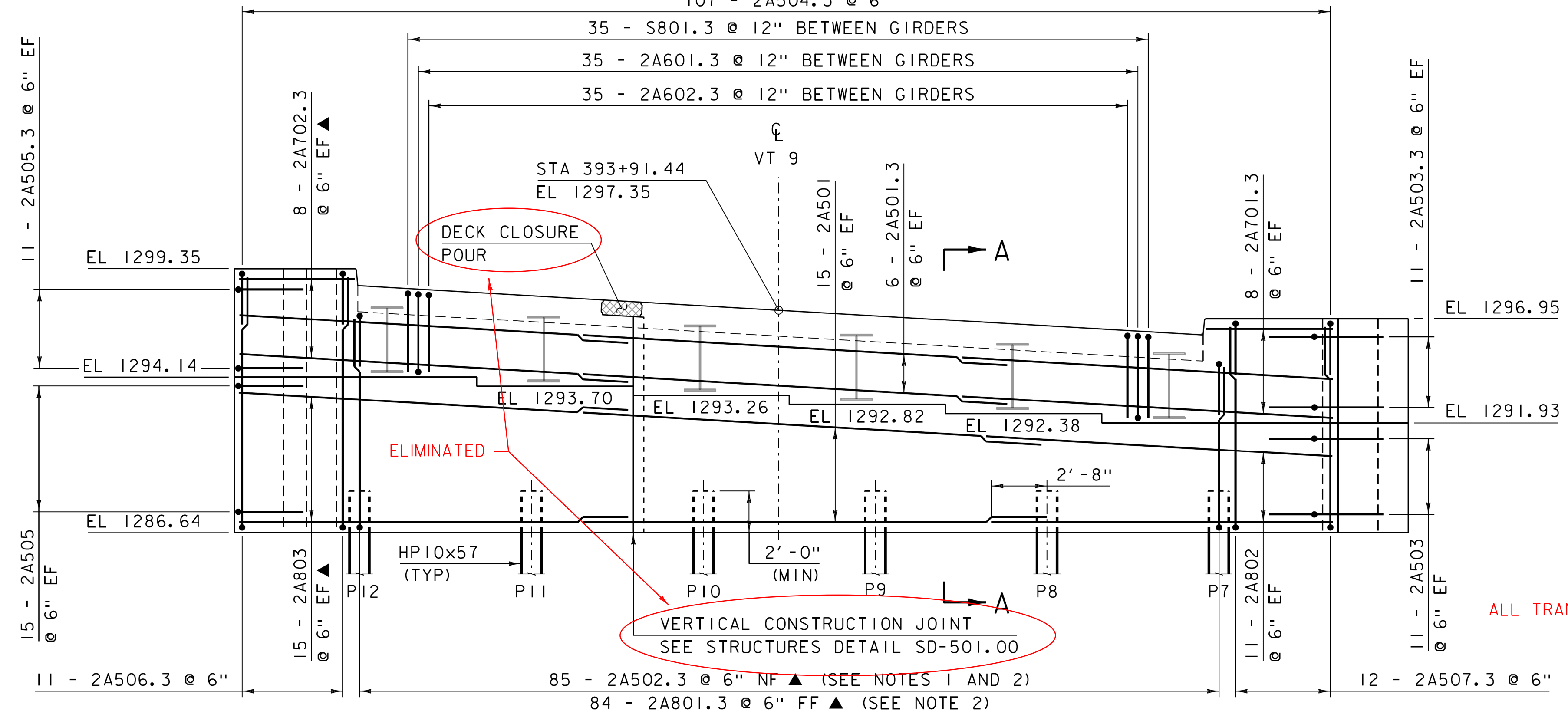
△ - SHEET REVISED 5/7/2014.
 REPLACES SHEET 32 IN CONTRACT PLANS.

ALL TRANSVERSE REBARS WERE STAGGERED



ABUTMENT 2 PLAN

SCALE 1/4" = 1'-0"
 107 - 2A504.3 @ 6"



ABUTMENT 2 ELEVATION

SCALE 1/4" = 1'-0"

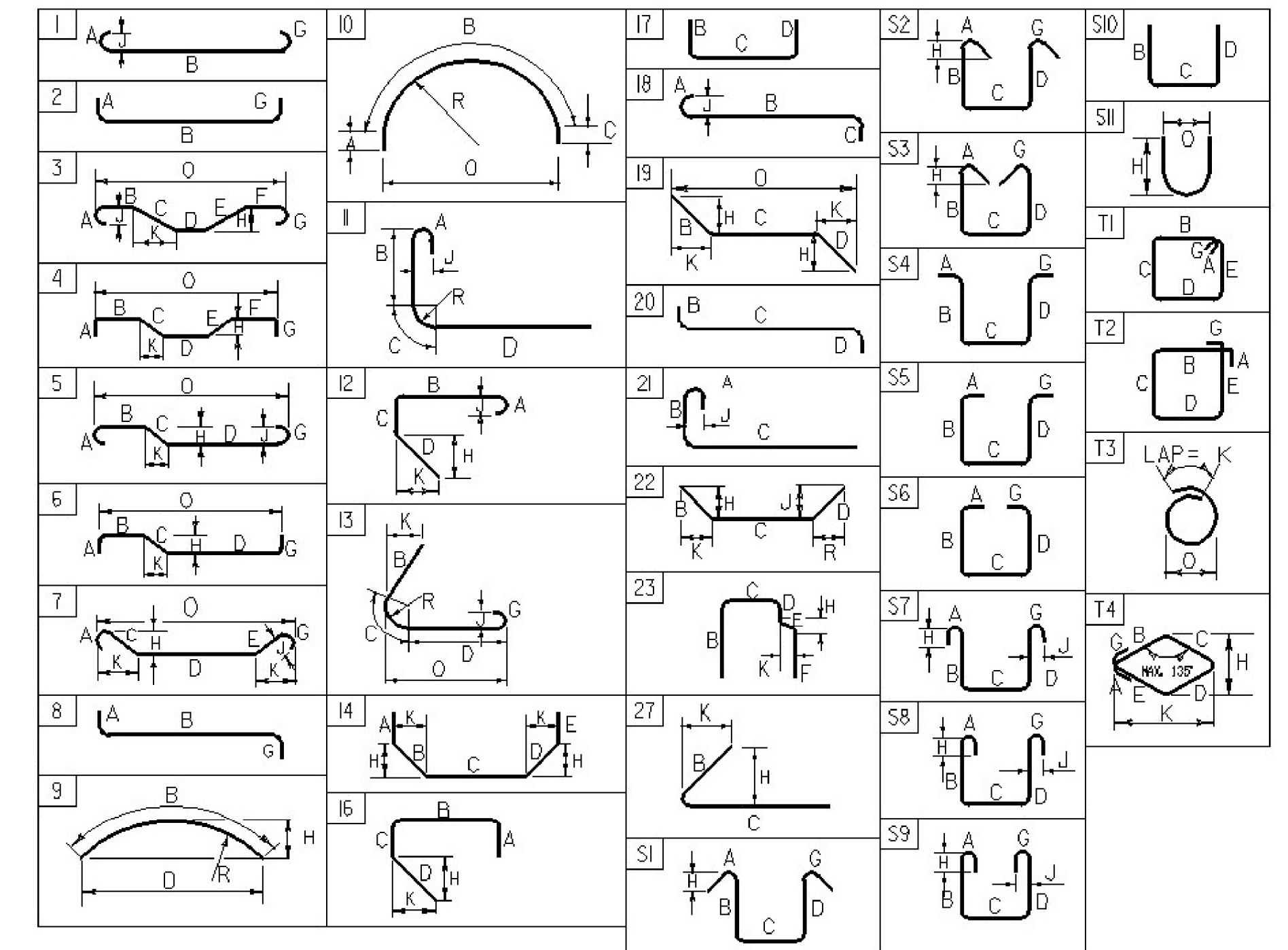
PROJECT NAME:	MARLBORO	FILE NAME:	sl0414sub_2.dgn	PLOT DATE:	07-MAY-2014
PROJECT NUMBER:	BRF 010-1(43)	PROJECT LEADER:	K. HIGGINS	DRAWN BY:	R. KLINEFELTER
		DESIGNED BY:	R. KLINEFELTER	CHECKED BY:	J. SALVATORI
		ABUTMENT 2			SHEET 32 OF 50

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					
DECK																																								
	324	5	30'-0"	S501.3	STR	30'-0"																																		
	▲ 328	5	15'-9"	S502.3	STR	15'-9"																																		
	▲ 328	5	31'-2"	S503.3	STR	31'-2"																																		
	* 25	23	5	5'-0"	S504.3	STR	5'-0"																																	
	256	234	5	5'-4"	S505.3	S5	0'-10"	1'-1"	1'-5"	1'-2"			0'-10"																											
	*	71	8	23'-7"	S801.3	17		3'-0"	20'-7"	---																														
APPROACH SLAB #1																																								
	*	22	5	13'-3"	1AS501	STR	13'-3"																																	
		21	5	28'-6"	1AS502	STR	28'-6"																																	
		49	9	20'-9"	1AS901	1	1'-3"	19'-6"				---		1'-0"																										
APPROACH SLAB #2																																								
		21	5	13'-6"	2AS501	STR	13'-6"																																	
		21	5	29'-0"	2AS502	STR	29'-0"																																	
	*	50	9	20'-9"	2AS901	1	1'-3"	19'-6"				---		1'-0"																										
ABUTMENT #1																																								
	*	31	5	22'-1"	1A501	STR	22'-1"																																	
		12	5	20'-10"	1A501.3	STR	20'-10"																																	
		14	7	19'-10"	1A701.3	STR	19'-10"																																	
	* ▲	17	8	18'-8"	1A702.3	STR	18'-8"																																	
		22	8	19'-1"	1A802	STR	19'-1"																																	
	* ▲	31	9	18'-8"	1A803	STR	18'-8"																																	
		30	5	14'-11"	1A503	22		2'-5"	12'-6"	---			2'-4"	---	0'-8"	---																								
	* ▲	86	5	12'-7"	1A502.3	17		2'-7"	10'-0"	---			2'-4"	---	0'-8"	---																								
		22	5	14'-11"	1A503.3	22		2'-5"	12'-6"	---			2'-4"	---	0'-8"	---																								
		112	5	7'-5"	1A504.3	S10		2'-5"	2'-7"	2'-5"			2'-6"	---	4'-9"	---																								
	▲	2	5	9'-4"	1A505.3	22		5'-4"	4'-0"	---			2'-6"	---	4'-9"	---																								
	▲	17	5	22'-1"	1A506.3	S10		9'-9"	2'-7"	9'-9"																														
		11	5	26'-9"	1A507.3	S10		12'-1"	2'-7"	12'-1"																														
	*	36	6	6'-1"	1A601.3	1	0'-8"	4'-9"				0'-8"		0'-6"																										
	*	36	6	6'-6"	1A602.3	22		5'-0"	1'-6"	---			3'-6"	---	3'-6"	---																								
	* ▲	85	8	12'-7"	1A801.3	17		2'-7"	10'-0"	---																														
WINGWALL #1																																								
		11	5	25'-3"	1W501.3	S10		12'-1"	1'-1"	12'-1"																														
		11	5	6'-5"	1W502.3	S10		2'-8"	1'-1"	2'-8"																														
ABUTMENT #2																																								
		30	5	22'-1"	2A501	STR	22'-1"																																	
		12	5	20'-10"	2A501.3	STR	20'-10"																																	
	*	17	7	17'-6"	2A701.3	STR	17'-6"																																	
	▲	16	7	18'-10"	2A702.3	STR	18'-10"																																	
	*	23	8	16'-10"	2A802	STR	16'-10"																																	
	▲	30	8	18'-10"	2A803	STR	18'-10"																																	
	*	23	5	14'-11"	2A503	22		2'-5"	12'-6"	---			2'-4"	---	0'-8"	---																								
		30	5	15'-2"	2A505	27		2'-5"	12'-9"	---			2'-4"	---	0'-8"	---																								
	▲	85	5	12'-8"	2A502.3	17		2'-7"	10'-1"	---			2'-4"	---	0'-8"	---																								
		22	5	14'-11"	2A503.3	22		2'-5"	12'-6"	---			2'-4"	---	0'-8"	---																								
		107	5	7'-5"	2A504.3	S10		2'-5"	2'-7"	2'-5"			2'-6"	---	4'-9"	---																								
		22	5	15'-2"	2A505.3	27		2'-5"	12'-9"	---			2'-4"	---	0'-8"	---																								
		11	5	26'-11"	2A506.3	S10		12'-2"	2'-7"	12'-2"																														
		12	5	22'-1"	2A507.3	S10		9'-9"	2'-7"	9'-9"																														
	*	36	6	6'-1"	2A601.3	1	0'-8"	4'-9"				0'-8"		0'-6"																										
	*	36	6	6'-6"	2A602.3	22		5'-0"	1'-6"	---			3'-6"	---	3'-6"	---																								
	* ▲	85	8	12'-8"	2A801.3	17		2'-7"	10'-1"	---																														
WINGWALL #3																																								
		11	5	24'-11"	3W501.3	S10		11'-11"	1'-1"	11'-11"																														
		11	5	6'-5"	3W502.3	S10		2'-8"	1'-1"	2'-8"																														
WINGWALL #4																																								
	*	12	5	20'-3"	4W501.3	S10		9'-7"	1'-1"	9'-7"																														
		11	5	6'-5"	4W502.3	S10		2'-8"	1'-1"	2'-8"																														

~ 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-S). 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.
- WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
- ▲ DENOTES BARS TO BE CUT IN FIELD.
- * DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
- △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
- .3 IN BAR MARK SUFFIX DENOTES LEVEL III REINFORCING STEEL.



ASTM STANDARD
REINFORCING BARS

BAR SIZE DESIGNATION	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

▲ - SHEET ADDED 5/7/2014.
REPLACES SHEET 33 IN CONTRACT PLANS.

PROJECT NAME: **MARLBORO**

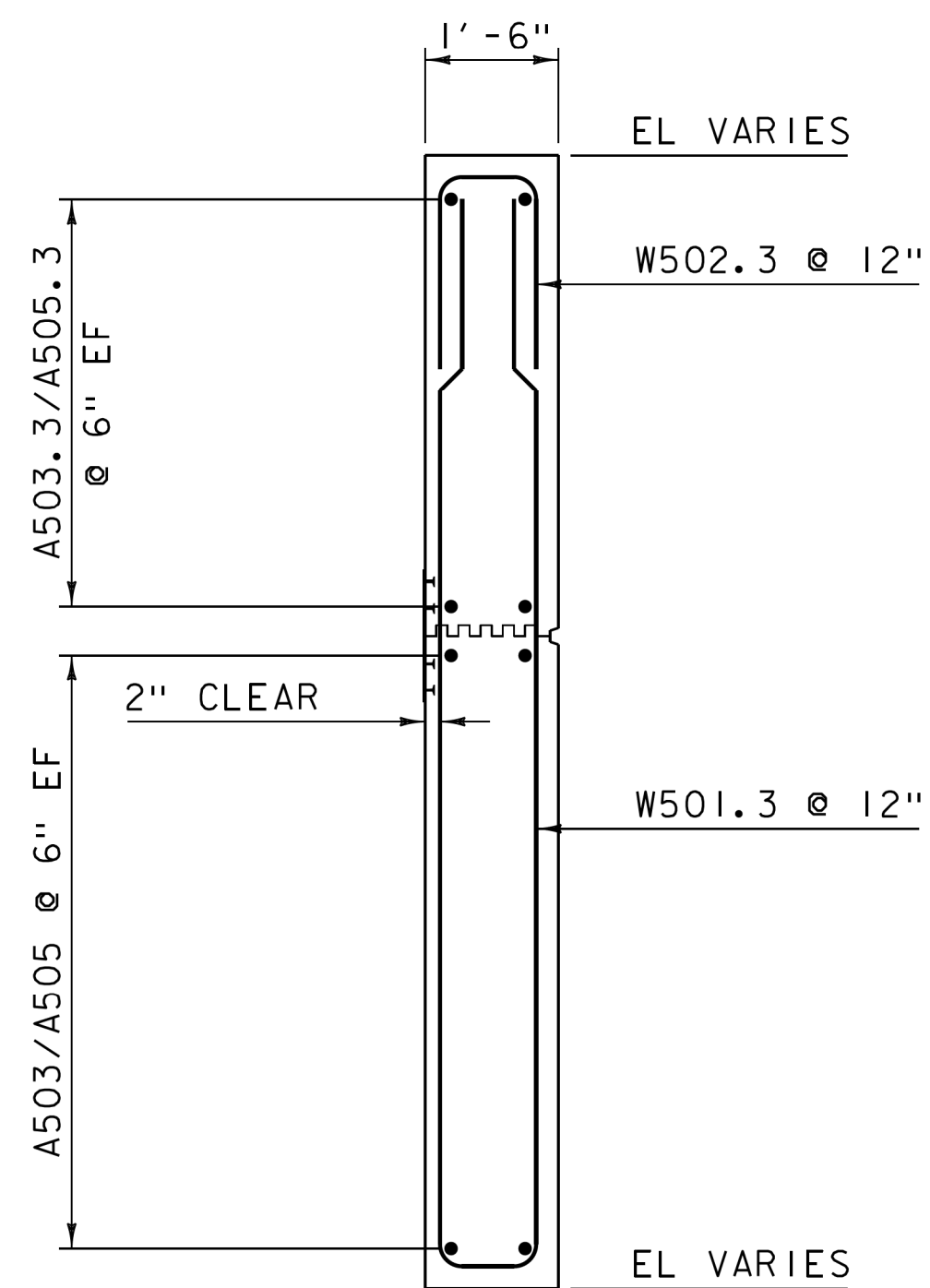
PROJECT NUMBER: **BRF 010-1(43)**

FILE NAME: s10b414rss.dgn

PROJECT MANAGER: **K. HIGGINS**

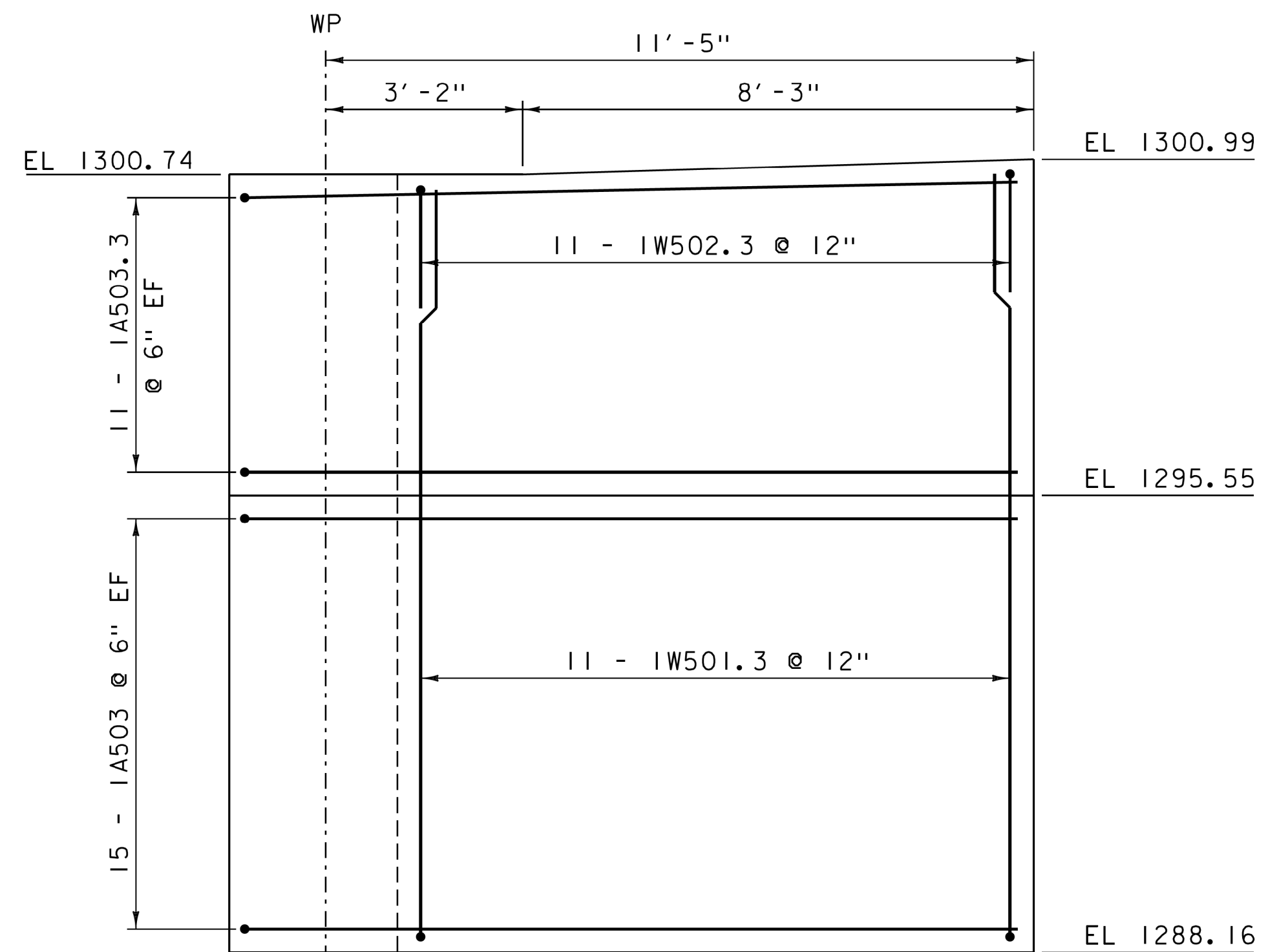
DESIGNED BY: **R. KLINFELTER**

REINFORCING



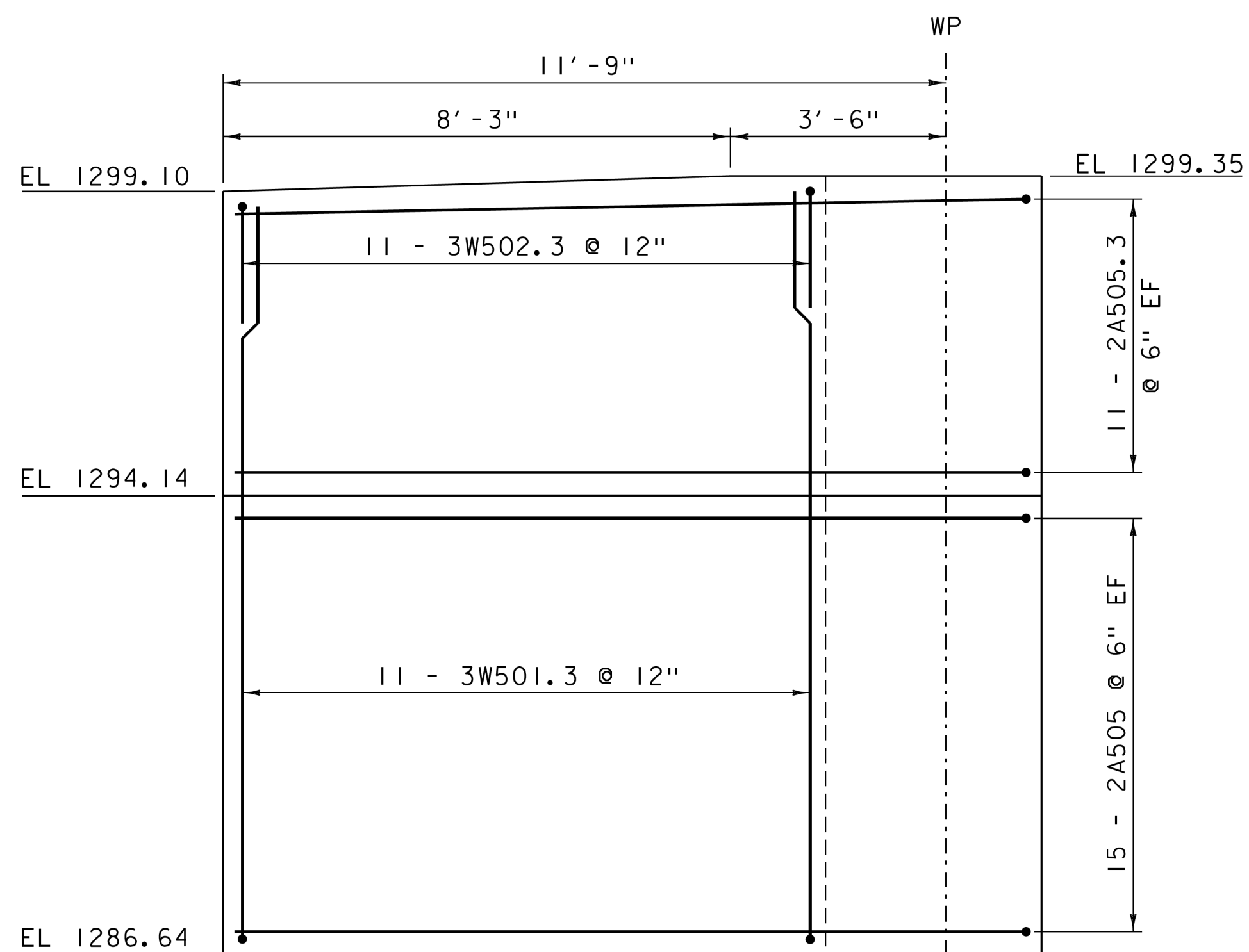
WINGWALL TYPICAL

SCALE 1/2" = 1'-0"



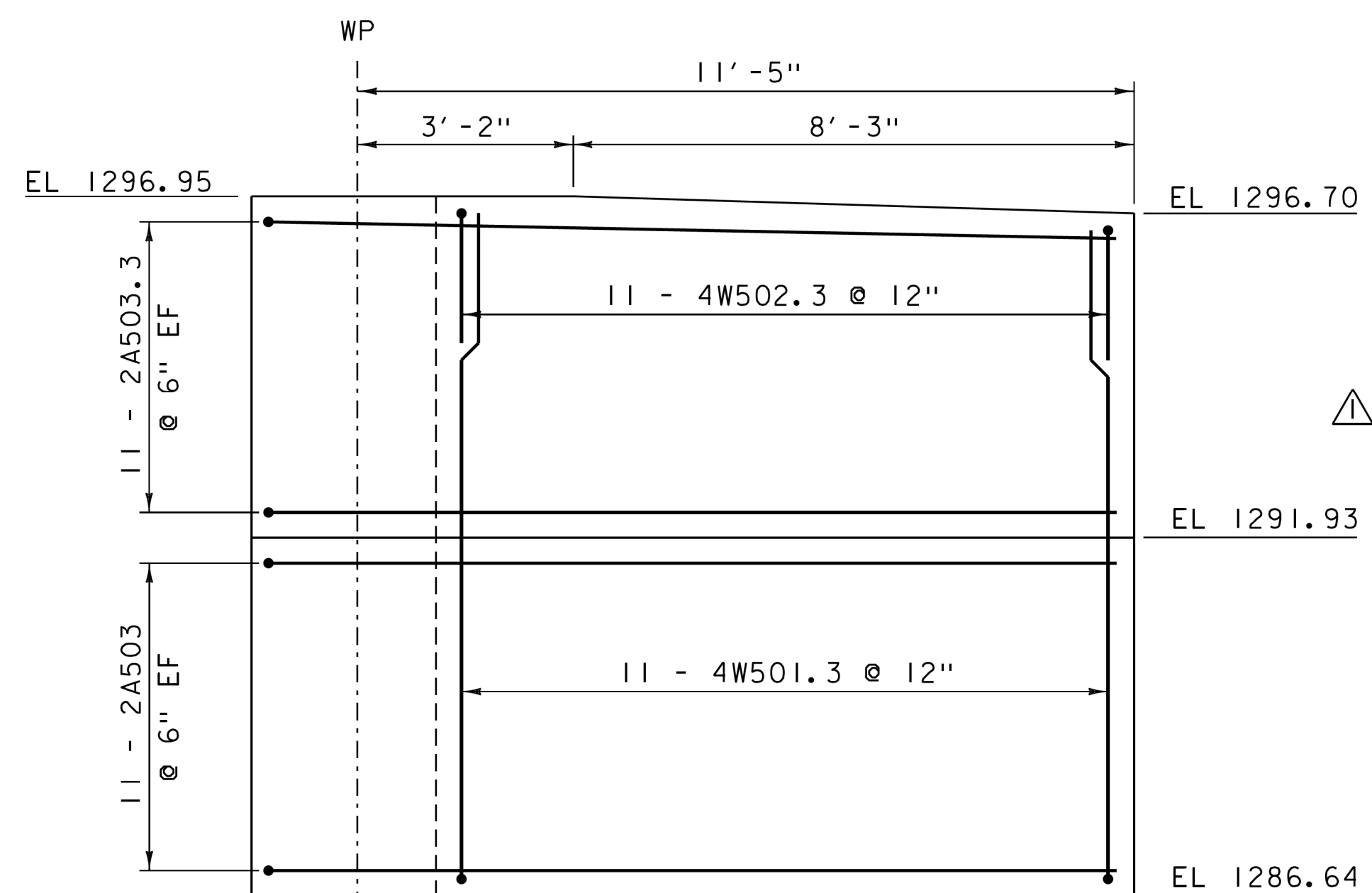
WINGWALL 1 ELEVATION

SCALE 1/2" = 1'-0"



WINGWALL 3 ELEVATION

SCALE 1/2" = 1'-0"



WINGWALL 4 ELEVATION

SCALE 1/2" = 1'-0"

△ - SHEET REVISED 5/6/2014.
REPLACES SHEET 34 IN CONTRACT PLANS.

NOTE:

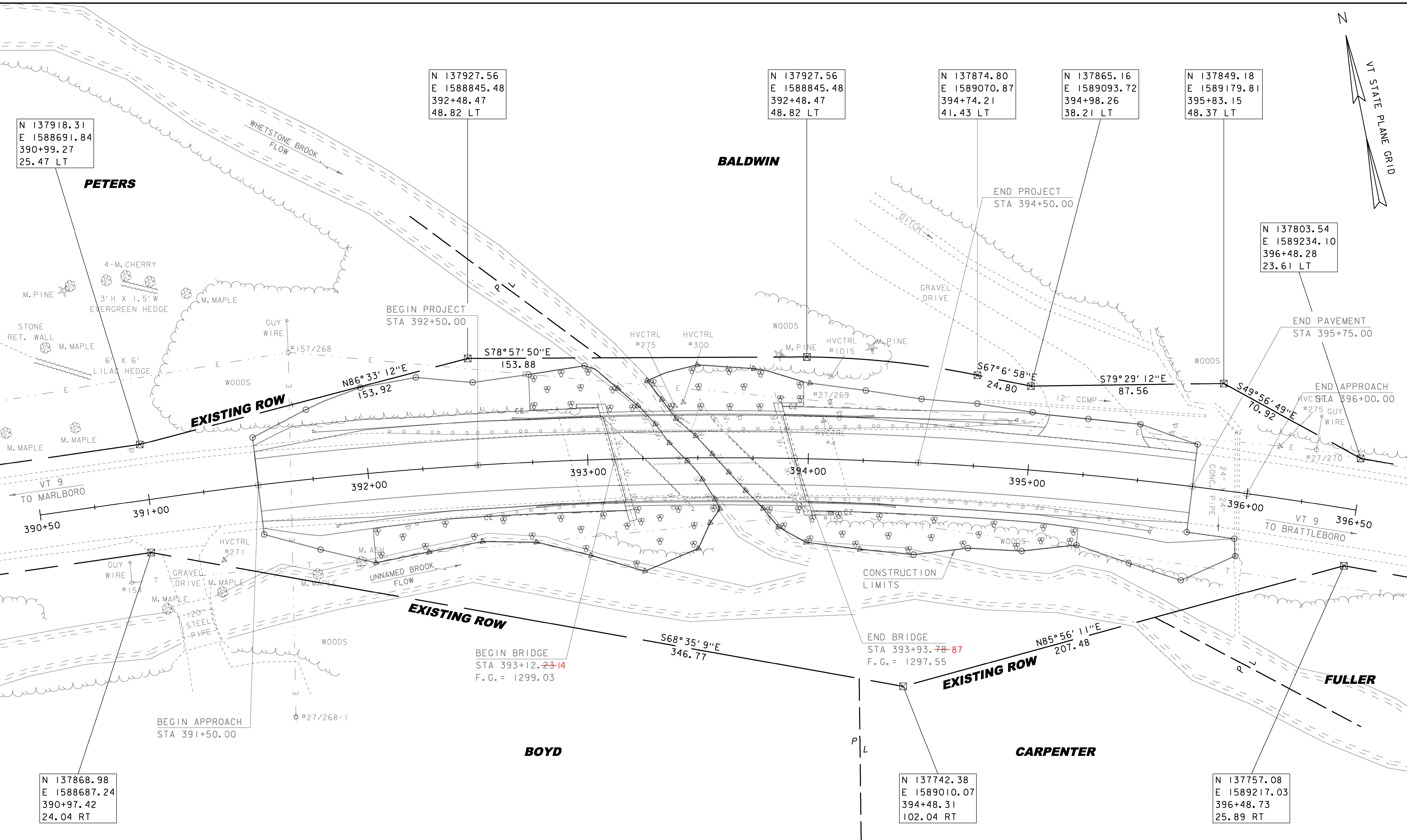
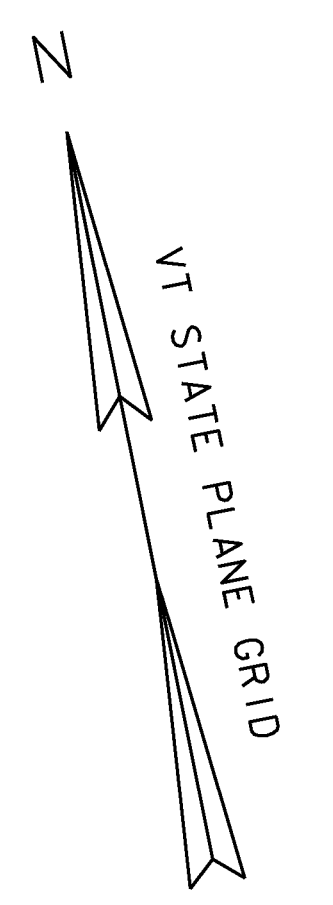
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME: MARLBORO
PROJECT NUMBER: BRF 010-1(43)

FILE NAME: sl0414ww.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: R. KLINEFELTER
WINGWALL DETAILS

PLOT DATE: 06-MAY-2014
DRAWN BY: J. SALVATORI
CHECKED BY: R. KLINEFELTER
SHEET 34 OF 50





N 137918.31
E 1588691.84
390+99.27
25.47 LT

N 137927.56
E 1588845.48
392+48.47
48.82 LT

N 137927.56
E 1588845.48
392+48.47
48.82 LT

N 137874.80
E 1589070.87
394+74.21
41.43 LT

N 137865.16
E 1589093.72
394+98.26
38.21 LT

N 137849.18
E 1589179.81
395+83.15
48.37 LT

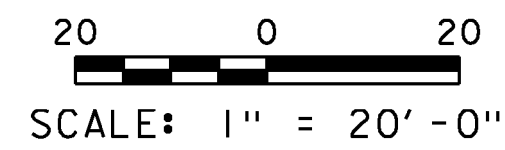
N 137803.54
E 1589234.10
396+48.28
23.61 LT

N 137868.98
E 1588687.24
390+97.42
24.04 RT

N 137742.38
E 1589010.07
394+48.31
102.04 RT

N 137757.08
E 1589217.03
396+48.73
25.89 RT

ROW LAYOUT SHEET



THIS SHEET IS FOR R.O.W. PURPOSES ONLY

PROJECT NAME: MARLBORO	
PROJECT NUMBER: BRF 010-1(43)	
FILE NAME: s10b414row.layout.dgn	PLOT DATE: 28-AUG-2013
PROJECT LEADER: K. HIGGINS	DRAWN BY: K. FRIEDLAND
DESIGNED BY: R. KLINEFELTER	CHECKED BY: J. SALVATORI
ROW LAYOUT SHEET	SHEET 35 OF 50

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE 48 WITH RELATED ROADWAY APPROACH AND CHANNEL WORK. THE PROJECT LOCATION IS IN THE TOWN OF MARLBORO, VT ON VERMONT ROUTE 9, BEGINNING APPROXIMATELY 0.870 MILES FROM THE MARLBORO AND BRATTLEBORO TOWN LINE. ONE-WAY TRAFFIC WILL BE MAINTAINED ON THE EXISTING ROAD THROUGH THE USE OF PHASED CONSTRUCTION AND TEMPORARY TRAFFIC SIGNALS.

THE NEW PREFABRICATED CONCRETE/STEEL COMPOSITE SUPERSTRUCTURE WILL BE APPROXIMATELY 82 FEET IN LENGTH WITH 118 FEET OF ROADWAY WORK.

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

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.68 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL BE COMPLETED IN ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS MOUNTAINOUS, MOSTLY FORESTED WITH SOME OPEN AREAS. VT ROUTE 9 AND TWO GRAVEL DRIVEWAYS ARE WITHIN THE PROJECT SITE. THE IMMEDIATE AREA IS RURAL RESIDENTIAL WITH SEVERAL HOUSES IN THE GENERAL VICINITY OF THE PROJECT. THERE ARE OVERHEAD UTILITIES WHICH MAY HAVE TO BE RELOCATED PRIOR TO CONSTRUCTION.

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

WHETSTONE BROOK AND A DOWNSTREAM UNNAMED BROOK ARE THE ONLY WATER SOURCES ON THE PROJECT SITE. THE BROOK IS CLASSIFIED AS SINUOUS WITH A STREAM BED CONSISTING OF GRAVEL AND COBBLES. THE TRIBUTARY AREA AT THE BRIDGE CROSSING IS 3.3 SQUARE MILES. AT THE END OF THE PROJECT, THERE IS A 24 INCH CULVERT UNDER THE ROAD WHICH CONVEYS WATER FROM A DITCH TOWARDS THE BROOK. DUE TO THE NATURE OF THE SURROUNDING TERRAIN, RUNOFF WATER ENTERING THE PROJECT SITE WILL BE PRIMARILY LIMITED TO THAT WHICH IS CONVEYED ALONG ROADWAY EMBANKMENT, AND THAT WHICH FOLLOWS VT ROUTE 9 ALONG THE -2.1% GRADE AT THE BEGINNING OF THE PROJECT LIMITS AND -2.6% GRADE AT THE END OF THE PROJECT LIMITS.

1.2.3 VEGETATION

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

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF WINDHAM, VERMONT. SOILS ON THE PROJECT SITE ARE 46D BERKSHIRE AND MONADNOCK FINE SANDY LOAM, 15% TO 25% SLOPES, "K FACTOR" = 0.24/0.28 AND 26C WESTBURY FINE SANDY LOAM, 8% TO 15% SLOPES, "K FACTOR" = 0.37. THE SOIL IS CONSIDERED HIGHLY ERODIBLE DUE TO SIGNIFICANT SLOPES.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:

0.0-0.23 = LOW EROSION POTENTIAL
0.24-0.36 = MODERATE EROSION POTENTIAL
0.37 AND HIGHER = HIGH EROSION POTENTIAL.

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NONE.
HISTORICAL AREAS: NONE.
ARCHEOLOGICAL AREAS: NONE.
PRIME AGRICULTURAL LAND: NONE.
THREATENED AND ENDANGERED SPECIES: NONE.
WATER RESOURCE: WHETSTONE BROOK.
WETLANDS: NONE.

1.3 RISK EVALUATION

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

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

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

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

1.4.1 MARK SITE BOUNDARIES

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

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

1.4.2 LIMIT DISTURBANCE AREA

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

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

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

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

FOLLOWING GUIDANCE FROM THE LOW RISK SITE HANDBOOK, THE CONTRACTOR SHALL PROPOSE LOCATIONS FOR STABILIZED CONSTRUCTION ENTRANCES ON THE CONTRACTOR DEVELOPED EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

1.4.4 INSTALL SEDIMENT BARRIERS

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

FILTER CURTAIN SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLANS PRIOR TO ANY CHANNEL WORK.

FOLLOWING GUIDANCE FROM THE LOW RISK SITE HANDBOOK, THE CONTRACTOR SHALL PROPOSE LOCATIONS FOR SILT FENCE ON THE CONTRACTOR DEVELOPED EPSC PLAN.

1.4.5 DIVERT UPLAND RUNOFF

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

THE NEED TO DIVERT UPLAND RUNOFF IS NOT ANTICIPATED AT THIS SITE.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

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

THE USE OF STONE CHECK DAMS IS NOT ANTICIPATED FOR THIS PROJECT.

1.4.7 CONSTRUCT PERMANENT CONTROLS

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

THE USE OF PERMANENT STORMWATER TREATMENT DEVICES IS NOT ANTICIPATED FOR THIS PROJECT.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE.

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

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

1.4.9 WINTER STABILIZATION

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

1.4.10 STABILIZE SOIL AT FINAL GRADE

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

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

1.4.11 DE-WATERING ACTIVITIES

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

DEWATERING IS NOT ANTICIPATED AT THIS SITE. IF DEWATERING IS NECESSARY, THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR.

1.4.12 INSPECT YOUR SITE

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

1.5 SEQUENCE AND STAGING

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

1.5.1 CONSTRUCTION SEQUENCE

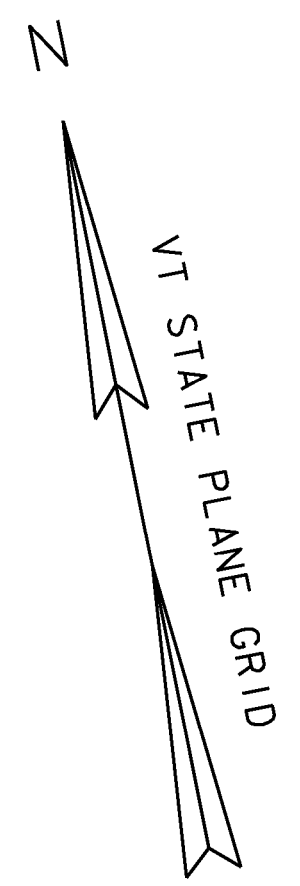
1.5.2 OFF-SITE ACTIVITIES

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

PROJECT NAME: MARLBORO
PROJECT NUMBER: BRF 010-1 (43)

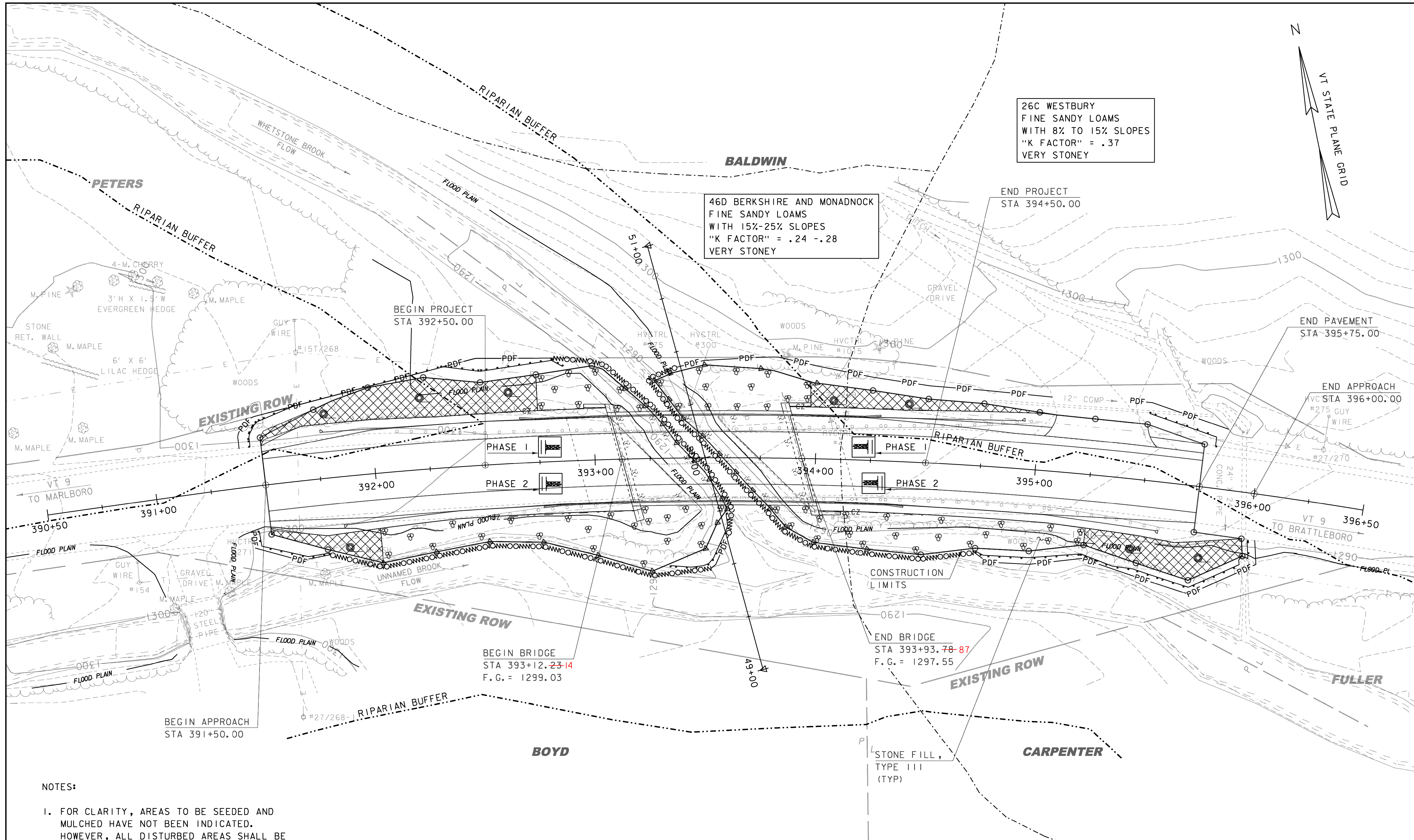
FILE NAME: si0b414erode+.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: R. KLINEFELTER
EPSC NARRATIVE

PLOT DATE: 28-AUG-2013
DRAWN BY: K. FRIEDLAND
CHECKED BY: G. LAROCHE
SHEET 36 OF 50

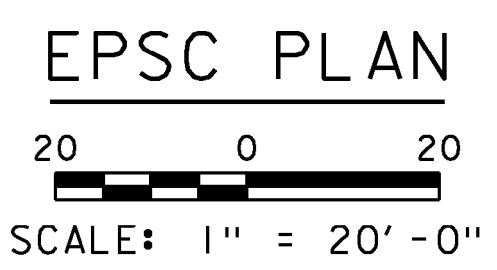


26C WESTBURY
FINE SANDY LOAMS
WITH 8% TO 15% SLOPES
"K FACTOR" = .37
VERY STONEY

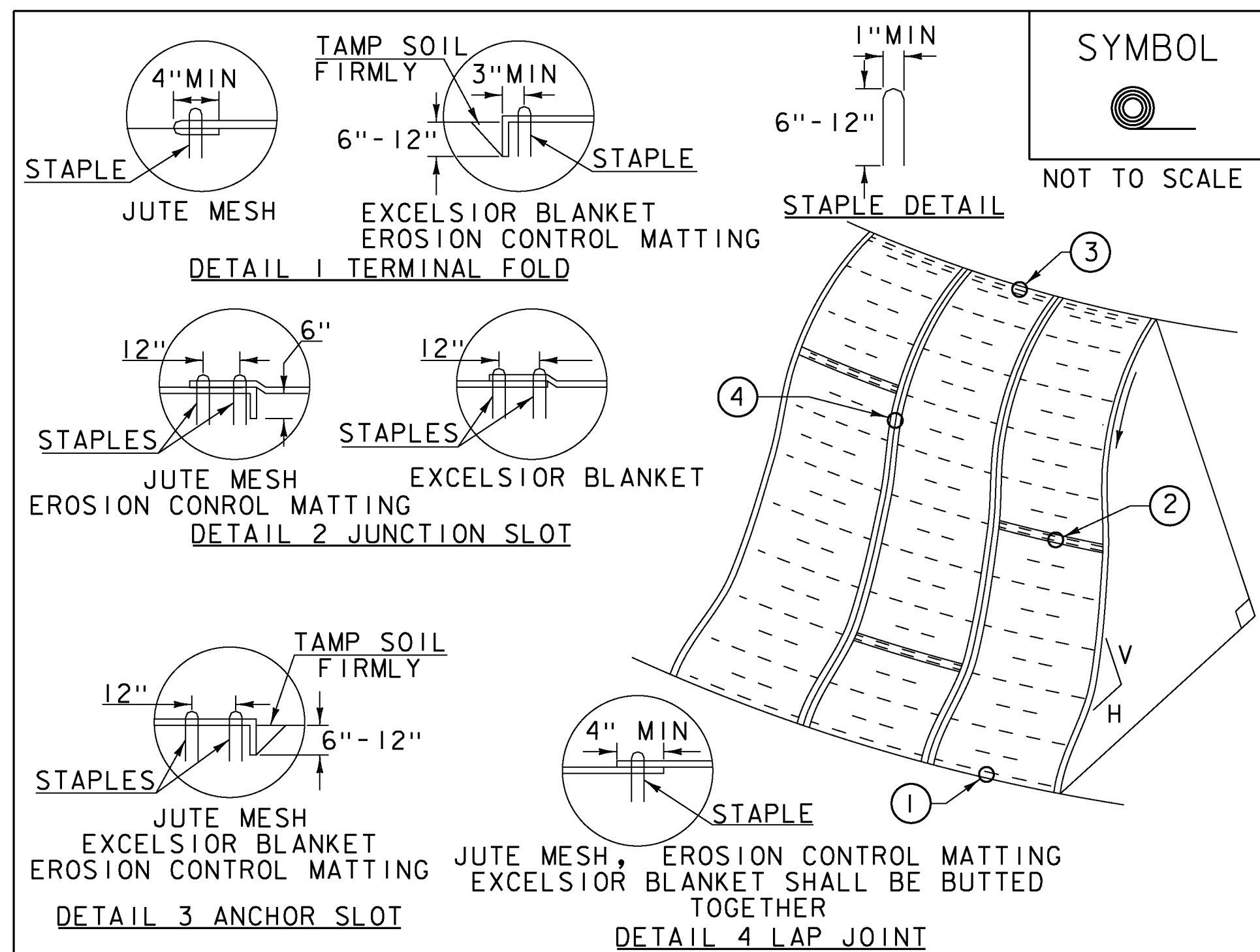
46D BERKSHIRE AND MONADNOCK
FINE SANDY LOAMS
WITH 15%-25% SLOPES
"K FACTOR" = .24 -.28
VERY STONEY



- NOTES:
1. FOR CLARITY, AREAS TO BE SEEDDED AND MULCHED HAVE NOT BEEN INDICATED. HOWEVER, ALL DISTURBED AREAS SHALL BE SEEDDED AND MULCHED AS APPLICABLE.
 2. EXISTING CONTOURS SHOWN. SEE CROSS SECTIONS FOR FINAL CONDITIONS.



PROJECT NAME:	MARLBORO	FILE NAME:	sl0b414ero_bdr.dgn	PLOT DATE:	28-AUG-2013
PROJECT NUMBER:	BRF 010-1(43)	PROJECT LEADER:	K. HIGGINS	DRAWN BY:	K. FRIEDLAND
		DESIGNED BY:	R. KLINEFELTER	CHECKED BY:	G. LAROCHE
		EPSC PLAN			SHEET 37 OF 50



CONSTRUCTION SPECIFICATIONS

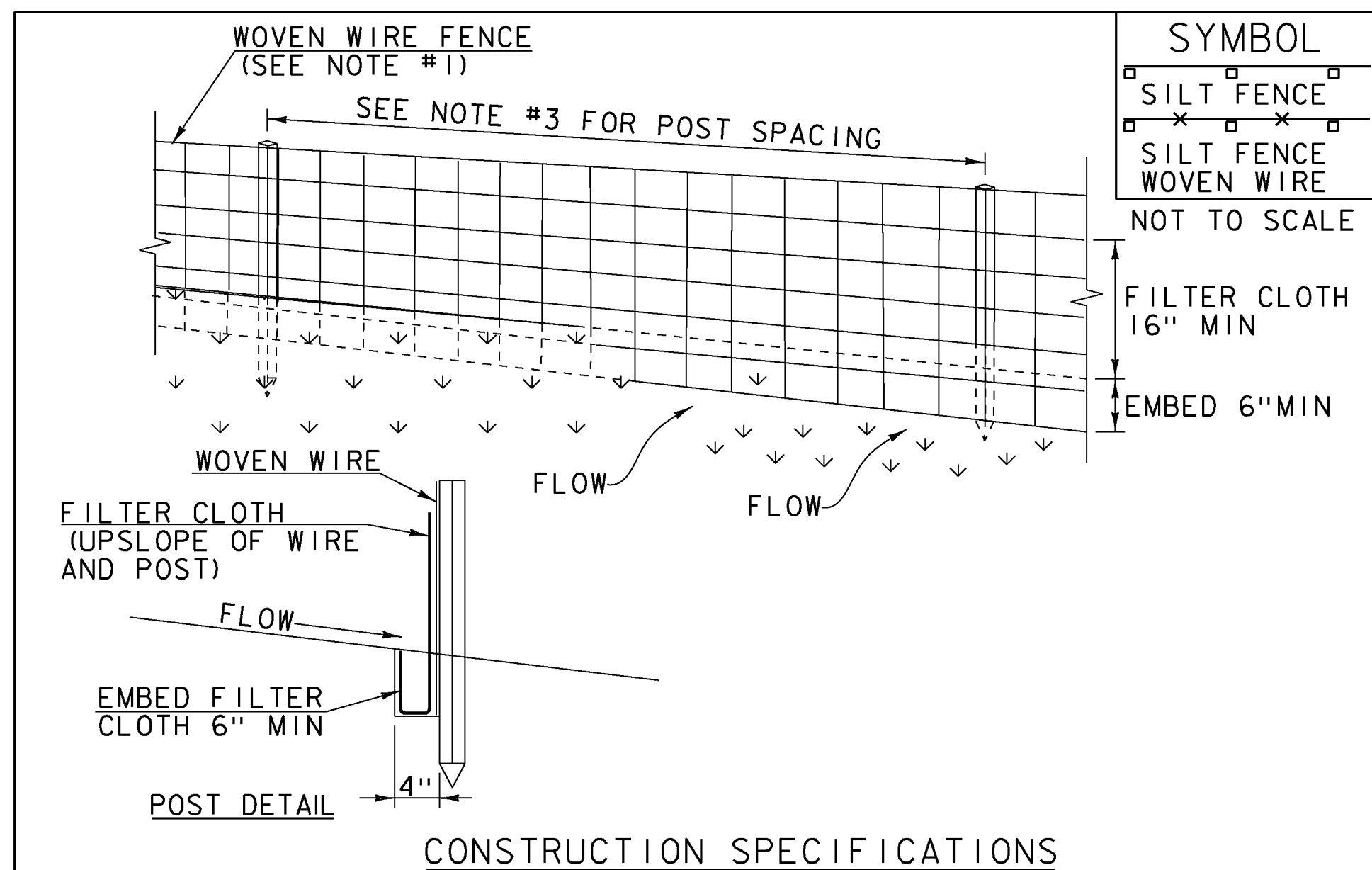
1. APPLY TO SLOPES GREATER THAN 3H: 1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4' X 225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4' X 150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

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

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

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

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAF1100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

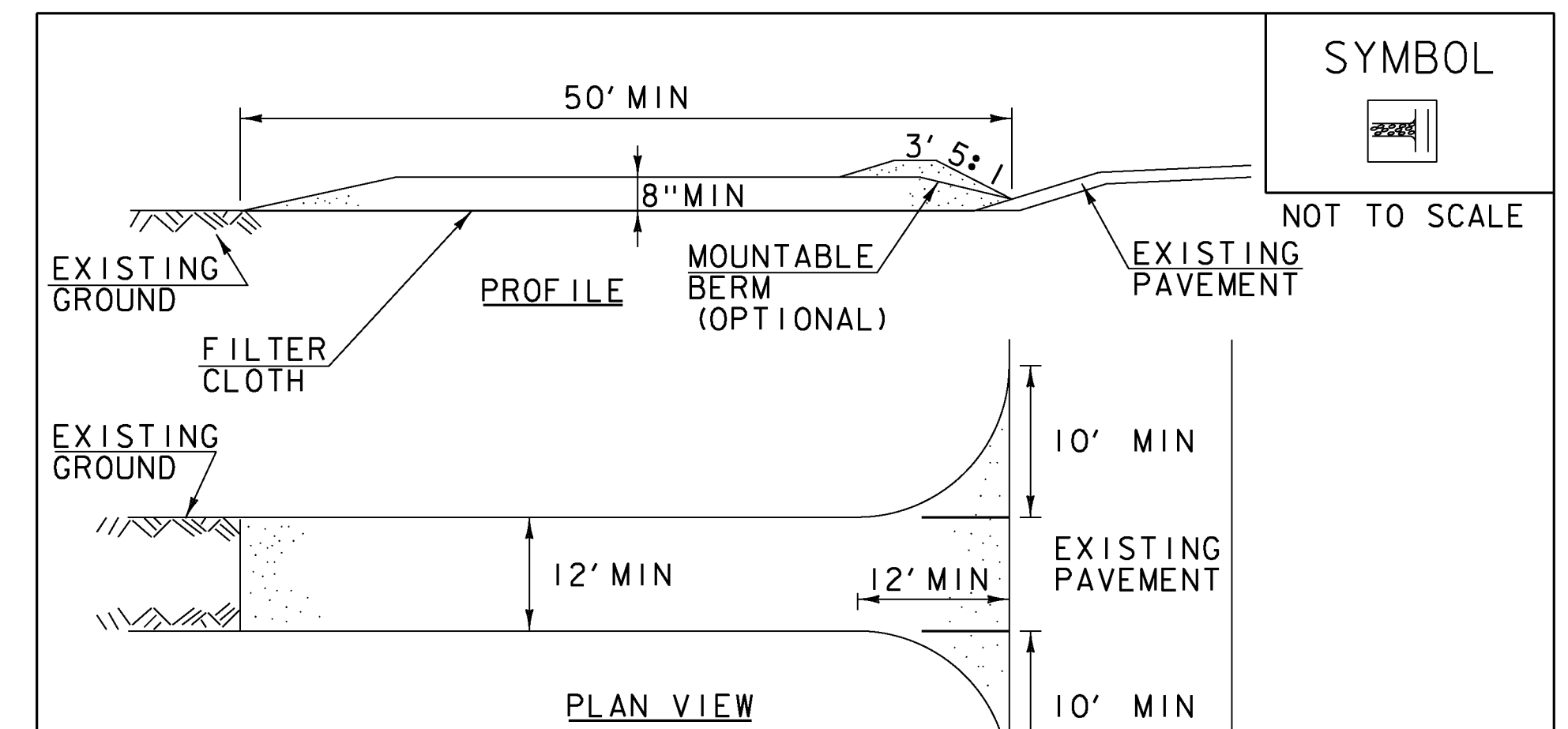
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

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

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

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



CONSTRUCTION SPECIFICATIONS

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

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

STABILIZED CONSTRUCTION ENTRANCE

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

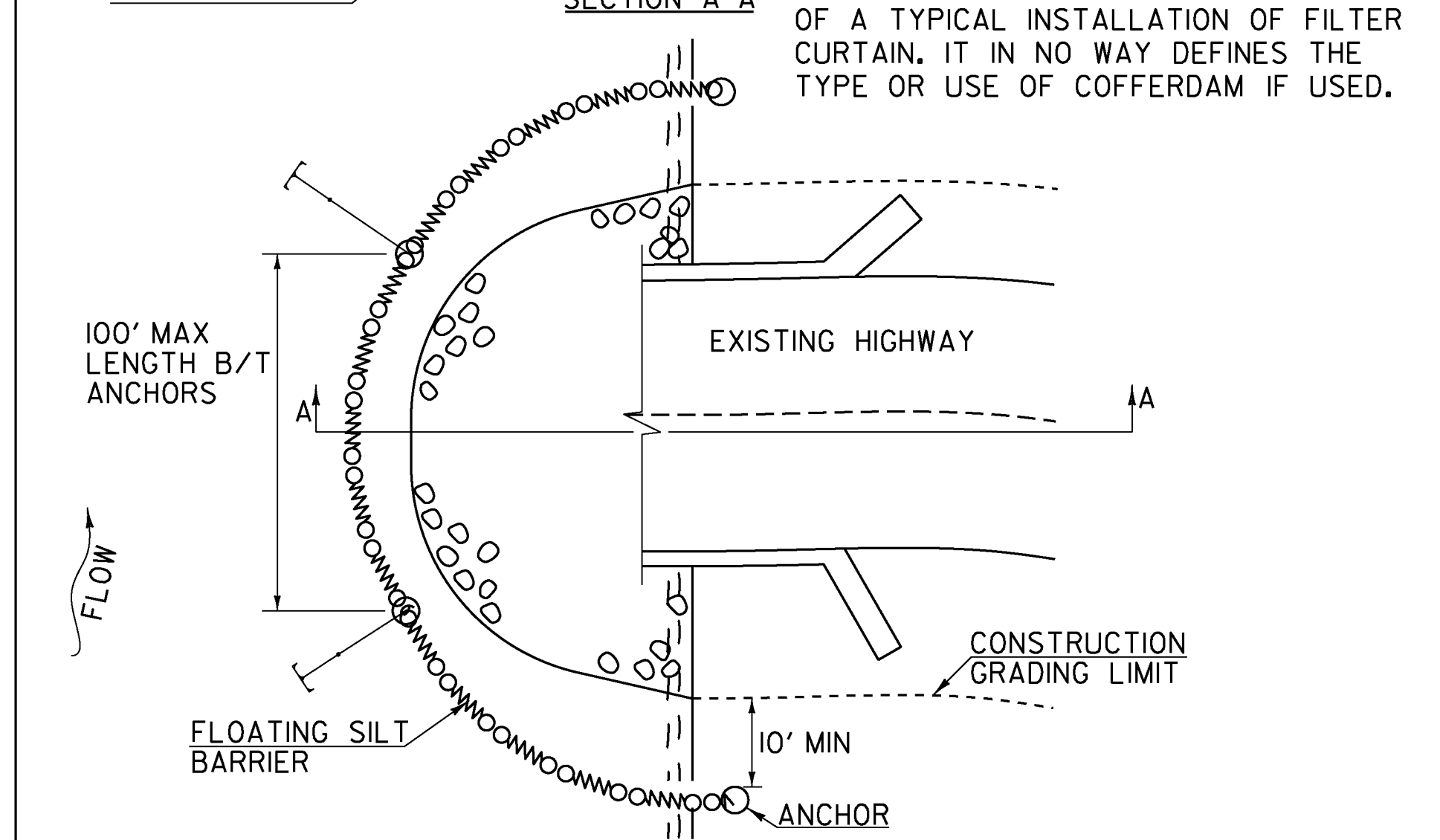
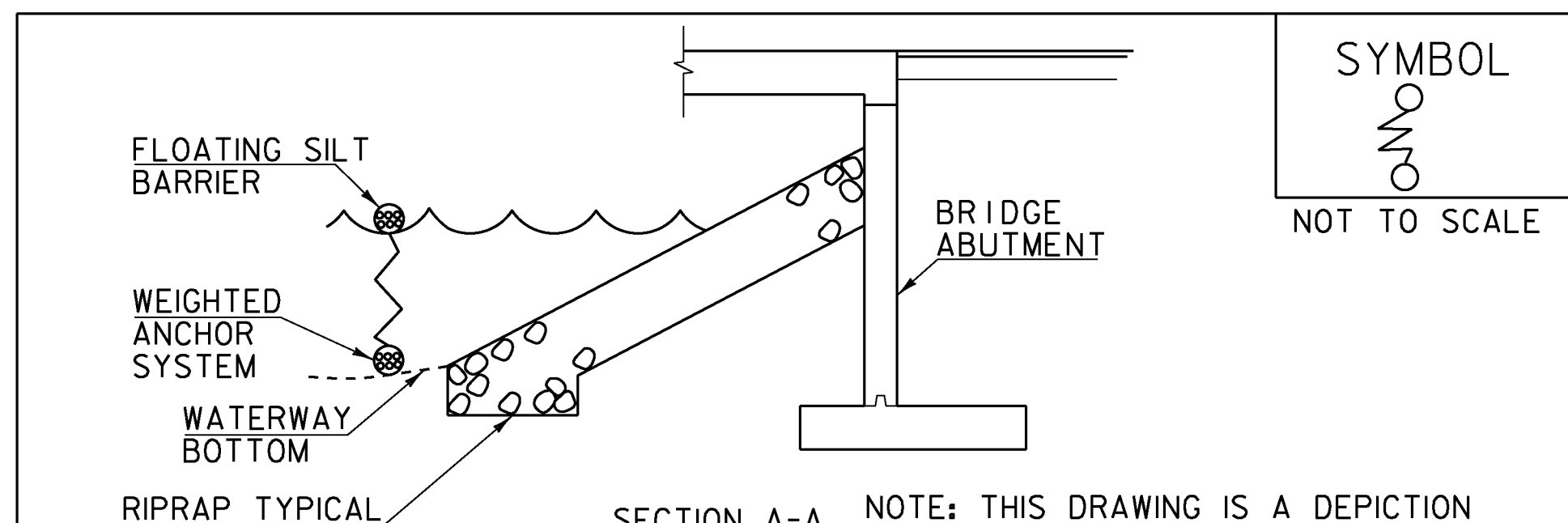
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: MARLBORO
PROJECT NUMBER: BRF 010-1 (43)

FILE NAME: si0b414ero_det.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: R. KLINEFELTER
EPSC DETAILS 1

PLOT DATE: 28-AUG-2013
DRAWN BY: K. FRIEDLAND
CHECKED BY: G. LAROCHE
SHEET 38 OF 50

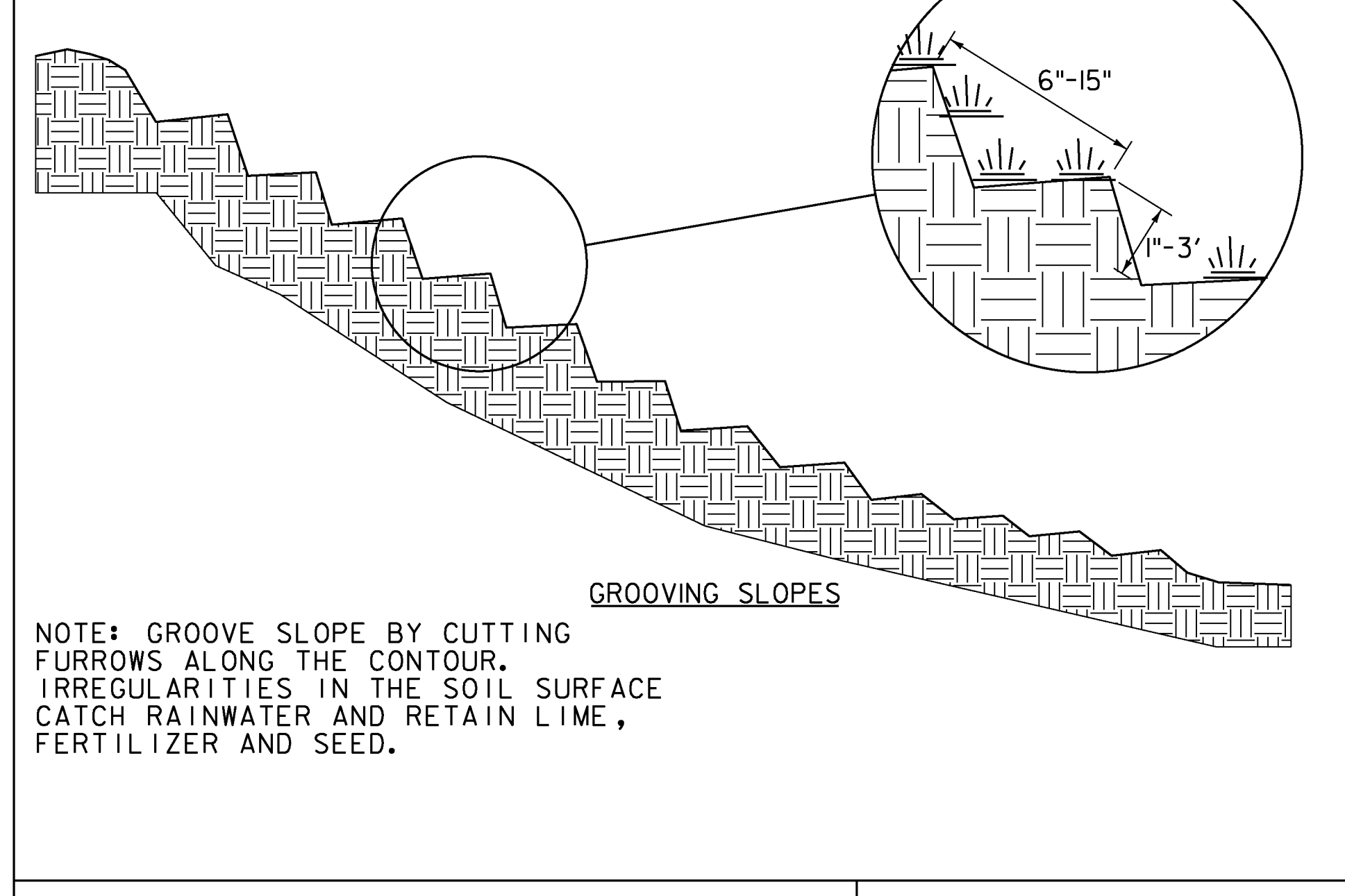
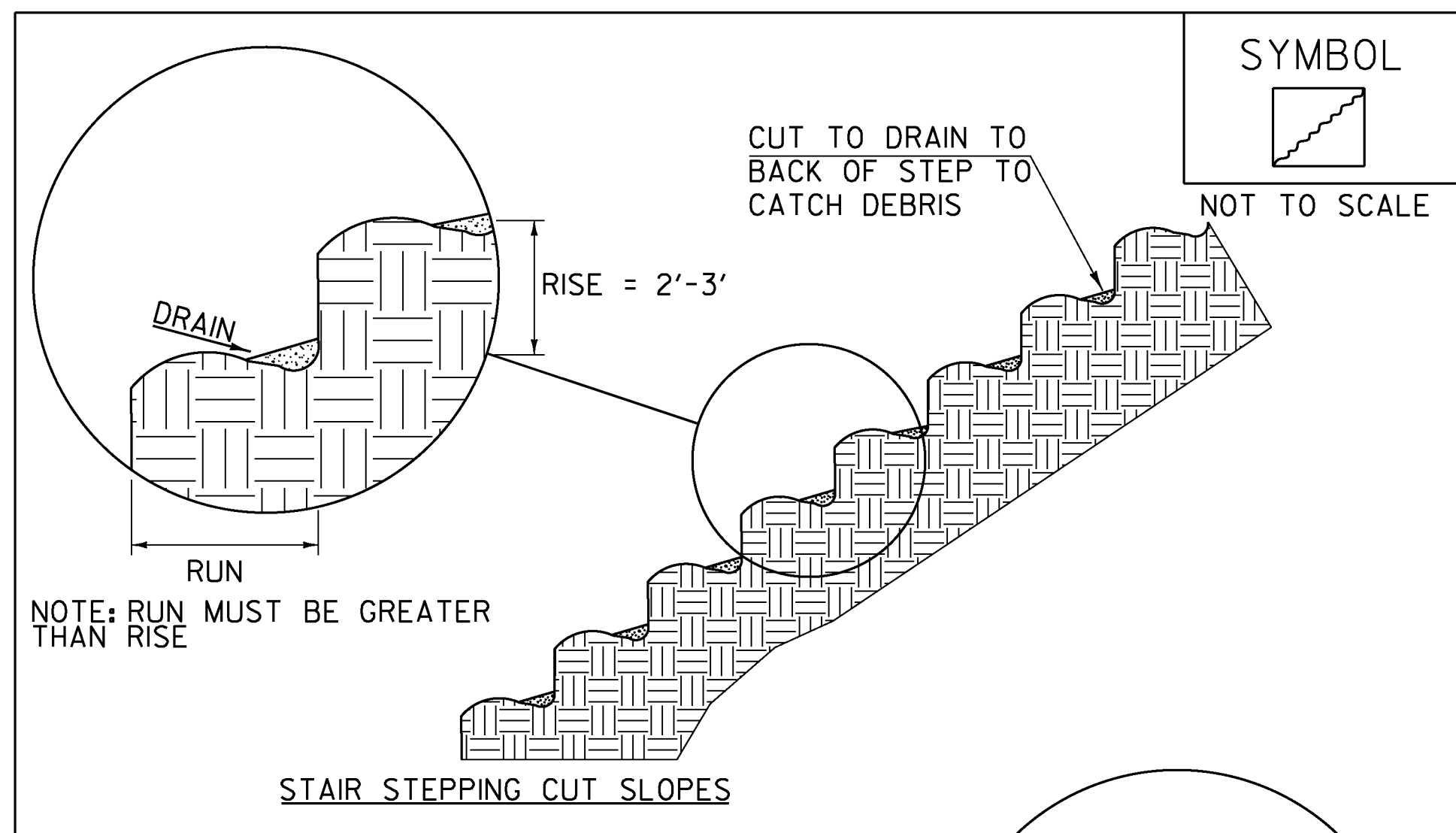


- CONSTRUCTION SPECIFICATIONS**
1. FILTER CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY, OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN 1.5 FEET/SECOND.
 2. MAXIMUM 100' LENGTH BETWEEN ANCHORS.
 3. LAST SECTION SHALL TERMINATE A MINIMUM OF 10' BEYOND LIMIT OF DISTURBANCE.
 4. THE WEIGHTED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

FILTER CURTAIN

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

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



SURFACE ROUGHENING

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

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

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT

REVISIONS		
APRIL 1, 2008	WHF	
JANUARY 13, 2009	WHF	

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

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

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

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

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

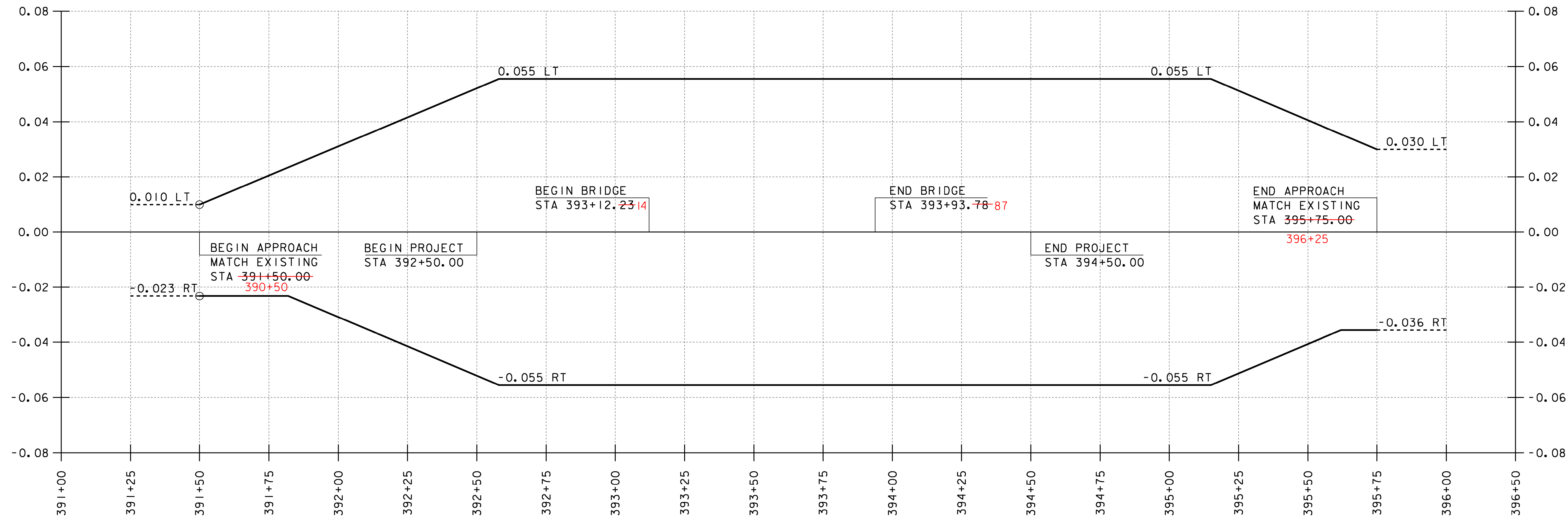
TURF ESTABLISHMENT

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

PROJECT NAME: MARLBORO
PROJECT NUMBER: BR 010-1 (43)

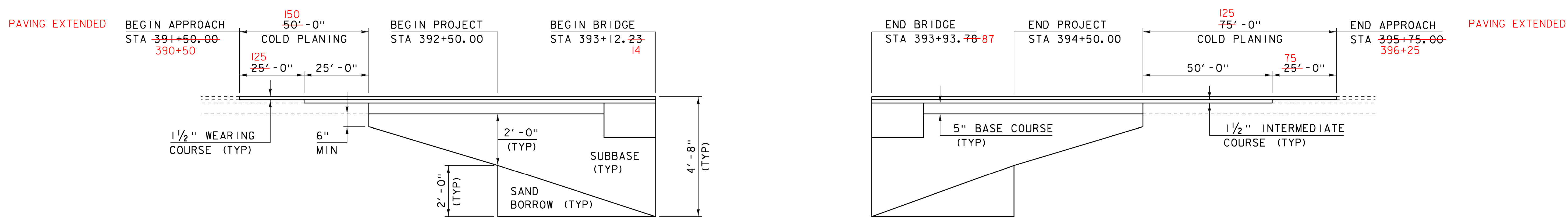
FILE NAME: si0b414ero_det.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: R. KLINEFELTER
EPSC DETAILS 2

PLOT DATE: 28-AUG-2013
DRAWN BY: K. FRIEDLAND
CHECKED BY: G. LAROCHE
SHEET 39 OF 50



VT 9 BANKING DIAGRAM

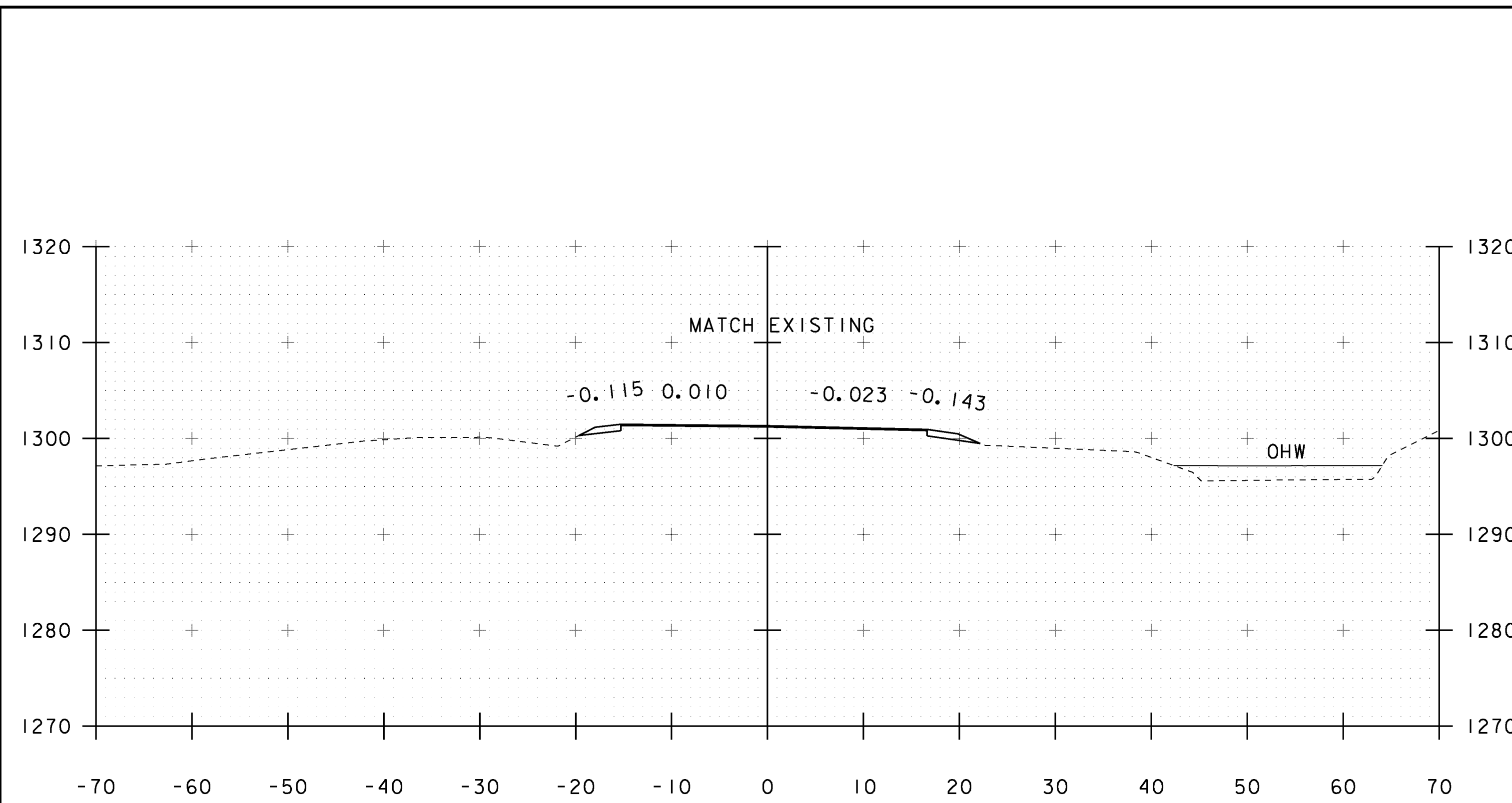
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 VERTICAL SCALE: NOT TO SCALE



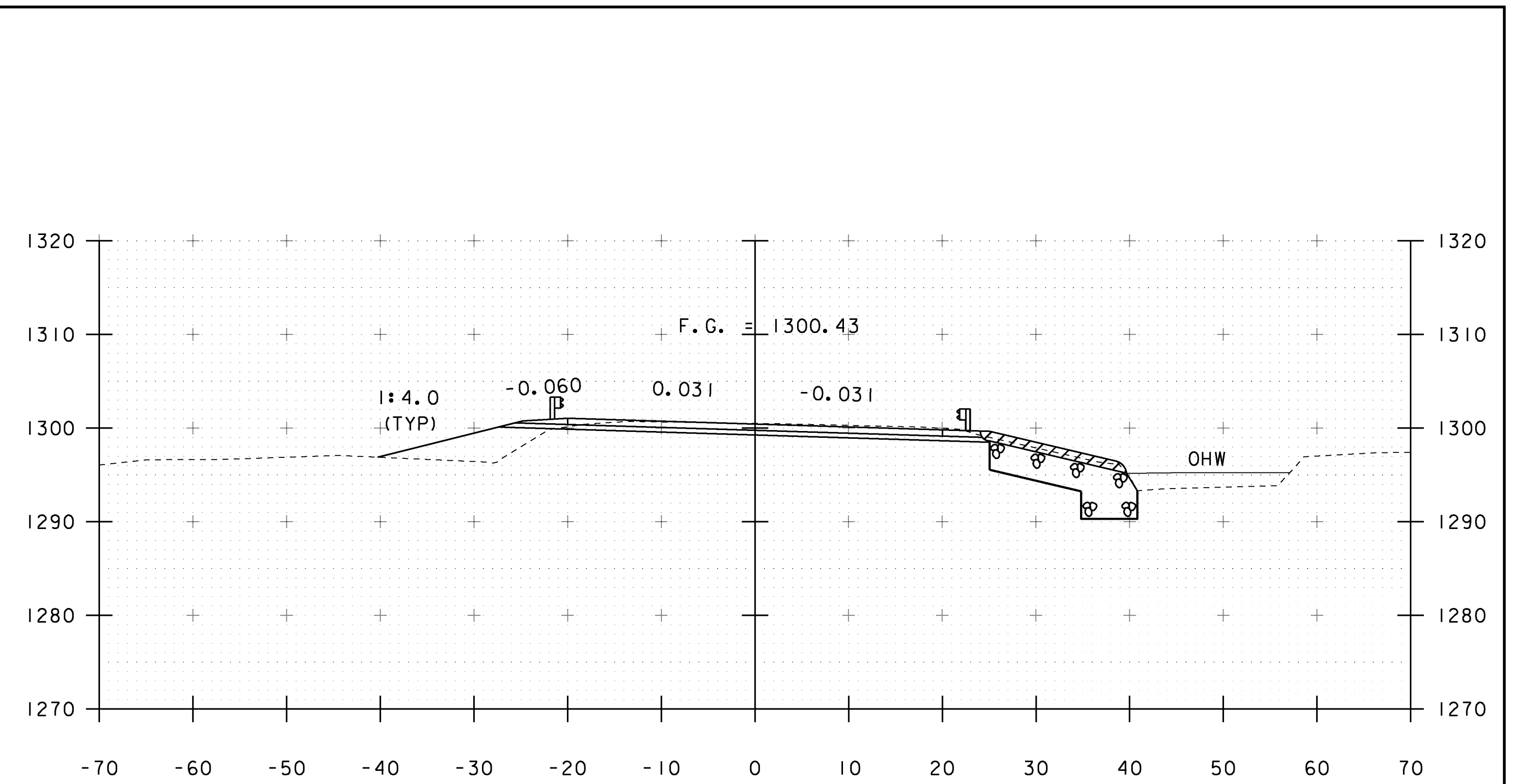
VT 9 MATERIAL TRANSITION DETAIL

HORIZONTAL SCALE: 1" = 20' -0"
 VERTICAL SCALE: 1" = 2' -0"

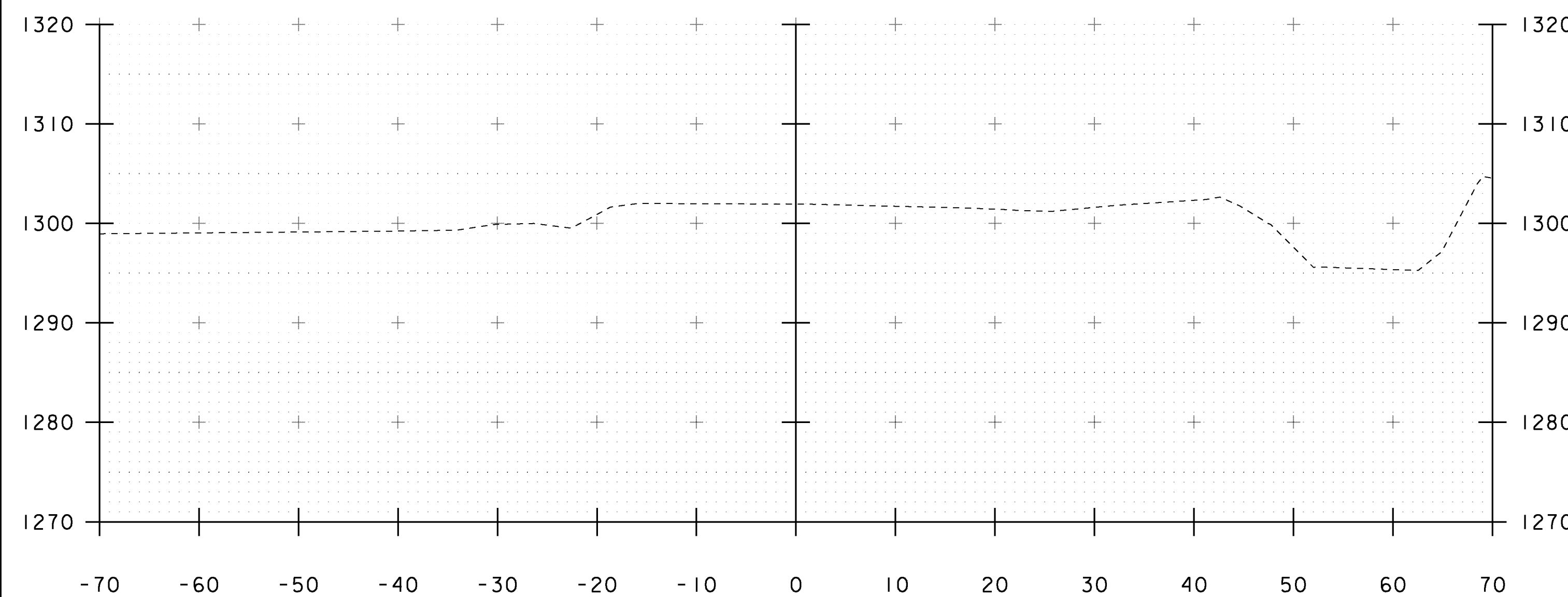
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PROJECT NUMBER:	BRF 010-1(43)
FILE NAME:	s10b414pro.dgn
PROJECT LEADER:	K. HIGGINS
DESIGNED BY:	R. KLINEFELTER
BANKING DIAGRAM AND MATERIAL TRANSITION SHEET	40 OF 50
PLOT DATE:	28-AUG-2013
DRAWN BY:	K. FRIEDLAND
CHECKED BY:	G. LAROCHE



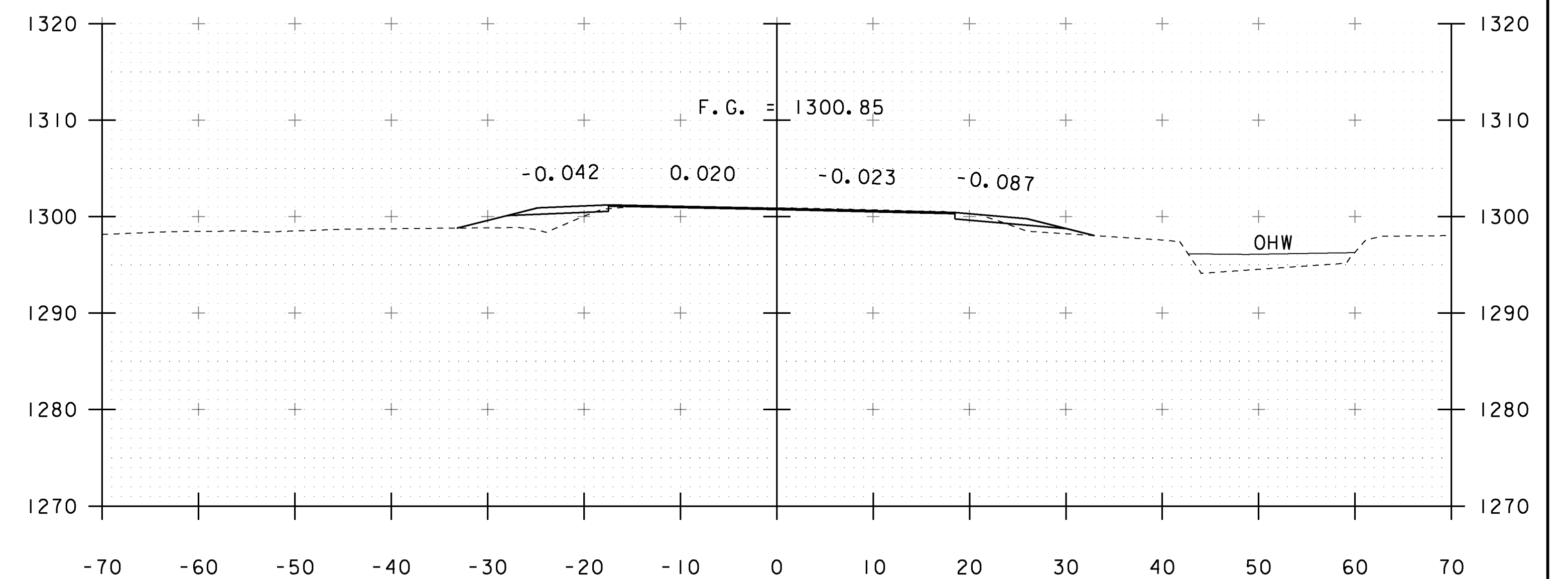
391+50
BEGIN APPROACH



392+00



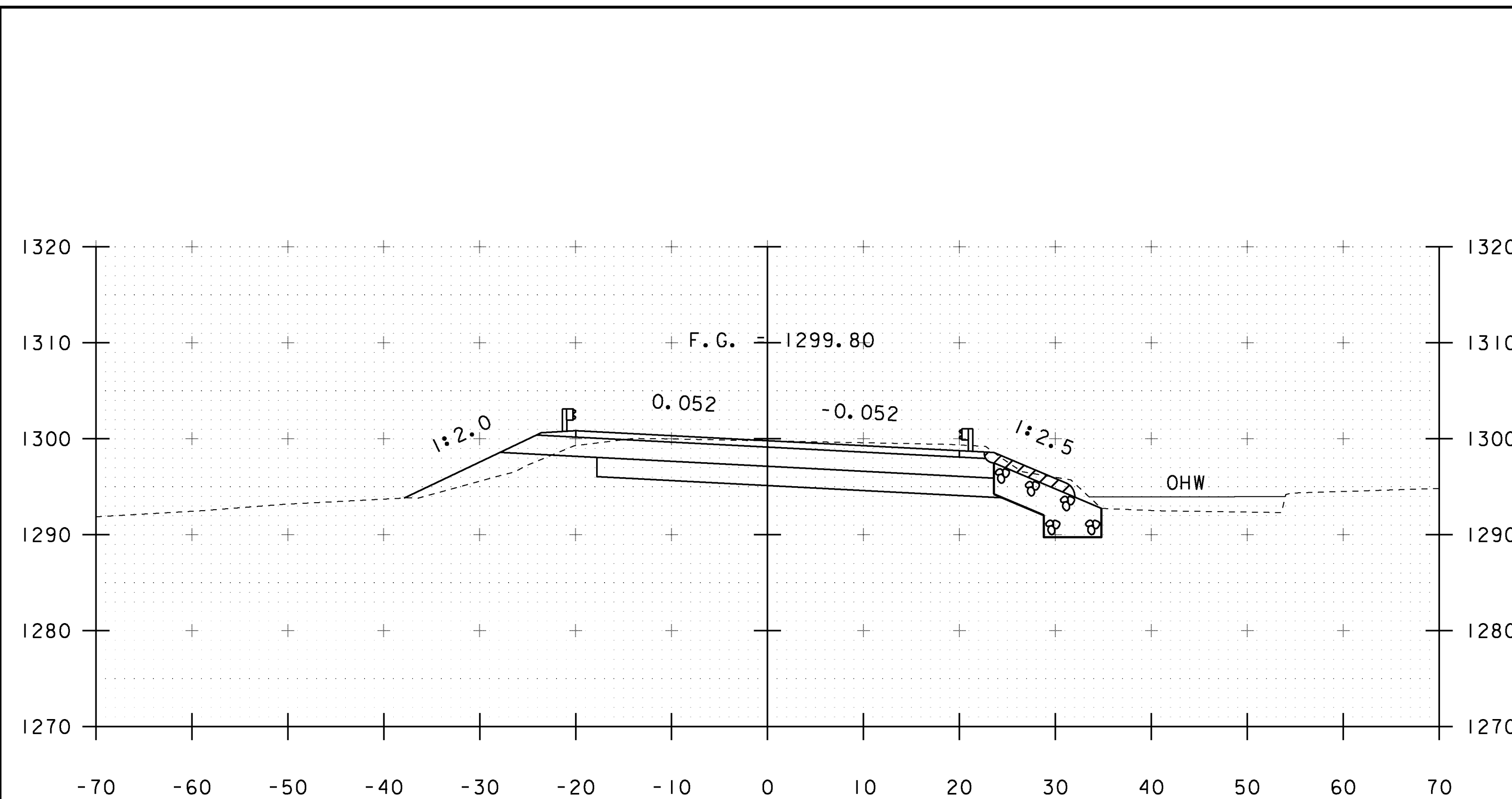
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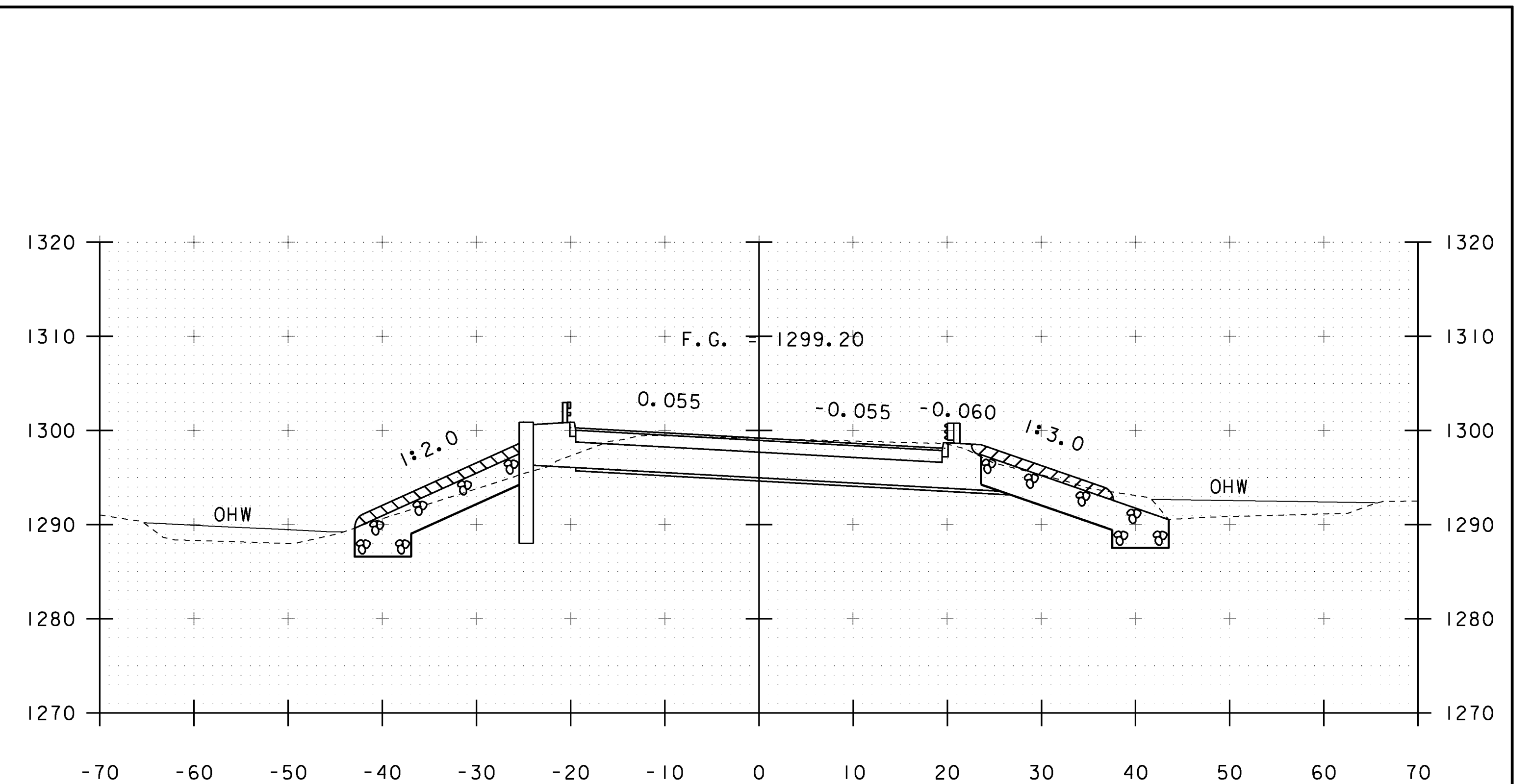
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STA. 391+25 TO STA. 392+00

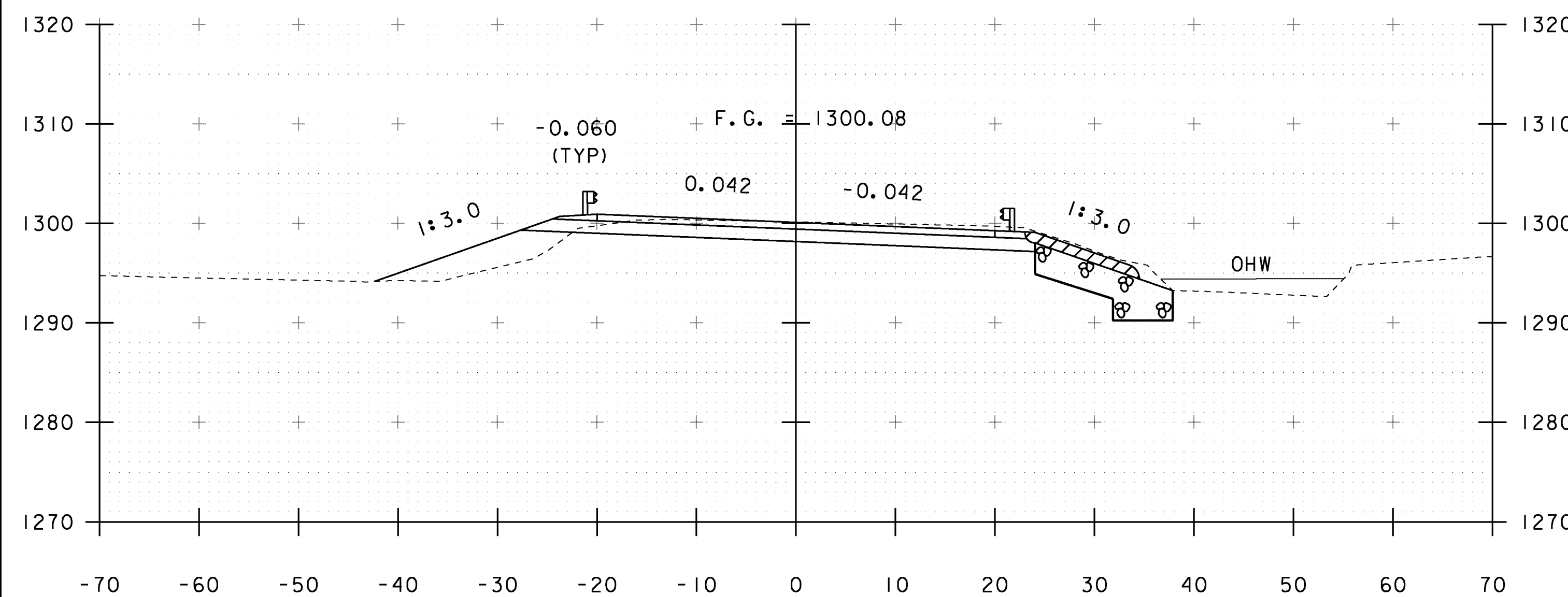
PROJECT NAME: MARLBORO	PLOT DATE: 28-AUG-2013
PROJECT NUMBER: BRF 010-1(43)	DRAWN BY: K. FRIEDLAND
FILE NAME: s10b414xsl.dgn	CHECKED BY: G. LAROCHE
PROJECT LEADER: K. HIGGINS	SHEET 41 OF 50
DESIGNED BY: R. KLINEFELTER	
MAINLINE SECTIONS 1	



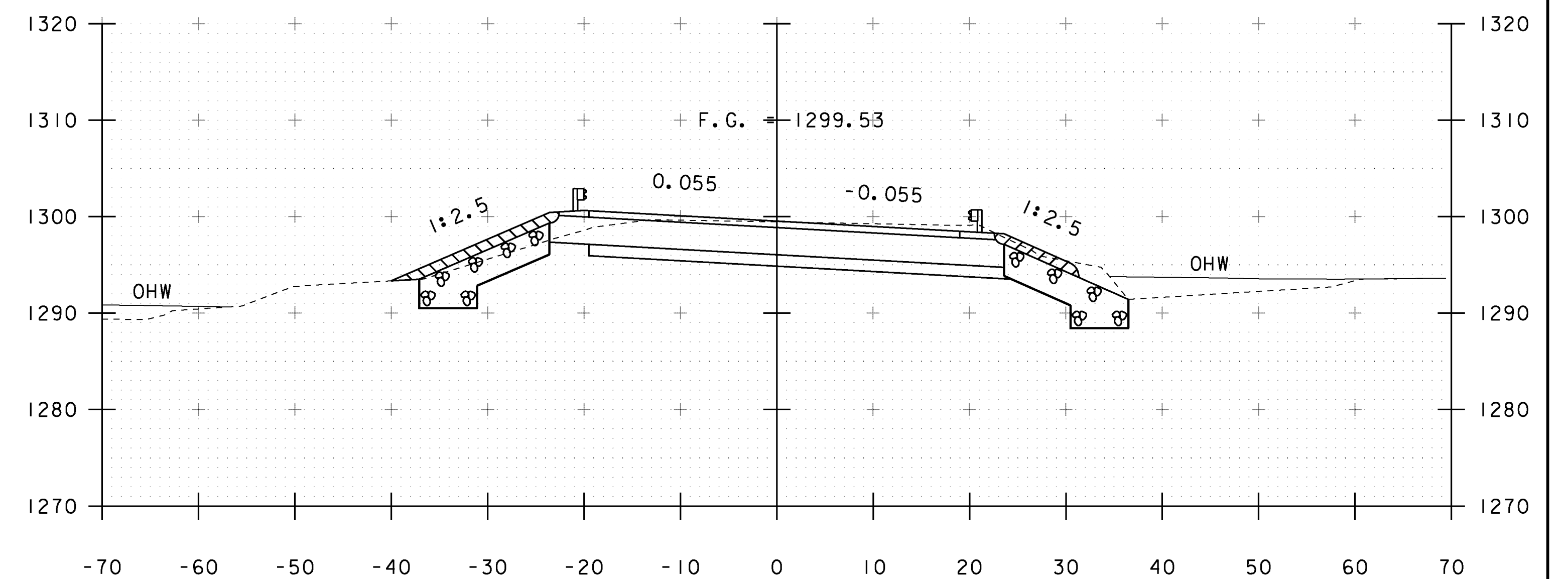
392+50
BEGIN PROJECT



393+00



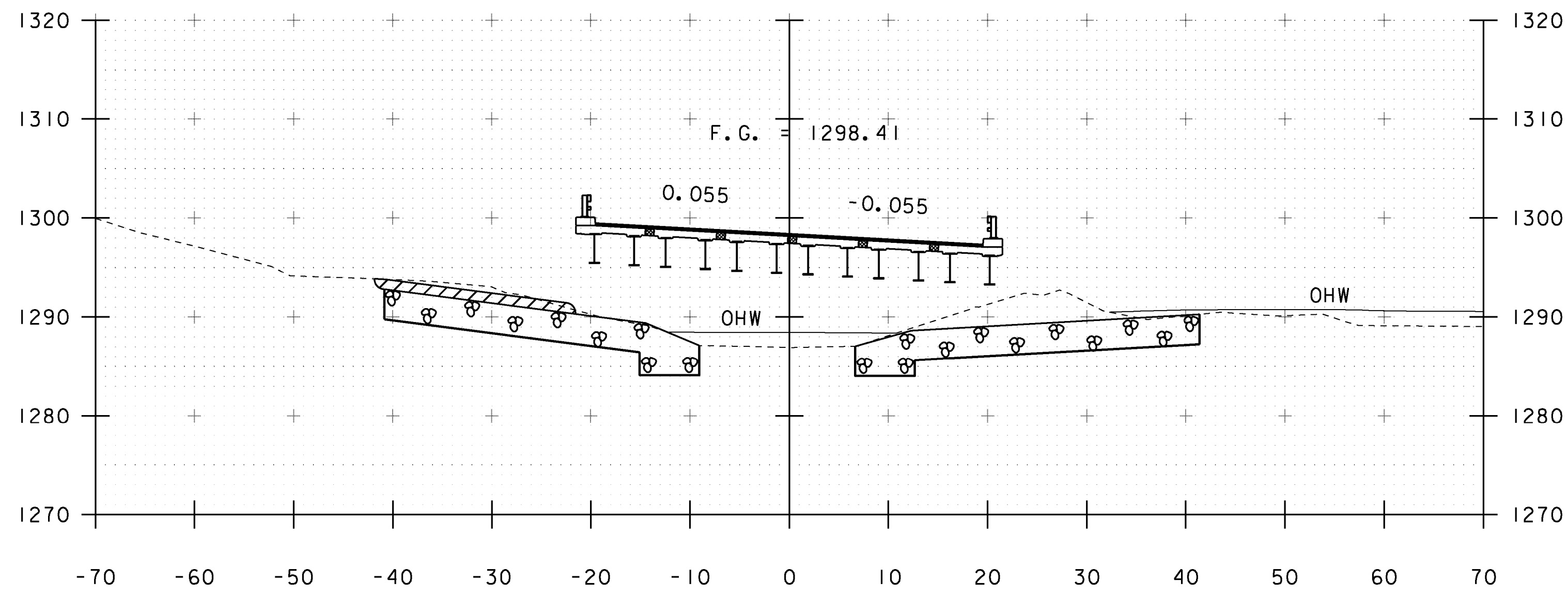
392+25



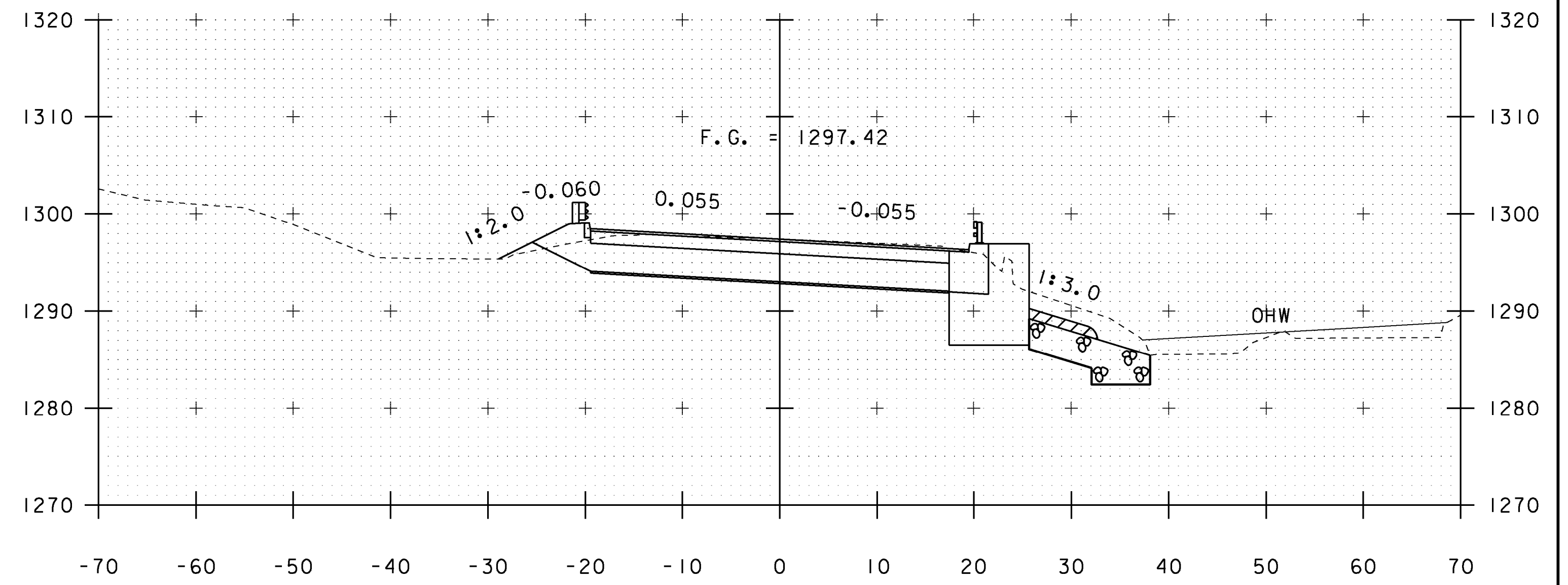
392+75

STA. 392+25 TO STA. 393+00

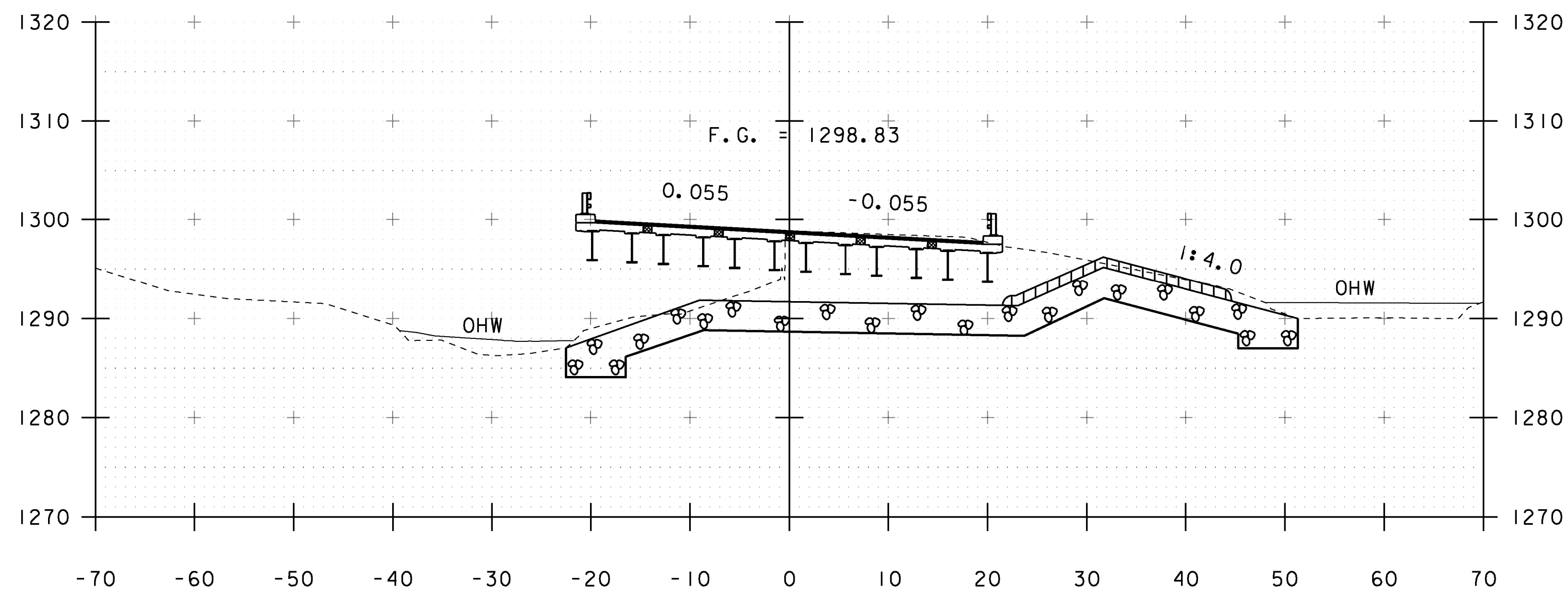
PROJECT NAME: MARLBORO	PLOT DATE: 28-AUG-2013
PROJECT NUMBER: BRF 010-1(43)	DRAWN BY: K. FRIEDLAND
FILE NAME: s10b414xsl.dgn	DESIGNED BY: R. KLINEFELTER
PROJECT LEADER: K. HIGGINS	CHECKED BY: G. LAROCHE
DESIGNED BY: R. KLINEFELTER	SHEET 42 OF 50
MAINLINE SECTIONS 2	



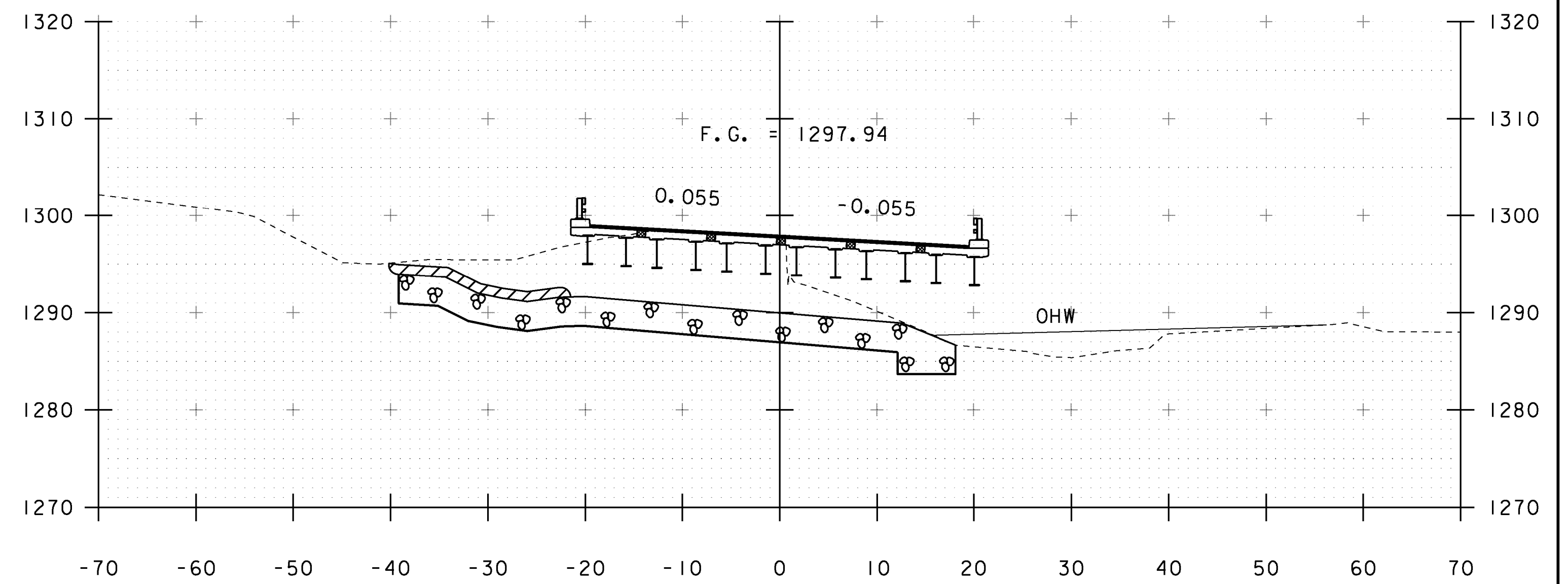
393+50 • REVISED BRIDGE HAS 6 GIRDERS



394+00
 END BRIDGE STA ~~393+93.78~~
 393+93.87



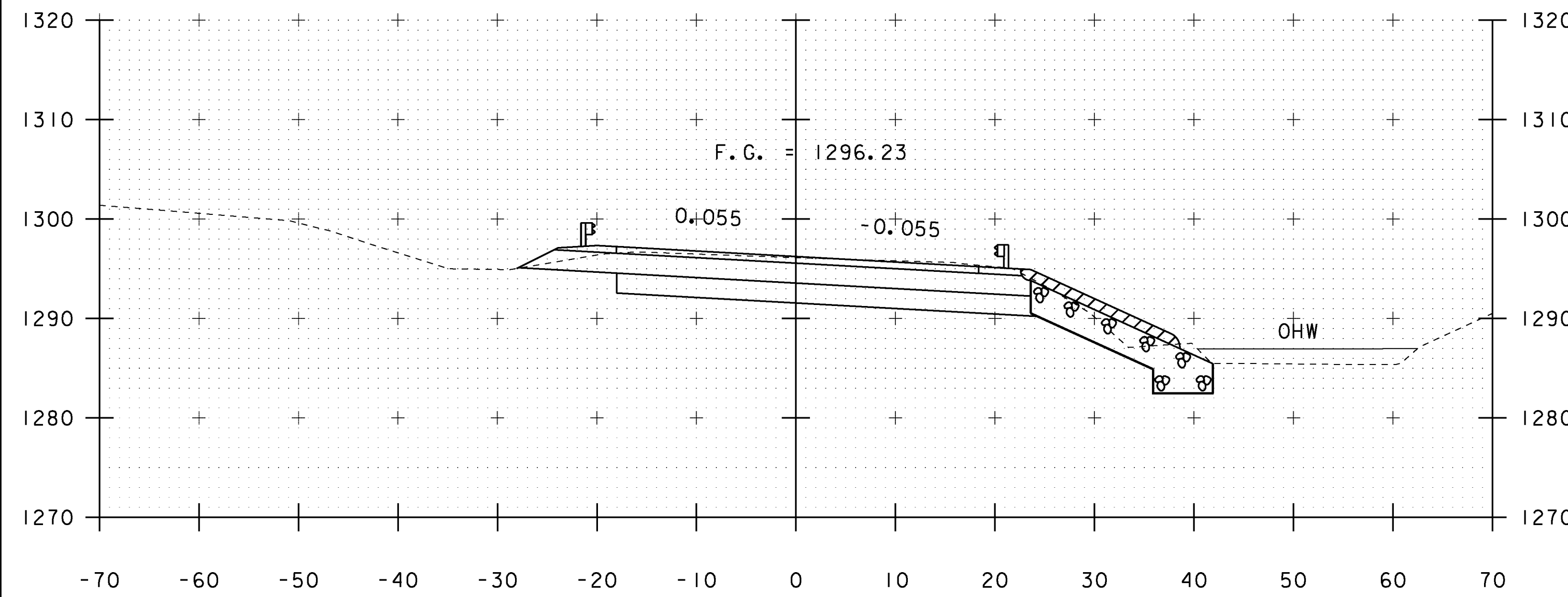
393+25
 BEGIN BRIDGE STA ~~393+12.23~~
 393+12.14



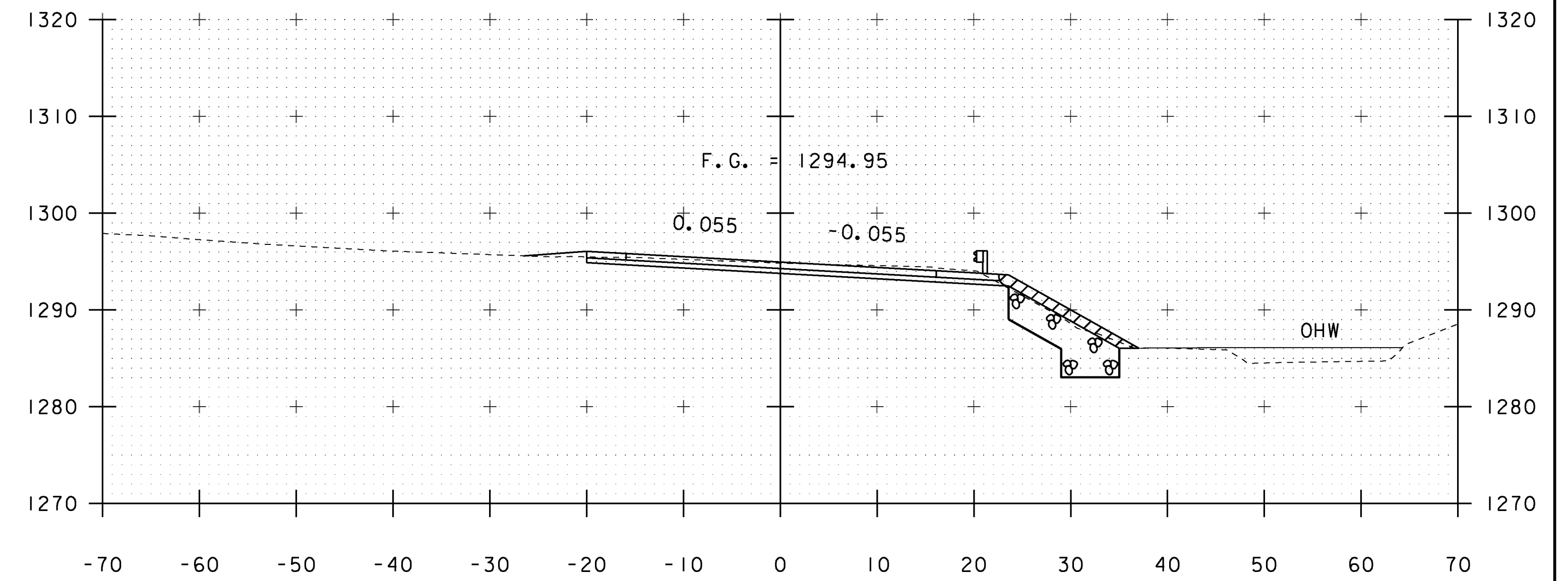
393+75

STA. 393+25 TO STA. 394+00

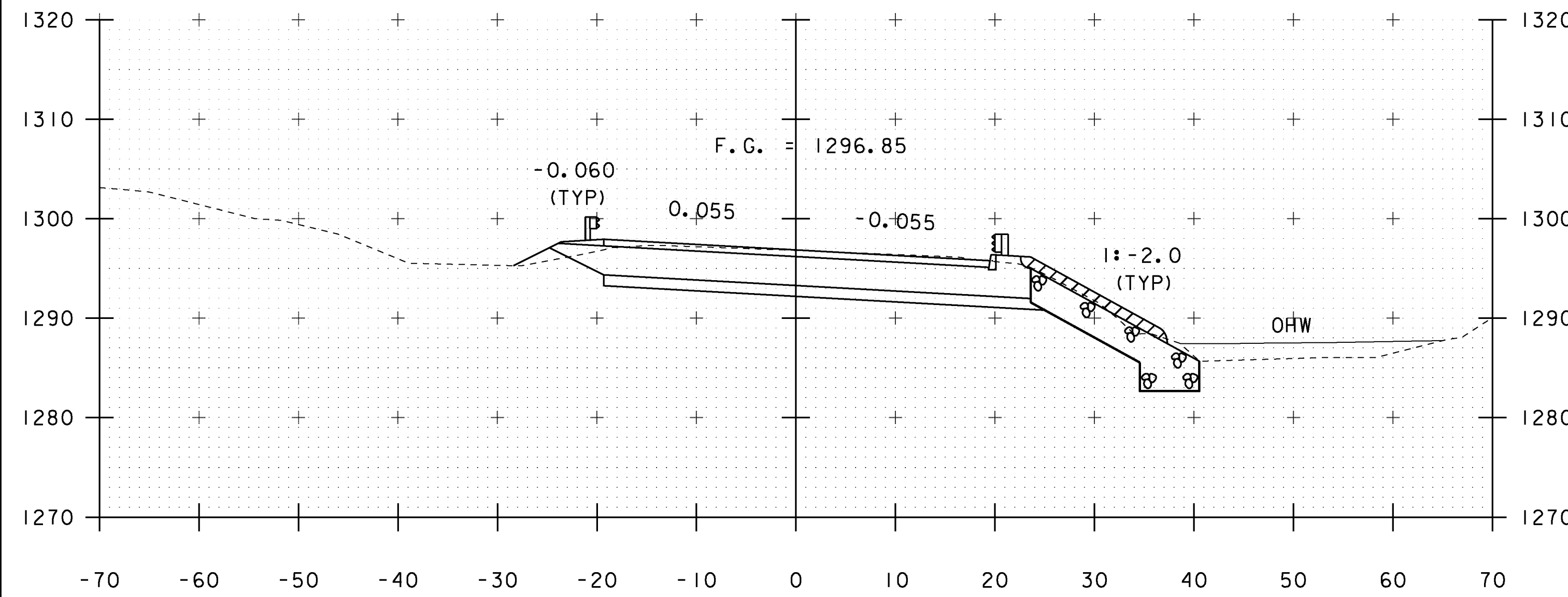
PROJECT NAME: MARLBORO	
PROJECT NUMBER: BRF 010-1(43)	
FILE NAME: s10b414xsl.dgn	PLOT DATE: 28-AUG-2013
PROJECT LEADER: K. HIGGINS	DRAWN BY: K. FRIEDLAND
DESIGNED BY: R. KLINEFELTER	CHECKED BY: G. LAROCHE
MAINLINE SECTIONS 3	SHEET 43 OF 50



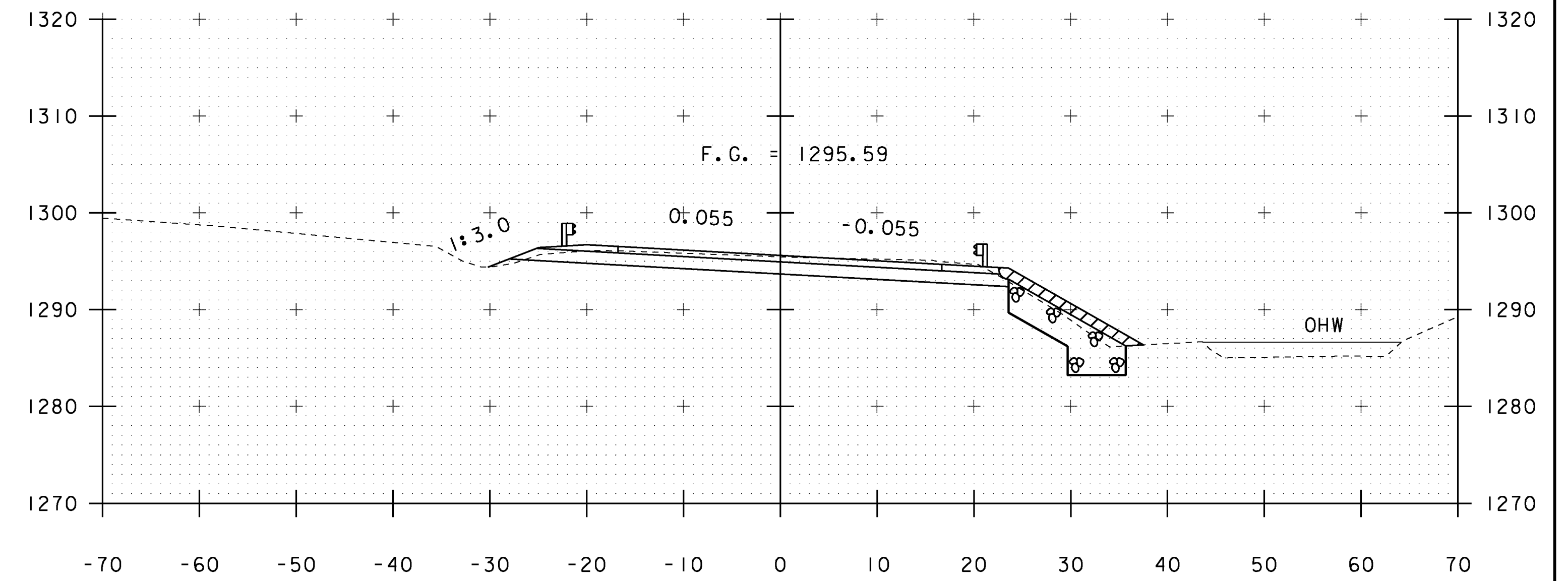
394+50
END PROJECT



395+00



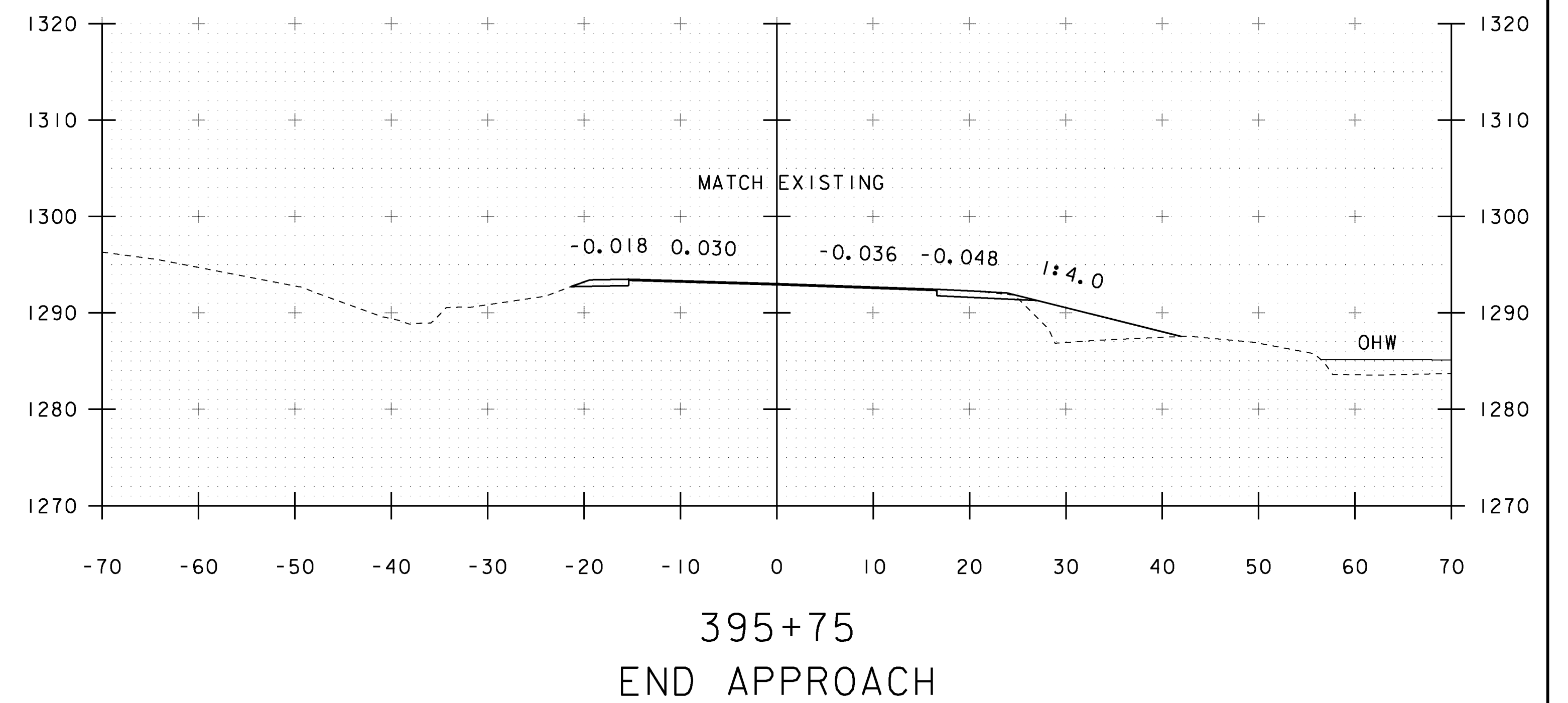
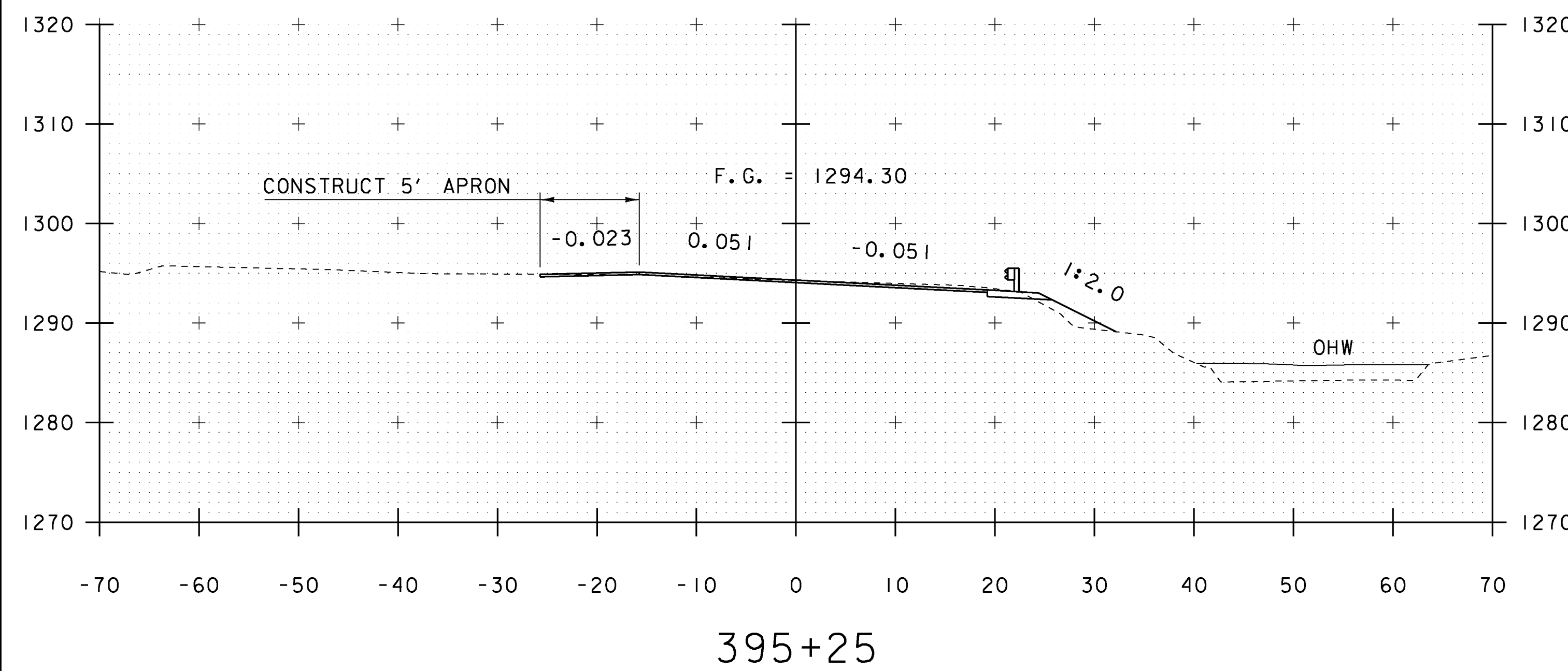
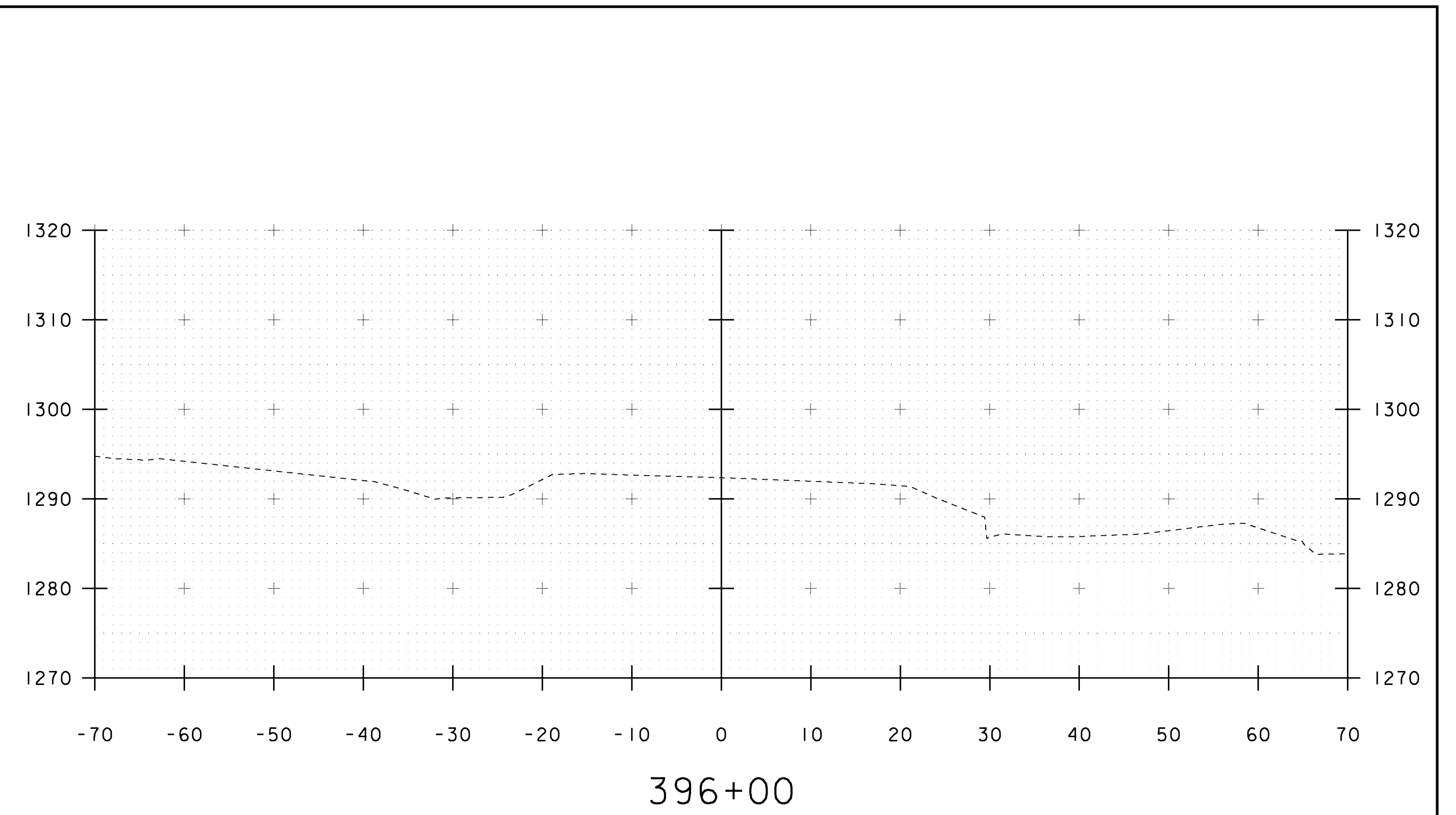
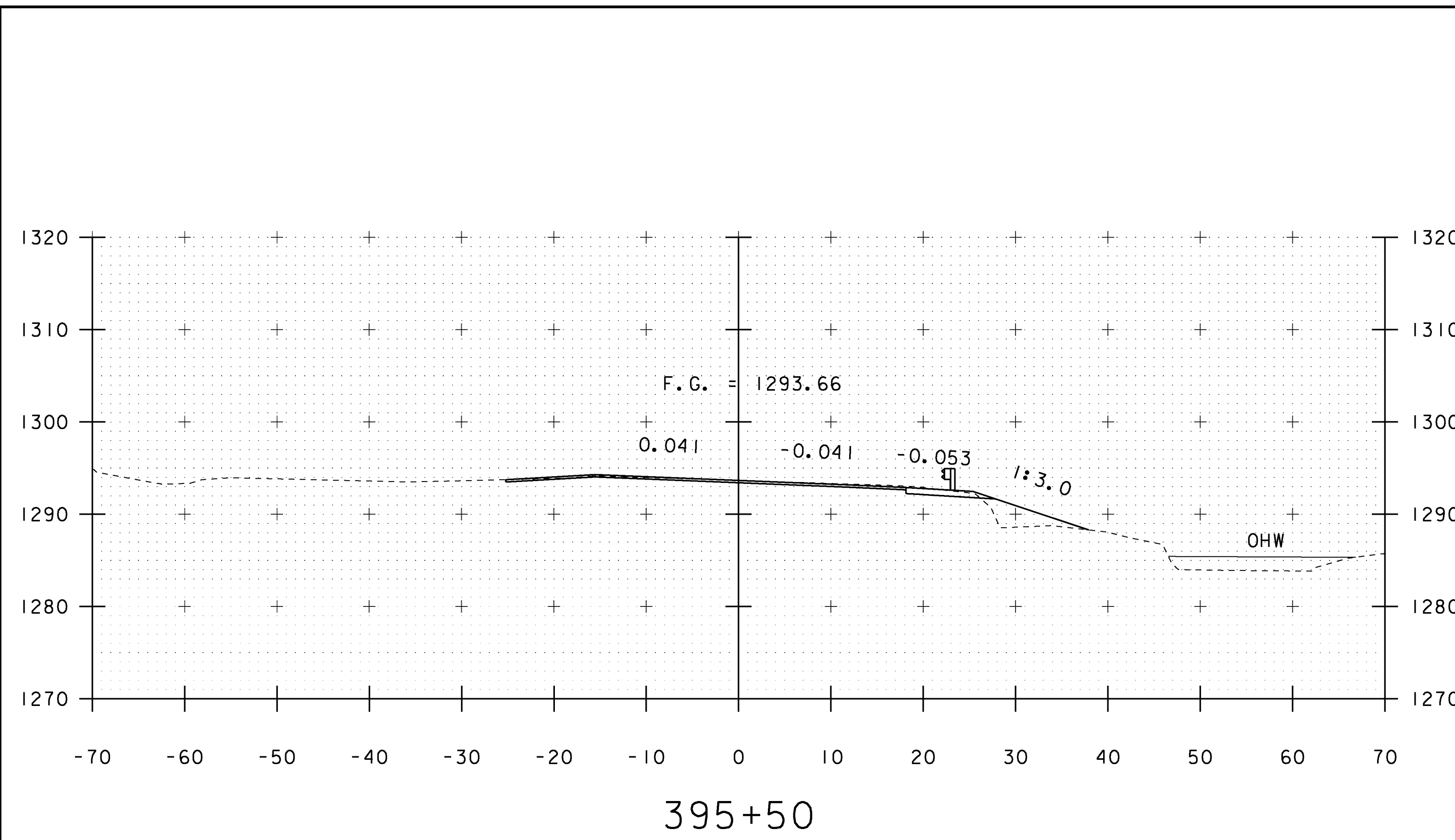
394+25



394+75

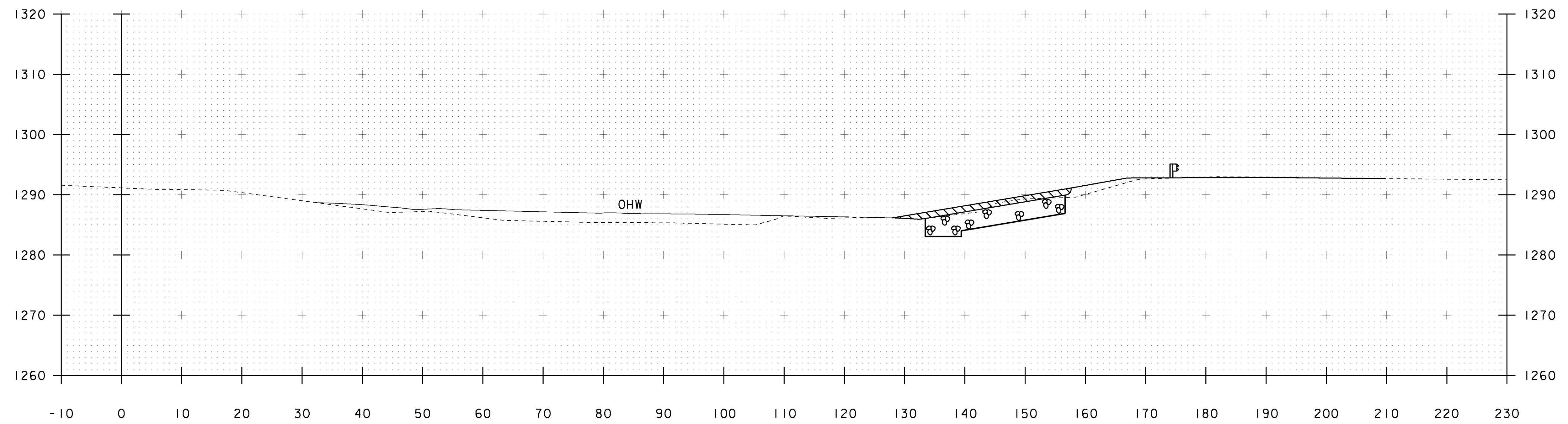
STA. 394+25 TO STA. 395+00

PROJECT NAME: MARLBORO	PLOT DATE: 28-AUG-2013
PROJECT NUMBER: BRF 010-1(43)	DRAWN BY: K. FRIEDLAND
FILE NAME: s10b414xsl.dgn	CHECKED BY: G. LAROCHE
PROJECT LEADER: K. HIGGINS	SHEET 44 OF 50
DESIGNED BY: R. KLINEFELTER	
MAINLINE SECTIONS 4	



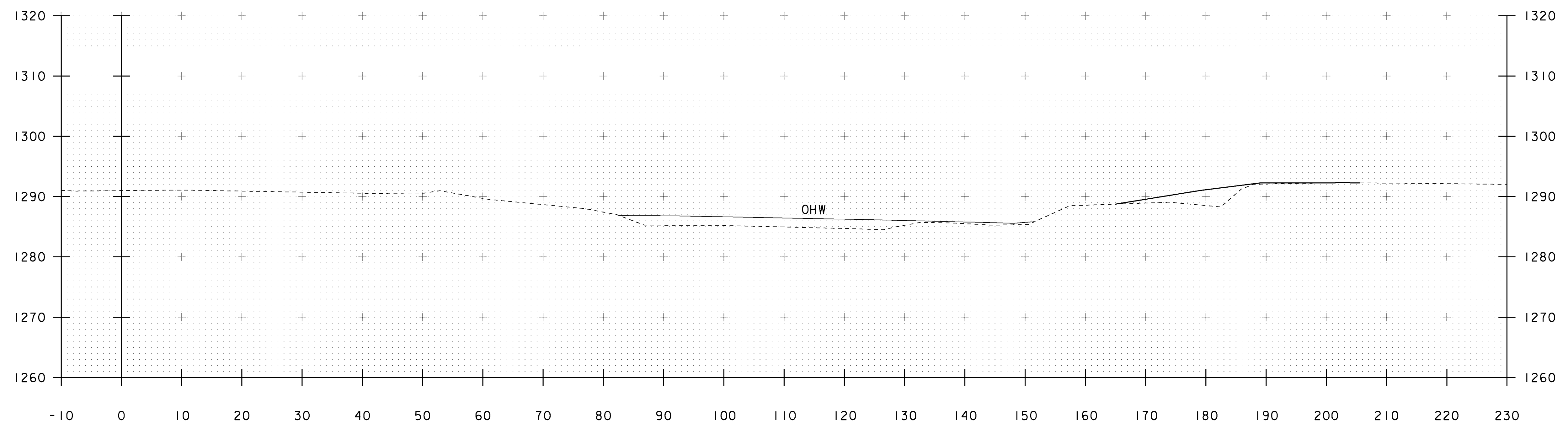
STA. 395+25 TO STA. 396+00

PROJECT NAME: MARLBORO	PLOT DATE: 28-AUG-2013
PROJECT NUMBER: BRF 010-1(43)	DRAWN BY: K. FRIEDLAND
FILE NAME: si0b414xsl.dgn	CHECKED BY: G. LAROCHE
PROJECT LEADER: K. HIGGINS	SHEET 45 OF 50
DESIGNED BY: R. KLINEFELTER	
MAINLINE SECTIONS 5	



49+20

STA 49+17 RT
 BEGIN UNCLASSIFIED CHANNEL EXCAVATION
 GEOTEXTILE UNDER STONE FILL
 STONE FILL, TYPE III
 GRUBBING MATERIAL



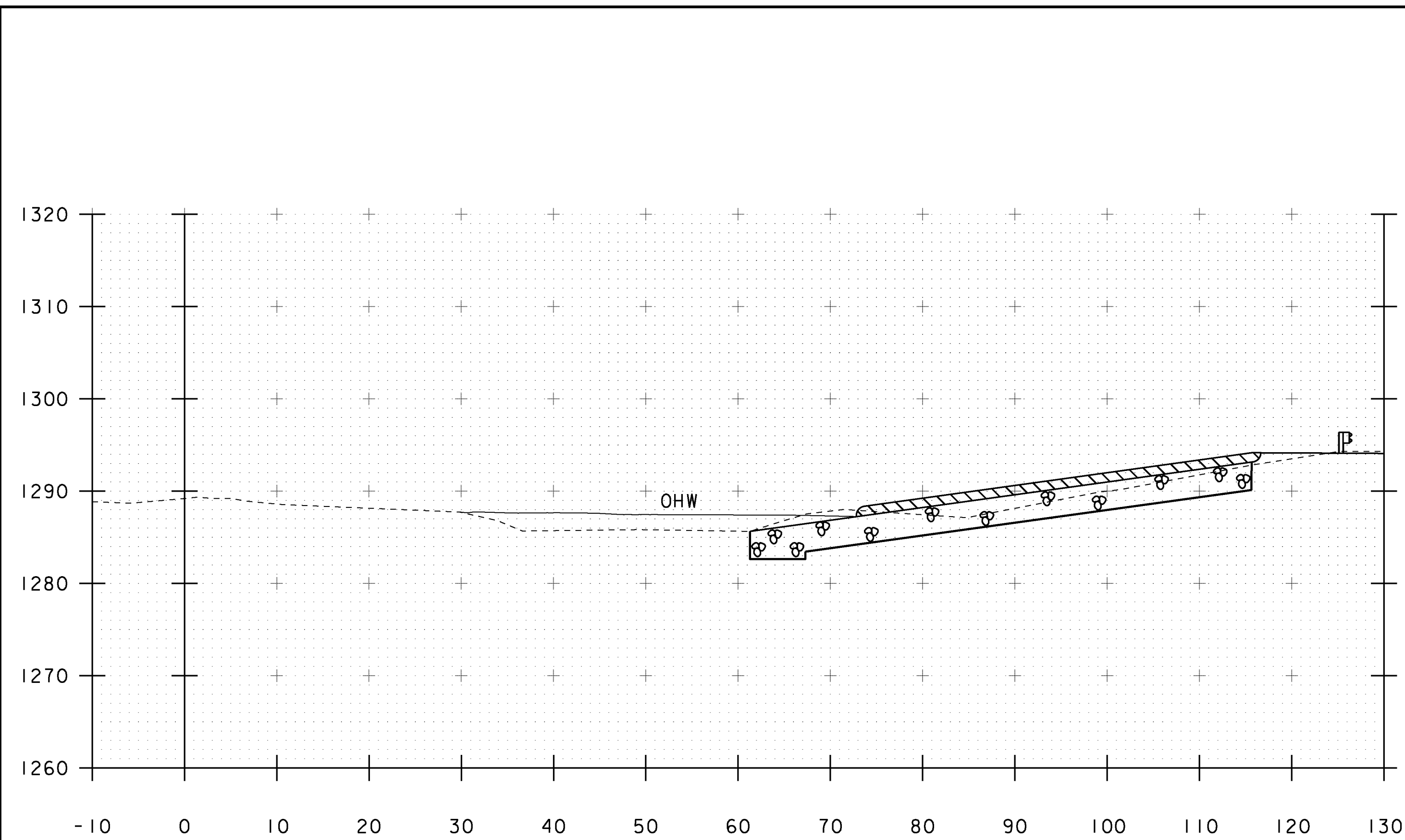
49+10

PROJECT NAME: MARLBORO
 PROJECT NUMBER: BRF 010-1(43)

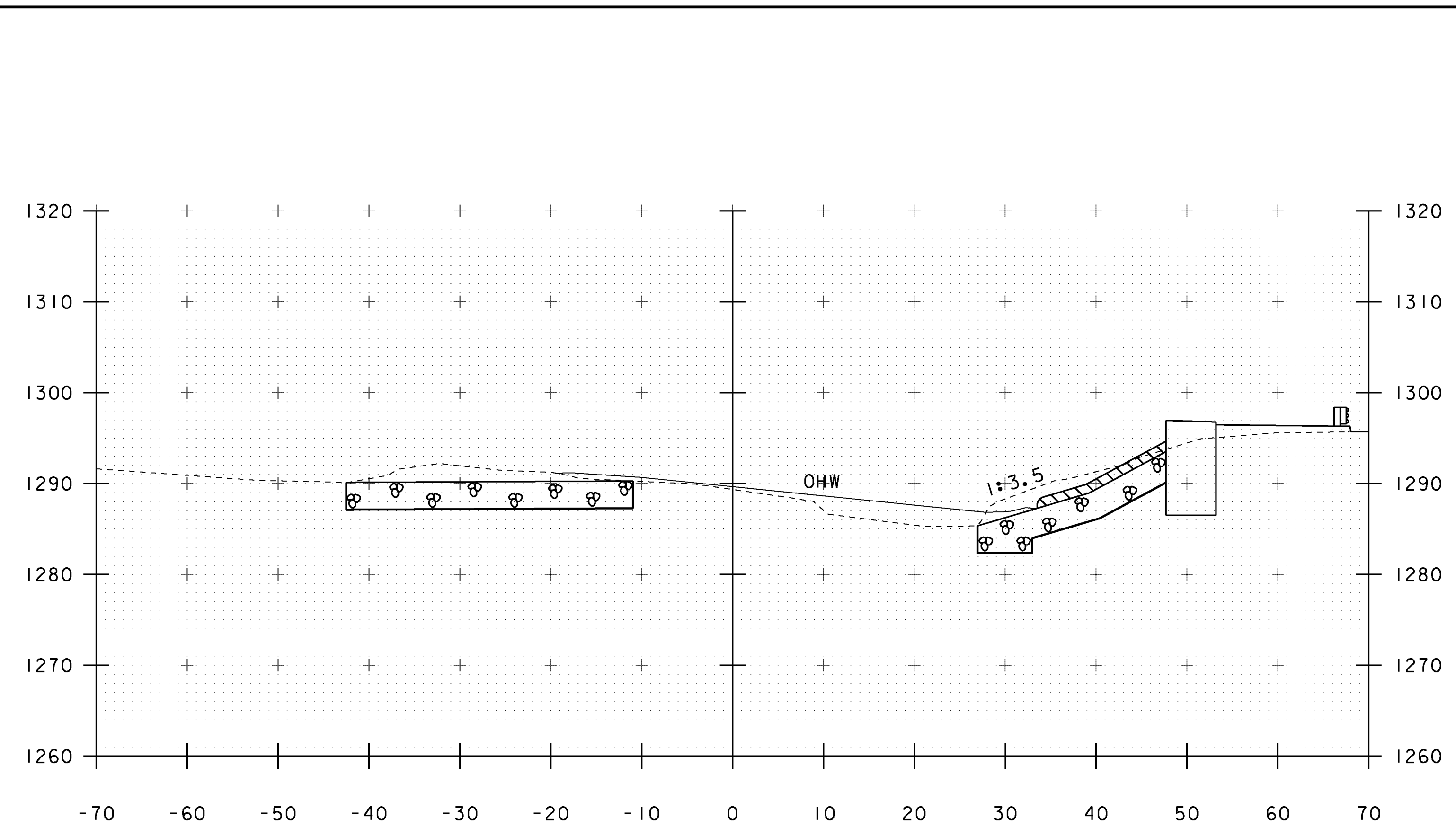
FILE NAME: s10b414xsl.dgn
 PROJECT LEADER: K. HIGGINS
 DESIGNED BY: R. KLINEFELTER
 CHANNEL SECTIONS 1

PLOT DATE: 28-AUG-2013
 DRAWN BY: K. FRIEDLAND
 CHECKED BY: G. LAROCHE
 SHEET 46 OF 50

STA. 49+10 TO STA. 49+20

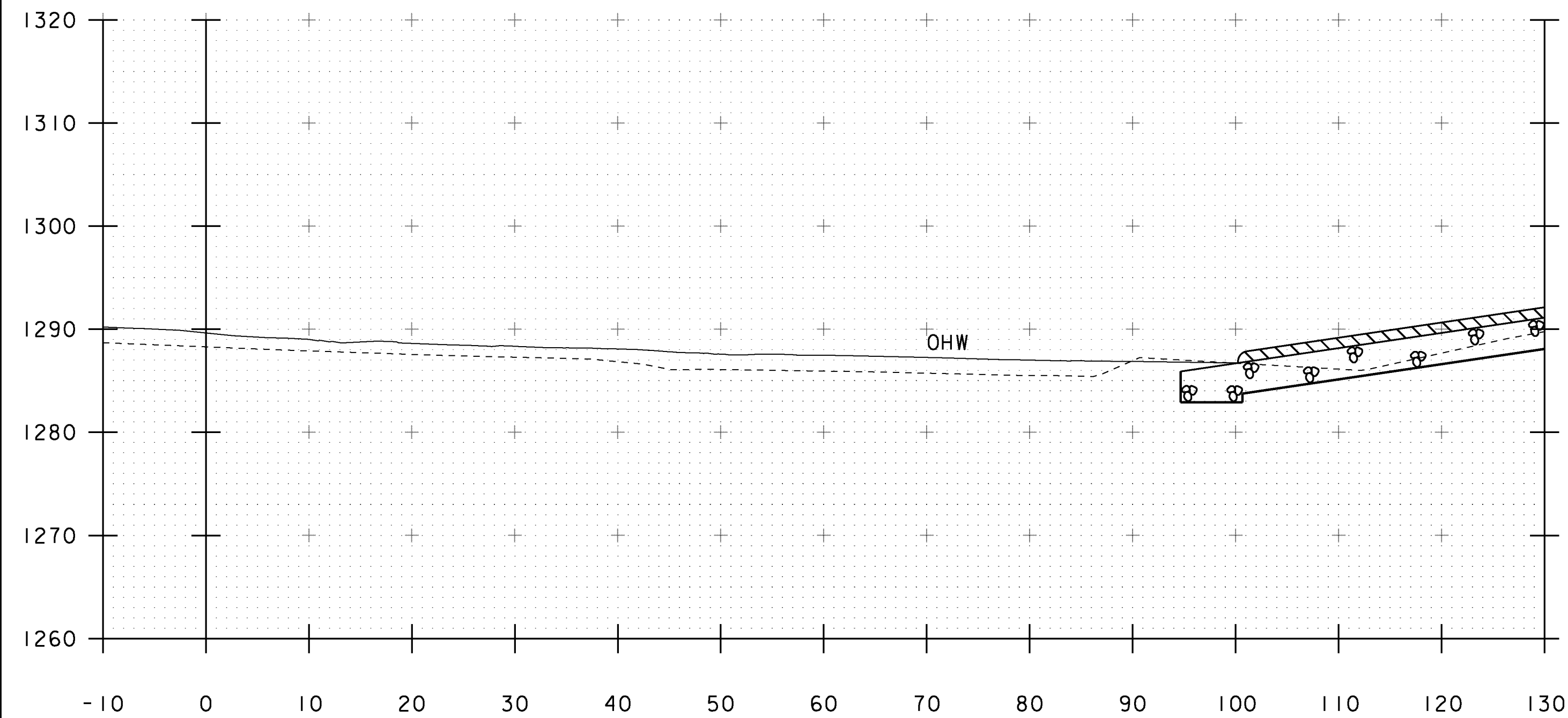


49+40

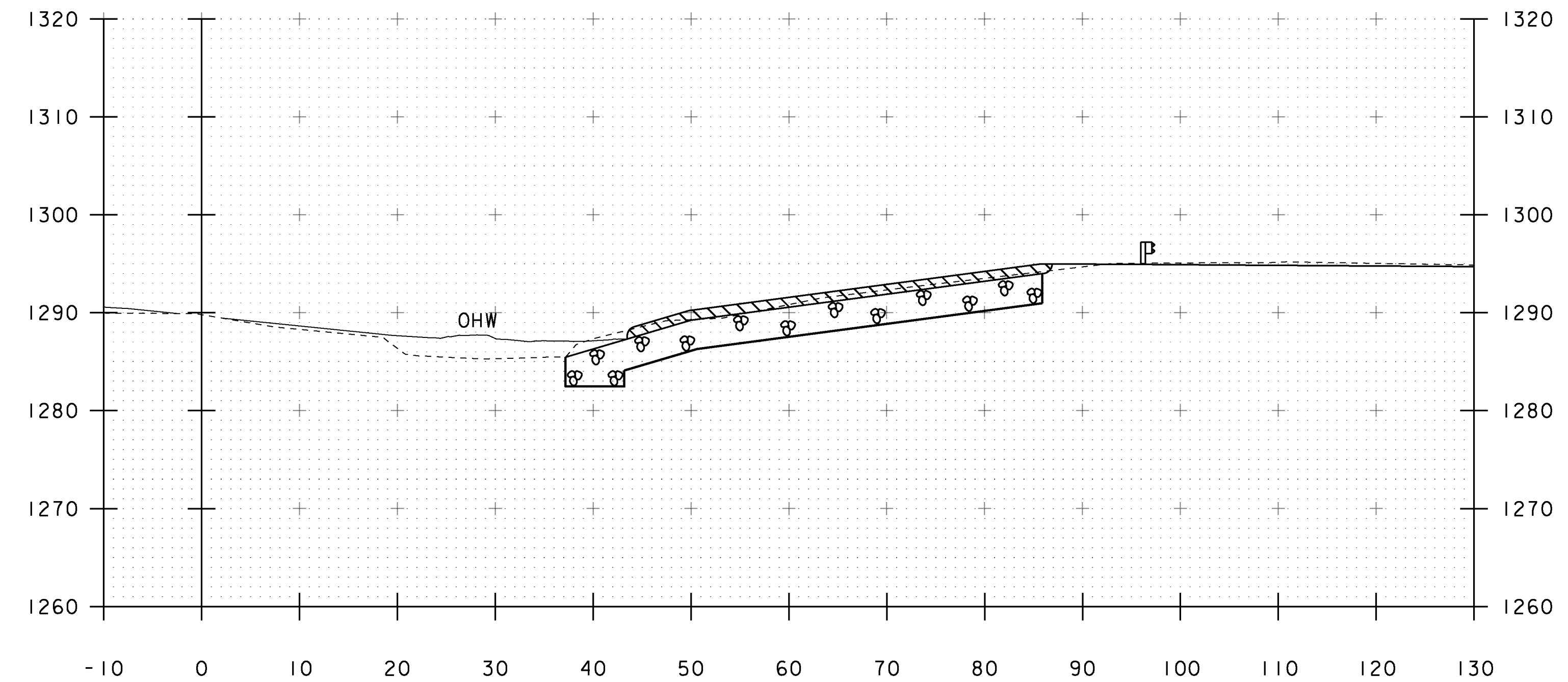


49+60

STA 49+56 LT
 BEGIN UNCLASSIFIED CHANNEL EXCAVATION
 GEOTEXTILE UNDER STONE FILL
 STONE FILL, TYPE III
 GRUBBING MATERIAL



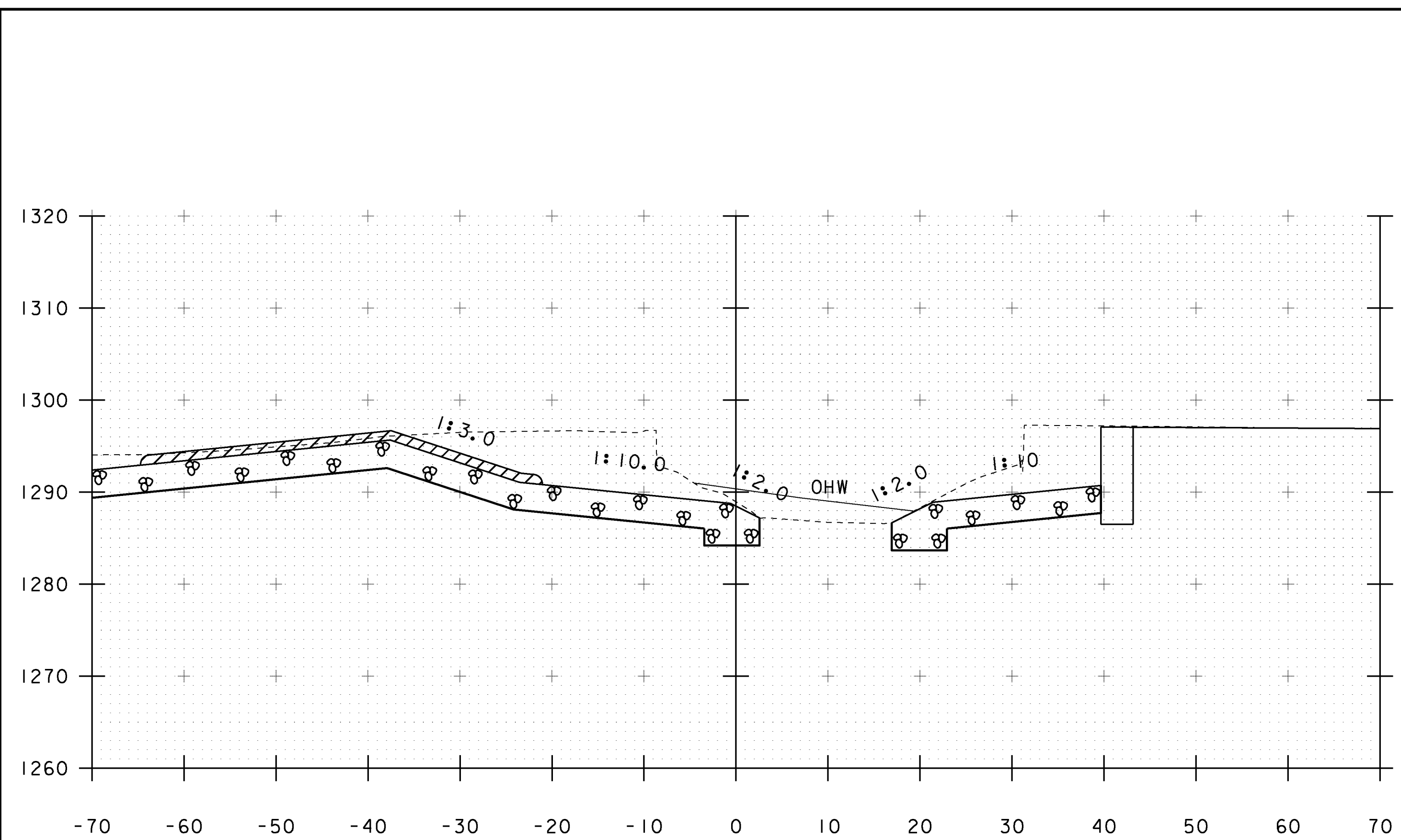
49+30



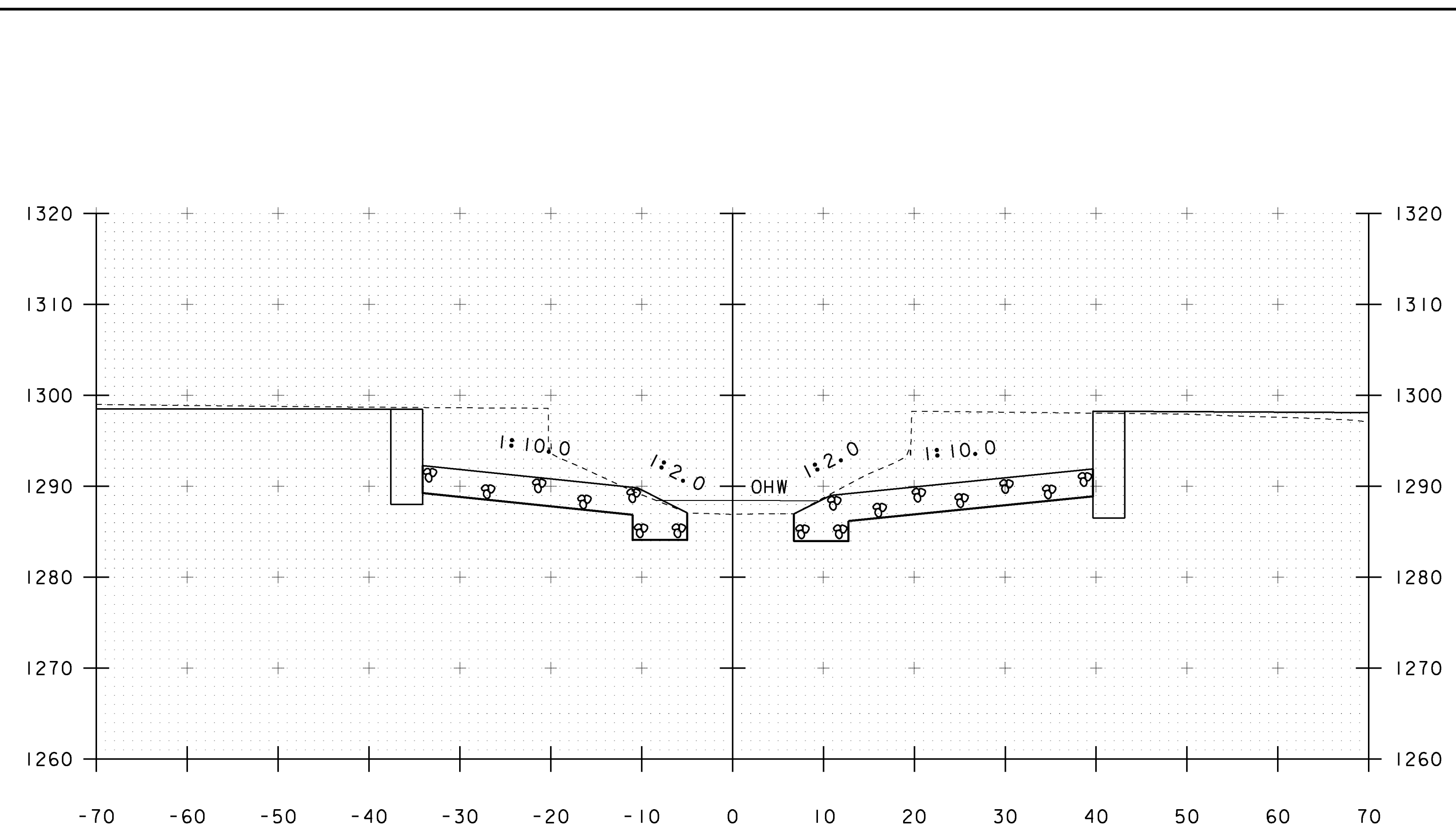
49+50

STA. 49+30 TO STA. 49+60

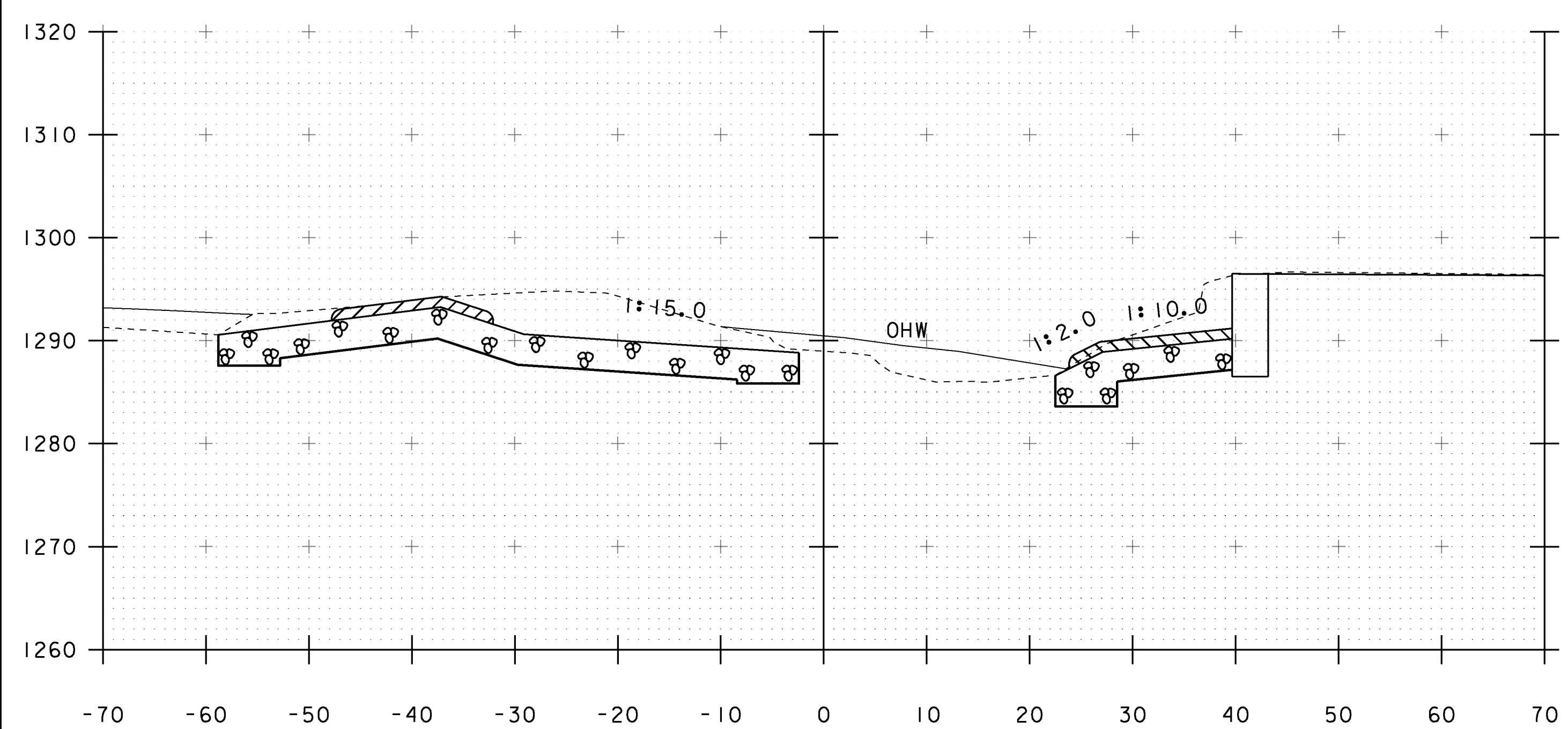
PROJECT NAME:	MARLBORO
PROJECT NUMBER:	BRF 010-1(43)
FILE NAME:	sl0b414xsl.dgn
PROJECT LEADER:	K. HIGGINS
DESIGNED BY:	R. KLINEFELTER
CHANNEL SECTIONS 2	
PLOT DATE:	28-AUG-2013
DRAWN BY:	K. FRIEDLAND
CHECKED BY:	G. LAROCHE
SHEET	47 OF 50



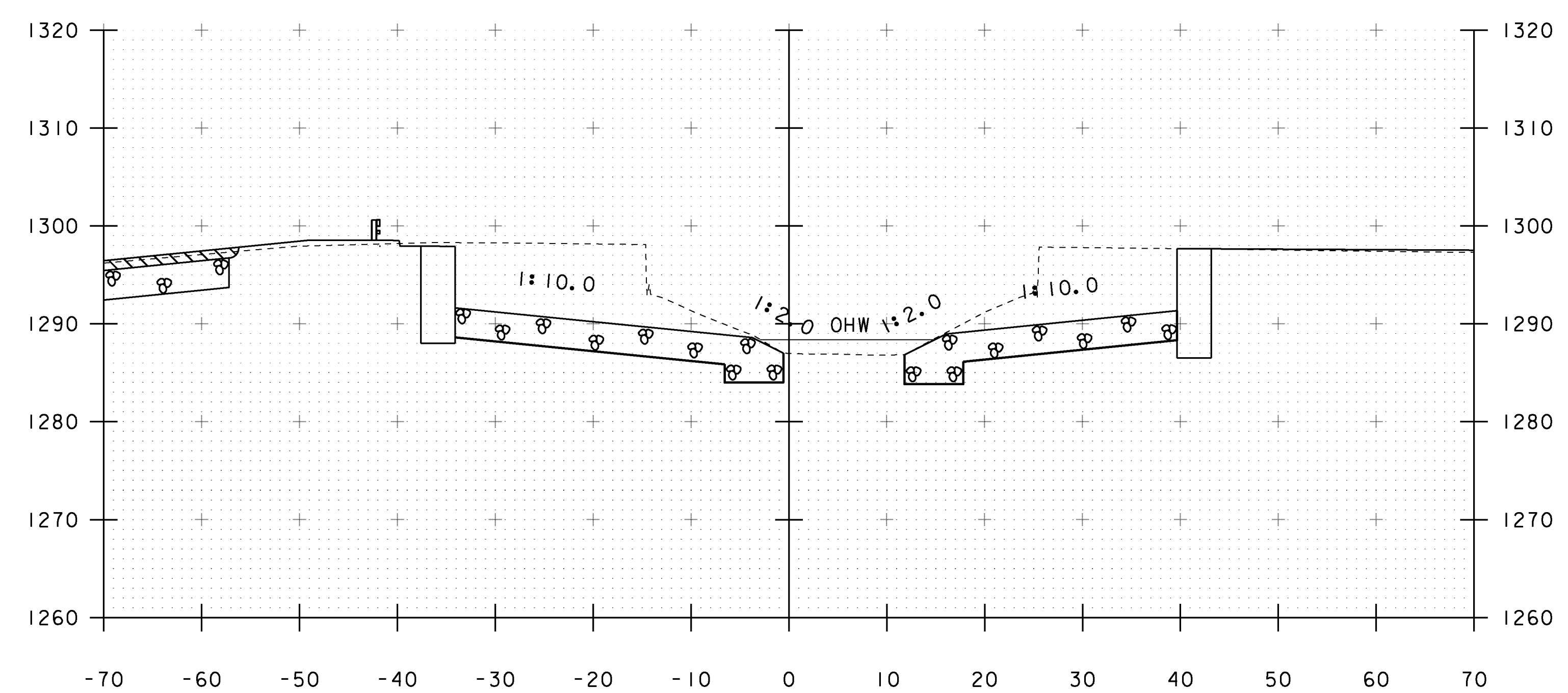
49+80



50+00



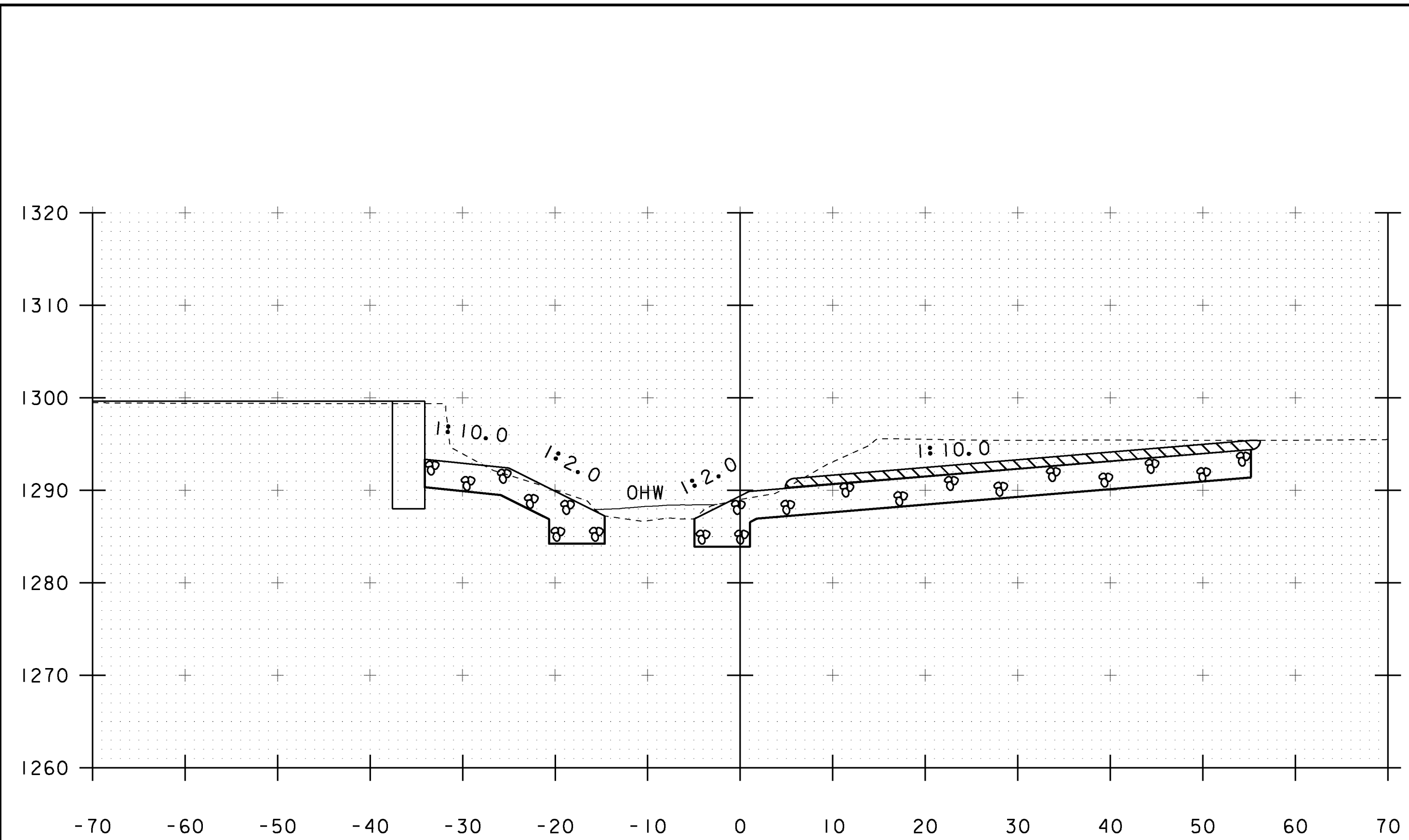
49+70



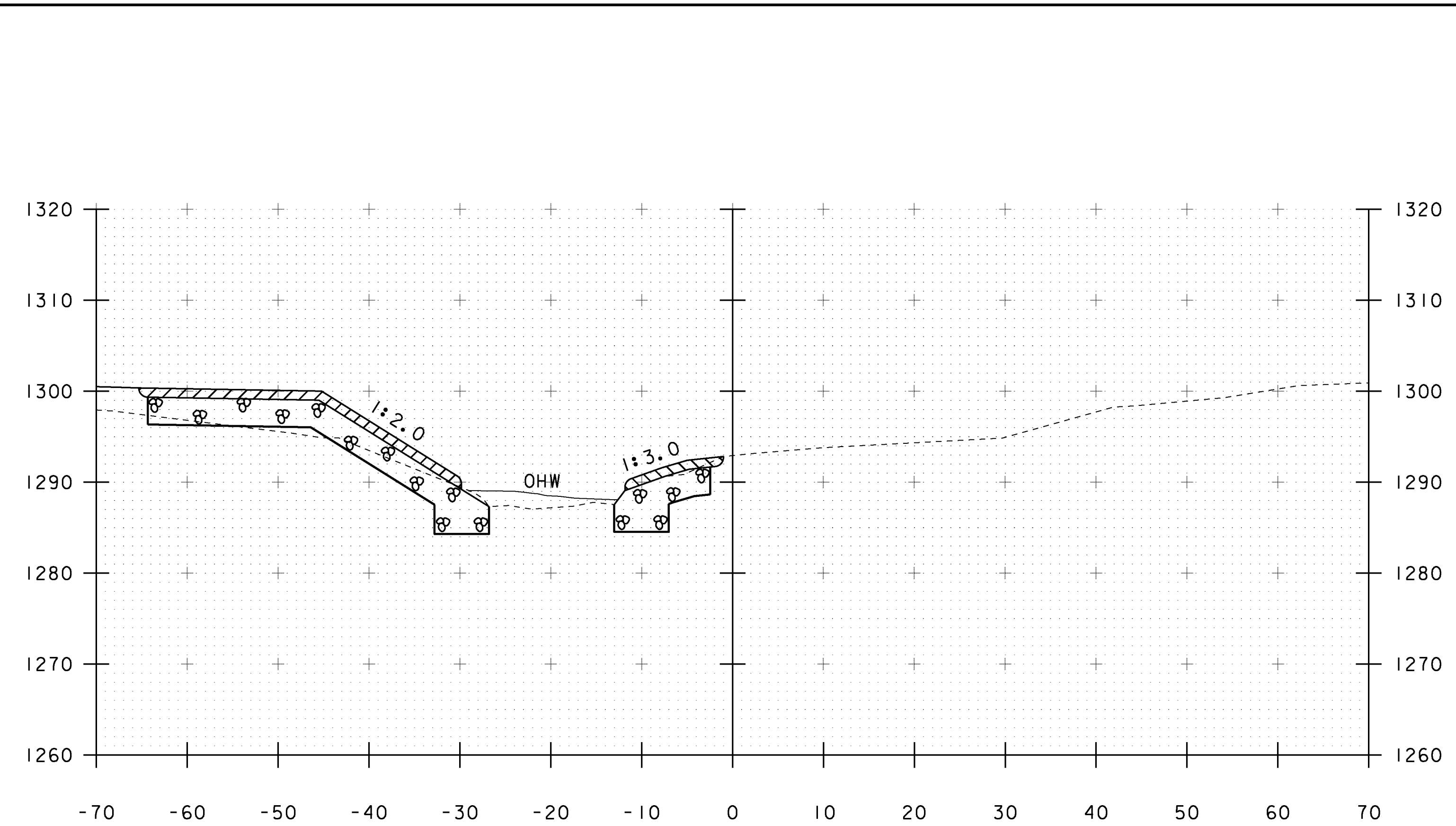
49+90

STA. 49+70 TO STA. 50+00

PROJECT NAME:	MARLBORO	FILE NAME:	sl0b414xsl.dgn	PLOT DATE:	28-AUG-2013
PROJECT NUMBER:	BRF 010-1(43)	PROJECT LEADER:	K. HIGGINS	DRAWN BY:	K. FRIEDLAND
		DESIGNED BY:	R. KLINEFELTER	CHECKED BY:	G. LAROCHE
		CHANNEL SECTIONS	3	SHEET	48 OF 50

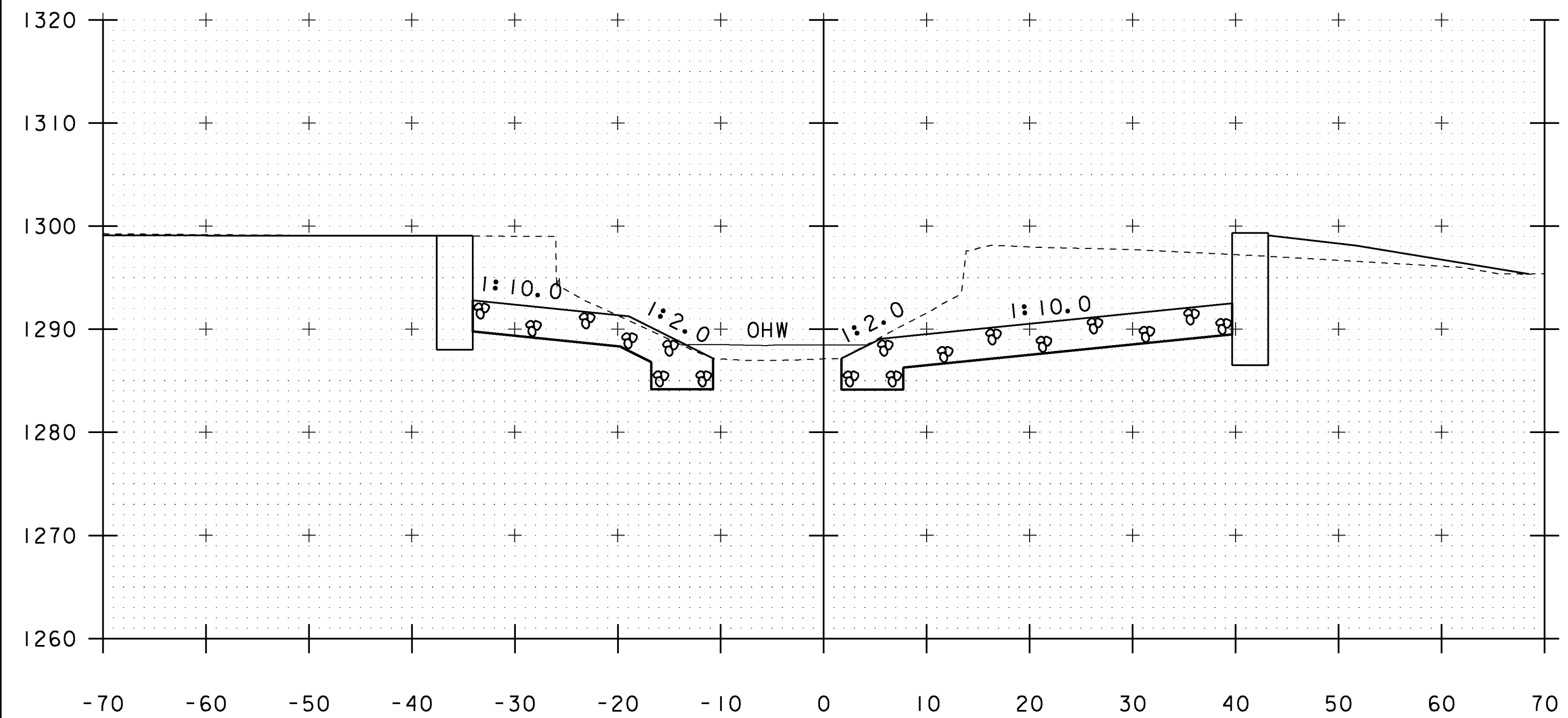


50+20

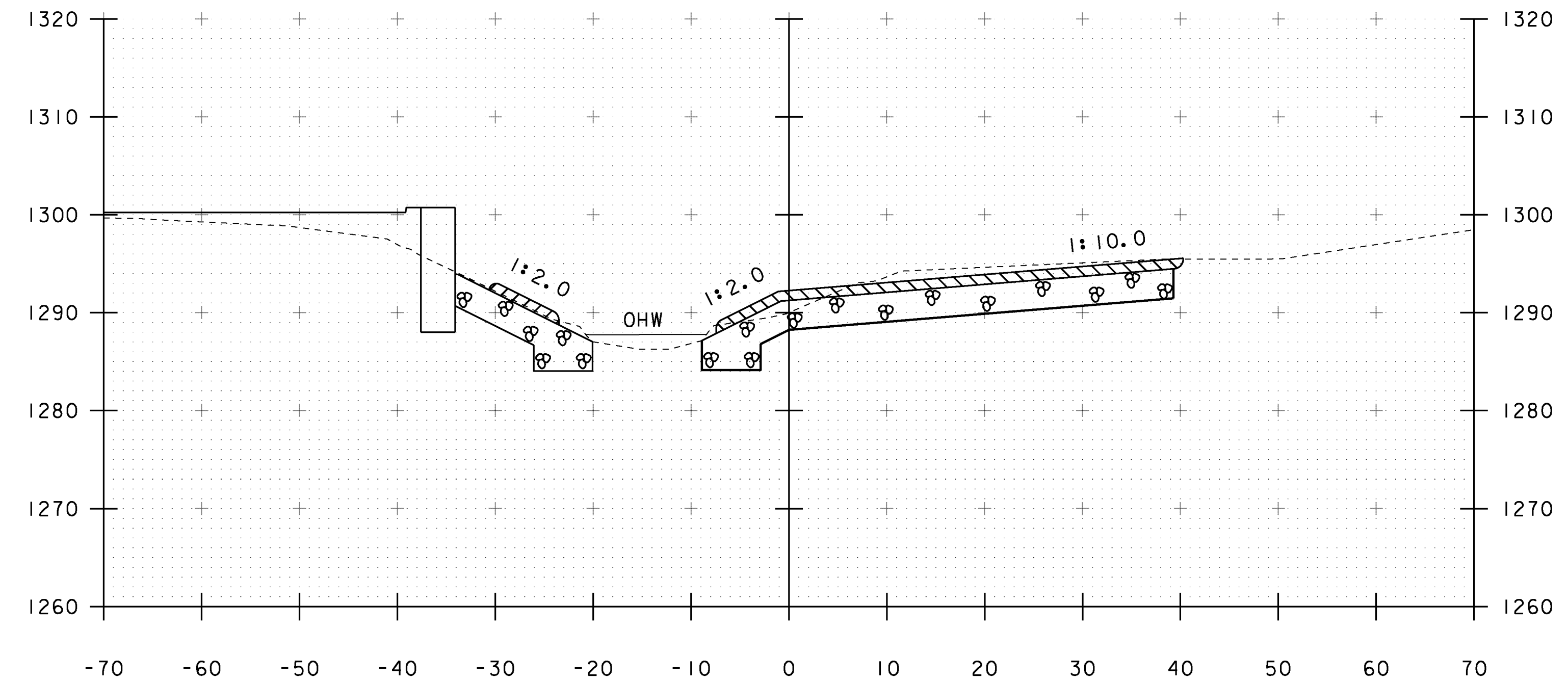


50+40

STA 50+41 LT
 END UNCLASSIFIED CHANNEL EXCAVATION
 GEOTEXTILE UNDER STONE FILL
 STONE FILL, TYPE III
 GRUBBING MATERIAL



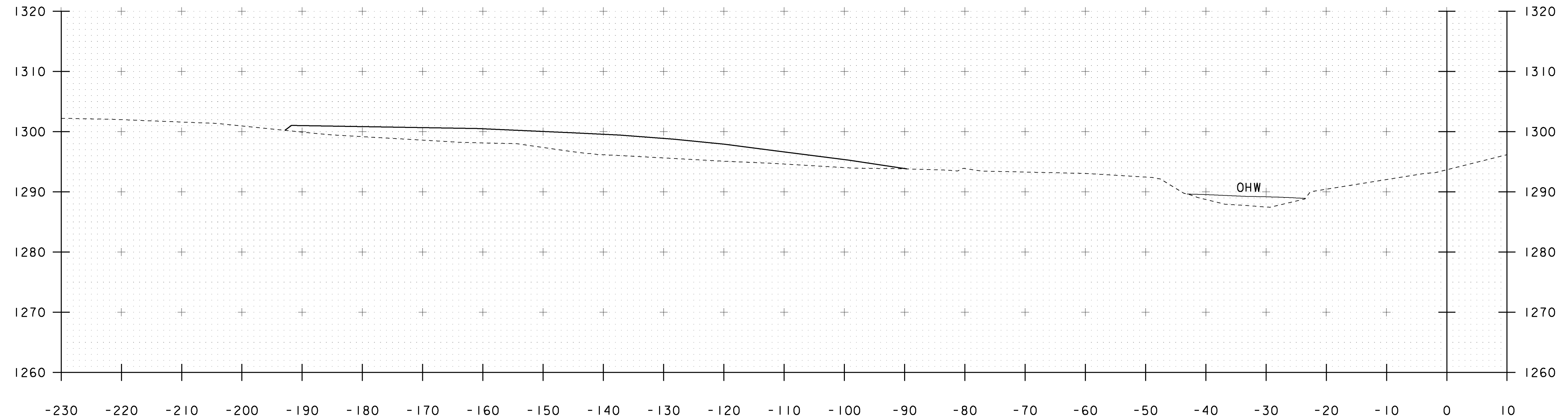
50+10



50+30

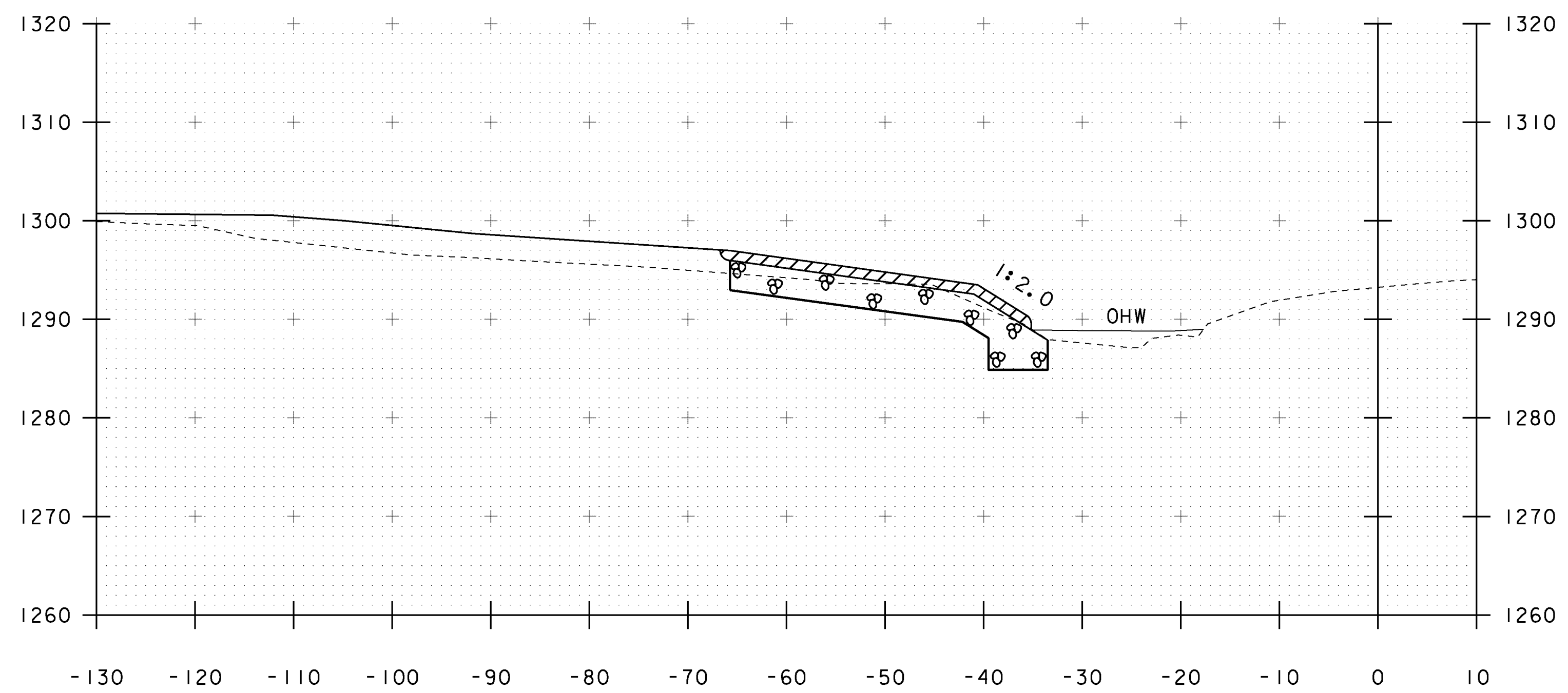
STA. 50+10 TO STA. 50+40

PROJECT NAME: MARLBORO	PLOT DATE: 28-AUG-2013
PROJECT NUMBER: BRF 010-1(43)	DRAWN BY: K. FRIEDLAND
FILE NAME: s10b414xsl.dgn	CHECKED BY: G. LAROCHE
PROJECT LEADER: K. HIGGINS	SHEET 49 OF 50
DESIGNED BY: R. KLINEFELTER	
CHANNEL SECTIONS 4	



STA 50+57 FAR LT
 END UNCLASSIFIED CHANNEL EXCAVATION
 GEOTEXTILE UNDER STONE FILL
 STONE FILL, TYPE III
 GRUBBING MATERIAL

50+60



50+50

PROJECT NAME: MARLBORO
 PROJECT NUMBER: BRF 010-1(43)

FILE NAME: sl0b414xsl.dgn
 PROJECT LEADER: K. HIGGINS
 DESIGNED BY: R. KLINEFELTER
 CHANNEL SECTIONS 5

PLOT DATE: 28-AUG-2013
 DRAWN BY: K. FRIEDLAND
 CHECKED BY: G. LAROCHE
 SHEET 50 OF 50

STA. 50+50 TO STA. 50+60