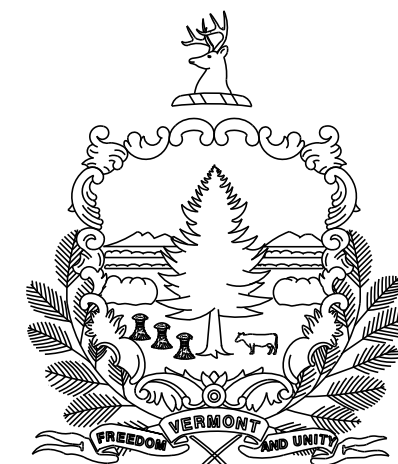


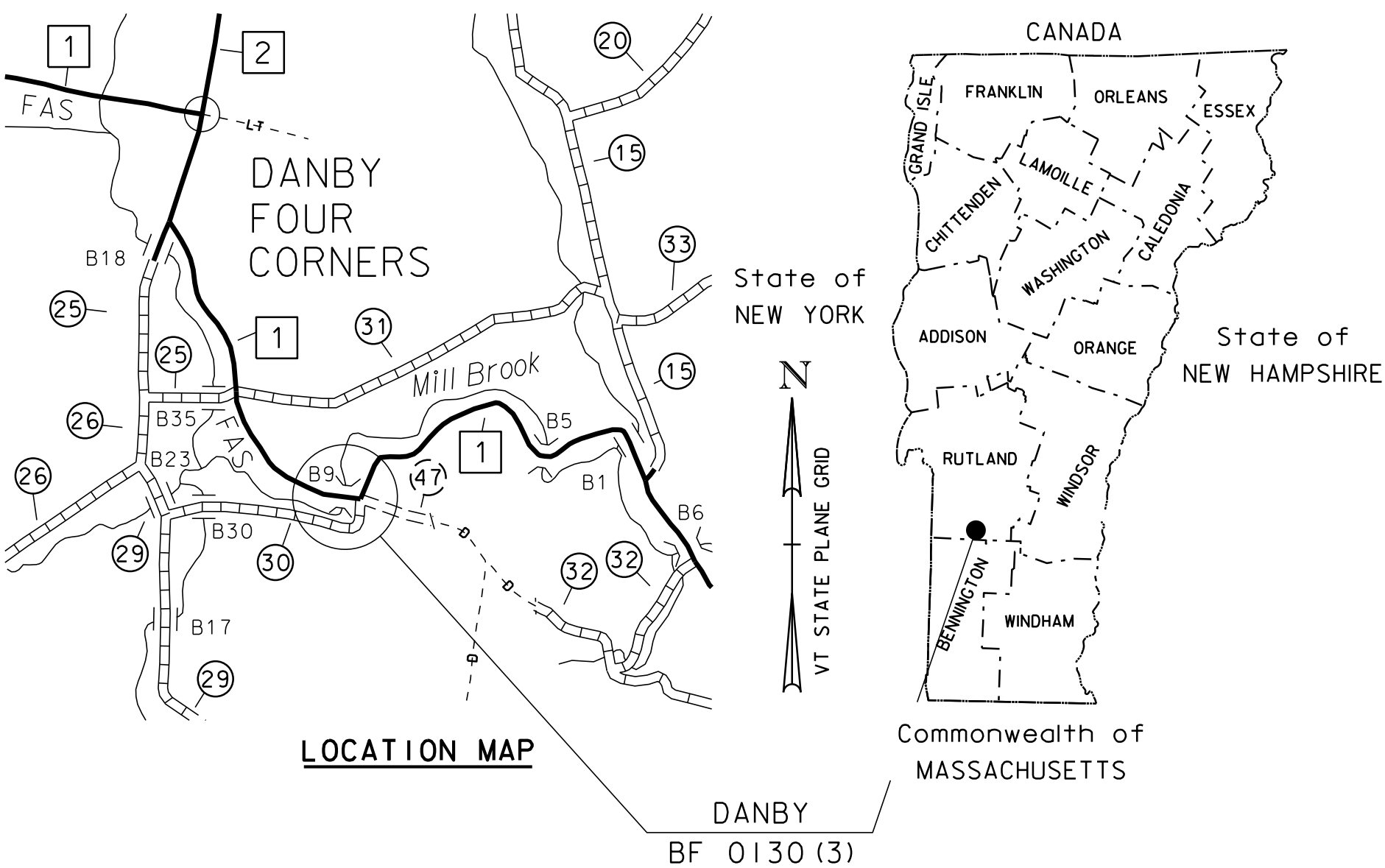
STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF DANBY

COUNTY OF RUTLAND

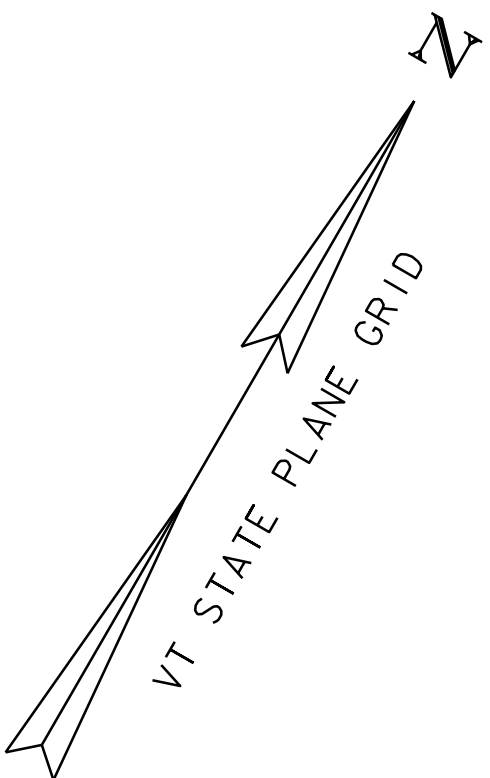
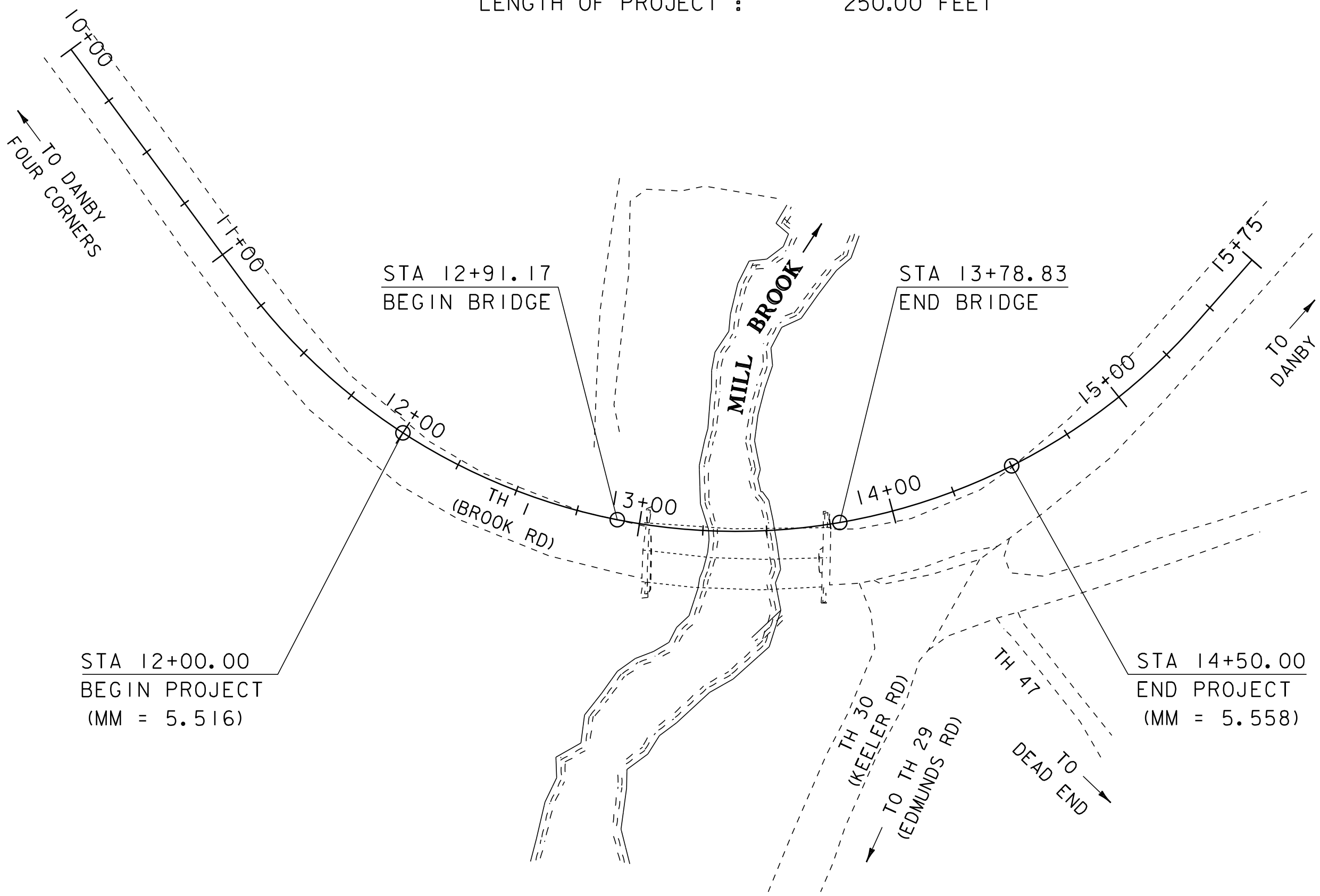


ROUTE NO : TH 1 (FAS 0130); RURAL MAJOR COLLECTOR BRIDGE NO : 9

PROJECT LOCATION : ON TH 1 BEGINNING APPROXIMATELY 2.830 MILES WEST FROM ITS INTERSECTION WITH
TH 27 (NORTH MAIN ST) AND EXTENDING EASTERLY APPROXIMATELY 0.047 MILE.

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

LENGTH OF STRUCTURE : 87.66 FEET
LENGTH OF ROADWAY : 162.34 FEET
LENGTH OF PROJECT : 250.00 FEET



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

QUALITY ASSURANCE PROGRAM : LEVEL 2

SURVEYED BY : L. ORVIS
SURVEYED DATE : 05/01/2014

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (2011)

40 0 40
SCALE: 1" = 40'-0"

DIRECTOR OF PROJECT DELIVERY

APPROVED _____ DATE _____

PROJECT MANAGER : CAROLYN CARLSON, PE

PROJECT NAME : DANBY
PROJECT NUMBER : BF 0130 (3)

SHEET 1 OF 55 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version

LRFD

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02-23-1995

E-121

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08-08-1995

E-193

PAVEMENT MARKING DETAILS

08-18-1995

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STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)

03-10-2017

G-1D

STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)

03-10-2017

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GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS

11-15-2002

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MAIL BOX SUPPORT DETAILS

08-07-1995

S-367A

BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING

02-02-2017

S-367B

GUARDRAIL APPROACH SECTION, GALVANIZED HD STEEL BEAM

02-02-2017

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04-25-2016

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DELINEATORS AND MILEPOSTS

01-02-2013

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04-09-2014

T-45

SQUARE TUBE SIGN POST AND ANCHOR

01-02-2013

TRAFFIC DATA

YEAR

ADT

DHV

% D

% T

ADTT

20 year ESAL for flexible pavement from 2017 to 2037 : 463000

2017

660

85

67

3.5

75

40 year ESAL for flexible pavement from 2017 to 2057 : 1114000

2037

700

90

67

5.2

120

Design Speed : 30 mph

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: February 2016

DRAINAGE AREA : 11.0 sq. mi.

CHARACTER OF TERRAIN : Mixture woods and open land, rural

STREAM CHARACTERISTICS : Steep and sinuous

NATURE OF STREAMBED : Ledge, gravel and cobbles

PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

43% = 600 cfs2% = 2070 cfs

10% = 1260 cfs1% = 2500 cfs

4% = 1690 cfs0.2% = 3500 cfs

DATE OF FLOOD OF RECORD: Unknown

ESTIMATED DISCHARGE: Unknown

WATER SURFACE ELEV.: Unknown

NATURAL STREAM VELOCITY: @ 2% AEP = 15.9 fps

ICE CONDITIONS : Moderate

DEBRIS: Light

DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No

IS ORDINARY RISE RAPID? No

IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No

IF YES, DESCRIBE:

WATERSHED STORAGE: <1%HEADWATERS: UNIFORM: XIMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single span rolled beam

YEAR BUILT: 1933

CLEAR SPAN(NORMAL TO STREAM): 67.5'

VERTICAL CLEARANCE ABOVE STREAMBED: ~25'

WATERWAY OF FULL OPENING: 1180 sq. ft.

DISPOSITION OF STRUCTURE: Remove and replace

TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings

WATER SURFACE ELEVATIONS AT:

43% AEP = 1215.3'VELOCITY = 10.8 fps

10% AEP = 1216.4'" 14.6 fps

4% AEP = 1217.0'" 15.8 fps

2% AEP = 1217.6'" 16.7 fps

1% AEP = 1218.1'" 17.4 fps

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No

FREQUENCY: N/A

RELIEF ELEVATION: 1239.0'

DISCHARGE OVER ROAD @ 1% AEP:

UPSTREAM STRUCTURE

TOWN: DanbyDISTANCE: 3950'

HIGHWAY #: TH 29STRUCTURE #:

CLEAR SPAN: CLEAR HEIGHT:

YEAR BUILT: FULL WATERWAY:

STRUCTURE TYPE:

DOWNSTREAM STRUCTURE

TOWN: DanbyDISTANCE: 3870'

HIGHWAY #: TH 1STRUCTURE #: 5

CLEAR SPAN: 2CLEAR HEIGHT:

YEAR BUILT: 1983FULL WATERWAY:

STRUCTURE TYPE: Concrete Slab

LRFR LOAD RATING FACTORS

LOADING LEVELS

H-20HL-933S28 AXLE3A STR.4A STR.5A SEMI

TONNAGE203636663034.538

INVENTORY2.371.08

POSTING

OPERATING3.071.412.241.472.141.91.96

COMMENTS:

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span plate girder

CLEAR SPAN(NORMAL TO STREAM): ~88' upstream, ~76' downstream

VERTICAL CLEARANCE ABOVE STREAMBED: ~25'

WATERWAY OF FULL OPENING: 1410 sq. ft.

WATER SURFACE ELEVATIONS AT:

43% AEP = 1215.3'VELOCITY= 10.8 fps

10% AEP = 1216.4'" 14.6 fps

4% AEP = 1217.0'" 15.8 fps

2% AEP = 1217.6'" 16.7 fps

1% AEP = 1218.1'" 17.4 fps

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No

FREQUENCY: N/A

RELIEF ELEVATION: 1239.0'

DISCHARGE OVER ROAD @ 1% AEP:

BRIDGE LOW CHORD ELEVATION: 1239.0'

FREEBOARD: @ 2% AEP = 21.4'

SCOUR: Ledge through bridge. Abutments on ledge. No scour calculated.

REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV (Below 2% AEP)Stone Fill, Type II (Above 2% AEP)

PERMIT INFORMATION

AVERAGE DAILY FLOW: -DEPTH OR ELEVATION:

ORDINARY LOW WATER: -

ORDINARY HIGH WATER: -

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: None required

CLEAR SPAN (NORMAL TO STREAM):

VERTICAL CLEARANCE ABOVE STREAMBED:

WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

Road closed during construction. Traffic will be maintained on an off-site detour.

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.

2. TRAFFIC SIGNALS ARE NOT NECESSARY.

3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOADHL-93

2. FUTURE PAVEMENTdp: 2.5 INCH

3. DESIGN SPANL: 86.00 FT

4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS) Δ: ---

5. PRESTRESSING STRANDfy: ---

6. PRESTRESSED CONCRETE STRENGTHf'c: ---

7. PRESTRESSED CONCRETE RELEASE STRENGTHf'ci: ---

8. CONCRETE, HIGH PERFORMANCE CLASS AAf'c: ---

9. CONCRETE, HIGH PERFORMANCE CLASS Af'c: 4.0 KSI

10. CONCRETE, HIGH PERFORMANCE CLASS Bf'c: 3.5 KSI

11. CONCRETE, CLASS Cf'c: ---

12. REINFORCING STEELfy: 60 KSI

13. STRUCTURAL STEEL AASHTO M270 (WEATHERING)fy: 50 KSI

14. NOMINAL BEARING RESISTANCE OF SOILqn: ---

15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)φ: ---

16. NOMINAL BEARING RESISTANCE OF ROCKqn: ---

17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)φ: ---

18. PILE RESISTANCE FACTORφ: 0.70

19. LATERAL PILE DEFLECTIONΔ: ---

20. BASIC WIND SPEEDV3s: ---

21. MINIMUM GROUND SNOW LOADpg: ---

22. SEISMIC DATAPGA: 0.7Ss: ---S1: ---

23.

24. ---

25. ---

26. ---

PROJECT NAME: DANBY

PROJECT NUMBER: BF 0130(3)

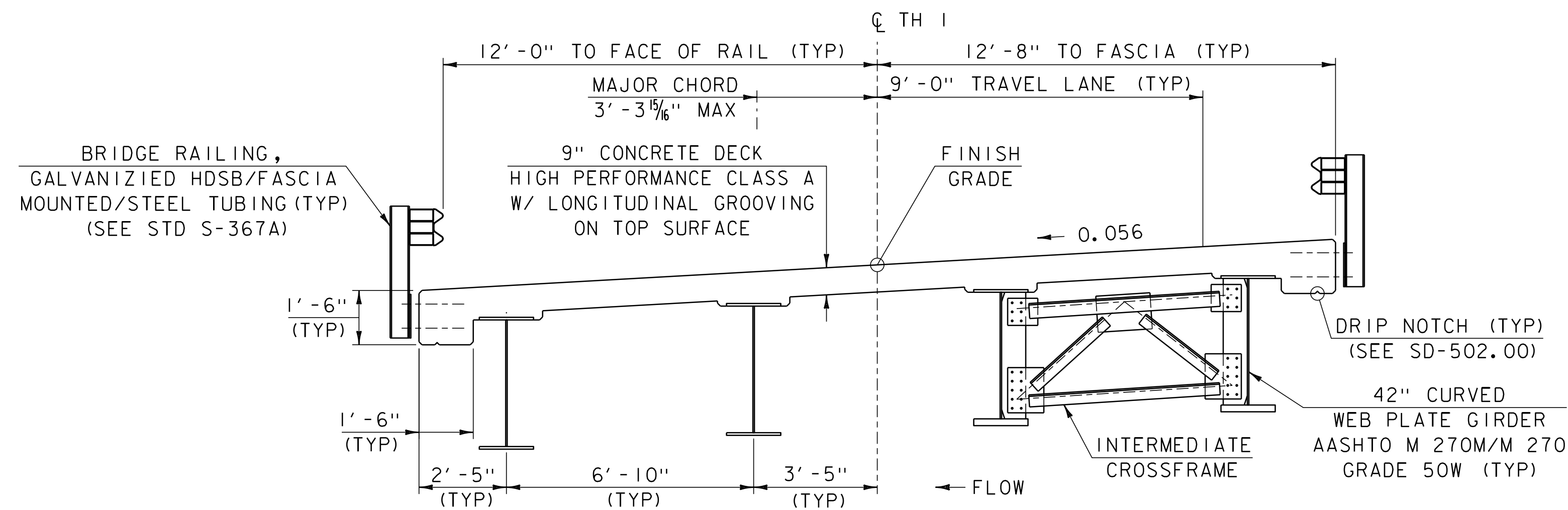
FILE NAME: s13j304pi.dgnPLOT DATE: 12/5/2017

PROJECT LEADER: C. CARLSONDRAWN BY: G. ROY

DESIGNED BY: C. BURRALLCHECKED BY: C. BURRALL

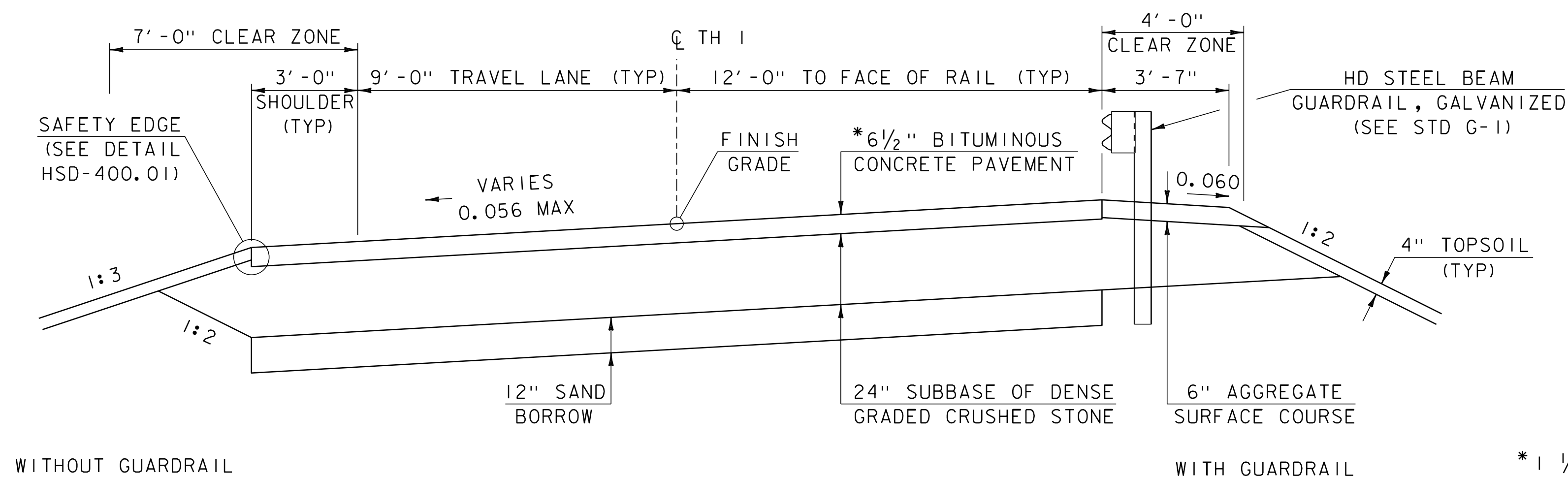
PRELIMINARY INFORMATION SHEET

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BRIDGE TYPICAL SECTION

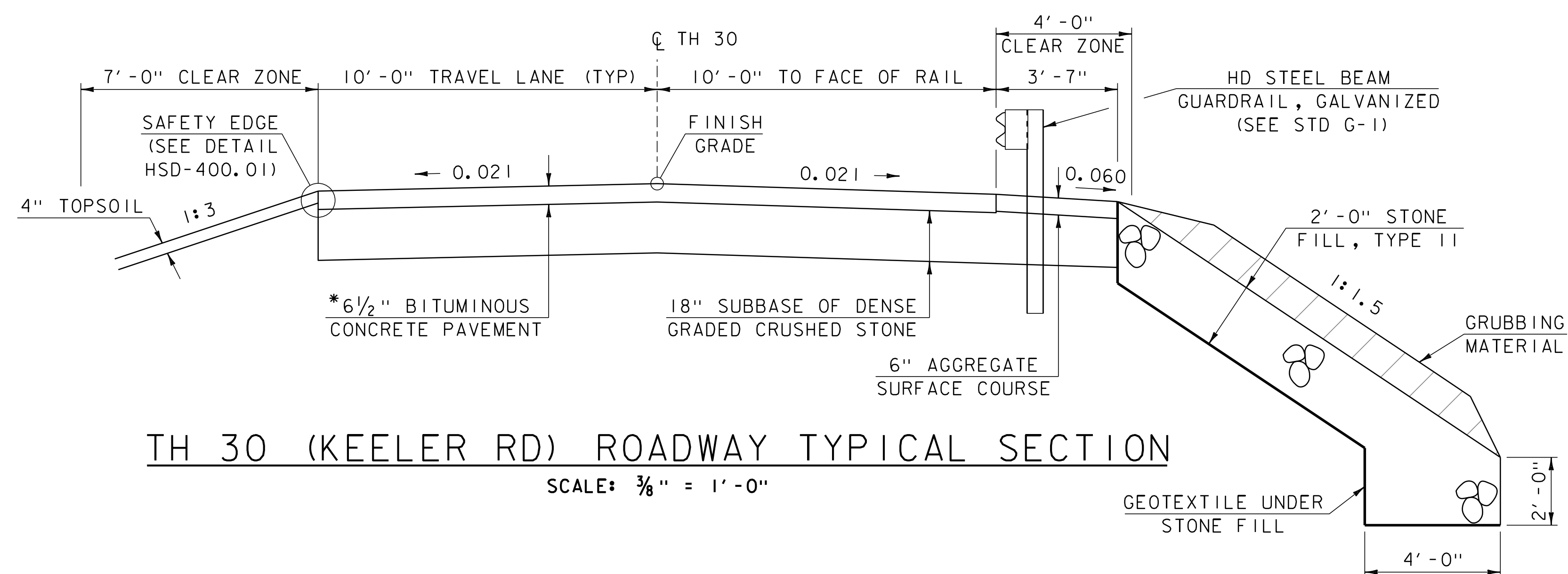
SCALE: $\frac{3}{8}$ " = 1'-0"



TH 1 (BROOK RD) ROADWAY TYPICAL SECTION

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

* 1 1/2" TYPE IVS OVER
1 1/2" TYPE IVS OVER
3 1/2" TYPE IIS



TH 30 (KEELER RD) ROADWAY TYPICAL SECTION

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

PAVEMENT SHALL BE PAID FOR UNDER ITEM 900.680 "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".

TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT A RATE OF 0.025 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT AND 0.080 GAL/SY ON COLD PLANED SURFACES AS DIRECTED BY THE ENGINEER.

MATERIAL TOLERANCES

(IF USED ON PROJECT)

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

PROJECT NAME: DANBY

PROJECT NUMBER: BF 0130 (3)

FILE NAME: sl3j304typ.dgn

PROJECT LEADER: C. CARLSON

DESIGNED BY: C. BURRALL

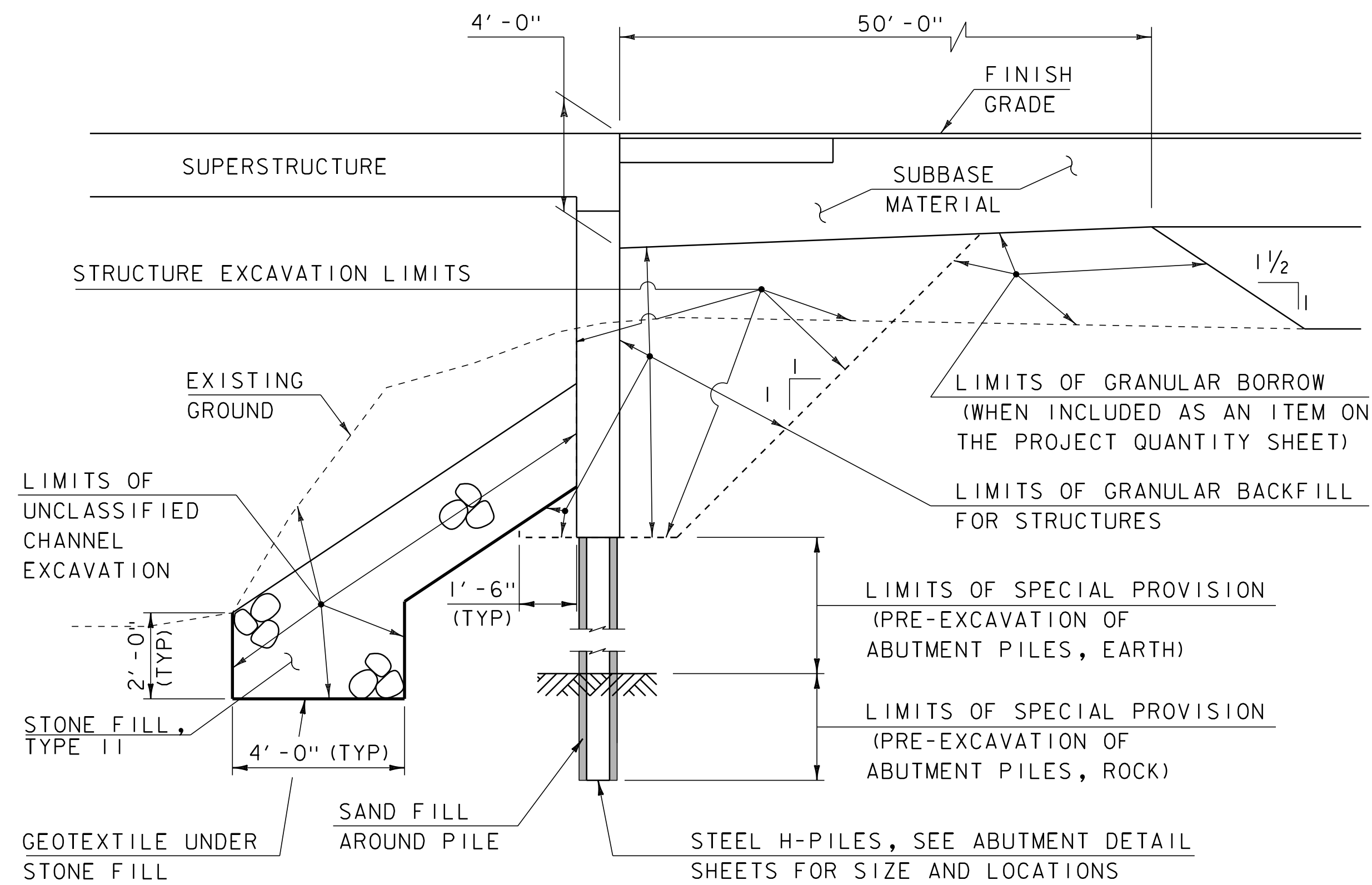
TYPICAL SECTIONS (1)

PLOT DATE: 06-DEC-2017

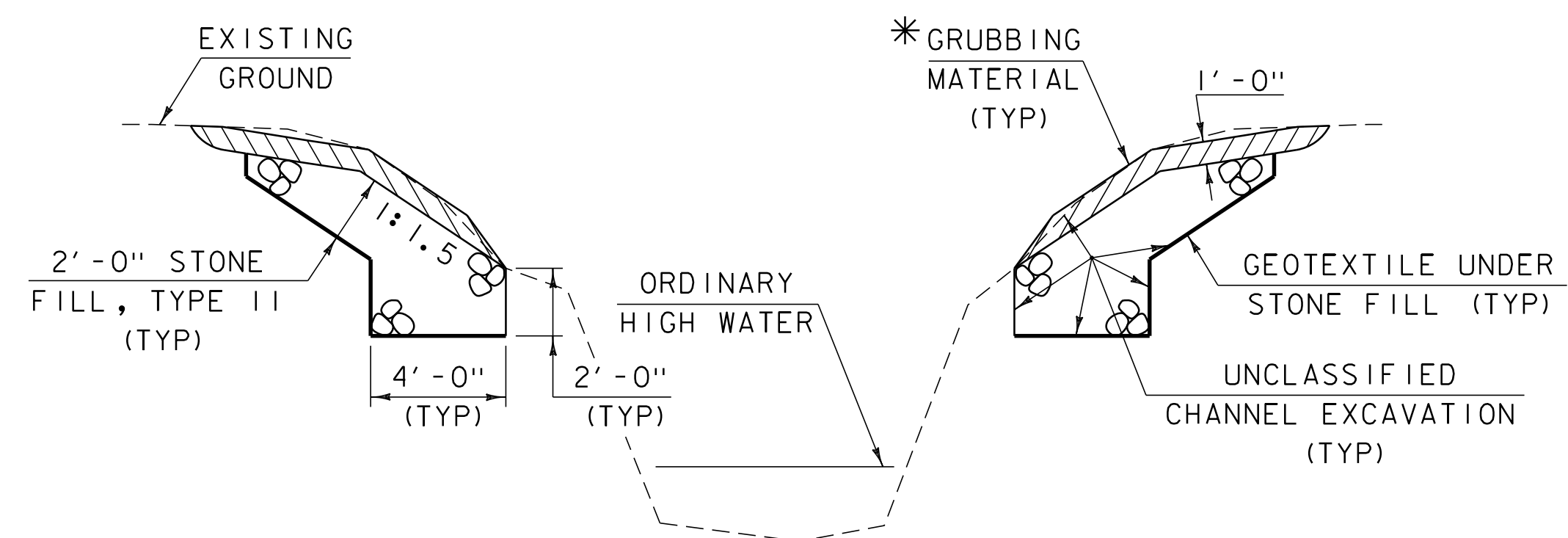
DRAWN BY: G. ROY

CHECKED BY: C. BURRALL

SHEET 3 OF 55



ABUTMENT EARTHWORK TYPICAL SECTION
(NOT TO SCALE)



CHANNEL TYPICAL SECTION
(NOT TO SCALE)

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

PROJECT NAME: DANBY
PROJECT NUMBER: BF 0130 (3)

FILE NAME: sl3j304typ.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: C. BURRALL
TYPICAL SECTIONS (2)

PLOT DATE: 06-DEC-2017
DRAWN BY: G. ROY
CHECKED BY: C. BURRALL
SHEET 4 OF 55

GENERAL

1.

ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011 AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 7TH EDITION, AND ITS LATEST REVISIONS.
2.

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

THE DETAILS AND DIMENSIONS SHOWN ON THE PROJECT SPECIFIC PLAN AND DETAIL SHEETS TAKE PRECEDENCE OVER THE MORE GENERAL “STRUCTURES DETAIL SHEETS” PROVIDED AFTER THE PLAN SHEETS.
4.

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

BRIDGE #9 WAS DESIGNED FOR AN HL-93 LIVE LOAD.

TRAFFIC CONTROL

6.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF A SITE-SPECIFIC TRAFFIC CONTROL PLAN FOR ALL STAGES OF CONSTRUCTION. THE PLAN SHALL CLEARLY DETAIL HOW TRAFFIC WILL BE MAINTAINED. THE PLAN SHALL SPECIFY ALL CONSTRUCTION ACTIVITIES REQUIRING ALTERNATING ONE WAY TRAFFIC, RELATE THOSE ACTIVITIES TO THE CONSTRUCTION SCHEDULE, AND SHOW APPROPRIATE TEMPORARY TRAFFIC CONTROL. ALL COSTS WILL BE INCLUDED IN ITEMS 900.645, “SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)”. FIELD WORK SHALL NOT COMMENCE UNTIL A TRAFFIC CONTROL PLAN HAS BEEN SUBMITTED BY THE CONTRACTOR AND ACCEPTED BY VTRANS.
7.

FAS ROUTE 130 (TH 1/ BROOK RD.) IN PROXIMITY OF THE PROJECT WILL BE CLOSED DURING THE BRIDGE CLOSURE PERIOD (BCP) AND TRAFFIC WILL BE MAINTAINED ON AN OFF-SITE DETOUR. THE TOWN OF DANBY WILL BE RESPONSIBLE FOR SIGNING THE DETOUR WHICH WILL UTILIZE TH 30 (KEELER RD.) TO TH 29 (EDMUNDS RD.) TO TH 26 (DANBY MOUNTAIN RD.) TO TH 25 (SMOKEY HOUSE RD.) AND BACK TO TH 1 (BROOK RD.)). THEINSTALLATION AND MAINTENANCE OF ALL SIGNING ASSOCIATED WITH THE TEMPORARY DETOUR SHALL BE THE RESPONSIBILITY OF THE TOWN OF DANBY.
8.

ALL ITEMS REQUIRED TO IMPLEMENT THE TRAFFIC CONTROL PLAN WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED INCIDENTAL TO THE BID PRICE FOR ITEM 900.645, “SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)”. FLAGGERS, UNIFORMED TRAFFIC OFFICERS, AND PORTABLE CHANGEABLE MESSAGE SIGNS WILL BE PAID SEPARATELY.

EARTHWORK

9.

REMOVAL OF THE EXISTING STRUCTURE SHALL BE PAID UNDER ITEM 529.15, “REMOVAL OF STRUCTURE”. THIS WORK SHALL INCLUDE REMOVAL OF ANY PORTIONS OF THE EXISTING STRUCTURE THAT FALL OUTSIDE THE LIMITS OF ANY OF THE EXCAVATION ITEMS.
10.

PRIOR TO SETTING STRUCTURAL STEEL, BACKFILL BEHIND THE ABUTMENTS SHALL BE LIMITED TO 2 FEET BELOW THE BRIDGE SEATS UNTIL STRUCTURAL STEEL IS SET. BACKFILL BEHIND THE ABUTMENTS SHALL NOT BE PLACED HIGHER THAN THE BRIDGE SEATS UNTIL THE ABUTMENTS AND DECK CONSTRUCTION ARE COMPLETED.
11.

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

CONCRETE AND REINFORCING STEEL

12.

ITEM 900.608, “SPECIAL PROVISION (CONCRETE HIGH PERFORMANCE, CLASS PCD)” SHALL BE USED FOR THE DECK, CURBS AND INTEGRAL ABUTMENT CURTAIN WALL AND WINGWALLS 3 AND 4 ABOVE THE PILE CAP CONSTRUCTION JOINT.
13.

ITEM 900.608, “SPECIAL PROVISION (CONCRETE HIGH PERFORMANCE, CLASS PCS)” SHALL BE USED FOR THE APPROACH SLABS, AND ALL INTEGRAL ABUTMENT SUBSTRUCTURE BELOW THE PILE CAP CONSTRUCTION JOINT.
14.

RETAINING WALLS 1 AND 2 SHALL BE PAID FOR UNDER ITEM 900.645, “SPECIAL PROVISION (RETAINING WALL 1)” AND ITEM 900.645, “SPECIAL PROVISION (RETAINING WALL 2)”. JOINT MATERIAL MEETING SUBSECTION(S) 707.06, 707.07, 707.08, OR 707.09 SHALL BE USED TO SEAL THE JOINT BETWEEN THE RETAINING WALLS AND THE BACK OF ABUTMENT 1. WORK FOR INSTALLING JOINT SHALL BE INCIDENTAL TO THE RETAINING WALL BID ITEMS.
15.

THE DECK IS TO BE PLACED IN ONE CONTINUOUS POUR WITH A MAXIMUM DURATION OF EIGHT HOURS. IF THE DECK PLACEMENT CANNOT BE COMPLETED, DUE TO UNEXPECTED CIRCUMSTANCES, A CONSTRUCTION JOINT SHALL BE USED. A MINIMUM 96 HOUR DELAY BETWEEN THE COMPLETION OF ONE DAY’S PLACEMENT AND THE BEGINNING OF ANY OTHER ADJACENT SEGMENT SHALL BE OBSERVED.
16.

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 BRIDGE DECK BETWEEN THE DRIP NOTCHES.
17.

REINFORCING BARS AND THEIR DESIGNATIONS SHALL BE AS FOLLOWS:

•

BARS MARKED WITH A “.3” IN THEIR SUFFIX SHALL BE ITEM 507.13, “REINFORCING STEEL, LEVEL III.”

•

BARS MARKED WITH A “G” IN THEIR SUFFIX SHALL BE THE APPROPRIATE 900.640, “SPECIAL PROVISION (REINFORCING BAR, GFRP)” ITEM.

•

BARS MARKED WITH AN “E” IN THEIR PREFIX SHALL BE EPOXY COATED AND MEET THE REQUIREMENTS OF ITEM 507.11, “REINFORCING STEEL, LEVEL I (EPOXY COATED).”
- ALL OTHER REINFORCEMENT SHALL MEET THE REQUIREMENTS OF ITEM 507.11, “REINFORCING STEEL, LEVEL I (BLACK).”

18.

UNLESS OTHERWISE NOTED, MINIMUM CLEAR COVER SHALL BE AS FOLLOWS:

•

ALONG TOP SURFACE OF SUPERSTRUCTURE:

2 INCHES

•

ALONG BOTTOM SURFACE OF SUPERSTRUCTURE:

1 ½ INCHES

•

ALONG BACK FACES OF WALLS AGAINST EARTH:

2 INCHES

•

ELSEWHERE UNLESS OTHERWISE INDICATED:

3 INCHES

19.

THE TOP MAT OF GFRP REINFORCING BARS IN THE DECK SHALL BE TIED DOWN TO AVOID FLOATING DURING DECK CASTING. PAYMENT SHALL BE INCIDENTAL TO ITEM 900.640, “SPECIAL PROVISION (REINFORCING BAR, GFRP) (#5) OR ITEM 900.640, “SPECIAL PROVISION (REINFORCING BAR, GFRP) (#6)”.

20.

TEST BARS SHALL BE PROVIDED IN ACCORDANCE WITH THE “VERMONT AGENCY OF TRANSPORTATION MATERIAL SAMPLING MANUAL” AVAILABLE ON THE AGENCY WEBSITE.

STRUCTURAL STEEL

21.

UNLESS NOTED OTHERWISE, ALL NEW STRUCTURAL STEEL SHALL CONFORM TO AASHTO M 270 GRADE 50W AND SHALL BE PAID UNDER ITEM 506.56, “STRUCTURAL STEEL, CURVED PLATE GIRDER.”

22.

AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, LOWER PORTIONS OF THE ABUTMENTS AND WINGWALLS CAST AND CURED, AND BEFORE ANY FORMWORK OR OTHER LOADS ARE ADDED TO THE GIRDERS, ELEVATIONS ALONG THE TOP OF THE GIRDER FLANGES SHALL BE TAKEN AS DIRECTED BY THE ENGINEER FOR USE IN DETERMINING DECK FORMWORK ELEVATIONS.

23.

FLEMING BRACKETS OR SIMILAR FALSEWORK SHALL BE SPACED AS REQUIRED BY DESIGN, BUT SHALL BE LIMITED TO A MAXIMUM SPACING OF 4'-0". THE DESIGN OF THE FALSEWORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DEPTH OF FLEMING BRACKETS SHALL EXTEND AS NEAR AS POSSIBLE TO THE BOTTOM FLANGE AND SHALL BE A MINIMUM OF 75% OF THE WEB DEPTH.

24.

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

25.

UNLESS OTHERWISE NOTED, ALL BOLTS SHALL BE 7/8" DIA ASTM A325 TYPE 3 AND MEET THE REQUIREMENTS OF SUBSECTION 714.05. HOLE DIAMETERS SHALL BE 15/16".

26.

ANY CONNECTIONS THAT ARE NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE VTRANS PROJECT MANAGER FOR APPROVAL.

PILE FOUNDATIONS

27.

ITEM 505.20, "STEEL PILING, HP 12 X 74" SHALL BE USED FOR ALL PILING NECESSARY FOR THE CONSTRUCTION OF ABUTMENTS 1 AND 2.

28.

PRE-EXCAVATION IS REQUIRED AT ALL PILE LOCATIONS. PAYMENT SHALL BE MADE UNDER ITEM 900.640, “SPECIAL PROVISION (PRE-EXCAVATION OF ABUTMENTS PILES, EARTH)” OR ITEM 900.640, “SPECIAL PROVISION (PRE-EXCAVATION OF ABUTMENTS PILES, ROCK)”.

29.

PILE LOCATIONS SHALL BE PRE-EXCAVATED FROM THE BOTTOM OF THE PILE CAP THROUGH THE VUGGY ROCK ZONE TO AN ELEVATION OF 1217 FT AT ABUTMENT 1 AND 1212 FT AT ABUTMENT 2. PRE-EXCAVATED HOLES SHALL BE A MINIMUM 24 INCHES IN DIAMETER.

30.

THE ENTIRE PRE-EXCAVATED HOLE SHALL BE BACKFILLED WITH SAND AND THE PILE DRIVEN THROUGH THE SAND. SAND SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 703.03. SAND SHALL BE INCIDENTAL TO ITEM 900.640, “SPECIAL PROVISION (PRE-EXCAVATION OF ABUTMENTS PILES, ROCK)”.

31.

PILES SHALL BE SEATED ON OR WITHIN THE BEDROCK WITH A PILE DRIVING IMPACT HAMMER TO A NOMINAL RESISTANCE OF 345 KIPS. THE PILES SHALL BE DRIVEN TO A PILE TIP ELEVATION OF 1217 FT AT ABUTMENT 1 AND 1212 FT AT ABUTMENT 2. ANY WORK REQUIRED FOR THIS SHALL BE INCIDENTAL TO ITEM 504.10, “FURNISHING EQUIPMENT FOR PILE DRIVING”.

32.

REINFORCED DRIVING TIPS SHALL BE REQUIRED AND SHALL CONFORM TO SUBSECTION 505.04(F) OF THE STANDARD SPECIFICATIONS.

33.

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

34.

PILES SHALL BE DRIVEN AS A SINGLE PIECE WITHOUT SPLICES.

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130(3)	
FILE NAME: sl3j304forms.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
PROJECT NOTES	SHEET 5 OF 55

STATE OF VERMONT AGENCY OF TRANSPORTATION														QUANTITY SHEET 1												
SUMMARY OF ESTIMATED QUANTITIES														TOTALS		DESCRIPTIONS								DETAILED SUMMARY OF QUANTITIES		
								ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS					
								1					1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10									
								1230					1230		CY	COMMON EXCAVATION	203.15									
								20					20		CY	SOLID ROCK EXCAVATION	203.16									
											1090		1090		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27									
								90					90		CY	SAND BORROW	203.31									
								210					210		CY	GRANULAR BORROW	203.32									
								1					1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22									
											400		400		CY	STRUCTURE EXCAVATION	204.25									
											280		280		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30									
								360					360		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10									
								730					730		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35									
								40					40		CY	AGGREGATE SURFACE COURSE	401.10									
								6					6		CWT	EMULSIFIED ASPHALT	404.65									
								1					1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50									
											1		1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10									
											150		150		LF	STEEL PILING, HP 12 X 74	505.16									
											87450		87450		LB	STRUCTURAL STEEL, CURVED PLATE GIRDER (FPQ)	506.56									
											11370		11370		LB	REINFORCING STEEL, LEVEL I (BLACK)	507.11									
											3020		3020		LB	REINFORCING STEEL, LEVEL I (EPOXY COATED)	507.11									
											16960		16960		LB	REINFORCING STEEL, LEVEL III	507.13									
											1		1		LS	SHEAR CONNECTORS (922 - 7/8" x 7")	508.15									
											250		250		SY	LONGITUDINAL DECK GROOVING	509.10									
											28		28		GAL	WATER REPELLENT, SILANE	514.10									
											51		51		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG (FPQ)	516.10									
											51		51		LF	JOINT SEALER, HOT POURED	524.11									
											190		190		LF	BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING (FPQ)	525.44									
											1		1		EACH	REMOVAL OF STRUCTURE (1720 SF - EST)	529.15									
											8		8		EACH	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	531.17									
								1					1		MGAL	DUST CONTROL WITH WATER	609.10									
										70			70		CY	STONE FILL, TYPE I	613.10									
										690			690		CY	STONE FILL, TYPE II	613.11									
								1					1		EACH	RELOCATE MAILBOX, SINGLE SUPPORT	617.10									
								173					173		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED (FPQ)	621.21									
								1					1		EACH	MANUFACTURED TERMINAL SECTION, TANGENT	621.51									
								3					3		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60									
								4					4		EACH	GUARDRAIL APPROACH SECTION, GALV HD STEEL BEAM	621.737									
								282					282		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80									
								50					50		HR	UNIFORMED TRAFFIC OFFICERS	630.10									
								500					500		HR	FLAGGERS	630.15									
												1	1		LS	FIELD OFFICE, ENGINEERS	631.10									
																		PROJECT NAME: DANBY								
																		PROJECT NUMBER: BF 0130(3)								
FILE NAME: sj3j304forms.dgn														PLOT DATE: 06-DEC-2017												
PROJECT LEADER: C. CARLSON														DRAWN BY: R. PELLETT												
DESIGNED BY: C. BURRALL														CHECKED BY: C. BURRALL												
QUANTITY SHEET (I)														SHEET 6 OF 55												

STATE OF VERMONT AGENCY OF TRANSPORTATION														QUANTITY SHEET 2									
SUMMARY OF ESTIMATED QUANTITIES														TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	TRAINING	EROSION CONTROL	BRIDGE		FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS		
												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						
								520					520		HR	EMPLOYEE TRAINEESHIP	634.10						
							1						1		LS	MOBILIZATION/DEMOBILIZATION	635.11						
							2						2		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15						
							900						900		LF	4 INCH YELLOW LINE	646.21						
							26						26		LF	24 INCH STOP BAR	646.26						
									1760				1760		SY	GEOTEXTILE UNDER STONE FILL	649.31						
									30				30		SY	GEOTEXTILE FOR SILT FENCE	649.51						
									50				50		SY	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515						
									60				60		LB	SEED	651.15						
									60				60		LB	SEED, WINTER RYE	651.17						
									190				190		LB	FERTILIZER	651.18						
									0.8				0.8		TON	AGRICULTURAL LIMESTONE	651.20						
									0.8				0.8		TON	HAY MULCH	651.25						
									80				80		CY	TOPSOIL	651.35						
									800				800		SY	GRUBBING MATERIAL	651.40						
									1				1		LS	EPSC PLAN	652.10						
									75				75		HR	MONITORING EPSC PLAN	652.20						
									1				1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30						
									1800				1800		SY	TEMPORARY EROSION MATTING	653.20						
									30				30		CY	TEMPORARY STONE CHECK DAM, TYPE I	653.25						
									30				30		CY	VEHICLE TRACKING PAD	653.35						
									180				180		LF	BARRIER FENCE	653.50						
									820				820		LF	PROJECT DEMARCATION FENCE	653.55						
							126						126		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341						
							9						9		EACH	REMOVING SIGNS	675.50						
							9						9		EACH	ERECTING SALVAGED SIGNS	675.60						
							4						4		EACH	DELINEATOR WITH STEEL POST	676.10						
							1						1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50						
										108			108		CY	SPECIAL PROVISION (CONCRETE HIGH PERFORMANCE, CLASS PCD)	900.608						
										106			106		CY	SPECIAL PROVISION (CONCRETE HIGH PERFORMANCE, CLASS PCS)	900.608						
										7			7		EACH	SPECIAL PROVISION (CPM SCHEDULE)	900.620						
										27			27		LF	SPECIAL PROVISION (PRE-EXCAVATION OF ABUTMENT PILES, EARTH)	900.640						
										107			107		LF	SPECIAL PROVISION (PRE-EXCAVATION OF ABUTMENT PILES, ROCK)	900.640						
										8390			8390		LF	SPECIAL PROVISION (REINFORCING BAR, GFRP)(#5)	900.640						
										7730			7730		LF	SPECIAL PROVISION (REINFORCING BAR, GFRP)(#6)	900.640						
										1			1		LS	SPECIAL PROVISION (RETAINING WALL 1)	900.645						
										1			1		LS	SPECIAL PROVISION (RETAINING WALL 2)	900.645						
																		PROJECT NAME: DANBY					
																		PROJECT NUMBER: BF 0130(3)					
																		FILE NAME: s13j304forms.dgn		PLOT DATE: 06-DEC-2017			
																		PROJECT LEADER: C. CARLSON		DRAWN BY: R. PELLETT			
																		DESIGNED BY: C. BURRALL		CHECKED BY: C. BURRALL			
																		QUANTITY SHEET (2)		SHEET 7 OF 55			

GENERAL INFORMATION

SYMBOLGY LEGEND NOTE

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

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

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

COMMON TOPOGRAPHIC POINT SYMBOLS

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

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

PROPOSED GEOMETRY CODES

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

UTILITY SYMBOLGY

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

ABOVE GROUND UTILITIES (AERIAL)

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

PROJECT CONSTRUCTION SYMBOLGY

PROJECT DESIGN & LAYOUT SYMBOLGY	
— -- — CZ — -- —	CLEAR ZONE
—————	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

△ — △ — △ — △	TOP OF CUT SLOPE
○ — ○ — ○ — ○	TOE OF FILL SLOPE
⊗ ⊗ ⊗ ⊗ ⊗ ⊗	STONE FILL
-----	BOTTOM OF DITCH
=====	CULVERT PROPOSED
-----	STRUCTURE SUBSURFACE
PDF — PDF —	PROJECT DEMARCATION FENCE
BF — x — x — x — x — BF — x — x —	BARRIER FENCE
xxxxxxxxxxxxxxxxxxxx	TREE PROTECTION ZONE (TPZ)
//////////	STRIPING LINE REMOVAL
~~~~~	SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLGY

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

EPSC LAYOUT PLAN SYMBOLGY

EPSC MEASURES	
ONNOONNOONNO	FILTER CURTAIN
▣ — ▣ — ▣ — ▣ — ▣ — ▣ —	SILT FENCE
▣ — x — ▣ — x — ▣ — x — ▣ — x —	SILT FENCE WOVEN WIRE
▶ —▶ —▶ —	CHECK DAM
▣	DISTURBED AREAS REQUIRING RE-VEGETATION
▣	EROSION MATTING
SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLGY	

ENVIRONMENTAL RESOURCES

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

ARCHEOLOGICAL & HISTORIC

——— ARCH ———	ARCHEOLOGICAL BOUNDARY
——— HISTORIC DIST ———	HISTORIC DISTRICT BOUNDARY
——— HISTORIC ———	HISTORIC AREA
Ⓜ	HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLGY

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

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130 (3)	
FILE NAME: sl3j304legend.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
CONVENTIONAL SYMBOLGY-LEGEND	SHEET 10 OF 55

GPS CONTROL POINTS

HVCTRL #1  
LEWIS AZ MK  
NORTH = 302949.3420  
EAST = 1497537.5380  
ELEV. = 1615.697

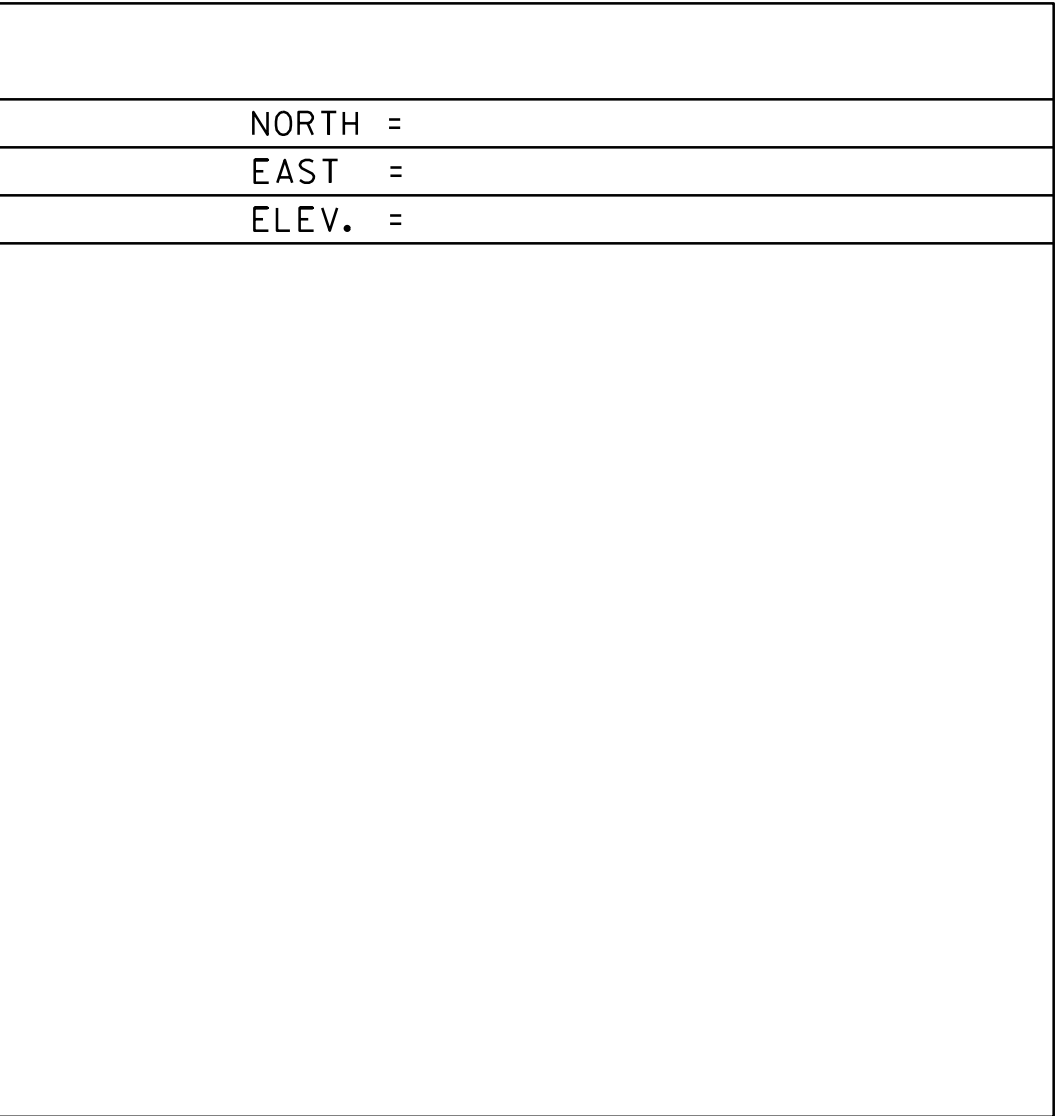
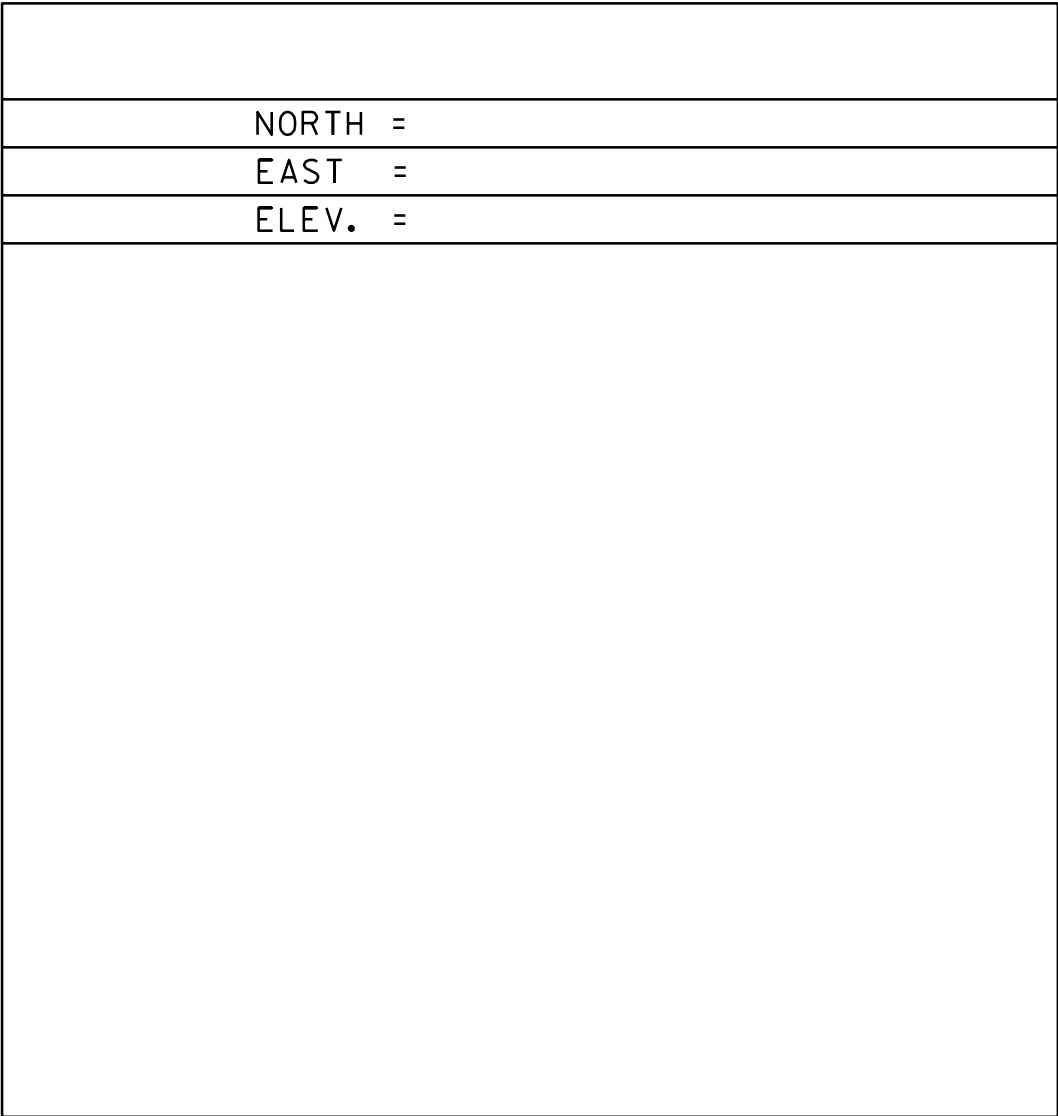
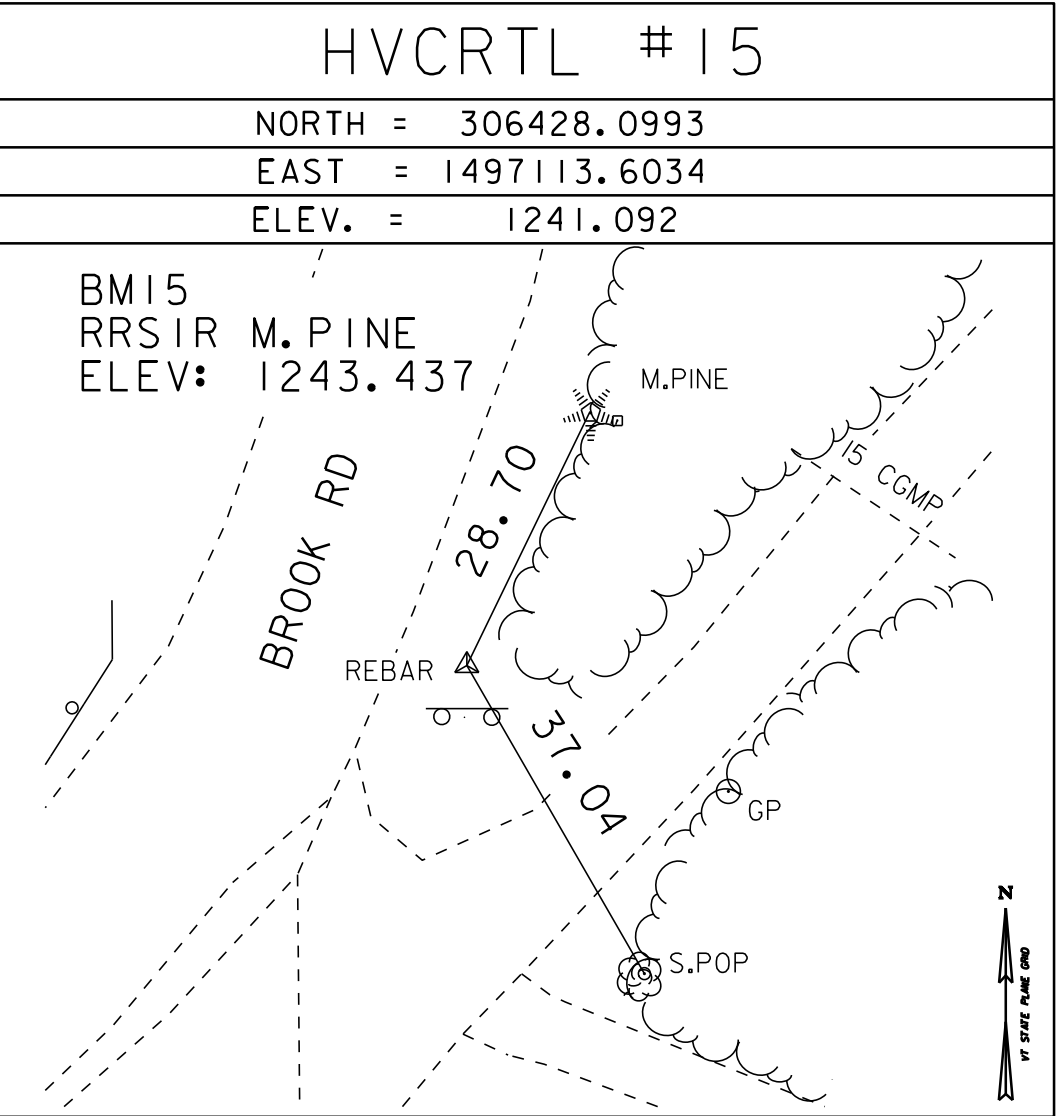
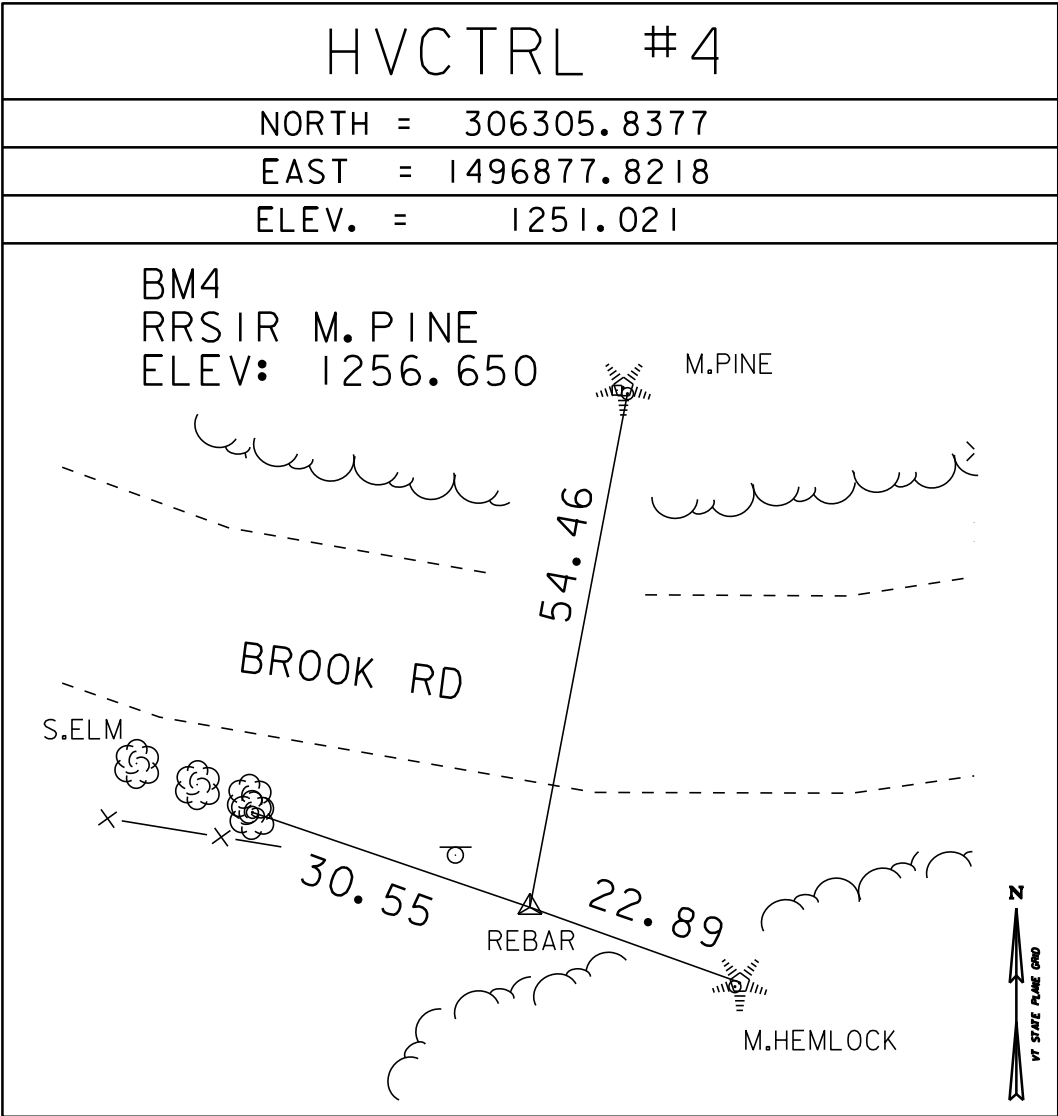
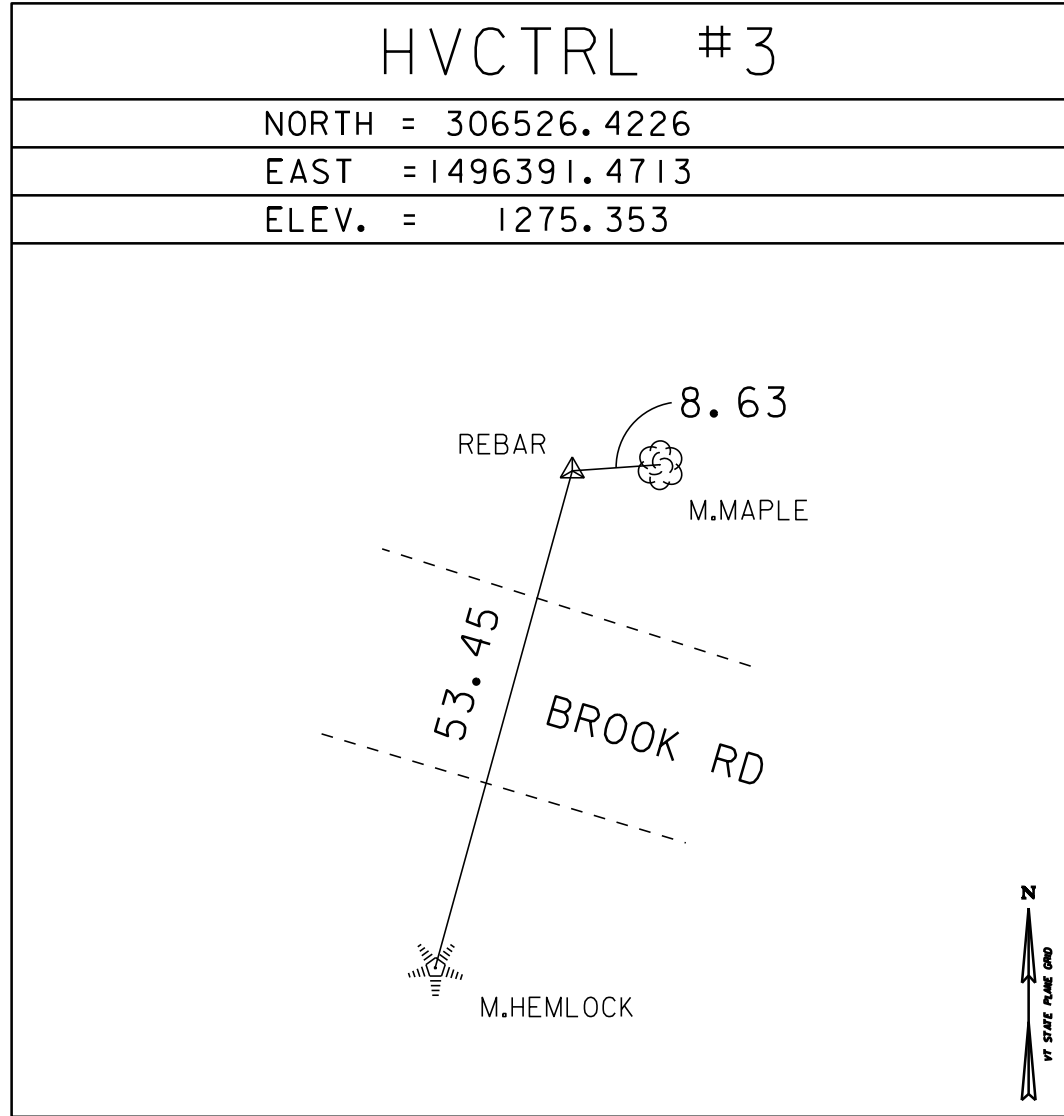
TO REACH FROM THE INTERSECTION OF US ROUTE 7 AND US HISTORICAL ROUTE 7A IN DORSET GO NORTH ALONG US ROUTE 7 FOR 8.1 MI (13.0 KM) TO THE INTERSECTION OF MOUNT TABOR ROAD RIGHT AND MOUNT TABOR AVENUE LEFT. TO REACH FROM THE INTERSECTION OF VT ROUTE 140 AND US ROUTE 7 IN SOUTH WALLINGFORD GO SOUTH ALONG US ROUTE 7 FOR 9.2 MI (14.8 KM) TO THE INTERSECTION OF MOUNT TABOR AVENUE RIGHT. TURN RIGHT AND GO WEST ALONG MOUNT TABOR AVENUE FOR 0.2 MI (0.3 KM) TO THE INTERSECTION OF SOUTH MAIN STREET. TURN RIGHT AND GO NORTH ALONG SOUTH MAIN STREET FOR ABOUT 50 M (164.0 FT) TO THE INTERSECTION OF BROOK ROAD LEFT. TURN LEFT AND GO WEST ALONG BROOK ROAD FOR 2.8 MI (4.5 KM) TO THE Y-INTERSECTION OF KEELER ROAD LEFT. BEAR RIGHT AND GO NORTHWEST ALONG BROOK FOR 0.5 MI (0.8 KM) TO THE INTERSECTION OF DANBY HILL ROAD RIGHT AND SMOKEY HOUSE ROAD LEFT. TURN RIGHT AND GO EAST ALONG DANBY HILL ROAD FOR 0.1 MI (0.2 KM) TO THE SITE OF THE MARK ON THE RIGHT. THE MARK IS SET IN THE TOP OF A 1.3 M (4.3 FT) X 0.8 M (2.6 FT) ROCK OUTCROP WHICH PROJECTS SLIGHTLY ABOVE GROUND. IT IS 26.8 M (87.9 FT) SOUTH-SOUTHWEST OF AND LEVEL WITH THE CENTERLINE OF DANBY HILL ROAD, 1.0 M (3.3 FT) EAST OF THE WEST EDGE OF THE ROCK OUTCROP, 66.0 M (216.5 FT) SOUTHEAST OF POLE NO 59 WITH AN UNDERGROUND PHONE JUNCTION BOX AND 37.5 M (123.0 FT) WEST-SOUTHWEST OF POLE NO 58 AND A FIBERGLASS WITNESS POST.

HVCTRL #2  
LEWIS  
NORTH = 307709.7920  
EAST = 1495925.8670  
ELEV. = 1353.349

TO REACH FROM THE INTERSECTION OF US ROUTE 7 AND US HISTORICAL ROUTE 7A IN DORSET GO NORTH ALONG US ROUTE 7 FOR 8.1 MI (13.0 KM) TO THE INTERSECTION OF MOUNT TABOR ROAD RIGHT AND MOUNT TABOR AVENUE LEFT. TO REACH FROM THE INTERSECTION OF VT ROUTE 140 AND US ROUTE 7 IN SOUTH WALLINGFORD GO SOUTH ALONG US ROUTE 7 FOR 9.2 MI (14.8 KM) TO THE INTERSECTION OF MOUNT TABOR AVENUE RIGHT. TURN RIGHT AND GO WEST ALONG MOUNT TABOR AVENUE FOR 0.2 MI (0.3 KM) TO THE INTERSECTION OF SOUTH MAIN STREET. TURN RIGHT AND GO NORTH ALONG SOUTH MAIN STREET FOR ABOUT 50 M (164.0 FT) TO THE INTERSECTION OF BROOK ROAD LEFT. TURN LEFT AND GO WEST ALONG BROOK ROAD FOR 2.8 MI (4.5 KM) TO THE Y-INTERSECTION OF KEELER ROAD LEFT. BEAR LEFT AND GO WEST ALONG KEELER ROAD FOR 0.6 MI (1.0 KM) TO THE INTERSECTION OF EDMUNDS ROAD LEFT. TURN LEFT AND GO SOUTH ALONG EDMUNDS ROAD FOR 1.1 MI (1.8 KM) TO THE SITE OF THE MARK ON THE LEFT AT THE EAST END OF A PULLOUT. IT IS ABOUT 55 M (177.2 FT) WEST OF A GATE AT THE TERMINUS OF THE ROAD. THE MARK IS SET IN THE TOP OF A 2.7 M (8.9 FT) X 0.8 M (2.6 FT) BOULDER WHICH PROJECTS 0.6 M (2.0 FT) ABOVE GROUND SURFACE. IT IS 7.0 M (23.0 FT) NORTH OF AND 0.2 M (0.7 FT) HIGHER THAN THE CENTERLINE OF EDMUNDS ROAD, 13.3 M (43.6 FT) WEST OF POLE NO 833/29, 59.0 M (193.6 FT) EAST-NORTHEAST OF AND ACROSS THE ROAD FROM POLE NO 35/30, 28.8 M (94.5 FT) EAST OF THE CENTERLINE OF A FIELD DRIVE AND 30 CM (12 INCHES) EAST OF THE WEST EDGE OF THE BOULDER.

*GPS CONTROL PROVIDED BY VT GSU 2014

TRAVERSE TIES



*TRAVERSE COMPLETED 05/01/2014 BY L. ORVIS P.C. & H. MCGOWAN

ALIGNMENT TIES

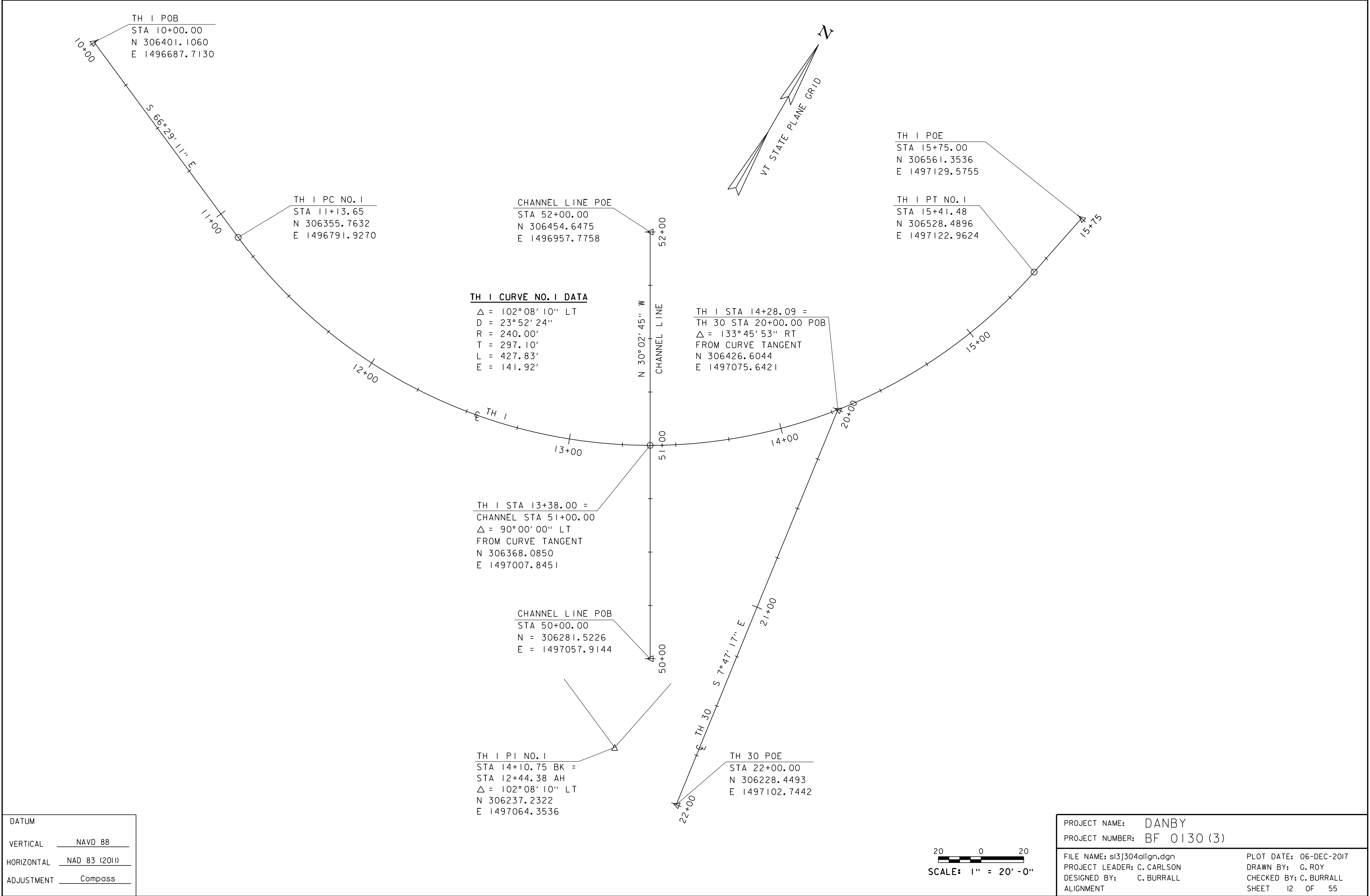
TH 1			
	STATION	NORTHING	EASTING
POB	10+00.00	306401.106	1496687.713
PC	11+13.65	306355.7632	1496791.927
PI	14+10.75	306237.2322	1497064.354
PT	15+41.48	306528.4896	1497122.962

Delta:	102°8'10" Left
Degree of Curve:	23°52'24"
Radius:	240.00
Tangent:	297.10
Length:	427.83
External:	141.92

PT	15+41.48	306528.4896	1497122.962
POE	15+75.00	306561.3536	1497129.576

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (2011)
ADJUSTMENT	COMPASS

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130 (3)	
FILE NAME: s13j304+1e.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
TIES	SHEET 11 OF 55



**CONSTRUCT STONE-LINED DITCH, TYPE I**  
TH I STA 11+00.0 LT - TH I STA 12+75.2 LT

**CONSTRUCT GRASS-LINED DITCH**  
TH I STA 14+31.7 RT - TH I STA 15+50.0 RT

**CONSTRUCT 18' PAVED APRON**  
TH 30 STA 20+12.2 LT - TH 30 STA 20+75.2 LT

**CONSTRUCT 7' MAILBOX TURNOUT**  
TH 30 STA 20+55.9 LT - TH 30 STA 20+92.4 LT

**BRIDGE RAILING, GALVANIZED  
HDSB/FASCIA MOUNTED/STEEL TUBING**  
TH I STA 12+88.9 LT - TH I STA 13+81.1 LT  
TH I STA 12+89.4 RT - TH I STA 13+80.6 RT

**RELOCATE MAILBOX, SINGLE SUPPORT**  
FROM TH 30 STA 20+82.5 LT TO TH 30 STA 20+68.4 LT

**HD STEEL BEAM GUARDRAIL, GALVANIZED**  
TH I STA 12+36.2 RT - TH I STA 12+65.6 RT  
TH I STA 12+49.2 LT - TH I STA 12+62.6 LT  
TH I STA 14+07.4 LT - TH I STA 14+60.2 LT  
TH 30 STA 20+50.5 RT - TH 30 STA 21+19.2 RT

**MANUFACTURED TERMINAL SECTION, TANGENT**  
TH 30 STA 21+19.2 RT - TH 30 STA 21+58.5 RT

**ANCHOR FOR STEEL BEAM RAIL**  
TH I STA 12+42.9 RT  
TH I STA 12+57.3 LT  
TH I STA 14+52.2 LT

**EXISTING BRIDGE DATA**

SIMPLE SPAN CONCRETE DECK ON ROLLED BEAMS  
WITH CONCRETE ABUTMENTS  
BUILT 1933  
OVERALL LENGTH: 74'  
FASCIA TO FASCIA WIDTH: 24'  
ROADWAY WIDTH: 22.4'

**GUARDRAIL APPROACH SECTION, GALV HD STEEL BEAM**

TH I STA 12+62.6 LT - TH I STA 12+88.9 LT  
TH I STA 12+65.6 RT - TH I STA 12+89.4 RT  
TH I STA 13+80.6 RT - TH 30 STA 20+50.5 RT  
TH I STA 13+81.1 LT - TH I STA 14+07.4 LT

**REMOVAL AND DISPOSAL OF GUARDRAIL**

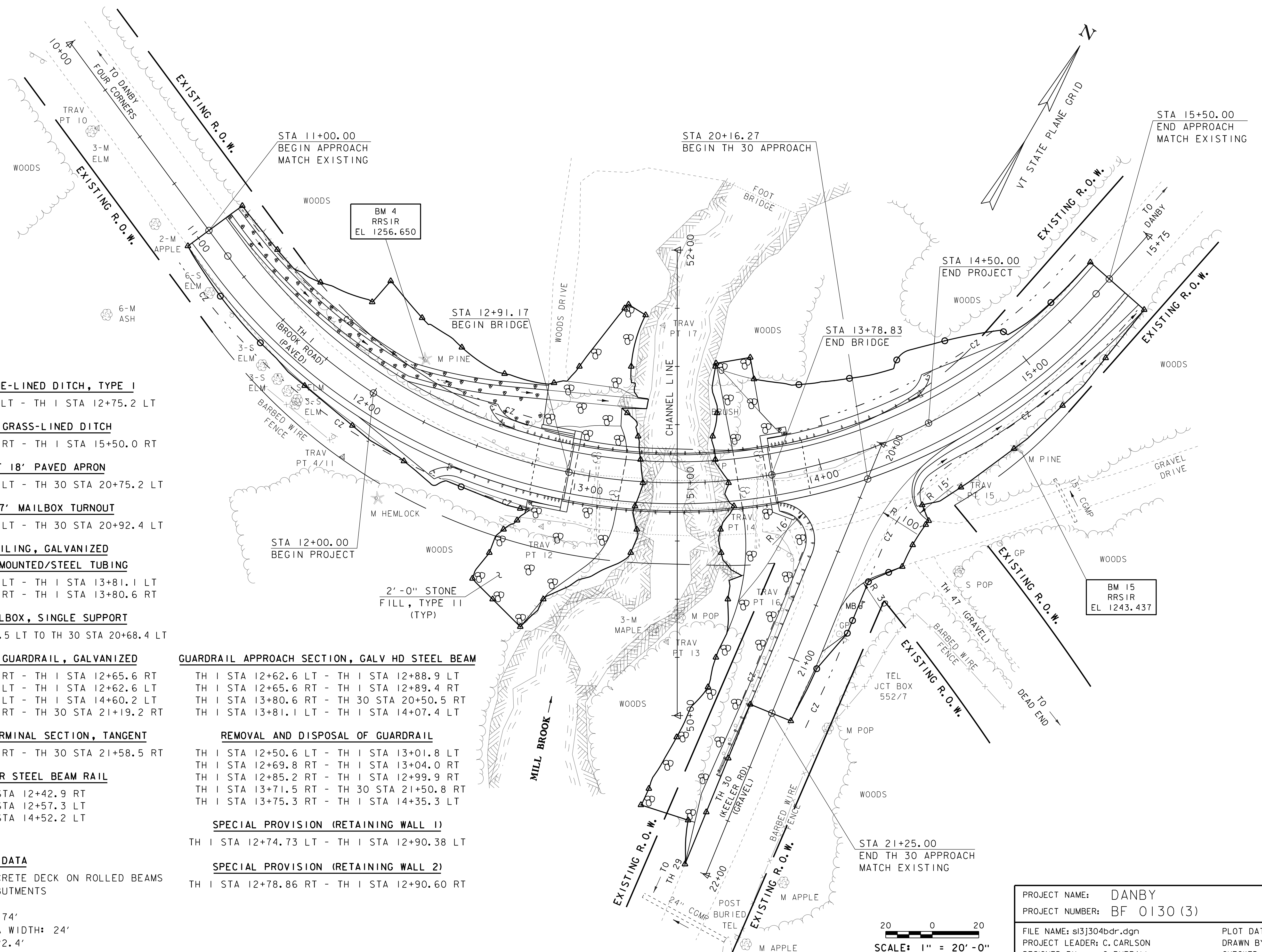
TH I STA 12+50.6 LT - TH I STA 13+01.8 LT  
TH I STA 12+69.8 RT - TH I STA 13+04.0 RT  
TH I STA 12+85.2 RT - TH I STA 12+99.9 RT  
TH I STA 13+71.5 RT - TH 30 STA 21+50.8 RT  
TH I STA 13+75.3 RT - TH I STA 14+35.3 LT

**SPECIAL PROVISION (RETAINING WALL 1)**

TH I STA 12+74.73 LT - TH I STA 12+90.38 LT

**SPECIAL PROVISION (RETAINING WALL 2)**

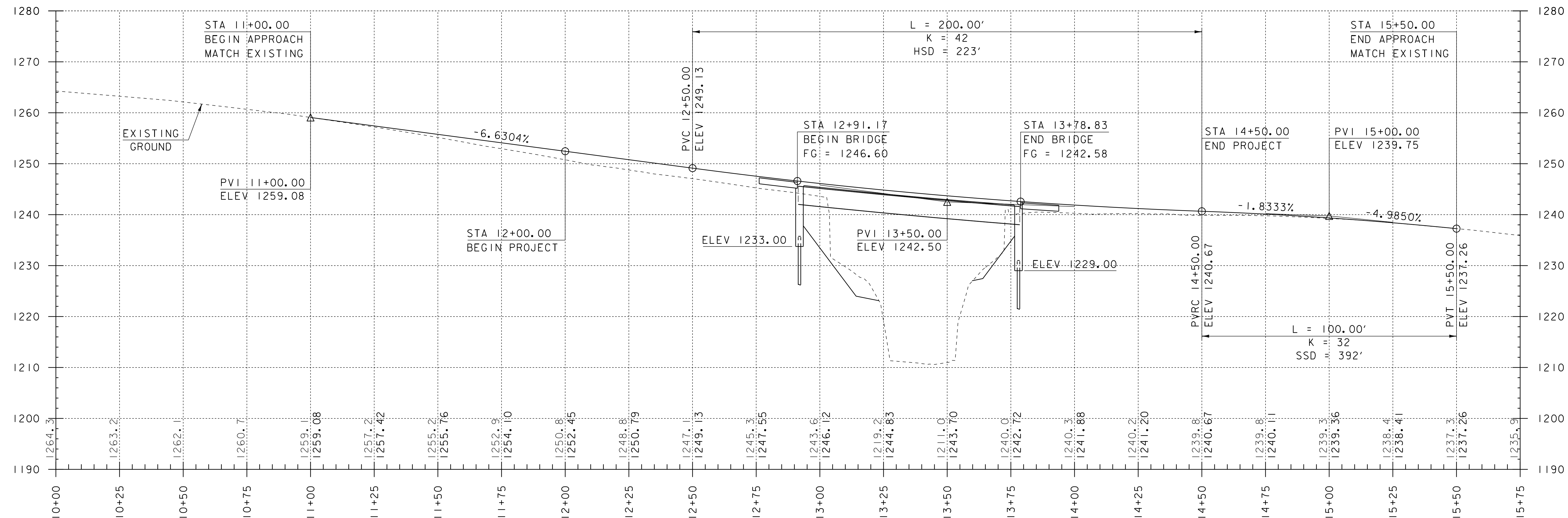
TH I STA 12+78.86 RT - TH I STA 12+90.60 RT



PROJECT NAME: DANBY  
PROJECT NUMBER: BF 0130 (3)

FILE NAME: sl3j304bdr.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
LAYOUT

PLOT DATE: 06-DEC-2017  
DRAWN BY: G. ROY  
CHECKED BY: C. BURRALL  
SHEET 13 OF 55

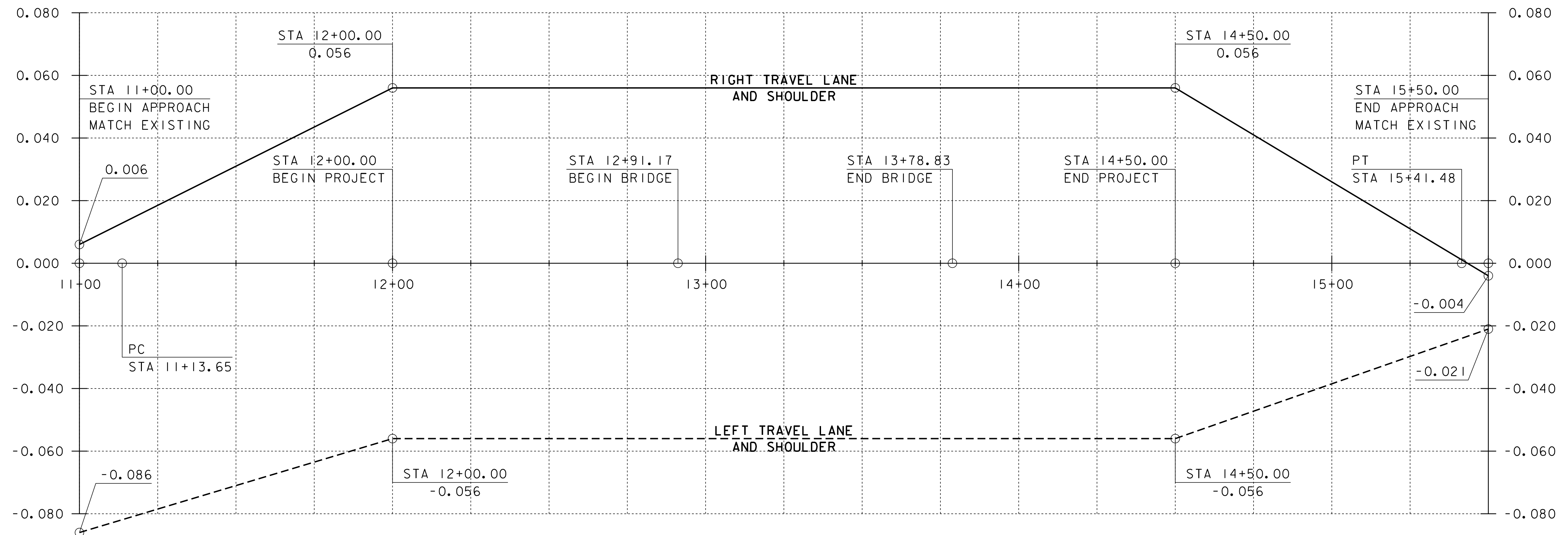


PROFILE ALONG TH 1 (BROOK RD)

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

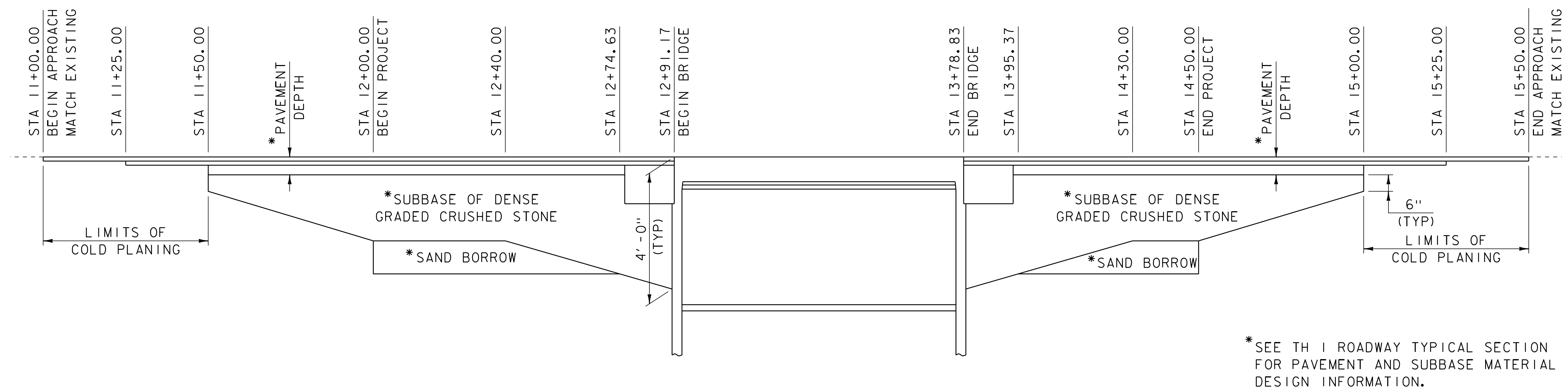
NOTE:  
  
ELEVATIONS SHOWN TO THE NEAREST TENTH ARE  
EXISTING GROUND ALONG PROPOSED CENTERLINE.  
  
ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE  
FINISH GRADES ALONG PROPOSED CENTERLINE.

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130(3)	
FILE NAME: sl3j304pro.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
TH 1 PROFILE	SHEET 14 OF 55



### TH 1 (BROOK RD) BANKING DIAGRAM

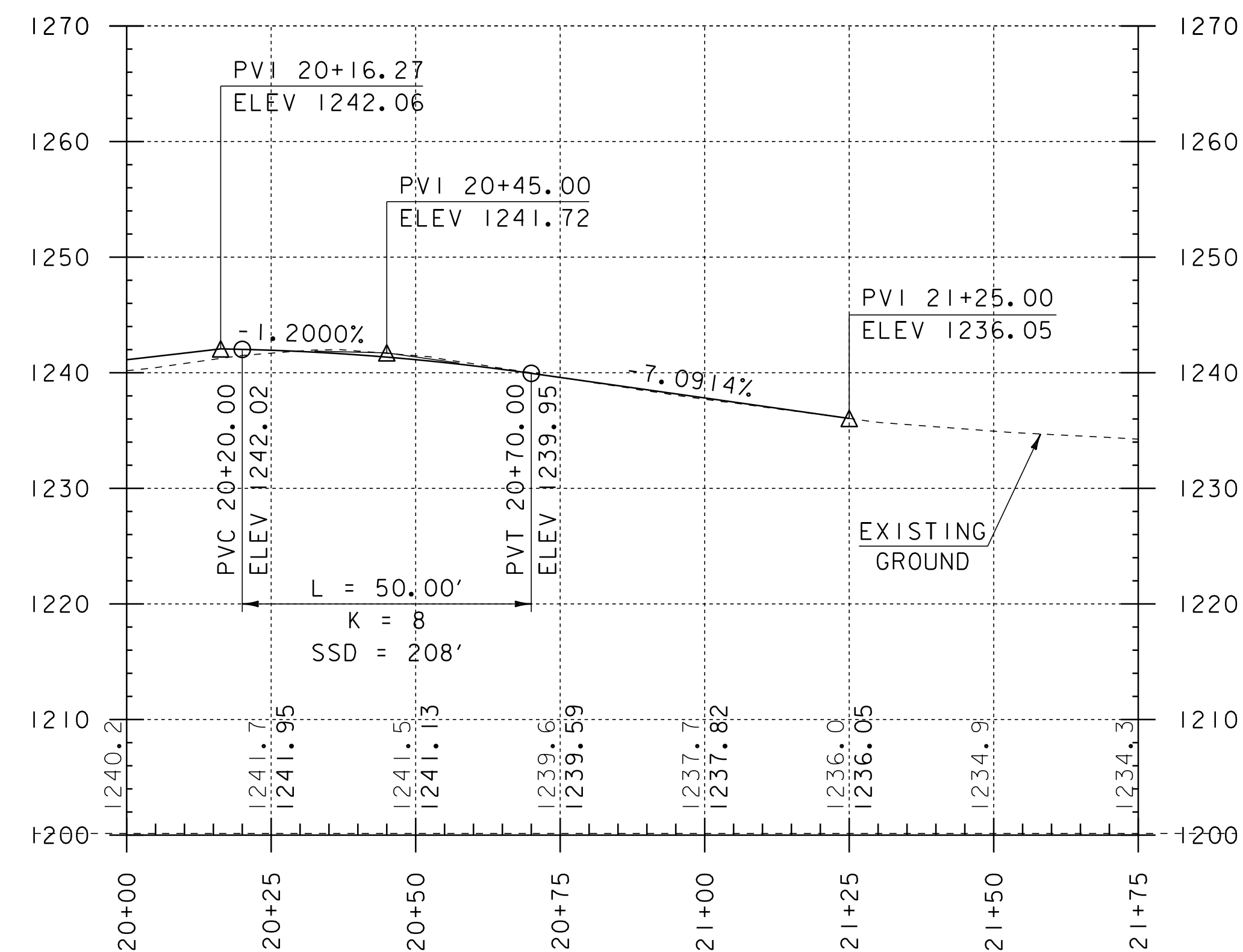
HORIZONTAL SCALE: 1" = 20' -0"  
VERTICAL SCALE: 1" = 0.020' /'



### TH 1 (BROOK RD) MATERIAL TRANSITION

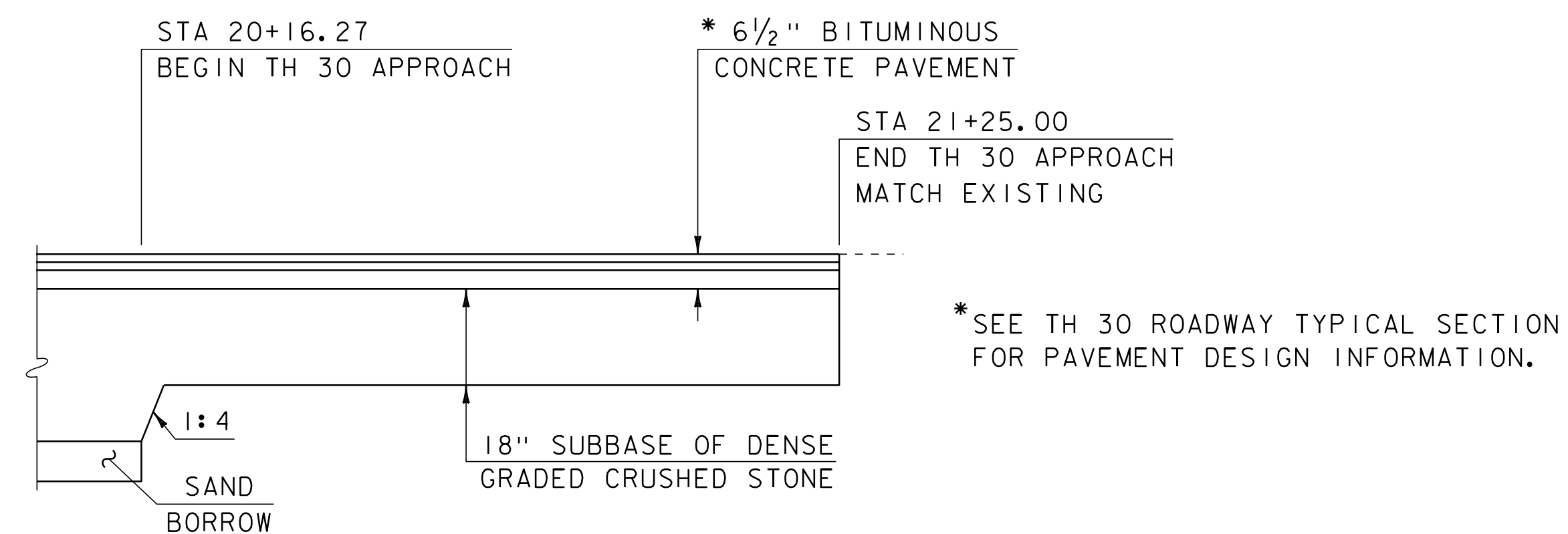
HORIZONTAL SCALE: 1" = 20' -0"  
VERTICAL SCALE: 1" = 2' -0"

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130 (3)	
FILE NAME: sl3j304pro.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
TH 1 BANKING AND MATERIAL TRANSITION	SHEET 15 OF 55



### PROFILE ALONG TH 30 (KEELER RD)

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



### TH 30 (KEELER RD) MATERIAL TRANSITION

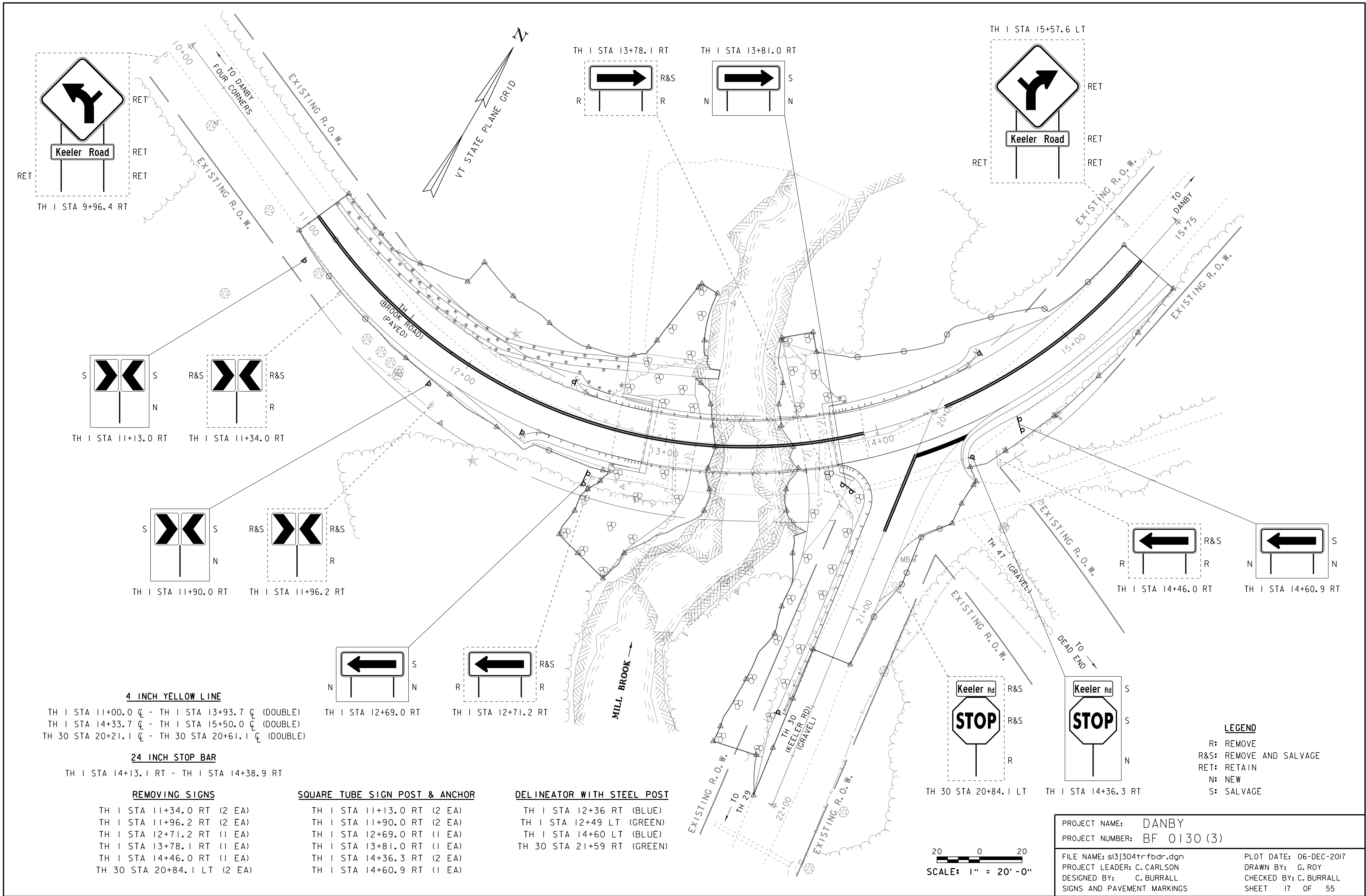
HORIZONTAL SCALE: 1" = 20'-0"  
VERTICAL SCALE: 1" = 2'-0"

#### NOTE:

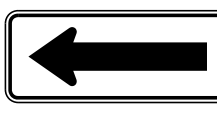
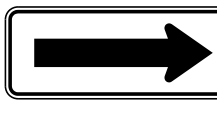
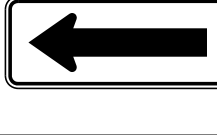
ELEVATIONS SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG PROPOSED CENTERLINE.

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

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130 (3)	
FILE NAME: sl3j304pro.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
TH 30 PROFILE AND MATERIAL TRANSITION	SHEET 16 OF 55



# TRAFFIC SIGN SUMMARY SHEET

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS			NEW & SALVAGED SIGNS				EXIST POST RETAIN	SALVAGE	NO. OF POSTS	FLANGED CHANNEL			SQUARE STEEL (in)				ANCHOR	SLEEVE	TUBULAR ALUMINUM Ø (in)			TUBULAR STEEL Ø (in)				W-SHAPE STEEL			REQUIRE FRAMING	REMARKS	SIGN DETAIL			
					"A"	"B"	SALV SIGN	SALV TIS				lb/ft			1.75	2.0	2.5	lb/ft			FOUND-ATION	3.0	3.5	4.0	5.0	FTG. SIZE		WEIGHT	POST SIZE	DETAIL IN SHS			DETAIL ON SHEET NUMBER	STD. SHEET NUMBER		
		1.2	2.0	3.0								1.88	2.42	3.35	lb/ft			1.3				1.7	1.7	7.6	9.0	10.8	14.6								24"	30"
		EA	WIDTH (in)	HEIGHT (in)																																
OPTION ITEMS																																				
TH 11+13.0 RT							I				I					X		X																		
							I																													
TH 11+90.0 RT							I				I					X		X																		
							I																													
TH 12+69.0 RT							I				2					X		X																		
TH 13+81.0 RT							I				2					X		X																		
TH 14+36.3 RT							I				I					X		X																		
							I																													
TH 14+60.9 RT							I				2					X		X																		
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND VTRANS "SIGN POST DESIGN GUIDELINE." SHS = STANDARD HIGHWAY SIGNS		POST TOTALS								FT	FT	FT		FT	FT	FT		EA	LB	LB	LB		LB	LB	LB	LB										
		SUB-TOTAL	SF	SF	EA 9	SF			FT			FT	126			LB		EA		LB		EA	EA	LB												
		TOTALS	SF	SF	EA 9	SF			FT			FT	126			LB		EA		LB		EA	EA	LB												
		PROJECT NAME: DANBY PROJECT NUMBER: BF 0130 (3) FILE NAME: sl3j304trfbdr.dgn PROJECT LEADER: C. CARLSON DESIGNED BY: C. BURRALL TRAFFIC SIGN SUMMARY PLOT DATE: 06-DEC-2017 DRAWN BY: G. ROY CHECKED BY: C. BURRALL SHEET 18 OF 55																																		

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

SHEAR STRENGTH

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

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

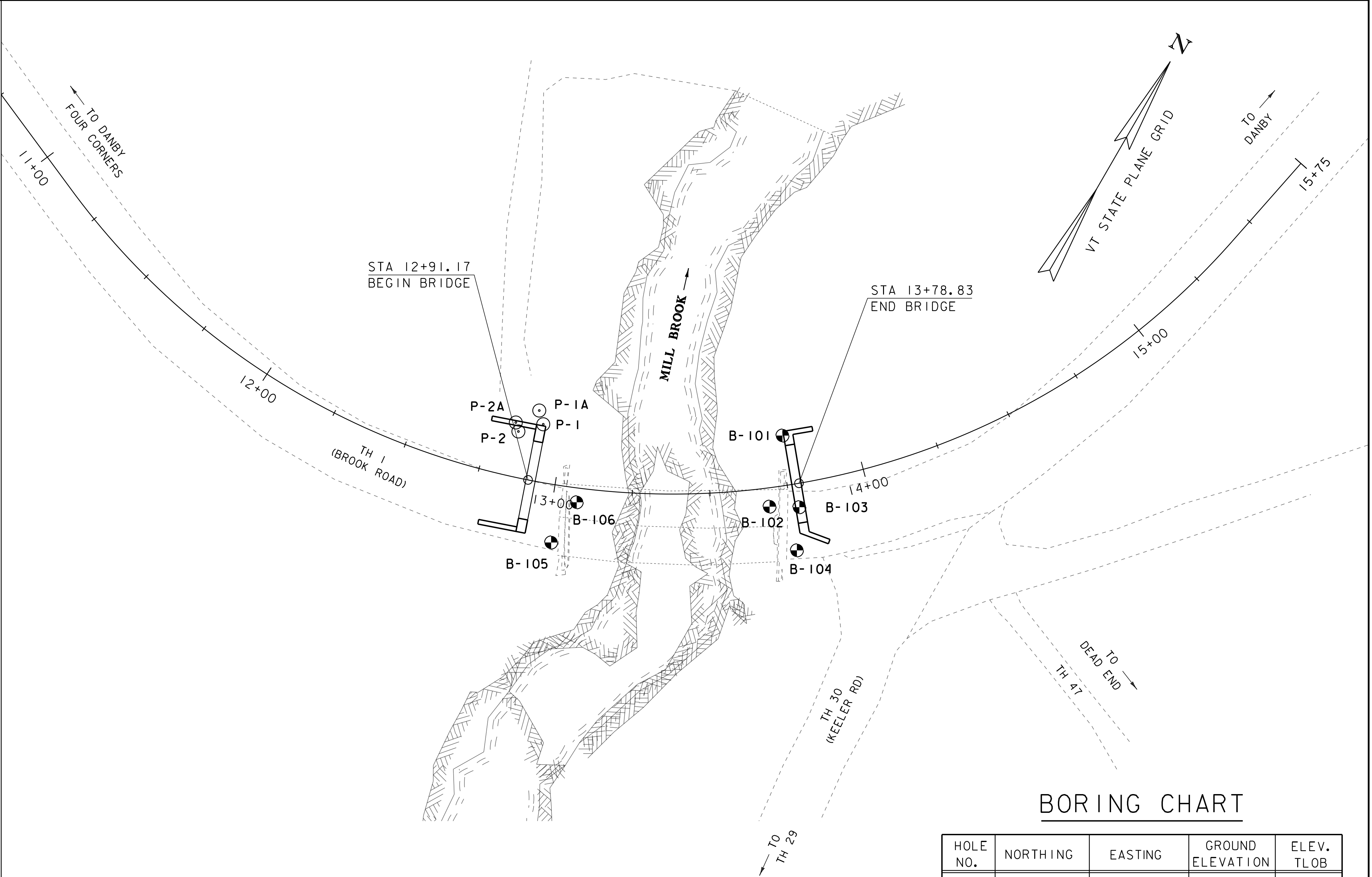
DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

COMMONLY USED SYMBOLS

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

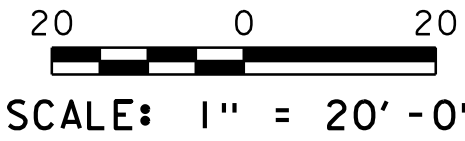
COLOR

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



BORING CHART

HOLE NO.	NORTHING	EASTING	GROUND ELEVATION	ELEV. TLOB
B-101	306402.06	1497029.00	1231.79	1227.59
B-102	306380.19	1497036.86	1229.85	1226.35
B-103	306384.84	1497045.25	1241.47	1226.37
B-104	306372.42	1497051.51	1242.21	1228.21
B-105	306335.03	1496981.79	1244.65	1230.25
B-106	306350.34	1496982.43	1230.56	1226.56
P-1	306366.68	1496960.56	1234.30	1228.60
P-2	306360.68	1496954.79	1236.90	1230.60
P-1A	306369.87	1496957.24	1232.10	1228.70
P-2A	306362.76	1496952.63	1235.20	1230.60



DEFINITIONS (AASHTO)

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

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

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

**GRAVEL** - Rounded particles of rock < 3" and > 0.075" (#10 sieve).

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

**SLT** - Soil < 0.0025" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

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

**VARVED** - Alternate layers of silt and clay.

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

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

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

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

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

**DIP** - Inclination of bed with a horizontal plane.

GENERAL NOTES

- The subsurface explorations shown herein were made between 12/03/2014 and 02/11/2015 by the Agency.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
- Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
- Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
- Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

PROJECT NAME: DANBY  
PROJECT NUMBER: BF 0130 (3)

FILE NAME: s13j304bor.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
BORING INFORMATION SHEET

PLOT DATE: 06-DEC-2017  
DRAWN BY: G. ROY  
CHECKED BY: C. BURRALL  
SHEET 19 OF 55

ABUTMENT NO. 2  
BOTTOM OF PILE CAP  
ELEV. 1229.00

ABUTMENT NO. 2  
PILE TIP  
ELEV. 1212.00

BORING LOG 2 DANBY BF 0130(3).GPJ VERMONT AOT.GDT 4/27/15

		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-101</b>				
				DANBY BF 0130(3) TH-1 BR-9		Page No.: 1 of 1				
						Pin No.: 13J304				
						Checked By: TDE				
Boring Crew: DAIGNEAULT, JUDKINS, HOOK				Casing		Sampler				
Date Started: 12/03/14 Date Finished: 12/03/14				Type: WB		SS				
VTSPG NAD83: N 306402.06 ft E 1497029.00 ft				I.D.: 4 in		1.5 in				
Station: 13+76 Offset: -16.00				Hammer Wt: N.A.		140 lb.				
Ground Elevation: 1231.79 ft				Hammer Fall: N.A.		30 in.				
				Hammer/Rod Type: Auto/AWJ						
				Rig: CME 45C TRACK		C = 1.34				
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-4, GrSaSi, brn-gry, Moist, Rec. = 1.0 ft, Lab Note: Roots & Sticks were within sample.				4-2-2-2 (4)	22.7	22.7	29.1	48.2
2.5		A-2-4, SaSiGr, brn, Moist, Rec. = 0.3 ft, Lab Note: Broken Rock was within sample. Tested as, SiSaGr, gry, MTD, Rec. = 0.5 ft, Lab Note: Sample was mostly small Broken Rock pieces.				30-50- R@5.0" (R)	19.2	39.1	30.5	30.4
							3.7	39.0	34.5	26.5
5.0		Visual Description: Weathered Rock, gry, Moist, Rec. = 0.2 ft 4.2 ft - 9.2 ft, Gray, Siliceous shale and Phyllite, Medium hard, Severely weathered, Very poor rock, NXMDC, Core run is very vuggy with iron staining on vug and foliation surfaces. RMR = 20	1 (20)	100 (6)	3	R@2.5" (R)	9.9			
7.5										
10.0		9.2 ft - 14.2 ft, Gray, Siliceous and limy shale and Phyllite, Medium hard, Moderately weathered, Poor rock, NXMDC, Portions of core run is vuggy (20) with iron staining on vug and foliation surfaces. RMR = 22	2	100 (17)	3					
12.5										
15.0										
		Hole stopped @ 14.2 ft								
		Remarks: Hole collapsed at 2.1 ft.								
Notes:	1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.									

ABUTMENT NO. 2  
BOTTOM OF PILE CAP  
ELEV. 1229.00

ABUTMENT NO. 2  
PILE TIP  
ELEV. 1212.00

BORING LOG 2 DANBY BF 0130(3).GPJ VERMONT AOT.GDT 4/27/15

		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-102</b>				
				DANBY BF 0130(3) TH-1 BR-9		Page No.: 1 of 1				
						Pin No.: 13J304				
						Checked By: TDE				
Boring Crew: DAIGNEAULT, HOOK, NIETO				Casing		Sampler				
Date Started: 12/08/14 Date Finished: 12/15/14				Type: WB		SS				
VTSPG NAD83: N 306380.19 ft E 1497036.86 ft				I.D.: 4 in		1.5 in				
Station: 13+68.3 Offset: 6.00				Hammer Wt: N.A.		140 lb.				
Ground Elevation: 1229.85 ft				Hammer Fall: N.A.		30 in.				
				Hammer/Rod Type: Auto/AWJ						
				Rig: CME 45C TRACK		C = 1.34				
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Tested as, SaGr, brn-gry, Moist, Rec. = 1.0 ft, Lab Note: Sample was mostly broken soft flat rock.								
		Field Note: NXDC, Broken Rock								
5		3.5 ft - 8.5 ft, Gray, Siliceous shale and Phyllite, Medium hard, Moderately severe weathering, Very poor rock, NXMDC, Core run is very vuggy with iron staining on vug and foliation surfaces. RMR = 20	1	64 (0)	3	3-4-15- R@3.5" (19)	6.0	51.5	31.7	16.8
10		8.5 ft - 13.5 ft, Gray, Phyllite, Medium hard, Moderately weathered, Very poor rock, NXMDC, Portions of core run is vuggy with iron staining on vug and foliation surfaces. RMR = 20	2 (20)	86 (0)	3					
15		13.5 ft - 18.5 ft, Gray, Phyllite, Medium hard, Slightly weathered to unweathered, Poor rock, NXMDC, Top 2.1 feet of core is slightly vuggy with iron staining on vug and foliation surfaces. RMR = 36	3 (20)	98 (42)	3					
20		18.5 ft - 23.5 ft, Gray, Phyllite, Medium hard, Unweathered, Good rock, NXMDC, RMR = 64	4 (20)	98 (94)	5					
25		Hole stopped @ 23.5 ft								
		Remarks: 1. Hole collapsed at 1.0 ft. 2. Boring was drilled through bridge deck. 3. Measurements are referenced from ground surface.  Geologist's Note: Water soaked from top of Run #1 through middle of Run #3. Cores remained wet for days after drilling.								
Notes:	1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.									

PROJECT NAME: DANBY  
PROJECT NUMBER: BF 0130 (3)

FILE NAME: si3j304bor.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
BORING LOGS (1)

PLOT DATE: 06-DEC-2017  
DRAWN BY: G. ROY  
CHECKED BY: C. BURRALL  
SHEET 20 OF 55

VTrans Working to Get You There    STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY	BORING LOG							Boring No.: <b>B-103</b>					
	DANBY BF 0130(3) TH-1 BR-9							Page No.: 1 of 1					
								Pin No.: 13J304					
								Checked By: TDE					
Boring Crew: DAIGNEAULT, JUDKINS, HOOK					Casing	Sampler	Groundwater Observations						
Date Started: 12/04/14      Date Finished: 12/05/14					Type: WB	SS	Date	Depth (ft)	Notes				
VTSPG NAD83: N 306384.84 ft E 1497045.25 ft					I.D.: 4 in	1.5 in			No water to depth.				
Station: 13+77.6      Offset: 7.70					Hammer Wt: N.A.	140 lb.							
Ground Elevation: 1241.47 ft					Hammer Fall: N.A.	30 in.							
					Hammer/Rod Type: Auto/AWJ								
					Rig: CME 45C TRACK	C = 1.34							
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)				Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
ABUTMENT NO. 2 BOTTOM OF PILE CAP ELEV. 1229.00		Asphalt Pavement, 0.0 ft - 0.48 ft											
	5	A-1-a, SaGr, brn, MTW, Rec. = 0.5 ft							5-7-10-25 (17)	10.6	59.3	31.5	9.2
		A-1-a, SaGr, brn, MTW, Rec. = 0.3 ft, Lab Note: Broken Rock was within sample.							16-17-16-16 (33)	6.8	60.8	24.3	14.9
		A-1-b, SiSaGr, brn, MTW, Rec. = 0.7 ft, Lab Note: Broken Rock was within sample.							25-18-7-3 (25)	15.7	40.3	38.7	21.0
		A-1-b, SiSaGr, brn, MTW, Rec. = 0.6 ft, Lab Note: Broken Rock was within sample.							4-4-4-3 (8)	14.6	47.0	32.0	21.0
		Field Note:, Cleaned out with roller cone											
	10	A-4, SaGrSi, brn-Lt/brn, MTW, Rec. = 0.2 ft, Cleaned out with roller cone.							4-3-3-3 (6)	18.4	27.6	27.0	45.4
		A-1-b, SaGr, gry, Moist, Rec. = 0.2 ft, Lab Note: Mostly small flat Broken Rock pieces. NXDC, Cleaned out casing.							4-2-4-13 (6)	7.7	54.4	29.5	16.1
		A-1-b, SiSaGr, brn-gry, Moist, Rec. = 0.7 ft, Lab Note: Mostly small flat Broken Rock pieces.							50-R@2.5" (R)	14.3	40.2	35.2	24.6
	15	Field Note:, NXDC, Cleaned out casing							R@1.0"	13.2	36.4	34.7	28.9
		A-2-4, SiSaGr, gry-rust, Moist, Rec. = 0.1 ft, Lab Note: Mostly small flat Broken soft Rock pieces.				1 (20)	100 (0)	2	Top of Bedrock @ 15.1 ft				
	20	15.1 ft - 20.1 ft, Gray, Siliceous and limy shale and Phyllite, with quartz veins. Medium hard, Moderately weathered, Poor rock, NXMDC, Portions of core run is vuggy with iron staining on vug and foliation surfaces. RMR = 23						3					
						3							
						5							
						4							
						4							
						4							
25	20.1 ft - 25.1 ft, Gray, Phyllite, with quartz veins. Medium hard, Moderately weathered, Poor rock, NXMDC, Portions of core run is vuggy with iron staining on vug and foliation surfaces. RMR = 28				2 (20)	100 (30)	4						
							5						
							4						
							4						
Hole stopped @ 25.1 ft													
Remarks: Hole collapsed at 13.0 ft.													
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.													

ABUTMENT NO. 2  
BOTTOM OF PILE CAP  
ELEV. 1229.00

ABUTMENT NO. 2  


---

 PILE TIP  
 ELEV. 1212.00

STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
CONSTRUCTION AND MATERIALS BUREAU  
CENTRAL LABORATORY

BORING LOG

DANBY  
BF 0130(3)  
TH-1 BR-9

Boring No.: B-104  
Page No.: 1 of 1  
Pin No.: 13J304  
Checked By: TDE

Boring Crew: DAIGNEAULT, HOOK, JUDKINS  
Date Started: 12/22/14 Date Finished: 12/30/14  
VTSPG NAD83: N 306372.42 ft E 1497051.51 ft  
Station: 13.75 Offset: 21.20  
Ground Elevation: 1242.21 ft

Casing WB  
Sampler SS  
Type: I.D.: 4 in 1.5 in  
Hammer Wt: N.A. 140 lb.  
Hammer Fall: N.A. 30 in.  
Hammer/Rod Type: Auto/AWJ  
Rig: CME 45C SKID C = 1.33

Groundwater Observations

Date	Depth (ft)	Notes
		No water to depth.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.42 ft								
5		A-1-b, SiSaGr, blk-brn, MTW, Rec. = 1.2 ft, High low counts were do to frost layer. Lab Note: Broken Rock was within sample.				48-38-38-18 (76)	12.4	43.0	35.9	21.1
		A-4, SaGrSi, Lt/brn-gry, Moist, Rec. = 0.5 ft, Cleaned out with roller cone. Lab Note: Broken Rock was within sample.				7-6-6-5 (12)	13.9	31.0	29.1	39.9
		Visual Description:, Broken Rock with silty sand, gry, Moist, Rec. = 0.3 ft, Cleaned out with roller cone. Insufficient sample for testing.				7-5-5-7 (10)	13.0			
		Visual Description:, Broken Rock with silty sand, brn, Moist, Rec. = 0.3 ft, Cleaned out with roller cone. Insufficient sample for testing.				4-6-5-3 (11)	16.1			
10		Visual Description:, Broken Rock with silty sand, gry, Moist, Rec. = 0.1 ft, Cleaned out with roller cone. Insufficient sample for testing.				3-4-2-5 (6)	14.4			
		A-1-b, SaGr, red-brn, Moist, Rec. = 0.6 ft, Lab Note: Broken Rock was within sample.				3-3-4-R@1.0" (7)	14.1	57.3	24.5	18.2
15		14.0 ft - 19.0 ft, Gray, Siliceous shale and Phyllite, Medium hard, Moderately weathered to unweathered, Poor rock, NXMDC, Portions of core run are slightly vuggy with iron staining on vug and foliation surfaces. RMR = 39	1 (25)	86 (30)	3					
20		19.0 ft - 24.0 ft, Gray, Siliceous shale and Phyllite, with quartz vein. Medium hard, Moderately weathered to unweathered, Poor rock, NXMDC, Portions of core run are slightly vuggy with iron staining on vug and foliation surfaces. RMR = 39	2 (25)	84 (30)	2					
25		24.0 ft - 29.0 ft, Gray, Siliceous shale and Phyllite, with quartz vein. Medium hard, Moderately weathered to unweathered, Fair rock, NXMDC, Top 1.5 feet of core run is slightly vuggy with iron staining on vug and foliation surfaces. RMR = 39	3 (25)	98 (74)	2					
30		29.0 ft - 34.0 ft, Gray, Siliceous shale and Phyllite, Medium hard, Unweathered, Fair rock, NXMDC, RMR = 58	4 (25)	100 (88)	3					
35		Hole stopped @ 34.0 ft								
		Remarks: Hole collapsed at 14.0 ft.								

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

Notes:

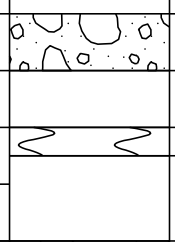
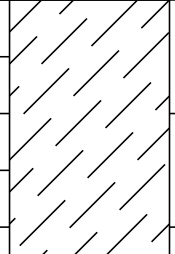
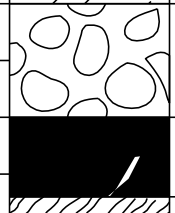
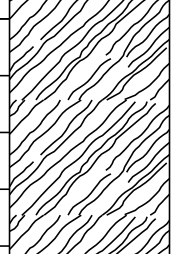
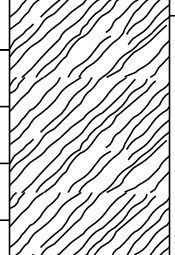
BORING LOG 2 DANBY BF 0130(3) GPJ VERMONT AOT.GDT 4/27/15

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130 (3)	
FILE NAME: sl3j304bor.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
BORING LOGS (2)	SHEET 21 OF 55

ABUTMENT NO. 1  
BOTTOM OF PILE CAP  
ELEV. 1233.00

ABUTMENT NO. 1  
PILE TIP  
ELEV. 1217.00

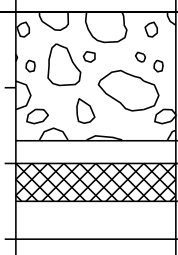
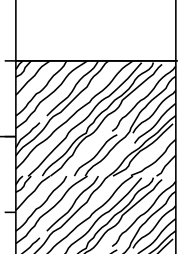
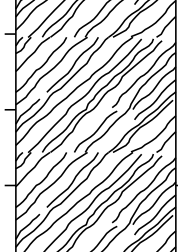
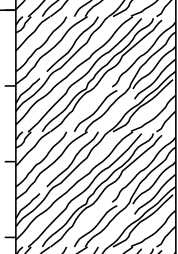
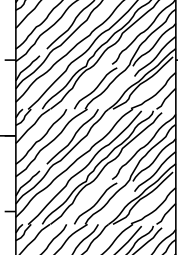
BORING LOG 2 DANBY BF 0130(3).GPJ VERMONT AOT.GDT 4/27/15

		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-105</b>											
				DANBY BF 0130(3) TH-1 BR-9		Page No.: 1 of 1											
						Pin No.: 13J304											
						Checked By: TDE											
Boring Crew: DAIGNEAULT, JUDKINS, NIETO				Casing		Sampler											
Date Started: 1/22/15 Date Finished: 2/11/15				Type: WB		SS											
VTSPG NAD83: N 306335.03 ft E 1496981.79 ft				I.D.: 4 in		1.5 in											
Station: 13+1.6 Offset: 18.50				Hammer Wt: N.A.		140 lb.											
Ground Elevation: 1244.65 ft				Hammer Fall: N.A.		30 in.											
				Hammer/Rod Type: Auto/AWJ													
				Rig: CME 45C TRACK		C = 1.34											
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %						
5		A-1-b, SiSaGr, Lt/brn, Moist, Rec. = 1.2 ft, High blow counts due to frost.					52-110 (R)	15.3	41.0	37.3	21.7						
		Field Note:, NXDC					R@6.0" (R)	10.3									
		Visual Description:, Broken Rock with silty sand, gry, Moist, Rec. = 0.4 ft, Insufficient sample for testing.															
		Field Note:, NXDC															
10		A-4, GrSaSi, gry, Moist, Rec. = 0.4 ft, Lab Note: Broken Rock was within sample. NXDC, Cleaned out casing.					28-12-9-9 (21)	15.6	30.9	31.4	37.7						
		A-4, GrSaSi, gry, Moist, Rec. = 0.3 ft, NXDC, Cleaned out casing.					8-7-7-8 (14)	14.0	23.9	33.5	42.6						
		A-4, GrSaSi, gry, Moist, Rec. = 0.8 ft					5-5-6-12 (11)	13.6	28.1	29.9	42.0						
		Field Note:, No Recovery. Appears to be Cobbles and silt. NXDC, Cleaned out casing					4-2-4-4 (6)										
15		Visual Description:, Severely Weathered Rock with silty sand, gry, Moist, Rec. = 1.0 ft		1 (20)	64 (0)	2	Top of Bedrock @ 14.4 ft										
		14.4 ft - 19.4 ft, Gray, Siliceous shale and Phyllite, with quartz vein. Core run is very vuggy with iron staining on vug and foliation surfaces. Medium hard, Moderately severe weathering, Very poor rock, NXMDC, RMR = 19										2	26 (0)				
		19.4 ft - 24.4 ft, Gray, Siliceous shale and Phyllite, with quartz vein. Core run is very vuggy with iron staining on vug and foliation surfaces. Medium hard, Moderately severe weathering, Very poor rock, NXMDC, RMR = 19															
		24.4 ft - 29.4 ft, Gray, Siliceous shale and Phyllite, Top 3.5 feet of core run is slightly vuggy with some iron staining on foliation surfaces. Medium hard, Slightly weathered, Fair rock, NXMDC, RMR = 36															
20		19.4 ft - 24.4 ft, Gray, Siliceous shale and Phyllite, with quartz vein. Core run is very vuggy with iron staining on vug and foliation surfaces. Medium hard, Moderately severe weathering, Very poor rock, NXMDC, RMR = 19		2 (20)	26 (0)	3											
		24.4 ft - 29.4 ft, Gray, Siliceous shale and Phyllite, Top 3.5 feet of core run is slightly vuggy with some iron staining on foliation surfaces. Medium hard, Slightly weathered, Fair rock, NXMDC, RMR = 36										2	100 (20)				
		29.4 ft - 33.6 ft, Gray, Siliceous shale and Phyllite, Top 1.5 feet of core run is slightly vuggy with some iron staining on foliation surfaces. Medium hard, Slightly weathered, Fair rock, NXMDC, RMR = 46															
		Hole stopped @ 33.6 ft															
25		29.4 ft - 33.6 ft, Gray, Siliceous shale and Phyllite, Top 1.5 feet of core run is slightly vuggy with some iron staining on foliation surfaces. Medium hard, Slightly weathered, Fair rock, NXMDC, RMR = 46		4 (20)	100 (67)	2											
		Hole stopped @ 33.6 ft										3					
		Remarks: Hole collapsed at 13.3 ft.															
		Geologist's Note: Water soaked from top of Run #1 through middle of Run #3. Cores remained wet for days after drilling.															
Notes:	1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.																

ABUTMENT NO. 1  
BOTTOM OF PILE CAP  
ELEV. 1233.00

ABUTMENT NO. 1  
PILE TIP  
ELEV. 1217.00

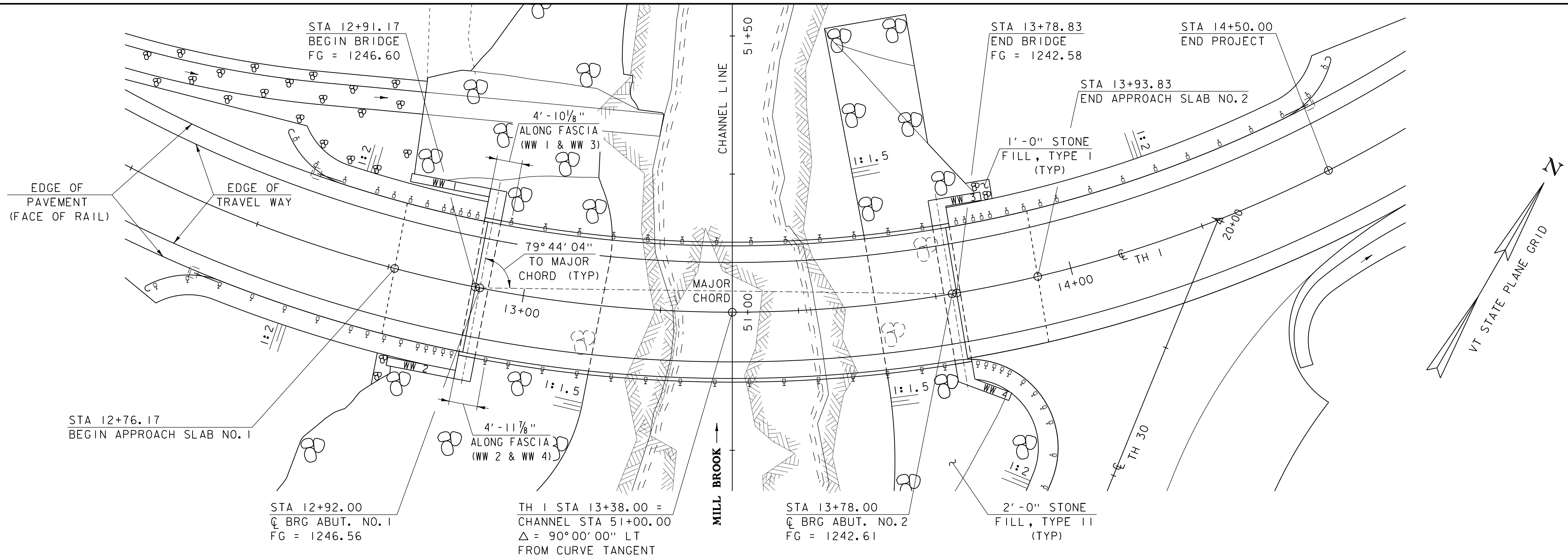
BORING LOG 2 DANBY BF 0130(3).GPJ VERMONT AOT.GDT 4/27/15

		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-106</b>											
				DANBY BF 0130(3) TH-1 BR-9		Page No.: 1 of 1											
						Pin No.: 13J304											
						Checked By: TDE											
Boring Crew: DAIGNEAULT, JUDKINS, GARROW				Casing		Sampler											
Date Started: 12/15/14 Date Finished: 12/19/14				Type: WB		SS											
VTSPG NAD83: N 306350.34 ft E 1496982.43 ft				I.D.: 4 in		1.5 in											
Station: 13+7.6 Offset: 4.60				Hammer Wt: N.A.		140 lb.											
Ground Elevation: 1230.56 ft				Hammer Fall: N.A.		30 in.											
				Hammer/Rod Type: Auto/AWJ													
				Rig: CME 45C TRACK		C = 1.34											
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %						
5		Tested as, SaGr, brn, Moist, Rec. = 1.1 ft, Lab Note: Sample was mostly small pieces of broken soft flat rock.					8-10-25-R@2.5" (35)	6.2	55.6	29.3	15.1						
		Field Note:, No Recovery										R@6.0" (R)					
		Field Note:, Cleaned out casing															
		4.0 ft - 9.0 ft, Gray, Siliceous shale and Phyllite, Medium hard, Moderately severe weathering, Very poor rock, NXMDC, Core run is very vuggy with iron staining on vug and foliation surfaces. RMR = 20															
10		9.0 ft - 14.0 ft, Gray, Siliceous shale and Phyllite, Medium hard, Moderately weathered to unweathered, Fair rock, NXMDC, Portions of core run is vuggy with iron staining on vug and foliation surfaces. RMR = 46		1 (30)	70 (0)	2	Top of Bedrock @ 4.0 ft										
		14.0 ft - 19.0 ft, Gray, Siliceous shale and Phyllite, Medium hard, Unweathered, Fair rock, NXMDC, RMR = 58										3	100 (78)				
		Hole stopped @ 19.0 ft															
		Remarks: 1. Hole collapsed at 1.5 ft. 2. Boring was drilled through bridge deck. 3. Measurements are referenced from ground surface.															
15		14.0 ft - 19.0 ft, Gray, Siliceous shale and Phyllite, Medium hard, Unweathered, Fair rock, NXMDC, RMR = 58		3 (30)	100 (78)	3											
		Hole stopped @ 19.0 ft										3					
		Remarks: 1. Hole collapsed at 1.5 ft. 2. Boring was drilled through bridge deck. 3. Measurements are referenced from ground surface.															
		Hole stopped @ 19.0 ft															
20		Hole stopped @ 19.0 ft															
		Remarks: 1. Hole collapsed at 1.5 ft. 2. Boring was drilled through bridge deck. 3. Measurements are referenced from ground surface.															
		Hole stopped @ 19.0 ft															
		Hole stopped @ 19.0 ft															
25		Hole stopped @ 19.0 ft															
		Remarks: 1. Hole collapsed at 1.5 ft. 2. Boring was drilled through bridge deck. 3. Measurements are referenced from ground surface.															
		Hole stopped @ 19.0 ft															
		Hole stopped @ 19.0 ft															
Notes:	1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.																

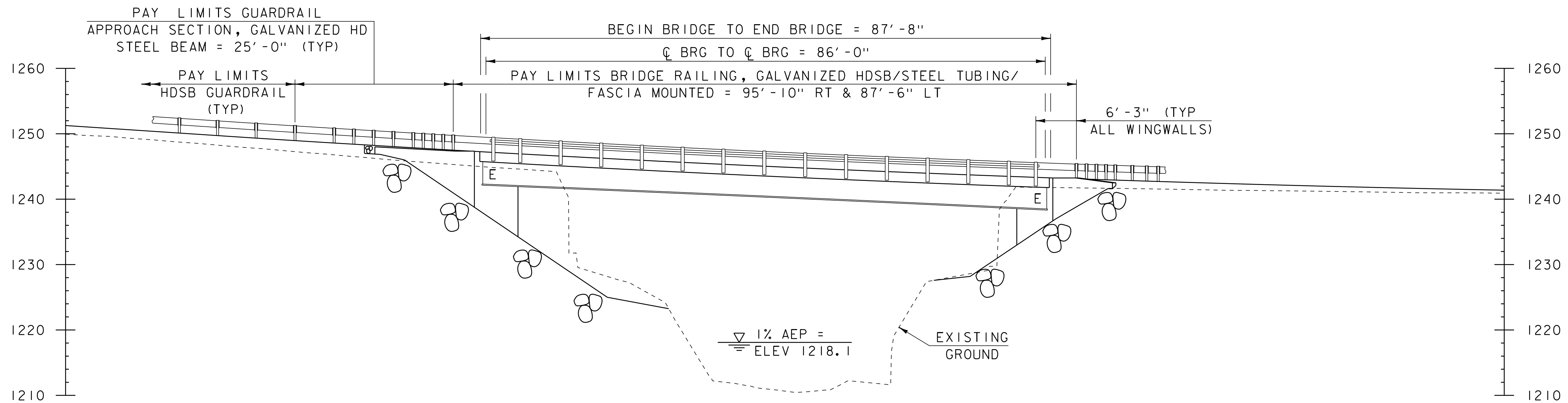
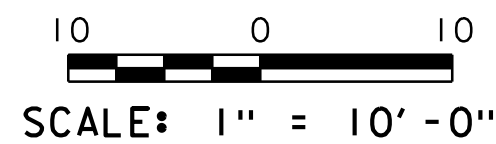
PROJECT NAME: DANBY  
PROJECT NUMBER: BF 0130 (3)

FILE NAME: s13j304bor.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
BORING LOGS (3)

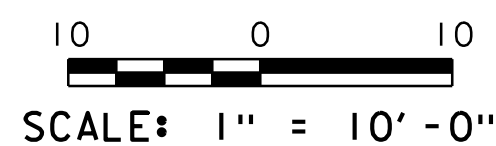
PLOT DATE: 06-DEC-2017  
DRAWN BY: G. ROY  
CHECKED BY: C. BURRALL  
SHEET 22 OF 55



PLAN



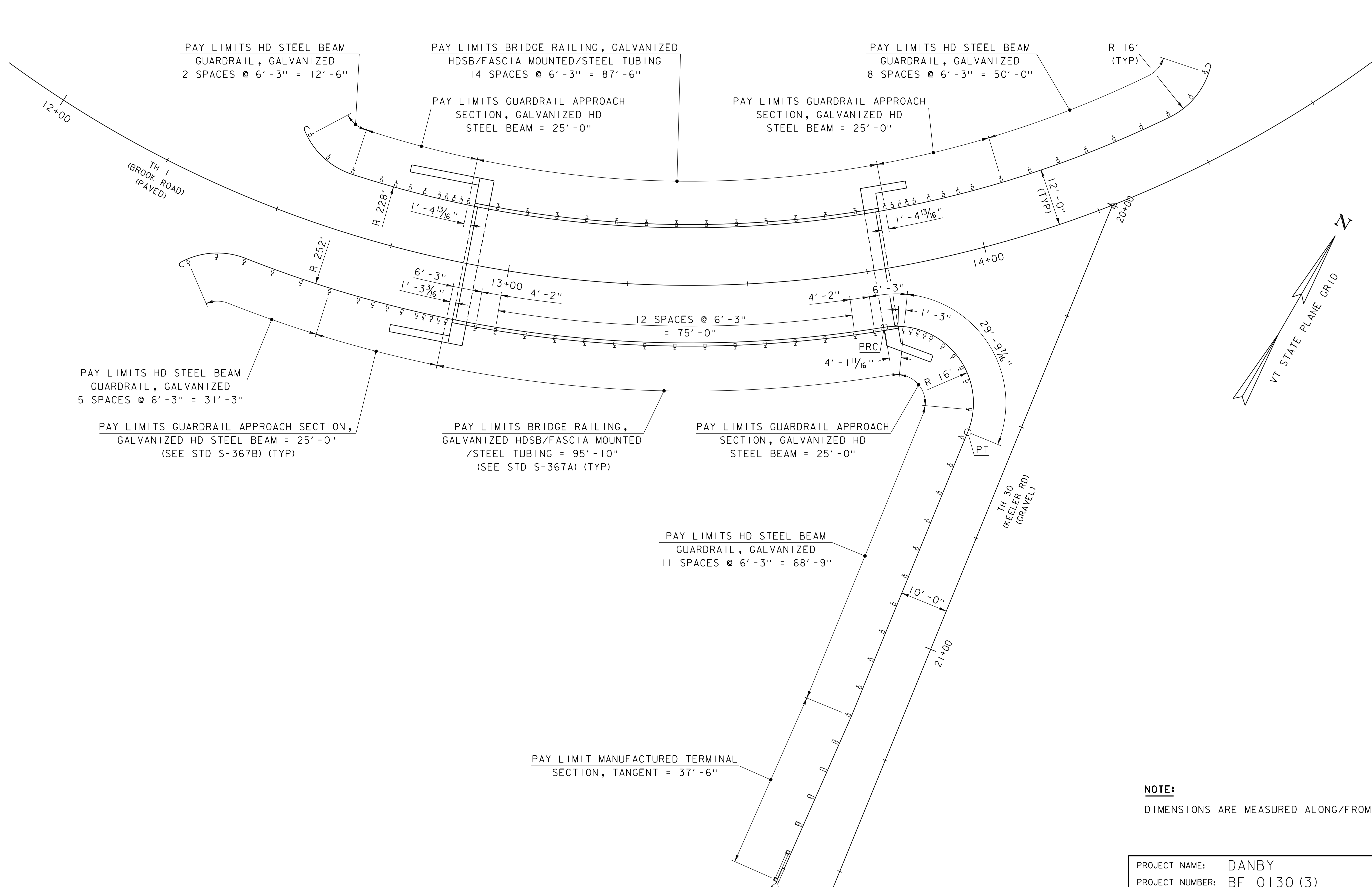
ELEVATION



PROJECT NAME: DANBY  
PROJECT NUMBER: BF 0130 (3)

FILE NAME: sl3j304pe.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
PLAN AND ELEVATION

PLOT DATE: 06-DEC-2017  
DRAWN BY: G. ROY  
CHECKED BY: C. BURRALL  
SHEET 23 OF 55



PAY LIMITS HD STEEL BEAM  
GUARDRAIL, GALVANIZED  
2 SPACES @ 6'-3" = 12'-6"

PAY LIMITS BRIDGE RAILING, GALVANIZED  
HDSB/FASCIA MOUNTED/STEEL TUBING  
14 SPACES @ 6'-3" = 87'-6"

PAY LIMITS HD STEEL BEAM  
GUARDRAIL, GALVANIZED  
8 SPACES @ 6'-3" = 50'-0"

R 16'  
(TYP)

PAY LIMITS GUARDRAIL APPROACH  
SECTION, GALVANIZED HD  
STEEL BEAM = 25'-0"

PAY LIMITS GUARDRAIL APPROACH  
SECTION, GALVANIZED HD  
STEEL BEAM = 25'-0"

PAY LIMITS HD STEEL BEAM  
GUARDRAIL, GALVANIZED  
5 SPACES @ 6'-3" = 31'-3"

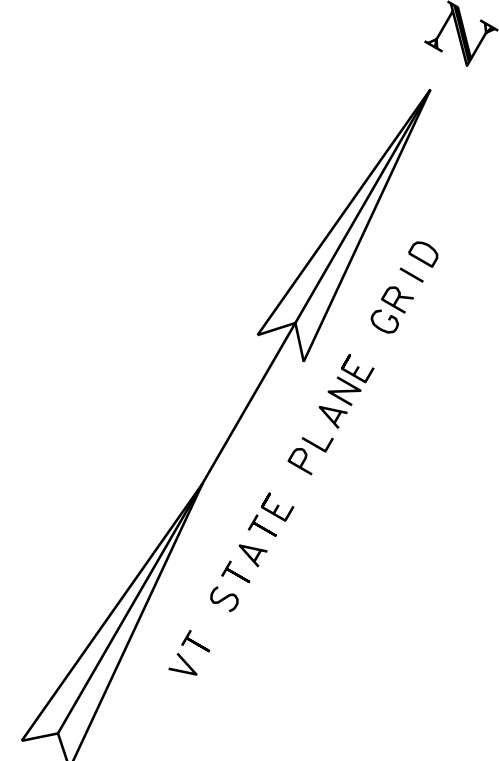
PAY LIMITS GUARDRAIL APPROACH SECTION,  
GALVANIZED HD STEEL BEAM = 25'-0"  
(SEE STD S-367B) (TYP)

PAY LIMITS BRIDGE RAILING,  
GALVANIZED HDSB/FASCIA MOUNTED  
/STEEL TUBING = 95'-10"  
(SEE STD S-367A) (TYP)

PAY LIMITS GUARDRAIL APPROACH  
SECTION, GALVANIZED HD  
STEEL BEAM = 25'-0"

PAY LIMITS HD STEEL BEAM  
GUARDRAIL, GALVANIZED  
11 SPACES @ 6'-3" = 68'-9"

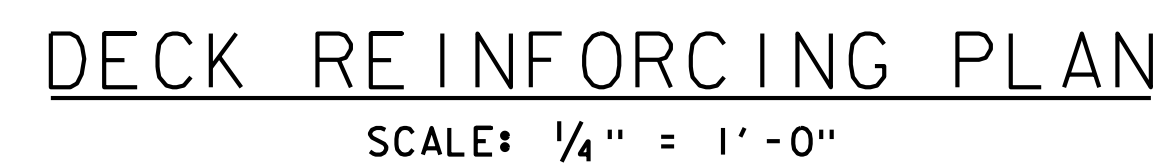
PAY LIMIT MANUFACTURED TERMINAL  
SECTION, TANGENT = 37'-6"



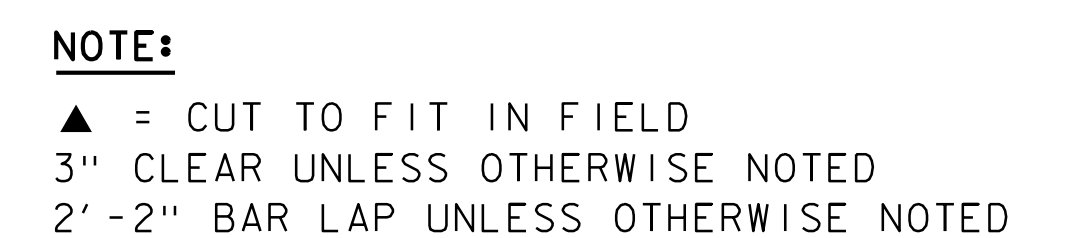
10 0 10  
SCALE: 1" = 10'-0"

**NOTE:**  
DIMENSIONS ARE MEASURED ALONG/FROM FACE OF RAIL.

PROJECT NAME:	DANBY	PLOT DATE:	06-DEC-2017
PROJECT NUMBER:	BF 0130 (3)	DRAWN BY:	G. ROY
FILE NAME:	sl3j304rail-layout.dgn	CHECKED BY:	C. BURRALL
PROJECT LEADER:	C. CARLSON	SHEET	24 OF 55
DESIGNED BY:	C. BURRALL		
RAIL LAYOUT			

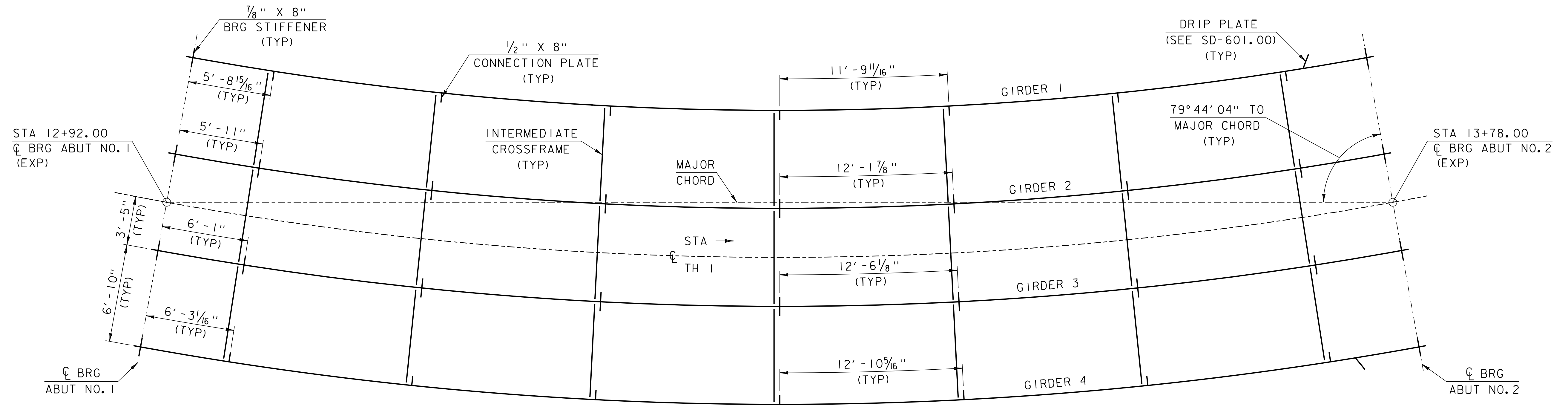


SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE ABUTMENT TYPICAL AND ABUTMENT ELEVATION SHEETS.

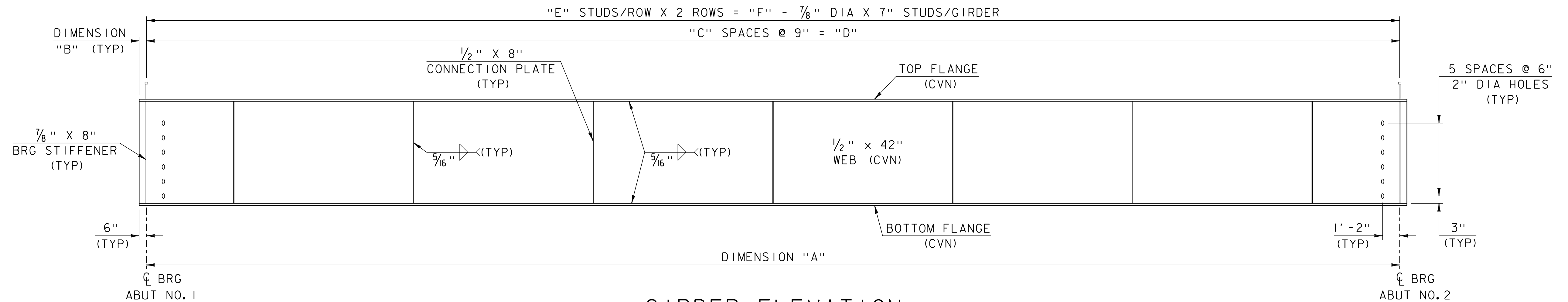


BRIDGE TYPICAL SECTION  
SCALE: 1/2" = 1' - 0"

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130 (3)	
FILE NAME: sl3j304sup.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: J. LACY
BRIDGE DECK DETAILS	SHEET 25 OF 55



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



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

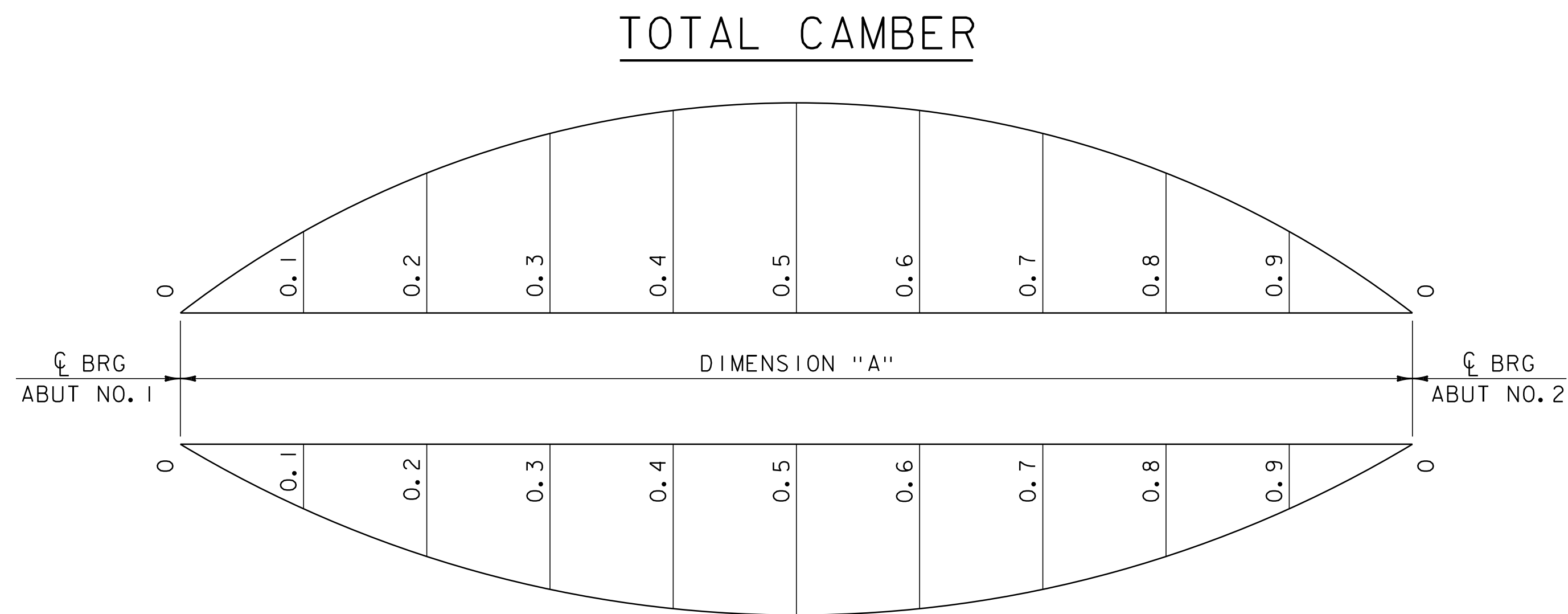
GIRDER DIMENSIONS TABLE

GIRDER	TOP FLANGE	BOTTOM FLANGE	RADIUS	"A"	"B"	"C"	"D"	"E"	"F"
1	7/8" X 18"	7/8" X 18"	229'-9"	82'-3 15/16"	9 1/2"	109	81'-9"	110	220
2	7/8" X 18"	7/8" X 18"	236'-7"	84'-9 5/16"	6 3/16"	113	84'-9"	114	228
3	7/8" X 18"	2 1/4" X 18"	243'-5"	87'-2 11/16"	7 5/16"	116	87'-0"	117	234
4	7/8" X 18"	2 1/4" X 18"	250'-3"	89'-8 1/16"	8 1/2"	119	89'-3"	120	240

NOTES:

- DIMENSIONS SHOWN ARE ALONG THE ARC  $\phi$  OF THE GIRDER.
- ENDS OF GIRDERS AND BEARING STIFFENERS SHALL BE FABRICATED SO THAT THEY WILL BE PLUMB UNDER STEEL DEAD LOAD ONLY.
- CVN - SHALL MEET CHARPY V-NOTCH REQUIREMENTS FOR MAIN MEMBERS AS INDICATED IN SECTION 714.
- ALL STEEL SHALL BE AASHTO M 270M/M 270, GRADE 50W.
- SEE STRUCTURAL DETAIL SHEETS SD-601.00 AND SD-602.00 FOR ADDITIONAL DETAILING INFORMATION AND REQUIREMENTS.

PROJECT NAME:	DANBY
PROJECT NUMBER:	BF 0130 (3)
FILE NAME: sl3j304sup.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: J. LACY
FRAMING PLAN AND GIRDER ELEVATION	SHEET 26 OF 55



TOTAL DEAD LOAD DEFLECTION

**NOTES:**

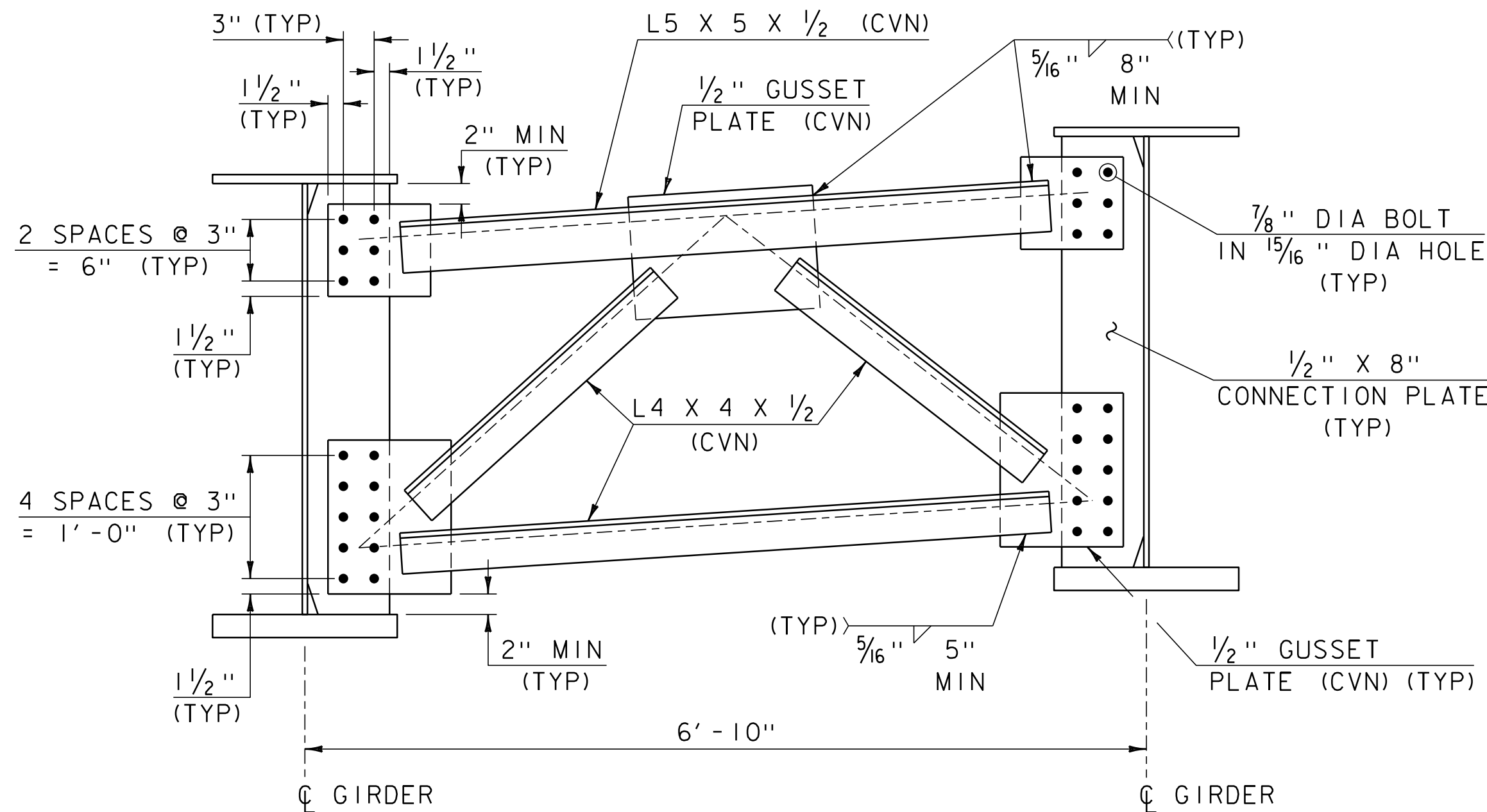
1. CAMBER AND DEFLECTION MEASUREMENTS ARE GIVEN IN INCHES AT TENTH POINTS.
2. MEASUREMENTS INCLUDE GIRDER SELF-WEIGHT.
3. POSITIVE CAMBER VALUES ARE UPWARD;  
POSITIVE DEFLECTION VALUES ARE DOWNWARD.

TOTAL CAMBER

GIRDER	"A"	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
1	82' - 3 ¹⁵ / ₁₆ "	- ³ / ₁₆ "	- ⁷ / ₁₆ "	- ⁵ / ₈ "	- ⁷ / ₈ "	-1 ¹ / ₁₆ "	- ⁷ / ₈ "	- ⁵ / ₈ "	- ⁷ / ₁₆ "	- ³ / ₁₆ "
2	84' - 9 ⁵ / ₁₆ "	- ¹ / ₁₆ "	- ¹ / ₈ "	- ³ / ₁₆ "	- ¹ / ₄ "	- ⁵ / ₁₆ "	- ¹ / ₄ "	- ³ / ₁₆ "	- ¹ / ₈ "	- ¹ / ₁₆ "
3	87' - 2 ¹¹ / ₁₆ "	¹ / ₁₆ "	³ / ₁₆ "	¹ / ₄ "	³ / ₈ "	⁷ / ₁₆ "	³ / ₈ "	¹ / ₄ "	³ / ₁₆ "	¹ / ₁₆ "
4	89' - 8 ¹ / ₁₆ "	¹ / ₄ "	¹ / ₂ "	¹³ / ₁₆ "	1 ¹ / ₁₆ "	1 ⁵ / ₁₆ "	1 ¹ / ₁₆ "	¹³ / ₁₆ "	¹ / ₂ "	¹ / ₄ "

TOTAL DEAD LOAD DEFLECTION

GIRDER	"A"	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
1	82' - 3 ¹⁵ / ₁₆ "	⁵ / ₁₆ "	⁵ / ₈ "	¹⁵ / ₁₆ "	1 ¹ / ₄ "	1 ⁹ / ₁₆ "	1 ¹ / ₄ "	¹⁵ / ₁₆ "	⁵ / ₈ "	⁵ / ₁₆ "
2	84' - 9 ⁵ / ₁₆ "	⁷ / ₁₆ "	¹⁵ / ₁₆ "	1 ³ / ₈ "	1 ⁷ / ₈ "	2 ⁵ / ₁₆ "	1 ⁷ / ₈ "	1 ³ / ₈ "	¹⁵ / ₁₆ "	⁷ / ₁₆ "
3	87' - 2 ¹¹ / ₁₆ "	⁵ / ₈ "	1 ¹ / ₄ "	1 ⁷ / ₈ "	2 ¹ / ₂ "	3 ¹ / ₈ "	2 ¹ / ₂ "	1 ⁷ / ₈ "	1 ¹ / ₄ "	⁵ / ₈ "
4	89' - 8 ¹ / ₁₆ "	¹³ / ₁₆ "	1 ⁹ / ₁₆ "	2 ³ / ₈ "	3 ³ / ₁₆ "	3 ¹⁵ / ₁₆ "	3 ³ / ₁₆ "	2 ³ / ₈ "	1 ⁹ / ₁₆ "	¹³ / ₁₆ "



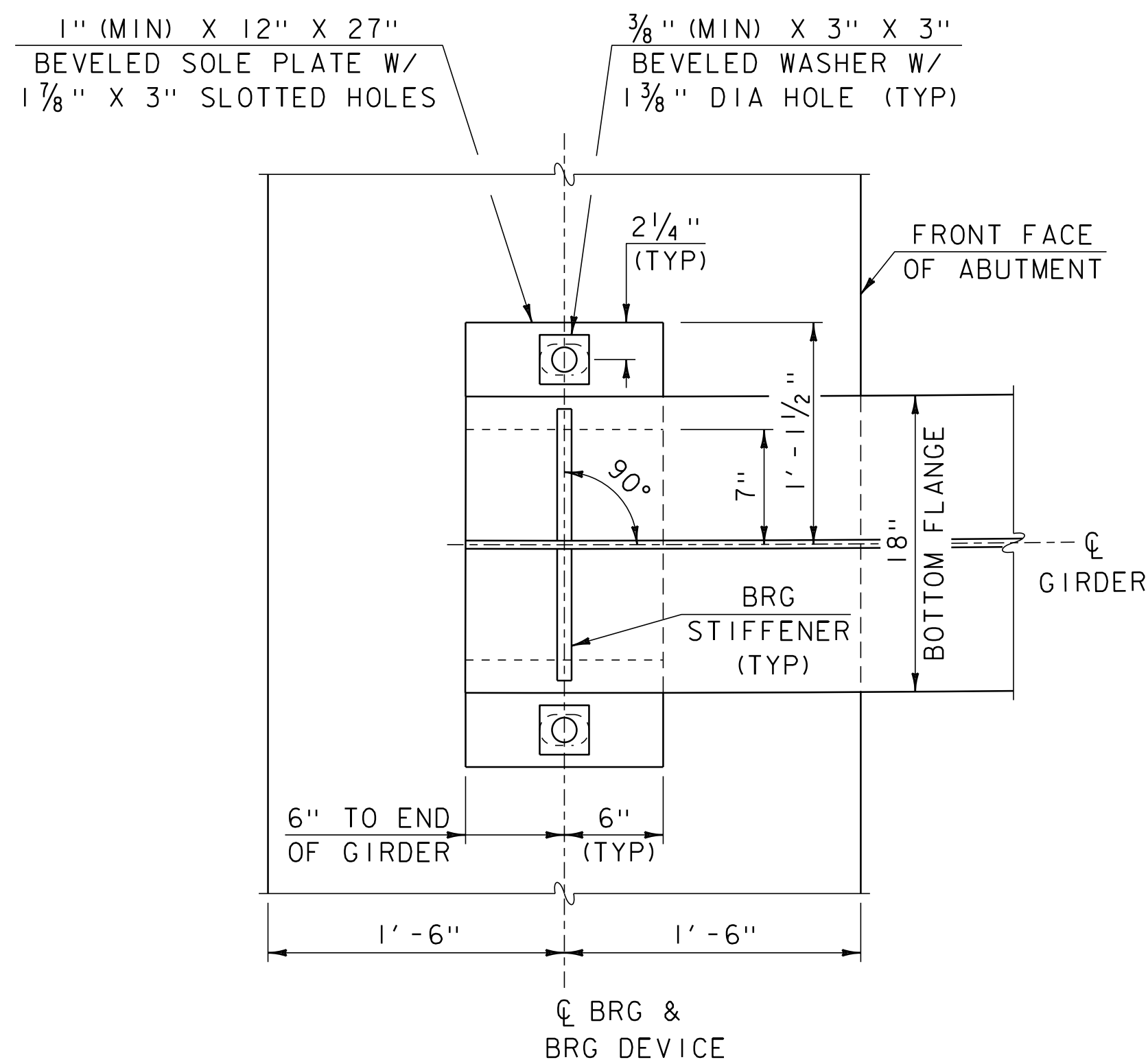
INTERMEDIATE CROSSFRAME

SCALE: 1" = 1' - 0"

PROJECT NAME: DANBY  
PROJECT NUMBER: BF 0130 (3)

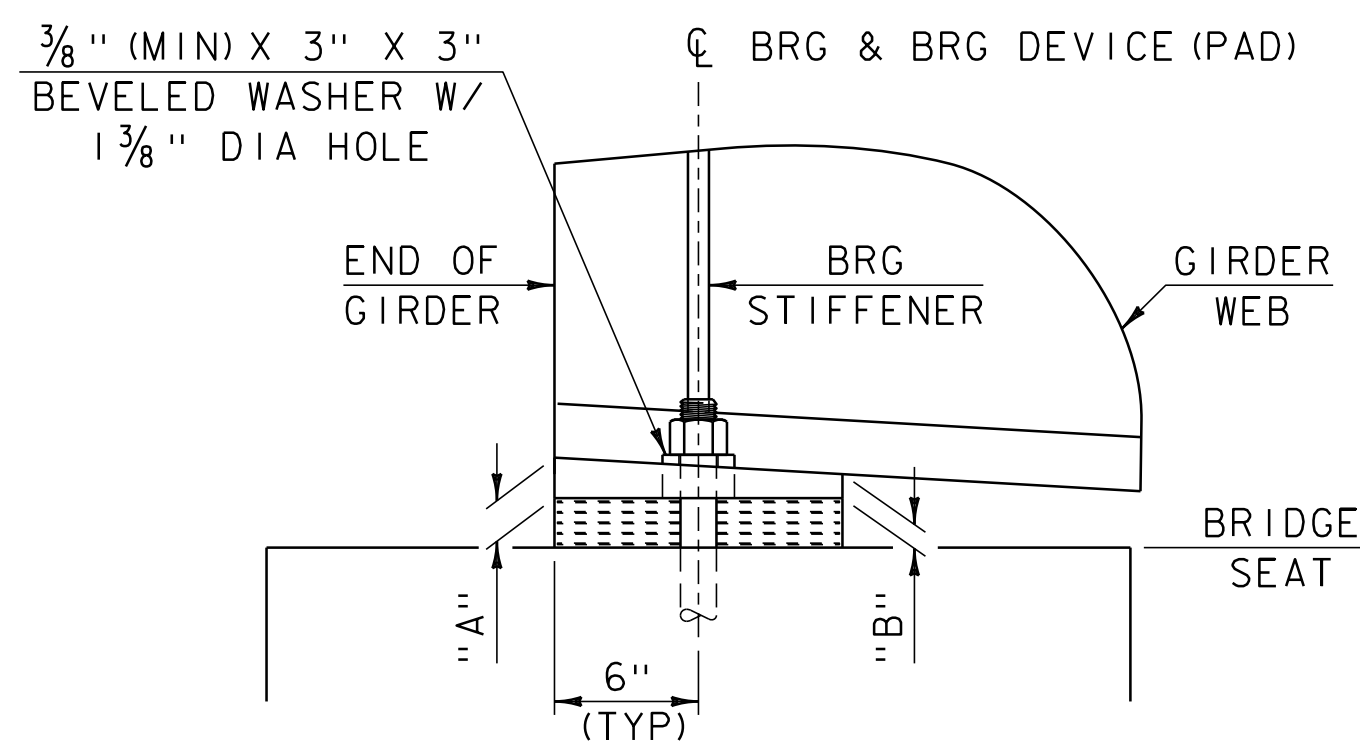
FILE NAME: sl3j304sup.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
GIRDER CAMBER AND DEFLECTION TABLES

PLOT DATE: 06-DEC-2017  
DRAWN BY: G. ROY  
CHECKED BY: J. LACY  
SHEET 27 OF 55



### PLAN VIEW

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

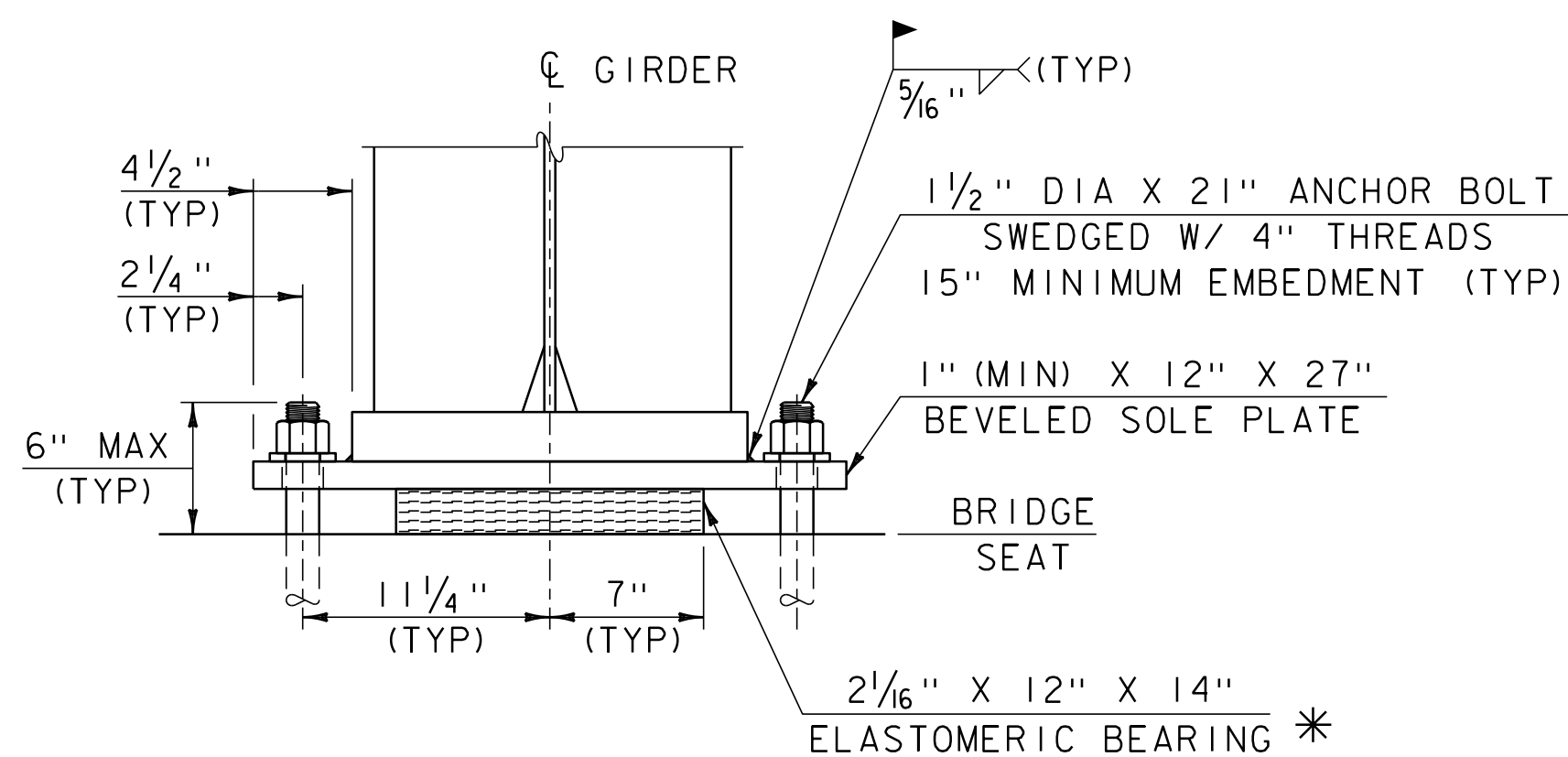


### SIDE VIEW

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

- * 2 - 1/8" EXTERIOR LAYERS OF ELASTOMER  
4 - 3/8" INTERIOR LAYERS OF ELASTOMER  
5 - 1/16" STEEL REINFORCING PLATES

DIMENSION	ABUT. NO. 1	ABUT. NO. 2
"A"	1 11/16"	1"
"B"	1"	1 1/2"



### FRONT VIEW

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

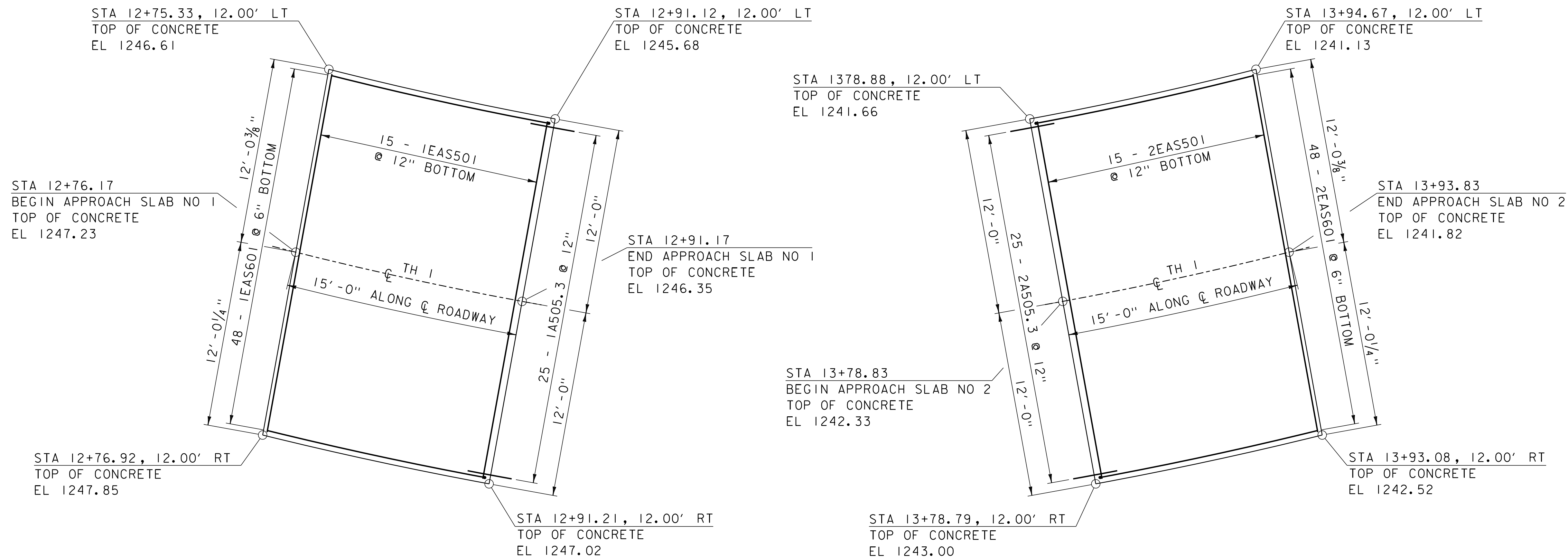
#### BEARING NOTES:

- BEARINGS WILL BE PAID FOR UNDER ITEM 531.17 "BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD" AND SHALL CONFORM TO APPLICABLE SUBSECTIONS OF SECTION 531 AND 731.
- FABRICATION DRAWINGS, INCLUDING ASSOCIATED WELDING PROCEDURES, SHALL BE SUBMITTED CONFORMING TO SUBSECTION 531.03.
- DESIGN CRITERIA:
  - DEAD LOAD ROTATION: 0.0103 RADIANS
  - DEAD LOAD (UNFACTORED): 88.5 KIPS
  - ELASTOMER SHEAR MODULUS: 95 PSI
- ALL STEEL IN BEARINGS DEVICES SHALL BE AASHTO M 270M/M 270 GRADE 36, UNLESS OTHERWISE NOTED.
- ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMER SHALL BE STEEL MEETING THE REQUIREMENTS OF SUBSECTION 714.02. ALL INTERNAL STEEL SHEETS SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST AND MILL SCALE. THE SHEETS SHALL BE FREE OF SHARP EDGES AND BURRS.
- STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM 1/8" EDGE SEAL OF ELASTOMER INTEGRAL WITH BEARING OVER ALL INTERNAL SHEETS.
- THE CONCRETE SURFACE UNDER THE BEARING DEVICES SHALL BE LEVEL.
- ANCHOR BOLTS SHALL HAVE A MINIMUM 15 INCHES EMBEDMENT INTO THE CONCRETE AND SHALL CONFORM TO SUBSECTION 714.08. ANCHOR BOLTS SHALL BE GRADE 55.

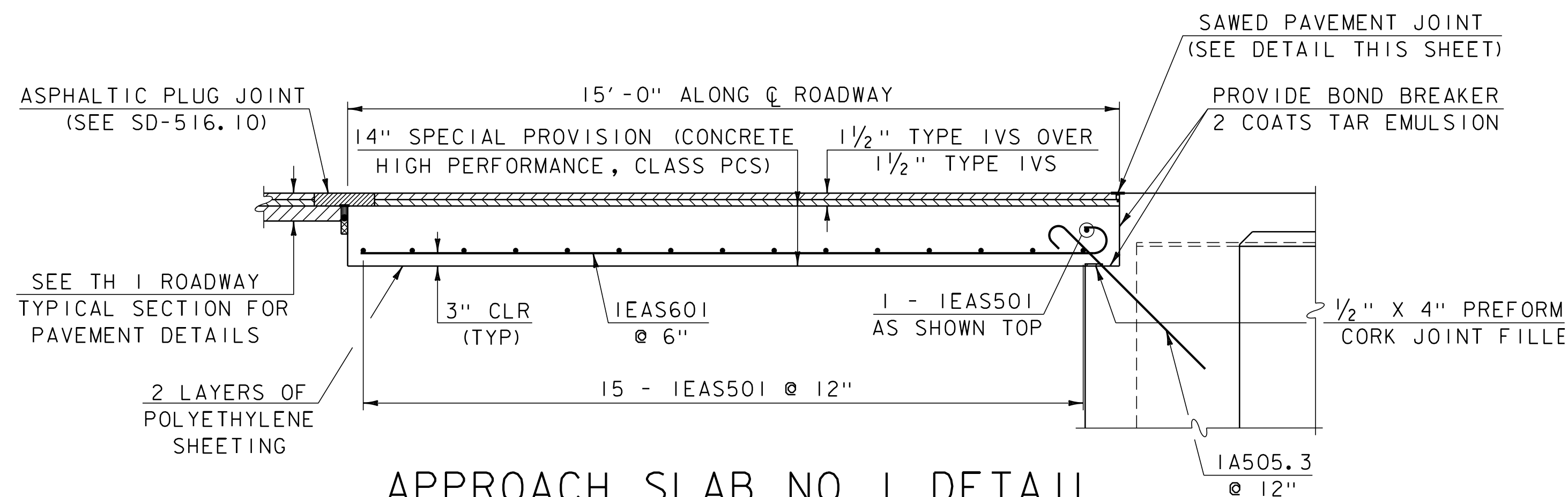
PROJECT NAME: DANBY  
PROJECT NUMBER: BF 0130 (3)

FILE NAME: sl3j304sup.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
BEARING DETAILS

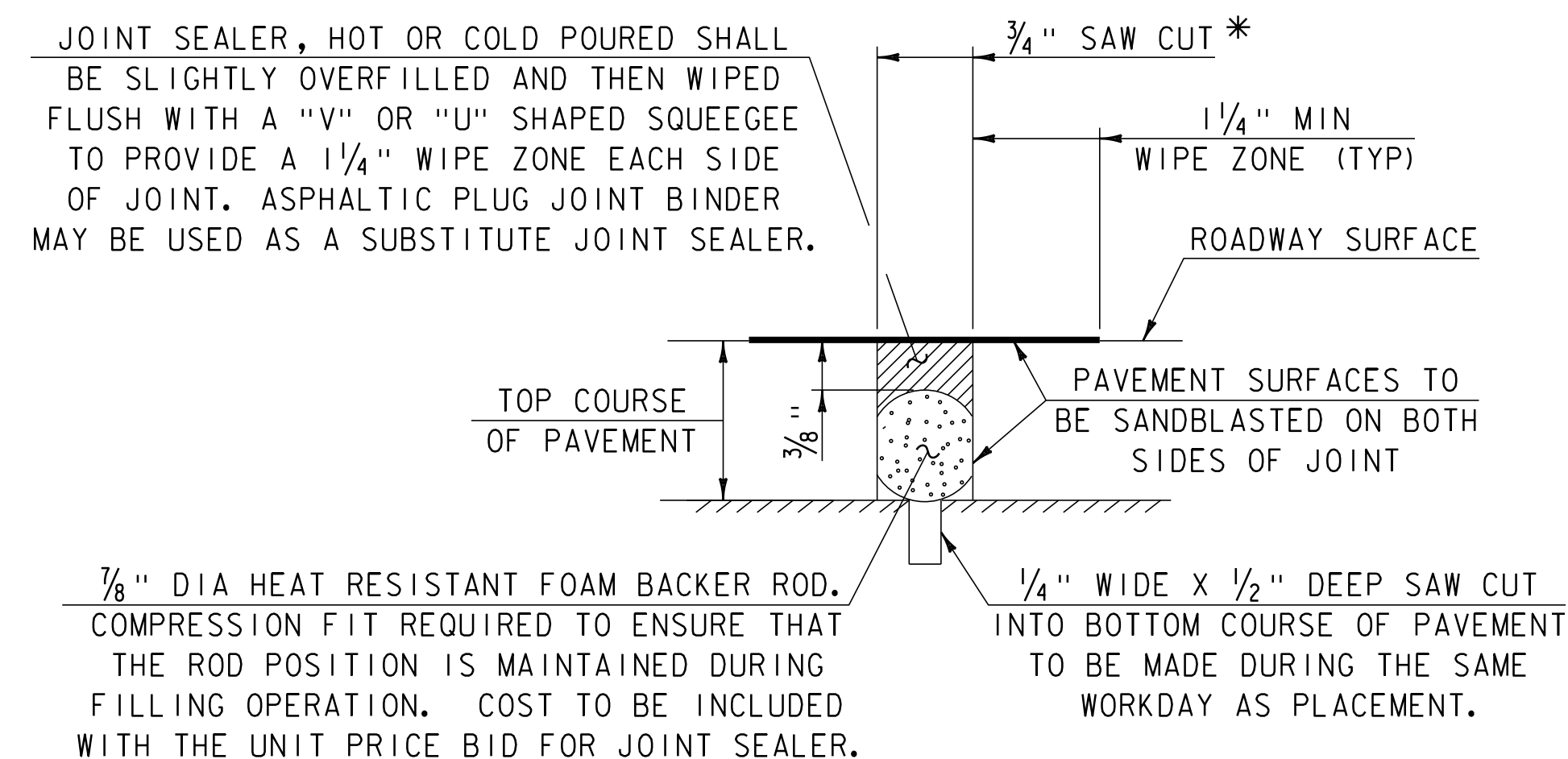
PLOT DATE: 06-DEC-2017  
DRAWN BY: G. ROY  
CHECKED BY: J. LACY  
SHEET 28 OF 55



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



APPROACH SLAB NO 1 DETAIL  
SCALE: 1/2" = 1'-0"  
(APPROACH SLAB NO 2 SIMILAR)



SAWED PAVEMENT JOINT DETAIL  
(NOT TO SCALE)

NOTES:

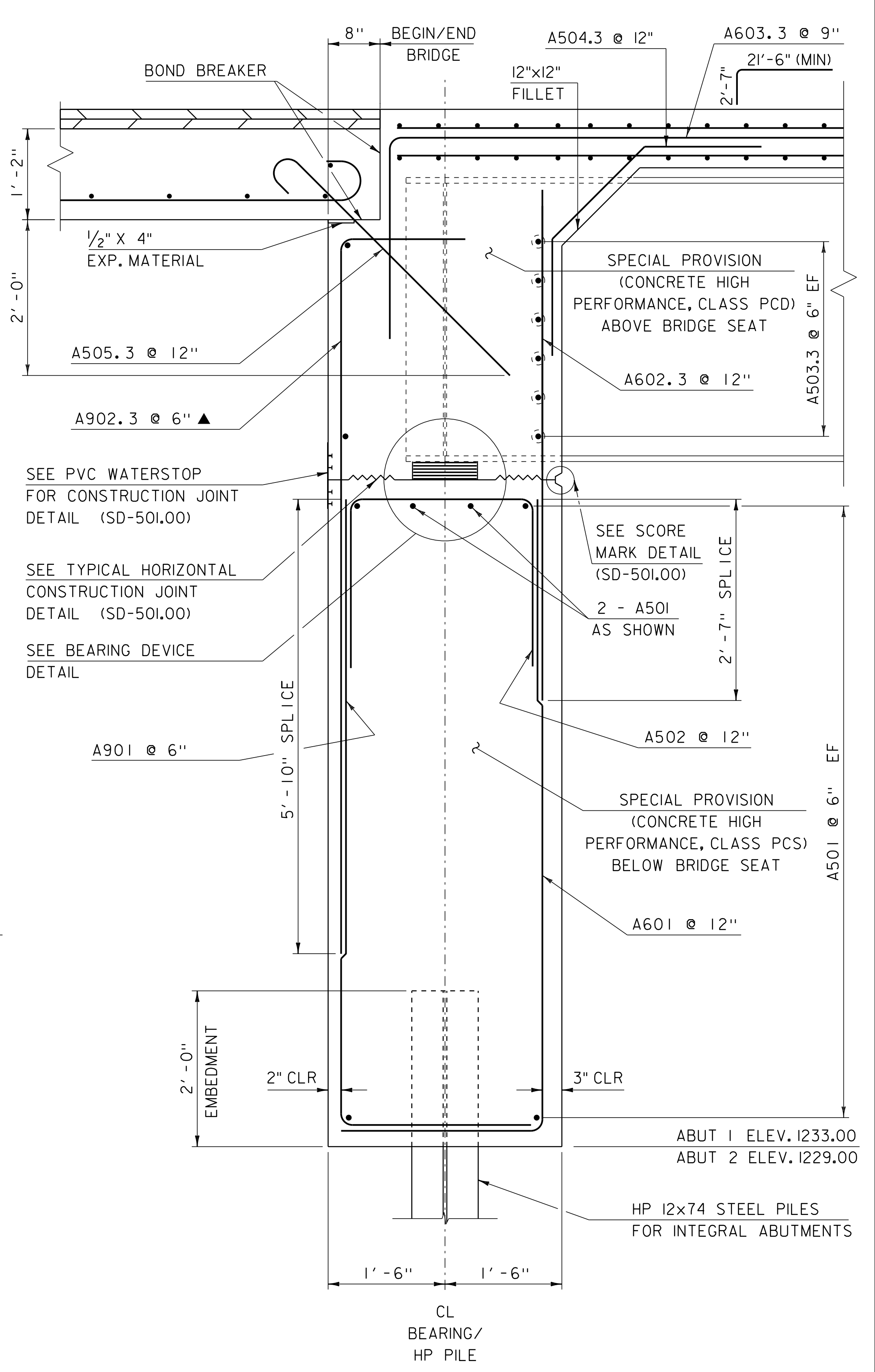
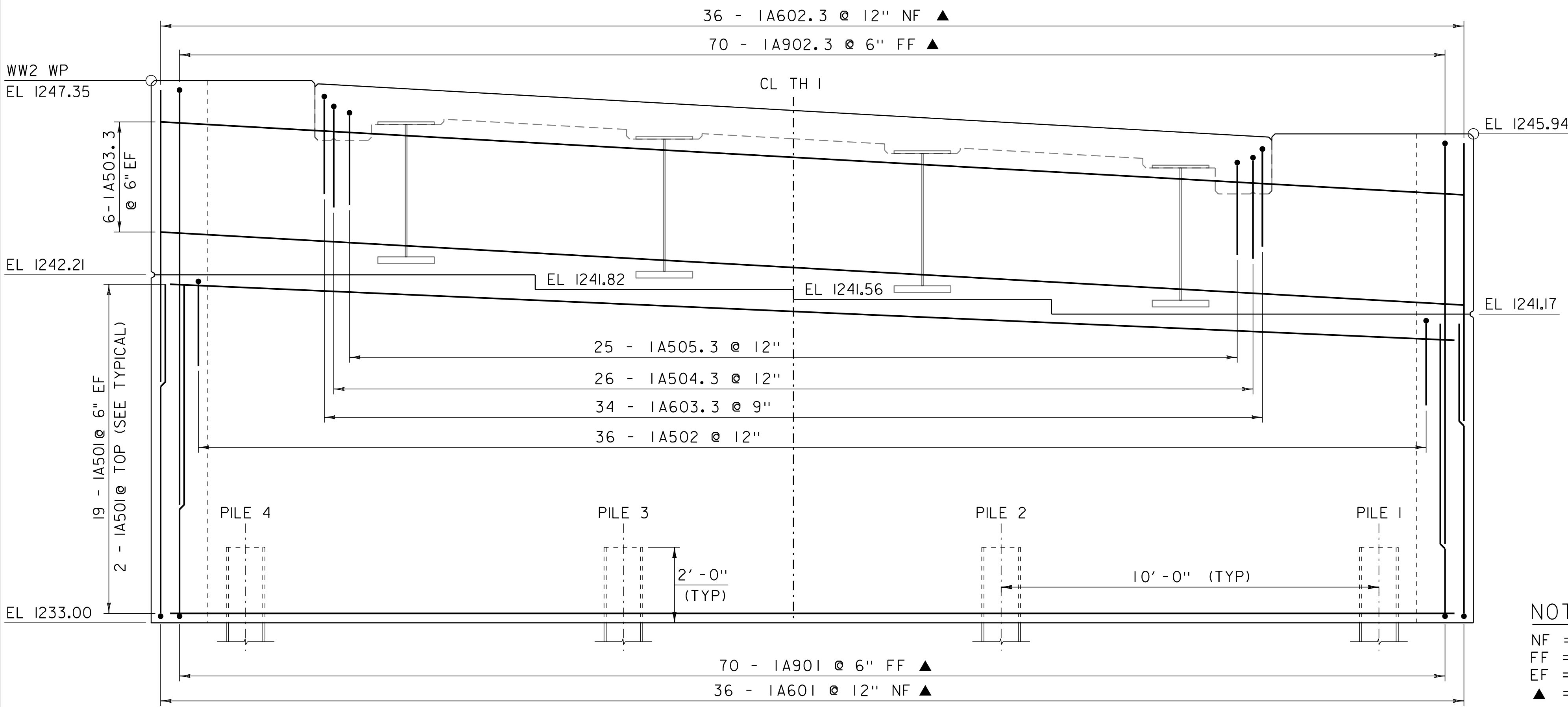
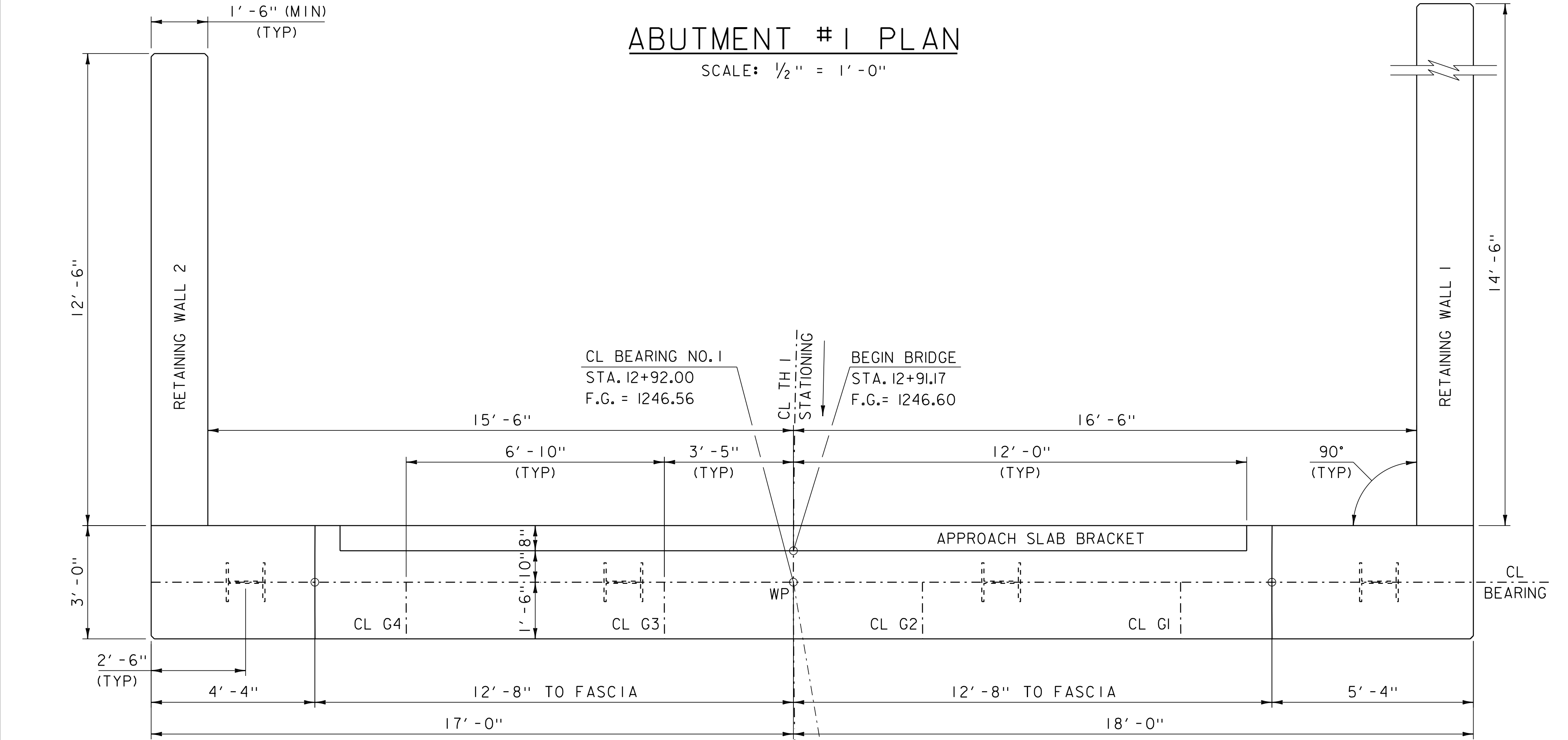
1. COMPACT THE SUBBASE IN THE AREA UNDER THE APPROACH SLAB TO A SMOOTH SURFACE.
2. MATERIAL FOR POLYETHYLENE SHEETING SHALL MEET THE REQUIREMENTS OF SUBSECTION 725.01 (c). THE SHEETING THICKNESS SHALL BE 12 MIL. PLACE THE SHEETING ON TOP OF THE FINISHED SUBBASE FOR THE FULL LENGTH AND WIDTH OF THE APPROACH SLAB, EXCEPT IN THE BRACKET AREA AT THE ABUTMENT. LAP SHEETING AT LEAST 2'-0". PAYMENT FOR SHEETING WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 900.608 SPECIAL PROVISION (CONCRETE HIGH PERFORMANCE, CLASS PCS)".
3. PLACE HOOKED ENDS OF BOTTOM STEEL AT ABUTMENT END OF SLAB UNLESS OTHERWISE SHOWN.
4. BOND BREAKER AND TAR EMULSION WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 900.608 SPECIAL PROVISION (CONCRETE HIGH PERFORMANCE, CLASS PCS)".

NOTE:

▲ = CUT TO FIT IN FIELD  
3" CLEAR UNLESS OTHERWISE NOTED  
2'-2" BAR LAP UNLESS OTHERWISE NOTED

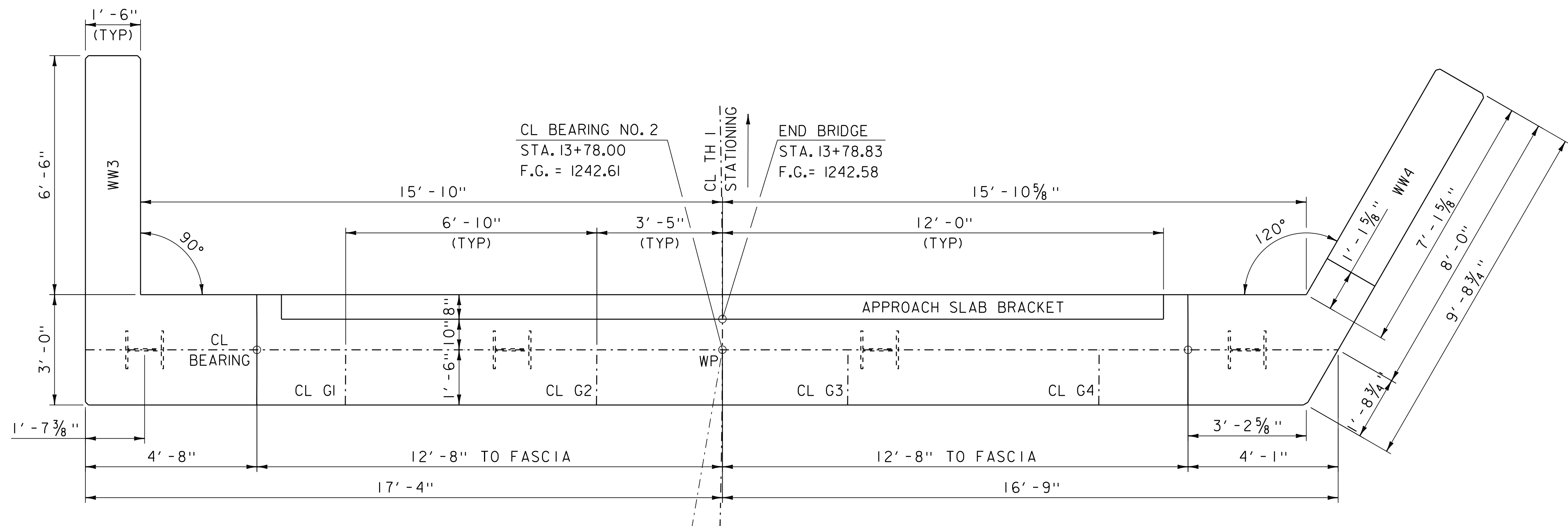
*JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUTS WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING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

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130 (3)	
FILE NAME: sl3j304sup.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: J. LACY
APPROACH SLAB DETAILS	SHEET 29 OF 55



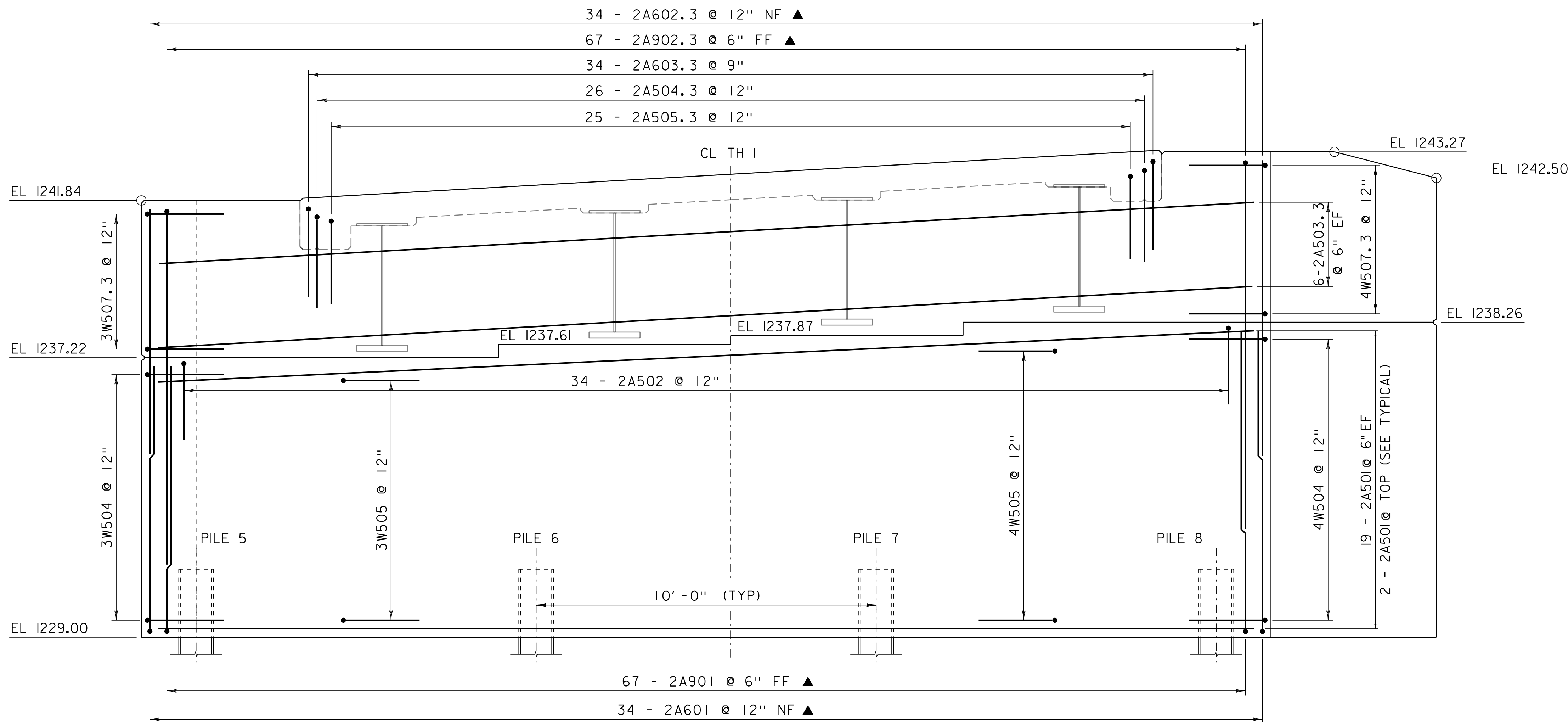
**NOTE:**  
NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130(3)	
FILE NAME: sl3j304sub.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
ABUTMENT 1 PLAN & ELEVATION	
SHEET 30 OF 55	



ABUTMENT #2 PLAN

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



ABUTMENT #2 ELEVATION

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

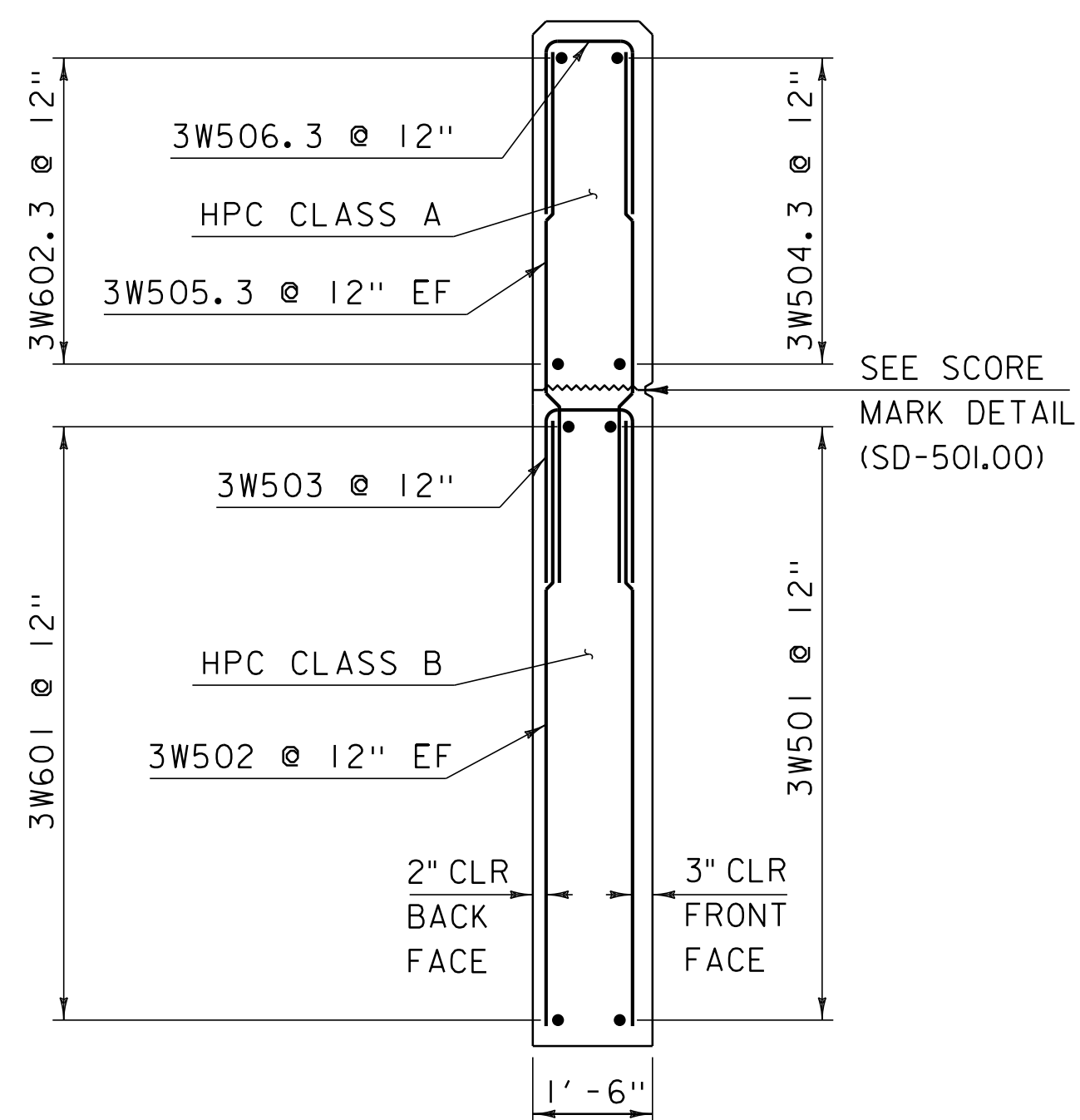
NOTE:

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

PROJECT NAME: DANBY  
PROJECT NUMBER: BF 0130(3)

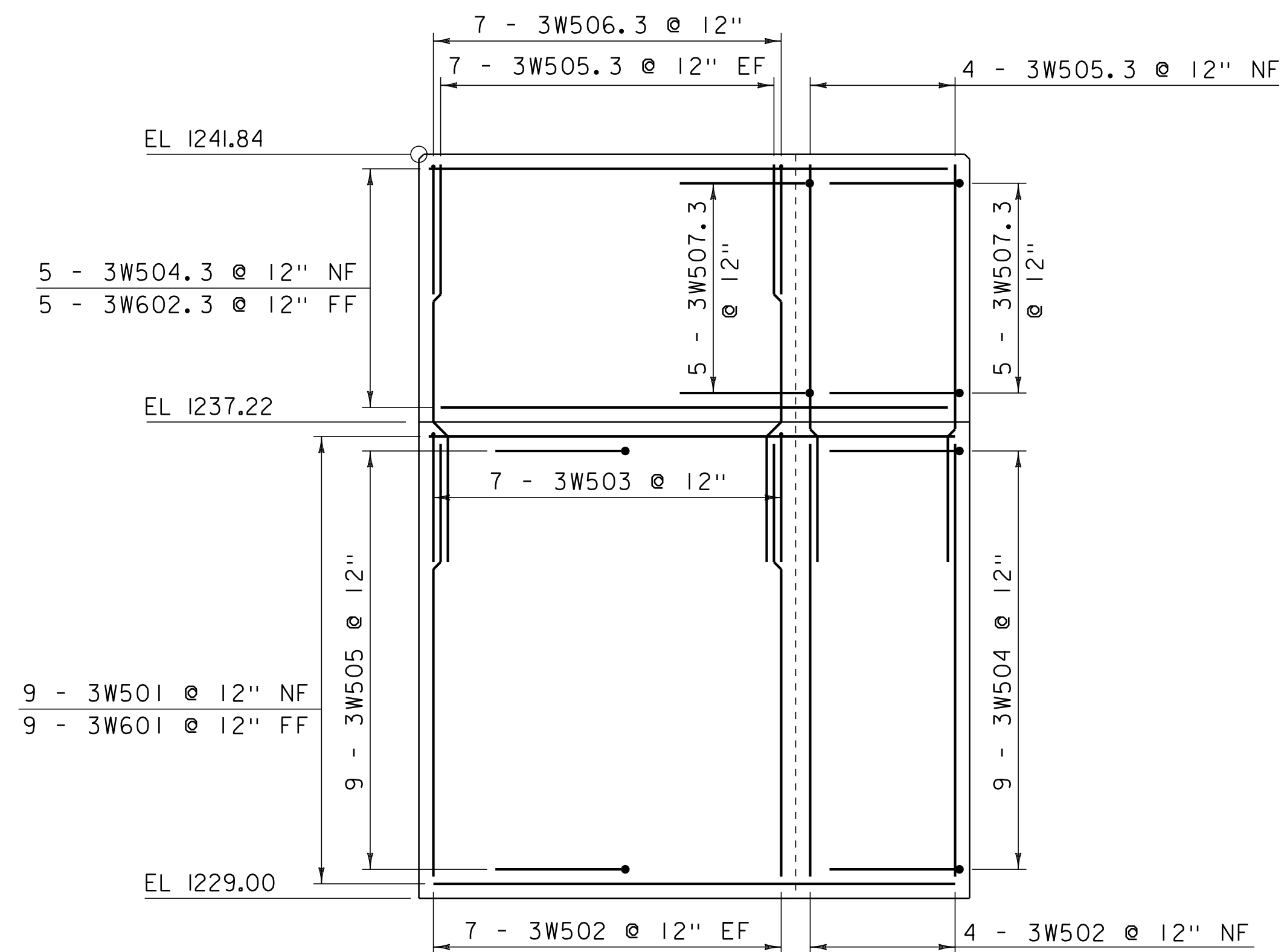
FILE NAME: sl3j304sub.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
ABUTMENT 2 PLAN & ELEVATION

PLOT DATE: 06-DEC-2017  
DRAWN BY: R. PELLETT  
CHECKED BY: C. BURRALL  
SHEET 31 OF 55



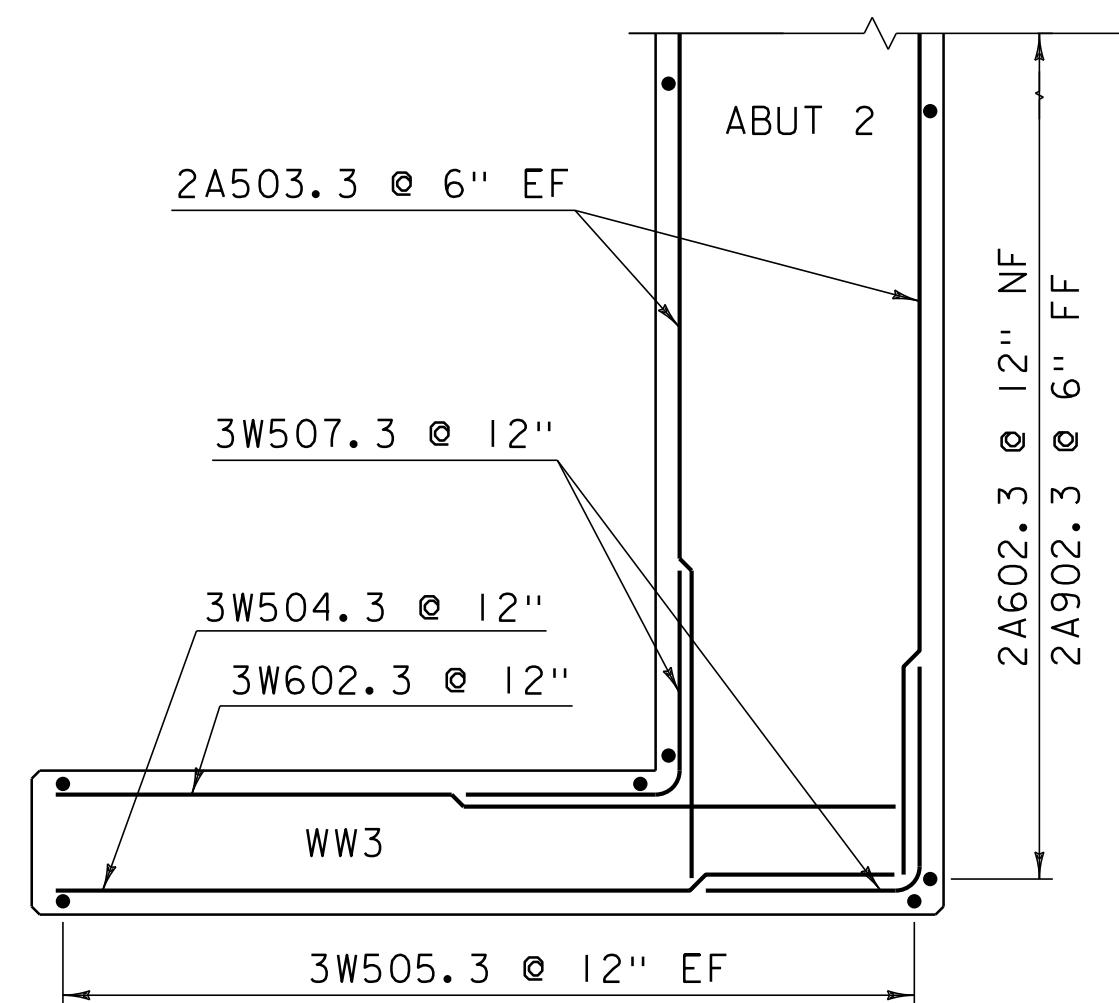
**WINGWALL #3 TYPICAL**

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



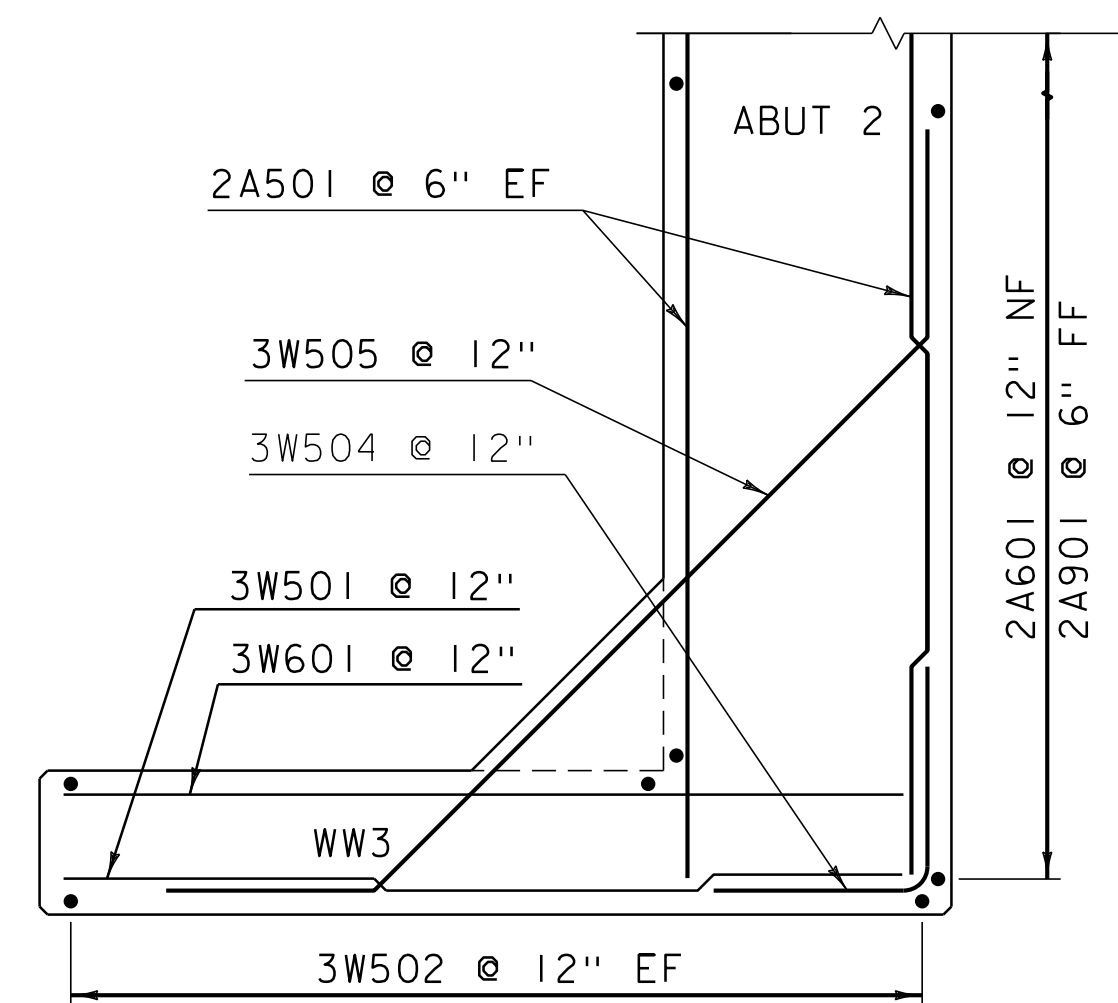
**WINGWALL #3 ELEVATION**

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



**CORNER WINGWALL #3  
ABOVE BRIDGE SEAT**

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



**CORNER WINGWALL #3  
BELOW BRIDGE SEAT**

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

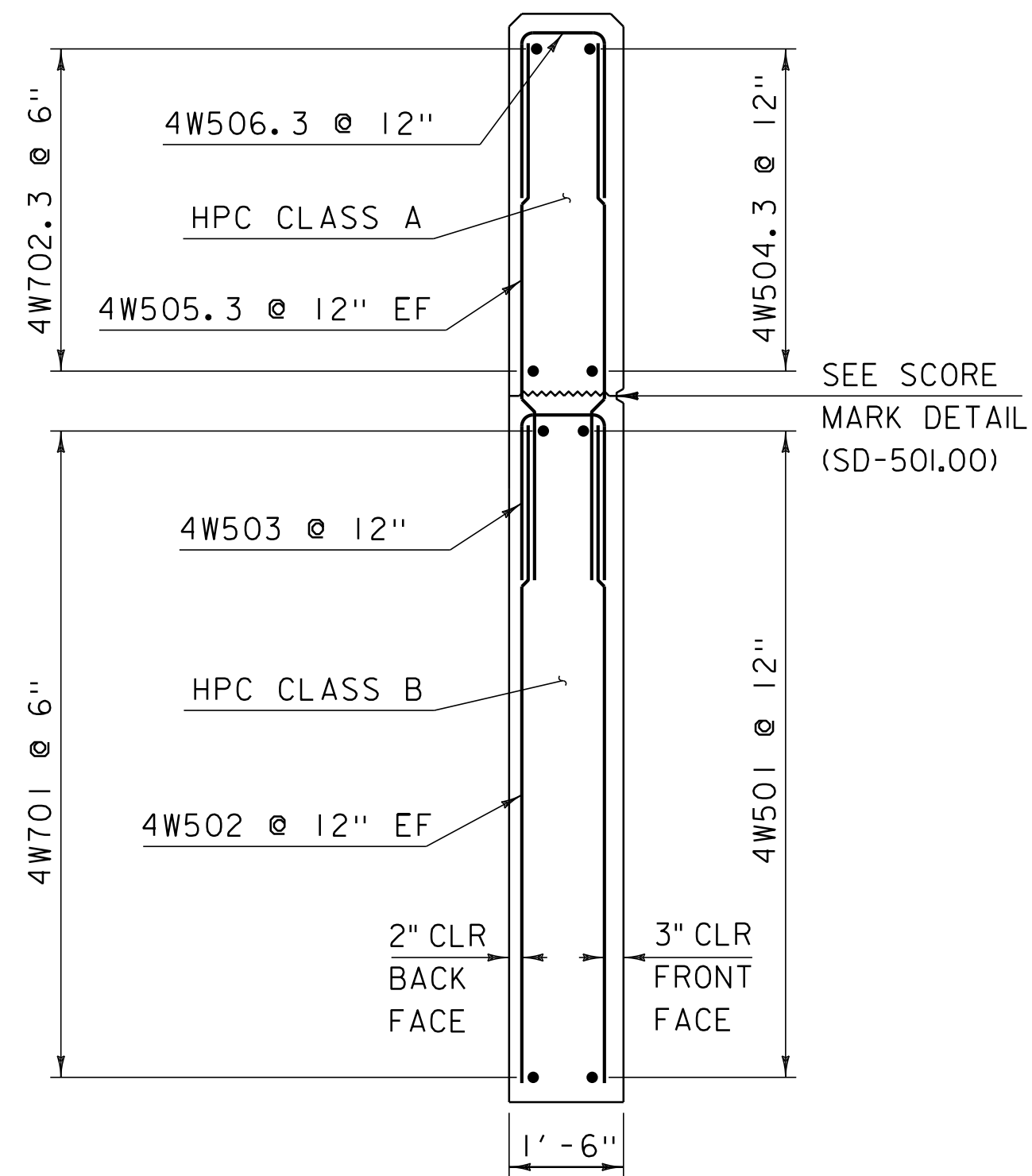
**NOTE:**

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: DANBY  
PROJECT NUMBER: BF 0130(3)

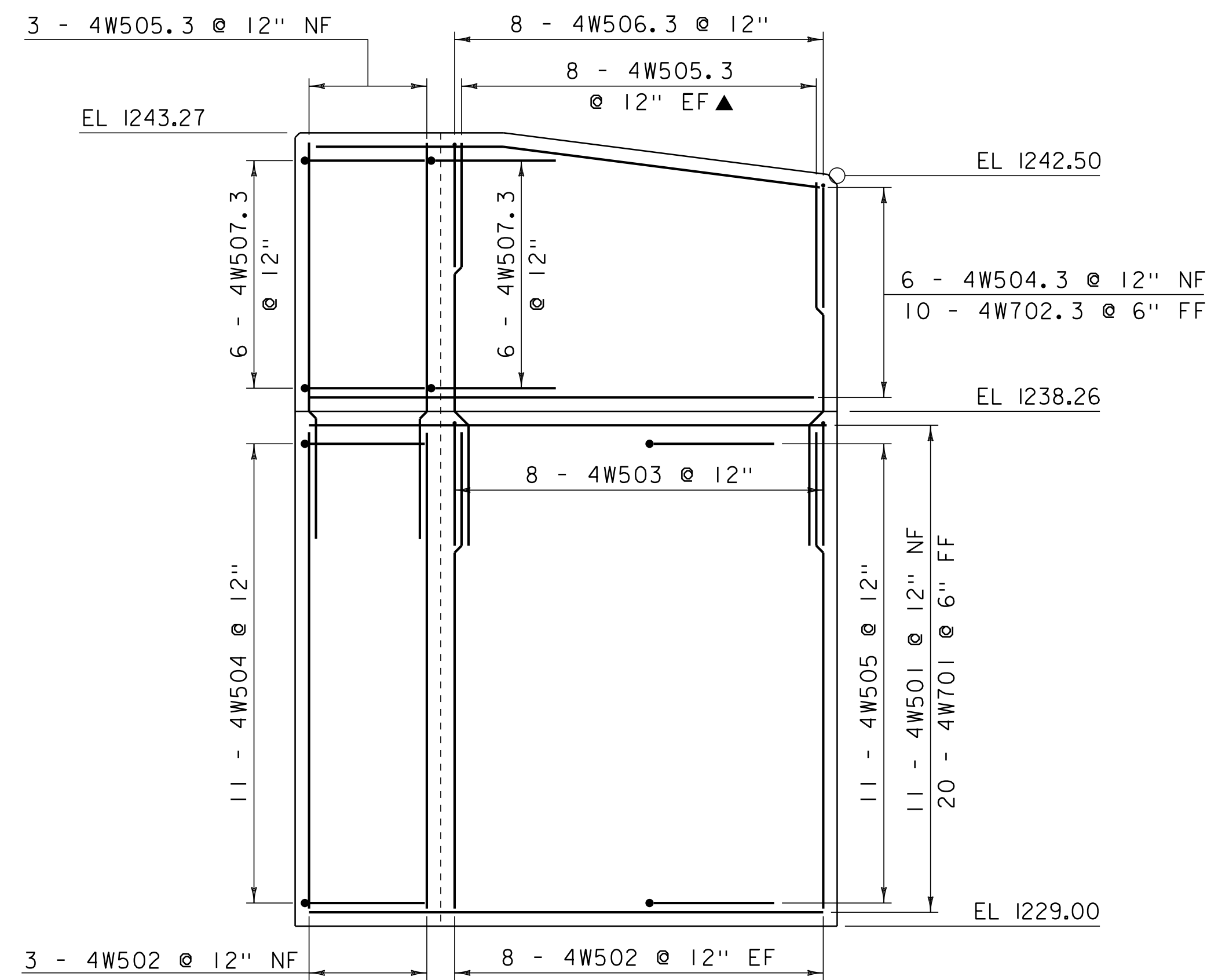
FILE NAME: sl3j304sub.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
WINGWALL 3

PLOT DATE: 06-DEC-2017  
DRAWN BY: R. PELLETT  
CHECKED BY: C. BURRALL  
SHEET 32 OF 55



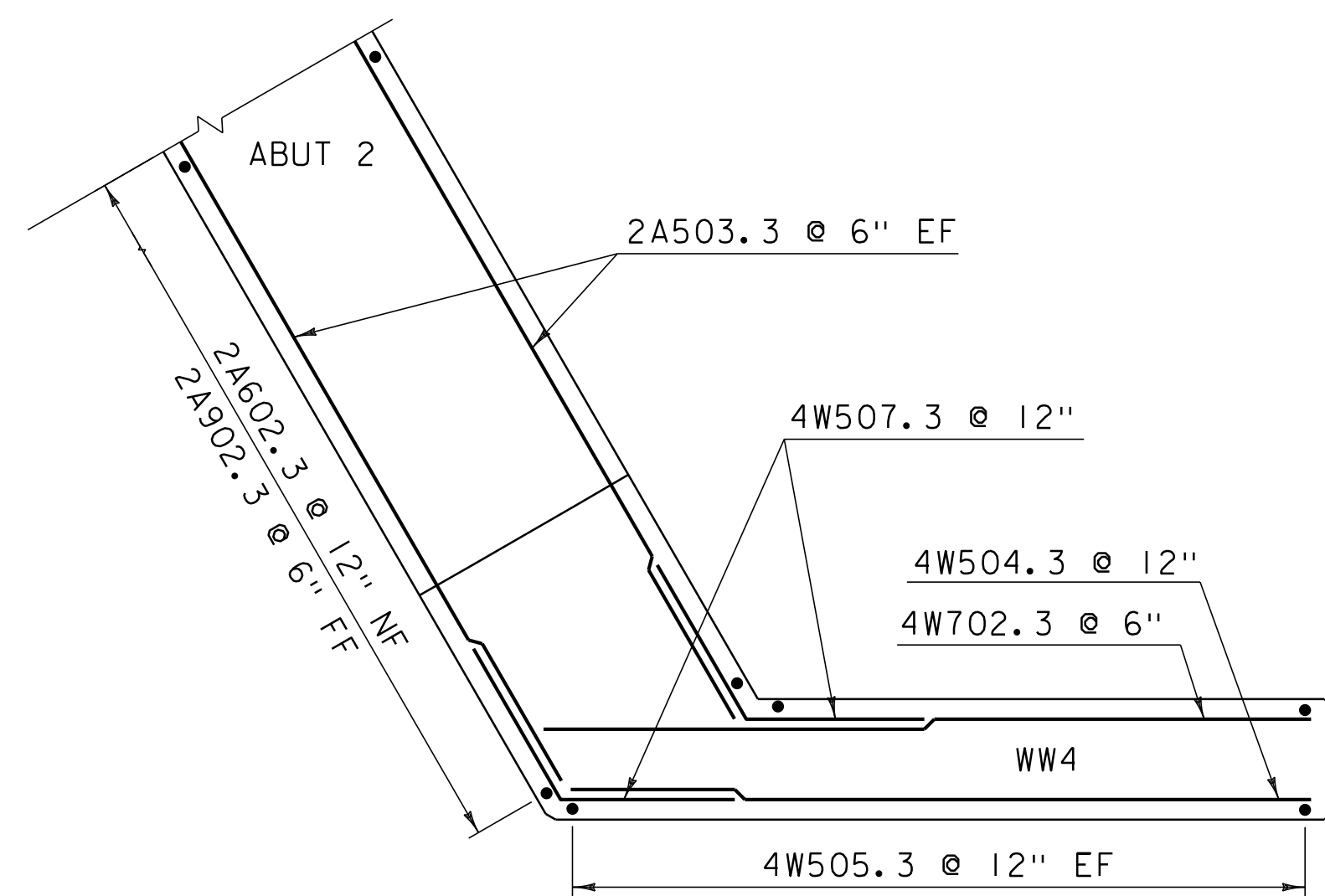
**WINGWALL #4 TYPICAL**

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



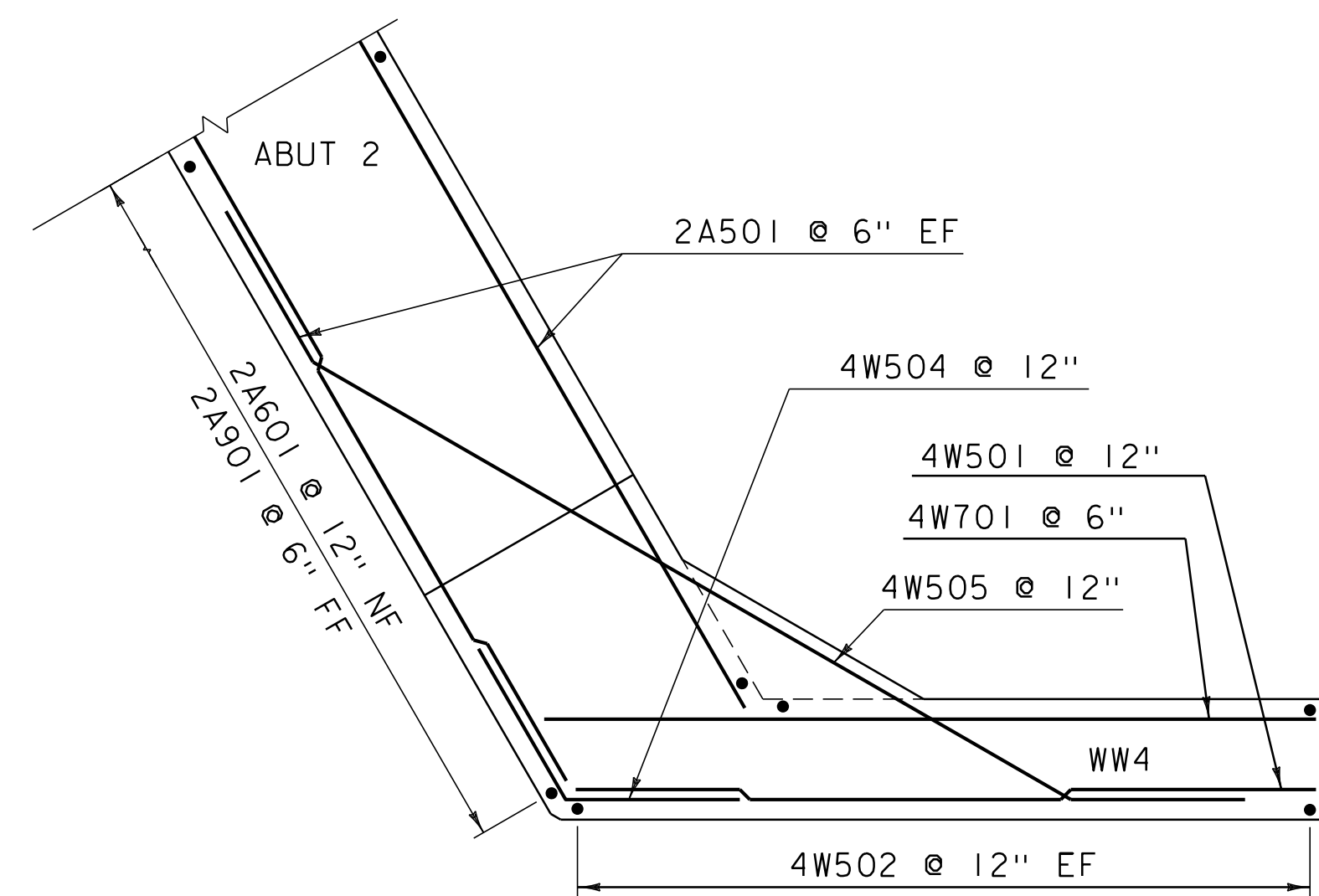
**WINGWALL #4 ELEVATION**

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



**CORNER WINGWALL #4  
ABOVE BRIDGE SEAT**

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



**CORNER WINGWALL #4  
BELOW BRIDGE SEAT**

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

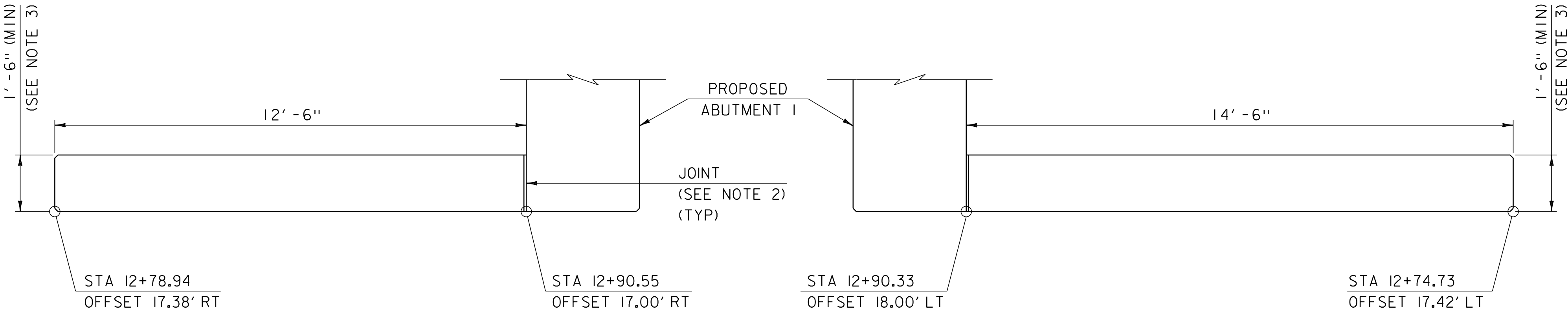
**NOTE:**

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: DANBY  
PROJECT NUMBER: BF 0130(3)

FILE NAME: sl3j304sub.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
WINGWALL 4

PLOT DATE: 06-DEC-2017  
DRAWN BY: R. PELLETT  
CHECKED BY: C. BURRALL  
SHEET 33 OF 55



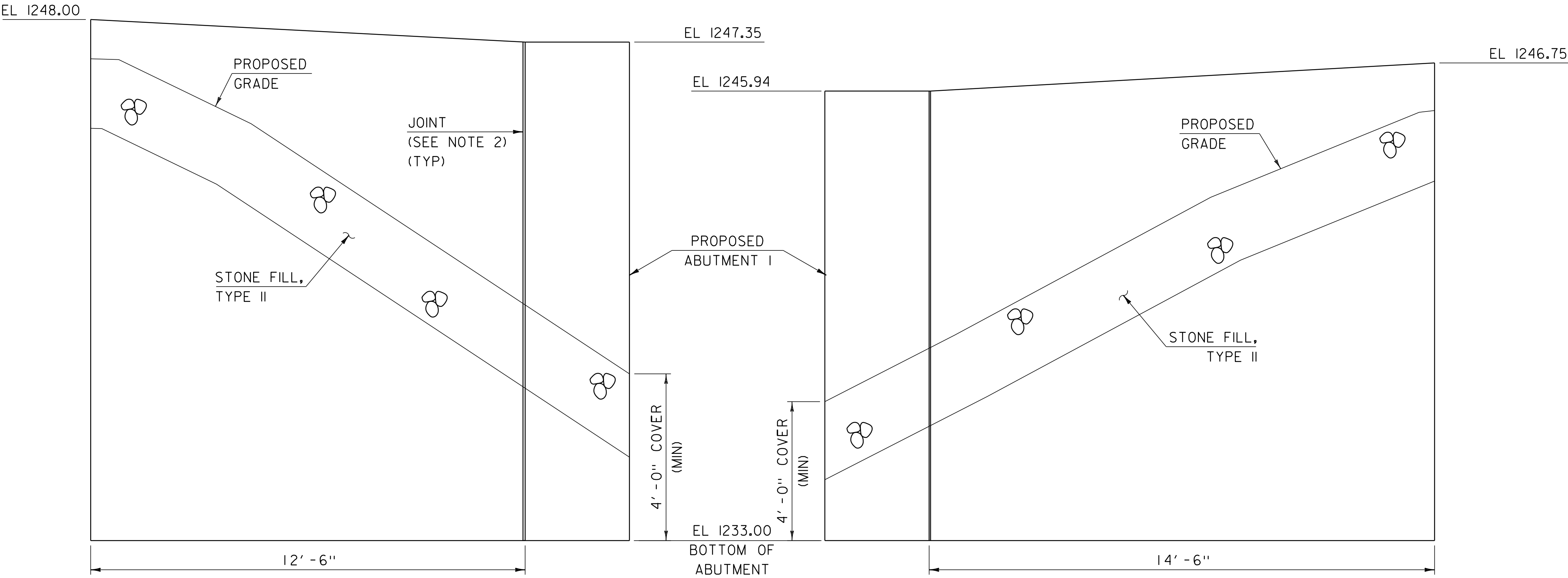
RETAINING WALL #2 PLAN

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

RETAINING WALL #1 PLAN

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

- NOTES:
- THE FOLLOWING SOIL PROPERTIES SHALL BE USED IN THE DESIGN OF THE RETAINING WALLS:
    - FOUNDATION SOIL DESIGN VALUES  
THE NOMINAL (UNFACTORED) BEARING RESISTANCE IS 4 KSF
    - FOUNDATION SOIL PARAMETERS  
UNIT WEIGHT: 120 PCF  
FRICTION ANGLE: 34 DEG
    - BACKFILL SOIL PARAMETERS  
UNIT WEIGHT: 140 PCF  
FRICTION ANGLE: 34 DEG
  - THE INTERFACE BETWEEN THE RETAINING WALL AND THE ABUTMENT CAP SHALL BE DESIGNED TO ALLOW 0.5 INCHES OF MOVEMENT. A JOINT DETAIL SHALL BE SUBMITTED FOR REVIEW AND APPROVAL. JOINT SHALL PROVIDE A FLEXIBLE WATER TIGHT SEAL IN ORDER TO PREVENT MIGRATION OF BACKFILL MATERIAL THROUGH THE JOINT. ALL COMPONENTS WILL BE INCLUDED IN THE UNIT PRICE FOR ITEM 900.645, "SPECIAL PROVISION (RETAINING WALL)". DIMENSIONS AND STATIONS SHOWN INCLUDE AN ASSUMED JOINT THICKNESS OF 3/4". IF A DIFFERENT THICKNESS IS USED THE GEOMETRY WILL NEED TO BE MODIFIED BY THE CONTRACTOR.
  - DIMENSIONS ARE BASED ON A RETAINING WALL THICKNESS OF 1'-6" (MIN), IF A DIFFERENT THICKNESS IS USED, GEOMETRY WILL NEED TO BE MODIFIED BY THE CONTRACTOR.

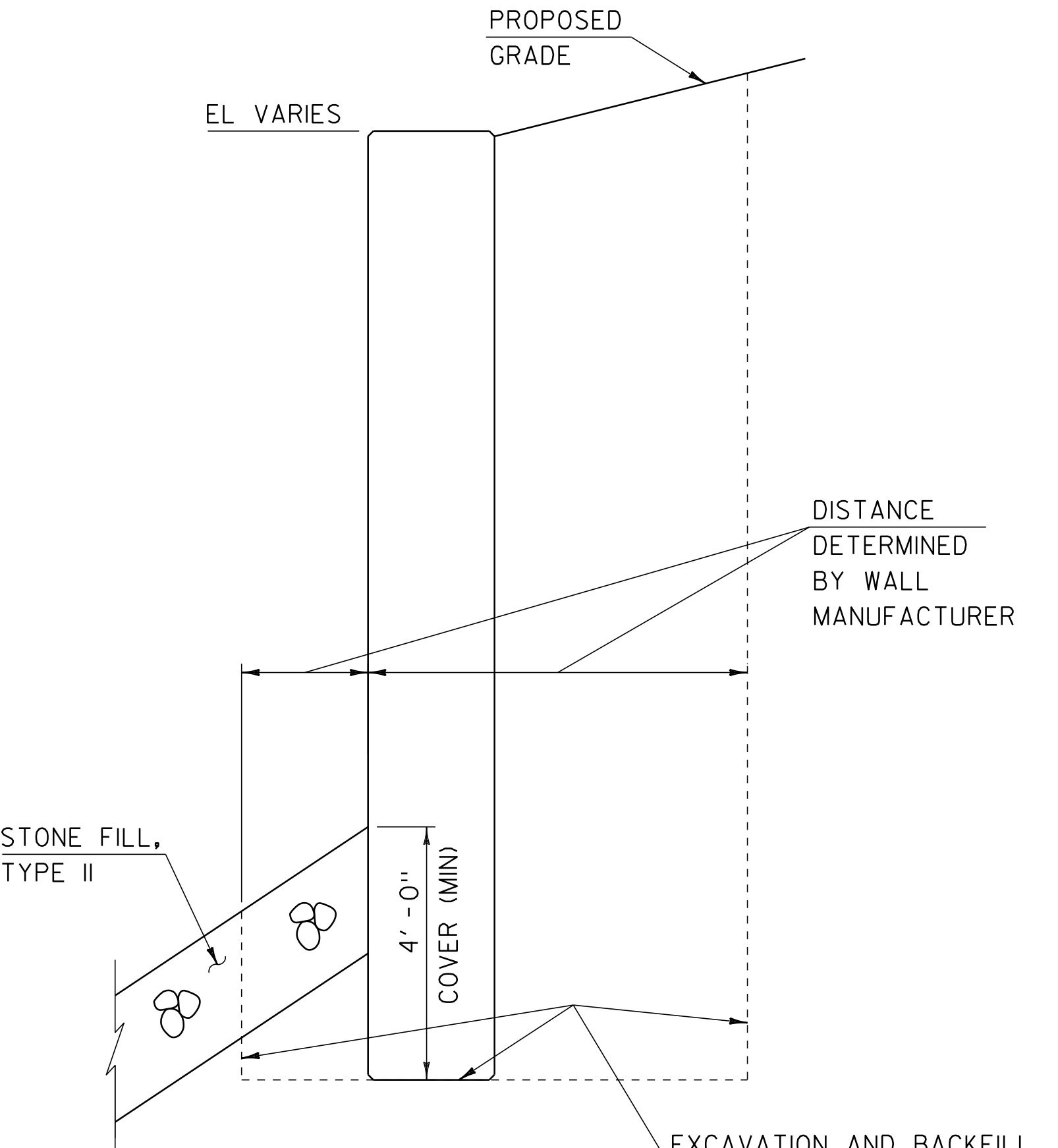


RETAINING WALL #2 ELEVATION

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

RETAINING WALL #1 ELEVATION

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



TYPICAL SECTION

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

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130(3)	
FILE NAME: sl3j304sub.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
RETAINING WALLS 1 & 2	SHEET 34 OF 55

# REINFORCING STEEL SCHEDULE

## ~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. * DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.

### ASTM STANDARD REINFORCING BARS

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

### ~ REINFORCING STEEL CORROSION RESISTANCE LEVEL ~

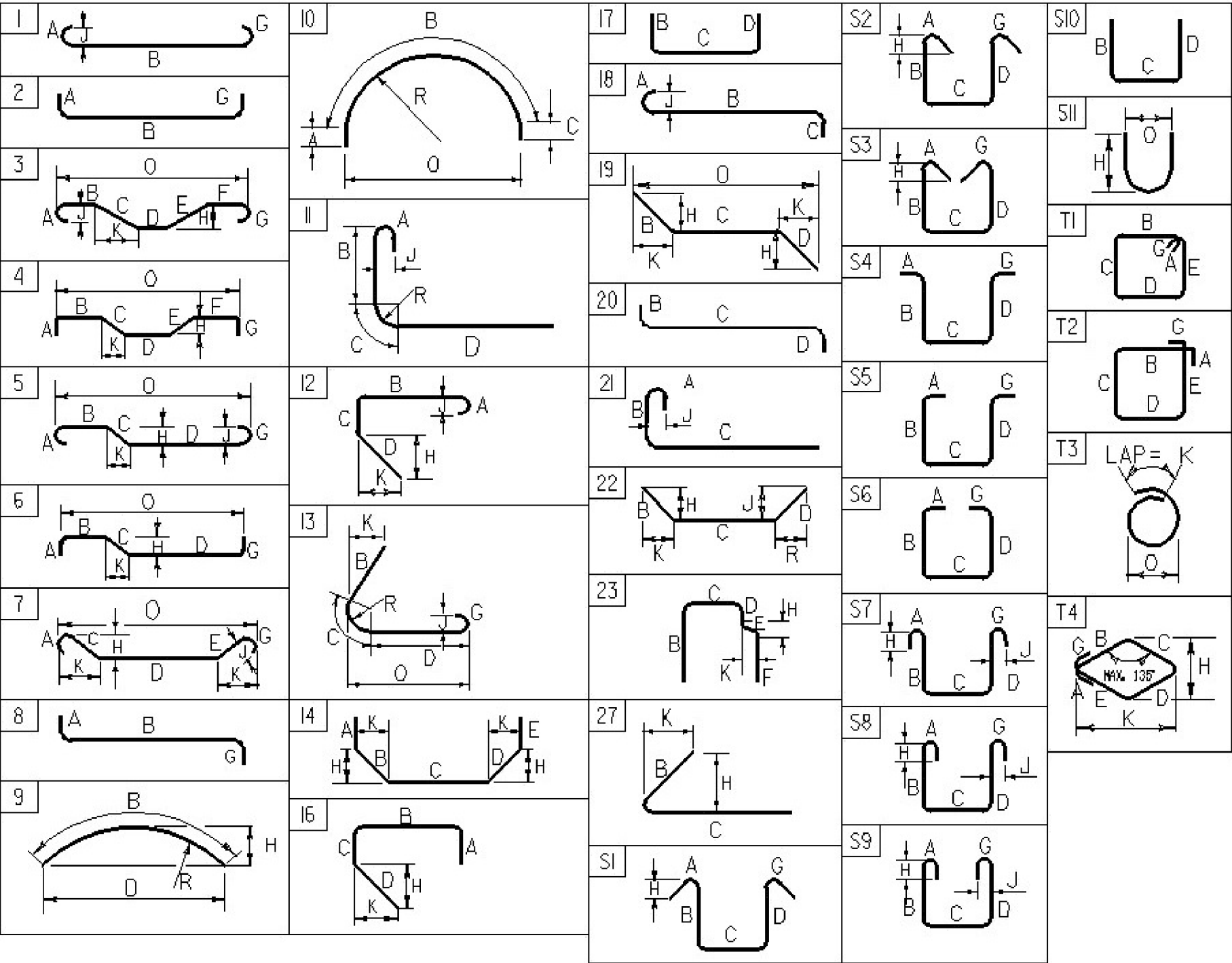
THE REINFORCING STEEL MARKS IN THIS SCHEDULE INDICATE THE REQUIRED BAR CORROSION RESISTANCE LEVEL. CORROSION RESISTANCE LEVEL IS DENOTED WITH A . 2 FOR LEVEL TWO SUFFIX OR . 3 FOR LEVEL THREE SUFFIX. 1 FOR LEVEL ONE IS TO BE OMITTED. BARS MARKED WITH A "G" IN THEIR SUFFIX SHALL BE THE APPROPRIATE 900.640, "SPECIAL PROVISION (REINFORCING BAR, GFRP)" ITEM. THE BAR MATERIAL TYPE AND BAR STEEL GRADE PROVIDED FOR EACH CORROSION LEVEL WILL BE RECORDED ON THE PLAN SET PI SHEET FOR AS-BUILT RECORD PLAN ARCHIVES.

PROJECT NAME: **DANBY**  
PROJECT NUMBER: **BF 0130(3)**

FILE NAME: **s13j304rss.dgn**  
PROJECT MANAGER: **C. CARLSON**  
DESIGNED BY: **K. CHEVIOT**  
REINFORCING STEEL SCHEDULE

PLOT DATE: **12/5/2017**  
DRAWN BY: **R. PELLETT**  
CHECKED BY: **C. BURRALL**  
SHEET **35** OF **55**

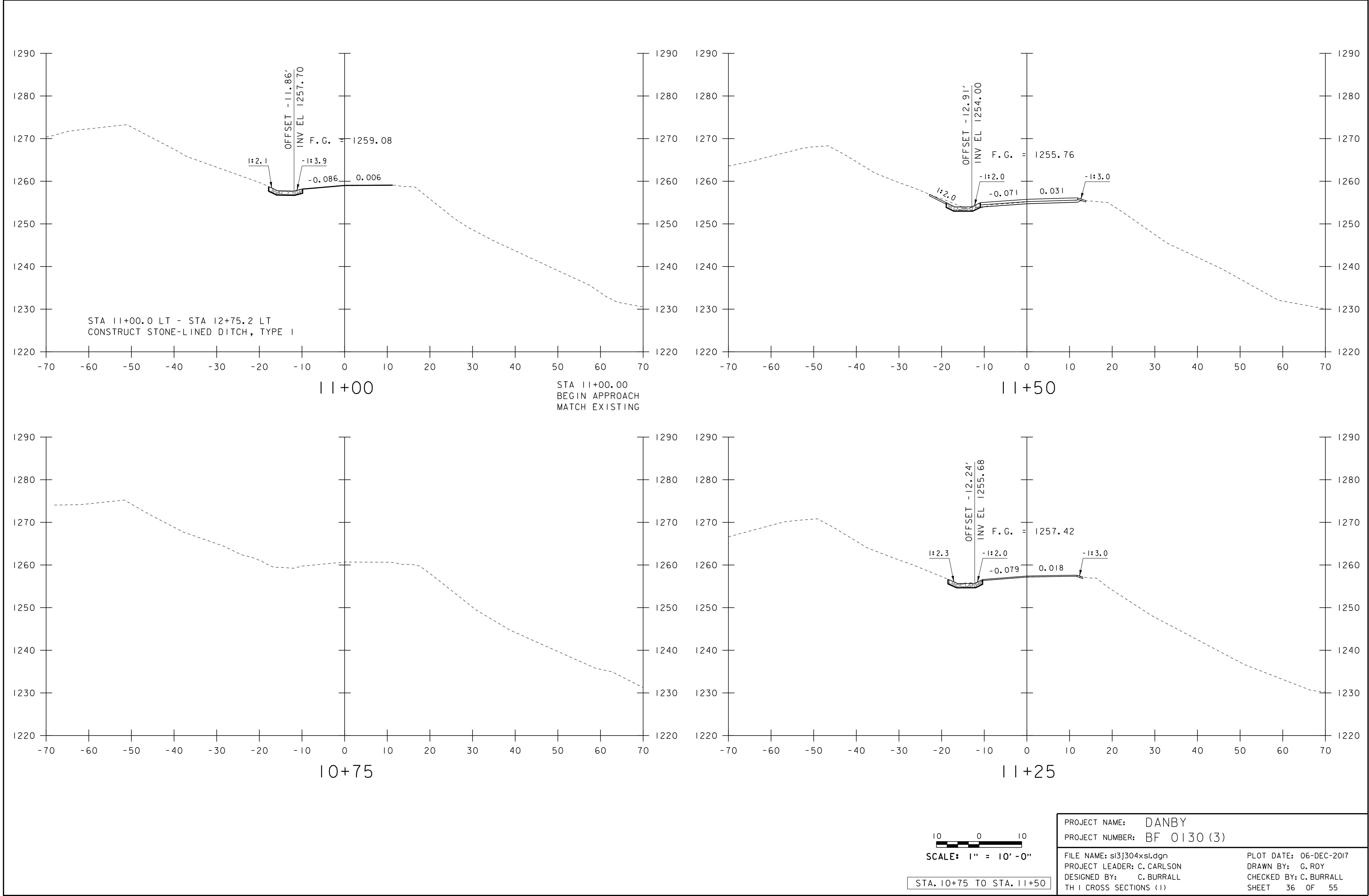
1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. * DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.

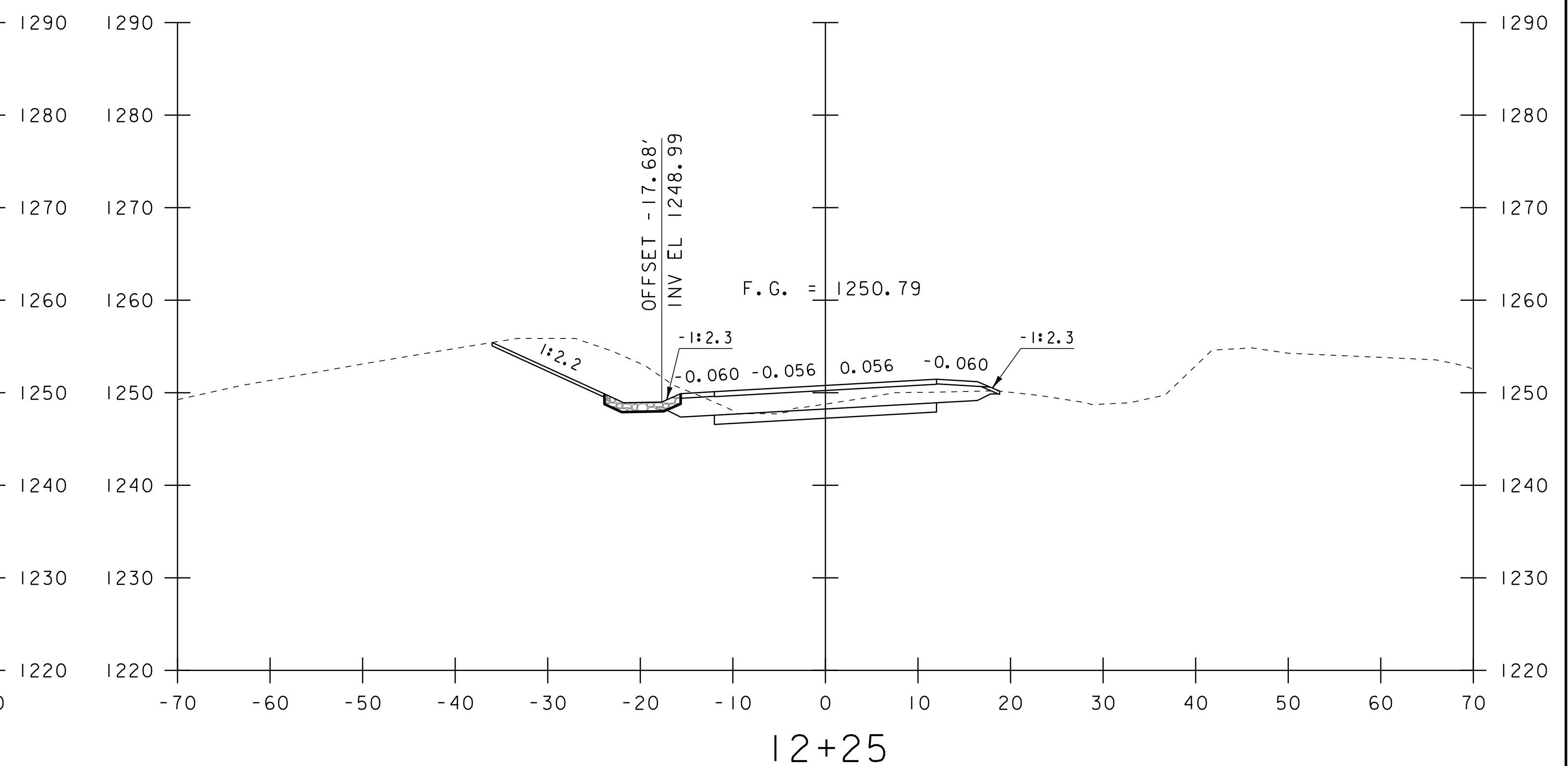
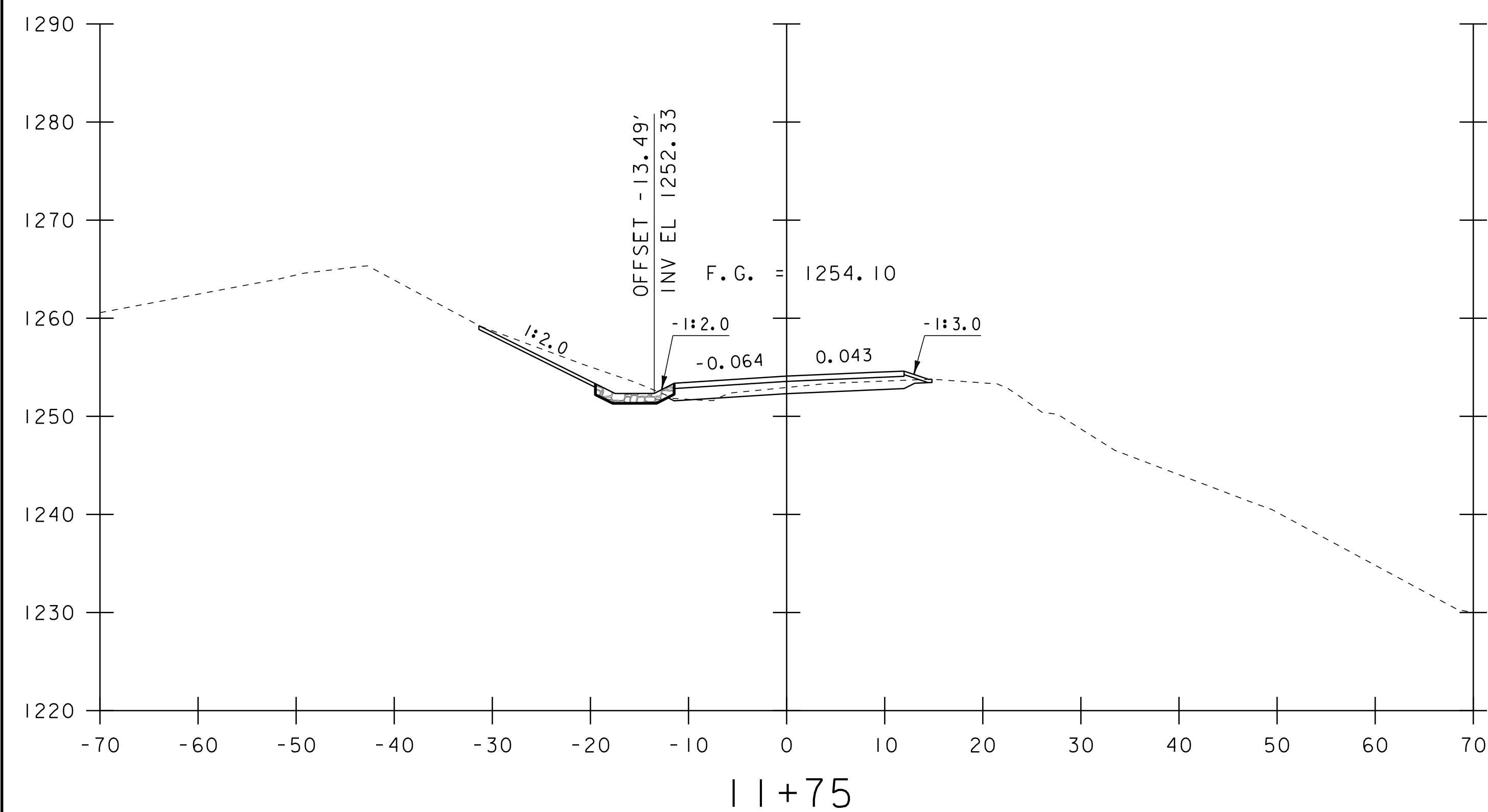
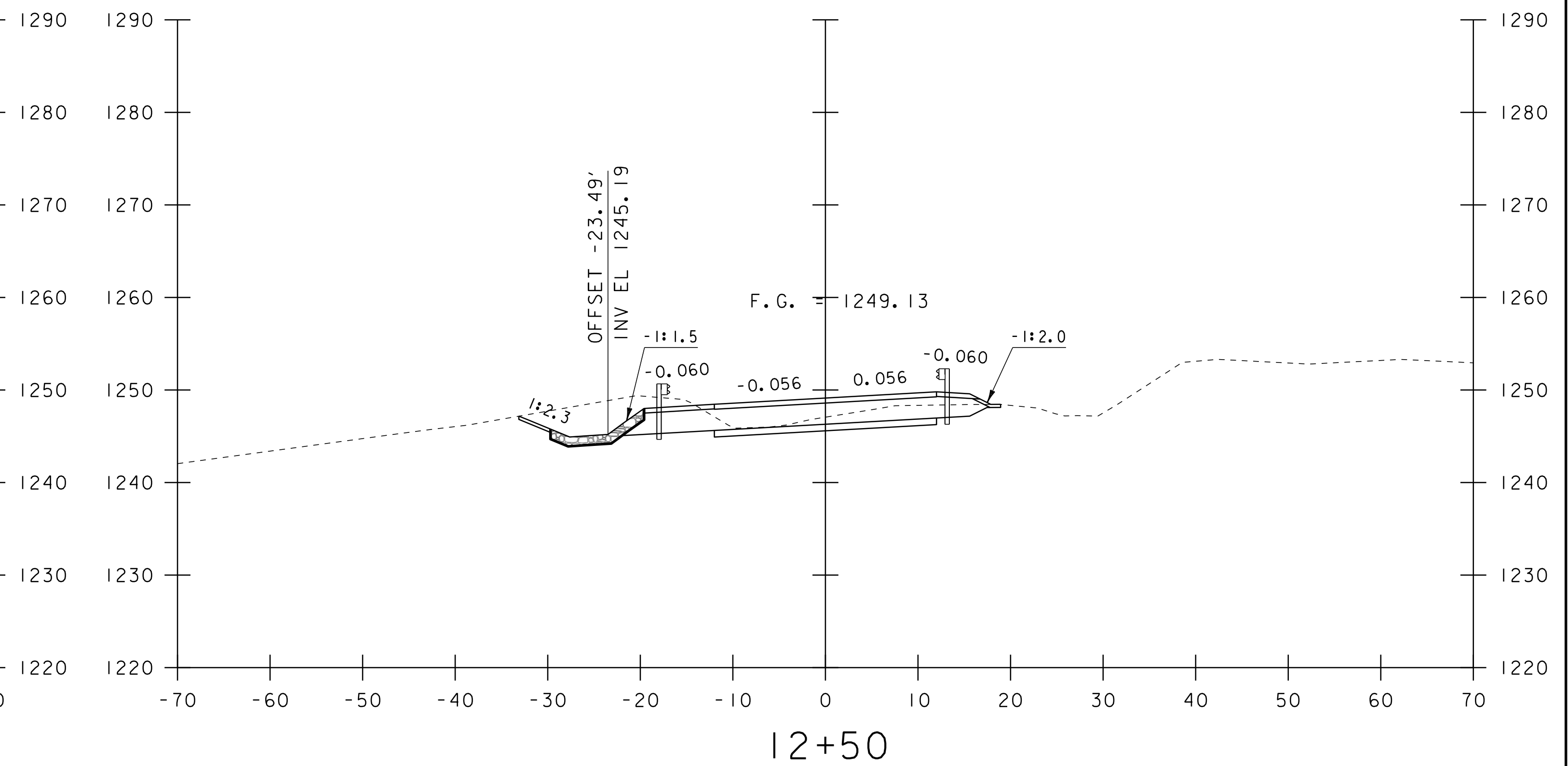
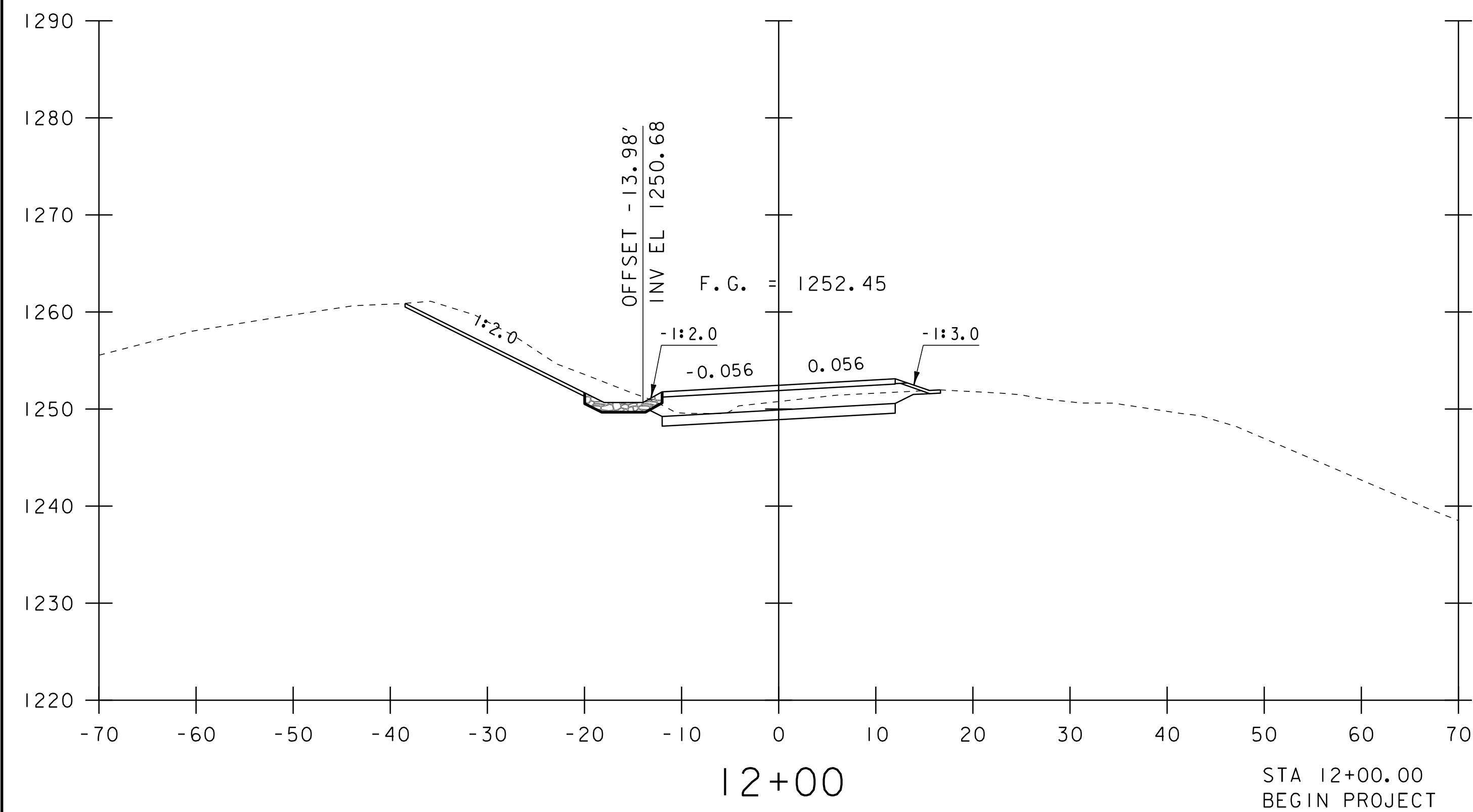


**~ REINFORCING STEEL CORROSION RESISTANCE LEVEL ~**

THE REINFORCING STEEL MARKS IN THIS SCHEDULE INDICATE THE REQUIRED BAR CORROSION RESISTANCE LEVEL. CORROSION RESISTANCE LEVEL IS DENOTED WITH A .2 FOR LEVEL TWO SUFFIX .3 FOR LEVEL THREE SUFFIX. 1 FOR LEVEL ONE IS TO BE OMITTED. BARS MARKED WITH A "G" IN THEIR SUFFIX SHALL BE THE APPROPRIATE 900.640, "SPECIAL PROVISION (REINFORCING BAR, GFRP)" ITEM. THE BAR MATERIAL TYPE AND BAR STEEL GRADE PROVIDED FOR EACH CORROSION LEVEL WILL BE RECORDED ON THE PLAN SET PI SHEET FOR AS-BUILT RECORD PLAN ARCHIVES.

PROJECT NAME: <b>DANBY</b>	
PROJECT NUMBER: <b>BF 0130(3)</b>	
FILE NAME: <b>s13j304rss.dgn</b>	PLOT DATE: <b>12/5/2017</b>
PROJECT MANAGER: <b>C. CARLSON</b>	DRAWN BY: <b>R. PELLETT</b>
DESIGNED BY: <b>K. CHEVIOT</b>	CHECKED BY: <b>C. BURRALL</b>
<b>REINFORCING STEEL SCHEDULE</b>	SHEET 35 OF 55

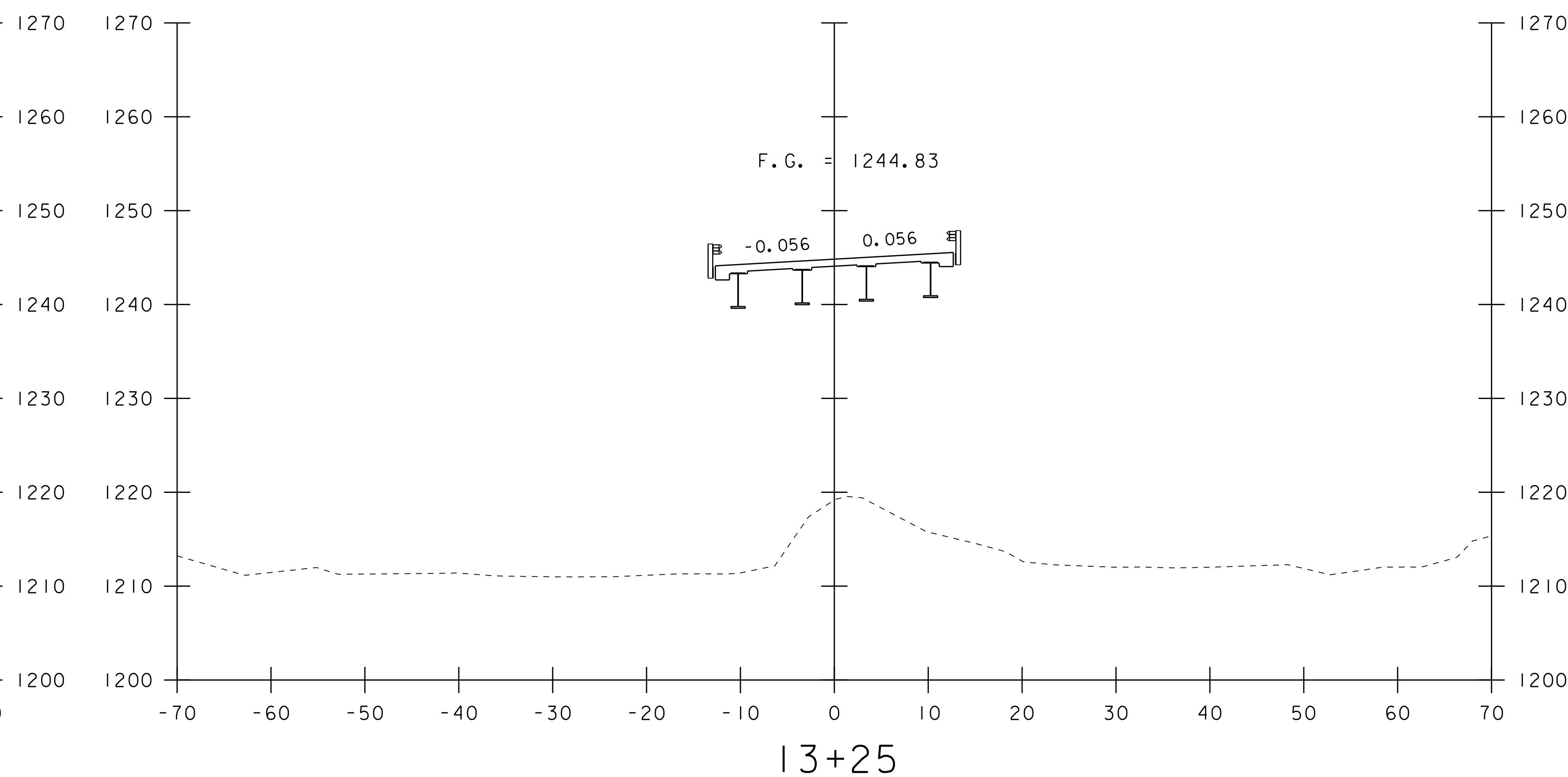
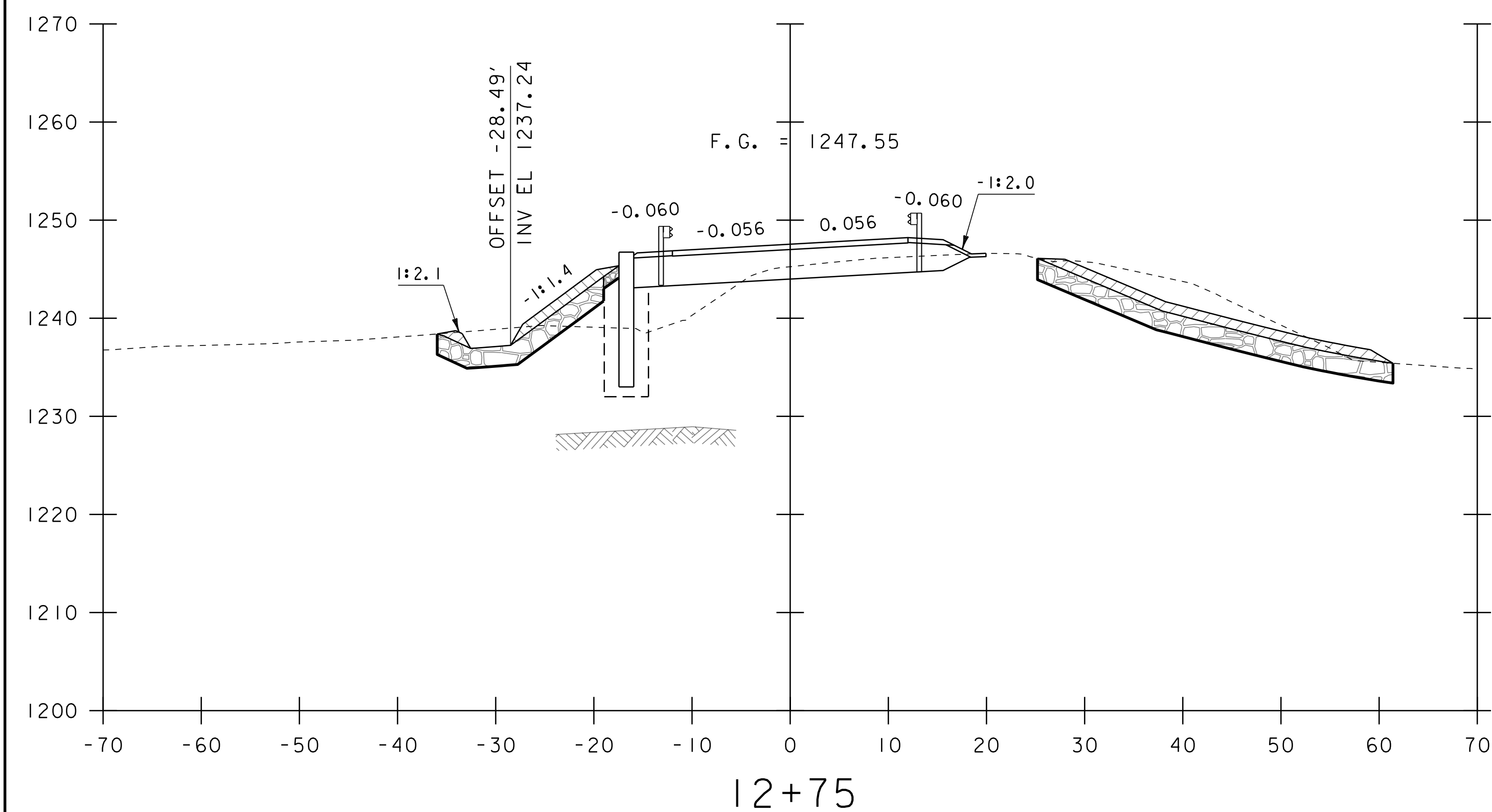
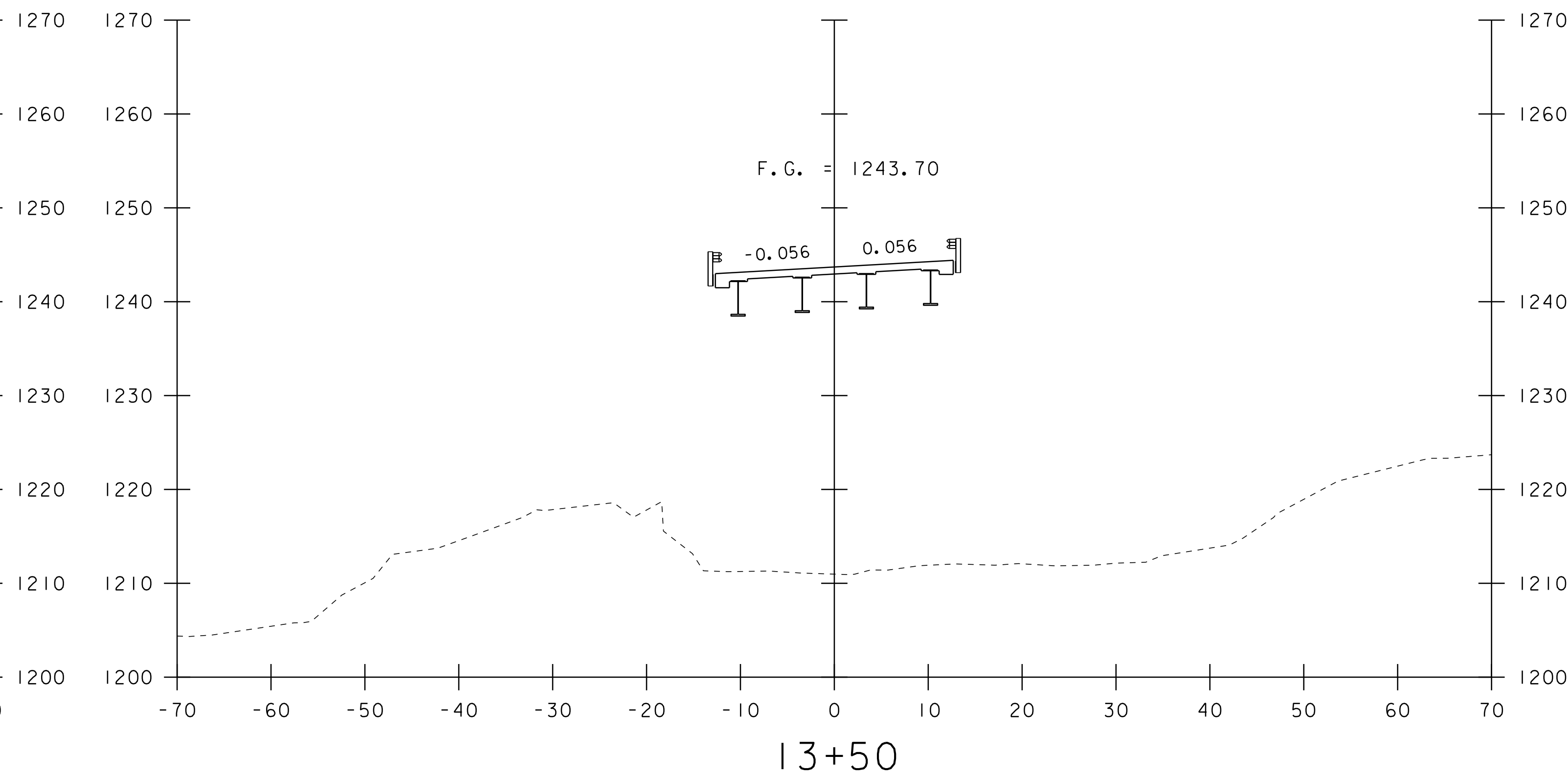
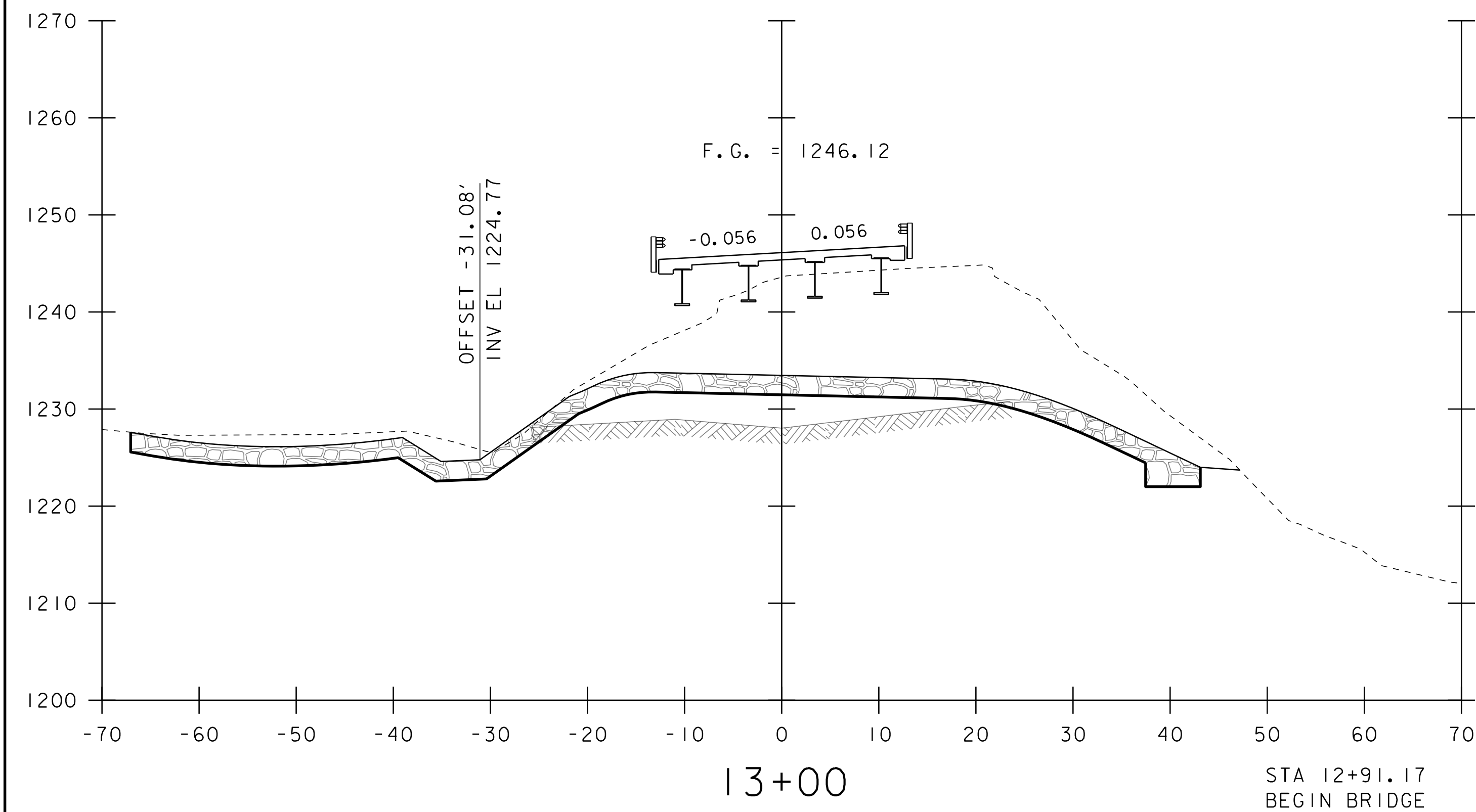




10 0 10  
SCALE: 1" = 10' - 0"

STA. 11+75 TO STA. 12+50

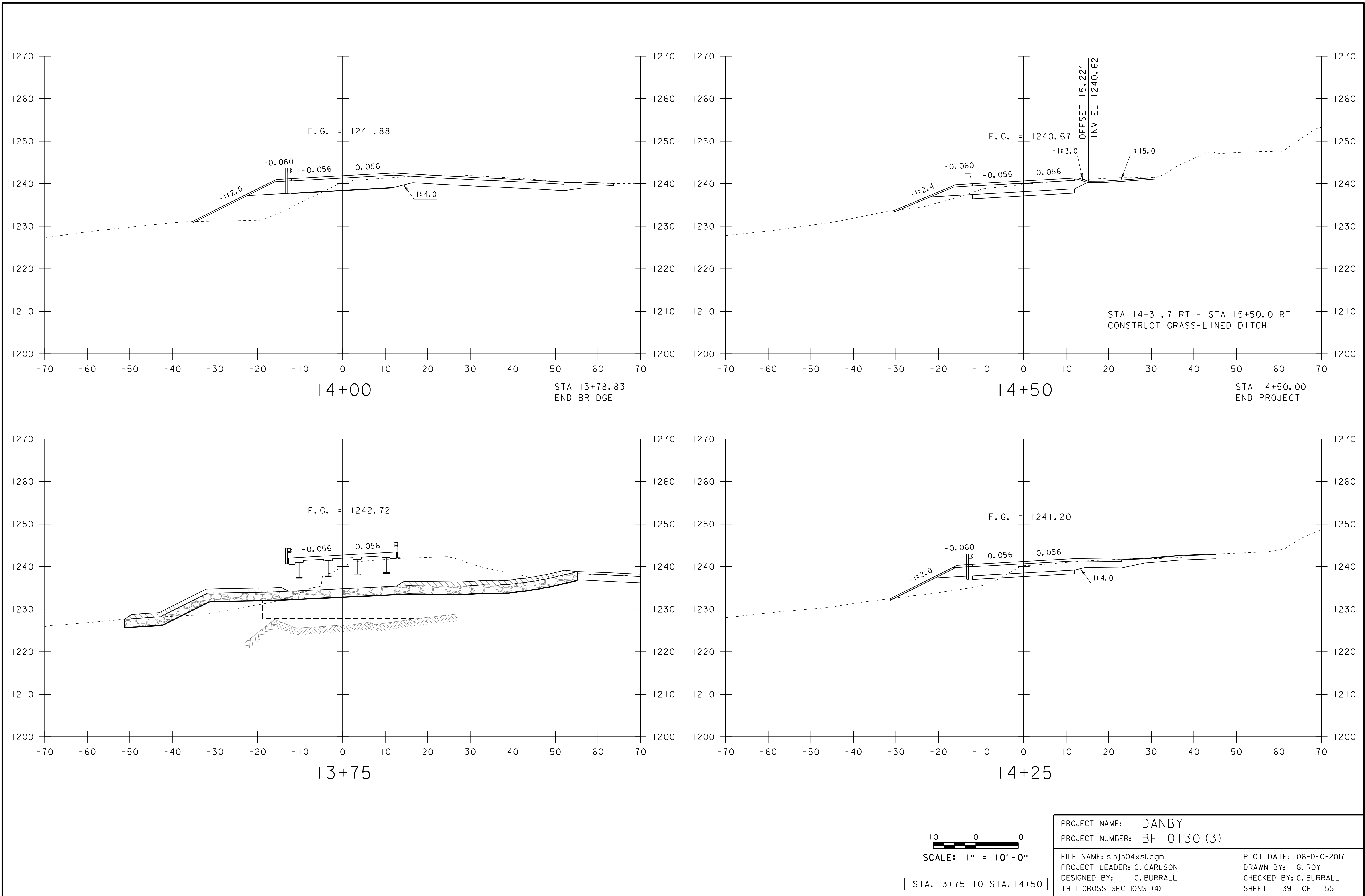
PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130 (3)	
FILE NAME: sl3j304xsl.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
TH 1 CROSS SECTIONS (2)	SHEET 37 OF 55

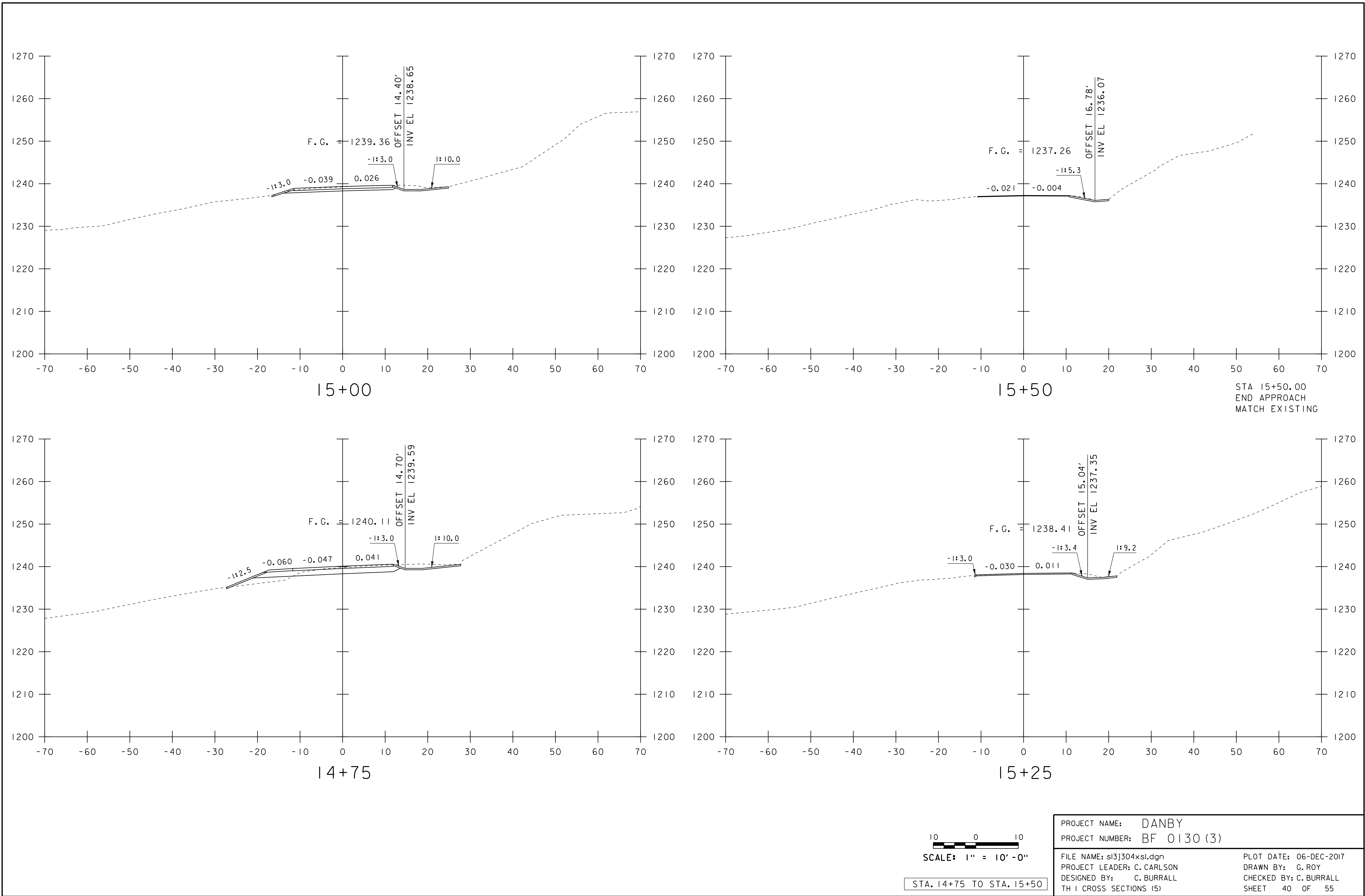


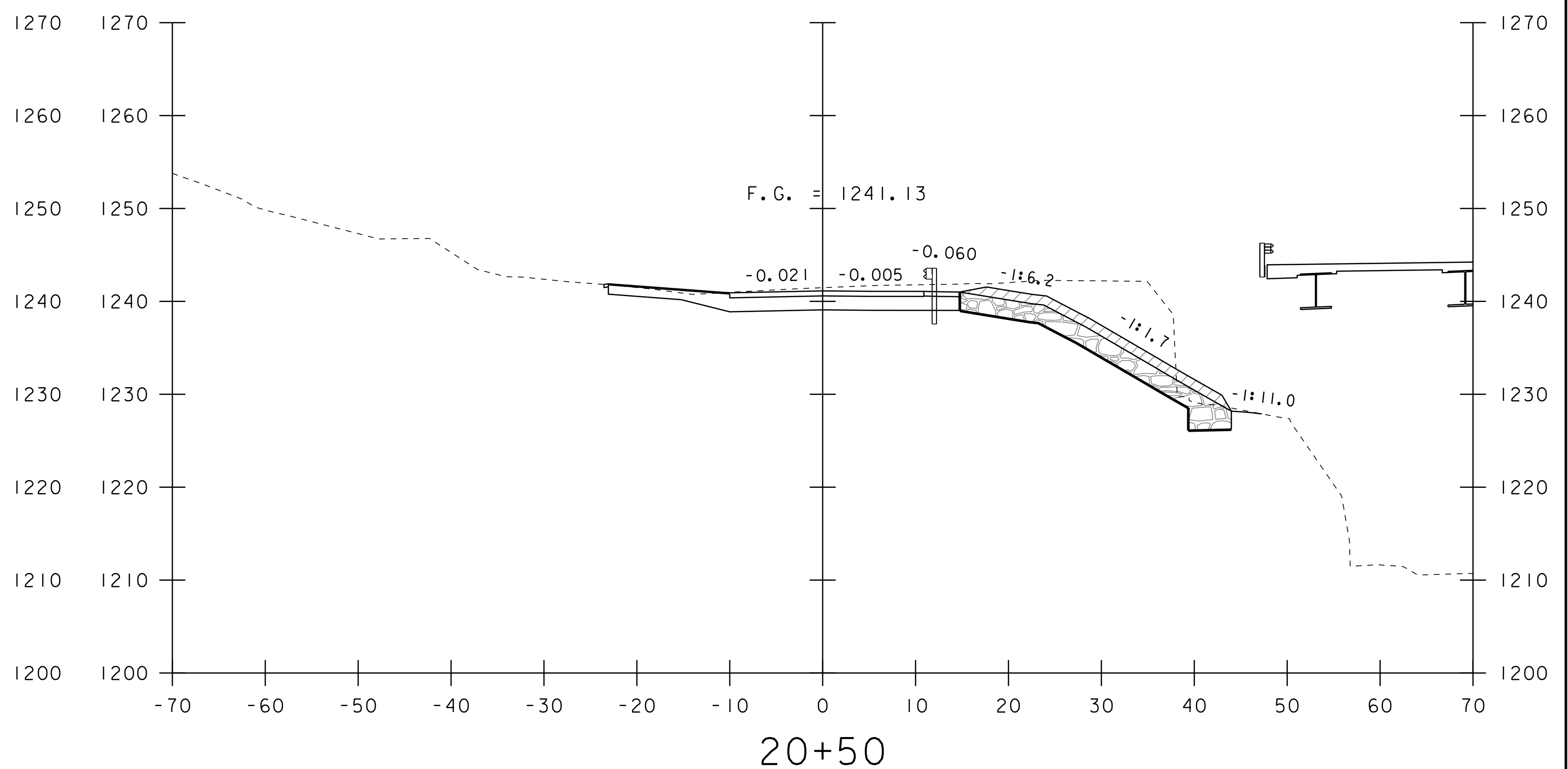
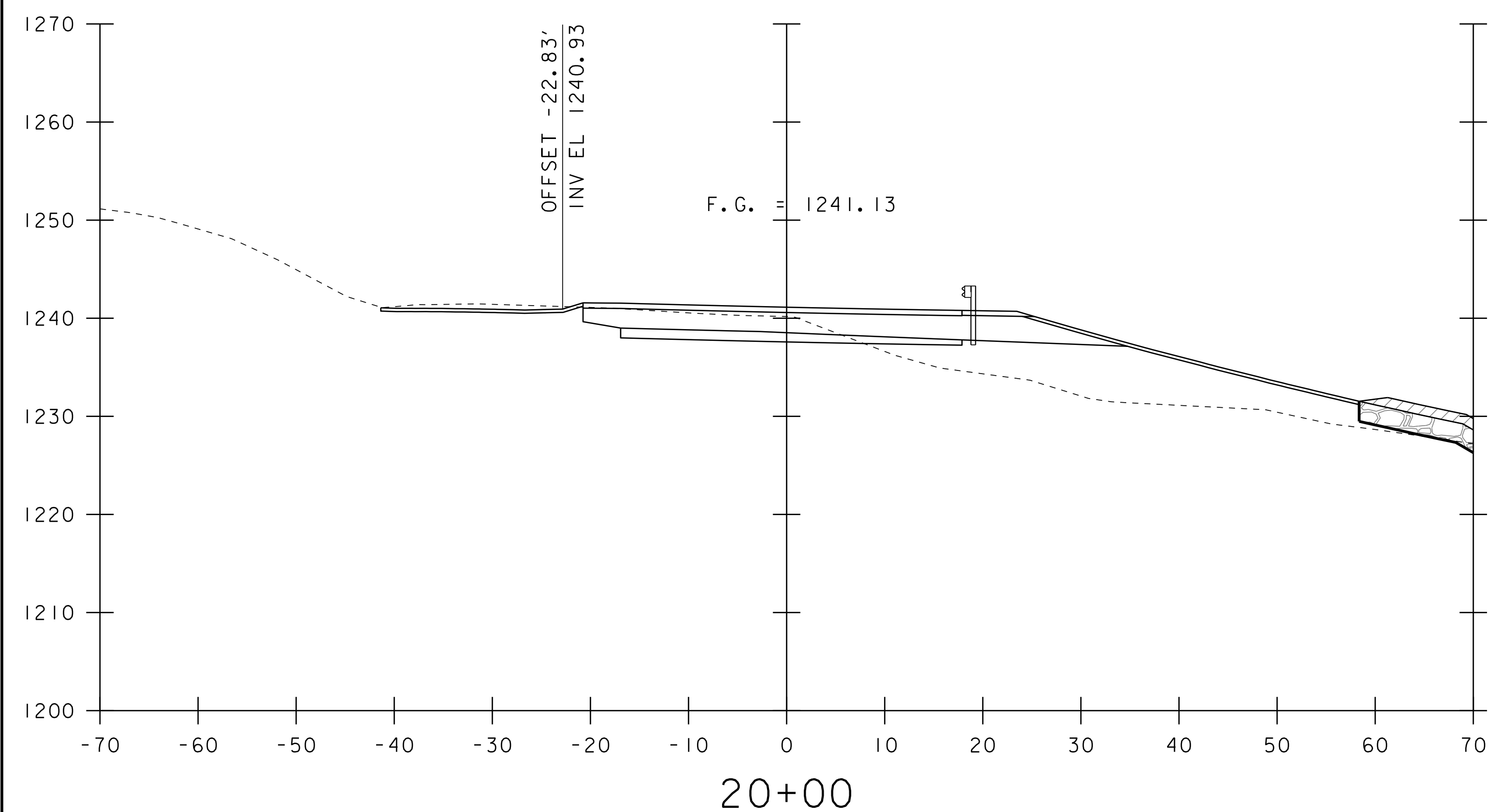
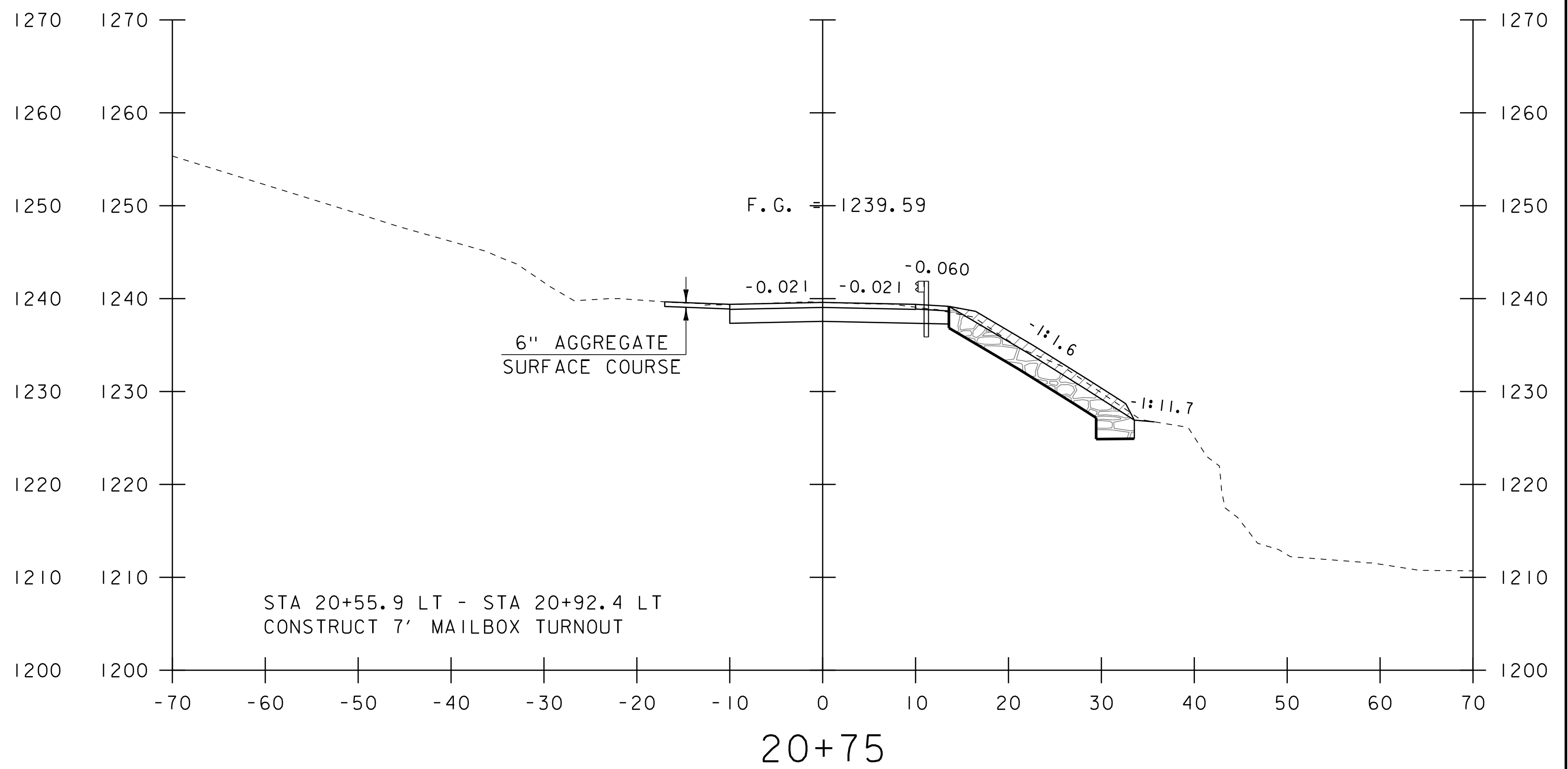
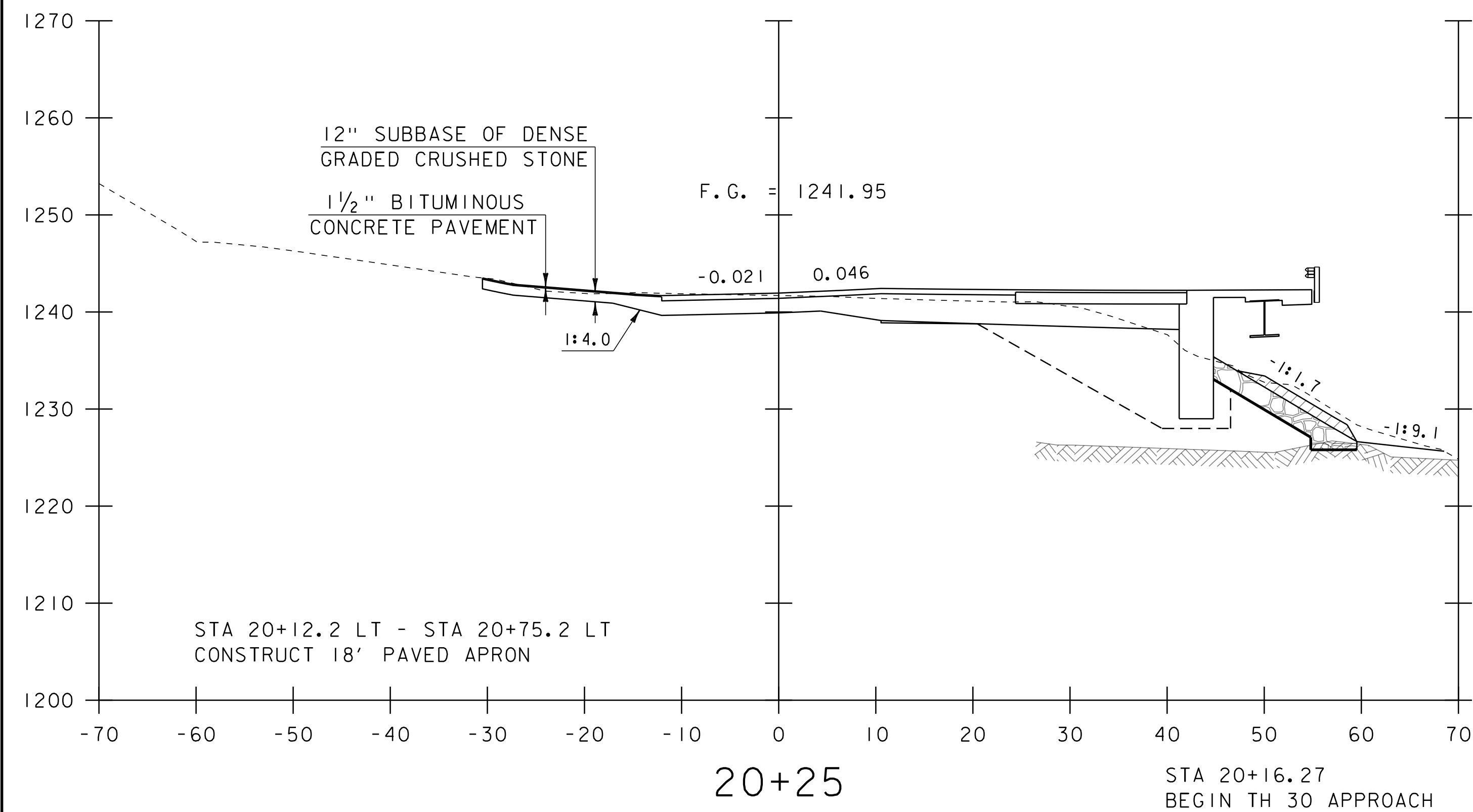
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SCALE: 1" = 10' - 0"

STA. 12+75 TO STA. 13+50

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130 (3)	
FILE NAME: sl3j304xsl.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
TH 1 CROSS SECTIONS (3)	SHEET 38 OF 55







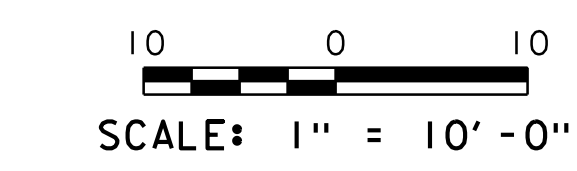
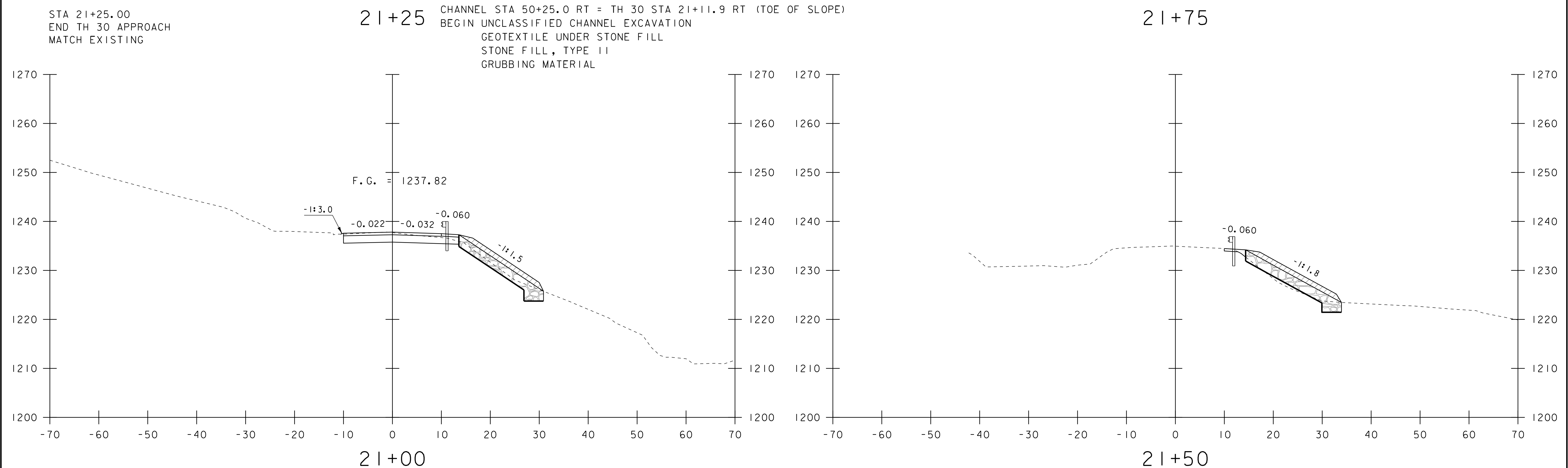
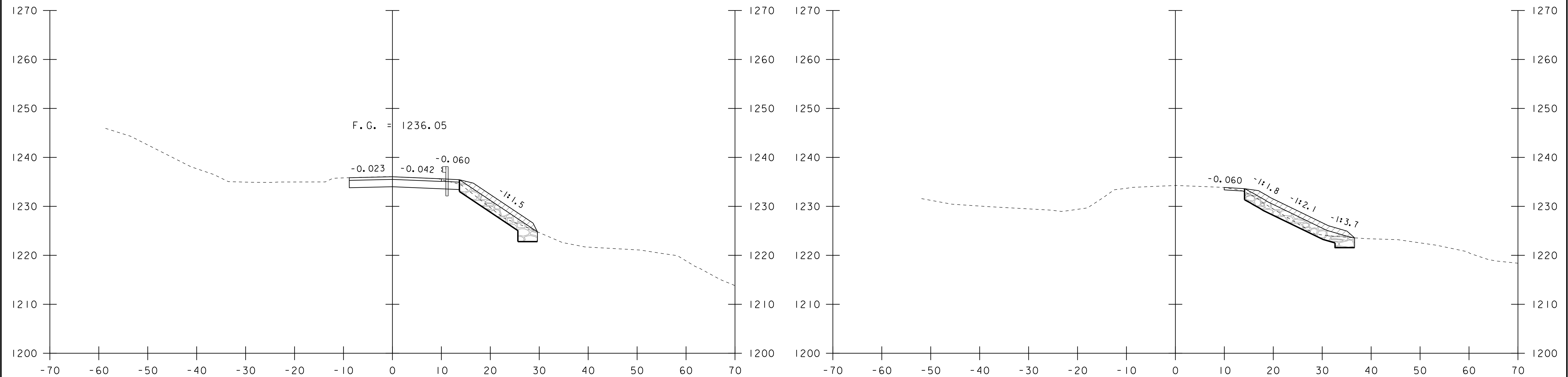
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SCALE: 1" = 10' - 0"

STA. 20+00 TO STA. 20+75

PROJECT NAME: DANBY  
PROJECT NUMBER: BF 0130 (3)

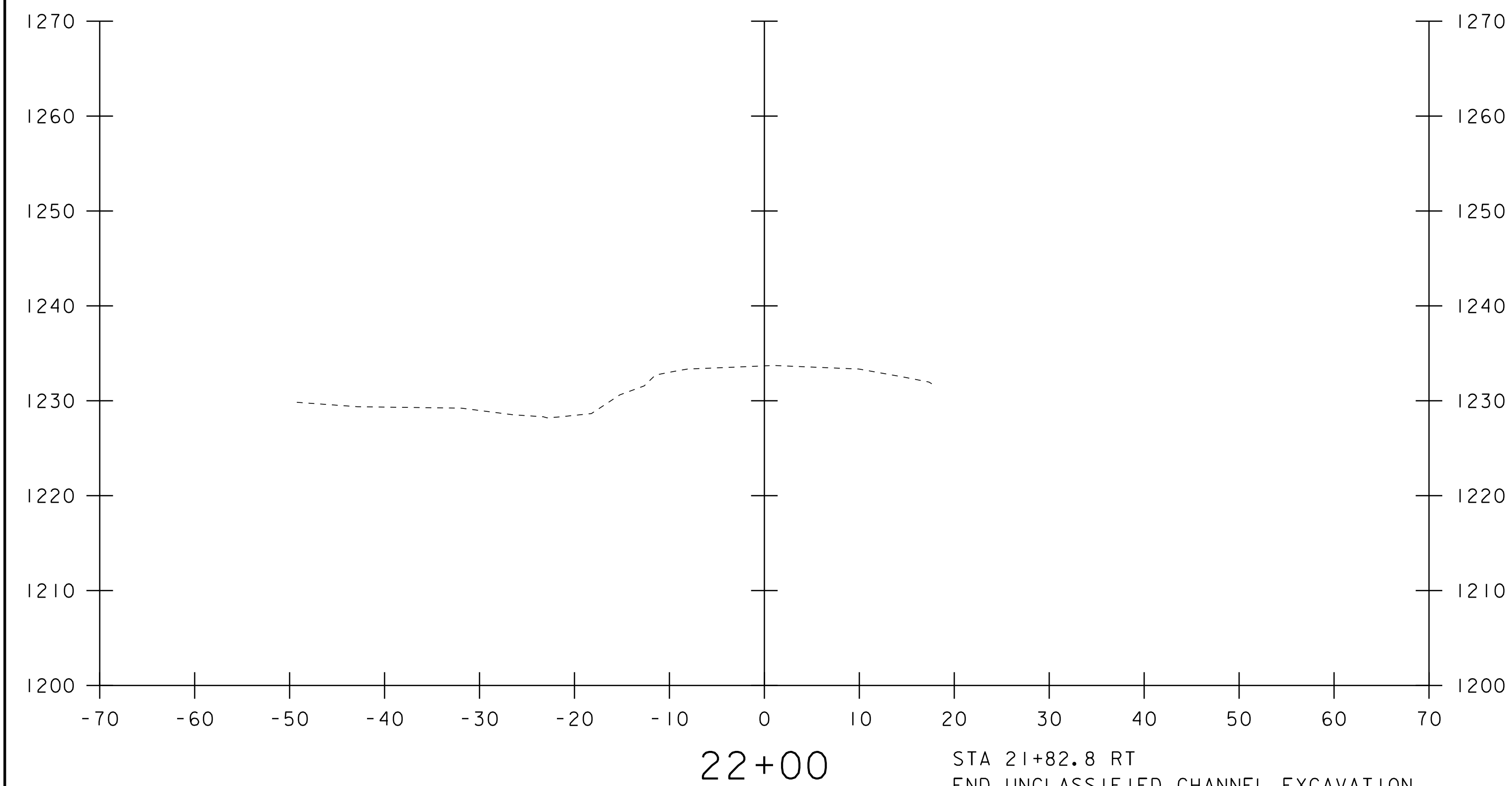
FILE NAME: sl3j304xsl.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
TH 30 CROSS SECTIONS (1)

PLOT DATE: 06-DEC-2017  
DRAWN BY: G. ROY  
CHECKED BY: C. BURRALL  
SHEET 41 OF 55



STA. 21+00 TO STA. 21+75

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130 (3)	
FILE NAME: sl3j304xsl.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
TH 30 CROSS SECTIONS (2)	SHEET 42 OF 55



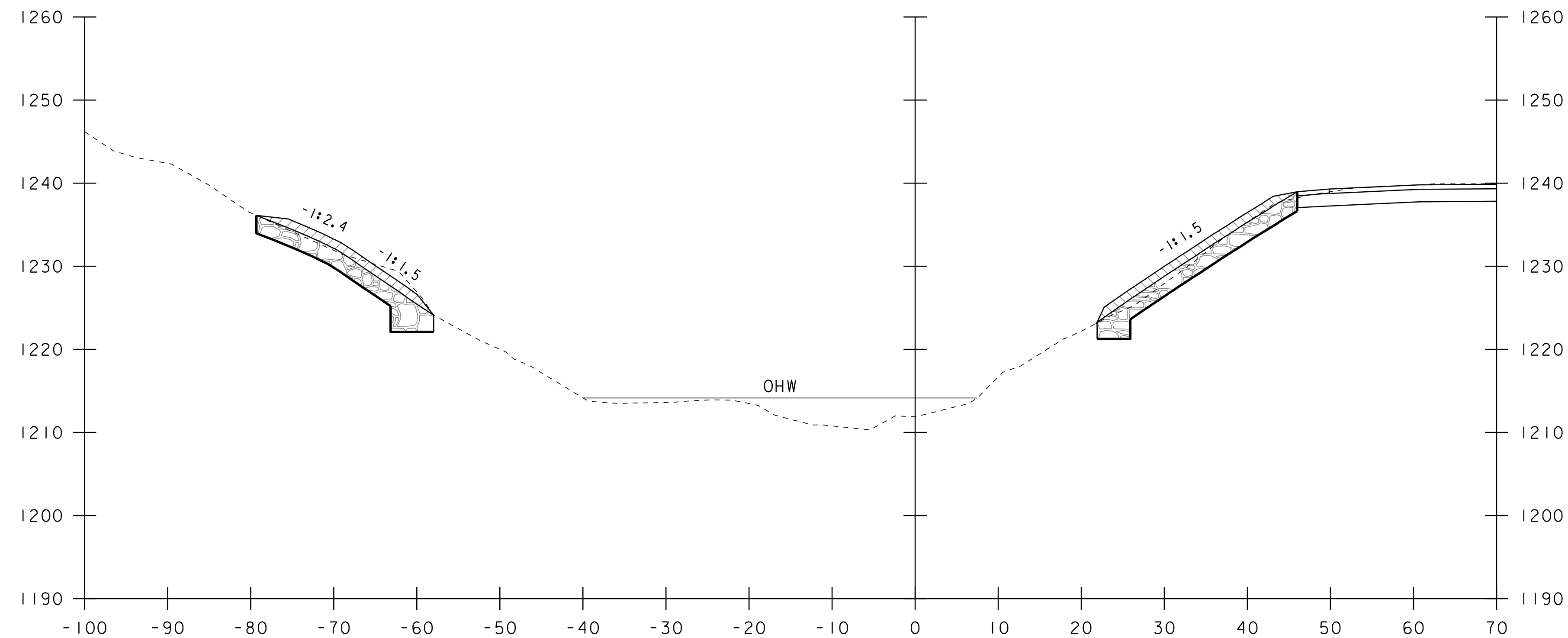
22+00

STA 21+82.8 RT  
END UNCLASSIFIED CHANNEL EXCAVATION  
GEOTEXTILE UNDER STONE FILL  
STONE FILL, TYPE II  
GRUBBING MATERIAL

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

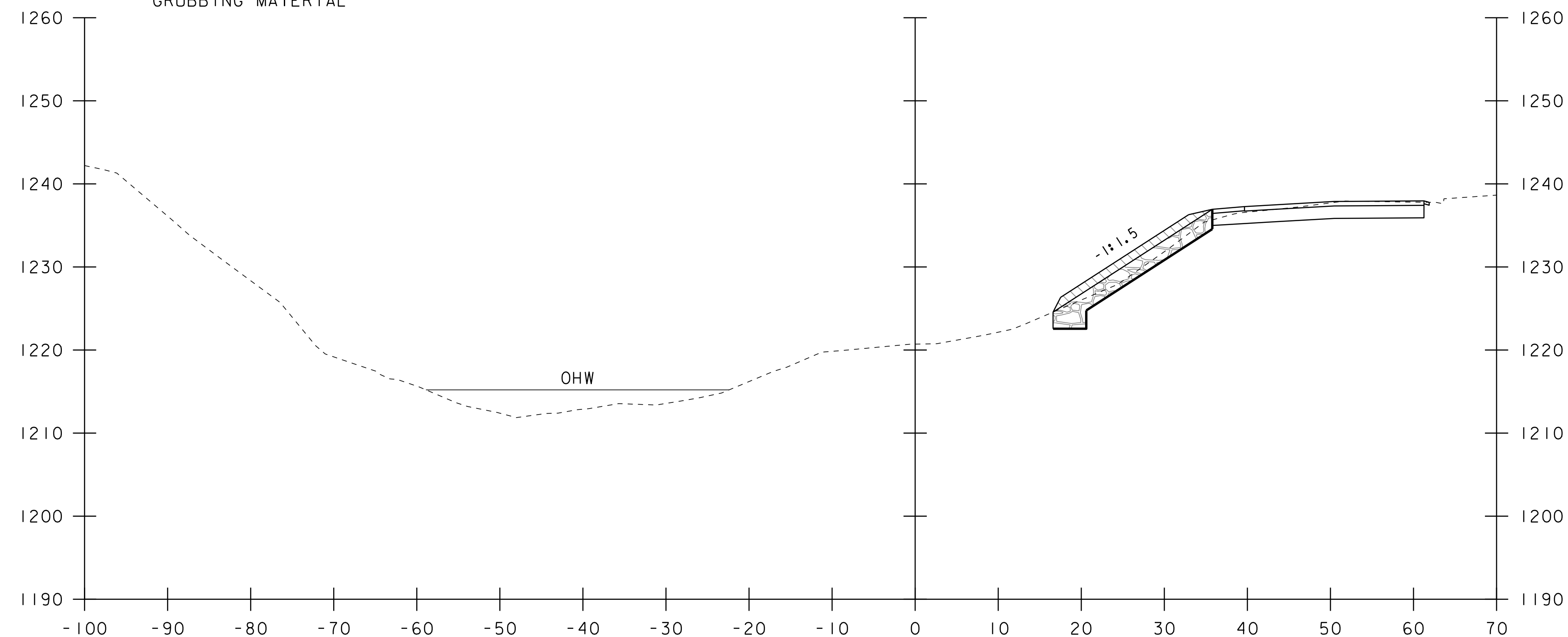
STA. 22+00 TO STA. 22+00

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130 (3)	
FILE NAME: sl3j304xsl.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
TH 30 CROSS SECTIONS (3)	SHEET 43 OF 55



STA 50+38.2 LT  
BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
GEOTEXTILE UNDER STONE FILL  
STONE FILL, TYPE II  
GRUBBING MATERIAL

50+50



TH 30 STA 21+11.9 RT = CHANNEL STA 50+25.0 RT (TOE OF SLOPE)  
BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
GEOTEXTILE UNDER STONE FILL  
STONE FILL, TYPE II  
GRUBBING MATERIAL

50+25

NOTE:

LEDGE PROFILES SHOWN ARE APPROXIMATE AND MAY DIFFER IN FIELD. STONE FILL, TYPE II SHALL BE PLACED AS SHOWN IN CHANNEL SECTIONS BUT ONLY NEEDS TO BE SLIGHTLY KEYED INTO ANY EXPOSED BEDROCK FOR STABILITY. ADDITIONAL BEDROCK EXCAVATION WILL NOT BE REQUIRED JUST TO MATCH PROPOSED STONE FILL AS SHOWN.

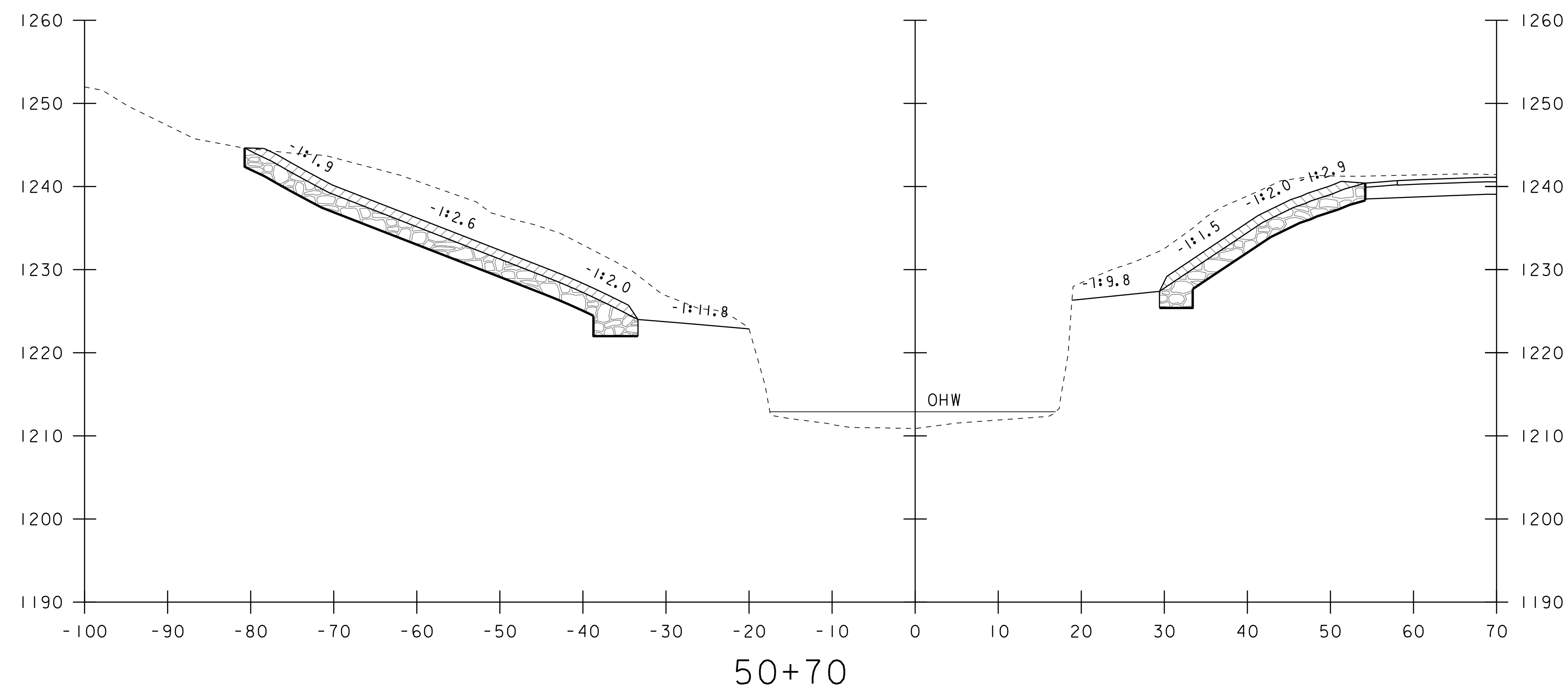
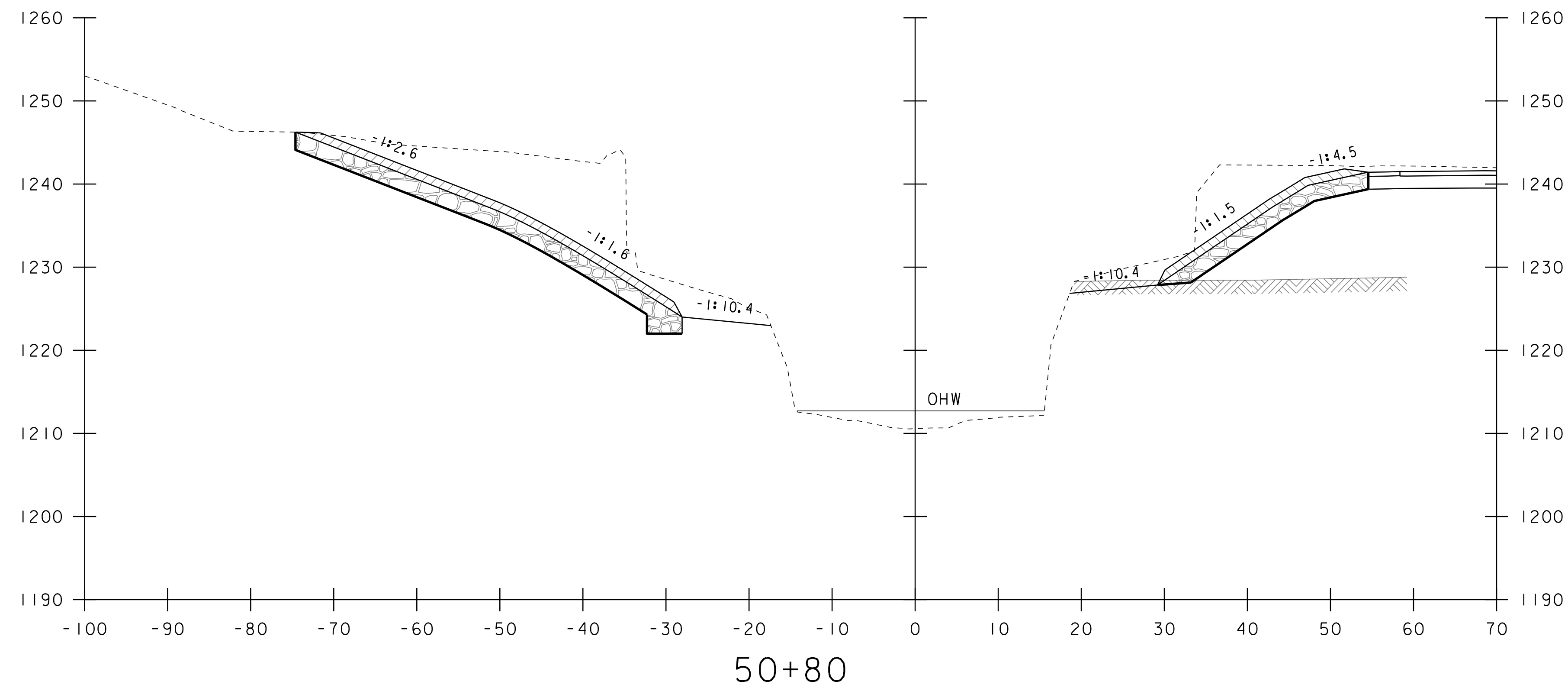
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SCALE: 1" = 10'-0"

STA. 50+25 TO STA. 50+50

PROJECT NAME: DANBY  
PROJECT NUMBER: BF 0130 (3)

FILE NAME: sl3j304xsl.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
CHANNEL CROSS SECTIONS (1)

PLOT DATE: 06-DEC-2017  
DRAWN BY: G. ROY  
CHECKED BY: C. BURRALL  
SHEET 44 OF 55



NOTE:

LEDGE PROFILES SHOWN ARE APPROXIMATE AND MAY DIFFER IN FIELD. STONE FILL, TYPE II SHALL BE PLACED AS SHOWN IN CHANNEL SECTIONS BUT ONLY NEEDS TO BE SLIGHTLY KEYED INTO ANY EXPOSED BEDROCK FOR STABILITY. ADDITIONAL BEDROCK EXCAVATION WILL NOT BE REQUIRED JUST TO MATCH PROPOSED STONE FILL AS SHOWN.

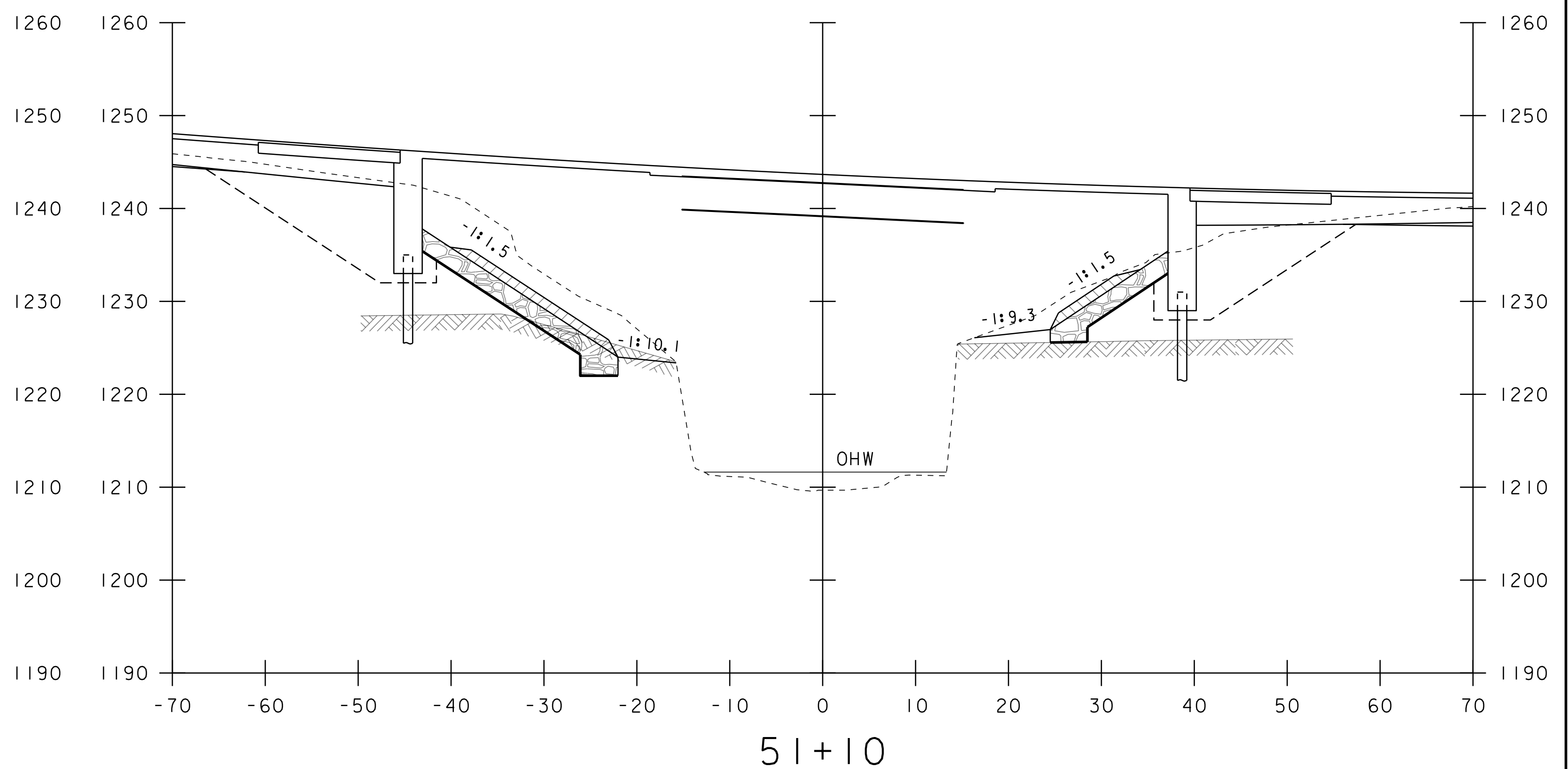
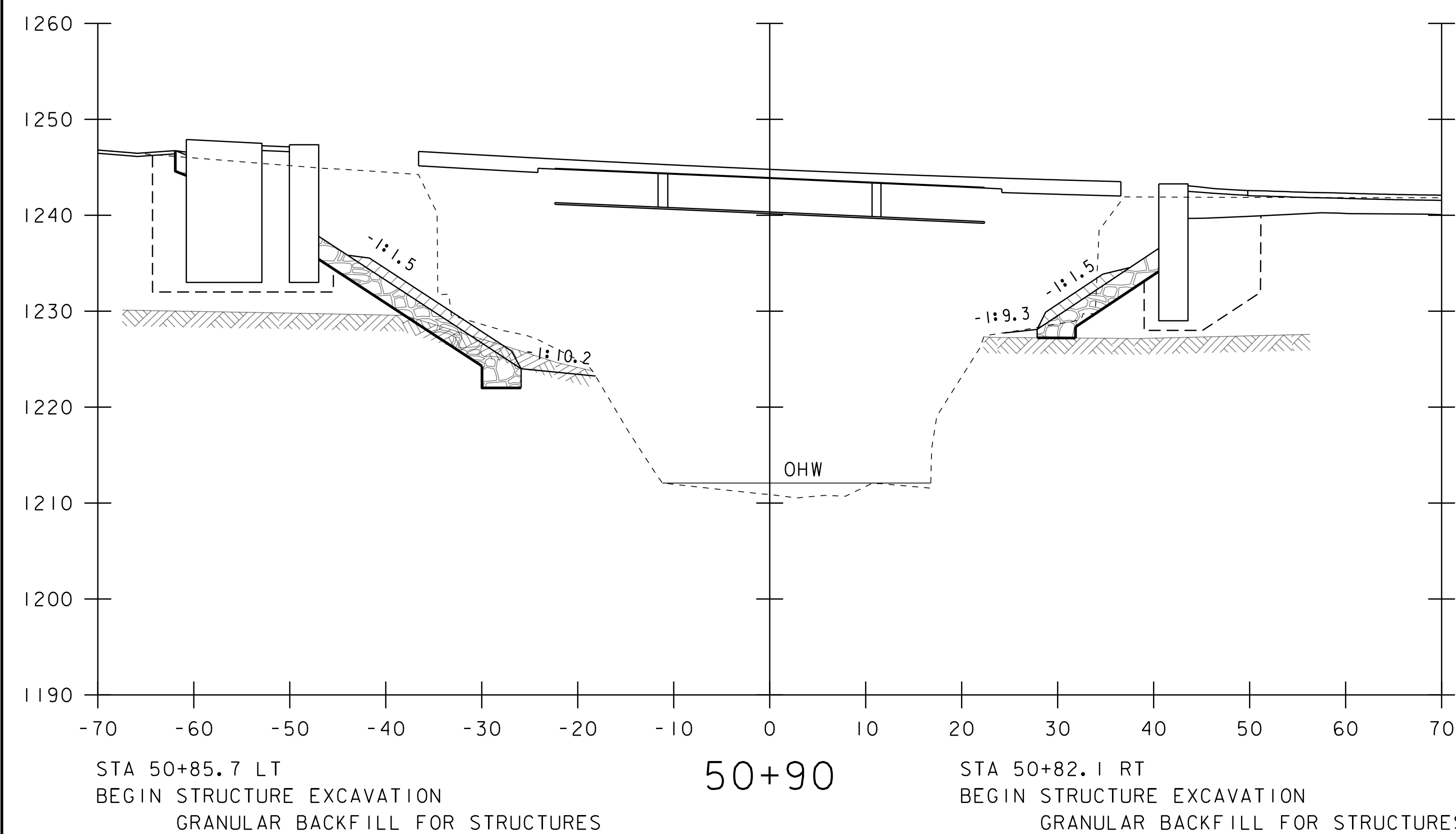
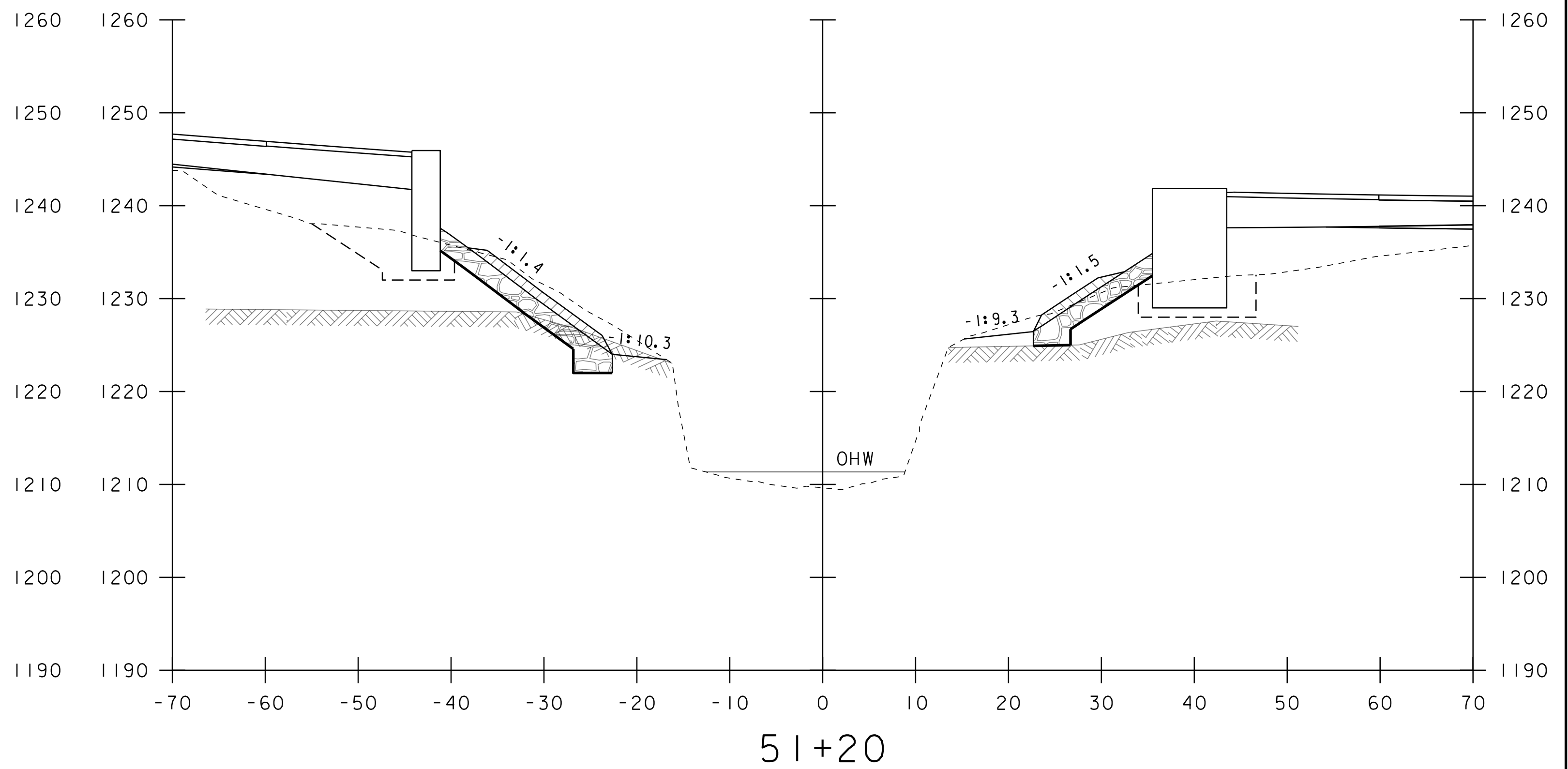
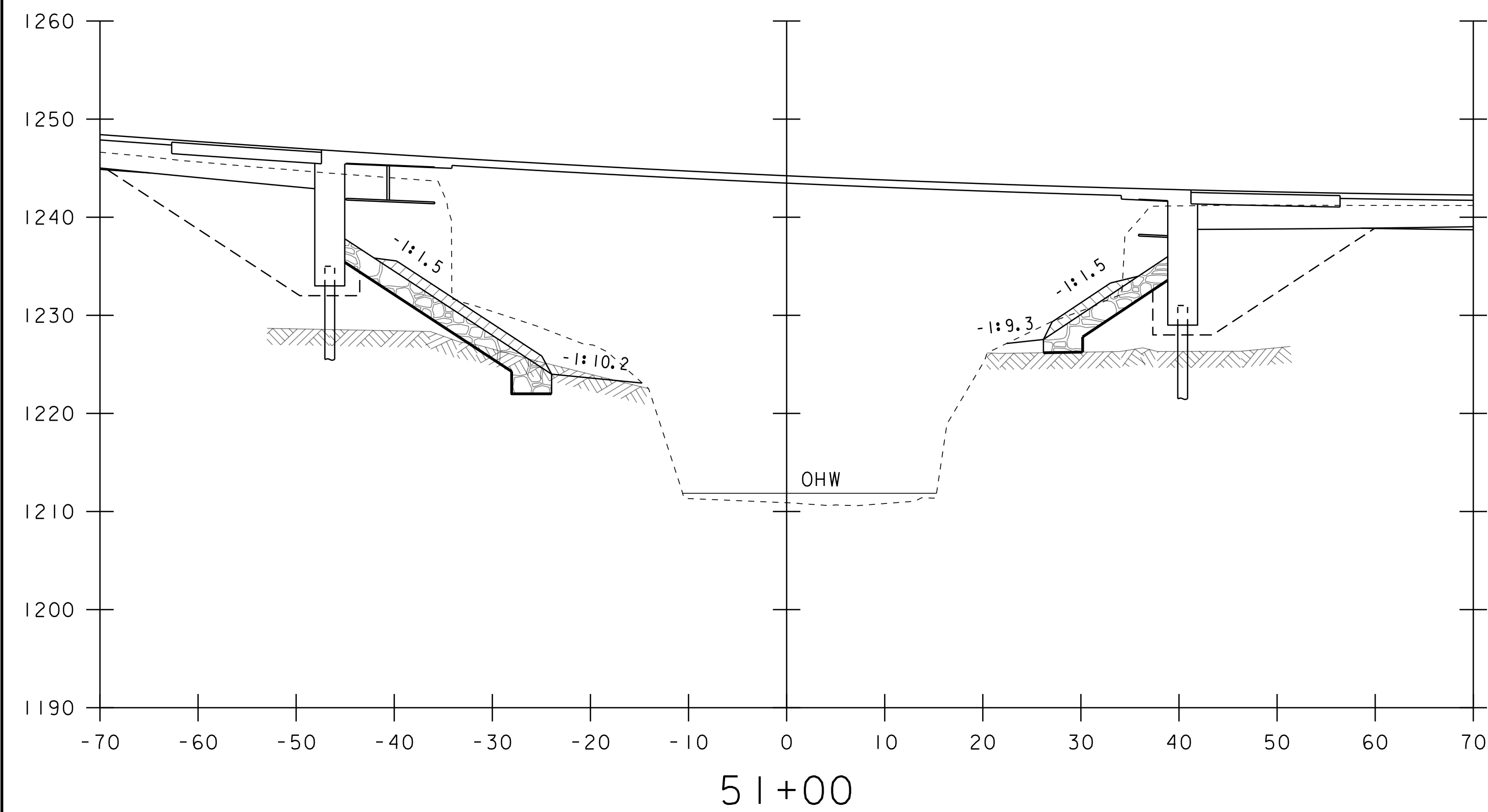
10 0 10  
SCALE: 1" = 10' - 0"

STA. 50+70 TO STA. 50+80

PROJECT NAME: DANBY  
PROJECT NUMBER: BF 0130 (3)

FILE NAME: sl3j304xsl.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
CHANNEL CROSS SECTIONS (2)

PLOT DATE: 06-DEC-2017  
DRAWN BY: G. ROY  
CHECKED BY: C. BURRALL  
SHEET 45 OF 55



NOTE:

LEDGE PROFILES SHOWN ARE APPROXIMATE AND MAY DIFFER IN FIELD. STONE FILL, TYPE II SHALL BE PLACED AS SHOWN IN CHANNEL SECTIONS BUT ONLY NEEDS TO BE SLIGHTLY KEYED INTO ANY EXPOSED BEDROCK FOR STABILITY. ADDITIONAL BEDROCK EXCAVATION WILL NOT BE REQUIRED JUST TO MATCH PROPOSED STONE FILL AS SHOWN.

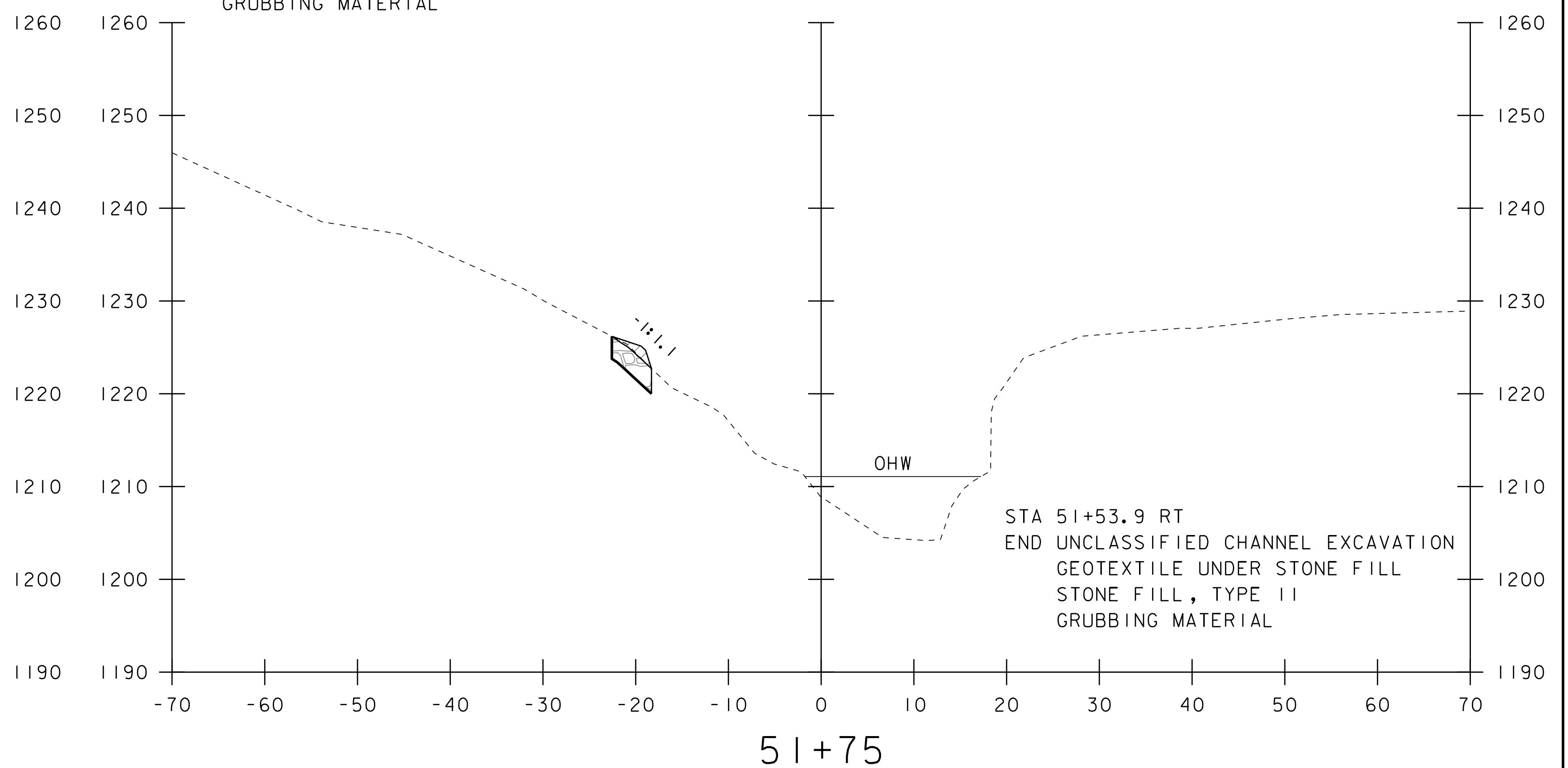
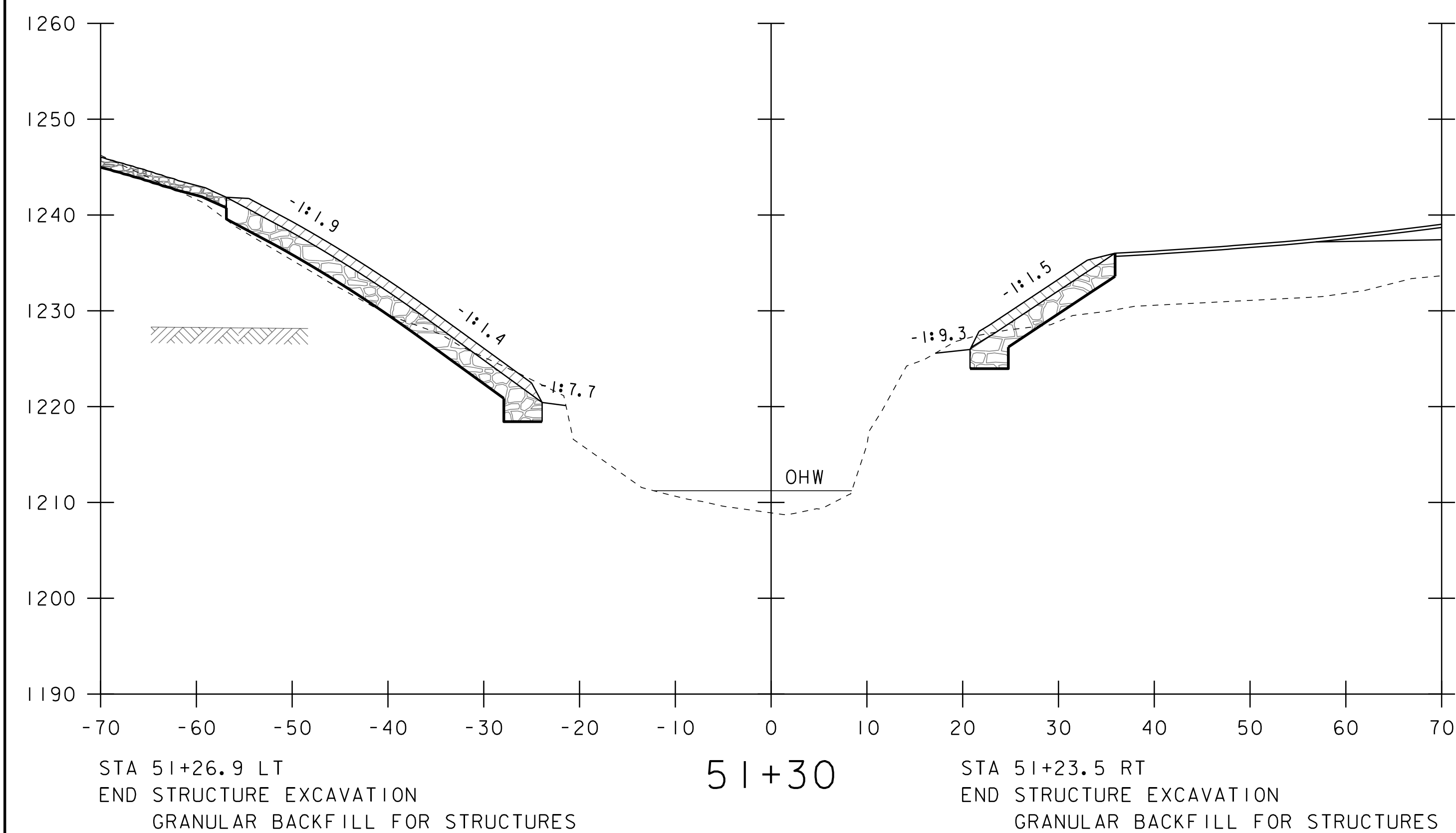
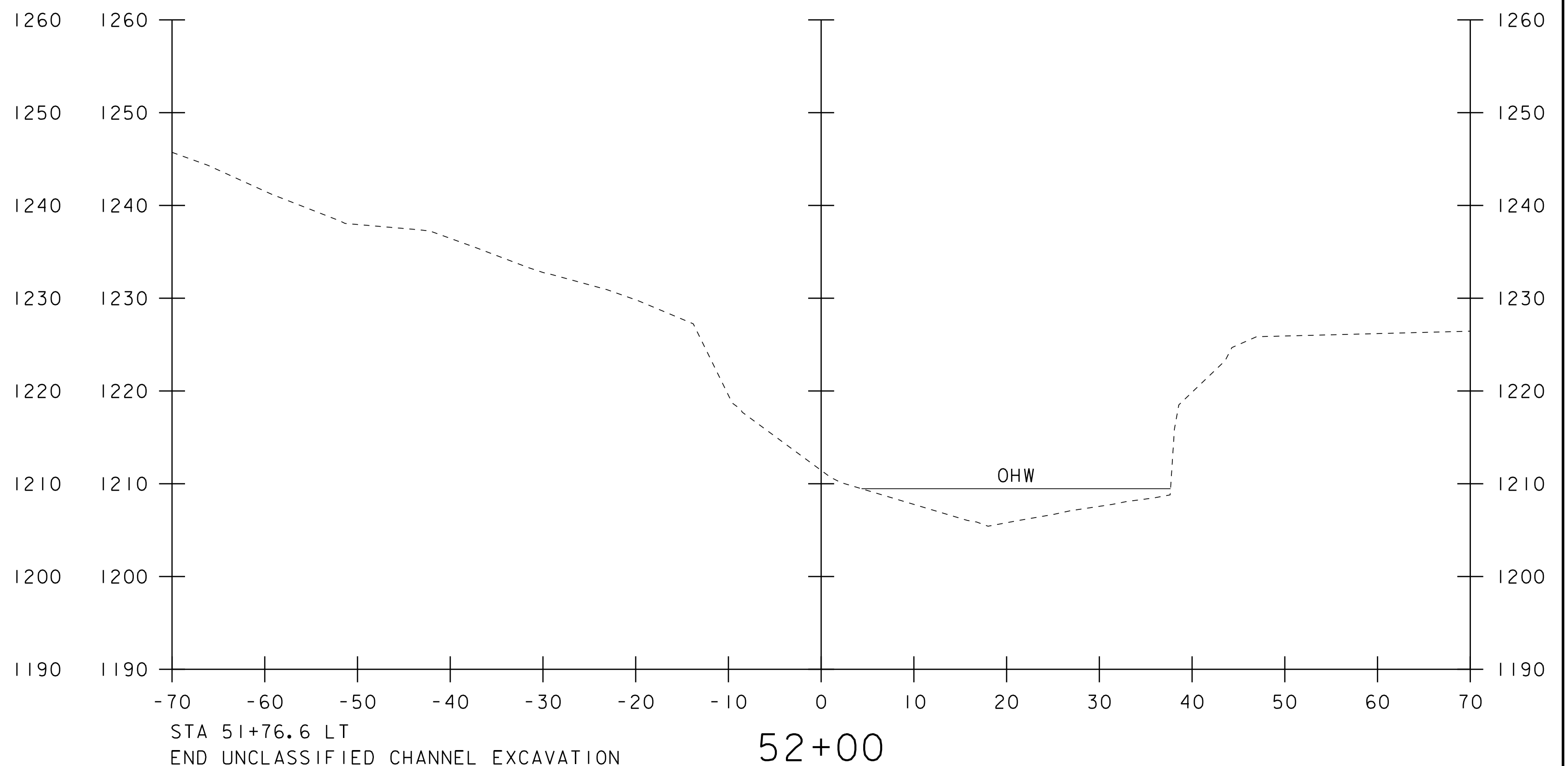
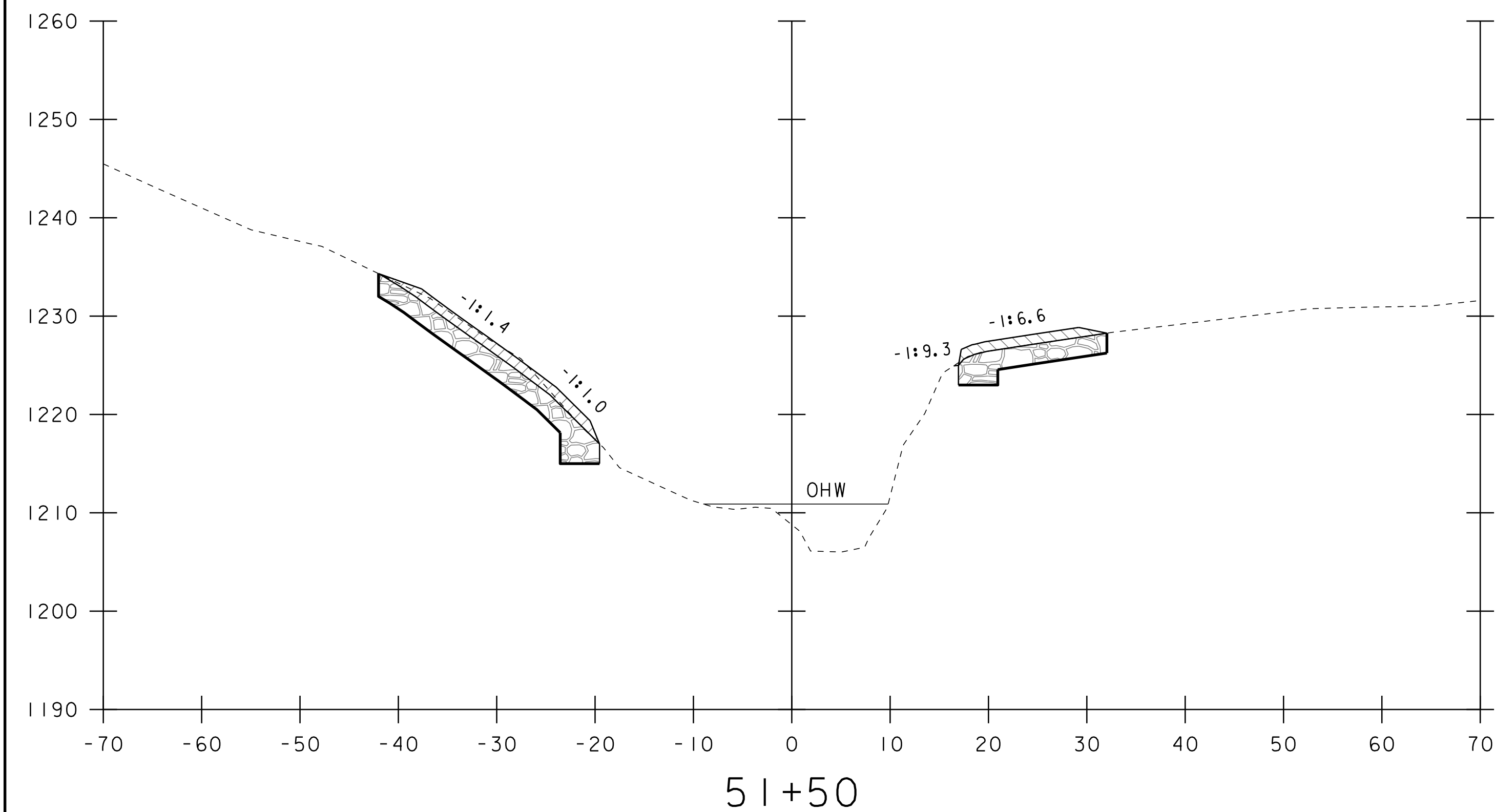
10 0 10  
SCALE: 1" = 10' - 0"

STA. 50+90 TO STA. 51+20

PROJECT NAME: DANBY  
PROJECT NUMBER: BF 0130 (3)

FILE NAME: sl3j304xsl.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
CHANNEL CROSS SECTIONS (3)

PLOT DATE: 06-DEC-2017  
DRAWN BY: G. ROY  
CHECKED BY: C. BURRALL  
SHEET 46 OF 55



NOTE:

LEDGE PROFILES SHOWN ARE APPROXIMATE AND MAY DIFFER IN FIELD. STONE FILL, TYPE II SHALL BE PLACED AS SHOWN IN CHANNEL SECTIONS BUT ONLY NEEDS TO BE SLIGHTLY KEYED INTO ANY EXPOSED BEDROCK FOR STABILITY. ADDITIONAL BEDROCK EXCAVATION WILL NOT BE REQUIRED JUST TO MATCH PROPOSED STONE FILL AS SHOWN.

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

STA. 51+30 TO STA. 52+00

PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130 (3)	
FILE NAME: sl3j304xsl.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
CHANNEL CROSS SECTIONS (4)	SHEET 47 OF 55

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF THE EXISTING BRIDGE ALONG WITH RELATED APPROACH ROADWAY AND CHANNEL WORK. THE EXISTING BRIDGE IS A SINGLE SPAN CONCRETE DECK ON ROLLED BEAMS. THE NEW BRIDGE WILL BE A BARE CONCRETE DECK ON CURVED STEEL GIRDERS BUILT ON CONCRETE SPREAD FOOTING ABUTMENTS. THE SPAN OF THE NEW BRIDGE IS 84.00 FEET AND LOCATED SLIGHTLY DOWNSTREAM OF THE EXISTING BRIDGE ON AN IMPROVED ALIGNMENT. THE PROJECT SITE IS LOCATED IN THE TOWN OF DANBY, ON TH 1 LOCATED APPROXIMATELY 2.830 MILES WEST FROM ITS INTERSECTION WITH TH 27 (NORTH MAIN ST) AND EXTENDING EASTERLY APPROXIMATELY 0.047 MILE. TRAFFIC WILL BE MAINTAINED THROUGH AN OFF-SITE DETOUR DURING CONSTRUCTION.

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

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.86 ACRES.

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

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE AREA SURROUNDING THE PROJECT IS HILLY TO MOUNTAINOUS, MOSTLY FORESTED, AND RURAL. TH 1 (BROOK RD), TH 30 (KEELER RD), TH 47 AND ONE GRAVEL DRIVE ARE PRESENT WITHIN THE PROJECT AREA. THERE ARE NO RESIDENCES WITHIN THE PROJECT AREA.

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

THE MILL BROOK IS THE ONLY WATER SOURCE ON THE PROJECT. THIS STRETCH OF THE RIVER IS CLASSIFIED AS STEEP AND SINUOUS. THE STREAMBED CONSISTS OF LEDGE, GRAVEL AND COBBLES. THE TRIBUTARY AREA AT THIS POINT IS 11.0 SQ MILES. DRAINAGE DITCHES ARE LOCATED ON THE NORTHWEST AND SOUTHWEST SIDES OF TH 1 AND SOUTHEAST SIDE OF TH 30 THAT LEAD INTO MILL BROOK. DRAINAGE DITCH LOCATED ON THE SOUTHEAST SIDE OF TH 1 LEADS AWAY FROM THE PROJECT SITE. THE PROJECT SITE COULD RECEIVE RUNOFF WATER FROM NEARBY SLOPES.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF A MIX OF HARWOOD AND SOFTWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY THE CONSTRUCTION PROJECT. DRAINAGE DITCHES ON THE NORTHWEST AND SOUTHEAST SIDES OF TH 1 WILL BE LINED WITH STONE FILL, TYPE I. THE SLOPE ALONG THE SOUTHWEST SIDE OF TH 30 WILL BE ARMORED WITH STONE FILL, TYPE II. THE CHANNEL WILL BE ARMORED WITH STONE FILL, TYPE III. DISTURBED VEGETATION WILL BE RE-ESTABLISHED 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 RUTLAND, VERMONT. SOILS ON THE NORTHWEST AND SOUTHWEST QUADRANTS ARE QUONSET-WARWICK COMPLEX, 25%-45% SLOPES, “K FACTOR” = 0.20/0.24. SOILS ON THE NORTHEAST QUADRANT ARE MACOMBER-DUTCHESS COMPLEX, 3%-8% SLOPES, “K” FACTOR = 0.32/0.32. SOILS ON THE SOUTHEAST QUADRANT ARE MACOMBER-TACONIC COMPLEX, 15%-25” SLOPES, “K FACTOR” = 0.32/0.37 AND DUTCHESS SILT LOAM, 15%-25% SLOPES, “K FACTOR” = 0.32.

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

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO  
HISTORICAL OR ARCHAEOLOGICAL AREAS: YES, ARCHAEOLOGICAL IN NE QUADRANT. INSTALL BARRIER FENCE TO PROTECT AREA.  
PRIME AGRICULTURAL LAND: NO  
THREATENED AND ENDANGERED SPECIES: THIS AREA HAS BEEN IDENTIFIED AS A POTENTIAL HABITAT FOR THE NORTHERN LONG-EARED BAT AND INDIANA BAT.  
WATER RESOURCE: MILL BROOK  
WETLANDS: NO

1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES FOR LOW RISK PROJECTS. 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 IS RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

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

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

1.4.1 MARK SITE BOUNDARIES

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

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES. BARRIER FENCE (BF) SHALL BE USED TO PHYSICALLY MARK BOUNDARIES WHERE SENSITIVE RESOURCES ARE LOCATED.

1.4.2 LIMIT DISTURBANCE AREA

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

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

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

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

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

1.4.4 INSTALL SEDIMENT BARRIERS

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

GEOTEXTILE FOR SILT FENCE AND GEOTEXTILE FOR SILT FENCE, WOVEN WIRE SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

1.4.5 DIVERT UPLAND RUNOFF

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

RUNOFF FROM ABOVE THE DISTURBED AREAS IS EXPECTED TO BE DIRECTED INTO EXISTING DRAINAGE DITCHES. THEREFORE, DIVERSIONARY MEASURES ARE NOT ANTICIPATED.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

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

STONE CHECK DAMS SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

1.4.7 CONSTRUCT PERMANENT CONTROLS

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

NONE ANTICIPATED HERE.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

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

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

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.

NONE ANTICIPATED.

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. INSTALL EROSION CONTROL MATTING IN NEW GRASS-LINED DITCH SHOWN ON THE NORTHEAST QUADRANT. SEED, WINTER RYE CAN BE USED AS A TEMPORARY STABILIZATION IF PERMANENT SEEDING TIMEFRAMES HAVE PASSED.

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.

NONE ANTICIPATED HERE.

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

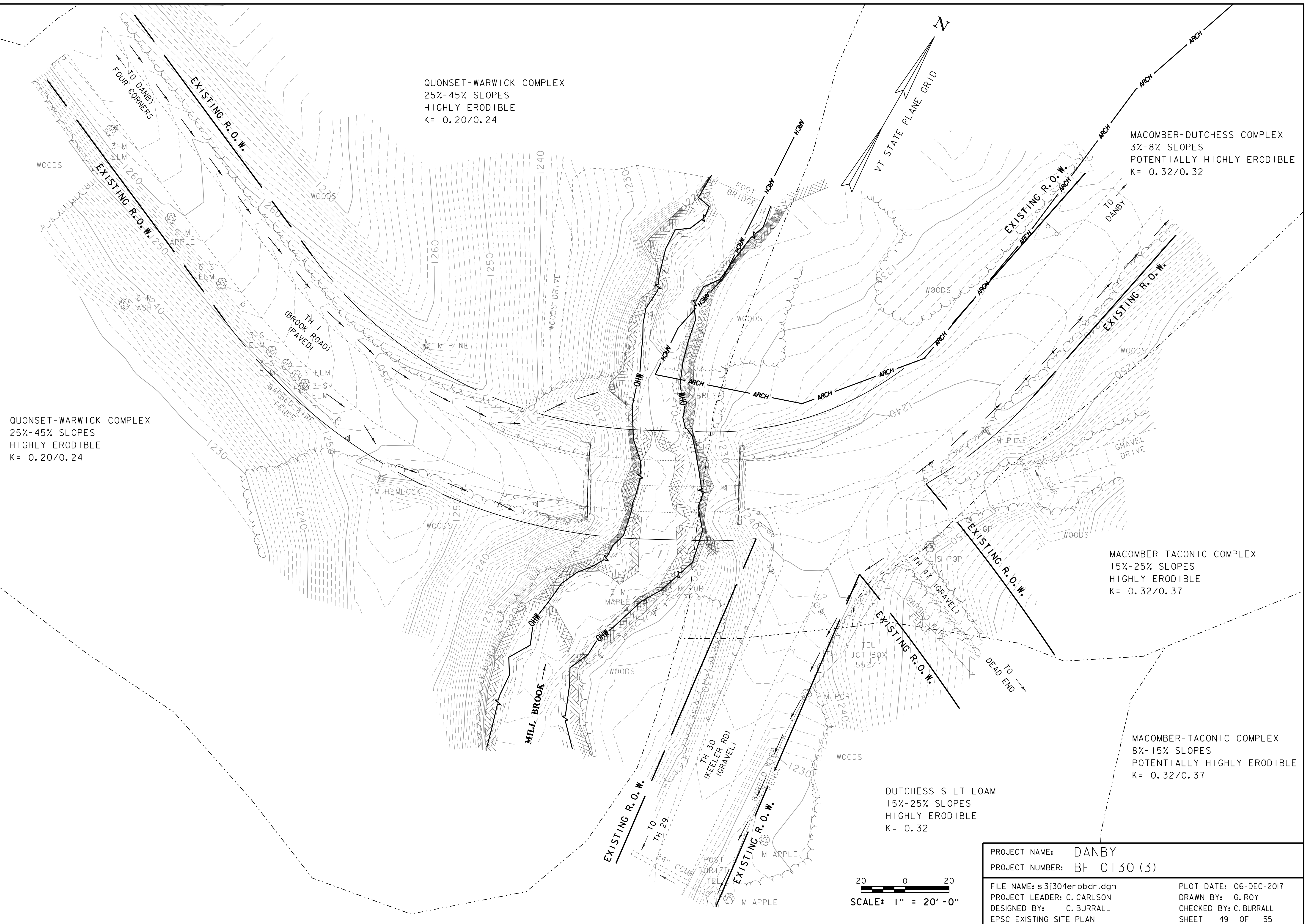
THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

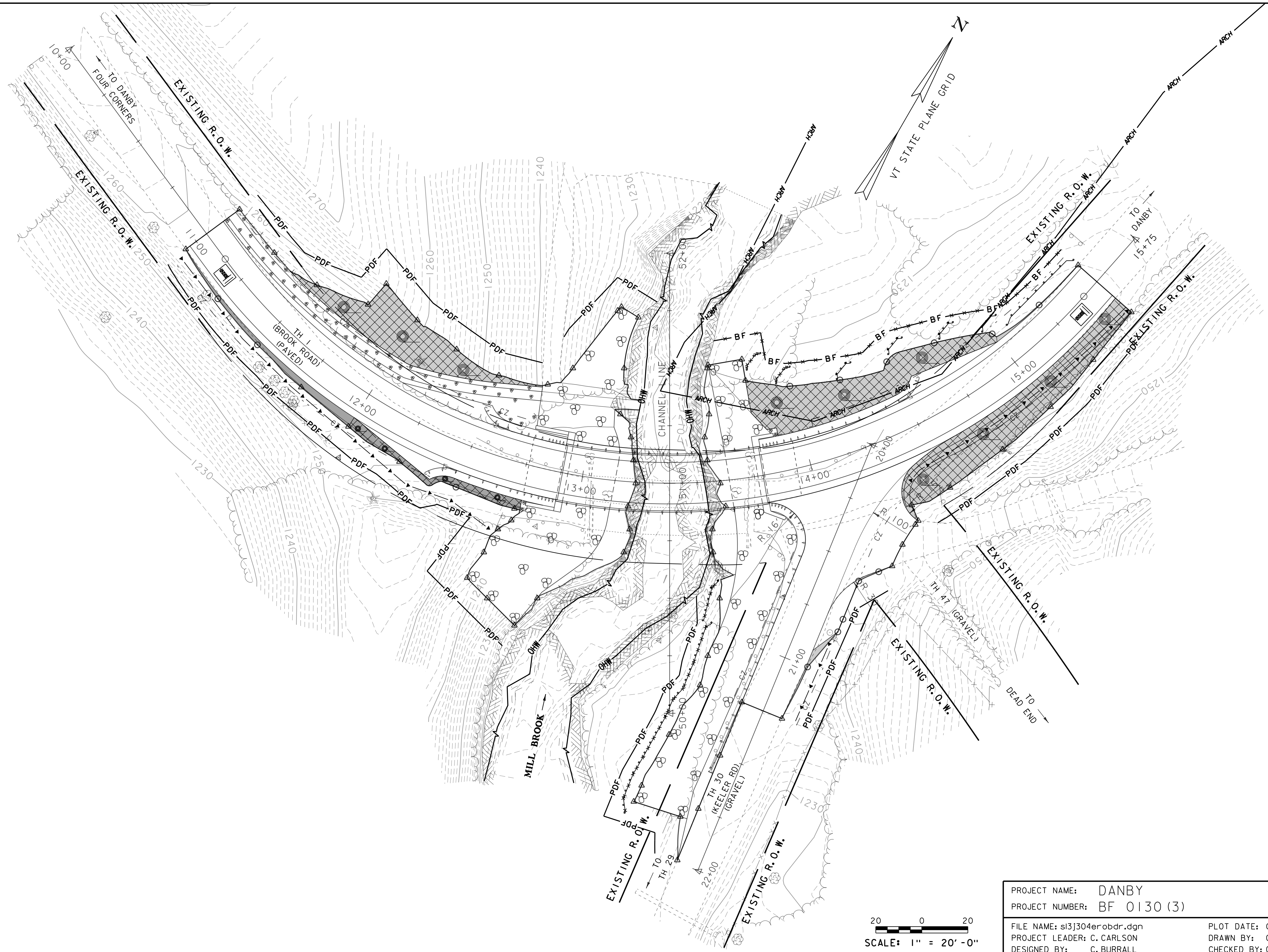
1.5.1 CONSTRUCTION SEQUENCE

1.5.2 OFF-SITE ACTIVITIES

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

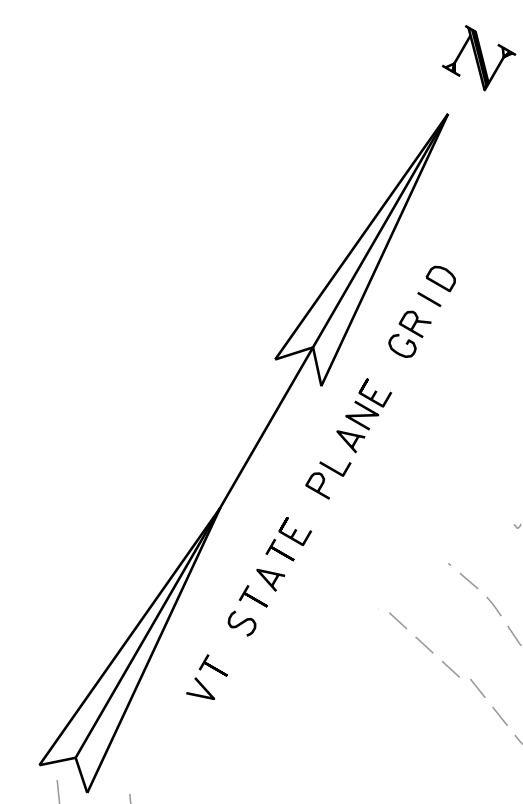
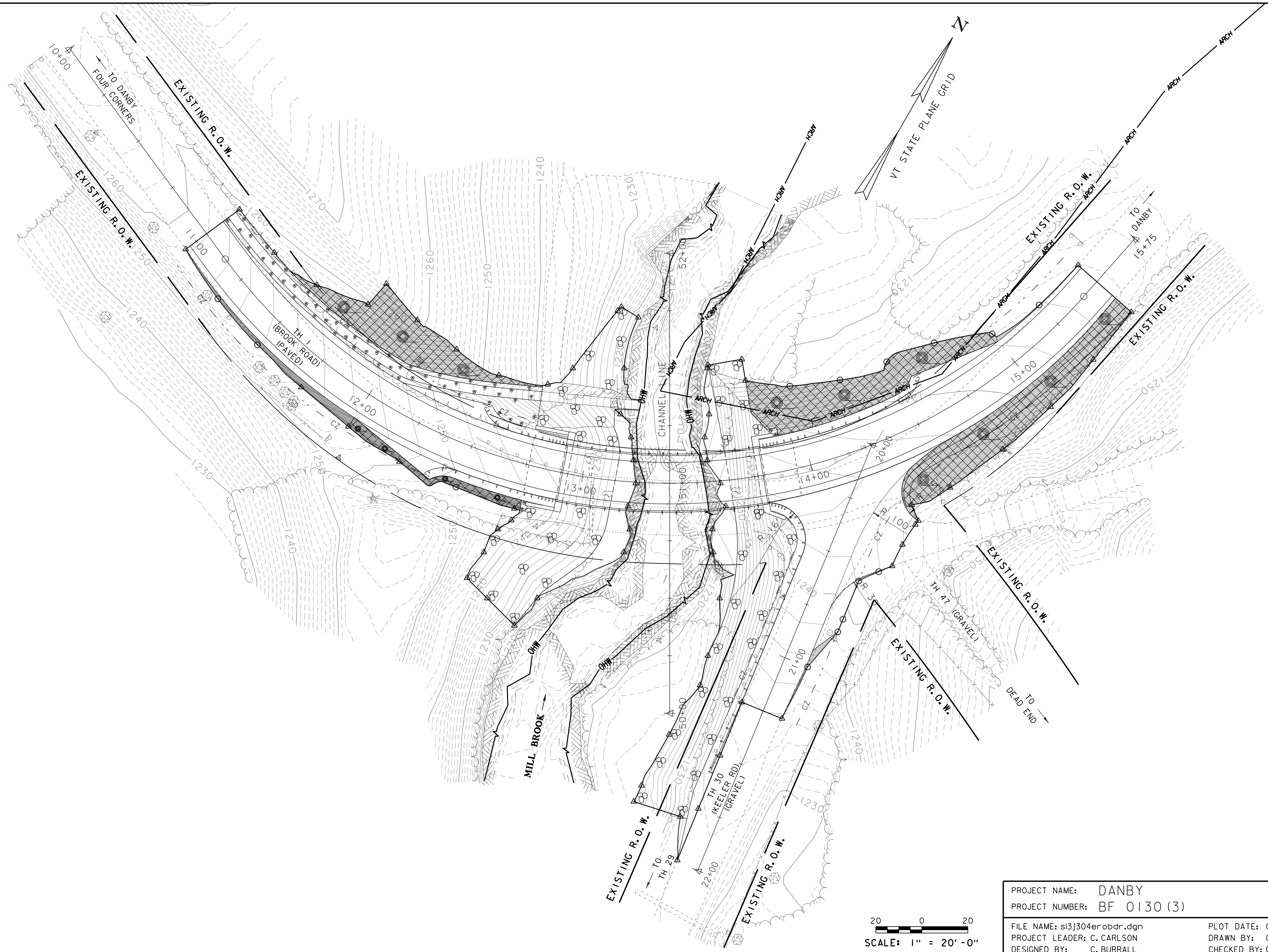
PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130(3)	
FILE NAME: s13j304eronar.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
EPSC NARRATIVE	SHEET 48 OF 55



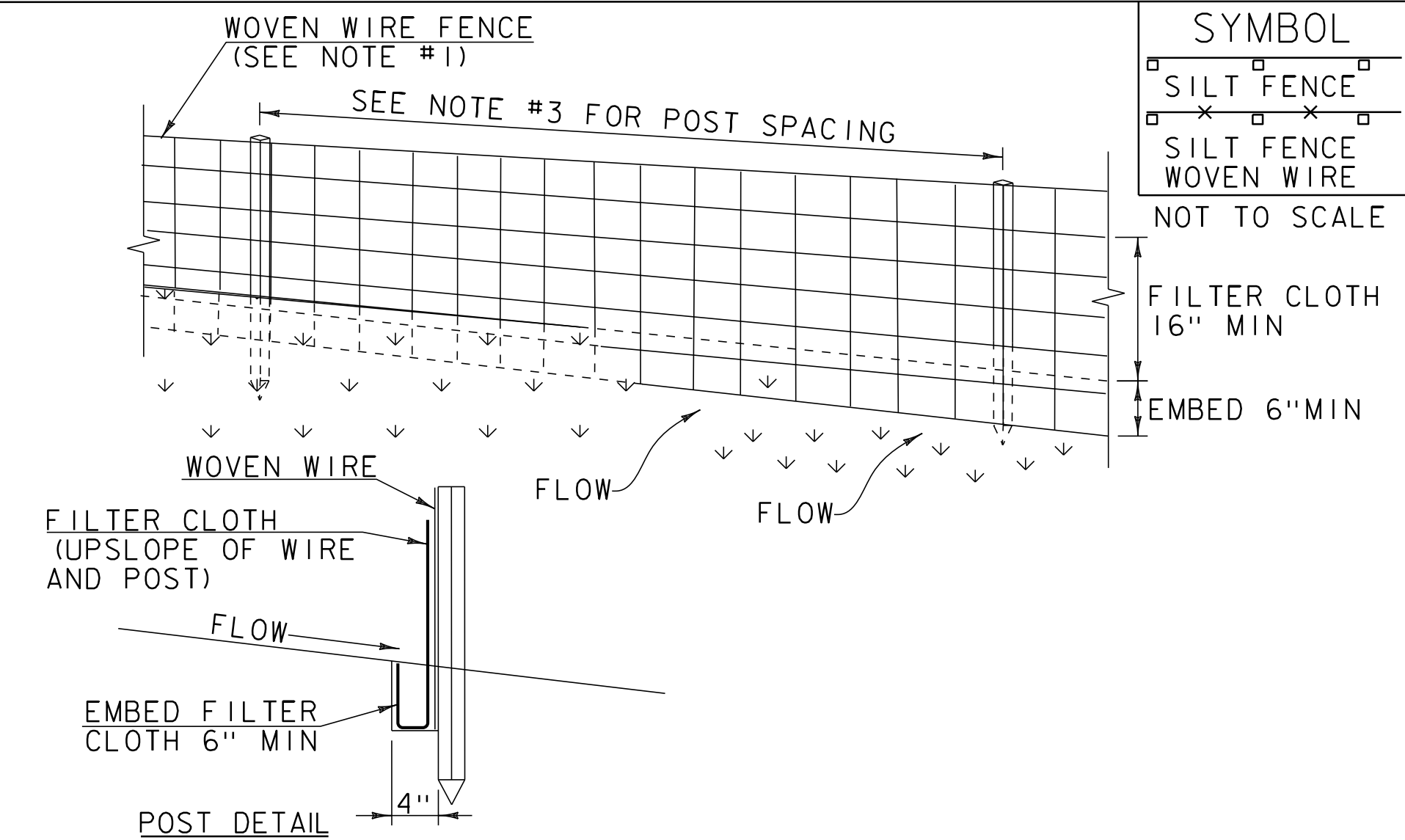


PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130 (3)	
FILE NAME: sl3j304erobdr.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
EPSC CONSTRUCTION SITE PLAN	SHEET 50 OF 55

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



PROJECT NAME: DANBY	
PROJECT NUMBER: BF 0130 (3)	
FILE NAME: sl3j304erobdr.dgn	PLOT DATE: 06-DEC-2017
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: C. BURRALL	CHECKED BY: C. BURRALL
EPSC FINAL SITE PLAN	SHEET 51 OF 55



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

VAOT LOW GROW/FINE FESCUE MIX						
LBS/AC			NAME	LATIN NAME	GERM	PURITY
WEIGHT	BROADCAST	HYDROSEED				
38%	57	95	CREeping RED FESCUE	FESTUCA RUBRA VAR. RUBRA	90%	98%
29%	43.5	72.5	HARD FESCUE	FESTUCA LONGIFOLIA	85%	95%
15%	22.5	37.5	CHEWINGS FESCUE	FESTUCA RUBRA VAR. COMMUTATA	87%	95%
15%	22.5	37.5	ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	90%	95%
3%	4.5	7.5	INERTS			
100%	150	250				

VAOT RURAL AREA MIX						
LBS/AC			NAME	LATIN NAME	GERM	PURITY
WEIGHT	BROADCAST	HYDROSEED				
37.5%	22.5	45	CREeping RED FESCUE	FESTUCA RUBRA VAR. RUBRA	85%	98%
37.5%	22.5	45	TALL FESCUE	FESTUCA ARUNDINACEA	90%	95%
5.0%	3	6	RED TOP	AGROSTIS GIGANTEA	90%	95%
15.0%	9	18	WHITE FIELD CLOVER	TRIFOLIUM REPENS	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	LOLIUM MULTIFLORUM	85%	95%
100%	60	120				

GENERAL AMENDMENT GUIDANCE		
FERTILIZER	LIME	
10/20/10	AG LIME	PELLITIZED
500 LBS/AC	2 TONS/AC	1 TONS/AC

CONSTRUCTION GUIDANCE

1. SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
2. SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) 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. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED PROPOSED FOR USE WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED.
7. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

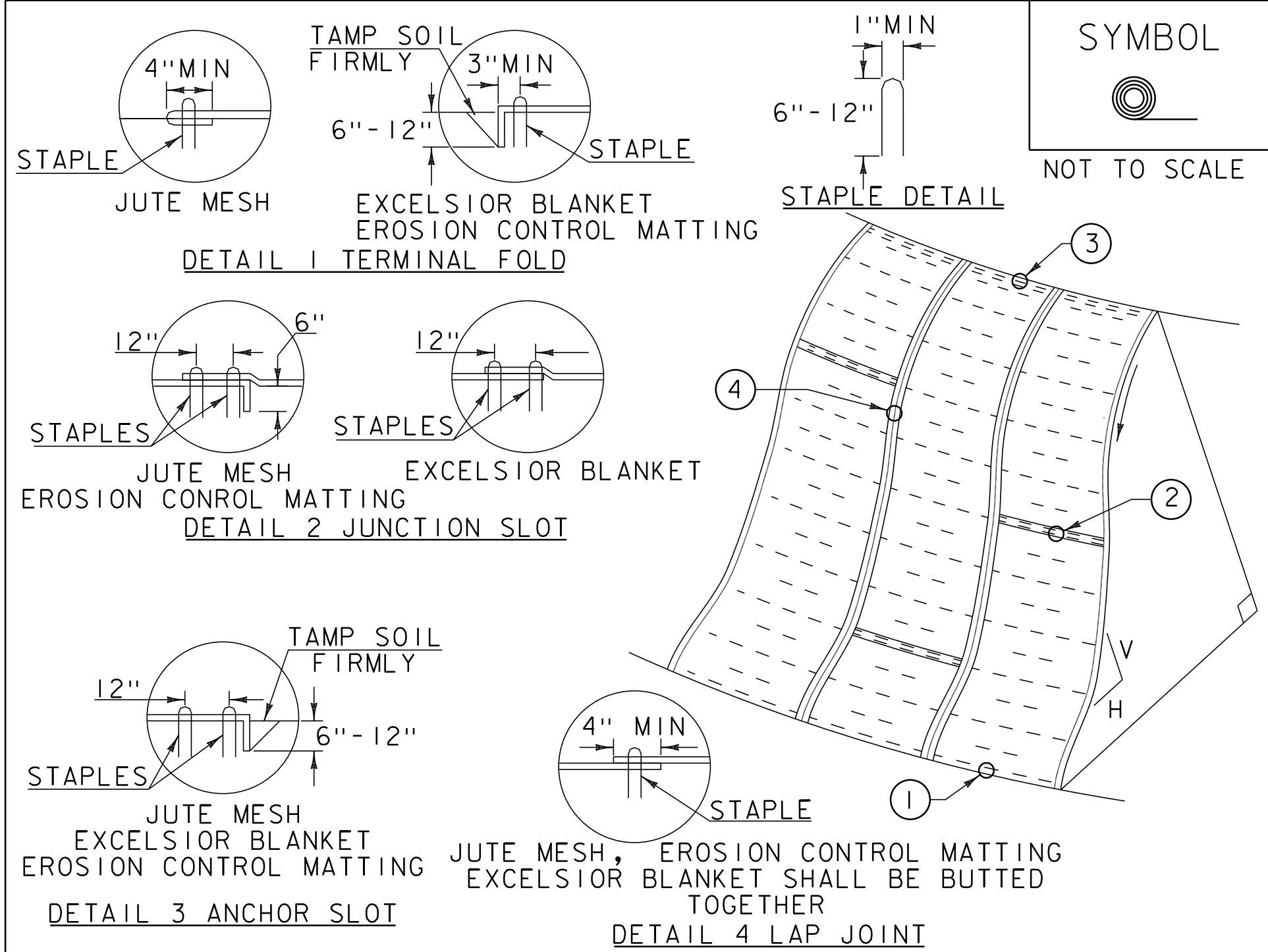
ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR  
ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

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

REVISIONS

JANUARY 12, 2015	WHF



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

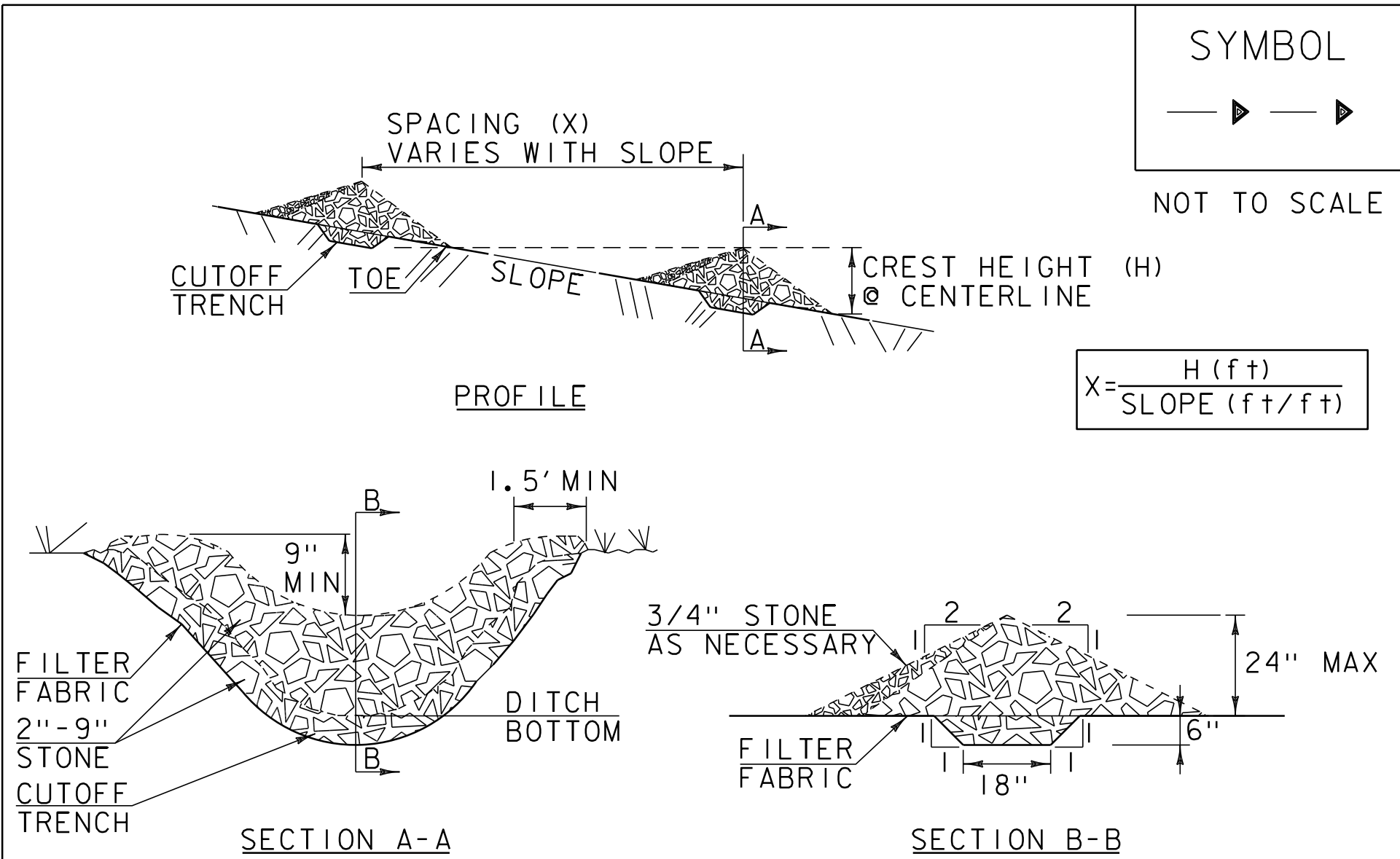
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION  
CONTROL PRODUCT  
(RECP) SIDE SLOPE

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

REVISIONS

APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION.
2. CHECK DAMS SHALL BE SPACED SO THAT THE ELEVATION OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM DAM.
3. 3/4" FILTERING STONE MAY BE ADDED TO THE FACE OF THE CHECK DAM AS NECESSARY.
4. EXTEND THE STONE A MINIMUM OF 1.5' BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
5. PROTECT CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
6. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
7. MAXIMUM DRAINAGE AREA 2 ACRES.

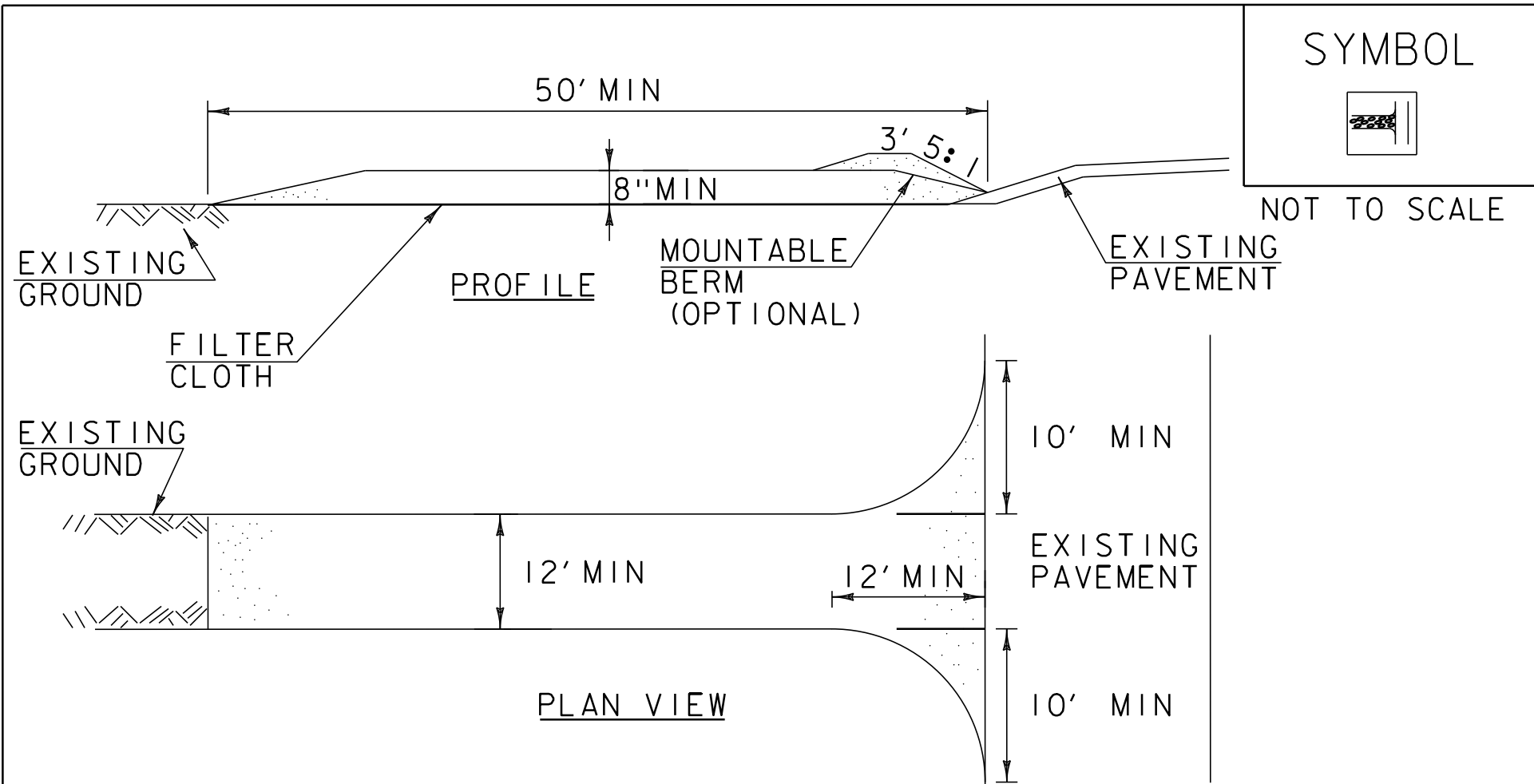
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CHECK DAM

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 TEMPORARY STONE CHECK DAM, TYPE I (PAY ITEM 653.25)

REVISIONS		
MARCH 21, 2008	WHF	
JANUARY 8, 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.

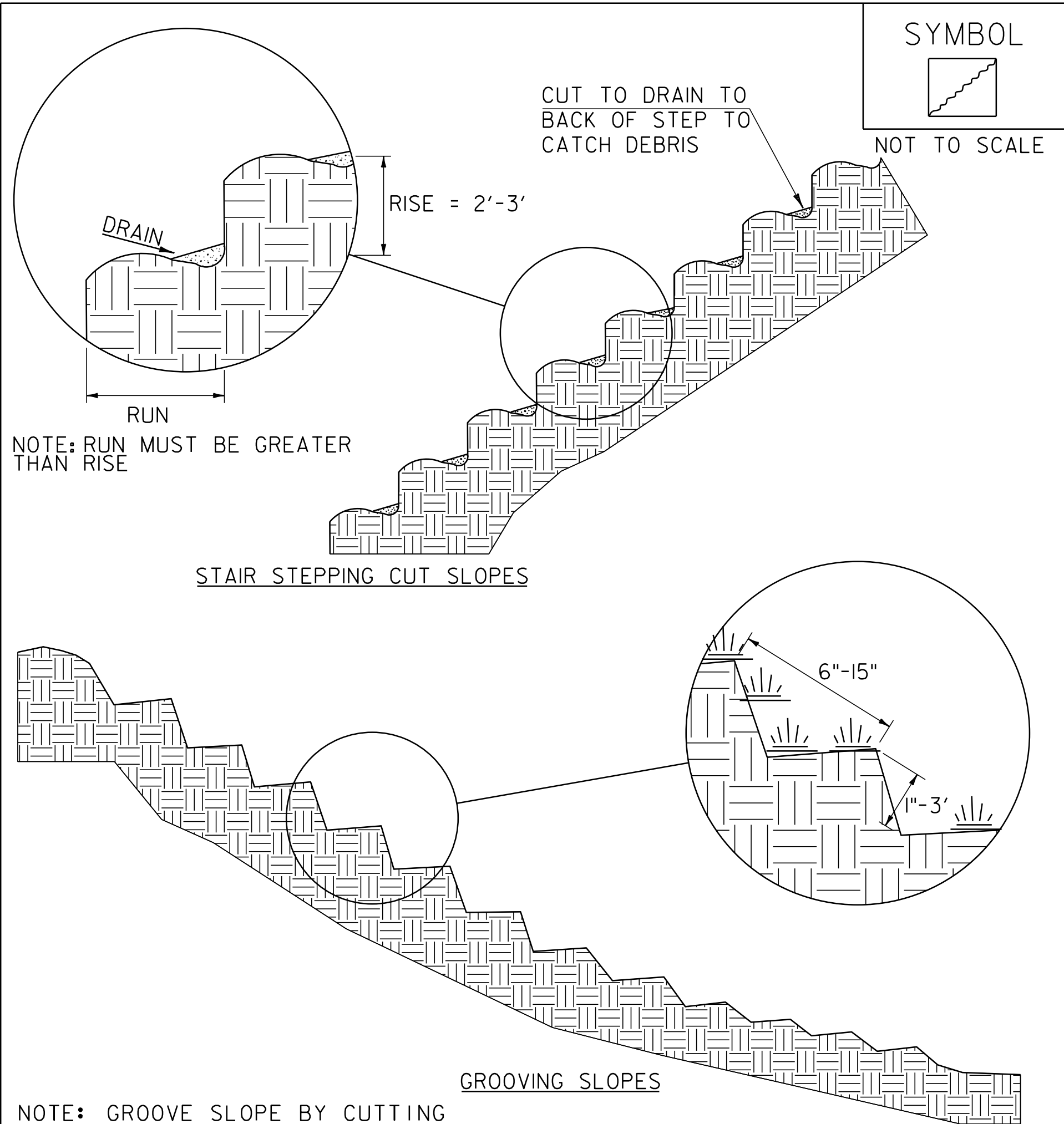
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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	



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

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

SURFACE ROUGHENING

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

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT

REVISIONS		
APRIL 1, 2008	WHF	
JANUARY 13, 2009	WHF	

PROJECT NAME: DANBY  
PROJECT NUMBER: BF 0130(3)

FILE NAME: s13j304erodetails.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: C. BURRALL  
EPSC DETAILS (2)

PLOT DATE: 06-DEC-2017  
DRAWN BY: G. ROY  
CHECKED BY: C. BURRALL  
SHEET 53 OF 55

# RIGHT - OF - WAY DETAIL SHEET

[illegible][illegible]

PROJECT NAME: **DANBY**  
PROJECT NUMBER: **BF 0130(3)**

---

FILE NAME: **r13304detail.xls**  
PROJECT LEADER: **C. CARLSON**  
DESIGNED BY: **A. CROUX**  
**R.O.W. DETAIL SHEET #1**

PLOT DATE: 06-DEC-2017  
DRAWN BY: M TROTTIER  
CHECKED R. CLOUTIER  
SHEET 54 OF 55

**BEGIN R.O.W. PROJECT**  
**DANBY BF 0130(3)**  
**STA. TH-1 10+99, 24.75' LT**

- CONSTRUCT STONE-LINED DITCH, TYPE 1  
TH 1 STA 11+00.0 LT - TH 1 STA 12+75.2 LT
- CONSTRUCT GRASS-LINED DITCH  
TH 1 STA 14+31.7 RT - TH 1 STA 15+50.0 RT
- CONSTRUCT 18' PAVED APRON  
TH 30 STA 20+12.2 LT - TH 30 STA 20+75.2 LT
- CONSTRUCT 7' MAILBOX TURNOUT  
TH 30 STA 20+55.9 LT - TH 30 STA 20+92.4 LT
- BRIDGE RAILING, GALVANIZED  
HDSB/FASCIA MOUNTED/STEEL TUBING  
TH 1 STA 12+88.9 LT - TH 1 STA 13+81.1 LT  
TH 1 STA 12+89.4 RT - TH 1 STA 13+80.6 RT
- RELOCATE MAILBOX, SINGLE SUPPORT  
FROM TH 30 STA 20+82.5 LT TO TH 30 STA 20+68.4 LT
- HD STEEL BEAM GUARDRAIL, GALVANIZED  
TH 1 STA 12+36.2 RT - TH 1 STA 12+65.6 RT  
TH 1 STA 12+49.2 LT - TH 1 STA 12+62.6 LT  
TH 1 STA 14+07.4 LT - TH 1 STA 14+60.2 LT  
TH 30 STA 20+50.5 RT - TH 30 STA 21+19.2 RT
- MANUFACTURED TERMINAL SECTION, TANGENT  
TH 30 STA 21+19.2 RT - TH 30 STA 21+58.5 RT
- ANCHOR FOR STEEL BEAM RAIL  
TH 1 STA 12+42.9 RT  
TH 1 STA 12+57.3 LT  
TH 1 STA 14+52.2 LT

**EXISTING BRIDGE DATA**

SIMPLE SPAN CONCRETE DECK ON ROLLED BEAMS  
WITH CONCRETE ABUTMENTS  
BUILT 1933  
OVERALL LENGTH: 74'  
FASCIA TO FASCIA WIDTH: 24'  
ROADWAY WIDTH: 22.4'

**GUARDRAIL APPROACH SECTION, GALV HD STEEL BEAM**

TH 1 STA 12+62.6 LT - TH 1 STA 12+88.9 LT  
TH 1 STA 12+65.6 RT - TH 1 STA 12+89.4 RT  
TH 1 STA 13+80.6 RT - TH 30 STA 20+50.5 RT  
TH 1 STA 13+81.1 LT - TH 1 STA 14+07.4 LT

**REMOVAL AND DISPOSAL OF GUARDRAIL**

TH 1 STA 12+50.6 LT - TH 1 STA 13+01.8 LT  
TH 1 STA 12+69.8 RT - TH 1 STA 13+04.0 RT  
TH 1 STA 12+85.2 RT - TH 1 STA 12+99.9 RT  
TH 1 STA 13+71.5 RT - TH 30 STA 21+50.8 RT  
TH 1 STA 13+75.3 RT - TH 1 STA 14+35.3 LT

**SPECIAL PROVISION (RETAINING WALL 1)**

TH 1 STA 12+74.73 LT - TH 1 STA 12+90.38 LT

**SPECIAL PROVISION (RETAINING WALL 2)**

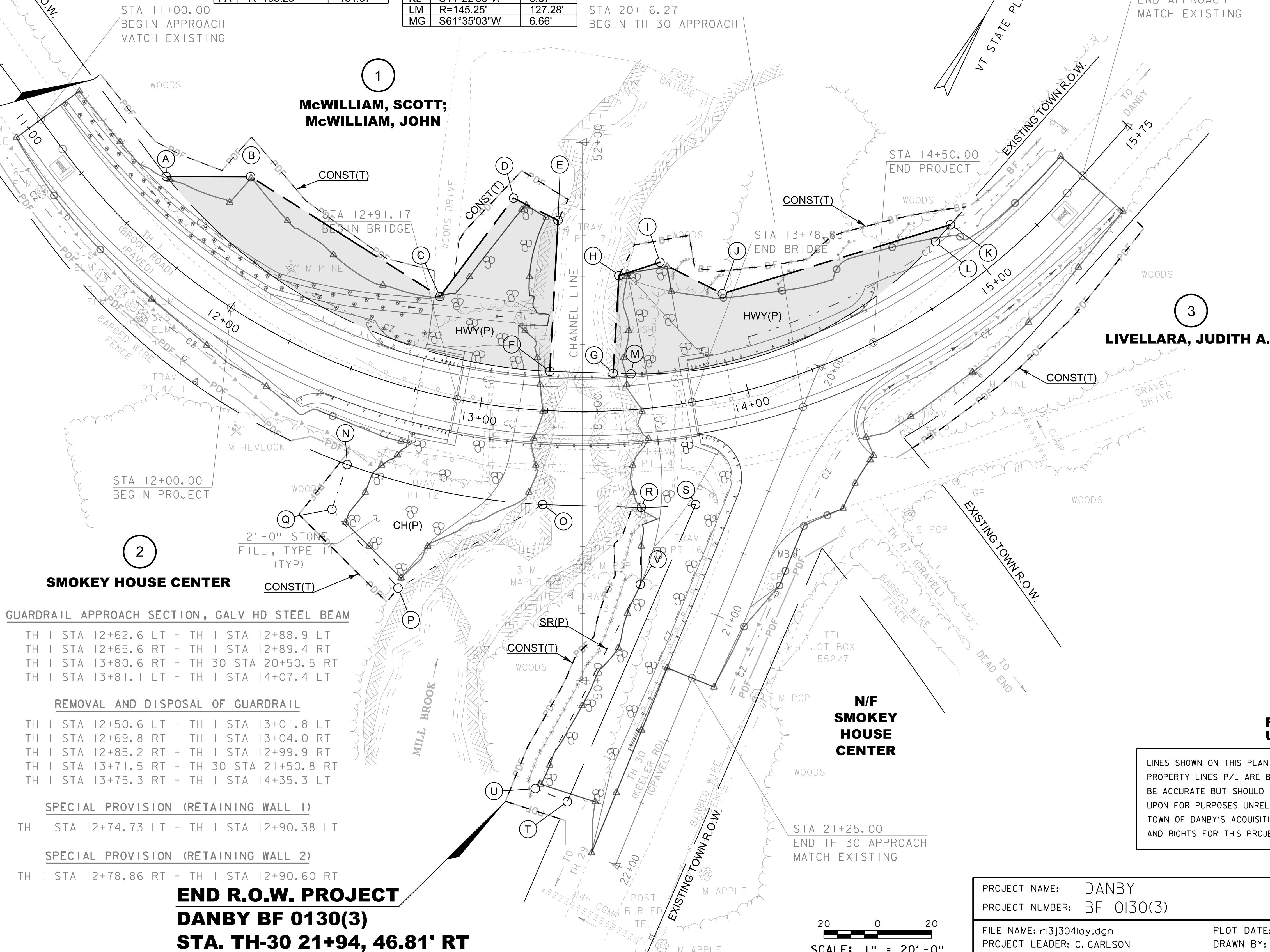
TH 1 STA 12+78.86 RT - TH 1 STA 12+90.60 RT

**END R.O.W. PROJECT**  
**DANBY BF 0130(3)**  
**STA. TH-30 21+94, 46.81' RT**

A	STA. 11+48.00	22.71' LT
B	STA. 11+75.00	43.69' LT
C	STA. 12+75.00	35.72' LT
D	STA. 13+00.00	77.25' LT
E	STA. 13+25.00	70.74' LT
F	STA. 13+25.00	14.61' LT
AB	N60°04'26"E	31.30'
BC	S87°41'37"E	83.22'
CD	N06°44'53"E	45.66'
DE	N86°39'31"E	18.47'
EF	S26°56'32"E	56.13'
FA	R=195.25'	164.57'

G	STA. 13+50.00	13.95' LT
H	STA. 13+55.00	50.00' LT
I	STA. 13+75.00	53.24' LT
J	STA. 14+00.00	37.09' LT
K	STA. 15+00.00	21.50' LT
L	STA. 14+91.00	19.90' LT
M	STA. 13+57.03	13.33' LT
GH	N26°39'09"W	36.31'
HI	N41°50'57"E	16.02'
IJ	N86°37'41"E	25.92'
JK	N43°08'38"E	88.49'
KL	S11°22'39"W	8.37'
LM	R=145.25'	127.28'
MG	S61°35'03"W	6.66'

N	STA. 12+60.00	33.97' RT
O	STA. 13+25.00	34.89' RT
P	STA. 12+85.00	73.11' RT
Q	STA. 12+60.00	51.58' RT
R	STA. 20+73.43	41.52' RT
S	STA. 20+64.85	23.23' RT
T	STA. 21+85.00	25.52' RT
U	STA. 21+85.00	38.36' RT
V	STA. 21+00.00	31.03' RT



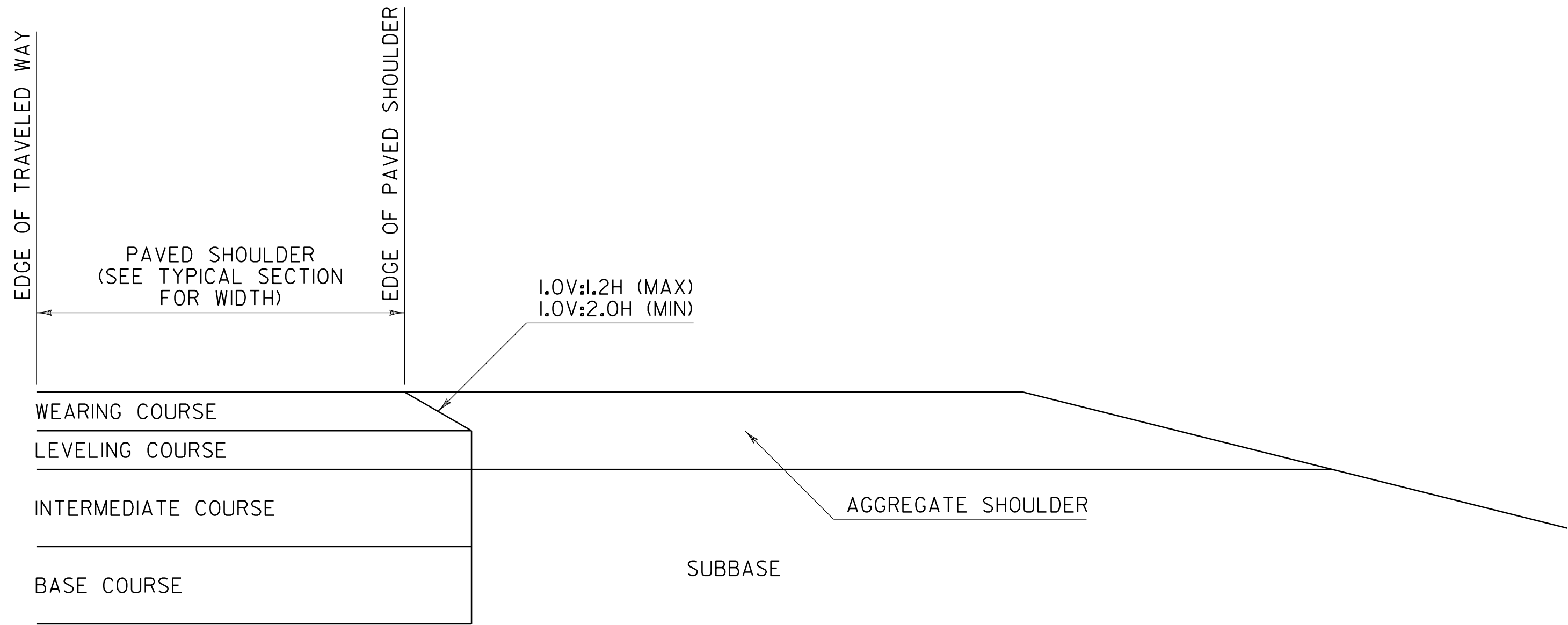
**FOR R.O.W.  
USE ONLY**

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

PROJECT NAME: DANBY  
PROJECT NUMBER: BF 0130(3)

FILE NAME: r13j304lay.dgn  
PROJECT LEADER: C. CARLSON  
DESIGNED BY: G. ROY  
R.O.W. LAYOUT SHEET 1 OF 1

PLOT DATE: 06-DEC-2017  
DRAWN BY: A. PROULX  
CHECKED BY: R. CLOUTIER  
SHEET 55 OF 55

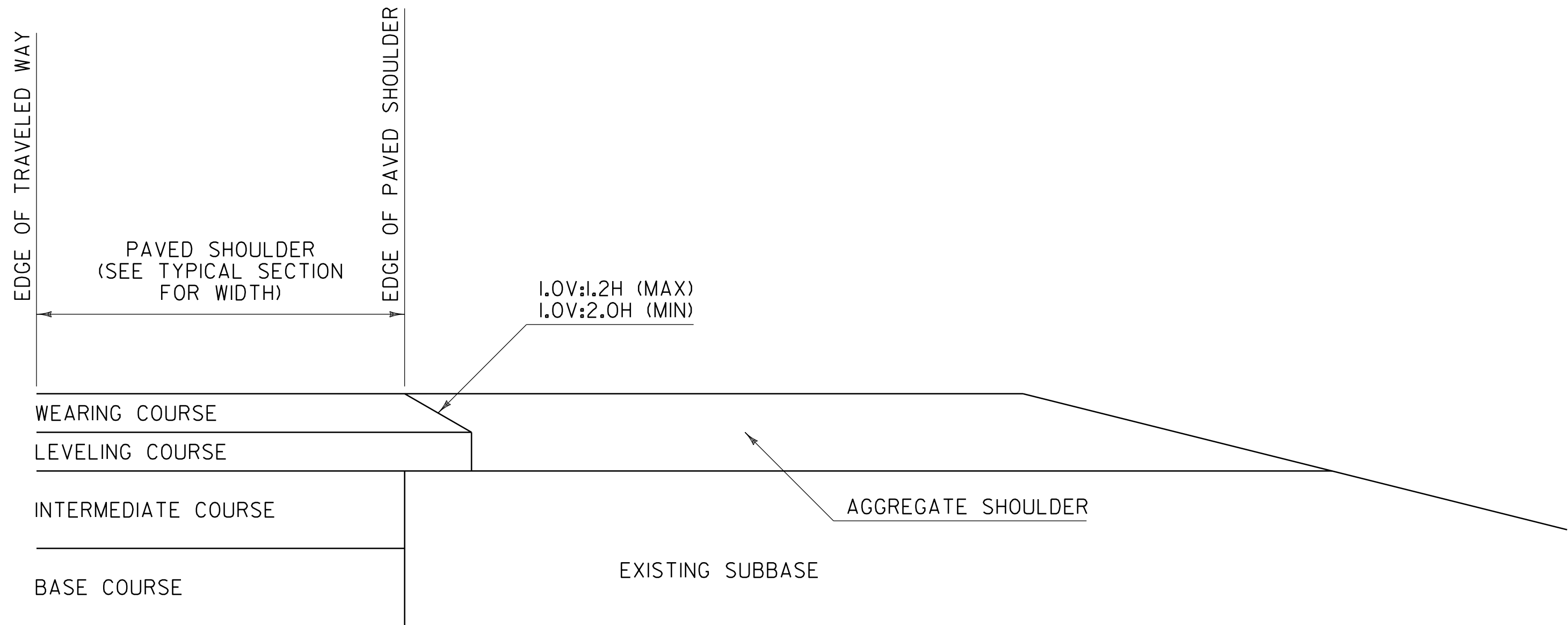


**SAFETY EDGE DETAIL**  
**FOR PAVING BELOW WEARING COURSE**

**NOTES:**

1. THIS DETAIL IS INTENDED FOR WHEN PAVING EXTENDS BELOW THE WEARING COURSE.
2. PRIOR TO PLACEMENT OF THE LEVELING AND/OR WEARING COURSE, THE SUBBASE LOCATED BENEATH THE AGGREGATE SHOULDER SHALL BE PREPARED FLUSH WITH THE BOTTOM OF THE LEVELING COURSE.
3. BASE COURSE LIMITS MAY VARY, SEE TYPICAL SECTIONS FOR WIDTH.

SAFETY EDGE WIDTH BASED ON WEARING COURSE THICKNESS AND A 1V:1.6H SLOPE	
WEARING COURSE THICKNESS (INCHES)	NOMINAL SAFETY EDGE WIDTH (INCHES)
1.25	2.000
1.50	2.375
1.75	2.750
2.00	3.125
2.25	3.500
2.50	4.000



**SAFETY EDGE DETAIL**  
**FOR PAVING WEARING COURSE ONLY**

**NOTES:**

1. THIS DETAIL IS INTENDED FOR WHEN ONLY THE LEVELING AND/OR WEARING COURSE IS TO BE PLACED.
2. PAVEMENT COURSES MAY VARY, SEE TYPICAL SECTIONS FOR ACTUAL PAVEMENT COURSES REQUIRED.

**GENERAL NOTES:**

1. PLACEMENT OF THE WEARING COURSE SHALL INCLUDE THE SAFETY EDGE, UNLESS THE FOLLOWING APPLIES:
  - A. THE ADJACENT SLOPE IS STEEPER THAN THE SAFETY EDGE.
  - B. THE EDGE OF PAVEMENT BEING PLACED ABUTS BOUND MATERIAL.
  - C. VEHICLES ARE RESTRICTED FROM LEAVING THE PAVED SURFACE (EXAMPLE: GUARDRAIL).
2. THE SAFETY EDGE SHALL BE FORMED IN SUCH A WAY THAT THE BITUMINOUS CONCRETE PAVEMENT IS EXTRUDED OR COMPRESSED TO FORM THE SLOPE. DEVICES THAT SIMPLY STRIKE-OFF THE MIX WITHOUT PROVIDING ANY COMPACTIVE EFFORT WILL NOT BE ALLOWED.
3. THE SAFETY EDGE SHALL NOT BE CONSIDERED PART OF THE PAVED SHOULDER.
4. THIS WORK SHALL BE INCIDENTAL TO THE RESPECTIVE BITUMINOUS CONCRETE PAVEMENT ITEM.

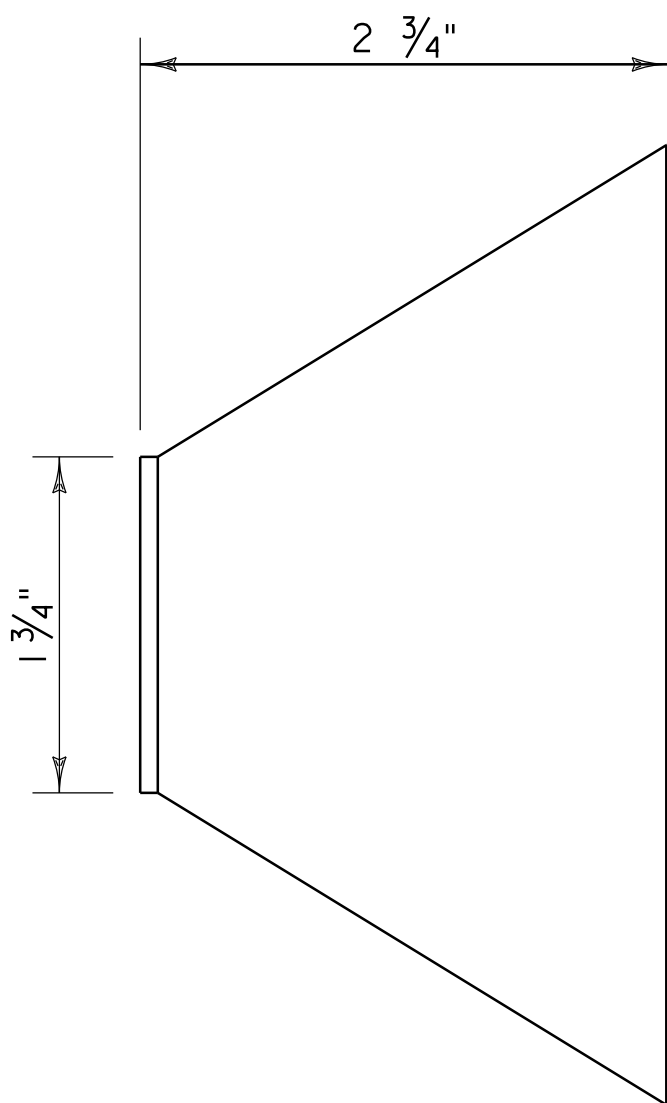
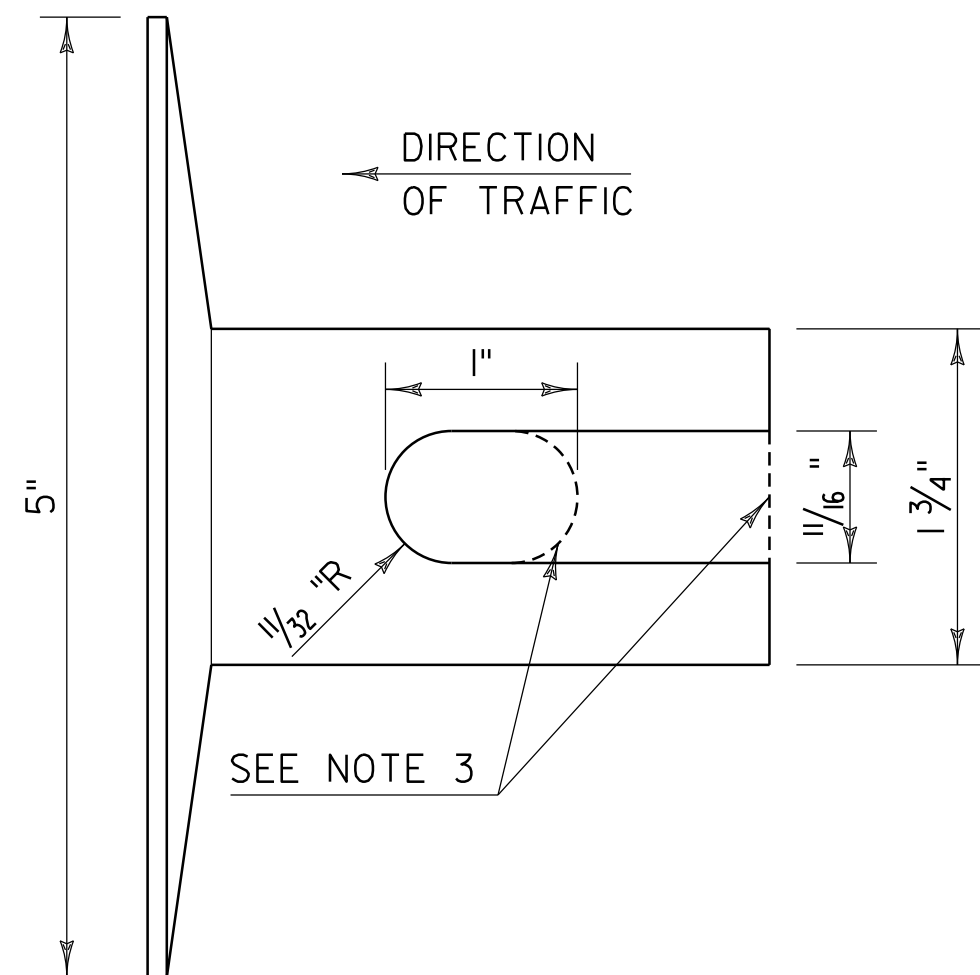
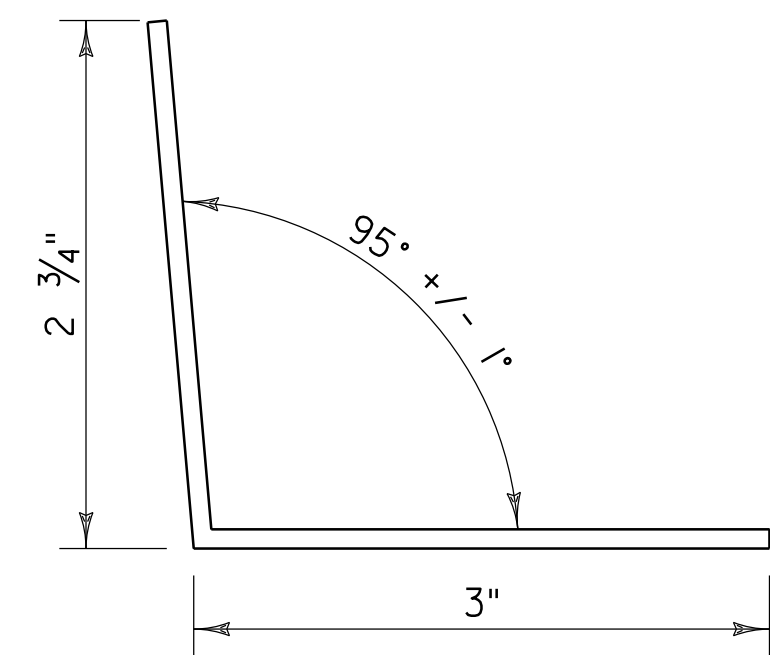
REV.	DATE	DESCRIPTION
0	MAR. 29, 2016	ORIGINAL APPROVAL
OTHER DETAILS REQUIRED: NONE		
DETAILS APPROVED FOR USE BY HIGHWAY SAFETY & DESIGN		

SAFETY EDGE DETAILS



HIGHWAY SAFETY  
& DESIGN DETAIL  
HSD-400.01

GUARDRAIL DELINEATOR DETAIL



GUARDRAIL TERMINAL LABEL DETAIL



NOTES:

- 1. LINE ONE SHALL INDICATE THE INSTALLATION YEAR (YYYY).
- 2. LINE TWO SHALL INDICATE THE MODEL AS IDENTIFIED ON THE APPROVED PRODUCTS LIST.FOR GENERIC INSTALLATIONS THE STANDARD DRAWING DESIGNATION OR NAME AS IDENTIFIED IN THE FHWA ELIGIBILITY LETTER SHALL BE USED.
- 3. LINE THREE SHALL SHALL INDICATE ADDITIONAL MODEL INFORMATION IF NECESSARY.
- 4. LINE FOUR SHALL INDICATE FLARED (FLRD) OR TANGENT (TANG).
- 5. LEGEND SHALL BE SIZE 3/4 INCH ARIEL FONT.
- 6. LEGEND SHALL BE BLACK ON A WHITE BACKGROUND, LEGEND AND BACKGROUND SHALL NOT BE REFLECTIVE.
- 7. SUITABLE MATERIAL SHALL BE USED SO AS TO NOT DETERIORATE DURING EXPOSURE TO WEATHER.
- 8. LABELS SHALL BE APPLIED IN SUCH A WAY THAT THEY REMAIN INTACT DURING THE LIFE OF THE TERMINAL.
- 9. FOR W-BEAM GUARDRAIL, LABEL SHALL BE PLACED ON THE TOP OF POST ONE FACING AWAY FROM TRAFFIC.
- 10. FOR BOX BEAM GUARDRAIL, LABEL SHALL BE PLACED ON THE BOX BEAM ADJACENT TO POST ONE FACING AWAY FROM TRAFFIC.
- 11. PAYMENT SHALL BE INCIDENTAL TO OTHER TRAFFIC BARRIER ITEMS.

NOTES:

- 1. GUARDRAIL DELINEATOR BASE MATERIAL SHALL BE 0.10 INCH THICK ALUMINUM IN ACCORDANCE WITH SUBSECTION 728.04 DELINEATION DEVICES.
- 2. GUARDRAIL DELINEATORS SHALL HAVE WHITE RETROREFLECTIVE SHEETING, EQUAL TO OR EXCEEDING TYPE IIIN ACCORDANCE WITH SUBSECTION 750.08(B)(3) ON THE RIGHT SIDE OF THE TRAVELED WAY AND YELLOW RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING TYPE VIIIN ACCORDANCE WITH SUBSECTION 750.08(B)(7) ON THE LEFT SIDE OF THE TRAVELED WAY IN RESPECT TO APPROACHING TRAFFIC. ON ONE DIRECTIONAL ROADWAYS RETROREFLECTIVE SHEETING MAY BE OMITTED ON FACES WHERE THERE WILL BE NO APPROACHING TRAFFIC.
- 3. HOLE MAY BE USED IN PLACE OF SLOT.

REV.	DATE	DESCRIPTION
0	NOV. 3, 2015	ORIGINAL APPROVAL
1	FEB. 27, 2017	UPDATED NAME, MINOR CORRECTIONS AND ADDED GUARDRAIL DELINEATOR DETAIL
OTHER DETAILS REQUIRED: NONE		
DETAILS APPROVED FOR USE BY HIGHWAY SAFETY & DESIGN		

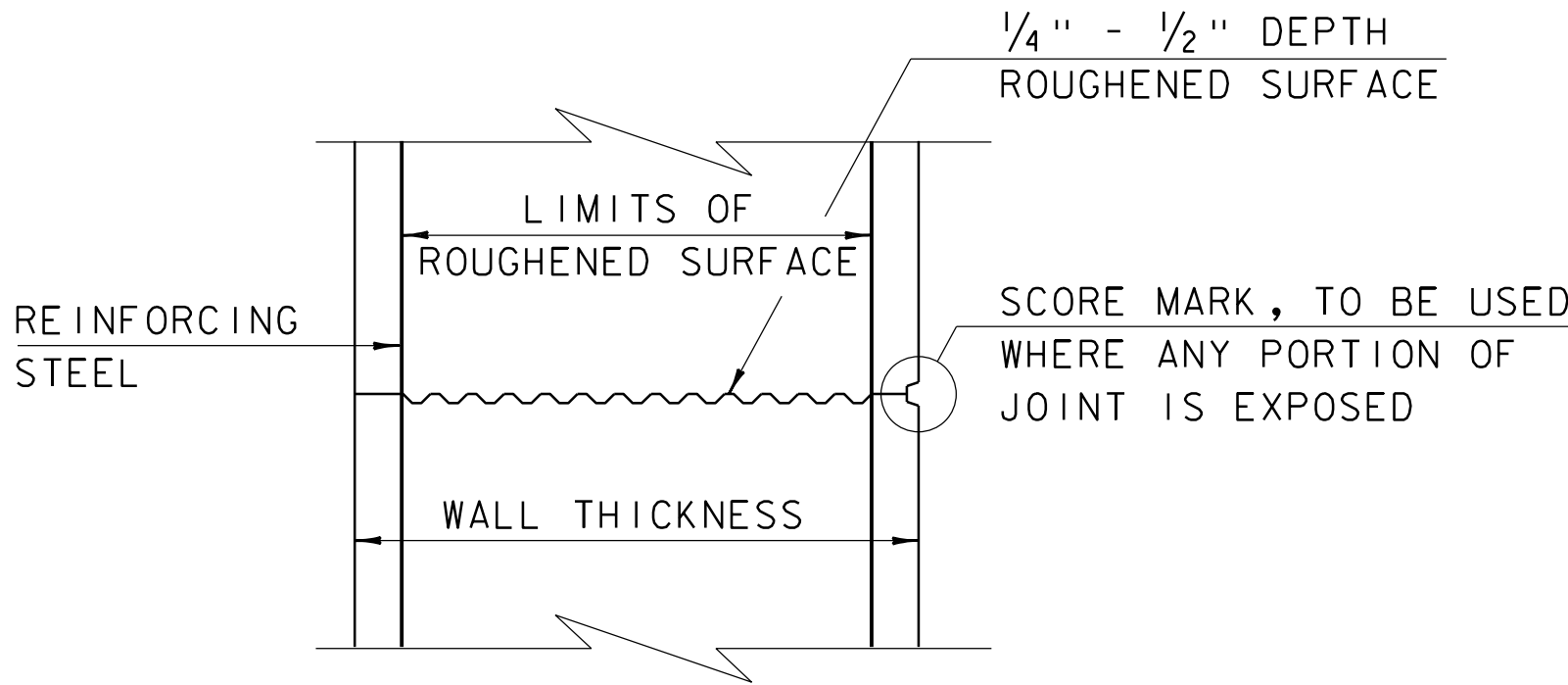
MISCELLANEOUS GUARDRAIL DETAILS



HIGHWAY SAFETY  
& DESIGN DETAIL  
HSD-621.06

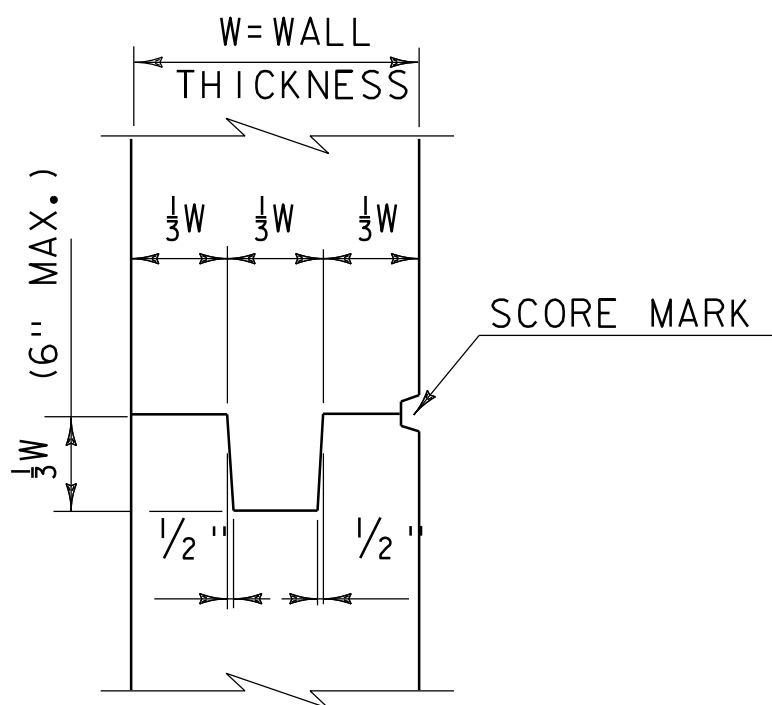
CONCRETE GENERAL NOTES

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

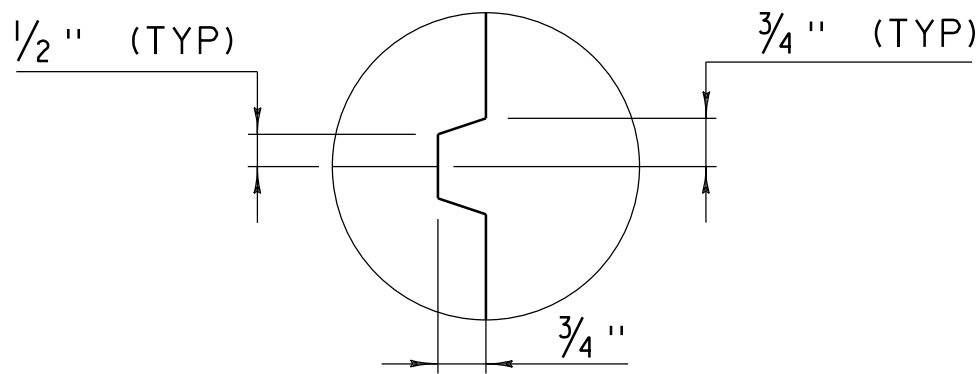


TYPICAL HORIZONTAL CONSTRUCTION JOINT  
(NOT TO SCALE)

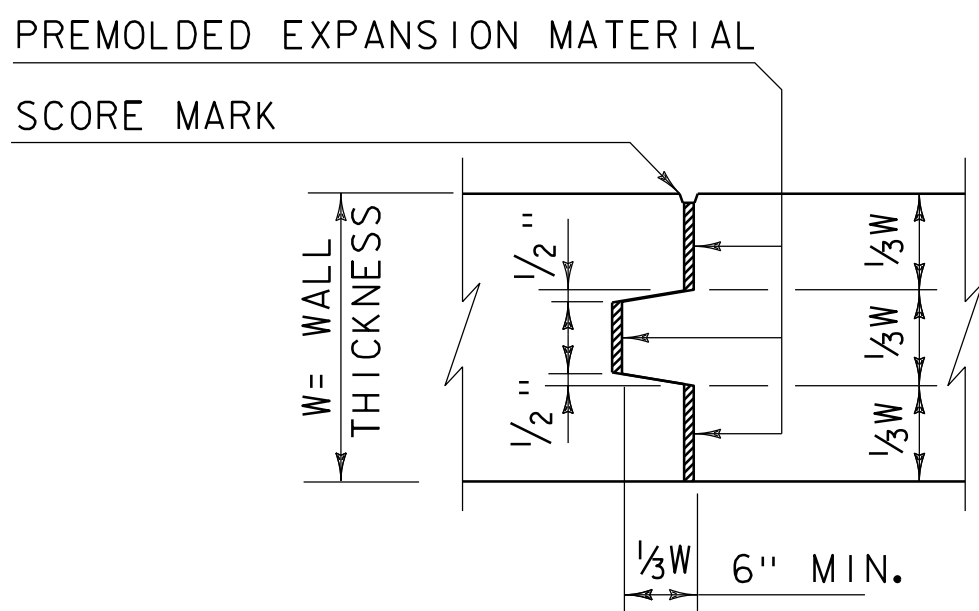
- 1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
- 2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



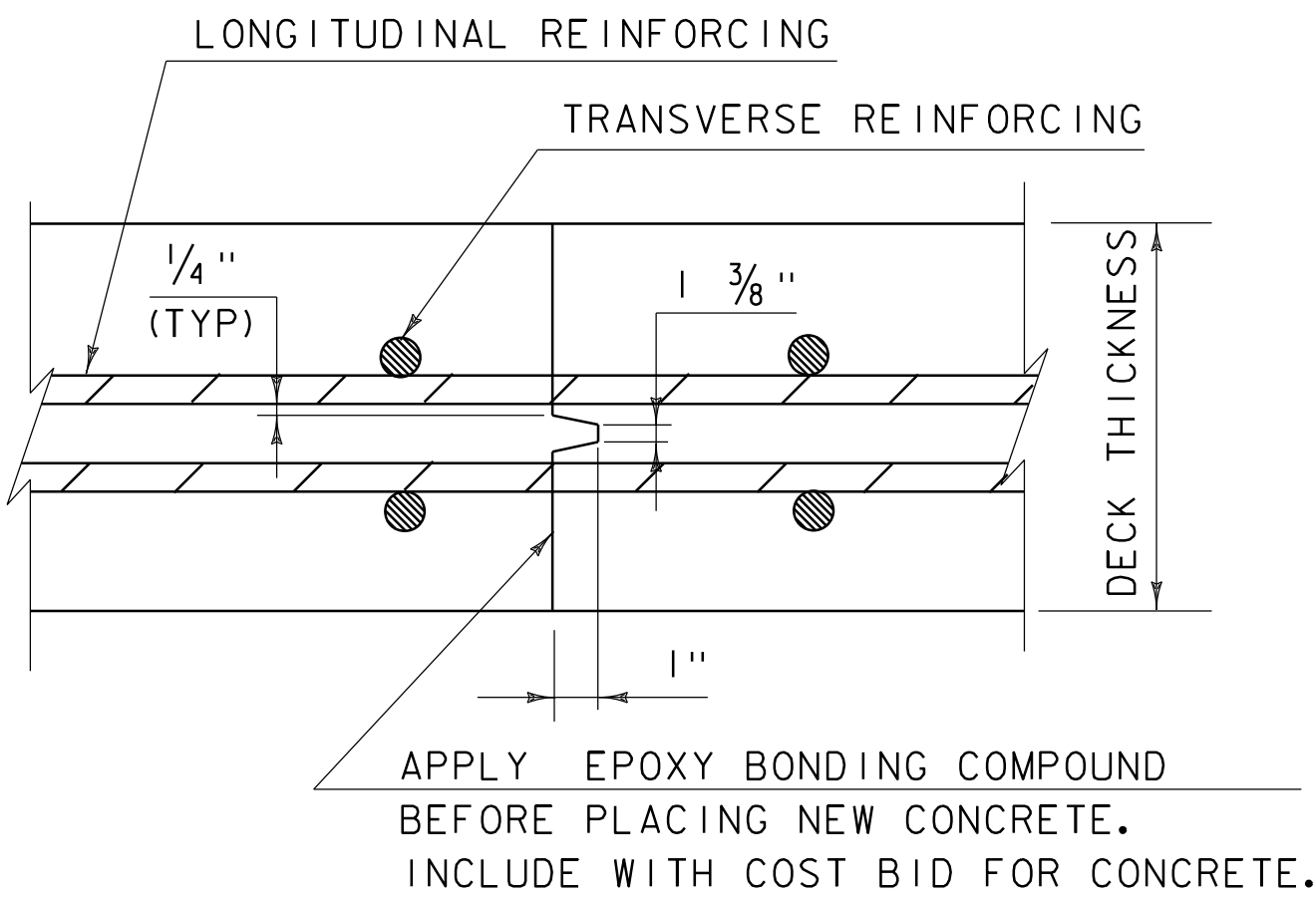
TYPICAL CONCRETE CONSTRUCTION JOINT  
(NOT TO SCALE)



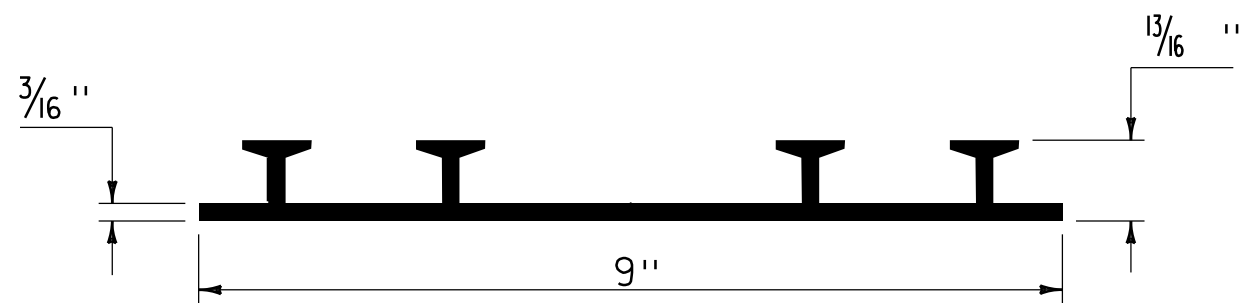
SCORE MARK DETAIL  
(NOT TO SCALE)



TYPICAL CONCRETE EXPANSION JOINT  
(NOT TO SCALE)



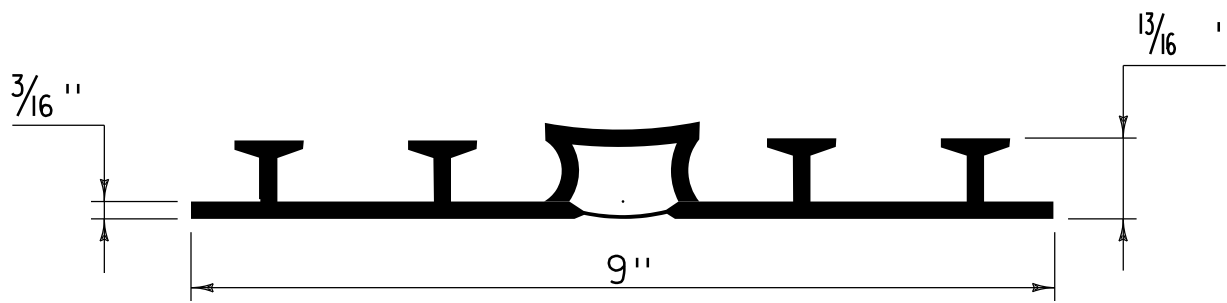
TRANSVERSE BRIDGE SLAB  
CONSTRUCTION JOINT DETAILS  
(NOT TO SCALE)



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

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

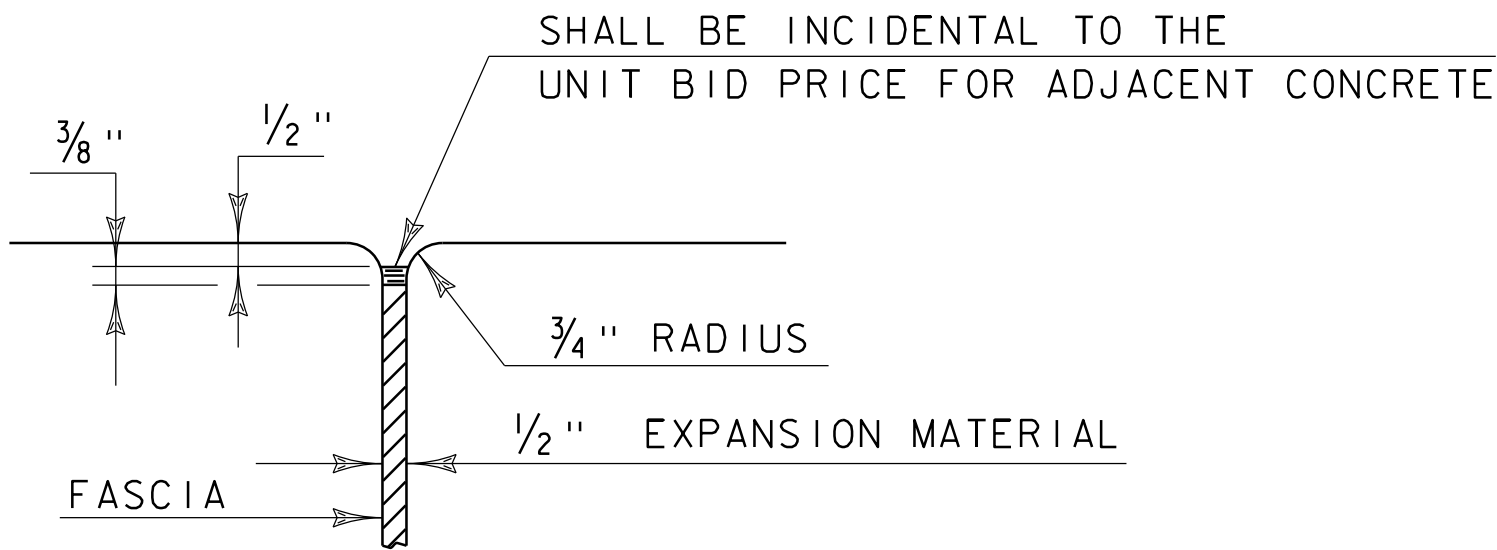
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



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

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

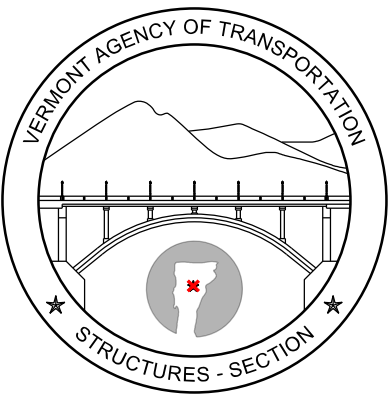
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



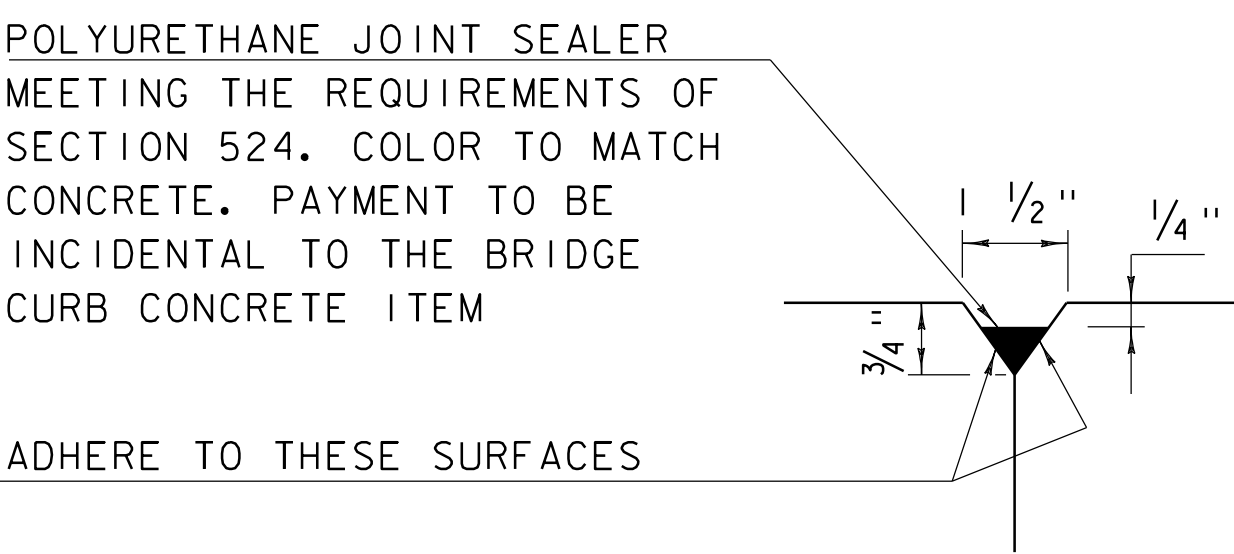
JOINT BETWEEN FASCIA  
AND WINGWALL  
(NOT TO SCALE)

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

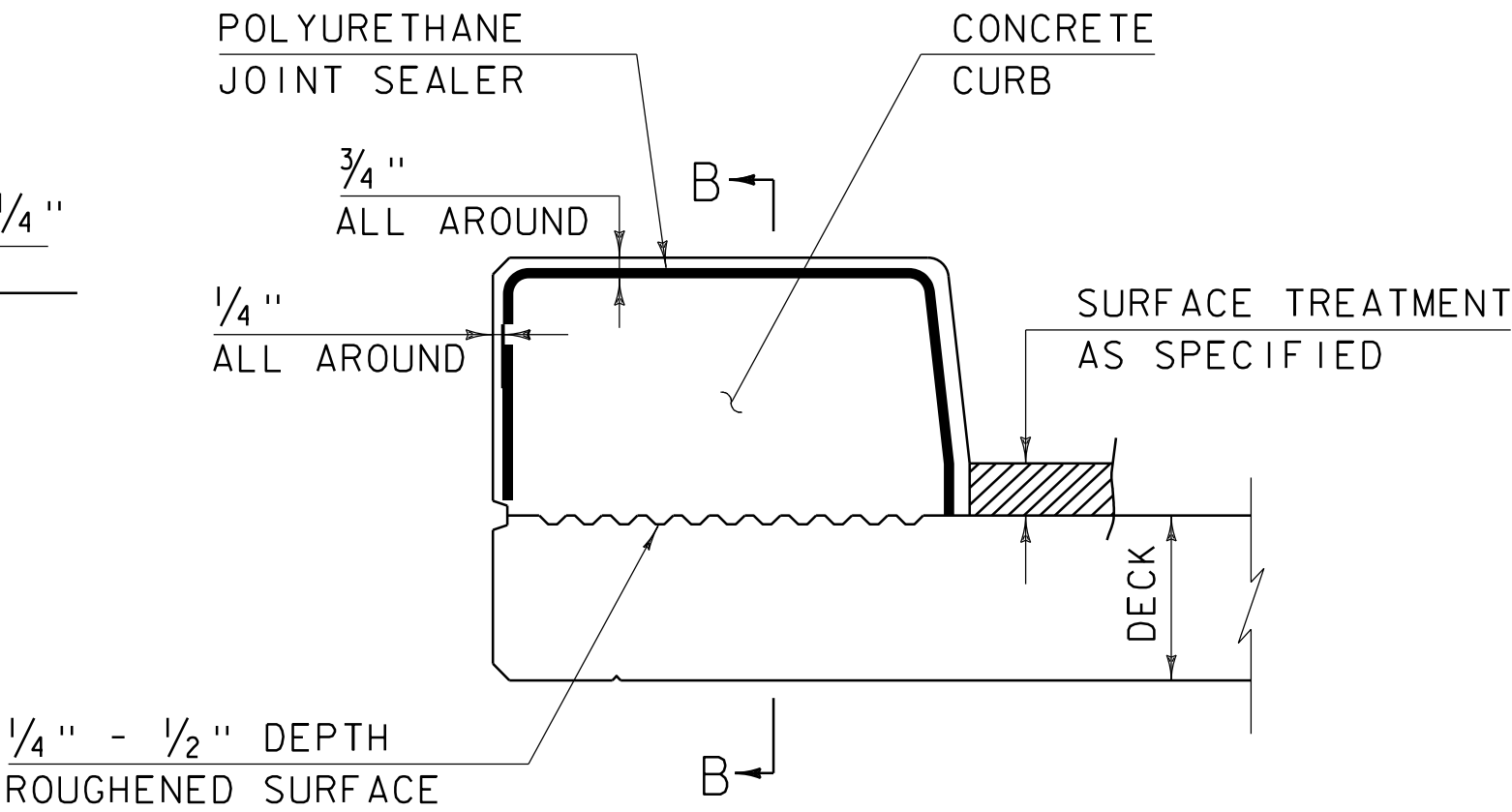
CONCRETE  
DETAILS AND NOTES



STRUCTURES  
DETAIL  
SD-501.00

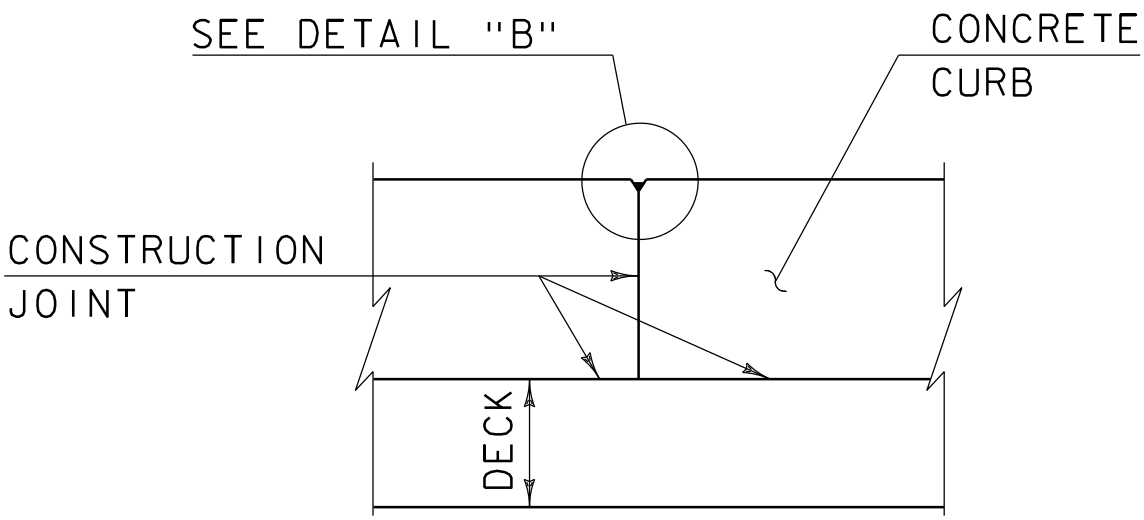


DETAIL "B"  
(NOT TO SCALE)

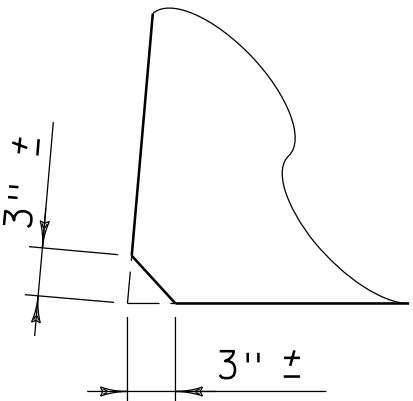


CONCRETE CURB JOINT SECTION  
(NOT TO SCALE)

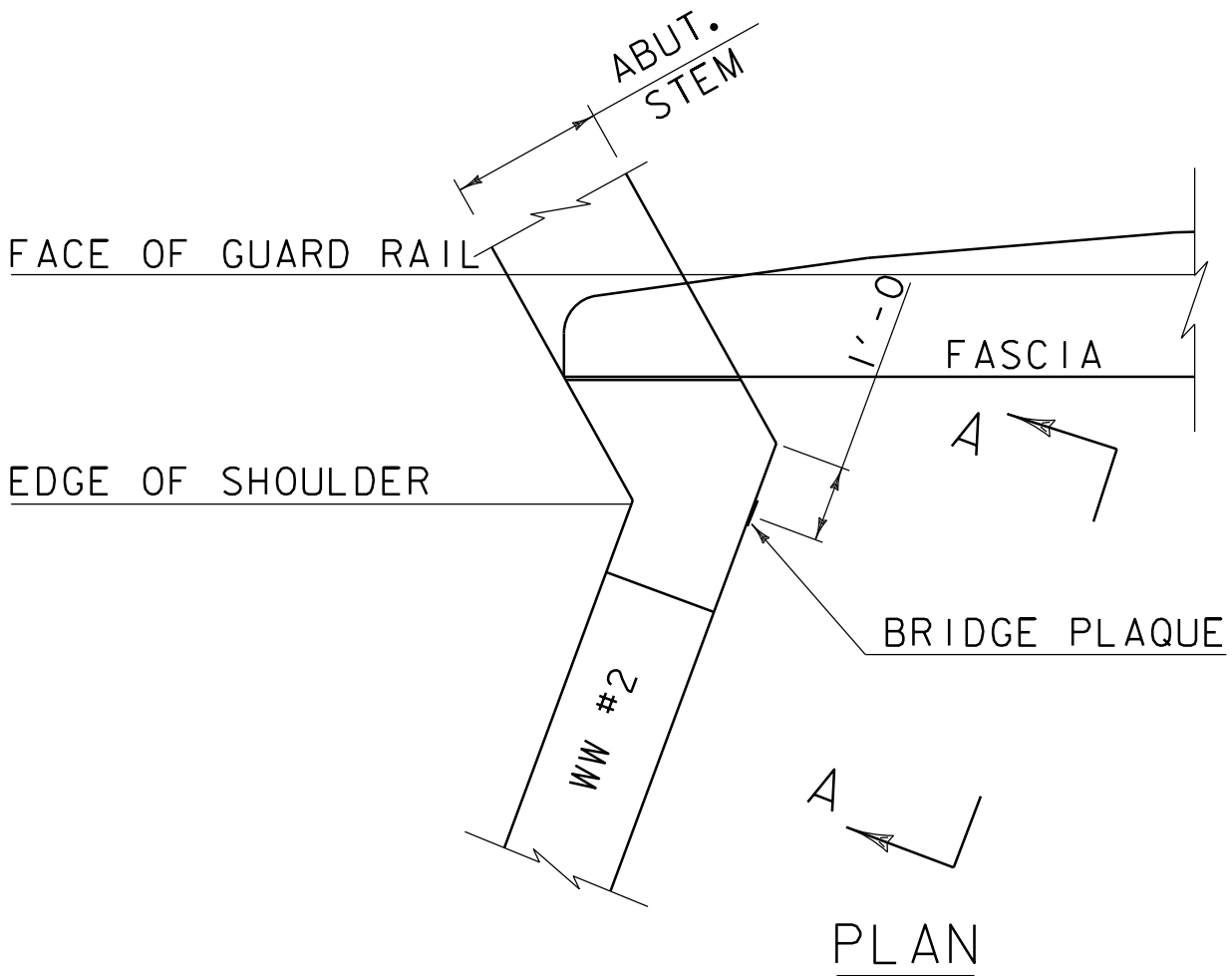
1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT  
DETAIL FOR ADDITIONAL INFORMATION



SECTION B - B  
(NOT TO SCALE)



ACUTE ANGLE  
CLIP DETAIL  
(NOT TO SCALE)



VIEW "A - A"

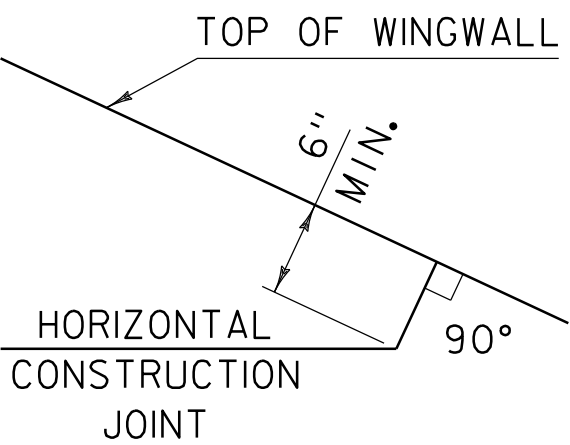
BRIDGE PLAQUE  
(NOT TO SCALE)

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

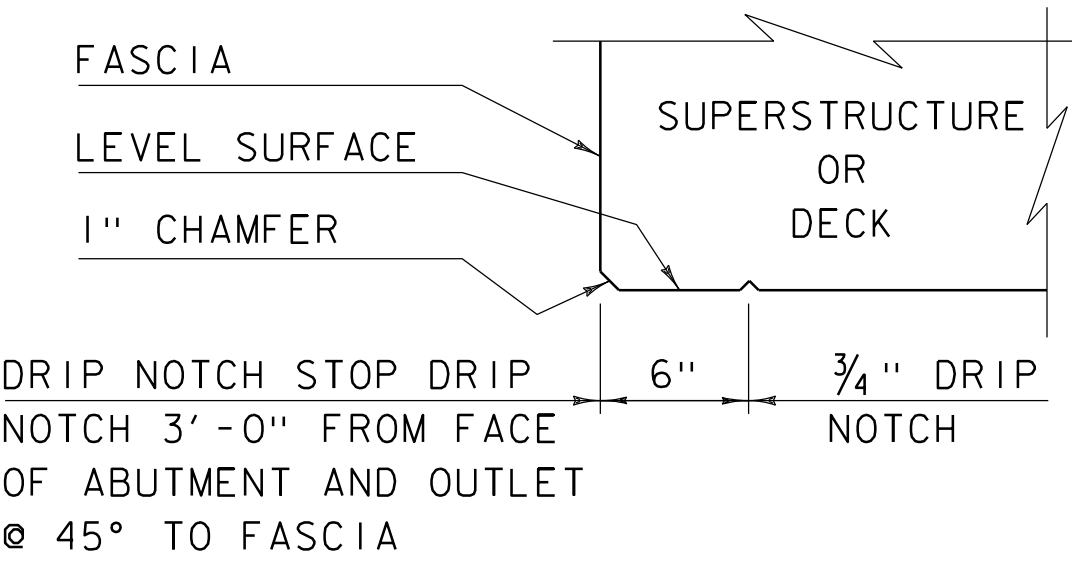
PAYMENT FOR INSTALLATION OF THE BRIDGE PLAQUE SHALL BE  
INCIDENTAL TO THE ADJACENT CONCRETE.

CONCRETE CURB JOINT NOTES

1. CONCRETE CURBS MAY BE PLACED IN ONE CONTINUOUS OPERATION IF  
AN APPROVED SHRINKAGE REDUCING ADMIXTURE LISTED IN THE  
SPECIAL PROVISIONS IS USED WITH THE CONCRETE MIX DESIGN.  
PAYMENT FOR THE SHRINKAGE REDUCING ADMIXTURE WILL BE  
INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM.
2. IF THE CONTRACTOR CHOOSES NOT TO USE AN APPROVED SHRINKAGE  
REDUCING ADMIXTURE, THE CURBS SHALL BE CONSTRUCTED WITH  
CONSTRUCTION JOINTS SPACED AT A MAXIMUM OF 15'-0" CENTER TO  
CENTER AND 2'-0" MINIMUM FROM THE CENTER OF NEAREST BRIDGE  
RAILING POST.
3. ON MULTI-SPAN CONTINUOUS SUPERSTRUCTURES, REGARDLESS OF  
WHETHER APPROVED SHRINKAGE REDUCING ADMIXTURE IS USED, CURB  
JOINTS SHALL BE LOCATED OVER THE CENTERLINE OF PIERS AND  
7'-0" EACH SIDE OF THE CENTERLINE OF EACH PIER.
4. WHEN CURB JOINTS ARE USED THE CURBS SHALL BE PLACED IN  
ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOUR DELAY BETWEEN  
ADJACENT PLACEMENTS.
5. LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THROUGH CURB  
CONSTRUCTION JOINTS. CURB STIRRUP BARS SHALL BE TURNED AS  
NECESSARY TO MAINTAIN COVER IN THE FLARED CURB ENDS.
6. THE JOINT SPACING AND DETAILS SHOWN SHALL APPLY TO  
SIDEWALKS WHEN SHOWN IN THE PLANS.



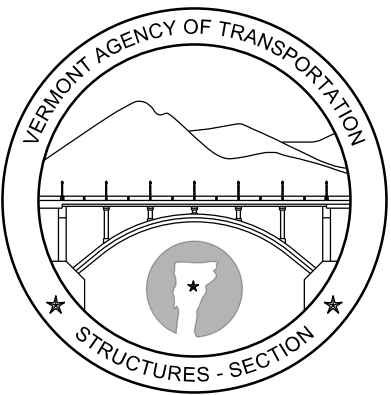
HORIZONTAL WINGWALL  
CONSTRUCTION JOINT  
(NOT TO SCALE)



DRIP NOTCH DETAIL  
(NOT TO SCALE)

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

CONCRETE  
DETAILS AND NOTES



STRUCTURES  
DETAIL  
SD-502.00

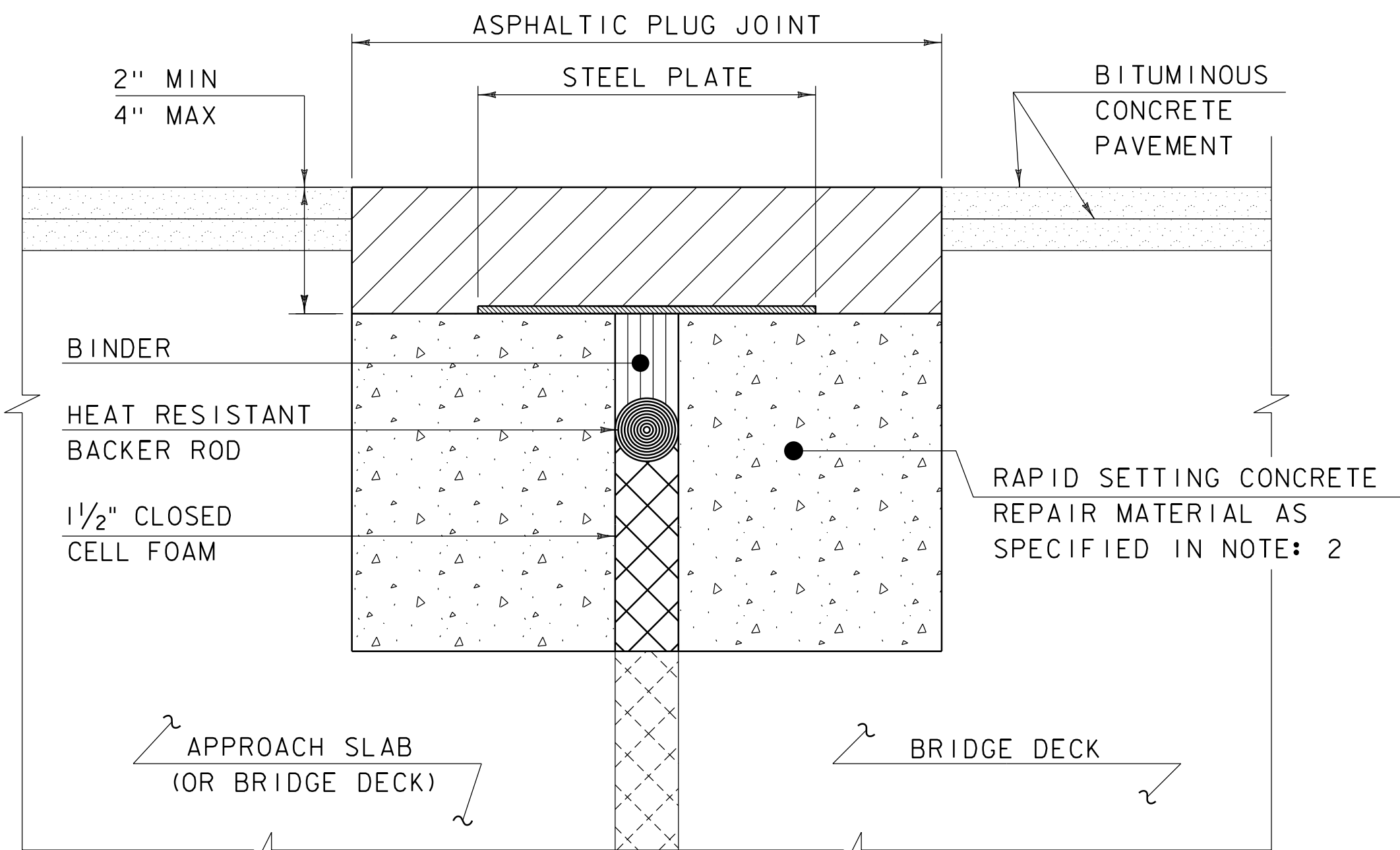
ASPHALTIC PLUG JOINT NOTES

INSTALLATION:

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

WEATHER LIMITATIONS

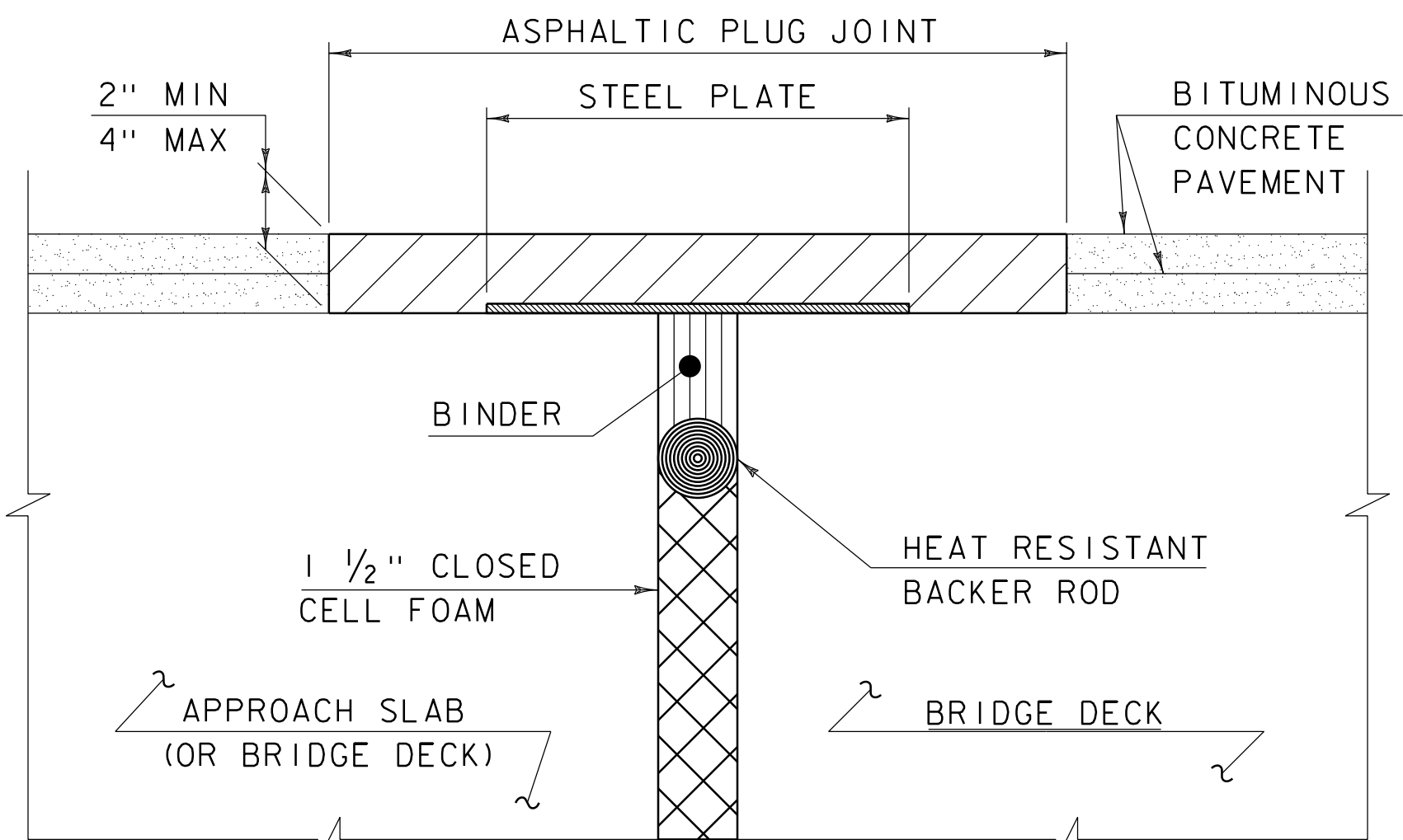
- APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL OR AS RECOMMENDED BY THE MANUFACTURER:
1. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.
  2. THE ROAD SURFACE IS DRY.
  3. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.



ASPHALTIC PLUG JOINT DETAIL - REHAB

NOTES:

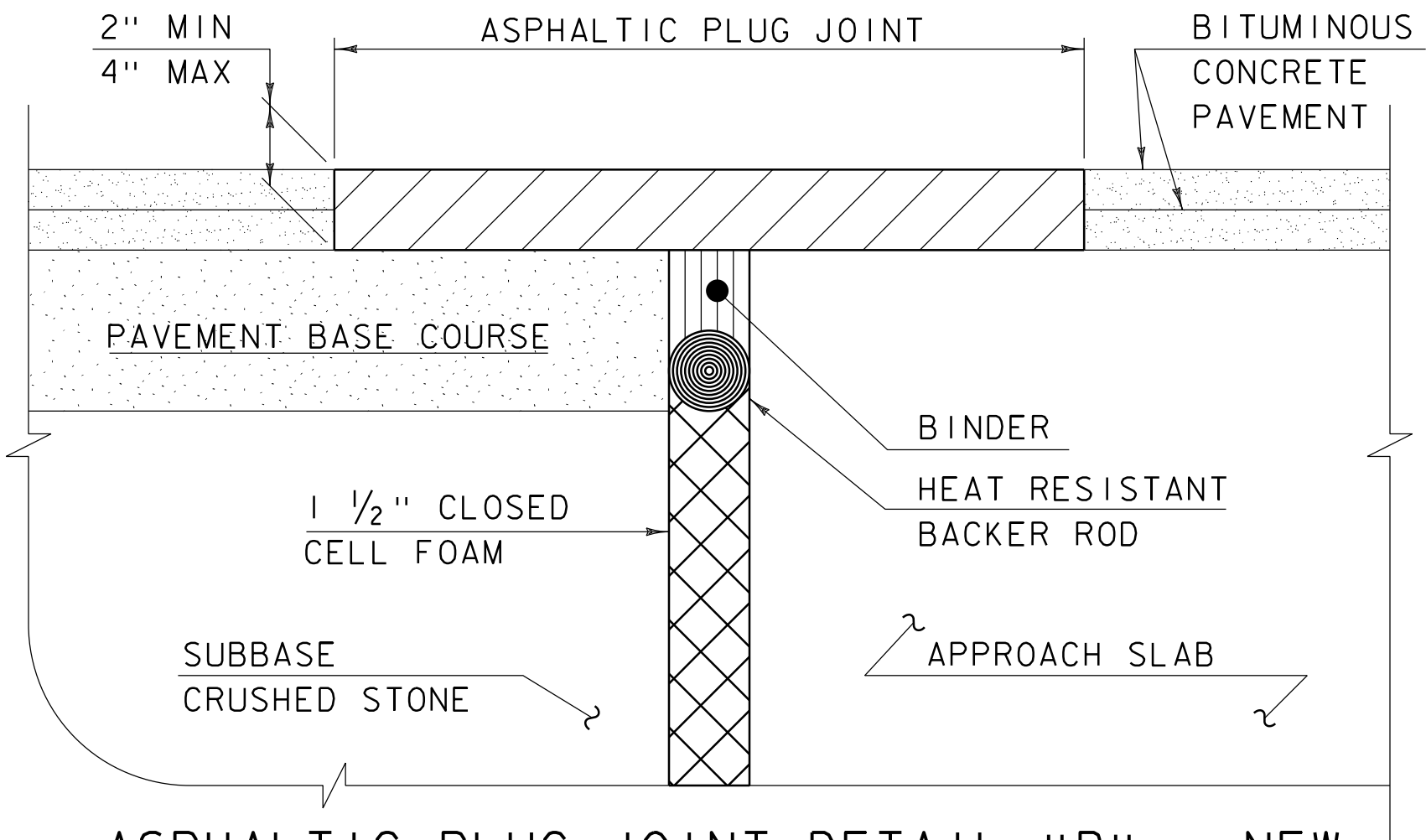
1. THE CONTRACTOR SHALL REMOVE ALL ASPHALTIC PLUG JOINT MATERIAL AND DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER. REMOVAL OF THE FIRST 4 INCHES OF MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG. ANY REMOVAL OF MATERIAL GREATER THAN 4 INCHES SHALL BE INCLUDED IN THE BID PRICE OF ITEM 580.20 RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.
2. THE CONTRACTOR SHALL REPLACE REMOVED MATERIAL THAT IS LESS THAN 4" FROM FINISHED GRADE WITH ASPHALTIC PLUG JOINT MATERIAL MEETING THE REQUIREMENTS OF SUBSECTION 707.15. ALL REMOVED MATERIAL THAT IS GREATER THAN 4 INCHES FROM FINISHED GRADE SHALL BE REPLACED WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.
4. PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER. THE STEEL PLATES MAY BE OMITTED WHERE THE ENGINEER DETERMINES THAT THE APPROACH SLAB OR BRIDGE DECK WILL PROVIDE INADEQUATE SUPPORT AND WHERE VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.



ASPHALTIC PLUG JOINT DETAIL "A" - NEW

NOTE:

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

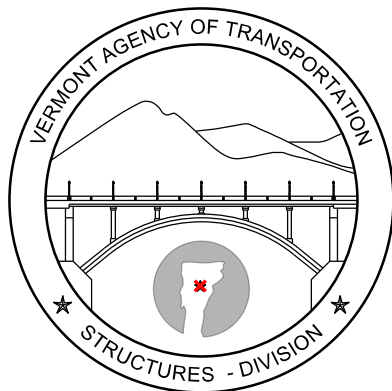


ASPHALTIC PLUG JOINT DETAIL "B" - NEW

DETAILS ON THIS SHEET ARE NOT TO SCALE.

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

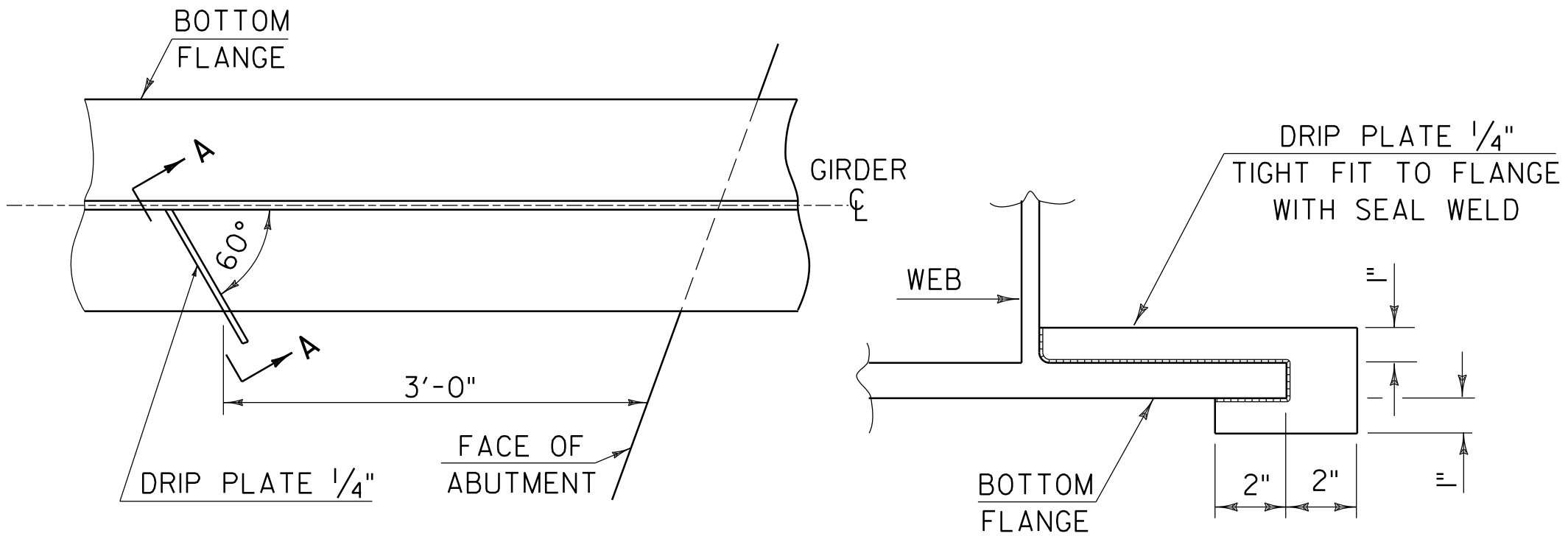
BRIDGE JOINT  
ASPHALTIC PLUG



STRUCTURES  
DETAIL  
SD-516.10

STRUCTURAL STEEL GENERAL NOTES:

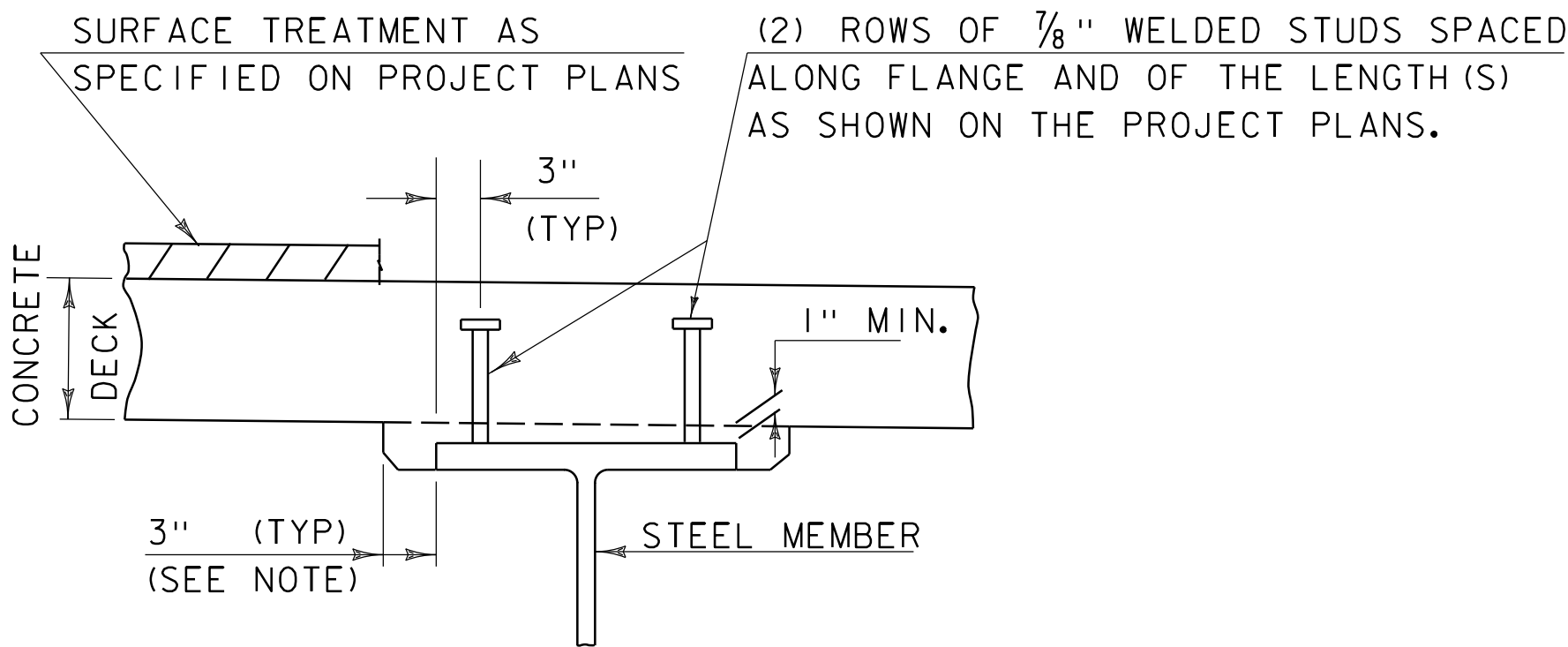
- 1. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH-STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SUBSECTION 506.19, UNLESS OTHERWISE SPECIFIED.
- 2. ALL HOLES IN THE WEBS OF THE FASCIA GIRDERS THAT ARE NOT OTHERWISE FILLED, SHALL BE FILLED WITH EITHER BUTTON HEAD OR HEX HEAD BOLTS. THESE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



PLAN DRIP PLATE

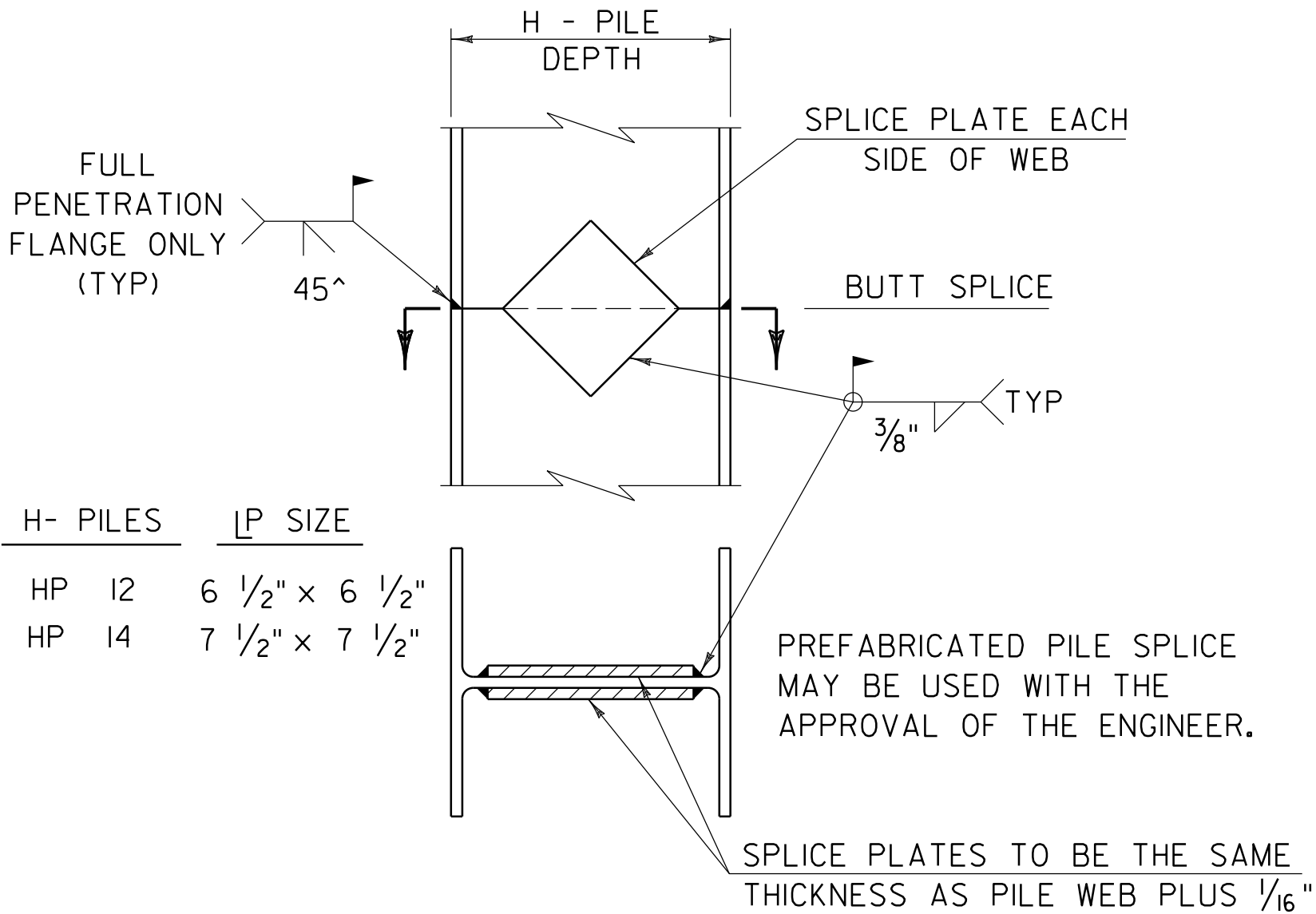
SECTION A - A

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



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

HAUNCH AND SHEAR CONNECTOR DETAIL

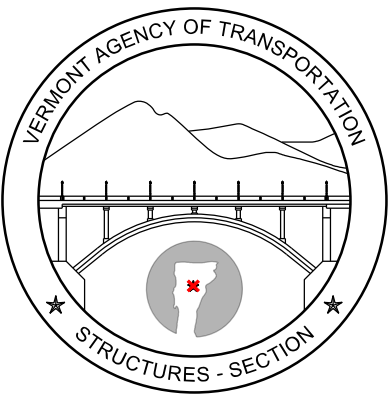


DETAIL OF PILE SPLICE

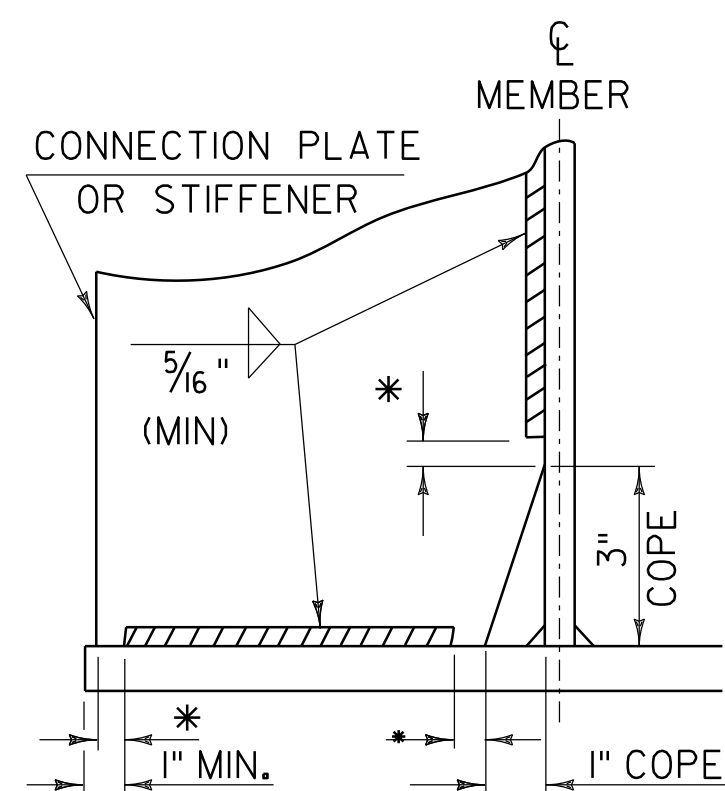
DETAILS ON THIS SHEET ARE "NOT TO SCALE" UNLESS NOTED OTHERWISE.

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

STRUCTURAL STEEL  
DETAILS & NOTES

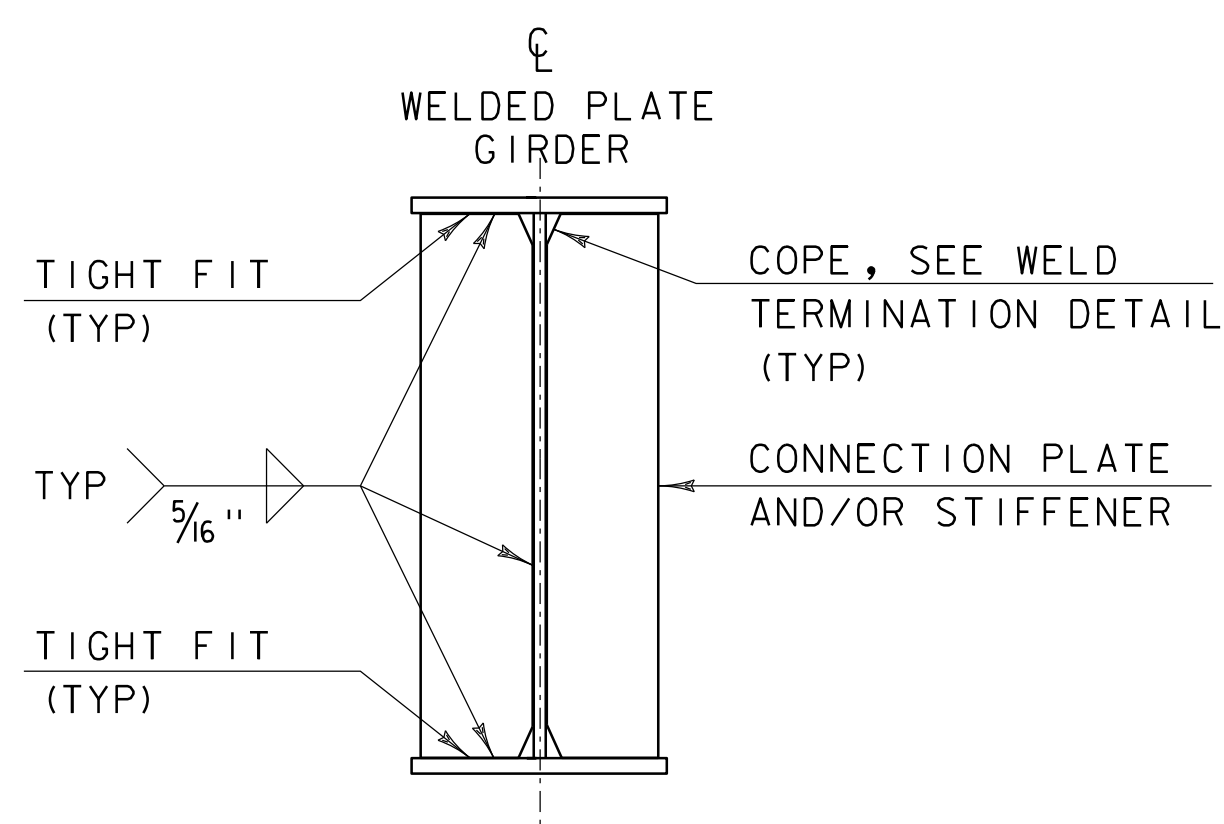


STRUCTURES  
DETAIL  
SD-601.00



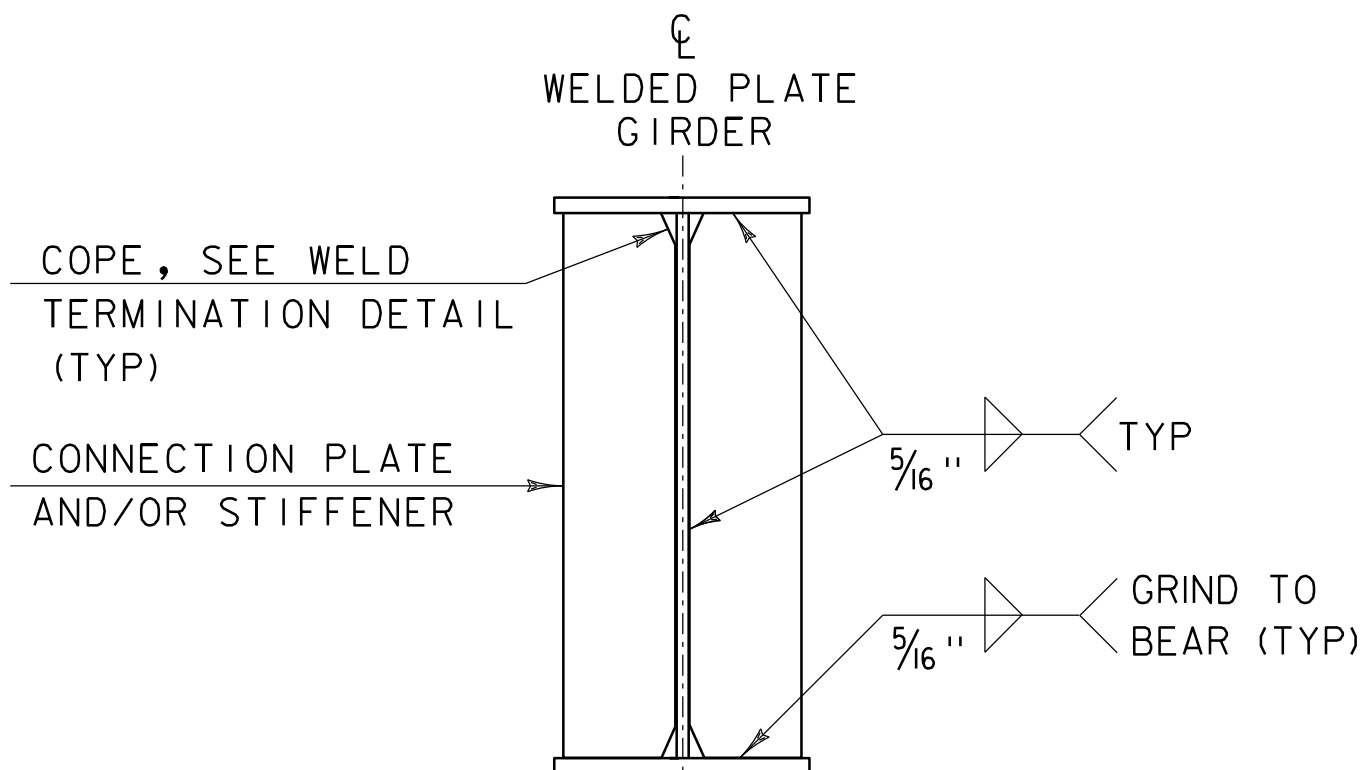
WELD TERMINATION AND COPING  
DETAILS FOR STEEL MEMBERS

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

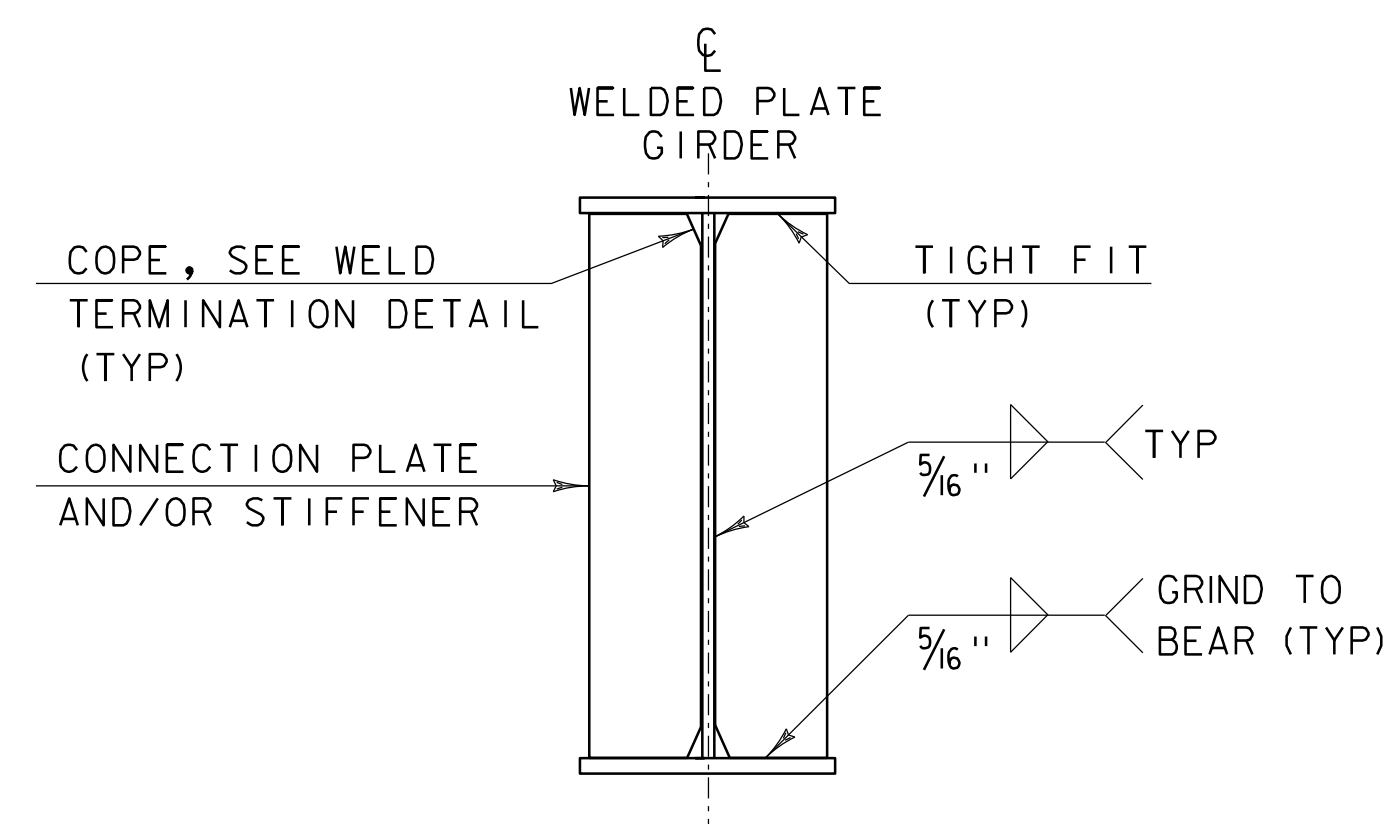


INTERMEDIATE CONNECTION PLATES  
AND/OR STIFFENERS FOR WELDED  
PLATE GIRDERS

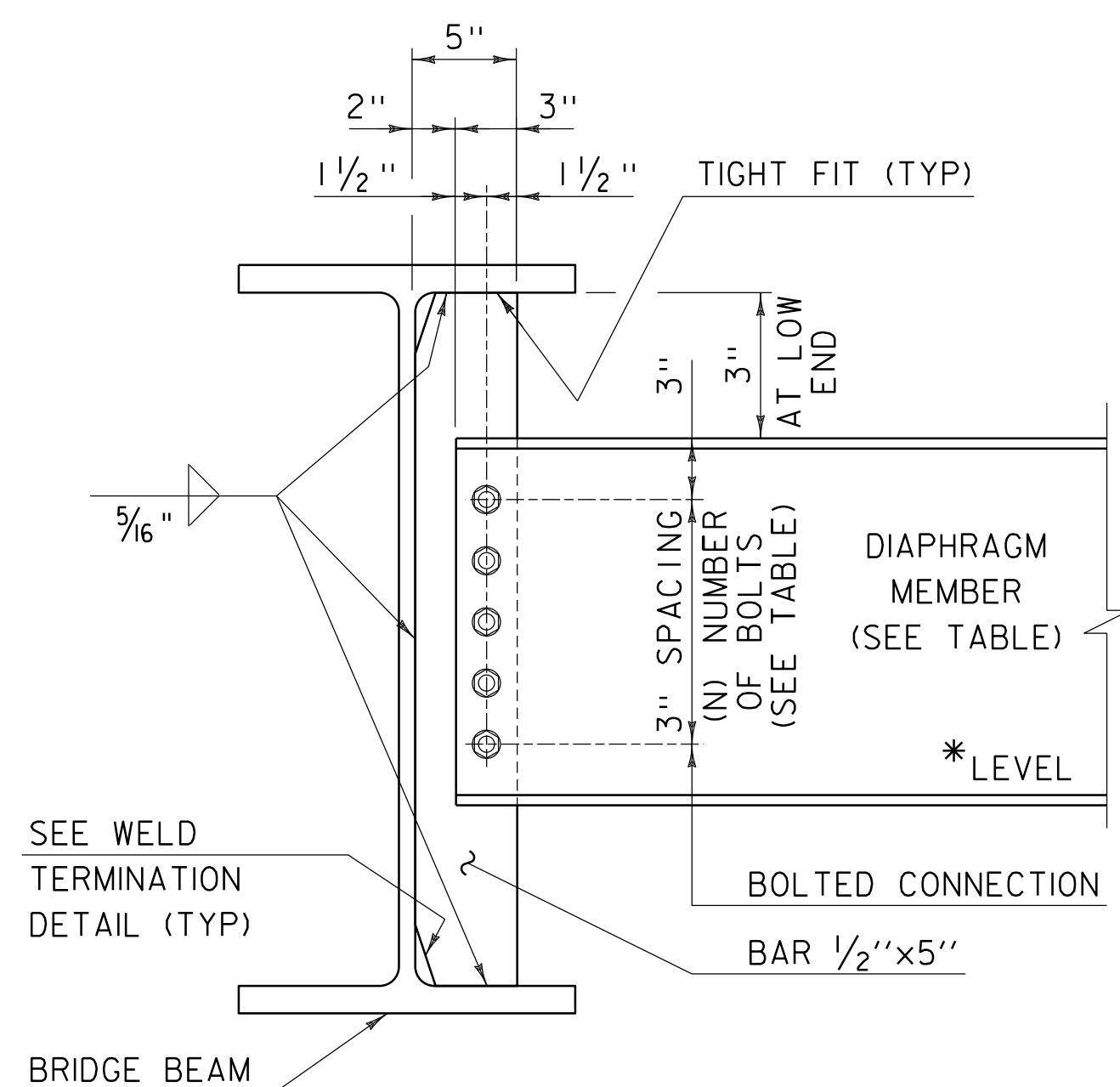
INTERMEDIATE DETAIL IS ONLY USED WHEN PLATE DOES  
NOT OCCUR AT AN ABUTMENT OR PIER.



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



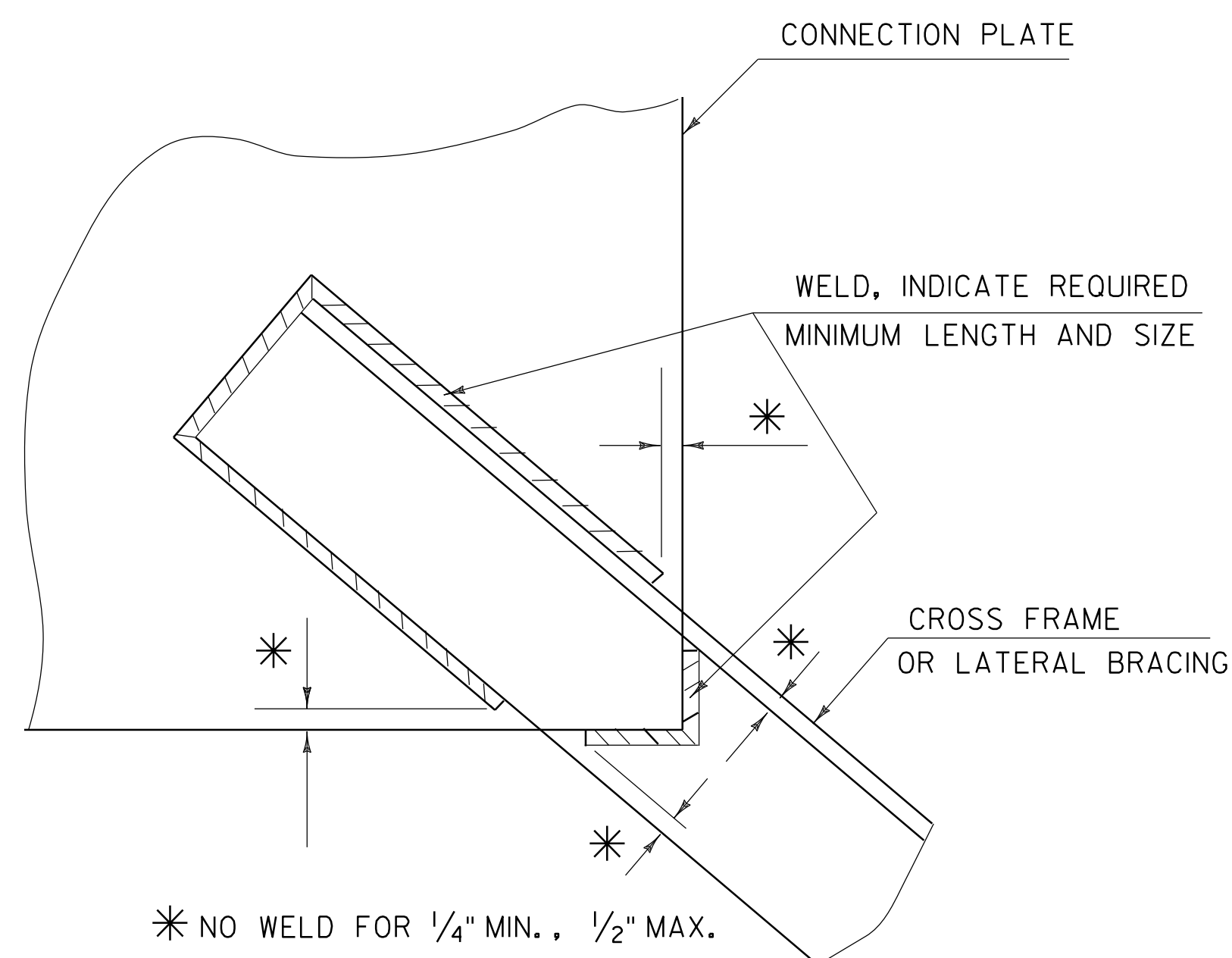
PIER BEARING STIFFENERS  
AND/OR CONNECTION PLATES  
FOR WELDED PLATE GIRDERS



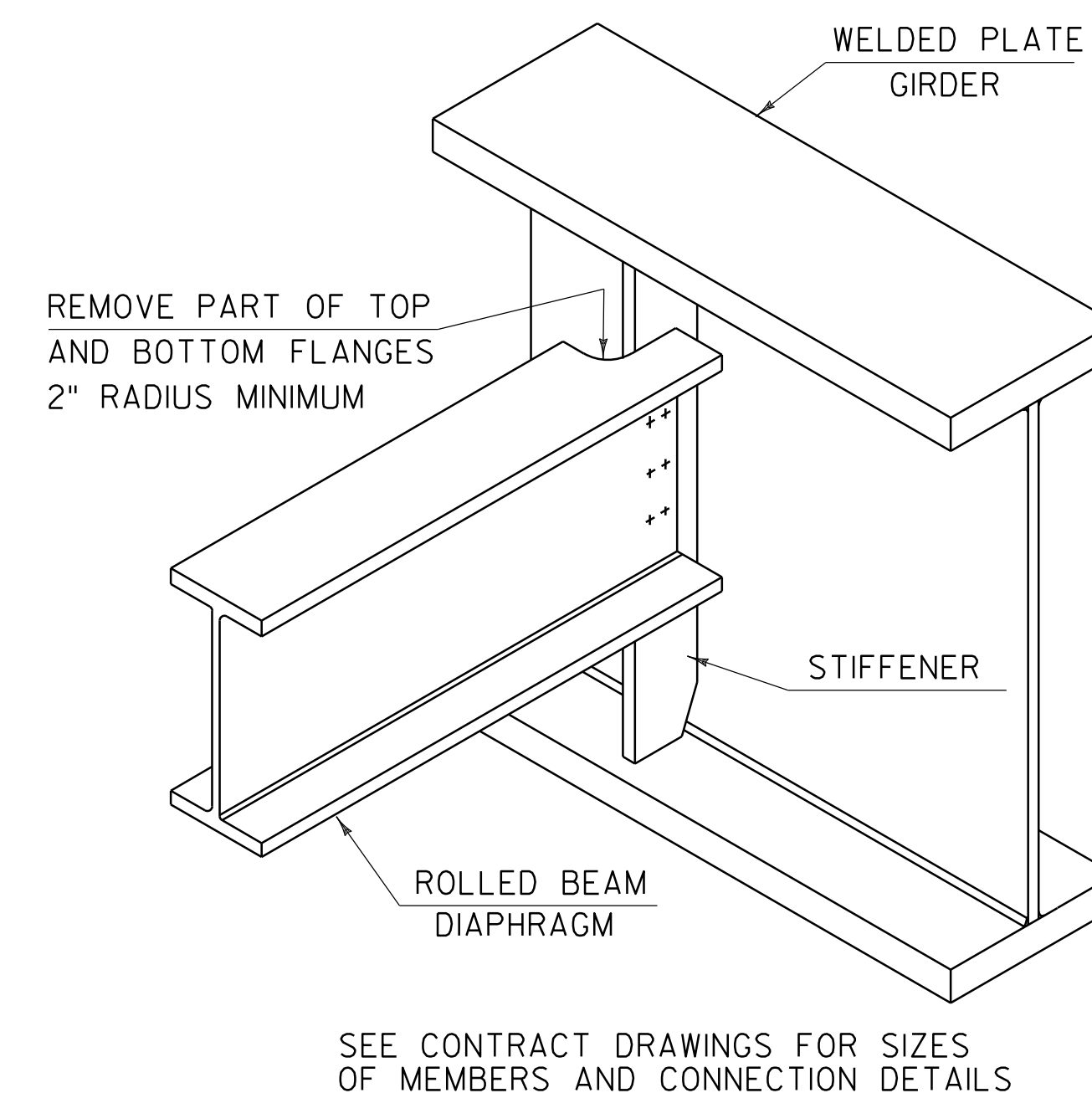
INTERMEDIATE DIAPHRAGMS  
FOR 24" TO 48" BRIDGE BEAMS

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

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



WELD LOCATION DETAIL AT CROSS  
FRAMES AND LATERAL BRACING

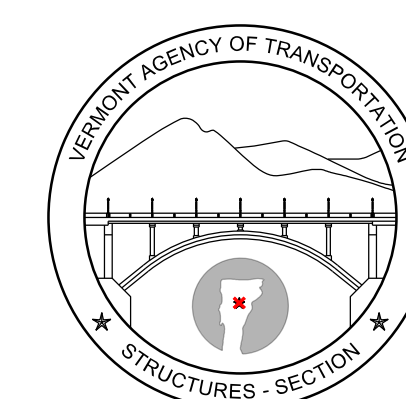


ROLLED BEAM USED AS DIAPHRAGM

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

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

# STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES



STRUCTURES  
DETAIL  
SD-602.00