

STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF WARREN
COUNTY OF WASHINGTON

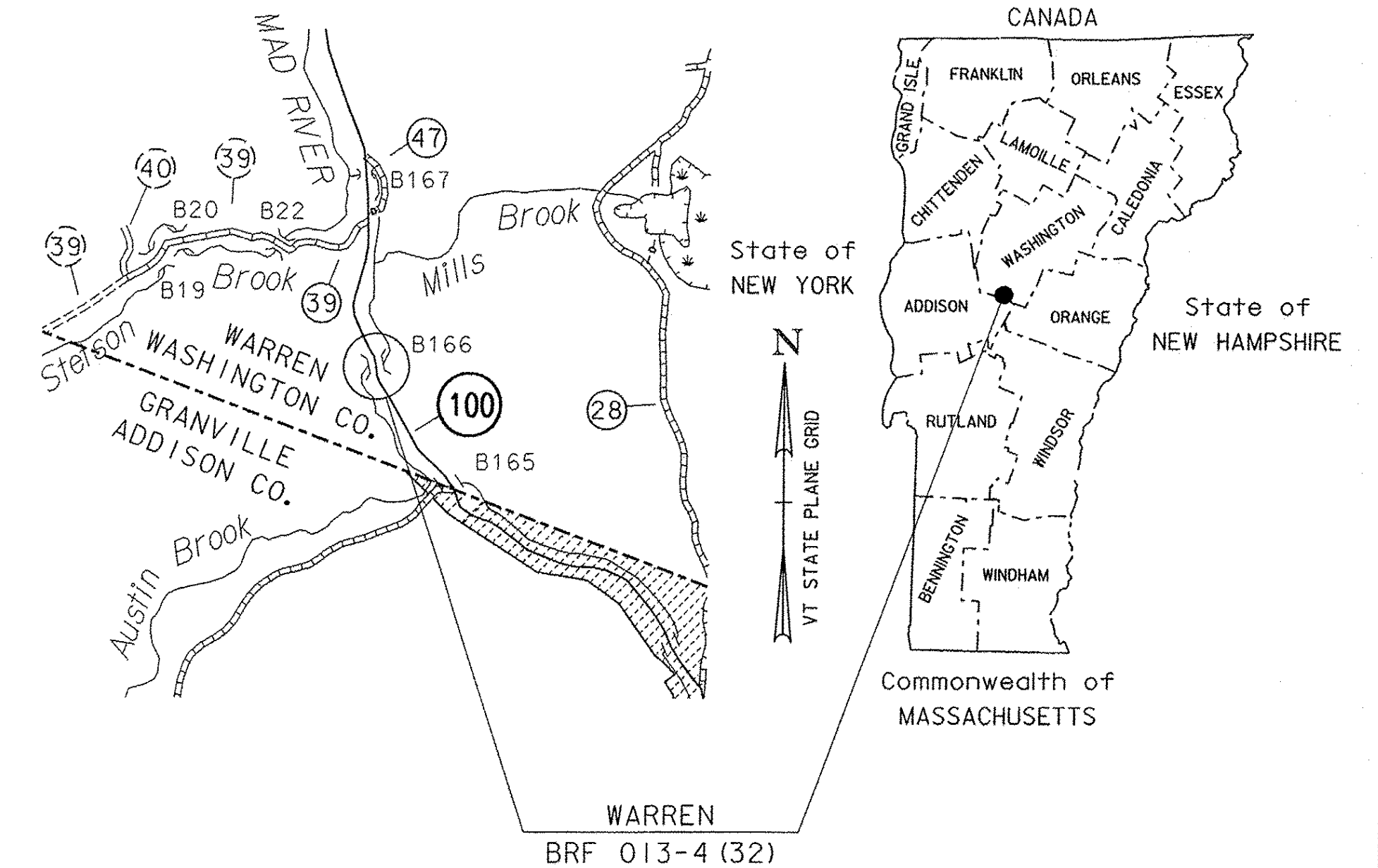
VT ROUTE 100 (MINOR ARTERIAL)

BRIDGE NO : 166

BEGINNING AT A POINT APPROXIMATELY 8.3 MILES SOUTH OF JUNCTION OF VT ROUTE 100 WITH
VT ROUTE 17 AND EXTENDING NORTHERLY 250 FEET ALONG VT ROUTE 100

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES REPLACEMENT OF THE EXISTING BRIDGE
WITH A NEW BRIDGE ON THE EXISTING ALIGNMENT WITH NECESSARY ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE: 103.80 FEET
LENGTH OF ROADWAY: 146.20 FEET
LENGTH OF PROJECT: 250.00 FEET

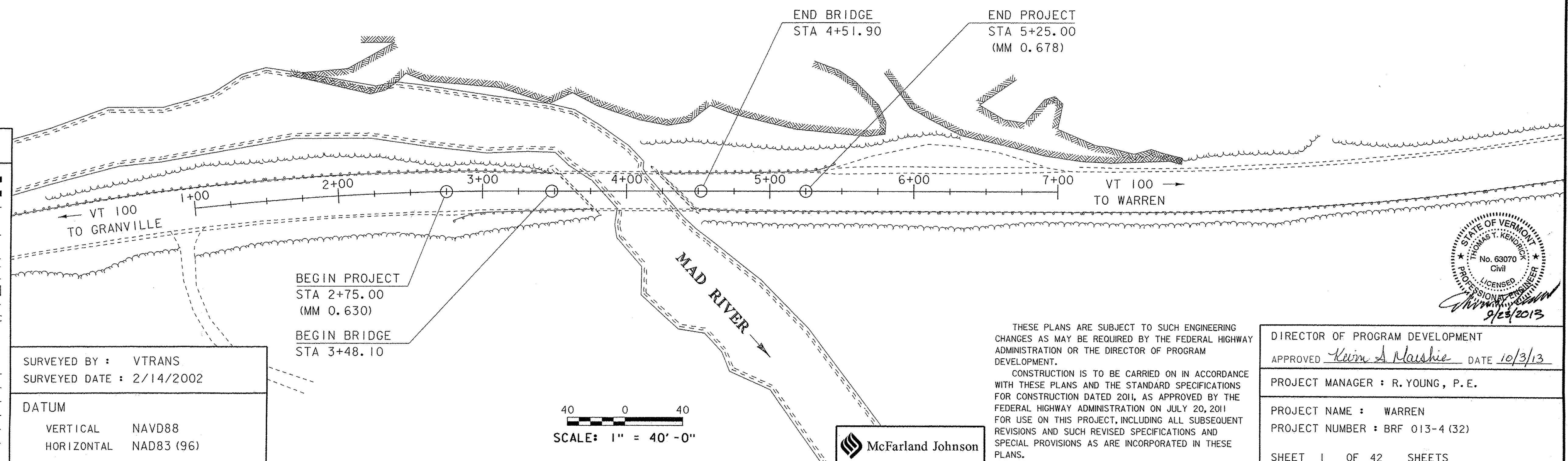


RECORD PLANS	
CONTRACTOR:	LUCK BROTHERS, INC. - PLATTSBURGH, NY
RESIDENT ENGINEER:	RICK HALE
CONSTRUCTION BEGAN:	APRIL 30, 2014
CONSTRUCTION COMPLETE:	SEPTEMBER 11, 2014
RECORD PLANS BY:	RICK HALE & KEVIN KING
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.	
BY	RESIDENT ENGINEER
DATE	2/25/16
NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.	

QUALITY ASSURANCE PROGRAM: LEVEL 2

CONVENTIONAL SYMBOLS

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



SURVEYED BY : VTRANS
SURVEYED DATE : 2/14/2002

DATUM
VERTICAL NAVD88
HORIZONTAL NAD83 (96)

SCALE: 1" = 40'-0"

McFarland Johnson

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

DIRECTOR OF PROGRAM DEVELOPMENT	
APPROVED	DATE 10/3/13
PROJECT MANAGER : R. YOUNG, P.E.	
PROJECT NAME : WARREN	
PROJECT NUMBER : BRF 013-4 (32)	
SHEET 1 OF 42 SHEETS	

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version 11.06.15

LRFD

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STRUCTURES DETAILS SHEETS

SD-501.00

CONCRETE DETAILS AND NOTES

05-07-2010

SD-502.00

CONCRETE DETAILS AND NOTES

10-10-2012

SD-516.10

BRIDGE JOINT ASPHALTIC PLUG

05-07-2010

SD-601.00

STRUCTURAL STEEL DETAILS AND NOTES

06-04-2010

SD-602.00

STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES

05-02-2011

STANDARDS LIST

T-1

TRAFFIC CONTROL GENERAL NOTES

08-06-2012

T-30

CONSTRUCTION SIGN DETAILS

08-06-2012

T-35

CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS

08-06-2012

T-36

CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS FOR PAVING

08-06-2012

E-120

STANDARD SIGN PLACEMENT - EXPRESSWAY & FREEWAY

08-08-1995

E-121

STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD

08-08-1995

E-127

ROUTE MARKINGS AT RURAL INTERSECTIONS

08-08-1995

E-134

BRIDGE NUMBER PLAQUE

08-08-1995

E-136B

STATE ROUTE MARKER SIGN DETAILS

08-08-1995

T-45

SQUARE TUBE SIGN POST AND ANCHOR

01-02-2013

E-193

PAVEMENT MARKING DETAILS

08-18-1995

G-1

STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)

01-03-2000

G-1B

BOX BEAM GUARD RAIL

06-01-1994

S-364A

BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM

04-23-2012

S-364B

GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM

04-23-2012

S-364C

GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM

04-23-2012

S-364D

GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM

04-23-2012

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: FEBRUARY 2013

DRAINAGE AREA : 10.15 SQ MI

CHARACTER OF TERRAIN : FORESTED, MOUNTAINOUS

STREAM CHARACTERISTICS : MEANDERING, PARALLEL TO VT 100

NATURE OF STREAMBED : GRAVEL, COBBLES

PEAK FLOW DATA

Q 2.33 = 400 CFS

Q 50 = 1500

Q 10 = 900

Q 100 = 1800

Q 25 = 1200

Q 500 = 2520

DATE OF FLOOD OF RECORD : UNKNOWN

ESTIMATED DISCHARGE : UNKNOWN

WATER SURFACE ELEV. : UNKNOWN

NATURAL STREAM VELOCITY : @ Q50 = 9.8 FPS

ICE CONDITIONS : MODERATE

DEBRIS : MODERATE

DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? NO

IS ORDINARY RISE RAPID? NO

IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO

IF YES, DESCRIBE :

WATERSHED STORAGE : >1% HEADWATERS :

UNIFORM : X

IMMEDIATELY ABOVE SITE :

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE : SINGLE SPAN ROLLED BEAM

YEAR BUILT : 1939

CLEAR SPAN(NORMAL TO STREAM): 48 FT

VERTICAL CLEARANCE ABOVE STREAMBED: 10.8 FT

WATERWAY OF FULL OPENING: 360 SQ FT

DISPOSITION OF STRUCTURE : PARTIAL REMOVAL

TYPE OF MATERIAL UNDER SUBSTRUCTURE : UNKNOWN

WATER SURFACE ELEVATIONS AT:

Q2.33 = 1132.3 FT

VELOCITY= 6.3 FPS

Q10 = 1134.1

" 7.9

Q25 = 1134.9

" 8.7

Q50 = 1136.5

" 9.7

Q100 = 1137.1

" 10.6

LONG TERM STREAMBED CHANGES :

IS THE ROADWAY OVERTOPPED BELOW Q100: NO

FREQUENCY: N/A

RELIEF ELEVATION: 1142.8 FT

DISCHARGE OVER ROAD @Q100: 0

UPSTREAM STRUCTURE

TOWN: WARREN

DISTANCE: 4,000 FT

HIGHWAY #: VT 100

STRUCTURE #: BR 165

CLEAR SPAN: 32 FT

CLEAR HEIGHT: 6 FT

YEAR BUILT: 2012

FULL WATERWAY: 180 SQ FT

STRUCTURE TYPE: PRECAST CONCRETE RIGID FRAME

DOWNSTREAM STRUCTURE

TOWN: WARREN

DISTANCE: 4,500 FT

HIGHWAY #: VT 100

STRUCTURE #: BR 167

CLEAR SPAN: 80 FT

CLEAR HEIGHT: 12 FT

YEAR BUILT: 1957

FULL WATERWAY:

STRUCTURE TYPE: SINGLE SPAN ROLLED BEAM

LRFR LOAD RATING FACTORS

LOADING LEVELS

H-20

HL-93

3S2

6 AXLE

3A STR.

4A STR.

5A SEMI

TONNAGE

20

36

36

66

30

34.5

38

INVENTORY

3.56

1.88

POSTING

OPERATING

4.61

2.44

3.27

2.08

3.14

2.83

2.89

COMMENTS:

SERVICEABILITY (DEFLECTION) GOVERNS DESIGN

AS BUILT "REBAR" DETAIL

LEVEL I

LEVEL II

LEVEL III

TYPE:

TYPE:

TYPE:

GRADE:

GRADE:

GRADE:

TRAFFIC DATA

YEAR

ADT

DHV

% D

% T

ADTT

20 year ESAL for flexible pavement from 2014 to 2034 : 378000

2014

1100

140

55

5.6

65

40 year ESAL for flexible pavement from 2014 to 2054 : 873000

2034

1200

160

55

8.7

110

Design Speed : 50 mph

PILE DRIVING AND TESTING REQUIREMENTS

1. NOMINAL PILE DRIVING CAPACITY (SEE GENERAL NOTES)

2. PILE TEST RESISTANCE FACTOR (SEE GENERAL NOTES)

3. MAXIMUM PILE TIP ELEVATION

4. PILES MUST BE DRIVEN A MINIMUM OF 19 FEET BELOW BOTTOM OF ABUTMENT REGARDLESS IF REQUIRED DRIVING RESISTANCE HAS BEEN MET.

SEE BELOW

PROPOSED STRUCTURE

STRUCTURE TYPE: PRECAST CONCRETE/STEEL COMPOSITE SUPERSTRUCTURE

CLEAR SPAN(NORMAL TO STREAM): 82 FT

VERTICAL CLEARANCE ABOVE STREAMBED: 10 FT

WATERWAY OF FULL OPENING: 420 SQ FT

WATER SURFACE ELEVATIONS AT:

Q2.33 = 1132.3 FT

VELOCITY= 6.3 FPS

Q10 = 1134.0

" 7.9

Q25 = 1134.9

" 8.7

Q50 = 1136.4

" 9.7

Q100 = 1137.0

" 10.6

IS THE ROADWAY OVERTOPPED BELOW Q100: NO

FREQUENCY: N/A

RELIEF ELEVATION: 1142.8 FT

DISCHARGE OVER ROAD @Q100: 0

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 1138.0 FT

VERTICAL CLEARANCE: @ Q50 = 1.6 FT

SCOUR: 1.5' @ Q100

REQUIRED CHANNEL PROTECTION: STONE FILL, TYPE IV

PERMIT INFORMATION

AVERAGE DAILY FLOW: 21 CFS

DEPTH OR ELEVATION:

ORDINARY LOW WATER: 10

DEPTH = 0.5 FT

ORDINARY HIGH WATER: 172

DEPTH = 2 FT

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: N/A

CLEAR SPAN (NORMAL TO STREAM):

VERTICAL CLEARANCE ABOVE STREAMBED:

WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

OHW AND OLW ARE AVERAGE DEPTHS MEASURED UPSTREAM AND DOWNSTREAM OF THE BRIDGE.

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.

2. TRAFFIC SIGNALS ARE NOT NECESSARY.

3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD

HL-93

2. FUTURE PAVEMENT

dP: 3.0 INCH

3. DESIGN SPAN

L: 101.50 FT

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

Δ: ---

5. PRESTRESSING STRAND

f_y: ---

6. PRESTRESSED CONCRETE STRENGTH

f'c: ---

7. PRESTRESSED CONCRETE RELEASE STRENGTH

f'ci: ---

8. SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)

f'c: 7.0 KSI

9. CONCRETE, HIGH PERFORMANCE CLASS A

f'c: 4.0 KSI

10. CONCRETE, HIGH PERFORMANCE CLASS B

f'c: ---

11. CONCRETE, CLASS C

f'c: ---

12. REINFORCING STEEL

f_y: 60 KSI

13. STRUCTURAL STEEL AASHTO M270 (WEATHERING)

f_y: 50 KSI

14. SOIL UNIT WEIGHT

γ: 0.140 KCF

15. NOMINAL BEARING RESISTANCE OF SOIL

q_n: ---

16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)

φ: ---

17. NOMINAL BEARING RESISTANCE OF ROCK

q_n: ---

18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)

φ: ---

19. NOMINAL AXIAL PILE RESISTANCE (SEE PROJECT NOTES)

q_p: ---

20. PILE YIELD STRENGTH ASTM A572

f_y: 50 KSI

21. PILE SIZE

HP 12X74

22. EST. PILE LENGTH

L_p: ---

23. ABUTMENT NO. 1 = 19 FT

ABUTMENT NO. 2 = 19 FT

23. PILE RESISTANCE FACTOR

φ: 0.45

24. LATERAL PILE DEFLECTION

Δ: 0.50 INCH

25. BASIC WIND SPEED

V_{3s}: 100 MPH

26. MINIMUM GROUND SNOW LOAD

p_g: ---

27. SEISMIC DATA

PGA: ---

S_s: ---

S₁: ---

PROJECT NAME: WARREN

PROJECT NUMBER: BRF 013-4(32)

FILE NAME: z10b424frm.dgn

PLOT DATE: 10/11/2013

PROJECT LEADER: R.YOUNG

DRAWN BY: P.DUSTIN

DESIGNED BY: VTRANS/D.KULL

CHECKED BY: T.KENDRICK

PRELIMINARY INFORMATION SHEET

SHEET 2 OF 42

PROJECT NOTES

GENERAL

1.

ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, LRFD FIFTH EDITION, DATED 2010 AND ITS LATEST REVISIONS.
2.

THE BRIDGE IS DESIGNED FOR AN HL-93 LIVE LOADING WITH A 3 INCH ALLOWANCE FOR FUTURE PAVEMENT.
3.

ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT.
4.

ITEM 529.15, "REMOVAL OF STRUCTURE" SHALL BE USED FOR THE REMOVAL OF THE EXISTING STRUCTURE INCLUDING THE SUPERSTRUCTURE, AND ANY PORTION OF THE ABUTMENTS OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION. THE ABUTMENTS SHALL BE REMOVED TO ELEVATION 1132 FEET OR BOTTOM OF STONE FILL.
5.

THE EXISTING STRUCTURAL STEEL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL IDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSAL OF THE REMOVED EXISTING STRUCTURAL STEEL.
6.

ALL PRECAST CONCRETE ELEMENTS SHALL BE FABRICATED TO THE SPECIFIED DIMENSIONS WITHIN THE TOLERANCES DICTATED IN THE PRECAST/PRESTRESSED CONCRETE INSTITUTE TOLERANCE MANUAL FOR PRECAST AND PRESTRESSED CONCRETE CONSTRUCTION, MNL 135-00 AND ITS LATEST REVISIONS.
7.

FOR TRAFFIC CONTROL NOTES, SEE SHEET 14.
8.

THE STATE HAS INSTALLED STEEL PLATES ON THE EXISTING BRIDGE DECK. PRIOR TO BRIDGE DECK REMOVAL, THE CONTRACTOR SHALL STOCKPILE THE PLATES ON THE PROJECT SITE AND LOAD ON A TRUCK SUPPLIED BY THE DISTRICT. CONTACT BILL SARGENT, MAINTENANCE BRIDGE MANAGER AT (802) 828-2699 TO ARRANGE REMOVAL FROM THE PROJECT SITE. ALL COSTS SHALL BE INCLUDED UNDER ITEM 529.15, "REMOVAL OF STRUCTURE".

EARTHWORK

9.

THE "STONE FILL, TYPE IV" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE PREFABRICATED BRIDGE UNITS ARE SET. EXISTING ABUTMENTS TO BE REMOVED TO BOTTOM OF STONE FILL OR AS DIRECTED BY THE ENGINEER.
10.

SUITABLE EXCAVATION MATERIAL TO BE MATERIAL FROM COMMON EXCAVATION WHICH HAS BEEN APPROVED BY THE ENGINEER.

CONCRETE

11.

ALL CONCRETE PLACED IN THE DECK CLOSURE POURS, BACKWALL, APPROACH SLAB CLOSURE POURS AND PILE VOID CLOSURE POURS SHALL BE ITEM 900.608 "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)".
12.

ALL CONCRETE PLACED IN THE DECK OF THE PREFABRICATED BRIDGE UNITS SHALL MEET THE REQUIREMENTS OF ITEM 900.675 "SPECIAL PROVISION (PREFABRICATED BRIDGE UNIT SUPERSTRUCTURE)"
13.

ALL PRECAST SUBSTRUCTURE CONCRETE AND APPROACH SLAB CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 540 - PRECAST CONCRETE.
14.

ALL REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR REINFORCING STEEL, LEVEL II. ALL REINFORCING STEEL PLACED IN THE BACKWALL WILL BE PAID FOR UNDER ITEM 507.12 REINFORCING STEEL, LEVEL II. ALL OTHER REINFORCING STEEL WILL BE INCLUDED IN THE UNIT BID PRICE FOR THE APPROPRIATE PRECAST CONCRETE PAY ITEM.
15.

ITEM 514.10, "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE SUPERSTRUCTURE AND SUBSTRUCTURE SURFACES, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.
16.

ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH X 1 INCH UNLESS OTHERWISE NOTED.
17.

ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".A REINFORCING STEEL SCHEDULE SHALL BE SUBMITTED TO THE RESIDENT ENGINEER FOR REVIEW.
18.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT AT NO POINT DURING FABRICATION, DELIVERY, OR ERECTION OF THE PRECAST BRIDGE UNITS THAT THE CONCRETE DECK IS IN TENSION WHICH CAUSES CRACKING IN THE CONCRETE.

19.

MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

ALONG BACK FACES OF WALLS AGAINST EARTH

2.0 INCH

ALONG TOP SURFACE OF DECK SLAB

2.5 INCH

ALONG BOTTOM SURFACE OF DECK SLAB

1.5 INCH

ELSEWHERE UNLESS OTHERWISE NOTED

3.0 INCH

PRECAST ABUTMENTS AND POST-TENSIONING

20.

VERTICAL CONSTRUCTION JOINTS REQUIRED BY THE CONTRACTOR FOR SHIPMENT OF THE ABUTMENTS SHALL BE KEVED AND MATCH CAST. A JOINT DETAIL SHALL BE SHOWN ON THE FABRICATION DRAWINGS.
21.

POST-TENSIONING AND ASSOCIATED ITEMS ARE ONLY REQUIRED IF THE ABUTMENT CAP IS CONSTRUCTED OF MORE THAN ONE UNIT. ANY POST-TENSIONING STRANDS AND CONDUIT SHALL ADHERE TO THE REQUIREMENTS OF SECTION 510 - PRESTRESSED CONCRETE. GALVANIZED ANCHOR ASSEMBLIES, CONDUIT AND POST-TENSIONING STRANDS SHALL BE INCLUDED UNDER ITEM 540.10 "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1) OR ITEM 540.10 "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2)" AS APPROPRIATE. POST TENSIONING STRANDS SHALL BE COVERED WITH SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF THE STRAND, EXCEPT AT ANCHORAGE LOCATIONS.
22.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND DETAILING OF POST TENSIONING ELEMENTS. THE POST TENSIONING DESIGN SHALL FOLLOW CURRENT LRFD GUIDELINES.
23.

GALVANIZE ANCHOR ASSEMBLIES (SUPPORT BOLTS , NUTS, WASHERS AND LEVELING PLATES) AFTER FABRICATION ACCORDING TO AASHTO M232M/M232.
24.

ANCHOR BOLTS, LEVELING PLATE, NUTS AND WASHERS EXPANDABLE JOINT FILLER AND ELASTOMERIC PADS SHALL BE INCLUDED UNDER ITEM 540.10 "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1) OR ITEM 540.10 "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2)" AS APPROPRIATE.
25.

DESIGN VALUES:

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

B. POST-TENSIONING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW RELAXATION 7-WIRE STRANDS.

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

D. THERE SHALL BE 2 STRANDS PER CONDUIT.

E. THE JACKING FORCE PER STRAND = 44 KIPS.
26.

THE CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF SUBSECTION 711.01. ALL COSTS ASSOCIATED WITH PLACING THE CORRUGATED STEEL PIPE SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 540.10 "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1)" OR ITEM 540.10 "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2)" AS APPROPRIATE.
27.

SUGGESTED SEQUENCE OF CONSTRUCTION:

A. PRE-DRILL 2' DIA. HOLES FOR PILES AND BACKFILL WITH SAND BORROW PRIOR TO ROAD CLOSURE USING ALTERNATING ONE-WAY TRAFFIC ON THE BRIDGE

B. CLOSE ROADWAY AND DEMO EXISTING BRIDGE.

C. PREPARE AND GRADE FOUNDATION TO REQUIRED ELEVATION.

D. DRIVE PILES IN PRE-AUGERED HOLES.

E. APPLY EPOXY BONDING COMPOUND TO MATCH CAST CONSTRUCTION JOINT FACES. PLACE PRECAST ABUTMENTS.

F. USE A CALIBRATED JACK TO TENSION TO 3 KIPS TO REMOVE SAG IN STRANDS.

G. CHECK ALIGNMENT OF ABUTMENT CAPS.

H. STRESS POST-TENSIONING STRANDS USING A CALIBRATED JACK OPERATED BY QUALIFIED PERSONNEL WHO HAVE PREVIOUS EXPERIENCE IN POST-TENSIONING.

I. FILL PILE CAVITIES WITH ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)".

J. BACKFILL BEHIND ABUTMENTS.
28.

BOTH ABUTMENTS SHALL BE BACKFILLED SIMULTANEOUSLY. NO MORE THAN 12" DIFFERENTIAL BACKFILL HEIGHT SHALL BE PERMITTED. BACKFILLING SHALL NOT BEGIN UNTIL THE BACKWALL CLOSURE POUR IS COMPLETE.

PILES

29.

THE PILES SHALL BE HP 12X74 WITH THE FOLLOWING STRUCTURAL AND PILE DRIVING PROPERTIES:

A. PILE AXIAL PILE RESISTANCE = 1090 KIPS

B. PILE MONITORING METHOD = STATIC ANALYSIS

C. PILE TEST RESISTANCE FACTOR = φ=0.45

D. NOMINAL PILE DRIVING RESISTANCE (RNDR) = 466.7 KIPS
30.

PILE SHOES ARE REQUIRED AND SHALL CONFORM TO SUBSECTION 505.04(F).

31.

THE TOPS OF THE PILES AFTER DRIVING SHALL NOT VARY FROM THE LOCATION SHOWN ON THE PLANS BY MORE THAN 3 INCHES. THE PILE ORIENTATION SHALL NOT VARY BY MORE THAN 5 DEGREES. THE CONTRACTOR SHALL DEMONSTRATE HOW TOLERANCE WILL BE MET TO THE SATISFACTION OF THE ENGINEER REGARDLESS OF INSTALLATION METHOD.
32.

FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL LENGTHS MAY VARY.
33.

THE PILES SHALL BE DRIVEN TO BEDROCK AND SHALL BE EMBEDDED IN THE GROUND A MINIMUM OF 19 FEET BELOW THE BOTTOM OF THE PILE CAP.
34.

DUE TO THE PRESENCE OF COBBLES AND BOULDERS, THE CONTRACTOR IS REQUIRED TO PRE-EXCAVATE MATERIAL TO BEDROCK PRIOR TO DRIVING PILES. THIS WORK SHALL BE COMPLETED PRIOR TO THE BRIDGE CLOSURE PERIOD. REFERENCE TRAFFIC CONTROL SHEET 14 FOR ADDITIONAL INFORMATION.
35.

PAYMENT FOR PRE-EXCAVATION FOR PILES SHALL BE UNDER ITEM 900.640 "SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENT PILES)"

PREFABRICATED BRIDGE UNITS

36.

PREFABRICATED BRIDGE UNITS SHALL BE PAID UNDER ITEM 900.675, "SPECIAL PROVISION (PREFABRICATED BRIDGE UNIT SUPERSTRUCTURE)".
37.

PREFABRICATED BRIDGE UNITS SHALL BE FABRICATED TO THE DIMENSIONS SHOWN ON THE PLANS. PRECAST BACKWALL DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
38.

THE CAST IN PLACE BACKWALL AS SHOWN ON THE PLANS IS OPTIONAL AND MAY BE PRECAST BY THE CONTRACTOR.
39.

PRECAST BACKWALLS, IF USED, SHALL INCLUDE AN EQUIVALENT AMOUNT OF DOWEL BARS AS IS CURRENTLY PROVIDED BY THE SUPPORT BOLTS AT THE CONSTRUCTION JOINT. THE DOWELS CAN BE LOCATED ANYWHERE ALONG THE CENTERLINE OF BEARING PROVIDED THAT THE MAXIMUM SIZE OF THE DOWELS DOES NOT EXCEED TWO INCHES IN DIAMETER.
40.

UNLESS OTHERWISE NOTED, ALL NEW STRUCTURAL STEEL SHALL CONFORM TO AASHTO M270/M270M GRADE 50W AND SHALL BE PAID FOR UNDER ITEM 900.675 "SPECIAL PROVISION (PREFABRICATED BRIDGE UNIT SUPERSTRUCTURE)".
41.

AFTER SUPERSTRUCTURE STEEL ELEMENTS HAVE BEEN SET UP AT THE SHOP, ELEVATIONS ALONG THE TOP OF THE GIRDERS SHALL BE TAKEN FOR USE IN DETERMINING FINISHED GRADES.
42.

ENDS OF GIRDERS ARE TO BE VERTICAL IN FINAL POSITION.

PRECAST APPROACH SLABS

43.

PRECAST CONCRETE STRENGTH: f'c = 5,000 PSI.
44.

SLAB EDGES IN CONTACT WITH HPC RAPID SET CONCRETE SHALL BE SANDBLASTED PRIOR TO DELIVERY AND POWER WASHED WITH WATER PRIOR TO INSTALLATION.
45.

FILL APPROACH SLAB CLOSURE POURS WITH HPC RAPID SET CONCRETE IN ACCORDANCE WITH ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)". CONCRETE SHALL HAVE A 28 DAY MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI.
46.

THE FABRICATOR MAY ALTER THE DESIGN DETAILED WITHIN THESE PLANS TO ACCOMMODATE THEIR SPECIFIC OPERATION. THIS ALTERATION SHALL BE DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT.

PROJECT NAME: WARREN
PROJECT NUMBER: BRF 013-4(32)

FILE NAME: z10b424frm.dgn

PLOT DATE: 03-OCT-2013

PROJECT LEADER: R. YOUNG

DRAWN BY: P. DUSTIN

DESIGNED BY: D. KULL

CHECKED BY: T. KENDRICK

PROJECT NOTES

SHEET 3 OF 42



QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES												TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
						ROADWAY	TRAINING	EROSION CONTROL	FULL C.E. ITEMS	BRIDGE		GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
						1						1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				
						500						500		CY	COMMON EXCAVATION	203.15				EARTHWORK SUMMARY
										1000		1000		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27		500	CY	FILL AVAILABLE COMMON EXCAVATION
										525		525		CY	STRUCTURE EXCAVATION	204.25		500	CY	TOTAL AVAILABLE FILL
										300		300		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
						335						335		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10		45	CY	FILL REQUIRED PLANMETERED FILL
						400						400		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35		45	CY	TOTAL FILL REQUIRED
						25						25		CY	AGGREGATE SHOULDERS, IN PLACE	402.10		455	CY	TOTAL WASTE
						3						3		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				
										252		252		LF	STEEL PILING, HP 12 X 74	505.16				
										4060		4060		LB	REINFORCING STEEL, LEVEL II	507.12				
										10		10		GAL	WATER REPELLENT, SILANE	514.10				
										60		60		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
										345		345		SY	MEMBRANE WATERPROOFING, SPRAY APPLIED	520.10				
										210		210		LF	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	525.335				
										1		1		EACH	REMOVAL OF STRUCTURE (2100 SF - EST.)	529.15				
										1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1)	540.10				
										1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2)	540.10				
										1		1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 1)	540.10				
										1		1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 2)	540.10				
						180						180		CY	STONE FILL, TYPE III	613.12				
										700		700		CY	STONE FILL, TYPE IV	613.13				
						370						370		LF	BOX BEAM GUARDRAIL	621.30				
						4						4		EACH	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	621.725				
						505						505		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
						60						60		LF	TEMPORARY TRAFFIC BARRIER	621.90				
						120						120		HR	FLAGGERS	630.15				
									1			1		LS	FIELD OFFICE, ENGINEERS	631.10				
									1			1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
									1			1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
									3000			3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
						1						1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
						1						1		LS	TRAFFIC CONTROL	641.10				
						4						4		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
						700						700		LF	4 INCH WHITE LINE	646.20				
						700						700		LF	4 INCH YELLOW LINE	646.21				
										710		710		SY	GEOTEXTILE UNDER STONE FILL	649.31				
								225				225		SY	GEOTEXTILE FOR SILT FENCE	649.51				

PROJECT NAME: WARREN
PROJECT NUMBER: BRF 013-4(32)

FILE NAME: z10b424frm.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
QUANTITY SHEET (1 OF 3)

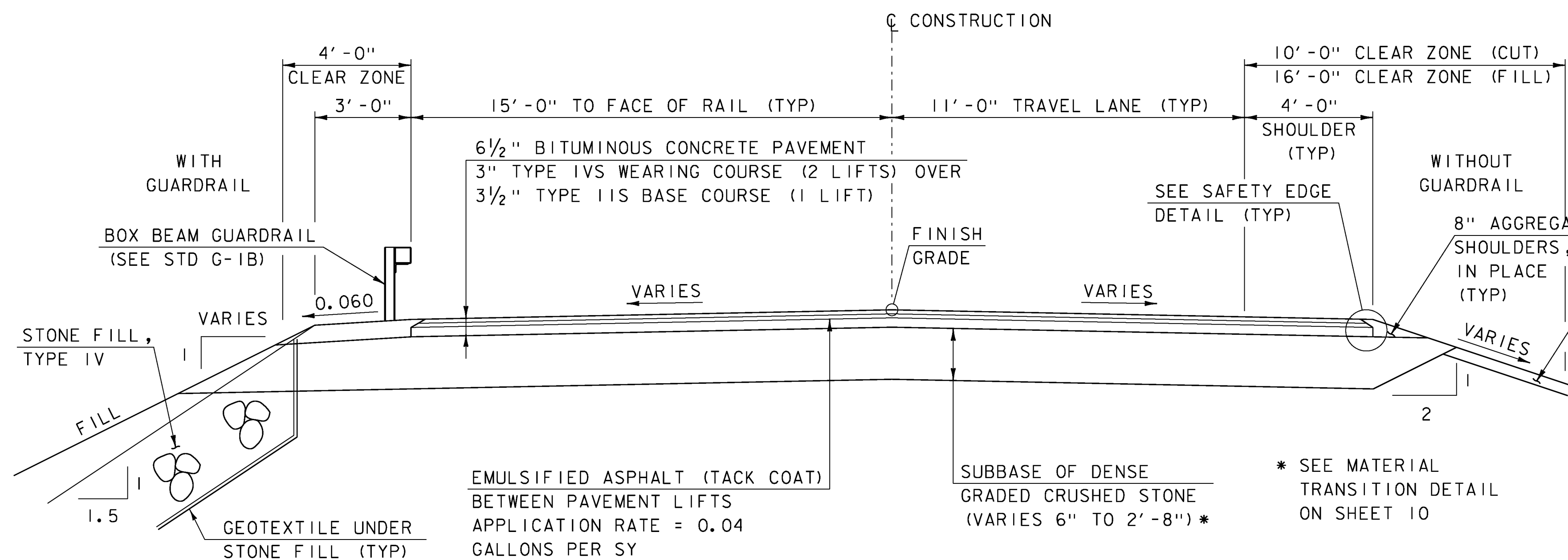
PLOT DATE: 03-OCT-2013
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 4 OF 42



PROJECT NAME: WARREN	
PROJECT NUMBER: BRF 013-4(32)	
FILE NAME: z10b424frm.dgn	PLOT DATE: 14-OCT-2013
PROJECT LEADER: R. YOUNG	DRAWN BY: P. DUSTIN
DESIGNED BY: D. KULL	CHECKED BY: T. KENDRICK
QUANTITY SHEET (2 OF 3)	SHEET 5 OF 42

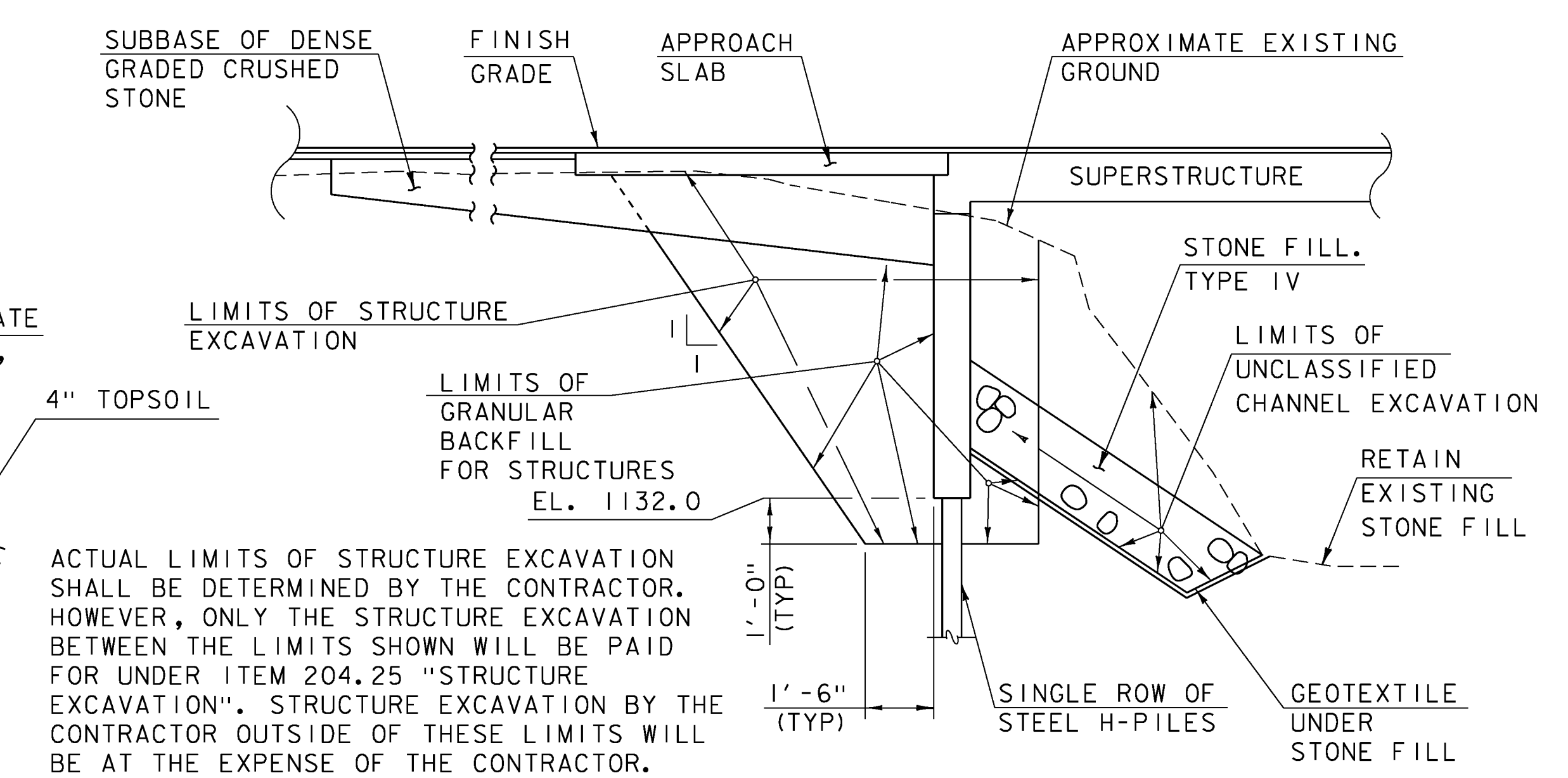
BRIDGE QUANTITY SHEET 1

		PROJECT NAME:	WARREN
		PROJECT NUMBER:	BRF 013-4(32)
		FILE NAME: z10b424frm.dgn	PLOT DATE: 03-OCT-2013
	 McFarland Johnson	PROJECT LEADER: R. YOUNG	DRAWN BY: P. DUSTIN
		DESIGNED BY: D. KULL	CHECKED BY: T. KENDRICK
		QUANTITY SHEET (3 OF 3)	SHEET 6 OF 42



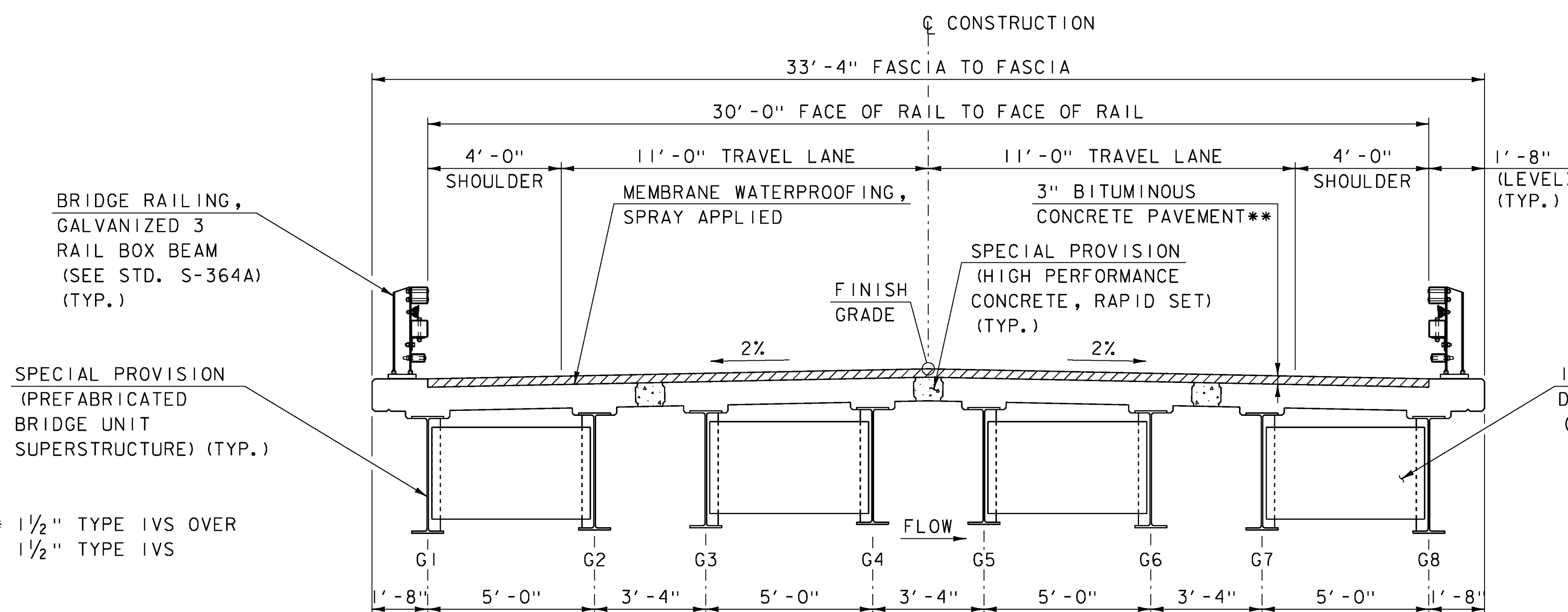
VT 100 TYPICAL SECTION

SCALE 3/8" = 1'-0"



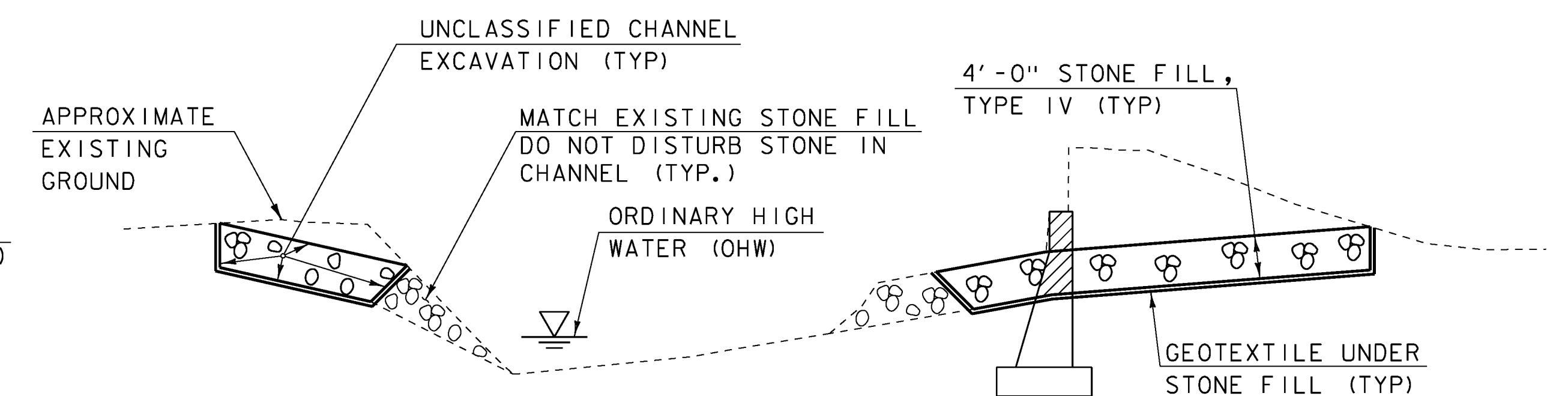
ABUTMENT EARTHWORK SECTION

NOT TO SCALE



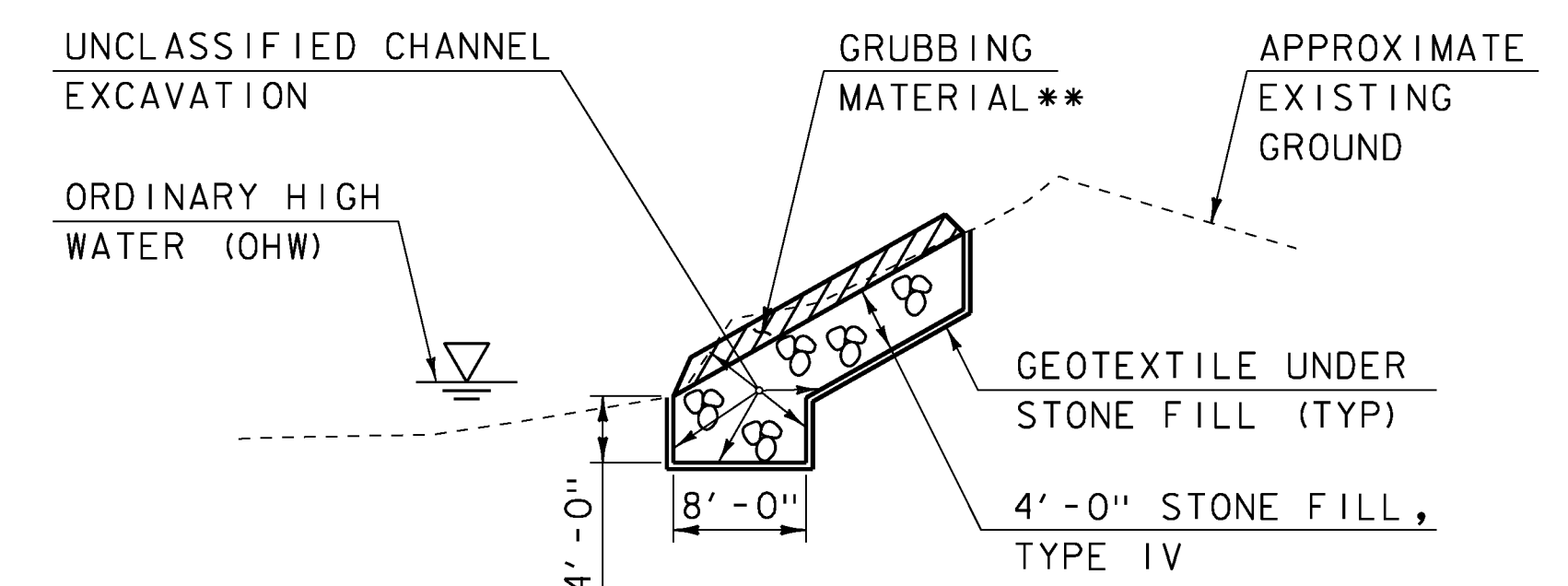
BRIDGE TYPICAL SECTION

SCALE 3/8" = 1'-0"



TYPICAL CHANNEL SECTION

(UNDER BRIDGE)
NOT TO SCALE



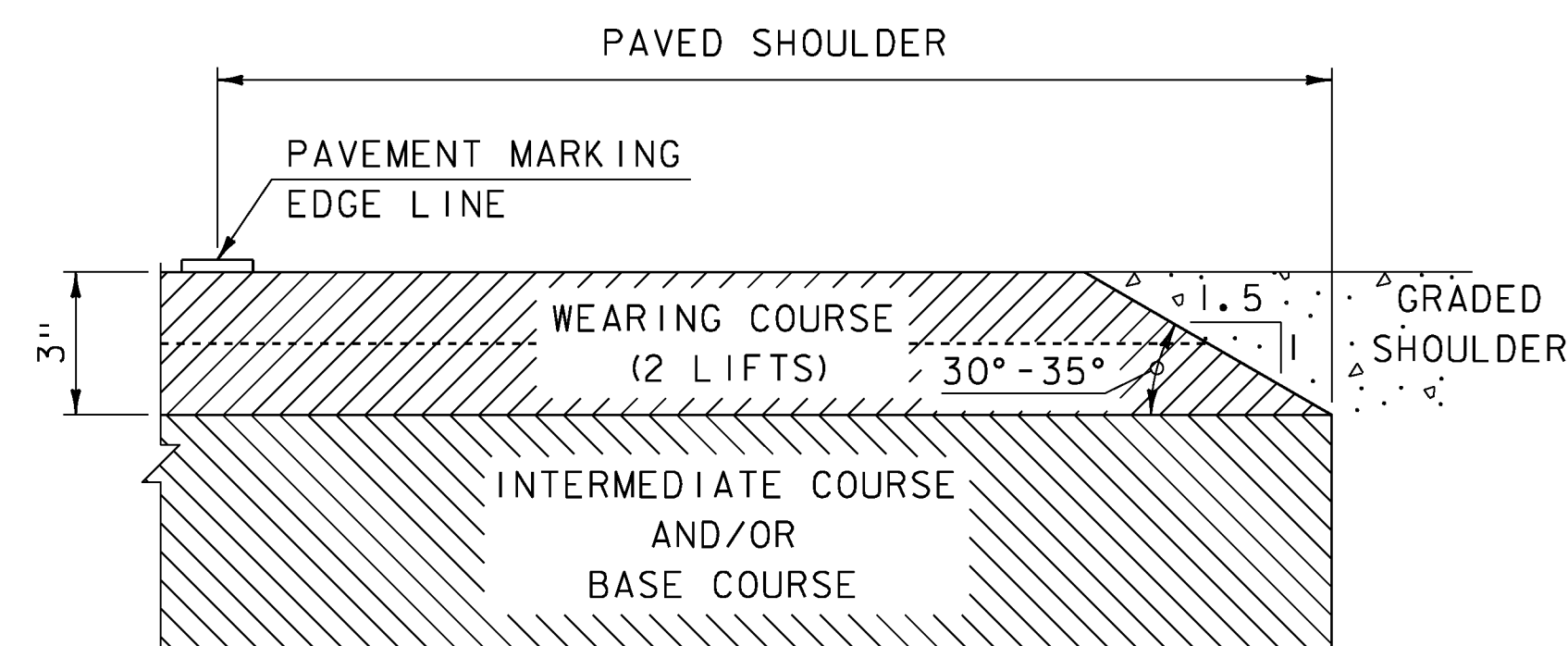
TYPICAL CHANNEL SECTION

(OUTSIDE OF BRIDGE)
NOT TO SCALE

MATERIAL TOLERANCES

(IF USED ON PROJECT)

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



SAFETY EDGE DETAIL

NOT TO SCALE

NOTES:

1. LEVELING COURSE MAY INCLUDE THE "SAFETY EDGE" AT THE CONTRACTOR'S CHOICE.
2. THE EDGE OF PAVEMENT SHALL BE FORMED IN SUCH A WAY THAT THE BITUMINOUS CONCRETE PAVEMENT IS EXTRUDED OR COMPRESSED TO FORM THE 30 TO 35 DEGREE ANGLE. DEVICES THAT SIMPLY STRIKE-OFF THE MIX WITHOUT PROVIDING ANY COMPACTIVE EFFORT WILL NOT BE ALLOWED.

HVCTRL #1

TWIN RIVER AZ

N = 576661.660
E = 1546135.820
ELEV. = 1089.47

GENERAL LOCATION, WARREN, VERMONT. TO REACH FROM THE INTERSECTION OF VERMONT ROUTES 100 AND 17 IN WAITSFIELD GO SOUTH ALONG ROUTE 100 FOR 7.35 MI (11.83 KM) TO THE MARK ON THE LEFT. THE MARK IS SET FLUSH WITH THE GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT SET 1.3 M (4.3 FT) DEEP. IT IS 4.7 M (15.4 FT) EAST OF AND ABOUT 0.5 M (1.6 FT) HIGHER THAN THE EAST EDGE OF PAVEMENT OF ROUTE 100, 7.2 M (23.6 FT) WEST THE CENTERLINE OF A GRAVEL ROAD, 9.2 M (30.2 FT) NORTH OF POLE NO.119, AND 5.2 M (17.1 FT) NORTH OF A 15 CM WHITE BIRCH AND A FIBERGLASS WITNESS POST.

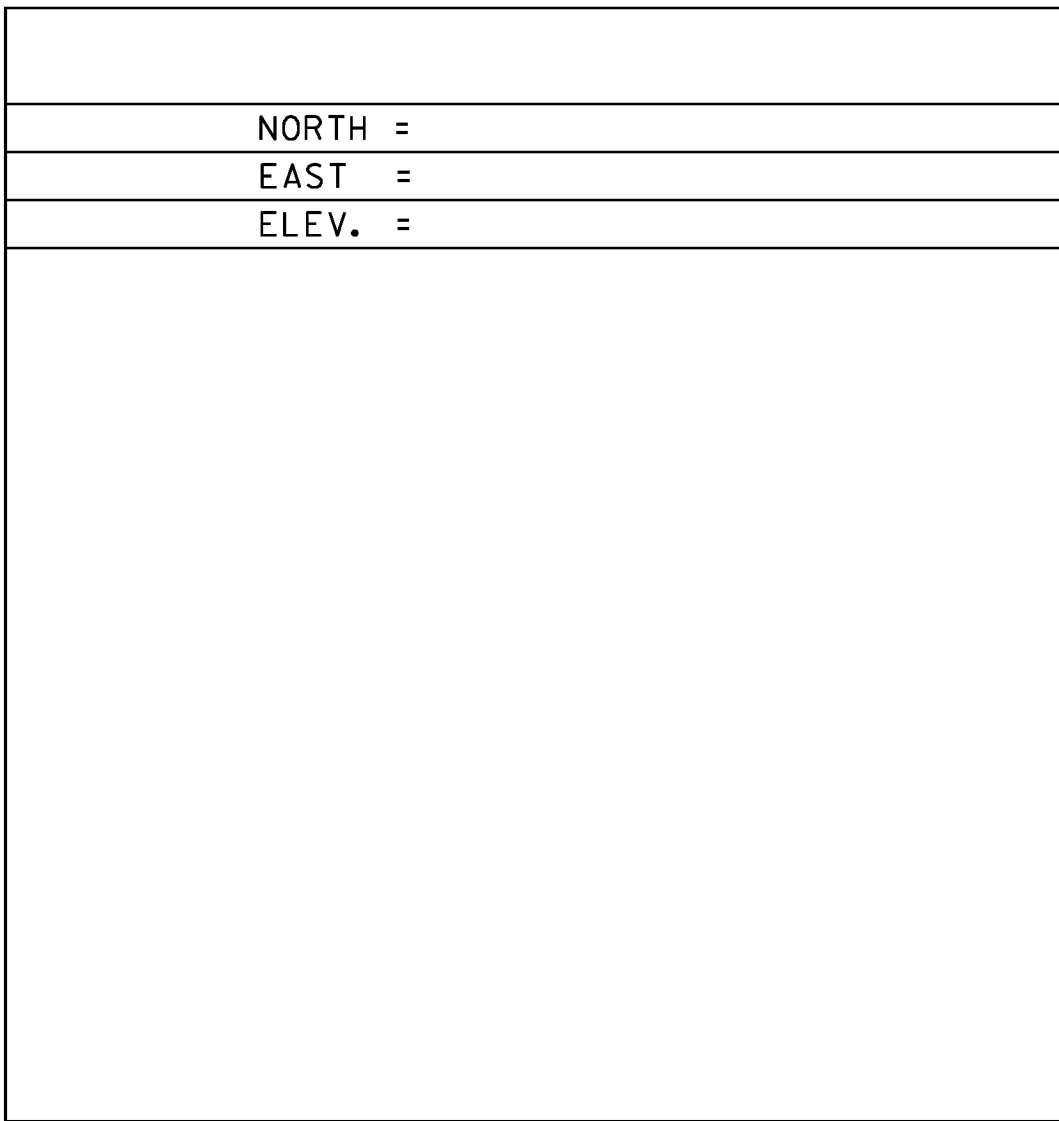
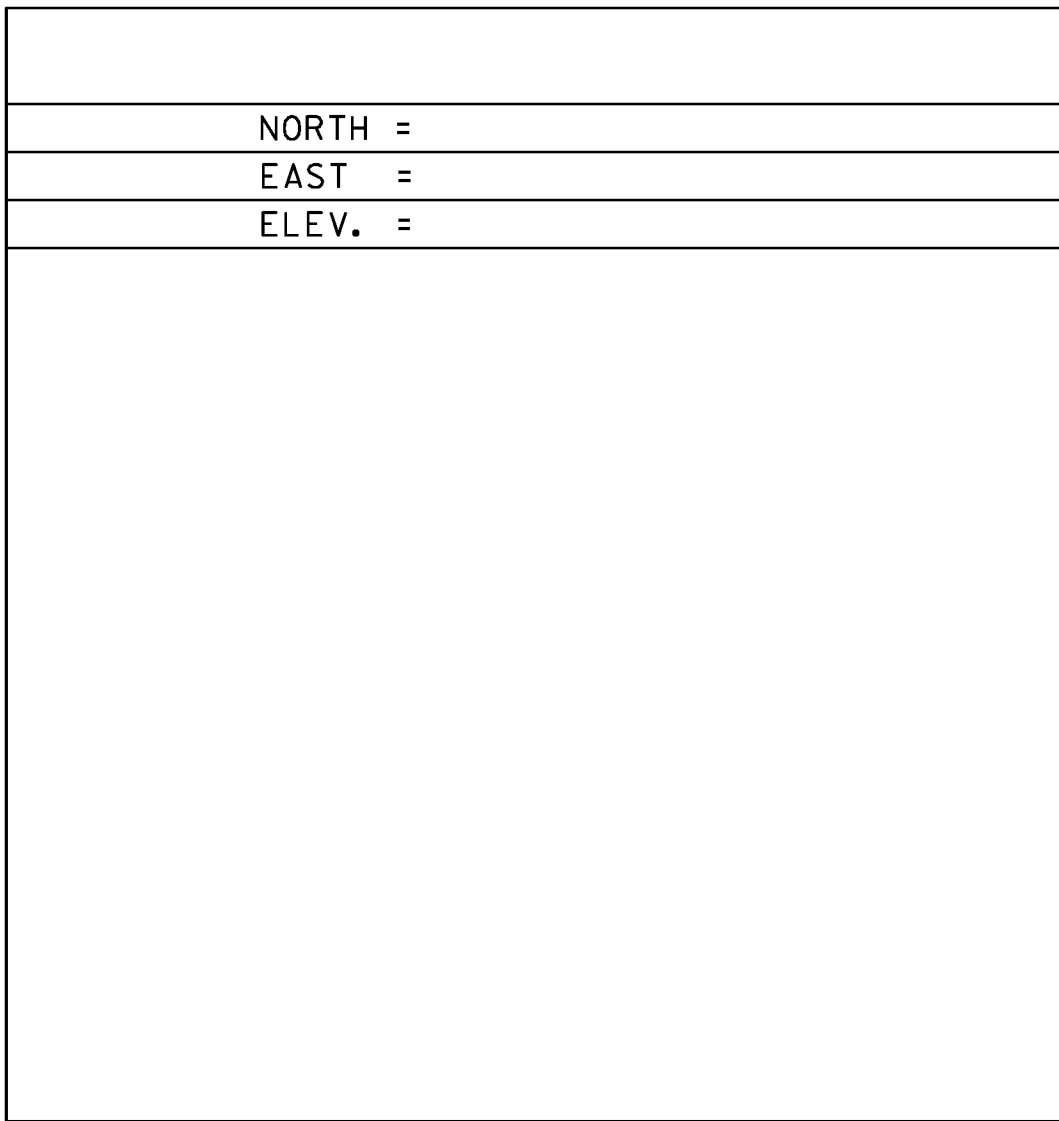
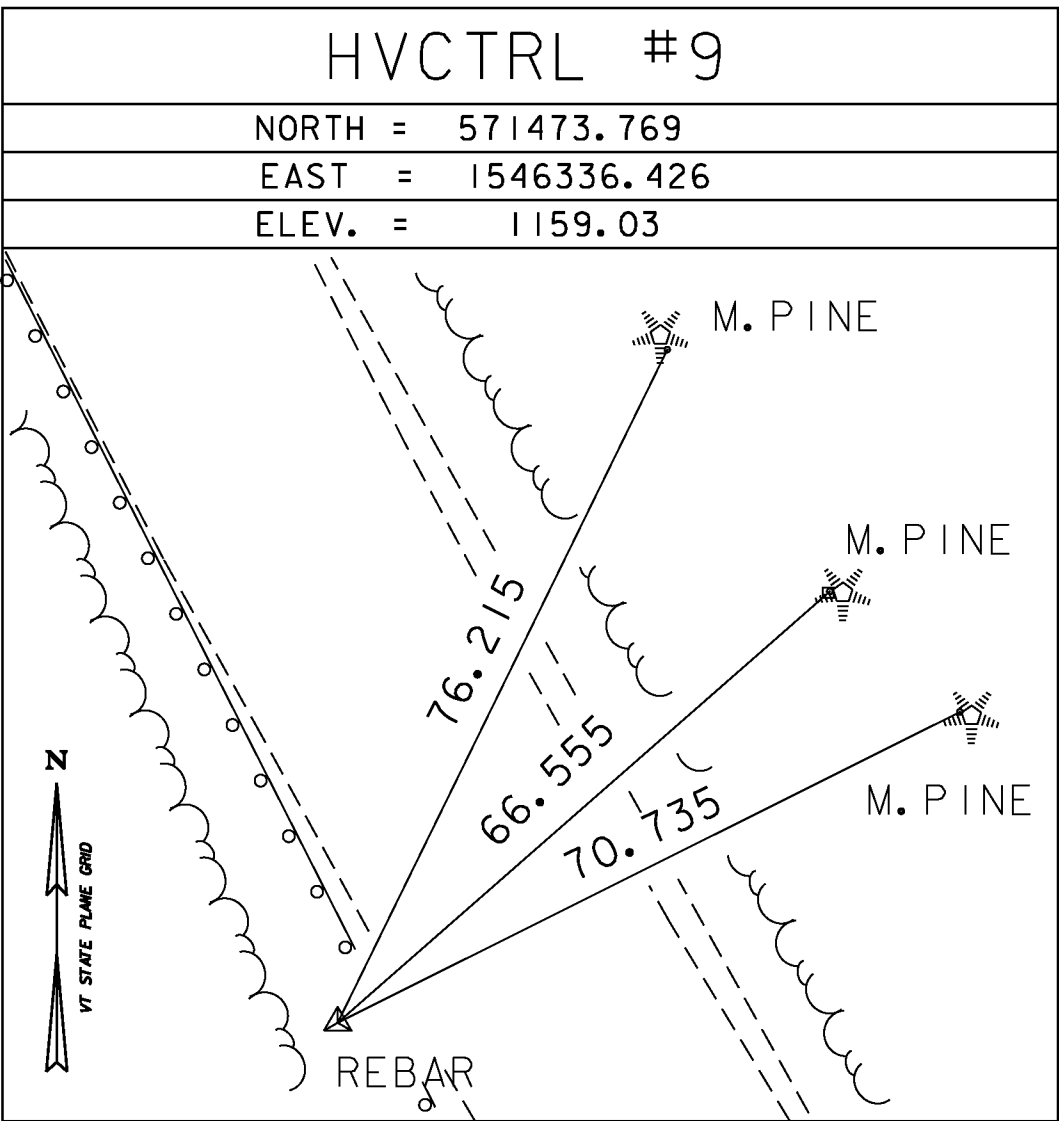
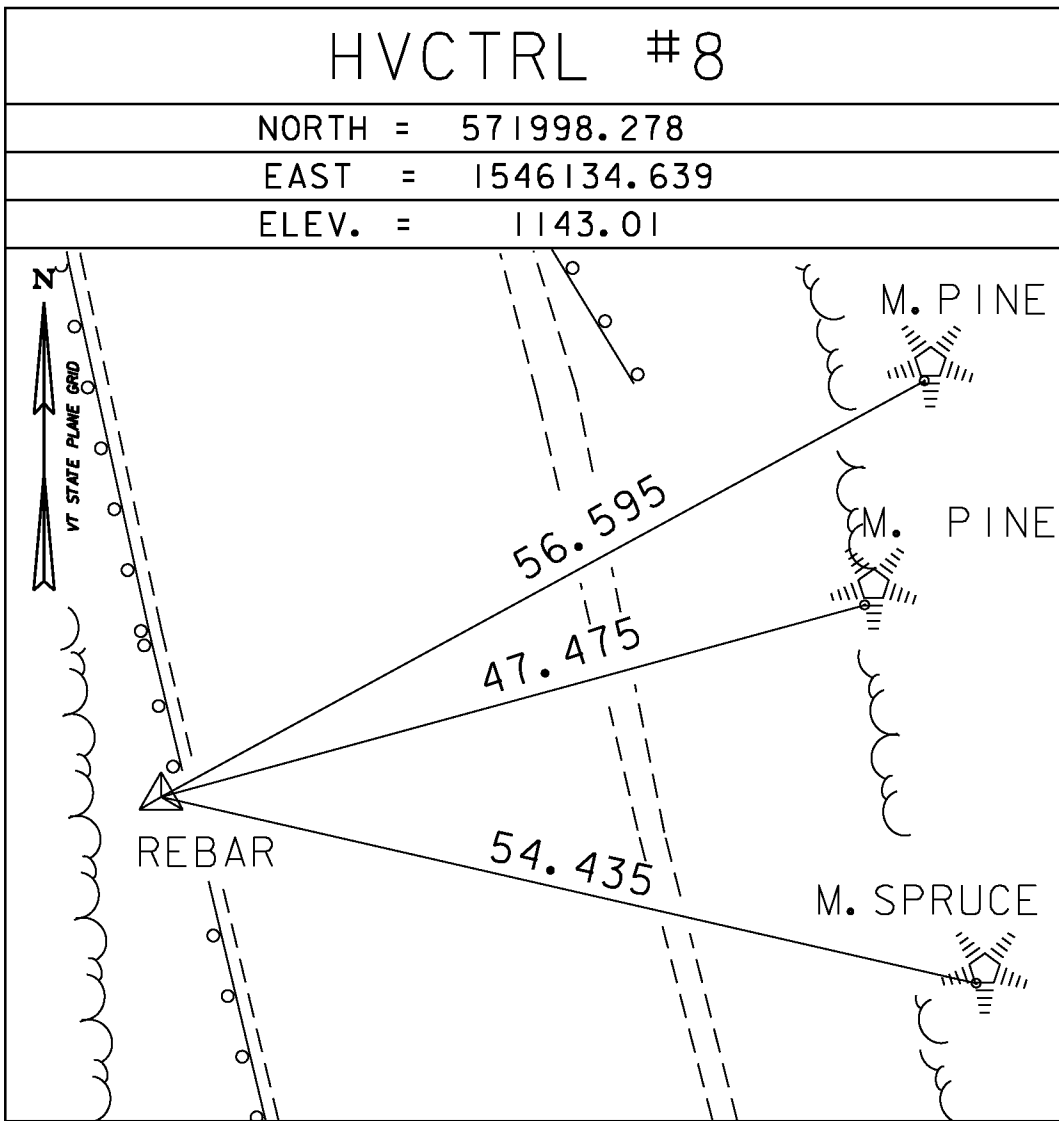
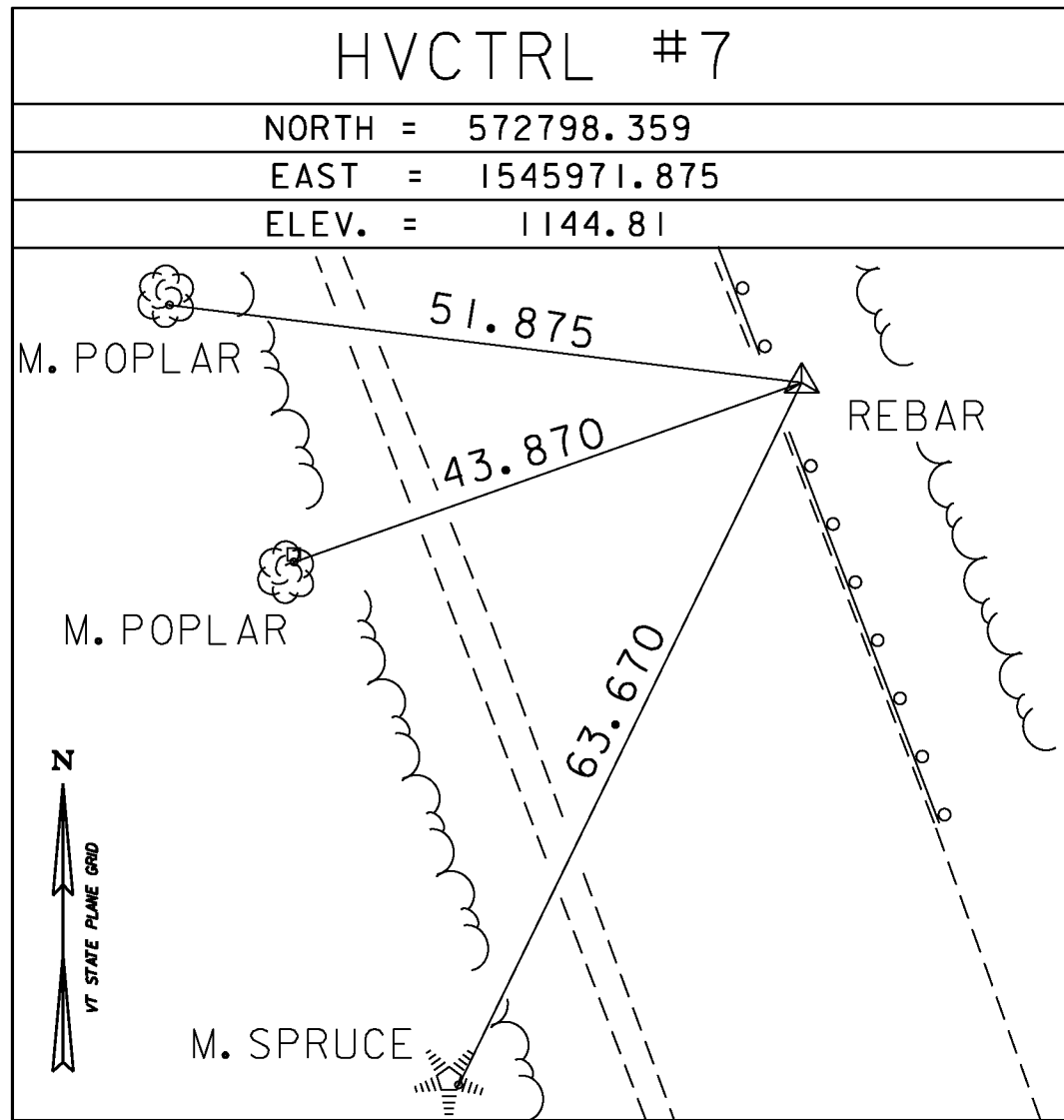
HVCTRL #2

TWIN RIVER

N = 575426.060
E = 1546006.840
ELEV. = 1084.41

GENERAL LOCATION, WARREN, VERMONT. TO REACH FROM THE INTERSECTION OF VERMONT ROUTES 100 AND 17 IN WAITSFIELD GO SOUTH ALONG ROUTE 100 FOR 7.6 MI (12.2 KM) TO THE MARK ON THE RIGHT. THE MARK IS SET FLUSH WITH THE GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT SET 1.4 M (4.6 FT) DEEP. IT IS 3.1 M (10.2 FT) WEST OF AND ABOUT 0.5 M (1.6 FT) LOWER THAN THE WEST EDGE OF PAVEMENT OF ROUTE 100, 17.0 M (55.8 FT) OF POLE NO.123, 13.7 M (44.9 FT) WEST OF MILE MARKER 1000/1217/0131, 29.0 M (95.1 FT) NORTH OF THE CENTERLINE OF A PAVED DRIVE1 AND 3.1 M (10.2 FT) EAST OF A FIBERGLASS WITNESS POST.

* DESCRIPTION PROVIDED BY VERMONT AGENCY OF TRANSPORTATION GEODETIC SURVEY UNIT



* MAIN TRAVERSE COMPLETED: FEB. 14, 2002 BY R.GILMAN, P.WINTERS, & D.BREER

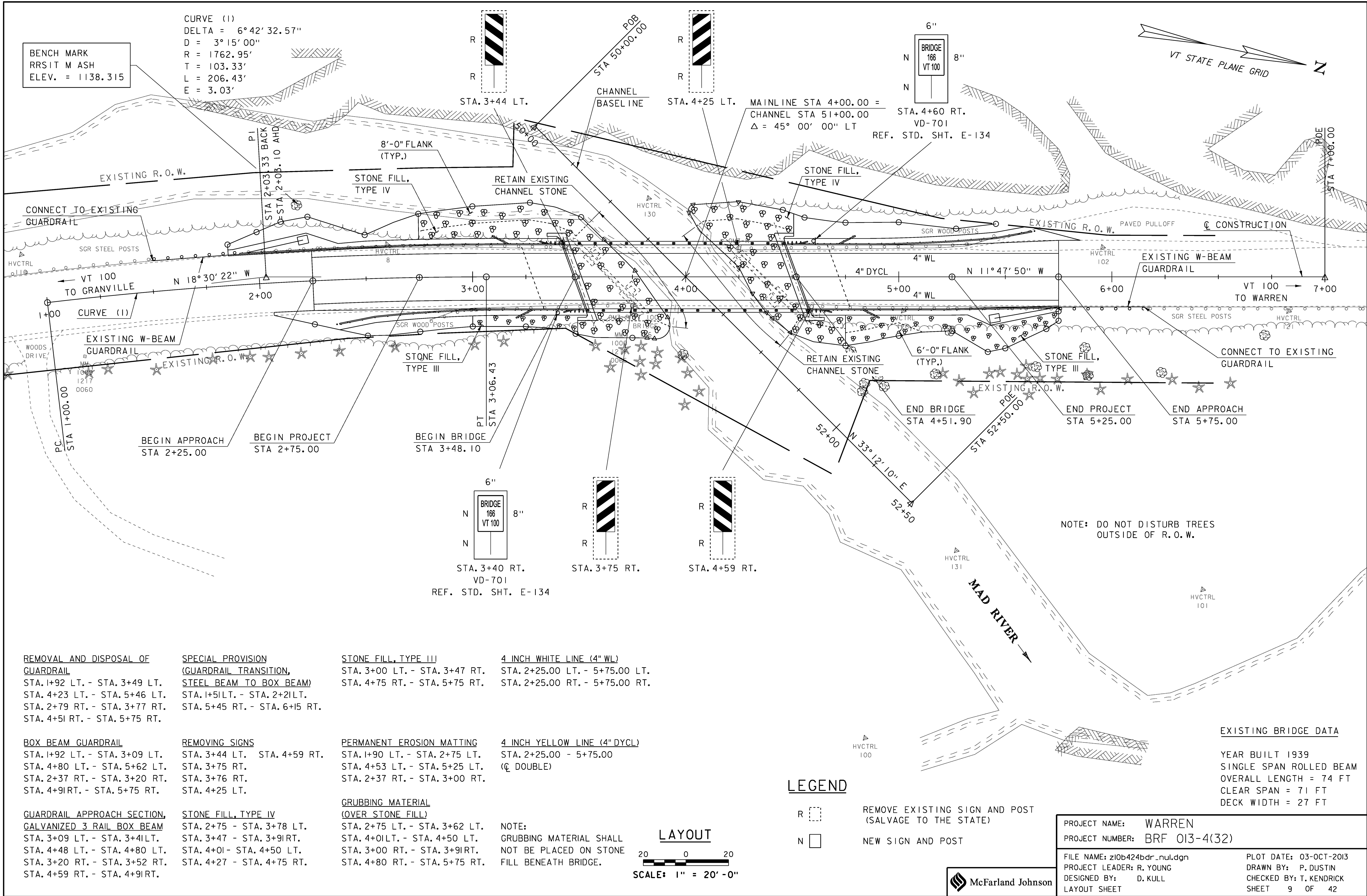
ALIGNMENT COORDINATES			
VT ROUTE 100			
	STATION	NORTHING	EASTING
PC	1+00.00	571847.9800	1546194.0104
PT	3+06.43	572047.1222	1546140.0849
POE	7+00.00	572432.3768	1546059.6208
CHANNEL			
POB	50+00.00	572055.0399	1546066.1947
POE	52+50.00	572264.2242	1546203.0958

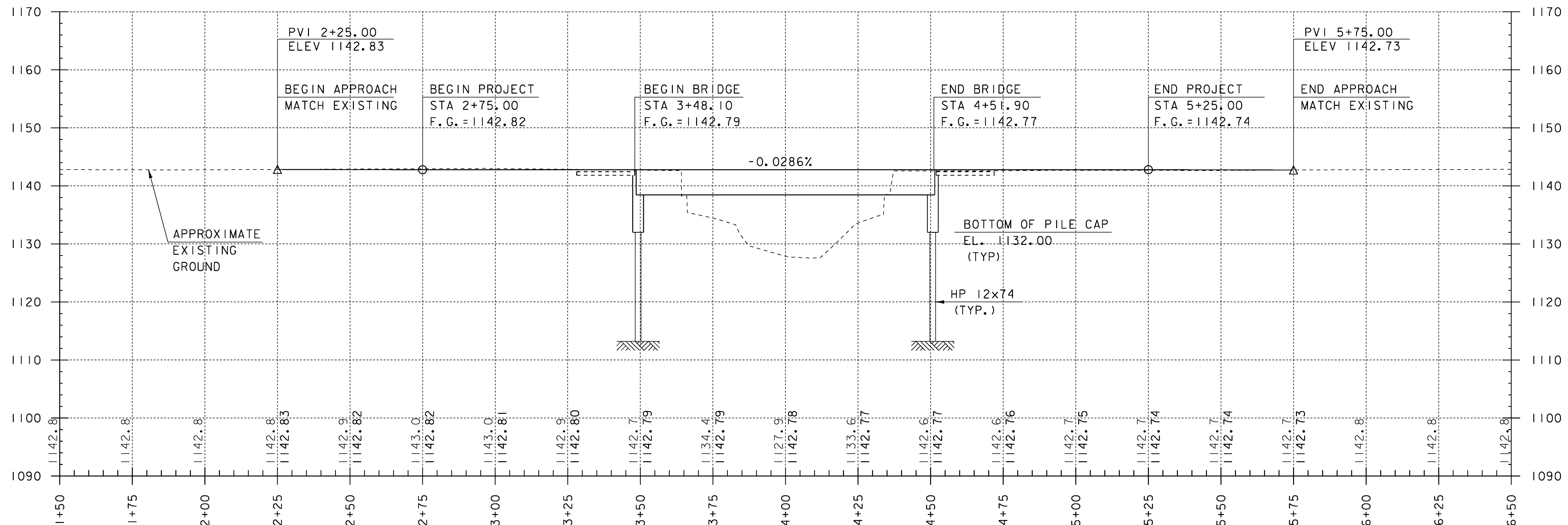
CURVE (1)
DELTA = 6°42'32.57" RT.
D = 3°15'00"
R = 1762.95'
T = 103.33'
L = 206.43'
E = 3.03'

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



PROJECT NAME: WARREN	
PROJECT NUMBER: BRF 013-4(32)	
FILE NAME: z10b424tie.dgn	PLOT DATE: 03-OCT-2013
PROJECT LEADER: R. YOUNG	DRAWN BY: R. BULLOCK
DESIGNED BY: VTRANS	CHECKED BY: T. KENDRICK
TIE SHEET	SHEET 8 OF 42

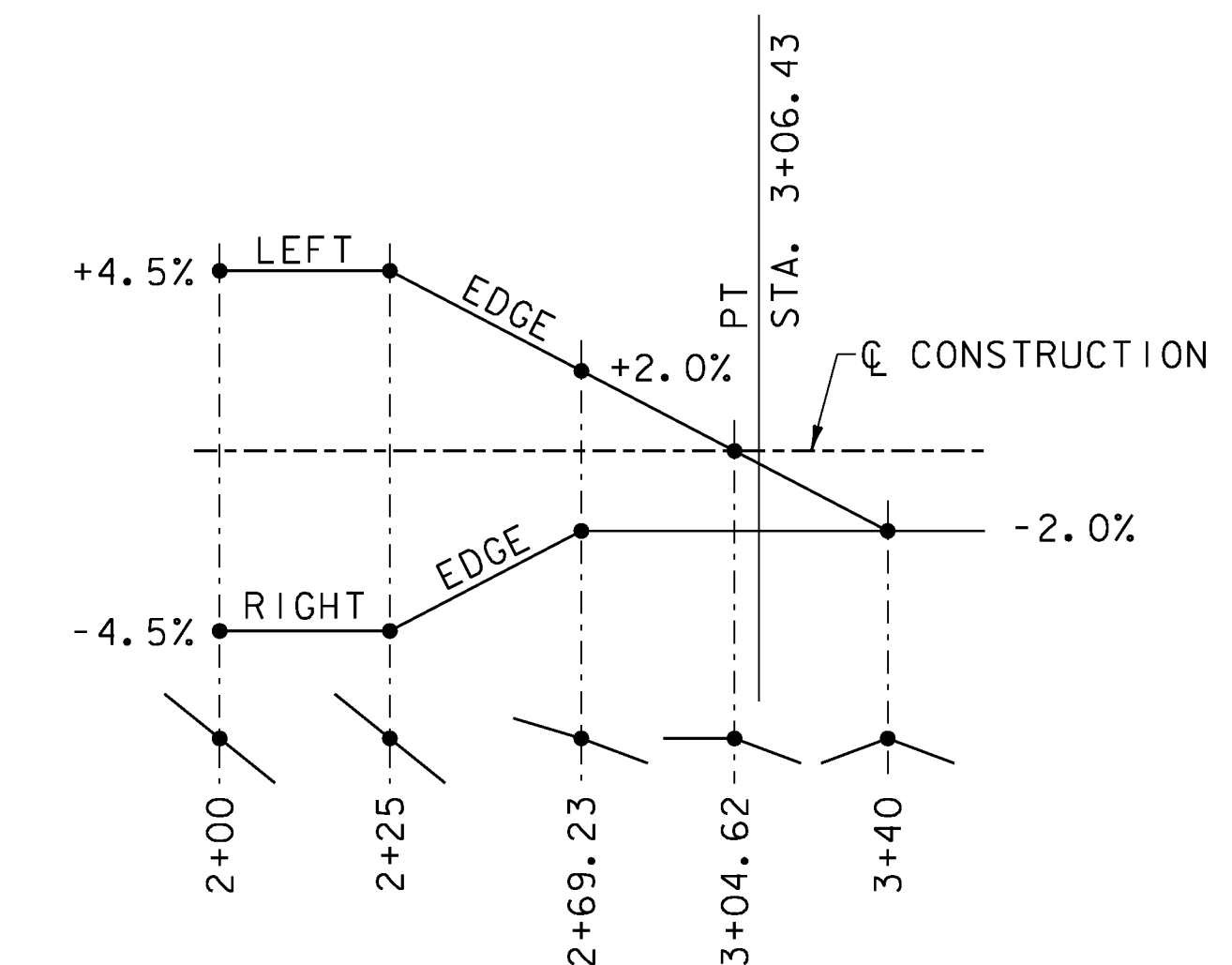




VT 100 PROFILE

HORIZONTAL SCALE: 1" = 20'-0"

VERTICAL SCALE: 1" = 10'-0"

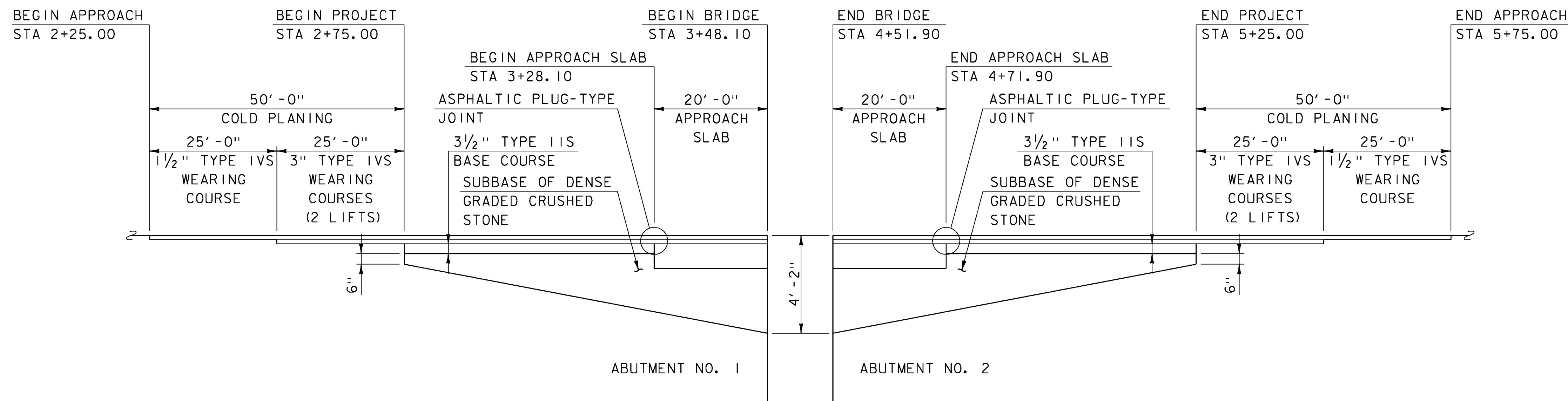


PROPOSED BANKING DIAGRAM

NOT TO SCALE

NOTES

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



MATERIAL TRANSITION DETAIL

NOT TO SCALE



PROJECT NAME: WARREN

PROJECT NUMBER: BRF 013-4(32)

FILE NAME: z10b424pro.dgn

PROJECT LEADER: R. YOUNG

DESIGNED BY: VTRANS/D. KULL

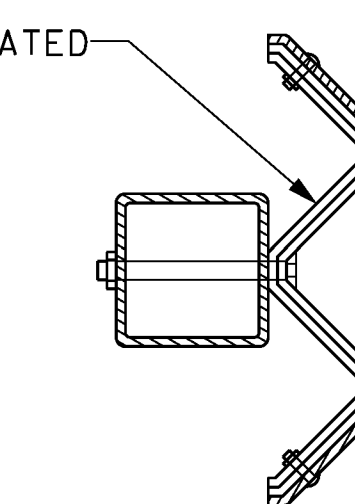
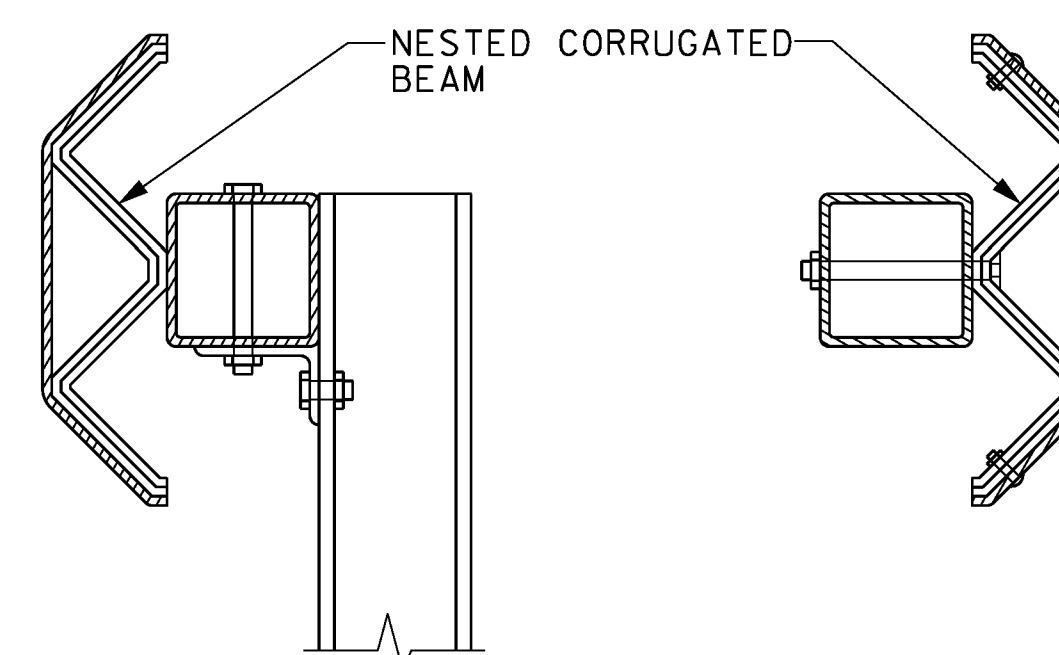
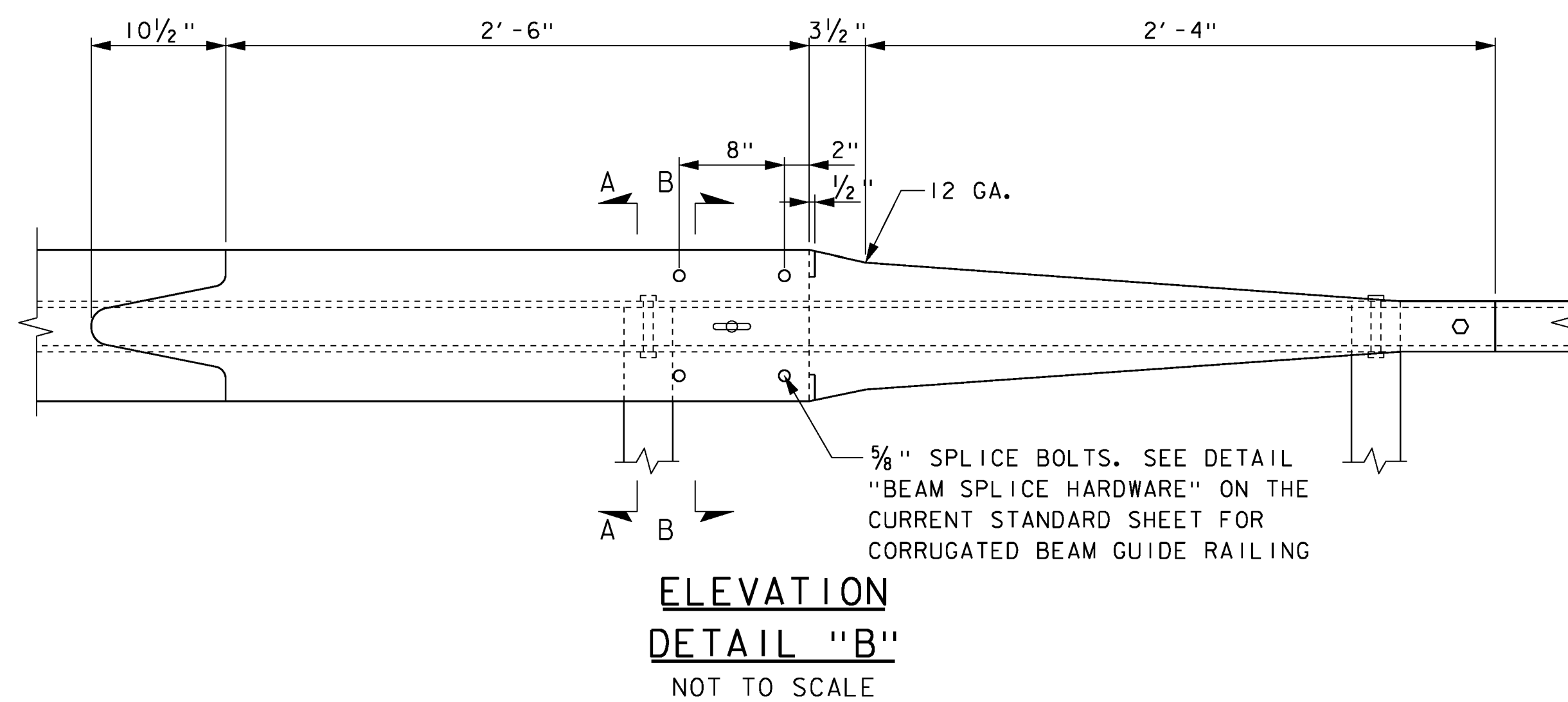
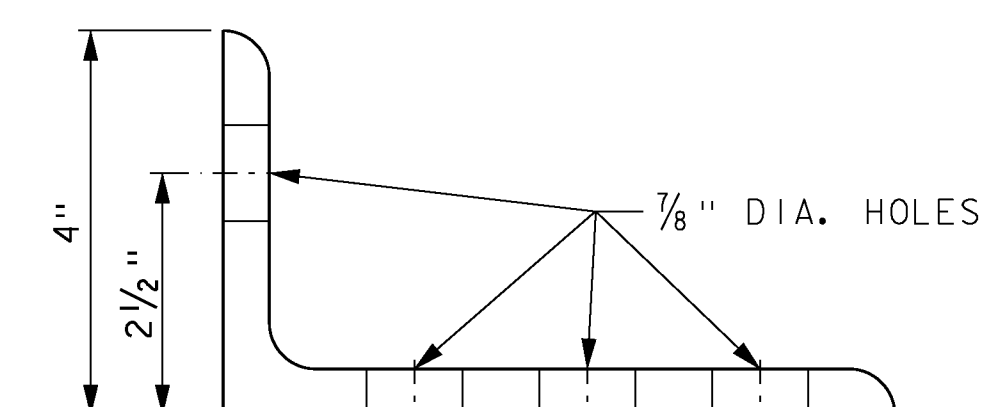
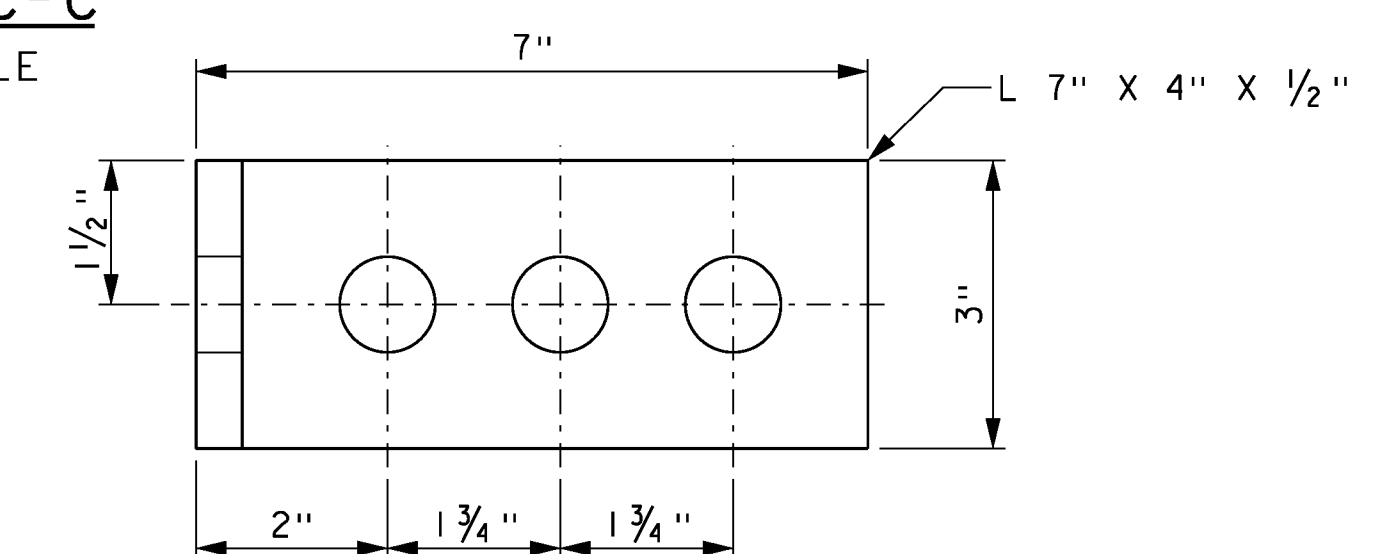
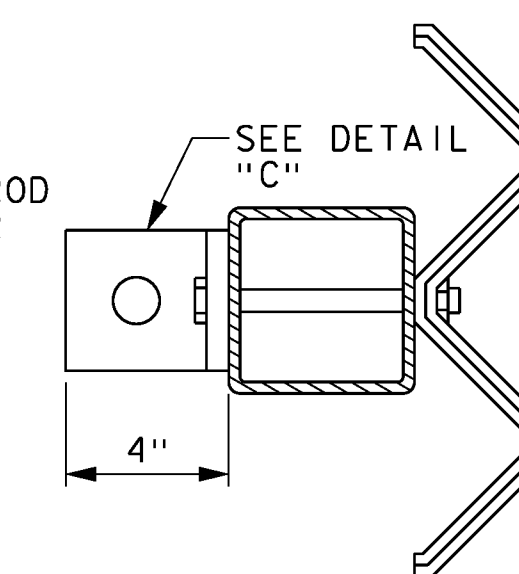
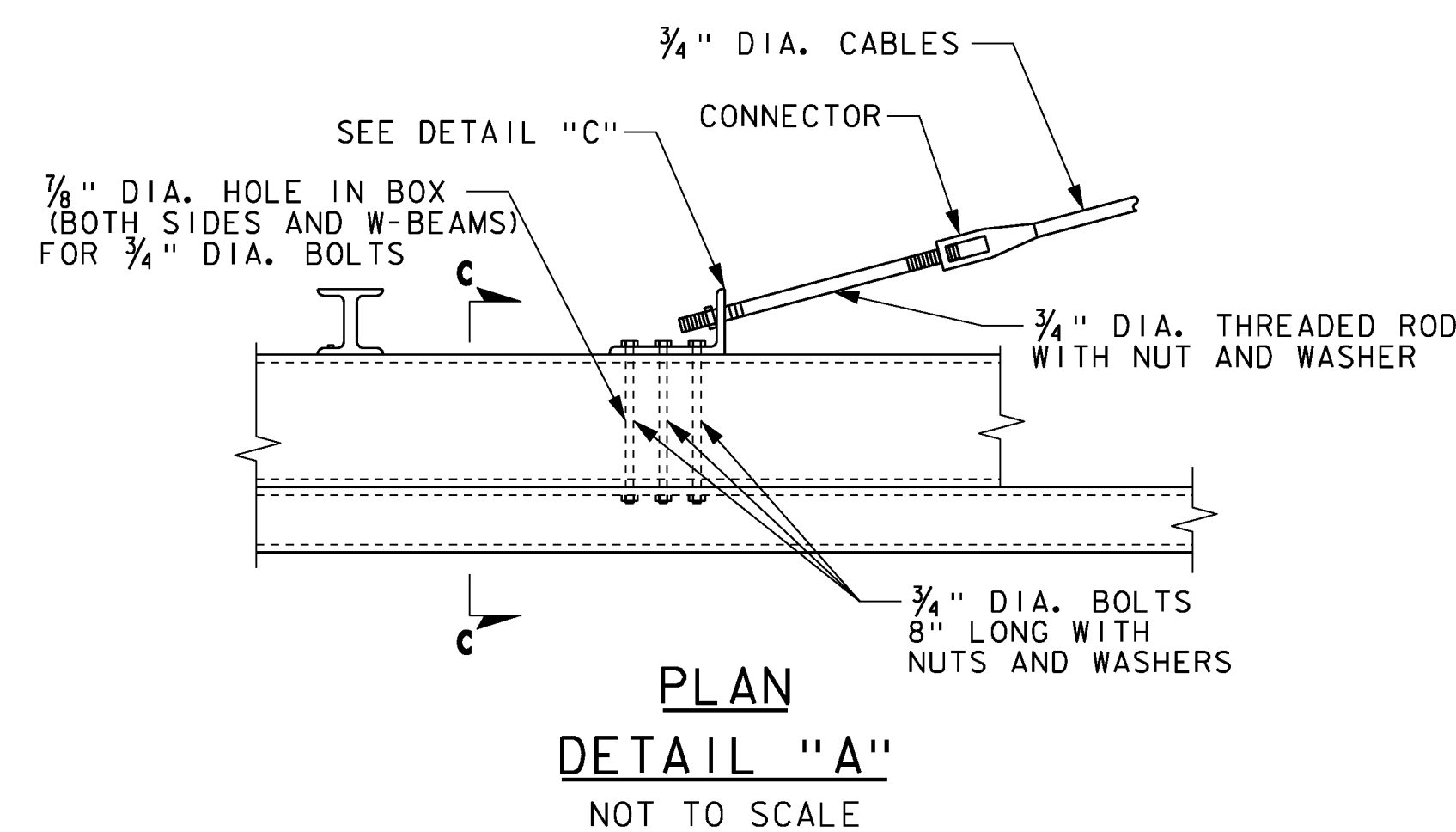
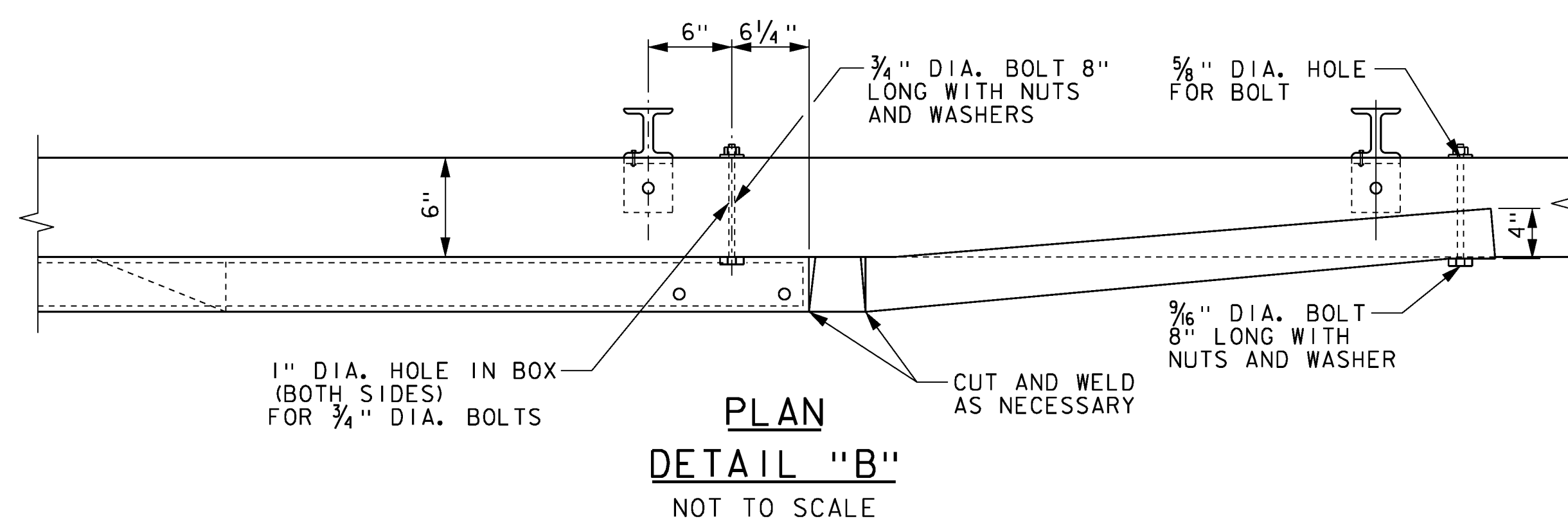
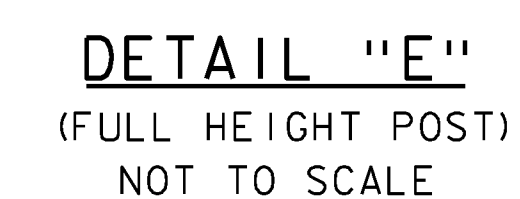
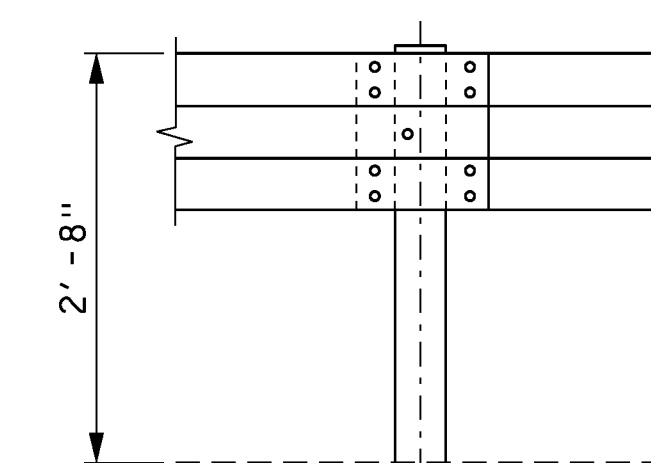
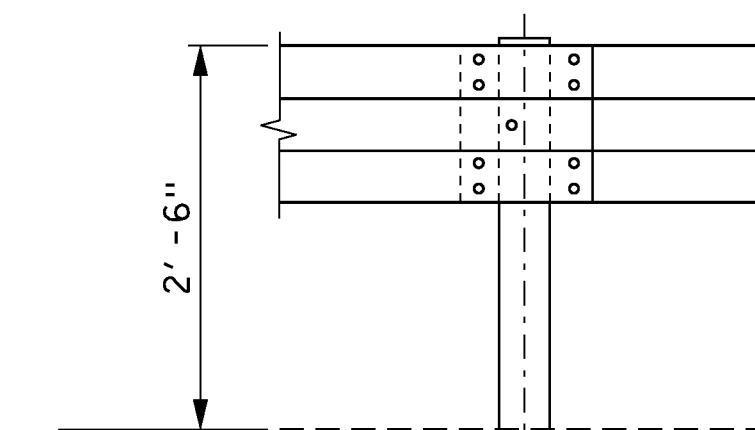
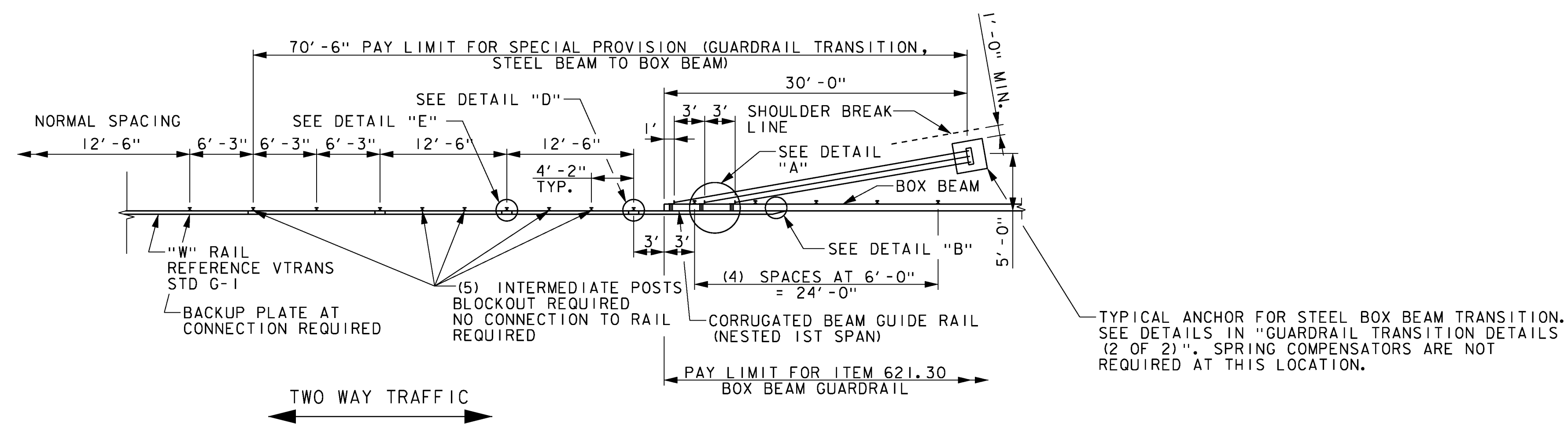
PROFILE SHEET

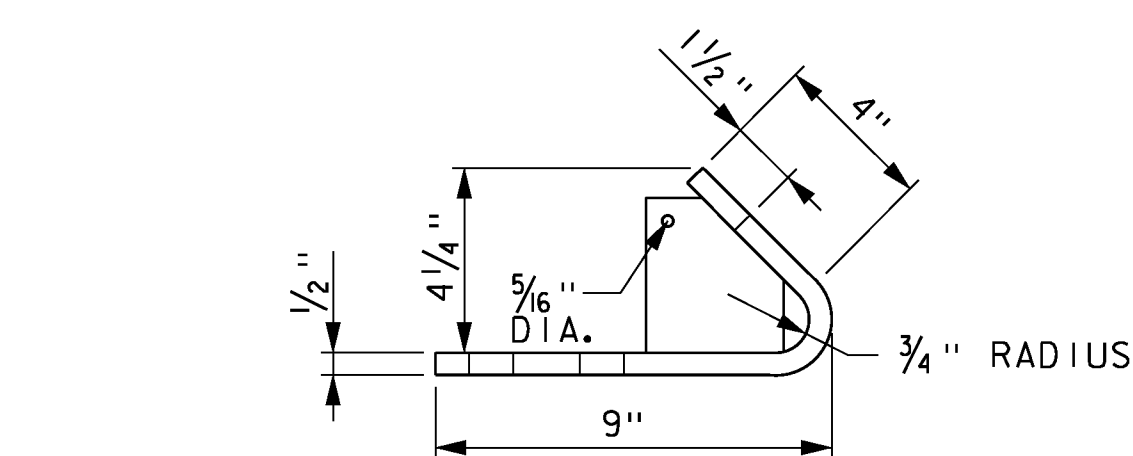
PLOT DATE: 03-OCT-2013

DRAWN BY: P. DUSTIN

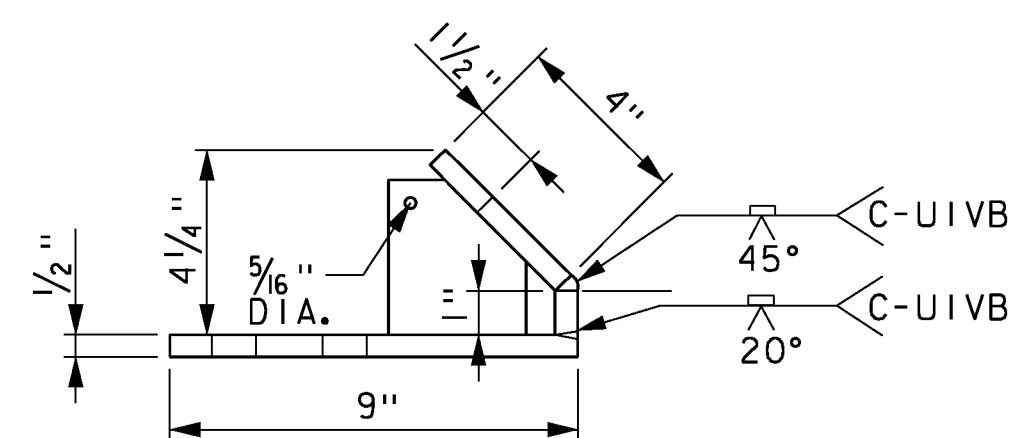
CHECKED BY: T. KENDRICK

SHEET 10 OF 42

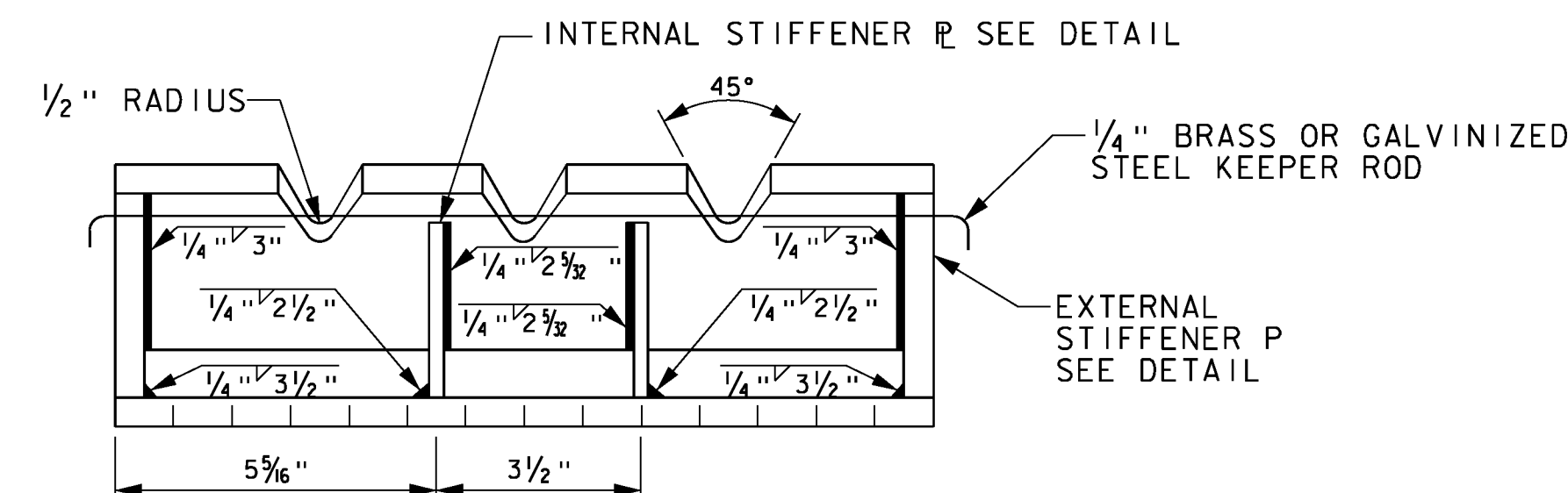




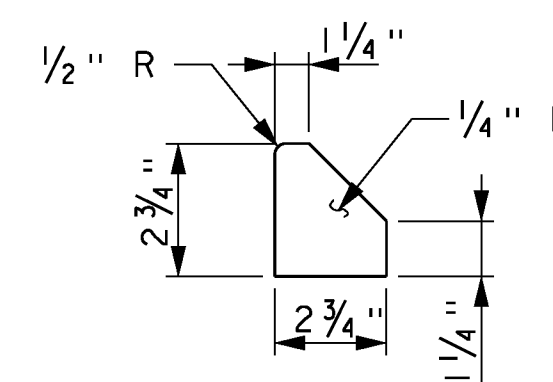
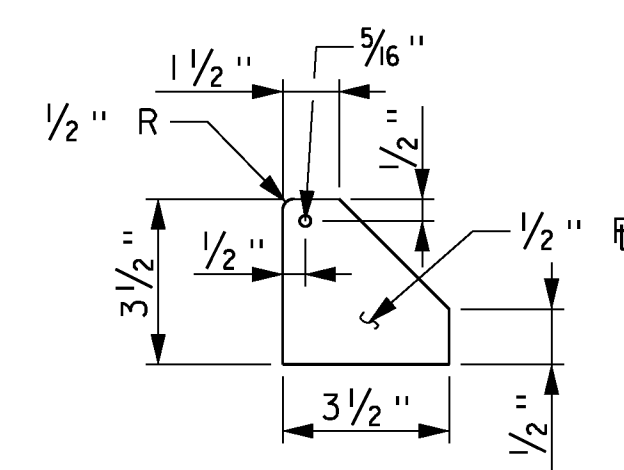
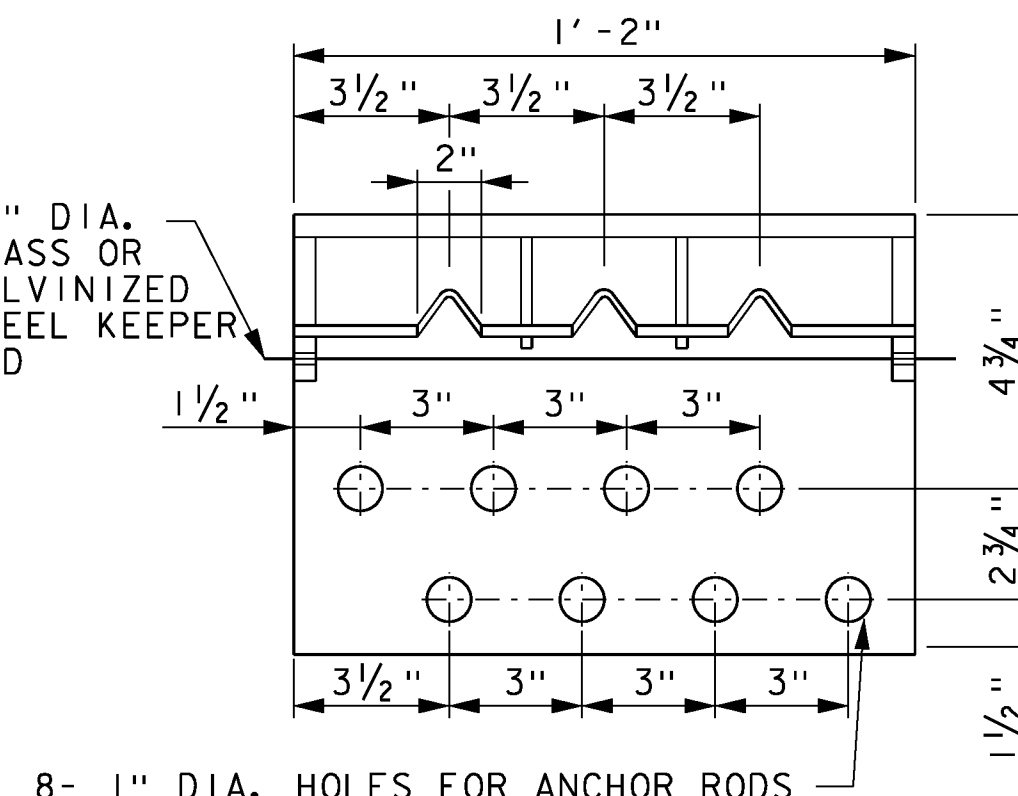
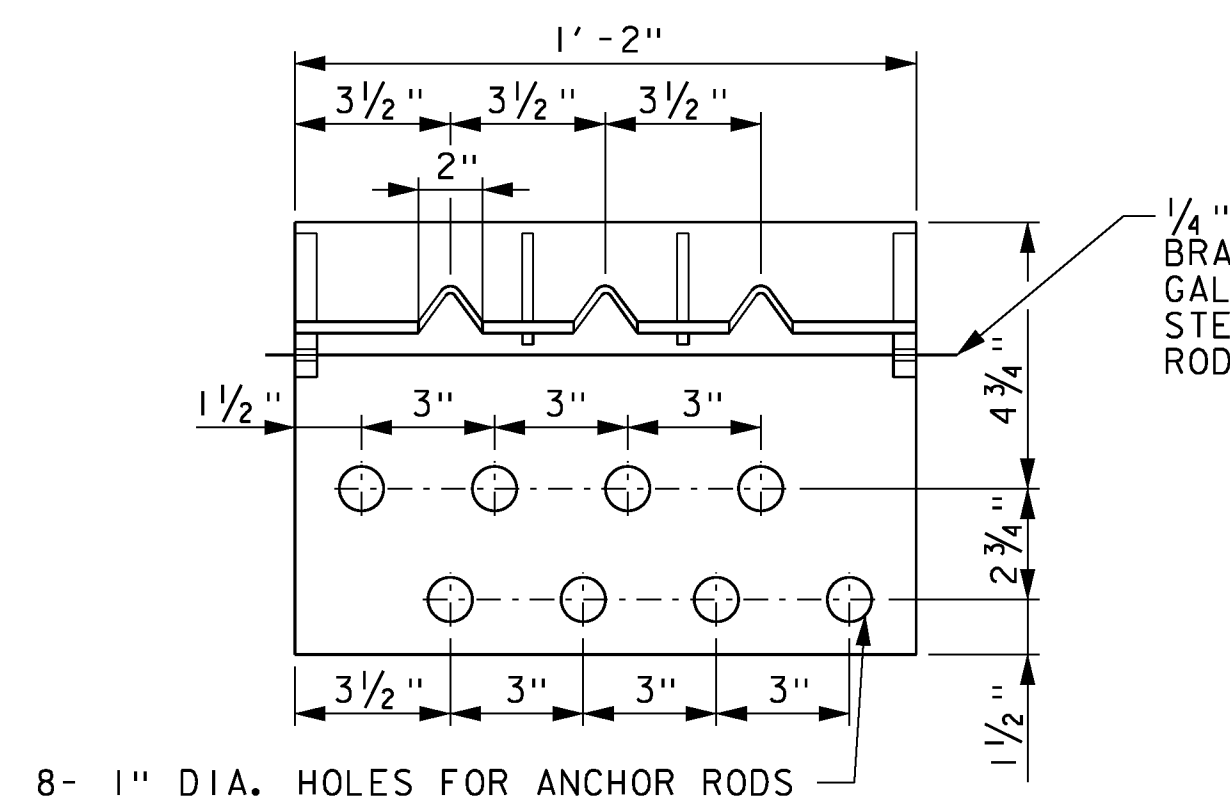
BENT PLATE
ANCHOR ANGLE DETAILS
NOT TO SCALE



WELDED PLATE
ANCHOR ANGLE DETAILS
NOT TO SCALE



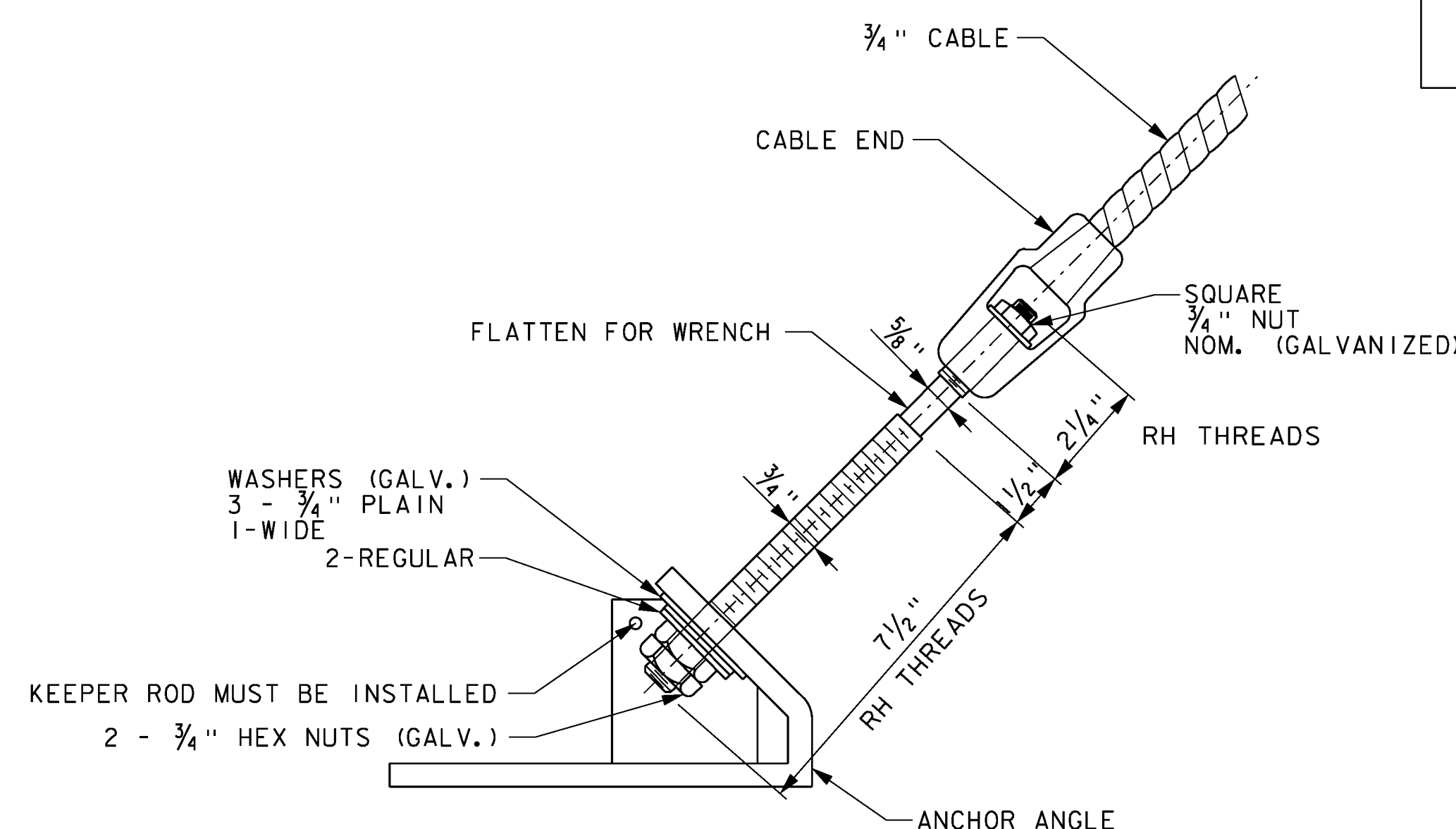
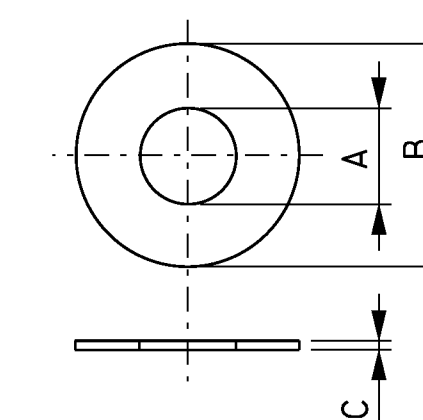
EXTERNAL STIFFENER
ANCHOR ANGLE DETAILS
NOT TO SCALE



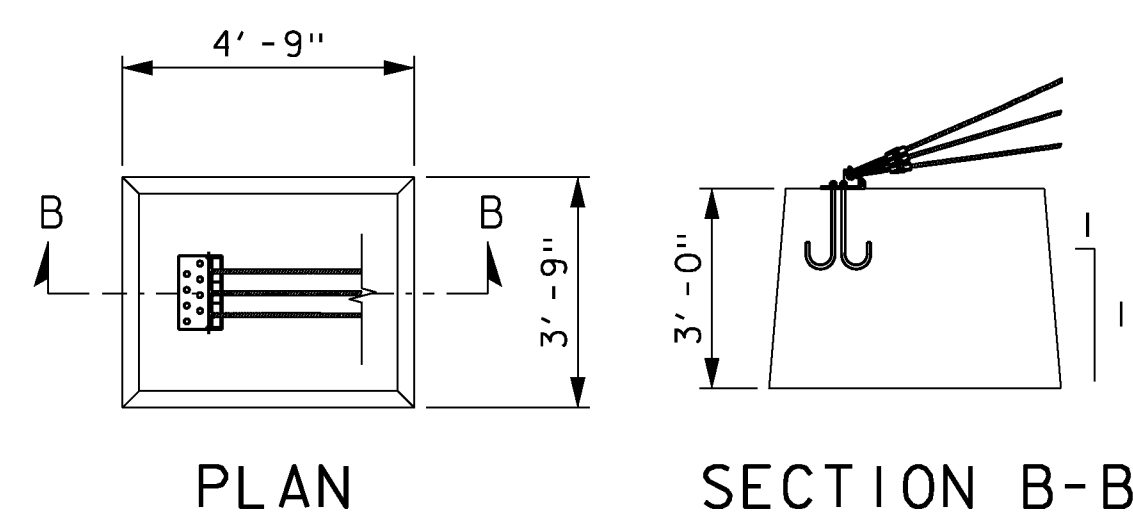
INTERNAL STIFFENER
ANCHOR ANGLE DETAILS
NOT TO SCALE

WASHER	WASHER SERIES	INSIDE DIAMETER "A"			OUTSIDE DIAMETER "B"			THICKNESS "C"		
		BASIC	TOLERANCE PLUS	TOLERANCE MINUS	BASIC	TOLERANCE PLUS	TOLERANCE MINUS	BASIC	MAX.	MIN.
3/4"	REGULAR	0.812	0.030	0.007	1.469	0.030	0.007	0.134	0.160	0.108
	WIDE	0.812	0.030	0.007	2.000	0.030	0.007	0.165	0.192	0.136
1/2"	NARROW	0.531	0.015	0.005	1.062	0.030	0.007	0.095	0.121	0.074

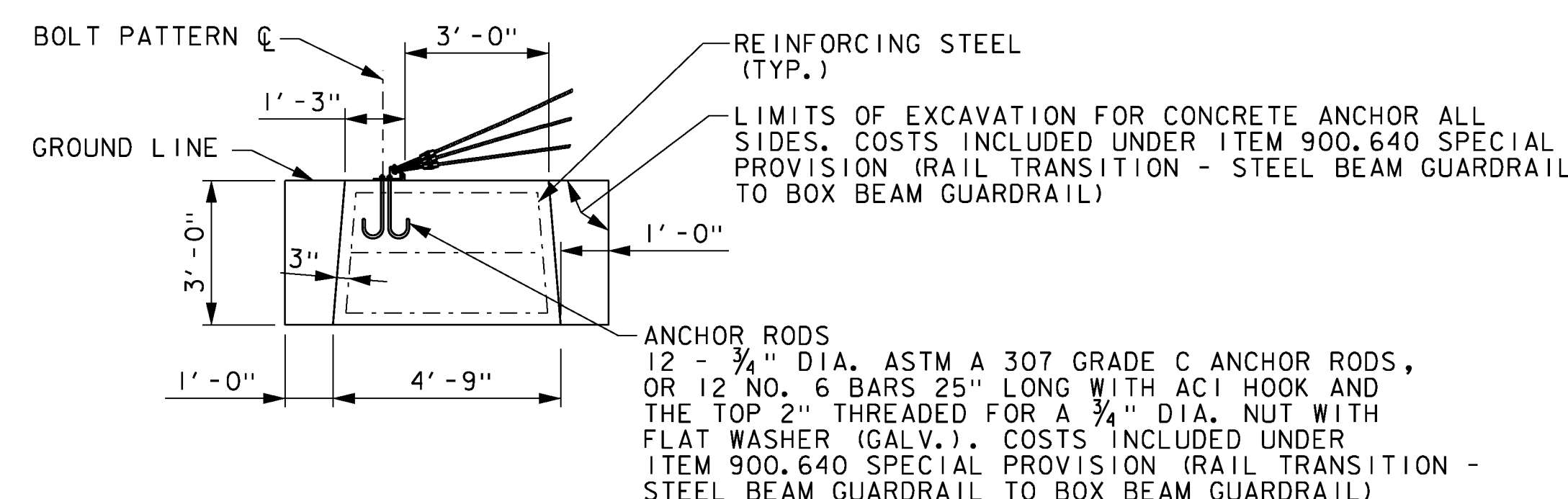
WASHER TABLE AND WASHER DETAIL
NOT TO SCALE



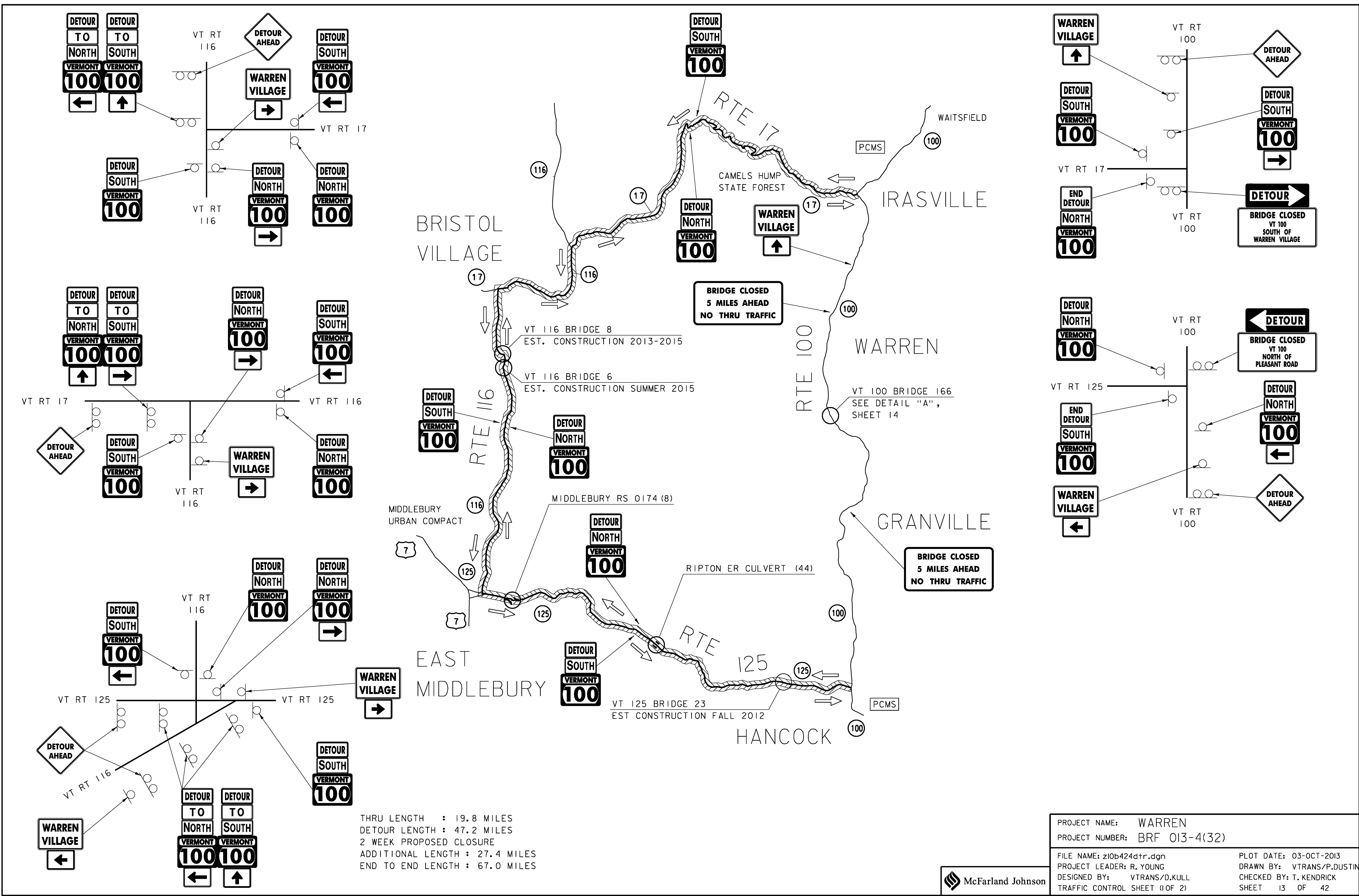
CABLE END ASSEMBLY TO
ANCHOR ANGLE DETAILS
NOT TO SCALE



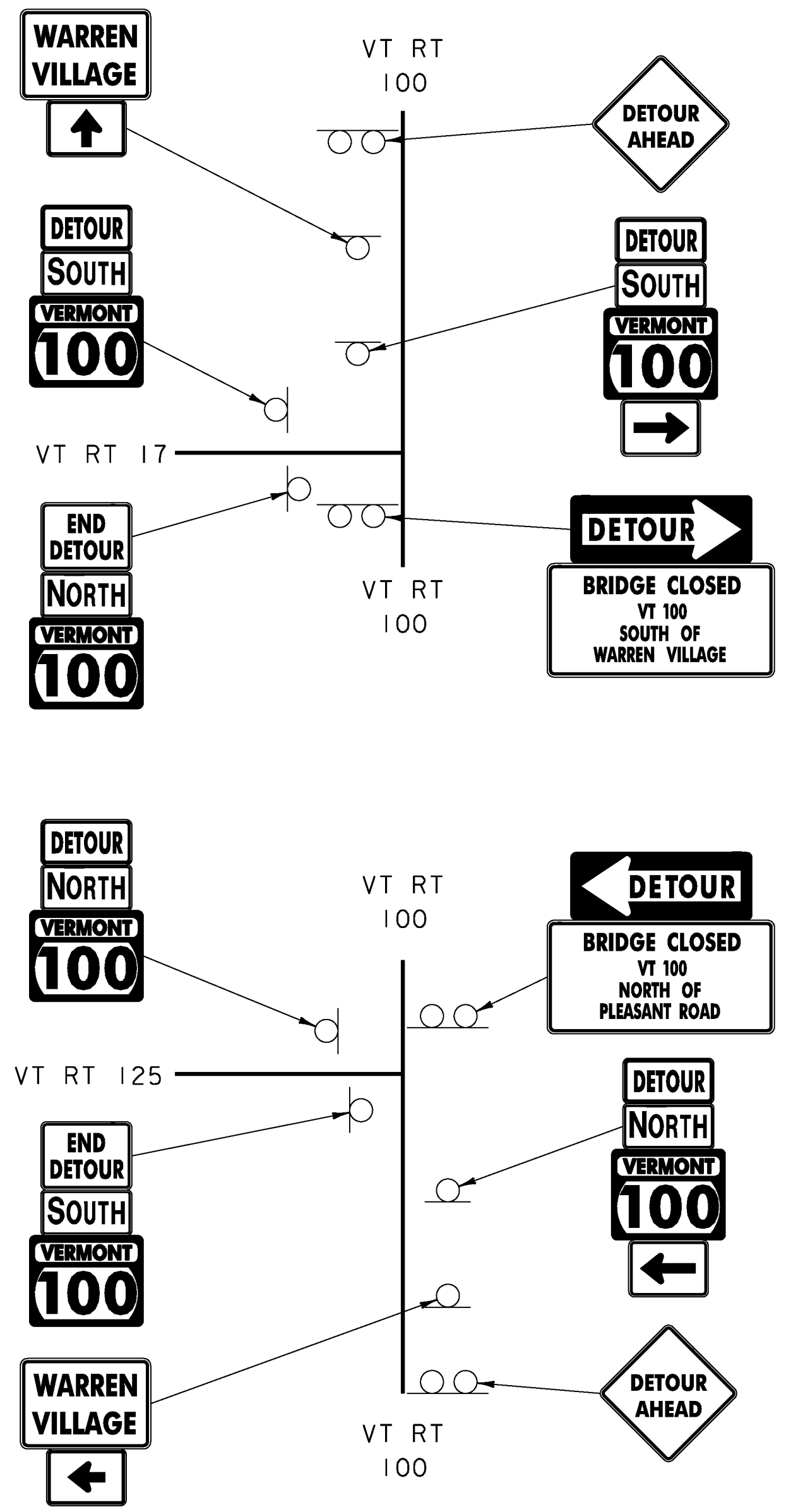
CONCRETE ANCHOR
NOT TO SCALE



ANCHOR UNIT DETAIL
NOT TO SCALE

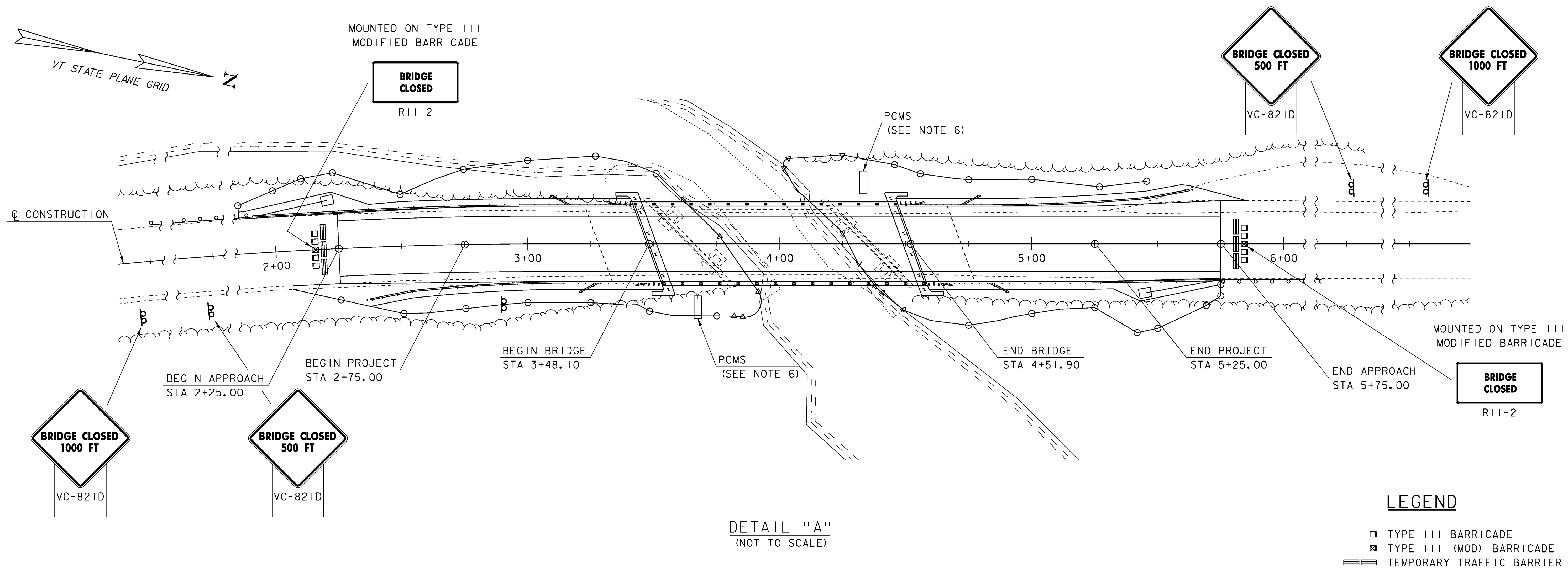


THRU LENGTH : 19.8 MILES
DETOUR LENGTH : 47.2 MILES
2 WEEK PROPOSED CLOSURE
ADDITIONAL LENGTH : 27.4 MILES
END TO END LENGTH : 67.0 MILES



PROJECT NAME: WARREN	
PROJECT NUMBER: BRF 013-4(32)	
FILE NAME: z10b424dtr.dgn	PLOT DATE: 03-OCT-2013
PROJECT LEADER: R. YOUNG	DRAWN BY: VTRANS/P.DUSTIN
DESIGNED BY: VTRANS/D.KULL	CHECKED BY: T. KENDRICK
TRAFFIC CONTROL SHEET (1 OF 2)	SHEET 13 OF 42





TRAFFIC CONTROL NOTES

1. THE OFFICIAL STATE DETOUR IS SHOWN FOR THE ROAD CLOSURE PORTION OF THIS PROJECT ON SHEET 13.
2. NO LOCAL DETOUR ROUTE WILL BE SIGNED OR OFFICIALLY RECOGNIZED FOR THIS PROJECT.
3. TRACTOR TRAILER TRUCKS SHOULD SEEK ALTERNATE ROUTES.
4. A PUBLIC OUTREACH COORDINATOR (NOT IN CONTRACT) SHALL BE USED FOR PUBLICIZING AND COORDINATING DETOUR INFORMATION, INCLUDING (BUT NOT LIMITED TO) TRAFFIC DELAYS FOR THE PUBLIC. THE CONTRACTOR IS TO COORDINATE WITH THE PUBLIC OUTREACH COORDINATOR AS NEEDED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING, ERECTING AND MAINTAINING (AS WELL AS REMOVING AND RESETTING) ALL DETOUR AND ON-PROJECT TEMPORARY TRAFFIC CONTROL ZONE DEVICES, INCLUDING (BUT NOT LIMITED TO) CONSTRUCTION SIGNS, BARRICADES, TEMPORARY TRAFFIC BARRIERS, PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) AND OTHER REQUIRED DEVICES (AS ORDERED BY THE ENGINEER) USED TO REGULATE, WARN AND GUIDE TRAFFIC DURING CONSTRUCTION. TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS OF LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND PERTINENT E-SERIES AND T-SERIES STANDARDS. WHERE CONFLICTS EXIST, THE MUTCD SHALL GOVERN. EXACT LOCATIONS OF DEVICES SHALL BE COORDINATED WITH THE ENGINEER. ADDITIONAL PROJECT CONSTRUCTION SIGNS SHALL BE INSTALLED AS REQUIRED BY THE ENGINEER. THE COST OF ALL DETOUR AND ON-PROJECT TEMPORARY TRAFFIC CONTROL ZONE DEVICES (WITH THE EXCEPTION OF TEMPORARY TRAFFIC BARRIERS AND PCMS) SHALL BE PAID FOR UNDER ITEM 641.10, TRAFFIC CONTROL.
6. PORTABLE CHANGEABLE MESSAGE SIGNS "PCMS" SHALL BE PLACED AT THE APPROXIMATE LOCATIONS SHOWN ON THE PLANS OR WHERE DESIGNATED BY THE ENGINEER. TWO SIGNS SHALL BE PLACED AT THE BRIDGE 14 DAYS PRIOR TO THE START OF CONSTRUCTION TO WARN OF THE IMPENDING DETOURS. SIGN MESSAGE SHALL BE DETERMINED BY THE PUBLIC OUTREACH COORDINATOR AND THE ENGINEER. PAYMENT FOR THESE SIGNS SHALL BE INCLUDED IN ITEM 641.15 "PORTABLE CHANGEABLE MESSAGE SIGN".
7. TRAFFIC WILL BE ALLOWED TO BE REDUCED TO ONE LANE FOR A MAXIMUM OF TWO WEEKS PRIOR TO THE BRIDGE CLOSURE PERIOD FOR PRE-EXCAVATION OF THE PILES. THE CONTRACTOR IS REQUIRED TO INFORM THE PUBLIC OUTREACH COORDINATOR PRIOR TO REDUCING TRAFFIC TO ONE LANE. ALL SIGNS, SIGNALS, BARRIERS, ETC. REQUIRED TO MAINTAIN ONE LANE OF TRAFFIC IS TO BE INCLUDED UNDER ITEM 641.10, TRAFFIC CONTROL.
8. THE STATE ROUTE MARKERS USED FOR THE DETOUR AS SHOWN ON THE PLANS SHALL FOLLOW STANDARDS T-127 AND T-136B. THESE SIGNS SHALL BE REMOVED AT THE END OF THE ROAD CLOSURE. THESE SIGNS AND THEIR REMOVAL SHALL BE PAID FOR UNDER ITEM 641.10 "TRAFFIC CONTROL".
9. ALL TRAFFIC CONTROL DEVICES SHALL BE KEPT IN THEIR PROPER POSITION AT ALL TIMES AND SHALL BE REPAIRED, REPLACED OR CLEANED AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY.
10. ALL SIGNS SHALL BE PLACED WITHIN EXISTING OR TOWN RIGHTS-OF-WAY.
11. ACCESS TO ALL EXISTING DRIVES AND SIDE ROADS SHALL BE MAINTAINED AT ALL TIMES DURING ALL PHASES OF CONSTRUCTION.
12. INSTALLATION OF DETOUR AND ON-SITE SIGNS SHALL NOT BLOCK ANY EXISTING TRAFFIC CONTROL SIGN ASSEMBLIES AND SHALL MODIFY OR BE PLACED ADJACENT TO EXISTING ROUTE MARKER SIGN ASSEMBLIES WHEN POSSIBLE. THE CONTRACTOR SHALL MAINTAIN AT LEAST 200 FEET BETWEEN SIGN ASSEMBLIES WHENEVER POSSIBLE.
13. EXISTING SIGNS THAT ARE IN CONFLICT WITH THE TRAFFIC FLOW OF THE DETOUR SHALL BE REMOVED OR COVERED BY THE CONTRACTOR. ALL SIGNS REMOVED OR COVERED SHALL BE REPLACED OR UNCOVERED WHEN THE TRAFFIC CONTROL PLAN IS DISASSEMBLED. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 641.10 "TRAFFIC CONTROL".
14. NO CONSTRUCTION SIGNS SHALL BE INSTALLED AS TO INTERFERE WITH STOPPING SIGHT DISTANCE AND CORNER SIGHT DISTANCE FROM DRIVES AND TOWN HIGHWAYS.
15. CONTACT DIG-SAFE AT 1-888-344-7233 PRIOR TO BREAKING GROUND TO INSTALL ANY SIGN POSTS.

SOIL CLASSIFICATION

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

ROCK QUALITY DESIGNATION

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

SHEAR STRENGTH

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

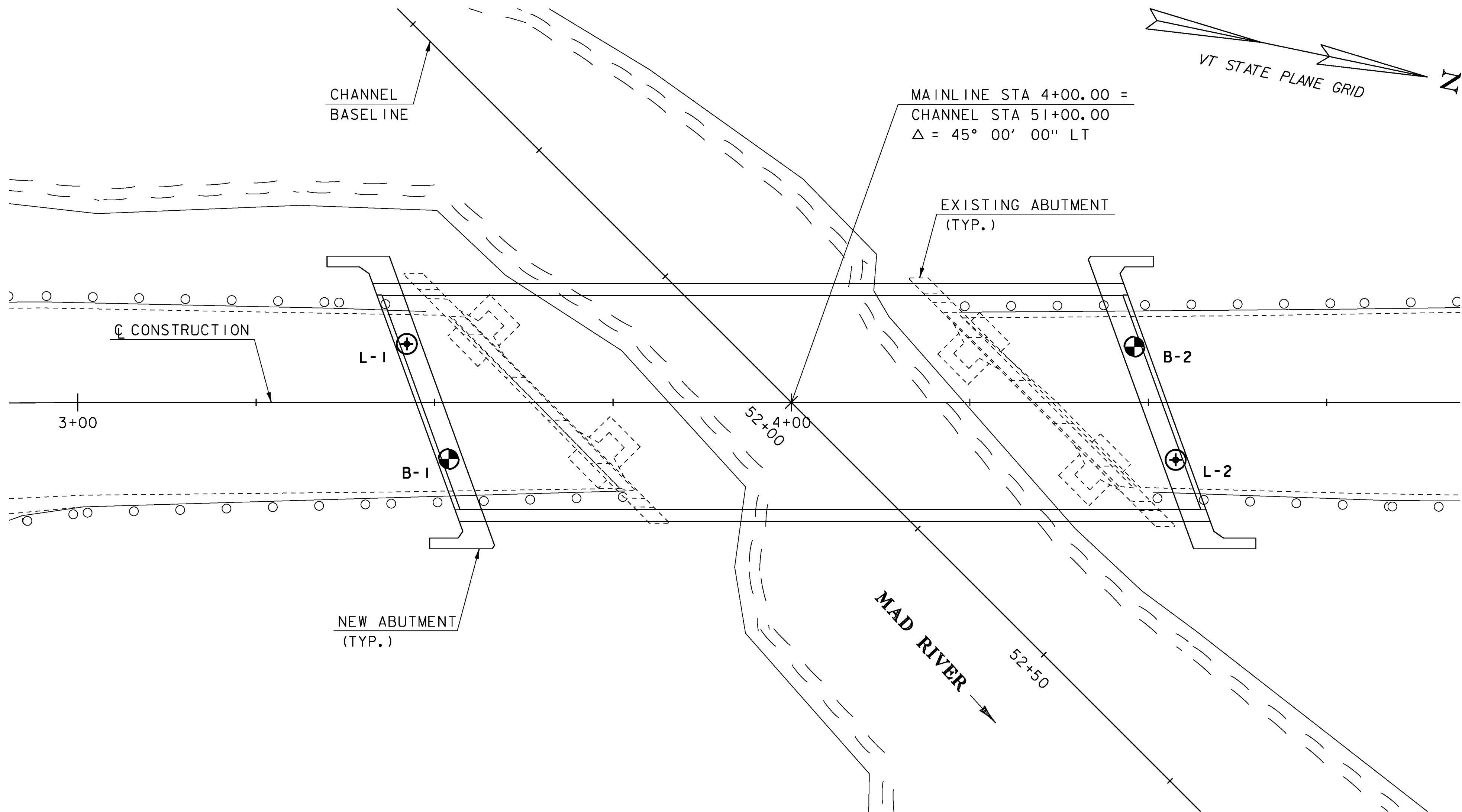
CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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

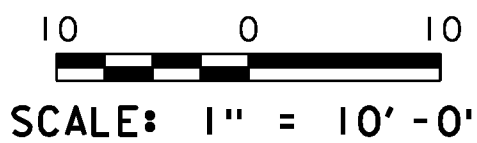
COMMONLY USED SYMBOLS

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

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



BORING LAYOUT



BORING CHART

HOLE NO.	SURV. STATION	OFFSET	GROUND ELEV.	DEPTH TLOB (FT.)	NORTHING	EASTING
B-1	3+52	7.93 RT.	1142.5	40.0	572093.33	1546138.54
B-2	4+48	7.82 LT.	1142.3	39.2	572184.16	1546103.48
L-1	3+46	8.20 LT.	1142.5	20.0	572084.29	1546123.94
L-2	4+54	8.05 RT.	1142.3	29.5	572193.05	1546117.83

LEGEND



B-1 BORING



L-1 LEDGE PROBE

GENERAL NOTES

- The subsurface explorations shown herein were made between January 13, 2013 and January 17, 2013 by GZA Geoenvironmental.
- 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 Subsurface Investigations, 1988.
- Northings and Eastings coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.



McFarland Johnson

PROJECT NAME: WARREN
PROJECT NUMBER: BRF 013-4(32)

FILE NAME: z10b424bor.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
BORING INFORMATION SHEET

PLOT DATE: 03-OCT-2013
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 15 OF 42

DEFINITIONS (AASHTO)

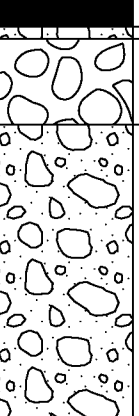
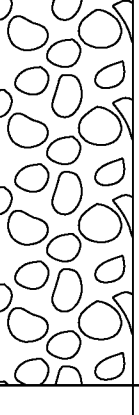
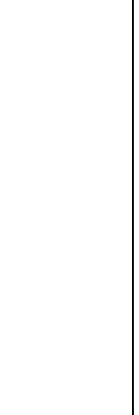
BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.
BOULDER - A rock fragment with an average dimension > 12 inches.
COBBLE - Rock fragments with an average dimension between 3 and 12 inches.
GRAVEL - Rounded particles of rock < 3" and > 0.075" (#10 sieve).
SAND - Particles of rock < 0.075" (#10 sieve) and > 0.0029" (#200 sieve).
SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.
CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.
HARDPAN - Extremely dense soil, cemented layer, not softened when wet.
MUCK - Soft organic soil (containing > 10% organic material).
MOISTURE CONTENT - Weight of water divided by dry weight of soil.
FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.
DIP - Inclination of bed with a horizontal plane.

ESTIMATED PILE
TIP EL. 1112.9

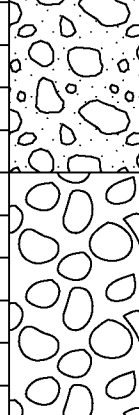
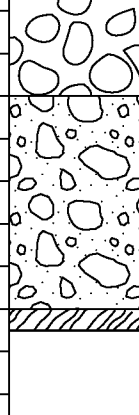
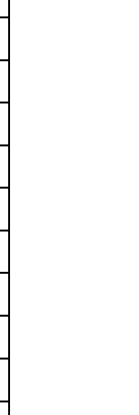
ESTIMATED PILE
TIP EL. 1113.1

ABUT. NO. 1
BOTTOM PILE CAP
EL. 1132.00

		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: L-1 Page No.: 1 of 1 Pin No.: Checked By: DGL		
Boring Crew: P. Labossiere (NHB), J. Szmyt (GZA)		Casing		Sampler		Groundwater Observations		
Date Started: 1/16/13 Date Finished: 1/17/13		Type: WB		I.D.: 4. in		Date		
VTSPG NAD83: N 572084.29 ft E 1546123.94 ft		Hammer Wt: 300 lb.		N.A.		Depth (ft)		
Station: 3+46 Offset: 8.2L		Hammer Fall: 24 in.		N.A.		Notes		
Ground Elevation: 1142.5 ft		Hammer/Rod Type: AWJ		Rig: MOBILE B47 TRUCK CE =				
Depth (ft)	Strata (t)	CLASSIFICATION OF MATERIALS (Description)		Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5		0.0 ft - 0.7 ft, ASPHALT						
		0.7 ft - 1.0 ft, SAND						
		1.0 ft - 3.0 ft, COBBLES AND BOULDERS						
		3.0 ft - 10.0 ft, SAND AND GRAVEL						
10		10.0 ft - 20.0 ft, COBBLES AND BOULDERS						
20		Hole stopped @ 20.0 ft						
Remarks: 1. Boring advanced without sampling. Stratum descriptions based on observations of drilling action and wash water. 2. Roller bit refusal at 20 feet below ground surface.								
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. CE 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.								

ABUT. NO. 2
BOTTOM PILE CAP
EL. 1132.00

ESTIMATED PILE
TIP EL. 1113.3

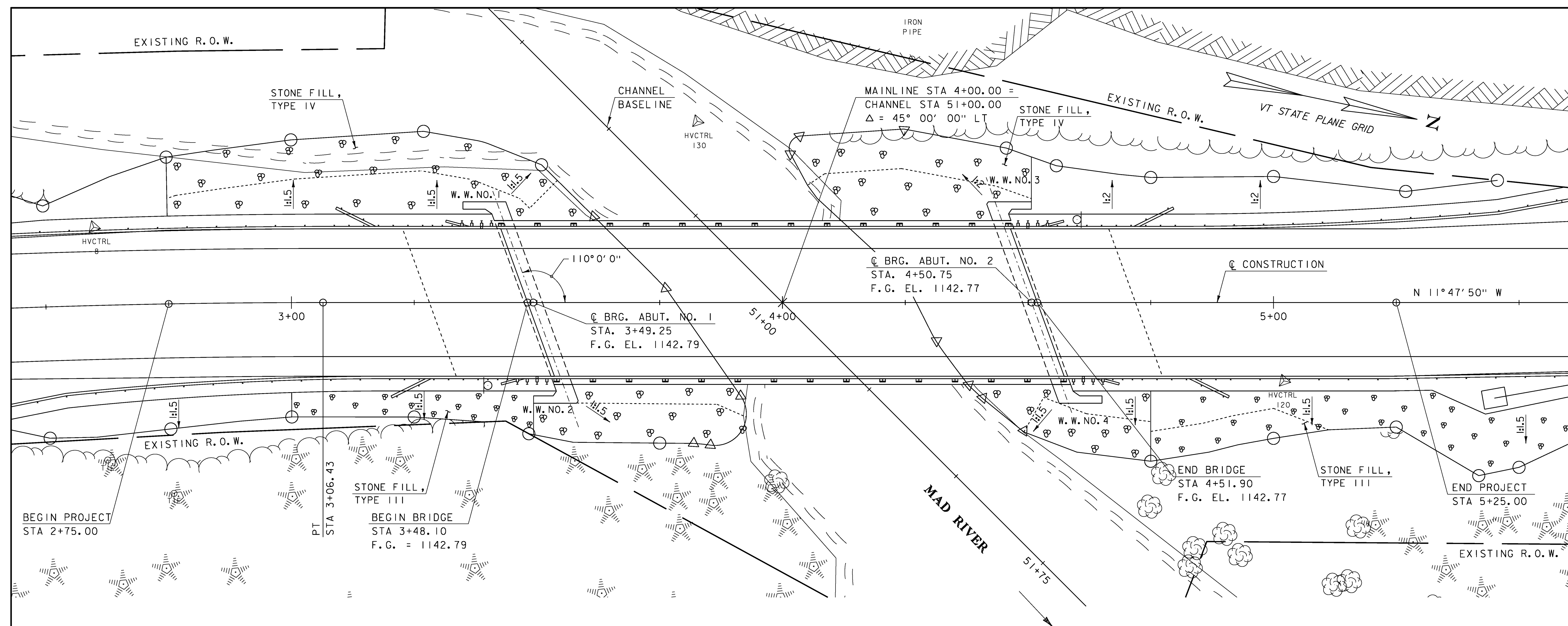
		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: L-2 Page No.: 1 of 1 Pin No.: Checked By: DGL		
Boring Crew: P. Labossiere (NHB), J. Szmyt (GZA)		Casing		Sampler		Groundwater Observations		
Date Started: 1/15/13 Date Finished: 1/16/13		Type: WB		I.D.: 4. in		Date		
VTSPG NAD83: N 572193.05 ft E 1546117.83 ft		Hammer Wt: 300 lb.		N.A.		Depth (ft)		
Station: 4+54 Offset: 8.1R		Hammer Fall: 24 in.		N.A.		Notes		
Ground Elevation: 1142.3 ft		Hammer/Rod Type: AWJ		Rig: MOBILE B47 TRUCK CE =				
Depth (ft)	Strata (t)	CLASSIFICATION OF MATERIALS (Description)		Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5		0.0 ft - 0.7 ft, ASPHALT						
		0.7 ft - 1.0 ft, SAND						
		1.0 ft - 2.0 ft, COBBLES AND BOULDERS						
		2.0 ft - 15.0 ft, SAND AND GRAVEL						
15		15.0 ft - 24.0 ft, COBBLES AND BOULDERS						
25		24.0 ft - 29.0 ft, SAND AND GRAVEL						
30		29.0 ft - 29.5 ft, PROBABLE BEDROCK						
Remarks: 1. Boring advanced without sampling. Stratum descriptions based on observations of drilling action and wash water. 2. Advanced roller bit into probable bedrock from 29.0 to 29.5 feet below ground surface.								
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. CE 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.								



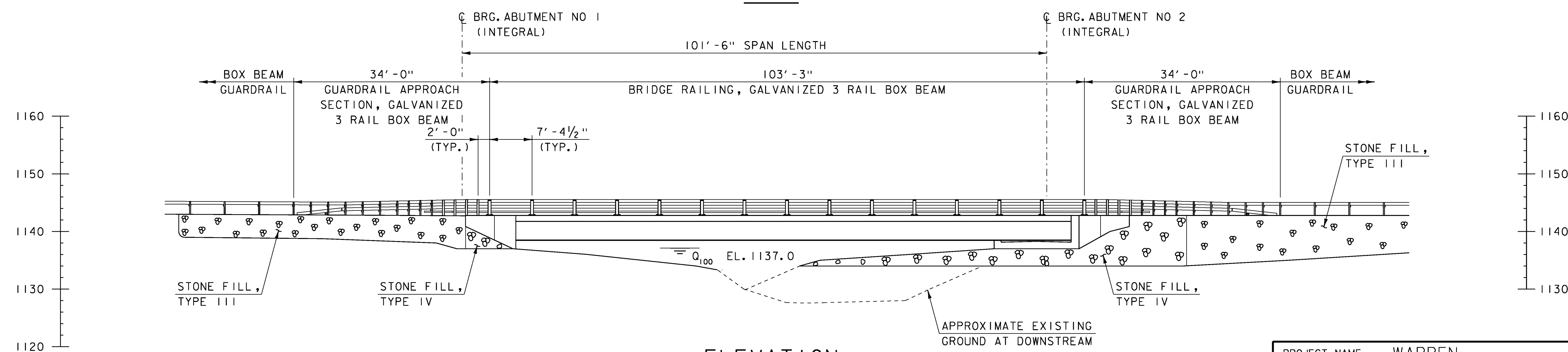
PROJECT NAME: WARREN
PROJECT NUMBER: BRF 013-4(32)

FILE NAME: z10b424bor_log.dgn
PROJECT LEADER: R. Young
DESIGNED BY: D. Kull
BORING LOG SHEET (2 OF 2)

PLOT DATE: 03-OCT-2013
DRAWN BY: P. Dustin
CHECKED BY: T. Kendrick
SHEET 17 OF 42



PLAN

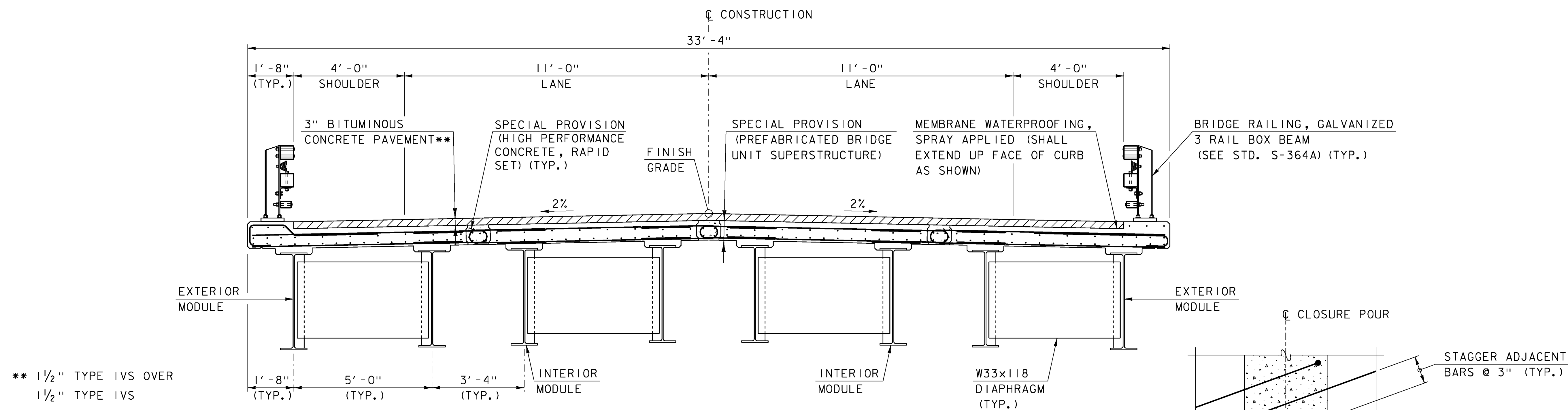


ELEVATION

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

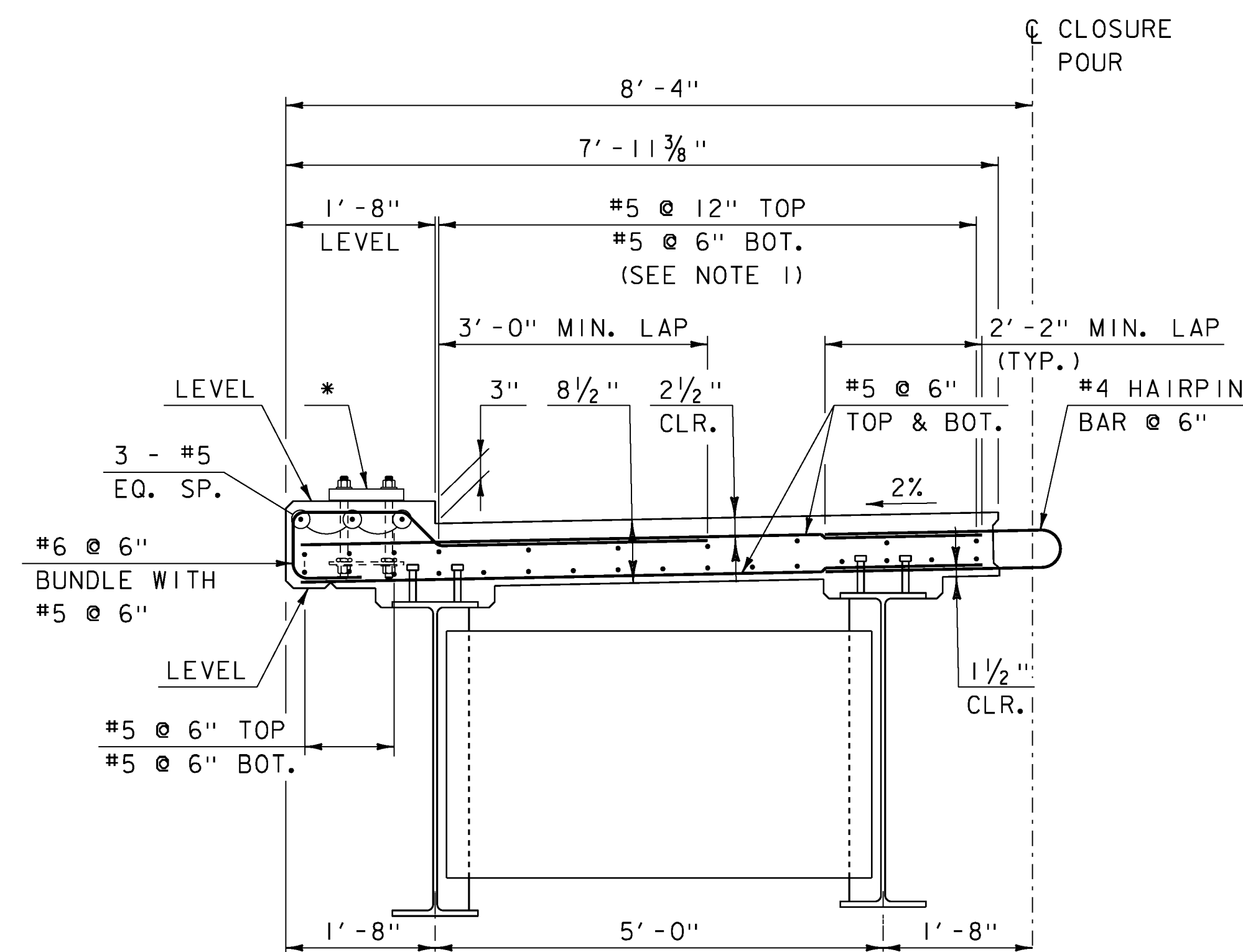


PROJECT NAME: WARREN	PLOT DATE: 03-OCT-2013
PROJECT NUMBER: BRF 013-4(32)	DRAWN BY: P. DUSTIN
FILE NAME: z10b424pe.dgn	CHECKED BY: T. KENDRICK
PROJECT LEADER: R. YOUNG	SHEET 18 OF 42
DESIGNED BY: D. KULL	
PLAN AND ELEVATION	



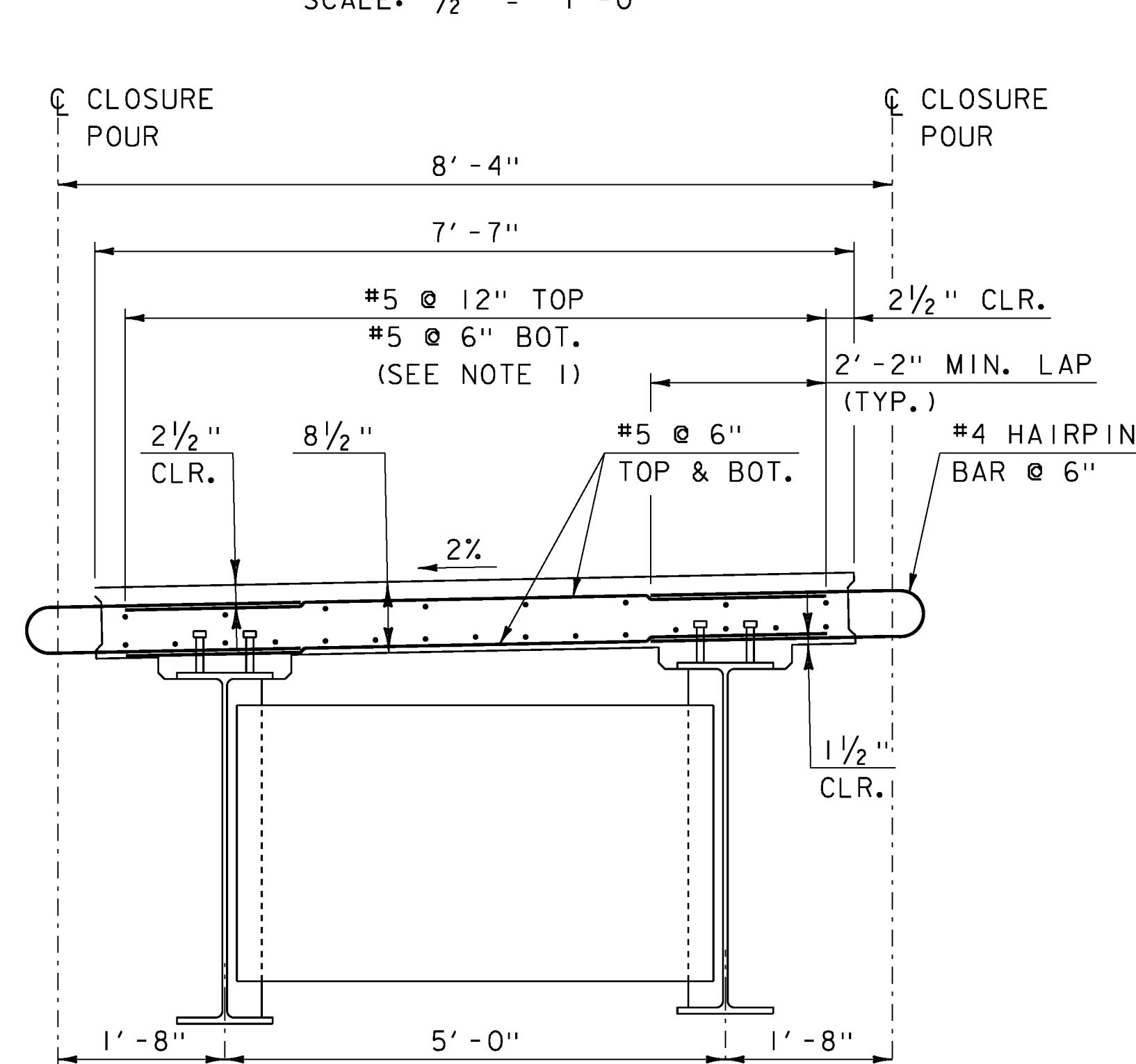
DECK TYPICAL SECTION

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



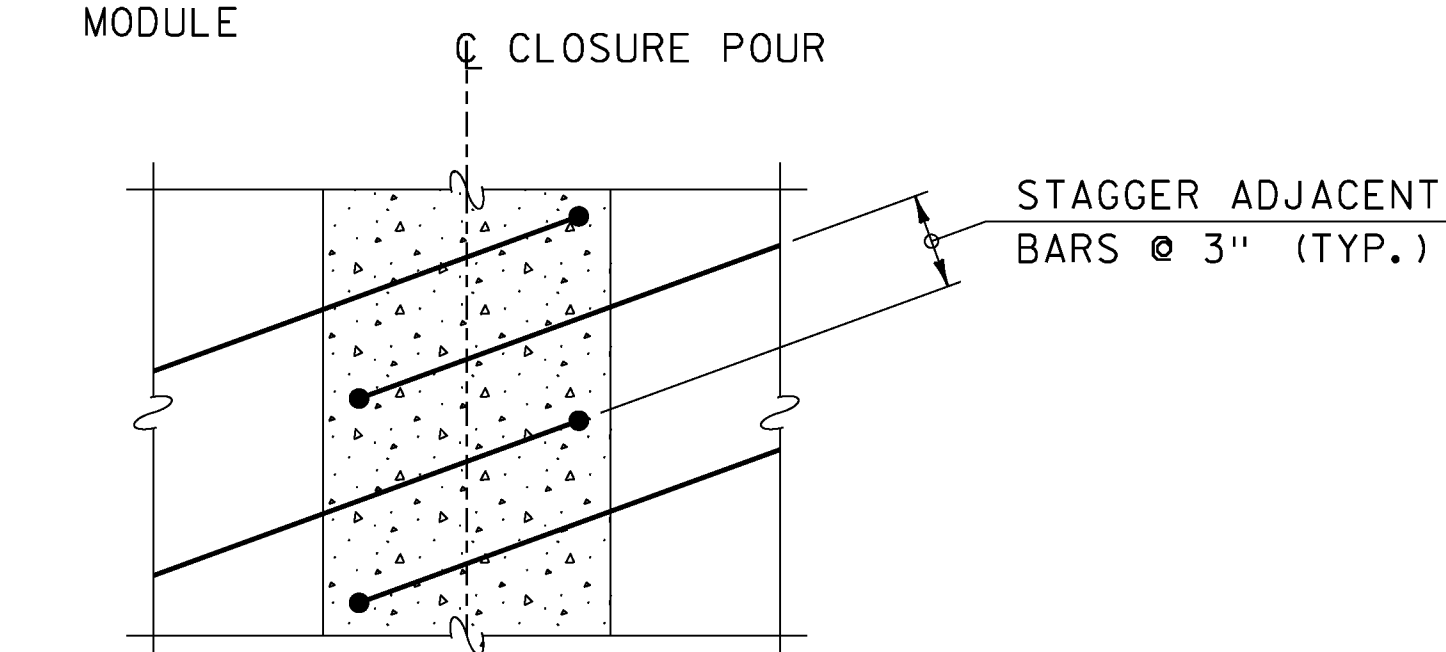
EXTERIOR MODULE DETAIL

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



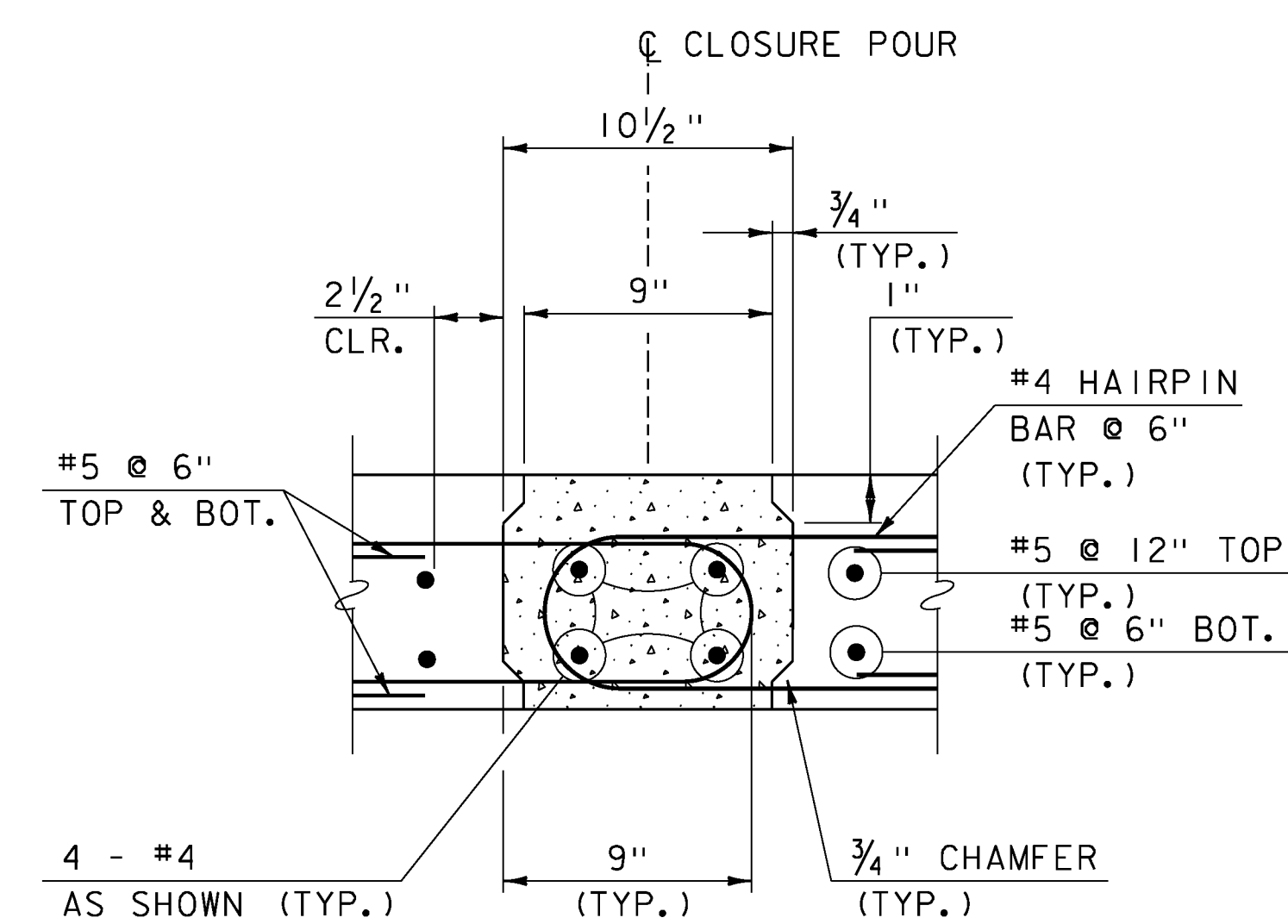
INTERIOR MODULE DETAIL

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



CONNECTION DETAIL PLAN

SCALE: 2" = 1'-0"



CONNECTION DETAIL SECTION

SCALE: 2" = 1'-0"

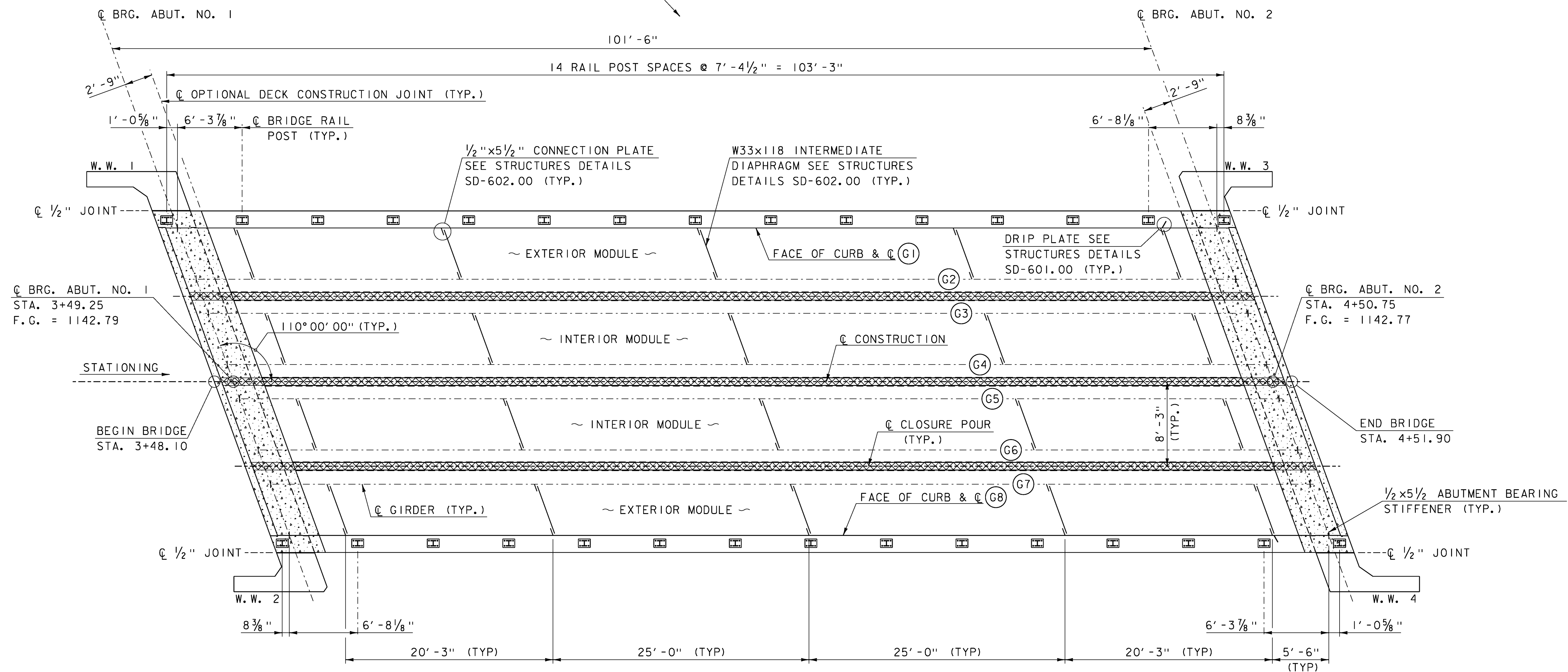
NOTES

1. MINIMUM LONGITUDINAL LAP SPLICE IS 1'-9"
2. TRANSVERSE REINFORCING ORIENTED WITH CL BEARING. STAGGER BARS BETWEEN ADJACENT PBU'S.

NOTE:

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

* BRIDGE RAIL ANCHORAGE SHOWN.
ADJUST DECK REINFORCEMENT
AS NECESSARY TO AVOID CONFLICT.

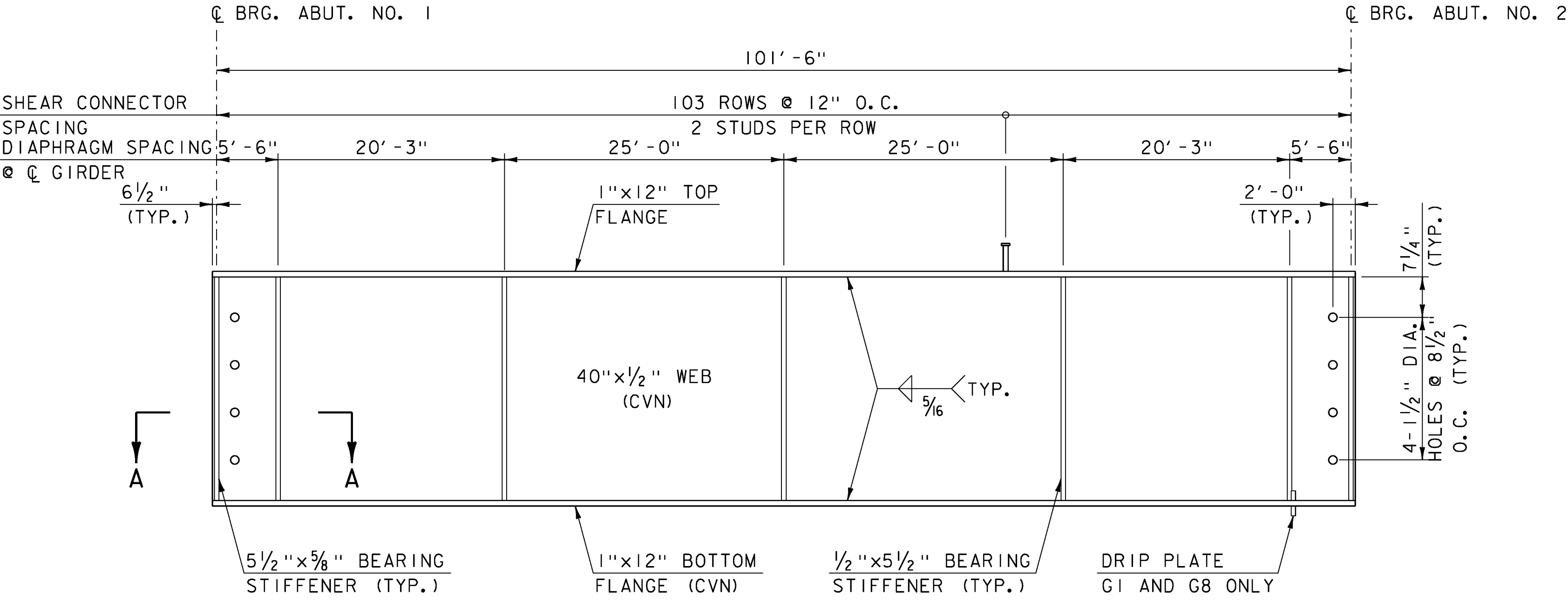


SCALE: $\frac{3}{16}'' = 1' - 0''$

 SPECIAL PROVISION
(HIGH PERFORMANCE CONCRETE,
RAPID SET) (FPQ)

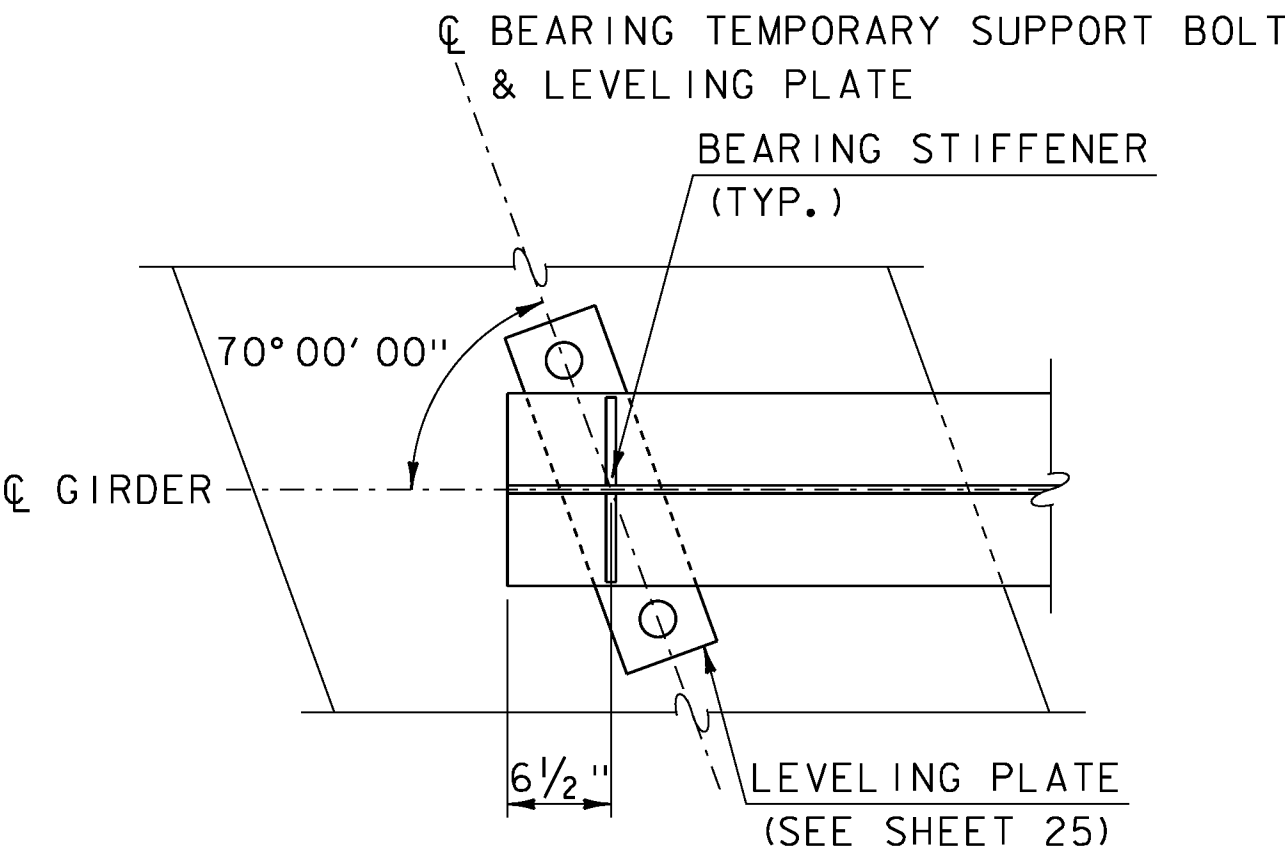
 OPTIONAL CLOSURE POUR
SPECIAL PROVISION
(HIGH PERFORMANCE CONCRETE,
RAPID SET) (FPQ)

FILE NAME: z10b424framing.dgn	PLOT DATE: 03-OCT-2013
PROJECT LEADER: R. YOUNG	DRAWN BY: P. DUSTIN
DESIGNED BY: D. KULL	CHECKED BY: T. KENDRICK
DECK AND FRAMING PLAN	SHEET 20 OF 42



CVN = CHARPY V-NOTCH TEST IN ACCORDANCE
WITH SUBSECTION 714.01.

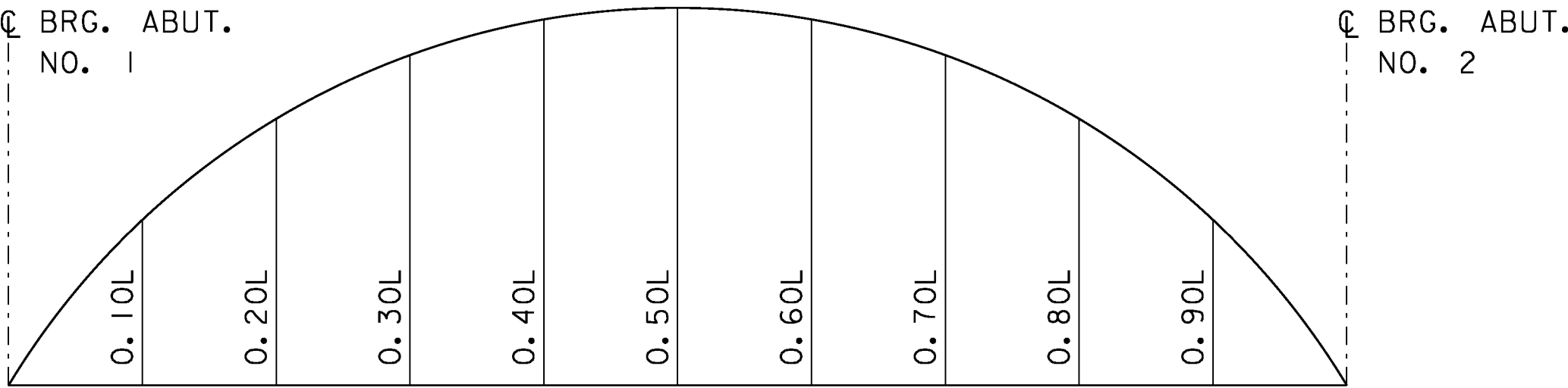
GIRDER ELEVATION
NOT TO SCALE



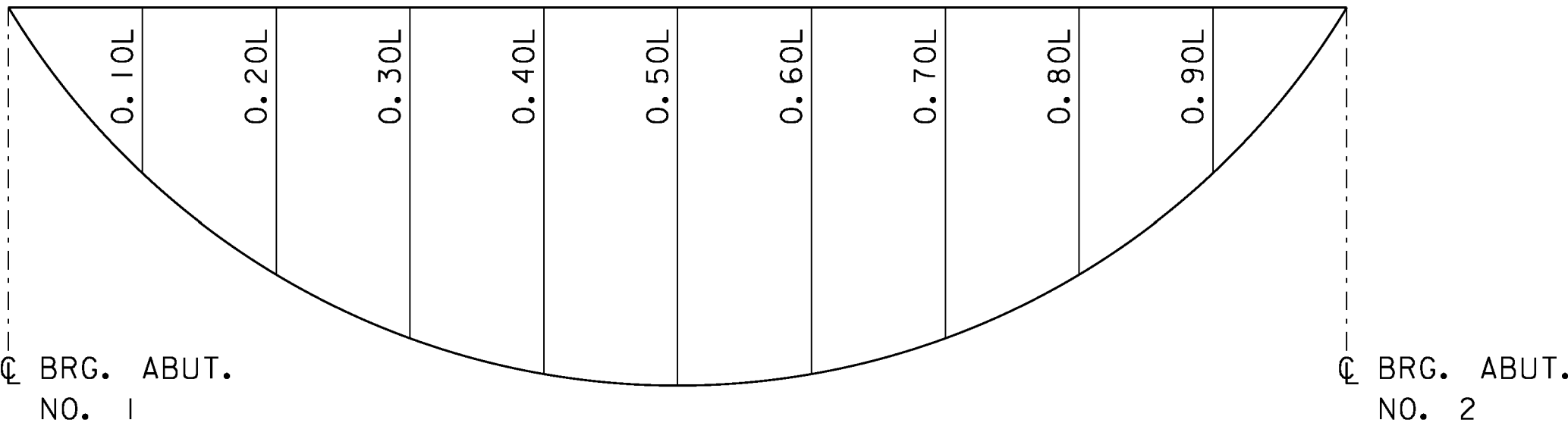
TYPICAL GIRDER END SECTION
SCALE: 1" = 1'-0"

CAMBER TABLE - GIRDERS 1 & 8 (INCHES)											
POINT ON GIRDER	CL BRG. ABUT. 1	0.10 L	0.20 L	0.30 L	0.40 L	0.50 L	0.60 L	0.70 L	0.80 L	0.90 L	CL BRG. ABUT. 2
STEEL DL	0.00	0.31	0.59	0.81	0.95	1.00	0.95	0.81	0.59	0.31	0.00
CONCRETE SLAB	0.00	1.02	1.94	2.65	3.10	3.26	3.10	2.65	1.94	1.02	0.00
SUPERIMPOSED DL	0.00	0.20	0.37	0.51	0.59	0.62	0.59	0.51	0.37	0.20	0.00
TOTAL DEFLECTION	0.00	1.53	2.90	3.97	4.65	4.88	4.65	3.97	2.90	1.53	0.00
RESIDUAL CAMBER	0.00	0.25	0.50	0.75	1.00	1.25	1.00	0.75	0.50	0.25	0.00
TOTAL CAMBER	0.00	1.78	3.40	4.72	5.65	6.13	5.65	4.72	3.40	1.78	0.00

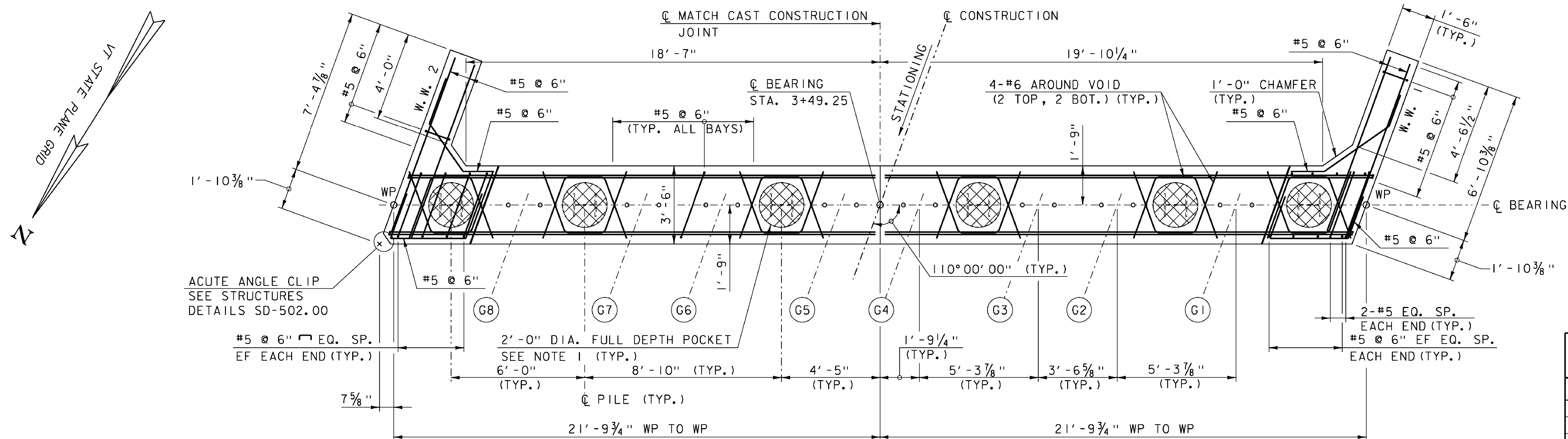
CAMBER TABLE - GIRDERS 2 - 7 (INCHES)											
POINT ON GIRDER	CL BRG. ABUT. 1	0.10 L	0.20 L	0.30 L	0.40 L	0.50 L	0.60 L	0.70 L	0.80 L	0.90 L	CL BRG. ABUT. 2
STEEL DL	0.00	0.31	0.59	0.81	0.95	1.00	0.95	0.81	0.59	0.31	0.00
CONCRETE SLAB	0.00	0.98	1.86	2.55	2.99	3.13	2.99	2.55	1.86	0.98	0.00
SUPERIMPOSED DL	0.00	0.20	0.37	0.51	0.59	0.62	0.59	0.51	0.37	0.20	0.00
TOTAL DEFLECTION	0.00	1.49	2.82	3.87	4.53	4.76	4.53	3.87	2.82	1.49	0.00
RESIDUAL CAMBER	0.00	0.25	0.50	0.75	1.00	1.25	1.00	0.75	0.50	0.25	0.00
TOTAL CAMBER	0.00	1.74	3.32	4.62	5.53	6.01	5.53	4.62	3.32	1.74	0.00



CAMBER DIAGRAM
SEE CAMBER TABLES



DEAD LOAD DEFLECTION DIAGRAM
SEE CAMBER TABLES



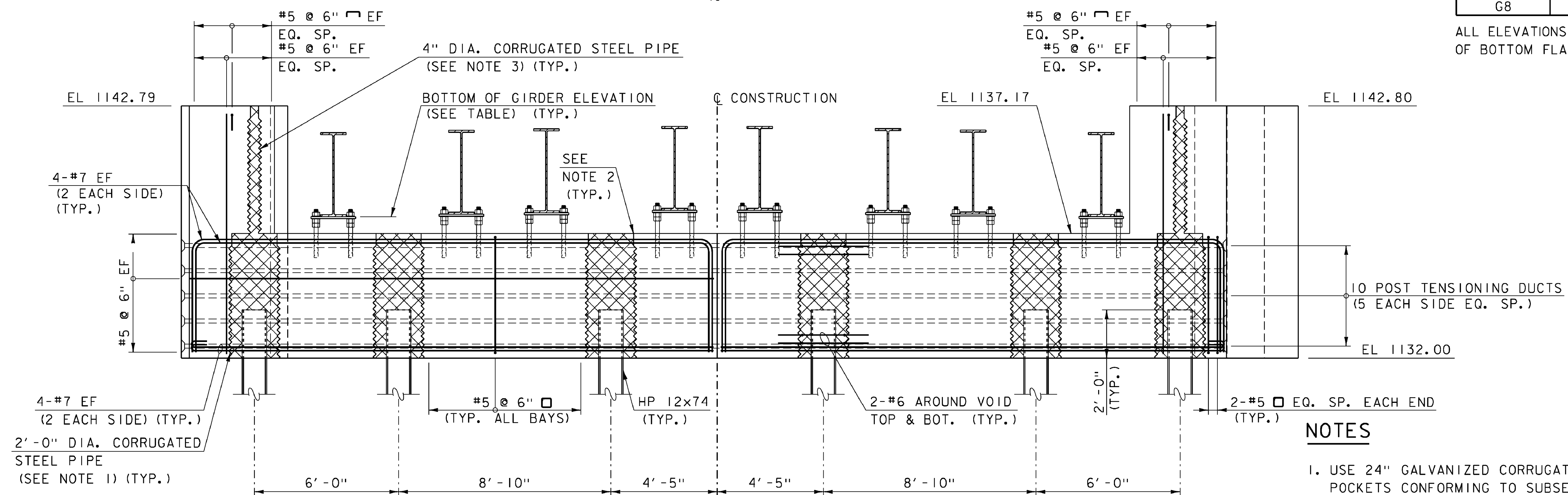
NOTE: ABUTMENT PLAN BELOW BRIDGE SEAT SHOWN.
FOR PLAN VIEW ABOVE BRIDGE SHEET, SEE
SHEET 28.

PRECAST ABUTMENT NO. 1 PLAN

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

GIRDER ELEVATION TABLE			REVISED ELEVATIONS
GIRDER	ELEVATION	Abut 1	
G1	1137.88	1137.71	
G2	1137.98	1137.79	
G3	1138.04	1137.88	
G4	1138.13	1137.96	
G5	1138.13	1137.96	
G6	1138.03	1137.88	
G7	1137.97	1137.81	
G8	1137.87	1137.72	

ALL ELEVATIONS ARE AT BOTTOM
OF BOTTOM FLANGE



NOTE: WINGWALL REINFORCEMENT NOT SHOWN FOR CLARITY.
FOR WINGWALL REINFORCEMENT, SEE SHEET 26.

PRECAST ABUTMENT NO. 1 ELEVATION

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

NOTES

- USE 24" GALVANIZED CORRUGATED STEEL PIPE FOR PILE POCKETS CONFORMING TO SUBSECTION 711.01.
- FORM TOP 6" WITH REMOVABLE FORM TO ELIMINATE EXPOSED CORRUGATED STEEL ON THE TOP OF THE ABUTMENT.
- 4" GALVANIZED CORRUGATED STEEL PIPE TO CONFORM TO SUBSECTION 711.01.

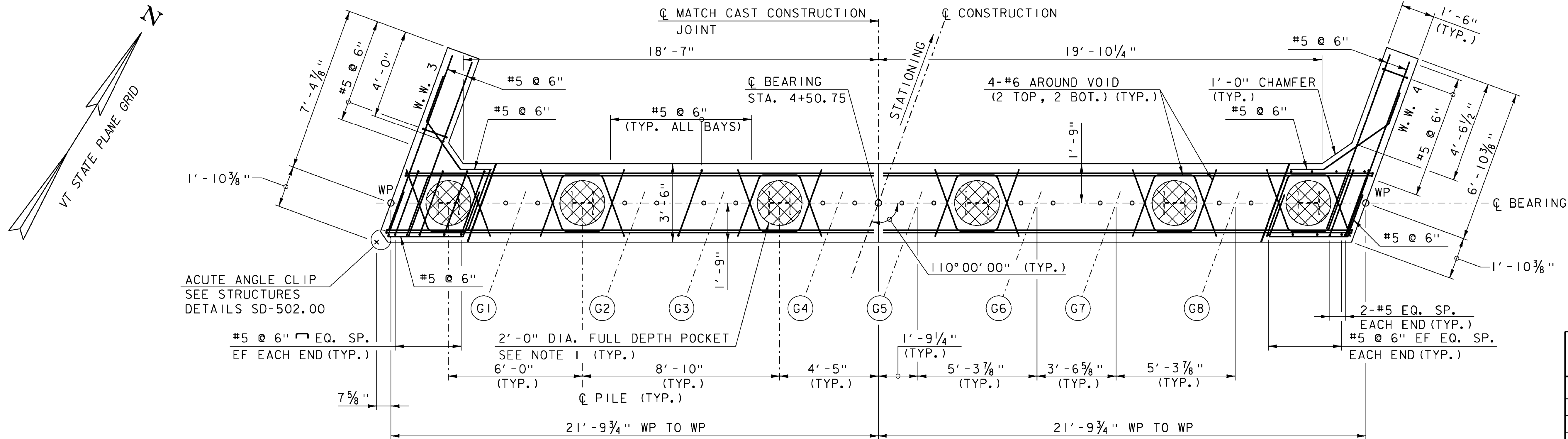
NOTE:

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.

LEGEND

SPECIAL PROVISION
(HIGH PERFORMANCE CONCRETE,
RAPID SET) (FPQ)

PROJECT NAME:	WARREN
PROJECT NUMBER:	BRF 013-4(32)
FILE NAME:	z10b424abutdtls.dgn
PROJECT LEADER:	R. YOUNG
DESIGNED BY:	D. KULL
ABUTMENT NO. 1 PRECAST DETAILS	
PLOT DATE:	03-OCT-2013
DRAWN BY:	S. MERKMAN
CHECKED BY:	T. KENDRICK
SHEET	23 OF 42



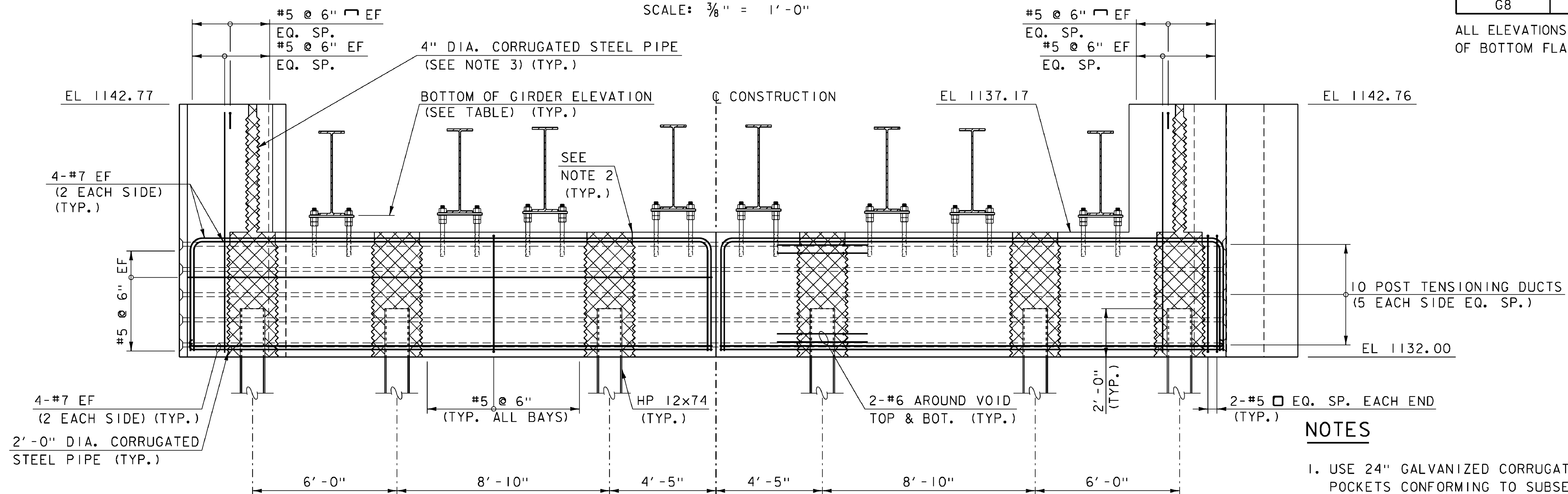
NOTE: ABUTMENT PLAN BELOW BRIDGE SEAT SHOWN.
FOR PLAN VIEW ABOVE BRIDGE SHEET, SEE
SHEET 28.

PRECAST ABUTMENT NO. 2 PLAN

(ABUTMENT PLAN BELOW BRIDGE SEAT SHOWN)
SCALE: 3/8" = 1'-0"

GIRDER ELEVATION TABLE		REVISED ELEVATIONS
GIRDER	ELEVATION	Abut 2
G1	1137.85	1137.70
G2	1137.95	1137.79
G3	1138.01	1137.87
G4	1138.11	1137.96
G5	1138.11	1137.94
G6	1138.00	1137.84
G7	1137.94	1137.77
G8	1137.84	1137.69

ALL ELEVATIONS ARE AT BOTTOM
OF BOTTOM FLANGE



NOTE: WINGWALL REINFORCEMENT NOT SHOWN FOR CLARITY.
FOR WINGWALL REINFORCEMENT, SEE SHEET 26.

PRECAST ABUTMENT NO. 2 ELEVATION

SCALE: 3/8" = 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.

LEGEND

SPECIAL PROVISION
(HIGH PERFORMANCE CONCRETE,
RAPID SET) (FPQ)

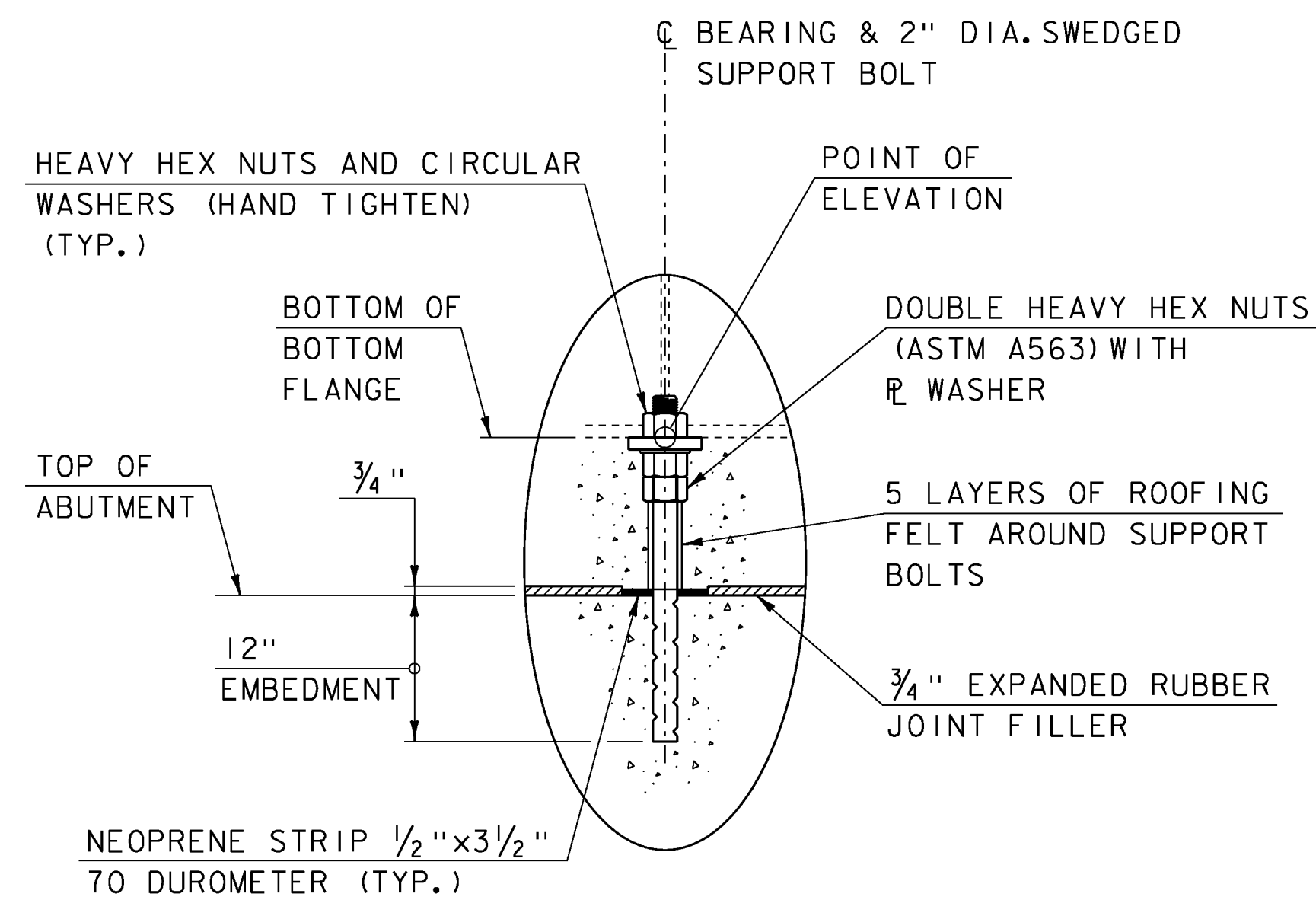
NOTES

- USE 24" GALVANIZED CORRUGATED STEEL PIPE FOR PILE POCKETS CONFORMING TO SUBSECTION 711.01.
- FORM TOP 6" WITH REMOVABLE FORM TO ELIMINATE EXPOSED CORRUGATED STEEL ON THE TOP OF THE ABUTMENT.
- 4" GALVANIZED CORRUGATED STEEL PIPE TO CONFORM TO SUBSECTION 711.01.

PROJECT NAME: WARREN
PROJECT NUMBER: BRP 013-4(32)

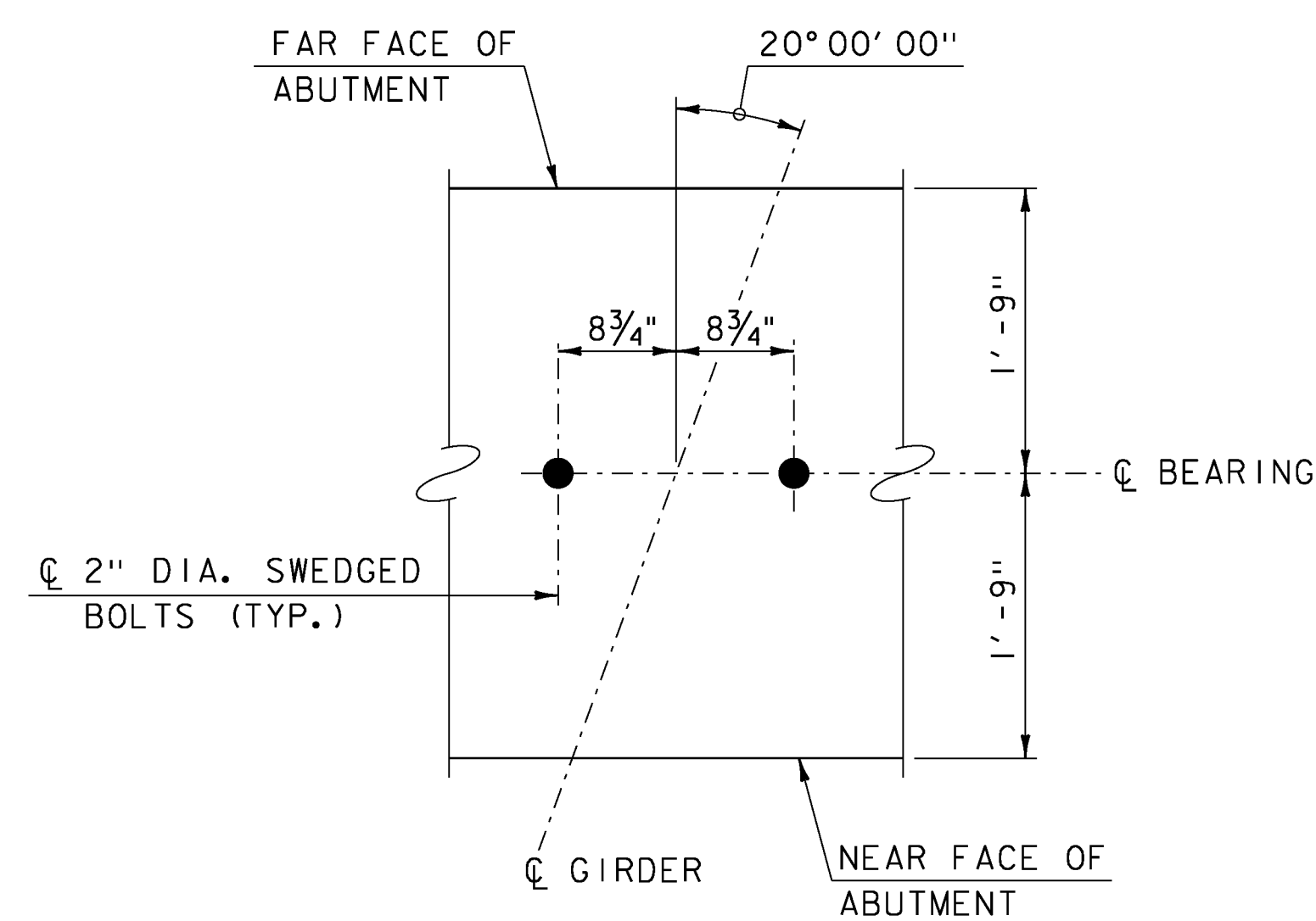
FILE NAME: z10b424abutdtls.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
ABUTMENT NO. 2 PRECAST DETAILS

PLOT DATE: 03-OCT-2013
DRAWN BY: S. MERKMAN
CHECKED BY: T. KENDRICK
SHEET 24 OF 42



SUPPORT BOLT DETAIL

SCALE: 1" = 1'-0"

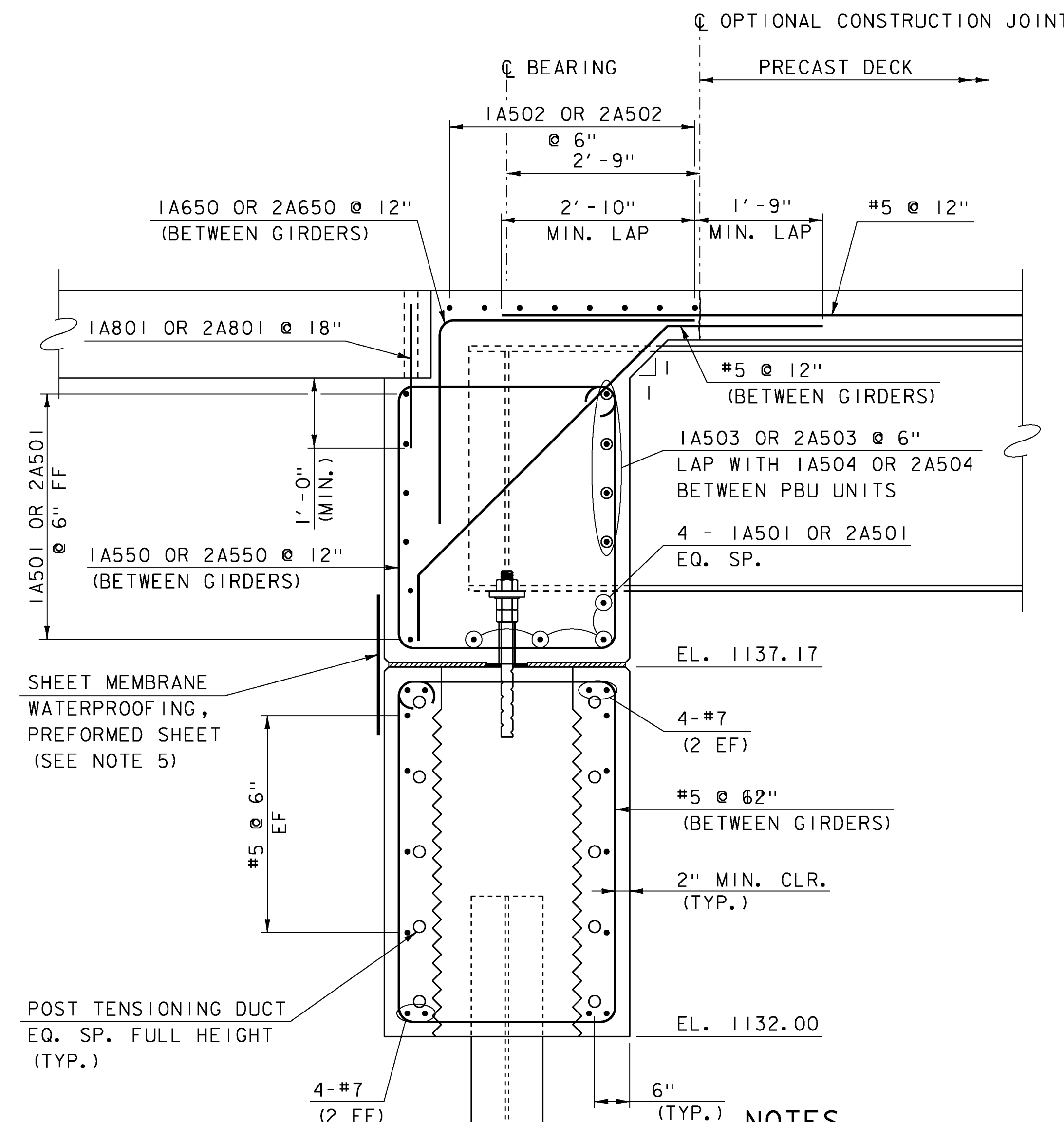


SUPPORT BOLT LAYOUT

SCALE: 1" = 1'-0"

NOTE:

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

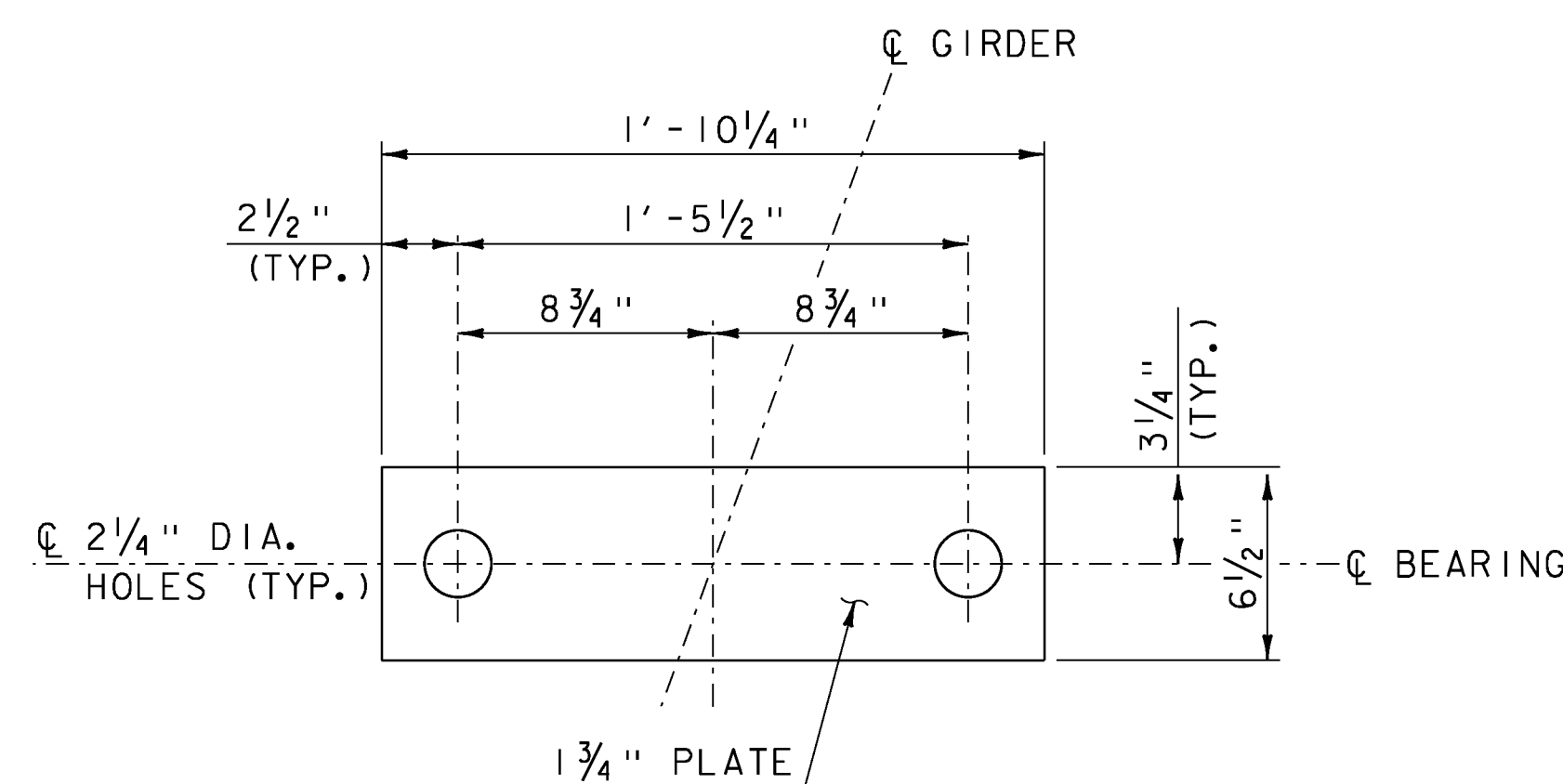


ABUTMENT SECTION

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

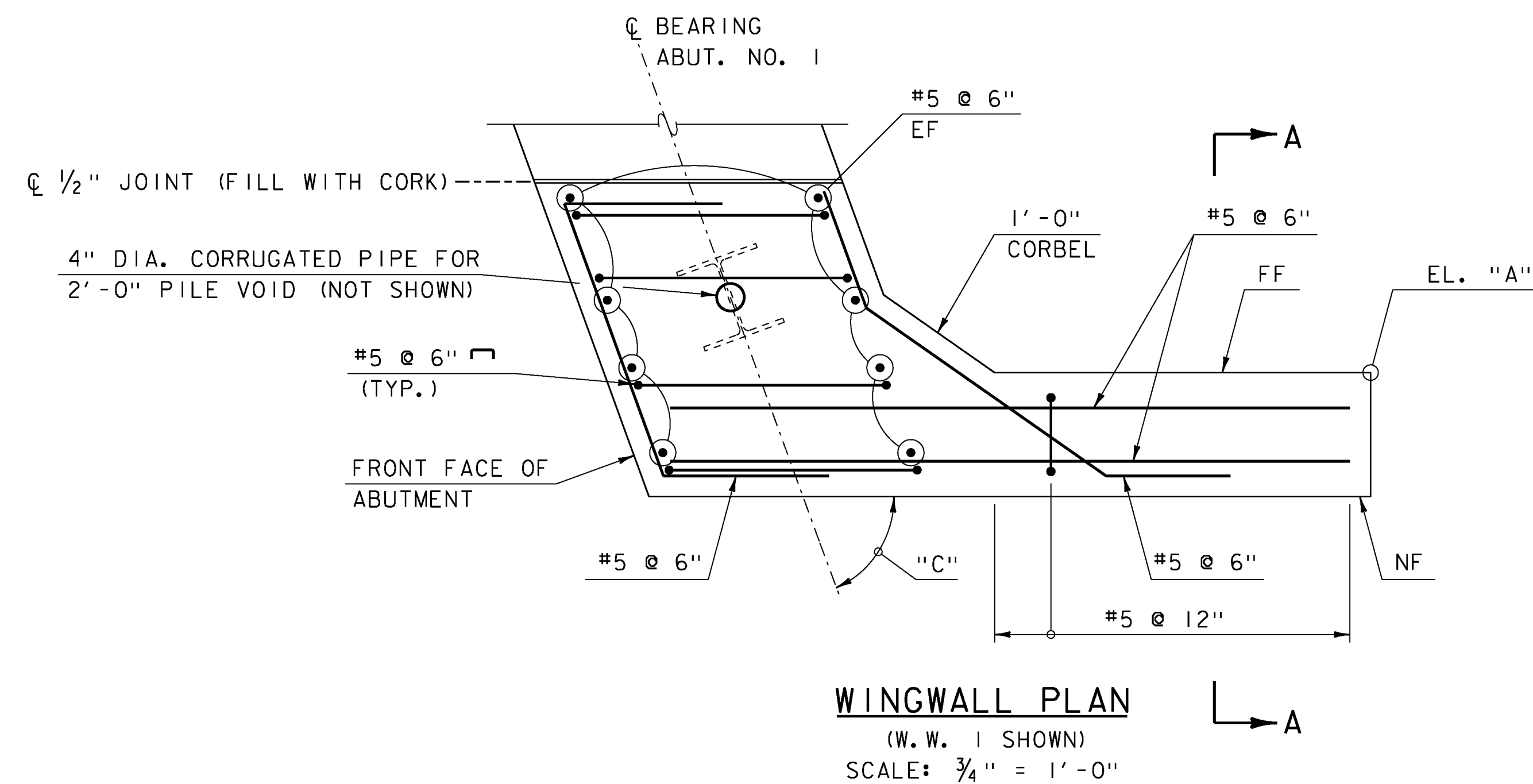
NOTES

1. PAYMENT FOR TEMPORARY SUPPORT ASSEMBLIES SHALL BE INCIDENTAL TO RESPECTIVE 540.10 ITEMS.
2. THE TOP SURFACE OF THE LEVELING PLATE SHALL BE GREASED PRIOR TO SETTING PBU'S. EXCESS GREASE SHALL BE WIPED CLEAN AFTER PBU'S HAVE BEEN SET.
3. LEVELING PLATES SHALL BE LEVEL PRIOR TO SETTING PBU'S. ELEVATIONS SHALL BE ADJUSTED TO WITHIN 0.10 FT OF REQUIRED ELEVATIONS.
4. LEVELING PLATE STEEL SHALL BE GRADE 50 AND CONFORM TO SUBSECTION 714.03. ANCHOR RODS SHALL MEET THE REQUIREMENTS OF SUBSECTION 714.08 AND SHALL BE GRADE 55.
5. PREFORMED SHEET INCIDENTAL TO ITEMS 540.10 PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1) OR PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2) AND SHALL MEET THE REQUIREMENTS OF SUBSECTION 707.07.

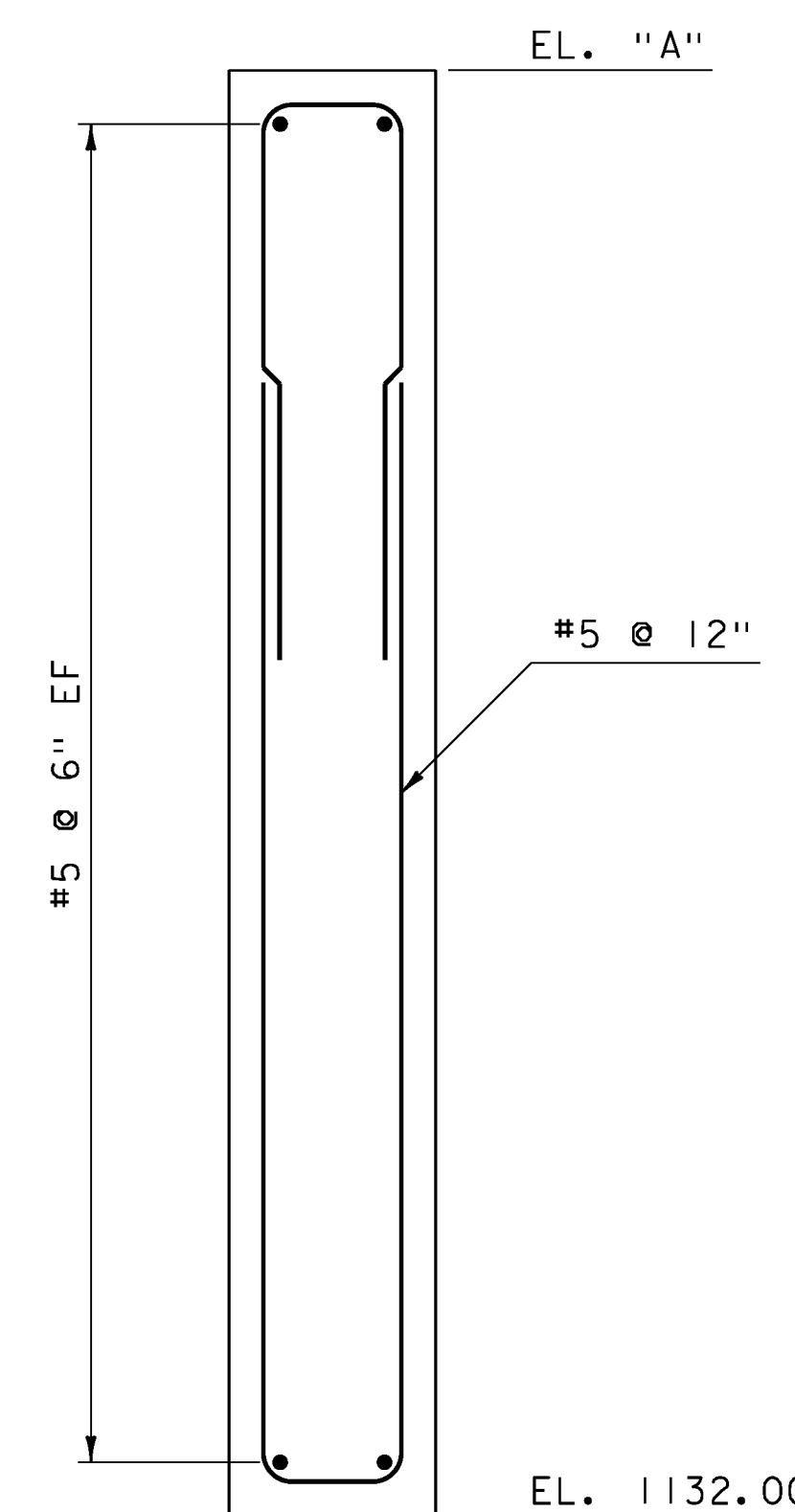
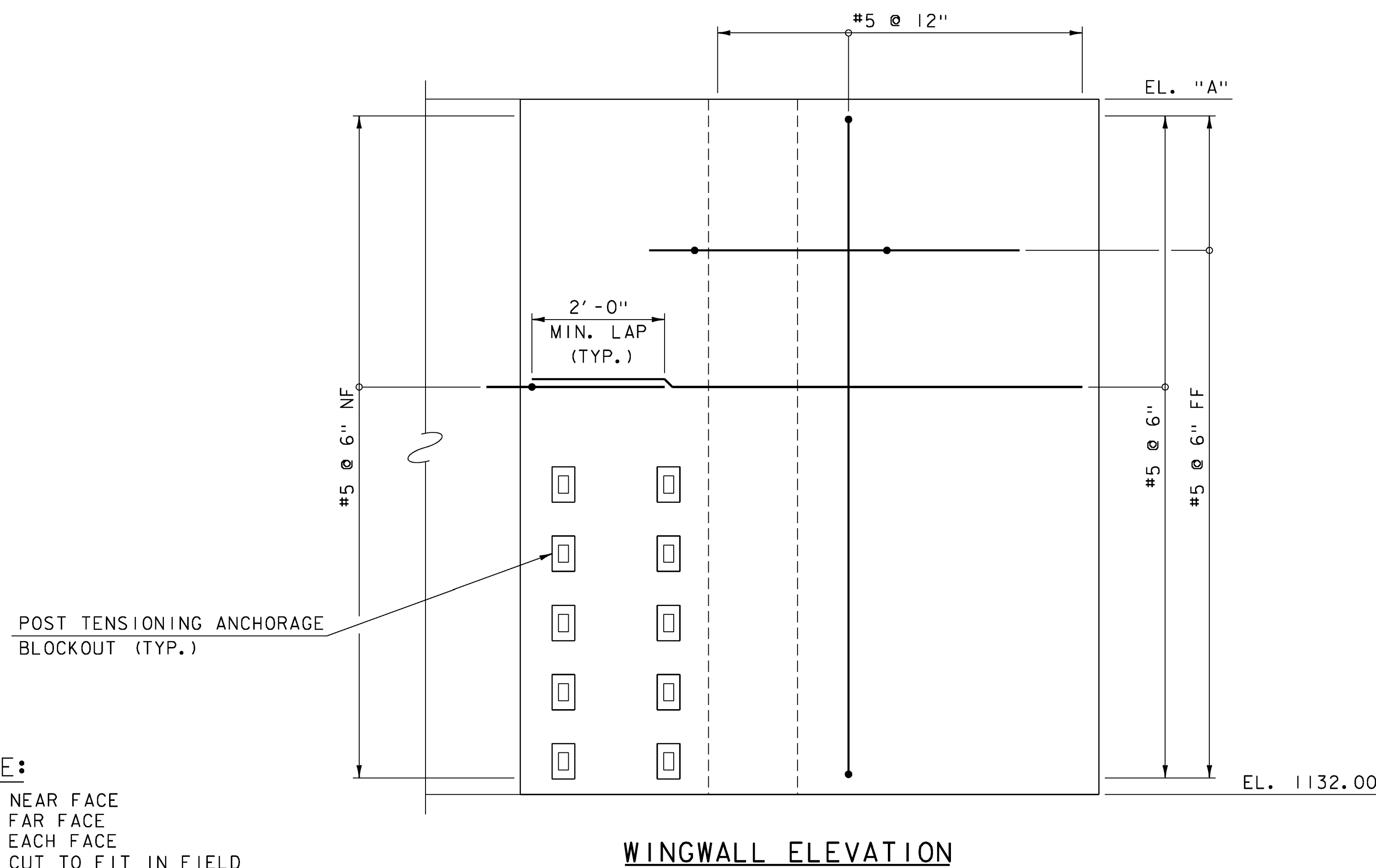


LEVELING PLATE

SCALE: 2" = 1'-0"



WINGWALL TABLE				
	W.W. 1	W.W. 2	W.W. 3	W.W. 4
EL. "A"	1142.42	1142.42	1142.42	1142.42
ANGLE "C"	70° 00' 00"	110° 00' 00"	110° 00' 00"	70° 00' 00"



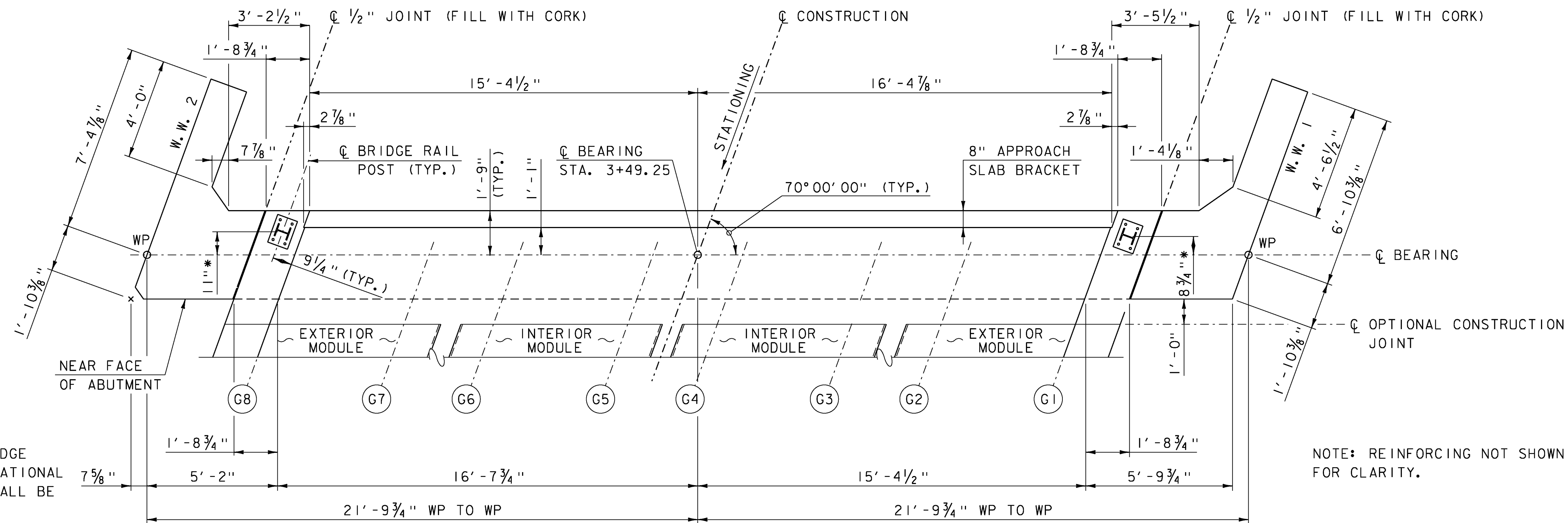
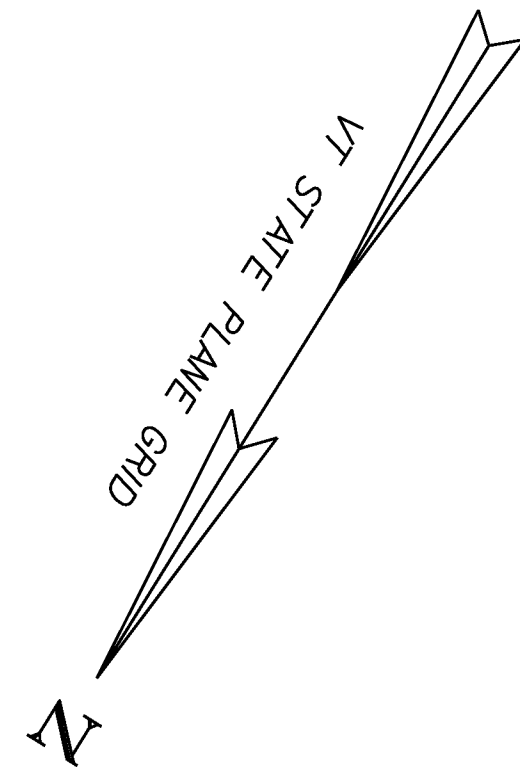
NOTE

1. SEE SHEETS 23 AND 24 FOR REINFORCING DETAILS NOT SHOWN.

PROJECT NAME: WARREN
PROJECT NUMBER: BRF 013-4(32)

FILE NAME: z10b424wingdt1s.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
WINGWALL DETAILS

PLOT DATE: 03-OCT-2013
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 26 OF 42

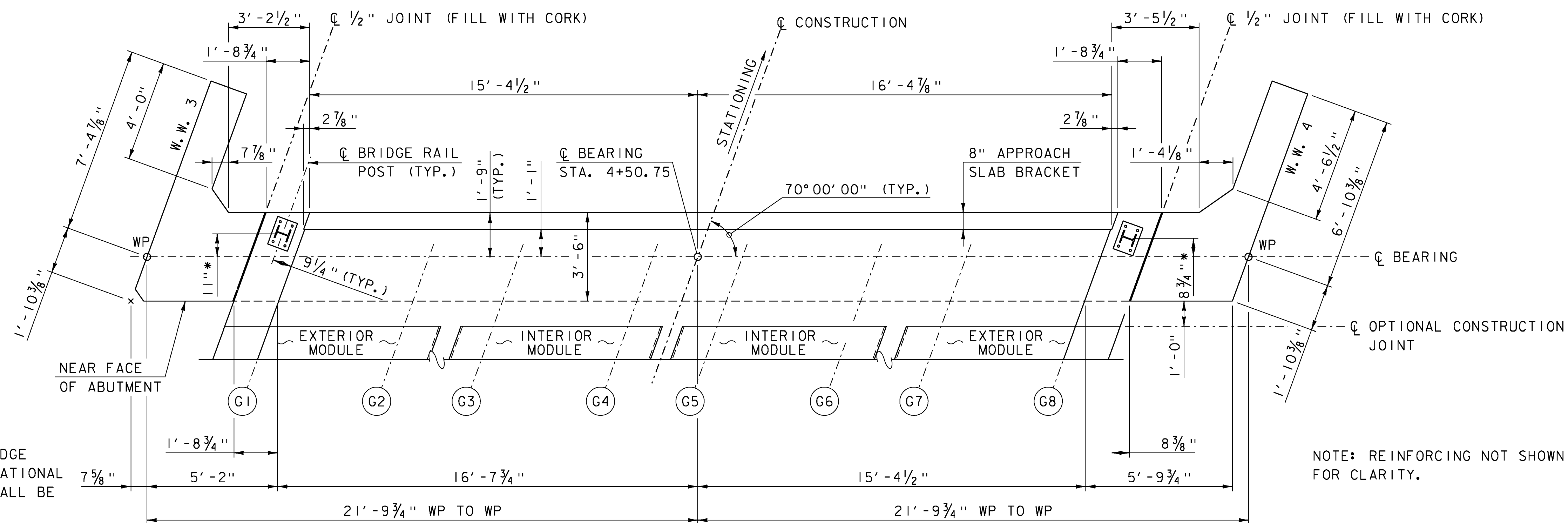
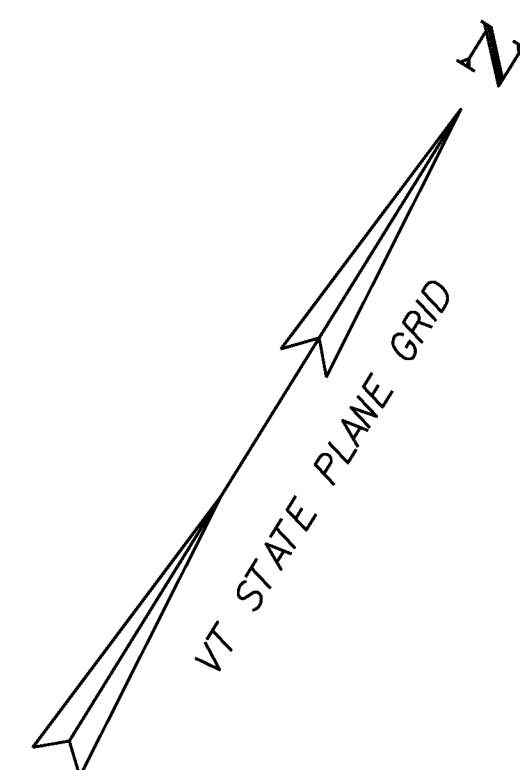


* RAIL POST DIMENSIONED TO CL OF BRIDGE POST HAS BEEN PROVIDED FOR INFORMATIONAL PURPOSES ONLY. ACTUAL LOCATION SHALL BE DETERMINED BY THE FABRICATOR.

NOTE: REINFORCING NOT SHOWN FOR CLARITY.

ABUTMENT NO. 1 CLOSURE POUR PLAN

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



* RAIL POST DIMENSIONED TO CL OF BRIDGE POST HAS BEEN PROVIDED FOR INFORMATIONAL PURPOSES ONLY. ACTUAL LOCATION SHALL BE DETERMINED BY THE FABRICATOR.

NOTE: REINFORCING NOT SHOWN FOR CLARITY.

ABUTMENT NO. 2 CLOSURE POUR PLAN

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



PROJECT NAME: WARREN
PROJECT NUMBER: BRF 013-4(32)

FILE NAME: z10b424abutdtis.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: D. KULL
ABUTMENT CLOSURE POUR DETAILS

PLOT DATE: 03-OCT-2013
DRAWN BY: S. MERKMAN
CHECKED BY: T. KENDRICK
SHEET 27 OF 42

STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O	ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
ABUTMENT NO. 1																																			
*	14	5	35'- 0"	1A501	STR																														
	8	5	35'- 0"	1A502	STR																														
	16	5	7'- 1"	1A503	STR																														
	12	5	3'- 0"	1A504	STR																														
	37	5	15'- 2"	1A550	T1	0'- 5"	3'- 2"	4'- 2"	3'- 2"	4'- 2"		0'- 5"																							
*	33	6	7'- 2"	1A650	17		3'- 7"	3'- 7"	---																										
*	22	8	2'- 0"	1A801	STR																														
ABUTMENT NO. 2																																			
*	14	5	35'- 0"	2A501	STR																														
	8	5	35'- 0"	2A502	STR																														
	16	5	7'- 1"	2A503	STR																														
	12	5	3'- 0"	2A504	STR																														
	37	5	15'- 2"	2A550	T1	0'- 5"	3'- 2"	4'- 2"	3'- 2"	4'- 2"		0'- 5"																							
*	33	6	7'- 2"	2A650	17		3'- 7"	3'- 7"	---																										
*	22	8	2'- 0"	2A801	STR																														

~ 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.

1

A

B

G

2

A

B

G

3

A

B

C

D

E

F

G

4

A

B

C

D

E

F

G

5

A

B

C

D

E

F

G

6

A

B

C

D

G

7

A

B

C

D

E

F

G

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A

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G

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A

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R

H

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C

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D

E

ASTM STANDARD
REINFORCING BARS

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

PROJECT NAME: WARREN

PROJECT NUMBER: BRF 013-4(32)

FILE NAME: z10b424reinf.xls

PROJECT MANAGER: R. YOUNG

DESIGNED BY: D. KULL

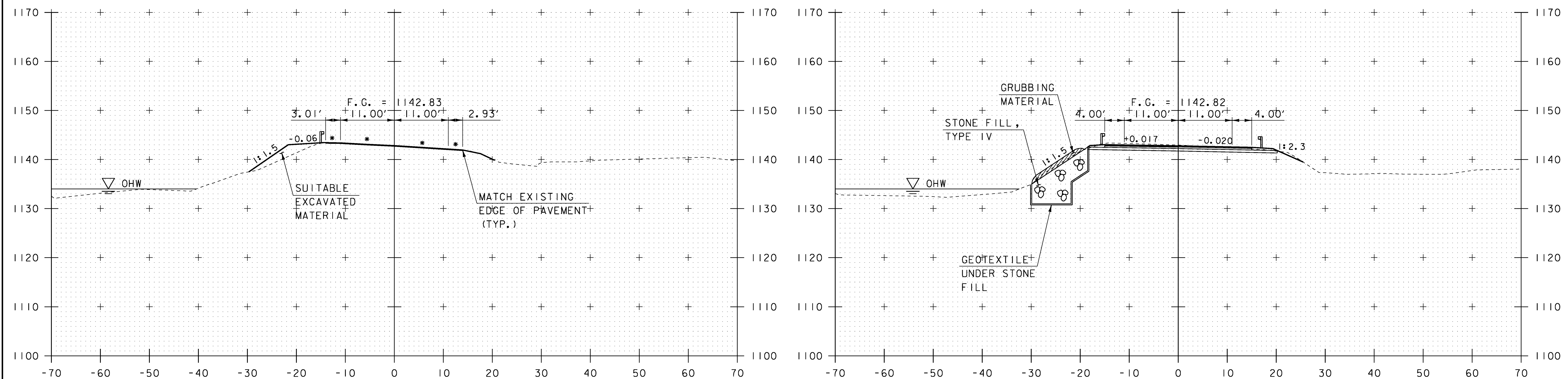
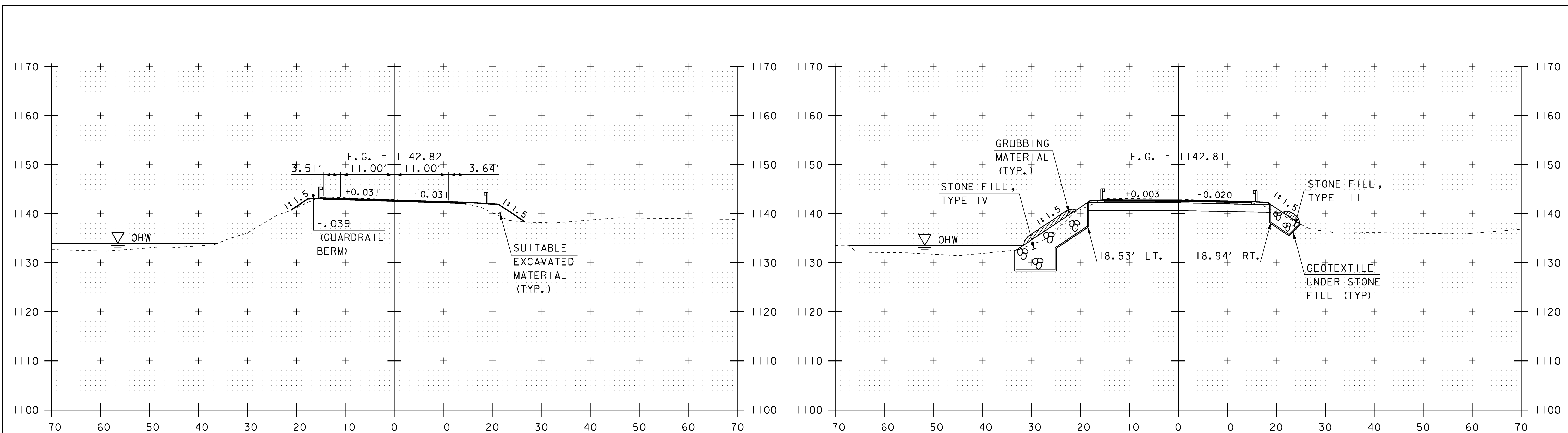
REINFORCING STEEL SCHEDULE

PLOT DATE: 10/3/2013

DRAWN BY: P. DUSTIN

CHECKED BY: T. KENDRICK

SHEET 28 OF 42



* MATCH EXISTING
CROSS SLOPE

2+25
BEGIN APPROACH
MATCH EXISTING

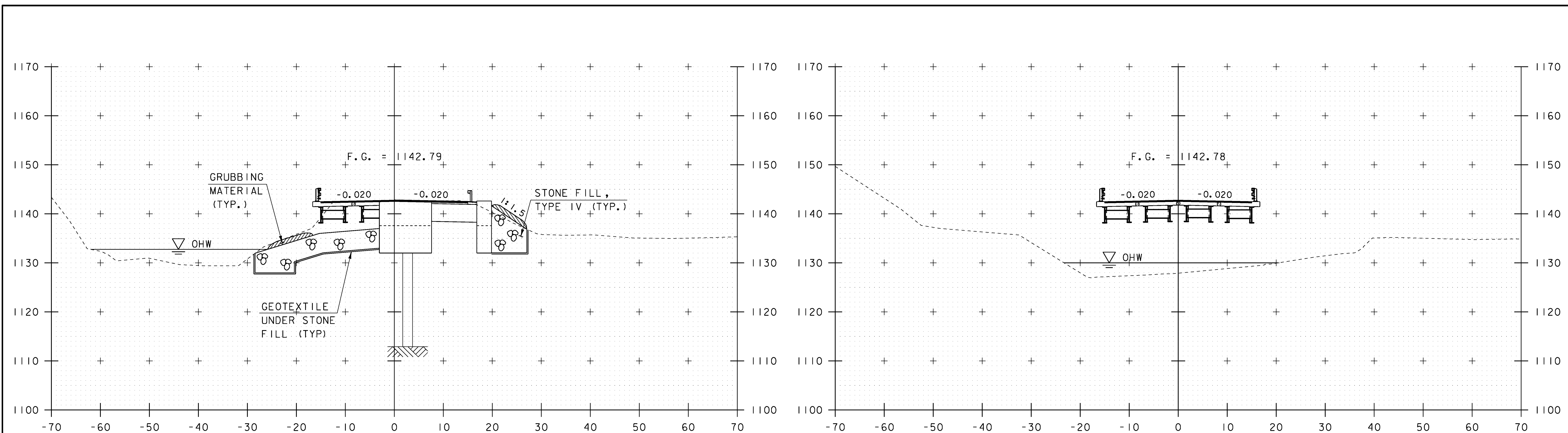
2+75
BEGIN PROJECT

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

McFarland Johnson

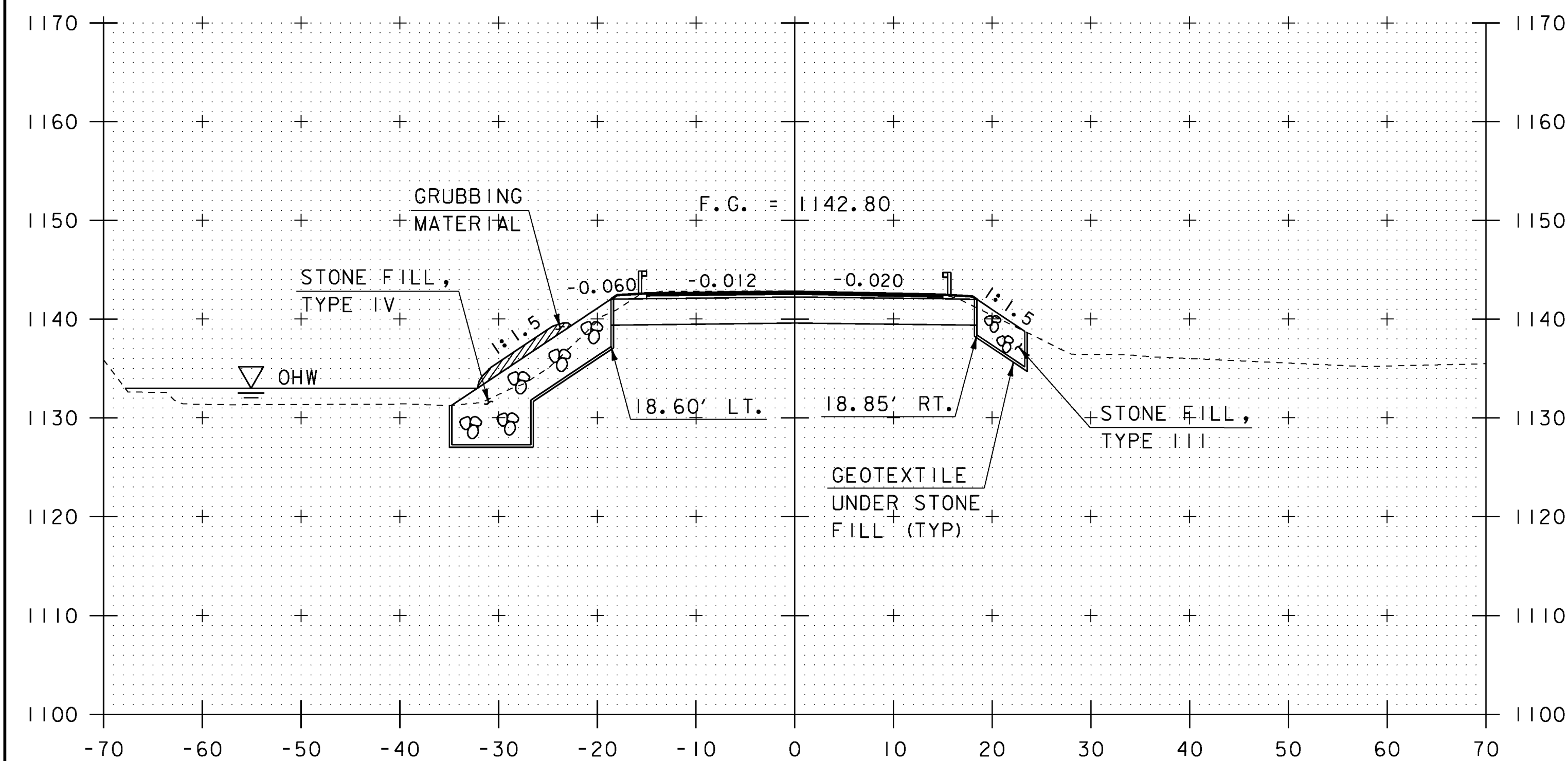
PROJECT NAME:	WARREN
PROJECT NUMBER:	BRF 013-4(32)
FILE NAME:	z10b424xsl.dgn
PROJECT LEADER:	R. YOUNG
DESIGNED BY:	D. KULL
ROADWAY CROSS SECTIONS (1 OF 4)	
PLOT DATE:	03-OCT-2013
DRAWN BY:	S. MERKWAN
CHECKED BY:	T. KENDRICK
SHEET	29 OF 42

STA. 2+25 TO STA. 3+00

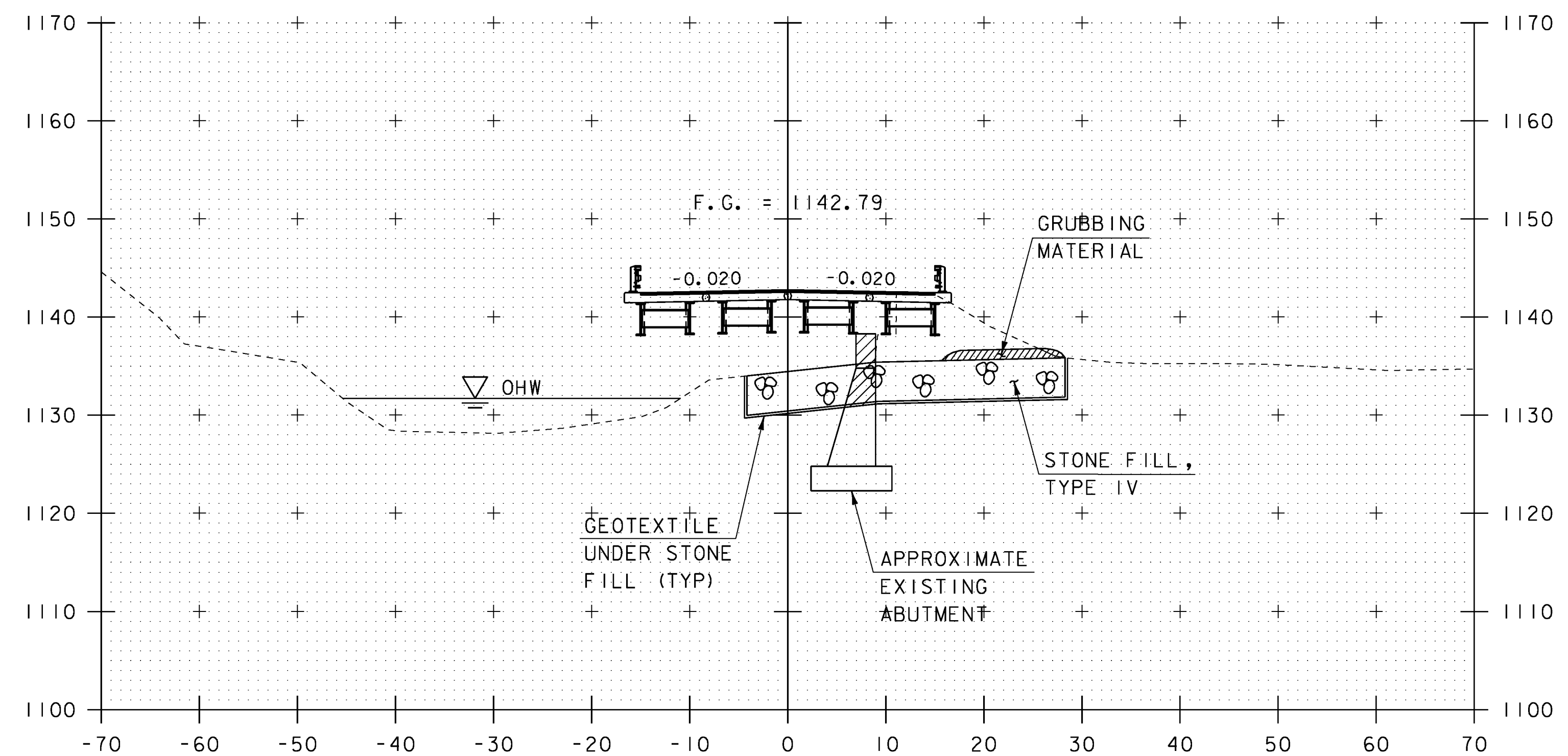


3+50

BEGIN BRIDGE - STA. 3+48.10



3+25



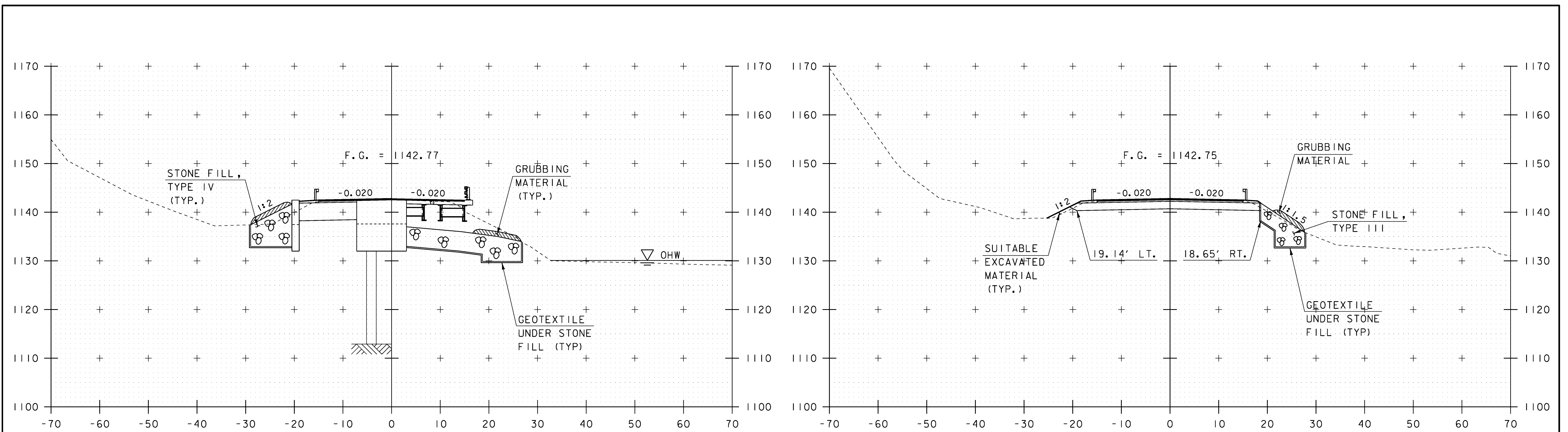
3+75

SCALE 1" = 10' - 0"



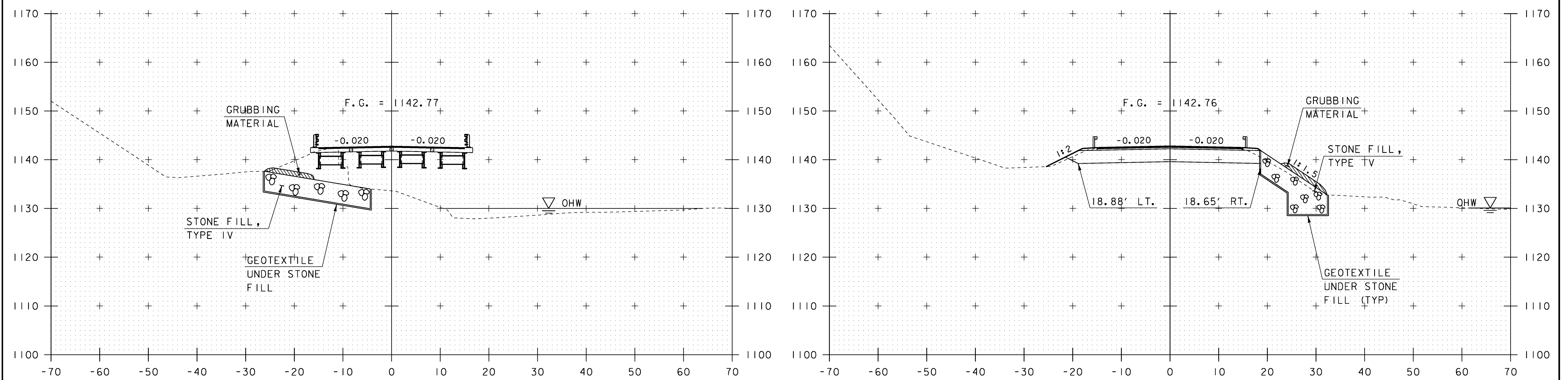
PROJECT NAME: WARREN	PLOT DATE: 03-OCT-2013
PROJECT NUMBER: BRF 013-4(32)	DRAWN BY: S. MERKWAN
FILE NAME: z10b424xsl.dgn	CHECKED BY: T. KENDRICK
PROJECT LEADER: R. YOUNG	SHEET 30 OF 42
DESIGNED BY: D. KULL	
ROADWAY CROSS SECTIONS (2 OF 4)	

STA. 3+25 TO STA. 4+00



4+50

5+00



4+25

4+75

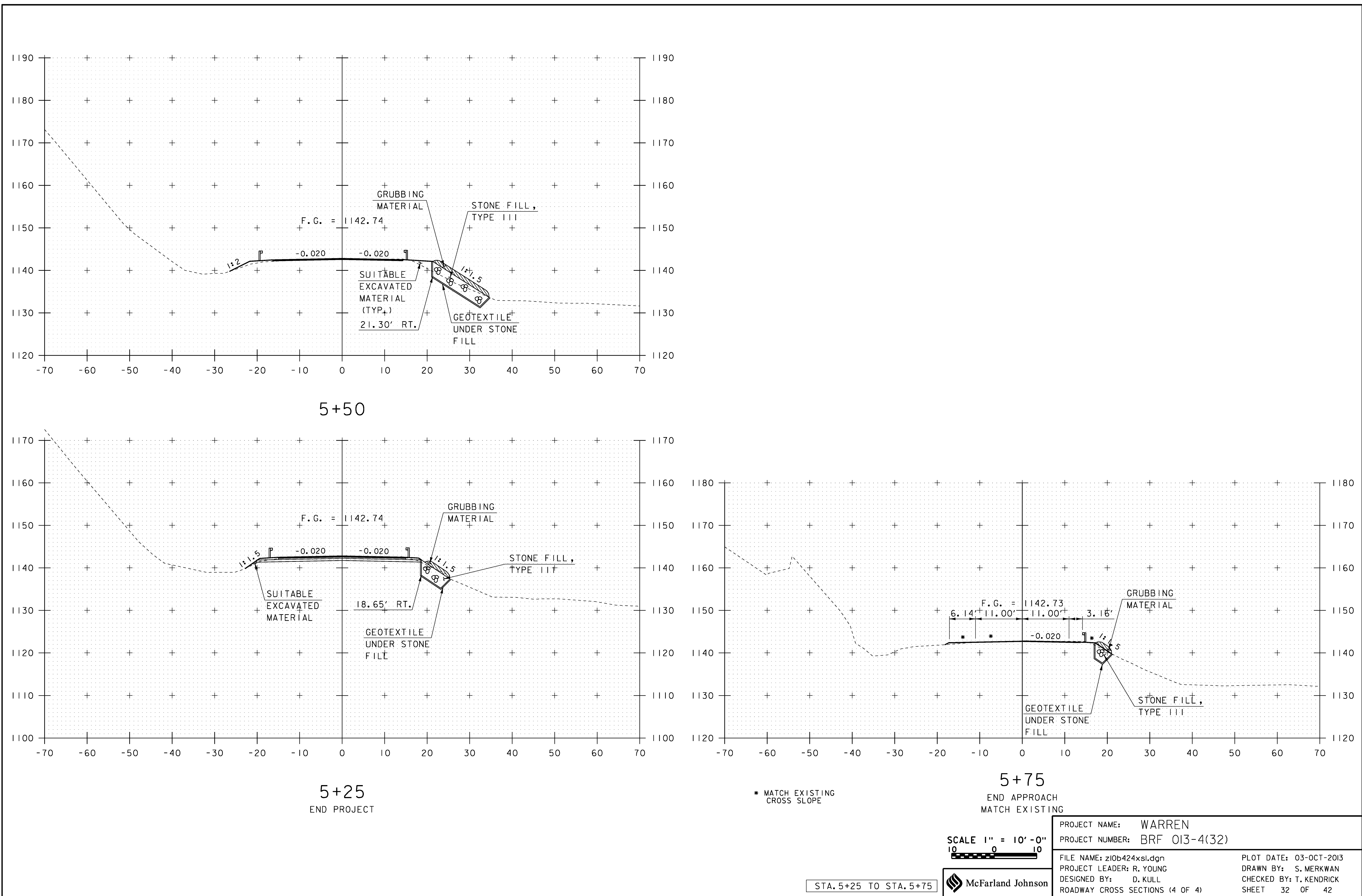
END BRIDGE - STA. 4+51.90

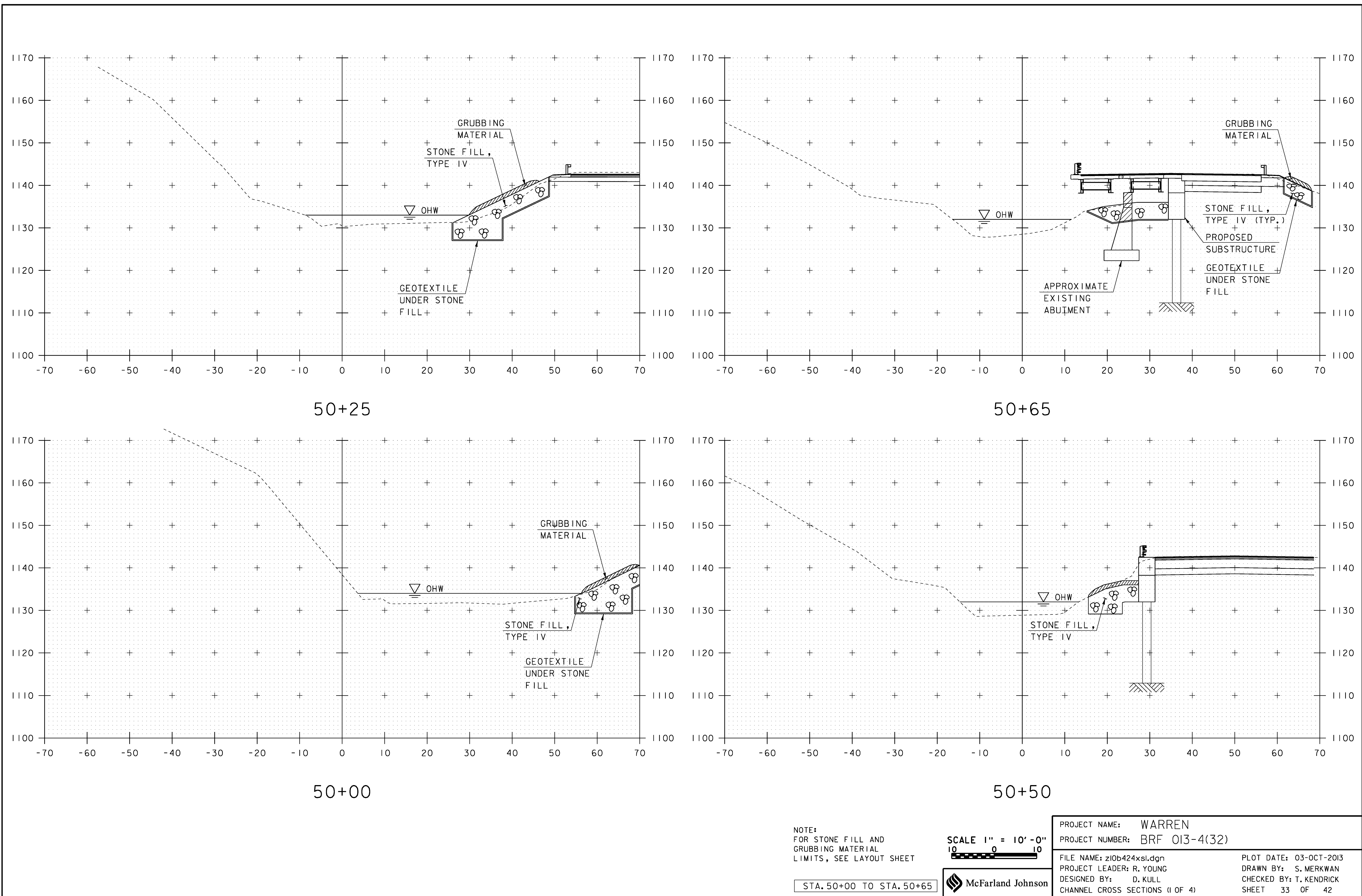
SCALE 1" = 10' - 0"

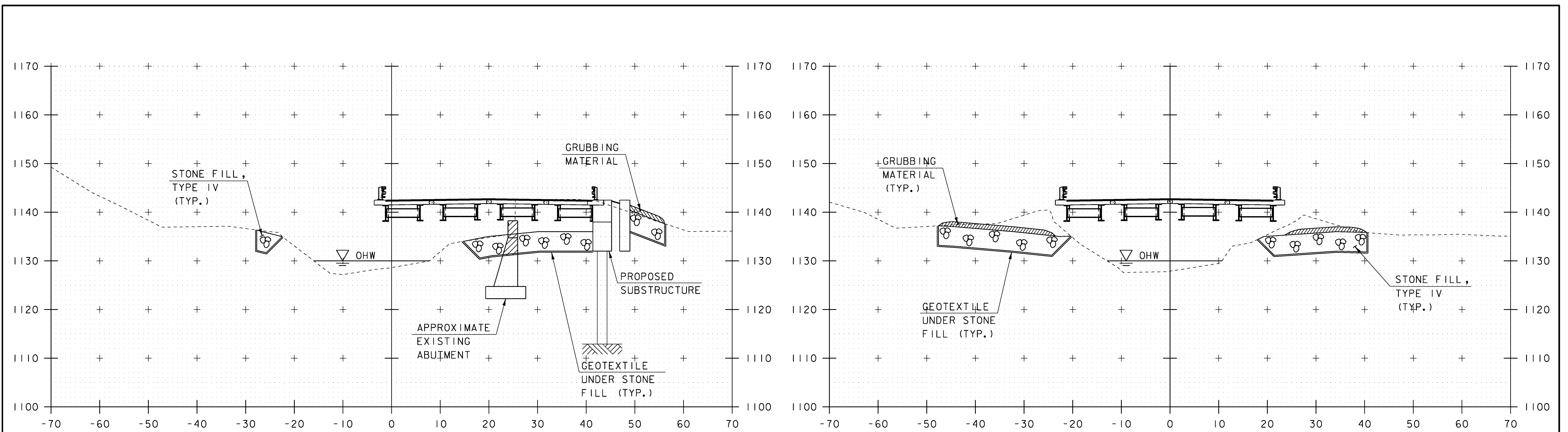
McFarland Johnson

PROJECT NAME:	WARREN
PROJECT NUMBER:	BRF 013-4(32)
FILE NAME:	z10b424xsl.dgn
PROJECT LEADER:	R. YOUNG
DESIGNED BY:	D. KULL
ROADWAY CROSS SECTIONS (3 OF 4)	
PLOT DATE:	03-OCT-2013
DRAWN BY:	S. MERKWAN
CHECKED BY:	T. KENDRICK
SHEET	31 OF 42

STA. 4+25 TO STA. 5+00

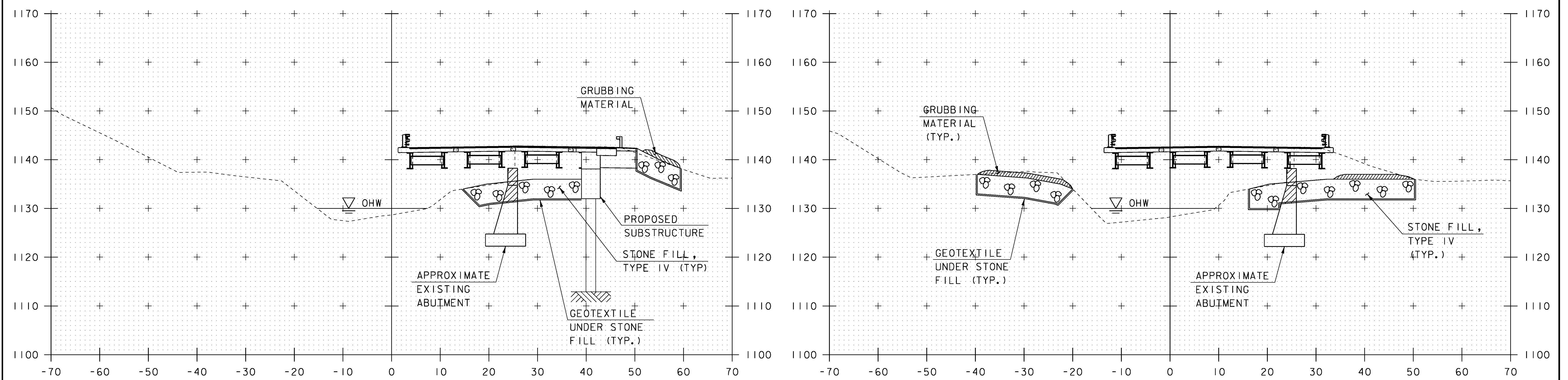






50+80

51+00

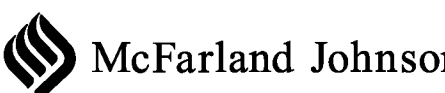


50+75

50+90

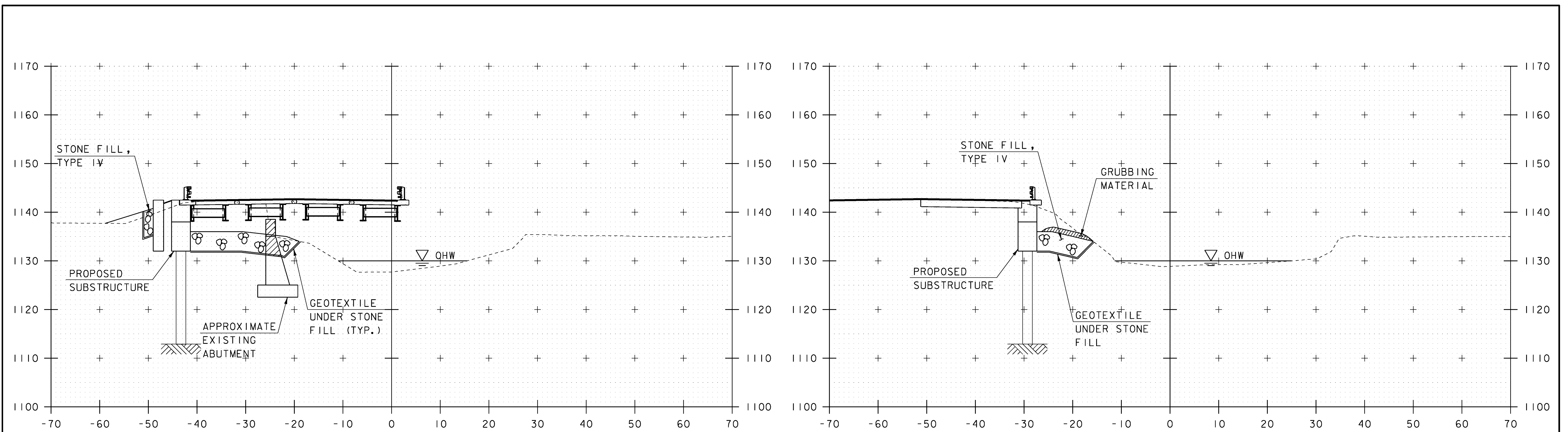
NOTE:
FOR STONE FILL AND
GRUBBING MATERIAL
LIMITS, SEE LAYOUT SHEET

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



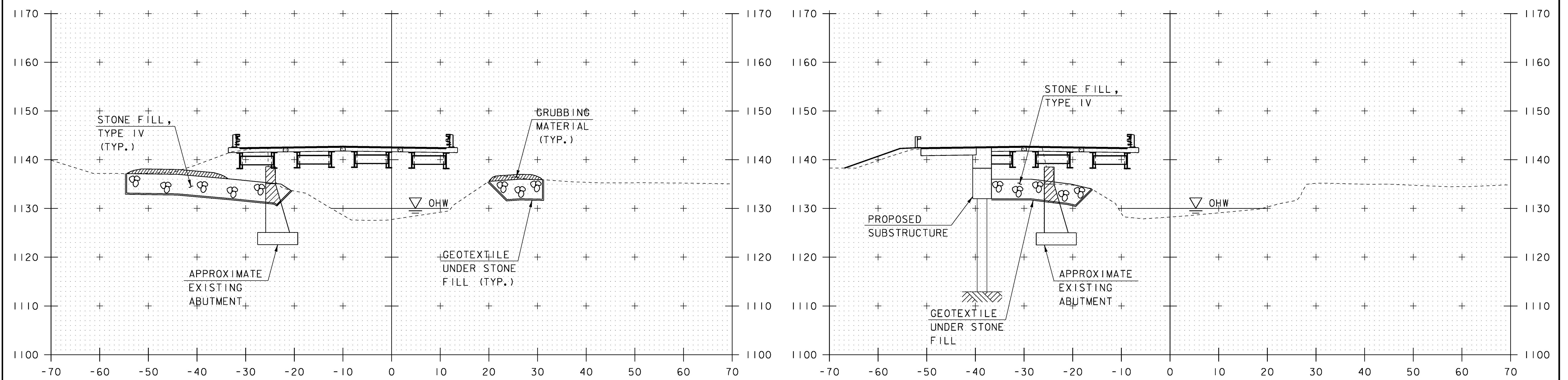
PROJECT NAME: WARREN	
PROJECT NUMBER: BRF 013-4(32)	
FILE NAME: z10b424xsl.dgn	PLOT DATE: 03-OCT-2013
PROJECT LEADER: R. YOUNG	DRAWN BY: S. MERKWAN
DESIGNED BY: D. KULL	CHECKED BY: T. KENDRICK
CHANNEL CROSS SECTIONS (2 OF 4)	SHEET 34 OF 42

STA. 50+75 TO STA. 51+00



51+20

51+50

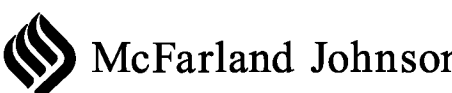


51+10

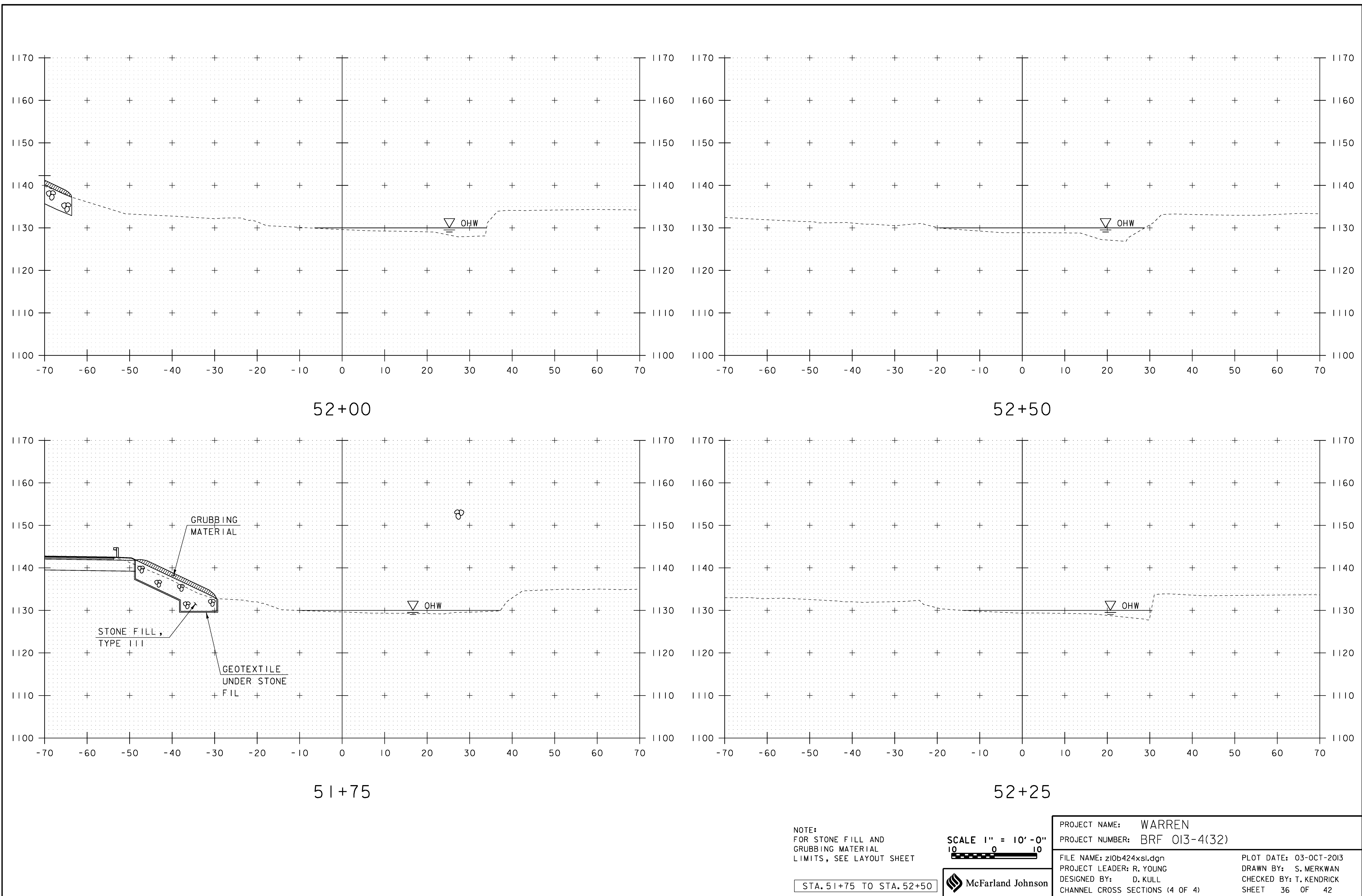
51+30

NOTE:
FOR STONE FILL AND
GRUBBING MATERIAL
LIMITS, SEE LAYOUT SHEET

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



PROJECT NAME: WARREN	
PROJECT NUMBER: BRF 013-4(32)	
FILE NAME: z10b424xsl.dgn	PLOT DATE: 03-OCT-2013
PROJECT LEADER: R. YOUNG	DRAWN BY: S. MERKWAN
DESIGNED BY: D. KULL	CHECKED BY: T. KENDRICK
CHANNEL CROSS SECTIONS (3 OF 4)	SHEET 35 OF 42



EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL OF BRIDGE #166 WHICH IS A 71 FOOT LONG MULTI-STRINGER ROLLED STEEL BEAM BRIDGE. BRIDGE #166 WILL BE REPLACED BY A 105 FOOT SIMPLE SPAN STRUCTURE FOUNDED ON PRECAST INTEGRAL ABUTMENTS AND STEEL BEARING PILES ALONG THE EXISTING VT 100 ALIGNMENT. BRIDGE #166 IS LOCATED IN THE TOWN OF WARREN, ON VT ROUTE 100, APPROXIMATELY 8.3 MILES SOUTH OF THE INTERSECTION OF VT 17 AND VT 100. THIS PROJECT WILL UTILIZE ACCELERATED BRIDGE CONSTRUCTION METHODS SO THE BRIDGE WILL BE CLOSED TO TRAFFIC FOR APPROXIMATELY 14 DAYS.

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 0.40 ACRES.

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

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS HILLY WITH MOSTLY WELL ESTABLISHED FOREST AND OCCASIONAL OPEN AREAS WITHIN THE GREEN MOUNTAIN NATIONAL FOREST. ROADWAY SIDE SLOPES CONSIST OF VEGETATED UNDERGROWTH WITH SEVERAL EXPOSED LEDGE FACES.

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

THE MAD RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE MAD RIVER IS CLASSIFIED AS FLAT, WITH A NARROW SEMI-ARMORED CHANNEL UPSTREAM AND A WIDE EARTH LINED CHANNEL DOWNSTREAM OF THE SITE. THE STREAM BED CONSISTS OF GRAVEL, COBBLES AND BOULDERS.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF MIXED HARDWOOD AND SOFTWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING BRIDGE AND RECONSTRUCTION OF THE ROADWAY AND SIDE SLOPES WITHIN THE PROJECT LIMITS. UPON PROJECT COMPLETION, THE CHANNEL SIDE SLOPE ADJACENT TO THE BRIDGE WILL BE ARMORED WITH STONE FILL TYPE IV AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES. BECAUSE THIS AREA IS WITHIN THE GREEN MOUNTAIN NATIONAL FOREST, CLEARING SHALL BE KEPT TO A MINIMUM.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF WASHINGTON, VERMONT. SOILS ON THE PROJECT SITE ARE ADAMS IOAMY PINE SAND, 3% TO 8% SLOPES, "K FACTOR" = 0.17. THE SOIL IS CONSIDERED SLIGHTLY ERODIBLE.

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: EXISTING MAPPED DEER YARDS ON THE EASTERN SIDE OF THE ROADWAY.
HISTORICAL OR ARCHEOLOGICAL AREAS: NO
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: MAD RIVER
WETLANDS: NO

1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE

PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

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

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

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED. PROJECT DEMARCATION FENCING (PDF) SHALL BE PLACED 5 FEET FROM THE TOE OF SLOPE TO PHYSICALLY MARK SITE BOUNDARIES. PDF CAN BE LOCATED CLOSER TO THE PROPOSED SLOPE LIMITS IN SENSITIVE AREAS OR AS DIRECTED BY THE ENGINEER. PDF SHALL BE INSTALLED PRIOR TO THE BEGINNING OF ANY EARTHWORK ON THE PROJECT.

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 CONSTRUCTION CHANGES.

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 SHOULD 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 EARTHWORK IN ACCORDANCE WITH THE EROSION PREVENTION AND CONTROL PLANS.

SILT FENCE WILL BE INSTALLED AT THE TOE OF SLOPE AS PROPOSED ON THE EPSC PLAN.

AT LOCATIONS WHERE CONSTRUCTION IS IN OR NEAR WATERCOURSES OF THE STATE OF VERMONT, GEOTEXTILE FOR FILTER CURTAIN SHALL BE USED TO MINIMIZE SEDIMENT FROM ENTERING THESE WATERCOURSES. THE FILTER CURTAIN SHALL EXTEND FROM THE BOTTOM OF THE WATERCOURSE TO THE TOP OF THE WATER SURFACE. GEOTEXTILE SHALL ALSO BE PLACED ALONG THE BOTTOM OF THE WATERCOURSE WITHIN THE LIMITS OF THE FILTER CURTAIN TO FACILITATE THE REMOVAL OF SEDIMENT AND PROTECT THE EXISTING WATERCOURSE BOTTOM. IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD FOR CONTAINING SEDIMENT IN THE WATERCOURSES, THE CONTRACTOR SHALL SUBMIT THE ALTERNATE METHOD TO THE ENGINEERFOR APPROVAL AT LEAST 14 DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING. FILTER CURTAIN SHALL BE INSTALLED AS SHOWN ON THE EROSION PREVENTTION AND SEDIMENT CONTROL PLANS PRIOR TO ANY CONSTRUCTION WITHIN 50 FEET OF WATERS OF THE STATE.

1.4.5 DIVERT UPLAND RUNOFF

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

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

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

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

TEMPORARY STONE CHECK DAMS, TYPE I WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN, AT A MINIMUM.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES, SUCH AS STONE SLOPES, SHALL BE INSTALLED AS SHOWN ON THE PLANS.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

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

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

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

1.4.9 WINTER STABILIZATION

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

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE. SEEDING AND MULCHING SHALL BE USED TO STABILIZE SOIL. SEE THE EROSION CONTROL DETAILS FOR SEED TYPES AND APPLICATION RATES.

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

1.4.11 DE-WATERING ACTIVITIES

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

TREATMENT OF DEWATERING COFFERDAM IS NOT ANTICIPATED ON THIS PROJECT.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR AFTER ANY RAINFALL EVENT THAT RESULTS IN DISCHARGE FROM THE SITE.

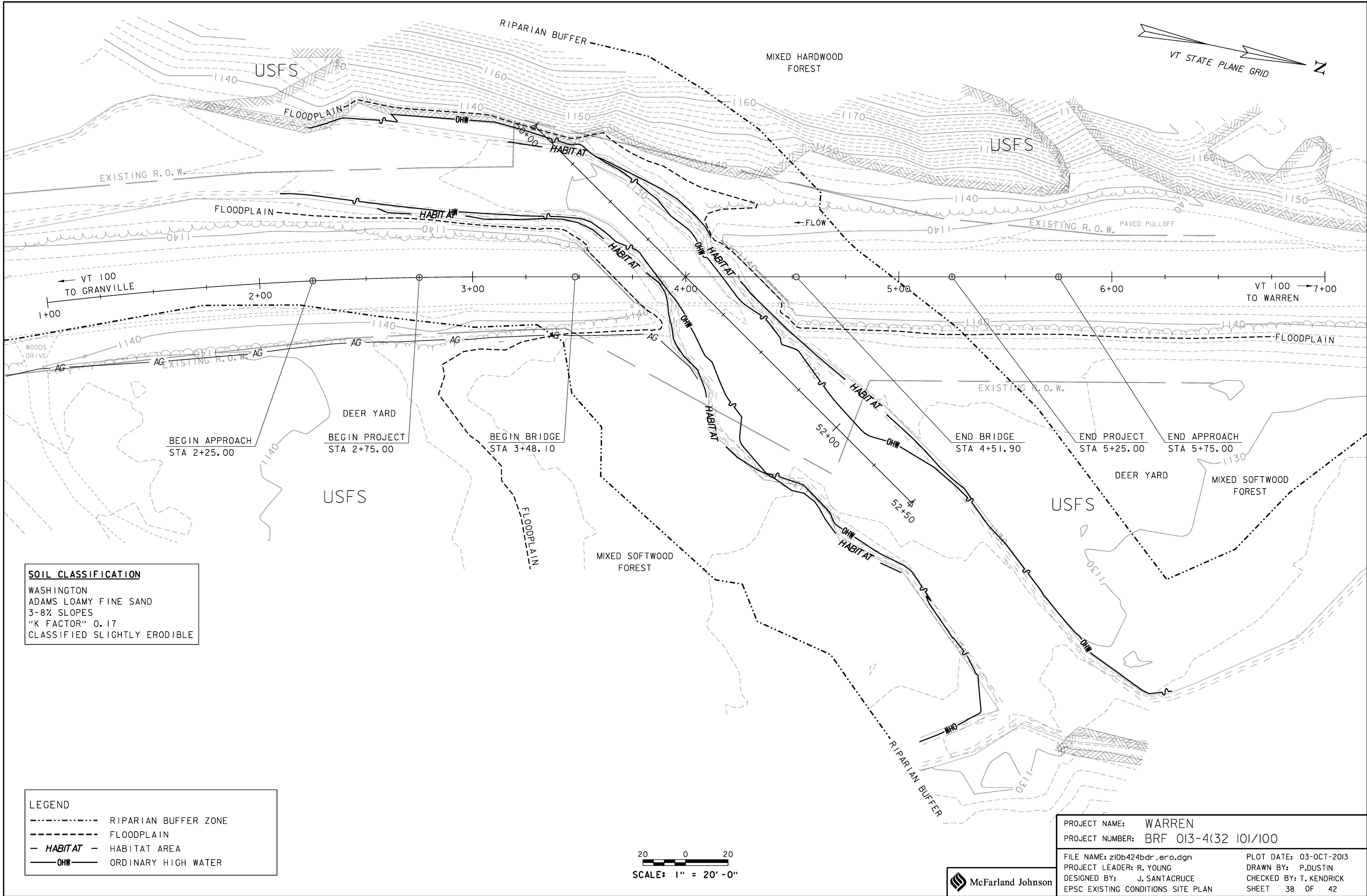
1.5 SEQUENCE AND STAGING

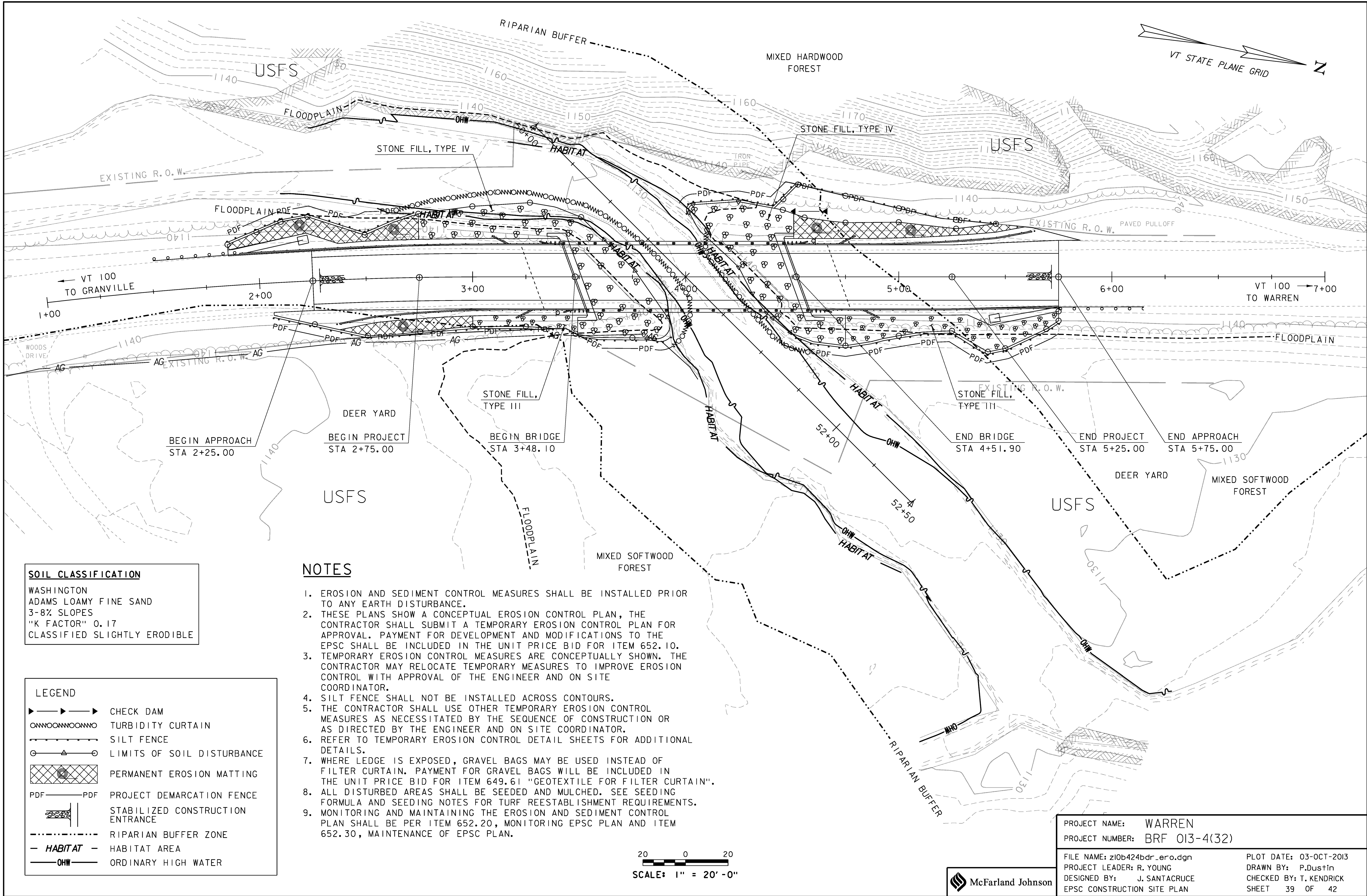
THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

1.5.1 CONSTRUCTION SEQUENCE

1.5.2 OFF-SITE ACTIVITIES

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





SOIL CLASSIFICATION
WASHINGTON
ADAMS LOAMY FINE SAND
3-8% SLOPES
"K FACTOR" 0.17
CLASSIFIED SLIGHTLY ERODIBLE

LEGEND

▶—▶—▶	CHECK DAM
ONNOONNOONNO	TURBIDITY CURTAIN
— — — — —	SILT FENCE
○ — △ — ○	LIMITS OF SOIL DISTURBANCE
[Cross-hatched box]	PERMANENT EROSION MATTING
PDF — PDF	PROJECT DEMARCATION FENCE
[Stippled box]	STABILIZED CONSTRUCTION ENTRANCE
- - - - -	RIPARIAN BUFFER ZONE
- HABITAT -	HABITAT AREA
— OHW —	ORDINARY HIGH WATER

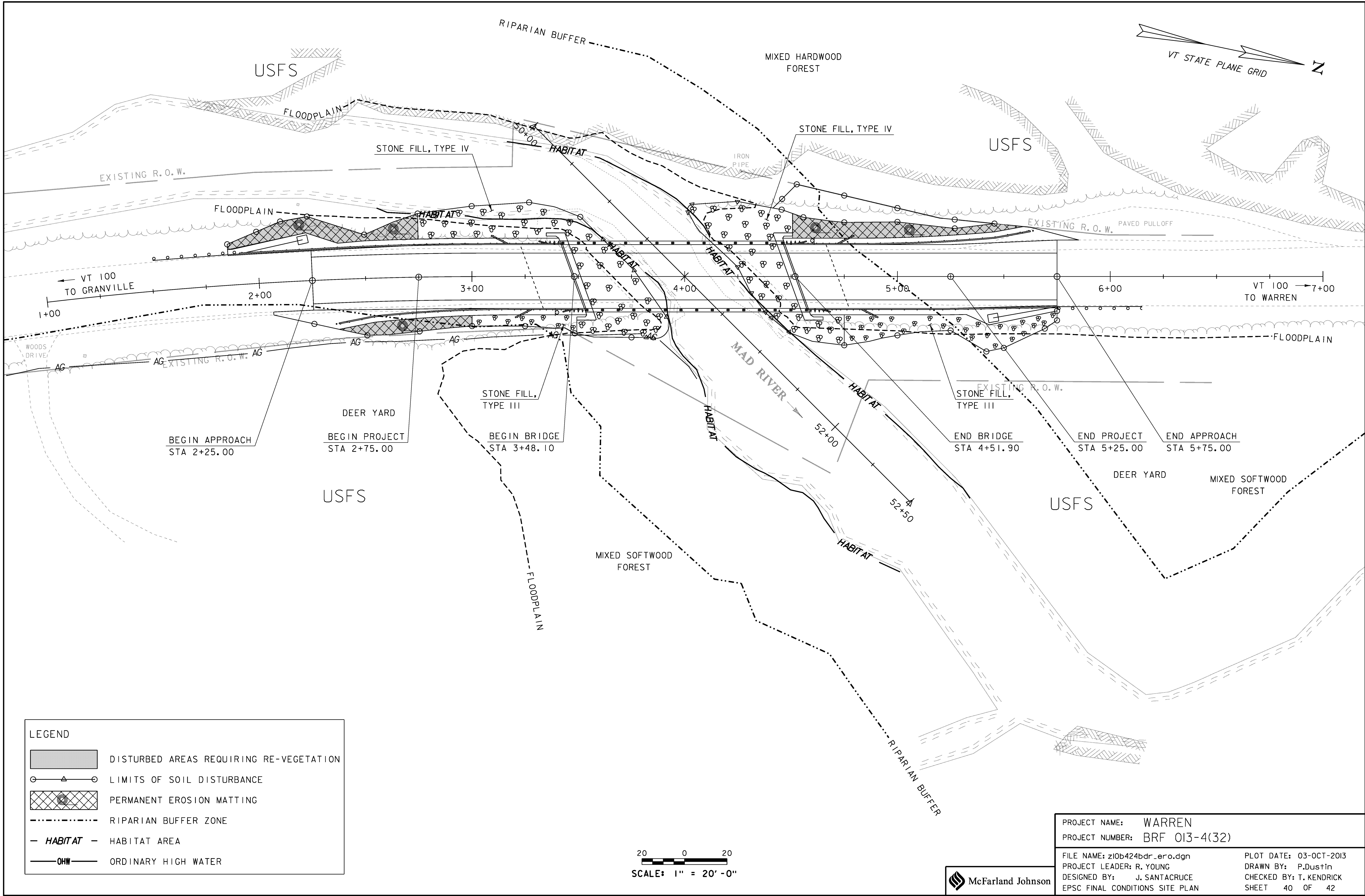
NOTES

1. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBANCE.
2. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN, THE CONTRACTOR SHALL SUBMIT A TEMPORARY EROSION CONTROL PLAN FOR APPROVAL. PAYMENT FOR DEVELOPMENT AND MODIFICATIONS TO THE EPSC SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 652.10.
3. TEMPORARY EROSION CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE ENGINEER AND ON SITE COORDINATOR.
4. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
5. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE ENGINEER AND ON SITE COORDINATOR.
6. REFER TO TEMPORARY EROSION CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.
7. WHERE LEDGE IS EXPOSED, GRAVEL BAGS MAY BE USED INSTEAD OF FILTER CURTAIN. PAYMENT FOR GRAVEL BAGS WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 649.61 "GEOTEXTILE FOR FILTER CURTAIN".
8. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED. SEE SEEDING FORMULA AND SEEDING NOTES FOR TURF REESTABLISHMENT REQUIREMENTS.
9. MONITORING AND MAINTAINING THE EROSION AND SEDIMENT CONTROL PLAN SHALL BE PER ITEM 652.20, MONITORING EPSC PLAN AND ITEM 652.30, MAINTENANCE OF EPSC PLAN.

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



PROJECT NAME:	WARREN
PROJECT NUMBER:	BRF 013-4(32)
FILE NAME:	z10b424bdr_ero.dgn
PROJECT LEADER:	R. YOUNG
DESIGNED BY:	J. SANTACRUCE
EPSC CONSTRUCTION SITE PLAN	
PLOT DATE:	03-OCT-2013
DRAWN BY:	P.Dustin
CHECKED BY:	T. KENDRICK
SHEET	39 OF 42



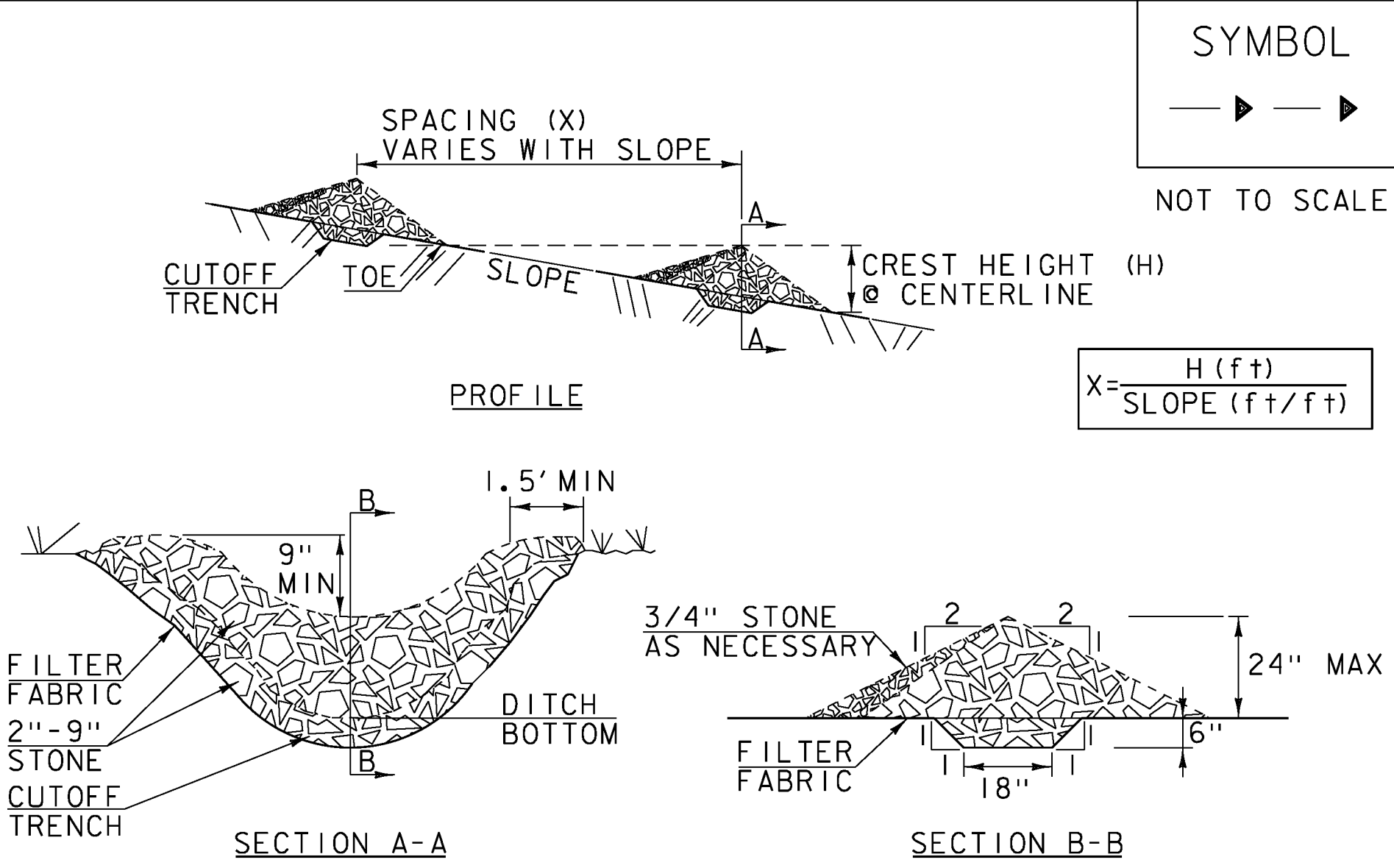
LEGEND

	DISTURBED AREAS REQUIRING RE-VEGETATION
	LIMITS OF SOIL DISTURBANCE
	PERMANENT EROSION MATTING
	RIPARIAN BUFFER ZONE
	HABITAT AREA
	ORDINARY HIGH WATER

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



PROJECT NAME: WARREN	
PROJECT NUMBER: BRF 013-4(32)	
FILE NAME: z10b424bdr_ero.dgn	PLOT DATE: 03-OCT-2013
PROJECT LEADER: R. YOUNG	DRAWN BY: P.Dustin
DESIGNED BY: J. SANTACRUCE	CHECKED BY: T. KENDRICK
EPSC FINAL CONDITIONS SITE PLAN	SHEET 40 OF 42



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

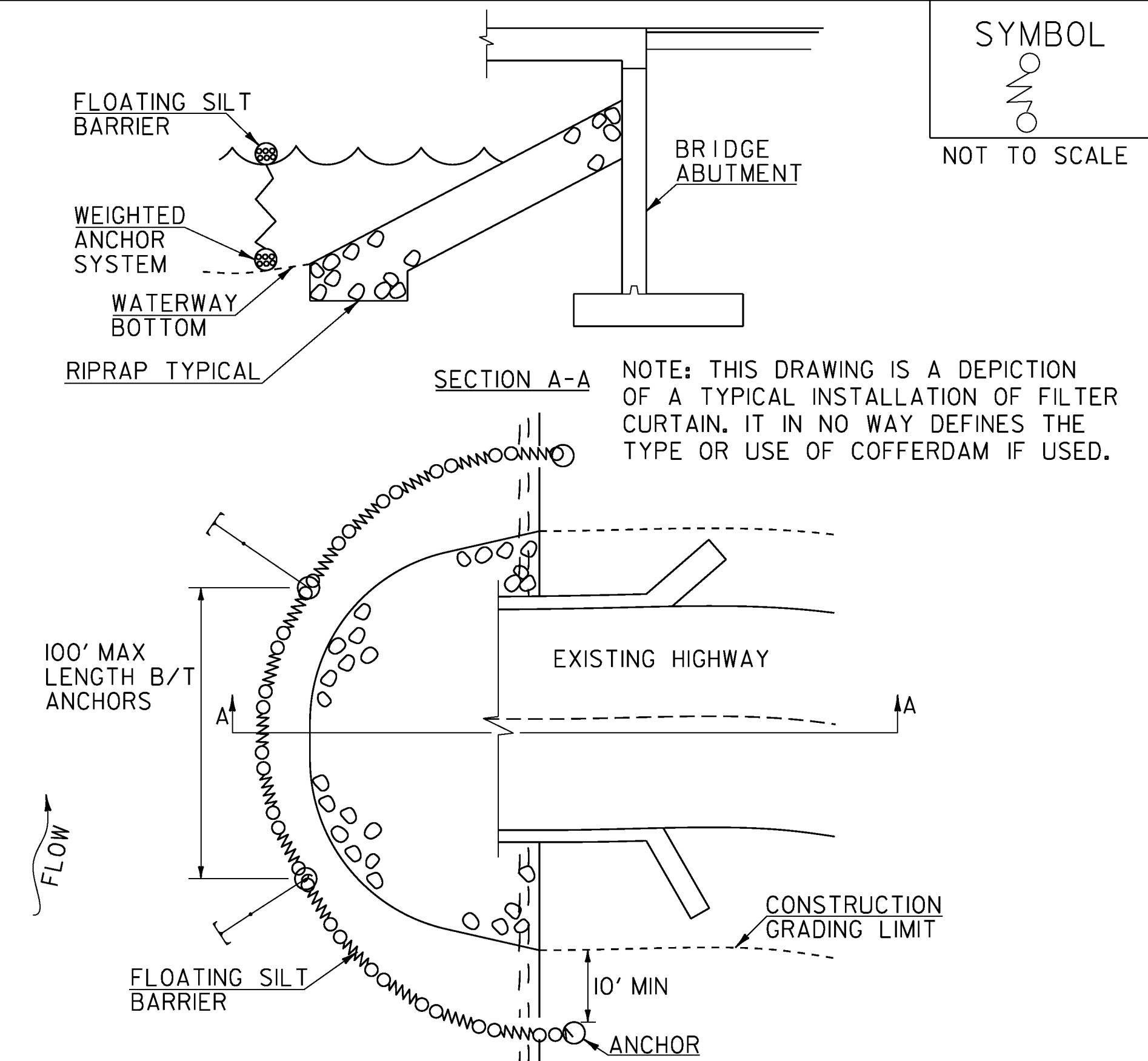
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR
EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM
THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL
GUIDANCE.

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

FILTER CURTAIN

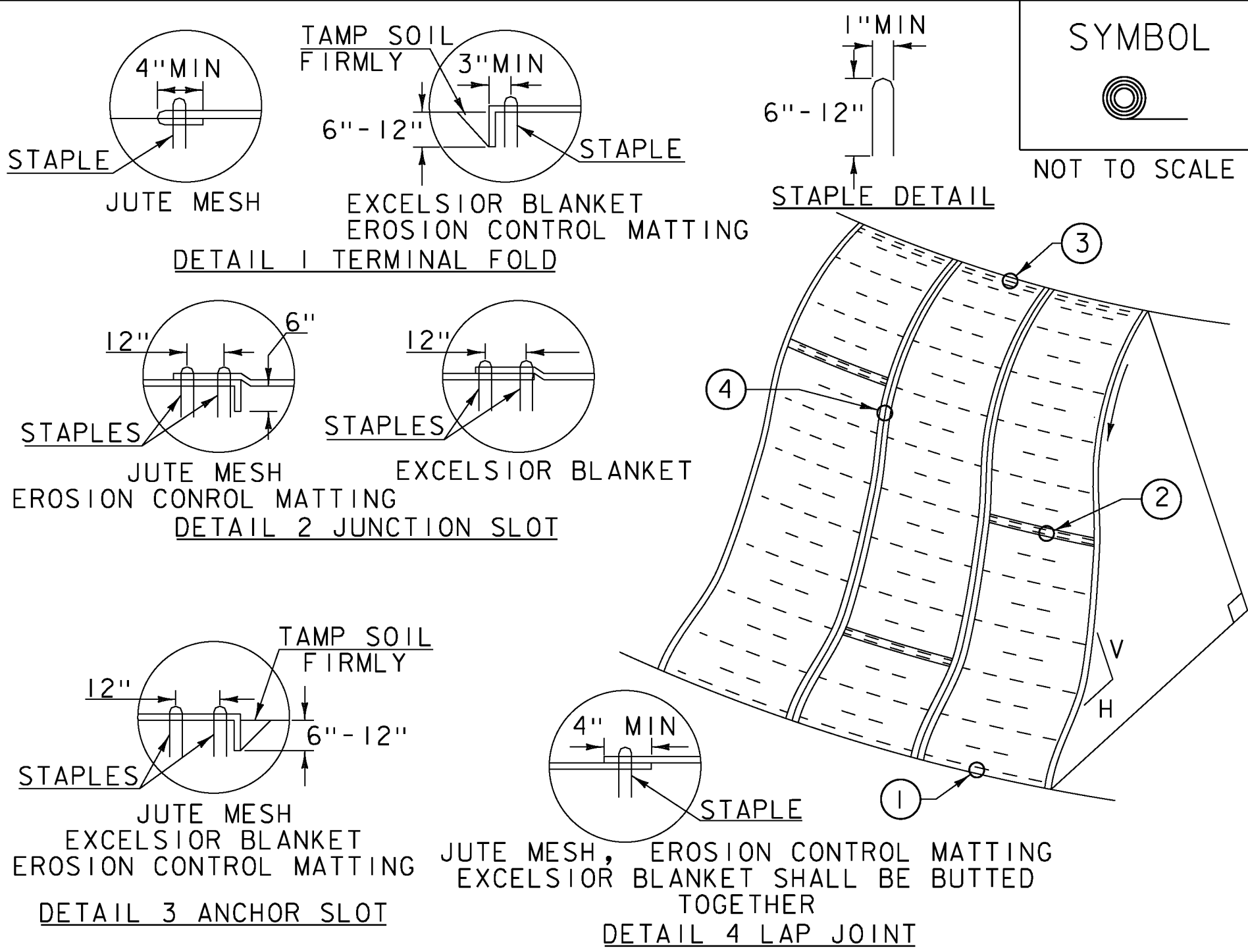
REVISIONS

APRIL 1, 2008 WHF

JANUARY 13, 2009 WHF

SEPTEMBER 4, 2009 WHF

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



CONSTRUCTION SPECIFICATIONS

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

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

ROLLED EROSION
CONTROL PRODUCT
(RECP) SIDE SLOPE

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

REVISIONS

APRIL 16, 2007 JMF

JANUARY 13, 2009 WHF

PROJECT NAME: WARREN
PROJECT NUMBER: BRF 013-4(32)

FILE NAME: z10b424ero_det
PROJECT LEADER: R. YOUNG
DESIGNED BY: J. SANTACRUCE
EPSC DETAILS SHEET (1 OF 2)

PLOT DATE: 03-OCT-2013
DRAWN BY: P. DUSTIN
CHECKED BY: T. KENDRICK
SHEET 41 OF 42

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

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

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

CONSTRUCTION GUIDANCE

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

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES	TURF ESTABLISHMENT
REVISIONS	
JUNE 23, 2009	WHF
JANUARY 15, 2010	WHF
FEBRUARY 16, 2011	WHF

50' MIN

8" MIN

3' 5:1

EXISTING GROUND

FILTER CLOTH

PROFILE

MOUNTABLE BERM (OPTIONAL)

EXISTING PAVEMENT

EXISTING GROUND

12' MIN

12' MIN

10' MIN

EXISTING PAVEMENT

10' MIN

PLAN VIEW

SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1.STONE SIZE- USE 1-4" STONE , RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.

2.LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).

3.THICKNESS- NOT LESS THAN 8".

4.WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.

5.GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.

6.SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL , A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.

7.MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY , ALL SEDIMENT SPILLED , DROPPED , WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

8.WHEN WASHING IS REQUIRED , IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

9.PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

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

STABILIZED
CONSTRUCTION
ENTRANCE

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

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

REVISIONS

MARCH 24, 2008

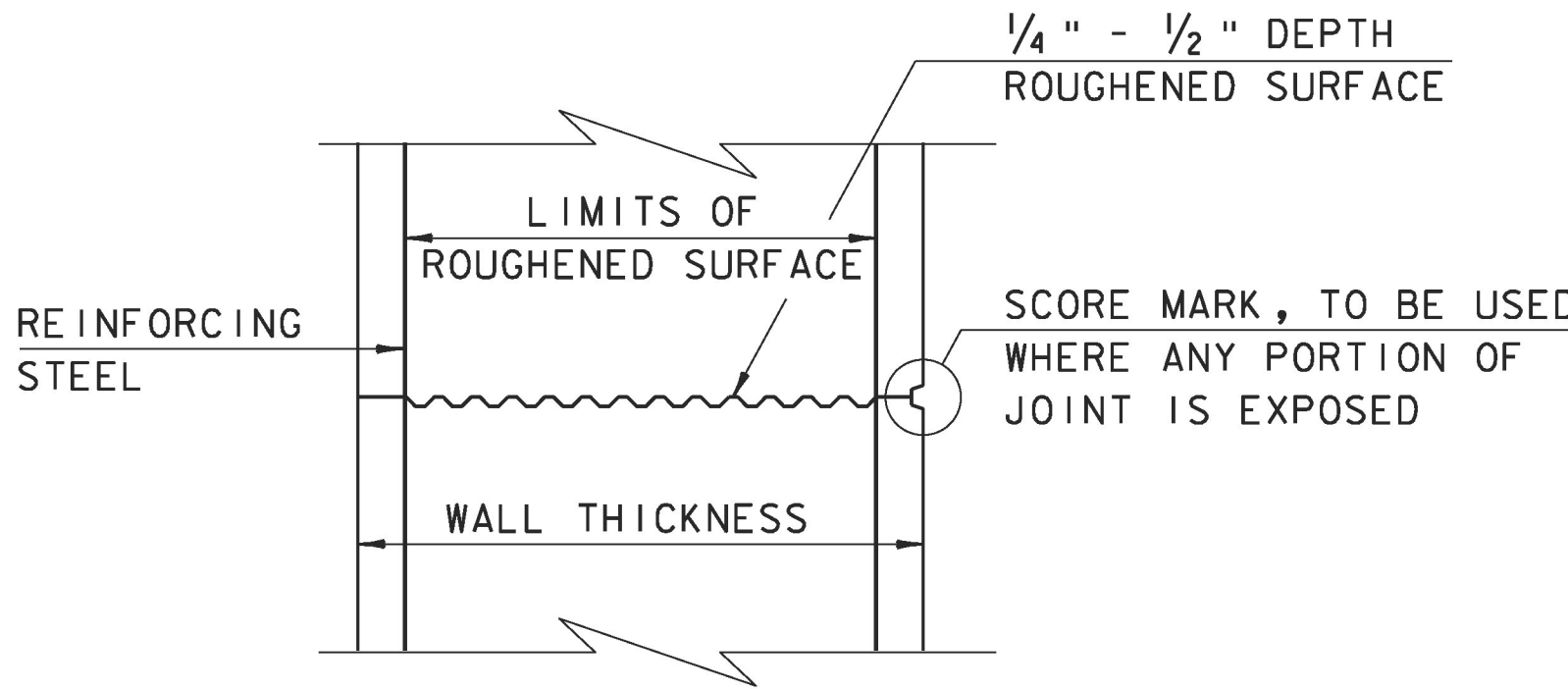
WHF

JANUARY 13, 2009

WHF

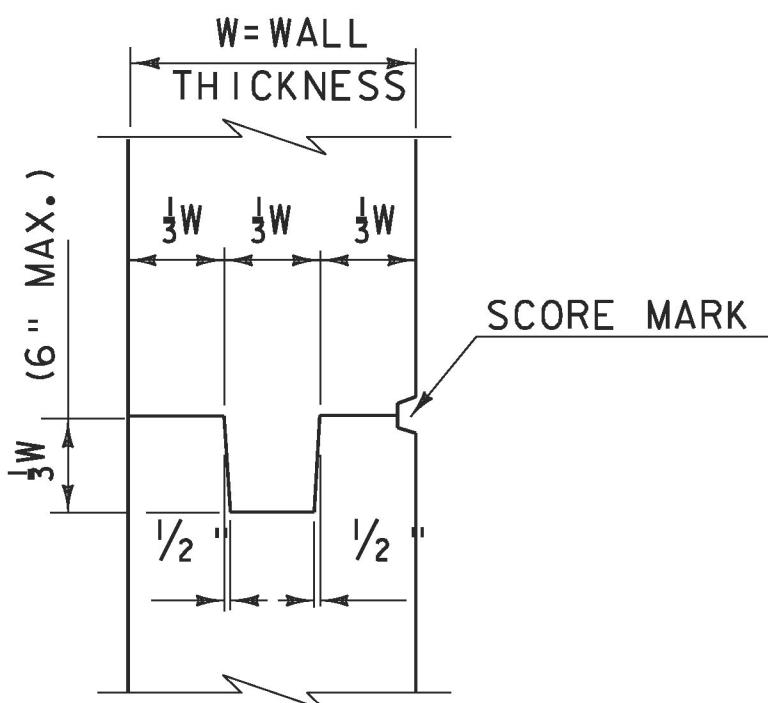
CONCRETE GENERAL NOTES

1. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1"

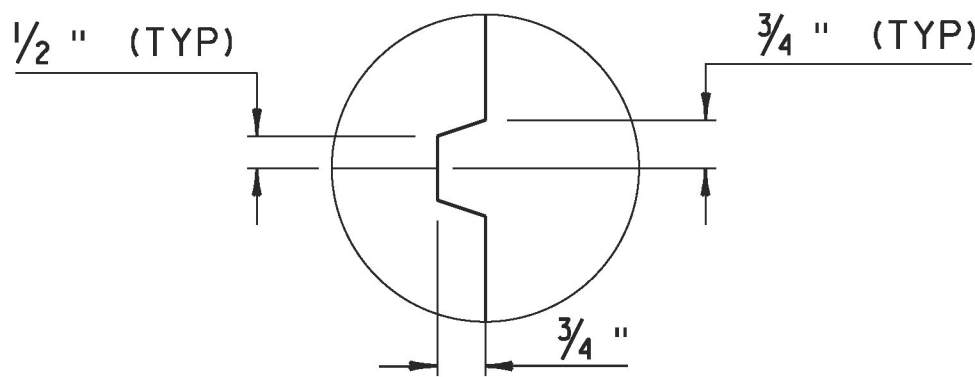


TYPICAL HORIZONTAL CONSTRUCTION JOINT
(NOT TO SCALE)

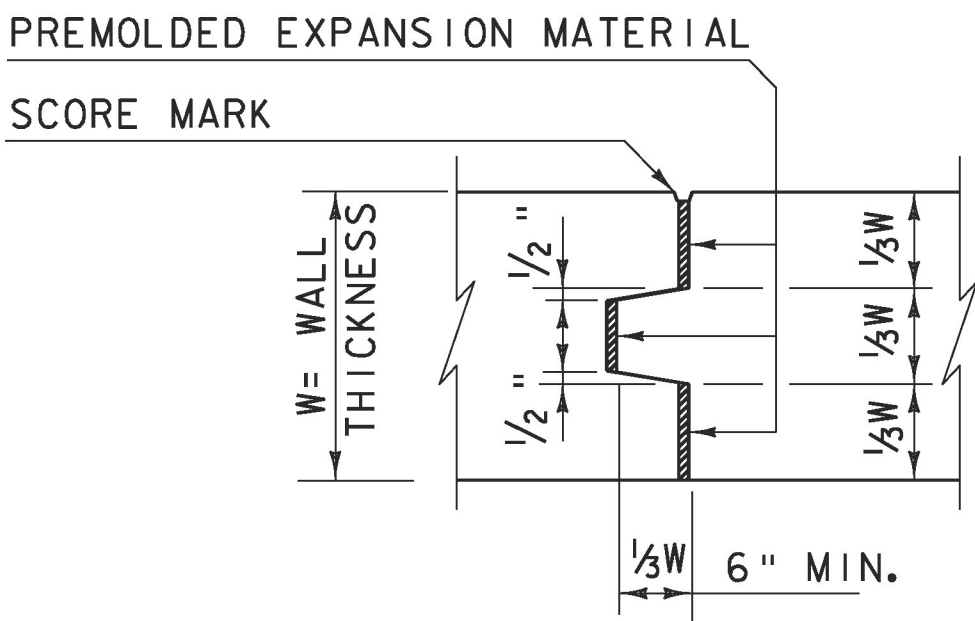
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



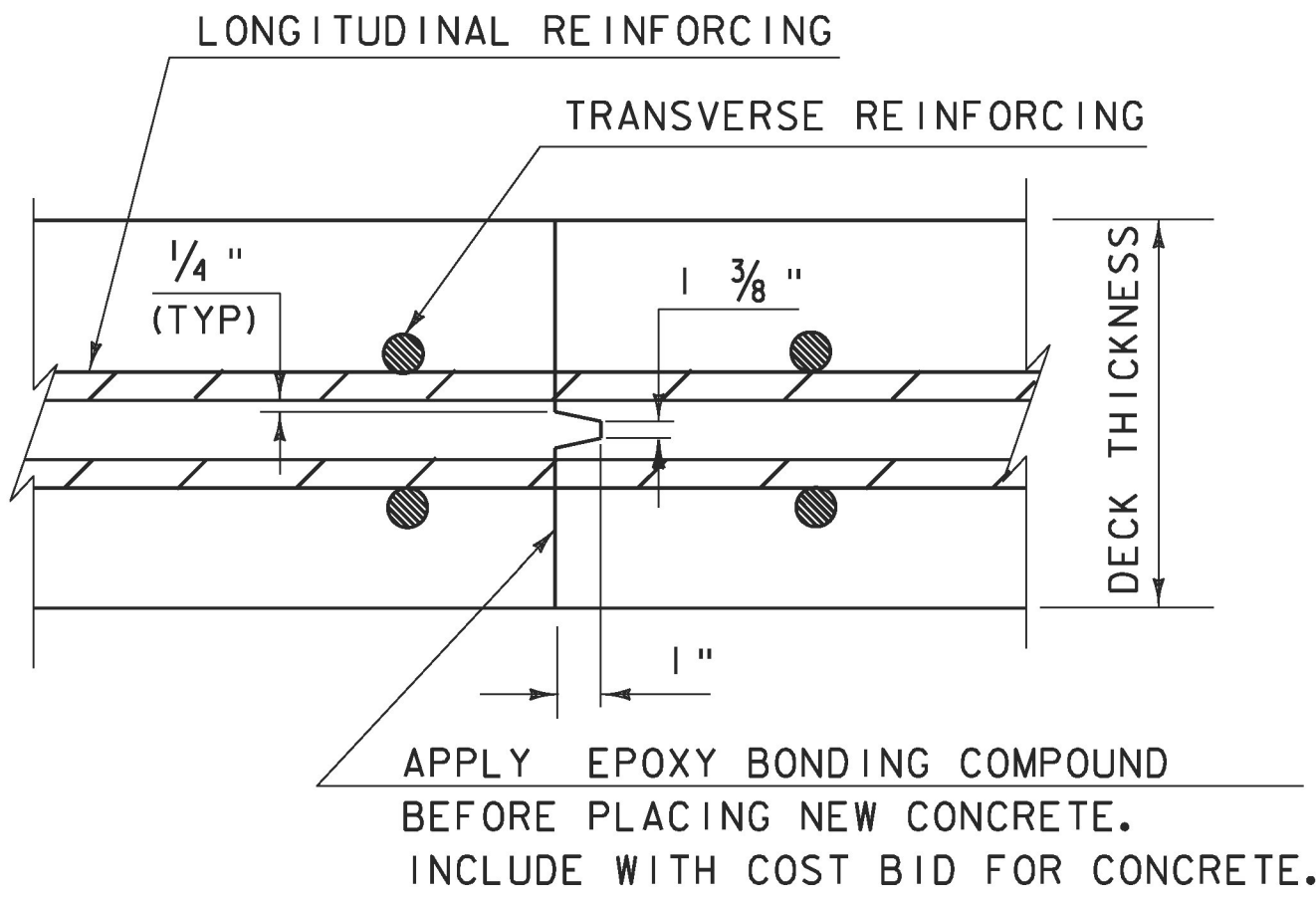
TYPICAL CONCRETE CONSTRUCTION JOINT
(NOT TO SCALE)



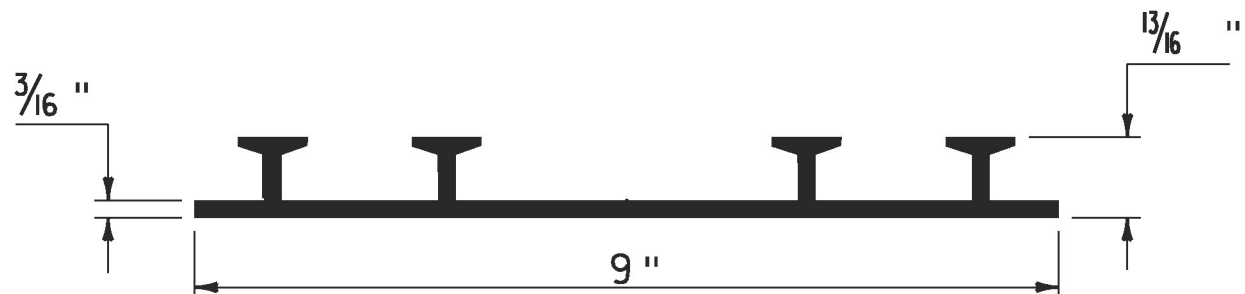
SCORE MARK DETAIL
(NOT TO SCALE)



TYPICAL CONCRETE EXPANSION JOINT
(NOT TO SCALE)



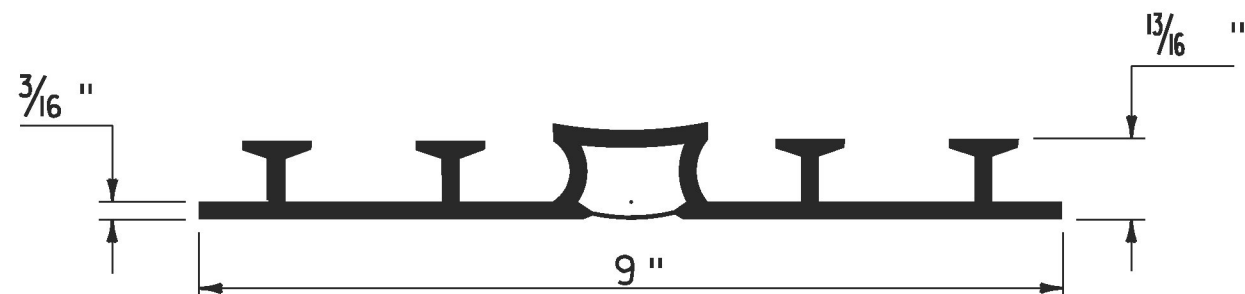
TRANSVERSE BRIDGE SLAB
CONSTRUCTION JOINT DETAILS
(NOT TO SCALE)



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.

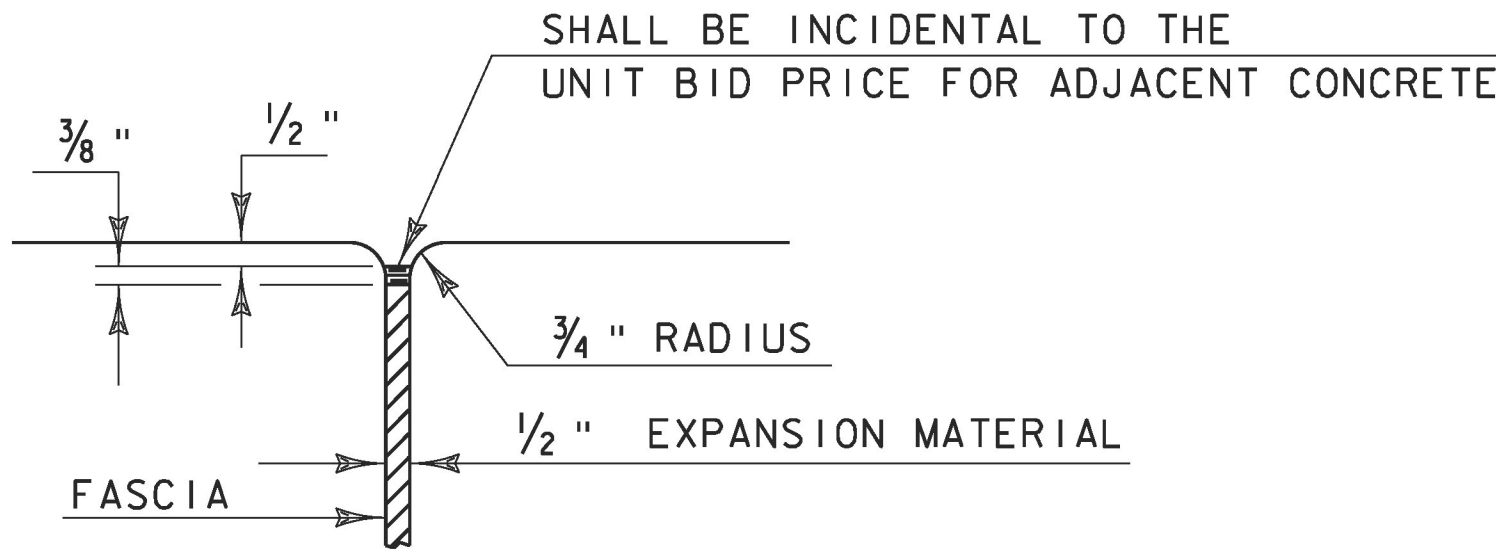
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



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.

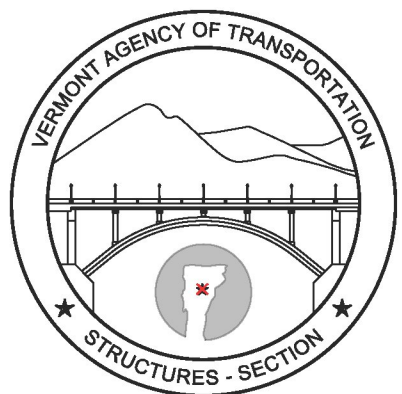
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



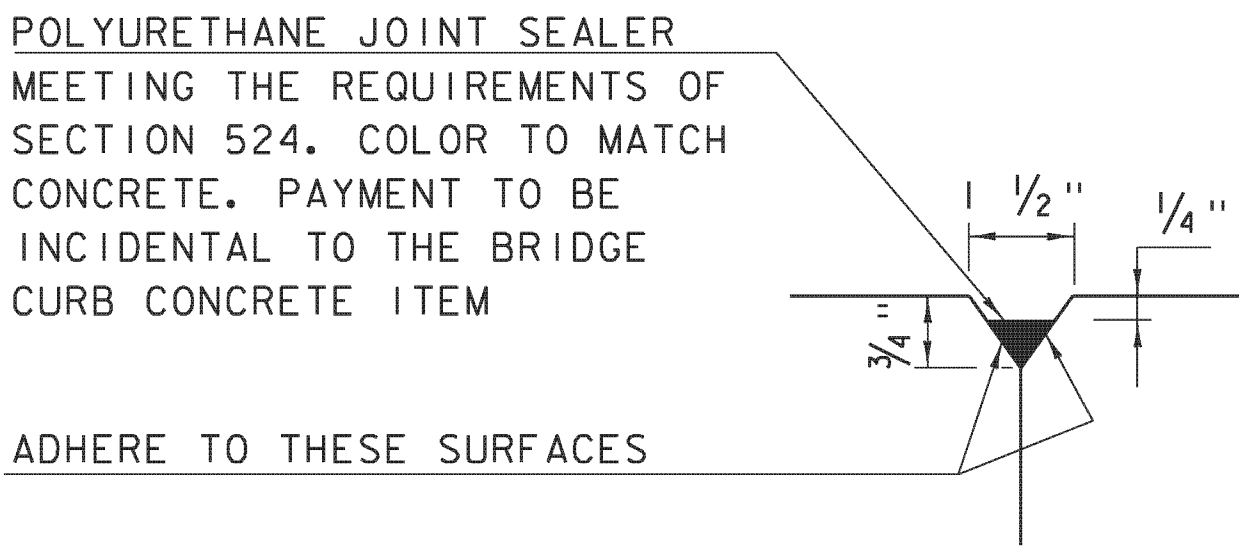
JOINT BETWEEN FASCIA
AND WINGWALL
(NOT TO SCALE)

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION

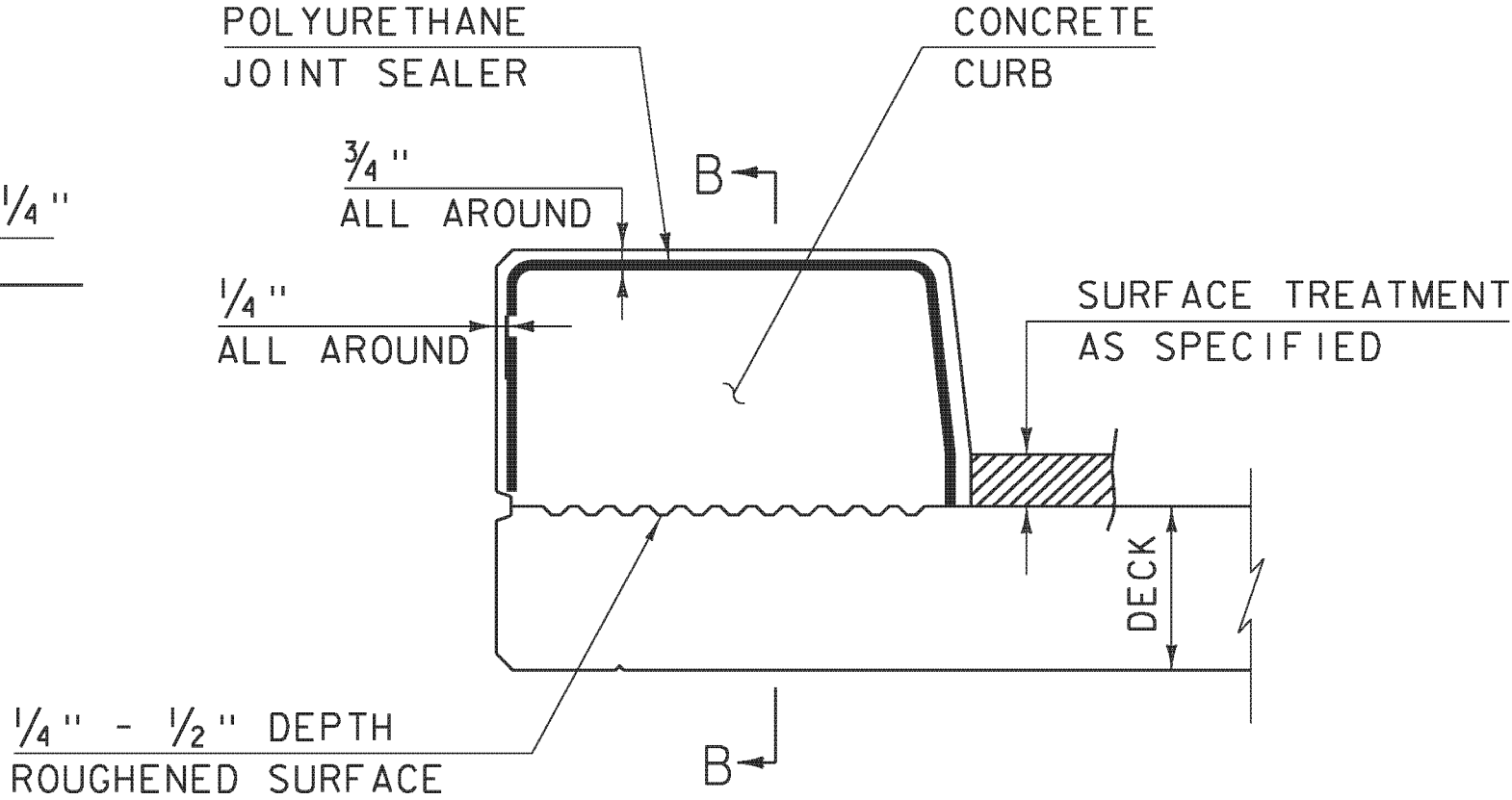
CONCRETE
DETAILS AND NOTES



STRUCTURES
DETAIL
SD-5 01.00

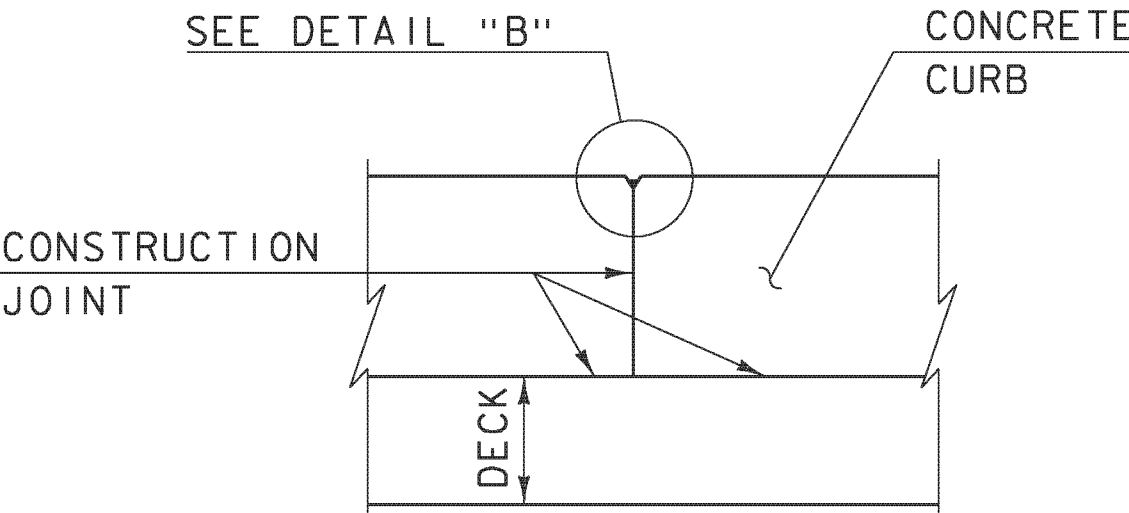


DETAIL "B"
(NOT TO SCALE)

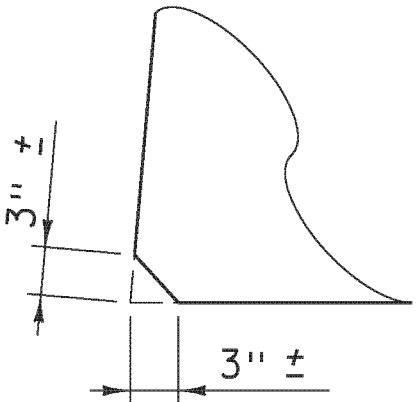


CONCRETE CURB JOINT SECTION
(NOT TO SCALE)

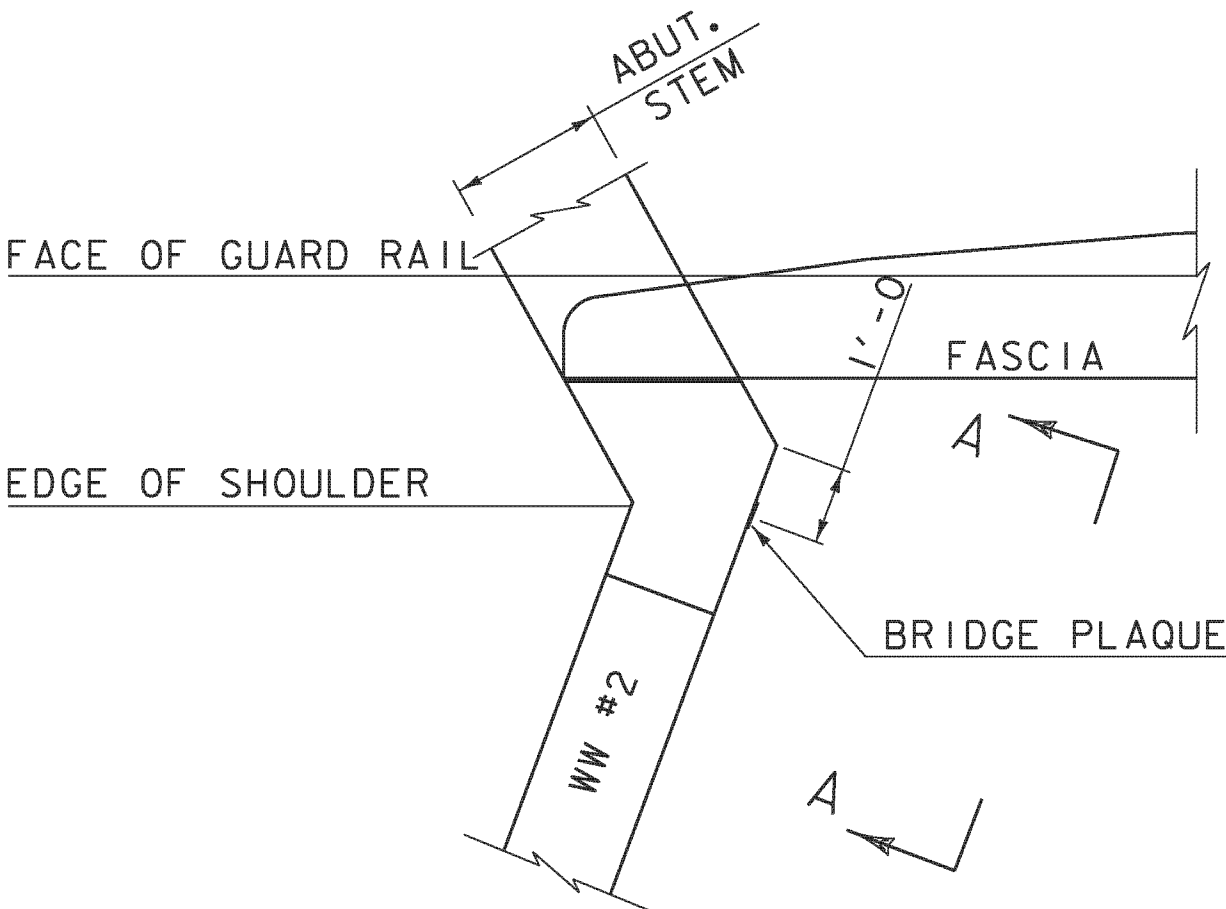
1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT
DETAIL FOR ADDITIONAL INFORMATION



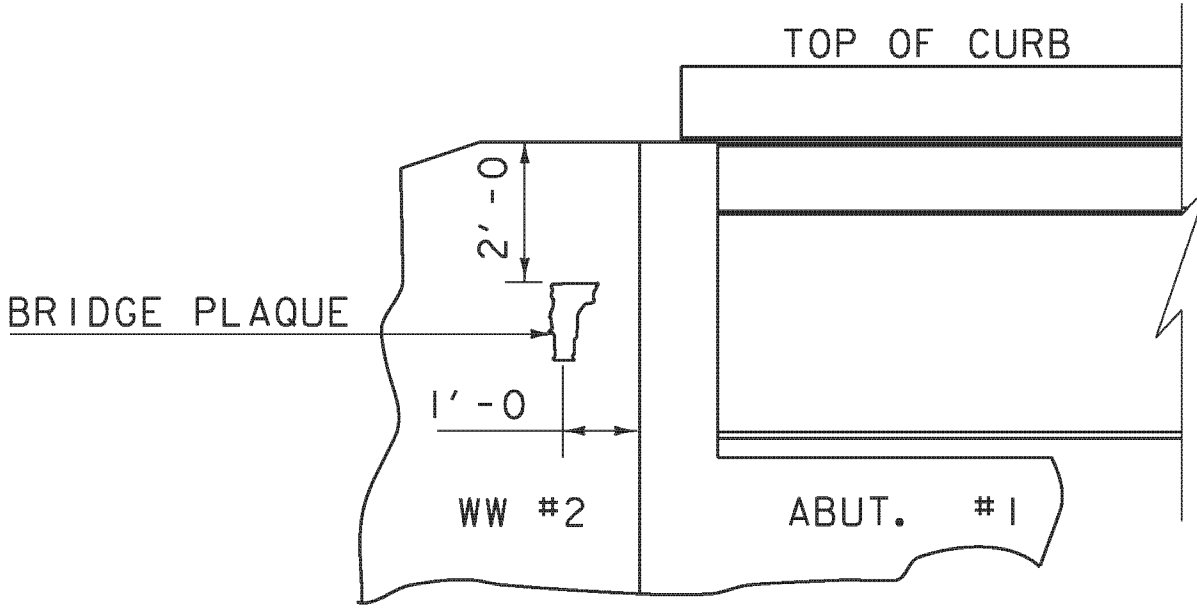
SECTION B - B
(NOT TO SCALE)



ACUTE ANGLE
CLIP DETAIL
(NOT TO SCALE)



PLAN



VIEW "A - A"

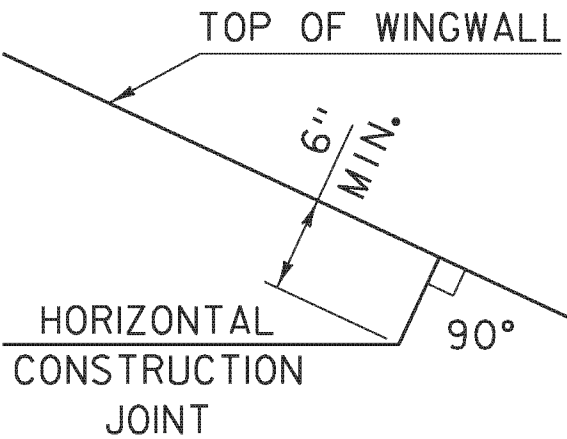
BRIDGE PLAQUE
(NOT TO SCALE)

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.

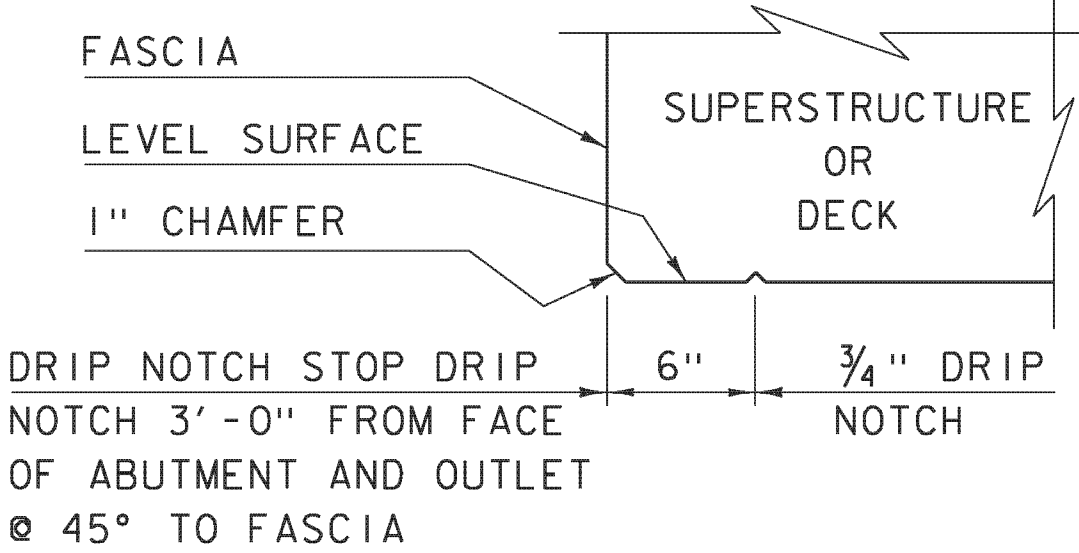
PAYMENT FOR INSTALLATION OF THE BRIDGE PLAQUE SHALL BE
INCIDENTAL TO THE ADJACENT CONCRETE.

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.

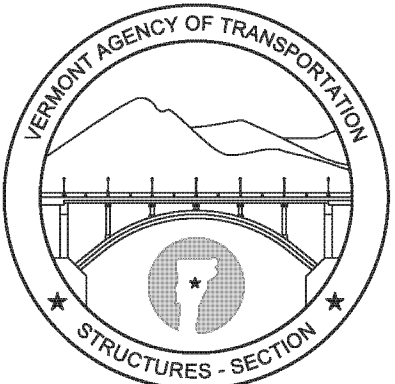


HORIZONTAL WINGWALL
CONSTRUCTION JOINT
(NOT TO SCALE)

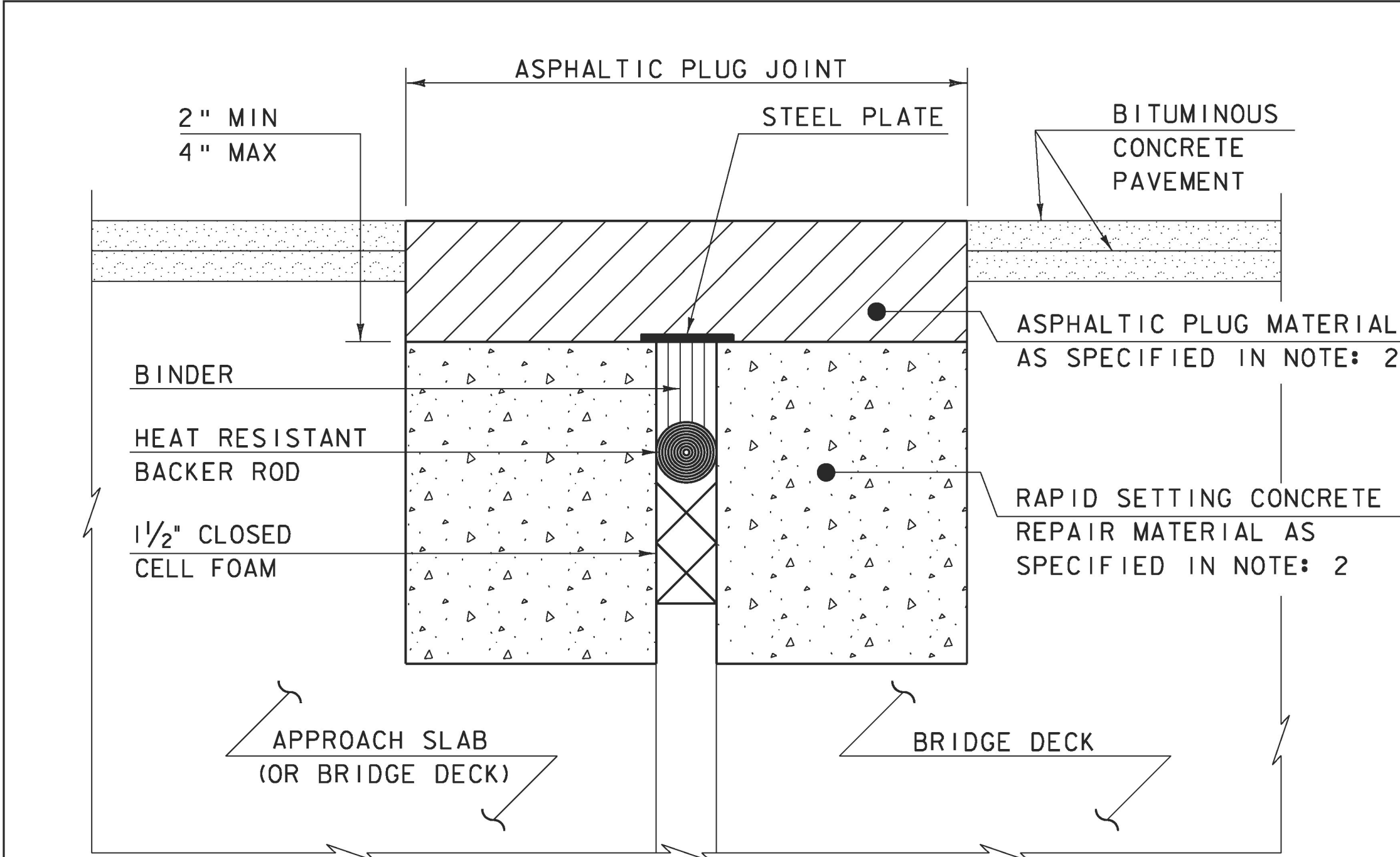


DRIP NOTCH DETAIL
(NOT TO SCALE)

CONCRETE
DETAILS AND NOTES



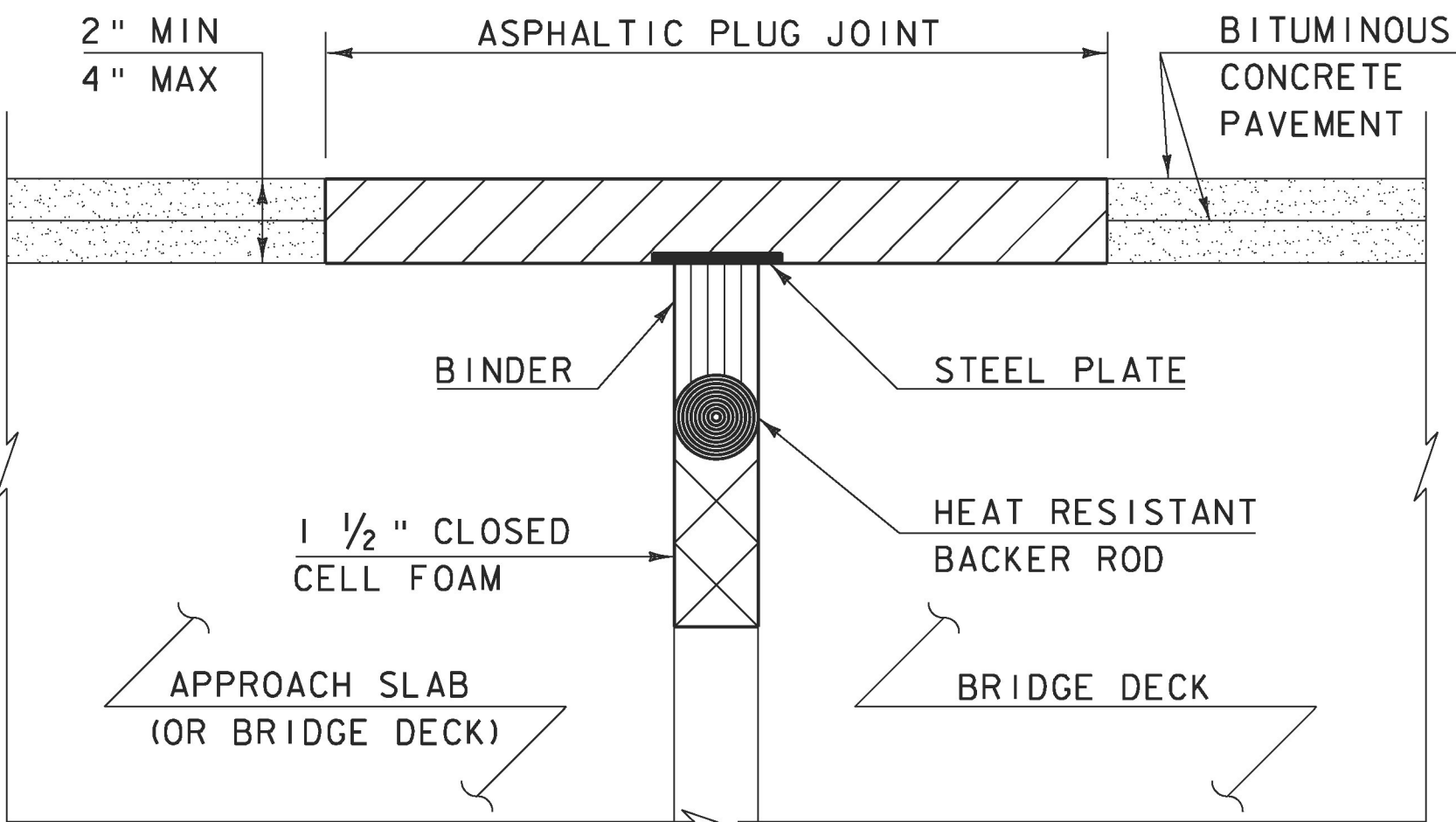
STRUCTURES
DETAIL
SD-502.00



ASPHALTIC PLUG-TYPE JOINT DETAIL - REHAB

NOTES: (NOT TO SCALE)

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 COURSE 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.



ASPHALTIC PLUG-TYPE JOINT DETAIL - NEW
(NOT TO SCALE)

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. REPAIR MATERIAL GREATER THAN 4 INCHES FROM FINISHED GRADE WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.
5. PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 1" +/- OF BINDER ABOVE THE ROD.
6. HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.
7. 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.
8. HEAT AND MIX THE BINDER MATERIAL AND AGGREGATE AS RECOMMENDED BY THE MANUFACTURER.
9. INSTALLATION OF MATERIAL, COMPACTION, AND TOP COATING SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
10. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.
11. ONCE THE JOINT REACHES 82 DEG C (180 DEG F) +/-, WATER MAY BE USED TO EXPEDITE THE COOLING PROCESS.
12. PROTECT JOINT FROM TRAFFIC UNTIL THE MATERIAL HAS COOLED TO 51 DEG C (125 DEG F) +/-.

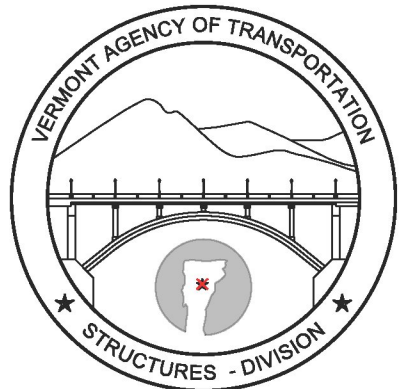
WEATHER LIMITATIONS

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.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION

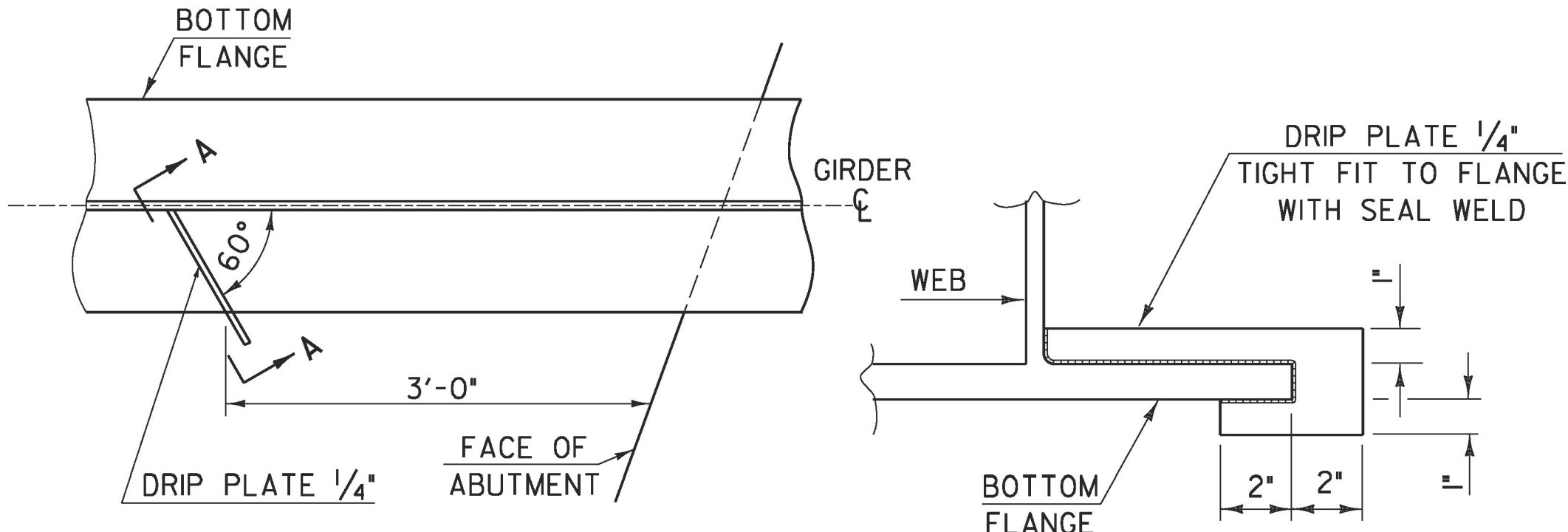
BRIDGE JOINT
ASPHALTIC PLUG



STRUCTURES
DETAIL
SD-516.10

STRUCTURAL STEEL GENERAL NOTES:

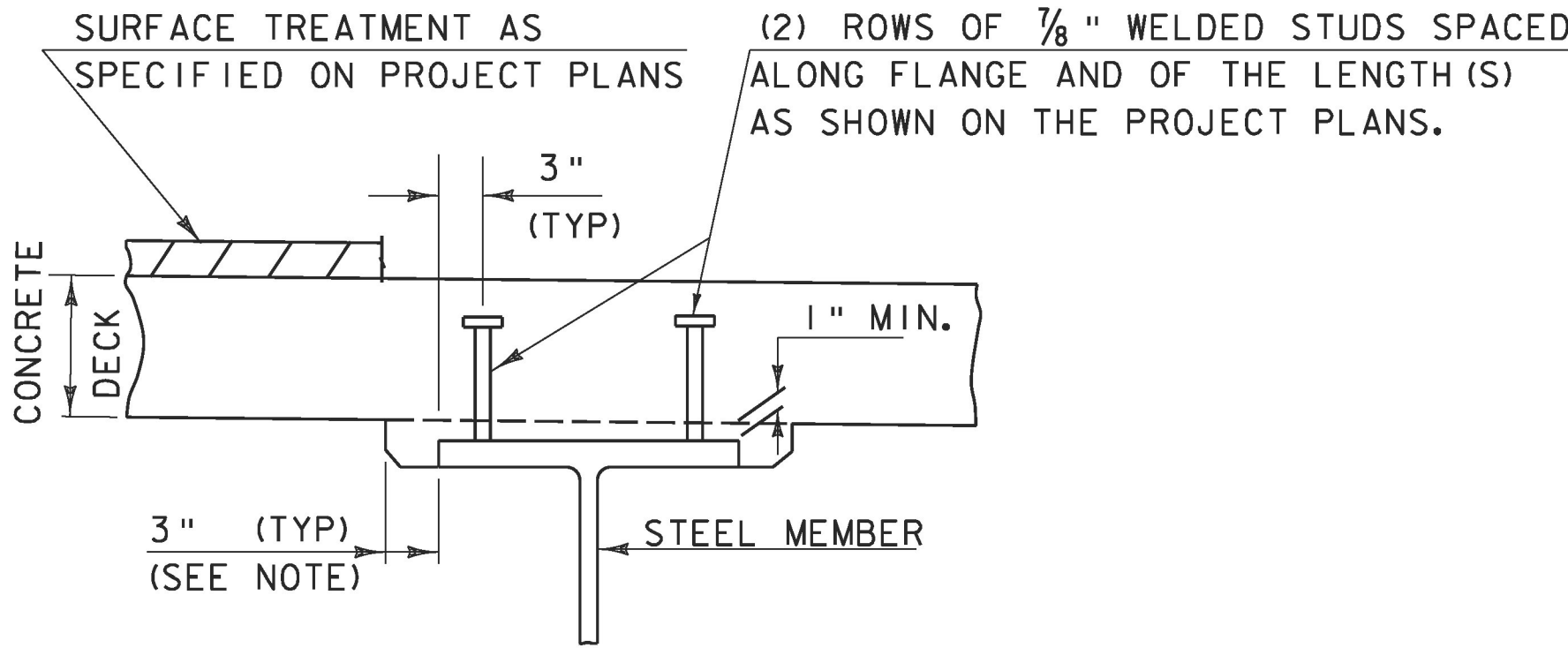
- 1. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH-STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SUBSECTION 506.I9, UNLESS OTHERWISE SPECIFIED.
- 2. ALL HOLES IN THE WEBS OF THE FASCIA GIRDERS THAT ARE NOT OTHERWISE FILLED, SHALL BE FILLED WITH EITHER BUTTON HEAD OR HEX HEAD BOLTS. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.I9.
- 3. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.I0.
- 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

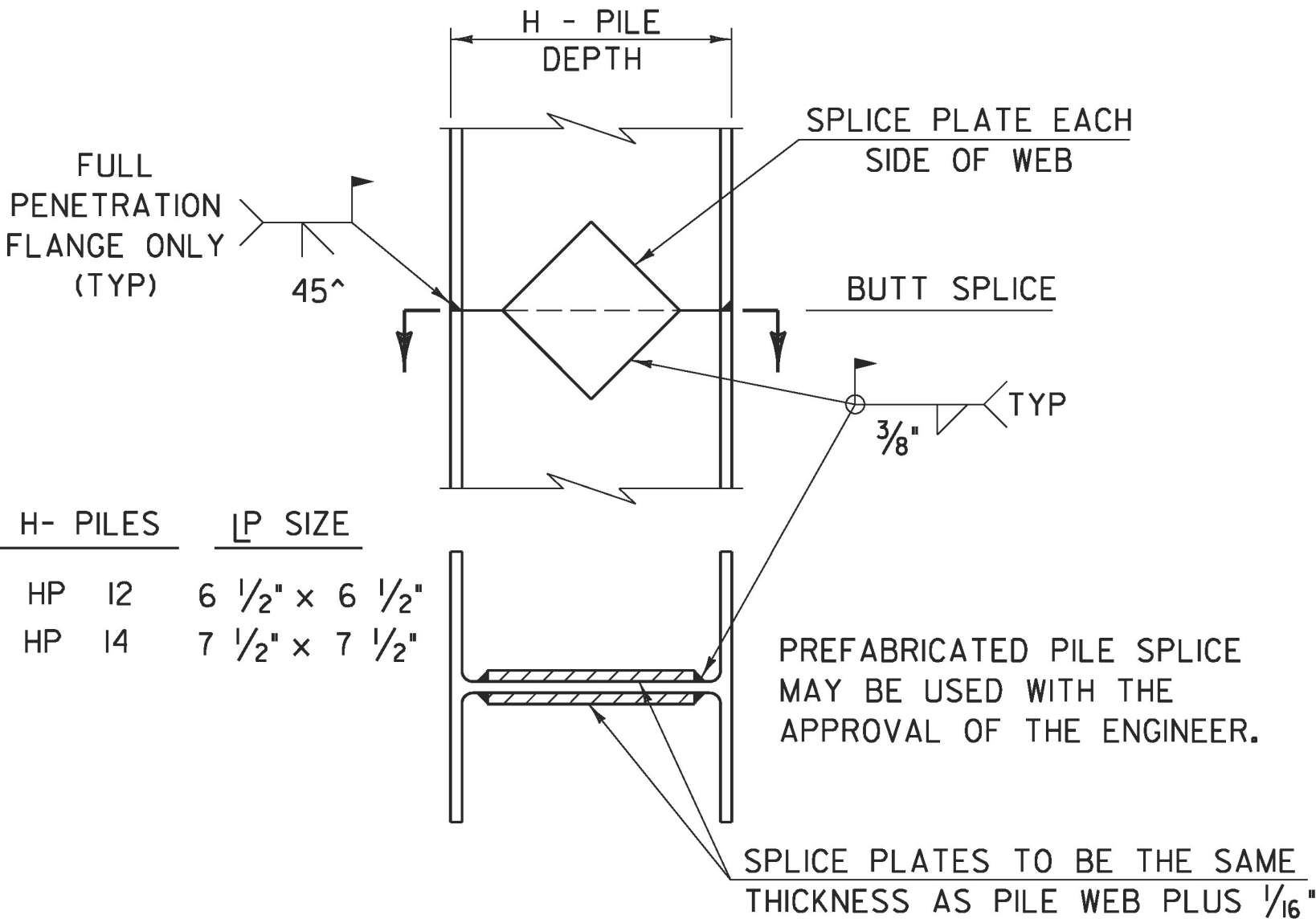
SECTION A - A

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

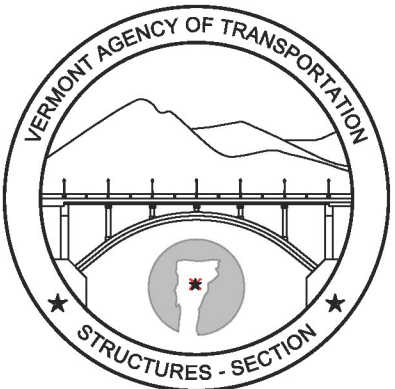


DETAIL OF PILE SPLICE

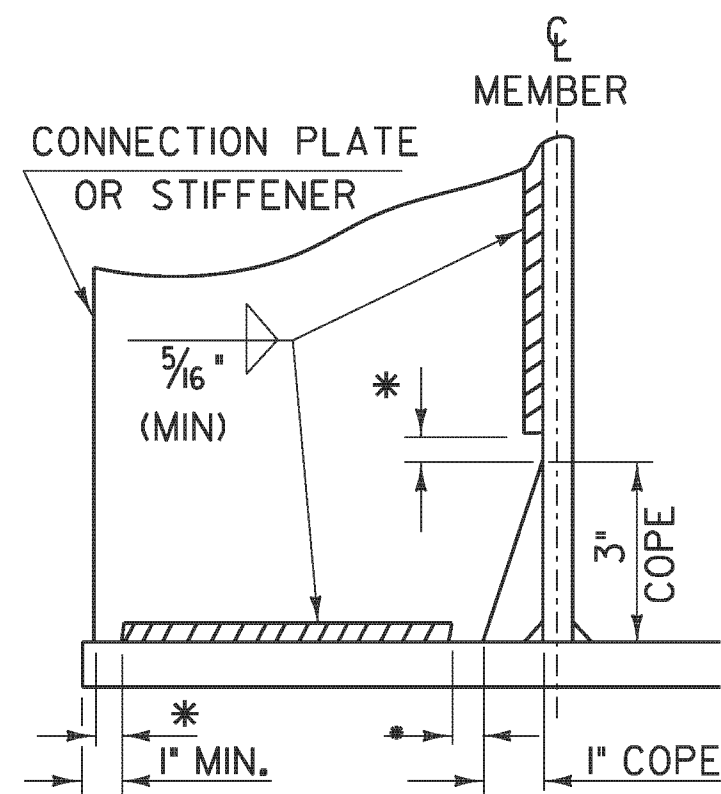
DETAILS ON THIS SHEET ARE "NOT TO SCALE" UNLESS NOTED OTHERWISE.

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

STRUCTURAL STEEL
DETAILS & NOTES

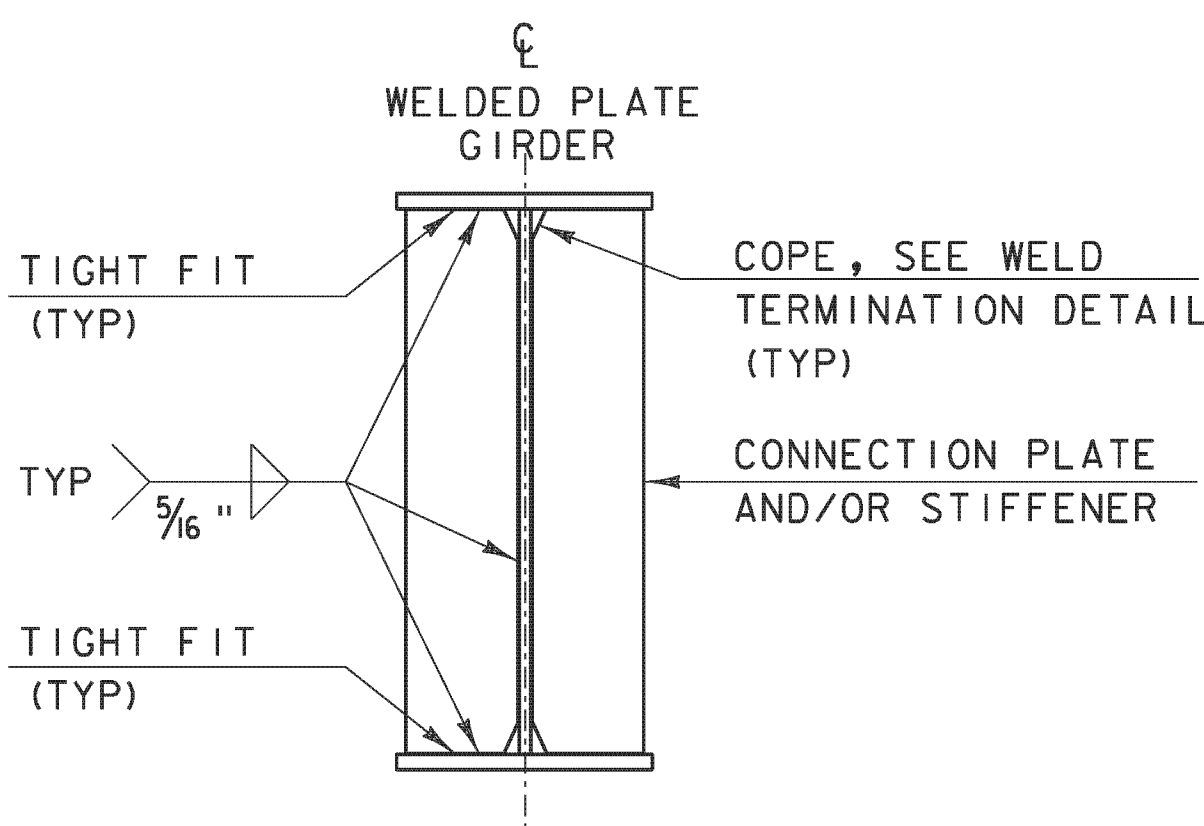


STRUCTURES
DETAIL
SD-6 01.00



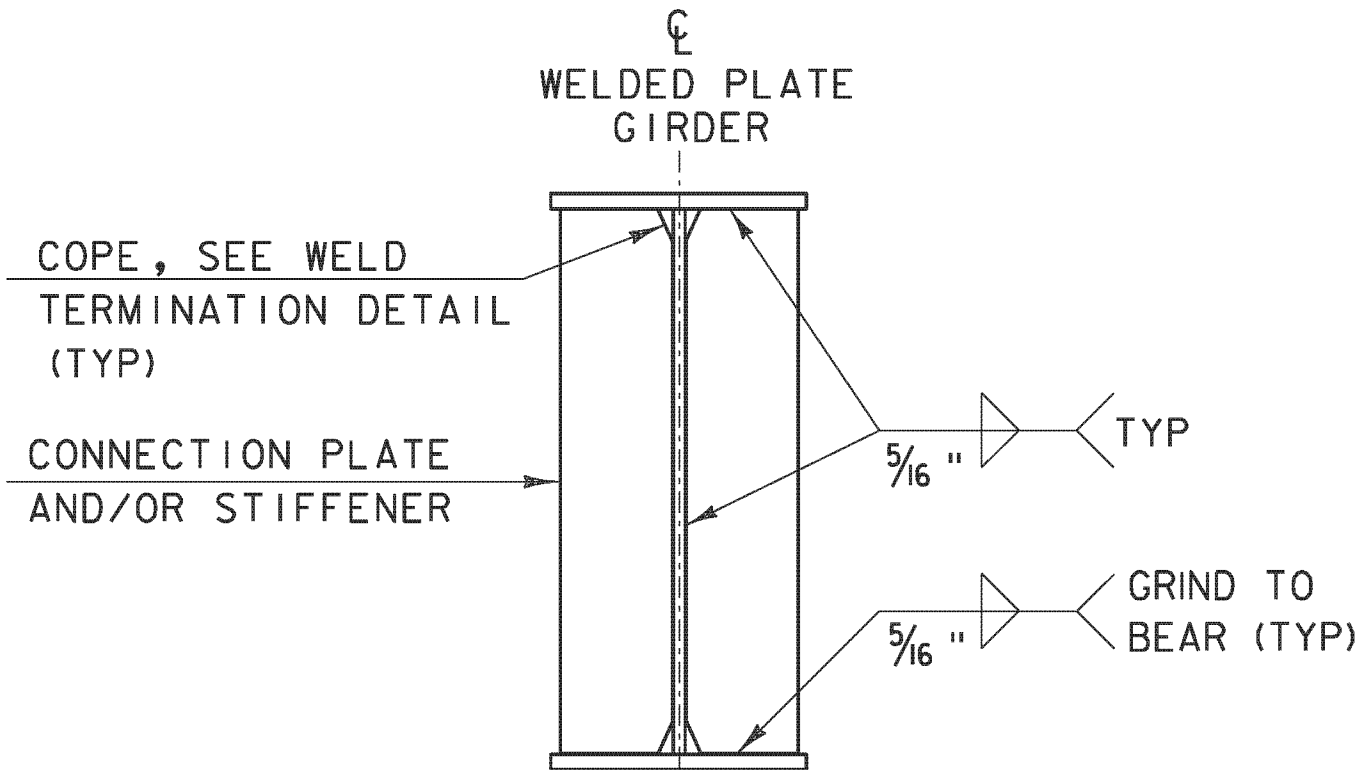
WELD TERMINATION AND COPING
DETAILS FOR STEEL MEMBERS

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

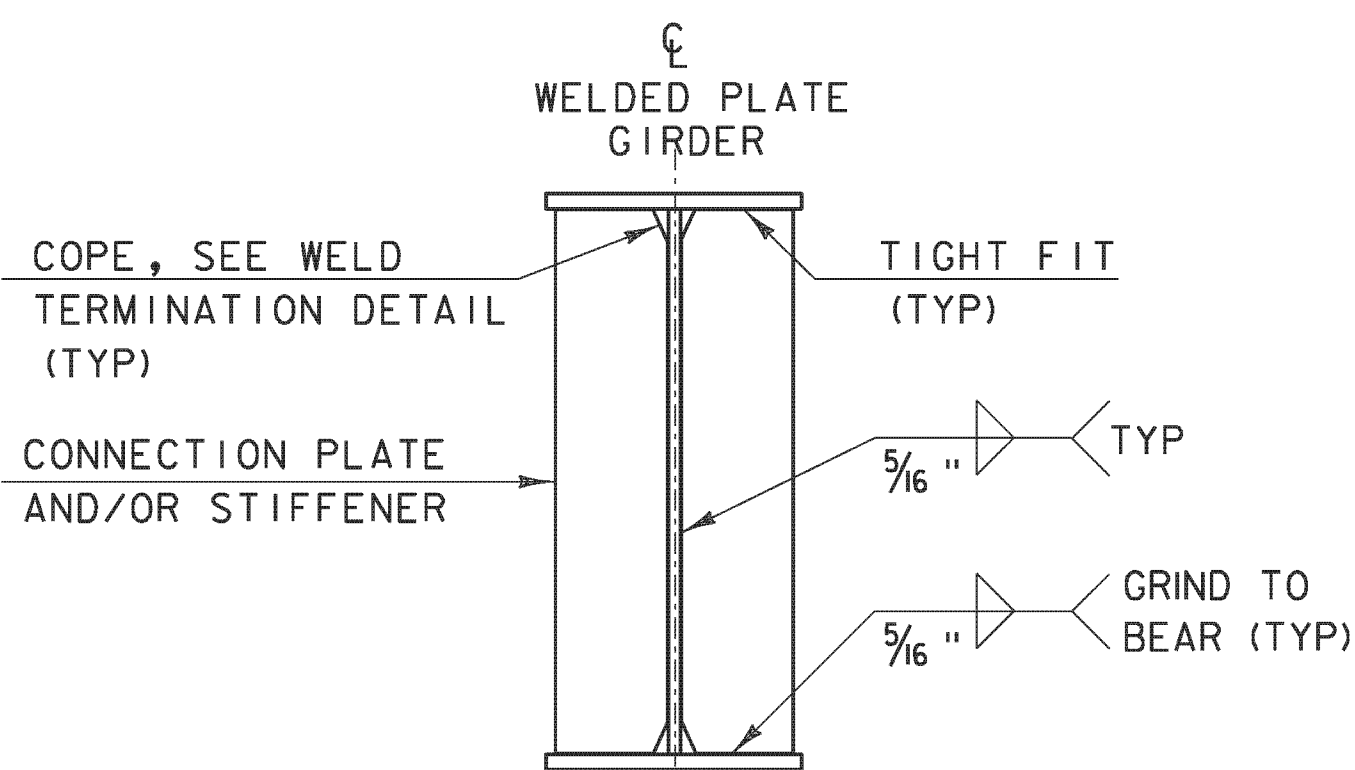


INTERMEDIATE CONNECTION PLATES
AND/OR STIFFENERS FOR WELDED
PLATE GIRDERS

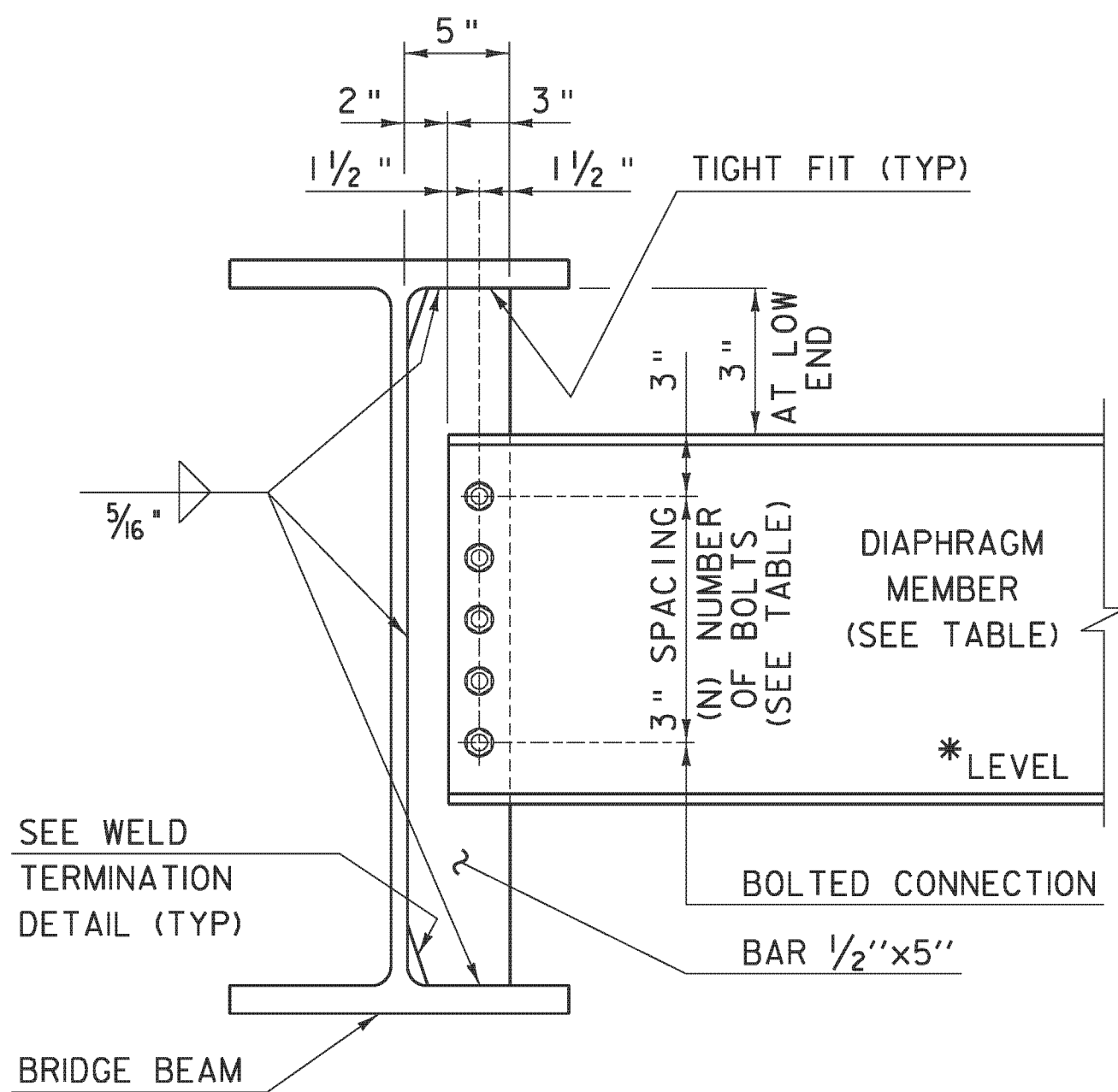
INTERMEDIATE DETAIL IS ONLY USED WHEN PLATE DOES
NOT OCCUR AT AN ABUTMENT OR PIER.



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



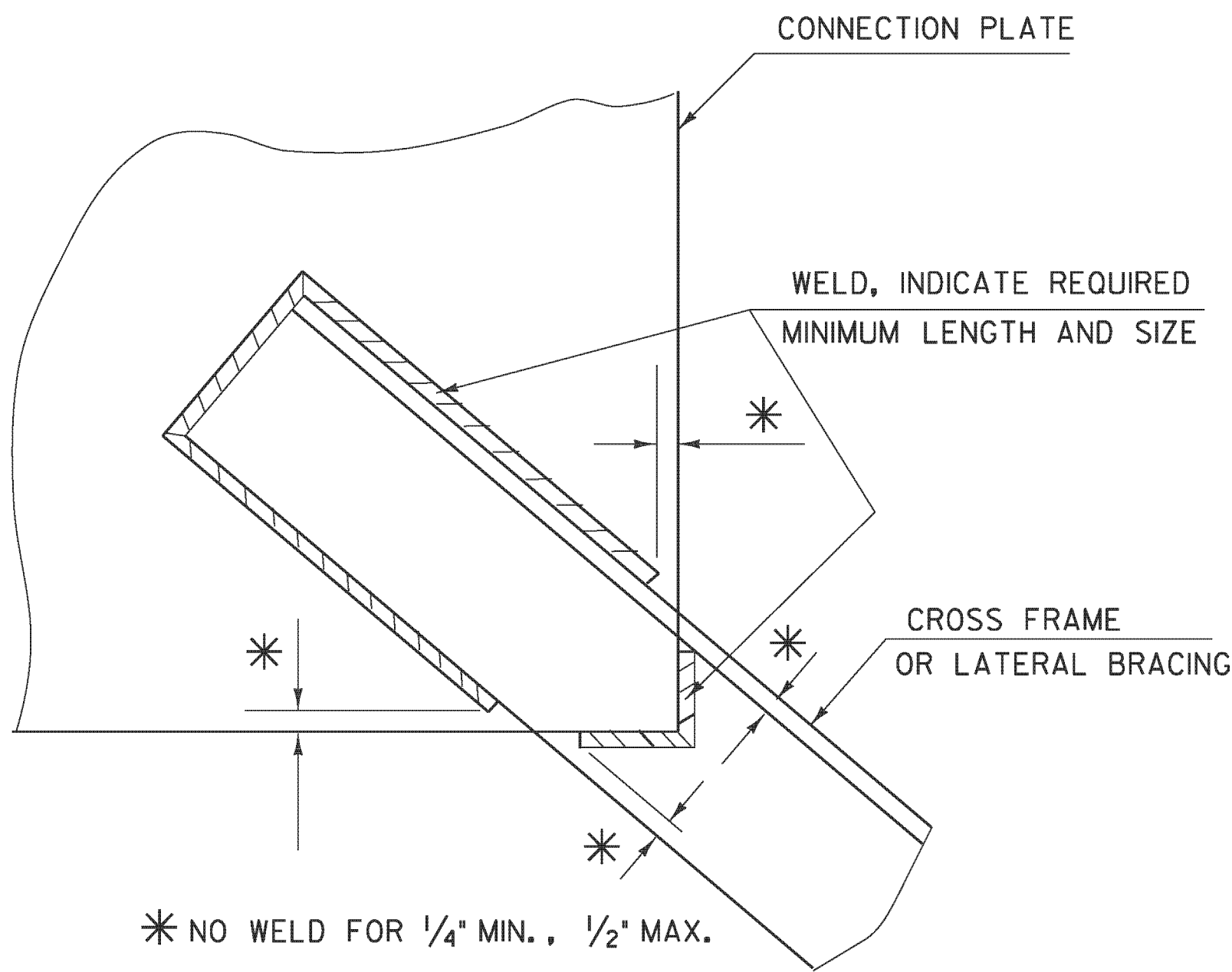
PIER BEARING STIFFENERS
AND/OR CONNECTION PLATES
FOR WELDED PLATE GIRDERS



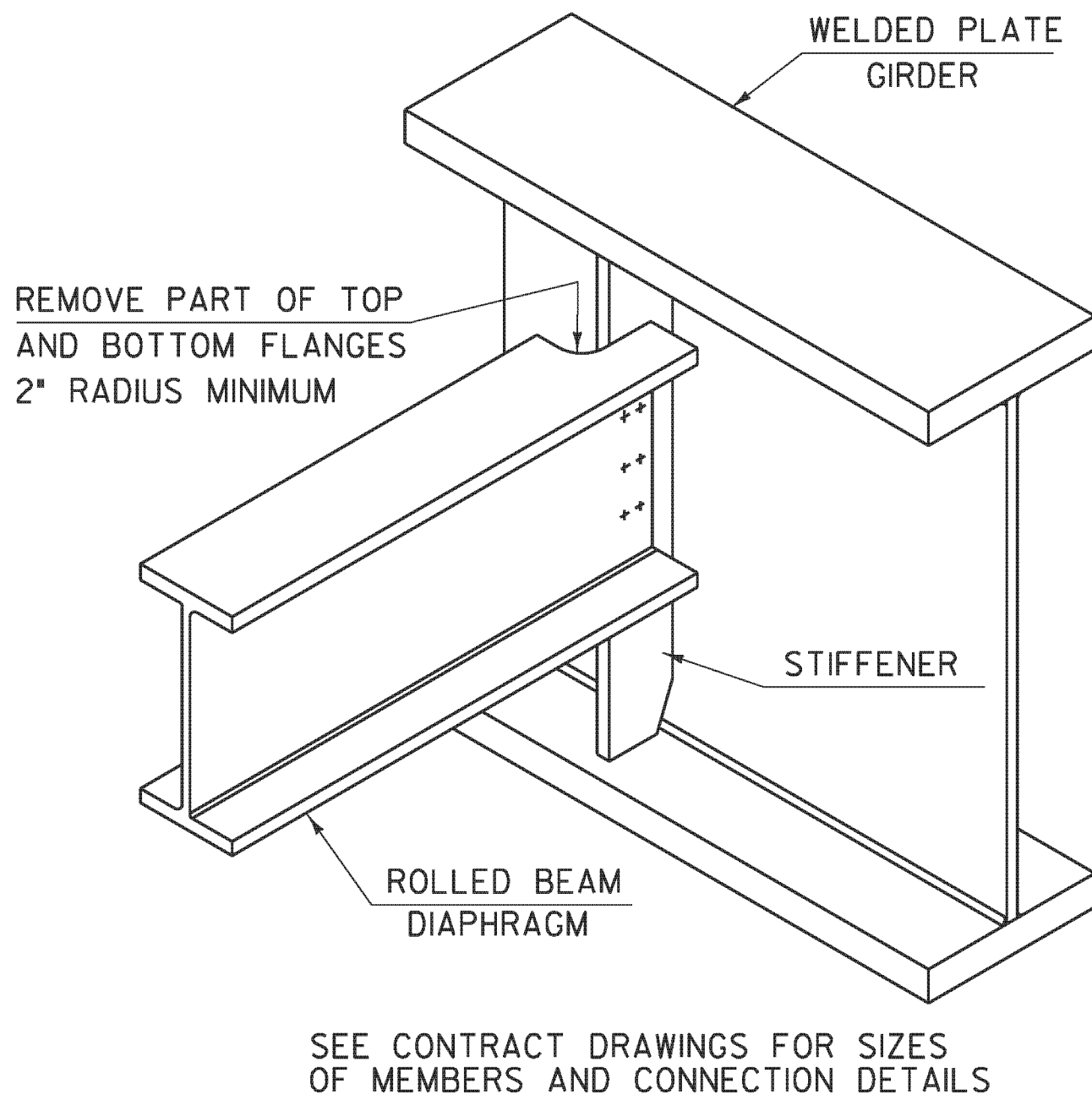
INTERMEDIATE DIAPHRAGMS
FOR 24" TO 48" BRIDGE BEAMS

* 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"		
37"	W21x44	6
42"		
PLATE GIRDER WEB		
31"	W27x84	7
36"		
37"	W33x118	9
42"		
43"	W36x135	10
48"		



WELD LOCATION DETAIL AT CROSS
FRAMES AND LATERAL BRACING

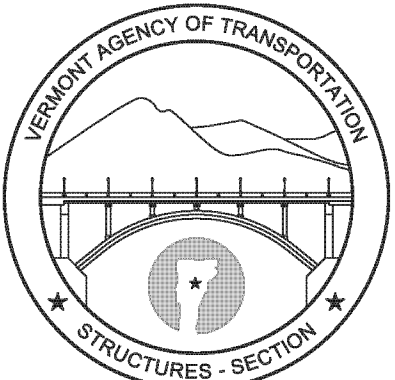


ROLLED BEAM USED AS DIAPHRAGM

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

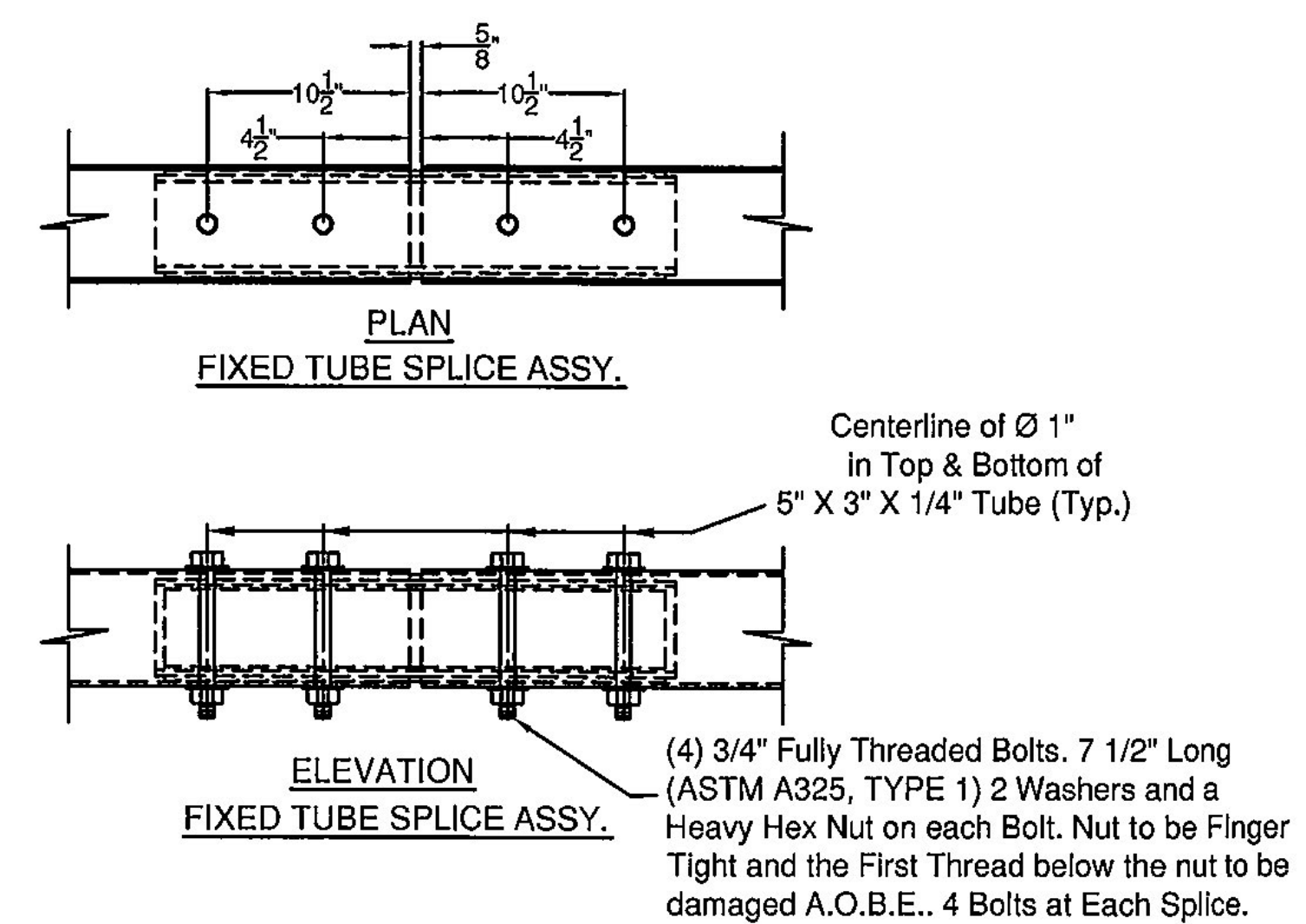
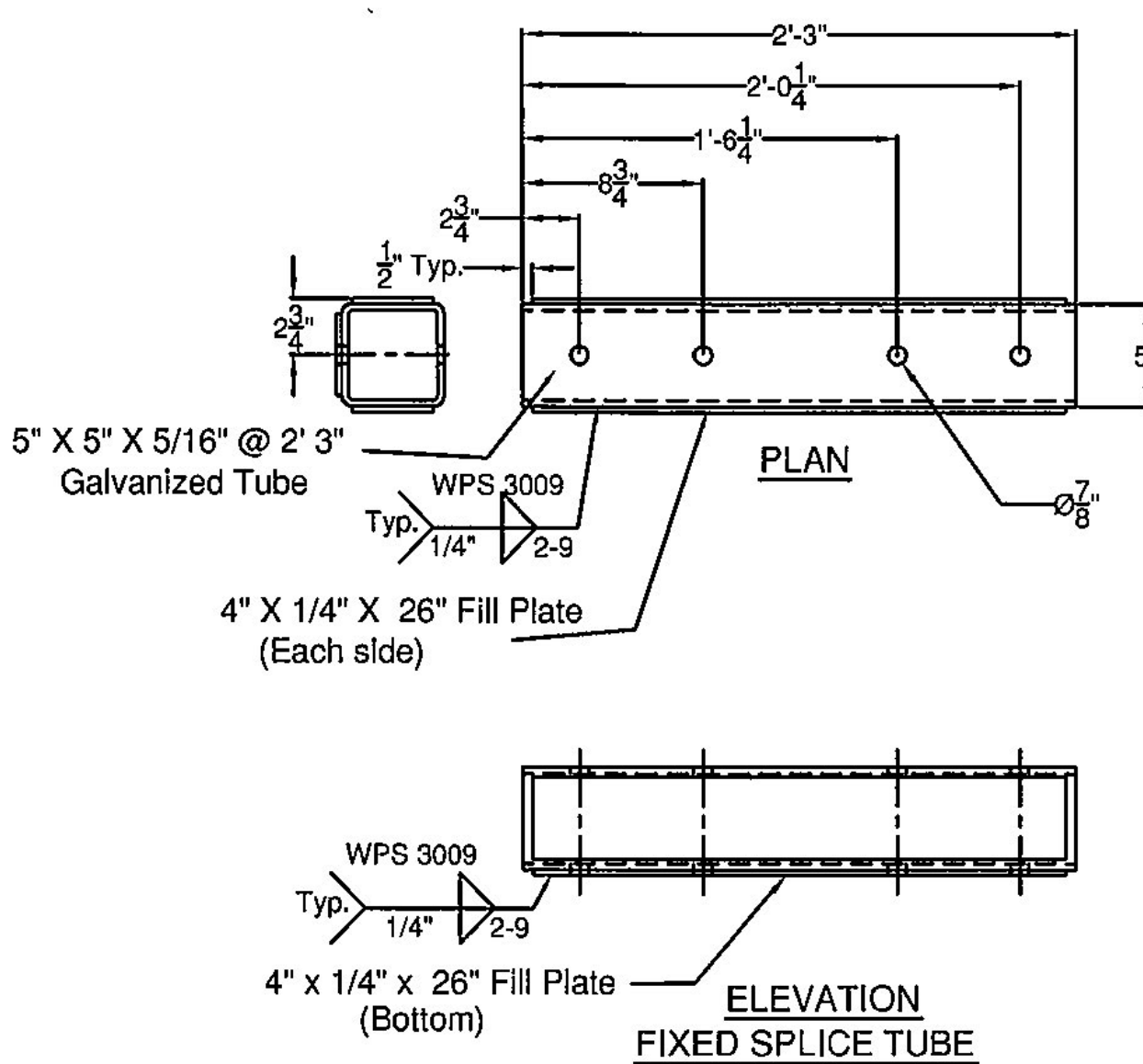
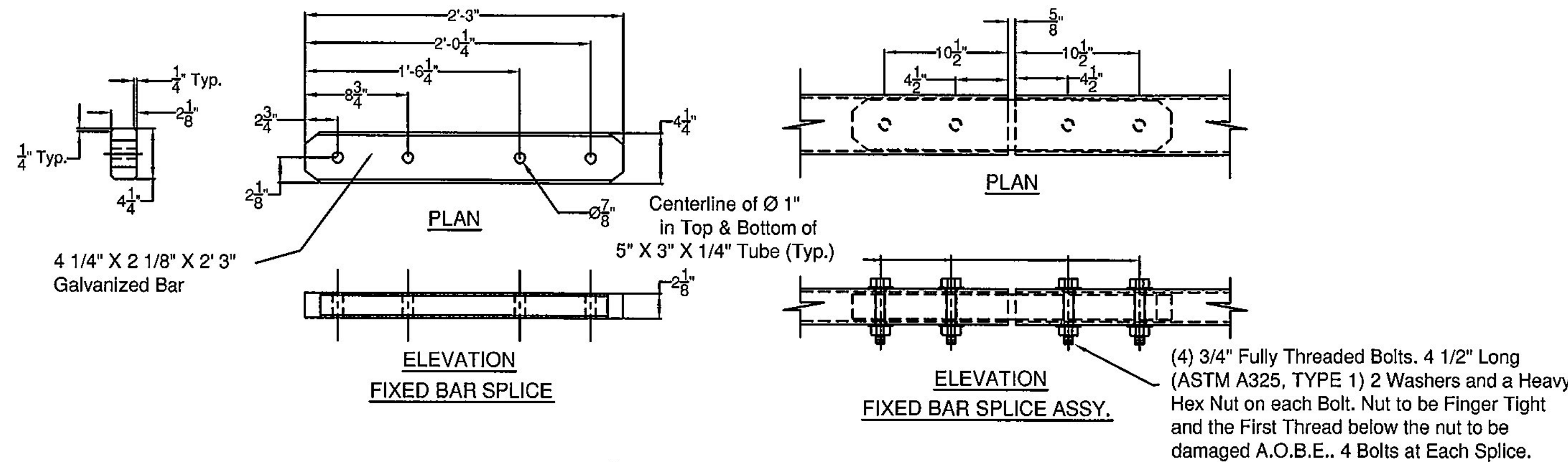
REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
MAY 2, 2011	ADD INTERMEDIATE DIAPHRAGMS DETAIL & ADD NOT TO SCALE NOTE

STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES



STRUCTURES
DETAIL
SD-6 02.00

SPLICE BAR - FIXED

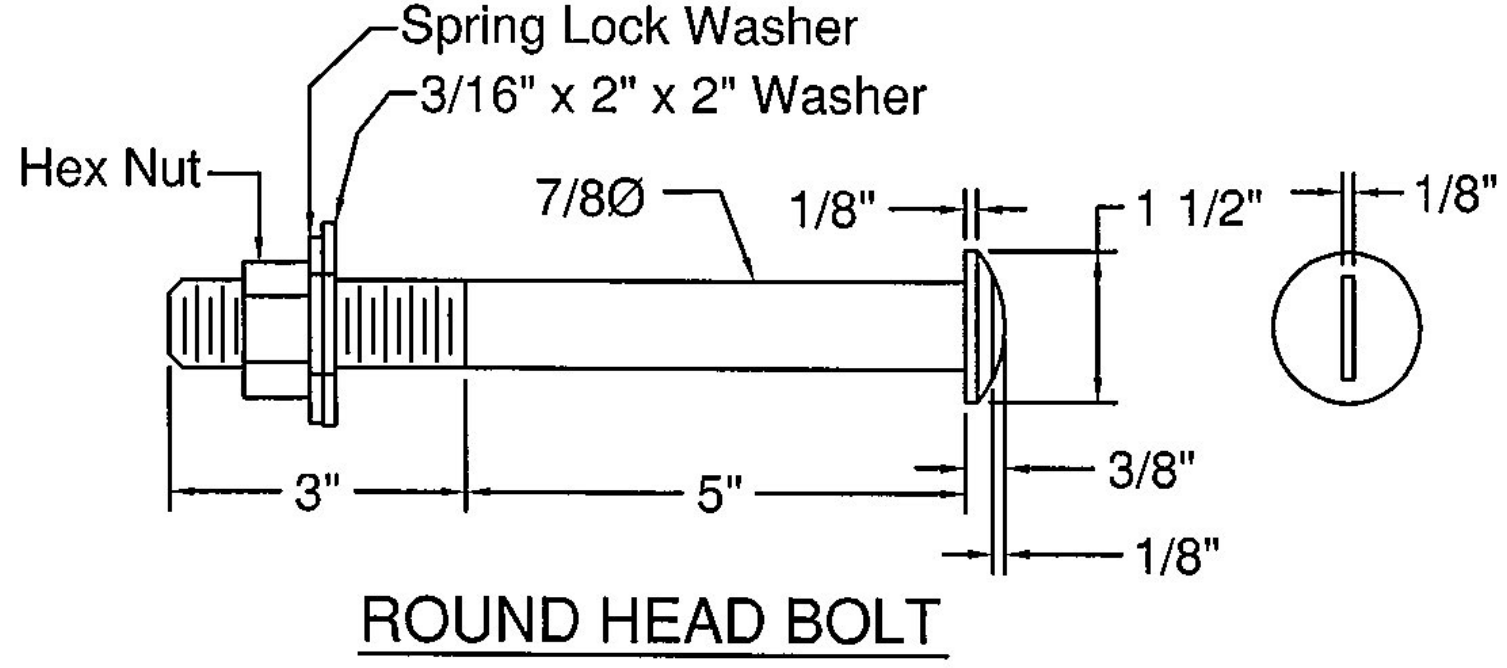
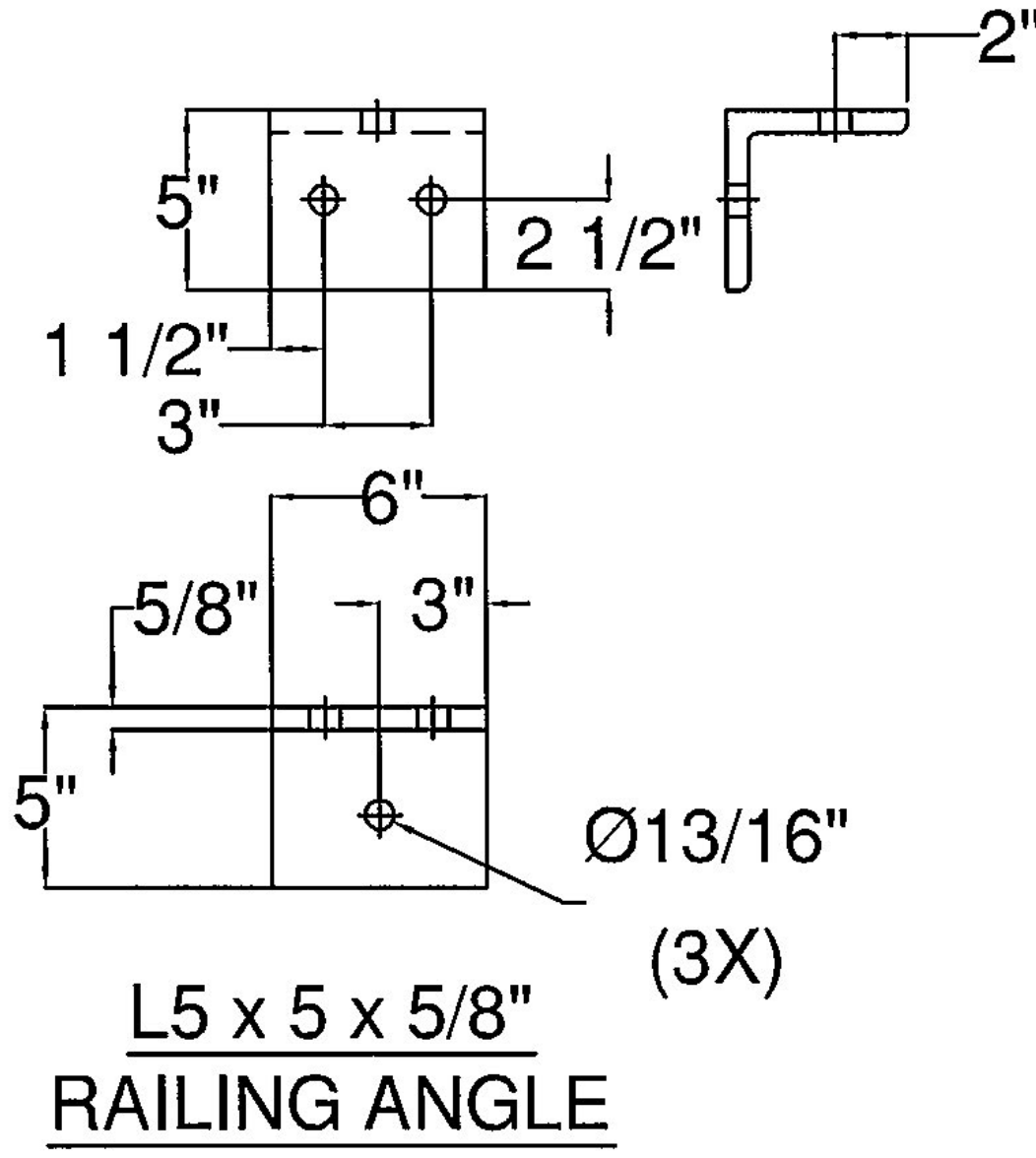
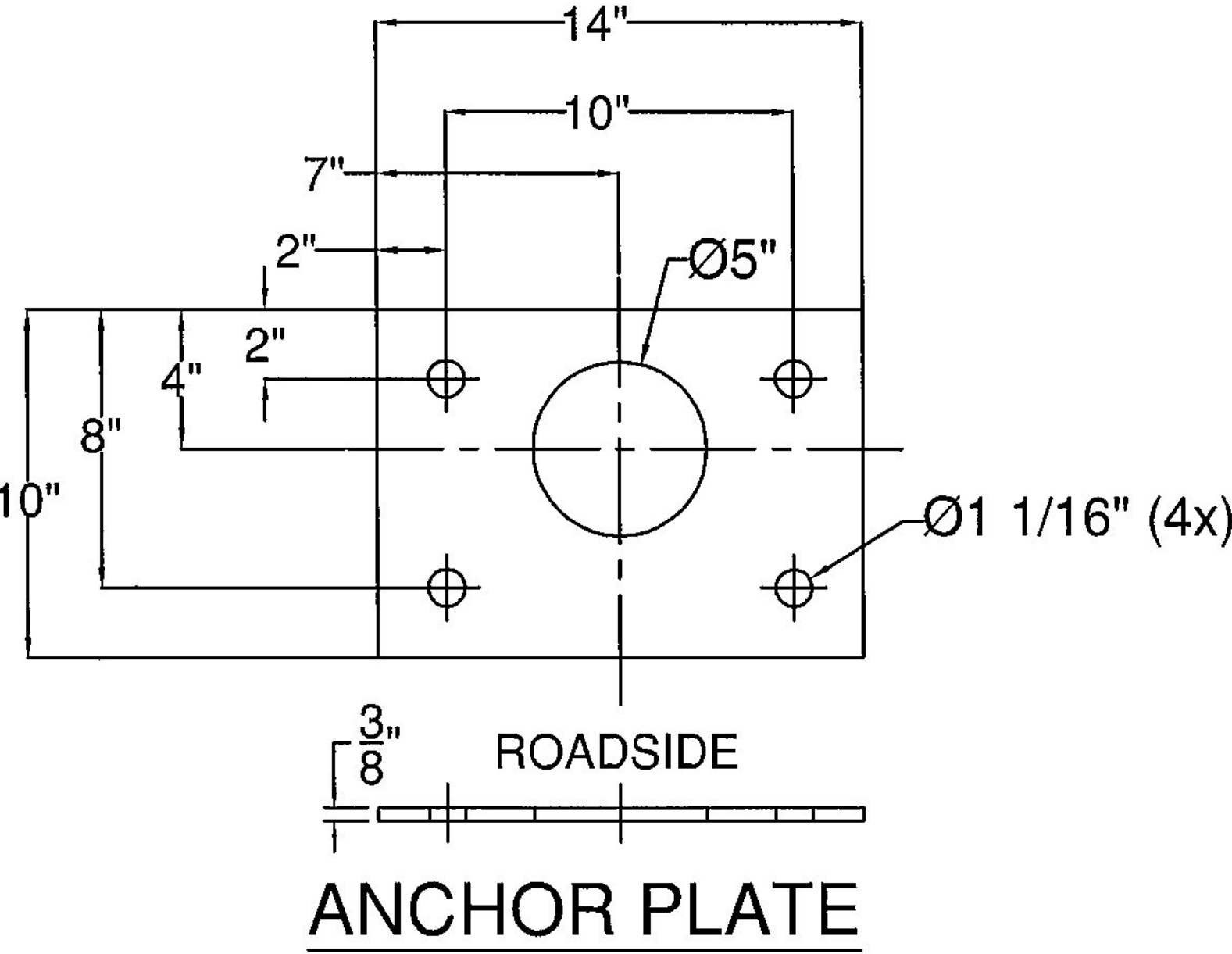
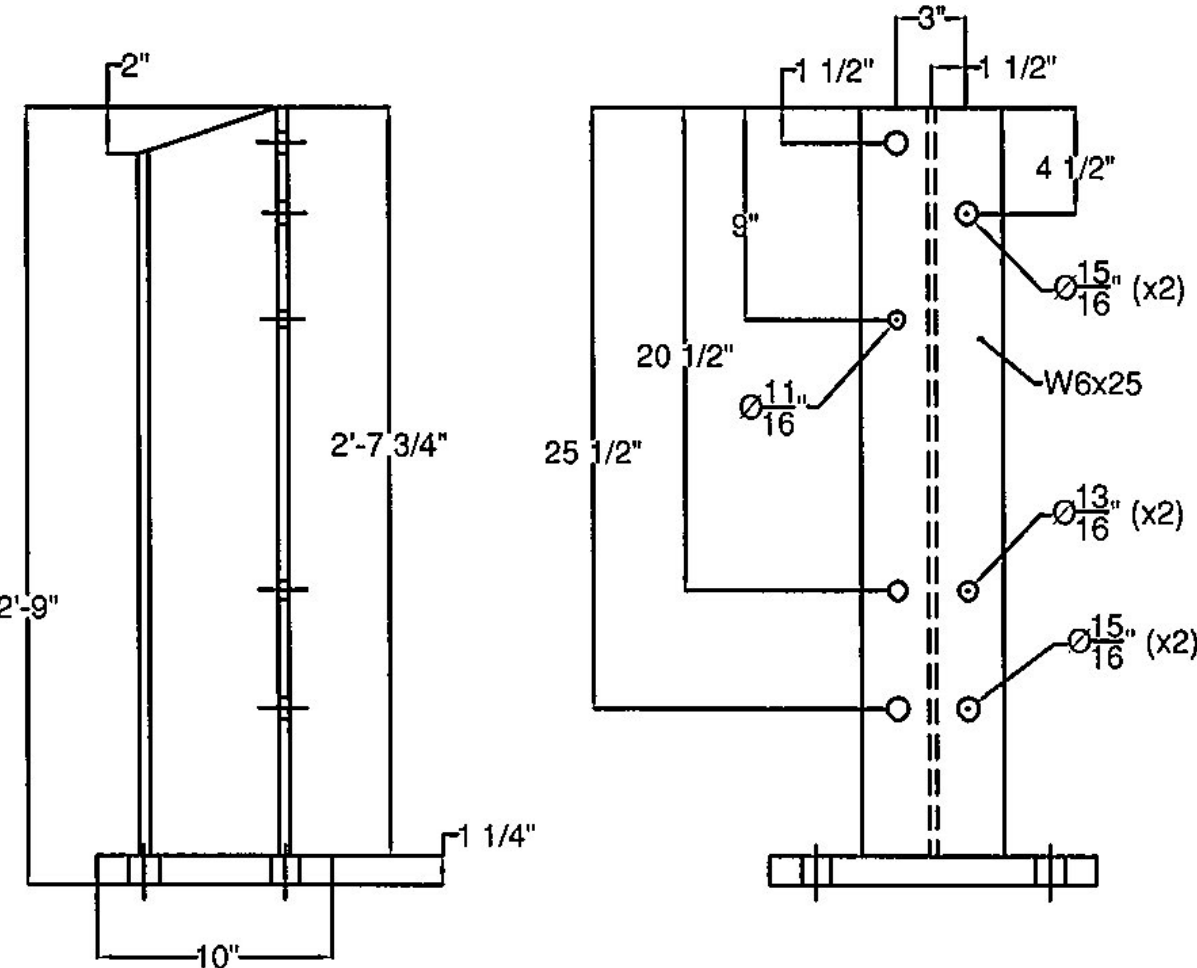
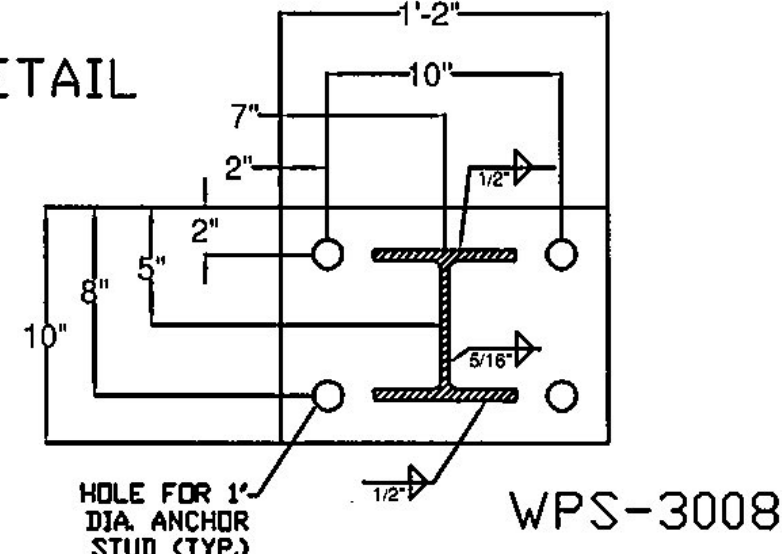


SPLICE TUBE - FIXED

Vermont Agency of Transportation
RECEIVED
ON: April 28, 2014
and Checked for
CONFORMANCE
BY: Rob Young DATE: 05/16/2014

☒ Approved	☐ Approved As Noted
☐ Rejected	
This review is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made on the shop drawings during the review do not relieve the Contractor from compliance with the requirements of the Plans and Specifications. Review of a specific item shall not include review of an assembly of which an item is a component. The Contractor is responsible for dimensions to be confirmed and corrected at the job site; information that pertains solely to the fabrication process or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of other trades and performing all Work in a safe and satisfactory manner.	
Date:	5/16/2014
By:	D. Kull

BRIDGE POST DETAIL



ITEM #: 525.335

APPROVED BY:

BRIDGE RAIL DETAILS SHEET									
WARREN BR 013-4 (32), VT ROUTE 100 (MINOR ARTERIAL) BRIDGE # 166									
TOWN OF WARREN, COUNTY OF WASHINGTON, VT.									
R	NO.	DATE	DESCRIPTION	BY	R	NO.	DATE	DESCRIPTION	BY
E					E				
V					V				
ELDERLEE, INC.					DRAWN				
OAKS CORNERS, NEW YORK 14518					E.P.				
E-Mail: dlong@elderlee.com					4/24/14				
Tel: 315-789-6670 Fax: 315-789-6616					CHECKED				
					D.L.				
					4/24/14				
					APPROVED				
					SCALE				
					SCHEMATIC				
					DRAWING NO. F.R. LaFAYETTE-WARREN				

WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE#1

Material Specification	A572 GRD. 50 /A992-06a		
Welding Process	FCAW		
Manual or Machine	SEMAUTOMATIC		
Position of Welding	FLAT/HORIZONTAL		
Filler Metal Specification	A5.20		
Filler Metal Classification	E70 LINCOLN OUTERSHEILD		
Flux	N/A		
Shielding Gas	CO 2	Dew Point	-40DEG F Flow Rate 50 CFM
Single or Multiple Pass	SINGLE	(45 TO 63 CFM)	
Single or Multiple Arc	N/A		
Welding Current	DC		
Polarity	DCEP		
Welding Progression	STRINGER		
Root Treatment	PER D1.5		
Preheat and Interpass Temperature	PER D1.5		
Postheat Temperature	NONE		
Heat Input	Min		Max

Vermont Agency of Transportation

RECEIVED

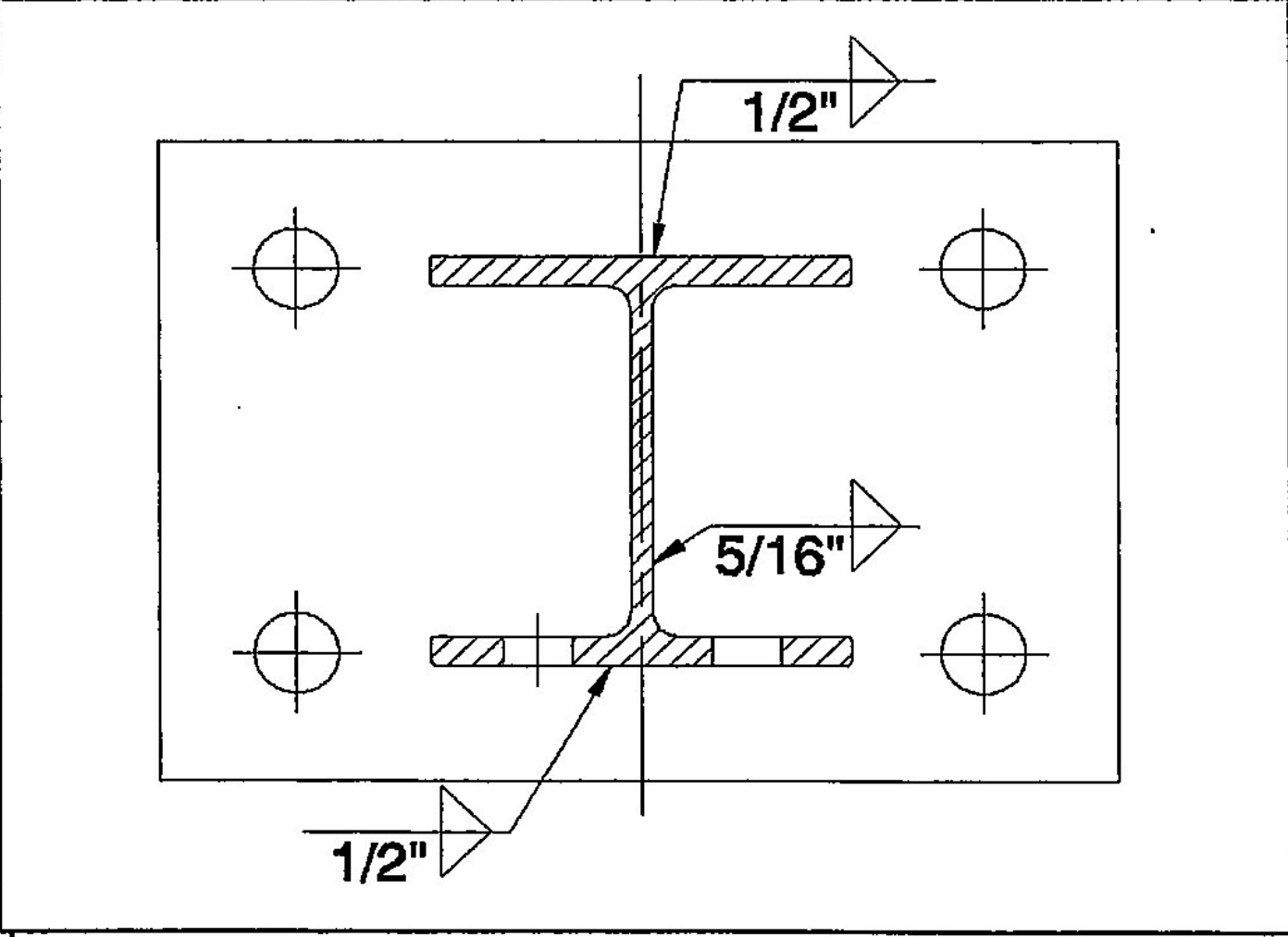
ON: April 28, 2014

and Checked for

CONFORMANCE

BY: Rob Young DATE: 05/16/2014

WELDING PROCEDURE

Pass no.	Electrode size	Welding Current		Travel speed	Joint detail
		Amperes	Volts		
1	3/32	390	27	12	
Variable	LIMITS	351	25	11	
		TO 429	TO 29	TO 13	

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in Section 5.

Procedure No. 3008

Contractor Elderlee, Inc.

Revision No.

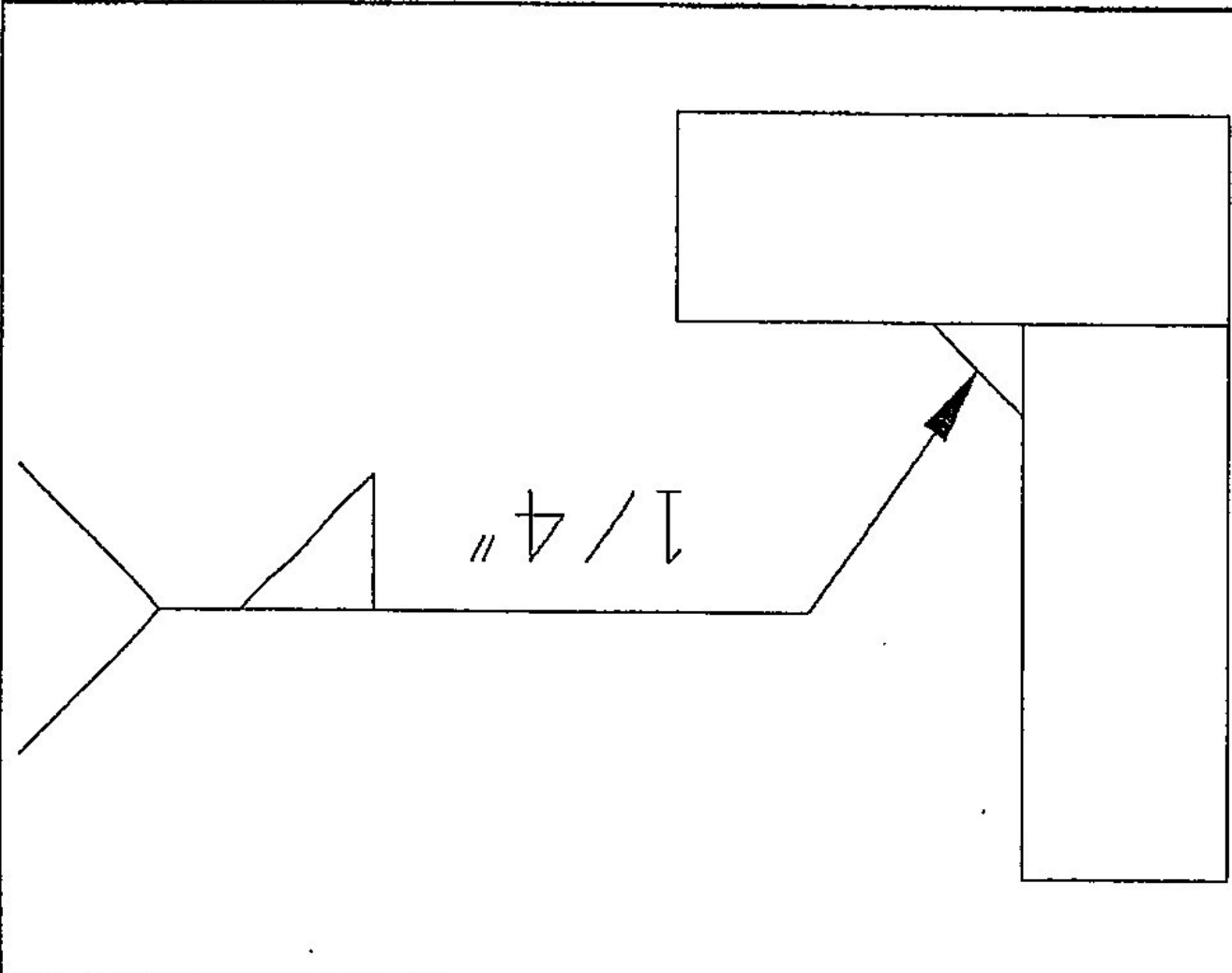
Authorized By RANDY SCOTT

Date 5/29/2013

WELDING PROCEDURE SPECIFICATION
PQR ELDERLEE #3
A709 TO A500 GR B

FCAW-G	Welding Process
SEMAUTOMATIC	Manual or Machine
FLAT/HORIZONTAL	Position of Welding
A5.29	Filler Metal Specification
E81T1-NiC-JH4	Filler Metal Classification
N/A	Flux
CO 2	Shielding Gas
Dew Point -40DEG F Flow Rate 50CFH	Single or Multiple Pass
SINGLE	Single or Multiple Arc
SINGLE	Welding Current
DC	Polarity
REVERSE ELECTRODE POSITIVE	Welding Progression
STRINGER	Root Treatment
D1.5	Preheat and Interpass Temperature
D1.5	Postheat Temperature
NONE	Heat Input
Min	
Max	

WELDING PROCEDURE

Pass no.	Electrode size	Welding Current		Travel speed	Variable
		Amperes	Volts		
1	1/16	310	25	11	1
LIMITS		341 TO 269	27 TO 23	12 TO 10	
					
Joint detail					

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in Section 5.

Procedure No.	3009	Contractor	Elderlee, Inc.
Revision No.		Authorized By	RANDY SCOTT
		Date	3/20/2014

Vermont Agency of Transportation
RECEIVED
ON: April 28, 2014
and Checked for
CONFORMANCE
BY: Rob Young DATE: 05/16/2014

WARREN BRF 013-4(32)
CONTRACTOR FABRICATED PBU UNITS

- SHEET 1: PBU PLAN
- SHEET 2: PBU PLAN UNITS 1 & 4
- SHEET 3: PBU PLAN UNITS 3 & 4
- SHEET 3: PBU TYPICAL DETAILS
- SHEET 4: CLOSURE POUR DETAILS
- SHEET 5: PBU INSERT-LAYOUT
- SHEET 6: DIMENSION FABRICATORS, INC. RE-BAR DRAWINGS
- SHEET 7: DIMENSION FABRICATORS, INC. RE-BAR DRAWINGS
- SHEET 8: QC PROCEDURES / PLAN
- SHEET 9: PBU CASTING PLAN
- SHEET 10: CONCRETE MIX DESIGN
- SHEET 11: BRIDGE ANCHORAGE
- SHEET 12: BRIDGE ANCHORAGE DETAILS

ROBERT M. SUTHERLAND, P
ENGINEERS-SURVEYORS-MATERIAL TESTI
PLATTSBURGH NEW YORK

1	PER REVIEWER COMMENTS	05/22/14
REV	REVISION	DATE

REVISIONS

PROJECT
WARREN BRF
013-4(32)
VT ROUTE 100
WARREN, VT

CLIENT
LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

SHEET TITLE
PRE-CAST BRIDGE UNIT
COVER SHEET / INDEX

Vermont Agency of Transportation
RECEIVED
ON: May 23, 2014
and Checked for
CONFORMANCE
BY: Rob Young DATE: 05/30/2014

Approved

Rejected

X

Approved As Noted

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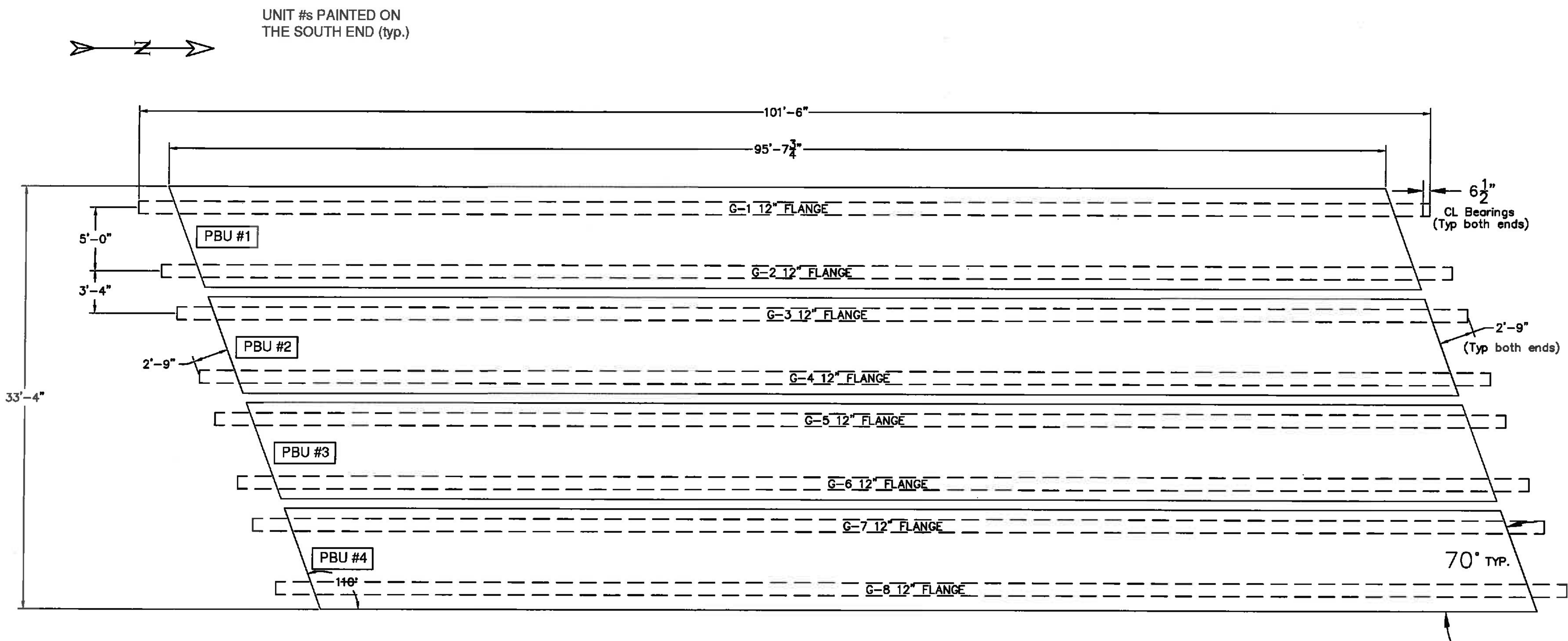
McFarland Johnson

Date: 5/29/2014
By: D. Kull

DRAWN BY: KTW
CHECKED BY: TL
DATE: 04/28/14
SHEET NO:

COVER

ROBERT M. SUTHERLAND, P
ENGINEERS-SURVEYORS-MATERIAL TESTI
PLATTSBURGH NEW YORK



REV	REVISION	DATE
1	PER REVIEWER COMMENTS	05/22/14

REVISIONS

PROJECT
WARREN BRIDGE
013-4(32)
VT ROUTE 100
WARREN, VT

CLIENT
LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

SHEET TITLE
PRE-CAST BRIDGE UNIT
PLAN

DRAWN BY: KTW
CHECKED BY: TL
DATE: 04/28/14
SHEET NO: 1

Vermont Agency of Transportation
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BY: Rob Young DATE: 05/30/2014

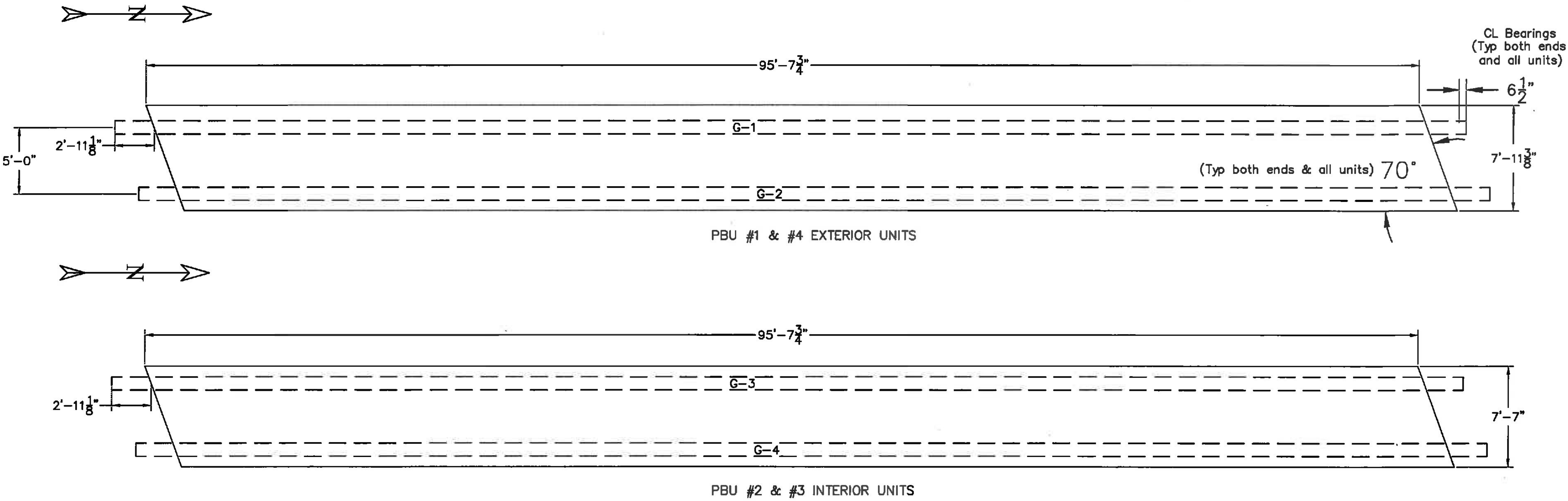
Approved	X	Approved As Noted
Rejected		

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McFarland Johnson

ROBERT M. SUTHERLAND, P
ENGINEERS-SURVEYORS-MATERIAL TESTI
PLATTSBURGH NEW YORK



REV	REVISION	DATE
1	PER REVIEWER COMMENTS	05/22/14

REVISIONS

PROJECT
WARREN BRIDGE
013-4(32)
VT ROUTE 100
WARREN, VT

CLIENT
LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

SHEET TITLE
PRE-CAST BRIDGE UNIT
PBU #1 thru #4

Vermont Agency of Transportation
RECEIVED
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and Checked for
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BY: Rob Young DATE: 05/30/2014

Approved	☒ Approved As Noted
Rejected	☐

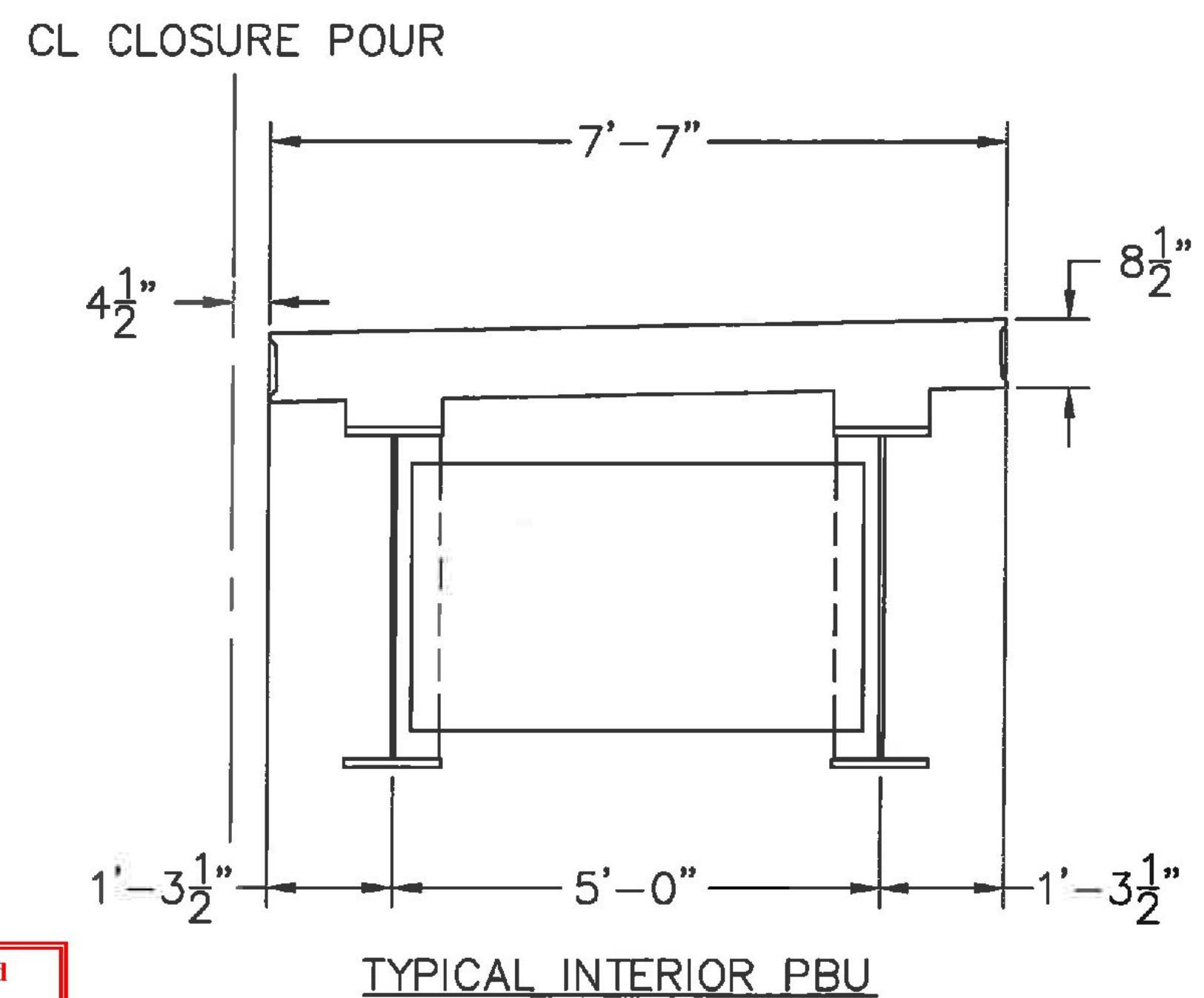
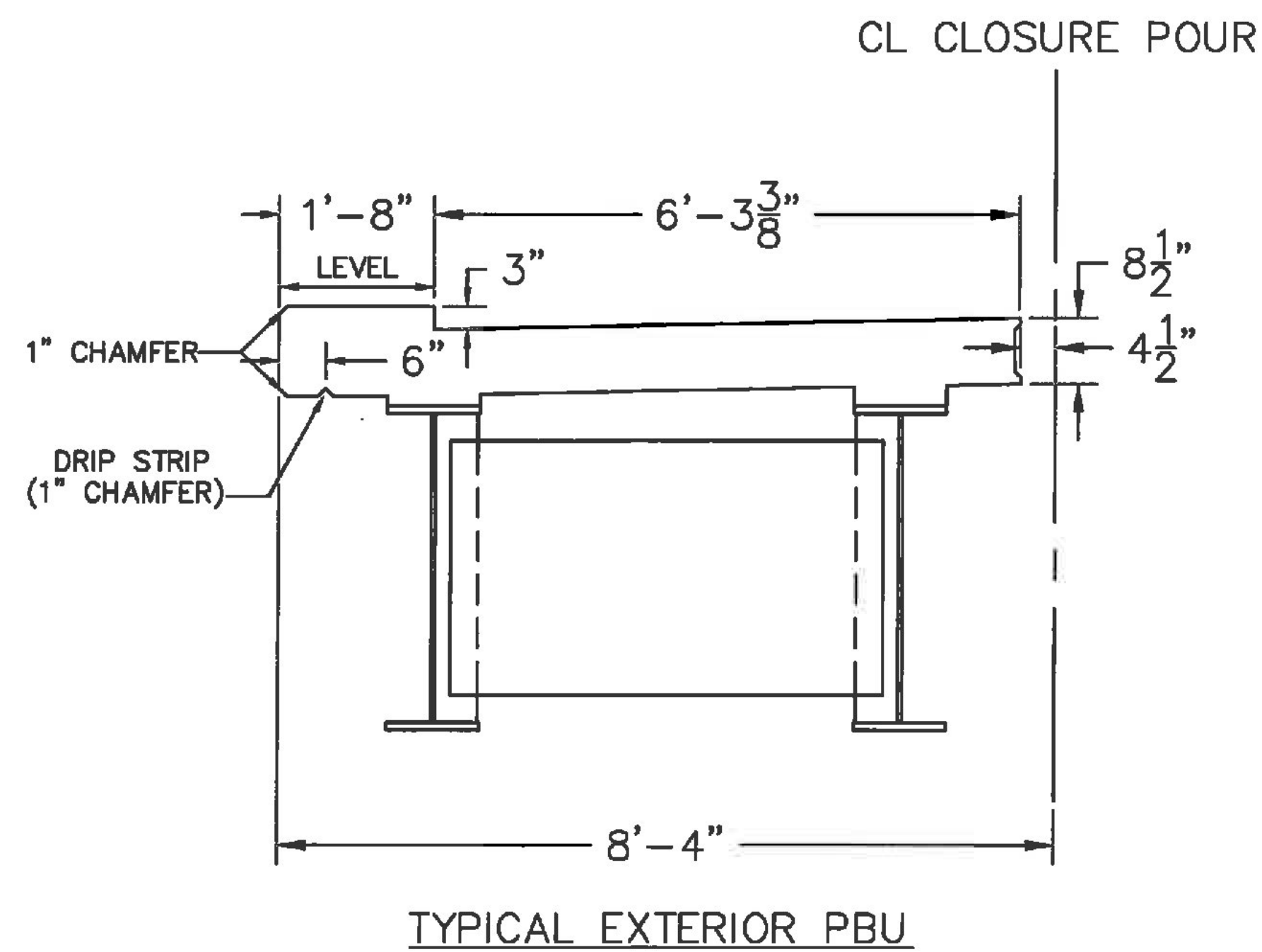
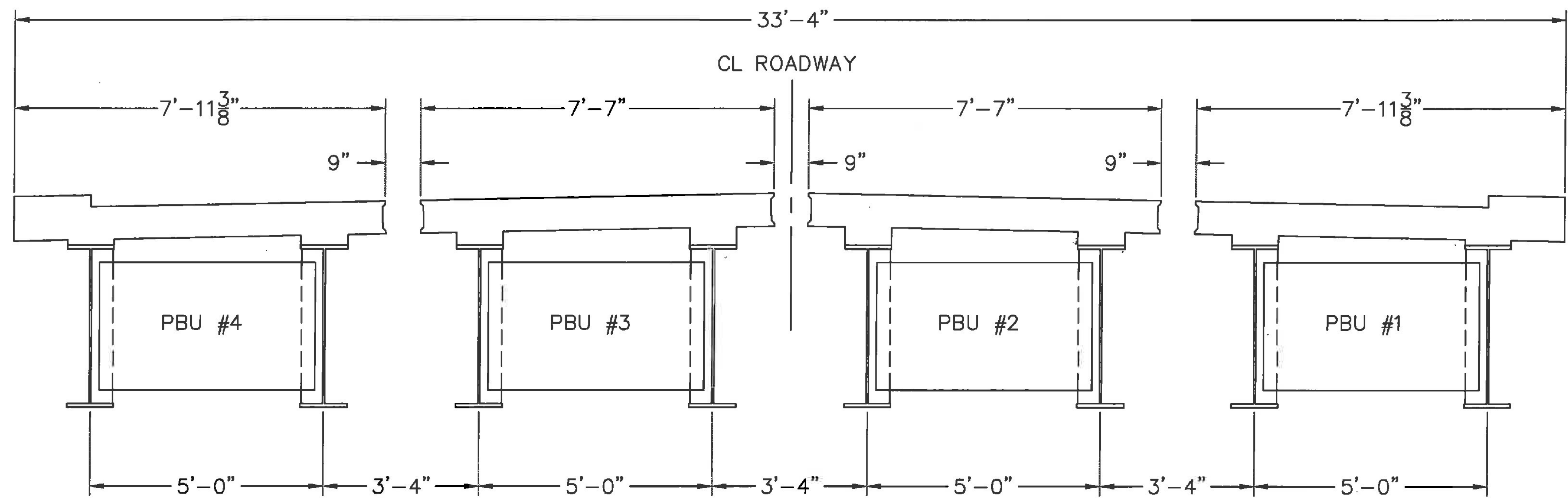
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McFarland Johnson

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ROBERT M. SUTHERLAND, P
ENGINEERS-SURVEYORS-MATERIAL TESTI
PLATTSBURGH NEW YORK



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Approved _____ X Approved As Noted _____
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McFarland Johnson

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REVISIONS

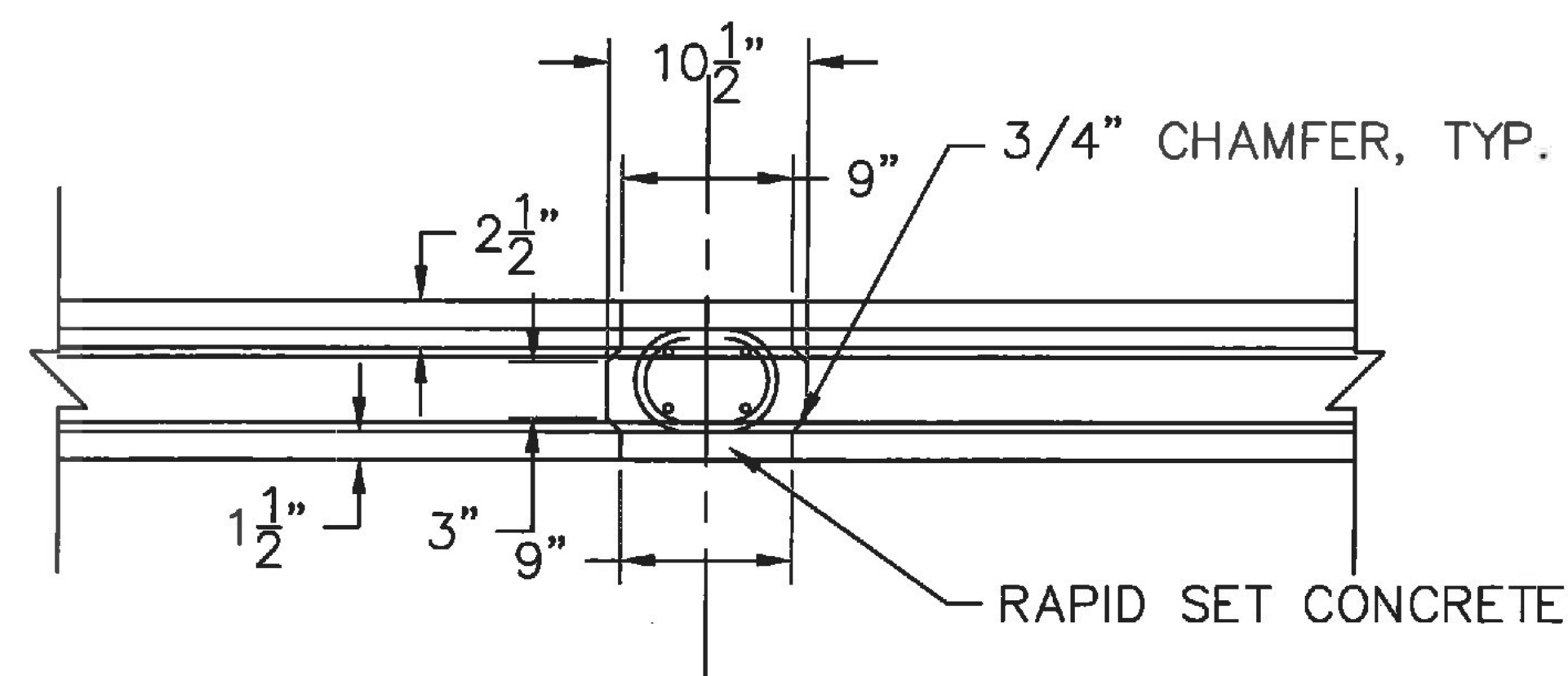
PROJECT
WARREN BRIDGE
013-4(32)
VT ROUTE 100
WARREN, VT

CLIENT
LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

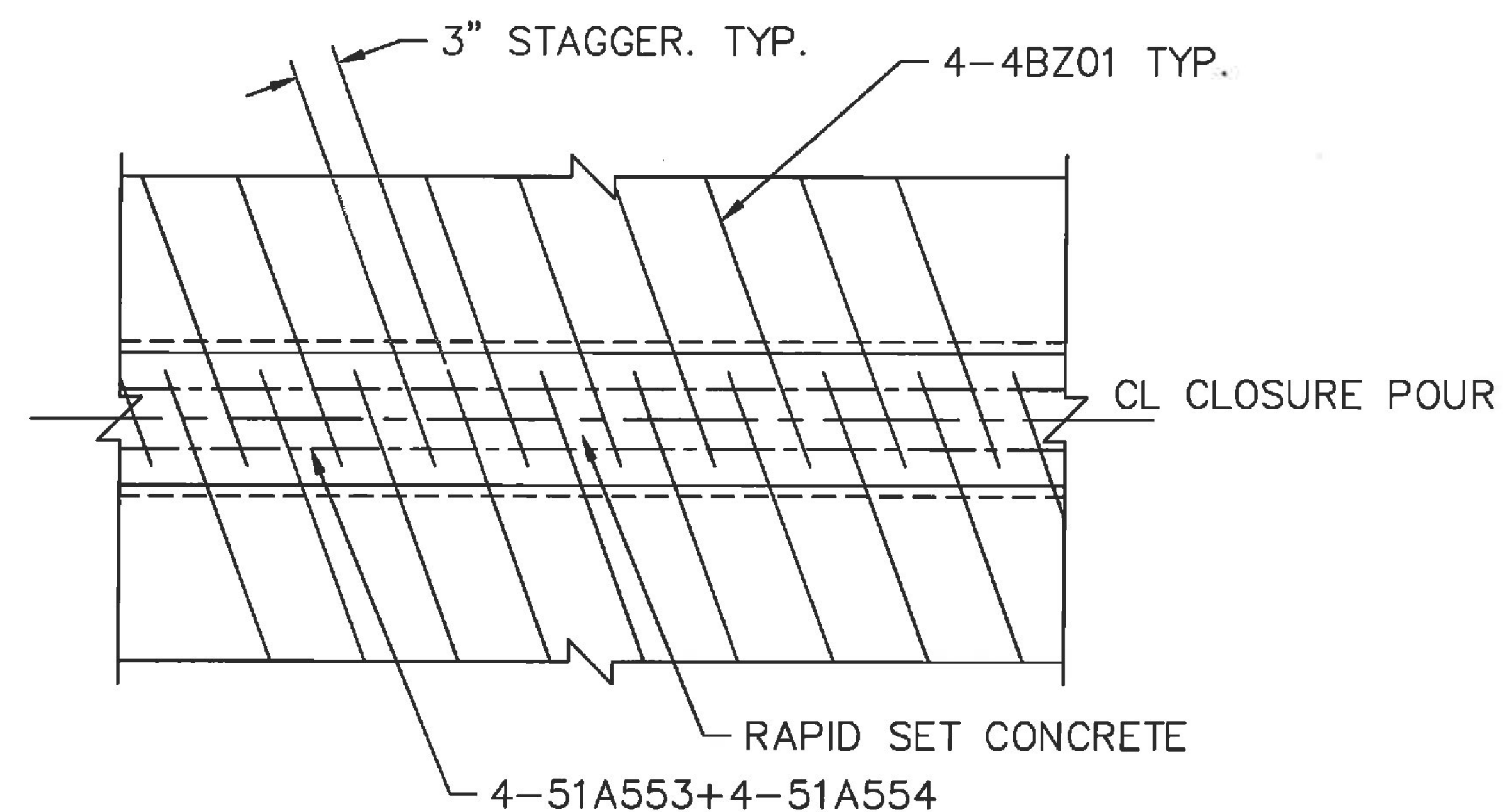
SHEET TITLE
PRE-CAST BRIDGE UNIT
PBU DETAILS

DRAWN BY: KTW
CHECKED BY: TL
DATE: 04/28/14
SHEET NO:

ROBERT M. SUTHERLAND, P
ENGINEERS-SURVEYORS-MATERIAL TESTI
PLATTSBURGH NEW YORK



CLOSURE POUR SECTION



CLOSURE POUR PLAN

REV	REVISION	DATE
1	PER REVIEWER COMMENTS	05/22/14

REVISIONS

PROJECT
WARREN BRIDGE
013-4(32)
VT ROUTE 100
WARREN, VT

CLIENT
LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

SHEET TITLE
PRE-CAST BRIDGE UNIT
CLOSURE POUR DETAILS

DRAWN BY: KTW
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ON: May 23, 2014
and Checked for
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BY: Rob Young DATE: 05/30/2014

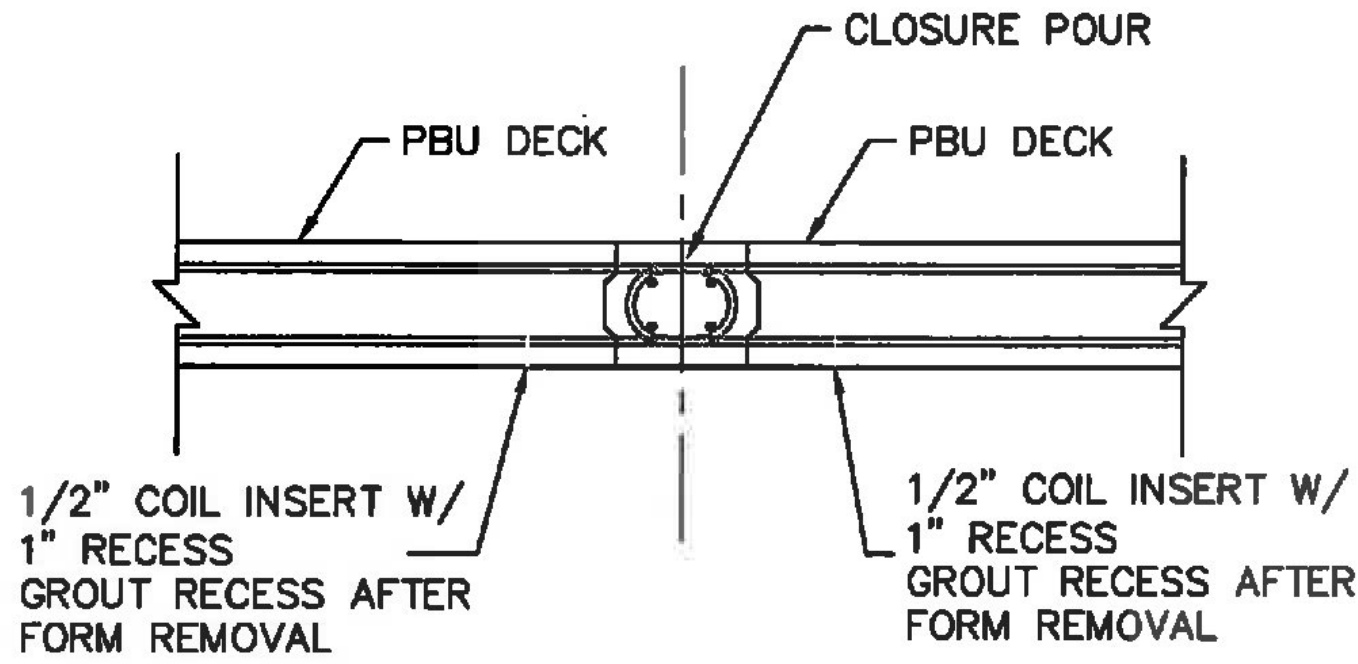
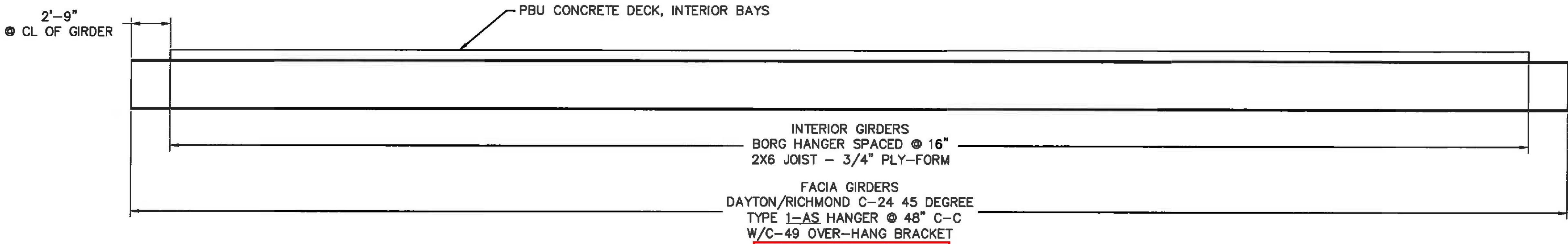
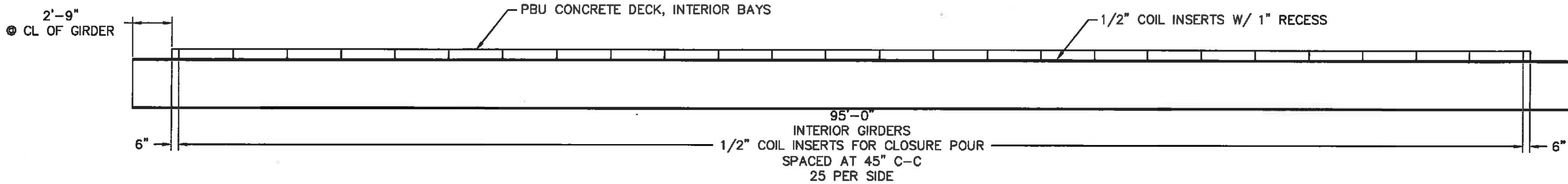
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Rejected	

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By: D. Kull

McFarland Johnson

ROBERT M. SUTHERLAND, P
ENGINEERS-SURVEYORS-MATERIAL TESTI
PLATTSBURGH NEW YORK



1" Max Weld to
Top Flange

Coil Insert to be
galvanized or other
corrosion resistant
coating.

REV	REVISION	DATE
1	PER REVIEWER COMMENTS	05/22/14

REVISIONS

PROJECT
WARREN BRIDGE
013-4(32)
VT ROUTE 100
WARREN, VT

CLIENT
LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

SHEET TITLE
PBU CLOSURE POUR
COIL INSERT LAYOUT

Vermont Agency of Transportation
RECEIVED
ON: May 23, 2014
and Checked for
CONFORMANCE
BY: Rob Young DATE: 05/30/2014

Approved	☒ Approved As Noted
Rejected	

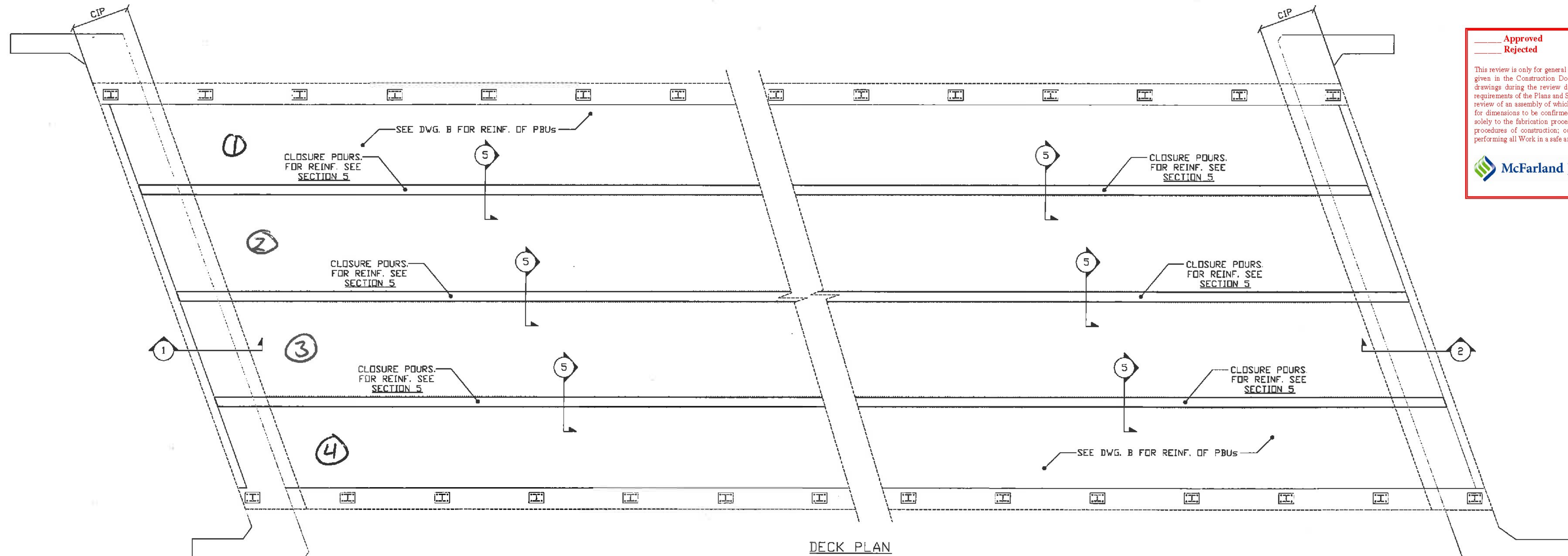
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McFarland Johnson

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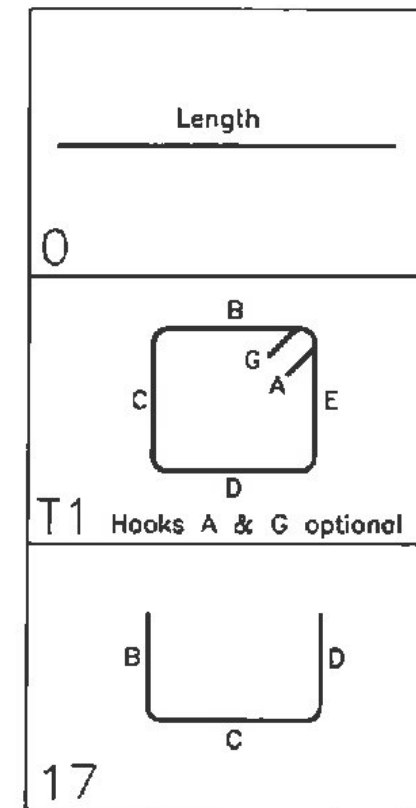
DECK PLAN

Drawing Sheet : A

Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'J'	'K'	'O'	'R'
51A501	14	#5	35'-0"			35'-0"										
51A502	8	#5	35'-0"			35'-0"										
51A503	16	#5	7'-1"			7'-1"										
51A504	12	#5	3'-0"			3'-0"										
51A550	18	#5	14'-10"	T1	0'-5 1/2"	3'-4 1/2"	3'-7"	3'-4 1/2"	3'-7"		0'-5 1/2"					
51A551	18	#5	14'-6"	T1	0'-5 1/2"	3'-4 1/2"	3'-5"	3'-4 1/2"	3'-5"		0'-5 1/2"					
51A553	12	#5	30'-0"			30'-0"										
51A554	12	#5	19'-0"			19'-0"										
52A501	14	#5	35'-0"			35'-0"										
52A502	8	#5	35'-0"			35'-0"										
52A503	16	#5	7'-1"			7'-1"										
52A504	12	#5	3'-0"			3'-0"										
52A550	18	#5	14'-10"	T1	0'-5 1/2"	3'-4 1/2"	3'-7"	3'-4 1/2"	3'-7"		0'-5 1/2"					
52A551	18	#5	14'-6"	T1	0'-5 1/2"	3'-4 1/2"	3'-5"	3'-4 1/2"	3'-5"		0'-5 1/2"					
61A650	37	#6	7'-2"	17		3'-7"	3'-7"									
62A650	37	#6	7'-2"	17		3'-7"	3'-7"									
81A801	22	#8	2'-0"			2'-0"										
82A801	22	#8	2'-0"			2'-0"										

* BARS FOR TESTING PURPOSES INCLUDED

CONTRACT DWGS.
BAR MARK
5 1A501



Vermont Agency of Transportation
RECEIVED
ON: April 11, 2014
and Checked for
CONFORMANCE
BY: Rob Young DATE: 04/14/2014

☒ Approved
☐ Rejected

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McFarland Johnson
Date: 4/14/2014
By: D. Kull

**ALL DUAL COATED
REINF. DENOTED (Z)**

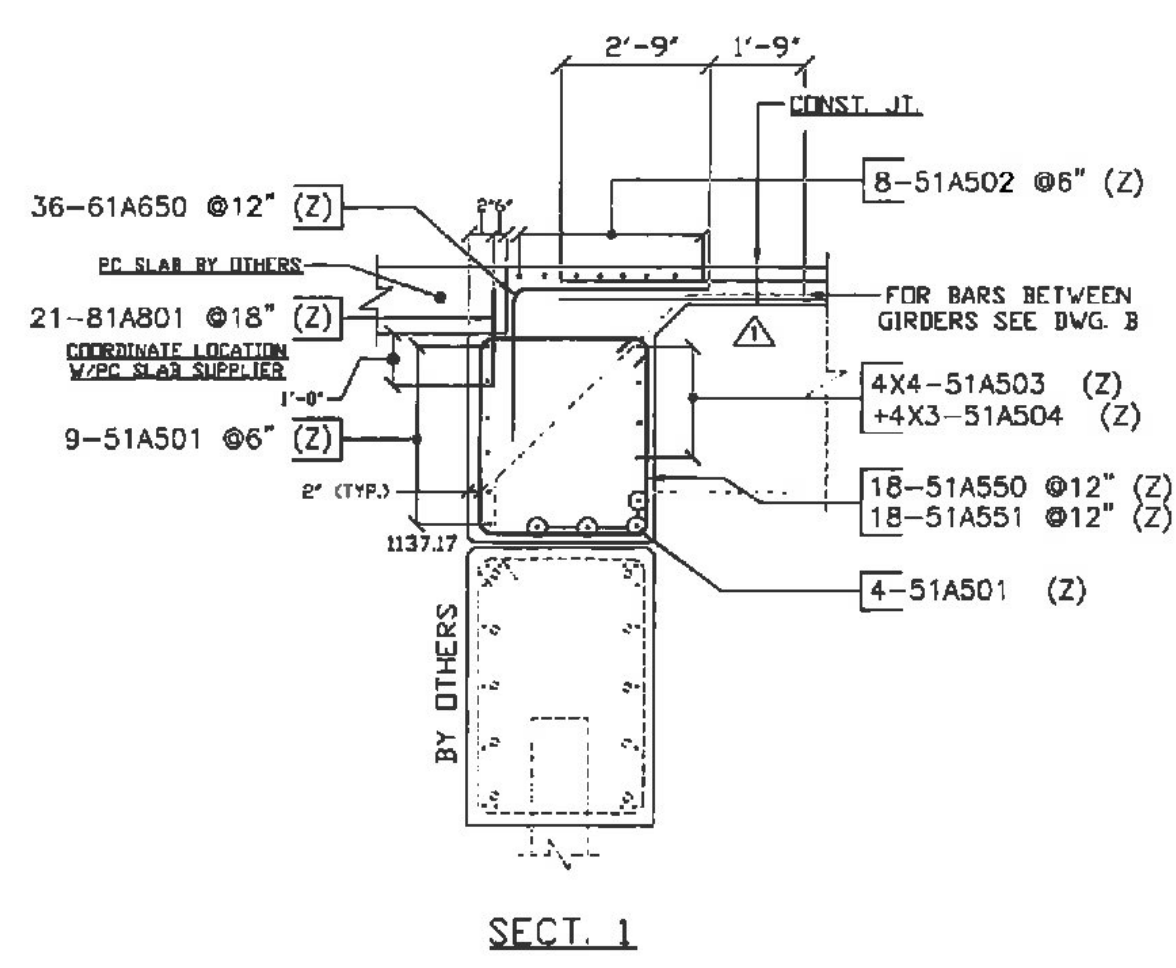
LEGEND:
CONT.-CONTINUOUS
TRANS.-TRANSVERSE
DWLS.-DOWELS
VERTS.-VERTICAL
HORIS.-HORIZONTAL
T&B -TOP & BOTTOM
I.F.-INNER FACE
O.F.-OUTER FACE
E.E.-EACH END
E.F.-EACH FACE
F.F.-FRONT FACE
R.F.-REAR FACE
E.W.-EACH WAY
D.C.-ON CENTER
L.W.-LONG WAY
S.W.-SHORT WAY

FOR APPROVAL

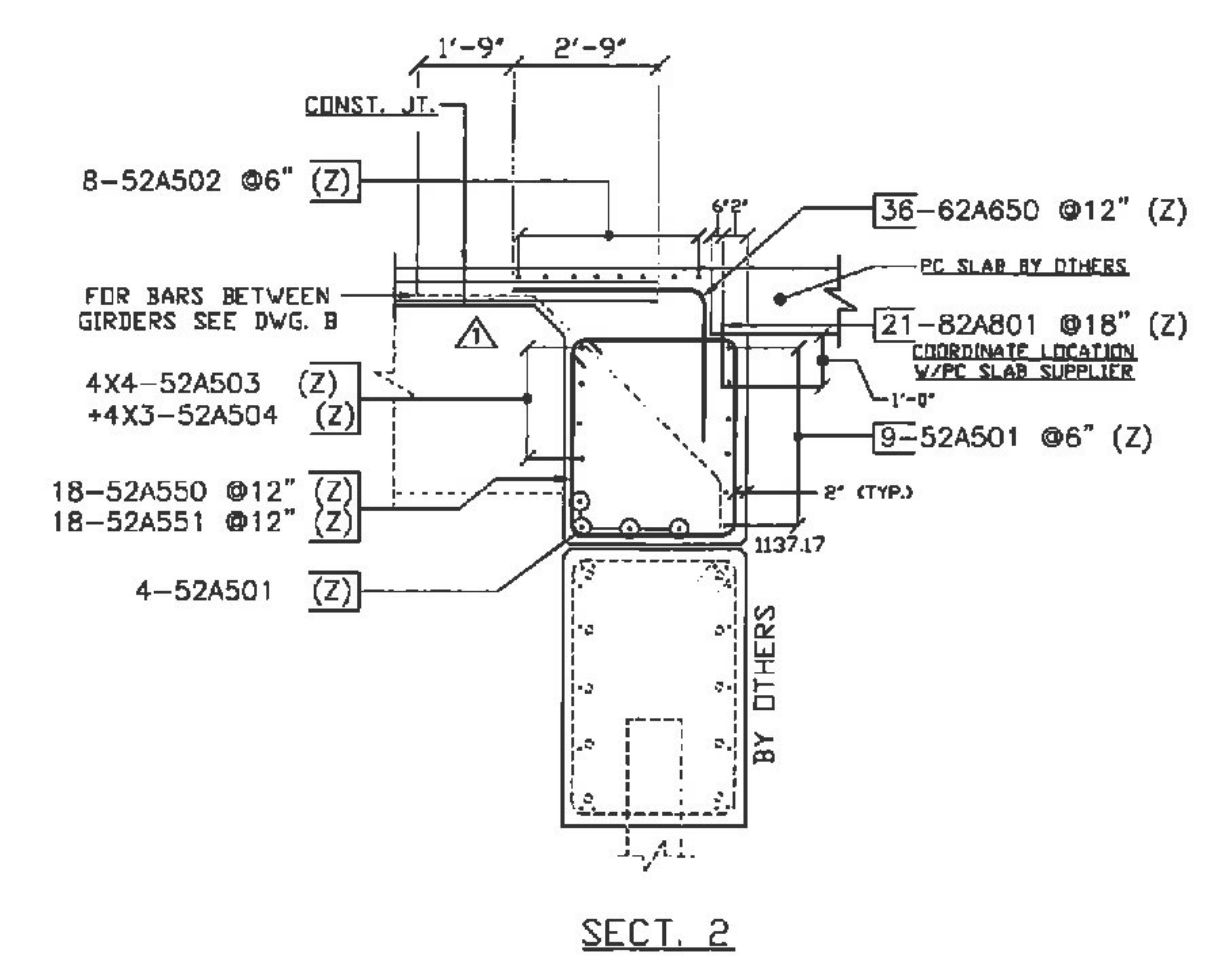
ELEVATIONS & DIMENSIONS SHOWN
ON THIS DWG. ARE FOR REINF.
DETAILING PURPOSES ONLY AND ARE
NOT INTENDED FOR CONSTRUCTION.

REINF. BARS ASTM A615 GRADE 60
DUAL COATED

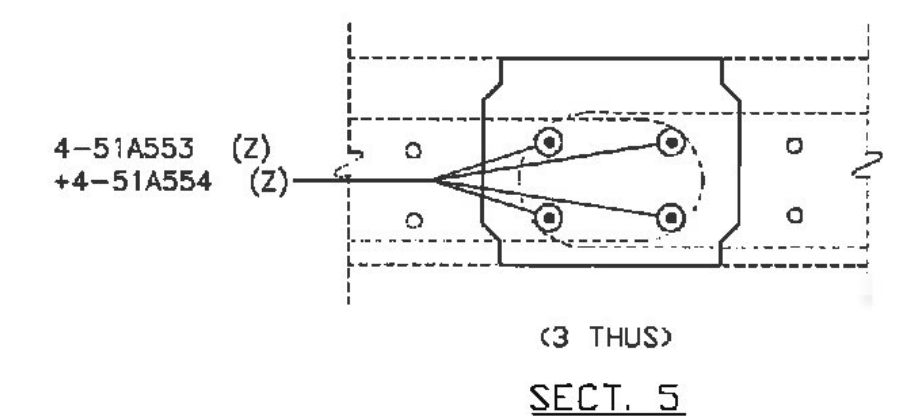
VERIFICATION OF UNCLEAR INFORMATION
MAY BE REQUESTED ON THIS DRAWING.
SHOULD VERIFICATION BE LEFT
UN-ADDRESSED IT WILL REMAIN AS
SHOWN AND ASSUME TO BE CORRECT.



SECT. 1



SECT. 2



SECT. 5

6					
5					
4					
3					
2	4-10-14	REVISD/ENG.COM/FOR APPROVAL			
1	3-3-14	FOR APPROVAL			
	DATE	REV.#	SENT FOR		
DIMENSION DIMENSION FABRICATORS INC. 2000 FRY STREET SUITE 100, W. 1200 PLY. DR. 251-1000 PLY. DR. 251-1000 FAX 251-1000 WWW.DIMENSIONFABRICATORS.COM					
STRUCTURE	VTAOT WARREN BRG 013-4(32) PRECAST				
LOCATION	BRIDGE 166 ROUTE 100 (MINOR ARTERIAL)				
ARCHITECT	WARREN, VT				
ENGINEER					
CUSTOMER	LUCK BROTHERS INC.				
DRAWN BY	ED	DATE	3/3/14	ORI #	8747
DRAWING COVERS				DRAWING #	
LEVEL 2 ABUTMENT				A	
DUAL COATED CIP REINFORCING					

QUALITY CONTROL PROCEDURES-PORTABLE BRIDGE UNITS.

ALL PROCEDURES, MATERIALS AND METHODS TO BE IN COMPLIANCE WITH PAGE 26 – SPECIAL PROVISIONS – PREFABRICATED BRIDGE UNIT SUPERSTRUCTURE.

1. S.D. IRELAND WILL BE SUPPLYING THE CONCRETE FROM ITS MONTPELIER PLANT AND WILL BE RESPONSIBLE FOR THE CONTRACTOR/SUPPLIER QC TESTING DURING CONCRETE PLACEMENT. S.D. IRELAND WILL SUPPLY AN ON SITE TECHNICIAN TO MONITOR AND DOCUMENT AIR CONTENT, WATER CEMENT RATIO AND SLUMP OF EACH TRUCK. S. D. IRELAND WILL ALSO PRODUCE CONCRETE TEST CYLINDERS FOR 7, 14, 28 DAY STRENGTHS. S.D. IRELAND WILL BE RESPONSIBLE FOR ANY ADJUSTMENTS TO THE CONCRETE AT THE PLANT AND OR IN THE FIELD TO MEET THE REQUIRED SPECIFICATIONS.
2. A PRE-PRODUCTION MEETING SHALL BE HELD BETWEEN THE CONTRACTOR AND RESIDENT ENGINEER BEFORE CONCRETE PLACEMENT.
3. VTRANS WILL RETAIN THEIR RESPONSIBILITIES FOR QUALITY ACCEPTANCE TESTING.
4. FOUR EXTRA CYLINDER SETS PER CONCRETE PLACEMENT SHALL BE TAKEN FOR EARLY STRENGTH BREAKS.
5. ALL INSIDE FORM DIMENSION AND R-BAR SPACING AND CLEARANCES SHALL BE REVIEWED AND DOCUMENTED BY THE CONTRACTOR AND RESIDENT ENGINEER BEFORE CASTING IS COMMENCED. ANY DEFICIENCIES SHALL BE CORRECTED TO MEET THE TOLERANCES BELOW.
6. BEFORE FORMS ARE ERECTED THE CONTRACTOR WILL PROFILE THE GIRDERS AT THE CASTING SITE THIS INFORMATION WILL BE USED TO DETERMINE BLOCKING DISTANCES AS DIRECTED BY THE ENGINEER.
7. FORMS SHALL HAVE A GENEROUS COATING OF FORM OIL APPLIED. CAUTION WILL BE TAKEN NOT TO HAVE PONDING OF FORM OIL IN THE BASE OF THE FORM OR ON ANY R-BAR.
8. ALL PRE-CAST WILL BE INSPECTED BY BOTH THE CONTRACTOR AND THE RESIDENT ENGINEER AND DOCUMENTED.
9. CURE WILL MEET THE REQUIREMENTS OF SECTION 501.17, AND WILL BE CONTINUOUSLY COVERED WITH WET BURLAP FOR THE SPECIFIED CURE PERIOD.

PORTABLE BRIDGE UNIT DIMENSIONAL TOLERANCES

+/- 1/4" – REINFORCING PLACEMENT, +/- 1/4" COVER AND CLEARANCE, 1" BAR SPACING.
LENGTH (EACH UNIT) +/- 3/4" (LENGTH OF ADJACENT UNITS SHOULDN'T VARY BY MORE THAN 3/4")
WIDTH +/- 3/8"
DEVIATION FROM DIAGONALS +/- 3/4" (HORIZONTAL)
DEVIATION SQUARENESS OR SKEW +/- 3/4"
HORIZONTAL ALIGNMENT +/- 3/8"

10. FIELD INSTALLATION TOLERANCES:

VERTICAL DEVIATION BETWEEN UNITS PRIOR TO GROUTING- +/- 1/4" (VERTICAL DEVIATIONS EXCEEDING 1/4" SHALL BE GROUND WITH DIAMOND CUP WHEELS OR OTHER MECHANICAL METHODS). THE CASTING OF ALL PBU UNITS WILL HAPPEN SIMULTANEOUSLY WITH A SINGLE SCREED MACHINE SPANNING THE ENTIRE WIDTH OF PBU 1-4. THIS SHOULD MINIMIZE ANY IRREGULARITIES IN THE JOINTS DEVIATION IN JOINT WITH- +/- 3/8".

11. EACH PIECE OF PRE-CAST SHALL BE MARKED WITH ITS UNIT NUMBER AND CASTING DATE AND ORIENTATION (MARKINGS PLACED ON THE SOUTH END OF THE UNIT.
12. CURING WILL MEET THE REQUIREMENTS OF SUBSECTION 501.17 (2) BURLAP CURE. PLACEMENT OF BURLAP WILL FOLLOW THE PROGRESS OF THE SCREED MACHINE FROM A WORK-PLATFORM WITH A LAG TIME NOT TO EXCEED 10 MINUTES. CRB WILL HAVE A POWER WASHER ON SITE FOR THE PURPOSE OF FOGGING AS NECESSARY. THE PROJECT SUPERINTENDENT WILL BE RESPONSIBLE FOR MONITORING THE CURE. ANY ADJUSTMENTS REQUIRED OR REQUESTED BY THE RESIDENT ENGINEER WILL BE MADE TO MAINTAIN THE PROPER CURING OF THE PBU UNITS. CRB WILL CHECK THE CURE DAILY INCLUDING WEEKENDS AND OTHER NON-WORKING DAYS. ALL CURING ACTIVITIES WILL BE DOCUMENTED ON THE CONTRACTORS DAILY REPORT. SILANE SEALER TO BE APPLIED TO THE UNITS AFTER CURING AND PRIOR TO SHIPPING.
13. CONCRETE FINISHING:

PBU FINISH WILL BE VIBRATORY SCREED FINISH. THE MORRISON SCREED WILL SPAN THE ENTIRE WIDTH OF THE PBU UNITS AND WILL RESIDE ON THE FASCIA PANELS. DRY RUNS WILL BE PERFORMED AND ADJUSTMENTS WILL BE MADE TO THE SCREED TO THE SATISFACTION OF THE ENGINEER. TOLERANCE FOR SCREED MACHINE +/- 1/4". HAND FINISHING WILL BE ALLOWED ONLY WERE IT IS NOT POSSIBLE TO USE THE SCREED MACHINE. MAGNESIUM BULL FLOATS IF NECESSARY WILL BE USED FROM A WORK BRIDGE POSITIONED BEHIND THE SCREED TO REMOVE ANY IRREGULARITIES IN THE CONCRETES SURFACE.

REPAIR OF UNITS

1. MINOR DEFECTS IN THE PBU UNITS AS DEFINED IN THE CONTRACT SPECIAL PROVISION PAGE 29, PARAGRAPH (m) SHALL BE FIXED USING AN OVERHEAD AND VERTICAL REPAIR MATERIAL FROM THE VERMONT AGENCY OF TRANSPORTATION APPROVED PRODUCTS LIST.
2. CRACKING .01" OR LESS SHALL BE SEALED WITH A PENETRATING SEALING FROM THE VERMONT AGENCY OF TRANSPORTATION APPROVED PRODUCTS LIST.
3. CRACK WIDTHS MEASURING .01"-.08" SHALL BE FILLED WITH AN EPOXY INJECTED CRACK FILLER FROM VERMONT AGENCY OF TRANSPORTATION APPROVED PRODUCT LIST.
4. PRODUCTION SITE HANDLING UNITS SHALL NOT BE LIFTED OR MOVED UNTIL DESIGN STRENGTH OF 4,000 PSI HAS BEEN MET.

PRE-ASSEMBLY:

LUCK BROTHERS, INC. WILL BE CASTING THE PBU UNITS OFF SITE. EACH UNIT WILL BE CONSTRUCTED IN A CASTING YARD APPROXIMATELY 2 MILES FROM THE SITE. PBU UNITS WILL BE CAST SIMULTANEOUSLY. THE UNIT WILL BE CAST AT THE SAME TIME WITH ONLY 9" BETWEEN BULK-HEADS. PRE-ASSEMBLY WILL NOT BE REQUIRED.

SHIPPING AND HANDLING:

PBU UNITS WILL BE CONSTRUCTED OFF SITE AND MOVED INTO PLACE ON TRAILERS AS PER ERECTION PLAN TO BE SUBMITTED UNDER SEPARATE COVER. THE PBU UNITS WILL BE INSTALLED WITH CRANES AS PER ERECTION PLAN UNDER SEPARATE COVER. DO TO TIME RESTRICTIONS DURING THE BCP ANY REPAIR WORK (IF NEEDED) WILL BE REPAIRED BEFORE THE PBU UNIT ARE IN FINAL PLACEMENT. REPAIRS PRIOR TO FINAL PLACEMENT OF PBU'S DOES NOT RELIEVE THE CONTRACTOR FROM REPAIRING DEFECTS OR DAMAGE (IF NECESSARY) TO THE PBU'S DURING PLACEMENT AND SUBSEQUENT CONSTRUCTION ACTIVITIES.

ROBERT M. SUTHERLAND, P

ENGINEERS-SURVEYORS-MATERIAL TESTI

PLATTSBURGH

NEW YORK

Approved	X	Approved As Noted
Rejected		
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Date: 5/28/2014		
McFarland Johnson		
By: D. Kull		

Vermont Agency of Transportation

RECEIVED

ON: May 23, 2014

and Checked for

CONFORMANCE

BY: Rob Young DATE: 05/30/2014

1	PER REVIEWER COMMENTS	05/22/14
REV	REVISION	DATE

REVISIONS

PROJECT

WARREN BRF
013-4(32)
VT ROUTE 100
WARREN, VT

CLIENT

LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

SHEET TITLE

QUALITY CONTROL
PROCEDURES/PLAN

DRAWN BY: KTW

CHECKED BY: TL

DATE: 04/28/14

SHEET NO:

Vermont Agency of Transportation

RECEIVED

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BY: Rob Young DATE: 05/30/2014

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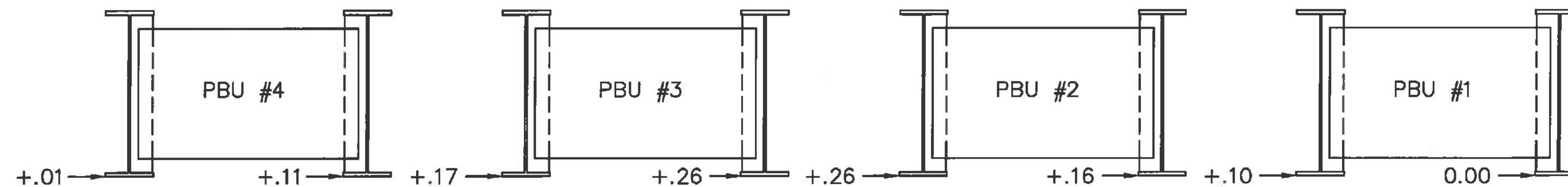
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ROBERT M. SUTHERLAND, P

ENGINEERS-SURVEYORS-MATERIAL TESTI

PLATTSBURGH

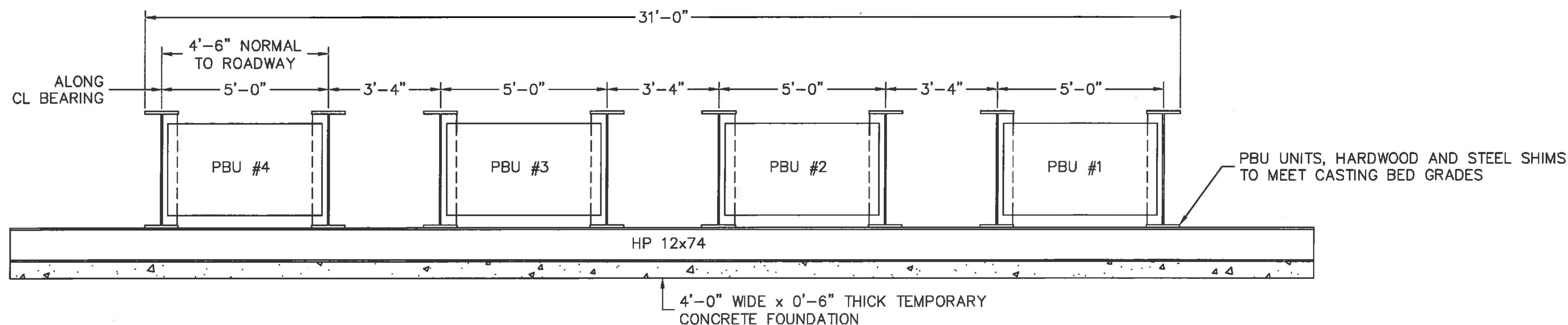
NEW YORK



BEARING ADJUSTMENT FOR CASTING BED
LOOKING BACKSTATION

CASTING SEQUENCE:

1. POUR 6" THICK BY 4' WIDE CONCRETE PAD AT ENDS ON COMPACTED SUBGRADE
2. PLACE 12" H-PILE ON CONCRETE PAD
3. SET INDIVIDUAL PLATE GIRDERS, SHIM TO GRADE.
4. BOLT AND TORQUE INDIVIDUAL PBU SECTIONS
5. PROFILE INDIVIDUAL GIRDERS
6. TIE R-BAR, BUILD BULKHEADS PBU-UNITS 1-4
7. SET SCREED, TEST RUN
8. CAST PBU DECK SECTIONS 1-4 SIMULTANEOUSLY



LOOKING BACKSTATION

REV	REVISION	DATE
1	PER REVIEWER COMMENTS	05/22/14

REVISIONS

PROJECT

WARREN BRF
013-4(32)
VT ROUTE 100
WARREN, VT

CLIENT

LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

SHEET TITLE

PRE-CAST BRIDGE UNIT
PBU-CASTING PLAN

DRAWN BY: KTW

CHECKED BY: TL

DATE: 04/28/14

SHEET NO:

Approved

Rejected

X

Approved As Noted

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McFarland Johnson

Date

5/29/2014

By

D. Kull

Vermont Agency of Transportation

RECEIVED

ON: May 23, 2014

and Checked for

CONFORMANCE

BY: Rob Young DATE: 05/30/2014

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIAL AND RESEARCH SECTION - STRUCTURAL CONCRETE UNIT

STRUCTURAL CONCRETE MIX DESIGN SUBMISSION

Concrete class: HPC A

Additional Description

Ready Mix Supplier: IRELAND CONCRETE - BURLINGTON, VT

Designed By: Nate Perry

Design strength: 4000 PSI

Design by dry weight or saturated surface dry: SSD

Agency Use Only

Mix ID: HP00-A-0

Mix Design #

Approved by

Approved Date

Spec Book Year: 2014

Mix designs are valid for a 12 month period from date of approval or unless there is a change in material, material property or design parameter.

Cement:

701.02

Source:

Brand Name:

Specific Gravity

lb/cy

0.00

cf

Cement Type III:

701.04

Source:

Brand Name:

Specific Gravity

lb/cy

0.00

cf

Blended Cement:

701.06

Source: LAFARGE - TERCEM - MONTREAL, EAST PLANT

Brand Name: Tercem 3000

Specific Gravity

3.020

811

lb/cy

3.24

cf

Cement with Slag:

701.07

Source:

Brand Name:

Specific Gravity

lb/cy

0.00

cf

Pozzolan:

725.03(a)

Source:

Brand Name:

Specific Gravity

lb/cy

0.00

cf

Fly Ash:

725.03(a)

Source:

Brand Name:

Specific Gravity

lb/cy

0.00

cf

Silica Fume:

725.03(b)

Source:

Brand Name:

Specific Gravity

lb/cy

0.00

cf

Slag:

725.03(c)

Source:

Brand Name:

Specific Gravity

lb/cy

0.00

cf

Water

Air Content Target

31.5

gals

262.9

lb/cy

4.21

cf

7.0

%

1.89

cf

0.00

cf

Coarse Aggregate 3/8"

704.02A

Source:

Absorption

Specific Gravity

lb/cy

0.00

cf

Coarse Aggregate 3/4"

704.02B

Source: IRELAND PIT - WILLISTON, VT

Absorption: 0.37

Specific Gravity: 2.800

1725

lb/cy

9.87

cf

Coarse Aggregate 1 1/2"

704.02C

Source:

Absorption

Specific Gravity

lb/cy

0.00

cf

Fine Aggregate:

704.01

Source: HINESBURG SAND & GRAVEL - HINESBURG,

Absorption: 1.30

Specific Gravity: 2.670

1298

lb/cy

7.79

cf

Fineness Modulus: 1.80

Air Entrainment Admixture

725.02(b)

Source: W.R. GRACE & CO. - CAMBRIDGE, MA

Brand Name: Darex II AEA

Specific Gravity: 1.000

3

oz/cy

Retarder Admixture:

725.02(c)

Source: MASTER BUILDERS INC - MESQUITE, TX

Brand Name: Pozzolith 100 XR

Specific Gravity: 1.000

2

oz/cwt

High Range Water Reducer Admixture:

725.02(h)

Source: MASTER BUILDERS INC - MESQUITE, TX

Brand Name: Glenium 7500

Specific Gravity: 1.000

8.25

oz/cwt

Other Admixtures:

Source:

Brand Name:

Specific Gravity

0.00

cf

Source:

Brand Name:

Specific Gravity

0.00

cf

Source:

Brand Name:

Specific Gravity

0.00

cf

TOTAL

49.980

3897

lb

27.00

cf

Maximum Water/Cementitious Ratio: 0.44

Maximum Water (gal/cy): 32.2

Slump Min/Max (inch): - min - max

Air Content Min/Max (%): 6.5 min 8.5 max

Design Unit Wt. (lb/cf): 144.33

Notes:

Admixture dosages may vary on the basis of the ambient temperature, travel time, job site conditions and contractors preferred slump.

ROBERT M. SUTHERLAND, P
ENGINEERS—SURVEYORS—MATERIAL TESTI
PLATTSBURGH NEW YORK

1	PER REVIEWER COMMENTS	05/22/14
REV	REVISION	DATE

REVISIONS

PROJECT

WARREN BRF
013-4(32)
VT ROUTE 100
WARREN, VT

CLIENT

LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

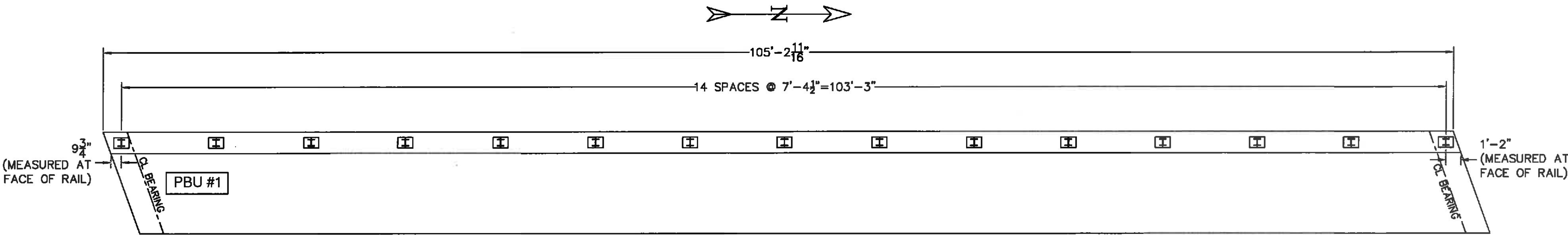
SHEET TITLE

PRE-CAST BRIDGE UNIT
CONCRETE MIX DESIGN

DRAWN BY: KTW
CHECKED BY: TL
DATE: 04/28/14
SHEET NO:

10

ROBERT M. SUTHERLAND, P
ENGINEERS-SURVEYORS-MATERIAL TESTI
PLATTSBURGH NEW YORK



BRIDGE RAIL ANCHORAGE LAYOUT PLAN

PBU #1 SHOWN,

Approved

Rejected

X

Approved As Noted

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Date

5/29/2014

By

D. Kull

Vermont Agency of Transportation
RECEIVED
ON: May 23, 2014
and Checked for
CONFORMANCE
BY: Rob Young DATE: 05/30/2014

1	PER REVIEWER COMMENTS	05/22/14
REV	REVISION	DATE

REVISIONS

PROJECT

WARREN BRF
013-4(32)
VT ROUTE 100
WARREN, VT

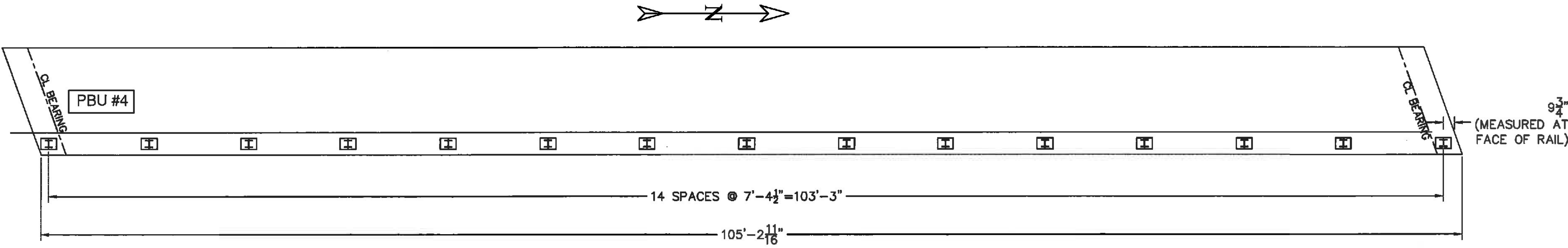
CLIENT

LUCK BROTHERS, INC.
TRADE ROAD
PLATTSBURGH, NY 12901

SHEET TITLE

PRE-CAST BRIDGE UNIT
ANCHORAGE LAYOUT

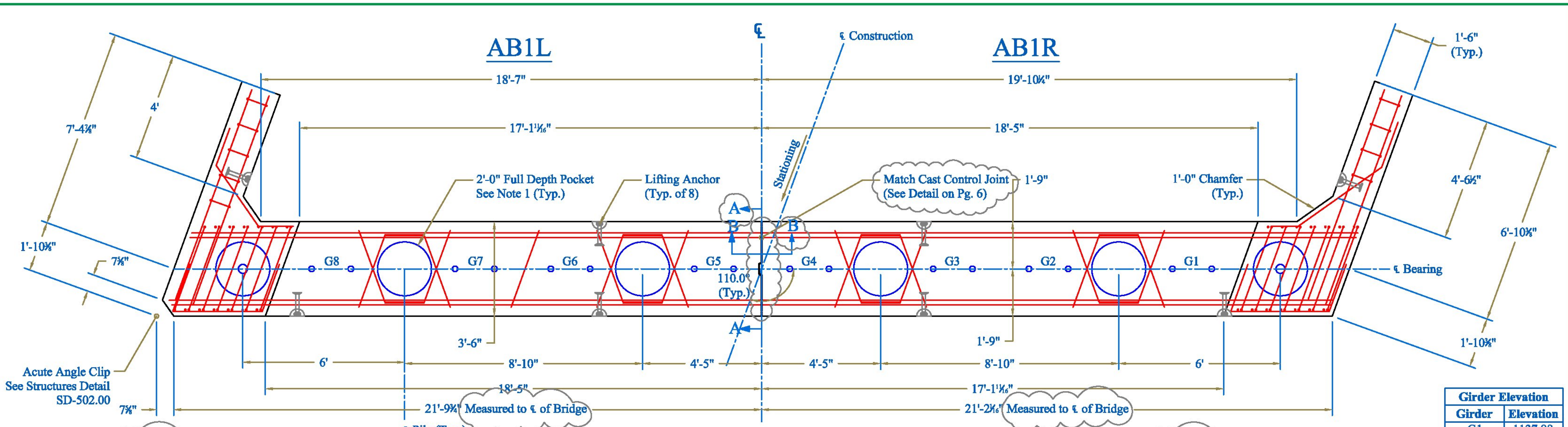
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CHECKED BY: TL
DATE: 04/28/14
SHEET NO:



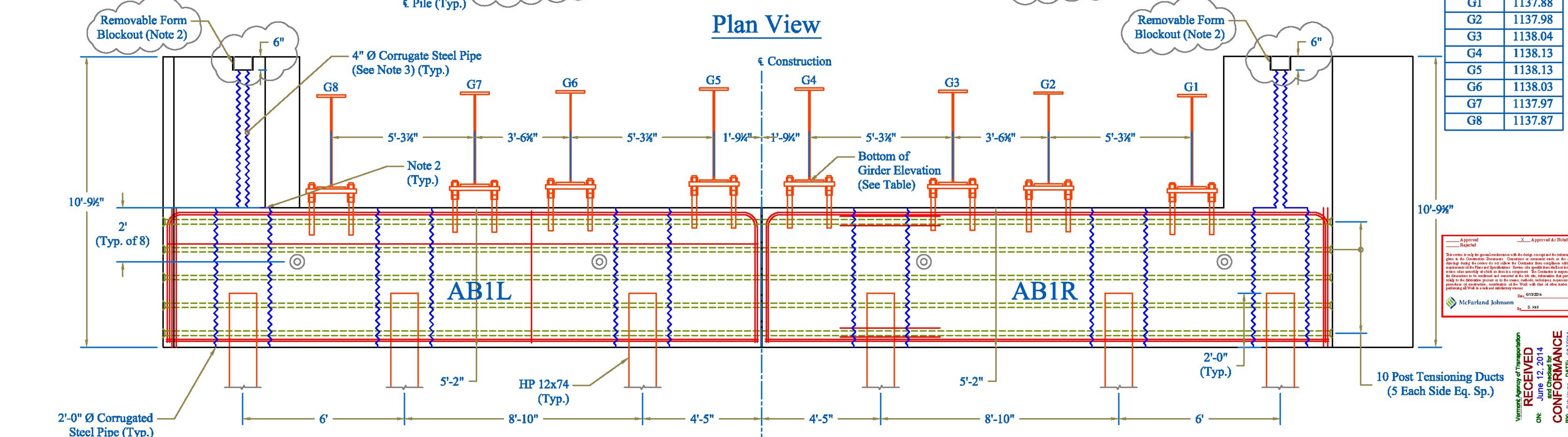
BRIDGE RAIL ANCHORAGE LAYOUT PLAN

PBU#4 SHOWN,





Plan View



Elevation View

Girder Elevation	
Girder	Elevation
G1	1137.88
G2	1137.98
G3	1138.04
G4	1138.13
G5	1138.13
G6	1138.03
G7	1137.97
G8	1137.87

Approved _____
Rejected _____

Approved As Noted _____

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McFarland Johnson
DATE: 6/13/2014
BY: D. J. J.

RECEIVED
June 12, 2014
ON: June 12, 2014
First Checked for
CONFORMANCE
DATE: 6/12/2014

VT Agency of Transportation

AB1L Weight = 76,790 lbs
AB1R Weight = 77,140 lbs

CONTRACTORS VISPE: NOTES:
1. Use 24" Galvanized Corrugated Steel Pipe for Pile Pockets Conforming to Subsection 711.01.
2. Form Top 6" with Removable Form to Eliminate Exposed Corrugated Steel on the Top of The Abutment
3. 4" Galvanized Corrugated Steel Pipe to Conform to Subsection 711.01.
4. Richmond ties, 2 part epoxy paint any portion of ties outside the clear area plus 1" deeper and any broken section. Patch hole per manufacturers directions to achieve the correct perimeter edge conditions.

PRECAST CONCRETE ABUTMENT SHOP DRAWINGS (SDI JOB #14046)
SUPERVISOR: M. WHEELER
DETAILER: I. ADAMS
CHECKER: E. Barendse
ENGINEER: N/A

PROJECT NAME: Warren
PROJECT #: BR# 013-4(32)
LOCATION: Bridge #166
Route 100, Warren, VT

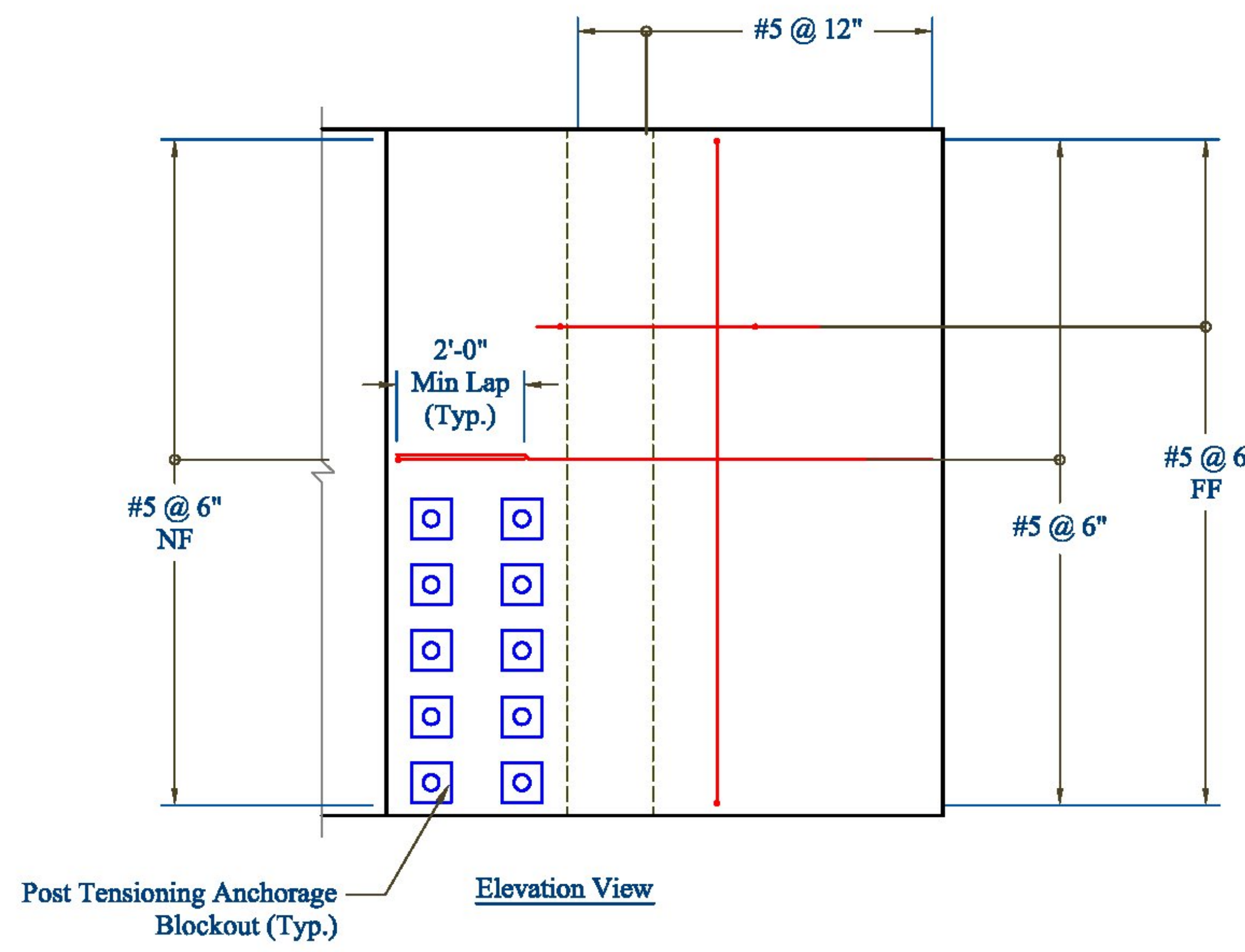
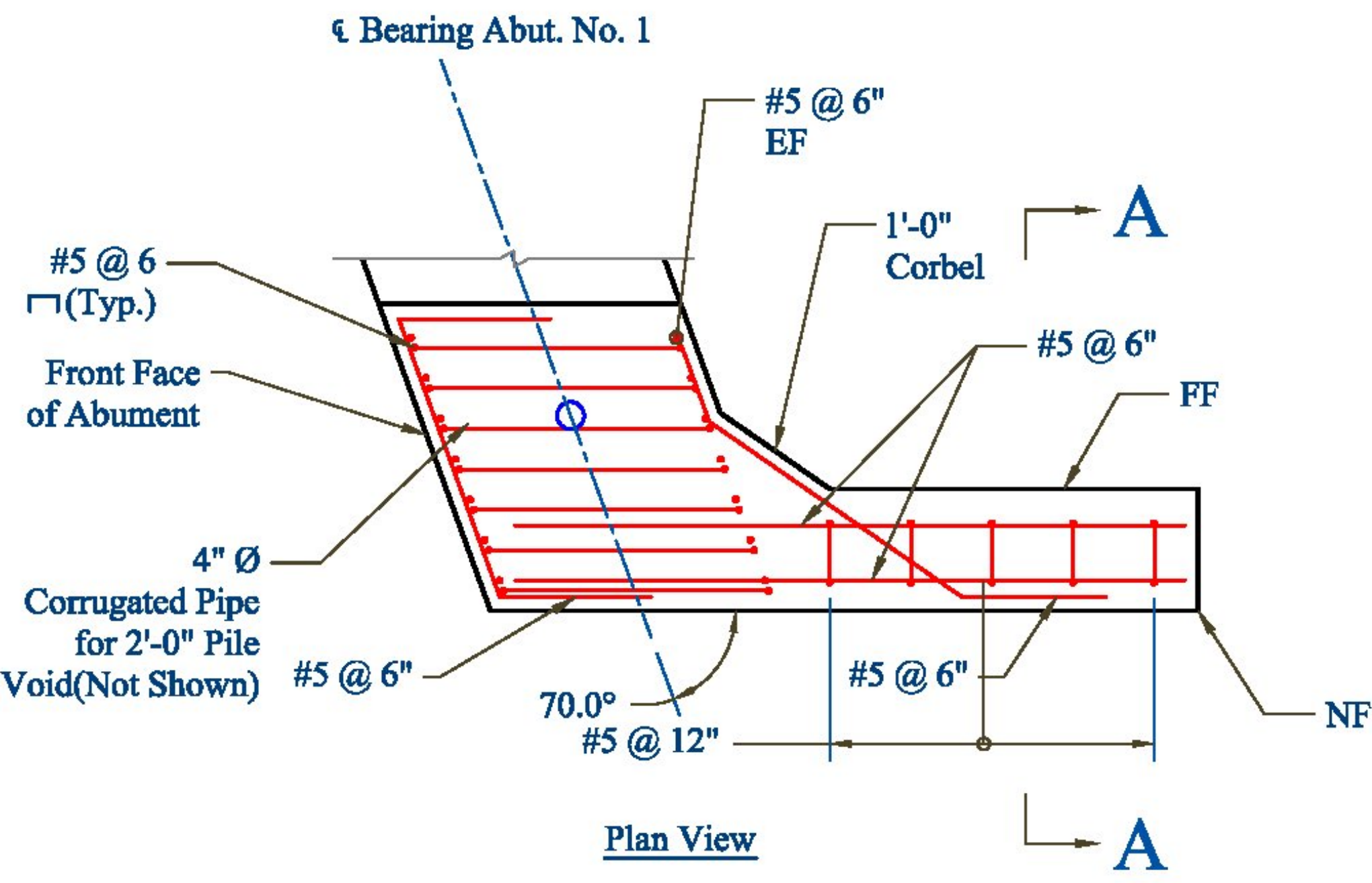
Luck Brothers, Inc
73 Trade Road
Plattsburg, NY, 12901
Ph: (518)-561-4321
04/08/2014

FABRICATOR:
193 INDUSTRIAL AVE.
WILLISTON, VT 05495
Ph: (802) 658-0201

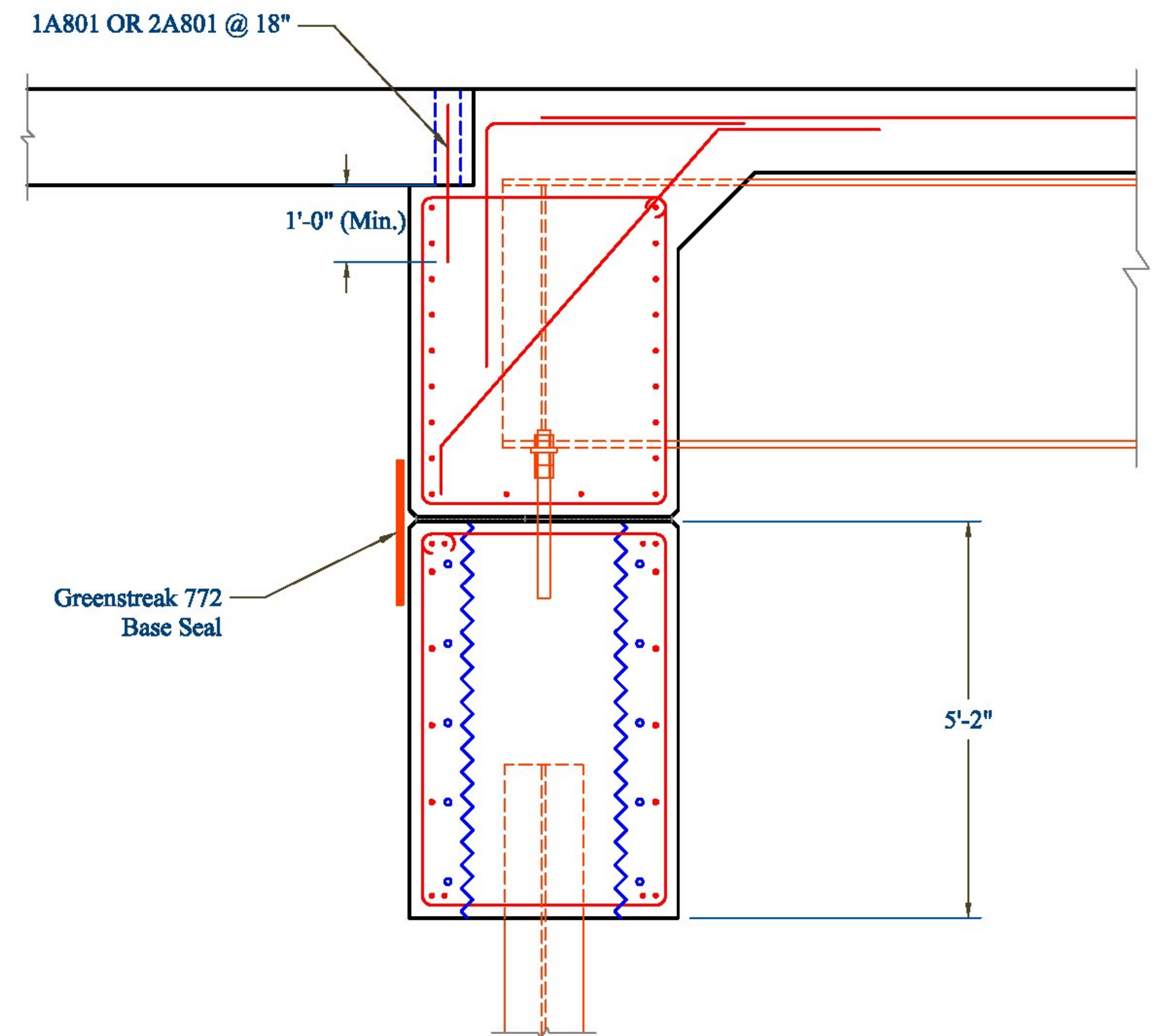
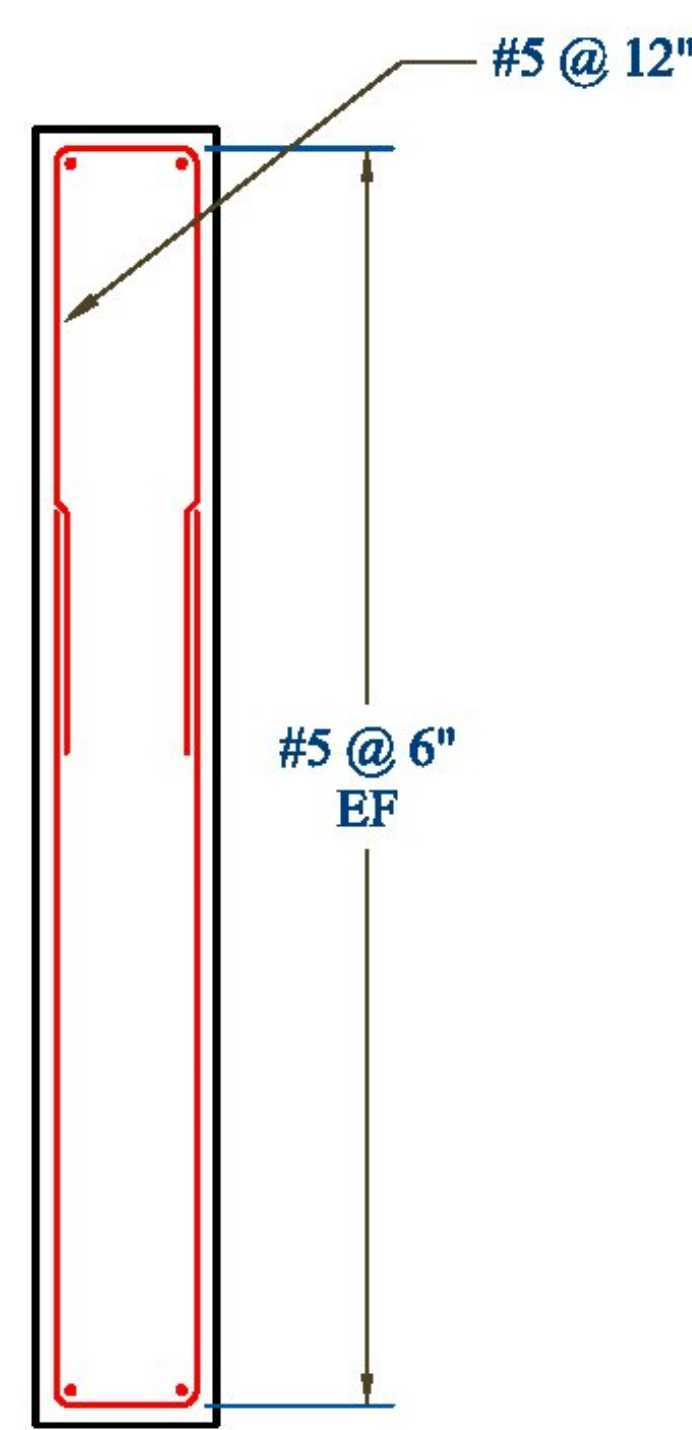
SD Ireland
PRECAST

Abutment 1

3 of 7



Wing Wall Detail
Wing Wall 1 Shown



Approach Slab to Abutment Detail

RECEIVED
June 12, 2014
and Checked for
CONFORMANCE
BY: Rob Young DATE: 6/17/2014

Approved _____
Rejected _____

X Approved As Noted

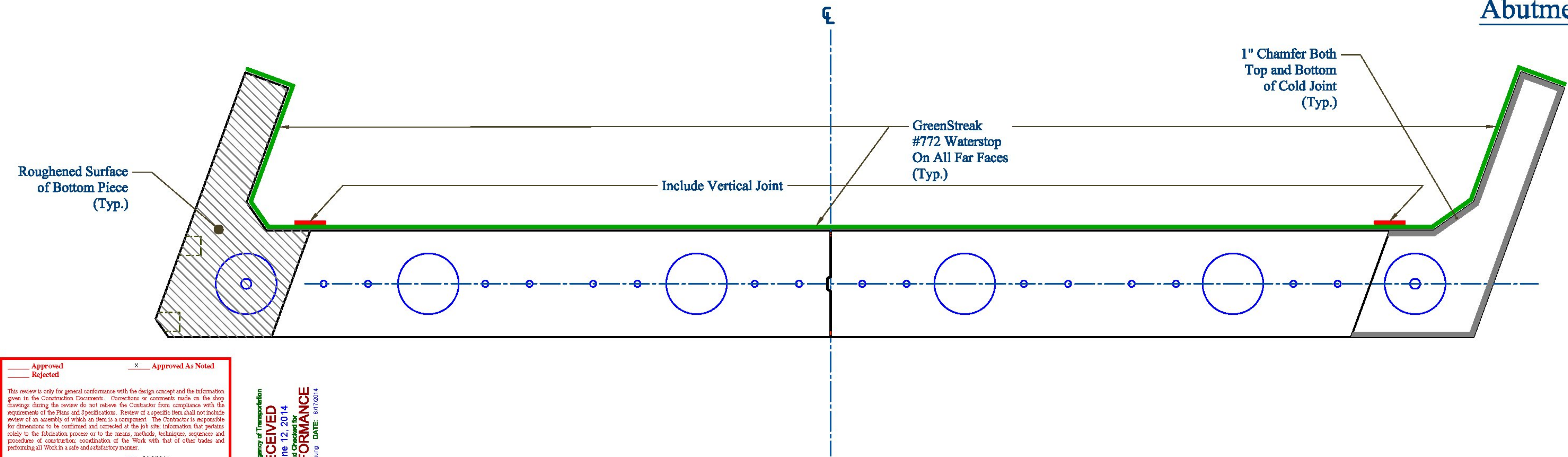
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Date: 6/13/2014
By: D. Kull

McFarland Johnson

CONTRACTORS VISPE:	PRECAST CONCRETE ABUTMENT SHOP DRAWINGS (SDI JOB #14046)		Luck Brothers, Inc 73 Trade Road Plattsburg, NY, 12901 Ph: (518)-561-4321	FABRICATOR: 193 INDUSTRIAL AVE. WILLISTON, VT 05495 Ph: (802) 658-0201	SD Ireland PRECAST
	SUPERVISOR: M. WHEELER DETAILER: I. ADAMS CHECKER: E. Barendse ENGINEER: N/A	PROJECT NAME: Warren PROJECT #: BRF 013-4(32) LOCATION: Bridge #166 Route 100, Warren, VT	06/12/2014	Abutment 2	5 of 7

Abutment Plan View



Approved

Rejected

X

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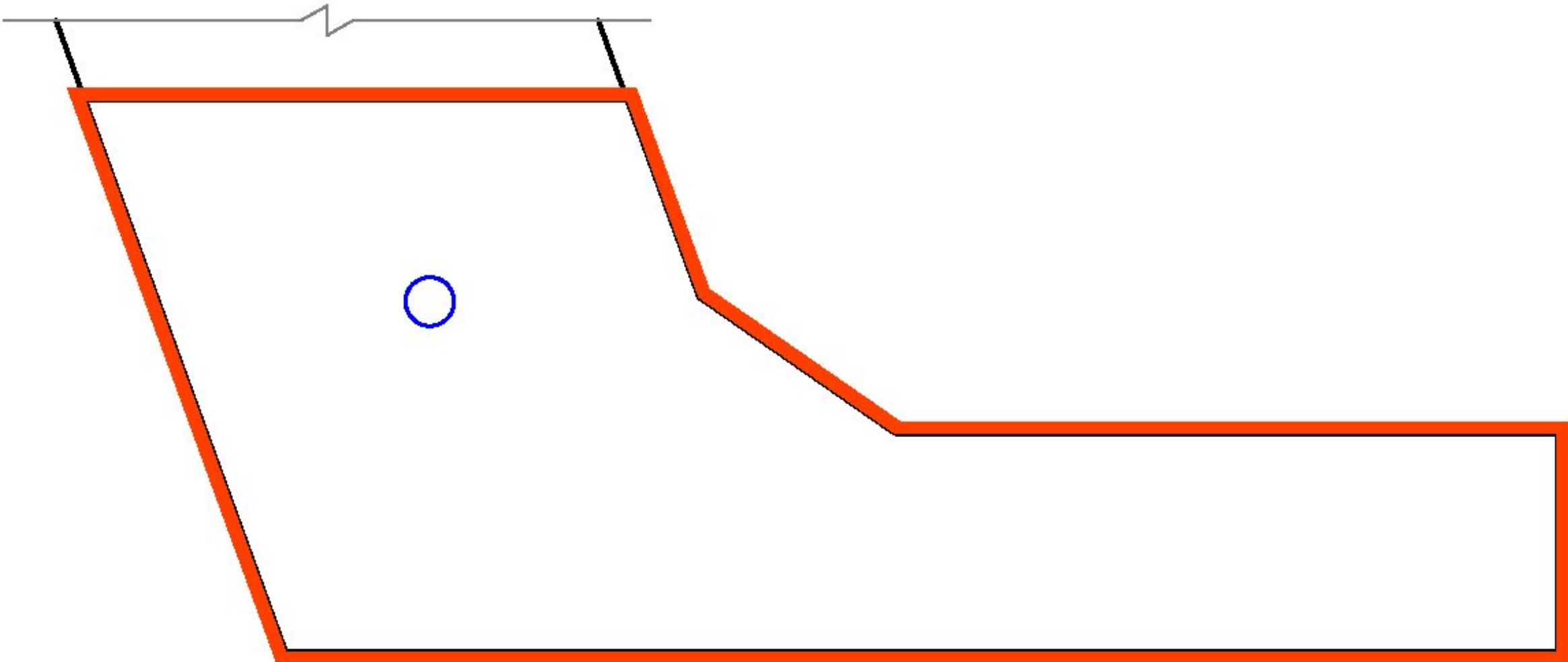
McFarland Johnson

Date: 6/13/2014

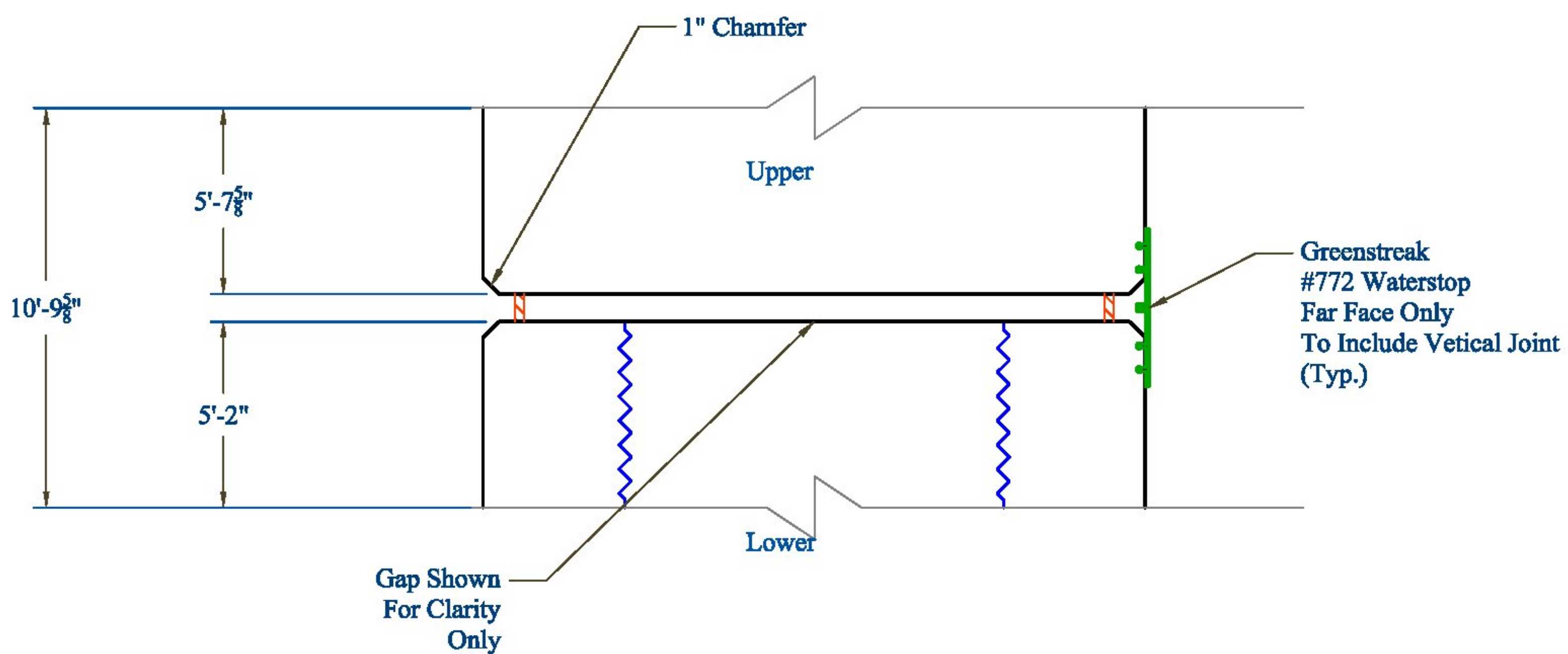
By: D. Kull

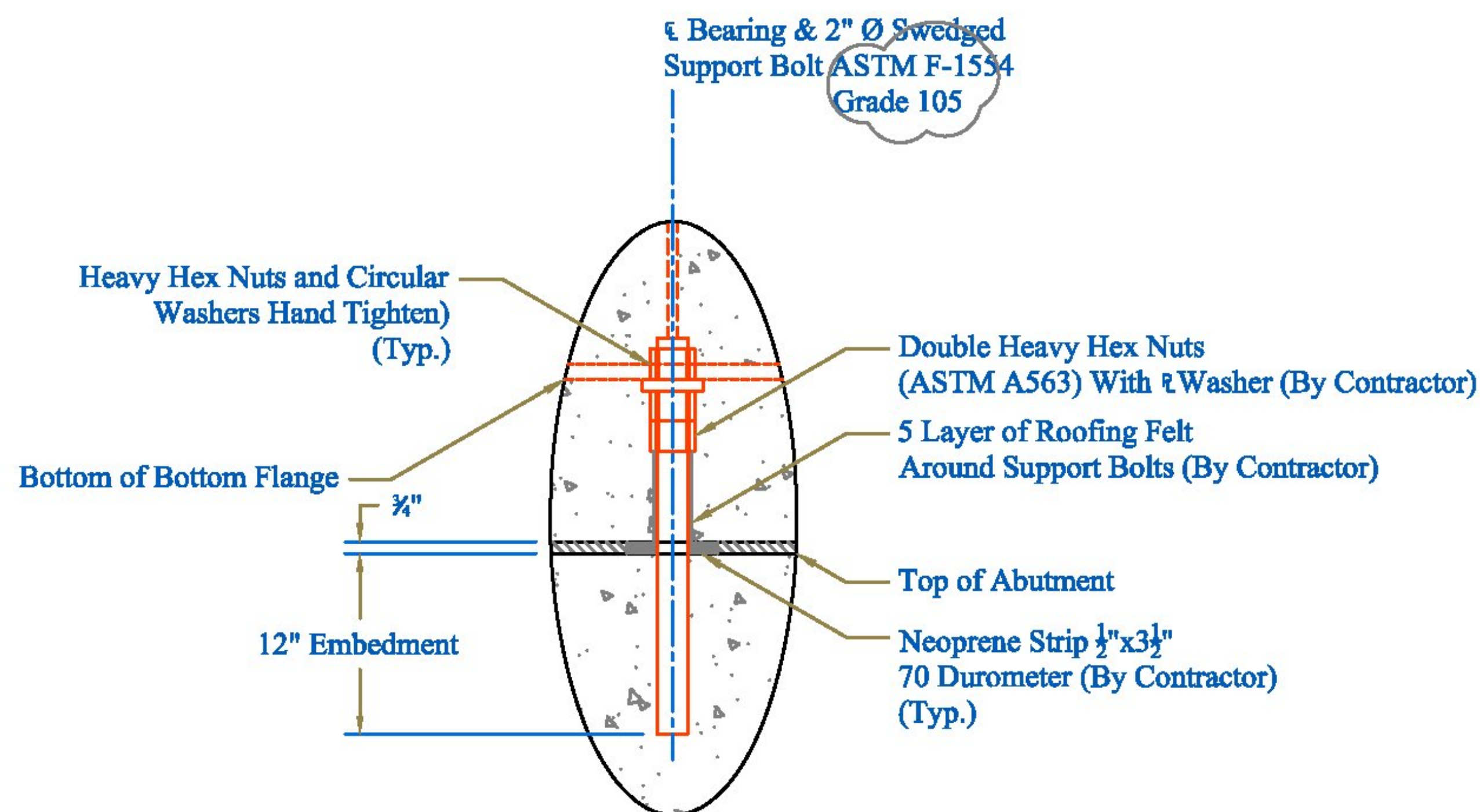
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June 12, 2014
ON: and Checked for
CONFORMANCE
BY: Rob Young DATE: 6/17/2014

Upper Piece Plan View

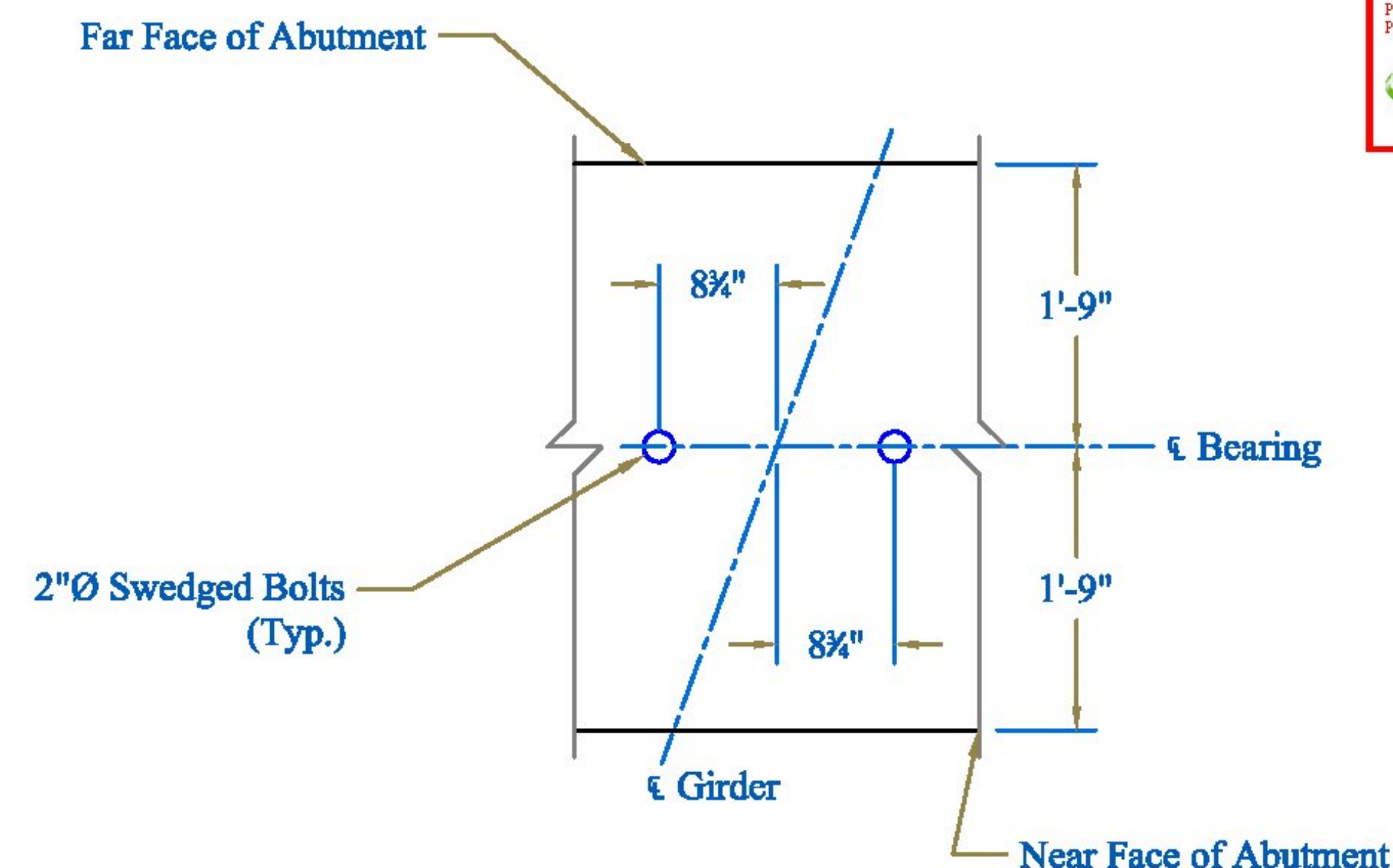


Water Stop Joint Detail





Support Bolt Detail



Support Bolt Layout

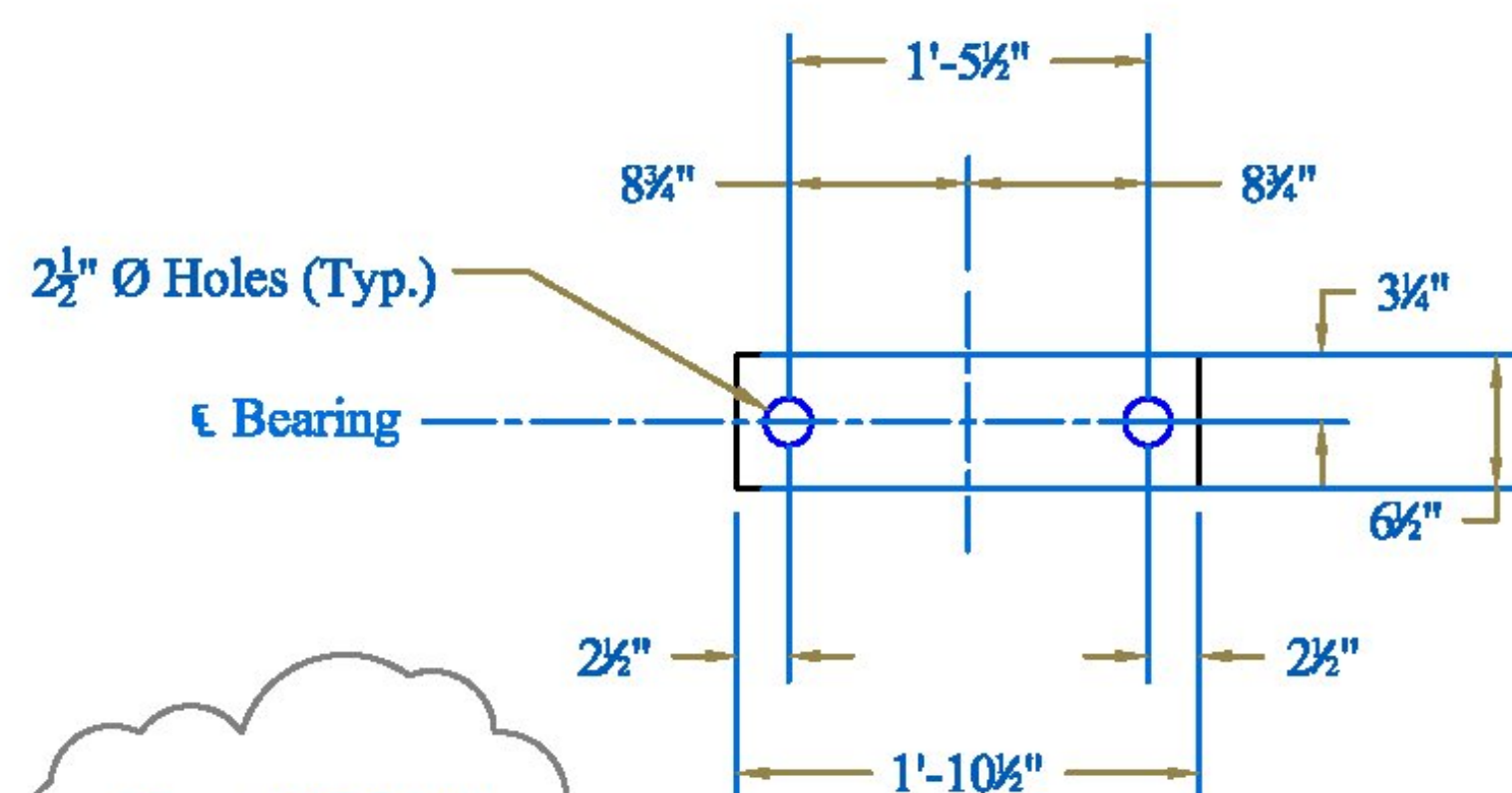
Approved _____ X _____ Approved As Noted
Rejected _____

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Date: 6/13/2014
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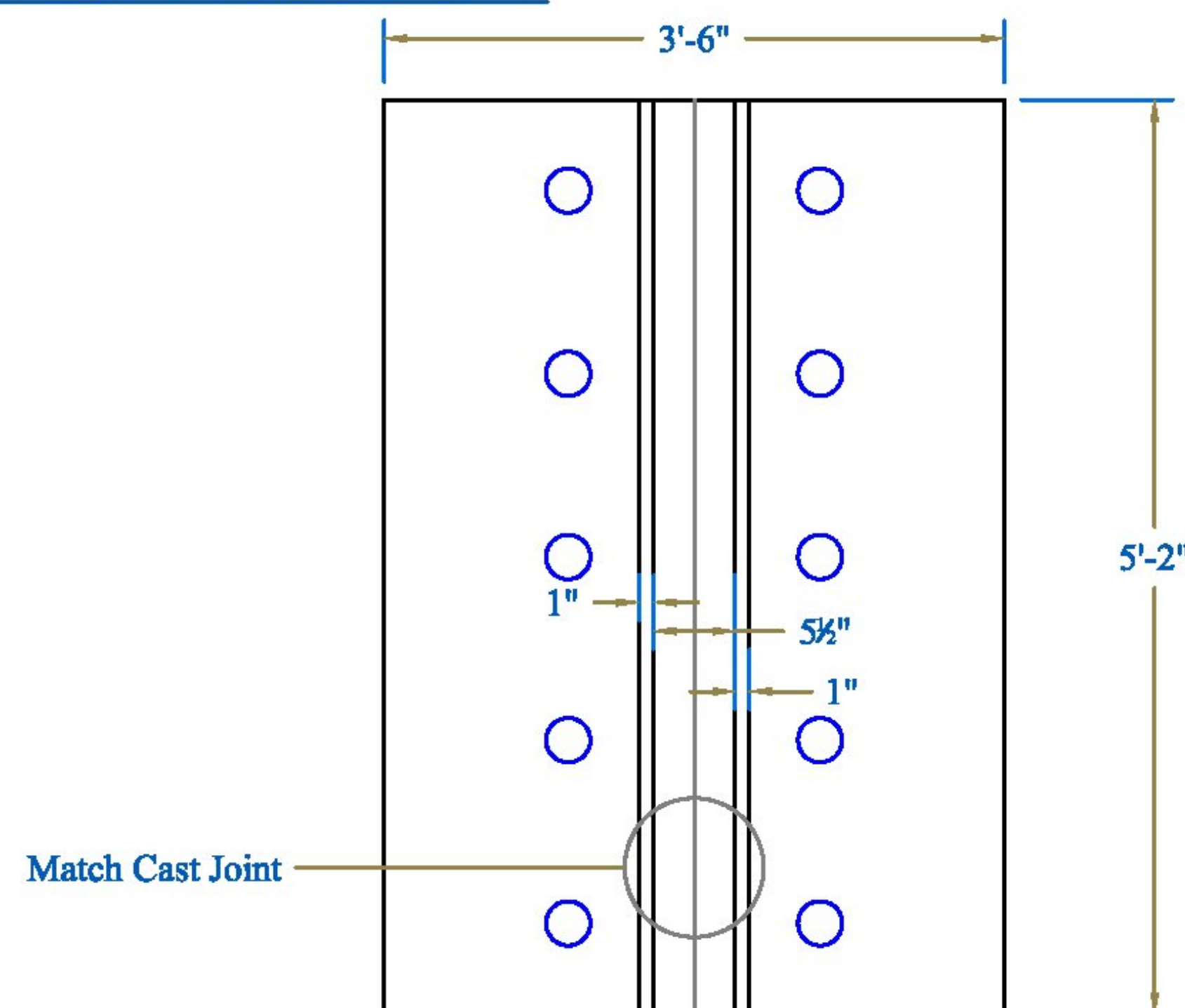
McFarland Johnson

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BY: Rob Young DATE: 6/17/2014

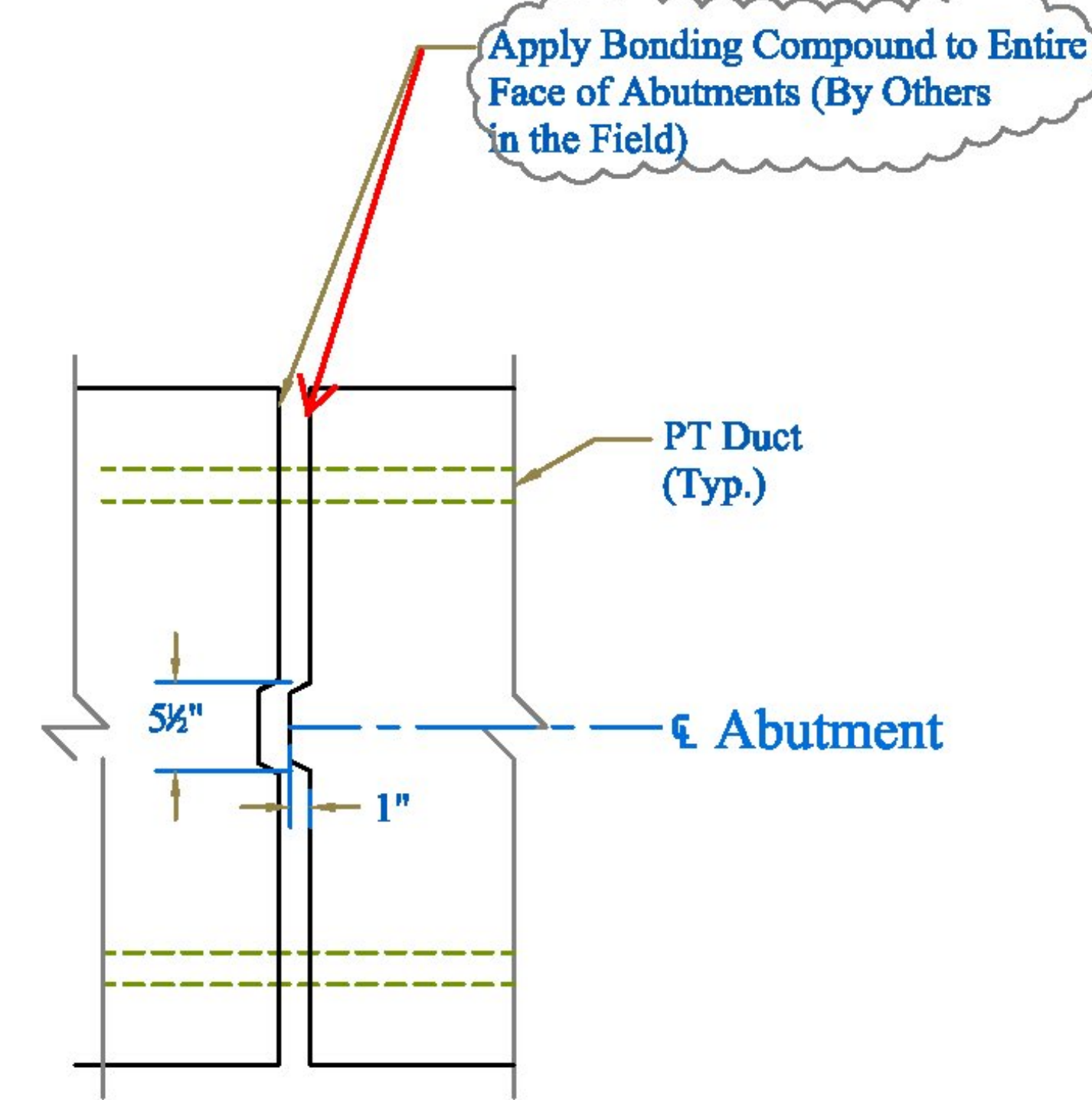


Leveling Plate

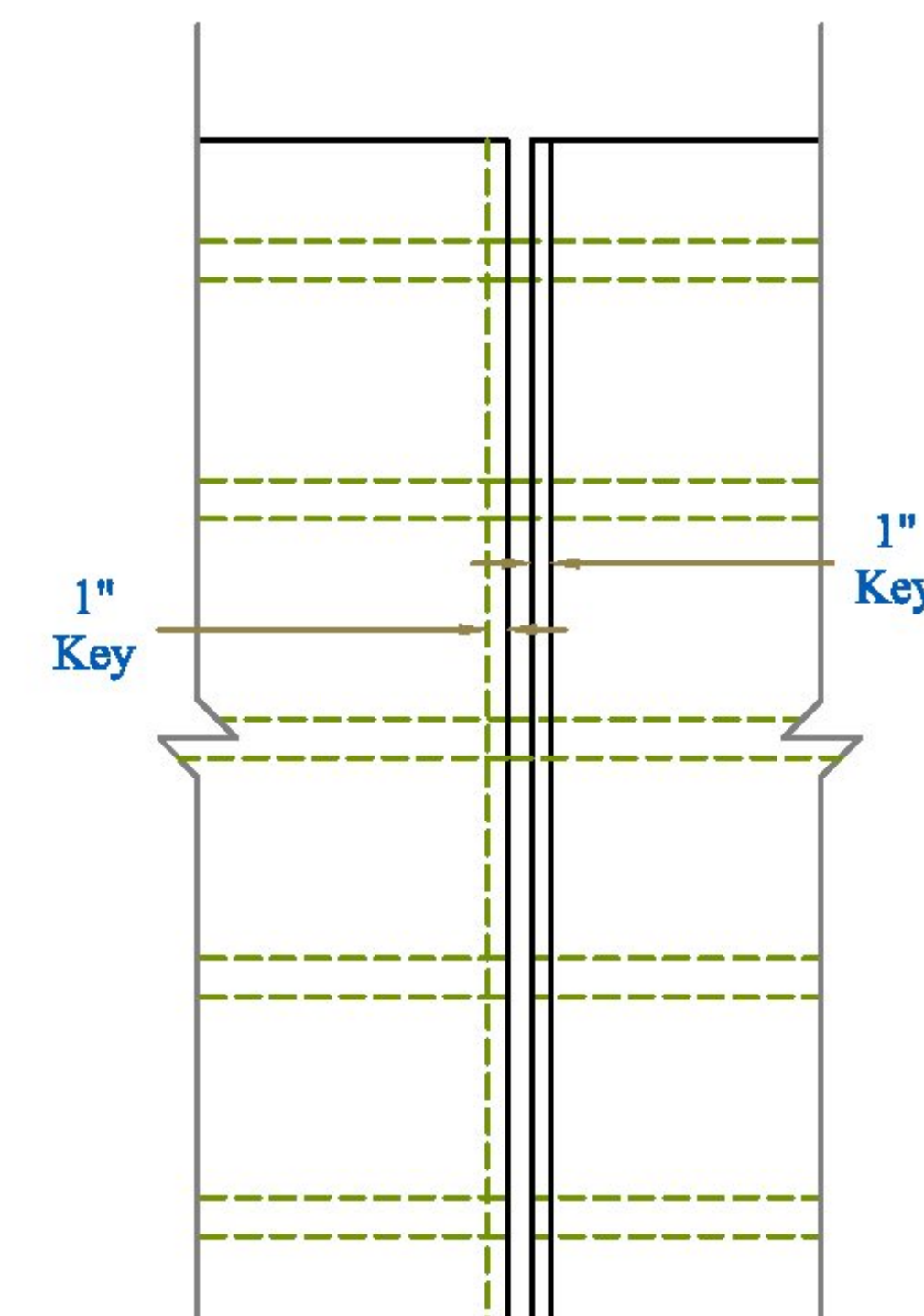
Match Cast Detail



Abutment Face: A-A



Plan View: B-B



Section View

CONTRACTORS VISPE:

PRECAST CONCRETE ABUTMENT SHOP DRAWINGS (SDI JOB #14046)

SUPERVISOR: M. WHEELER
DETAILER: I. ADAMS
CHECKER: E. Barendse
ENGINEER: N/A

PROJECT NAME: Warren
PROJECT #: BRF 013-4(32)
LOCATION: Bridge #166
Route 100, Warren, VT

Luck Brothers, Inc
73 Trade Road
Plattsburg, NY, 12901
Ph: (518)-561-4321

04/08/2014

FABRICATOR:
193 INDUSTRIAL AVE.
WILLISTON, VT 05495
Ph: (802) 658-0201

Connection Details

SD Ireland
PRECAST

6 of 7



LEGEND:
CONT.-CONTINUOUS
TRANS.-TRANSVERSE
DWLS.-DWELLS
VERTS.-VERTICAL
HORIZ.-HORIZONTAL
T&B -TOP & BOTTOM
I.F.-INNER FACE
O.F.-OUTER FACE
E.E.-EACH END
E.F.-EACH FACE
F.F.-FRONT FACE
R.F.-REAR FACE
E.W.-EACH WAY
O.C.-ON CENTER
L.W.-LONG WAY
S.W.-SHORT WAY

ALL DUAL COATED REINF. DENOTED (Z)

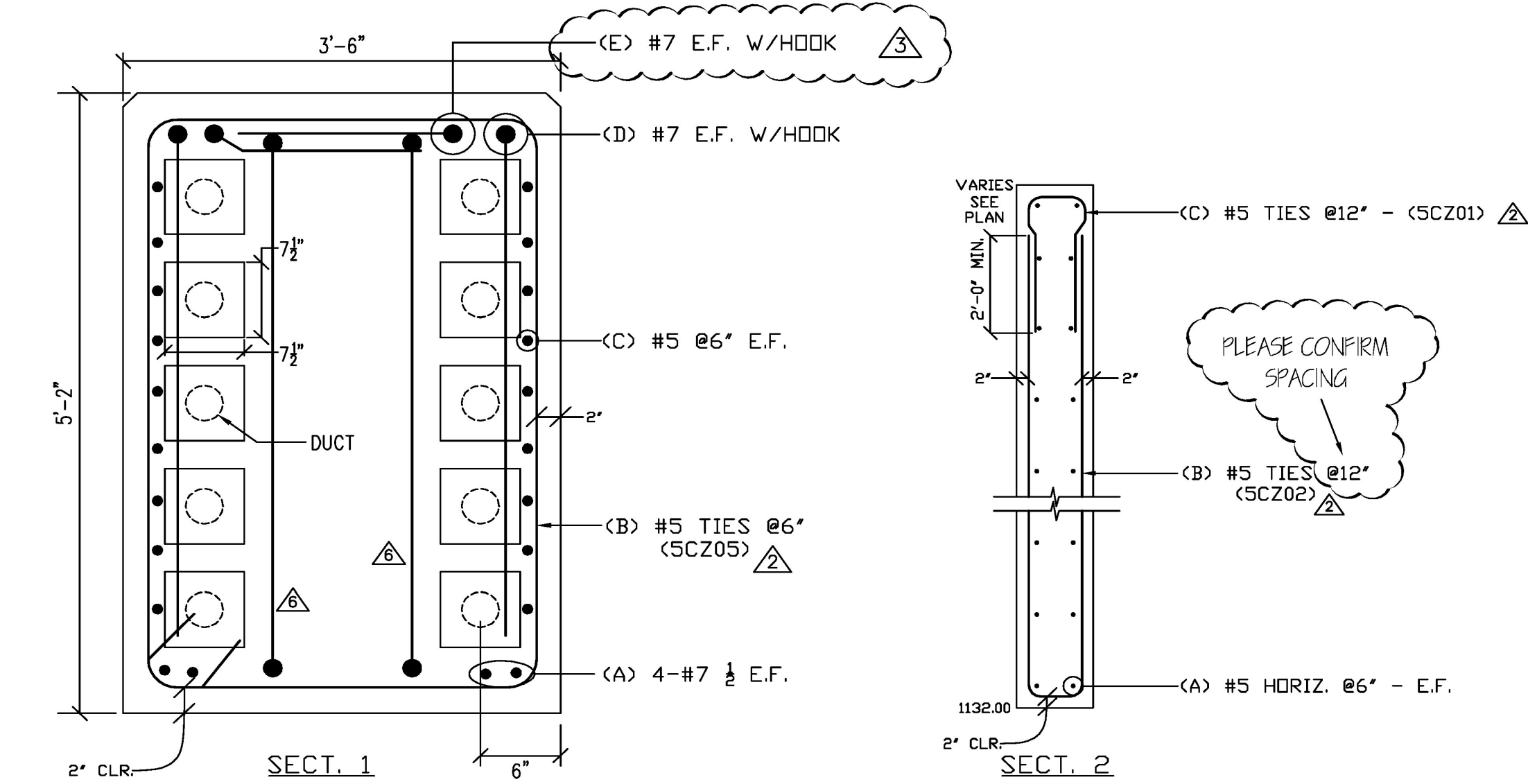
ELEVATIONS & DIMENSIONS SHOWN
ON THIS DWG. ARE FOR REINF.
DETAILING PURPOSES ONLY AND ARE
NOT INTENDED FOR CONSTRUCTION

REINF. BARS ASTM A615 GRADE 60
DUAL COATED

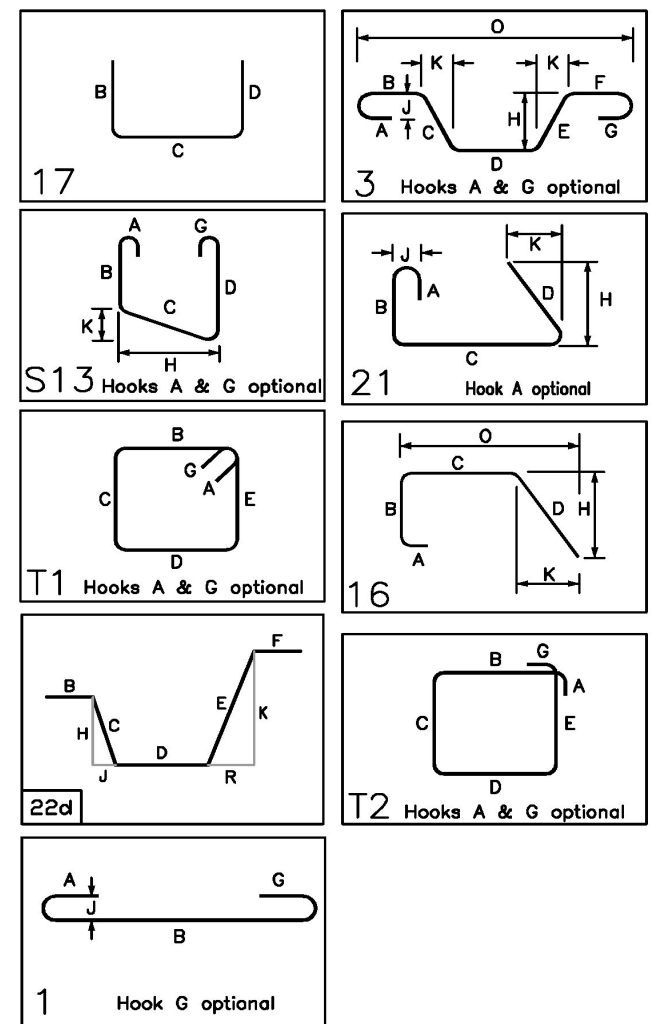
VERIFICATION OF UNCLEAR INFORMATION
MAY BE REQUESTED ON THIS DRAWING.
SHOULD VERIFICATION BE LEFT
UN-ADDRESSED IT WILL REMAIN AS
SHOWN AND ASSUME TO BE CORRECT.

8	6-12-14		REMOVED 5CZ08/SDI/FOR RECORD
7	4-30-14		REVISED/SDI/FOR JOB USE
6	4-18-14		APPROVED AS NOTED
5	4-17-14		REVIEWED/SDI COM./FOR APPROVAL
4	4-17-14		REVIEWED/SDI COM./FOR APPROVAL
3	4-08-14		REVIEWED/ENG COM./FOR APPROVAL
2	2-24-14		DFI INTERNAL REVIEW/FOR APPROVAL

	DIMENSION		2000 7TH STREET SCOTIA, N.Y. 12020 PH: (518) 374-1336 FAX (518) 374-4830 www.dimensionfabricators.com
	DIMENSION FABRICATORS INC.		
STRUCTURE	VTAOT WARREN BRF 013-4(32) PRECAST		
LOCATION	BRIDGE 166 ROUTE 100 (MINOR ARTERIAL) WARREN, VT		
ARCHITECT			
ENGINEER			
CUSTOMER	S.D. IRELAND CONCRETE CONST. CORP.		
DRAWN BY	DATE	DT#	
ED	2/18/14		8756
DRAWING COVERS			DRAWING #
ABUTMENT #1			C
DUAL COATED REINFORCING			



Drawing Sheet : C			BAR LIST													
Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'J'	'K'	'O'	'R'
4CZ01	16	#4	3'-9"	T2	0'-4 ½"	0'-9"	0'-9"	0'-9"	0'-9"		0'-4 ½"					
4CZ01	8	#4	3'-9"	T2	0'-4 ½"	0'-9"	0'-9"	0'-9"	0'-9"		0'-4 ½"					
4CZ01	40	#4	3'-9"	T2	0'-4 ½"	0'-9"	0'-9"	0'-9"	0'-9"		0'-4 ½"					
5CZ01	10	#5	6'-4"	17		2'-7"	1'-2"	2'-7"								
5CZ02	10	#5	21'-2"	17		10'-0"	1'-2"	10'-0"								
5CZ03	16	#5	5'-0 ½"	17		0'-10"	3'-4 ½"	0'-10"								
5CZ04	44	#5	7'-6"	S13		2'-0"	3'-6"	2'-0"					3'-3 ½"		1'-2 ¾"	1'-2 ¾"
5CZ05	60	#5	17'-4"	T1	0'-5 ½"	3'-4 ½"	4'-10"	3'-4 ½"	4'-10"		0'-5 ½"					
5CZ06	22	#5	6'-0"	22D			2'-0"	2'-9"	1'-3"				1'-8"	1'-1 ¾"	1'-0 ¾"	0'-8 ¾"
5CZ07	22	#5	7'-0"	22D			2'-0"	3'-7"	1'-5"				1'-2"	1'-7 ¾"	0'-9 ¾"	1'-2"
																
5CZ09	4	#5	10'-0"	17		2'-7"	4'-10"	2'-7"								
5CZ10	2	#5	9'-6"	17		2'-7"	4'-4"	2'-7"								
6CZ01	12	#6	7'-8"	3			3'-0"	1'-8"	3'-0"				2'-9 ¾"		1'-0 ¾"	3'-10"
6CZ02	36	#6	7'-8"	3			3'-0"	1'-8"	3'-0"				2'-9 ¾"		1'-0 ¾"	3'-9 ¾"
7CZ01	2	#7	30'-1"	17		4'-10"	20'-5"	4'-10"								
7CZ02	2	#7	31'-0"	17		4'-10"	21'-4"	4'-10"								
7CZ03	2	#7	26'-1 ½"	21		2'-6"	20'-11"	2'-8 ¾"					2'-7"		0'-9 ¾"	
7CZ04	2	#7	25'-2 ¾"	16		2'-6"	20'-2"	2'-6 ¾"					2'-4 ¾"		0'-10 ¾"	21'-0 7/8"



Vermont Agency of Transportation
ON: June 12, 2014
and Checked for CONFORMANCE
By: Rob Young DATE: 6/17/2014

Approved As Noted
Rejected

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Date: 6/13/2014
By: D. Kull

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E.W.-EACH WAY
O.C.-ON CENTER
L.W.-LONG WAY
S.W.-SHORT WAY

FOR FIELD USE

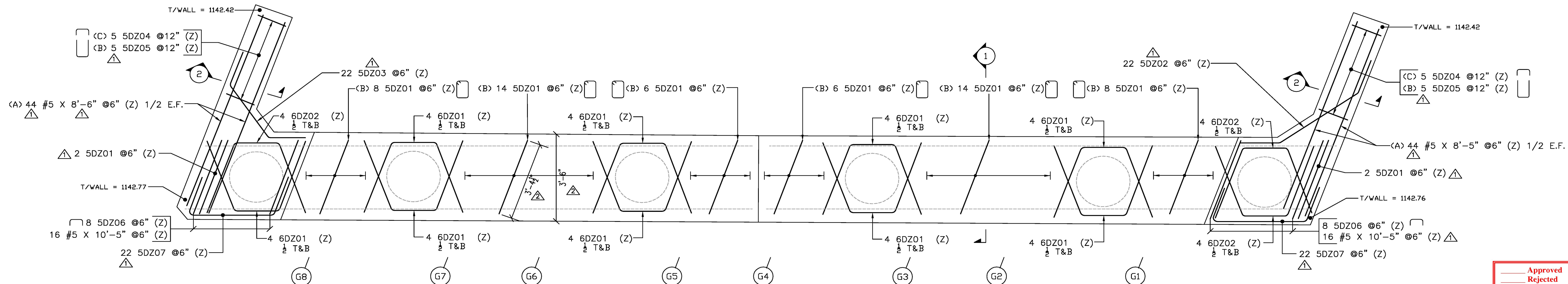
ALL DUAL COATED
REINF. DENOTED (Z)

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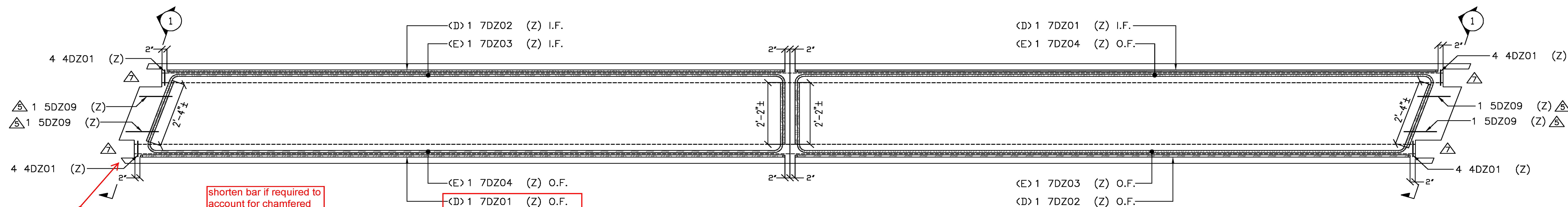
REINF. BARS ASTM A615 GRADE 60
DUAL COATED

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SHOULD VERIFICATION BE LEFT
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B	6-12-14	REMOVED SDZ08/SDI/FOR RECORD
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6	4-18-14	APPROVED AS NOTED
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3	4-08-14	REVISED/ENG.COM./FOR APPROVAL
2	2-24-14	DFI INTERNAL REVIEW/FOR APPROVAL
1	2-18-14	FOR APPROVAL
DATE	REV.#	SENT FOR
 DIMENSION DIMENSION FABRICATORS INC. 2000 7TH STREET SCOTIA, N.Y. 12302 PH: (518) 374-1338 FAX: (518) 374-4830 www.dimensionfabricators.com		
STRUCTURE	VTAOT WARREN BR# 013-4(32) PRECAST	
LOCATION	BRIDGE 166 ROUTE 100 (MINOR ARTERIAL) WARREN, VT	
ARCHITECT		
ENGINEER		
CUSTOMER	S.D. IRELAND CONCRETE CONST. CORP.	
DRAWN BY	DATE	DP#
ED	2/18/14	8756
DRAWING COVERS ABUTMENT #2 DUAL COATED REINFORCING		DRAWING # D



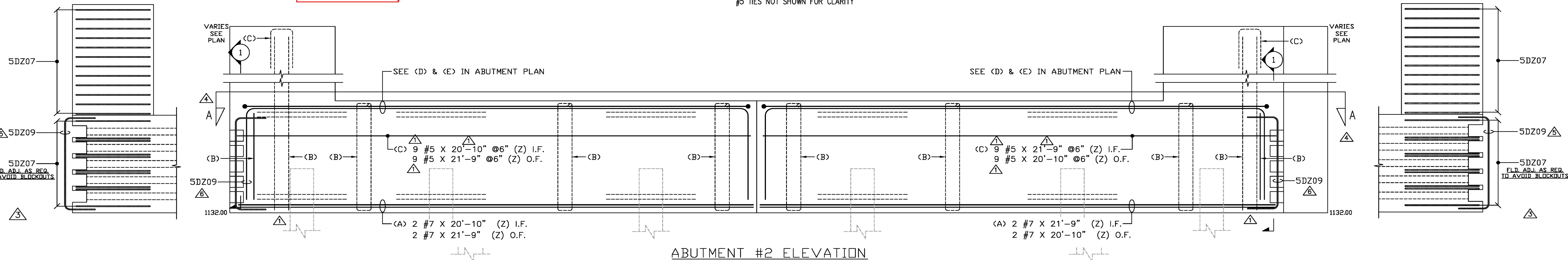
ABUTMENT #2 PLAN



PLAN VIEW A-A

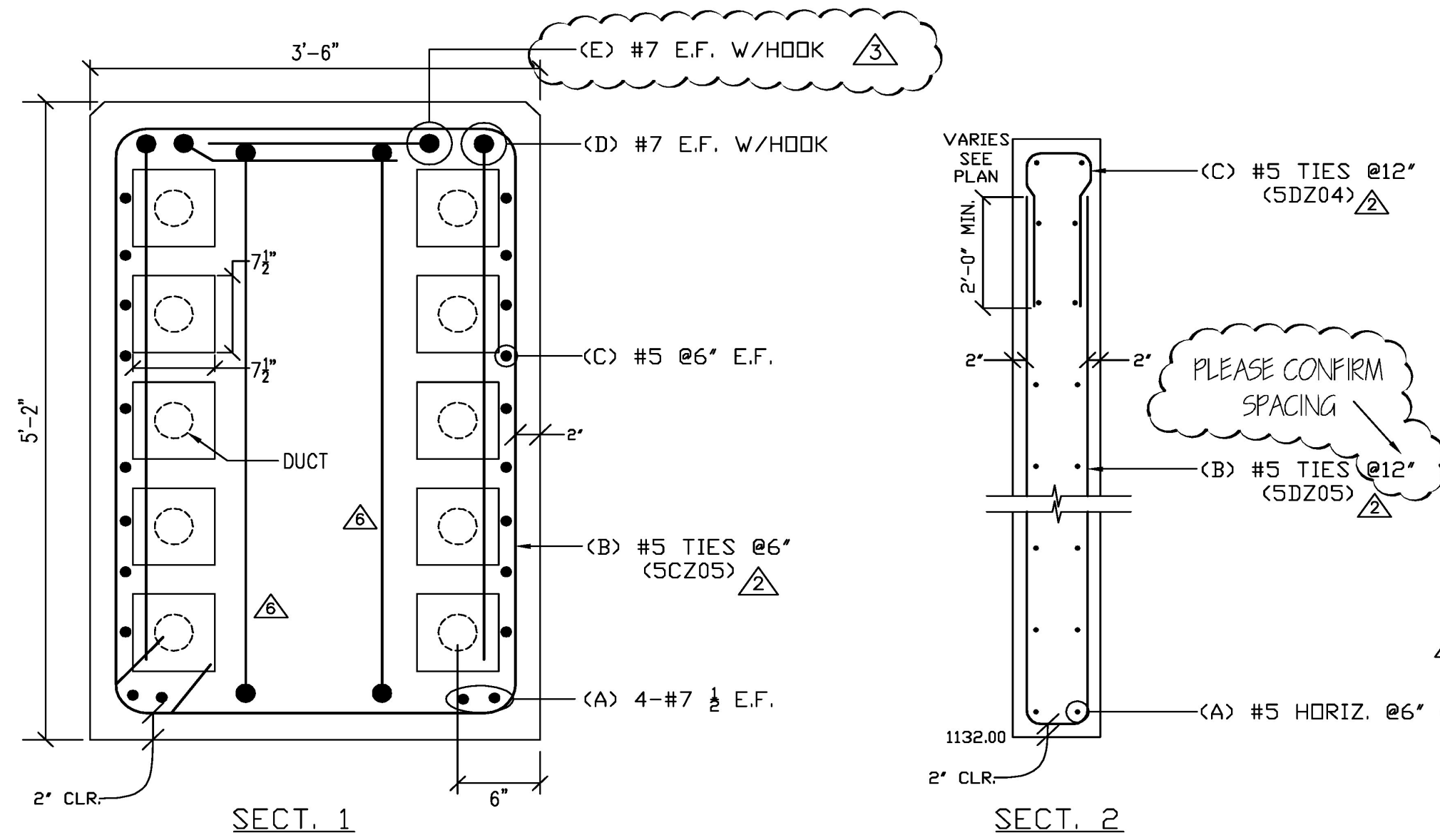
#7 UPPER BARS SHOWN
#5 HORIZONTALS, #6 BENDS &
#5 TIES NOT SHOWN FOR CLARITY

shorten bar if required to
account for chamfered
end of abutment. Bar to
be spliced with same bar
size 2x's the 53" lap
distance



ABUTMENT #2 ELEVATION

Drawing Sheet : D				BAR LIST															
Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'J'	'K'	'L'	'M'	'N'	'O'	'P'
4DZ01	16	#4	3'-9"	T2	0'-4 1/2"	0'-9"	0'-9"	0'-9"	0'-9"		0'-4 1/2"								
5DZ01	60	#5	17'-4"	T1	0'-5 1/2"	3'-4 1/2"	4'-10"	3'-4 1/2"	4'-10"		0'-5 1/2"								
5DZ02	22	#5	7'-0"	22D			2'-0"	3'-7"	1'-5"				1'-2"	1'-7 1/2"	0'-9 1/2"			1'-2"	
5DZ03	22	#5	6'-0"	22D			2'-0"	2'-9"	1'-3"				1'-8"	1'-1 1/2"	1'-0 1/2"				
5DZ04	10	#5	6'-4"	17			2'-7"	1'-2"	2'-7"										
5DZ05	10	#5	21'-2"	17			10'-0"	1'-2"	10'-0"										
5DZ06	16	#5	5'-0 1/2"	17			0'-10"	3'-4 1/2"	0'-10"										
5DZ07	44	#5	7'-6"	S13			2'-0"	3'-6"	2'-0"				3'-3 1/2"		1'-2 3/8"	1'-2 3/8"			
6DZ01	36	#6	7'-8"	3			3'-0"	1'-8"	3'-0"				2'-9 1/2"		1'-0 1/2"	3'-9 1/2"			
6DZ02	12	#6	7'-8"	3			3'-0"	1'-8"	3'-0"				2'-9 1/2"		1'-0 1/2"	3'-10"			
7DZ01	2	#7	31'-0"	17			4'-10"	21'-4"	4'-10"										
7DZ02	2	#7	30'-1"	17			4'-10"	20'-5"	4'-10"										
7DZ03	2	#7	25'-2"	16			2'-6"	20'-2"	2'-6"				2'-4 1/2"		0'-10 1/2"	21'-0 1/2"			
7DZ04	2	#7	26'-1 1/2"	21			2'-6"	20'-11"	2'-8 1/2"				2'-7"		0'-9 1/2"				
5DZ09	4	#5	10'-0"	17			2'-7"	4'-10"	2'-7"										

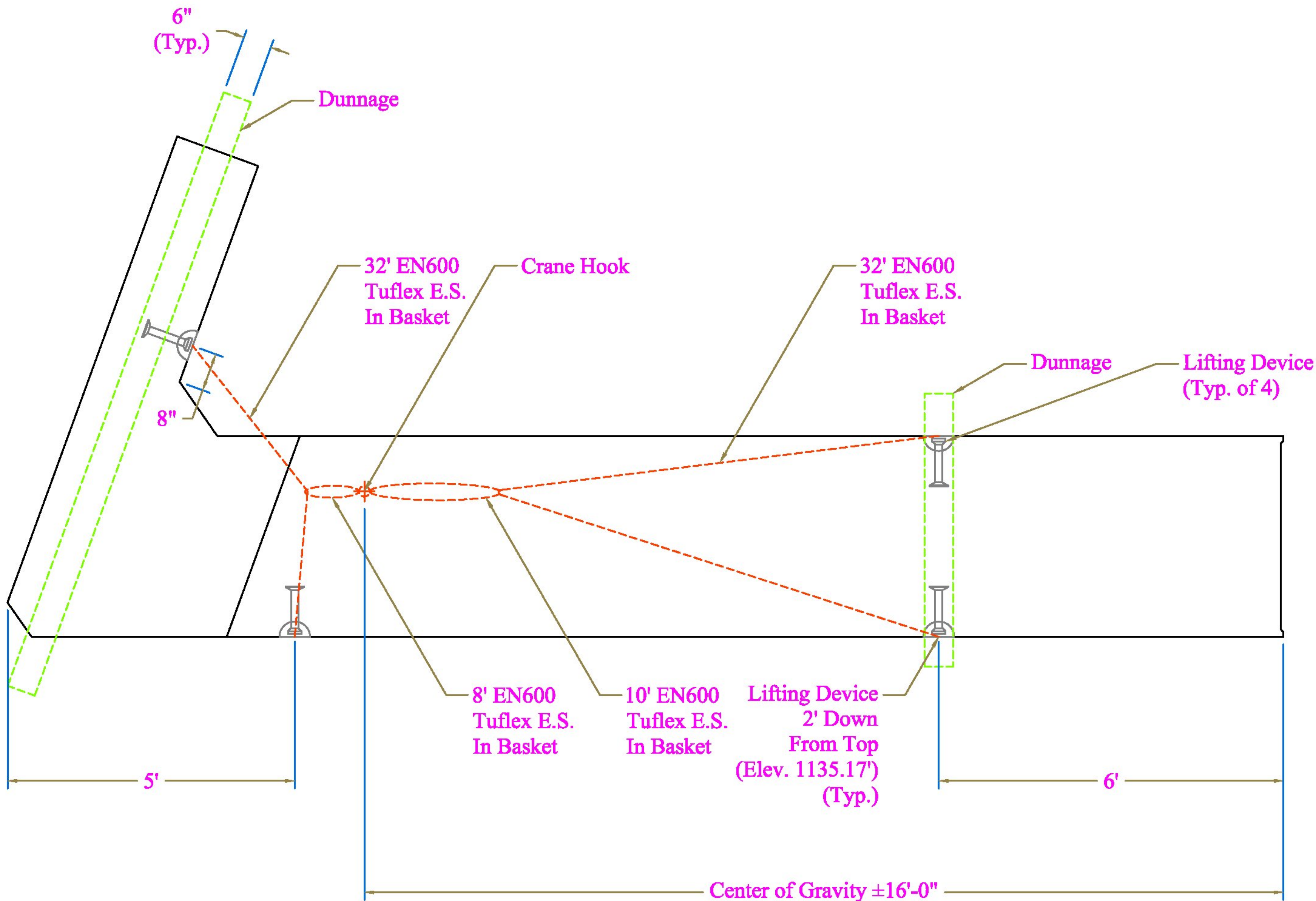


SECT. 2

SECT. 1

EN600 = 53,000 Vertical
106,000 Basket

Lift Device = AL Patterson Part # LPA20T10G
Lift Pin Anchor
W/ LPLE20T Lift Eye



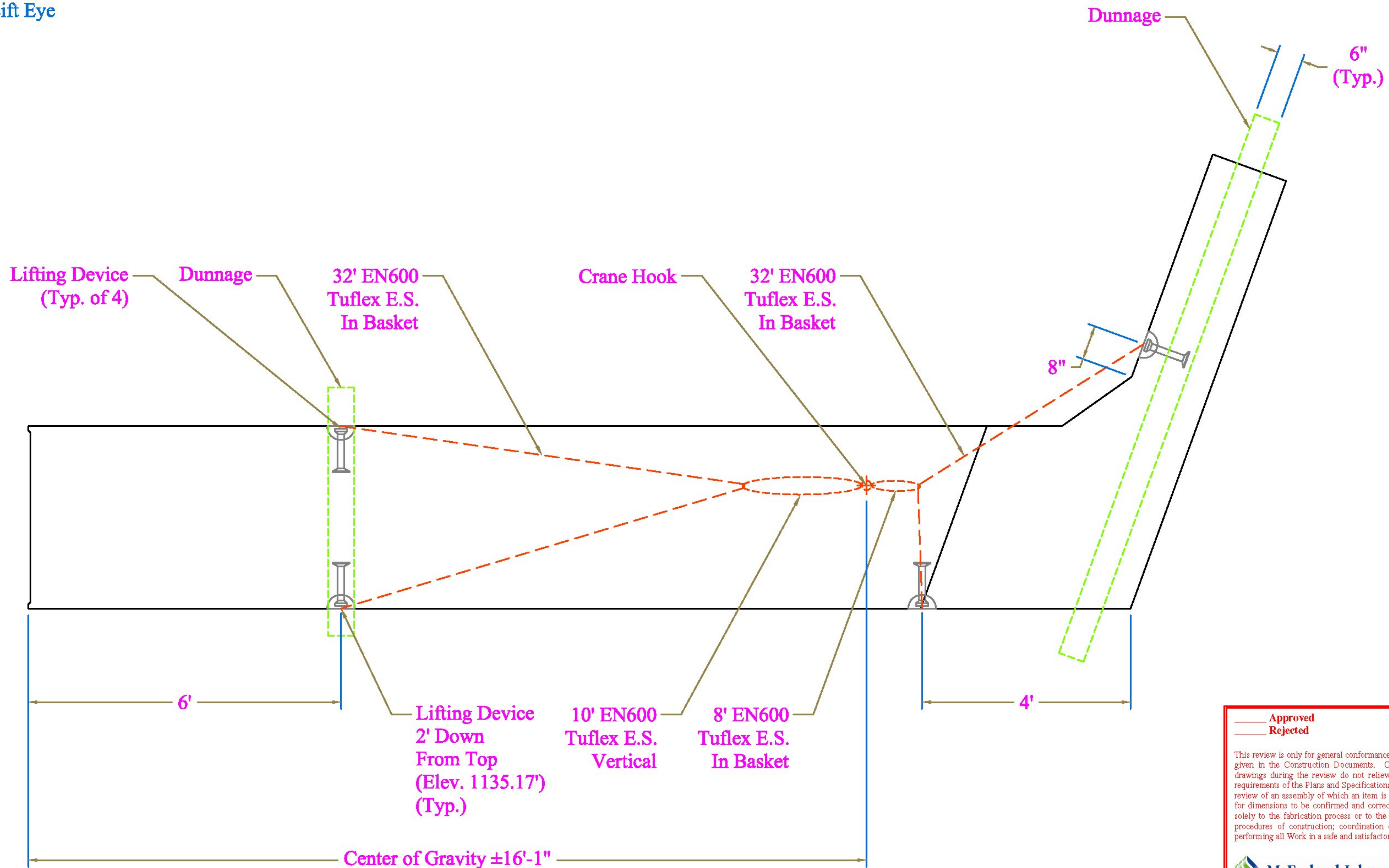
Vermont Agency of Transportation
RECEIVED
ON: June 12, 2014
and Checked for
CONFORMANCE
BY: Rob Young DATE: 6/17/2014

____ Approved	____X____ Approved As Noted
____ Rejected	
This review is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made on the shop drawings during the review do not relieve the Contractor from compliance with the requirements of the Plans and Specifications. Review of a specific item shall not include review of an assembly of which an item is a component. The Contractor is responsible for dimensions to be confirmed and corrected at the job site; information that pertains solely to the fabrication process or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of other trades and performing all Work in a safe and satisfactory manner.	
 McFarland Johnson	Date: 6/13/2014
	By: D. Kull

CONTRACTORS VTSPE:		PRECAST CONCRETE ABUTMENT SHOP DRAWINGS (SDI JOB #14046)		Luck Brothers, Inc 73 Trade Road Plattsburg, NY, 12901 Ph: (518)–561–4321		FABRICATOR: 193 INDUSTRIAL AVE. WILLISTON, VT 05495 Ph: (802) 658–0201			
		SUPERVISOR: M. WHEELER DETAILER: I. ADAMS CHECKER: E. Barendse ENGINEER: N/A		PROJECT NAME: Warren PROJECT #: BRF 013–4(32) LOCATION: Bridge #166 Route 100, Warren, VT		03/03/2014		AB1L & AB2L Lifting	
								1 of 2	

EN600 = 53,000 Vertical
106,000 Basket

Lift Device = AL Patterson Part # LPA20T10G
Lift Pin Anchor
W/ LPLE20T Lift Eye



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Date: 6/13/2014	
By: D. Kull	

McFarland Johnson

SD Ireland
PRECAST

AB1R & AB2R Lifting

2 of 2

CONTRACTORS VISPE:

PRECAST CONCRETE ABUTMENT SHOP DRAWINGS (SDI JOB #14046)

SUPERVISOR: M. WHEELER
DETAILER: I. ADAMS
CHECKER: E. Barendse
ENGINEER: N/A

PROJECT NAME: Warren
PROJECT #: BRF 013-4(32)
LOCATION: Bridge #166
Route 100, Warren, VT

Luck Brothers, Inc
73 Trade Road
Plattsburg, NY, 12901
Ph: (518)-561-4321

03/03/2014

FABRICATOR:
193 INDUSTRIAL AVE.
WILLISTON, VT 05495
Ph: (802) 658-0201

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS

1. ALL MATERIAL AND CONSTRUCTION TO BE IN ACCORDANCE WITH THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION (2011) WITH ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH EDITION (2010) WITH ITS LATEST REVISIONS.

MATERIAL SPECIFICATIONS

1. ALL STRUCTURAL STEEL TO BE UNPAINTED AASHTO M270 (ASTM A709) GRADE 50W, UNLESS NOTED.
2. MATERIAL NOTES "T2" ON DETAIL DRAWINGS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF VERMONT STANDARD SPECIFICATIONS SECTION 714.01.
3. HIGH STRENGTH BOLTS SHALL BE 7/8" DIAMETER, ASTM A325 (TYPE 3), IN 15/16" DIAMETER HOLES. NUTS SHALL BE A563 (TYPE 3) GRADE C3, AND WASHERS SHALL BE F436 (TYPE 3).

**BOLTS & NUTS SHALL BE ROTATIONAL CAPACITY TESTED.
DO NOT MIX BOLTS & NUTS FROM DIFFERENT CONTAINERS
UNLESS ALL BOLTS & NUTS HAVE THE SAME LOT NUMBER.**

FABRICATION

1. ALL HOLES SHALL BE DRILLED FULL SIZE, UNLESS NOTED.

WELDING

1. THE CONFIGURATION OF THE WELD JOINTS AND ALL WELDING PROCEDURES SHALL BE IN ACCORDANCE WITH AASHTO/AWS D1.5-10 BRIDGE WELDING CODE; IN ADDITION TO THE PROVISIONS OF VERMONT STANDARD SPECIFICATIONS SECTION 506.10. ALL WELDING WILL BE DETAILED TO PRE-QUALIFIED JOINTS, UNLESS PROHIBITED BY THE DESIGNER.
2. WELDING OF MAIN LOAD CARRYING MEMBERS AND ATTACHMENTS SHALL BE PERFORMED USING THE AUTOMATIC SUBMERGED ARC & SHIELDED METAL ARC PROCESSES. SUBMERGED ARC WELDS, WHERE USED, ARE SUBJECT TO TESTING REQUIREMENTS OF AWS D1.5, SECTION 5. ALL WELDS ARE CONTINUOUS, UNLESS NOTED.
3. NON-DESTRUCTIVE TESTING OF WELDS SHALL BE IN ACCORDANCE WITH THE REFERENCED SPECIFICATION.
4. SEE DETAIL "WS1" FOR THE WELD TERMINATION DETAIL.

FIELD CONNECTIONS

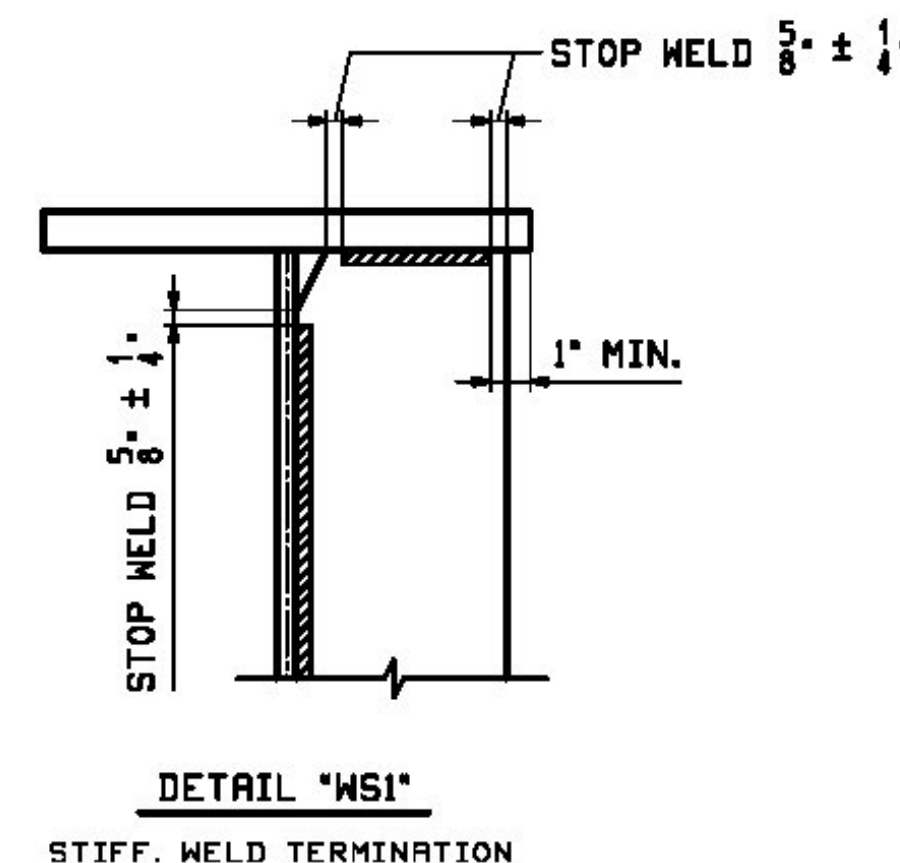
1. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH STRENGTH A325 BOLTS, INSTALLED PER SECTION 506.19(c).
2. BOLTS SHALL HAVE A HEAVY HEX HEAD, HEAVY HEX NUT, AND AT LEAST ONE HARD FLAT WASHER EACH. WASHER TO BE PLACED UNDER THE TURNED ELEMENT.
3. PIECE MARKS WILL BE LOCATED AS SHOWN ON SHEET E1.

CLEANING

1. ALL STEEL SHALL BE BLAST CLEANED IN ACCORDANCE WITH SSPC SP-10.

PRINTING

1. STRUCTURAL STEEL SHALL BE UNPAINTED.



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BY: Rob Young DATE: 02/18/2014

✕ Reviewed Rejected	Furnish As Corrected Revise and Resubmit
--	--

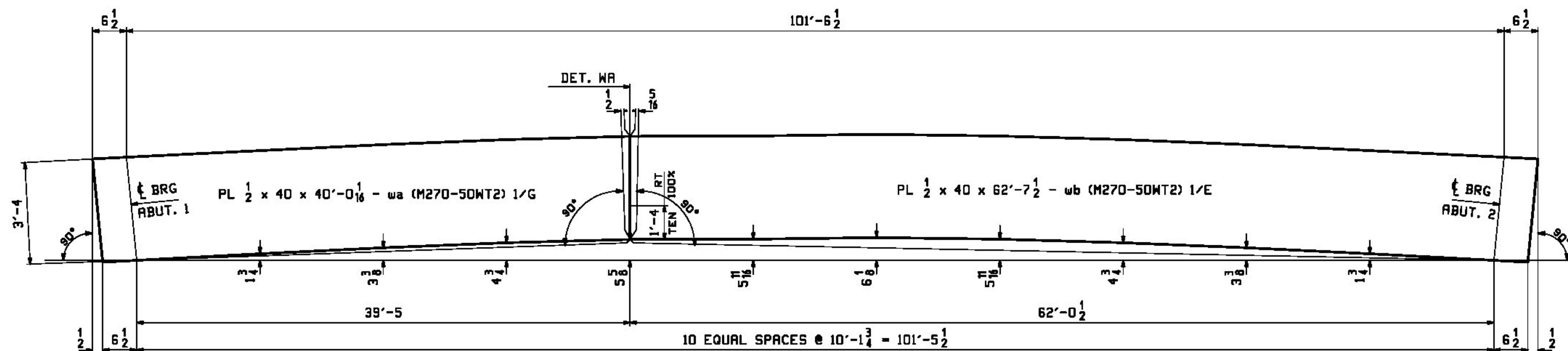
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Date February 12, 2014

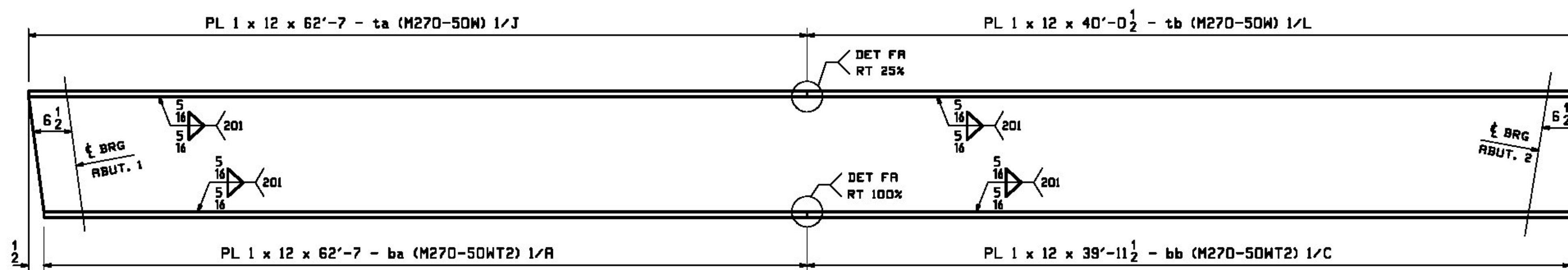
By D. Kull

NOTE TO ENGINEER:
THESE NOTES ARE NOT INTENDED TO BE ALL INCLUSIVE AND COMPLIANCE WITH RELEVANT SPECIFICATIONS REMAIN UNCHANGED.

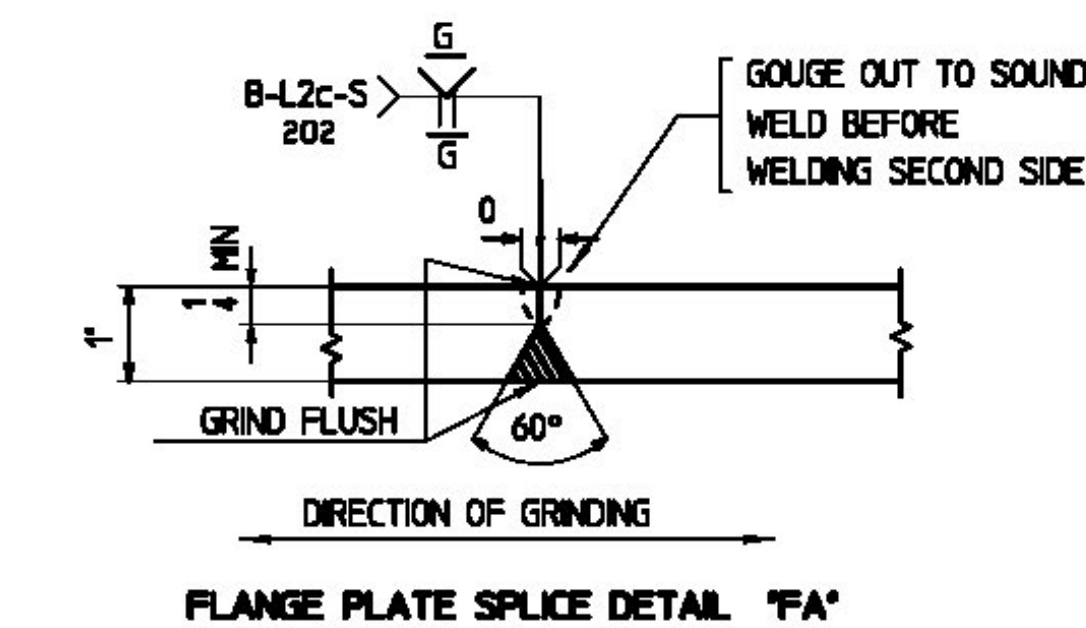
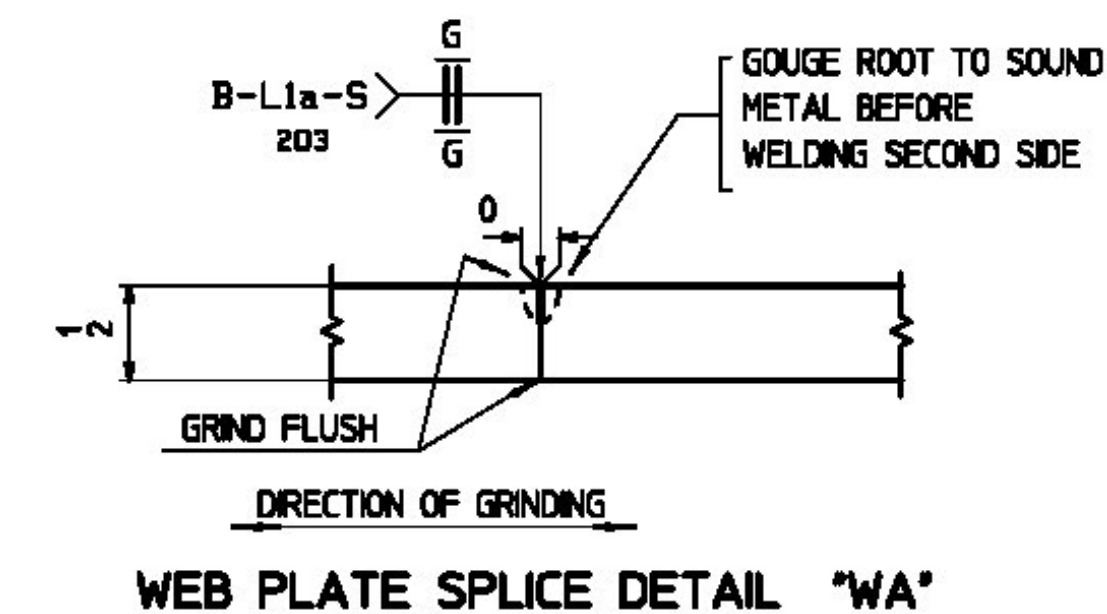
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REV.	DATE	REMARKS			DWN	CHK	APVL	SHOP	
MATERIAL:		SURFACE PREP. & PAINT:			HOLES:		SHOP BOLTS:		
DESCRIPTION:		GENERAL NOTES							
CASCO BAY STEEL STRUCTURES, INC.									 TENSOR 3223
1 WALLACE AVE.			PHONE (207) 780-6722						
SOUTH PORTLAND, ME 04106			FAX. (207) 780-6726						
STRUCTURE: VT ROUTE 100 (MINOR ARTERIAL) OVER MAD RIVER BRIDGE NO. 166 WARREN COUNTY OF WASHINGTON					DRAWN: CRK		DATE: 01/07		
					CHCKD: DO		DATE: 01/08		
LOCATION: TOWN OF WARREN					JOB NO.		DNG NO.		
PROJ NO. BRF 013-4(32)					548		GN1		
CUSTOMER: VT AOT							REV. / Δ		



**CAMBER DIAGRAM FOR IGI, 2G2, 3G3,
2G4, 4G5, 5G6, 4G7 & 6G8**



**FLANGE DIAGRAM FOR IGI, 2G2, 3G3,
2G4, 4G5, 5G6, 4G7 & 6G8**



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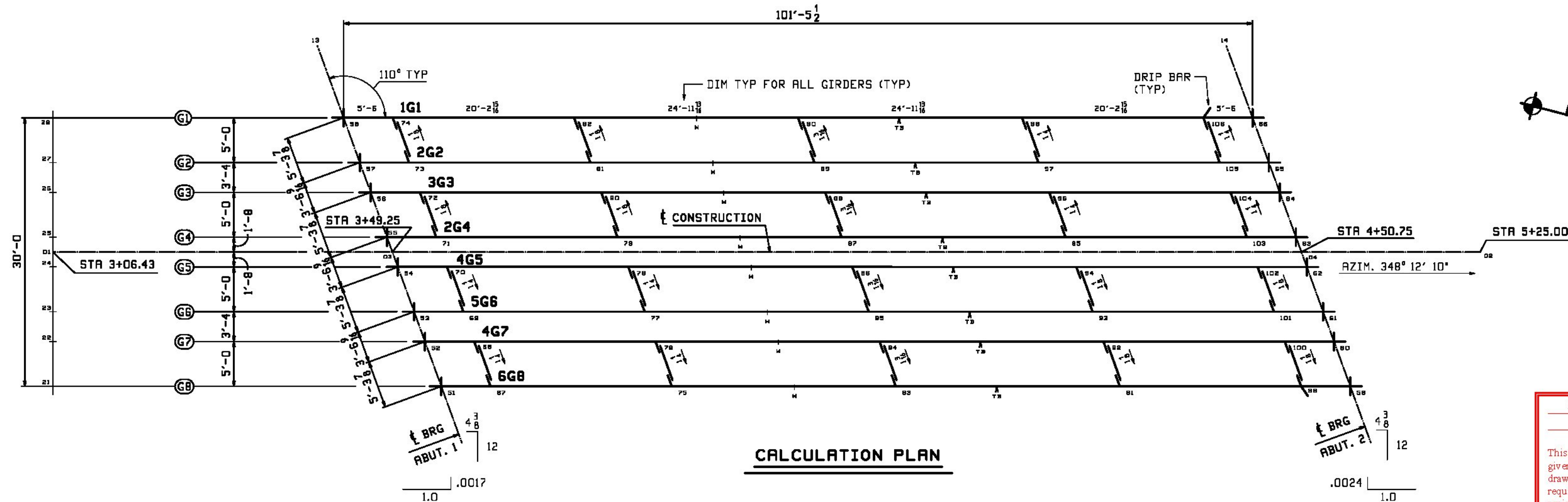
Date: February 12, 2014
By: D. Kull

McFarland Johnson

NOTES:

- FOR GENERAL NOTES SEE DRAWING GN1.
- T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TEST AT H FREQUENCY FOR ZONE 2.

0									
REV.	DATE	REMARKS			DWN	CHK	APVL	SHOP	
MATERIAL:		SURFACE PREP. & PAINT:			HOLES:		SHOP BOLTS:		
AS NOTED		SEE GNI			AS NOTED		AS NOTED		
DESCRIPTION: CAMBER & FLANGE DIAGRAMS									
CASCO BAY STEEL STRUCTURES, INC.									
1 WALLACE AVE.				PHONE (207) 780-6722					
SOUTH PORTLAND, ME 04106				FAX. (207) 780-6726					
STRUCTURE: VT ROUTE 100 (MINOR ARTERIAL) OVER MAD RIVER BRIDGE NO. 166 WARREN COUNTY OF WASHINGTON						DRAWN:		DATE:	
						CRK		12/11	
						CHKD:		DATE:	
						DO		1/6	
LOCATION: TOWN OF WARREN						JOB NO.		DWG NO.	
PROJ NO. BRF 013-4(32)						548		C1	
CUSTOMER: VT ROT								REV.	



- NOTES:
1. LONGITUDINAL DIMENSIONS ARE SLOPING ALONG BOTT OF WEB WITH CORRECTIONS MADE FOR VERTICAL CURVE, GRADE & DL CAMBER (UN).
 2. TRANSVERSE DIMENSIONS ARE IN A HORIZ. PLANE (UN).
 3. DROP ARROW POINTS TOWARDS LOW END OF MEMBER.
 4. ENDS OF GIRDERS ARE VERTICAL AFTER DL ROTATION.
 5. ALL INT. CROSSFRAMES ARE NORMAL TO GRADE.
 6. BOTT PT NUMBERS = TOP PT NUMBERS + 500.
 7. CROSSFRAME DROPS ARE CALCULATED IN THEIR FINAL POSITION.

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☐ Rejected	☐ Revise and Resubmit

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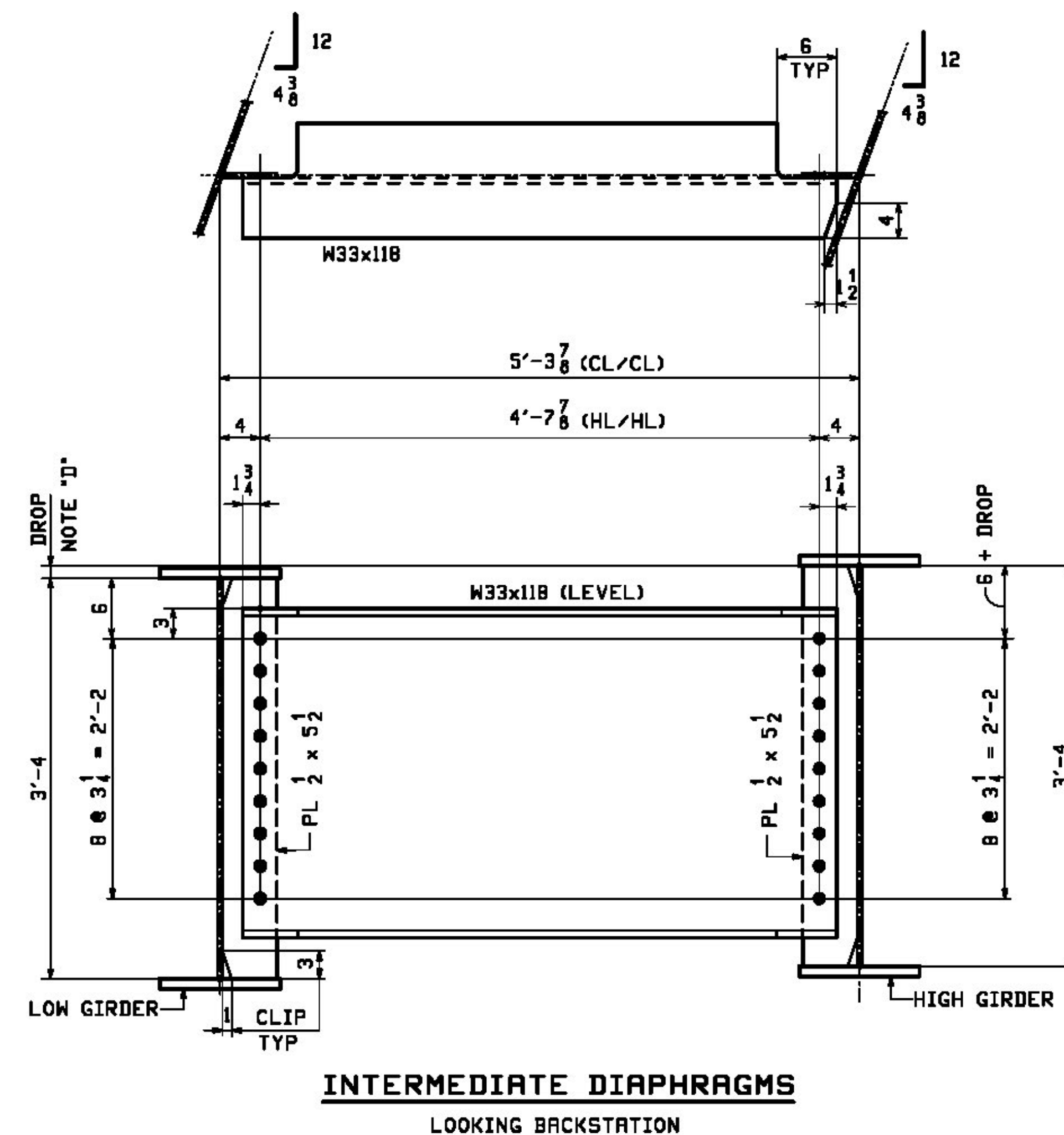
McFarland Johnson

Date: February 12, 2014

By: D. Kull

- NOTES:
1. BOLTS SHALL BE $\frac{7}{8}$ " A325-3 (UN).
 2. HOLES SHALL BE $\frac{5}{8}$ " (UN).
 3. ALL MATERIAL M270 GRADE 50W.
- NOTE D:
DROPS VARIES IN MAGNITUDE & DIRECTION.
SEE CALCULATION PLAN (THIS SHEET) FOR VALUES.

**** NOTE ****
THE PURPOSE OF THIS DRAWING IS TO COORDINATE GEOMETRIC CONTROL INFORMATION. THIS DWG IS SUBMITTED FOR INFORMATION ONLY AND IS NOT INTENDED FOR SHOP FABRICATION.



Vermont Agency of Transportation

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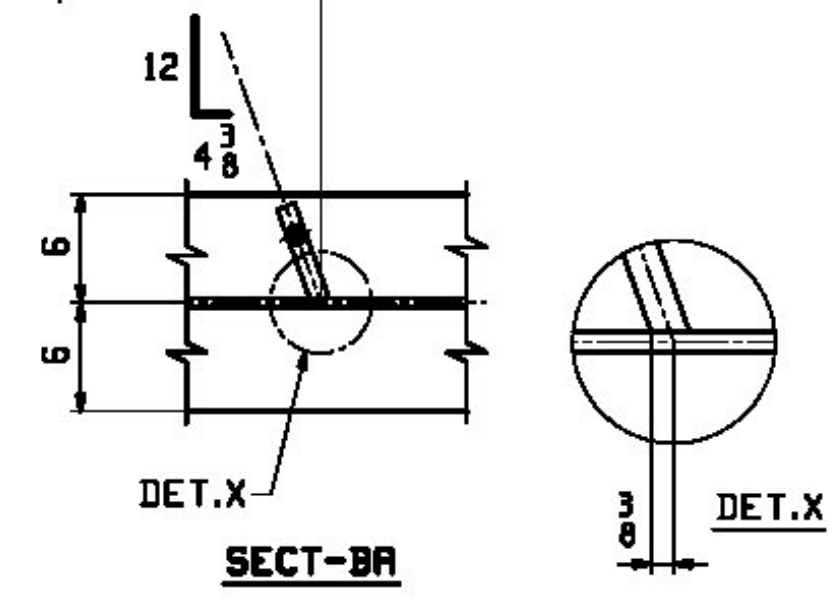
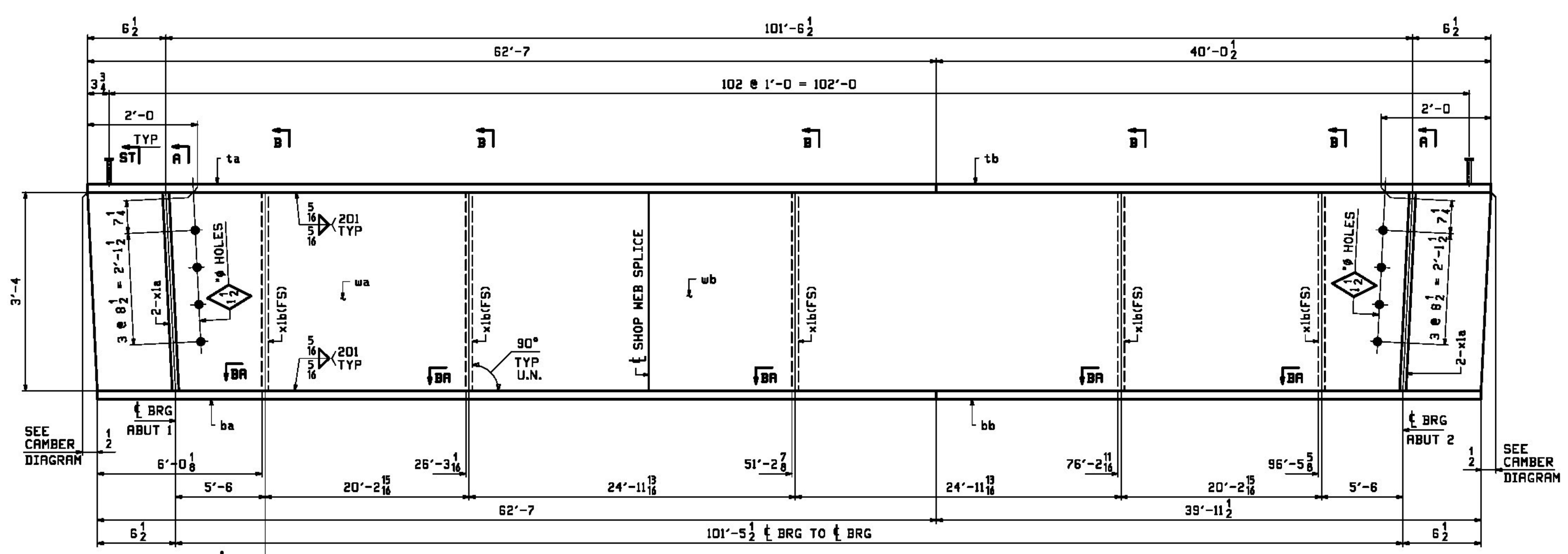
CONFORMANCE

BY: Rob Young DATE: 02/18/2014

0									
REV.	DATE	REMARKS			DWN	CHK	APVL	SHOP	
MATERIAL: AS NOTED		SURFACE PREP. & PAINT: SEE GNI			HOLES: AS NOTED		SHOP BOLTS: NONE		
DESCRIPTION: CALCULATION PLAN & TYPICAL LAYOUTS									
CASCO BAY STEEL STRUCTURES, INC.								 TENSOR 3223	
1 WALLACE AVE.				PHONE (207) 780-6722					
SOUTH PORTLAND, ME 04106				FAX. (207) 780-6726					
STRUCTURE: VT ROUTE 100 (MINOR ARTERIAL) OVER MAD RIVER BRIDGE NO. 166 WARREN COUNTY OF WASHINGTON						DRAWN: CRK		DATE: 12/10	
						CHKD: DO		DATE: 1/6	
LOCATION: TOWN OF WARREN						JOB NO.		DWG NO.	
PROJ NO. BRP 013-4(32)						548		WS1	
CUSTOMER: VT AOT								REV. 	

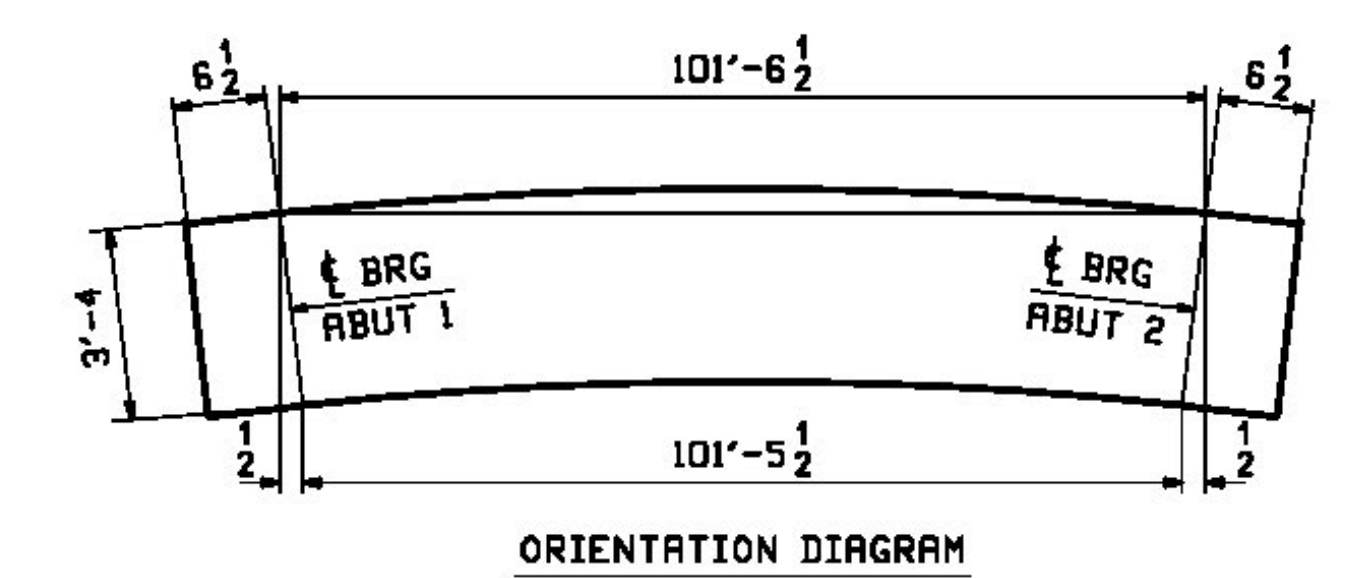
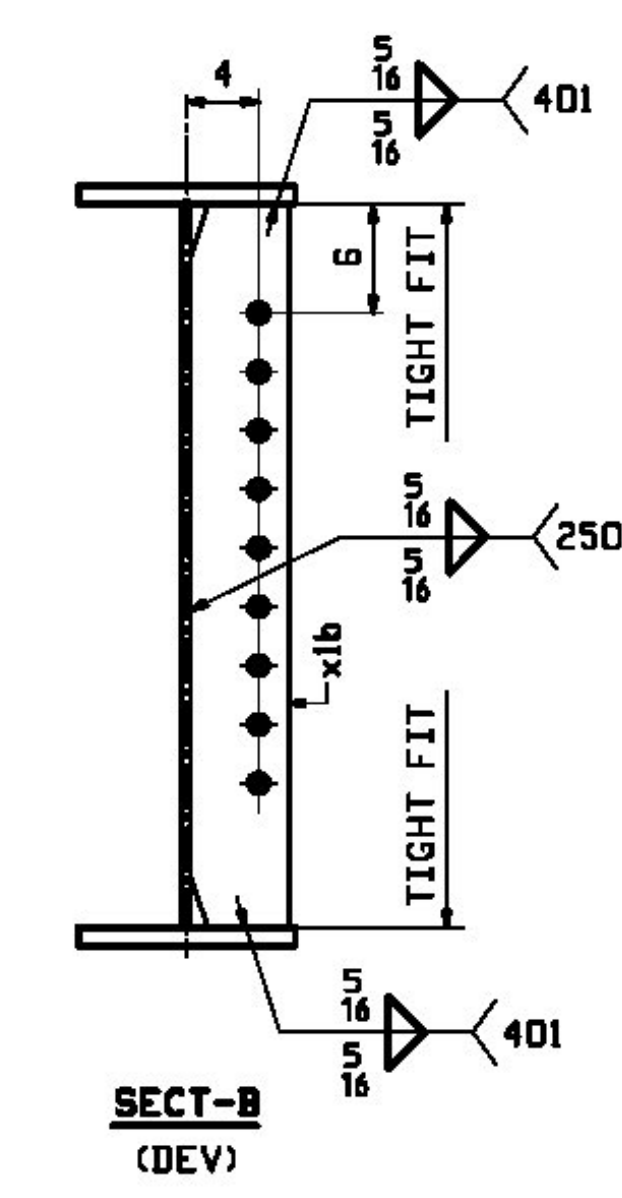
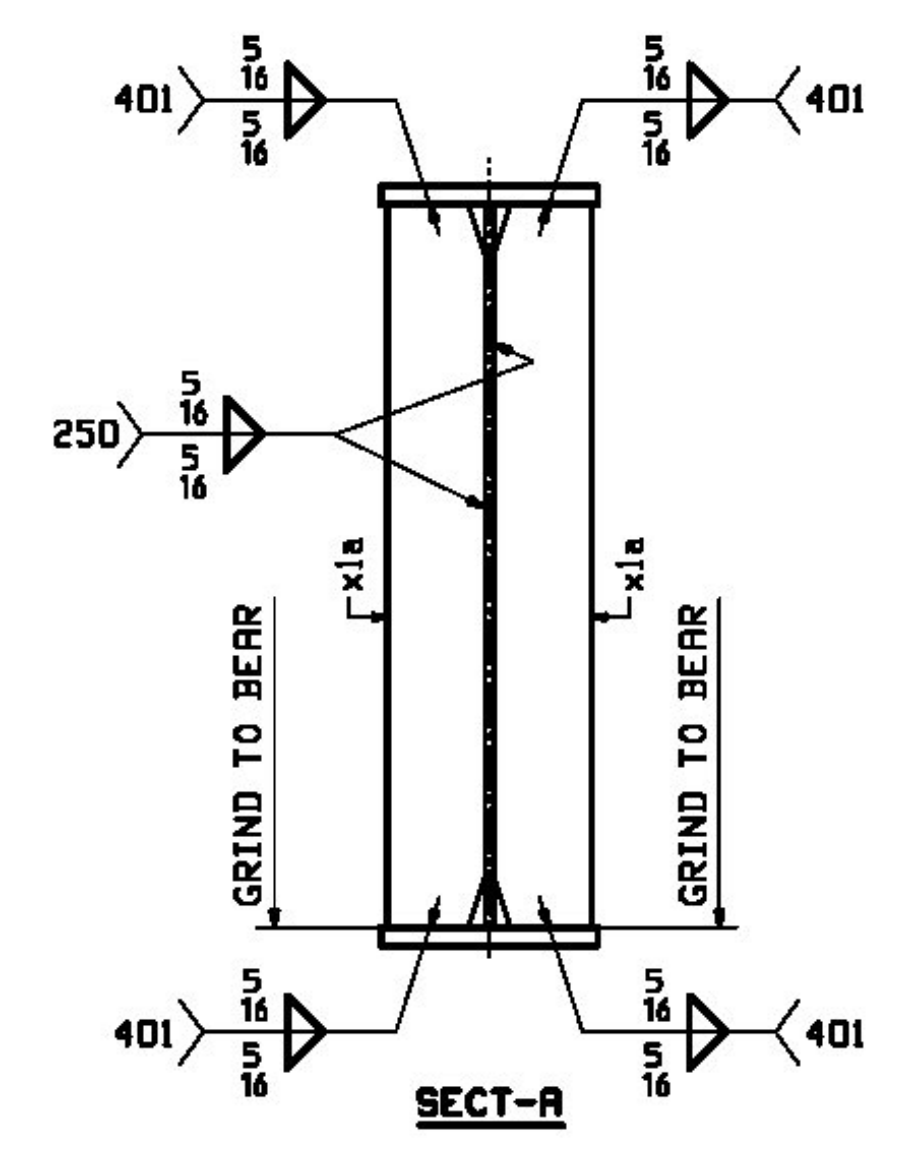
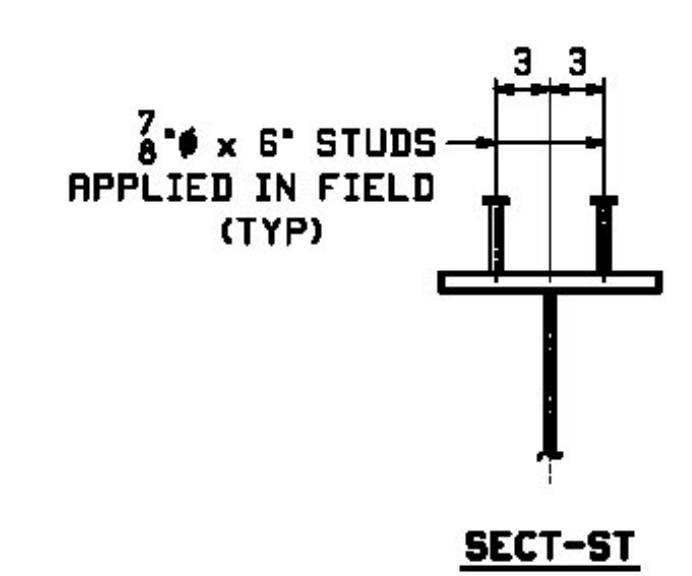
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						FT	INCHES					
		5G6	1		GIRDER				15912			
1	G		1	wa	PL $\frac{1}{2} \times 40$	40	0 $\frac{1}{16}$	M270-SQWT2	2723			
1	E		1	wb	PL $\frac{1}{2} \times 40$	62	7 $\frac{1}{2}$	M270-SQWT2	4262			
1	J		1	ta	PL 1x12	62	7		2555			
1	L		1	tb	PL 1x12	40	0 $\frac{1}{2}$		1635			
1	A		1	ba	PL 1x12	62	7	M270-SQWT2	2555			
1	C		1	bb	PL 1x12	39	11 $\frac{1}{2}$	M270-SQWT2	1632			
2	C		4	x1a	PL $\frac{5}{8} \times 5 \frac{1}{2}$	3	4	MIE	39			
2	D		5	x1b	PL $\frac{1}{2} \times 5 \frac{1}{2}$	3	4		31			
3	H		206		STUD $\frac{1}{2} \times 6$	0	6	8108	1			

DO NOT SHIP FROM THIS SHEET



ONE ~ GIRDER ~ 5G6

- NOTES:
1. FOR GENERAL NOTES SEE SHEET GNI.
 2. FOR STANDARD DETAILS SEE SHEET XI.
 3. FOR CAMBER & FLANGE DIAGRAM SEE SHEET C1.
 4. T2 - DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.



Vermont Agency of Transportation
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 By: D. Kull

McFarland Johnson

0						
REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
MATERIAL:		SURFACE PREP. & PAINT:	HOLES:		SHOP BOLTS:	
M270-SQW (UN)		SEE GNI	15 16" Ø UN		NONE	
DESCRIPTION: GIRDER ~ 5G6						
CASCO BAY STEEL STRUCTURES, INC.						
1 WALLACE AVE.			PHONE (207) 780-6722			
SOUTH PORTLAND, ME 04106			FAX. (207) 780-6726			
						
STRUCTURE: VT ROUTE 100 (MINOR ARTERIAL)			DRAWN:	DATE:		
OVER MAD RIVER			CRK	01/23		
BRIDGE NO. 166			CHKD:	DATE:		
WARREN			DO	01/27		
COUNTY OF WASHINGTON						
LOCATION: TOWN OF WARREN			JOB NO.		DWG NO.	
PROJ NO. BRP 013-4(32)			548		5	
CUSTOMER: VT AOT					REV. 1	

DO NOT SHIP FROM THIS SHEET



ON: January 29, 2014

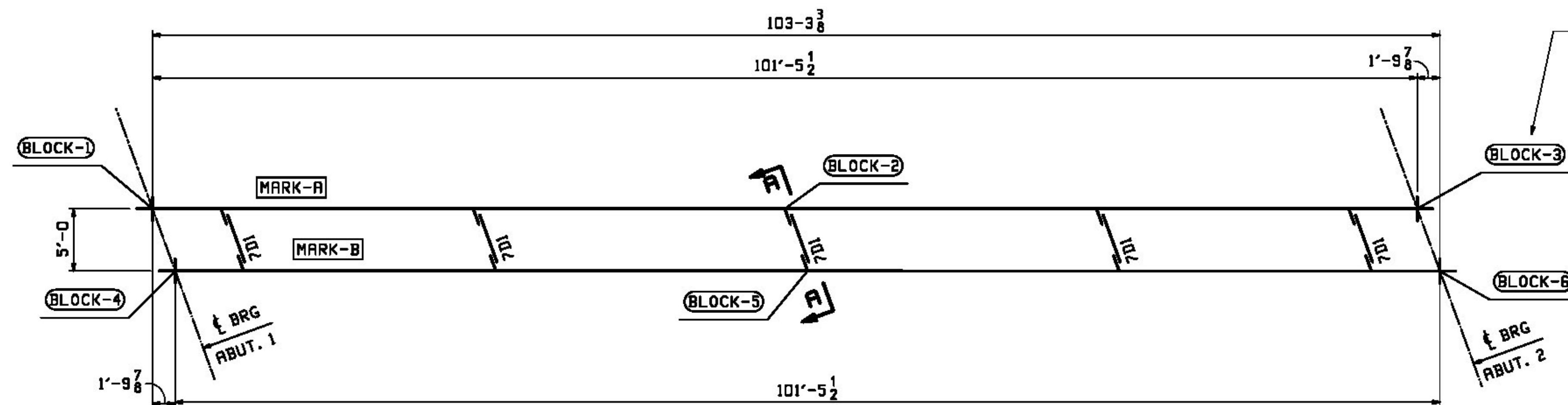
and Checked for

BY: Rob Young DATE: 02/18/2014

NOTES:

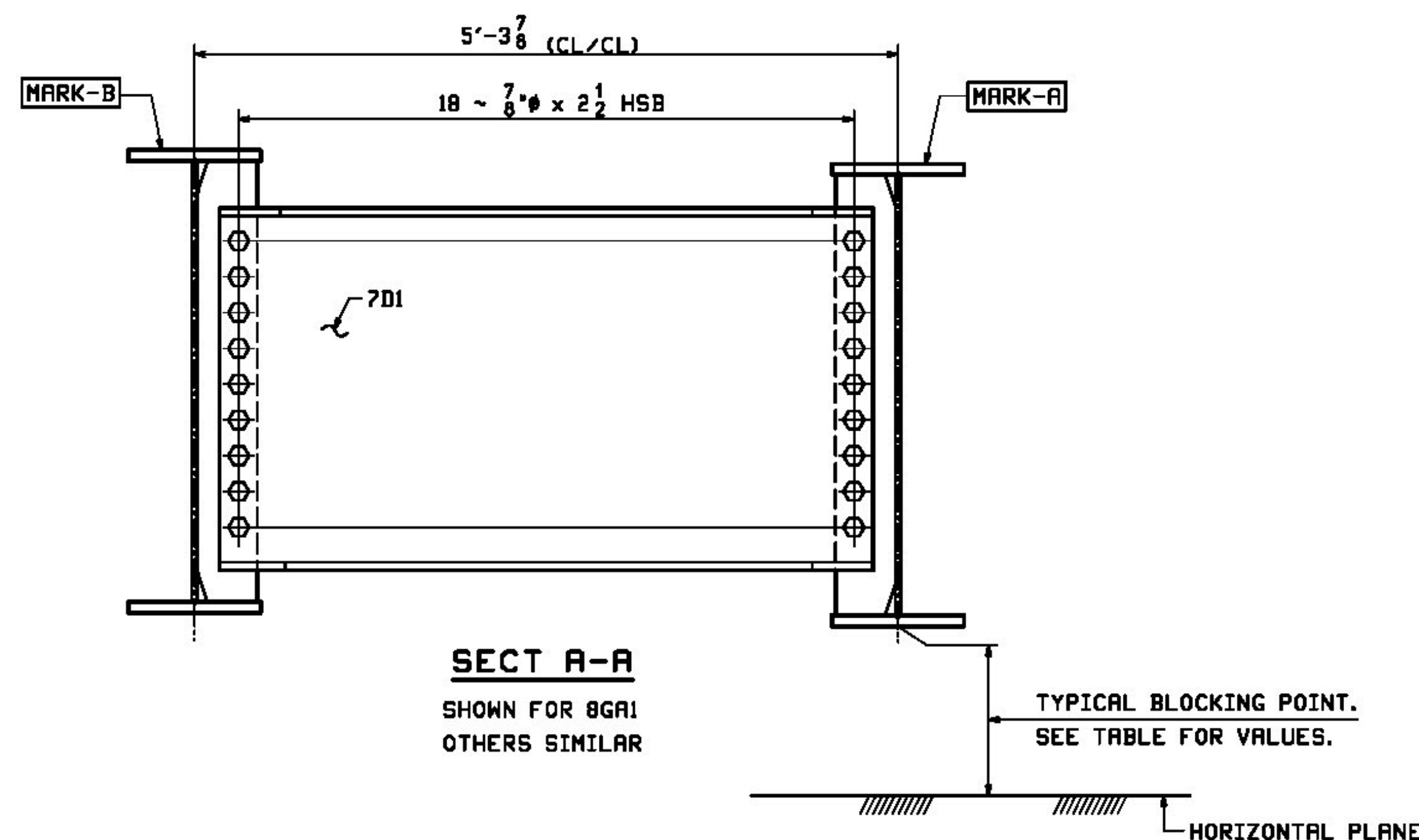
1. FOR GENERAL NOTES SEE DRAWING GN1.

0									
REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP			
MATERIAL: M270-SOW		SURFACE PREP. & PAINT: SEE GNI	HOLES: 15 16" Ø UN		SHOP BOLTS: NONE				
DESCRIPTION: INTERMEDIATE DIAPHRAGMS									
CASCO BAY STEEL STRUCTURES, INC. 1 WALLACE AVE. SOUTH PORTLAND, ME 04106 PHONE (207) 780-6722 FAX. (207) 780-6726								 TENSOR 3223	
STRUCTURE: VT ROUTE 100 (MINOR ARTERIAL) OVER MAD RIVER BRIDGE NO. 166 WARREN COUNTY OF WASHINGTON					DRAWN:	DATE:			
					CRK	01/23			
					CHCKD:	DATE:			
					DO	01/27			
LOCATION: TOWN OF WARREN					JOB NO.	DWG NO.			
PROJ NO. BRF 013-4(32)					548	7			
CUSTOMER: VT ROT						REV.	△		



GIRDER ASSEMBLY PLAN

SHIP MARK	MARK-A	MARK-B	BLOCK-1	BLOCK-2	BLOCK-3	BLOCK-4	BLOCK-5	BLOCK-6
BGA1	1G1	2G2	11 1/2	1'-5 7/16	11 1/16	1'-0 11/16	1'-6 1/2	1'-0 1/4
BGA2	3G3	2G4	1'-1 7/16	1'-7 1/4	1'-1 1/16	1'-2 11/16	1'-8 1/2	1'-2 1/4
BGA3	4G5	5G6	1'-2 5/8	1'-8 7/16	1'-2 1/4	1'-1 7/16	1'-7 1/4	1'-1 1/16
BGA4	4G7	6G8	1'-0 5/8	1'-6 7/16	1'-0 1/4	11 7/16	1'-5 3/8	11 1/16



SECT A-A
SHOWN FOR BGA1
OTHERS SIMILAR

TYPICAL BLOCKING POINT.
SEE TABLE FOR VALUES.

HORIZONTAL PLANE

BLOCKING ELEVATIONS
ARE GIVEN AT BOTTOM
OF BOTTOM FLANGE (TYP).
SEE SECT A-A.

ABN INFO		SHIP	BILL OF MATERIAL				JOB NO.	DRAWING NO.	REV.
PAGE LINE		MARK	QTY	MARK	MATERIAL	LENGTH FT INCHES	REMARKS	WT	PROCUREMENT NOTES
		BGA1	1		GIRDER ASSEMBLY			34624	
			1	1G1	GIRDER			5B13	
			1	2G2	GIRDER			5B12	
			5	7D1	INT. DIAPHRAGM			5B4	
3	C	90		1/8" HSB		0 2 1/2	A325-3	.80	
3	G	90		1/8" HSB			F438M	.07	
		BGA2	1		GIRDER ASSEMBLY			34623	
			1	3G3	GIRDER			5B12	
			1	2G4	GIRDER			5B12	
			5	7D1	INT. DIAPHRAGM			5B4	
3	C	90		1/8" HSB		0 2 1/2	A325-3	.80	
3	G	90		1/8" HSB			F438M	.07	
		BGA3	1		GIRDER ASSEMBLY			34623	
			1	4G5	GIRDER			5B12	
			1	5G6	GIRDER			5B12	
			5	7D1	INT. DIAPHRAGM			5B4	
3	C	90		1/8" HSB		0 2 1/2	A325-3	.80	
3	G	90		1/8" HSB			F438M	.07	
		BGA4	1		GIRDER ASSEMBLY			34624	
			1	4G7	GIRDER			5B12	
			1	6G8	GIRDER			5B13	
			5	7D1	INT. DIAPHRAGM			5B4	
3	C	90		1/8" HSB		0 2 1/2	A325-3	.80	
3	G	90		1/8" HSB			F438M	.07	

Vermont Agency of Transportation

RECEIVED

ON: **January 29, 2014**

and Checked for

CONFORMANCE

BY: **Rob Young** DATE: **02/18/2014**

NOTES:
FOR GENERAL NOTES SEE GNI

☒ Reviewed ☐ Furnish As Corrected
☐ Rejected ☐ Revise and Resubmit

This review is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made on the shop drawings during the review do not relieve the Contractor from compliance with the requirements of the Plans and Specifications. Review of a specific item shall not include review of an assembly of which an item is a component. The Contractor is responsible for dimensions to be confirmed and corrected at the job site, information that pertains solely to the fabrication process or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of other trades and performing all Work in a safe and satisfactory manner.

McFarland Johnson

Date February 12, 2014

By D. Kull

0									
REV.	DATE	REMARKS			DWN	CHK	APVL	SHOP	
MATERIAL:		SURFACE PREP. & PAINT:			HOLES:		SHOP BOLTS:		
DESCRIPTION: GIRDER ASSEMBLIES									
CASCO BAY STEEL STRUCTURES, INC.									
1 WALLACE AVE.			PHONE (207) 780-6722						
SOUTH PORTLAND, ME 04106			FAX. (207) 780-6726						
									
STRUCTURE: VT ROUTE 100 (MINOR ARTERIAL) OVER MAD RIVER BRIDGE NO. 166 WARREN COUNTY OF WASHINGTON					DRAWN:		DATE:		
					CRK		01/24		
					CHKD:		DATE:		
					DO		01/24		
LOCATION: TOWN OF WARREN					JOB NO.		DWG NO.		
PROJ NO. BRP 013-4(32)					548		8		
CUSTOMER: VT AOT							REV. 		



RECEIVED

and Checked for

CONFORMANCE

X	Reviewed	_____	Furnish As Corrected
	Rejected	_____	Revise and Resubmit



McFarland Johnson

By D. Kull

Tue, Jan 28, 2014 10:24:27 AM /users/John/3223/CI : NewO