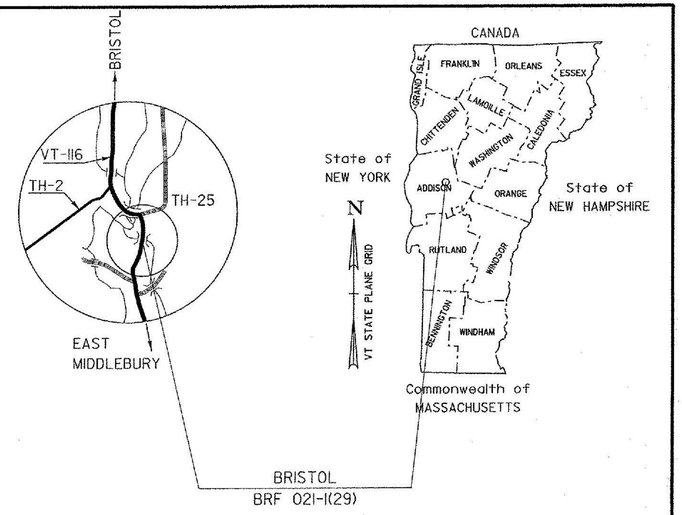
STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF BRISTOL

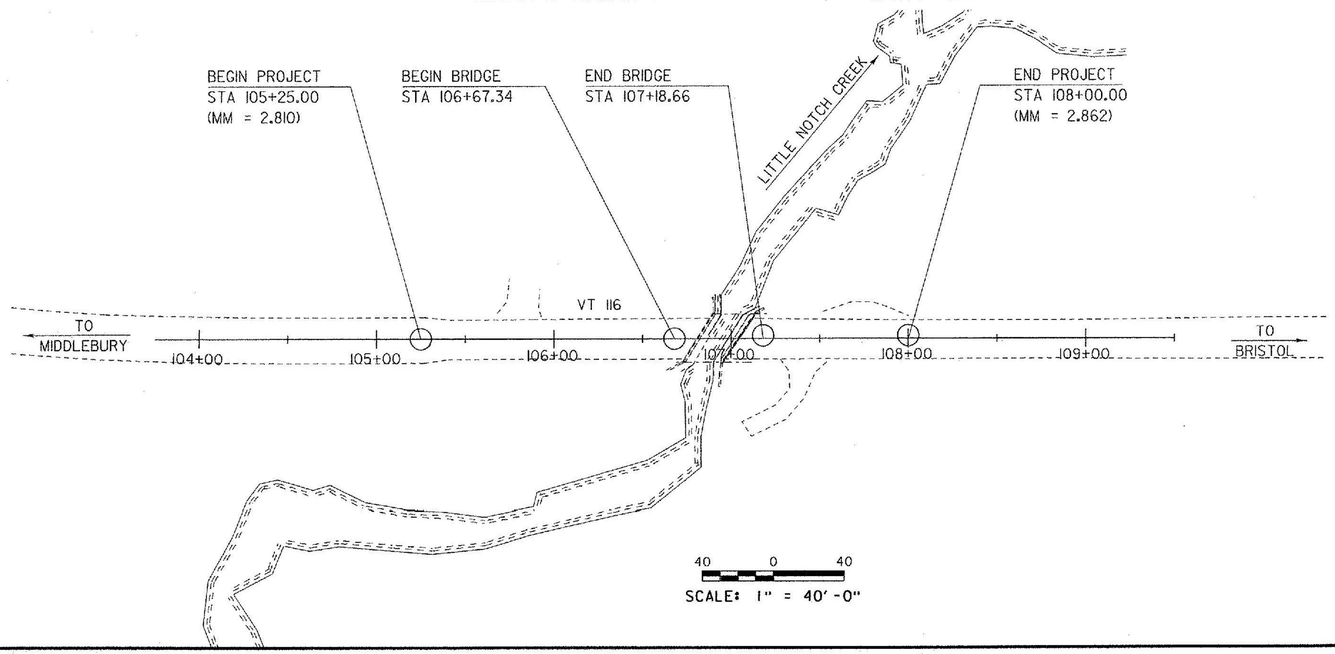
COUNTY OF ADDISON

ROUTE NO : VT ROUTE 116, MINOR ARTERIAL BRIDGE NO : #6

PROJECT LOCATION : BEGINNING AT A POINT ON VT 116 APPROXIMATELY 2.82 MILES NORTHERLY OF THE BRISTOL-MIDDLEBURY TOWN LINE AND EXTENDING NORTHEASTERLY 0.052 MILES.

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

LENGTH OF STRUCTURE :	51.32 FEET.
LENGTH OF ROADWAY :	223.68 FEET.
LENGTH OF PROJECT :	275.00 FEET.



RECORD PLANS

CONTRACTOR: S. D. IRELAND CONC. CONST. CORP - BURLINGTON, VT

RESIDENT ENGINEER: RICK HALE

CONSTRUCTION BEGAN: MAY 4, 2015

CONSTRUCTION COMPLETE: AUGUST 21, 2015

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 Phil Harrington RESIDENT ENGINEER

DATE 01/31/17

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.

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

QUALITY ASSURANCE PROGRAM : LEVEL 2

SURVEYED BY : VSE

SURVEYED DATE : 1998

DATUM

VERTICAL NAVD 88

HORIZONTAL NAD 83 (1996)

DIRECTOR OF PROJECT DELIVERY

APPROVED [signature] DATE 11/13/2014

PROJECT MANAGER : CAROLYN CARLSON, P.E.

PROJECT NAME : BRISTOL

PROJECT NUMBER : BRF 021-1 (29)

SHEET 1 OF 54 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version 09.02.02

LRFD

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B-71	STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES	7/8/2005
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S-360A	BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM	4/23/2012
S-360B	GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM	4/23/2012
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T-45	SQUARE TUBE SIGN POST AND ANCHOR	1/2/2013

STRUCTURES DETAIL SHEETS

SD-501.00	CONCRETE DETAILS AND NOTES	5/7/2010
SD-502.00	CONCRETE DETAILS AND NOTES	5/7/2010
SD-516.10	BRIDGE JOINT ASPHALTIC PLUG	5/7/2010

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: Oct. 2014

DRAINAGE AREA : 10.7 sq. mi.
CHARACTER OF TERRAIN : Hilly to mountainous, mostly forested with a few open areas
STREAM CHARACTERISTICS : Mountainous in headwaters, to flatter and meandering at site
NATURE OF STREAMBED : Gravel and sand

PEAK FLOW DATA

Q 2.33 =	530 cfs	Q 50 =	1800 cfs
Q 10 =	1100 cfs	Q 100 =	2100 cfs
Q 25 =	1450 cfs	Q 500 =	2950 cfs

DATE OF FLOOD OF RECORD: Unknown
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: Unknown
NATURAL STREAM VELOCITY: @ Q50 = 6.6 fps (2.4 fps)*
ICE CONDITIONS : Moderate
DEBRIS: Moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes
IS ORDINARY RISE RAPID? Yes
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Yes
IF YES, DESCRIBE: Hydraulics at the bridge may be controlled by backwater from the New Haven River, during high water events on that river.

WATERSHED STORAGE: <1%
HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single span concrete slab bridge.
YEAR BUILT: Built 1931, reconstructed in 1970
CLEAR SPAN(NORMAL TO STREAM): 16'
VERTICAL CLEARANCE ABOVE STREAMBED: 8'
WATERWAY OF FULL OPENING: 120 sq. ft.
DISPOSITION OF STRUCTURE: Remove and replace with a new bridge
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See boring information

WATER SURFACE ELEVATIONS AT:

Q2.33 =	326.5' (327.8')*	VELOCITY =	10.2 fps (5.8 fps)
Q10 =	329.5' (329.5')	"	7.9 fps (5.8 fps)
Q25 =	329.7' (329.7')	"	9.3 fps (6.4 fps)
Q50 =	329.8' (329.8')	"	6.9 fps (6.9 fps)
Q100 =	330.0' (330.0')	"	7.2 fps (6.6 fps)

LONG TERM STREAMBED CHANGES: The channel appears to have degraded or scoured over 5' since 1931. There is presently about 2' of local scour through the existing bridge.

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
FREQUENCY: Below Q10
RELIEF ELEVATION: 328.8' on the northern roadway approach
DISCHARGE OVER ROAD @Q100: 1235 cfs (1305 cfs)

UPSTREAM STRUCTURE

TOWN: Bristol — DISTANCE: 2400'
HIGHWAY # : TH 27 — STRUCTURE #: 20
CLEAR SPAN: 43' — CLEAR HEIGHT: 10'
YEAR BUILT: Built in 1919, reconstructed in 2002 — FULL WATERWAY:
STRUCTURE TYPE: Single span steel beam bridge with wood deck

DOWNSTREAM STRUCTURE

TOWN: Bristol — DISTANCE: 250'
HIGHWAY # : — STRUCTURE #:
CLEAR SPAN: — CLEAR HEIGHT:
YEAR BUILT: — FULL WATERWAY:
STRUCTURE TYPE: Confluence with the New Haven River

PROPOSED STRUCTURE

STRUCTURE TYPE: Single Span Pre-stressed Concrete Voided Slab Bridge

CLEAR SPAN(NORMAL TO STREAM): 41'
VERTICAL CLEARANCE ABOVE STREAMBED: 9'
WATERWAY OF FULL OPENING: 280 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	325.1' (327.4')	VELOCITY=	5.7 fps (2.9 fps)
Q10 =	327.1' (328.2')	"	8.6 fps (5.8 fps)
Q25 =	328.2' (328.7')	"	10.7 fps (7.6 fps)
Q50 =	329.1' (329.2')	"	12.0 fps (8.9 fps)
Q100 =	329.4' (329.6')	"	12.3 fps (7.4 fps)

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
FREQUENCY: Between Q25 and Q50
RELIEF ELEVATION: 328.8' on the northern roadway approach
DISCHARGE OVER ROAD @Q100: 250 cfs (450 cfs)

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 329.5'
VERTICAL CLEARANCE: @ Q50 = 0.4' (0.3')

SCOUR: Maximum contraction scour up to Q500 is 7.5' without New Haven River tailwater and 7.0' with concurrent New Haven River floods.
REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW:	20 cfs	
ORDINARY LOW WATER:	10 cfs	DEPTH OR ELEVATION: Depth = 1.0'
ORDINARY HIGH WATER:	230 cfs	Depth = 3.5'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge required.
CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

* Hydraulics at this site can be affected by high flows on the New Haven River, which is 250' downstream. Water surface elevations and velocities are reported without tailwater from that river first, followed by values based on concurrent flows on both rivers in parenthesis.

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD		HL-93
2. FUTURE PAVEMENT	d_p:	---
3. DESIGN SPAN	L:	48.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	SEE SHT 6
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f_y:	270 KSI
6. PRESTRESSED CONCRETE STRENGTH	f'_c:	7.5 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	5.0 KSI
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f'_c:	---
9. CONCRETE, HIGH PERFORMANCE CLASS A	f'_c:	4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B	f'_c:	3.5 KSI
11. CONCRETE, CLASS C	f'_c:	---
12. REINFORCING STEEL	f_y:	60 KSI
13. STRUCTURAL STEEL AASHTO M270	f_y:	---
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	q_p:	---
20. PILE YIELD STRENGTH ASTM A572	f_y:	50 KSI
21. PILE SIZE		HP 12X 84
22. EST. PILE LENGTHS (TWO SUBSTRUCTURES) (ABUTMENT 1 = 50 AND ABUTMENT 2 = 70) FT	L_p:	
23. PILE RESISTANCE FACTOR	ϕ:	0.65
24. LATERAL PILE DEFLECTION	Δ:	---
25. BASIC WIND SPEED	V_{3s}:	90 MPH
26. MINIMUM GROUND SNOW LOAD	p_g:	0.05 K/FT^2
27. SEISMIC DATA PGA: ---	S_s:	---
	S_1:	---

AS BUILT "REBAR" DETAIL

LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2012	2600	290	53	8.9	270
2032	3000	340	53	12.9	460

20 year ESAL for flexible pavement from 2012 to 2032 : 1911000
40 year ESAL for flexible pavement from 2012 to 2052 : 4465000
Design Speed : 40 mph

LRFR LOAD RATING FACTORS

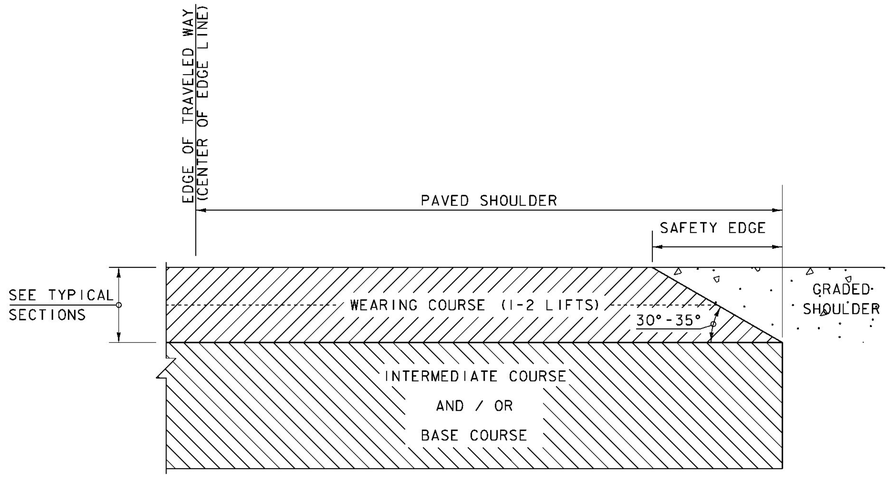
LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A STR.	4A STR.	5A SEMI
TONNAGE	**20**	**36**	**36**	**66**	**30**	**34.5**	**38**
INVENTORY	1.93	1.05					
POSTING							
OPERATING	2.51	1.36	2.21	1.3	1.77	1.61	
COMMENTS:							

PILE DRIVING AND TESTING REQUIREMENTS

1. NOMINAL PILE DRIVING CAPACITY — R_{nd}: **255.00 KIP**
2. PILE TEST RESISTANCE FACTOR — ϕ: **0.65**
3. MAXIMUM PILE TIP ELEVATION — **282.00 FT**
4. ONE DYNAMIC PILE LOADING TEST SHALL BE PERFORMED AT EACH ABUTMENT.

PROJECT NAME: **BRISTOL**
PROJECT NUMBER: **BRF 021-1 (29)**

FILE NAME: **s10b094pi.dgn**
PROJECT LEADER: **C. CARLSON**
DESIGNED BY: **M. EVANS-MONGEON**
PRELIMINARY INFORMATION
PLOT DATE: 12/5/2014
DRAWN BY: **G. ROY**
CHECKED BY: **EVANS-MONGEO**
SHEET 2 OF 54

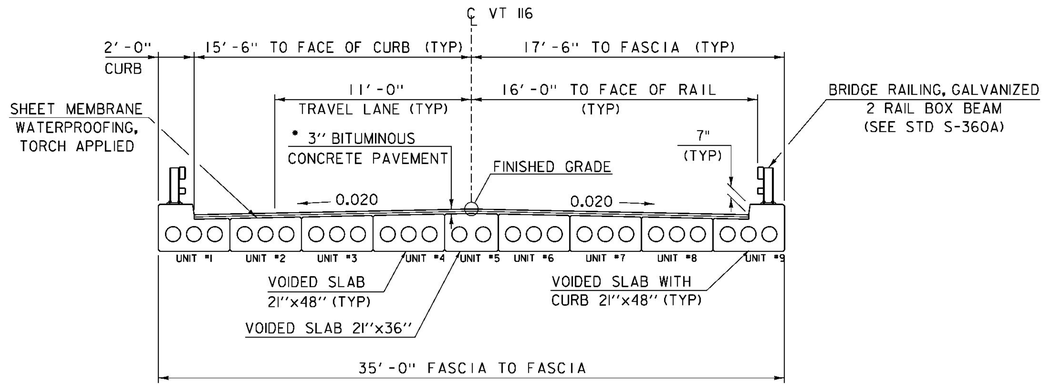


SAFETY EDGE DETAIL

SAFETY EDGE NOTES

1. 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.

2. PAVED SHOULDER EXTENDS FROM THE EDGE OF TRAVELED WAY TO THE EDGE OF THE WEARING COURSE, INCLUDING THE "SAFETY EDGE".

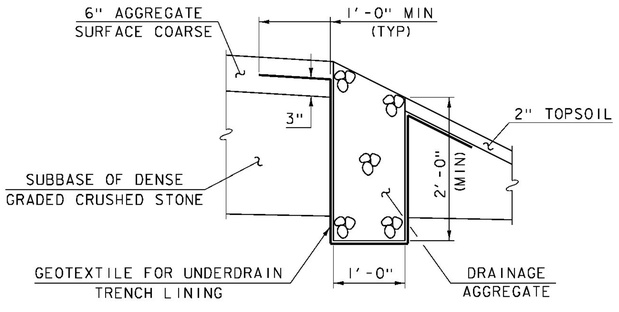


BRIDGE TYPICAL SECTION

1 0 1 2 3 4 5 6

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

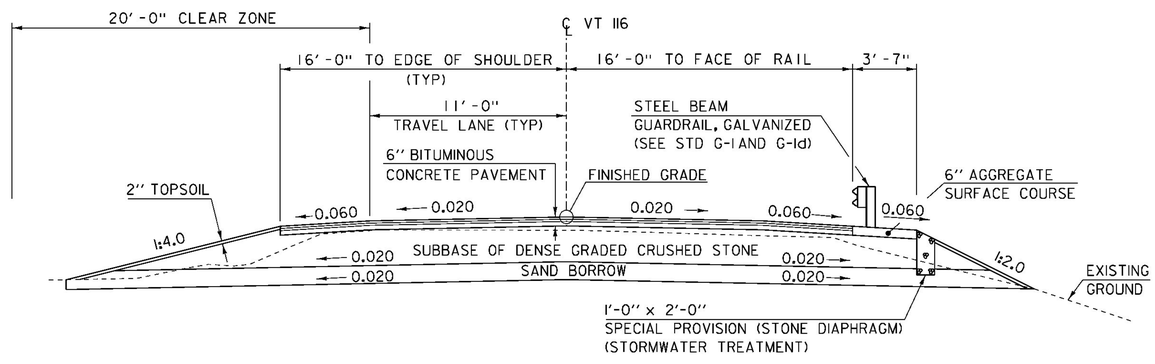
• 1½" BITUMINOUS CONCRETE PAVEMENT, TYPE IVS
1½" BITUMINOUS CONCRETE PAVEMENT, TYPE IVS



SPECIAL PROVISION (STONE DIAPHRAGM)

1 0 1 2

SCALE: 1" = 1'-0"



ROADWAY TYPICAL SECTION

1 0 1 2 3 4 5 6

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

MATERIAL TOLERANCES (IF USED ON PROJECT)	
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

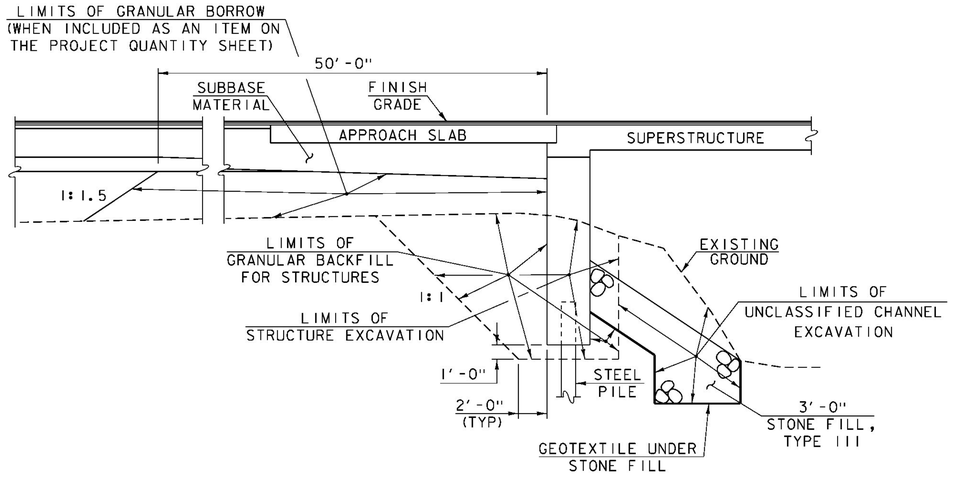
1½" BITUMINOUS CONCRETE PAVEMENT, TYPE IVS
1½" BITUMINOUS CONCRETE PAVEMENT, TYPE IVS
3" BITUMINOUS CONCRETE PAVEMENT, TYPE IIS
24" SUBBASE OF DENSE GRADED CRUSHED STONE
12" SAND BORROW

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

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

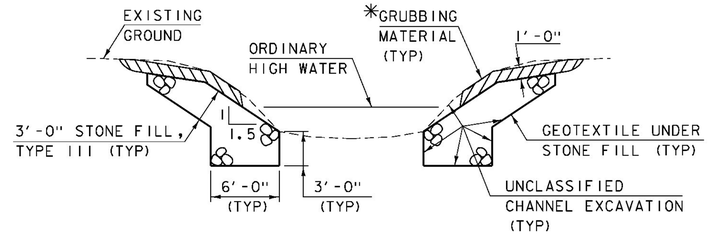
FILE NAME: s10b094typ.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: M. EVANS-MONGEON
PROJECT TYPICAL SECTIONS (1)

PLOT DATE: 04-NOV-2014
DRAWN BY: G. ROKES
CHECKED BY: G. ROY
SHEET 3 OF 54



ABUTMENT EARTHWORK TYPICAL SECTION

(NOT TO SCALE)



TYPICAL CHANNEL SECTION

(NOT TO SCALE)

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

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)
FILE NAME: s10b094typ.dgn	PLOT DATE: 04-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROKES
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: G. ROY
PROJECT TYPICAL SECTIONS (2)	SHEET 4 OF 54

GENERAL

1) ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE VERMONT AGENCY OF TRANSPORTATION 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE 2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, AND THEIR LATEST REVISIONS.

2) ALL PRECAST CONCRETE ELEMENTS TO 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.

3) ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.

4) THE WEARING SURFACE SHALL BE SHIMMED TRANSVERSELY AS NECESSARY TO ACCOUNT FOR POTENTIAL DIFFERENTIAL CAMBER OF THE ADJACENT PRESTRESSED UNITS.

5) THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL BURIED AND AERIAL UTILITIES AND POLES PRIOR TO STARTING WORK. SEE UTILITY SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

TRAFFIC CONTROL

6) THE CONTRACTOR WILL BE ALLOWED TO CLOSE THE BRIDGE FOR A MAXIMUM OF FOUR CONSECUTIVE WEEKS TO COMPLETE THE BRIDGE REPLACEMENT. SEE THE SPECIAL PROVISIONS FOR WORK REQUIREMENTS AND INCENTIVE/DISINCENTIVE PROVISIONS FOR THE BRIDGE CLOSURE PERIOD.

7) THE CONTRACTOR SHALL NOTIFY THE TOWNS OF BRISTOL, NEW HAVEN, AND MIDDLEBURY A MINIMUM OF FOUR WEEKS PRIOR TO CLOSING THE BRIDGE.

8) FULL ACCESS TO ALL SIDE ROADS AND DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".

9) THE TEMPORARY DETOUR, TO BE USED WHILE THE BRIDGE IS CLOSED, IS SHOWN ON THE TRAFFIC DETOUR SHEET. THE INSTALLATION AND MAINTENANCE OF ALL SIGNING ASSOCIATED WITH THE TEMPORARY DETOUR SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL ALL-INCLUSIVE).

10) THE CONTRACTOR SHALL SUBMIT A DETAILED, SITE-SPECIFIC, TRAFFIC-CONTROL PLAN TO THE ENGINEER FOR ALL STAGES OF CONSTRUCTION, FOR APPROVAL PER SUBSECTION 105.03. NO WORK SHALL BEGIN UNTIL THE TRAFFIC-CONTROL PLAN HAS BEEN APPROVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING THE TRAFFIC CONTROL PACKAGE IDENTIFYING THE PROJECT BEFORE, DURING AND AFTER THE EXISTING TRAFFIC CONTROL PATTERN IS ALTERED. ALL COST SHALL BE INCLUDED IN ITEM 900.645 "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)". SEE SPECIAL PROVISIONS FOR ADDITIONAL DETAILS.

11) THE COST FOR ALL ITEMS REQUIRED TO DESIGN AND IMPLEMENT THE CONTRACTOR'S TRAFFIC CONTROL PLAN SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 900.645 "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)". FLAGGERS AND MESSAGE BOARDS PAID SEPARATELY.

12) ALL SIGNS, BARRICADES, AND OTHER TRAFFIC CONTROL DEVICES SHALL BE CLEANED WEEKLY OR AS DIRECTED BY THE ENGINEER. ALL PORTABLE CHANGEABLE MESSAGE BOARDS SHALL BE INSPECTED TWICE A DAY (AM AND PM) EVERY DAY OF THE WEEK, INCLUDING WEEKENDS, TO BE SURE THAT THEY ARE OPERATING PROPERLY. THE COST FOR THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".

13) ALL SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD. WHERE CONFLICTS EXIST BETWEEN THE MUTCD AND THE PLANS, THE MUTCD SHALL GOVERN. FOR ADDITIONAL SIGNING REQUIREMENTS SEE THE T SERIES OF THE STANDARDS.

14) DUE TO STABILITY CONCERNS AT THE ABUTMENTS DURING THE ERECTION OF THE SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT THE ERECTION PLAN A MINIMUM OF 30 WORKING DAYS PRIOR TO THE BRIDGE CLOSURE PERIOD. UNDER NO CIRCUMSTANCES SHALL A BRIDGE CLOSURE PERIOD BEGIN PRIOR TO HAVING AN ACCEPTED ERECTION PLAN

EARTHWORK

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

16) THE "STONE FILL, TYPE III" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE SUPERSTRUCTURE IS SET.

CONCRETE AND REINFORCING STEEL

17) ITEM 514.10, "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES ON THE BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE, WITH THE EXCEPTION OF THE BOTTOM OF THE PRECAST VOIDED SLABS BETWEEN THE DRIP NOTCHES.

18) ALL CONCRETE PLACED INTEGRALLY WITH THE SUPERSTRUCTURE SHALL BE ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)". ALL PRECAST SUBSTRUCTURE AND APPROACH SLAB CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 540 – PRECAST CONCRETE.

19) ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".

20) ALL REINFORCING STEEL SHALL MEET THE REQUIREMENTS FOR REINFORCING STEEL, LEVEL II.

21) PAYMENT FOR REINFORCING INCLUDED IN THE PRE-CAST ELEMENTS WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE SECTION 540 CONTRACT ITEM. PAYMENT FOR REINFORCING FOR ANY CAST-IN PLACE CONCRETE WILL BE MADE UNDER ITEM 507.12, "REINFORCING STEEL, LEVEL II".

PRECAST ABUTMENTS AND POST-TENSIONING

22) THE UNIT PRICE FOR EACH PRECAST ABUTMENT SHALL INCLUDE THE ASSOCIATED WINGWALLS AND ALL LABOR AND MATERIAL TO CONNECT THE WINGWALLS TO THE ABUTMENT. THIS WORK SHALL BE PAID FOR UNDER ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1)" OR ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2)", AS APPROPRIATE.

23) IF VERTICAL CONSTRUCTION JOINTS ARE REQUIRED BY THE CONTRACTOR FOR SHIPMENT OF THE ABUTMENTS, THE SECTIONS SHALL BE KEYED AND MATCH CAST. A JOINT DETAIL SHALL BE SHOWN ON THE FABRICATION DRAWINGS.

24) POST-TENSIONING AND ASSOCIATED ITEMS ARE ONLY REQUIRED IF THE PRECAST ABUTMENT IS CONSTRUCTED IN MORE THAN ONE PIECE. 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.

25) GALVANIZE ANCHOR ASSEMBLIES AFTER FABRICATION ACCORDING TO AASHTO M232M/M 232.

26) DESIGN VALUES
- a) CONCRETE COMPRESSIVE STRENGTH: f'c = 5000 PSI.
- b) POST-TENSIONING STRANDS: 0.5 INCH DIAMETER, 270 KSI, LOW RELAXATION 7-WIRE STRANDS.
- c) ASSUMED MODULUS OF ELASTICITY IS 28,500 KSI.
- d) THERE SHALL BE 2 STRANDS PER POST-TENSIONING CONDUIT.
- e) JACKING FORCE PER STRAND = 32 KIPS

27) THE CONCRETE FOR THE ABUTMENT # 1 AND ABUTMENT #2 PILE CAVITIES SHALL MEET THE REQUIREMENTS OF ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)".

28) 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.

29) PROPOSED SEQUENCE OF CONSTRUCTION:
- a) PREPARE AND GRADE FOUNDATION TO REQUIRED ELEVATION.
- b) DRIVE PILES.
- c) PLACE PRECAST ABUTMENTS AND INSTALL TRANSVERSE STRANDS (IF MORE THAN ONE UNIT).
- d) APPLY EPOXY BONDONG COMPOUND TO MATCH CAST FACES OF VERTICAL CONSTRUCTION JOINT.
- e) USE A CALIBRATED JACK TO TENSION TO 3 KIPS TO REMOVE SAG IN STRANDS.
- f) CHECK ALIGNMENT OF PILE CAP ELEMENTS.
- g) STRESS POST-TENSIONING STRANDS USING A CALIBRATED JACK.
- h) FILL PILE CAVITIES WITH ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)".
- i) PLACE PRE-CAST WINGWALLS AND GROUT MECHANICAL SPLICE CONNECTORS.
- j) BACKFILL MAY BE INITIATED AFTER SPLICE CONNECTOR GROUT HAS REACHED 85% OF 5000 PSI.

30) ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED TO THE VTRANS PROJECT MANAGER FOR APPROVAL.

H-PILES

31) TO PREVENT DAMAGE TO THE PILES, PILE SHOES ARE REQUIRED AND SHALL CONFORM TO SUBSECTION 505.04 (f).

32) THE PILES SHALL BE DRIVEN TO A NOMINAL PILE DRIVING RESISTANCE (R_{NDR}) OF 255 KIPS, PROVIDED A MINIMUM PENETRATION OF 40 FEET BELOW THE BOTTOM OF PILE CAP HAS BEEN ACHIEVED.

33) A MINIMUM OF TWO DYNAMIC TESTS ARE REQUIRED DURING PILE INSTALLATION. NO LESS THAN ONE DYNAMIC PILE TEST SHALL BE CONDUCTED AT EACH ABUTMENT. PAYMENT WILL BE MADE UNDER ITEM 505.45, "DYNAMIC PILE LOADING TEST".

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

35) FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL IN-PLACE LENGTHS MAY VARY.

PROPOSED CONSTRUCTION SEQUENCE FOR PRESTRESSED VOIDED SLABS

36) LAYOUT WORKING LINES:
- A. LAYOUT WORKING LINES FOR THE ENTIRE BRIDGE WIDTH ON THE SLAB SEAT.
- B. MEASURE ALL WORKING LINES FROM A COMMON WORKING POINT.
- C. BASE THE WORKING LINES ON THE NOMINAL SLAB WIDTHS.

37) VERIFY SLAB SEAT ELEVATIONS
- 1. MEASURE ELEVATIONS AT SLAB SEATS.
- 2. IF SEATS ARE HIGH OR LOW, TAKE CORRECTIVE ACTION.
- 3. INSTALL BEARINGS.

38) ERECT SLAB:
- A. PLACE SLAB TO FIT WITHIN WORKING LINES.
- B. AS WORK PROGRESSES, INSTALL HARDWOOD WEDGES BETWEEN ADJACENT SLABS TO MAINTAIN PROPER JOINT OPENING, A MINIMUM OF ONE WEDGE AT TRANSVERSE TENDON.
- C. DRILL ANCHOR BOLT HOLES.
- D. PLACE ANCHOR BOLTS.

39) INSTALL BACKER ROD:
- A. PLACE FILLER BELOW THE KEYWAY BOTTOM, AS SHOWN ON THE PLANS.

40) INSTALL TRANSVERSE TENDONS:
- A. FEED TENDONS THROUGH DUCTS.
- B. VERIFY THAT HARDWOOD WEDGES ARE IN PLACE AS REQUIRED TO PREVENT SLIPPAGE OF SLABS.
- C. USING A CALIBRATED JACK, POST-TENSION TENDONS TO APPROXIMATELY 5 KIPS TO REMOVE SAG IN THE TENDON AND SEAT THE CHUCK.

41) GROUT SHEAR KEYS:
- A. CLEAN JOINT WITH OIL-FREE AIR-BLAST IMMEDIATELY BEFORE GROUT PLACEMENT. VERIFY THAT BACKER ROD IS STILL IN PLACE.
- B. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR ADDITIONAL JOINT PREPARATION AND GROUT PLACEMENT.
- C. CAREFULLY ROD JOINTS TO ELIMINATE THE POSSIBILITY OF VOIDS.

42) POST-TENSION TRANSVERSE TENDONS:
- A. GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI, BASED ON THE MANUFACTURER'S RECOMMENDATIONS, PRIOR TO STRESSING.
- B. POST-TENSION TENDONS TO 32 KIPS EACH USING A CALIBRATED JACK OPERATED BY QUALIFIED PERSONNEL. BEGIN WITH TENDONS AT THE ENDS AND WORK SYMMETRICALLY TOWARDS THE MID-SPAN FROM EACH END.
- C. SEE SHEET 23 FOR ADDITIONAL NOTES AND DETAIL.

43) END DETAILS:
- A. GROUT ANCHOR BOLTS INTO THE SLEEVES IN THE PRE-STRESSED UNITS. BEFORE THE GROUT CURES, PLACE THE WASHER PLATE AND INSTALL THE NUT ON TOP AND TIGHTEN.
- B. GROUT OVER THE NUT AND BOLT IN THE ANCHOR BOLT BLOCK OUTS.
- C. SEE SHEET 23 FOR ADDITIONAL NOTES AND DETAILS.

44) FINISH WORK:
- A. REMOVE WEDGES AND SURFACE PATCH THE FASCIA SLABS AT TRANSVERSE TENDONS.

45) FILL KEYWAY WITH TYPE IV MORTAR ACCORDING TO SECTION 510. GROUTING SHALL BE PAID FOR UNDER ITEM 510.24, "GROUTING SHEAR KEYS".

46) ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED TO THE VTRANS PROJET MANAGER FOR APPROVAL.

47) THE FABRICATOR MAY ALTER THE DESIGN AS DETAILED IN THESE PLANS TO ACCOMMODATE THEIR SPECIFIC OPERATION. ALTERNATE CONFIGURATIONS SHALL MEET ALL OF THE APPLICABLE DESIGN CRITERIA, LOADINGS AND CODES; AND SHALL BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER, LICENSED IN VERMONT.

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)
FILE NAME: s10b094proj_notes.dgn	PLOT DATE: 04-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: EVANS-MONGEON
PROJECT NOTES (1)	SHEET 5 OF 54

48.) DESIGN VALUES FOR PRESTRESSED CONCRETE VOIDED SLABS

a) CONCRETE COMPRESSIVE STRENGTH: f'c = 7,500 PSI.
b) LIVE LOAD HL-93.
c) CONCRETE COMPRESSIVE STRENGTH AT RELEASE: f'ci = 5,000 PSI
d) ASSUMED MODULUS OF ELASTICITY = 28,500 KSI.
e) PRESTRESSING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW-RELAXATION 7-WIRE STRAND PULLED TO 75% OF THEIR ULTIMATE TENSILE STRENGTH.
f) POST TENSIONING STRANDS: 0.5 INCH DIAMETER, 270 KSI, LOW-RELAXATION 7 WIRE STRAND.
g) THERE SHALL BE TWO (2) TRANSVERSE STRANDS PER CONDUIT. JACKING FORCE PER STRAND = 32 KIPS.
h) 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.
i) SERVICE LOADS:

	FASCIA UNITS		4 FOOT INTERIOR UNITS		UNIT 5 (3 FOOT UNIT)
MEMBER MOMENT (UNFACTORED)	320 FT-KIPS		290 FT-KIPS		230 FT- KIPS
SUPERIMPOSED DEAD LOAD MOMENT (UNFACTORED)	40 FT-KIPS		40 FT-KIPS		40 FT-KIPS
LIVE LOAD AND IMPACT MOMENT (UNFACTORED)	332 FT-KIPS		312 FT-KIPS		273 FT-KIPS
DEAD LOAD REACTION PER BRG (UNFACTORED)	16 KIPS		14 KIPS		12 KIPS
LIVE LOAD AND IMPACT REACTION PER BRG (UNFACTORED)	24 KIPS		24 KIPS		15 KIPS
TOTAL REACTION PER BRG (UNFACTORED)	40 KIPS		38 KIPS		27 KIPS
FINAL CAMBER	3/8 INCH		3/8 INCH		3/8 INCH

PROJECT NAME: BRISTOL
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FILE NAME: s10b094proj_notes.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: M. EVANS-MONGEON
PROJECT NOTES (2)

PLOT DATE: 04-NOV-2014
DRAWN BY: R. PELLETT
CHECKED BY: EVANS-MONGEON
SHEET 6 OF 54

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES							TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
													EARTHWORKS SUMMARY
1					1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				
1050					1050		CY	COMMON EXCAVATION	203.15				
			600		600		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27				**FILL AVAILABLE**
330					330		CY	SAND BORROW	203.31		735	CY	COMMON EXCAVATION (0.70 x 1050 CY)
40		10			50		CY	TRENCH EXCAVATION OF EARTH	204.20		180	CY	UNCLASSIFIED CHANNEL EXCAVATION (0.30 x 600)
1					1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22		35	CY	TRENCH EXCAVATION OF EARTH (0.70 x 50)
			480		480		CY	STRUCTURE EXCAVATION	204.25		144	CY	STRUCTURE EXCAVATION (0.30 x 480)
			220		220		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30		6	CY	ROUNDING
270					270		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10		**1100**	**CY**	**TOTAL FILL AVAILABLE**
980					980		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35				
50					50		CY	AGGREGATE SURFACE COURSE	401.10				**FILL REQUIRED**
9					9		CWT	EMULSIFIED ASPHALT	404.65		154	CY	FACTORED FILL (134 x 1.15)
1					1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50		6	CY	ROUNDING
											160	**CY**	**TOTAL FILL REQUIRED**
			1		1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10				
			600		600		LF	STEEL PILING, HP 12 X 84	505.165		**940**	**CY**	**TOTAL WASTE**
			2		2		EACH	DYNAMIC PILE LOADING TEST	505.45				
			928		928		LB	REINFORCING STEEL, LEVEL II	507.12				
			50		50		LF	PRESTRESSED CONCRETE VOIDED SLABS (21" X 36")	510.22				
			100		100		LF	PRESTRESSED CONCRETE VOIDED SLABS (21" X 48")(FASCIA)	510.22				
			300		300		LF	PRESTRESSED CONCRETE VOIDED SLABS (21" X 48")(INTERIOR)	510.22				
			400		400		LF	GROUTING SHEAR KEYS	510.24				
			10		10		GAL	WATER REPELLENT, SILANE	514.10				
			70		70		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
			180		180		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20				
			70		70		LF	JOINT SEALER, HOT POURED	524.11				
			110		110		LF	BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM	525.33				
			1		1		EACH	REMOVAL OF STRUCTURE (690 SF -EST.)	529.15				
			36		36		EACH	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	531.17				
			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				
								BEGIN OPTION AA					
66					66		LF	24" CAAP .060 (2-2/3 X 1/2)	601.0225				
66					66		LF	24" PCCSP .064 (2-2/3 X 1/2)	601.0425				
66					66		LF	24" CPEP(SL)	601.2620				
								END OPTION AA					
30					30		CY	STONE FILL, TYPE II	613.11				
			380		380		CY	STONE FILL, TYPE III	613.12				
160					160		LF	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28				

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: s10b094qs.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: M. EVANS-MONGEON
QUANTITY SHEET (1)

PLOT DATE: 04-NOV-2014
DRAWN BY: R. PELLETT
CHECKED BY: EVANS-MONGEON
SHEET 7 OF 54

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES							TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
260					260		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.20				
4					4		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60				
4					4		EACH	GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM	621.72				
170					170		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
640					640		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				
	520				520		HR	EMPLOYEE TRAINEESHIP	634.10				
1					1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
2					2		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
1050					1050		LF	4 INCH WHITE LINE	646.20				
1050					1050		LF	4 INCH YELLOW LINE	646.21				
140			560		700		SY	GEOTEXTILE UNDER STONE FILL	649.31				
260					260		SY	GEOTEXTILE FOR UNDERDRAIN TRENCH LINING	649.41				
		230			230		SY	GEOTEXTILE FOR SILT FENCE	649.51				
		90			90		SY	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515				
		70			70		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61				
		20			20		LB	SEED	651.15				
		20			20		LB	SEED, WINTER RYE	651.17				
		100			100		LB	FERTILIZER	651.18				
		1			1		TON	AGRICULTURAL LIMESTONE	651.20				
		1			1		TON	HAY MULCH	651.25				
		50			50		CY	TOPSOIL	651.35				
			80		80		SY	GRUBBING MATERIAL	651.40				
		1			1		LS	EPSC PLAN	652.10				
		50			50		HR	MONITORING EPSC PLAN	652.20				
		1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30				
		260			260		SY	TEMPORARY EROSION MATTING	653.20				
		30			30		CY	VEHICLE TRACKING PAD	653.35				
		620			620		LF	BARRIER FENCE	653.50				
		420			420		LF	PROJECT DEMARCATION FENCE	653.55				
1					1		SF	TRAFFIC SIGNS, TYPE A	675.20				
16					16		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
			20		20		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)	900.608				
30					30		CY	SPECIAL PROVISION (STONE DIAPHRAGM)	900.608				
8					8		EACH	SPECIAL PROVISION (CPM SCHEDULE)	900.620				
1					1		LS	SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)	900.645				
1					1		LU	SPECIAL PROVISION (INCENTIVE/DISINCENTIVE)(N.A.B.I.)	900.650				

PROJECT NAME: BRISTOL
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QUANTITY SHEET (2)

PLOT DATE: 04-NOV-2014
DRAWN BY: R. PELLETT
CHECKED BY: EVANS-MONGEON
SHEET 8 OF 54

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 3

SUMMARY OF ESTIMATED QUANTITIES							TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS			GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
1							1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I.)	900.650				
1							1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N.A.B.I.)	900.650				
406			54				460		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: s10b094qs.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: M. EVANS-MONGEON
QUANTITY SHEET (3)

PLOT DATE: 04-NOV-2014
DRAWN BY: R. PELLETT
CHECKED BY: EVANS-MONGEON
SHEET 9 OF 54

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE QUANTITY SHEET 1

SUMMARY OF BRIDGE QUANTITIES					TOTALS	DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES		
APPROACH SLAB #1	ABUTMENT #1	SUPER= STRUCTURE	ABUTMENT #2	APPROACH SLAB #2	BRIDGE TOTAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS
	266		334		600	CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27			
	245		235		480	CY	STRUCTURE EXCAVATION	204.25			
	113		107		220	CY	GRANULAR BACKFILL FOR STRUCTURES	204.30			
	0.5		0.5		1	LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10			
	250		350		600	LF	STEEL PILING, HP 12 X 84	505.165			
	1		1		2	EACH	DYNAMIC PILE LOADING TEST	505.45			
	464		464		928	LB	REINFORCING STEEL, LEVEL II	507.12			
		50			50	LF	PRESTRESSED CONCRETE VOIDED SLABS (21" X 36")	510.22			
		100			100	LF	PRESTRESSED CONCRETE VOIDED SLABS (21" X 48")(FASCIA)	510.22			
		300			300	LF	PRESTRESSED CONCRETE VOIDED SLABS (21" X 48")(INTERIOR)	510.22			
		400			400	LF	GROUTING SHEAR KEYS	510.24			
	1	8	1		10	GAL	WATER REPELLENT, SILANE	514.10			
		70			70	LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10			
		180			180	SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20			
		70			70	LF	JOINT SEALER, HOT POURED	524.11			
		110			110	LF	BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM	525.33			
		1			1	EACH	REMOVAL OF STRUCTURE (690 SF -EST.)	529.15			
	18		18		36	EACH	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	531.17			
	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			
	166		214		380	CY	STONE FILL, TYPE III	613.12			
	273		287		560	SY	GEOTEXTILE UNDER STONE FILL	649.31			
	40		40		80	SY	GRUBBING MATERIAL	651.40			
3	7		7	3	20	CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)	900.608			
		54			54	TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680			

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: s10b094qs.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: M. EVANS-MONGEON
BRIDGE QUANTITY SHEET 1

PLOT DATE: 04-NOV-2014
DRAWN BY: R. PELLETT
CHECKED BY: EVANS-MONGEON
SHEET 10 OF 54

GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

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

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

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

COMMON TOPOGRAPHIC POINT SYMBOLS

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

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

PROPOSED GEOMETRY CODES

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

UTILITY SYMBOLOGY

UNDERGROUND UTILITIES

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

ABOVE GROUND UTILITIES (AERIAL)

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

PROJECT CONSTRUCTION SYMBOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOGY

- CZ — CLEAR ZONE
- PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

- TOP OF CUT SLOPE
- TOE OF FILL SLOPE
- STONE FILL
- BOTTOM OF DITCH ℄
- CULVERT PROPOSED
- STRUCTURE SUBSURFACE
- PDF — PROJECT DEMARCATION FENCE
- BF — BARRIER FENCE
- TREE PROTECTION ZONE (TPZ)
- STRIPING LINE REMOVAL
- SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINES

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

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

- FILTER CURTAIN
- SILT FENCE
- SILT FENCE WOVEN WIRE
- CHECK DAM
- DISTURBED AREAS REQUIRING RE-VEGETATION
- EROSION MATTING

ENVIRONMENTAL RESOURCES

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

ARCHEOLOGICAL & HISTORIC

- ARCH — ARCHEOLOGICAL BOUNDARY
- HISTORIC DIST — HISTORIC DISTRICT BOUNDARY
- HISTORIC — HISTORIC AREA
- Ⓗ HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

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

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)
FILE NAME: sl0c094legend.dgn	PLOT DATE: 04-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: EVANS-MONGEON
CONVENTIONAL SYMBOLOGY - LEGEND	SHEET 11 OF 54

GPS CONTROL POINTS

HVCTRL #1

CGS TRIANGULATION STATION DISC

"BRISTOL 2 1970"

NORTH = 595643.717
EAST = 1485447.780
ELEV. = 577.427

STATION IS LOCATED ABOUT 0.8 KM (0.5 MILE) WEST OF CENTER OF BRISTOL , IN THE WEST ANGLE OF THE T-INTERSECTION OF STATE HIGHWAY 17 AND A MACADAM ROAD RUNNING NORTH, UP ON A LOW CUTBANK, IN SOUTHWEST CORNER OF SCHOOL PLAYGROUND, FORMERLY BRISTOL AIRPORT. TO REACH STATION FROM THE MAIN INTERSECTION IN CENTER OF BRISTOL, GO WEST ON STATE HIGHWAY 17 FOR 0.97 KM (0.6 MILE) TO STATION ON RIGHT, WHERE THE HIGHWAY BEGINS TO CURVE LEFT, DOWNGRADE. STATION MARK IS A STANDARD DISK STAMPED BRISTOL 2 1910, SET IN TOP OF A 0.25 m (10 INCH) DIAMETER, CONCRETE MONUMENT FLUSH WITH THE GROUND. IT IS 21 m (69 FEET) NORTHWEST OF CENTER LINE OF HIGHWAY 17, 13.4 m (44 FEET) WEST-NORTHWEST OF CENTER LINE OF MACAOAM SIOE ROAO, 1.4 m (4.5 FEET) NORTH OF POWER POLE 29, 6.64 m (21.8 FEET) NORTH OF A FIRE HYORANT, ANO 0.46 m (1.5 FEETJ SOUTHWEST OF A METAL WiTNESS POST

HVCTRL #2

STANDARD DISK STAMPED

"POWERLINE 1991"

NORTH = 592458.116
EAST = 1466209.098
ELEV. = 425.521

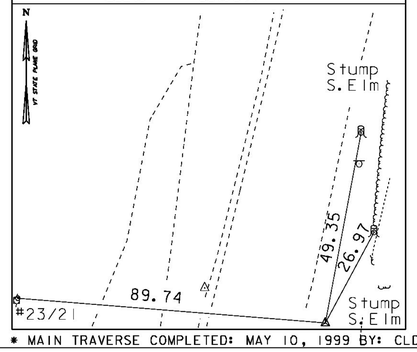
GENERAL LOCATION, NEW HAVEN, VT. TO REACH FROM THE INTERSECTION OF VT ROUTE 17 EAST AND US ROUTE 7 IN NEW HAVEN JUNCTION, GO EAST ALONG VT ROUTE 17 FOR 1.4 KM (0.9 MILE) TO A POWERLINE CROSSING AND THE MARK ON THE LEFT. THE MARK IS, SET FLUSH WITH GROUND SURFACE IN THE TOP OF A 25 cm (1 FOOT) DIAMETER CONCRETE MONUMENT. IT IS 12.7 m (41.7 FEET) NORTH OF ANO ABOUT LEVEL WITH THE CENTERLINE OF VT ROUTE 17, 3.7 m (12.1 FEET) EAST OF POLE NO.3. 15.3 m (50.2 FEET) WEST or POLE NO.303, AND 0.8 m (2.6 FEET) NORTH OF A FIBERGLASS WITNESS POST.

* Description provided by the Vermont Agency of Transportation Geodetic Survey Unit

TRAVERSE TIES

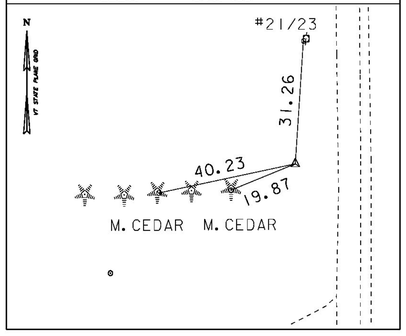
HVCTRL #10

NORTH = 584134.277
EAST = 1483656.157
ELEV. = 337.911



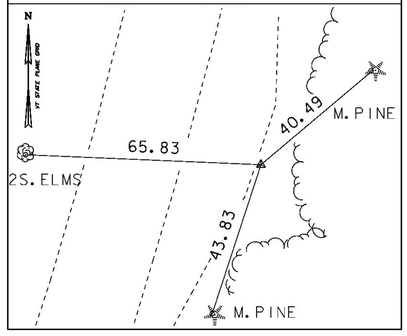
HVCTRL #11

NORTH = 584747.306
EAST = 1483661.156
ELEV. = 341.469



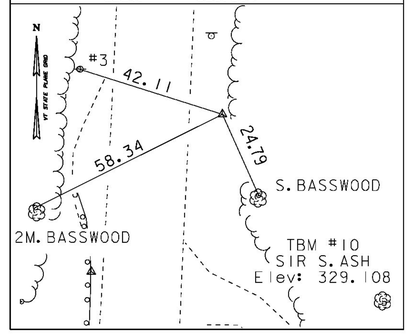
HVCTRL #70

NORTH = 580898.273
EAST = 1485139.549
ELEV. = 337.838



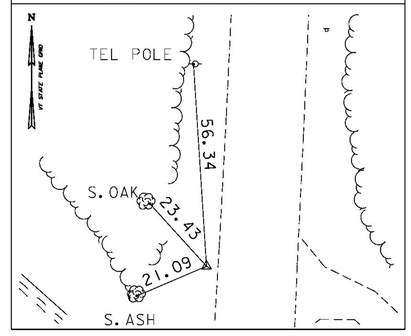
HVCTRL #72

NORTH = 581583.417
EAST = 1485190.331
ELEV. = 329.994



HVCTRL #101

NORTH = 581539.421
EAST = 1485153.670
ELEV. = 330.708

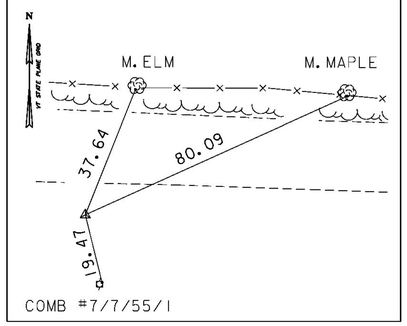


* MAIN TRAVERSE COMPLETED: MAY 10, 1999 BY: CLD

ALIGNMENT TIES

HVCTRL #102

NORTH = 582772.214
EAST = 1485209.119
ELEV. = 334.035



VT 116

	STATION	NORTHING	EASTING
POB	103+75.00	581168.0686	1485151.1601
POE	109+50.00	581742.4986	1485176.7565

Tangent Direction: N 2°33'05" E
Tangent Length: 575.00

CHANNEL

	STATION	NORTHING	EASTING
POB	800+00.00	581417.2360	1485230.3702
POT	801+50.00	581486.7772	1485097.4640

Tangent Direction: N 62°26'55" W

DATUM

VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)
ADJUSTMENT Unknown

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: s10b094tie.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: M. EVANS-MONGEON
TIE SHEET

PLOT DATE: 04-NOV-2014
DRAWN BY: R. BULLOCK
CHECKED BY: EVANS-MONGEON
SHEET 12 OF 54

CONSTRUCT 3' WIDE PAVED APRON

STA 105+55.0 LT - STA 106+02.9 LT - 47.9'

CONSTRUCT GRAVEL DRIVE

STA 105+79.0 LT - 16'

BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM

STA 106+73.3 LT - STA 107+28.2 LT
STA 106+57.8 RT - STA 107+12.7 RT

CAST-IN-PLACE CONCRETE CURB, TYPE B

STA 106+20.8 RT - STA 106+60.8 RT
STA 106+35.3 LT - STA 106+75.2 LT
STA 107+10.8 RT - STA 107+50.7 RT
STA 107+25.2 LT - STA 107+65.2 LT

STEEL BEAM GUARDRAIL, GALVANIZED

STA 105+94.2 LT - STA 106+44.2 LT
STA 105+28.7 RT - STA 106+28.7 RT
STA 107+57.3 LT - STA 108+19.8 LT
STA 107+41.8 RT - STA 107+79.3 RT

ANCHOR FOR STEEL BEAM RAIL

STA 106+00.5 LT
STA 105+35.0 RT
STA 108+13.4 LT
STA 107+73.0 RT

GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM

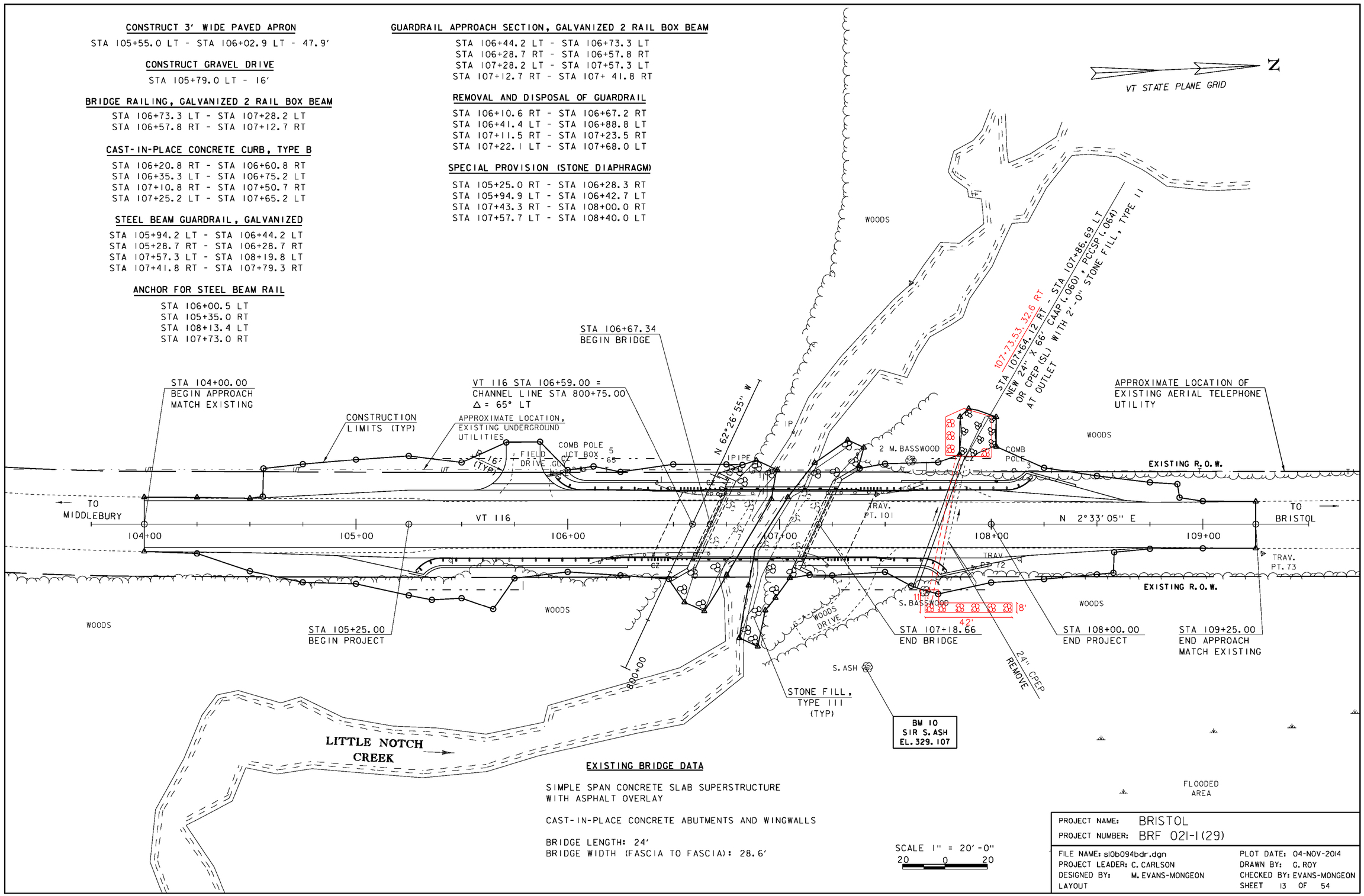
STA 106+44.2 LT - STA 106+73.3 LT
STA 106+28.7 RT - STA 106+57.8 RT
STA 107+28.2 LT - STA 107+57.3 LT
STA 107+12.7 RT - STA 107+ 41.8 RT

REMOVAL AND DISPOSAL OF GUARDRAIL

STA 106+10.6 RT - STA 106+67.2 RT
STA 106+41.4 LT - STA 106+88.8 LT
STA 107+11.5 RT - STA 107+23.5 RT
STA 107+22.1 LT - STA 107+68.0 LT

SPECIAL PROVISION (STONE DIAPHRAGM)

STA 105+25.0 RT - STA 106+28.3 RT
STA 105+94.9 LT - STA 106+42.7 LT
STA 107+43.3 RT - STA 108+00.0 RT
STA 107+57.7 LT - STA 108+40.0 LT



EXISTING BRIDGE DATA

SIMPLE SPAN CONCRETE SLAB SUPERSTRUCTURE
WITH ASPHALT OVERLAY

CAST-IN-PLACE CONCRETE ABUTMENTS AND WINGWALLS

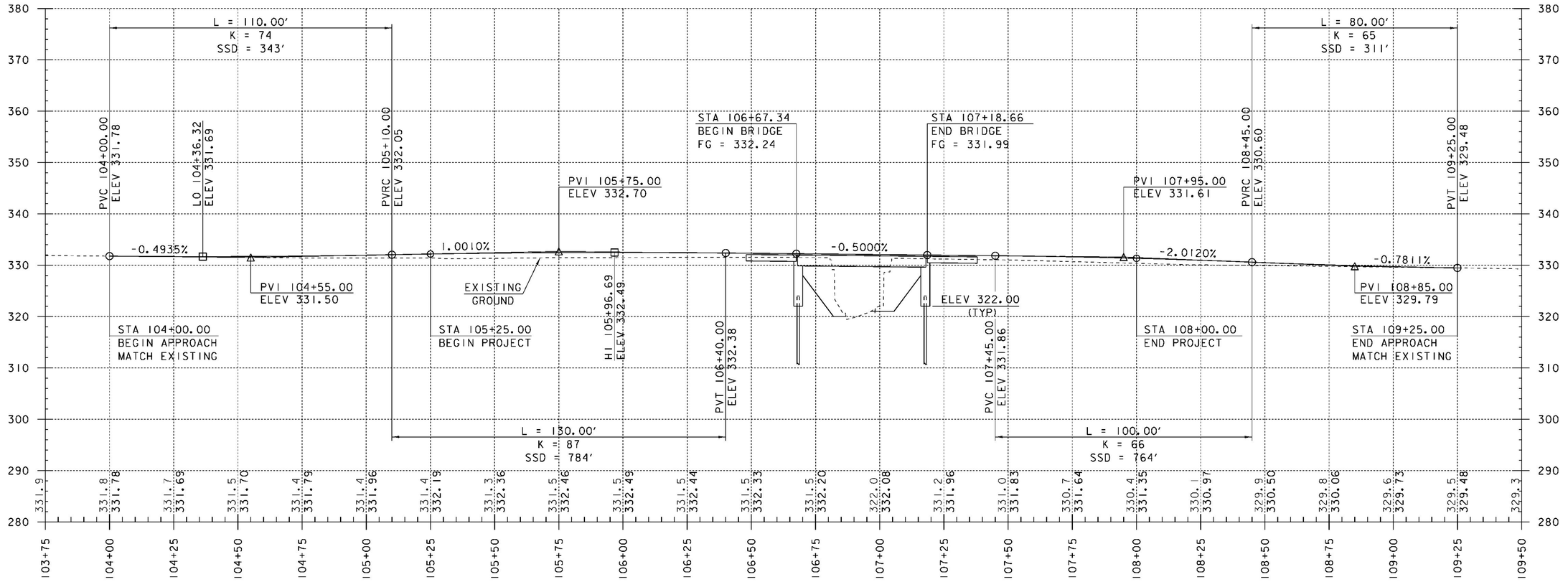
BRIDGE LENGTH: 24'
BRIDGE WIDTH (FASCIA TO FASCIA): 28.6'

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

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: sl0b094bdr.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: M. EVANS-MONGEON
LAYOUT

PLOT DATE: 04-NOV-2014
DRAWN BY: C. ROY
CHECKED BY: EVANS-MONGEON
SHEET 13 OF 54



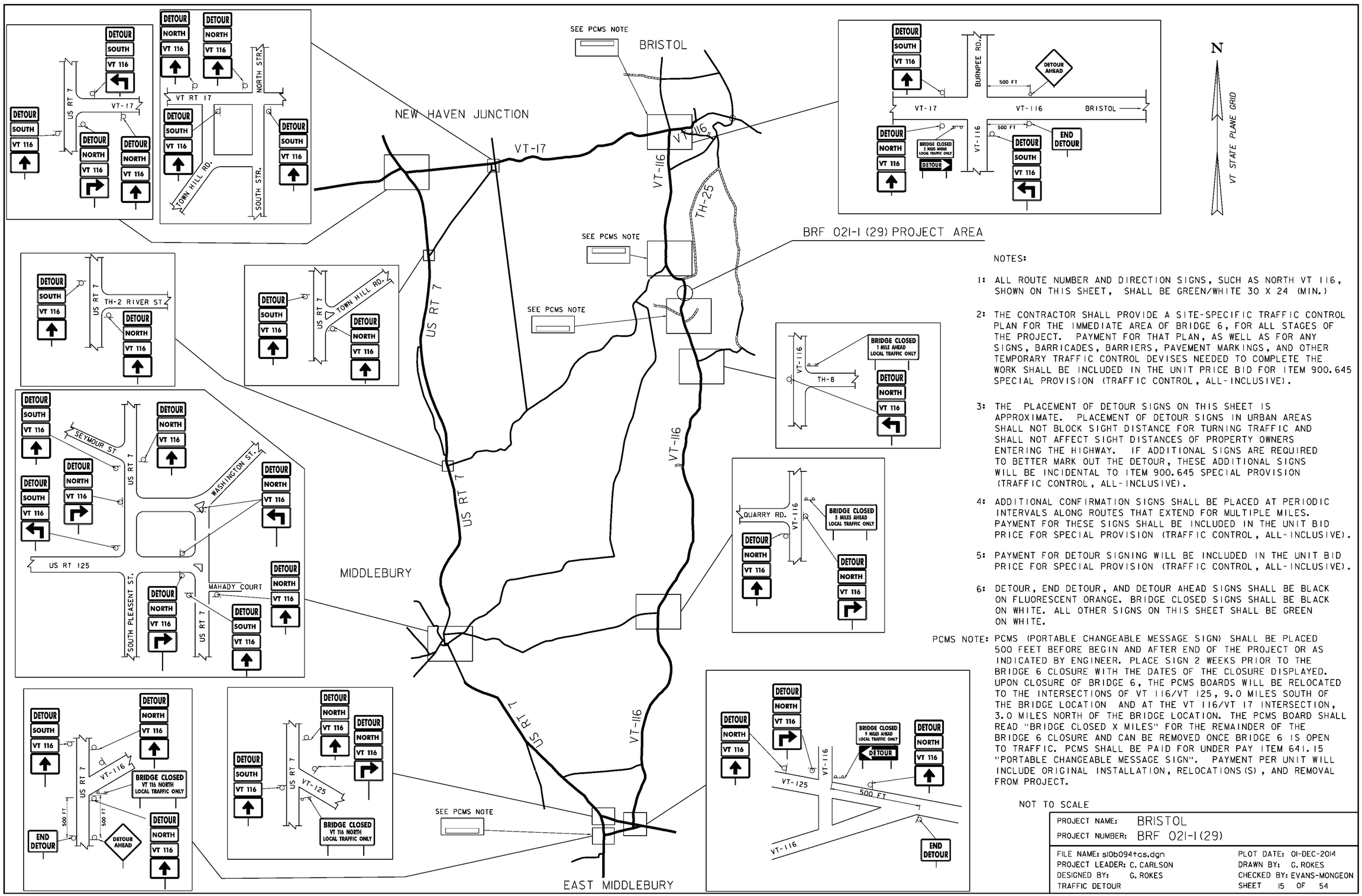
PROFILE ALONG VT 116

NOTE:

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

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

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)
FILE NAME: s10b094pro.dgn	PLOT DATE: 04-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: EVANS-MONGEON
PROFILE	SHEET 14 OF 54



NOTES:

1: ALL ROUTE NUMBER AND DIRECTION SIGNS, SUCH AS NORTH VT 116, SHOWN ON THIS SHEET, SHALL BE GREEN/WHITE 30 X 24 (MIN.)

2: THE CONTRACTOR SHALL PROVIDE A SITE-SPECIFIC TRAFFIC CONTROL PLAN FOR THE IMMEDIATE AREA OF BRIDGE 6, FOR ALL STAGES OF THE PROJECT. PAYMENT FOR THAT PLAN, AS WELL AS FOR ANY SIGNS, BARRICADES, BARRIERS, PAVEMENT MARKINGS, AND OTHER TEMPORARY TRAFFIC CONTROL DEVISES NEEDED TO COMPLETE THE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).

3: THE PLACEMENT OF DETOUR SIGNS ON THIS SHEET IS APPROXIMATE. PLACEMENT OF DETOUR SIGNS IN URBAN AREAS SHALL NOT BLOCK SIGHT DISTANCE FOR TURNING TRAFFIC AND SHALL NOT AFFECT SIGHT DISTANCES OF PROPERTY OWNERS ENTERING THE HIGHWAY. IF ADDITIONAL SIGNS ARE REQUIRED TO BETTER MARK OUT THE DETOUR, THESE ADDITIONAL SIGNS WILL BE INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).

4: ADDITIONAL CONFIRMATION SIGNS SHALL BE PLACED AT PERIODIC INTERVALS ALONG ROUTES THAT EXTEND FOR MULTIPLE MILES. PAYMENT FOR THESE SIGNS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).

5: PAYMENT FOR DETOUR SIGNING WILL BE INCLUDED IN THE UNIT BID PRICE FOR SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).

6: DETOUR, END DETOUR, AND DETOUR AHEAD SIGNS SHALL BE BLACK ON FLUORESCENT ORANGE. BRIDGE CLOSED SIGNS SHALL BE BLACK ON WHITE. ALL OTHER SIGNS ON THIS SHEET SHALL BE GREEN ON WHITE.

PCMS NOTE: PCMS (PORTABLE CHANGEABLE MESSAGE SIGN) SHALL BE PLACED 500 FEET BEFORE BEGIN AND AFTER END OF THE PROJECT OR AS INDICATED BY ENGINEER. PLACE SIGN 2 WEEKS PRIOR TO THE BRIDGE 6 CLOSURE WITH THE DATES OF THE CLOSURE DISPLAYED. UPON CLOSURE OF BRIDGE 6, THE PCMS BOARDS WILL BE RELOCATED TO THE INTERSECTIONS OF VT 116/VT 125, 9.0 MILES SOUTH OF THE BRIDGE LOCATION AND AT THE VT 116/VT 17 INTERSECTION, 3.0 MILES NORTH OF THE BRIDGE LOCATION. THE PCMS BOARD SHALL READ "BRIDGE CLOSED X MILES" FOR THE REMAINDER OF THE BRIDGE 6 CLOSURE AND CAN BE REMOVED ONCE BRIDGE 6 IS OPEN TO TRAFFIC. PCMS SHALL BE PAID FOR UNDER PAY ITEM 641.15 "PORTABLE CHANGEABLE MESSAGE SIGN". PAYMENT PER UNIT WILL INCLUDE ORIGINAL INSTALLATION, RELOCATIONS(S), AND REMOVAL FROM PROJECT.

NOT TO SCALE

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)

FILE NAME: s10b094tcs.dgn	PLOT DATE: 01-DEC-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: C. ROKES
DESIGNED BY: G. ROKES	CHECKED BY: EVANS-MONGEON
TRAFFIC DETOUR	SHEET 15 OF 54

4 INCH YELLOW LINE

STA 104+00 - STA 109+25 (DOUBLE ℄)

4 INCH WHITE LINE

STA 104+00.0 - STA 109+25.0 RT
STA 104+00.0 - STA 109+25.0 LT

N
VT STATE PLANE GRID

STA 107+50 LT

BRIDGE 6 VT 116

N
N

4 INCH DOUBLE YELLOW LINE

4 INCH WHITE LINE

← VT 116 TO MIDDLEBURY

VT 116 → TO BRISTOL

BRIDGE 6 VT 116

N
N

STA 106+25 RT

LITTLE NOTCH CREEK →

LEGEND

N - NEW

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

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)
FILE NAME: s10b094trf.dgn	PLOT DATE: 04-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: C. ROY
DESIGNED BY: C. ROY	CHECKED BY: EVANS-MONGEON
SIGNS AND PAVEMENT MARKINGS	SHEET 16 OF 54

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

MILE MARKER, STATION OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS			NEW & SALVAGED SIGNS				EXIST POST		NEW SIGN POSTS																				REMARKS SHSM = FHWA STANDARD HIGHWAY SIGNS AND MARKINGS BOOK	SIGN DETAIL		
											NO. OF				SQUARE STEEL (in)							TUBULAR STEEL Ø (IN)					W-SHAPE STEEL									
		EACH	WIDTH (in)	HEIGHT (in)	"A"	"B"	SALV SIGN	SALV TIS	RETAIN	SALVAGE	POST				1.75 (LB / FT) 1.88	2.00 (LB / FT) 2.42	2.50 (LB / FT) 3.35	ANCHOR	SLEEVE				FOUNDATION	3.00 (LB / FT) 7.60	3.50 (LB / FT) 9.00	4.00 (LB / FT) 10.80	5.00 (LB / FT) 14.60	FTG. SIZE 24"	FTG. SIZE 30"	WEIGHT	POST SIZE	SIGN FRAME REQUIRED		DETAIL IN SHSM	DETAIL ON SHEET NUMBER	STANDARD SHEET NUMBER
STA 106+25 RT	BRIDGE 6 VT 116	1	6	10	0.42						1				X			X														VD-701			T-42
STA 107+50 LT	BRIDGE 6 VT 116	1	6	10	0.42						1				X			X														VD-701			T-42
SUBTOTAL		0.84										FT	FT	FT	FT 16	FT	FT	EA	LB	LB	LB		LB	LB	LB	LB								
ROUNDING		0.16										.	.	.	.	.	.	.	.	.	.		.	.	.	.								
TOTALS		SF 1.	SF .	EA. .	SF .	XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX							FT .			FT 16.				LB .			EA.	LB .				EA. .	EA. .	LB .					

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE VTRANS "SIGN POST DESIGN GUIDELINE."

PROJECT NAME: **BRISTOL**
PROJECT NUMBER: **BRF 021-1 (29)**

FILE NAME: **s10b094trf.dgn**
PROJECT MANAGER: **C. CARLSON**
DESIGNED BY: **EVANS-MONGEON**
TRAFFIC SIGN SUMMARY

PLOT DATE: 04-NOV-2014
DRAWN BY: **G. ROY**
CHECKED BY: **EVANS-MONGEO**
SHEET 17 OF 54

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		

DEFINITIONS (AASHTO)

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

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

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

GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).

SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).

SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

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

VARVED - Alternate layers of silt and clay.

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

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

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

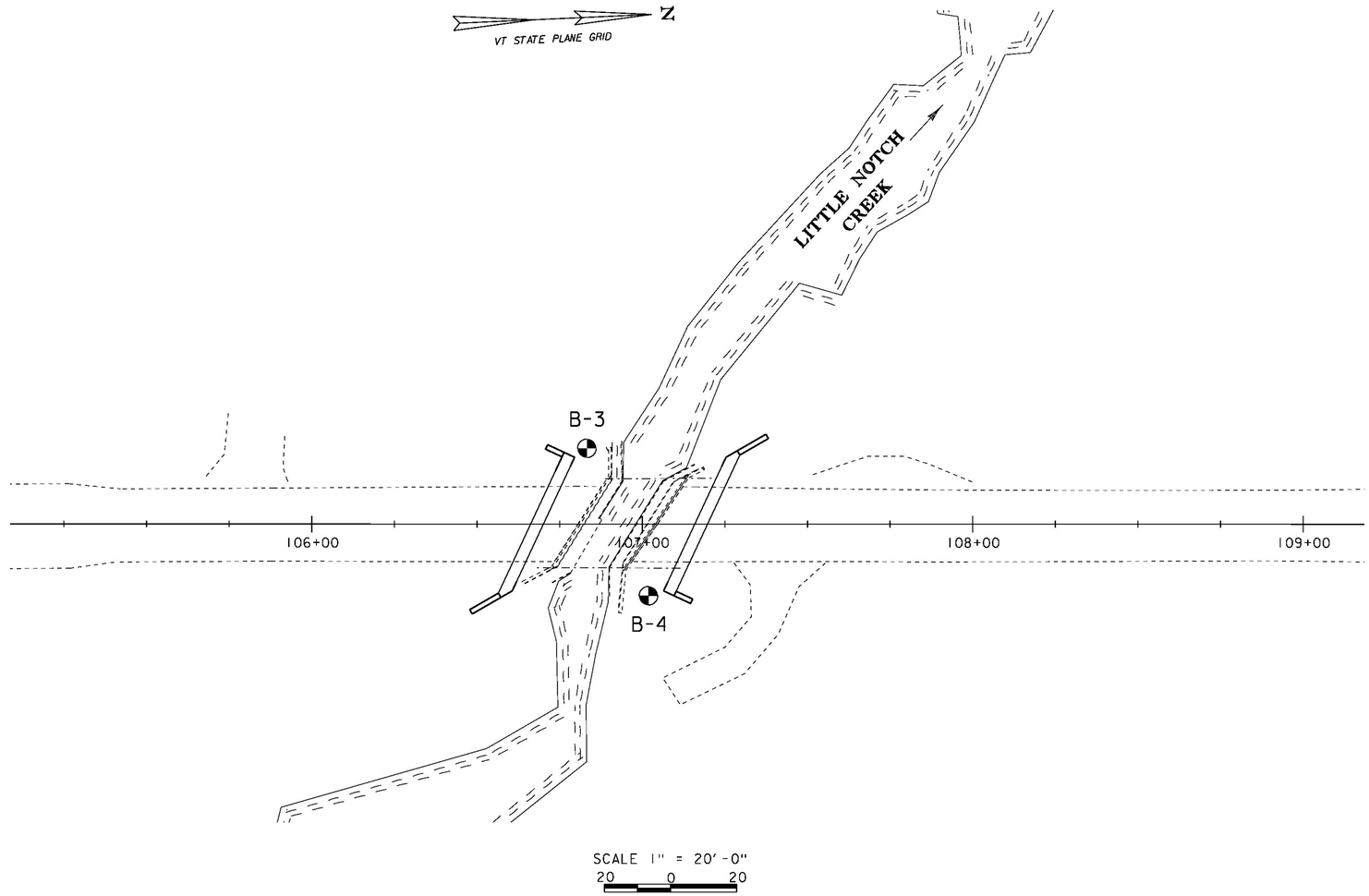
FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.

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

DIP - Inclination of bed with a horizontal plane.

BORING CHART

HOLE NO.	STATION	OFFSET	GROUND ELEVATION	ELEV. TLOB	NORTHING	EASTING
B-3	106+83.30	22.97 LT	329.137	NLTD	581477.0707	1485141.9404
B-4	107+01.92	21.65 RT	329.587	NLTD	581493.6861	1485187.3409



GENERAL NOTES

1. The subsurface explorations shown herein were made between 7/16/02 and 9/12/02 by the Agency.

2. 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.

3. 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.

4. 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.

5. 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.

6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.

7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1 (29)

FILE NAME: s10b094bor.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: EVANS-MONGEON
BORING INFORMATION SHEET

PLOT DATE: 04-NOV-2014
DRAWN BY: G. ROY
CHECKED BY: EVANS-MONGEON
SHEET 18 OF 54

BOTTOM
ABUTMENT I
EL 322.00

ESTIMATED LENGTH = 50'

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

BORING LOG

BRISTOL
BRF 021-1(29)
VT-116 BR-6

Boring No.: B-3
Page No.: 1 of 2
Pin No.: 78F187
Checked By: CCB

Boring Crew: TALLMAN, SOMERS, RUSSELL
Date Started: 8/27/02 Date Finished: 9/12/02
VTSPG NAD83: N 581477.07 ft E 1485141.94 ft
Station: 106+83.30 Offset: -22.97
Ground Elevation: 329.14 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	3. in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 45C SKID	C_r = 1.33

Groundwater Observations		
Date	Depth (ft)	Notes
09/12/02	7.38	

Depth (ft)	Strata	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5		A-4, SlSa with a Trace of Organics (2.3%), gry, Moist, Rec. = 1.1 ft	1-1-1-1 (2)	36.3		50.6	49.4
10		A-1-a, SaGr, gry, Moist, Rec. = 0.3 ft	3-3-14-23 (17)	11.2	65.2	30.3	4.5
15		A-2-4, SlGr, gry, Moist, Rec. = 0.2 ft	5-8-9-4 (17)	14.0	53.4	17.2	29.4
20		A-4, SaSi, gry, Moist, Rec. = 1.1 ft	5-4-4-3 (8)	23.7	6.2	27.6	66.2
25		A-4, SaSi, gry, Moist, Rec. = 1.3 ft	4-2-2-2 (4)	28.5	0.1	21.8	78.1
30		A-4, GrSaSi, gry, Moist, Rec. = 0.8 ft	2-1-3-2 (4)	15.3	25.2	34.6	40.2
		BXDC, Boulder, 32.2 ft - 33.5 ft					
35		A-4, SlSa, gry, Moist, Rec. = 0.8 ft	6-7-9-8 (16)	21.6	1.5	57.3	41.2

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

BRISTOL BRF 021-1(29).PJ VERMONT AOT.GDT 7/8/10
BORING LOG

ESTIMATED
PILE TIP
EL 274.00

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

BORING LOG

BRISTOL
BRF 021-1(29)
VT-116 BR-6

Boring No.: B-3
Page No.: 2 of 2
Pin No.: 78F187
Checked By: CCB

Boring Crew: TALLMAN, SOMERS, RUSSELL
Date Started: 8/27/02 Date Finished: 9/12/02
VTSPG NAD83: N 581477.07 ft E 1485141.94 ft
Station: 106+83.30 Offset: -22.97
Ground Elevation: 329.14 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	3. in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 45C SKID	C_r = 1.33

Groundwater Observations		
Date	Depth (ft)	Notes
09/12/02	7.38	

Depth (ft)	Strata	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
40		No Recovery. Stone in sampler, 38.4 ft - 39.4 ft	R/2.75" (R)				
45		BXDC, No Sample, Boulder, 43.1 ft - 45.9 ft					
		BXDC, Cleaned out casing, 48.2 ft - 49.2 ft					
50		A-1-b, SlSaGr, gry, Moist, Rec. = 1.3 ft	27-53-62-42 (R)	7.7	42.7	35.2	22.1
55		No Recovery, Possible stone in front of sampler, 54.1 ft - 55.4 ft	32-66-70 (R)				
		BXDC, Cleaned out casing, 57.9 ft - 59.0 ft					
60		A-4, SaSi (HP), gry, Moist, Rec. = 1.8 ft	19-34-53-R/3.0" (87)	14.7	3.5	25.3	71.2
		BXDC, Cored ahead, 62.0 ft - 64.0 ft					
65		A-4, SlSa (HP), gry, Moist, Rec. = 1.1 ft	57-80-92 (R)	8.8	19.5	45.0	35.5
		Field Note:, Advanced casing to 66.5 ft.					
		Hole stopped @ 66.5 ft					
70							

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

BRISTOL BRF 021-1(29).PJ VERMONT AOT.GDT 7/8/10
BORING LOG

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: sl0b094bor.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: M. EVANS-MONGEON
BORING LOG SHEET (1)

PLOT DATE: 04-NOV-2014
DRAWN BY: C. ROY
CHECKED BY: EVANS-MONGEON
SHEET 19 OF 54

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

BORING LOG

BRISTOL
BRF 021-1(29)
VT-116 BR-6

Boring No.: B-4
Page No.: 1 of 2
Pin No.: 78F187
Checked By: CCB

Boring Crew: YOUNG, SOMERS
Date Started: 7/02/02 Date Finished: 7/16/02
VTSPG NAD83: N 581493.69 ft E 1485187.34 ft
Station: 107+01.90 Offset: 21.65
Ground Elevation: 329.59 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	3. in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 45C TRACK	C_E = 1.34

Groundwater Observations

Date	Depth (ft)	Notes
07/16/02	8.0	

BOTTOM
ABUTMENT 2
EL 322.00

ESTIMATED LENGTH = 70'

ESTIMATED
PILE TIP
EL 254.00

Depth (ft)	Strata	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		No sample. Appears to be SiSaGr, 4.9 ft – 6.9 ft	2-1-2-2 (3)						
10		A-1-b, GrSa, gry, Moist, Rec. = 1.0 ft	4-1-1-1 (2)	20.2	26.9	62.2	10.9		
		No sample. Appears to be SiGrSa, gry, Moist, 14.7 ft – 16.7 ft	7-3-3-5 (6)						
20		A-4, Si, gry, Moist, Rec. = 1.2 ft	3-2-4-3 (6)	21.1		15.3	84.7		
		A-4, Si, gry, Moist, Rec. = 1.0 ft	3-1-3-3 (4)	22.5		11.8	88.2		
30		A-4, SaSi, gry, Moist, Rec. = 1.2 ft	2-4-5-3 (9)	23.2	9.9	32.8	57.3		
		A-4, SaSi, gry, Moist, Rec. = 0.8 ft	2-1-7-2 (8)	16.5	20.0	30.4	49.6		
40		Visual Classification: Broken Rock, Rec. = 0.2 ft, 39.4 ft – 40.0 ft NXDC, Boulders, 40.0 ft – 49.2 ft	24-100/1.5" (R)						
50		A-1-b, SlSaGr, gry, Moist, Rec. = 0.4 ft NXDC, Boulders, 50.2 ft – 52.9 ft	100/5.0" (R)	8.3	41.3	33.9	24.8		
		A-4, Si, gry, Moist, Rec. = 1.6 ft	34-39-40-44 (79)	13.9	5.1	19.1	75.8	18	2

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

BORING LOG BRISTOL BRF 021-1(29).GPJ VERMONT AOT.GDT 7/8/10

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

BORING LOG

BRISTOL
BRF 021-1(29)
VT-116 BR-6

Boring No.: B-4
Page No.: 2 of 2
Pin No.: 78F187
Checked By: CCB

Boring Crew: YOUNG, SOMERS
Date Started: 7/02/02 Date Finished: 7/16/02
VTSPG NAD83: N 581493.69 ft E 1485187.34 ft
Station: 107+01.90 Offset: 21.65
Ground Elevation: 329.59 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	3. in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 45C TRACK	C_E = 1.34

Groundwater Observations

Date	Depth (ft)	Notes
07/16/02	8.0	

Depth (ft)	Strata	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
60		A-4, GrSi, gry, Moist, Rec. = 1.4 ft	98-61-78-100/3.5" (R)	13.3	23.5	12.6	63.9	22	5
		A-4, GrSi, gry, Moist, Rec. = 1.4 ft	19-76-100/5.0" (R)	11.8	20.5	18.1	61.4	20	4
70		A-4, SaSi, gry, Moist, Rec. = 0.6 ft	71-100/2.0" (R)	11.0	18.8	21.3	59.9		
		A-4, GrSiSa, gry, Moist, Rec. = 1.3 ft	21-48-89-R (R)	14.1	22.8	39.9	37.3		
80		A-2-4, SlSa, gry, Moist, Rec. = 1.3 ft	20-51-101 (R)	14.0	13.9	55.4	30.7		
		Boulders, 81.7 ft – 86.6 ft							
		Hole stopped @ 86.6 ft							

Remarks:
1. The first boring was started at 107+01.9, offset 20.8 ft Rt. This boring was discontinued at 52.9 ft. The casing broke off at 44.3 ft.
2. A second boring was started at 107+01.9, offset 22.5' Rt. and was discontinued at 44.3 ft due to wearing out of casing bit in boulders from 36.1-44.3 feet.

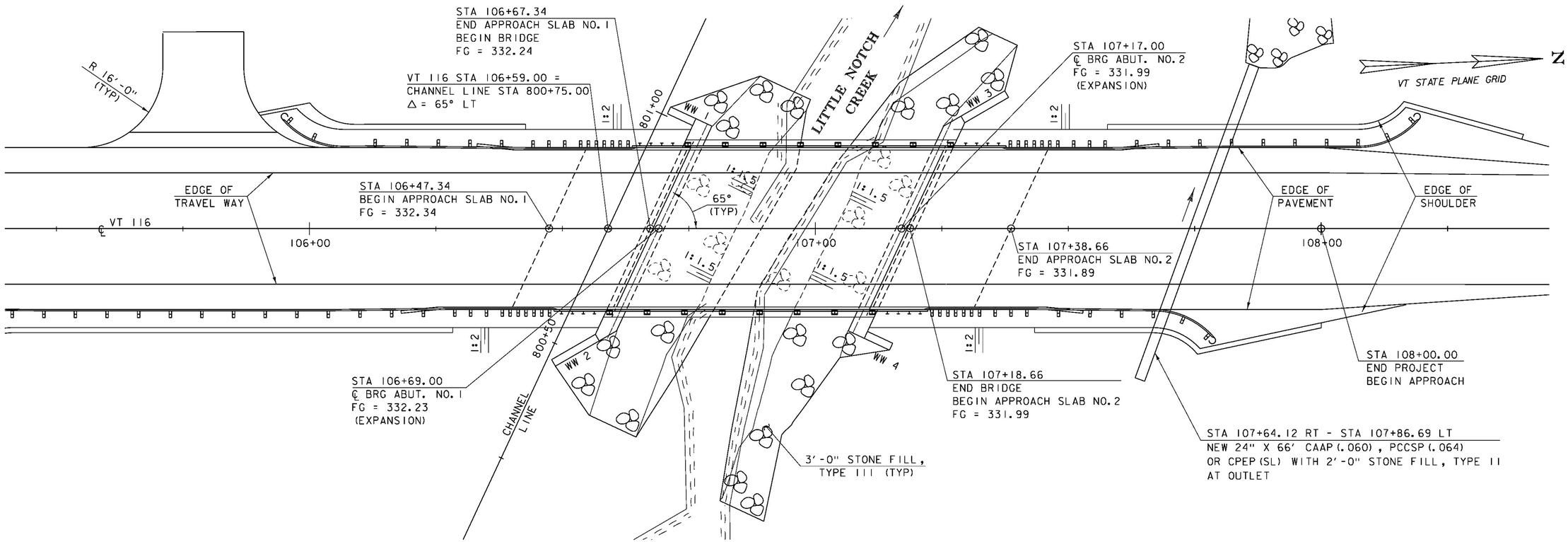
Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations of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

BORING LOG BRISTOL BRF 021-1(29).GPJ VERMONT AOT.GDT 7/8/10

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

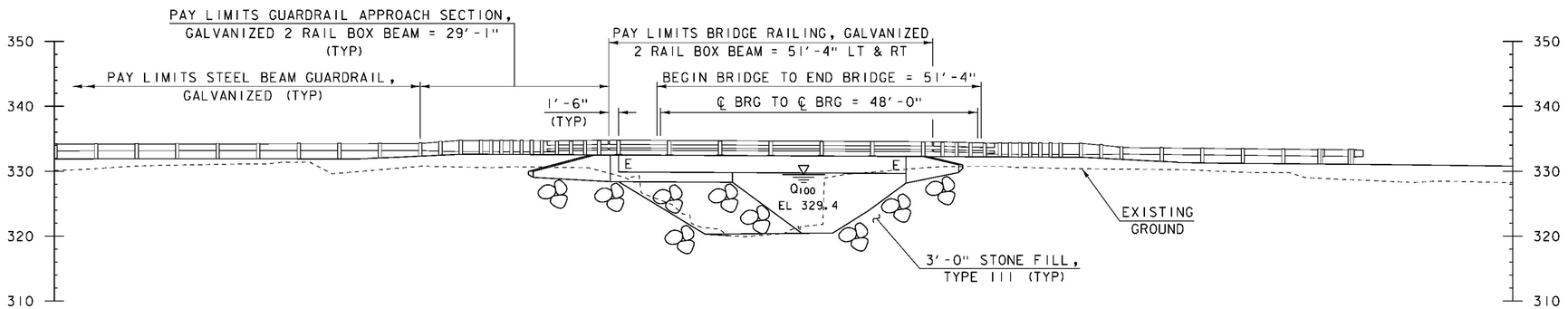
FILE NAME: sl0b094bor.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: M. EVANS-MONGEON
BORING LOG SHEET (2)

PLOT DATE: 04-NOV-2014
DRAWN BY: G. ROY
CHECKED BY: EVANS-MONGEON
SHEET 20 OF 54



PLAN

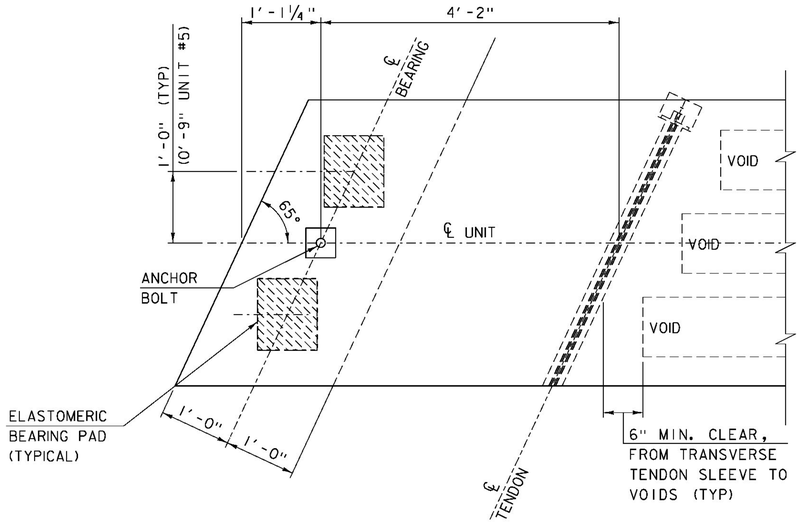
SCALE 1" = 10'-0"
10 0 10



ELEVATION

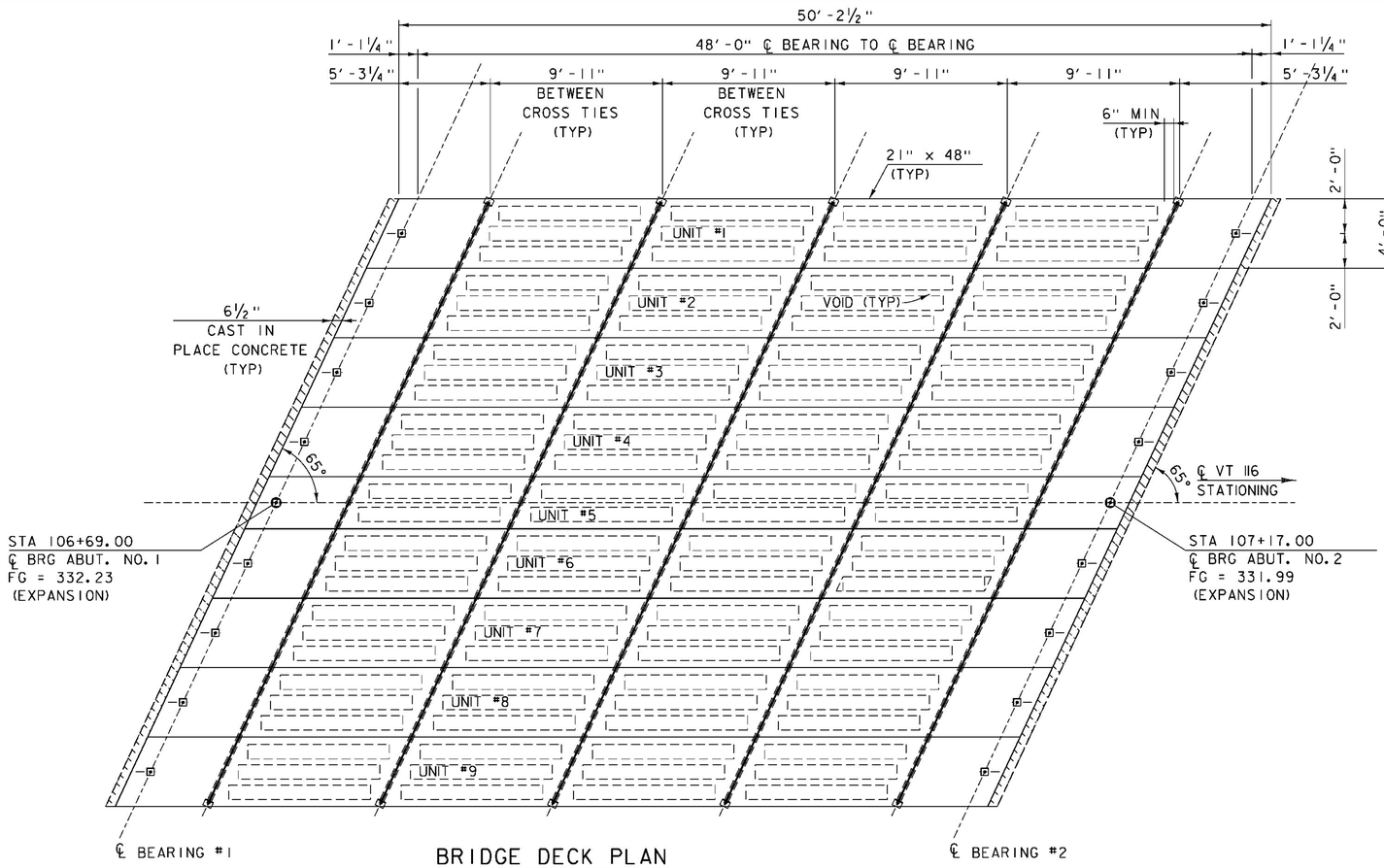
SCALE 1" = 10'-0"
10 0 10

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)
FILE NAME: sl0b094pe.dgn	PLOT DATE: 05-DEC-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: EVANS-MONGEON
PLAN AND ELEVATION	SHEET 21 OF 54



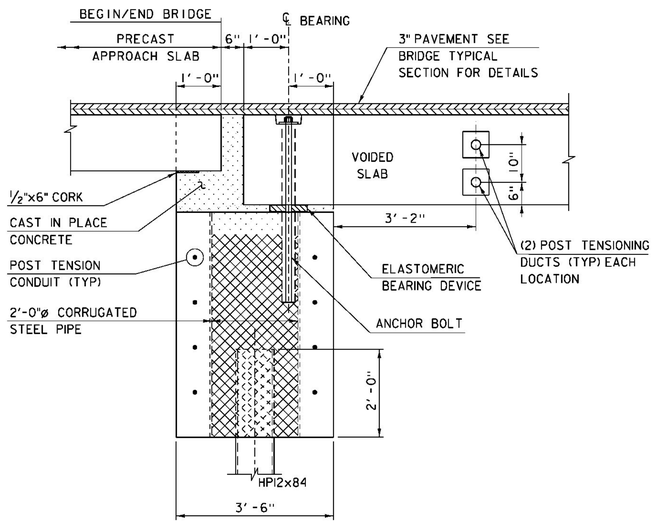
BEARING PAD PLACEMENT DETAIL

SCALE: 1" = 1'-0"



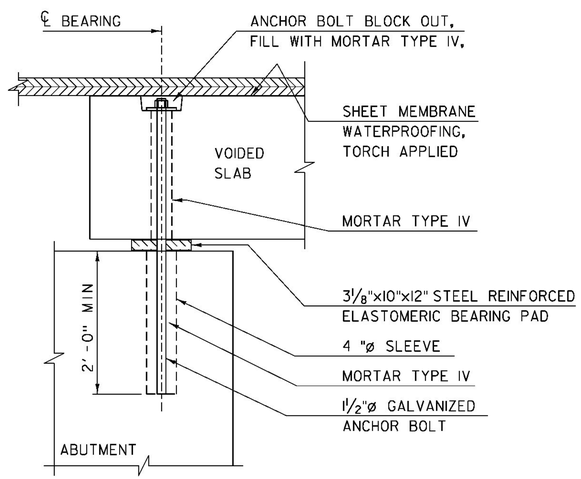
BRIDGE DECK PLAN

SCALE: ¼" = 1'-0"



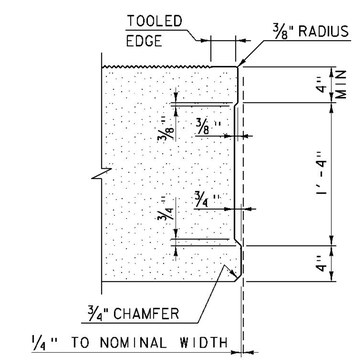
BEGIN/END BRIDGE DETAIL

SCALE: ¾" = 1'-0"



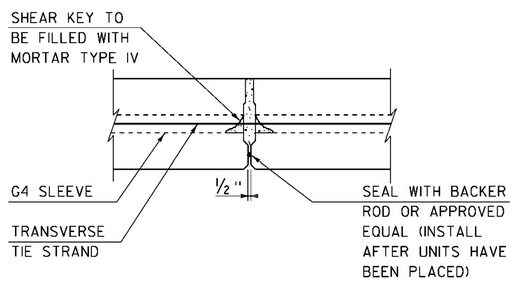
ANCHOR BOLT DETAIL

SCALE: 1" = 1'-0"



FULL DEPTH SHEAR KEY DETAIL

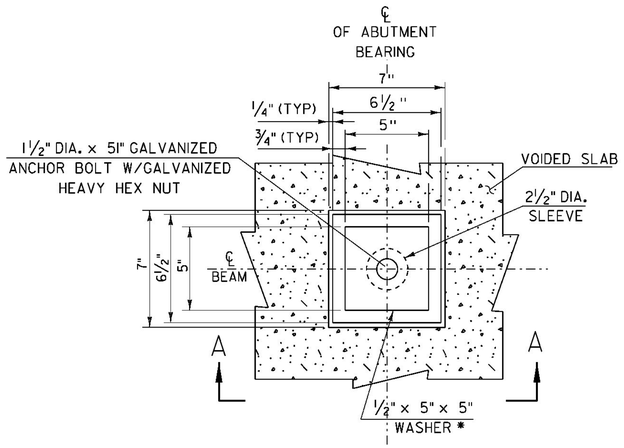
SCALE: 1½" = 1'-0"



SHEAR KEY SECTION

SCALE: 1" = 1'-0"

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)
FILE NAME: s10b094sup.dgn	PLOT DATE: 24-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: C. MOONEY	CHECKED BY: EVANS-MONGEON
BRIDGE DECK PLAN	SHEET 22 OF 54

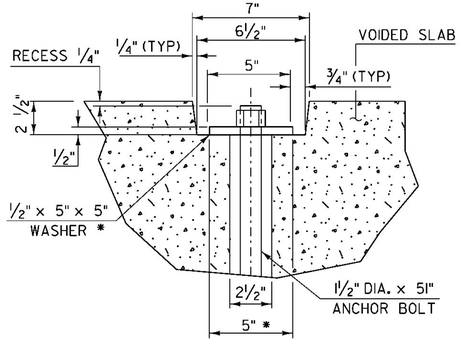


END BRIDGE ANCHOR BOLT DETAIL

NOT TO SCALE

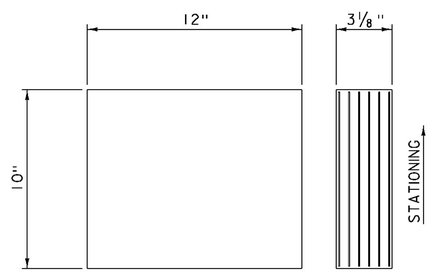
NOTE:
SEE SUBSECTION 714.08
FOR ANCHOR BOLTS & NUTS

* ½" x 5" x 5" WASHER WITH 1½" DIA. HOLE (GALVANIZED)



SECTION A-A

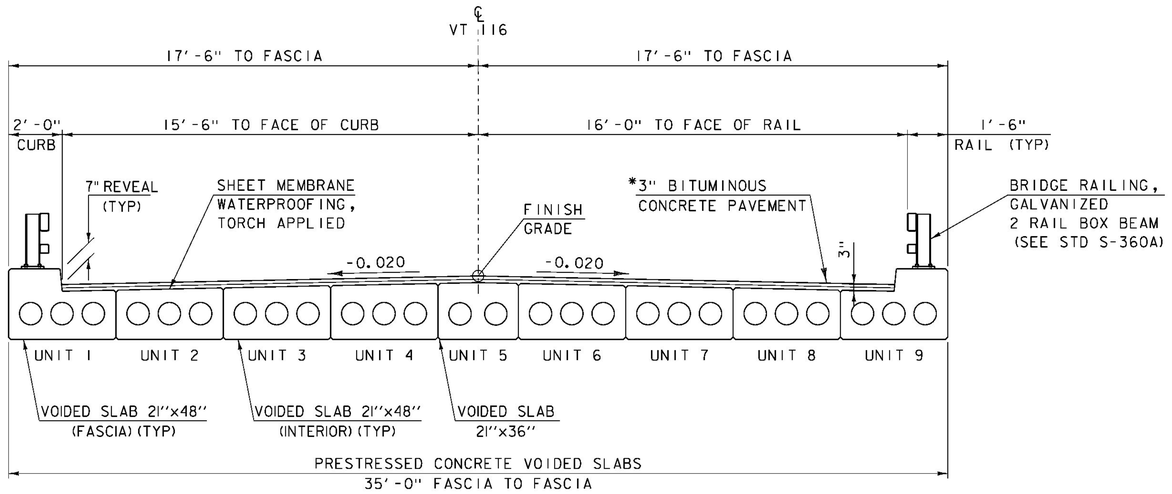
NOT TO SCALE



ELASTOMERIC BEARING DETAIL

SCALE: 3" = 1'-0"

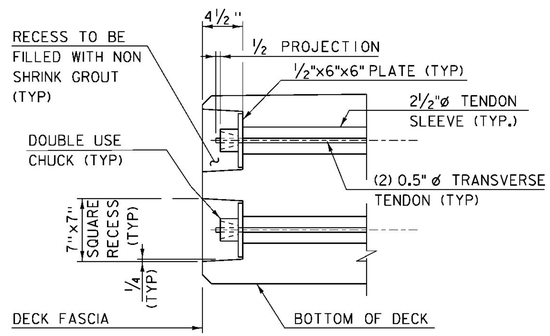
⅛" ELASTOMERIC OUTER LAYER (TOP, BOTTOM, AND SIDES)
(5) ½" LAYERS OF INTERIOR ELASTOMERIC ALTERNATING W/
(6) 1/16" STEEL REINFORCING PLATES



BRIDGE TYPICAL SECTION

SCALE: ⅜" = 1'-0"

*1½" BITUMINOUS CONCRETE PAVEMENT, TYPE IVS
1½" BITUMINOUS CONCRETE PAVEMENT, TYPE IVS



TRANSVERSE TENDON CHUCK DETAIL

SCALE: 1½" = 1'-0"

NOTES:
1. TRANSVERSE TENDONS SHALL BE COVERED BY SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND TENDON) FOR THE LENGTH OF TENDON, EXCEPT AT ANCHORAGE LOCATIONS. TENDONS SHALL BE TENSIONED TO 145 KIPS.

2. THE ½" PLATE SHALL CONFORM TO AASHTO M 270M/ M 270 GRADE 50. THE PLATE AND CHUCK SHALL BE GALVANIZED ACCORDING TO AASHTO M111M/ M111.

BEARING NOTES:

1. BEARINGS WILL BE PAID FOR UNDER ITEM 531.17, "BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD".

2. ALTERNATE CONFIGURATIONS FOR ELASTOMERIC BEARINGS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ANY ALTERNATE BEARING SUBMITTED SHALL BE DESIGNED AND CERTIFIED TO MEET THE LOADS AND CRITERIA SHOWN ON THIS SHEET AND MAINTAIN THE ANCHORAGE SYSTEM SHOWN. THE BEARINGS SHALL BE DESIGNED ACCORDING TO AASHTO "LRFD BRIDGE DESIGN SPECIFICATIONS" 2012 EDITION AND ITS LATEST REVISIONS. MINIMUM OVERALL HEIGHT OF BEARING SHALL BE 3".

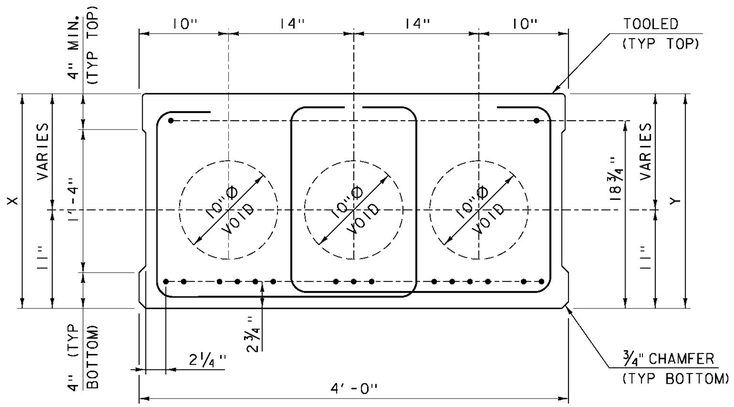
4. ALL REINFORCMENT BETWEEN LAYERS OF ELASTOMERIC SHALL BE STEEL GRADE 50. NO FABRIC REINFORCEMENT WILL BE PERMITTED.

5. ELASTOMERIC BEARINGS REINFORCED WITH STEEL SHALL HAVE A ⅛" EDGE SEAL OF ELASTOMERIC INTEGRAL WITH THE BEARING OVER ALL PLATES.

6. DESIGN CRITERIA:
   - A. TEMPERATURE RANGE: 80° F
   - B. 50 DUROMETER ELASTOMERIC
   - C. MAXIMUM BEARING STRESS: 1000 psi
   - D. DESIGN ROTATION: 0.010 rad
   - E. REACTION/BEAM:
     RDL = 31 Kips (UNFACTORED)

7. THE FABRICATOR SHALL SUPPLY A SELF ADHESIVE COMPRESSIBLE SEALER BETWEEN THE BOTTOM OF THE UNITS AND THE BRIDGE SEAT. THIS COMPRESSIBLE SEALER SHALL SURROUND THE 2 ½" DIA SLEEVE IN THE UNIT. THE PURPOSE OF THE SEALER IS TO FACILITATE PLACEMENT OF THE MORTAR AROUND THE ANCHOR BOLTS. PAYMENT WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 531.17, "BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD"

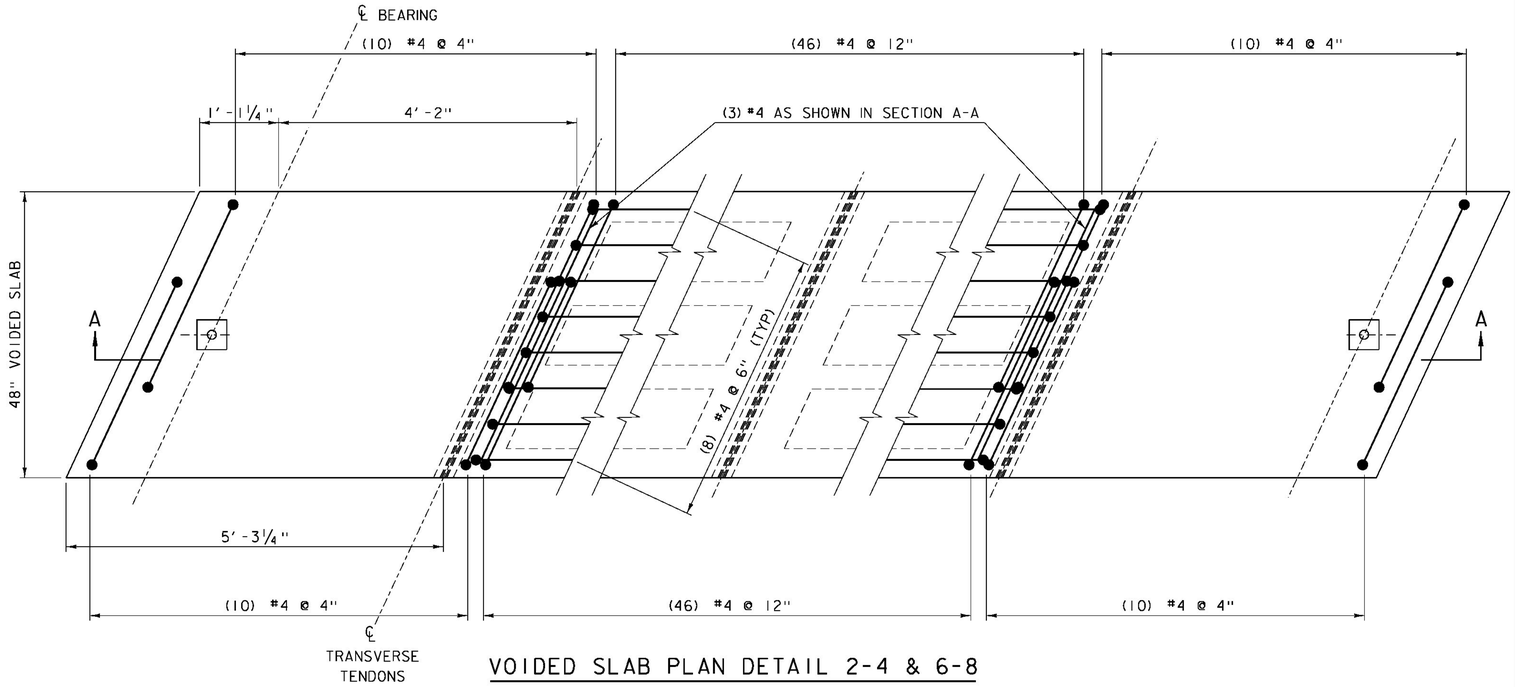
PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)
FILE NAME: s10b094sup.dgn	PLOT DATE: 04-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: C. MOONEY	CHECKED BY: EVANS-MONGEON
BRIDGE VOIDED SLAB DETAILS (1)	SHEET 23 OF 54



VOIDED SLAB UNIT #2-#4 & #6-#8 TYPICAL

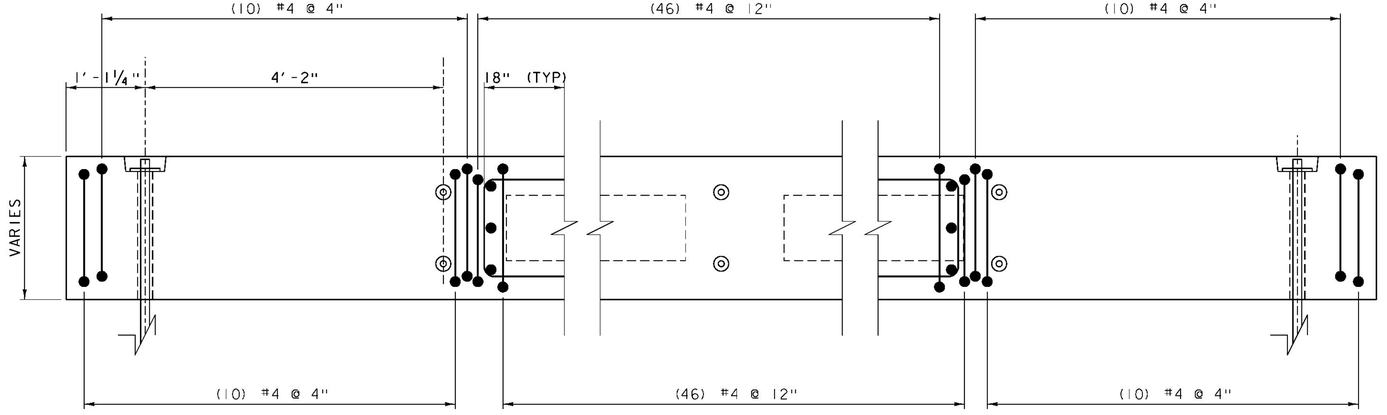
SCALE: 1½" = 1'-0"

VOIDED SLAB UNIT	QUANTITY	(X) DIMENSION	(Y) DIMENSION	BOTTOM STRAND COUNT	TOP STRAND COUNT
#2	1	21½"	22½"	14	2
#3	1	22½"	23½"	15	2
#4	1	23½"	24½"	15	2
#6	1	24½"	23½"	15	2
#7	1	23½"	22½"	15	2
#8	1	22½"	21½"	14	2



VOIDED SLAB PLAN DETAIL 2-4 & 6-8

SCALE: 1" = 1'-0"

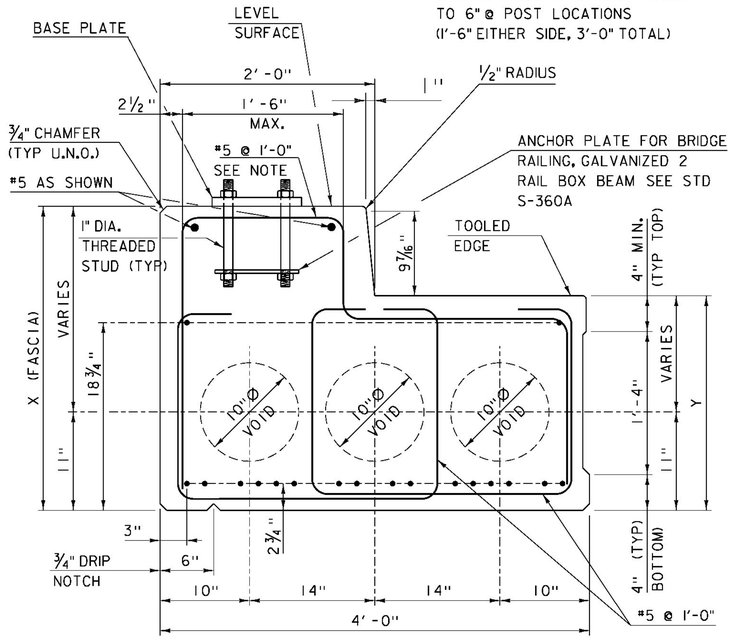


VOIDED SLAB SECTION A-A 2-4 & 6-8

SCALE: 1" = 1'-0"

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)

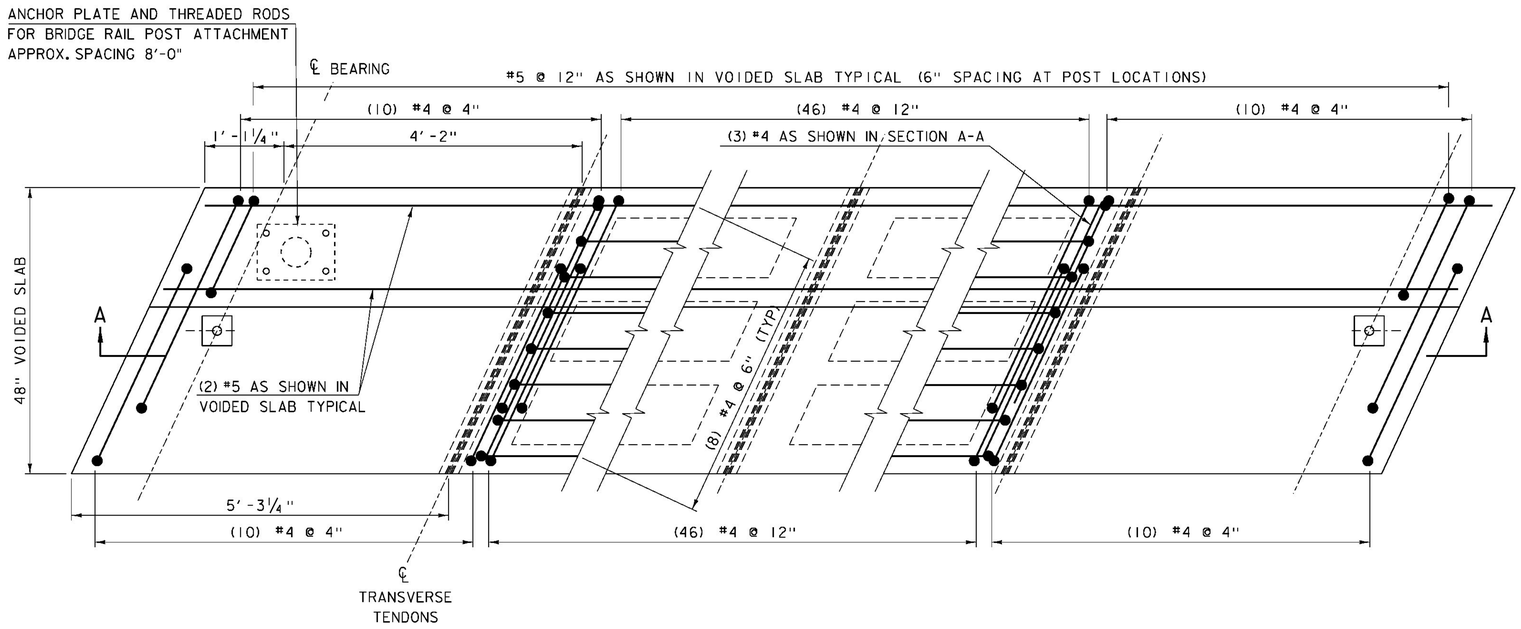
FILE NAME: s10b094sup.dgn	PLOT DATE: 04-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: C. MOONEY	CHECKED BY: EVANS-MONGEON
BRIDGE VOIDED SLAB DETAILS (2)	SHEET 24 OF 54



VOIDED SLAB UNIT #1 & #9 TYPICAL

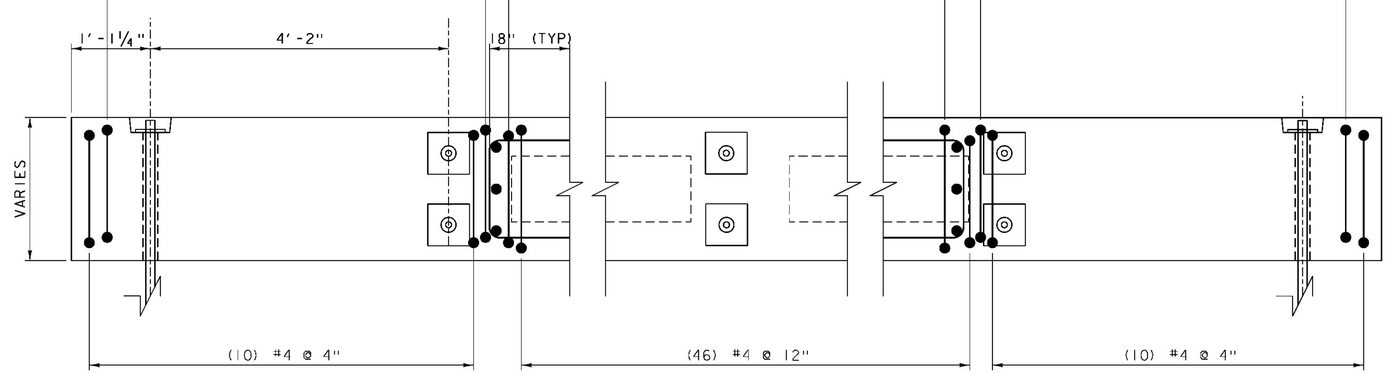
SCALE: 1½" = 1'-0"

VOIDED SLAB UNIT	QUANTITY	(X) FASCIA DIMENSION	(Y) DIMENSION	BOTTOM STRAND COUNT	TOP STRAND COUNT
#1	1	31"	21½"	16	2
#9	1	31"	21½"	16	2



VOIDED SLAB PLAN DETAIL 1 (9 SIMILAR)

SCALE: 1" = 1'-0"

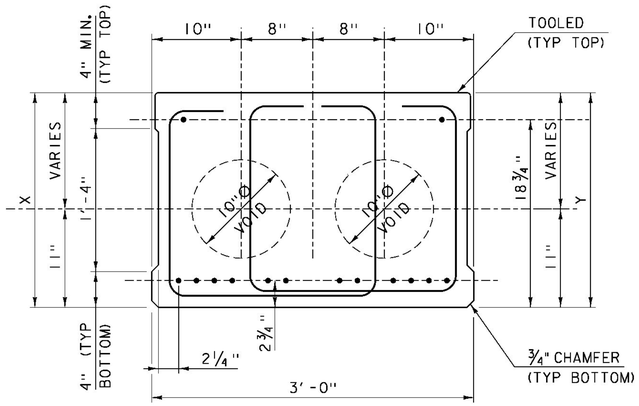


VOIDED SLAB SECTION A-A 1 (9 SIMILAR)

SCALE: 1" = 1'-0"

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)

FILE NAME: s10b094sup.dgn	PLOT DATE: 04-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: C. MOONEY	CHECKED BY: EVANS-MONGEON
BRIDGE VOIDED SLAB DETAILS (3)	SHEET 25 OF 54

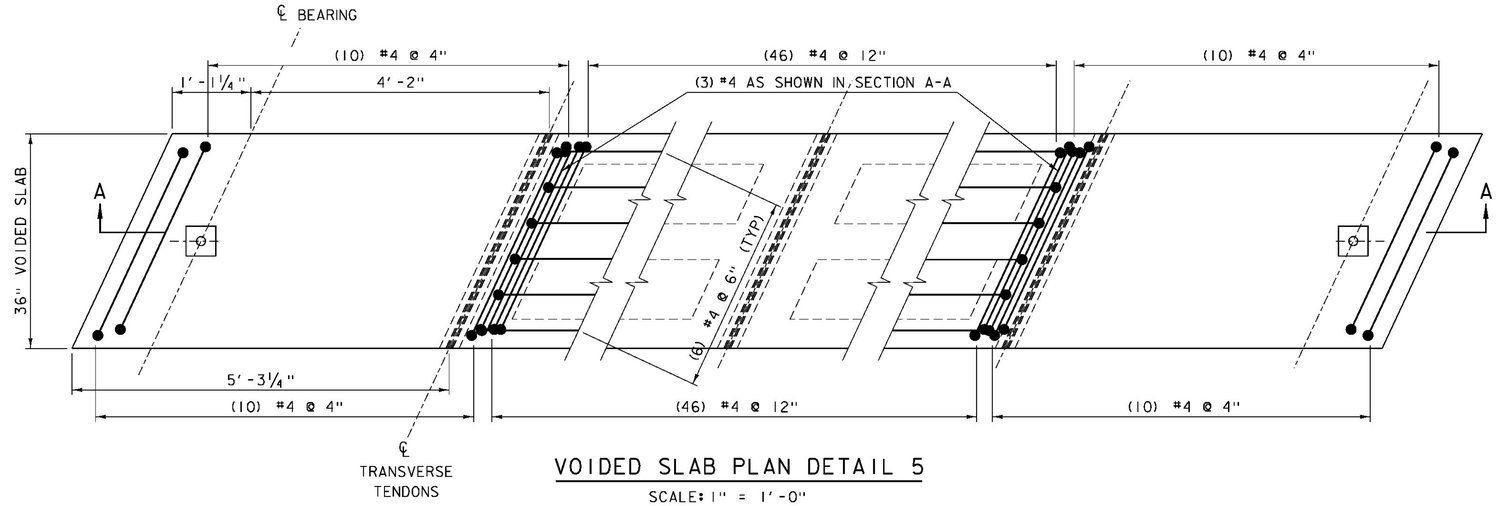


VOIDED SLAB UNIT #5 TYPICAL

SCALE: 1½" = 1'-0"

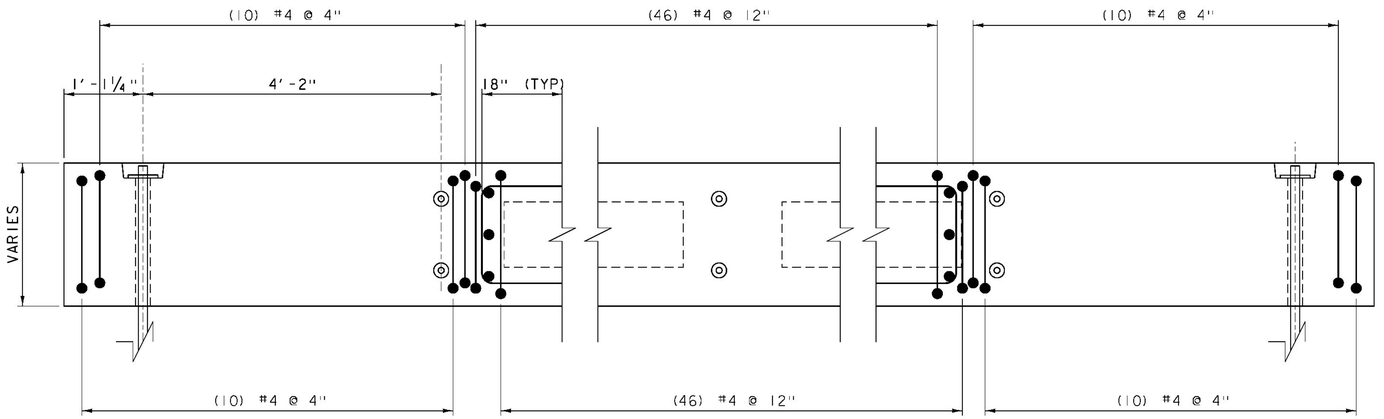
VOIDED SLAB UNIT	QUANTITY	(X) DIMENSION	(Y) DIMENSION	BOTTOM STRAND COUNT	TOP STRAND COUNT
#5	1	24½"	24½"	12	2

NOTE:
ROADWAY CROWN AT CENTER OF VOIDED SLAB UNIT #5 IS ACHIEVED BY VARING THE PAVEMENT DEPTH BY ⅜"



VOIDED SLAB PLAN DETAIL 5

SCALE: 1" = 1'-0"

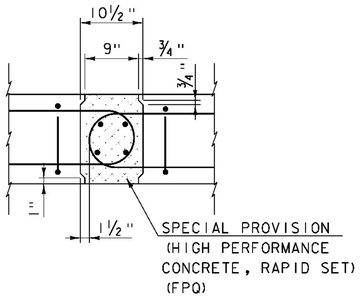


VOIDED SLAB SECTION A-A 5

SCALE: 1" = 1'-0"

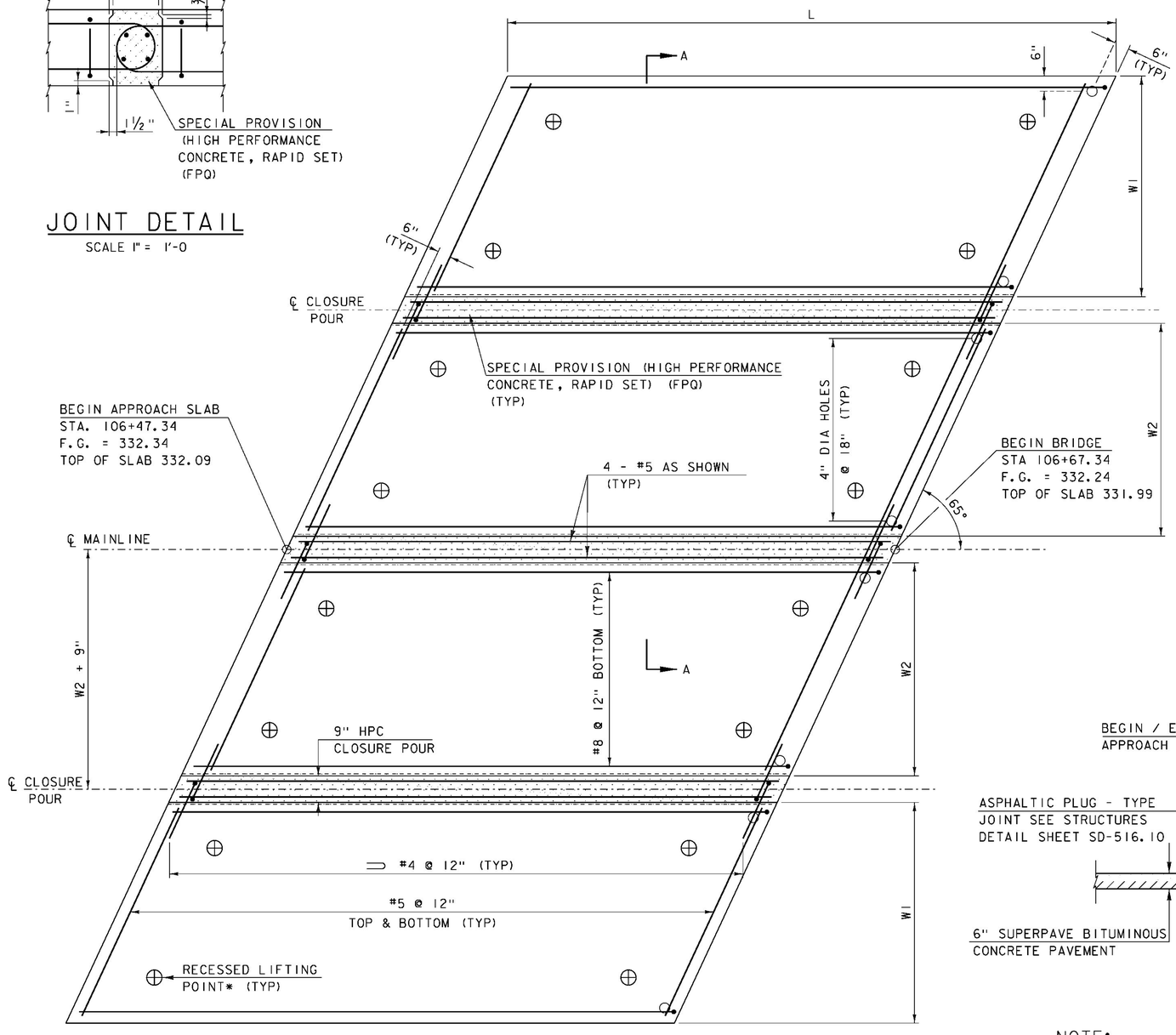
PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)

FILE NAME: sl0b094sup.dgn	PLOT DATE: 04-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: C. MOONEY	CHECKED BY: EVANS-MONGEON
BRIDGE VOIDED SLAB DETAILS (4)	SHEET 26 OF 54



JOINT DETAIL

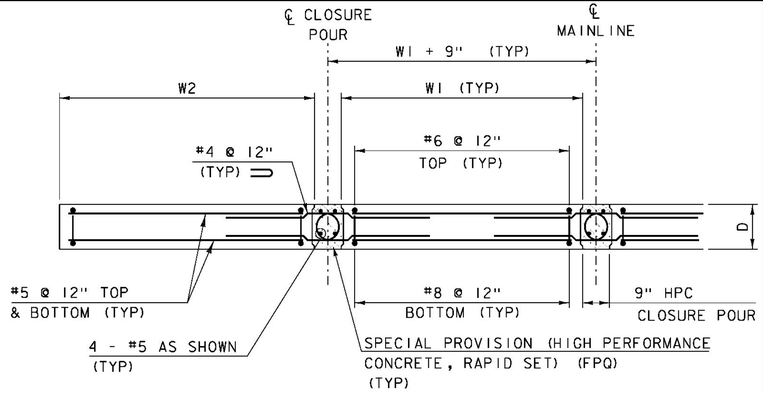
SCALE 1" = 1'-0



* ALTERNATE LIFTING POINTS MAY BE SUBMITTED WITH CALCULATIONS FOR NEW LOCATIONS.

APPROACH SLAB 1 PLAN VIEW

SCALE ½" = 1'-0



SECTION A-A

SCALE ½" = 1'-0

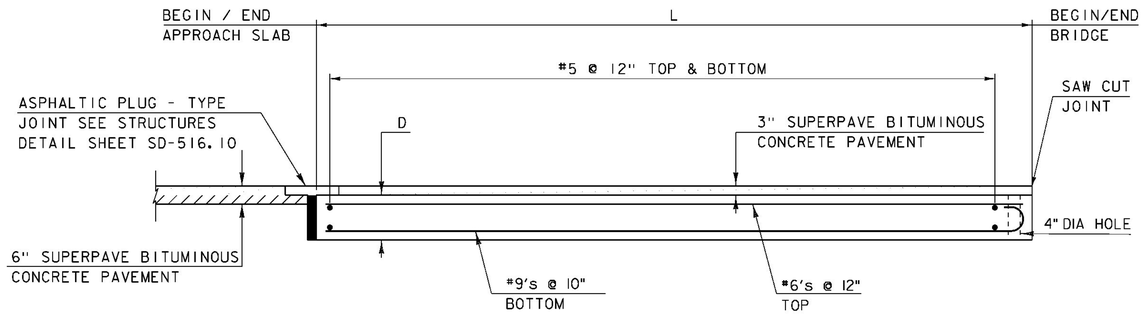
	STATION	@ 15'-6" OFFSET
BEGIN AS#1 LT	106+54.57	331.75
BEGIN AS#1 RT	106+40.11	331.82
END AS#1 LT	106+74.57	331.65
END AS#1 RT	106+60.11	331.72

APPROACH SLAB ELEVATIONS

ALL ELEVATIONS ARE TOP OF SLAB

D	1'-3"
L	20'-0"
W1	7'-3"
W2	7'-0"

APPROACH SLAB DIMENSIONS



APPROACH SLAB ELEVATION VIEW

SCALE ½" = 1'-0

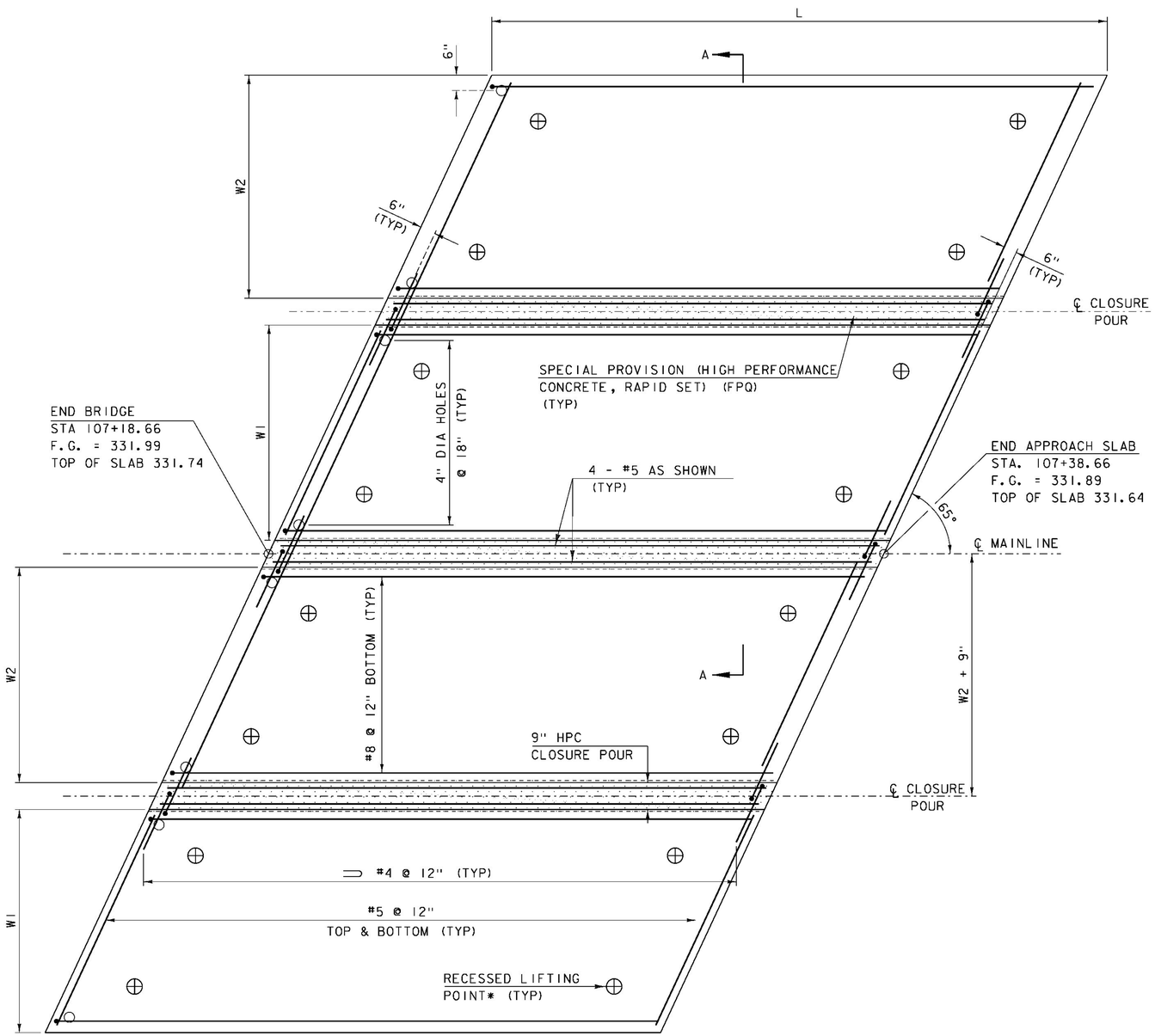
NOTE:

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

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: s10b094sub.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: C. MOONEY
APPROACH SLAB #1 DETAILS

PLOT DATE: 05-DEC-2014
DRAWN BY: R. PELLETT
CHECKED BY: EVANS-MONGEON
SHEET 27 OF 54



* ALTERNATE LIFTING POINTS MAY BE SUBMITTED WITH CALCULATIONS FOR NEW LOCATIONS.

APPROACH SLAB 2 PLAN VIEW

SCALE 1/2" = 1'-0

	STATION	@ 15'-6" OFFSET	℄
BEGIN AS#2 RT	107+11.43	331.47	331.78
BEGIN AS#2 LT	107+25.89	331.40	331.71
END AS#2 RT	107+31.43	331.37	331.68
END AS#2 LT	107+45.89	331.30	331.61

APPROACH SLAB ELEVATIONS

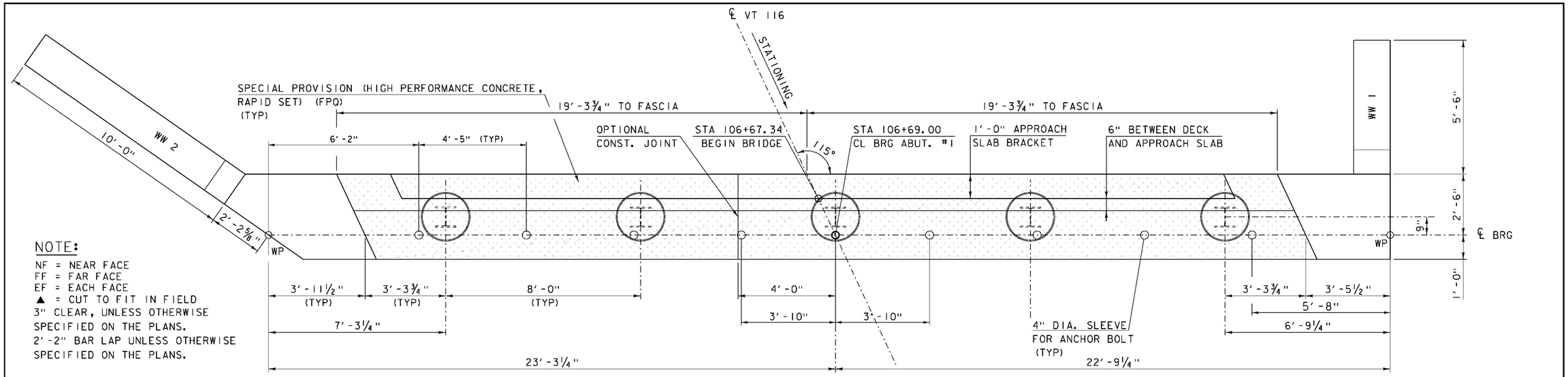
ALL ELEVATIONS ARE TOP OF SLAB

SEE APPROACH SLAB #1 DETAILS FOR ADDITIONAL INFORMATION

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: s10b094sub.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: C. MOONEY
APPROACH SLAB #2 DETAILS

PLOT DATE: 04-NOV-2014
DRAWN BY: R. PELLETT
CHECKED BY: EVANS-MONGEON
SHEET 28 OF 54



NOTE:

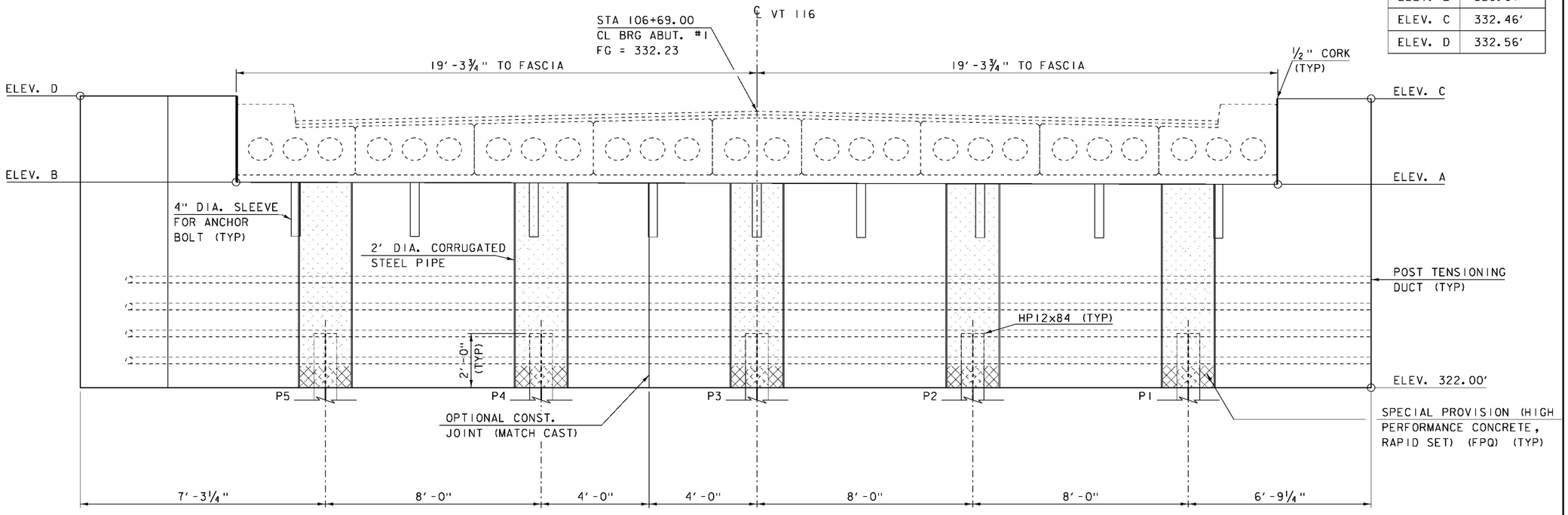
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

ABUTMENT #1 (PCU1)

SCALE: ½"=1'-0"

ELEV ALONG CL BEARING

	ABUTMENT 1
ELEV. A	329.53'
ELEV. B	329.61'
ELEV. C	332.46'
ELEV. D	332.56'



ABUTMENT #1 ELEVATION (PCU1)

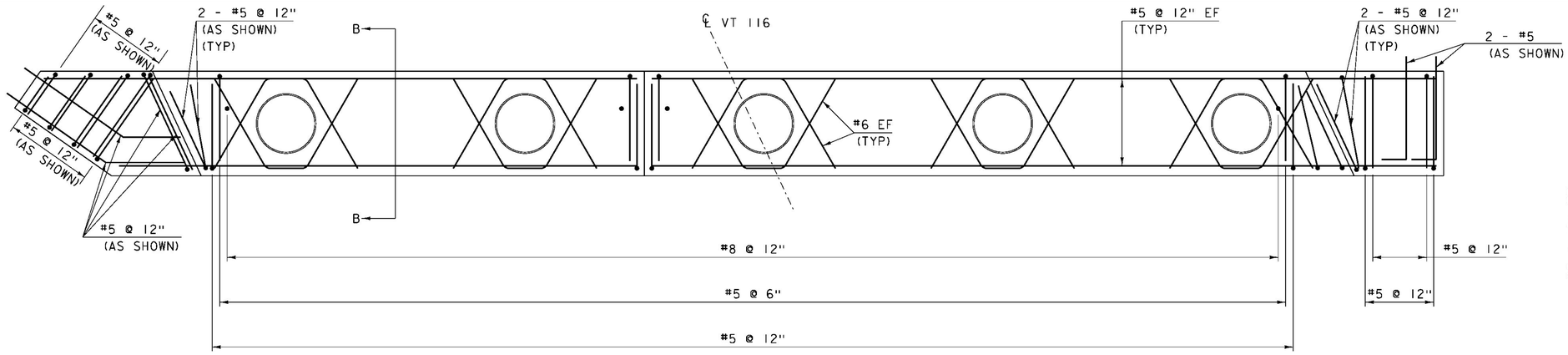
SCALE: ½"=1'-0"

NOTES:
1) POST-TENSIONING AND ASSOCIATED ITEMS ONLY REQUIRED IF PRECAST ABUTMENT IS CONSTRUCTED IN MORE THAN ONE PIECE.

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

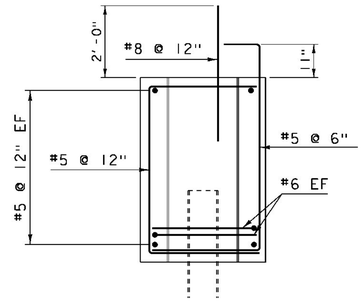
FILE NAME: s10b094sub.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: C. MOONEY
ABUTMENT #1 DETAILS

PLOT DATE: 24-NOV-2014
DRAWN BY: R. PELLETT
CHECKED BY: EVANS-MONGEON
SHEET 29 OF 54



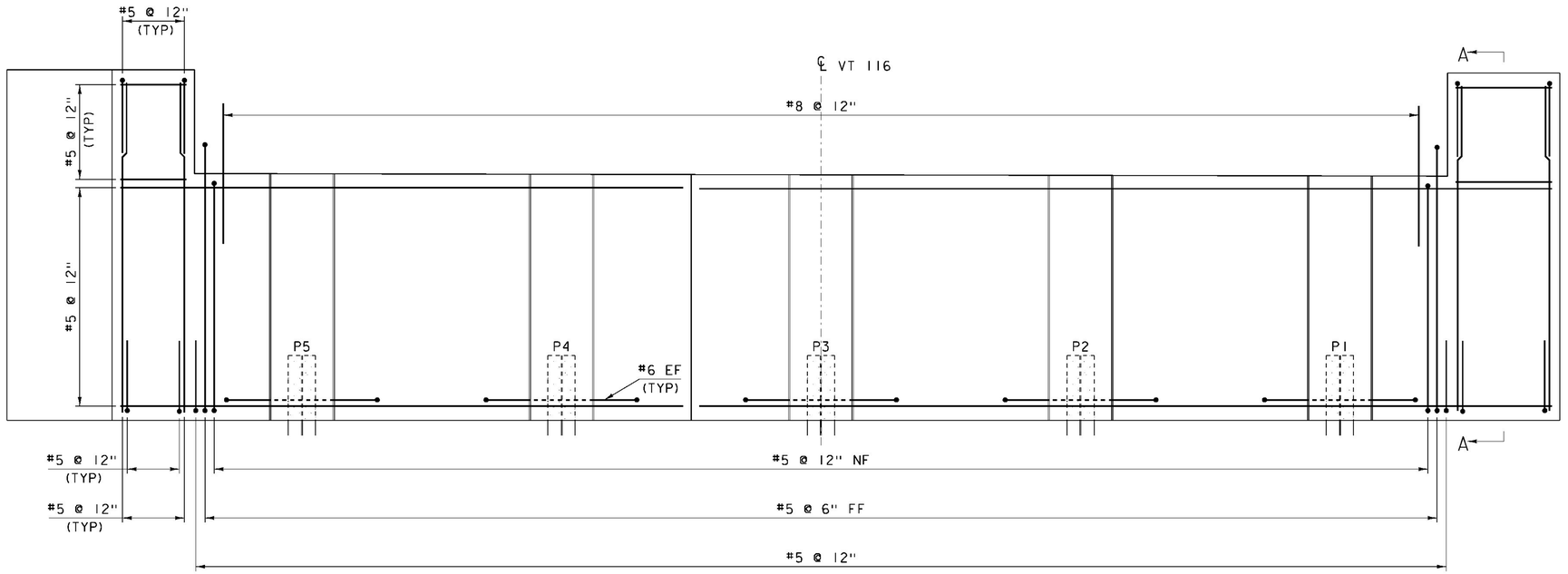
ABUTMENT #1 REINFORCING PLAN (PCU1)

SCALE: ½"=1'-0"



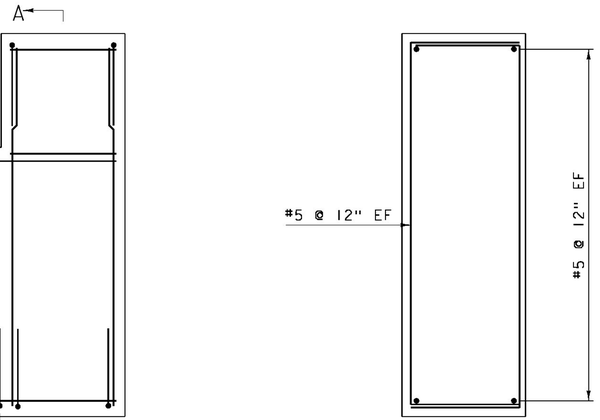
SECTION B-B

SCALE: ½"=1'-0"



ABUTMENT #1 REINFORCING ELEVATION (PCU1)

SCALE: ½"=1'-0"



SECTION A-A

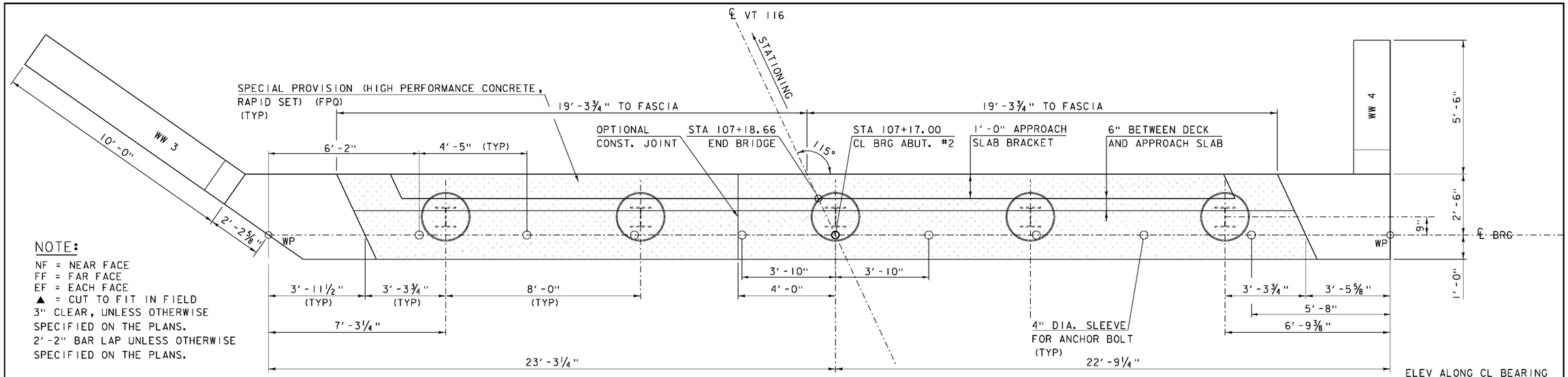
SCALE: ½"=1'-0"

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.

NOTES:
1) POST-TENSIONING AND ASSOCIATED ITEMS ONLY REQUIRED IF PRECAST ABUTMENT IS CONSTRUCTED IN MORE THAN ONE PIECE.

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)
FILE NAME: s10b094sub.dgn	PLOT DATE: 24-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: C. MOONEY	CHECKED BY: EVANS-MONGEON
ABUTMENT #1 REINFORCING	SHEET 30 OF 54



NOTE:

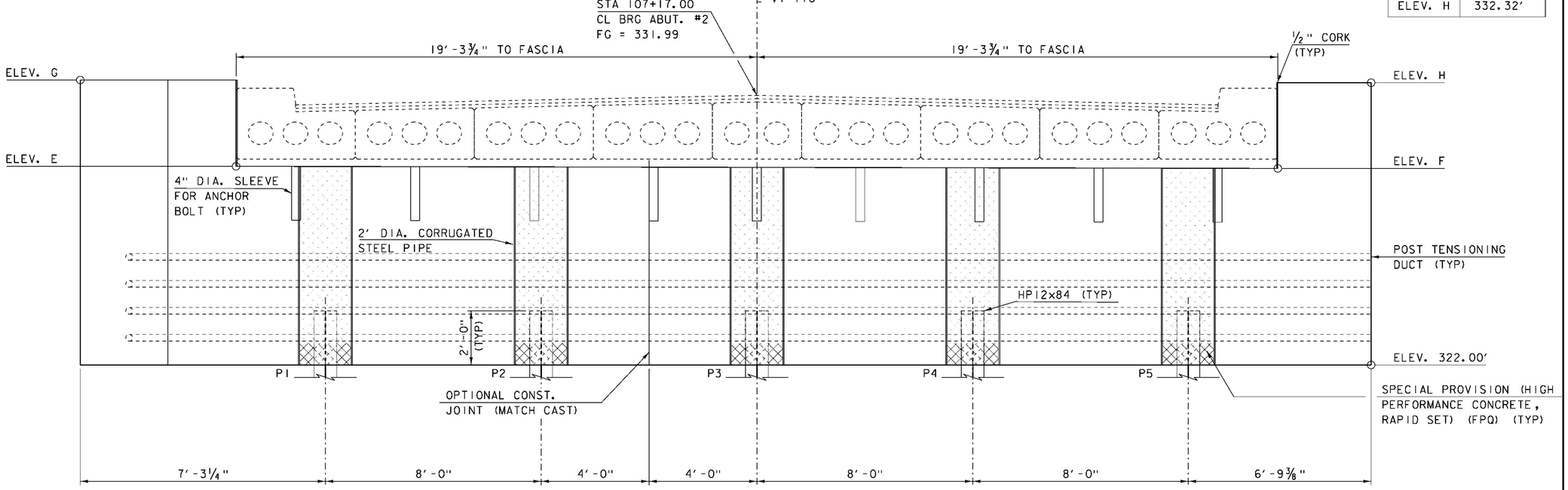
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

ABUTMENT #2 (PCUI)

SCALE: ½" = 1'-0"

ELEV ALONG CL BEARING

	ABUTMENT 2
ELEV. E	329.29'
ELEV. F	329.37'
ELEV. G	332.23'
ELEV. H	332.32'



ABUTMENT #2 ELEVATION (PCUI)

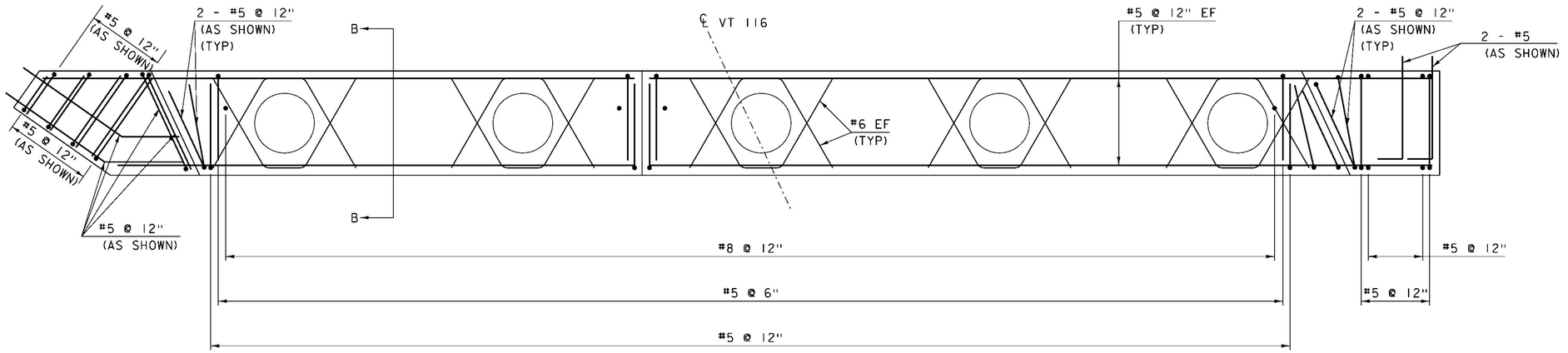
SCALE: ½" = 1'-0"

NOTES:
1) POST-TENSIONING AND ASSOCIATED ITEMS ONLY REQUIRED IF PRECAST ABUTMENT IS CONSTRUCTED IN MORE THAN ONE PIECE.

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: s10b094sub.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: C. MOONEY
ABUTMENT #2 DETAILS

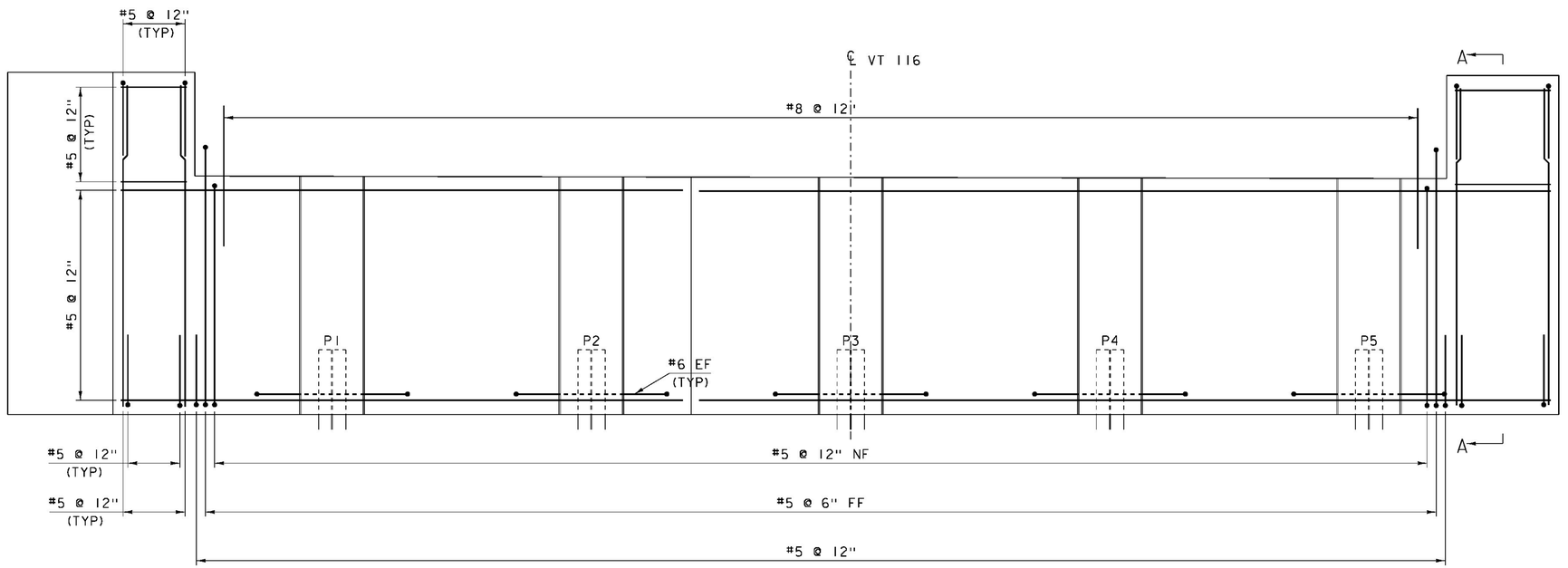
PLOT DATE: 24-NOV-2014
DRAWN BY: R. PELLETT
CHECKED BY: EVANS-MONGEON
SHEET 31 OF 54



ABUTMENT #2 REINFORCING PLAN (PCUI)

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

(SEE SHEET "ABUTMENT #1 REINFORCING" FOR SECTION B-B)



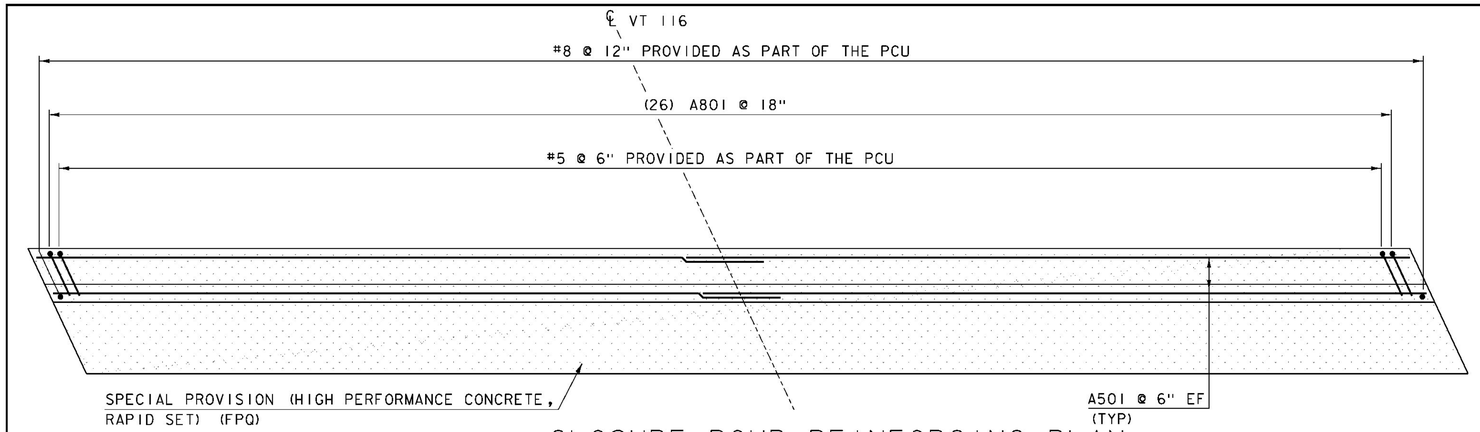
ABUTMENT #2 REINFORCING ELEVATION (PCUI)

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

(SEE SHEET "ABUTMENT #1 REINFORCING" FOR SECTION A-A)

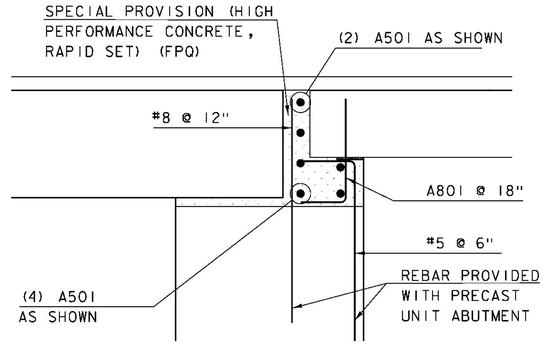
PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)

FILE NAME: s10b094sub.dgn	PLOT DATE: 24-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: R. PELLETT
DESIGNED BY: C. MOONEY	CHECKED BY: EVANS-MONGEON
ABUTMENT #2 REINFORCING	SHEET 32 OF 54



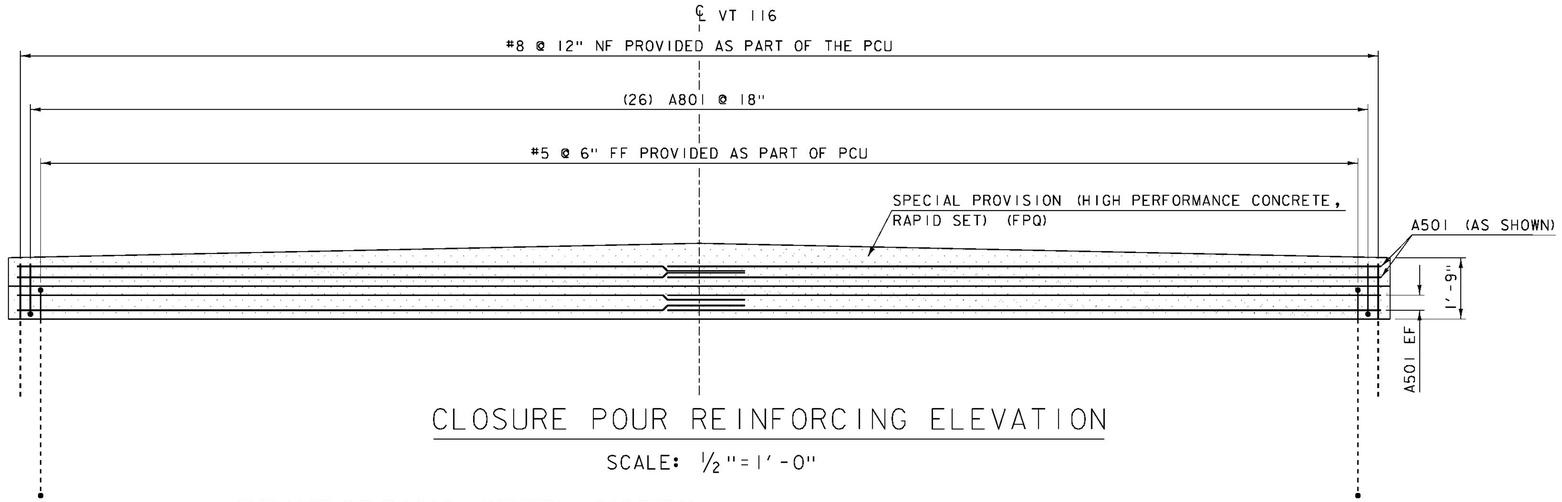
CLOSURE POUR REINFORCING PLAN

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



CLOSURE POUR TYPICAL

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



CLOSURE POUR REINFORCING ELEVATION

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

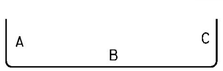
NOTE: NF=NEAR FACE
FF=FAR FACE
EF=EACH FACE
▲=CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS

REINFORCING STEEL 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.

REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
✳	13	5	20'- 2"	1A501.2	STR	20'- 2"											
✳	26	8	3'- 0"	1A801.2	2	1'- 0"	2'- 0"	---									
✳	13	5	20'- 2"	2A501.2	STR	20'- 2"											
✳	26	8	3'- 0"	2A801.2	2	1'- 0"	2'- 0"	---									



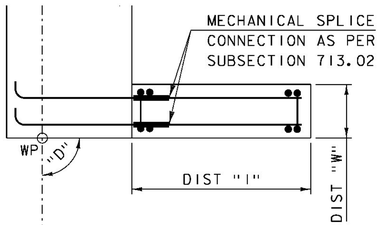
BAR TYPE 2

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: sl0b094sub.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: C. MOONEY
CLOSURE POUR REINFORCING DETAILS

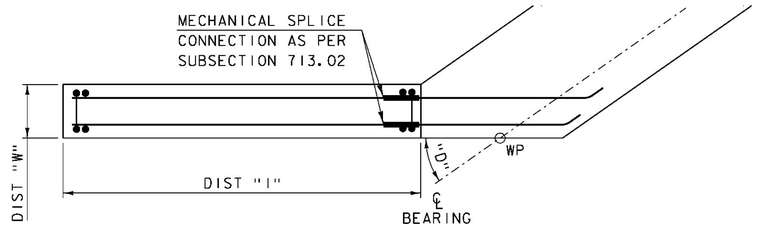
PLOT DATE: 04-NOV-2014
DRAWN BY: R. PELLETT
CHECKED BY: EVANS-MONGEON
SHEET 33 OF 54

PCU 3-6 ELEVATIONS



WW1&4 PLAN (PCU 3&6)

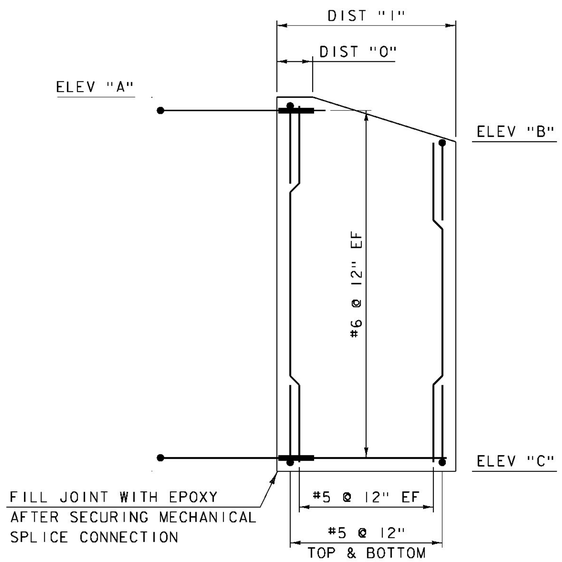
SCALE ½" = 1'-0"



WW2&3 PLAN (PCU 4&5)

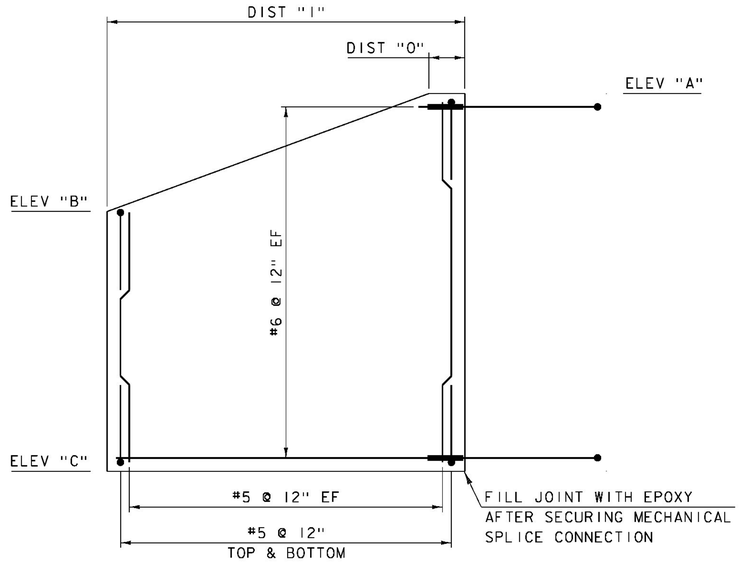
SCALE ½" = 1'-0"

	WW1 (PCU 3)	WW2 (PCU 4)	WW3 (PCU 5)	WW4 (PCU 6)
ELEV "A"	332.46	332.56	332.22	332.32
ELEV "B"	331.21	329.26	329.31	331.00
ELEV "C"	322.00	322.00	322.00	322.00
DIST "W"	1'-6"	1'-6"	1'-6"	1'-6"
DIST "I"	5'-6"	10'-0"	10'-0"	5'-6"
DIST "O"	1'-0"	1'-0"	1'-0"	1'-0"
ANGLE "D"	90°	35°	35°	90°



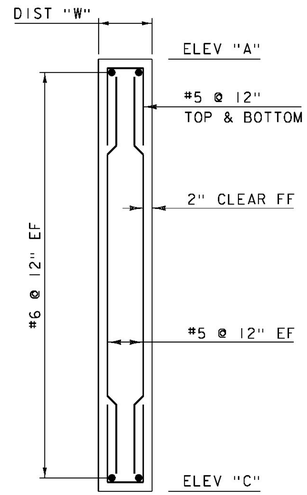
WW1&4 ELEVATION (PCU 3&6)

SCALE ½" = 1'-0"



WW2&3 ELEVATION (PCU 3&6)

SCALE ½" = 1'-0"



WINGWALL TYPICAL

SCALE ½" = 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'-7" BAR LAP UNLESS OTHERWISE
SPECIFIED ON THE PLANS.

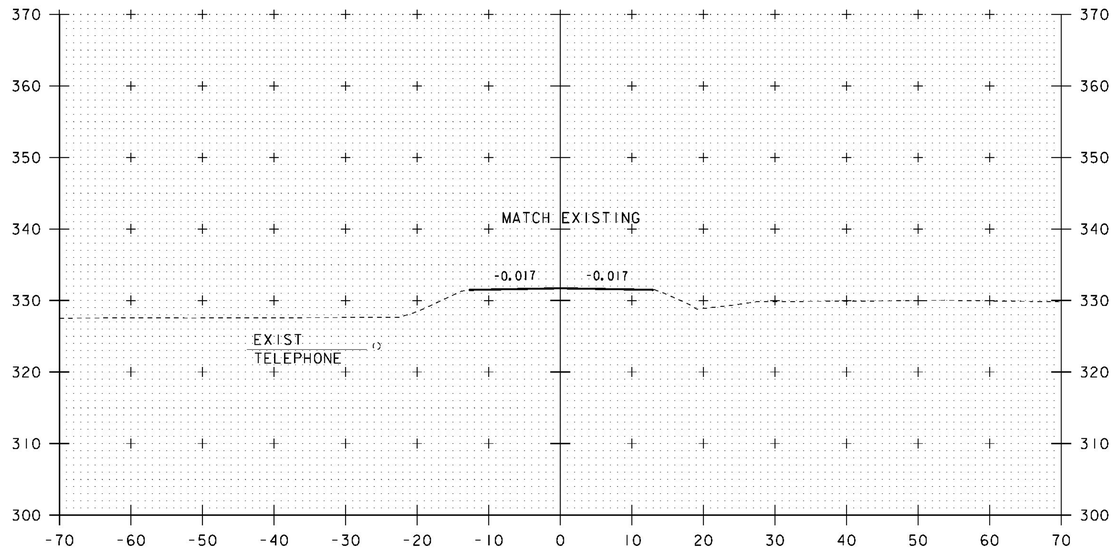
NOTES:

1. EPOXY GROUT SHALL BE INCIDENTAL TO ITEM 540.10, "PRECAST CONCRETE STRUCTURE".
2. ALL REINFORCING STEEL AND MECHANICAL CONNECTORS SHALL BE INCLUDED IN THE UNIT PROCE BID FOR ITEM 540.10, "PRECAST CONCRETE STRUCTURE".
3. ALL REINFORCING STEEL IN WINGWALLS SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR LEVEL II REINFORCING. ALL MECHANICAL CONNECTORS IN WINGWALLS SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR LEVEL I (EPOXY COATED) REINFORCING.
4. THE BRIDGE PLAQUE FURNISHED BY THE AGENCY SHALL BE CAST INTO WINGWALL 2. ALL WORK TO INSTALL THE PLAQUE SHALL BE INCIDENTAL TO THE APPROPRIATE PRECAST CONCRETE STRUCTURE ITEM. SEE SD-502.00 FOR FURTHER DETAILS.

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

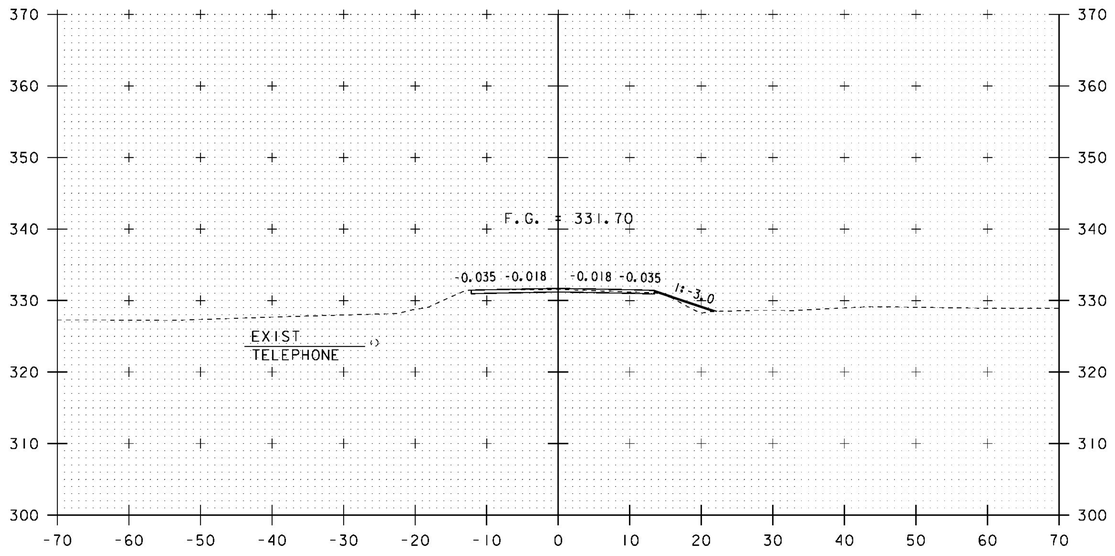
FILE NAME: sl0b094sub.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: C. MOONEY
WINGWALL DETAILS

PLOT DATE: 04-NOV-2014
DRAWN BY: R. PELLETT
CHECKED BY: EVANS-MONGEON
SHEET 34 OF 54

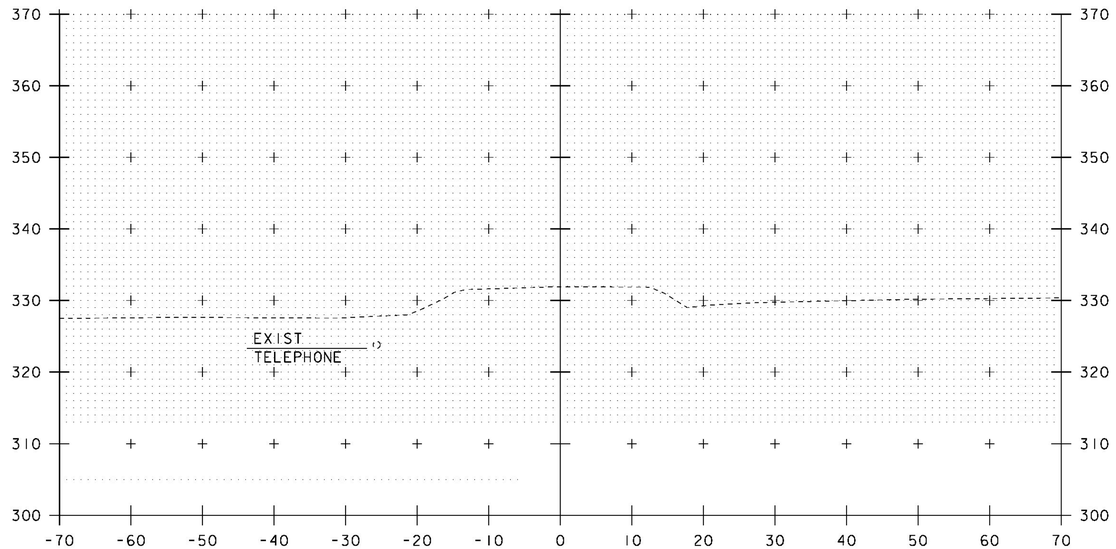


104+00

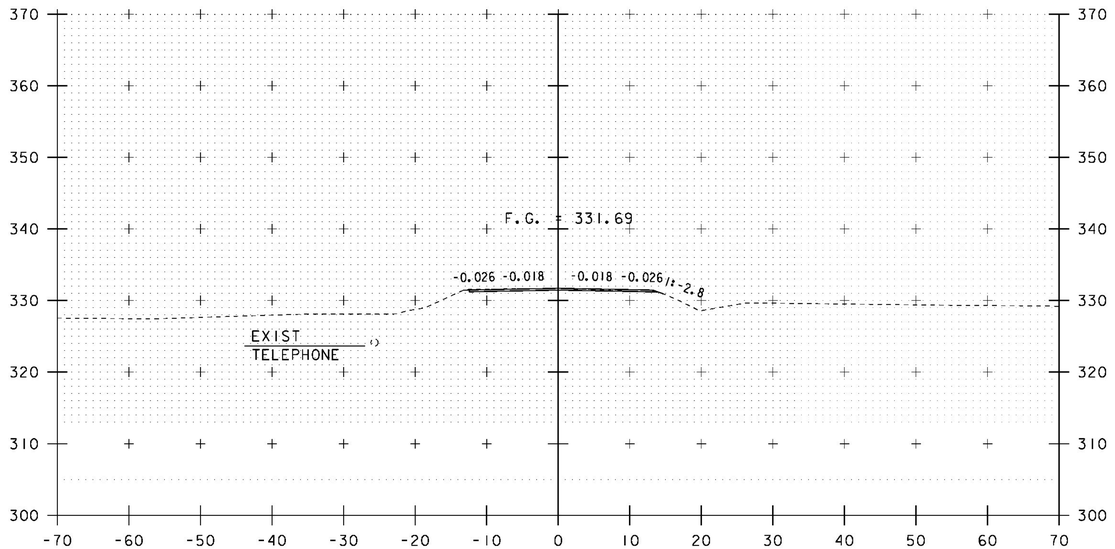
STA 104+00.00
BEGIN APPROACH
MATCH EXISTING



104+50



103+75



104+25

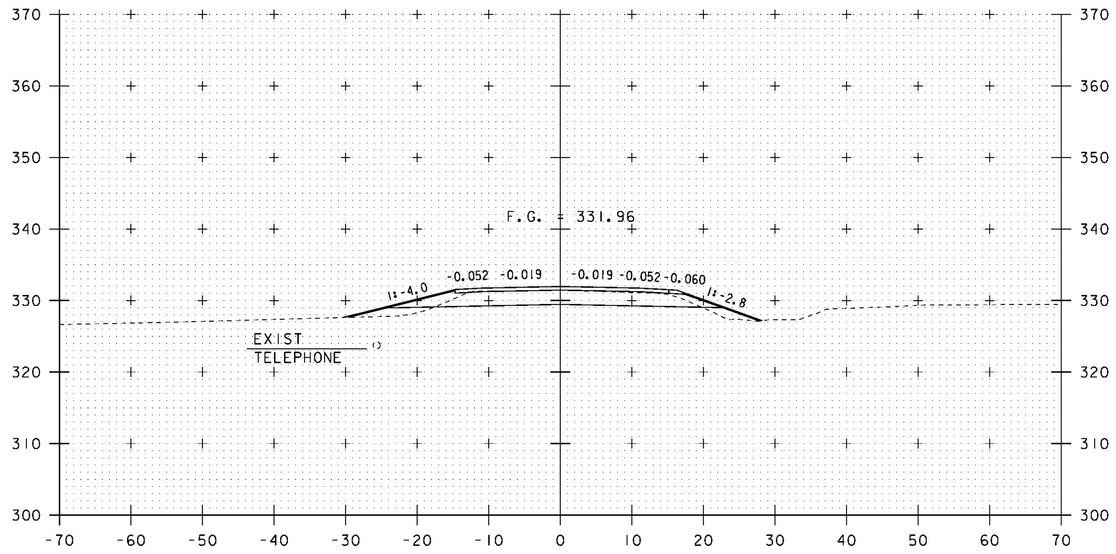
10 0 10
SCALE: 1" = 10'-0"

STA. 103+75 TO STA. 104+50

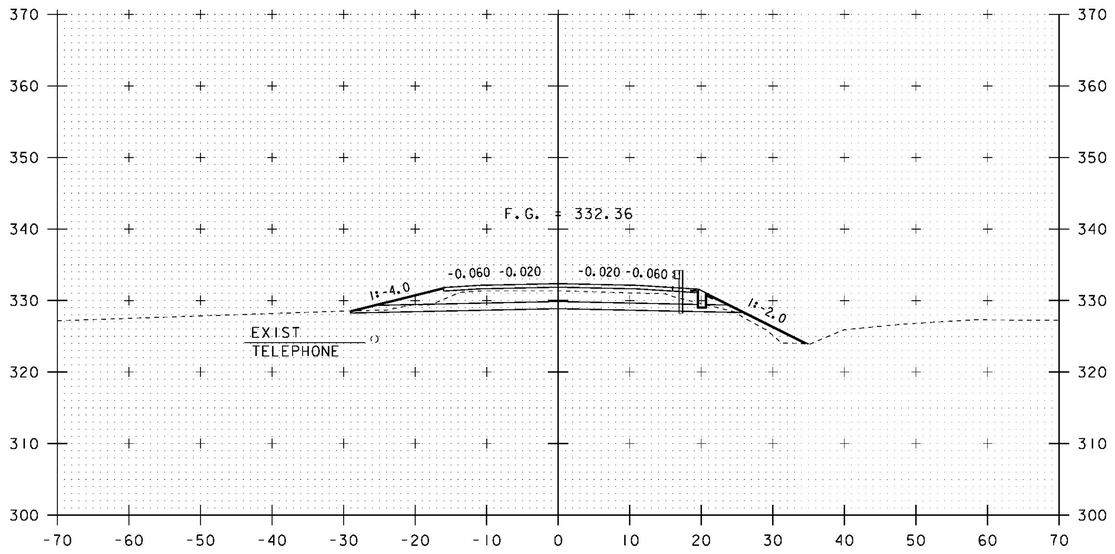
PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: s10b094xsl.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: G. ROY
VT 116 CROSS SECTIONS (1)

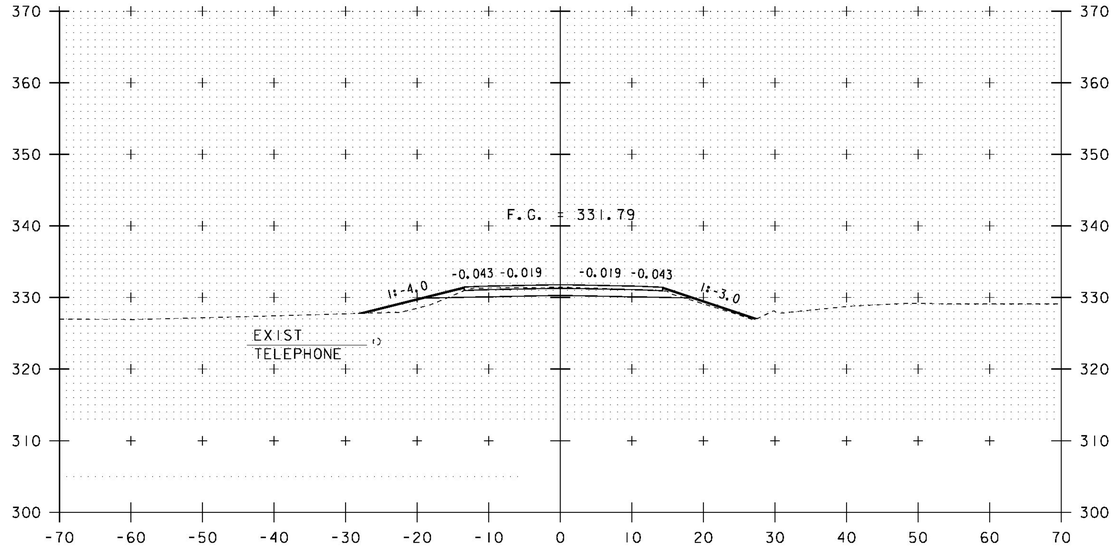
PLOT DATE: 04-NOV-2014
DRAWN BY: G. ROY
CHECKED BY: EVANS-MONGEON
SHEET 35 OF 54



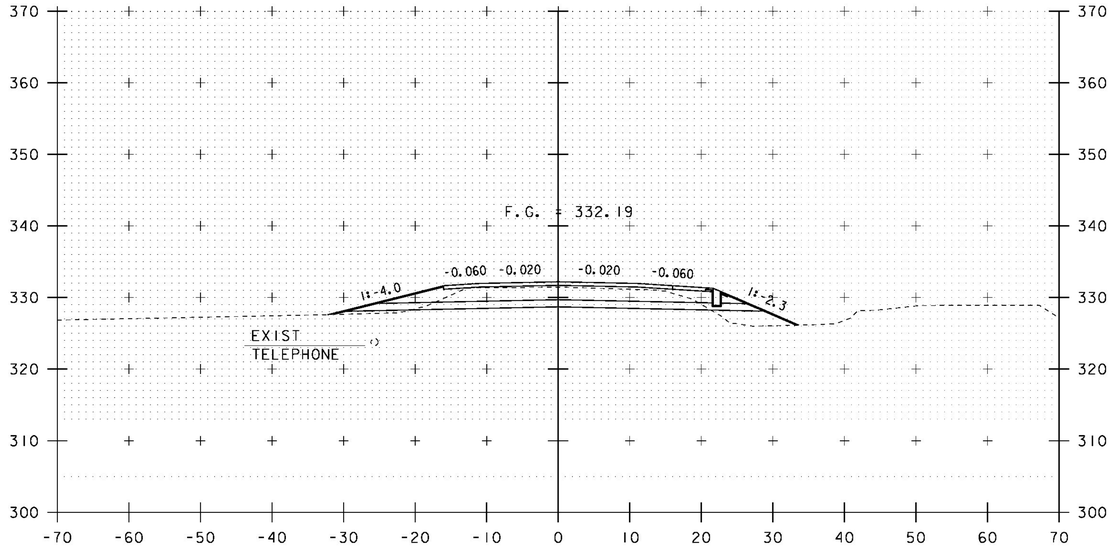
105+00



105+50



104+75



105+25

SPECIAL PROVISION (STONE DIAPHRAGM)
STA 105+25.0 RT - STA 106+28.3 RT

STA 105+25.00
END APPROACH
BEGIN PROJECT

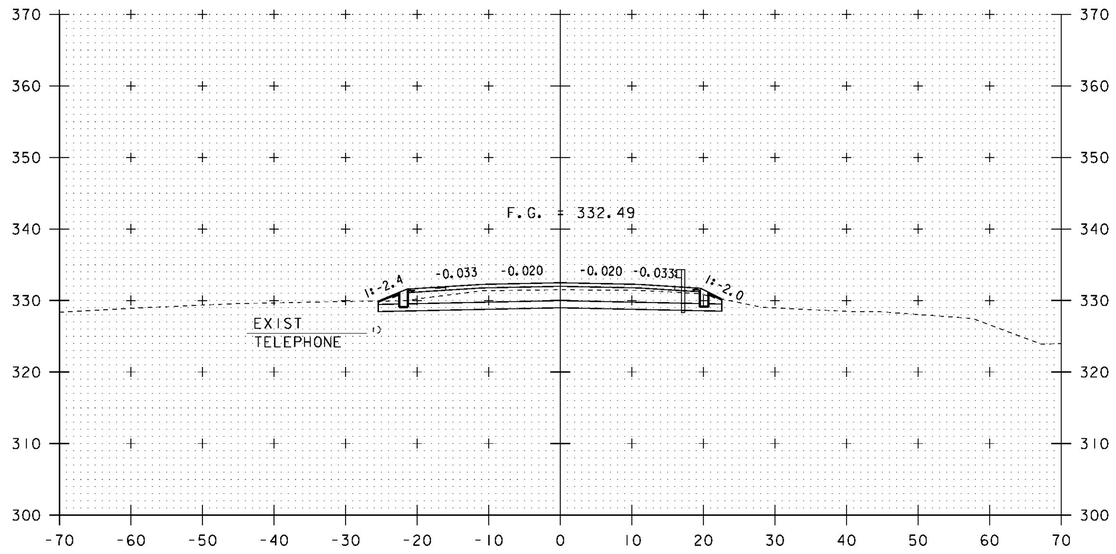
10 0 10
SCALE: 1" = 10'-0"

STA. 104+75 TO STA. 105+50

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: s10b094xsl.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: G. ROY
VT 116 CROSS SECTIONS (2)

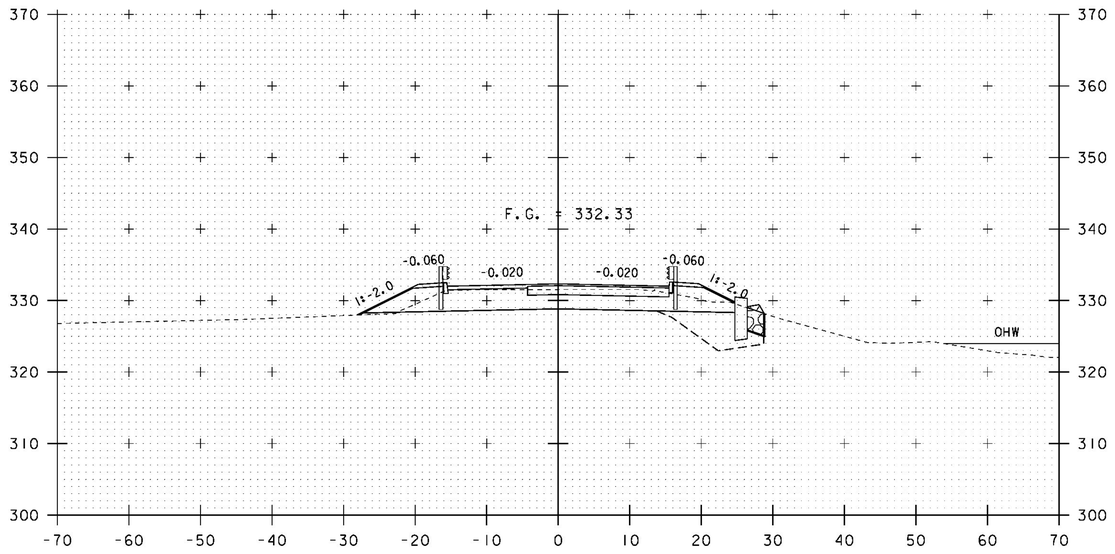
PLOT DATE: 04-NOV-2014
DRAWN BY: G. ROY
CHECKED BY: EVANS-MONGEON
SHEET 36 OF 54



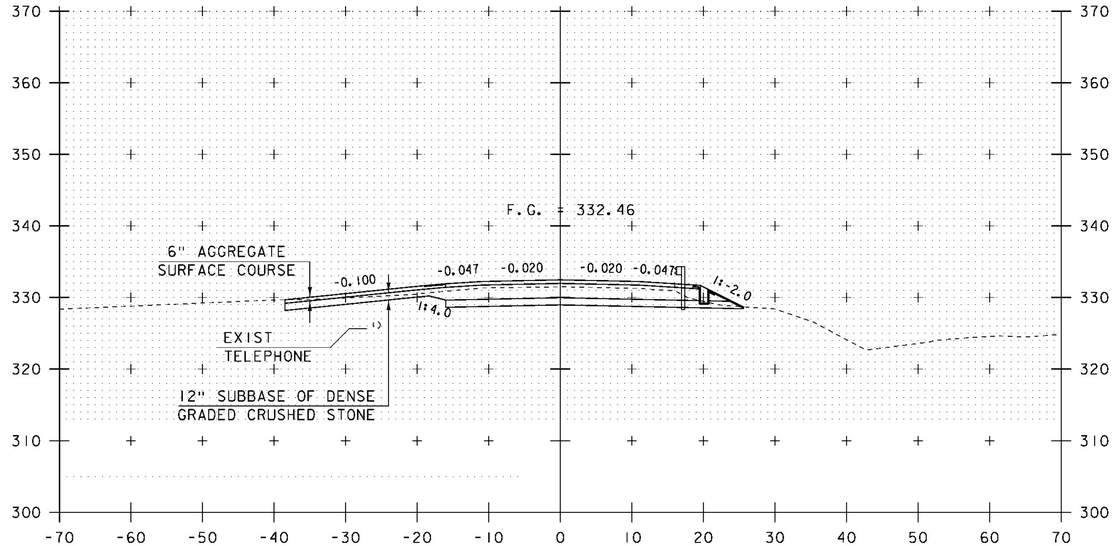
SPECIAL PROVISION (STONE DIAPHRAGM)
STA 105+94.9 LT - STA 106+42.7 LT

CONSTRUCT GRAVEL DRIVE
STA 105+83.0 LT

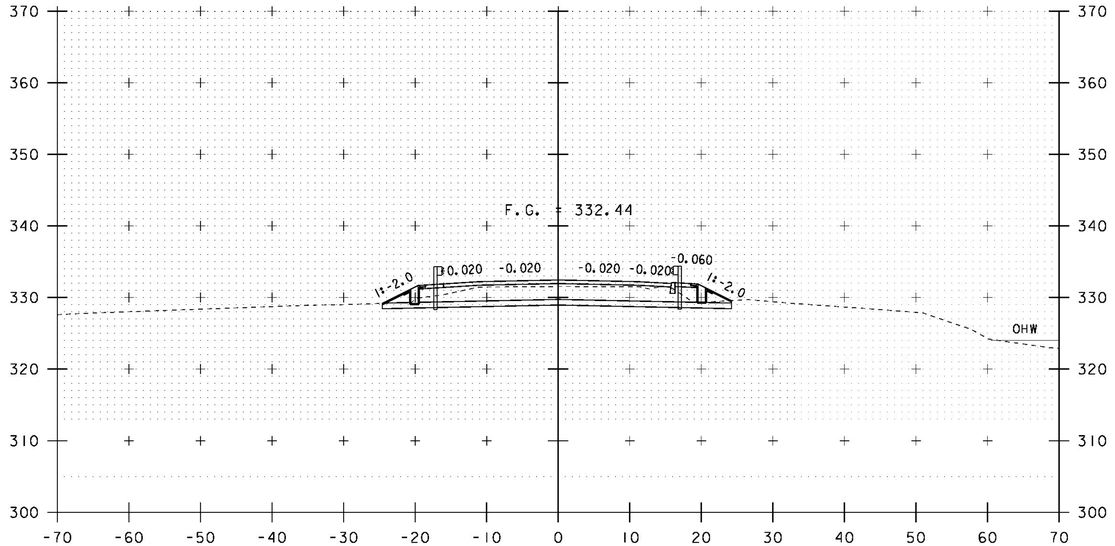
106+00



106+50



105+75



106+25

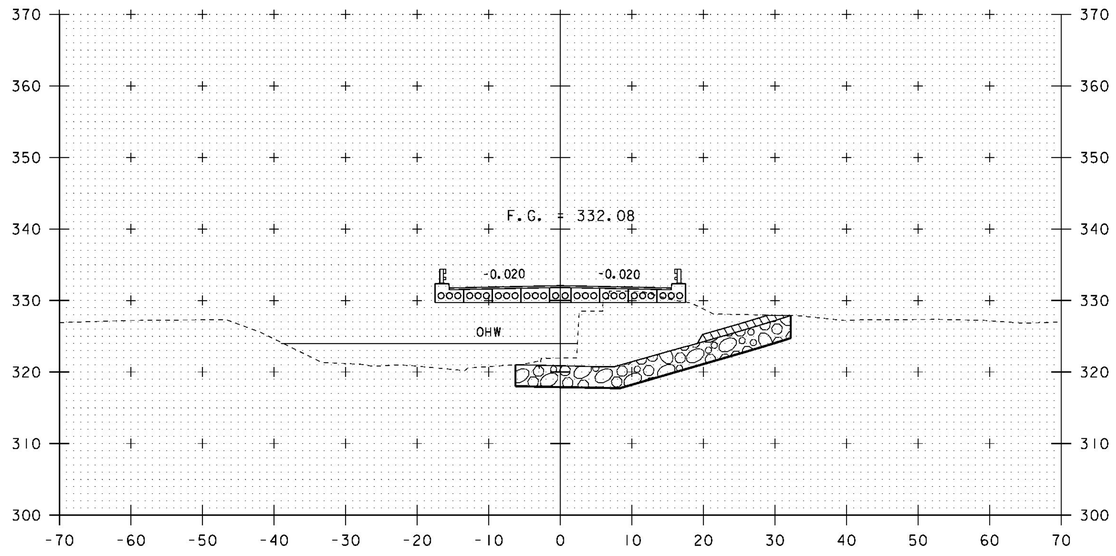
10 0 10
SCALE: 1" = 10'-0"

STA. 105+75 TO STA. 106+50

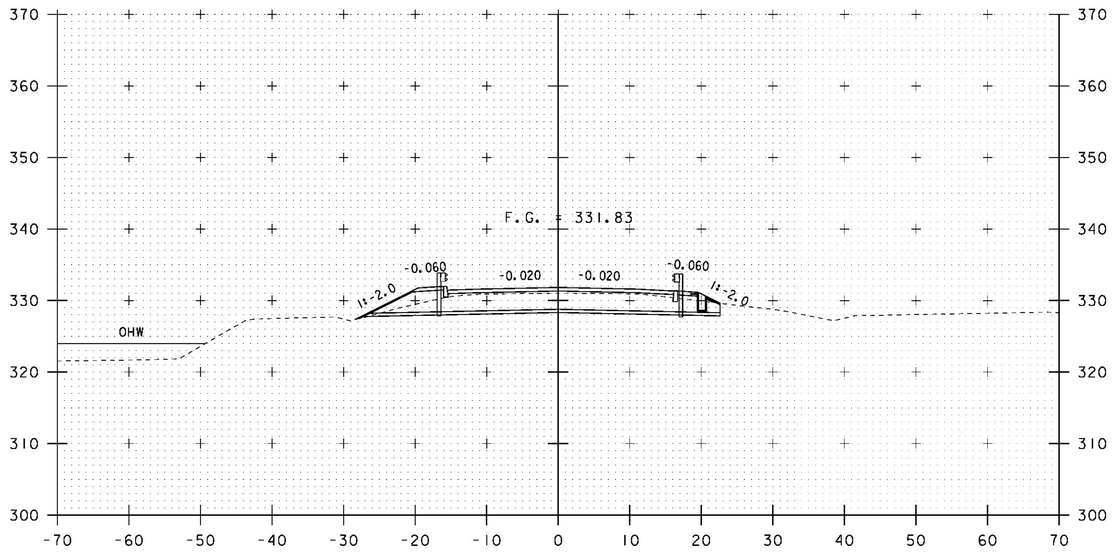
PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: s10b094xsl.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: G. ROY
VT 116 CROSS SECTIONS (3)

PLOT DATE: 04-NOV-2014
DRAWN BY: G. ROY
CHECKED BY: EVANS-MONGEON
SHEET 37 OF 54

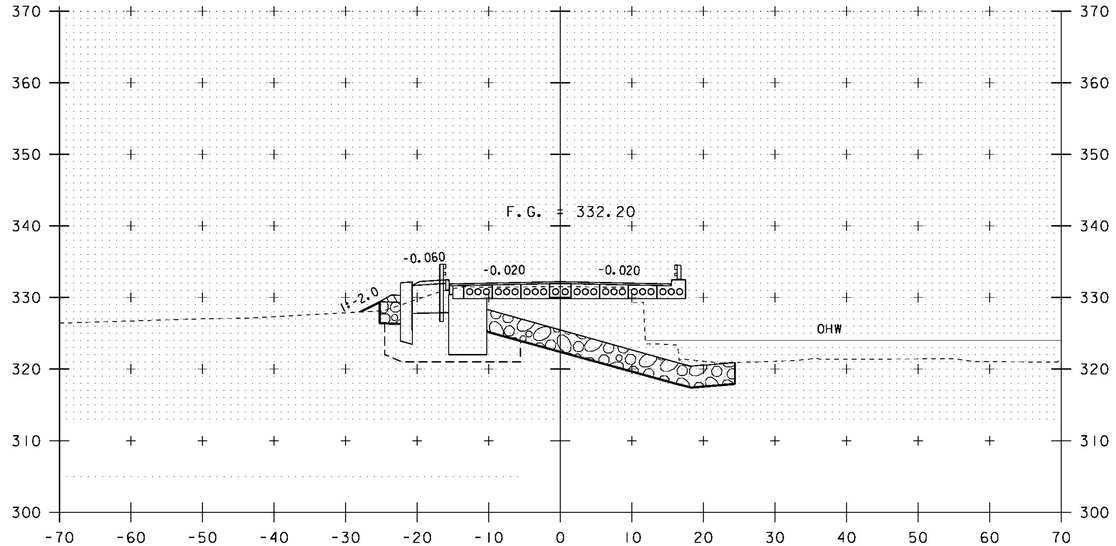


107+00



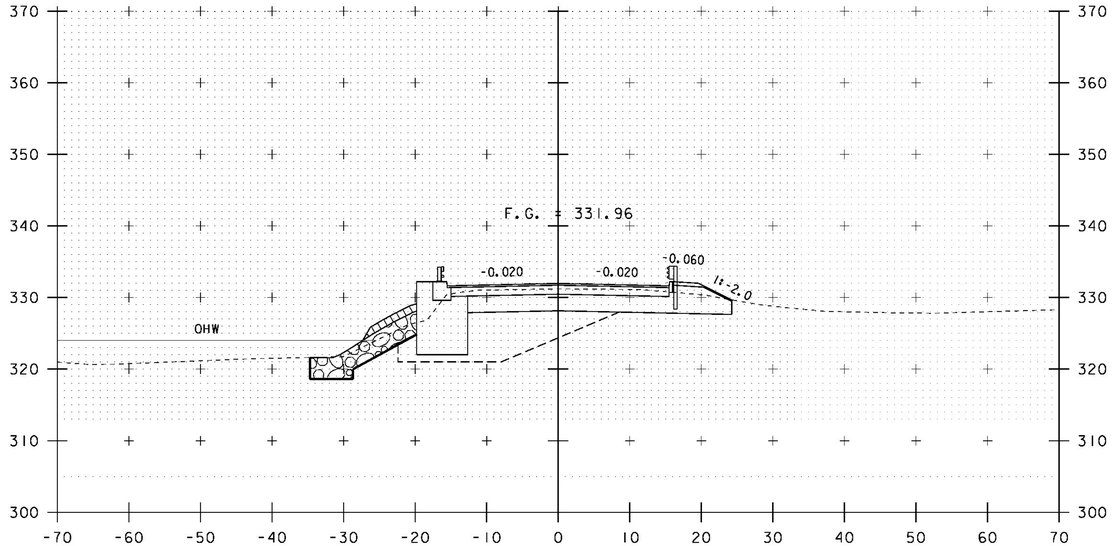
107+50

SPECIAL PROVISION (STONE DIAPHRAGM)
STA 107+43.3 RT - STA 108+00.0 RT



106+75

STA 106+67.34
END ROADWAY
BEGIN BRIDGE



107+25

STA 107+18.66
END BRIDGE
RESUME ROADWAY

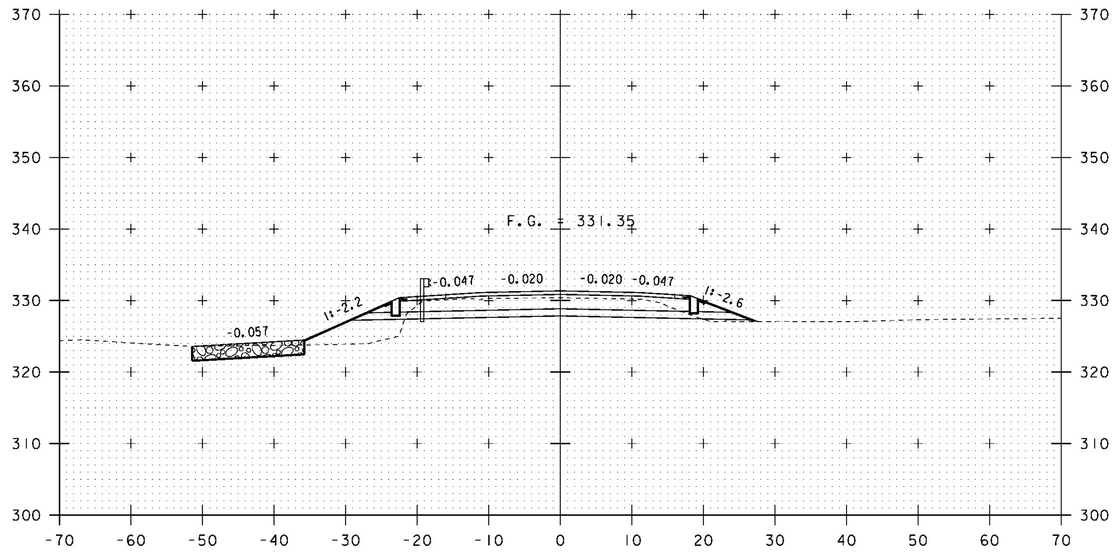
10 0 10
SCALE: 1" = 10'-0"

STA. 106+75 TO STA. 107+50

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

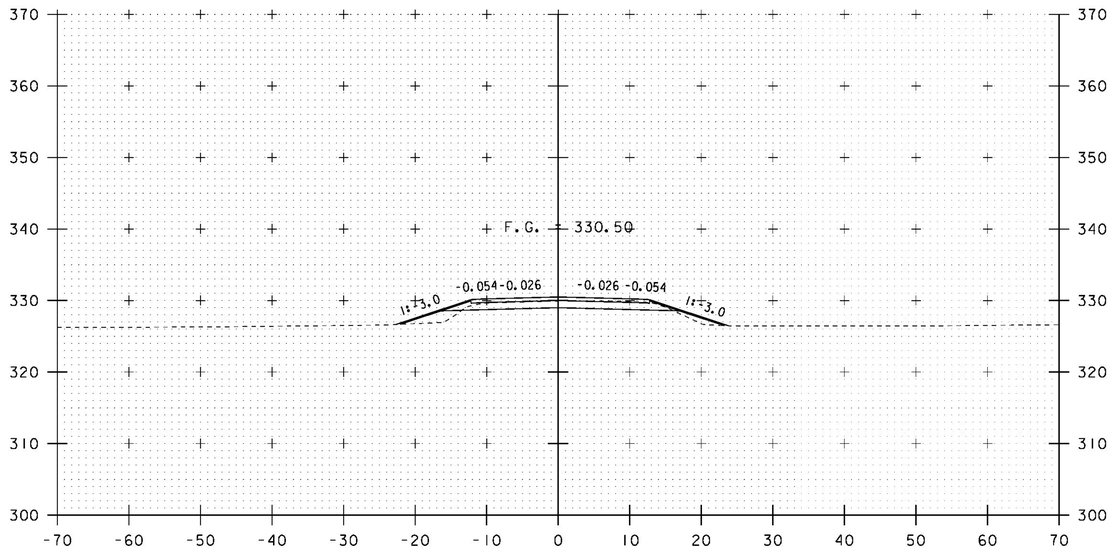
FILE NAME: s10b094xsl.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: G. ROY
VT 116 CROSS SECTIONS (4)

PLOT DATE: 04-NOV-2014
DRAWN BY: G. ROY
CHECKED BY: EVANS-MONGEON
SHEET 38 OF 54

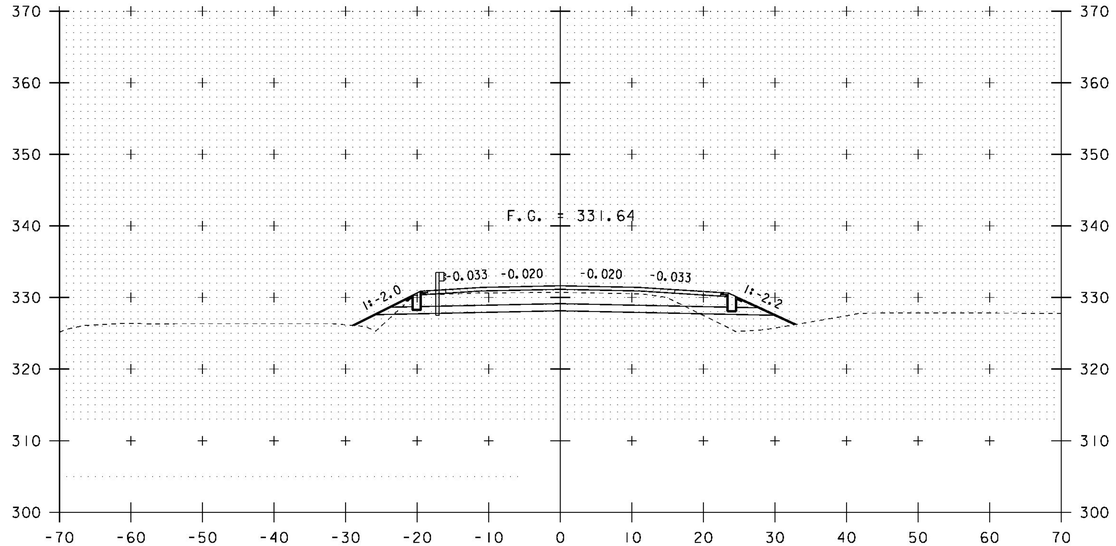


108+00

STA 108+00.00
END PROJECT
BEGIN APPROACH

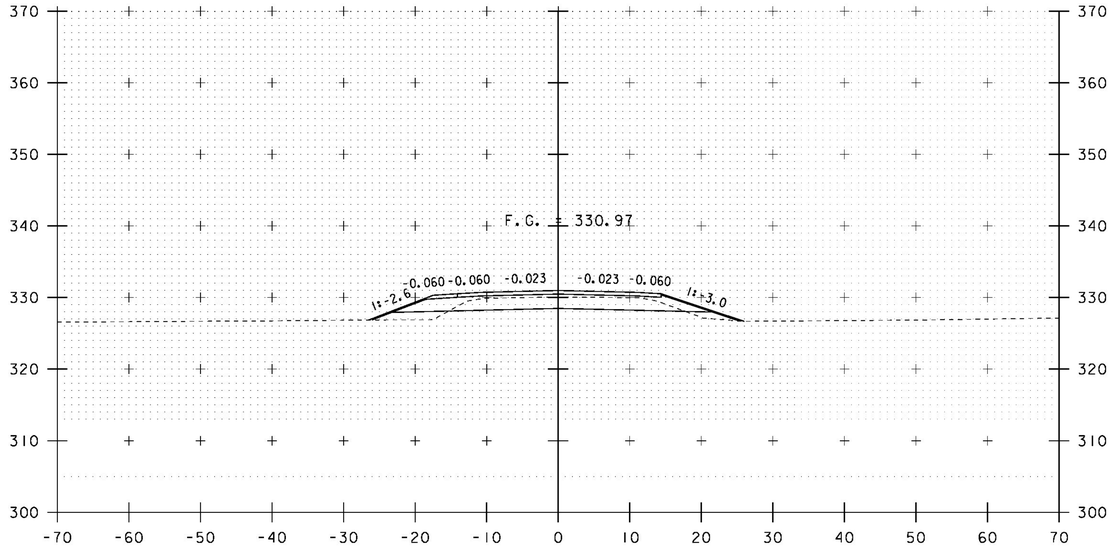


108+50



107+75

SPECIAL PROVISION (STONE DIAPHRAGM)
STA 107+57.7 LT - STA 108+40.0 LT



108+25

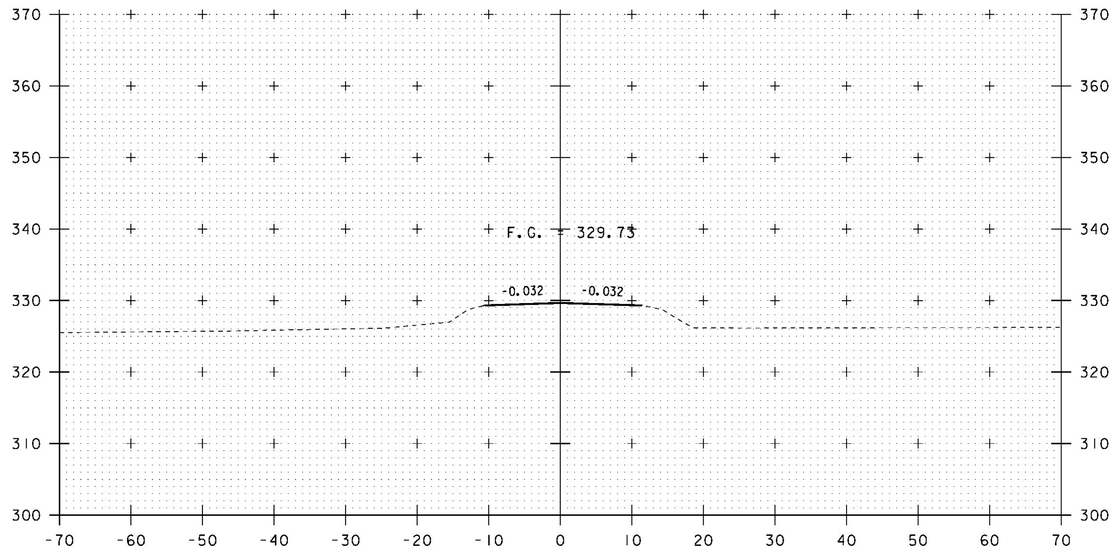
10 0 10
SCALE: 1" = 10'-0"

STA. 107+75 TO STA. 108+50

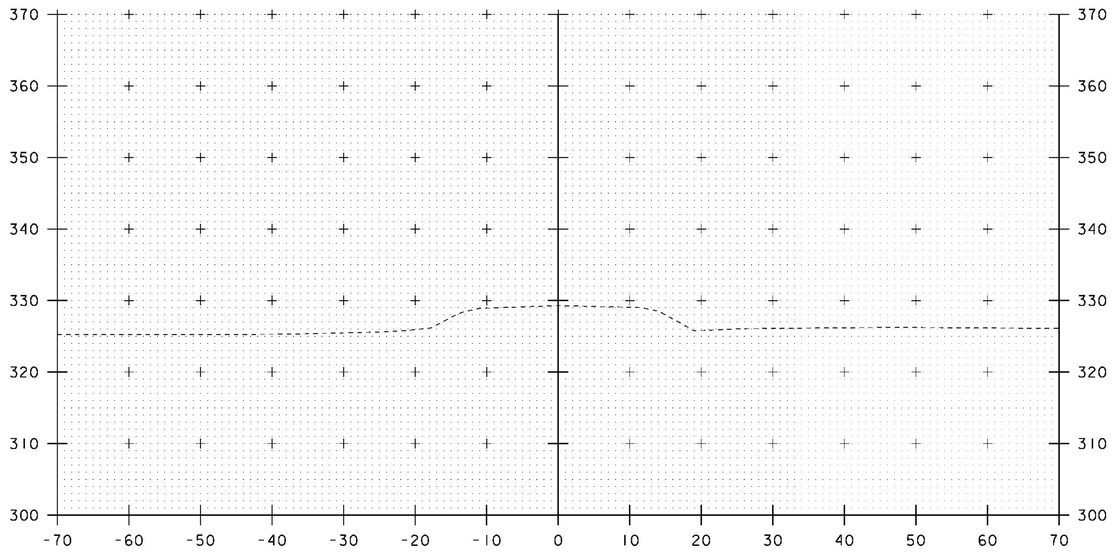
PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: s10b094xsl.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: G. ROY
VT 116 CROSS SECTIONS (5)

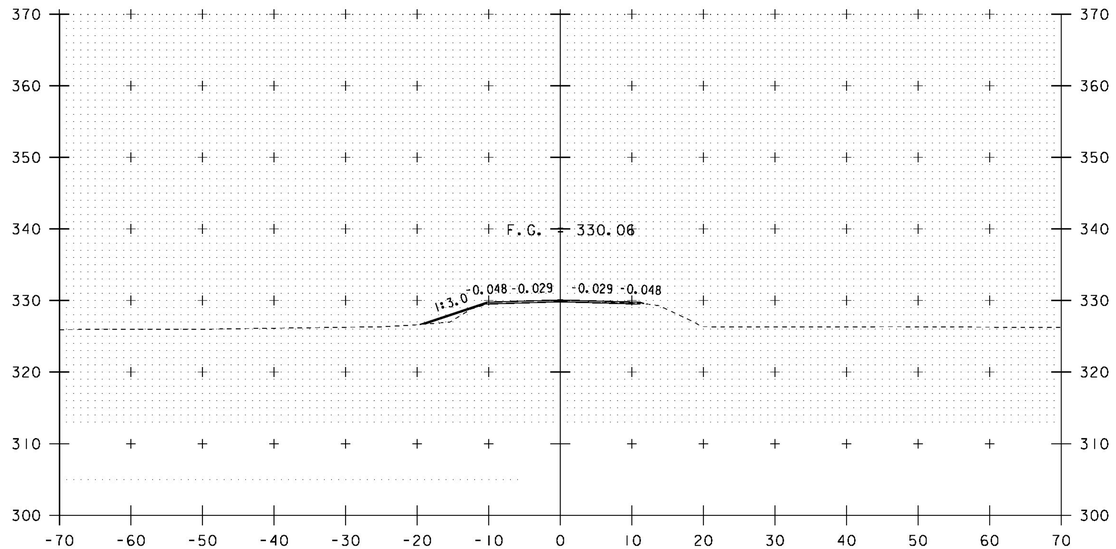
PLOT DATE: 04-NOV-2014
DRAWN BY: G. ROY
CHECKED BY: EVANS-MONGEON
SHEET 39 OF 54



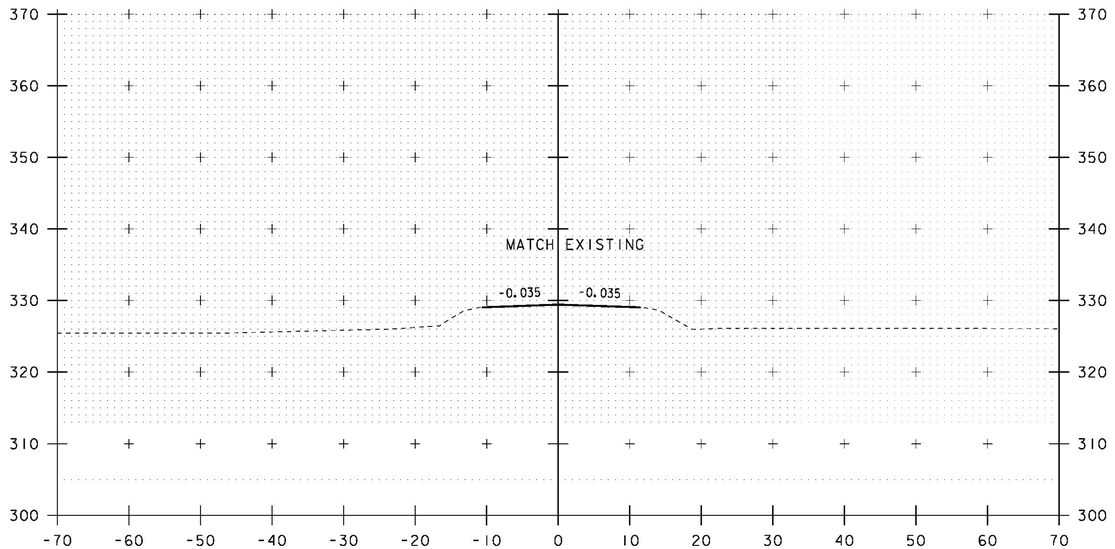
109+00



109+50



108+75



109+25

STA 109+25.00
END APPROACH
MATCH EXISTING

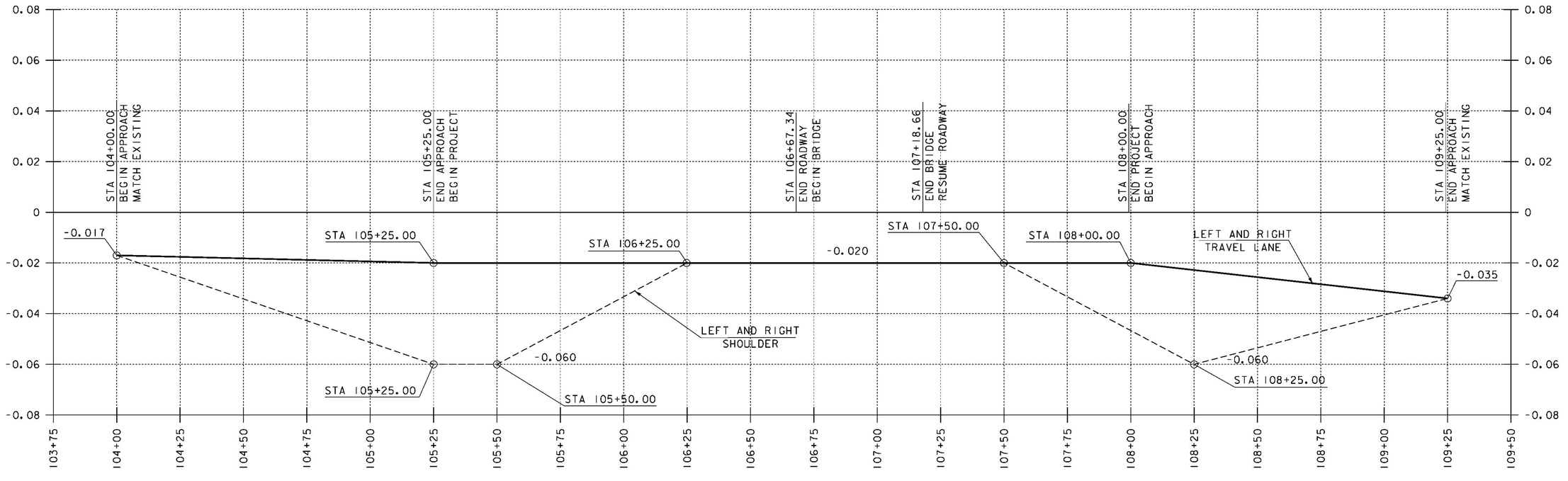
10 0 10
SCALE: 1" = 10'-0"

STA. 108+75 TO STA. 109+50

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

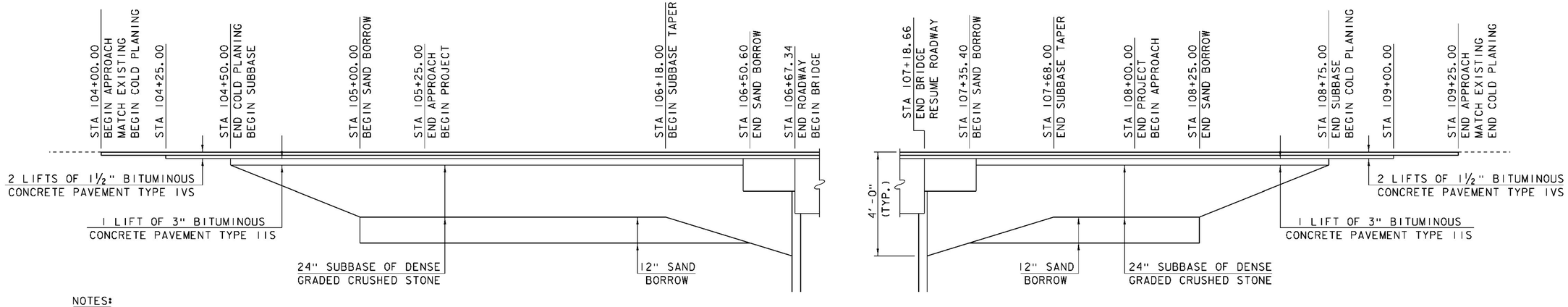
FILE NAME: s10b094xsl.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: G. ROY
VT 116 CROSS SECTIONS (6)

PLOT DATE: 04-NOV-2014
DRAWN BY: C. ROY
CHECKED BY: EVANS-MONGEON
SHEET 40 OF 54



VT 116 BANKING DIAGRAM

HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 0.02'/'



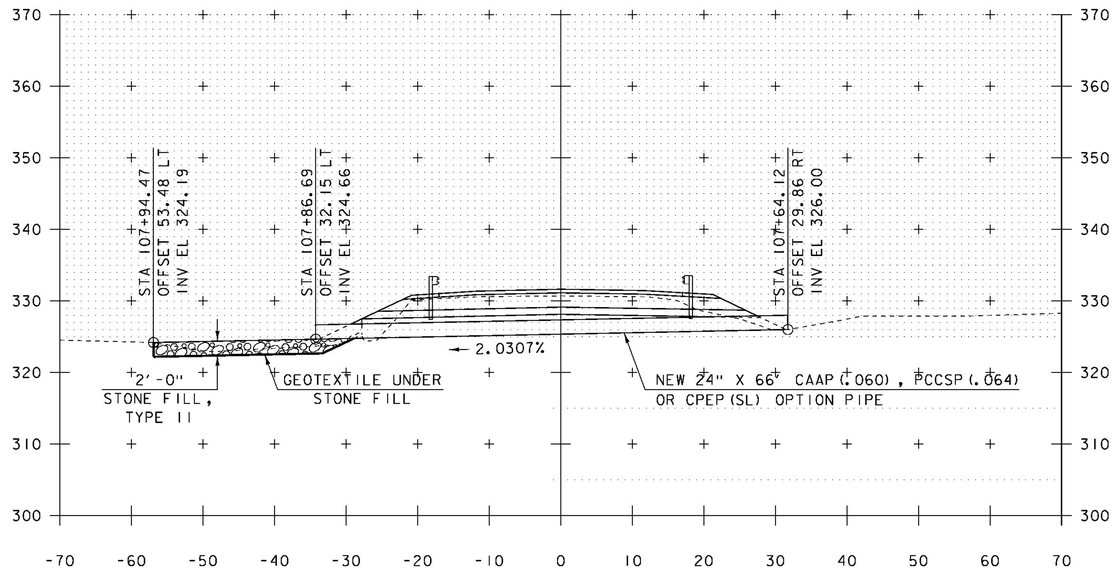
NOTES:

1. SEE SECTIONS TO DETERMINE CUT OR FILL.
2. SEE PROJECT TYPICAL SECTIONS FOR ABUTMENT EARTHWORK DETAILS.

VT 116 MATERIAL TRANSITION DETAIL

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

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)
FILE NAME: s10b094bdmtd.dgn	PLOT DATE: 04-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: EVANS-MONGEON
BANKING DIAGRAM AND MATERIAL TRANSITION DETAIL	SHEET 41 OF 54

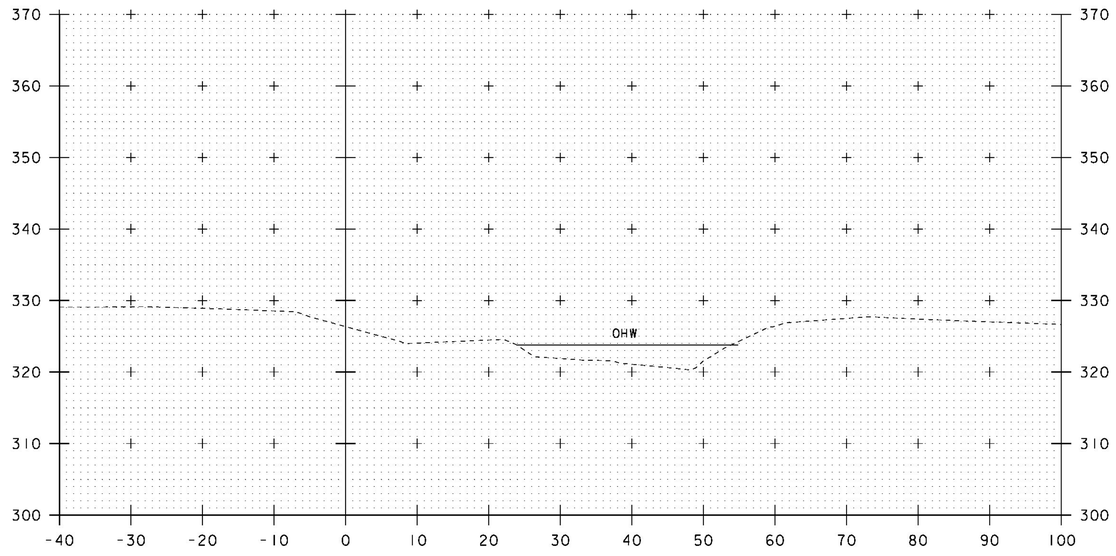


107+75, ASKEW 20° RT

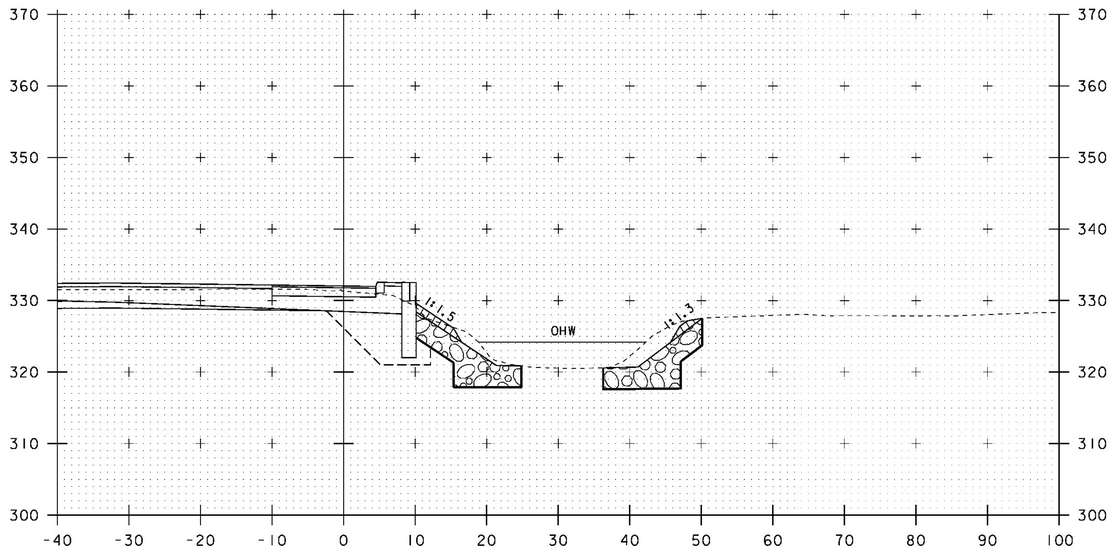
10 0 10

SCALE: 1" = 10'-0"

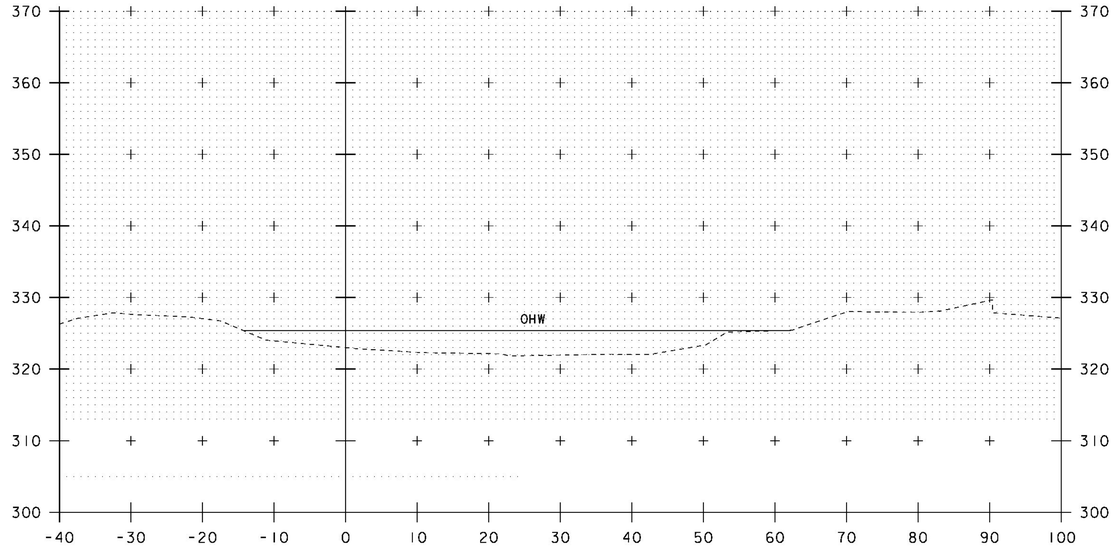
PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)
FILE NAME: s10b094xsl.dgn	PLOT DATE: 04-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: EVANS-MONGEON
PIPE PROFILE	SHEET 42 OF 54



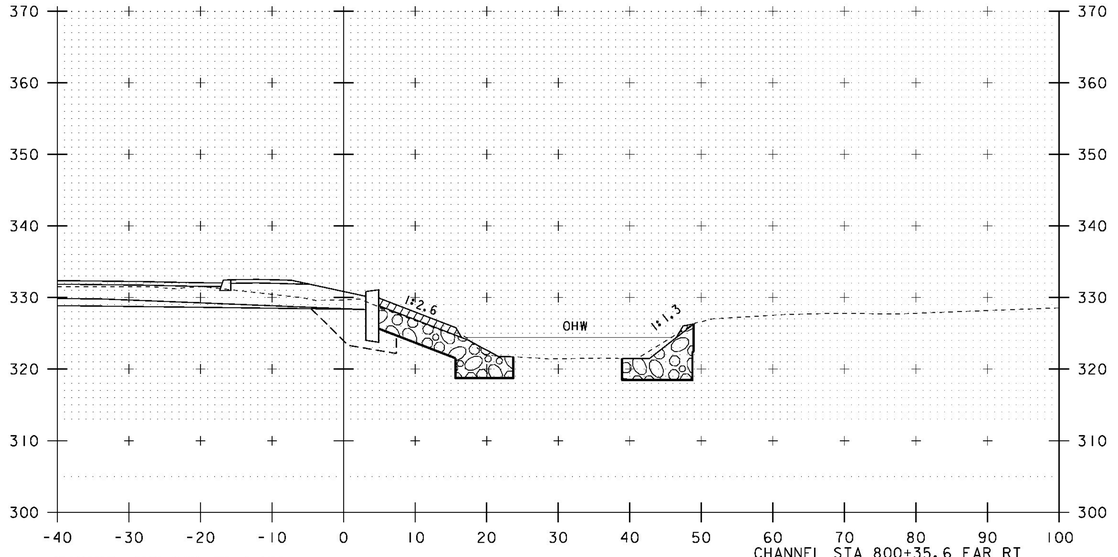
800+25



800+60



800+00



800+50

CHANNEL STA 800+43.4 RT
BEGIN STRUCTURE EXCAVATION
GRANULAR BACKFILL FOR STRUCTURES

CHANNEL STA 800+40.0 RT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
STONE FILL, TYPE III
GRUBBING MATERIAL

CHANNEL STA 800+35.6 FAR RT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
STONE FILL, TYPE III
GRUBBING MATERIAL

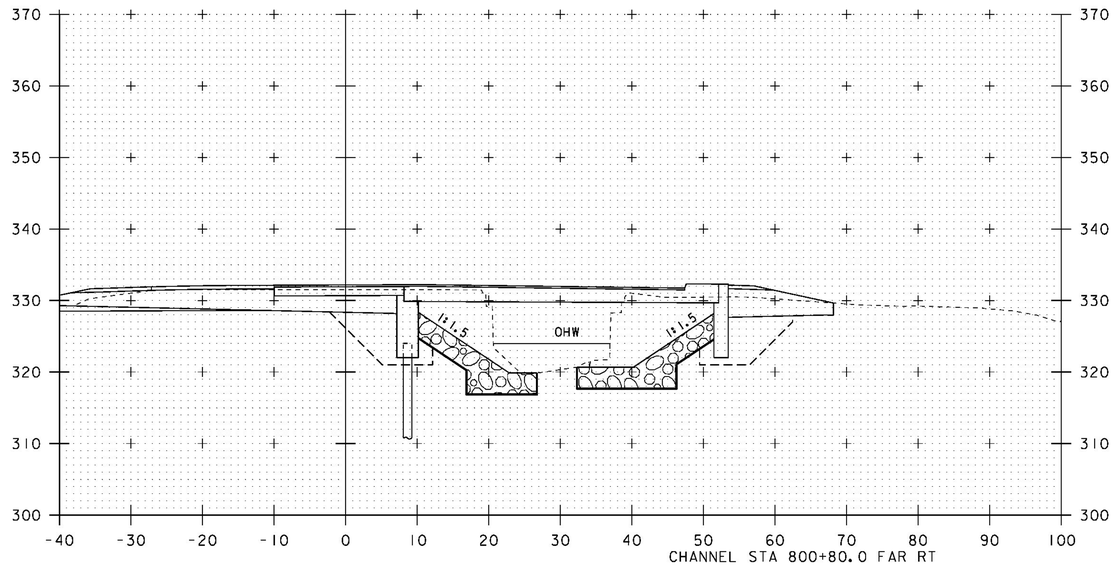
10 0 10
SCALE: 1" = 10'-0"

STA. 800+00 TO STA. 800+60

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: s10b094xsl.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: G. ROY
CHANNEL CROSS SECTIONS (1)

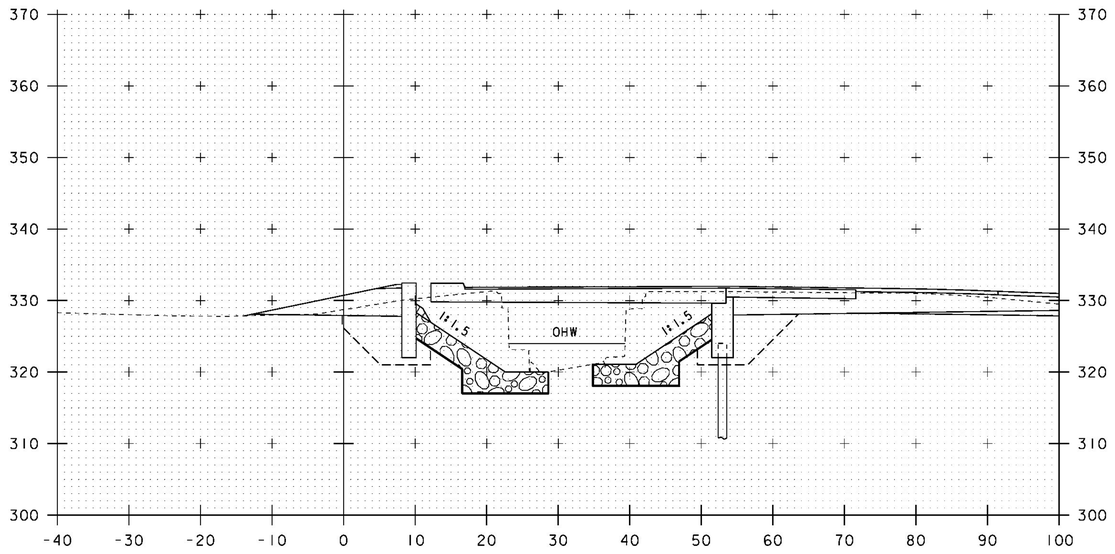
PLOT DATE: 04-NOV-2014
DRAWN BY: G. ROY
CHECKED BY: EVANS-MONGEON
SHEET 43 OF 54



800+80

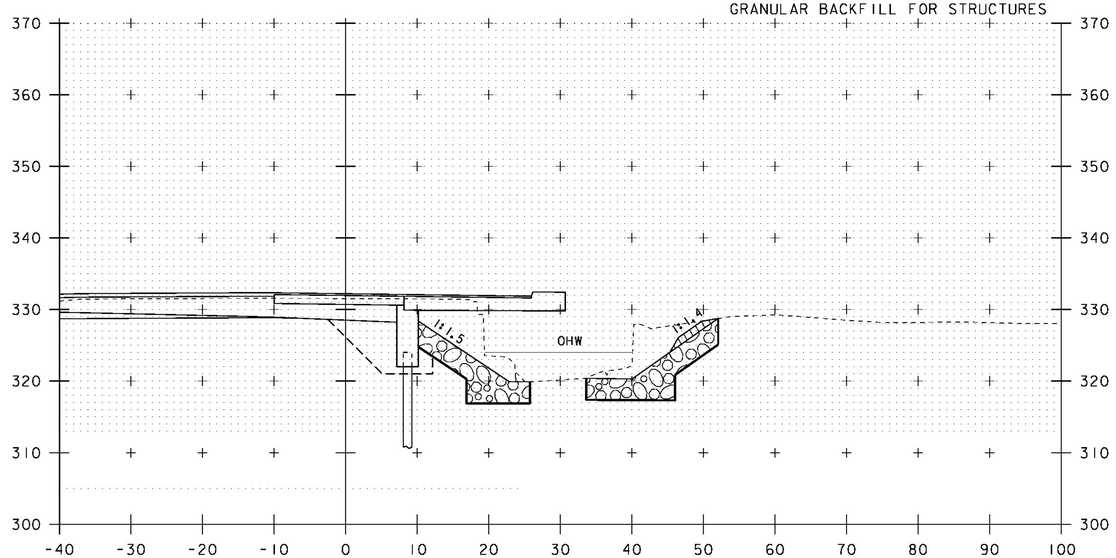
CHANNEL STA 800+80.0 FAR RT
END GRUBBING MATERIAL

CHANNEL STA 800+74.7 FAR RT
BEGIN STRUCTURE EXCAVATION
GRANULAR BACKFILL FOR STRUCTURES



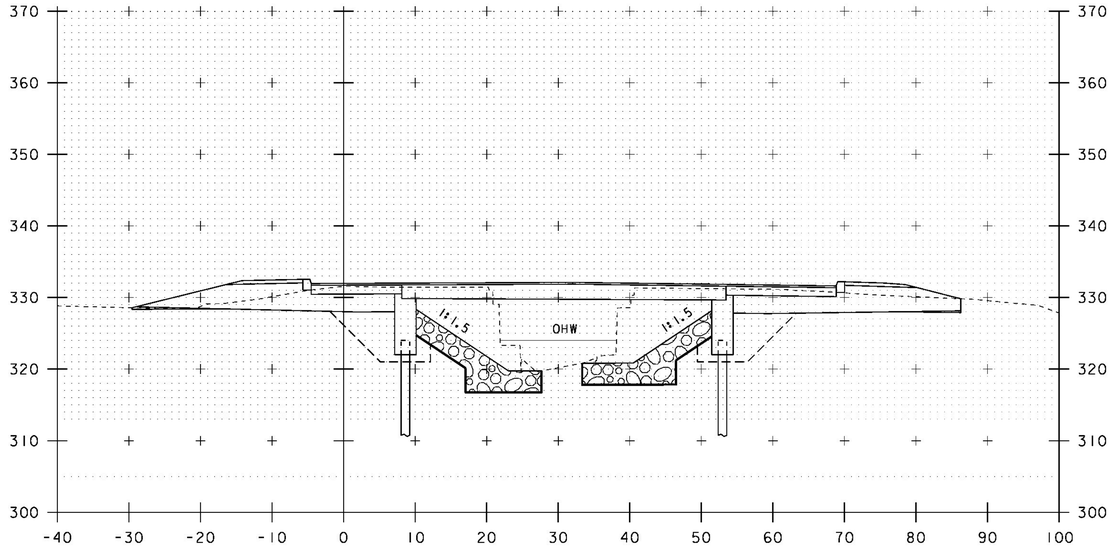
CHANNEL STA 800+99.0 RT
BEGIN GRUBBING MATERIAL

801+00



CHANNEL STA 800+61.0 RT
END GRUBBING MATERIAL

800+70



800+90

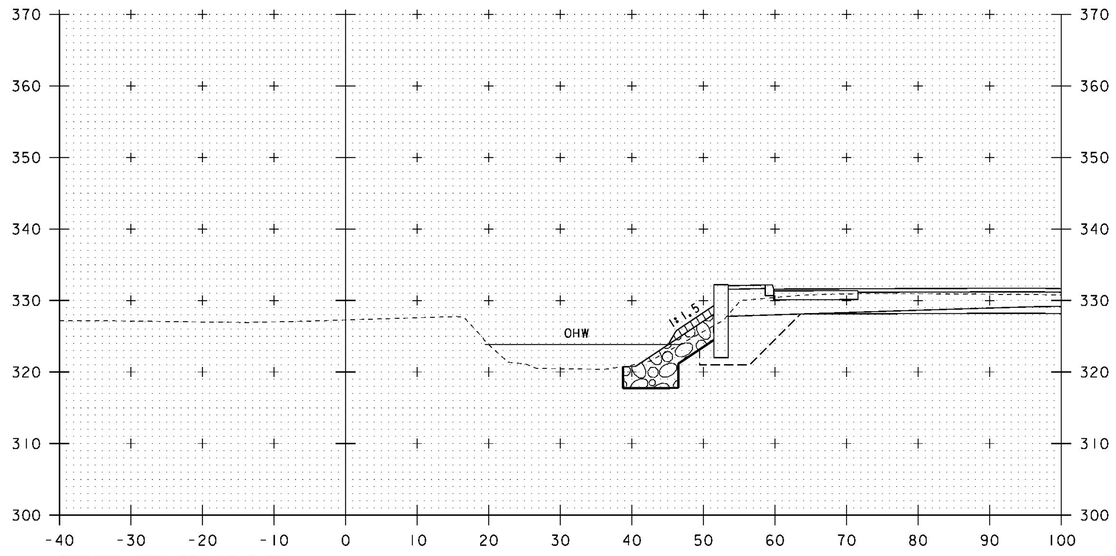
10 0 10
SCALE: 1" = 10'-0"

STA. 800+70 TO STA. 801+00

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: s10b094xsl.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: G. ROY
CHANNEL CROSS SECTIONS (2)

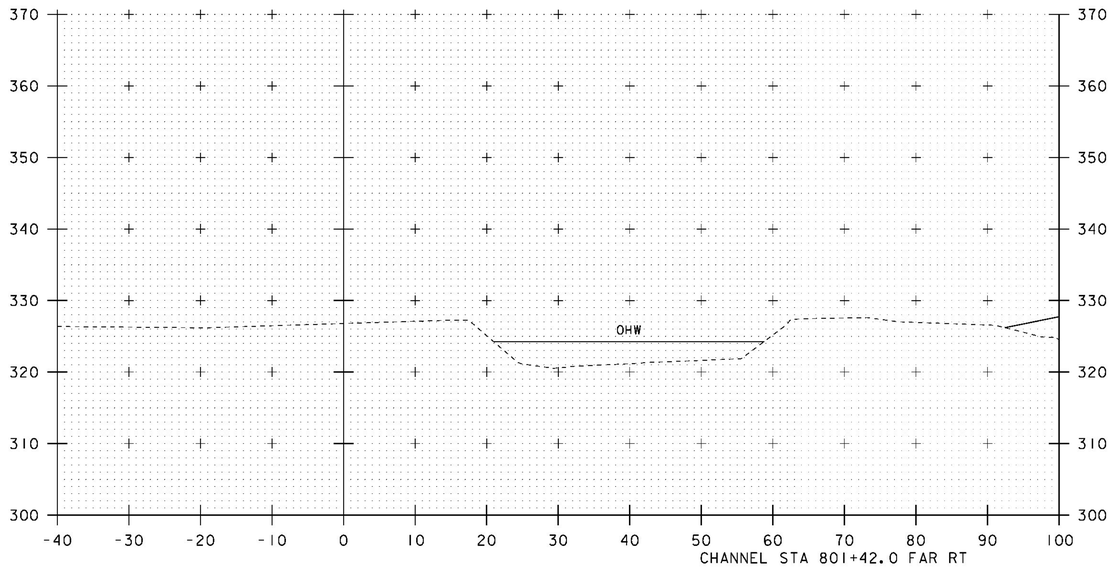
PLOT DATE: 04-NOV-2014
DRAWN BY: G. ROY
CHECKED BY: EVANS-MONGEON
SHEET 44 OF 54



CHANNEL STA 801+15.0 RT
END UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
STONE FILL, TYPE III
GRUBBING MATERIAL

801+20

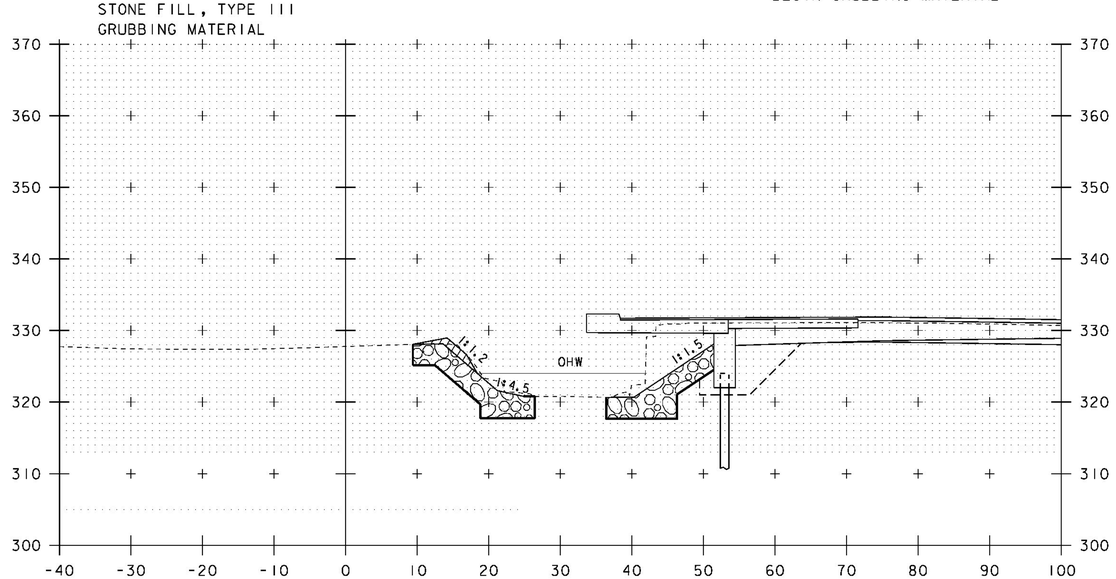
CHANNEL STA 801+18.0 FAR RT
BEGIN GRUBBING MATERIAL



801+50

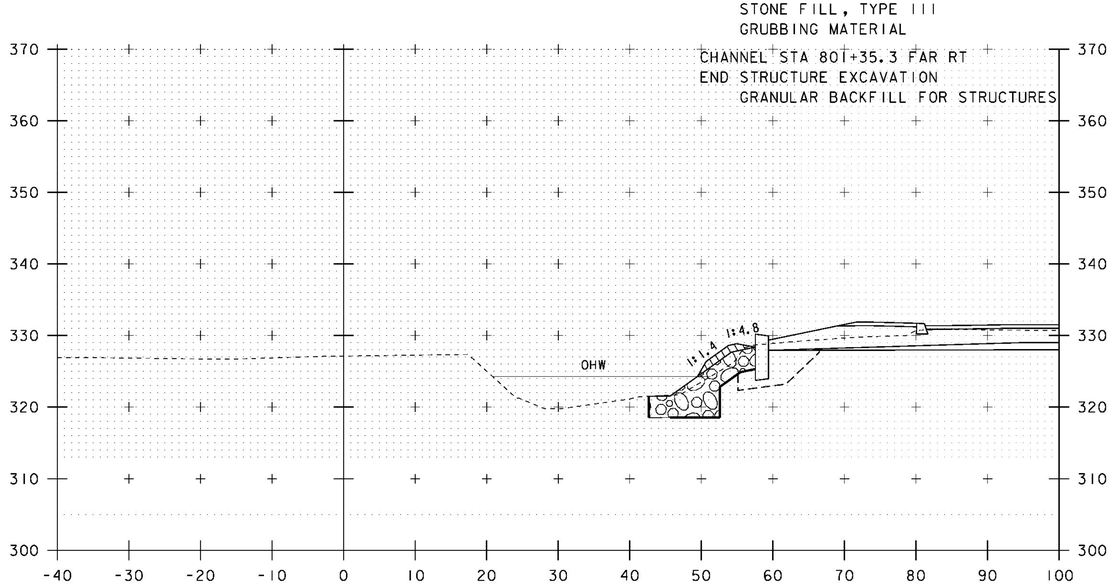
CHANNEL STA 801+42.0 FAR RT
END UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
STONE FILL, TYPE III
GRUBBING MATERIAL

CHANNEL STA 801+35.3 FAR RT
END STRUCTURE EXCAVATION
GRANULAR BACKFILL FOR STRUCTURES



CHANNEL STA 801+04.0 RT
END STRUCTURE EXCAVATION
GRANULAR BACKFILL FOR STRUCTURES

801+10



801+30

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

STA. 801+10 TO STA. 801+50

PROJECT NAME: BRISTOL	
PROJECT NUMBER: BRF 021-1(29)	
FILE NAME: s10b094xsl.dgn	PLOT DATE: 04-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: C. ROY
DESIGNED BY: C. ROY	CHECKED BY: EVANS-MONGEON
CHANNEL CROSS SECTIONS (3)	SHEET 45 OF 54

BRISTOL BRIDGE 6: ESPC PLAN "LOW RISK" NARRATIVE

1.1 PROJECT DESCRIPTION

BRISTOL BRF 021-1(29) CONSISTS OF THE REPLACEMENT OF BRIDGE 6 ON VT ROUTE 116 OVER THE LITTLE NOTCH CREEK, IN THE TOWN OF BRISTOL IN ADDISON COUNTY, VERMONT. A NEW PRECAST CONCRETE BRIDGE #6 (APPROX. 50 FT SPAN) WILL BE CONSTRUCTED ON NEW ABUTMENTS ON THE EXISTING HORIZONTAL ALIGNMENT. ACCELERATED BRIDGE CONSTRUCTION IS PLANNED FOR THIS BRIDGE; NO DETOUR BRIDGE IS PLANNED.

TOTAL AREA OF DISTURBANCE FOR THE BRIDGE #6 AREA IS 0.70 ACRES. THIS INCLUDES THE 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. IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY
THE LAND ADJOINING THE BRIDGE #6 PROJECT SITE CONSISTS OF RELATIVELY FLAT AGRICULTURAL LAND TO THE SOUTH WEST AND THE LITTLE NOTCH CREEK AND WETLANDS TO THE NORTH AND EAST.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES
BRIDGE 6 SPANS OVER THE LITTLE NOTCH CREEK. THERE ARE WETLANDS TO THE NORTH AND EAST OF THE BRIDGE, WHICH ARE WELL ESTABLISHED WITH SMALL TREES, HIGH GRASSES AND HEAVY BRUSH. NO HOUSES OR OTHER BUILDINGS ARE WITHIN THE PROJECT LIMITS. LITTLE NOTCH CREEK FLOWS INTO THE NEW HAVEN RIVER, APPROX. 220 FT DOWNSTREAM FROM THE PROJECT SITE.

1.2.3 VEGETATION
THE VEGETATION IN THE PROJECT AREA CONSISTS OF A COMBINATION OF GRASS/HAY, LIGHT WOODS, BRUSH, UNDERGROWTH, AND WETLANDS. STONE FILL COVERED WITH GRUBBING MATERIAL WILL STABILIZE STEEPER (CHANNEL) SLOPES . SEED AND MULCH (OR BIODEGRADABLE EROSION MATTING WHERE SPECIFIED) WILL STABILIZE FLATTER SLOPES. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE III AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS
THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR ADDISON COUNTY, VERMONT IS THE SOURCE OF THE SOILS INFORMATION.
THERE ARE 3 TYPES OF SOILS EXPECTED ON THIS PHASE OF THE PROJECT:
1. WINOOSKI VERY FINE SANDY LOAM, 2. COBBLY ALLUVIAL LAND, 3. HADLEY VERY FINE SANDY LOAM, FREQUENTLY FLOODED. THE TWO LOAMS ARE CONSIDERED HIGHLY ERODIBLE (K=0.49).

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING: 0.00-0.17 = LOW EROSION POTENTIAL
0.18-0.36 = MODERATE EROSION POTENTIAL
0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS
CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: YES, ADJOINS ARCHEOLOGICAL AREA IN PLOWED FIELD, (WEST OF STA.106+00)
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: LITTLE NOTCH CREEK, A TRIBUTARY OF THE NEW HAVEN RIVER
WETLANDS: YES, CLASS II

1.3 RISK EVALUATION

THIS PROJECT FALLS UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020(AMENDED 2008) FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES FOR LOW RISK PROJECTS ANY MODIFICATIONS TO THE PROJECT THAT INCREASES THE RISK TO ENVIRONMENTAL RESOURCES SHALL BE RE-EVALUATED IN ACCORDANCE WITH THE PERMIT REQUIREMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

THIS WORK MAY BE CONSIDERED PART OF A LARGER COMMON PLAN OF DEVELOPMENT.
BRISTOL F 021-1(15) REPLACES BRIDGES 7 AND 8 (JUST TO THE NORTH OF BRIDGE 6), IS A MODERATE RISK PROJECT WITH AN OVERALL RISK SCORE OF 2, WHICH WOULD NOT BE INCREASED BY THE ADDITION OF THE BRIDGE 6 WORK. NOTE: THE TWO PROJECTS HAVE A COMBINED INDIVIDUAL STORMWATER DISCHARGE PERMIT #5221-INDS.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL (EPSC)

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

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

1.4.1 MARK SITE BOUNDARIES
SITE BOUNDARIES AND AREAS THAT CAN BE ACCESSED BY CONSTRUCTION EQUIPMENT SHALL BE DELINEATED.
PROJECT DEMARCATION FENCING , DENOTED **-PDF-** ON THE PLANS, SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES. BECAUSE THIS PROJECT FALLS UNDER CGP3-9020,
BARRIER FENCE, DENOTED **-BF-** ON THE PLANS, SHALL BE USED INSTEAD OF PROJECT DEMARCATION FENCE WITHIN 100 FT OF A WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC) AND AT AREAS IDENTIFIED AS ARCHEOLOGICALLY SENSITIVE.

1.4.2 LIMIT DISTURBANCE AREA
PREVENTING INITIAL SOIL EROSION 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 (PHASING) AS CONSTRUCTION PROCEEDS. ADDITIONAL MEASURES MAY BE NEEDED DUE TO THE PHASING OF THE PROJECT AND AS DIRECTED BY THE ENGINEER.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS AND OTHER SENSITIVE AREAS IS A CRUCIAL EROSION CONTROL MEASURE THAT SHALL 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.

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

INSTALL SILT FENCE AS PROPOSED ON THE EPSC PLAN, ACCORDING TO DETAIL PROVIDED. BECAUSE THIS PROJECT FALLS UNDER CGP-3-9020, WOVEN WIRE REINFORCED SILT FENCE SHALL BE USED INSTEAD OF SILT FENCE WITHIN 100 FEET UPSLOPE OF RECEIVING WATERS.

1.4.5 DIVERT UPLAND RUNOFF WITH SWALES
THE PROJECT SITE IS RELATIVELY FLAT SO CONSTRUCTION OF DIVERSIONARY SWALES IS NOT ANTICIPATED.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF
THE PROJECT SITE IS RELATIVELY FLAT SO CONSTRUCTION OF STONE CHECK DAMS IS NOT ANTICIPATED.

1.4.7 CONSTRUCT PERMANENT CONTROLS
PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.
PRIMARY PERMANENT CONTROLS ARE AS FOLLOWS:
1. PEA GRAVEL DIAPHRAGMS (ALONG THE EDGE OF ROADWAY) FOR PRE-TREATMENT OF RUNOFF
2. NON-ROOFTOP DISCONNECTION - FROM STORMWATER PERMIT SITE BALANCING
3. STONE FILL, TYPE III FOR CHANNEL PROTECTION
4. GRUBBING MATERIAL OVER STONE FILL

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

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

1.4.9 WINTER STABILIZATION
ALTHOUGH WINTER WORK IS NOT PLANNED, VARIOUS MEASURES SPECIFIC TO WINTER CONSTRUCTION MAY BE NECESSARY SHOULD THE PROJECT WORK EXTEND INTO WINTER (OCT. 15 - 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, OR SOONER IF RAIN IS FORECAST. 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 VERMONT WATER QUALITY STANDARDS.

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

1.5 SEQUENCE AND STAGING

THE CONTRACTOR SHALL DEVELOP A SEQUENCE AND STAGING PLAN USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

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

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)
FILE NAME: sl0b094epsc_nar.dgn	PLOT DATE: 01-DEC-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: G. ROKES
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: EVANS-MONGEON
EPSC NARRATIVE	SHEET 46 OF 54

N

VT STATE PLANE GRID

SOIL INFORMATION
WINOOSKI VERY FINE SANDY LOAM (WO)
HYDROGROUP TYPE B
MODERATELY WELL DRAINED
ERODIBILITY HIGH

ARCH — ARCH — ARCH — ARCH — ARCH — ARCH — ARCH — ARCH

ARCH

ARCH — ARCH — ARCH — ARCH — ARCH — ARCH — ARCH — ARCH

FLOOD PLAIN

RIPARIAN BUFFER

OHW

P L

CLASS II WETLANDS

SOIL INFORMATION
COBBLY ALLUVIAL (Co)
HYDROGROUP TYPE C
POORLY DRAINED
ERODIBILITY MODERATE TO HIGH

FLOOD PLAIN

RIPARIAN BUFFER

EXISTING R.O.W.

WETLAND BUFFER

EXISTING R.O.W.

TO MIDDLEBURY

VT 116

TO BRISTOL

104+00 105+00 106+00 107+00 108+00 109+00

FLOOD PLAIN

EXISTING R.O.W.

RIPARIAN BUFFER

FLOOD PLAIN

WETLAND BUFFER

FLOOD PLAIN

EXISTING R.O.W.

CLASS II WETLANDS

FLOOD PLAIN

P L

OHW

CLASS II WETLANDS

OHW

LITTLE NOTCH CREEK

RIPARIAN BUFFER

330

FLOOD PLAIN

SOIL INFORMATION
HADLEY VERY FINE SANDY LOAM (Hh)
HYDROGROUP TYPE B
POORLY DRAINED
ERODIBILITY HIGH

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

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: s10b094ero_ext.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: M. EVANS-MONGEON
EPSC EXISTING CONDITIONS

PLOT DATE: 04-NOV-2014
DRAWN BY: G. ROKES
CHECKED BY: EVANS-MONGEON
SHEET 47 OF 54

N

VT STATE PLANE GRID

ARCH ARCH ARCH ARCH ARCH ARCH ARCH ARCH

CLASS II WETLANDS

2'-0" STONE FILL
TYPE II

3'-0" STONE FILL
TYPE III

RIPARIAN BUFFER

OHW

PDF BF CZ

EXISTING R.O.W.

TO MIDDLEBURY

VT 116

TO BRISTOL

104+00 105+00 106+00 107+00 108+00 109+00

61'

160'

RIPARIAN BUFFER

CLASS II WETLANDS

CHANNEL SHIFT

800+00

LITTLE NOTCH CREEK

CLASS II WETLANDS

WETLAND BUFFER

EXISTING R.O.W.

STABILIZED CONSTRUCTION ENTRANCE (TYP)

CLASS II WETLANDS

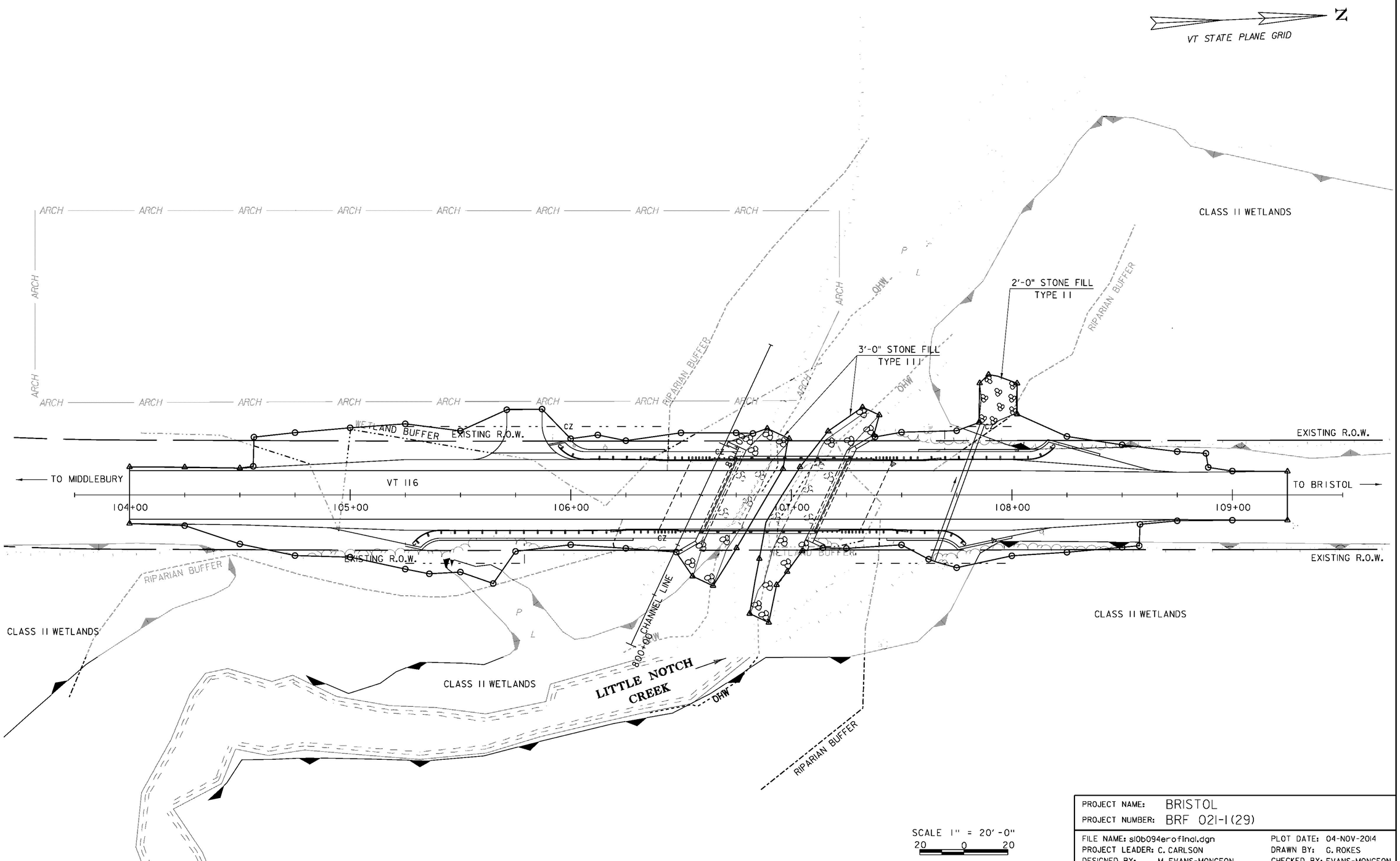
RIPARIAN BUFFER

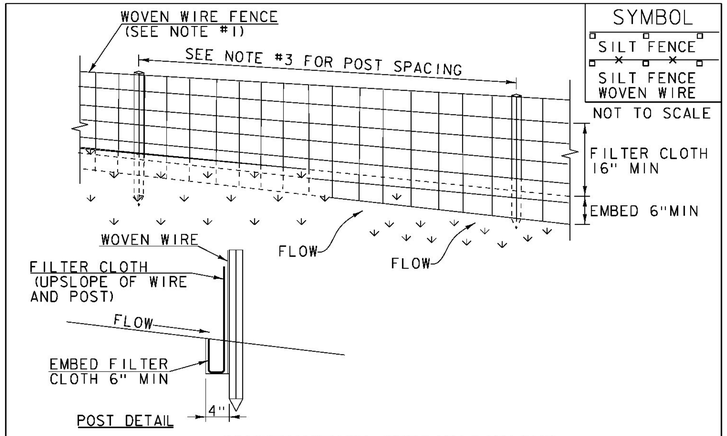
SCALE 1" = 20'-0"
20 0 20

NOTE: SEE SHEET 11 FOR LEGEND

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	BRF 021-1(29)

FILE NAME: sl0b094erocon.dgn	PLOT DATE: 04-NOV-2014
PROJECT LEADER: C. CARLSON	DRAWN BY: C. ROKES
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: EVANS-MONGEON
EPSC CONSTRUCTION CONDITIONS	SHEET 48 OF 54


N
VT STATE PLANE GRID
ARCH
ARCH
ARCH



SYMBOL

SILT FENCE

SILT FENCE WOVEN WIRE

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

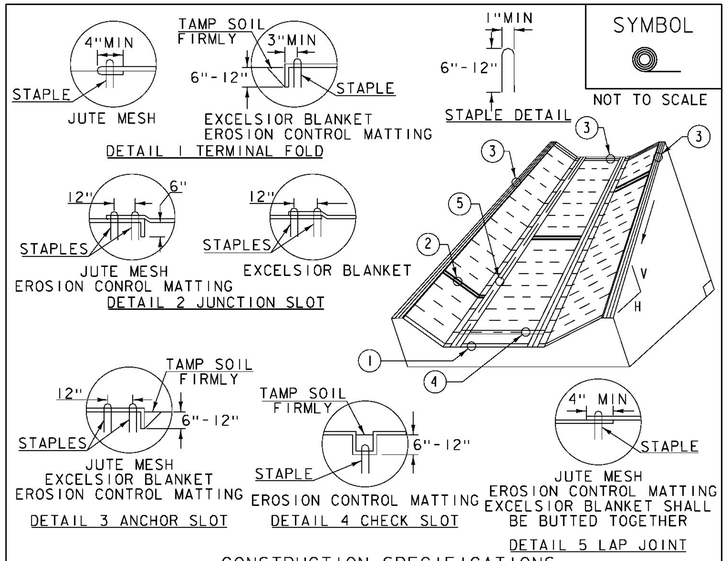
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

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

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

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



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

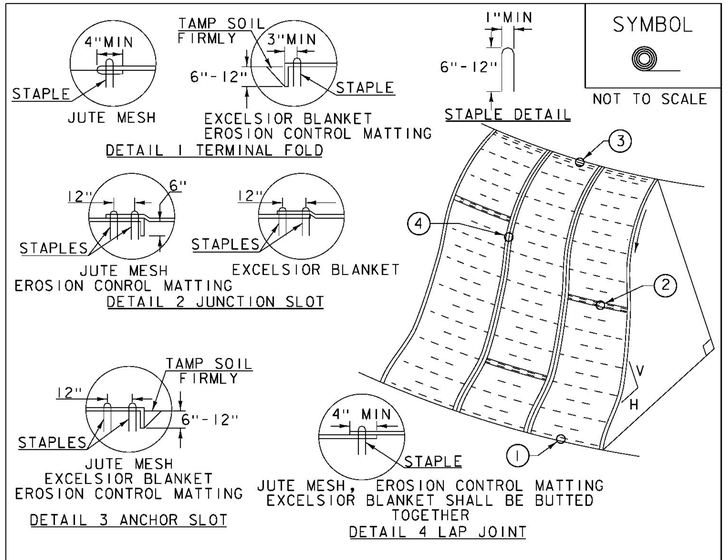
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) DITCH

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

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



SYMBOL

NOT TO SCALE

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

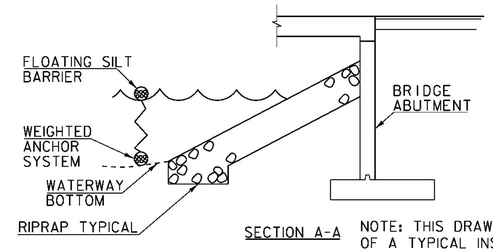
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20)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

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: sl0b094epscdet.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: M. EVANS-MONGEON
EPSC DETAILS (1)

PLOT DATE: 04-NOV-2014
DRAWN BY: C. ROKES
CHECKED BY: EVANS-MONGEON
SHEET 50 OF 54

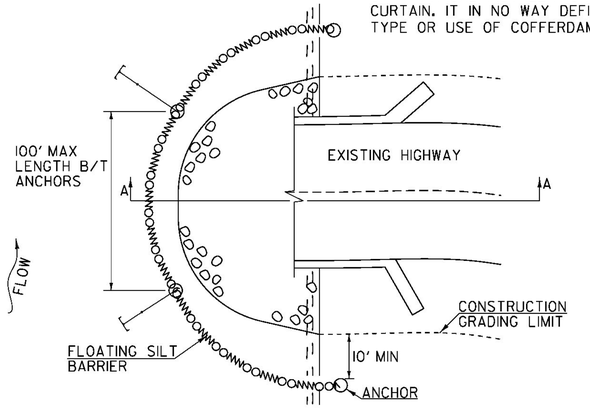


SYMBOL

NOT TO SCALE

SECTION A-A

NOTE: THIS DRAWING IS A DEPICTION OF A TYPICAL INSTALLATION OF FILTER CURTAIN. IT IN NO WAY DEFINES THE TYPE OR USE OF COFFERDAM IF USED.



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

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

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

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

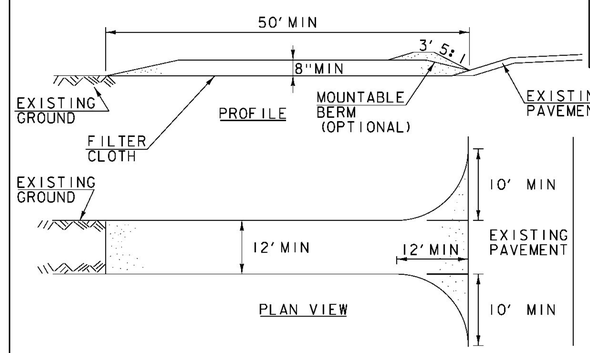
1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 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

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

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



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

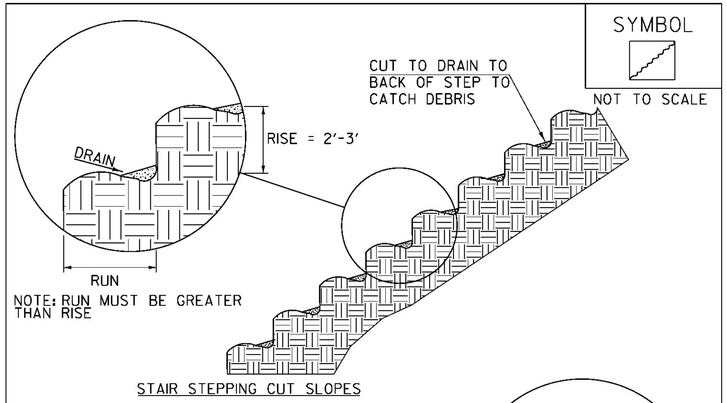
PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: sl0b094epscdet.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: M. EVANS-MONGEON
EPSC DETAILS (2)

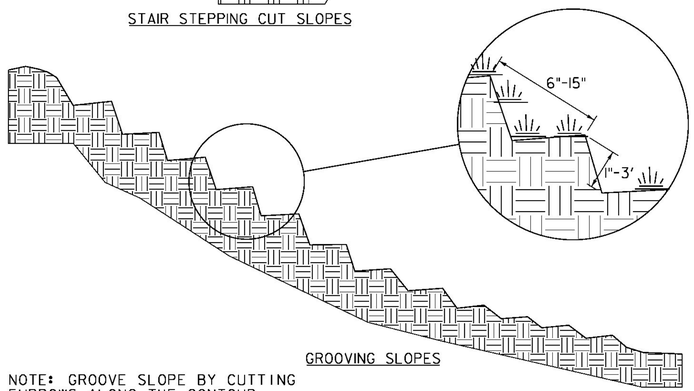
PLOT DATE: 04-NOV-2014
DRAWN BY: C. ROKES
CHECKED BY: EVANS-MONGEON
SHEET 51 OF 54

SYMBOL

NOT TO SCALE



STAIR STEPPING CUT SLOPES



GROOVING SLOPES

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

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

SURFACE ROUGHENING

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

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: sl0b094epscdet.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: M. EVANS-MONGEON
EPSC DETAILS (3)

PLOT DATE: 04-NOV-2014
DRAWN BY: C. ROKES
CHECKED BY: EVANS-MONGEON
SHEET 52 OF 54

STATE OF VERMONT
AGENCY OF TRANSPORTATION

RIGHT - OF - WAY DETAIL SHEET

TABLE OF PROPERTY ACQUISITION

PARCEL NO.	PROPERTY OWNER	ROW LAYOUT NO.	BEGINNING STATION	ENDING STATION	TAKE	REMAINDER	RIGHT			RECORDING DATA					REMARKS
					AREA±	AREA±	TYPE	T / P	AREA ±	TITLE	DATE	TOWN / CITY	BOOK	PAGE	
1	SAUNDERS, LEE W.	1	104+50.00 LT	107+03.16 LT	3,770 SF					WDIF	03/27/14	BRISTOL	144	225	0.09 A±
			104+11 LT	104+50 LT			CONST.	T	220 SF						INCL. PDF & EC
			104+73 LT	105+74 LT			CONST.	T	140 SF						INCL. PDF & EC
			105+79 LT												DRIVE 16' GRAVEL; MM 2.820
			105+92 LT	107+03 LT			CONST.	T	230 SF						INCL. PDF, BF & EC
			106+87.77 LT	107+03.16 LT			REMOVE & REPLACE	T							I. PIPE W/IRON PIN
2	BARRECA, CHRISTOPHER	1	106+87.63 LT	108+50.00 LT	2,380 SF					WDIF	07/09/14	BRISTOL	145	55	0.05 A±
			106+87.77 LT	107+03.16 LT			REMOVE & REPLACE	T							I. PIPE W/IRON PIN
			107+32 LT	107+46 LT			CONST.	T	25 SF						INCL. BF & EC
			107+60 LT	108+16 LT			CONST.	T	420 SF						INCL. BF & EC
			107+85 LT	108+02 LT			DIT, DR	P	220 SF						INCL. STONE FILL
			108+50 LT	108+91 LT			CONST.	T	190 SF						INCL. PDF & EC
3	FOSTER, FELICIA A.	1	104+50.00 RT	106+58.51 RT	3,675 SF					WDIF	03/27/14	BRISTOL	144	233	0.08 A±
			104+41 RT	104+50 RT			CONST.	T	12 SF						INCL. BF & EC
			105+17 RT	105+76 RT			CONST.	T	190 SF						INCL. BF & EC
4	THOMAS, TERRENCE E.	1	106+10.35 RT	108+50.00 RT	0.10 A					WDIF	03/27/14	BRISTOL	144	234	4,320 SF±
			106+43 RT	107+43 RT			CONST.	T	1,140 SF						INCL. BF & EC
			106+81 RT	106+92 RT			CHANNEL	P	100 SF						INCL. STONE FILL
			108+50 RT	108+66 RT			CONST.	T	80 SF						INCL. PDF & EC
5	WAITSFIELD AND CHAMPLAIN VALLEY TELECOM	1													UTILITY
6	COMCAST OF CONNECTICUT, GEORGIA, MASSACHUSETTS, NEW HAMPSHIRE, NEW YORK, NORTH CAROLINA, VERMONT LLC	1													UTILITY

APPROVED: RYAN CLOUTIER DATE: 10-24-13
CHIEF, PLANS & TITLES

TABLE OF REVISIONS

REVISION NO.	ROW SET SHEET #	DESCRIPTION	DATE

PROJECT NAME:	**BRISTOL**
PROJECT NUMBER:	**BRF 021-1(29)**
FILE NAME:	**r10b094DetailSheet.xls**
PROJECT LEADER:	**C. CARLSON**
DESIGNED BY:	**R. WHITE**
R.O.W. DETAIL SHEET #1	
PLOT DATE:	04-NOV-2014
DRAWN BY:	**M. TROTTIER**
CHECKED BY:	**E. PIERCE**
SHEET	53 OF 54

CONSTRUCT 3' WIDE PAVED APRON

STA 105+55.0 LT - STA 106+02.9 LT - 47.9'

CONSTRUCT GRAVEL DRIVE

STA 105+79.0 LT - 16'

BRIDGE RAILING, GALVANIZED 2 RAIL BOX BEAM

STA 106+73.3 LT - STA 107+28.2 LT
STA 106+57.8 RT - STA 107+12.7 RT

CAST-IN-PLACE CONCRETE CURB, TYPE B

STA 106+20.8 RT - STA 106+60.8 RT
STA 106+35.3 LT - STA 106+75.2 LT
STA 107+10.8 RT - STA 107+50.7 RT
STA 107+25.2 LT - STA 107+65.2 LT

STEEL BEAM GUARDRAIL, GALVANIZED

STA 105+94.2 LT - STA 106+44.2 LT
STA 105+28.7 RT - STA 106+28.7 RT
STA 107+57.3 LT - STA 108+19.8 LT
STA 107+41.8 RT - STA 107+79.3 RT

ANCHOR FOR STEEL BEAM RAIL

STA 106+00.5 LT
STA 105+35.0 RT
STA 108+13.4 LT
STA 107+73.0 RT

GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM

STA 106+44.2 LT - STA 106+73.3 LT
STA 106+28.7 RT - STA 106+57.8 RT
STA 107+28.2 LT - STA 107+57.3 LT
STA 107+12.7 RT - STA 107+ 41.8 RT

REMOVAL AND DISPOSAL OF GUARDRAIL

STA 106+10.6 RT - STA 106+67.2 RT
STA 106+41.4 LT - STA 106+88.8 LT
STA 107+11.5 RT - STA 107+23.5 RT
STA 107+22.1 LT - STA 107+68.0 LT

SPECIAL PROVISION (STONE DIAPHRAGM)

STA 105+25.0 RT - STA 106+28.3 RT
STA 105+94.9 LT - STA 106+42.7 LT
STA 107+43.3 RT - STA 108+00.0 RT
STA 107+57.7 LT - STA 108+40.0 LT

REMOVE AND REPLACE PROPERTY MARKERS

EXISTING	PROPOSED
I.PIPE N=581481.62 E=1485140.49 106+87.77 24.62' LT	I. PIN N=581497.69 E=1485125.81 107+03.16 40.00' LT

BEGIN ROW PROJECT
104+11, 25' LT

END ROW PROJECT
108+91, 25' LT

N=581194.15
E=1485127.44
104+00.00, 24.86'LT

N87°26'55"W
15.34'

104+50.00
24.66' LT

104+50.00
40.00' LT

CONST(T)

N02°46'19"E
50.00'

N02°46'19"E
91.42'

N02°33'05"E
253.16'

CONST(T)

FIELD DRIVE GUY WIRE

COMB POLE JCT BOX 5 65

N02°29'08"E
146.21'

107+03.16
40.00' LT

N42°25'15"W
21.96'

REMOVE& REPLACE(T)

106+87.63
24.48' LT

IP

IPIPE

CONST(T)

N02°33'05"E

2 M. BASSWOOD

CONST(T)

DIT,DR (P)

108+50.00
40.00' LT

146.84'

WOODS S87°26'55"E
15.33'

CONST(T)

COMB POLE 3

162.37'

N02°29'08"E

TO
N=582093.26
E=1485167.18
PROJ. STP F 021-1(15)
113+00.00, 25.18'LT

EXISTING R.O.W.

108+50.00
24.67' LT

TO MIDDLEBURY

TRAV. PT. 101

TO BRISTOL

49.50'

104+00

105+00

106+00

106+58.51
25.05' RT

107+00

108+00

109+00

104+50.00
24.84' RT

N02°46'19"E
50.00'

CONST(T)
S87°26'55"E
20.16'

N02°46'19"E
91.36'

N02°29'08"E
117.16'

N02°33'05"E
160.35'

104+50.00
45.00' RT

WOODS

N=581191.95
E=1485176.89
104+00.00, 24.64'RT

WOODS

P N19°56'52"W
52.12'

106+10.35
45.00' RT

CONST(T)

TRAV PT 72

N02°29'08"E
191.49'

S. BASSWOOD

N02°33'05"E
239.65'

WOODS

WOODS DRIVE

CONST(T)

S. ASH

CHANNEL(P)

STONE FILL, TYPE III (TYP)

BM 10
SIR S. ASH
EL. 329.107

TRAV. PT. 73

N02°29'08"E

EXISTING R.O.W.

108+50.00
24.83' RT

CONST(T)

S87°26'55"E
20.17'

108+50.00
45.00' RT

TO
N=582091.05
E=1485216.63
PROJ. STP F 021-1(15)
113+00.00, 24.32'RT

FLOODED AREA

LOT LINE

LOT LINE

LOT LINE

LITTLE NOTCH CREEK

VT STATE PLANE GRID

WOODS

1
SAUNDERS, LEE W.

2
BARRECA, CHRISTOPHER

3
FOSTER, FELICIA A.

4
THOMAS, TERRENCE E.

EXISTING BRIDGE DATA

SIMPLE SPAN CONCRETE SLAB SUPERSTRUCTURE
WITH ASPHALT OVERLAY

CAST-IN-PLACE CONCRETE ABUTMENTS AND WINGWALLS

BRIDGE LENGTH: 24'
BRIDGE WIDTH (FASCIA TO FASCIA): 28.6'

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

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

FOR R.O.W. USE ONLY

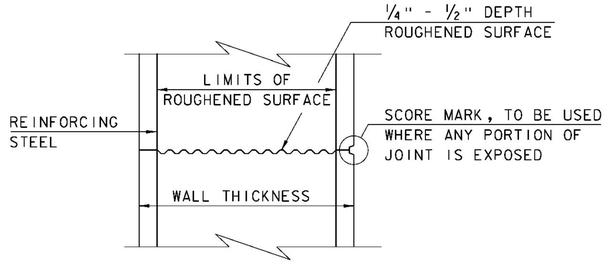
PROJECT NAME: BRISTOL
PROJECT NUMBER: BRF 021-1(29)

FILE NAME: r10b094lay.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: EVANS-MONGEON
ROW LAYOUT SHEET 10F 1

PLOT DATE: 04-NOV-2014
DRAWN BY: E. PIERCE
CHECKED BY: E. PIERCE
SHEET 54 OF 54

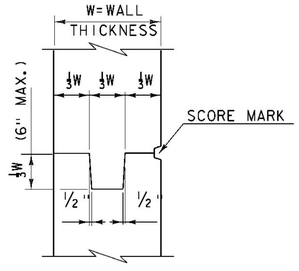
CONCRETE GENERAL NOTES

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

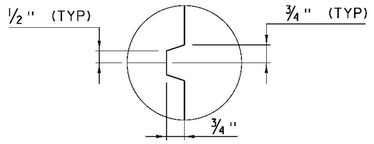


TYPICAL HORIZONTAL CONSTRUCTION JOINT
(NOT TO SCALE)

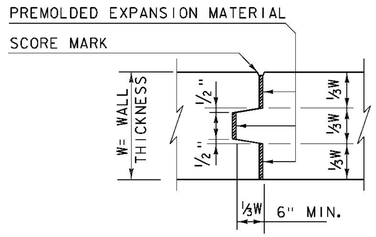
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



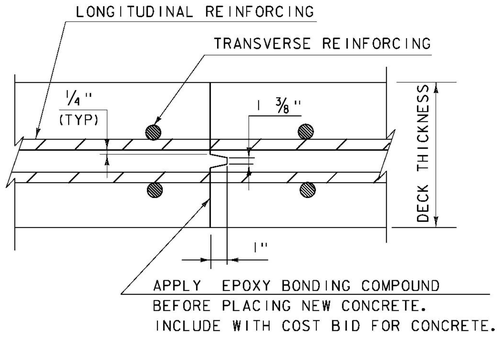
TYPICAL CONCRETE CONSTRUCTION JOINT
(NOT TO SCALE)



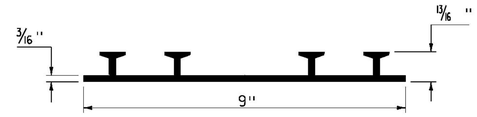
SCORE MARK DETAIL
(NOT TO SCALE)



TYPICAL CONCRETE EXPANSION JOINT
(NOT TO SCALE)



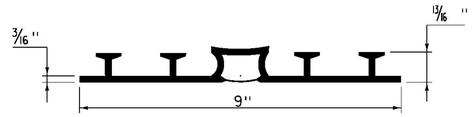
TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS
(NOT TO SCALE)



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

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

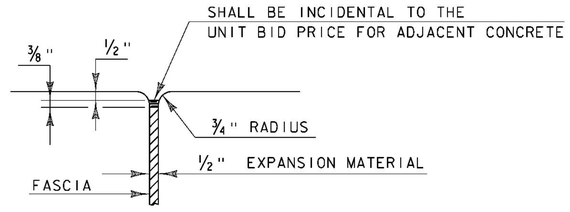
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



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

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

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



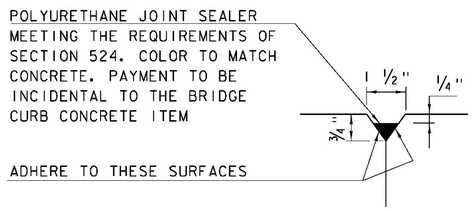
JOINT BETWEEN FASCIA AND WINGWALL
(NOT TO SCALE)

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

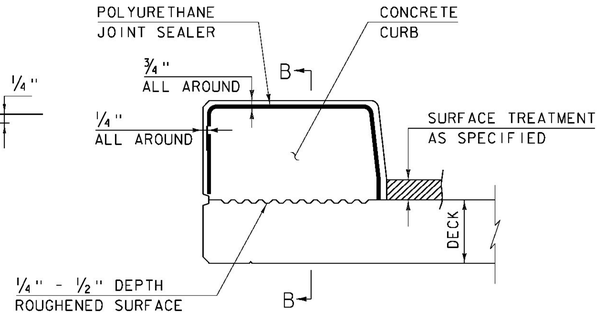
CONCRETE DETAILS AND NOTES

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

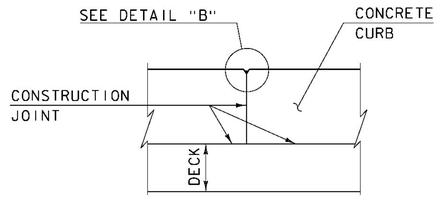
STRUCTURES DETAIL
SD-501.00



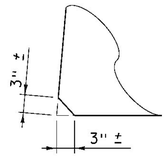
DETAIL "B"
(NOT TO SCALE)



CONCRETE CURB JOINT SECTION
(NOT TO SCALE)

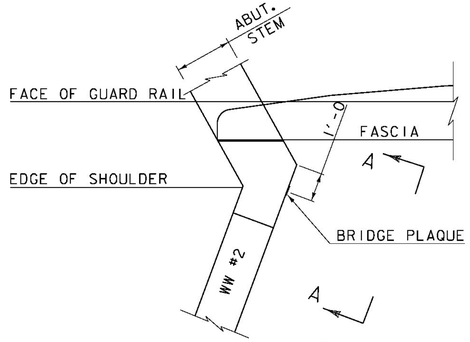


SECTION B - B
(NOT TO SCALE)



ACUTE ANGLE CLIP DETAIL
(NOT TO SCALE)

1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION



PLAN

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.

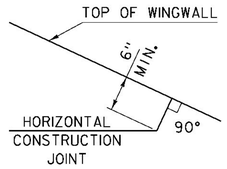
2. IF THE CONTRACTOR CHOOSES NOT TO USE AN APPROVED SHRINKAGE REDUCING ADMIXTURE, THE CURBS SHALL BE CONSTRUCTED WITH CONSTRUCTION JOINTS SPACED AT A MAXIMUM OF 15'-0" CENTER TO CENTER AND 2'-0" MINIMUM FROM THE CENTER OF NEAREST BRIDGE RAILING POST.

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.

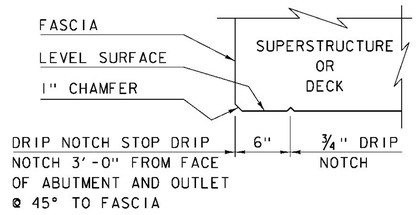
4. WHEN CURB JOINTS ARE USED THE CURBS SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOUR DELAY BETWEEN ADJACENT PLACEMENTS.

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.

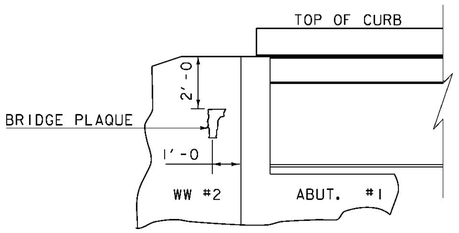
6. THE JOINT SPACING AND DETAILS SHOWN SHALL APPLY TO SIDEWALKS WHEN SHOWN IN THE PLANS.



HORIZONTAL WINGWALL CONSTRUCTION JOINT
(NOT TO SCALE)



DRIP NOTCH DETAIL
(NOT TO SCALE)



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.

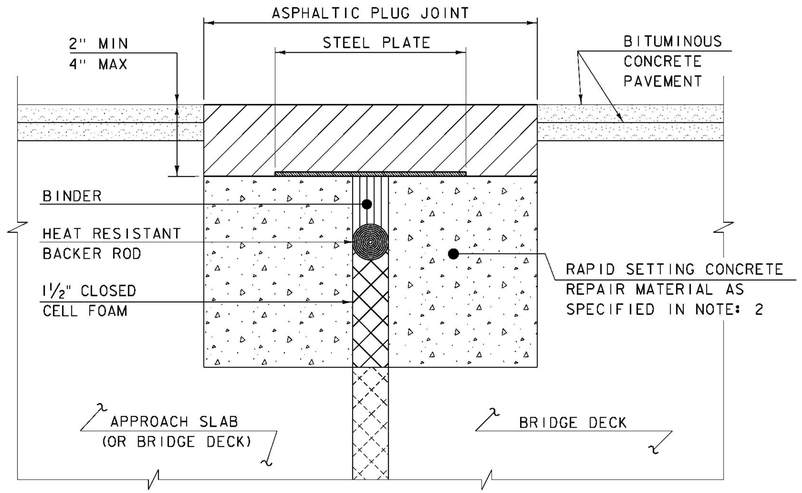
PAYMENT FOR INSTALLATION OF THE BRIDGE PLAQUE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

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

CONCRETE DETAILS AND NOTES

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL
SD-502.00



ASPHALTIC PLUG JOINT DETAIL - REHAB

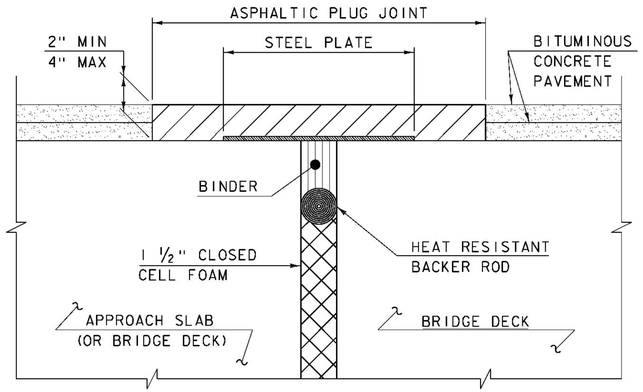
NOTES:

1. THE CONTRACTOR SHALL REMOVE ALL ASPHALTIC PLUG JOINT MATERIAL AND DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER. REMOVAL OF THE FIRST 4 INCHES OF MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG. ANY REMOVAL OF MATERIAL GREATER THAN 4 INCHES SHALL BE INCLUDED IN THE BID PRICE OF ITEM 580.20 RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.

2. THE CONTRACTOR SHALL REPLACE REMOVED MATERIAL THAT IS LESS THAN 4" FROM FINISHED GRADE WITH ASPHALTIC PLUG JOINT MATERIAL MEETING THE REQUIREMENTS OF SUBSECTION 707.15. ALL REMOVED MATERIAL THAT IS GREATER THAN 4 INCHES FROM FINISHED GRADE SHALL BE REPLACED WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.

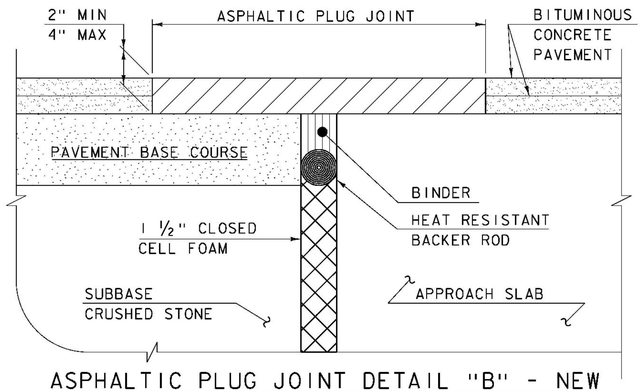
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.

4. PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER. THE STEEL PLATES MAY BE OMITTED WHERE THE ENGINEER DETERMINES THAT THE APPROACH SLAB OR BRIDGE DECK WILL PROVIDE INADEQUATE SUPPORT AND WHERE VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.



ASPHALTIC PLUG JOINT DETAIL "A" - NEW

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



ASPHALTIC PLUG JOINT DETAIL "B" - NEW

ASPHALTIC PLUG JOINT NOTES

INSTALLATION:

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

WEATHER LIMITATIONS

APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL OR AS RECOMMENDED BY THE MANUFACTURER:

1. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.
2. THE ROAD SURFACE IS DRY.
3. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.

DETAILS ON THIS SHEET ARE NOT TO SCALE.

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

BRIDGE JOINT
ASPHALTIC PLUG

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - DIVISION

STRUCTURES DETAIL
SD-516.10

Precast Bridge Abutments

Bristol BRF 021-1(29)

Concrete:

Mix Designation: P60TER

1. Specified Mix Design	5000 PSI
2. Proposed Mix Design	6000 PSI
3. Striping Strength	3500 PSI
4. Handling Strength	3500 PSI
5. Shipping Strength	5000 PSI
6. Install Strength	5000 PSI
7. Traffic Loading	5000 PSI

Fabrication Tolerances:

1. Width	±1/4"
2. Height	±1/4"
3. Length	±1/2"
4. Rebar Cover	3" Min. (Unless Noted Otherwise)
5. Rebar Spacing	±1"
6. Rebar Clearance	+1/4" ⚠
7. Insert Placement	±1/4"

Reinforcing:

General Notes:

1. Reinforcing Steel - ASTM A615, Grade 60, Level II, Dual Coated.
2. Bar tied at every intersection.
3. Grout Sleeves to be epoxy coated.
4. Three grout couplers will be provided for each bar size for testing purposes
5. See rebar schedule for random bar samples available for the State. Two #4 bars @ 2'-6" will be provided for testing as well. ⚠

Tolerances:

1. Spacing ±1"
2. Clearance ±1/4"
3. Clear Cover 3" U.N.O.

Lap Lengths:

1. Per AASHTO 5.11.2.1.1 & 5.11.5.3.1
   Lap Length for Level II (Dual Coated):
   #4 Bar=17"
   #5 Bar=26"
   #6 Bar=39"
   #7 Bar=53"
   #8 Bar=69"

Note: See pg 6 for typical vertical lap lengths for bars extending into cast in place abutment sections

General Notes:

1. All precast pieces will be dry fit prior to shipping.
2. All lifting anchor points to be grouted after use.(by site contractor
3. All rebar spacing chairs to be plastic
4. All exposed edges to be chamfered 1"

Post Tensioning

1. All anchoring assemblies will be galvanized plated.
2. Two tensioning strands per duct.
3. Tension ducts will be 3" SCH 40 PVC conduit.
4. Post tension strands will be .5"Ø, 270 ksi, low relaxation, 7-wire strands.
5. Strands will be tensioned to 32 kips prior to the H-pile sleeves being filled with HPC RS.
6. Tensioning block outs to be filled with grout of vertical overhead repair material after tensioning is complete.

CONTRACTORS VTSPEC:

Vermont Agency of Transportation
RECEIVED
CK'D BY MEM OK'D BY CWC
Apr. 17, 2015
RESUBMIT APPROVED ✓
BY C. Carlson DATE 04-17-2015

Rev.	Date	By	Description
1	04/16/15	IBA	Changes per State Review

PRECAST CONCRETE ABUTMENT SHOP DRAWINGS (SDI JOB #15264)

SUPERVISOR: M. WHEELER
DETAILER: I. ADAMS
CHECKER: E. Barendse
ENGINEER: VTAOT

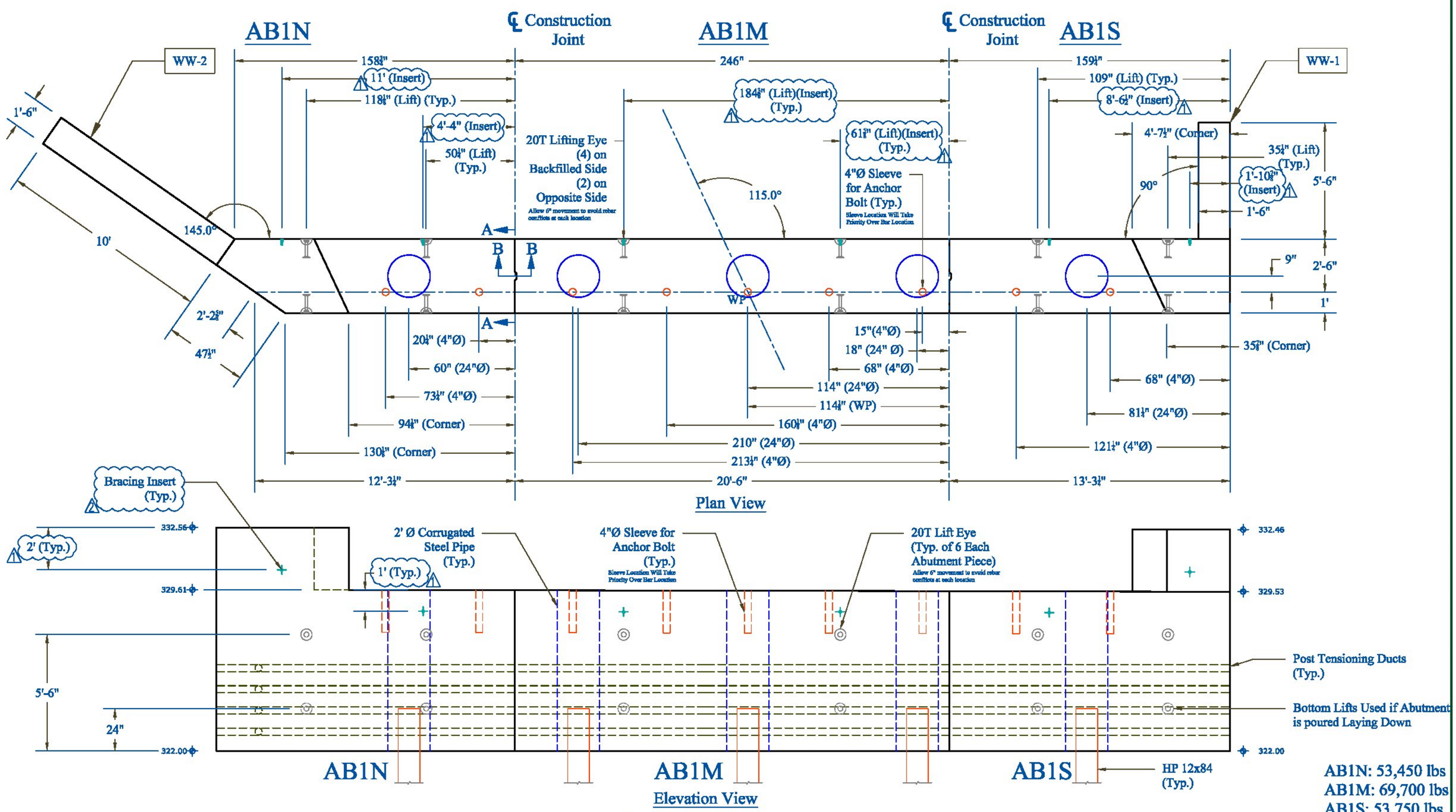
PROJECT NAME: Bristol BRF 021-1(29)
PROJECT #: 021-1(29)
LOCATION: Bristol, VT

INSTALLER:
S.D. Ireland Concrete
193 Industrial Ave
Williston, VT 05495

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

SD Ireland PRECAST

03/17/2015 | COVER_SHEET | 1_OF_16



AB1N: 53,450 lbs
AB1M: 69,700 lbs
AB1S: 53,750 lbs

CONTRACTORS VTSPEC:

Vermont Agency of Transportation
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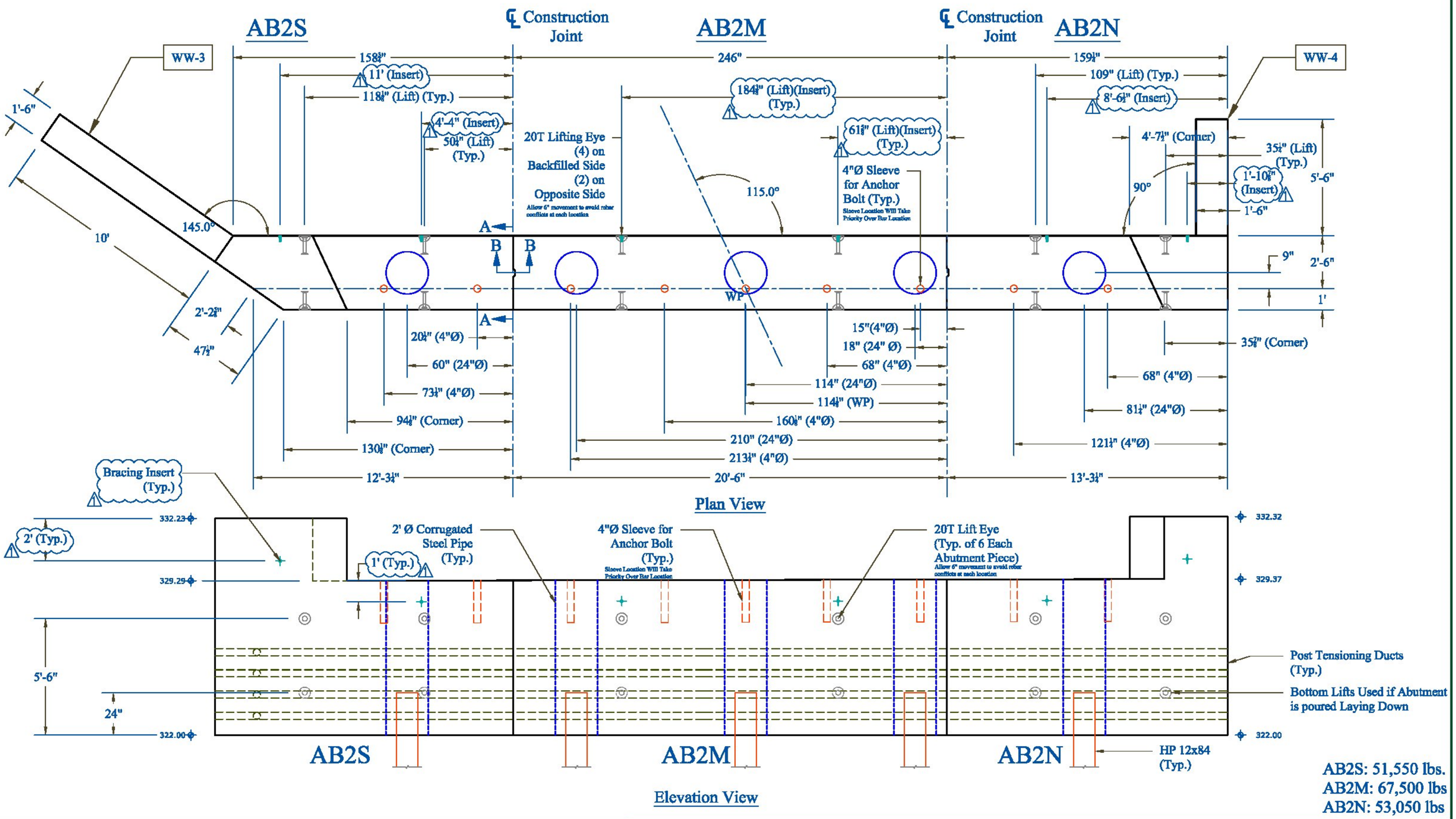
SD Ireland PRECAST

03/17/2015 | ABUTMENT_1 | 2_OF_16



CONTRACTORS VTSPE:

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CHECKER: E. Barendse
ENGINEER: VTAOT

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Williston, VT 05495

FABRICATOR:
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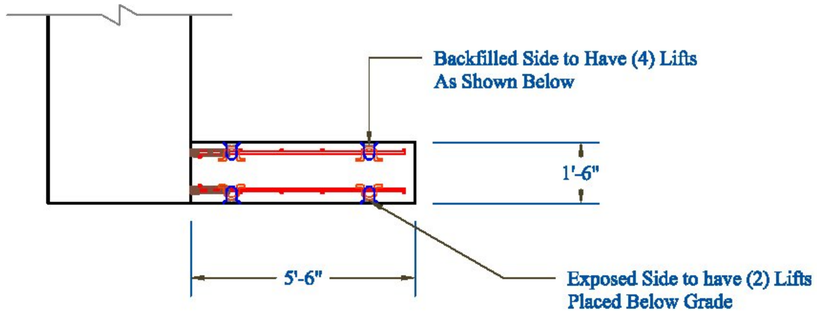
WILLISTON, VT 05495
Ph: (802) 658-0201

SD Ireland PRECAST

03/17/2015 | ABUTMENT_2 | 3_OF_16

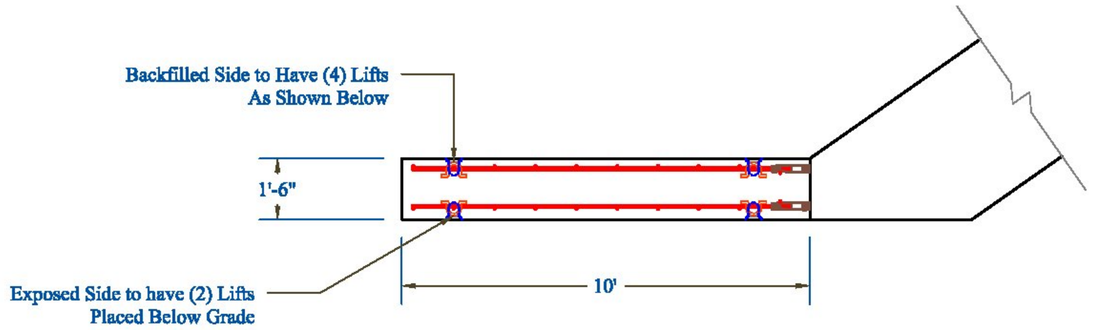
WW1: Plan View



⚠ Note: Reference rebar drawings for grout sleeve spacing and quantities for each wing wall.

Weight = 12,160 lbs

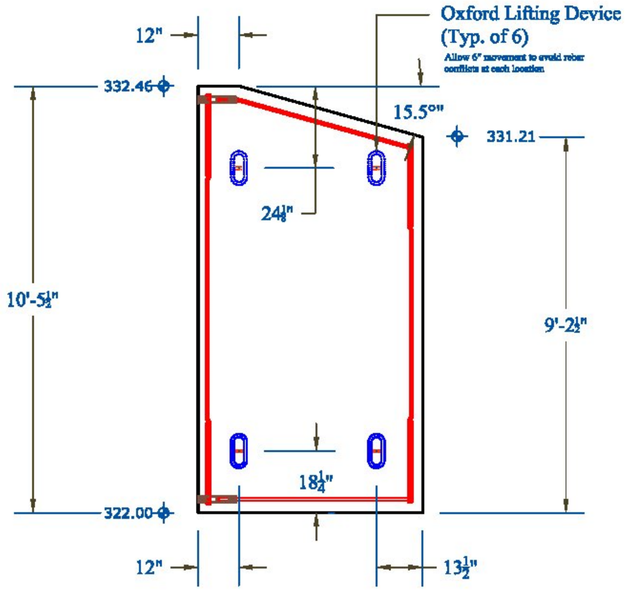
WW2: Plan View



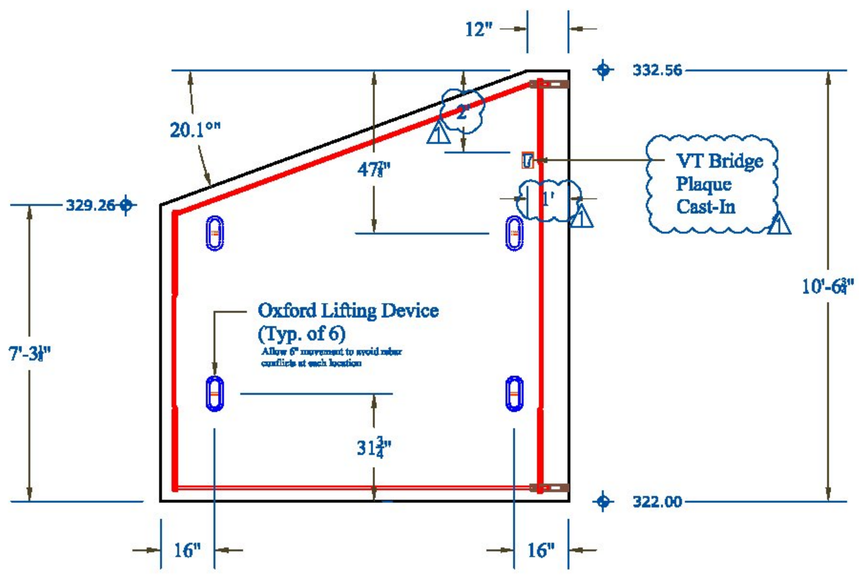
⚠ Note: Reference rebar drawings for grout sleeve spacing and quantities for each wing wall.

Weight = 20,166 lbs

WW1: Elevation View



WW2: Elevation View



CONTRACTORS VTSPEC:	Vermont Agency of Transportation RECEIVED CK'D BY MEM OK'D BY CWC Apr. 17, 2015 RESUBMIT APPROVED ✓ BY C. Carlson DATE 04-17-2015

Rev.	Date	By	Description
1	04/16/15	IBA	Changes per State Review

PRECAST CONCRETE ABUTMENT SHOP DRAWINGS (SDI JOB #15264)

SUPERVISOR: M. WHEELER
DETAILER: I. ADAMS
CHECKER: E. Barendse
ENGINEER: VTAOT

PROJECT NAME: Bristol BRF 021-1(29)
PROJECT #: 021-1(29)
LOCATION: Bristol, VT

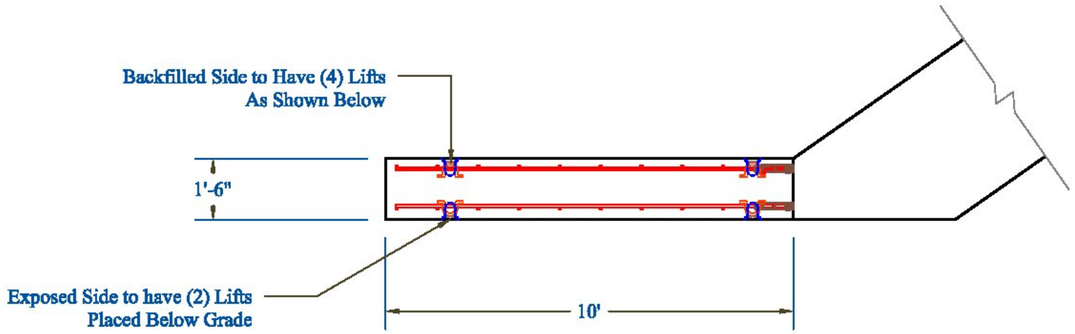
INSTALLER: S.D. Ireland Concrete 193 Industrial Ave Williston, VT 05495

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

SD Ireland PRECAST

03/17/2015 | WINGWALLS_1 | 4_OF_16

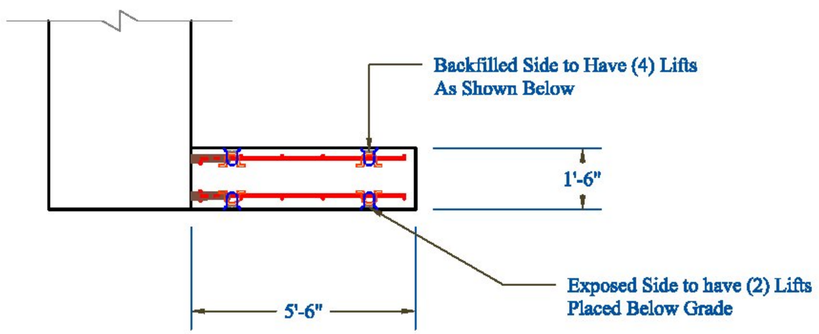
WW3: Plan View



Note: Reference rebar drawings for grout sleeve spacing and quantities for each wing wall.

Weight = 19,802 lbs

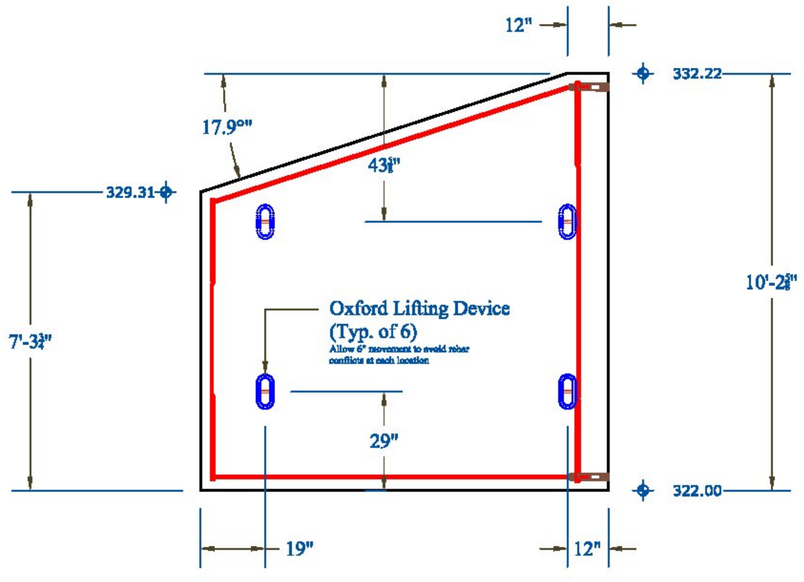
WW4: Plan View



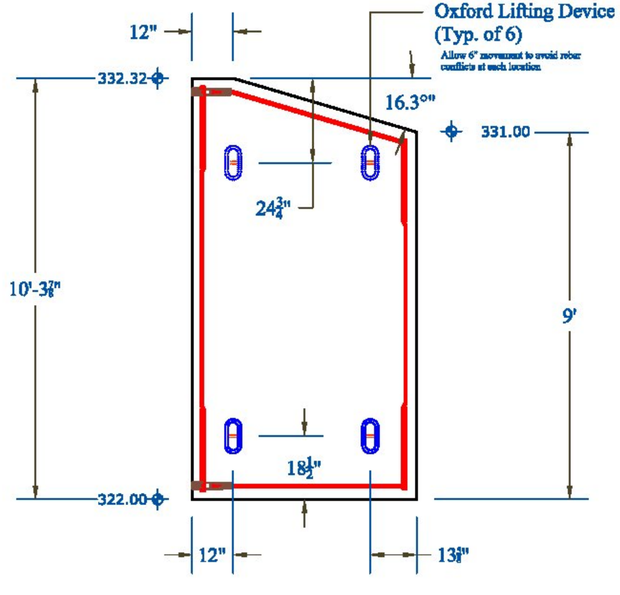
Note: Reference rebar drawings for grout sleeve spacing and quantities for each wing wall.

Weight = 11,953 lbs

WW3: Elevation View



WW4: Elevation View



CONTRACTORS VTSPE:	Vermont Agency of Transportation RECEIVED CK'D BY MEM OK'D BY CWC Apr. 17, 2015 RESUBMIT APPROVED ✓ BY C. Carlson DATE 04-17-2015

Rev.	Date	By	Description
1	04/16/15	IBA	Changes per State Review

PRECAST CONCRETE ABUTMENT SHOP DRAWINGS (SDI JOB #15264)

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ENGINEER: VTAOT

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WILLISTON, VT 05495
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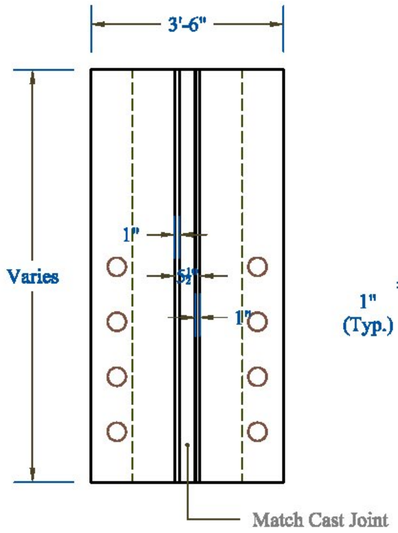
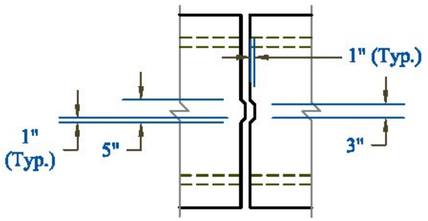
SD Ireland PRECAST

03/17/2015 | WINGWALLS_2 | 5_OF_16

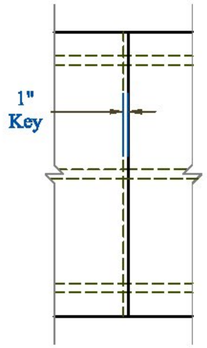
Match Cast Joint Detail



Abutment Face: A-A (Pgs 2 & 3)

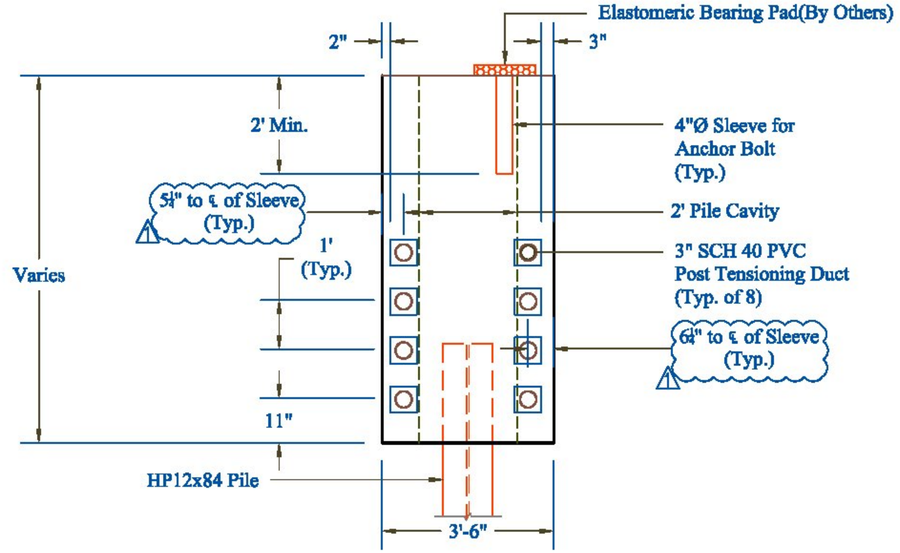


Plan View

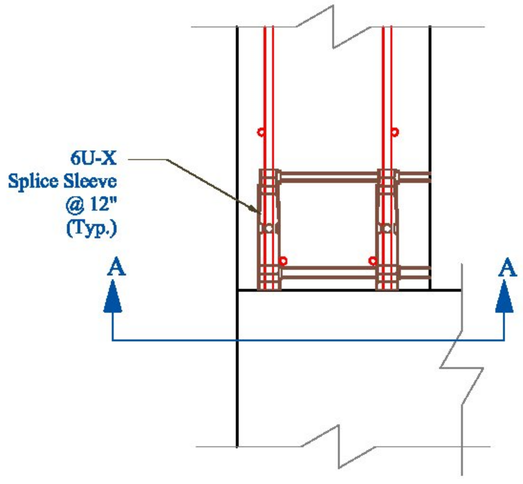


Section View: B-B (Pgs 2 & 3)

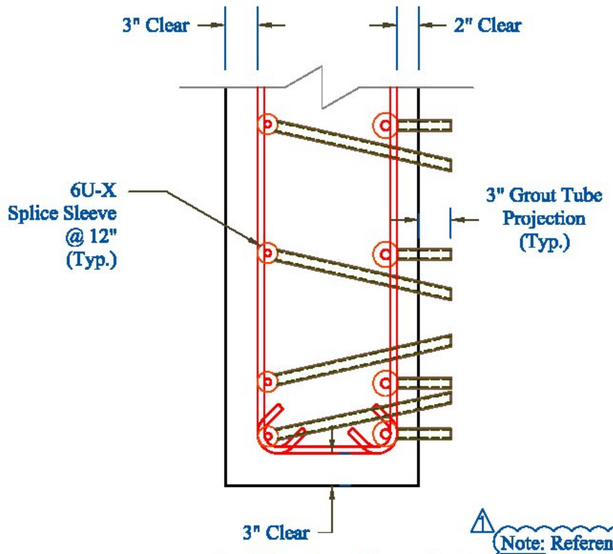
Abutment 1 & 2: Typical Section



Wingwall Grout Sleeve Detail



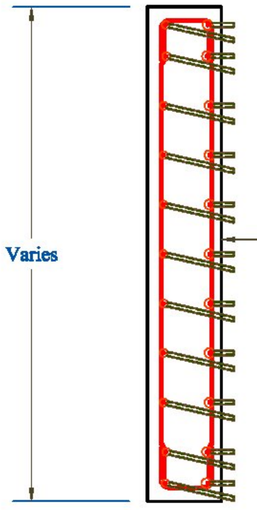
Plan View



End Section View: A-A

⚠ Note: Reference rebar drawings for grout sleeve spacing and quantities for each wing wall.

Wingwall 1 - 4: Typical Section



⚠ Note: Reference rebar drawings for grout sleeve spacing and quantities for each wing wall.

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PRECAST CONCRETE ABUTMENT SHOP DRAWINGS (SDI JOB #15264)

SUPERVISOR: M. WHEELER
DETAILER: I. ADAMS
CHECKER: E. Barendse
ENGINEER: VTAOT

PROJECT NAME: Bristol BRF 021-1(29)
PROJECT #: 021-1(29)
LOCATION: Bristol, VT

INSTALLER: S.D. Ireland Concrete 193 Industrial Ave Williston, VT 05495

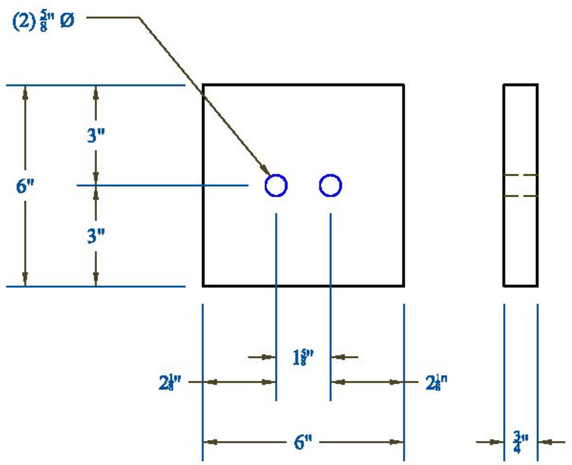
FABRICATOR: 193 INDUSTRIAL AVE. WILLISTON, VT 05495 Ph: (802) 658-0201

SD Ireland PRECAST

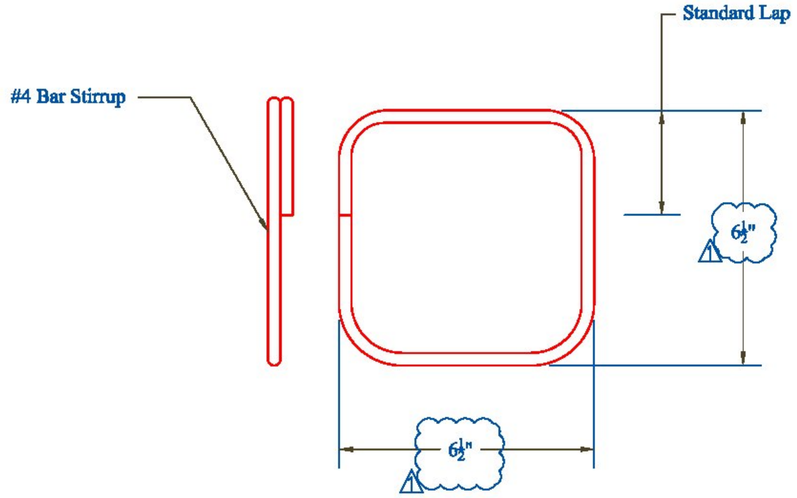
03/17/2015 | DETAILS | 6_OF_16

Tension Duct Bearing Plate

See Post Tensioning Note 1 on Pg. 1

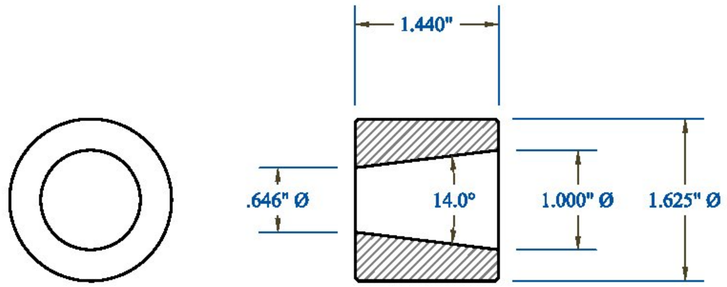


Reinforcement Detail at Tensioning Blockouts



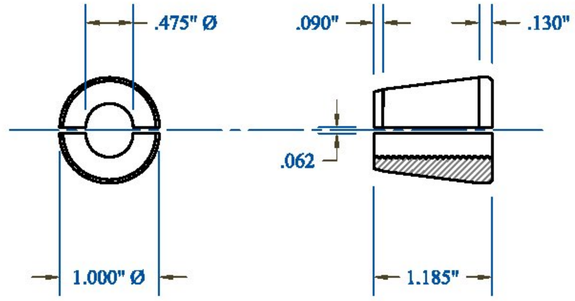
0.5" Barrel Chuck

See Post Tensioning Note 1 on Pg. 1



0.5" 2-Part Wedge

See Post Tensioning Note 1 on Pg. 1



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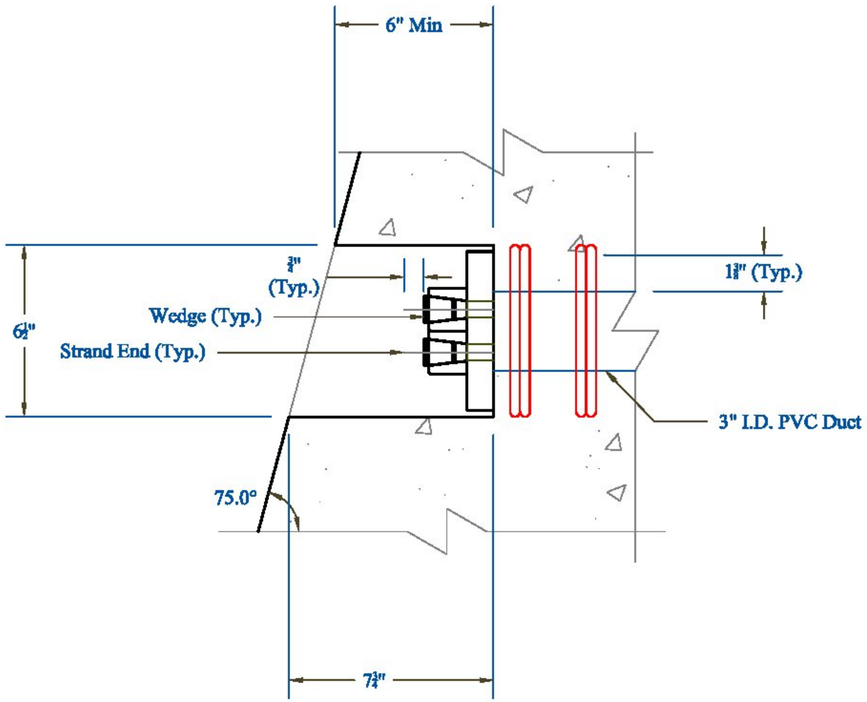
PRECAST CONCRETE ABUTMENT SHOP DRAWINGS (SDI JOB #15264)		INSTALLER: S.D. Ireland Concrete 193 Industrial Ave Williston, VT 05495	FABRICATOR: 193 INDUSTRIAL AVE. WILLISTON, VT 05495 Ph: (802) 658-0201 SD Ireland PRECAST
SUPERVISOR: M. WHEELER	PROJECT NAME: Bristol BRF 021-1(29)		
DETAILER: I. ADAMS	PROJECT #: 021-1(29)		
CHECKER: E. Barendse	LOCATION: Bristol, VT		
ENGINEER: VTAOT		03/17/2015	POST_TENSIONING_1 — 7_OF_16

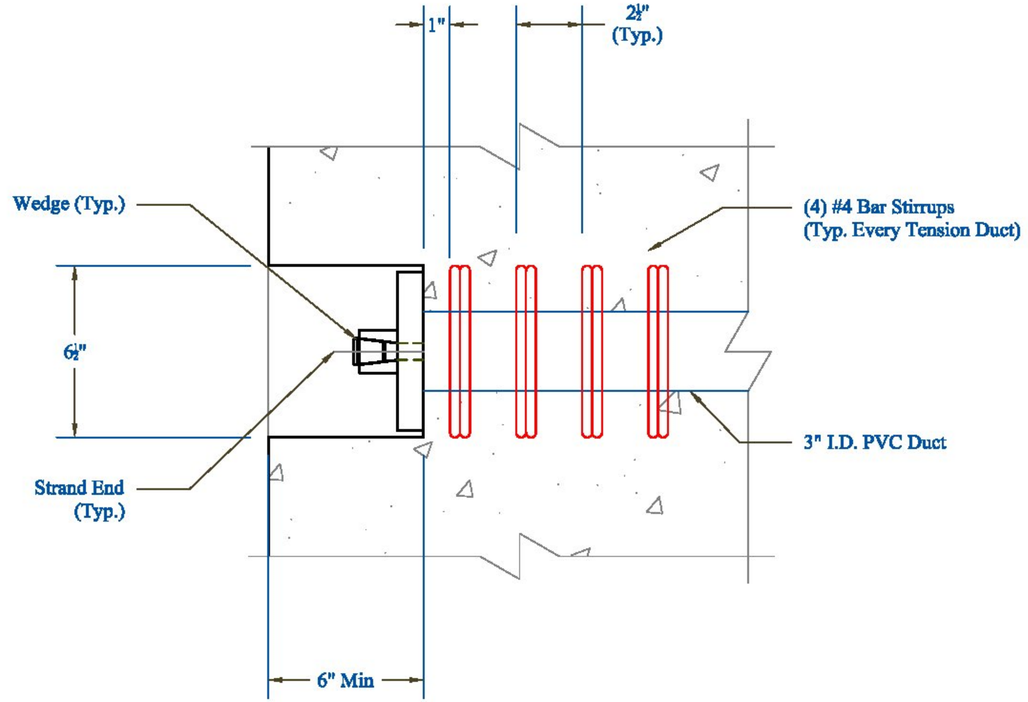
Tensioning Blockout Plan

See Post Tensioning Note 1 & 6 on Pg. 1



Tensioning Blockout Section

See Post Tensioning Note 1 & 6 on Pg. 1



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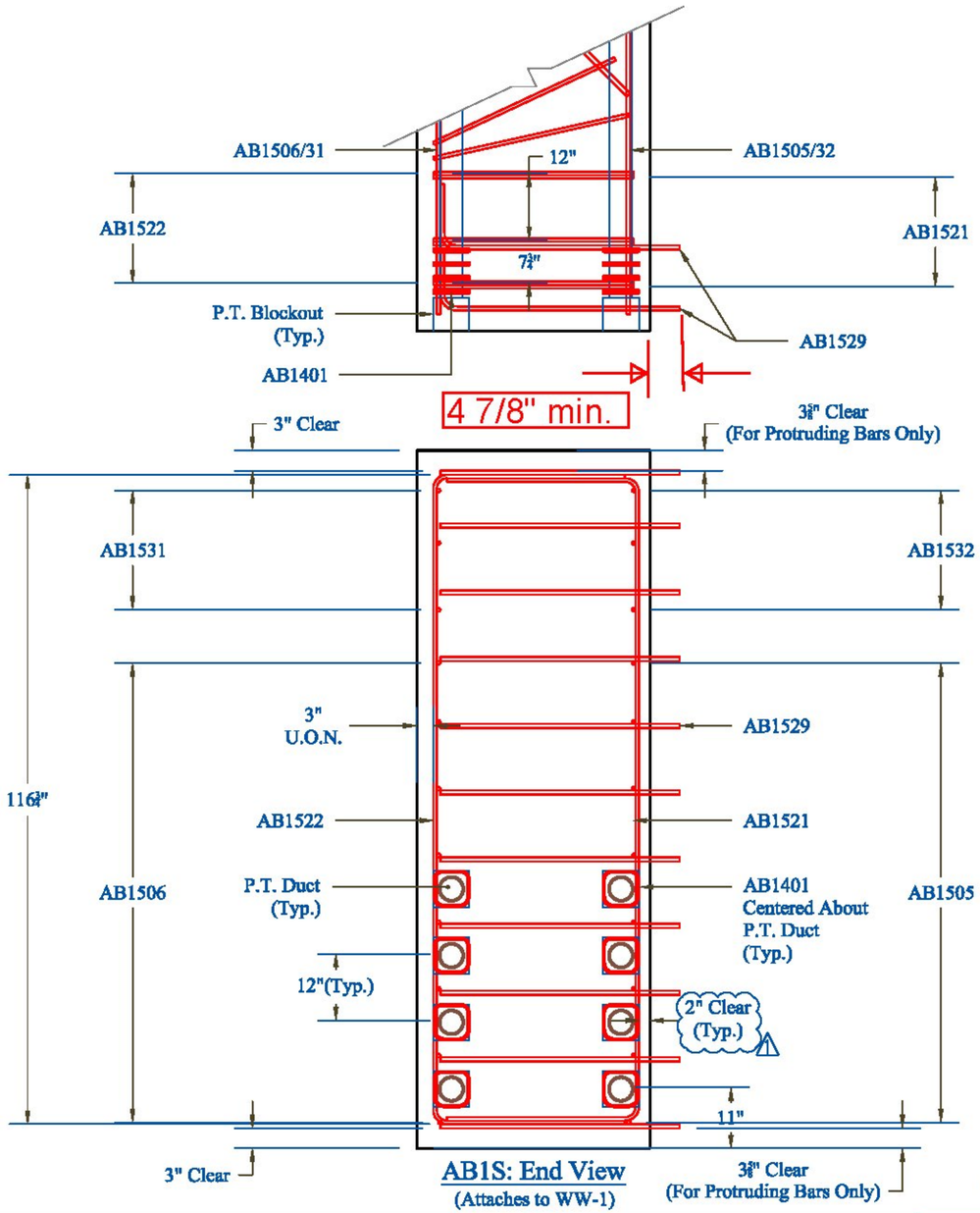
03/17/2015 | POST_TENSIONING_2 | 8_OF_16

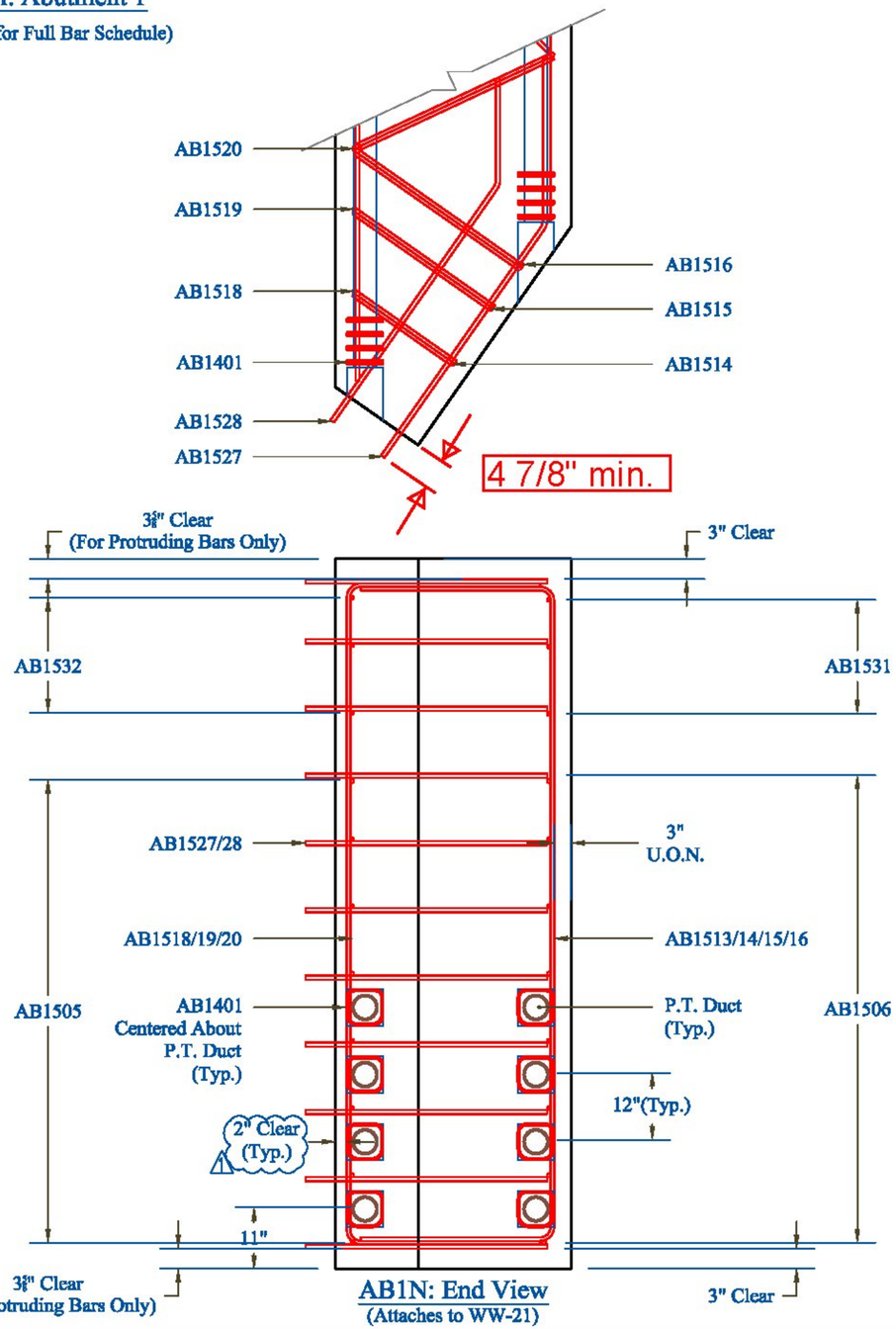
End Bar Detail: Abutment 1

(Refer to Rebar Plan for Full Bar Schedule)



AB1S: End View

(Attaches to WW-1)



AB1N: End View

(Attaches to WW-21)

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ENGINEER: VTAOT

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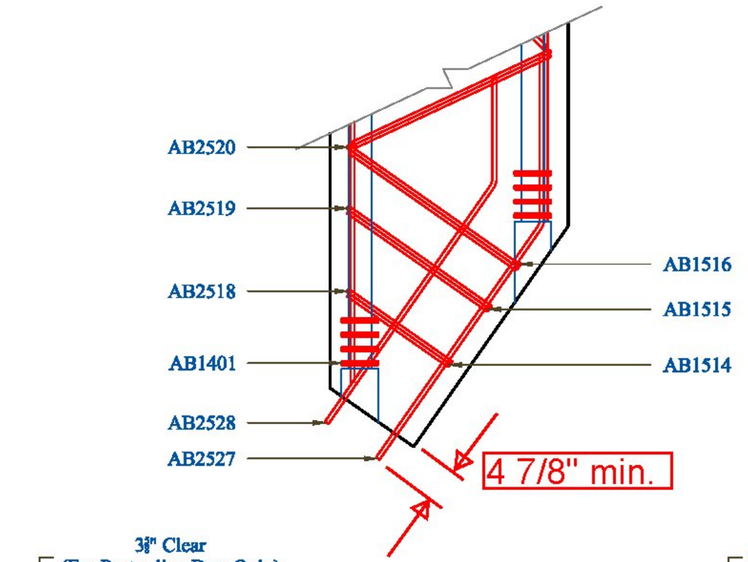
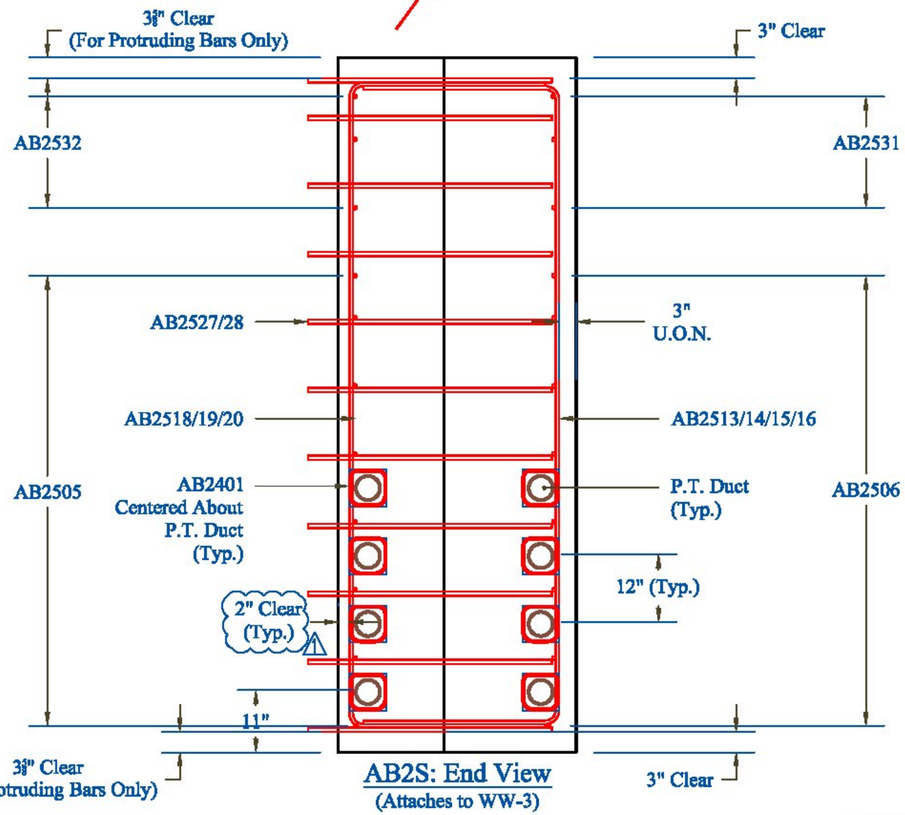
03/17/2015 | END_BAR_DETAIL_1 | 9_OF_16

End Bar Detail: Abutment 2

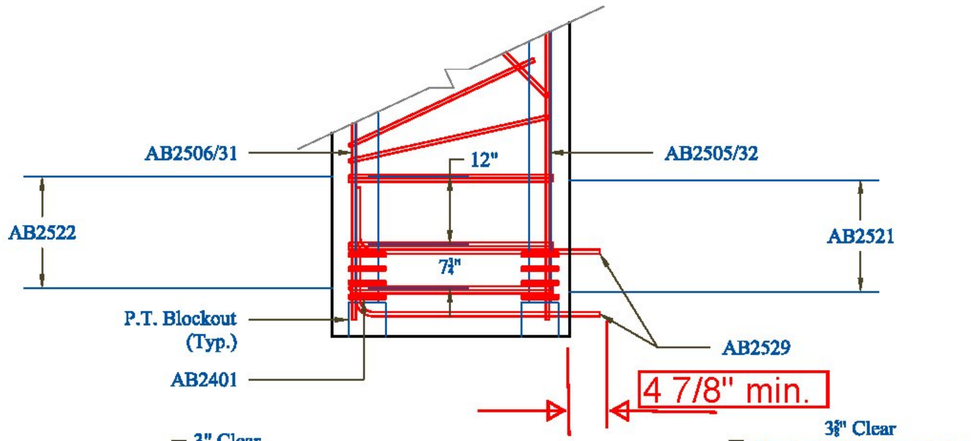
(Refer to Rebar Plan for Full Bar Schedule)

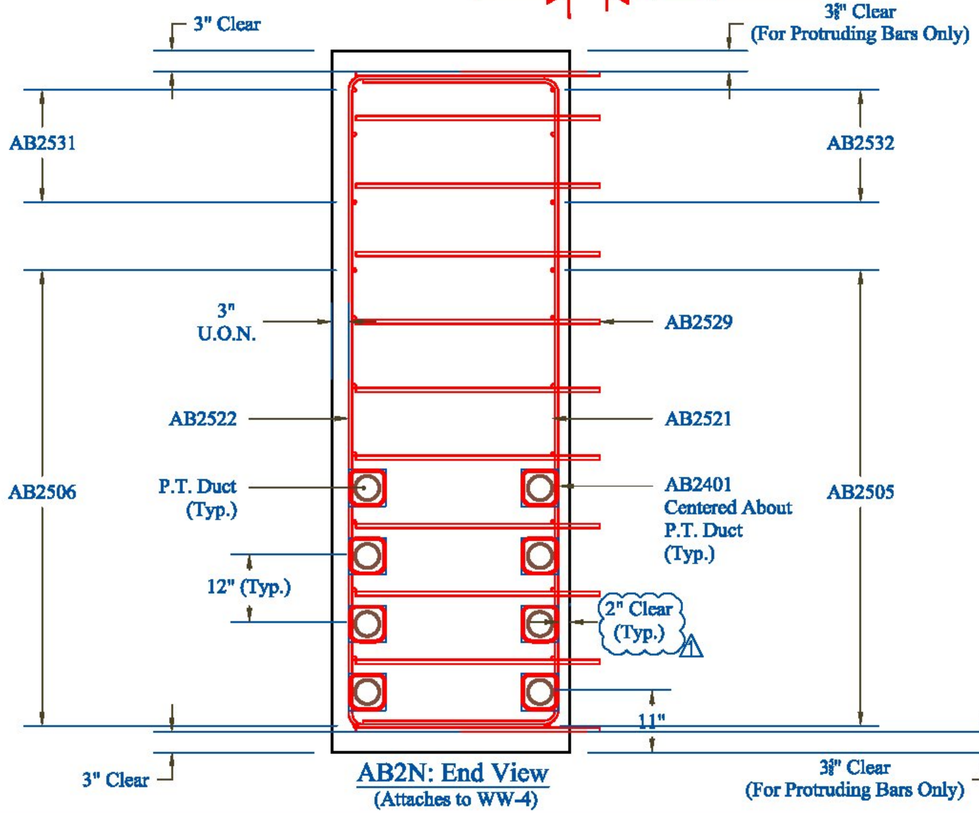




AB2S: End View

(Attaches to WW-3)





AB2N: End View

(Attaches to WW-4)

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CHECKER: E. Barendse
ENGINEER: VTAOT

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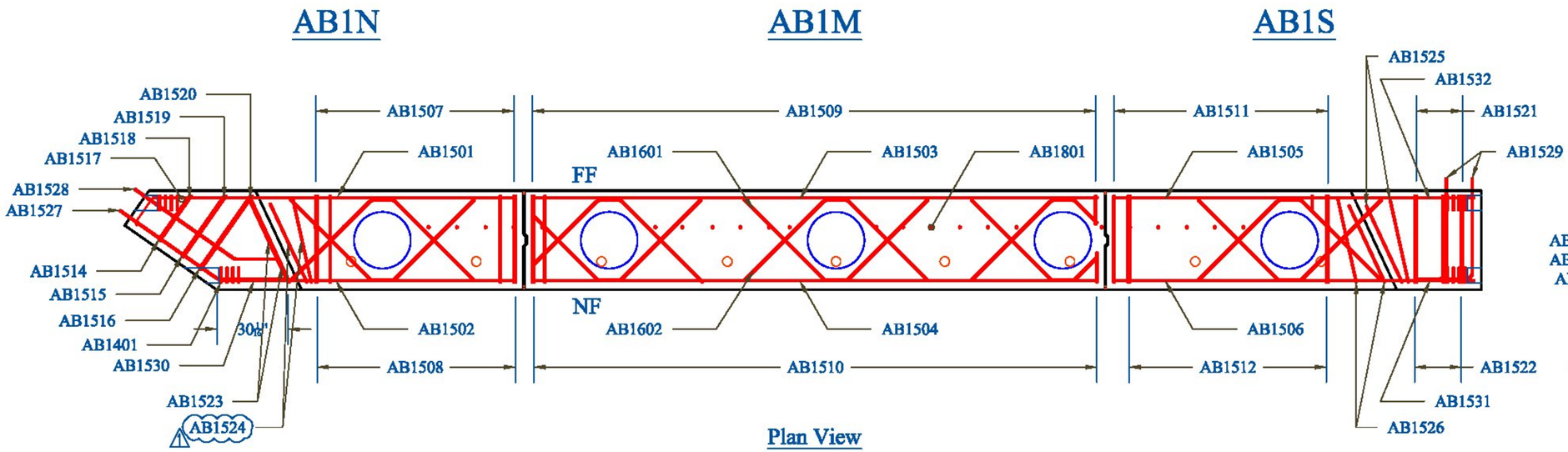
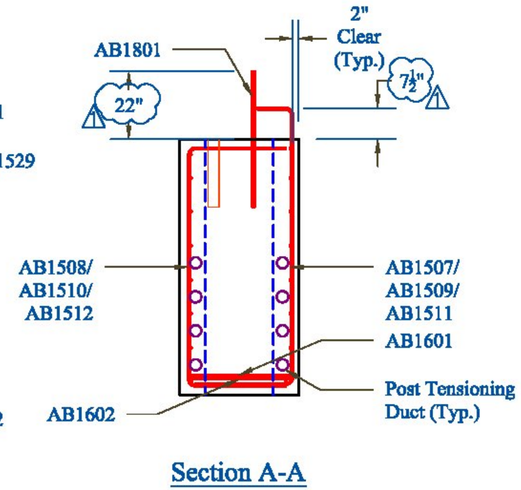
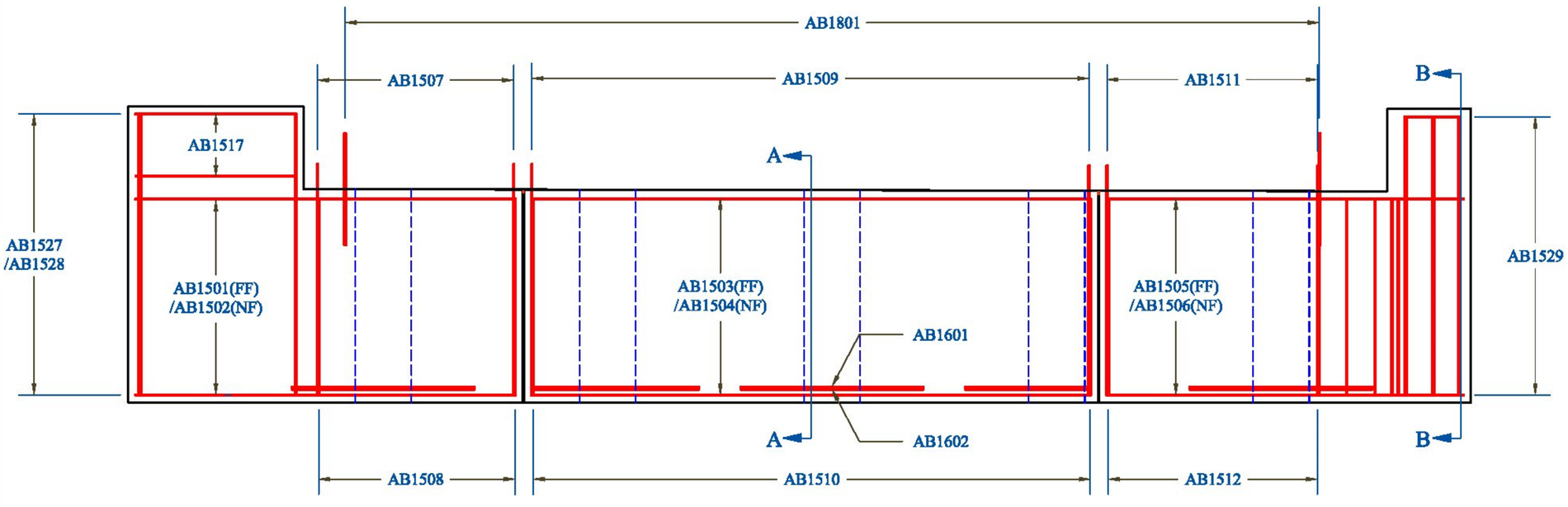
03/17/2015 | END_BAR_DETAIL_2 | 10_OF_16



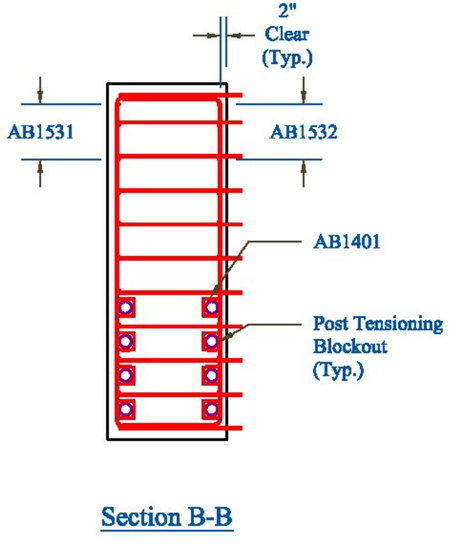
Plan View



Section A-A



Elevation View



Section B-B

3" Clear U.O.N.

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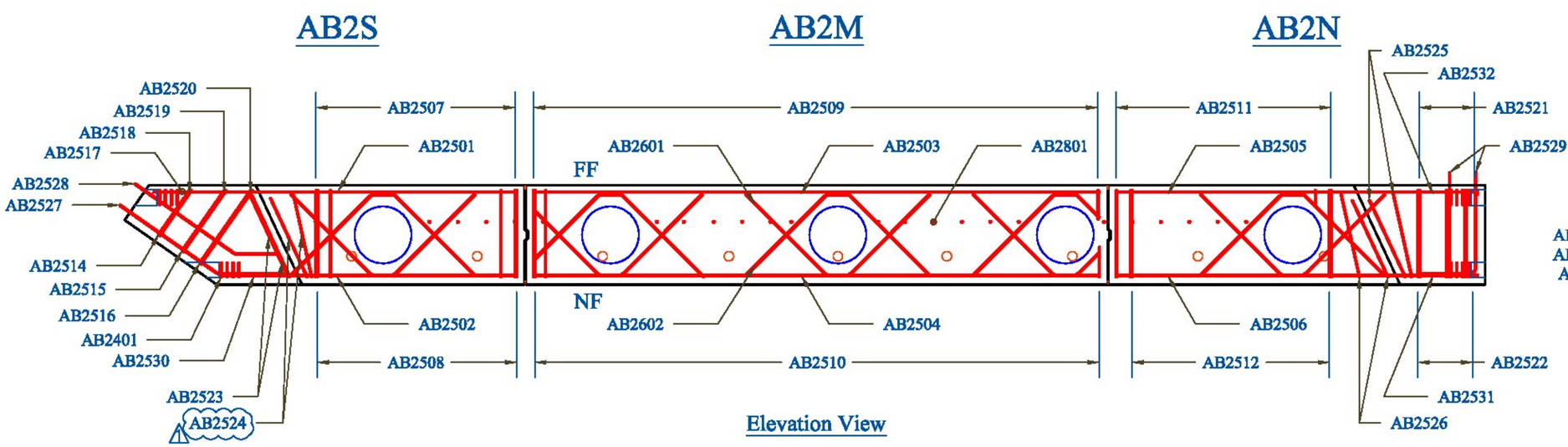
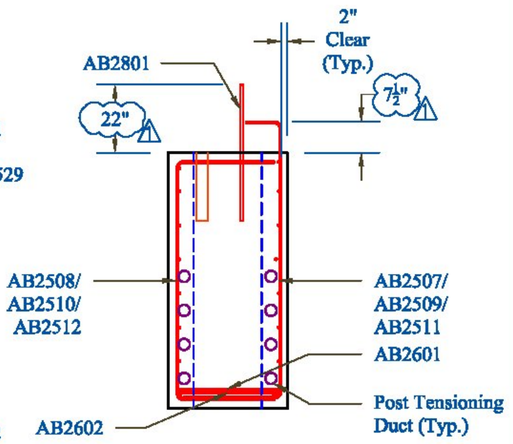
SD Ireland PRECAST

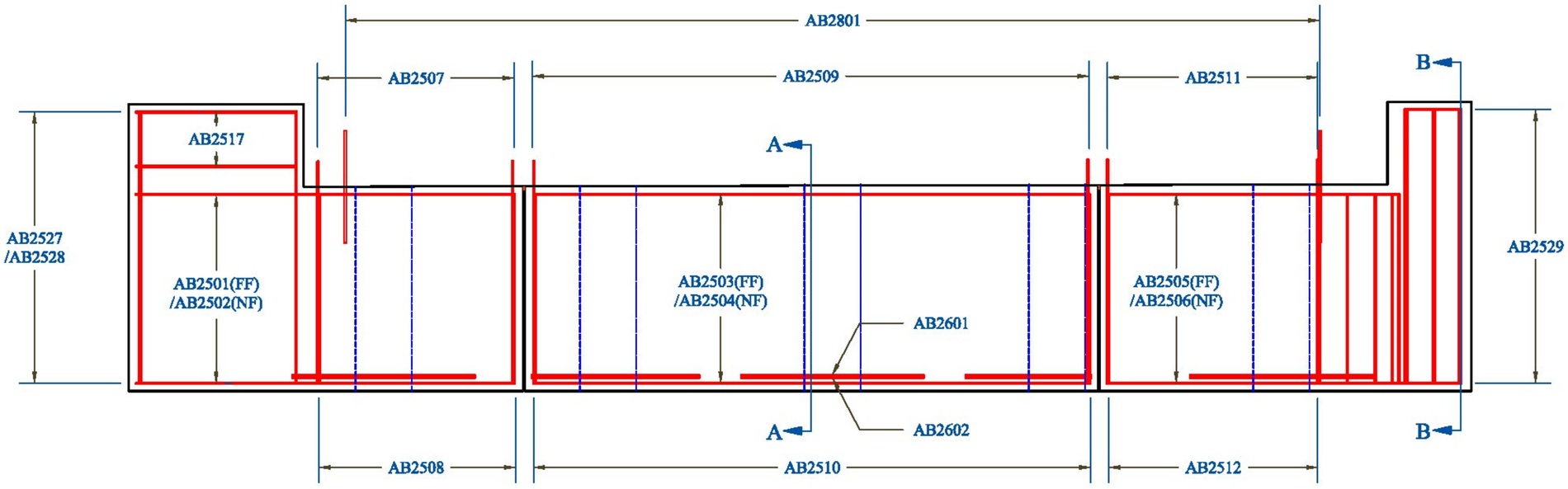
03/17/2015 | ABUTMENT_1 | 11_OF_16

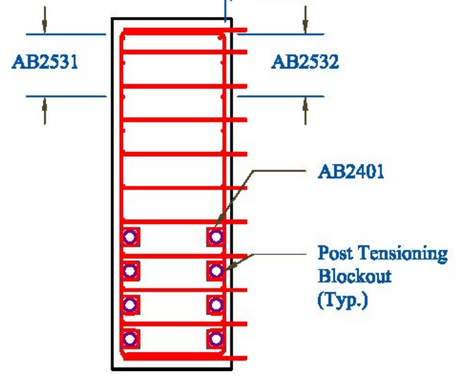


Elevation View



Section B-B





Section A-A

AB2S AB2M AB2N

Elevation View

3" Clear U.O.N.

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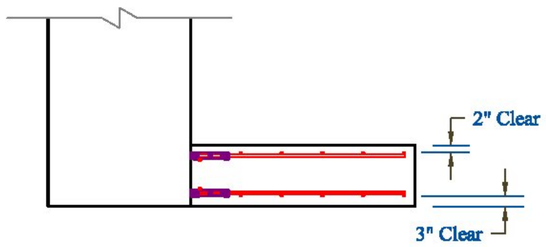
SD Ireland PRECAST

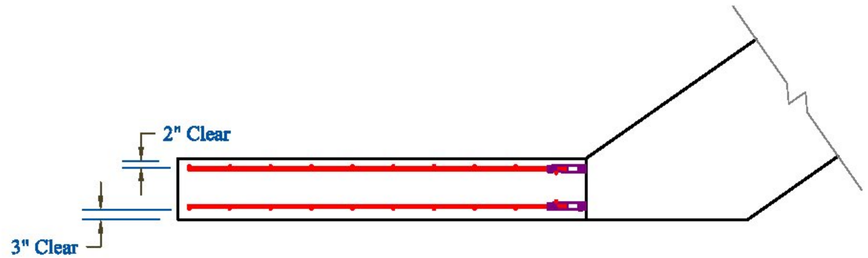
03/17/2015 | ABUTMENT_2 | 12_OF_16

WW1: Plan View



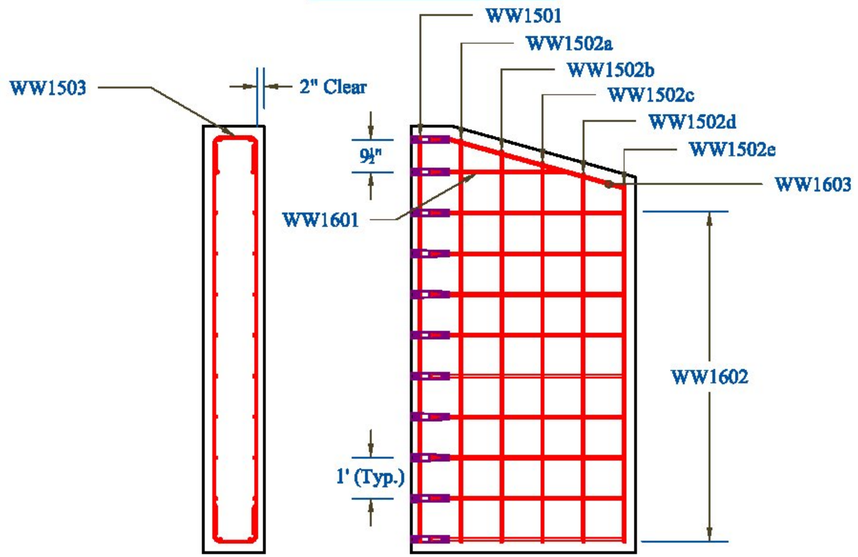
Note: Reference reinforcing schedule for bar dimensions and quantities. Piece drawing may not reflect actual bar order.

WW2: Plan View



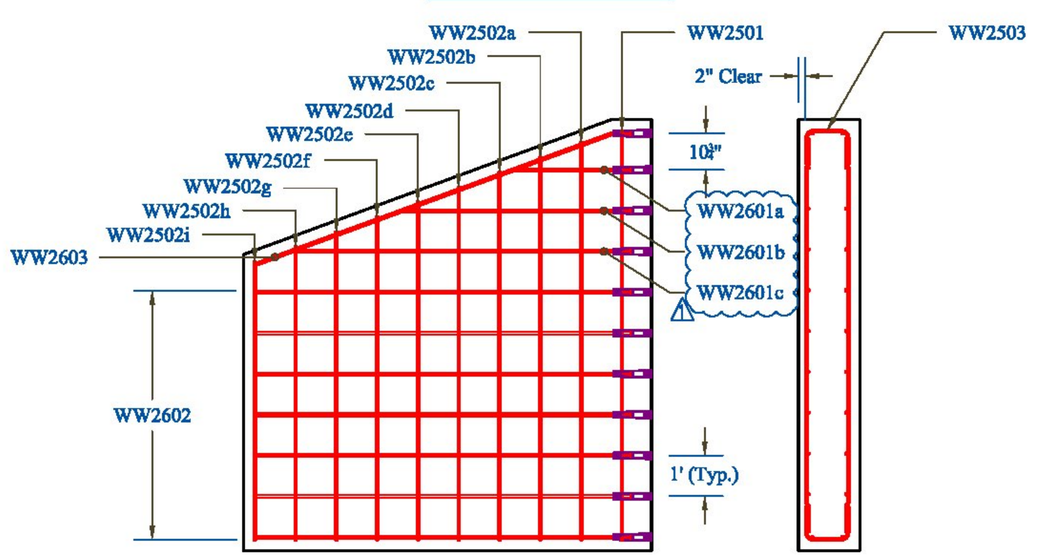
Note: Reference reinforcing schedule for bar dimensions and quantities. Piece drawing may not reflect actual bar order.

WW1: Elevation View



3" Clear U.O.N.

WW2: Elevation View



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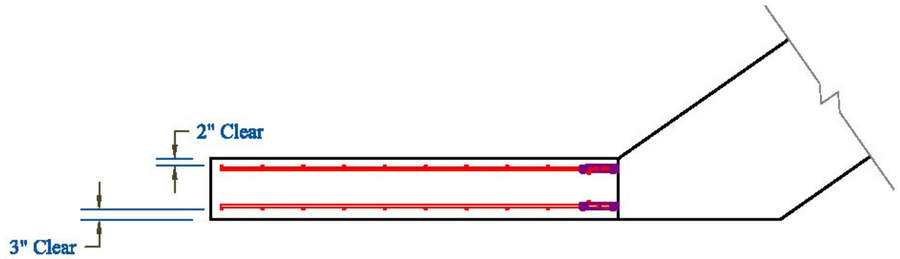
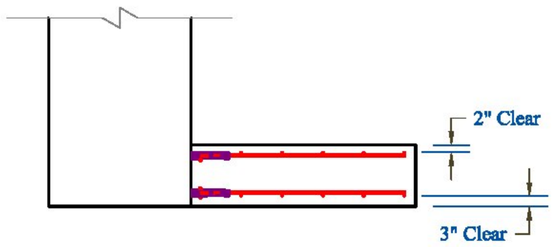
03/17/2015 | WINGWALLS_1 | 13_OF_16

WW3: Plan View



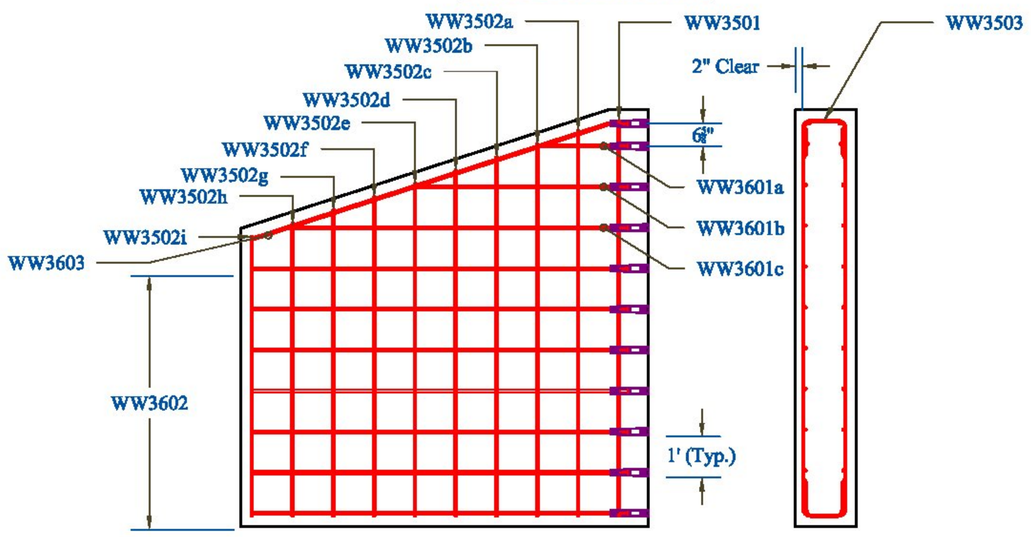
Note: Reference reinforcing schedule for bar dimensions and quantities. Piece drawing may not reflect actual bar order.

WW4: Plan View



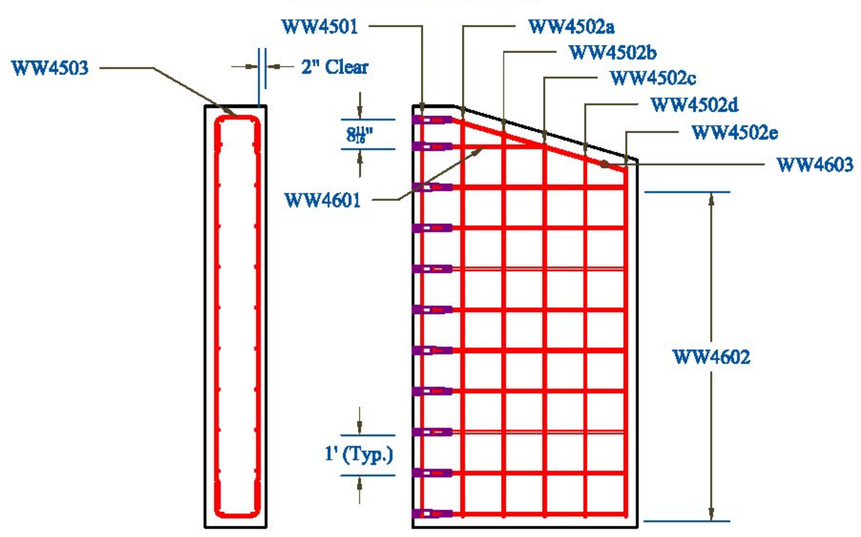
Note: Reference reinforcing schedule for bar dimensions and quantities. Piece drawing may not reflect actual bar order.

WW3: Elevation View



3" Clear U.O.N.

WW4: Elevation View



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03/17/2015 | WINGWALLS_2 | 14_OF_16

Location	Mark	Description	Size	Spacing	Length	Qty.	A	B	C
AB1N Hor Bar FF	AB1501	Str	#5	12"	153 3/4"	8	153 3/4"		
AB1N Hor Bar NF	AB1502	Str	#5	12"	126"	9	126"		
AB1M Hor Bar FF	AB1503	Str	#5	12"	239-1/2"	8	239-1/2"		
AB1M Hor Bar NF	AB1504	Str	#5	12"	239-1/2"	8	239-1/2"		
AB1S Hor Bar FF	AB1505	Str	#5	12"	153"	8	153"		
AB1S Hor Bar NF	AB1506	Str	#5	12"	153"	8	153"		
AB1N Vert Bar FF	AB1507	2	#5	6"	146 3/4"	15	12-1/2"	97-1/4"	37"
AB1N Vert Bar NF	AB1508	2	#5	12"	158 3/8"	8	37"	84-3/8"	37"
AB1M Vert Bar FF	AB1509	2	#5	6"	146 3/8"	41	12-1/2"	96-7/8"	37"
AB1M Vert Bar NF	AB1510	2	#5	12"	158 3/8"	21	37"	84-3/8"	37"
AB1S Vert Bar FF	Ab1511	2	#5	6"	146"	16	12-1/2"	96-1/2"	37"
AB1S Vert Bar NF	AB1512	2	#5	12"	158 3/8"	9	37"	84-3/8"	37"
AB1 Pile Cavity Bar	AB1601	3	#6	N/A	106-1/2"	5	48-1/4"	10"	48-1/4"
AB1 Pile Cavity Bar	AB1602	3	#6	N/A	106-1/2"	5	48-1/4"	10"	48-1/4"
AB1N End Vert	AB1514	2	#5	12"	164-1/4"	1	23-1/8"	118"	23-1/8"
AB1N End Vert	Ab1515	2	#5	12"	181"	1	31-1/2"	118"	31-1/2"
AB1N End Vert	AB1516	2	#5	12"	193-3/4"	1	37-7/8"	118"	37-7/8"
AB1N End Hor	AB1517	Str	#5	12"	42-1/4"	3	42-1/4"		
AB1N End Vert	AB1518	2	#5	12"	165-1/4"	1	23-5/8"	118"	23-5/8"
AB1N End Vert	AB1519	2	#5	12"	182-1/4"	1	32-1/8"	118"	32-1/8"
AB1N End Vert	AB1520	2	#5	12"	194-3/4"	1	38-3/8"	118"	38-3/8"
AB1S End Vert	AB1521	2	#5	12"	190-3/4"	3	37"	116-3/4"	37"
AB1S End Vert	AB1522	2	#5	12"	190-3/4"	3	37"	116-3/4"	37"
AB1N End Vert CP	AB1523	2	#5	N/A	197-1/4"	2	38-1/4"	120-3/4"	38-1/4"
AB1N End Vert	AB1524	2	#5	N/A	158-3/8"	2	37"	84-3/8"	37"
AB1S End Vert CP	AB1525	2	#5	N/A	193-1/2"	2	37"	119-1/2"	37"
AB1S End Vert	AB1526	2	#5	N/A	158-3/8"	2	37"	84-3/8"	37"
WW2 Sleeve Bar	AB1527	5	#5	12"	80-1/2"	11	50-1/2"	30"	145°
WW2 Sleeve Bar	AB1528	5	#5	12"	70-3/8"	11	51-1/2"	18-7/8"	145°
WW1 Sleeve Bar	AB1529	1	#5	12"	54-3/4"	22	43"	11-3/4"	
AB1N End Hor	AB1530	Str	#5	12"	29-3/4"	3	29-3/4"		
AB1S End Hor	AB1531	Str	#5	12"	31-1/4"	3	31-1/4"		
AB1S End Hor	AB1532	Str	#5	12"	47-1/4"	3	47-1/4"		
AB1 Burst Bar	AB1401	4	#4	N/A	41-1/2"	64	6 1/2"	6 1/2"	4-1/2"
AB1 Vert Dowels	AB1801	Str	#8	12"	44 1/2"	39*	44 1/2"		
AB2S Hor Bar FF	AB2501	Str	#5	12"	153 3/4"	8	153 3/4"		
AB2S Hor Bar NF	AB2502	Str	#5	12"	126"	9*	126"		
AB2M Hor Bar FF	AB2503	Str	#5	12"	239-1/2"	8	239-1/2"		
AB2M Hor Bar NF	AB2504	Str	#5	12"	239-1/2"	8	239-1/2"		
AB2N Hor Bar FF	AB2505	Str	#5	12"	153"	8	153"		
AB2N Hor Bar NF	AB2506	Str	#5	12"	153"	8	153"		
AB2S Vert Bar FF	AB2507	2	#5	6"	143-1/8"	15	12-1/2"	93-5/8"	37"
AB2S Vert Bar NF	AB2508	2	#5	12"	155-1/2"	8	37"	81-1/2"	37"
AB2M Vert Bar FF	AB2509	2	#5	6"	143-1/2"	41	12-1/2"	94"	37"
AB2M Vert Bar NF	AB2510	2	#5	12"	155-1/2"	21	37"	81-1/2"	37"
AB2N Vert Bar FF	AB2511	2	#5	6"	143-3/4"	16	12-1/2"	94-1/4"	37"
AB2N Vert Bar NF	AB2512	2	#5	12"	155-1/2"	9	37"	81-1/2"	37"
AB2 Pile Cavity Bar	AB2601	3	#6	N/A	106-1/2"	5	48-1/4"	10"	48-1/4"
AB2 Pile Cavity Bar	AB2602	3	#6	N/A	106-1/2"	5	48-1/4"	10"	48-1/4"
AB2S End Vert	AB2514	1	#5	12"	160-1/4"	1	23 1/8"	114"	23 1/8"
AB2S End Vert	AB2515	1	#5	12"	177"	1	31 1/2"	114"	31 1/2"
AB2S End Vert	AB2516	1	#5	12"	189-3/4"	1	37 7/8"	114"	37 7/8"
AB2S End Hor	AB2517	Str	#5	12"	42-1/2"	1	42 1/2"		
AB2S End Vert	AB2518	1	#5	12"	161-1/4'	1	23 5/8"	114"	23 5/8"
AB2S End Vert	AB2519	1	#5	12"	178-1/4"	1	32 1/8"	114"	32 1/8"
AB2S End Vert	AB2520	1	#5	12"	190-3/4"	1	38 3/8"	114"	38 3/8"
AB2N End Vert	AB2521	2	#5	12"	189"	3	37"	115"	37"
AB2N End Vert	AB2522	2	#5	12"	189"	3	37"	115"	37"
AB2S End Vert CP	AB2523	2	#5	N/A	195-3/4"	2	39-1/2"	116-3/4"	39-1/2"
AB2S End Vert	AB2524	2	#5	N/A	155-1/2"	2	37"	81-1/2"	37"

This length should be 95 1/4", at most, bottom elevation is 322.25, top elevation is 330.19 +/-

This length should be 94 3/4", at most, bottom elevation is 322.25, top elevation is 330.15 +/-

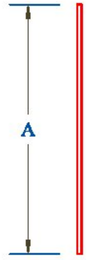
This length should be 94 1/2", at most, bottom elevation is 322.25, top elevation is 330.13 +/-

This length should be 91 3/4", at most, bottom elevation is 322.25, top elevation is 329.89 +/-

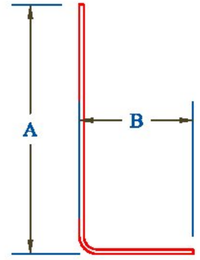
This length should be 92", at most, bottom elevation is 322.25, top elevation is 329.91 +/-

This length should be 92 1/2", at most, bottom elevation is 322.25, top elevation is 329.95 +/-

Bar Bend Types



Straight



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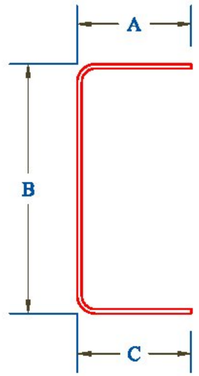

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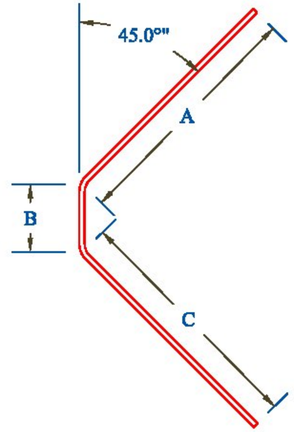

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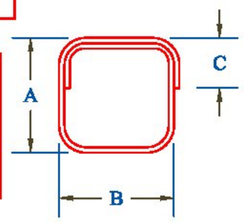

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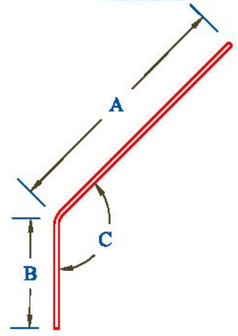


Type 5

Std. Bar Bend Ø	
Bar #	Bend Ø
#4	3"
#5	3¾"
#6	4½"

*One Bar Added for Testing

Rev.	Date	By	Description
1	04/16/15	IBA	Changes per State Review

CONTRACTORS VISPE:

Vermont Agency of Transportation
RECEIVED
CK'D BY MEM OK'D BY CWC
Apr. 17, 2015
RESUBMIT APPROVED AS NOTED ✓
BY C. Carlson DATE 04-17-2015

PRECAST CONCRETE ABUTMENT SHOP DRAWINGS (SDI JOB #15264)

SUPERVISOR: M. WHEELER
DETAILER: I. ADAMS
CHECKER: E. Barendse
ENGINEER: VTAOT

PROJECT NAME: Bristol BRF 021-1(29)
PROJECT #: 021-1(29)
LOCATION: Bristol, VT

INSTALLER:
S.D. Ireland Concrete
193 Industrial Ave
Williston, VT 05495

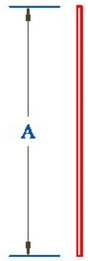
FABRICATOR:
193 INDUSTRIAL AVE.
WILLISTON, VT 05495
Ph: (802) 658-0201

SD Ireland PRECAST

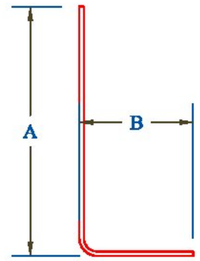
03/17/2015 | BAR_1 | 15_OF_16

AB2N End Vert CP	AB2525	2	#5	N/A	191-3/4"	2	37"	117-3/4"	37"
AB2N End Vert	AB2526	2	#5	N/A	155-1/2"	2	37"	81-1/2"	37"
WW3 Sleeve Bar	AB2527	5	#5	12"	80-1/2"	11	50-1/2"	30"	145°
WW3 Sleeve Bar	AB2528	5	#5	12"	70-3/8"	11	51-1/2"	18-7/8"	145°
WW4 Sleeve Bar	AB2529	1	#5	12"	54-3/4"	22	43"	11-3/4"	
AB2S End Hor	AB2530	Str	#5	12"	29-3/4"	3	29-3/4"		
AB2N End Hor	AB2531	Str	#5	12"	31-1/4"	3	31-1/4"		
AB2N End Hor	AB2532	Str	#5	12"	47-1/4"	3	47-1/4"		
AB2 Burst Bar	AB2401	4	#4	N/A	41-1/2"	64	6 1/2"	6 1/2"	4-1/2"
AB2 Vert Dowels	AB2801	Str	#8	12"	44 1/2"	38	44 1/2"		
WW1 Sleeve Vert	WW1501	Str	#5	N/A	119-1/2"	2	119-1/2"		
WW1 Slope Vert	WW1502a	Str	#5	12"	118-5/8"	2	118-5/8"		
WW1 Slope Vert	WW1502b	Str	#5	12"	115-3/8"	2	115-3/8"		
WW1 Slope Vert	WW1502c	Str	#5	12"	112"	2	112"		
WW1 Slope Vert	WW1502d	Str	#5	12"	108-3/4"	2	108-3/4"		
WW1 Slope Vert	WW1502e	Str	#5	12"	105-3/8"	2	105-3/8"		
WW1 Slope Hor	WW1601	Str	#6	12"	39-3/4"	2	39-3/4"		
WW1 Hor Bar	WW1602	Str	#6	12"	56-7/8"	19	56-7/8"		
WW1 Bent Top	WW1603	5	#6	N/A	58-3/4"	2	53-1/4"	5-1/2"	164.5°
WW1 Vert U Bars	WW1503	2	#5	12"	61"	12	24"	13"	24"
WW2 Sleeve Vert	WW2501	Str	#5	N/A	120-3/4"	2	120-3/4"		
WW2 Slope Vert	WW2502a	Str	#5	12"	117-3/8"	2	117-3/8"		
WW2 Slope Vert	WW2502b	Str	#5	12"	113"	2	113"		
WW2 Slope Vert	WW2502c	Str	#5	12"	108-5/8"	2	108-5/8"		
WW2 Slope Vert	WW2502d	Str	#5	12"	104-1/8"	2	104-1/8"		
WW2 Slope Vert	WW2502e	Str	#5	12"	99-3/4"	2	99-3/4"		
WW2 Slope Vert	WW2502f	Str	#5	12"	95-3/8"	2	95-3/8"		
WW2 Slope Vert	WW2502g	Str	#5	12"	91"	2	91"		
WW2 Slope Vert	WW2502h	Str	#5	12"	86-5/8"	2	86-5/8"		
WW2 Slope Vert	WW2502i	Str	#5	12"	82-1/8"	2	82-1/8"		
WW2 Slope Hor	WW2601a	Str	#6	12"	34-5/8"	2	34-5/8"		
WW2 Slope Hor	WW2601b	Str	#6	12"	67-3/8"	2	67-3/8"		
WW2 Slope Hor	WW2601c	Str	#6	12"	100-1/4"	2	100-1/4"		
WW2 Hor Bar	WW2602	Str	#6	12"	110-7/8"	14	110-7/8"		
WW2 Bent Top	WW2603	5	#6	N/A	117-1/4"	2	111-3/4"	5-1/2"	159.9°
WW2 Vert U Bars	WW2503	2	#5	12"	61"	20	24"	13"	24"
WW3 Sleeve Vert	WW3501	Str	#5	N/A	116-5/8"	2	116-5/8"		
WW3 Slope Vert	WW3502a	Str	#5	12"	113-3/4"	2	113-3/4"		
WW3 Slope Vert	WW3502b	Str	#5	12"	109-7/8"	2	109-7/8"		
WW3 Slope Vert	WW3502c	Str	#5	12"	106"	2	106"		
WW3 Slope Vert	WW3502d	Str	#5	12"	102-1/8"	2	102-1/8"		
WW3 Slope Vert	WW3502e	Str	#5	12"	98-1/4"	2	98-1/4"		
WW3 Slope Vert	WW3502f	Str	#5	12"	94-1/4"	2	94-1/4"		
WW3 Slope Vert	WW3502g	Str	#5	12"	90-3/8"	2	90-3/8"		
WW3 Slope Vert	WW3502h	Str	#5	12"	86-1/2"	2	86-1/2"		
WW3 Slope Vert	WW3502i	Str	#5	12"	82-5/8"	2	82-5/8"		
WW3 Slope Hor	WW3601a	Str	#6	12"	26"	2	26"		
WW3 Slope Hor	WW3601b	Str	#6	12"	63-1/4"	3*	63-1/4"		
WW3 Slope Hor	WW3601c	Str	#6	12"	100-1/4"	2	100-1/4"		
WW3 Hor Bar	WW3602	Str	#6	12"	110-7/8"	14	110-7/8"		
WW3 Bent Top	WW3603	5	#6	N/A	116-1/8"	2	110-3/4"	5-3/8"	162.1°
WW3 Vert U Bars	WW3503	2	#5	12"	61"	10	24"	13"	24"
WW4 Sleeve Vert	WW4501	Str	#5	N/A	117-3/4"	2			
WW4 Slope Vert	WW4502a	Str	#5	12"	117"	2	117"		
WW4 Slope Vert	WW4502b	Str	#5	12"	113-3/8"	2	113-3/8"		
WW4 Slope Vert	WW4502c	Str	#5	12"	109-7/8"	2	109-7/8"		
WW4 Slope Vert	WW4502d	Str	#5	12"	106-3/8"	2	106-3/8"		
WW4 Slope Vert	WW4502e	Str	#5	12"	102-7/8"	2	102-7/8"		
WW4 Slope Hor	WW4601	Str	#6	12"	32-1/4"	2	32-1/4"		
WW4 Hor Bar	WW4602	Str	#6	12"	56-7/8"	18	56-7/8"		
WW4 Bent Top	WW4603	5	#6	N/A	59"	2	53-1/2"	5-1/2"	163.7°
WW4 Vert U Bars	WW4503	2	#5	12"	61"	12	24"	13"	24"

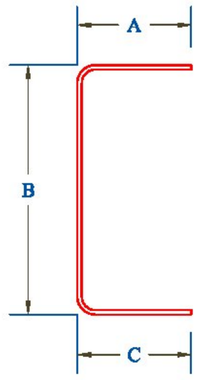
Bar Bend Types



Straight



Type 1



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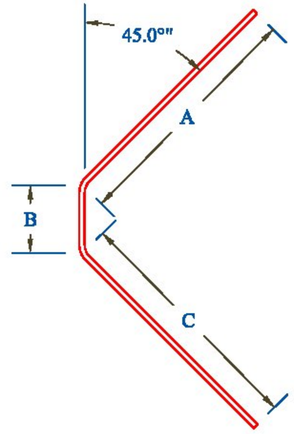

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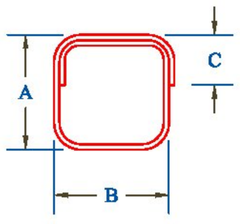
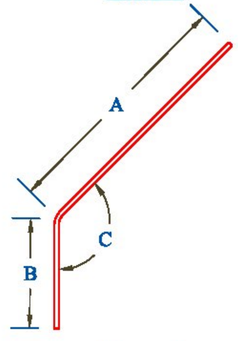


Type 4



Type 5

Std. Bar Bend Ø	
Bar #	Bend Ø
#4	3"
#5	3¾"
#6	4½"

*One Bar Added for Testing

CONTRACTORS VTSPEC:

Vermont Agency of Transportation
RECEIVED
CK'D BY MEM OK'D BY CWC
Apr. 17, 2015
RESUBMIT APPROVED ✓
BY C. Carlson DATE 04-17-2015

Rev.	Date	By	Description
1	04/16/15	IBA	Changes per State Review

PRECAST CONCRETE ABUTMENT SHOP DRAWINGS (SDI JOB #15264)

SUPERVISOR: M. WHEELER
DETAILER: I. ADAMS
CHECKER: E. Barendse
ENGINEER: VTAOT

PROJECT NAME: Bristol BRF 021-1(29)
PROJECT #: 021-1(29)
LOCATION: Bristol, VT

INSTALLER:
S.D. Ireland Concrete
193 Industrial Ave
Williston, VT 05495

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

SD Ireland PRECAST

03/17/2015 | BAR_2 | 16_OF_16

Precast Approach Slabs

Bristol BRF 021-1(29)

Concrete:

Mix Designation: P60TER

1. Specified Mix Design - 5000 PSI
2. Proposed Mix Design - 6000 PSI
3. Striping Strength - 4000 PSI
4. Handling Strength - 4000 PSI
5. Shipping Strength - 5000 PSI
6. Install Strength - 5000 PSI
7. Traffic Loading - 5000 PSI

Fabrication Tolerances:

1. Width ±1/4"
2. Height ±1/4"
3. Length ±1/2"
4. Rebar Cover 3" Min. (Unless Noted Otherwise)
5. Rebar Spacing ±1"
6. Rebar Clearance ±1/4"
7. Insert Placement ±1/4"

Approch Slab Finish:

1. Top surface to be smooth flat finish

Reinforcing:

General Notes:

1. Reinforcing Steel - ASTM A615, Grade 60, Level II, Dual Coated
2. Bar tied at every intersection.
3. Contractor must coordinate closure pour vertical dowel bars with the associated sleeves cast into the approach slab as submitted. Note that the spacing of these sleeves do not exactly match the spacing indicated on sheet 33 of 54.

Tolerances:

1. Spacing ±1"
2. Clearance +1/4"

Lap Lengths:

1. Per AASHTO 5.11.2.1.1 & 5.11.5.3.1
   Lap Length for Level II (Dual Coated):
   #4 Bar=17"
   #5 Bar=31"
   #6 Bar=39"
   #7 Bar=53"
   #8 Bar=69"

Vermont Agency of Transportation
RECEIVED
CK'D BY MEM OK'D BY CWC
May 29, 2015
RESUBMIT APPROVED ✓
BY C. Carlson DATE 05-29-2015

CONTRACTORS VTSPE:	Rev.	Date	By	Description
	1	04/09/15	IBA	Changes per State Review
	2	04/16/15	IBA	Changes per State Changes Received 04/13/15

PRECAST CONCRETE APPROACH SLAB SHOP DRAWINGS (SDI JOB #15738)

SUPERVISOR: E. Barendse
DETAILER: I. ADAMS
CHECKER: E. Barendse
ENGINEER: X

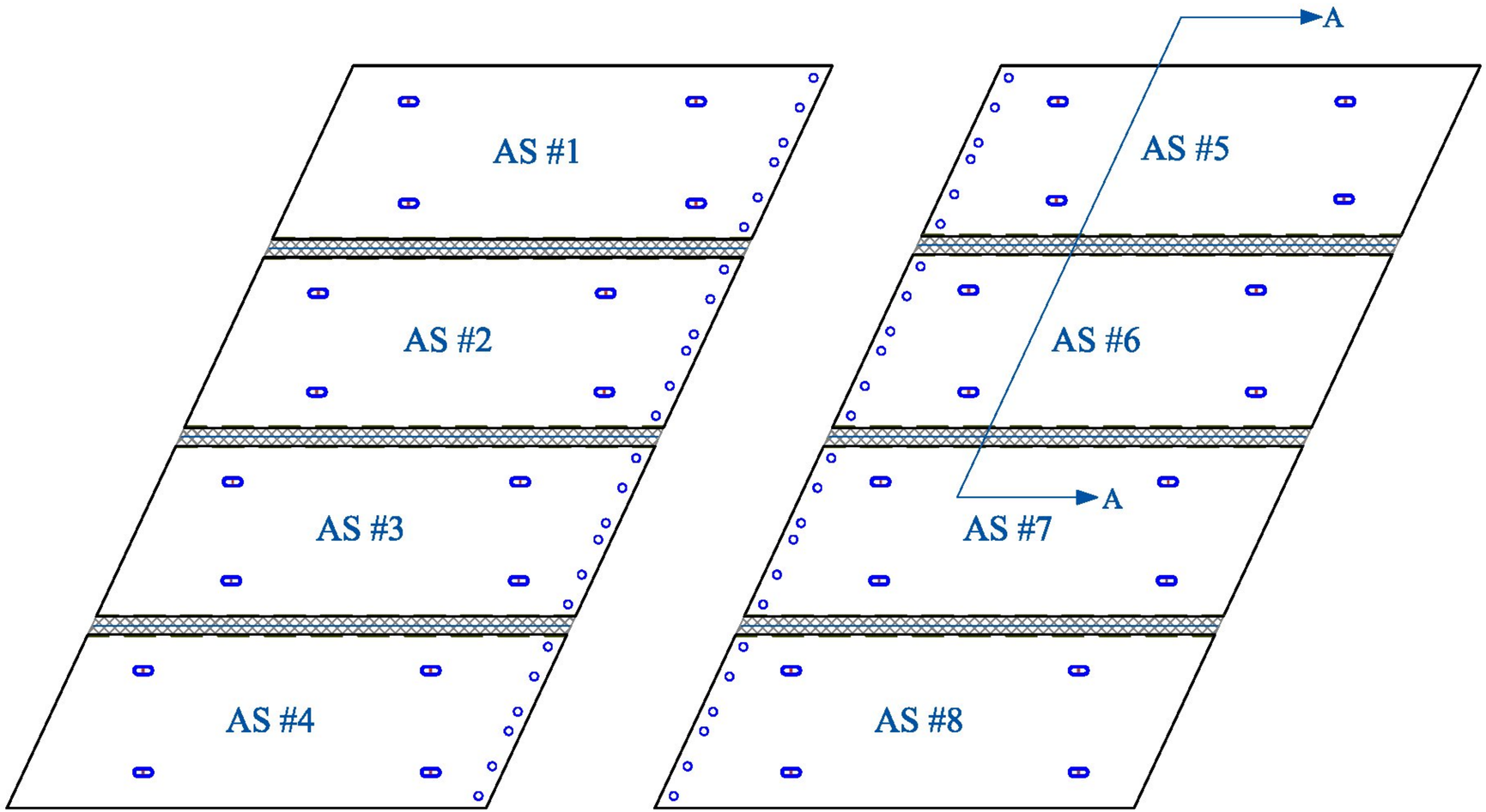
PROJECT NAME: Bristol BRF 021-1(29)
PROJECT #: 021-1(29)
LOCATION: Bristol, VT

INSTALLER:
S.D. Ireland
193 Industrial Ave
Williston, VT 05495

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

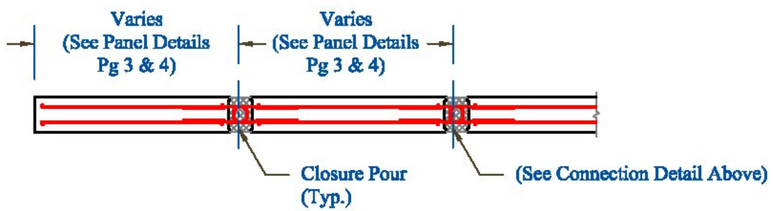
SD Ireland PRECAST

03/17/2015 | COVER_PAGE | 1_OF_10

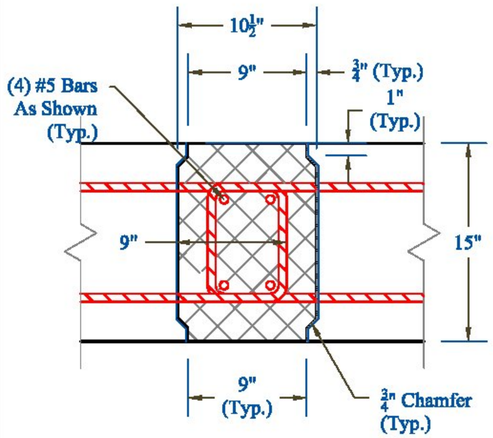


Approach Slab 1: Plan

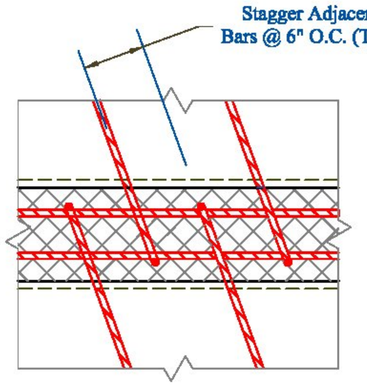
Approach Slab 2: Plan



Section A-A



Connection Detail Section



Connection Detail Plan

Table of Pieces

Name	Qty	Thickness	Vol (Cu Yd)	Wt (lbs)
As#1	1	1'-3"	6.71	26,840
As#2	1	1'-3"	6.48	25,925
As#3	1	1'-3"	6.48	25,925
As#4	1	1'-3"	6.71	26,840
As#5	1	1'-3"	6.48	25,925
As#6	1	1'-3"	6.71	26,840
As#7	1	1'-3"	6.48	25,925
As#8	1	1'-3"	6.71	26,840

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PRECAST CONCRETE APPROACH SLAB SHOP DRAWINGS (SDI JOB #15738)

SUPERVISOR: E. Barendse
DETAILER: I. ADAMS
CHECKER: E. Barendse
ENGINEER: X

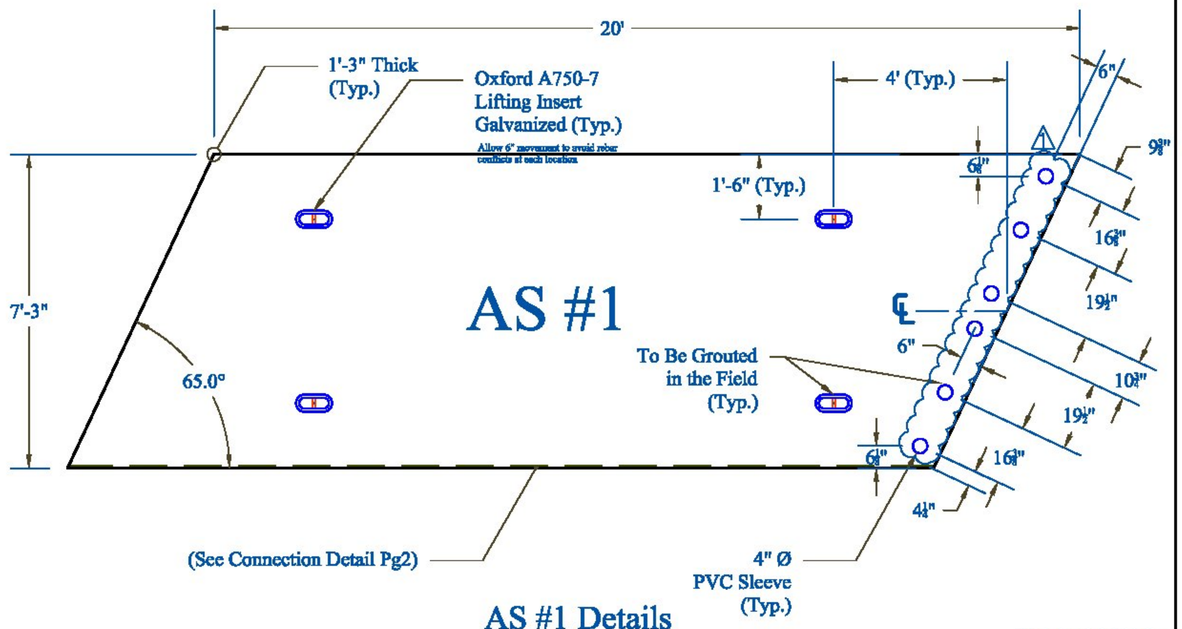
PROJECT NAME: Bristol BRF 021-1(29)
PROJECT #: 021-1(29)
LOCATION: Bristol, VT

INSTALLER:
S.D. Ireland
193 Industrial Ave
Williston, VT 05495

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

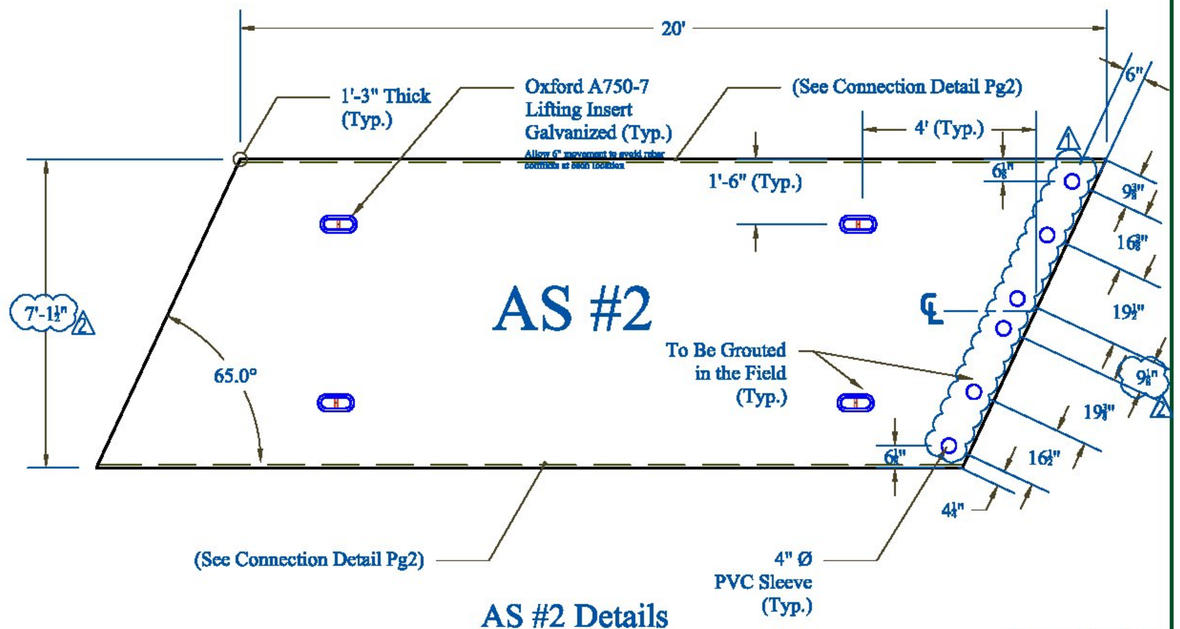
SD Ireland PRECAST

03/17/2015 | PLAN_ELEVATION | 2_OF_10



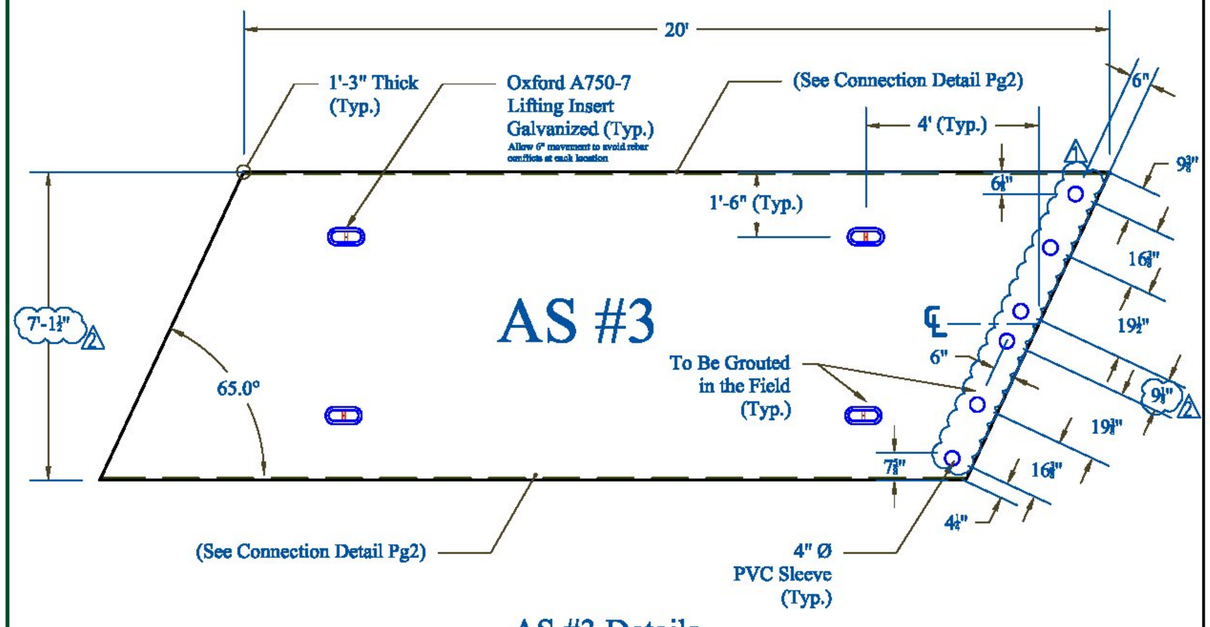
AS #1 Details

Weight: 26,840 lbs



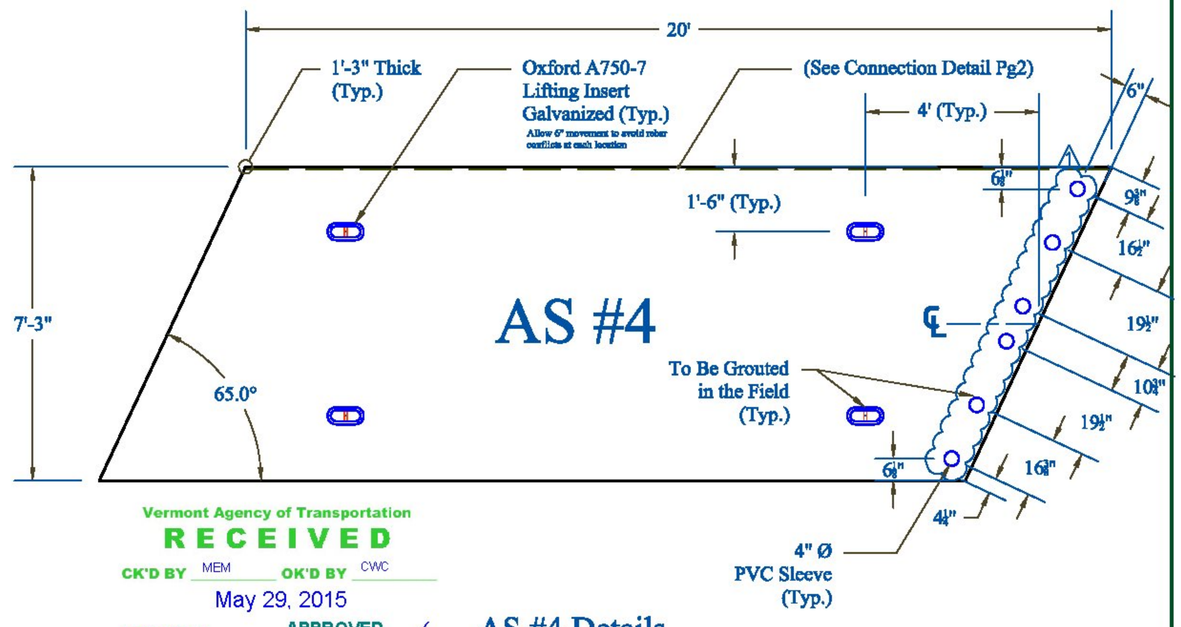
AS #2 Details

Weight: 25,925 lbs



AS #3 Details

Weight: 25,925 lbs



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AS #4 Details

Weight: 26,840 lbs

CONTRACTORS VTSPEC	Rev.	Date	By	Description
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PRECAST CONCRETE APPROACH SLAB SHOP DRAWINGS (SDI JOB #15738)

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ENGINEER: X

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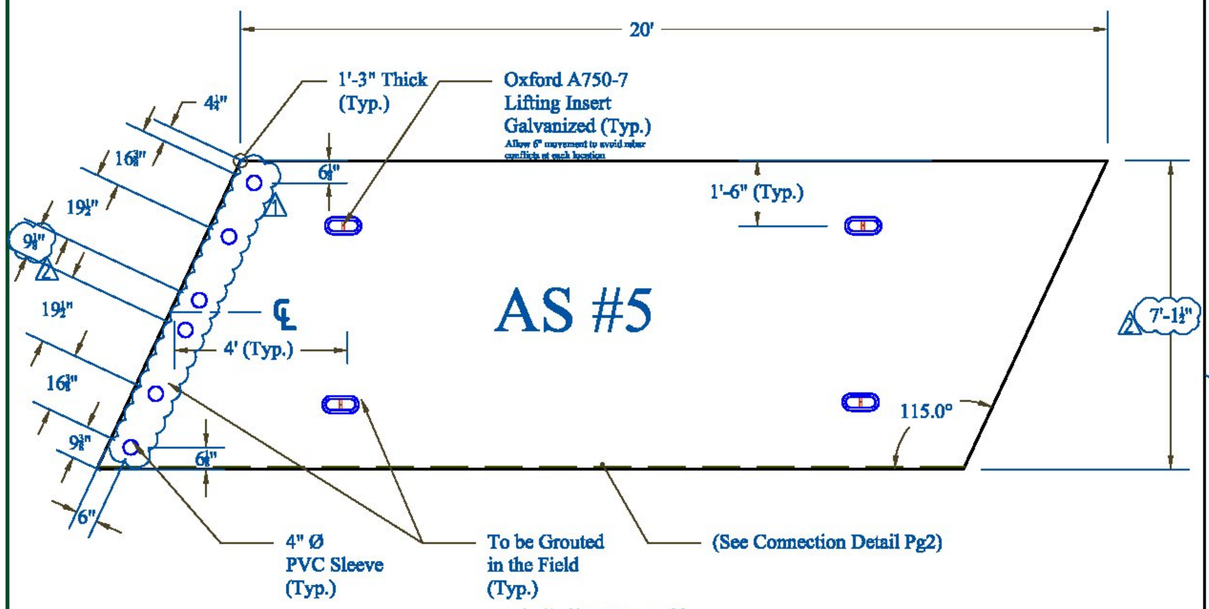
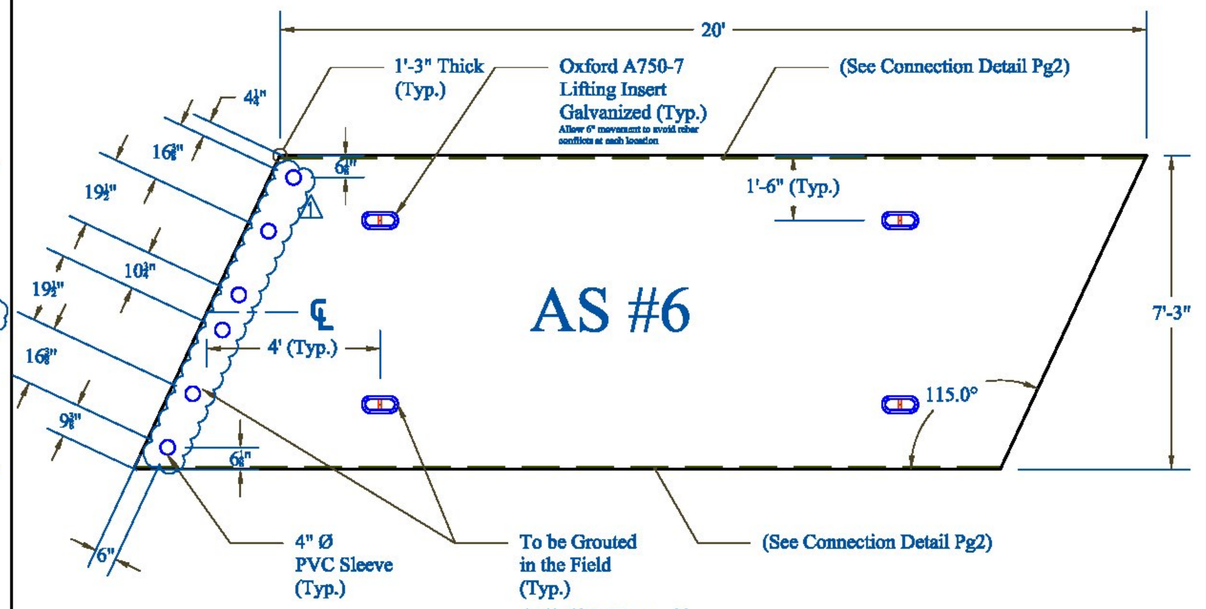
03/17/2015 | PANELS_1 | 3_OF_10



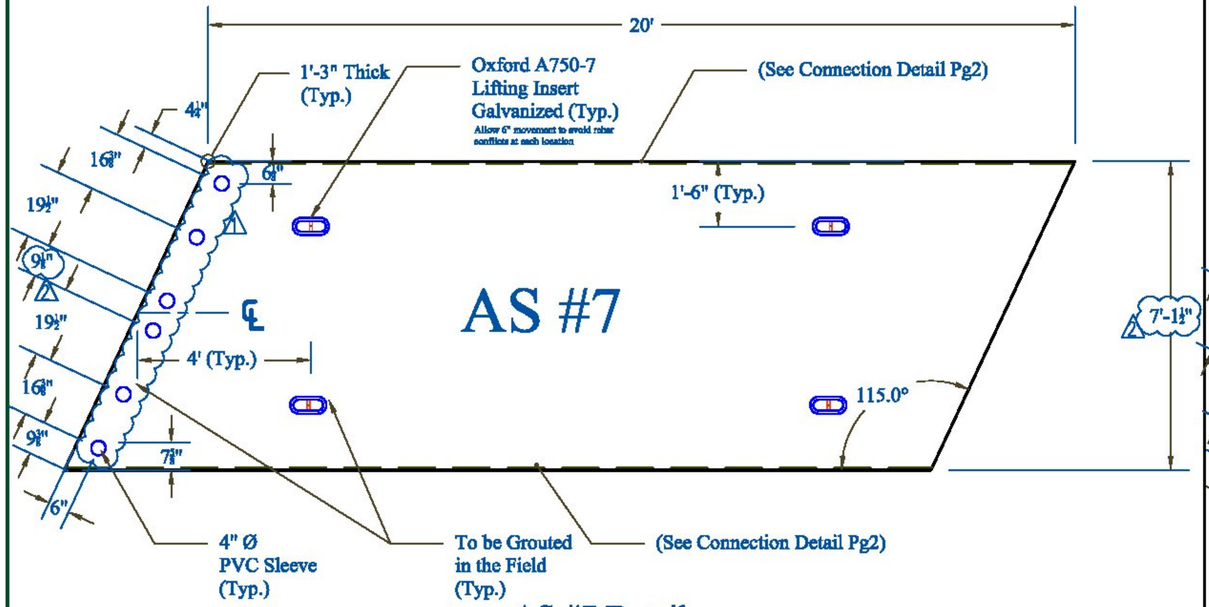
AS #5 Details

Weight: 25,925 lbs



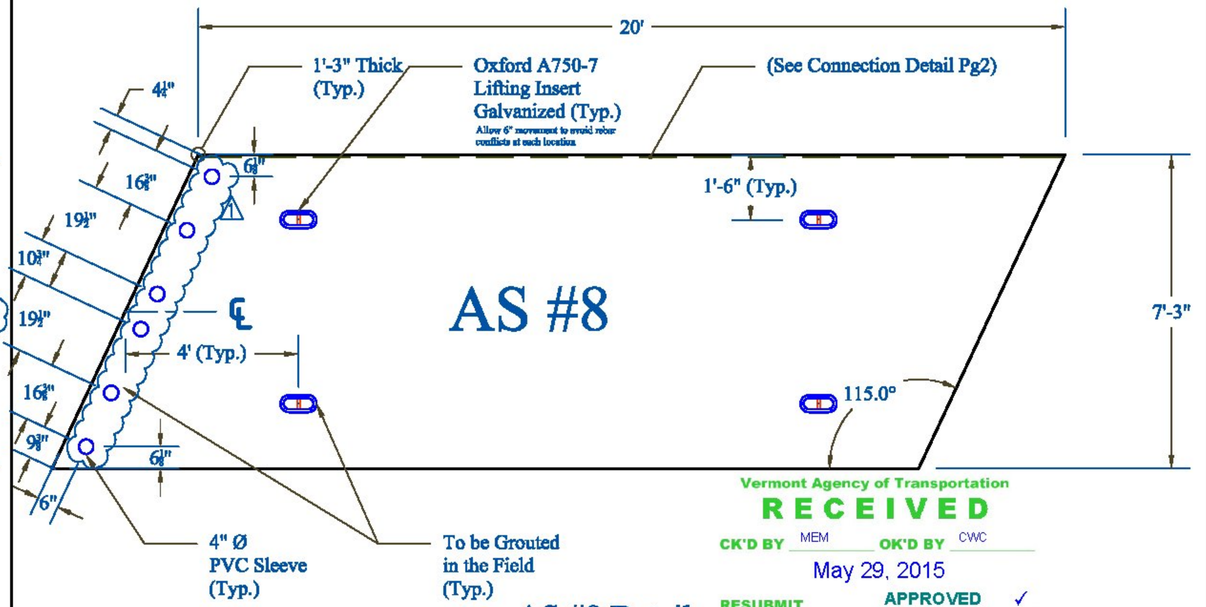
AS #6 Details

Weight: 26,840 lbs



AS #7 Details

Weight: 25,925 lbs



AS #8 Details

Weight: 26,840 lbs

Vermont Agency of Transportation
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PRECAST CONCRETE APPROACH SLAB SHOP DRAWINGS (SDI JOB #15738)

SUPERVISOR: E. Barendse
DETAILER: I. ADAMS
CHECKER: E. Barendse
ENGINEER: X

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03/17/2015 | PANELS_2 | 4_OF_10

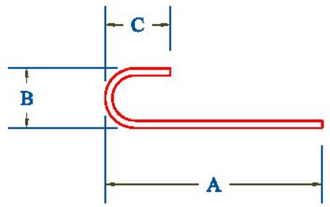
Reinforcing Schedule

Location	Mark	Description	Size	Spacing	Length	Qty.	A	B	C
CP Hook Bars	AS1401	2	#4	12"	67-1/8"	106*	30"	7-1/8"	30"
CP Sm Hook Bars	AS1402	2	#4	12"	66-1/8"	3	30"	6-1/8"	30"
AS#1/#4 T&B Mats	AS1501	Str	#5	12"	89-1/8"	79*	89-1/8"		
AS#2/#3 T&B Mats	AS1502	Str	#5	12"	87 1/2"	78	87 1/2"		
CP Hor Bars	AS1503	Str	#5	N/A	233-1/8"	12	233-1/8"		
Top Hor Bar	AS1601	Str	#6	12"	233"	34	233"		
Bottom Hor Hooks	AS1901	1	#9	10"	253-1/4"	36	233"	11-1/4"	9"
CP Hook Bars	AS2401	2	#4	12"	67-1/8"	105	30"	7-1/8"	30"
CP Sm Hook Bars	AS2402	2	#4	12"	66-1/8"	3	30"	6-1/8"	30"
AS#6/#8 T&B Mats	AS2501	Str	#5	12"	89-1/8"	80	89-1/8"		
AS#5/#7 T&B Mats	AS2502	Str	#5	12"	87 1/2"	76	87 1/2"		
CP Hor Bars	AS2503	Str	#5	N/A	233-1/8"	12	233-1/8"		
Top Hor Bar	AS2601	Str	#6	12"	233"	35*	233"		
Bottom Hor Hooks	AS2901	1	#9	10"	253-1/4"	37*	233"	11-1/4"	9"

*One Bar Added for Testing

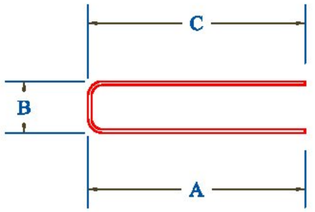
Rebar Bend Types

1

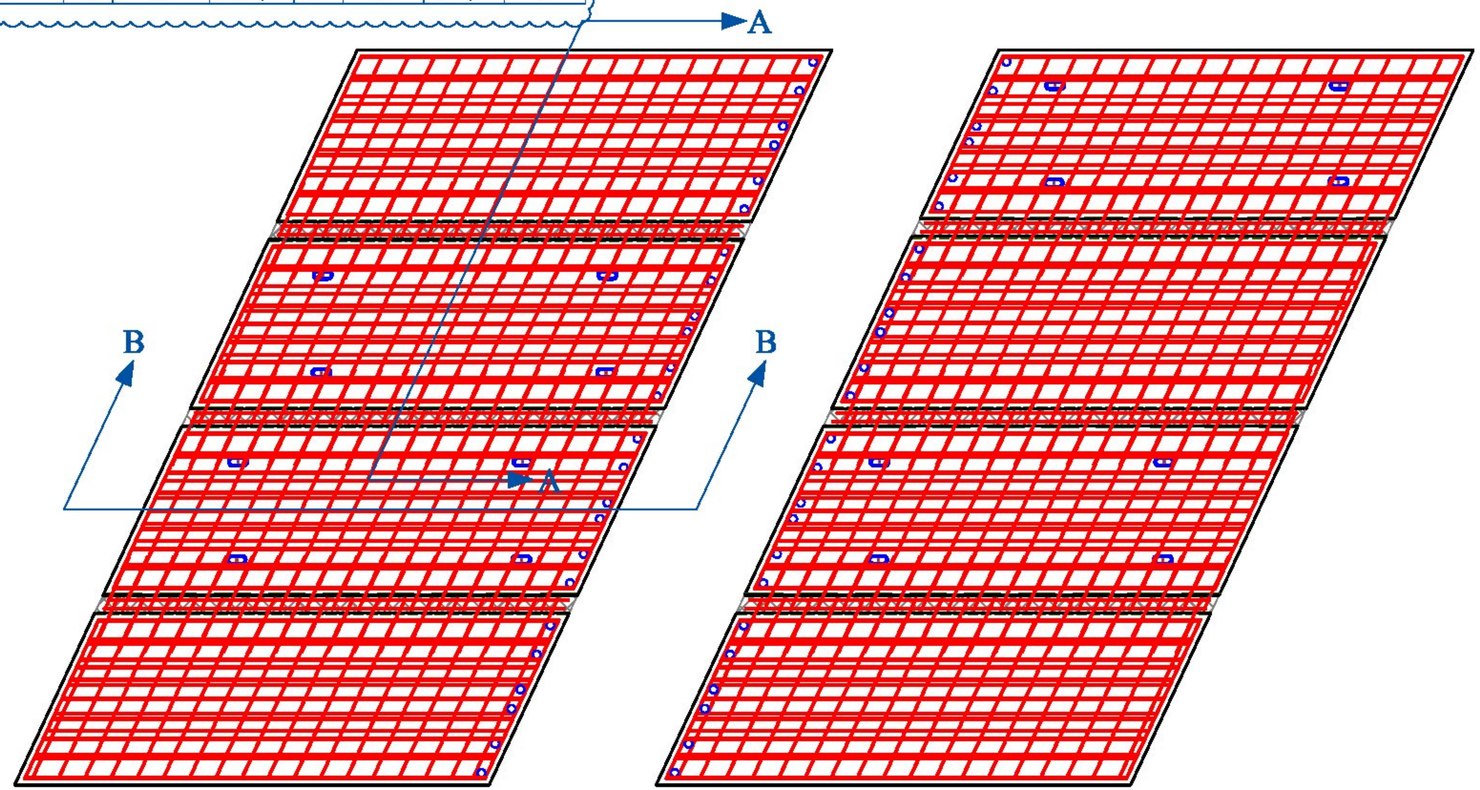


Str

2



Std. Bar Bend Ø	
Bar #	Bend Ø
#4	3"
#5	3¾"
#6	4½"
#9	9½"



Approach Slab 1

Approach Slab 2

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PRECAST CONCRETE APPROACH SLAB SHOP DRAWINGS (SDI JOB #15738)

SUPERVISOR: E. Barendse
DETAILER: I. ADAMS
CHECKER: E. Barendse
ENGINEER: X

PROJECT NAME: Bristol BRF 021-1(29)
PROJECT #: 021-1(29)
LOCATION: Bristol, VT

INSTALLER:
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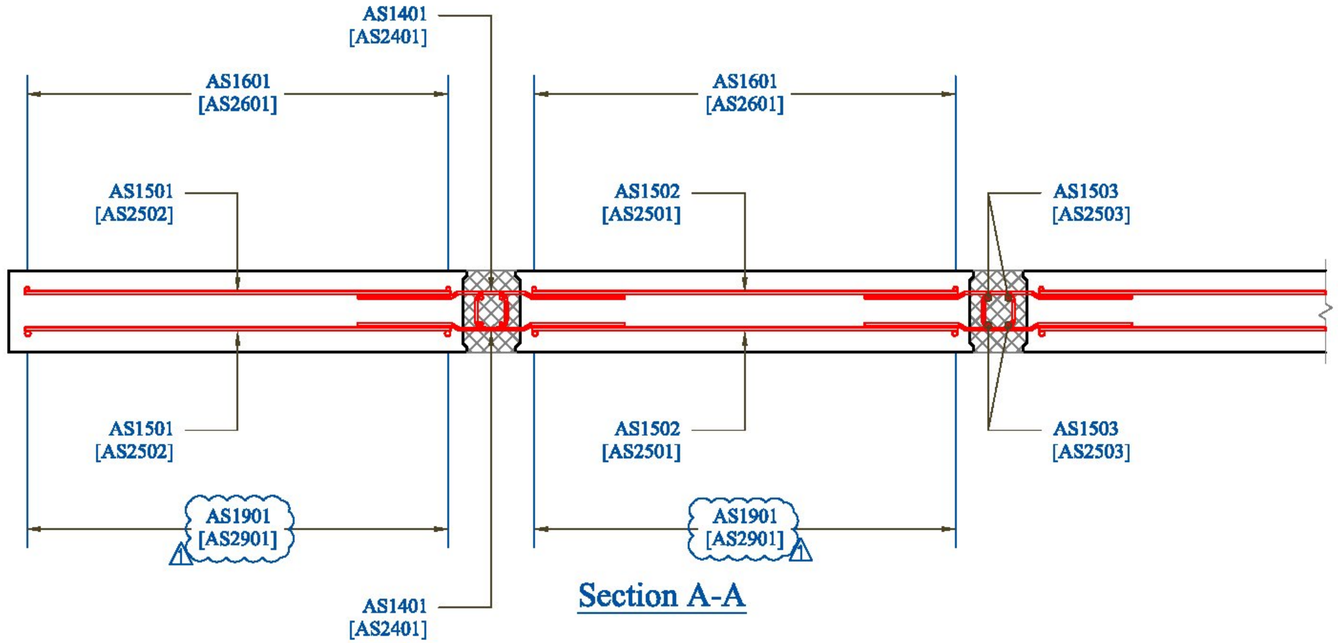
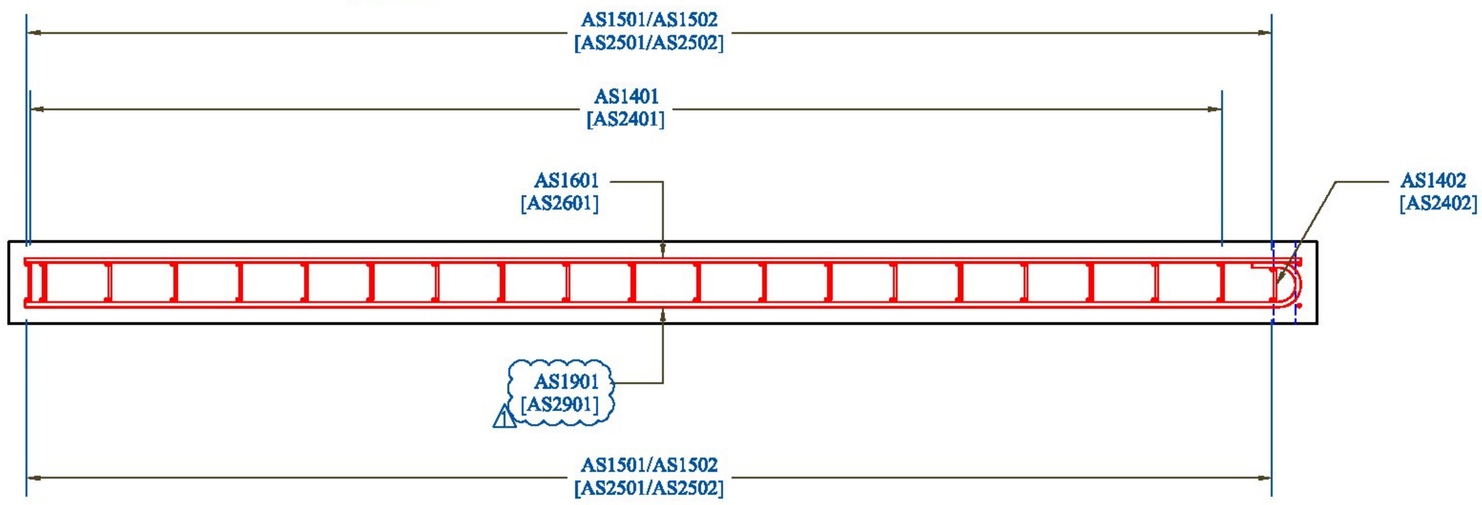
03/17/2015 | BAR_PLAN | 5_OF_10



Section A-A



Section B-B

Vermont Agency of Transportation
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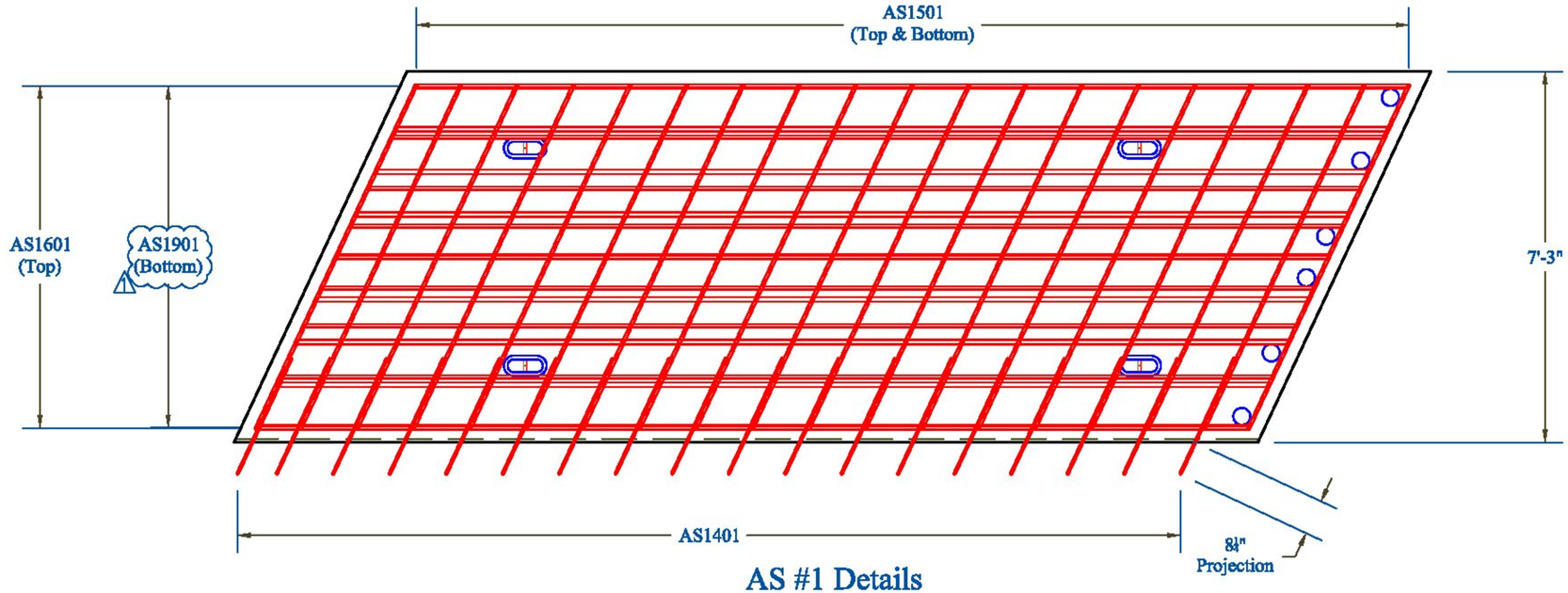
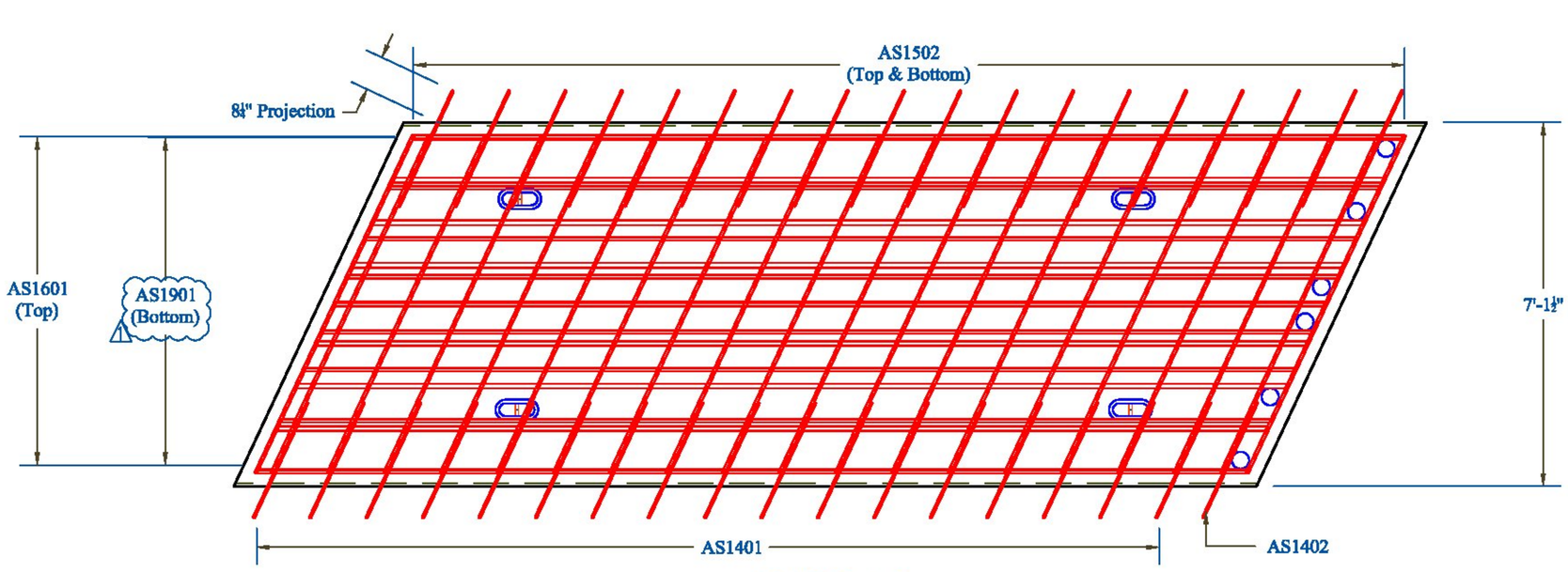
SD Ireland PRECAST

03/17/2015 | SECTION_VIEWS | 6_OF_10



AS #1 Details



AS #2 Details

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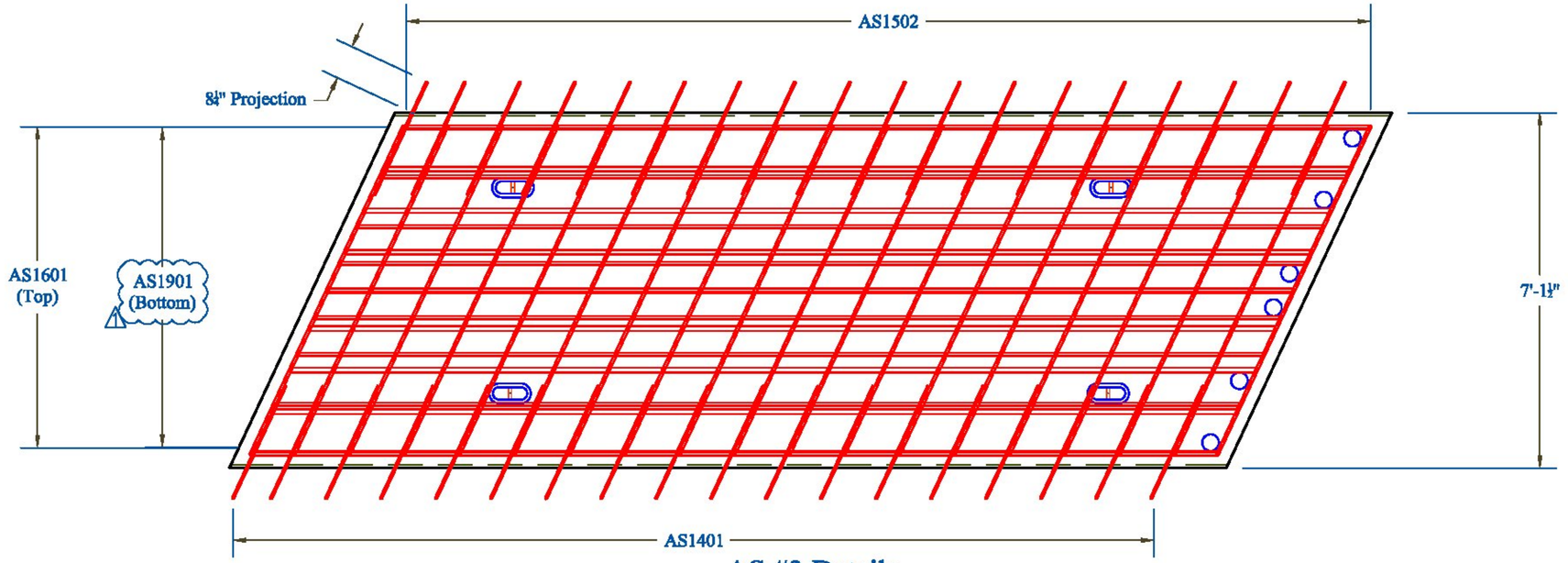
SD Ireland PRECAST

03/17/2015 | AS1_AS2 | 7_OF_10



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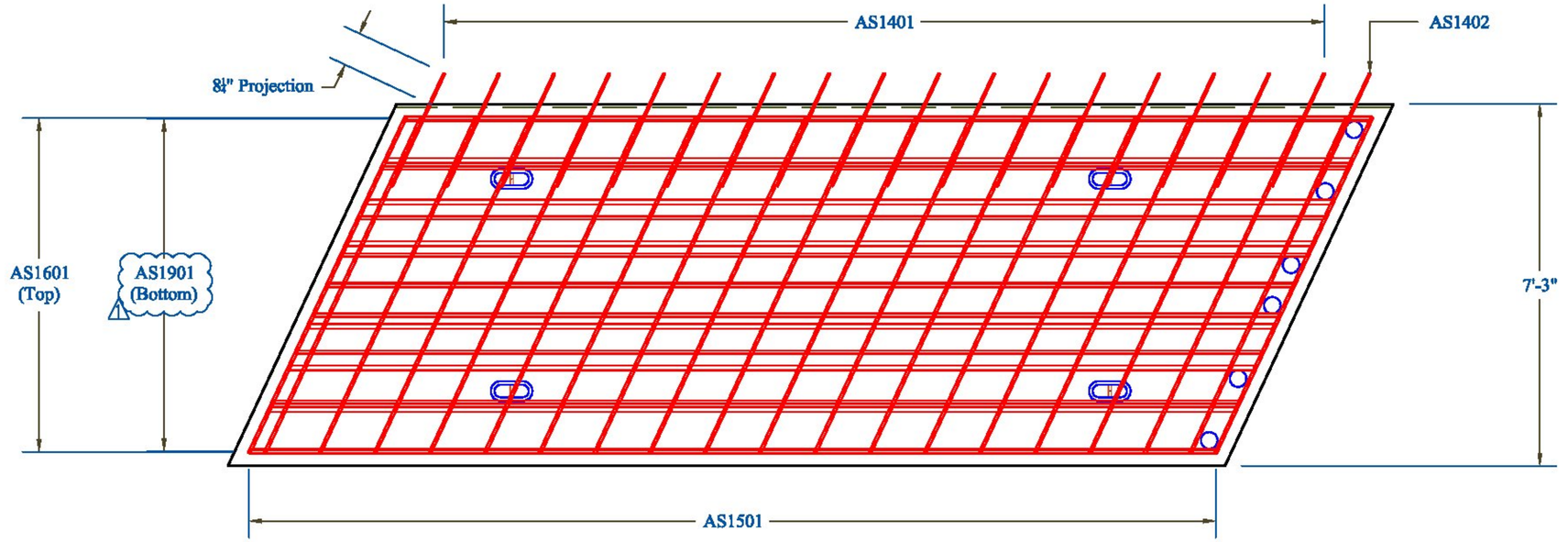

AS #4 Details

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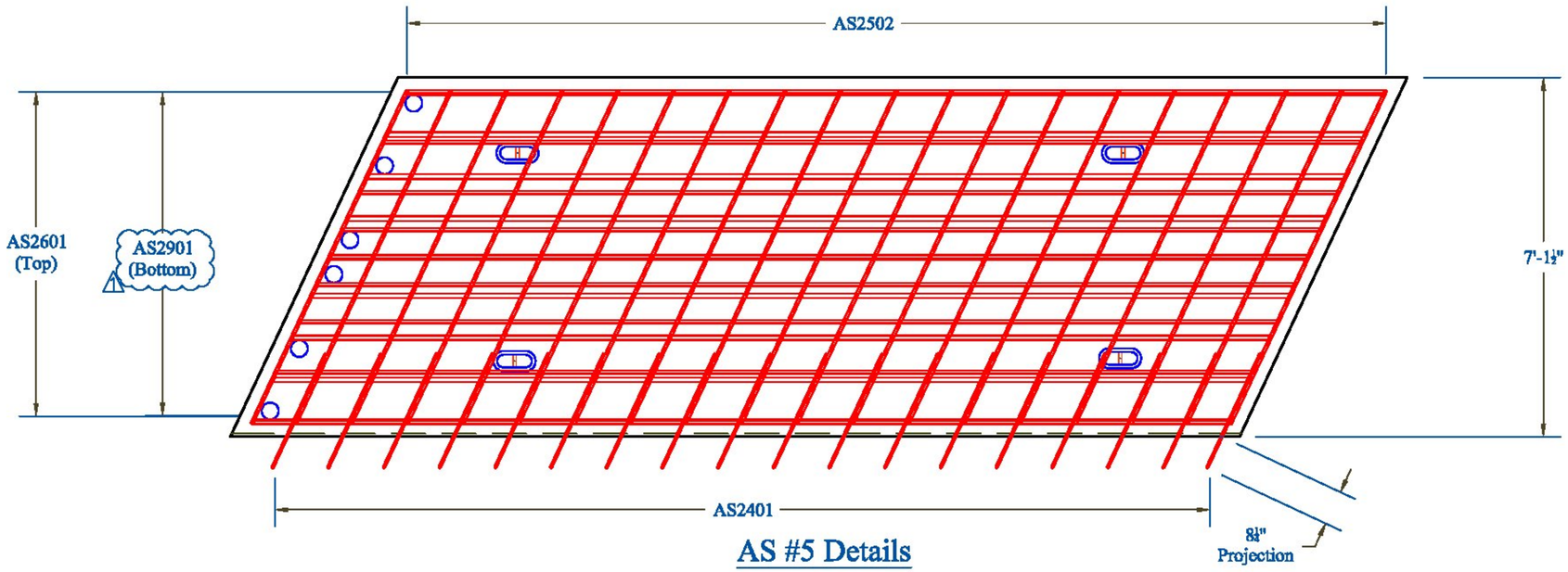
SD Ireland PRECAST

03/17/2015 | AS3_AS4 | 8_OF_10



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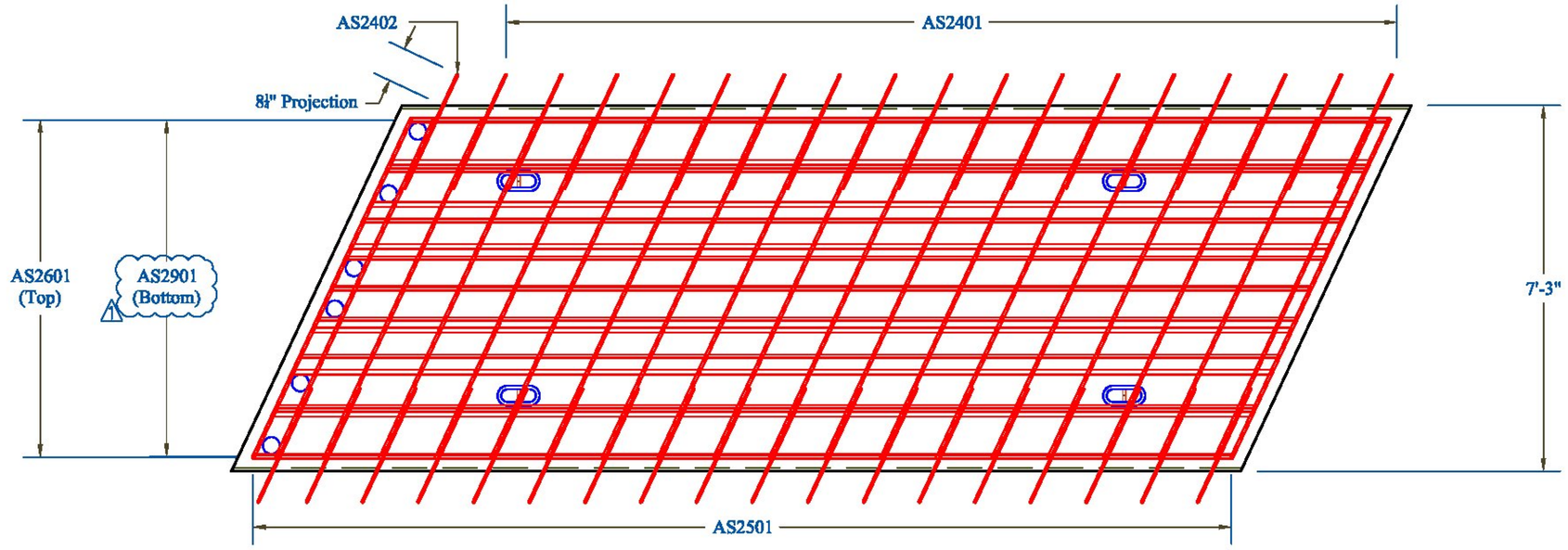

AS #6 Details

Vermont Agency of Transportation
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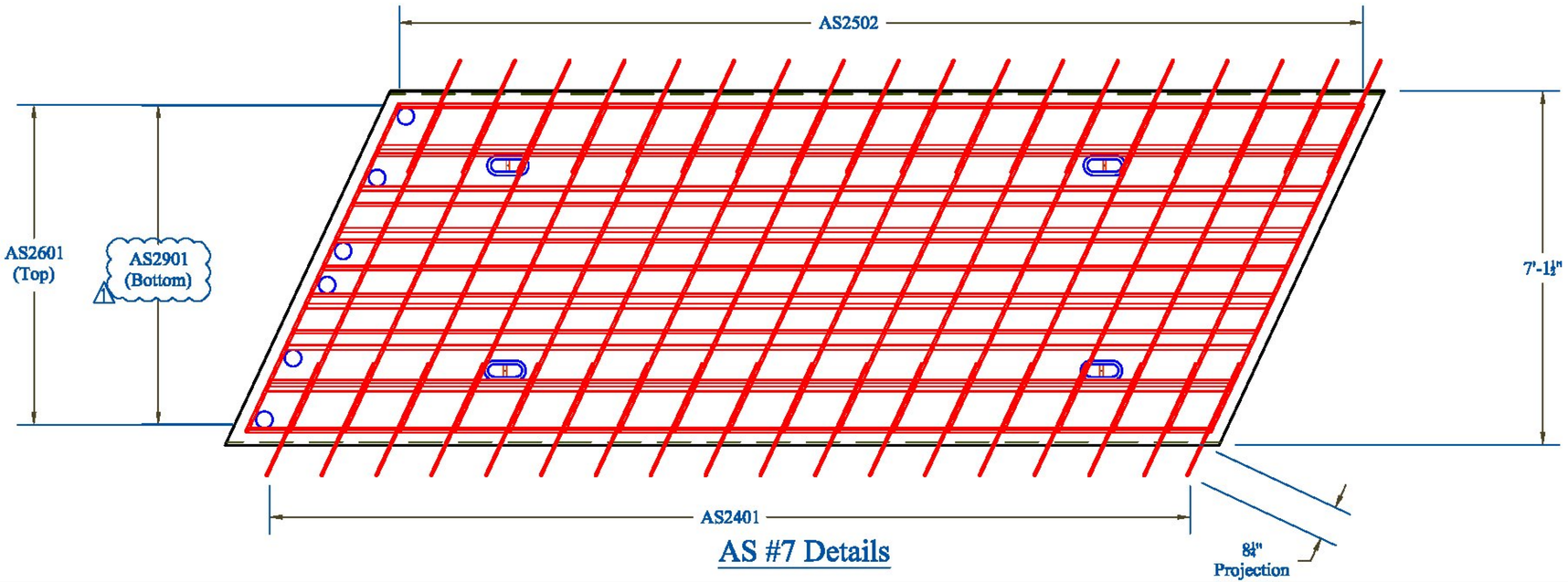
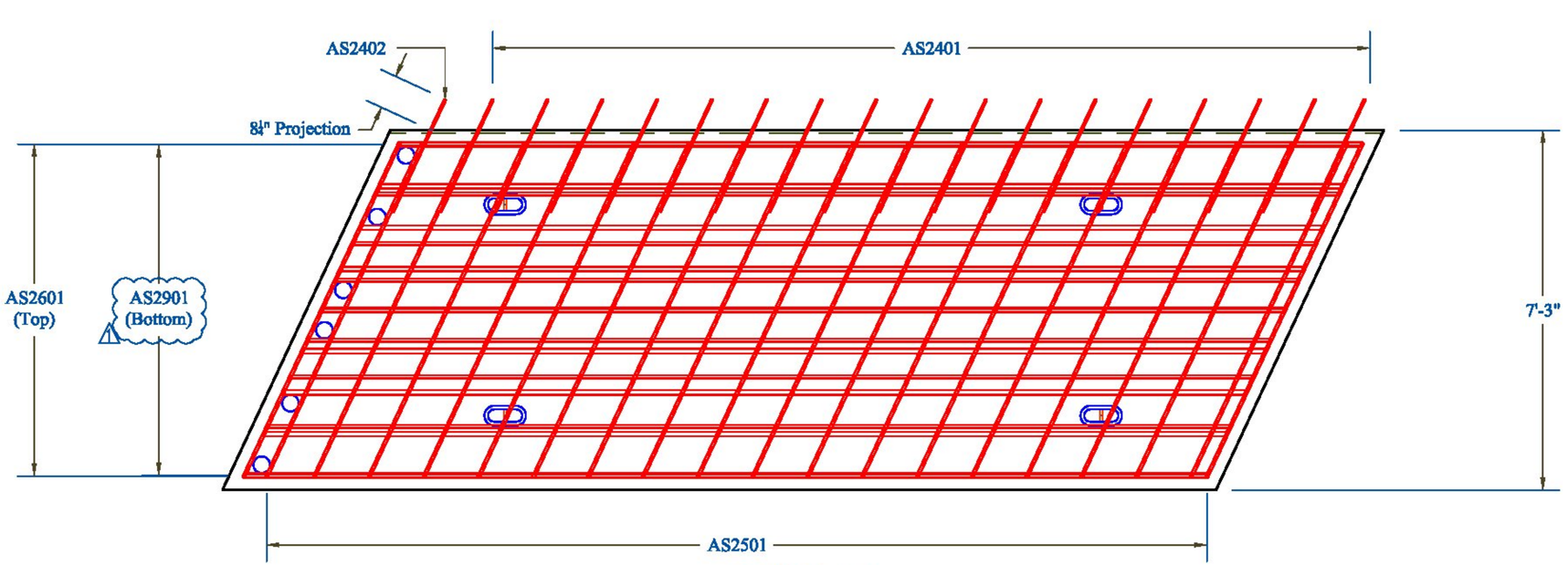
SD Ireland PRECAST

03/17/2015 | AS5_AS6 | 9_OF_10



AS #7 Details



AS #8 Details

Vermont Agency of Transportation
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CK'D BY MEM OK'D BY CWC
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SD Ireland PRECAST

03/17/2015 | AS7_AS8 | 10_OF_10

GENERAL NOTES

1. ALL BEARINGS SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS, LATEST EDITION, SECTIONS 531 AND 731 AND THE CONTRACT PRINTS, UNLESS NOTED OTHERWISE.

2. MATERIALS:
   ELASTOMER.....50 DURO NATURAL, GRADE 4 (110 ± 15 psi)
   CARBON STEEL SHIMS.....ASTM A1011, GR. 50

3. TOLERANCES:
   LAMINATED ELASTOMERIC PADS:
   - DUROMETER.....± 5
   - OVERALL THICKNESS (VERTICAL) OVER 1 1/4".....-0, +1/4"
   - OVERALL LENGTH & WIDTH (HORIZONTAL) 36" OR LESS.....-0, +1/4"
   - THICKNESS OF INDIVIDUAL LAYERS OF ELASTOMER.....±1/8"
   - PARALLELISM:
     - TOP.....0.005 rad
     - SIDES.....1/4"
   - EDGE COVER.....-0, +1/8"

4. MARKINGS:
   EACH BEARING SHALL BE PERMANENTLY MARKED IN A LOCATION THAT IS VISIBLE WHEN THE DEVICE IS INSTALLED IN THE COMPLETED STRUCTURE. MARKING SHALL BE SEP STANDARD:
   - CONTRACT/ORDER #
   - LOT#
   - BEARING ID # (MK. #)
   - LOCATION/BRIDGE #
   - ELASTOMER TYPE AND GRADE
   - ORIENTATION (WHERE APPLICABLE)

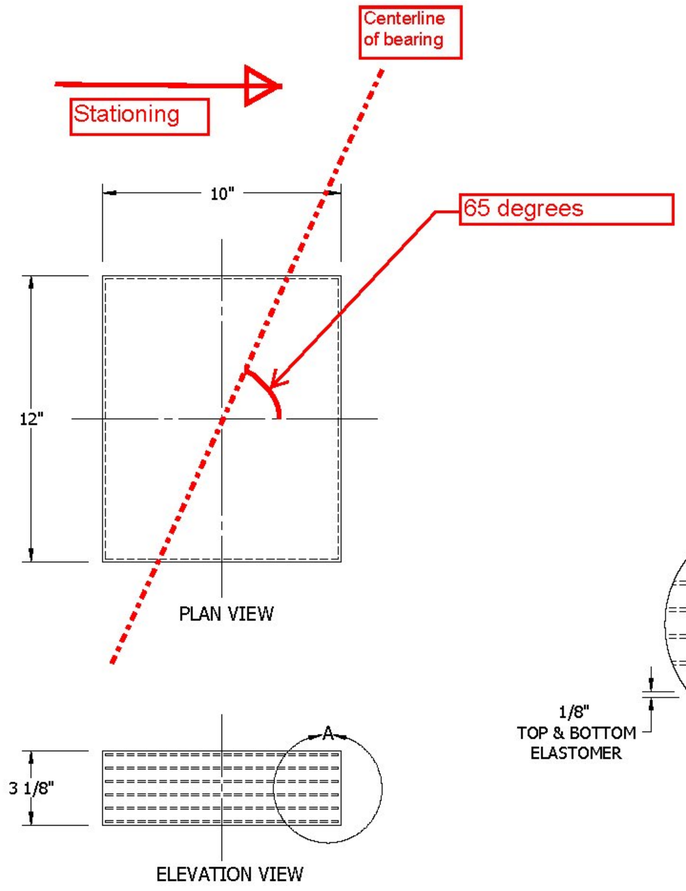
5. TESTING: PER SPECIFICATIONS CITED IN GENERAL NOTE #1.

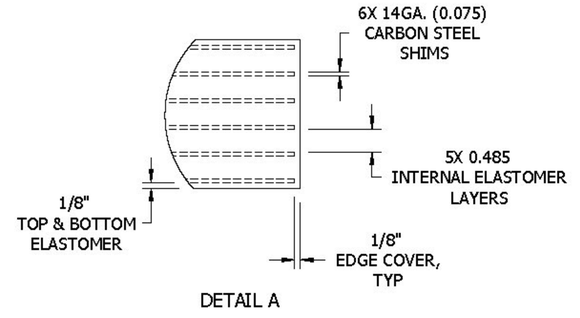
6. SEP TO PROVIDE ONLY THE ITEMS SHOWN ON THIS DRAWING.

7. SHIPPING: BEARINGS SHALL BE PACKAGED IN SUCH A MANNER TO ENSURE THAT DURING SHIPMENT AND STORAGE THE BEARINGS WILL BE PROTECTED AGAINST DAMAGE FROM HANDLING, WEATHER OR ANY NORMAL HAZARD.

8. REPRESENTATIVE
   CUSTOMER SERVICE: STEVE BOWMAN.....903-677-4318
   TECHNICAL: MIKE SPELLMAN.....903-677-4342

REVISIONS			
REV.	DESCRIPTION	BY	DATE
A	SUBMITTAL	AL	3/25/2015





MK.01
BEARING PADS
(36) REQ'D

Vermont Agency of Transportation
RECEIVED
CK'D BY MEM OK'D BY CWC
Mar. 25, 2015
RESUBMIT _____ APPROVED AS NOTED ✓
BY C. Carlson DATE 04-08-2015

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED

NOTE

INFORMATION SET FORTH IN THIS DRAWING IS PROPRIETARY WITH Seismic Energy Products, Inc. THIS DRAWING SHALL NOT BE REPRODUCED, COPIED, LOANED OR SUBMITTED TO OUTSIDE PARTIES FOR EXAMINATION WITHOUT OUR CONSENT EXCEPT FOR THE PURPOSE FOR WHICH IT WAS INTENDED.

BRIDGE NO.	6
COUNTY	ADDISON
PROJECT NO.	BRF 021-1(29)

Seismic Energy Products, Inc.
STRUCTURAL BEARINGS FOR BRIDGES & BUILDINGS
ATHENS, TX PHONE: 903-675-8571

BEARING ASSY FOR:
STATE OF VERMONT AGENCY OF TRANSPORTATION
BRISTOL

CONTRACTOR: S.D. IRELAND BROTHERS CORP

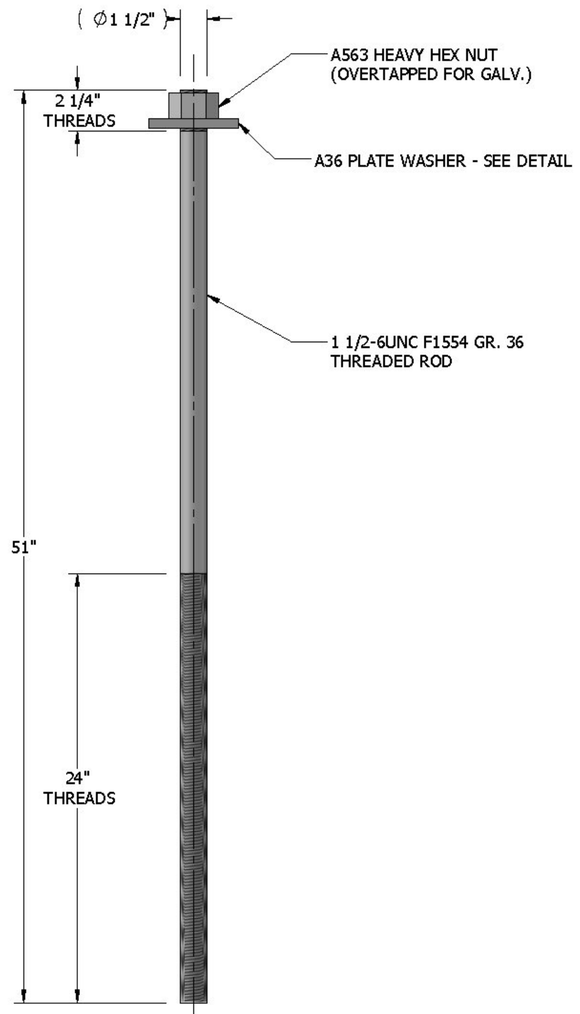
DRAWN ALUTTRELL	DATE 3/17/15	PO # S. QT.
CHECKED .	DATE .	SO NO. & ST. **61921 VT**
REVIEWED .	DATE .	SHEET 1 OF 2

TOLERANCES:

ANCHOR ROD LENGTH.....-0, +1/4"
WASHER:
VERTICAL.....±1/16"
HORIZONTAL.....±1/4"
FLATNESS.....0.001 x NOMINAL
HOLE/SLOT POSITION.....±1/16"
HOLE/SLOT SIZE.....-0, +1/16"

GALVANIZE: PER ASTM A123 OR A153 AS APPLICABLE.

REVISIONS			
REV.	DESCRIPTION	BY	DATE
A	SUBMITTAL	AL	3/25/2015



MK.02
ANCHOR RODS
GALVANIZED
(18) REQ'D

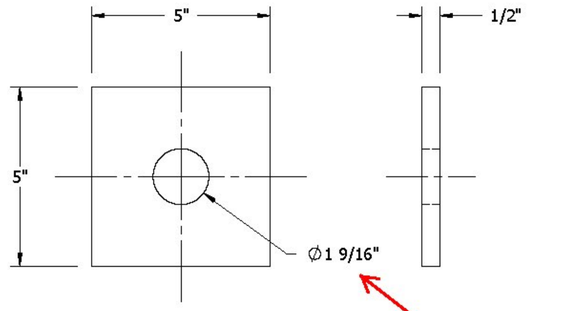


PLATE WASHERS
GALVANIZED
(18) REQ'D

we specify 1.5" hole

ALL DIMENSIONS ARE IN INCHES
UNLESS OTHERWISE SPECIFIED

NOTE

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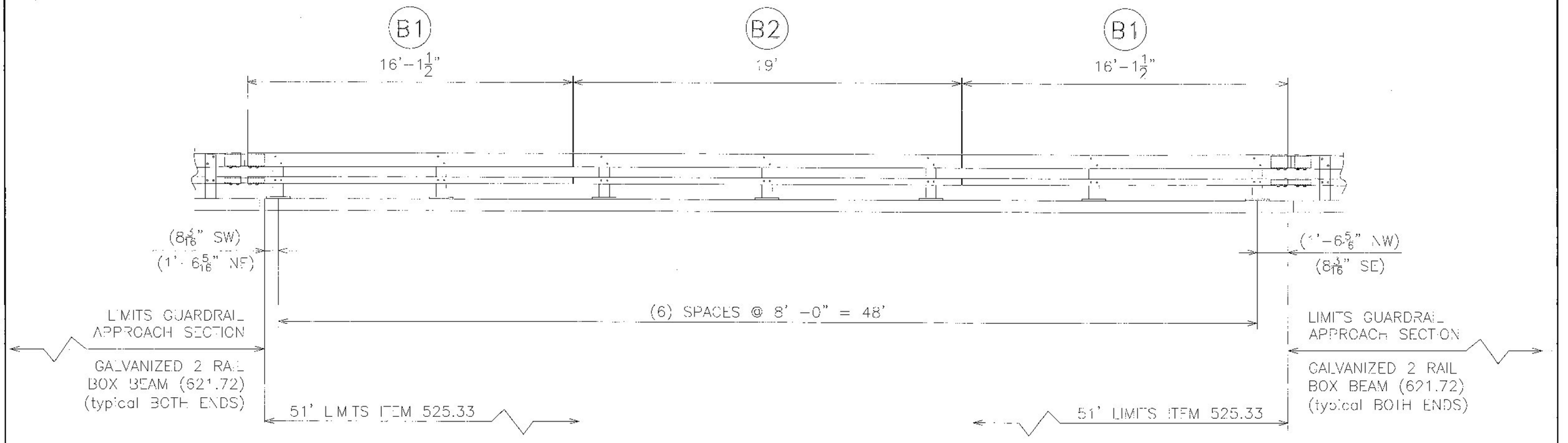
Seismic Energy Products, Inc.
STRUCTURAL BEARINGS FOR BRIDGES & BUILDINGS
ATHENS, TX PHONE: 903-675-8571

BEARING ASSY FOR:
STATE OF VERMONT AGENCY OF TRANSPORTATION
BRISTOL

CONTRACTOR: S.D. IRELAND BROTHERS CORP

BRIDGE NO. 6	DRAWN ALUTTRELL	DATE 3/17/15
COUNTY ADDISON	CHECKED .	DATE .
PROJECT NO. BRF 021-1(29)	REVIEWED .	DATE .

PO # S. QT.
SO NO. & ST. **61921 VT**
SHEET 2 OF 2



B.I.N. #6

TYPICAL SIDE RAILING ELEVATION

LOOKING AT FACE OF RAIL FROM CENTERLINE OF ROAD

Vermont Agency of Transportation
RECEIVED
CK'D BY MEM OK'D BY CWC
Apr. 16, 2015
RESUBMIT APPROVED ✓
BY C. Carlson DATE 05-06-2015

No.	Remarks	Date
0	Initial submittal	4/15/15

REVISIONS — APPLIES TO SET

HIGHWAY SAFETY CORP
GLASTONBURY, CT
860-633-9445

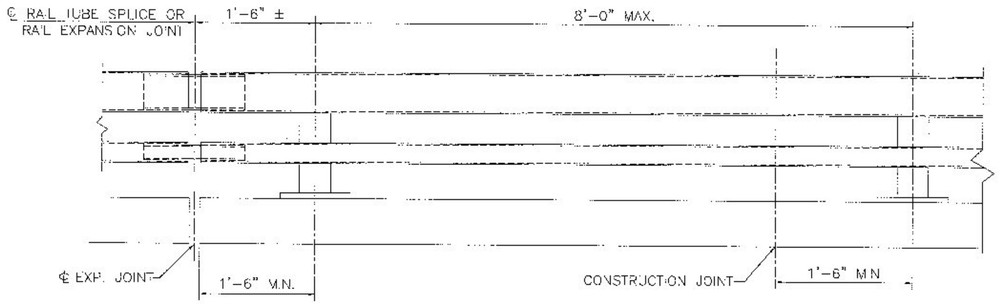
ITEM 525.33 2-RAIL BRIDGERAIL GALVANIZED
BRIDGE REHABILITATION
RT. 116 OVER LITTLE NOTCH CREEK
B.I.N. #6 P.I.N. BRF 021-1 (29)
TOWN OF BRISTOL, ADDISON COUNTY

AISC CERTIFIED FABRICATOR

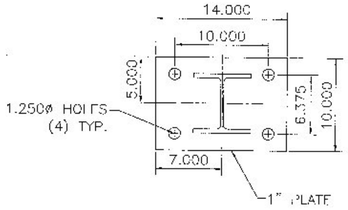
GENERAL CONTRACTOR
SUB CONTRACTOR LAFAYETTE

HSE JOB NO. 2040
SHEET NO. 1 of 4

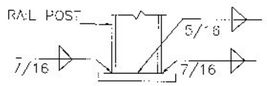
DRAWN	CHECKED	DATE	SCALE	SIZE
MKT		04-15-15	NONE	D



BRIDGE RAILING ELEVATION



POST AND BASE PLATE



BASE WELD DETAIL

NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.

2. PRIOR TO GALVANIZING, ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 1/16" RADIUS AND BE FREE OF BURRS.

3. ALL POSTS SHALL BE SET NORMAL TO GRADE.

4. SECTIONS OF RAIL TUBES SHALL BE ATTACHED TO A MINIMUM OF TWO (2) RAIL POSTS AND, PREFERABLY TO AT LEAST FOUR (4) POSTS.

5. RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING THE END OF AN INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPERSTRUCTURE EXPANSION JOINTS. EXPANSION JOINT WIDTH SHALL BE 4" AT 45° AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.

6. HOLES IN RAILS FOR RAIL TUBE ATTACHMENT SHALL BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC RICH PAINT DURING INSTALLATION.

7. RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.

8. RAIL TUBES SHALL BE ATTACHED USING 3/4" FULL DIAMETER BODY ASTM A449 ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE TUBE. HOLES IN POSTS SHALL BE 1/16" LARGER THAN THE BOLT SIZE.

9. ANY BENDING OR CURVING OF RAIL SHALL BE DONE IN A FABRICATION PLANT IN ACCORDANCE WITH SUBMITTED PROCEDURES.

10. THE MINIMUM DISTANCE FROM A POST TO AN EXPANSION JOINT SHALL BE SUCH TO MAINTAIN MINIMUM EDGE DISTANCE OF 5" FROM ANY ANCHOR STUD TO THE END OF THE SLAB, OR TO THE EXPANSION JOINT RECESS POUR, IF ONE IS USED.

11. A DELINEATOR (SEE VAOT STANDARD DRAWING G-1 FOR DETAILS) SHALL BE INSTALLED AT NEAREST POST TO 30 FT SPACING. WHITE IS TO BE INSTALLED ON THE DRIVER'S RIGHT. FOR ONE WAY BRIDGES, YELLOW IS TO BE INSTALLED ON THE DRIVER'S LEFT. PAYMENT SHALL BE INCIDENTAL TO OTHER ITEMS.

12. THIS RAILING MEETS THE REQUIREMENTS FOR A TL-4 SERVICE LEVEL.

MATERIALS

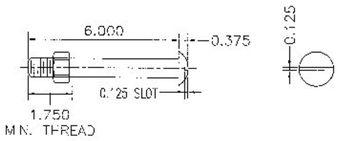
RAIL TUBES	ASTM A500 GRADE B OR ASTM A501
RAIL POSTS AND BASE PLATES	ASTM A709/A709M, GRADE 50
ALL OTHER SHAPES AND PLATES	ASTM A709/A709M, GARDE 36
ANCHOR STUDS	ASTM A449
ALL OTHER BOLTS (UNLESS NOTED)	AASHTO M164, TYPE1

NUTS FOR AASHTO M164 BOLTS AND FOR ANCHOR STUDS SHALL COMPLY WITH AASTHO M291 (ASTM A563).

WASHERS SHALL COMPLY WITH AASHTO M293 (ASTM F436) SPECIFICATIONS.

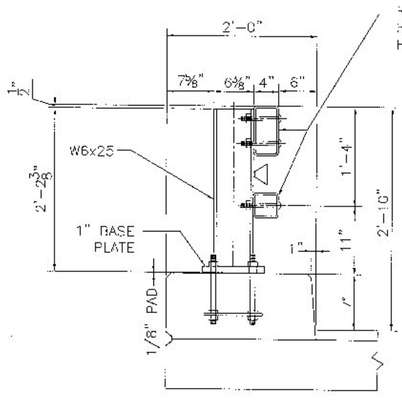
1/8" PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.01 OR 731.02.

RAIL POSTS AND BASE PLATES SHALL BE TESTED FOR IMPACT PROPERTIES IN ACCORDANCE WITH ASTM A370 CHARPY IMPACT TESTING USING TYPE A SPECIMEN.

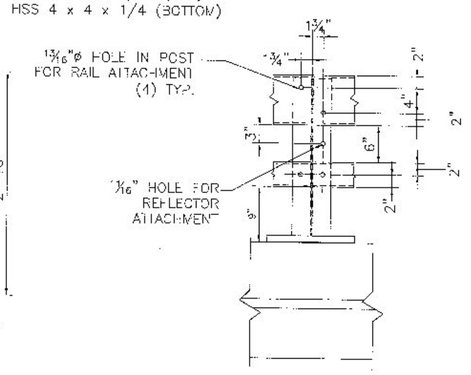


3/4" DIA. A449
ROUND HEAD BOLT

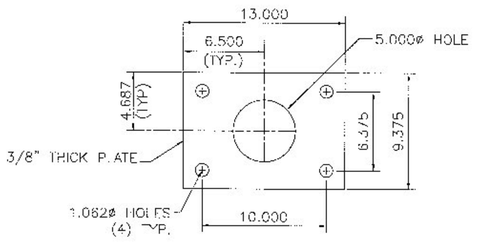
(WITH WASHER AND PREVAILING TORQUE TYPE LOCK NUT)
(SEE NOTE #8)
ONLY FULL DIAMETER BODY BOLTS WILL BE ALLOWED.



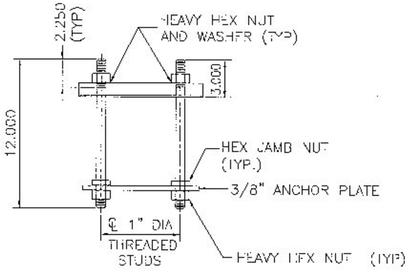
TYPICAL SECTION



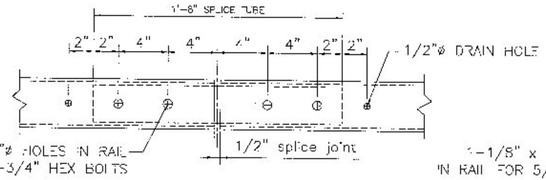
ELEVATION



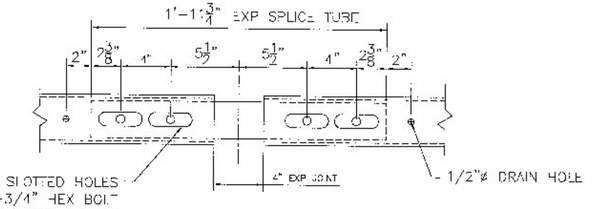
ANCHOR PLATE



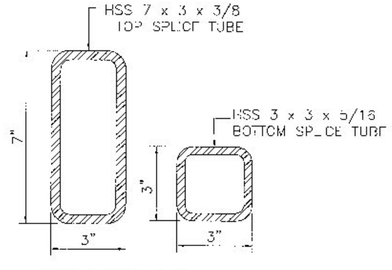
RAIL POST ANCHORAGE



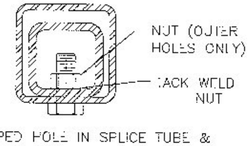
FIXED SPLICE JOINT DETAIL
BOTTOM VIEW



EXPANSION SPLICE DETAIL
BOTTOM VIEW

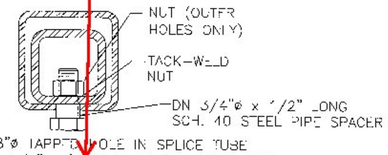


RAIL TUBE SPLICE SECTION



5/8"ø TAPPED HOLE IN SPLICE TUBE & 3/4"ø HOLE IN RAIL TUBE FOR BOLT & PLAIN HARDENED WASHER

FIXED SPLICE JOINT SECTION



5/8"ø TAPPED HOLE IN SPLICE TUBE AND 1 1/8" x "C" SLOT IN RAIL TUBE FOR BOLT AND PLAIN HARDENED WASHER

EXPANSION JOINT SECTION

where is "C" specified? should be 3 1/2"

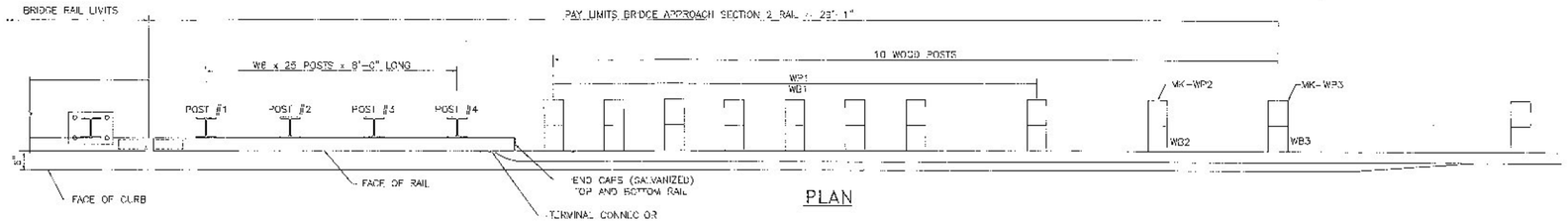
Vermont Agency of Transportation
RECEIVED
CK'D BY MEM OK'D BY CWC
Apr. 16, 2015
RESUBMIT APPROVED AS NOTED ✓
BY C. Carlson DATE 05-06-2015

HIGHWAY SAFETY CORP
GLASTONBURY, CT
860-633-9445

ITEM 525.33 2-RAIL BRIDGERAIL GALVANIZED
BRIDGE REHABILITATION
RT. 116 OVER LITTLE NOTCH CREEK
B.I.N. #6 P.I.N. BRF 021-1 (29)
TOWN OF BRISTOL, ADDISON COUNTY

NSSC CERTIFIED FABRICATOR

GENERAL CONTRACTOR			NSSC JOB NO.	2040
SUB CONTRACTOR	LAFAYETTE		SHEET NO.	2 of 4
DRAWN MKT	CHECKED	DATE 04-15-15	SCALE NONE	SIZE D



PLAN

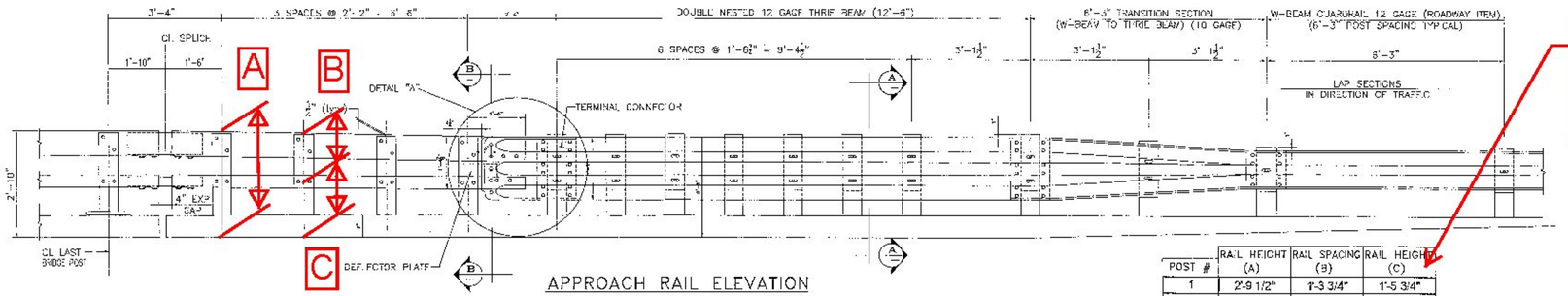
NOTES:
1. PAYMENT FOR GUARDRAIL APPROACH SECTION – GALVANIZED 2 RAIL, SHALL INCLUDE THE TERMINAL CONNECTOR, THE CONNECTION PLATE, THE DEFLECTOR PLATE, RAIL, POSTS, BLOCKS AND ATTACHMENT HARDWARE.

2. ALL APPROACH RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW.

3. TUBE AND STEEL POST MATERIALS, DIMENSION SIZES AND NOTES SHALL BE THE SAME AS THOSE OF THE BRIDGE RAIL UNLESS OTHERWISE NOTED.

4. APPROACH RAIL BOLTS SHALL BE ASTM A307 GRADE A AND NUTS SHALL BE AASHTO M291 (ASTM 563 GRADE A OR BETTER (GALVANIZED). WASHERS SHALL BE ASTM F844.

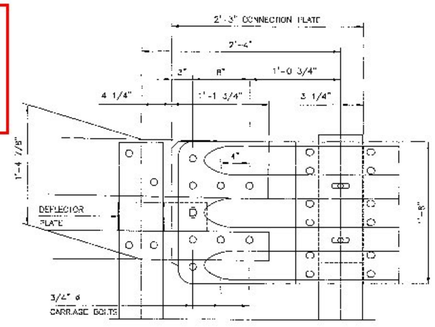
5. WELD TOP SPLICE BAR TO FIT BEND. USE COMPLETE PENETRATION WELD (B-U2).



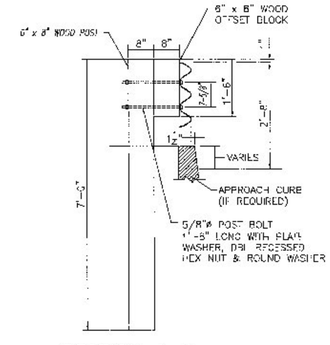
APPROACH RAIL ELEVATION
LEADING END (RIGHT) IS SHOWN
DEPARTURE END (LEFT) SIMILAR BUT OPPPOSITE HAND

POST #	RAIL HEIGHT (A)	RAIL SPACING (B)	RAIL HEIGHT (C)
1	2'-9 1/2"	1'-3 3/4"	1'-5 3/4"
2	2'-9"	1'-3 1/2"	1'-5 1/2"
3	2'-8 1/2"	1'-3 3/16"	1'-5 5/16"
4	2'-8"	1'-2 7/8"	1'-5 1/8"

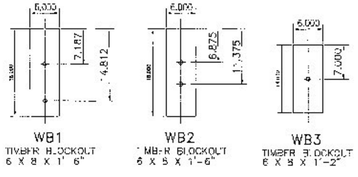
where are "A", "B" and "C" shown?



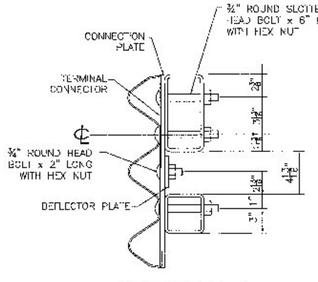
DETAIL A



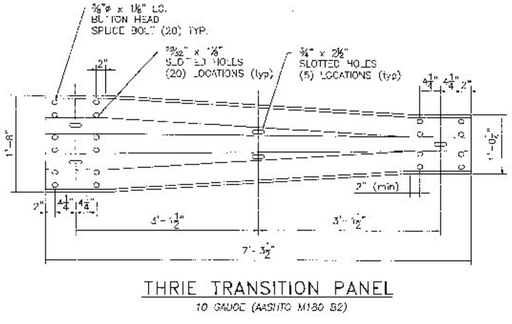
SECTION A–A



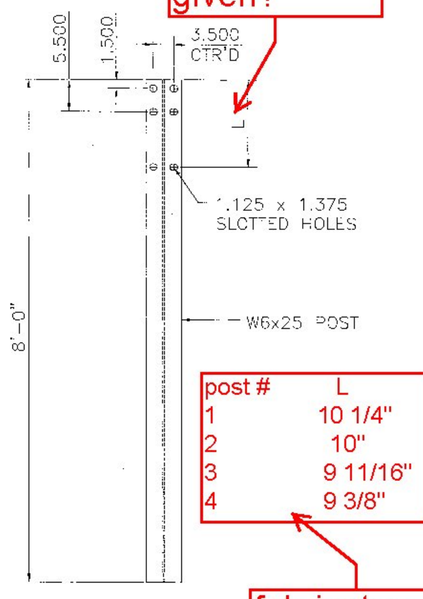
WOOD BLOCK DETAILS



SECTION B–B



THRIE TRANSITION PANEL
10 GAUGE (AASHTO M180 B2)

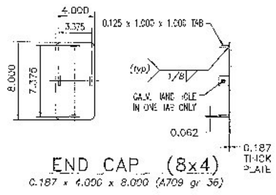


STEEL POST

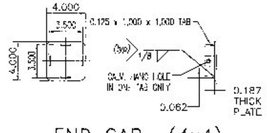
where is "L" given?

post #	L
1	10 1/4"
2	10"
3	9 11/16"
4	9 3/8"

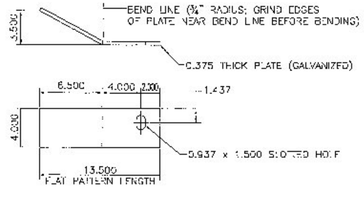
fabricator, please verify



END CAP (8x4)
0.187 x 4.000 x 8.000 (A709 gr 36)



END CAP (4x4)
0.187 x 4.000 x 4.000 (A709 gr 36)



DEFLECTOR PLATE
0.375 x 4.000 x 13.500 (A709 gr 36)
RIGHT HAND APPROACH SHOWN – LEFT HAND BENT OPPOSITE

Vermont Agency of Transportation
RECEIVED
CK'D BY MEM OK'D BY CWC
Apr. 16, 2015
RESUBMIT
APPROVED AS NOTED ✓
BY C. Carlson
DATE 05-06-2015

HIGHWAY SAFETY CORP
GLASTONBURY, CT
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ITEM 525.33 2-RAIL BRIDGERAIL GALVANIZED
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TOWN OF BRISTOL, ADDISON COUNTY

CERTIFIED FABRICATOR

GENERAL CONTRACTOR
LAFAYETTE

SHOP DWG NO. 2040
SHEET NO. 3 of 4

DRAWN	CHECKED	DATE	SCALE	SIZE
MKT		04-15-15	NONE	D

BILL OF MATERIAL

BRIDGE #6

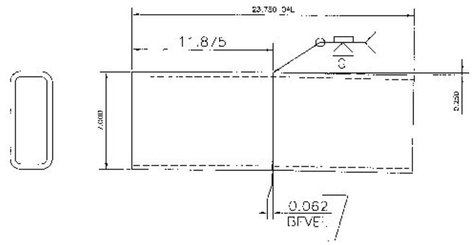
TOTAL PAY LENGTH ITEM 525.33 = 102 LF

Qty	mk	Description	Spec.
14		BRIDGE RAILING POST W6 x 25 x 2'-2.375" OAH WITH 1 x 10 x 14 BASE PLATE (GLV)	A709 gr 50
4		SPLICE TUBE (FOR 8X4 RAIL) HSS 7 x 3 x 3/8 x 1'-8.000" OAL w/ TAPPED HOLES & 2 WELDED NUTS (GLV)	A500 gr B
4		SPLICE TUBE (FOR 4X4 RAIL) HSS 3 x 3 x 5/16 x 1'-8.000" OAL w/ TAPPED HOLES & 2 WELDED NUTS (GLV)	A500 gr B
4	B1	UPPER RAIL TUBE HSS 8 x 4 x 5/16 x 16'-1.500" LG (GLV) one end holes, one end slots	A500 gr B
2	B2	UPPER RAIL TUBE HSS 8 x 4 x 5/16 x 19' LG (GLV) one end holes, one end slots	A500 gr B
4	B1	LOWER RAIL TUBE HSS 4 x 4 x 1/4 x 16'-1.500" LG (GLV) one end holes, one end slots	A500 gr B
2	B2	LOWER RAIL TUBE HSS 4 x 4 x 1/4 x 19' LG (GLV) one end holes, one end slots	A500 gr B
14		ANCHOR SPACER PLATE PL 0.375 x 13.000 x 9.375	A709 gr 36
56		ANCHOR STUD DBL END PART THREAD - 1" DIA x 12.000 w/ 2.250" THD EACH END (GLV)	A449
112		HEAVY HEX NUT 1" (GLV)	A563 DH
56		ROUND WASHER (SAE) - 1" DIA SMALL (GLV)	F436
56		JAM NUT 1" (GALV)	A563 DH
56		ROUND HEAD POST BOLT slot or wrench head - no shoulder 3/4" DIA x 6" LG. FULL BODY (GLV)	A449 / A325
56		LOCK NUT 3/4" (GLV)	A563 DH
56		ROUND WASHER (SAE) 3/4" (GLV)	F436
32		HEX HEAD BOLT 5/8" DIA x 1.75" LG. (GLV)	A325
32		ROUND WASHER (SAE) 5/8" (GLV)	F436
14		BEARING PAD 0.125" THICK x 10.000 x 14.000 (NEOPRENE 60 duro +/-10)	aashto M251

APPROACH BRIDGE #6

QUANTITY = 4

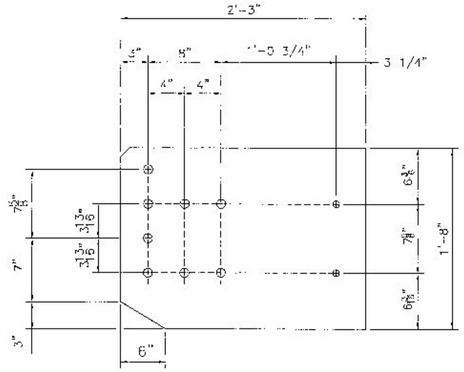
Qty	mk	Description	Spec.
4	01	W6x25 APPROACH POST - #1 x 8'-0" OAL (GALV)	A709 gr 50
4	02	W6x25 APPROACH POST - #2 x 8'-0" OAL (GALV)	A709 gr 50
4	03	W6x25 APPROACH POST - #3 x 8'-0" OAL (GALV)	A709 gr 50
4	04	W6x25 APPROACH POST - #4 x 8'-0" OAL (GALV)	A709 gr 50
4		UPPER RAIL APPROACH TUBE HSS 8 x 4 x 5/16 x 9'-4.000" w/ 3.500 SLOTS FOR 4" EXP GAP (GALV)	A500 gr B
4		LOWER RAIL APPROACH TUBE HSS 4 x 4 x 5/16 x 9'-4.000" w/ 3.500 SLOTS FOR 4" EXP GAP (GALV)	A500 gr B
4		CONNECTION PLATE PL 0.375" x 20.000" x 27.000" (GALV)	A709 gr 36
2		DEFLECTOR PLATE (RIGHT) PL 0.375 x 4.000 x 13.375 (GALV)	A709 gr 36
2		DEFLECTOR PLATE (LEFT) PL 0.375 x 4.000 x 13.375 (GALV)	A709 gr 36
4		END CAP FOR 8x4 TUBE 0.187 THICK PLATE 8.000 x 4.000 w/ WELDED TABS (GALV)	A709 gr 36
4		END CAP FOR 4x4 TUBE 0.187 THICK PLATE 4.000 x 4.000 w/ WELDED TABS (GALV)	A709 gr 36
4		(ANGLED) SPLICE TUBE (EXPANSION) FOR 8x4 UPPER RAIL HSS 7 x 3 x 3/8 x 1'-11.750" OAL (GALV)	A500 gr B
4		SPLICE TUBE (EXPANSION) FOR 4x4 LOWER RAIL HSS 3 x 3 x 5/16 x 1'-11.750" OAL (GALV)	A500 gr B
32		WOOD POST (WP1) 6 x 8 x 7'-0"	TIMBER
32		WOOD BLOCKOUT (WB1) 6 x 8 x 1'-6"	TIMBER
4		WOOD POST (WP2) 6 x 8 x 7'-0"	TIMBER
4		WOOD BLOCKOUT (WB2) 6 x 8 x 1'-6"	TIMBER
4		WOOD POST(WP3) 6 x 8 x 7'-0"	TIMBER
4		WOOD BLOCKOUT (WB3) 6 x 8 x 1'-2"	TIMBER
4		THRIE FLAT LIP BRIDGE SHOE (MODIFIED) 10 GA. GALV	aashto M180 B2
4		THRIE TRANSITION PANEL 6'-3" / 3'-1 1/2" 10 GA. GALV.	aashto M180 B2
8		THRIE PANEL 12'-6" / 1'-6 3/4" 12 GA. GALV.	aashto M180 A2
92		ROUND HEAD POST BOLT slot or wrench head - no shoulder 3/4" DIA x 6" LG. (GLV) w/ LOCK NUT & FLAT WASHE	A449
4		ROUND HEAD POST BOLT slot or wrench head - no shoulder 3/4" DIA x 2" LG. (GLV) w/ HEX NUT	A449
8		ROUND HEAD POST BOLT - oval shoulder 5/8" DIA x 1'-8" LG. (GALV) w/ DBL RECESS NUT, FLAT WASHER	A307
68		ROUND HEAD POST BOLT - oval shoulder 5/8" DIA x 1'-6" LG. (GALV) w/ DBL RECESS NUT, FLAT WASHER	A307
32		HEX HEAD BOLT 5/8 x 1-3/4" (GALV) w/ FLAT WASHER	A325
128		PANEL SPLICE BOLT 5/8 x 1-1/4" (GALV) w/ DOUBLE RECESSED NUT	A307
76		RECTANGULAR PLATE WASHER 0.187 x 1.750 x 3.000 (GALV)	A709 gr 36
32		SPACER PIPE - GALVANIZED 3/4" SCH. 40 x 1/2" LONG (GLV)	A53 gr B



ANGLED SPLICE DETAIL

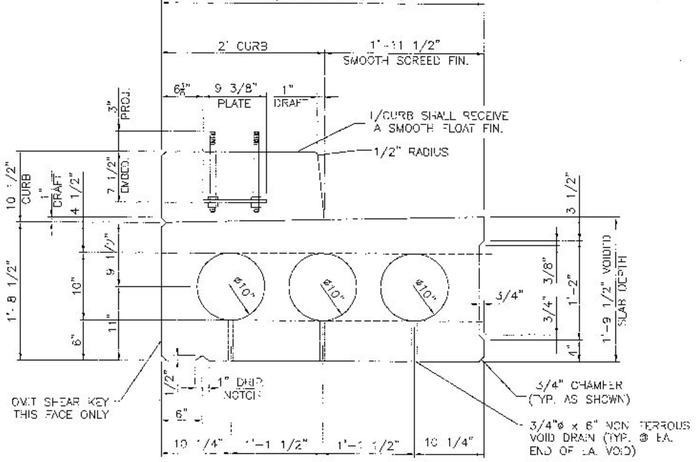
HSS 7 x 3 x 3/8 - FOR UPPER RAIL SPLICE

SEE BRIDGE RAIL SHEET FOR DETAIL ON LOWER RAIL SPLICE TUBE



CONNECTION PLATE

3/8" x 1'-8" x 2'-3"



CURB SECTION

Vermont Agency of Transportation

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CK'D BY MEM OK'D BY CWC

Apr. 16, 2015

RESUBMIT ____ APPROVED ✓

BY C. Carlson DATE 05-06-2015

HIGHWAY SAFETY CORP

GLASTONBURY, CT

860-633-9445

ITEM 525.33 2-RAIL BRIDGERAIL GALVANIZED
BRIDGE REHABILITATION
RT. 116 OVER LITTLE NOTCH CREEK
B.I.N. #6 P.I.N. BRF 021-1 (29)
TOWN OF BRISTOL, ADDISON COUNTY

NSC CERTIFIED FABRICATOR

GENERAL CONTRACTOR

SUB CONTRACTOR LAFAYETTE

JOB NO. 2040

SHEET NO. 4 of 4

DRAWN	CHECKED	DATE	SCALE	SIZE
MKT		04-15-15	NONE	D

Highway Safety Corporation

Glastonbury, CT

Welding Procedure Specification

Material specification **A572 gr 50, A709 Gr 50**

Welding process **Gas Metal Arc Welding (GMAW) Spray Transfer**

Manual, semi-automatic, or automatic **Semi-Automatic**

Position of welding **Flat (1F) or Horizontal (2F)**

Filler metal specification **AWS A5.18**

Filler metal classification **ER70S-6**

Electrode and manufacturer **Lincoln Electric Lincoln Weld L-56**

Flux and manufacturer **N/A**

Shielding gas **86% Argon / 14% CO2** Flow rate **35-45 CFM**

Single or multiple pass **Single or Multiple**

Single or multiple arc **Single**

Welding current **DCEP**

Polarity **Reverse - electrode positive**

Welding progression **Stringers**

Root treatment **clean base metal**

Preheat and interpass temperature **base metal up to 3/4" (50°F) ; over 3/4 thru 1-1/2" (150°F) : over 1-1/2" thru 2-1/2" (225°F)**

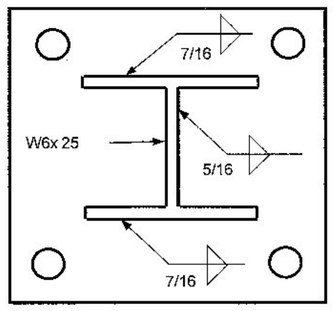
Postheat treatment **None**

Electrode extension **3/4" ± 1/4"**

WELDING PROCEDURE

Weld size	Pass no.	Electrode size	Welding parameters		Travel speed
			Amperes	Volts	
5/16"	1	0.062"	300 A ± 30	29 V ± 2	15 ipm ± 2
7/16"	1 & 2	0.062"	↓	↓	15 ipm ± 2

Joint detail



APPROVED
By Jeff Clark at 11:29 am, May 06, 2015

This procedure may vary due to fabrication sequence, fit-up, pass size, etc. within the limitation of variables given in section 5 of latest edition AWS D1.5

WPS no. **W-VTPEDPOST1**

Revision no. **0**

Supporting PQR no. **Pre-Qualified**

Project Name **Bristol Vermont**

Fabricator **Highway Safety Corporation**

Prepared By: **Paul Radice**

Date **4/15/15**

Project Number **BRF 021-1 (29)**

Highway Safety Corporation

Glastonbury, CT

Welding Procedure Specification

Material specification **ASTM A500 gr B**

Welding process **Gas Metal Arc Welding (GMAW)**

Manual, semi-automatic, or automatic **Semi-Automatic**

Position of welding **Flat (1F) or Horizontal (2F)**

Filler metal specification **AWS A5.18**

Filler metal classification **ER70S-6**

Electrode and manufacturer **Lincoln Electric Lincoln Weld L-56**

Flux and manufacturer **N/A**

Shielding gas **86% Argon / 14% CO2** Flow rate **35-45 CFM**

Single or multiple pass **Single**

Single or multiple arc **Single**

Welding current **DCEP**

Polarity **Reverse - electrode positive**

Welding progression **Stringers**

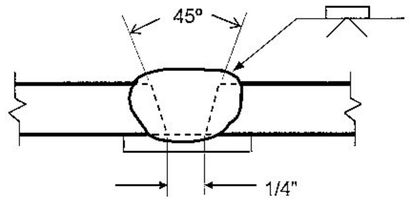
Root treatment **clean base metal**

Preheat and interpass temperature **base metal up to 3/4" (50°F)**

Postheat treatment **None**

Electrode extension **3/4" ± 1/4"**

WELDING PROCEDURE

Weld size	Pass no.	Electrode size	Welding parameters Amperes	Welding parameters Volts	Travel speed	Joint detail
	1	**0.063"**	**300 A ± 30**	**29 V ± 2**	**15 ipm ± 2**	B-U2a-GF 

APPROVED
By Jeff Clark at 11:29 am, May 06, 2015

This procedure may vary due to fabrication sequence, fit-up, pass size, etc. within the limitation of variables given in section 5 of latest edition AWS D1.1

WPS no. **W-VGwBCK**

Revision no. **0**

Supporting PQR no. **Pre-Qualified**

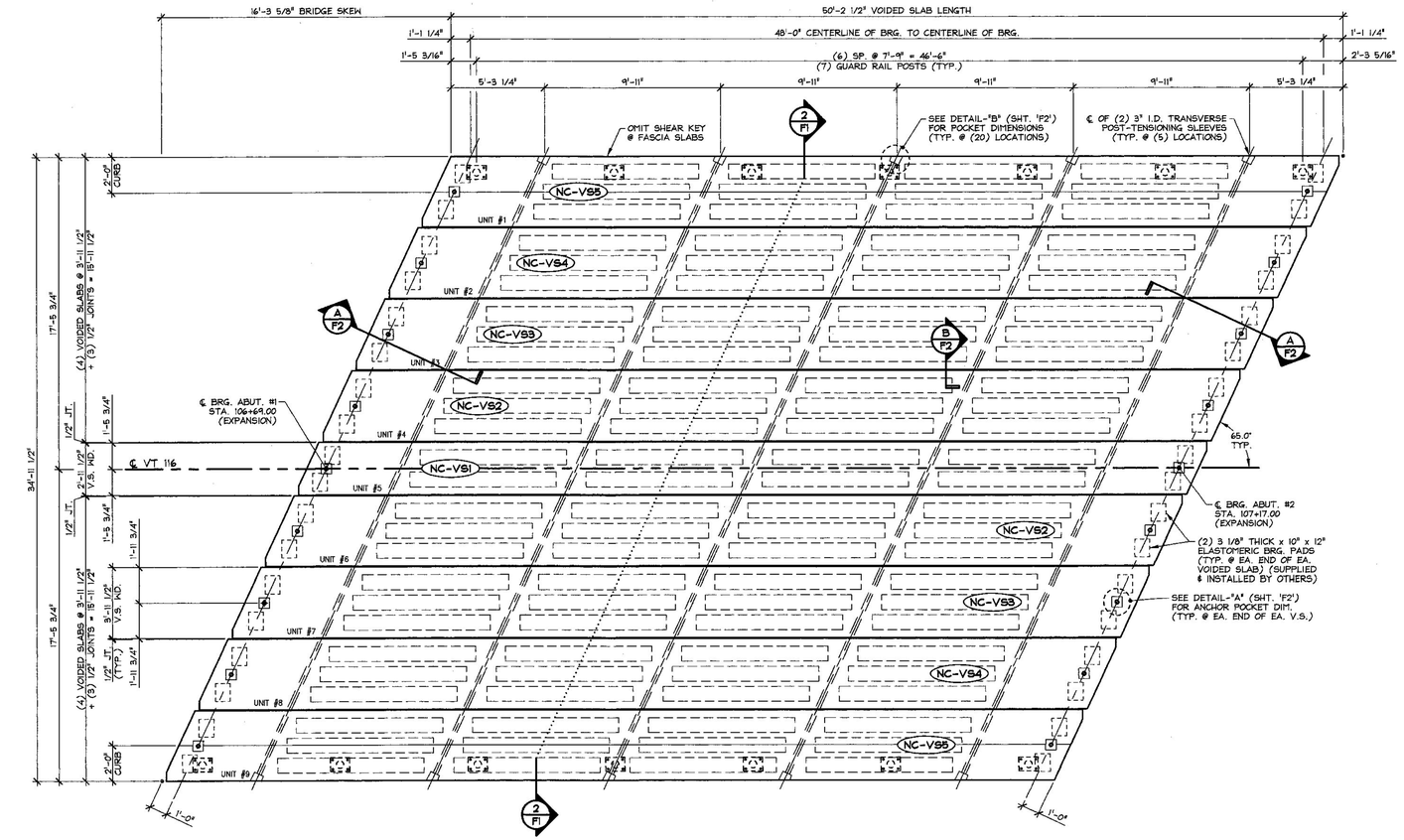
Project Name **Bristol Vermont**

Fabricator **Highway Safety Corporation**

Prepared By: **Paul Radice**

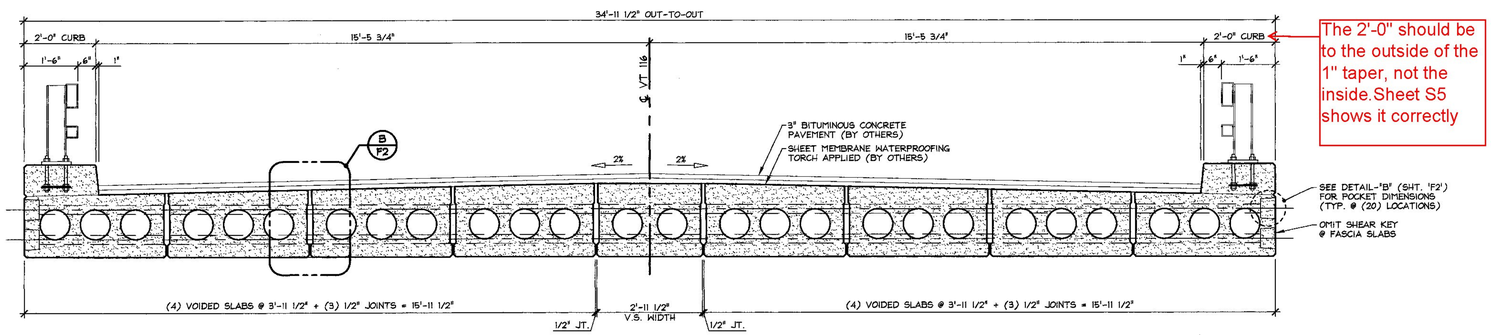
Date **4/15/15**

Project Number **BRF 021-1 (29)**



1 F1 PRESTRESSED VOIDED SLAB LAYOUT

1/4" = 1'-0"



The 2'-0" should be to the outside of the 1" taper, not the inside. Sheet S5 shows it correctly

2 F1 TRANSVERSE VOIDED SLAB SECTION

1/2" = 1'-0"

VOIDED SLAB GENERAL NOTES

1. MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 7,500 PSI.
2. MIN. CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 5,000 PSI.
3. REINFORCING STEEL SHALL BE GR-60, ASTM A-615 (AASHTO M31) LEVEL II (DUAL COATED).
4. PRESTRESSING STRANDS SHALL CONFORM TO ASTM A-416 (AASHTO M203) AND SHALL CONSIST OF 0.60"ø x 270 KSI 7-WIRE LOW RELAXATION STRANDS.
5. PRESTRESSING STRANDS SHALL EACH BE PULLED TO HAVE A NET TENSION OF **44.0** K AFTER ACCOUNTING FOR CHUCK SLIPPAGE. TENSION SHALL BE VERIFIED BY MEASURING STRAND ELONGATION. (SEE EXAMPLE ELONGATION CALCULATION AND TENSIONING PROCEDURE, THIS SHEET.)
6. ENDS OF PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH END OF SOLID SLABS USING AN ABRASIVE WHEEL (UNLESS NOTED OTHERWISE) AND TWO PART EPOXY PAINTED.
7. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
8. THE TOP OF SLABS SHALL RECEIVE A SMOOTH SCREED FINISH (UNLESS NOTED OTHERWISE).
9. SHEAR KEY SURFACES SHALL BE SAND BLASTED CLEAN.
10. SLABS SHALL BE HANDLED AND ERECTED USING THE LIFTING LOOPS ONLY. RIGGING SHALL BE CONFIGURED SUCH THAT EQUAL FORCES ARE APPLIED TO EACH OF THE TWO LIFTING LOOPS AT EACH END OF THE SLAB. **THE PINS OF THE SHACKLES SHALL BE PLACED THROUGH THE LIFTING LOOPS. SEE DETAIL, SHEET 'F2'.** SLABS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 2'-0" OF THE SLAB ENDS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.

    ONCE VOIDED HAVE BEEN ERECTED, CUT LIFTING LOOPS AT RECESS, EPOXY PAINT AND PATCH AS REQUIRED (BY OTHERS).
11. MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. P510.02 AND P510.05 RESPECTIVELY.

    DESIGN MIX: J.P.C. BRIDGE MIX #426M (NO DCI)
12. QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
13. CURING METHOD: AS SOON AS THE TOP OF SLAB IS FINISHED, A COVER OF INSULATED POLY. THE DESIRED CURING TEMPERATURE RANGE SHALL NOT DROP BELOW 70°F. THE TEMPERATURE SHALL BE RECORDED BY AUTOMATIC SENSOR INSTRUMENTS ON GRAPH CHARTS, SPACED NOT MORE THAN 100' APART AND WILL CONTINUE UNTIL RELEASE STRENGTH IS ACHIEVED. EACH CHART SHALL BE MARKED WITH THE CASTING DATED AND LOCATION OF THE RECORDER. IF NECESSARY TO MAINTAIN CASTING BED TEMPERATURE PRIOR TO CONCRETE PLACEMENT OR TO ACCELERATE EARLY AGE STRENGTH GAIN, EXTERNAL RADIANT HEAT MAY BE EMPLOYED VIA HOT WATER DUCTS BENEATH AND WITHIN THE PERIPHERY OF THE CASTING BED. MAXIMUM CURING TEMPERATURE SHALL NOT EXCEED PCI SPECIFIED LIMITS.
14. TRANSVERSE POST-TENSIONING SEQUENCE:

    A. ERECT VOIDED SLABS, AND POST-TENSION TENDONS TO APPROXIMATELY 5,000 PSI.

    B. GROUT SHEAR KEYS (BY OTHERS).

    C. ONCE SHEAR KEY GROUT HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1,500 PSI; POST TENSION TENDONS TO 32,000 LBS.

    D. EXCESS TENDON LENGTH SHALL BE CUT USING AN ABRASIVE WHEEL.

    E. APPLY TWO PART EPOXY TO EXPOSED TENDON AND CHUCK (BY OTHERS).

5 kips

15. OWNER SHALL PROVIDE APPROPRIATE WATERPROOFING TO GROUTED AND/OR EPOXIED SHEAR KEYS. J.P. CARRARA & SONS, INC. SHALL NOT BE HELD LIABLE FOR PROBLEMS ASSOCIATED WITH MOISTURE INFILTRATING GROUTED AND/OR EPOXIED SHEAR KEYS.

EXAMPLE PRESTRESSING STRAND ELONGATION CALC. AND TENSIONING

(NOT TO BE USED FOR CONSTRUCTION)

SIZE & GRADE: 0.60"ø x 270 KSI
AREA: 0.217 IN^2
TENSION: 44,000 LB. EACH STRAND
GRIP-TO-GRIP: 252'-0" = 252.00'
Es = 28,600,000 PSI (ASSUMED FOR THESE CALCULATIONS; VALUE TO BE OBTAINED FOR STRAND SPOOL ACTUALLY USED)

EXAMPLE:

$$\Delta = \frac{PL}{AE} = \frac{(44{,}000 - 3{,}000) \times 252.00 \times 12}{0.217 \times 28{,}600{,}000} = 19.977"$$

THEREFORE: (TOLERANCES ± 5%)
Δ UPPER LIMIT = 1.05 x 19.977" = 20.98" = 21"
Δ LOWER LIMIT = 0.95 x 19.977" = 18.98" = 19"

EXTRA FORCE REQUIRED TO COMPENSATE FOR 1/2" CHUCK SLIPPAGE:

$$\Delta P = \frac{0.5 \times 41{,}000}{19.977} = 1{,}026 \text{ LBS.}$$

TOTAL TENSIONING FORCE = 44,000 + 1,026 = 45,026 LBS.

STRAND TENSIONING PROCEDURE:

1. PULL EACH STRAND INITIALLY TO 3,000# LBS. AND MARK STRAND.
2. THEN PULL EACH STRAND TO A TOTAL TENSION OF 45,026# LBS. AND MEASURE ELONGATION AFTER SEATING. IT MUST BE BETWEEN 19"ø AND 21"ø.

& NOTE: FORCES READ ON STRESSING JACK GAUGES MUST BE MADE TO CORRESPOND TO ABOVE VALUES BASED ON CALIBRATION DATA FOR SPECIFIC JACK USED.

DESIGN LIVE LOAD: HL-93

APPROVAL STAMP:

Vermont Agency of Transportation
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CK'D BY MEM OK'D BY CWC
Mar. 16, 2015
RESUBMIT APPROVED AS NOTED ✓
BY C. Carlson DATE 03-27-2015

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6381 Fax:(802)388-9010

S.D. IRELAND CONCRETE CONSTRUCTION CORP.
SOUTH BURLINGTON, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ADDISON

TOWN OF BRISTOL
VT RT. 116 (MINOR ARTERIAL) OVER LITTLE NOTCH CREEK
BRIDGE NO.: 6 PROJECT NO.: BRF 021-1(29)

PRESTRESSED VOIDED SLAB LAYOUT & TRANSVERSE SECTION

DATE: MAR. 6, 2015
SCALE: NOTED
CHKD: P.C. DFTM: B.L.
JOB NO: 23461-015
DWG. NO: F1

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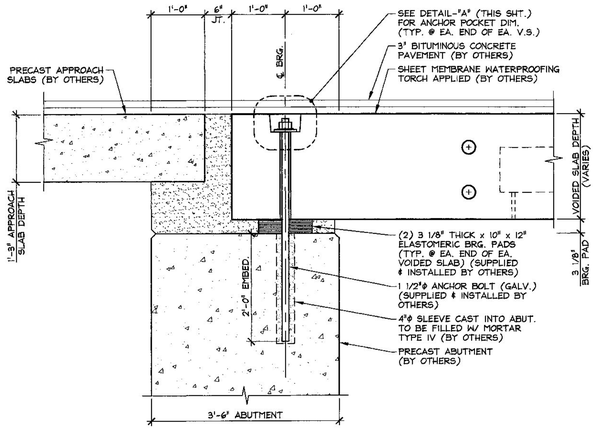
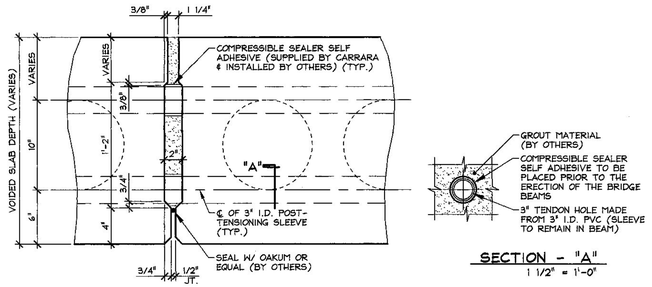


A F2 **BEARING SECTION**

3/4" = 1'-0"

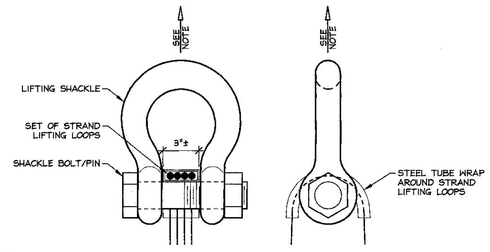


B F2 **SHEAR KEY SECTION @ P.T. SLEEVE**

1 1/2" = 1'-0"

SECTION - "A"

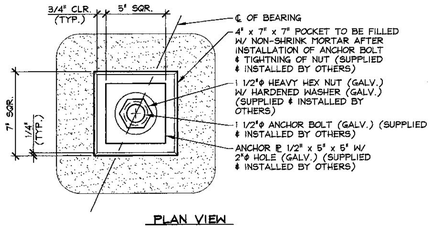
1 1/2" = 1'-0"



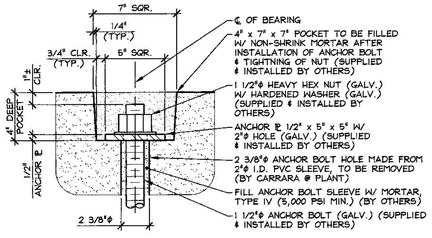
NOTE: SLAB SHALL BE HANDLED AND ERECTED USING THE LIFTING LOOPS ONLY. RIGGING SHALL BE CONFIGURED SUCH THAT EQUAL FORCES ARE APPLIED TO EACH SET OF LIFTING LOOPS AT EACH END OF THE SLAB. SHACKLE BOLT/PIN SHALL BE PLACED UNDER LIFT LOOPS AS SHOWN. DESIGN AND CONFIGURATION OF RIGGING BY PURCHASER.

LIFTING SHACKLE DETAILS

N.T.S.



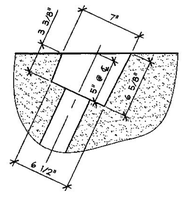
PLAN VIEW



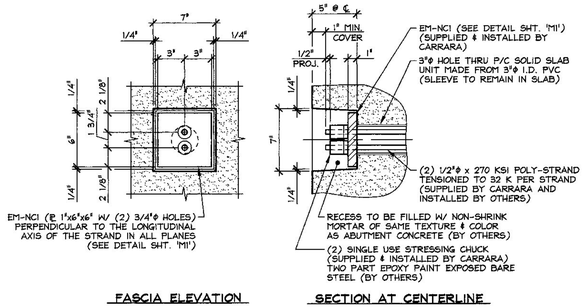
SECTION

DETAIL - "A"

2" = 1'-0"



PLAN OF POCKET



FASCIA ELEVATION **SECTION AT CENTERLINE**

DETAIL - "B"

1 1/2" = 1'-0"

APPROVAL STAMP:

Vermont Agency of Transportation
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CK'D BY MEM OK'D BY CWC
Mar. 16, 2015
RESUBMIT _____ APPROVED ✓
BY C. Carlson DATE 03-27-2015

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
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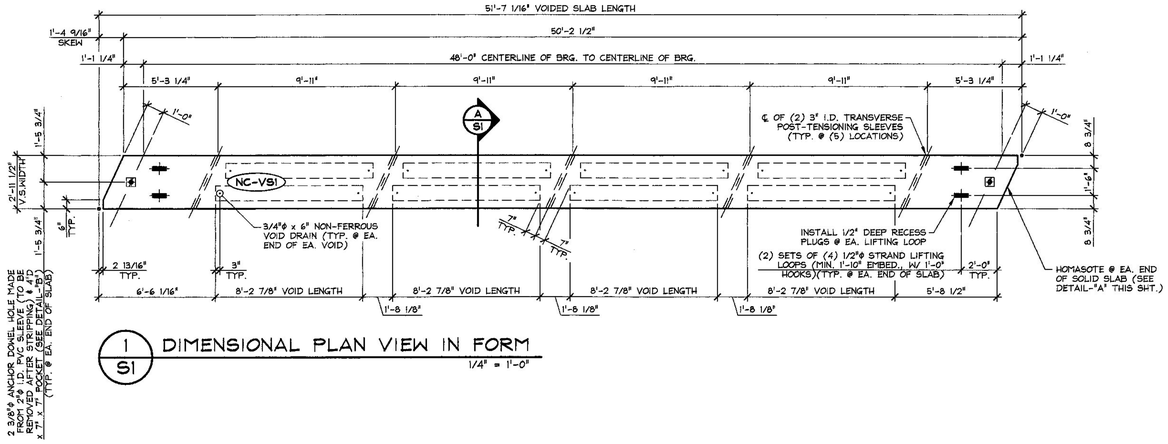
S.D. IRELAND CONCRETE CONSTRUCTION CORP.
SOUTH BURLINGTON, VERMONT

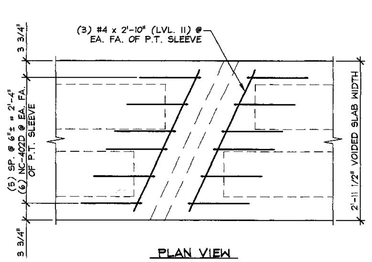
STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF ADDISON	DATE: MAR. 6, 2015 SCALE: NOTED
TOWN OF BRISTOL VT RT. 116 (MINOR ARTERIAL) OVER LITTLE NOTCH CREEK BRIDGE NO.: 6 PROJECT NO.: BRF 021-1(29)	CHKD: P.C. DFTM: B.L. JOB NO: 23461-015
SUPERSTRUCTURE SECTIONS & DETAILS	DWG. NO: F2

F:\VT-Bridges\23461-15 Bristol Bridge 6\23461-F2.dwg, 3/13/2015 3:48:20 PM

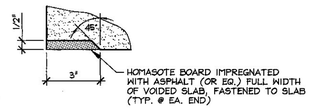


1 / S1 DIMENSIONAL PLAN VIEW IN FORM

1/4" = 1'-0"

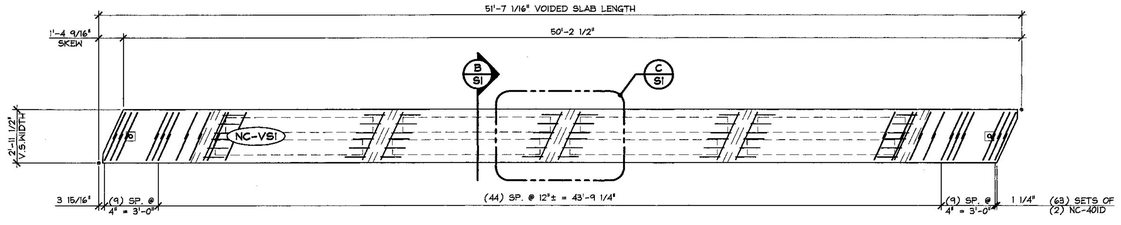


PLAN VIEW



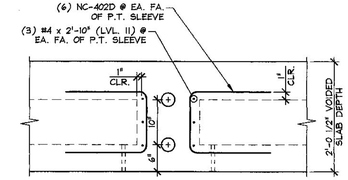
DETAIL - "A"

3" = 1'-0"



2 / S1 REINFORCING PLAN VIEW IN FORM

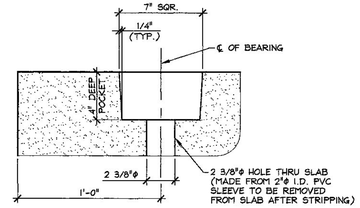
1/4" = 1'-0"



SECTION VIEW

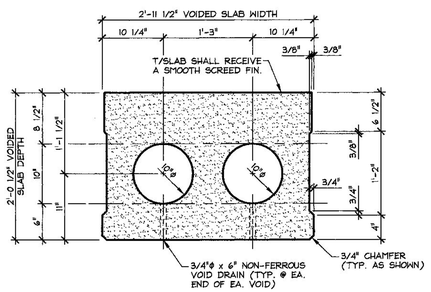
C / S1 DIAPHRAGM REINF. DETAILS

3/4" = 1'-0"



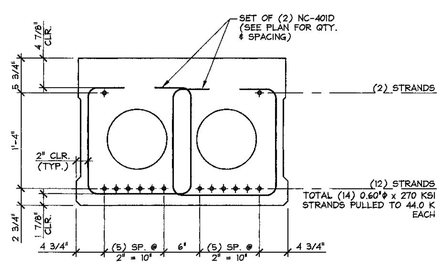
DETAIL - "B"

2" = 1'-0"



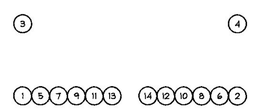
A / S1 DIMENSIONAL SECTION

1" = 1'-0"



B / S1 REINFORCING SECTION

1" = 1'-0"



DETENSIONING SCHEDULE

N.T.S.

MARK: NC-VS1	QTY.: 1	WT.: 19.37 T	VOL.: 9.57 cy

MATERIAL LIST / VOIDED SLAB

ITEM	MARK	DESCRIPTION	QTY.
1	NC-401D	#4 BENT BAR (LEVEL II, DUAL COATED)	126
2	NC-402D	#4 BENT BAR (LEVEL II, DUAL COATED)	48
3		#4 x 2'-10" (LEVEL II, DUAL COATED)	24
4			
5			
6			
7		3/4"ϕ x 6" NON-FERROUS VOID DRAIN	16
8		10"ϕ x 8'-2 7/8" VOID	8
9		SET OF (4) 1/2"ϕ STRAND LIFTING LOOPS	4
10			

APPROVAL STAMP:

Vermont Agency of Transportation
RECEIVED
CK'D BY MEM OK'D BY CWC
Mar. 16, 2015
RESUBMIT ____ APPROVED ✓
BY C. Carlson DATE 03-27-2015

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010
S.D. IRELAND CONCRETE CONSTRUCTION CORP.
SOUTH BURLINGTON, VERMONT

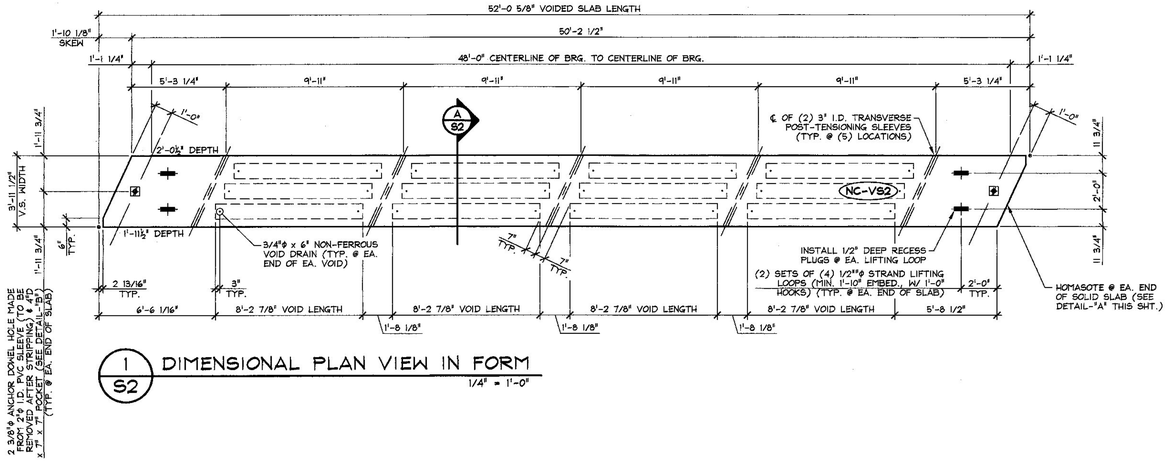
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ADDISON

TOWN OF BRISTOL
VT RT. 116 (MINOR ARTERIAL) OVER LITTLE NOTCH CREEK
BRIDGE NO.: 6 PROJECT NO.: BRF 021-1(29)

PRESTRESSED VOIDED SLAB DETAILS

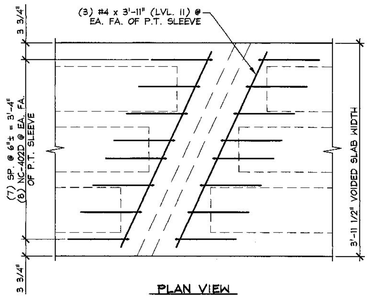
DATE: MAR. 6, 2015
SCALE: NOTED
CHK'D: P.C. DFT'M: B.L.
JOB NO: 23461-015
DWG. NO: S1

F:\VT-Bridges\23461-15 Bristol Bridge 6\23461-S1.dwg, 3/13/2015 3:49:33 PM

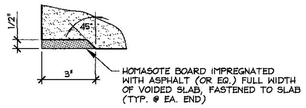


1/S2 DIMENSIONAL PLAN VIEW IN FORM

1/4" = 1'-0"

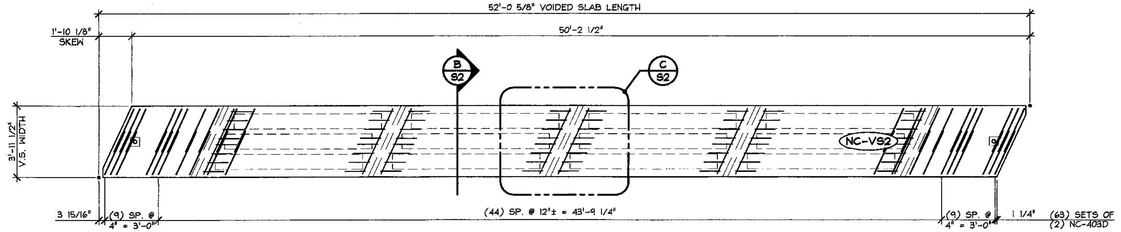


PLAN VIEW



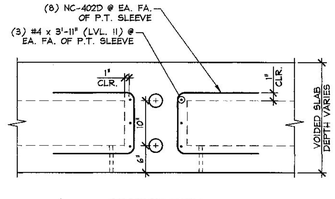
DETAIL - "A"

3" = 1'-0"

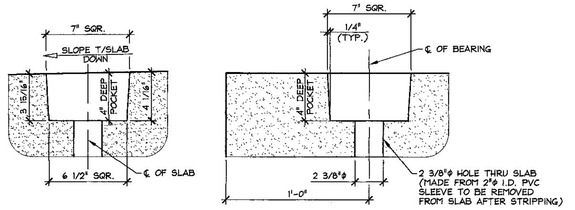


2/S2 REINFORCING PLAN VIEW IN FORM

1/4" = 1'-0"



SECTION VIEW



POCKET ELEVATION

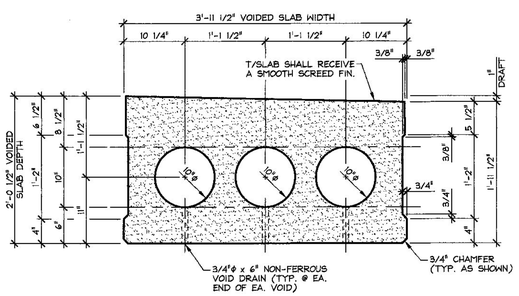
SECTION @ BEAM ℄

DETAIL - "B"

2" = 1'-0"

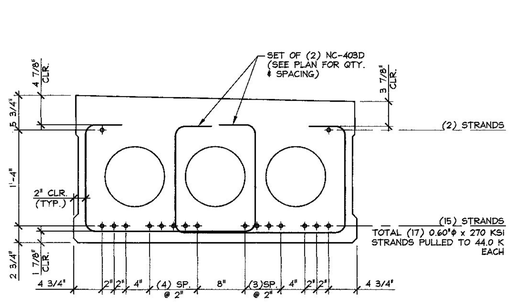
C/S2 DIAPHRAGM REINF. DETAILS

3/4" = 1'-0"



A/S2 DIMENSIONAL SECTION

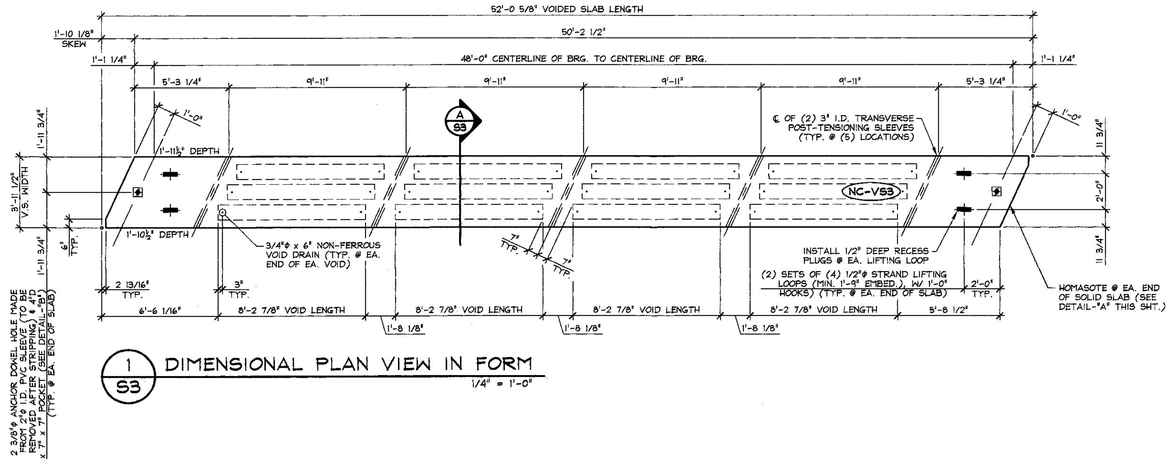
1" = 1'-0"



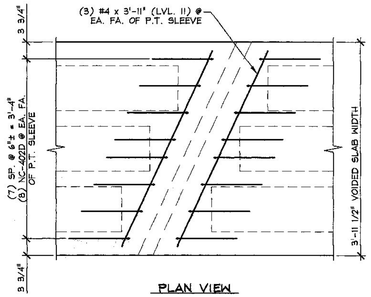
B/S2 REINFORCING SECTION

1" = 1'-0"

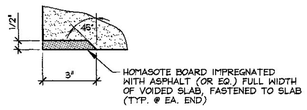
| 3 | | |



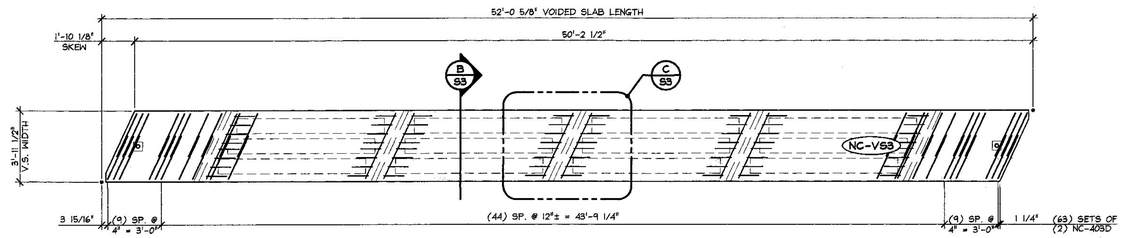
1/S3 DIMENSIONAL PLAN VIEW IN FORM
1/4" = 1'-0"



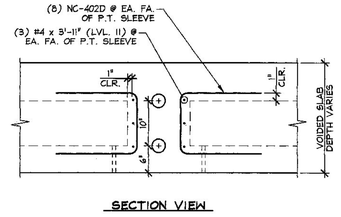
PLAN VIEW



DETAIL - "A"
3" = 1'-0"

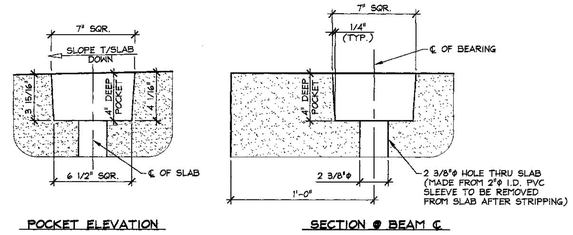


2/S3 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"



SECTION VIEW

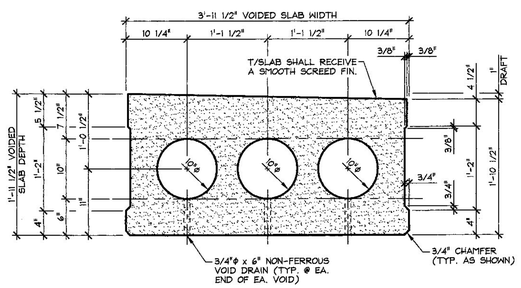
C/S3 DIAPHRAGM REINF. DETAILS
3/4" = 1'-0"



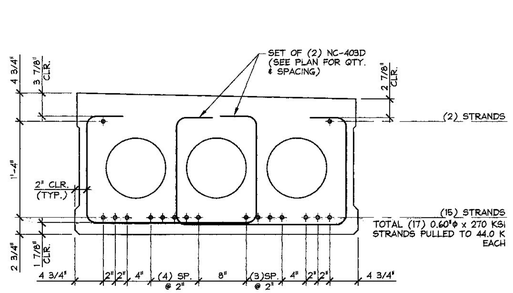
POCKET ELEVATION

SECTION @ BEAM ℄

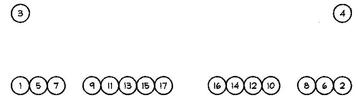
DETAIL - "B"
2" = 1'-0"



A/S3 DIMENSIONAL SECTION
1" = 1'-0"



B/S3 REINFORCING SECTION
1" = 1'-0"



DETENSIONING SCHEDULE
N.T.S.

MARK: NC-VS3	QTY.: 2	WT.: 24.04 T	VOL.: 11.87 cy

MATERIAL LIST / VOIDED SLAB

ITEM	MARK	DESCRIPTION	QTY.
1	NC-402D	#4 BENT BAR (LEVEL II, DUAL COATED)	64
2	NC-403D	#4 BENT BAR (LEVEL II, DUAL COATED)	126
3		#4 x 3'-11" (LEVEL II, DUAL COATED)	24
4			
5			
6			
7		3/4"ø x 6" NON-FERROUS VOID DRAIN	24
8		10"ø x 8'-2 7/8" VOID	12
9		SET OF (4) 1/2"ø STRAND LIFTING LOOPS	4
10			

APPROVAL STAMP:

Vermont Agency of Transportation
RECEIVED
CK'D BY MEM OK'D BY CWC
Mar. 16, 2015
RESUBMIT APPROVED ✓
BY C. Carlson DATE 03-27-2015

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

S.D. IRELAND CONCRETE CONSTRUCTION CORP.
SOUTH BURLINGTON, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ADDISON

DATE: MAR. 6, 2015
SCALE: NOTED

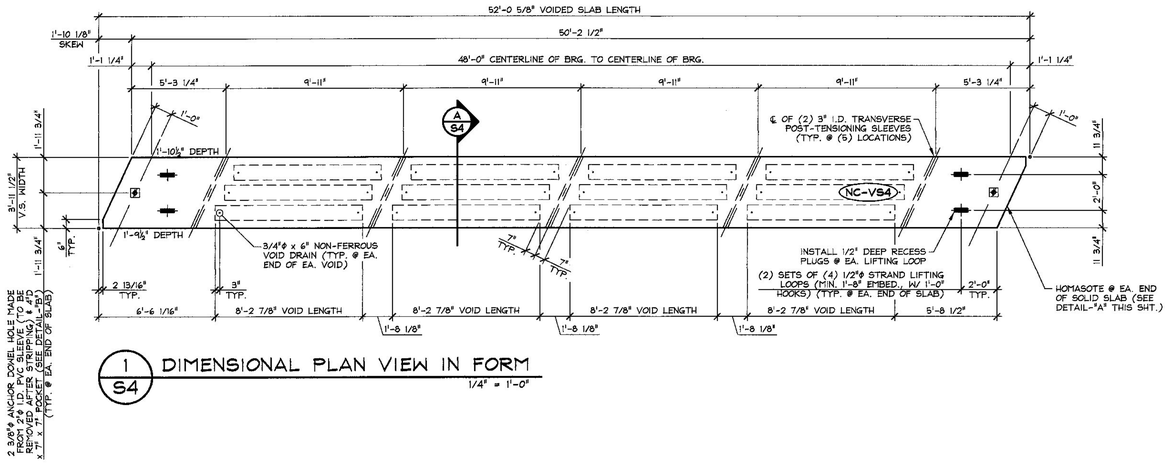
TOWN OF BRISTOL
VT RT. 116 (MINOR ARTERIAL) OVER LITTLE NOTCH CREEK
BRIDGE NO.: 6 PROJECT NO.: BRF 021-1(29)

CHKD: P.C. DFTM: B.L.
JOB NO: 23461-015

PRESTRESSED VOIDED SLAB DETAILS

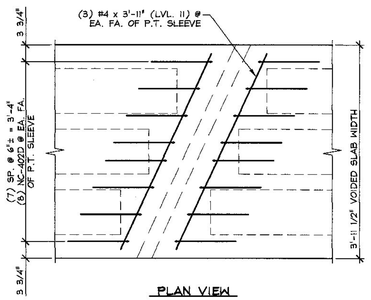
DWG. NO: S3

F:\VT-Bridges\23461-15 Bristol Bridge @23461-S3.dwg, 3/13/2015 4:17:08 PM

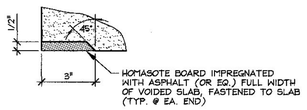


1 S4 DIMENSIONAL PLAN VIEW IN FORM

1/4" = 1'-0"

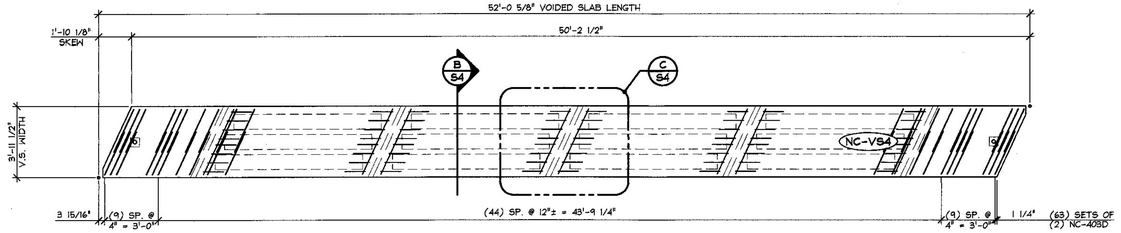


PLAN VIEW



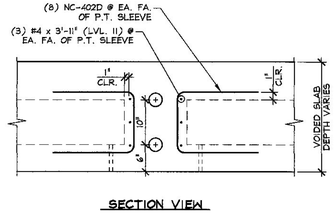
DETAIL - "A"

3" = 1'-0"

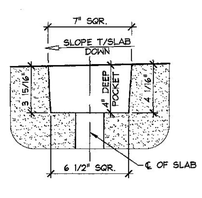


2 S4 REINFORCING PLAN VIEW IN FORM

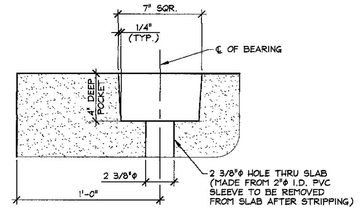
1/4" = 1'-0"



SECTION VIEW



POCKET ELEVATION



SECTION @ BEAM ℄

DETAIL - "B"

2" = 1'-0"

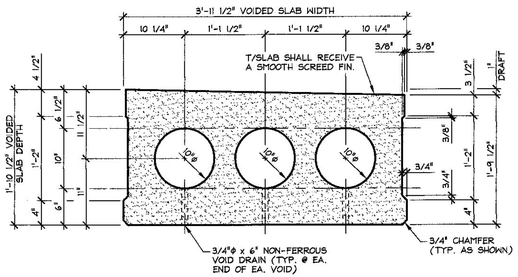
C S4 DIAPHRAGM REINF. DETAILS

3/4" = 1'-0"

MARK: NC-VS4	QTY.: 2	WT.: 22.66 T	VOL.: 11.19 cy

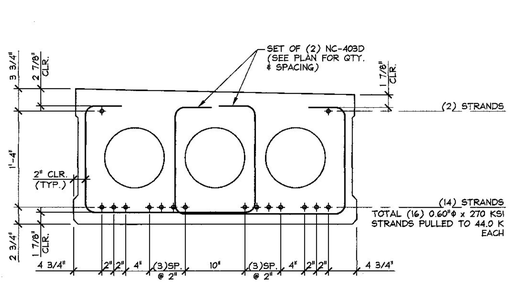
MATERIAL LIST / VOIDED SLAB

ITEM	MARK	DESCRIPTION	QTY.
1	NC-402D	#4 BENT BAR (LEVEL II, DUAL COATED)	64
2	NC-403D	#4 BENT BAR (LEVEL II, DUAL COATED)	126
3		#4 x 3'-11" (LEVEL II, DUAL COATED)	24
4			
5			
6			
7		3/4"ø x 6" NON-FERROUS VOID DRAIN	24
8		10"ø x 8'-2 7/8" VOID	12
9		SET OF (4) 1/2"ø STRAND LIFTING LOOPS	4
10			



A S4 DIMENSIONAL SECTION

1" = 1'-0"



B S4 REINFORCING SECTION

1" = 1'-0"

3		4
1 5 7	9 11 13 15	16 14 12 10	8 6 2

DETENSIONING SCHEDULE

N.T.S.

APPROVAL STAMP:

Vermont Agency of Transportation
RECEIVED
CK'D BY MEM OK'D BY CWC
Mar. 16, 2015
RESUBMIT ____ APPROVED ✓
BY C. Carlson DATE 03-27-2015

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

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SOUTH BURLINGTON, VERMONT

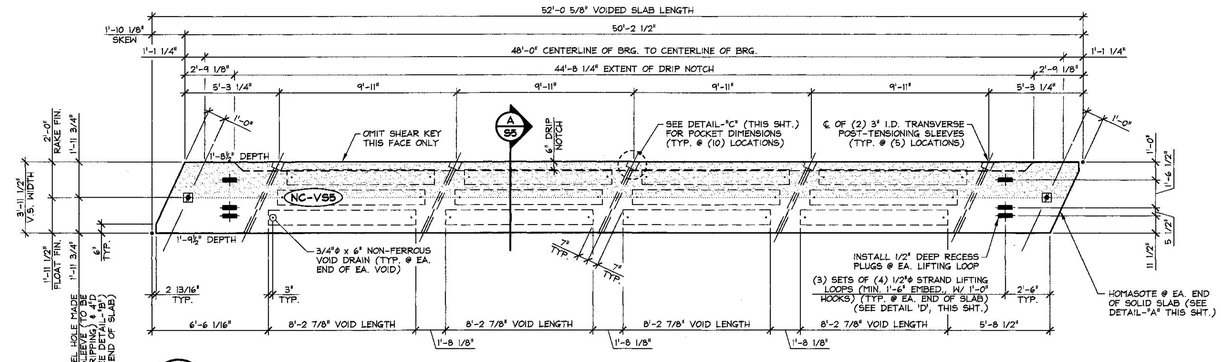
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ADDISON

TOWN OF BRISTOL
VT RT. 116 (MINOR ARTERIAL) OVER LITTLE NOTCH CREEK
BRIDGE NO.: 6 PROJECT NO.: BRF 021-1(29)

PRESTRESSED VOIDED SLAB DETAILS

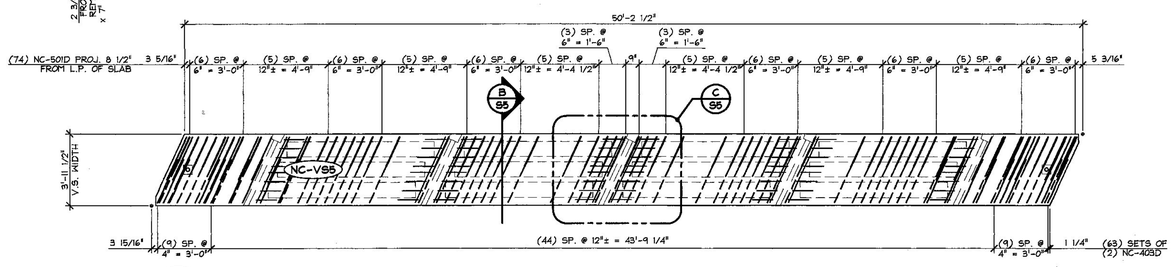
DATE: MAR. 6, 2015
SCALE: NOTED
CHKD: P.C. DFTM: B.L.
JOB NO: 23461-015
DWG. NO: S4

F:\VT-Bridges\23461-15 Bristol Bridge 6\23461-S4.dwg, 3/13/2015 4:23:08 PM



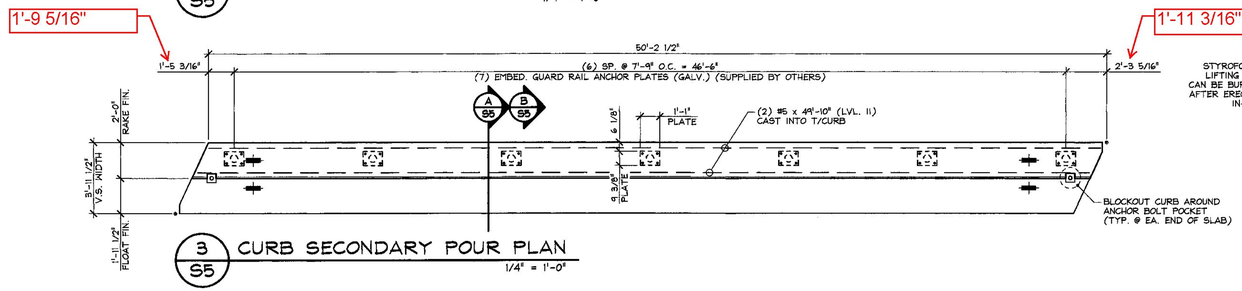
1 S5 DIMENSIONAL PLAN VIEW IN FORM

1/4" = 1'-0"



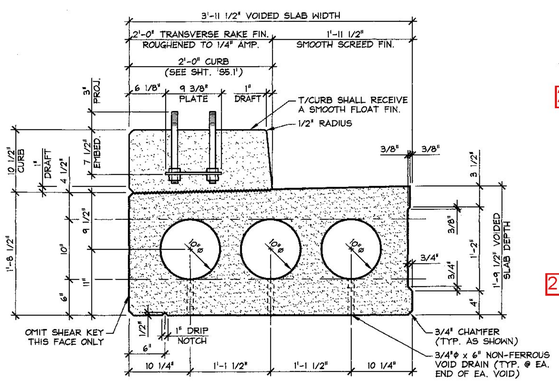
2 S5 REINFORCING PLAN VIEW IN FORM

1/4" = 1'-0"



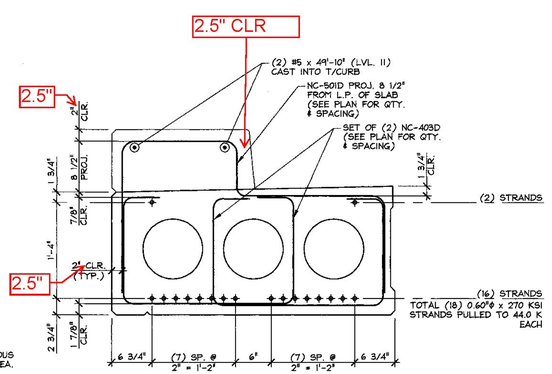
3 S5 CURB SECONDARY POUR PLAN

1/4" = 1'-0"



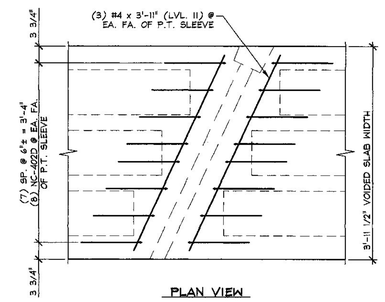
A S5 DIMENSIONAL SECTION

1" = 1'-0"

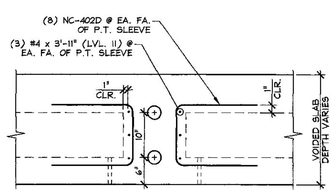


B S5 REINFORCING SECTION

1" = 1'-0"



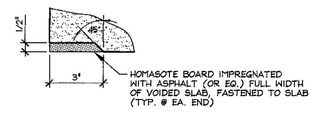
PLAN VIEW



SECTION VIEW

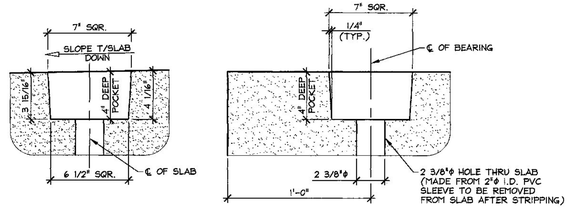
C S5 DIAPHRAGM REINF. DETAILS

3/4" = 1'-0"



DETAIL - "A"

3" = 1'-0"

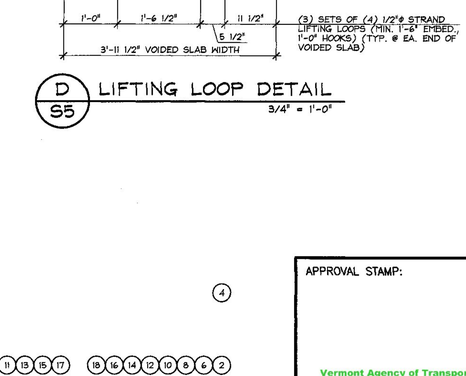


POCKET ELEVATION

SECTION @ BEAM ℄

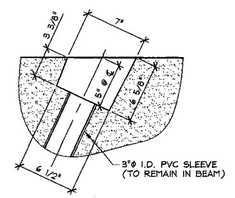
DETAIL - "B"

2" = 1'-0"



D S5 LIFTING LOOP DETAIL

3/4" = 1'-0"



DETAIL - "C"

1 1/2" = 1'-0"

MARK: NC-VS5	QTY.: 2	21.71 T= SLAB 6.55 T= CURB 28.26 T= TOTAL	10.72 cy = SLAB 3.23 cy = CURB 13.95 cy = TOTAL

MATERIAL LIST / VOIDED SLAB

ITEM	MARK	DESCRIPTION	QTY.
1	NC-402D	#4 BENT BAR (LEVEL II, DUAL COATED)	64
2	NC-403D	#4 BENT BAR (LEVEL II, DUAL COATED)	126
3		#4 x 3'-11" (LEVEL II, DUAL COATED)	24
4	NC-501D	#5 BENT BAR (LEVEL II, DUAL COATED)	74
5		#5 x 49'-10" (LEVEL II, DUAL COATED)	2
6			
7		GUARD RAIL ANCHOR PLATE (GALV.) (SUPPLIED BY OTHERS)	7
8		3/4"ø x 6" NON-FERROUS VOID DRAIN	24
9		10"ø x 8'-2 7/8" VOID	12
10		SET OF (4) 1/2"ø STRAND LIFTING LOOPS	6

③ ④

1 5 7 9 11 13 15 17 — 18 16 14 12 10 8 6 2

DETENSIONING SCHEDULE

N.T.S.

APPROVAL STAMP:

Vermont Agency of Transportation
RECEIVED
CK'D BY MEM OK'D BY CWC
Mar. 16, 2015
RESUBMIT APPROVED AS NOTED ✓
BY C. Carlson DATE 03-27-2015

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

S.D. IRELAND CONCRETE CONSTRUCTION CORP.
SOUTH BURLINGTON, VERMONT

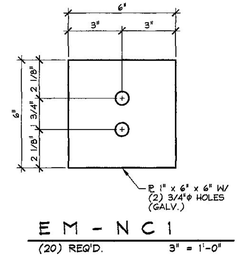
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ADDISON

TOWN OF BRISTOL
VT RT. 116 (MINOR ARTERIAL) OVER LITTLE NOTCH CREEK
BRIDGE NO.: 6 PROJECT NO.: BRF 021-1(29)

PRESTRESSED VOIDED SLAB DETAILS

DATE: MAR. 6, 2015
SCALE: NOTED
CHKD: P.C. DFTM: B.L.
JOB NO: 23461-015
DWG. NO: S5

F:\VT-Bridges\23461-15 Bristol Bridge 6\23461-S5.dwg, 3/13/2015 4:23:51 PM

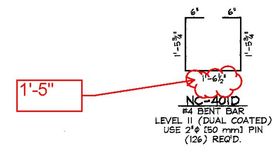


EM - NC1

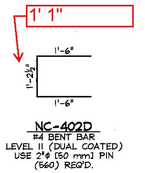
(20) REQ'D. 3" = 1'-0"

MISCELLANEOUS MATERIALS

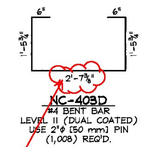
ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	EM-NC1	20	1" THICK x 6" x 6" W/ (2) 3/4"ø HOLES (GALV.)	FOR ERECTION; SEE DETAIL THIS SHEET
2		40	1/2"ø SINGLE USE STRESSING CHUCK	FOR ERECTION
3		20	1/2"ø x 270 KSI x 41'-4" LONG POLYSTRAND	FOR ERECTION
4		80	COMPRESSIBLE SEALER SELF ADHESIVE	FOR ERECTION
5				
6				
7		24	#4 x 2'-10" (LEVEL II, DUAL COATED)	
8		192	#4 x 3'-11" (LEVEL II, DUAL COATED)	
9				
10		4	#5 x 49'-10" (LEVEL II, DUAL COATED)	
11				
12		208	3/4"ø x 6" NON-FERROUS VOID DRAIN	
13		104	10"ø x 8'-2 7/8" VOID	
14		14	GUARD RAIL ANCHOR PLATE (GALV.)	SUPPLIED BY OTHERS
15		40	SET OF (4) 1/2"ø STRAND LIFTING LOOPS	
16				
17				
18				
19				
20				



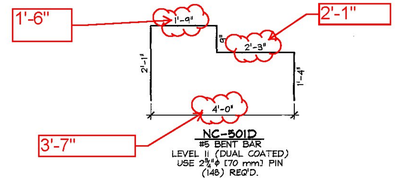
NC-401D
#4 BENT BAR
LEVEL II (DUAL COATED)
USE 2"ø (50 mm) PIN
(126) REQ'D.



NC-402D
#4 BENT BAR
LEVEL II (DUAL COATED)
USE 2"ø (50 mm) PIN
(560) REQ'D.



NC-403D
#4 BENT BAR
LEVEL II (DUAL COATED)
USE 2"ø (50 mm) PIN
(1,008) REQ'D.



NC-501D
#5 BENT BAR
LEVEL II (DUAL COATED)
USE 2¾"ø (70 mm) PIN
(148) REQ'D.

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