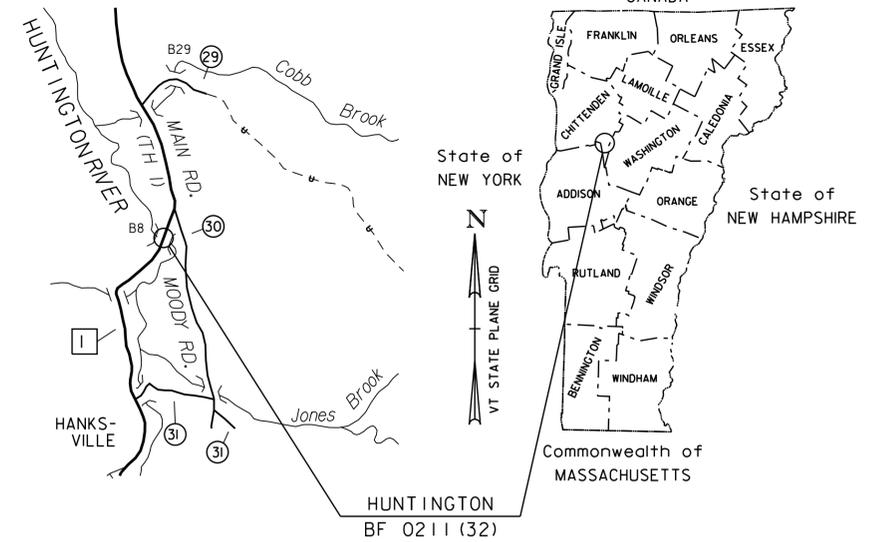


STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT BRIDGE PROJECT

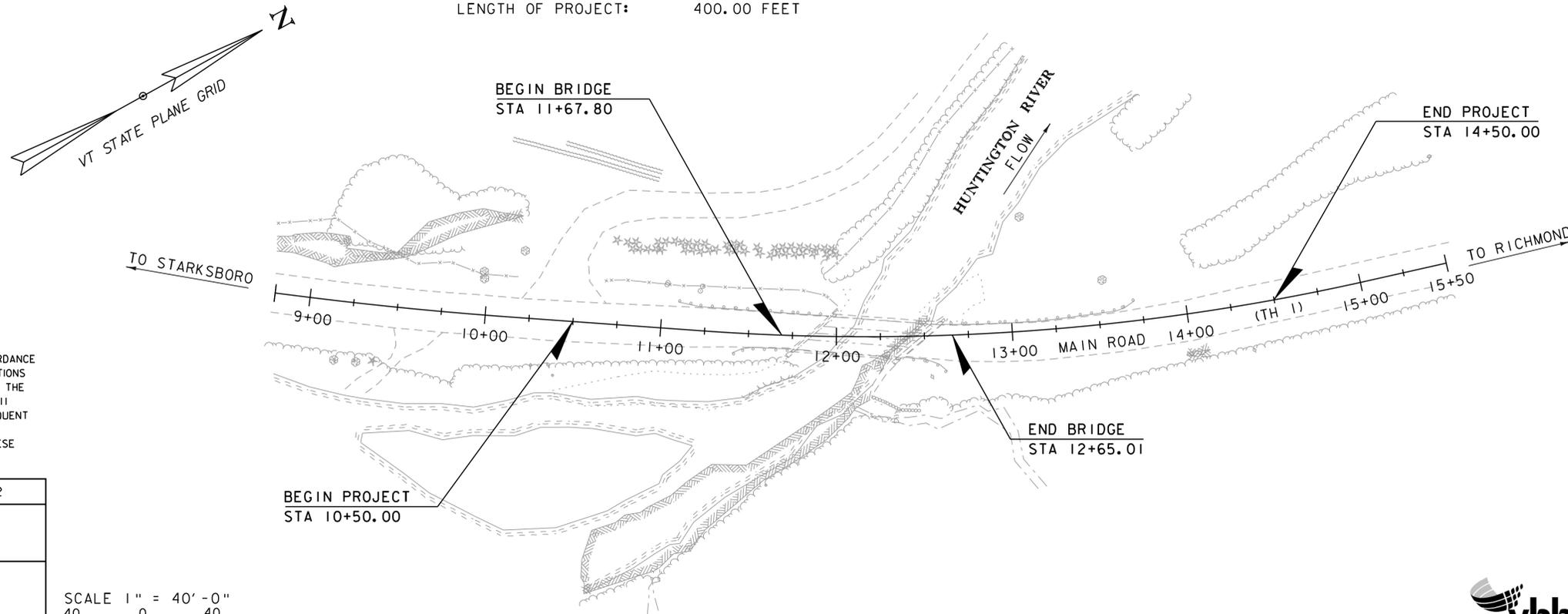
TOWN OF HUNTINGTON
COUNTY OF CHITTENDEN
TH-1, RURAL MAJOR COLLECTOR, FAS ROUTE 0211, BRIDGE NO 8



PROJECT LOCATION: LOCATED IN THE COUNTY OF CHITTENDEN, TOWN OF HUNTINGTON, ON TH 1 (FAS 0211), BRIDGE NO. 8 OVER HUNTINGTON RIVER, APPROXIMATELY 3.9 MILES NORTH OF TH 1'S JUNCTION WITH VT ROUTE 17.

PROJECT DESCRIPTION: WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES REMOVAL AND REPLACEMENT OF BRIDGE NO. 8 ON A NEW ALIGNMENT WITH ASSOCIATED ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE: 97.21 FEET
LENGTH OF ROADWAY: 302.79 FEET
LENGTH OF PROJECT: 400.00 FEET



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

QUALITY ASSURANCE PROGRAM : LEVEL 2
SURVEYED BY : L. ORVIS
SURVEYED DATE : 06/17/2013

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 83 (2011)

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

FINAL PLANS
APRIL 2016

DIRECTOR OF PROJECT DELIVERY
APPROVED _____ DATE _____
PROJECT MANAGER : ROBERT YOUNG, P. E.
PROJECT NAME : HUNTINGTON
PROJECT NUMBER : BF 0211 (32)
SHEET 1 OF 61 SHEETS



INDEX OF SHEETS

FINAL HYDRAULIC REPORT

PLAN SHEETS

1	TITLE SHEET
2	PRELIMINARY INFORMATION SHEET
3	TYPICAL BRIDGE SECTION
4	TYPICAL ROADWAY SECTIONS
5	TYPICAL EARTHWORK SECTIONS
6 - 7	PROJECT NOTES
8 - 10	QUANTITY SHEETS
11	CONVENTIONAL SYMBOLOLOGY LEGEND
12	TIE SHEET
13	ALIGNMENT SHEET
14	LAYOUT SHEET
15 - 16	PROFILE AND BANKING DIAGRAMS
17	TRAFFIC CONTROL SHEET
18	UTILITY LAYOUT SHEET
19	TRAFFIC SIGNS & LINE STRIPING SHEET
20	TRAFFIC SIGN SUMMARY SHEET
21	BORING INFORMATION SHEET
22 - 25	BORING LOGS
26	PLAN AND ELEVATION
27	DECK REINFORCING DETAILS
28	BRIDGE END DETAILS
29	FRAMING PLAN
30	CAMBER AND DEFLECTION
31 - 32	BEARING DETAILS
33 - 34	PRECAST APPROACH SLAB DETAILS
35	ABUTMENT NO 1 PLAN & ELEVATION
36	ABUTMENT NO 1 REINFORCING
37	ABUTMENT NO 1 SECTIONS
38	ABUTMENT NO 1 WINGWALL DETAILS
39	ABUTMENT NO 2 PLAN & ELEVATION
40	ABUTMENT NO 2 FOOTING
41	ABUTMENT NO 2 REINFORCING
42	ABUTMENT NO 2 WINGWALL DETAILS
43	RETAINING WALL DETAILS
44	BRIDGE RAIL LAYOUT
45	REINFORCING STEEL SCHEDULE SHEET
46 - 51	ROADWAY CROSS SECTIONS
52 - 55	CHANNEL CROSS SECTIONS
56	EPSC NARRATIVE
57	EPSC EXISTING SITE PLAN
58	EPSC CONSTRUCTION SITE PLAN
59	EPSC FINAL SITE PLAN
60 - 61	EPSC DETAILS

STANDARDS LIST

B-71	STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES	07-08-2005
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
G-1B	BOX BEAM GUARDRAIL	06-01-1994
S-364A	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	02-10-2014
S-364B	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	02-10-2014
S-364C	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	02-10-2014
S-364D	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	04-23-2012
T-1	TRAFFIC CONTROL GENERAL NOTES	08-06-2012
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-30	CONSTRUCTION DETAILS	08-06-2012
T-35	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS	08-06-2012
T-42	BRIDGE NUMBER PLAQUE	04-09-2014
T-44	MILEMARKER DETAILS STATE AND TOWN HIGHWAYS	04-09-2014
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013
T-80	VERMONT WARNING SIGN DETAILS	02-12-2016

STRUCTURES DETAIL SHEETS

SD-501.00	CONCRETE DETAILS AND NOTES	2/9/2012
SD-502.00	CONCRETE DETAILS AND NOTES	10/10/2012
SD-516.10	BRIDGE JOINT ASPHALTIC PLUG	8/9/2011
SD-601.00	STRUCTURAL STEEL DETAILS AND NOTES	6/4/2010
SD-602.00	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	5/2/2011

AS BUILT "REBAR" DETAIL

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

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	
2016	1100	150	65	9.8	85	20 year ESAL for flexible pavement from 2016 to 2036 : 558000
2036	1200	160	65	12.9	120	40 year ESAL for flexible pavement from 2016 to 2056 : 1253000
Design Speed : 45 mph						

HYDROLOGIC DATA

Date: April 2015

DRAINAGE AREA : 18.4 sq. mi.
 CHARACTER OF TERRAIN : Mostly forested, rural
 STREAM CHARACTERISTICS : Sinuous and alluvial
 NATURE OF STREAMBED : Cobbles, gravel and sand

PEAK FLOW DATA

Q 2.33 =	850 cfs	Q 50 =	2800 cfs
Q 10 =	1700 cfs	Q 100 =	3400 cfs
Q 25 =	2300 cfs	Q 500 =	4700 cfs

DATE OF FLOOD OF RECORD : Unknown
 ESTIMATED DISCHARGE : Unknown
 WATER SURFACE ELEV. : Unknown
 NATURAL STREAM VELOCITY : @ Q50 = 11.7 fps
 ICE CONDITIONS : Moderate
 DEBRIS : Low
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? : No
 IS ORDINARY RISE RAPID? : No
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? : No
 IF YES, DESCRIBE :

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE : Single span rolled beam bridge
 YEAR BUILT : 1934
 CLEAR SPAN(NORMAL TO STREAM) : 42'
 VERTICAL CLEARANCE ABOVE STREAMBED : ~15.5'
 WATERWAY OF FULL OPENING : 485 sq. ft.
 DISPOSITION OF STRUCTURE : Remove and replace
 TYPE OF MATERIAL UNDER SUBSTRUCTURE : See borings

WATER SURFACE ELEVATIONS AT:

Q2.33 =	779.5'	VELOCITY =	7.9 fps
Q10 =	782.0'	"	12.2 fps
Q25 =	783.5'	"	13.4 fps
Q50 =	784.6'	"	14.3 fps
Q100 =	785.9'	"	15.3 fps

LONG TERM STREAMBED CHANGES : None noted

IS THE ROADWAY OVERTOPPED BELOW Q100 : No
 FREQUENCY : N/A
 RELIEF ELEVATION : 792.1'
 DISCHARGE OVER ROAD @Q100 :

UPSTREAM STRUCTURE

TOWN : Huntington DISTANCE : 5000'
 HIGHWAY # : TH 31 STRUCTURE # : BR 40
 CLEAR SPAN : 50' CLEAR HEIGHT :
 YEAR BUILT : 1964, reconstructed 2010 FULL WATERWAY :
 STRUCTURE TYPE : Prestress void slab

DOWNSTREAM STRUCTURE

TOWN : Huntington DISTANCE : 9970'
 HIGHWAY # : TH 28 STRUCTURE # : BR 38
 CLEAR SPAN : 71' CLEAR HEIGHT :
 YEAR BUILT : 1977 FULL WATERWAY :
 STRUCTURE TYPE : Rolled beam

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	1.82	1.17					
POSTING							
OPERATING	2.37	1.55	1.89	1.19	1.82	1.62	1.66
COMMENTS:							

PROPOSED STRUCTURE

STRUCTURE TYPE : Single span steel beam
 CLEAR SPAN(NORMAL TO STREAM) : 86'
 VERTICAL CLEARANCE ABOVE STREAMBED : ~16.5'
 WATERWAY OF FULL OPENING : 970 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	779.3'	VELOCITY =	6.2 fps
Q10 =	781.1'	"	8.7 fps
Q25 =	782.1'	"	10.2 fps
Q50 =	782.9'	"	11.3 fps
Q100 =	783.8'	"	12.6 fps

IS THE ROADWAY OVERTOPPED BELOW Q100 : No
 FREQUENCY : N/A
 RELIEF ELEVATION : 792.3'
 DISCHARGE OVER ROAD @Q100 :

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE : 789.5'
 VERTICAL CLEARANCE : @ Q50 = 6.6'

SCOUR : 6.0' - Minimum design scour depth or to ledge

REQUIRED CHANNEL PROTECTION : Stone Fill Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW : 40 cfs DEPTH OR ELEVATION :
 ORDINARY LOW WATER : 20 cfs 776'
 ORDINARY HIGH WATER : 370 cfs 778'

TEMPORARY BRIDGE REQUIREMENTS

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

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

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

DESIGN VALUES

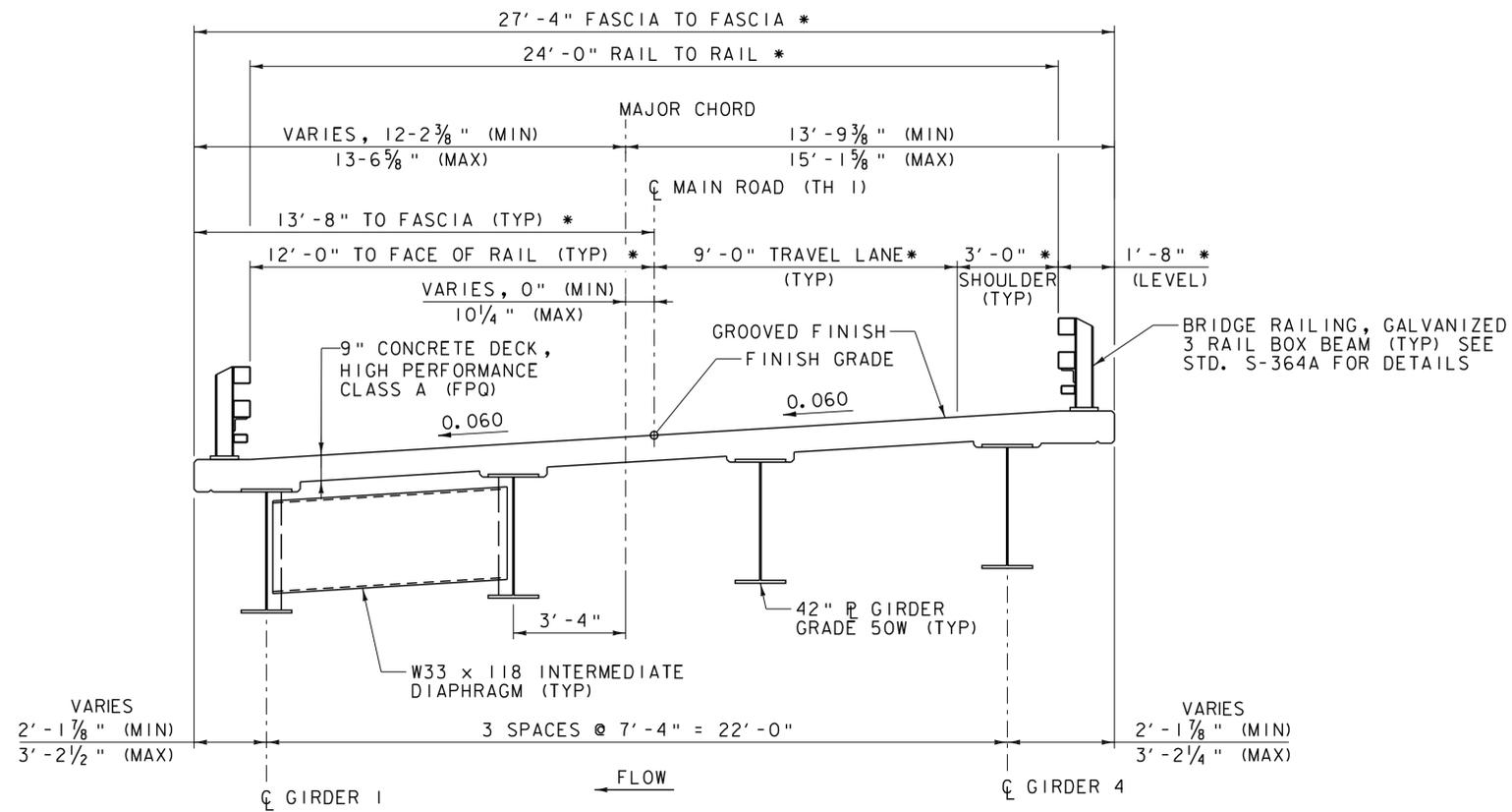
1. DESIGN LIVE LOAD HL-93
2. FUTURE PAVEMENT d_p : 2.5 INCH
3. DESIGN SPAN L: 94.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS) Δ : ---
5. PRESTRESSING STRAND f_y : ---
6. PRESTRESSED CONCRETE STRENGTH $f'c$: ---
7. PRESTRESSED CONCRETE RELEASE STRENGTH $f'cl$: ---
8. CONCRETE, HIGH PERFORMANCE CLASS AA $f'c$: ---
9. CONCRETE, HIGH PERFORMANCE CLASS A $f'c$: 4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B $f'c$: 3.5 KSI
11. CONCRETE, CLASS C $f'c$: ---
12. REINFORCING STEEL f_y : 60 KSI
13. STRUCTURAL STEEL AASHTO M270 (WEATHERING) f_y : 50 KSI
14. NOMINAL BEARING RESISTANCE OF SOIL q_n : ---
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) ϕ : ---
16. NOMINAL BEARING RESISTANCE OF ROCK q_n : 70.0 KSF
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) ϕ : 0.45

18. PILE RESISTANCE FACTOR ϕ : 0.65
19. LATERAL PILE DEFLECTION Δ : 0.06 INCH
20. BASIC WIND SPEED V_{3s} : ---
21. MINIMUM GROUND SNOWLOAD p_g : ---
22. SEISMIC DATA PGA : 0.65 S_s : --- S_1 : ---
23. ---
24. ---
25. ---
26. ---

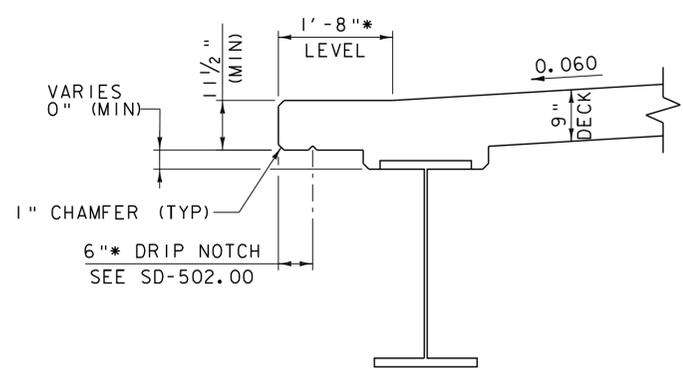
PROJECT NAME : HUNTINGTON
 PROJECT NUMBER : BF 0211(32)

FILE NAME : z13j080pi.dgn PLOT DATE : 4/8/2016
 PROJECT LEADER : S.E. BURBANK DRAWN BY : A.J. GOUDREAU
 DESIGNED BY : S.E. BURBANK CHECKED BY : E.F. LAWES
 PRELIMINARY INFORMATION SHEET 1 SHEET 2 OF 61

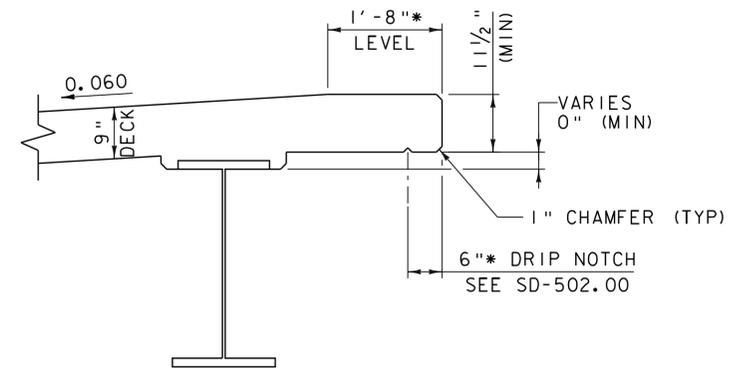




* - DIMENSIONS ARE RADIAL
TYPICAL BRIDGE SECTION
 SCALE 3/8" = 1'-0"



* - DIMENSIONS ARE RADIAL
GIRDER 1 FASCIA & DRIP NOTCH DETAIL
 SCALE 3/4" = 1'-0"



* - DIMENSIONS ARE RADIAL
GIRDER 4 FASCIA & DRIP NOTCH DETAIL
 SCALE 3/4" = 1'-0"

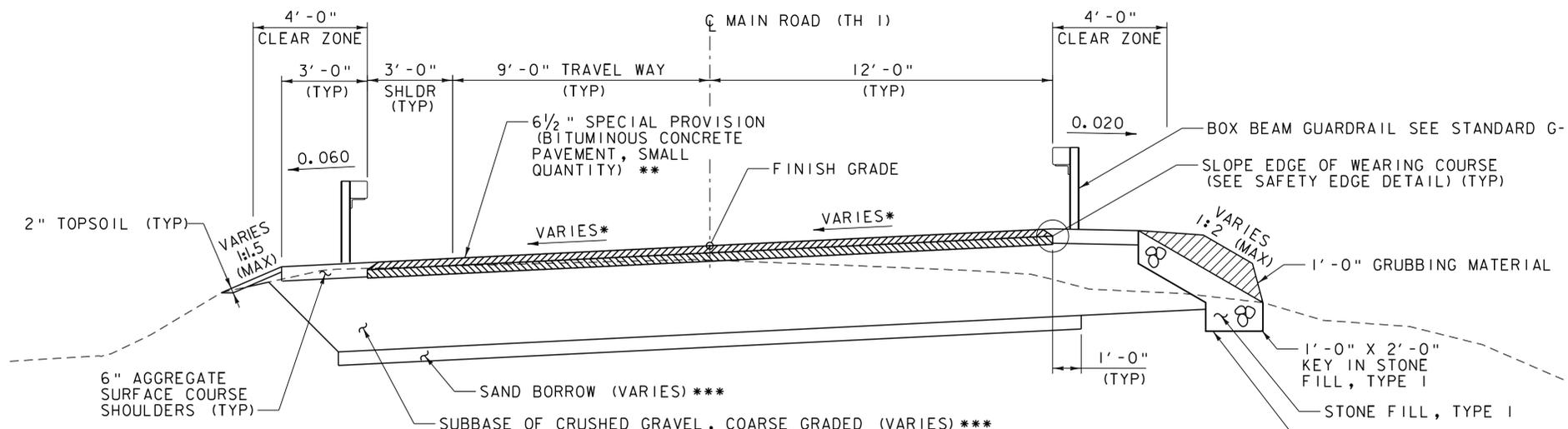


PROJECT NAME: HUNTINGTON	
PROJECT NUMBER: BF 0211(32)	
FILE NAME: z13j080typ.dgn	PLOT DATE: 4/4/2016
PROJECT LEADER: S.E. BURBANK	DRAWN BY: J.D. KEENER
DESIGNED BY: E.F. LAWES	CHECKED BY: S.E. BURBANK
TYPICAL BRIDGE SECTION	SHEET 3 OF 61

MATERIAL TOLERANCES

(IF USED ON PROJECT)

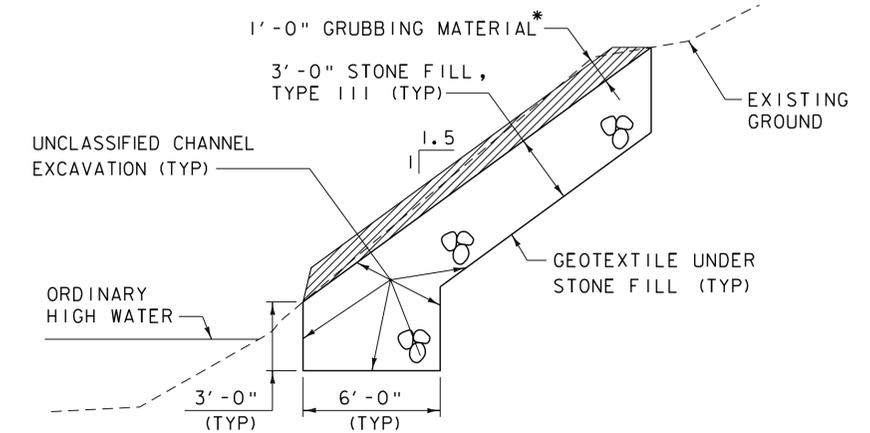
SURFACE	
PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"



* SEE BANKING DIAGRAM ON PROFILE AND BANKING DIAGRAM SHEET
 ** (2) - 1 1/2" LIFTS OF TYPE IVS OVER
 (1) - 3 1/2" LIFT OF TYPE IIS
 *** SEE "BEGIN/END APPROACH SECTION" ON TYPICAL EARTHWORK SECTIONS SHEET FOR TRANSITION DEPTHS.

TYPICAL ROADWAY SECTION

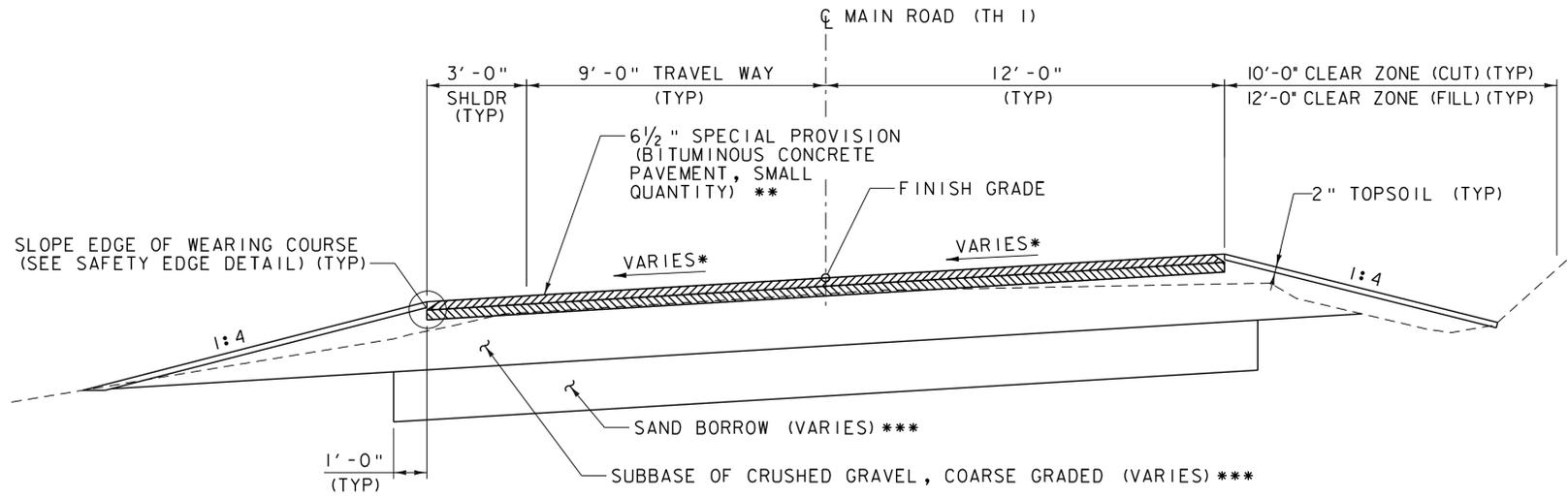
SCALE 3/8" = 1'-0"



TYPICAL CHANNEL SECTION

NOT TO SCALE

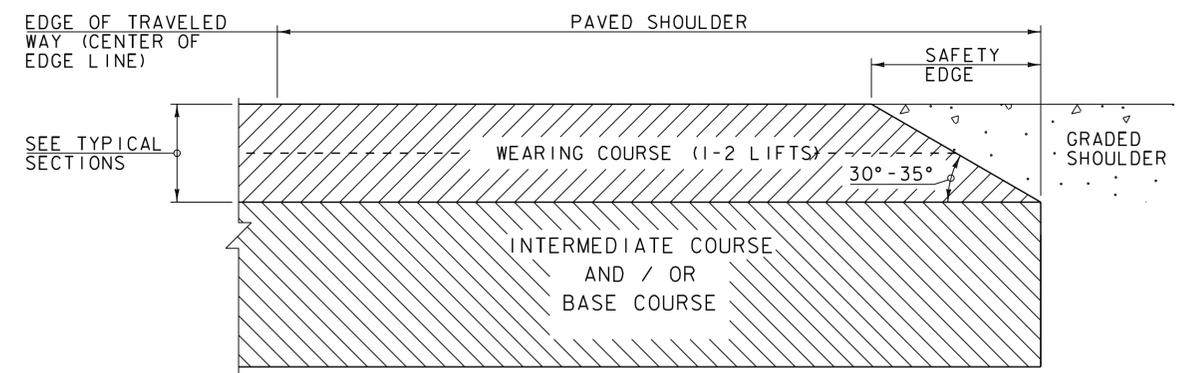
*GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.



* SEE BANKING DIAGRAM ON PROFILE AND BANKING DIAGRAM SHEET
 ** (2) - 1 1/2" LIFTS OF TYPE IVS OVER
 (1) - 3 1/2" LIFT OF TYPE IIS

TYPICAL NON-GUARDRAIL SECTION

SCALE 3/8" = 1'-0"



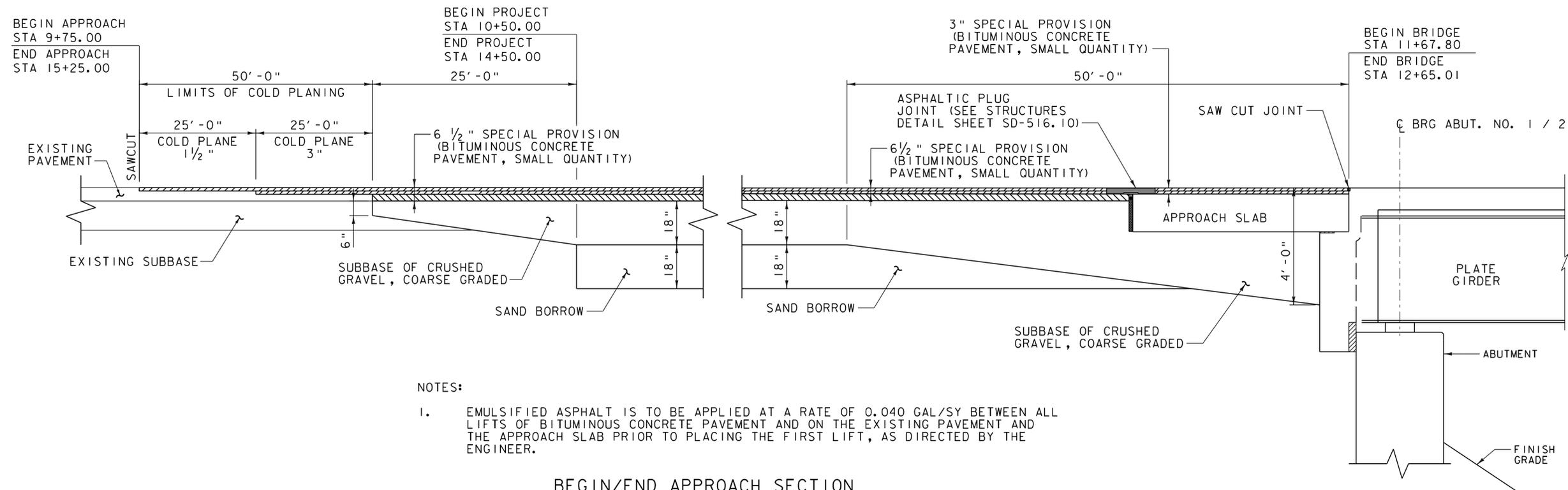
SAFETY EDGE DETAIL

NOT TO SCALE

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



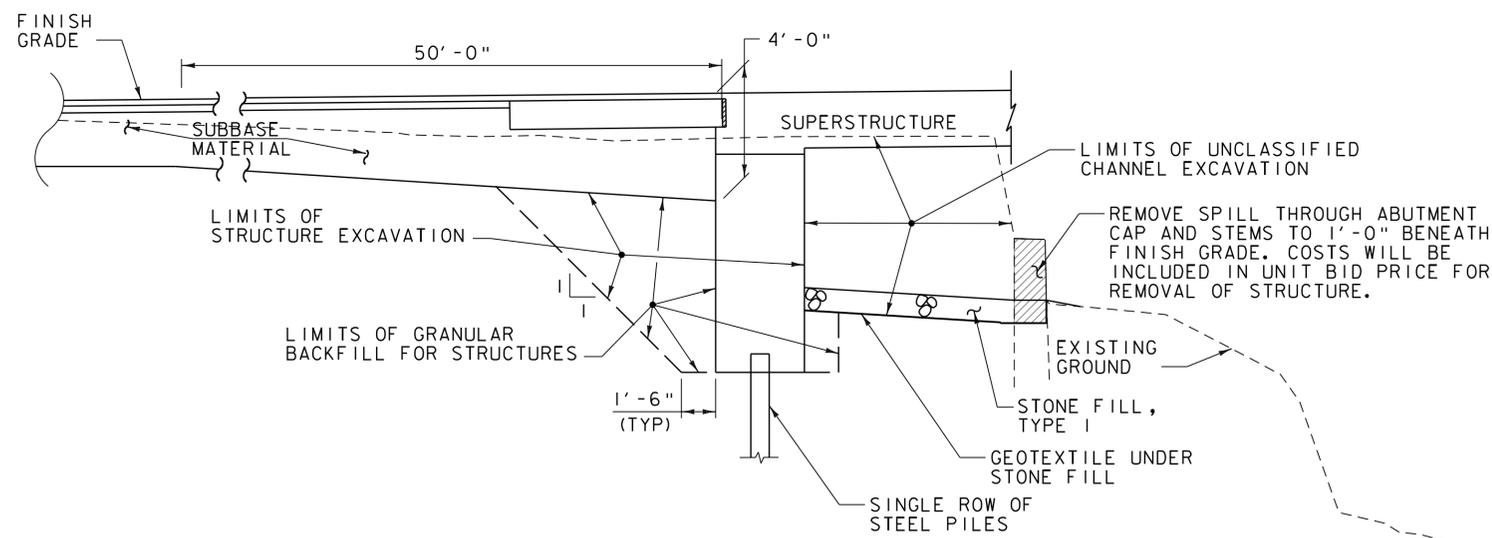
PROJECT NAME:	HUNTINGTON	PLOT DATE:	4/4/2016
PROJECT NUMBER:	BF 0211(32)	DRAWN BY:	J.D. KEENER
FILE NAME:	z13j080typ.dgn	DESIGNED BY:	J.D. KEENER
PROJECT LEADER:	S.E. BURBANK	CHECKED BY:	S.E. BURBANK
TYPICAL ROADWAY SECTIONS		SHEET	4 OF 61



NOTES:

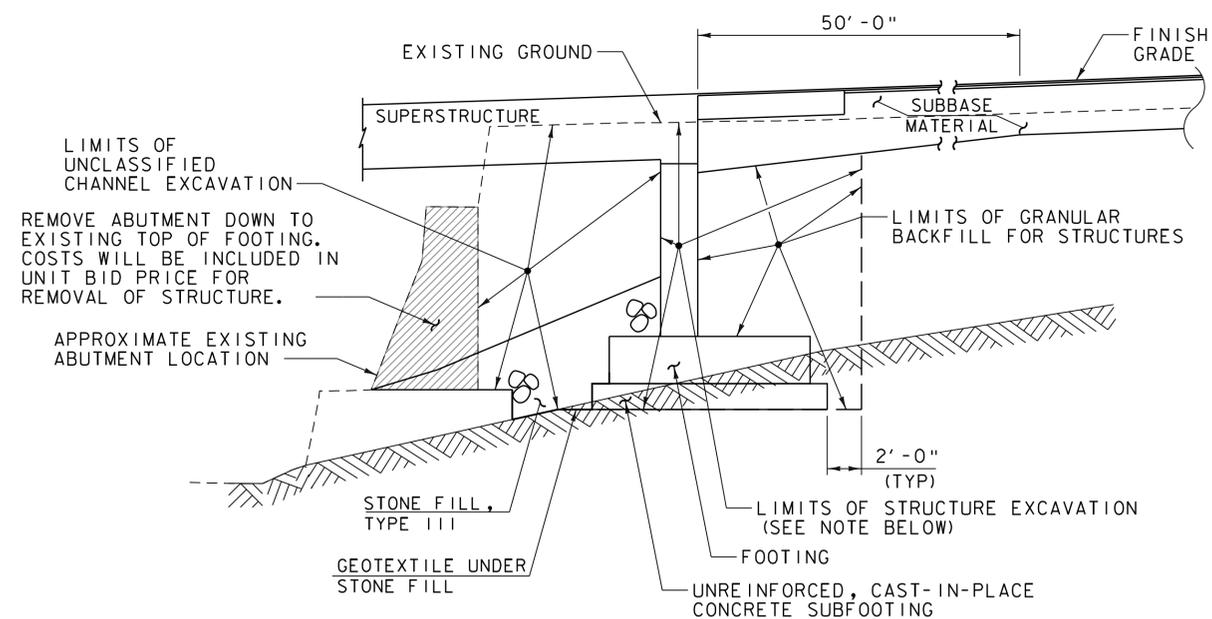
- EMULSIFIED ASPHALT IS TO BE APPLIED AT A RATE OF 0.040 GAL/SY BETWEEN ALL LIFTS OF BITUMINOUS CONCRETE PAVEMENT AND ON THE EXISTING PAVEMENT AND THE APPROACH SLAB PRIOR TO PLACING THE FIRST LIFT, AS DIRECTED BY THE ENGINEER.

BEGIN/END APPROACH SECTION
NOT TO SCALE



NOTE: ACTUAL STRUCTURE EXCAVATION LIMITS SHALL BE DETERMINED BY THE CONTRACTOR. HOWEVER, ONLY THE EXCAVATION BETWEEN THE LIMITS SHOWN FOR STRUCTURE EXCAVATION WILL BE PAID FOR UNDER ITEM 204.25 "STRUCTURE EXCAVATION". EXCAVATION OUTSIDE OF THESE LIMITS OR OUTSIDE THE UNCLASSIFIED CHANNEL EXCAVATION WILL BE AT THE EXPENSE OF THE CONTRACTOR.

ABUTMENT 1 EARTHWORK SECTION
NOT TO SCALE



NOTE: STRUCTURE EXCAVATION INCLUDES ANY REQUIRED REMOVAL OF LEDGE

ABUTMENT 2 EARTHWORK SECTION
(NOT TO SCALE)

PROJECT NAME: HUNTINGTON
PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080typ.dgn
PROJECT LEADER: S.E. BURBANK
DESIGNED BY: J.D. KEENER
TYPICAL EARTHWORK SECTIONS

PLOT DATE: 4/4/2016
DRAWN BY: J.D. KEENER
CHECKED BY: S.E. BURBANK
SHEET 5 OF 61



PROJECT NOTES

GENERAL

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION, AND ITS LATEST REVISIONS.
- ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
- THE BRIDGE IS DESIGNED FOR HL-93 LIVE LOAD WITH A 2.5 INCH ALLOWANCE FOR FUTURE PAVEMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING CONSISTENCY BETWEEN THE FABRICATOR'S SHOP DRAWINGS AND ENSURING THE FIT-UP OF ALL COMPONENTS.
- THE EXISTING BRIDGE CONTAINS STRUCTURAL STEEL. THE STRUCTURAL STEEL MAY BE PAINTED WITH MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE REMOVED EXISTING STRUCTURAL STEEL.
- THE REMOVAL OF THE EXISTING BRIDGE WILL BE PAID FOR UNDER ITEM 529.15, "REMOVAL OF STRUCTURE". THIS WORK WILL INCLUDE THE COMPLETE REMOVAL AND DISPOSAL OF THE EXISTING BRIDGE SUPERSTRUCTURE, INCLUDING ALL BEARINGS, ANCHOR BOLTS, AND THE BRIDGE SUBSTRUCTURE THAT FALLS OUTSIDE THE LIMITS COVERED BY THE CONTRACT EXCAVATION ITEMS.

TRAFFIC CONTROL

- THE CONTRACTOR SHALL IMPLEMENT THE ROAD CLOSURE AND TRAFFIC CONTROL, AS SHOWN ON THE PLANS. THE TOWN OF HUNTINGTON WILL BE RESPONSIBLE FOR SIGNING AND MAINTAINING THE OFF-SITE DETOUR.
- THE CONTRACTOR SHALL NOTIFY THE TOWN AND RESIDENTS WITHIN THE PROJECT LIMITS A MINIMUM OF TWO (2) WEEKS PRIOR TO CLOSING THE ROAD.
- FULL ACCESS TO ALL SIDE ROADS AND DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL".
- UNLESS COVERED UNDER INDIVIDUAL PAY ITEMS OR NOTED OTHERWISE, ALL COSTS FOR WORK SHOWN ON THE TRAFFIC CONTROL SHEETS AND FOR TEMPORARY TRAFFIC CONTROL DEVICES WILL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR ITEM 641.10, "TRAFFIC CONTROL". THIS INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING ITEMS:

TEMPORARY TRAFFIC BARRIERS
RETROREFLECTIVE DRUMS
TEMPORARY SIGNS
TEMPORARY SIGN POSTS
INSTALLATION OF TEMPORARY SIGNS AND SIGN POSTS

TEMPORARY TRAFFIC BARRIER SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 621.

- ALL SIGNS SHALL BE IN ACCORDANCE WITH THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), AND ITS LATEST REVISIONS AND THE 2004 EDITION OF THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOK (SHSM), AND ITS 2012 SUPPLEMENT, PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).

EARTHWORK

- THE CONTRACTOR'S ATTENTION IS DIRECTED TO SUBSECTION 301.06 REGARDING THE COMPACTION OF THE SUBBASE MATERIAL.
- THE CONTRACTOR MAY SUBSTITUTE SUBBASE MATERIAL FOR THE SAND BORROW SHOWN IN THE MATERIALS TRANSITION. THE SUBBASE MATERIAL SHALL BE THE TYPE SPECIFIED IN THE CONTRACT AND SHALL BE PLACED TO MEET THE SUBBASE SPECIFICATIONS. IF SUBBASE IS PLACED IN LIEU OF SAND BORROW, A GEOTEXTILE MEETING THE REQUIREMENTS OF ITEM 649.11, "GEOTEXTILE FOR ROADBED SEPARATOR" SHALL BE PLACED BETWEEN THE SUBGRADE AND SUBBASE MATERIAL. ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING THE GEOTEXTILE SHALL BE INCIDENTAL TO ITEM 203.31, "SAND BORROW".
- STONE FILL SHALL BE PLACED IN FRONT OF THE ABUTMENTS BEFORE THE NEW GIRDERS ARE SET, AS SHOWN ON THE PLANS.

H-PILES

- ABUTMENT NO. 1 PILES
 - THE PILES SHALL BE HP 12x63.
 - THE PILES SHALL BE DRIVEN TO A NOMINAL PILE DRIVING RESISTANCE (RNRD) OF 350 KIPS, PROVIDED A MINIMUM PENETRATION OF 25.5 FEET BELOW THE BOTTOM OF PILE CAP HAVE BEEN ACHIEVED.

- TO PREVENT DAMAGE TO THE PILES, PILE SHOES ARE REQUIRED AND SHALL CONFORM TO SUBSECTION 505.04 (f).
- A MINIMUM OF TWO DYNAMIC TESTS ARE REQUIRED AT ABUTMENT NO. 1 DURING PILE INSTALLATION. PAYMENT IS ITEM 505.45, "DYNAMIC PILE LOADING TEST".
- THE TOPS OF THE PILES AFTER INSTALLATION 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.
- FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY.

STRUCTURAL STEEL

- ALL STRUCTURAL STEEL WILL BE PAID UNDER ITEM 506.55, "STRUCTURAL STEEL, PLATE GIRDER (FPQ)" SHALL CONFORM TO AASHTO M270M/M270 GRADE 50W.
- ALL STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).
- ALL MEMBERS MARKED (CVN) MUST MEET THE CHARPY V-NOTCH TESTING REQUIREMENTS AS INDICATED IN SUBSECTION 714.01.
- ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH-STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SECTION 506.
- ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.
- ANY CONNECTIONS THAT ARE NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.
- AFTER THE STRUCTURAL STEEL HAS BEEN SET ON THE BEARINGS, ELEVATIONS SHALL BE TAKEN ALONG THE TOP OF EACH GIRDER UNDER THE DIRECTION OF THE RESIDENT ENGINEER. THESE ELEVATIONS SHALL BE USED IN DETERMINING THE FINAL GRADE.
- ANY HOLES IN FASCIA GIRDERS NOT OTHERWISE FILLED SHALL BE FILLED WITH BOLTS CONFORMING TO ASTM A325 TYPE III. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19
- BEARING STIFFENERS AND GIRDER ENDS SHALL BE VERTICAL UNDER FULL DEAD LOAD DEFLECTION.
- THE FAYING SURFACES ON THE CONNECTION PLATES SHALL BE PREPARED AS CLASS "B". THESE SURFACES SHALL BE PROTECTED FROM DAMAGE AND CORROSION PRIOR TO THE CONNECTION.

CONCRETE

- CONCRETE FOR THE WINGWALLS, ABOVE THE BRIDGE SEAT ELEVATION MAY BE PLACED PRIOR TO THE GIRDERS BEING PROFILED. THE CONTRACTOR IS PROVIDED THE OPTION FOR CAST-IN-PLACE CONCRETE WINGWALLS AND CHEEKWALLS, ABOVE THE BRIDGE SEAT, AS INDICATED IN THE PLANS AND THE TABLE ON PROJECT NOTES (2 OF 2).
- IN ACCORDANCE WITH SUBSECTION 506.23 (a) AND AS DIRECTED BY THE RESIDENT ENGINEER, THE CONTRACTOR SHALL TAKE MEASURES NECESSARY TO PROTECT ALL SUBSTRUCTURE CONCRETE FROM STAINING DUE TO OXIDE FORMATION ON THE STRUCTURAL STEEL PRIOR TO PLACEMENT OF THE DECK. THESE MEASURES WILL NOT BE PAID FOR SEPARATELY BUT WILL BE CONSIDERED INCIDENTAL TO THE ADJACENT CONCRETE ITEM. ANY SUCH STAINING THAT OCCURS PRIOR TO DECK PLACEMENT SHALL BE REMOVED AT NO ADDITIONAL COST TO THE STATE.
- THE DECK IS TO BE POURED IN ONE CONTINUOUS POUR WITH A MAXIMUM DURATION OF EIGHT HOURS. IF CIRCUMSTANCES BEYOND THE CONTRACTOR'S CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A TRANSVERSE CONSTRUCTION JOINT SHALL BE USED BETWEEN ADJACENT POURS. A MINIMUM 96 HOUR DELAY BETWEEN ADJACENT POURS SHALL BE OBSERVED.
- RELATIVE TO GRADE, ALL DECK POURS SHALL BEGIN FROM THE LOW ELEVATION END AND PROCEED TOWARDS THE HIGH ELEVATION END.
- FLEMING BRACKETS OR SIMILAR FALSE WORK SHALL BE DESIGNED BY THE CONTRACTOR AND PLACED AT A MAXIMUM SPACING OF 4'-0". THE BRACKETS SHALL BEAR NEAR THE BOTTOM FLANGE AND IN NO CASE SHALL THEY BEAR ABOVE THE BOTTOM QUARTER OF THE WEB DEPTH.
- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1" UNLESS OTHERWISE NOTED.
- ITEM 514.10, "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON THE BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.
- JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.

- SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTH STEEL TROWEL FINISHED.
- ALL FORM SUPPORTS AND FORM TIES THAT ARE TO REMAIN PERMANENTLY IN THE CONCRETE ABOVE THE BRIDGE SEAT SHALL BE AT A MINIMUM PROTECTION LEVEL OF GALVANIZED AND CONFORM TO SECTION 726 OF THE SPECIFICATIONS.

PRECAST CONCRETE PILE CAP AND ABUTMENT

- PRECAST CONCRETE COMPRESSIVE STRENGTH: $f'c = 5,000$ PSI.
- ALL PRECAST CONCRETE ELEMENTS ARE 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.
- ALL LIFTING POINTS IN THE SUBSTRUCTURES SHALL BE REMOVABLE TO THE MINIMUM CLEAR COVER FOR REINFORCING STEEL SPECIFIED IN THE PLANS. THE LIFTING POINTS SHALL BE DETAILED IN THE APPROPRIATE FABRICATION DRAWING. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.
- ALL RECESSED LIFTING POINTS AND BLOCKOUTS SHALL BE FILLED WITH A TYPE IV MORTAR MEETING THE REQUIREMENTS OF SUBSECTION 707.03. PAYMENT WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.
- THE METHOD OF FORMING FOR SUBSEQUENT CONCRETE PLACEMENTS AFTER PLACING PRECAST UNITS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR IS ENCOURAGED TO WORK WITH THE FABRICATOR IF ADDITIONAL SUPPORTS MAY BE REQUIRED. IN NO CASE SHALL THE CONTRACTOR ATTACH ADDITIONAL FORM SUPPORTS BY DRILLING OR SIMILAR MEANS INTO ANY PRECAST UNIT.
- SHEET MEMBRANE WATERPROOFING, PREFORMED SHEET SHALL BE INSTALLED WHERE SHOWN ON THE PLANS AND MEET THE REQUIREMENTS OF SUBSECTION 726.11. PAYMENT FOR SHEET MEMBRANE WATERPROOFING, PREFORMED SHEET WILL BE CONSIDERED INCIDENTAL TO THE ADJACENT PRECAST ITEM.

REINFORCING STEEL

- ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
- TEST BARS SHALL BE PROVIDED IN ACCORDANCE WITH THE "VERMONT AGENCY OF TRANSPORTATION MATERIAL SAMPLING MANUAL" AVAILABLE ON THE AGENCY WEBSITE. A MINIMUM OF TWO TEST SECTIONS ARE REQUIRED FOR EACH SIZE, BRAND, AND GRADE OR TYPE OF REINFORCING. SEE THE MANUAL FOR ACCEPTABLE DIMENSIONS OF TEST SECTIONS. ALL COSTS ASSOCIATED WITH PROVIDING BARS FOR TESTING WILL BE INCLUDED IN THE UNIT BID PRICE FOR THE APPROPRIATE REINFORCING STEEL OR PRECAST CONCRETE ITEM.
- THE CONTRACTOR SHALL PROVIDE THREE (3) ASSEMBLED SPLICE TUBES PER SPLICE CONNECTOR SIZE FOR TESTING. THE CONNECTION SHALL BE ASSEMBLED IN THE FIELD BY THE CONTRACTOR AND WITNESSED BY THE ENGINEER. THE MECHANICAL COUPLER CONNECTORS WILL BE PAID FOR UNDER ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1)" OR ITEM 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 1)" AS APPROPRIATE.
- MINIMUM COVER FOR REINFORCING STEEL SHALL BE 2" ALONG THE BACK FACES OF WALLS AGAINST EARTH, 1½" ALONG THE BOTTOM SURFACE OF THE DECK AND 3" ELSEWHERE, UNLESS OTHERWISE NOTED.
- REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:

SPACING	+/- 1"
CLEARANCE	+/- ¼"
- CUTTING AND REPAIRING DAMAGED AREAS OF COATED REINFORCING STEEL SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 507.04.

PROJECT NAME: HUNTINGTON

PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080pn.dgn
PROJECT LEADER: S.E. BURBANK
DESIGNED BY: K.C. BARRY
PROJECT NOTES (1 OF 2)

PLOT DATE: 4/4/2016
DRAWN BY: K.C. BARRY
CHECKED BY: S.E. BURBANK
SHEET 6 OF 61



SUBSTRUCTURE ON LEDGE

- 52. FOOTINGS AND SUB-FOOTINGS SHALL BE FOUNDED ON LEDGE WHICH HAS BEEN CLEANED OF ALL LOOSE ROCK AND DEBRIS TO ENSURE THAT SUBSTRUCTURES ARE PLACED ON COMPETENT ROCK.
- 53. UPON COMPLETION OF THE EXCAVATION FOR SUBSTRUCTURES FOUNDED ON BEDROCK AND PRIOR TO PLACING FORMWORK, THE ENGINEER SHALL NOTIFY THE PROJECT MANAGER AND THE VTTRANS STATE GEOLOGIST. THE GEOLOGIST WILL DETERMINE IF THE BEDROCK IS COMPETENT TO OBTAIN THE REQUIRED NOMINAL BEARING RESISTANCE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 72 HOURS PRIOR TO WHEN THE ANALYSIS WILL BE NEEDED.
- 54. LEDGE THAT IS EXCAVATED FOR PLACEMENT OF FOOTINGS SHALL BE EXCAVATED TO PROVIDE A LEVEL SURFACE, OR AS DIRECTED BY THE ENGINEER.
- 55. A MAXIMUM OF 6" OVERBREAKAGE SHALL BE REPLACED WITH "CONCRETE, HIGH PERFORMANCE CLASS B". OVERBREAKAGE BEYOND 6" SHALL BE REPLACED WITH "CONCRETE, HIGH PERFORMANCE CLASS B" AT THE EXPENSE OF THE CONTRACTOR.
- 56. THE LIMITS OF THE SUBFOOTING SHALL BE 1'-0" OUTSIDE THE LIMITS OF THE FOOTING.
- 57. THE SUBSTRUCTURE UNITS HAVE BEEN DESIGNED FOR THE ELEVATIONS SHOWN ON THE PLANS. FOR ALL SUBSTRUCTURE UNITS, LEDGE SHALL BE EXCAVATED DOWN (IF NECESSARY) TO ALLOW FOR THE INDICATED SUBFOOTING TO BE POURED USING "CONCRETE, HIGH PERFORMANCE CLASS B" AND HAVING A MINIMUM THICKNESS OF 1'-0" AND A MAXIMUM THICKNESS OF 5'-0" TO LEDGE.
- 58. #8 DOWELS SHALL BE DRILLED AND GROUTED INTO THE LEDGE AS SHOWN ON THE PLANS. THE DOWELS SHALL HAVE A 2'-0" EMBEDMENT INTO THE LEDGE AND SHALL EXTEND INTO THE SUBFOOTING 2'-0". WHERE THE SUBFOOTING DEPTH IS INSUFFICIENT TO OBTAIN A 2'-0" EMBEDMENT THE MAXIMUM EMBEDMENT SHALL BE 9" WHILE MAINTAINING 3" OF CLEAR COVER. #8 DOWELS WILL ALSO BE USED AT THE INTERFACE BETWEEN THE SUBFOOTING AND THE PRECAST CONCRETE FOOTING AS SHOWN ON THE PLANS. THE DRILLING AND GROUTING OF THESE DOWELS WILL BE PAID FOR UNDER ITEM 507.16, "DRILLING AND GROUTING DOWELS".

APPROACH SLABS

- 59. PRECAST CONCRETE COMPRESSIVE STRENGTH: $f'c = 5,000$ PSI.

- 60. CORRUGATED POST-TENSIONING DUCTS IN THE PRECAST APPROACH SLABS FOR DOWEL CONNECTIONS SHALL BE CONSTRUCTED FROM EITHER POLYETHYLENE OR POLYPROPYLENE. THE DUCT SHALL HAVE A MINIMUM MATERIAL THICKNESS OF 0.080 IN. +/- 0.010 IN. AND SHALL HAVE A WHITE COATING ON THE OUTSIDE OR SHALL BE OF WHITE MATERIAL WITH ULTRAVIOLET STABILIZERS ADDED. POLYETHYLENE DUCT SHALL BE FABRICATED FROM RESINS MEETING OR EXCEEDING THE REQUIREMENTS OF ASTM D 3350 WITH A CELL CLASSIFICATION OF 345464A. POLYPROPYLENE DUCT SHALL BE FABRICATED FROM RESINS MEETING OR EXCEEDING THE REQUIREMENTS OF ASTM D 4101 WITH A CELL CLASSIFICATION RANGE OF PP0340B44544 TO PP340B65884. ALL COSTS ASSOCIATED WITH PLACING THE DUCTS WILL BE INCLUDED IN THE BID PRICE FOR THE APPROPRIATE PRECAST APPROACH SLAB.
- 61. GROUT USED TO FILL DOWEL DUCTS IN THE PRECAST APPROACH SLABS FOR DOWEL CONNECTION SHALL BE MORTAR TYPE IV IN ACCORDANCE WITH SECTION 540 - PRECAST CONCRETE. ALL COSTS ASSOCIATED WITH PROVIDING AND PLACING GROUT FOR THE APPROACH SLAB DOWEL CONNECTION WILL BE INCLUDED IN THE BID FOR THE APPROPRIATE PRECAST APPROACH SLAB.
- 62. THE CONCRETE EDGES ALONG THE LONGITUDINAL CLOSURE POURS SHALL BE TREATED TO PROVIDE A ROUGHENED/EXPOSED AGGREGATE SURFACE. THE AMPLITUDE OF THE EXPOSED AGGREGATE SURFACE SHALL BE A MINIMUM OF 1/8" AND BE COMPLETED PRIOR TO ERECTION OF THE APPROACH SLABS. THE FABRICATOR SHALL INDICATE THE METHOD USED TO ACHIEVE THIS PROFILE ON THE FABRICATION DRAWINGS AND METHOD USED TO PROTECT THE REINFORCING STEEL.
- 63. THE LONGITUDINAL CLOSURE POUR CONCRETE SHALL OBTAIN A STRENGTH OF 5,000 PSI PRIOR TO ANY VEHICULAR LOADING.

PRECAST CONCRETE RETAINING WALL

- 64. THE DESIGN, CONSTRUCTION, HANDLING, AND ASSEMBLY OF THE PRECAST CONCRETE RETAINING WALL SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS. HANDLING AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AS APPLICABLE.
- 65. THE PRECAST CONCRETE RETAINING WALL SHALL BE SELECTED FROM THE LIST OF WALLS ON THE APPROVED RETAINING WALL DOCUMENT AVAILABLE FROM VAOT GEOTECHNICAL SECTION WEBSITE: (https://outside.vermont.gov/agency/vtrans/external/docs/construction/03GeotechEng/Engineering/MandRSoilAPPROVED_Retaining_Walls_8-2012_Final%20Engineering.pdf)

- 66. THE PRECAST CONCRETE RETAINING WALL WILL BE PAID FOR UNDER ITEM 900.670, "SPECIAL PROVISION (RETAINING WALL).
 - 67. THE PRECAST CONCRETE RETAINING WALL SHALL BE DESIGNED BY THE FABRICATOR IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS REFERENCED IN PROJECT NOTE 1. THE DESIGN SHALL INCLUDE THE EFFECTS OF ALL APPLICABLE LOADS INCLUDING VEHICULAR SURCHARGE. DESIGN CALCULATIONS SHALL BE SUBMITTED WITH FABRICATION DRAWINGS STAMPED BY AN ENGINEER REGISTERED IN THE STATE OF VERMONT.
 - 68. THE DESIGN OF THE WALL SHALL INCORPORATE PROVISIONS FOR ADJACENT OBSTRUCTIONS SUCH AS DRAINAGE FEATURES AND GUARDRAIL POSTS IF NECESSARY. ANY CHANGES TO THE WALL SYSTEM SHALL BE DETAILED IN THE FABRICATION DRAWINGS.
 - 69. DESIGN VALUES:
 - A. BACKFILL SOIL PARAMETERS (704.08 - GRANULAR BACKFILL FOR STRUCTURES)
 - i. UNIT WEIGHT = 140 LB/FT³
 - ii. FRICTION ANGLE = 34°
 - B. BEARING STRATUM AND RETAINED SOIL PARAMETERS
 - i. UNIT WEIGHT = 110 LB/FT³
 - ii. FRICTION ANGLE = 32°
 - C. REQUIRED DESIGN LIFE = 75 YEARS
 - D. FACTORED BEARING RESISTANCE AT STRENGTH LIMIT STATE (EFFECTIVE FOOTING WIDTH) = 7.5 KIPS/FT² (6-FEET)
 - E. VEHICULAR SURCHARGE = PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
- WALL DESIGN SHALL INCLUDE DRAINAGE PROVISIONS TO PREVENT HYDROSTATIC PRESSURE BEHIND WALL

CONCRETE		REINFORCING STEEL	
STRUCTURAL ELEMENT:	CONTRACT ITEM:	TO MEET THE REQUIREMENTS FOR:	PAYMENT TO BE INCLUDED IN:
CAST-IN-PLACE SUBFOOTING	ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B".	REINFORCING STEEL, LEVEL I	ITEM 507.11, "REINFORCING STEEL, LEVEL I".
ABUTMENT NO. 1 PRECAST PILE CAP AND WINGWALLS	ITEM 540.10, "PRECAST CONCRETE STRUCTURE" OR ITEM 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)", AS APPROPRIATE.	REINFORCING STEEL, LEVEL II	ITEM 540.10, "PRECAST CONCRETE STRUCTURE" OR ITEM 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)", AS APPROPRIATE.
ABUTMENT NO. 2 PRECAST FOOTING, ABUTMENT STEM, AND WINGWALL STEMS	ITEM 540.10, "PRECAST CONCRETE STRUCTURE" OR ITEM 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)", AS APPROPRIATE.	REINFORCING STEEL, LEVEL I (FOOTINGS) REINFORCING STEEL, LEVEL II (STEMS)	ITEM 540.10, "PRECAST CONCRETE STRUCTURE" OR ITEM 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)", AS APPROPRIATE.
ABUTMENT NO. 1 PILE CAP VOIDS AND ABUTMENT NO. 2 REINFORCING VOIDS	ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)"	N/A	N/A
APPROACH SLAB CLOSURE POUR CONCRETE	ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)"	REINFORCING STEEL, LEVEL II	ITEM 540.10, "PRECAST CONCRETE STRUCTURE" OR ITEM 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)", AS APPROPRIATE.
PRECAST APPROACH SLABS	ITEM 540.10, "PRECAST CONCRETE STRUCTURE" OR ITEM 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)", AS APPROPRIATE.	REINFORCING STEEL LEVEL II	ITEM 540.10, "PRECAST CONCRETE STRUCTURE" OR ITEM 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)", AS APPROPRIATE.
CAST-IN-PLACE WINGWALLS/CHEEKWALLS (OPTION ITEMS)	ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A (FPQ)"	REINFORCING STEEL LEVEL II	ITEM 507.12, "REINFORCING STEEL, LEVEL II"
CAST-IN-PLACE DECK AND BACKWALLS	ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A (FPQ)"	REINFORCING STEEL LEVEL II	ITEM 507.12, "REINFORCING STEEL, LEVEL II"
NOTE: PAYMENT FOR REINFORCING STEEL PROJECTING FROM A PRECAST CONCRETE ELEMENT WILL BE MADE UNDER THE APPROPRIATE ADJACENT PRECAST CONCRETE ITEM.			

PROJECT NAME:	HUNTINGTON
PROJECT NUMBER:	BF 0211(32)
FILE NAME:	z13j080pn.dgn
PROJECT LEADER:	S.E. BURBANK
DESIGNED BY:	K.C. BARRY
PROJECT NOTES (2 OF 2)	
PLOT DATE:	4/4/2016
DRAWN BY:	K.C. BARRY
CHECKED BY:	S.E. BURBANK
SHEET	7 OF 61



QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES											TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
				ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	BRIDGE (ABUTMENT NO 1)	BRIDGE (ABUTMENT NO 2)		GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
				1							1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				
				880							880		CY	COMMON EXCAVATION	203.15				
						730					730		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
				345							345		CY	SAND BORROW	203.31				
				1							1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
						230					230		CY	STRUCTURE EXCAVATION	204.25				
						145					145		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
				255							255		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
				660							660		CY	SUBBASE OF CRUSHED GRAVEL, COARSE GRADED	301.25				
				27							27		CY	AGGREGATE SURFACE COURSE	401.10				
				11							11		CWT	EMULSIFIED ASPHALT	404.65				
				1							1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
						100					100		CY	CONCRETE, HIGH PERFORMANCE CLASS A (FPQ)	501.33				
														BEGIN OPTION AA					
								1			1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1)	540.10				
								1			1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 1)	900.645				
								9			9		CY	CONCRETE, HIGH PERFORMANCE CLASS A (FPQ)	501.33				
								675			675		LB	REINFORCING STEEL, LEVEL II	507.12				
								1			1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1)	540.10				
								9			9		CY	CONCRETE, HIGH PERFORMANCE CLASS A (FPQ)	501.33				
								675			675		LB	REINFORCING STEEL, LEVEL II	507.12				
								1			1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 1)	900.645				
														END OPTION AA					
														BEGIN OPTION BB					
									1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2)	540.10				
									1		1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 2)	900.645				
									7		7		CY	CONCRETE, HIGH PERFORMANCE CLASS A (FPQ)	501.33				
									800		800		LB	REINFORCING STEEL, LEVEL II	507.12				
									1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2)	540.10				
									7		7		CY	CONCRETE, HIGH PERFORMANCE CLASS A (FPQ)	501.33				
									800		800		LB	REINFORCING STEEL, LEVEL II	507.12				
									1		1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 2)	900.645				
														END OPTION BB					
						43					43		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34				
						1					1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10				
						125					125		LF	STEEL PILING, HP 12 X 63	505.155				
						2					2		EACH	DYNAMIC PILE LOADING TEST	505.45				
						84500					84500		LB	STRUCTURAL STEEL, PLATE GIRDER (FPQ)	506.55				

PROJECT NAME:	HUNTINGTON
PROJECT NUMBER:	BF 0211(32)
FILE NAME: z13j080qs.dgn	PLOT DATE: 03/28/2016
PROJECT LEADER: S.E. BURBANK	DRAWN BY: R.H. BARNES
DESIGNED BY: R.H. BARNES	CHECKED BY: S.E. BURBANK
QUANTITY SHEET #1	SHEET 8 OF 61



QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
					ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	BRIDGE (ABUTMENT NO 1)	BRIDGE (ABUTMENT NO 2)	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							620				620		LB	REINFORCING STEEL, LEVEL I	507.11				
							26500				26500		LB	REINFORCING STEEL, LEVEL II	507.12				
							140				140		LF	DRILLING AND GROUTING DOWELS	507.16				
							1				1		LS	SHEAR CONNECTORS (760 - 7/8" X 6")	508.15				
							265				265		SY	LONGITUDINAL DECK GROOVING	509.10				
							25				25		GAL	WATER REPELLENT, SILANE	514.10				
							52				52		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
							52				52		LF	JOINT SEALER, HOT POURED	524.11				
							196.75				196.75		LF	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	525.335				
							1				1		EACH	REMOVAL OF STRUCTURE (1267 SF - EST)	529.15				
							8				8		EACH	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	531.17				
														BEGIN OPTION CC					
							1				1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 1)	540.10				
							1				1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (APPROACH SLAB NO. 1)	900.645				
														END OPTION CC					
														BEGIN OPTION DD					
							1				1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 2)	540.10				
							1				1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (APPROACH SLAB NO. 2)	900.645				
														END OPTION DD					
					1						1		MGAL	DUST CONTROL WITH WATER	609.10				
					130						130		CY	STONE FILL, TYPE I	613.10				
							315				315		CY	STONE FILL, TYPE III	613.12				
					204						204		LF	BOX BEAM GUARDRAIL	621.30				
					4						4		EACH	MANUFACTURED TERMINAL SECTION, TANGENT	621.51				
					4						4		EACH	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	621.725				
					260						260		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
					400						400		HR	FLAGGERS	630.15				
							1				1		LS	FIELD OFFICE, ENGINEERS	631.10				
							1				1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
							1				1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
							3000				3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
					1						1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
					1						1		LS	TRAFFIC CONTROL	641.10				
					14						14		DAY	PORTABLE CHANGEABLE MESSAGE SIGN RENTAL	641.17				
					1100						1100		LF	4 INCH YELLOWLINE	646.21				
						1500					1500		SY	GEOTEXTILE UNDER STONE FILL	649.31				
						500					500		SY	GEOTEXTILE FOR SILT FENCE	649.51				
						65					65		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61				
						15					15		LB	SEED	651.15				



QUANTITY SHEET 3

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
					ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	BRIDGE (ABUTMENT NO 1)	BRIDGE (ABUTMENT NO 2)	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
						100					100		LB	FERTILIZER	651.18				
						0.5					0.5		TON	AGRICULTURAL LIMESTONE	651.20				
						0.25					0.25		TON	HAY MULCH	651.25				
						26					26		CY	TOPSOIL	651.35				
						620					620		SY	GRUBBING MATERIAL	651.40				
						1					1		LS	EPSC PLAN	652.10				
						65					65		HR	MONITORING EPSC PLAN	652.20				
						1					1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30				
						620					620		SY	TEMPORARY EROSION MATTING	653.20				
						35					35		CY	VEHICLE TRACKING PAD	653.35				
						230					230		LF	BARRIER FENCE	653.50				
						760					760		LF	PROJECT DEMARCATION FENCE	653.55				
					12						12		SF	TRAFFIC SIGNS, TYPE A	675.20				
					15						15		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
					5						5		EACH	REMOVING SIGNS	675.50				
					1						1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50				
							10				10		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)	900.608				
					75000						75000		DL	SPECIAL PROVISION (INCENTIVE/DISINCENTIVE) (N.A.B.I.)	900.615				
							4				4		EACH	SPECIAL PROVISION (CPM SCHEDULE)	900.620				
					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				
							95				95		SF	SPECIAL PROVISION (RETAINING WALL)	900.670				
					60						60		SY	SPECIAL PROVISION (HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES)	900.675				
					360						360		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				



GENERAL INFORMATION

SYMBOLY LEGEND NOTE

THE SYMBOLY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLY. THE SYMBOLY 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. SYMBOLY 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 SYMBOLY

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

ABOVE GROUND UTILITIES (AERIAL)

SYMBOL	DESCRIPTION
— T —	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 SYMBOLY

SYMBOL	DESCRIPTION
— — — CZ — — —	CLEAR ZONE
— — — — —	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

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

**CONVENTIONAL BOUNDARY SYMBOLY**

SYMBOL	DESCRIPTION
— — — — —	TOWN BOUNDARY LINE
— — — — —	COUNTY BOUNDARY 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
— — — — —	PROPERTY LINE (P/L)
— — — — —	SLOPE RIGHTS
6f — — — — —	6F PROPERTY BOUNDARY
4f — — — — —	4F PROPERTY BOUNDARY
HAZ — — — — —	HAZARDOUS WASTE

**EPSC LAYOUT PLAN SYMBOLY**

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

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLY

**ENVIRONMENTAL RESOURCES**

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

**ARCHEOLOGICAL & HISTORIC**

— — — — —	ARCHEOLOGICAL BOUNDARY
HISTORIC DIST — — —	HISTORIC DISTRICT BOUNDARY
HISTORIC — — —	HISTORIC AREA
(H)	HISTORIC STRUCTURE

**CONVENTIONAL TOPOGRAPHIC SYMBOLY**

SYMBOL	DESCRIPTION
— — — — —	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: HUNTINGTON  
PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080LegendSheet.dgn  
PROJECT LEADER: S.E. BURBANK  
DESIGNED BY: VTRANS  
CONVENTIONAL SYMBOLY LEGEND

PLOT DATE: 4/4/2016  
DRAWN BY: J.D. KEENER  
CHECKED BY: S.E. BURBANK  
SHEET 11 OF 61



GPS CONTROL POINTS

SHAKE AZ MK  
 NORTH = 650571.420  
 EAST = 1518446.317  
 ELEV. = 710.960

SHAKE AZ MK  
 TO REACH FROM THE INTERSECTION OF VT ROUTE 116 AND HINESBURG HOLLOW ROAD IN SOUTH HUNTINGTON, GO EAST ALONG HINESBURG HOLLOW ROAD FOR 5.0MI TO THE T-INTERSECTION OF MAIN ROAD (HUNTINGTON ROAD). TURN RIGHT AND GO SOUTH ALONG MAIN ROAD FOR 2.7MI TO THE SITE OF THE MARK ON THE LEFT ABOUT 40 M (131.2 FT) SOUTH OF HOUSE NO 5726.

THE MARK IS SET 20 CM (8 INCHES) BELOW GROUND SURFACE IN THE TOP OF A FENO STYLE MONUMENT.

IT IS 5.9 M (19.4 FT) EAST OF AND ABOUT 0.3 M (1.0 FT) LOWER THAN THE CENTERLINE OF MAIN ROAD, 13.3 M (43.6 FT) EAST OF AND ACROSS THE ROAD FROM POLE NO 33/119A AND 72.1 M (236.5 FT) SOUTH OF TELEPHONE JUNCTION BOX NO 5/150.

SHAKE  
 NORTH = 651682.260  
 EAST = 1518644.275  
 ELEV. = 709.745

SHAKE  
 TO REACH FROM THE INTERSECTION OF VT ROUTE 116 AND HINESBURG HOLLOW ROAD IN SOUTH HUNTINGTON, GO EAST ALONG HINESBURG HOLLOW ROAD FOR 5.0MI TO THE T-INTERSECTION OF MAIN ROAD (HUNTINGTON ROAD). TURN RIGHT AND GO SOUTH ALONG MAIN ROAD FOR 2.5MI TO THE SITE OF THE MARK ON THE RIGHT ABOUT 35 M (114.8 FT) NORTHEAST OF THE INTERSECTION OF SHAKER MOUNTAIN ROAD RIGHT.

THE MARK IS SET 20 CM (8 INCHES) BELOW GROUND SURFACE IN THE TOP OF A FENO STYLE MONUMENT.

IT IS 5.3 M (17.4 FT) NORTHWEST OF AND ABOUT 5 CM (2 INCHES) LOWER THAN THE CENTERLINE OF MAIN ROAD, 20.7 M (67.9 FT) NORTHEAST OF POLE NO 48/00, 1.4 M (4.6 FT) NORTHWEST OF THE NORTHWEST EDGE OF PAVEMENT OF MAIN ROAD AND 42.0 M (137.8 FT) NORTHEAST OF THE EAST END OF A BRIDGE CURB.

SHELDRAKE  
 NORTH=644259.00  
 EAST=1520182.804  
 ELEV.=815.258

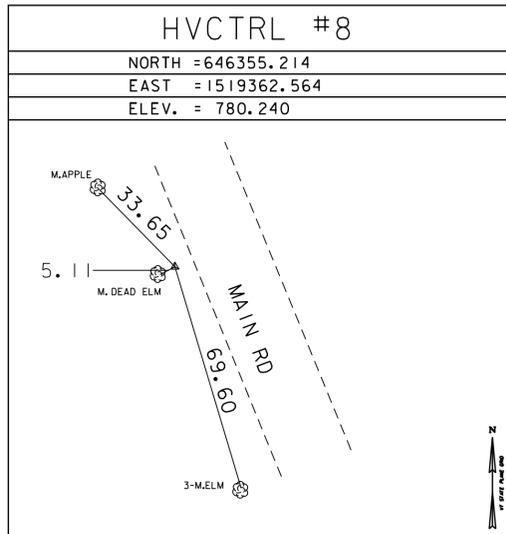
TO REACH FROM THE INTERSECTION OF US ROUTE 2 AND VT ROUTE 100 NORTH IN WATERBURY, GO WEST ALONG US ROUTE 2 FOR 9.6 MI (15.4 KM) TO THE INTERSECTION OF STAGE ROAD RIGHT AND COCHRAN PAVED ROAD LEFT, IN JONESVILLE. TURN LEFT, IMMEDIATELY CROSSING THE NEW ENGLAND CENTRAL RAILROAD AND THE COCHRAN ROAD BRIDGE OVER THE WINOOSKI RIVER AND GO SOUTH AND WEST ALONG COCHRAN ROAD FOR 0.45 MI (0.7 KM) TO THE Y-INTERSECTION OF THE ROAD TO HUNTINGTON GORGE (DUGWAY ROAD) LEFT AND COCHRAN ROAD RIGHT. BEAR LEFT AND GO SOUTHWEST ALONG DUGWAY ROAD FOR 3.2 MI (5.1 KM) TO THE INTERSECTION OF HUNTINGTON MAIN ROAD. BEAR LEFT AND GO SOUTH ALONG HUNTINGTON MAIN ROAD FOR 5.4 MI (8.7 KM) TO THE INTERSECTION OF CAMELS HUMP ROAD LEFT, IN HUNTINGTON CENTER. CONTINUE STRAIGHT AHEAD AND GO SOUTH ALONG HUNTINGTON MAIN ROAD FOR 2.2 MI (3.5 KM) TO THE SITE OF THE MARK ON THE RIGHT. IT IS JUST SOUTH OF THE SHELDRAKE ONE AND ONE-HALF STORY HOUSE AND BARN.

THE MARK IS SET FLUSH WITH THE GROUND SURFACE IN THE TOP OF A FENO STYLE MONUMENT.

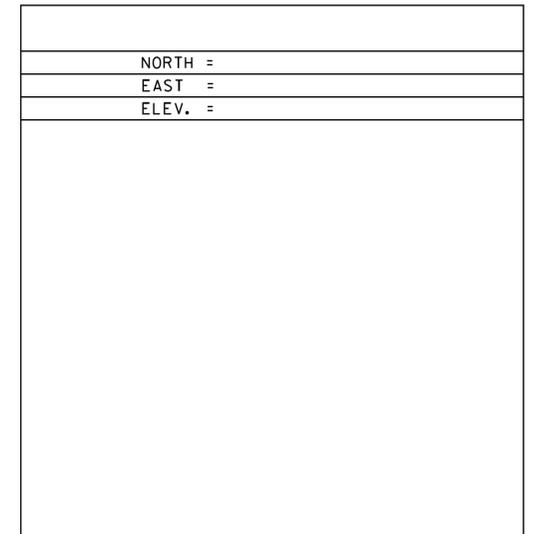
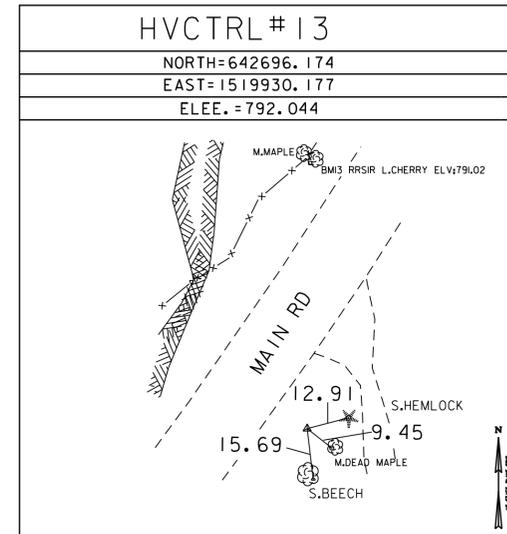
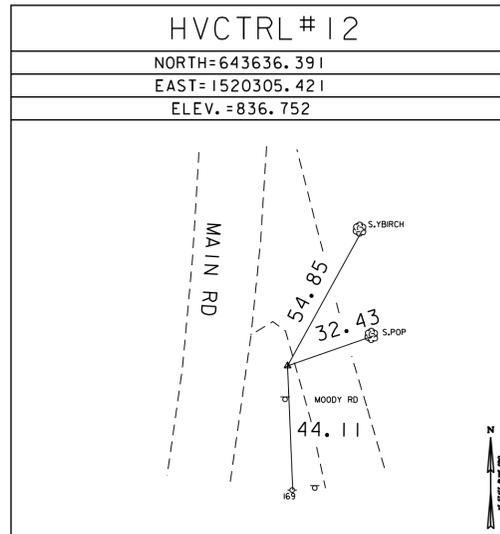
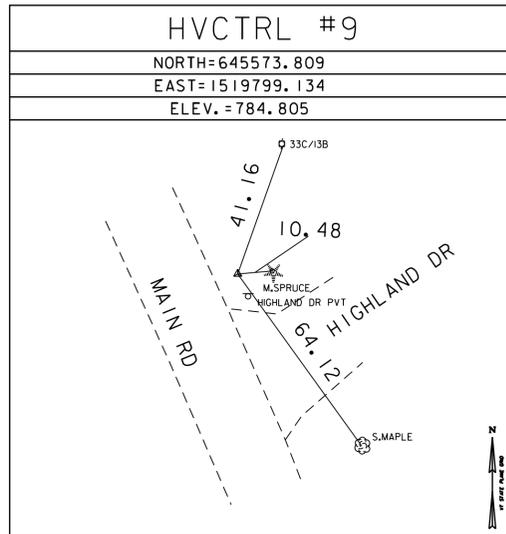
IT IS 5.7 M (18.7 FT) WEST OF AND ABOUT 0.2 M (0.7 FT) LOWER THAN THE CENTERLINE OF HUNTINGTON MAIN ROAD, 29.2 M (95.8 FT) NORTHEAST OF THE NORTHEAST CORNER OF THE HOUSE, 39.9 M (130.9 FT) NORTHWEST OF POLE NO 167, 51.4 M (168.6 FT) SOUTH-SOUTHWEST OF POLE NO CTC 5/166 AND 0.6 M (2.0 FT) EAST OF A FIBERGLASS WITNESS POST.

GPS CONTROL SET BY VTRANS GSU JUNE 6,2013

TRAVERSE TIES



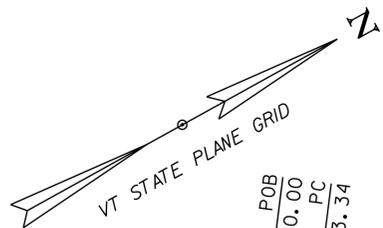
TRAVERSE COMPLETED BY L. ORVIS PC/H. MCGOWAN JUNE 17,2013



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

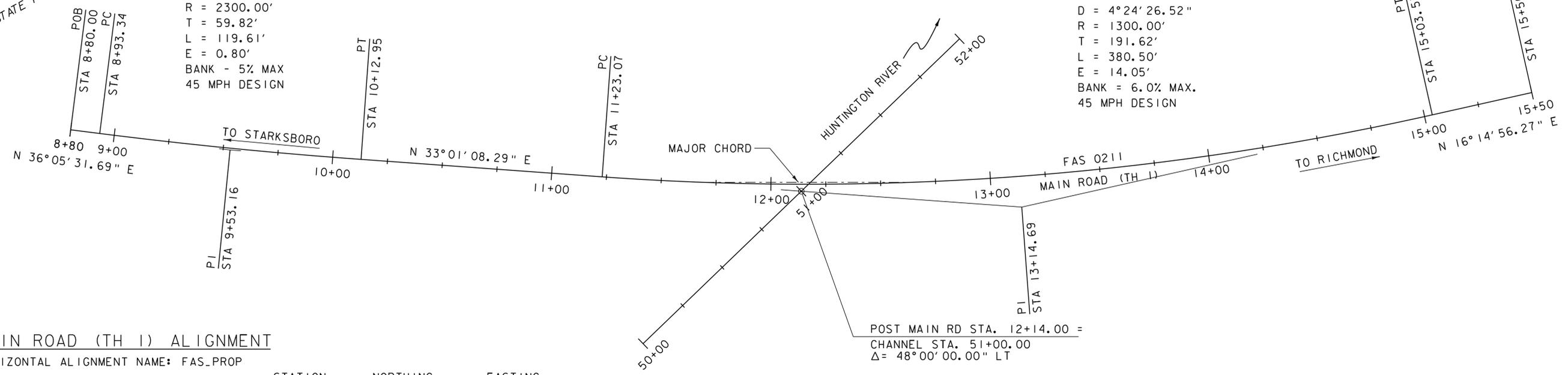
PROJECT NAME: HUNTINGTON	
PROJECT NUMBER: BF 0211(32)	
FILE NAME: z13j080t1.dgn	PLOT DATE: 4/4/2016
PROJECT LEADER: S.E. BURBANK	DRAWN BY: VTRANS
DESIGNED BY: VTRANS	CHECKED BY:
TIE SHEET	SHEET 12 OF 61





FAS 0211  
 CURVE NO. 1 DATA  
 $\Delta = 3^{\circ}04'23.40''$   
 $D = 2^{\circ}34'09.54''$   
 $R = 2300.00'$   
 $T = 59.82'$   
 $L = 119.61'$   
 $E = 0.80'$   
 BANK = 5% MAX  
 45 MPH DESIGN

FAS 0211  
 CURVE NO. 2 DATA  
 $\Delta = 16^{\circ}46'12.02''$   
 $D = 4^{\circ}24'26.52''$   
 $R = 1300.00'$   
 $T = 191.62'$   
 $L = 380.50'$   
 $E = 14.05'$   
 BANK = 6.0% MAX.  
 45 MPH DESIGN



**MAIN ROAD (TH 1) ALIGNMENT**

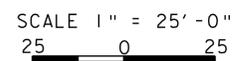
HORIZONTAL ALIGNMENT NAME: FAS_PROP

ELEMENT:	STATION	NORTHING	EASTING
LINEAR			
POB	8+80.00	642669.4735	1519882.4528
PC	8+93.34	642680.2502	1519890.3090
TANGENT DIRECTION:	N 36°05'31.69" E		
TANGENT LENGTH:	13.34		
CIRCULAR			
PC	8+93.34	642680.2502	1519890.3090
PI	9+53.16	642728.5885	1519925.5478
PT	10+12.95	642778.7466	1519958.1444
RADIUS:	2230.00		
DELTA:	3°04'23.40" LEFT		
DEGREE OF CURVATURE (ARC):	2°34'09.54"		
LENGTH:	119.61		
TANGENT:	59.82		
CHORD:	119.60		
MIDDLE ORDINATE:	0.80		
EXTERNAL:	0.80		
LINEAR			
PT	10+12.95	642778.7466	1519958.1444
PC	11+23.07	642871.0875	1520018.1548
TANGENT DIRECTION:	N 33°01'08.29" E		
TANGENT LENGTH:	110.13		
CIRCULAR			
PC	11+23.07	642871.0875	1520018.1548
PI	13+14.69	643031.7586	1520122.5715
PT	15+03.57	643215.7240	1520176.1889
RADIUS:	1300.00		
DELTA:	16°46'12.02" LEFT		
DEGREE OF CURVATURE (ARC):	4°24'26.52"		
LENGTH:	380.50		
TANGENT:	191.62		
CHORD:	379.14		
MIDDLE ORDINATE:	13.90		
EXTERNAL:	14.05		
LINEAR			
PT	15+03.57	643215.7240	1520176.1889
POE	15+50.00	643260.2960	1520189.1795
TANGENT DIRECTION:	N 16°14'56.27" E		
TANGENT LENGTH:	46.43		

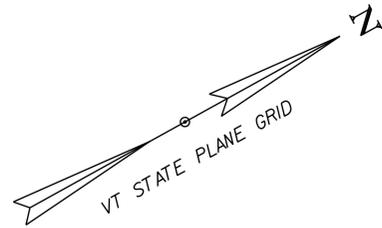
**CHANNEL ALIGNMENT**

HORIZONTAL ALIGNMENT NAME: BR8CHANNEL

ELEMENT:	STATION	NORTHING	EASTING
LINEAR			
POB	50+00.00	642850.7268	1520093.5517
POE	52+00.00	643043.9291	1520041.8518
TANGENT DIRECTION:	N 14°58'51.71" W		
TANGENT LENGTH:	200.00		



PROJECT NAME:	HUNTINGTON	PLOT DATE:	4/4/2016
PROJECT NUMBER:	BF 0211(32)	DRAWN BY:	E.F. LAWES
FILE NAME:	z13j080align.dgn	CHECKED BY:	S.E. BURBANK
PROJECT LEADER:	S.E. BURBANK	DESIGNED BY:	D.M. PECK
ALIGNMENT SHEET		SHEET	13 OF 61

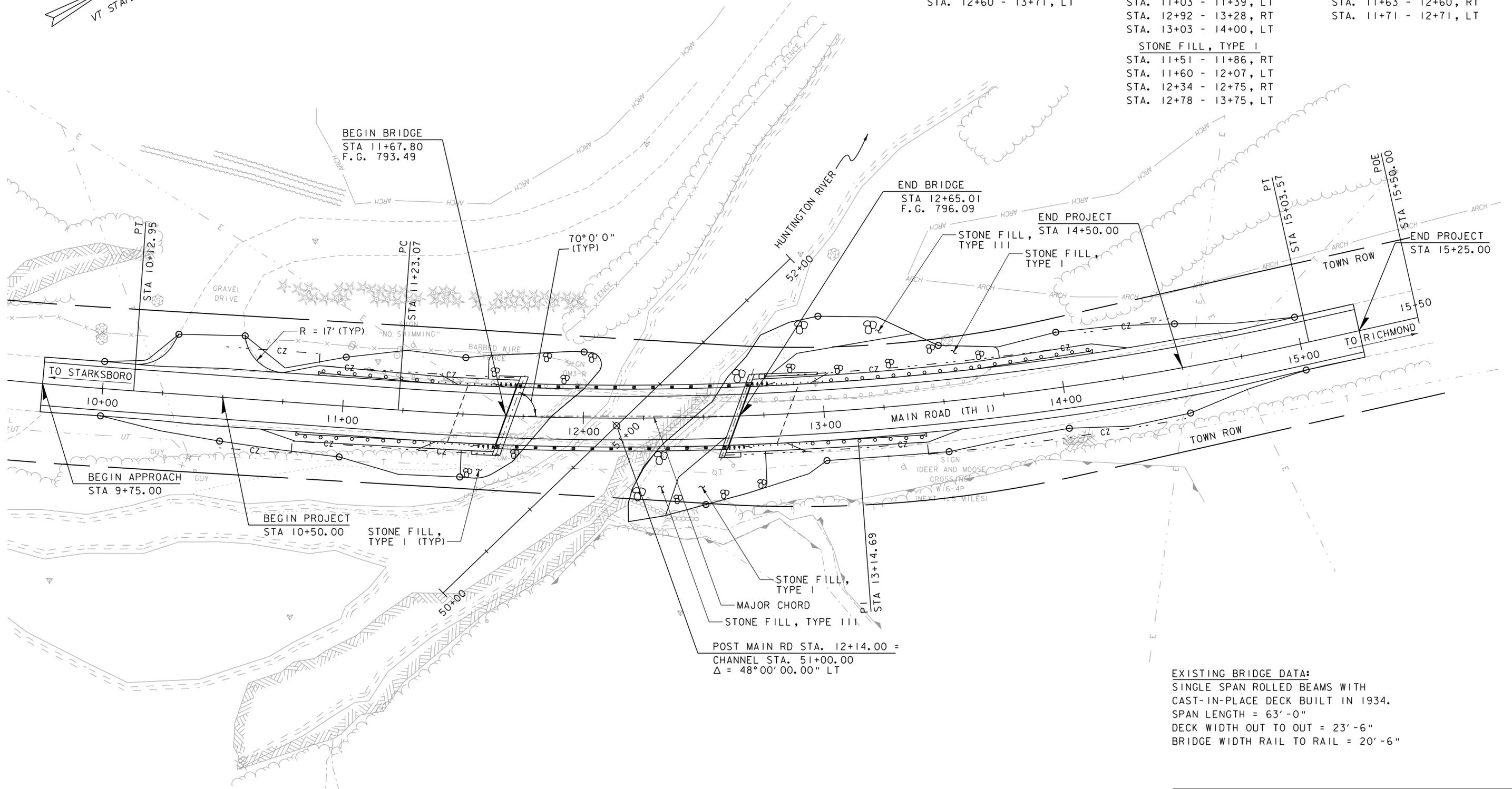


REMOVE FENCE  
 STA. 11+73 - 12+02, LT  
 CONSTRUCT DRIVE WITH  
 13' PAVED APRON  
 STA. 10+13 - 10+74, LT  
 LIMITS OF COLD PLANING  
 STA. 9+75 - 10+25, LT & RT  
 STA. 14+75 - 15+25, LT & RT

SPECIAL PROVISION  
 (RETAINING WALL)  
 STA. 12+76 - 12+98, LT  
 REMOVAL AND DISPOSAL  
 OF GUARDRAIL  
 STA. 11+09 - 11+96, LT  
 STA. 11+41 - 11+75, RT  
 STA. 12+38 - 12+62, RT  
 STA. 12+60 - 13+71, LT

MANUFACTURED TERMINAL  
 SECTION, TANGENT  
 STA. 10+81 - 10+95, RT  
 STA. 10+89 - 11+03, LT  
 STA. 13+28 - 13+42, RT  
 STA. 14+00 - 14+14, LT  
 BOX BEAM GUARDRAIL  
 STA. 10+95 - 11+31, RT  
 STA. 11+03 - 11+39, LT  
 STA. 12+92 - 13+28, RT  
 STA. 13+03 - 14+00, LT  
 STONE FILL, TYPE I  
 STA. 11+51 - 11+86, RT  
 STA. 11+60 - 12+07, LT  
 STA. 12+34 - 12+75, RT  
 STA. 12+78 - 13+75, LT

GUARDRAIL APPROACH SECTION,  
 GALVANIZED 3 RAIL BOX BEAM  
 STA. 11+31 - 11+63, RT  
 STA. 11+39 - 11+71, LT  
 STA. 12+60 - 12+92, RT  
 STA. 14+00 - 14+14, LT  
 BRIDGE RAILING,  
 GALVANIZED 3 RAIL BOX BEAM  
 STA. 11+63 - 12+60, RT  
 STA. 11+71 - 12+71, LT

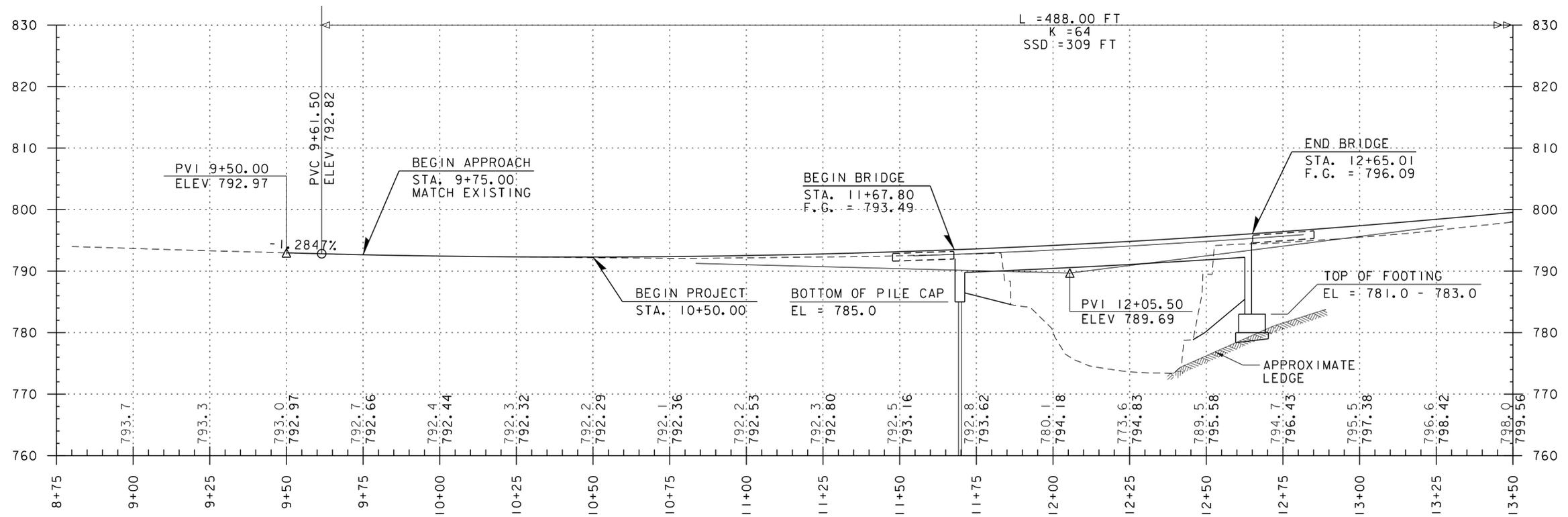


EXISTING BRIDGE DATA:  
 SINGLE SPAN ROLLED BEAMS WITH  
 CAST-IN-PLACE DECK BUILT IN 1934.  
 SPAN LENGTH = 63'-0"  
 DECK WIDTH OUT TO OUT = 23'-6"  
 BRIDGE WIDTH RAIL TO RAIL = 20'-6"

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

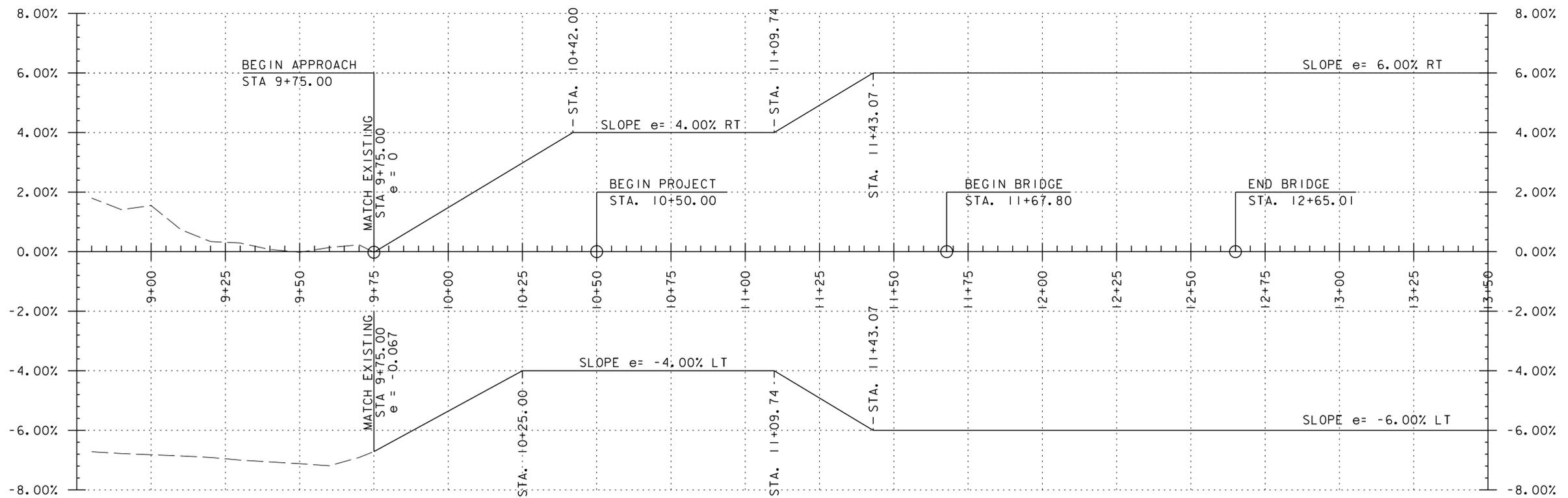


PROJECT NAME:	HUNTINGTON	FILE NAME:	z13j080bdr_nul.dgn	PLOT DATE:	4/4/2016
PROJECT NUMBER:	BF 0211(32)	PROJECT LEADER:	S.E. BURBANK	DRAWN BY:	J.D. KEENER
		DESIGNED BY:	J.D. KEENER	CHECKED BY:	S.E. BURBANK
		LAYOUT SHEET		SHEET	14 OF 61



**MAIN ROAD (TH 1) PROFILE**

SCALE 1" = 20' HORIZONTAL  
1" = 10' VERTICAL



**BANKING DIAGRAM**

SCALE HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 0.02 FT/FT

THE GRADES SHOWN TO THE NEAREST TENTH ARE THE ORIGINAL GROUND ELEVATIONS ALONG THE PROPOSED ALIGNMENT.

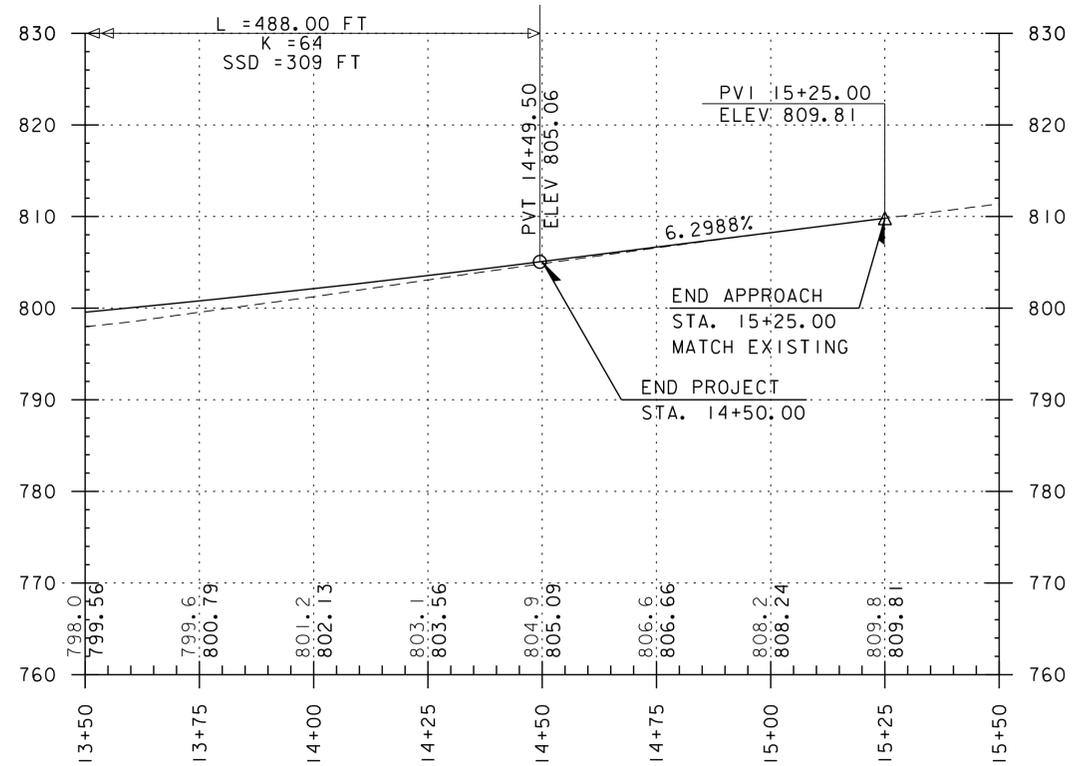
THE GRADES SHOWN TO THE NEAREST HUNDREDTH ARE THE FINISH GRADES ALONG THE PROPOSED ALIGNMENT.

PROJECT NAME: HUNTINGTON  
PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080pro.dgn  
PROJECT LEADER: S.E. BURBANK  
DESIGNED BY: D.M. PECK  
PROFILE & BANKING DIAGRAM (1 OF 2)

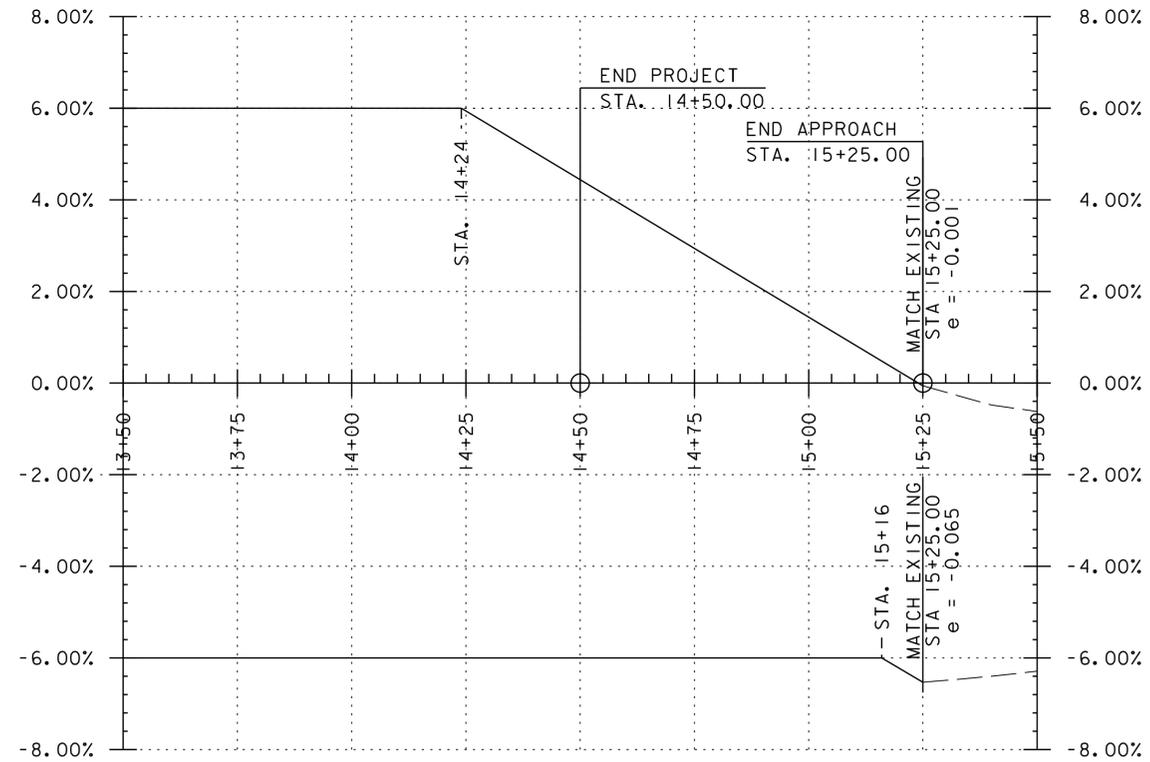
PLOT DATE: 4/4/2016  
DRAWN BY: D.M. PECK  
CHECKED BY: E.F. LAWES  
SHEET 15 OF 61





**MAIN ROAD (TH 1) PROFILE**

SCALE 1" = 20' HORIZONTAL  
1" = 10' VERTICAL



**BANKING DIAGRAM**

SCALE HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 0.02 FT/FT

THE GRADES SHOWN TO THE NEAREST TENTH ARE THE ORIGINAL GROUND ELEVATIONS ALONG THE PROPOSED ALIGNMENT.

THE GRADES SHOWN TO THE NEAREST HUNDREDTH ARE THE FINISH GRADES ALONG THE PROPOSED ALIGNMENT.



PROJECT NAME: HUNTINGTON

PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080pro.dgn

PROJECT LEADER: S.E. BURBANK

DESIGNED BY: D.M. PECK

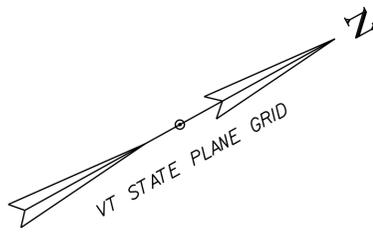
PROFILE & BANKING DIAGRAM (2 OF 2)

PLOT DATE: 4/4/2016

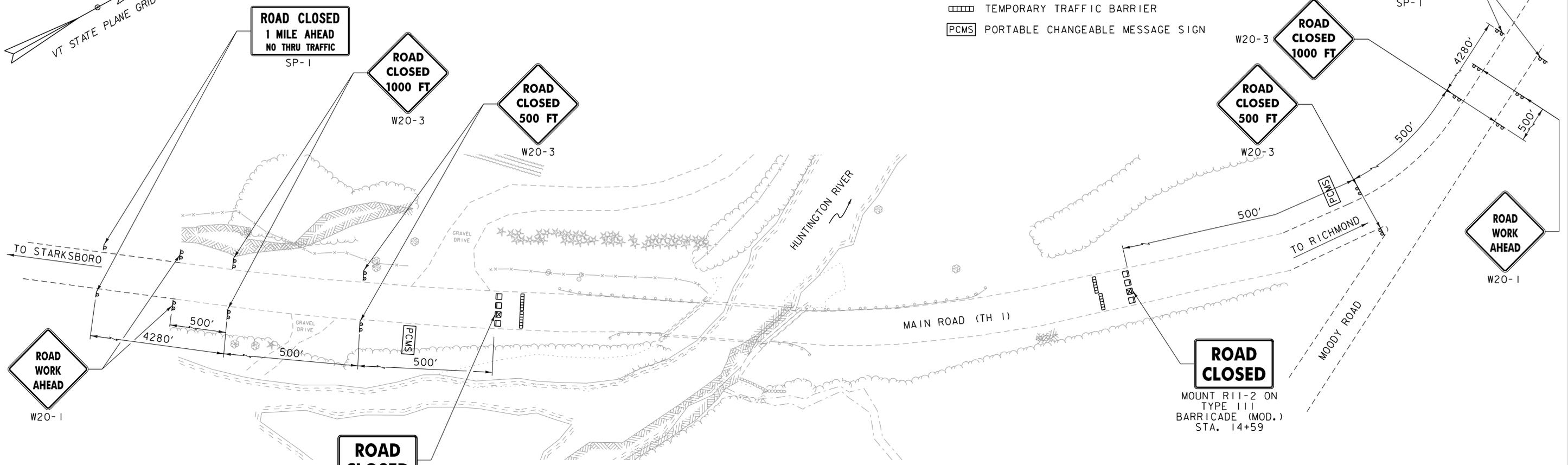
DRAWN BY: D.M. PECK

CHECKED BY: E.F. LAWES

SHEET 16 OF 61



- LEGEND**
- TYPE III BARRICADE
  - ⊠ TYPE III BARRICADE (MOD.)
  - ▤ TEMPORARY TRAFFIC BARRIER
  - PCMS PORTABLE CHANGEABLE MESSAGE SIGN



**ROAD CLOSED**  
MOUNT R11-2 ON  
TYPE III  
BARRICADE (MOD.)  
STA. 10+72

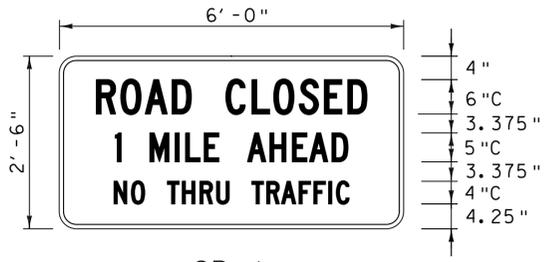
**ROAD CLOSED**  
MOUNT R11-2 ON  
TYPE III  
BARRICADE (MOD.)  
STA. 14+59

**TRAFFIC CONTROL PLAN -  
ROAD CLOSED TO TRAFFIC**  
NOT TO SCALE

**MESSAGE FOR PORTABLE CHANGEABLE  
MESSAGE SIGNS (PCMS) - AT BRIDGE**

MESSAGE 1	MESSAGE 2	
<b>MAIN RD</b>	<b>MMMM DD</b>	(DATE) **
<b>BRIDGE</b>	<b>TO</b>	
<b>CLOSED</b>	<b>MMMM DD</b>	(DATE) **

** - MONTH SHALL BE SPELLED OUT - JUNE 10 NOT 6/10



**SP-1**  
NOT TO SCALE

- NOTE:**
- COLORS FOR THE SP-1 SIGN SHALL BE BLACK TEXT AND BORDER ON RETROREFLECTIVE FLUORESCENT WHITE BACKGROUND. TWO ORANGE FLAGS (ONE EACH SIDE) SHALL BE PLACED AT THE TOP OF THE SP-1 SIGNS.

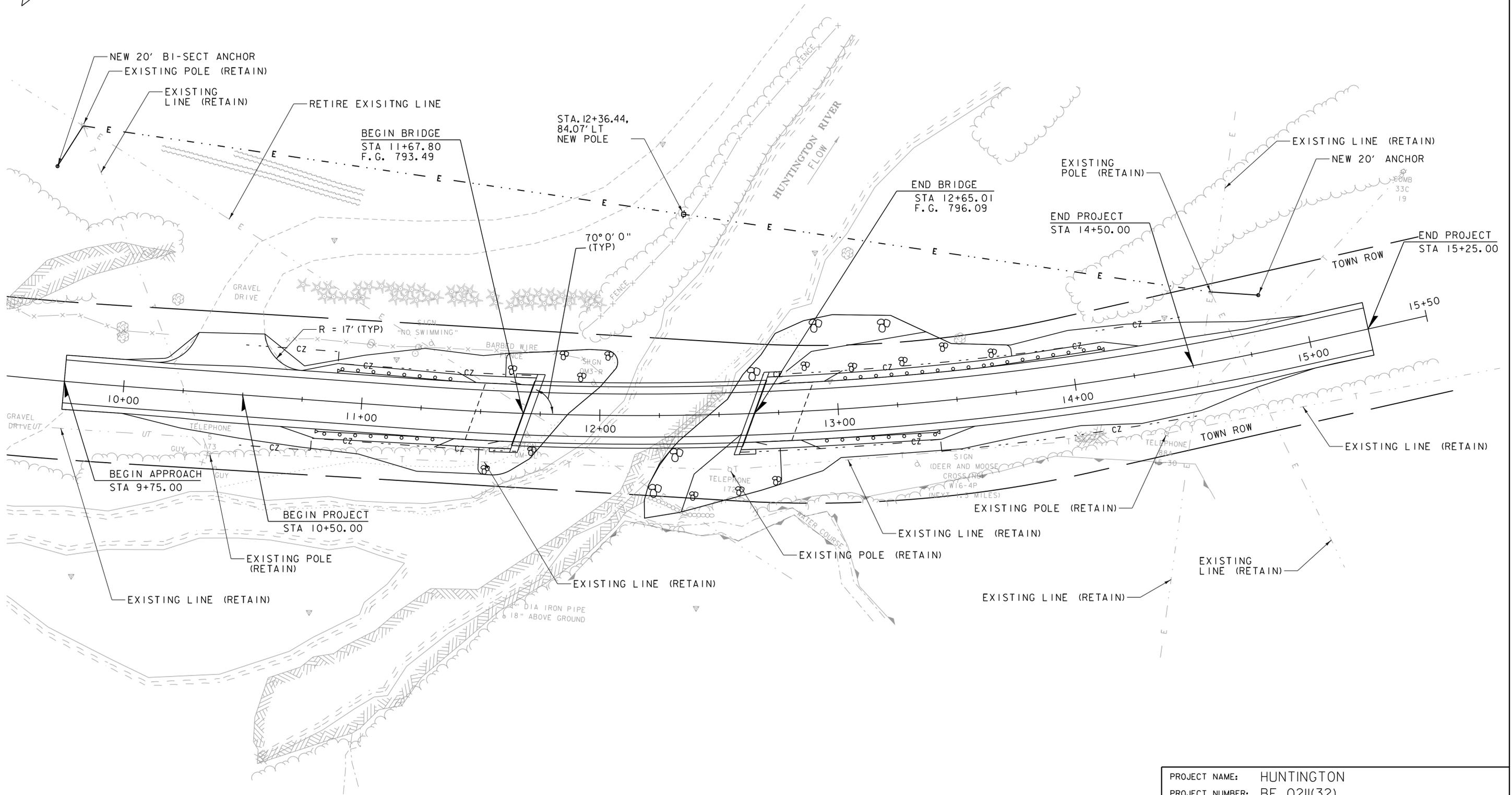
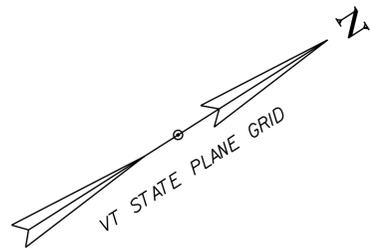
**NOTES:**

- THE NUMBER OF TYPE III BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED ARE TO BE DETERMINED BASED ON INDIVIDUAL ROADWAY CLOSURE REQUIREMENTS.
- THE PCMS SHALL DISPLAY THE MESSAGE SHOWN ONE WEEK (7 DAYS) PRIOR TO THE CLOSURE OF THE BRIDGE. THE PCMS SHALL BE REMOVED ONCE CONSTRUCTION BEGINS.
- ALL SIGNS SHALL BE LOCATED SO THEY ARE VISIBLE AND ABLE TO BE READ BY THE TRAVELING PUBLIC. SIGNS SHALL BE INSTALLED SO AS NOT TO OBSTRUCT EXISTING SIGNS.
- ALL SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOK (SHSM) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).
- SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES, AND UPON COMPLETION OF THE WORK. EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER. SIGNS SHALL BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER.
- WHERE SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARDRAIL OR OTHER APPROVED TRAFFIC BARRIERS, ALL SIGN STANDS AND POST INSTALLATIONS SHALL BE "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 COMPLIANT. NO SIGN POSTS SHALL EXTEND OVER THE TOP OF THE SIGN INSTALLED ON SAID POST(S). WHEN ANCHORS ARE INSTALLED STUB SHALL NOT BE GREATER THAN FOUR INCHES ABOVE EXISTING GROUND.

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	NUMBER OF SIGNS REQ'D	AREA (SQ FT)	TOTAL AREA (SQ FT)	REMARKS
	WIDTH (IN)	HEIGHT (IN)					
R11-2	48	30	<b>ROAD CLOSED</b>	2	10.00	20.00	MOUNT ON TYPE III BARRICADE (MOD.)
W20-1	48	48	<b>ROAD WORK AHEAD</b>	4	16.0	64.00	MOUNT ON TWO POSTS
W20-3	48	48	<b>ROAD CLOSED 500 FT</b>	4	16.0	64.00	MOUNT ON TWO POSTS
W20-3	48	48	<b>ROAD CLOSED 1000 FT</b>	4	16.0	64.00	MOUNT ON TWO POSTS
SP-1	60	30	<b>ROAD CLOSED 1 MILE AHEAD NO THRU TRAFFIC</b>	4	12.50	50.00	MOUNT ON TWO POSTS

PROJECT NAME:	HUNTINGTON
PROJECT NUMBER:	BF 0211(32)
FILE NAME:	z13j080tcp.dgn
PROJECT LEADER:	S.E. BURBANK
DESIGNED BY:	E.F. LAWES
TRAFFIC CONTROL SHEET	
PLOT DATE:	4/4/2016
DRAWN BY:	E.F. LAWES
CHECKED BY:	S.E. BURBANK
SHEET	17 OF 61





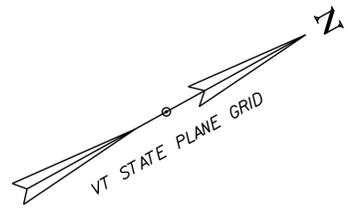
SCALE 1" = 20'-0"  
 20 0 20



PROJECT NAME: HUNTINGTON  
 PROJECT NUMBER: BF 0211(32)

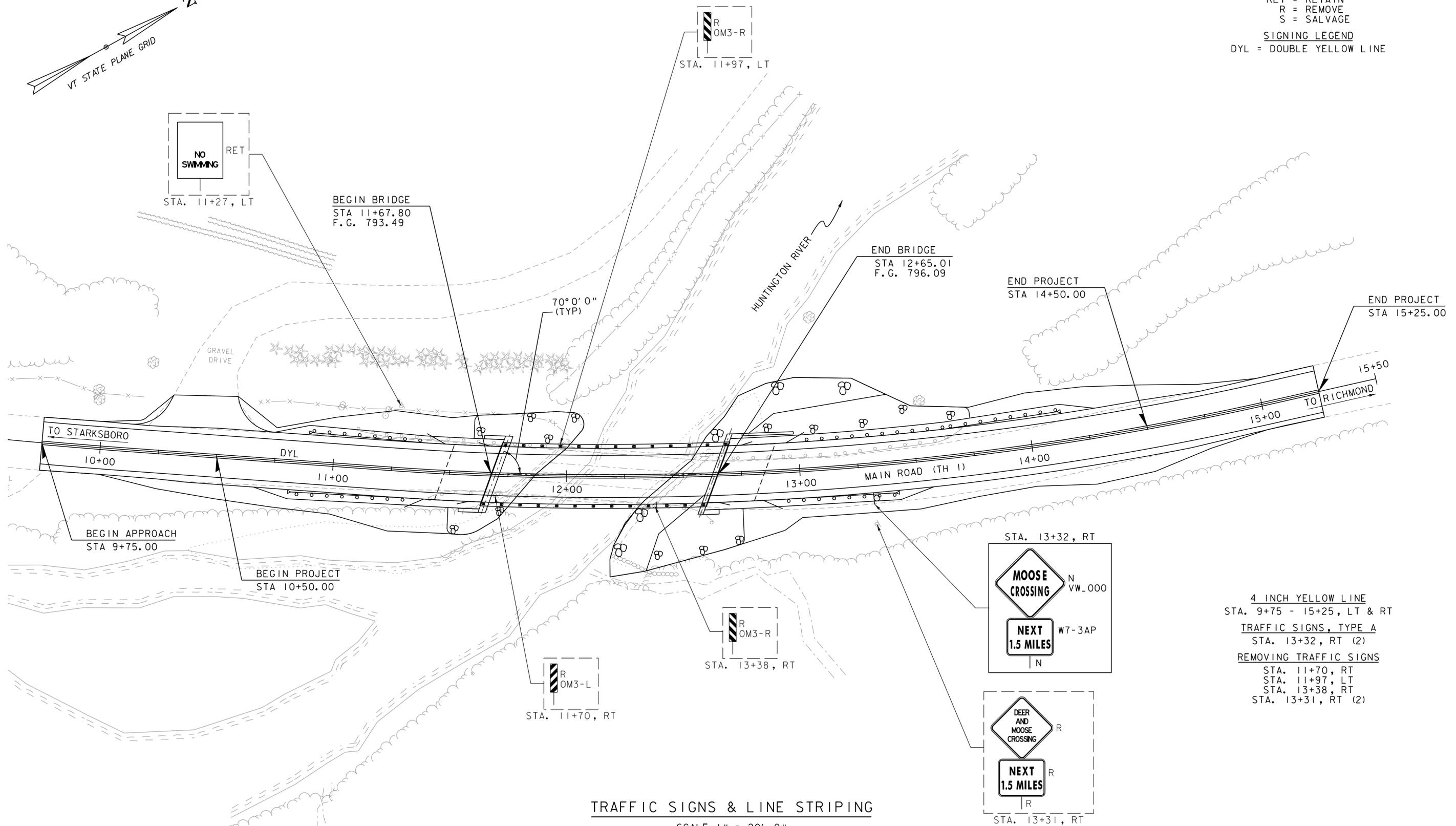
FILE NAME: z13j080bdr_utility.dgn  
 PROJECT LEADER: S.E. BURBANK  
 DESIGNED BY: L. WHEELER  
 UTILITY LAYOUT SHEET

PLOT DATE: 4/4/2016  
 DRAWN BY: J.D. KEENER  
 CHECKED BY: S.E. BURBANK  
 SHEET 18 OF 61



**SIGNING LEGEND**  
 N = NEW  
 RET = RETAIN  
 R = REMOVE  
 S = SALVAGE

**SIGNING LEGEND**  
 DYL = DOUBLE YELLOW LINE



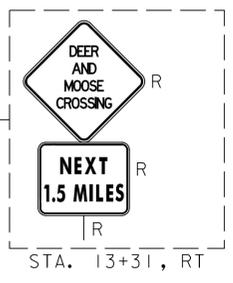
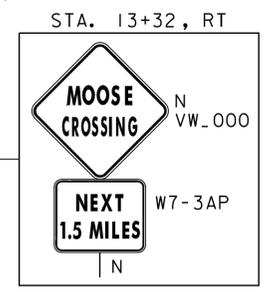
**4 INCH YELLOW LINE**  
 STA. 9+75 - 15+25, LT & RT

**TRAFFIC SIGNS, TYPE A**  
 STA. 13+32, RT (2)

**REMOVING TRAFFIC SIGNS**  
 STA. 11+70, RT  
 STA. 11+97, LT  
 STA. 13+38, RT  
 STA. 13+31, RT (2)

**TRAFFIC SIGNS & LINE STRIPING**

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



PROJECT NAME:	HUNTINGTON	FILE NAME:	z13j080+sl.dgn	PLOT DATE:	4/4/2016
PROJECT NUMBER:	BF 0211(32)	PROJECT LEADER:	S.E. BURBANK	DRAWN BY:	E.F. LAWES
		DESIGNED BY:	E.F. LAWES	CHECKED BY:	S.E. BURBANK
		TRAFFIC SIGNS & LINE STRIPING SHEET		SHEET	19 OF 61





**SOIL CLASSIFICATION**

**AASHTO**

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

**ROCK QUALITY DESIGNATION**

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

**SHEAR STRENGTH**

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

**CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY**

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

**COMMONLY USED SYMBOLS**

▼	Water Elevation
⊕	Standard Penetration Boring
⊗	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test
	Blow Count Per Foot For:
	2" O. D. Sampler
	1 3/8" I. D. Sampler
	Hammer Weight Of 140 Lbs.
	Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 1 1/8"
BX	Core Size 1 3/8"
NX	Core Size 2 1/8"
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
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
1/2 Rec.	Percent Recovery
ROD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)
VTSPG	NAD83 - See Note 7

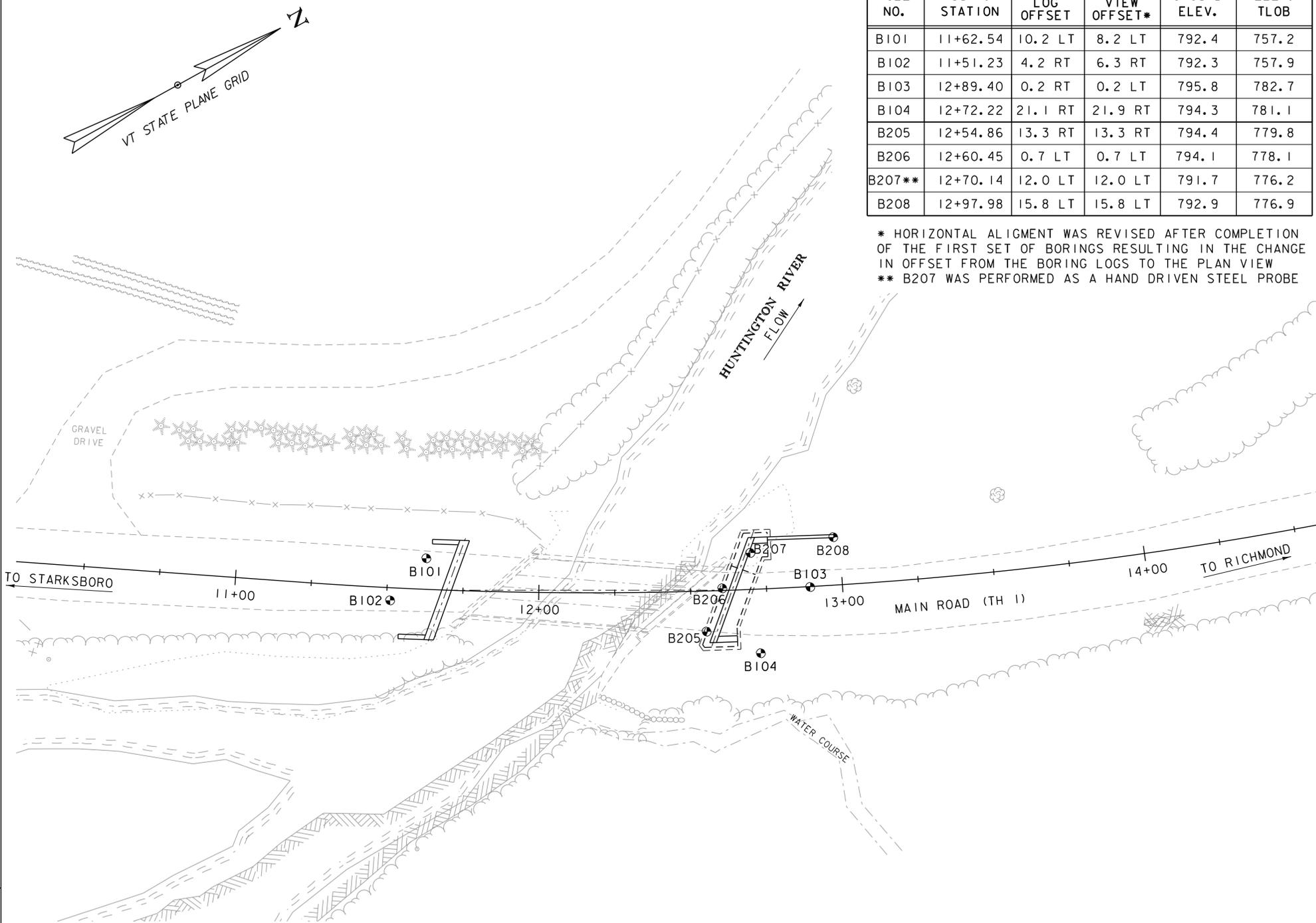
**COLOR**

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

**BORING CHART**

HOLE NO.	SURV. STATION	BORING LOG OFFSET	PLAN VIEW OFFSET*	GROUND ELEV.	ELEV. TLOB
B101	11+62.54	10.2 LT	8.2 LT	792.4	757.2
B102	11+51.23	4.2 RT	6.3 RT	792.3	757.9
B103	12+89.40	0.2 RT	0.2 LT	795.8	782.7
B104	12+72.22	21.1 RT	21.9 RT	794.3	781.1
B205	12+54.86	13.3 RT	13.3 RT	794.4	779.8
B206	12+60.45	0.7 LT	0.7 LT	794.1	778.1
B207**	12+70.14	12.0 LT	12.0 LT	791.7	776.2
B208	12+97.98	15.8 LT	15.8 LT	792.9	776.9

* HORIZONTAL ALIGNMENT WAS REVISED AFTER COMPLETION OF THE FIRST SET OF BORINGS RESULTING IN THE CHANGE IN OFFSET FROM THE BORING LOGS TO THE PLAN VIEW  
 ** B207 WAS PERFORMED AS A HAND DRIVEN STEEL PROBE



**DEFINITIONS (AASHTO)**

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.	VARVED - Alternate layers of silt and clay.
BOULDER - A rock fragment with an average dimension > 12 inches.	HARDPAN - Extremely dense soil, cemented layer, not softened when wet.
COBBLE - Rock fragments with an average dimension between 3 and 12 inches.	MUCK - Soft organic soil (containing > 10% organic material).
GRAVEL - Rounded particles of rock < 3" and > 0.075" (#10 sieve).	MOISTURE CONTENT - Weight of water divided by dry weight of soil.
SAND - Particles of rock < 0.075" (#10 sieve) and > 0.0029" (#200 sieve).	FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
SLT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.	STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.
CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.	DIP - Inclination of bed with a horizontal plane.

**GENERAL NOTES**

- The subsurface explorations B101-B104 shown herein were made between September 4 and September 9, 2014 by the Agency. B205-208 explorations shown herein were made between July 6 and July 8, 2015 by the Agency.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and interpretation, independent analysis or judgment by the Contractor.
- Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
- Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
- Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.



PROJECT NAME: HUNTINGTON  
 PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080bor.dgn  
 PROJECT LEADER: S.E. BURBANK  
 DESIGNED BY: VTrans  
 BORING INFORMATION SHEET

PLOT DATE: 4/4/2016  
 DRAWN BY: J.D. KEENER  
 CHECKED BY: S.E. BURBANK  
 SHEET 21 OF 61

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: <b>B-101</b>					
				<b>HUNTINGTON BF 0211(32) TH-1 BR-8</b>		Page No.: <u>1 of 1</u>					
						Pin No.: <u>13J080</u>					
						Checked By: <u>MLM</u>					
Boring Crew: <u>DAIGNEAULT, JUDKINS, HOOK</u>		Casing		Sampler		Groundwater Observations					
Date Started: <u>9/08/14</u> Date Finished: <u>9/09/14</u>		Type: <u>WB</u>		SS		Date					
VTSPG NAD83: <u>N 642909.79 ft E 1520030.44 ft</u>		I.D.: <u>4 in</u>		<u>1.5 in</u>		Depth (ft)					
Station: <u>11+62</u> Offset: <u>-8.20</u>		Hammer Wt: <u>N.A.</u>		<u>140 lb.</u>		Notes					
Ground Elevation: <u>792.4 ft</u>		Hammer Fall: <u>N.A.</u>		<u>30 in.</u>		09/09/14 16.7 AM					
		Hammer/Rod Type: <u>Auto/AWJ</u>									
		Rig: <u>CME 45C SKID</u>		<u>C_e = 1.33</u>							
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.68 ft									
		A-2-4, SiSa, brn, Moist, Rec. = 1.2 ft					11-8-7-7 (15)	16.1	13.5	57.0	29.5
		A-2-4, SiSa, brn, Moist, Rec. = 1.1 ft					9-8-7-6 (15)	13.6	12.3	58.6	29.1
		A-2-4, SiSa, brn, Moist, Rec. = 1.1 ft, Cleaned out casing.					8-14-18-14 (32)	13.9	19.1	55.2	25.7
		A-1-a, SaGr, brn, Moist, Rec. = 0.9 ft, Lab Note: Lots of Broken Rock was within sample.					8-10-20-15 (30)	9.2	57.0	33.0	10.0
		A-1-a, SaGr, brn, Moist, Rec. = 0.6 ft, Lab Note: Broken Rock was within sample.					12-18-28-17 (46)	8.1	72.4	19.6	8.0
		A-1-a, Gr, red-brn, Moist, Rec. = 0.5 ft, Lab Note: Lots of Broken Rock was within sample.					10-11-10-6 (21)	9.4	68.2	23.9	7.9
		A-1-a, SaGr, brn, Moist, Rec. = 0.6 ft, Lab Note: Lots of Broken Rock was within sample.					6-6-4-4 (10)	23.3	22.6	18.1	59.3
		A-4, GrSi, brn, MTW, Rec. = 0.8 ft, Cleaned out casing.					5-4-3-3 (7)	29.6	1.8	21.1	77.1
		A-4, SaSi, brn, MTW, Rec. = 0.4 ft					2-2-3-4 (5)	27.3	3.8	10.7	85.5
		A-4, Si, brn, MTW, Rec. = 0.8 ft					3-10-11-11 (21)	14.0	32.9	37.0	30.1
		A-2-4, SiGrSa, brn, Moist, Rec. = 0.9 ft					27-25-24-29 (49)	14.8	32.6	31.0	36.4
		A-4, SaGrSi, brn, Moist, Rec. = 1.2 ft					14-29-30-R@3.5" (59)	15.6	19.2	55.7	25.1
		Field Note: Cleaned out casing.					R@2.5"				
		A-2-4, SiSa, brn, Moist, Rec. = 1.1 ft									
		Field Note: Cleaned out casing.									
		Field Note: No Recovery									
		35.2 ft - 40.2 ft, Gray, Muscovite-chlorite-biotite-feldspar-quartz Metagraywacke, and schist with lenses of quartz. Hard, Unweathered, Very good rock, NXMDC, RMR = 84		1 (25)	96 (96)	4					
		40.2 ft - 45.2 ft, Gray, Muscovite-chlorite-biotite-feldspar-quartz Metagraywacke, and schist with lenses of quartz. Hard, Unweathered, Very good rock, NXMDC, RMR = 81		2 (25)	100 (86)	5					
		Hole stopped @ 45.2 ft									
		Remarks: 1. Hole collapsed at 15.7 ft. 2. Offsets were taken from the proposed centerline, not existing.									
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 _e is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.									

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: <b>B-102</b>					
				<b>HUNTINGTON BF 0211(32) TH-1 BR-8</b>		Page No.: <u>1 of 1</u>					
						Pin No.: <u>13J080</u>					
						Checked By: <u>MLM</u>					
Boring Crew: <u>DAIGNEAULT, JUDKINS, HOOK</u>		Casing		Sampler		Groundwater Observations					
Date Started: <u>9/05/14</u> Date Finished: <u>9/05/14</u>		Type: <u>WB</u>		SS		Date					
VTSPG NAD83: <u>N 642892.67 ft E 1520036.77 ft</u>		I.D.: <u>4 in</u>		<u>1.5 in</u>		Depth (ft)					
Station: <u>11+51</u> Offset: <u>6.30</u>		Hammer Wt: <u>N.A.</u>		<u>140 lb.</u>		Notes					
Ground Elevation: <u>792.3 ft</u>		Hammer Fall: <u>N.A.</u>		<u>30 in.</u>		09/05/14 7.0 After drilling.					
		Hammer/Rod Type: <u>Auto/AWJ</u>									
		Rig: <u>CME 45C SKID</u>		<u>C_e = 1.33</u>							
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.98 ft									
		A-2-4, SiSa, brn, Moist, Rec. = 1.3 ft					7-6-3-4 (9)	15.4	16.1	53.4	30.5
		A-2-4, SiSa, brn, Moist, Rec. = 1.6 ft					6-5-4-3 (9)	14.4	16.6	60.0	23.4
		A-1-b, GrSa, brn, Moist, Rec. = 1.1 ft, Lab Note: Broken Rock was within sample.					1-3-4-6 (7)	15.5	42.1	43.8	14.1
		A-1-a, SaGr, brn, Moist, Rec. = 1.6 ft, Lab Note: Broken Rock was within sample.					9-15-18-31 (33)	4.7	57.8	32.6	9.6
		A-1-a, SaGr, brn-white, Moist, Rec. = 1.4 ft, Lab Note: Broken Rock was within sample.					17-20-27-19 (47)	4.3	57.6	29.5	12.9
		A-1-b, SiSaGr, brn, Moist, Rec. = 0.7 ft, Lab Note: Broken Rock was within sample.					13-17-12-9 (29)	12.9	51.1	25.9	23.0
		A-4, Si, brn, Moist, Rec. = 0.3 ft					8-8-8-9 (16)	21.6	19.5	15.5	65.0
		A-4, SaSi, brn, MTW, Rec. = 0.9 ft					4-5-4-4 (9)	19.3	16.9	40.4	42.7
		A-4, SaSi, brn, MTW, Rec. = 0.9 ft					2-3-5-5 (8)	19.4	16.9	33.3	49.8
		A-1-b, SiSaGr, red-brn, Moist, Rec. = 0.7 ft, Lab Note: Broken Rock was within sample.					11-13-17-7 (30)	13.2	43.3	36.0	20.7
		A-1-b, GrSa, brn, Moist, Rec. = 1.2 ft, Lab Note: Broken Rock was within sample.					12-14-22-25 (36)	11.1	33.7	53.9	12.4
		A-2-4, SiGrSa, brn, Moist, Rec. = 1.1 ft, Lab Note: Broken Rock was within sample.					26-27-33-R@1.0" (60)	12.9	31.9	45.8	22.3
		34.4 ft - 39.4 ft, Gray, Muscovite-chlorite-biotite-feldspar-quartz Metagraywacke, and schist with lenses of quartz. Hard, Unweathered, Good rock, NXMDC, RMR = 72		1 (25)	72 (30)	5					
		39.4 ft - 44.4 ft, Gray, Muscovite-chlorite-biotite-feldspar-quartz Metagraywacke, and schist with lenses of quartz. Hard, Unweathered, Very good rock, NXMDC, RMR = 84		2 (25)	94 (94)	5					
		Hole stopped @ 44.4 ft									
		Remarks: 1. Offsets were taken from the proposed centerline, not existing.									
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 _e is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.									

PROJECT NAME: HUNTINGTON  
PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080borlogs.dgn  
PROJECT LEADER: S.E. BURBANK  
DESIGNED BY: VTRANS  
BORING LOGS (1 OF 4)

PLOT DATE: 4/4/2016  
DRAWN BY: J.D. KEENER  
CHECKED BY: S.E. BURBANK  
SHEET 22 OF 61



VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: <b>B-103</b>					
		HUNTINGTON BF 0211(32) TH-1 BR-8		Page No.: 1 of 1		Pin No.: 13J080					
				Checked By: MLM							
Boring Crew: DAIGNEAULT, JUDKINS		Casing: WB		Sampler: SS		Groundwater Observations					
Date Started: 9/04/14 Date Finished: 9/04/14		I.D.: 4 in 1.5 in		Date: 09/04/14		Depth (ft): 6.1					
VTSPG NAD83: N 643015.89 ft E 1520099.77 ft		Hammer Wt: N.A. 140 lb.		Notes: After drilling.							
Station: 12+89 Offset: 0.90		Hammer Fall: N.A. 30 in.									
Ground Elevation: 795.8 ft		Hammer/Rod Type: Auto/AWJ									
		Rig: CME 45C SKID		C _e = 1.33							
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg.)	Core Rec. % (RCD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.77 ft									
		A-1-b, SaGr, brn, Moist, Rec. = 1.2 ft					11-10-7-5 (17)	7.5	45.8	42.2	12.0
		A-1-b, SiGrSa, brn, Moist, Rec. = 1.1 ft					4-2-3-4 (5)	15.9	35.4	43.8	20.8
5		A-1-b, GrSa, brn, Moist, Rec. = 0.7 ft					3-2-3-2 (5)	11.1	45.3	46.4	8.3
		A-1-b, Sa, brn, Moist, Rec. = 0.2 ft					3-3-3-4 (6)	10.8	18.5	65.4	16.1
10		A-1-b, GrSa, brn, Moist, Rec. = 0.5 ft					5-4-3-3 (7)	6.5	35.4	52.7	11.9
		A-1-b, GrSa, brn, Moist, Rec. = 0.6 ft					3-2-2-3 (4)	14.3	36.1	46.6	17.3
							R@1.0"	12.0	15.3	48.6	36.1
15		A-4, SiSa, gry, Moist, Rec. = 0.1 ft		1 (50)	78 (78)	5	Top of Bedrock @ 13.1 ft				
		13.1 ft - 18.1 ft, Gray, Muscovite-chlorite-biotite-feldspar-quartz Metagraywacke, and schist with lenses of quartz. Hard, Unweathered, Very good rock, NXMDC, RMR = 81				5					
						5					
						5					
						5					
20		18.1 ft - 23.1 ft, Gray, Muscovite-chlorite-biotite-feldspar-quartz Metagraywacke, and schist with lenses of quartz. Hard, Unweathered, Very good rock, NXMDC, RMR = 84		2 (50)	94 (94)	5					
						6					
						5					
						5					
						5					
25		Hole stopped @ 23.1 ft									
		Remarks: 1. Hole collapsed at 8.2 ft. 2. Offsets were taken from the proposed centerline, not existing.									
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 _e is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.											

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: <b>B-104</b>					
		HUNTINGTON BF 0211(32) TH-1 BR-8		Page No.: 1 of 1		Pin No.: 13J080					
				Checked By: MLM							
Boring Crew: DAIGNEAULT, JUDKINS, HOOK		Casing: WB		Sampler: SS		Groundwater Observations					
Date Started: 9/09/14 Date Finished: 9/09/14		I.D.: 4 in 1.5 in		Date: 09/09/14		Depth (ft): 2.8					
VTSPG NAD83: N 642991.15 ft E 1520110.94 ft		Hammer Wt: N.A. 140 lb.		Notes: After drilling.							
Station: 12+72 Offset: 21.90		Hammer Fall: N.A. 30 in.									
Ground Elevation: 794.3 ft		Hammer/Rod Type: Auto/AWJ									
		Rig: CME 45C SKID		C _e = 1.33							
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg.)	Core Rec. % (RCD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-1-b, GrSa, Dk/brn, Moist, Rec. = 1.1 ft					2-3-5-6 (8)	5.4	44.6	45.9	9.5
		A-1-a, SaGr, brn-gry, Moist, Rec. = 0.8 ft, Lab Note: Lots of Broken Rock was within sample.					41-R@4.5" (R)	1.7	56.8	28.9	14.3
5		A-1-a, SaGr, brn, Moist, Rec. = 0.7 ft, Lab Note: Lots of Broken Rock was within sample.					3-4-6-7 (10)	11.0	50.5	39.7	9.8
		Field Note: No Recovery, Cleaned out casing.					5-3-2-1 (5)				
		A-4, GrSiSa, brn, MTW, Rec. = 0.1 ft, Lab Note: Broken Rock was within sample.					1-1-2-2 (3)	18.2	22.8	39.6	37.6
10		Field Note: No Recovery					3-3-1-1 (4)				
		A-2-4, SiSa, brn, MTW, Rec. = 1.1 ft					WH-WH-R@2.5" (R)	27.6	4.5	66.9	28.6
15		13.2 ft - 18.2 ft, Gray, Muscovite-chlorite-biotite-feldspar-quartz Metagraywacke, and schist with lenses of quartz. Hard, Unweathered, Very good rock, NXMDC, RMR = 84		1 (25)	100 (100)	7	Top of Bedrock @ 13.2 ft				
						7					
						8					
						10					
						9					
						6					
20		18.2 ft - 23.2 ft, Gray, Muscovite-chlorite-biotite-feldspar-quartz Metagraywacke, and schist with lenses of quartz. Hard, Unweathered, Very good rock, NXMDC, RMR = 84		2 (25)	98 (98)	6					
						6					
						6					
						6					
						6					
25		Hole stopped @ 23.2 ft									
		Remarks: 1. Hole collapsed at 6.9 ft. 2. Offsets were taken from the proposed centerline, not existing.									
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 _e is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.											

PROJECT NAME: HUNTINGTON  
 PROJECT NUMBER: BF 0211(32)  
 FILE NAME: z13j080borlogs.dgn  
 PROJECT LEADER: S.E. BURBANK  
 DESIGNED BY: VTRANS  
 BORING LOGS (2 OF 4)

PLOT DATE: 4/4/2016  
 DRAWN BY: J.D. KEENER  
 CHECKED BY: S.E. BURBANK  
 SHEET 23 OF 61



VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-205</b>				
				HUNTINGTON BF 0211(32) TH-1 BR-8		Page No.: 1 of 1				
				Pin No.: 13J080		Checked By: MLM				
Boring Crew: GARROW, JUDKINS		Casing: WB		Sampler: SS		Groundwater Observations				
Date Started: 7/07/15 Date Finished: 7/08/15		I.D.: 4 in 1.5 in		Date: 07/08/15		Depth (ft):				
VTSPG NAD83: N 642978.94 ft E 1520096.10 ft		Hammer Wt: N.A. 140 lb.		Notes: No water to 13 ft.						
Station: 12+55 Offset: 13.30		Hammer Fall: N.A. 30 in.								
Ground Elevation: 794.4 ft		Hammer/Rod Type: Auto/AWJ								
		Rig: CME 45C TRACK		C _E = 1.34						
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 1.0 ft								
		A-2-4, SiGrSa, brn, Moist, Rec. = 0.9 ft				5-5-5-5 (10)	12.9	29.9	45.2	24.9
		A-1-b, SiGrSa, brn, Moist, Rec. = 0.6 ft, Cleaned out with roller cone.				5-4-3-3 (7)	12.6	37.3	40.5	22.2
5		A-2-4, SiGrSa, brn, Moist, Rec. = 0.5 ft, Cleaned out with roller cone.				3-3-2-3 (5)	13.3	33.7	38.5	27.8
		A-1-b, SiGrSa, brn, Moist, Rec. = 0.9 ft, Cleaned out with roller cone.				3-3-3-3 (6)	16.8	37.5	38.9	23.6
10		A-2-4, SiGrSa, brn, Moist, Rec. = 0.9 ft				4-3-2-2 (5)	18.6	27.1	46.3	26.6
		A-4, SaSi, brn-gry, Moist, Rec. = 0.9 ft, Lab Note: Large Wood chunks were within sample.				4-3-1-2 (4)	35.5	8.7	43.6	47.7
		Visual Description: Wood pieces & chunks with silty sand, Dk/gry, Moist, Rec. = 0.2 ft				2-3-2-R@1.0" (5)	71.0			
15		14.6 ft - 19.6 ft, Gray, Muscovite-biotite-chlorite-albite-quartz SCHIST, with joints that are rust stained. Hard, Very slightly weathered, Good rock, NXMDC, RMR = 68	1 (30)	100 (87)	3	Top of Bedrock @ 14.6 ft				
					4					
					4					
					3					
					3					
20		19.6 ft - 24.6 ft, Gray, Muscovite-biotite-chlorite-albite-quartz SCHIST, Hard, Unweathered, Very good rock, NXMDC, RMR = 84	2 (25-30)	100 (100)	3					
					3					
					3					
					3					
25		Hole stopped @ 24.6 ft								
		Remarks: 1. Hole collapsed at 18.4 ft. 2. Offsets were taken from the proposed centerline, not existing.								
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 _E is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.										

BOTTOM OF FOOTING  
EL = 781.0

BORING LOG 2 HUNTINGTON BF 0211(32).GPJ VERMONT AOT.GDT 7/15/15

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-206</b>				
				HUNTINGTON BF 0211(32) TH-1 BR-8		Page No.: 1 of 1				
				Pin No.: 13J080		Checked By: MLM				
Boring Crew: GARROW, JUDKINS		Casing: WB		Sampler: SS		Groundwater Observations				
Date Started: 7/07/15 Date Finished: 7/07/15		I.D.: 4 in 1.5 in		Date: 07/07/15		Depth (ft):				
VTSPG NAD83: N 642990.35 ft E 1520086.14 ft		Hammer Wt: N.A. 140 lb.		Notes: While drilling.						
Station: 12+60 Offset: -0.70		Hammer Fall: N.A. 30 in.								
Ground Elevation: 794.1 ft		Hammer/Rod Type: Auto/AWJ								
		Rig: CME 45C TRACK		C _E = 1.34						
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 1.0 ft								
		A-1-b, GrSa, brn, Moist, Rec. = 0.7 ft				11-14-10-10 (24)	7.5	36.2	46.4	17.4
5		Field Note: Cleaned out with roller cone								
		A-1-b, GrSa, brn, Moist, Rec. = 0.8 ft				5-4-6-6 (10)	14.2	41.3	42.2	16.5
		Field Note: Cleaned out with roller cone								
10		A-1-b, SaGr, brn, Moist, Rec. = 0.8 ft, Lab Note: Broken Rock was within sample.				7-6-6-6 (12)	11.3	56.7	28.1	15.2
		Field Note: NXDC, Cleaned out casing								
15		Field Note: No Recovery				R@0.0" (R)				
		16.0 ft - 21.0 ft, Gray, Muscovite-biotite-chlorite-albite-quartz SCHIST, Hard, Very slightly weathered, Good rock, NXMDC, RMR = 71	1 (35-40)	92 (96)	3	Top of Bedrock @ 16.0 ft				
					3					
					4					
					3					
					3					
20		21.0 ft - 26.0 ft, Gray, Muscovite-biotite-chlorite-albite-quartz SCHIST, Hard, Unweathered, Good rock, NXMDC, RMR = 79	2 (20)	100 (100)	3					
					4					
					4					
					3					
25		Hole stopped @ 26.0 ft								
		Remarks: 1. Hole collapsed at 15.4 ft. 2. Offsets were taken from the proposed centerline, not existing.								
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 _E is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.										

BOTTOM OF FOOTING  
EL = 781.0

BORING LOG 2 HUNTINGTON BF 0211(32).GPJ VERMONT AOT.GDT 7/15/15

PROJECT NAME: HUNTINGTON  
PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080borlogs.dgn PLOT DATE: 4/4/2016  
PROJECT LEADER: S.E. BURBANK DRAWN BY: J.D. KEENER  
DESIGNED BY: VTRANS CHECKED BY: S.E. BURBANK  
BORING LOGS (3 OF 4) SHEET 24 OF 61



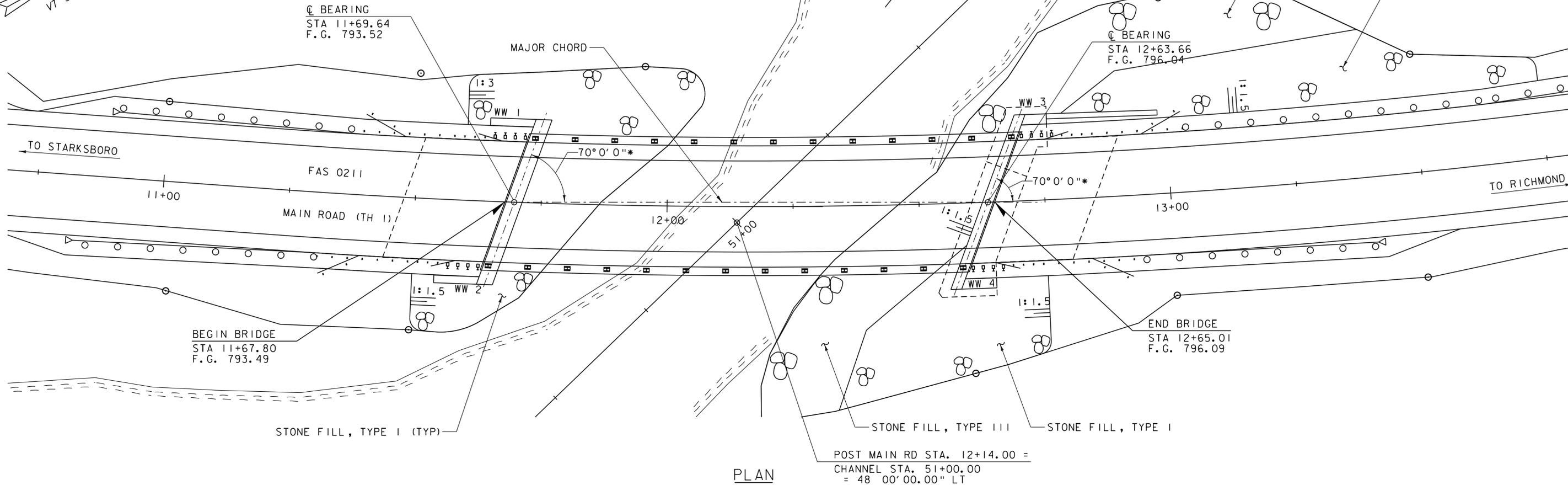
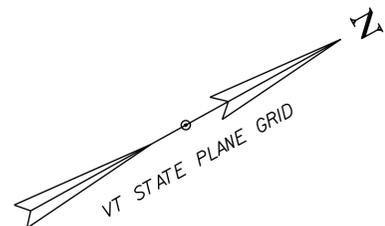
VT Trans <small>Working to Get You There</small> <small>Smart. Open. Forward.</small>		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-208</b>					
				HUNTINGTON BF 0211(32) TH-1 BR-8		Page No.: 1 of 1					
						Pin No.: 13J080					
						Checked By: MLM					
Boring Crew: DAIGNEAULT, GARROW, NIETO		Casing Type: WB		Sampler: SS		Groundwater Observations					
Date Started: 7/06/15		Date Finished: 7/06/15		I.D.: 4 in		Date: 07/06/15					
VTSPG NAD83: N 643030.44 ft E 1520089.09 ft		Hammer Wt: N.A.		140 lb.		Depth (ft): 13.2					
Station: 12+98		Hammer Fall: N.A.		30 in.		Notes: After drilling.					
Offset: -15.80		Hammer/Rod Type: Auto/AWJ									
Ground Elevation: 792.9 ft		Rig: CME 45C TRACK		C _e = 1.34							
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RCD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	
5		A-1-a, SaGr, brn, Moist, Rec. = 0.6 ft, Lab Note: Lots of Broken Rock was within sample.				1-2-2-4 (4)	8.1	60.6	28.1	11.3	
		A-1-b, SaGr, brn-gry, Moist, Rec. = 0.6 ft, Lab Note: Lots of Broken Rock was within sample.				15-3-3-3 (6)	8.4	51.0	35.1	13.9	
		A-1-a, SaGr, brn, Moist, Rec. = 0.3 ft, NXDC, Cleaned out casing. Lab Note: Lots of Broken Rock was within sample.				3-2-1-3 (3)	12.7	61.2	31.0	7.8	
		A-1-a, Gr, brn-gry, Moist, Rec. = 0.3 ft, NXDC, Cleaned out casing. Lab Note: Very clean (washed) sample.				2-2-1-2 (3)	6.7	86.5	12.5	1.0	
10		A-2-4, SiSa, brn, Moist, Rec. = 0.4 ft, NXDC, Cleaned out casing.				4-1-1-1 (2)	25.5	16.3	53.6	30.1	
		A-1-a, SaGr, brn-gry, Moist, Rec. = 0.4 ft, NXDC, Cleaned out casing. Lab Note: Lots of Broken Rock was within sample.				3-4-6-10 (10)	8.6	63.1	27.8	9.1	
		A-1-a, SaGr, rust-gry, Moist, Rec. = 0.9 ft, NXDC, Cleaned out casing. Lab Note: Lots of Broken Rock was within sample.				16-15-9-13 (24)	11.0	62.6	27.9	9.5	
15		A-1-b, SaGr, gry, Moist, Rec. = 1.1 ft, NXDC, Cleaned out casing. Lab Note: Lots of Broken Rock was within sample.				29-40-R@3.5" (R)	10.5	55.3	28.8	15.9	
		Field Note: NXDC, Cleaned out casing									
20		16.0 ft - 18.0 ft, Gray, Muscovite-biotite-chlorite-albite-quartz SCHIST, Hard, Unweathered, Good rock, NXMDC, RMR = 68	1 (20)	40 (78)	3	Top of Bedrock @ 16.0 ft					
		18.0 ft - 22.0 ft, Gray, Muscovite-biotite-chlorite-albite-quartz SCHIST, Hard, Unweathered, Good rock, NXMDC, RMR = 79	2 (20-25)	78 (100)	3						
					3						
					3						
25		22.0 ft - 26.0 ft, Gray, Muscovite-biotite-chlorite-albite-quartz SCHIST, Hard, Unweathered, Good rock, NXMDC, RMR = 71	3 (20-25)	80 (100)	4						
					4						
					4						
					4						
Hole stopped @ 26.0 ft											
Remarks: 1. Hole collapsed at 4.5 ft. 2. Offsets were taken from the proposed centerline, not existing.											
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 _e is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.											

BORING LOG 2 HUNTINGTON BF 0211(32).GPJ VERMONT AOT.GDT 7/15/15

NOTE: B207 WAS PERFORMED AS A HAND DRIVEN STEEL PROBE, THEREFORE NO BORING LOG IS PROVIDED. SEE BORING INFORMATION SHEET FOR DEPTH TO REFUSAL.

PROJECT NAME: HUNTINGTON	PLOT DATE: 4/4/2016
PROJECT NUMBER: BF 0211(32)	DRAWN BY: J.D. KEENER
FILE NAME: z13j080borlogs.dgn	CHECKED BY: S.E. BURBANK
PROJECT LEADER: S.E. BURBANK	SHEET 25 OF 61
DESIGNED BY: VTRANS	
BORING LOGS (4 OF 4)	

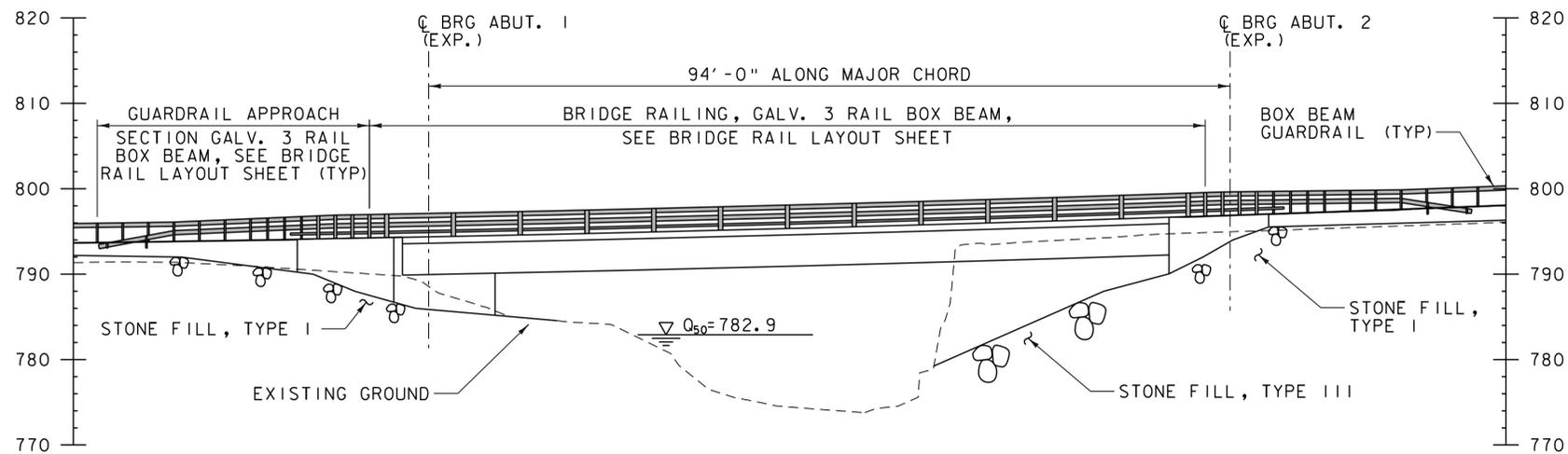




**PLAN**

SCALE 1" = 10'-0"

* THE ANGLE FOR THE CENTERLINE OF BEARING AT BOTH ABUTMENTS IS MEASURED FROM THE MAJOR CHORD.



**ELEVATION**

SCALE 1" = 10'-0"

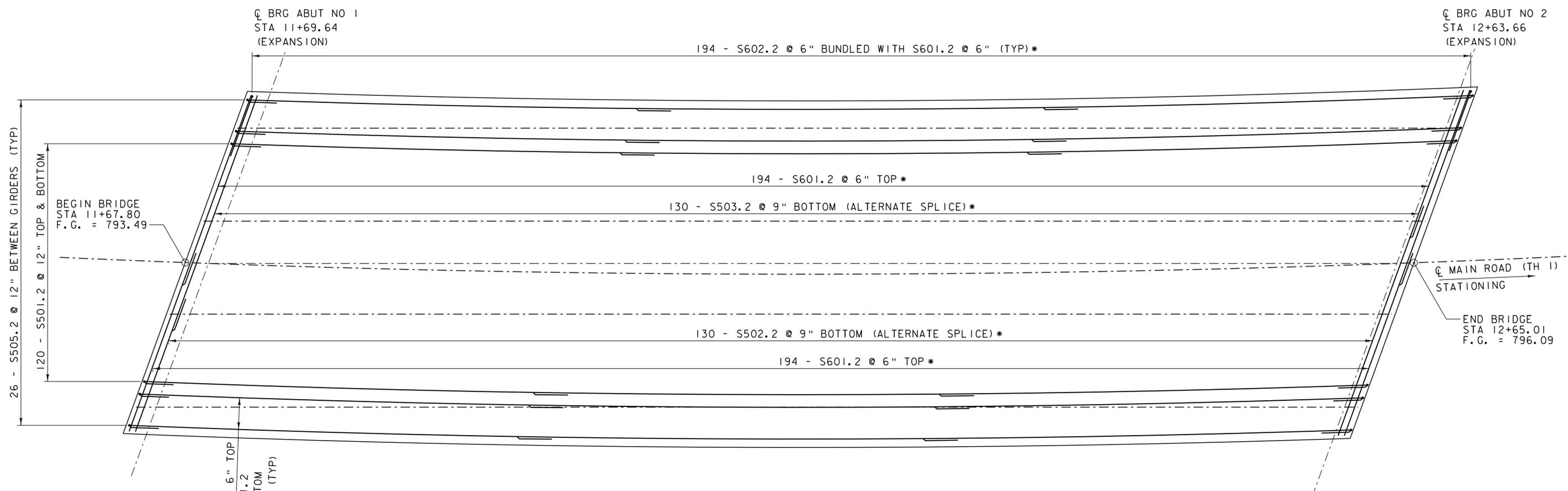
PROJECT NAME: HUNTINGTON

PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080pe.dgn  
 PROJECT LEADER: S.E. BURBANK  
 DESIGNED BY: E.F. LAWES  
 PLAN AND ELEVATION

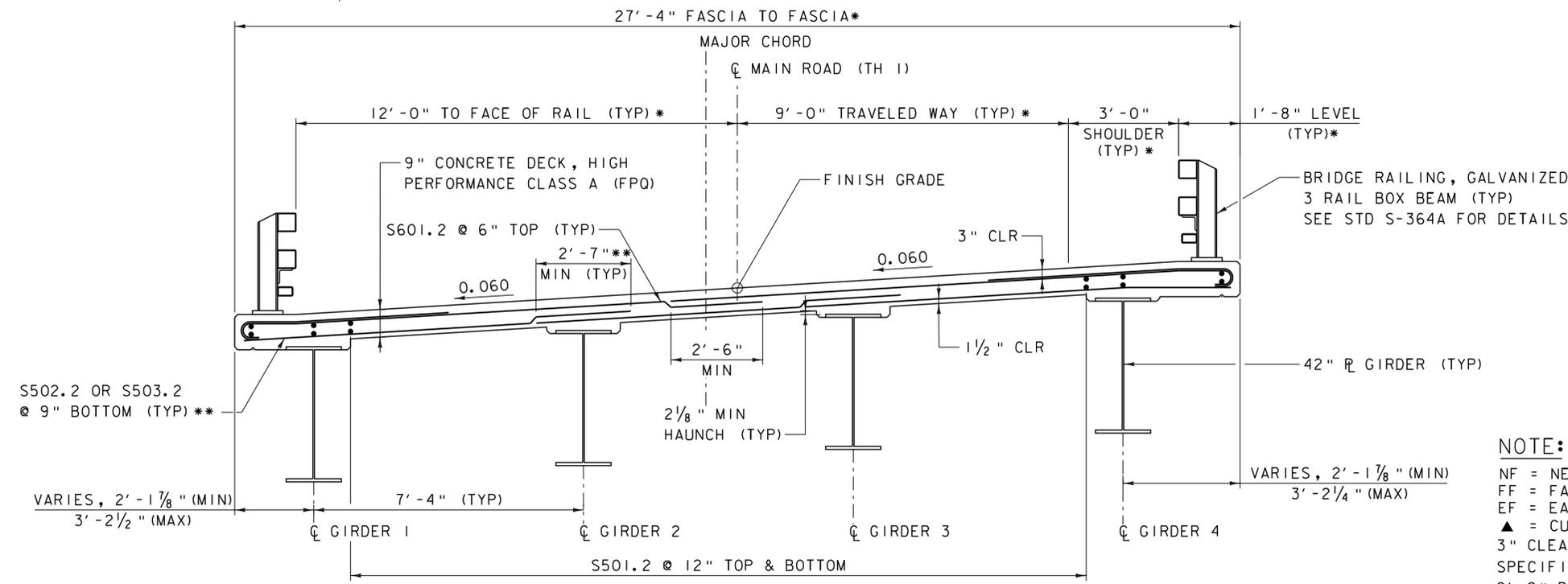
PLOT DATE: 4/4/2016  
 DRAWN BY: E.F. LAWES  
 CHECKED BY: S.E. BURBANK  
 SHEET 26 OF 61





**DECK REINFORCING PLAN**

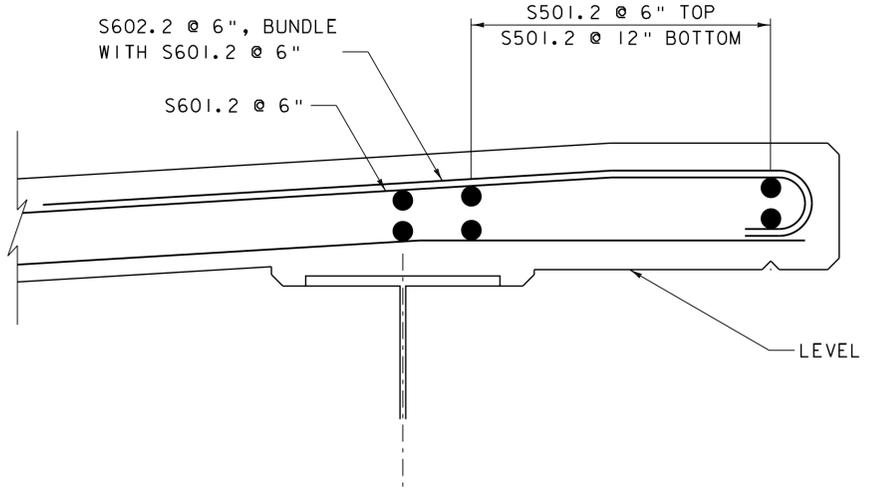
SCALE 1/4" = 1'-0"  
 * SPACING ALONG MAJOR CHORD



**DECK TYPICAL SECTION**

SCALE 1/2" = 1'-0"

* DIMENSIONS ARE RADIAL  
 ** LAP TO ALTERNATE OVER GIRDER 2 AND GIRDER 3



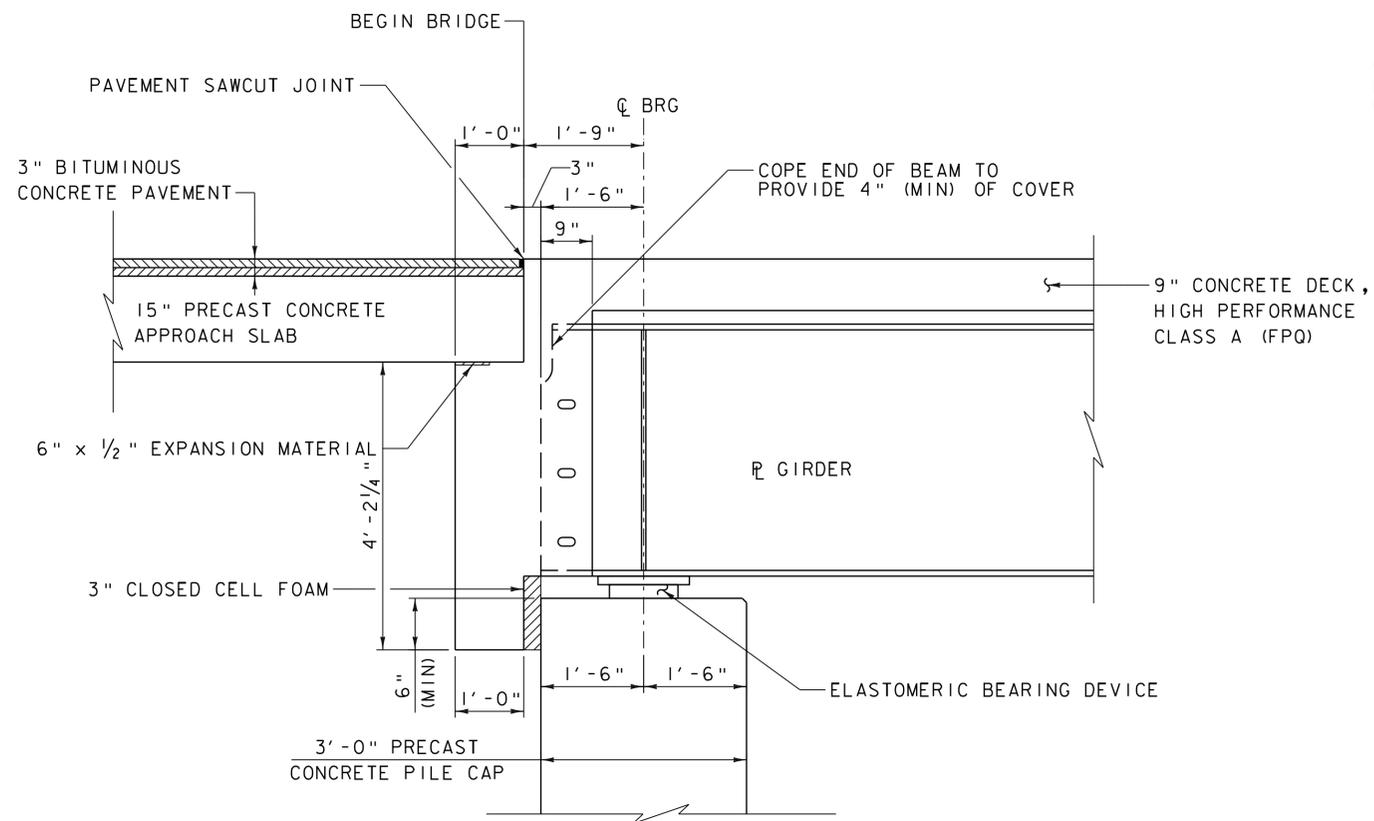
**TYPICAL OVERHANG REINFORCEMENT**

SCALE 1/2" = 1'-0"

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

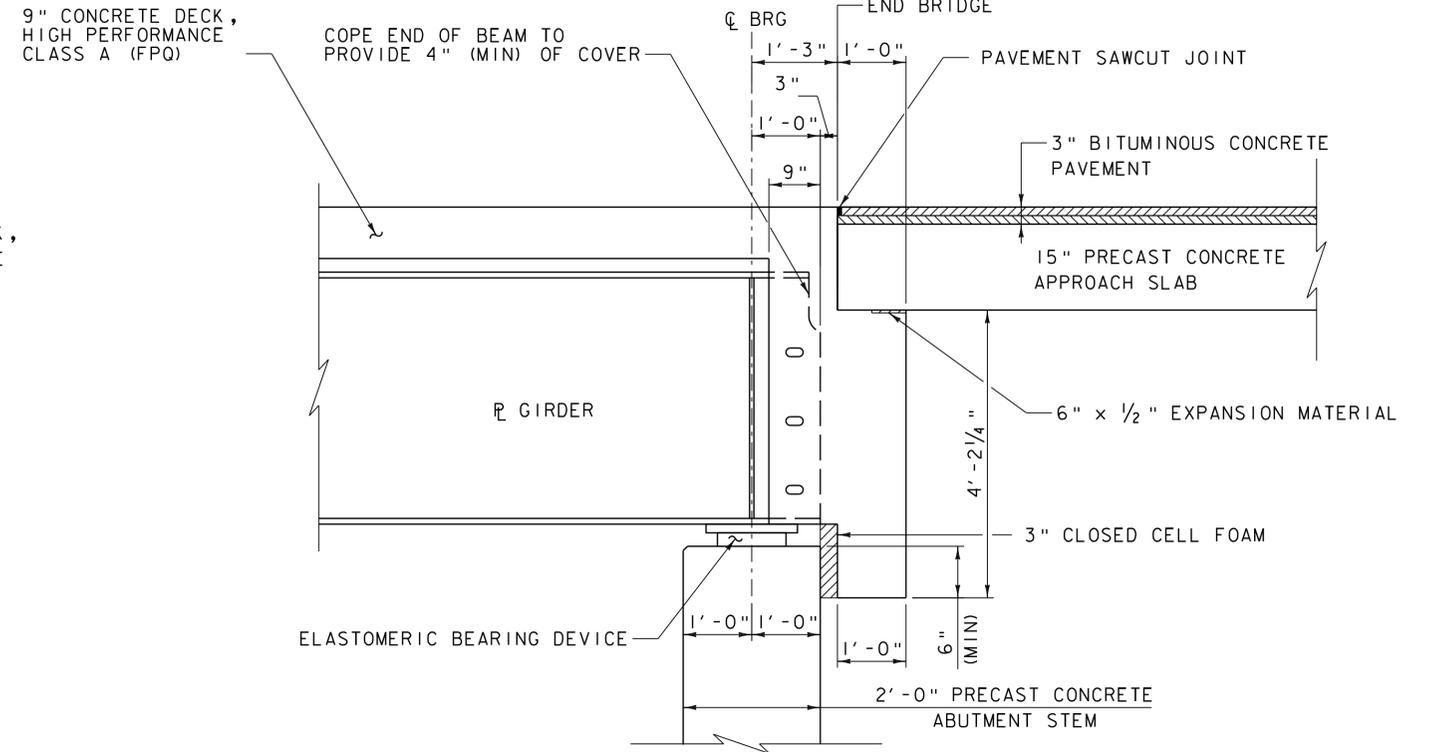
PROJECT NAME:	HUNTINGTON	FILE NAME:	z13j080deck.dgn	PLOT DATE:	4/4/2016
PROJECT NUMBER:	BF 0211(32)	PROJECT LEADER:	S.E. BURBANK	DRAWN BY:	R.H. BARNES
		DESIGNED BY:	J.D. KEENER	CHECKED BY:	S.E. BURBANK
		DECK REINFORCING DETAILS			SHEET 27 OF 61





ABUTMENT NO 1 BRIDGE END DETAIL

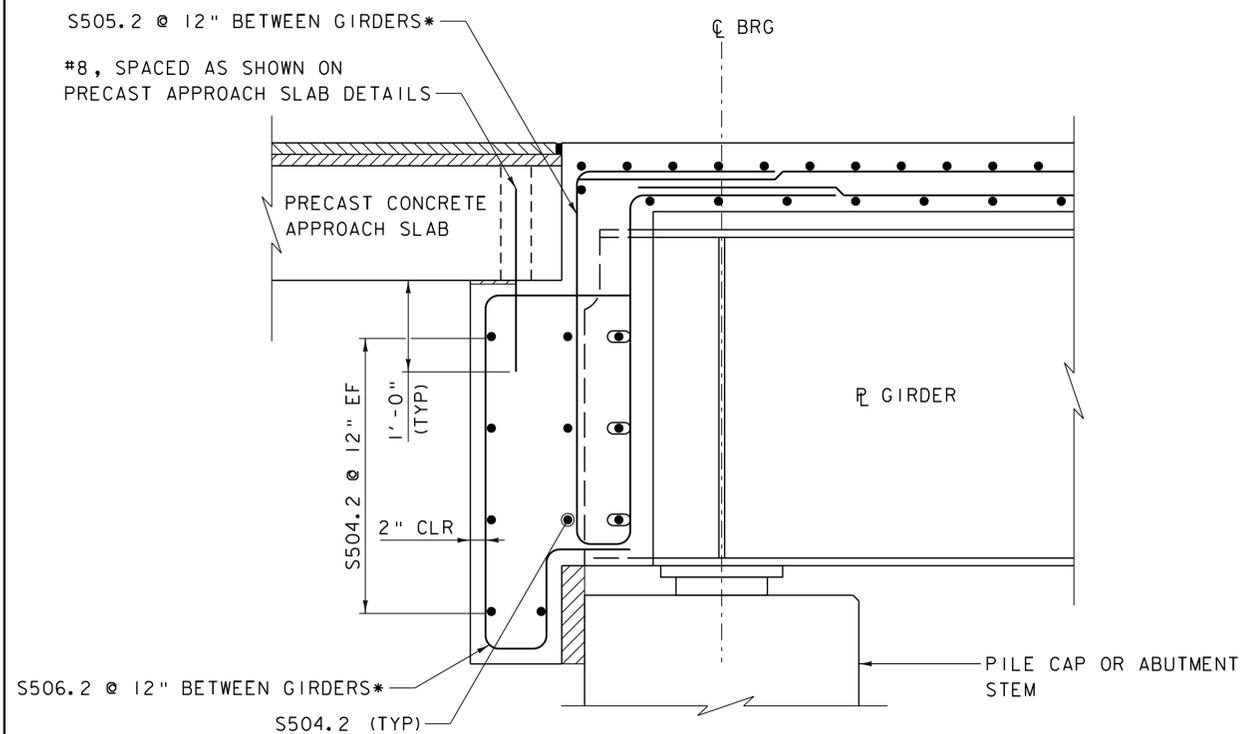
SCALE 3/4" = 1'-0"



ABUTMENT NO 2 BRIDGE END DETAIL

SCALE 3/4" = 1'-0"

NOTE: HORIZONTAL DIMENSIONS PROVIDED IN BRIDGE END DETAILS ARE PERPENDICULAR TO CL BRG UNLESS NOTED OTHERWISE.

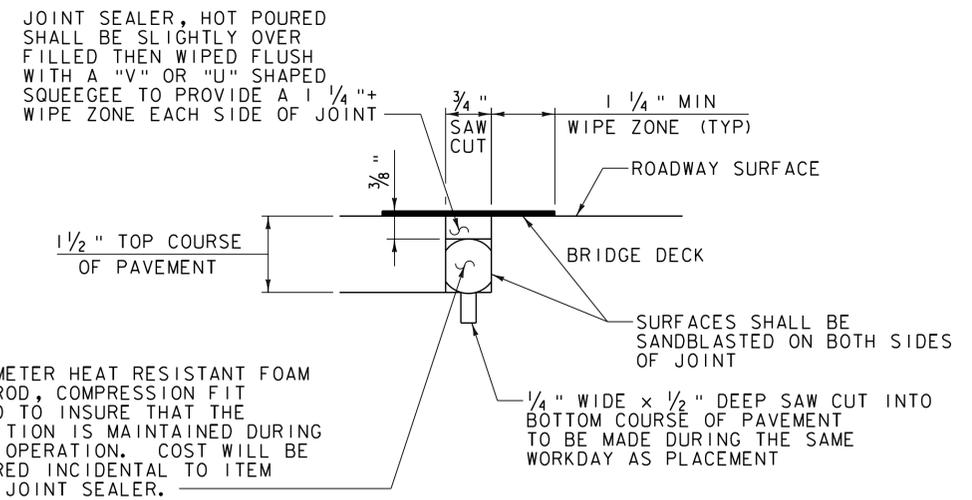


BRIDGE END DETAIL REINFORCING TYPICAL

SCALE 1" = 1'-0"

* REINFORCING TO BE PLACED PARALLEL TO LONGITUDINAL DECK REINFORCING

NOTE: APPROACH SLAB AND ABUTMENT REINFORCING NOT SHOWN FOR CLARITY.



SAW CUT JOINT DETAIL

NOT TO SCALE

NOTE:

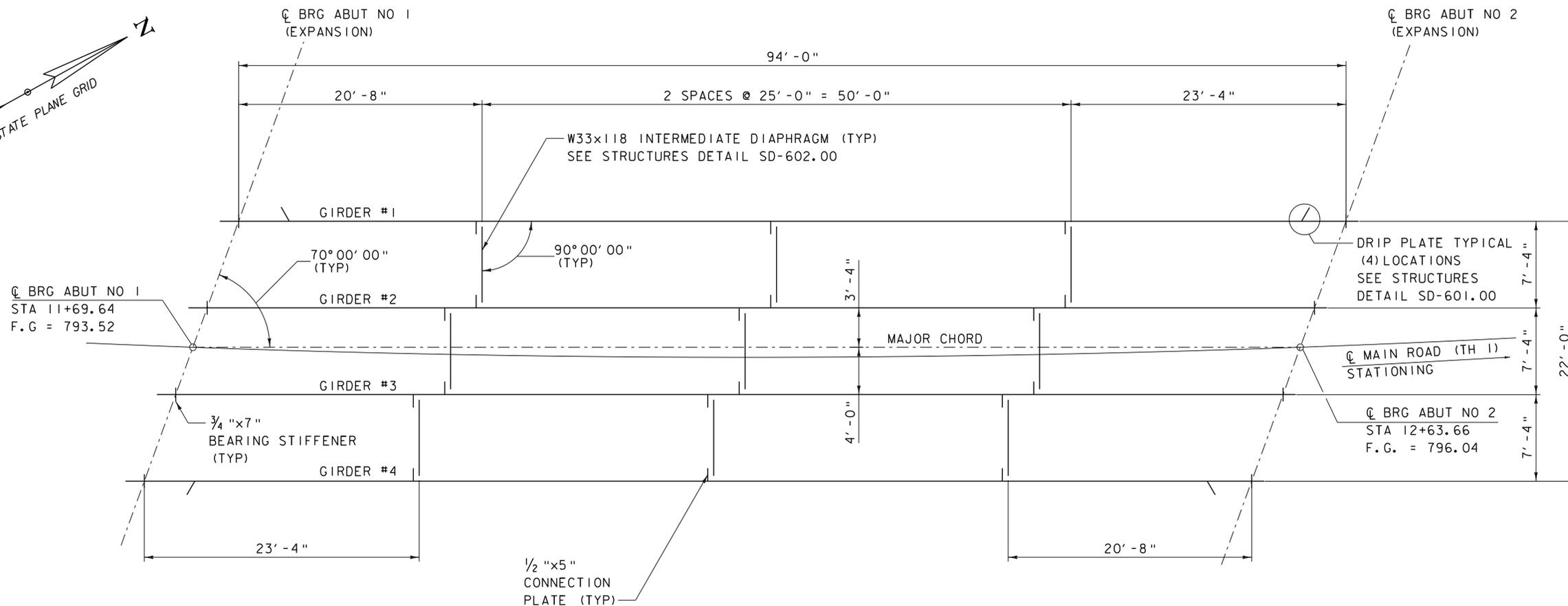
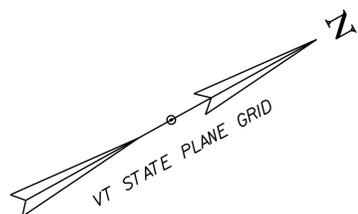
NF = NEAR FACE  
 FF = FAR FACE  
 EF = EACH FACE  
 ▲ = CUT TO FIT IN FIELD  
 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
 2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

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



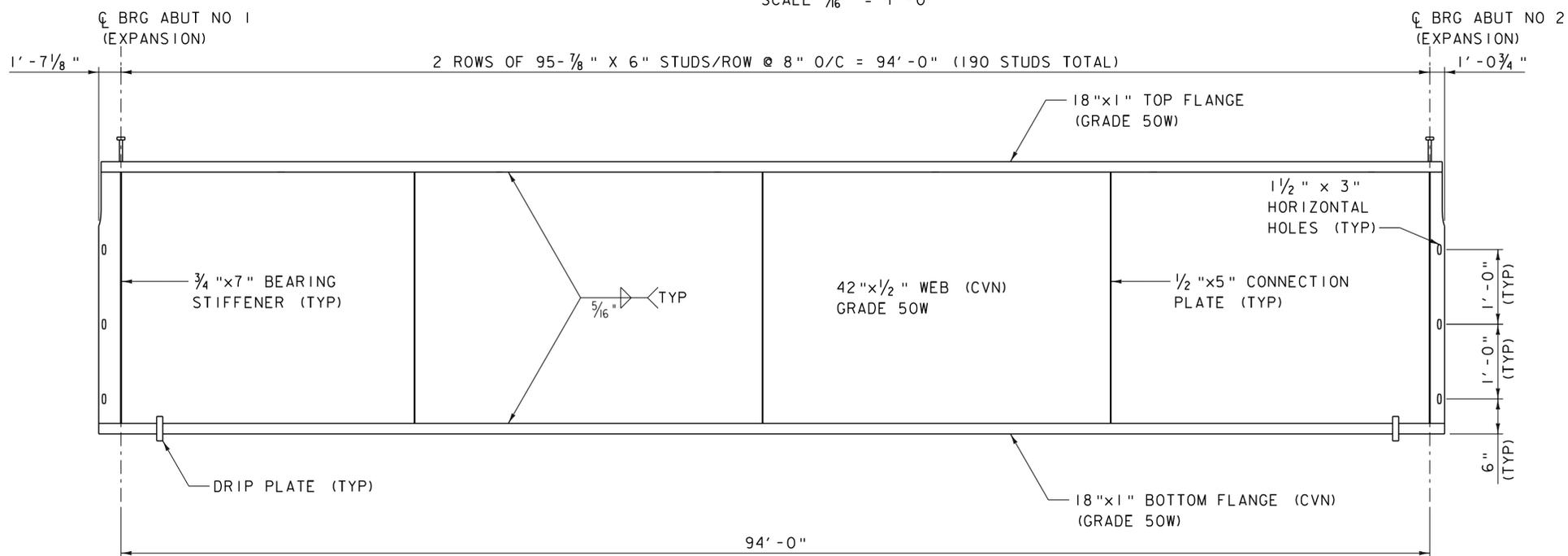
PROJECT NAME: HUNTINGTON  
 PROJECT NUMBER: BF 0211(32)  
 FILE NAME: z13j080sup.dgn  
 PROJECT LEADER: S.E. BURBANK  
 DESIGNED BY: J.D. KEENER  
 BRIDGE END DETAILS

PLOT DATE: 4/4/2016  
 DRAWN BY: J.D. KEENER  
 CHECKED BY: R.H. BARNES  
 SHEET 28 OF 61



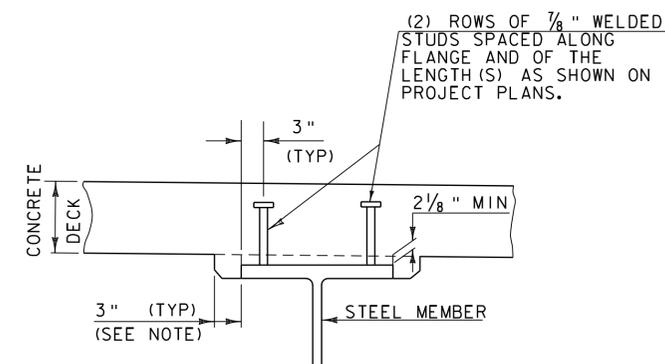
**FRAMING PLAN**

SCALE 3/16" = 1'-0"



**TYPICAL GIRDER ELEVATION**

HORIZONTAL SCALE 3/16" = 1'-0"  
VERTICAL NOT TO SCALE



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

**HAUNCH AND SHEAR CONNECTOR DETAIL**

**NOTES:**

1. CVN DENOTES THAT CHARPY V-NOTCH TEST IS REQUIRED.
2. TWO ROWS OF 7/8" DIA. WELDED STUD CONNECTORS AT 8". SEE HAUNCH AND SHEAR CONNECTOR DETAIL, THIS SHEET.

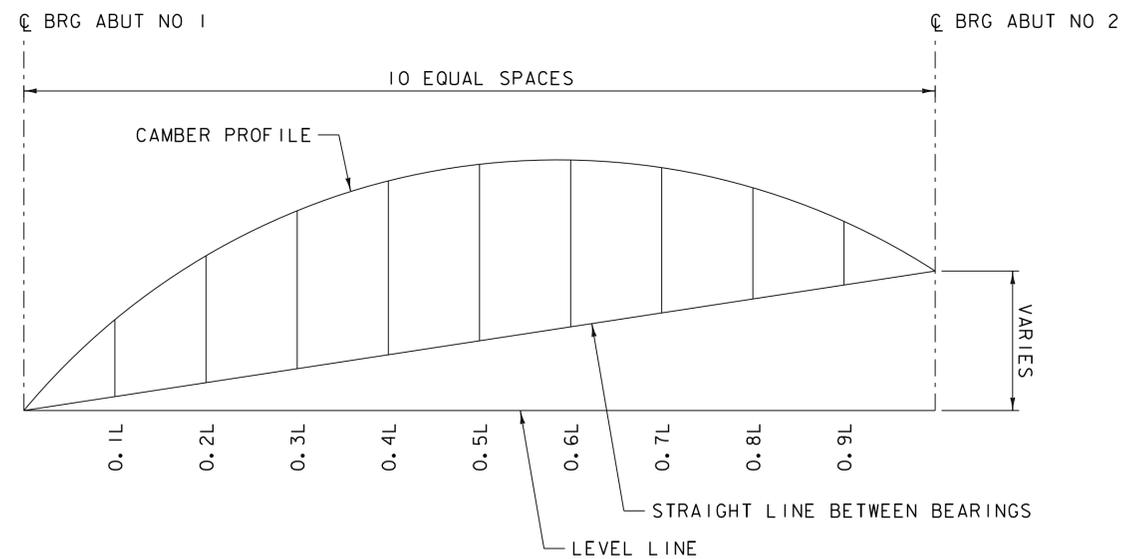
PROJECT NAME: HUNTINGTON  
PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080sup.dgn  
PROJECT LEADER: S.E. BURBANK  
DESIGNED BY: J.D. KEENER  
FRAMING PLAN

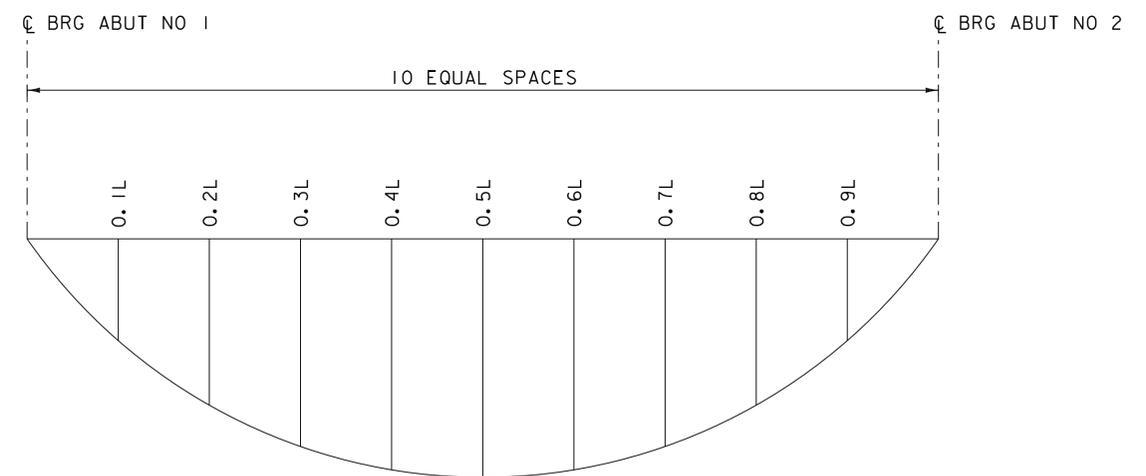
PLOT DATE: 4/4/2016  
DRAWN BY: R.H. BARNES  
CHECKED BY: S.E. BURBANK  
SHEET 29 OF 61



		CAMBER TABLE @ 1/10 POINTS (INCHES)										
POINT ON GIRDER		℄ BRG. ABUT #1	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ BRG. ABUT #2
GIRDER 1 - 4	STEEL DL	0.00	0.20	0.38	0.53	0.62	0.65	0.62	0.53	0.38	0.20	0.00
	CONCRETE SLAB	0.00	0.96	1.82	2.49	2.91	3.06	2.91	2.49	1.82	0.96	0.00
	SUPERIMPOSED DL	0.00	0.14	0.26	0.35	0.41	0.43	0.41	0.35	0.26	0.14	0.00
	TOTAL DEFLECTION	0.00	1.30	2.46	3.36	3.94	4.14	3.94	3.36	2.46	1.30	0.00
	RESIDUAL CAMBER	0.00	-0.96	-1.72	-2.24	-2.57	-2.68	-2.57	-2.24	-1.72	-0.96	0.00
	TOTAL CAMBER	0.00	0.34	0.74	1.12	1.37	1.46	1.37	1.12	0.74	0.34	0.00



CAMBER DIAGRAM



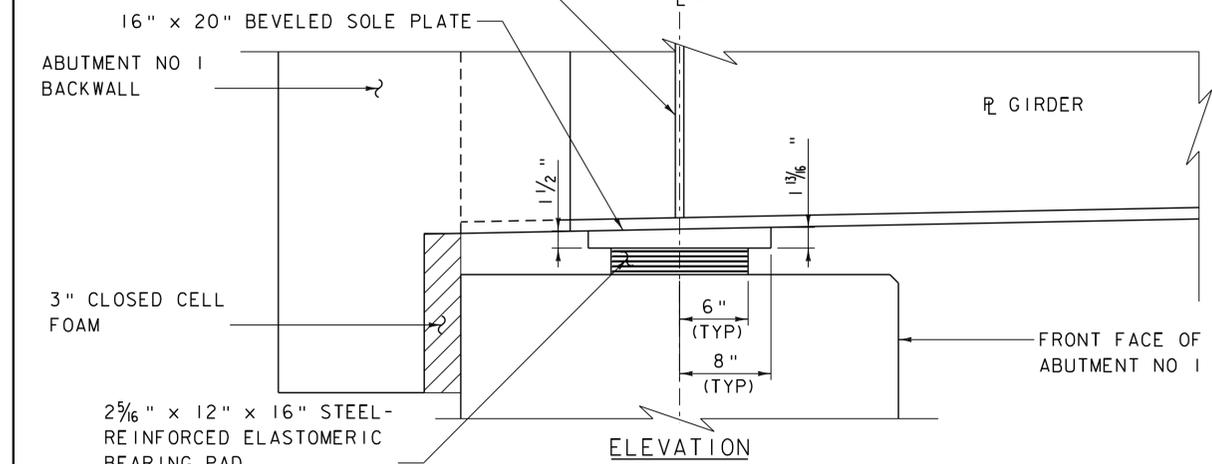
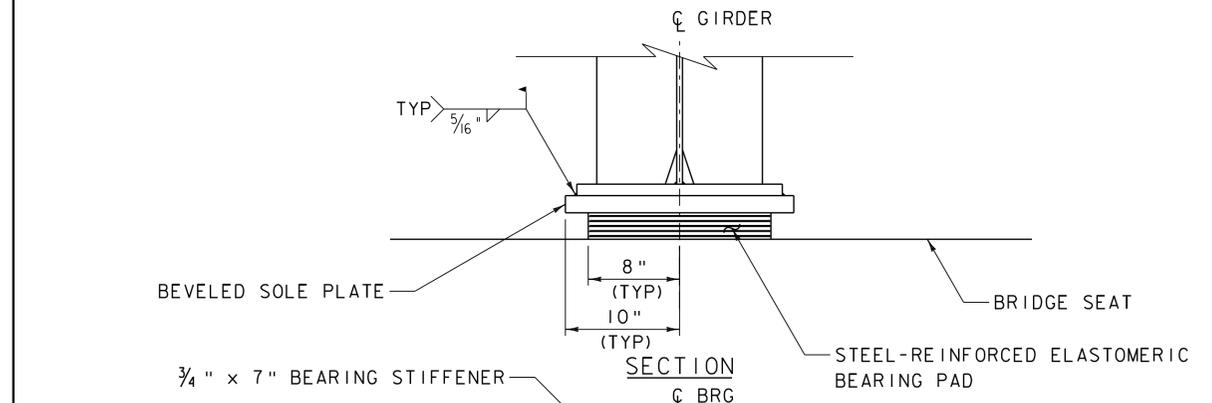
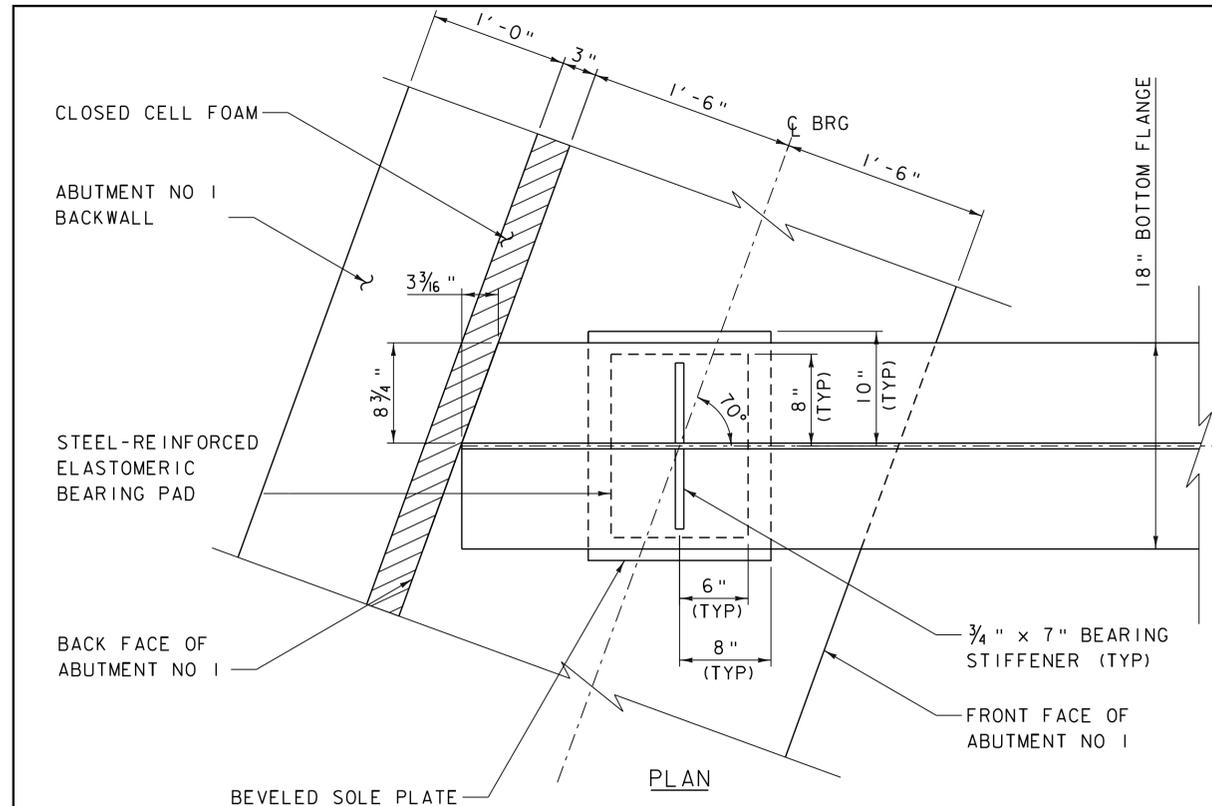
DEFLECTION DIAGRAM

PROJECT NAME: HUNTINGTON  
PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080sup.dgn  
PROJECT LEADER: S.E. BURBANK  
DESIGNED BY: R.H. BARNES  
CAMBER AND DEFLECTION

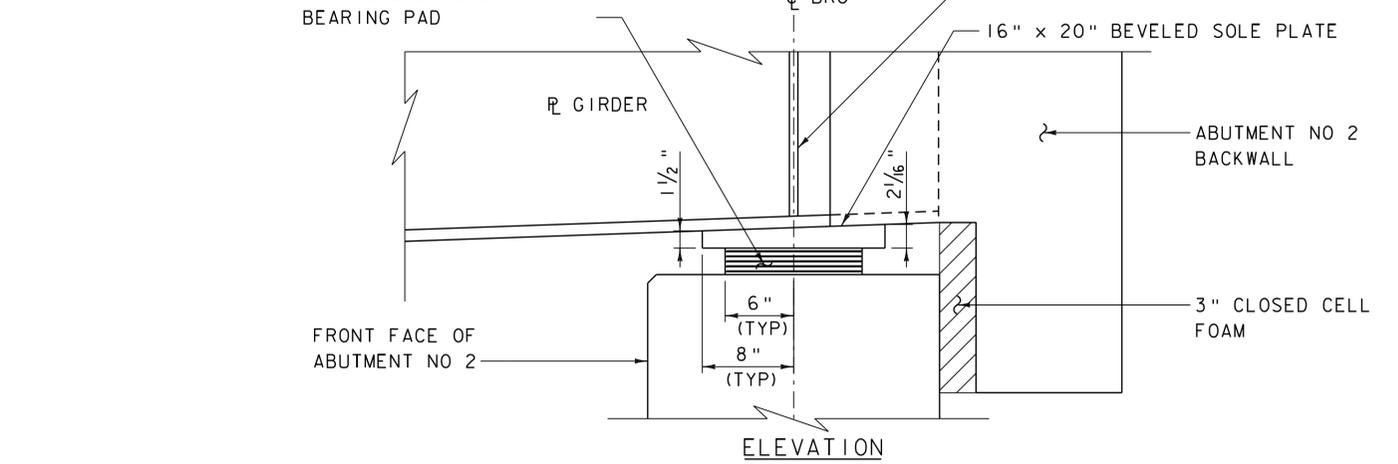
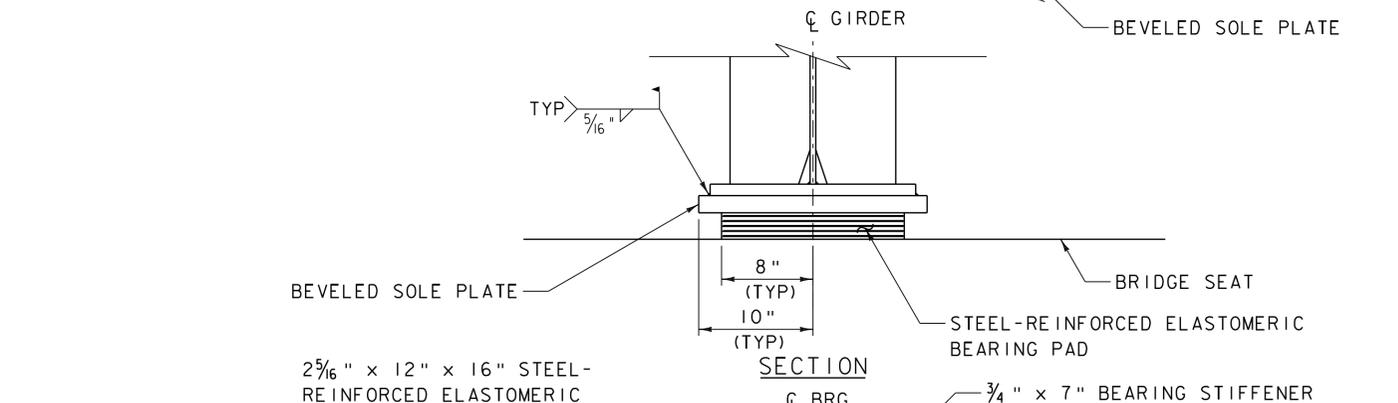
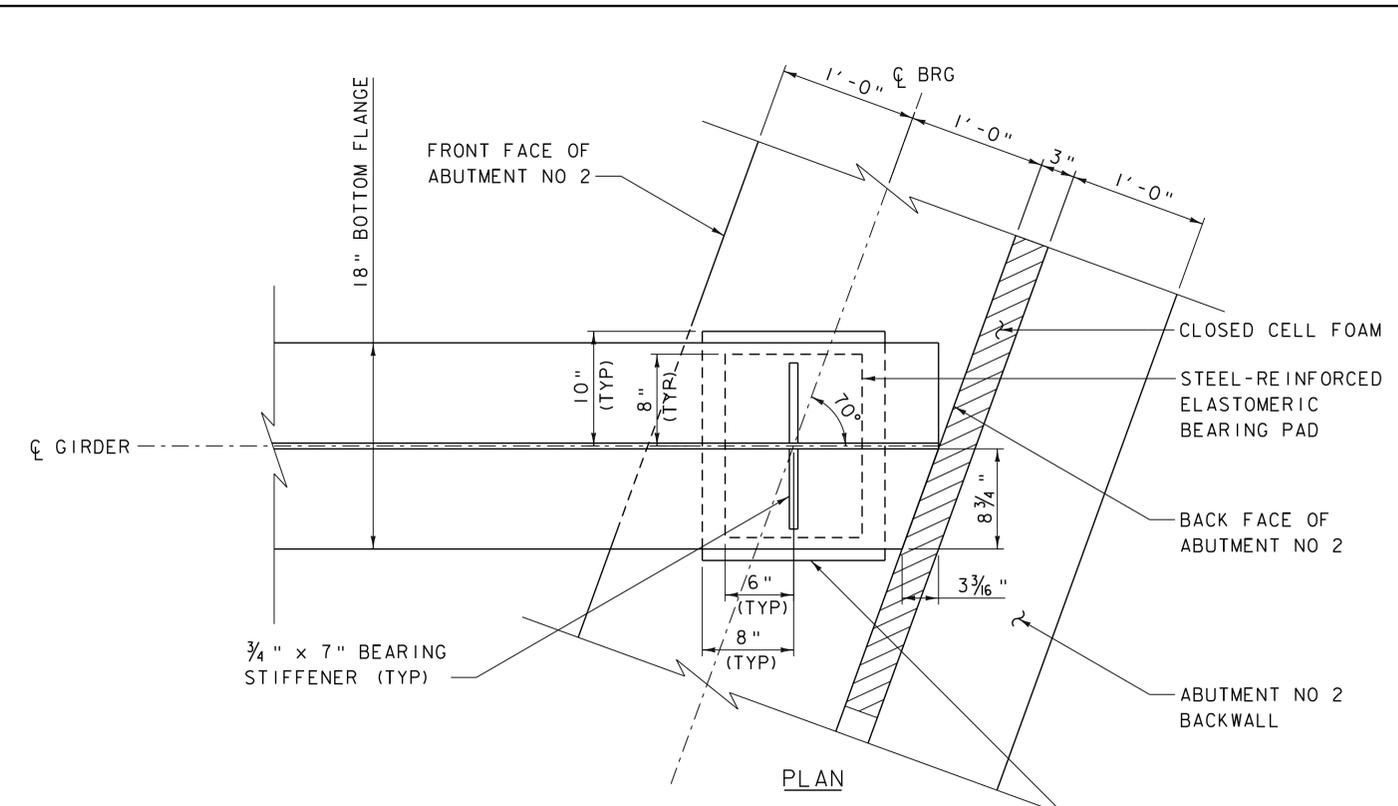
PLOT DATE: 4/4/2016  
DRAWN BY: R.H. BARNES  
CHECKED BY: S.E. BURBANK  
SHEET 30 OF 61





**ABUTMENT NO 1 - EXPANSION BEARING DETAILS**  
SCALE 1/2" = 1'-0"

NOTE: SEE BEARING DETAILS (2 OF 2) FOR STEEL-REINFORCED ELASTOMERIC BEARING PAD DETAILS.



**ABUTMENT NO 2 - EXPANSION BEARING DETAILS**

SCALE 1/2" = 1'-0"

**REVIEWER NOTE**

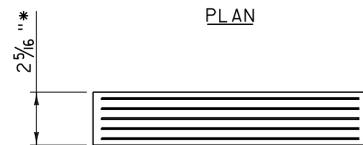
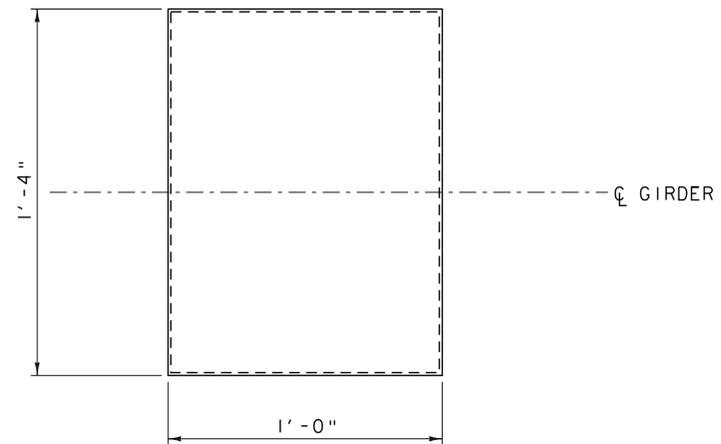
BEARING DETAILS WILL BE REVISED FOR THE ADDITION OF 2 ANCHOR BOLTS IN BEVELED SOLE PLATES WITH SLOTTED HOLES AT EACH BEARING LOCATION.



PROJECT NAME:	HUNTINGTON	FILE NAME:	z13j080brg.dgn	PLOT DATE:	4/4/2016
PROJECT NUMBER:	BF 0211(32)	PROJECT LEADER:	S.E. BURBANK	DRAWN BY:	R.H. BARNES
		DESIGNED BY:	R.H. BARNES	CHECKED BY:	S.E. BURBANK
		BEARING DETAILS (1 OF 2)		SHEET	31 OF 61

## ELASTOMERIC BEARING NOTES

1. BEARINGS SHALL CONFORM TO THE APPLICABLE SUBSECTIONS OF STANDARD SPECIFICATIONS SECTIONS 531 AND 731.
2. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMER SHALL BE STEEL AASHTO M270M/M270 GRADE 36. ALL INTERNAL STEEL PLATES SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST, AND MILL SCALE. THE PLATES SHALL BE FREE OF SHARP EDGES AND BURRS.
3. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM 1/8" EDGE SEAL OF ELASTOMER INTEGRAL WITH BEARING OVER ALL INTERNAL PLATES.
4. THE STEEL REINFORCED ELASTOMERIC BEARING PADS SHALL BE VULCANIZED TO THE STEEL SOLE PLATES. THE STEEL SURFACES TO BE BONDED TO THE PAD SHALL NOT BE METALIZED.
5. THE ELASTOMER WAS DESIGNED WITH A SHEAR MODULUS OF 130 PSI +/- 15%.
6. THE ELASTOMER SHALL MEET THE REQUIREMENTS OF LOW TEMPERATURE ZONE D, GRADE 4.
7. THE CONCRETE UNDER THE BEARING DEVICE SHALL BE LEVEL.
8. ALL DESIGNS DONE FOR THE BEARINGS SHALL BE PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS REFERENCED ON THE PROJECT NOTES SHEET.
9. ALTERNATE CONFIGURATIONS FOR BEARINGS MAY BE SUBMITTED FOR APPROVAL. ANY ALTERNATE SUBMITTED SHALL BE DESIGNED AND CERTIFIED TO MEET THE DESIGN LOADS AND CRITERIA SHOWN ON THE PLANS.
10. BRIDGE SEAT ELEVATIONS MAY BE REVISED TO ACCOMMODATE AN ALTERNATIVE CONFIGURATION.



PLAN

SECTION

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

## ELASTOMERIC BEARING DETAIL

SCALE 3" = 1' - 0"

## DESIGN CRITERIA (SERVICE LIMIT STATE)

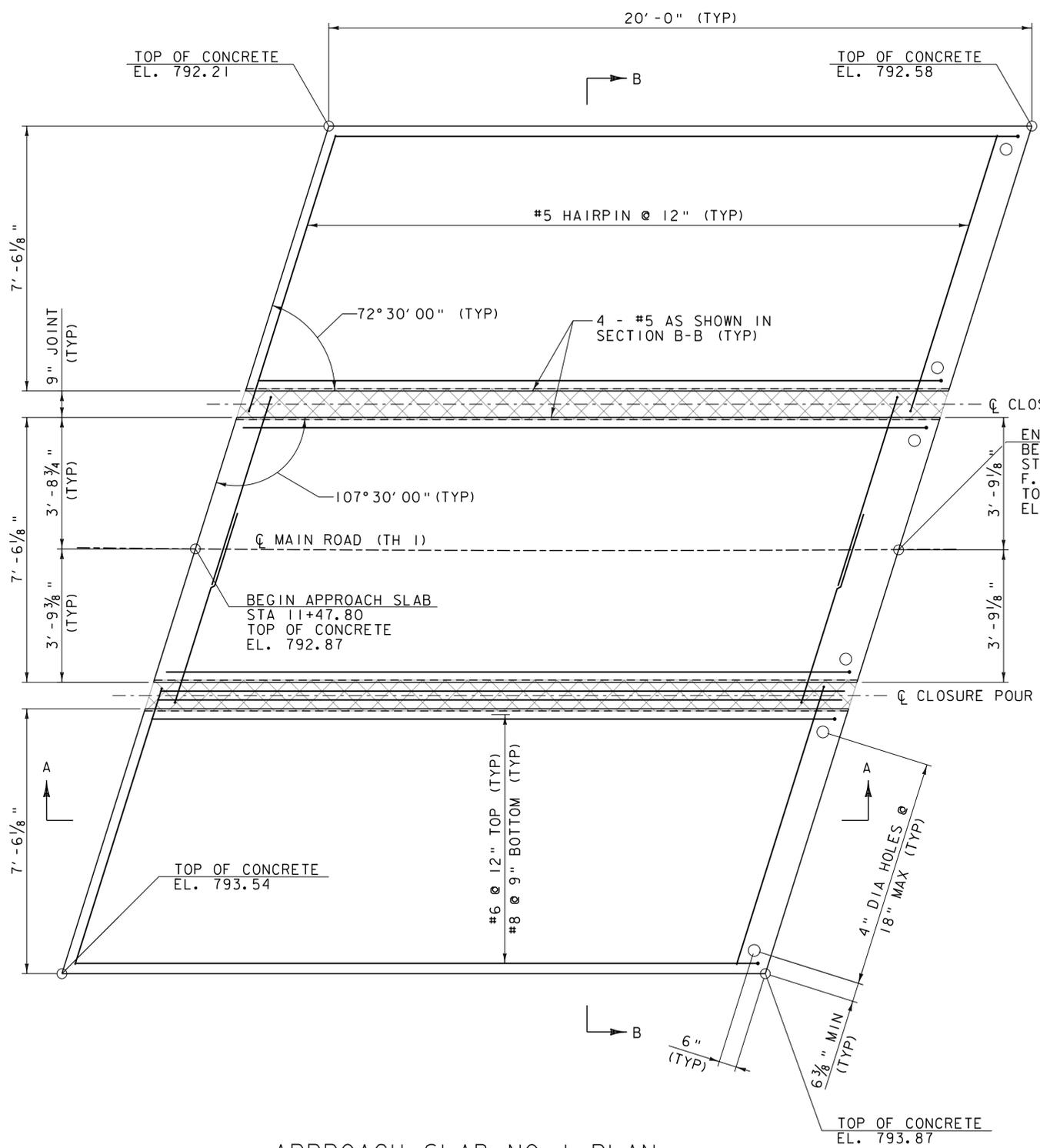
AASHTO METHOD A  
 DEAD LOAD = 62.7 KIPS  
 LIVE LOAD = 96.7 KIPS  
 LONGITUDINAL MOVEMENT = 0.30 IN. (ABUTMENT NO 1 & 2)

PROJECT NAME: HUNTINGTON  
 PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080brg.dgn  
 PROJECT LEADER: S.E. BURBANK  
 DESIGNED BY: R.H. BARNES  
 BEARING DETAILS (2 OF 2)

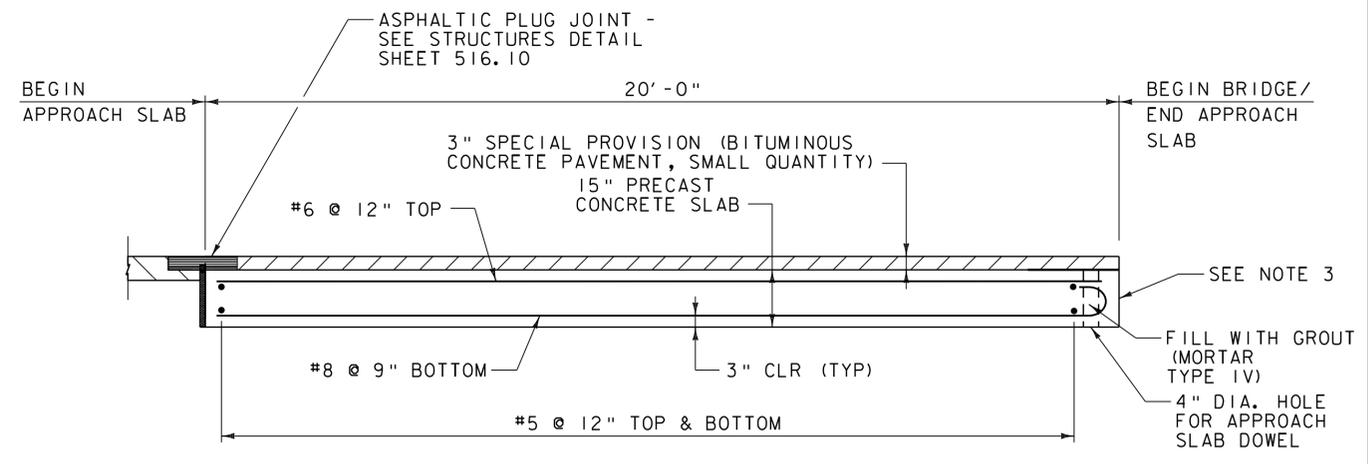
PLOT DATE: 4/4/2016  
 DRAWN BY: R.H. BARNES  
 CHECKED BY: S.E. BURBANK  
 SHEET 32 OF 61



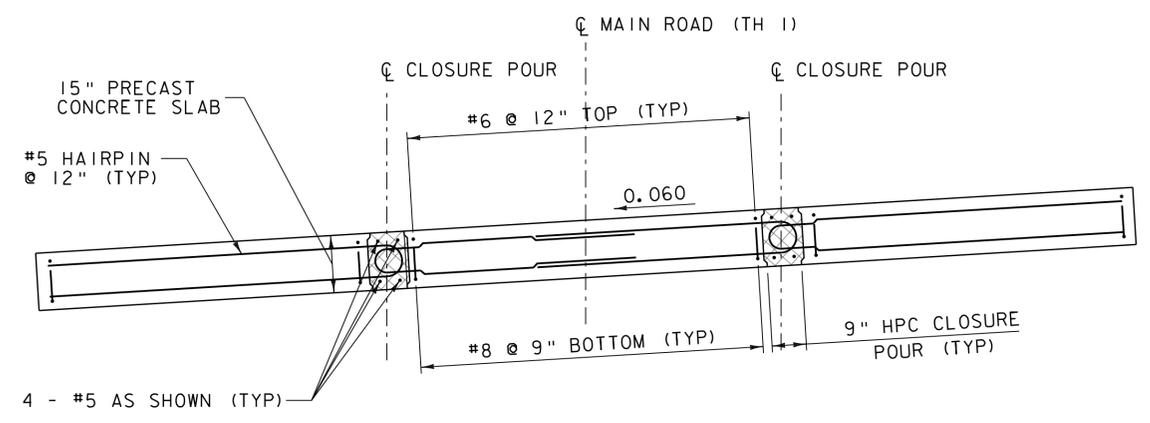


**APPROACH SLAB NO. 1 PLAN**  
SCALE 1/2" = 1'-0"

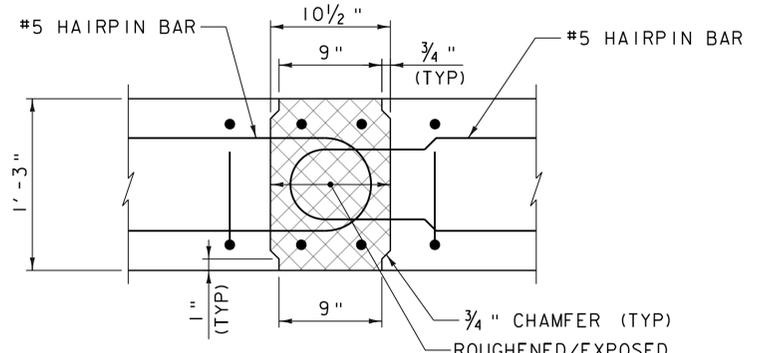
**NOTE:**  
 NF = NEAR FACE  
 FF = FAR FACE  
 EF = EACH FACE  
 ▲ = CUT TO FIT IN FIELD  
 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
 2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.



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



**SECTION B-B**  
SCALE 1/2" = 1'-0"



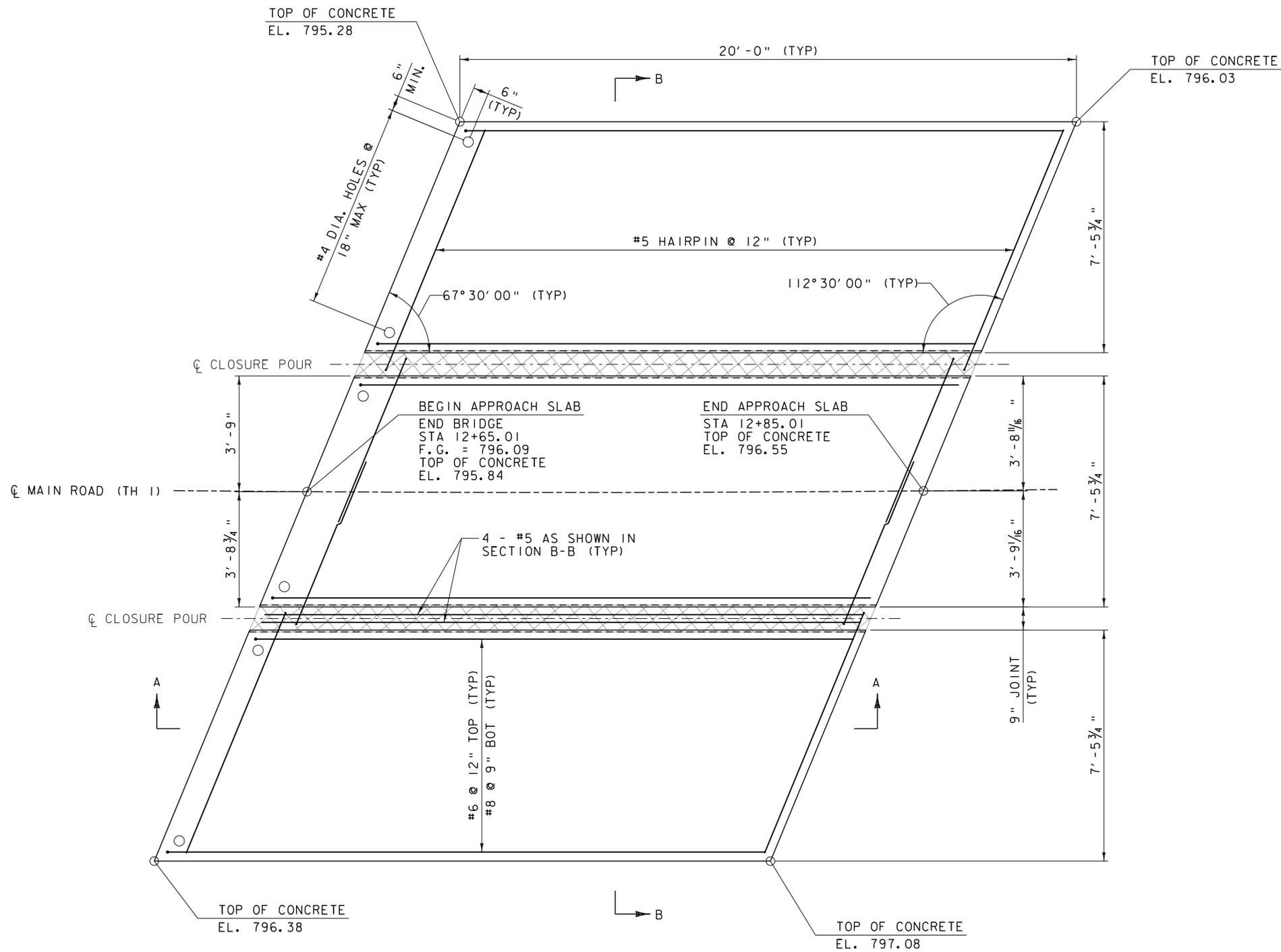
**JOINT DETAIL**  
SCALE 1 1/2" = 1'-0"

 LIMITS OF SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPO) CLOSURE POUR

- NOTES:**
1. LIFTING POINTS IN APPROACH SLABS TO BE DESIGNED BY PRECASTER AND SUBMITTED WITH CALCULATIONS.
  2. CONTRACTOR SHALL INCLUDE IN THE FABRICATION DRAWINGS THE METHOD AND DETAILS FOR ESTABLISHING CONTINUOUS CONTACT WITH SUBGRADE AND SUPPORT FOR PRECAST APPROACH SLABS.
  3. FRONT FACE OF APPROACH SLAB SHALL BE VERTICAL WHEN PLACED ON APPROACH SLAB SEAT.

PROJECT NAME: HUNTINGTON	
PROJECT NUMBER: BF 0211(32)	
FILE NAME: z13j080slab.dgn	PLOT DATE: 4/4/2016
PROJECT LEADER: S.E. BURBANK	DRAWN BY: R.H. BARNES
DESIGNED BY: R.H. BARNES	CHECKED BY: S.E. BURBANK
PRECAST APPROACH SLAB DETAILS (1 OF 2)	SHEET 33 OF 61





APPROACH SLAB NO 2 PLAN  
SCALE 1/2" = 1'-0"

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

**NOTE:**

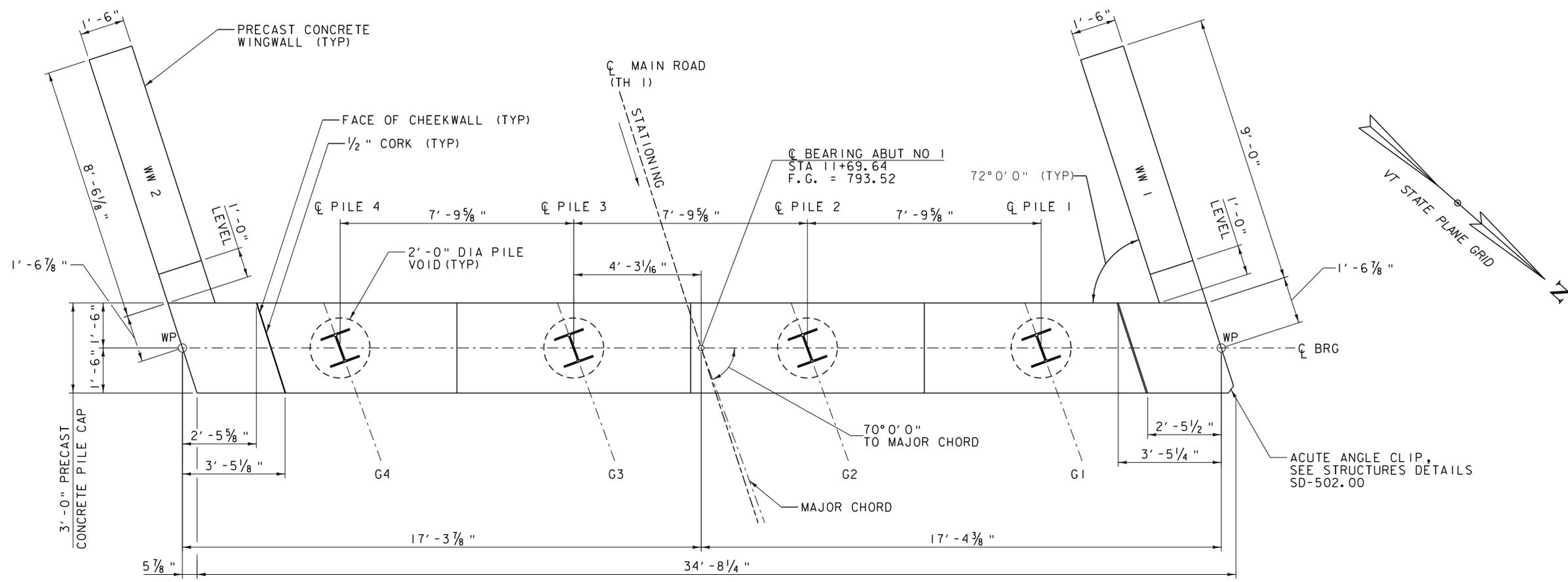
- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- ▲ = CUT TO FIT IN FIELD
- 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- 2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

**NOTE:**

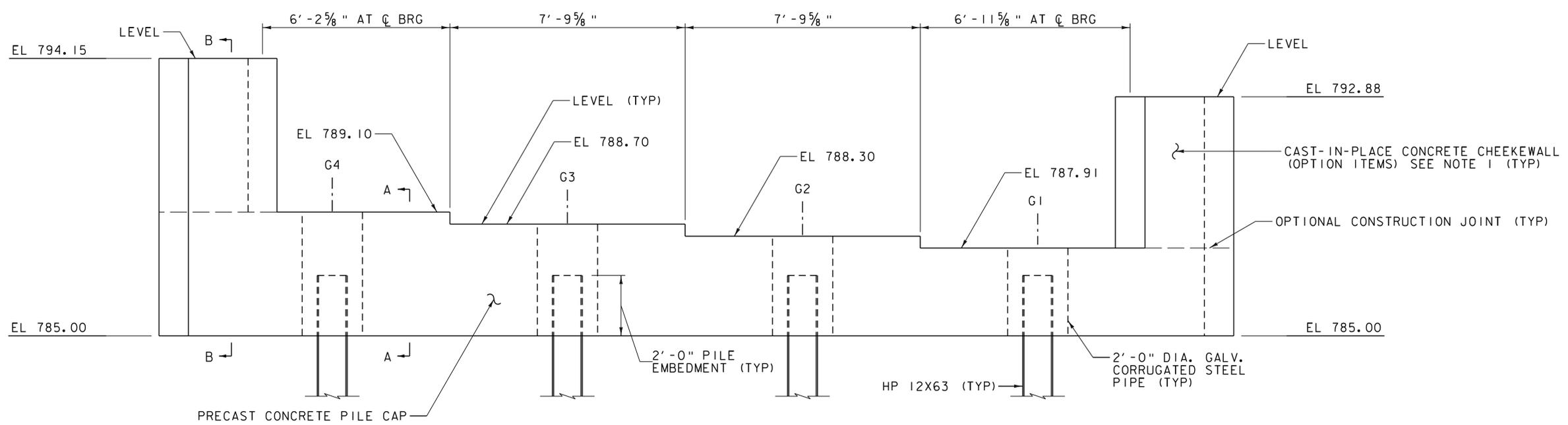
1. SEE "PRECAST APPROACH SLAB DETAILS (1 OF 2)" SHEET FOR NOTES AND SECTIONS A-A AND B-B.

PROJECT NAME: HUNTINGTON	
PROJECT NUMBER: BF 0211(32)	
FILE NAME: z13j080slab.dgn	PLOT DATE: 4/4/2016
PROJECT LEADER: S.E. BURBANK	DRAWN BY: R.H. BARNES
DESIGNED BY: R.H. BARNES	CHECKED BY: S.E. BURBANK
PRECAST APPROACH SLAB DETAILS (2 OF 2) SHEET	34 OF 61





ABUTMENT NO 1 PLAN  
SCALE 1/2" = 1'-0"

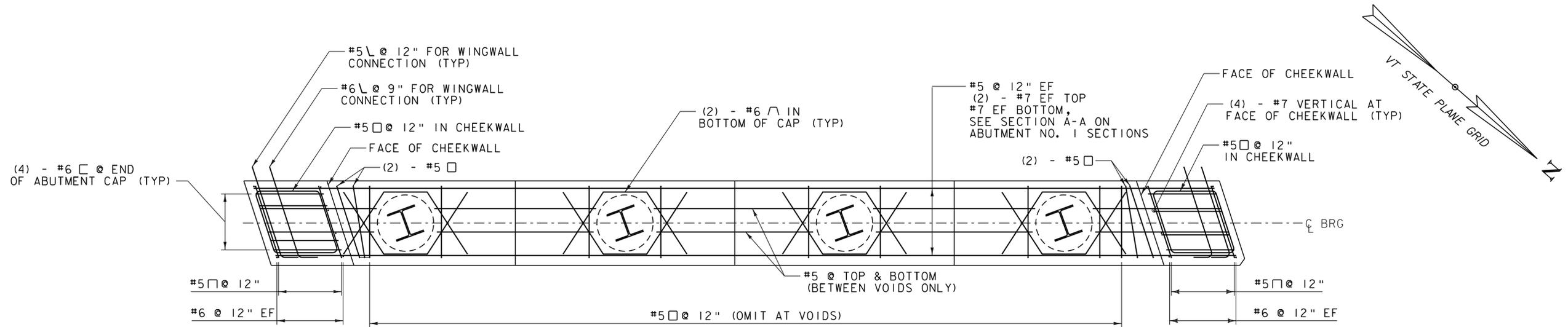


ABUTMENT NO 1 ELEVATION  
SCALE 1/2" = 1'-0"

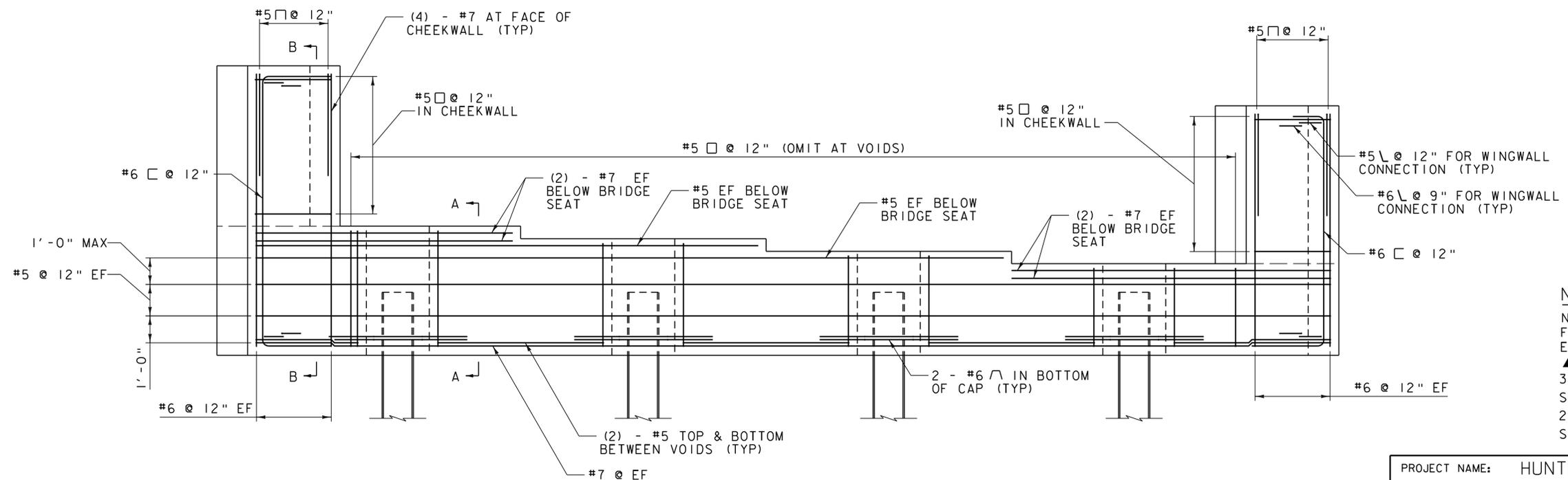
- NOTES:**
1. THE CONTRACTOR IS PROVIDED THE OPTION FOR CAST-IN-PLACE CONCRETE CHEEKWALLS AND WINGWALL CAPS. SEE PROJECT NOTES SHEETS FOR DETAILS.
  2. SEE ABUTMENT NO 1 SECTIONS SHEET FOR SECTIONS A-A AND B-B.

PROJECT NAME: HUNTINGTON	
PROJECT NUMBER: BF 0211(32)	
FILE NAME: z13j080sub1.dgn	PLOT DATE: 4/4/2016
PROJECT LEADER: S.E. BURBANK	DRAWN BY: J.D. KEENER
DESIGNED BY: R.H. BARNES	CHECKED BY: R.H. BARNES
ABUTMENT NO 1 PLAN & ELEVATION	SHEET 35 OF 61





ABUTMENT NO 1 PLAN  
SCALE 1/2" = 1'-0"



ABUTMENT NO 1 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.

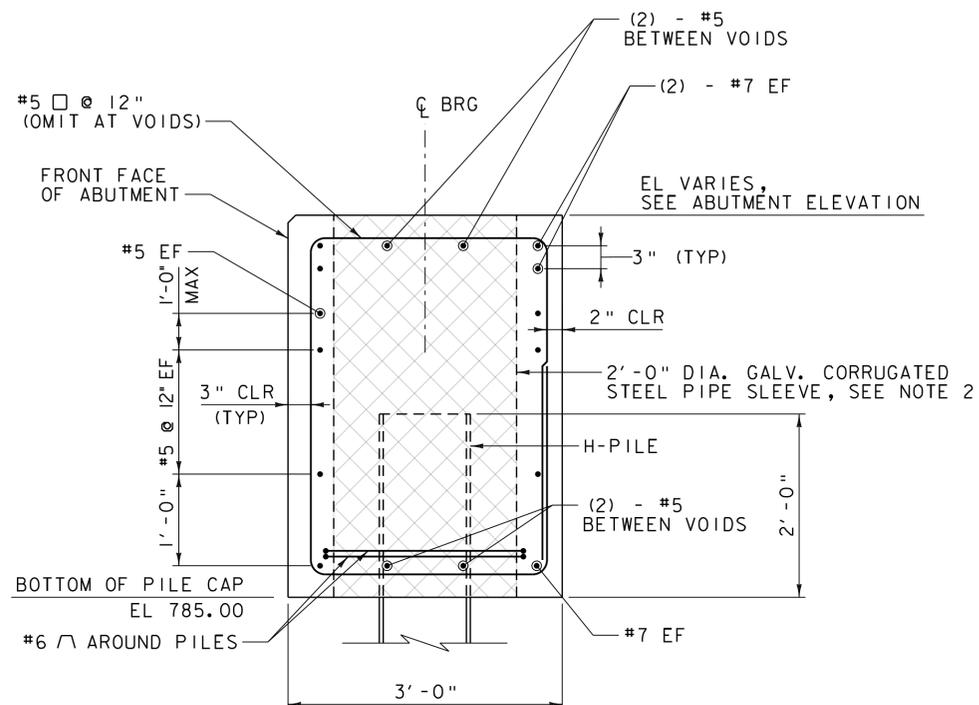
**NOTE:**  
 1. SEE ABUTMENT NO 1 SECTIONS SHEET FOR SECTIONS A-A AND B-B.

PROJECT NAME: HUNTINGTON  
 PROJECT NUMBER: BF 0211(32)

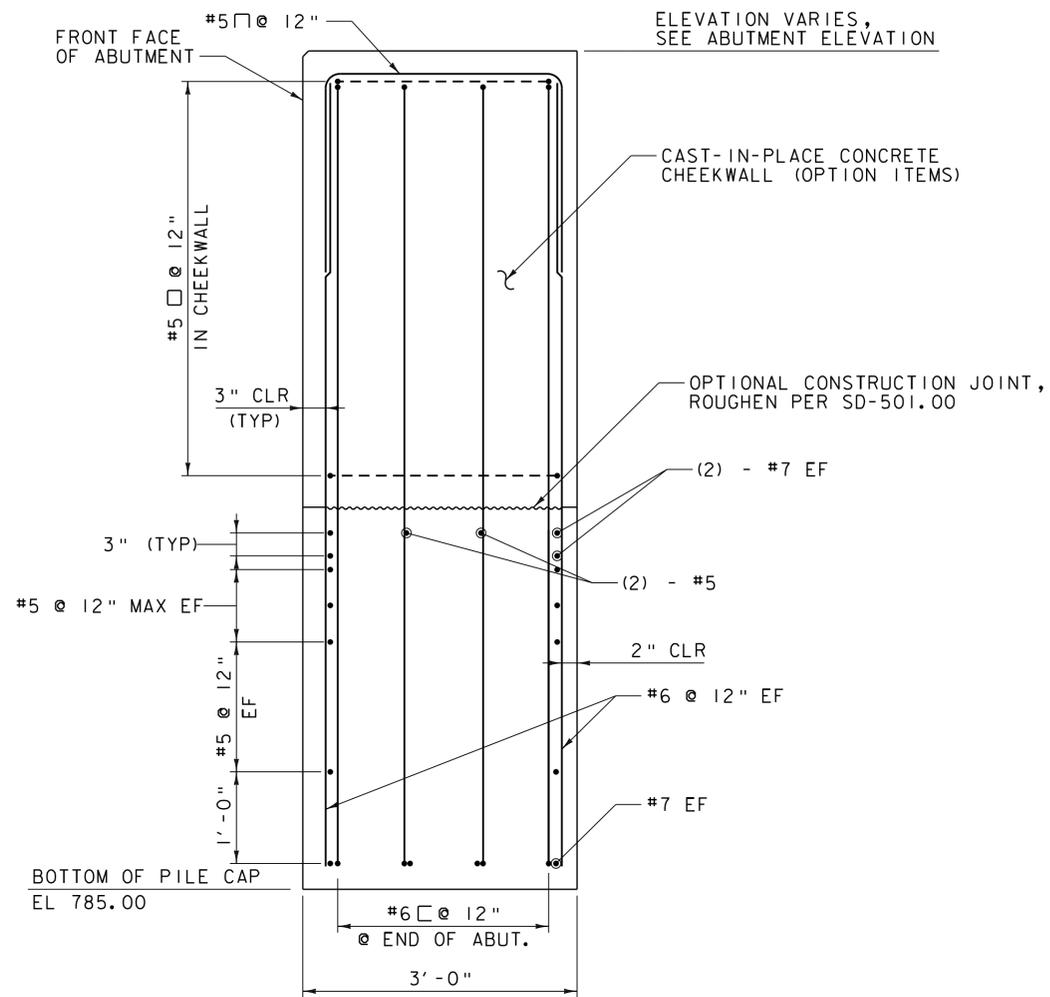
FILE NAME: z13j080subl.dgn  
 PROJECT LEADER: S.E. BURBANK  
 DESIGNED BY: R.H. BARNES  
 ABUTMENT NO 1 REINFORCING

PLOT DATE: 4/4/2016  
 DRAWN BY: J.D. KEENER  
 CHECKED BY: R.H. BARNES  
 SHEET 36 OF 61





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



SECTION B-B  
SCALE 1"=1'-0"

**NOTES:**

1. ABUTMENTS SHALL BE PRECAST CONCRETE ACCORDING TO THE APPROPRIATE PRECAST ITEM.
2. USE GALVANIZED STEEL PIPE THAT CONFORMS TO SUBSECTION 711.01 FOR PILE AND STEM VOIDS. FORM TOP 6" WITH REMOVABLE FORM TO ELIMINATE EXPOSED CORRUGATED STEEL ON THE TOP OF THE BRIDGE SEAT.
3. SEE PROJECT NOTES FOR ADDITIONAL FABRICATION, CONSTRUCTION, AND SEQUENCE NOTES.



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

**NOTE:**

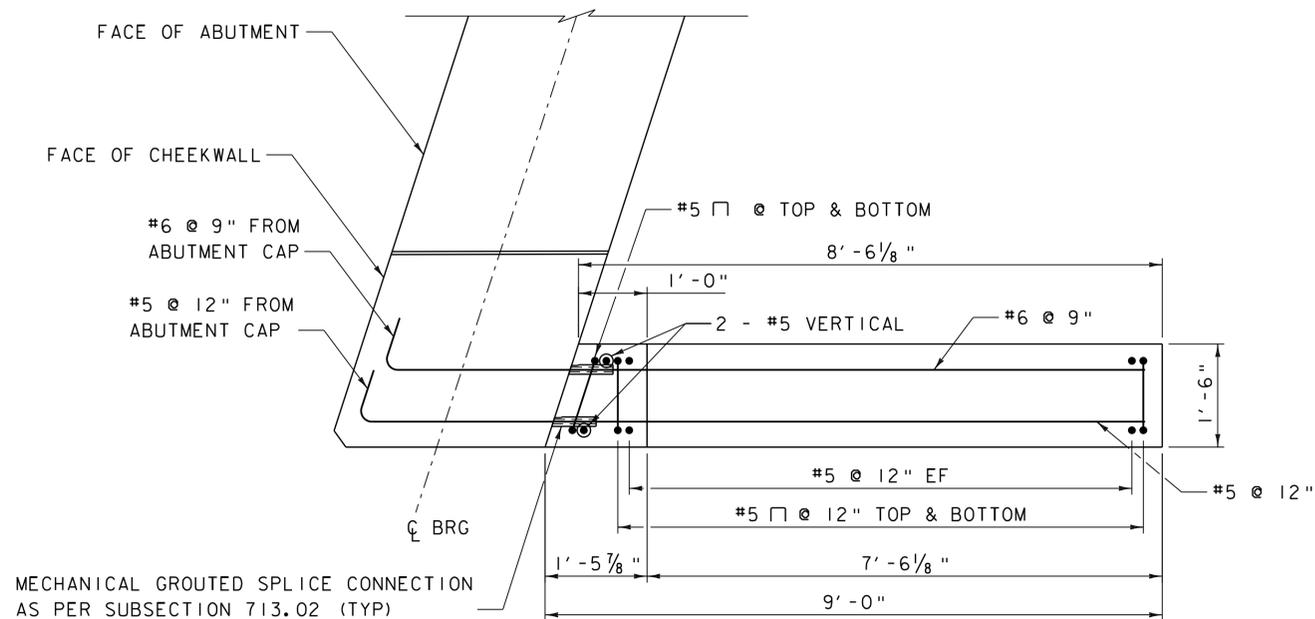
NF = NEAR FACE  
 FF = FAR FACE  
 EF = EACH FACE  
 ▲ = CUT TO FIT IN FIELD  
 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
 2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME: HUNTINGTON  
 PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080sub1.dgn  
 PROJECT LEADER: S.E. BURBANK  
 DESIGNED BY: R.H. BARNES  
 ABUTMENT NO 1 SECTIONS

PLOT DATE: 4/4/2016  
 DRAWN BY: J.D. KEENER  
 CHECKED BY: R.H. BARNES  
 SHEET 37 OF 61

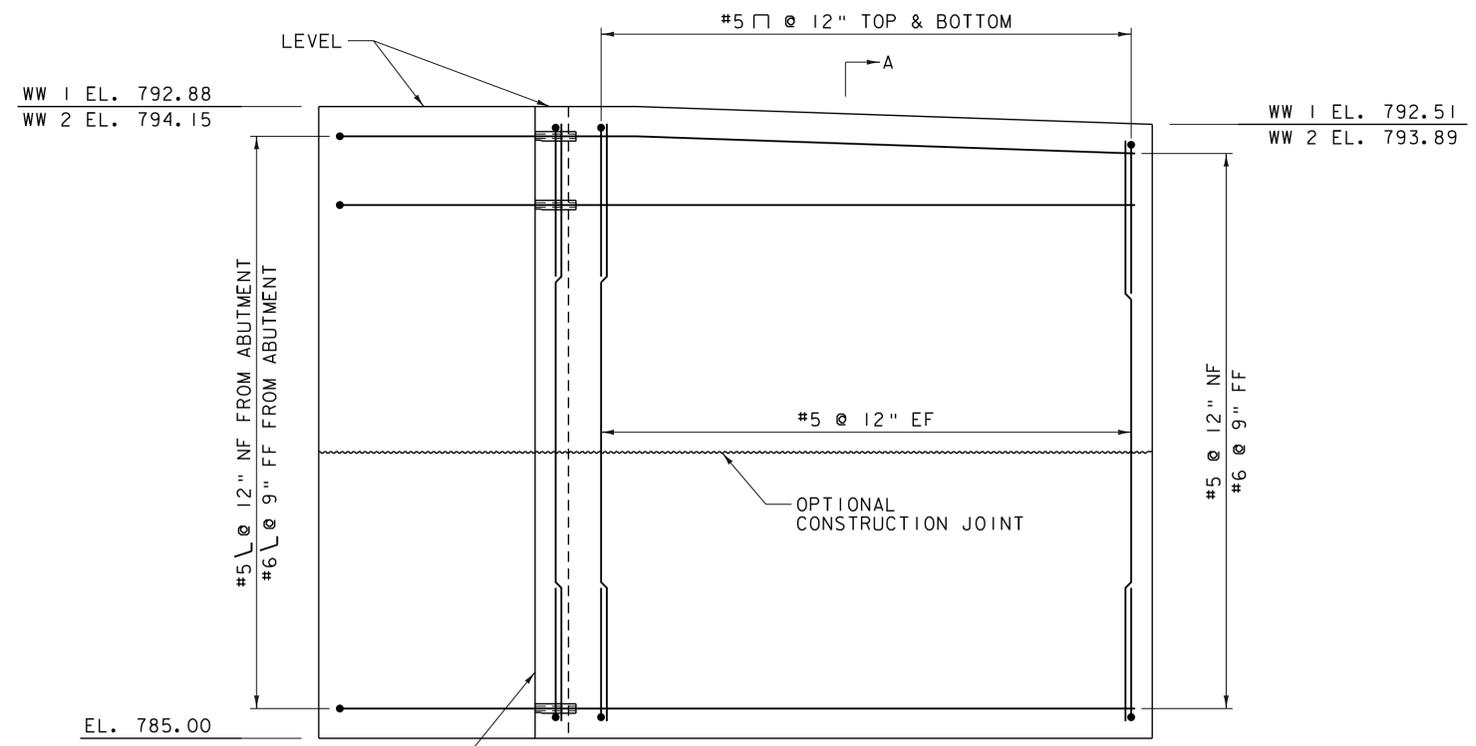




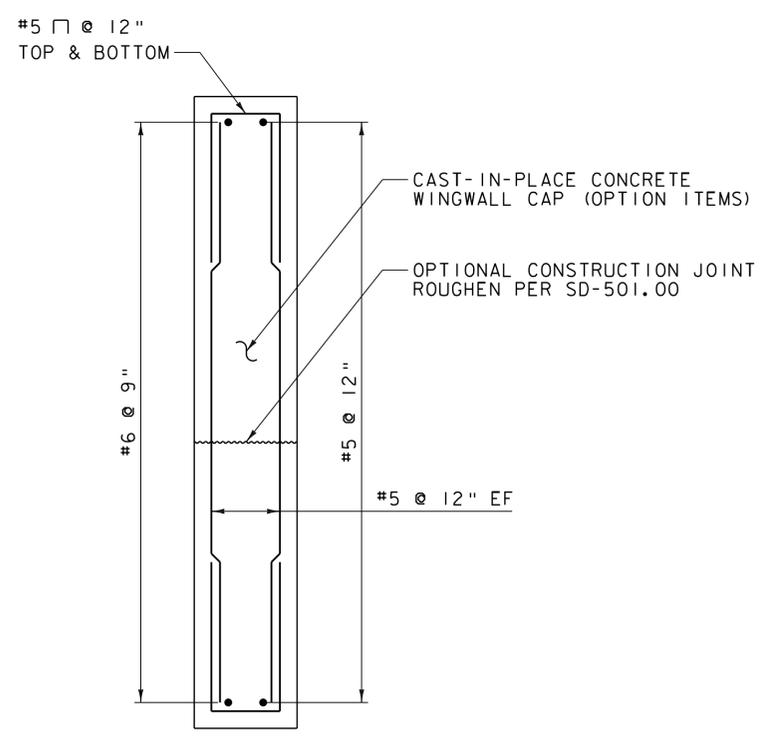
**WINGWALL NO 1 PLAN**  
 (WINGWALL NO 1 SHOWN, WINGWALL NO 2 SIMILAR)  
 SCALE 3/4" = 1'-0"

**NOTES:**

1. PAYMENT FOR ALL REINFORCING STEEL AND MECHANICAL CONNECTORS WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE PRECAST CONTRACT ITEM. THE CONTRACTOR SHALL PROVIDE THREE (3) MECHANICAL CONNECTORS ASSEMBLED PER SPLICE SIZE FOR TESTING. THE ASSEMBLY SHALL BE WITNESSED BY THE ENGINEER.
2. ALL REINFORCING STEEL IN WINGWALLS SHALL MEET 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.
3. 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 CONTRACT ITEM. SEE SD-502.00 FOR FURTHER DETAILS.
4. PAYMENT FOR EPOXY GROUT WILL BE CONSIDERED INCIDENTAL TO APPROPRIATE PRECAST PAY ITEM.



**WINGWALL NO 1 ELEVATION**  
 (WINGWALL NO 1 SHOWN, WINGWALL NO 2 SIMILAR)  
 SCALE 3/4" = 1'-0"



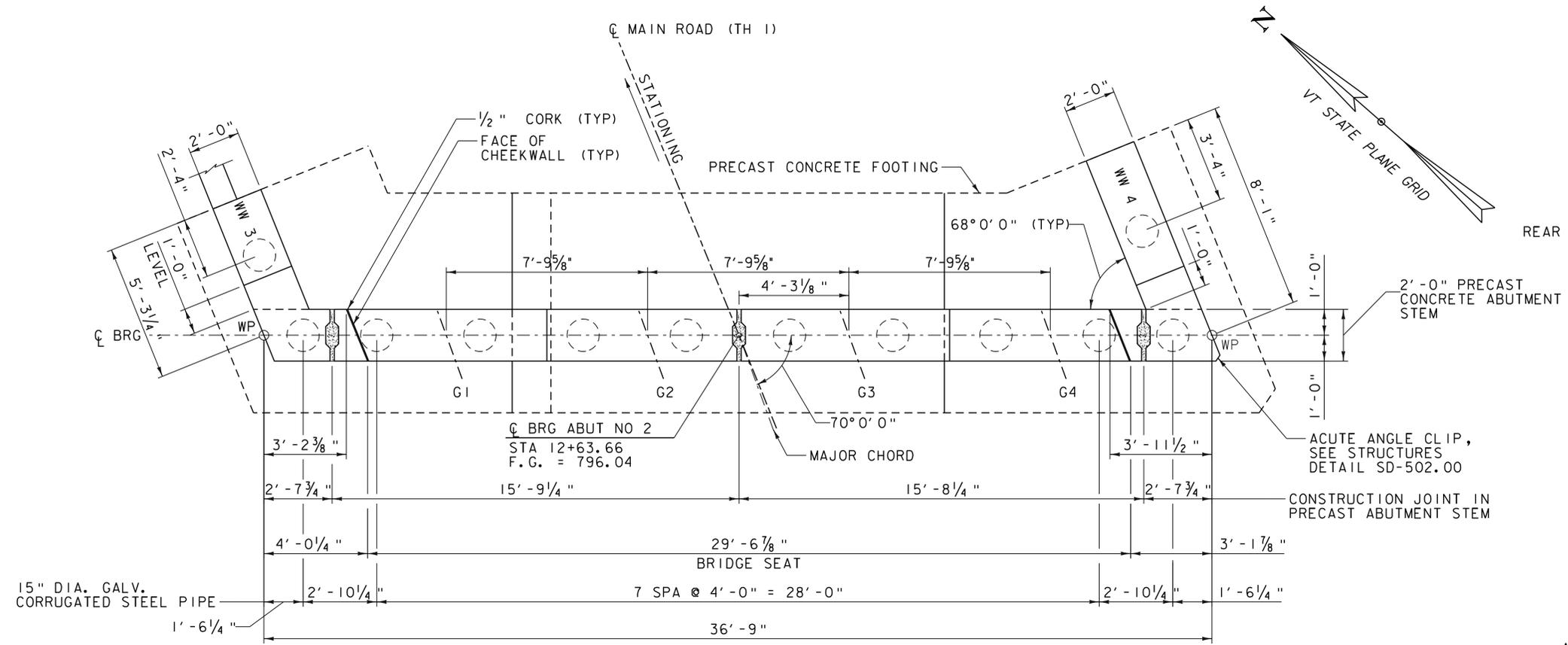
**SECTION A-A**  
 SCALE 3/4" = 1'-0"

**NOTE:**

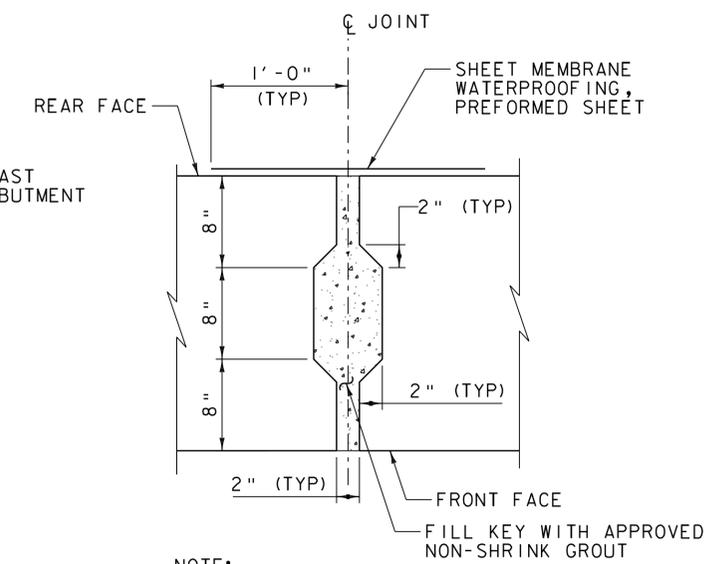
- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- ▲ = CUT TO FIT IN FIELD
- 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- 2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME:	HUNTINGTON
PROJECT NUMBER:	BF 0211(32)
FILE NAME:	z13j080subl.dgn
PROJECT LEADER:	S.E. BURBANK
DESIGNED BY:	R.H. BARNES
ABUTMENT NO	I WINGWALL DETAILS
PLOT DATE:	4/4/2016
DRAWN BY:	J.D. KEENER
CHECKED BY:	R.H. BARNES
SHEET	38 OF 61

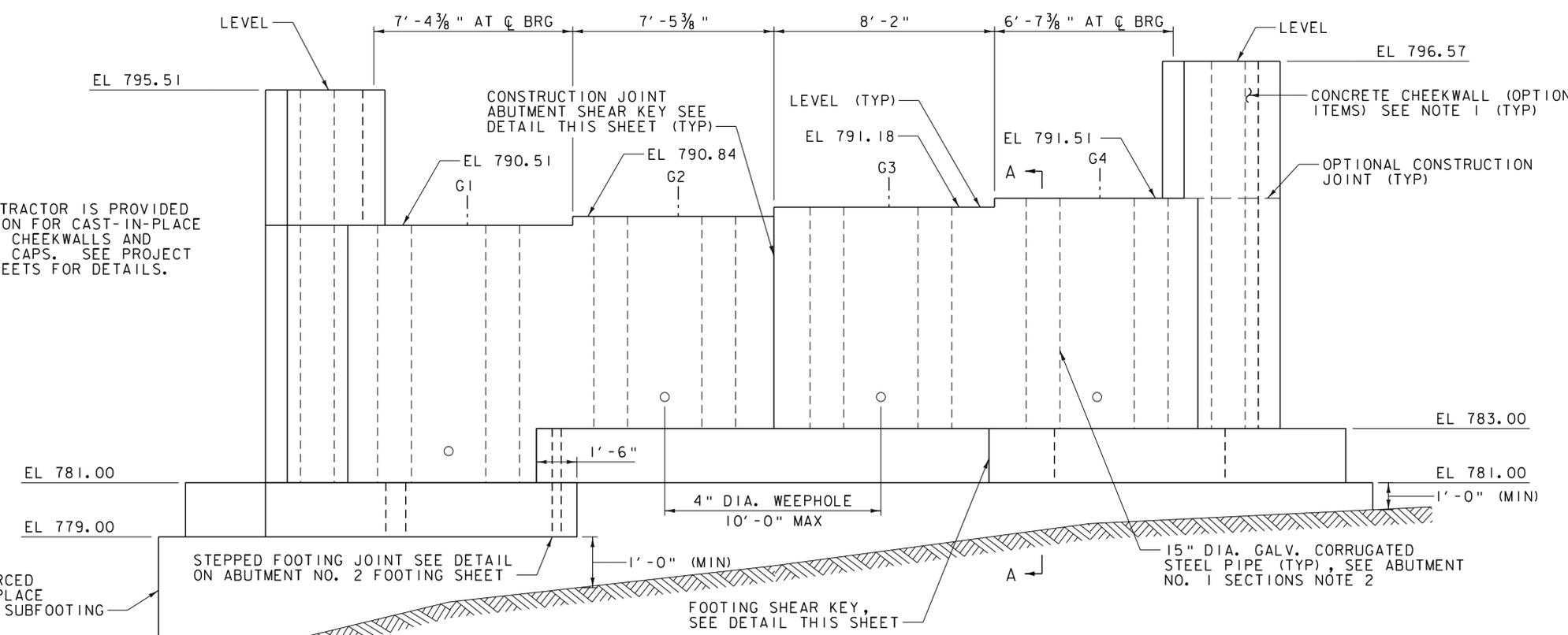




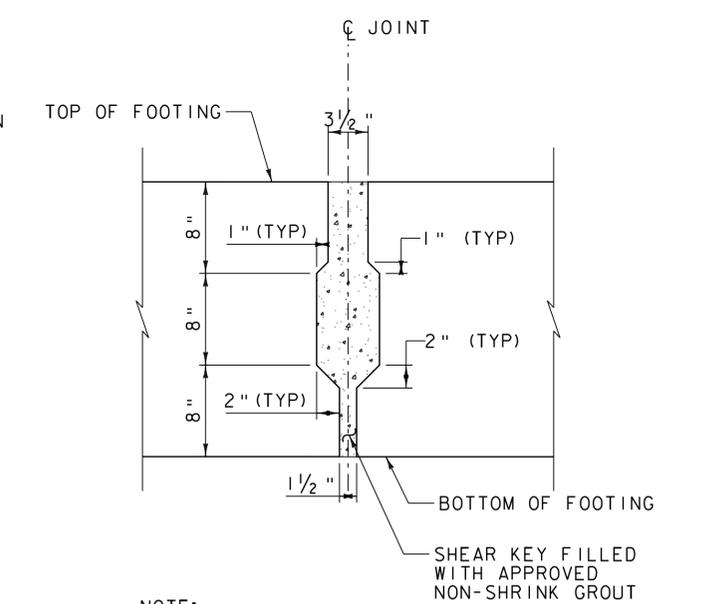
ABUTMENT NO 2 PLAN  
SCALE 3/8" = 1'-0"



ABUTMENT SHEAR KEY PLAN VIEW  
SCALE 1 1/2" = 1'-0"



ABUTMENT NO 2 ELEVATION  
SEE ABUTMENT NO 2 REINFORCING SHEET FOR SECTION A-A  
SCALE 3/8" = 1'-0"

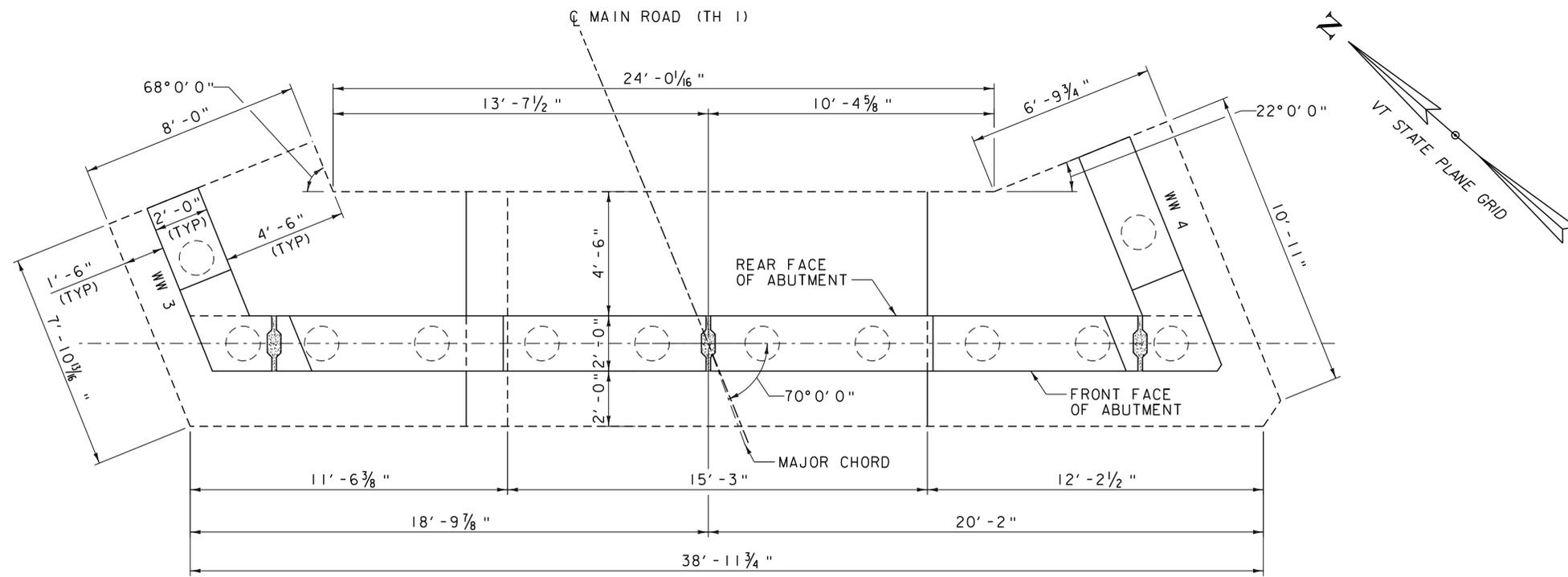


FOOTING SHEAR KEY ELEVATION VIEW  
SCALE 1 1/2" = 1'-0"

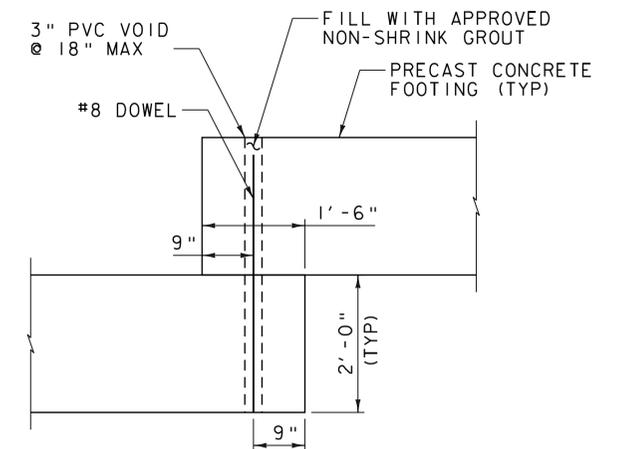
NOTES:  
1. THE CONTRACTOR IS PROVIDED THE OPTION FOR CAST-IN-PLACE CONCRETE CHEEKWALLS AND WINGWALL CAPS. SEE PROJECT NOTES SHEETS FOR DETAILS.

PROJECT NAME:	HUNTINGTON	PLOT DATE:	4/4/2016
PROJECT NUMBER:	BF 0211(32)	DRAWN BY:	J.D. KEENER
FILE NAME:	z13j080sub2.dgn	DESIGNED BY:	R.H. BARNES
PROJECT LEADER:	S.E. BURBANK	CHECKED BY:	J.D. KEENER
ABUTMENT NO 2 PLAN & ELEVATION		SHEET	39 OF 61



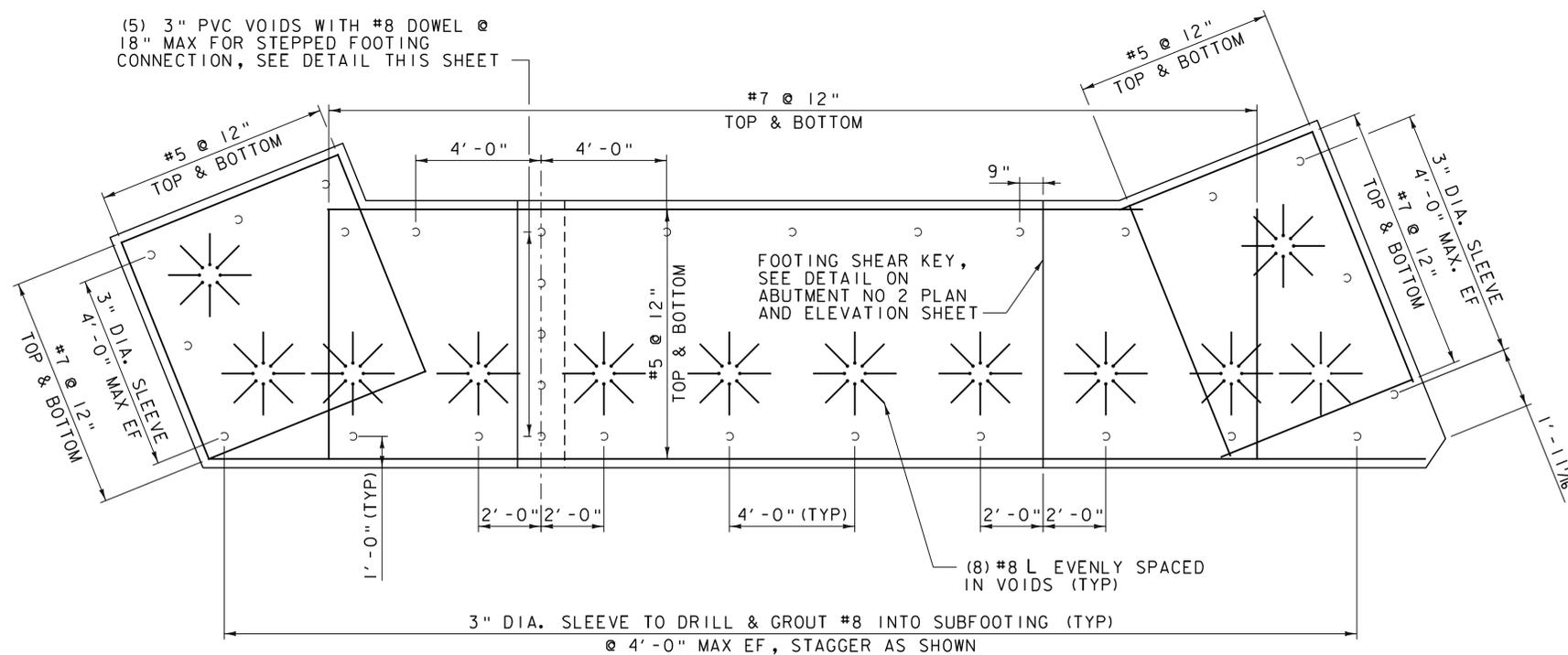


ABUTMENT NO 2 FOOTING MASONRY PLAN  
SCALE 3/8" = 1'-0"

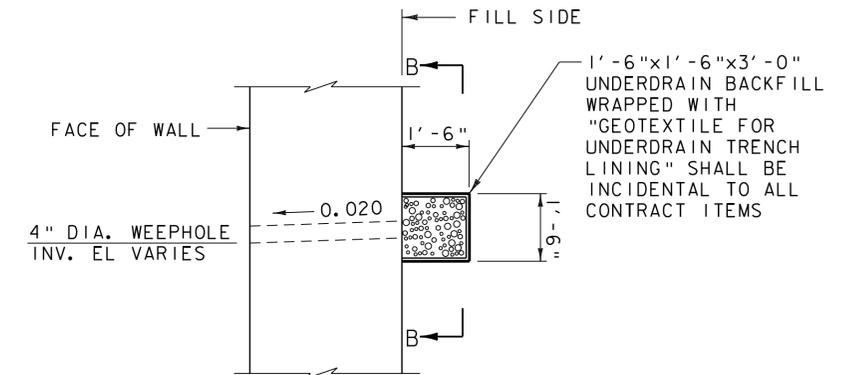


STEPPED FOOTING DETAIL  
SCALE 3/4" = 1'-0"

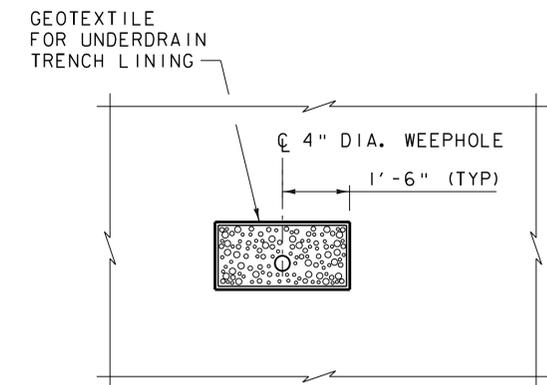
(5) 3" PVC VOIDS WITH #8 DOWEL @ 18" MAX FOR STEPPED FOOTING CONNECTION, SEE DETAIL THIS SHEET



ABUTMENT NO 2 FOOTING REINFORCING PLAN  
SCALE 3/8" = 1'-0"



TYPICAL WEEPHOLE DETAIL  
NOT TO SCALE



SECTION B-B  
NOT TO SCALE

NOTE:

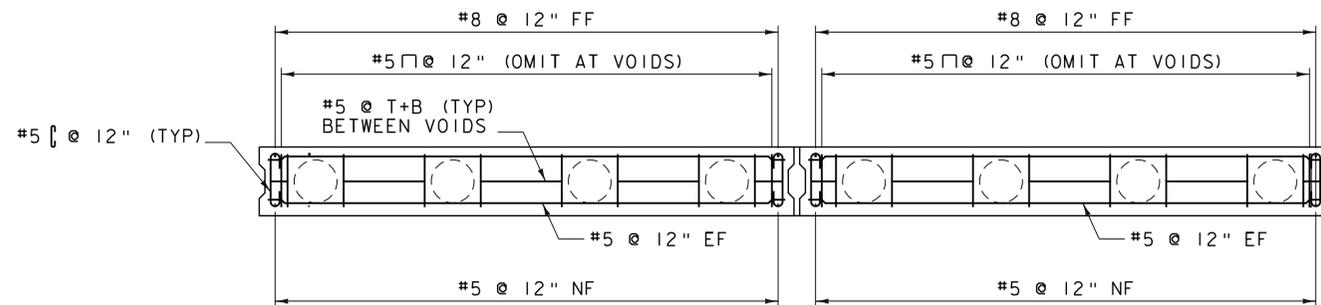
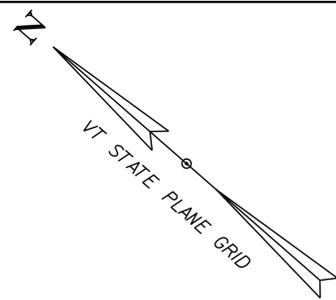
- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- ▲ = CUT TO FIT IN FIELD
- 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- 2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME: HUNTINGTON  
PROJECT NUMBER: BF 0211(32)

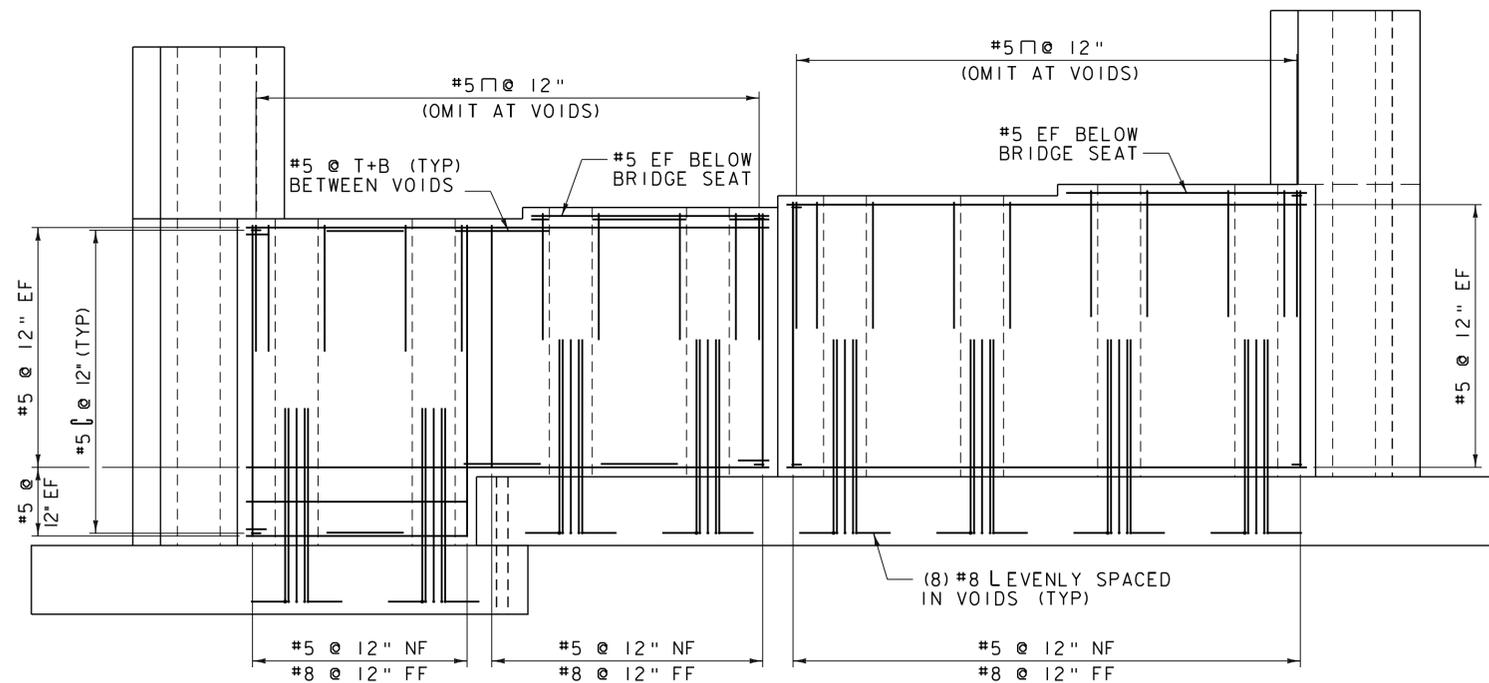
FILE NAME: z13j080sub2.dgn  
PROJECT LEADER: S.E. BURBANK  
DESIGNED BY: R.H. BARNES  
ABUTMENT NO 2 FOOTING

PLOT DATE: 4/4/2016  
DRAWN BY: J.D. KEENER  
CHECKED BY: J.D. KEENER  
SHEET 40 OF 61





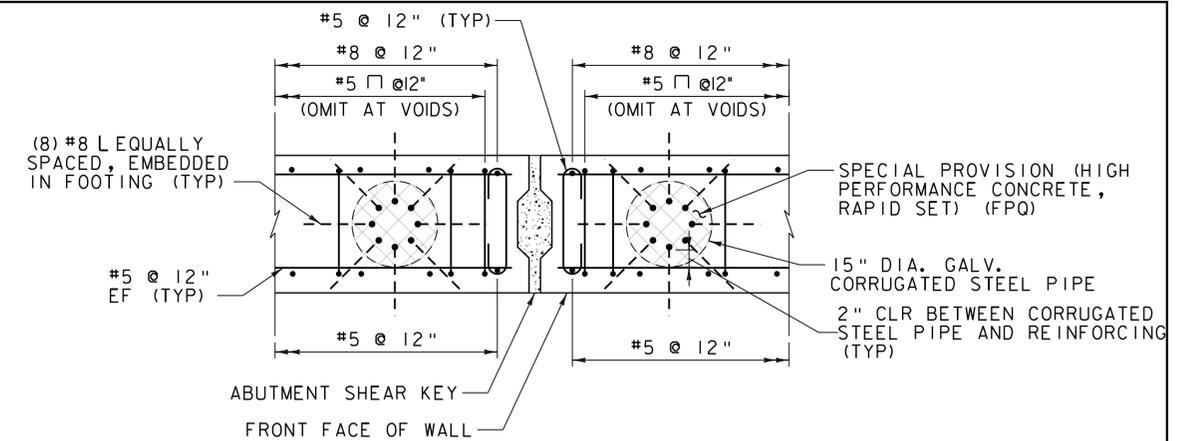
ABUTMENT NO 2 STEM REINFORCING PLAN  
SCALE 3/8" = 1'-0"



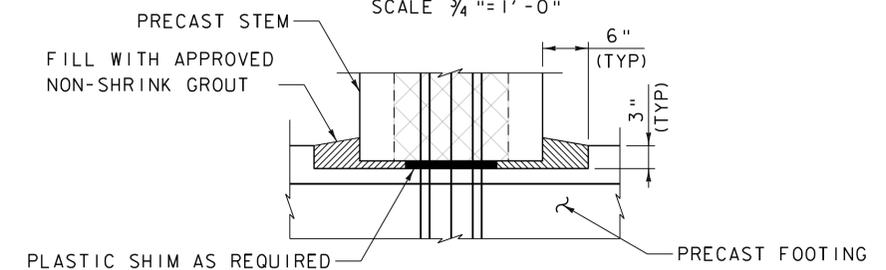
ABUTMENT NO 2 STEM REINFORCING ELEVATION  
SCALE 3/8" = 1'-0"

**NOTE:**

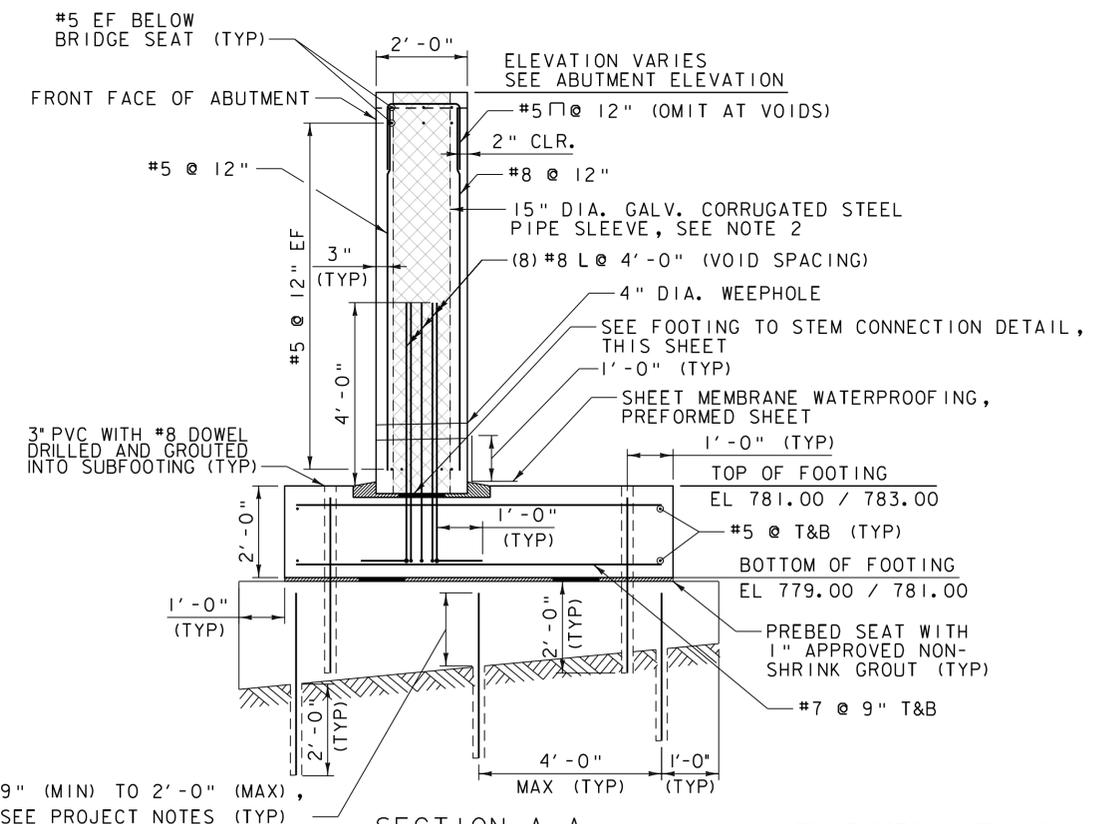
- T+B = TOP AND BOTTOM
- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- ▲ = CUT TO FIT IN FIELD
- 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- 2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.



ABUTMENT STEM DETAIL  
SCALE 3/4" = 1'-0"



FOOTING TO STEM CONNECTION DETAIL  
SCALE 1" = 1'-0"



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

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

**NOTE:**  
WINGWALL REINFORCING NOT SHOWN FOR CLARITY

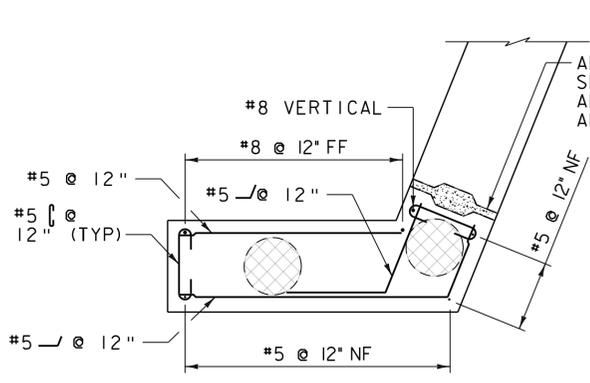


PROJECT NAME: HUNTINGTON

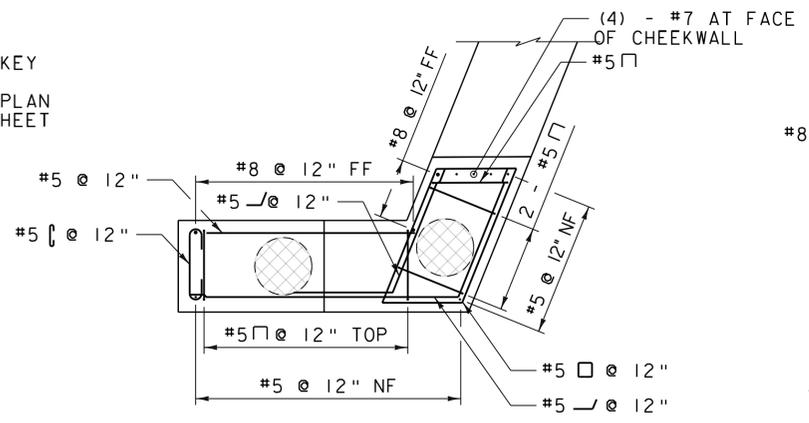
PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080sub2.dgn  
PROJECT LEADER: S.E. BURBANK  
DESIGNED BY: R.H. BARNES  
ABUTMENT NO 2 REINFORCING

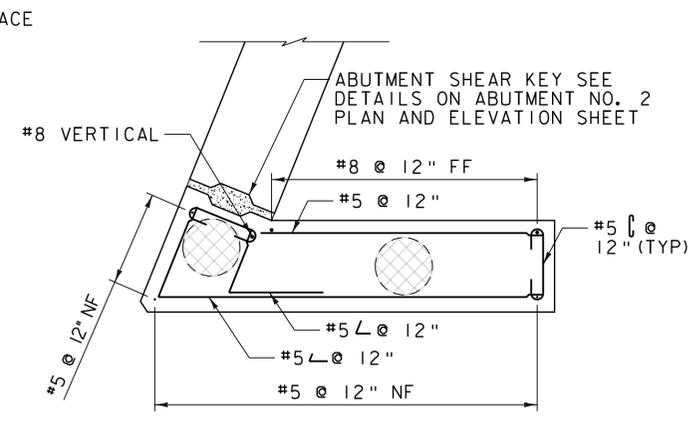
PLOT DATE: 4/4/2016  
DRAWN BY: J.D. KEENER  
CHECKED BY: J.D. KEENER  
SHEET 41 OF 61



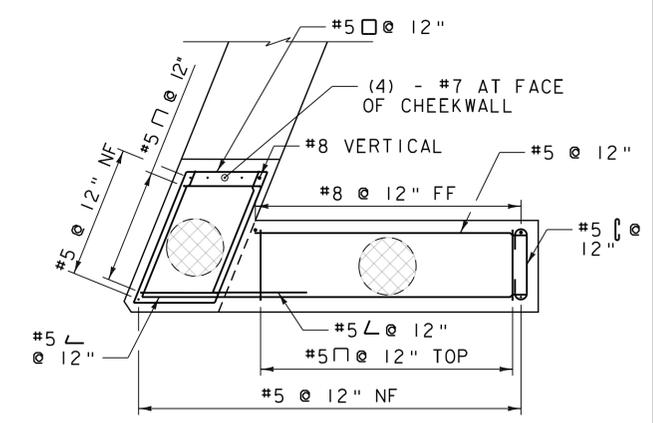
WW NO 3 REINFORCING  
BELOW BRIDGE SEAT  
SCALE 1/2" = 1'-0"



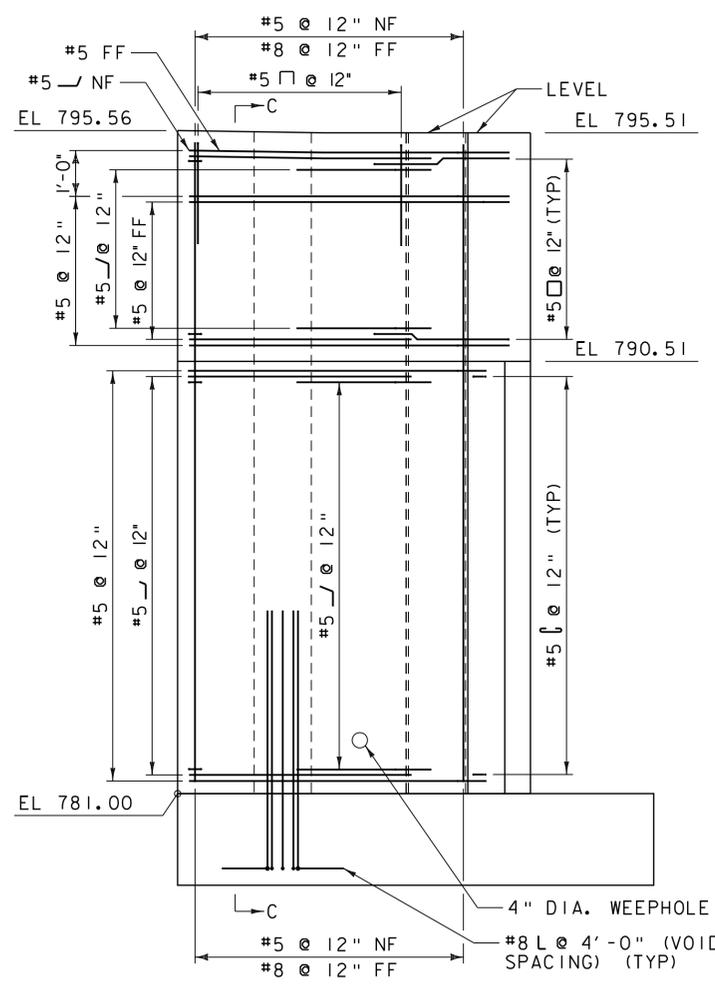
WW NO 3 REINFORCING  
ABOVE BRIDGE SEAT  
SCALE 1/2" = 1'-0"



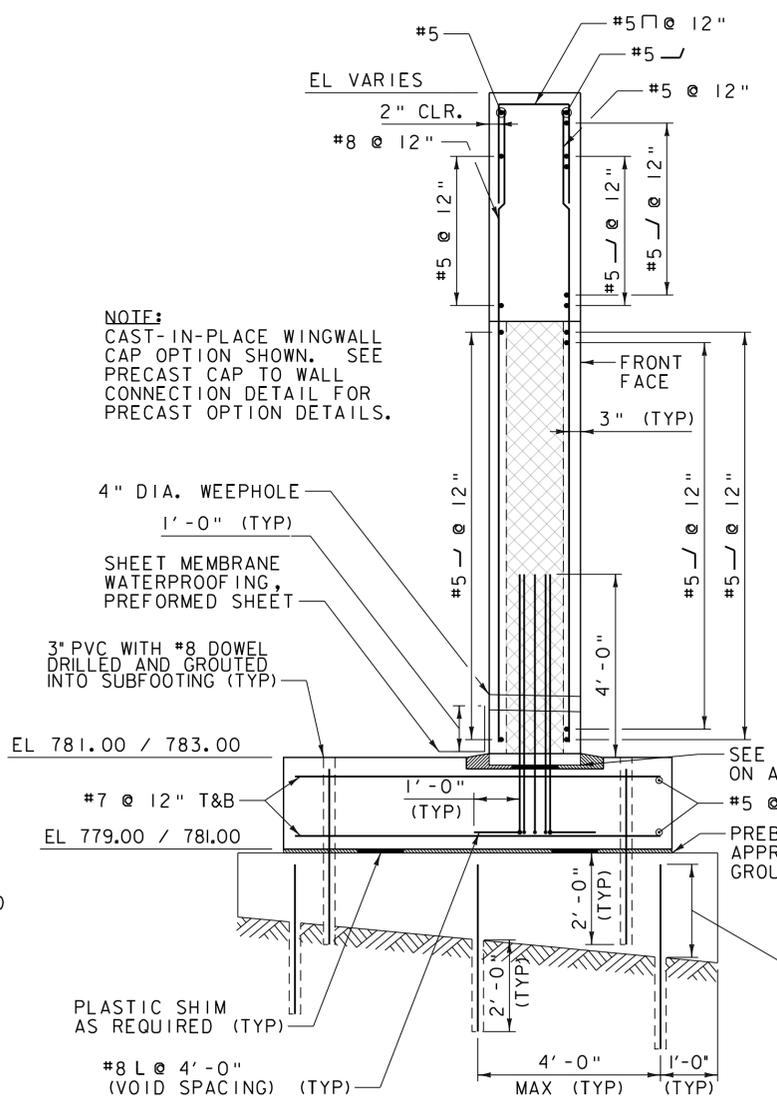
WW NO 4 REINFORCING  
BELOW BRIDGE SEAT  
SCALE 1/2" = 1'-0"



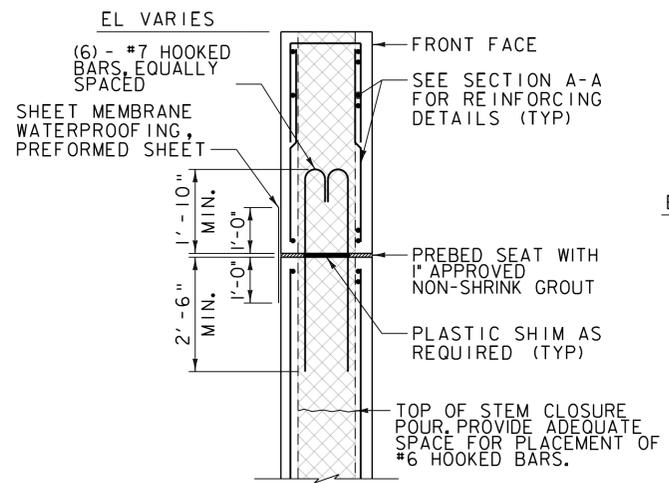
WW NO 4 REINFORCING  
ABOVE BRIDGE SEAT  
SCALE 1/2" = 1'-0"



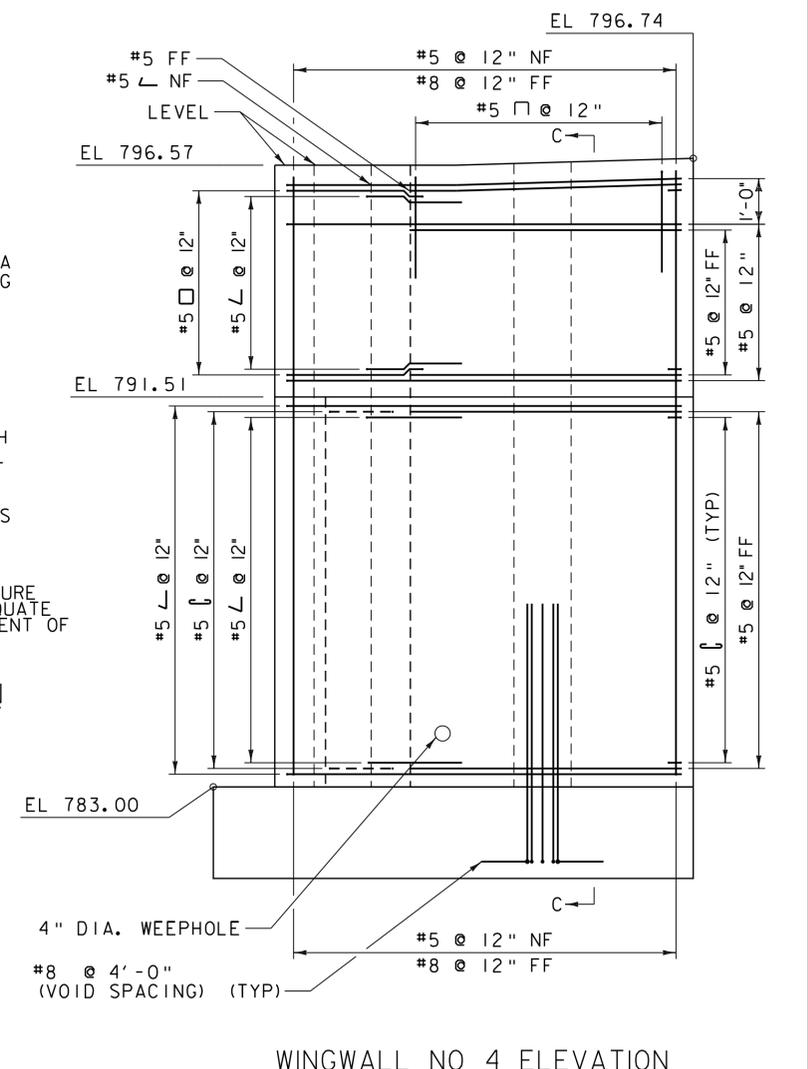
WINGWALL NO 3 ELEVATION  
SCALE 1/2" = 1'-0"



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



PRECAST CAP TO WALL CONNECTION  
SCALE 1/2" = 1'-0"



WINGWALL NO 4 ELEVATION  
SCALE 1/2" = 1'-0"

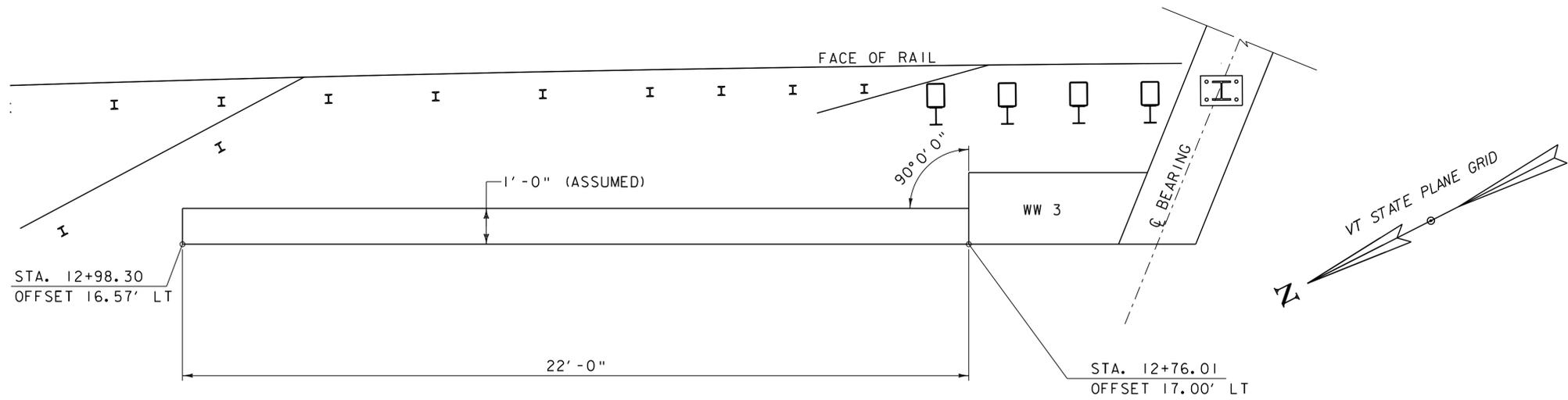
**NOTE:**  
NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT IN FIELD  
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

**NOTE:**  
CAST-IN-PLACE WINGWALL CAP OPTION SHOWN. SEE PRECAST CAP TO WALL CONNECTION DETAIL FOR PRECAST OPTION DETAILS.

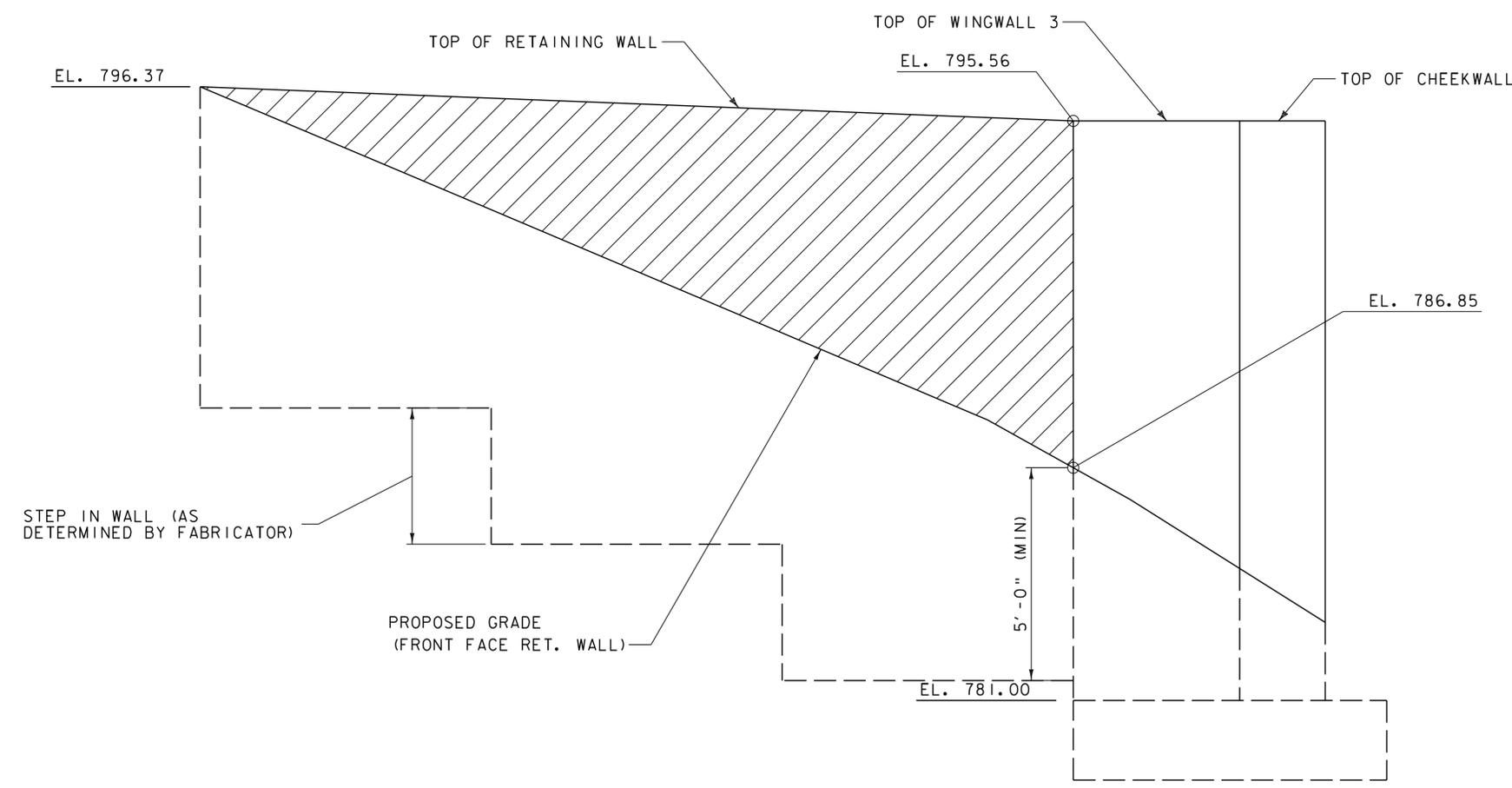
LIMITS OF SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ) CLOSURE POUR



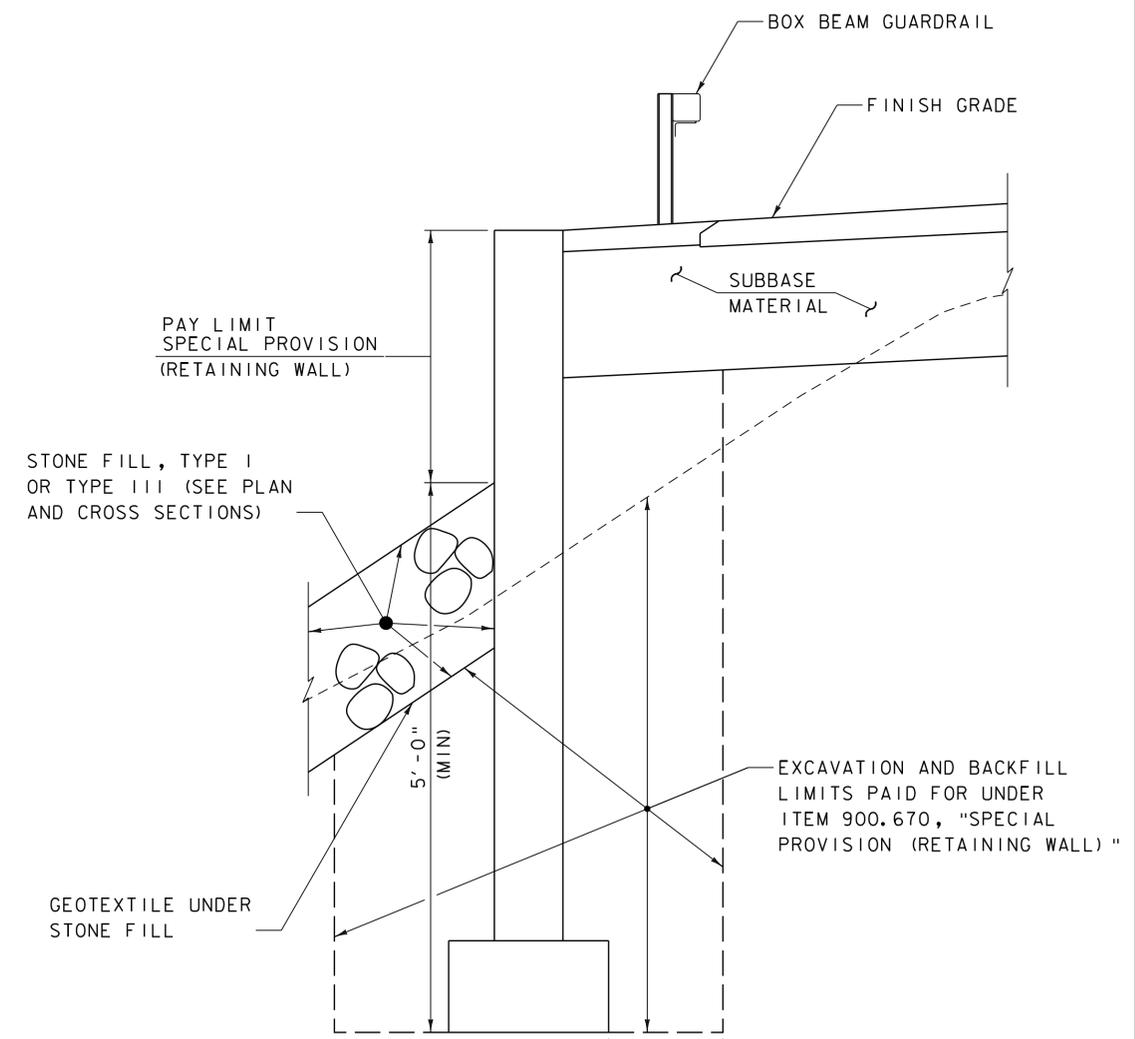
PROJECT NAME:	HUNTINGTON	FILE NAME:	z13j080sub2.dgn	PLOT DATE:	4/4/2016
PROJECT NUMBER:	BF 0211(32)	PROJECT LEADER:	S.E. BURBANK	DRAWN BY:	J.D. KEENER
		DESIGNED BY:	R.H. BARNES	CHECKED BY:	J.D. KEENER
		ABUTMENT NO 2 WINGWALL DETAILS		SHEET	42 OF 61



RETAINING WALL PLAN  
SCALE 1/2" = 1'-0"



RETAINING WALL ELEVATION  
SCALE 1/2" = 1'-0"



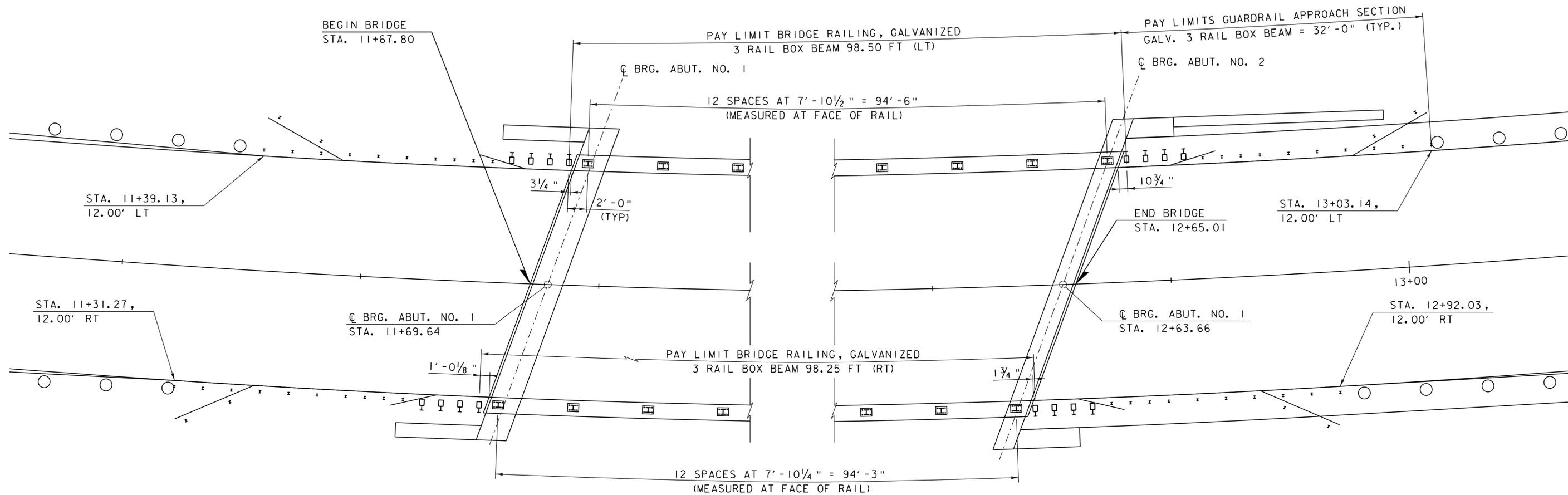
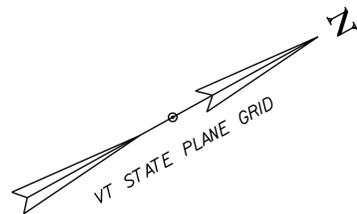
TYPICAL SECTION  
SCALE 1/2" = 1'-0"

 PAY LIMITS OF ITEM 900.670, "SPECIAL PROVISION (RETAINING WALL)"

NOTE: SEE PROJECT NOTES SHEET FOR PRECAST CONCRETE RETAINING WALL NOTES.



PROJECT NAME: HUNTINGTON	
PROJECT NUMBER: BF 0211(32)	
FILE NAME: z13j080retwall.dgn	PLOT DATE: 4/4/2016
PROJECT LEADER: S.E. BURBANK	DRAWN BY: J.D. KEENER
DESIGNED BY: R.H. BARNES	CHECKED BY: R.H. BARNES
RETAINING WALL DETAILS	SHEET 43 OF 61



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



PROJECT NAME: HUNTINGTON  
PROJECT NUMBER: BF 0211(32)  
FILE NAME: z13j080brail.dgn  
PROJECT LEADER: S.E. BURBANK  
DESIGNED BY: E.F. LAWES  
BRIDGE RAIL LAYOUT

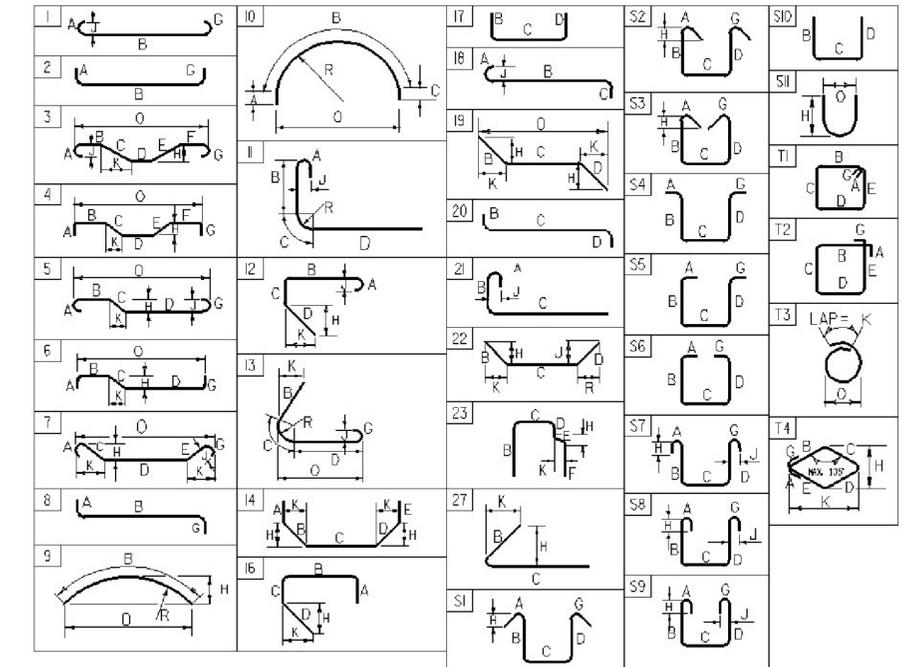
PLOT DATE: 4/4/2016  
DRAWN BY: E.F. LAWES  
CHECKED BY: S.E. BURBANK  
SHEET 44 OF 61

# REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O	ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
<b>DECK</b>																																			
*	181	5	33'- 9"	S501.2	STR	33'- 9"																													
	130	5	12'- 3"	S502.2	STR	12'- 3"																													
	130	5	20'- 0"	S503.2	STR	20'- 0"																													
	44	5	15'- 10"	S504.2	STR	15'- 10"																													
	52	5	12'- 1"	S505.2	S5	2'- 2"	4'- 0"		3'- 9"			2'- 2"																							
	52	5	7'- 6"	S506.2	S5	1'- 7"	3'- 10"		1'- 2"			0'- 11"																							
*	389	6	16'- 3"	S601.2	1	0'- 6"	15'- 9"					---																							
	388	6	7'- 2"	S602.2	1	0'- 6"	6'- 8"					---																							

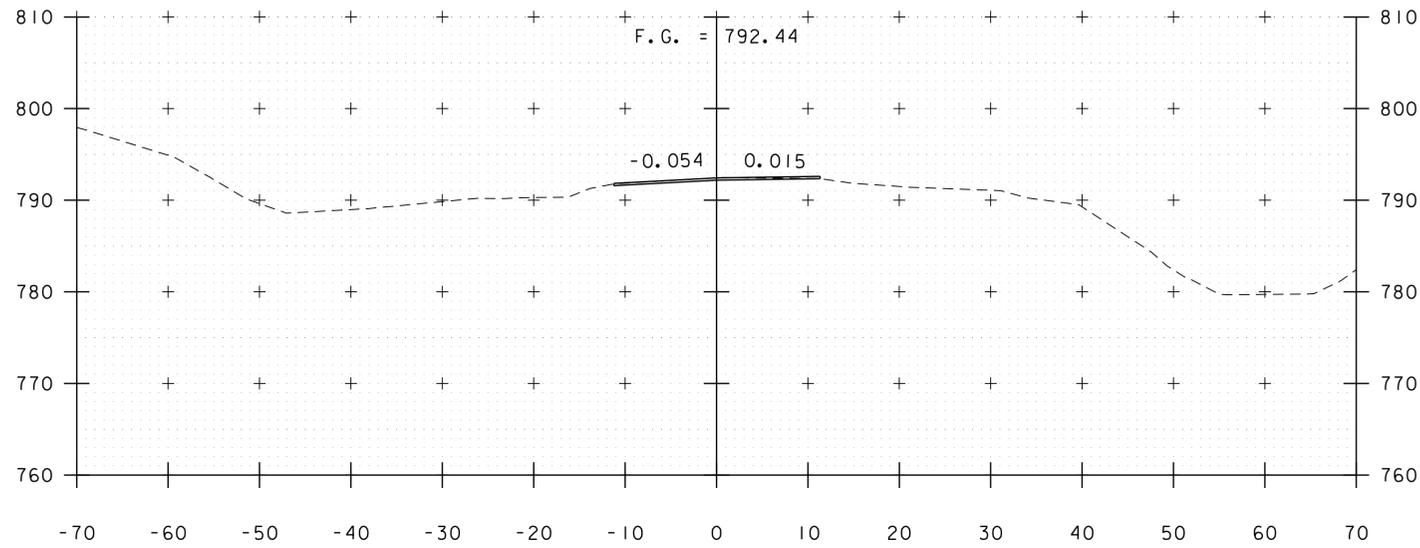
~ NOTES ~

- UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-S1). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
- FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
- BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
- ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
- "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
- "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
- WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
- ▲ DENOTES BARS TO BE CUT IN FIELD.
- * DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
- △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
- E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.

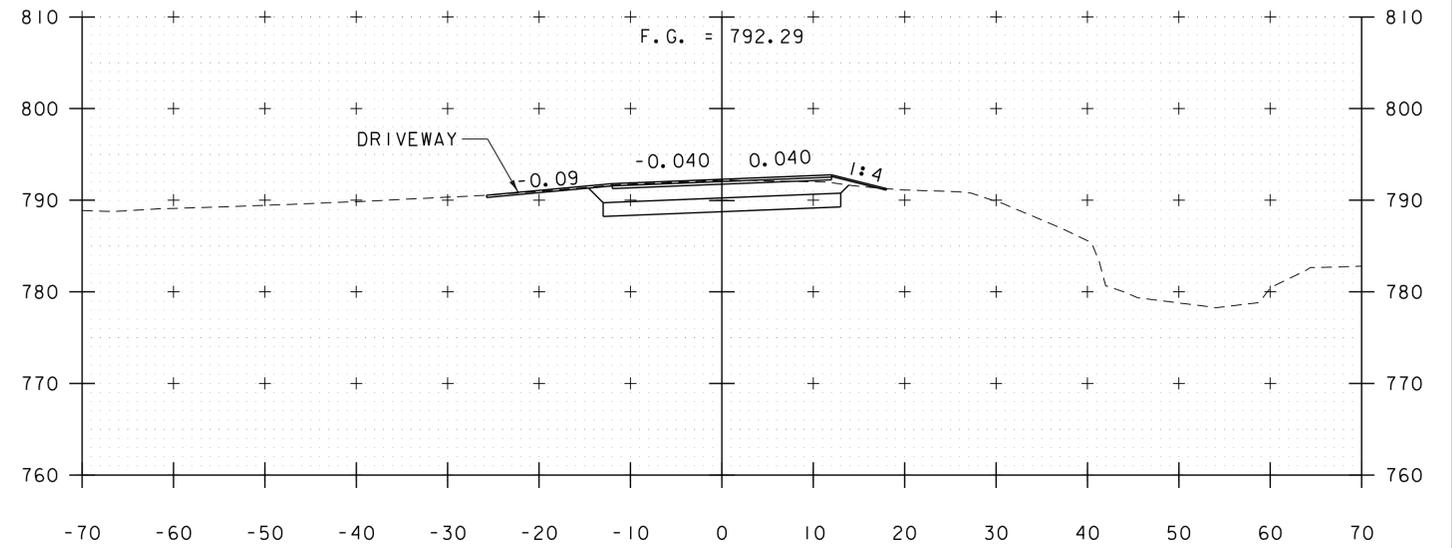


ASTM STANDARD REINFORCING BARS				
BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	AREA INCHES ²	PERMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670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

PROJECT NAME: HUNTINGTON  
PROJECT NUMBER: BF 0211(32)  
FILE NAME: z13j080rss.dgn PLOT DATE: 2/2/2016  
PROJECT MANAGER: S.E. BURBANK DRAWN BY: R.H. BARNES  
DESIGNED BY: R.H. BARNES CHECKED BY: S.E. BURBANK  
REINFORCING STEEL SCHEDULE SHEET #1 SHEET 45 OF 61

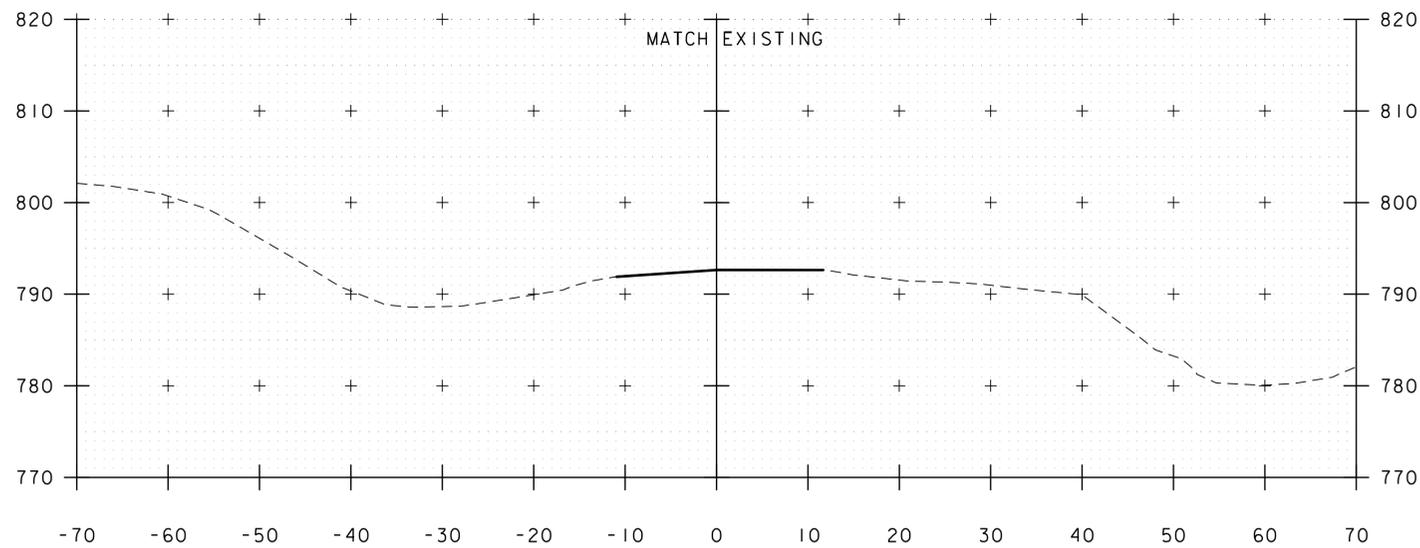


10+00



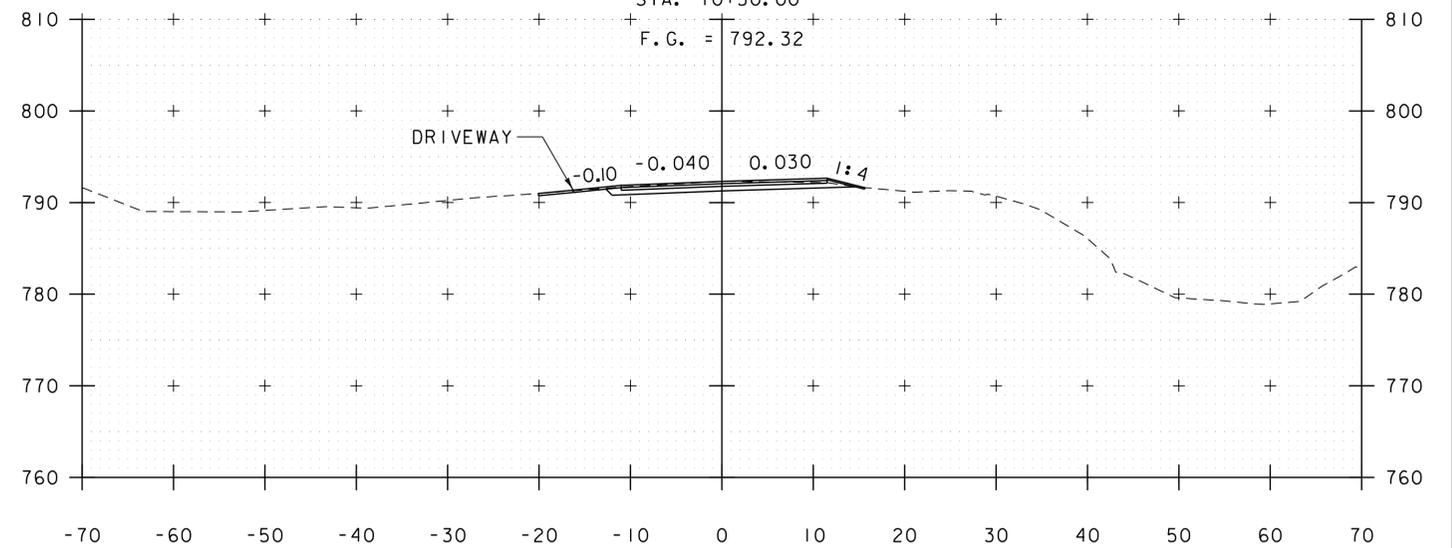
10+50

BEGIN PROJECT  
STA. 10+50.00



9+75

BEGIN APPROACH  
STA. 9+75.00



10+25

ROADWAY CROSS SECTIONS

SCALE 1" = 10'-0"

STA. 9+75 - 10+50



PROJECT NAME: HUNTINGTON

PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080xsl.dgn

PROJECT LEADER: S.E. BURBANK

DESIGNED BY: K.C. BARRY

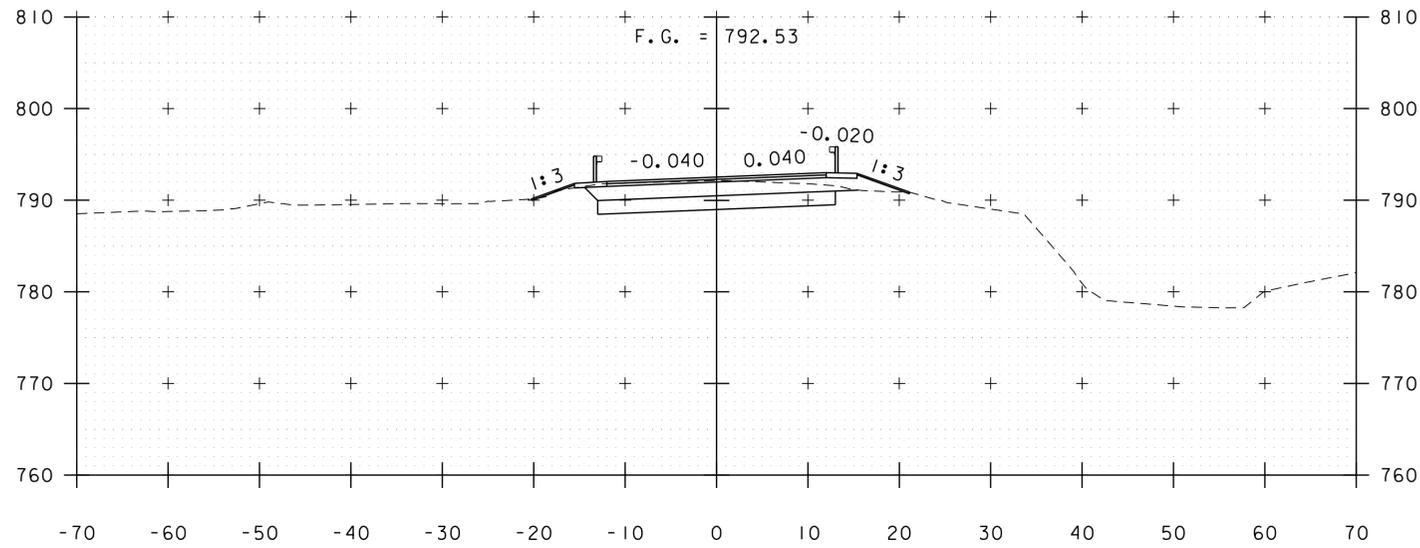
ROADWAY CROSS SECTIONS (1 OF 6)

PLOT DATE: 4/4/2016

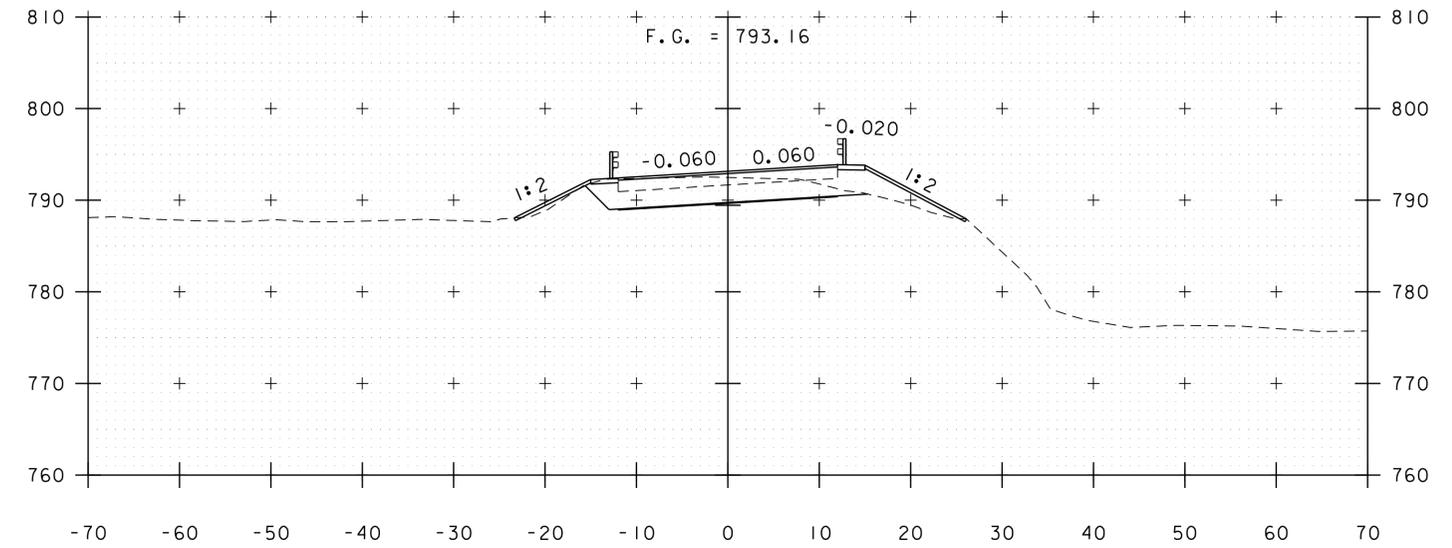
DRAWN BY: K.C. BARRY

CHECKED BY: E.F. LAWES

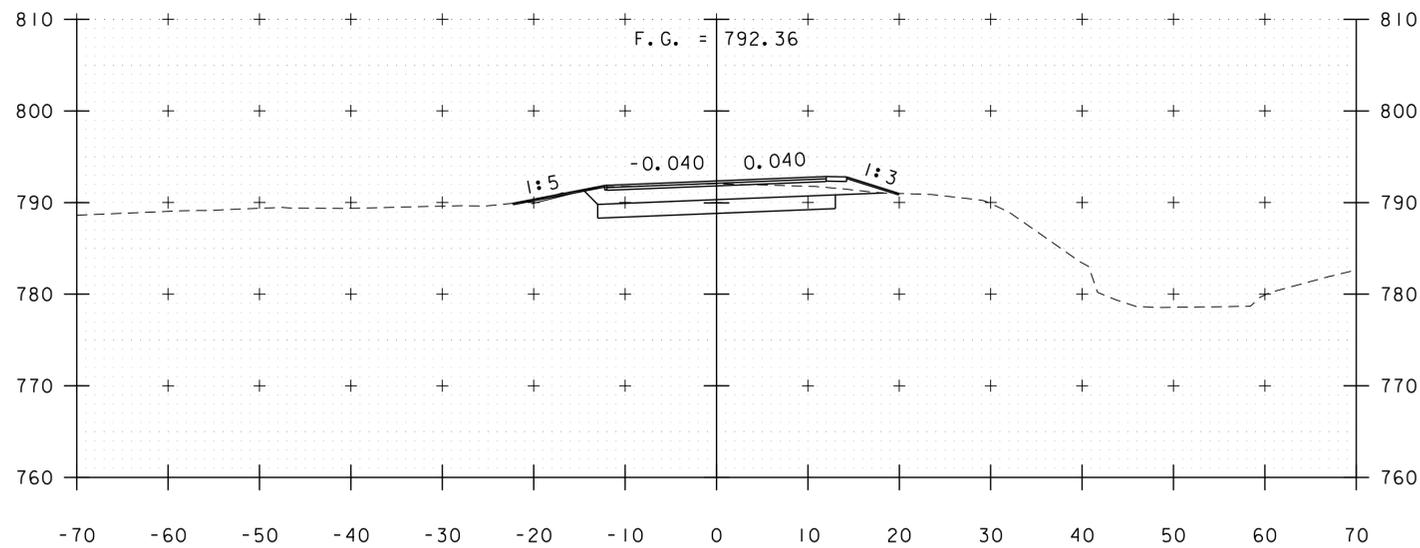
SHEET 46 OF 61



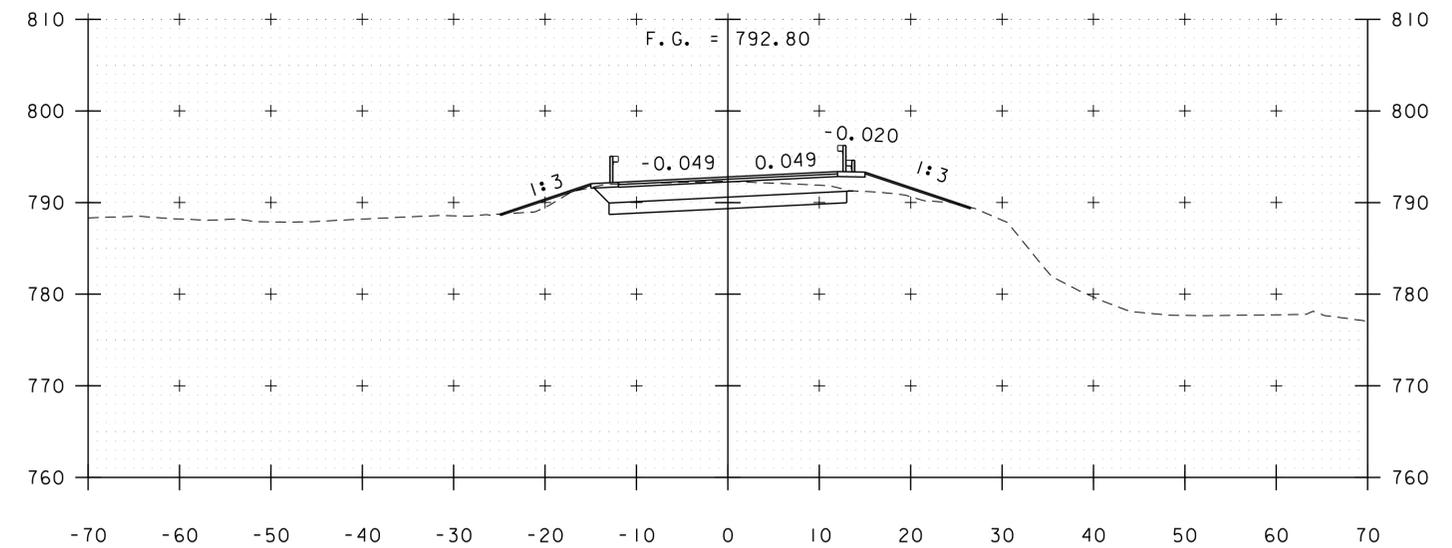
11+00



11+50



10+75



11+25

ROADWAY CROSS SECTIONS

SCALE 1" = 10'-0"

STA. 10+75 - 11+50



PROJECT NAME: HUNTINGTON

PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080xsl.dgn

PROJECT LEADER: S.E. BURBANK

DESIGNED BY: K.C. BARRY

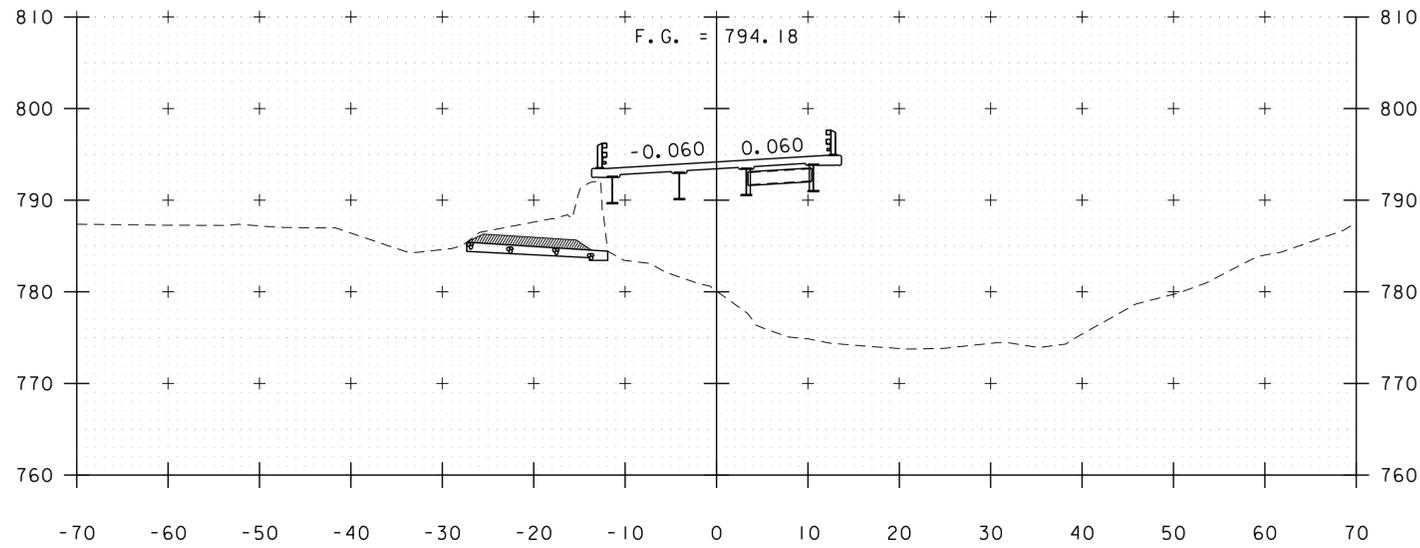
ROADWAY CROSS SECTIONS (2 OF 6)

PLOT DATE: 4/4/2016

DRAWN BY: K.C. BARRY

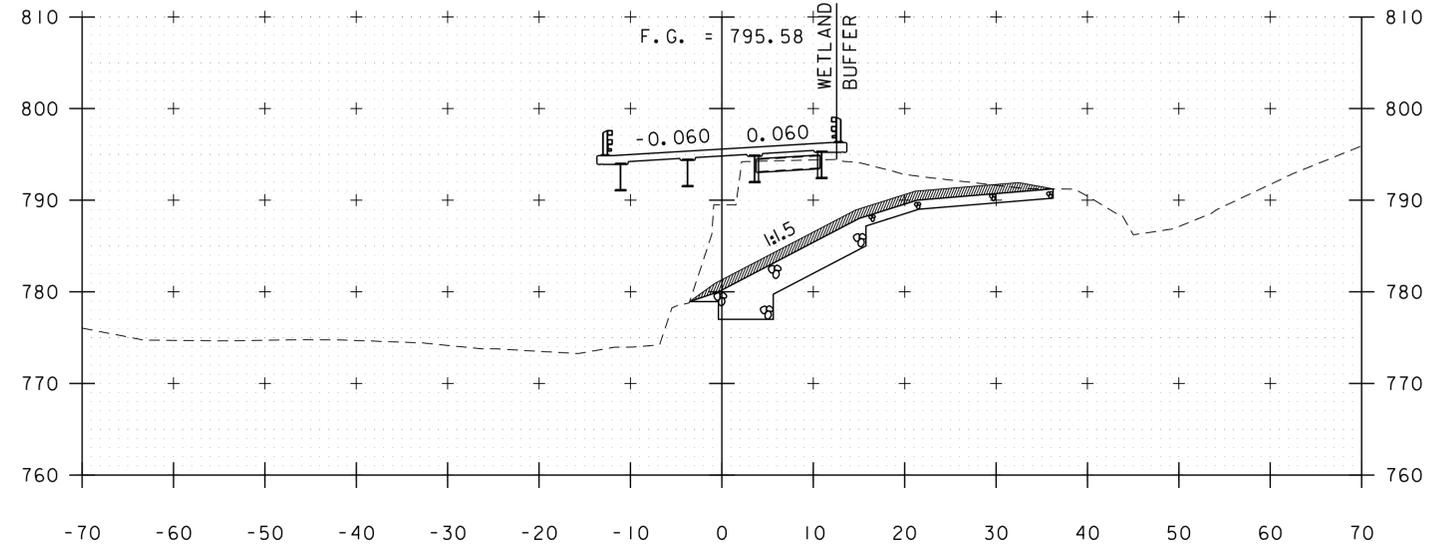
CHECKED BY: E.F. LAWES

SHEET 47 OF 61



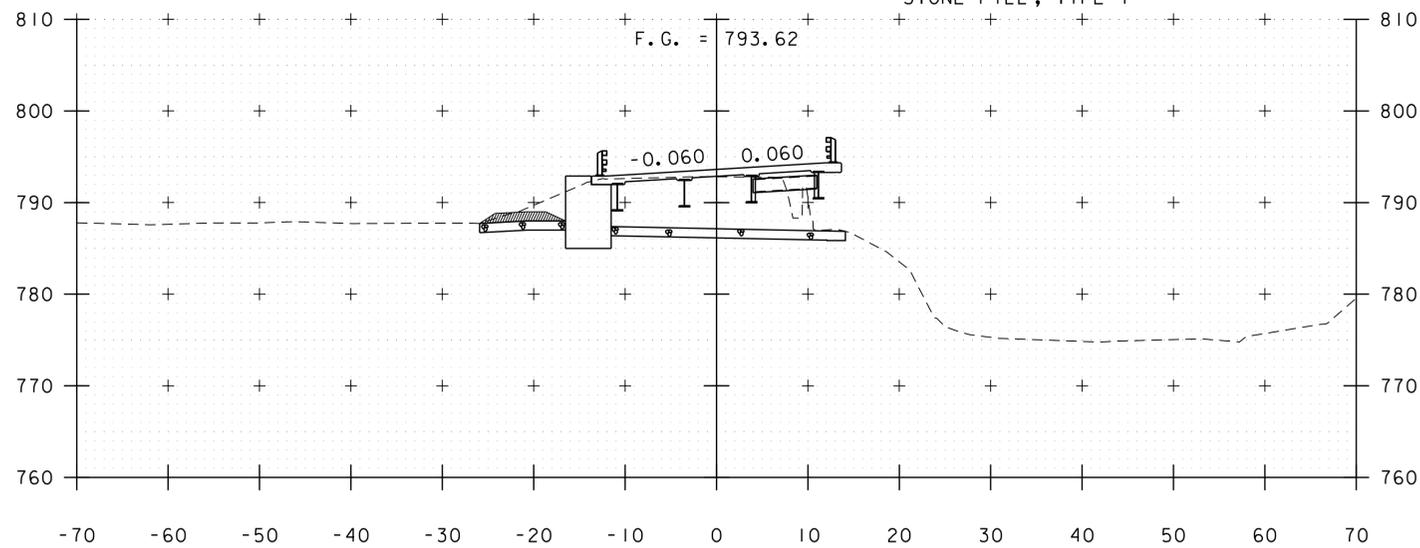
12+00

STA. 11+76, RT  
END GRUBBING MATERIAL  
STA. 11+86, RT  
END GEOTEXTILE UNDER STONE FILL  
STONE FILL, TYPE I



12+50

STA. 12+34, RT  
BEGIN GEOTEXTILE UNDER STONE FILL  
STONE FILL, TYPE I, & GRUBBING MATERIAL

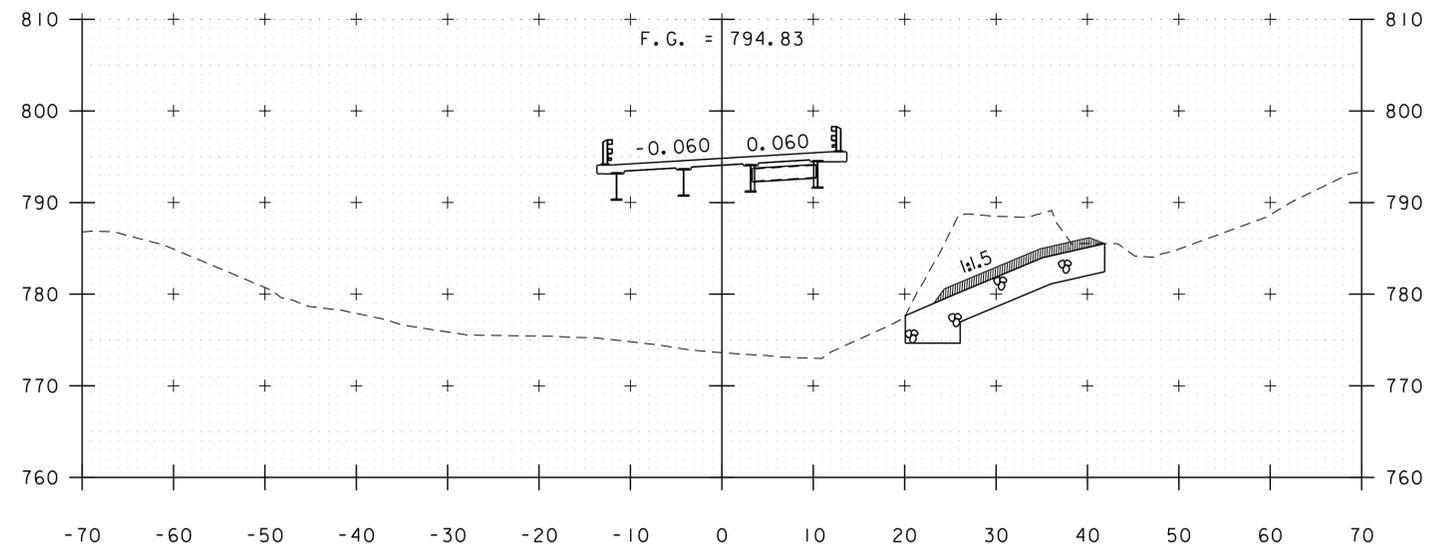


11+75

STA 11+60, LT  
BEGIN GEOTEXTILE UNDER STONE FILL  
STONE FILL, TYPE I, & GRUBBING MATERIAL

BEGIN BRIDGE  
STA. 11+67.80

STA 11+51, RT  
BEGIN GEOTEXTILE UNDER STONE FILL  
STONE FILL, TYPE I, & GRUBBING MATERIAL



12+25

STA. 12+07, LT  
END GEOTEXTILE UNDER STONE FILL  
STONE FILL, TYPE I, & GRUBBING MATERIAL

ROADWAY CROSS SECTIONS

SCALE 1" = 10'-0"

STA. 11+75 - 12+50

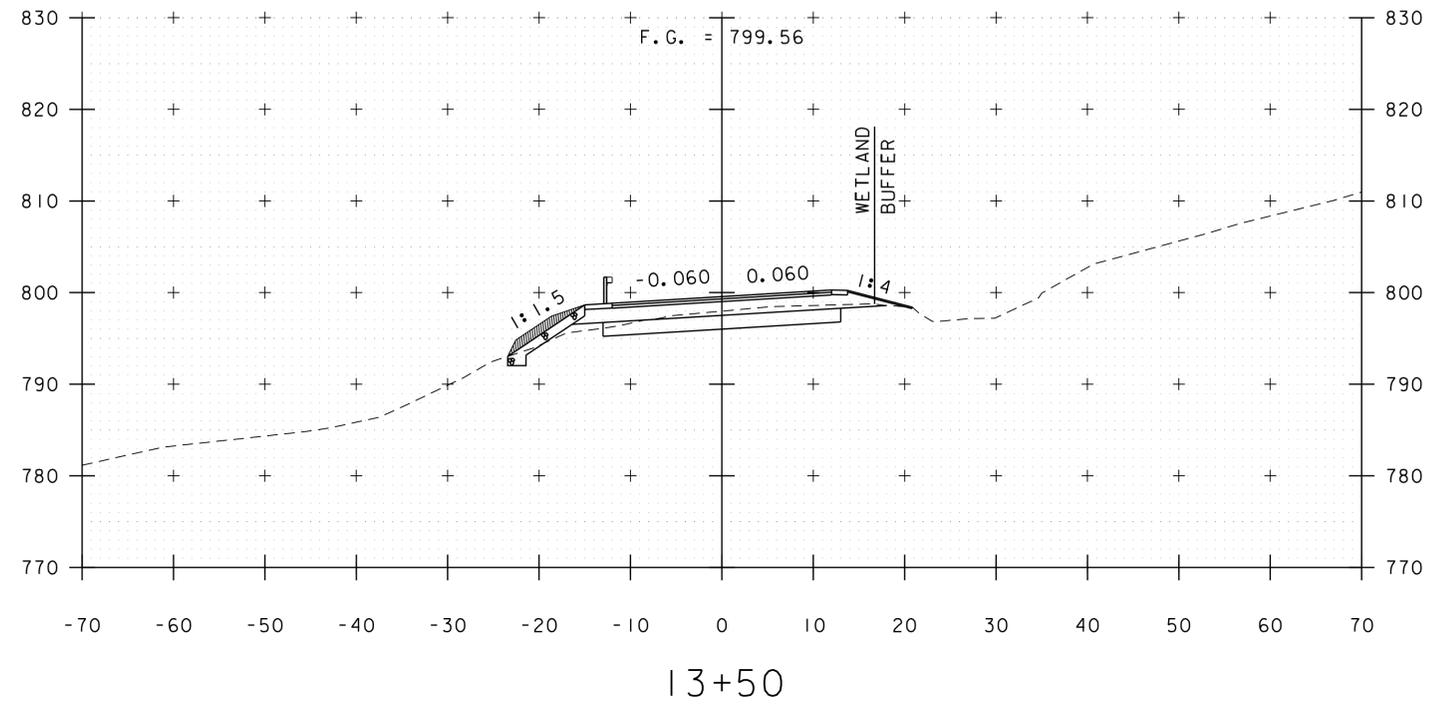
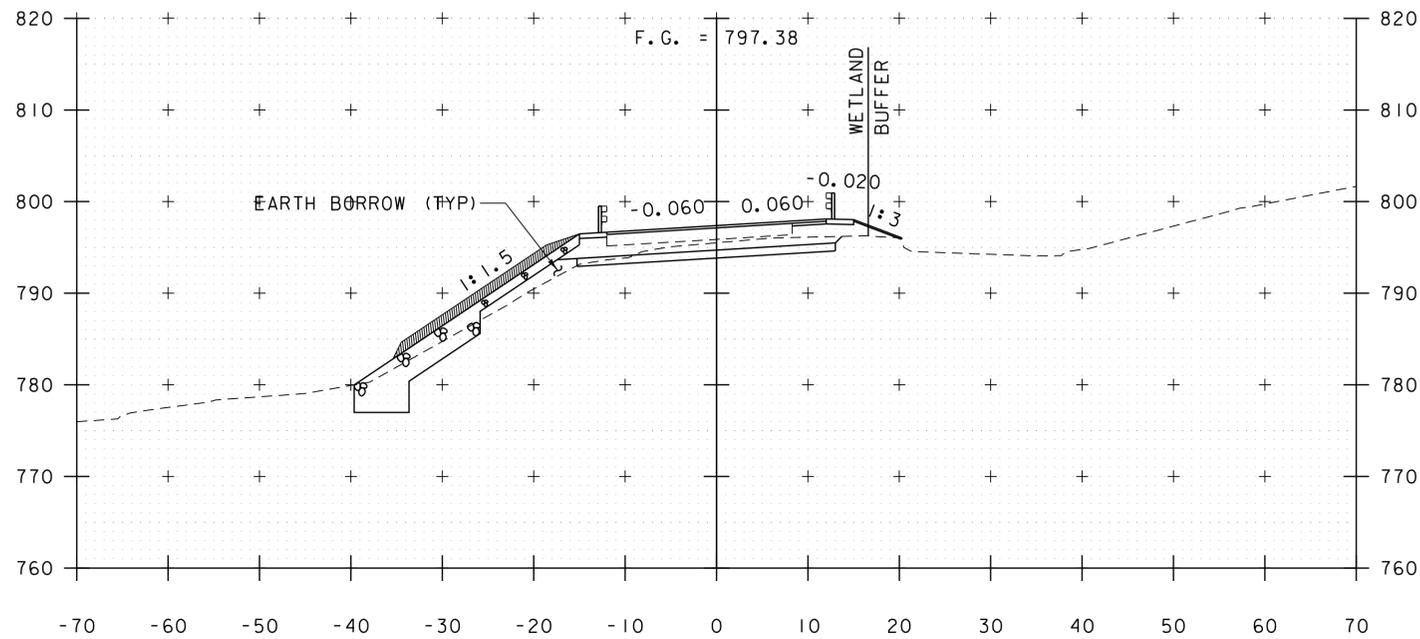
PROJECT NAME: HUNTINGTON

PROJECT NUMBER: BR 0211(32)

FILE NAME: z13j080xsl.dgn  
PROJECT LEADER: S.E. BURBANK  
DESIGNED BY: K.C. BARRY  
ROADWAY CROSS SECTIONS (3 OF 6)

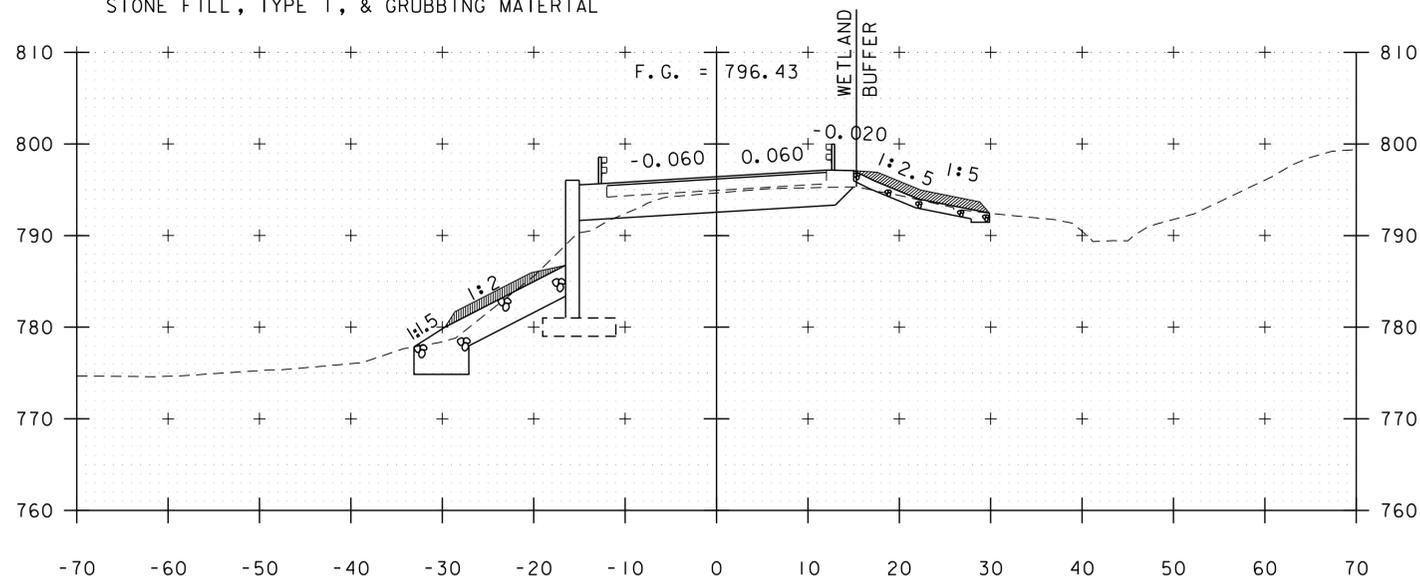
PLOT DATE: 4/4/2016  
DRAWN BY: K.C. BARRY  
CHECKED BY: E.F. LAWES  
SHEET 48 OF 61





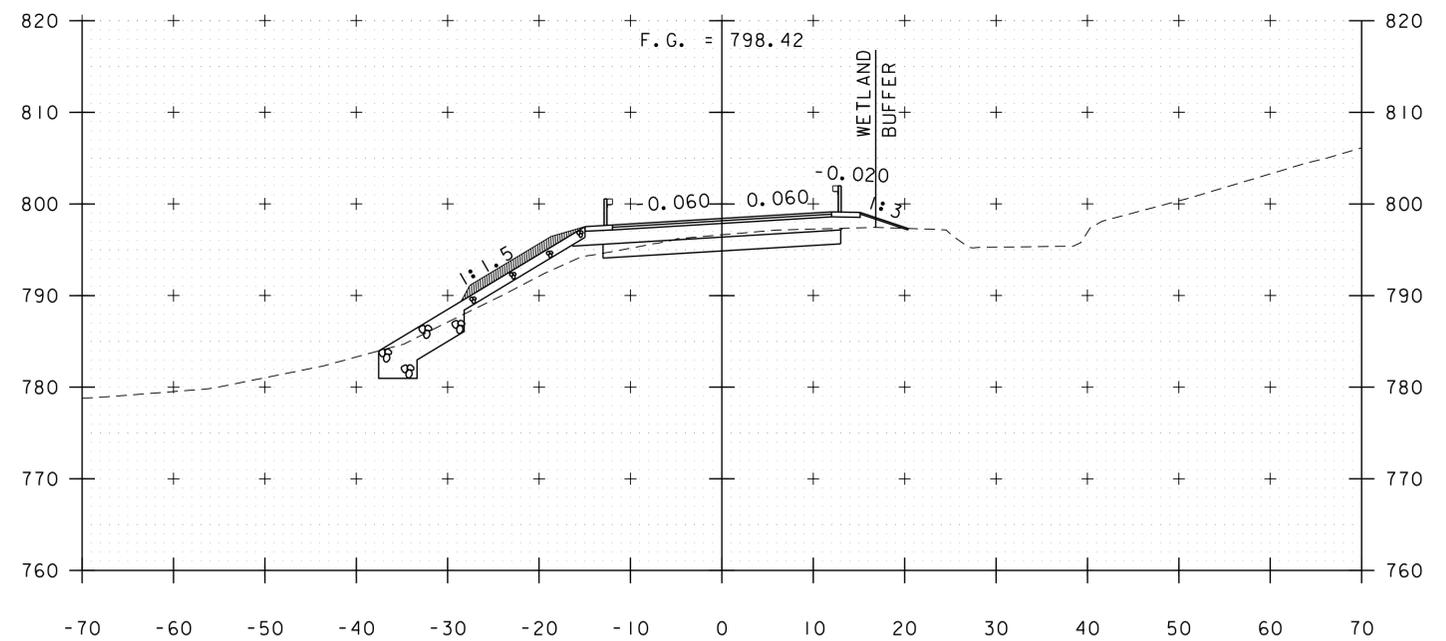
STA. 12+78, LT  
 BEGIN GEOTEXTILE UNDER STONE FILL  
 STONE FILL, TYPE 1, & GRUBBING MATERIAL

13+00



12+75  
 END BRIDGE  
 STA. 12+65.01

STA. 12+75, RT  
 END GEOTEXTILE UNDER STONE FILL  
 STONE FILL, TYPE 1, & GRUBBING MATERIAL



13+25

ROADWAY CROSS SECTIONS

SCALE 1" = 10'-0"

STA. 12+75 - 13+50



PROJECT NAME: HUNTINGTON

PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080xsl.dgn

PROJECT LEADER: S.E. BURBANK

DESIGNED BY: K.C. BARRY

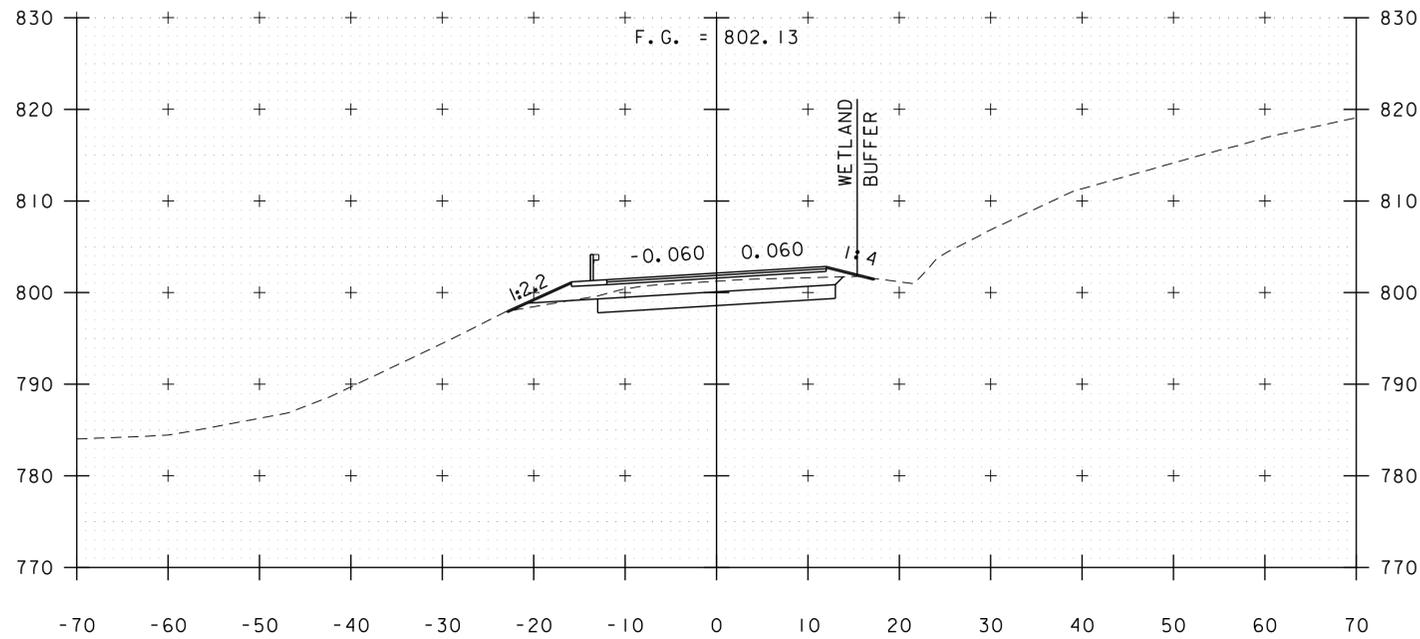
ROADWAY CROSS SECTIONS (4 OF 6)

PLOT DATE: 4/4/2016

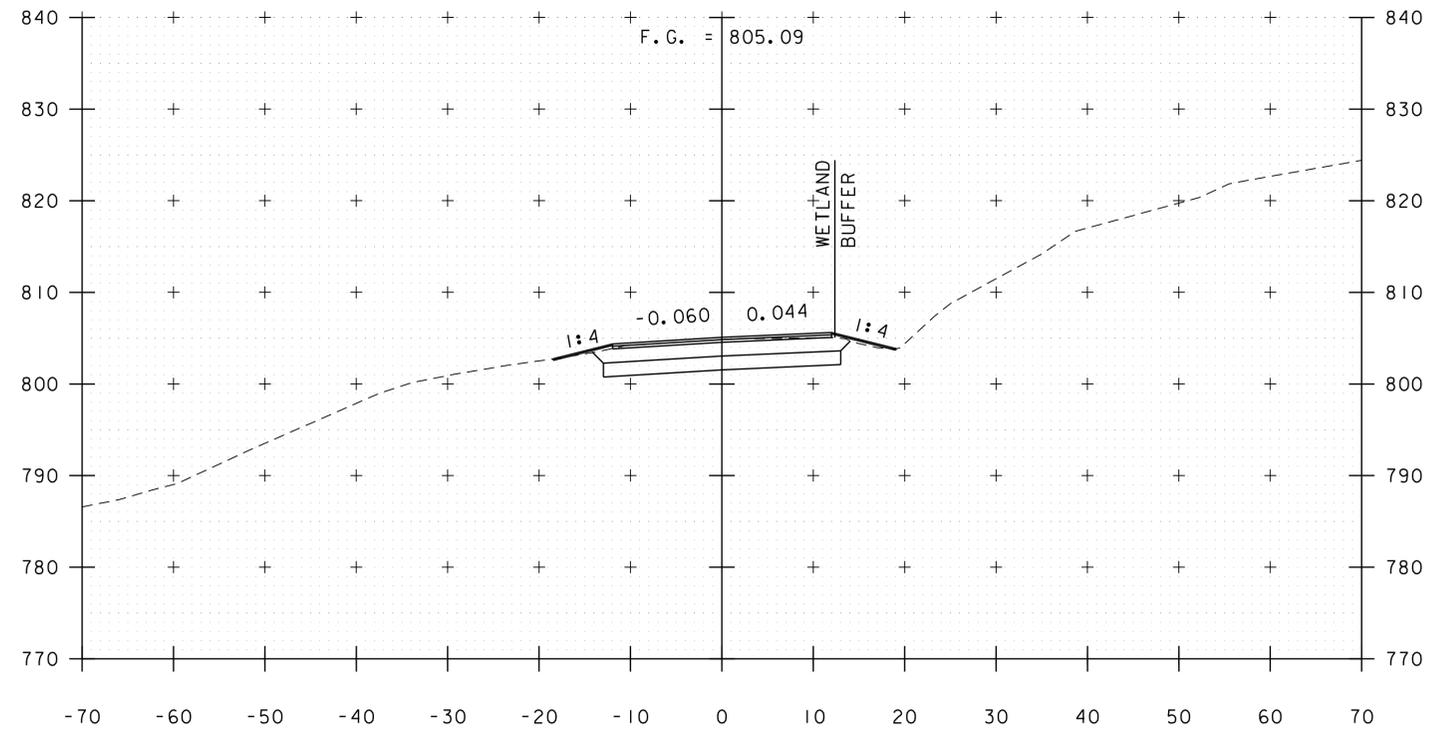
DRAWN BY: K.C. BARRY

CHECKED BY: E.F. LAWES

SHEET 49 OF 61



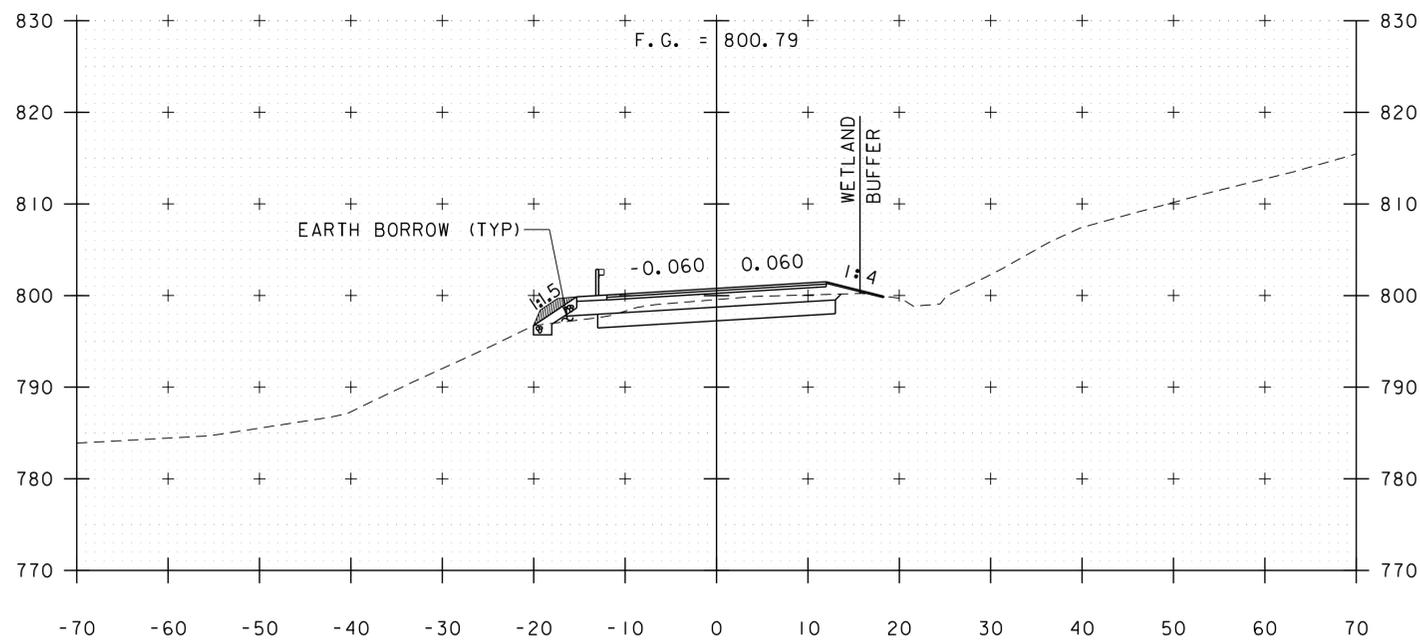
14+00



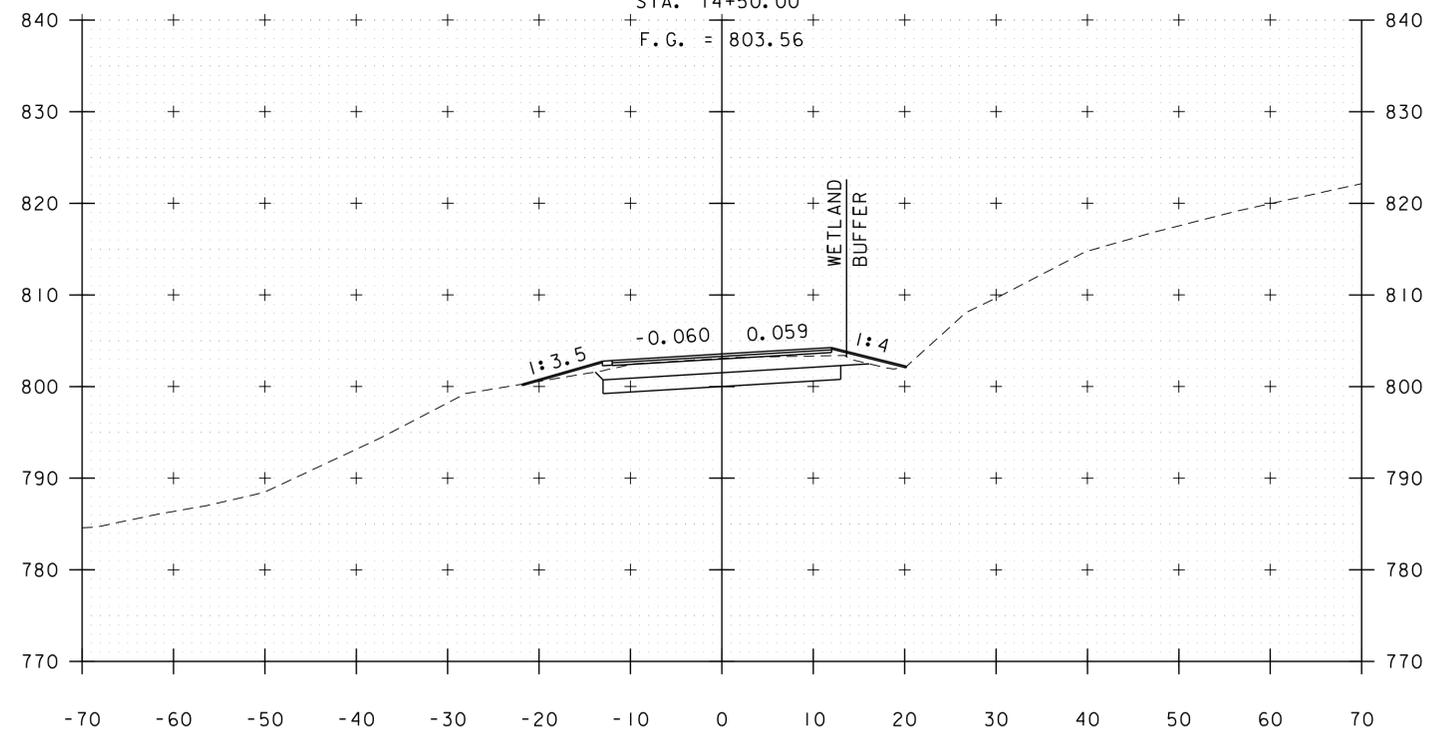
14+50

END PROJECT  
STA. 14+50.00

F.G. = 803.56



13+75



14+25

STA. 13+75, LT  
END GEOTEXTILE UNDER STONE FILL  
STONE FILL, TYPE 1, & GRUBBING MATERIAL

ROADWAY CROSS SECTIONS

SCALE 1" = 10'-0"

STA. 13+75 - 14+50



PROJECT NAME: HUNTINGTON

PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080xsl.dgn

PROJECT LEADER: S.E. BURBANK

DESIGNED BY: K.C. BARRY

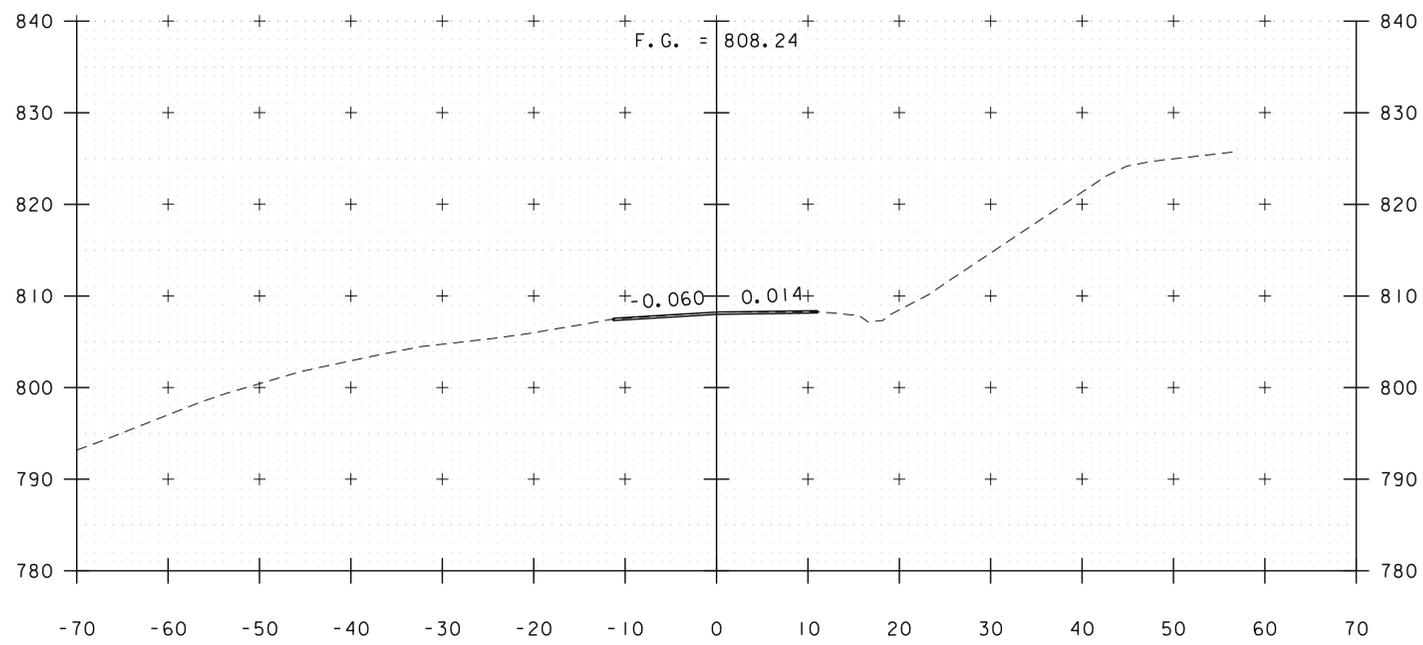
ROADWAY CROSS SECTIONS (5 OF 6)

PLOT DATE: 4/4/2016

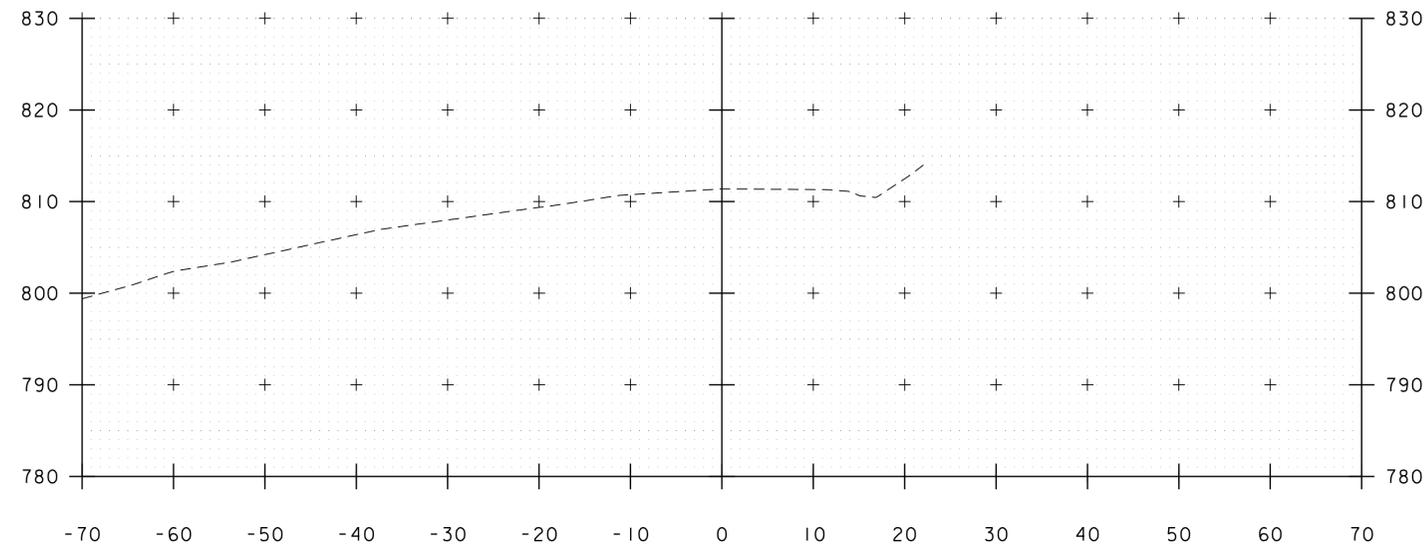
DRAWN BY: K.C. BARRY

CHECKED BY: E.F. LAWES

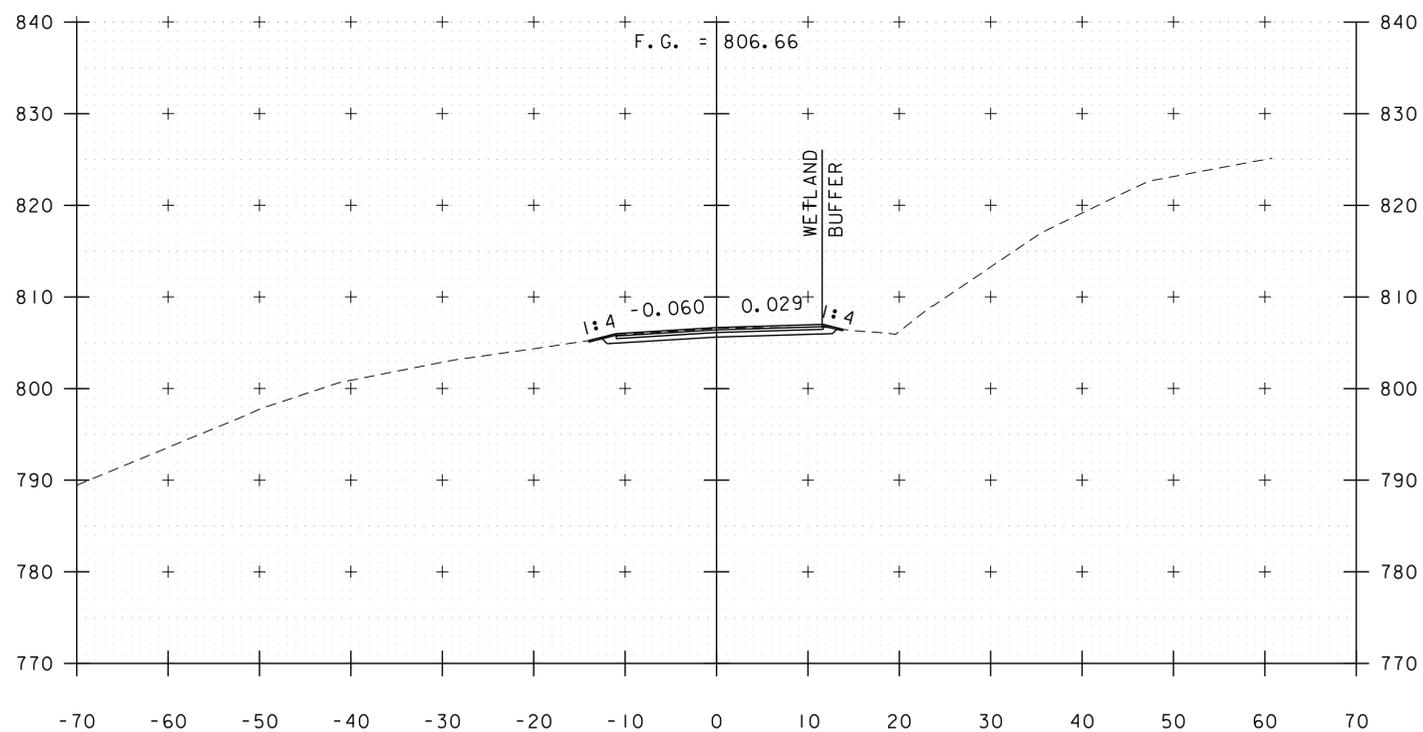
SHEET 50 OF 61



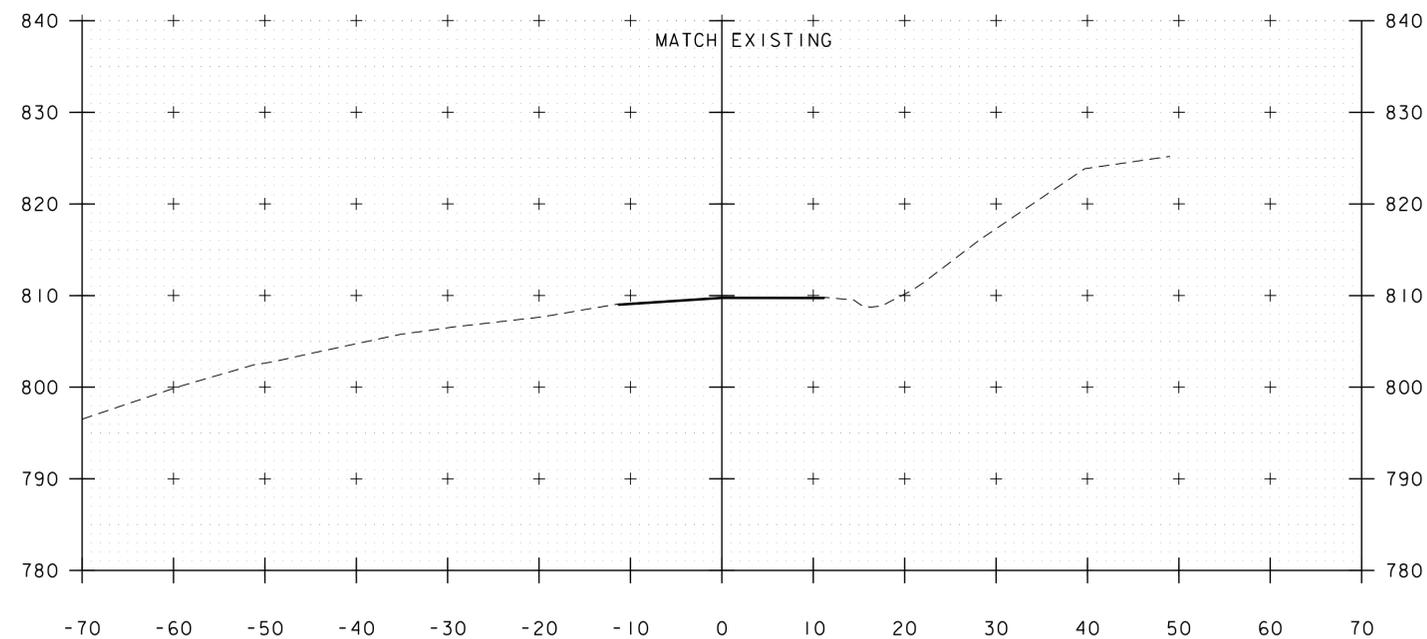
15+00



15+50



14+75



15+25  
END APPROACH  
STA. 15+25.00

ROADWAY CROSS SECTIONS

SCALE 1" = 10'-0"

STA. 14+75 - 15+50



PROJECT NAME: HUNTINGTON

PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080xsl.dgn

PROJECT LEADER: S.E. BURBANK

DESIGNED BY: K.C. BARRY

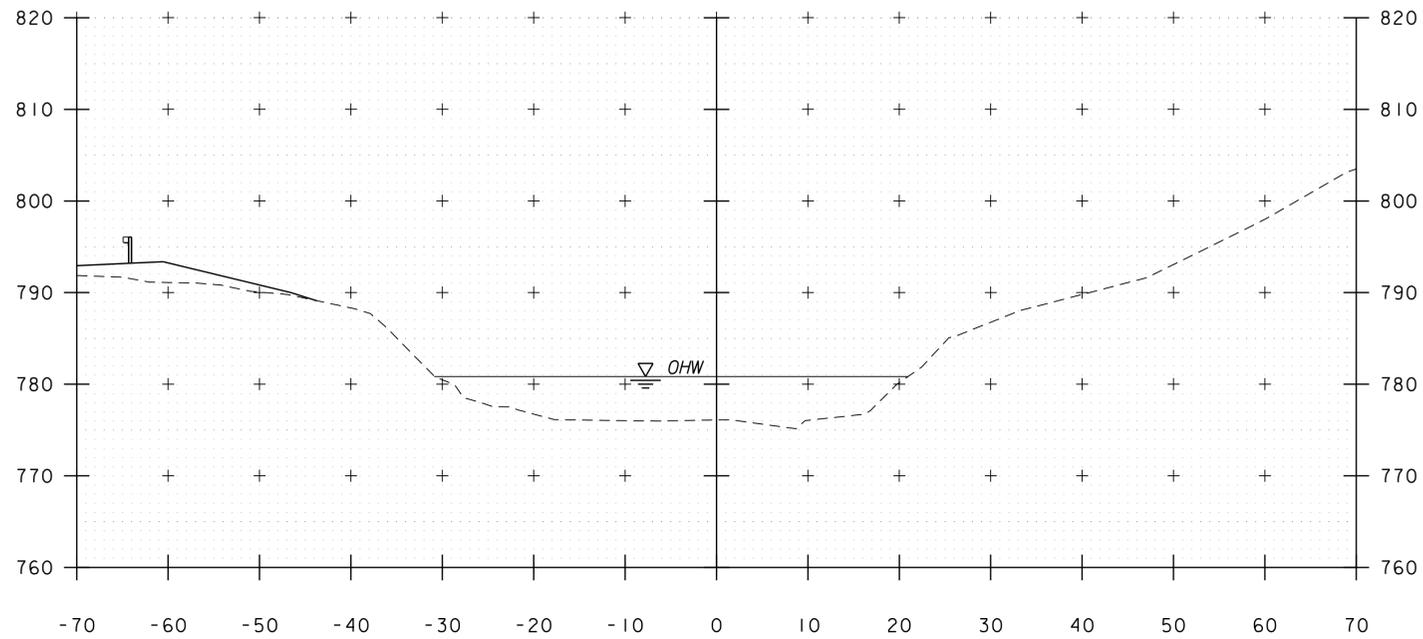
ROADWAY CROSS SECTIONS (6 OF 6)

PLOT DATE: 4/4/2016

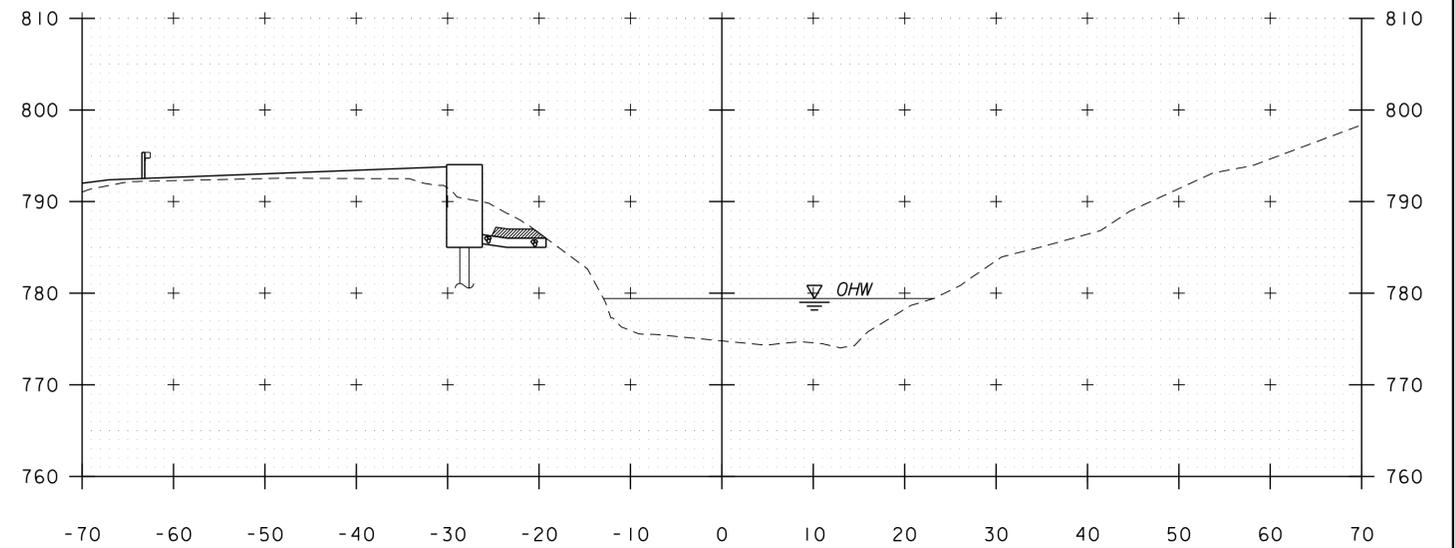
DRAWN BY: K.C. BARRY

CHECKED BY: E.F. LAWES

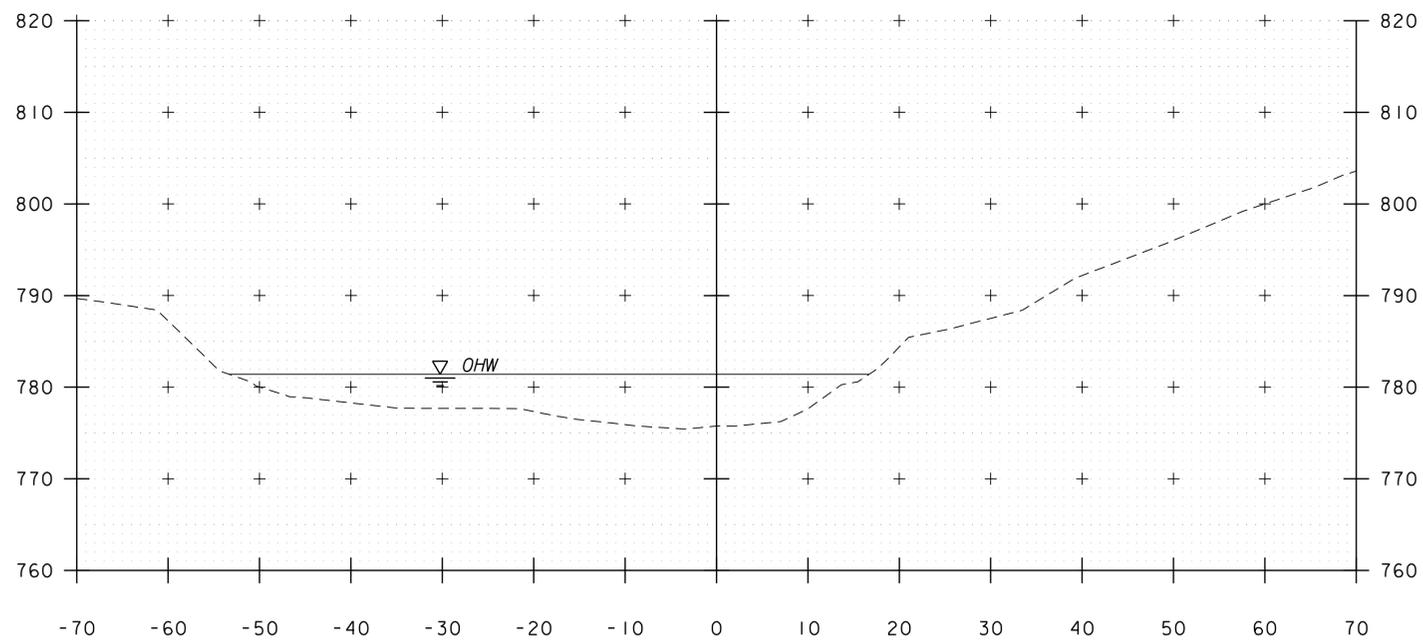
SHEET 51 OF 61



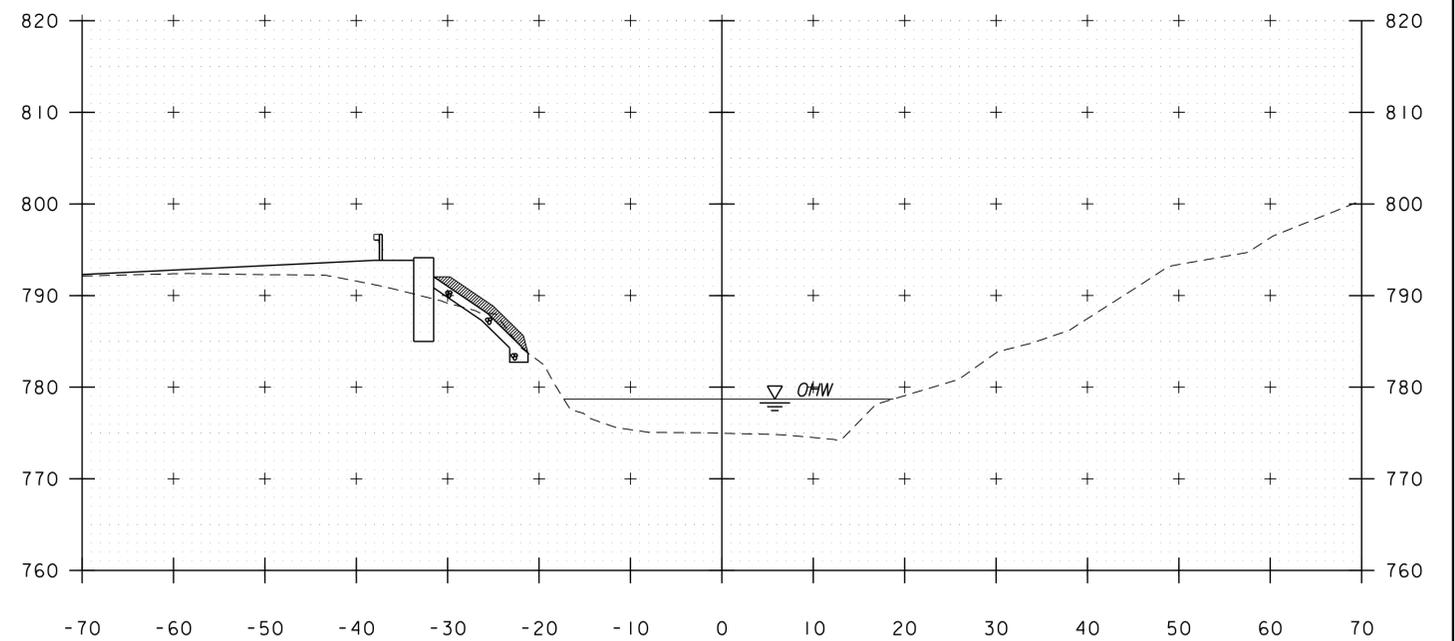
50+25



50+60



50+00



50+50

STA. 50+40, LT  
 BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
 GEOTEXTILE UNDER STONE FILL  
 STONE FILL, TYPE I, & GRUBBING MATERIAL

CHANNEL CROSS SECTIONS

SCALE 1" = 10'-0"

STA. 50+00 - 50+60

PROJECT NAME: HUNTINGTON

PROJECT NUMBER: BR 0211(32)

FILE NAME: z13j080xsl.dgn

PROJECT LEADER: S.E. BURBANK

DESIGNED BY: K.C. BARRY

CHANNEL CROSS SECTIONS (1 OF 4)

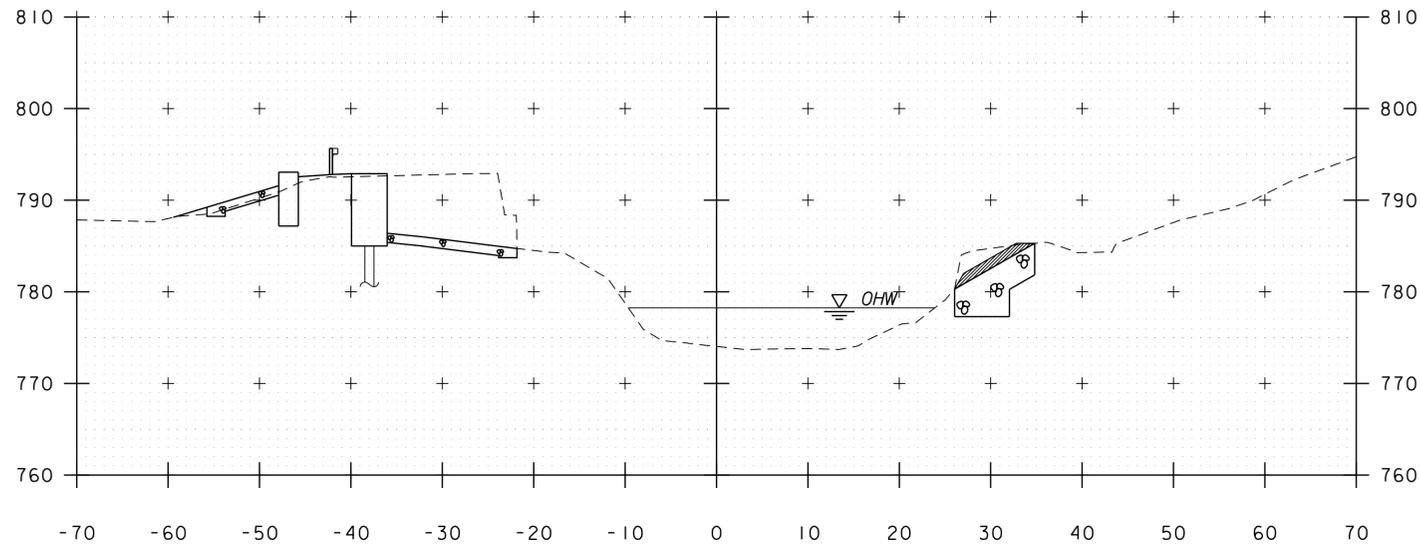
PLOT DATE: 4/4/2016

DRAWN BY: K.C. BARRY

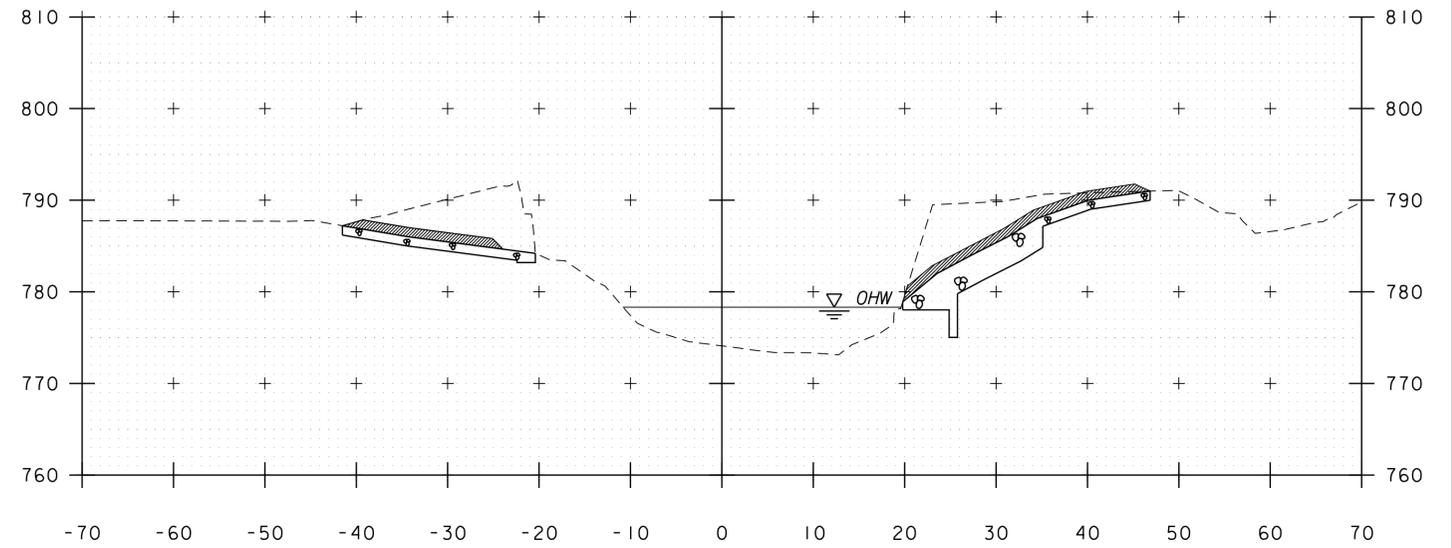
CHECKED BY: E.F. LAWES

SHEET 52 OF 61

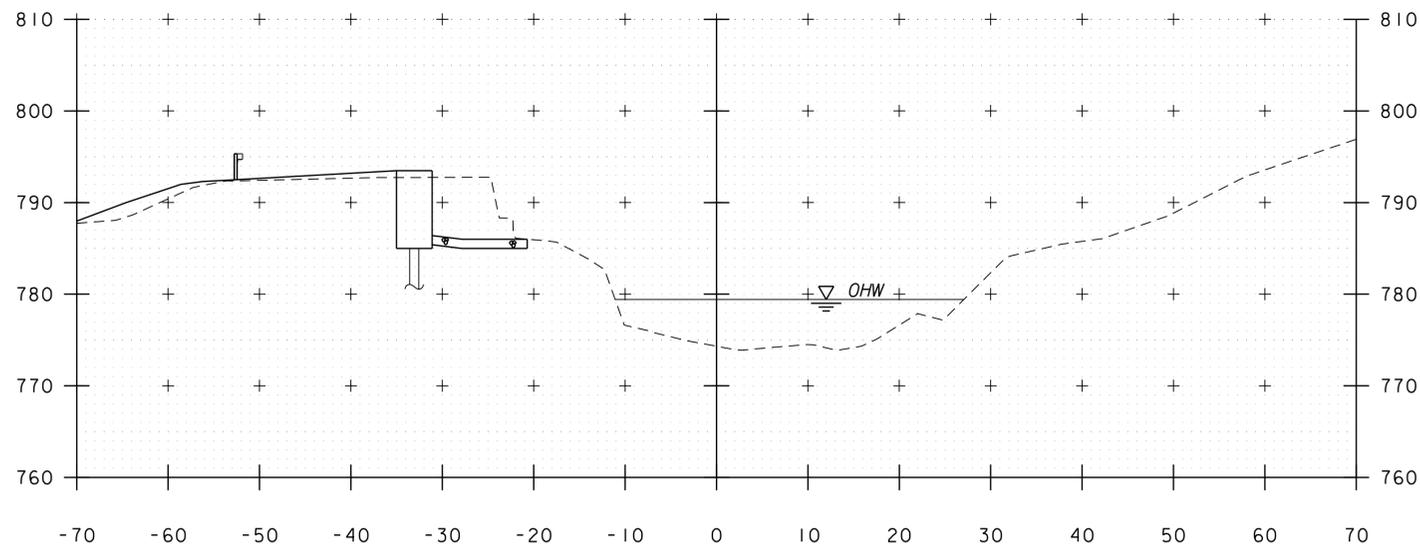




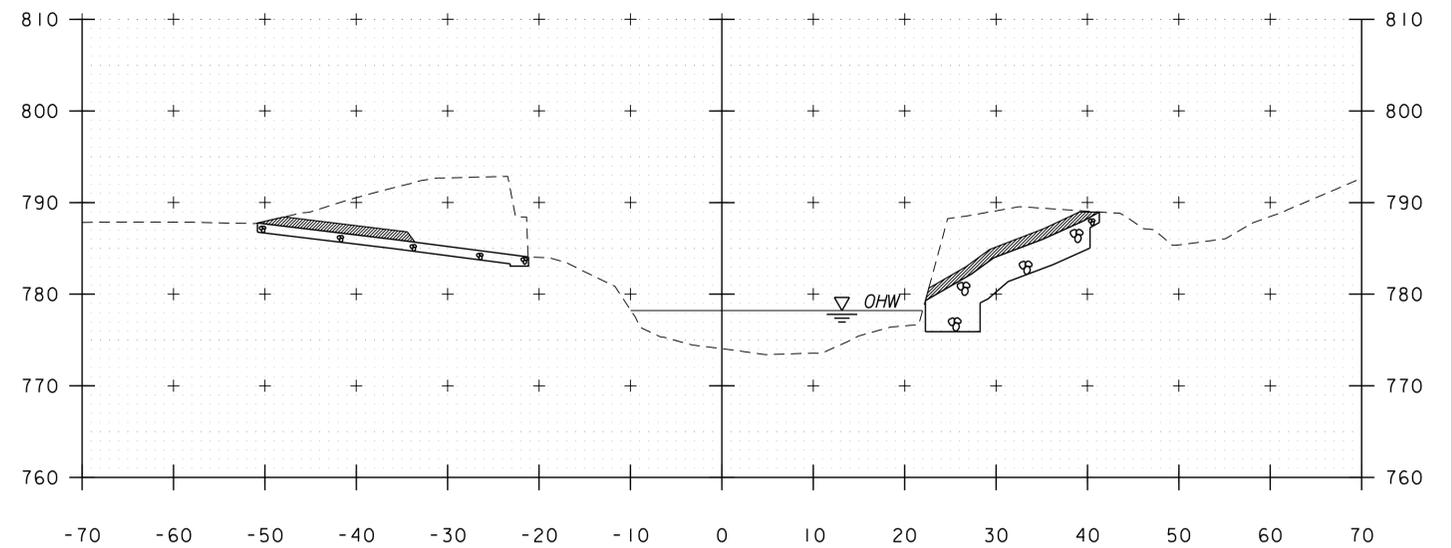
50+80



51+00



50+70



50+90

STA. 50+65, LT  
END GRUBBING MATERIAL

STA. 50+85, LT  
BEGIN GRUBBING MATERIAL

STA. 50+83, RT  
BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
GEOTEXTILE UNDER STONE FILL  
STONE FILL, TYPE III, & GRUBBING MATERIAL

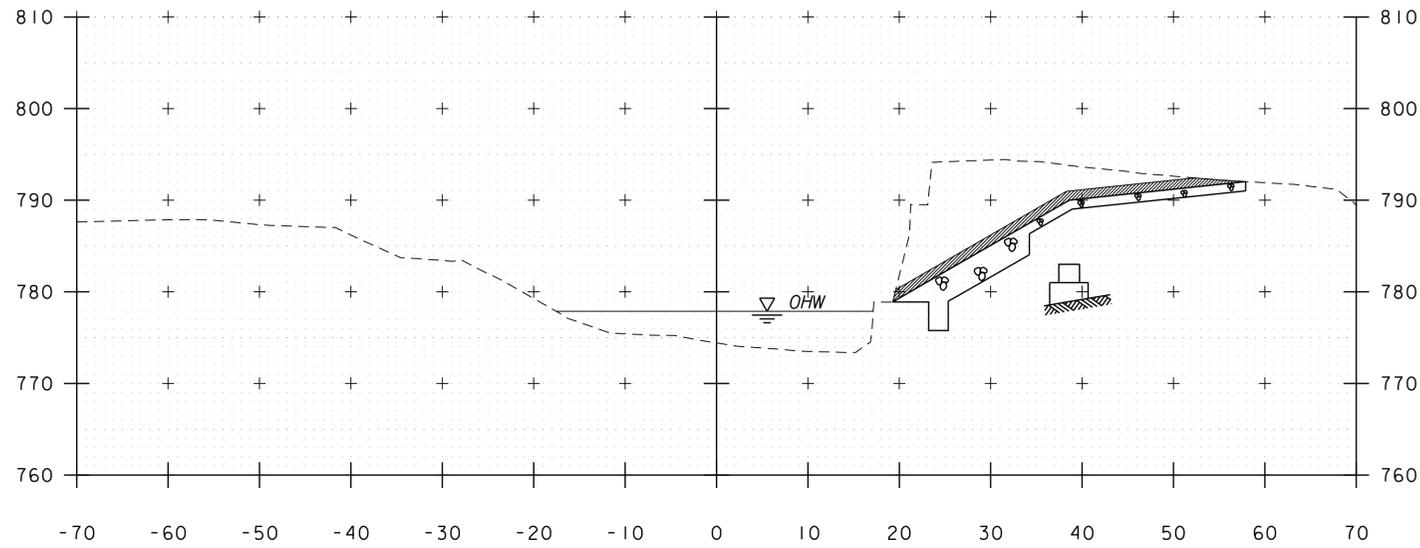
CHANNEL CROSS SECTIONS

SCALE 1" = 10'-0"

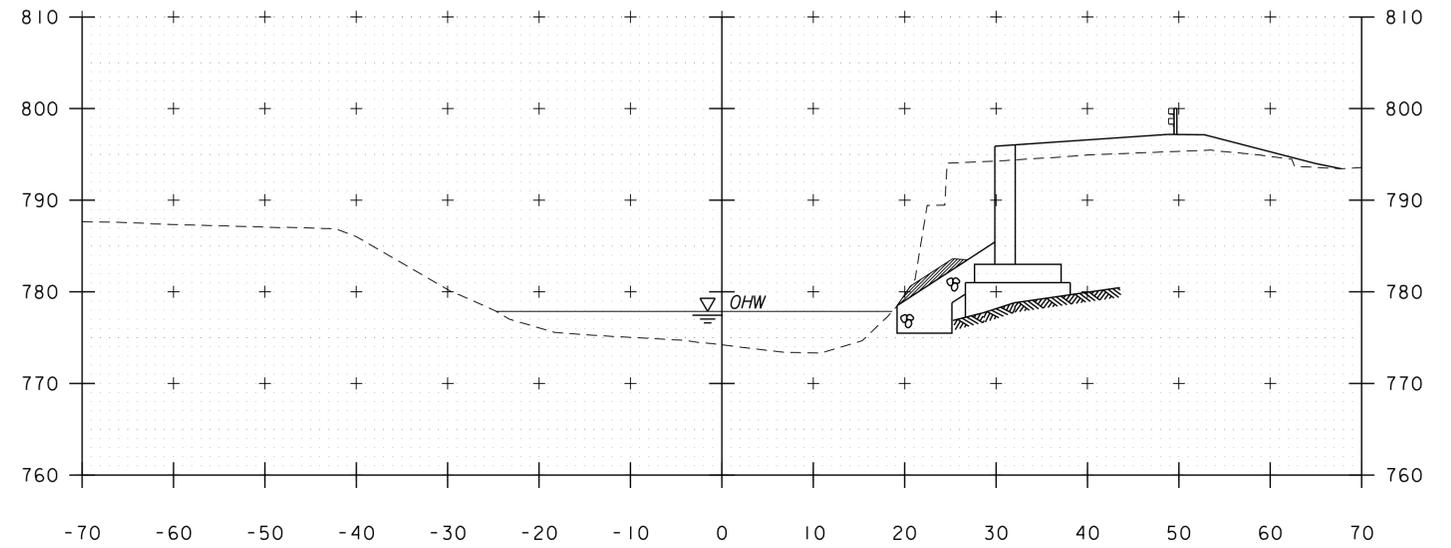
STA. 50+70 - 51+00



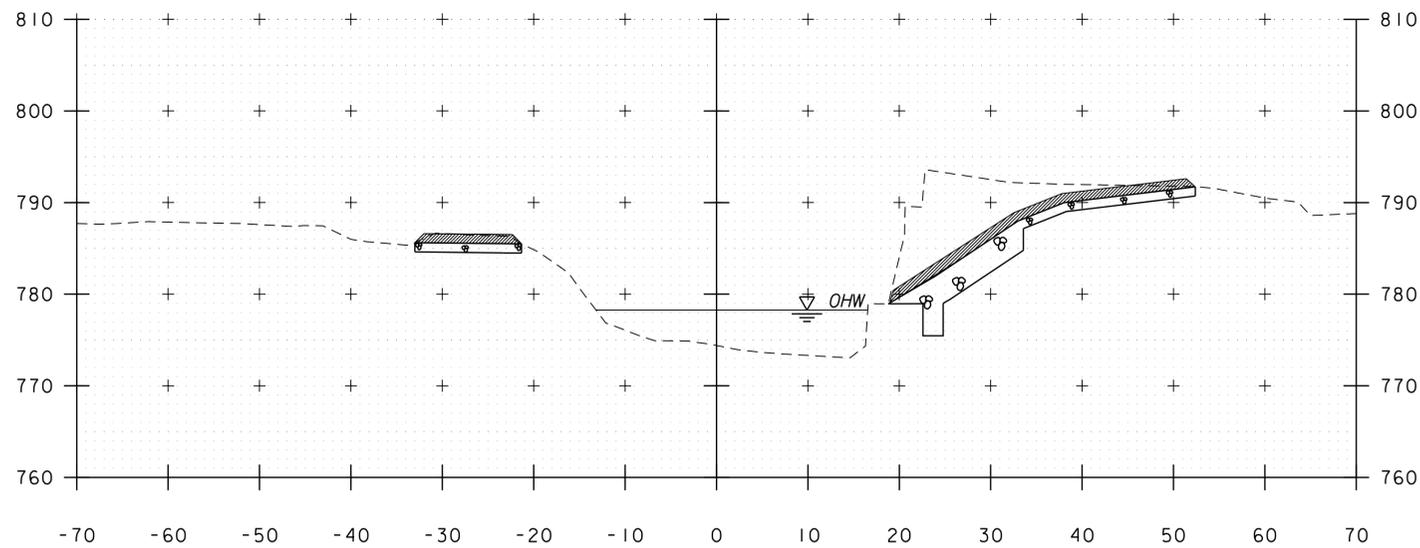
PROJECT NAME: HUNTINGTON	
PROJECT NUMBER: BR 0211(32)	
FILE NAME: z13j080xsl.dgn	PLOT DATE: 4/4/2016
PROJECT LEADER: S.E. BURBANK	DRAWN BY: K.C. BARRY
DESIGNED BY: K.C. BARRY	CHECKED BY: E.F. LAWES
CHANNEL CROSS SECTIONS (2 OF 4)	SHEET 53 OF 61



51+20

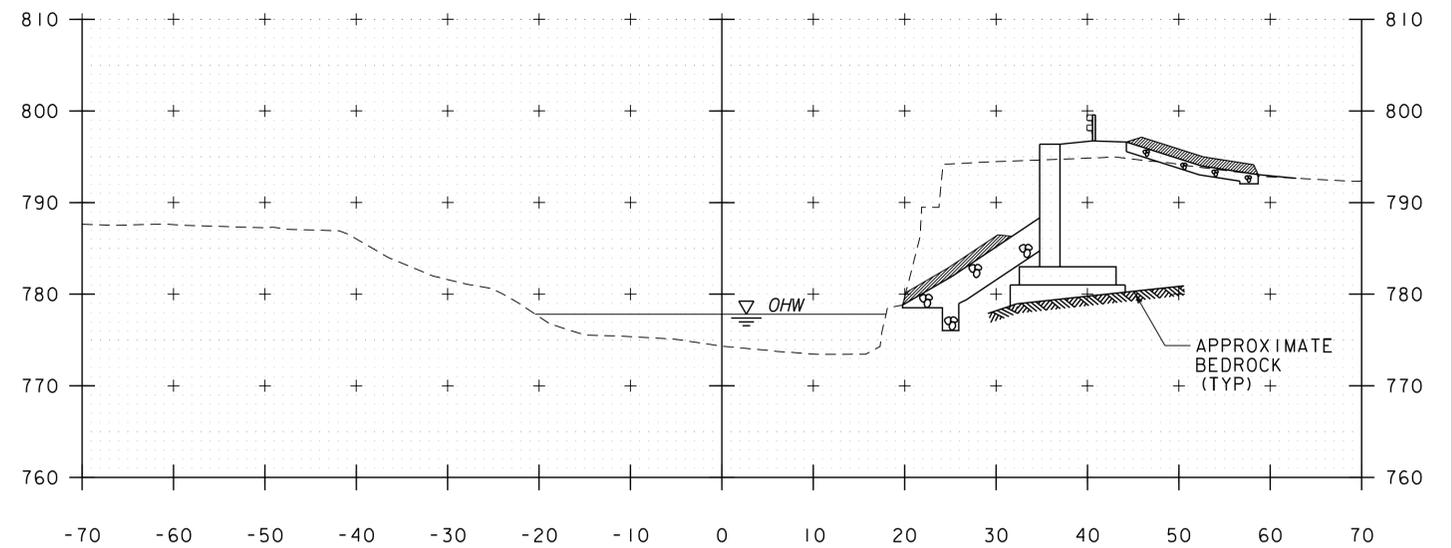


51+40



51+10

STA. 51+15, LT  
 END UNCLASSIFIED CHANNEL EXCAVATION  
 GEOTEXTILE UNDER STONE FILL  
 STONE FILL, TYPE I, & GRUBBING MATERIAL



51+30

CHANNEL CROSS SECTIONS

SCALE 1" = 10'-0"

STA. 51+10 - 51+40



PROJECT NAME: HUNTINGTON

PROJECT NUMBER: BR 0211(32)

FILE NAME: z13j080xsl.dgn

PROJECT LEADER: S.E. BURBANK

DESIGNED BY: K.C. BARRY

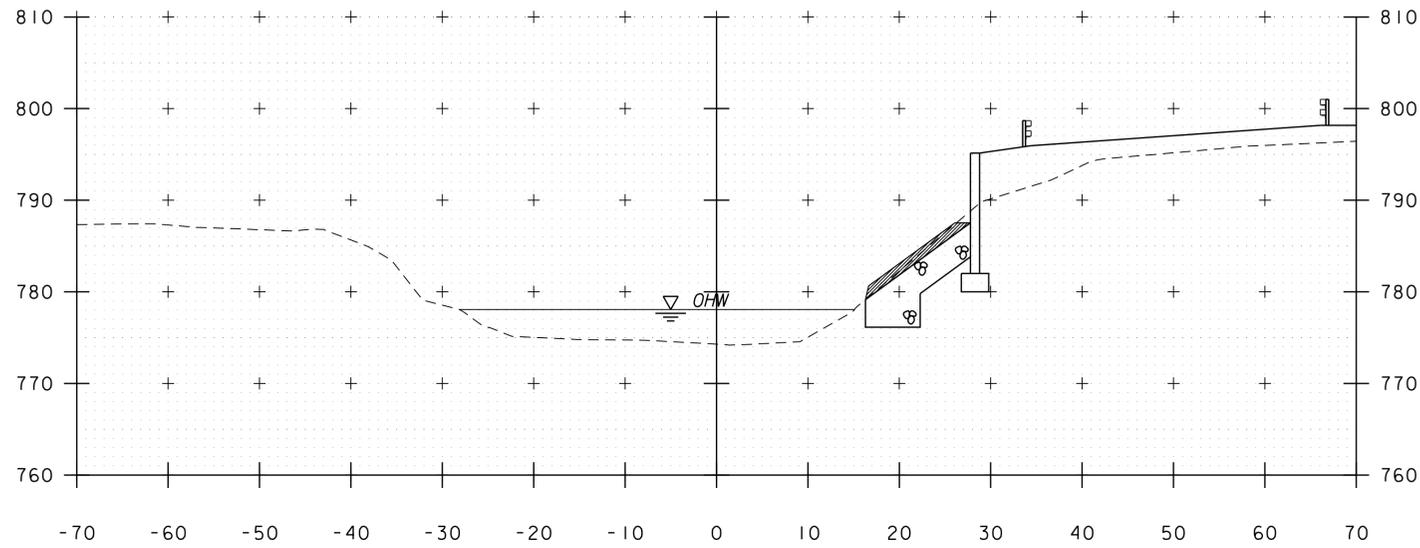
CHANNEL CROSS SECTIONS (3 OF 4)

PLOT DATE: 4/4/2016

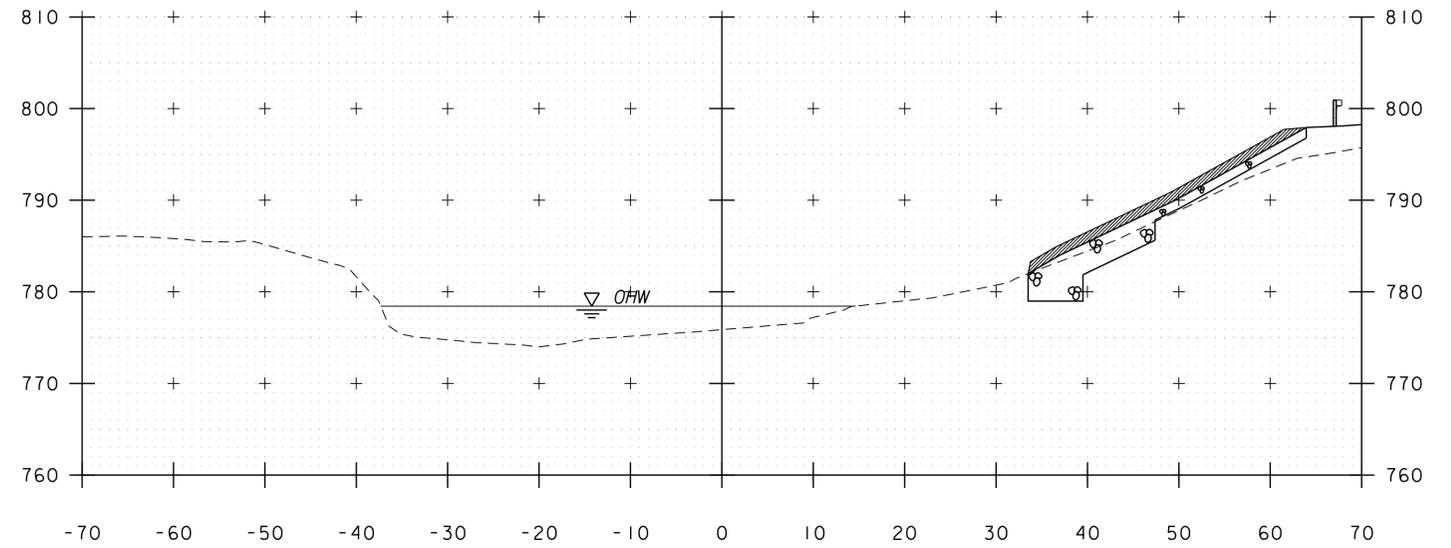
DRAWN BY: K.C. BARRY

CHECKED BY: E.F. LAWES

SHEET 54 OF 61

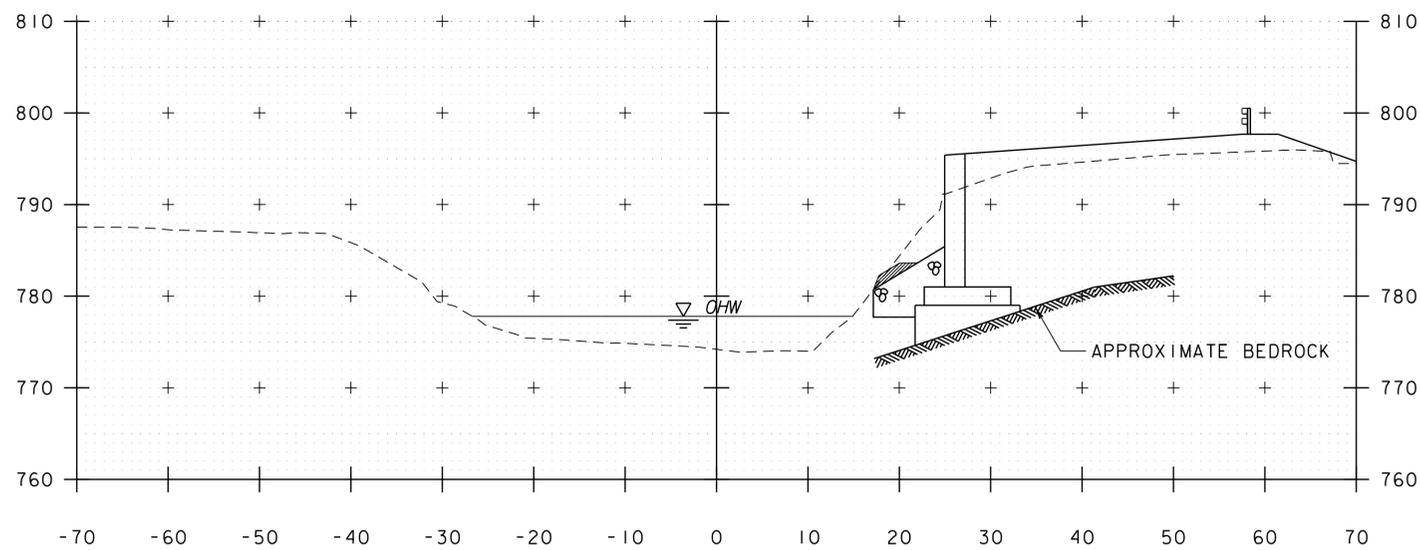


51+60

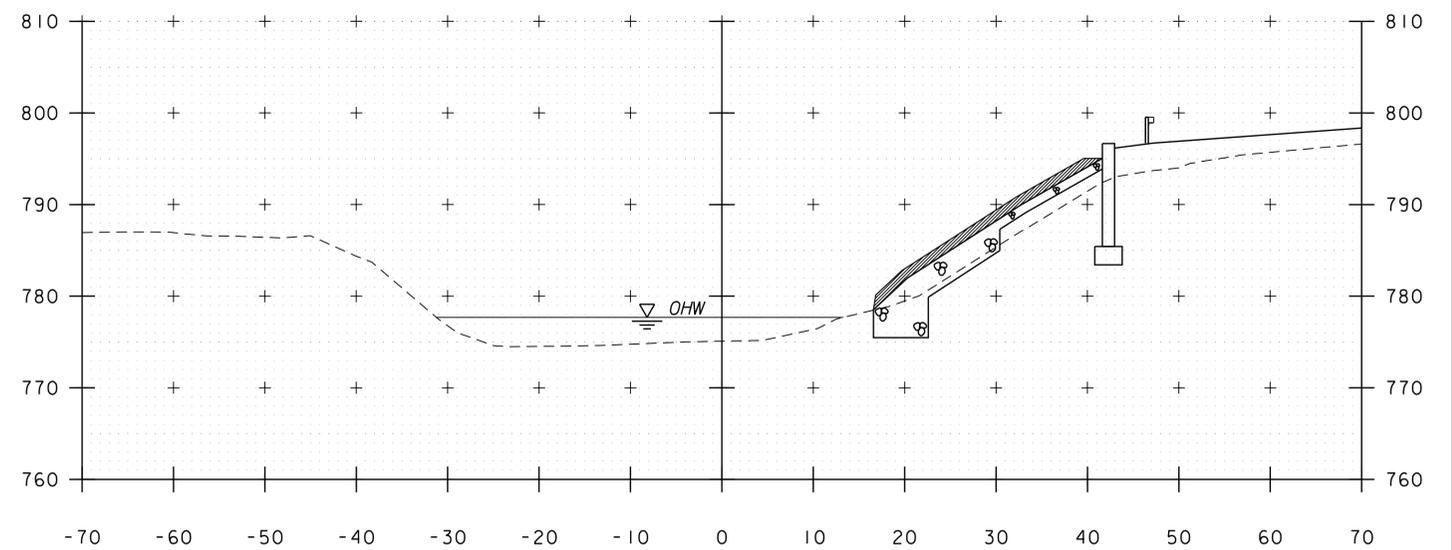


52+00

STA. 52+00, RT  
 END UNCLASSIFIED CHANNEL EXCAVATION  
 GEOTEXTILE UNDER STONE FILL  
 STONE FILL, TYPE III, & GRUBBING MATERIAL



51+50



51+75

CHANNEL CROSS SECTIONS

SCALE 1" = 10'-0"

STA. 51+50 - 52+00



PROJECT NAME: HUNTINGTON

PROJECT NUMBER: BR 0211(32)

FILE NAME: z13j080xsl.dgn

PROJECT LEADER: S.E. BURBANK

DESIGNED BY: K.C. BARRY

CHANNEL CROSS SECTIONS (4 OF 4)

PLOT DATE: 4/4/2016

DRAWN BY: K.C. BARRY

CHECKED BY: E.F. LAWES

SHEET 55 OF 61

# EPSC PLAN NARRATIVE

## 1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL AND REPLACEMENT OF BRIDGE NO. 8 OVER THE HUNTINGTON RIVER IN HUNTINGTON, VT. BRIDGE NO. 8 IS LOCATED ON MAIN ROAD (TH 1) APPROXIMATELY 3.9 MILES NORTH OF THE INTERSECTION OF MAIN ROAD AND VT ROUTE 17 AND CONSISTS OF A ROLLED STEEL BEAM SUPERSTRUCTURE ON CONCRETE ABUTMENTS. THE EXISTING BRIDGE NO. 8 WILL BE REMOVED ALONG WITH PARTIAL REMOVAL OF THE EXISTING ABUTMENTS AND REPLACED WITH A NEW STEEL PLATE GIRDER BRIDGE SPANNING 94 FT OVER THE HUNTINGTON RIVER ON NEW ABUTMENTS AND ON A NEW ALIGNMENT.

THE BRIDGE REPLACEMENT INCLUDES THE REMOVAL OF THE EXISTING ROLLED STEEL BEAM SUPERSTRUCTURE, PARTIAL REMOVAL OF THE SPILL THROUGH ABUTMENT 1 DOWN TO GRADE, REMOVAL OF ABUTMENT 2 DOWN TO THE TOP OF FOOTING, AND CONSTRUCTION OF A 94'-0" SINGLE SPAN BRIDGE. THE NEW BRIDGE WILL CONSIST OF STEEL PLATE GIRDERS, A CAST-IN-PLACE CONCRETE OVERLAY TO CREATE A BRIDGE WIDTH OF 27'-4", AND NEW PRECAST CONCRETE ABUTMENTS. ABUTMENT 1 WILL BE AN INTEGRAL ABUTMENT ON H-PILES AND ABUTMENT 2 WILL BE A FIXED ABUTMENT ON LEDGE. CONSTRUCTION WILL ALSO INCLUDE THE ASSOCIATED APPROACH WORK, INSTALLATION OF BRIDGE APPROACH SLABS, REALIGNMENT OF ROADWAY, AND NEW GUARDRAIL.

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

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.65 ACRES.

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

## 1.2 SITE INVENTORY

### 1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS A TRANSITION FROM STEEPER FORESTED AREA ON THE EAST SIDE TO A GENERALLY FLAT AREA TO THE WEST WITH BOTH OPEN AGRICULTURAL FIELDS AND WOODED AREAS. THE PROJECT IS LOCATED IN A LARGELY UNDEVELOPED RURAL AREA WITH A FEW HOUSES OUTSIDE THE PROJECT AREA WITH FIELD AND FOREST BUFFERS. TOWN HIGHWAY 1 AND AN ACCESS DRIVE ARE WITHIN THE PROJECT SITE.

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

THE HUNTINGTON RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE, ALTHOUGH AN INTERMITTENT STREAM IS LOCATED JUST TO THE EAST OF THE PROJECT. AT THE PROJECT LOCATION THE HUNTINGTON RIVER IS CHARACTERIZED AS AN INCISED CHANNEL HAVING A SANDY GRAVEL STREAMBED WITH SOME BOULDERS AND STONE FILL AROUND THE EXISTING ABUTMENTS. THE TRIBUTARY AREA AT THE BRIDGE CROSSING IS 18.4 SQUARE MILES. THERE IS A CLASS II FORESTED WETLAND LOCATED TO THE NORTHEAST WHICH THE PROJECT LIMITS EXTEND INTO.

### 1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD AND SOFTWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING BRIDGE. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

### 1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF CHITTENDEN, VERMONT. SOILS ON THE SOUTHEAST OF THE PROJECT SITE ARE CABOT SILT LOAM, 3% TO 25% SLOPES, "K FACTOR" = 0.49. TO THE SOUTHWEST SOIL CONSISTS OF STETSON GRAVELLY FINE SANDY LOAM, 5% TO 12% SLOPES, "K FACTOR" = 0.15. ON THE WEST SIDE AND NORTHEAST BANK OF THE HUNTINGTON RIVER SOILS CONSIST OF HADLEY VERY FINE SANDY LOAM FREQUENTLY FLOODED, 0% TO 3% SLOPES "K-FACTOR" = 0.32. THE NORTHEAST PORTION OF THE SITE CONSIST OF PERU EXTREMELY STONY LOAM, 20% TO 60% SLOPES, "K FACTOR" = 0.28. THE SOIL IN THE IMMEDIATE VICINITY OF THE BRIDGE ARE CONSIDERED HIGHLY ERODIBLE DUE TO SIGNIFICANT SLOPES.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:

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

## 1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO  
HISTORICAL OR ARCHEOLOGICAL AREAS: YES. ARCHEOLOGICAL AREAS HAVE BEEN IDENTIFIED TO THE NORTHEAST AND NORTHWEST OF THE SITE. DUE TO THEIR VICINITY TO THE PROJECT AREAS TO THE NORTHEAST WILL BE PROTECTED BY BARRIER FENCE TO ENSURE CONSTRUCTION ACTIVITIES DO NOT IMPACT THESE AREAS.  
PRIME AGRICULTURAL LAND: YES. THE BRIDGE REPLACEMENT WILL NOT LIKELY REDUCE THE AGRICULTURAL POTENTIAL OF THE LAND.  
THREATENED AND ENDANGERED SPECIES: NO  
WATER RESOURCE: HUNTINGTON RIVER  
WETLANDS: YES. A CLASS II WETLAND FEATURE WAS LOCATED ON THE OUTSIDE OF THE PROJECT AREA EAST OF THE BRIDGE.

## 1.3 RISK EVALUATION

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

## 1.4 EROSION PREVENTION AND SEDIMENT CONTROL

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

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

### 1.4.1 MARK SITE BOUNDARIES

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

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES. BECAUSE OF THE ARCHEOLOGIC AREAS TO THE NORTHEAST, BARRIER FENCE SHALL BE USED ADJACENT TO THOSE AREAS.

### 1.4.2 LIMIT DISTURBANCE AREA

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

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

### 1.4.3 SITE ENTRANCE/EXIT STABILIZATION

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

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

### 1.4.4 INSTALL SEDIMENT BARRIERS

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

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

FILTER CURTAIN WILL BE INSTALLED WHERE WORK MUST TAKE PLACE WITHIN THE LIMITS OF THE HUNTINGTON RIVER AS PROPOSED ON THE EPSC PLAN.

## 1.4.5 DIVERT UPLAND RUNOFF

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

DIVERSION MEASURES ARE NOT ANTICIPATED FOR THIS PROJECT.

## 1.4.6 SLOW DOWN CHANNELIZED RUNOFF

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

CHECK STRUCTURES ARE NOT ANTICIPATED FOR THIS PROJECT.

## 1.4.7 CONSTRUCT PERMANENT CONTROLS

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

PERMANENT EROSION CONTROL STRUCTURES ARE NOT ANTICIPATED FOR THIS PROJECT.

## 1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE 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 EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

## 1.4.9 WINTER STABILIZATION

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

## 1.4.10 STABILIZE SOIL AT FINAL GRADE

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

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

## 1.4.11 DE-WATERING ACTIVITIES

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

TREATMENT OF DEWATERING IS NOT ANTICIPATED.

## 1.4.12 INSPECT YOUR SITE

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

## 1.5 SEQUENCE AND STAGING

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

### 1.5.1 CONSTRUCTION SEQUENCE

### 1.5.2 OFF-SITE ACTIVITIES

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



PROJECT NAME: HUNTINGTON

PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080epsc.narrative.dgn

PROJECT LEADER: S.E. BURBANK

DESIGNED BY: J.D. KEENER

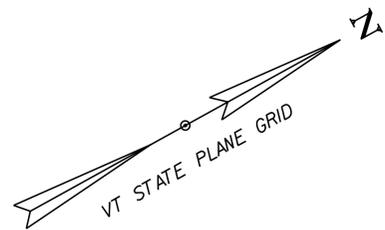
EPSC NARRATIVE

PLOT DATE: 4/4/2016

DRAWN BY: J.D. KEENER

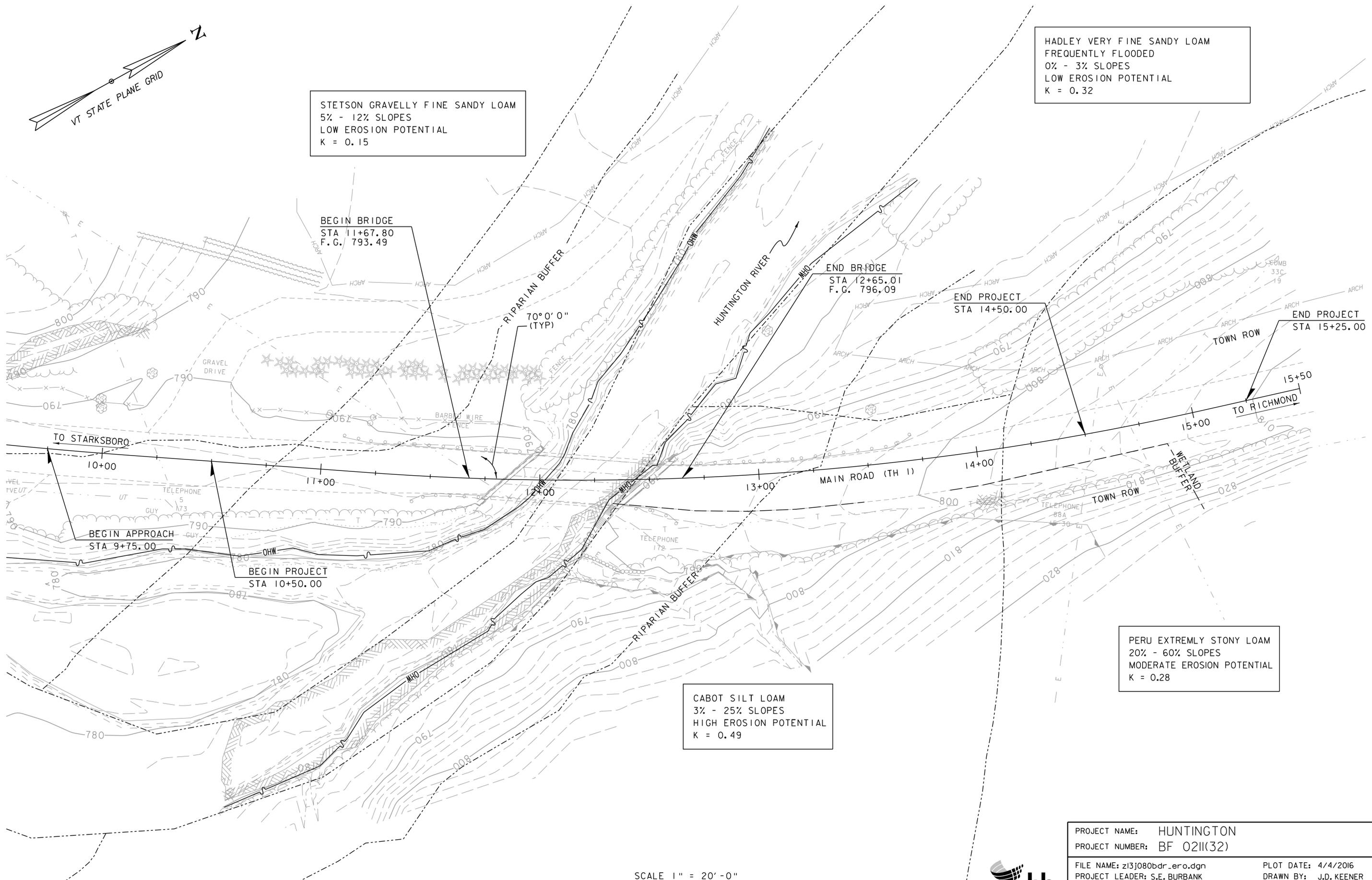
CHECKED BY: E.F. LAWES

SHEET 56 OF 61



STETSON GRAVELLY FINE SANDY LOAM  
 5% - 12% SLOPES  
 LOW EROSION POTENTIAL  
 K = 0.15

HADLEY VERY FINE SANDY LOAM  
 FREQUENTLY FLOODED  
 0% - 3% SLOPES  
 LOW EROSION POTENTIAL  
 K = 0.32



70° 0' 0" (TYP)

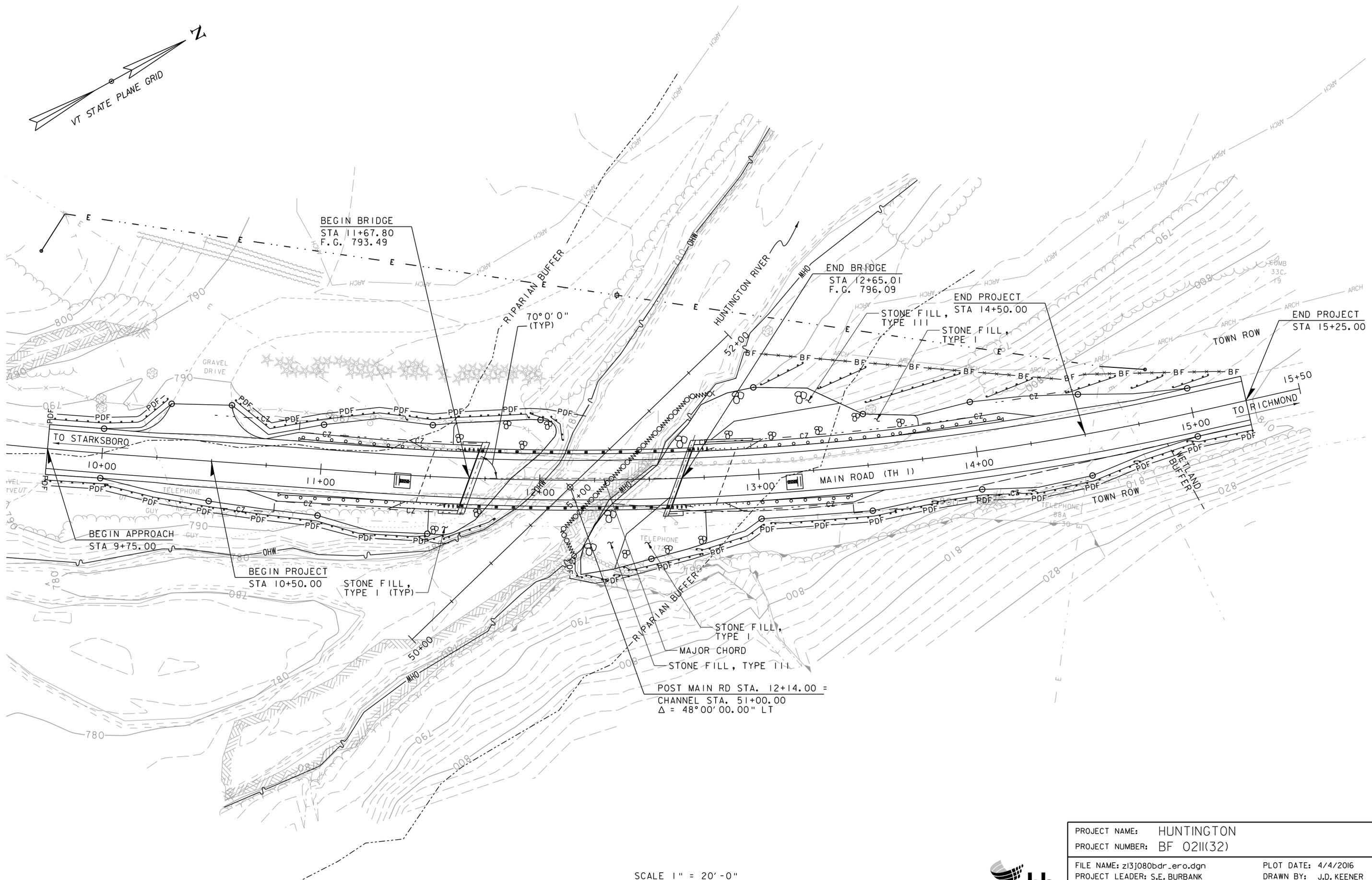
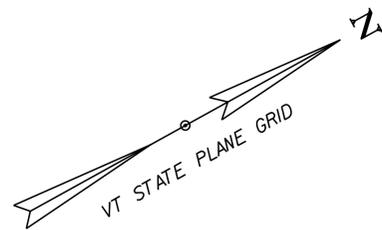
CABOT SILT LOAM  
 3% - 25% SLOPES  
 HIGH EROSION POTENTIAL  
 K = 0.49

PERU EXTREMELY STONY LOAM  
 20% - 60% SLOPES  
 MODERATE EROSION POTENTIAL  
 K = 0.28

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



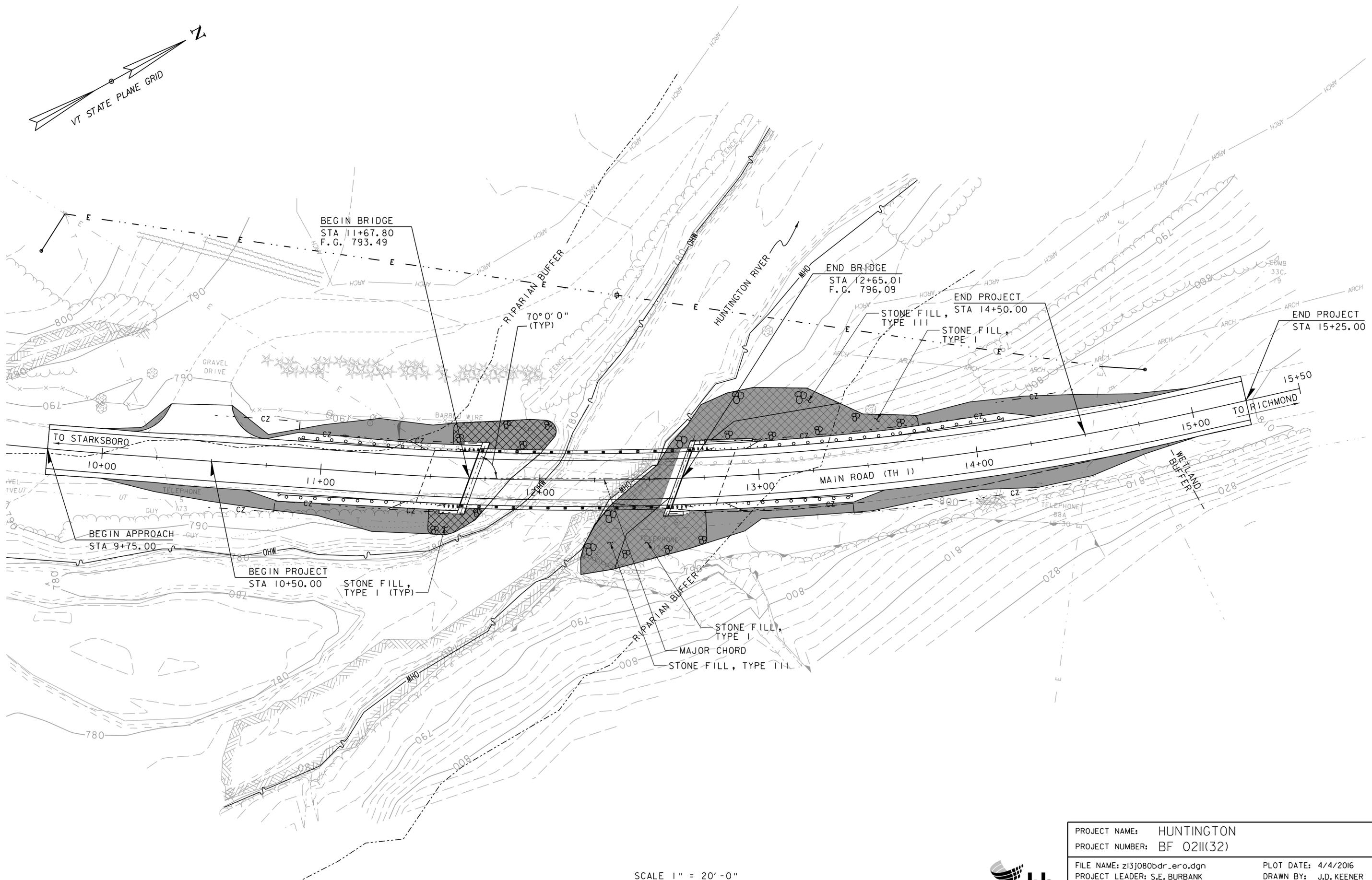
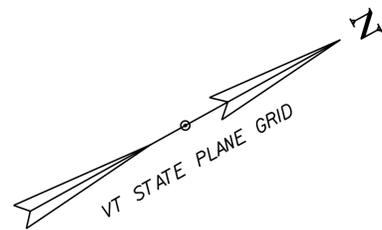
PROJECT NAME: HUNTINGTON	
PROJECT NUMBER: BF 0211(32)	
FILE NAME: z13j080bdr_ero.dgn	PLOT DATE: 4/4/2016
PROJECT LEADER: S.E. BURBANK	DRAWN BY: J.D. KEENER
DESIGNED BY: J.D. KEENER	CHECKED BY: E.F. LAWES
EPSC EXISTING SITE PLAN	SHEET 57 OF 61



PROJECT NAME: HUNTINGTON	
PROJECT NUMBER: BF 0211(32)	
FILE NAME: z13j080bdr_ero.dgn	PLOT DATE: 4/4/2016
PROJECT LEADER: S.E. BURBANK	DRAWN BY: J.D. KEENER
DESIGNED BY: J.D. KEENER	CHECKED BY: E.F. LAWES
EPSC CONSTRUCTION SITE PLAN	SHEET 58 OF 61



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



BEGIN BRIDGE  
 STA 11+67.80  
 F.G. 793.49

END BRIDGE  
 STA 12+65.01  
 F.G. 796.09

END PROJECT  
 STA 14+50.00

END PROJECT  
 STA 15+25.00

BEGIN APPROACH  
 STA 9+75.00

BEGIN PROJECT  
 STA 10+50.00

STONE FILL,  
 TYPE I (TYP)

STONE FILL,  
 TYPE III  
 STA 14+50.00

STONE FILL,  
 TYPE I

STONE FILL,  
 TYPE I

STONE FILL,  
 TYPE III

70° 0' 0" (TYP)

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



PROJECT NAME: HUNTINGTON  
 PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080bdr_ero.dgn  
 PROJECT LEADER: S.E. BURBANK  
 DESIGNED BY: J.D. KEENER  
 EPSC FINAL SITE PLAN

PLOT DATE: 4/4/2016  
 DRAWN BY: J.D. KEENER  
 CHECKED BY: E.F. LAWES  
 SHEET 59 OF 61

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

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

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

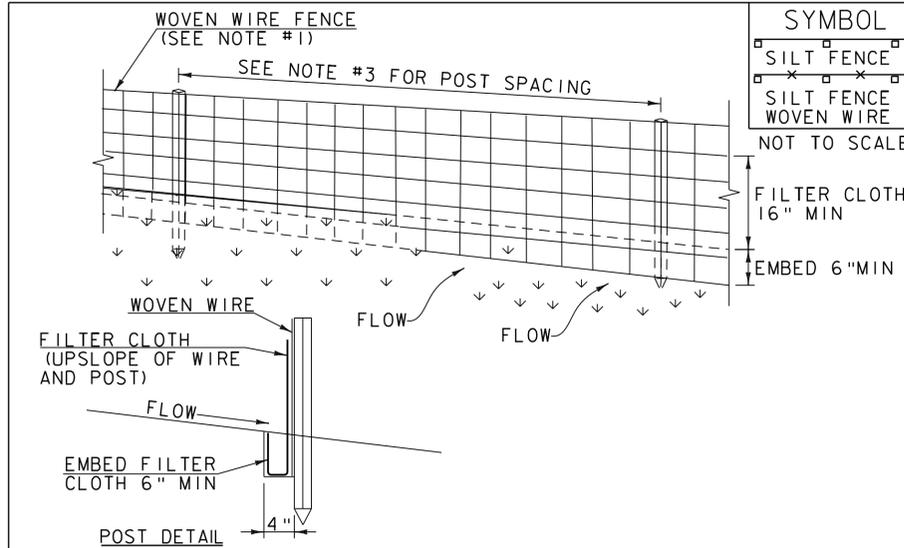
**CONSTRUCTION GUIDANCE**

- RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
- URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
- ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
- FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
- 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.
- TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
- 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
- TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

**TURF ESTABLISHMENT**

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



**CONSTRUCTION SPECIFICATIONS**

- 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.
- FILTER CLOTH SHALL BE EITHER FILTER X, MIRAF1100X, STABILINKA T140N OR APPROVED EQUIVALENT.
- 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'.
- 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.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

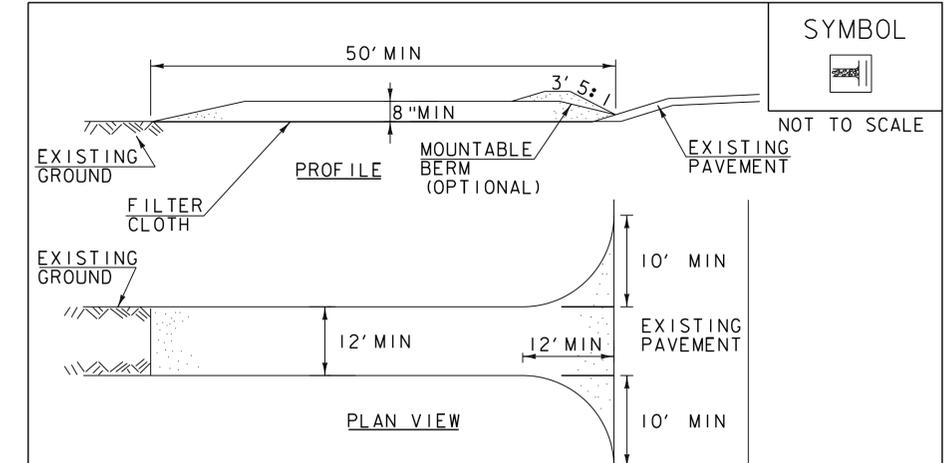
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**SILT FENCE**

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

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

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



**CONSTRUCTION SPECIFICATIONS**

- STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
- THICKNESS- NOT LESS THAN 8".
- WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
- GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
- 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.
- 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.
- WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- 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.

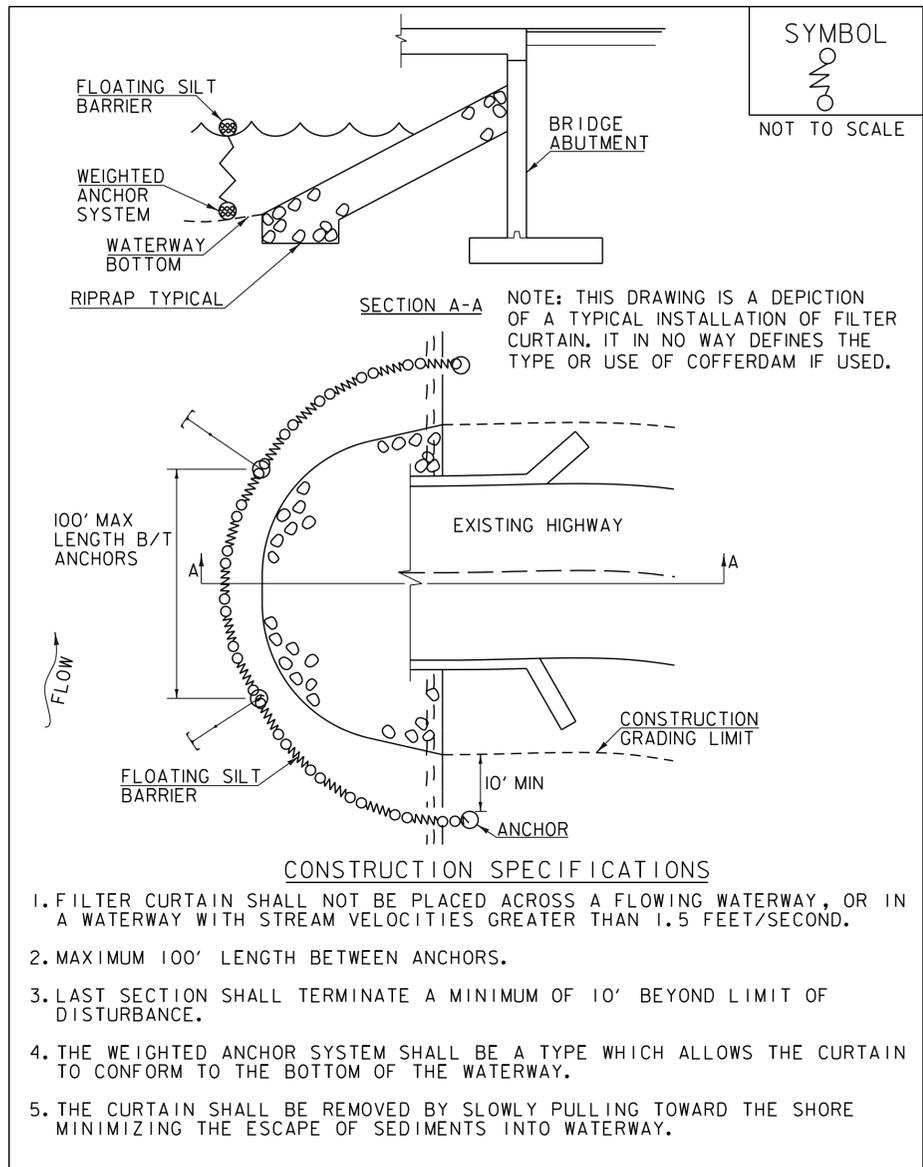
REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: HUNTINGTON  
PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080details_ero.dgn  
PROJECT LEADER: S.E. BURBANK  
DESIGNED BY: VTRANS  
EPSC DETAILS (1 OF 2)

PLOT DATE: 4/4/2016  
DRAWN BY: E.F. LAWES  
CHECKED BY: S.E. BURBANK  
SHEET 60 OF 61

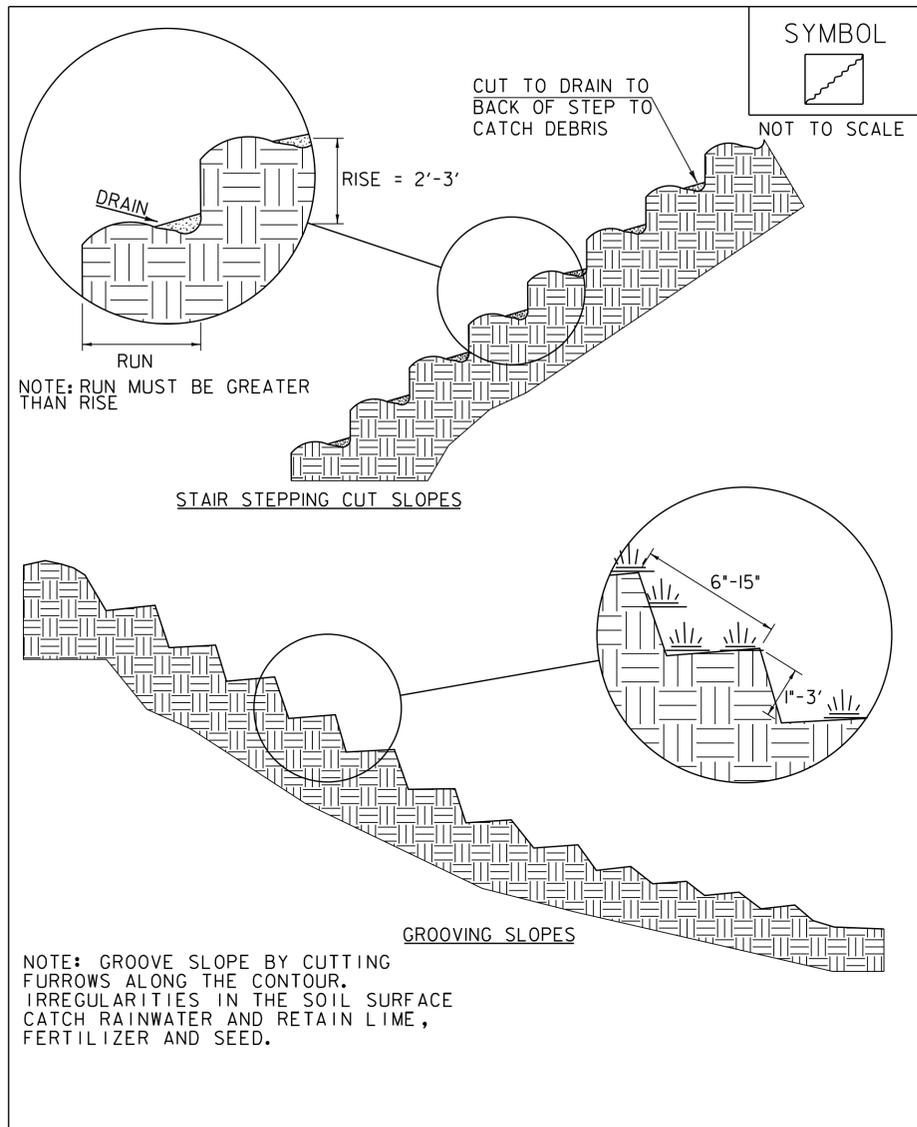




FILTER CURTAIN

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.6).



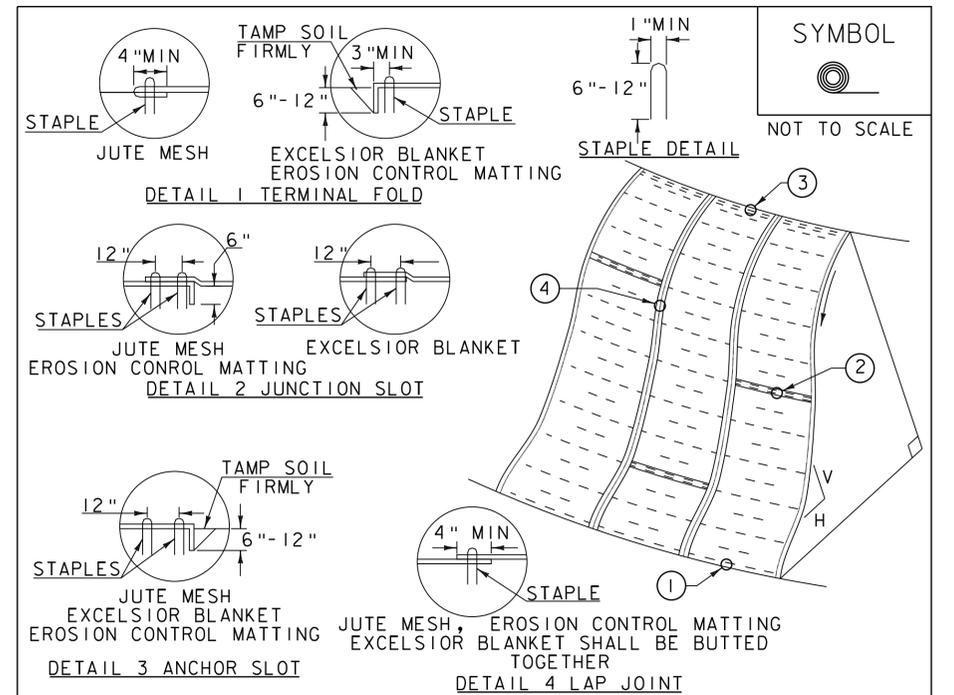
SURFACE ROUGHENING

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

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

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF



ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

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

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



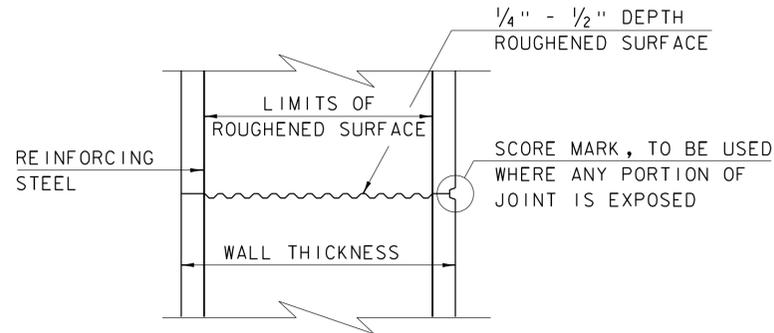
PROJECT NAME: HUNTINGTON  
PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080details_ero.dgn  
PROJECT LEADER: S.E. BURBANK  
DESIGNED BY: VTRANS  
EPSC DETAILS (2 of 2)

PLOT DATE: 4/4/2016  
DRAWN BY: E.F. LAWES  
CHECKED BY: S.E. BURBANK  
SHEET 61 OF 61

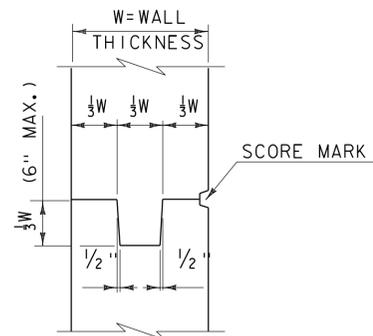
**CONCRETE GENERAL NOTES**

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

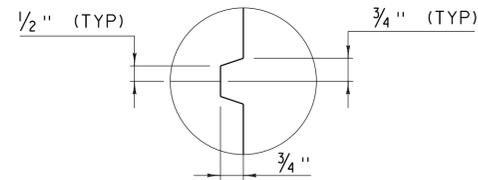


**TYPICAL HORIZONTAL CONSTRUCTION JOINT**  
(NOT TO SCALE)

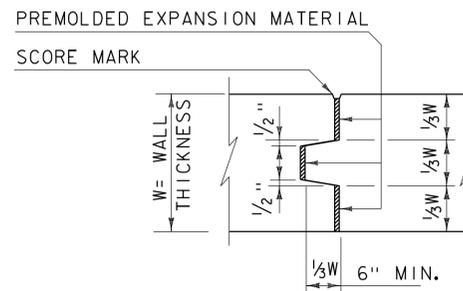
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



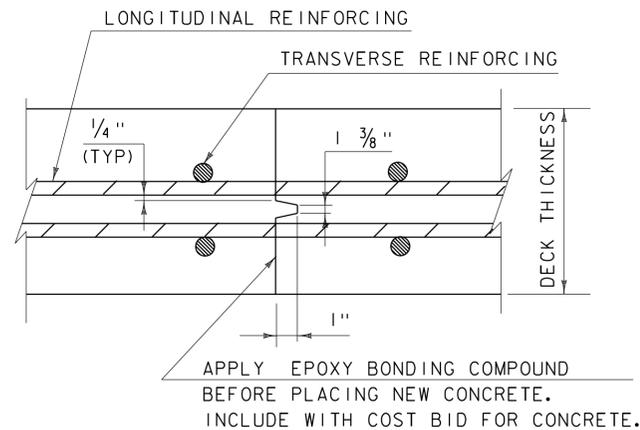
**TYPICAL CONCRETE CONSTRUCTION JOINT**  
(NOT TO SCALE)



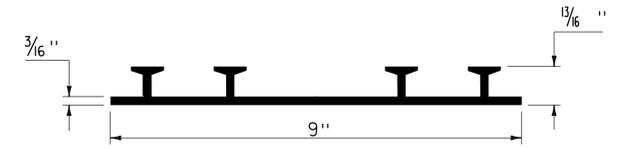
**SCORE MARK DETAIL**  
(NOT TO SCALE)



**TYPICAL CONCRETE EXPANSION JOINT**  
(NOT TO SCALE)



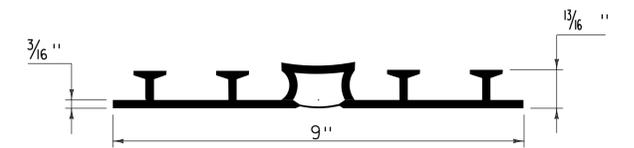
**TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS**  
(NOT TO SCALE)



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

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

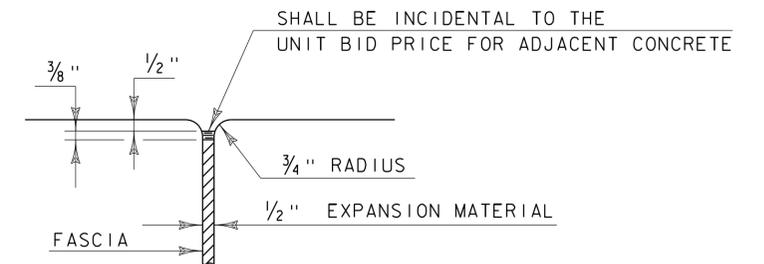
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



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

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

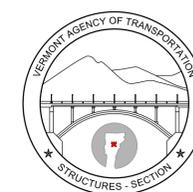
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



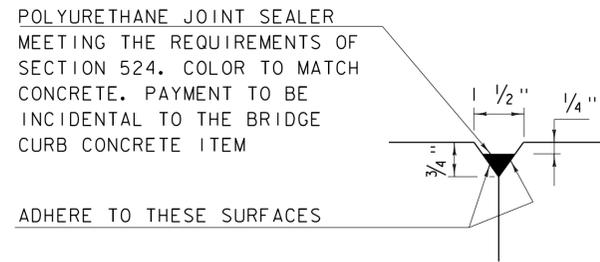
**JOINT BETWEEN FASCIA AND WINGWALL**  
(NOT TO SCALE)

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

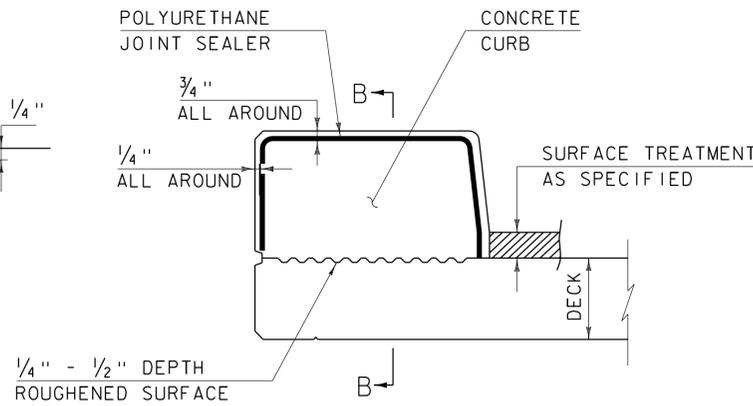
**CONCRETE  
DETAILS AND NOTES**



**STRUCTURES  
DETAIL  
SD-501.00**

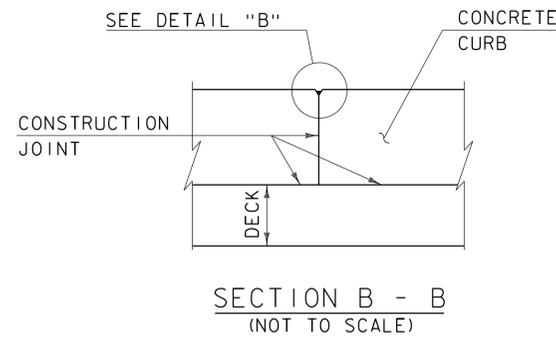


DETAIL "B"  
(NOT TO SCALE)

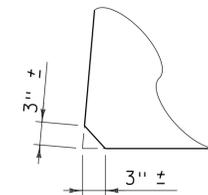


CONCRETE CURB JOINT SECTION  
(NOT TO SCALE)

1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION



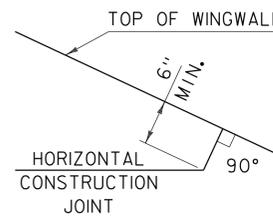
SECTION B - B  
(NOT TO SCALE)



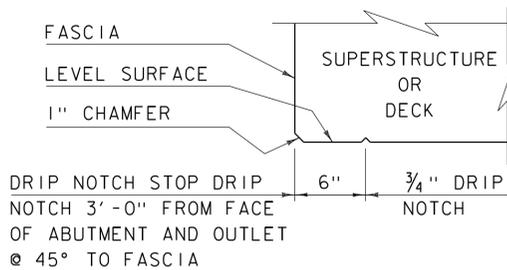
ACUTE ANGLE  
CLIP DETAIL  
(NOT TO SCALE)

CONCRETE CURB JOINT NOTES

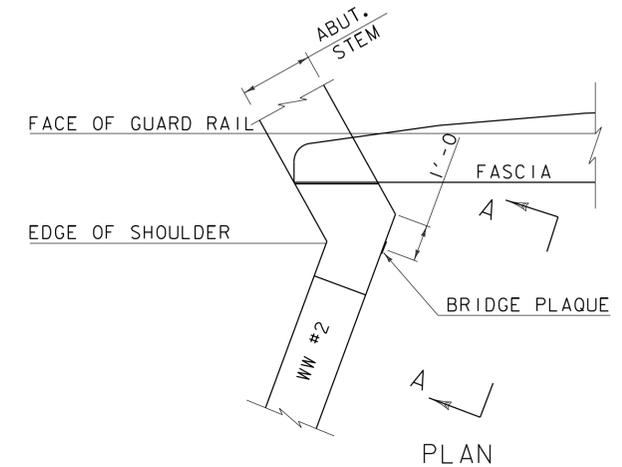
1. CONCRETE CURBS MAY BE PLACED IN ONE CONTINUOUS OPERATION IF AN APPROVED SHRINKAGE REDUCING ADMIXTURE LISTED IN THE SPECIAL PROVISIONS IS USED WITH THE CONCRETE MIX DESIGN. PAYMENT FOR THE SHRINKAGE REDUCING ADMIXTURE WILL BE INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM.
2. IF THE CONTRACTOR CHOOSES 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.



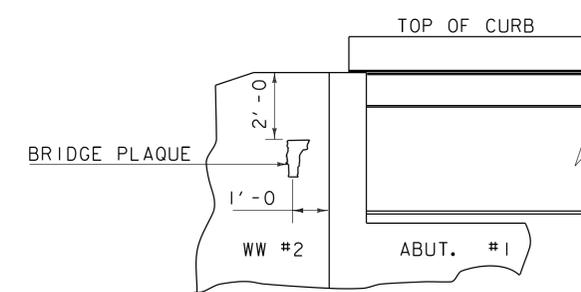
HORIZONTAL WINGWALL  
CONSTRUCTION JOINT  
(NOT TO SCALE)



DRIP NOTCH DETAIL  
(NOT TO SCALE)



PLAN



VIEW "A - A"

BRIDGE PLAQUE  
(NOT TO SCALE)

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

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

REVISIONS

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

CONCRETE  
DETAILS AND NOTES



STRUCTURES  
DETAIL  
SD-502.00

ASPHALTIC PLUG JOINT NOTES

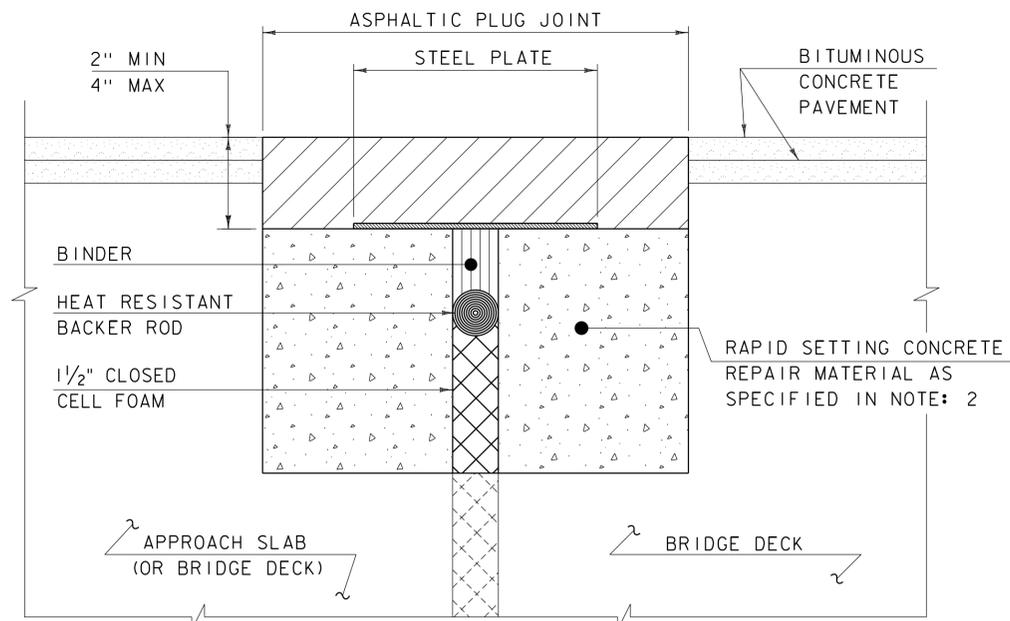
INSTALLATION:

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

WEATHER LIMITATIONS

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

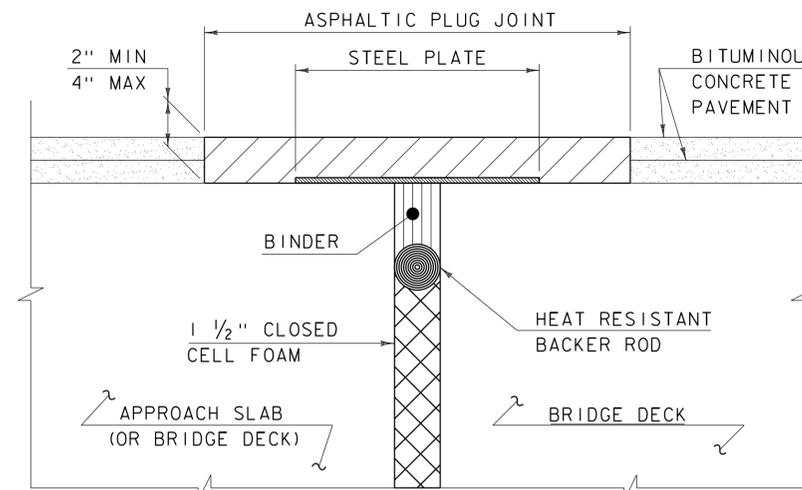
1. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.
2. THE ROAD SURFACE IS DRY.
3. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.



ASPHALTIC PLUG JOINT DETAIL - REHAB

NOTES:

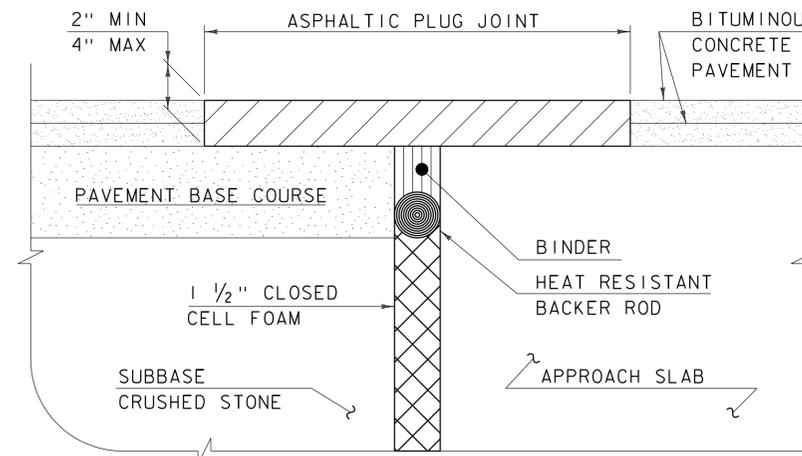
1. THE CONTRACTOR SHALL REMOVE ALL ASPHALTIC PLUG JOINT MATERIAL AND DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER. REMOVAL OF THE FIRST 4 INCHES OF MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG. ANY REMOVAL OF MATERIAL GREATER THAN 4 INCHES SHALL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



ASPHALTIC PLUG JOINT DETAIL "A" - NEW

NOTE:

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



ASPHALTIC PLUG JOINT DETAIL "B" - NEW

DETAILS ON THIS SHEET ARE NOT TO SCALE.

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

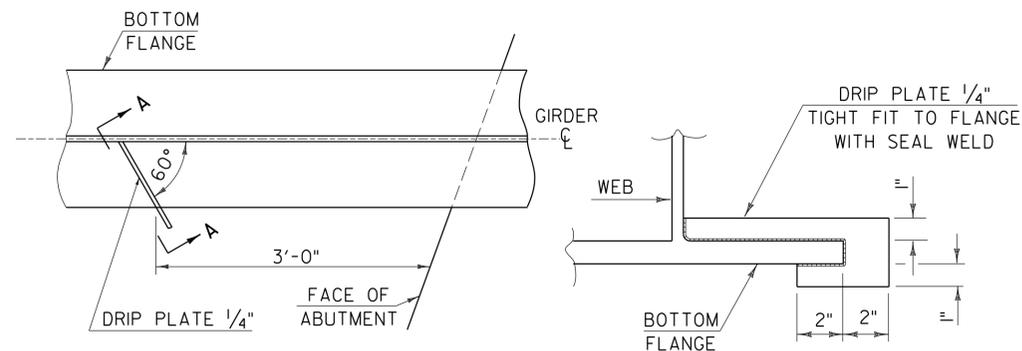
BRIDGE JOINT  
ASPHALTIC PLUG



STRUCTURES  
DETAIL  
SD-516.10

STRUCTURAL STEEL GENERAL NOTES:

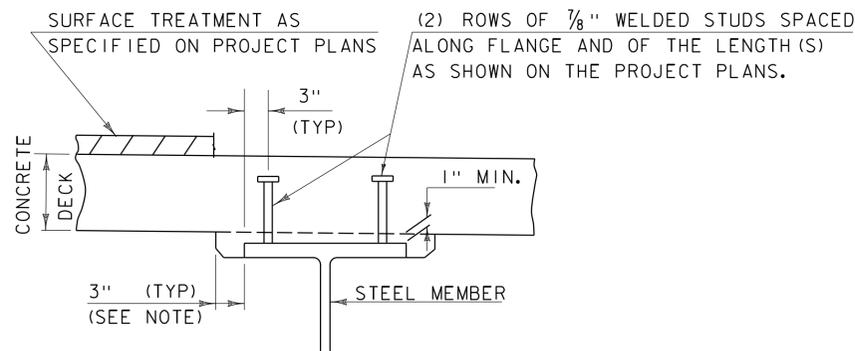
1. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH-STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SUBSECTION 506.I9, UNLESS OTHERWISE SPECIFIED.
2. ALL HOLES IN THE WEBS OF THE FASCIA GIRDERS THAT ARE NOT OTHERWISE FILLED, SHALL BE FILLED WITH EITHER BUTTON HEAD OR HEX HEAD BOLTS. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.I9.
3. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.I0.
4. ANY CONNECTIONS THAT ARE NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.
5. STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01 OF THE STANDARD SPECIFICATIONS.
6. ENDS OF GIRDERS ARE TO BE VERTICAL IN THEIR FINAL POSITION.
7. AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF THE GIRDERS SHALL BE TAKEN AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING FINISHED GRADES.



PLAN DRIP PLATE

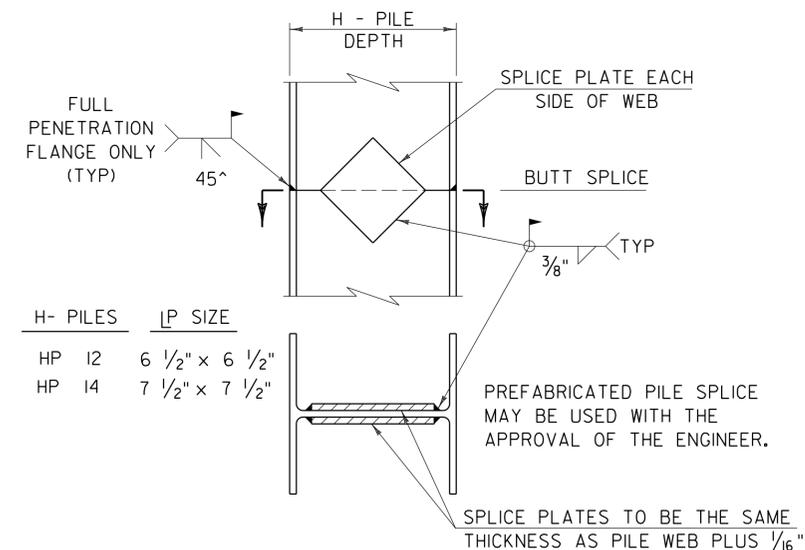
SECTION A - A

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



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

HAUNCH AND SHEAR CONNECTOR DETAIL



DETAIL OF PILE SPLICE

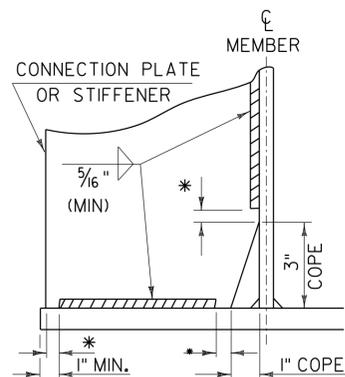
DETAILS ON THIS SHEET ARE "NOT TO SCALE" UNLESS NOTED OTHERWISE.

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

# STRUCTURAL STEEL DETAILS & NOTES

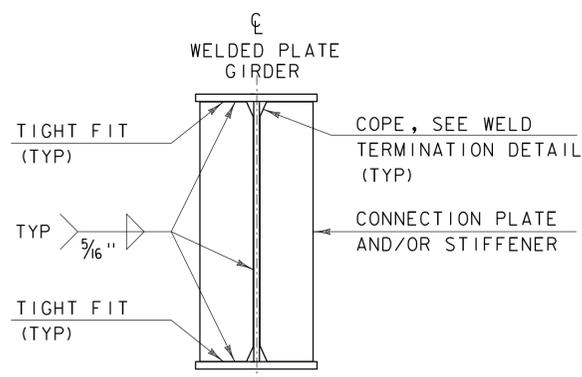


# STRUCTURES DETAIL SD-601.00



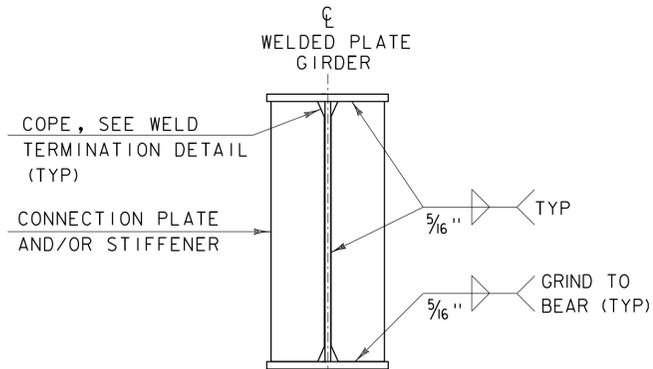
WELD TERMINATION AND COPING  
DETAILS FOR STEEL MEMBERS

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

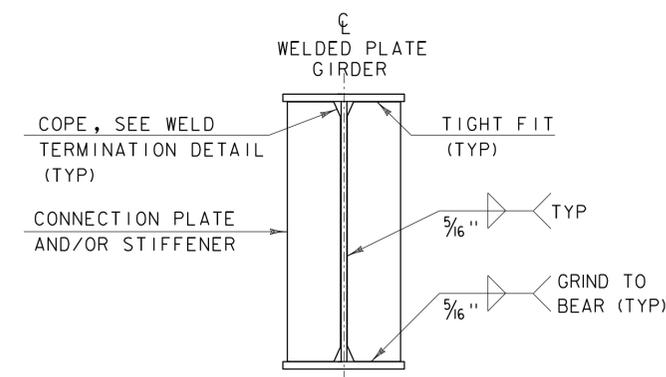


INTERMEDIATE CONNECTION PLATES  
AND/OR STIFFENERS FOR WELDED  
PLATE GIRDERS

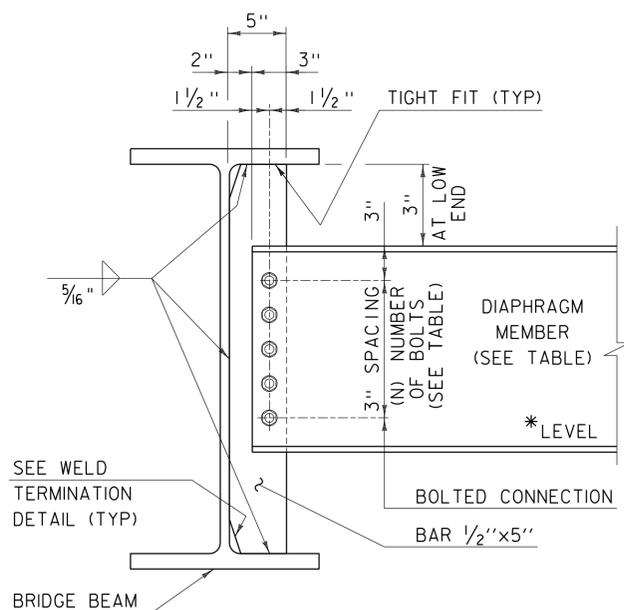
INTERMEDIATE DETAIL IS ONLY USED WHEN PLATE DOES NOT OCCUR AT AN ABUTMENT OR PIER.



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



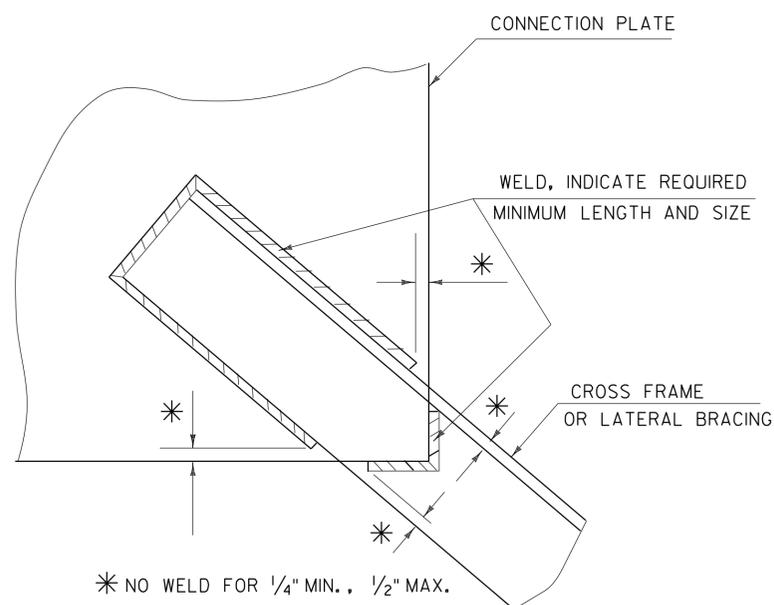
PIER BEARING STIFFENERS  
AND/OR CONNECTION PLATES  
FOR WELDED PLATE GIRDERS



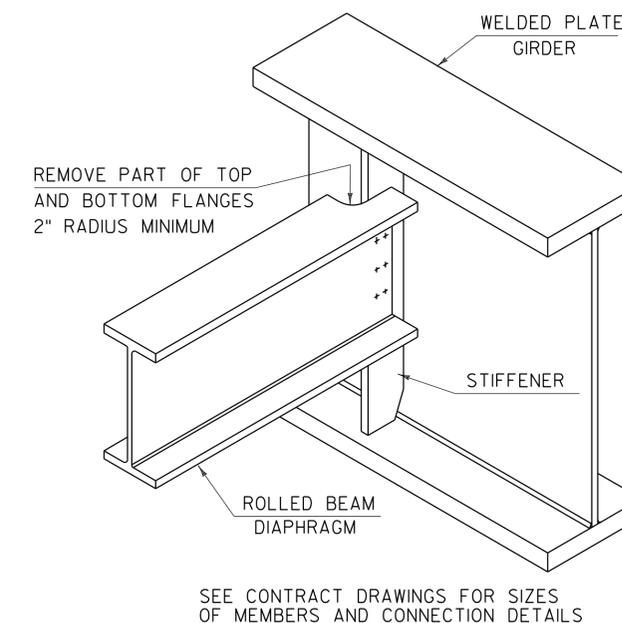
INTERMEDIATE DIAPHRAGMS  
FOR 24\"/>

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

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



WELD LOCATION DETAIL AT CROSS  
FRAMES AND LATERAL BRACING

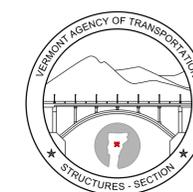


ROLLED BEAM USED AS DIAPHRAGM

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

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

# STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES



STRUCTURES  
DETAIL  
SD-602.00