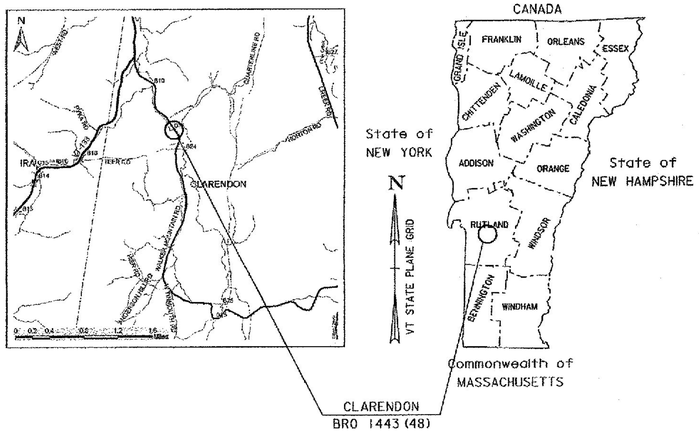
STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF CLARENDON

COUNTY OF RUTLAND

ROUTE NO : TH 3 (CLASS 2), RURAL COLLECTOR BRIDGE NO : 11

PROJECT LOCATION : 1.05 MILES SOUTH OF THE INTERSECTION OF TH 3 AND VT RT 133

PROJECT DESCRIPTION : REPLACEMENT OF BRIDGE 11 WITH A NEW PRECAST CONCRETE STRUCTURE WITH RELATED APPROACH AND CHANNEL WORK.

LENGTH OF STRUCTURE :	76.70 FEET.
LENGTH OF ROADWAY :	98.30 FEET.
LENGTH OF PROJECT :	175.00 FEET.

RECORD PLANS

CONTRACTOR: J. A. MCDONALD INC. – LYNDON CENTER, VT

RESIDENT ENGINEER: CHRISTOPHER D. WILLIAMS

CONSTRUCTION BEGAN: JUNE 27, 2016

CONSTRUCTION COMPLETE: AUGUST 18, 2016

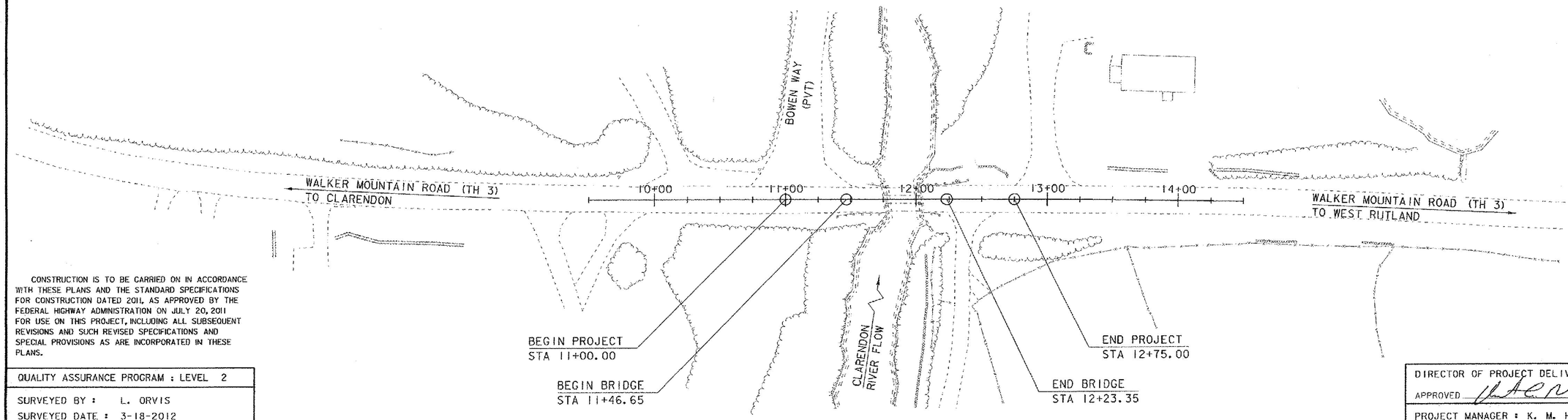
RECORD PLANS BY: CHRISTOPHER D. WILLIAMS & JESSE IVES

I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY _____ RESIDENT ENGINEER

DATE 4/6/2017

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.



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

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 : 3-18-2012

DATUM

VERTICAL NAVD 88

HORIZONTAL NAD 83 (92)

DIRECTOR OF PROJECT DELIVERY

APPROVED _____ DATE 9/10/2015

PROJECT MANAGER : K. M. HIGGINS, P.E.

PROJECT NAME : CLARENDON

PROJECT NUMBER : BRO 1443(48)

SHEET 1 OF 59 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version
LRFD

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STANDARDS LIST

D-20	HIGHWAY CROSSING FOR UNDERGROUND UTILITIES	03-03-2003
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
E-154	WARNING SIGN DETAILS	05-01-2004
E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-4	PLANK RAIL, GUIDE POSTS, MARKER POSTS	06-01-1994
J-3	MAIL BOX SUPPORT DETAILS	08-07-1995
S-352B	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	08-22-2012
S-352C	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	08-22-2012
T-1	TRAFFIC CONTROL GENERAL NOTES	08-06-2012
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-17	TRAFFIC CONTROL MISCELLANEOUS DETAILS	08-06-2012
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T-30	CONSTRUCTION SIGN DETAILS	08-06-2012
T-31	CONSTRUCTION SIGN DETAILS	08-06-2012
T-40	DELINEATORS AND MILEPOSTS	01-02-2013
T-42	BRIDGE NUMBER PLAQUE	04-09-2014
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013

STRUCTURES DETAIL SHEETS

SD-501.00	CONCRETE DETAILS AND NOTES	5/7/2010
SD-502.00	CONCRETE DETAILS AND NOTES	5/7/2010
SD-516.10	BRIDGE JOINT ASHPALTIC PLUG	5/7/2010
SD-601.00	STRUCTURAL STEEL DETAILS AND NOTES	5/7/2010
SD-602.00	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	5/7/2010

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: December 2013

DRAINAGE AREA : 25.0 sq. mi.
CHARACTER OF TERRAIN : Mountainous, mostly forested
STREAM CHARACTERISTICS : Sinuous and alluvial
NATURE OF STREAMBED : Sand and gravel

PEAK FLOW DATA

Q 2.33 =	680 cfs	Q 50 =	2135 cfs
Q 10 =	1315 cfs	Q 100 =	2750 cfs
Q 25 =	1735 cfs	Q 500 =	3850 cfs

DATE OF FLOOD OF RECORD: Unknown
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: Unknown
NATURAL STREAM VELOCITY : @ Q25 = 7.6 fps
ICE CONDITIONS : Moderate
DEBRIS: Light to moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
IS ORDINARY RISE RAPID? No
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
IF YES, DESCRIBE:

WATERSHED STORAGE: <6%
HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single span concrete T-beam
YEAR BUILT: 1927
CLEAR SPAN(NORMAL TO STREAM): 26'
VERTICAL CLEARANCE ABOVE STREAMBED: ~9'
WATERWAY OF FULL OPENING: 190 sq. ft.
DISPOSITION OF STRUCTURE: Remove and replace
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings

WATER SURFACE ELEVATIONS AT:

Q2.33 =	641.1'	VELOCITY =	8.8 fps
Q10 =	643.6'	"	11.8 fps
Q25 =	645.3'	"	7.6 fps
Q50 =	645.7'	"	7.8 fps
Q100 =	646.2'	"	8.8 fps

LONG TERM STREAMBED CHANGES: None noted except scour through bridge

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
FREQUENCY: Below Q10
RELIEF ELEVATION: 643.0'
DISCHARGE OVER ROAD @Q100: 1085 cfs

UPSTREAM STRUCTURE

TOWN: Clarendon — DISTANCE: 2330'
HIGHWAY # : TH 16 — STRUCTURE #: 24
CLEAR SPAN: 60' — CLEAR HEIGHT: 10'
YEAR BUILT: 2006 — FULL WATERWAY:
STRUCTURE TYPE: Prestress concrete slab

DOWNSTREAM STRUCTURE

TOWN: Clarendon — DISTANCE: 3540'
HIGHWAY # : TH 3 — STRUCTURE #: 10
CLEAR SPAN: 76' — CLEAR HEIGHT: 9'
YEAR BUILT: 1957 — 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	2.26	1.13					
POSTING							
OPERATING	2.95	1.46	2.36	1.57	2.08	1.86	2.0
COMMENTS:	FOR NEXT BEAM SUPERSTRUCTURE						

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	**20**	**36**	**36**	**66**	**30**	**34.5**	**38**
INVENTORY	2.40	1.19					
POSTING							
OPERATING	3.11	1.54	2.45	1.61	2.19	1.96	2.10
COMMENTS:	FOR PBU SUPERSTRUCTURE						

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span prefabricated units

CLEAR SPAN(NORMAL TO STREAM): 70'
VERTICAL CLEARANCE ABOVE STREAMBED: ~8'
WATERWAY OF FULL OPENING: 380 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	640.2'	VELOCITY=	6.3 fps
Q10 =	641.8'	"	7.0 fps
Q25 =	642.8'	"	7.6 fps
Q50 =	643.7'	"	7.9 fps
Q100 =	643.9'	"	10.1 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
FREQUENCY: Below Q25
RELIEF ELEVATION: 643.0'
DISCHARGE OVER ROAD @Q100: 65 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 642.9'
VERTICAL CLEARANCE: @ Q25 = 0.1'

SCOUR: Contraction scour = 1.5' at Q500

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

		DEPTH OR ELEVATION:
AVERAGE DAILY FLOW:	50 cfs	
ORDINARY LOW WATER:	25 cfs	~0.5'
ORDINARY HIGH WATER:	300 cfs	~2.0'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: None required. Detour will be used.
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:	0.0 INCH
3. DESIGN SPAN	L:	74.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	1.63 INCH
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f_y:	270 KSI
6. PRESTRESSED CONCRETE STRENGTH	f'_c:	10.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	8.0 KSI
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f'_c:	---
9. CONCRETE, HIGH PERFORMANCE CLASS A	f'_c:	4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B	f'_c:	---
11. CONCRETE, CLASS C	f'_c:	---
12. REINFORCING STEEL	f_y:	60 KSI
13. STRUCTURAL STEEL AASHTO M270 (GALVANIZED OR METALLIZED)	f_y:	50 KSI
14. NOMINAL BEARING RESISTANCE OF SOIL	q_n:	4.0 KSF
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
16. NOMINAL BEARING RESISTANCE OF ROCK	q_n:	10.0 KSF
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
18. PILE RESISTANCE FACTOR	ϕ:	0.65
19. LATERAL PILE DEFLECTION	Δ:	---
20. BASIC WIND SPEED	V_{3s}:	---
21. MINIMUM GROUND SNOW LOAD	p_g:	---
22. SEISMIC DATA PGA: 0.65	S_s:	---
	S_1:	---
23.		---
24.		---
25.		---
26.		---

AS BUILT "REBAR" DETAIL

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

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	
2015	700	100	54	5.3	40	20 year ESAL for flexible pavement from 2015 to 2035 : 188000
2035	750	110	54	6.1	50	40 year ESAL for flexible pavement from 2015 to 2055 : 407000
						Design Speed : 35 mph

PROJECT NAME: **CLARENDON**
PROJECT NUMBER: **BRO 1443(48)**

FILE NAME: **s12j160 PI Sheet Builder NEXT**
PROJECT LEADER: **K. HIGGINS**
DESIGNED BY: **J. GRIGAS**
PRELIMINARY INFORMATION SHEET

PLOT DATE: 3/10/2015
DRAWN BY: **T. MATTHEWS**
CHECKED BY: **G. LAROCHE**
SHEET 2 OF 59

GENERAL

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

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

3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING CONSISTENCY BETWEEN FABRICATOR'S SHOP DRAWINGS AND ENSURING THAT ALL PRECAST AND RAIL COMPONENTS FIT TOGETHER.

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

5. NO ADJUSTMENTS TO THE BITUMINOUS WEARING SURFACE ON THE BRIDGE SHALL BE MADE TO ACCOUNT FOR THE DIFFERENCE BETWEEN BEAM CAMBER AND THE THEORETICAL ROADWAY PROFILE. THE WEARING SURFACE SHALL BE SHIMMED TRANSVERSELY AS NECESSARY TO ACCOUNT FOR POTENTIAL DIFFERENTIAL CAMBER OF THE ADJACENT BEAMS.

6. NO CAST IN PLACE CONCRETE SUBSTITUTIONS WILL BE PERMITTED FOR PRECAST CONCRETE.

7. THE REMOVAL OF EXISTING STRUCTURE WILL BE PAID FOR UNDER ITEM 529.15, "REMOVAL OF STRUCTURE". THIS WORK SHALL INCLUDE REMOVAL OF THE ENTIRE SUPERSTRUCTURE AND ANY PORTIONS OF THE EXISTING ABUTMENTS THAT FALL OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION.

TRAFFIC CONTROL

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF A SITE SPECIFIC TRAFFIC CONTROL PLAN FOR ALL STAGES OF CONSTRUCTION. THE PLAN SHALL CLEARLY DETAIL HOW TRAFFIC WILL BE MAINTAINED. THE PLAN SHALL SPECIFY ALL CONSTRUCTION ACTIVITES REQUIRING ALTERNATING ONE WAY TRAFFIC, RELATE THOSE ACTIVITIES TO THE CONSTRUCTION SCHEDULE, AND SHOW APPROPRIATE TEMPORARY TRAFFIC CONTROL. THE CONTRACTOR SHALL SUBMIT DETAILED TRAFFIC CONTROL PLANS TO THE ENGINEER FOR APPROVAL PER SUBSECTION 105.03. ALL COSTS WILL BE INCLUDED IN ITEM 900.645 "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".

9. ALL ITEMS REQUIRED TO IMPLEMENT THE CONTRACTOR'S TRAFFIC CONTROL PLAN WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED INCIDENTAL TO THE BID PRICE FOR ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".

10. INSTALLATION OF TEMPRORARY TRAFFIC CONTROL SIGNS SHALL NOT BLOCK ANY EXISTING TRAFFIC CONTROL SIGN ASSEMBLIES. THE CONTRATOR SHALL TRY TO MAINTAIN AT LEAST 200 FEET BETWEEN SIGN ASSEMBLIES.

11. TH3 IN PROXIMITY OF THE PROJECT WILL BE CLOSED DURING THE BRIDGE CLOSURE PERIOD. IF THE TOWN ELECTS TO SIGN A LOCAL DETOUR, THEN NO SIGNS WILL BE PERMITTED IN A STATE HIGHWAY RIGHT OF WAY. ANY DETOUR SIGNED IS THE SOLE RESPONSIBILITY OF THE TOWN OF CLARENDON.

EARTHWORK

12. THE "STONE FILL, TYPE III" AND "SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL) (TYPE I)" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW BEAMS ARE SET.

13. THE GRAVEL DRIVES OFF OF WING WALLS 3 AND 4 SHALL BE PLACED AND GRADED TO THE SATISFACTION OF THE PROPERTY OWNER. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 401.10 "AGGREGATE SURFACE COURSE".

14. 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 ROAD BED SEPARATOR" SHALL BE PLACED BETWEEN THE SUBGRADE AND SUBBASE MATERIAL. ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING THE GEOTEXTILE WILL BE INCIDENTAL TO 203.31 "SAND BORROW".

CONCRETE

15. ALL LIFTING POINTS IN THE SUPERSTRUCTURE 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.

16. ALL RECESSED LIFTING POINTS AND BLOCKOUTS SHALL BE FILLED WITH A TYPE IV MORTAR PER SUBSECTION 707.03. PAYMENT WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.

17. THE METHOD OF FORMING FOR SUBSEQUENT POURS AFTER PLACING PRECAST/PRESTRESSED SUPERSTRUCTURE UNITS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR IS ENCOURAGED TO WORK WITH THE FABRICATOR IF ADDITIONAL SUPPORTS ARE REQUIRED. IN NO CASE SHALL THE CONTRACTOR ATTACH ADDITIONAL FORM OR SCREED SUPPORTS BY DRILLING OR SIMILAR MEANS INTO ANY PRECAST/PRESTRESSED SUPERSTRUCTURE UNIT.

18. ALL FORM SUPPORTS AND FORM TIES THAT ARE TO REMAIN PERMANENTLY IN THE CONCRETE ABOVE THE BRIDGE SEAT SHALL BE GALVANIZED AND CONFORM TO SECTION 726 OF THE STANDARD SPECIFICATIONS.

19. BRIDGE RAIL SHALL BE CONCRETE, HIGH PERFORMANCE CLASS A AND WILL BE PAID UNDER ITEM 525.45, "BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION". THE EFFECTIVE CURE TIME OF THE BRIDGE RAIL MAY BE REDUCED TO A MINIMUM OF (7) SEVEN DAYS PROVIDED THAT THE CONCRETE HAS REACHED 85% OF THE COMPRESSIVE STRENGTH. THE BRIDGE RAIL SHALL MEET ALL OTHER SPECIFICATIONS OF SECTION 501 OF THE STANDARD SPECIFICATIONS.

20. THE BRIDGE RAIL CONCRETE SHALL NOT BE SUBSTITUTED FOR HIGH PERFORMANCE CONCRETE, RAPID SET.

21. BRIDGE RAIL SHALL NOT BE POURED UNTIL THE CONCRETE IN THE LONGITUDINAL CLOSURE POUR BETWEEN THE BEAMS HAS REACHED A MINIMUM STRENGTH OF 4,000 PSI.

22. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.

23. ALL EXPOSED EDGES SHALL HAVE A 1"X1" CHAMFER UNLESS OTHERWISE NOTED.

REINFORCING STEEL

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

25. 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 PRICE BID FOR THE APPROPRIATE PRECAST ITEM.

26. ALL REINFORCING STEEL IN THE NEXT BEAMS, PREFABRICATED BRIDGE UNITS, AND APPROACH SLABS SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL II" AND WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE PRECAST ITEM.

27. ALL REINFORCING STEEL IN BRIDGE RAIL SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL II" AND WILL BE PAID UNDER ITEM 525.45," BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION".

28. BARS LABELED N7, N8, AND N9 IN THE PBU DETAILS 2 SHEET SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL II" AND WILL BE PAID UNDER 507.12 "REINFORCING STEEL, LEVEL II (FPQ)" FOR THE APPROPRIATE PBU ALTERNATE.

29. ALL REINFORCING STEEL IN THE CLOSURE POURS FOR THE ABUTMENT, APPROACH SLABS, AND SUPERSTRUCTURE SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL II" AND WILL BE PAID UNDER ITEM 507.12 REINFORCING STEEL, LEVEL II (FPQ)" FOR THE APPROPRIATE SUPERSTRUCTURE ALTERNATE.

30. ALL ABUTMENT REINFORCING STEEL LOCATED OR EXTENDING ABOVE THE BRIDGE SEAT SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL II" AND WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE ABUTMENT OPTION.

31. ALL ABUTMENT REINFORCING STEEL LOCATED COMPLETELY BELOW THE BRIDGE SEAT SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL I" AND WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE ABUTMENT OPTION.

32. CUTTING AND REPAIRING DAMAGED AREAS OF COATED REINFORCING STEEL SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 507.04.

33. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

ALONG BACK FACES OF WALLS AGAINST EARTH	2 INCH
ALONG TOP SURFACE OF DECK SLAB:	2 ½ INCH
ALONG BOTTOM SURFACE OF NEXT BEAM:	1¾ INCH
ALONG BOTTOM SURFACE OF PBU:	1 ½ INCH
ELSEWHERE UNLESS OTHERWISE INDICATED:	3 INCH

PRECAST ABUTMENTS AND POST-TENSIONING

34. IF A VERTICAL CONSTRUCTION JOINT IS REQUIRED BY THE CONTRACTOR FOR SHIPMENT OF THE ABUTMENTS, THE SECTIONS SHALL BE KEYED AND MATCH CAST. A JOINT DETAIL SHALL BE SHOWN ON THE FABRICATION DRAWINGS. NO LESS THAN TWO PILES SHALL SUPPORT EACH PRECAST ABUTMENT SECTION.

35. EPOXY BONDING COMPOUND SHALL BE APPLIED TO ALL VERTICAL MATCH CAST CONSTRUCTION JOINTS. SEE AGENCY WEBSITE FOR LIST OF APPROVED EPOXY BONDING COMPOUNDS. PAYMENT FOR EPOXY WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE PRECAST ITEM.

36. ITEM 524.21, JOINT SEALER, POLYURETHANE, SHALL BE APPLIED TO THE OUTSIDE FAR FACE OF ALL VERTICAL MATCH CAST CONSTRUCTION JOINTS.

37. POST-TENSIONING AND ASSOCIATED ITEMS ARE ONLY REQUIRED IF THE PILE CAP IS CONSTRUCTED OF MORE THAN ONE UNIT. POST-TENSIONING STRANDS SHALL BE COVERED WITH SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF THE STRAND, EXCEPT AT ANCHORAGE LOCATIONS. ANY POST-TENSIONING STRANDS AND CONDUITS SHALL ADHERE TO THE REQUIREMENTS OF SECTION 510 – PRESTRESSED CONCRETE. GALVANIZED ANCHOR ASSEMBLIES, CONDUIT, POLYPROPYLENE SHEATH, AND POST-TENSIONING STRANDS WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE PRECAST ITEM.

38. POST-TENSIONING SHALL BE COMPLETED PRIOR TO POURING THE PILE CAVITY CLOSURE POUR.

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

40. DESIGN VALUES
    a. CONCRETE COMPRESSIVE STRENGTH: f'c = 5,000 PSI.
    b. POST-TENSIONING STRANDS: 0.5 INCH DIAMETER, 270 KSI, LOW RELAXATION 7-WIRE STRANDS.
    c. ASSUMED MODULUS OF ELASTICITY IS 28,500 KSI.
    d. THERE SHALL BE 2 STRANDS PER CONDUIT.
    e. THE JACKING FORCE PER STRAND = 32 KIPS

41. THE CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF SUBSECTION 711.01 AND SHALL BE GALVANIZED PER SUBSECTION 726.08 OF THE STANDARD SPECIFICATIONS. ALL COSTS ASSOCIATED WITH PLACING THE CORRUGATED STEEL PIPE, WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE PRECAST ABUTMENT ITEM.

42. THE CONCRETE FOR THE ABUTMENT PILE CAVITIES WILL BE PAID FOR UNDER ITEM" 900.608 SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)" AND WILL BE PAID UNDER ITEM 900.608 "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)" FOR THE APPROPRIATE SUPERSTRUCTURE ALTERNATE. SEE SPECIAL PROVISIONS FOR REQUIREMENTS.

43. THE BACKFILL BEHIND THE ABUTMENTS SHALL BE LIMITED TO A HEIGHT OF 3'-0" BELOW THE BRIDGE SEAT AND NO CRANES SHALL BE CLOSER THAN 1'-0" TO THE ABUTMENT DURING THE ERECTION OF THE SUPERSTRUCTURE.

44. LOADING OF THE ABUTMENT PILE CAVITIES AND END CLOSURE POURS SHALL CONFORM TO SUBSECTION 501.18; HOWEVER, THE COMPRESSIVE STRENGTH SHALL BE TAKEN AS THE 28 DAY COMPRESSIVE STRENGTH SPECIFIED IN THE PROJECT SPECIAL PROVISIONS. SUBSECTION 501.18(c) SHALL NOT APPLY TO THE VERTICAL CONSTRUCTION JOINT BETWEEN PRECAST ELEMENTS.

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)
FILE NAME: s12j160gen.dgn	PLOT DATE: 08-OCT-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. GRIGAS
DESIGNED BY: J. GRIGAS	CHECKED BY: C. LAROCHE
PROJECT NOTES 1	SHEET 3 OF 59

NEXT D BEAMS

45. NEXT D BEAMS ARE A NON-PROPRIETARY SHAPE DEVELOPED BY PCI NORTHEAST (PCINE). STANDARDIZED SECTION PROPERTIES AND DETAILS MAY BE FOUND AT http://www.pcine.org.

46. DESIGN VALUES
    a. CONCRETE COMPRESSIVE STRENGTH: f'c = 10,000 PSI.
    b. CONCRETE COMPRESSIVE STRENGTH AT RELEASE: f'ci = 8,000 PSI
    c. PRESTRESSING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW-RELAXATION 7-WIRE STRANDS
    d. ASSUMED MODULUS OF ELASTICITY = 28,500 KSI.
    e. PRESTRESSING STRANDS SHALL EACH BE PULLED TO HAVE A NET TENSION OF 44.0 KIPS AFTER ACCOUNTING FOR CHUCK SLIPPAGE.
    f. SERVICE LOADS

MEMBER MOMENT	1125.1 K-FT
SUPERIMPOSED DEAD LOAD MOMENT	514.8 K-FT
LIVE LOAD AND IMPACT MOMENT	1837.2 K-FT
DEAD LOAD REACTION	89.1 KIPS
LIVE LOAD AND IMPACT REACTION	107.4 KIPS
TOTAL REACTION	136 KIPS
CAMBER AT RELEASE	1 5/8 INCHES
FINAL CAMBER	2 1/4 INCHES

47. THE FABRICATOR SHALL PROVIDE A CALCULATED CAMBER ESTIMATE FOR THE NEXT D BEAMS AT RELEASE, ERECTION, AND FINAL CONDITIONS PRIOR TO ANY SUPERIMPOSED LOADING OF THE BEAM. MINOR ADJUSTMENTS TO THE BRIDGE SEAT ELEVATIONS MAY BE REQUIRED DURING THE FABRICATION REVIEW PROCESS BASED OFF OF THESE VALUES. ALL WORK ASSOCIATED WITH PROVIDING AN ESTIMATED CAMBER ALONG WITH ANY ADJUSTMENTS TO THE BRIDGE SEAT ELEVATIONS WILL CONSIDERED INCIDENTAL TO ITEM 900.640 "SPECIAL PROVISION (PRESTRESSED NEXT D BEAMS)(NEXT 36D)" AND THE APPROPRIATE ABUTMENT PAY ITEM.

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

49. THE FABRICATOR MAY ALTER THE DESIGN AS DETAILED IN THE PLANS TO ACCOMMODATE THEIR SPECIFIC OPERATION. THIS ALTERATION SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN STATE OF VERMONT TO MEET SPECIFIED CRITERIA AND SHALL BE APPROVED BY THE PROJECT MANAGER.

PREFABRICATED BRIDGE UNITS (PBU)

50. PREFABRICATED BRIDGE UNITS ARE A NON-PROPRIETARY PRODUCT.

51. STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01

52. ANY HOLES IN THE WEBS OF THE FASCIA BEAMS NOT OTHERWISE FILLED SHALL BE FILLED WITH BUTTON HEAD BOLTS. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19.

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

54. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SECTION 506 UNLESS OTHERWISE NOTED.

55. FLEMING BRACKETS OR SIMILAR FALSE WORK SHALL BE PLACED AT A MAXIMUM SPACING OF 4 FEET. THE BRACKETS SHALL BEAR NEAR THE BOTTOM FLANGE AND IN NO CASE SHALL THEY BEAR ABOVE THE BOTTOM QUARTER WEB.

56. AFTER THE SUPERSTRUCTURE STEEL HAS BEEN ERECTED AT THE DECK CASTING SITE, AND BEFORE ANY FORMWORK OR OTHER LOADS ARE ADDED TO THE GIRDERS, BEAM PROFILES SHALL BE TAKEN AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING DECK FORMWORK ELEVATIONS.

57. DURING THE FABRICATION OF THE PBU'S THE CONTRACTOR SHALL LOAD THE UNITS EVENLY TO MINIMIZE DIFFERENTIAL CAMBER BETWEEN UNITS.

58. BEAM WEBS AND CROSS FRAMES SHALL BE PLUMB IN FINAL POSITION.

59. PBU DECKS SHALL MEET THE REQUIREMENTS OF "CONCRETE, HIGH PERFORMANCE CLASS A" AND WILL BE PAID FOR UNDER BID ITEM "900.640 SPECIAL PROVISION (PREFABRICATED BRIDGE UNIT SUPERSTRUCTURE)(FPQ)".

60. PBU STRUCTURAL STEEL SHALL MEET THE REQUIREMENTS OF SECTION 506 OF THE STANDARD SPECIFICATIONS.

61. ALL CORNERS AND EDGES OF THE STRUCTURAL STEEL SHALL BE GROUND TO A 1/16 INCH RADIUS PRIOR TO GALVANIZING OR METALLIZING.

62. ALL WELDING TO THE STRUCTURAL STEEL SHALL BE COMPLETED PRIOR TO GALVANIZING OR METALLIZING.

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

64. THE FABRICATOR MAY ALTER THE DESIGN AS DETAILED IN THESE PLANS TO ACCOMMODATE THEIR SPECIFIC OPERATION. THIS ALTERATION SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN STATE OF VERMONT TO MEET SPECIFIED CRITERIA AND SHALL BE APPROVED BY THE PROJECT MANAGER.

APPROACH SLAB AND SUPERSTRUCTURE LONGITUDINAL CLOSURE POURS

65. THE CONCRETE EDGES ALONG THE LONGITUDINAL CLOSURE POURS SHALL BE TREATED TO PROVIDE A ROUGHENED/ EXPOSED AGGREGATE SURFACE. THAT AMPLITUDE OF THE EXPOSED AGGREGATE SHALL BE A MINIMUM OF 1/8" AND BE COMPLETED PRIOR TO ERECTION OF THE BEAMS. THE FABRICATOR SHALL INDICATE THE METHOD USED TO ACHIEVE THIS PROFILE ON THE FABRICATION DRAWINGS AND METHOD USED TO PROTECT THE REINFORCING STEEL.

66. THE CONCRETE FOR LONGITUDINAL CLOSURE POURS SHALL BE ITEM 900.608 "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)" AND WILL BE PAID UNDER ITEM 900.608 "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)" FOR THE APPROPRIATE SUPERSTRUCTURE ALTERNATE. SEE SPECIAL PROVISIONS FOR REQUIREMENTS.

67. THE LONGITUDINAL CLOSURE POUR CONCRETE SHALL OBTAIN A STRENGTH OF 4,000 PSI PRIOR TO ANY VEHICULAR LOADING.

ABUTMENT CLOSURE/END DIAPHRAGM

68. THE CONCRETE FOR THE ABUTMENT CLOSURE POUR SHALL BE 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)" AND WILL BE PAID UNDER ITEM 900.608 "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)" FOR THE APPROPRIATE SUPERSTRUCTURE ALTERNATE. SEE SPECIAL PROVISIONS FOR REQUIREMENTS.

69. AFTER THE CONCRETE HAS BEEN PLACED AND THE FINISHING OPERATIONS CONCLUDED IT SHALL NOT BE WALKED ON OR DISTURBED IN ANY MANNER, INCLUDING THE REMOVAL OF FORMS FOR 12 HOURS.

70. THE END DIAPHRAGM CLOSURE POUR CONCRETE SHALL OBTAIN A STRENGTH OF 4,000 PSI PRIOR TO ANY VEHICULAR LOADING.

APPROACH SLABS

71. APPROACH SLAB CONCRETE STRENGTH: f'c = 5,000 PSI.

72. 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 OPTION.

73. GROUT USED TO FILL DOWEL DUCTS IN THE PRECAST APPROACH SLABS FOR DOWEL CONNECTIONS 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 CONNECTIONS WILL BE INCLUDED IN THE BID PRICE FOR THE APPROPRIATE PRECAST APPROACH SLAB OPTION.

H-PILES

74. THE PILES SHALL BE HP 12X63.

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

76. PILES SHALL BE DRIVEN TO A MINIMUM OF 18 FEET BELOW THE PILE CAP ELEVATION WITH NO EMBEDMENT INTO ROCK. IF COMPETENT BEDROCK IS ENCOUNTERED SHALLOWER THAN 18 FEET BELOW THE BOTTOM OF THE PILE CAP, PRE-EXCAVATION OF THE INTEGRAL ABUTMENT PILES IS REQUIRED WITH A MINIMUM PILE LENGTH OF 13 FEET BELOW THE PILE CAP AND A MINIMUM EMBEDMENT OF 3 FEET INTO COMPETENT BEDROCK.

77. PAYMENT FOR PRE-EXCAVATION OF PILES WILL BE PAID FOR UNDER ITEM 900.640, "SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENTS PILES, EARTH)" OR ITEM 900.640, "SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENTS PILES, ROCK)" AS APPROPRIATE.

78. PRE-EXCAVATION OF PILES WILL BE REQUIRED FOR ABUTMENT TWO. IT IS NOT ANTICIPATED THAT PRE-EXCAVATION OF PILES WILL BE REQUIRED FOR ABUTMENT ONE. THE CONTRACTOR MAY PRE-EXCAVATE THE PILE LOCATIONS FOR ABUTMENT ONE PER THE REQUIREMENTS OF ITEM 900.640, "SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENTS PILES, EARTH)" OR ITEM 900.640, "SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENTS PILES, ROCK)" AS APPROPRIATE. ALL PRE-EXCAVATION OF PILES FOR ABUTMENT ONE WILL BE INCLUDED IN THE UNIT PRICE FOR ITEM 504.10 "FURNISHING EQUIPMENT FOR DRIVING PILING."

79. THE CONTRACTOR MAY PRE-EXCAVATE AND DRIVE THE PILES IN THE 14 DAY PERIOD PRIOR TO THE BRIDGE CLOSURE PERIOD. THIS WORK SHALL BE DONE DURING DAILY LANE CLOSURES.

80. PILES THAT ARE PRE-EXCAVATED TO THE MINIMUM EMBEDMENT INTO COMPETENT BEDROCK SHALL BE SEATED ON BEDROCK IN A METHOD APPROVED BY THE ENGINEER. ALL OTHER PILES SHALL BE DRIVEN TO A NOMINAL PILE DRIVING RESISTANCE (R_{NDR}) OF 310 KIPS.

81. A MINIMUM OF TWO DYNAMIC PILE TESTS SHALL BE CONDUCTED AT ABUTMENT ONE. PAYMENT WILL BE MADE UNDER ITEM 505.45, "DYNAMIC PILE LOADING TEST". ITEM 505.45, "DYNAMIC PILE LOADING TEST" MAY BE WAIVED AT THE APPROVAL OF THE ENGINEER IF THE ABUTMENT PILES ARE PRE-EXCAVATED TO THE MINIMUM EMBEDMENT INTO COMPETENT BEDROCK.

82. ALL PRE-EXCAVATED HOLES SHALL BE A MINIMUM OF 23 INCHES IN DIAMETER. THE ENTIRE PRE-EXCAVATED HOLE SHALL BE BACKFILLED WITH SAND. SAND SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 703.03. REFER TO THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

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

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

MISCELLANEOUS

85. EPSC EXISTING CONDITIONS SHEET AND EPSC PLAN SHEET HAVE BEEN INCLUDED AS A REFERENCE FOR SUBMITTALS.

86. ITEM 404.65 "EMULSIFIED ASPHALT" IS TO BE APPLIED AT A RATE OF 0.080 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT AND ON ALL COLD PLANED SURFACES OR AS DIRECTED BY THE ENGINEER.

87. THE RELOCATION AND PLACEMENT OF THE STONEWALL OFF OF WING WALL THREE SHALL BE DONE TO THE SATISFACTION OF THE PROPERTY OWNER. PAYMENT FOR THIS WORK WILL BE INCLUDED IN THE UNIT PRICE FOR ITEM 900.645, "SPECIAL PROVISION (REMOVE AND RELOCATE EXISTING STONE WALL)"

88. ITEM 520.10, "MEMBRANE WATERPROOFING, SPRAY APPLIED" SHALL BE APPLIED TO THE BRIDGE DECK AS PER THE MANUFACTURER'S INSTRUCTIONS AND EXTEND ONTO THE APPROACH SLABS 2 FEET BEYOND THE BEGIN BRIDGE/END OF BRIDGE.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES

ROADWAY	EROSION CONTROLS	BRIDGE	FULL CE ITEMS	BRIDGE (ALTERNATE A)	BRIDGE (ALTERNATE B)	BRIDGE (ALTERNATE C)
1						
600						
		1225				
90						
25						
40						
1						
		175				
		75				
250						
350						
20						
20						
11						
1						
		1				
		240				
		2				
		15				
		45				
		200				
		45				
		15				
		155				
		1				
		12				
		1				
		1				
		1				
		1				
		1				
		1				

TOTALS

GRAND TOTAL	FINAL
1	
600	
1225	
90	
25	
40	
1	
175	
75	
250	
350	
20	
20	
11	
1	
1	
240	
2	
15	
45	
200	
45	
15	
155	
1	
12	
1	
1	
1	
1	
1	
1	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER	ROUND
LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10	
CY	COMMON EXCAVATION	203.15	
CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27	
CY	SAND BORROW	203.31	
CY	GRANULAR BORROW	203.32	
CY	TRENCH EXCAVATION OF EARTH	204.20	
CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	
CY	STRUCTURE EXCAVATION	204.25	
CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	
SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10	
CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35	
CY	AGGREGATE SURFACE COURSE	401.10	
CY	AGGREGATE SHOULDERS, IN PLACE	402.10	
CWT	EMULSIFIED ASPHALT	404.65	
LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50	
LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10	
LF	STEEL PILING, HP 12 X 63	505.155	
EACH	DYNAMIC PILE LOADING TEST	505.45	
GAL	WATER REPELLENT, SILANE	514.10	
LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10	
SY	MEMBRANE WATERPROOFING, SPRAY APPLIED	520.10	
LF	JOINT SEALER, HOT POURED	524.11	
LF	JOINT SEALER, POLYURETHANE	524.21	
LF	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	525.45	
EACH	REMOVAL OF STRUCTURE (850 SF-EST.)	529.15	
EACH	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	531.17	
	BEGIN OPTION AA		
LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #1)	540.10	
~~LS~~	~~SPECIAL PROVISION (CONTRACTOR FABRICATED PRECAST CONCRETE STRUCTURE)(ABUTMENT #1)~~	~~900.645~~	
	END OPTION AA		
	BEGIN OPTION BB		
LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #2)	540.10	
~~LS~~	~~SPECIAL PROVISION (CONTRACTOR FABRICATED PRECAST CONCRETE STRUCTURE)(ABUTMENT #2)~~	~~900.645~~	
	END OPTION BB		
	BEGIN OPTION CC		
LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB #1)	540.10	
~~LS~~	~~SPECIAL PROVISION (CONTRACTOR FABRICATED PRECAST CONCRETE STRUCTURE)(APPROACH SLAB #1)~~	~~900.645~~	
	END OPTION CC		

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
		EARTHWORK SUMMARY
		FILL AVAILABLE
600	CY	COMMON EXCAVATION (600 x 1.0)
368	CY	CHANNEL EXCAVATION (1225 x 0.3)
55	CY	STRUCTURE EXCAVATION (175 x 0.3)
1	CY	TRENCH EXCAVATION (1 x 0.9)
6	CY	ROUNDING
1030	CY	TOTAL FILL AVAILABLE
		FILL REQUIRED
0	CY	FILL (0 CY EARTH)
0	CY	FACTORED FILL (x1.15)
0	CY	ROUNDING
0	CY	TOTAL FILL REQUIRED
1030	CY	TOTAL WASTE
		SPECIAL PROVISION (BITUMINOUS CONCRETE, SMALL QUANTITY)
50	TONS	TYPE I OR TYPE IIS
135	TONS	TYPE III OR TYPE IVS
185	TONS	TOTAL

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: s12j160quantitysheet
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
QUANTITY SHEET 1

PLOT DATE: 08-OCT-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 5 OF 59

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES								TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	EROSION CONTROLS	BRIDGE	FULL CE ITEMS	BRIDGE (ALTERNATE A)	BRIDGE (ALTERNATE B)	BRIDGE (ALTERNATE C)		GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
											BEGIN OPTION DD					
		1						1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB #2)	540.10				
		1						1		~~LS~~	~~SPECIAL PROVISION (CONTRACTOR FABRICATED PRECAST CONCRETE STRUCTURE)(APPROACH SLAB #2)~~	900.645				
											END OPTION DD					
											BEGIN OPTION EE					
76								76		~~LF~~	~~18" CSP .064 (2-2/3 X 1/2)~~	601.0015				
76								76		~~LF~~	~~18" CAAP .060 (2-2/3 X 1/2)~~	601.0215				
76								76		~~LF~~	~~18" PCCSP .079 (2-2/3 X 1/2)~~	601.0416				
76								76		~~LF~~	~~18" RCP CLASS III~~	601.0815				
76								76		LF	18" CPEP	601.0915				
76								76		~~LF~~	~~18" CPPP (SL)~~	601.2815				
											END OPTION EE					
	1							1		MGAL	DUST CONTROL WITH WATER	609.10				
10								10		CY	STONE FILL, TYPE I	613.10				
		525						525		CY	STONE FILL, TYPE III	613.12				
~~1~~ 2								~~1~~ 2		EACH	RELOCATE MAILBOX, SINGLE SUPPORT	617.10				
2								2		EACH	STEEL MARKER POSTS	619.16				
2								2		EACH	REMOVING AND RESETTING PROPERTY MARKERS	619.20				
55								55		LF	BOX BEAM GUARDRAIL	621.30				
100								100		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
2								2		~~EACH~~	~~GUIDE POSTS (WOOD)~~	621.85				
40								40		LF	SLEEVES FOR UTILITIES (1 X 4")	625.10				
40								40		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
200								200		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				
650								650		~~LF~~	~~4 INCH WHITE LINE~~	646.20				
650								650		LF	4 INCH YELLOW LINE	646.21				
		650						650		SY	GEOTEXTILE UNDER STONE FILL	649.31				
	240							240		SY	GEOTEXTILE FOR SILT FENCE	649.51				
	5							5		LB	SEED	651.15				
	5							5		LB	SEED, WINTER RYE	651.17				
	25							25		LB	FERTILIZER	651.18				
	1							1		TON	AGRICULTURAL LIMESTONE	651.20				
	1							1		TON	HAY MULCH	651.25				
	40							40		CY	TOPSOIL	651.35				
		290						290		SY	GRUBBING MATERIAL	651.40				

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: s12j160quantitysheet
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
QUANTITY SHEET 2

PLOT DATE: 08-OCT-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 6 OF 59

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 3

SUMMARY OF ESTIMATED QUANTITIES

ROADWAY	EROSION CONTROLS	BRIDGE	FULL CE ITEMS	BRIDGE (ALTERNATE A)	BRIDGE (ALTERNATE B)	BRIDGE (ALTERNATE C)
	1					
	40					
	1					
	200					
	60					
	525					
	400					
14						
30						
1						
~~2~~ 4						
1						
		100				
56000						
1						
4						
1						
		75				
		25				
1						
	1					
1						
1						
1						
185						
			1800			
			31			
			226			
				5020		
				38		
				226		
				1		

TOTALS

GRAND TOTAL	FINAL
1	
40	
1	
200	
60	
525	
400	
14	
30	
1	
~~2~~ 4	
1	
100	
56000	
1	
4	
1	
75	
25	
1	
1	
1	
1	
185	
1800	
31	
226	
5020	
38	
226	
1	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER	ROUND
LS	EPSC PLAN	652.10	
HR	MONITORING EPSC PLAN	652.20	
LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30	
SY	TEMPORARY EROSION MATTING	653.20	
CY	VEHICLE TRACKING PAD	653.35	
LF	BARRIER FENCE	653.50	
LF	PROJECT DEMARCATION FENCE	653.55	
SF	TRAFFIC SIGNS, TYPE A	675.20	
LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341	
EACH	REMOVING SIGNS	675.50	
EACH	DELINEATOR WITH STEEL POST	676.10	
EACH	REMOVAL OF EXISTING DELINEATOR	676.12	
CY	SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL)(TYPE I)	900.608	
DL	SPECIAL PROVISION (INCENTIVE, DISINCENTIVE)(N.A.B.I.)	900.615	
EACH	SPECIAL PROVISION (CPM SCHEDULE)	900.620	
EACH	SPECIAL PROVISION (GUARDRAIL APPROACH SECTION TO CONCRETE BRIDGE RAILING)	900.620	
EACH	SPECIAL PROVISION (GUARDRAIL END ASSEMBLY, TYPE IIA)	900.620	
LF	SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENT PILES, EARTH)	900.640	
LF	SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENT PILES, ROCK)	900.640	
LS	SPECIAL PROVISION (REMOVE AND RELOCATE EXISTING STONE WALL)	900.645	
LS	SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)	900.645	
LS	SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)	900.645	
LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY)(N.A.B.I.)	900.650	
LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT)(N.A.B.I.)	900.650	
TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680	
	BEGIN ALTERNATE ZA1		
LB	REINFORCING STEEL, LEVEL II (FPQ)	507.12	
CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPQ)	900.608	
LF	SPECIAL PROVISION (PRESTRESSED NEXT D BEAMS)(NEXT 36D)(FPQ)	900.640	
	END ALTERNATE ZA1		
	BEGIN ALTERNATE ZA2		
~~LB~~	~~REINFORCING STEEL, LEVEL II (FPQ)~~	~~507.12~~	
~~CY~~	~~SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPQ)~~	~~900.608~~	
~~LF~~	~~SPECIAL PROVISION (PREFABRICATED BRIDGE UNIT SUPERSTRUCTURE)(FPQ)~~	~~900.640~~	
~~LS~~	~~SPECIAL PROVISION (GALVANIZING STRUCTURAL STEEL)~~	~~900.645~~	
	END ALTERNATE ZA2		

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: s12j160quantitysheet
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
QUANTITY SHEET 3

PLOT DATE: 08-OCT-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 7 OF 59

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 4

SUMMARY OF ESTIMATED QUANTITIES

			ROADWAY	EROSION CONTROLS	BRIDGE	FULL CE ITEMS	BRIDGE (ALTERNATE A)	BRIDGE (ALTERNATE B)	BRIDGE (ALTERNATE C)
									5020
									38
									226
									1

TOTALS

GRAND TOTAL	FINAL
5020	
38	
226	
1	

DESCRIPTIONS

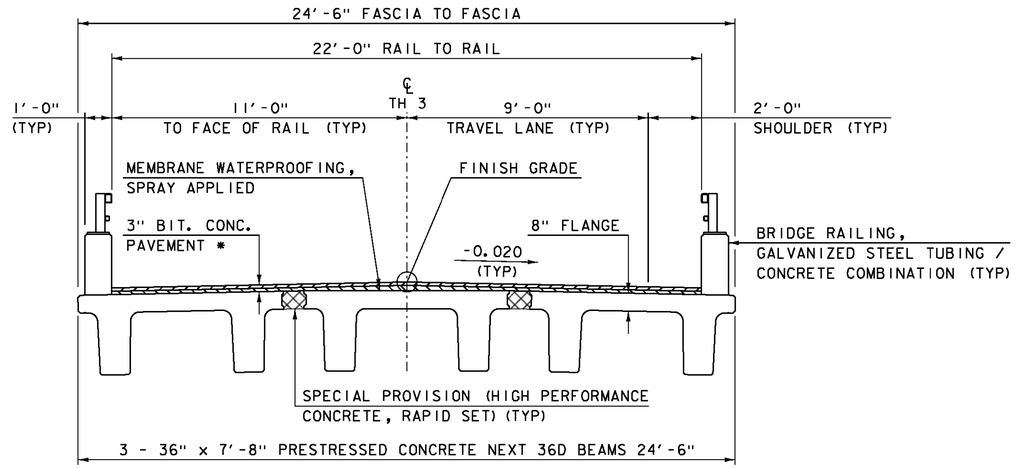
UNIT	ITEMS	ITEM NUMBER	ROUND
	BEGIN ALTERNATE ZA3		
~~LB~~	~~REINFORCING STEEL, LEVEL II (FPQ)~~	~~507.12~~	
~~CY~~	~~SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPQ)~~	~~999.608~~	
~~LF~~	~~SPECIAL PROVISION (PREFABRICATED BRIDGE UNIT SUPERSTRUCTURE)(FPQ)~~	~~999.640~~	
~~LS~~	~~SPECIAL PROVISION (METALLIZING STRUCTURAL STEEL)~~	~~999.645~~	
	END ALTERNATE ZA3		

DETAILED SUMMARY OF QUANTITIES

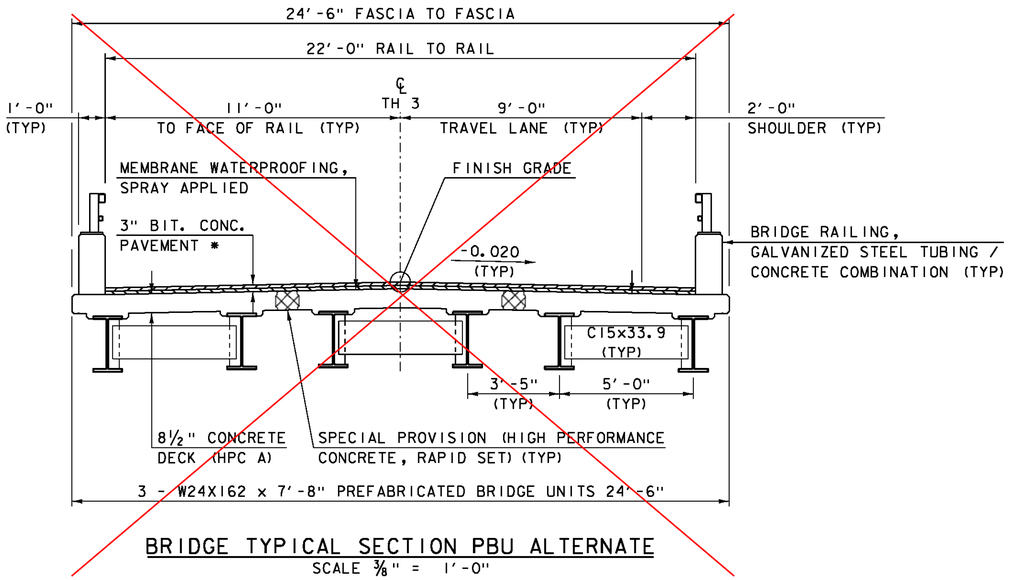
QUANTITIES	UNIT	ITEMS

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)

FILE NAME: s12j160quantitysheet	PLOT DATE: 08-OCT-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. GRIGAS
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
QUANTITY SHEET 4	SHEET 8 OF 59



BRIDGE TYPICAL SECTION NEXT BEAM ALTERNATE
SCALE 3/8" = 1'-0"

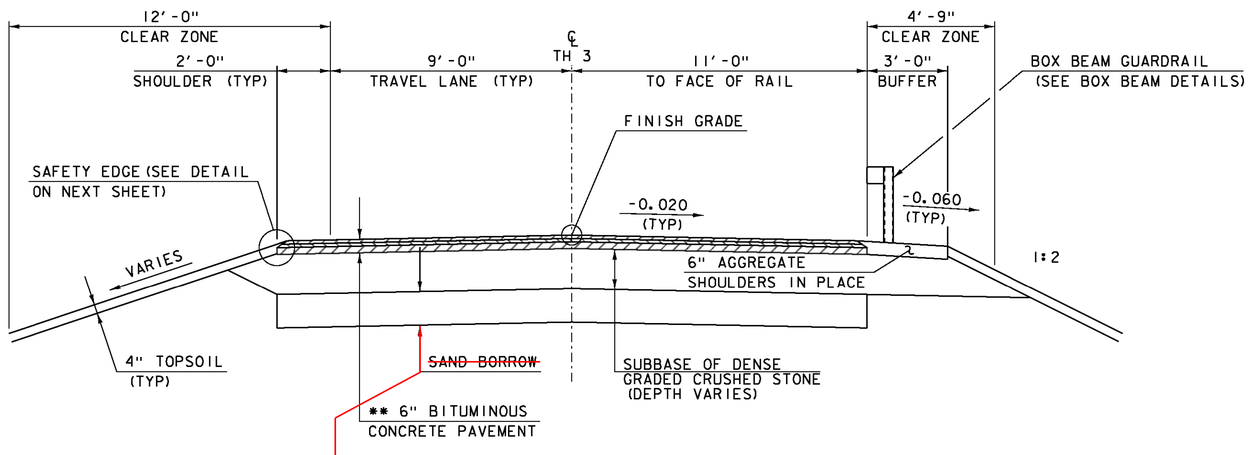


BRIDGE TYPICAL SECTION PBU ALTERNATE
SCALE 3/8" = 1'-0"

* 1½" BITUMINOUS CONCRETE PAVEMENT TYPE III OR IVS OVER
1½" BITUMINOUS CONCRETE PAVEMENT TYPE III OR IVS

MATERIAL TOLERANCES
(IF USED ON PROJECT)

SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- ¼"
- AGGREGATE SURFACE COURSE	+/- ½"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"



ROADWAY TYPICAL SECTION
SCALE 3/8" = 1'-0"

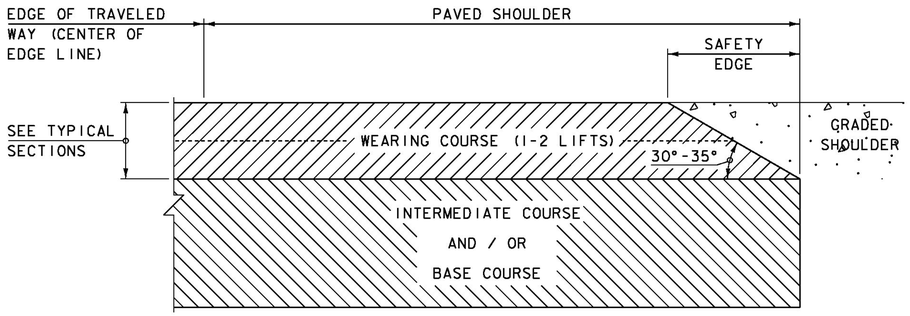
** 1½" BITUMINOUS CONCRETE PAVEMENT TYPE III OR IVS OVER
1½" BITUMINOUS CONCRETE PAVEMENT TYPE III OR IVS OVER
3" BITUMINOUS CONCRETE PAVEMENT TYPE I OR IIS

1'-6" SUBBASE OF DENSE GRADED CRUSHED STONE
1'-3" SAND BORROW

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: sl2j160typical.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
TYPICAL SECTIONS 1

PLOT DATE: 08-OCT-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 9 OF 59

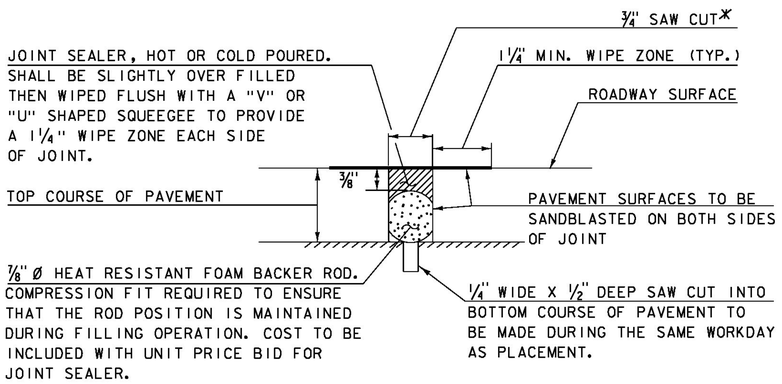


SAFETY EDGE DETAIL

NOT TO SCALE

1. THE EDGE OF PAVEMENT SHALL BE FORMED IN SUCH A WAY THAT THE BITUMINOUS CONCRETE PAVEMENT IS EXTRUDED OR COMPRESSED TO FORM THE 30 TO 35 DEGREE ANGLE. DEVICES THAT SIMPLY STRIKE-OFF THE MIX WITHOUT PROVIDING ANY COMPACTIVE EFFORT WILL NOT BE ALLOWED.

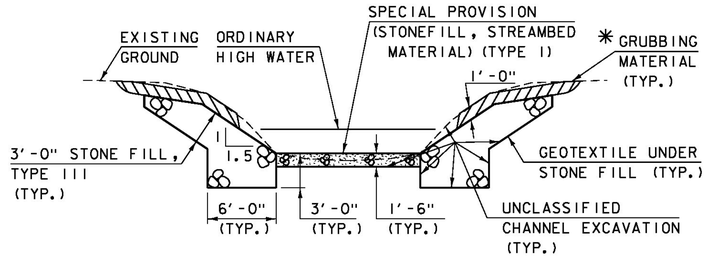
2. THE PAVED SHOULDER EXTENDS FROM THE EDGE OF TRAVELED WAY TO THE EDGE OF THE WEARING COURSE, INCLUDING THE "SAFETY EDGE".



SAWED PAVEMENT JOINT DETAIL

(NOT TO SCALE)

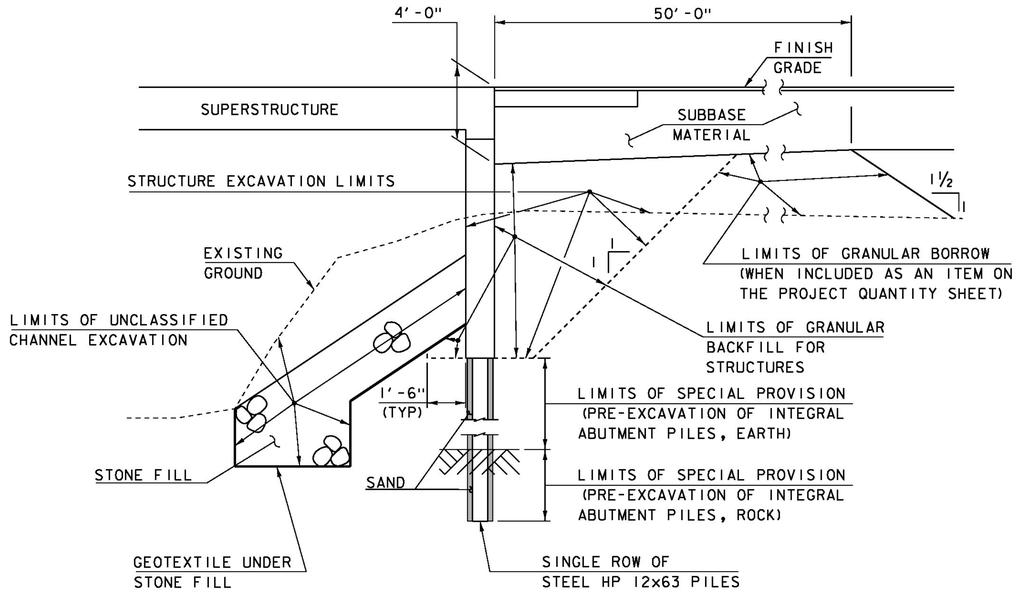
*JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUTS WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING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



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.



TYPICAL INTEGRAL ABUTMENT SECTION

NOT TO SCALE

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

PROJECT NAME: CLARENDON	
PROJECT NUMBER: BRO 1443(48)	
FILE NAME: sl2j160typical.dgn	PLOT DATE: 08-OCT-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. GRIGAS
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
TYPICAL SECTIONS 2	SHEET 10 OF 59

GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

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

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

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

COMMON TOPOGRAPHIC POINT SYMBOLS

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

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

PROPOSED GEOMETRY CODES

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

UTILITY SYMBOLOGY

UNDERGROUND UTILITIES

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

ABOVE GROUND UTILITIES (AERIAL)

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

PROJECT CONSTRUCTION SYMBOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOGY

- CZ — CLEAR ZONE
- PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

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

CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINES

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

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

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

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLOGY

ENVIRONMENTAL RESOURCES

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

ARCHEOLOGICAL & HISTORIC

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

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

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

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: 12J160/s12J160legend.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
LEGEND SHEET

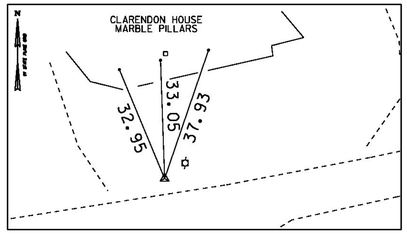
PLOT DATE: 10-SEP-2015
DRAWN BY: K. FRIEDLAND
CHECKED BY: G. LAROCHE
SHEET 11 OF 59

GPS CONTROL POINTS

HVCTRL #1

SPRINGS TEMP 1

NORTH = 382442.365
EAST = 1502188.866
ELEV. = 691.040



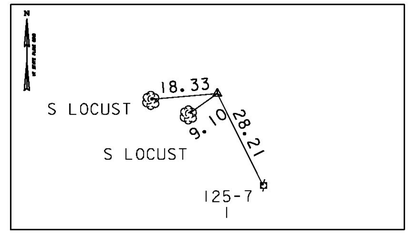
LOCATION - CLARENDON SPRINGS, 3 MILES SOUTH OF WEST RUTLAND

FROM THE JUNCTION OF ROUTES 4A AND 133 IN WEST RUTLAND, TAKE RTE 133 SOUTH FOR 2.25 MI TO A "Y" INTERSECTION. GO LEFT ON A PAVED ROAD FOR 1.2 MI. TO A GRAVEL ROAD LEFT (EAST). GO LEFT (EAST) ON THE GRAVEL ROAD FOR 50 METERS TO AN INTERSECTION AND THE OLD CLARENDON SPRINGS HOTEL AND THE MARK ON THE LEFT. THE MARK IS A REBAR WITH A DRILL HOLE IN IT, LEFT 0.3 M BELOW GROUND LEVEL. THE MARK IS 12.2 M SOUTH OF THE SW CORNER OF A 3½ STORY BRICK BUILDING, 16.0 M SW OF THE SE CORNER OF A 3½ STORY BRICK BUILDING, 2.1 M SW OF POLE # 125-2/8-10/2.

HVCTRL #2

SPRINGS TEMP 2

NORTH = 381427.561
EAST = 1502479.265
ELEV. = 680.440



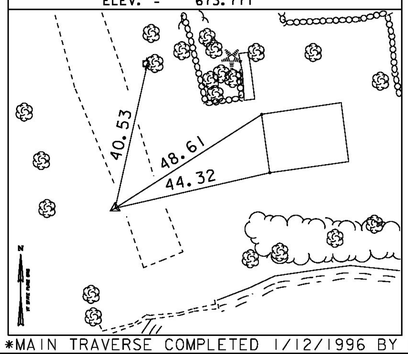
LOCATION - CLARENDON SPRINGS, 3 MILES SOUTH OF WEST RUTLAND

FROM THE JUNCTION OF ROUTES 4A AND 133 IN WEST RUTLAND, TAKE RTE 133 SOUTH FOR 2.25 MI TO A "Y" INTERSECTION. GO LEFT ON A PAVED ROAD FOR 1.2 MI. TO A GRAVEL ROAD LEFT (EAST). GO LEFT (EAST) ON THE GRAVEL ROAD FOR 50 METERS TO AN INTERSECTION AND THE OLD CLARENDON SPRINGS HOTEL AND THE MARK ON THE LEFT. THE MARK IS A REBAR WITH A DRILL HOLE IN IT, LEFT 0.3 M BELOW GROUND LEVEL. THE MARK IS 8.5 M SOUTH OF POLE # 125-7/1, 3.2 M WEST OF THE CENTERLINE OF A GRAVEL ROAD, 8.7 M SE OF THE CORNER OF A WOOD AND WIRE FENCE.

TRAVERSE TIES

HVCTRL #3

NORTH = 381925.592
EAST = 1502330.393
ELEV. = 673.771



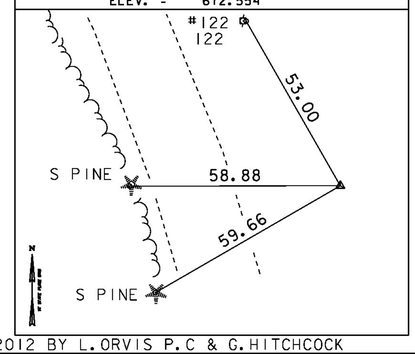
HVCTRL #4

NORTH = 382278.519
EAST = 1501864.151
ELEV. = 687.487

NOT TIED

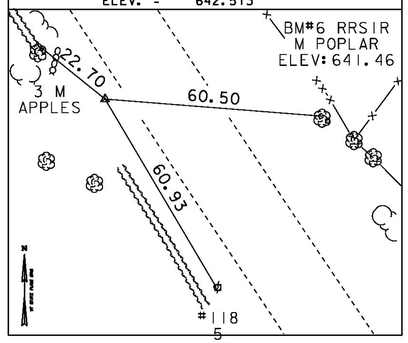
HVCTRL #5

NORTH = 382745.289
EAST = 1501993.822
ELEV. = 672.554



HVCTRL #6

NORTH = 383473.504
EAST = 1501481.868
ELEV. = 642.513



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NORTH =
EAST =
ELEV. =

*MAIN TRAVERSE COMPLETED 1/12/1996 BY L.ORVIS [95J286] SECONDARY TRAVERSE 3/15/2012 BY L.ORVIS P.C & G.HITCHCOCK

ALIGNMENT TIES

NORTH =	NORTH =	NORTH =	NORTH =	NORTH =
EAST =	EAST =	EAST =	EAST =	EAST =
ELEV. =	ELEV. =	ELEV. =	ELEV. =	ELEV. =

DATUM

VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)
ADJUSTMENT COMPASS

PROJECT NAME: CLARENDON
PROJECT NUMBER: BHO 1443 (48)

FILE NAME: x12j160t1.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: VTRAN
TIE SHEET

PLOT DATE: 10-SEP-2015
DRAWN BY: G. HITCHCOCK
CHECKED BY: P. BEYOR
SHEET 12 OF 59

96 UDIPSAMMENTS
WITH 0% SLOPES
"K" FACTOR = 0.15

28 UDIFLUVENTS/
FLUVAQUENTS
WITH 0% SLOPES
"K" FACTOR = N/A

18E WINDSOR
LOAMY SAND
WITH 20%-60% SLOPES
"K" FACTOR = 0.17

VT STATE PLANE GRID

N

PRIVATE ROAD
LET
BOWEN WAY (PVT)
WELL
HVCTRL 14
GRAVEL DRIVE
PIPE ½" DIA 12" ABOVE GROUND
EXISTING R.O.W.
SIGN TO" ABOVE GROUND R2-1 (35)
GUY
SIGN
BOWEN WAY PVT.
COMB 119 5E 119 SUBE
18" CCMP FLOW
HVCTRL 13
PIPE ½" DIA ABOVE GROUND
APPLE
HVCTRL 17
GRAVEL DRIVE
STAIRS
MANHOLE SEWER
LILAC
MAPLE
COMB 118 5 118 SUBT SUBE
EXISTING R.O.W.
HVCTRL 6
TOWN HIGHWAY 3
TO CLARENDON
TOWN HIGHWAY 3
TO WEST RUTLAND
8+50
10+00
11+00
12+00
13+00
14+00
14+50
COMB 8 099 120
15" CCMP-PLUGGED FLOW
15" CPEP-PLUGGED FLOW
FIELD DRIVE
EXISTING R.O.W.
BASSWOOD
CEDAR
COMB
3 x MAILBOX
HVCTRL 11
HISTORIC
HISTORIC
PIPE ½" DIA 15" ABOVE GROUND
HVCTRL 18
HVCTRL 16
GRAVEL DRIVE
FIELD DRIVE
FENCE BARBED WIRE
FENCE WOOD
EXISTING R.O.W.
POPLAR
FENCE ELECTRIC
FENCE WOOD
BENCHMARK
RAIL ROAD SPIKE
IN POPLAR
ELEV = 641.46
CLARENDON RIVER FLOW

26A RAYNHAM
SILT LOAM
WITH 0%-4% SLOPES
"K" FACTOR = 0.49

18C WINDSOR
LOAMY SAND
WITH 8%-15% SLOPES
"K" FACTOR = 0.17

EXISTING BRIDGE DATA
CONCRETE T-BEAMS, BUILT 1927
STRUCTURE LENGTH = 31'
MAX SPAN LENGTH = 29'
DECK WIDTH = 23.4'

EXISTING CONDITIONS

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

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: s12j160bdrero.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
EXISTING CONDITIONS

PLOT DATE: 10-SEP-2015
DRAWN BY: K. FRIEDLAND
CHECKED BY: G. LAROCHE
SHEET 13 OF 59

CONSTRUCT AGGREGATE SURFACE COURSE
DRIVES W/ 5'-0" PAVED APRONS
STA 11+12.00 LT - 45.00' WIDE
STA 12+38.00 RT - 15.00' WIDE
STA 13+00.00 LT - 28.00' WIDE

REMOVAL AND DISPOSAL OF GUARDRAIL
STA 11+38.71 - 11+76.24 RT
STA 11+61.18 - 11+73.59 LT
STA 12+03.84 - 12+40.25 LT
STA 12+05.83 - 12+18.60 RT

REMOVAL OF EXISTING DELINEATOR
STA 11+46.19 LT

RELOCATE MAILBOX, SINGLE SUPPORT
REMOVE FROM STA 11+06.00 RT (4)
RELOCATE TO STA 10+20.00 RT (4)

18" OPTION PIPE
STA 10+75.00 - 11+50.00

REMOVAL OF EXISTING CULVERT
STA 10+75.00 - 11+50.00

SPECIAL PROVISION (REMOVE AND RELOCATE EXISTING STONE WALL)
STA 12+12.71 - 12+35.25 LT
STA 12+47.21 - 12+70.26 LT

REMOVING AND RESETTING PROPERTY MARKERS
STA 11+71.00 LT
N = 383271.2824
E = 1501608.8904
STA 12+12.50 RT
N = 383332.7475
E = 1501625.1234

4" SLEEVE FOR FUTURE WATERLINE
STA 10+60.00

STEEL MARKER POST
STA 10+60.00 LT
STA 10+60.00 RT

VT STATE PLANE GRID
N

POB MAINLINE
STA 9+50.00
N = 383102.4589
E = 1501753.4476

PROPOSED 18" OPTION PIPE

STONE FILL TYPE III (TYP)

STONE FILL TYPE I (TYP)

R = 8'

PROPOSED 4" PVC UTILITY SLEEVE

POE CHANNEL
STA 52+00.00
N = 382246.5866
E = 1501535.1213
S 65° 32' 39" W

PI#1 MAINLINE
STA 13+00.00 BK
STA 13+00.00 AH
N = 383391.0568
E = 1501555.4276

END BRIDGE
STA 12+23.35
FG 646.01
R = 12'

R = 35' (TYP)

POE MAINLINE
STA 14+50.00
N = 383516.0330
E = 1501472.4744

END APPROACH ~~STA. 13+50.00~~ STA. 13+77 RT

N 34°27'20.77" W

BEGIN PROJECT
STA 11+00.00

BEGIN BRIDGE
STA 11+46.65
FG 646.83

CL BEARING
STA 11+48.00
FG 646.83

MAINLINE STA 11+75.00
=CHANNEL STA 51+00.00
Δ = 80° 0' 0" LT

BEGIN APPROACH
STA ~~10+25.00~~ 10+05.00

CL BEARING
STA 12+22.00
FG 646.03

R = 7' (TYP)

SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL) (TYPE I)

POB CHANNEL
STA 50+00.00
N = 383329.3847
E = 1501717.1775
50+00

END PROJECT
STA 12+75.00

PC#1 MAINLINE
STA 12+50.00

PT#1 MAINLINE
STA 13+50.00

MAINLINE CURVE (1)
DELTA = 0°52'53"
D = 0°52'53"
R = 6500.00'
T = 50.00'
L = 100.00'
E = 0.19'

BENCHMARK
RAIL ROAD SPIKE IN POPLAR
ELEV = 641.46

SAVE

TOWN HIGHWAY 3
TO CLARENDON

TOWN HIGHWAY 3
TO WEST RUTLAND

EXISTING R.O.W.

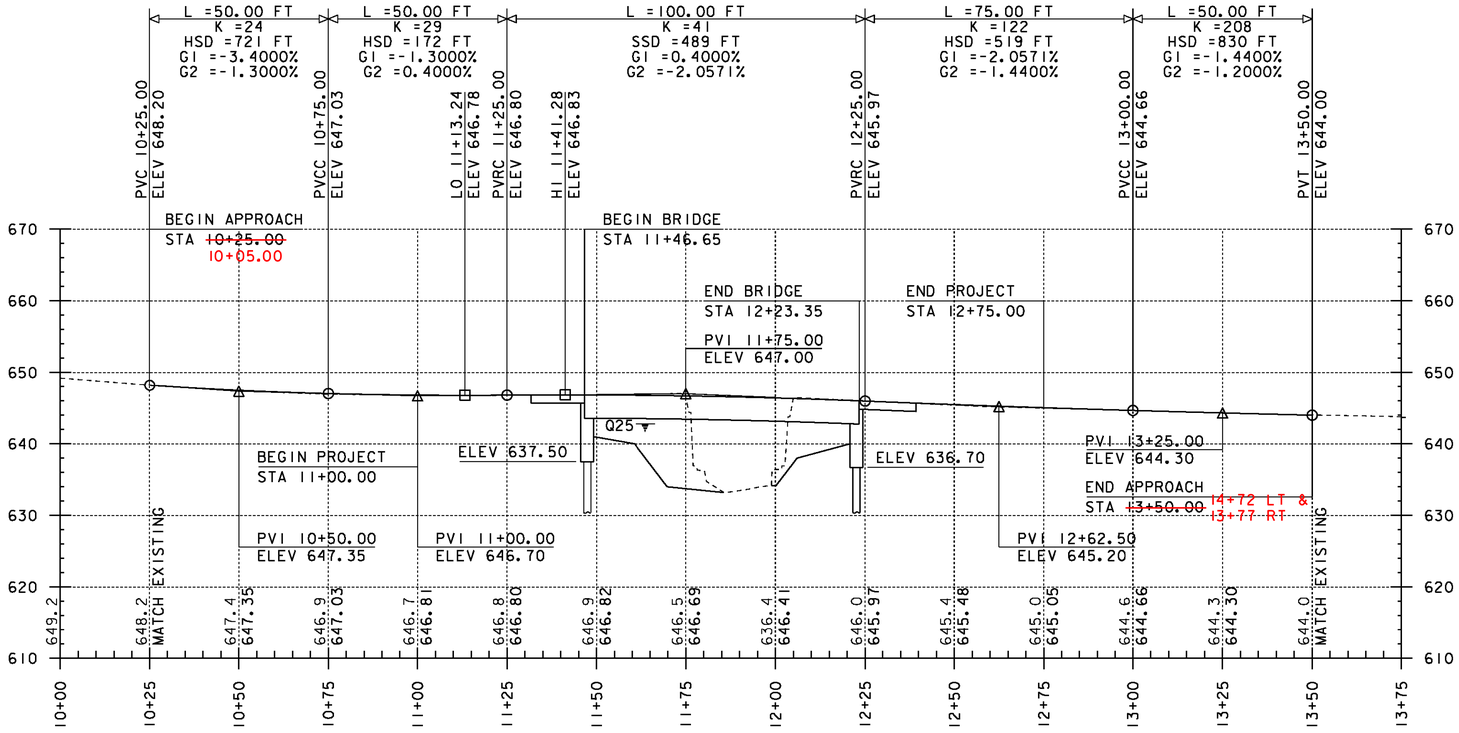
49.50' R.O.W.

9+50
10+00
11+00
12+00
13+00
14+00
14+50

PRIVATE ROAD
BOWEN WAY (PVT)
WELL
GRAVEL DRIVE
FIELD DRIVE
STAIRS
MANHOLE SEWER
FLOW
CLARENDON RIVER FLOW
BASSWOOD
CEDAR
POPLAR
APPLE
MAPLE
LILAC
HEMLOCK
FENCE WOOD
FENCE ELECTRIC
GUY
SIGN
HVCTRL
COMB
SUBT
TIE
WIRE

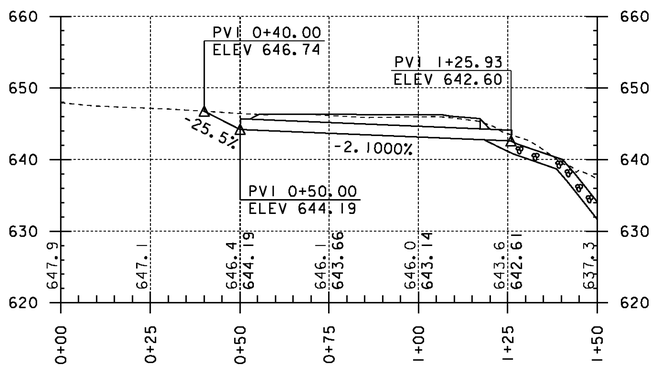
LAYOUT SHEET
SCALE 1" = 20'-0"
20 0 20

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)
FILE NAME: sl2jl60bdr.dgn	PLOT DATE: 08-OCT-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: K. FRIEDLAND
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
LAYOUT SHEET	SHEET 14 OF 59



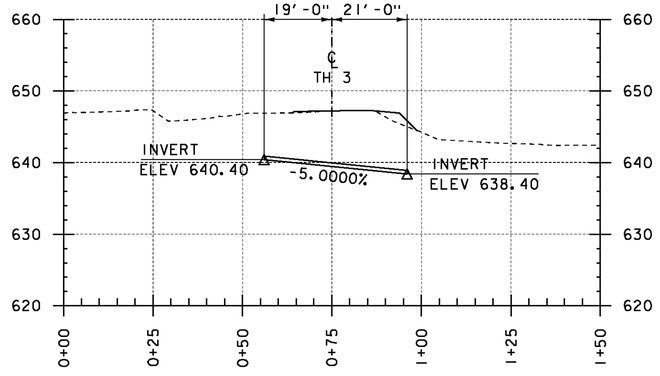
MAINLINE PROFILE

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



OPTION PIPE PROFILE

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



UTILITY SLEEVE PROFILE (STA 10+60)

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

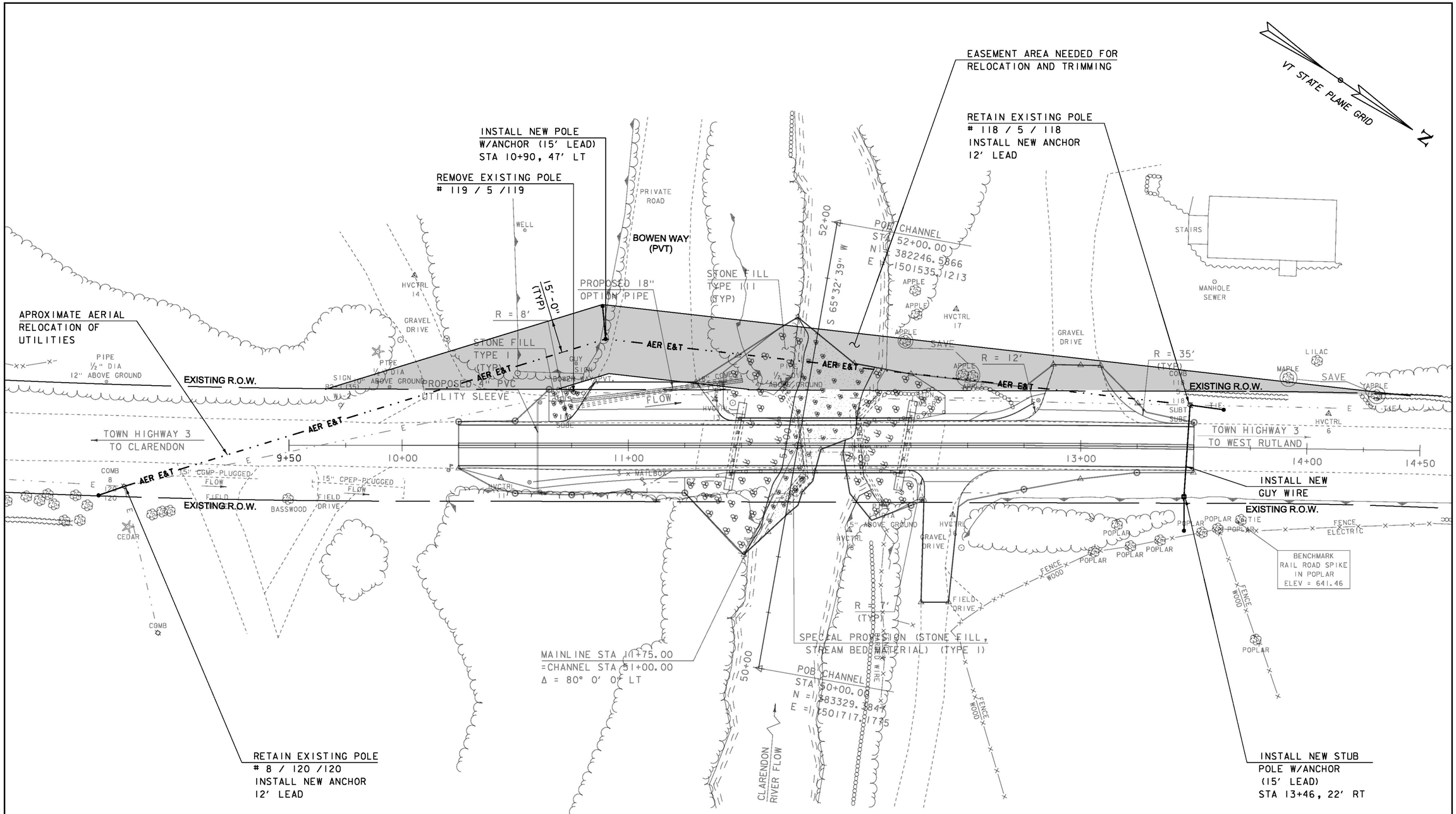
THE GRADES SHOWN TO THE NEAREST TENTH ARE THE ORIGINAL GROUND ELEVATIONS ALONG THE PROPOSED ALIGNMENT.

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

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: s12j160profile.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
MAINLINE PROFILE

PLOT DATE: 10-SEP-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 15 OF 59



NOTE:

1. WORK TO BE DONE BY OTHERS.

PROPOSED UTILITY LAYOUT

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

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)
FILE NAME: s12j160ut1.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: K. FRIEDLAND
DESIGNED BY: L. WHEELER	CHECKED BY: J. SALVATORI
PROPOSED UTILITY LAYOUT	SHEET 16 OF 59

REMOVING SIGNS

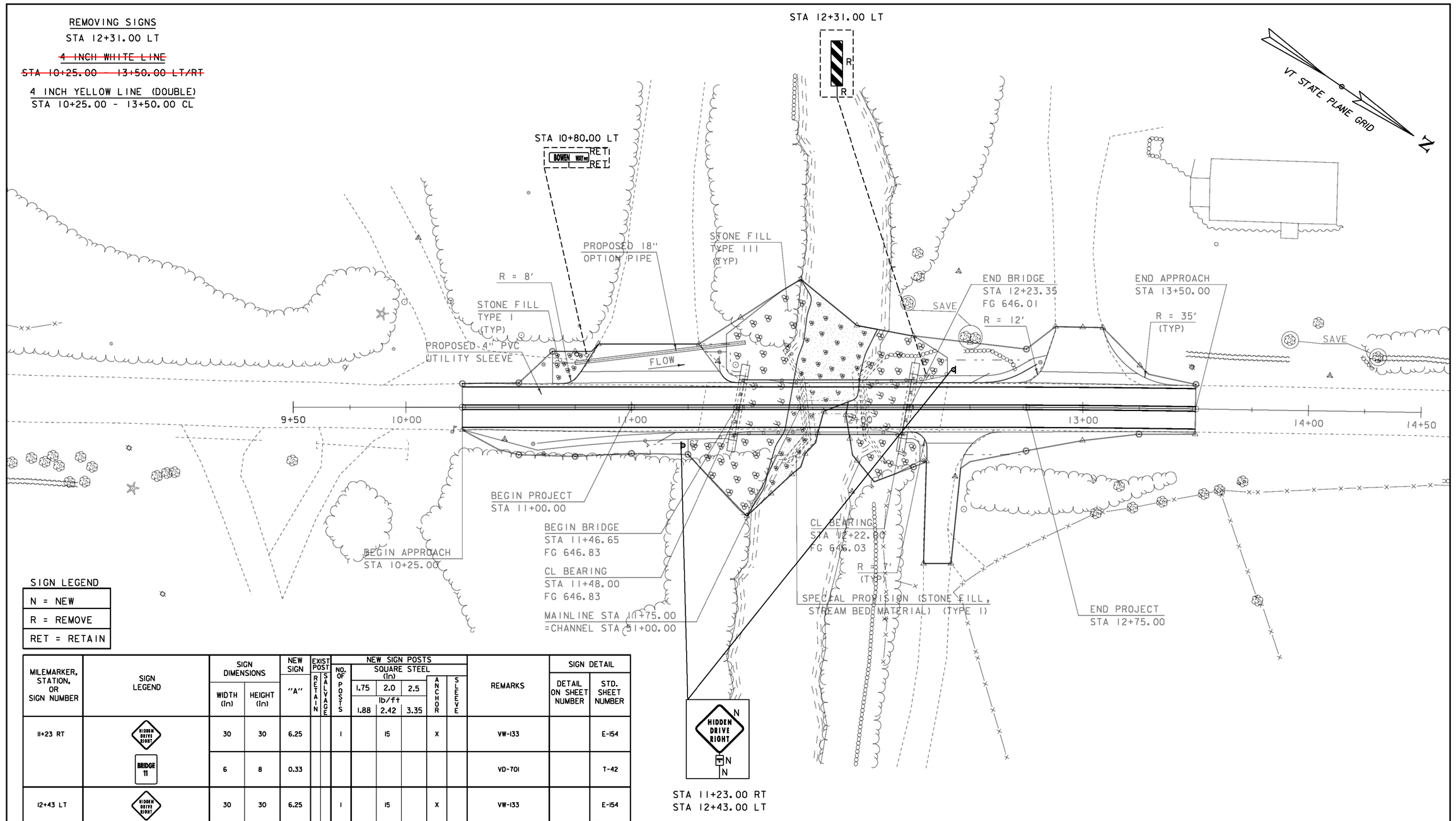
STA 12+31.00 LT

~~4 INCH WHITE LINE~~

~~STA 10+25.00 - 13+50.00 LT/RT~~

4 INCH YELLOW LINE (DOUBLE)

STA 10+25.00 - 13+50.00 CL



SIGN LEGEND

N = NEW
R = REMOVE
RET = RETAIN

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS WIDTH (in)	SIGN DIMENSIONS HEIGHT (in)	NEW SIGN "A"	EXIST POST RETAIN	EXIST POST SALVAGE	NEW SIGN POSTS NO. OF POSTS	SQUARE STEEL (in) 1.75 lb/ft 1.88	SQUARE STEEL (in) 2.0 lb/ft 2.42	SQUARE STEEL (in) 2.5 lb/ft 3.35	ANCHOR	SLEEVE	REMARKS	SIGN DETAIL DETAIL ON SHEET NUMBER	SIGN DETAIL STD. SHEET NUMBER
11+23 RT	HIDDEN DRIVE RIGHT	30	30	6.25			1		15		X		VW-133		E-154
	BRIDGE 11	6	8	0.33									VD-701		T-42
12+43 LT	HIDDEN DRIVE RIGHT	30	30	6.25			1		15		X		VW-133		E-154
	BRIDGE 11	6	8	0.33									VD-701		T-42
									FT 30	FT		EA			
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE VTRANS "SIGN POST DESIGN GUIDELINE."		**TOTALS**		SF 13.16					FT 30				SHS = STANDARD HIGHWAY SIGNS (MUTCD)		

SIGN & PAVEMENT MARKINGS

SCALE 1" = 20'-0"

20 0 20

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

PROJECT NAME: CLARENDON

PROJECT NUMBER: BRO 1443(48)

FILE NAME: s12j160sign
PROJECT LEADER: K. HIGGINS
DESIGNED BY: S. COLEY
SIGN AND PAVEMENT MARKINGS

PLOT DATE: 08-OCT-2015
DRAWN BY: S. COLEY
CHECKED BY: J. GRIGAS

BOX BEAM GUARDRAIL

STA 10+58.25 - 11+10.89 RT

SPECIAL PROVISION (GUARDRAIL APPROACH SECTION TO CONCRETE BRIDGE RAILING)

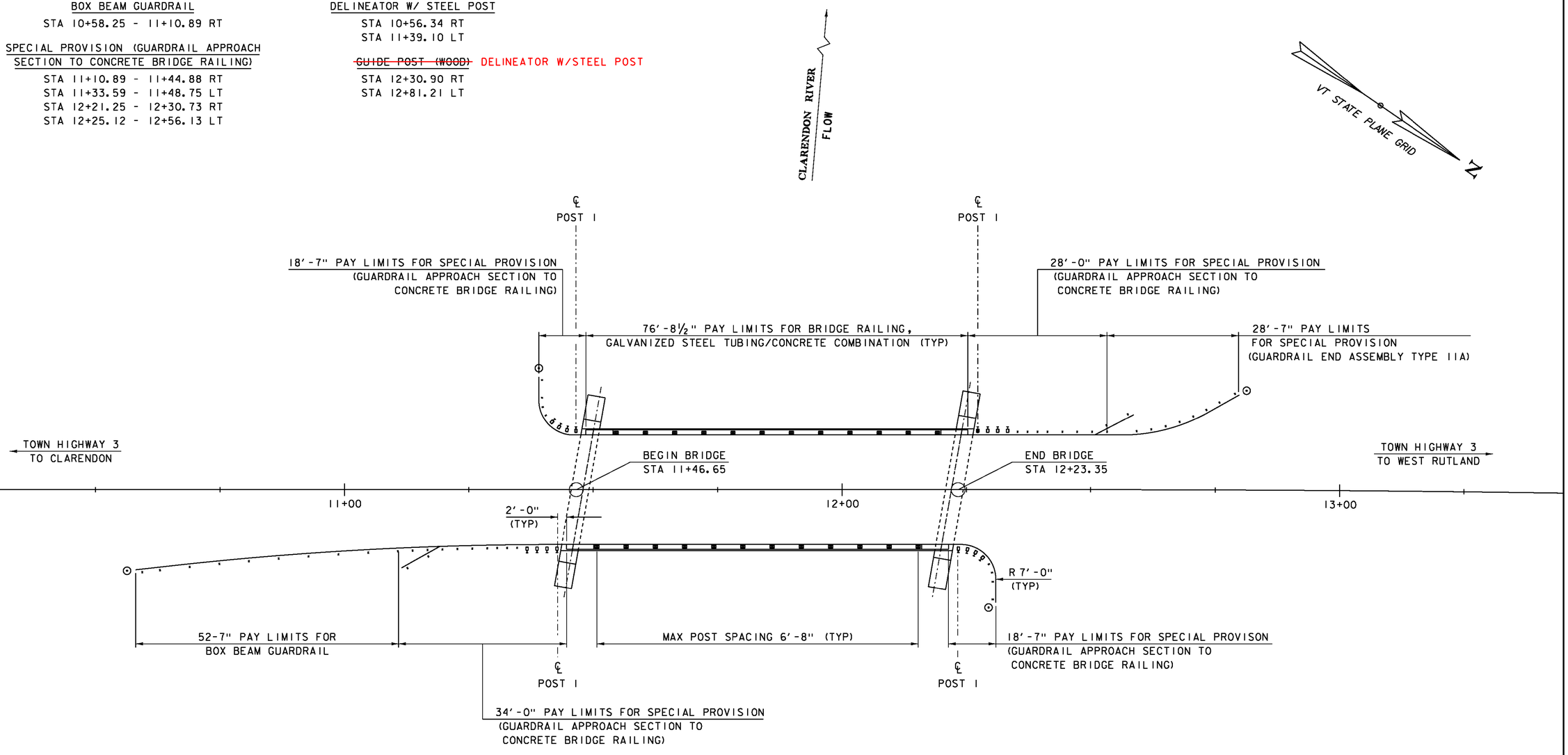
STA 11+10.89 - 11+44.88 RT
STA 11+33.59 - 11+48.75 LT
STA 12+21.25 - 12+30.73 RT
STA 12+25.12 - 12+56.13 LT

DELINEATOR W/ STEEL POST

STA 10+56.34 RT
STA 11+39.10 LT

~~GUIDE POST (WOOD)~~ DELINEATOR W/STEEL POST

STA 12+30.90 RT
STA 12+81.21 LT



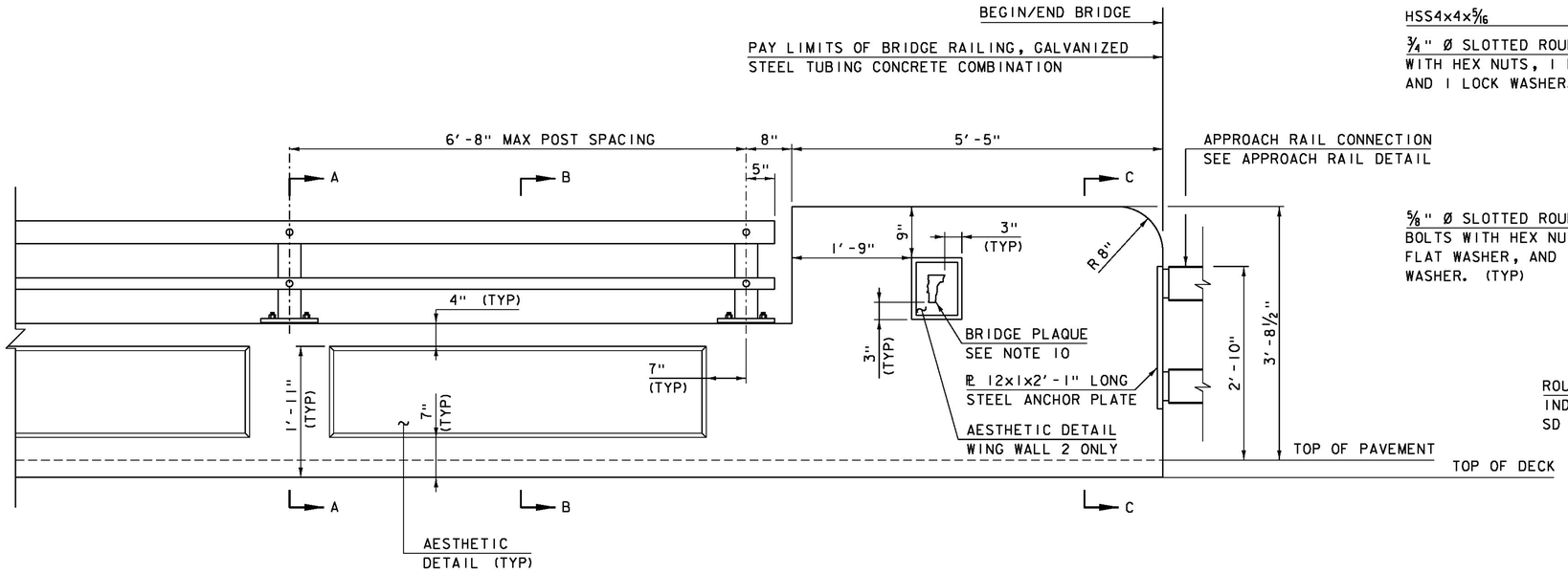
RAIL LAYOUT SHEET

SCALE 1" = 10'-0"

NOTES:

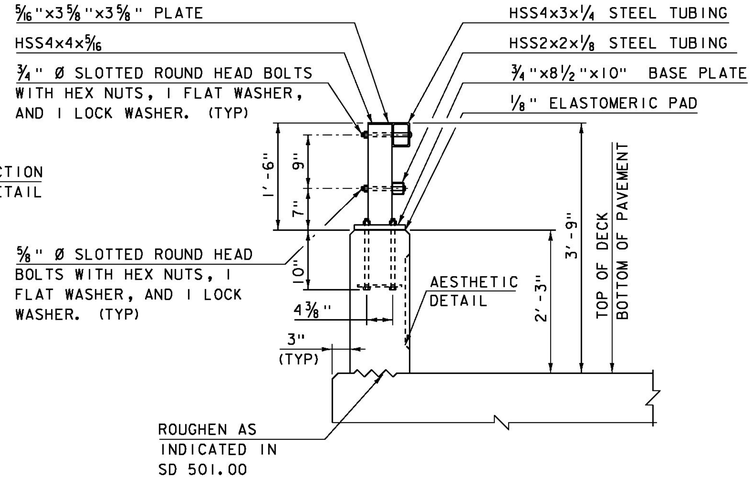
1. ALL DIMENSIONS ARE ALONG THE FACE OF RAIL.
2. SEE STANDARDS G-4, S-352B, S-352C, T-40 AND THE FOLLOWING PLAN SHEETS FOR ADDITIONAL DETAILS.

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)
FILE NAME: s12j160bdr_rail.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINGS	DRAWN BY: J. GRIGAS
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
RAIL LAYOUT SHEET	SHEET 18 OF 59



RAILING & END WALL APPROACH

NOT TO SCALE

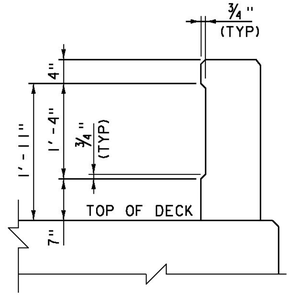


RAIL TYPICAL SECTION

NOT TO SCALE

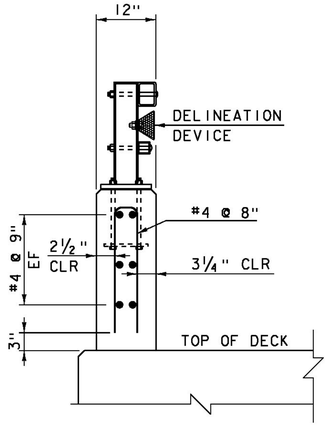
NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.
2. PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/16".
3. ALL POSTS SHALL BE SET NORMAL TO GRADE.
4. SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO BRIDGE POSTS AND PREFERABLY TO AT LEAST 4 POSTS.
5. HOLES IN RAILS FOR TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
6. BOLTS SHALL BE TORQUED SNUG TIGHT (APPROXIMATELY 100 FT-LB).
7. RAIL TUBES SHALL BE ATTACHED USING ¾" FULL DIAMETER BODY ASTM A 449 (TYPE 1) ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE TUBE.
8. SEE BOX BEAM DETAILS FOR DETAILS OF DELINEATORS. A DELINEATOR SHALL BE INSTALLED AT 30 FOOT SPACING OR THE NEAREST POST. WHITE IS TO BE INSTALLED OF THE DRIVER'S RIGHT. FOR ONE WAY BRIDGES YELLOW IS TO BE INSTALLED ON THE DRIVER'S LEFT. PAYMENT FOR THE BRIDGE RAIL DELINEATORS SHALL BE INCIDENTAL TO ITEM 525.45, "BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION."
9. BRIDGE RAILING SHALL HAVE A RUBBED FINISH IN ACCORDANCE WITH SECTION 501.
10. BRIDGE PLAQUE IS TO BE PLACED ON THE PARAPET OFF OF WINGWALL 2. A BRIDGE PLAQUE AS SHOWN IN SD-502.00 WILL NOT BE REQUIRED. THE BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND WILL BE CONSIDERED INCIDENTAL TO PAY ITEM 525.45, "BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION."
11. BRIDGE PLAQUE TO HAVE A 3" BORDER FOR THE AESTHETIC DETAIL.



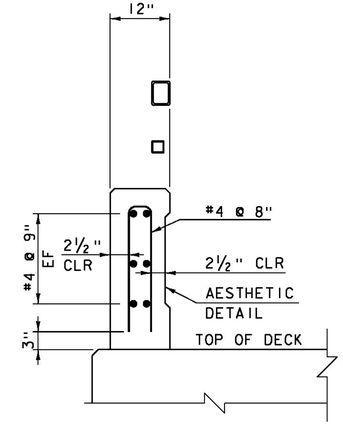
AESTHETIC DETAIL

NOT TO SCALE



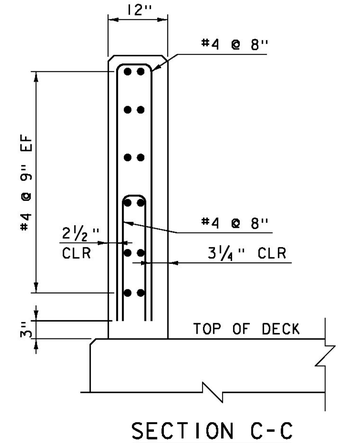
SECTION A-A

NOT TO SCALE



SECTION B-B

NOT TO SCALE



SECTION C-C

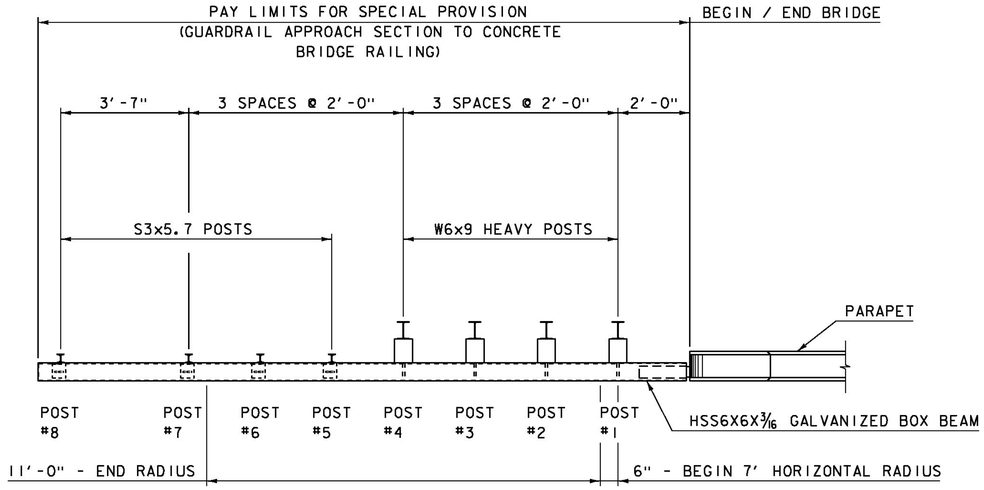
NOT TO SCALE

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

SEE STANDARD S352-B AND S352-C FOR FURTHER DETAILS

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)

FILE NAME: si2j160raildet.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: S. COLEY
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
BRIDGE RAIL DETAILS	SHEET 19 OF 59

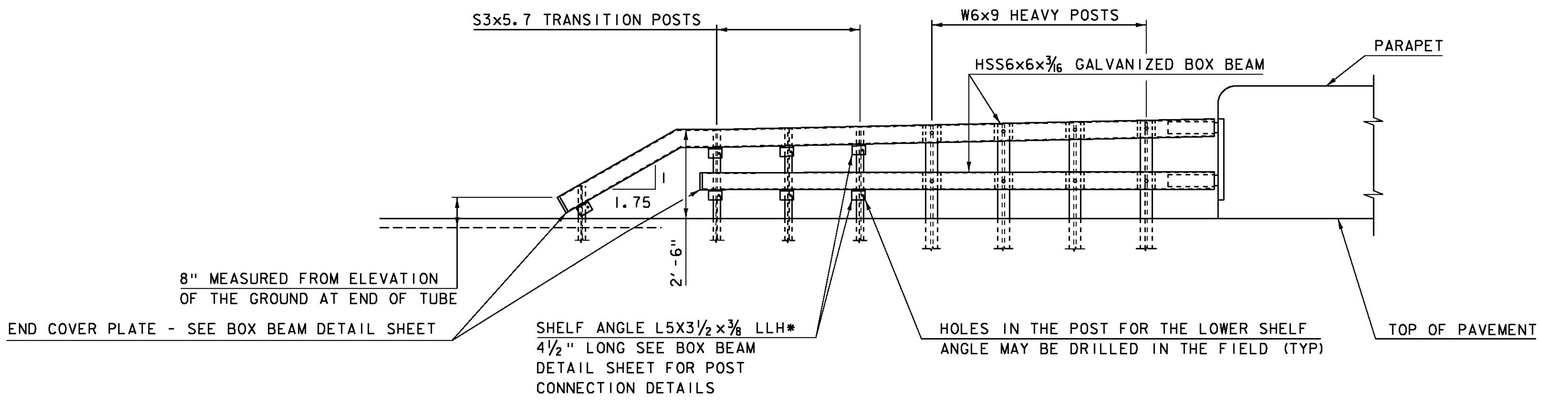


APPROACH RAIL PLAN @ WW1 AND WW4

NOT TO SCALE

POST 1	645.78
POST 2	645.72
POST 3	645.57
POST 4	645.35
POST 5	645.08
POST 6	644.77
POST 7	644.47
POST 8	643.91

WW #4 GUARDRAIL
GROUND ELEVATION



APPROACH RAIL ELEVATION @ WW1 AND WW4

NOT TO SCALE
*LONG LEG HORIZONTAL

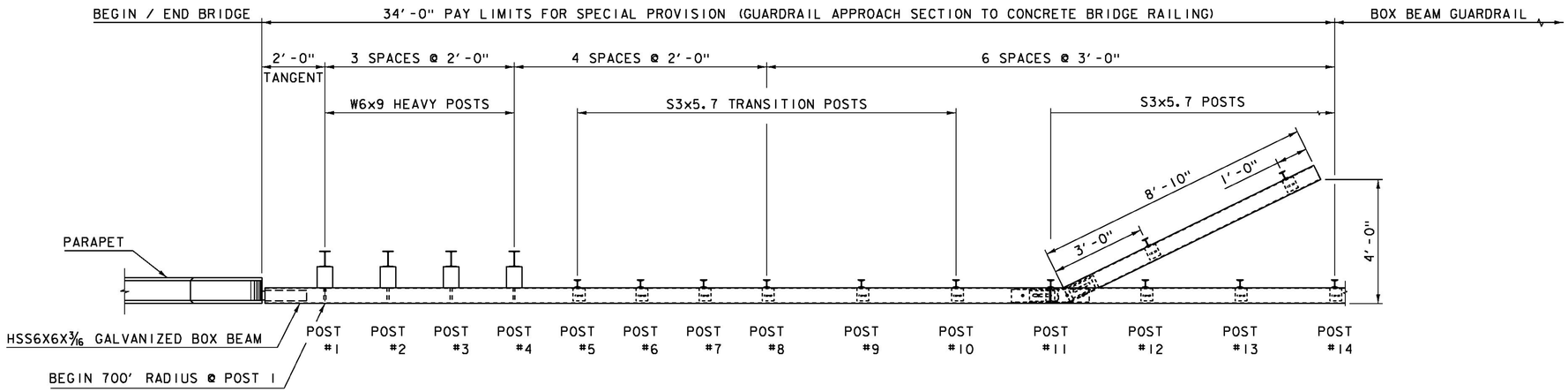
NOTES:

1. APPROACH RAIL TO BE SHOP BENT.
2. ANY HOLES THAT ARE FIELD DRILLED SHALL HAVE THEIR GALVANIZING REPAIRED PER SUBSECTION 726.08 OF THE STANDARD SPECIFICATIONS.
3. SEE BOX BEAM DETAIL SHEET FOR FURTHER DETAILS.
4. RAILS SHOWN STRAIGHT FOR CLARITY
5. WING WALL 4 APPROACH RAIL WILL HAVE TO BE BENT IN THE VERTICAL DIRECTION AS WELL. ELEVATIONS ARE GIVEN FOR USE BY THE FABRICATOR.

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

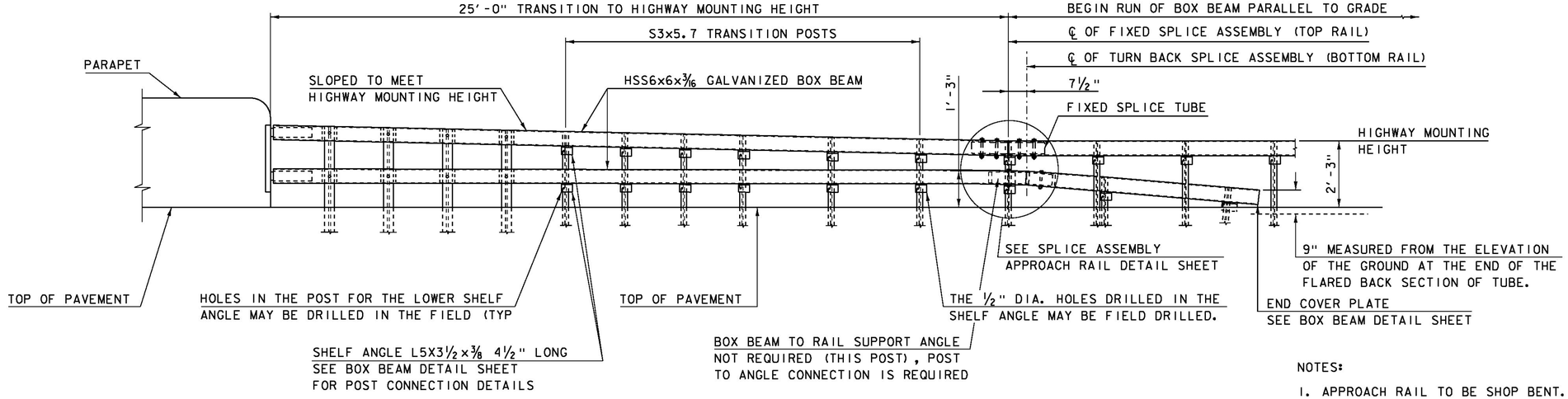
FILE NAME: si2j160raildet.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
APPROACH RAIL WW1 AND WW4

PLOT DATE: 10-SEP-2015
DRAWN BY: S. COLEY
CHECKED BY: G. LAROCHE



APPROACH RAIL PLAN @ WW2

NOT TO SCALE



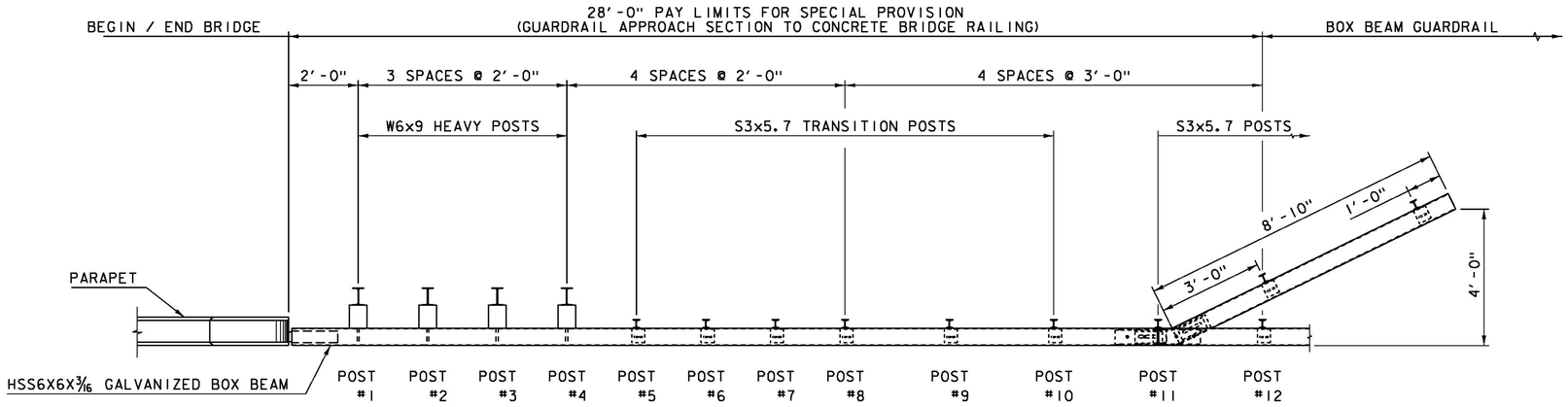
APPROACH RAIL ELEVATION @ WW2

NOT TO SCALE

NOTES:

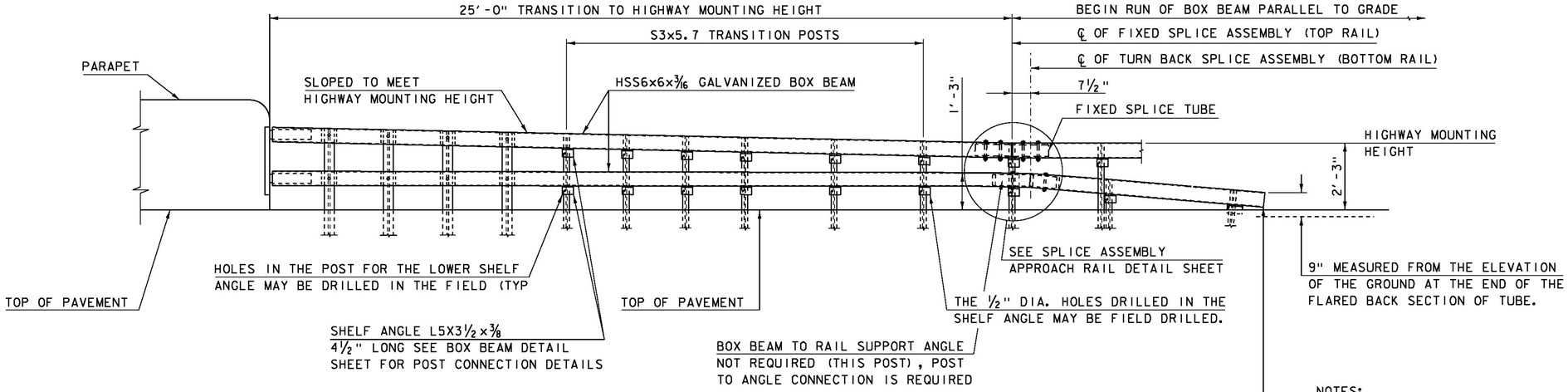
1. APPROACH RAIL TO BE SHOP BENT.
2. ANY HOLES THAT ARE FIELD DRILLED SHALL HAVE THEIR GALVANIZING REPAIRED PER SUBSECTION 726.08 OF THE STANDARD SPECIFICATIONS.
3. SEE BOX BEAM DETAIL SHEET FOR FURTHER DETAILS.
4. RAILS SHOWN STRAIGHT FOR CLARITY

PROJECT NAME: CLARENDON	
PROJECT NUMBER: BRO 1443(48)	
FILE NAME: sl2jl60raildet.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: S. COLEY
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
APPROACH RAIL WW2	SHEET 21 OF 59



APPROACH RAIL PLAN @ WW3

NOT TO SCALE



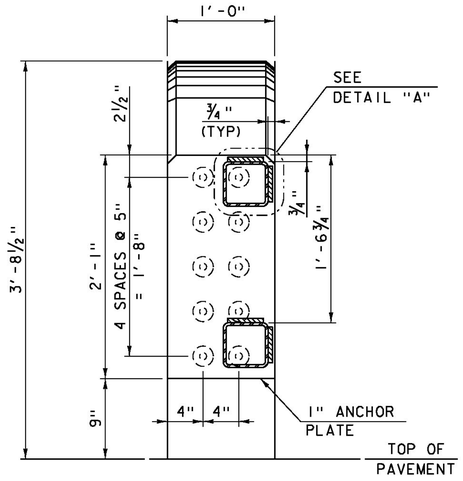
APPROACH RAIL ELEVATION @ WW3

NOT TO SCALE

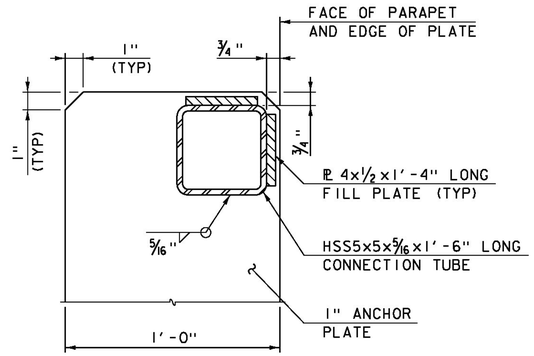
NOTES:

1. ANY HOLES THAT ARE FIELD DRILLED SHALL HAVE THEIR GALVANIZING REPAIRED PER SUBSECTION 726.08 OF THE STANDARD SPECIFICATIONS.
2. SEE BOX BEAM DETAIL SHEET FOR FURTHER DETAILS.
3. RAILS SHOWN STRAIGHT FOR CLARITY

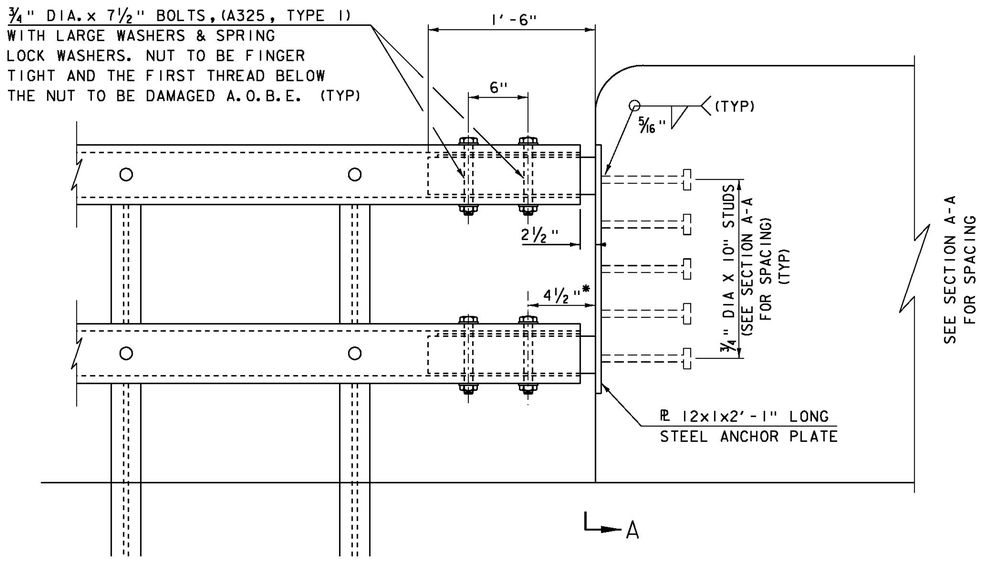
PROJECT NAME: CLARENDON	
PROJECT NUMBER: BRO 1443(48)	
FILE NAME: si2j160raildet.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: S. COLEY
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
APPROACH RAIL WW3	SHEET 22 OF 59



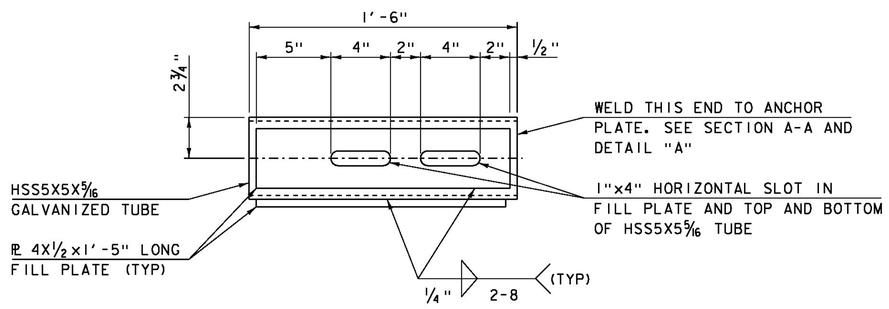
SECTION A-A
NOT TO SCALE



DETAIL "A"
NOT TO SCALE



APPROACH RAIL DETAIL
NOT TO SCALE

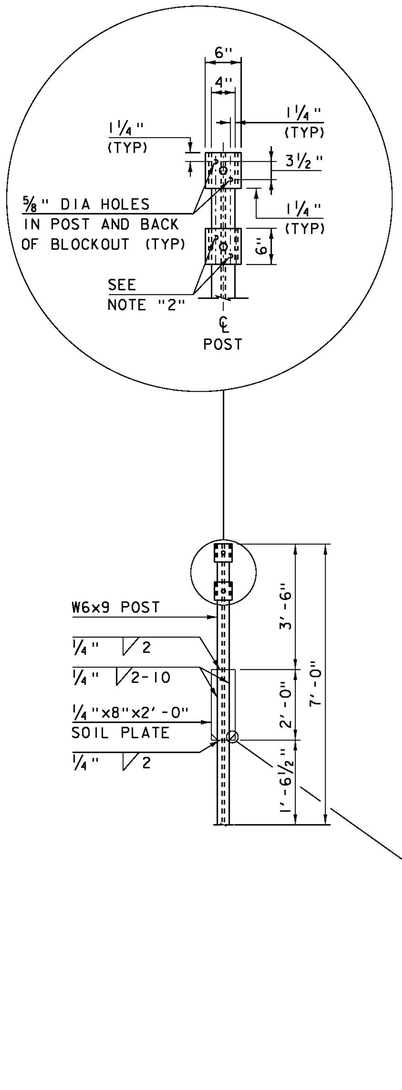


CONNECTION TUBE PLATE
PLAN VIEW
NOT TO SCALE

* AT 68°F (INCREASE DIMENSIONS IF MORE THAN 1½" OF EXPANSION IS ANTICIPATED).

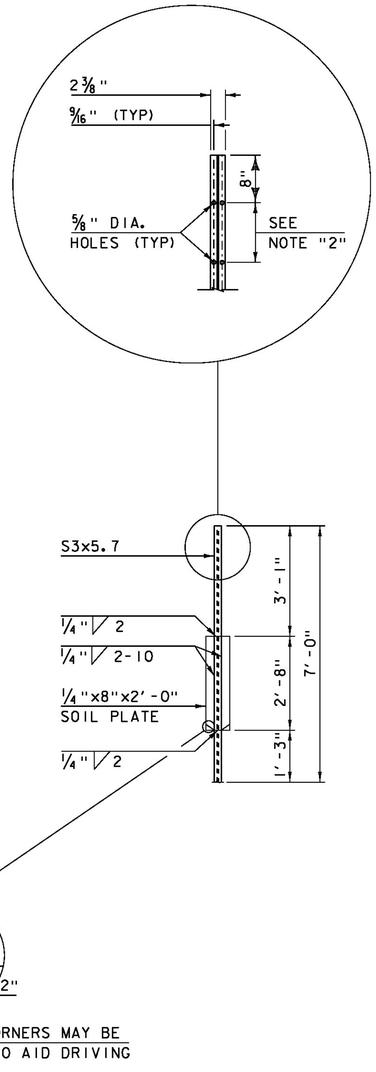
PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)

FILE NAME: si2j160raildet.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: S. COLEY
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
APPROACH RAIL DETAILS 1	SHEET 23 OF 59



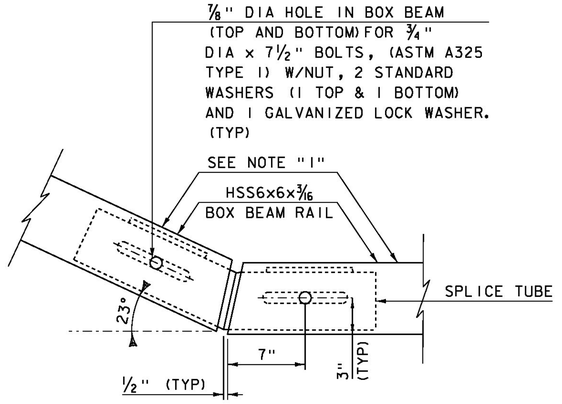
HEAVY POST DETAIL

NOT TO SCALE



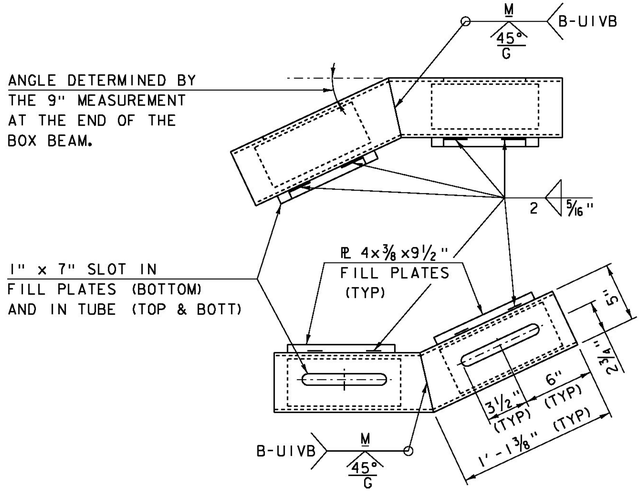
TRANSITION POST DETAIL

NOT TO SCALE



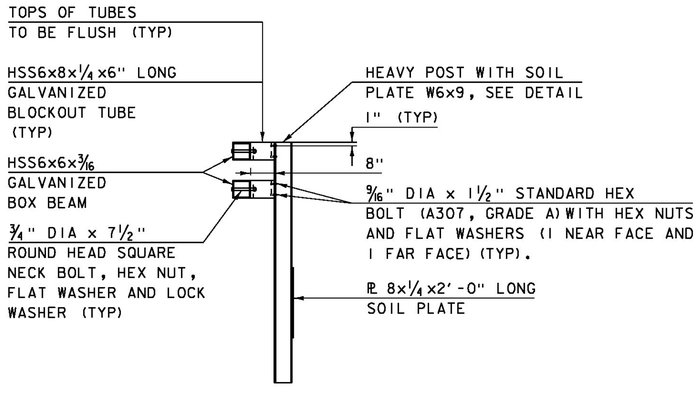
SPLICE DETAIL AT BOTTOM RAIL TURN BACK PLAN

NOT TO SCALE



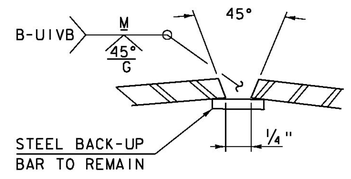
SPLICE TUBE DETAIL FOR TURN BACK

NOT TO SCALE



HEAVY POST ELEVATION

NOT TO SCALE



WELD DETAIL FOR SPLICE TUBE

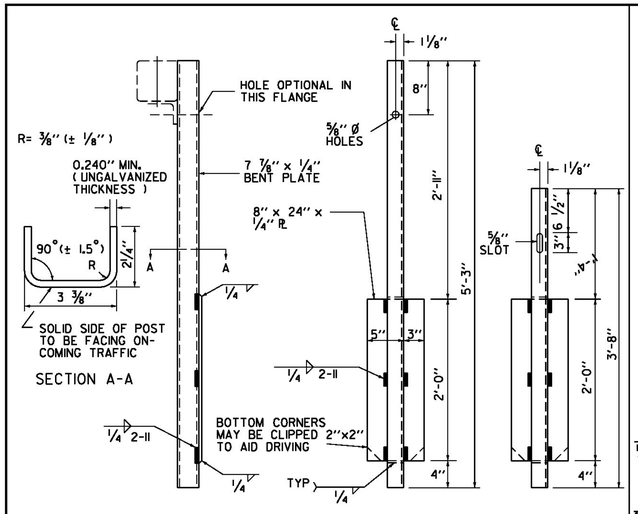
NOT TO SCALE

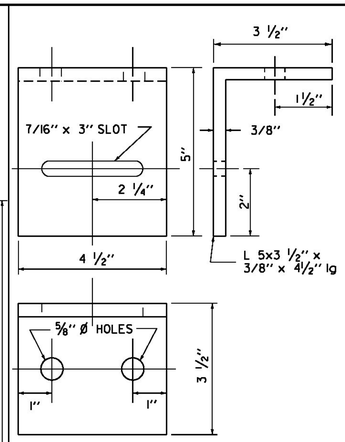
NOTES:

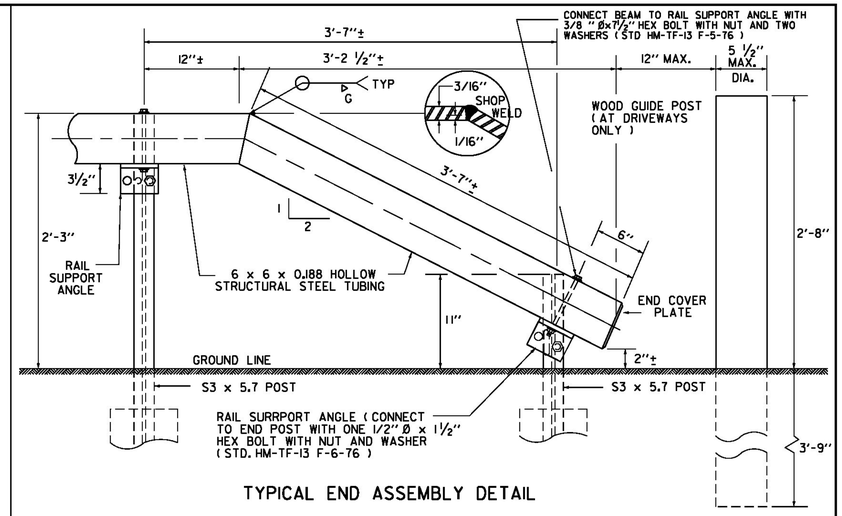
1. PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE BOX BEAM RAILS, SPLICE TUBES AND FILL PLATES.
2. HOLES IN POST FOR LOWER RAIL MAY BE LOCATED AND DRILLED IN THE FIELD. IF SO, GALVANIZING SHALL BE REPAIRED PER SECTION 726.08.

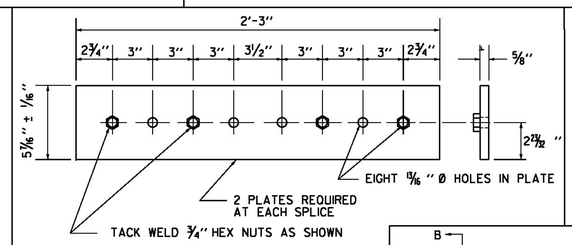
PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)

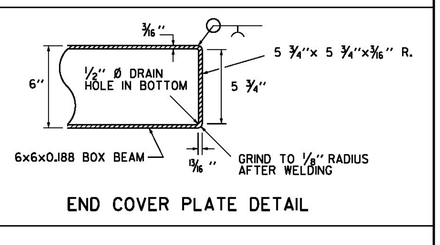
FILE NAME: sl2j160raildet.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: S. COLEY
DESIGNED BY: J. GRIGAS	CHECKED BY: C. LAROCHE
APPROACH RAIL DETAILS 2	SHEET 24 OF 59

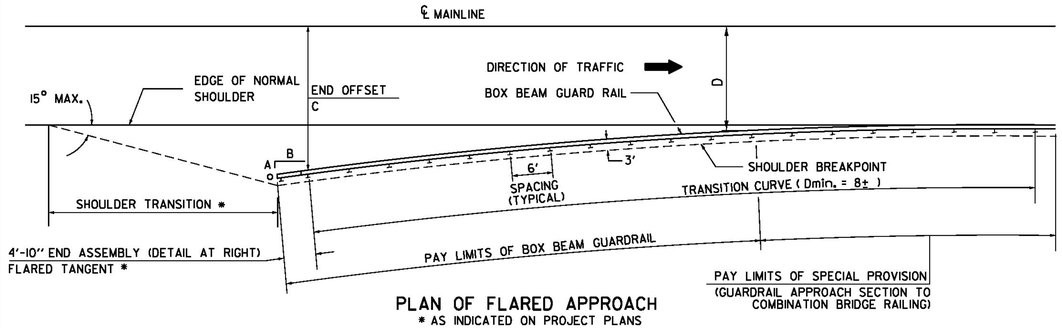








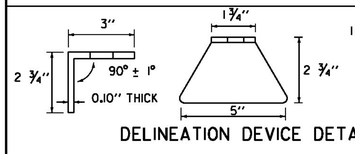


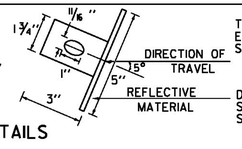


MAX. FLARE RATE (B:A)	TRANSITION CURVE LENGTH	OFFSET "C" FOR MIN. TRANS. CURVE	END OFFSET	OFFSET "D" FOR APPROACH RAIL
9:1	78 FEET	15'-4"	15'-4"	11'-9"

GENERAL NOTES

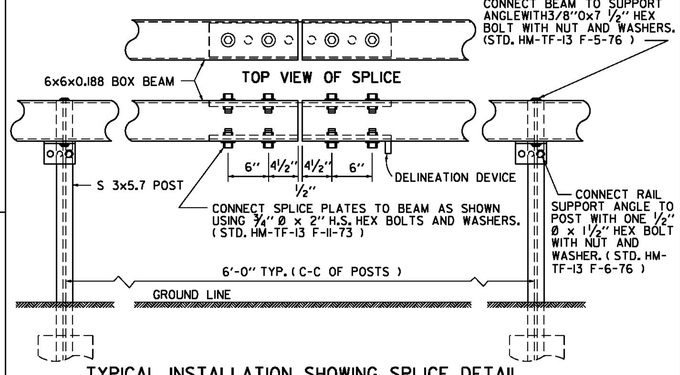
1. FOR MATERIAL REQUIREMENTS AND CONSTRUCTION DETAILS SEE SPECIFICATIONS FOR BOX BEAM GUARD RAIL.
2. RAIL ALIGNMENT TO BE STRAIGHT AT SPLICES. NO LATERAL BENDS PERMITTED WITHIN THE SPLICE. THIS DOES NOT PRECLUDE THE SHOP FABRICATION OF BENT SPLICES.
3. THE LINE OF BOX BEAM GUARD RAIL WHEN COMPLETED SHALL PRESENT A SMOOTH AND PLEASING GRADE LINE IN BOTH HORIZONTAL AND VERTICAL PLANES.
4. ALL POSTS IN A GIVEN RUN TO BE OF THE SAME TYPE.
5. TRANSITION CURVE TO BEGIN AT POST 1 OF APPROACH RAIL. SEE APPROACH RAIL WW2 FOR FURTHER DETAILS

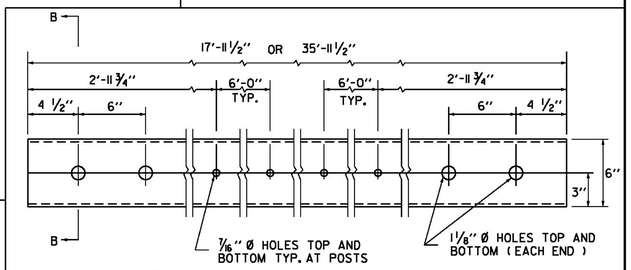




THIS REFLECTORIZED ALUMINUM DELINEATION DEVICE IS TO BE ERECTED EVERY 36 FEET, AT SPLICES. DELINEATOR SHALL MEET SPECIFICAITON REQUIRMENTS FOR ASTM B209 ALLOY 5052-H32.

DELINEATION DEVICES SHALL MEET THRE REQUIREMENTS OF SUBSECTION 728.04 AND 750.08. REFLECTIVE MATERIAL SHALL BE OF ENCAPSULATED LENS SILVER OR AMBER.



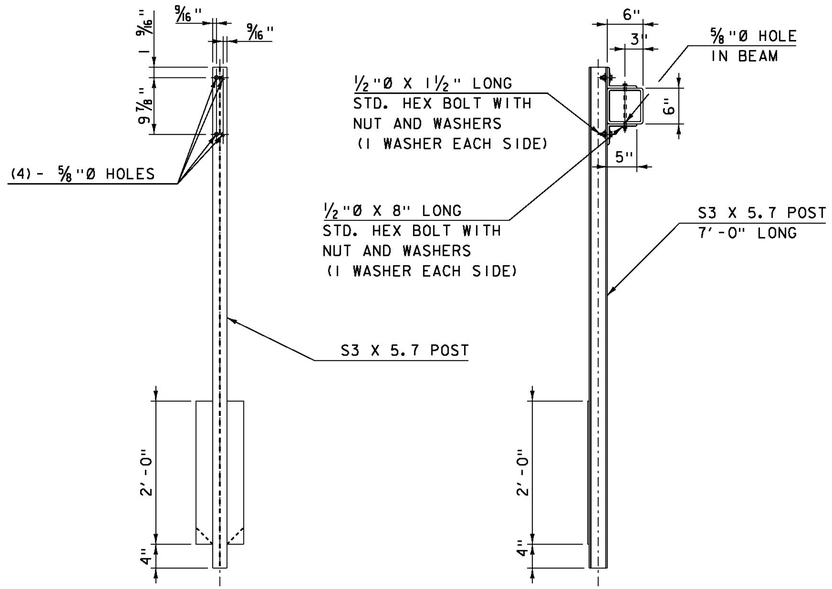


NOTES:

1. RAIL SECTIONS FOR TANGENT RUNS WILL BE EITHER 17'-11 1/2" OR 35'-11 1/2" IN LENGTH.
2. ON CURVES, CHORD LENGTHS WILL BE NO LESS THAN 12 FEET.

6x6x0.188 BOX BEAM RAIL ELEMENT
(STD. HM-TF-13 RE-10-76)

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)
FILE NAME: s12j160raildet.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: S. COLEY
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
BOX BEAM DETAILS	SHEET 25 OF 59

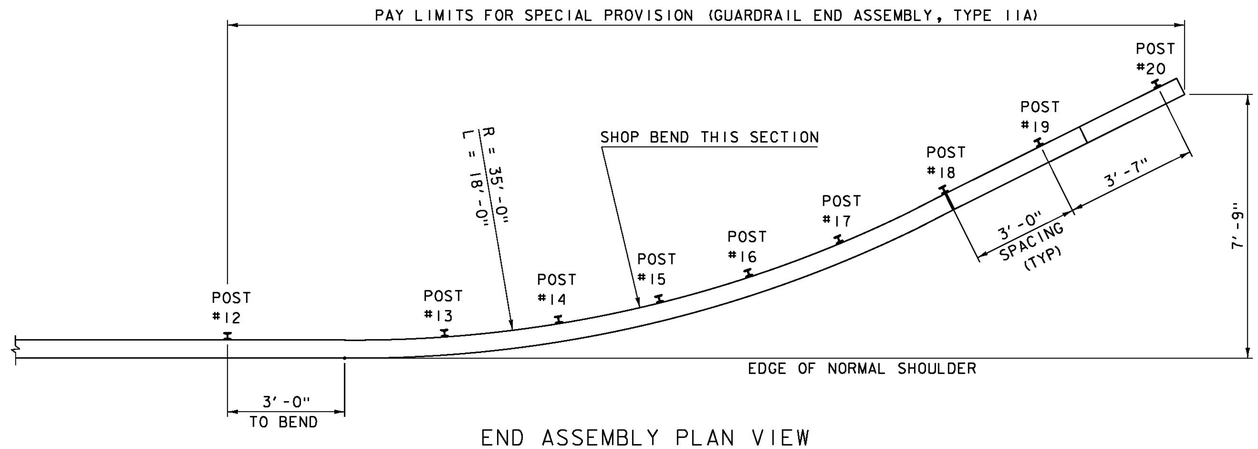


FRONT ELEVATION
POSTS 17 AND 19

NOT TO SCALE

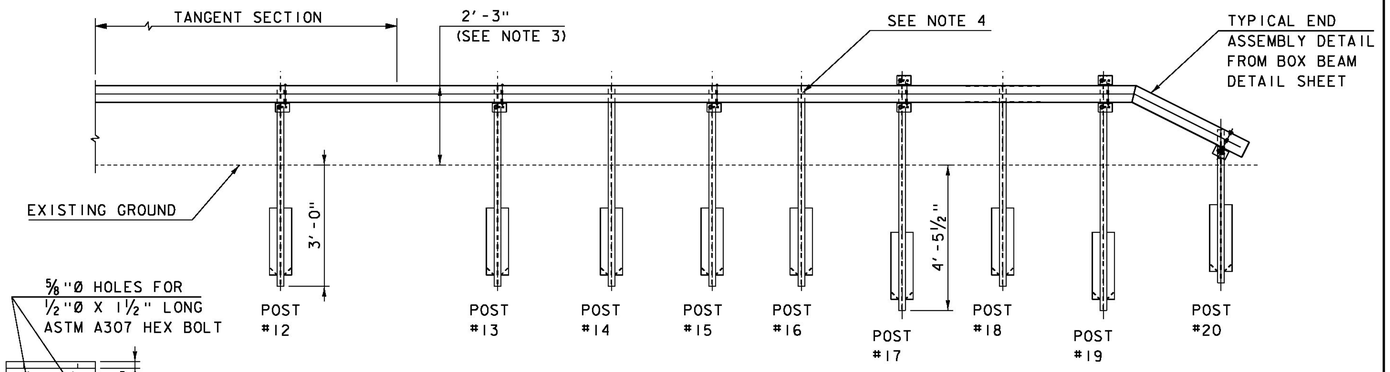
SIDE ELEVATION
POSTS 17 AND 19

NOT TO SCALE



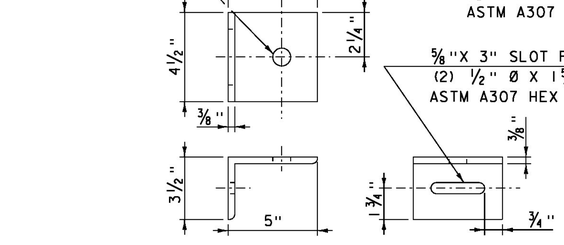
END ASSEMBLY PLAN VIEW

NOT TO SCALE



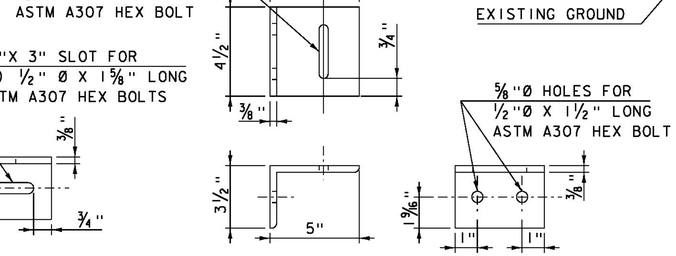
END ASSEMBLY ELEVATION

NOT TO SCALE



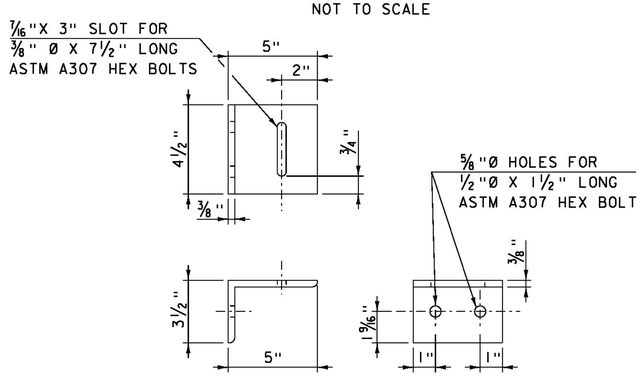
BRACKET DETAILS POST 20

NOT TO SCALE



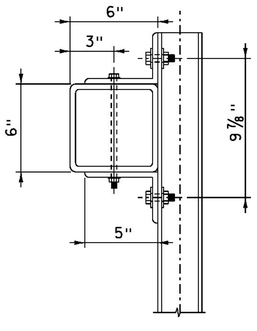
BRACKET DETAILS POSTS 17 AND 19

NOT TO SCALE



BRACKET DETAILS POSTS 12, 13, 14, 15, 16 AND 18

NOT TO SCALE



POSTS 17 AND 19 CONNECTION DETAIL
"DETAIL A"

NOT TO SCALE

NOTES:

1. POSTS 17 AND 19 SHALL BE EXTRA LONG POSTS. POSTS 12, 13, 14, 14, 15, 16 AND 18 SHALL BE STANDARD LENGTH.
2. POSTS 17 AND 19 SHALL BE FASTENED TO THE RAIL USING DETAIL "A".
3. THE DRAWING INDICATES THE TERMINAL INSTALLED ON LEVEL GROUND. WHEN INSTALLED OVER A SLOPE OR DITCH, THE TERMINAL END SHOULD BE PUSHED DOWN WITH THE EQUIVALENT OF APPROXIMATELY 100 LBS EFFORT TO DEPRESS THE TERMINAL DOWN.
4. POSTS 14, 16 AND 18 SHALL NOT BE CONNECTED TO BOX BEAM GUARDRAIL.
5. SEE BOX BEAM DETAIL SHEET FOR SPLICE AND TYPICAL END ASSEMBLY DETAILS.

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)
FILE NAME: s12j160raildet.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: S. COLEY
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
GUARDRAIL END ASSEMBLY TYPE IIA	SHEET 26 OF 59

SOIL CLASSIFICATION

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

ROCK QUALITY DESIGNATION

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

SHEAR STRENGTH

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

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

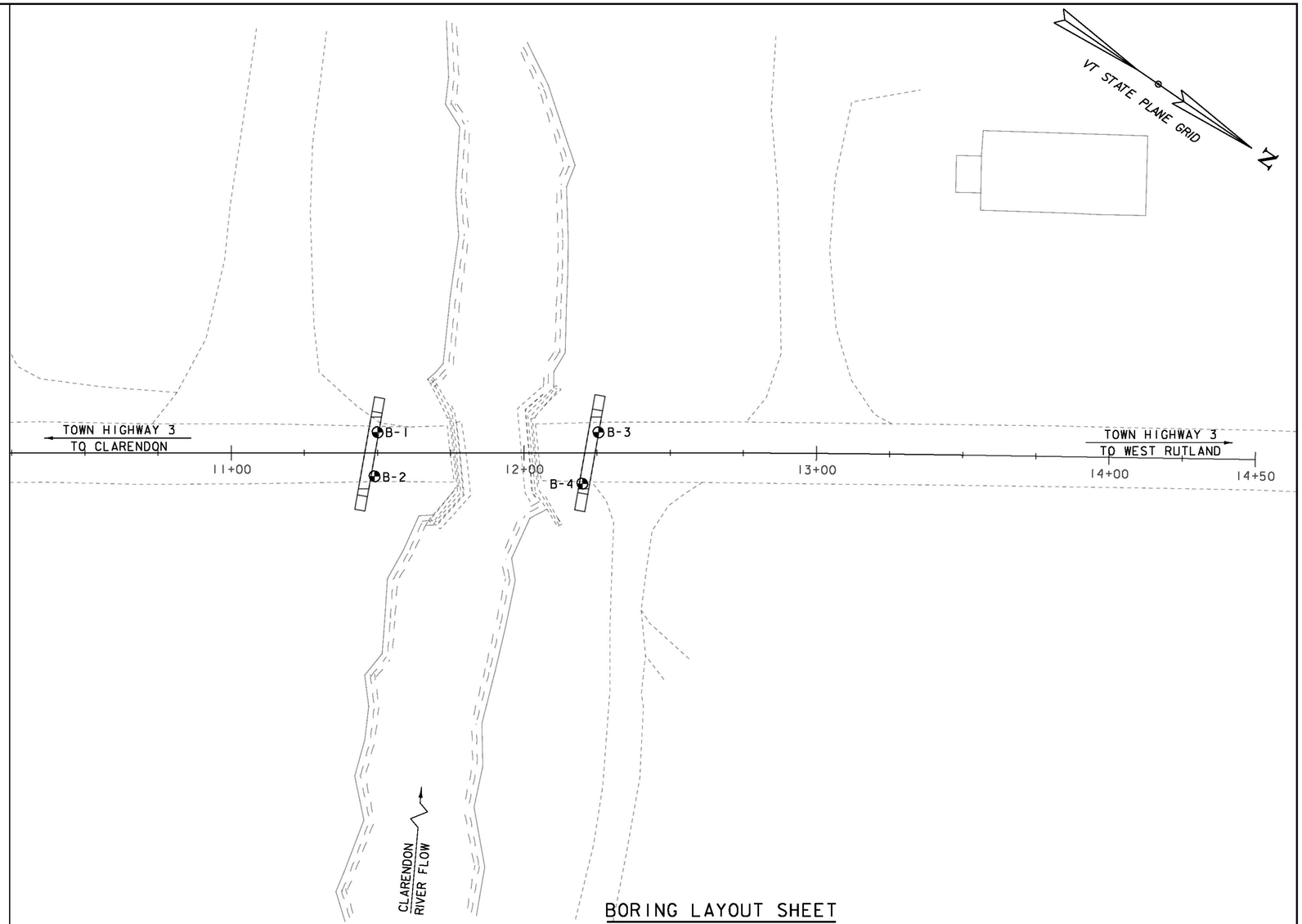
DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

COMMONLY USED SYMBOLS

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

COLOR

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



BORING LAYOUT SHEET

SCALE 1" = 20'-0"

20 0 20

DEFINITIONS (AASHTO)

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

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

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

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

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

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

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

VARVED - Alternate layers of silt and clay.

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

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

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

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

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

DIP - Inclination of bed with a horizontal plane.

GENERAL NOTES

1. The subsurface explorations shown herein were made between 03/04/13 and 03/07/13 by the Agency.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

BORING CHART

HOLE NO.	SURV. STATION	OFFSET	GROUND ELEV.	ELEV. TLOB
B-1	11+50.0	7.0' LT	647.00	615.20
B-2	11+49.0	8.0' RT	647.00	616.70
B-3	12+25.5	7.0' LT	645.00	624.70
B-4	12+20.0	10.5' RT	645.00	619.00

PROJECT NAME: CLARENDON

PROJECT NUMBER: BRO 1443(48)

FILE NAME: s12j160boring.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
BORING LAYOUT SHEET

PLOT DATE: 10-SEP-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 27 OF 59

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

BORING LOG

Clarendon BRO 1443 (48)
Clarendon, VT

Boring No.: B-1
Page No.: 1 of 1
Pin No.: 12J160
Checked By: JFW

Boring Crew: J. Leonhardt (TransTech), J.Gilman (GeoDesign)
Date Started: 3/04/13 Date Finished: 3/05/13
VTSPG NAD83: N 383263 ft E 1501635 ft
Station: 11+50 Offset: 7LT
Ground Elevation: 647 ft

	Casing	Sampler
Type:	FJ	SS
I.D.:	4 in	1.38 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Manual/Auto/NWJ	
Rig:	SEE REMARK 3 BELOW	

Groundwater Observations

Date	Depth (ft)	Notes
03/04/13	10.0	Wet sample

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 %	LL %	PI %
		S1 (0.5'-2.0'): Dense, dark brown fine to coarse SAND, some fine to coarse Gravel, little Silt, moist. Rec. = 0.8 ft (AASHTO M145 Classification: A-1-b.)				18-23-20 (43)	4.9	45.9	43.5	10.6	NP	NP
		S2 (2'-4'): Medium dense, fine to coarse SAND, some Silt, little fine to coarse Gravel, moist. Rec. = 0.9 ft (AASHTO M145 Classification: A-2-4.)				19-11-7-8 (18)	12.0	22.9	49.2	27.9	NP	NP
5		S3 (5'-7'): Medium dense, brown fine to coarse SAND, some fine to coarse Gravel, little Silt, moist. Rec. = 1.3 ft (AASHTO M145 Classification: A-1-b.)				5-7-5-8 (12)	8.1	35.2	48.1	16.7	NP	NP
		S4 (7'-9'): Loose, brown fine to medium SAND, some (+) Silt, trace fine Gravel, moist (bottom 5" mottled). Rec. = 1.5 ft (AASHTO M145 Classification: A-2-4.)				6-4-3-3 (7)	19.1	9.0	58.8	32.2	NP	NP
10		S5 (10'-12'): Medium dense, brown fine to coarse GRAVEL and fine to coarse SAND, trace Silt, wet. Rec. = 0.5 ft (AASHTO M145 Classification: A-1-a.)				10-6-5-7 (11)	14.8	64.5	27.5	8.0	NP	NP
		S6 (12'-14'): Medium dense, brown fine to coarse GRAVEL and fine to coarse SAND, trace (+) Silt, wet. Rec. = 0.5 ft (AASHTO M145 Classification: A-1-a.)				8-5-11-16 (16)	11.9	64.6	26.5	8.9	NP	NP
15		S7 (15'-17'): Medium dense, brown fine to coarse SAND and fine to coarse GRAVEL, little Silt, wet. Rec. = 1.0 ft (AASHTO M145 Classification: A-1-b.)				15-11-17-31 (28)	11.0	46.0	37.0	17.0	NP	NP
		S8 (17'-19'): Very dense, mixed color fine to coarse GRAVEL and fine to coarse SAND, little Silt, wet. Rec. = 1.3 ft (AASHTO M145 Classification: A-1-a.)				75-65-44-50 (100+)	8.4	61.7	24.0	14.3	NP	NP
20		S9 (20'-22'): Very dense, gray fine to medium SAND, some fine to coarse Gravel, some Silt, wet. Rec. = 0.6 ft (AASHTO M145 Classification: A-2-4.)				16-20-45-37 (65)	11.6	35.0	44.7	20.3	NP	NP
		S10 (25'-27'): Top 3": Gray fine to medium SAND. Bottom 14": Very dense, gray fine to coarse SAND, some fine to coarse Gravel, some Silt, wet. Rec. = 1.4 ft (AASHTO M145 Classification: A-1-b.)				25-35-42-32 (77)	10.3	41.6	33.8	24.6	NP	NP
25		S11 (30'-31.7'): Very dense, gray fine to medium SAND and SILT, wet (rock fragments in spoon tip). Rec. = 1.5 ft (AASHTO M145 Classification: A-4.)				28-44-57-100/3" (100+)	16.8	11.7	32.5	55.8	NP	NP
			C1	93.3 (84)	8	Top of Bedrock @ 31.8 ft						
30		C1 (32'-37'): Good quality, hard, fresh to slightly weathered, moderately jointed, white-gray, DOLOSTONE. Reacts to dilute HCl when powdered. Fractures typically 30 to 70 degrees from horizontal.			5.75 6.25 5.5 5.5							
		C2 (37'-42'): Fair quality, hard, slightly weathered, closely to moderately jointed, white-gray DOLOSTONE. Middle 1.5' tan and more weathered. Reacts to dilute HCl when powdered. Fractures typically 20 to 30 degrees from horizontal.	C2	95 (68)	4 4.5 4.4 6.5 7.5							
35												
40												
45												

BOTTOM OF PILE CAP AB#1 ELEV. 637.50

EST. PILE TIP ELEV. 615.00

Remarks: Hole stopped @ 42.0 ft
1) Exploration location taped in the field by GeoDesign. Ground surface elevation, station, and offset shown are estimated from conceptual plans provided by VTrans.
2) Driller used 3.25" ID HSA to advance to 5 feet deep to create pilot hole for FJ casing advance.
3) Upper 22' of borehole (samples S1 through S9) was performed with a CME 45C Skid Rig with a cathead safety hammer and an assumed hammer correction factor of 1.0. Due to drill rig breakdown, the lower 20' (samples S10 through C2) was completed with a CME 75 Track Rig with a automatic hammer and a hammer correction factor of 1.43.
4) Driller noted a temporary decreased rotary bit resistance at approximately 22 feet deep.
5) Visual soil descriptions are per the Burmister system. Lab testing gradations reported are per AASHTO M145.

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

GEOVSSEN BORING LOG 750-08.10-CLARENDONBRO1443(48).GPJ VERMONT AOT.GDT 4/11/13

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

BORING LOG

Clarendon BRO 1443 (48)
Clarendon, VT

Boring No.: B-2
Page No.: 1 of 1
Pin No.: 12J160
Checked By: JFW

Boring Crew: J. Leonhardt (TransTech), J.Gilman (GeoDesign)
Date Started: 3/07/13 Date Finished: 3/07/13
VTSPG NAD83: N 383271 ft E 1501647 ft
Station: 11+49 Offset: 8RT
Ground Elevation: 647 ft

	Casing	Sampler
Type:	FJ	SS
I.D.:	4 in	1.38 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/NWJ	
Rig:	CME 75 TRACK	C_E = 1.43

Groundwater Observations

Date	Depth (ft)	Notes
03/07/13	9.0	Wet sample

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 %	LL %	PI %
		0' - 9': Inferred Sand & Gravel fill.										
5												
10		S1 (9'-11'): Loose, brown with oxidized zones, fine to coarse SAND, some fine to coarse Gravel, trace Silt, wet. Rec. = 0.5 ft (AASHTO M145 Classification: A-1-a.)				7-6-2-8 (8)	19.4	54.2	37.2	8.6	NP	NP
15		S2 (19'-21'): Very dense, gray fine to medium SAND and SILT, trace fine to coarse Gravel (top 3" only), wet. Rec. = 1.2 ft (AASHTO M145 Classification: A-4.)				17-31-25-31 (56)	17.8	17.7	46.5	35.8	NP	NP
20												
25												
30		S3 (29'-31'): Refusal, gray brown fine to coarse SAND and SILT, trace fine Gravel, moist. Rec. = 1.3 ft (AASHTO M145 Classification: A-4.)				45-48-50/3" (100+)	16.2	13.6	36.9	49.5	NP	NP
			C1	88 (68)	5.5 5.5 7 6.2 6	Top of Bedrock @ 30.3 ft						
35		C1 (30.3'-35.3'): Fair quality, hard, slightly weathered with moderately to highly weathered seams, close to moderately jointed, tan to white-gray DOLOSTONE. Reacts to dilute HCl when powdered. Fractures typically 30 degrees from horizontal.										
40												
45												

BOTTOM OF PILE CAP AB#1 ELEV. 637.50

EST. PILE TIP

Remarks: Hole stopped @ 35.3 ft
1) Exploration location taped in the field by GeoDesign. Ground surface elevation, station, and offset shown are estimated from conceptual plans provided by VTrans.
2) Driller used 3.25" ID HSA to advance to 5 feet deep to create pilot hole for FJ casing advance.
3) Driller noted increased roller bit resistance (near refusal) at approximately 16.5 feet deep. Driller advanced casing to 15 feet deep and was able to continue borehole advance with roller bit.
4) Driller noted difficultly advancing casing from approximately 16.5 to 19 feet deep, and from 22 to 30 feet deep through dense soils.
5) Split spoon, spin casing, and roller bit refusal at 30.3 feet deep.
6) Visual soil descriptions are per the Burmister system. Lab testing gradations reported are per AASHTO M145.

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

GEOVSSEN BORING LOG 750-08.10-CLARENDONBRO1443(48).GPJ VERMONT AOT.GDT 4/11/13

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: s12j160boring
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
BORING LOGS 1

PLOT DATE: 10-SEP-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 28 OF 59

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

BORING LOG

Clarendon BRO 1443 (48)
Clarendon, VT

Boring No.: B-3
Page No.: 1 of 1
Pin No.: 12J160
Checked By: JFW

Boring Crew: J. Leonhardt (TransTech), J.Gilman (GeoDesign)
Date Started: 3/06/13 Date Finished: 3/07/13
VTSPG NAD83: N 383326 ft E 1501592 ft
Station: 12+25.5 Offset: 7LT
Ground Elevation: 645 ft

	Casing	Sampler
Type:	FJ	SS
I.D.:	4 in	1.38 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/NWJ	
Rig:	CME 75 TRACK	C_E = 1.43

Groundwater Observations

Date	Depth (ft)	Notes
03/06/13	9.0	Wet sample

BOTTOM OF PILE CAP AB#2 ELEV. 636.70

EST. PILE TIP ELEV. 621.70

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 %	LL %	PI %
5		0' - 9': Inferred Sand & Gravel fill.										
10		S1 (9'-11'): Dense, mixed color fine to coarse GRAVEL, some fine to coarse Sand, trace Silt, wet. Rec. = 0.6 ft (AASHTO M145 Classification: A-1-a.)				17-22-26-25 (48)	7.9	74.8	16.1	9.1	NP	NP
15		S2 (19'-20.3'): Refusal, gray fine to coarse SAND, some Silt, some fine to coarse Gravel, wet. Rec. = 1.0 ft (AASHTO M145 Classification: A-1-b.)				55-27-57/3" (100+)	9.6	41.5	36.4	22.1	NP	NP
20		C1 (20.5'-25.5'): Good quality, hard, fresh, closely to moderately jointed, white-gray DOLOSTONE. Reacts to dilute HCl when powdered. Fractures typically 20 to 70 degrees from horizontal.	C1	97 (78)	6.5 6 7 6.3 6.8			Top of Bedrock @ 20.3 ft				
25		Hole stopped @ 25.5 ft										
30												
35												
40												
45												

Remarks:
1) Exploration location taped in the field by GeoDesign. Ground surface elevation, station, and offset shown are estimated from conceptual plans provided by VTrans.
2) Driller used 3.25" ID HSA to advance to 5 feet deep to create pilot hole for FJ casing advance.
3) Transition between kame terrace and glacial till strata is inferred based on boring B-4. No indication of strata change was noted during borehole advance.
4) Split spoon refusal and roller bit refusal at approximately 20.3 feet deep. Driller advanced casing to approximately 20.5 feet deep prior to coring.
5) Visual soil descriptions are per the Burmister system. Lab testing gradations reported are per AASHTO M145.

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

GEOSIGN BORING LOG 750-08.10-CLARENDONBRO1443(48).GPJ VERMONT AOT.GDT 4/11/13

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

BORING LOG

Clarendon BRO 1443 (48)
Clarendon, VT

Boring No.: B-4
Page No.: 1 of 1
Pin No.: 12J160
Checked By: JFW

Boring Crew: J. Leonhardt (TransTech), J.Gilman (GeoDesign)
Date Started: 3/05/13 Date Finished: 3/06/13
VTSPG NAD83: N 383331 ft E 1501609 ft
Station: 12+20 Offset: 10.5RT
Ground Elevation: 645 ft

	Casing	Sampler
Type:	FJ	SS
I.D.:	4 in	1.38 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/NWJ	
Rig:	CME 75 TRACK	C_E = 1.43

Groundwater Observations

Date	Depth (ft)	Notes
03/05/13	7.0	Wet sample

BOTTOM OF PILE CAP AB#2 ELEV. 636.70

EST. PILE TIP

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 %	LL %	PI %
5		S1 (0.5'-2'): Medium dense, dark brown fine to coarse SAND, some fine to coarse Gravel, little Silt, moist. Rec. = 0.7 ft (AASHTO M145 Classification: A-1-b.)				7-10-10 (20)	7.1	48.4	43.5	8.1	NP	NP
		S2 (2'-4'): Loose, brown fine to coarse SAND, some fine to coarse Gravel, little Silt, moist. Rec. = 0.7 ft (AASHTO M145 Classification: A-1-b.)				6-4-4-5 (8)	7.9	45.8	42.7	11.5	NP	NP
		S3 (5'-7'): Loose, no recovery. Rec. = 0.0 ft				9-5-2-6 (7)						
		S4 (7'-9'): Loose, gray brown fine to coarse SAND, some fine to coarse Gravel, some Silt, wet. Rec. = 0.9 ft (AASHTO M145 Classification: A-2-4.)				7-4-5-10 (9)	16.0	36.9	42.1	21.0	NP	NP
10		S5 (10'-12'): Dense, brown fine to coarse GRAVEL, some fine to coarse Sand, little Silt, wet. Rec. = 1.0 ft (AASHTO M145 Classification: A-1-a.)				21-15-28-15 (43)	9.3	64.9	22.1	13.0	NP	NP
		S6 (12'-13'): Refusal, brown fine to coarse GRAVEL and fine to coarse SAND, little Silt, wet. Rec. = 0.8 ft (AASHTO M145 Classification: A-1-a.)				25-100 (100+)	9.7	66.1	22.5	11.4	NP	NP
15		S7 (15'-17'): Very dense, brown fine to coarse SAND, some fine to coarse Gravel, some Silt, wet. Rec. = 1.0 ft (AASHTO M145 Classification: A-1-b.)				47-35-30-37 (65)	9.7	41.1	35.0	23.9	NP	NP
		S8 (17'-19'): Very dense, gray fine to coarse SAND, some fine to coarse Gravel, some Silt, wet. Rec. = 1.3 ft (AASHTO M145 Classification: A-1-b.)				36-70-44-48 (100+)	8.3	43.0	31.8	25.2	NP	NP
20		S9 (20'-22'): Very dense, gray fine to coarse SAND, some Silt, some fine to coarse Gravel, wet. Rec. = 1.0 ft (AASHTO M145 Classification: A-2-4.)				28-55-30-36 (85)	9.2	40.3	28.6	31.1	NP	NP
		C1 (22'-26'): Boulder Fragments.	C1	52 (0)	6.5 3.5 3 4							
25		C2 (26'-27'): Excellent quality, hard, fresh to slightly weathered, close to moderately jointed, light grayish tan DOLOSTONE. Reacts to dilute HCl when powdered.	C2	100 (100)	8 8			Top of Bedrock @ 26.0 ft				
		C3 (27'-32'): Fair quality, hard, fresh to slightly weathered, moderately jointed, white-gray DOLOSTONE. Reacts to dilute HCl when powdered. Fractures typically 10 to 30 degrees from horizontal.	C3	87 (70)	5.8 4.5 4 4.5							
30		Hole stopped @ 32.0 ft										
35												
40												
45												

Remarks:
1) Exploration location taped in the field by GeoDesign. Ground surface elevation, station, and offset shown are estimated from conceptual plans provided by VTrans.
2) Driller used 3.25" ID HSA to advance to 5 feet deep to create pilot hole for FJ casing advance.
3) Roller bit refusal at 22 feet deep. Set casing to 22' deep prior to coring C1.
4) Core runs C1 and C2 were performed continuously without removal of the core barrel. Driller telescoped 3" I.D. casing through 4" I.D. casing to 25 feet deep after coring C1/C2, then advanced roller bit to 26 feet deep to clear the borehole of boulder debris prior to coring C3.
5) Visual soil descriptions are per the Burmister system. Lab testing gradations reported are per AASHTO M145.

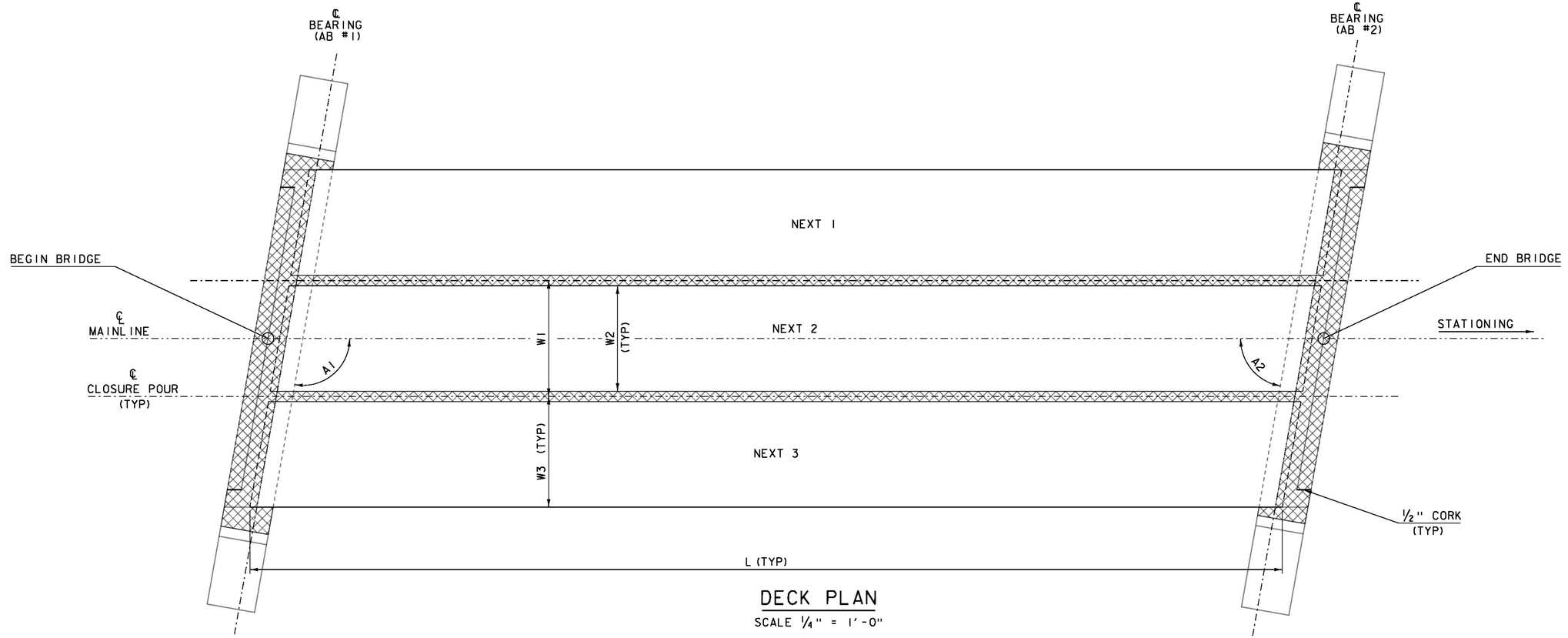
Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations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

GEOSIGN BORING LOG 750-08.10-CLARENDONBRO1443(48).GPJ VERMONT AOT.GDT 4/11/13

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

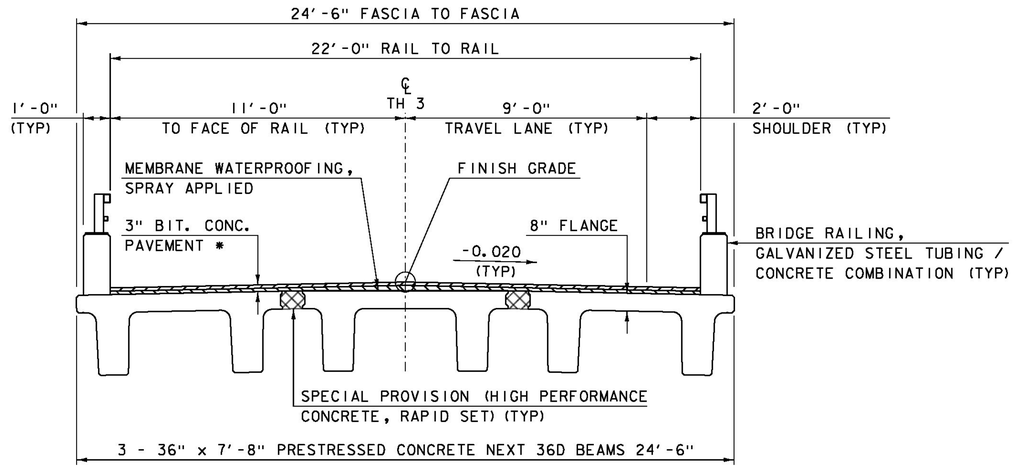
FILE NAME: sl2j160boring
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
BORING LOGS 2

PLOT DATE: 10-SEP-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 29 OF 59



DECK PLAN

SCALE ¼" = 1'-0"



BRIDGE TYPICAL SECTION NEXT BEAM ALTERNATE

SCALE ⅜" = 1'-0"

SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)

SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) *

L	75'-0¼"
W1	8'-5"
W2	7'-8"
W3	8'-0½"

SKEW	A1	100°
	A2	80°

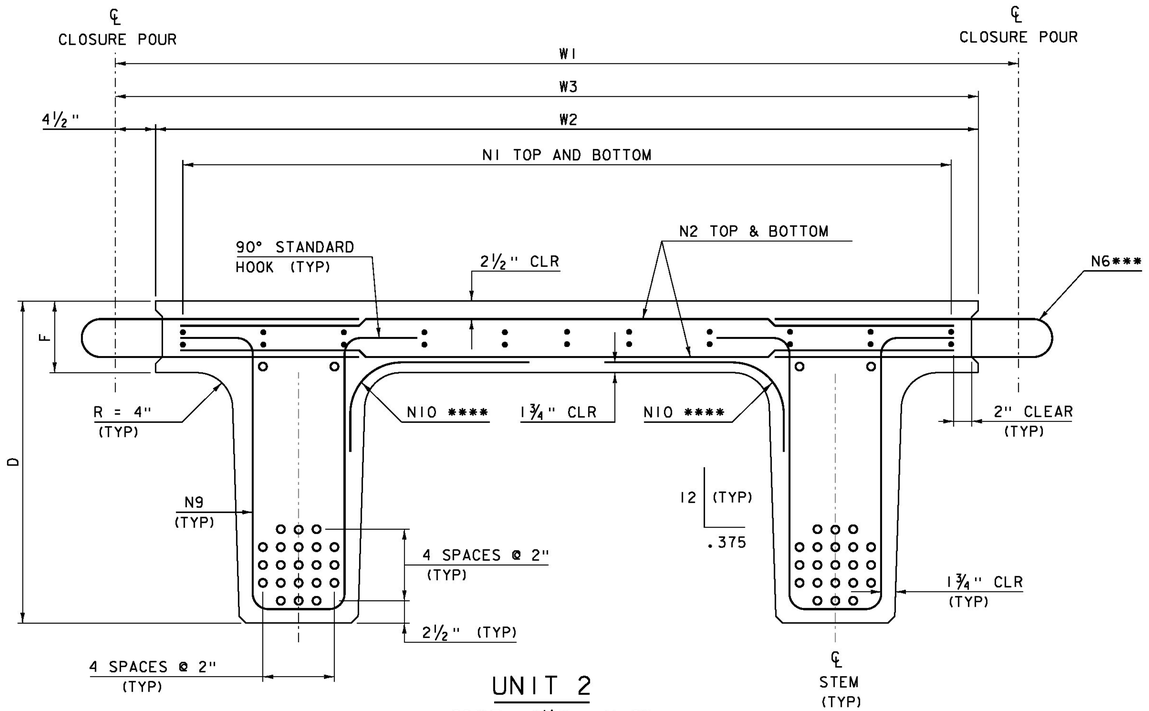
NOTE:

*BITUMINOUS CONCRETE PAVEMENT IN DECK PLAN VIEW IS OMITTED FOR CLARITY

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

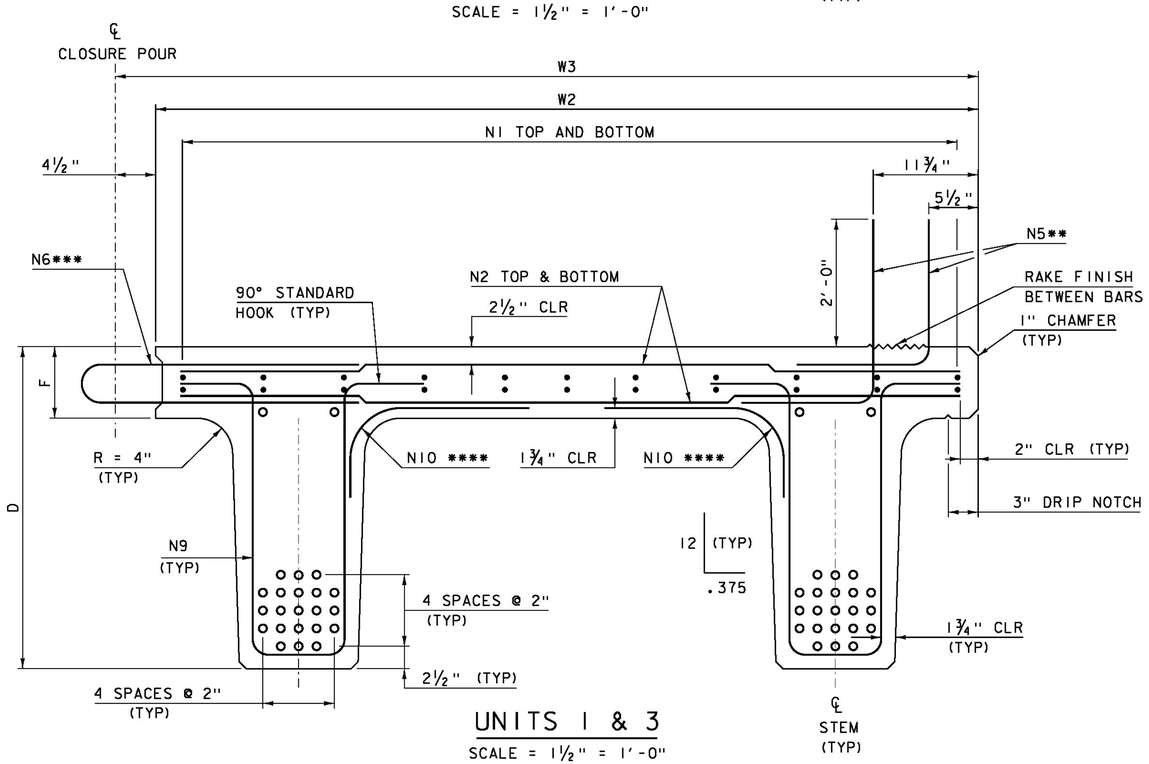
FILE NAME: s12j160sup
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
NEXT BEAM FRAMING PLAN

PLOT DATE: 08-OCT-2015
DRAWN BY: G. DARGAN
CHECKED BY: J. GRIGAS
SHEET 30 OF 59



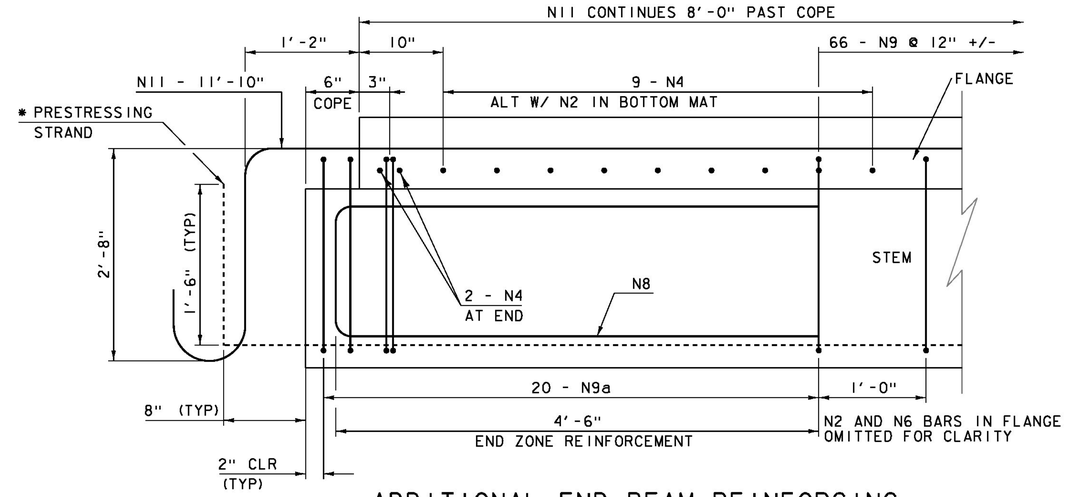
UNIT 2

SCALE = 1½" = 1'-0"



UNITS 1 & 3

SCALE = 1½" = 1'-0"



ADDITIONAL END BEAM REINFORCING LONGITUDINAL SECTION

SCALE = 1½" = 1'-0"

NEXT BEAM REINFORCING CHART

BAR	SIZE	SPACING	TYPE
N1	5	9"	STR
N2	5	6"	STR
N3	4	AS SHOWN	STR
N4	4	6"	STR
N5	4	8"	2
N6	4	6"	S11
N8	5	AS SHOWN	S10
N9	4	12"	S4
N9a	4	3"	S4
N10	5	6"	11
N11	8	6"	S7

NEXT BEAM DIMENSIONS

D	36"
F	8"
W1	8'-5"
W2	7'-8"
W3	8'-0½"

NOTES:

* LEAVE FOUR STRANDS LONG PER STEM AS INDICATED. TIE STRANDS TO HORIZONTAL FF REINFORCING IN DECK CLOSURE POUR. SLEEVES FOR PERMANENT BENDING OF THE PRESTRESSING STRANDS WILL NOT BE ALLOWED INSIDE THE CLOSURE POUR.

** VERTICAL LEGS TO BE SET PLUM IN FINAL CONDITION

*** TO BE STAGGERED WITH ADJACENT BEAM

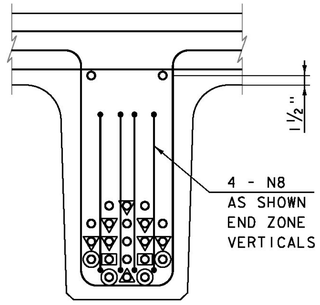
**** N10 SHALL BE PLACED AS SHOWN FOR THE FIRST 10 FEET AT EACH END OF THE BEAM

3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS
2'-7" NUMBER 5 BAR LAP LENGTH
2'-1" NUMBER 4 BAR LAP LENGTH

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: s12j160sup.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
NEXT BEAM DETAILS 1

PLOT DATE: 10-SEP-2015
DRAWN BY: S. COLEY
CHECKED BY: G. LAROCHE
SHEET 31 OF 59



BEAM SECTION

SCALE = 1½" = 1'-0"

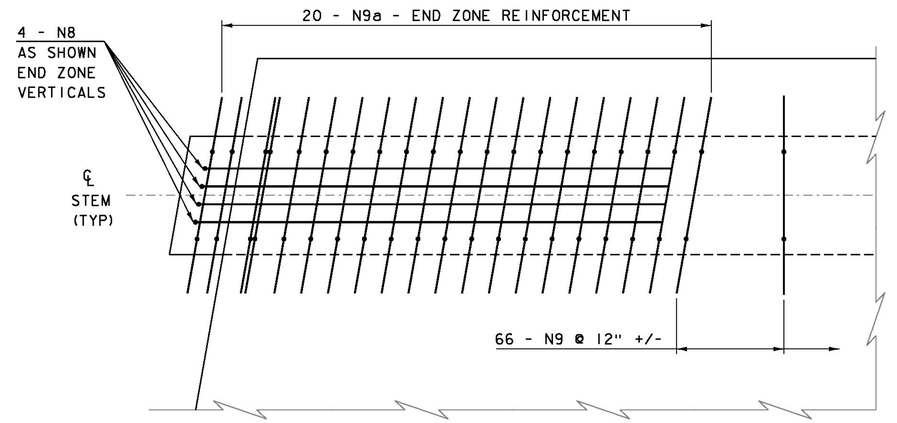
LEGEND

△ - DEBONDED 4'-0"

□ - DEBONDED 2'-0"

▽ - DEBONDED 0'-6"

○ - EXTEND 2'-2" OUT OF BEAM (90° BEND @ 8" OUT)

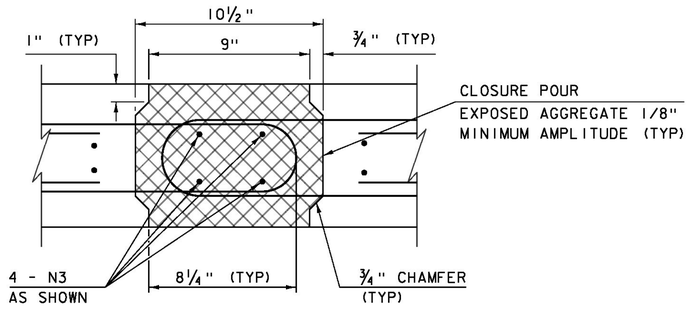


SKEWED END DETAIL

SCALE = 1½" = 1'-0"

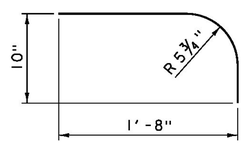
NOTES:

1. BARS IN DECK FLANGE OMITTED FOR CLARITY.
2. TRANSVERSE REINFORCING IN THE DECK SHALL BE PLACED PARALELL TO THE SKEW UNTIL OUTSIDE THE END ZONE REGION
3. HAIRPIN BARS MAY BE BENT NORMAL TO THE FACE OF THE BEAM IN THE END ZONE REGION



CONNECTION DETAIL SECTION

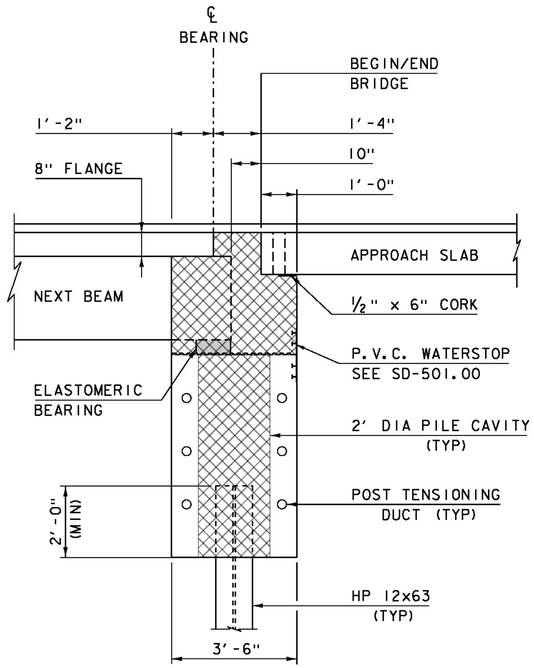
NOT TO SCALE



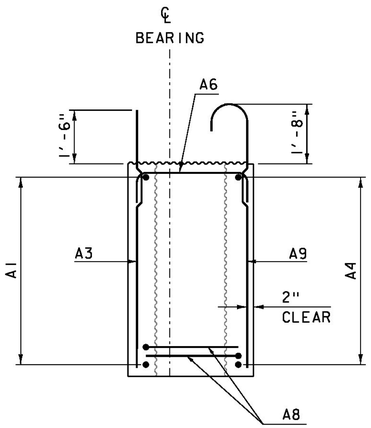
N10

NOT TO SCALE

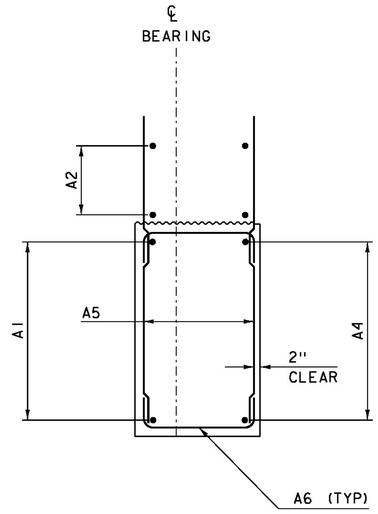
PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)
FILE NAME: s12j160sup.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: S. COLEY
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
NEXT BEAM DETAILS 2	SHEET 32 OF 59



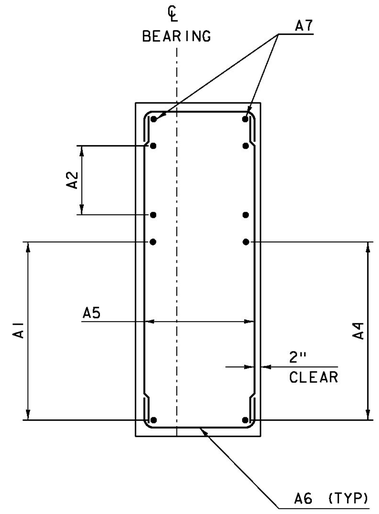
ABUTMENT TYPICAL
NEXT BEAM ALTERNATIVE
SCALE ½" = 1'-0"



ABUTMENT REINFORCING
AT BRIDGE SEAT
SCALE ½" = 1'-0"



ABUTMENT REINFORCING
AT CAST IN PLACE CHEEK WALL
SCALE ½" = 1'-0"



ABUTMENT REINFORCING
AT PRECAST CHEEK WALL
SCALE ½" = 1'-0"

NOTE:

1. SEE ABUTMENT REINFORCING SHEET FOR REINFORCING TABLE.

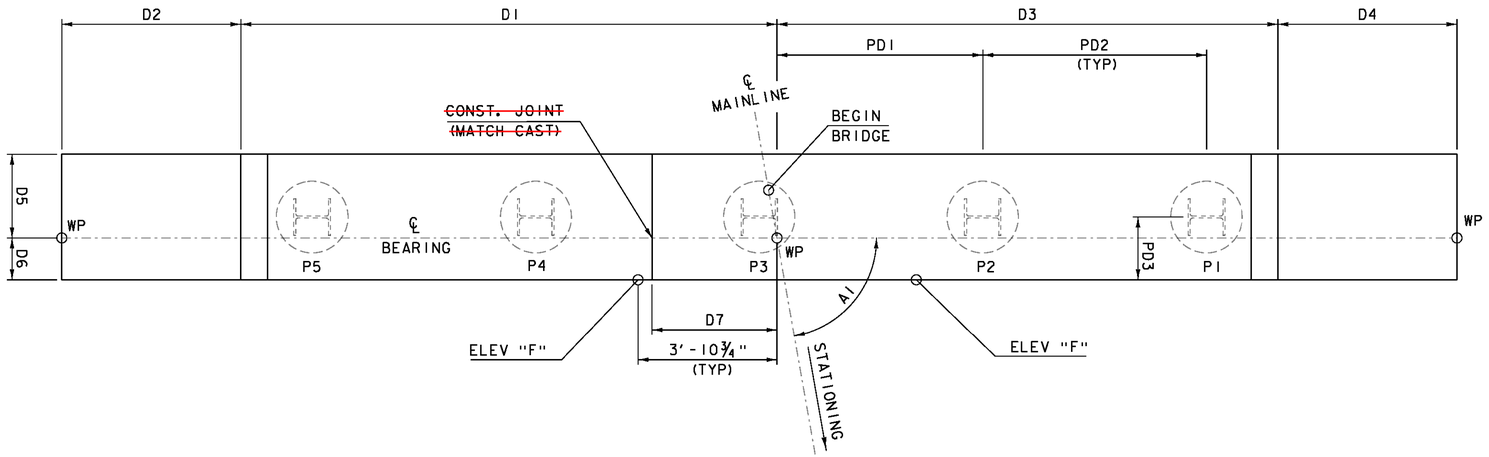
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
6" LEG LENGTH FOR BAR LABELED A6 SPECIFIED ON THE PLANS.

SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)

FILE NAME: sl2j160sub.dgn	PLOT DATE: 08-OCT-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: T. MATTHEWS
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
NEXT BEAM ABUTMENT TYPICALS	SHEET 33 OF 59

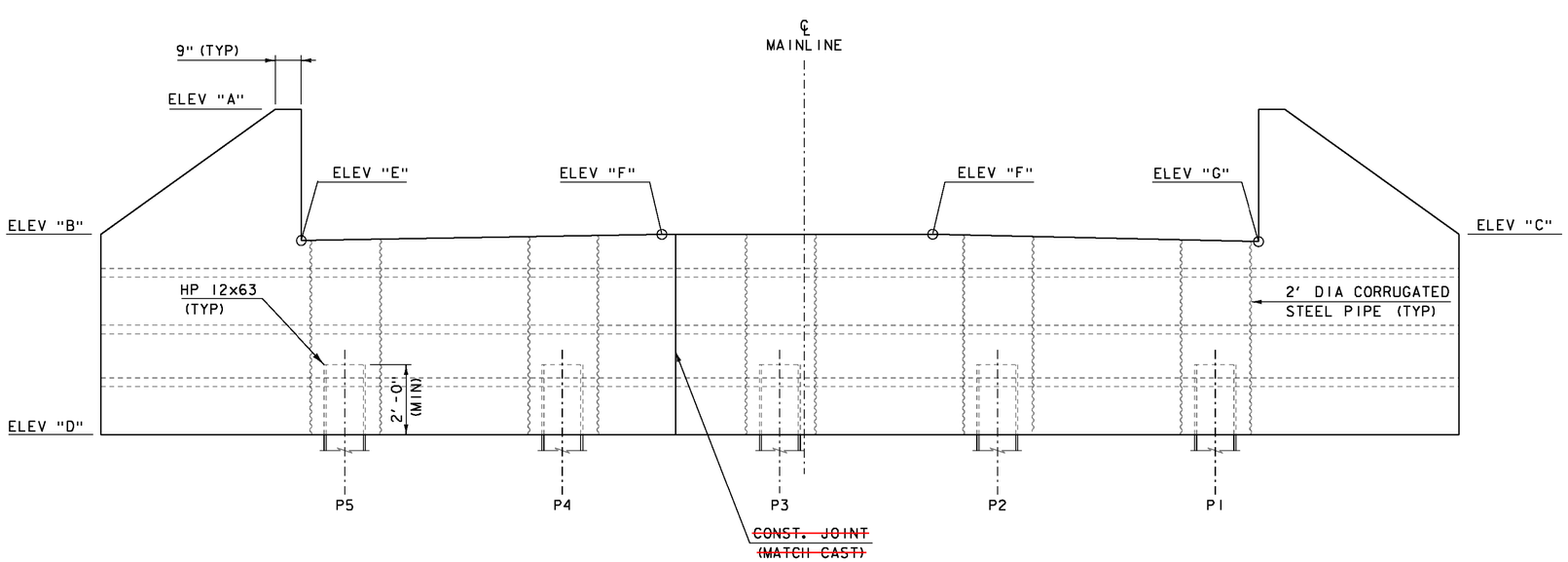


ABUTMENT PLAN

SCALE ½" = 1'-0

ABUTMENT DIMENSIONS

	AB1	AB2
D1	15'-0"	15'-0"
D2	5'-0"	5'-0"
D3	14'-0"	14'-0"
D4	5'-0"	6'-0"
D5	2'-4"	2'-4"
D6	1'-2"	1'-2"
D7	3'-6"	2'-6"
PD1	5'-9"	5'-9"
PD2	6'-3"	6'-3"
PD3	1'-9"	1'-9"
A1	80°	80°



ABUTMENT ELEVATION

SCALE ½" = 1'-0

ABUTMENT ELEVATIONS

	AB1	AB2
ELEV "A"	646.83	646.03
ELEV "B"	643.25	642.37
ELEV "C"	643.25	642.45
ELEV "D"	637.50	636.70

BRIDGE SEAT ELEVATIONS

	AB1	AB2
ELEV "E"	643.07	642.22
ELEV "F"	643.25	642.45
ELEV "G"	643.04	642.29

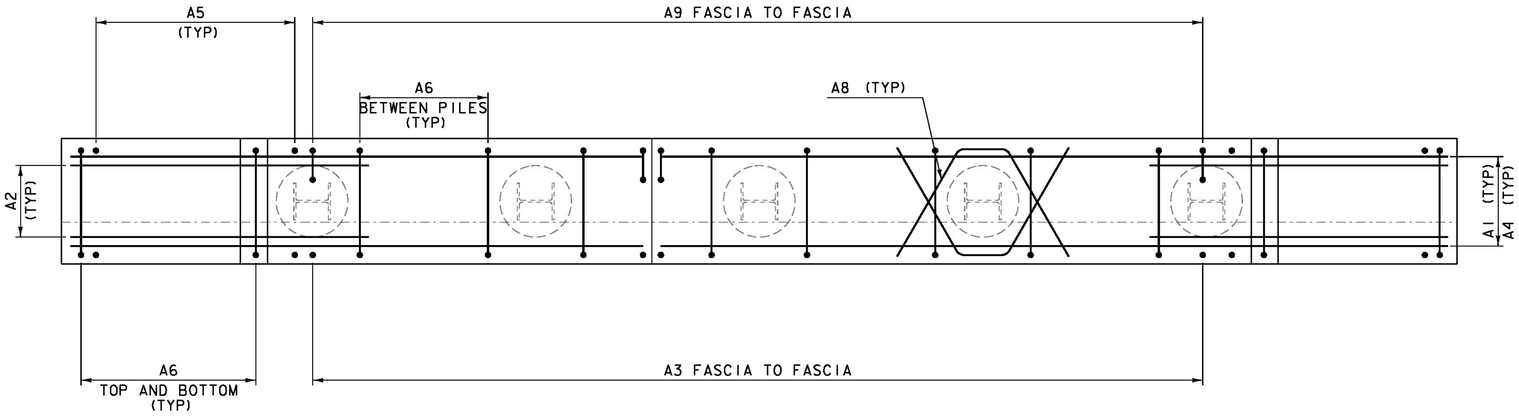
NOTES:

1. ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR.
2. THE BRIDGE SEAT AND INTERIOR VERTICAL FACE OF THE CHEEKWALL SHALL HAVE A ROUGHENED FINISH. AREAS OF THE BRIDGE SEAT UNDER BEARING PADS SHALL BE TROWELED SMOOTH TO THE PROPOSED SLOPE.

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

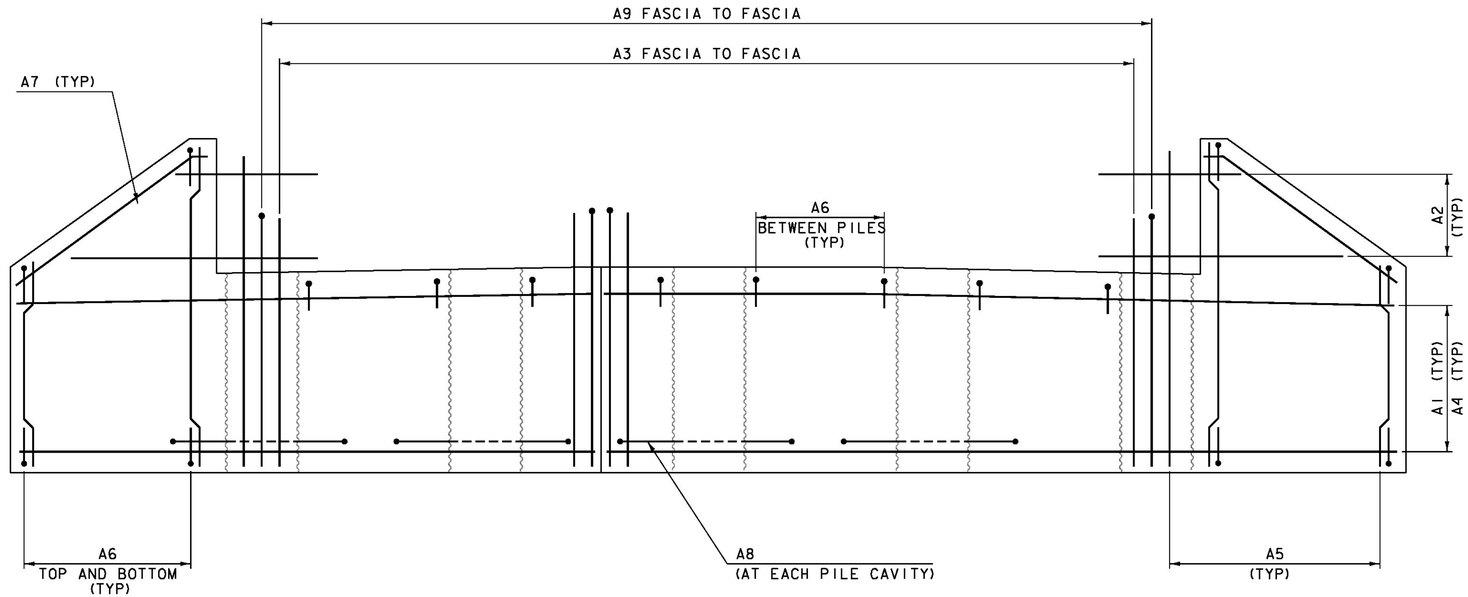
FILE NAME: s12j160sub.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
NEXT BEAM ABUTMENT PLAN

PLOT DATE: 10-SEP-2015
DRAWN BY: S. COLEY
CHECKED BY: J. GRIGAS
SHEET 34 OF 59



ABUTMENT REINFORCING PLAN

SCALE ½" = 1'-0



ABUTMENT REINFORCING ELEVATION

SCALE ½" = 1'-0

ABUTMENT REINFORCING

BAR	SIZE	SPACING	FACE	TYPE
A1	5	10"	NF	STR
A2	5	10"	EF	STR
A3	5	10"	NF	STR
A4	8	12"	FF	STR
A5	5	10"	EF	STR
A6	5	10"	---	S10
A7	5	AS SHOWN	EF	19
A8	6	AS SHOWN	EF	14
A9	9	12"	FF	1

NOTES:

1. ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR.
2. EXTEND A2 AND A7 BARS 1'-11" OUT OF WING WALL. CUT TO FIT AT CONFLICTS.
3. SEE ABUTMENT TYPICALS FOR MORE INFORMATION.

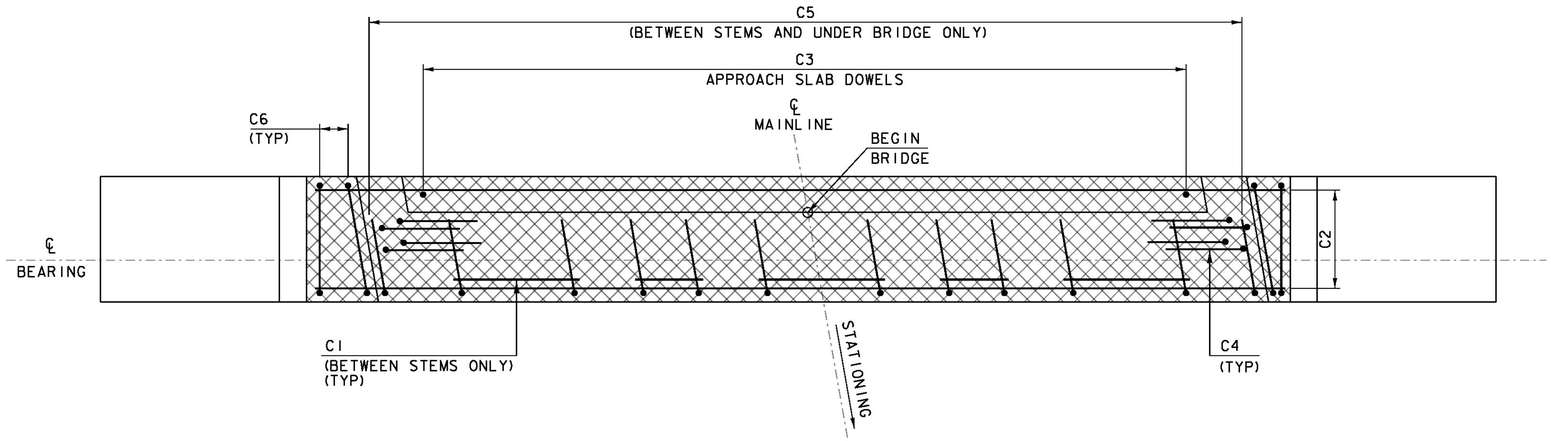
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-7" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

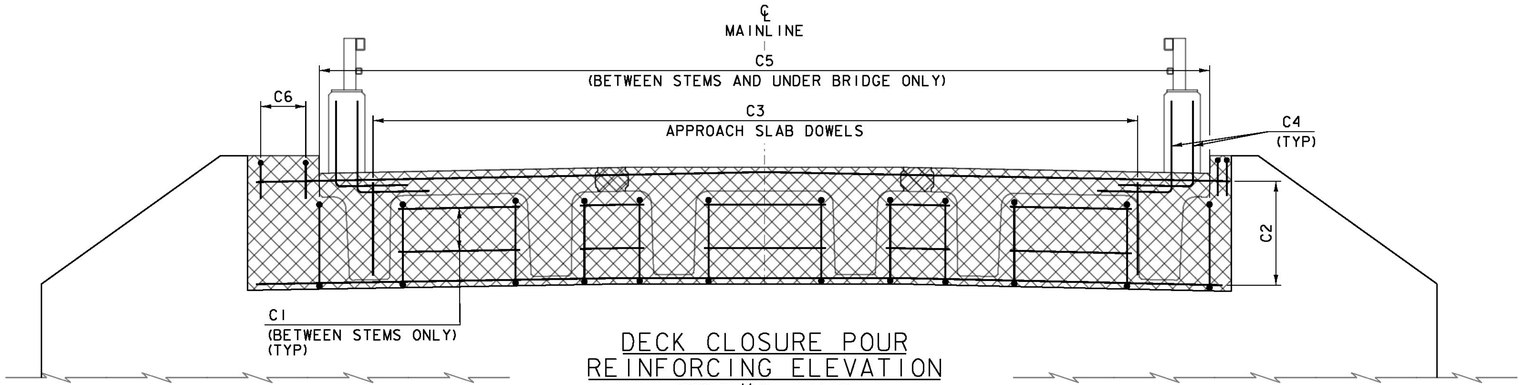
FILE NAME: s12j160sub.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
NEXT BEAM ABUTMENT REINFORCING

PLOT DATE: 10-SEP-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 35 OF 59



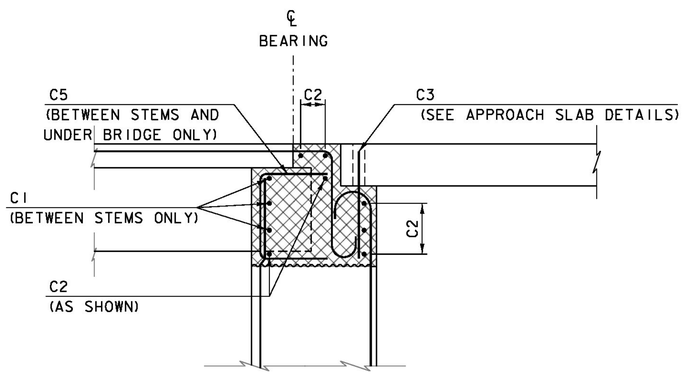
DECK CLOSURE POUR REINFORCING PLAN

SCALE ½" = 1'-0



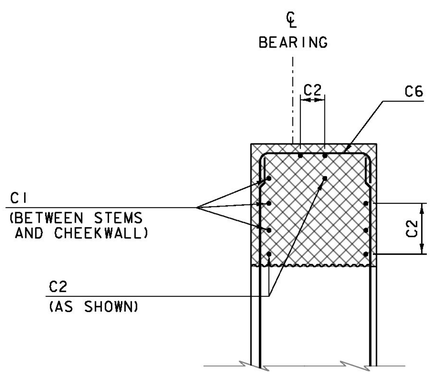
DECK CLOSURE POUR REINFORCING ELEVATION

SCALE ½" = 1'-0



ABUTMENT ELEVATION AT BRIDGE

SCALE ½" = 1'-0



ABUTMENT ELEVATION AT CHEEKWALL

SCALE ½" = 1'-0

CLOSURE POUR REINFORCING

BAR	SIZE	SPACING	FACE	TYPE
C1	5	10"	NF	STR
C2	5	10"	AS SHOWN	STR
C3	6	12"	---	STR
C4	4	8"	---	20
C5	5	10"	---	S10
C6	5	10"	---	S10

NOTE:

1. ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR.

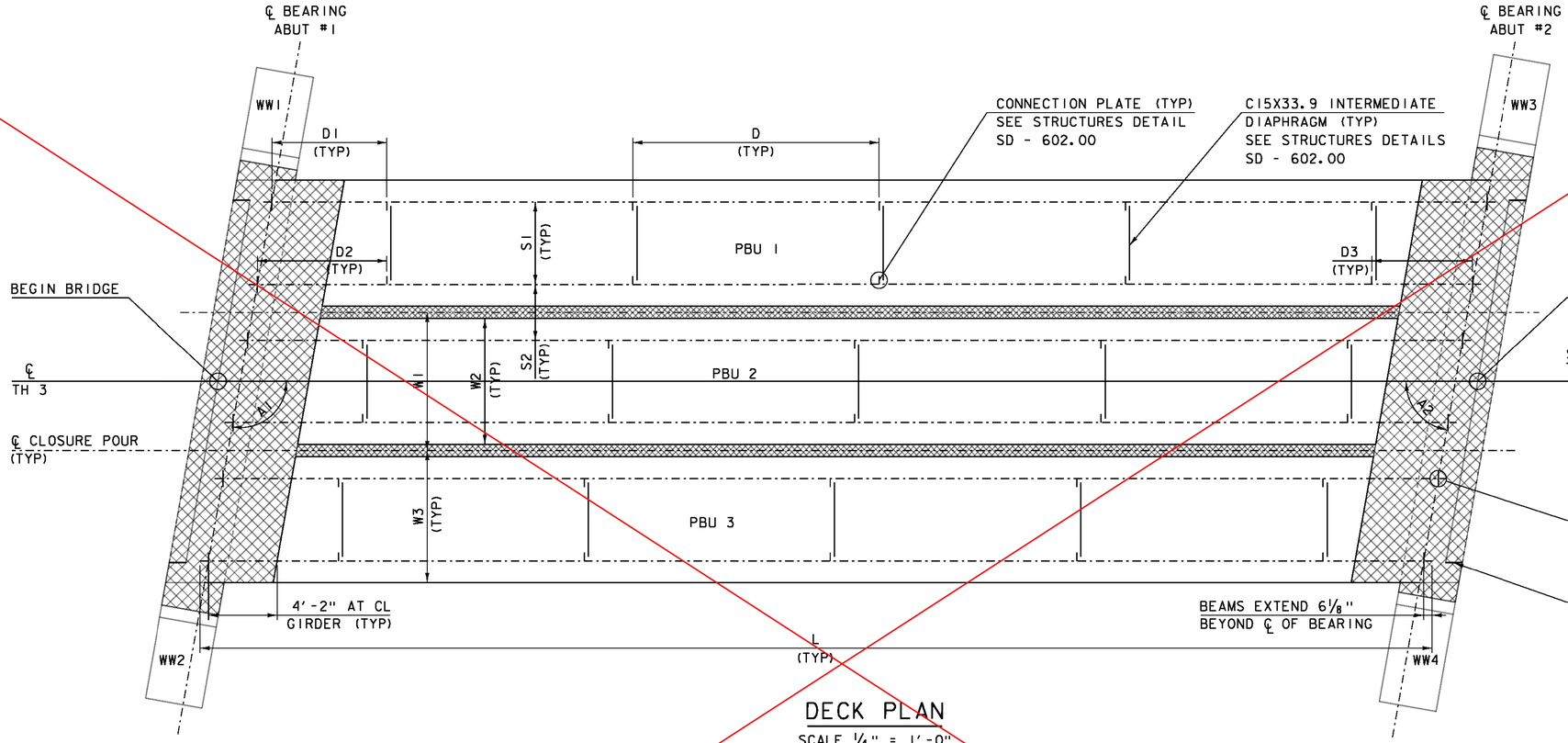
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-7" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: s12j160sub.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
NEXT BEAM CLOSURE POUR

PLOT DATE: 10-SEP-2015
DRAWN BY: J. GRIGAS
CHECKED BY: C. LAROCHE
SHEET 36 OF 59

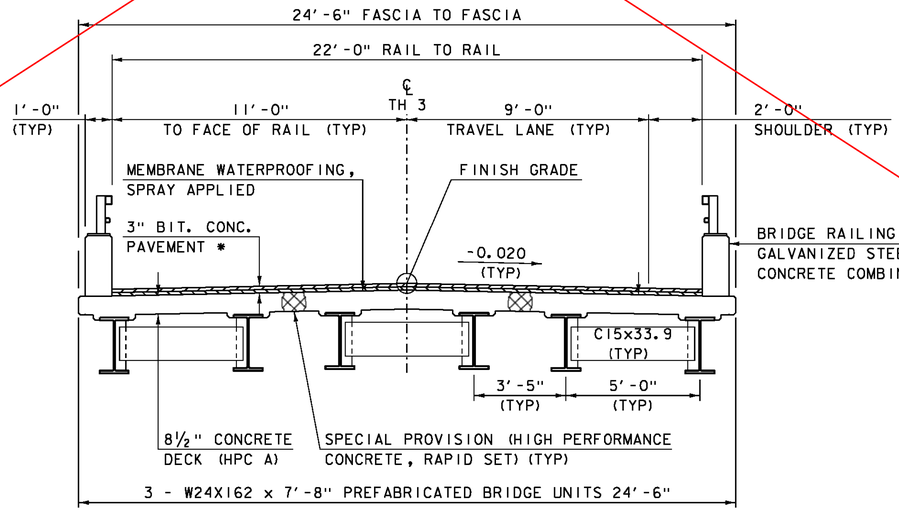


L	75'-0¼"
W1	8'-5"
W2	7'-8"
W3	8'-0½"
S1	5'-0"
S2	3'-5"
D	15'-0"
D1	7'-0"
D2	7'-10½"
D3	6'-1½"

SKEW	A1	100°
	A2	80°

DECK PLAN

SCALE ¼" = 1'-0"



BRIDGE TYPICAL SECTION PBU ALTERNATE

SCALE ⅜" = 1'-0"

SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)

SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) *

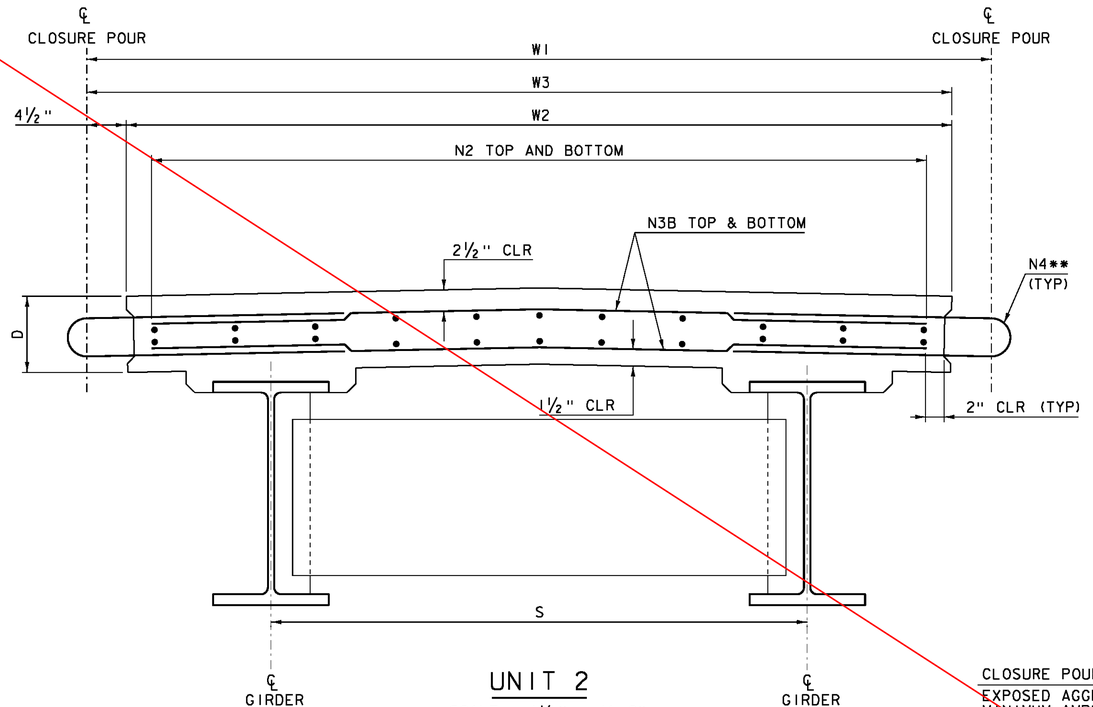
NOTE:

*BITUMINOUS CONCRETE PAVEMENT IN DECK PLAN VIEW IS OMITTED FOR CLARITY

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

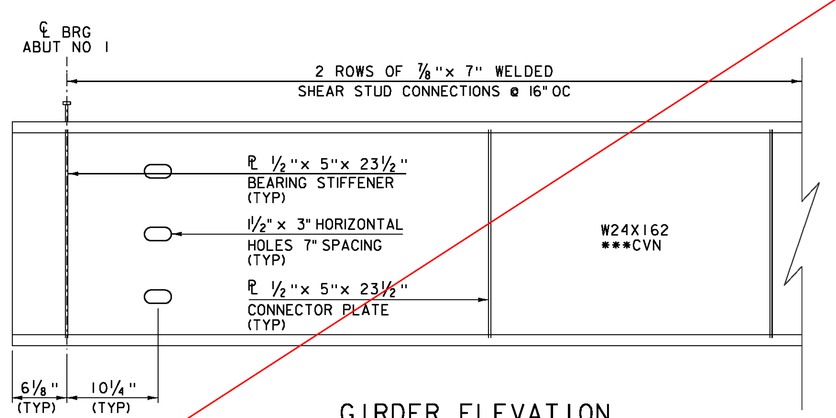
FILE NAME: s12j160sup2
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
PBU FRAMING PLAN

PLOT DATE: 08-OCT-2015
DRAWN BY: T. MATTHEWS
CHECKED BY: G. LAROCHE
SHEET 37 OF 59



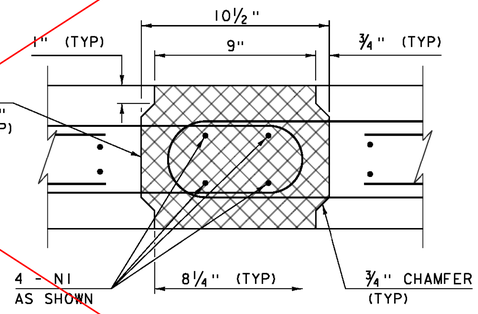
UNIT 2

SCALE = 1½" = 1'-0"



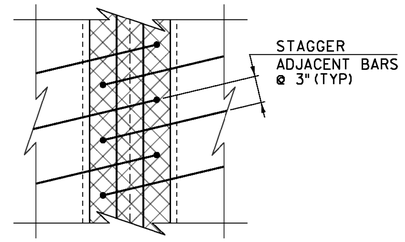
GIRDER ELEVATION

NOT TO SCALE



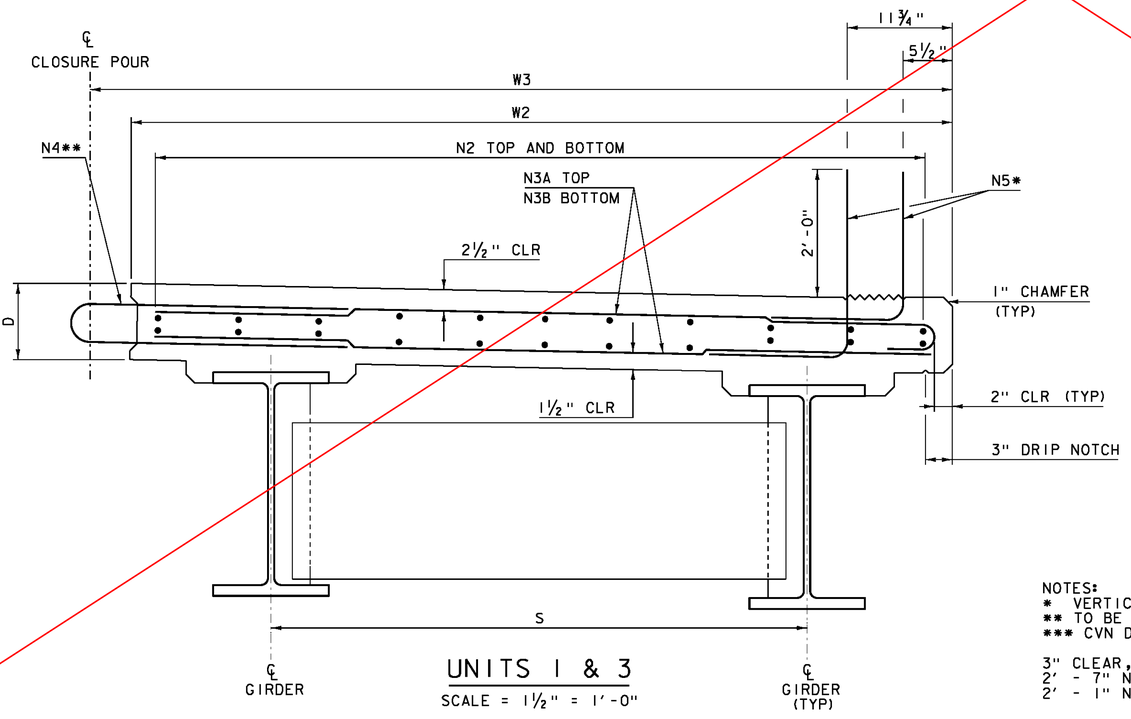
CONNECTION DETAIL SECTION

NOT TO SCALE



CONNECTION DETAIL PLAN

NOT TO SCALE



UNITS 1 & 3

SCALE = 1½" = 1'-0"

PBU BEAM REINFORCING CHART

BAR	SIZE	SPACING	TYPE
N1	4	AS SHOWN	STR
N2	5	12"	STR
N3A	5	6"	1
N3B	5	6"	STR
N4	4	6"	S11
N5	4	8"	2

PBU BEAM DIMENSIONS

D	8½"
W1	8'-5"
W2	7'-8"
W3	8'-0½"
S	5'-0"

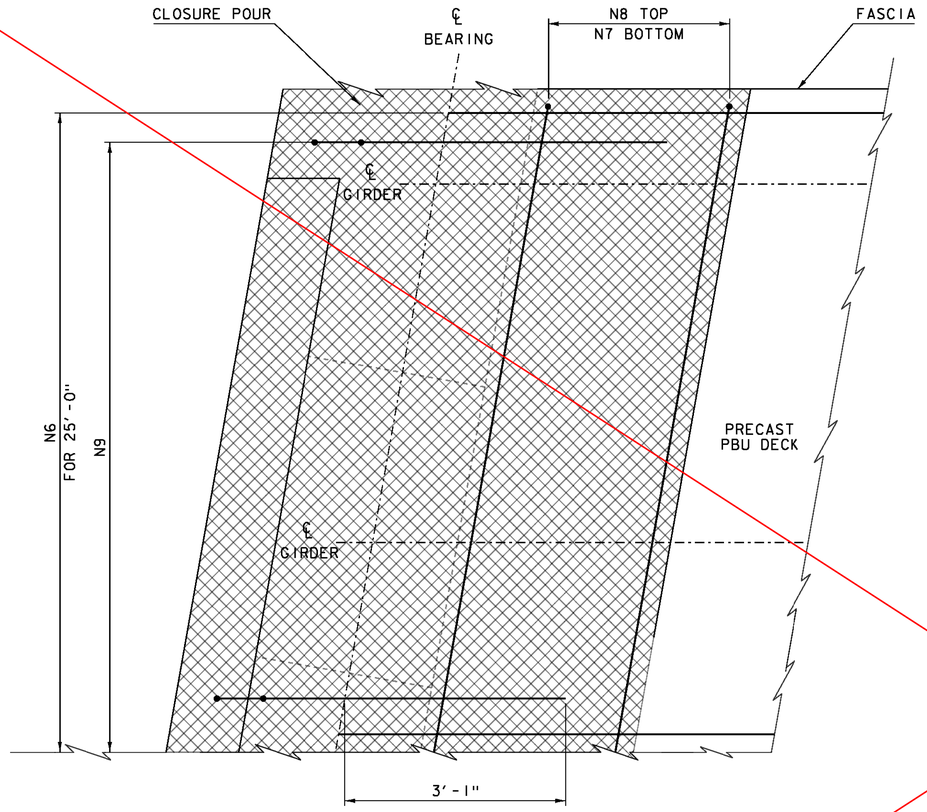
NOTES:
* VERTICAL LEGS TO BE SET PLUM IN FINAL CONDITION
** TO BE STAGGERED WITH ADJACENT BEAM
*** CVN DENOTES THAT CHARPY V-NOTCH TEST IS REQUIRED

3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS
2' - 7" NUMBER 5 BAR LAP LENGTH
2' - 1" NUMBER 4 BAR LAP LENGTH

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

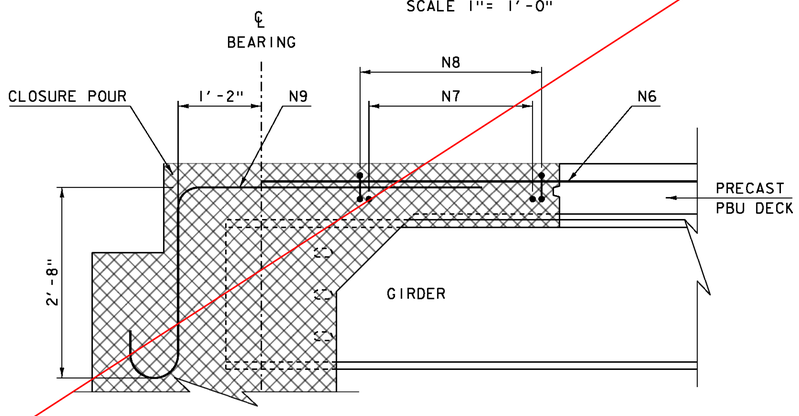
FILE NAME: s12J160Ssup2
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
PBU DETAILS 1

PLOT DATE: 08-OCT-2015
DRAWN BY: S. COLEY
CHECKED BY: G. LAROCHE
SHEET 38 OF 59



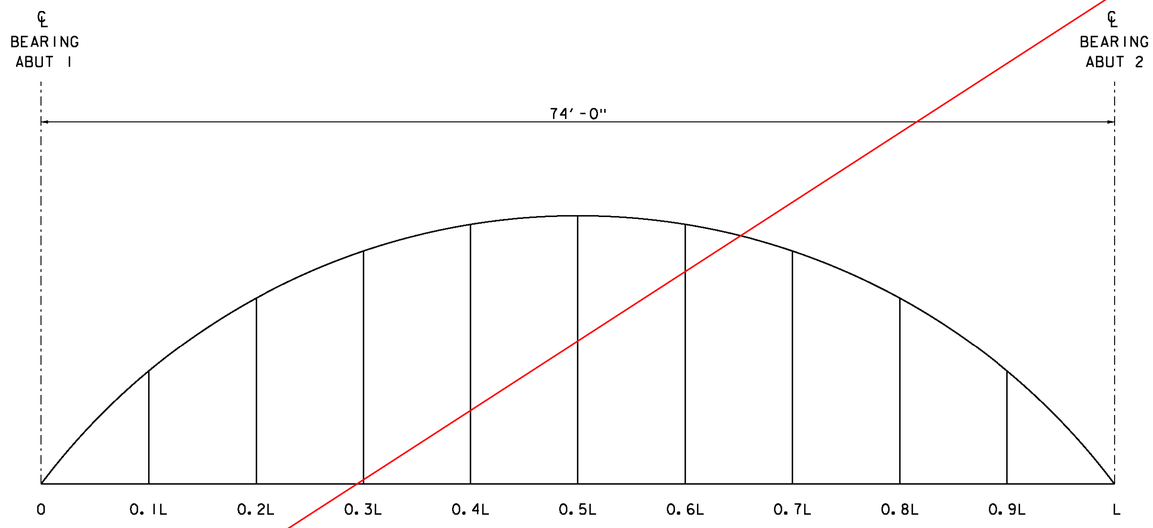
ADDITIONAL END REINFORCING
PLAN VIEW

SCALE 1"= 1'-0"



ADDITIONAL END REINFORCING
ELEVATION VIEW

SCALE 1"= 1'-0"



CAMBER DIAGRAM

NOT TO SCALE

	0	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	L
Steel Deflection	0	1/4	1/2	5/8	3/4	13/16	3/4	5/8	1/2	1/4	0
Slab & Super Deflection	0	7/8	1 5/8	2 1/4	2 9/16	2 3/4	2 9/16	2 1/4	1 5/8	7/8	0
Total Deflection	0	1 1/8	2 1/16	2 7/8	3 5/16	3 1/2	3 5/16	2 7/8	2 1/16	1 1/8	0
Residual Camber	0	3/4	1 5/16	1 11/16	1 15/16	2	1 15/16	1 11/16	1 5/16	3/4	0
Total Camber	0	1 13/16	3 3/8	4 9/16	5 5/16	5 9/16	5 5/16	4 9/16	3 3/8	1 13/16	0

CAMBER AND DEFLECTION

INCHES

ADDITIONAL END REINFORCING CHART

BAR	SIZE	SPACING	TYPE
N6	5	12"	STR
N7	5	6"	STR
N8	5	6"	1
N9	8	6"	18

* N2 AND N5 BARS OMITTED FOR CLARITY ALONG WITH BARS DETAILED IN PBU ABUTMENT REINFORCING SHEET AND PBU CLOSURE POUR REINFORCING SHEET.

SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)

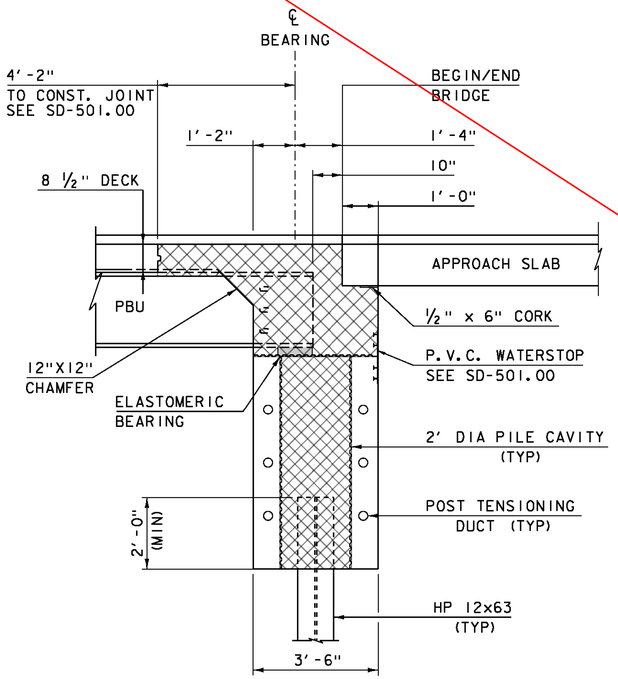
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-7" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

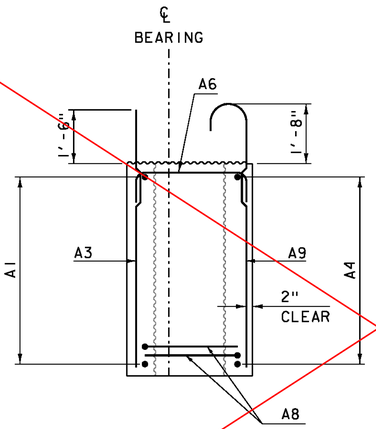
PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: s12j160sup2
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
PBU DETAILS 2

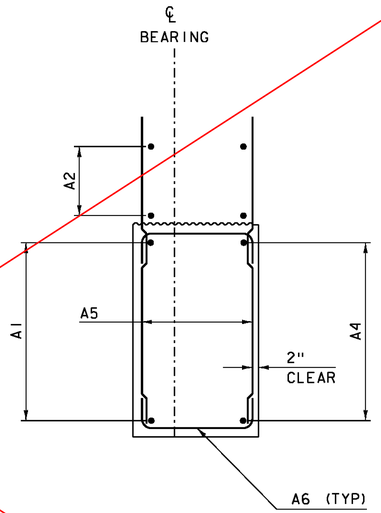
PLOT DATE: 10-SEP-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 39 OF 59



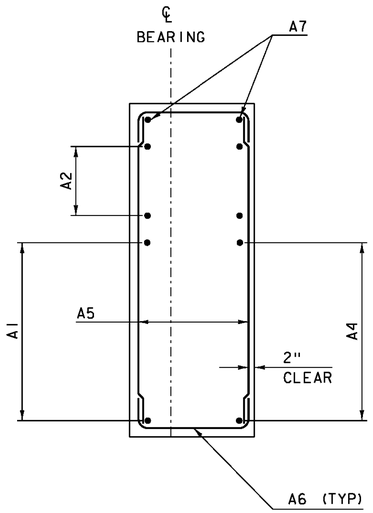
ABUTMENT TYPICAL
PBU OPTION
SCALE ½" = 1'-0"



ABUTMENT REINFORCING
AT BRIDGE SEAT
SCALE ½" = 1'-0"



ABUTMENT REINFORCING
AT CAST IN PLACE CHEEK WALL
SCALE ½" = 1'-0"



ABUTMENT REINFORCING
AT PRECAST CHEEK WALL
SCALE ½" = 1'-0"

NOTE:

1. SEE ABUTMENT REINFORCING SHEET FOR REINFORCING TABLE.

NOTE:

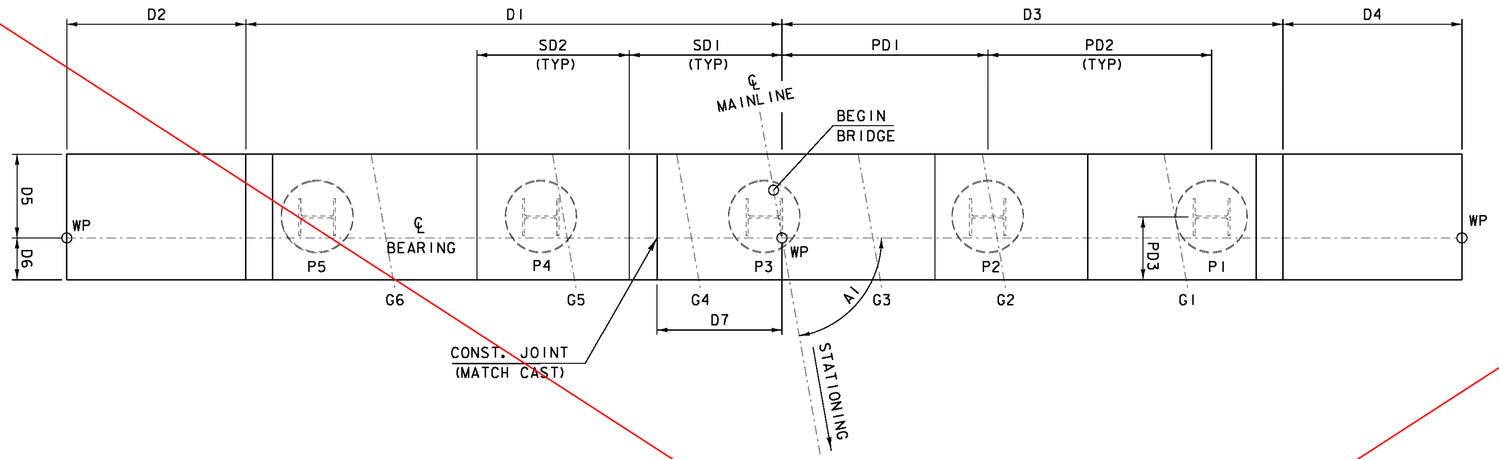
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
6" LEG LENGTH FOR BAR LABELED A6 SPECIFIED ON THE PLANS.

SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: s12j160sub2.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
PBU ABUTMENT TYPICALS

PLOT DATE: 08-OCT-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 40 OF 59

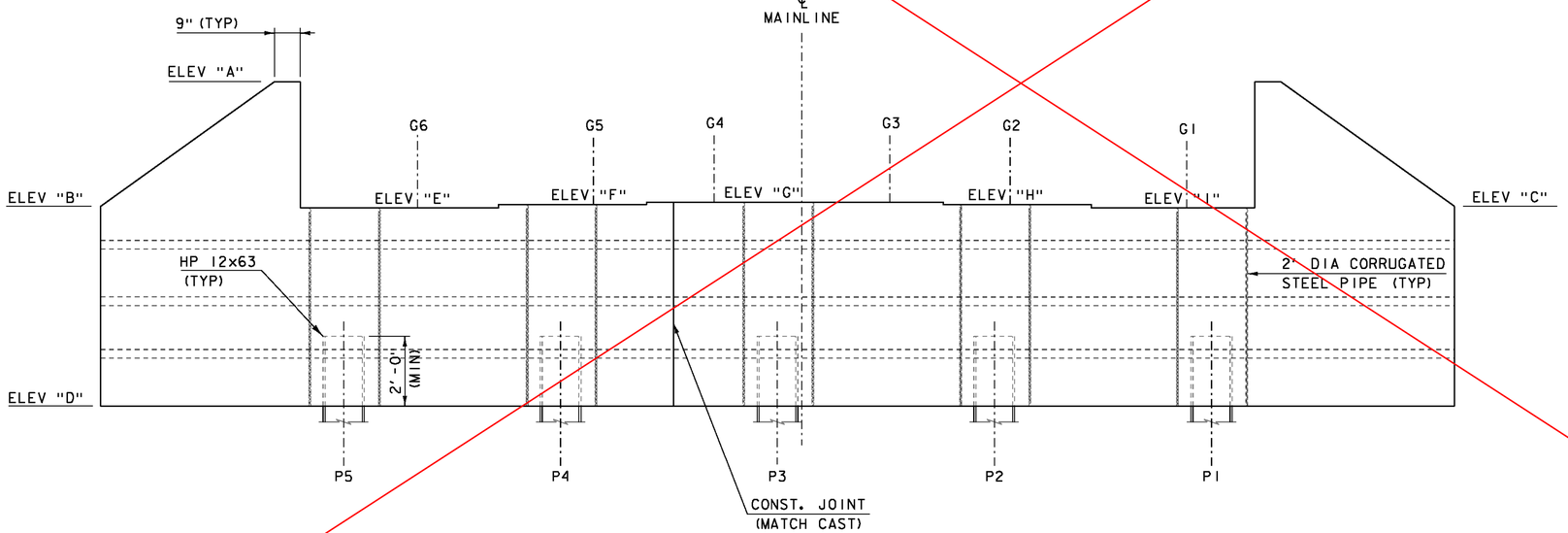


ABUTMENT PLAN

SCALE ½" = 1'-0

ABUTMENT DIMENSIONS

	AB1	AB2
D1	15'-0"	15'-0"
D2	5'-0"	5'-0"
D3	14'-0"	14'-0"
D4	5'-0"	6'-0"
D5	2'-4"	2'-4"
D6	1'-2"	1'-2"
D7	3'-6"	2'-6"
PD1	5'-9"	5'-9"
PD2	6'-3"	6'-3"
PD3	1'-9"	1'-9"
A1	80°	80°
SD1	4'-3 ¼"	4'-3 ¼"
SD2	4'-3 ¼"	4'-3 ¼"



ABUTMENT ELEVATION

SCALE ½" = 1'-0

ABUTMENT ELEVATIONS

	AB1	AB2
ELEV "A"	646.83	646.03
ELEV "B"	643.25	642.37
ELEV "C"	643.25	642.45
ELEV "D"	637.50	636.70

BRIDGE SEAT ELEVATIONS

	AB1	AB2
ELEV "E"	643.20	642.37
ELEV "F"	643.30	642.49
ELEV "G"	643.37	642.57
ELEV "H"	643.30	642.53
ELEV "I"	643.20	642.44

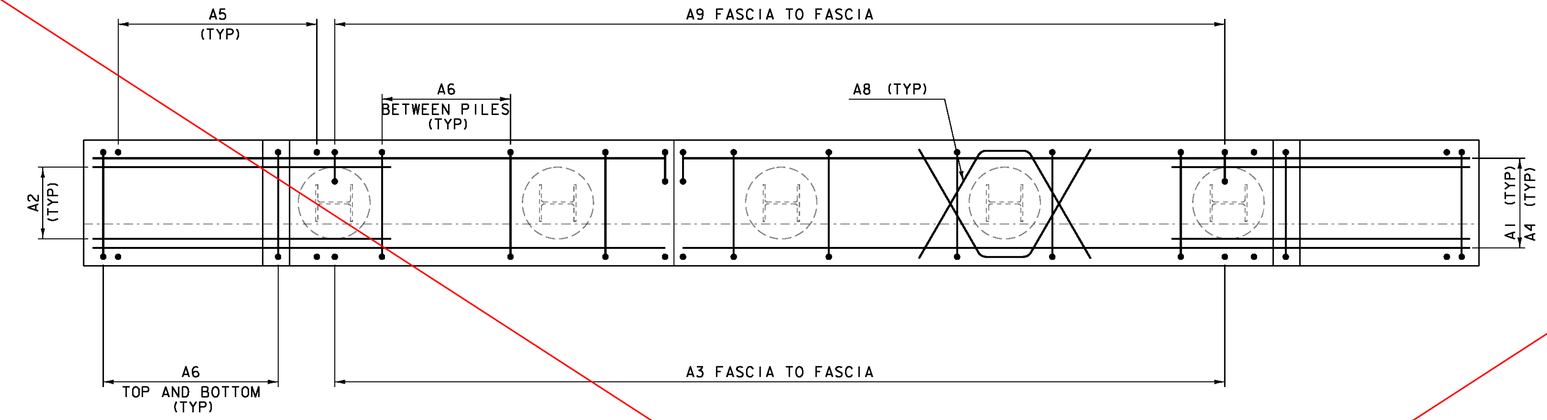
NOTES:

1. ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR.
2. THE BRIDGE SEAT AND INTERIOR VERTICAL FACE OF THE CHEEKWALL SHALL HAVE A ROUGHENED FINISH. AREAS OF THE BRIDGE SEAT UNDER BEARING PADS SHALL BE TROWELED SMOOTH TO THE PROPOSED SLOPE.

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

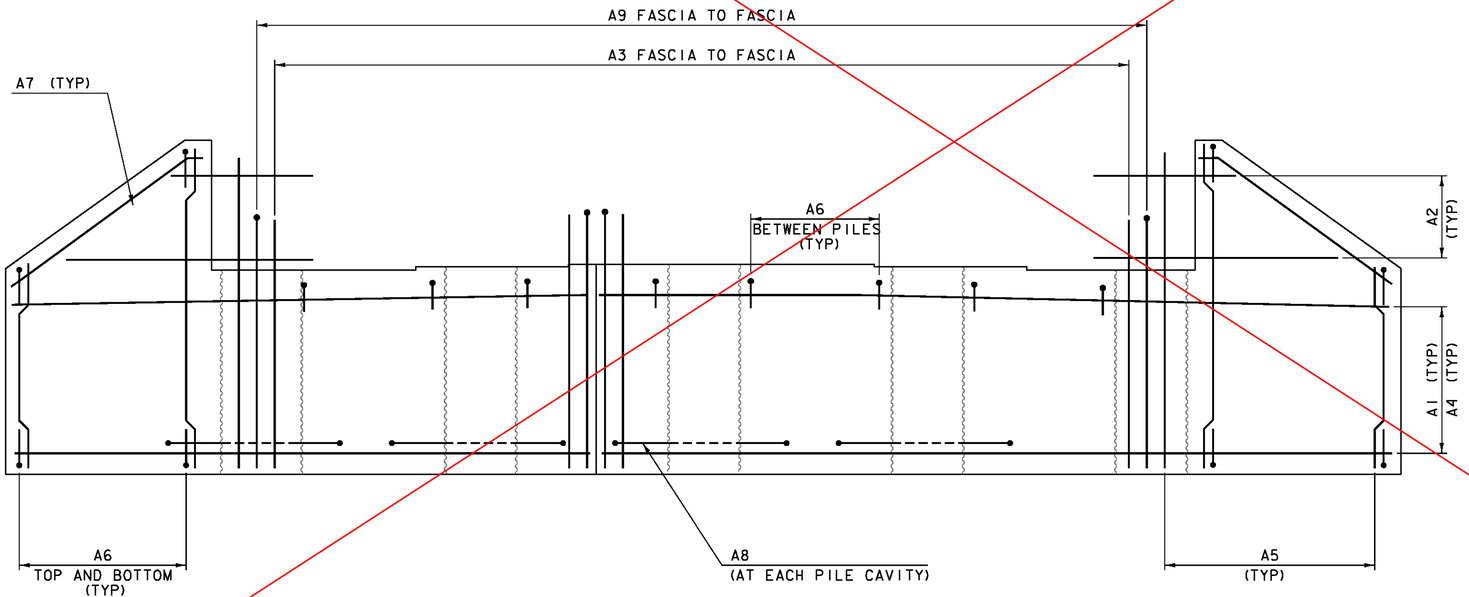
FILE NAME: sl2j160sub2.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
PBU ABUTMENT PLAN

PLOT DATE: 10-SEP-2015
DRAWN BY: S. COLEY
CHECKED BY: J. GRIGAS
SHEET 41 OF 59



ABUTMENT REINFORCING PLAN

SCALE ½" = 1'-0



ABUTMENT REINFORCING ELEVATION

SCALE ½" = 1'-0

ABUTMENT REINFORCING

BAR	SIZE	SPACING	FACE	TYPE
A1	5	10"	NF	STR
A2	5	10"	EF	STR
A3	5	10"	NF	STR
A4	8	12"	FF	STR
A5	5	10"	EF	STR
A6	5	10"	---	S10
A7	5	AS SHOWN	EF	19
A8	6	AS SHOWN	EF	14
A9	9	12"	FF	1

NOTES:

1. ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR.
2. EXTEND A2 AND A7 BARS 1'-11" OUT OF WING WALL. CUT TO FIT AT CONFLICTS.
3. SEE ABUTMENT TYPICALS FOR MORE INFORMATION.

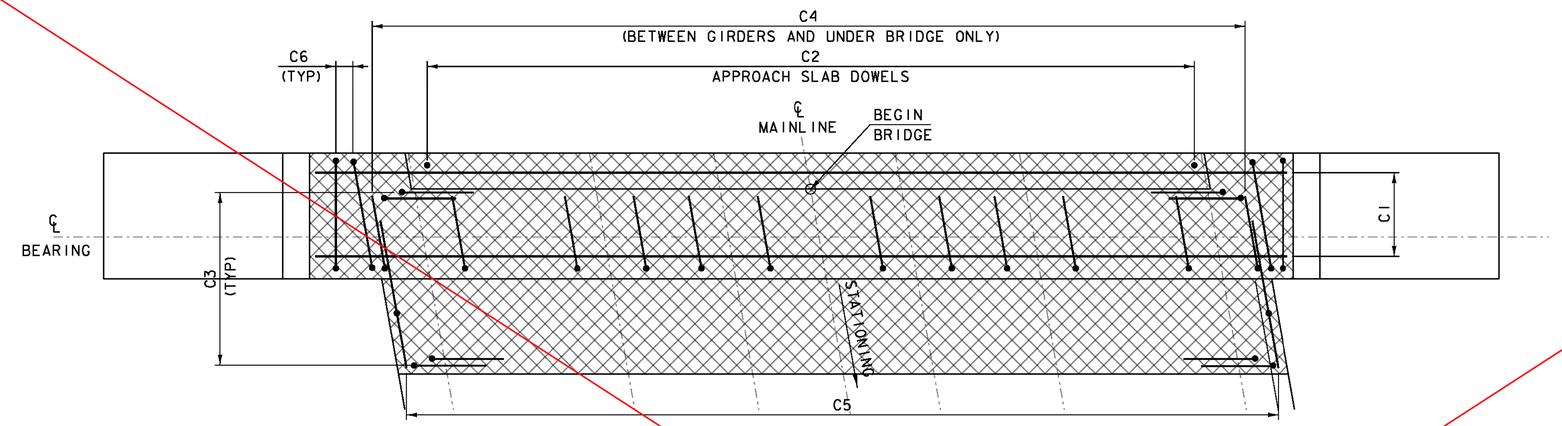
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-7" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

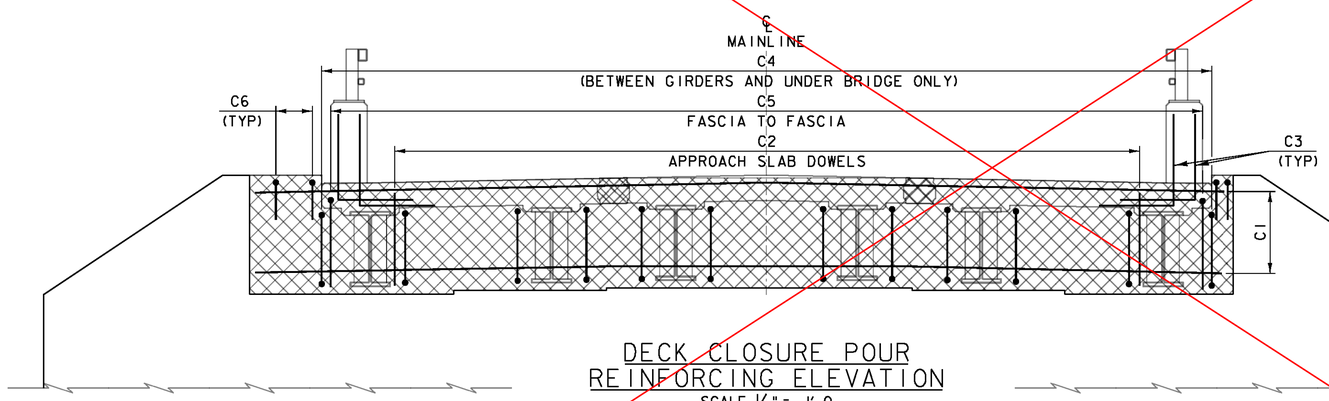
FILE NAME: sl2jl60sub2.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
PBU ABUTMENT REINFORCING

PLOT DATE: 10-SEP-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 42 OF 59



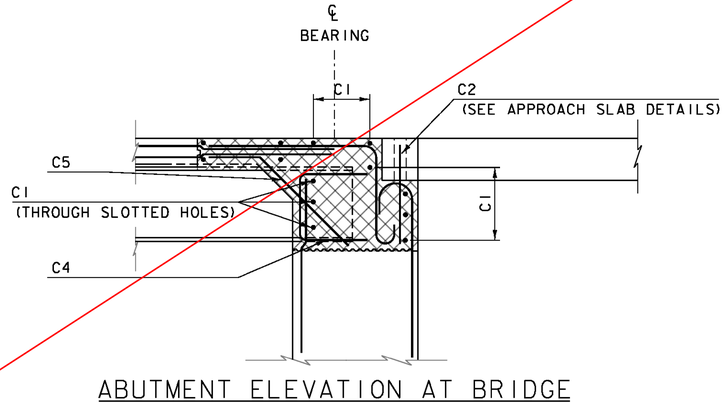
DECK CLOSURE POUR REINFORCING PLAN

SCALE ½" = 1'-0



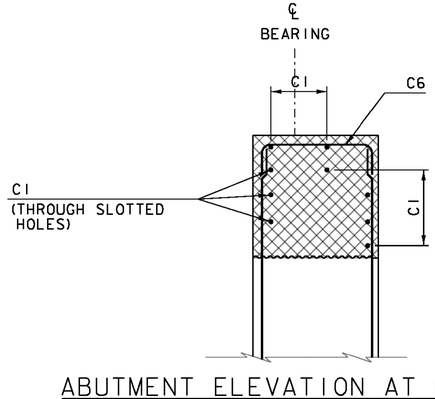
DECK CLOSURE POUR REINFORCING ELEVATION

SCALE ½" = 1'-0



ABUTMENT ELEVATION AT BRIDGE

SCALE ½" = 1'-0



ABUTMENT ELEVATION AT CHEEKWALL

SCALE ½" = 1'-0

CLOSURE POUR REINFORCING

BAR	SIZE	SPACING	FACE	TYPE
C1	5	10"	AS SHOWN	STR
C2	6	12"	---	STR
C3	4	8"	---	20
C4	5	10"	---	S10
C5	5	10"	---	19
C6	5	10"	---	S10

NOTES:

1. ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR.
2. SEE PBU DETAILS 2 FOR ADDITIONAL REINFORCING IN THE CLOSURE POUR.

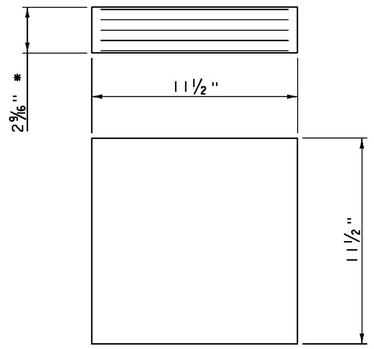
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-7" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: s12j160sub2.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
PBU CLOSURE POUR

PLOT DATE: 10-SEP-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 43 OF 59



ELASTOMERIC BEARING DETAIL

SCALE 3" = 1'-0"

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

BEARING NOTES:

1. NEXT BEAM ALTERNATE SHOWN. SAME BEARING DETAILS TO BE USED FOR PBU ALTERNATE.

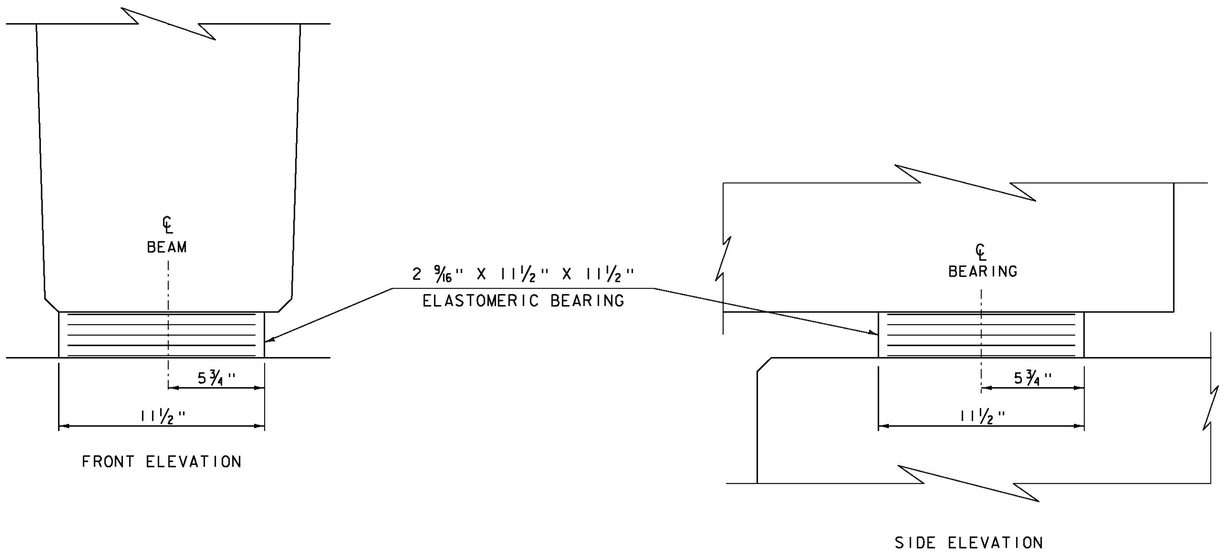
2. BEARINGS SHALL CONFORM TO THE APPLICABLE SUBSECTIONS OF SECTIONS 531 AND 731.

3. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMER SHALL BE STEEL MEETING THE REQUIREMENTS OF SUBSECTION 714.02. ALL INTERNAL STEEL SHEETS SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST AND MILL SCALE. THE SHEETS SHALL BE FREE OF SHARP EDGES AND BURRS.

4. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM 1/8" EDGE SEAL OF ELASTOMER INTEGRAL WITH BEARING OVER ALL INTERNAL SHEETS.

5. THE ELASTOMER WAS DESIGNED WITH A SHEAR MODULUS OF 100 PSI +/- 15%

6. THE CONTRACTOR IS ADVISED TO HAVE A MINIMUM OF 12 - 1/4"x12 1/2"x12 1/2" GALVANIZED STEEL SHIMS AVAILABLE FOR USE FOR ELEVATION ADJUSTMENTS UPON THE SETTING OF THE SUPERSTRUCTURE UNITS. THE SHIMS SHALL BE FABRICATED ACCORDING TO SECTION 531 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 531.17, "BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD".

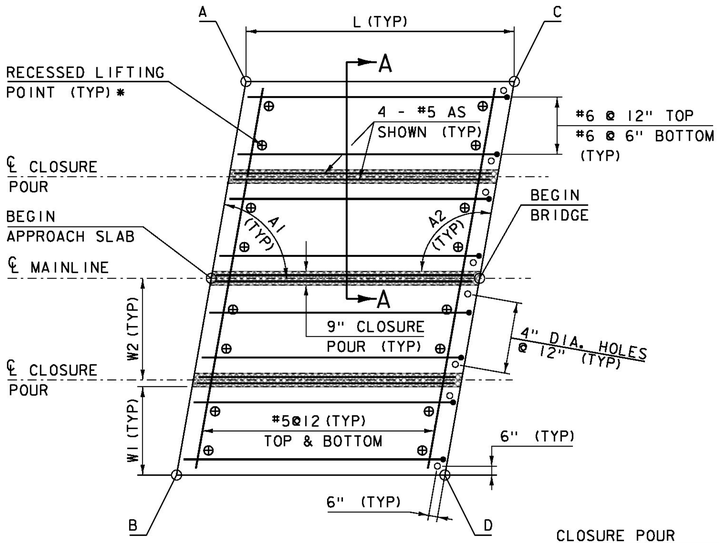


ELASTOMERIC BEARING DETAILS

SCALE 3" = 1'-0"

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)

FILE NAME: s12j160brg.dgn	PLOT DATE: 08-OCT-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: G. DARGAN
DESIGNED BY: J. GRIGAS	CHECKED BY: J. GRIGAS
BEARING DETAILS	SHEET 44 OF 59

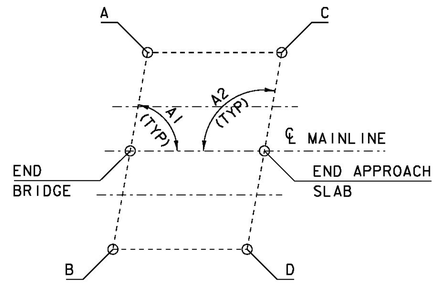


APPROACH SLAB #1 PLAN VIEW

SCALE 1/4" = 1'-0"

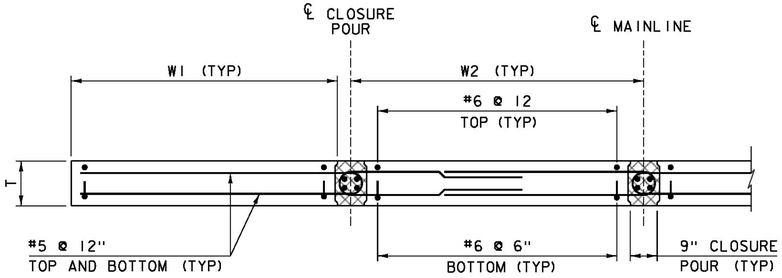
*NOTES:

1. LIFTING POINTS SHALL BE DESIGNED BY FABRICATOR AND SUBMITTED WITH CALCULATIONS.
2. REINFORCING STEEL FOR APPROACH SLAB #1 SHOWN, APPROACH SLAB #2 SIMILAR.



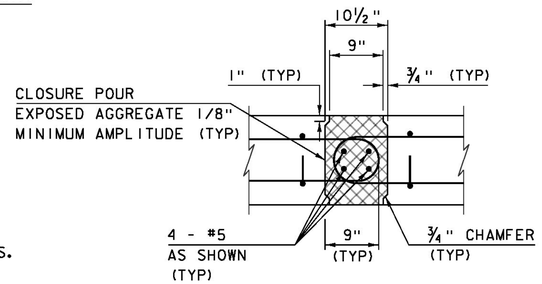
APPROACH SLAB #2 PLAN VIEW

NOT TO SCALE



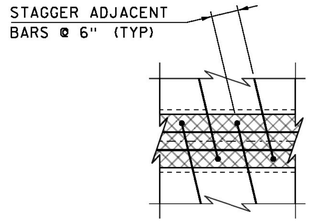
SECTION A-A

SCALE 1/2" = 1'-0"



CONNECTION DETAIL SECTION

SCALE 1" = 1'-0"



CONNECTION DETAIL PLAN

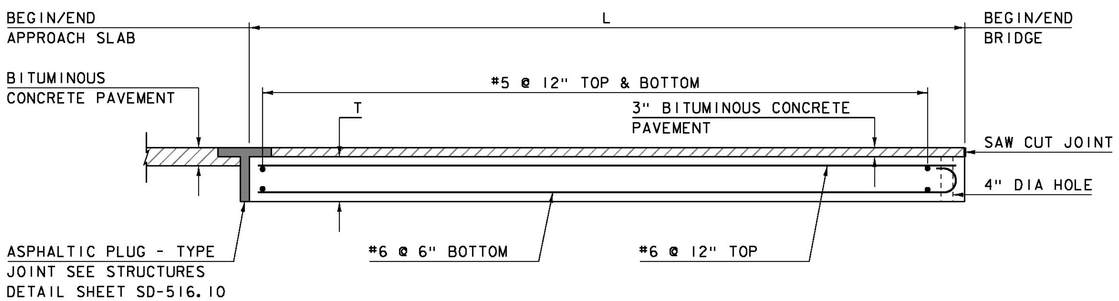
SCALE 1" = 1'-0"

APPROACH SLAB #1			
	STATION	OFFSET	ELEVATION
1A	11+33.59	-10'-11 1/2"	646.36
BEGIN AS #1	11+31.65	℄	646.57
1B	11+29.71	10'-11 1/2"	646.35
1C	11+48.59	-10'-11 1/2"	646.36
END AS #1	11+46.65	℄	646.58
1D	11+44.71	10'-11 1/2"	646.36
APPROACH SLAB #2			
	STATION	OFFSET	ELEVATION
2A	12+25.29	-10'-11 1/2"	645.50
BEGIN AS #2	12+23.35	℄	645.76
2B	12+21.41	10'-11 1/2"	645.57
2C	12+40.29	-10'-11 1/2"	645.20
END AS #2	12+38.35	℄	645.45
2D	12+36.41	10'-11 1/2"	645.27

APPROACH SLAB ELEVATIONS

ALL ELEVATIONS ARE TOP OF SLAB

SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)



APPROACH SLAB ELEVATION VIEW

SCALE 1/2" = 1'-0"

T	1'-2"
L	15'-0"
W1	4'-11"
W2	5'-8"

APPROACH SLAB #1	A1	80°
	A2	100°
APPROACH SLAB #2	A1	80°
	A2	100°

APPROACH SLAB DIMENSIONS

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-7" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: sl2j160appslab.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
APPROACH SLAB DETAILS

PLOT DATE: 08-OCT-2015
DRAWN BY: G. DARGAN
CHECKED BY: J. GRIGAS
SHEET 45 OF 59

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE 11 WITH RELATED APPROACH AND CHANNEL WORK. BRIDGE 11 WILL BE REPLACED WITH A PRECAST STRUCTURE. THE PROJECT IS LOCATED IN THE TOWN OF CLARENDON, VT ON TOWN HIGHWAY 3 (WALKER MOUNTAIN ROAD) 1.05 MILES SOUTH OF THE INTERSECTION WITH VT RT 133.

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 0.45 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 MOUNTAINOUS AND MOSTLY FORESTED WITH RIPARIAN VEGETATION AND TREES.

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

THE CLARENDON RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE RIVER IS CLASSIFIED AS SINUOUS AND ALLUVIAL WITH A CONFINED CHANNEL AT THE SITE. THE STREAM BED CONSISTS OF SAND AND GRAVEL.

1.2.3 VEGETATION

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

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF RUTLAND, VERMONT.

WINDSOR LOAMY SAND	20%-60% SLOPES	"K" FACTOR = 0.17
WINDSOR LOAMY SAND	8%-15% SLOPES	"K" FACTOR = 0.17
RAYNHAM SILT LOAM	0%-4% SLOPES	"K" FACTOR = 0.49
UDIFLUVENTS/ FLUVAQUENTS	0% SLOPES	"K" FACTOR = N/A
UDIPSAMMENTS	0% SLOPES	"K" FACTOR = 0.15

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
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NORTHERN LONG-EARED BAT
WATER RESOURCE: CLARENDON RIVER
WETLANDS: YES (SEE PLANS)

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.

BARRIER FENCE SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

PROJECT DEMARCATION FENCE SHALL BE PLACED TO VISIBLY DEPICT LIMITS OF CLEARING. THE PROJECT DEMARCATION FENCE MUST BE PLACED AND APPROVED BY THE RESIDENT ENGINEER PRIOR TO ANY CLEARING ACTIVITIES.

1.4.2 LIMIT DISTURBANCE AREA

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

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

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

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

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

1.4.4 INSTALL SEDIMENT BARRIERS

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

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

FILTER CURTAIN WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN

1.4.5 DIVERT UPLAND RUNOFF

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

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

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

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

IT IS NOT ANTICIPATED THAT CHECK STRUCTURES WILL BE NECESSARY.

1.4.7 CONSTRUCT PERMANENT CONTROLS

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

THERE ARE NO PERMANENT STORM WATER TREATMENT DEVICES ANTICIPATED ON 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 DISCHARGE 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 SUBSECTIONS 105.25- 105.29.

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)

FILE NAME: s12j160epsc_nar	PLOT DATE: 08-OCT-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. GRIGAS
DESIGNED BY: J. GRIGAS	CHECKED BY: C. LAROCHE
EPSC NARRATIVE	SHEET 46 OF 59

96 UDIPSAMMENTS
WITH 0% SLOPES
"K" FACTOR = 0.15

28 UDIFLUVENTS/
FLUVAQUENTS
WITH 0% SLOPES
"K" FACTOR = N/A

18E WINDSOR
LOAMY SAND
WITH 20%-60% SLOPES
"K" FACTOR = 0.17

VT STATE PLANE GRID

N

PRIVATE ROAD

BOWEN WAY (PVT)

EXISTING R.O.W.

TOWN HIGHWAY 3
TO CLARENDON

TOWN HIGHWAY 3
TO WEST RUTLAND

8+50 10+00 11+00 12+00 13+00 14+00 14+50

GRAVEL DRIVE

FIELD DRIVE

SAVE

STAIRS

MANHOLE SEWER

BENCHMARK
RAIL ROAD SPIKE
IN POPLAR
ELEV = 641.46

CLARENDON RIVER FLOW

26A RAYNHAM
SILT LOAM
WITH 0%-4% SLOPES
"K" FACTOR = 0.49

18C WINDSOR
LOAMY SAND
WITH 8%-15% SLOPES
"K" FACTOR = 0.17

NOTES:

1. FOR CLARITY, AREAS TO BE SEEDED AND MULCHED HAVE NOT BEEN INDICATED. HOWEVER, ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED AS APPLICABLE.
2. EXISTING CONTOURS SHOWN. SEE CROSS SECTIONS FOR FINAL CONDITIONS.
3. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN, THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION CONTROL PLAN FOR APPROVAL.
4. THE CONTRACTOR SHALL USE OTHER EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON-SITE COORDINATOR.

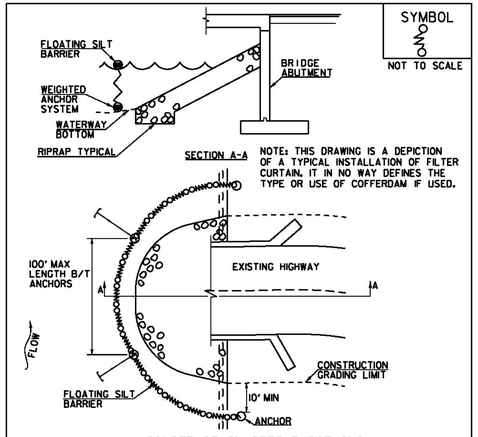
EPSC PLAN

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

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: s12j160epsc.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
EPSC PLAN

PLOT DATE: 10-SEP-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 47 OF 59



SYMBOL

NOT TO SCALE

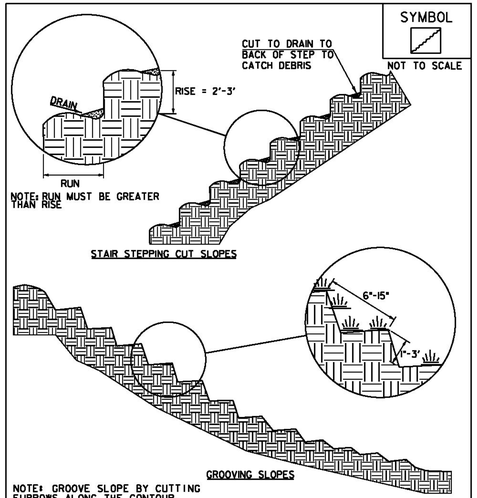
CONSTRUCTION SPECIFICATIONS

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

FILTER CURTAIN

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

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



SYMBOL

NOT TO SCALE

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

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

SURFACE ROUGHENING

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

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF

VAOT LOW GROW/FINE FESCUE MIX

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

VAOT RURAL AREA MIX

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

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

CONSTRUCTION GUIDANCE

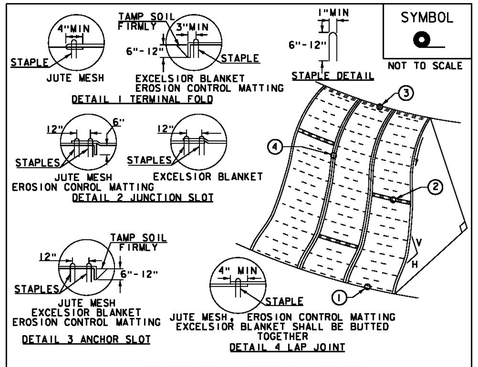
1. SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
2. SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT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

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651.5)

REVISIONS	
JANUARY 12, 2015	WHF



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

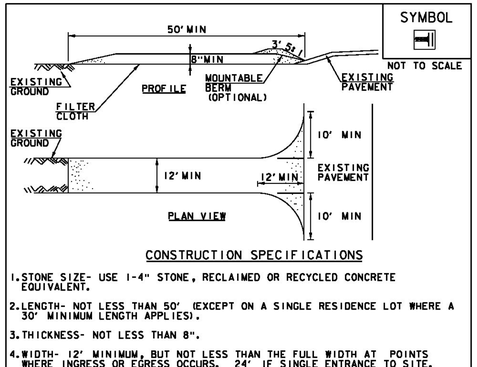
1. APPLY TO SLOPES GREATER THAN 3H: 1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER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

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

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

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

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

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

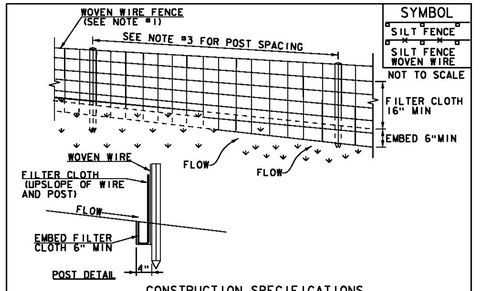
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STABILIZED CONSTRUCTION ENTRANCE

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

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

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

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

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

SILT FENCE

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

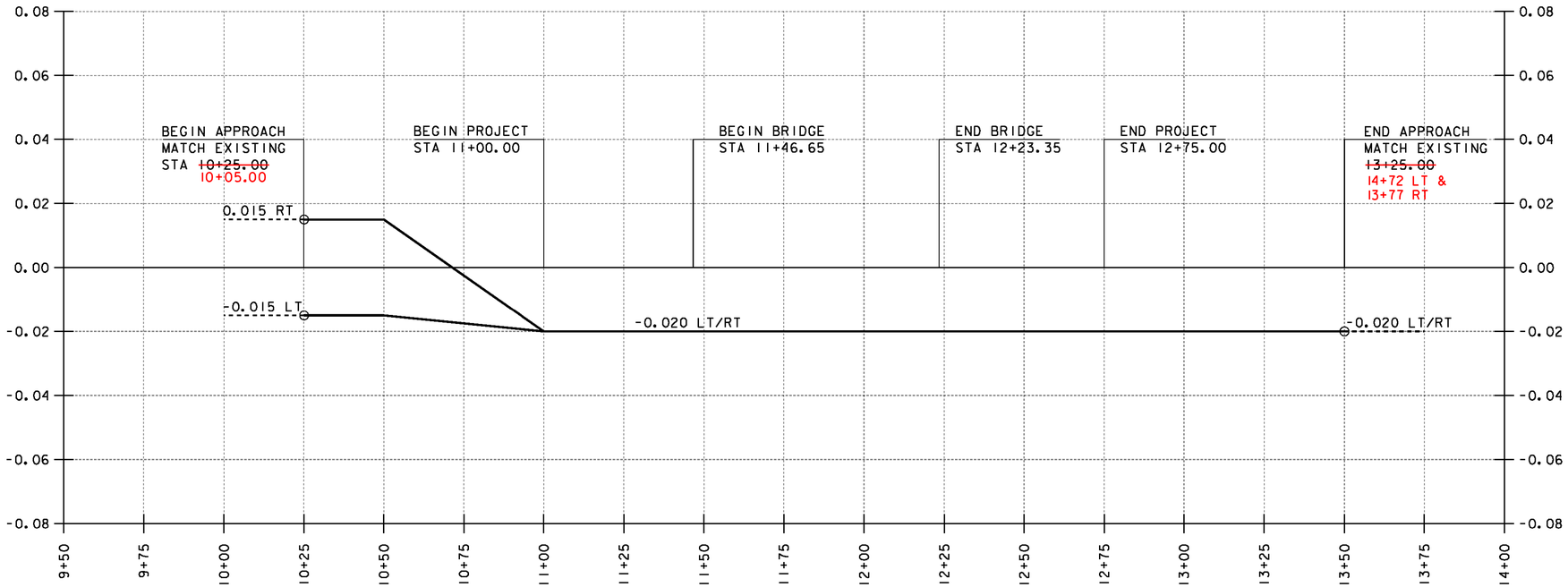
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) ~~OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.516)~~

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

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

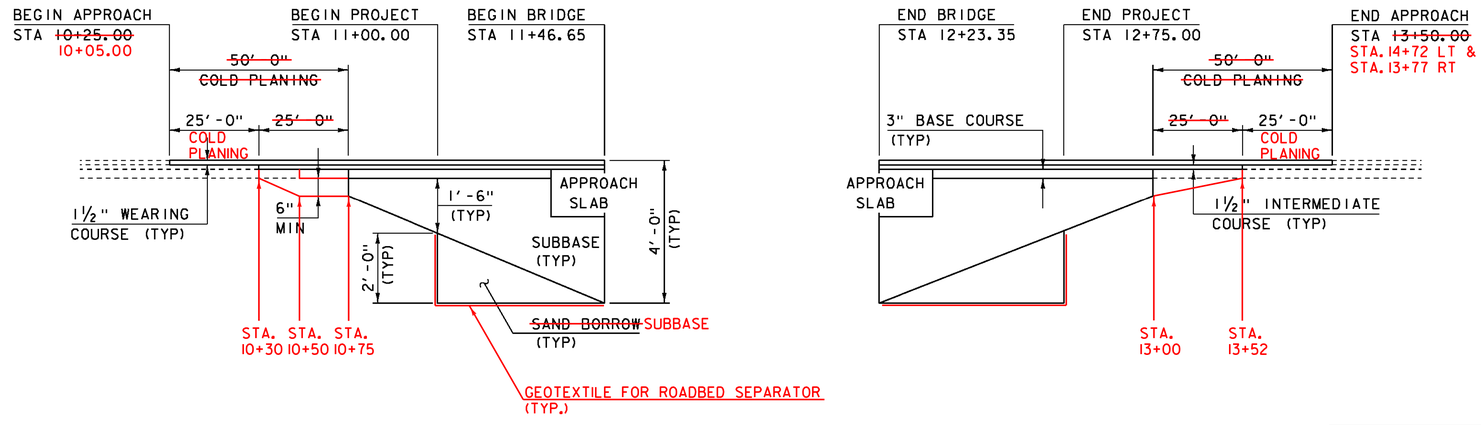
FILE NAME: s12j160ero_det.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
EPSC DETAILS

PLOT DATE: 10-SEP-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE



TH 3 BANKING DIAGRAM

HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: NOT TO SCALE

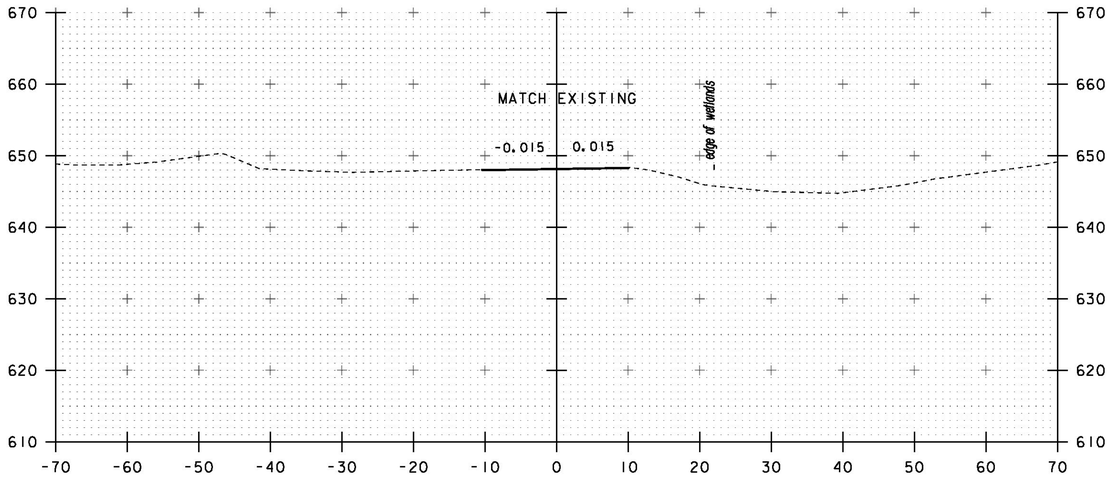


TH 3 MATERIAL TRANSITION DETAIL

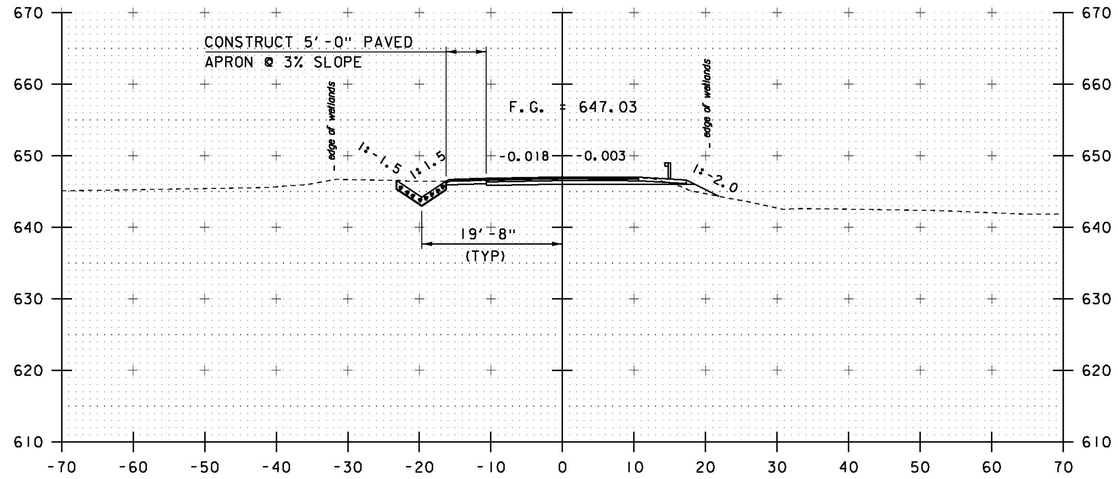
HORIZONTAL SCALE: 1" = 20'-0"
VERTICAL SCALE: 1" = 2'-0"

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)

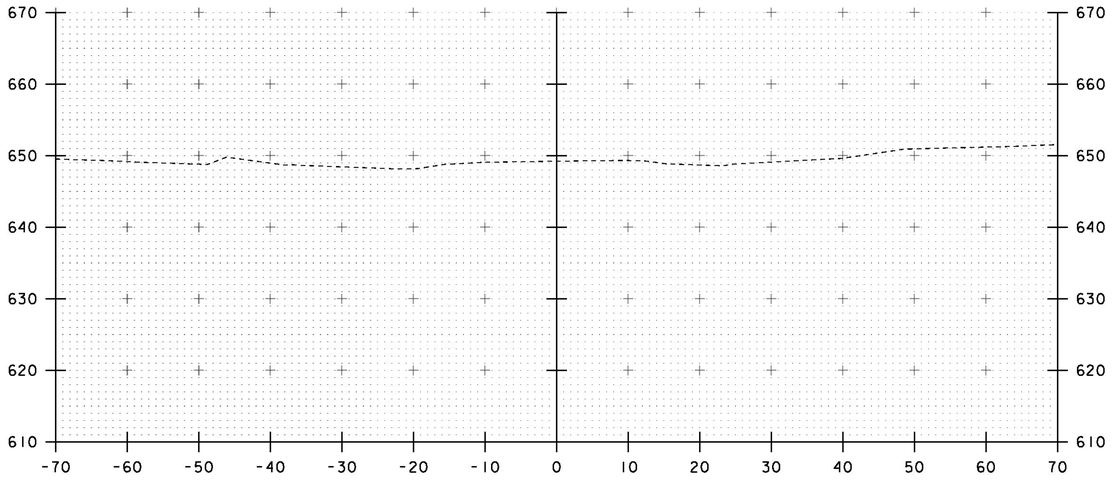
FILE NAME:	s12j160profile.dgn	PLOT DATE:	10-SEP-2015
PROJECT LEADER:	K. HIGGINS	DRAWN BY:	J. GRIGAS
DESIGNED BY:	J. GRIGAS	CHECKED BY:	G. LAROCHE
BANKING DIAGRAM AND MATERIAL TRANSITION		SHEET	49 OF 59



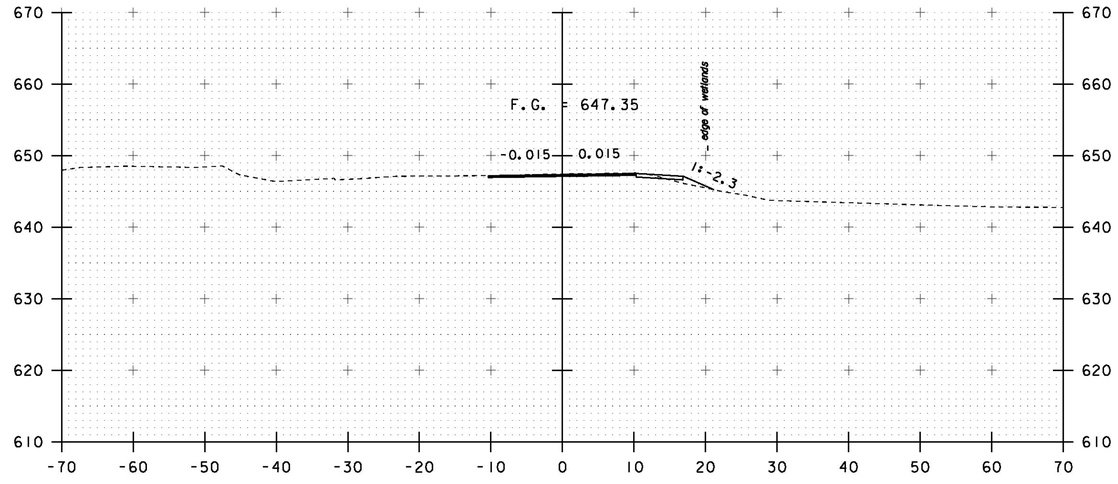
10+25
BEGIN APPROACH



10+75



10+00



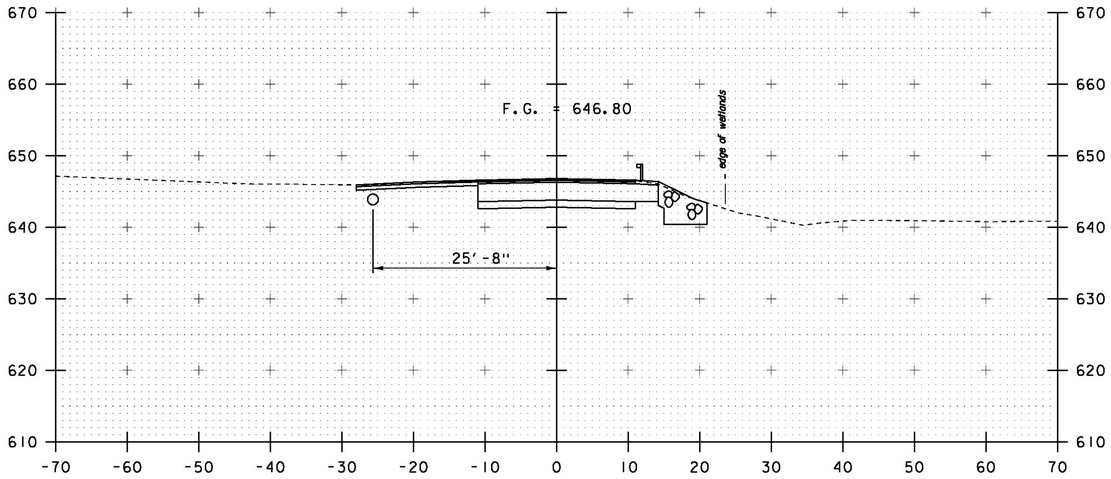
10+50

STA. 10+00 TO STA. 10+75

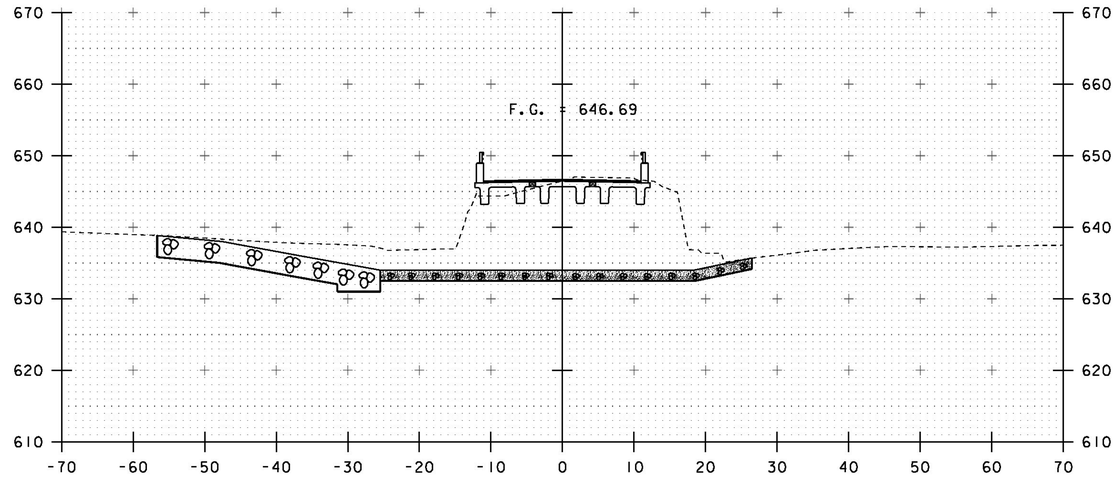
PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)

FILE NAME: s12j160xs.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. GRIGAS
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
MAINLINE CROSS SECTIONS 1	SHEET 50 OF 59

NEXT BEAM ALTERNATE SHOWN. PBU ALTERNATE SIMILAR.

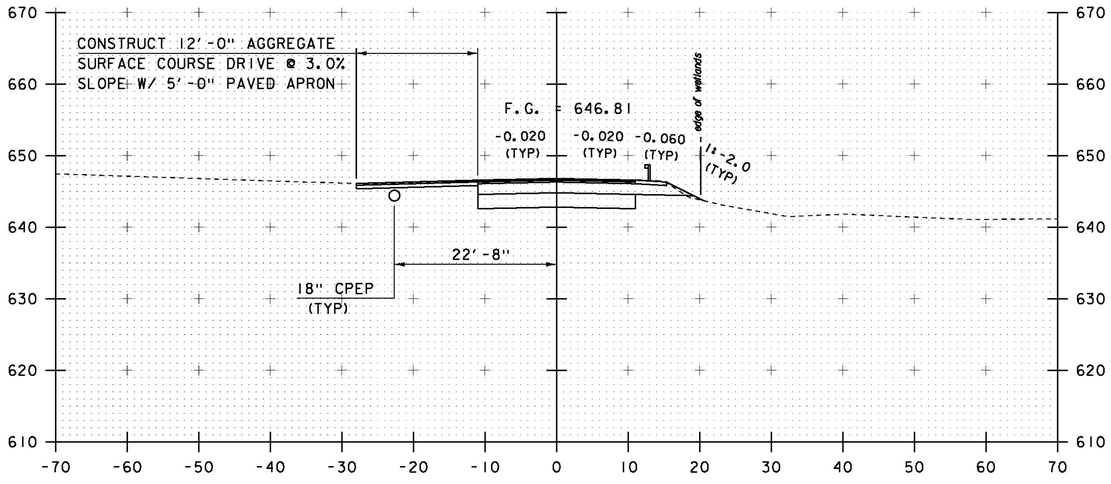


11+25



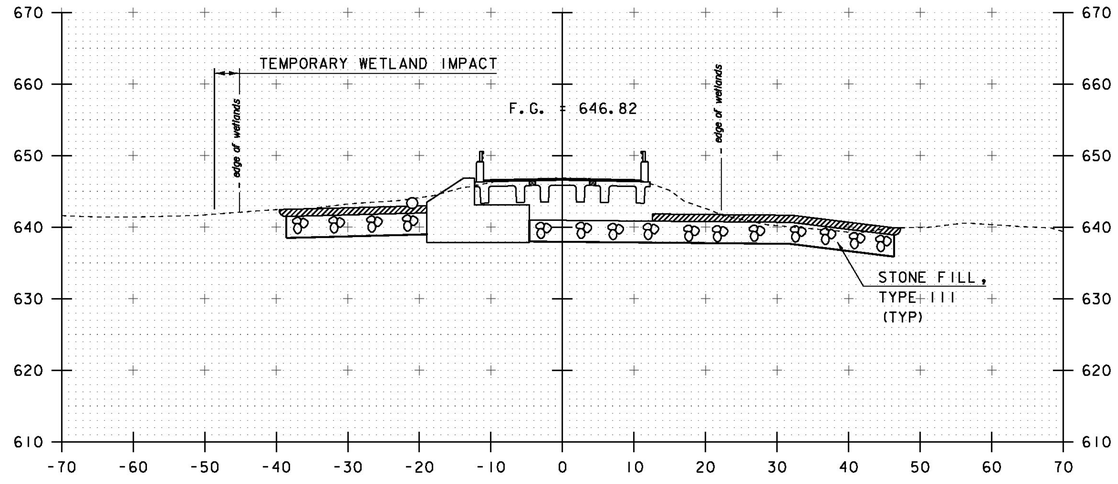
11+75

NEXT BEAM ALTERNATE SHOWN. PBU ALTERNATE SIMILAR.



11+00
BEGIN PROJECT

NEXT BEAM ALTERNATE SHOWN. PBU ALTERNATE SIMILAR.



11+50
BEGIN BRIDGE 11+46.65

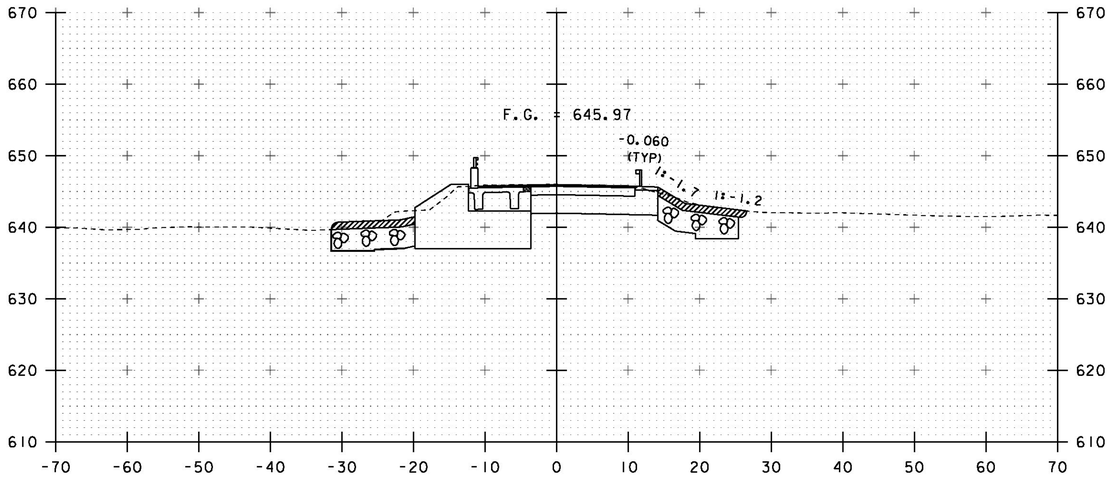
STA. 11+00 TO STA. 11+75

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

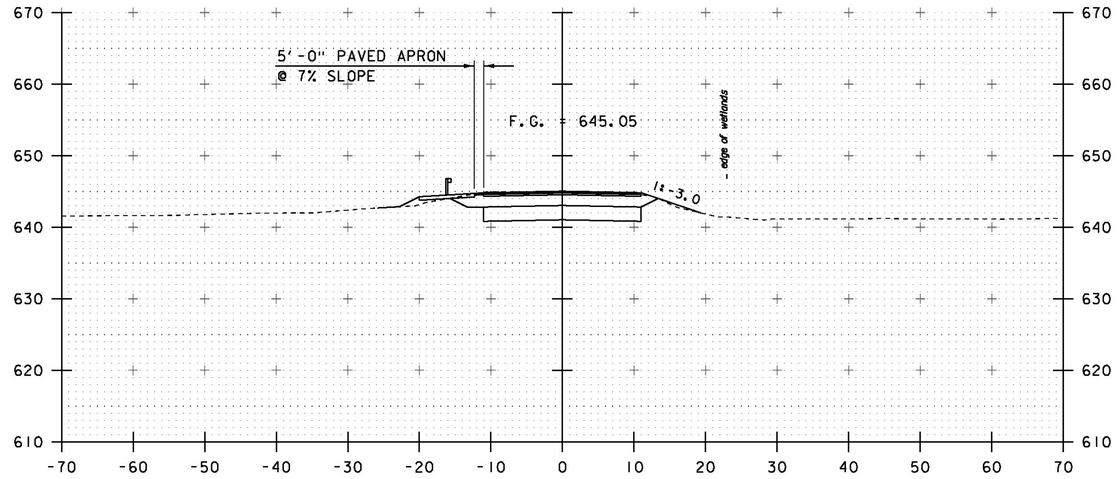
FILE NAME: s12j160xs.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
MAINLINE CROSS SECTIONS 2

PLOT DATE: 08-OCT-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 51 OF 59

NEXT BEAM ALTERNATE SHOWN. PBU ALTERNATE SIMILAR.

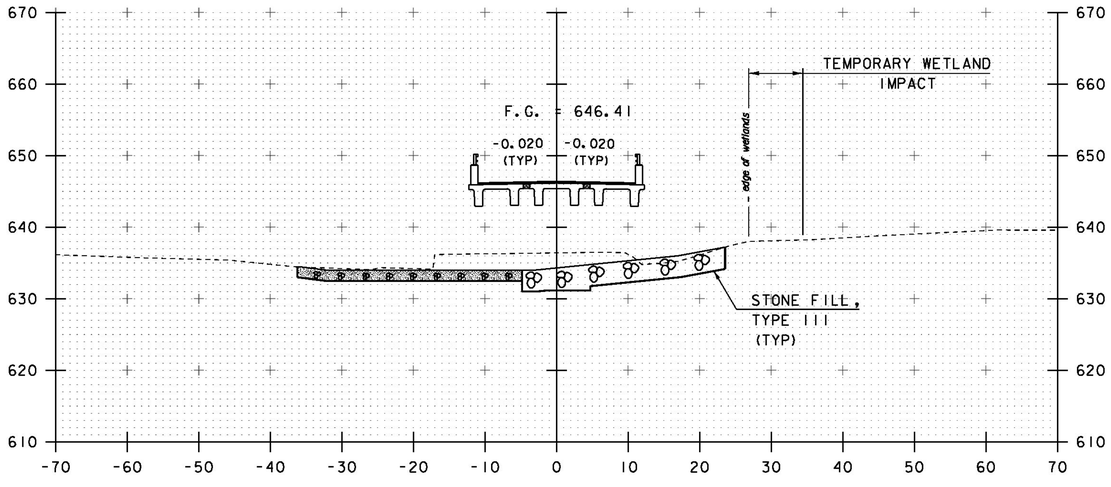


12+25
END BRIDGE 12+35.35

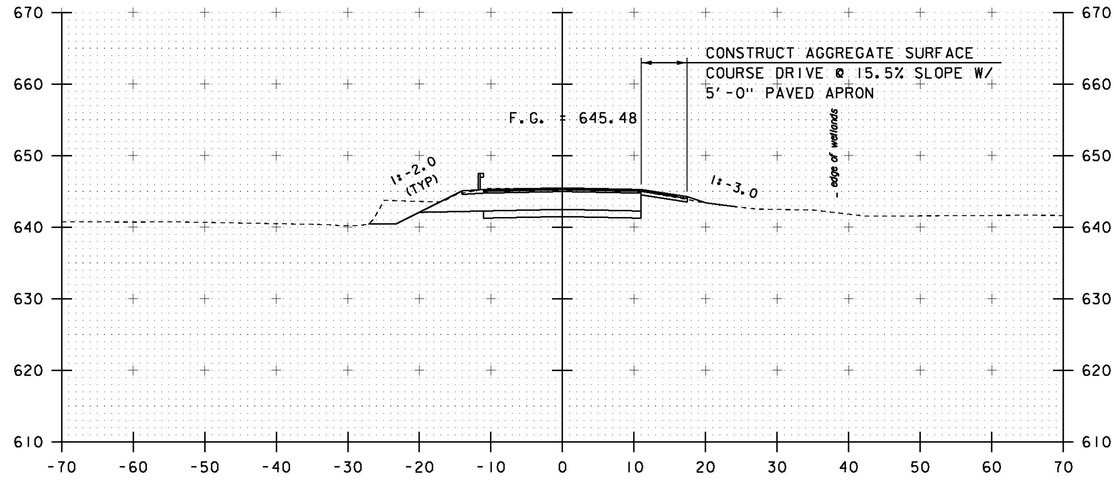


12+75
END PROJECT

NEXT BEAM ALTERNATE SHOWN. PBU ALTERNATE SIMILAR.



12+00

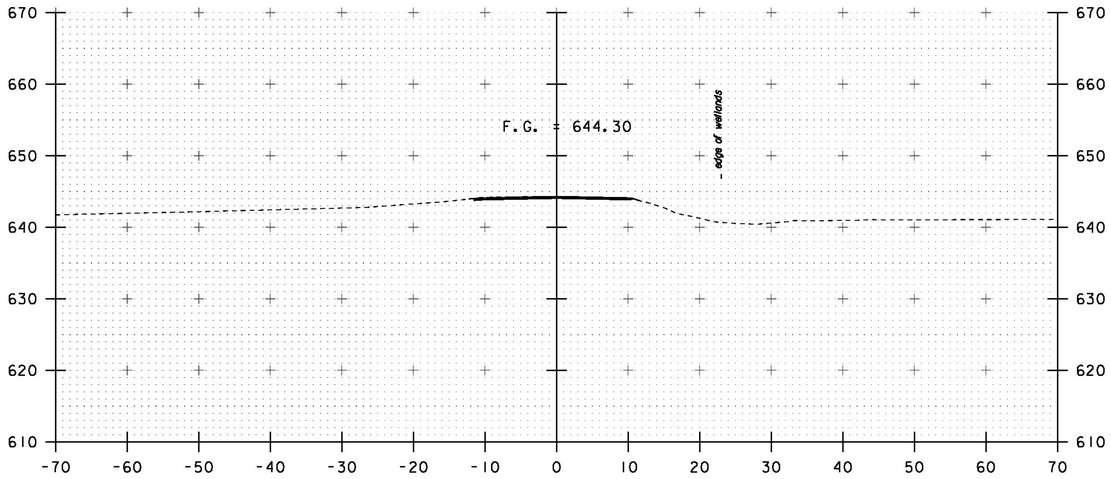


12+50

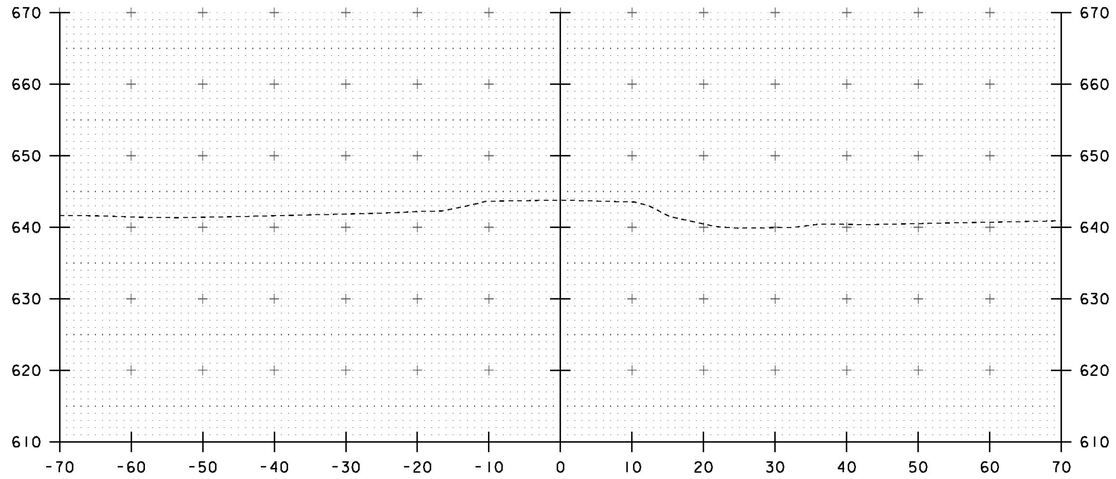
STA. 12+00 TO STA. 12+75

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)

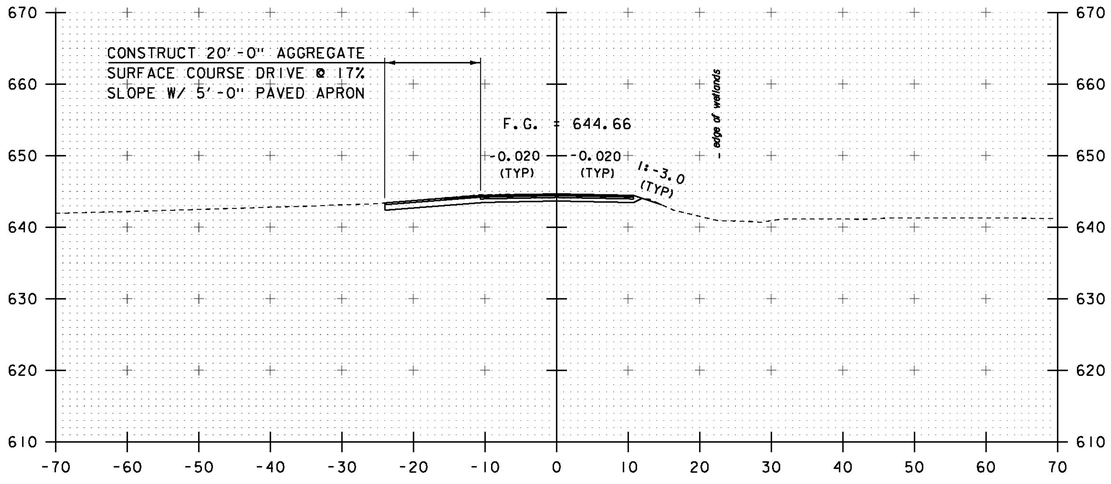
FILE NAME: si2j160xs.dgn	PLOT DATE: 08-OCT-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. GRIGAS
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
MAINLINE CROSS SECTIONS 3	SHEET 52 OF 59



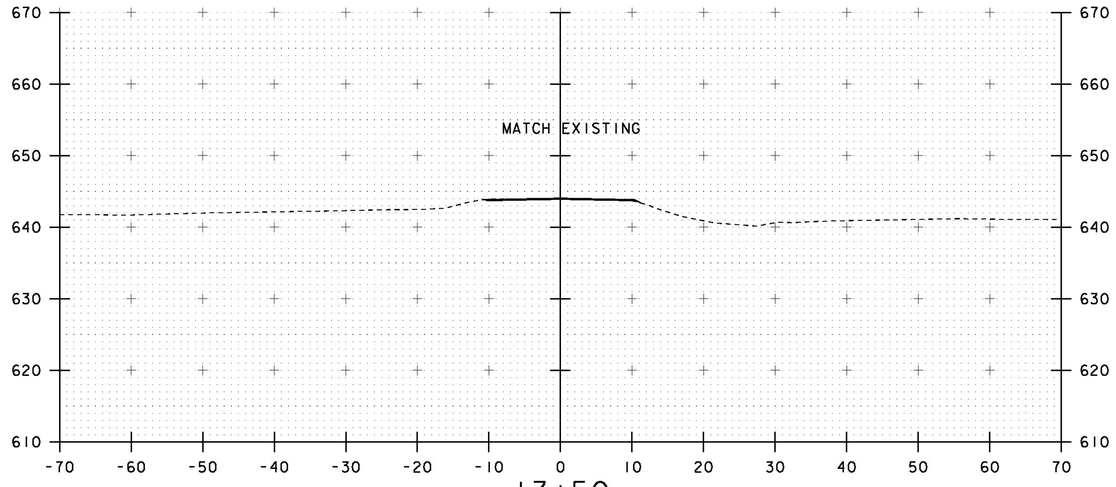
13+25



13+75



13+00



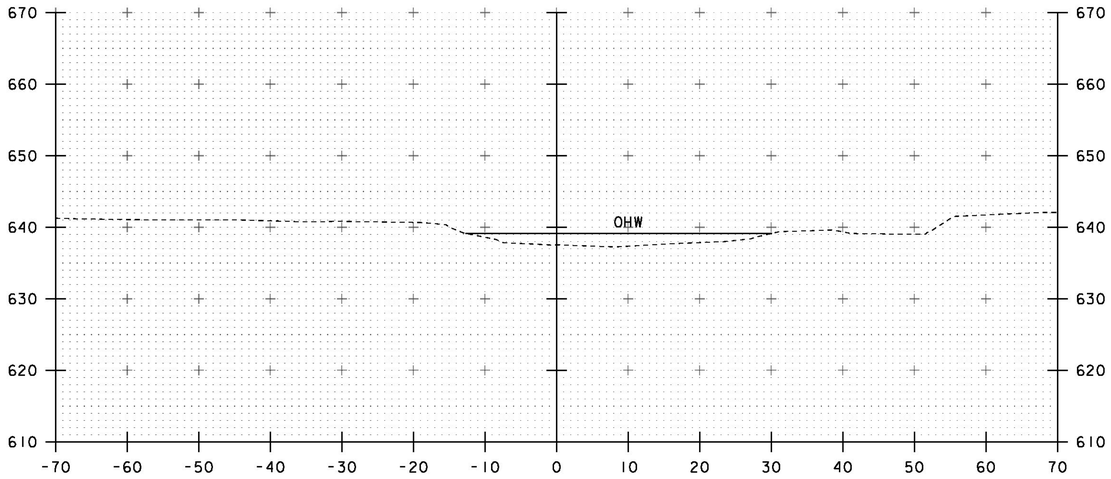
13+50
END APPROACH

STA. 13+00 TO STA. 13+75

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

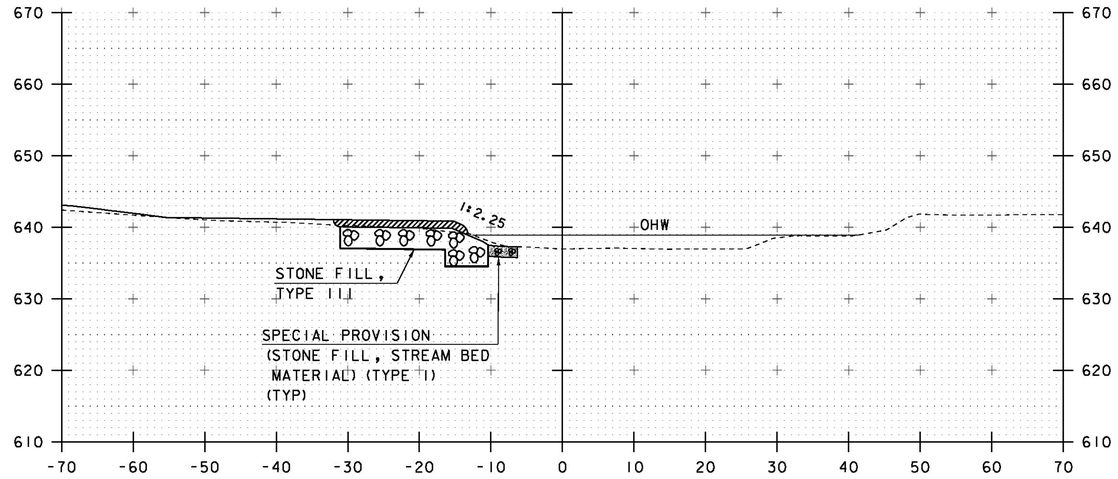
FILE NAME: si2j160xs.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
MAINLINE CROSS SECTIONS 4

PLOT DATE: 08-OCT-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 53 OF 59



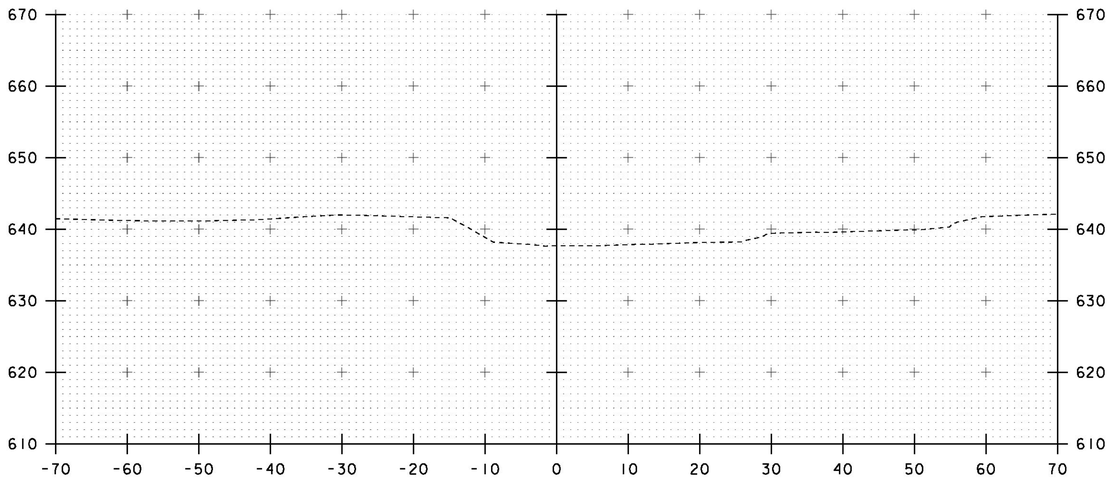
50+25

STA 50+68.25 RT
BEGIN SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL) (TYPE I)

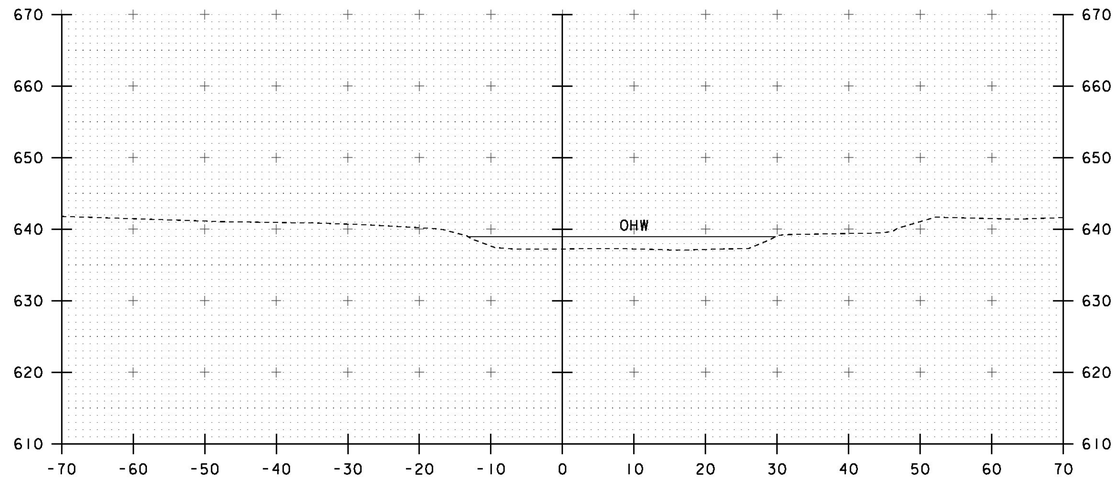


50+60

STA 50+50.00 LT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
STONE FILL, TYPE III
GRUBBING MATERIAL
SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL) (TYPE I)



50+00



50+50

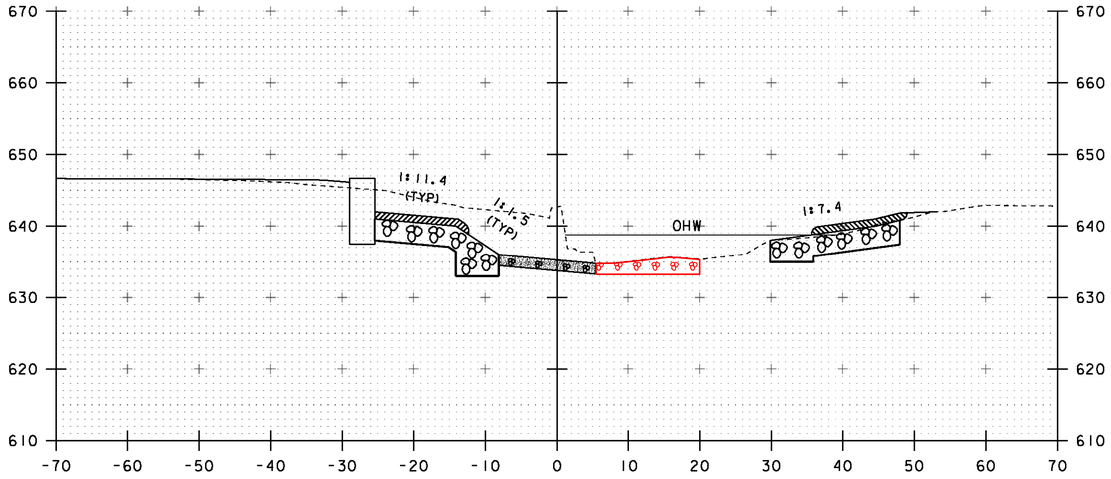
STA. 50+00 TO STA. 50+60

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: si2j160xs.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
CHANNEL CROSS SECTIONS 1

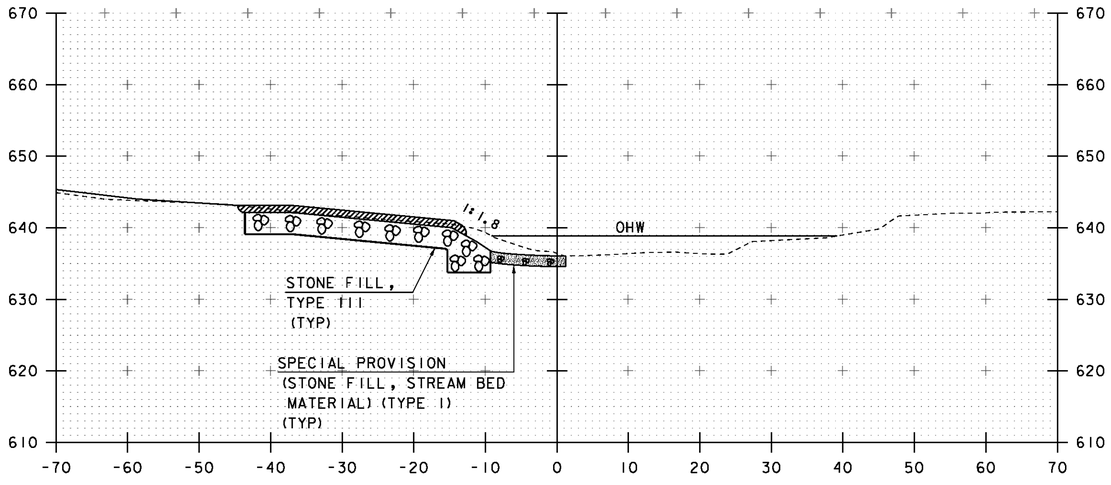
PLOT DATE: 10-SEP-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 54 OF 59

STA 50+82.00 LT
END GRUBBING MATERIAL



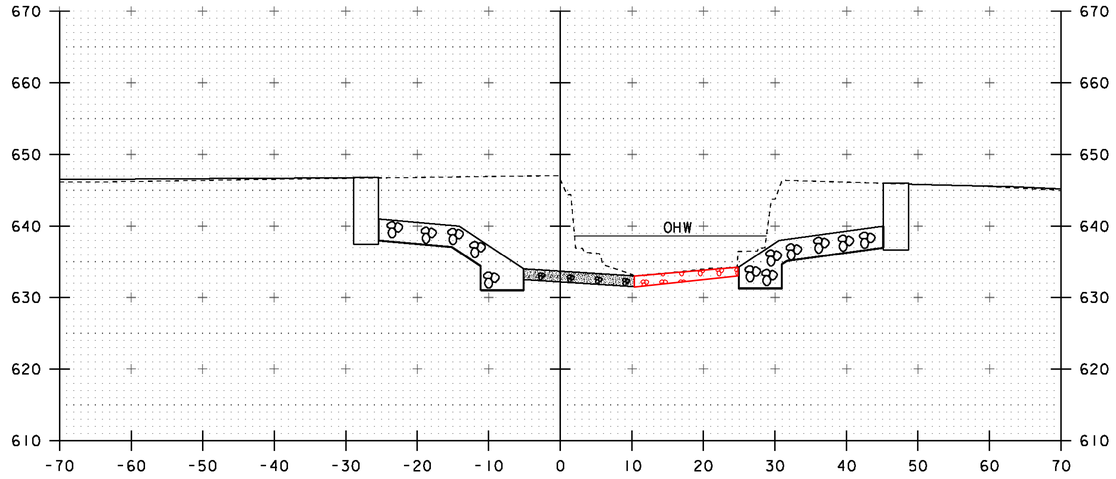
50+80

STA 50+76.77 RT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
STONE FILL, TYPE III
GRUBBING MATERIAL



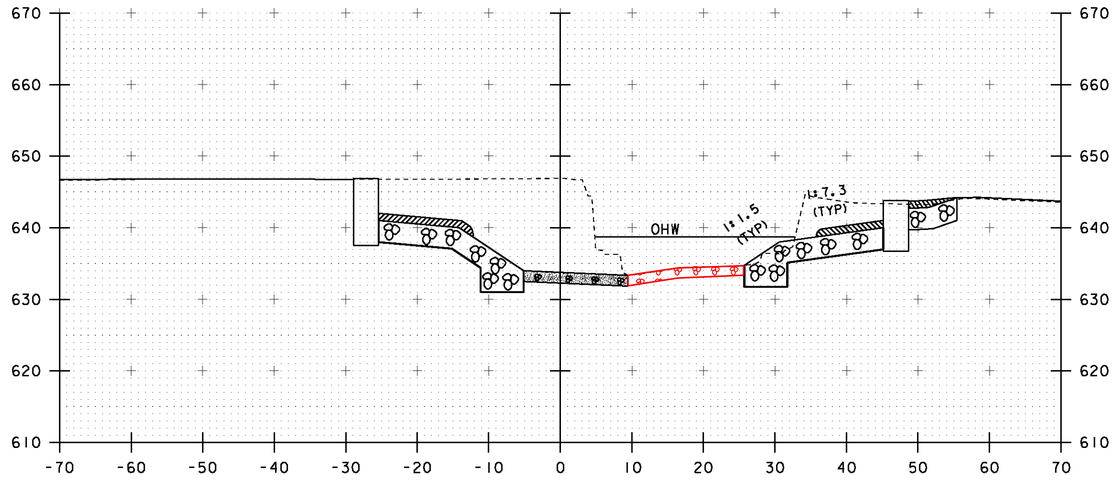
50+70

STA 51+07.70 LT
BEGIN GRUBBING MATERIAL



51+00

STA 50+95.48 RT
END GRUBBING MATERIAL

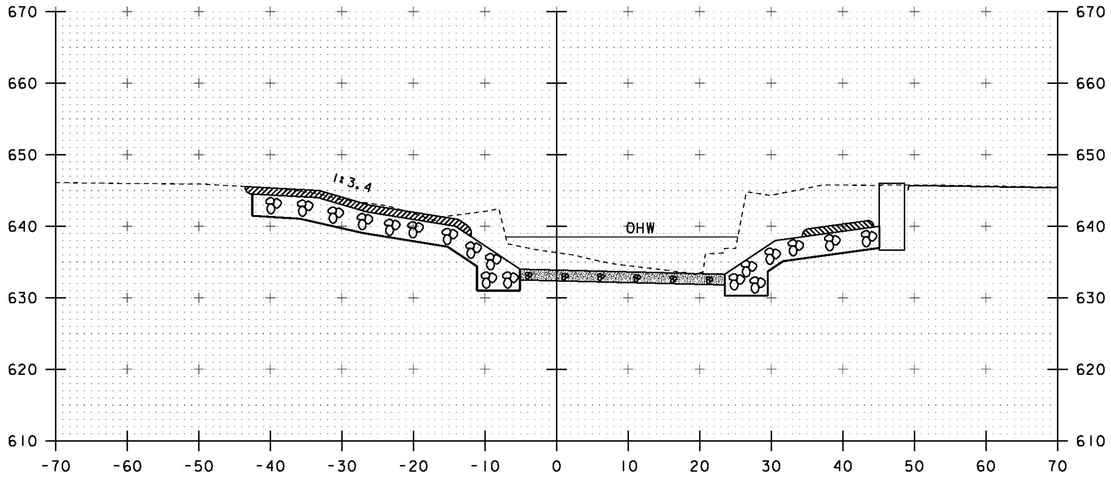


50+90

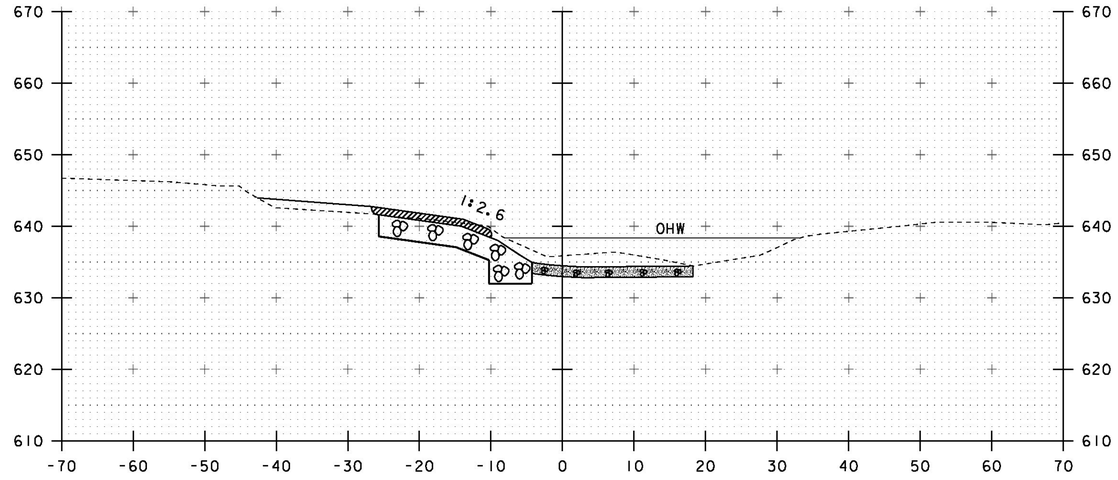
STA. 50+70 TO STA. 51+00

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)

FILE NAME: si2j160xs.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. GRIGAS
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
CHANNEL CROSS SECTIONS 2	SHEET 55 OF 59



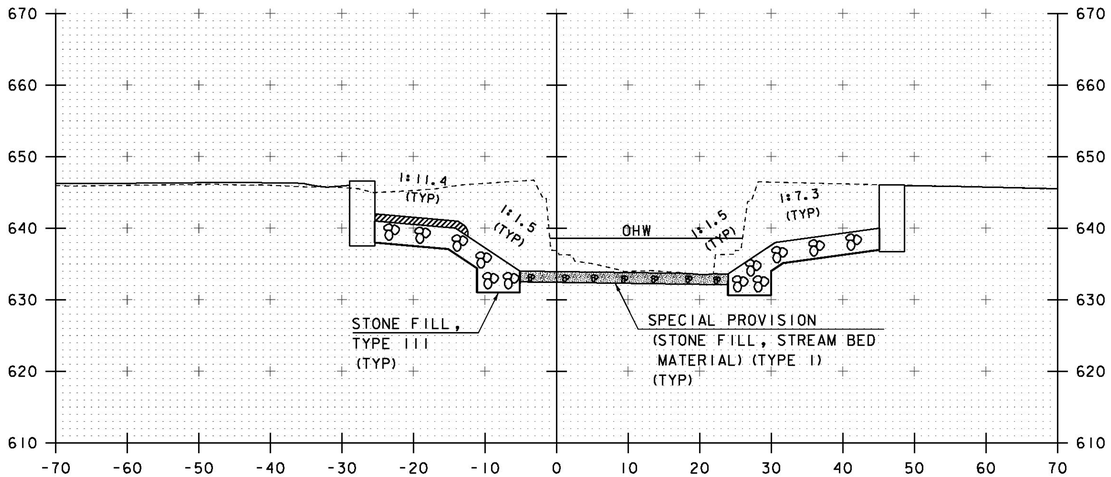
51+20



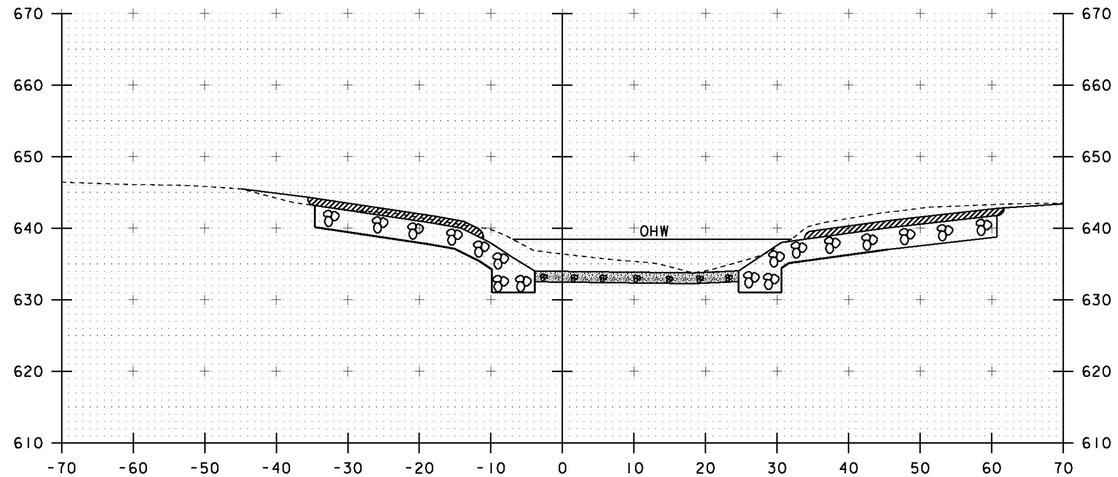
51+40

STA 51+39.73 RT
END UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
STONE FILL, TYPE III
GRUBBING MATERIAL

STA 51+18.49 RT
BEGIN GRUBBING MATERIAL



51+10

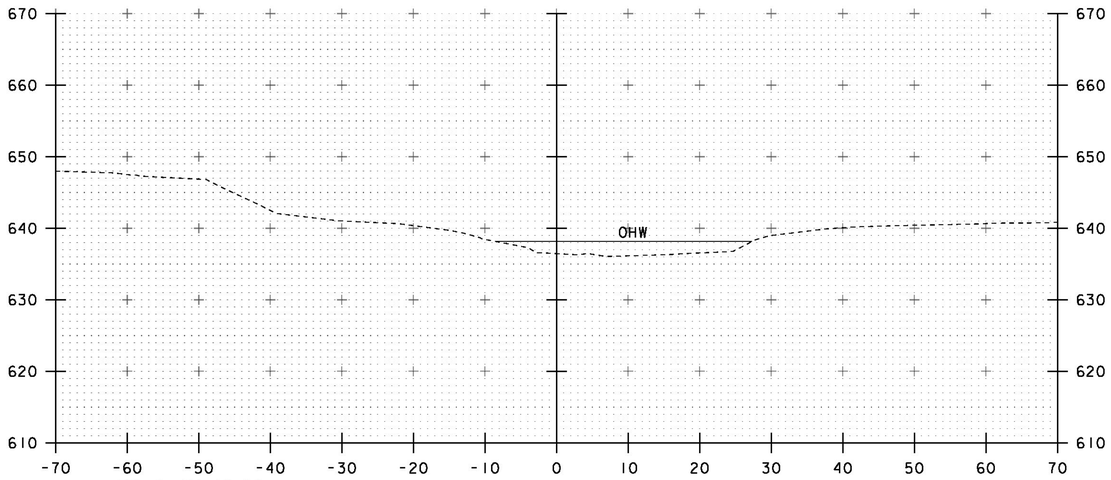


51+30

STA. 51+10 TO STA. 51+40

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)

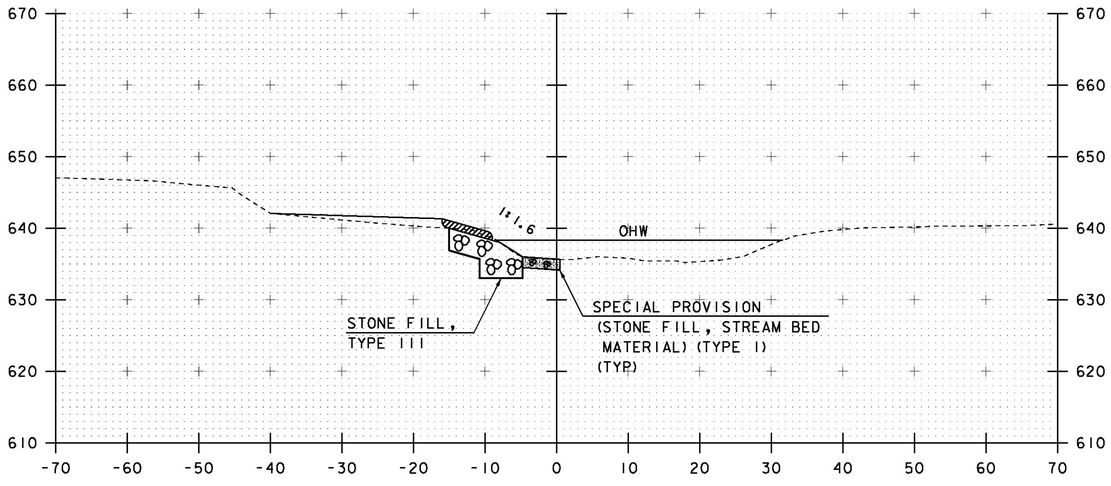
FILE NAME: sl2jl60xs.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. GRIGAS
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
CHANNEL CROSS SECTIONS 3	SHEET 56 OF 59



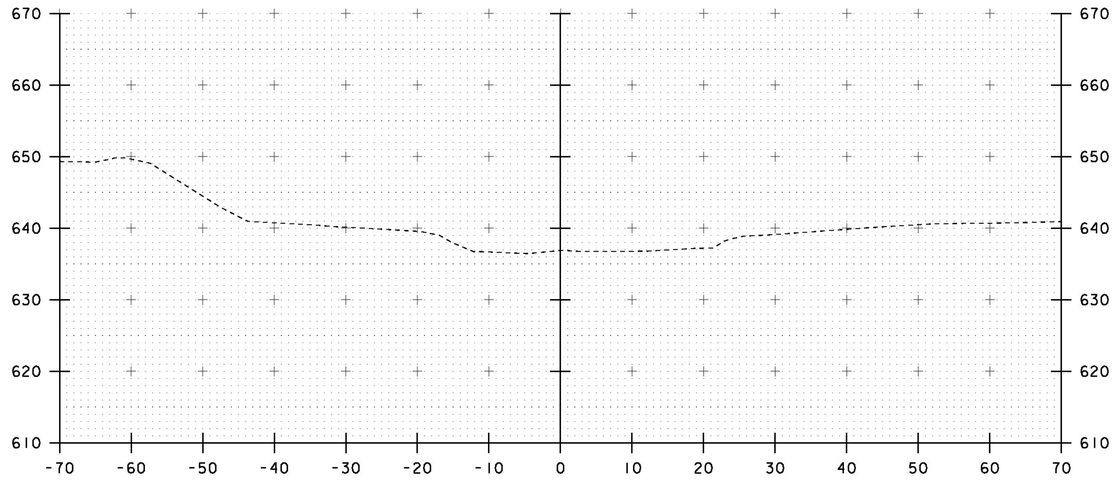
STA 51+50.25 RT
END SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL) (TYPE I)

51+75

STA 51+55.75 LT
END UNCLASSIFIED CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
STONE FILL, TYPE III
GRUBBING MATERIAL



51+50



52+00

STA. 51+50 TO STA. 52+00

PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)

FILE NAME: si2j160xs.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. GRIGAS
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
CHANNEL CROSS SECTIONS 4	SHEET 57 OF 59

CONSTRUCT AGGREGATE SURFACE COURSE
DRIVES W/ 5'-0" PAVED APRONS
STA 11+12.00 LT - 45.00' WIDE
STA 12+38.00 RT - 15.00' WIDE
STA 13+00.00 LT - 28.00' WIDE

REMOVAL AND DISPOSAL OF GUARDRAIL
STA 11+38.71 - 11+76.24 RT
STA 11+61.18 - 11+73.59 LT
STA 12+03.84 - 12+40.25 LT
STA 12+05.83 - 12+18.60 RT

REMOVAL OF EXISTING DELINEATOR
STA 11+46.19 LT

RELOCATE MAILBOX, SINGLE SUPPORT
REMOVE FROM STA 11+06.00 RT (4)
RELOCATE TO STA 10+20.00 RT (4)

18" OPTION PIPE
STA 10+75.00 - 11+50.00

REMOVAL OF EXISTING CULVERT
STA 10+75.00 - 11+50.00

SPECIAL PROVISION (REMOVE AND RELOCATE EXISTING STONE WALL)
STA 12+12.71 - 12+35.25 LT
STA 12+47.21 - 12+70.26 LT

REMOVING AND RESETTING PROPERTY MARKERS
STA 11+71.00 LT
N = 383271.2824
E = 1501608.8904
STA 12+12.50 RT
N = 383332.7475
E = 1501625.1234

4" SLEEVE FOR FUTURE WATERLINE
STA 10+60.00

INSTALL NEW POLE W/ANCHOR (15' LEAD)
STA 10+90, STEEL MARKER POST
STA 10+60.00 LT
STA 10+60.00 RT

REMOVE EXISTING POLE
119 / 5 /119

BEGIN R.O.W. PROJECT
CLARENDON BRO 1443 (48)
STA. 9+67, 25.02' LT

APROXIMATE AERIAL RELOCATION OF UTILITIES

POB MAINLINE
STA 9+50.00
N = 383102.4589
E = 1501753.4476

1
BOWEN, JACK A. & BONNIE L.

BOWEN WAY (PVT)

PRIVATE ROAD

STONE FILL TYPE III (TYP)

STONE FILL TYPE I (TYP)

EASEMENT AREA NEEDED FOR RELOCATION AND TRIMMING

RETAIN EXISTING POLE
118 / 5 / 118
INSTALL NEW ANCHOR
12' LEAD

PI#1 MAINLINE
STA 13+00.00 BK
STA 13+00.00 AH
N = 383391.0568
E = 1501555.4276

POB CHANNEL
STA 52+00.00
N = 382246.5866
E = 1501535.1213

2
BOWEN, KIMBERLY

END R.O.W. PROJECT
CLARENDON BRO 1443 (48)
STA. 14+39, 24.77' LT

POE MAINLINE
STA 14+50.00
N = 383516.0330
E = 1501472.4744

END BRIDGE
STA 12+23.35
FG 646.01

END APPROACH
STA 13+50.00

EXISTING R.O.W.

TOWN HIGHWAY 3 TO CLARENDON

TOWN HIGHWAY 3 TO WEST RUTLAND

49.50' R.O.W.

N 34°27'20.77" W

9+50 10+00 11+00 12+00 13+00 14+00 14+50

11+66.85 51.75' RT
11+70.99 54.24' RT
11+75.00 56.64' RT
11+99.92 36.22' RT
12+23.04 33.01' RT
12+36.53 24.25' RT
11+70.99 24.44' RT
11+20.30 24.56' RT
11+76.71 25.08' RT
12+12.42 25.18' RT
12+28.28 25.23' RT
11+27.51 24.93' RT
11+50.84 48.55' RT
12+01.12 25.15' RT
12+07.57 33.10' RT
12+11.74 31.54' RT

CONST(T)
CH(P)
UE(P)
SR(T)
R+R
R&R
DRIVE(T)
I&M(P)
AER E&T
SAVE

INSTALL NEW GUY WIRE

PT#1 MAINLINE
STA 13+50.00

PC#1 MAINLINE
STA 12+50.00

MAINLINE CURVE (1)
DELTA = 0°52'53"
D = 0°52'53"
R = 6500.00'
T = 50.00'
L = 100.00'
E = 0.19'

BENCHMARK
RAIL ROAD SPIKE IN POPLAR
ELEV = 641.46

BEGIN PROJECT
STA 11+00.00

BEGIN BRIDGE
STA 11+46.65
FG 646.83

CL BEARING
STA 11+48.00
FG 646.83

BEGIN APPROACH
STA 10+25.00

MAINLINE STA 11+75.00
=CHANNEL STA 51+00.00
Δ = 80° 0' 0" LT

SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL) (TYPE I)

END PROJECT
STA 12+75.00

POB CHANNEL
STA 50+00.00
N = 383329.8847
E = 1501717.1735

3
LICAUSI, FRANK V. & GALE M.

4
NAVIN, CHARLES F. & SHELLY B.

RETAIN EXISTING POLE
8 / 120 /120
INSTALL NEW ANCHOR
12' LEAD

INSTALL NEW STUB POLE W/ANCHOR (15' LEAD)
STA 13+46, 22' RT

CLARENDON RIVER FLOW

VT STATE PLANE GRID

NOTE:

1. WORK TO BE DONE BY OTHERS.
EXISTING BRIDGE DATA
CONCRETE T-BEAMS, BUILT 1927
STRUCTURE LENGTH = 31'
MAX SPAN LENGTH = 29'
DECK WIDTH = 23.4'

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

FOR R.O.W. USE ONLY

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

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)

FILE NAME: r12j1601ay.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
R.O.W. LAYOUT SHEET 1 OF 1

PLOT DATE: 08-OCT-2015
DRAWN BY: A. EGIZI
CHECKED BY: R. CLOUTIER
SHEET 58 OF 59

STATE OF VERMONT
AGENCY OF TRANSPORTATION

RIGHT - OF - WAY DETAIL SHEET

TABLE OF PROPERTY ACQUISITION

PARCEL NO.	PROPERTY OWNER	ROW LAYOUT NO.	BEGINNING STATION	ENDING STATION	TAKE	REMAINDER	RIGHT			RECORDING DATA					REMARKS
					AREA±	AREA±	TYPE	T / P	AREA ±	TITLE	DATE	TOWN / CITY	BOOK	PAGE	
1	BOWEN, JACK A. & BONNIE L.	1	9+67 LT	11+70.99 LT			UTILITY	P	4,702 SF	WDOE	05/11/15	CLARENDON	149	696-698	
			11+12 LT				DRIVE	T							45' WIDE
			11+30 LT	11+66.85 LT			SLOPE	T	67 SF						INCL. EC
			11+29 LT	11+71 LT			CONSTRUCTION	T	251 SF						INCL. BF, EC & FILTER CURTAIN
			10+75 LT	11+50 LT			INSTALL & MAINTAIN	P							CULVERT
			11+30.30 LT	11+70.99 LT			CHANNEL	P	617 SF						INCL. STONE FILL
			11+71.00 LT				REMOVE & RESET	P							IRON PIN
2	BOWEN, KIMBERLY	1	11+71 LT	14+39 LT			UTILITY	P	3,704 SF	WDOE	05/11/15	CLARENDON	149	699-701	
			11+70.99 LT	12+36.53 LT			CHANNEL	P	970 SF						INCL. STONE FILL & TEMP. FILTER CURTAIN
			11+71 LT	11+75.00 LT			CONSTRUCTION	T	5 SF						INCL. FILTER CURTAIN
			11+71.00 LT				REMOVE & RESET	P							IRON PIN
			12+12.71 LT	12+35.25 LT			REMOVE & RELOCATE	T							STONE WALL
			12+23.04 LT	12+88 LT			SLOPE	T	250 SF						INCL. BF, EC
			12+47.21 LT	12+70.26 LT			REMOVE & RELOCATE	T							STONE WALL
			13+00.00 LT				DRIVE	T							28' WIDE, GRAVEL
			13+09 LT	13+21 LT			CONSTRUCTION	T	50 SF						INCL. BF
3	LICAUSI, FRANK V. & GALE M.	1	11+19 RT	11+50.84 RT			CONSTRUCTION	T	202 SF	WDOE	05/18/15	CLARENDON	149	708-709	INCL. BF, EC & FILTER CURTAIN
			11+27.51 RT	11+76.71 RT			CHANNEL	P	573 SF						INCL. STONE FILL & TEMP. FILTER CURTAIN
			11+91 RT	12+11.74 RT			CONSTRUCTION	T	138 SF						INCL. BF, EC & FILTER CURTAIN
			12+01.12 RT	12+12.42 RT			CHANNEL	P	58 SF						INCL. STONE FILL
			12+12.50 RT				REMOVE & RESET	P							IRON PIN
4	NAVIN, CHARLES F. & SHELLY B.	1	12+11 RT	12+31 RT			CONSTRUCTION	T	346 SF	WDOE	05/11/15	CLARENDON	149	702-703	INCL. BF & EC
			12+11.74 RT	12+28.28 RT			CHANNEL	P	51 SF						INCL. STONE FILL
			12+12.50 RT				REMOVE & RESET	P							IRON PIN
			12+38 RT				DRIVE	T							15' GRAVEL
			12+43 RT	12+59 RT			CONSTRUCTION	T	58 SF						INCL. BF & EC
			13+46 RT				INSTALL & MAINTAIN	P							GUY WIRE & ANCHOR
5	GREEN MOUNTAIN POWER CORPORATION	1	9+67 LT	14+39 LT											UTILITY
6	TELEPHONE OPERATING COMPANY OF VERMONT LLC	1	9+67 LT	14+39 LT											UTILITY
7	COMCAST OF CONNECTICUT/GEORGIA/ MASSACHUSETTS/NEW HAMPSHIRE/ NEW YORK/NORTH CAROLINA/ VERMONT, LLC	1	9+67 LT	14+39 LT											UTILITY

APPROVED: RYAN CLOUTIER DATE: 08-12-14
CHIEF, PLANS & TITLES

TABLE OF REVISIONS

REVISION NO.	ROW SET SHEET #	DESCRIPTION	DATE
1	3, 4	PARCEL 1 - REVISE NORTH EDGE OF	01/28/15
		DRIVE, GUARDRAIL & CULVERT AS	
		REQUESTED BY PROPERTY OWNER.	
		REV BY: MT C.O. 9964 APP BY: RC	
2	4	PARCEL 4 - REVISE DRIVE ENTRANCE PER	01/28/15
		PROPERTY OWNER REQUEST. NO	
		CHANGES TO RIGHTS NEEDED.	
		REV BY: MT C.O. 9965 APP BY: RC	
3	3, 4	PARCEL 4, NAVIN - REVISE DRIVE	03/12/15
		ENTRANCE.	
		REV BY: MT C.O. 9978 APP BY: RC	
4	3, 4	PARCEL 2, BOWEN - REVISE EASEMENT	03/31/15
		FOR STONE WALL TO 'REMOVE AND	
		RELOCATE'; ADD 'SAVE' NOTE TO TWO	
		APPLE TREES; REVISE DRIVE	
		ENTRANCE.	
		REV BY: MT C.O. 9983 APP BY: RC	

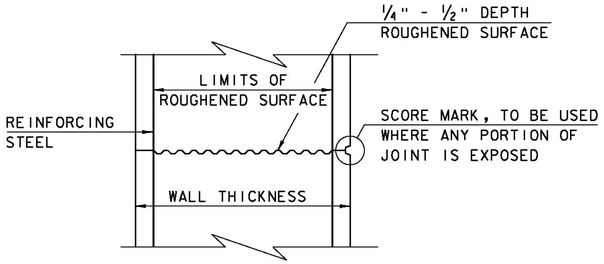
PROJECT NAME: **CLARENDON**
PROJECT NUMBER: **BRO 1443(48)**

FILE NAME: **r12j160detail.xls**
PROJECT LEADER: **K. HIGGINS**
DESIGNED BY: **A. EGIZI**
R.O.W. DETAIL SHEET #1

PLOT DATE: **08-OCT-2015**
DRAWN BY: **M. TROTTIER**
CHECKED BY: **R. CLOUTIER**
SHEET **59** OF **59**

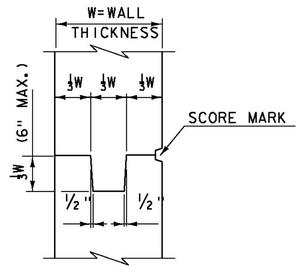
CONCRETE GENERAL NOTES

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

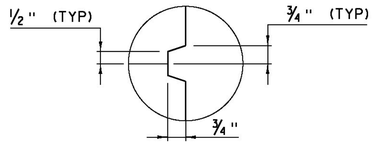


TYPICAL HORIZONTAL CONSTRUCTION JOINT
(NOT TO SCALE)

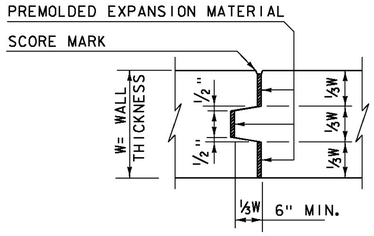
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



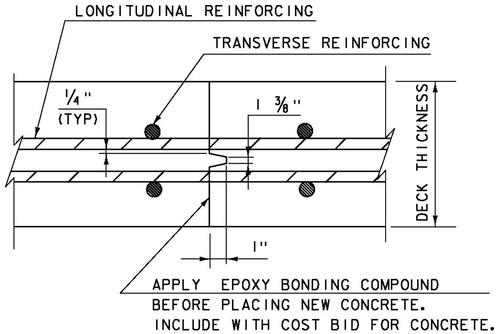
TYPICAL CONCRETE CONSTRUCTION JOINT
(NOT TO SCALE)



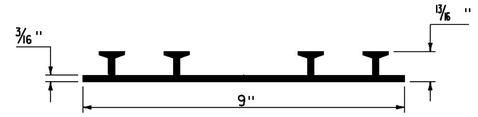
SCORE MARK DETAIL
(NOT TO SCALE)



TYPICAL CONCRETE EXPANSION JOINT
(NOT TO SCALE)



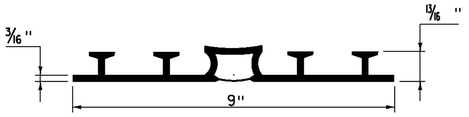
TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS
(NOT TO SCALE)



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

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

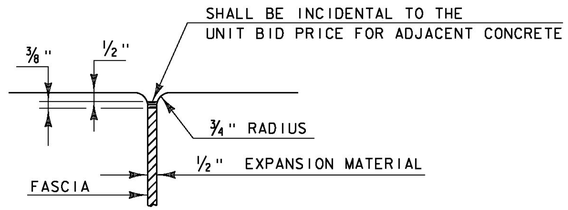
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



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

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

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



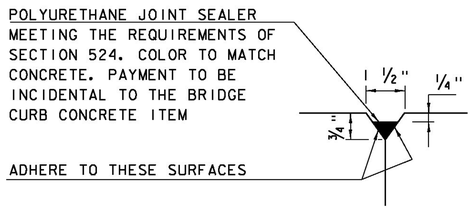
JOINT BETWEEN FASCIA AND WINGWALL
(NOT TO SCALE)

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

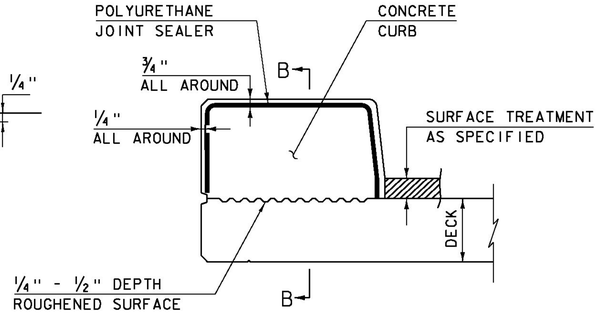
CONCRETE DETAILS AND NOTES

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

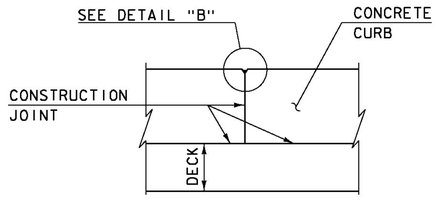
STRUCTURES DETAIL
SD-501.00



DETAIL "B"
(NOT TO SCALE)

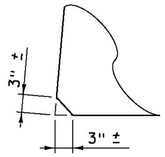


CONCRETE CURB JOINT SECTION
(NOT TO SCALE)

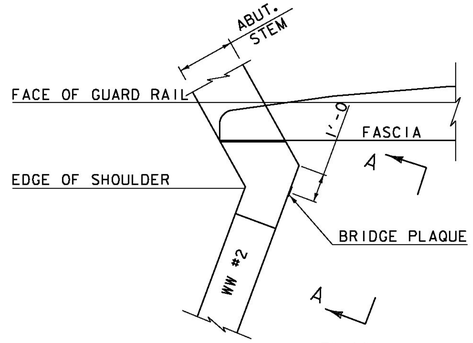


SECTION B - B
(NOT TO SCALE)

1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION



ACUTE ANGLE CLIP DETAIL
(NOT TO SCALE)



PLAN

CONCRETE CURB JOINT NOTES

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

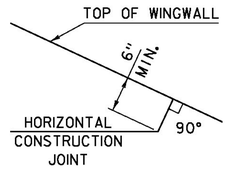
2. IF THE CONTRACTOR CHOOSES NOT TO USE AN APPROVED SHRINKAGE REDUCING ADMIXTURE, THE CURBS SHALL BE CONSTRUCTED WITH CONSTRUCTION JOINTS SPACED AT A MAXIMUM OF 15'-0" CENTER TO CENTER AND 2'-0" MINIMUM FROM THE CENTER OF NEAREST BRIDGE RAILING POST.

3. ON MULTI-SPAN CONTINUOUS SUPERSTRUCTURES, REGARDLESS OF WHETHER APPROVED SHRINKAGE REDUCING ADMIXTURE IS USED, CURB JOINTS SHALL BE LOCATED OVER THE CENTERLINE OF PIERS AND 7'-0" EACH SIDE OF THE CENTERLINE OF EACH PIER.

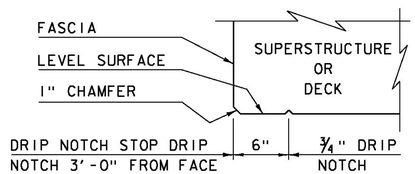
4. WHEN CURB JOINTS ARE USED THE CURBS SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOUR DELAY BETWEEN ADJACENT PLACEMENTS.

5. LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THROUGH CURB CONSTRUCTION JOINTS. CURB STIRRUP BARS SHALL BE TURNED AS NECESSARY TO MAINTAIN COVER IN THE FLARED CURB ENDS.

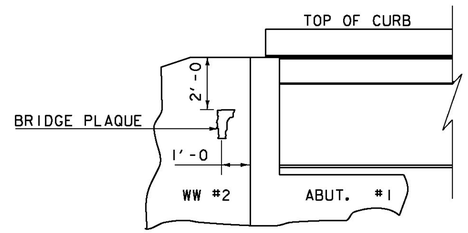
6. THE JOINT SPACING AND DETAILS SHOWN SHALL APPLY TO SIDEWALKS WHEN SHOWN IN THE PLANS.



HORIZONTAL WINGWALL CONSTRUCTION JOINT
(NOT TO SCALE)



DRIP NOTCH DETAIL
(NOT TO SCALE)



VIEW "A - A"

BRIDGE PLAQUE
(NOT TO SCALE)

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

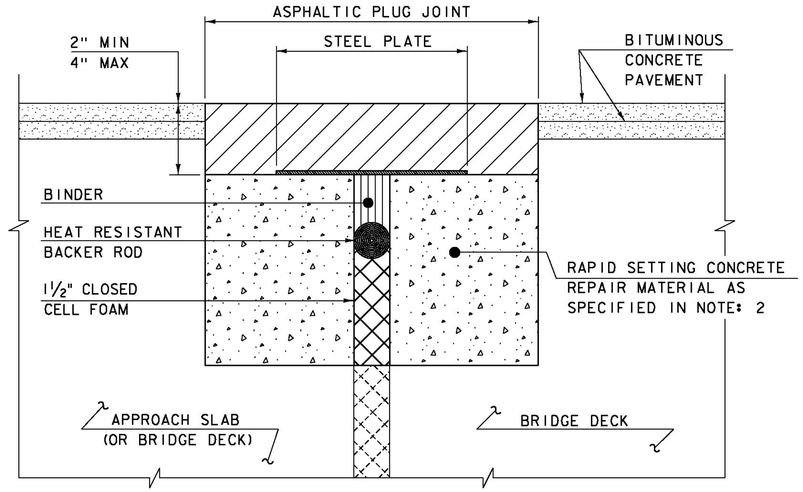
PAYMENT FOR INSTALLATION OF THE BRIDGE PLAQUE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

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

CONCRETE DETAILS AND NOTES

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL
SD-502.00



ASPHALTIC PLUG JOINT DETAIL - REHAB

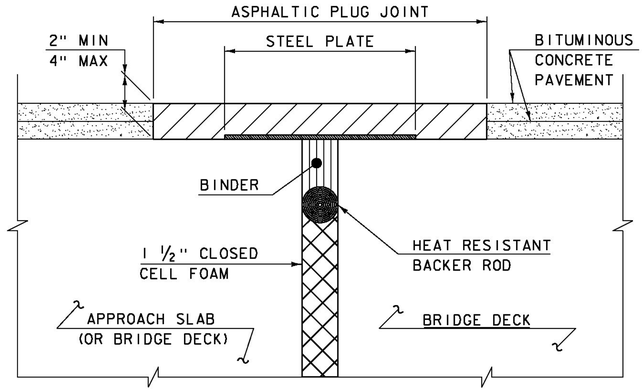
NOTES:

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

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

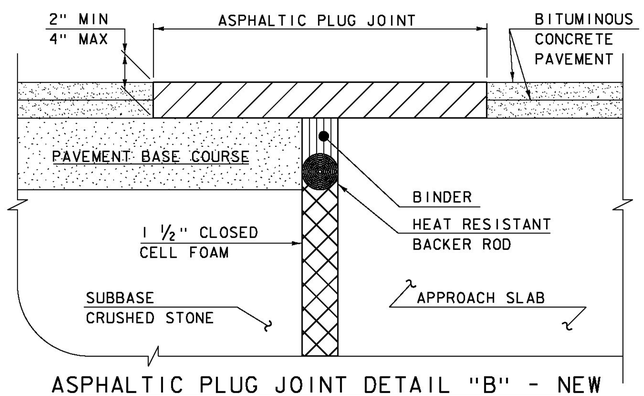
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.

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



ASPHALTIC PLUG JOINT DETAIL "A" - NEW

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



ASPHALTIC PLUG JOINT DETAIL "B" - NEW

ASPHALTIC PLUG JOINT NOTES

INSTALLATION:

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

WEATHER LIMITATIONS

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

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

DETAILS ON THIS SHEET ARE NOT TO SCALE.

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

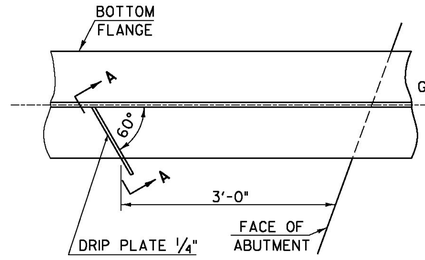
BRIDGE JOINT
ASPHALTIC PLUG

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - DIVISION

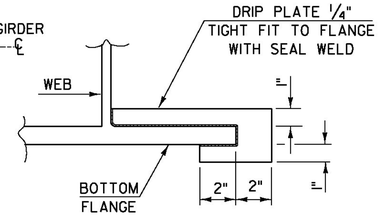
STRUCTURES DETAIL
SD-516.10

STRUCTURAL STEEL GENERAL NOTES:

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

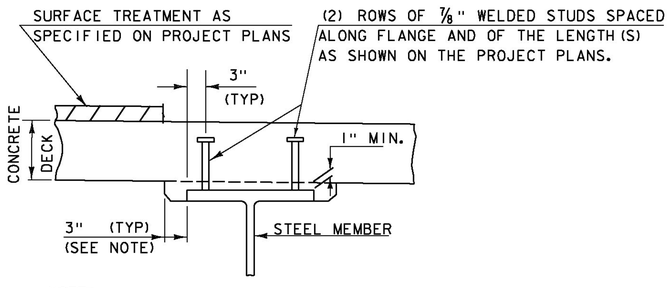


PLAN DRIP PLATE



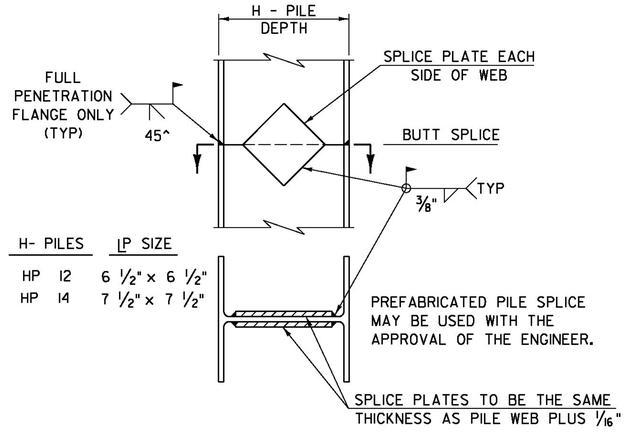
SECTION A - A

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



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

HAUNCH AND SHEAR CONNECTOR DETAIL



H- PILES	LP SIZE
HP 12	6 1/2" x 6 1/2"
HP 14	7 1/2" x 7 1/2"

DETAIL OF PILE SPLICE

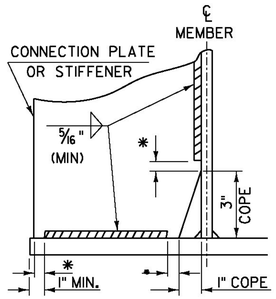
DETAILS ON THIS SHEET ARE "NOT TO SCALE" UNLESS NOTED OTHERWISE.

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

STRUCTURAL STEEL DETAILS & NOTES

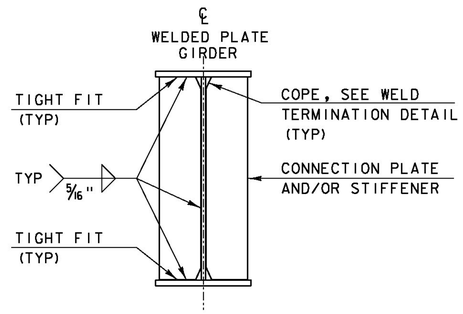
VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL
SD-601.00



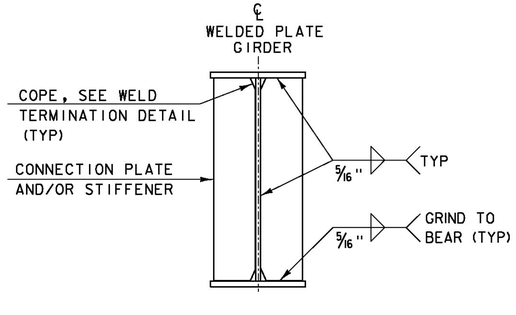
WELD TERMINATION AND COPING DETAILS FOR STEEL MEMBERS

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

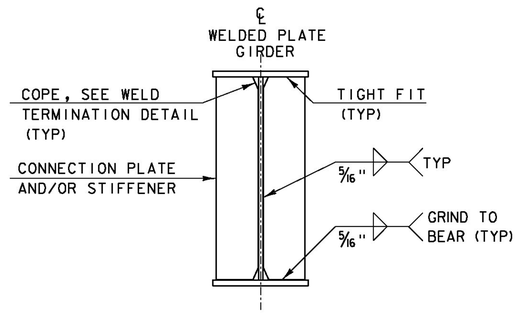


INTERMEDIATE CONNECTION PLATES AND/OR STIFFENERS FOR WELDED PLATE GIRDERS

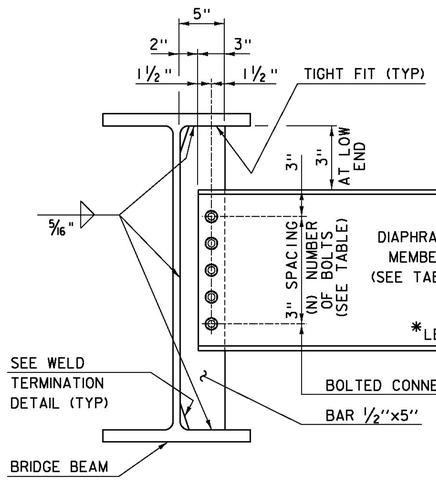
INTERMEDIATE DETAIL IS ONLY USED WHEN PLATE DOES NOT OCCUR AT AN ABUTMENT OR PIER.



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



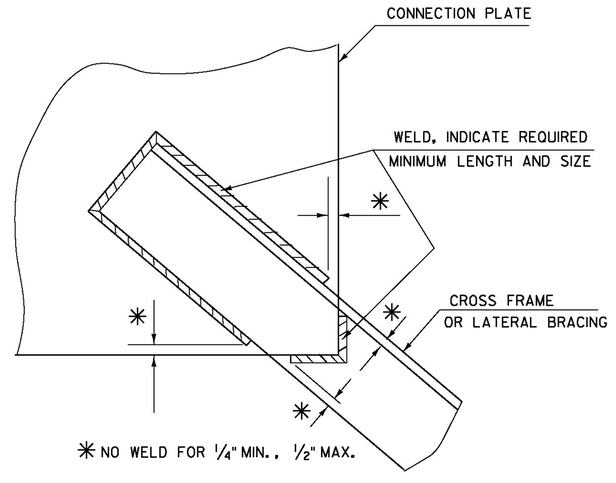
PIER BEARING STIFFENERS AND/OR CONNECTION PLATES FOR WELDED PLATE GIRDERS



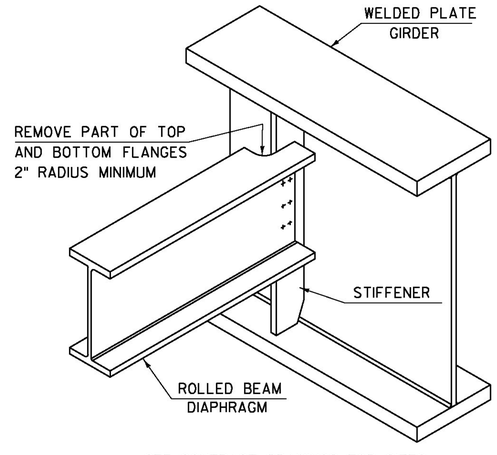
DEPTH		DIAPHRAGM MEMBER	(N) BOLTS
ROLLED BEAM	24" 30"	C15x33.9	4
	31" 36"	MC18x42.7	5
	37" 42"	W21x44	6
PLATE GIRDER WEB	31" 36"	W27x84	7
	37" 42"	W33x118	9
	43" 48"	W36x135	10

INTERMEDIATE DIAPHRAGMS FOR 24" TO 48" BRIDGE BEAMS

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



WELD LOCATION DETAIL AT CROSS FRAMES AND LATERAL BRACING



SEE CONTRACT DRAWINGS FOR SIZES OF MEMBERS AND CONNECTION DETAILS

ROLLED BEAM USED AS DIAPHRAGM

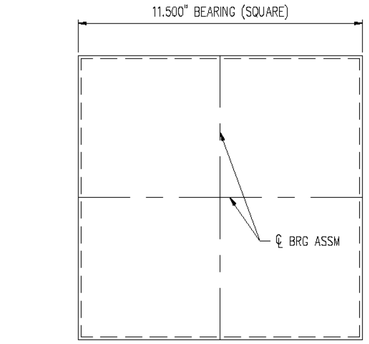
DETAILS ON THIS SHEET ARE "NOT TO SCALE" UNLESS NOTED OTHERWISE.

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

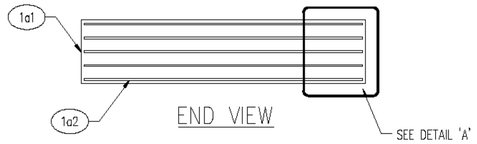
VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL
SD-602.00

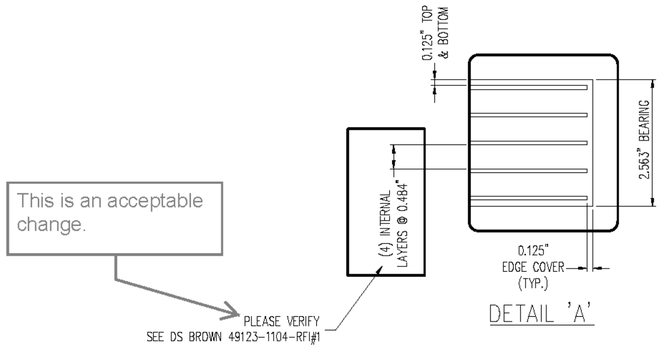


PLAN VIEW

ELASTOMERIC BEARING
(6) REQ'D @ S. ABUTMENT
(6) REQ'D @ N. ABUTMENT
(12) REQ'D TOTAL



END VIEW



DETAIL 'A'

GENERAL NOTES:

1. MATERIALS SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011 AND THE LATEST REVISIONS, INCLUDING SUPPLEMENTARY SPECIFICATIONS, CONTRACT PLANS, AND THE SPECIAL PROVISIONS.

2. THIS SHOP DRAWING WAS PREPARED IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS. THE D.S. BROWN COMPANY DOES NOT ACCEPT LIABILITY FOR THE DESIGN OF THE PRODUCTS DETAILED IN THIS SHOP DRAWING.

3. THE D.S. BROWN COMPANY TO SUPPLY ONLY THE PARTS SHOWN ON THIS DRAWING.

4. ALL STEEL SHALL BE PRODUCED IN THE UNITED STATES OF AMERICA.

5. ALL BEARINGS SHALL BE ENCASED IN CONCRETE IN THE FIELD. IN CONFORMANCE WITH THE SPECIAL PROVISIONS NO TESTING IS REQUIRED FOR FULLY ENCASED BERINGS.

6. IN ACCORDANCE WITH STATE SPECIFICATIONS, THE FABRICATOR SHALL HAVE THE OPTION TO USE NEOPRENE OR NATURAL RUBBER FOR THE ELASTOMER.

7. INTERNAL ALIGNMENT PINS: AFTER FABRICATION, HOLES TO BE FILLED WITH ELASTOMER EQUIVALENT TO THAT USED IN THE MANUFACTURE OF THE PAD.

8. BEARING MANUFACTURING FACILITY AND REPRESENTATIVE FOR COORDINATING PRODUCTION:
THE D.S. BROWN COMPANY
300 EAST CHERRY STREET
NORTH BALTIMORE, OHIO 45872
CSR – MARCIE THOMPSON – (419) 257-3561

MARKING NOTES:

1. EACH BEARING SHALL BE MARKED WITH THE FOLLOWING INFORMATION: LOCATION ON THE BRIDGE AND ELASTOMER TYPE AND GRADE. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER BEARING IS INSTALLED.

MK	QTY	DESCRIPTION	MATERIAL	LENGTH	REMARKS	WT*	REV
1A	12	ELASTOMERIC BEARING	49123.1103.1			27	
1a1	12	2.563" X 11.500"	NATURAL RUBBER	11.500"	110 PSI +/-15% GR.4	14	
1a2	60	14 GA. X 11.250"	A1011 GR 36	11.250"	PLAIN	3	
		*Approx. Gross Wt. Lbs Per Single Unit			2/11/16 11:09:04 AM		

TOLERANCE TABLE	
DESCRIPTION	TOLERANCE (INCHES U.N.O.)
ELASTOMERIC BEARING DESIGN THICKNESS ≤ 1.250"	−0, +0.1181
ELASTOMERIC BEARING DESIGN THICKNESS > 1.250"	−0, +0.2362
ELASTOMERIC BEARING PLAN DIMENSIONS ≤ 36"	−0, +0.2362
ELASTOMERIC BEARING PLAN DIMENSIONS > 36"	−0, +0.4724
THICKNESS OF INDIVIDUAL LAYERS OF ELASTOMER (LAMINATED BEARINGS ONLY) AT ANY POINT WITHIN THE BEARING	±0.1181
VARIATION FROM A PLANE PARALLEL TO THE THEORETICAL SURFACE (AS DETERMINED BY MEASUREMENTS AT THE EDGE OF THE BEARINGS) (PARALLELISM):	
TOP & BOTTOM	±0.005 RAD
SIDES	±0.2362
POSITION OF EXPOSED CONNECTION MEMBERS	±0.1181
ELASTOMERIC COVER: TOP & BOTTOM	−0, +0.1181
ELASTOMERIC COVER: SIDES	−0, +0.1181
ELASTOMERIC BEARING HOLE OR SLOT SIZE	±0.1181
ELASTOMERIC BEARING HOLE OR SLOT LOCATION	±0.1181

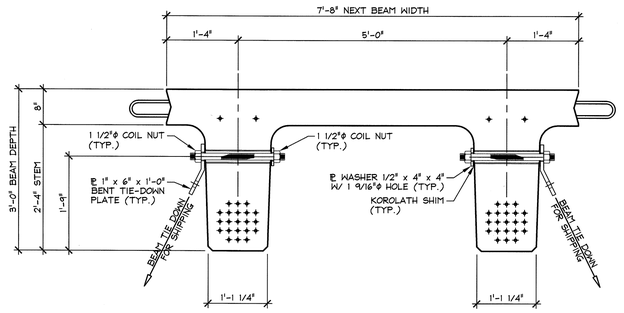
REV.	DESCRIPTION	DATE	DET.	CKD.

D.S. BROWN
A GIBRALTAR INDUSTRIES COMPANY
THE D.S. BROWN COMPANY
300 E. CHERRY STREET
NORTH BALTIMORE, OHIO 45872
419.257.3561
FAX: 419.257.0332
WWW.DSBROWN.COM

	ITEM	QUANTITY
LOCATION — WALKER MOUNTAIN RD	–	–
BRIDGE — 11	–	–
PROJECT — BRO 1443 (48)	–	–
PROJECT NAME — CLARENDON	–	–
P.O. NO. — JAM 11615	–	–
DESIGNER — VTDOT	–	–
CUSTOMER — J.A. McDONALD	–	–
	–	–
	–	–

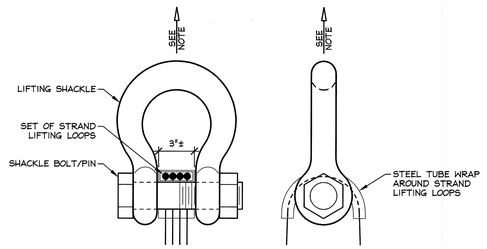
DESCRIPTION:
VERSIFLEX ELASTOMERIC BEARING
RUTLAND COUNTY, VT

SCALE:	DRAWN BY:	CHECKED BY:	DATE:	
N.T.S.	SP	ECW	2/16	–
PROJECT NUMBER	PRODUCT CODE	RELEASE	SHEET	
49123	1103	–	01	



MODIFIED NEXT BEAM 36D HOLD-DOWN DETAIL FOR SHIPPING

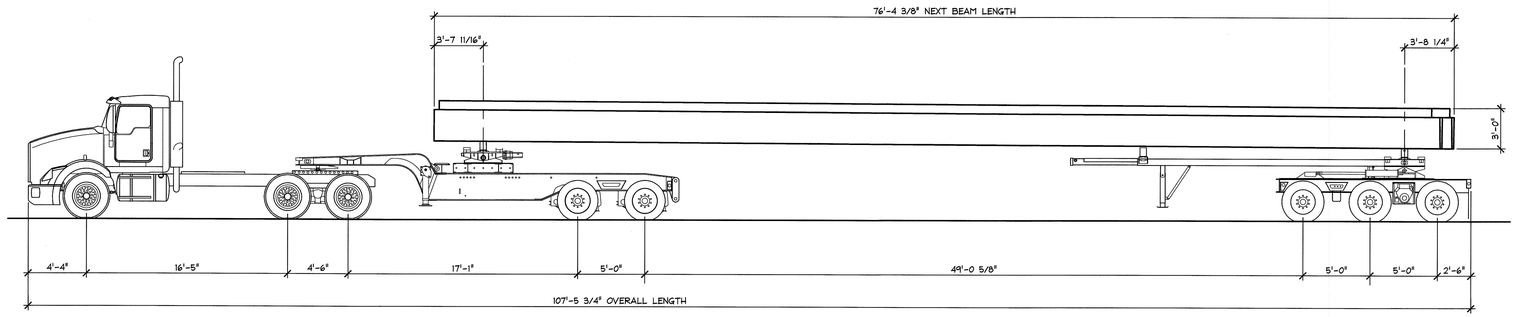
3/4" = 1'-0"



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

LIFTING SHACKLE DETAILS

N.T.S.



SHIPPING ELEVATION

3/16" = 1'-0"

ABUTMENT GENERAL NOTES

1. MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 5,000 PSI.
2. MIN. CONCRETE STRENGTH FOR HANDLING SHALL BE 5,000 PSI (UNLESS NOTED OTHERWISE).
3. REINFORCING STEEL SHALL BE GR-60, ASTM A-615 (AASHTO M31) LEVEL 1 (BLACK) OR ASTM A-1055 (LEVEL II DUAL COATED) (AS NOTED ON SHOP DWGS).
4. THE TOP OF ABUTMENTS SHALL RECEIVE A RAKE FINISH ROUGHENED TO 1/4" AMPLITUDE (UNLESS NOTED OTHERWISE).
5. ABUTMENTS SHALL BE HANDLED AND ERECTED USING THE LIFTING LOOPS ONLY. RIGGING SHALL BE CONFIGURED SUCH THAT EQUAL AND VERTICAL FORCES ARE APPLIED TO EACH OF THE LIFTING LOOPS AT EACH END OF THE ABUTMENT. **THE PINS OF THE SHACKLES SHALL BE PLACED THROUGH THE LIFTING LOOPS. SEE DETAIL, THIS SHEET.** ABUTMENTS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 2'-0" OF THE ABUTMENT ENDS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
6. MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. P540.02 AND P540.05 RESPECTIVELY.
   DESIGN MIX: J.P.C. BRIDGE MIX #425M-NO DCI
   APPROVAL DATE: MARCH 21, 2015
7. QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
8. CURING METHOD: AS SOON AS THE TOP OF ABUTMENTS IS FINISHED, A COVER OF POLY WILL BE PLACED OVER THE ABUTMENT. NATURAL CURE WITH NO EXTERNAL HEAT APPLIED. AMBIENT ENCLOSURE TEMPERATURE SHALL BE MONITORED. UNITS SHALL NOT BE EXPOSED TO TEMPERATURE DIFFERENTIAL GREATER THAN 40°F UNITS SHALL NOT BE EXPOSED TO TEMP < 36° UNTIL DESIGN STRENGTH IS ACHIEVED.
9. DUNNAGE IS LOCATED UNDER LIFTER POSITIONS.

APPROACH SLAB GENERAL NOTES

1. MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 5,000 PSI.
2. MIN. CONCRETE STRENGTH FOR HANDLING SHALL BE 3,000 PSI (UNLESS NOTED OTHERWISE).
3. REINFORCING STEEL SHALL BE GR-60, ASTM A-1055 (AASHTO M31) LEVEL II (DUAL COATED) (AS NOTED ON SHOP DRAWINGS).
4. THE TOP OF APPROACH SLABS SHALL RECEIVE A SMOOTH SCREED FINISH (UNLESS NOTED OTHERWISE).
5. APPROACH SLABS SHALL BE HANDLED AND ERECTED USING THE LIFTING INSERTS ONLY. THE MINIMUM SLING ANGLE FROM THE HORIZONTAL SHALL BE 60°. APPROACH SLABS SHALL BE STORED & TRANSPORTED WITH TIMBER SUPPORTS AT 5th POINTS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
6. MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. P540.02 AND P540.05 RESPECTIVELY.
   DESIGN MI : J.P.C. BRIDGE MIX #445MSCC
   APPROVAL DATE: MARCH 26 2015
7. QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
8. CURING METHOD: AS SOON AS THE TOP OF APPROACH SLABS ARE FINISHED, A COVER OF POLY WILL BE PLACED OVER THE APPROACH SLAB. NATURAL CURE WITH NO EXTERNAL HEAT APPLIED. UNITS SHALL NOT BE EXPOSED TO TEMPERATURE DIFFERENTIAL GREATER THAN 40°F. UNITS SHALL NOT BE EXPOSED TO TEMP < 36° UNTIL DESIGN STRENGTH IS ACHIEVED.
9. SHEAR KEY SURFACES SHALL BE ROUGHENED TO PROVIDE AN 1/8" AMPLITUDE EXPOSED AGGREGATE PROFILE. FABRICATOR MAY UTILIZE A SURFACE RETARDER WITH WATER BLAST, SAND BLAST, OR A COMBINATION OF BOTH TO ACHIEVE THE DESIRED SHEAR KEY SURFACE FINISH. PROJECTING REINFORCEMENT TO BE SHIELDED FROM DAMAGE; ANY INADVERTENT DAMAGE TO EPOXY COATING SHALL BE TOUCHED UP W/ 2-PART KITS FROM DUAL COATED BAR SUPPLIER.
10. DUNNAGE IS LOCATED UNDER LIFTER POSITIONS.

DESIGN LIVE LOAD: HL-93

NEXT BEAM GENERAL NOTES

1. MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 10,000 PSI.
2. MIN. CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 8,000 PSI.
3. REINFORCING STEEL SHALL BE GR-60, ASTM A-1055 (AASHTO M31) LEVEL II (DUAL COATED).
4. PRESTRESSING STRANDS SHALL CONFORM TO ASTM A-416 (AASHTO M203) AND SHALL CONSIST OF 0.60"ϕ x 270 KSI 7-WIRE LOW RELAXATION STRANDS.
5. PRESTRESSING STRANDS SHALL EACH BE PULLED TO HAVE A NET TENSION OF **44.0 K** AFTER ACCOUNTING FOR CHUCK SLIPPAGE. TENSION SHALL BE VERIFIED BY MEASURING STRAND ELONGATION. (SEE EXAMPLE ELONGATION CALCULATION AND TENSIONING PROCEDURE, THIS SHEET.)
6. ENDS OF PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH END OF NEXT BEAM STEMS (UNLESS NOTED OTHERWISE) AND COATED WITH TWO PART EPOXY PAINT SYSTEM.
7. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4" (UNLESS NOTED OTHERWISE).
8. THE TOP OF BEAMS SHALL RECEIVE A SMOOTH SCREED FINISH (UNLESS NOTED OTHERWISE).
9. SHEAR KEY SURFACES SHALL BE ROUGHENED TO PROVIDE AN 1/8" AMPLITUDE EXPOSED AGGREGATE PROFILE. PROJECTING REINFORCEMENT TO BE SHIELDED FROM DAMAGE; ANY INADVERTENT DAMAGE TO EPOXY COATING SHALL BE TOUCHED UP W/ 2-PART KITS FROM DUAL COATED BAR SUPPLIER.
10. BEAMS SHALL BE HANDLED AND ERECTED USING THE LIFTING LOOPS ONLY. THE MINIMUM SLING ANGLE FROM THE HORIZONTAL SHALL BE 60°. **THE PINS OF THE SHACKLES SHALL BE PLACED THROUGH THE LIFTING LOOPS. SEE DETAIL, THIS SHEET.** BEAMS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 2'-0" OF THE BEAM ENDS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
11. MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. P510.02 AND P510.05 RESPECTIVELY.
    DESIGN MIX: J.P.C. BRIDGE MIX #450M
    APPROVAL DATE: MARCH 21, 2015
12. QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
13. CURING METHOD: AS SOON AS THE TOP OF BEAM IS FINISHED, COVER WITH INSULATION AND POLY. THE DESIRED CURING TEMPERATURE RANGE SHALL NOT DROP BELOW 50°F. THE TEMPERATURE SHALL BE RECORDED BY AUTOMATIC SENSOR INSTRUMENTS ON GRAPH CHARTS, SPACED NOT MORE THAN 100' APART AND WILL CONTINUE UNTIL RELEASE STRENGTH IS ACHIEVED. EACH CHART SHALL BE MARKED WITH THE CASTING DATED AND LOCATION OF THE RECORDER. IF NECESSARY TO MAINTAIN CASTING BED TEMPERATURE PRIOR TO CONCRETE PLACEMENT OR TO ACCELERATE EARLY AGE STRENGTH GAIN, EXTERNAL RADIANT HEAT MAY BE EMPLOYED VIA HOT WATER DUCTS BENEATH AND WITHIN THE PERIPHERY OF THE CASTING BED. MAXIMUM CURING TEMPERATURE SHALL NOT EXCEED PCI SPECIFIED LIMITS. UNITS SHALL NOT BE EXPOSED TO TEMPERATURE DIFFERENTIAL GREATER THAN 40°F. UNITS SHALL NOT BE EXPOSED TO TEMP < 36° UNTIL DESIGN STRENGTH IS ACHIEVED.
14. OWNER SHALL PROVIDE APPROPRIATE WATERPROOFING TO GROUTED AND/OR EPOXIED SHEAR KEYS. J.P. CARRARA & SONS, INC. SHALL NOT BE HELD LIABLE FOR PROBLEMS ASSOCIATED WITH MOISTURE INFILTRATING GROUTED AND/OR EPOXIED SHEAR KEYS.
15. MANUFACTURING TOLERANCES SHALL COMPLY WITH PCI MNL-116.
16. TARGET CAMBER FROM THE CALCULATIONS PROVIDED BY CARRARA IS 3.84".

EXAMPLE PRESTRESSING STRAND ELONGATION CALC. AND TENSIONING

(NOT TO BE USED FOR CONSTRUCTION)

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

EXAMPLE:

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

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

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

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

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

ADDITIONALLY, INCREASED ELONGATION AND THE CORRESPONDING FORCE DUE TO FORM SHORTENING SHALL BE ACCOUNTED FOR IN THE CALCULATIONS USED FOR CONSTRUCTION PER PROVISION PCI MNL-116 5.3.11.3.

STRAND TENSIONING PROCEDURE:

1. PULL EACH STRAND INITIALLY TO 3,000# LBS. AND MARK STRAND.
2. THEN PULL EACH STRAND TO A TOTAL TENSION OF 45,026# LBS. AND MEASURE ELONGATION AFTER SEATING. IT MUST BE BETWEEN 19"± AND 21"±.
   # NOTE: FORCES READ ON STRESSING JACK GAUGES MUST BE MADE TO CORRESPOND TO ABOVE VALUES BASED ON CALIBRATION DATA FOR SPECIFIC JACK USED.
3. STRANDS IN BOTTOM TWO ROWS SHALL BE RE-PULLED TO VERIFY SHORTENING EFFECT OF SELF STRESSING BED. RE-PULL FORCE SHALL NOT INCLUDE OVER-PULL FOR SHORTENING.
4. STRANDS SHALL BE DETENSIONED WITH A TORCH PER SEQUENCE ON DETENSIONING SCHEDULE SHOWN ON THE SHOP DRAWINGS.

3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

APPROVAL STAMP:
Vermont Agency of Transportation
RECEIVED
CK'D BY SC, TM OK'D BY G. Laroche
March 18, 2016
RESUBMIT No Approved AsNoted
BY K. Higgins DATE 3/28/2016

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

J.A. McDonald, Inc.
CONTRACTOR
LYNDON CENTER, VERMONT

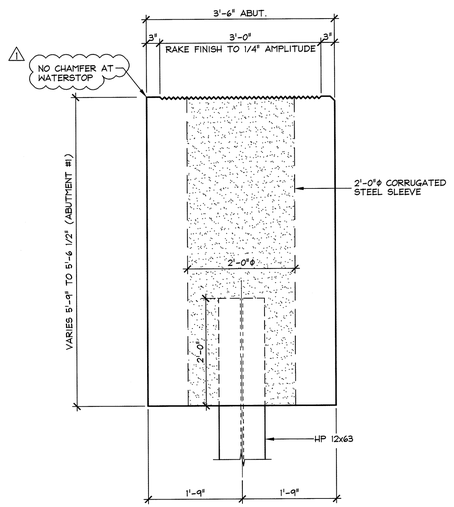
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

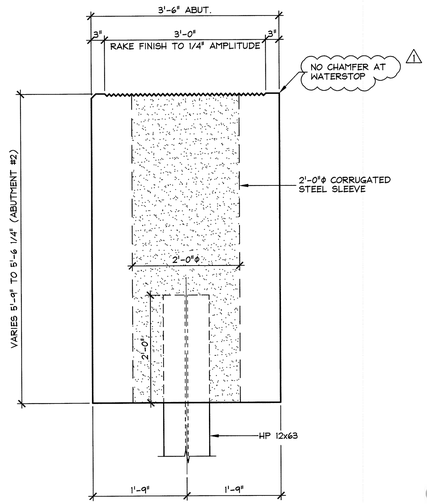
COVER SHEET

DATE: JAN. 8, 2016
SCALE: NOTED
CHKD: B.C. DFTM: T.D.
JOB NO: 23476-015
DWG. NO: C1

1 F1 PRECAST ABUTMENT LAYOUT
1/4" = 1'-0"



A F1 ABUTMENT SECTION (ABUT. #1)
3/4" = 1'-0"



B F1 ABUTMENT SECTION (ABUT. #2)
3/4" = 1'-0"

⚠ 3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

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2484 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

J.A. McDonald, Inc.
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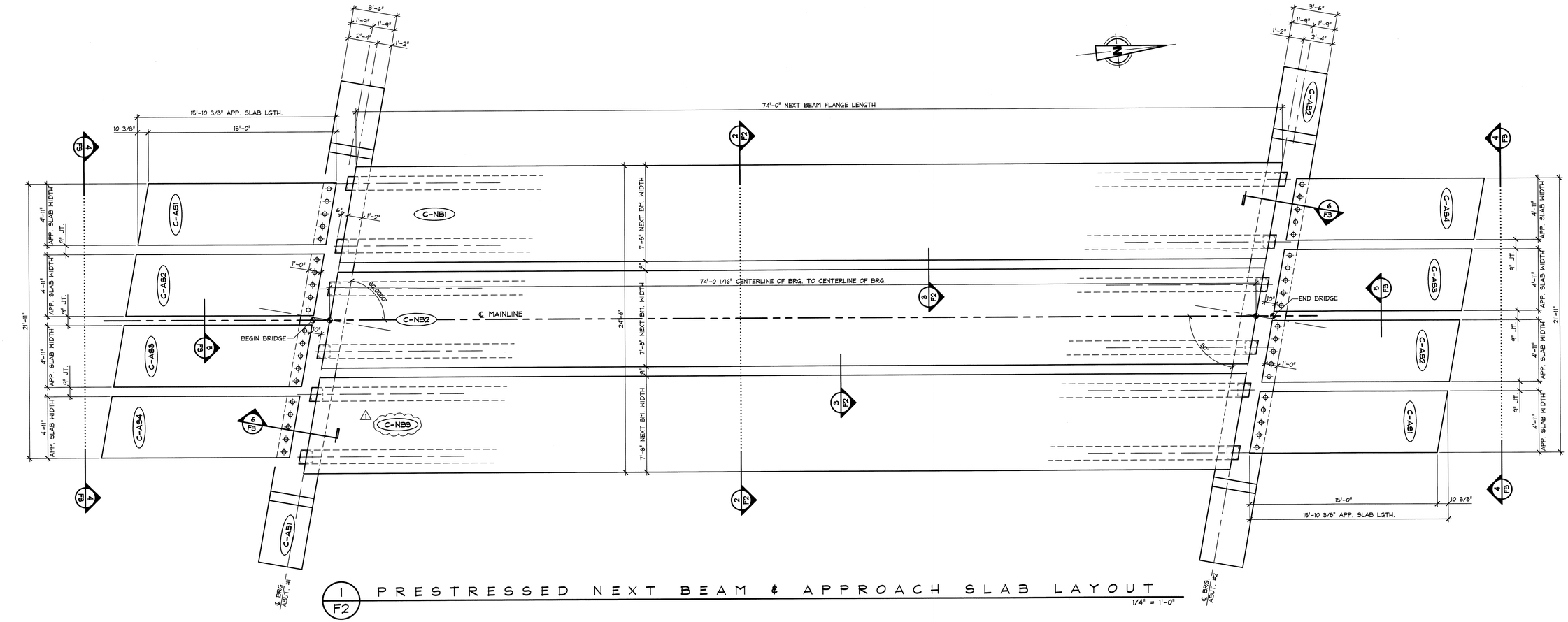
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

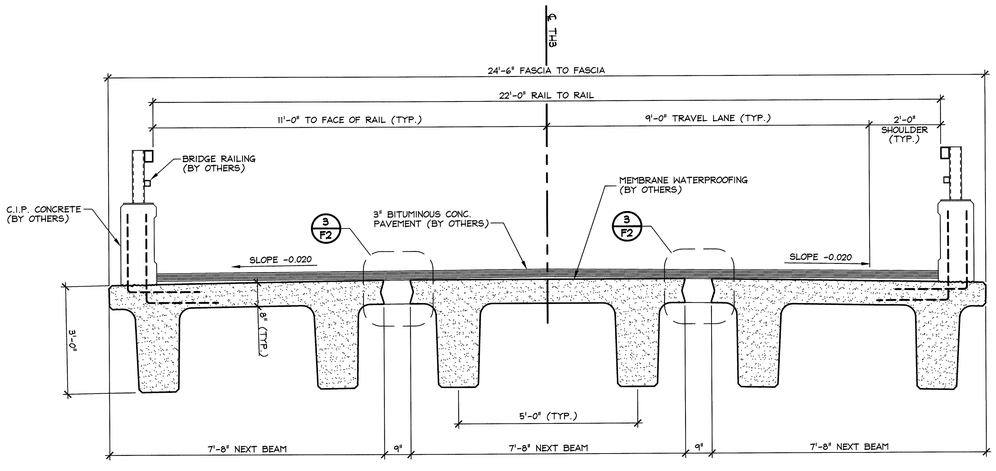
PRECAST ABUTMENT LAYOUT

DATE: JAN. 8, 2016
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23476-015
DWG. NO: F1



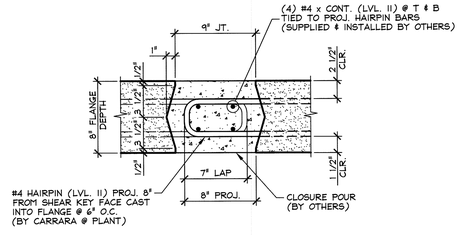
1 F2 PRESTRESSED NEXT BEAM & APPROACH SLAB LAYOUT

1/4" = 1'-0"



2 F2 TRANSVERSE SECTION THRU NEXT BEAMS

1/2" = 1'-0"



3 F2 NEXT BEAM CLOSURE POUR

1 1/2" = 1'-0"

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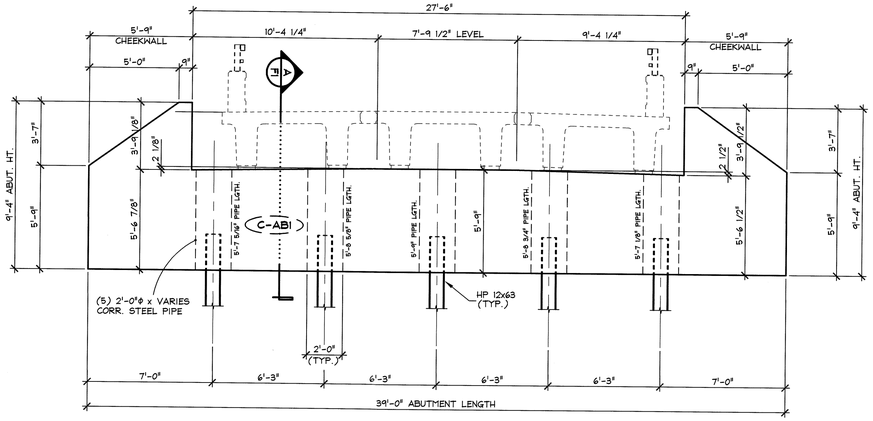
TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

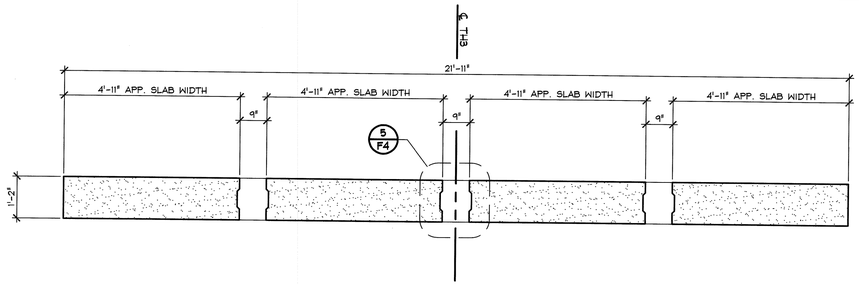
PRECAST NEXT BEAM LAYOUT

DWG. NO: F2



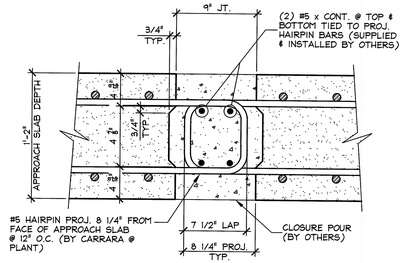
2 / F3 PRECAST ABUTMENT #1 ELEVATION

1/4" = 1'-0"



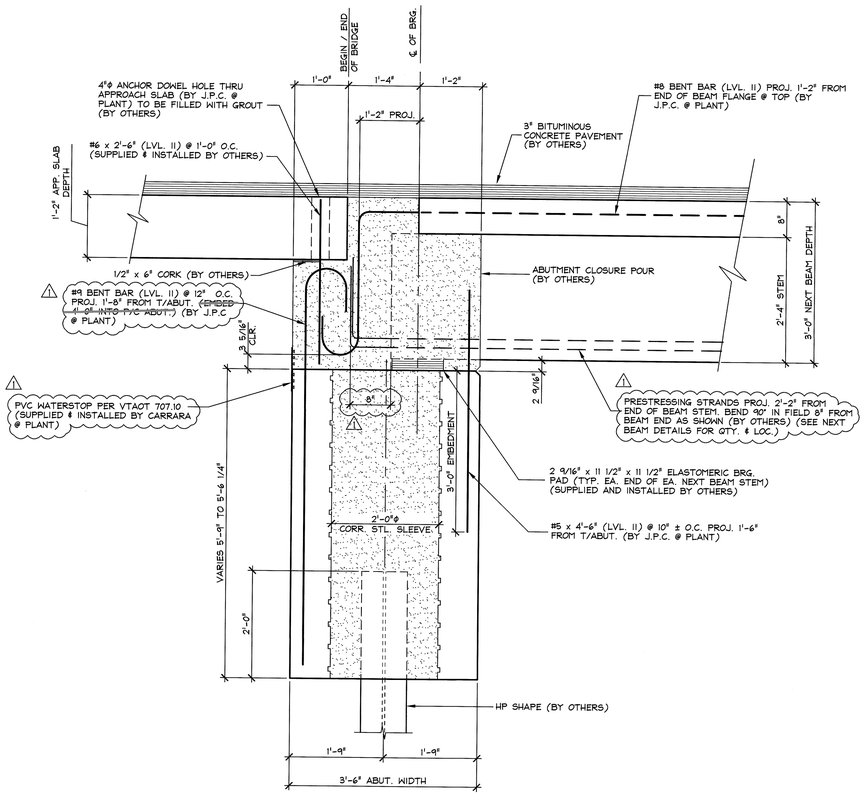
4 / F3 SECTION AT APPROACH SLABS

1/2" = 1'-0"



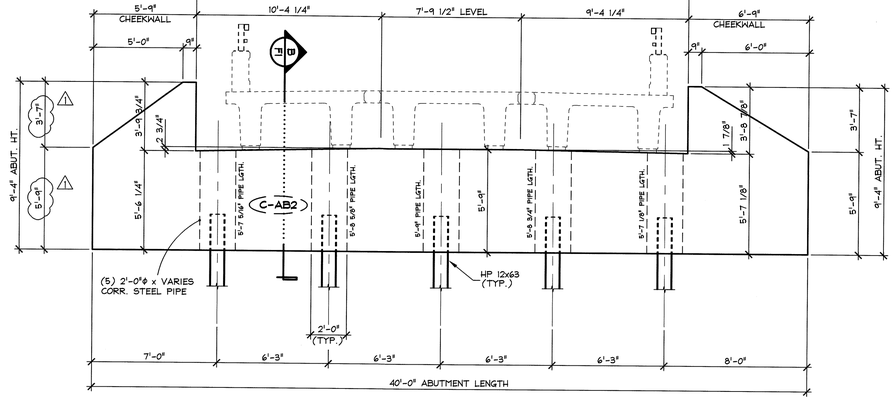
5 / F3 APPROACH SLAB CLOSURE POUR

1 1/2" = 1'-0"



6 / F3 ABUTMENT SECTION

3/4" = 1'-0"



3 / F3 PRECAST ABUTMENT #2 ELEVATION

1/4" = 1'-0"

⚠ 3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

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BY K. Higgins DATE 3/28/2016

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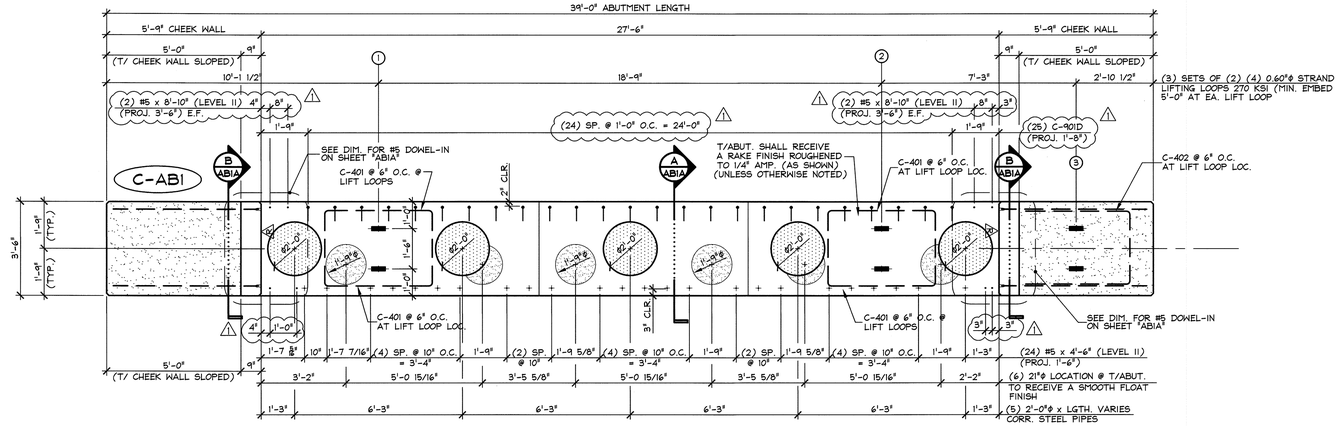
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

DATE: JAN. 8, 2016
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23476-015

TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

PRECAST ABUTMENT ELEVATIONS & DETAILS

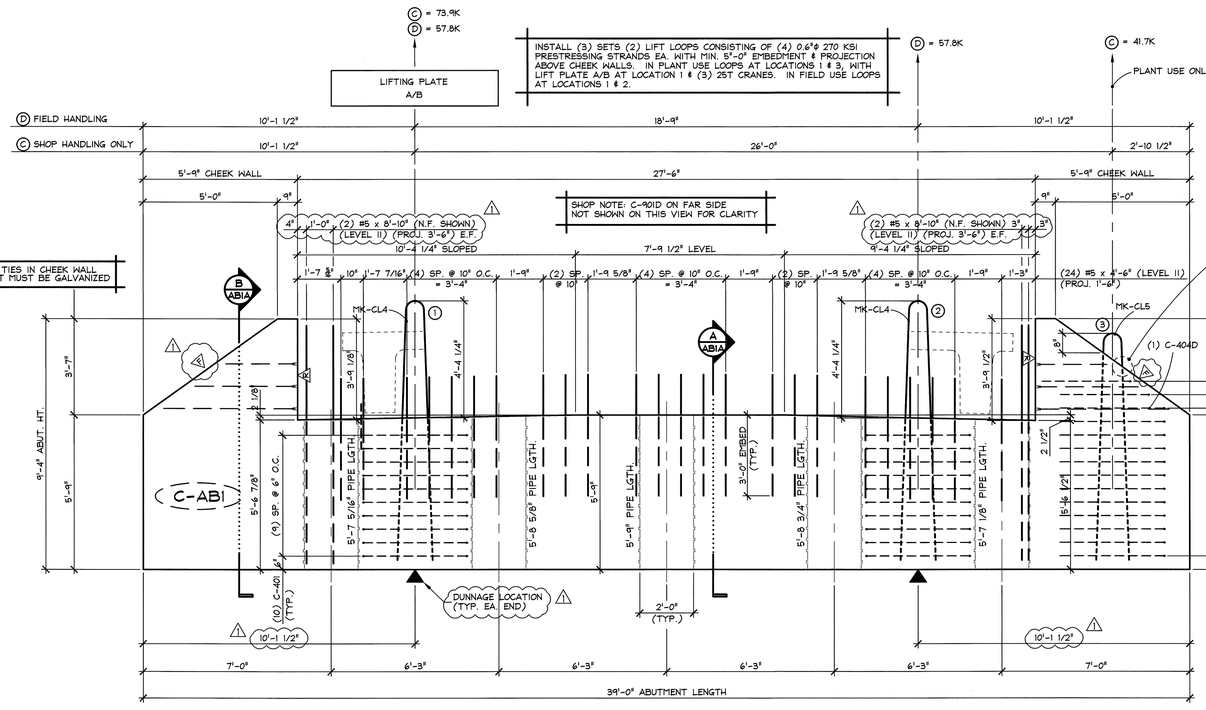
DWG. NO: F3



PLAN VIEW IN FORM

(B) DENOTES ROUGHENED SURFACE AT INTERIOR VERTICAL FACE OF CHEEK WALL

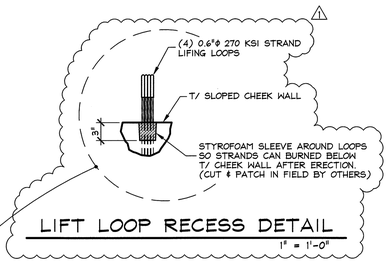
(A) FORM FINISH TOP OF CHEEK WALL



NON MARK FACE ELEVATION

1 / ABI ABUTMENT DIMENSIONAL DETAILS

3/8" = 1'-0"



LIFT LOOP RECESS DETAIL

1" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)

MARK: C-ABI	QTY.: 1	WT.: 57.71 T	VOL.: 28.5 cy

MATERIAL LIST / ABUTMENT

ITEM	MARK	DESCRIPTION	QTY.
1			
2	C-401	#4 BENT BAR (LEVEL I)	20
3	C-402	#4 BENT BAR (LEVEL I)	11
4	C-403D	#4 BENT BAR (LEVEL II, DUAL COATED)	2
5	C-404D	#4 BENT BAR (LEVEL II DUAL COATED)	1
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20		2'-0"ϕ x 5'-7 5/16" CORRUGATED STEEL PIPE (GALV.)	1
21		2'-0"ϕ x 5'-8 5/8" CORRUGATED STEEL PIPE (GALV.)	1
22		2'-0"ϕ x 5'-9" CORRUGATED STEEL PIPE (GALV.)	1
23		2'-0"ϕ x 5'-8 3/4" CORRUGATED STEEL PIPE (GALV.)	1
24		2'-0"ϕ x 5'-7 1/8" CORRUGATED STEEL PIPE (GALV.)	1
25			
26	MK-CL4	SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS	4
27	MK-CL5	SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS	2

SHOP NOTE:
28 DAYS = 5,000 PSI
RELEASE FOR HANDLING = 5,000 PSI

MIX DESIGN:
MIX NO. 425M-NO DCI

(1) 3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

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Vermont Agency of Transportation
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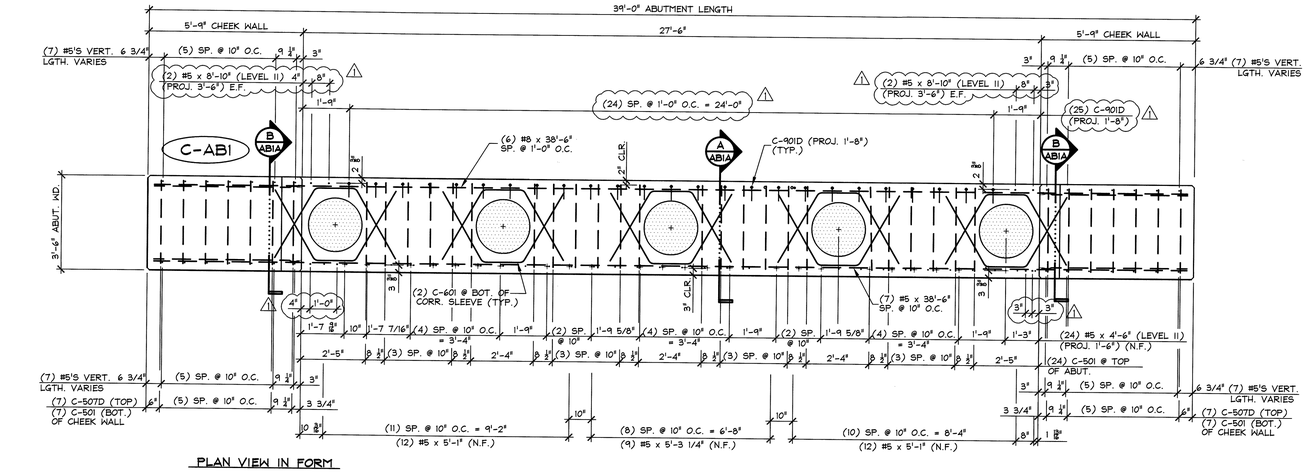
COUNTY OF RUTLAND

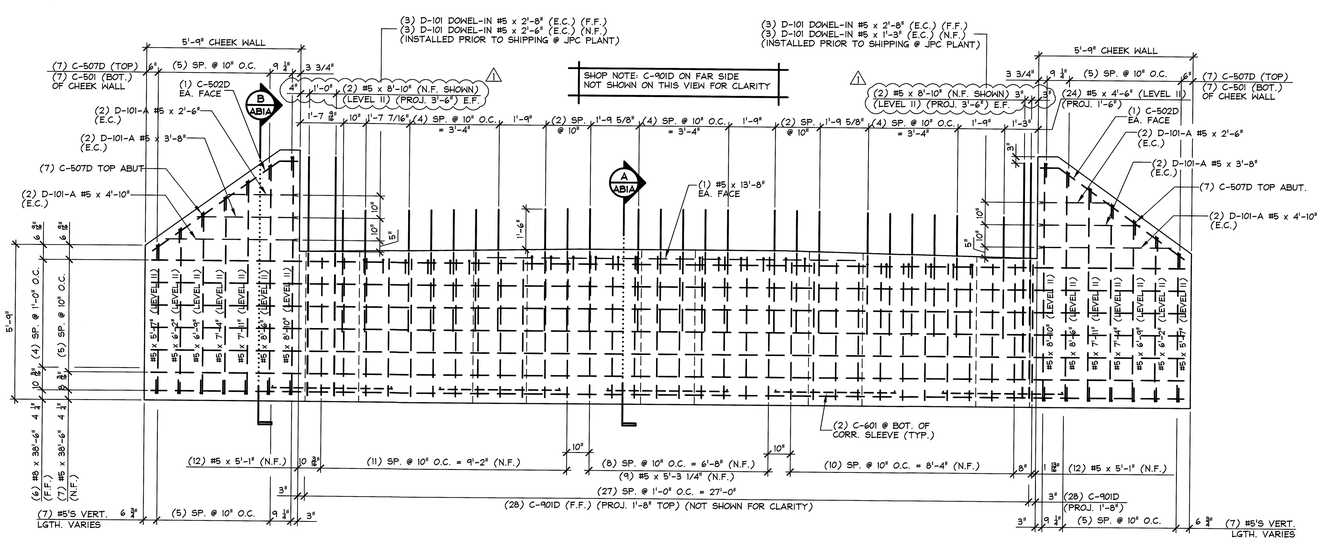
TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

PRECAST ABUTMENT DETAILS

DATE: JAN. 8, 2016
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23476-015
DWG. NO: AB1

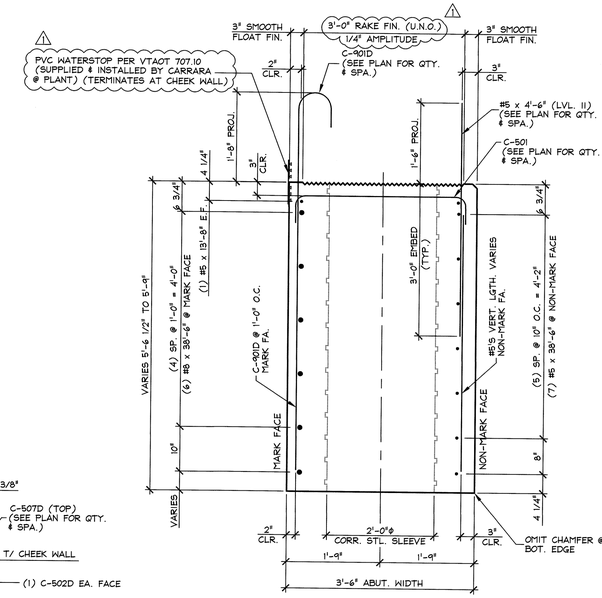


PLAN VIEW IN FORM



NON MARK FACE ELEVATION

1 ABIA ABUTMENT REINFORCING DETAILS
3/8" = 1'-0"



A ABIA ABUTMENT SECTION (C-AB1)
3/4" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)

B ABIA ABUTMENT SECTION (C-AB1)
3/4" = 1'-0"

MARK: C-AB1	QTY.: 1	WT.: 57.71 T	VOL.: 28.50 cy

MATERIAL LIST / ABUTMENT

ITEM	MARK	DESCRIPTION	QTY.
1		DAYTON D-101-A #5 x 2'-6" (EPOXY COATED)	4
2		DAYTON D-101-A #5 x 3'-8" (EPOXY COATED)	4
3		DAYTON D-101-A #5 x 4'-10" (EPOXY COATED)	4
4			
5		DAYTON D-101 DOWEL-IN #5 x 2'-8" (EPOXY COATED)	6
6		DAYTON D-101 DOWEL-IN #5 x 2'-6" (EPOXY COATED)	3
7		DAYTON D-101 DOWEL-IN #5 x 1'-3" (EPOXY COATED)	3
8			
9	C-501	#5 BENT BAR (LEVEL I)	38
10	C-502D	#5 BENT BAR (LEVEL II, DUAL COATED)	4
11	C-507D	#5 BENT BAR (LEVEL II, DUAL COATED)	14
12	C-601	#6 BENT BAR (LEVEL I)	10
13	C-901D	#9 BENT BAR (LEVEL II, DUAL COATED) ⚠1	(25)
14		#8 x 38'-6" (LEVEL I)	6
15		#5 x 38'-6" (LEVEL I)	7
16		#5 x 13'-8" (LEVEL I)	2
17		#5 x 8'-10" (LEVEL II, DUAL COATED) ⚠1	(12)
18		#5 x 8'-6" (LEVEL II DUAL COATED)	4
19		#5 x 7'-11" (LEVEL II, DUAL COATED)	4
20		#5 x 7'-4" (LEVEL II, DUAL COATED)	4
21		#5 x 6'-9" (LEVEL II, DUAL COATED)	4
22		#5 x 6'-2" (LEVEL II DUAL COATED)	4
23		#5 x 5'-7" (LEVEL II DUAL COATED)	4
24		#5 x 5'-3 1/4" (LEVEL I)	9
25		#5 x 5'-1" (LEVEL I)	24
26		#5 x 4'-6" (LEVEL II, DUAL COATED)	24
27			

⚠1 3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

APPROVAL STAMP:
Vermont Agency of Transportation
RECEIVED
Operation required 3-15-16 pd
CK'D BY SC, TM OK'D BY G. Laroche
March 18, 2016
RESUBMIT No Approved
BY K. Higgins DATE 3/28/2016

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TOWN OF CLARENDON
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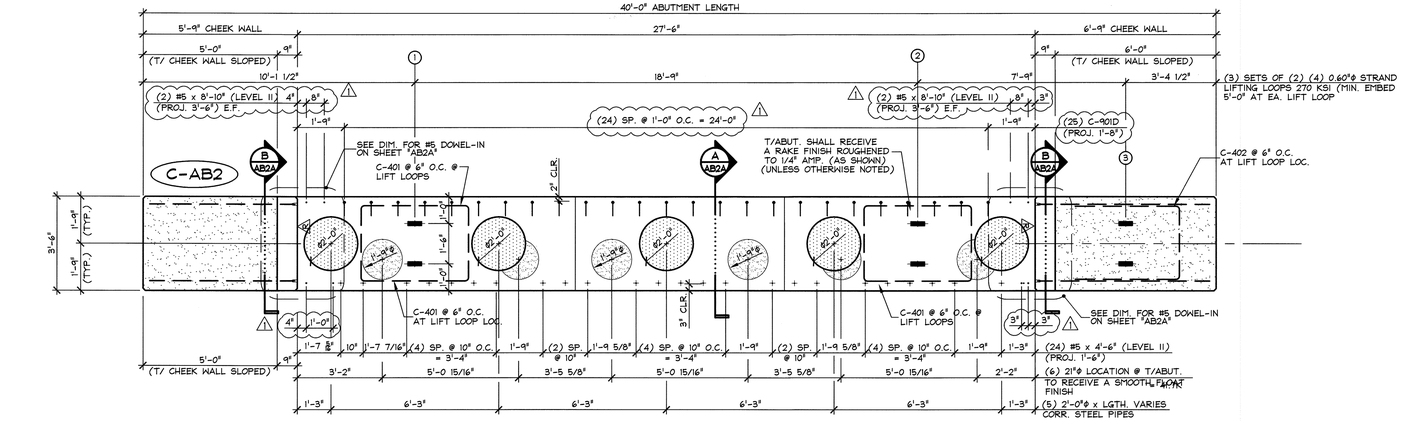
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

PRECAST ABUTMENT DETAILS

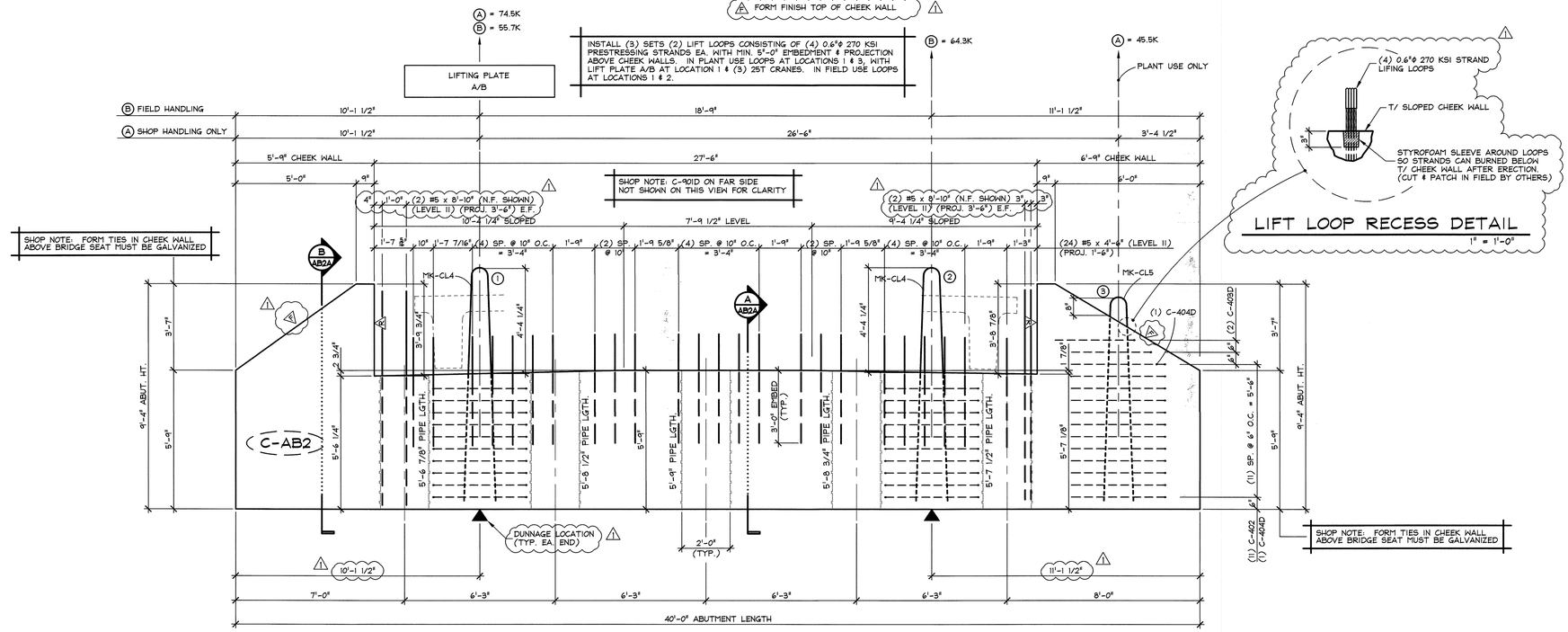
DATE: JAN. 8, 2016
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23476-015
DWG. NO: AB1A



PLAN VIEW IN FORM

⚠R DENOTES ROUGHENED SURFACE AT INTERIOR VERTICAL FACE OF CHEEK WALL

⚠F FORM FINISH TOP OF CHEEK WALL



NON MARK FACE ELEVATION

1 / AB2 ABUTMENT DIMENSIONAL DETAILS

3/8" = 1'-0"

SHOP NOTE:
28 DAYS = 5,000 PSI
RELEASE FOR HANDLING = 5,000 PSI

MIX DESIGN:
MIX NO. 425M-NO DCI

LIFT LOOP RECESS DETAIL

1" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)

MARK: C-AB2	QTY.: 1	WT.: 59.32 T	VOL.: 29.30 cy

MATERIAL LIST / ABUTMENT

ITEM	MARK	DESCRIPTION	QTY.
1			
2	C-401	#4 BENT BAR (LEVEL I)	20
3	C-402	#4 BENT BAR (LEVEL I)	11
4	C-403D	#4 BENT BAR (LEVEL II, DUAL COATED)	2
5	C-404D	#4 BENT BAR (LEVEL II, DUAL COATED)	1
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20		2'-0"ϕ x 5'-6 7/8" CORRUGATED STEEL PIPE (GALV.)	1
21		2'-0"ϕ x 5'-8 1/2" CORRUGATED STEEL PIPE (GALV.)	1
22		2'-0"ϕ x 5'-9" CORRUGATED STEEL PIPE (GALV.)	1
23		2'-0"ϕ x 5'-8 3/4" CORRUGATED STEEL PIPE (GALV.)	1
24		2'-0"ϕ x 5'-7 1/2" CORRUGATED STEEL PIPE (GALV.)	1
25			
26	MK-CL4	SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS	4
27	MK-CL5	SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS	2

⚠1 3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

APPROVAL STAMP:

Vermont Agency of Transportation
RECEIVED
Clarendon resubmit 3-15-16.pdf

CK'D BY SC, TM OK'D BY G. Laroche

March 18, 2016

RESUBMIT No Approved

BY K. Higgins DATE 3/28/2016

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

J.A. McDonald, Inc.
CONTRACTOR
LYNDON CENTER, VERMONT

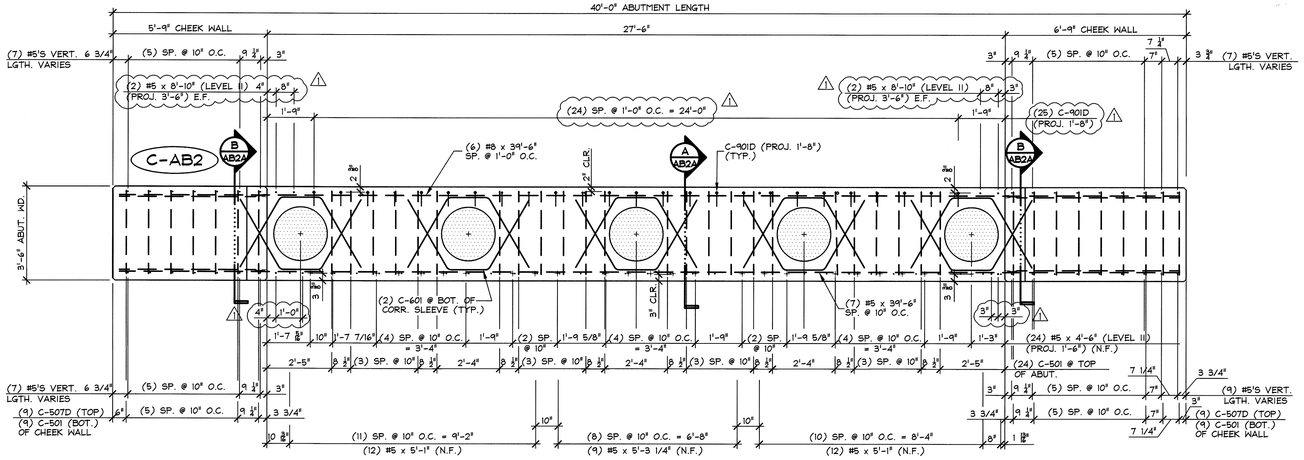
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

DATE: JAN. 8, 2016
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23476-015

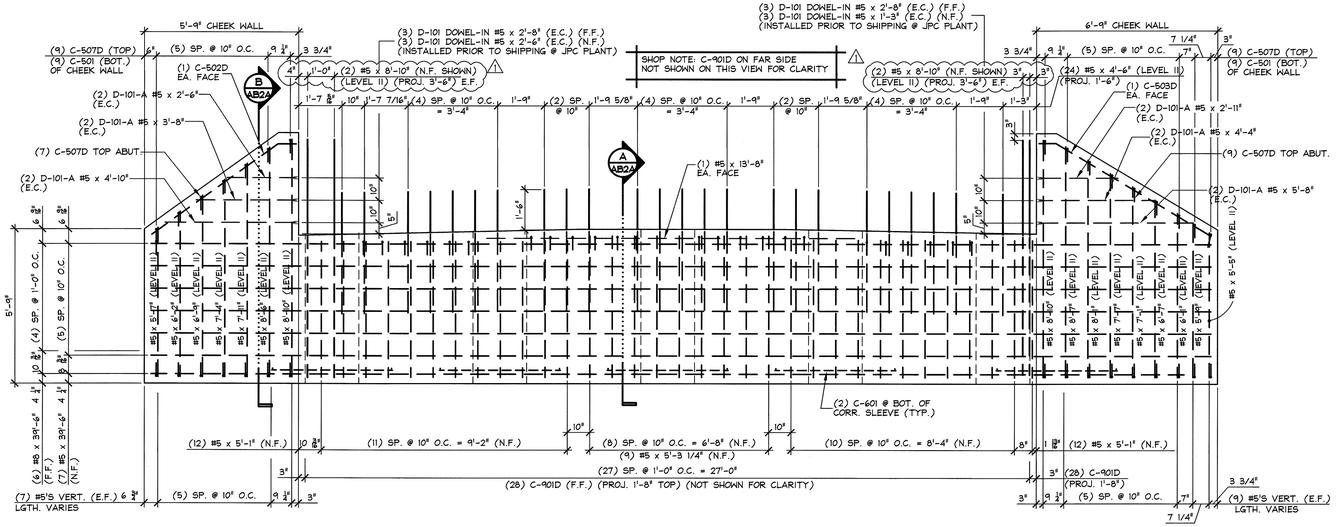
TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

PRECAST ABUTMENT DETAILS

DWG. NO: AB2



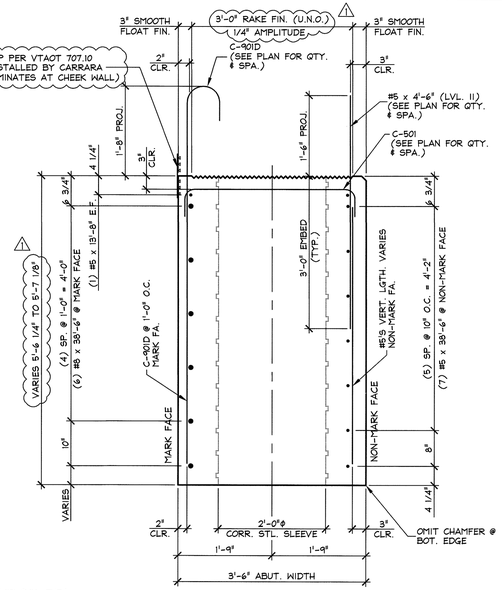
PLAN VIEW IN FORM



NON MARK FACE ELEVATION

1 AB2A ABUTMENT REINFORCING DETAILS
3/8" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)



A AB2A ABUTMENT SECTION (C-AB2)
3/4" = 1'-0"

SHOP NOTE:
ALL EDGES OF ABUTMENT SHALL RECEIVE A 1" CHAMFER (U.N.O.)

B AB2A ABUTMENT SECTION (C-AB2)
3/4" = 1'-0"

MARK: C-AB2	QTY.: 1	WT.: 59.32 T	VOL.: 29.30 cy

MATERIAL LIST / ABUTMENT

ITEM	MARK	DESCRIPTION	QTY.
1		DAYTON D-101-A #5 x 2'-6" (EPOXY COATED)	2
2		DAYTON D-101-A #5 x 3'-8" (EPOXY COATED)	2
3		DAYTON D-101-A #5 x 4'-10" (EPOXY COATED)	2
4		DAYTON D-101-A #5 x 2'-11" (EPOXY COATED)	2
5		DAYTON D-101-A #5 x 4'-4" (EPOXY COATED)	2
6		DAYTON D-101-A #5 x 5'-8" (EPOXY COATED)	2
7	C-501	#5 BENT BAR (LEVEL I)	40
8	C-502D	#5 BENT BAR (LEVEL II DUAL COATED)	2
9	C-503D	#5 BENT BAR (LEVEL II DUAL COATED)	2
10 ⚠1	C-507D	#5 BENT BAR (LEVEL II DUAL COATED) ⚠1	(16)
11	C-601	#6 BENT BAR (LEVEL I)	10
12	C-901D	#8 BENT BAR (LEVEL II, DUAL COATED) ⚠1	(25)
13		#8 x 39'-6" (LEVEL I)	6
14		#5 x 39'-6" (LEVEL I)	7
15		#5 x 13'-8" (LEVEL I)	2
16		#5 x 8'-10" (LEVEL II DUAL COATED) ⚠1	(12)
17		#5 x 8'-6" (LEVEL II DUAL COATED)	2
18		#5 x 7'-11" (LEVEL II DUAL COATED)	2
19		#5 x 7'-4" (LEVEL II DUAL COATED)	2
20		#5 x 6'-9" (LEVEL II DUAL COATED)	2
21		#5 x 6'-2" (LEVEL II DUAL COATED)	2
22		#5 x 5'-7" (LEVEL II DUAL COATED)	2
23		#5 x 5'-3 1/4" (LEVEL I)	9
24		#5 x 5'-1" (LEVEL I)	24
25		#5 x 4'-6" (LEVEL II, DUAL COATED)	24
26		#5 x 8'-7" (LEVEL II DUAL COATED)	2
27		#5 x 8'-1" (LEVEL II DUAL COATED)	2
28		#5 x 7'-7" (LEVEL II DUAL COATED)	2
29		#5 x 7'-1" (LEVEL II DUAL COATED)	2
30		#5 x 6'-7" (LEVEL II DUAL COATED)	2
31		#5 x 6'-1" (LEVEL II DUAL COATED)	2

ITEM	MARK	DESCRIPTION	QTY.
32			
33		#5 x 5'-9" (LEVEL II DUAL COATED)	2
34		#5 x 5'-5" (LEVEL II DUAL COATED)	2
35			
36		DAYTON D-101 DOWEL-IN #5 x 2'-8" (EPOXY COATED)	6
37		DAYTON D-101 DOWEL-IN #5 x 2'-6" (EPOXY COATED)	3
38		DAYTON D-101 DOWEL-IN #5 x 1'-3" (EPOXY COATED)	3
39			
40			

⚠1 3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

Vermont Agency of Transportation
RECEIVED
CK'D BY SC, TM OK'D BY G. Laroche
March 18, 2016
RESUBMIT No Approved
BY K. Higgins DATE 3/28/2016

APPROVAL STAMP:

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

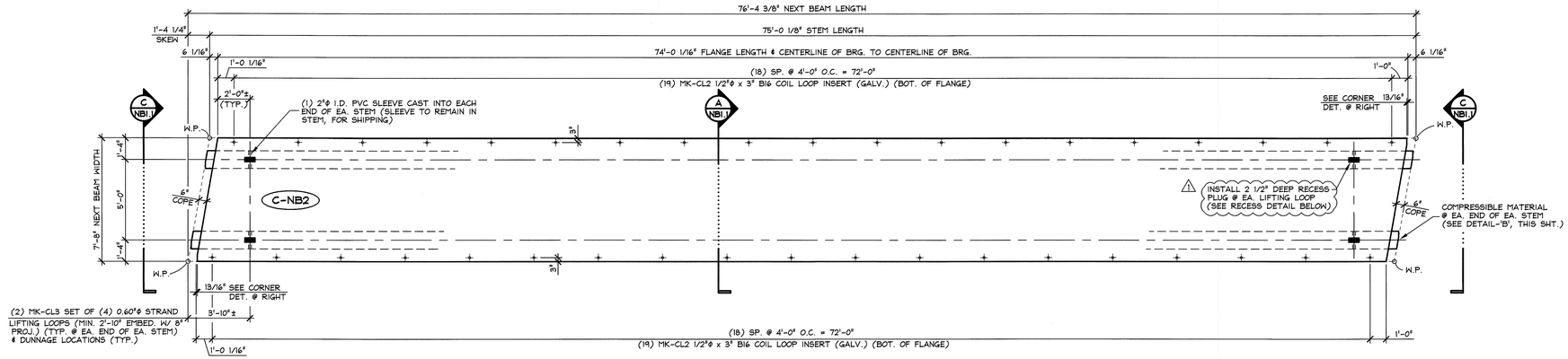
J.A. McDonald, Inc.
CONTRACTOR
LYNDON CENTER, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

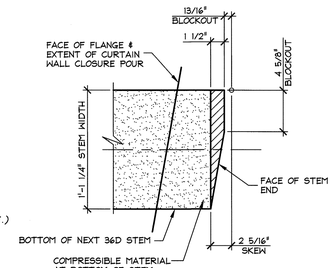
TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

PRECAST ABUTMENT DETAILS

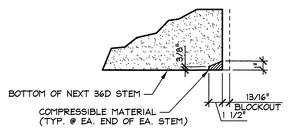
DATE: JAN. 8, 2016
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23476-015
DWG. NO: AB2A



1 NB1 DIMENSIONAL PLAN VIEW IN FORM "C-NB2"
1/4" = 1'-0"



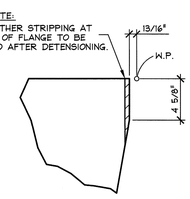
PLAN



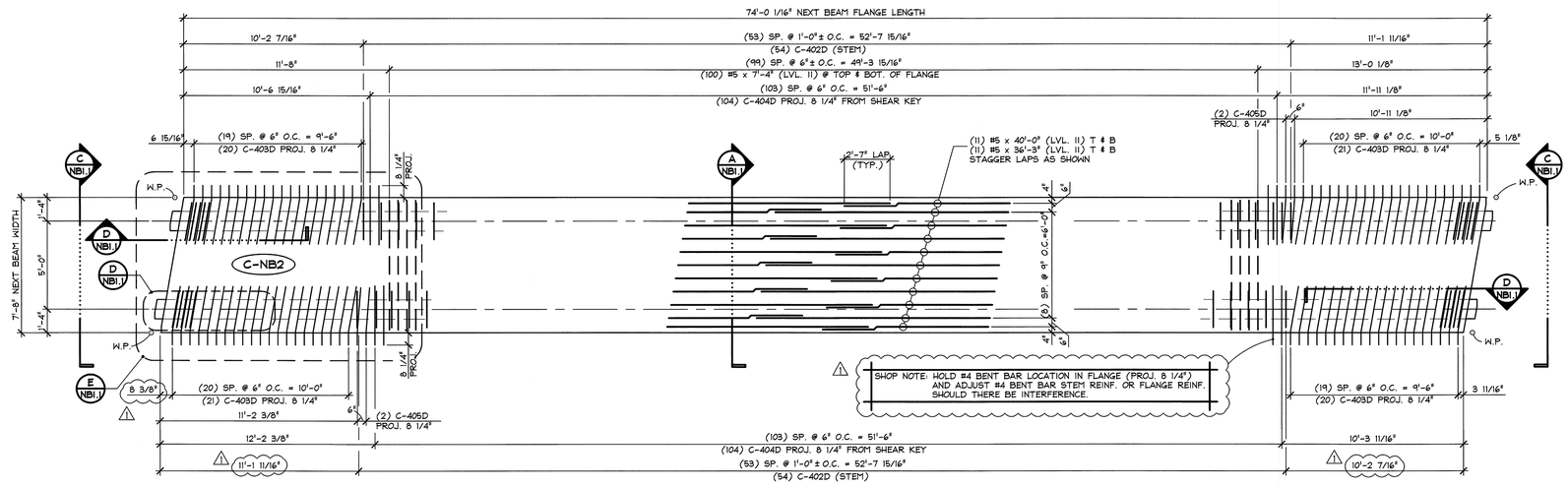
SECTION

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

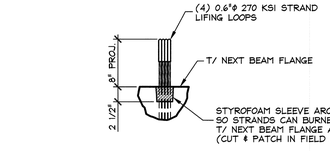
SHOP NOTE:
1/2" WEATHER STRIPPING AT BOTTOM OF FLANGE TO BE REMOVED AFTER DETENSIONING.



CORNER FLANGE B/O
(TYP. AS SHOWN) 1 1/2" = 1'-0"



2 NB1 REINFORCING PLAN VIEW IN FORM "C-NB2"
1/4" = 1'-0"



LIFT LOOP RECESS DETAIL
1" = 1'-0"

SHOP NOTE:
f'c = 10,000 PSI
f'ci = 8,000 PSI
MIX #490M

MARK: C-NB2	QTY.: 1	WT.: 59.42 T	VOL.: 29.34 cy

MATERIAL LIST / NEXT BEAM

ITEM	MARK	DESCRIPTION	QTY.
1			
2	MK-CL2	1/2"ϕ x 3" B16 COIL LOOP INSERT (GALV.)	38
3	MK-CL3	SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS x 3'-6" LONG	4
4			
5	C-401D	#4 BENT BAR (LEVEL II, DUAL COATED)	104
6	C-402D	#4 BENT BAR (LEVEL II, DUAL COATED)	108
7	C-403D	#4 BENT BAR (LEVEL II, DUAL COATED)	82
8	C-404D	#4 BENT BAR (LEVEL II, DUAL COATED)	208
9	C-405D	#4 BENT BAR (LEVEL II, DUAL COATED)	4
10			
11	C-501D	#5 BENT BAR (LEVEL II, DUAL COATED)	16
12	C-502D	#5 BENT BAR (LEVEL II, DUAL COATED)	40
13			
14	C-801D	#8 BENT BAR (LEVEL II, DUAL COATED)	28
15			
16		#4 x 7'-5 1/2" (LEVEL II, DUAL COATED) ⚠	(20)
17		#5 x 7'-5 1/2" (LEVEL II, DUAL COATED)	84
18		#5 x 7'-4 1/2" (LEVEL II, DUAL COATED)	4
19		#5 x 7'-4 1/4" (LEVEL II, DUAL COATED)	4
20		#5 x 4'-6" (LEVEL II, DUAL COATED)	12
21		#5 x 7'-4" (LEVEL II, DUAL COATED)	200
22		#5 x 40'-0" (LEVEL II, DUAL COATED)	22
23		#5 x 36'-3" (LEVEL II, DUAL COATED)	22
24			
25			

⚠ 3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

APPROVAL STAMP:
Vermont Agency of Transportation
RECEIVED
CK'D BY SC, TM OK'D BY G. Laroche
March 18, 2016
RESUBMIT No Approved
BY K. Higgins DATE 3/28/2016

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

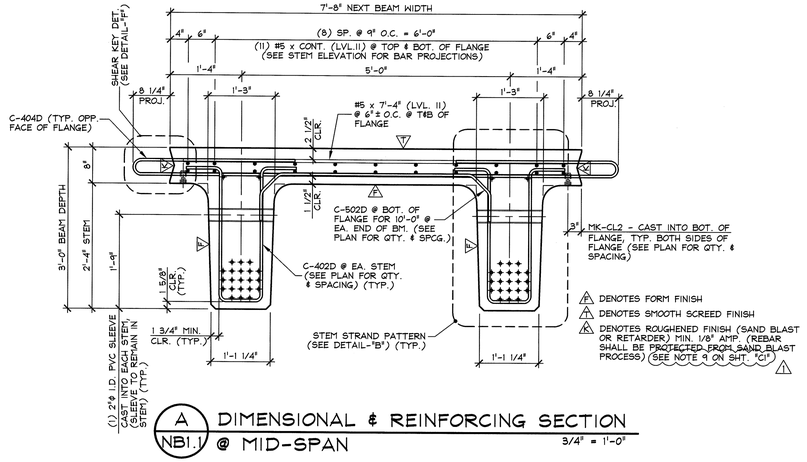
J.A. McDonald, Inc.
CONTRACTOR
LYNDON CENTER, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

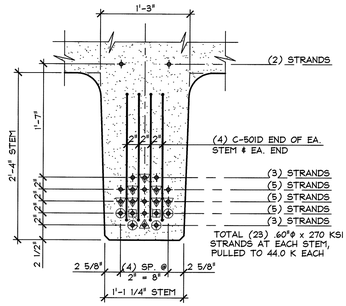
PRESTRESSED NEXT BEAM PLAN VIEWS

DATE: JAN. 8, 2016
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23476-015
DWG. NO: NB1



A NB1.1 DIMENSIONAL & REINFORCING SECTION @ MID-SPAN

3/4" = 1'-0"

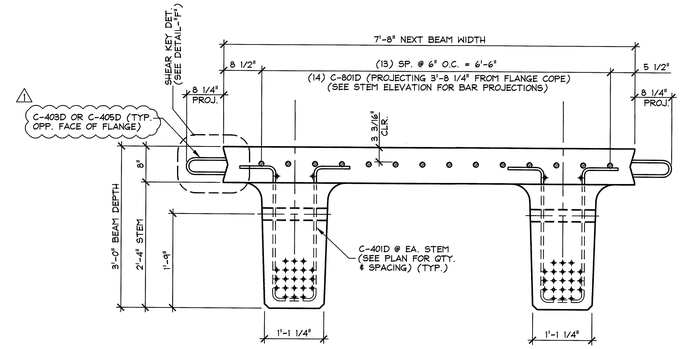


B NB1.1 STEM STRAND PATTERN

1" = 1'-0"

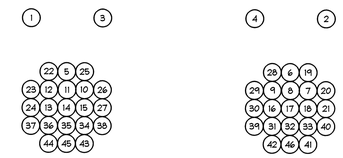
PRESTRESSING NOTATIONS

- DENOTES STRAIGHT STRANDS TO BE DEBONDED 6" FROM EA. END OF EA. STEM
- DENOTES STRAIGHT STRANDS TO BE DEBONDED 2'-0" FROM EA. END OF EA. STEM
- DENOTES STRAIGHT STRANDS TO BE DEBONDED 4'-0" FROM EA. END OF EA. STEM
- DENOTES FULLY BONDED STRAIGHT STRANDS EXTENDED 2'-2" FROM EA. END OF EA. STEM (90° BEND @ 8" OUT)
- DENOTES FULLY BONDED STRAIGHT STRANDS TO BE CUT FLUSH W/ EA. END OF EA. STEM



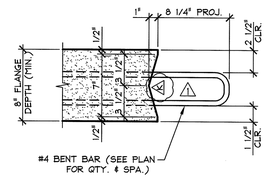
C NB1.1 DIMENSIONAL & REINFORCING SECTION @ BEAM END

3/4" = 1'-0"



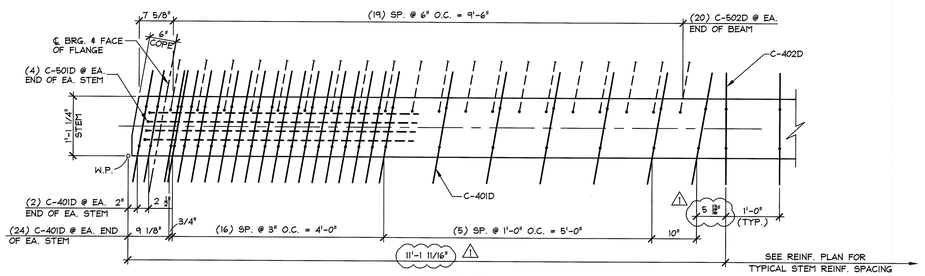
DETENSIONING SCHEDULE

N.T.S.

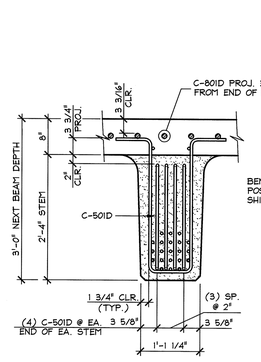


F NB1.1 SHEAR KEY DETAIL

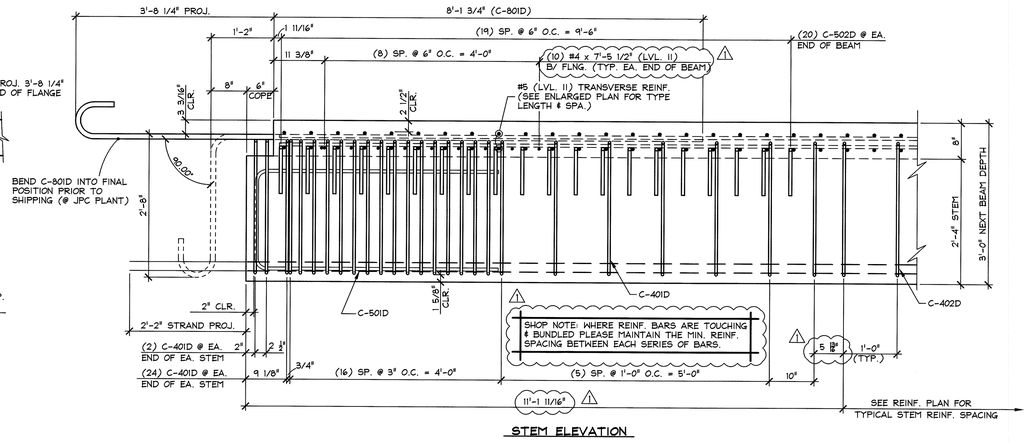
1 1/2" = 1'-0"



STEM PLAN



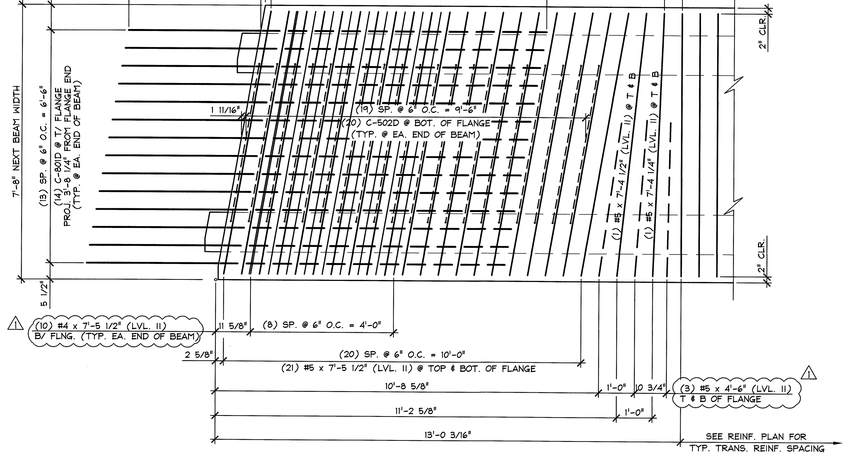
STEM SECTION



STEM ELEVATION

D NB1.1 END BLOCK STEM REINFORCING DETAILS

3/4" = 1'-0"



E NB1.1 ENLARGED TRANSVERSE REINFORCING PLAN

LONGITUDINAL REINFORCING & STEM STIRRUPS NOT SHOWN FOR CLARITY

1/2" = 1'-0"

3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

APPROVAL STAMP:

Vermont Agency of Transportation

RECEIVED

CK'D BY SC, TM OK'D BY G. Laroche

March 18, 2016

RESUBMIT No Approved

BY K. Higgins DATE 3/28/2016

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STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

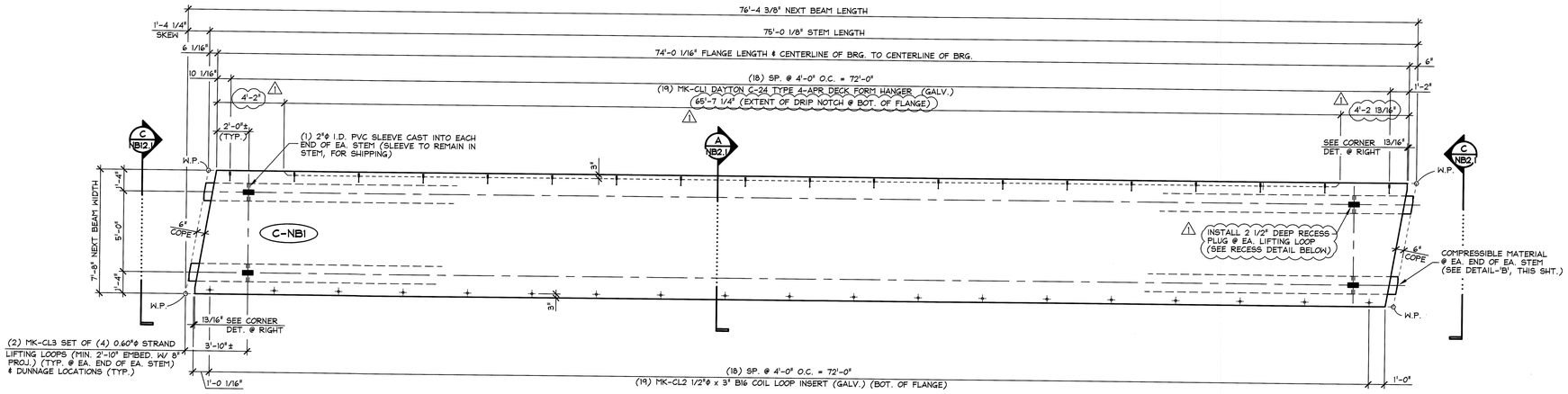
DATE: JAN. 8, 2016
SCALE: NOTED

TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

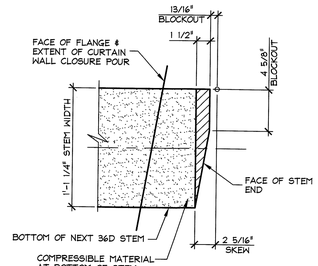
CHKD: DFTM: T.D.
JOB NO: 23476-015

PRESTRESSED NEXT BEAM DETAILS

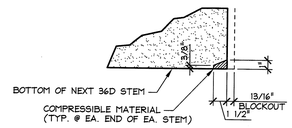
DWG. NO: NB1.1



1 NB2 DIMENSIONAL PLAN VIEW IN FORM "C-NB1"
1/4" = 1'-0"



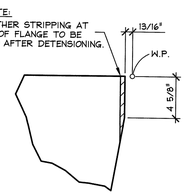
PLAN



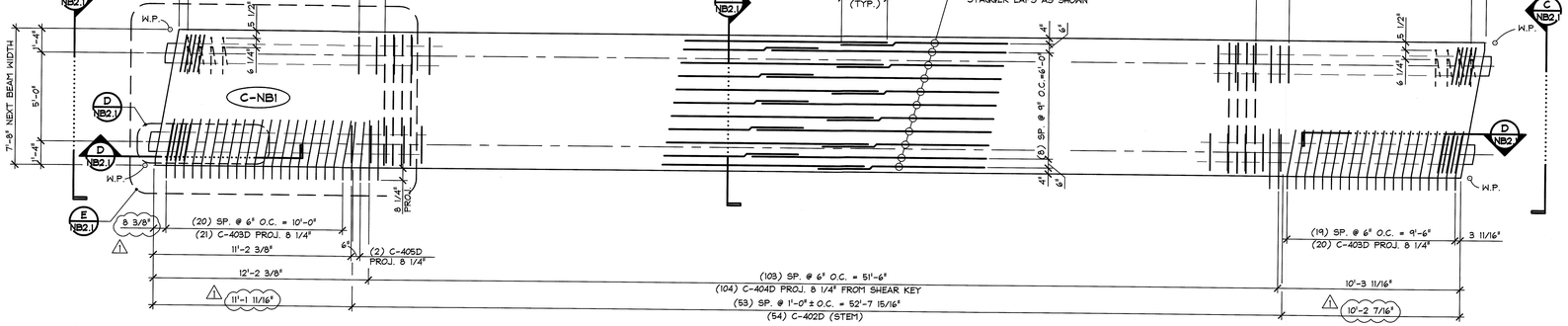
SECTION

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

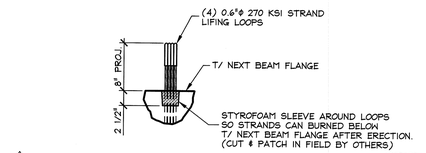
SHOP NOTE:
1/2" WEATHER STRIPPING AT BOTTOM OF FLANGE TO BE REMOVED AFTER DETENSIONING.



CORNER FLANGE B/O
(TYP. AS SHOWN) 1 1/2" = 1'-0"



2 NB2 REINFORCING PLAN VIEW IN FORM "C-NB1"
1/4" = 1'-0"



LIFT LOOP RECESS DETAIL
1" = 1'-0"

SHOP NOTE:
f'c = 10,000 PSI
f'ci = 8,000 PSI
MIX #430M

MARK: C-NB1	QTY.: 1	WT.: 59.42 T	VOL.: 29.34 cy

MATERIAL LIST / NEXT BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	MK-CLI	DAYTON C-24 TYPE 4-APR DECK FORM HANGER (GALV.)	19
2	MK-CL2	1/2"ϕ x 3" B16 COIL LOOP INSERT (GALV.)	19
3	MK-CL3	SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS x 3'-6" LONG	4
4			
5	C-401D	#4 BENT BAR (LEVEL II, DUAL COATED)	104
6	C-402D	#4 BENT BAR (LEVEL II, DUAL COATED) ⚠	(108)
7	C-403D	#4 BENT BAR (LEVEL II, DUAL COATED)	41
8	C-404D	#4 BENT BAR (LEVEL II, DUAL COATED)	104
9	C-405D	#4 BENT BAR (LEVEL II, DUAL COATED)	2
10	C-406D	#4 BENT BAR (LEVEL II, DUAL COATED)	110
11	C-407D	#4 BENT BAR (LEVEL II, DUAL COATED)	110
12			
13	C-501D	#5 BENT BAR (LEVEL II, DUAL COATED)	16
14	C-502D	#5 BENT BAR (LEVEL II, DUAL COATED)	40
15			
16	C-801D	#8 BENT BAR (LEVEL II, DUAL COATED)	28
17			
18		#4 x 7'-5 1/2" (LEVEL II, DUAL COATED) ⚠	(20)
19		#5 x 7'-5 1/2" (LEVEL II, DUAL COATED)	84
20		#5 x 7'-4 1/2" (LEVEL II, DUAL COATED)	4
21		#5 x 7'-4 1/4" (LEVEL II, DUAL COATED)	4
22		#5 x 4'-6" (LEVEL II, DUAL COATED)	12
23		#5 x 7'-4" (LEVEL II, DUAL COATED)	200
24		#5 x 40'-0" (LEVEL II, DUAL COATED)	22
25		#5 x 36'-3" (LEVEL II, DUAL COATED)	22

⚠ 3/11/16 REVISED AS PER ENGR. COMM. T.D.

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Vermont Agency of Transportation
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CK'D BY SC, TM OK'D BY G. Laroche
March 18, 2016
RESUBMIT No Approved
BY K. Higgins DATE 3/28/2016

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

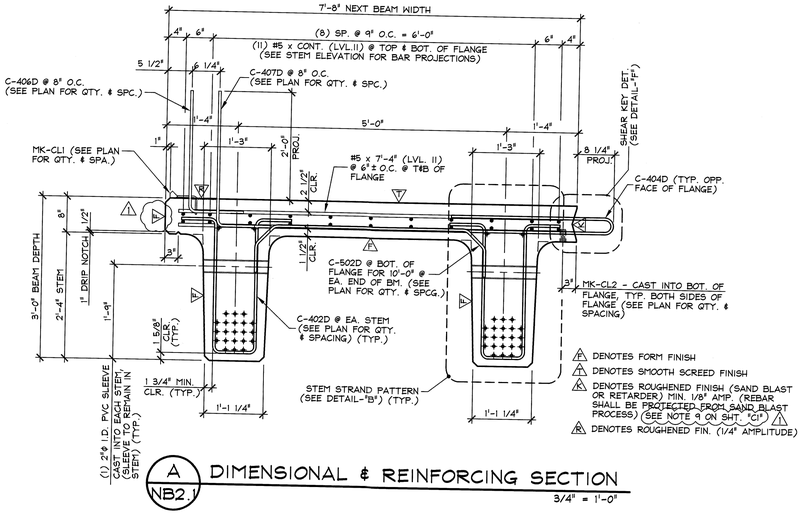
J.A. McDonald, Inc.
CONTRACTOR
LYNDON CENTER, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

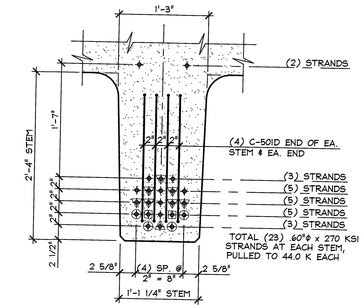
TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

PRESTRESSED NEXT BEAM PLAN VIEWS

DATE: JAN. 8, 2016
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23476-015
DWG. NO: NB2



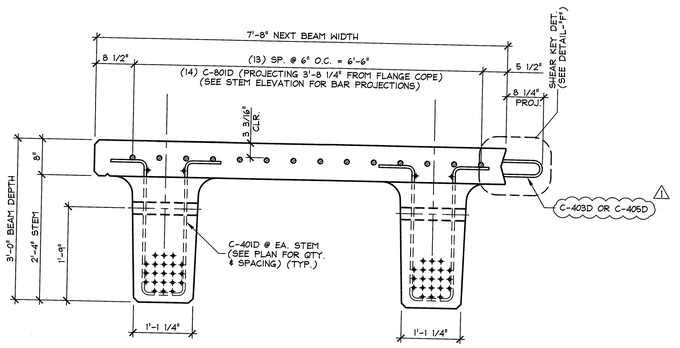
A NB2.1 DIMENSIONAL & REINFORCING SECTION
3/4" = 1'-0"



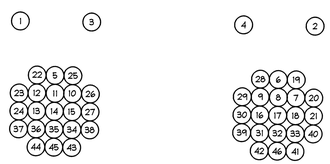
B NB2.1 STEM STRAND PATTERN
1" = 1'-0"

PRESTRESSING NOTATIONS

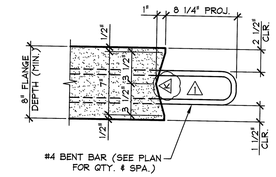
- DENOTES STRAIGHT STRANDS TO BE DEBONDED 6' FROM EA. END OF EA. STEM
- DENOTES STRAIGHT STRANDS TO BE DEBONDED 2'-0" FROM EA. END OF EA. STEM
- DENOTES STRAIGHT STRANDS TO BE DEBONDED 4'-0" FROM EA. END OF EA. STEM
- DENOTES FULLY BONDED STRAIGHT STRANDS EXTENDED 2'-3" FROM EA. END OF EA. STEM (90° BEND @ 8' CUT)
- DENOTES FULLY BONDED STRAIGHT STRANDS TO BE CUT FLUSH W/ EA. END OF EA. STEM



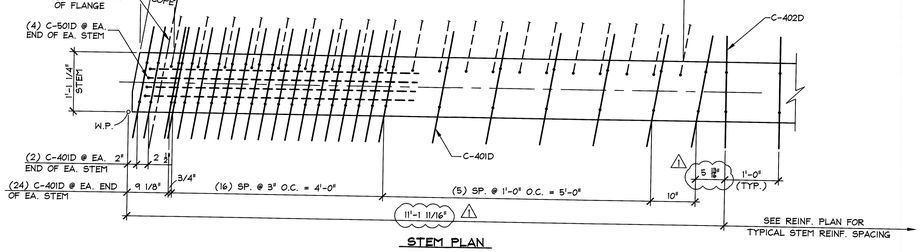
C NB2.1 DIMENSIONAL & REINFORCING SECTION
3/4" = 1'-0"



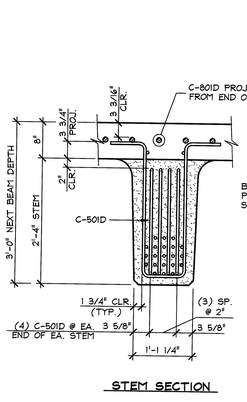
DETENSIONING SCHEDULE
N.T.S.



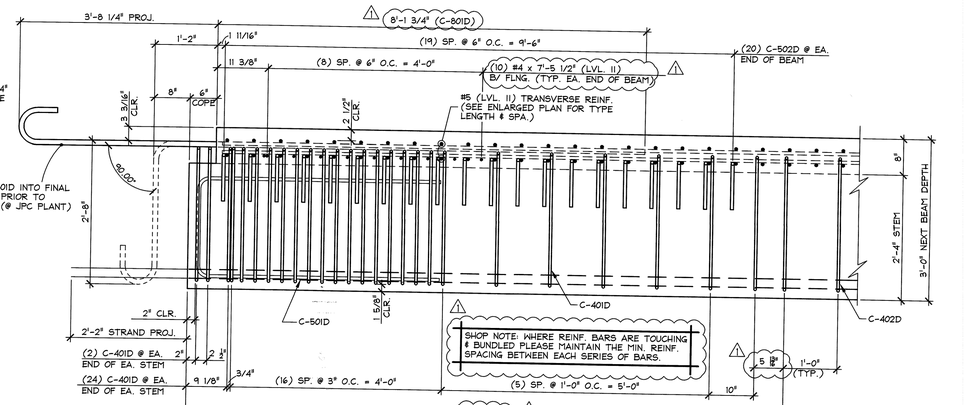
F NB2.1 SHEAR KEY DETAIL
1 1/2" = 1'-0"



STEM PLAN

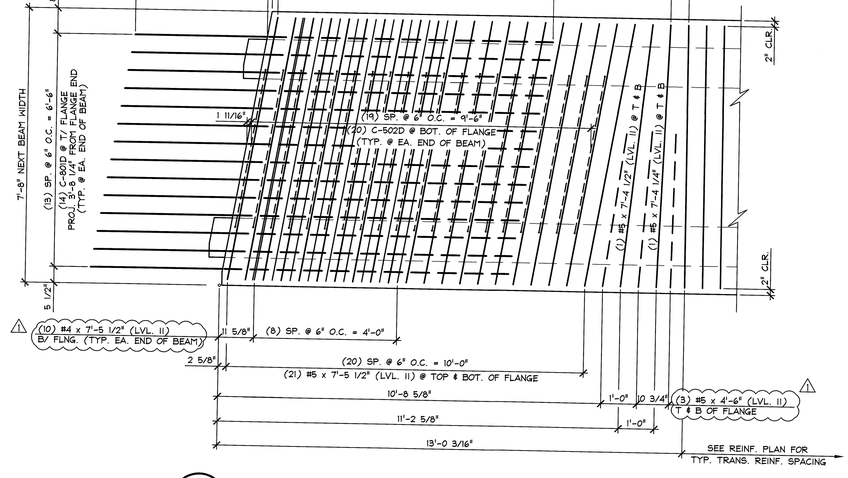


STEM SECTION



STEM ELEVATION

D NB2.1 END BLOCK STEM REINFORCING DETAILS
3/4" = 1'-0"



E NB2.1 ENLARGED TRANSVERSE REINFORCING PLAN
LONGITUDINAL REINFORCING & STEM STIRRUPS NOT SHOWN FOR CLARITY
1/2" = 1'-0"

⚠ 3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

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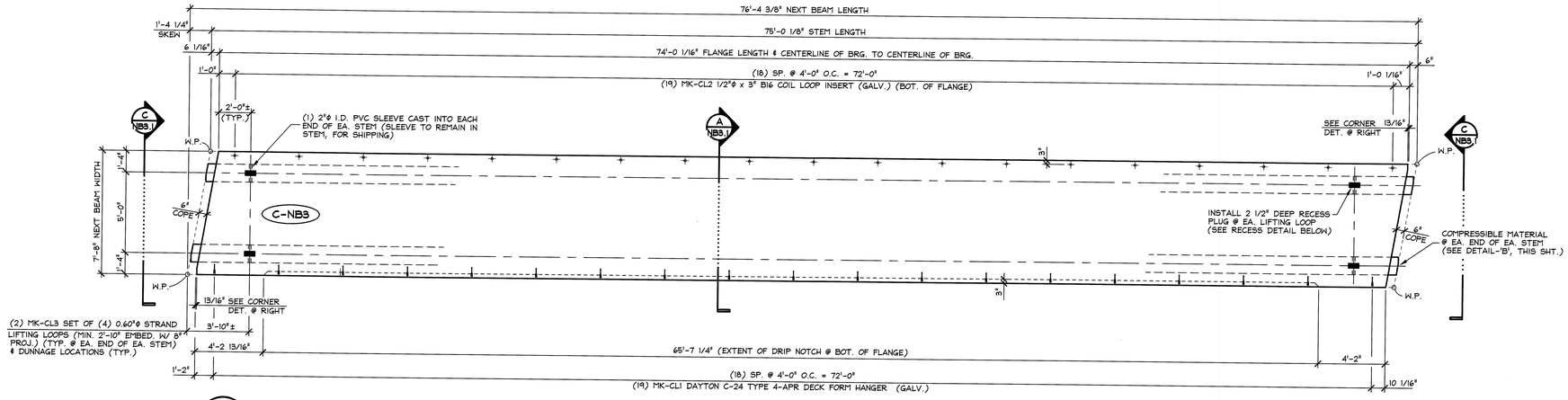
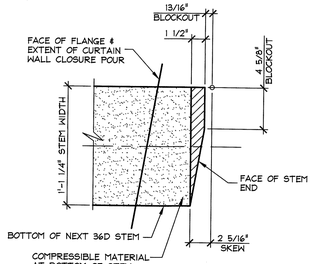
J.A. McDonald, Inc.
CONTRACTOR
LYNDON CENTER, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION COUNTY OF RUTLAND	DATE: JAN. 8, 2016
	SCALE: NOTED
TOWN OF CLARENDON WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)	CHKD: DFTM: T.D.
	JOB NO: 23476-015
PRESTRESSED NEXT BEAM DETAILS	DWG. NO: NB2.1

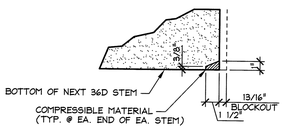


1 NB3 DIMENSIONAL PLAN VIEW IN FORM "C-NB1"

1/4" = 1'-0"



PLAN

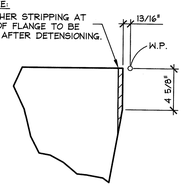


SECTION

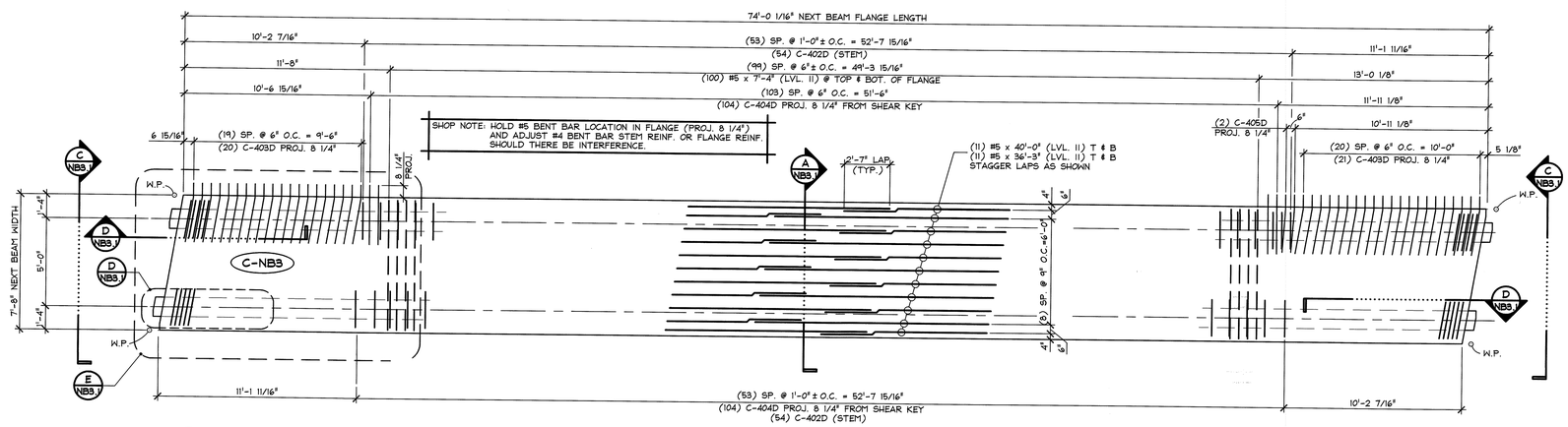
DETAIL - "B"

1 1/2" = 1'-0"

SHOP NOTE:
1/2" WEATHER STRIPPING AT BOTTOM OF FLANGE TO BE REMOVED AFTER DETENSIONING.

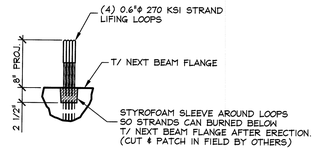


CORNER FLANGE B/O (TYP. AS SHOWN) 1 1/2" = 1'-0"



2 NB3 REINFORCING PLAN VIEW IN FORM "C-NB3"

1/4" = 1'-0"



LIFT LOOP RECESS DETAIL

1" = 1'-0"

SHOP NOTE:
f'c = 10,000 PSI
f'ci = 8,000 PSI
MIX #430M

MARK: C-NB3	QTY.: 1	WT.: 59.42 T	VOL.: 29.34 cy

MATERIAL LIST / NEXT BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	MK-CL1	DAYTON C-24 TYPE 4-APR DECK FORM HANGER (GALV.)	19
2	MK-CL2	1/2"ø x 3" B16 COIL LOOP INSERT (GALV.)	19
3	MK-CL3	SET OF (4) 0.60"ø STRAND LIFTING LOOPS x 3'-6" LONG	4
4			
5	C-401D	#4 BENT BAR (LEVEL II, DUAL COATED)	104
6	C-402D	#4 BENT BAR (LEVEL II, DUAL COATED)	108
7	C-403D	#4 BENT BAR (LEVEL II, DUAL COATED)	41
8	C-404D	#4 BENT BAR (LEVEL II, DUAL COATED)	104
9	C-405D	#4 BENT BAR (LEVEL II, DUAL COATED)	2
10	C-406D	#4 BENT BAR (LEVEL II, DUAL COATED)	110
11	C-407D	#4 BENT BAR (LEVEL II, DUAL COATED)	110
12			
13	C-501D	#5 BENT BAR (LEVEL II, DUAL COATED)	16
14	C-502D	#5 BENT BAR (LEVEL II, DUAL COATED)	40
15			
16	C-801D	#8 BENT BAR (LEVEL II, DUAL COATED)	28
17			
18		#4 x 7'-5 1/2" (LEVEL II, DUAL COATED)	20
19		#5 x 7'-5 1/2" (LEVEL II, DUAL COATED)	84
20		#5 x 7'-4 1/2" (LEVEL II, DUAL COATED)	4
21		#5 x 7'-4 1/4" (LEVEL II, DUAL COATED)	4
22		#5 x 4'-6" (LEVEL II, DUAL COATED)	12
23		#5 x 7'-4" (LEVEL II, DUAL COATED)	200
24		#5 x 40'-0" (LEVEL II, DUAL COATED)	22
25		#5 x 36'-3" (LEVEL II, DUAL COATED)	22

⚠ 3/11/16 ADDED THIS SHEET T.D.

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J.A. McDonald, Inc.
CONTRACTOR
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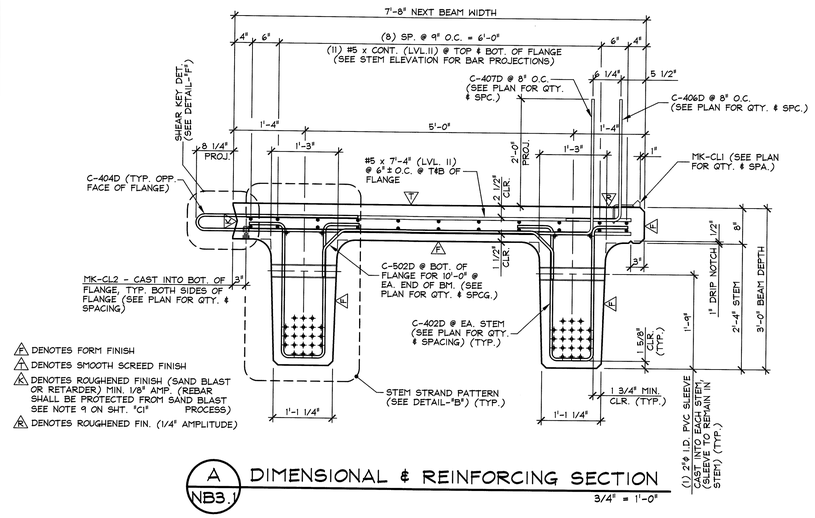
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

DATE: JAN. 8, 2016
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23476-015

TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

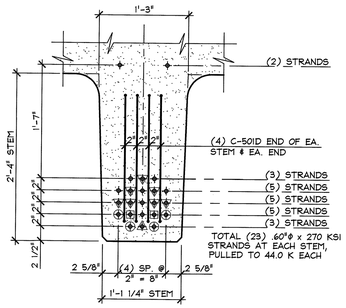
PRESTRESSED NEXT BEAM PLAN VIEWS

DWG. NO: NB3



△ DENOTES FORM FINISH
△ DENOTES SMOOTH SCREED FINISH
△ DENOTES ROUGHENED FINISH (SAND BLAST OR RETARDER) MIN. 1/8" AMP. (REBAR SHALL BE PROTECTED FROM SAND BLAST SEE NOTE 9 ON SHT. "C1" PROCESS.)
△ DENOTES ROUGHENED FIN. (1/4" AMPLITUDE)

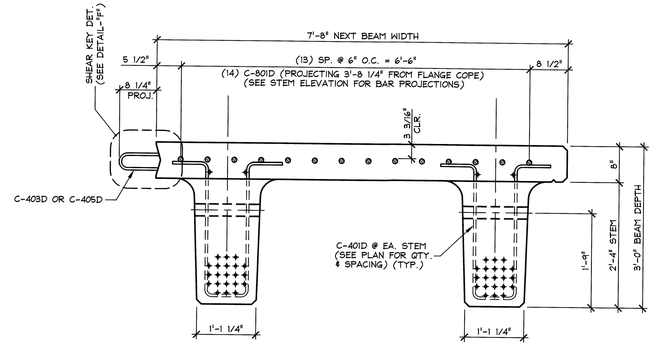
A NB3.1 DIMENSIONAL & REINFORCING SECTION
3/4" = 1'-0"



B NB3.1 STEM STRAND PATTERN
1" = 1'-0"

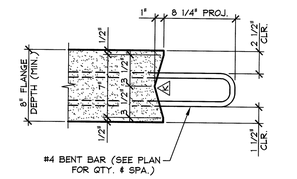
PRESTRESSING NOTATIONS

- DENOTES STRAIGHT STRANDS TO BE DEBONDED 6" FROM EA. END OF EA. STEM
- DENOTES STRAIGHT STRANDS TO BE DEBONDED 2'-0" FROM EA. END OF EA. STEM
- DENOTES STRAIGHT STRANDS TO BE DEBONDED 4'-0" FROM EA. END OF EA. STEM
- DENOTES FULLY BONDED STRAIGHT STRANDS EXTENDED 2'-2" FROM EA. END OF EA. STEM (90° BEND @ 8" CUT)
- DENOTES FULLY BONDED STRAIGHT STRANDS TO BE CUT FLUSH W/ EA. END OF EA. STEM

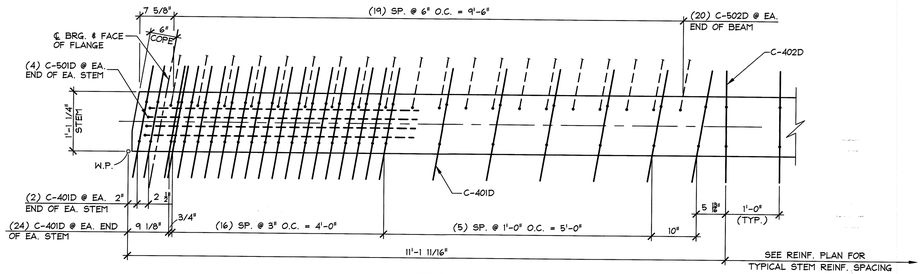


C NB3.1 DIMENSIONAL & REINFORCING SECTION
3/4" = 1'-0"

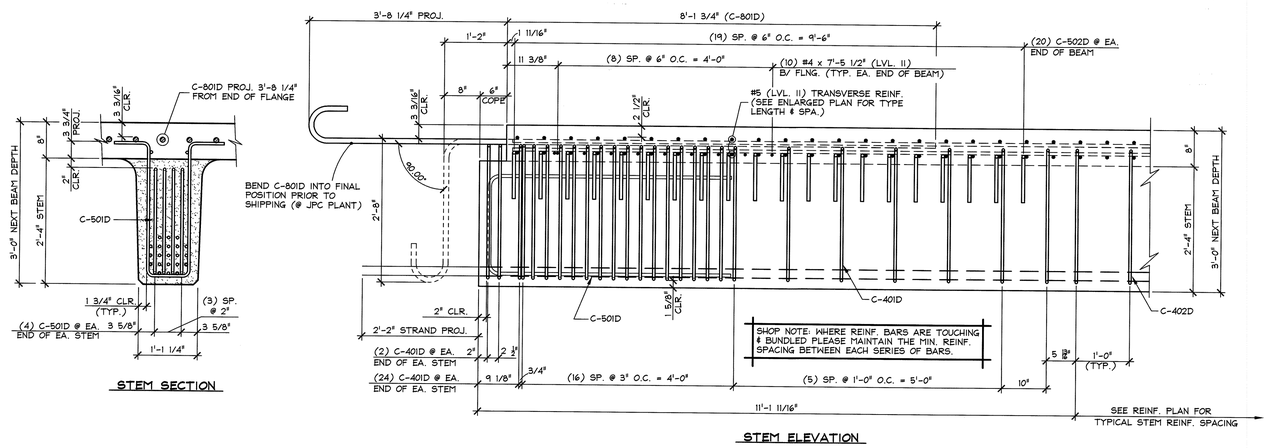
DETENSIONING SCHEDULE
N.T.S.



F NB3.1 SHEAR KEY DETAIL
1 1/2" = 1'-0"

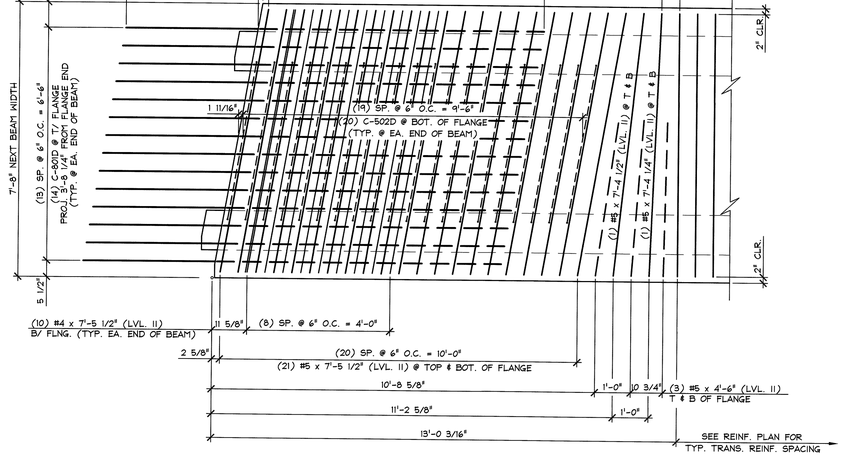


STEM PLAN



STEM ELEVATION
STEM SECTION

D NB3.1 END BLOCK STEM REINFORCING DETAILS
3/4" = 1'-0"



E NB3.1 ENLARGED TRANSVERSE REINFORCING PLAN
LONGITUDINAL REINFORCING & STEM STIRRUPS NOT SHOWN FOR CLARITY
1/2" = 1'-0"

△ 3/11/16 ADDED THIS SHEET T.D.

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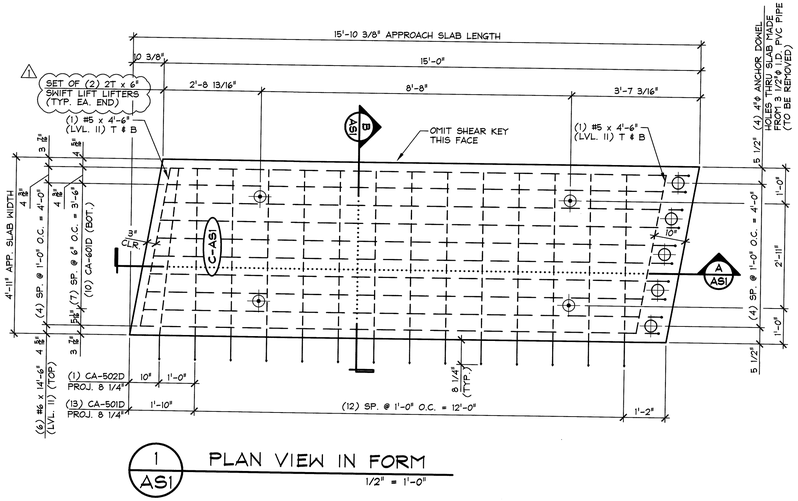
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

DATE: JAN. 8, 2016
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23476-015

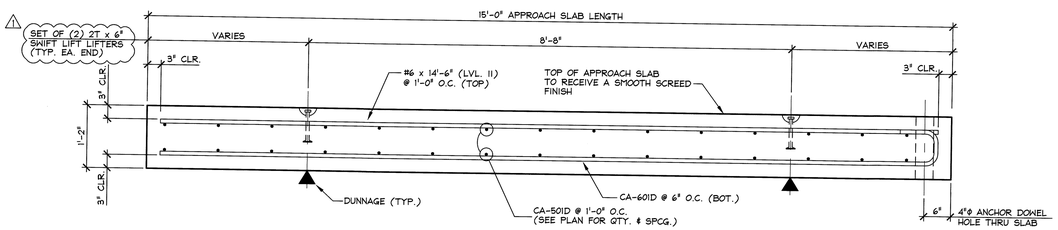
TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

PRESTRESSED NEXT BEAM DETAILS

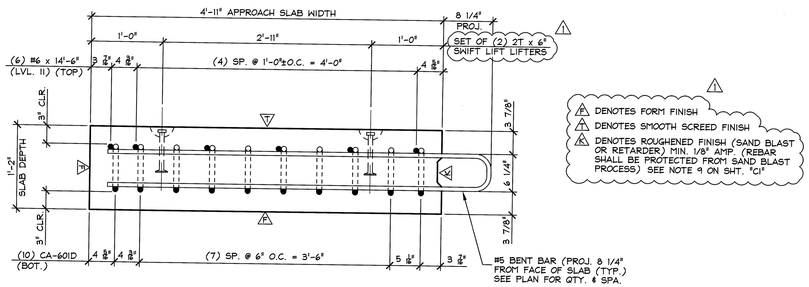
DWG. NO: NB3.1



1/A1 PLAN VIEW IN FORM
1/2" = 1'-0"

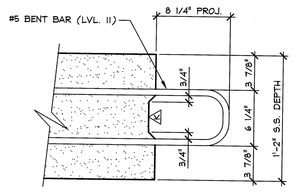


A/A1 LONGITUDINAL SECTION
3/4" = 1'-0"



B/A1 SECTION
1" = 1'-0"

1. DENOTES FORM FINISH
2. DENOTES SMOOTH SCREED FINISH
3. DENOTES ROUGHENED FINISH (SAND BLAST OR RETARDER) MIN. 1/8" AMP. (REBAR SHALL BE PROTECTED FROM SAND BLAST PROCESS) SEE NOTE 9 ON SHT. "C1"



SHEAR KEY DETAIL
1 1/2" = 1'-0"

SHOP NOTE:
f'c = 5,000 PSI
f'ci = 3,000 PSI
MIX #445MSCC

MARK: C-A1	QTY.: 2	WT.: 6.45 T	VOL.: 3.19 cy

MATERIAL LIST / APPROACH SLAB

ITEM	MARK	DESCRIPTION	QTY.
1	CA-501D	#5 BENT BAR (LEVEL 11, DUAL COATED)	13
2	CA-502D	#5 BENT BAR (LEVEL 11, DUAL COATED)	1
3	CA-601D	#6 BENT BAR (LEVEL 11, DUAL COATED	10
4			
5			
6		#6 x 14'-6" (LEVEL 11 DUAL COATED)	6
7		#5 x 4'-6" (LEVEL 11 DUAL COATED)	4
8			
9			
10			
11			
12			
13			
14		DAYTON 2T x 6" SNIFT LIFT (DOMESTIC)	4
15			

1 3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

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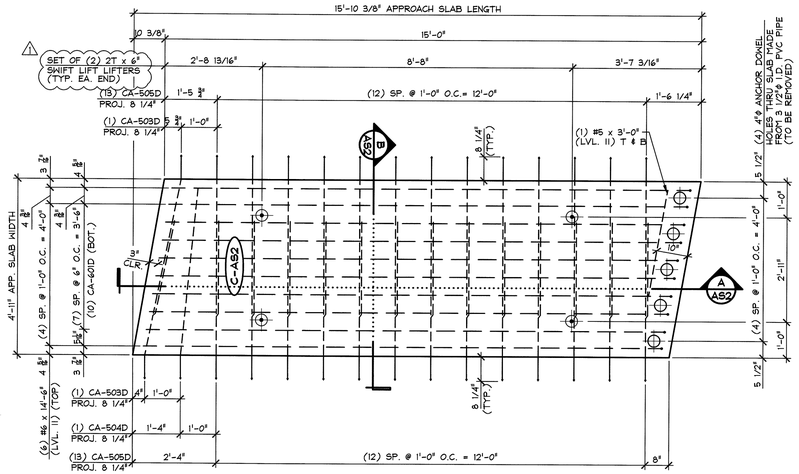
TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

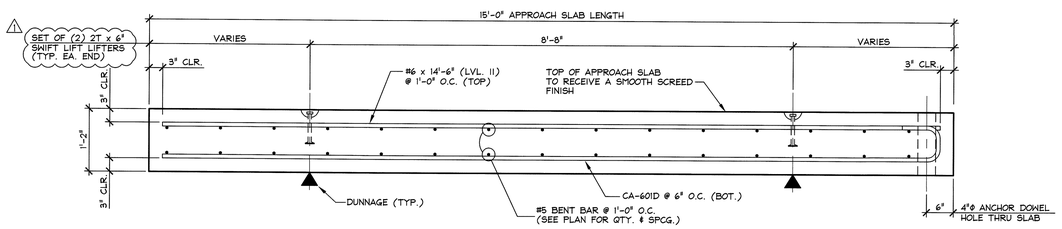
APPROACH SLAB DETAILS

DWG. NO: A1



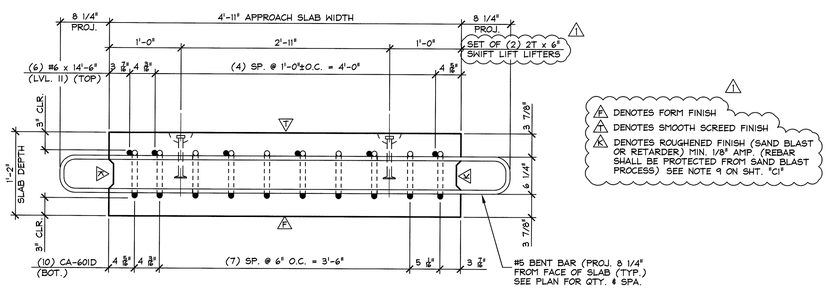
1 AS2 PLAN VIEW IN FORM

1/2" = 1'-0"



A AS2 LONGITUDINAL SECTION

3/4" = 1'-0"



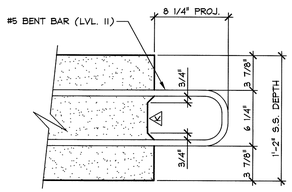
B AS2 SECTION

1" = 1'-0"

DENOTES FORM FINISH

DENOTES SMOOTH SCREED FINISH

DENOTES ROUGHENED FINISH (SAND BLAST OR RETARDER) MIN. 1/8" AMP. (REBAR SHALL BE PROTECTED FROM SAND BLAST PROCESS) SEE NOTE 9 ON SHT. 'C1'



SHEAR KEY DETAIL

1 1/2" = 1'-0"

SHOP NOTE:
f'c = 5,000 PSI
f'ci = 3,000 PSI
MIX #445MSCC

3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

MARK: C-AS2	QTY.: 2	WT.: 6.45 T	VOL.: 3.19 cy

MATERIAL LIST / APPROACH SLAB

ITEM	MARK	DESCRIPTION	QTY.
1	CA-503D	#5 BENT BAR (LEVEL II, DUAL COATED)	2
2	CA-504D	#5 BENT BAR (LEVEL II, DUAL COATED)	1
3	CA-505D	#5 BENT BAR (LEVEL II, DUAL COATED)	26
4	CA-601D	#6 BENT BAR (LEVEL II, DUAL COATED	10
5			
6		#6 x 14'-6" (LEVEL II DUAL COATED)	6
7		#5 x 3'-0" (LEVEL II DUAL COATED)	2
8			
9			
10			
11			
12			
13			
14		DAYTON 2T x 6" SWIFT LIFT (DOMESTIC)	4
15			

3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

APPROVAL STAMP:

Vermont Agency of Transportation
RECEIVED
Clarendon resubmit 3-15-16.pdf

CK'D BY SC, TM OK'D BY G. Laroche

March 18, 2016

RESUBMIT No Approved

BY K. Higgins DATE 3/28/2016

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

J.A. McDonald, Inc.
CONTRACTOR
LYNDON CENTER, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

DATE: JAN. 8, 2016

SCALE: NOTED

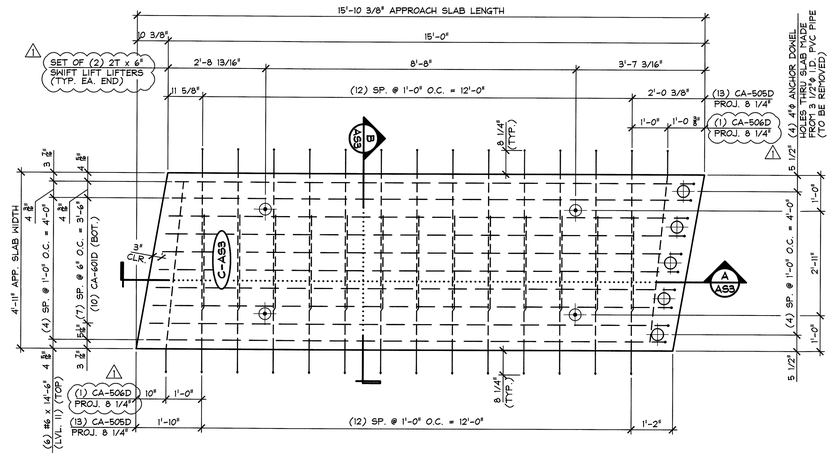
TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

CHKD: DFTM: T.D.

JOB NO: 23476-015

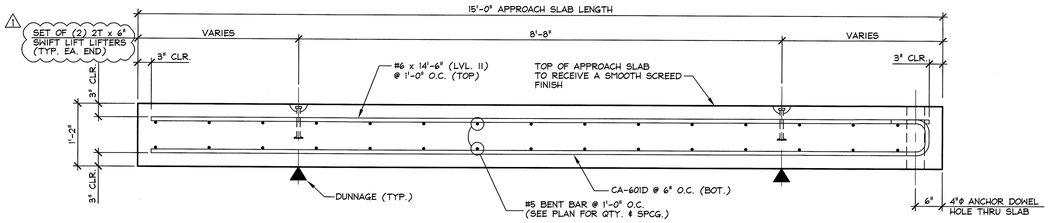
APPROACH SLAB DETAILS

DWG. NO: AS2



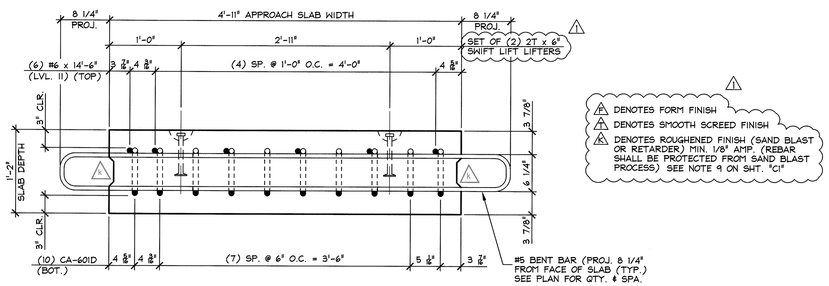
1 AS3 PLAN VIEW IN FORM

1/2" = 1'-0"



A AS3 LONGITUDINAL SECTION

3/4" = 1'-0"



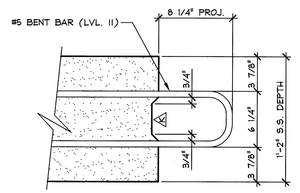
B AS3 SECTION

1" = 1'-0"

⚠ DENOTES FORM FINISH

⚠ DENOTES SMOOTH SCREED FINISH

⚠ DENOTES ROUGHENED FINISH (SAND BLAST OR RETARDER) MIN. 1/8" AMP. (REBAR SHALL BE PROTECTED FROM SAND BLAST PROCESS) SEE NOTE 9 ON SHT. "C1"



SHEAR KEY DETAIL

1 1/2" = 1'-0"

SHOP NOTE:
f'c = 5,000 PSI
f'ci = 3,000 PSI
MIX #445MSCC

MARK: C-AS3	QTY.: 2	WT.: 6.45 T	VOL.: 3.19 cy

MATERIAL LIST / APPROACH SLAB

ITEM	MARK	DESCRIPTION	QTY.
1	(CA-506D	#5 BENT BAR (LEVEL II, DUAL COATED)	2
2			
3	CA-505D	#5 BENT BAR (LEVEL II, DUAL COATED)	26
4	CA-601D	#6 BENT BAR (LEVEL II, DUAL COATED	10
5			
6		#6 x 14'-6" (LEVEL II DUAL COATED)	6
7			
8			
9			
10			
11			
12			
13			
14		DAYTON 2T x 6" SWIFT LIFT (DOMESTIC)	4
15			

⚠ 3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

APPROVAL STAMP:

Vermont Agency of Transportation
RECEIVED
Oversize received 3-16-16 pd

CK'D BY SC, TM OK'D BY G. Laroche

March 18, 2016

RESUBMIT No Approved AsNoted

BY K. Higgins DATE 3/28/2016

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2484 CKSE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

J.A. McDonald, Inc.
CONTRACTOR
LYNDON CENTER, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

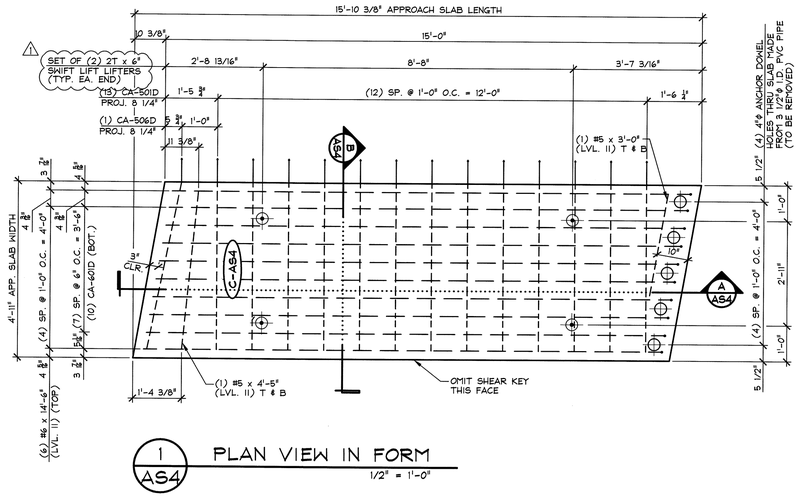
DATE: JAN. 8, 2016
SCALE: NOTED

TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

CHKD: DFTM: T.D.
JOB NO: 23476-015

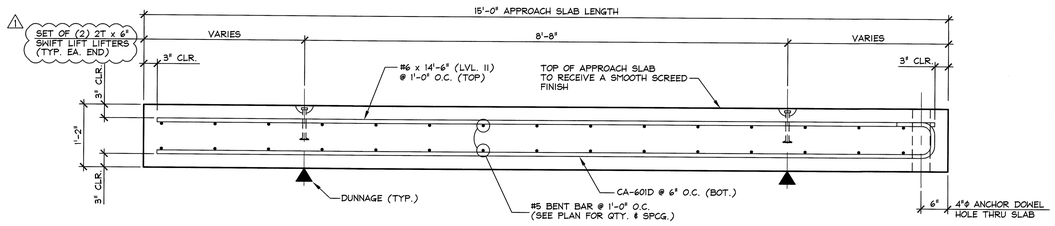
APPROACH SLAB DETAILS

DWG. NO: AS3



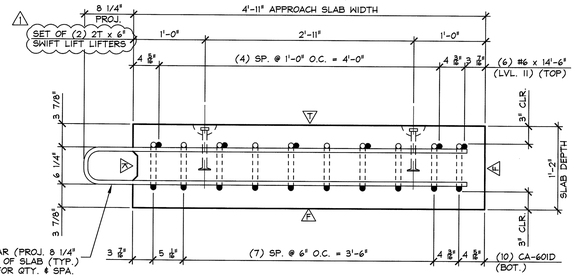
1 AS4 PLAN VIEW IN FORM

1/2" = 1'-0"



A AS4 LONGITUDINAL SECTION

3/4" = 1'-0"



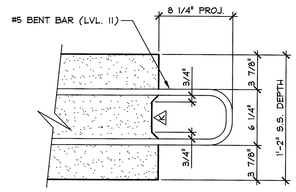
B AS4 SECTION

1" = 1'-0"

⚠1 DENOTES FORM FINISH

⚠2 DENOTES SMOOTH SCREED FINISH

⚠3 DENOTES ROUGHENED FINISH (SAND BLAST OR RETARDER) MIN. 1/8" AMP. (REBAR SHALL BE PROTECTED FROM SAND BLAST PROCESS) SEE NOTE 9 ON SHT. "C1"



SHEAR KEY DETAIL

1 1/2" = 1'-0"

SHOP NOTE:
F'c = 5,000 PSI
F'ci = 3,000 PSI
MIX #445MSCC

MARK: C-AS4 | QTY.: 2 | WT.: 6.45 T | VOL.: 3.19 cy

MATERIAL LIST / APPROACH SLAB

ITEM	MARK	DESCRIPTION	QTY.
1	CA-501D	#5 BENT BAR (LEVEL II, DUAL COATED)	13
2	CA-506D	#5 BENT BAR (LEVEL II, DUAL COATED)	1
3	CA-601D	#6 BENT BAR (LEVEL II, DUAL COATED	10
4			
5			
6		#6 x 14'-6" (LEVEL II DUAL COATED)	6
7		#5 x 4'-5" (LEVEL II DUAL COATED)	2
8		#5 x 3'-0" (LEVEL II DUAL COATED)	2
9			
10			
11			
12			
13			
14		DAYTON 2T x 6" SWIFT LIFT (DOMESTIC)	4
15			

⚠1 3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

APPROVAL STAMP:

Vermont Agency of Transportation
RECEIVED
Clarendon resubmit 3-10-16.pdf

CK'D BY SC, TM OK'D BY G. Laroche

March 18, 2016

RESUBMIT No Approved

BY K. Higgins DATE 3/28/2016

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

J.A. McDonald, Inc.
CONTRACTOR
LYNDON CENTER, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

DATE: JAN. 8, 2016
SCALE: NOTED

TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

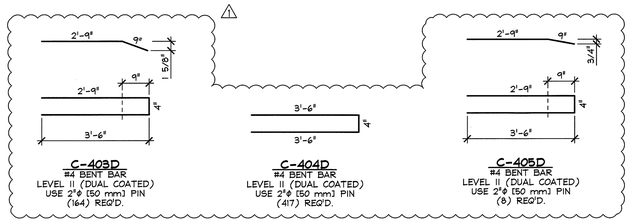
CHKD: DFTM: T.D.
JOB NO: 23476-015

APPROACH SLAB DETAILS

DWG. NO: AS4

C-401D
#4 BENT BAR
LEVEL II (DUAL COATED)
USE 2"ϕ (50 mm) PIN
(312) REQ'D.

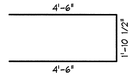
C-402D
#4 BENT BAR
LEVEL II (DUAL COATED)
USE 2"ϕ (50 mm) PIN
(318) REQ'D.



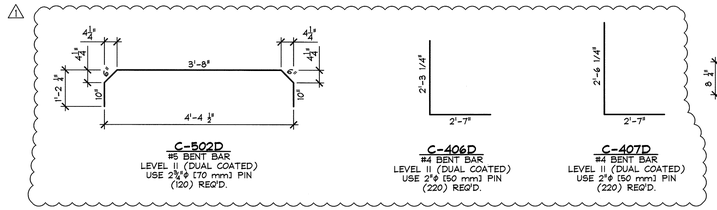
C-403D
#4 BENT BAR
LEVEL II (DUAL COATED)
USE 2"ϕ (50 mm) PIN
(164) REQ'D.

C-404D
#4 BENT BAR
LEVEL II (DUAL COATED)
USE 2"ϕ (50 mm) PIN
(417) REQ'D.

C-405D
#4 BENT BAR
LEVEL II (DUAL COATED)
USE 2"ϕ (50 mm) PIN
(8) REQ'D.



C-501D
#5 BENT BAR
LEVEL II (DUAL COATED)
USE 2¾"ϕ (70 mm) PIN
(48) REQ'D.



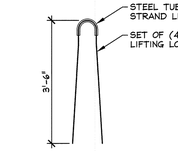
C-502D
#5 BENT BAR
LEVEL II (DUAL COATED)
USE 2¾"ϕ (70 mm) PIN
(120) REQ'D.

C-406D
#4 BENT BAR
LEVEL II (DUAL COATED)
USE 2"ϕ (50 mm) PIN
(220) REQ'D.

C-407D
#4 BENT BAR
LEVEL II (DUAL COATED)
USE 2"ϕ (50 mm) PIN
(220) REQ'D.

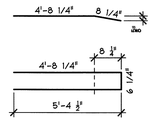
C-801D
#8 BENT BAR
LEVEL II (DUAL COATED)
USE 6"ϕ (152 mm) PIN
(84) REQ'D.

PRESTRESSED NEXT BEAMS

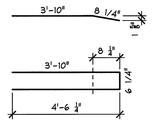


M K - C L 3
N.T.S.

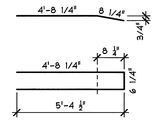
CA-501D
#5 BENT BAR
LEVEL II (DUAL COATED)
USE 2 3/4"ϕ (70 mm) PIN
(52) REQ'D.



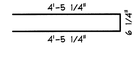
CA-502D
#5 BENT BAR
LEVEL II (DUAL COATED)
USE 2 3/4"ϕ (70 mm) PIN
(2) REQ'D.



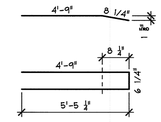
CA-503D
#5 BENT BAR
LEVEL II (DUAL COATED)
USE 2 3/4"ϕ (70 mm) PIN
(8) REQ'D.



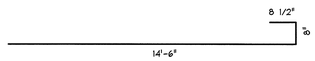
CA-504D
#5 BENT BAR
LEVEL II (DUAL COATED)
USE 2 3/4"ϕ (70 mm) PIN
(2) REQ'D.



CA-505D
#5 BENT BAR
LEVEL II (DUAL COATED)
USE 2 3/4"ϕ (70 mm) PIN
(104) REQ'D.



CA-506D
#5 BENT BAR
LEVEL II (DUAL COATED)
USE 2 3/4"ϕ (70 mm) PIN
(2) REQ'D.



CA-601D
#6 BENT BAR
LEVEL II (DUAL COATED)
USE 3 3/4"ϕ (95 mm) PIN
(80) REQ'D.

APPROACH SLABS

MISCELLANEOUS MATERIALS

PRESTRESSED NEXT BEAMS

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	MK-CL1	38	DAYTON C-24 TYPE 4-APR DECK FORM HANGER (GALV.)	DOMESTIC ORIGIN (BUY AMERICAN)
2	MK-CL2	76	1/2"ϕ x 3" B16 COIL LOOP INSERT (GALV.)	DOMESTIC ORIGIN (BUY AMERICAN)
3	MK-CL3	12	SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS x 3'-6" LONG	
4	C-401D	312	#4 BENT BAR (LEVEL II, DUAL COATED)	
5	C-402D	324	#4 BENT BAR (LEVEL II, DUAL COATED)	
6	C-403D	125	#4 BENT BAR (LEVEL II, DUAL COATED)	
7	C-404D	417	#4 BENT BAR (LEVEL II, DUAL COATED)	+(1) SAMPLE
8	C-405D	8	#4 BENT BAR (LEVEL II, DUAL COATED)	
9	C-406D	220	#4 BENT BAR (LEVEL II, DUAL COATED)	
10	C-407D	220	#4 BENT BAR (LEVEL II, DUAL COATED)	
11				
12	C-501D	48	#5 BENT BAR (LEVEL II, DUAL COATED)	
13	C-502D	120	#5 BENT BAR (LEVEL II, DUAL COATED)	
14				
15	C-801D	84	#8 BENT BAR (LEVEL II, DUAL COATED)	
16		2	#8 x 2'-6" (LEVEL II, DUAL COATED)	SAMPLES
17	⚠	(60)	#4 x 7'-5 1/2" (LEVEL II, DUAL COATED)	
18		252	#5 x 7'-5 1/2" (LEVEL II, DUAL COATED)	
19		12	#5 x 7'-4 1/2" (LEVEL II, DUAL COATED)	
20		12	#5 x 7'-4 1/4" (LEVEL II, DUAL COATED)	
21		37	#5 x 4'-6" (LEVEL II, DUAL COATED)	+(1) SAMPLE
22		600	#5 x 7'-4" (LEVEL II, DUAL COATED)	
23		66	#5 x 40'-0" (LEVEL II, DUAL COATED)	
24		66	#5 x 36'-3" (LEVEL II, DUAL COATED)	
25				

MISCELLANEOUS MATERIALS

APPROACH SLABS

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	CA-501D	52	#5 BENT BAR (LEVEL II, DUAL COATED)	
2	CA-502D	2	#5 BENT BAR (LEVEL II, DUAL COATED)	
3	CA-503D	8	#5 BENT BAR (LEVEL II, DUAL COATED)	
4	CA-504D	2	#5 BENT BAR (LEVEL II, DUAL COATED)	
5	CA-505D	104	#5 BENT BAR (LEVEL II, DUAL COATED)	
⚠ 6	CA-506D	(6)	#5 BENT BAR (LEVEL II, DUAL COATED)	
7	CA-601D	80	#6 BENT BAR (LEVEL II, DUAL COATED)	
8				
9				
10		48	#6 x 14'-6" (LEVEL II, DUAL COATED)	
11		4	#5 x 4'-5" (LEVEL II, DUAL COATED)	
12		8	#5 x 4'-6" (LEVEL II, DUAL COATED)	
13		4	#5 x 3'-0" (LEVEL II, DUAL COATED)	
14				
15		2	#6 x 2'-6" (LEVEL II, DUAL COATED)	SAMPLES
16				
17				
18		32	DAYTON 2T x 6" SWIFT LIFT	DOMESTIC ORIGIN (BUY AMERICAN)
19				
20				

⚠ 3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

APPROVAL STAMP:

Vermont Agency of Transportation
RECEIVED
Clarendon resubmit 3-15-16.pdf

CK'D BY SC, TM OK'D BY G. Laroche

March 18, 2016

RESUBMIT No **Approved**

BY K. Higgins DATE 3/28/2016

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

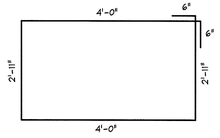
J.A. McDonald, Inc.
CONTRACTOR
LYNDON CENTER, VERMONT

STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

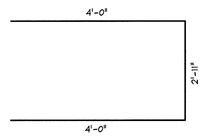
TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

MATERIALS LIST
NEXT BEAMS & APPROACH SLABS

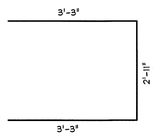
DATE: JAN. 8, 2016
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23476-015
DWG. NO: M1



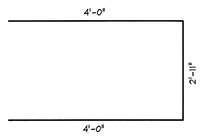
C-401
#4 BENT BAR
LEVEL I (BLACK)
USE 2"ϕ (50 mm) PIN
(40) REQ'D.



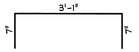
C-402
#4 BENT BAR
LEVEL I (BLACK)
USE 2"ϕ (50 mm) PIN
(21) REQ'D.



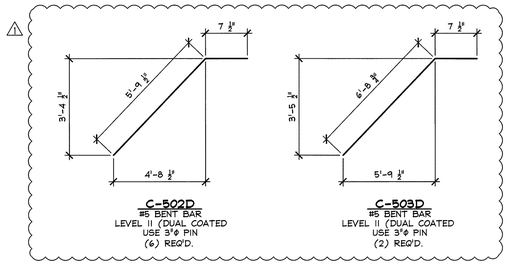
C-403D
#4 BENT BAR
LEVEL II (DUAL COATED)
USE 2"ϕ (50 mm) PIN
(4) REQ'D.



C-404
#4 BENT BAR
LEVEL II (DUAL COATED)
USE 2"ϕ (50 mm) PIN
(2) REQ'D.

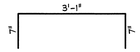


C-501
#5 BENT BAR
LEVEL I (BLACK)
USE 3"ϕ PIN
(78) REQ'D.

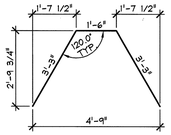


C-502D
#5 BENT BAR
LEVEL II (DUAL COATED
USE 3"ϕ PIN
(6) REQ'D.

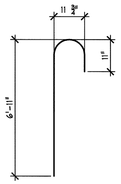
C-503D
#5 BENT BAR
LEVEL II (DUAL COATED
USE 3"ϕ PIN
(2) REQ'D.



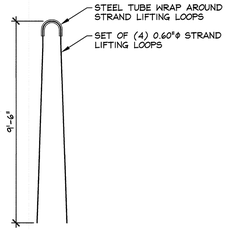
C-507D
#5 BENT BAR
LEVEL II (DUAL COATED
USE 3"ϕ PIN
(30) REQ'D.



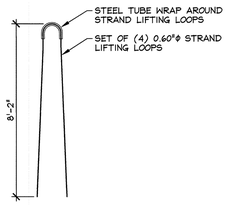
C-601
#6 BENT BAR
LEVEL I (BLACK)
USE 4"ϕ PIN
(21) REQ'D.



C-901D
#9 BENT BAR
LEVEL II (DUAL COATED)
USE 9 1/2"ϕ PIN
(56) REQ'D.



MK-CL4
N.T.S.



MK-CL5
N.T.S.

MISCELLANEOUS MATERIALS

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1		9	DAYTON D-101-A #5 x 2'-6" (EPOXY COATED)	+(3) SAMPLES
2		6	DAYTON D-101-A #5 x 3'-8" (EPOXY COATED)	
3		6	DAYTON D-101-A #5 x 4'-10" (EPOXY COATED)	
4		2	DAYTON D-101-A #5 x 2'-11" (EPOXY COATED)	
5		2	DAYTON D-101-A #5 x 4'-4" (EPOXY COATED)	
6		2	DAYTON D-101-A #5 x 5'-8" (EPOXY COATED)	
7		12	DAYTON D-101 DOWEL-IN #5 x 2'-8" (EPOXY COATED)	
8		6	DAYTON D-101 DOWEL-IN #5 x 2'-6" (EPOXY COATED)	
9		9	DAYTON D-101 DOWEL-IN #5 x 1'-3" (EPOXY COATED)	+(3) SAMPLES
10				
11	C-401	40	#4 BENT BAR (LEVEL I)	+(1) SAMPLE
12	C-402	21	#4 BENT BAR (LEVEL I)	
13	C-403D	4	#4 BENT BAR (LEVEL II DUAL COATED)	
14	C-404D	2	#4 BENT BAR (LEVEL II DUAL COATED)	
15	C-501	78	#5 BENT BAR (LEVEL I)	
16	C-502D	6	#5 BENT BAR (LEVEL II DUAL COATED)	
17	C-503D	2	#5 BENT BAR (LEVEL II DUAL COATED)	
18	C-507D	30	#5 BENT BAR (LEVEL II DUAL COATED)	
19	C-601	21	#6 BENT BAR (LEVEL I)	+(1) SAMPLE
20	C-901D	56	#9 BENT BAR (LEVEL II, DUAL COATED)	SAMPLES TO BE SHOP CUT
21		6	#8 x 38'-6" (LEVEL I)	
22		7	#5 x 38'-6" (LEVEL I)	
23		6	#8 x 39'-6" (LEVEL I)	
24		7	#5 x 39'-6" (LEVEL I)	
25		4	#5 x 13'-8" (LEVEL I)	
26	⚠1	(24)	#5 x 8'-10" (LEVEL I DUAL COATED)	
27		6	#5 x 8'-6" (LEVEL II DUAL COATED)	
28		6	#5 x 7'-11" (LEVEL II DUAL COATED)	
29		6	#5 x 7'-4" (LEVEL II DUAL COATED)	
30		6	#5 x 6'-9" (LEVEL II DUAL COATED)	
31		6	#5 x 6'-2" (LEVEL II DUAL COATED)	
32		6	#5 x 5'-7" (LEVEL II DUAL COATED)	
33		18	#5 x 5'-3 1/4" (LEVEL I)	
34		49	#5 x 5'-1" (LEVEL I)	+(1) SAMPLE
35		48	#5 x 4'-6" (LEVEL II, DUAL COATED)	
36		2	#5 x 8'-7" (LEVEL II DUAL COATED)	
37		2	#5 x 8'-1" (LEVEL II DUAL COATED)	
38		2	#5 x 7'-7" (LEVEL II DUAL COATED)	
39		2	#5 x 7'-1" (LEVEL II DUAL COATED)	
40		2	#5 x 6'-7" (LEVEL II DUAL COATED)	
41		2	#5 x 6'-1" (LEVEL II DUAL COATED)	
42		2	#5 x 5'-9" (LEVEL II DUAL COATED)	
43		2	#5 x 5'-5" (LEVEL II DUAL COATED)	
44		2	#9 x 2'-6" (LEVEL II DUAL COATED)	SAMPLES
45		1	2'-0"ϕ x 5'-7 5/16" CORRUGATED STEEL PIPE (GALV.)	DOMESTIC ORIGIN (BY AMERICAN)
46		1	2'-0"ϕ x 5'-8 5/8" CORRUGATED STEEL PIPE (GALV.)	DOMESTIC ORIGIN (BY AMERICAN)
47		1	2'-0"ϕ x 5'-8 3/4" CORRUGATED STEEL PIPE (GALV.)	DOMESTIC ORIGIN (BY AMERICAN)
48		1	2'-0"ϕ x 5'-7 1/8" CORRUGATED STEEL PIPE (GALV.)	DOMESTIC ORIGIN (BY AMERICAN)
49		1	2'-0"ϕ x 5'-7 5/16" CORRUGATED STEEL PIPE (GALV.)	DOMESTIC ORIGIN (BY AMERICAN)
50		1	2'-0"ϕ x 5'-8 5/8" CORRUGATED STEEL PIPE (GALV.)	DOMESTIC ORIGIN (BY AMERICAN)
51		2	2'-0"ϕ x 5'-9" CORRUGATED STEEL PIPE (GALV.)	DOMESTIC ORIGIN (BY AMERICAN)
52		1	2'-0"ϕ x 5'-8 3/4" CORRUGATED STEEL PIPE (GALV.)	DOMESTIC ORIGIN (BY AMERICAN)
53		1	2'-0"ϕ x 5'-7 1/8" CORRUGATED STEEL PIPE (GALV.)	DOMESTIC ORIGIN (BY AMERICAN)
54	MK-CL4	8	SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS	
55	MK-CL5	4	SET OF (4) 0.60"ϕ STRAND LIFTING LOOPS	

PRECAST ABUTMENTS

⚠1 3/11/16 REVISED AS PER ENGINEERS COMM. T.D.

APPROVAL STAMP:
Vermont Agency of Transportation
RECEIVED
Clarendon resubmit 3-15-16.pdf
CK'D BY SC, TM OK'D BY G. Laroche
March 18, 2016
RESUBMIT No Approved
BY K. Higgins DATE 3/28/2016

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

J.A. McDonald, Inc.
CONTRACTOR
LYNDON CENTER, VERMONT

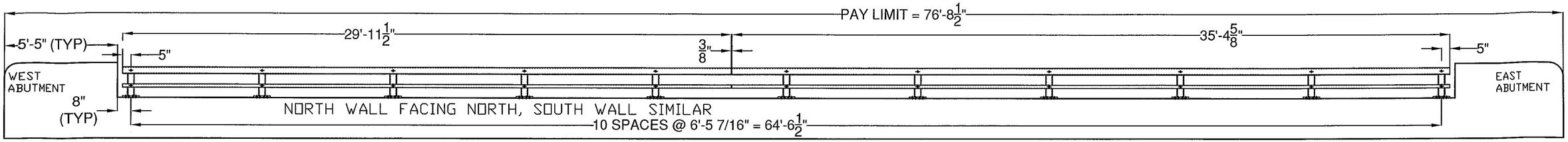
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF RUTLAND

DATE: JAN. 8, 2016
SCALE: NOTED
CHKD: DFTM: T.D.
JOB NO: 23476-015

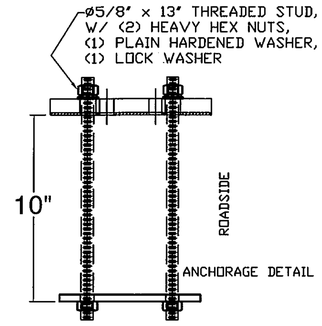
TOWN OF CLARENDON
WALKER MOUNTAIN ROAD, TH #3, RURAL COLLECTOR
BRIDGE NO.: 11 PROJECT NO.: BRO 1443(48)

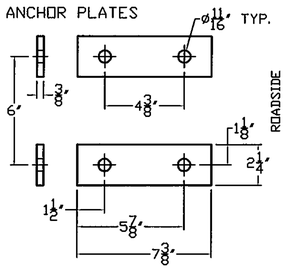
MATERIALS LIST
ABUTMENTS

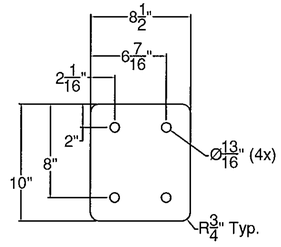
DWG. NO: M2



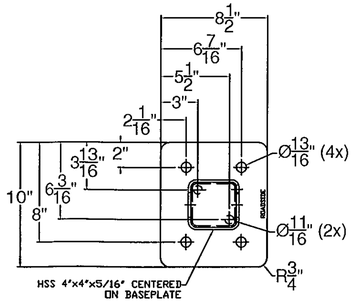
HARDWARE NOTES	
ITEM #	FUNCTION
13	BOLT BOTTOM RAIL TO POST (ITEM #1)
14	BOLT TOP RAIL TO POST (ITEM #1)
15	BOLT BOTTOM SPLICE BARS (ITEM #6) TO BOTTOM RAIL
16	BOLT TOP SPLICE BARS (ITEM #7) TO TOP RAIL

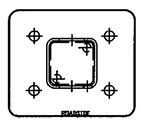


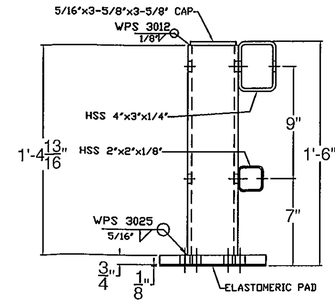


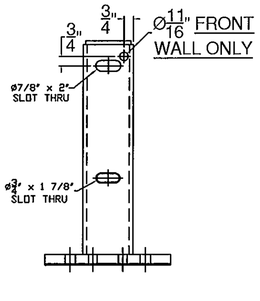


1/8" Elastomeric Pad









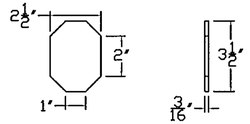
NOTES:
1. ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.
2. PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/16".
3. ALL POSTS SHALL BE SET NORMAL TO GRADE.
4. SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO BRIDGE POSTS AND PREFERABLY TO AT LEAST 4 POSTS.
5. HOLES IN RAILS FOR TUBE ATTACHMENT, WILL BE SHOP-DRILLED AND MAY BE FIELD DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
6. BOLTS SHALL BE TORQUED SNUG TIGHT (APPROXIMATELY 100 FT-LB).
7. RAIL TUBES SHALL BE ATTACHED USING FULL DIAMETER BODY ASTM A449 (TYPE I) ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE TUBE.
8. SEE STANDARD DRAWING G-1 FOR DETAILS OF DELINEATORS. A DELINEATOR SHALL BE INSTALLED AT 30 FOOT SPACING OR THE NEAREST POST. WHITE IS TO BE INSTALLED ON THE DRIVER'S RIGHT. FOR ONE WAY BRIDGES, YELLOW IS TO BE INSTALLED ON THE DRIVER'S LEFT. PAYMENT FOR DELINEATORS SHALL BE INCIDENTAL TO OTHER ITEMS.
9. AESTHETIC TREATMENT TYPE SHALL BE APPLIED AS SPECIFIED IN THE CONTRACT PLANS. IF NONE IS SPECIFIED IT SHALL NOT BE USED. AESTHETIC TREATMENT DETAILED ON THIS SHEET MAY ALSO BE APPLIED ON THE FASCIA SIDE OF THE RAIL, IF SPECIFIED IN THE CONTRACT PLANS.
10. BRIDGE RAILING SHALL HAVE A RUBBED FINISH IN ACCORDANCE WITH SECTION 501.
11. HOLES FOR MOUNTING DELINEATORS TO BE FIELD DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.

BILL OF MATERIAL

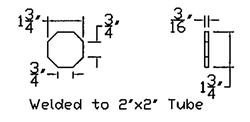
ITEM #	QTY	PART #	DESCRIPTION	ASTM DESIGNATION
1	22	0033.90017	TWO RAIL POST & BASE PLATE ASSEMBLY	A572 Gr. 50, A500 Gr. B
2	2	TBD	4" X 3" X 1/4" RAIL @ 29'-11 1/2" W/ END PLATES	A500 Gr. B / A572 Gr. 50
3	2	TBD	4" X 3" X 1/4" RAIL @ 35'-4 5/8" W/ END PLATES	A500 Gr. B / A572 Gr. 50
4	2	TBD	2" X 2" X 1/8" RAIL @ 29'-11 1/2" W/ END PLATES	A500 Gr. B / A572 Gr. 50
5	2	TBD	2" X 2" X 1/8" RAIL @ 35'-4 5/8" W/ END PLATES	A500 Gr. B / A572 Gr. 50
6	2	0033.90069	1-1/2" X 1-1/2" FIX. SPL BAR @ 2' 4"	A572 Gr. 50
7	2	0033.90071	2-1/4" X 3-1/4" FIX. SPL. BAR @ 2' 4"	A572 Gr. 50
8	44	0033.00295	3/8" X 2 1/4" X 7 3/8" ANCHOR PLATES	A36
9	90*	0042.05813	ø 5/8" X 13" ANCHOR STUDS	A449
10	178*	0080.15901	ø 5/8" HEAVY HEX NUTS	A563
11	88	0080.15911	ø 5/8" FLAT WASHERS	F436
12	88	0080.15920	ø 5/8" LOCK WASHERS	ASME B18.21
13	22	0080.05565	ø 5/8" X 7 1/2" SLOTTED, ROUND HEAD BOLT, NUT, F.W., & L.W.	A449, A563, F436, & ASME B18.21
14	22	0080.06410	ø 3/4" X 8 1/2" SLOTTED, ROUND HEAD BOLT, NUT, F.W., & L.W.	A449, A563, F436, & ASME B18.21
15	8	0080.05275	ø 5/8" X 3" HEX BOLT, NUT, F.W., & L.W.	A325, A563, F436, & ASME B18.21
16	8	0080.07330	ø 7/8" X 5 1/2" HEX BOLT, NUT, F.W., & L.W.	A325, A563, F436, & ASME B18.21
17	22	0033.00053	1/8" ELASTOMERIC PAD	D2240
18	2	0054.900015	APPROACH, END WALL CONNECTORS	PER BOM
19	2	0054.900016	TRAILING, END WALL CONNECTORS	PER BOM
20	6		DELINEATORS (SUPPLIED BY F.R. LaFAYETTE)	ALUMINUM

*-2 EXTRA FOR VOAT TESTING

Vermont Agency of Transportation
RECEIVED
CK'D BY RF, SC OK'D BY G. Laroche
April 11, 2016
RESUBMIT No Approved
BY K. Higgins DATE 04/11/2016



Welded to 4"x3" Tube



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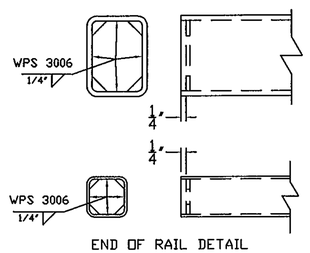


END OF RAIL DETAIL

ITEM #: 525.45

SHEET 1 OF 3

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

TOLERANCE UNLESS OTHERWISE NOTED:
FRACTIONS = ± 1/16"
ANGLES = ± 1/2°
DIAMETERS = ± 1/32"

ORTHOGRAPHIC PROJECTION

BRIDGE RAIL DETAILS SHEET

ROUTE NO. T.H. 3 (CLASS 2), RURAL COLLECTOR , BRIDGE # 11
TOWN OF CLARENDON, RUTAND COUNTY, VT.

R	NO.	DATE	DESCRIPTION	BY	R	NO.	DATE	DESCRIPTION	BY
E	1	2/11/16	REVISE PER 2/8/16 MARK-UP	E.P.	E				
V	2	3/31/16	REVISE END WALL CONNECTORS (TIP DOWN)	E.P.	V				

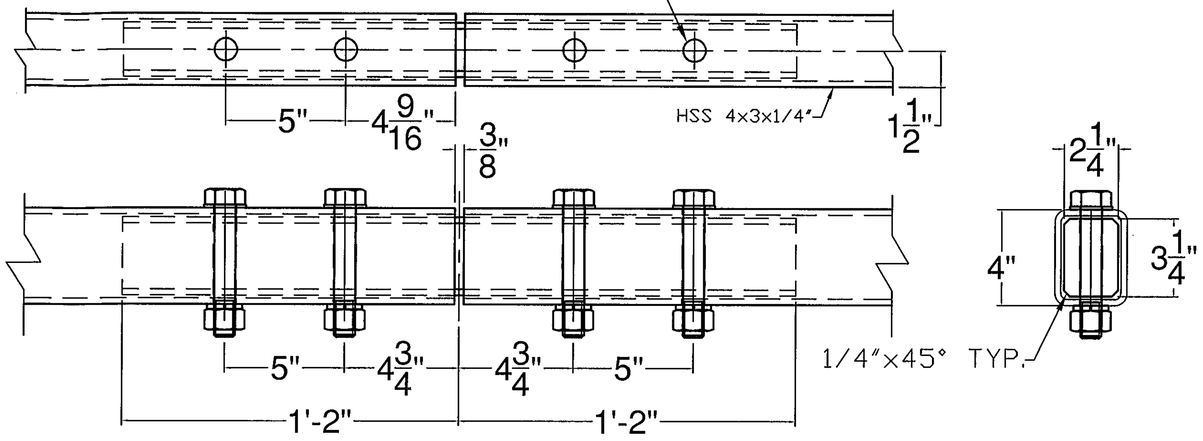
ELDERLEE, INC.
OAKS CORNERS, NEW YORK 14518
E-Mail: dlong@elderlee.com / epeek@elderlee.com
Tel: 315-789-6670 Fax: 315-789-6615

CERTIFIED FABRICATOR

DRAWN	E.P.	1/20/16
CHECKED	D.L.	1/20/16
APPROVED	.	.
SCALE	SCHEMATIC	
DRAWING NO.	FRL - CLARENDON (48)	

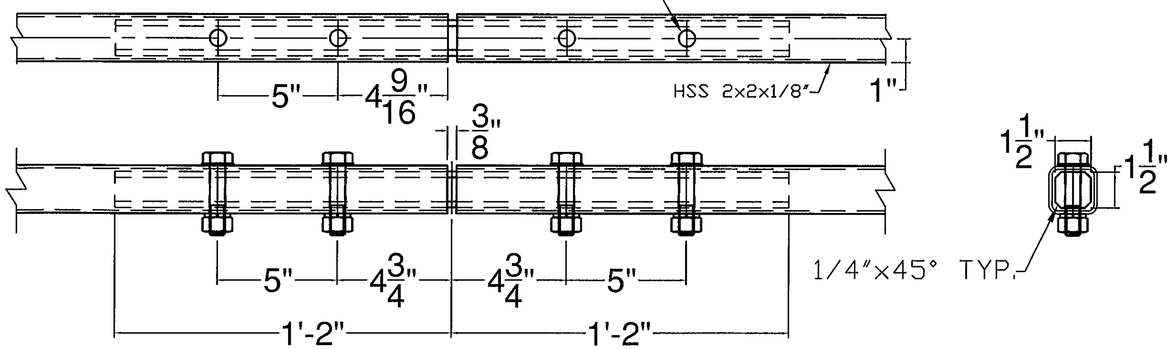
ø15/16" THRU TUBE & SPLICE BAR,
ø7/8"X5 1/2" HEX BOLT & NUT,
W/ (1) PLAIN HARDENED WASHER &
(1) LOCK WASHER (4 PLACES)

TOP RAIL FIXED SPLICE DETAIL



ø11/16" THRU TUBE & SPLICE BAR,
ø5/8"X3" HEX BOLT & NUT,
W/ (1) PLAIN HARDENED WASHER &
(1) LOCK WASHER (4 PLACES)

BOTTOM RAIL FIXED SPLICE DETAIL



Vermont Agency of Transportation
RECEIVED

CK'D BY RF, SC OK'D BY G. Laroche

April 11, 2016

RESUBMIT No Approved

BY K. Higgins DATE 04/11/2016

ITEM #: 525.45

SHEET 2 OF 3

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

TOLERANCE UNLESS OTHERWISE NOTED:
FRACTIONS = ± 1/16"
ANGLES = ± 1/2°
DIAMETERS = ± 1/32"

ORTHOGRAPHIC PROJECTION

BRIDGE RAIL DETAILS SHEET

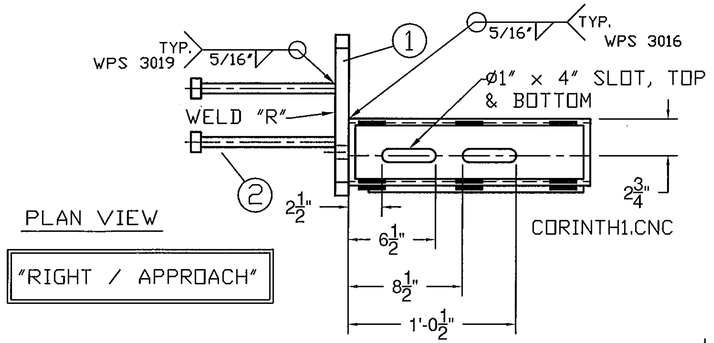
ROUTE NO. T.H. 3 (CLASS 2), RURAL COLLECTOR , BRIDGE # 11
TOWN OF CLARENDON, RUTAND COUNTY, VT.

R	NO.	DATE	DESCRIPTION	BY	R	NO.	DATE	DESCRIPTION	BY
E	1	2/11/16	REVISE PER 2/8/16 MARK-UP	E.P.	E				
V	2	3/31/16	REVISE END WALL CONNECTORS (TIP DOWN)	E.P.	V				

ELDERLEE, INC.
CERTIFIED FABRICATOR
OAKS CORNERS, NEW YORK 14518
E-Mail: dlong@elderlee.com / epeek@elderlee.com
Tel: 315-789-6670 Fax: 315-789-6615

DRAWN	E.P.	1/20/16
CHECKED	D.L.	1/20/16
APPROVED	.	.
SCALE	SCHEMATIC	
DRAWING NO.	FRL - CLARENDON (48)	

BILL OF MATERIALS			
ITEM #	QTY	DESCRIPTION	ASTM #
1	1	DBL TUBE WALL PLATE - 1" X 12" x 25"	ASTM A572 Gr. 50
2	10	ø3/4" X 10" STUD	TO BE PURCHASED
3	2	5" X 5" X 5/16" TUBE W/ SLOTS @ 18"	ASTM A500 Gr. B
4	2	SHIM PL 1/2" X 4" X 17" W/ SLOTS	ASTM A709 Gr. 36 CVN
5	2	SHIM PL 1/2" X 4" X 17" (W/O SLOTS)	ASTM A709 Gr. 36 CVN

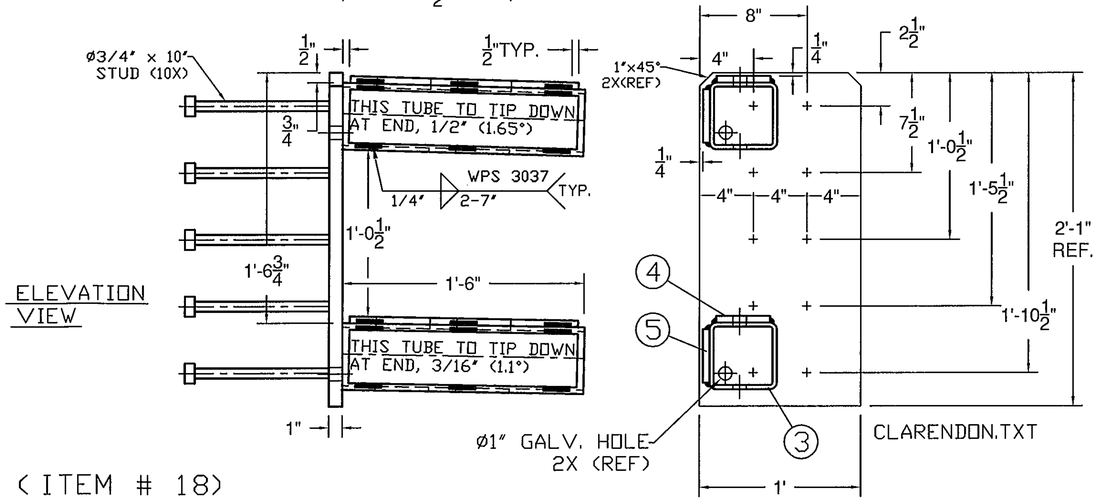


PLAN VIEW

"RIGHT / APPROACH"

PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE SPLICE TUBES AND FILL PLATES

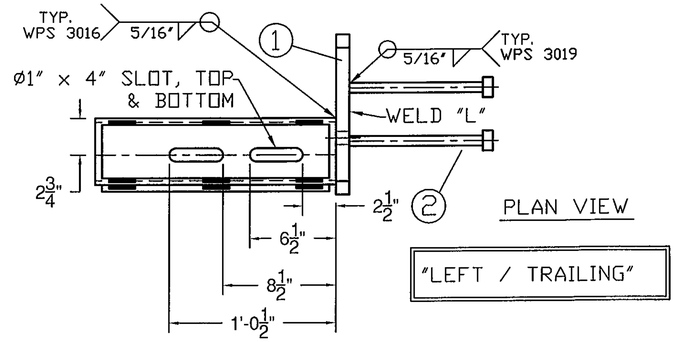
FR LAFAYETTE
CLAREDON (48)
P/N: 0054.900015
QTY: 2



ELEVATION VIEW

(ITEM # 18)

BILL OF MATERIALS			
ITEM #	QTY	DESCRIPTION	ASTM #
1	1	DBL TUBE WALL PLATE - 1" X 12" x 25"	ASTM A572 Gr. 50
2	10	ø3/4" X 10" STUD	TO BE PURCHASED
3	2	5" X 5" X 5/16" TUBE W/ SLOTS @ 18"	ASTM A500 Gr. B
4	2	SHIM PL 1/2" X 4" X 17" W/ SLOTS	ASTM A709 Gr. 36 CVN
5	2	SHIM PL 1/2" X 4" X 17" (W/O SLOTS)	ASTM A709 Gr. 36 CVN

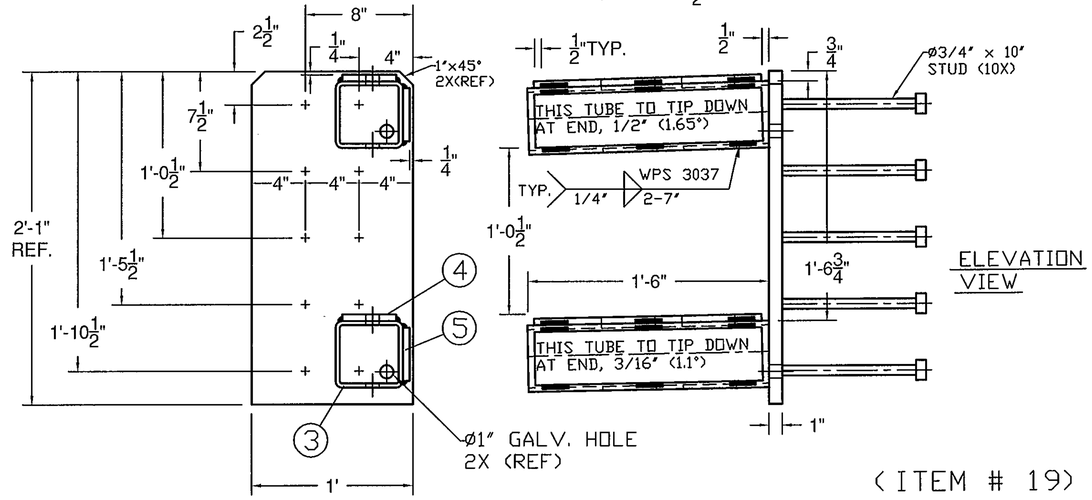


PLAN VIEW

"LEFT / TRAILING"

PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE SPLICE TUBES AND FILL PLATES

FR LAFAYETTE
CLAREDON (48)
P/N: 0054.900016
QTY: 2



ELEVATION VIEW

(ITEM # 19)

Vermont Agency of Transportation
RECEIVED
CK'D BY RF, SC OK'D BY G. Laroche
April 11, 2016
RESUBMIT No Approved
BY K. Higgins DATE 04/11/2016

ITEM #: 525.45

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

TOLERANCE UNLESS OTHERWISE NOTED:
FRACTIONS = ± 1/16"
ANGLES = ± 1/2°
DIAMETERS = ± 1/32"

ORTHOGRAPHIC PROJECTION

SHEET 3 OF 3

BRIDGE RAIL DETAILS SHEET

ROUTE NO. T.H. 3 (CLASS 2), RURAL COLLECTOR , BRIDGE # 11
TOWN OF CLARENDON, RUTLAND COUNTY, VT.

R	NO.	DATE	DESCRIPTION	BY	R	NO.	DATE	DESCRIPTION	BY
E	1	2/11/16	REVISE PER 2/8/16 MARK-UP	E.P.	E				
V	2	3/31/16	REVISE END WALL CONNECTORS (TIP DOWN)	E.P.	V				

ELDERLEE, INC.
CERTIFIED FABRICATOR
OAKS CORNERS, NEW YORK 14518
E-Mail: dlong@elderlee.com / epeek@elderlee.com
Tel: 315-789-6670 Fax: 315-789-6615

DRAWN	E.P.	1/20/16
CHECKED	D.L.	1/20/16
APPROVED	.	.
SCALE	SCHEMATIC	
DRAWING NO.	FRL - CLARENDON (48)	

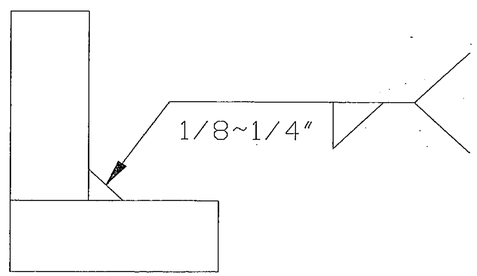
WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE #3

Material Specification	A572 GR. 50 /A500 GR. B
Welding Process	FCAW-G
Manual or Machine	SEMAUTOMATIC
Position of Welding	FLAT / HORIZONTAL
Filler Metal Specification	A5.29
Filler Metal Classification	E81T1-Ni1C-JH4
Flux	N/A
Shielding Gas	CO 2 Dew Point -40DEG F Flow Rate 50CFH
Single or Multiple Pass	SINGLE
Single or Multiple Arc	SINGLE
Welding Current	DC
Polarity	REVERSE ELECTRODE POSITIVE
Welding Progression	STRINGER
Root Treatment	PER D1.5
Preheat and Interpass Temperature	PER D1.5
Postheat Temperature	NONE
Heat Input	Min ____ Max

Vermont Agency of Transportation
RECEIVED
CK'D BY RF, SC OK'D BY G. Laroche
April 11, 2016
RESUBMIT No Approved
BY K. Higgins DATE 04/11/2016

WELDING PROCEDURE

Pass no.	Electrode size	Welding Current		Travel speed	Joint detail
		Amperes	Volts		
1	1/16	310	25	11	
Variable	LIMITS	341 TO 279	27 TO 23	12 TO 10	

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

Procedure No. 3006
Revision No. ____

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 3/31/2016

Form III-2

WELDING PROCEDURE SPECIFICATION

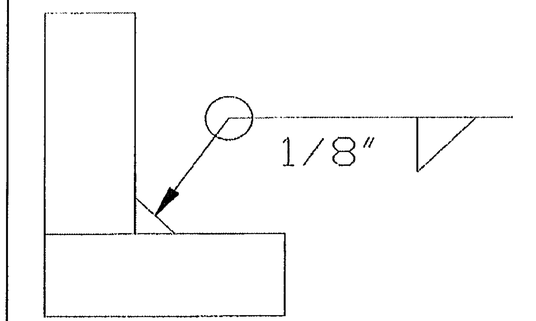
PQR ELDERLEE #3

Material Specification	A572 GR. 50/ A500 GR. B
Welding Process	FCAW-G
Manual or Machine	SEMAUTOMATIC
Position of Welding	FLAT/HORIZONTAL
Filler Metal Specification	A5.29
Filler Metal Classification	E81T1-Ni1C-JH4
Flux	N/A
Shielding Gas	CO 2 Dew Point -40DEG F FLOW RATE 50 CFH
Single or Multiple Pass	SINGLE
Single or Multiple Arc	SINGLE
Welding Current	DC
Polarity	REVERSE ELECTRODE POSITIVE
Welding Progression	STRINGER
Root Treatment	PER D1.5
Preheat and Interpass Temperature	PER. D1.5
Postheat Temperature	NONE
Heat Input	Min ____ Max ____

Vermont Agency of Transportation
RECEIVED
CK'D BY ____ OK'D BY RF
February 11, 2016
RESUBMIT NO Approved
BY KH DATE 02/16/2016

WELDING PROCEDURE

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



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

Procedure No. 3012
Revision No. ____

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 2/11/2016

WELDING PROCEDURE SPECIFICATION

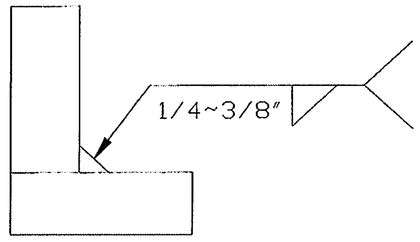
PQR ELDERLEE #3

Material Specification	ASTM A572 GR. 50 / ASTM A500 GR. B		
Welding Process	FCAW-G		
Manual or Machine	SEMAUTOMATIC		
Position of Welding	FLAT/HORIZONTAL		
Filler Metal Specification	A5.29		
Filler Metal Classification	E81T1-Ni1C-JH4		
Flux	N/A		
Shielding Gas	CO 2	Dew Point -40DEG F Flow Rate 50CFH	
Single or Multiple Pass	SINGLE		
Single or Multiple Arc	SINGLE		
Welding Current	DC		
Polarity	REVERSE		
Welding Progression	STRINGER		
Root Treatment	PER D1.5		
Preheat and Interpass Temperature	PER D1.5		
Postheat Temperature	NONE		
Heat Input	Min	Max	

Vermont Agency of Transportation
RECEIVED
CK'D BY OK'D BY RF
February 11, 2016
RESUBMIT NO Approved
BY KH DATE 02/16/2016

WELDING PROCEDURE

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



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

Procedure No. 3016

Revision No.

Contractor Elderlee, Inc.

Authorized By RANDY SCOTT

Date 2/11/2016

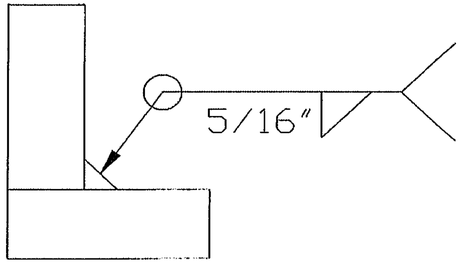
WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE #3

Material Specification	ASTM A572 GR. 50 /ASTM A108
Welding Process	FCAW-G
Manual or Machine	SEMAUTOMATIC
Position of Welding	FLAT/HORIZONTAL
Filler Metal Specification	A5.29
Filler Metal Classification	E81T1-Ni1C-JH4
Flux	N/A
Shielding Gas	CO 2 Dew Point -40DEG F Flow Rate 50CFH
Single or Multiple Pass	SINGLE
Single or Multiple Arc	SINGLE
Welding Current	DC
Polarity	REVERSE ELECTRODE POSITIVE
Welding Progression	STRINGER
Root Treatment	CLEAN PER D1.5
Preheat and Interpass Temperature	PER D1.5
Postheat Temperature	NONE
Heat Input	Min _____ Max _____

Vermont Agency of Transportation
RECEIVED
CK'D BY OK'D BY RF
February 11, 2016
RESUBMIT NO Approved
BY KH DATE 02/16/2016

WELDING PROCEDURE

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

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

Procedure No. 3019
Revision No. _____

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 2/11/2016

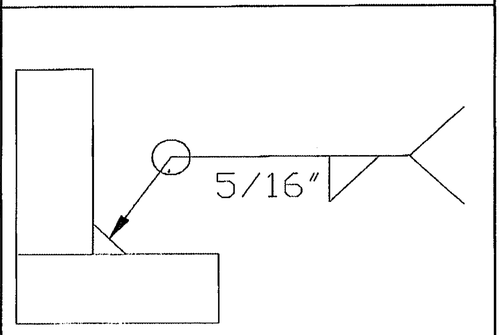
WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE #3

Material Specification	A572 GR. 50 / A500 GR. B
Welding Process	FCAW-G
Manual or Machine	SEMAUTOMATIC
Position of Welding	FLAT/HORIZONTAL
Filler Metal Specification	A5.29
Filler Metal Classification	E81T1-Ni1C-JH4
Flux	N/A
Shielding Gas	CO 2 Dew Point -40DEG F Flow Rate 50CFH
Single or Multiple Pass	SINGLE
Single or Multiple Arc	SINGLE
Welding Current	DC ELECTRODE POSITIVE
Polarity	REVERSE
Welding Progression	STRINGER
Root Treatment	PER D1.5
Preheat and Interpass Temperature	PER D1.5
Postheat Temperature	NONE
Heat Input	Min _____ Max _____

Vermont Agency of Transportation
RECEIVED
CK'D BY _____ OK'D BY RF
February 11, 2016
RESUBMIT NO Approved
BY KH DATE 02/16/2016

WELDING PROCEDURE

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

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

Procedure No. 3025
Revision No. _____

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 2/11/2016

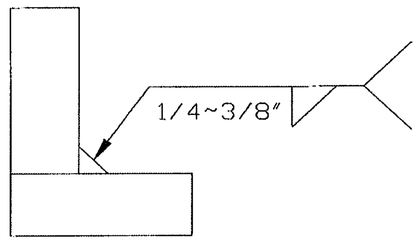
WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE #3

Material Specification	ASTM A500 GR. B / ASTM A709 GR. 36 CVN
Welding Process	FCAW-G
Manual or Machine	SEMAUTOMATIC
Position of Welding	FLAT/HORIZONTAL
Filler Metal Specification	A5.29
Filler Metal Classification	E81T1-Ni1C-JH4
Flux	N/A
Shielding Gas	CO 2 Dew Point -40DEG F Flow Rate 50CFH
Single or Multiple Pass	SINGLE
Single or Multiple Arc	SINGLE
Welding Current	DC
Polarity	REVERSE ELECTRODE POSITIVE
Welding Progression	STRINGER
Root Treatment	PER D1.5
Preheat and Interpass Temperature	PER D1.5
Postheat Temperature	NONE
Heat Input	Min _____ Max _____

Vermont Agency of Transportation
RECEIVED
CK'D BY _____ OK'D BY RF
February 11, 2016
RESUBMIT NO Approved
BY KH DATE 02/16/2016

WELDING PROCEDURE

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

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

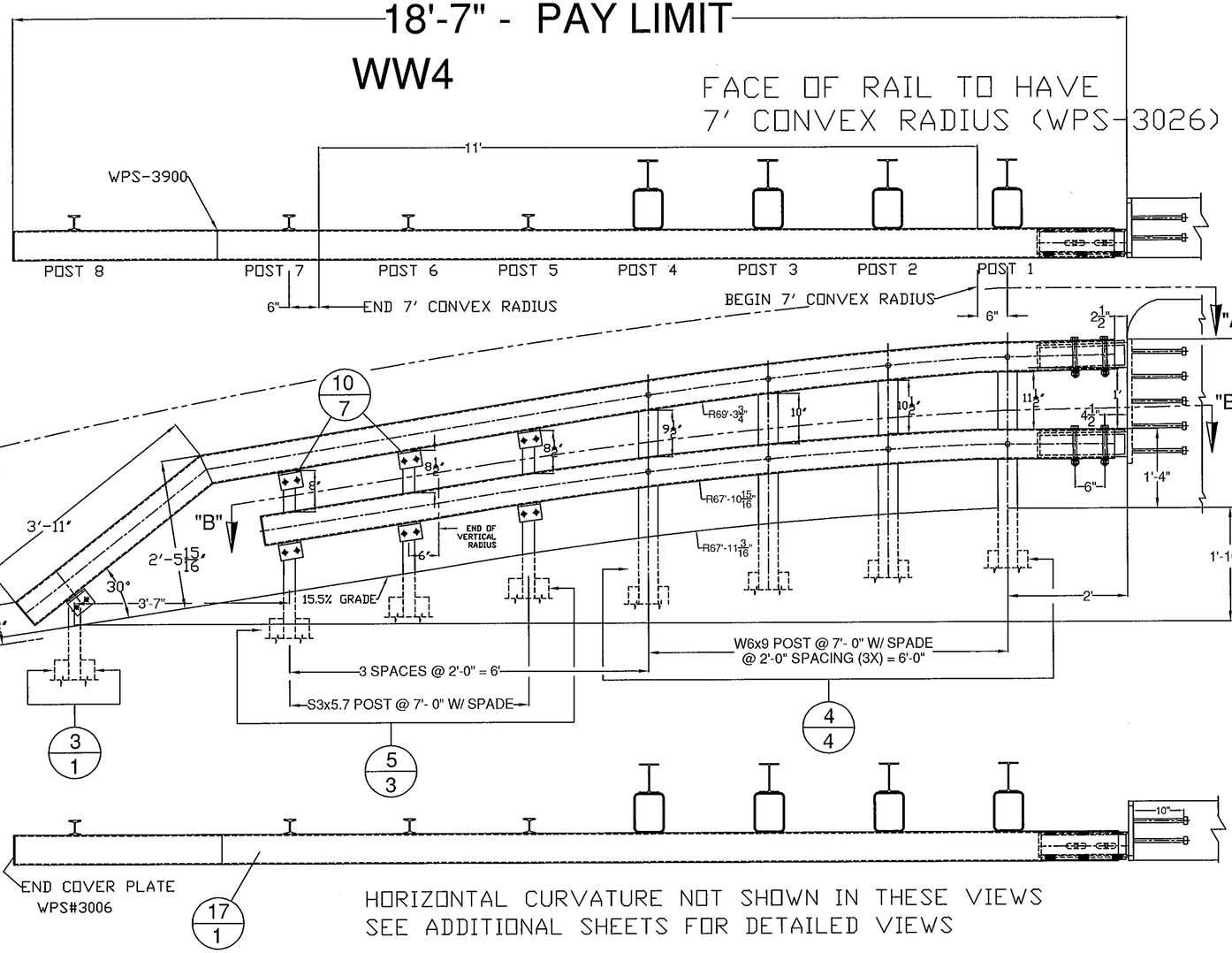
Procedure No. 3037
Revision No. _____

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 12/1/2014

18'-7" - PAY LIMIT

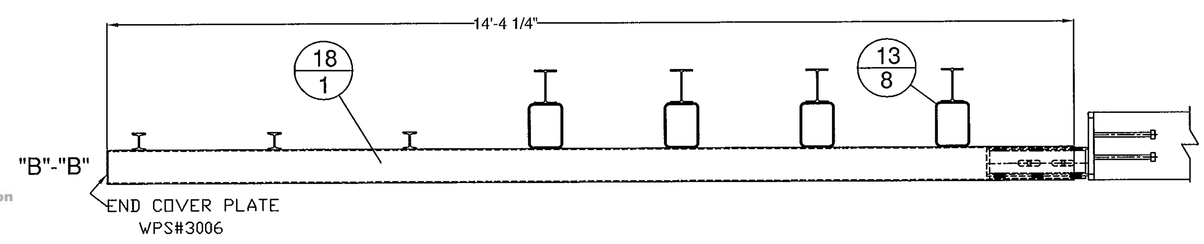
WW4

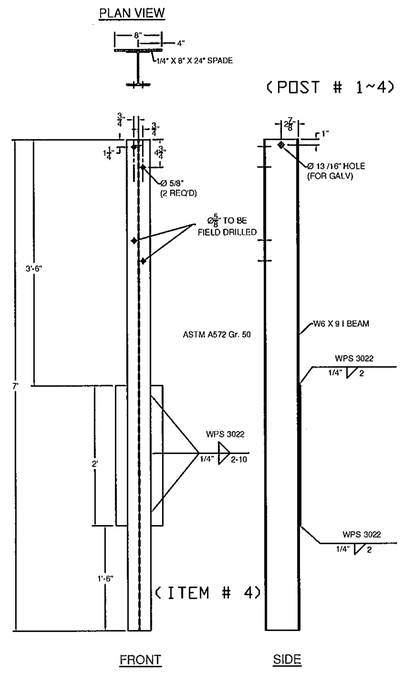
FACE OF RAIL TO HAVE
7' CONVEX RADIUS (WPS-3026)

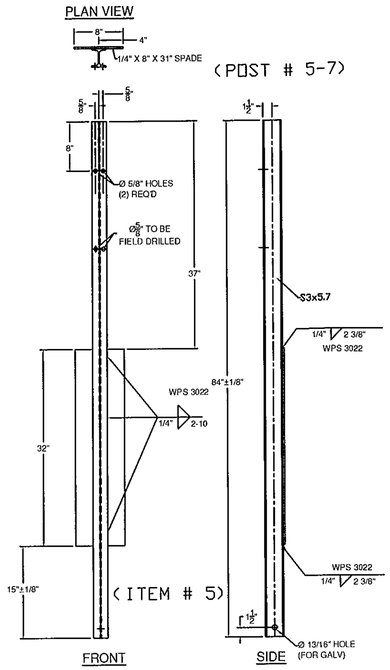


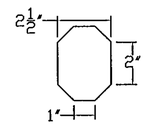
HORIZONTAL CURVATURE NOT SHOWN IN THESE VIEWS
SEE ADDITIONAL SHEETS FOR DETAILED VIEWS

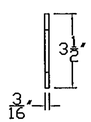
GUARD RAIL TO BRIDGE RAIL TRANSITION



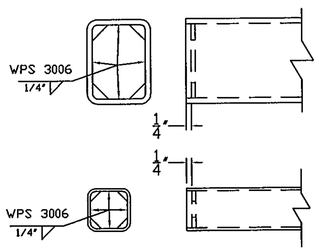




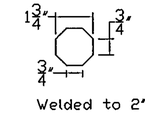


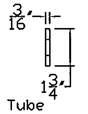


Welded to 4"x3" Tube



END OF RAIL DETAIL





Welded to 2"x2" Tube

BILL OF MATERIALS, WW4				
ITEM #	QTY.	COMPONENT #	DESCRIPTION	MATERIAL (ASTM)
3	1	0013.57060	3' I-END POST W/SPD @ 3'-8' LG	ASTM A572 Gr. 50
4	4	-	W6X9 POST @ 7' W/SPD & Ø9/16" HOLE (SPECIAL)	ASTM A572 Gr. 50
5	3	-	3' I-POST, PUNCH 8", W/8X32" SPADE @ 7' (SPECIAL)	ASTM A572 Gr. 50
10	7	0054.00050	REG BB SHELF ANGLES @ 4-1/2"	ASTM A709 Gr. 50
13	8	0054.00563	6X8" TRANS. TUBE B/O @ 6' LG	A500 Gr. B
17	1	-	6X6" BB TOP TRANS @ 19'-4" LG W/ TURNDOWN & 7' CONVEX RADIUS	A500 Gr. B
18	1	-	6X6" BB BTM TRANS @ 14'-4 1/4" LG W/ 7' CONVEX RADIUS & VERT. RAD	A500 Gr. B
19	7	0080.03355	3/8" X 7 1/2" BOLT, NUT, & 2 FW	A307, A563, F436
20	7	0080.04100	1/2" x 1-1/2" BOLT, NUT, & FW	A307, A563, F436
21	16	0080.04120	1/2" x 1-1/2" BOLT, NUT, & 2 FW	A307, A563, F436
23	4	0080.06340	3/4" X 7-1/2" BOLT, NUT, 2 FW	A325, A563, F436
23	4		3/4" LOCK WASHER	ASME B18.21.1
24	8	0080.06370	3/4" X 8" CARR BOLT, NUT, FW & LW	A307, A563, F436

900.620 SPECIAL PROVISION (GUARDRAIL
ITEM #: APPROACH SECTION TO CONCRETE BRIDGE RAIL)

SHEET 1 OF 12

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

TOLERANCE UNLESS OTHERWISE NOTED:
FRACTIONS = ± 1/16"
ANGLES = ± 1/2°
DIAMETERS = ± 1/32"

SPECIAL PROVISION, GRAS - CONCRETE COMBINATION BR.

ROUTE NO. T.H. 3 (CLASS 2), RURAL COLLECTOR, BRIDGE # 11
TOWN OF CLARENDON, RUTAND COUNTY, VT.

R	NO.	DATE	DESCRIPTION	BY	R	NO.	DATE	DESCRIPTION	BY
E	1	3/10/16	REVISED PER 2/23/16 MARK-UP	E.P.	E				
V	2	4/8/16	REVISED PER 3/22/16 MARK-UP	E.P.	V				

ELDERLEE, INC.
OAKS CORNERS, NEW YORK 14518
email: dlong@elderlee.com / epeek@elderlee.com
Tel: 315-789-6670 Fax: 315-789-6615

CERTIFIED FABRICATOR
ORTHOGRAPHIC PROJECTION

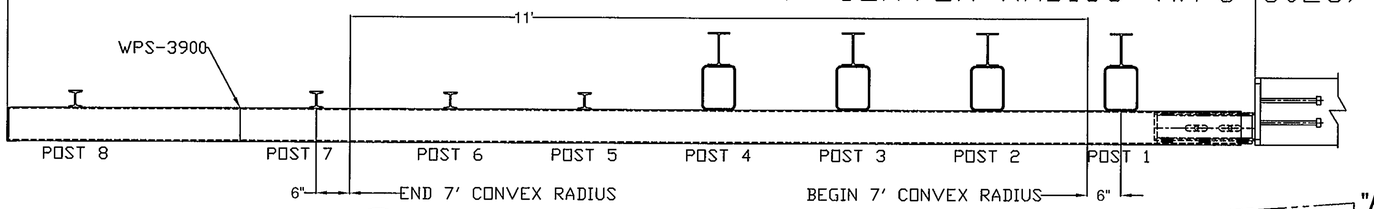
DRAWN	E.P.	01/29/16
CHECKED	D.L.	.
APPROVED	M.V.	.
SCALE	SCHEMATIC	
DRAWING NO.	FRL - CLARENDON - T	

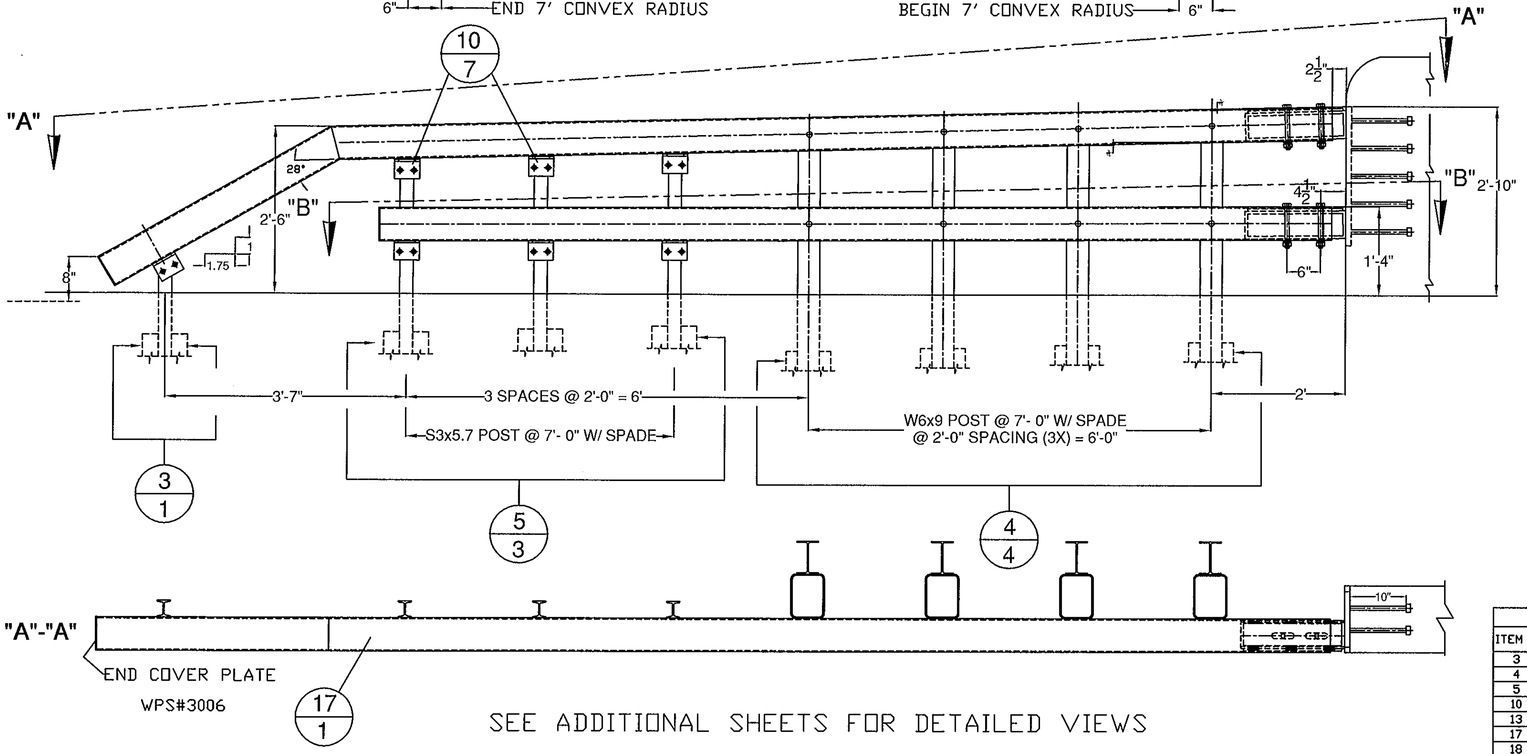
Vermont Agency of Transportation
RECEIVED
CK'D BY SC, RF OK'D BY G. Laroche
April 8, 2016
RESUBMIT No Approved
BY K. Higgins DATE 04/11/2016

18'-7" - PAY LIMIT

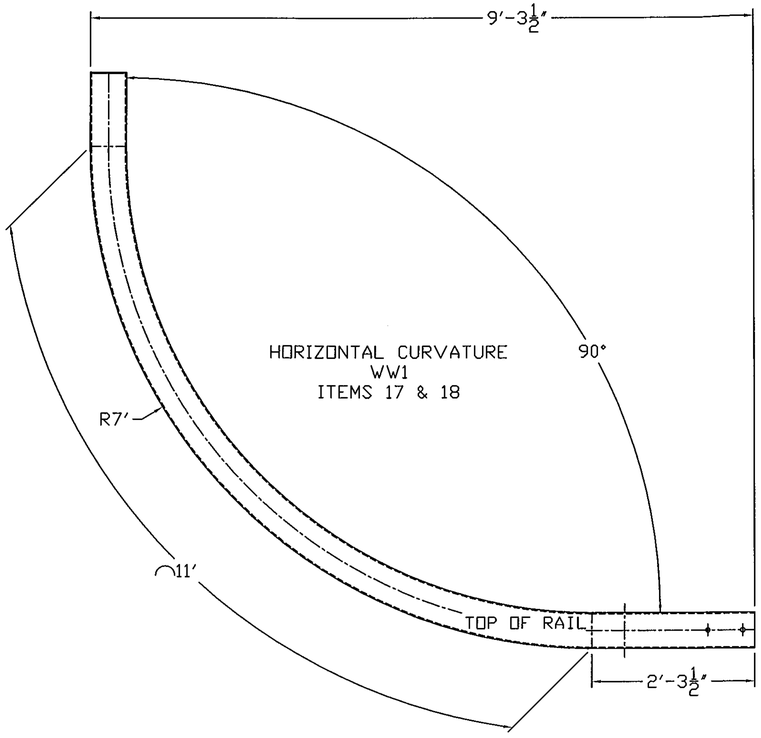
WW1

FACE OF RAIL TO HAVE
7' CONVEX RADIUS (WPS-3026)

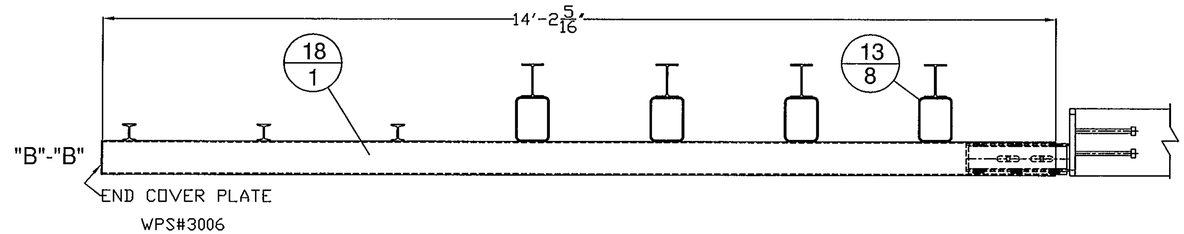




SEE ADDITIONAL SHEETS FOR DETAILED VIEWS



GUARD RAIL TO BRIDGE RAIL TRANSITION



BILL OF MATERIALS, WW1				
ITEM #	QTY.	COMPONENT #	DESCRIPTION	MATERIAL (ASTM)
3	1	0013.57060	3' I-END POST W/SPD @ 3'-8" LG	ASTM A572 Gr. 50
4	4	-	W6X9 POST @ 7' W/SPD & Ø9/16" HOLES @ VARIOUS	ASTM A572 Gr. 50
5	3	-	3' I-POST, PUNCH 8" & VARIOUS', W/8X32" SPADE @ 7'	ASTM A572 Gr. 50
10	7	0054.00050	REG BB SHELF ANGLES @ 4-1/2"	ASTM A709 Gr. 50
13	8	0054.00563	6X8' TRANS. TUBE B/D @ 6' LG	A500 Gr. B
17	1	-	6X6' BB TOP TRANS @ 14'-11 1/8' LG W/ TURNDOWN & 7' CONVEX RADIUS	A500 Gr. B
18	1	-	6X6' BB BTM TRANS @ 14'-2 5/16' LG W/ 7' CONVEX RADIUS	A500 Gr. B
19	7	0080.03355	3/8" X 7 1/2" BOLT, NUT, & 2 FW	A307, A563, F436
20	7	0080.04100	1/2" x 1-1/2" BOLT, NUT, & FW	A307, A563, F436
21	16	0080.04120	1/2" x 1-1/2" BOLT, NUT, & 2 FW	A307, A563, F436
23	4	0080.06340	3/4" X 7-1/2" BOLT, NUT, 2 FW	A325, A563, F436
23	4		3/4" LOCK WASHER	ASME B18.21.1
24	8	0080.06370	3/4" X 8" CARR BOLT, NUT, FW & LW	A307, A563, F436

900.620 SPECIAL PROVISION (GUARDRAIL
ITEM #: APPROACH SECTION TO CONCRETE BRIDGE RAIL)

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

TOLERANCE UNLESS OTHERWISE NOTED:
FRACTIONS = ± 1/16"
ANGLES = ± 1/2°
DIAMETERS = ± 1/32"

SPECIAL PROVISION, GRAS - CONCRETE COMBINATION BR.

ROUTE NO. T.H. 3 (CLASS 2), RURAL COLLECTOR , BRIDGE # 11
TOWN OF CLARENDON, RUTAND COUNTY, VT.

R	NO.	DATE	DESCRIPTION	BY
E	1	3/10/16	REVISED PER 2/23/16 MARK-UP	E.P.
V	2	4/8/16	REVISED PER 3/22/16 MARK-UP	E.P.

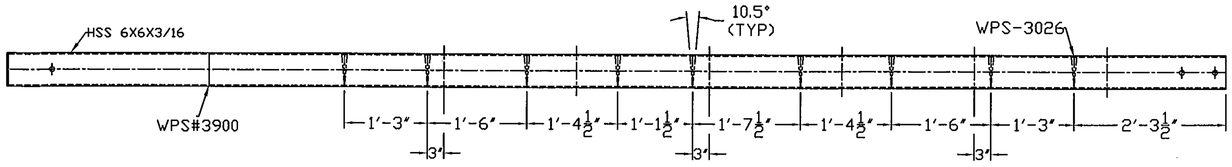
R	NO.	DATE	DESCRIPTION	BY
E				
V				

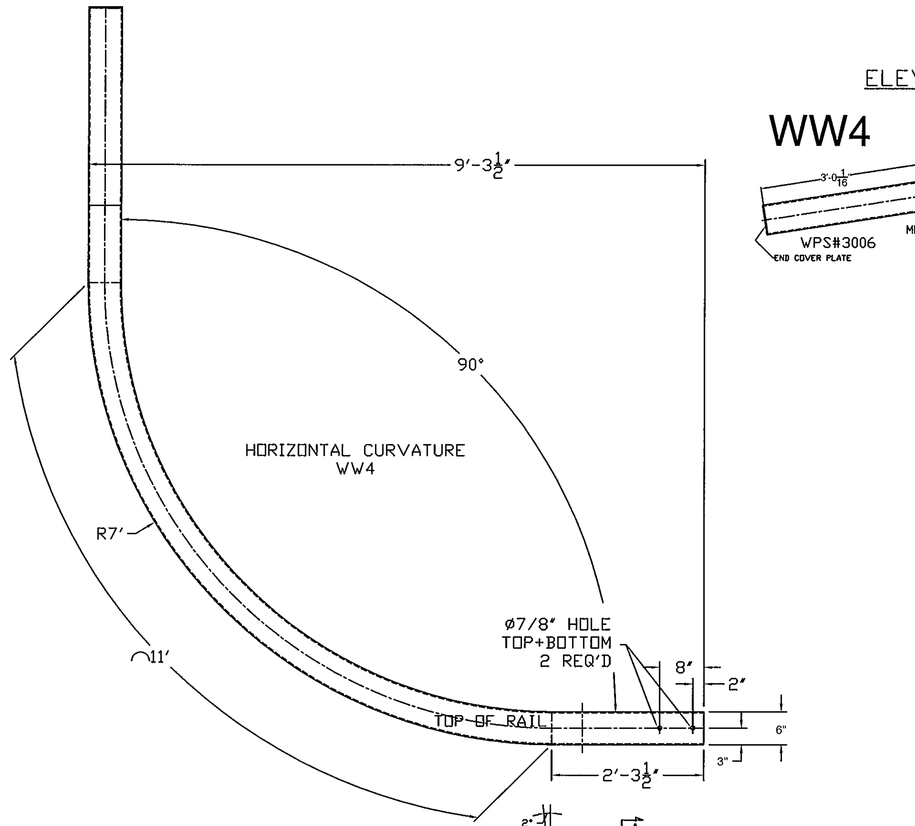
ELDERLEE, INC.
OAKS CORNERS, NEW YORK 14518
email: dlong@elderlee.com / epeek@elderlee.com
Tel: 315-789-6670 Fax: 315-789-6615

CERTIFIED FABRICATOR
ORTHOGRAPHIC PROJECTION

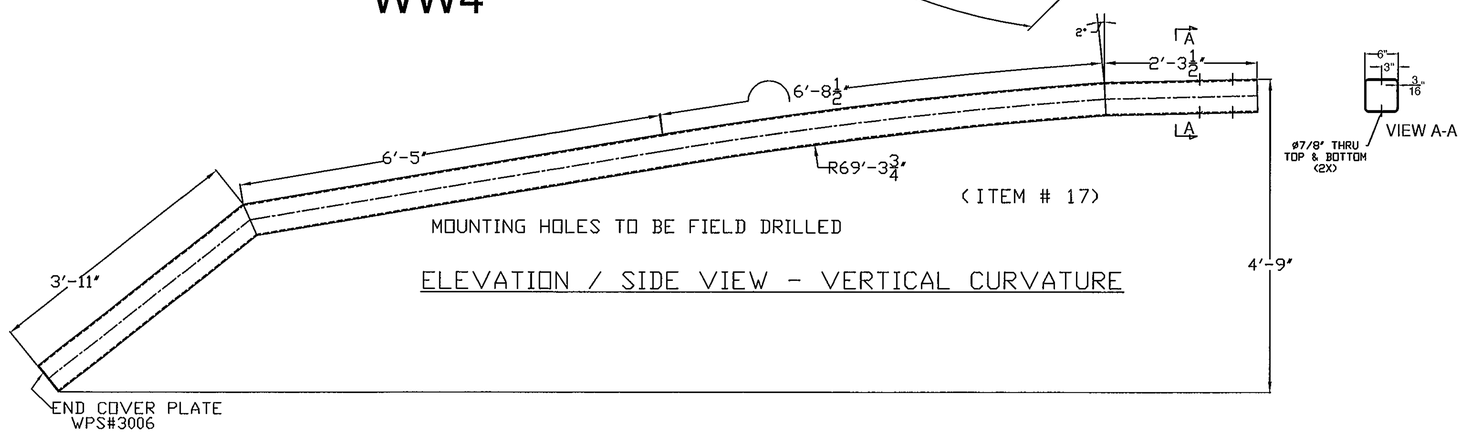
DRAWN	E.P.	01/29/16
CHECKED	D.L.	.
APPROVED	M.V.	.
SCALE	SCHEMATIC	
DRAWING NO.	FRL - CLARENDON - T	

Vermont Agency of Transportation
RECEIVED
CK'D BY SC, RF OK'D BY G. Laroche
April 8, 2016
RESUBMIT No Approved
BY K. Higgins DATE 04/11/2016



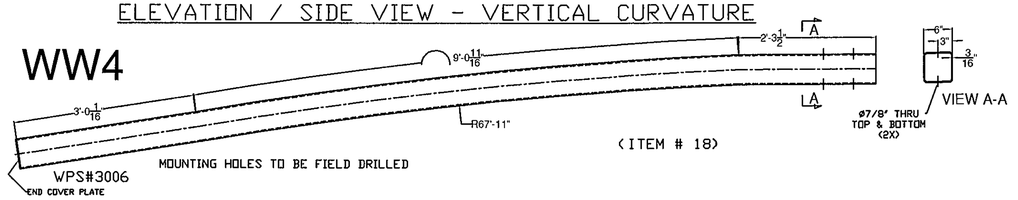


WW4



ELEVATION / SIDE VIEW - VERTICAL CURVATURE

WW4



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ITEM #: 900.620 SPECIAL PROVISION (GUARDRAIL APPROACH SECTION TO CONCRETE BRIDGE RAIL)

SHEET 3 OF 12

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

TOLERANCE UNLESS OTHERWISE NOTED:
FRACTIONS = ± 1/16"
ANGLES = ± 1/2°
DIAMETERS = ± 1/32"

SPECIAL PROVISION, GRAS - CONCRETE COMBINATION BR.

ROUTE NO. T.H. 3 (CLASS 2), RURAL COLLECTOR , BRIDGE # 11
TOWN OF CLARENDON, RUTAND COUNTY, VT.

R	NO.	DATE	DESCRIPTION	BY
E	1	3/10/16	REVISED PER 2/23/16 MARK-UP	E.P.
V	2	4/8/16	REVISED PER 3/22/16 MARK-UP	E.P.

R	NO.	DATE	DESCRIPTION	BY
E				
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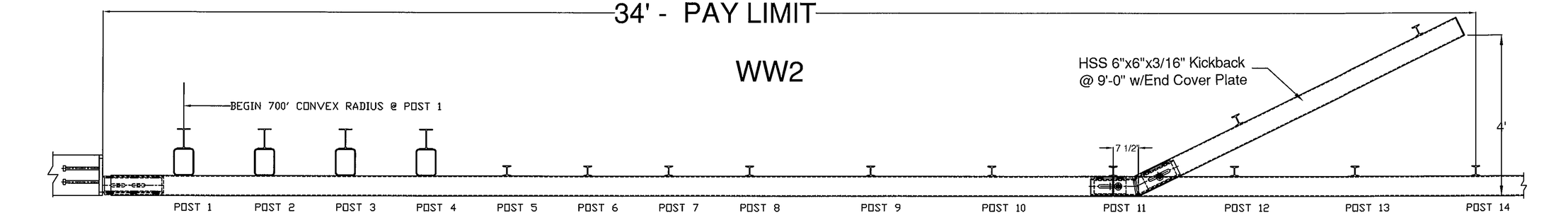
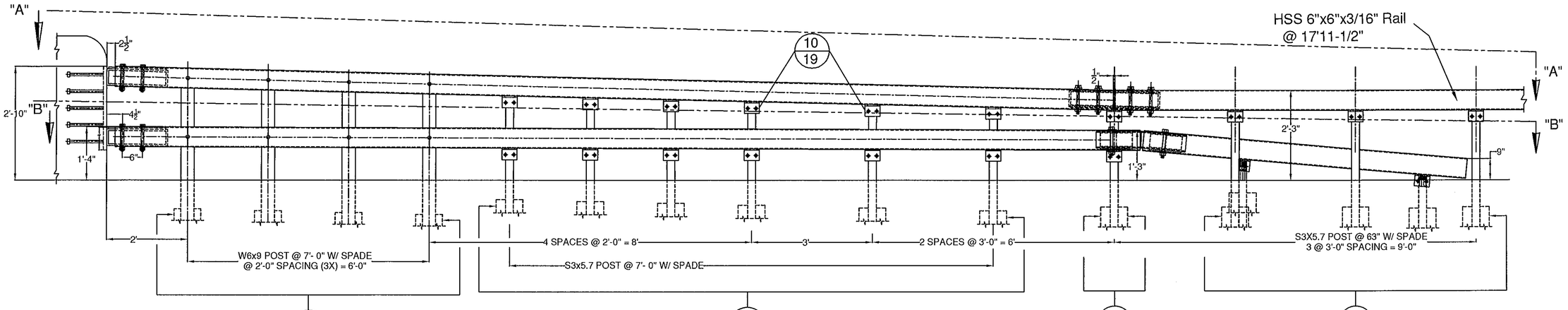
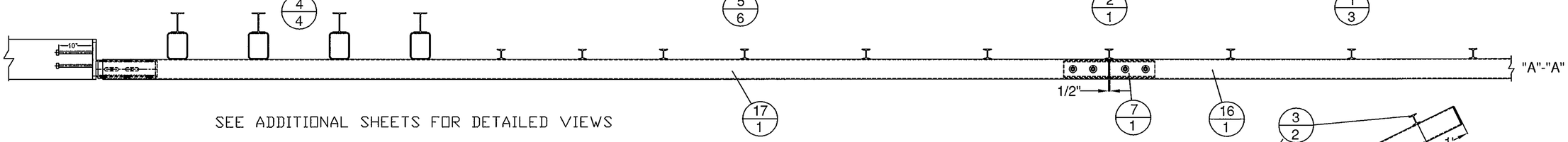
DRAWING NO.	FRL - CLARENDON - T	

34' - PAY LIMIT

WW2

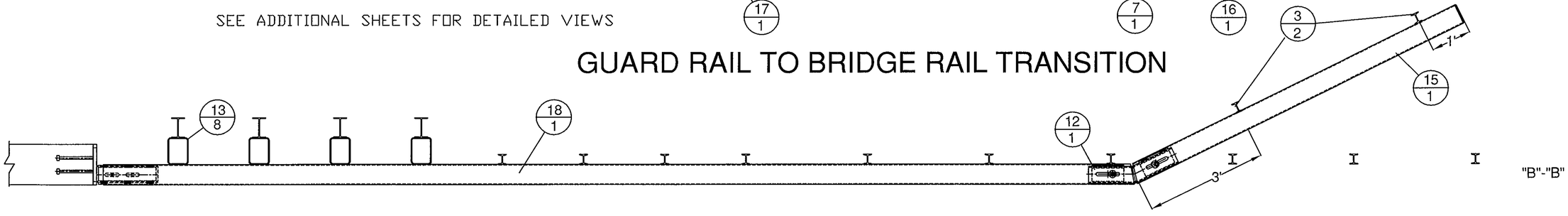






SEE ADDITIONAL SHEETS FOR DETAILED VIEWS

GUARD RAIL TO BRIDGE RAIL TRANSITION



900.620 SPECIAL PROVISION (GUARDRAIL
ITEM #: APPROACH SECTION TO CONCRETE BRIDGE RAIL)

SHEET 4 OF 12

Vermont Agency of Transportation
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STRUCTURAL STEEL TO COMPLY W/ ASTM A6

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DIAMETERS = ± 1/32"

SPECIAL PROVISION, GRAS - CONCRETE COMBINATION BR.

ROUTE NO. T.H. 3 (CLASS 2), RURAL COLLECTOR , BRIDGE # 11
TOWN OF CLARENDON, RUTAND COUNTY, VT.

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R	NO.	DATE	DESCRIPTION	BY
E				
V				

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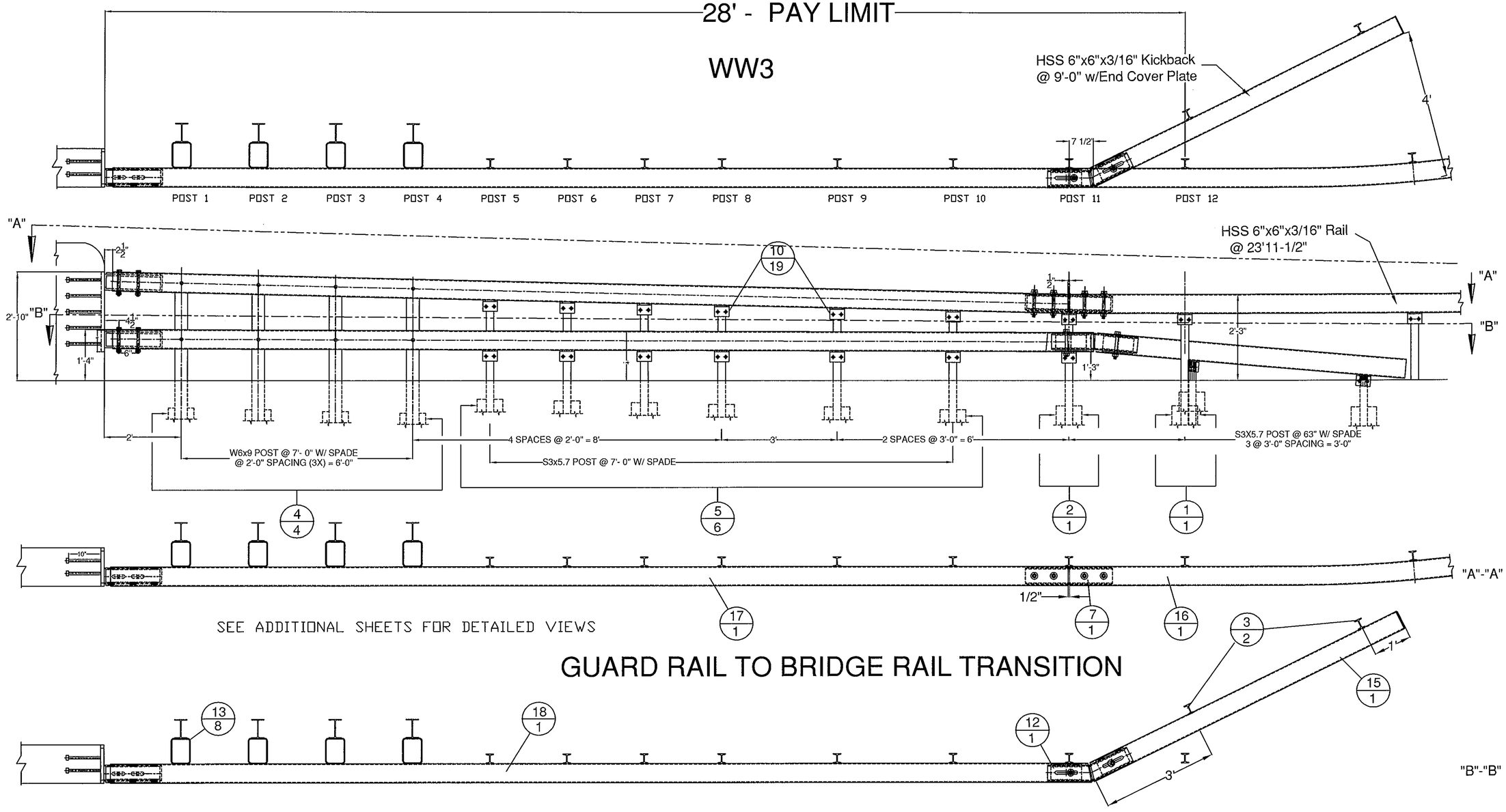

GUARD RAIL TO BRIDGE RAIL TRANSITION

GENERAL NOTES:

1) ALL RAILING IS TO BE FABRICATED AND ERECTED ACCORDING TO SECTION 525 OF THE STANDARD SPECIFICATIONS.
2) BOLTS SHALL BE TORQUED SNUG TIGHT (APPROXIMATELY 100 FT-LB).
3) PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE BOX BEAM RAILS, SPLICE TUBES AND FILL PLATES.
4) ANY BENDING OF RAIL SHALL BE DONE AT THE FABRICATION PLANT. RADII GREATER THAN 16' TO BE CURVED ON A TUBE BENDING MACHINE, RADII LESS THAN 16' TO BE "PIE CUT" AND WELDED. CURVED RAILING WILL HAVE AN 18" LENGTH ON EACH END STRAIGHT TO ACCOMADATE SPLICES. "PIE CUTS ARE LOCATED SO AS TO NOT CONFLICT WITH POST FASTENING HOLES. PIE CUTS WILL BE WELDED ACCORDING TO PROCEDURE WPS-3026.

Vermont Agency of Transportation
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900.620 SPECIAL PROVISION (GUARDRAIL
ITEM #: APPROACH SECTION TO CONCRETE BRIDGE RAIL)

SHEET 5 OF12

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

TOLERANCE UNLESS OTHERWISE NOTED:
FRACTIONS = ± 1/16"
ANGLES = ± 1/2°
DIAMETERS = ± 1/32"

SPECIAL PROVISION, GRAS - CONCRETE COMBINATION BR.
ROUTE NO. T.H. 3 (CLASS 2), RURAL COLLECTOR , BRIDGE # 11
TOWN OF CLARENDON, RUTAND COUNTY, VT.

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AISC CERTIFIED FABRICATOR

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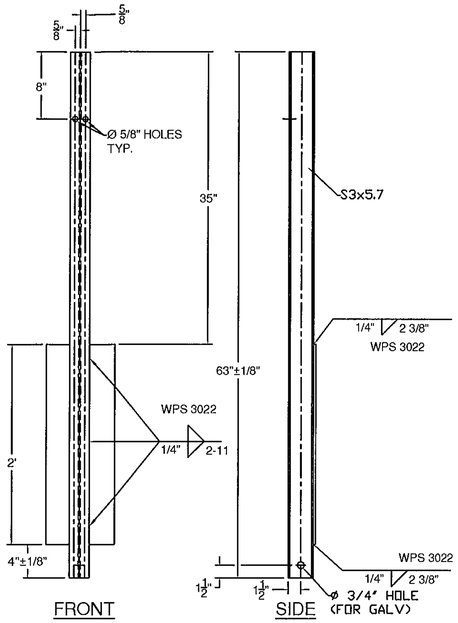
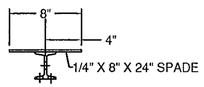
DRAWING NO.	FRL - CLARENDON - T	

PLAN VIEW

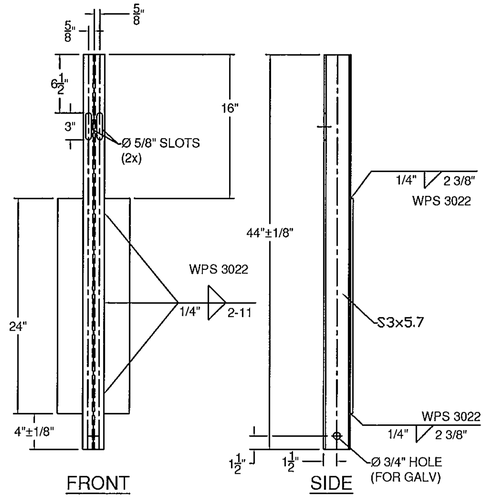
(ITEM # 1)



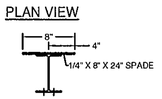
PLAN VIEW



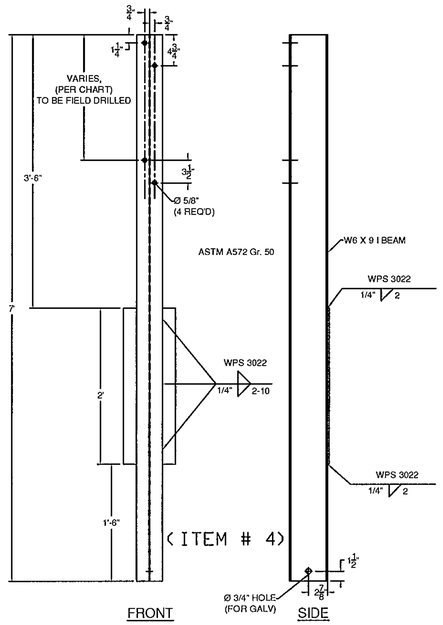
(ITEM # 3)



PLAN VIEW

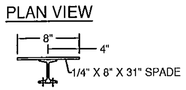


HOLE POSITION CHART	
POST	LENGTH
1	1'-6 11/16"
2	1'-6 1/4"
3	1'-5 3/4"
4	1'-5 1/4"

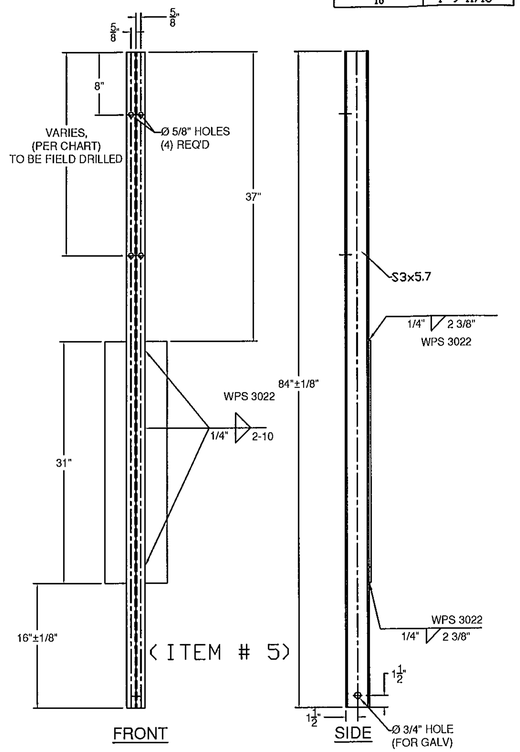


(ITEM # 4)

PLAN VIEW

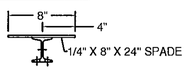


HOLE POSITION CHART	
POST	LENGTH
5	1'-11 9/16"
6	1'-11 1/16"
7	1'-10 5/8"
8	1'-10 1/8"
9	1'-9 7/16"
10	1'-9 11/16"

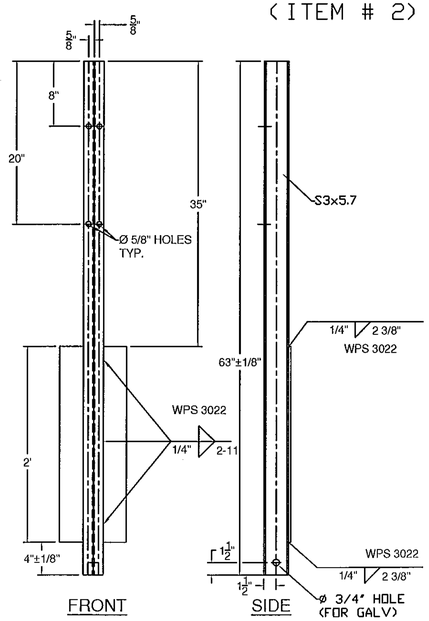


(ITEM # 5)

PLAN VIEW



(ITEM # 2)



BILL OF MATERIALS, WW2

ITEM #	QTY.	COMPONENT #	DESCRIPTION	MATERIAL (ASTM)
1	3	0013.57021	3' I-POST, PUNCH 8' W/SPD @ 63' LG	ASTM A572 Gr. 50
2	1	0013.57025	3' I-POST W/SPD @ 63', PUNCH 8', & 20'	ASTM A572 Gr. 50
3	2	0013.57060	3' I-END POST W/SPD @ 3'-8' LG	ASTM A572 Gr. 50
4	4	-	W6X9 POST @ 7' W/SPD & Ø9/16' HOLES @ VARIOUS	ASTM A572 Gr. 50
5	6	-	3' I-POST, PUNCH 8' & VARIOUS', W/8X32' SPADE @ 7'	ASTM A572 Gr. 50
7	1	0033.00640	HSS 5X5 BENT TUBE SPLICE @ 27' LG W/ 1/4' SHIMS	A500 Gr. B / A572 Gr 50
10	19	0054.00050	REG BB SHELF ANGLES @ 4-1/2'	ASTM A709 Gr. 50
12	1	0054.00074	HSS 5X5 DBL BEND TUBE SPL @ 26 3/4' LG - 25° ANGLE	A500 Gr. B / A572 Gr 50
13	8	0054.00563	6X8' TRANS. TUBE B/O @ 6' LG	A500 Gr. B
15	1	0054.09000	6X6' BB @ 9'-0" KICKBACK, W/ CAP & 13° ANGLE	A500 Gr. B / A36
16	1	-	6X6' BB @ 17'-11 1/2', DRILL 3' CC (W/ 700' CONVEX RAD.)	A500 Gr. B
17	1	-	6X6' BB TOP TRANS @ 24'-9 5/16' LG (W/ 700' CONVEX RAD.)	A500 Gr. B
18	1	-	6X6' BB BTM TRANS @ 25'-5' LG (W/700' CONVEX RAD.)	A500 Gr. B
19	19	0080.03355	3/8' X 7 1/2' BOLT, NUT, & 2 FW	A307, A563, F436
20	19	0080.04100	1/2' x 1-1/2' BOLT, NUT, & FW	A307, A563, F436
21	16	0080.04120	1/2' x 1-1/2' BOLT, NUT, & 2 FW	A307, A563, F436
23	10	0080.06340	3/4' X 7-1/2' BOLT, NUT, 2 FW	A325, A563, F436
23	8		3/4' LOCK WASHER	ASME B18.21.1
24	8	0080.06370	3/4' X 8' CARR BOLT, NUT, FW & LW	A307, A563, F436

BILL OF MATERIALS, WW3

ITEM #	QTY.	COMPONENT #	DESCRIPTION	MATERIAL (ASTM)
1	1	0013.57021	3' I-POST, PUNCH 8' W/SPD @ 63' LG	ASTM A572 Gr. 50
2	1	0013.57025	3' I-POST W/SPD @ 63', PUNCH 8', & 20'	ASTM A572 Gr. 50
3	2	0013.57060	3' I-END POST W/SPD @ 3'-8' LG	ASTM A572 Gr. 50
4	4	-	W6X9 POST @ 7' W/SPD & Ø9/16' HOLES @ VARIOUS	ASTM A572 Gr. 50
5	6	-	3' I-POST, PUNCH 8' & VARIOUS', W/8X31' SPADE @ 7'	ASTM A572 Gr. 50
7	1	0033.00640	HSS 5X5 BENT TUBE SPLICE @ 27' LG W/ 1/4' SHIMS	A500 Gr. B / A572 Gr 50
10	19	0054.00050	REG BB SHELF ANGLES @ 4-1/2'	ASTM A709 Gr. 50
12	1	0054.00074	HSS 5X5 DBL BEND TUBE SPL @ 26 3/4' LG - 27° ANGLE	A500 Gr. B / A572 Gr 50
13	8	0054.00563	6X8' TRANS. TUBE B/O @ 6' LG	A500 Gr. B
15	1	0054.09000	6X6' BB @ 9'-0" KICKBACK, W/ CAP & 13° ANGLE	A500 Gr. B / A36
16	1	0054.18000	6X6' BB @ 23'-11 1/2', DRILL 3' CC	A500 Gr. B
17	1	-	6X6' BB TOP TRANS @ 24'-9 5/16' LG	A500 Gr. B
18	1	-	6X6' BB BTM TRANS @ 25'-5' LG	A500 Gr. B
19	17	0080.03355	3/8' X 7 1/2' BOLT, NUT, & 2 FW	A307, A563, F436
20	17	0080.04100	1/2' x 1-1/2' BOLT, NUT, & FW	A307, A563, F436
21	16	0080.04120	1/2' x 1-1/2' BOLT, NUT, & 2 FW	A307, A563, F436
23	10	0080.06340	3/4' X 7-1/2' BOLT, NUT, 2 FW	A325, A563, F436
23	8		3/4' LOCK WASHER	ASME B18.21.1
24	8	0080.06370	3/4' X 8' CARR BOLT, NUT, FW & LW	A307, A563, F436

HARDWARE NOTES

ITEM #	FUNCTION
19	BOLT RAIL TO SHELF ANGLE (ITEM #10)
20	BOLT SHELF ANGLE (ITEM # 10) TO POST
21	BOLT BLOCK-OUTS (ITEM # 13) TO HEAVY POST (ITEM # 4)
23	SPLICE TUBING (ITEM #'S 7 & 12), & (4) PER PARAPET WALL CONNECTION
24	BOLT RAIL (ITEMS #'S 17, & 18 TO BLOCK-OUTS (ITEM # 13)

Vermont Agency of Transportation

RECEIVED

CK'D BY SC, RF OK'D BY G. Laroche

April 8, 2016

RESUBMIT No Approved

BY K. Higgins DATE 04/11/2016

900.620 SPECIAL PROVISION (GUARDRAIL ITEM #: APPROACH SECTION TO CONCRETE BRIDGE RAIL)

SHEET 6 OF 12

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

TOLERANCE UNLESS OTHERWISE NOTED:
FRACTIONS = ± 1/16"
ANGLES = ± 1/2°
DIAMETERS = ± 1/32"

SPECIAL PROVISION, GRAS - CONCRETE COMBINATION BR.

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CERTIFIED FABRICATOR

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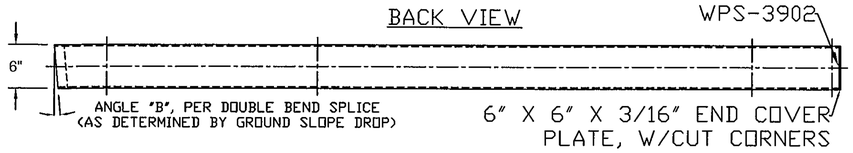
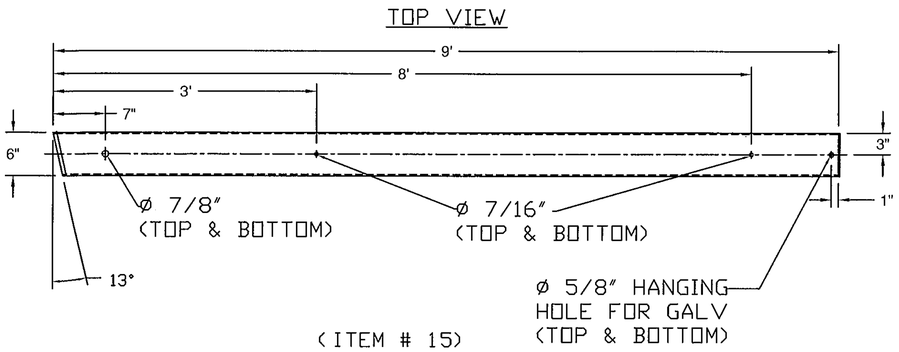
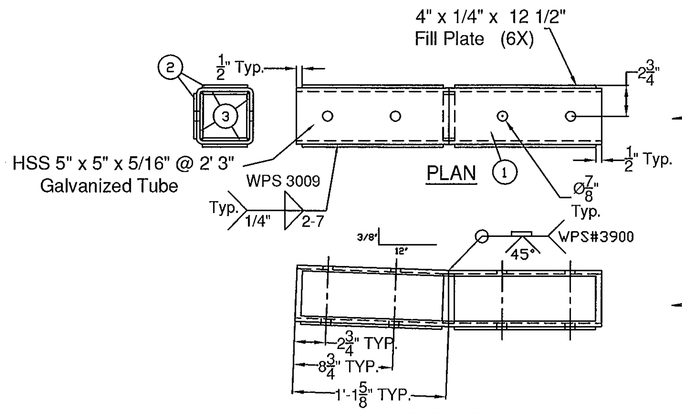
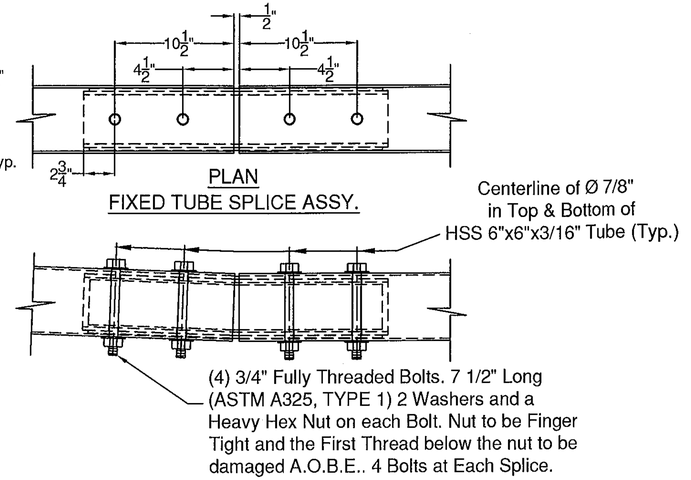




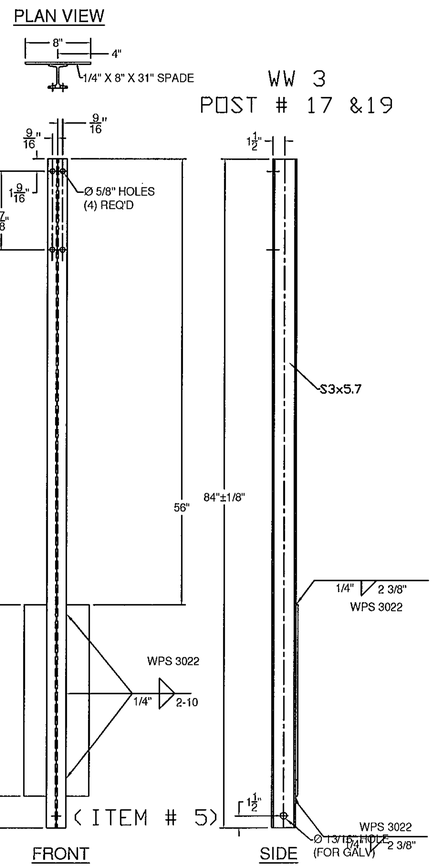
(ITEM # 15)



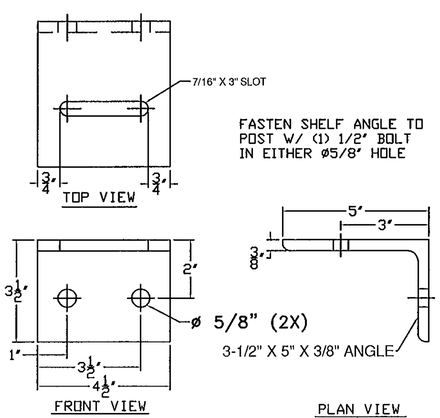


TOP RAIL SPLICE TUBE		
ITEM#	QTY.	DESCRIPTION
1	2	5" X 5" X 5/16" TUBE @ 27" ASTM A500 Gr. B
2	6	1/4" X 4" X 12 1/2" ASTM A36\A709 Gr36\CVN
3	4	3/16" X 1" X 4" BACKER PLATE

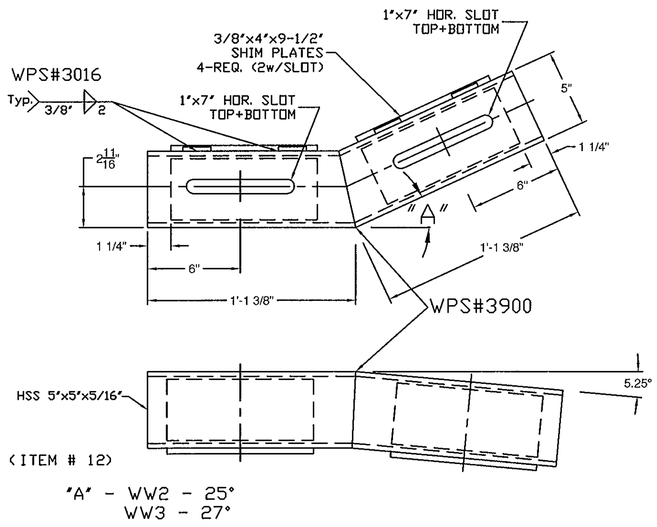
(ITEM # 7)



(ITEM # 5)

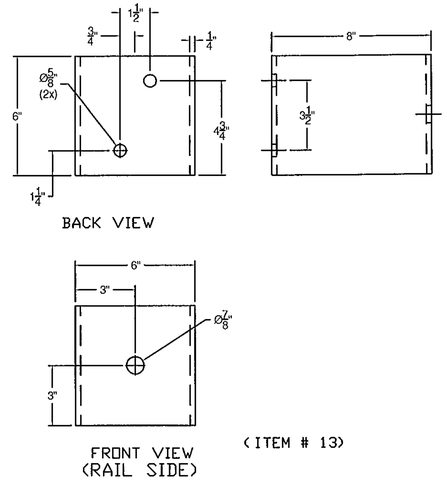


(ITEM # 10)



(ITEM # 12)

"A" - WW2 - 25°
WW3 - 27°



(ITEM # 13)

900.620 SPECIAL PROVISION (GUARDRAIL
ITEM #: APPROACH SECTION TO CONCRETE BRIDGE RAIL)

SHEET 7 OF 12

Vermont Agency of Transportation
RECEIVED
CK'D BY SC, RF OK'D BY G. Laroche
April 8, 2016
RESUBMIT No Approved
BY K. Higgins DATE 04/11/2016

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

TOLERANCE UNLESS OTHERWISE NOTED:
FRACTIONS = ± 1/16"
ANGLES = ± 1/2°
DIAMETERS = ± 1/32"

SPECIAL PROVISION, GRAS - CONCRETE COMBINATION BR.

ROUTE NO. T.H. 3 (CLASS 2), RURAL COLLECTOR, BRIDGE # 11
TOWN OF CLARENDON, RUTAND COUNTY, VT.

R	NO.	DATE	DESCRIPTION	BY
E	1	3/10/16	REVISED PER 2/23/16 MARK-UP	E.P.
V	2	4/8/16	REVISED PER 3/22/16 MARK-UP	E.P.

R	NO.	DATE	DESCRIPTION	BY
E				
V				

ELDERLEE, INC.
OAKS CORNERS, NEW YORK 14518
email: dlong@elderlee.com / epeek@elderlee.com
Tel: 315-789-6670 Fax: 315-789-6615

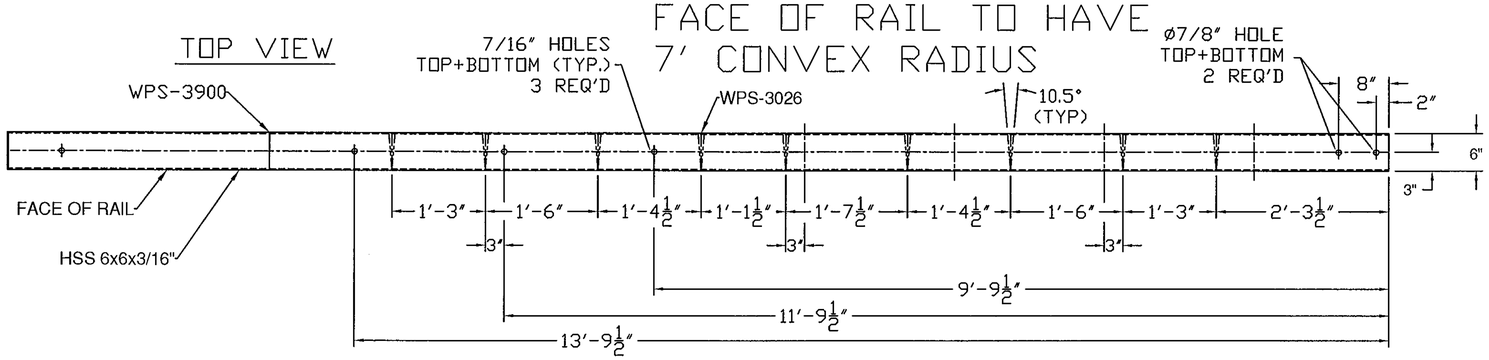
CERTIFIED FABRICATOR

ORTHOGRAPHIC PROJECTION

DRAWN	E.P.	01/29/16
CHECKED	D.L.	
APPROVED	M.V.	
SCALE	SCHEMATIC	
DRAWING NO.	FRL - CLARENDON - T	

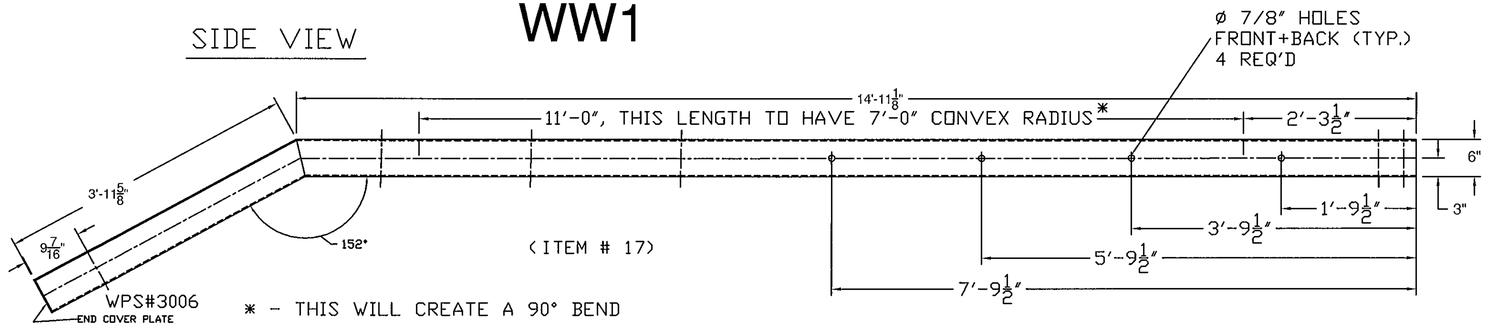
FACE OF RAIL TO HAVE 7′ CONVEX RADIUS

TOP VIEW



WW1

SIDE VIEW

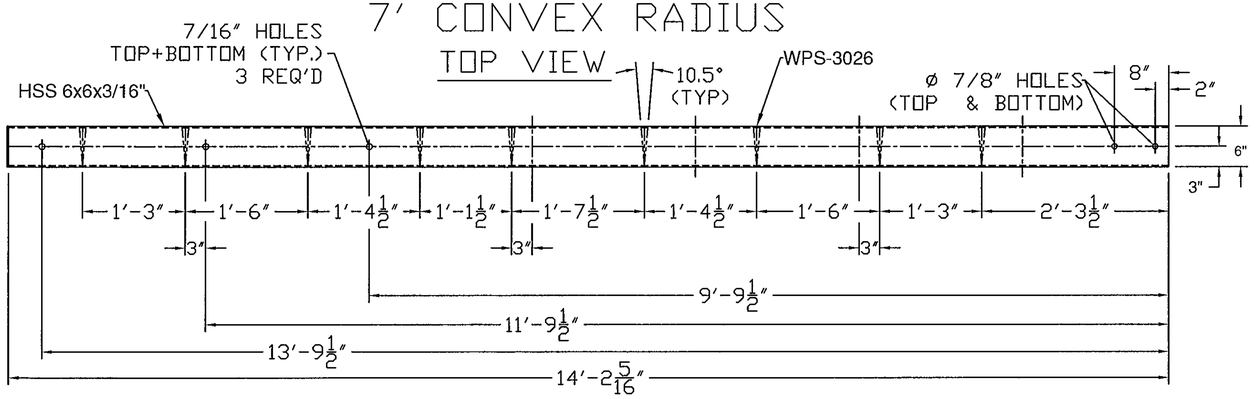


(ITEM # 17)

* - THIS WILL CREATE A 90° BEND

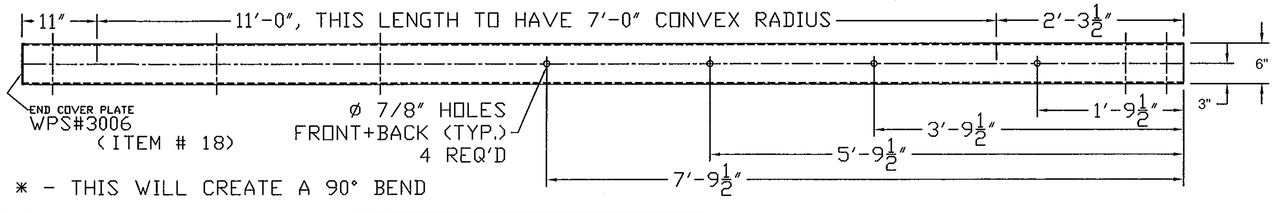
FACE OF RAIL TO HAVE 7′ CONVEX RADIUS

TOP VIEW



WW1

SIDE VIEW *



* - THIS WILL CREATE A 90° BEND

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900.620 SPECIAL PROVISION (GUARDRAIL
ITEM #: APPROACH SECTION TO CONCRETE BRIDGE RAIL)

SHEET 8 OF 12

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

TOLERANCE UNLESS OTHERWISE NOTED:
FRACTIONS = ± 1/16"
ANGLES = ± 1/2°
DIAMETERS = ± 1/32"

SPECIAL PROVISION, CRAS - CONCRETE COMBINATION BR.

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TOWN OF CLARENDON, RUTAND COUNTY, VT.

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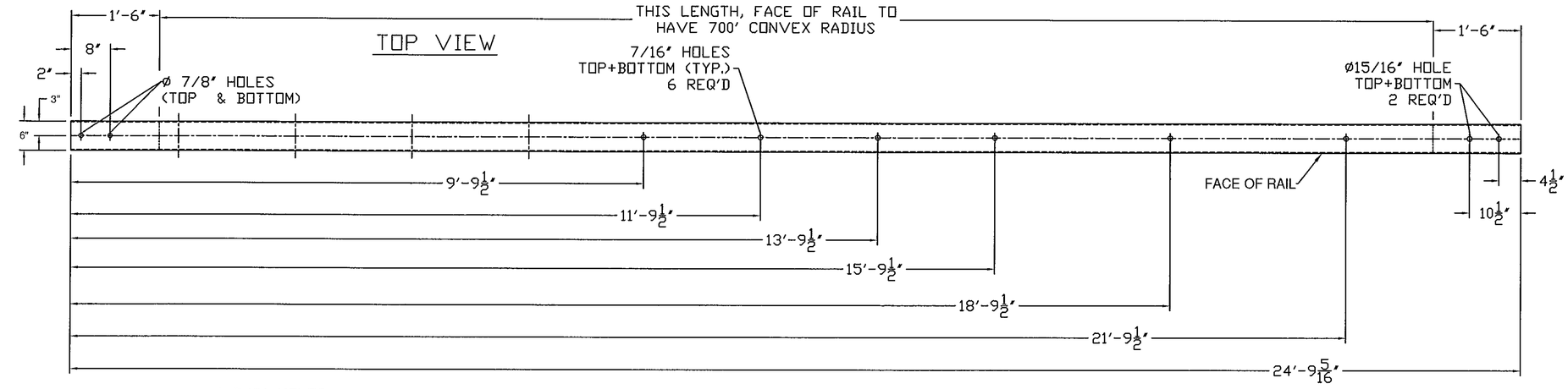
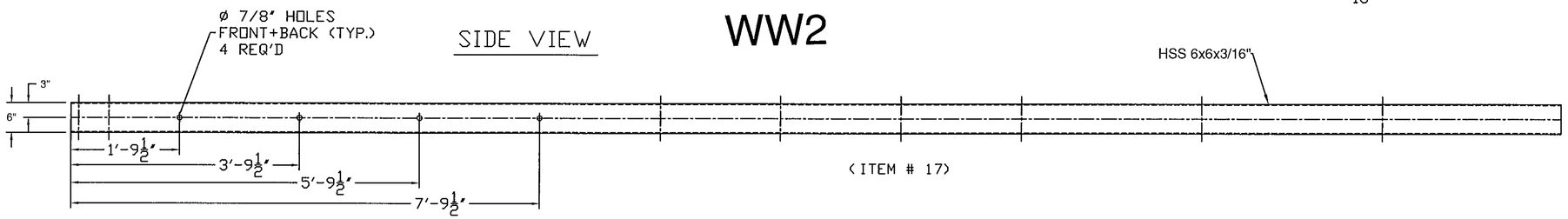
AISC CERTIFIED FABRICATOR

ORTHOGRAPHIC PROJECTION

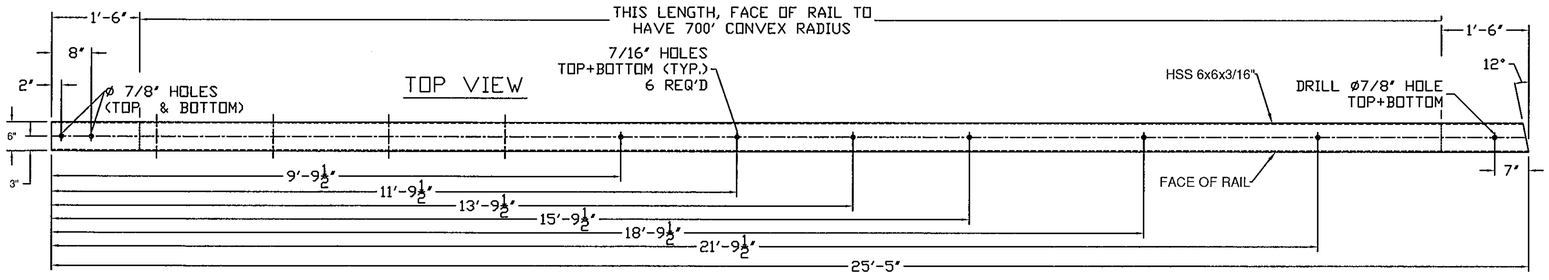
DRAWN	E.P.	01/29/16
CHECKED	D.L.	
APPROVED	M.V.	.
SCALE	SCHEMATIC	
DRAWING NO.	FRL - CLARENDON - T	



WW2



(ITEM # 17)



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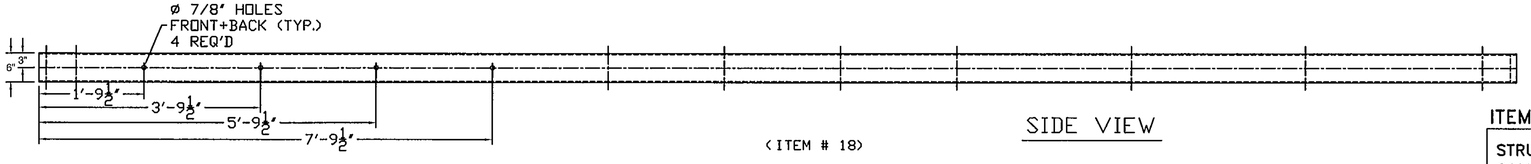

(ITEM # 18)

SIDE VIEW

Vermont Agency of Transportation
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RESUBMIT No Approved
BY K. Higgins DATE 04/11/2016

900.620 SPECIAL PROVISION (GUARDRAIL
ITEM #: APPROACH SECTION TO CONCRETE BRIDGE RAIL)

SHEET 9 OF 12

STRUCTURAL STEEL TO COMPLY W/ ASTM A6

TOLERANCE UNLESS OTHERWISE NOTED:
FRACTIONS = ± 1/16"
ANGLES = ± 1/2°
DIAMETERS = ± 1/32"

SPECIAL PROVISION, GRAS - CONCRETE COMBINATION BR.

ROUTE NO. T.H. 3 (CLASS 2), RURAL COLLECTOR, BRIDGE # 11
TOWN OF CLARENDON, RUTAND COUNTY, VT.

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E	1	3/10/16	REVISED PER 2/23/16 MARK-UP	E.P.
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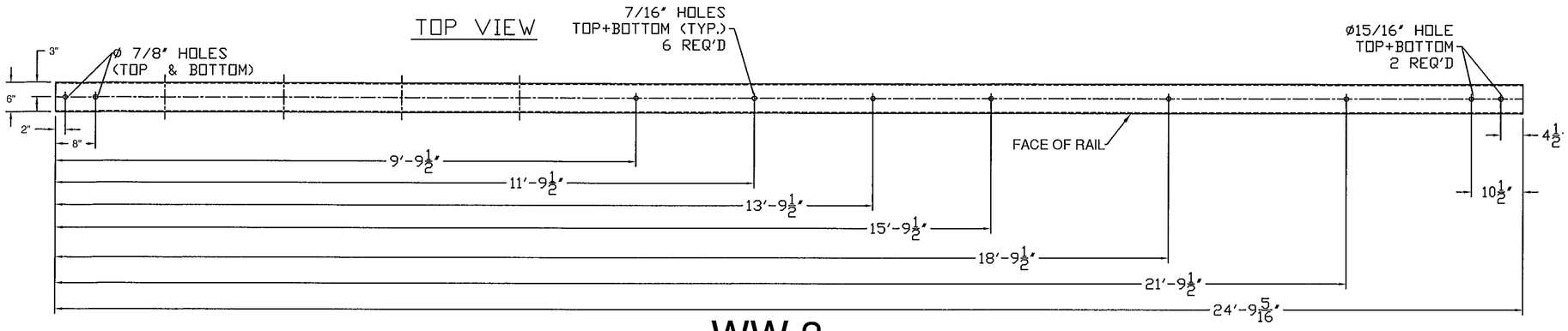
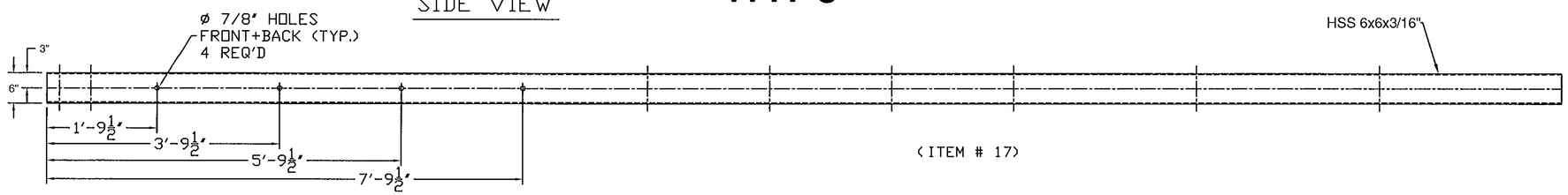
CERTIFIED FABRICATOR

DRAWN	E.P.	01/29/16
CHECKED	D.L.	
APPROVED	M.V.	.
SCALE	SCHEMATIC	
DRAWING NO.	FRL - CLARENDON - T	

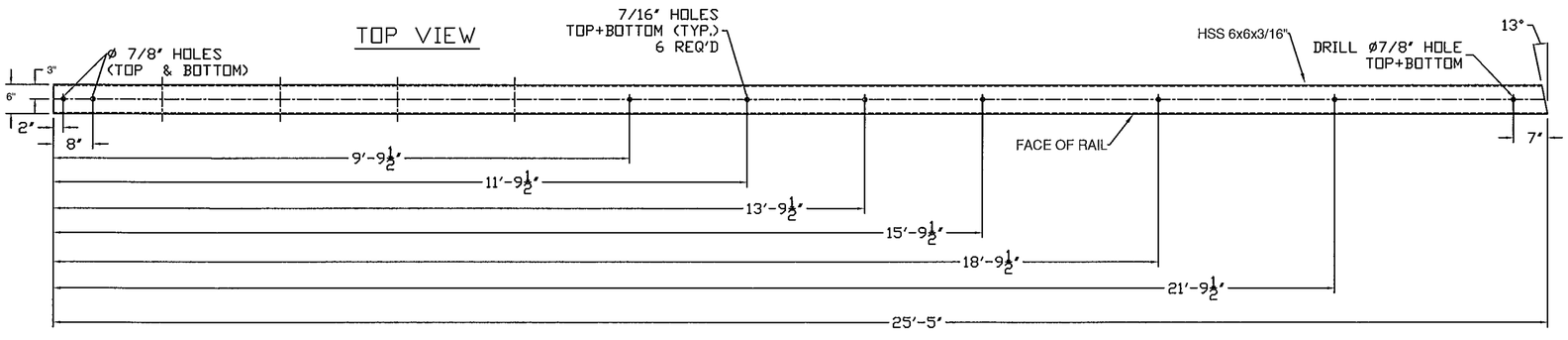
ORTHOGRAPHIC PROJECTION



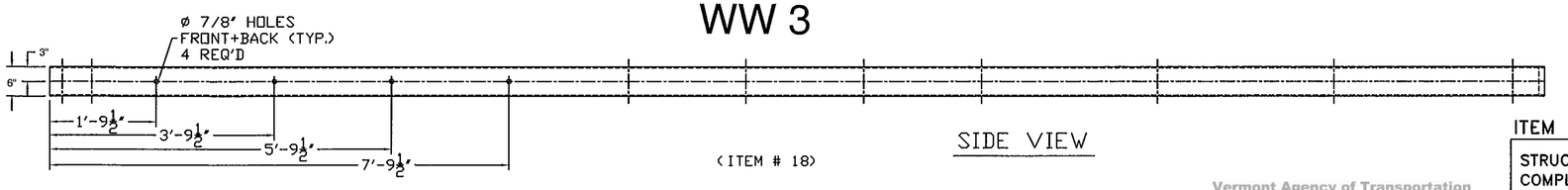
WW 3



(ITEM # 17)



WW 3



(ITEM # 18)

SIDE VIEW

900.620 SPECIAL PROVISION (GUARDRAIL
ITEM #: APPROACH SECTION TO CONCRETE BRIDGE RAIL)

SHEET 10 OF 12

Vermont Agency of Transportation
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ROUTE NO. T.H. 3 (CLASS 2), RURAL COLLECTOR, BRIDGE # 11
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R	NO.	DATE	DESCRIPTION	BY
E				
V				

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OAKS CORNERS, NEW YORK 14518
email: dlong@elderlee.com / epeek@elderlee.com
Tel: 315-789-6670 Fax: 315-789-6615

CERTIFIED FABRICATOR
ORTHOGRAPHIC PROJECTION

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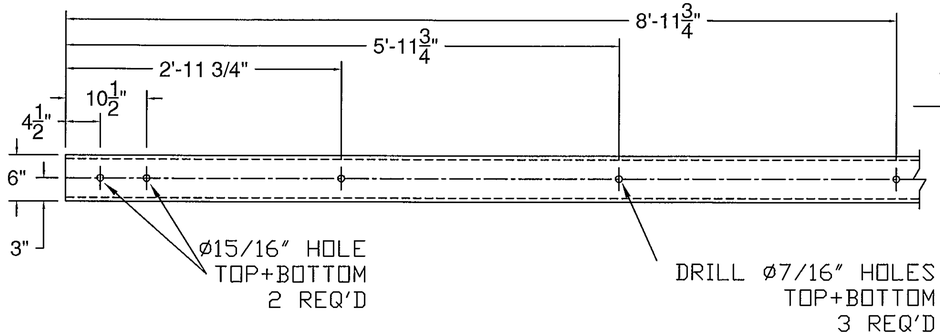
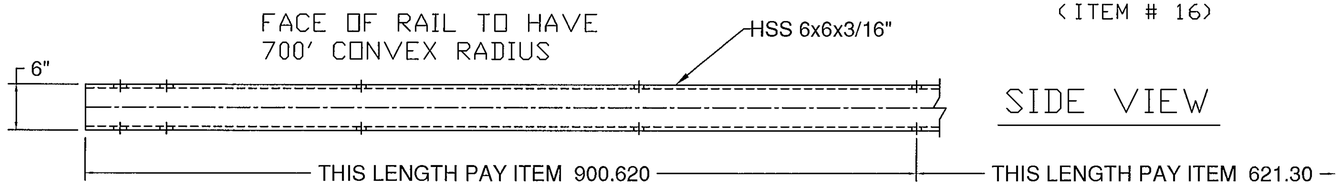
SCALE	SCHEMATIC	
DRAWING NO.	FRL - CLARENDON - T	



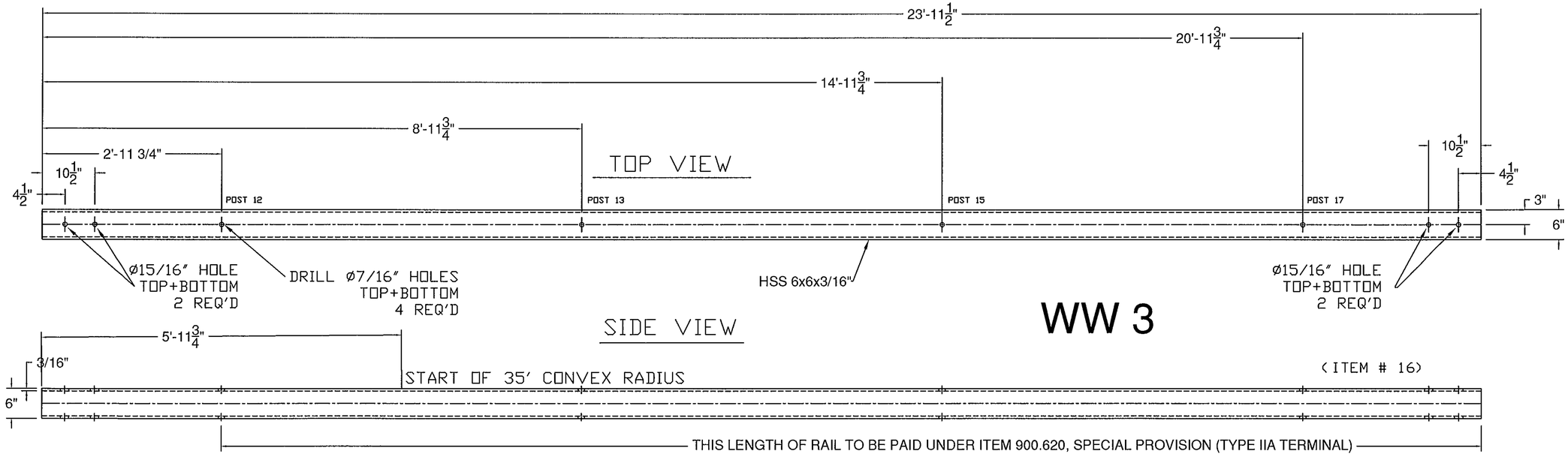
TOP VIEW

WW2

(ITEM # 16)



SIDE VIEW



TOP VIEW

WW 3

SIDE VIEW

(ITEM # 16)

900.620 SPECIAL PROVISION (GUARDRAIL
ITEM #: APPROACH SECTION TO CONCRETE BRIDGE RAIL)

SHEET 11 OF 12

Vermont Agency of Transportation
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CERTIFIED FABRICATOR
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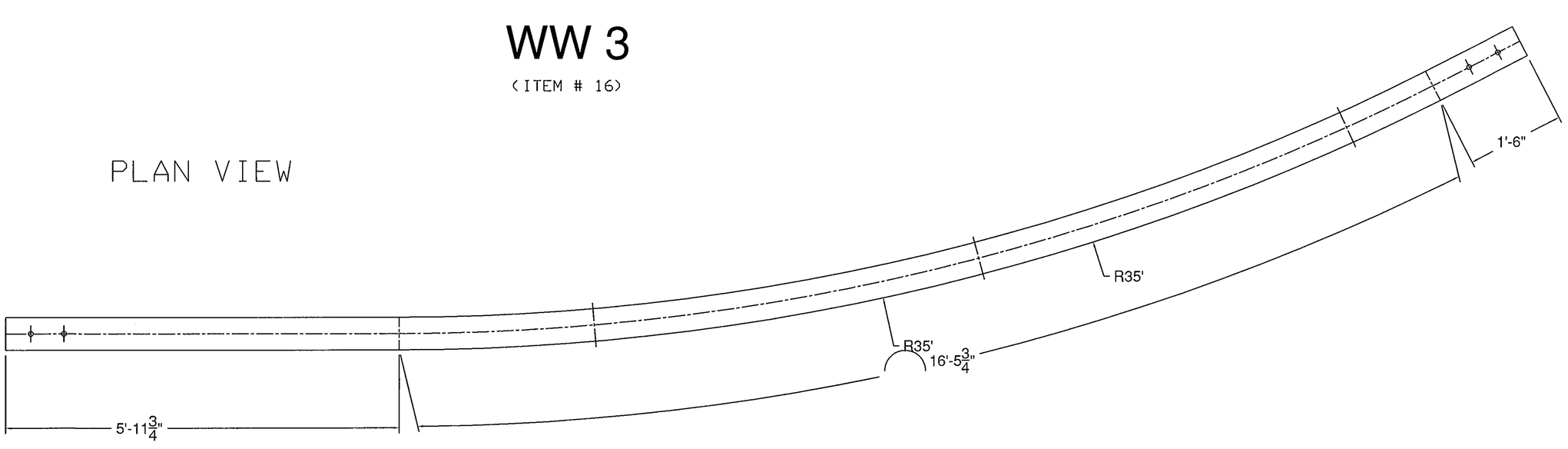
SCALE	SCHEMATIC	
DRAWING NO.	FRL - CLARENDON - T	

WW 3

(ITEM # 16)

PLAN VIEW



900.620 SPECIAL PROVISION (GUARDRAIL

ITEM #: APPROACH SECTION TO CONCRETE BRIDGE RAIL)

SHEET 12 OF 12

Vermont Agency of Transportation
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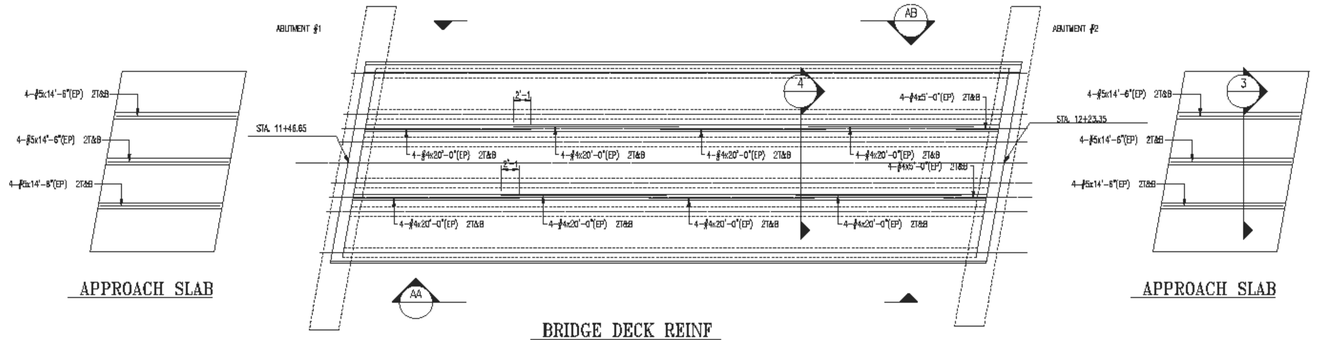
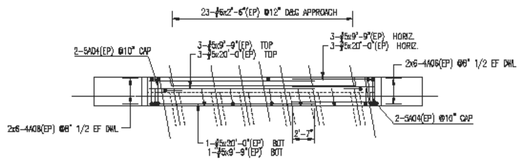


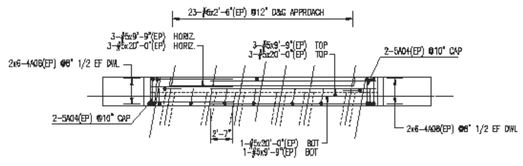
APPROACH SLAB

BRIDGE DECK REINF

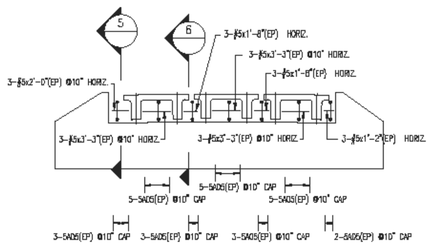
APPROACH SLAB



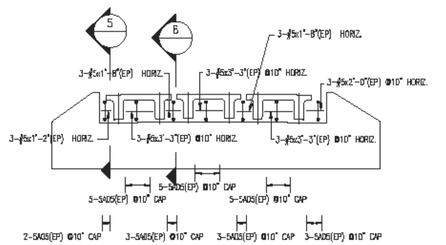
ABUTMENT #1 PLAN



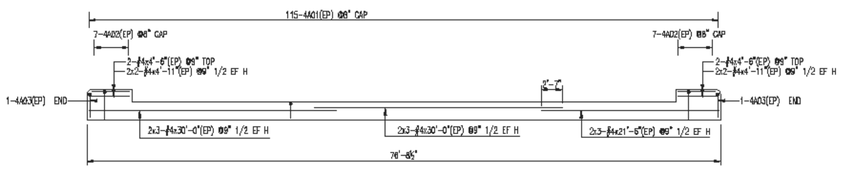
ABUTMENT #2 PLAN



ABUTMENT #1 ELEVATION



ABUTMENT #2 ELEVATION



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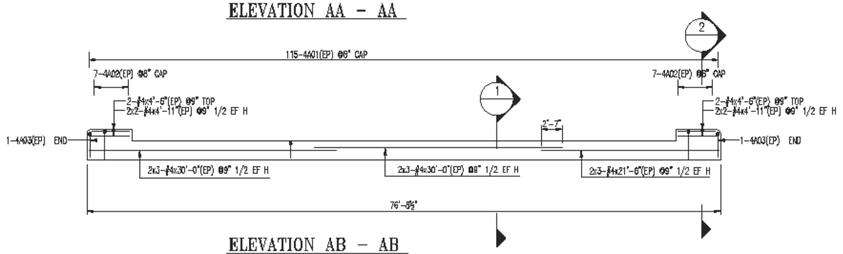
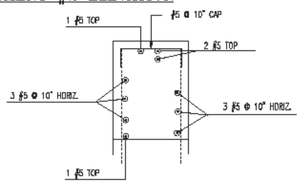
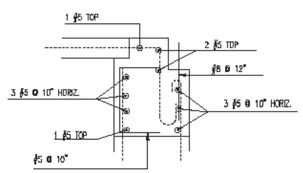


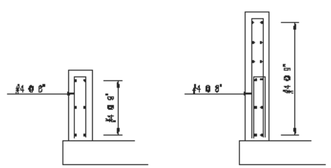
ELEVATION AB – AB



SECTION 5 – 5

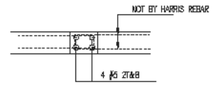


SECTION 6 – 6

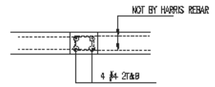


SECTION 1 – 1

SECTION 2 – 2

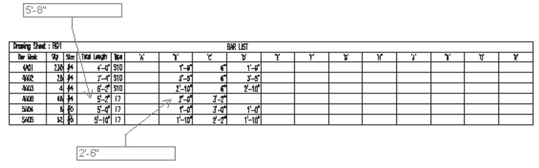


SECTION 3 – 3



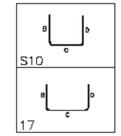
SECTION 4 – 4

DUAL COATED REINFORCING



BAR LIST

Drawing Sheet : R01					BAR LIST											
Bar Mark	Qty	Size	Total Length	Type	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'J'	'K'	'L'	'M'
4A01	138	#4	4'–6"	S10		1'–8"	6"	1'–6"								
4A02	28	#4	7'–6"	S10		2'–8"	6"	2'–6"								
4A03	4	#4	15'–6"	S10		2'–10"	6"	2'–10"								
4A08	48	#4	5'–9"	17		2'–0"	3'–0"									
5A04	8	#5	5'–6"	17		1'–8"	3'–0"	1'–8"								
5A05	32	#5	5'–10"	17		1'–10"	3'–0"	1'–10"								



ALL MATERIAL ON THIS DRAWING NOTED AS (EP) SHALL BE ASTM A1055 GRADE 60 DUAL COATED

LAP CHART-U.N.O.

#11		
#10		
#9		
#8		
#7		
#6		
#5		
#4		
#3		
SIZE	TOP BARS *	OTHER BARS

* Top bars are horiz. bars with more than 12" of concrete cast below the bars.

Vermont Agency of Transportation

RECEIVED

CK'D BY J. Grigas OK'D BY G. Laroche

March 3, 2016

RESUBMIT No Approved AsNoted

BY K. Higgins DATE 03/08/2016

No.	Description	Date	By
1	APPROVAL	3/4/16	RLL
0	APPROVAL	2/26/16	RLL

Revisions and Issue Record

The full intent and purpose of this drawing is the placing of reinforcing steel bars ONLY. It is NOT to be used as a means of communication between the Architect, Engineer, Contractor or any other Sub-trades.

THIS DRAWING IS NOT TO BE SCALED.

Harris Rebar Barker Steel — National Strength. Local Service.

DETAILED AT: CANAAN NEW HAMPSHIRE

Project: BRO 1443 (49) CLARENDON VT

Drawing: RAILING

Customer: J.A. MCDONALD

Engineer:

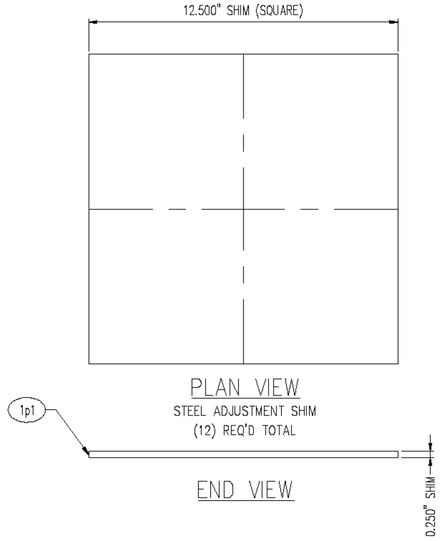
Refer to Release:

Date	Drawn	Chkd.	JOB No.	Dwg. No.
2/29/16	RLL		33505923	R01

W:\Handy\Project\33505923\Placing Drawings\DWGs\R01.dwg

AASHTO M270 Gr. 36 or
ASTM A709 Gr. 36

MK	QTY	DESCRIPTION	MATERIAL	LENGTH	REMARKS	WT*	REV
1A	12	STEEL SHIMS	49123.1107.1			11	
1p1	12	0.250" X 12.500"	M183 (A36)	12.500"	M111-HDG (A123)	11	
		*Approx. Gross Wt. Lbs Per Single Unit			2/11/16 11:23:42 AM		



GENERAL NOTES:

1. MATERIALS SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011 AND THE LATEST REVISIONS, INCLUDING SUPPLEMENTARY SPECIFICATIONS, CONTRACT PLANS, AND THE SPECIAL PROVISIONS.

2. THIS SHOP DRAWING WAS PREPARED IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS. THE D.S. BROWN COMPANY DOES NOT ACCEPT LIABILITY FOR THE DESIGN OF THE PRODUCTS DETAILED IN THIS SHOP DRAWING.

3. THE D.S. BROWN COMPANY TO SUPPLY ONLY THE PARTS SHOWN ON THIS DRAWING.

4. ALL STEEL SHALL BE PRODUCED IN THE UNITED STATES OF AMERICA.

5. ALL CORNERS AND EDGES OF STEEL PLATES SHALL BE GROUND TO A 1/16" RADIUS FOR GALVANIZING.

6. ALL EXTERNAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 AND M232 (ASTM 123 & 153) SPECIFICATIONS. IN ACCORDANCE WITH SECTION 726.08 OF THE STANDARD SPECIFICATIONS, REPAIR DAMAGED HOT DIPPED GALVANIZING PER ASTM A780, ANNEX A2. THE PAINT USED IN THE REPAIR SHALL BE ORGANIC-ZINC, CONTAINING 92% MINIMUM ZINC BY WEIGHT IN THE DRY FILM. THE PAINT SHALL BE APPLIED PER MANUFACTURER'S RECOMMENDATIONS TO A THICKNESS EQUIVALENT TO THE SURROUNDING GALVANIZING.

7. GALVANIZATION LIFTING DEVICES MAY BE WELDED TO PARTS IF NECESSARY. WHEN THEIR USE IS COMPLETE, REMOVE AND GRIND FLUSH ALL CONNECTION LOCATIONS. REPAIR AREA PER ASTM A780, ANNEX A2.

8. BEARING MANUFACTURING FACILITY AND REPRESENTATIVE FOR COORDINATING PRODUCTION:
   THE D.S. BROWN COMPANY
   300 EAST CHERRY STREET
   NORTH BALTIMORE, OHIO 45872
   CSR - MARCIE THOMPSON - (419) 257-3561

MARKING NOTES:

1. EACH BEARING SHALL BE PERMANENTLY MARKED. THE MARKING SHALL CONSIST OF MARK ON THE TOP SURFACE. WHERE POSSIBLE, THE MARKING SHALL BE ON A FACE WHICH IS VISIBLE AFTER ERECTION OF THE STRUCTURE.

TOLERANCE TABLE	
DESCRIPTION	TOLERANCE (INCHES U.N.O.)
STEEL PLATE THICKNESS	±0.063
STEEL PLATE PLAN DIMENSIONS ≤ 30"	±0.250
STEEL PLATE PLAN DIMENSIONS > 30"	±0.250
STEEL PLATE FLATNESS IN CONTACT WITH BEARING	0.001 X NOM. DIMENSION
STEEL PLATE FLATNESS: GROUT OR CONCRETE SIDE	0.005 X NOM. DIMENSION
STEEL PLATE FLATNESS: STEEL GIRDER SIDE	0.002 X NOM. DIMENSION
STEEL PLATE FLATNESS: STEEL PLATE SIDE	0.001 X NOM. DIMENSION
STEEL PLATE SURFACE FINISH IN CONTACT WITH BEARING	125 μ" RMS
ALL TOLERANCES ARE PRIOR TO COATING	

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D.S. BROWN
A GIBRALTAR INDUSTRIES COMPANY

THE D.S. BROWN COMPANY
300 E. CHERRY STREET
NORTH BALTIMORE, OHIO 45872
419.257.3561
FAX: 419.257.0332
WWW.DSBROWN.COM

REV.	DESCRIPTION	DATE	DET.	CKD.

LOCATION — WALKER MOUNTAIN RD
BRIDGE — 11
PROJECT — BRO 1443 (48)
PROJECT NAME — CLARENDON
P.O. NO. — JAM 11615
DESIGNER — VTDOT
CUSTOMER — J.A. McDONALD

ITEM	QUANTITY
–	–
–	–
–	–
–	–
–	–
–	–
–	–
–	–
–	–

DESCRIPTION:
STEEL ADJUSTING SHIMS
RUTLAND COUNTY, VT

SCALE:	DRAWN BY:	CHECKED BY:	DATE:	
N.T.S.	SP	ECW	2/16	–
PROJECT NUMBER		PRODUCT CODE	RELEASE	SHEET
49123		1107	–	01

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April 8, 2016
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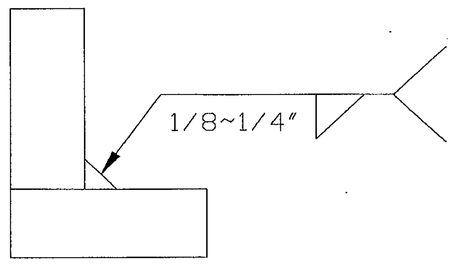
BY K. Higgins DATE 04/11/2016

WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE #3

Material Specification	A572 GR. 50 /A500 GR. B
Welding Process	FCAW-G
Manual or Machine	SEMAUTOMATIC
Position of Welding	FLAT / HORIZONTAL
Filler Metal Specification	A5.29
Filler Metal Classification	E81T1-Ni1C-JH4
Flux	N/A
Shielding Gas	CO 2 Dew Point -40DEG F Flow Rate 50CFH
Single or Multiple Pass	SINGLE
Single or Multiple Arc	SINGLE
Welding Current	DC
Polarity	REVERSE ELECTRODE POSITIVE
Welding Progression	STRINGER
Root Treatment	PER D1.5
Preheat and Interpass Temperature	PER D1.5
Postheat Temperature	NONE
Heat Input	Min _____ Max _____

WELDING PROCEDURE

Pass no.	Electrode size	Welding Current Amperes	Welding Current Volts	Travel speed	Joint detail
1	1/16	310	25	11	
Variable	LIMITS	341 TO 279	27 TO 23	12 TO 10	

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

Procedure No. 3006
Revision No. _____

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 3/31/2016

Form III-2

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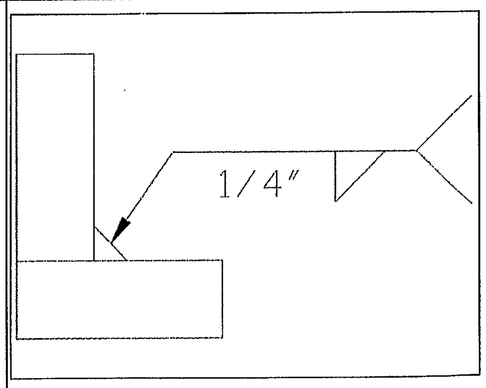
BY K. Higgins DATE 04/11/2016

WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE #3

Material Specification	A709 TO A500 GR B
Welding Process	FCAW-G
Manual or Machine	SEMAUTOMATIC
Position of Welding	FLAT/HORIZONTAL
Filler Metal Specification	A5.29
Filler Metal Classification	E81T1-Ni1C-JH4
Flux	N/A
Shielding Gas	CO 2 Dew Point -40DEG F Flow Rate 50CFH
Single or Multiple Pass	SINGLE
Single or Multiple Arc	SINGLE
Welding Current	DC
Polarity	REVERSE ELECTRODE POSITIVE
Welding Progression	STRINGER
Root Treatment	D1.5
Preheat and Interpass Temperature	D1.5
Postheat Temperature	NONE
Heat Input	Min _____ Max _____

WELDING PROCEDURE

Pass no.	Electrode size	Welding Current Amperes	Welding Current Volts	Travel speed	Joint detail
1	1/16	310	25	11	
Variable	LIMITS	341 TO 279	27 TO 23	12 TO 10	

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

Procedure No. 3009
Revision No. _____

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 3/30/2016

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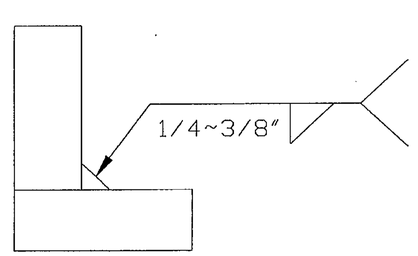
WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE #3

Material Specification	ASTM A572 GR. 50 / ASTM A500 GR. B		
Welding Process	FCAW-G		
Manual or Machine	SEMAUTOMATIC		
Position of Welding	FLAT/HORIZONTAL		
Filler Metal Specification	A5.29		
Filler Metal Classification	E81T1-Ni1C-JH4		
Flux	N/A		
Shielding Gas	CO 2	Dew Point -40DEG F Flow Rate	50CFH
Single or Multiple Pass	SINGLE		
Single or Multiple Arc	SINGLE		
Welding Current	DC		
Polarity	REVERSE		
Welding Progression	STRINGER		
Root Treatment	PER D1.5		
Preheat and Interpass Temperature	PER D1.5		
Postheat Temperature	NONE		
Heat Input	Min	Max	

WELDING PROCEDURE

Pass no.	Electrode size	Welding Current Amperes	Welding Current Volts	Travel speed	Joint detail
1	1/16	310	25	11	
Variable	LIMITS	341 TO 279	27 TO 23	12 TO 10	

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

Procedure No. 3016
Revision No.

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 3/30/2016

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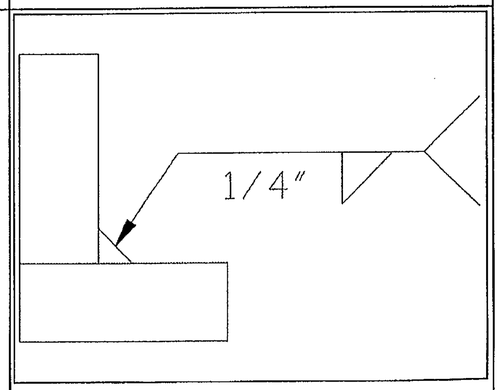
RESUBMIT No Approved
BY K. Higgins DATE 04/11/2016

WELDING PROCEDURE SPECIFICATION

Material Specification	A572 GR 50		
Welding Process	GMAW		
Manual or Machine	SEMIAUTOMATIC/ROBOTIC		
Position of Welding	FLAT/HORIZONTAL		
Filler Metal Specification	A5.18		
Filler Metal Classification	L-56 LINCOLN		
Flux	N/A		
Shielding Gas	90% ARGON /10% CO2	Dew Point -40DEG F	Flow Rate 45CFH
Single or Multiple Pass	SINGLE		
Single or Multiple Arc	SINGLE		
Welding Current	DC		
Polarity	REVERSE		
Welding Progression	STRINGER		
Root Treatment	PER D1.5		
Preheat and Interpass Temperature	PER D1.5		
Postheat Temperature	NONE		
Heat Input	Min	Max	

WELDING PROCEDURE

Pass no.	Electrode size	Welding Current Amperes	Welding Current Volts	Travel speed	Joint detail
	.045	190	22	19	
Variable	LIMITS	171 TO 209	20 TO 24	17 TO 21	

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

Procedure No. 3022
Revision No.

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 3/2/2016

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BY K. Higgins DATE 04/11/2016

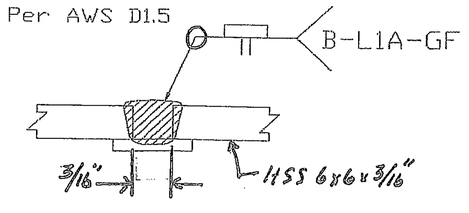
WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE #3

Material Specification	A500 TO A36		
Welding Process	FCAW-G		
Manual or Machine	SEMIAUTOMATIC		
Position of Welding	FLAT		
Filler Metal Specification	A5.29		
Filler Metal Classification	E81T1-Ni1C-JH4		
Flux	N/A		
Shielding Gas	CO 2	Dew Point -40DEG F Flow Rate 50CFH	
Single or Multiple Pass	SINGLE		
Single or Multiple Arc	SINGLE		
Welding Current	DC		
Polarity	REVERSE		
Welding Progression	STRINGER		
Root Treatment	CLEAN PER D1.5		
Preheat and Interpass Temperature	PER D1.5		
Postheat Temperature	NONE		
Heat Input	Min	Max	

WELDING PROCEDURE

Pass no.	Electrode size	Welding Current Amperes	Welding Current Volts	Travel speed	Joint detail
	1/16	310	25	11	
Variable	LIMITS	341 TO 279	27 TO 23	12 TO 10	



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

Procedure No. 3026
Revision No.

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 3/30/2016

Vermont Agency of Transportation
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April 8, 2016
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BY K. Higgins DATE 04/11/2016

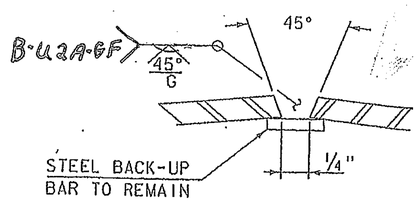
WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE #3

Material Specification	ASTM A500 TO A36		
Welding Process	FCAW-G		
Manual or Machine	SEMAUTOMATIC		
Position of Welding	FLAT		
Filler Metal Specification	A5.29		
Filler Metal Classification	E81T1-Ni1C-JH4		
Flux	N/A		
Shielding Gas	CO 2	Dew Point -40DEG F	Flow Rate 50CFH
Single or Multiple Pass	SINGLE		
Single or Multiple Arc	SINGLE		
Welding Current	DC		
Polarity	REVERSE ELECTRODE POSITIVE		
Welding Progression	STRINGER		
Root Treatment	PER D1.5		
Preheat and Interpass Temperature	PER D1.5		
Postheat Temperature	NONE		
Heat Input	Min	Max	

WELDING PROCEDURE

Pass no.	Electrode size	Welding Current Amperes	Welding Current Volts	Travel speed	Joint detail
1	1/16	310	25	11	
Variable	LIMITS	341 TO 279	27 TO 23	12 TO 10	



WELD DETAIL
FOR SPLICE TUBE

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

Procedure No. 3900
Revision No.

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 4/7/2016