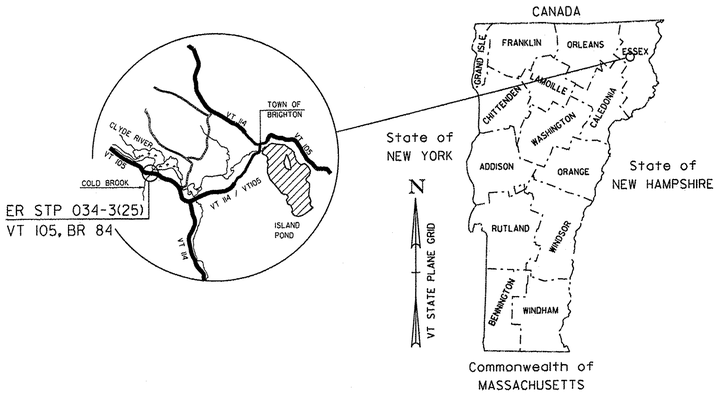
# STATE OF VERMONT
# AGENCY OF TRANSPORTATION




# PROPOSED IMPROVEMENT
# BRIDGE PROJECT

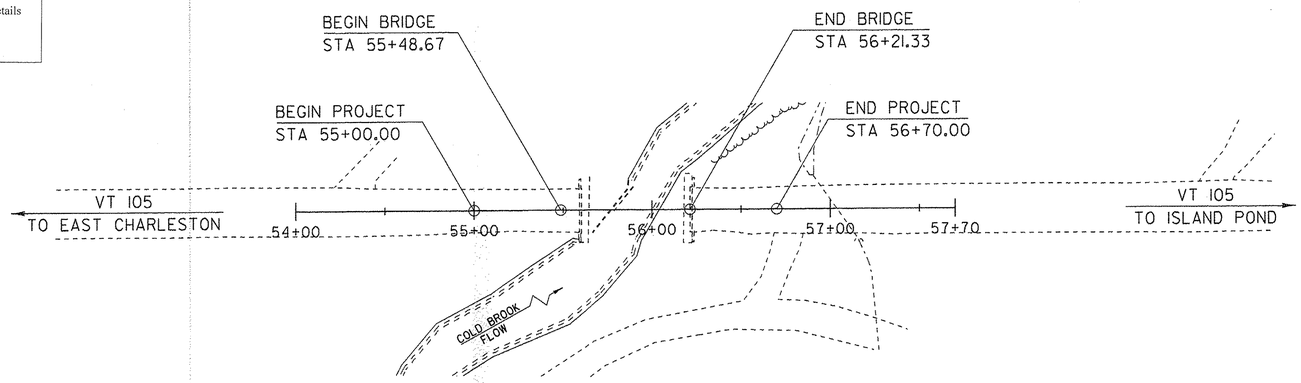
## TOWN OF BRIGHTON, ESSEX COUNTY

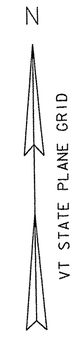
ROUTE NO : VT 105 (MINOR ARTERIAL) BRIDGE 84

PROJECT LOCATION: BEGINNING AT A POINT ON VT. ROUTE 105 APPROXIMATELY 1.058 MILES SOUTH EASTERLY OF THE CHARLESTON / BRIGHTON TOWN LINE AND EXTENDING EASTERLY 0.031 MILES.

PROJECT DESCRIPTION: REPLACEMENT OF BRIDGE 84 WITH A NEW CONCRETE STRUCTURE ON NEW ABUTMENTS, INCLUDING RELATED APPROACH AND CHANNEL WORK.

| | |
|---|---|
| LENGTH OF STRUCTURE : | 72.66 FEET |
| LENGTH OF ROADWAY : | 97.34 FEET |
| LENGTH OF PROJECT : | 170.00 FEET |




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

### RECORD PLANS

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

RESIDENT ENGINEER: DOUG BUMPS

CONSTRUCTION BEGAN: JUNE 28, 2013

CONSTRUCTION COMPLETE: NOVEMBER 11, 2013

RECORD PLANS BY: DOUG BUMPS & CRAIG PIERCE

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

BY _____ RESIDENT ENGINEER

DATE 4/3/14

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

QUALITY ASSURANCE PROGRAM: LEVEL 2

### CONVENTIONAL SYMBOLS

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

SURVEYED BY : R.GILMAN
SURVEYED DATE : 10/14/11

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (07)

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.

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

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED Richard Peterson DATE 9-12-13

PROJECT MANAGER : K. HIGGINS

PROJECT NAME : BRIGHTON
PROJECT NUMBER : ER STP 034-3(25)

SHEET 1 OF 36 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# PRELIMINARY INFORMATION SHEET (BRIDGE)

Version 11.06.15

**LRFD**

## INDEX OF SHEETS

### PLAN SHEETS

| | |
|---|---|
| 1 | TITLE SHEET |
| 2 | PRELIMINARY INFORMATION SHEET |
| 3 | GENERAL NOTES |
| 4 - 5 | QUANTITY SHEETS 1-2 |
| 6 - 7 | TYPICAL SECTIONS 1-2 |
| 8 | TIE SHEET |
| 9 | LAYOUT SHEET |
| 10 | MAINLINE PROFILE |
| 11 | RAIL LAYOUT SHEET |
| 12 | BORING LAYOUT SHEET |
| 13 - 14 | BORING LOGS |
| 15 | FRAMING PLAN |
| 16 | NEXT BEAM TYPICAL SECTION |
| 17 | BEARING DETAILS |
| 18 | APPROACH SLAB DETAILS |
| 19 | ABUTMENT PLAN |
| 20 | ABUTMENT REINFORCING |
| 21 | DECK CLOSURE POUR DETAILS |
| 22 | WINGWALL DETAILS |
| 23 - 24 | DETOUR PLAN 1-2 |
| 25 | EPSC NARRATIVE |
| 26 | EPSC PLAN |
| 27 - 28 | EPSC DETAILS |
| 29 - 33 | MAINLINE SECTIONS |
| 34 - 36 | CHANNEL SECTIONS |

### STANDARDS LIST

| | | |
|---|---|---|
| E-100 | CONSTRUCTION APPROACH SIGNS | 01-02-2004 |
| E-101 | CONSTRUCTION SIGN DETAILS | 05-30-2003 |
| E-102 | CONSTRUCTION SIGN DETAILS | 06-30-2003 |
| E-102A | CONSTURCTION SIGN DETAILS | 05-01-2004 |
| E-108 | CONSTRUCTION ZONE LONGITUDINAL DROP OFFS | 08-08-2009 |
| E-134 | BRIDGE NUMBER PLAQUE | 08-08-1995 |
| E-164 | SQUARE STEEL SIGN POST | 06-08-2009 |
| E-193 | PAVEMENT MARKING DETAILS | 08-18-1995 |
| G-1B | BOX BEAM GUARDRAIL | 06-01-1994 |
| S-364A | BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM | 04-23-2012 |
| S-364B | GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM | 04-23-2012 |
| S-364C | GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM | 04-23-2012 |
| S-364D | GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM | 04-23-2012 |

### STRUCTURES DETAILS

| | | |
|---|---|---|
| SD-501.00 | CONCRETE DETAILS AND NOTES | 05-07-2010 |
| SD-502.00 | CONCRETE DETAILS AND NOTES | 06-04-2010 |
| SD-516.10 | BRIDGE JOINT ASPHALTIC PLUG | 05-07-2010 |

## TRAFFIC DATA

| YEAR | ADT | DHV | % D | % T | ADTT |
|---|---|---|---|---|---|
| 2013 | 1600 | 180 | 56 | 12.7 | 250 |
| 2033 | 1700 | 190 | 56 | 18.2 | 380 |

20 year ESAL for flexible pavement from 2013 to 2033 : 2053000

40 year ESAL for flexible pavement from 2013 to 2053 : 4873000

Design Speed : 50 mph

## FINAL HYDRAULIC REPORT

### HYDROLOGIC DATA

Date: March 2012

DRAINAGE AREA : 5.0 sq. mi.
CHARACTER OF TERRAIN : Hilly to mountainous, mostly forested land cover
STREAM CHARACTERISTICS : Sinuous, alluvial, bend coming into the bridge
NATURE OF STREAMBED : Sand, gravel and cobbles

PEAK FLOW DATA

| | | | |
|---|---|---|---|
| Q 2.33 = | 190 cfs | Q 50 = | 675 cfs |
| Q 10 = | 420 cfs | Q 100 = | 825 cfs |
| Q 25 = | 560 cfs | Q 500 = | 1150 cfs |

DATE OF FLOOD OF RECORD : Unknown
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: Unknown
NATURAL STREAM VELOCITY : @ Q50 = 9.4 fps
ICE CONDITIONS : Moderate
DEBRIS: Moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes
IS ORDINARY RISE RAPID? Yes
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
IF YES, DESCRIBE:

WATERSHED STORAGE: 2%
HEADWATERS: X
UNIFORM:
IMMEDIATELY ABOVE SITE:

### EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single span concrete slab bridge
YEAR BUILT: Built 1928, reconstructed 1972
CLEAR SPAN(NORMAL TO STREAM): Approximately 20' *
VERTICAL CLEARANCE ABOVE STREAMBED: Approximately 3.5' *
WATERWAY OF FULL OPENING: Unknown *
DISPOSITION OF STRUCTURE: It has already been removed.
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See boring logs

WATER SURFACE ELEVATIONS AT:

| | | | |
|---|---|---|---|
| Q2.33 = | * | VELOCITY = | * |
| Q10 = | | " | |
| Q25 = | | " | |
| Q50 = | | " | |
| Q100 = | | " | |

LONG TERM STREAMBED CHANGES: Unknown

IS THE ROADWAY OVERTOPPED BELOW Q100: *
FREQUENCY: *
RELIEF ELEVATION: 1173.5'
DISCHARGE OVER ROAD @Q100: *

### UPSTREAM STRUCTURE

TOWN: None
HIGHWAY # :
CLEAR SPAN:
YEAR BUILT:
STRUCTURE TYPE:
DISTANCE:
STRUCTURE #:
CLEAR HEIGHT:
FULL WATERWAY:

### DOWNSTREAM STRUCTURE

TOWN: N.A. - confluence with Clyde River
HIGHWAY # :
CLEAR SPAN:
YEAR BUILT:
STRUCTURE TYPE:
DISTANCE:
STRUCTURE #:
CLEAR HEIGHT:
FULL WATERWAY:

### LRFR LOAD RATING FACTORS

| LOADING LEVELS | TRUCK | | | | | | |
|---|---|---|---|---|---|---|---|
| | HL-20 | HL-93 | 3S2 | 6 AXLE | 3A STR. | 4A STR. | 5A SEMI |
| TONNAGE | 20 | 36 | 36 | 66 | 30 | 34.5 | 38 |
| INVENTORY | 4.51 | 1.14 | | | | | |
| POSTING | | | | | | | |
| OPERATING | 5.85 | 1.48 | 3.19 | 2.14 | 2.73 | 2.45 | 2.68 |
| COMMENTS: | | | | | | | |

### PILE DRIVING AND TESTING REQUIREMENTS

1. NOMINAL PILE DRIVING CAPACITY — Resp. Int. Substructure: $\phi$: 0.65 Int. Substructure
2. PILE TEST RESISTANCE FACTOR
3. MAXIMUM PILE TIP ELEVATION
4. A MINIMUM OF 3 DYNAMIC TESTS SHALL BE PERFORMED DURING INSTALLATION. NO LESS THAN 1 TEST SHOULD BE PERFORMED AT EACH ABUTMENT. THE REMAINING PILES SHOULD BE CALIBRATED BY WAVE EQUATION ANALYSIS.

### PROPOSED STRUCTURE

STRUCTURE TYPE: Single span prestressed concrete beam bridge

CLEAR SPAN(NORMAL TO STREAM): 54' max., 30' min. effective
VERTICAL CLEARANCE ABOVE STREAMBED: 6.5'
WATERWAY OF FULL OPENING: 180 sq. ft.

WATER SURFACE ELEVATIONS AT:

| | | | |
|---|---|---|---|
| Q2.33 = | 1168.6' | VELOCITY= | 5.3 fps |
| Q10 = | 1170.0' | " | 7.4 fps |
| Q25 = | 1170.7' | " | 8.4 fps |
| Q50 = | 1171.2' | " | 9.1 fps |
| Q100 = | 1171.8' | " | 10.0 fps |

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Above Q100
RELIEF ELEVATION: 1173.5'
DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 1172.3'
VERTICAL CLEARANCE: @ Q50 = 1.1'

SCOUR: 4' of contraction scour up to Q500.

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

### PERMIT INFORMATION

| | | |
|---|---|---|
| AVERAGE DAILY FLOW: | 10 cfs | DEPTH OR ELEVATION: |
| ORDINARY LOW WATER: | 5 cfs | Depth = 0.5' |
| ORDINARY HIGH WATER: | 80 cfs | Depth = 2.0' |

### TEMPORARY BRIDGE REQUIREMENTS

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

### ADDITIONAL INFORMATION

* The existing bridge was destroyed in a flood and removed. We do not have accurate information on that bridge, so no hydraulics was done for it. The new bridge is longer and higher and has a larger waterway area than the previous bridge, so it will be better hydraulically.

### TRAFFIC MAINTENANCE NOTES

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

### DESIGN VALUES

| | | |
|---|---|---|
| 1. DESIGN LIVE LOAD | | HL-93 |
| 2. FUTURE PAVEMENT | $d_p$: | 3.0 INCH |
| 3. DESIGN SPAN | $L$: | 70.00 FT |
| 4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS) | $\Delta$: | 3.86 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 | $f'_c$: | --- |
| 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 | $f_y$: | --- |
| 14. SOIL UNIT WEIGHT | $\gamma$: | 0.140 KCF |
| 15. NOMINAL BEARING RESISTANCE OF SOIL | $q_n$: | 4.0 KSF |
| 16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) | $\phi$: | --- |
| 17. NOMINAL BEARING RESISTANCE OF ROCK | $q_n$: | 10.0 KSF |
| 18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) | $\phi$: | --- |
| 19. NOMINAL AXIAL PILE RESISTANCE | $q_p$: | ..... |
| 20. PILE YIELD STRENGTH ASTM A572 | $f_y$: | 50 KSI |
| 21. PILE SIZE | | HP 12X53 |
| 22. EST. PILE LENGTH | $L_p$: | 80 FT |
| 23. PILE RESISTANCE FACTOR | $\phi$: | --- |
| 24. LATERAL PILE DEFLECTION | $\Delta$: | --- |
| 25. BASIC WIND SPEED | $V_{3s}$: | --- |
| 26. MINIMUM GROUND SNOW LOAD | $p_g$: | --- |
| 27. SEISMIC DATA PGA: --- | $S_s$: | --- |
| | $S_1$: | --- |

PROJECT NAME: **BRIGHTON**
PROJECT NUMBER: **ER STP 034-3(25)**

FILE NAME: **s11b208pi.xls**
PROJECT LEADER: **K. HIGGINS**
DESIGNED BY: **W. LAMMER**
**PRELIMINARY INFORMATION SHEET 1**

PLOT DATE: **9/11/2012**
DRAWN BY: **J. SALVATORI**
CHECKED BY: **W. LAMMER**
SHEET **2** OF **36**

## GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE VERMONT AGENCY OF TRANSPORTATION 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE 2007 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, AND THEIR LATEST REVISIONS.

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

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

4. 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.

5. THERE ARE AERIAL ELECTRIC AND TELEPHONE LINES THAT RUN PARALLEL TO VT 105 ON THE NORTH SIDE OF THE PROJECT. NO PROVISION HAS BEEN MADE TO RELOCATE THESE LINES. THE CONTRACTOR SHALL WORK AROUND AND PROTECT THESE LINES. SEE UTILITY SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

6. NO SUBSTITUTION FOR PRECAST CONCRETE WILL BE PERMITTED.

## TRAFFIC CONTROL

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING THE LOCAL TRAFFIC CONTROL PACKAGE IDENTIFYING THE CONSTRUCTION PROJECT BEFORE, DURING, AND AFTER THE BRIDGE CLOSURE PERIOD. THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC CONTROL PLAN TO THE RESIDENT ENGINEER FOR ALL STAGES OF CONSTRUCTION, FOR APPROVAL PER SUBSECTION 105.03. ALL COSTS SHALL BE INCLUDED IN ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE). SEE SPECIAL PROVISIONS.

8. ALL SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD. WHERE CONFLICTS EXIST, THE MUTCD SHALL GOVERN. FOR ADDITIONAL SIGNING INSTRUCTIONS SEE THE E SERIES OF THE STANDARDS.

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

## EARTHWORK

10. REMOVAL OF THE EXISTING, FAILED STRUCTURE SHALL BE UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE". THIS WORK SHALL INCLUDE REMOVAL OF ANY PORTIONS OF THE EXISTING ABUTMENTS THAT FALL OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION.

11. EXCAVATION OF SOILS TO THE LIMITS SHOWN ON THE TYPICAL ABUTMENT SECTION SHALL BE PAID FOR UNDER ITEM 204.25, "STRUCTURE EXCAVATION". ALL NECESSARY EXCAVATION OUTSIDE OF THESE LIMITS SHALL BE PAID FOR UNDER ITEM 203.27. "UNCLASSIFIED CHANNEL EXCAVATION".

12. THE "STONE FILL, TYPE III" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW BEAMS ARE SET.

## CONCRETE

13. ITEM 514.10, "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON THE BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE, WITH THE EXCEPTION OF THE BOTTOM OF THE PRECAST NEXT BEAMS BETWEEN THE DRIP NOTCHES.

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

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

⚠1 16. ALL REINFORCING STEEL SHALL MEET THE REQUIREMENTS FOR REINFORCING STEEL, LEVEL 1, EPOXY COATED.

## PRECAST ABUTMENTS AND POST-TENSIONING

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

18. POST-TENSIONING AND ASSOCIATED ITEMS ARE ONLY REQUIRED IF THE PILE CAP IS CONSTRUCTED OF MORE THAN ONE UNIT. ANY POST-TENSIONING STRANDS AND CONDUIT SHALL ADHERE TO THE REQUIREMENTS OF SECTION 510 – PRESTRESSED CONCRETE. GALVANIZED ANCHOR ASSEMBLIES, CONDUIT, AND POST-TENSIONING STRANDS SHALL BE INCLUDED UNDER ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT #1) AND/OR "PRECAST CONCRETE STRUCTURE (ABUTMENT #2)" AS APPROPRIATE. POST-TENSIONING STRANDS SHALL BE COVERED WITH SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF THE STRAND, EXCEPT AT ANCHORAGE LOCATIONS.

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

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

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

22. THE CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF SUBSECTION 711.01. ALL COSTS ASSOCIATED WITH PLACING THE CORRUGATED STEEL PIPE, SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT #1)" AND ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT #2)".

23. PROPOSED SEQUENCE OF CONSTRUCTION:
    a. PREPARE AND GRADE FOUNDATION TO REQUIRED ELEVATION.
    b. DRIVE PILES.
    c. PLACE PRECAST ABUTMENTS AND INSTALL TRANSVERSE STRANDS (IF MORE THAN ONE UNIT).
    d. APPLY EPOXY TO MATCH CAST FACES OF VERTICAL CONSTRUCTION JOINT.
    e. USE A CALIBRATED JACK TO TENSION TO 3 KIPS TO REMOVE SAG IN STRANDS.
    f. CHECK ALIGNMENT OF PILE CAP ELEMENTS.
    g. STRESS POST-TENSIONING STRANDS USING A CALIBRATED JACK OPERATED BY QUALIFIED PERSONNEL WHO HAVE PREVIOUS EXPERIENCE IN POST-TENSIONING.
    h. FILL PILE CAVITIES WITH ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".
    i. PLACE PRECAST WINGWALLS AND GROUT SPLICE CONNECTORS.
    j. BACKFILL MAY BE COMPLETED AFTER SPLICE CONNECTOR GROUT HAS REACHED 85% OF 5,000 PSI.

24. ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED FOR APPROVAL BY THE PROJECT MANAGER.

## NEXT D BEAMS

25. 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.

26. 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. THE JACKING FORCE PER STRAND = 47 KIPS
    f. SERVICE LOADS

| | |
|---|---|
| MEMBER MOMENT | 857 K-FT |
| SUPERIMPOSED DEAD LOAD MOMENT | 341 K-FT |
| LIVE LOAD AND IMPACT MOMENT | 1,320 K-FT |
| DEAD LOAD REACTION | 72 KIPS |
| LIVE LOAD AND IMPACT REACTION | 98 KIPS |
| TOTAL REACTION | 170 KIPS |
| FINAL CAMBER | 1 5/16 INCHES |

27. ENDS OF FLANGES IN CONTACT WITH GROUT SHALL BE SANDBLASTED PRIOR TO DELIVERY AND POWER WASHED WITH WATER PRIOR TO ERECTION OF THE BEAMS.

28. FILL FLANGE CONNECTION WITH TYPE IV MORTAR ACCORDING TO SECTION 510. MORTAR SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 7000 PSI AND SHALL BE EXTENDED WITH AGGREGATE. ALL OTHER MATERIAL PROPERTIES SHALL REMAIN IN ACCORDANCE WITH SUBSECTION 707.03(c). GROUTING SHALL BE PAID FOR UNDER ITEM 510.24, "GROUTING SHEAR KEYS". THE CONTRACTOR SHALL SUBMIT A MIX DESIGN FOR THIS ITEM FOR APPROVAL BY THE PROJECT MANAGER.

29. METHOD OF FORMING FLANGE CONNECTION SHALL BE DETERMINED BY THE CONTRACTOR. THE FORMS SHALL BE REMOVABLE AND ABLE TO ACCOMMODATE DIFFERENTIAL CAMBER. FORM SUPPORTS SHALL NOT PENETRATE THROUGH THE TOP OF POUR UNLESS APPROVED BY THE ENGINEER.

30. THE FABRICATOR MAY ALTER THE DESIGN AS DETAILED IN THESE PLANS TO ACCOMMODATE THEIR SPECIFIC OPERATION. THIS ALTERATION MUST BE DESIGNED BY A PROFESSIONAL ENGINEER AND MEET THE ABOVE CRITERIA AND SHALL BE APPROVED BY THE PROJECT MANAGER.

31. PROPOSED SEQUENCE OF CONSTRUCTION
    a. LAY OUT WORKING LINES THE ENTIRE WIDTH OF THE BRIDGE ALONG CENTERLINE OF BEARING, MEASURED FROM A SINGLE WORKING POINT. THE WORKING LINES SHALL BE BASED ON THE NOMINAL BEAM WIDTHS.
    b. VERIFY THE BEAM SEAT ELEVATIONS AND TAKE CORRECTIVE ACTION IF NECESSARY.
    c. INSTALL BEARINGS
    d. ERECT THE BEAMS TO FIT WITHIN THE WORKING LINES.
    e. ADJUST FASCIA BEAM TO FIT SNUG AGAINST ½" CORK ON INTERIOR OF CHEEK WALL.
    f. CONSTRUCT FORMS FOR THE FLANGE AND CURTAIN WALL CONNECTION POURS.
    g. GROUT CONNECTIONS BETWEEN BEAM FLANGES AND CURE.
    h. BACKFILL AND PREPARE GRADE FOR APPROACH SLABS.
    i. COMPLETE BEAM-END CLOSURE POUR TO BOTTOM OF DECK ALLOWING FOR APPROACH SLAB BRACKET.
    j. COMPLETE PLACEMENT OF BACKFILL AND PLACE APPROACH SLAB.
    k. GROUT REBAR DOWELS IN APPROACH SLAB.
    l. COMPLETE LONGITUDINAL CLOSURE POURS OF APPROACH SLAB.
    m. COMPLETE BEAM-END CLOSURE POUR TO TOP OF DECK AND APPROACH SLABS.

32. ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED FOR APPROVAL BY THE PROJECT MANAGER.

## H-PILES

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

34. THE PILES SHALL BE DRIVEN TO A NOMINAL PILE DRIVING RESISTANCE ($R_{NDR}$) OF 286 KIPS, PROVIDED A MINIMUM PENETRATION OF 25 FEET BELOW THE BOTTOM OF PILE CAP HAS BEEN ACHIEVED.

35. A MINIMUM OF THREE DYNAMIC TESTS ARE REQUIRED DURING PILE INSTALLATION. NO LESS THAN ONE DYNAMIC PILE TEST SHALL BE CONDUCTED AT EACH ABUTMENT. PAYMENT IS ITEM 505.45, "DYNAMIC PILE LOADING TEST".

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

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

## MISCELLANEOUS

38. 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 TWO FEET BEYOND THE BEGIN BRIDGE/END OF BRIDGE.

39. A TEMPORARY BRIDGE IS IN PLACE OVER THE EXISTING, FAILED STRUCTURE. REMOVAL OF THIS TEMPORARY BRIDGE SHALL BE PAID FOR UNDER ITEM 900.645, "SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE AND APPROACHES). THE TEMPORARY BRIDGE IS THE PROPERTY OF VTRANS AND SHALL BE RETURNED TO THE VTRANS MAINTENANCE FACILITY IN MIDDLESEX, VT. CONTACT BILL SARGENT AT (802) 828-2699 TO MAKE NECESSARY ARRANGEMENTS AS PER THE SPECIAL PROVISIONS.

⚠1 REVISED 10-12-12

- REVISED NOTE 16

| | |
|---|---|
| PROJECT NAME: | BRIGHTON |
| PROJECT NUMBER: | ER STP 034-3(25) |

| | | | |
|---|---|---|---|
| FILE NAME: slib208gen.dgn | | PLOT DATE: | 12-OCT-2012 |
| PROJECT LEADER: | K. HIGGINS | DRAWN BY: | W. LAMMER |
| DESIGNED BY: | W. LAMMER | CHECKED BY: | J. SALVATORI |
| GENERAL NOTES | | SHEET | 3 OF 36 |

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# QUANTITY SHEET 2

| SUMMARY OF ESTIMATED QUANTITIES | | | | TOTALS | | DESCRIPTIONS | | | | DETAILED SUMMARY OF QUANTITIES | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROADWAY | EROSION CONTROL | BRIDGE | FULL C.E. ITEMS | GRAND TOTAL | FINAL | UNIT | ITEMS | ITEM NUMBER | ROUND | QUANTITIES | UNIT | ITEMS |
| 1 | | | | 1 | | LS | MOBILIZATION/DEMOBILIZATION | 635.11 | | | | |
| 740 | | | | 740 | | LF | 4 INCH WHITE LINE | 646.20 | | | | |
| 740 | | | | 740 | | LF | 4 INCH YELLOW LINE | 646.21 | | | | |
| | | 470 | | 470 | | SY | GEOTEXTILE UNDER STONE FILL | 649.31 | | | | |
| | 275 | | | 275 | | SY | GEOTEXTILE FOR SILT FENCE | 649.51 | | | | |
| | 81 | | | 81 | | SY | GEOTEXTILE FOR FILTER CURTAIN | 649.61 | | | | |
| | 10 | | | 10 | | LB | SEED | 651.15 | | | | |
| | 100 | | | 100 | | LB | FERTILIZER | 651.18 | | | | |
| | 1 | | | 1 | | TON | AGRICULTURAL LIMESTONE | 651.20 | | | | |
| | 1 | | | 1 | | TON | HAY MULCH | 651.25 | | | | |
| | 75 | | | 75 | | CY | TOPSOIL | 651.35 | | | | |
| | | 120 | | 120 | | SY | GRUBBING MATERIAL | 651.40 | | | | |
| | 1 | | | 1 | | LS | EPSC PLAN | 652.10 | | | | |
| | 40 | | | 40 | | HR | MONITORING EPSC PLAN | 652.20 | | | | |
| | 1 | | | 1 | | LU | MAINTENANCE OF EPSC PLAN (N.A.B.I.) | 652.30 | | | | |
| | 425 | | | 425 | | SY | TEMPORARY EROSION MATTING | 653.20 | | | | |
| | 60 | | | 60 | | CY | VEHICLE TRACKING PAD | 653.35 | | | | |
| | 605 | | | 605 | | LF | PROJECT DEMARCATION FENCE | 653.55 | | | | |
| 0.66 | | | | 0.66 | | SF | TRAFFIC SIGNS, TYPE A | 675.20 | | | | |
| 16 | | | | 16 | | LF | SQUARE TUBE SIGN POST AND ANCHOR | 675.341 | | | | |
| | | 32 | | 32 | | CY | SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE RAPID SET)(FPQ) | 900.608 | | | | |
| | | 284 | | 284 | | LF | SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAM)(NEXT 28 D) | 900.640 | | | | |
| | | 1 | | 1 | | LS | SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE AND APPROACHES) | 900.645 | | | | |
| 1 | | | | 1 | | LS | SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE) | 900.645 | | | | |
| 1 | | | | 1 | | LU | SPECIAL PROVISION (INCENTIVE/DISINCENTIVE)(N.A.B.I.) | 900.650 | | | | |
| 1 | | | | 1 | | LU | SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY)(N.A.B.I) | 900.650 | | | | |
| 1 | | | | 1 | | LU | SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT)(N.A.B.I) | 900.650 | | | | |
| 285 | | | | 285 | | TON | SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANITITY) | 900.680 | | | | |

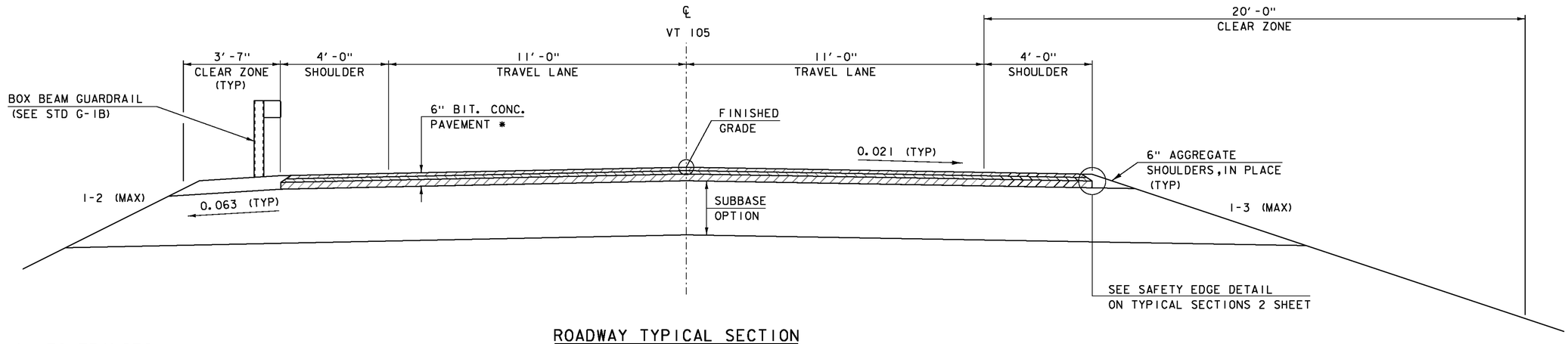
PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: sllb208qs.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: W. LAMMER
QUANTITY SHEET 2

PLOT DATE: 18-SEP-2012
DRAWN BY: W. LAMMER
CHECKED BY: J. SALVATORI
SHEET 5 OF 36

* 1 ½" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS
1 ½" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS
3" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IIS

VARIES SUBBASE OPTION



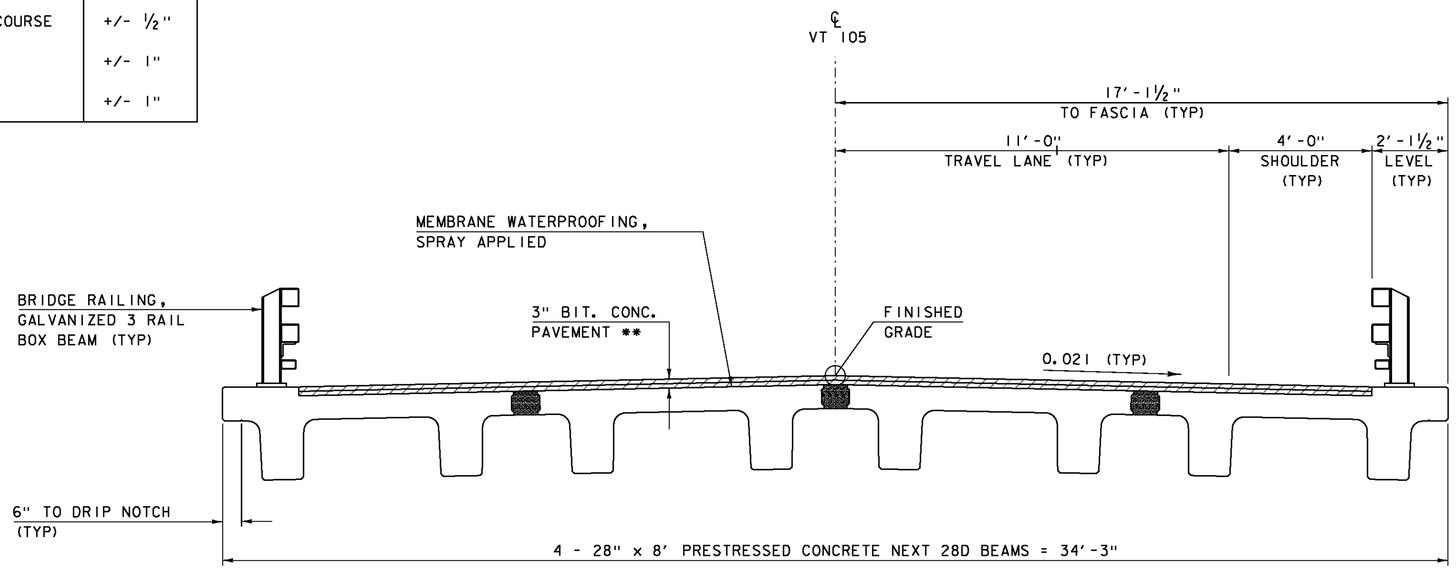

## ROADWAY TYPICAL SECTION

SCALE ½" = 1'-0"

## MATERIAL TOLERANCES

(IF USED ON PROJECT)

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




## BRIDGE TYPICAL SECTION

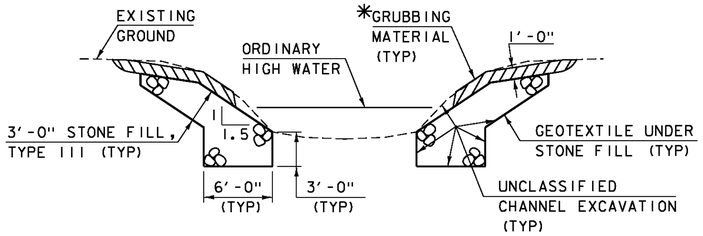
SCALE ½" = 1'-0"

** 1 ½" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS
1 ½" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: sllb208typ.dgn
PROJECT LEADER: K.HIGGINS
DESIGNED BY: J. SALVATORI
TYPICAL SECTIONS 1

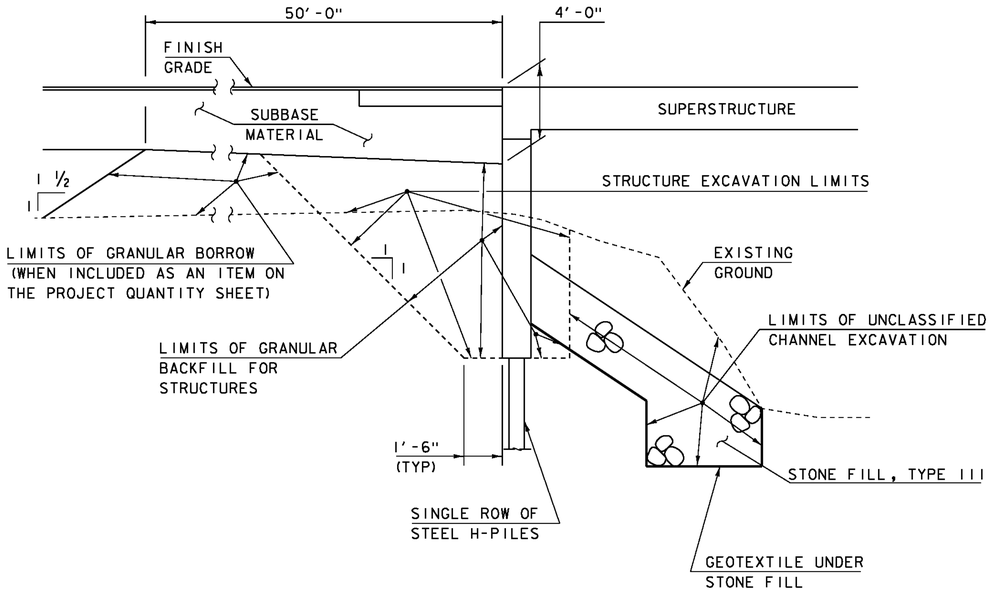
PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 6 OF 36




## TYPICAL CHANNEL SECTION

**(NOT TO SCALE)**

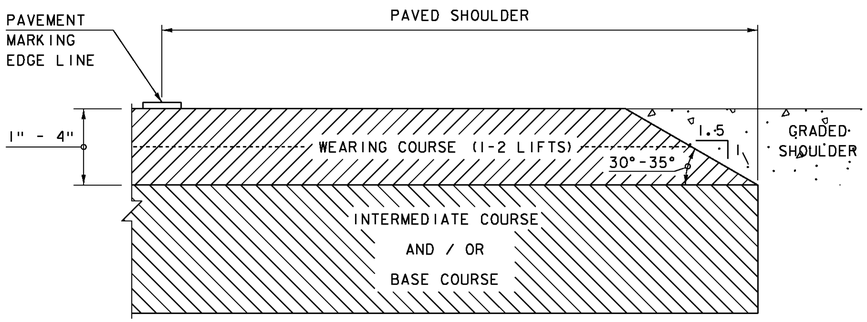
*GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.




## 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.




## SAFETY EDGE DETAIL

NOT TO SCALE

NOTE: LEVELING COURSE MAY INCLUDE THE "SAFETY EDGE" AT THE CONTRACTOR'S CHOICE.

| | |
|---|---|
| PROJECT NAME: | BRIGHTON |
| PROJECT NUMBER: | ER STP 034-3(25) |
| FILE NAME: sllb208typ.dgn | PLOT DATE: 12-SEP-2012 |
| PROJECT LEADER: K.HIGGINS | DRAWN BY: J. SALVATORI |
| DESIGNED BY: J. SALVATORI | CHECKED BY: W. LAMMER |
| TYPICAL SECTIONS 2 | SHEET 7 OF 36 |

## GPS CONTROL POINTS

### HVCTRL #1

PORTER AZ MK

NORTH = 839791.546
EAST = 1791829.618
ELEV. = 1189.855

TO REACH FROM THE INTERSECTION OF VT 114 SOUTH AND VT 105, GO NORTHWEST ALONG VT 105 FOR 0.4 MI TO THE SITE OF THE MARK ON THE LEFT.
THE MARK IS SET 4" BELOW GROUND SURFACE IN THE TOP OF A 12" DIAMETER CONCRETE MONUMENT. IT IS 22.3' WEST-SOUTHWEST OF AND 3.3' LOWER THE CENTERLINE OF VT 105, 110' NORTH-NORTHWEST OF THE CENTERLINE OF A GRAVEL DRIVE LEADING TO THE GOODHILE RESIDENCE, 41.7' SOUTH OF A METAL ROAD SIGN, 87.6' EAST-NORTHEAST OF A 16" PINE, 154.5' NORTHEAST OF THE NORTH CORNER OF A 2 BAY GARAGE, 12' NORTH OF A LILAC BUSH, 88.6' EAST OF A METAL POST FOR A SATELLITE DISH, AND 1' EAST-NORTHEAST OF A FIBERGLASS WITNESS POST.

### HVCTRL #2

PORTER

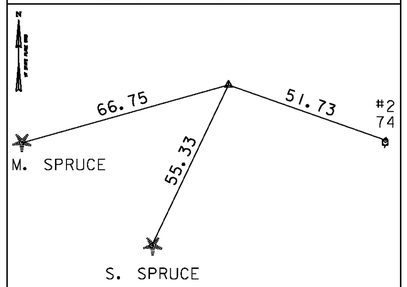
NORTH = 840414.211
EAST = 1790457.251
ELEV. = 1200.817

TO REACH FROM THE INTERSECTION OF VT 114 SOUTH AND VT 105, GO NORTHWEST ALONG VT 105 FOR 0.8 MI TO THE SITE OF THE MARK ON THE LEFT.
THE MARK IS SET 2" BELOW GROUND SURFACE IN THE TOP OF A 12" DIAMETER CONCRETE MONUMENT. IT IS 27.6' SOUTHWEST OF AND ABOUT 2.6' HIGHER THAN THE CENTERLINE OF VT 105, 89.2' WEST-NORTHWEST OF THE NORTH CORNER OF A SMALL WOODEN STORAGE BUILDING, 115' EAST-SOUTHEAST OF A 20" ELM, 74.5' WEST-SOUTHWEST OF AND ACROSS THE ROAD FROM THE SOUTH CORNER OF THE PORTER FARM BARN, 75.5' SOUTH-SOUTHEAST OF AND ACROSS THE ROAD FROM THE SOUTH CORNER OF THE ENCLOSED PORCH OF A 2 STORY HOUSE, 21' WEST OF THE CENTERLINE OF A FARM DRIVE, AND 1' NORTH-NORTHEAST OF A FIBERGLASS WITNESS POST.

## TRAVERSE TIES

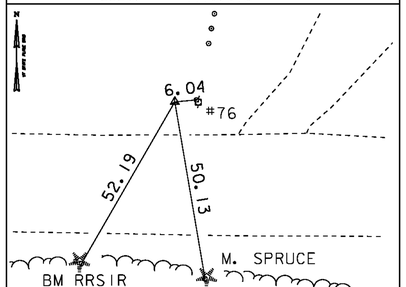
### HVCTRL #3

NORTH = 840980.242
EAST = 1789686.907
ELEV. = 1171.735



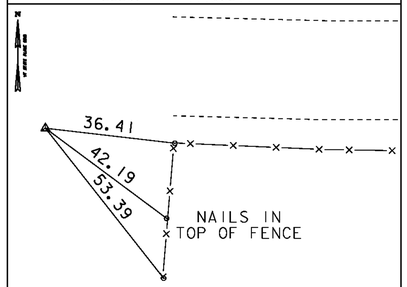

### HVCTRL #4

NORTH = 841133.516
EAST = 1789029.141
ELEV. = 1173.970




### HVCTRL #5

NORTH = 841102.677
EAST = 1788297.305
ELEV. = 1178.211




NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

*TRAVERSE COMPLETED 10/14/2011 BY R.GILMAN P.C. & P.WINTERS

## ALIGNMENT TIES

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

DATUM

VERTICAL NAVD 88
HORIZONTAL NAD 83 (07)
ADJUSTMENT COMPASS

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

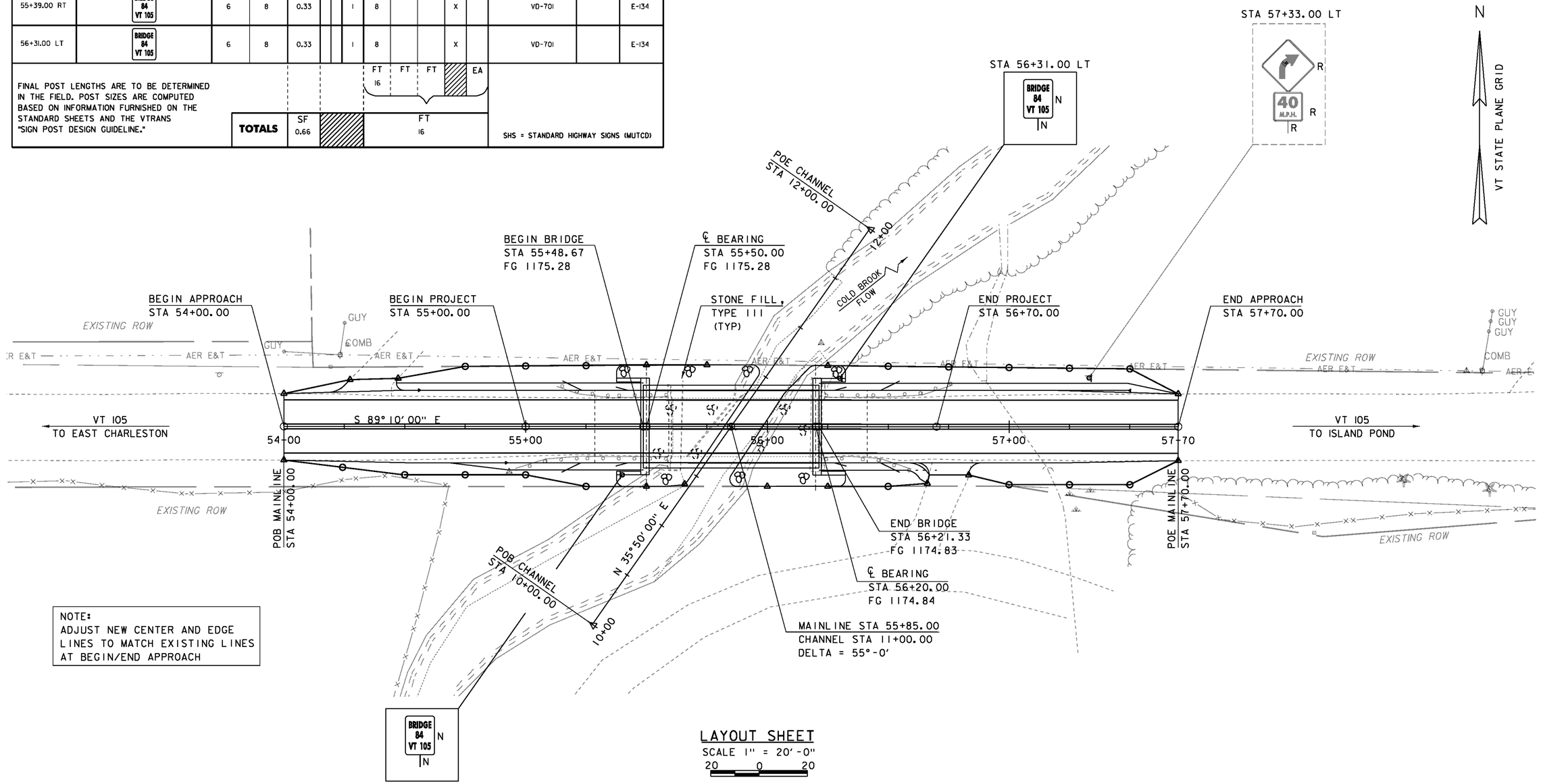
FILE NAME: slib208ti.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: W. LAMMER
TIE SHEET

PLOT DATE: 12-SEP-2012
DRAWN BY: W. LAMMER
CHECKED BY: J. SALVATORI
SHEET 8 OF 36

| MILEMARKER, STATION, OR SIGN NUMBER | SIGN LEGEND | SIGN DIMENSIONS WIDTH (In) | SIGN DIMENSIONS HEIGHT (In) | NEW SIGN "A" | EXIST POST RETAIN | EXIST POST SALVAGE | NO. OF POSTS | NEW SIGN POSTS SQUARE STEEL (In) 1.75 lb/ft 1.88 | 2.0 lb/ft 2.42 | 2.5 lb/ft 3.35 | ANCHOR | SLEEVE | REMARKS | SIGN DETAIL DETAIL ON SHEET NUMBER | SIGN DETAIL STD. SHEET NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 55+39.00 RT | BRIDGE 84 VT 105 | 6 | 8 | 0.33 | | | 1 | 8 | | | X | | VD-701 | | E-134 |
| 56+31.00 LT | BRIDGE 84 VT 105 | 6 | 8 | 0.33 | | | 1 | 8 | | | X | | VD-701 | | E-134 |
| 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." | | | | | | | | FT 16 | FT | FT | | EA | | | |
| | **TOTALS** | | | SF 0.66 | | | | FT 16 | | | | | SHS = STANDARD HIGHWAY SIGNS (MUTCD) | | |

SIGN LEGEND

| | | |
|---|---|---|
| N | = | NEW |
| R | = | RETAIN |




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

## LAYOUT SHEET

SCALE 1" = 20'-0"

20 0 20

CONSTRUCT PAVED APRON (5 FT)
STA 54+18.00 - 54+50.00 LT
STA 56+62.00 - 56+88.00 RT

SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE AND APPROACHES)
STA 55+00.00 - 57+00.00

TRAFFIC SIGNS, TYPE A
STA 55+39.00 (RT)
STA 56+31.00 (LT)

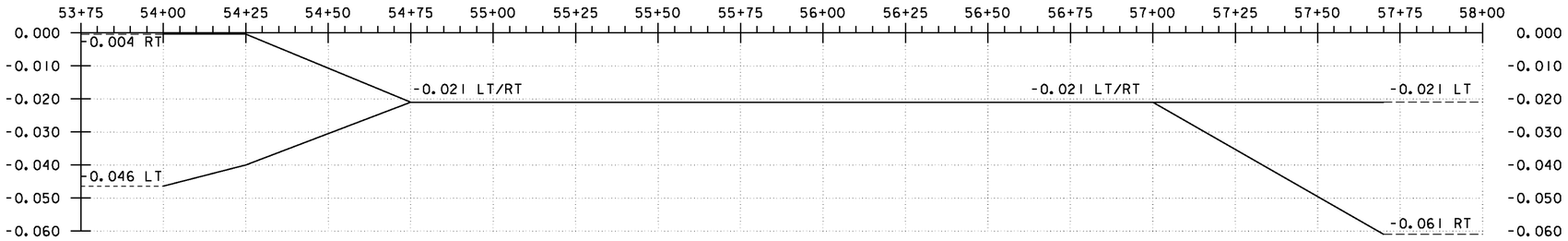
4" WHITE LINE (LT & RT)
STA 54+00.00 - 57+70.00

4" YELLOW LINE (DOUBLE)
STA 54+00.00 - 57+70.00

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

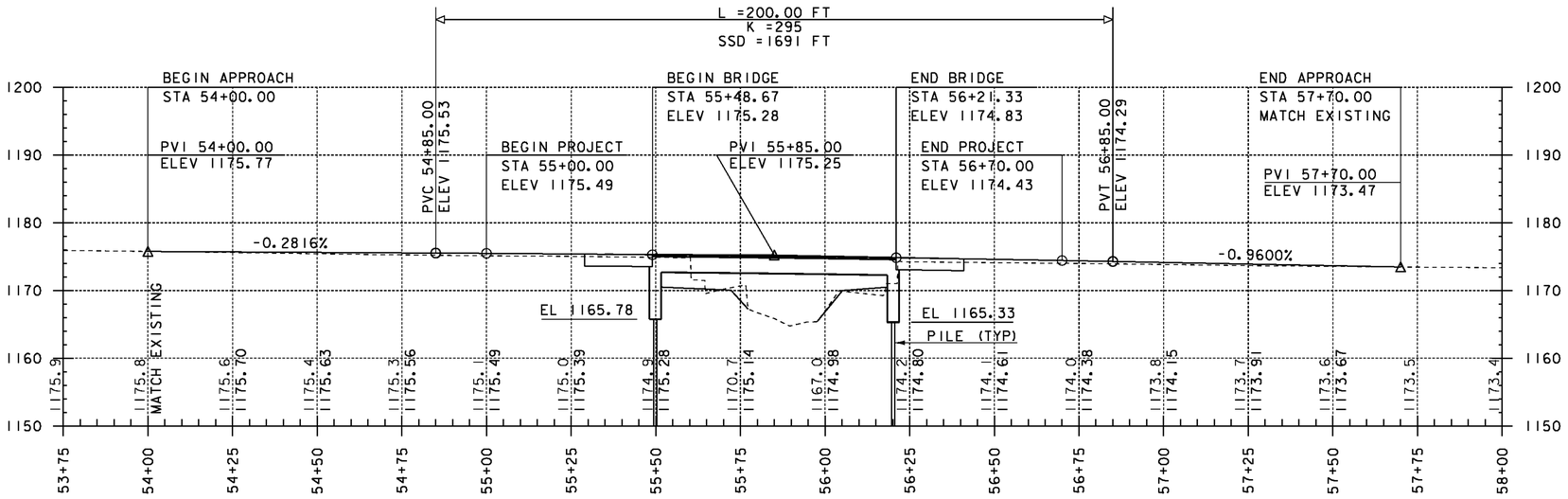
FILE NAME: sllb208bdr.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
LAYOUT SHEET

PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 9 OF 36



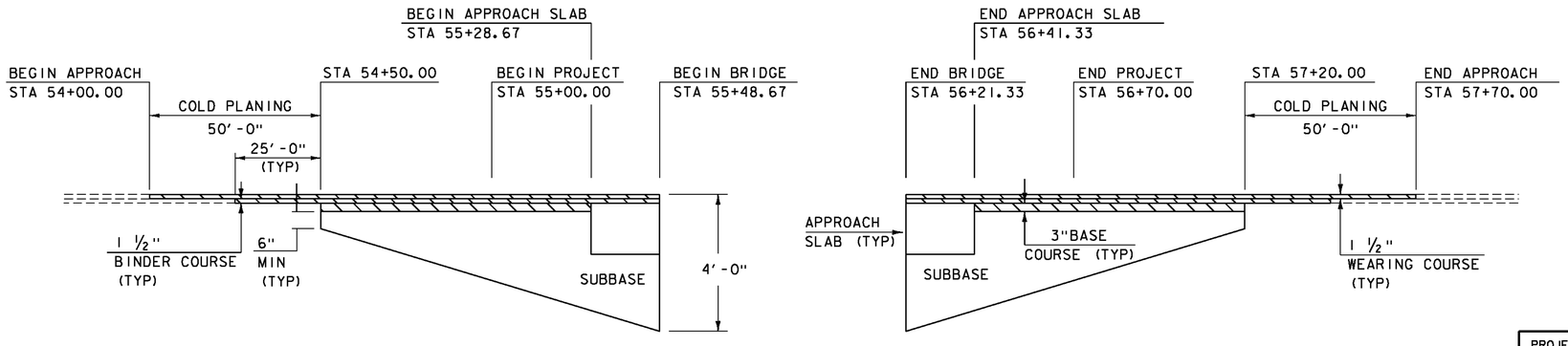

## BANKING DIAGRAM

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




## MAINLINE PROFILE

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




## MATERIAL TRANSITION

HORIZONTAL SCALE 1" = 20'-0"
VERTICLE SCALE 1/2" = 1'-0"

| | |
|---|---|
| PROJECT NAME: | BRIGHTON |
| PROJECT NUMBER: | ER STP 034-3(25) |
| FILE NAME: slib208pro.dgn | PLOT DATE: 12-SEP-2012 |
| PROJECT LEADER: K. HIGGINS | DRAWN BY: J. SALVATORI |
| DESIGNED BY: J. SALVATORI | CHECKED BY: W. LAMMER |
| MAINLINE PROFILE | SHEET 10 OF 36 |

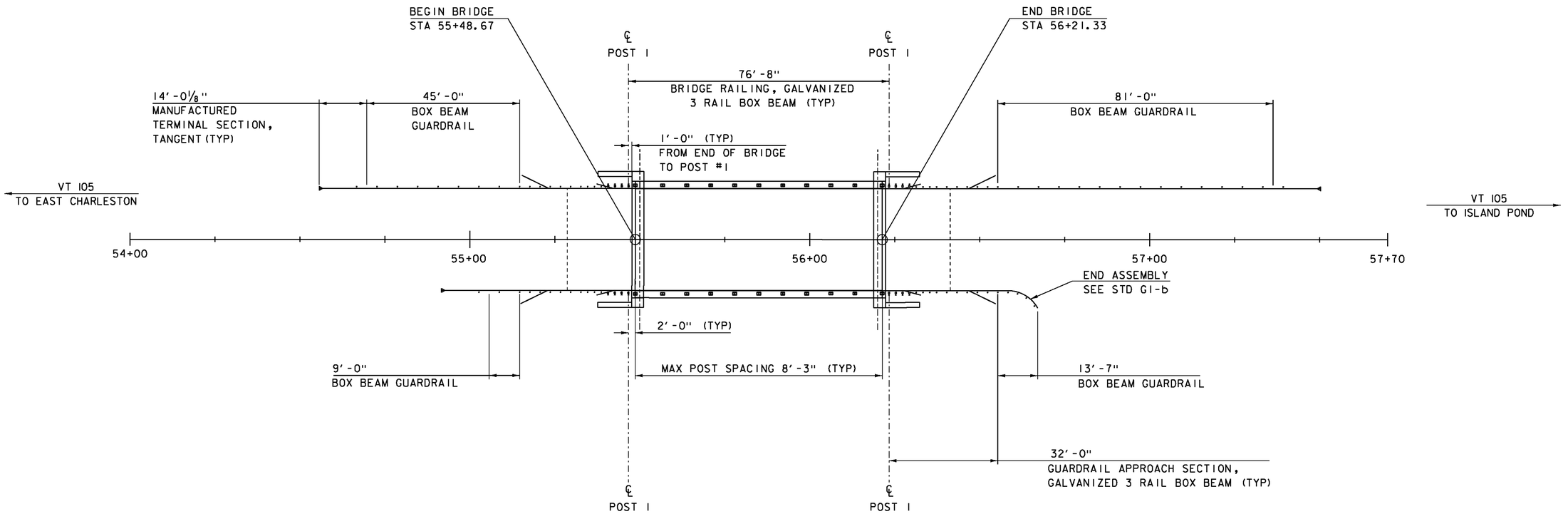
BOX BEAM GUARDRAIL
STA 54+69.67 - 55+14.67 LT
STA 55+05.66 - 55+14.67 RT
STA 56+55.33 - 57+36.34 LT
STA 56+55.33 - 56+67.05 RT

MANUFACTURED TERMINAL SECTION, TANGENT
STA 54+55.66 - 54+69.67 LT
STA 54+91.65 - 55+05.66 RT
STA 57+36.34 - 57+50.35 LT

BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM
STA 55+48.67 - 56+21.33 LT/RT

GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM
STA 55+14.67 - 55+48.67 LT/RT
STA 56+21.33 - 56+55.33 LT/RT

N
VT STATE PLANE GRID




## RAIL LAYOUT SHEET
SCALE 1" = 15'-0"

| | |
|---|---|
| PROJECT NAME: | BRIGHTON |
| PROJECT NUMBER: | ER STP 034-3(25) |

| | |
|---|---|
| FILE NAME: slib208rail.dgn | PLOT DATE: 12-SEP-2012 |
| PROJECT LEADER: K. HIGGINS | DRAWN BY: J. SALVATORI |
| DESIGNED BY: J. SALVATORI | CHECKED BY: W. LAMMER |
| RAIL LAYOUT SHEET | SHEET 11 OF 36 |

## SOIL CLASSIFICATION

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

## ROCK QUALITY DESIGNATION

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

## SHEAR STRENGTH

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

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

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

## COMMONLY USED SYMBOLS

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

### COLOR

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

## DEFINITIONS (AASHTO)

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

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

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

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

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

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

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

VARVED - Alternate layers of silt and clay.

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

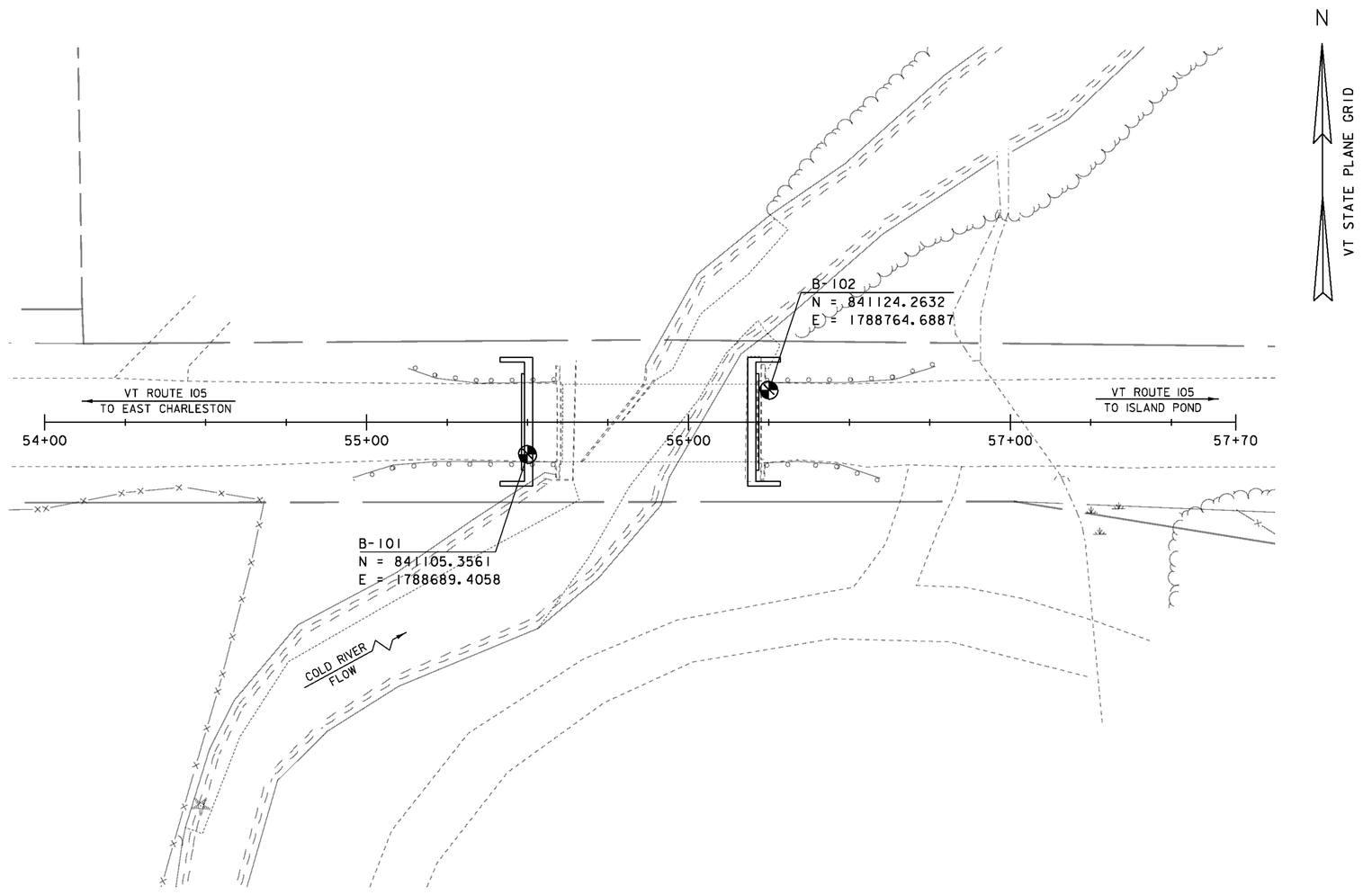
MUCK - Soft organic soil (containing > 10% organic material.

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

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

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

DIP - Inclination of bed with a horizontal plane.




## BORING LAYOUT

SCALE 1" = 20'-0"

20 0 20

## BORING CHART

| HOLE NO. | SURV. STATION | OFFSET | GROUND ELEV. |
|---|---|---|---|
| B-101 | 55+50 | 10' RT | 1174.85 |
| B-102 | 56+25 | 10' LT | 1174.26 |

The subsurface explorations shown herein were made between 04/05/12 and 04/20/12 by the Agency.

Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.

Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.

## GENERAL NOTES

4. Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.

5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.

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

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

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: slib208bor.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
BORING LAYOUT SHEET

PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 12 OF 36

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

# BORING LOG

BRIGHTON
STP 034-3(25)
VT-105 BR-84

Boring No.: B-101
Page No.: 1 of 2
Pin No.: 11B208
Checked By: CCB

Boring Crew: PORTER, DAVISON, HOLT
Date Started: 4/05/12 Date Finished: 4/16/12
VTSPG NAD83: N 841105.36 ft E 1788689.41 ft
Station: 55+50 Offset: 10.00
Ground Elevation: 1174.85 ft

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

Groundwater Observations

| Date | Depth (ft) | Notes |
|---|---|---|
| 04/16/12 | 8.5 | AM |

| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Run (Dip deg.) | Core Rec. % (RQD %) | Drill Rate minutes/ft | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Asphalt Pavement, 0.0 ft - 0.5 ft | | | | | | | | |
| | | Visual Description:, SlSa with one piece of granite, brn, Moist, Rec. = 0.2 ft, Stone in end of sampler. Insufficient sample for testing. | | | | 9-6-6-11 (12) | | | | |
| 5 | | | | | | | | | | |
| | | A-1-a, SaGr, brn, Moist, Rec. = 0.8 ft | | | | 8-8-8-5 (16) | 17.0 | 54.2 | 36.9 | 8.9 |
| ABUTMENT 1 | | | | | | | | | | |
| BOT OF PILE CAP | | | | | | | | | | |
| EL 1165.78 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| | | Field Note:, No Recovery. Trace of silt in sampler | | | | 4-1-1-1 (2) | | | | |
| 15 | | | | | | | | | | |
| | | A-2-4, Sa, gry, Moist, Rec. = 1.0 ft | | | | 15-12-11-12 (23) | 19.0 | 15.8 | 72.9 | 11.3 |
| 20 | | | | | | | | | | |
| | | A-1-b, Sa, brn, Moist, Rec. = 1.5 ft | | | | 5-6-8-9 (14) | 19.2 | 7.9 | 86.1 | 6.0 |
| 25 | | | | | | | | | | |
| | | A-2-4, Sa, brn, Moist, Rec. = 1.2 ft, Granite chips were within sample. | | | | 7-10-14-16 (24) | 15.2 | 18.1 | 70.4 | 11.5 |
| 30 | | | | | | | | | | |
| | | A-1-b, GrSa, brn, Moist, Rec. = 1.0 ft, Granite chips and broken rock were within sample. | | | | 17-17-21-34 (38) | 13.7 | 40.7 | 44.9 | 14.4 |
| 35 | | | | | | | | | | |
| | | A-1-b, GrSa, brn, Moist, Rec. = 0.8 ft, Granite chips and broken rock were within sample. | | | | 22-20-14-11 (34) | 12.9 | 38.0 | 52.8 | 9.2 |
| 40 | | | | | | | | | | |
| | | A-1-b, GrSa, brn, Moist, Rec. = 0.7 ft, Granite chips and broken rock were within sample. | | | | 14-12-16-15 (28) | 12.6 | 40.2 | 50.5 | 9.3 |
| 45 | | | | | | | | | | |
| | | A-1-b, GrSa, gry-brn, Moist, Rec. = 1.1 ft, Granite chips were within sample. | | | | 8-11-18-8 (29) | 15.6 | 38.2 | 53.8 | 8.0 |

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.

BORING LOG 2 BRIGHTON STP 034-3(25)CPJ VERMONT AOT.GDT 5/21/12

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

# BORING LOG

BRIGHTON
STP 034-3(25)
VT-105 BR-84

Boring No.: B-101
Page No.: 2 of 2
Pin No.: 11B208
Checked By: CCB

Boring Crew: PORTER, DAVISON, HOLT
Date Started: 4/05/12 Date Finished: 4/16/12
VTSPG NAD83: N 841105.36 ft E 1788689.41 ft
Station: 55+50 Offset: 10.00
Ground Elevation: 1174.85 ft

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

Groundwater Observations

| Date | Depth (ft) | Notes |
|---|---|---|
| 04/16/12 | 8.5 | AM |

| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Run (Dip deg.) | Core Rec. % (RQD %) | Drill Rate minutes/ft | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A-1-b, GrSa, gry-brn, Moist, Rec. = 1.0 ft, Small Granite chips within size. | | | | 6-5-8-9 (13) | 18.9 | 32.5 | 62.6 | 4.9 |
| 55 | | | | | | | | | | |
| | | A-1-b, GrSa, gry-brn, Moist, Rec. = 1.1 ft | | | | 6-8-9-18 (17) | 17.2 | 28.9 | 57.5 | 13.6 |
| 60 | | | | | | | | | | |
| | | A-1-b, Sa, gry-brn, Moist, Rec. = 1.0 ft | | | | 9-10-21-32 (31) | 18.3 | 17.3 | 78.6 | 4.1 |
| | | A-4, Si, brn, Moist, Rec. = 0.6 ft | | | | | 26.2 | 0.5 | 3.4 | 96.1 |
| 65 | | | | | | | | | | |
| | | A-4, Si, gry, Moist, Rec. = 1.3 ft | | | | 19-31-35-43 (66) | 20.0 | 0.1 | 11.8 | 88.1 |
| 70 | | | | | | | | | | |
| | | A-2-4, GrSa, gry, Moist, Rec. = 1.2 ft | | | | 22-25-35-27 (60) | 11.6 | 22.3 | 58.6 | 19.1 |
| 75 | | | | | | | | | | |
| | | Field Note:, Cored ahead | | | | R@2.5" | | | | |
| | | Field Note:, Cobbles | | | | | | | | |
| 80 | | | | | | | | | | |
| | | A-2-4, GrSlSa (HP), gry, Moist, Rec. = 0.2 ft | | | | 61-R@2.5" | 7.1 | 24.7 | 45.3 | 30.0 |
| 85 | | | | | | | | | | |
| | | Field Note:, Advanced casing to 87 feet. Cleaned out casing. 1.8 feet of rock inside bottom of casing. | | | | | | | | |
| | | 87.0 ft - 92.0 ft, Light gray, With dark green splotches Diorite, Hard, Unweathered, Very good rock, BXMDC, RMR = 92 | 1 (?) | 92 (90) | 7 7 7 6 7 | Top of Bedrock @ 87.0 ft | | | | |
| 90 | | | | | | | | | | |
| | | 92.0 ft - 97.0 ft, Light gray, With dark green splotches Diorite, Hard, Unweathered, Very good rock, BXMDC, Healed near vertical fracture from 95.0-97.0 feet. RMR = 92 | 2 (?) | 100 (94) | 5 4 5 4 5 | | | | | |
| 95 | | | | | | | | | | |
| | | Hole stopped @ 97.0 ft | | | | | | | | |

ABUTMENT 1
PILE TIP
EL 1087.85

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.

BORING LOG 2 BRIGHTON STP 034-3(25)CPJ VERMONT AOT.GDT 5/21/12

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: slib208bor.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: W. LAMMER
BORING LOG 1

PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 13 OF 36

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

# BORING LOG

BRIGHTON
STP 034-3(25)
VT-105 BR-84

Boring No.: B-102
Page No.: 1 of 2
Pin No.: 11B208
Checked By: CCB

Boring Crew: PORTER, DAVISON
Date Started: 4/17/12 Date Finished: 4/20/12
VTSPG NAD83: N 841124.26 ft E 1788764.69 ft
Station: 56+25 Offset: -10.00
Ground Elevation: 1174.26 ft

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

Groundwater Observations

| Date | Depth (ft) | Notes |
|---|---|---|
| 04/20/12 | 9.5 | AM |

| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % |
|---|---|---|---|---|---|---|---|
| | | Asphalt Pavement, 0.0 ft – 0.5 ft | | | | | |
| | | A-1-b, GrSa, brn, Moist, Rec. = 1.0 ft | 7-7-8-7 (15) | 9.9 | 35.5 | 49.3 | 15.2 |
| | | A-1-a, SaGr, brn, Moist, Rec. = 0.9 ft | 4-4-8-9 (12) | 12.1 | 53.0 | 39.2 | 7.8 |
| 10 | | A-1-b, GrSa, brn, Moist, Rec. = 0.6 ft | 2-2-3-2 (5) | 18.4 | 30.6 | 58.6 | 10.8 |
| | | A-1-a, SaGr, brn-gry, Moist, Rec. = 0.8 ft | 14-14-18-20 (32) | 12.0 | 52.5 | 37.5 | 10.0 |
| 20 | | A-2-4, Sa, brn, Moist, Rec. = 1.0 ft | 6-6-8-9 (14) | 20.6 | 9.7 | 76.5 | 13.8 |
| | | A-3, Sa, brn, Moist, Rec. = 0.8 ft | 6-6-7-7 (13) | 16.9 | 9.0 | 81.5 | 9.5 |
| 30 | | A-1-b, GrSa, brn, Moist, Rec. = 0.8 ft | 7-16-17-12 (33) | 16.7 | 42.4 | 53.9 | 3.7 |
| | | A-1-b, GrSa, brn, Moist, Rec. = 0.7 ft | 8-7-6-7 (13) | 16.4 | 30.9 | 61.1 | 8.0 |
| 40 | | Field Note:, No Recovery. Trace of sand | 8-11-11-10 (22) | | | | |
| | | Visual Description:, Broken Granite pieces with silty sand, brn, Moist, Rec. = 0.3 ft, Insufficient sample for testing. | 27-25-17-15 (42) | 17.7 | | | |
| 50 | | A-3, Sa, brn, Moist, Rec. = 0.7 ft | 5-9-13-19 (22) | 6.7 | 0.5 | 91.3 | 8.2 |

ABUTMENT 2
BOT OF PILE CAP
EL 1165.33

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.

BORING LOG 2 BRIGHTON STP 034-3(25).GPJ VERMONT AOT.GDT 5/21/12

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

# BORING LOG

BRIGHTON
STP 034-3(25)
VT-105 BR-84

Boring No.: B-102
Page No.: 2 of 2
Pin No.: 11B208
Checked By: CCB

Boring Crew: PORTER, DAVISON
Date Started: 4/17/12 Date Finished: 4/20/12
VTSPG NAD83: N 841124.26 ft E 1788764.69 ft
Station: 56+25 Offset: -10.00
Ground Elevation: 1174.26 ft

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

Groundwater Observations

| Date | Depth (ft) | Notes |
|---|---|---|
| 04/20/12 | 9.5 | AM |

| Depth (ft) | Strata (1) | CLASSIFICATION OF MATERIALS (Description) | Blows/6" (N Value) | Moisture Content % | Gravel % | Sand % | Fines % |
|---|---|---|---|---|---|---|---|
| | | A-1-b, Sa, brn, Moist, Rec. = 1.0 ft | 9-11-12-12 (23) | 22.5 | 10.5 | 82.5 | 7.0 |
| 60 | | A-4, Si, brn, Moist, Rec. = 1.6 ft | 14-16-18-20 (34) | 22.0 | 0.5 | 17.3 | 82.2 |
| | | A-1-b, GrSa, brn, Moist, Rec. = 1.5 ft | 16-13-27-46 (40) | 12.2 | 29.6 | 52.7 | 17.7 |
| 70 | | Field Note:, Cobbles. Pieces of Granite | (R) | | | | |
| | | A-4, SaSi, gry, Moist, Rec. = 0.5 ft, Lab Note: (HP) | R@6.0" | 11.9 | 15.0 | 39.8 | 45.2 |
| 80 | | Visual Description:, Broken Rock with sand, gry, Moist, Rec. = 0.2 ft, Insufficient sample for testing. | R@2.5" | 7.3 | | | |
| | | Visual Description:, Broken Rock, gry, Moist, Rec. = 0.2 ft, Insufficient sample for testing. | R@2.5" | | | | |
| 90 | | A-1-b, GrSa, gry, Moist, Rec. = 0.4 ft, Advanced casing to 99 ft. | R@5.0" | 8.1 | 38.7 | 43.6 | 17.7 |
| 100 | | Field Note:, Granite Boulder | | | | | |
| | | Hole stopped @ 109.0 ft | | | | | |

ABUTMENT 2
PILE TIP
EL 1087.33

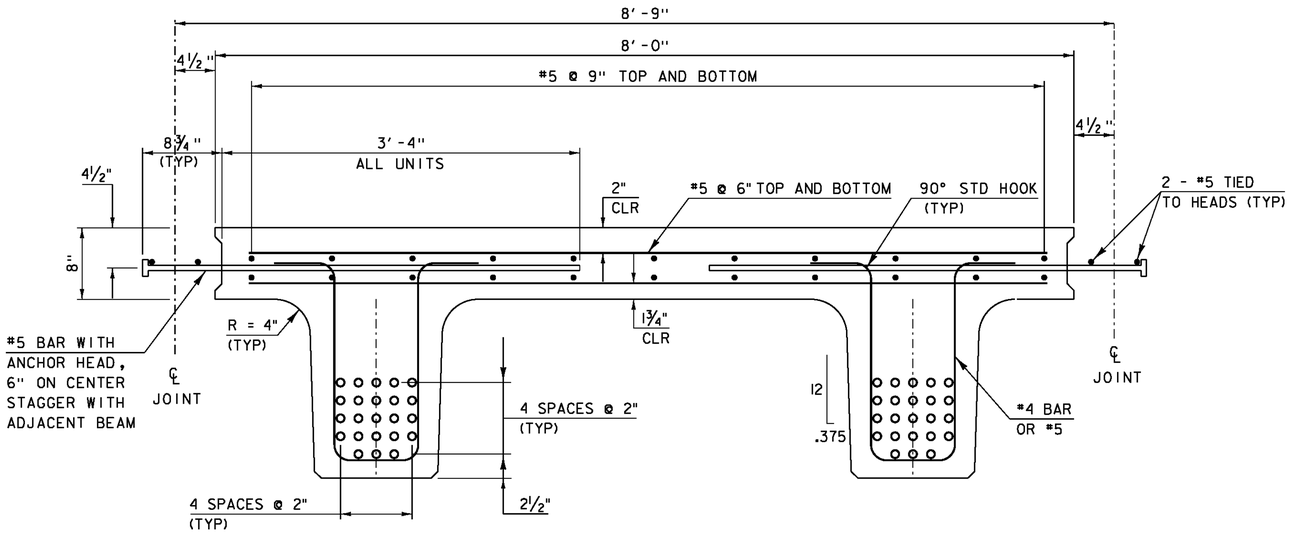
Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations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

BORING LOG 2 BRIGHTON STP 034-3(25).GPJ VERMONT AOT.GDT 5/21/12

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

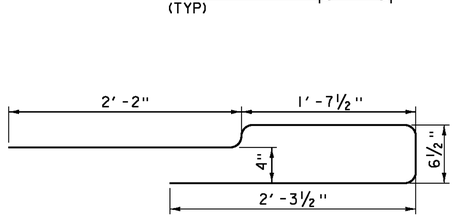
FILE NAME: s11b208bor.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: W. LAMMER
BORING LOG 2

PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 14 OF 36



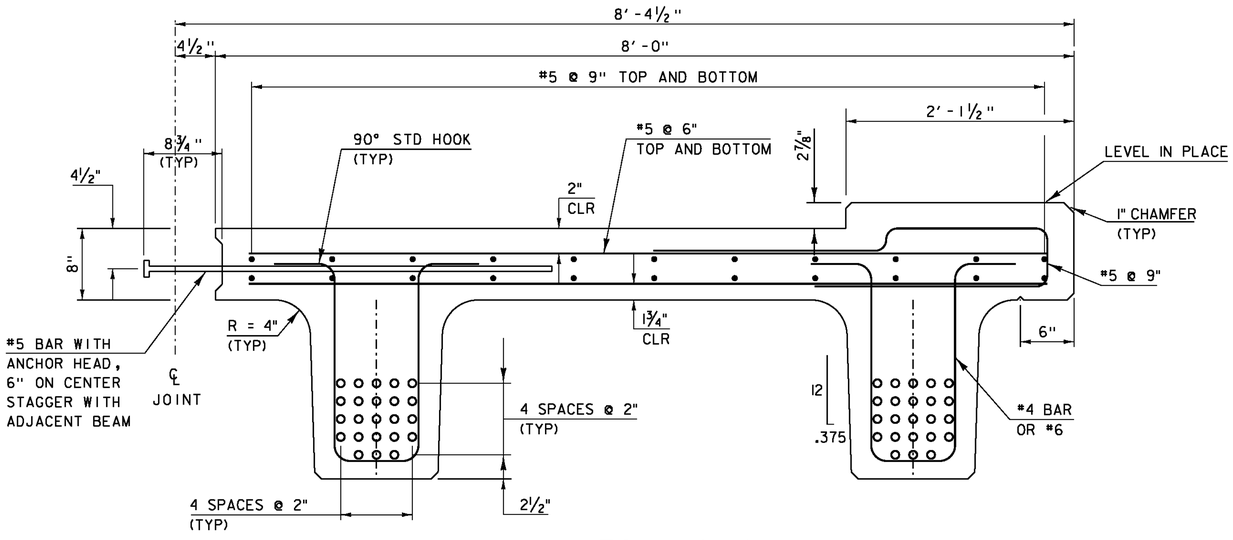

## UNITS 2 & 3

SCALE: 1½″ = 1′-0″



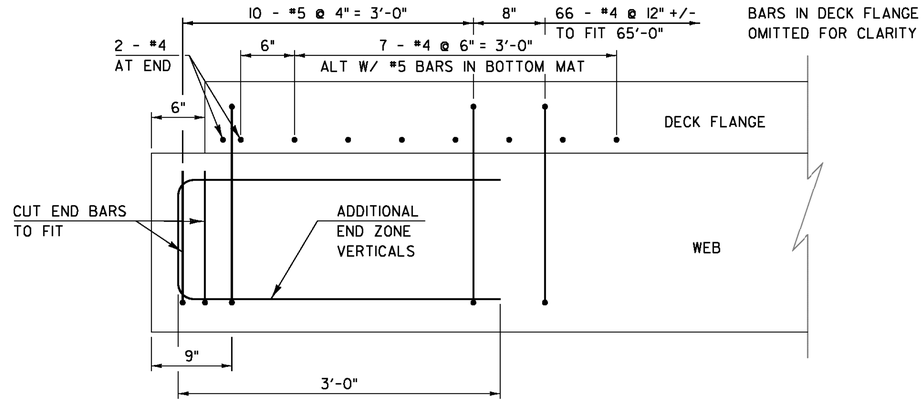

## CURB BAR

SCALE: 1½″ = 1′-0″



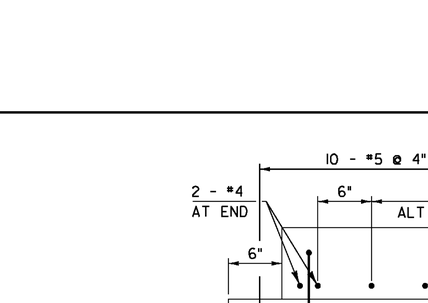

## UNITS 1 & 4

SCALE: 1½″ = 1′-0″




## ADDITIONAL END BEAM REINFORCING LONGITUDINAL SECTION

SCALE: 1½″ = 1′-0″



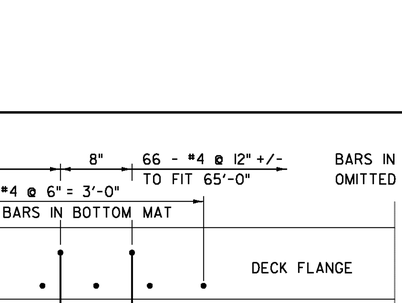

## BEAM SECTION

SCALE: 1½″ = 1′-0″

◇ - 1′-6″ STRAND CUT LONG

○ - DEBONDED 4′

□ - DEBONDED 6′




## END SECTION

SCALE: 1½″ = 1′-0″

$L_{NEXT}$ = 71 FT.

SKEW = 90°

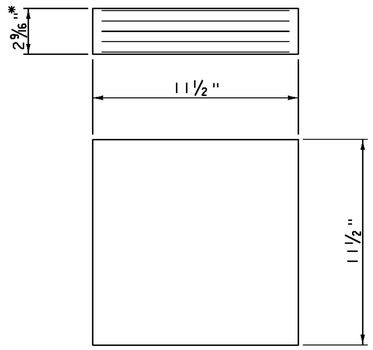
NOTES:

1. LEAVE SIX STRANDS 1′-6″ LONG AS INDICATED. TIE STRANDS TO HORIZONTAL #5 REINFORCING IN DECK CLOSURE POUR.

⚠1 REVISED 10-12-12

- REMOVED NOTE 2

| | |
|---|---|
| PROJECT NAME: | BRIGHTON |
| PROJECT NUMBER: | ER STP 034-3(25) |
| FILE NAME: sllb208sup.dgn | PLOT DATE: 12-OCT-2012 |
| PROJECT LEADER: K. HIGGINS | DRAWN BY: J. SALVATORI |
| DESIGNED BY: W. LAMMER | CHECKED BY: W. LAMMER |
| NEXT BEAM TYPICAL SECTIONS | SHEET 16 OF 36 |



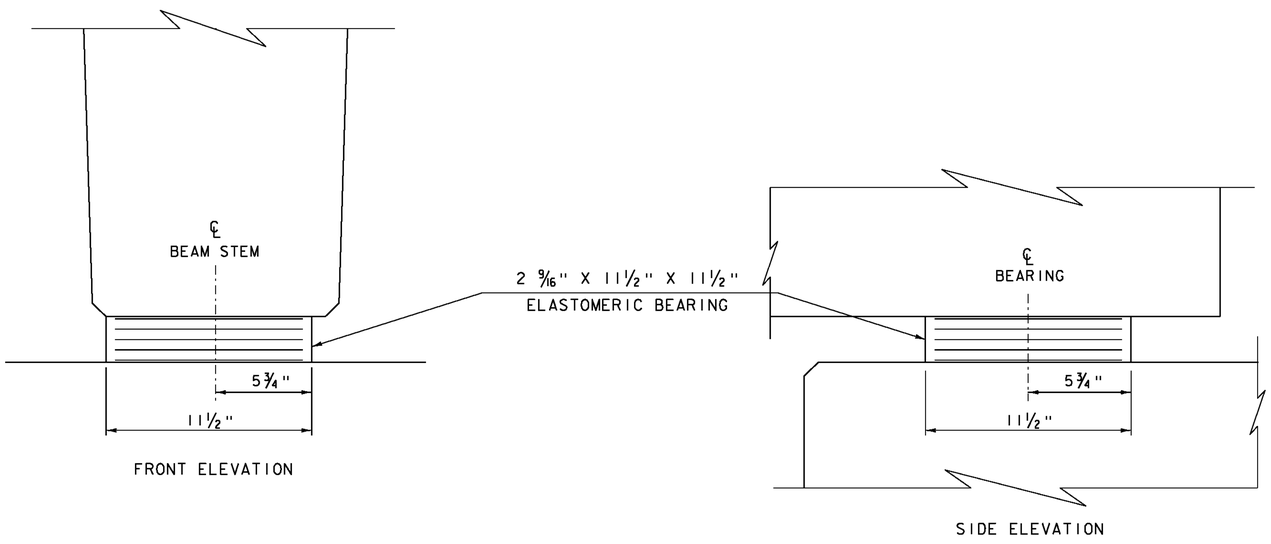

ELASTOMERIC BEARING DETAIL

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

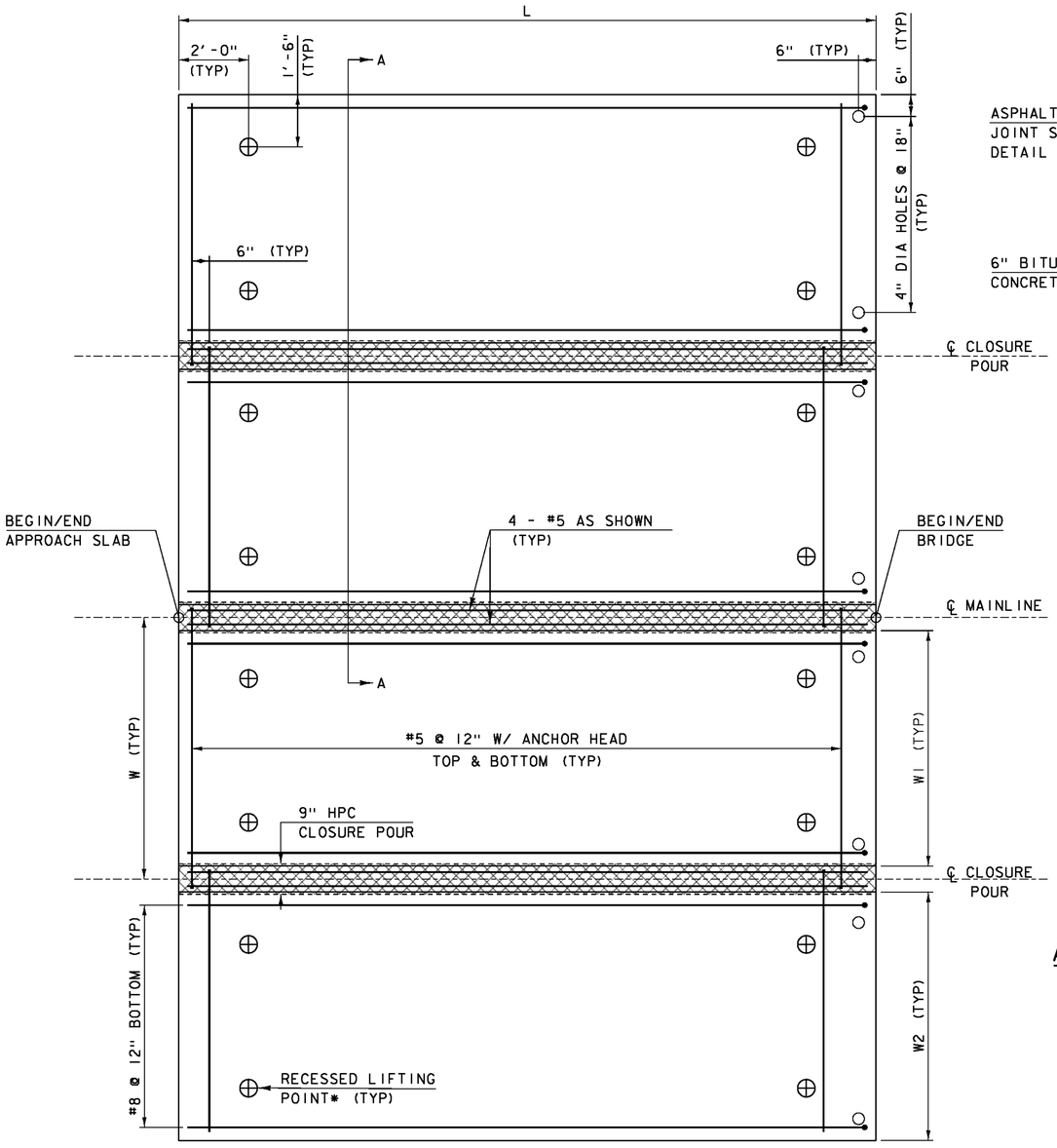
1. BEARINGS SHALL CONFORM TO THE APPLICABLE SUBSECTIONS OF SECTIONS 531 AND 731.
2. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMER SHALL BE STEEL MEETING THE REQUIREMENTS OF SUBSECTION 714.02. ALL INTERNAL STEEL PLATES SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST AND MILL SCALE. THE PLATES SHALL BE FREE OF SHARP EDGES AND BURRS.
3. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM 1/8" EDGE SEAL OF ELASTOMER INTEGRAL WITH BEARING OVER ALL INTERNAL PLATES.
4. THE ELASTOMER WAS DESIGNED WITH A SHEAR MODULUS OF 100 PSI +/- 15%
5. THE CONCRETE UNDER THE BEARING DEVICE SHALL BE LEVEL.
6. THE CONTRACTOR IS ADVISED TO HAVE A MINIMUM OF 16 - 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 UNDER ITEM 531.17,"BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD".




ELASTOMERIC BEARING DETAILS

SCALE 3" = 1'-0"

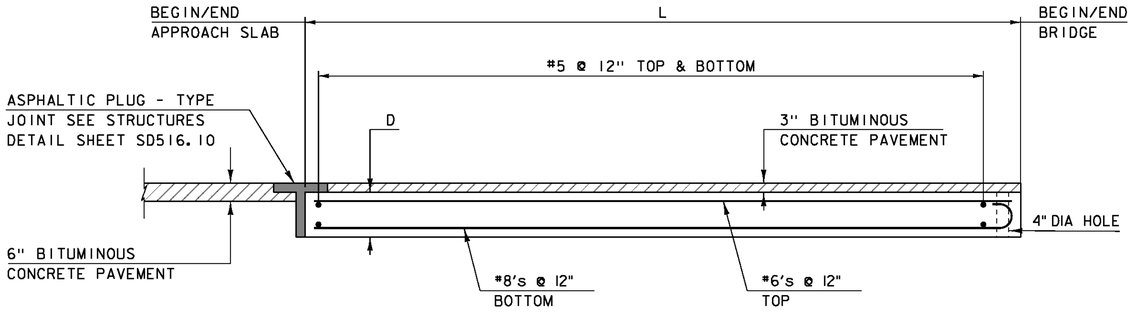
| | |
|---|---|
| PROJECT NAME: | BRIGHTON |
| PROJECT NUMBER: | ER STP 034-3(25) |
| FILE NAME: s11b208brg.dgn | PLOT DATE: 12-SEP-2012 |
| PROJECT LEADER: K. HIGGINS | DRAWN BY: J. SALVATORI |
| DESIGNED BY: W. LAMMER | CHECKED BY: W. LAMMER |
| BEARING DETAILS | SHEET 17 OF 36 |




## APPROACH SLAB PLAN VIEW

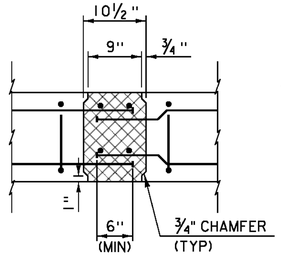
SCALE ½" = 1'-0

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



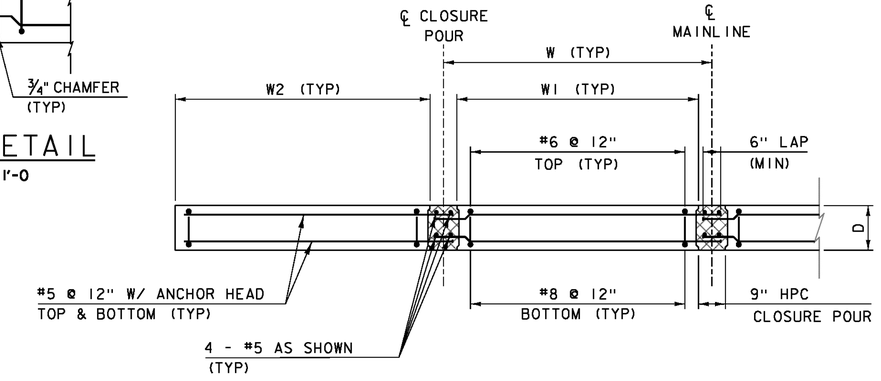

## APPROACH SLAB ELEVATION VIEW

SCALE ½" = 1'-0




## JOINT DETAIL

SCALE 1" = 1'-0




## SECTION A-A

SCALE ½" = 1'-0

## APPROACH SLAB DIMENSIONS

| | |
|---|---|
| D | 1'-3" |
| L | 20'-0" |
| W | 7'-6" |
| W1 | 6'-9" |
| W2 | 7'-1½" |

## APPROACH SLAB ELEVATIONS

ALL ELEVATIONS ARE TOP OF SLAB

| | STATION | 15'-0" LT | ℄ | 15'-0" RT |
|---|---|---|---|---|
| BEGIN AP#1 | 55+28.67 | 1174.81 | 1175.13 | 1174.81 |
| END AP#1 | 55+48.67 | 1174.71 | 1175.03 | 1174.71 |
| BEGIN AP#2 | 56+21.33 | 1174.26 | 1174.58 | 1174.26 |
| END AP#2 | 56+41.33 | 1174.11 | 1174.43 | 1174.11 |

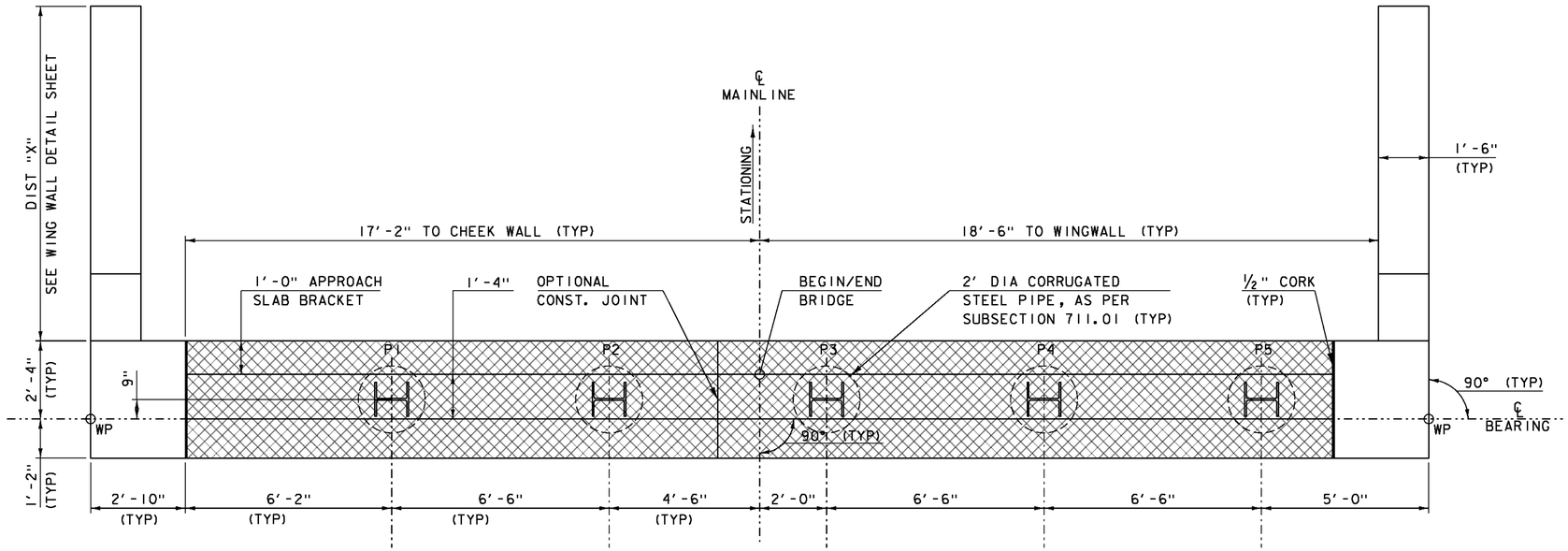
## NOTE:

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

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

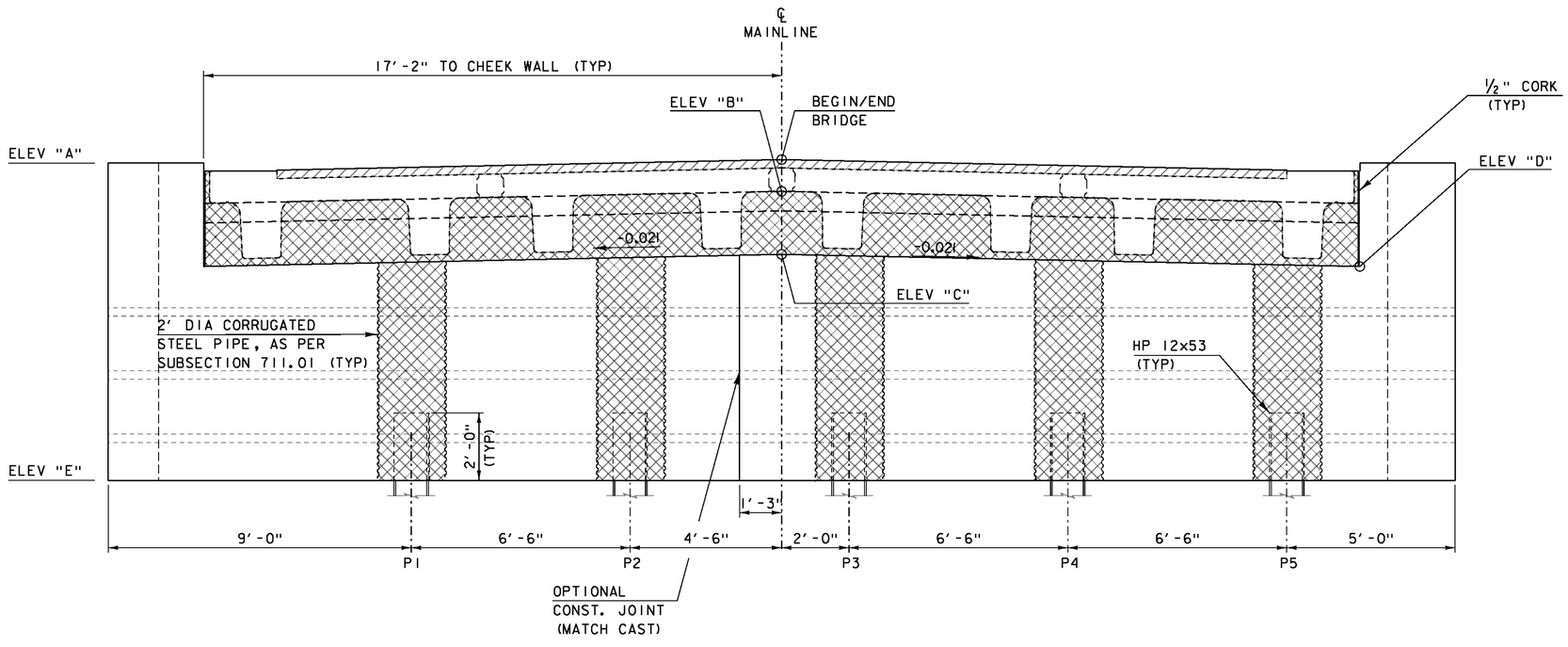
FILE NAME: sllb208sup.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: W. LAMMER
APPROACH SLAB DETAILS

PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 18 OF 36




## PCU 1 PLAN

SCALE ½" = 1'-0

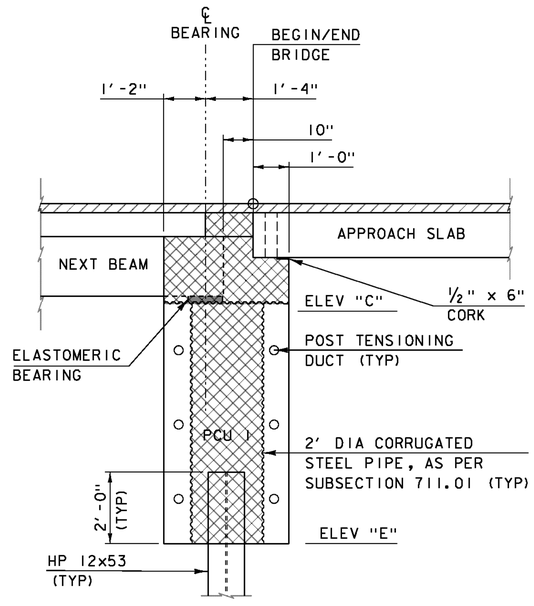



## PCU 1 ELEVATION

SCALE ½" = 1'-0

## PCU 1 ELEVATIONS

| | AB1 | AB2 |
|---|---|---|
| ELEV "A" | 1175.25 | 1174.75 |
| ELEV "B" | 1174.36 | 1173.91 |
| ELEV "C" | 1172.49 | 1172.04 |
| ELEV "D" | 1172.13 | 1171.68 |
| ELEV "E" | 1165.78 | 1165.33 |




## PCU 1 TYPICAL

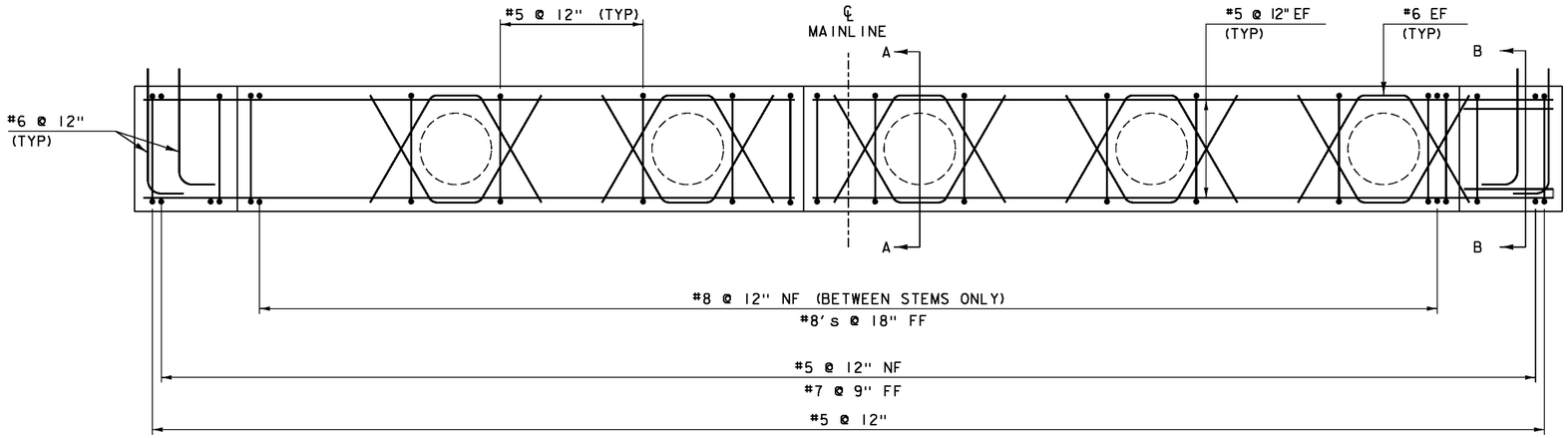
SCALE ½" = 1'-0

NOTE: POST-TENSIONING AND ASSOCIATED ITEMS ONLY REQUIRED IF PILE CAP IS CONSTRUCTED OF MORE THAN ONE UNIT.

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

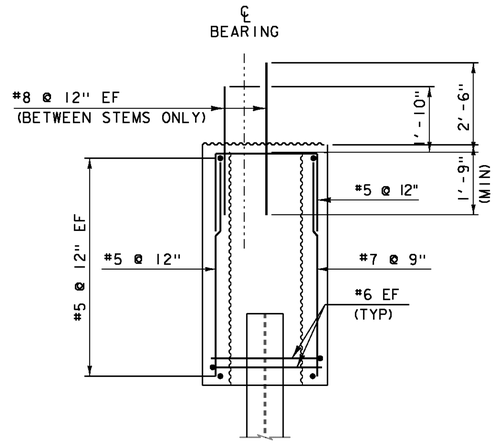
FILE NAME: sllb208sub.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: W. LAMMER
ABUTMENT PLAN

PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 19 OF 36



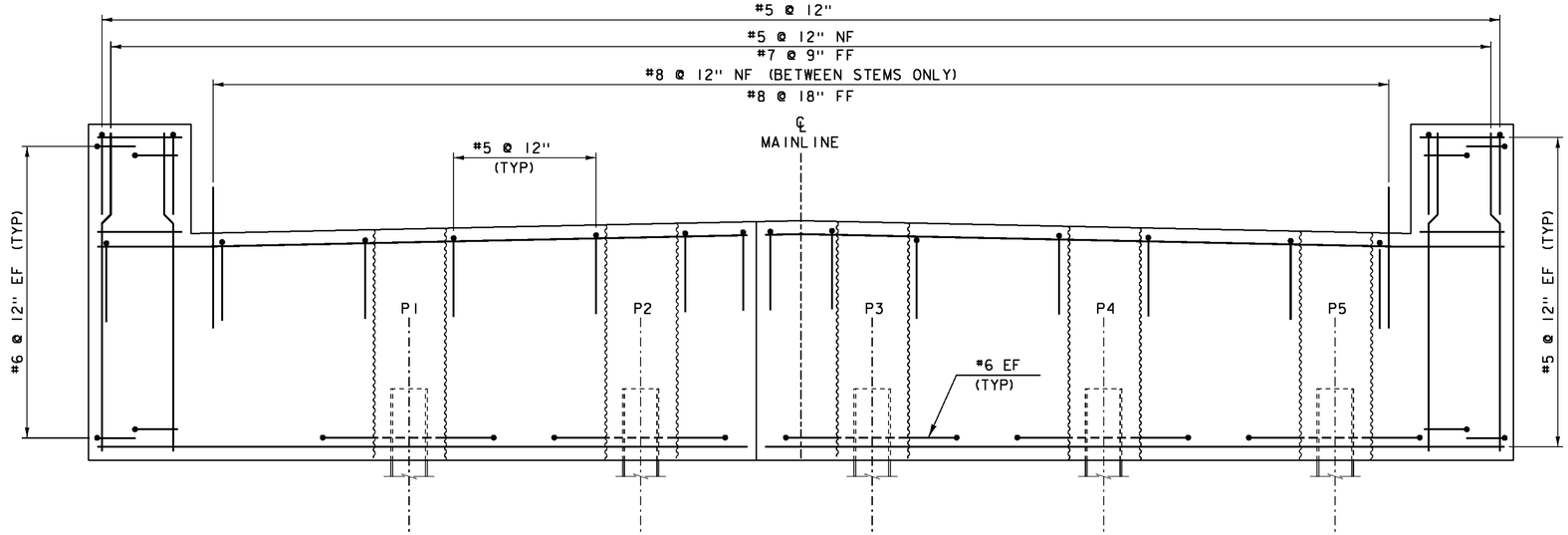

## PCU 1 REINFORCING PLAN

SCALE ½" = 1'-0



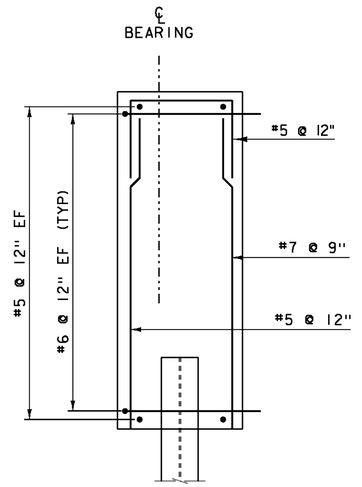

## SECTION A-A

SCALE ½" = 1'-0




## PCU 1 REINFORCING ELEVATION

SCALE ½" = 1'-0




## SECTION B-B

SCALE ½" = 1'-0

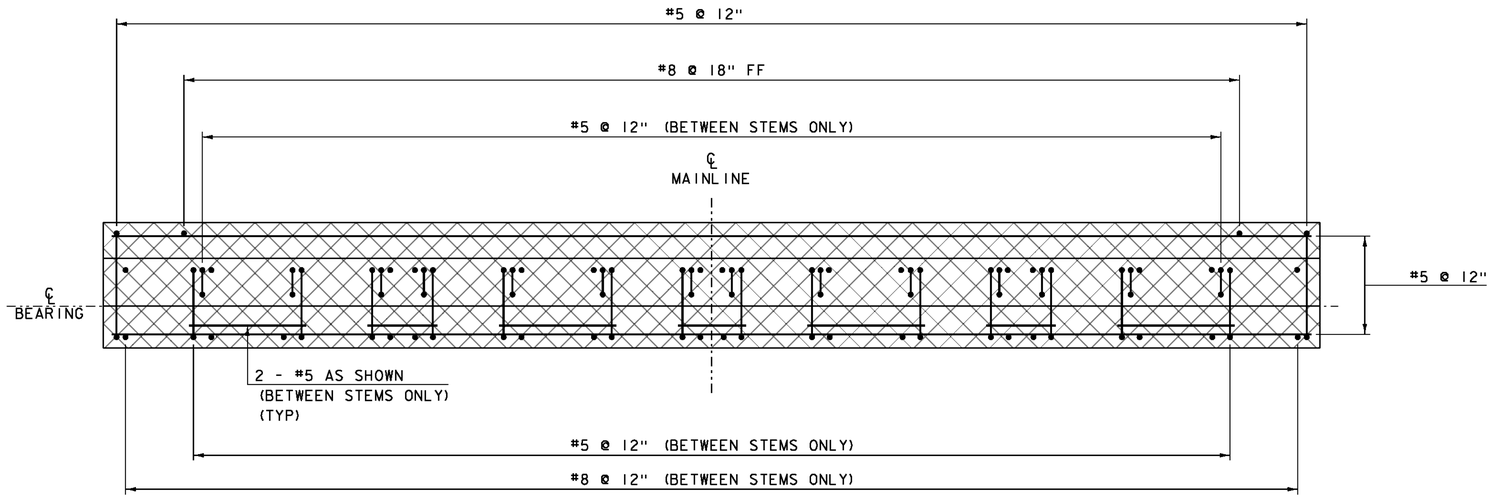
NOTE:

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

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

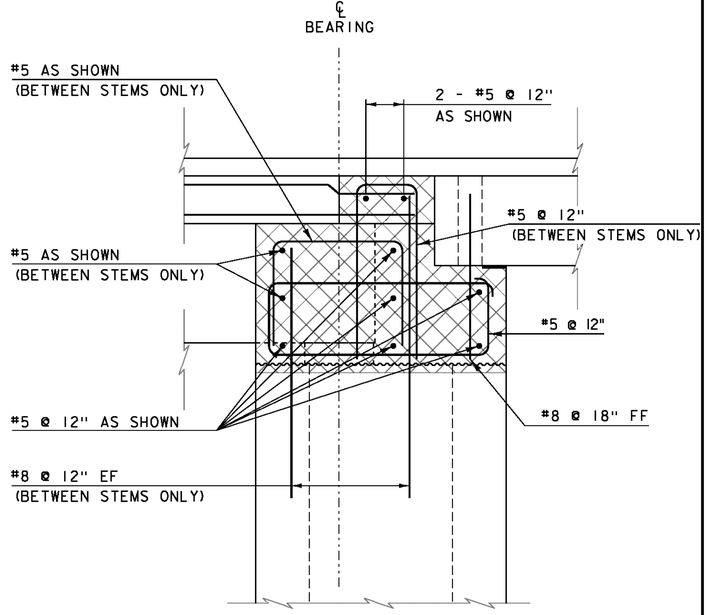
FILE NAME: sllb208sub.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: W. LAMMER
ABUTMENT REINFORCING

PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 20 OF 36



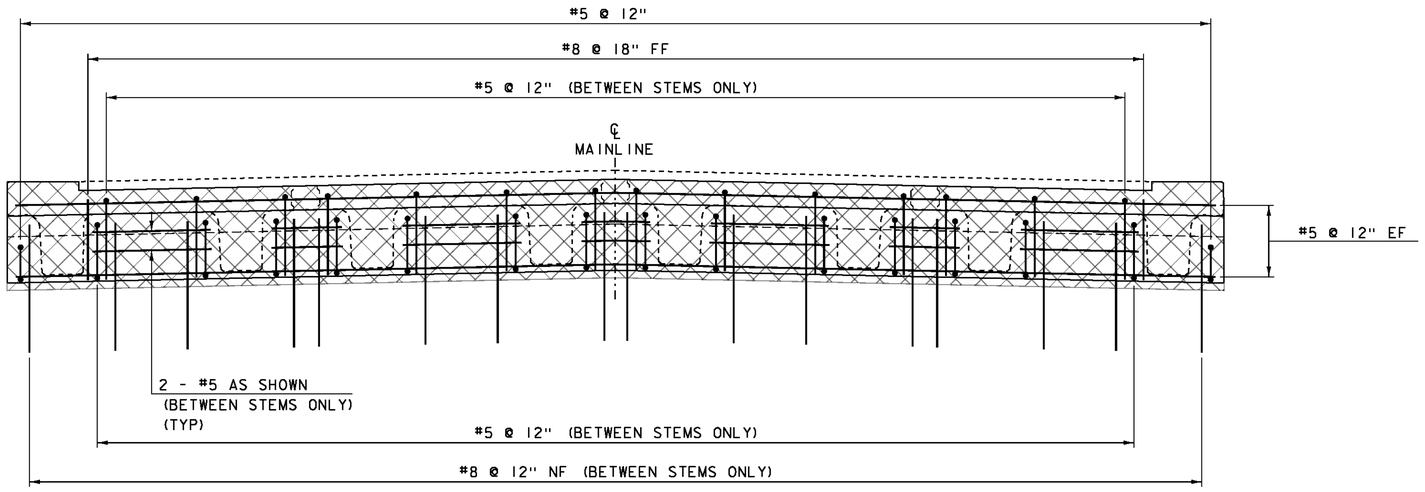

## DECK CLOSURE POUR REINFORCING PLAN

SCALE ½" = 1'-0




## REINFORCING TYPICAL

SCALE 1" = 1'-0




## DECK CLOSURE POUR REINFORCING ELEVATION

SCALE ½" = 1'-0

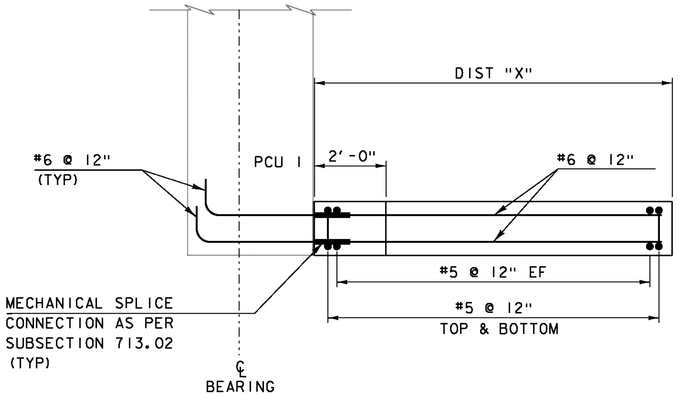
NOTE:

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

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: sllb208sub.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: W. LAMMER
DECK CLOSURE POUR DETAILS

PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 21 OF 36

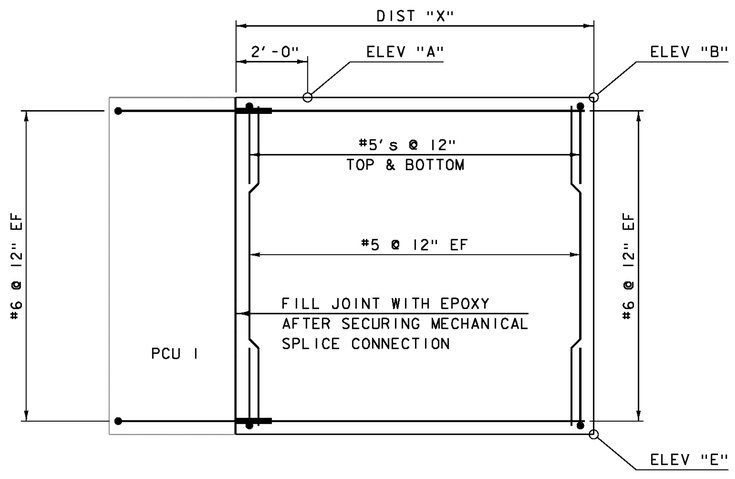



## PCU 2 PLAN

SCALE 1" = 1'-0

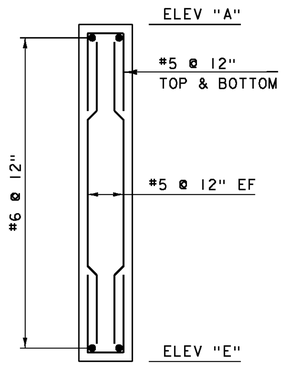
## PCU 2 ELEVATIONS

| | WW1 | WW2 | WW3 | WW4 |
|---|---|---|---|---|
| ELEV "A" | 1175.25 | 1175.25 | 1174.75 | 1174.75 |
| ELEV "B" | 1175.25 | 1175.25 | 1174.75 | 1174.75 |
| ELEV "E" | 1165.78 | 1165.78 | 1165.33 | 1165.33 |
| DIST "X" | 10'-0" | 10'-0" | 10'-0" | 10'-0" |




## PCU 2 ELEVATION

SCALE ½" = 1'-0




## PCU 2 TYPICAL

SCALE ½" = 1'-0

### NOTE:

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

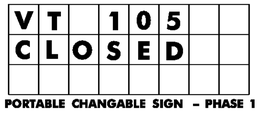
NOTES:

1. EPOXY SHALL BE INCIDENTAL TO THE PRECAST CONCRETE STRUCTURE.

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

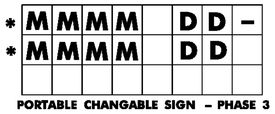
FILE NAME: sllb208sub.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: W. LAMMER
WINGWALL DETAILS

PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 22 OF 36




PORTABLE CHANGABLE SIGN - PHASE 1

PORTABLE CHANGABLE SIGN - PHASE 2



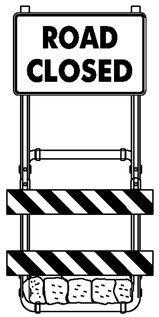

PORTABLE CHANGABLE SIGN - PHASE 3

* M=MONTH
D=DAY

(S)

NOTES:

1. THE PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE FULLY OPERATIONAL A MINIMUM OF TWO WEEKS PRIOR TO THE CLOSURE OF VT 105.
2. DURING ACTUAL CLOSURE, ELMININATE PHASE 3 ONLY.
3. DETOUR SIGNS SHALL BE LOCATED ADJACENT TO EXISTING INTERSECTION ROUTE MARKER ASSEMBLES WHERE APPLICABLE.
4. DETOUR SIGNING IS THE RESPONSIBILITY OF THE CONTRACTOR. PAYMENT FOR ALL TEMPRARY TRAFFIC CONTROL DEVICES FOR IMPLEMENTING THE DETOUR, INCLUDING BUT NOT LIMITED TO SIGNS, BARRICADES AND MESSAGE BOARDS, WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).
5. THIS DETOUR PLAN IS AN OUTLINE ONLY AND THE CONTRACTOR SHALL SUBMIT A DETAILED PLAN OF EACH INTERSECTION SHOWING DETOUR SIGN LOCATIONS IN RELATION TO EXISTING SIGNS.



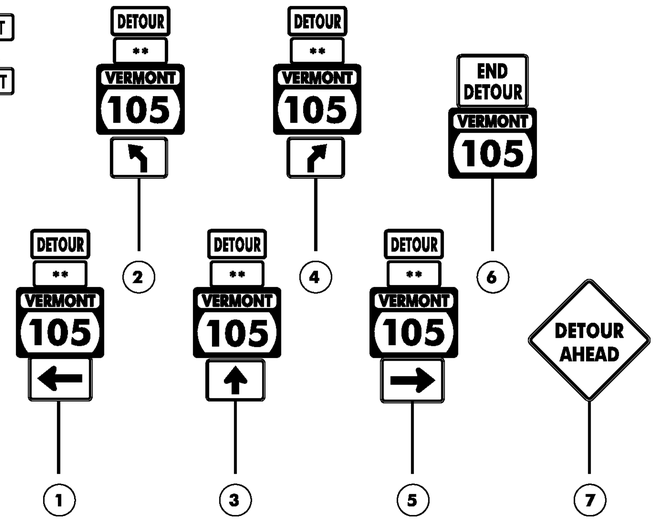

SIGN MOUNTING ON TYPE III BARRICADE (MODIFIED)

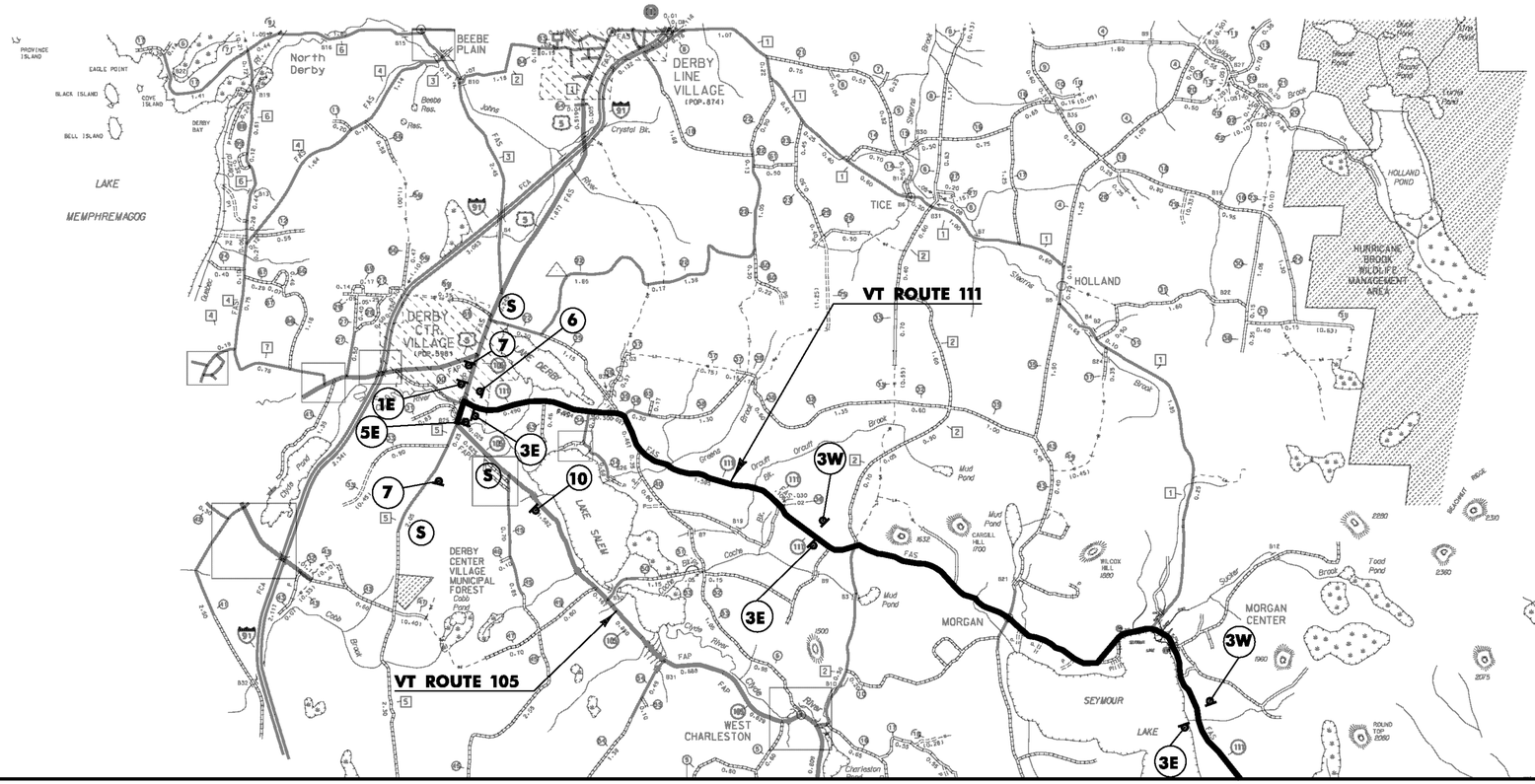
(A)

SIGN MOUNTING ON TYPE III BARRICADE (MODIFIED)

(B)

**E= EAST
OR
W= WEST



N

VT STATE PLANE GRID

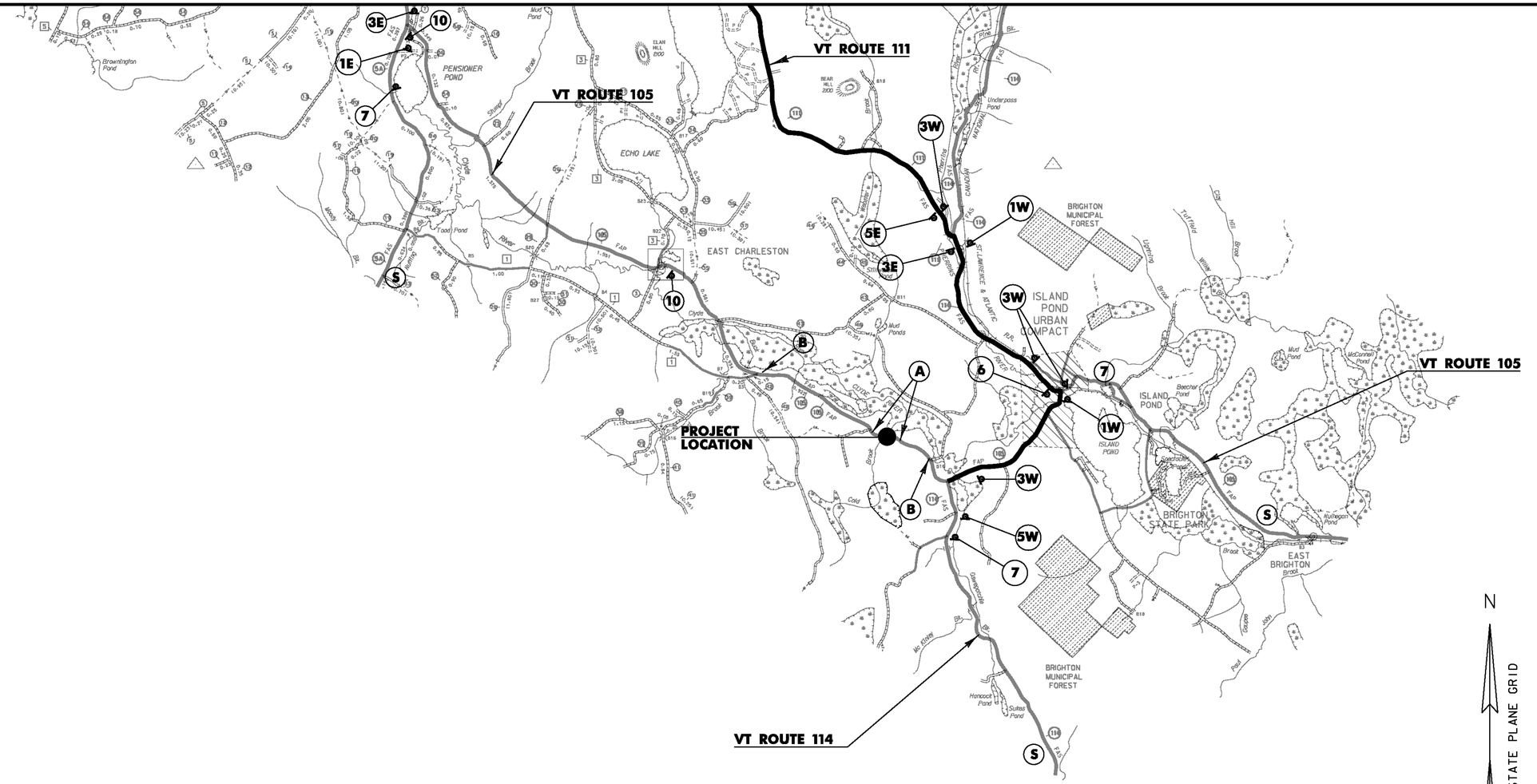
MATCHLINE

DETOUR PLAN - 1

NOT TO SCALE

| | |
|---|---|
| PROJECT NAME: | BRIGHTON |
| PROJECT NUMBER: | ER STP 034-3 (25) |
| FILE NAME: slb208detour.dgn | PLOT DATE: 12-SEP-2012 |
| PROJECT LEADER: K. HIGGINS | DRAWN BY: K. FRIEDLAND |
| DESIGNED BY: J. SALVATORI | CHECKED BY: W. LAMMER |
| DETOUR PLAN 1 | SHEET 23 OF 36 |

MATCHLINE




DETOUR PLAN - 2

NOT TO SCALE

| | |
|---|---|
| PROJECT NAME: | BRIGHTON |
| PROJECT NUMBER: | ER STP 034-3 (25) |
| FILE NAME: sllb208detour.dgn | PLOT DATE: 12-SEP-2012 |
| PROJECT LEADER: K. HIGGINS | DRAWN BY: K. FRIEDLAND |
| DESIGNED BY: J. SALVATORI | CHECKED BY: W. LAMMER |
| DETOUR PLAN 2 | SHEET 24 OF 36 |

# EPSC NARRATIVE

## 1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE 84 AND RELATED APPROACH AND CHANNEL WORK.

THE BRIDGE IS APPROXIMATELY 1.058 MILES SOUTH EASTERLY OF THE CHARLESTON/BRIGHTON TOWN LINE ALONG VT 105.

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 0.39 ACRES.

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

## 1.2 SITE INVENTORY

### 1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE PROJECT AREA IS RELATIVELY FLAT, WITH THE ROADWAY RAISED SLIGHTLY FROM THE SURROUNDING TERRAIN.

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

THE COLD RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE RIVER IS CLASSIFIED AS SINUOUS, ALLUVIAL, WITH A BEND COMING IN TO THE BRIDGE. THE STREAM BED CONSISTS OF SAND, GRAVEL AND COBBLES. THERE IS AN EXISTING CULVERT AT STATION 57+00 THAT WILL NOT BE IMPACTED AS PART OF THIS PROJECT.

### 1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS MOSTLY FORESTED LAND COVER. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING CULVERT. 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 ESSEX, VERMONT.

SOILS ON THE PROJECT SITE ARE:

3A – CHARLES SILTY LOAM, 0% TO 2% SLOPES, "K FACTOR" = 0.32. THE SOIL IS CONSIDERED FREQUENTLY FLOODED.

6B – ADAMS LOAMY FINE SAND, 3% TO 8% SLOPES, "K FACTOR" = 0.17

**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: NO
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: COLD RIVER
WETLANDS: NO

## 1.3 RISK EVALUATION

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

## 1.4 EROSION PREVENTION AND SEDIMENT CONTROL

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

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

### 1.4.1 MARK SITE BOUNDARIES

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

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES AS SHOWN ON THE PLANS.

### 1.4.2 LIMIT DISTURBANCE AREA

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

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

### 1.4.3 SITE ENTRANCE/EXIT STABILIZATION

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

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS SHOWN ON THE PLANS 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 STONE CHECK DAMS 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 STORMWATER 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.

IT IS NOT ANTICIPATED THAT DEWATERING WILL BE NECESSARY.

### 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: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: slib208epsc_nar.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
EPSC NARRATIVE

PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 25 OF 36

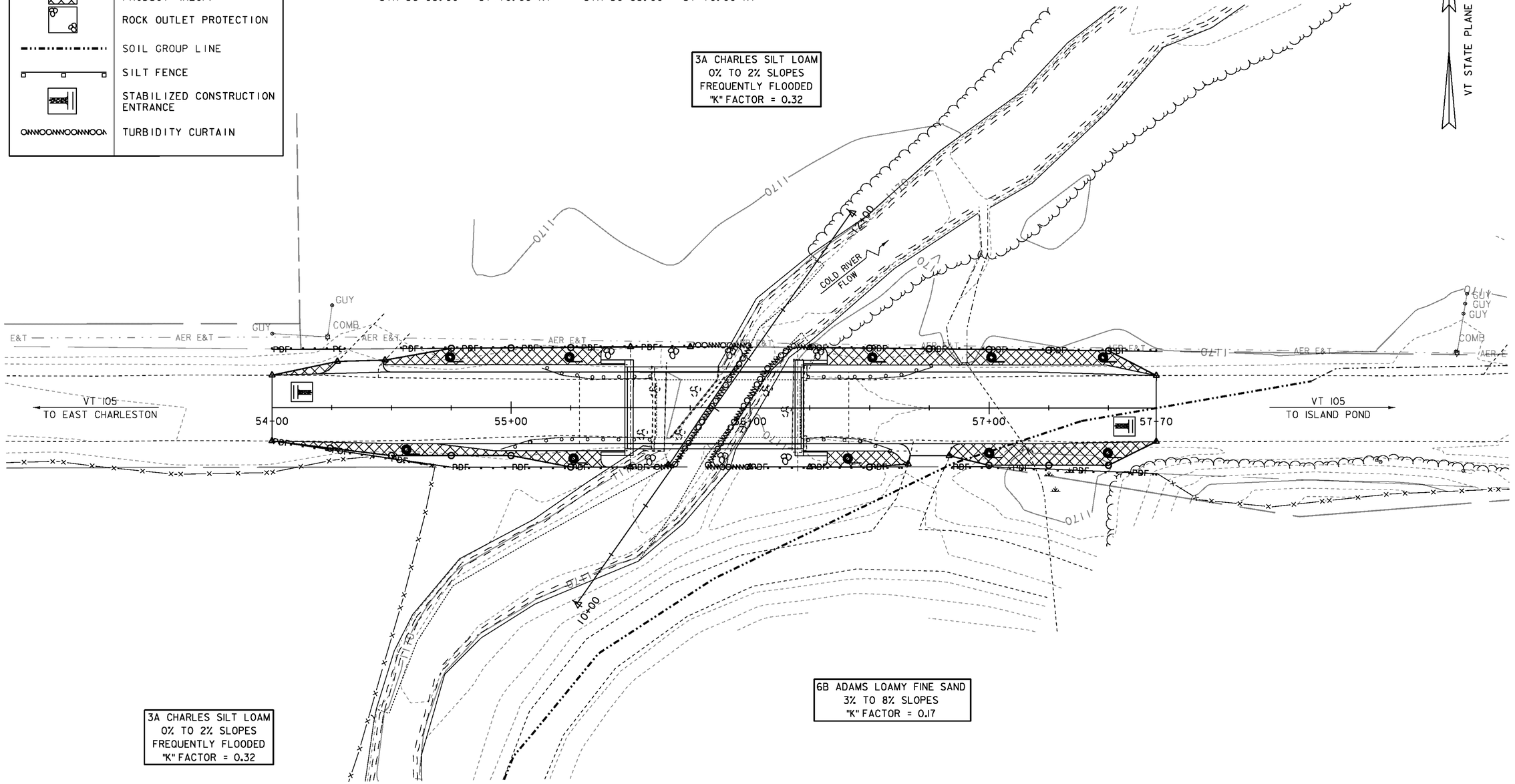
| | |
|---|---|
| | CUT/FILL LIMITS |
| PDF | PROJECT DEMARCATION FENCE |
| | ROLLED EROSION CONTROL PRODUCT (RECP) |
| | ROCK OUTLET PROTECTION |
| | SOIL GROUP LINE |
| | SILT FENCE |
| | STABILIZED CONSTRUCTION ENTRANCE |
| | TURBIDITY CURTAIN |

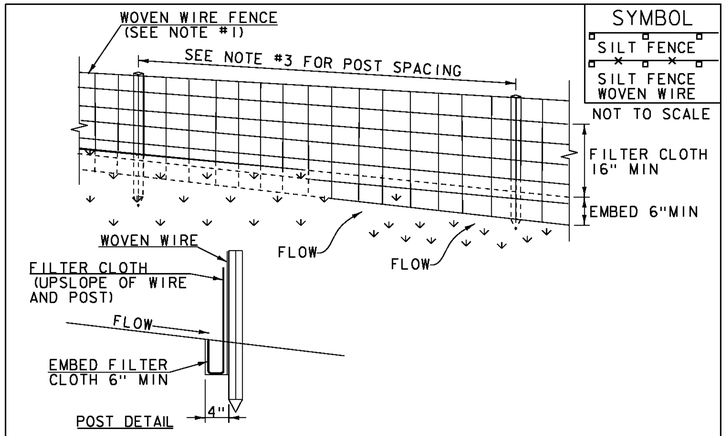
| GEOTEXTILE FOR SILT FENCE | PROJECT DEMARCATION FENCE |
|---|---|
| STA 54+00.00 - 54+25.00 LT | STA 54+00.00 - 54+25.00 LT |
| STA 54+00.00 - 55+60.00 RT | STA 54+00.00 - 55+60.00 RT |
| STA 54+50.00 - 55+75.00 LT | STA 54+50.00 - 55+75.00 LT |
| STA 56+00.00 - 56+65.00 RT | STA 56+00.00 - 56+65.00 RT |
| STA 56+25.00 - 57+70.00 LT | STA 56+25.00 - 57+70.00 LT |
| STA 56+85.00 - 57+70.00 RT | STA 56+85.00 - 57+70.00 RT |

N

VT STATE PLANE GRID

3A CHARLES SILT LOAM
0% TO 2% SLOPES
FREQUENTLY FLOODED
"K" FACTOR = 0.32


1170
1170
1170




SYMBOL

SILT FENCE

SILT FENCE WOVEN WIRE

NOT TO SCALE

## CONSTRUCTION SPECIFICATIONS

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

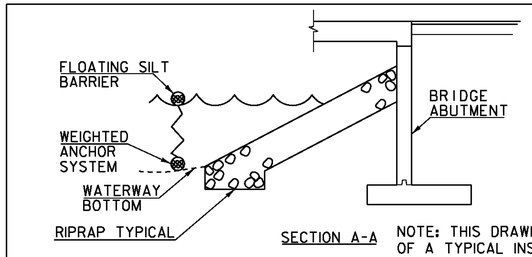
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

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

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

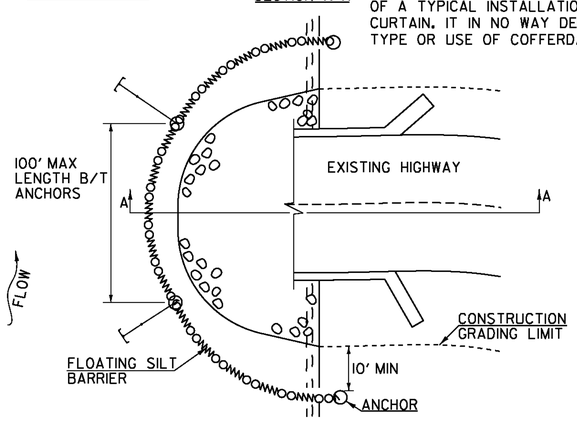
| REVISIONS | |
|---|---|
| MARCH 21, 2008 | WHF |
| DECEMBER 11, 2008 | WHF |
| JANUARY 13, 2009 | WHF |
| | |
| | |




SYMBOL

NOT TO SCALE

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



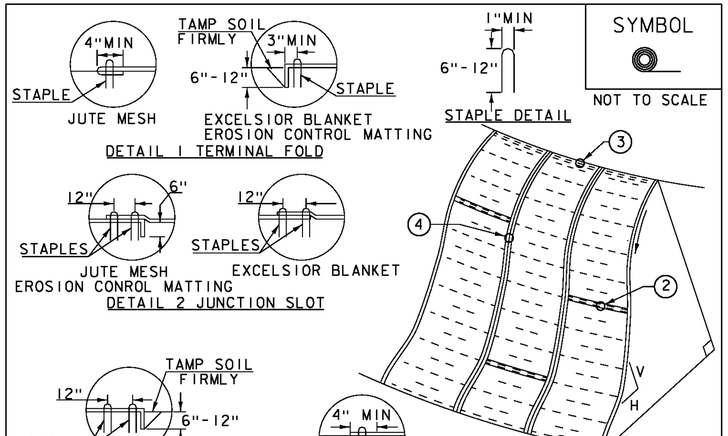

## CONSTRUCTION SPECIFICATIONS

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

FILTER CURTAIN

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

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




SYMBOL

NOT TO SCALE

## CONSTRUCTION SPECIFICATIONS

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

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

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

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

| REVISIONS | |
|---|---|
| APRIL 16, 2007 | JMF |
| JANUARY 13, 2009 | WHF |
| | |
| | |
| | |

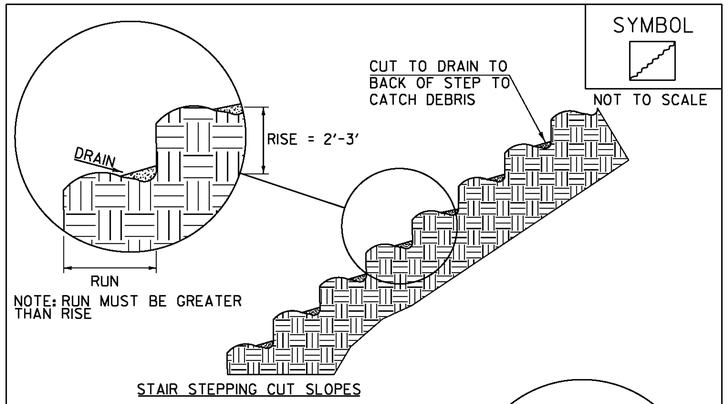
**PROJECT NAME:** BRIGHTON
**PROJECT NUMBER:** ER STP 034-3(25)

**FILE NAME:** sllb208epsc_det.dgn
**PROJECT LEADER:** K. HIGGINS
**DESIGNED BY:** J. SALVATORI
EPSC DETAILS SHEET 1

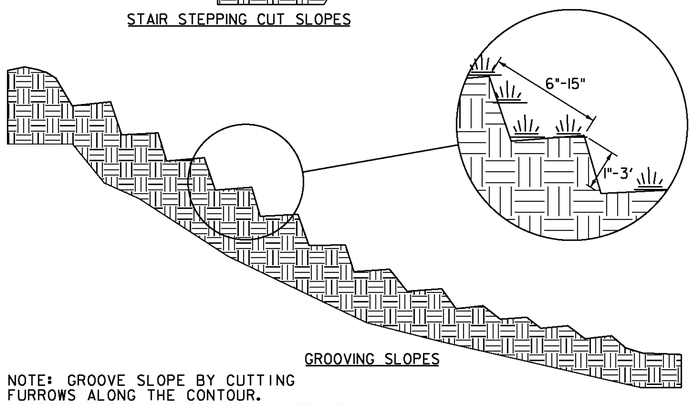
**PLOT DATE:** 12-SEP-2012
**DRAWN BY:** J. SALVATORI
**CHECKED BY:** W. LAMMER
**SHEET** 27 **OF** 36

SYMBOL

NOT TO SCALE




STAIR STEPPING CUT SLOPES




GROOVING SLOPES

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

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

## SURFACE ROUGHENING

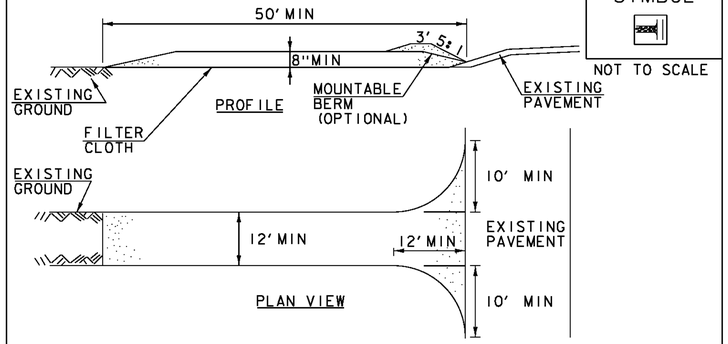
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT

| REVISIONS | |
|---|---|
| APRIL 1, 2008 | WHF |
| JANUARY 13, 2009 | WHF |
| | |
| | |
| | |

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 |
| | |
| | |
| | |

**VAOT RURAL AREA MIX**

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

**VAOT URBAN AREA MIX**

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

**SOIL AMENDMENT GUIDANCE**

| FERTILIZER | | LIME | |
|---|---|---|---|
| BROADCAST | HYDROSEED | BROADCAST | HYDROSEED |
| 10-20-10 | *FOLLOW* | PELLETIZED | *FOLLOW* |
| 500 LBS/AC | *MANUFACTURER* | 2 TONS/AC | *MANUFACTURER* |

## CONSTRUCTION GUIDANCE

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

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

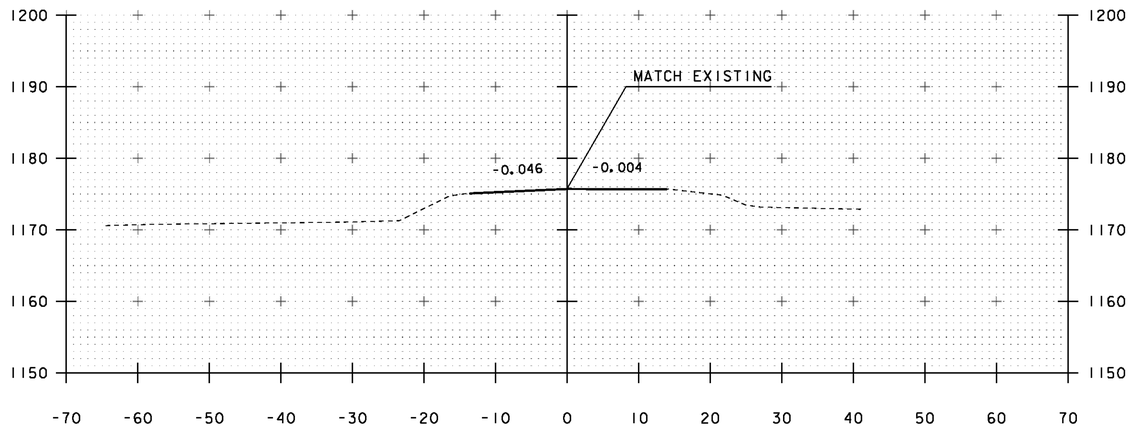
## TURF ESTABLISHMENT

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

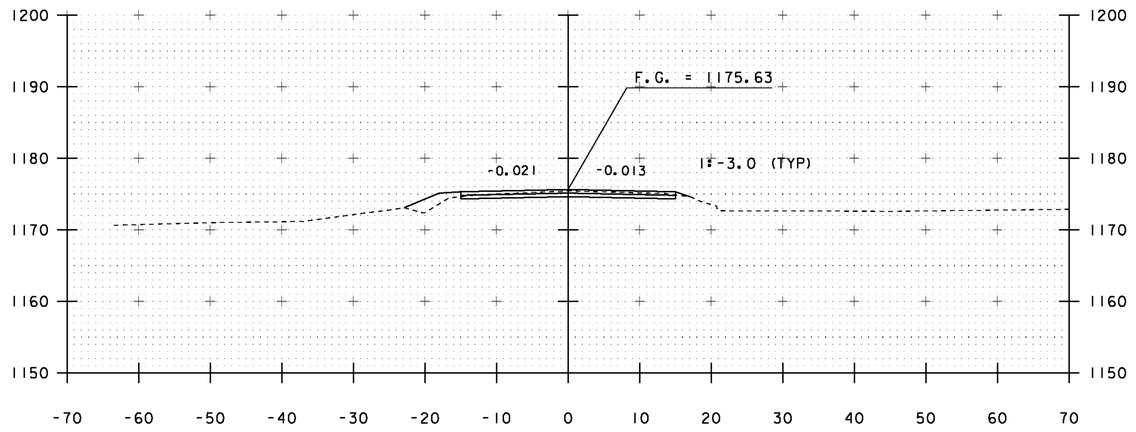
**PROJECT NAME:** BRIGHTON
**PROJECT NUMBER:** ER STP 034-3(25)

**FILE NAME:** sllb208epsc_det.dgn
**PROJECT LEADER:** K. HIGGINS
**DESIGNED BY:** J. SALVATORI
EPSC DETAILS SHEET 2

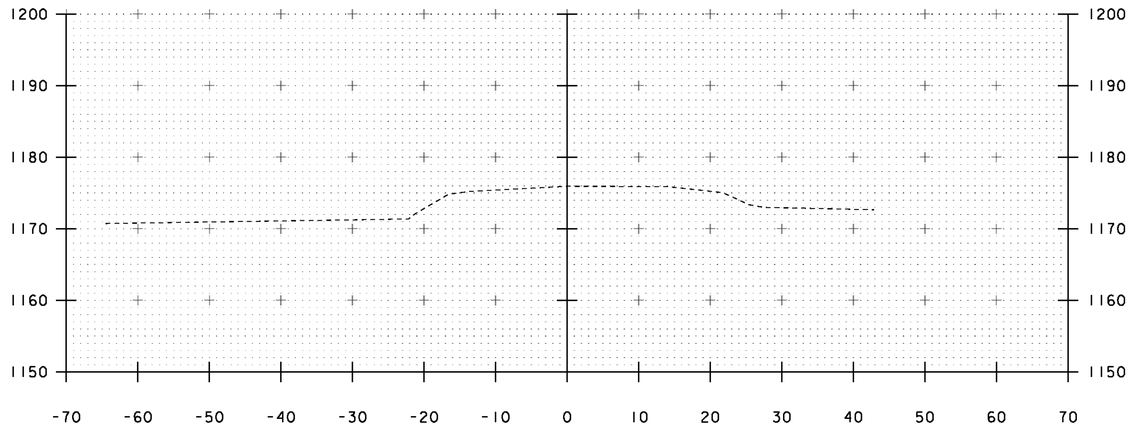
**PLOT DATE:** 12-SEP-2012
**DRAWN BY:** J. SALVATORI
**CHECKED BY:** W. LAMMER
**SHEET** 28 **OF** 36



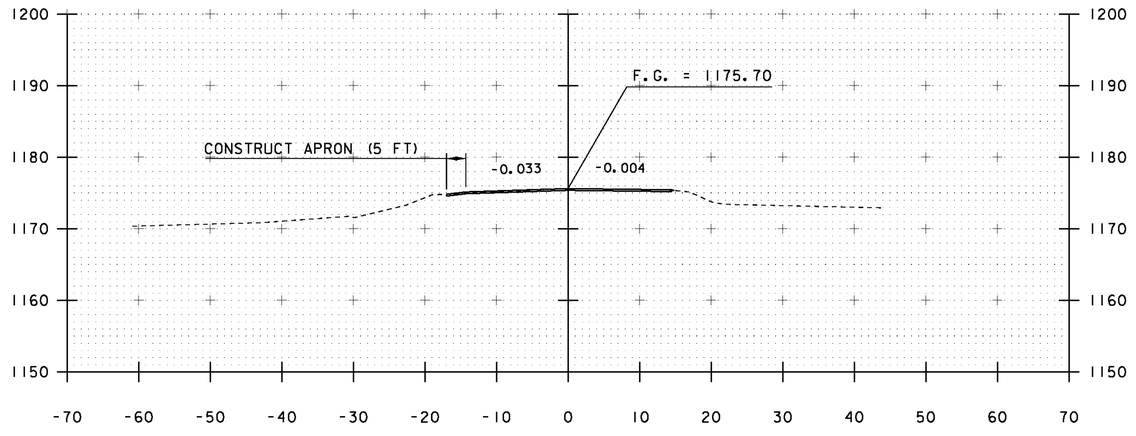

54+00
BEGIN APPROACH




54+50



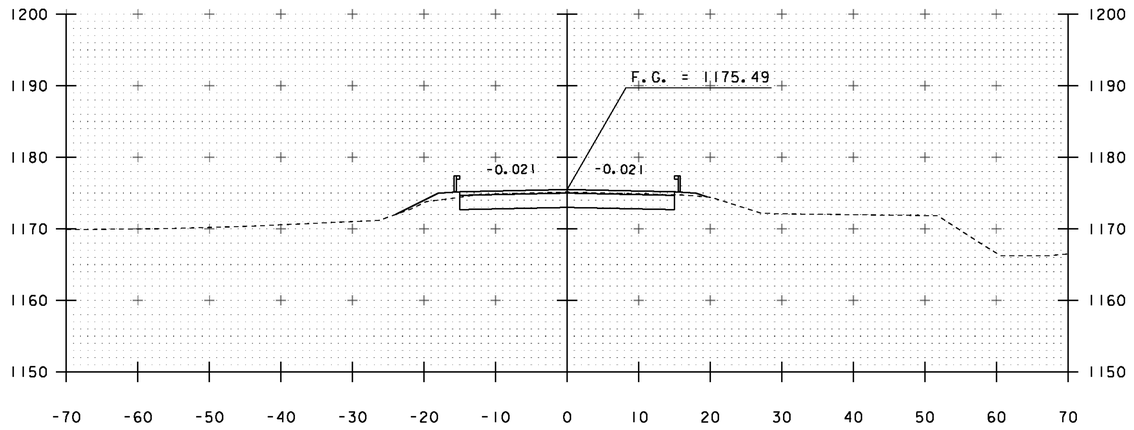

53+75



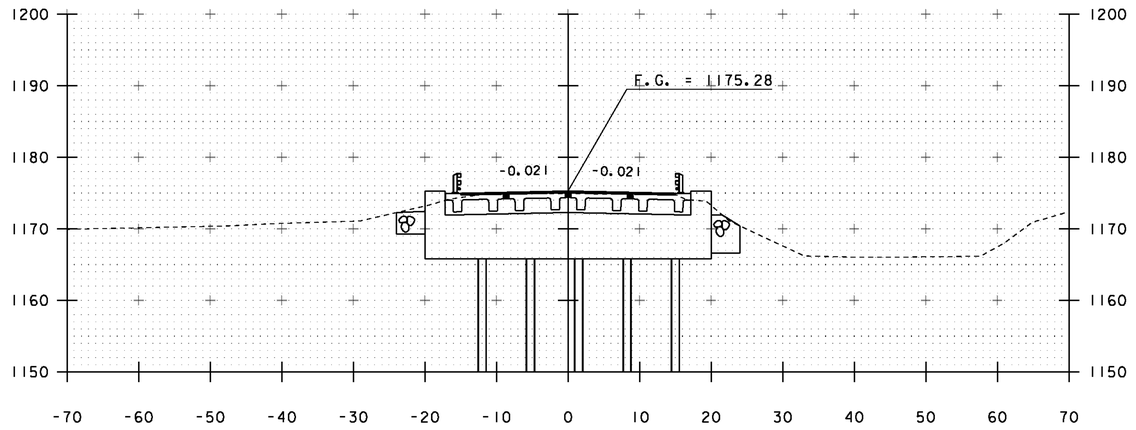

54+25

STA. 53+75 TO STA. 54+50

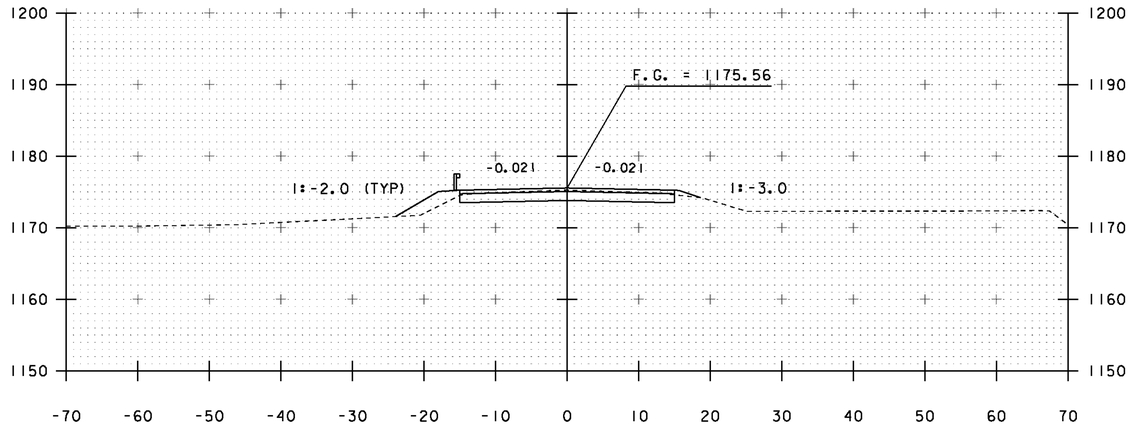
| | |
|---|---|
| PROJECT NAME: | BRIGHTON |
| PROJECT NUMBER: | ER STP 034-3(25) |
| FILE NAME: sllb208xs.dgn | PLOT DATE: 12-SEP-2012 |
| PROJECT LEADER: K. HIGGINS | DRAWN BY: J. SALVATORI |
| DESIGNED BY: J. SALVATORI | CHECKED BY: W. LAMMER |
| MAINLINE SECTIONS | SHEET 29 OF 36 |



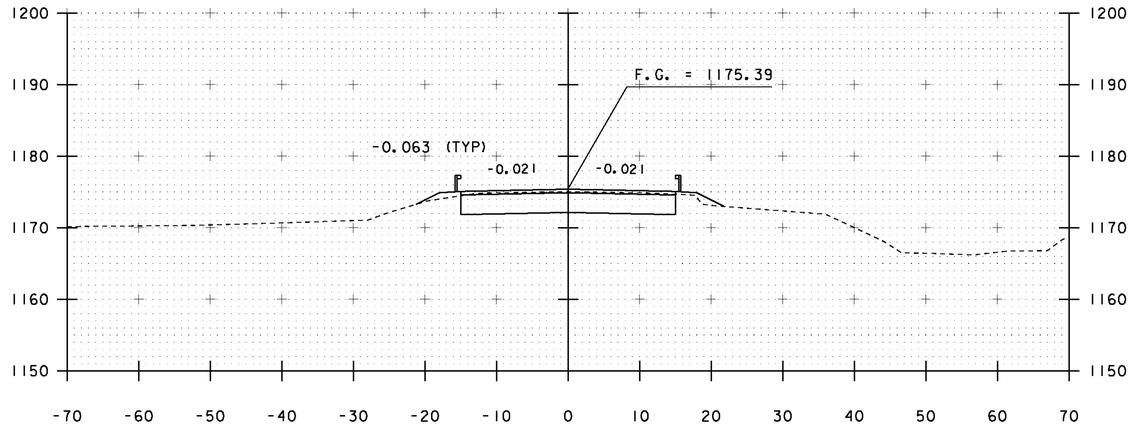

55+00
BEGIN PROJECT
END APPROACH




55+50
BEGIN BRIDGE STA 55+48.67



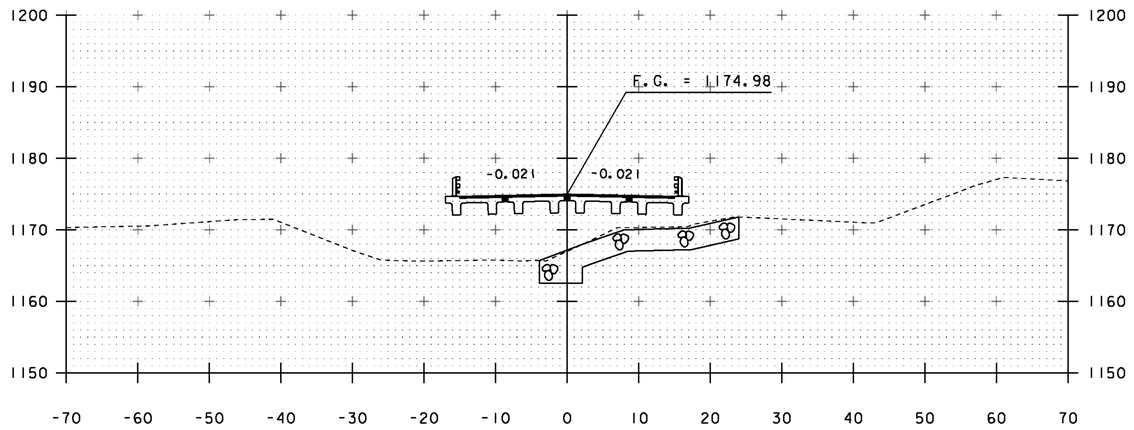

54+75



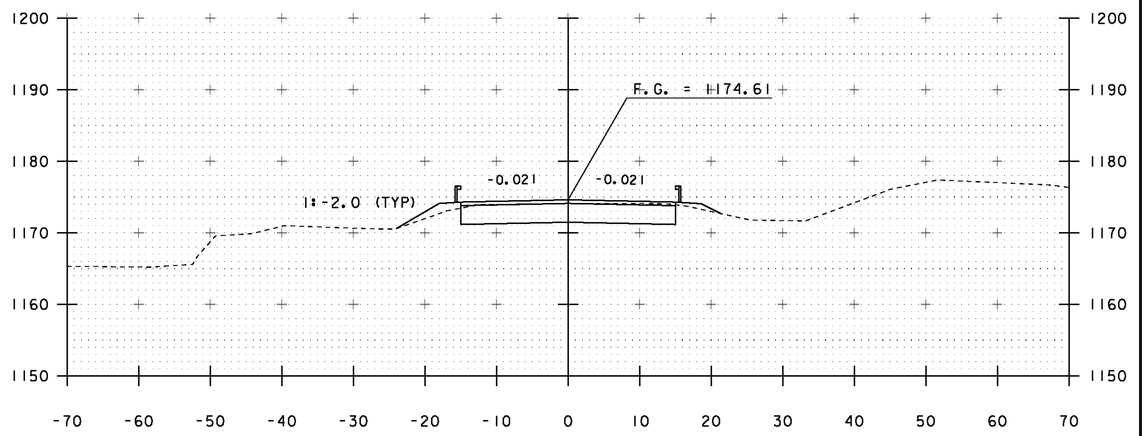

55+25

STA. 54+75 TO STA. 55+50

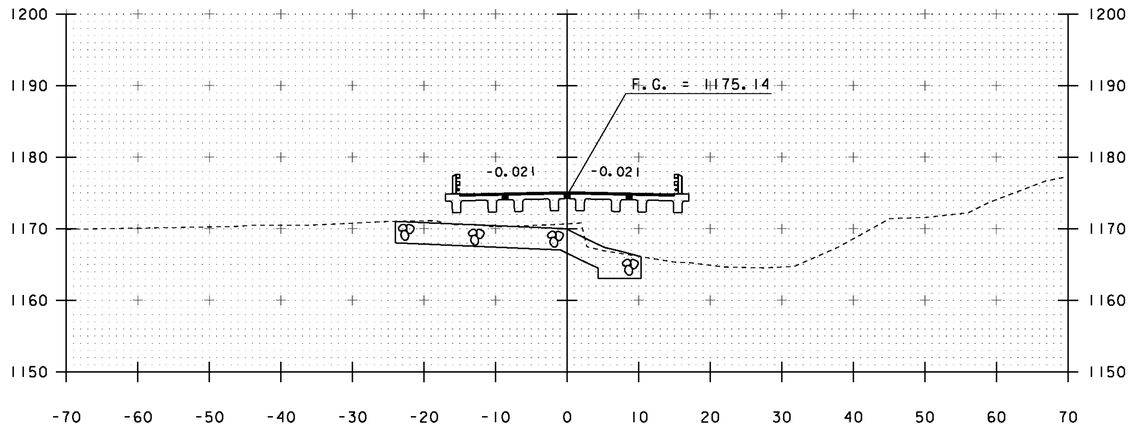
| | |
|---|---|
| PROJECT NAME: | BRIGHTON |
| PROJECT NUMBER: | ER STP 034-3(25) |
| FILE NAME: sllb208xs.dgn | PLOT DATE: 12-SEP-2012 |
| PROJECT LEADER: K. HIGGINS | DRAWN BY: J. SALVATORI |
| DESIGNED BY: J. SALVATORI | CHECKED BY: W. LAMMER |
| MAINLINE SECTIONS | SHEET 30 OF 36 |



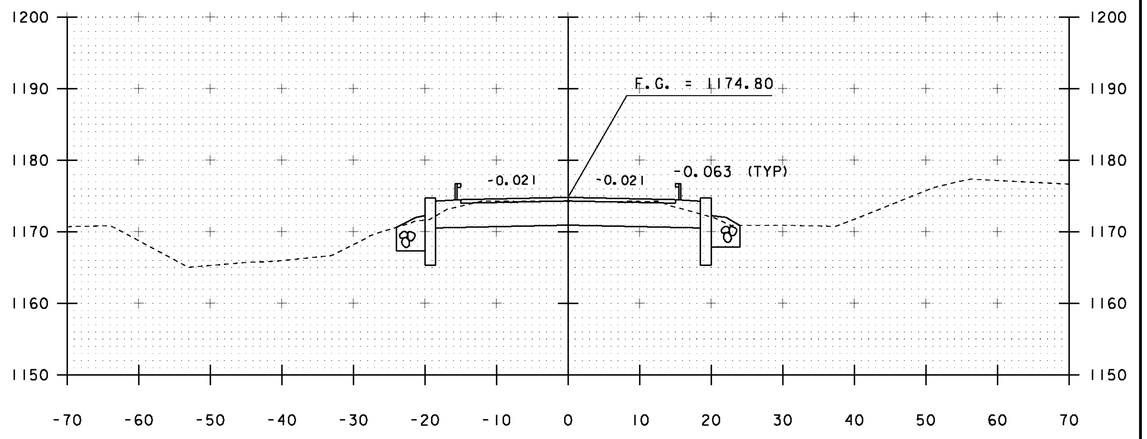

56+00




56+50




55+75



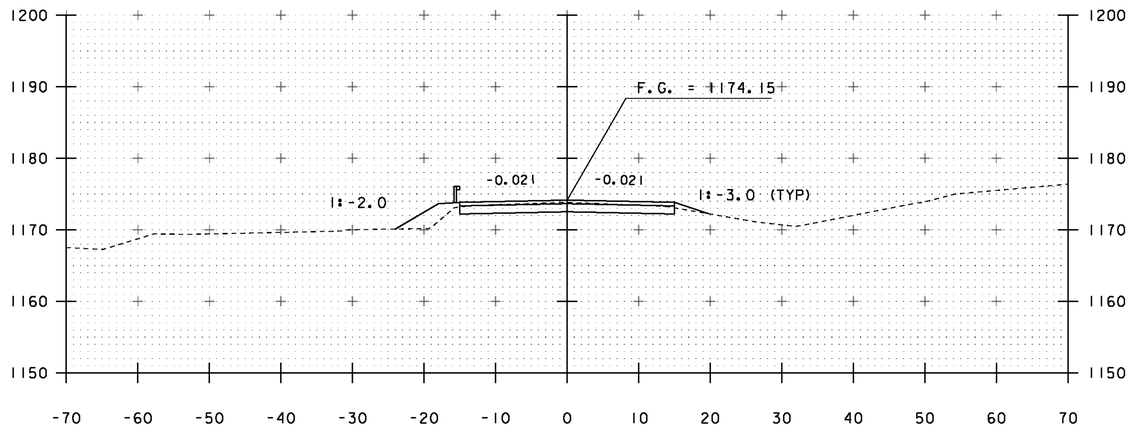

56+25

END BRIDGE STA 56+21.33

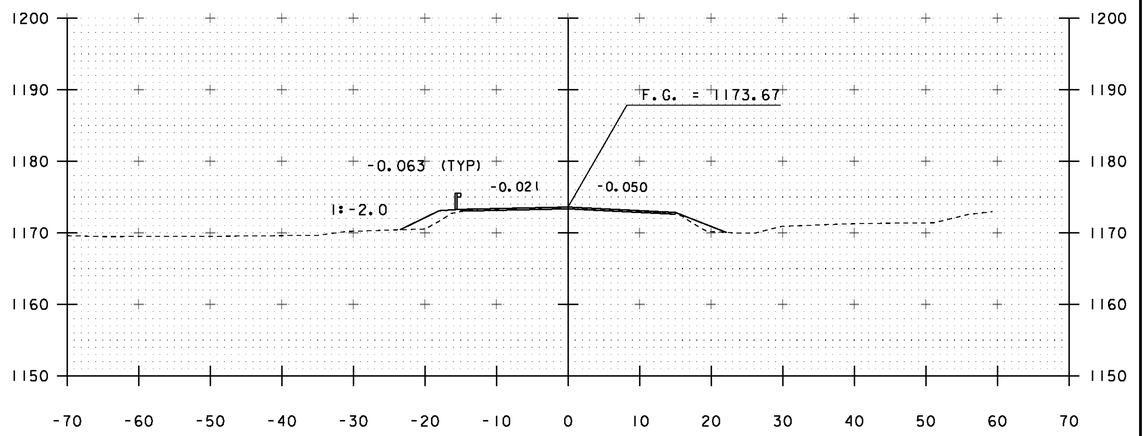
| | |
|---|---|
| PROJECT NAME: | BRIGHTON |
| PROJECT NUMBER: | ER STP 034-3(25) |

| | |
|---|---|
| FILE NAME: sllb208xs.dgn | PLOT DATE: 12-SEP-2012 |
| PROJECT LEADER: K. HIGGINS | DRAWN BY: J. SALVATORI |
| DESIGNED BY: J. SALVATORI | CHECKED BY: W. LAMMER |
| MAINLINE SECTIONS | SHEET 31 OF 36 |

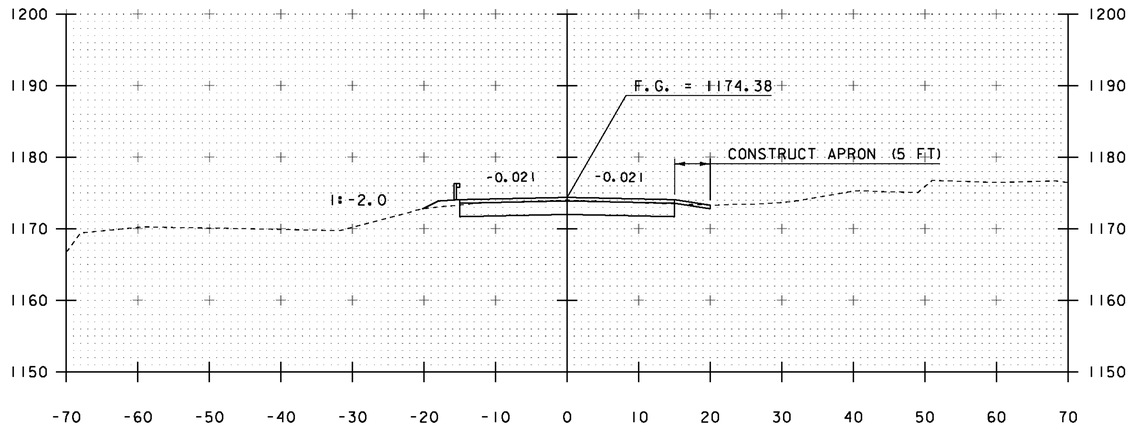
STA. 55+75 TO STA. 56+50




57+00

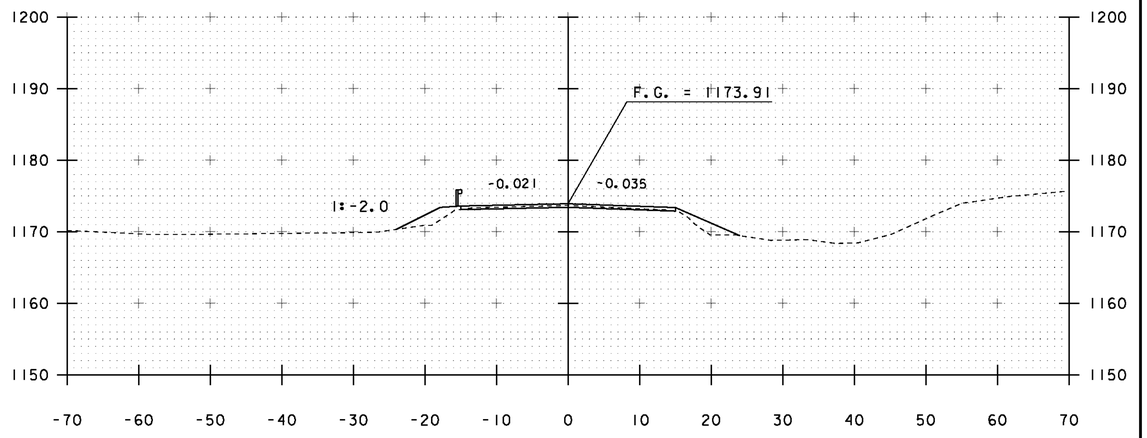



57+50




56+75

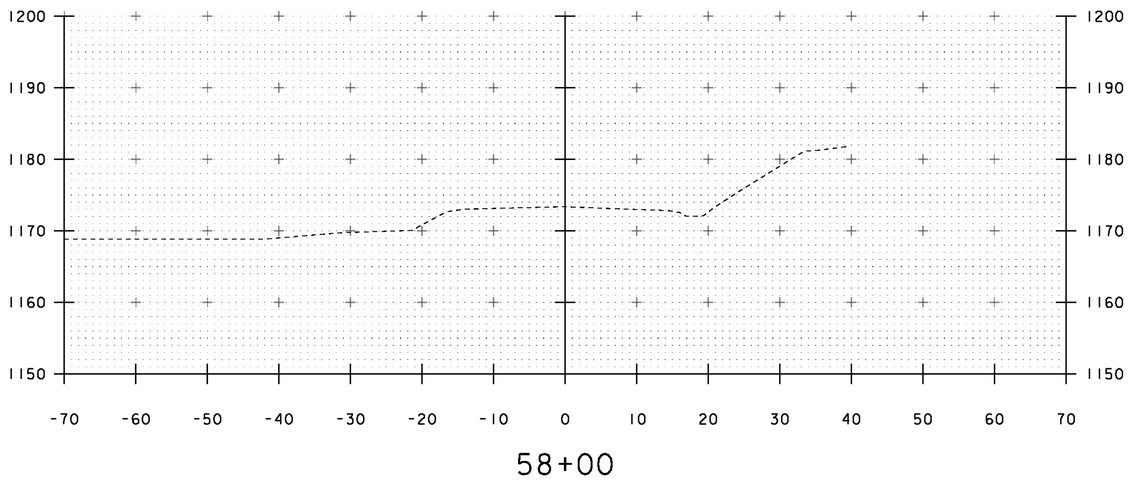
END PROJECT 56+70
BEGIN APPROACH



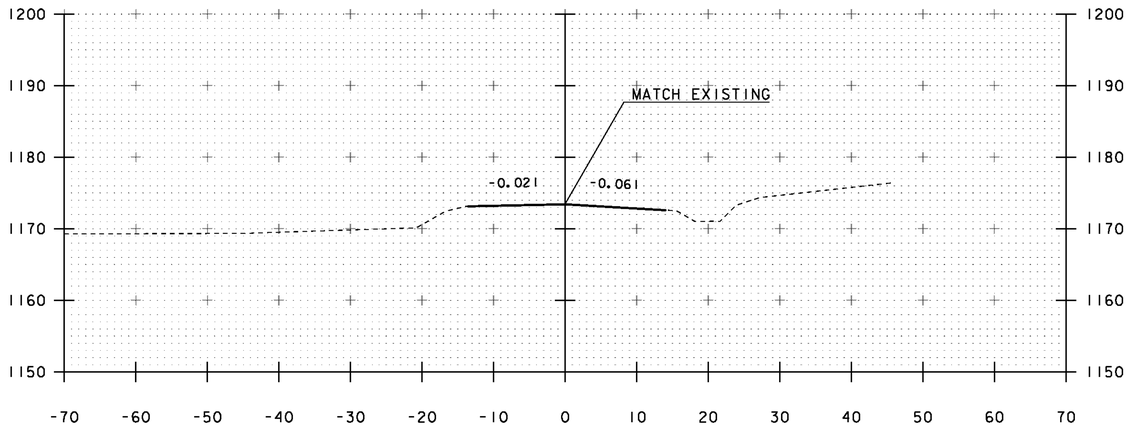

57+25

STA. 56+75 TO STA. 57+50

| | |
|---|---|
| PROJECT NAME: | BRIGHTON |
| PROJECT NUMBER: | ER STP 034-3(25) |
| FILE NAME: sllb208xs.dgn | PLOT DATE: 12-SEP-2012 |
| PROJECT LEADER: K. HIGGINS | DRAWN BY: J. SALVATORI |
| DESIGNED BY: J. SALVATORI | CHECKED BY: W. LAMMER |
| MAINLINE SECTIONS | SHEET 32 OF 36 |




58+00

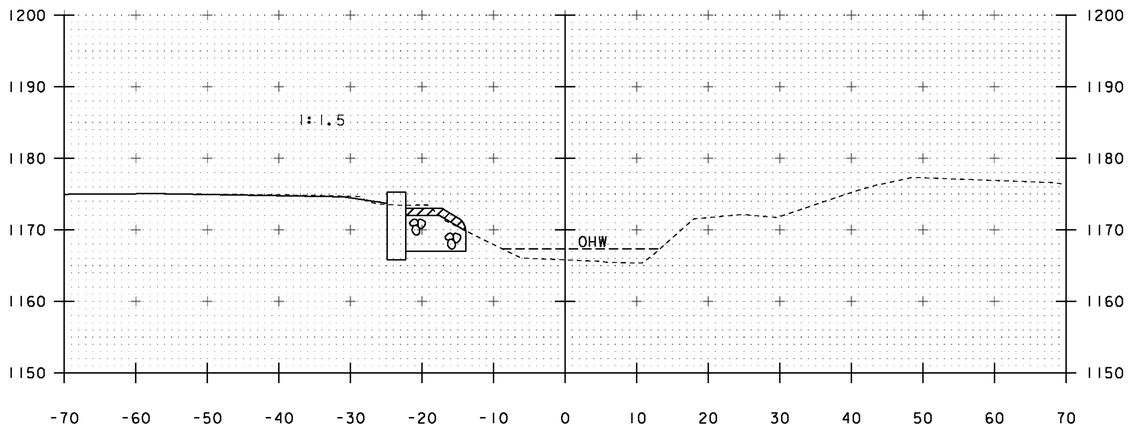



57+70
END APPROACH

STA. 57+75 TO STA. 58+00

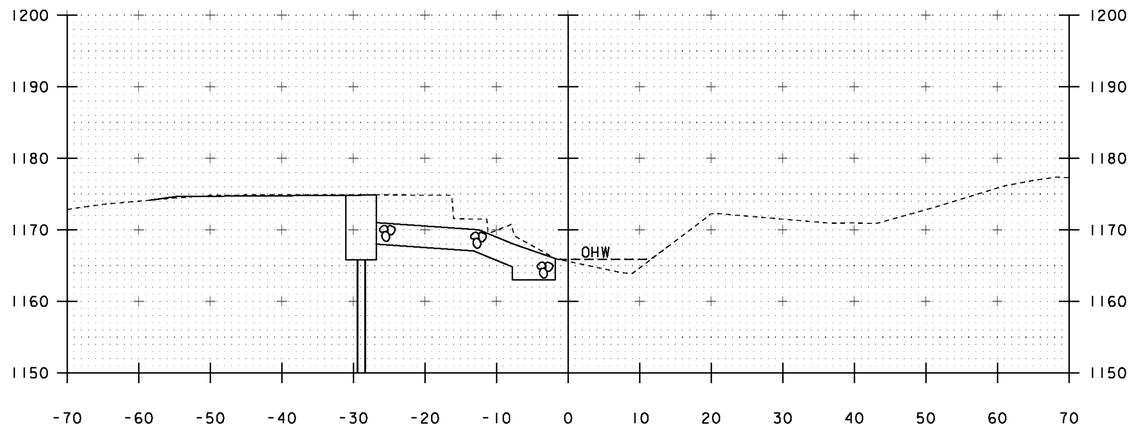
| | |
|---|---|
| PROJECT NAME: | BRIGHTON |
| PROJECT NUMBER: | ER STP 034-3(25) |
| FILE NAME: sllb208xs.dgn | PLOT DATE: 12-SEP-2012 |
| PROJECT LEADER: K. HIGGINS | DRAWN BY: J. SALVATORI |
| DESIGNED BY: J. SALVATORI | CHECKED BY: W. LAMMER |
| MAINLINE SECTIONS | SHEET 33 OF 36 |

STA 10+56 LT
BEGIN CHANNEL EXCAVATION
BEGIN GEOTEXTILE FABRIC UNDER STONE FILL
BEGIN STONE FILL, TYPE III
BEGIN GRUBBING MATERIAL



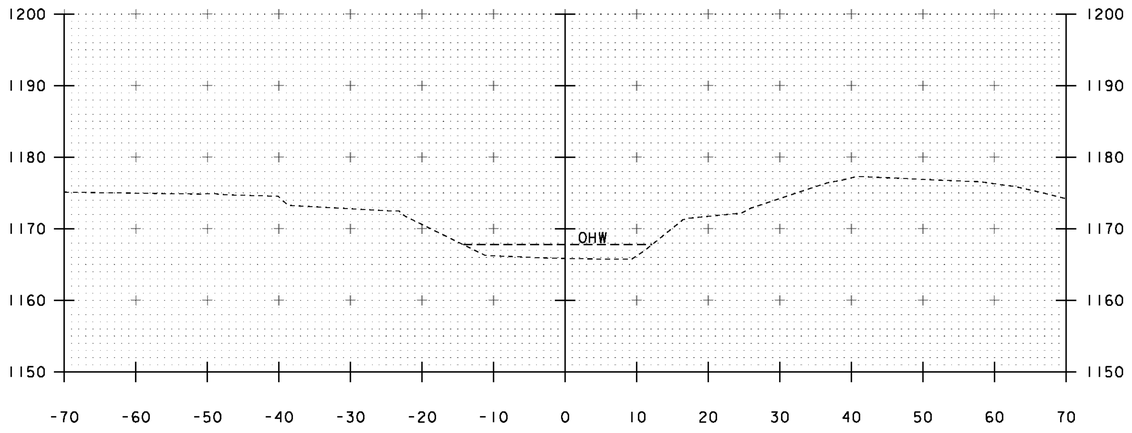

10+60

STA 10+81 RT
BEGIN CHANNEL EXCAVATION
BEGIN GEOTEXTILE FABRIC UNDER STONE FILL
BEGIN STONE FILL, TYPE III
BEGIN GRUBBING MATERIAL

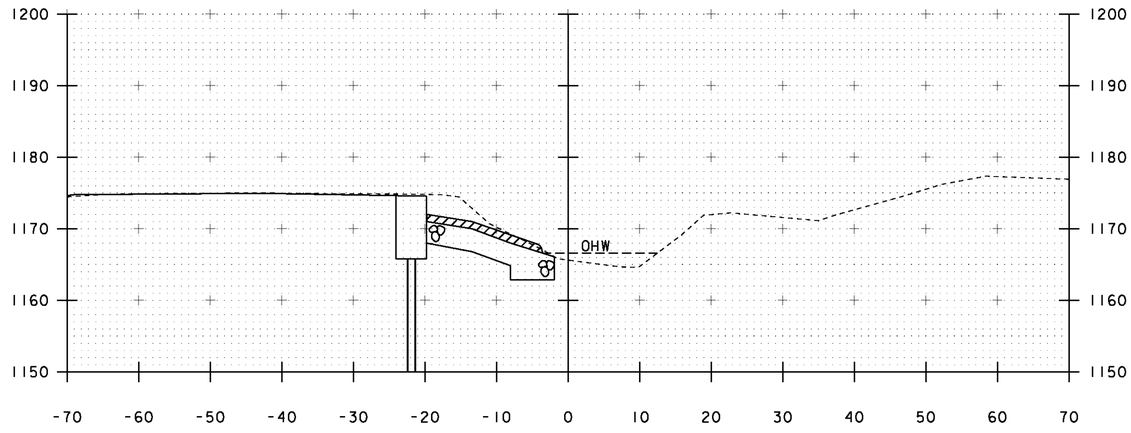



10+80

STA 10+74 LT
END GRUBBING MATERIAL




10+50



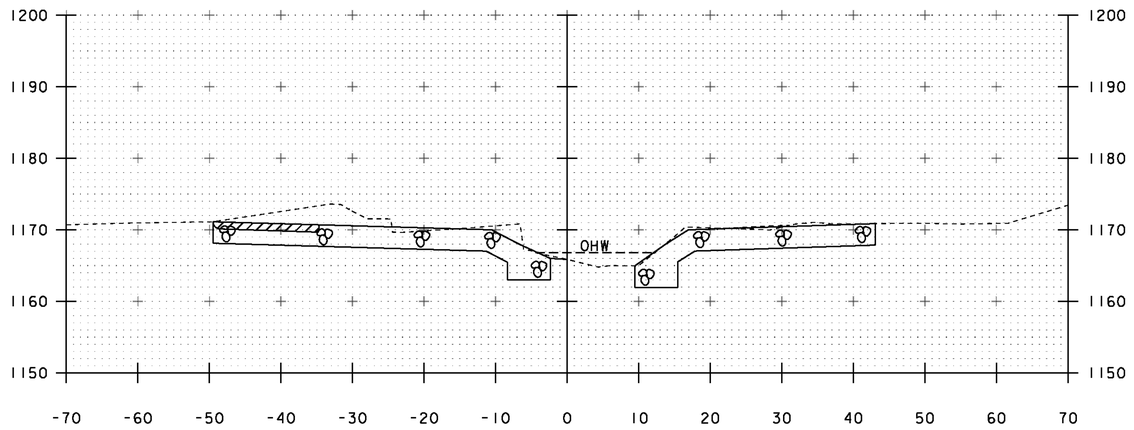

10+70

STA. 10+50 TO STA. 10+80

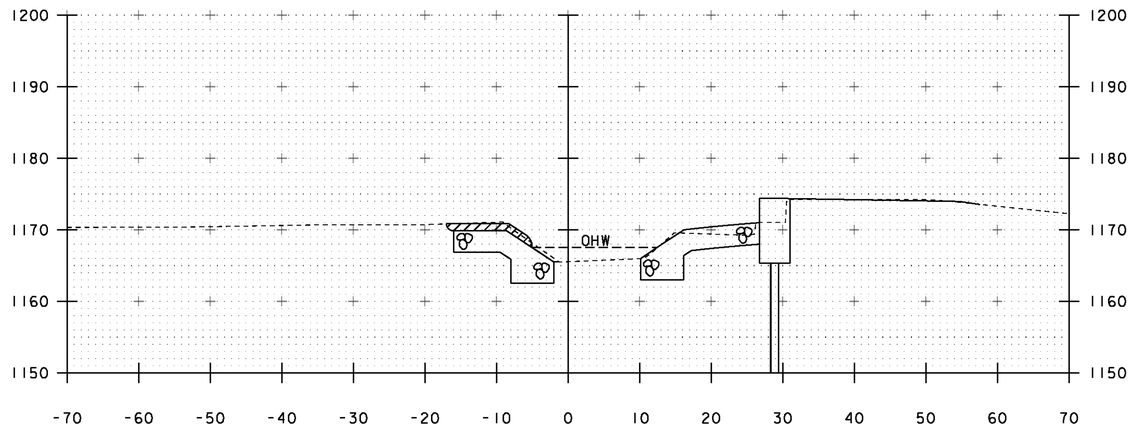
PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: sllb208xs.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
CHANNEL SECTIONS

PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 34 OF 36



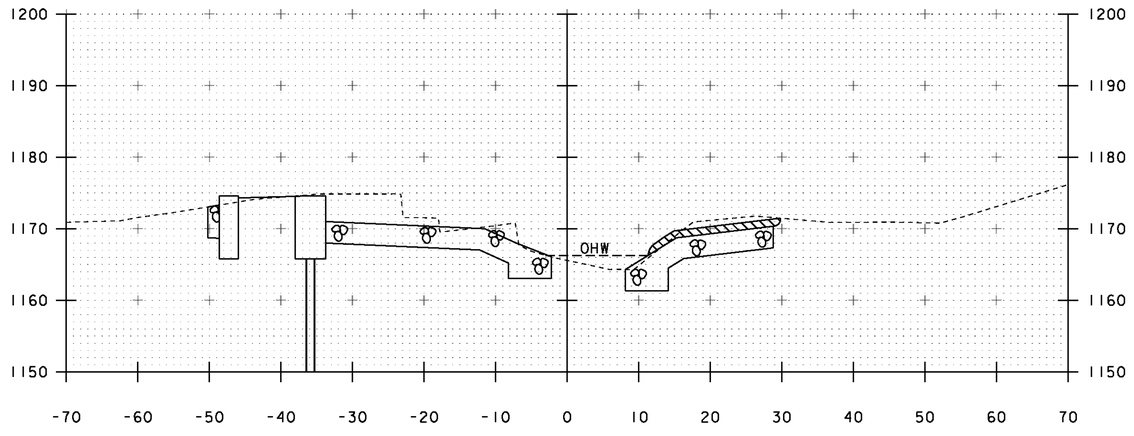

11+00



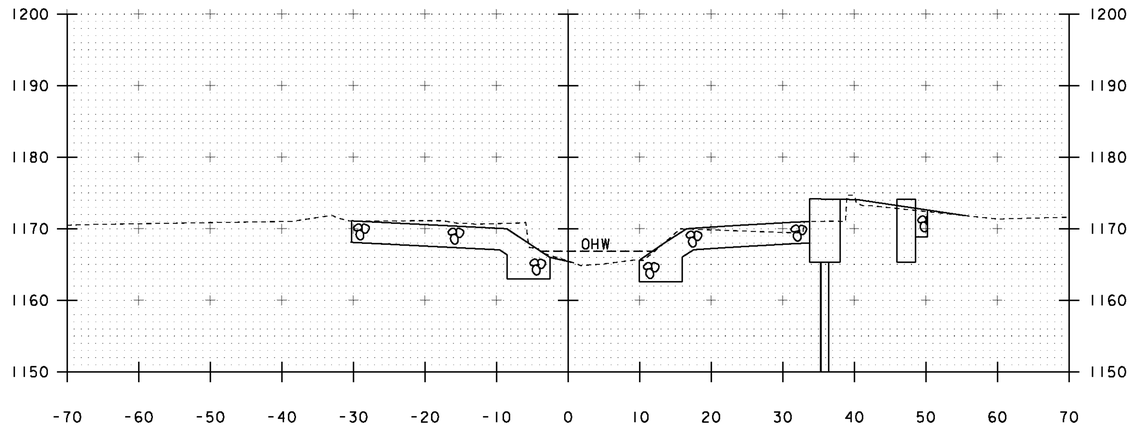

11+20

STA 10+95 LT
BEGIN GRUBBING MATERIAL

STA 10+91 RT
END GRUBBING MATERIAL




10+90




11+10

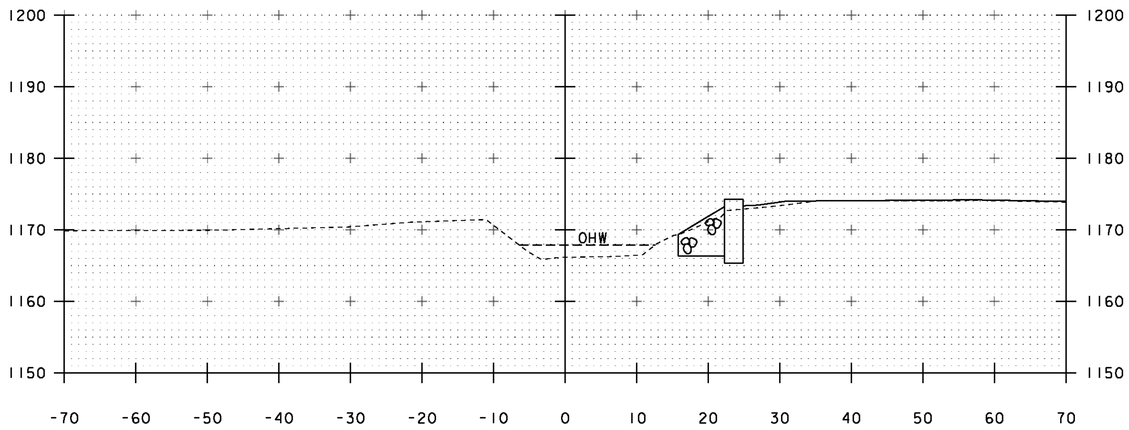
STA. 10+90 TO STA. 11+20

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: sllb208xs.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
CHANNEL SECTIONS

PLOT DATE: 13-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 35 OF 36

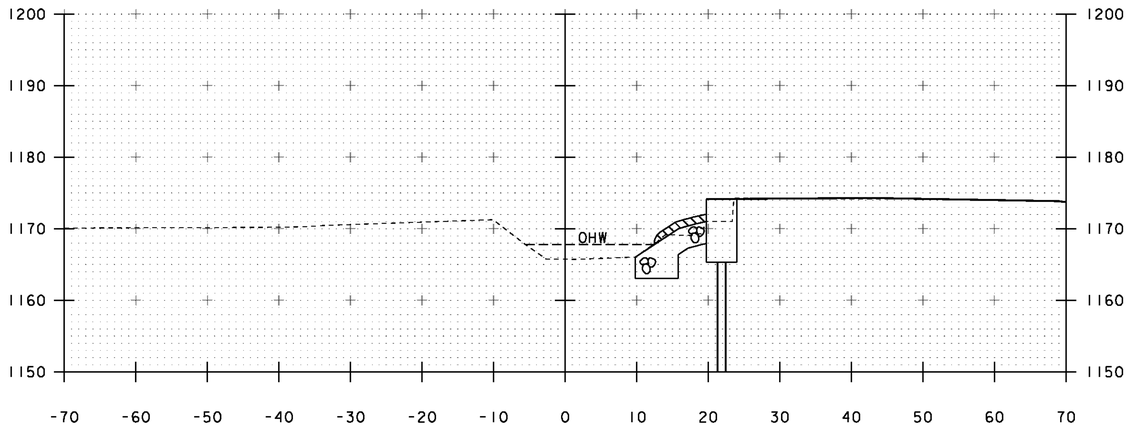
STA 11+44 RT
END CHANNEL EXCAVATION
END GEOTEXTILE FABRIC UNDER STONE FILL
END STONE FILL, TYPE III
END GRUBBING MATERIAL



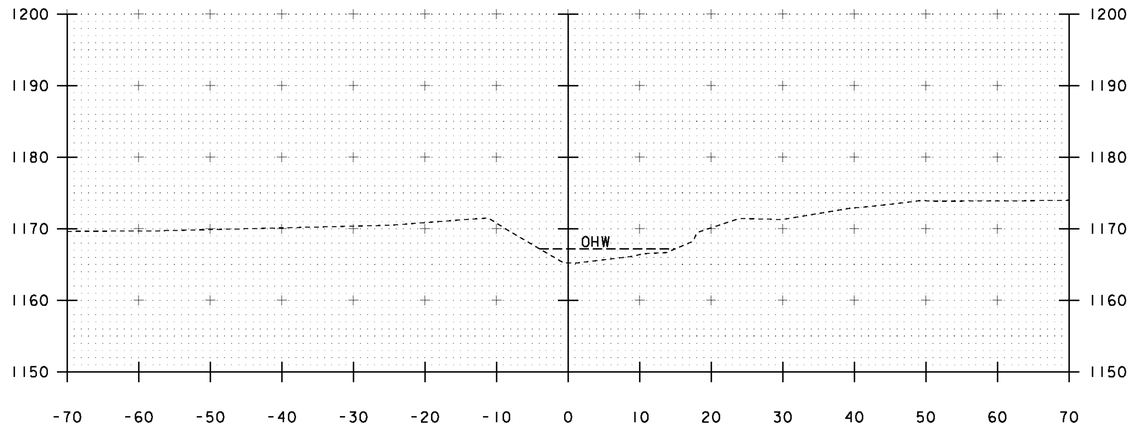

11+40

STA 11+27 LT
END CHANNEL EXCAVATION
END GEOTEXTILE FABRIC UNDER STONE FILL
END STONE FILL, TYPE III
END GRUBBING MATERIAL

STA 11+28 RT
BEGIN GRUBBING MATERIAL




11+30




11+50

STA. 11+30 TO STA. 11+50

PROJECT NAME: BRIGHTON
PROJECT NUMBER: ER STP 034-3(25)

FILE NAME: sllb208xs.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
CHANNEL SECTIONS

PLOT DATE: 12-SEP-2012
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 36 OF 36

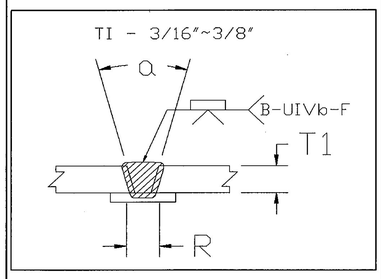
## WELDING PROCEDURE SPECIFICATION

| | |
|---|---|
| Material Specification | A500 GR B |
| Welding Process | FCAW |
| Manual or Machine | SEMAUTOMATIC |
| Position of Welding | FLAT |
| Filler Metal Specification | A5.20 - 95 |
| Filler Metal Classification | E71T-1H8 E71T-9H8 LINCOLN ULTRACORE |
| 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 AS PER SECTION 603 OF THE NYSSCM |
| Preheat and Interpass Temperature | PREHEAT AS PER TABLEL 708 OF THE NYSSCM |
| Postheat Temperature | NONE |
| Heat Input | Min Max |

### WELDING PROCEDURE

| Pass no. | Electrode size | Welding Current Amperes | Welding Current Volts | Travel speed |
|---|---|---|---|---|
| 1 | 1/16 | 300 | 26 | 14 |
| Variable | LIMITS | 270 TO 330 | 24 TO 28 | 12.6 TO 15.4 |

Joint detail




Vermont Agency of Transportation
RECEIVED
CK'D BY RMK OK'D BY JWC
January 4th, 2013
RESUBMIT APPROVED X
BY KMH DATE 1-8-13

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

Procedure No. 3007
Revision No.

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 3/23/2011

Form III-2

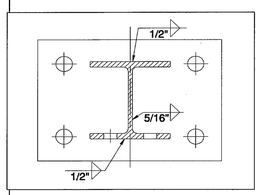
**Form III-2-Sample Welding Procedure Specification**

## WELDING PROCEDURE SPECIFICATION

| | |
|---|---|
| Material Specification | A572 GRD. 50 /A992-06a |
| Welding Process | FCAW |
| Manual or Machine | SEMAUTOMATIC |
| Position of Welding | FLAT |
| Filler Metal Specification | A5.20 |
| Filler Metal Classification | E70 LINCOLN OUTERSHEILD |
| Flux | N/A |
| Shielding Gas | CO 2 Dew Point -40DEG F Flow Rate 50 CFM |
| Single or Multiple Pass | SINGLE (45 TO 63 CFM) |
| Single or Multiple Arc | N/A |
| Welding Current | DC |
| Polarity | DCEP |
| Welding Progression | STRINGER |
| Root Treatment | CLEAN AS PER SECTION 603 OF THE NYSSCM |
| Preheat and Interpass Temperature | PREHEAT AS PER TABLEL 708 OF THE NYSSCM |
| Postheat Temperature | NONE |
| Heat Input | Min _____ Max _____ |

**WELDING PROCEDURE**

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




Vermont Agency of Transportation
RECEIVED
CK'D BY RMK OK'D BY JWC
January 4th, 2013
RESUBMIT APPROVED X
BY KMH DATE 1-8-13

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

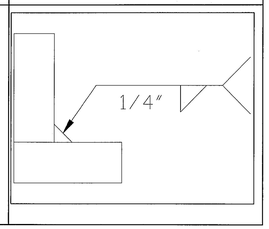
Procedure No. 3008
Revision No. _____

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 10/18/2011

## WELDING PROCEDURE SPECIFICATION

| | |
|---|---|
| Material Specification | A709 TO A500 GR B |
| Welding Process | FCAW |
| Manual or Machine | SEMAUTOMATIC |
| Position of Welding | FLAT |
| Filler Metal Specification | A5.20 - 95 |
| Filler Metal Classification | E71T-1H8 E71T-9H8 LINCOLN ULTRACORE |
| 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 AS PER SECTION 603 OF THE NYSSCM |
| Preheat and Interpass Temperature | PREHEAT AS PER TABLEL 708 OF THE NYSSCM |
| 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 | 300 | 26 | 14 |  |
| Variable | LIMITS | 270 TO 330 | 24 TO 28 | 12.6 TO 15.4 | |



Vermont Agency of Transportation
RECEIVED
CK'D BY RMK OK'D BY JWC
January 4th, 2013
RESUBMIT BY KMH APPROVED X DATE 1-8-13

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

Procedure No. 3009
Revision No. _____

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 10/18/2011

Form III-2

**Form III-2-Sample Welding Procedure Specification**

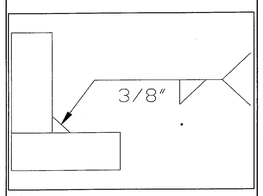
## WELDING PROCEDURE SPECIFICATION

| | |
|---|---|
| Material Specification | ASTM-A36 A709 GR 36 CVN |
| Welding Process | FCAW |
| Manual or Machine | SEMAUTOMATIC |
| Position of Welding | FLAT |
| Filler Metal Specification | A5.20- 95 |
| Filler Metal Classification | E71T-1H8 E71T-9H8 LINCOLN ULTRACORE |
| 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 | 300 | 26 | 14 | |
| Variable | LIMITS | 270 TO 330 | 24 TO 28 | 12.6 TO 15.4 | |

Vermont Agency of Transportation
RECEIVED
CK'D BY RMK OK'D BY JWC
January 4th, 2013
RESUBMIT BY KMH APPROVED DATE X 1-8-13




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

Procedure No. 3016
Revision No. _____

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 1/3/2013

Form III-2

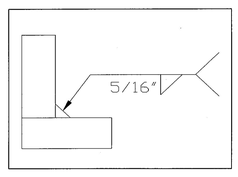
**Form III-2-Sample Welding Procedure Specification**

## WELDING PROCEDURE SPECIFICATION

| | |
|---|---|
| Material Specification | ASTM A572 GR. 50 CVN A500 GR B |
| Welding Process | FCAW |
| Manual or Machine | SEMAUTOMATIC |
| Position of Welding | FLAT |
| Filler Metal Specification | A5.20 - 95 |
| Filler Metal Classification | E71T-1H8 E71T-9H8 LINCOLN ULTRACORE |
| Flux | N/A |
| Shielding Gas | CO 2 Dew Point -40DEG F Flow Rate |
| 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 | 300 | 26 | 14 | |
| Variable | LIMITS | 270 TO 330 | 24 TO 28 | 12.6 TO 15.4 | |




Vermont Agency of Transportation
RECEIVED
CK'D BY RMK OK'D BY JWC
January 4th, 2013
RESUBMIT APPROVED X
BY KMH DATE 1-8-13

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

Procedure No. 3037
Revision No.

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 12/20/2011

Form III-2

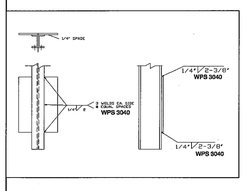
**Form III-2-Sample Welding Procedure Specification**

## WELDING PROCEDURE SPECIFICATION

| | |
|---|---|
| Material Specification | A36 |
| Welding Process | GMAW |
| Manual or Machine | SEMAUTOMATIC |
| Position of Welding | FLAT |
| Filler Metal Specification | A5.18 |
| Filler Metal Classification | L-50 .052 LINCOLN |
| Flux | N/A |
| Shielding Gas | 90% ARGON /10% CO2 Dew Point -40DEG F Flow Rate 50 CFM |
| 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 |
|---|---|---|---|---|---|
| | .052 | 430 | 32 | 13 | |
| Variable | LIMITS | 387 TO 473 | 29 TO 34 | 12 TO 14 | |




Vermont Agency of Transportation
RECEIVED
CK'D BY RMK OK'D BY JWC
January 4th, 2013
RESUBMIT APPROVED X
BY KMH DATE 1-8-13

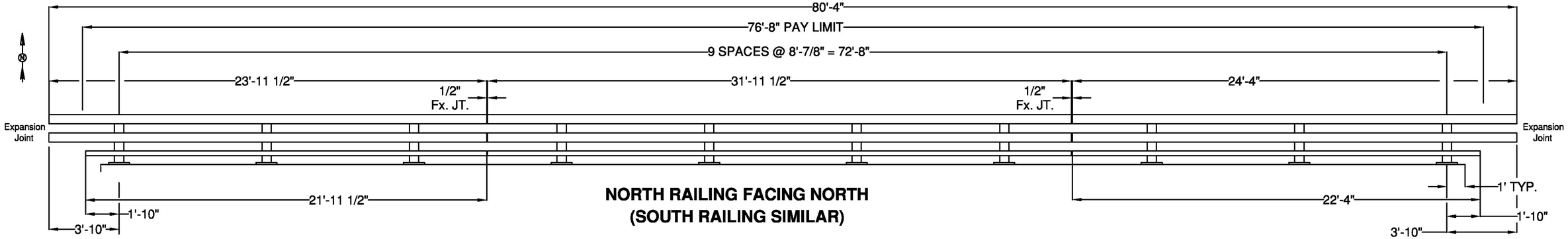
This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in Section 5.

Procedure No. 3040
Revision No.

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 12/20/2011

Form III-2

**Form III-2-Sample Welding Procedure Specification**




## NORTH RAILING FACING NORTH (SOUTH RAILING SIMILAR)

| BILL OF MATERIAL | | |
|---|---|---|
| QTY | DESCRIPTION | ASTM DESIGNATION |
| 20 | W6x25, THREE RAIL POST @ 2'-9" OA DN 1 1/4x10x1'-2" B.P. | A572 Gr. 50 |
| 2 | HSS 3" X 5" X 1/4" RAIL @ 21'-11 1/2" | A500 Gr. B |
| 2 | HSS 3" X 5" X 1/4" RAIL @ 31'-11 1/2" | A500 Gr. B |
| 2 | HSS 3" X 5" X 1/4" RAIL @ 22'-4" | A500 Gr. B |
| 4 | HSS 6" X 6" X 3/16" RAIL @ 23'-11 1/2" | A500 Gr. B |
| 4 | HSS 6" X 6" X 3/16" RAIL @ 31'-11 1/2" | A500 Gr. B |
| 4 | HSS 6" X 6" X 3/16" RAIL @ 24'-4" | A500 Gr. B |
| 4 | 2-1/8" X 4-1/4" FIX. SPLICE BAR @ 2'-3" | A572 Gr. 50 |
| 8 | HSS 5" X 5" X 5/16" FIX. SPLICE TUBE @ 2'-3" | A500 Gr. B, A572 Gr. 50 |
| 20 | 3/8" X 10" X 14" ANCHOR PLATES (END POST) | A572 Gr. 50 |
| 20 | 1/8" X 10" X 14" FABRIC PAD | AASHTO M251 |
| 80 | Ø 1" X 13" ANCHOR STUDS, W/ 2 1/4" THD. EACH END | A449 Gr. 1, CLASS 8.8 |
| 160 | Ø 1" HEAVY HEX NUTS & FLAT WASHERS | A563 & F436 |
| 80 | Ø 1" HEX JAM NUTS | A563 |
| 80 | Ø 7/8" X 8" ROUND HEAD BOLT, NUT, SQ. WASHER, L.W. | A449, A563, F436, ASME B18.21.1 |
| 20 | Ø 3/4" X 8" HEX BOLT, NUT, (2) F.W., & L.W. | A325, A563, F436, & ASME B18.21.1 |
| 40 | Ø 3/4" X 2-3/4" HEX BOLT, NUT, (2) F.W., & L.W. | A325, A563, F436, & ASME B18.21.1 |
| 32 | Ø 3/4" X 7-1/2" HEX BOLT, NUT, & (2) F.W. | A325, A563, & F436 |
| 16 | Ø 3/4" X 4-1/2" HEX BOLT, NUT, & (2) F.W. | A325, A563, & F436 |
| 20 | Ø 5/8" X 1-1/2" HEX BOLT, NUT, & (2) F.W. | A325, A563, & F436 |
| 20 | L5" X 5" X 5/8" RAILING ANGLE @ 6' | A572 Gr. 50 |
| TBD | DELINEATORS | (SUPPLIED BY F.R. LAFAYETTE) |

Vermont Agency of Transportation

RECEIVED

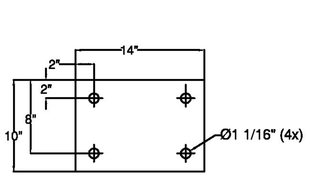
FR LaFayette BRIGHTON Submittal 2-14-2013.pdf

CK'D BY R. Klinefelter OK'D BY J. Salvatori

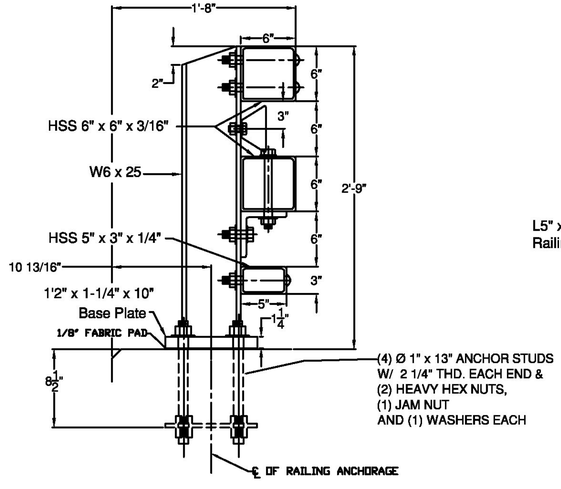
February 14, 2013

RESUBMIT ____ Approved X

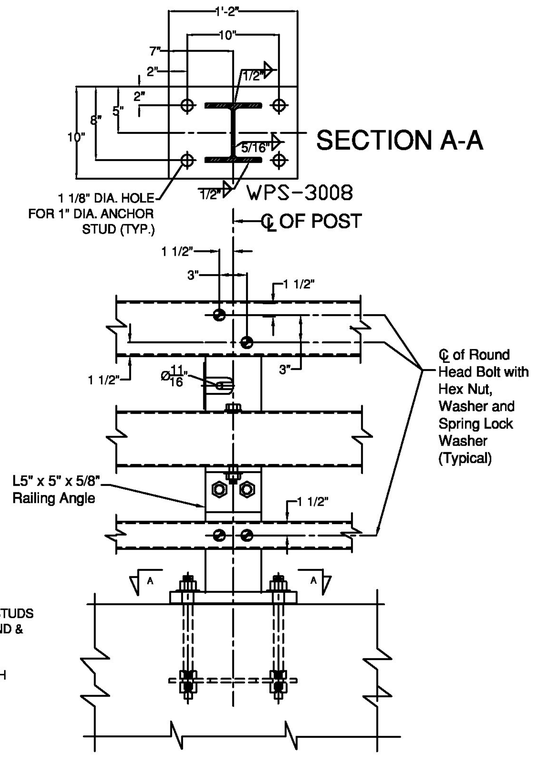
BY K. Higgins DATE 02/19/13




1/8" FABRIC PAD




SECTION




ELEVATION

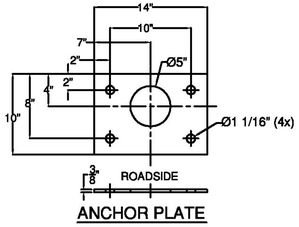
STEEL BRIDGE RAILING

GENERAL NOTES:

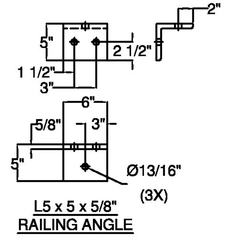
1) ALL RAILING IS TO BE FABRICATED AND ERECTED ACCORDING TO SECTION 525 OF THE STANDARD SPECIFICATIONS.
2) PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/16".
3) BOLTS SHALL BE TORQUED SNUG TIGHT (APPROXIMATELY 100 FT-LB).
4) RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING THE END OF AN INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPER STRUCTURE EXPANSION JOINTS. EXPANSION JOINT WIDTH SHALL BE 4"@ 68°F AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
5) RETROREFLECTIVE MATERIAL SHALL MEET THE REQUIREMENTS OF SUBSECTION 750.08 AND SHALL BE A .063" ALUMINUM BACKING WHITE OR YELLOW REFLECTOR. WHITE IS TO BE INSTALLED ON THE DRIVERS RIGHT. FOR ONE WAY BRIDGES , YELLOW IS TO BE INSTALLED ON THE DRIVERS LEFT.
6) PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE BOX BEAM RAILS, SPLICE TUBES AND FILL PLATES.
7) THE MINIMUM DISTANCE FROM THE POST TO AN EXPANSION JOINT SHALL BE DETERMINED BY THE MINIMUM EDGE DISTANCE OF 5" FROM ANY ANCHOR STUD TO THE END OF THE SLAB, OR THE EXPANSION JOINT RECESS POUR, IF ONE IS USED.
8) ALL POST SHALL BE SET NORMAL TO GRADE. THE MAXIMUM CENTER TO CENTER SPACING OF BRIDGE RAIL POST IS 8' 3".
9) ANY BENDING OF RAIL SHALL BE DONE AT THE FABRICATION PLANT ACCORDING TO A PROCEDURE PROVIDED BY THE FABRICATOR.
10) STD. SPLICE HOLES ONLY IN BRIDGE RAIL TUBES. REST TO BE DRILLED BY CUSTOMER. FIELD DRILLED HOLES TO BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO INSTALLATION.
11) THIS RAILING MEETS THE REQUIREMENTS FOR A TL-4 SERVICE LEVEL.

RAIL BENDING PROCEDURE:

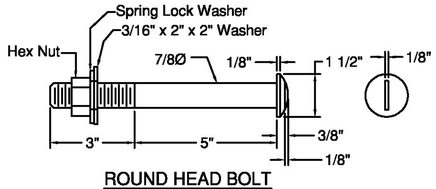
RADII GREATER THAN 16' TO BE CURVED ON A TUBE BENDING MACHINE, RADII LESS THAN 16' TO BE 'PIE CUT' AND WELDED.




ANCHOR PLATE




L5 x 5 x 5/8" RAILING ANGLE




ROUND HEAD BOLT

ITEM #: 525.335

F.R. LAFAYETTE, P.O. 27399

SHEET 1 OF 2

APPROVED BY:

# BRIDGE RAIL DETAILS SHEET

PROJECT: BRIGHTON, PROJECT # ER STP 034-3(25), MINOR ARTERIAL, BRIDGE # 84

TOWN OF BRIGHTON, ESSEX COUNTY, VT.

| R | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| E | 1 | 12/26/12 | REVISED PER 12/26/12 EMAIL | E.P. |
| V | 2 | 1/9/13 | REVISED PER 1/9/13 EMAIL | E.P. |

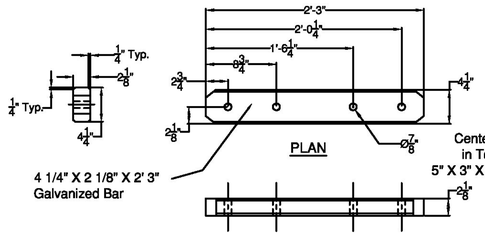
| R | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| E | 3 | 1/30/13 | HOLE IN WP TO 1 1/8" PER EMAIL 1/28/13 | E.P. |
| V | | | | |

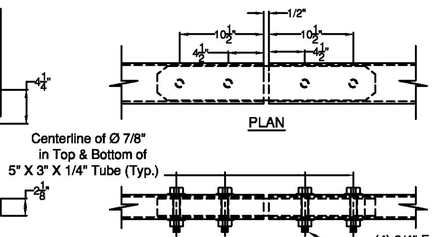

ELDERLEE, INC.
OAKS CORNERS, NEW YORK 14518
E-Mail: dlong@elderlee.com
Tel: 315-789-6670 Fax: 315-789-6615


AISC CERTIFIED FABRICATOR

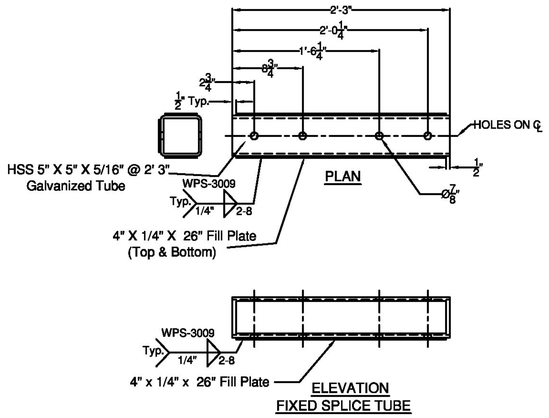
| | | |
|---|---|---|
| DRAWN | E.P. | 12/03/12 |
| CHECKED | D.L. | 12/03/12 |
| APPROVED | . | . |
| SCALE | SCHEMATIC | |
| DRAWING NO. | F.R. LAFAYETTE BRIGHTON | |

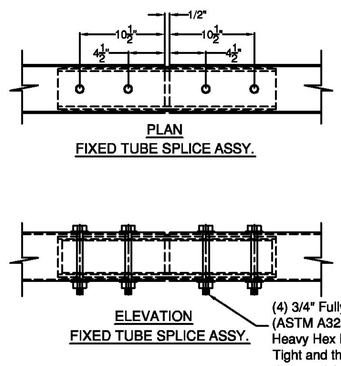
## SPLICE BAR - FIXED




(4) 3/4" Fully Threaded Bolts. 4 1/2" Long (ASTM A325, TYPE 1) 2 Washers and a Heavy Hex Nut on each Bolt. Nut to be Finger Tight and the First Thread below the nut to be damaged A.O.B.E.. 4 Bolts at Each Splice.

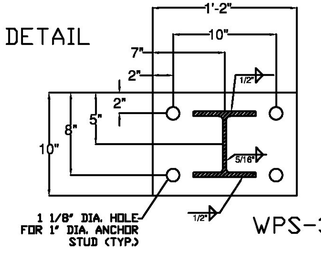


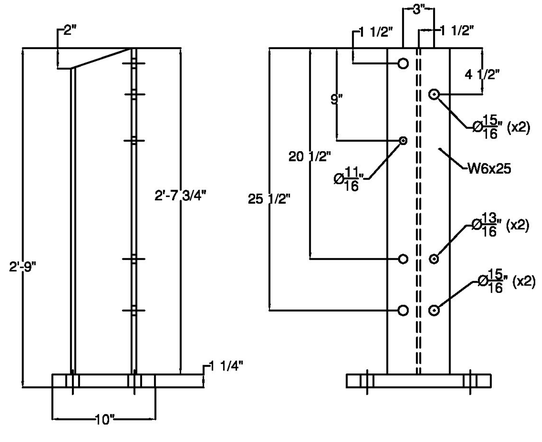

(4) 3/4" Fully Threaded Bolts. 7 1/2" Long (ASTM A325, TYPE 1) 2 Washers and a Heavy Hex Nut on each Bolt. Nut to be Finger Tight and the First Thread below the nut to be damaged A.O.B.E.. 4 Bolts at Each Splice.

## SPLICE TUBE - FIXED

## BRIDGE POST DETAIL




WPS-3008




ITEM #: 525.335

F.R. LAFAYETTE, P.O. 27399

SHEET 2 OF 2

Vermont Agency of Transportation

RECEIVED

CK'D BY R. Klinefelter OK'D BY J. Salvatori

February 14, 2013

RESUBMIT _____ Approved X

BY K. Higgins DATE 02/19/13

# BRIDGE RAIL DETAILS SHEET

PROJECT: BRIGHTON, PROJECT # ER STP 034-3(25), MINOR ARTERIAL, BRIDGE # 84

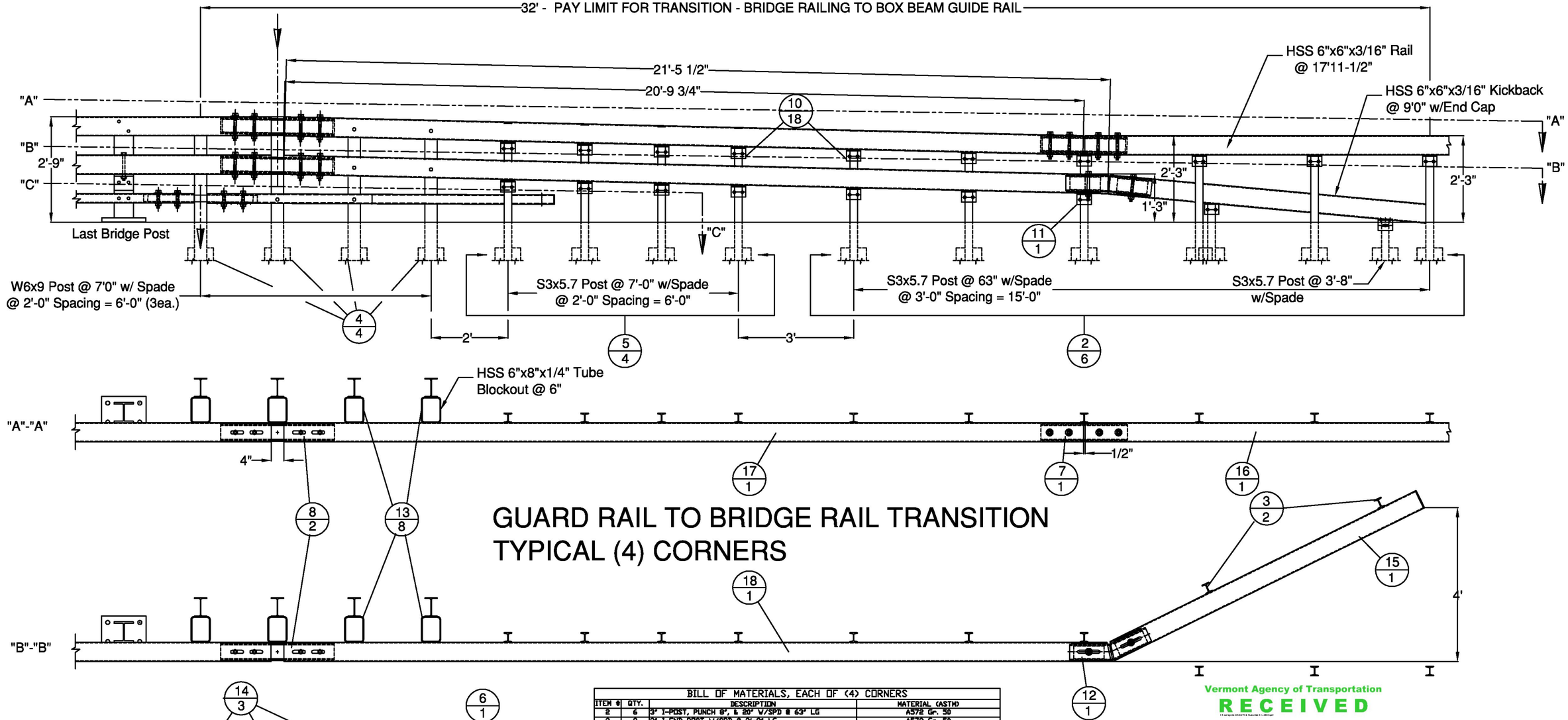
TOWN OF BRIGHTON, ESSEX COUNTY, VT.

| R | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| E | 1 | 12/26/12 | REVISED PER 12/26/12 EMAIL | E.P. |
| V | 2 | 1/9/13 | REVISED PER 1/9/13 EMAIL | E.P. |

| R | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| E | 3 | 1/30/13 | MOVE W 1/2" TO 1 1/8" PER EMAIL 1/28/13 | E.P. |
| V | | | | |


ELDERLEE, INC.
OAKS CORNERS, NEW YORK 14518
E-Mail: dlong@elderlee.com
Tel: 315-789-6670 Fax: 315-789-6615


| | | |
|---|---|---|
| DRAWN | E.P. | 12/03/12 |
| CHECKED | D.L. | 12/03/12 |
| APPROVED | . | . |
| SCALE | SCHEMATIC | |
| DRAWING NO. | F.R. LAFAYETTE BRIGHTON | |




# GUARD RAIL TO BRIDGE RAIL TRANSITION
# TYPICAL (4) CORNERS

| HARDWARE NOTES | |
|---|---|
| ITEM # | FUNCTION |
| 19 | BOLT RAIL TO SHELF ANGLE (ITEM #10) |
| 20 | BOLT SHELF ANGLE (ITEM #'S 10 & 11) TO POST |
| 21 | BOLT BLOCK-OUTS (ITEM #'S 13 & 14) TO HEAVY POST |
| 22 | (4) PER SPLICE BAR (ITEM #9) |
| 23 | (4) PER SPLICE TUBING (ITEM #'S 7 & 8) |
| 24 | BOLT RAIL (ITEMS #'S 6,17, & 18 TO BLOCK-OUTS (ITEM #'S 13 & 14) (WHERE FASTENED) |
| 25 | BOLT DOUBLE BEND SPLICE TUBE (ITEM #12) TO RAIL (ITEM #18) & KICKBACK (ITEM #15) & ITEM #11) |

BILL OF MATERIALS, EACH OF (4) CORNERS

| ITEM # | QTY. | DESCRIPTION | MATERIAL (ASTM) |
|---|---|---|---|
| 2 | 6 | 3' I-POST, PUNCH 8", & 20" W/SPD @ 63" LG | A572 Gr. 50 |
| 3 | 2 | 3' I-END POST W/SPD @ 3'-8" LG | A572 Gr. 50 |
| 4 | 4 | W6X9 POST @ 7' W/SPD & 5/8" HOLES | A572 Gr. 50 |
| 5 | 4 | 3' I-POST, PUNCH 8" & 20", W/8X32" SPADE @7' | A572 Gr. 50 |
| 6 | 1 | HSS 3X5" BTM TRANS RAIL W/5'-0" KB, EXP END | A500 Gr. B |
| 7 | 1 | HSS 5X5 TUBE SPLICE @27" LG W/ 1/4" SHIMS | A500 Gr. B / A572 Gr 50 |
| 8 | 2 | HSS 5x5 EXP TUBE SPLICE @ 36" LG W/ 1/4" SHIMS | A500 Gr. B / A572 Gr 50 |
| 9 | 1 | BR EXP BAR SPLICE 2-1/8" X 4-1/4" @ 36" LG | A572 Gr. 50 |
| 10 | 18 | REG BB SHELF ANGLES @ 4-1/2" | A572 Gr. 50 |
| 11 | 1 | DVY BB SHELF ANGLES @ 4-1/2" | A572 Gr. 50 |
| 12 | 1 | HSS 5X5 DBL BEND TUBE SPL @ 28" LG | A500 Gr. B / A572 Gr 50 |
| 13 | 8 | HSS 6X8" TRANS. TUBE B/O @ 6" LG | A500 Gr. B |
| 14 | 3 | HSS 6X8" TRANS. TUBE B/O @ 3" LG | A500 Gr. B |
| 15 | 1 | HSS 6X6" BB @ 9'-0" KICKBACK, W/ CAP | A500 Gr. B / A36 |
| 16 | 0.5 | HSS 6X6" BB @ 17'-11 1/2", DRILL 3" CC | A500 Gr. B |
| 17 | 1 | HSS 6X6" BB TOP TRANS @ 20'-9 3/4" LG W/EXP END | A500 Gr. B |
| 18 | 1 | HSS 6X6" BB BTM TRANS @ 21'-5 1/2" LG W/EXP END | A500 Gr. B |
| 19 | 18 | 3/8" X 7 1/2" BOLT, NUT, & 2 FW | A307, A563, F436 |
| 20 | 19 | 1/2" x 1-1/8" BOLT, NUT, & FW | A307, A563, F436 |
| 21 | 22 | 1/2" x 1-1/8" BOLT, NUT, 2 FW & LW | A307, A563, F436 |
| 22 | 4 | 3/4" X 4-1/2" BOLT, NUT, 2 FW | A325, A563, F436 |
| 23 | 12 | 3/4" X 7-1/2" BOLT, NUT, 2 FW | A325, A563, F436 |
| 24 | 6 | 3/4" X 8" CARR BOLT, NUT, FW & LW | A307, A563, F436 |
| 25 | 2 | 3/4" X 8" BOLT, NUT, 2 FW, & LW | A325, A563, F436 |

7/8" BOLT

Vermont Agency of Transportation
RECEIVED
CK'D BY R. Klinefelter OK'D BY J. Salvatori
February 14, 2013
RESUBMIT Approved AS NOTED
BY K. Higgins DATE 02/19/13

ITEM #: 525.335

F.R. LAFAYETTE, P.O. 27399

SHEET 1 OF 4

APPROVED BY:

## GUARD RAIL TO BRIDGE RAIL TRANSITION DETAILS SHEET

PROJECT: BRIGHTON, PROJECT # ER STP 034-3(25), MINOR ARTERIAL, BRIDGE # 84
TOWN OF BRIGHTON, ESSEX COUNTY, VT.

| R | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| E | 1 | 12/26/12 | REVISED PER 12/26/12 EMAIL | E.P. |
| V | 2 | 1/9/13 | REVISED PER 1/9/13 EMAIL | E.P. |

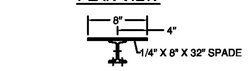
| R | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| | | | | |

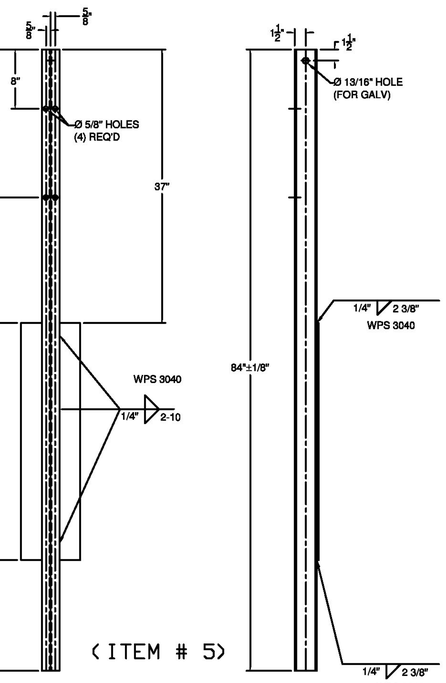
ELDERLEE, INC.
OAKS CORNERS, NEW YORK 14518
E-Mail: dlong@elderlee.com
Tel: 315-789-6670 Fax: 315-789-6615

AISC CERTIFIED FABRICATOR

| | | |
|---|---|---|
| DRAWN | E.P. | 12/03/12 |
| CHECKED | D.L. | 12/03/12 |
| APPROVED | . | . |
| SCALE | SCHEMATIC | |
| DRAWING NO. | F.R. LAFAYETTE BRIGHTON | |

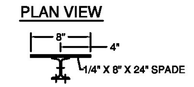
PLAN VIEW

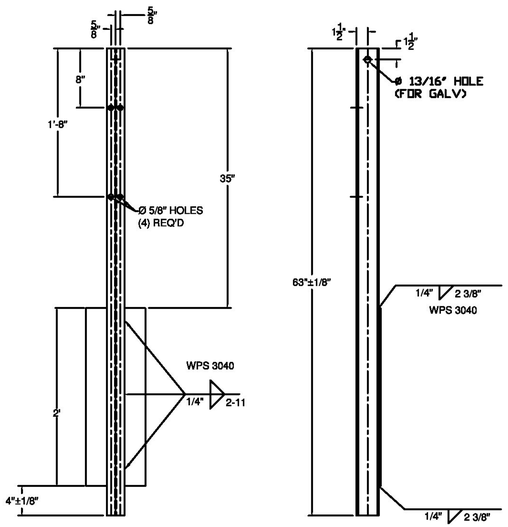



FRONT (ITEM # 5) SIDE

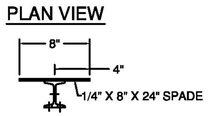
PLAN VIEW

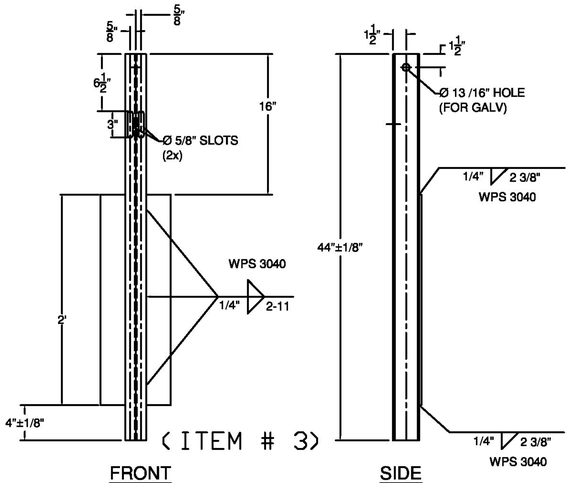



FRONT (ITEM # 2) SIDE

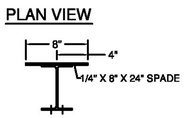
PLAN VIEW

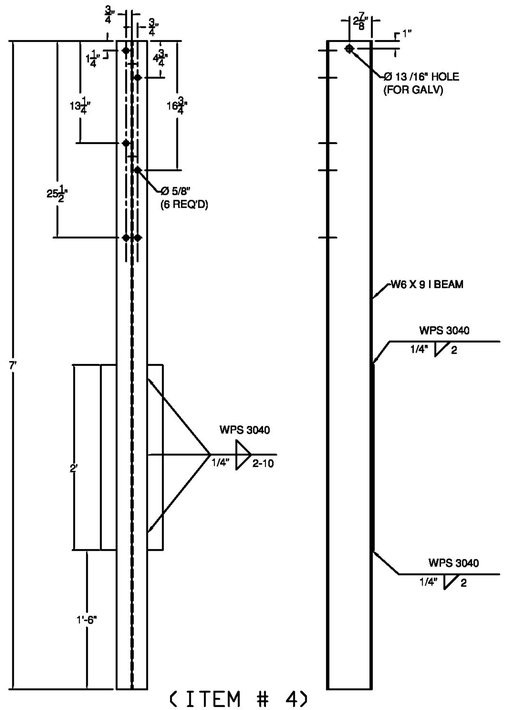


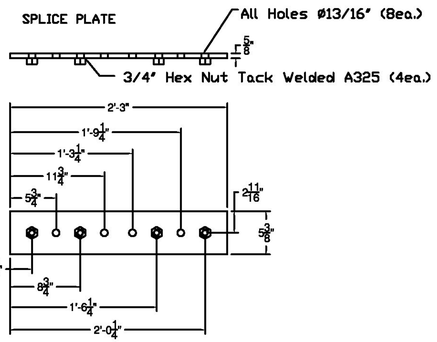

FRONT (ITEM # 3) SIDE

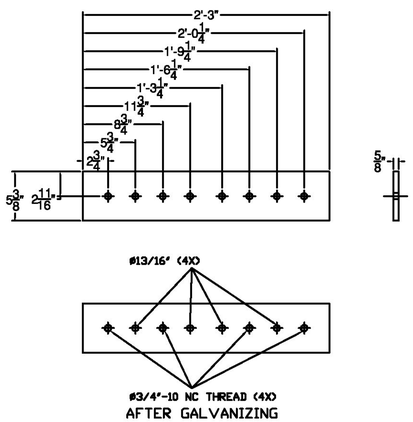
PLAN VIEW




FRONT (ITEM # 4) SIDE




AFTER GALVANIZING

ALTERNATE SPLICE PLATE

ITEM #: 525.335

F.R. LAFAYETTE, P.O. 27399

SHEET 2 OF 4

Vermont Agency of Transportation

RECEIVED

FR Lafayette BRIGHTON Submittal 2-14-2013.pdf

CK'D BY R. Klinefelter OK'D BY J. Salvatori

February 14, 2013

RESUBMIT _____ Approved X

BY K. Higgins DATE 02/19/13

# GUARD RAIL TO BRIDGE RAIL TRANSITION DETAILS SHEET

PROJECT: BRIGHTON, PROJECT # ER STP 034-3(25), MINOR ARTERIAL, BRIDGE # 84

TOWN OF BRIGHTON, ESSEX COUNTY, VT.

| R | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| E | 1 | 12/26/12 | REVISED PER 12/26/12 EMAIL | E.P. |
| V | 2 | 1/9/13 | REVISED PER 1/9/13 EMAIL | E.P. |

| R | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| E | | | | |
| V | | | | |


ELDERLEE, INC.

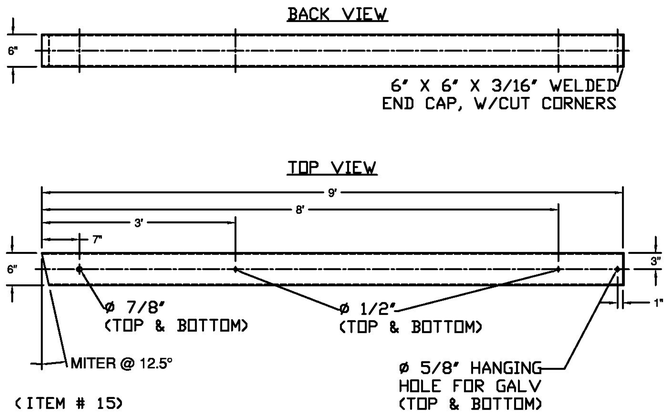
OAKS CORNERS, NEW YORK 14518

E-Mail: dlong@elderlee.com

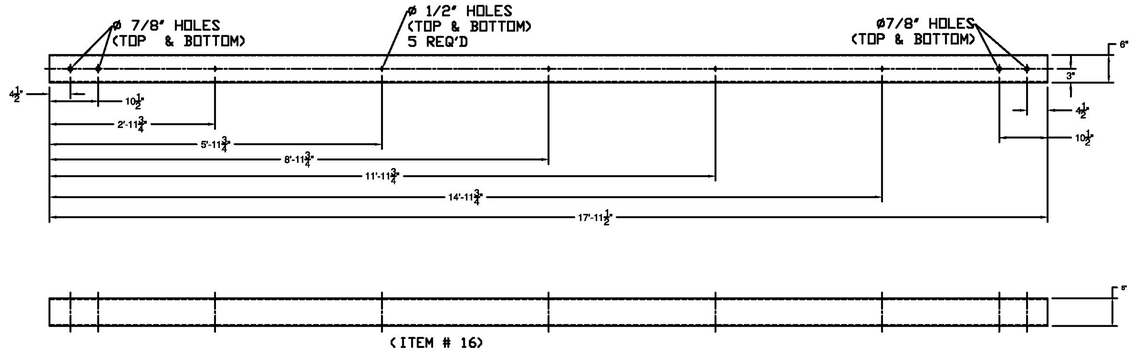
Tel: 315-789-6670 Fax: 315-789-6615


CERTIFIED FABRICATOR

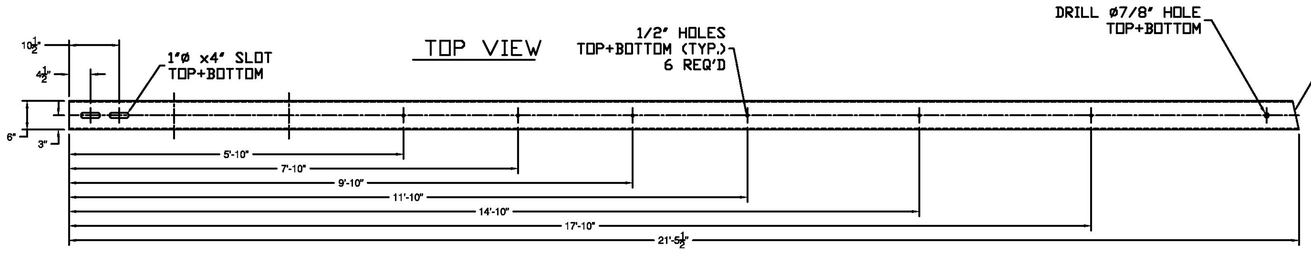
| | | |
|---|---|---|
| DRAWN | E.P. | 12/03/12 |
| CHECKED | D.L. | 12/03/12 |
| APPROVED | . | . |
| SCALE | SCHEMATIC | |
| DRAWING NO. | F.R. LAFAYETTE BRIGHTON | |

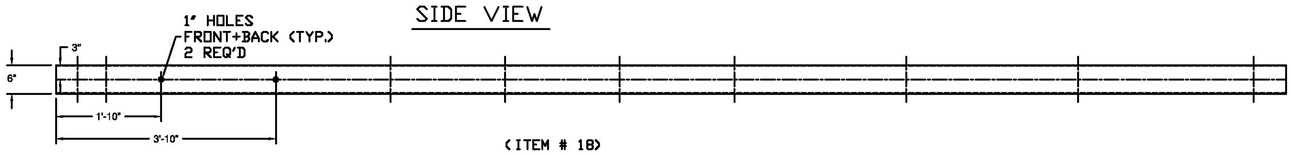



(ITEM # 15)

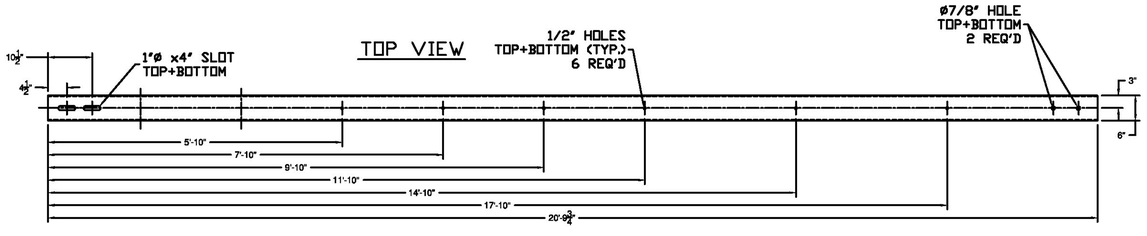
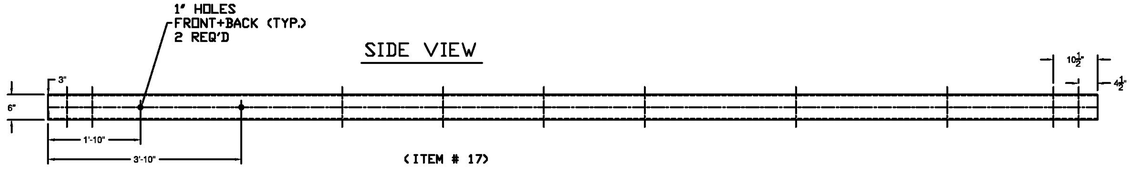



(ITEM # 16)

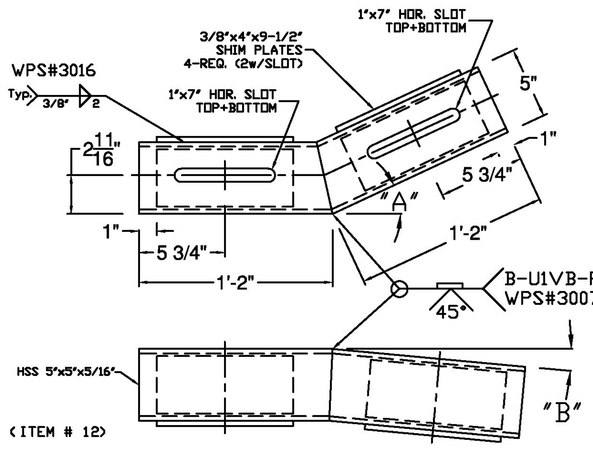



(ITEM # 18)



(ITEM # 17)




(ITEM # 12)

"A" - SEE PLAN FOR TURN BACK DISTANCE, SET ANGLE ACCORDINGLY.
"B" - TURN DOWN ANGLE SET BY THE 9" MEASURMENT AT THE END OF THE BOX BEAM.

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

**ITEM #:** 525.335

APPROVED BY:

Vermont Agency of Transportation
RECEIVED
CK'D BY R. Klinefelter OK'D BY J. Salvatori
February 14, 2013 X
RESUBMIT _____ Approved _____
BY K. Higgins DATE 02/19/13

F.R. LAFAYETTE, P.O. 27399

SHEET 3 OF 4

# GUARD RAIL TO BRIDGE RAIL TRANSITION DETAILS SHEET

PROJECT: BRIGHTON, PROJECT # ER STP 034-3(25), MINOR ARTERIAL, BRIDGE # 84
TOWN OF BRIGHTON, ESSEX COUNTY, VT.

| R | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| E | 1 | 12/26/12 | REVISED PER 12/26/12 EMAIL | E.P. |
| V | 2 | 1/9/13 | REVISED PER 1/9/13 EMAIL | E.P. |

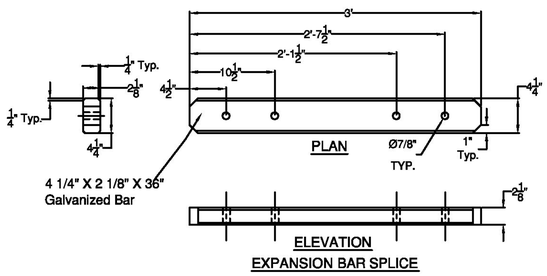
| R | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| E | | | | |
| V | | | | |

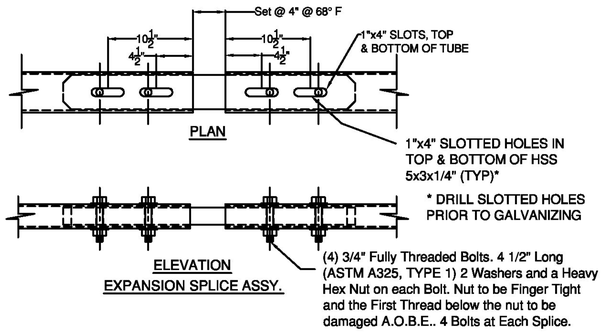
ELDERLEE, INC.
OAKS CORNERS, NEW YORK 14518
E-Mail: dlong@elderlee.com
Tel: 315-789-6670 Fax: 315-789-6615

CERTIFIED FABRICATOR

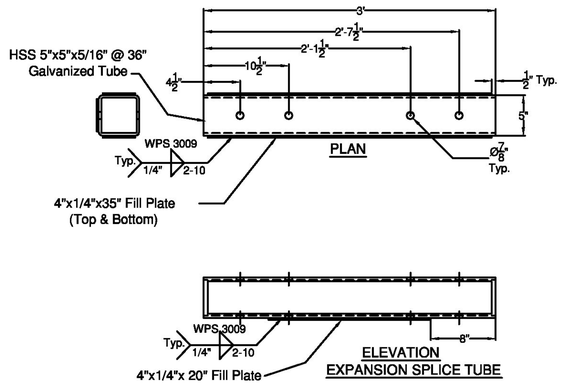
| | | |
|---|---|---|
| DRAWN | E.P. | 12/03/12 |
| CHECKED | D.L. | 12/03/12 |
| APPROVED | . | . |
| SCALE | SCHEMATIC | |
| DRAWING NO. | F.R. LAFAYETTE BRIGHTON | |

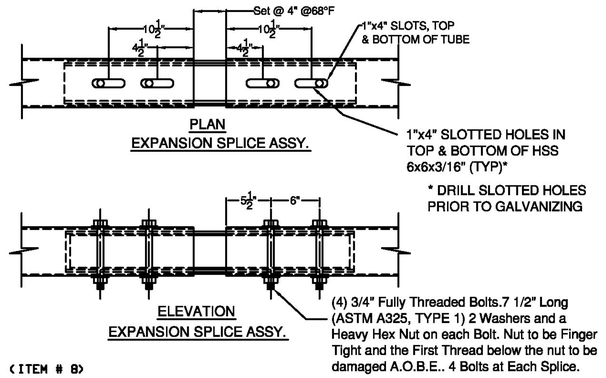
## SPLICE BAR - EXPANSION



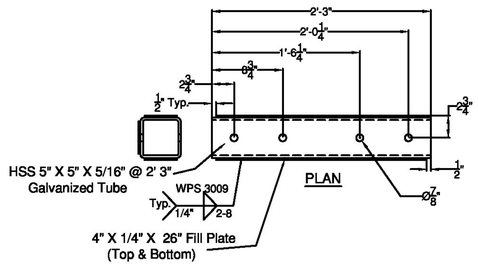

(ITEM # 9)

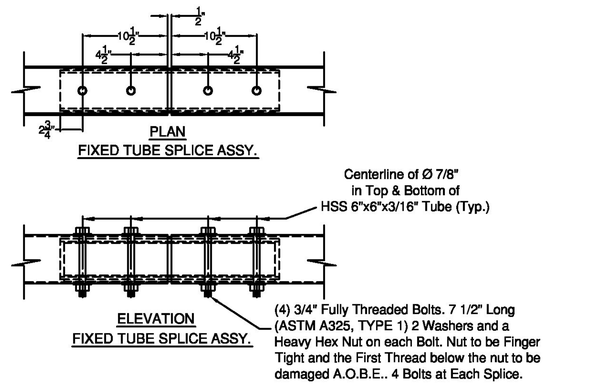



(ITEM # 8)

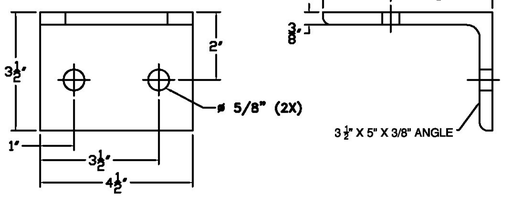
## SPLICE TUBE - EXPANSION



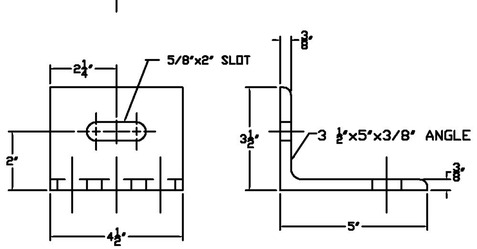




(ITEM # 7)

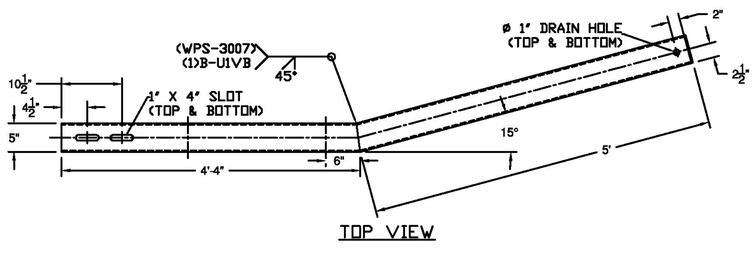
SPLICE TUBE - FIXED



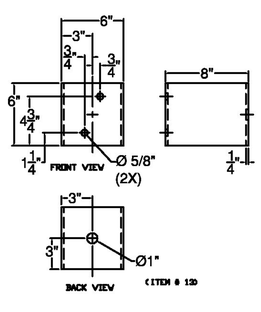

(ITEM # 10)

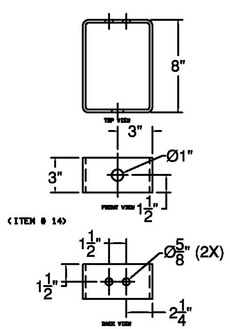


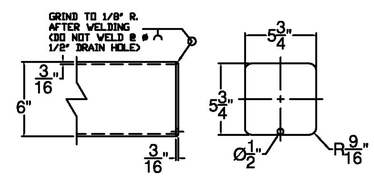

(ITEM # 11)




(ITEM # 6)




ITEM #: 525.335

F.R. LAFAYETTE, P.O. 27399

SHEET 4 OF 4

Vermont Agency of Transportation

RECEIVED

CK'D BY R. Klinefelter OK'D BY J. Salvatori

February 14, 2013

RESUBMIT _____ Approved X

BY K. Higgins DATE 02/19/13

# GUARD RAIL TO BRIDGE RAIL TRANSITION DETAILS SHEET

PROJECT: BRIGHTON, PROJECT # ER STP 034-3(25), MINOR ARTERIAL, BRIDGE # 84

TOWN OF BRIGHTON, ESSEX COUNTY, VT.

| R | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| E | 1 | 12/26/12 | REVISED PER 12/26/12 EMAIL | E.P. |
| V | 2 | 1/9/13 | REVISED PER 1/9/13 EMAIL | E.P. |

| R | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| V | | | | |

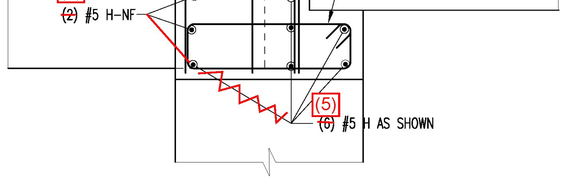

ELDERLEE, INC.
OAKS CORNERS, NEW YORK 14518
E-Mail: dlong@elderlee.com
Tel: 315-789-6670 Fax: 315-789-6615


CERTIFIED FABRICATOR

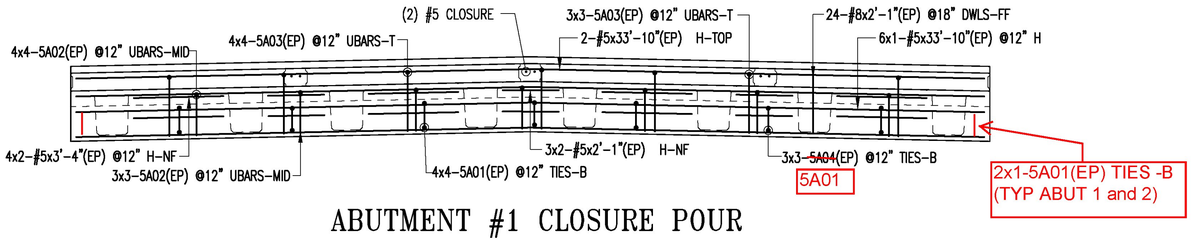
| | | |
|---|---|---|
| DRAWN | E.P. | 12/03/12 |
| CHECKED | D.L. | 12/03/12 |
| APPROVED | . | . |
| SCALE | SCHEMATIC | |
| DRAWING NO. | F.R. LAFAYETTE BRIGHTON | |

APPROACH SLAB CLOSURE

MAIN DECK CLOSURE




ABUTMENT CLOSURE POUR SECTION




ABUTMENT #1 CLOSURE POUR




ABUTMENT #2 CLOSURE POUR

54

12"

Drawing Sheet : R01

BAR LIST

| Bar Mark | Qty | Size | Total Length | Type | 'A' | 'B' | 'C' | 'D' | 'E' | 'F' | 'G' | 'H' | 'J' | 'K' | 'O' | 'R' |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5A01 | 41 | #5 | 9'-0" | T1 | 5 ½" | 11 ½" | 3'-1" | 11 ½" | 3'-1" | | 5 ½" | | | | | |
| 5A02 | 50 | #5 | 5'-2" | 17 | | 1'-6 ½" | 2'-1" | 1'-6 ½" | | | | | | | | |
| 5A03 | 50 | #5 | 5'-4" | 17 | | 2'-2 ½" | 1'1" | 2'-2 ½" | | | | | | | | |
| ~~5A04~~ | ~~9~~ | ~~#5~~ | ~~8'-10"~~ | ~~T1~~ | ~~5 ½"~~ | ~~10 ½"~~ | ~~3'-1"~~ | ~~10 ½"~~ | ~~3'-1"~~ | | ~~5 ½"~~ | | | | | |

Vermont Agency of Transportation

RECEIVED

49037R01Comments.pdf

CK'D BY WDL OK'D BY GML

January 17, 2013

RESUBMIT NO Approved AsNoted

BY KMH DATE 01/22/13

| No. | Description | Date | By |
|---|---|---|---|
| 1 | APPROVAL PRINT | 01/14/13 | CPS |

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.

BARKER STEEL LLC a HarrisRebar company

DETAILED AT: CANAAN NEW HAMPSHIRE

Project: BRIGHTON ER STP 034-(25)
BRIGHTON VT 05451

Drawing: POUR CLOSURES REINFORCEMENT

Customer: J.A. MCDONALD

Engineer:

Refer to Release:

| Date | Drawn | Chkd. | JOB No. | Dwg. No. |
|---|---|---|---|---|
| 01/14/13 | CPS | | 10049037 | R01 |

W:\csample\Projects\10049037\Placing Drawings\DWGs\R01.dwg

# REINFORCED ELASTOMERIC BEARING FABRICATION SHEET 1103- Page #: 1

Project #: 38760-1103-1 (16 of 16) Customer: J A McDONALD (PO # 101912)

County: ESSEX State: VT Structure: BRIDGE 84

Pad I.D./Loc.: ABUTMENTS Quantity (Including Full Size Sample(s) - If Req'd): 16

Certifications Are Required

Testing Req'd: ☐ YES, see below ☑ NO, random in-house only VADOT 2011

Sample Req'd: ☐ YES - (If not full size, create another sheet) ☐ NO

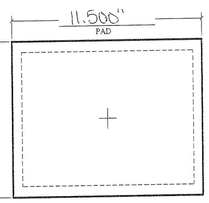
State D.O.T. Spec. Number (If Specified): SEC 631 & 731 Project # (req'd for cert.s) ER STP 034-3(25)

Special Notes: _____

Shim Steel Spec. (Circle One): A709 GR.36(250) (A1011 GR.36(250)-Type 1) Other: —

Durometer Requirement (Circle One): 50±5 60±5 Other: — Shear Modulus Requirement: 100 psi ± 15%

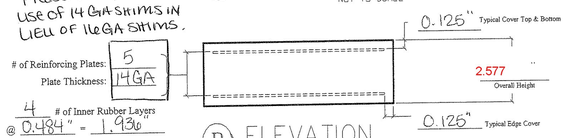
Neoprene Grade (Circle One): 3 (4) Other Grade or Natural Rubber: NATURAL RUBBER




Vermont Agency of Transportation
RECEIVED
CK'D BY JTS OK'D BY WDL
December 6, 2012
RESUBMIT _____ APPROVED AS NOTED
BY KMH 'E' 12-20-12

A PLAN
NOT TO SCALE

Please verify the use of 14 GA SHIMS IN LIEU OF 16GA SHIMS.




# of Reinforcing Plates: 5
Plate Thickness: 14GA

4 # of Inner Rubber Layers @ 0.484" = 1.936"

B ELEVATION
NOT TO SCALE

Name: _____ Date: 12-5-12

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 the shop drawings.

*The D.S. Brown Company* • 300 East Cherry Street • North Baltimore, Ohio 45872-0158
Phone: (419) 257-3561 • Fax: (419) 257-2200

# GENERAL FABRICATION SHEET

1103 - Page #: 2

Project #: Part of 38760-1103-1 (16 OF 16) Customer: JA McDONALD (PO# 101912)

County: ESSEX State: VT Structure: BRIDGE 84

Pad I.D./Loc.: — Quantity (Including Full Size Sample(s) - If Req'd): 16

Certifications Are Required

Testing Req'd: ☐ YES, see below ☑ NO, random in-house only

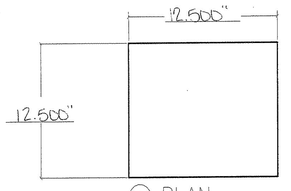
Sample Req'd: ☐ YES - (If not full size, create another sheet) ☑ NO

State D.O.T. Spec. Number (If Specified): — Project # (req'd for cert.s) ER STP 034-3(25)

Special Notes:

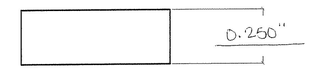
General Product Name: ADJUSTMENT SHIMS

Product Specification: A709 GR 36, A123-HDG




A PLAN

NOT TO SCALE




B ELEVATION

NOT TO SCALE

Vermont Agency of Transportation
RECEIVED
CK'D BY JTS OK'D BY WDL
December 6, 2012
RESUBMIT BY KMH APPROVED DATE 12-20-12 X

Name: [signature] Date: 12-5-12

The D.S. Brown Company • 300 East Cherry Street • North Baltimore, Ohio 45872-0158
Phone: (419) 257-3561 • Fax: (419) 257-2200

## ABUTMENT & WING WALL GENERAL NOTES

1. MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 5,000 PSI.
2. MIN. CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 3,500 PSI.
3. REINFORCING STEEL SHALL BE GR-60, ASTM A-615 (AASHTO M31) EPOXY COATED.
4. THE TOP OF ABUTMENTS SHALL RECEIVE A RAKE FINISH ROUGHENED TO 1/4" AMPLITUDE (UNLESS NOTED OTHERWISE).
5. THE TOP OF WING WALLS SHALL RECEIVE A SMOOTH FLOAT FINISH (UNLESS NOTED OTHERWISE).
6. SHEAR KEY SURFACES SHALL BE BLASTED CLEAN.
7. PRECAST CONCRETE UNITS SHALL BE HANDLED AND ERECTED USING THE LIFTING INSERTS ONLY. THE MINIMUM SLING ANGLE FROM THE HORIZONTAL SHALL BE 60°. NON-PRESTRESSED UNITS SHALL BE STORED & TRANSPORTED WITH TIMBER SUPPORTS AT 5th POINTS, UNLESS APPROVED BY J.P. CARRARA & SONS, INC.
8. MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. P510.02 AND P510.05 RESPECTIVELY.

   DESIGN MIX:

   WING WALLS: J.P.C. BRIDGE MIX #425M NO DCI

   APPROACH SLABS: J.P.C. BRIDGE MIX #425M NO DCI

   ABUTMENTS: J.P.C. BRIDGE MIX #445M
9. QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
10. CURING METHOD: AS SOON AS THE TOP OF PRECAST CONCRETE UNITS ARE FINISHED, A COVER OF RIGID INSULATION AND POLY WILL BE PLACED OVER THE UNIT. NATURAL CURE WITH NO EXTERNAL HEAT APPLIED.
11. ABUTMENT POST-TENSIONING SEQUENCE:
    A. ERECT PRECAST CONCRETE ABUTMENTS, AND POST-TENSION CENTER TENDON TO APPROXIMATELY 5,000 LBS.
    B. GROUT SHEAR KEY.
    C. ONCE SHEAR KEY GROUT HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI; POST-TENSION TENDONS TO 32,000 LBS.

## 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-615 (AASHTO M31) EPOXY 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 EPOXY PAINTED.
7. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
8. THE TOP OF BEAMS SHALL RECEIVE A SMOOTH FLOAT FINISH (UNLESS NOTED OTHERWISE).
9. SHEAR KEY SURFACES SHALL BE BLASTED CLEAN.
10. BEAMS SHALL BE HANDLED AND ERECTED USING THE LIFTING LOOPS ONLY. RIGGING SHALL BE CONFIGURED SUCH THAT EQUAL FORCES ARE APPLIED TO EACH OF THE TWO LIFTING LOOPS AT EACH END OF THE BEAM. **THE PINS OF THE SHACKLES SHALL BE PLACED THOUGH 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 #430M (5 GAL./CY DCI)
12. QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS, INC. IS A PCI CERTIFIED PLANT.
13. CURING METHOD: AS SOON AS THE TOP OF BEAM IS FINISHED, A COVER OF INSULATED POLY. THE DESIRED CURING TEMPERATURE RANGE SHALL NOT DROP BELOW 70°F. THE TEMPERATURE SHALL BE RECORDED BY AUTOMATIC SENSOR INSTRUMENTS ON GRAPH CHARTS, SPACED NOT MORE THAN 100' APART AND WILL CONTINUE UNTIL RELEASE STRENGTH IS ACHIEVED. EACH CHART SHALL BE MARKED WITH THE CASTING DATED AND LOCATION OF THE RECORDER. IF NECESSARY TO MAINTAIN CASTING BED TEMPERATURE PRIOR TO CONCRETE PLACEMENT OR TO ACCELERATE EARLY AGE STRENGTH GAIN, EXTERNAL RADIANT HEAT MAY BE EMPLOYED VIA HOT WATER DUCTS BENEATH AND WITHIN THE PERIPHERY OF THE CASTING BED. MAXIMUM CURING TEMPERATURE SHALL NOT EXCEED PCI SPECIFIED LIMITS.
14. OWNER SHALL PROVIDE APPROPRIATE WATERPROOFING TO GROUTED SHEAR KEYS. J.P. CARRARA & SONS, INC. SHALL NOT BE HELD LIABLE FOR PROBLEMS ASSOCIATED WITH MOISTURE INFILTRATING GROUTED SHEAR KEYS.

## 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.

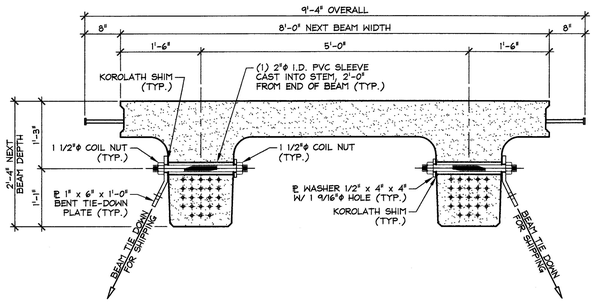
## STRAND TENSIONING PROCEDURE:

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.

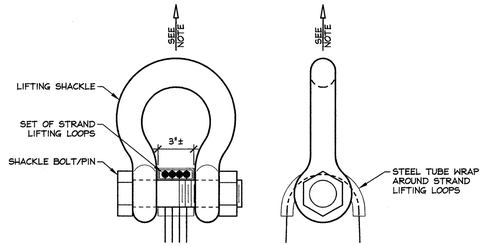
## DRAWING INDEX

| SHT. # | DRAWING TITLE | REV. # | REV. DATE |
|---|---|---|---|
| C1 | COVER SHEET | | |
| | | | |
| F1 | SUPERSTRUCTURE PLANS | 1 | 12-10-12 |
| F2 | ABUTMENT ELEVATIONS | 1 | 12-10-12 |
| F3 | ABUTMENT DETAILS | | |
| F4 | TRANSVERSE SECTIONS & DETAILS | 1 | 12-10-12 |
| | | | |
| NB1 | PRESTRESSED NEXT BEAM DETAILS "B-NB2" | 1 | 12-10-12 |
| NB2 | PRESTRESSED NEXT BEAM DETAILS "B-NB1" | 1 | 12-10-12 |
| NB3 | PRESTRESSED NEXT BEAM DETAILS "B-NB3" | 1 | 12-10-12 |
| | | | |
| AS1 | PRECAST APPROACH SLAB DETAILS "B-AS1" & "B-AS2" | | |
| AS2 | PRECAST APPROACH SLAB DETAILS "B-AS3" & "B-AS4" | | |
| | | | |
| AB1 | PRECAST ABUTMENT DETAILS "B-AB1" | 1 | 12-10-12 |
| AB2 | PRECAST ABUTMENT DETAILS "B-AB3" | 1 | 12-10-12 |
| AB3 | PRECAST ABUTMENT DETAILS "B-AB4" | 1 | 12-10-12 |
| AB4 | PRECAST ABUTMENT DETAILS "B-AB2" | 1 | 12-10-12 |
| | | | |
| WW1 | PRECAST WING WALL DETAILS | 1 | 12-10-12 |
| | | | |
| M1 | MATERIALS LIST | 1 | 12-10-12 |




NEXT BEAM 28D HOLD-DOWN DETAIL FOR SHIPPING

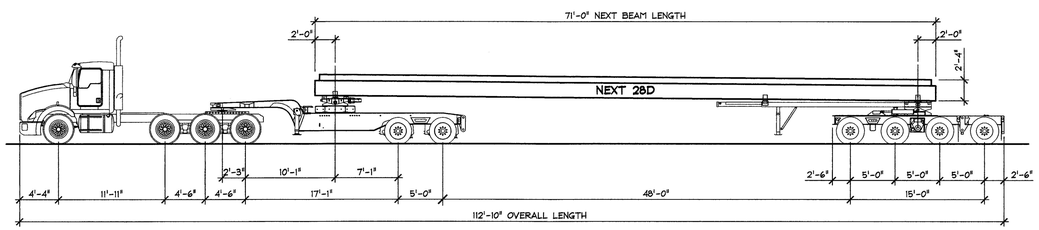
3/4" = 1'-0"




NOTE: BEAMS SHALL BE HANDLED AND ERECTED USING THE LIFTING LOOPS ONLY. RIGGING SHALL BE CONFIGURED SUCH THAT EQUAL 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

N.T.S.

SUBMITTED
JAN 9 2013
J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

APPROVAL STAMP:
Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT ____ APPROVED X
BY KMH DATE 1-10-13

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 ESSEX

DATE: OCT. 30, 2012
SCALE: NOTED

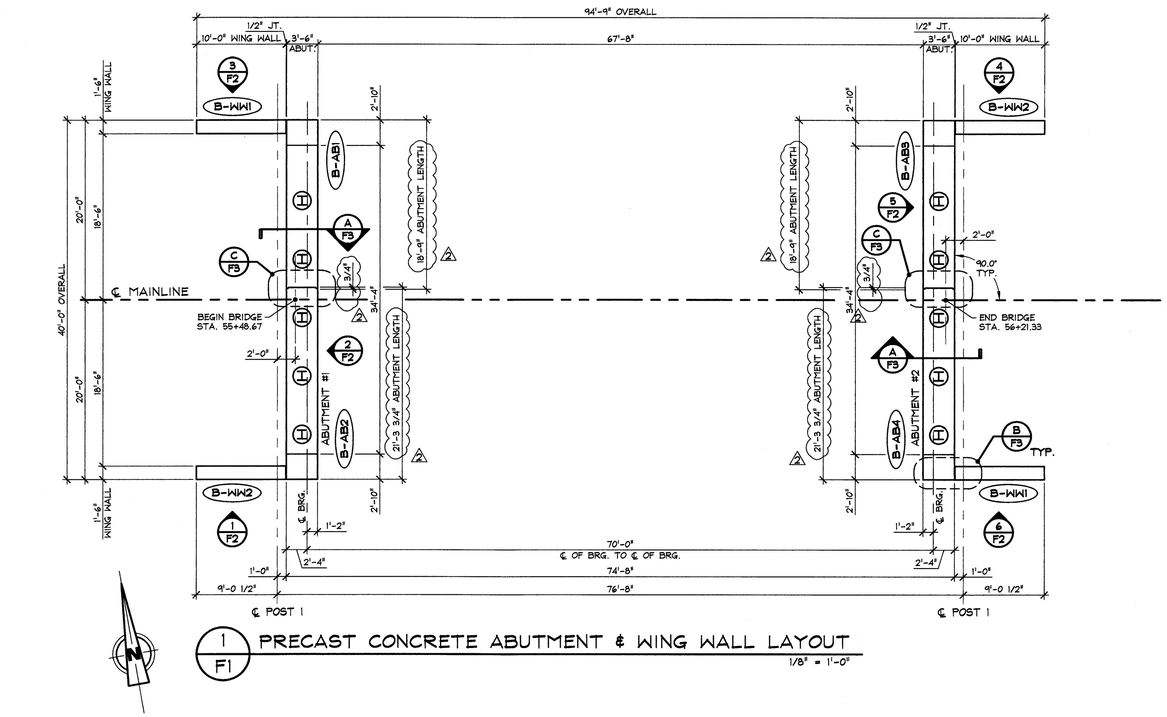
TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012

COVER SHEET

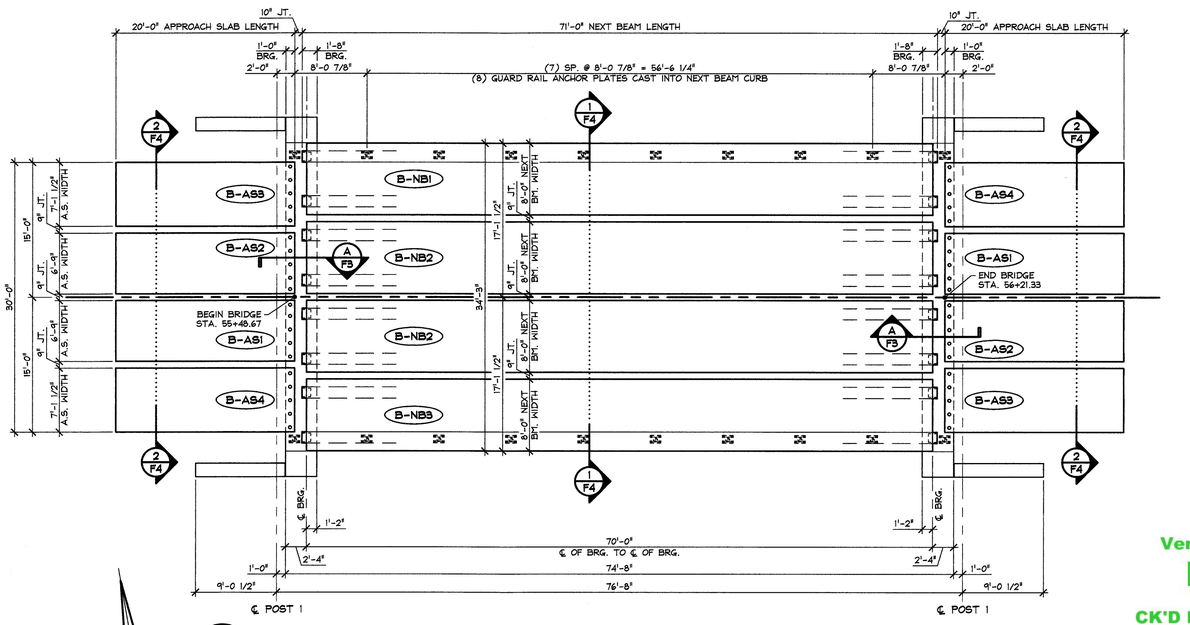
DWG. NO: C1

F:\VT-Bridges\23384-12 Brighton\23384-C1.dwg, 12/10/2013 3:57:46 PM




1 / F1 PRECAST CONCRETE ABUTMENT & WING WALL LAYOUT

1/8" = 1'-0"




2 / F1 PRESTRESSED APPROACH SLAB & NEXT BEAM LAYOUT

1/8" = 1'-0"

2 1-3-13 REVISED AS NOTED

1 12-10-12 REVISE ABUTMENT #1 & WING WALL PIECE NUMBERS

SUBMITTED
JAN 9 2013
J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT ____ APPROVED X
BY KMH DATE 1-10-13

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 ESSEX

DATE: OCT. 30, 2012
SCALE: NOTED

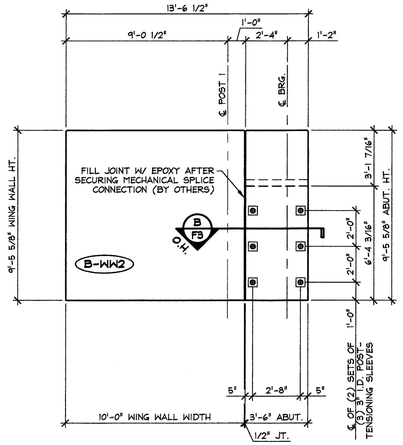
TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012

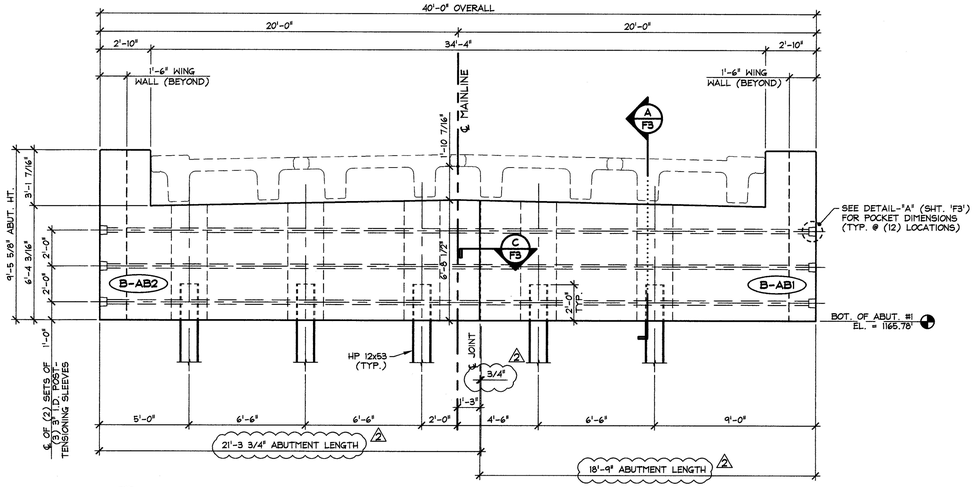
# SUPERSTRUCTURE PLANS

DWG. NO: F1

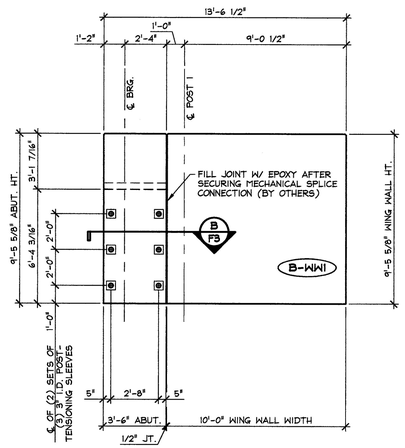
F:\VT-Bridges\23382-12 Hancock\23384-F1-2.dwg, 1/9/2013 7:21:15 AM



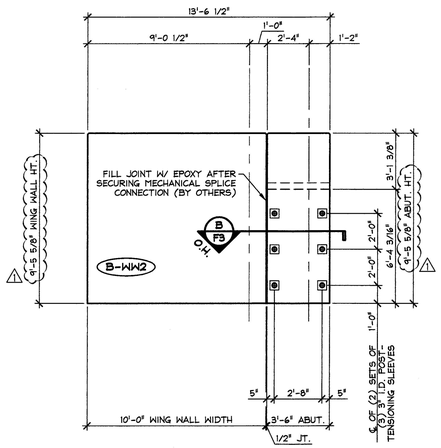

1/F2 WING WALL #2 - SOUTH ELEVATION 1/4" = 1'-0"



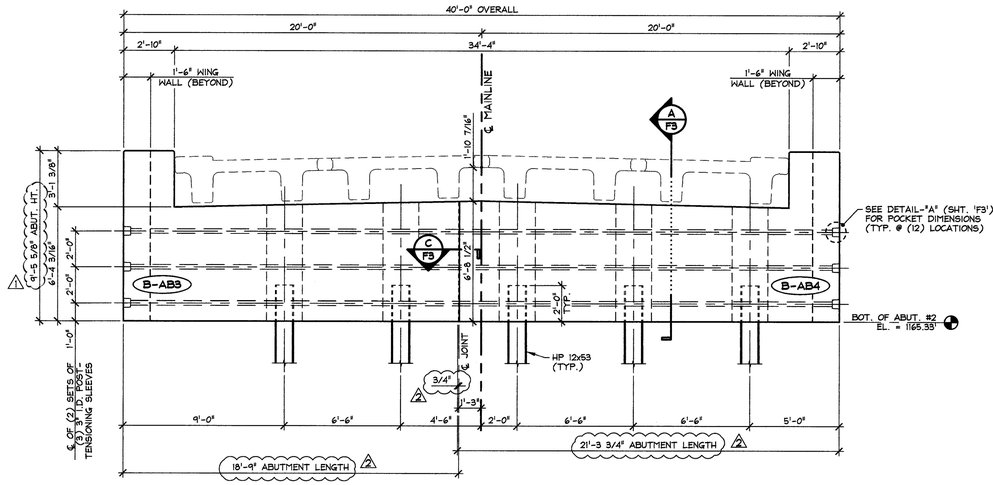

2/F2 ABUTMENT #1 - EAST ELEVATION 1/4" = 1'-0"



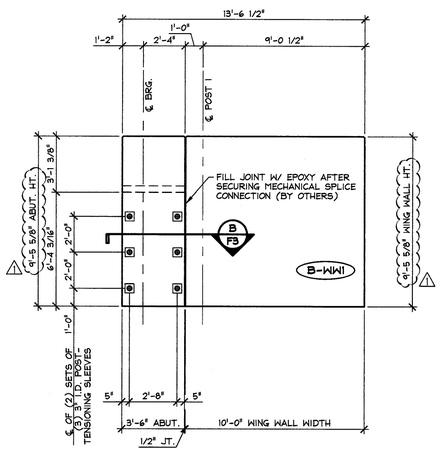

3/F2 WING WALL #1 - NORTH ELEVATION 1/4" = 1'-0"




4/F2 WING WALL #3 - NORTH ELEVATION 1/4" = 1'-0"




5/F2 ABUTMENT #2 - WEST ELEVATION 1/4" = 1'-0"




6/F2 WING WALL #4 - SOUTH ELEVATION 1/4" = 1'-0"

SUBMITTED
JAN 9 2013
J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

2 1-3-13 REVISED AS NOTED
1 12-10-12 REVISE ABUTMENT #1 LAYOUT & ABUTMENT #2 ELEVATIONS

Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT ____ APPROVED X
BY KMH DATE 1-10-13

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 ESSEX

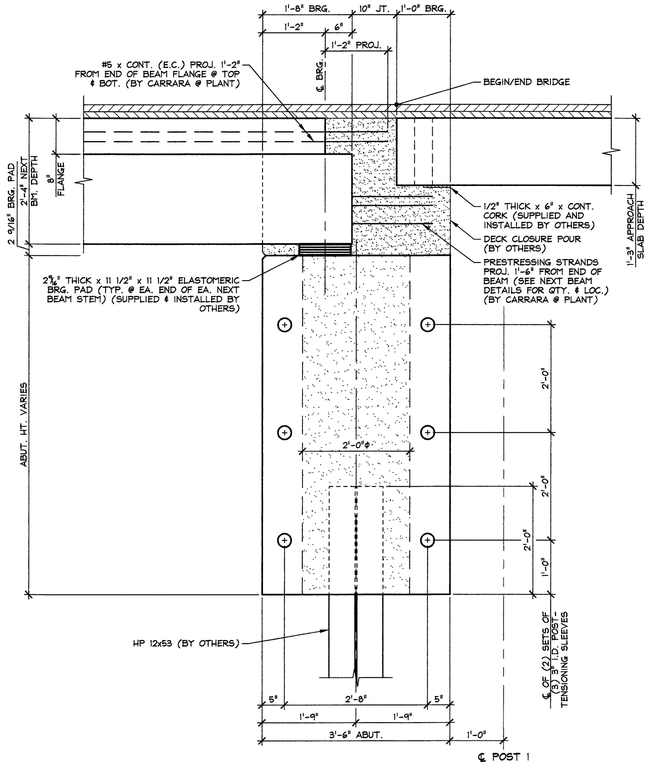
DATE: OCT. 30, 2012
SCALE: NOTED
CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012

TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 084-3(25)

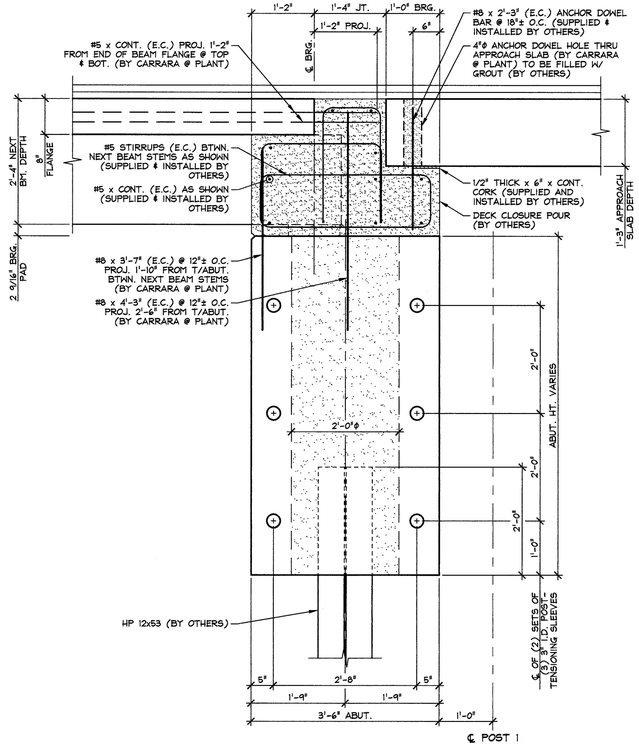
ABUTMENT ELEVATIONS

DWG. NO: F2

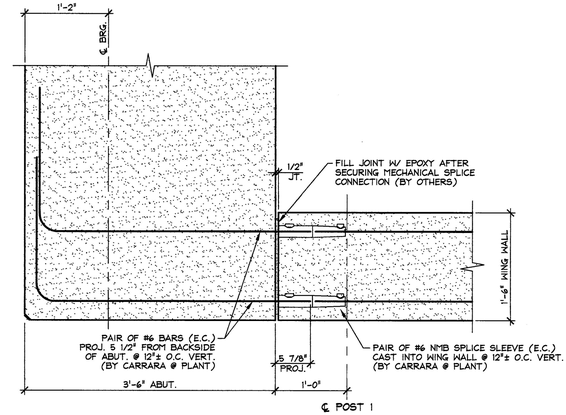
F:\VT-Bridges\23382-12 Hancock\23384-F2-2.dwg, 1/9/2013 11:11:03 AM



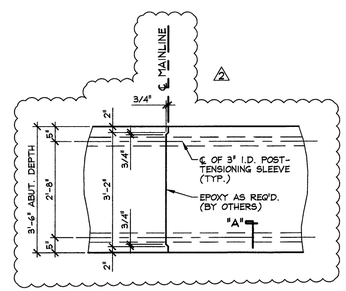

A F3 BEARING SECTION
NEXT BEAM STEM BEARING 3/4" = 1'-0"



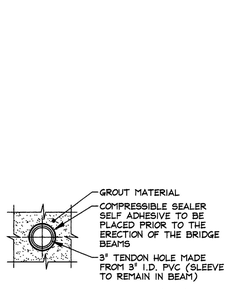

A.1 F3 BEARING SECTION
BETWEEN NEXT BEAM STEM BEARING 3/4" = 1'-0"



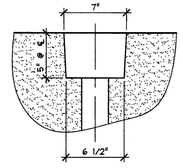

B F3 WING WALL CONNECTION DETAIL
1" = 1'-0"



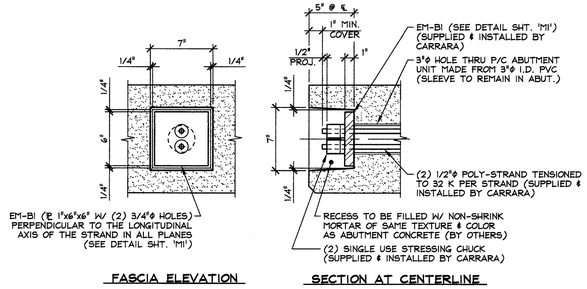

C F3 SHEAR KEY SECTION @ P.T. SLEEVE
1/2" = 1'-0"




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




PLAN OF POCKET




FASCIA ELEVATION SECTION AT CENTERLINE

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

Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT ____ APPROVED X
BY KMH DATE 1-10-13

SUBMITTED
JAN 9 2013
J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

⚠2 1-3-13 GENERAL REVISIONS

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2484 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 ESSEX

DATE: OCT. 30, 2012
SCALE: NOTED

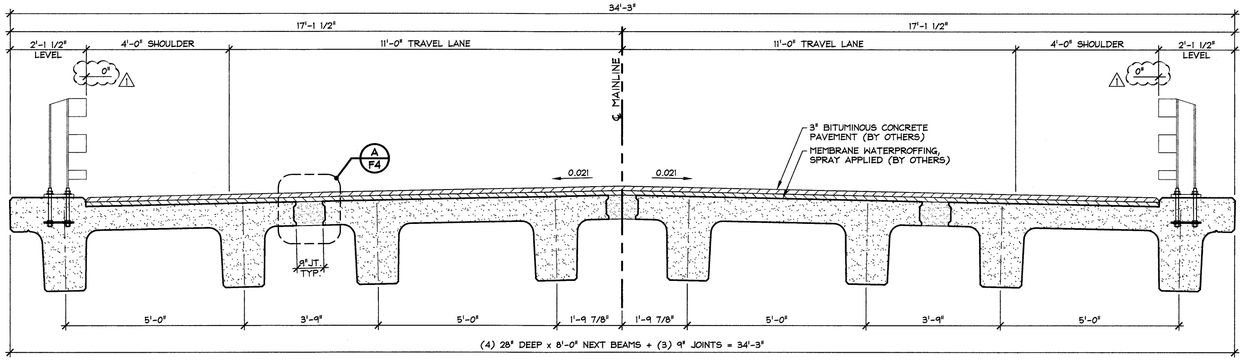
TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012

# ABUTMENT DETAILS

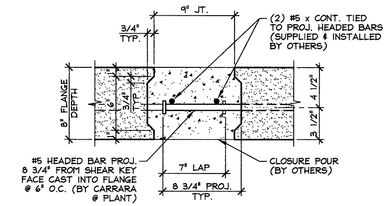
DWG. NO: F3

F:\VT-Bridges\23382-12 Hancock\23384-F3-2.dwg, 1/9/2013 2:46:24 PM



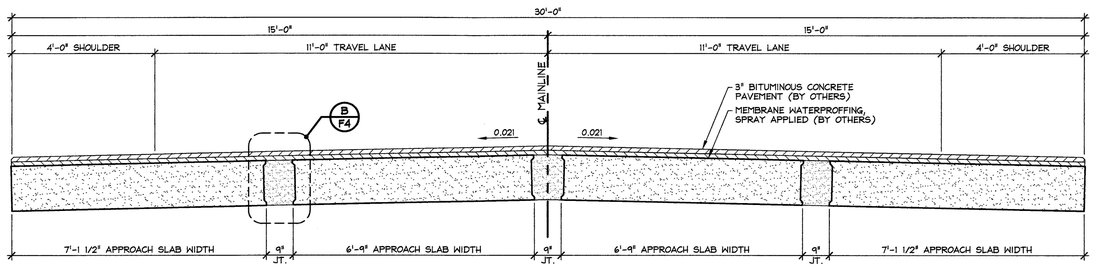

1/F4 NEXT BEAM TRANSVERSE SECTION

1/2" = 1'-0"



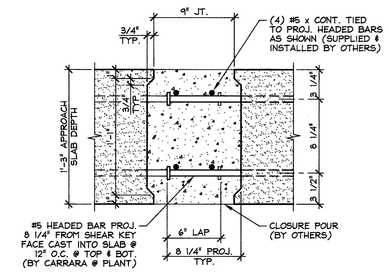

A/F4 NEXT BEAM CLOSURE POUR

1 1/2" = 1'-0"




2/F4 APPROACH SLAB TRANSVERSE SECTION

1/2" = 1'-0"




B/F4 APPROACH SLAB CLOSURE POUR

1 1/2" = 1'-0"

SUBMITTED
JAN 9 2013
J.P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

⚠ 12-10-12 REVISE GUARD RAIL LOCATIONS

Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT ____ APPROVED X
BY KMH DATE 1-10-13

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

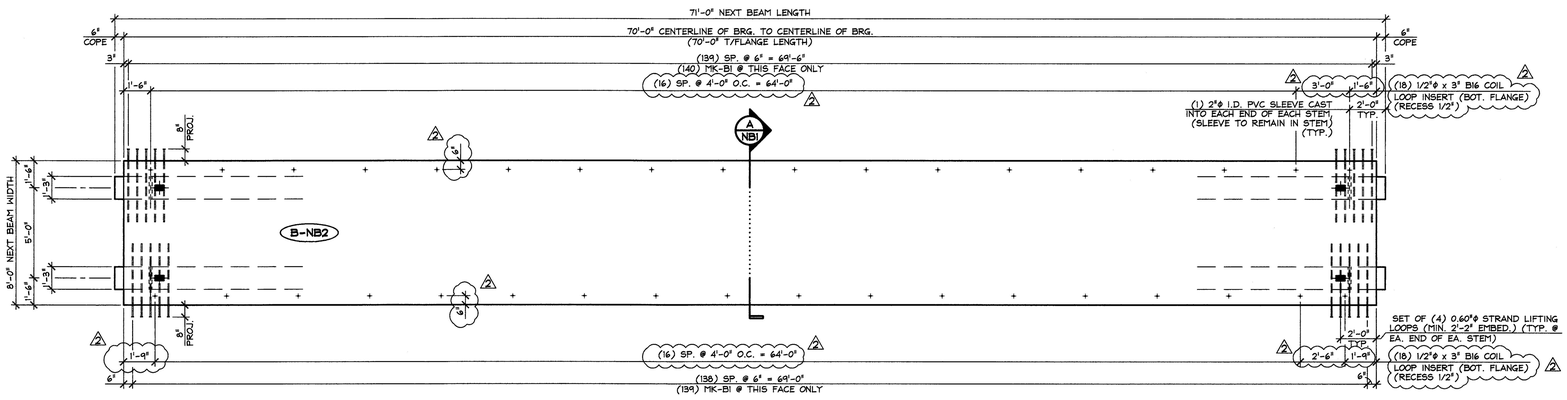
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ESSEX

TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

TRANSVERSE SECTIONS & DETAILS

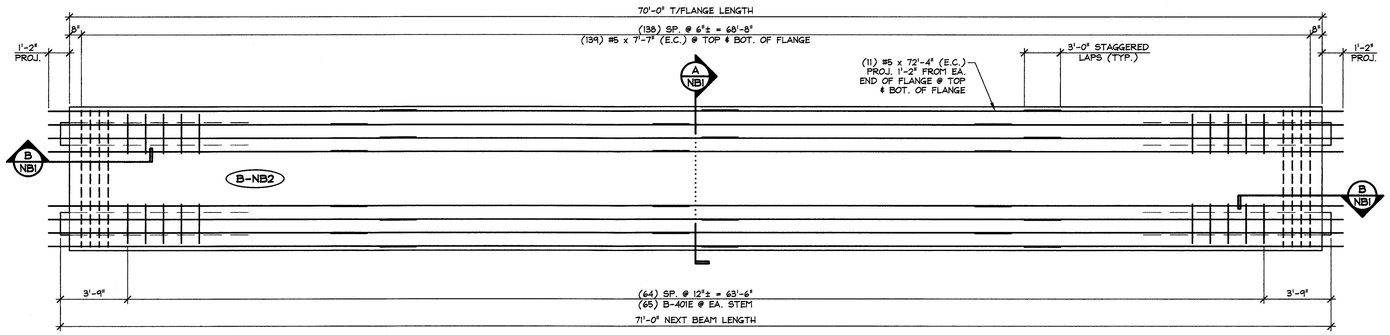
DATE: OCT. 30, 2012
SCALE: NOTED
CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012
DWG. NO: F4

F:\VT-Bridges\23384-12 Brighton\23384-F4.dwg, 12/10/2012 4:02:04 PM



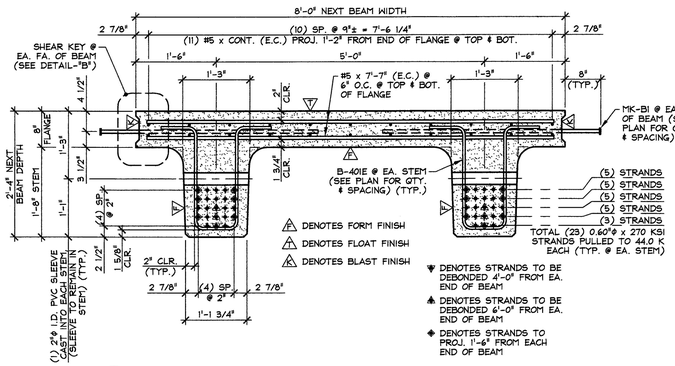

1 NB1 DIMENSIONAL PLAN VIEW IN FORM

1/4" = 1'-0"



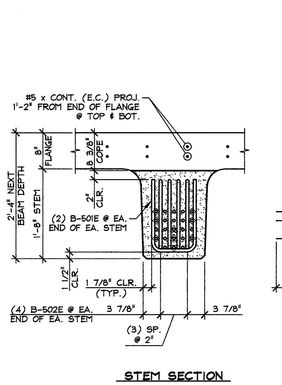

2 NB1 REINFORCING PLAN VIEW IN FORM

1/4" = 1'-0"

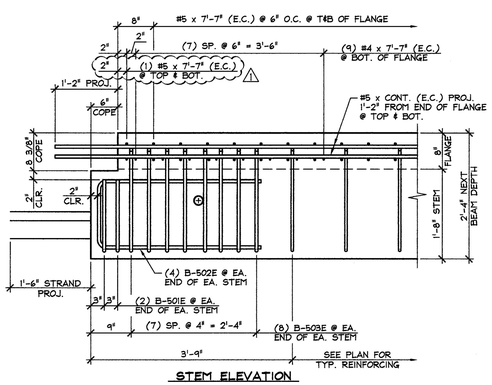



A NB1 DIMENSIONAL & REINFORCING SECTION

3/4" = 1'-0"



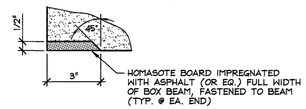

STEM SECTION




STEM ELEVATION

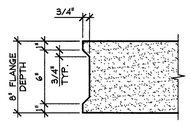
B NB1 END BLOCK STEM REINFORCING DETAILS

3/4" = 1'-0"



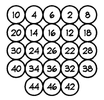

DETAIL - "A"

3" = 1'-0"




DETAIL - "B"

3" = 1'-0"




## DETENSIONING SCHEDULE

N.T.S.

| MARK: B-NB2 | QTY.: 2 | WT.: 49.41 T | VOL.: 24.40 cy |
|---|---|---|---|

MATERIAL LIST / BOX BEAM

| ITEM | MARK | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | B-401E | #4 BENT BAR (EPOXY COATED) | 130 |
| 2 | | #4 x 7'-7" (EPOXY COATED) | 18 |
| 3 | | | |
| 4 | B-501E | #5 BENT BAR (EPOXY COATED) | 8 |
| 5 | B-502E | #5 BENT BAR (EPOXY COATED) | 16 |
| 6 | B-503E | #5 BENT BAR (EPOXY COATED) | 32 |
| 7 | | #5 x 7'-7" (EPOXY COATED) | 282 |
| 8 | | #5 x 72'-4" (W/ (3) 3'-0" STAGGERED LAPS) (EPOXY COATED) | 22 |
| 9 | | | |
| 10 | | | |
| 11 | MK-B1 | #5 x 4'-1" HRC 555 HEADED REBAR (EPOXY COATED) | 279 |
| 12 | | | |
| 13 | 2 | 1/2"ø x 3" B16 COIL LOOP INSERT (ELECTRO-PLATED FINISH) | 36 |
| 14 | | SET OF (4) 0.60"ø x 270 KSI STRAND LIFTING LOOPS | 4 |
| 15 | | | |

2 1-3-13 REVISED AS NOTED

1 12-10-12 REVISED AS NOTED

Vermont Agency of Transportation

RECEIVED

CK'D BY WDL OK'D BY JTS

January 9th, 2013

RESUBMIT X

BY KMH APPROVED

DATE 1-10-13

SUBMITTED

JAN 9 2013

J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

APPROVAL STAMP:

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 ESSEX

DATE: OCT. 30, 2012

SCALE: NOTED

TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

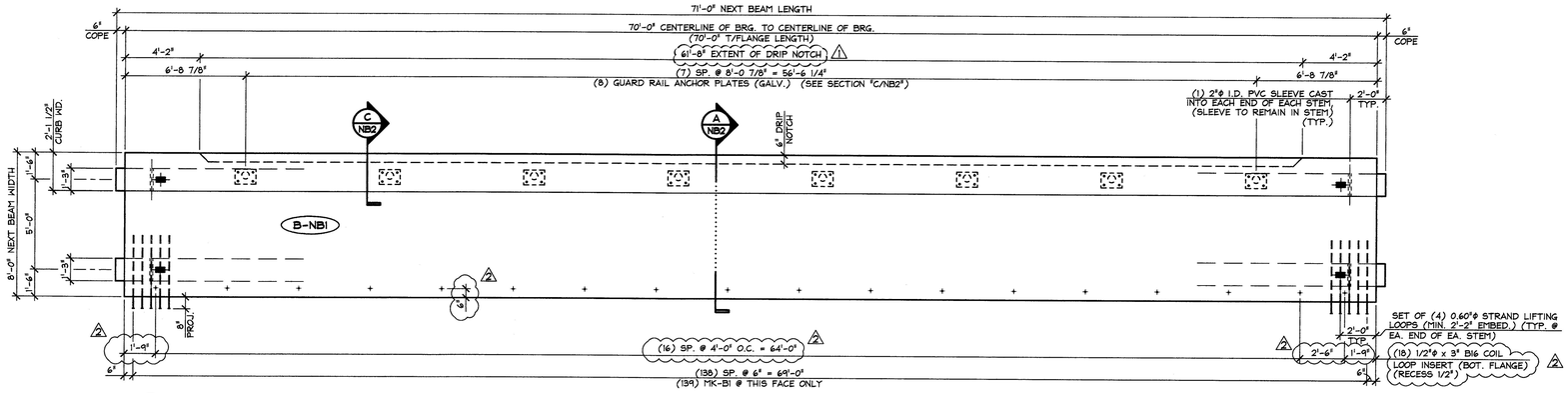
CHKD: B.C. DFTM: B.L.

JOB NO: 23384-012

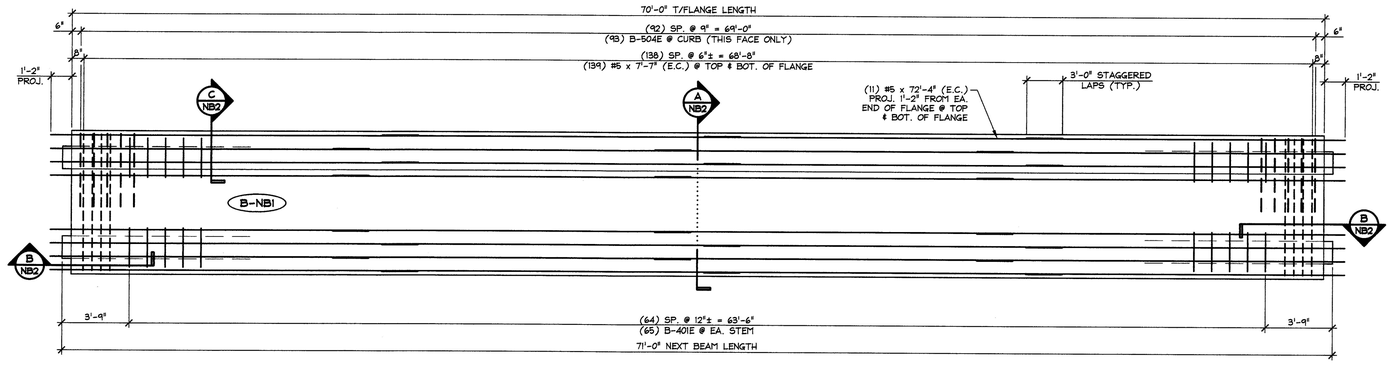
PRESTRESSED NEXT BEAM DETAILS

DWG. NO: NB1

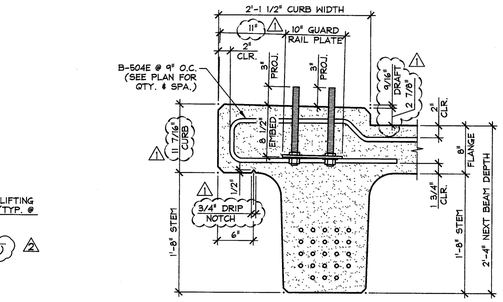
F:\VT-Bridges\23382-12 Hancock\23384-NB1-2.dwg, 1/9/2013 9:31:09 AM



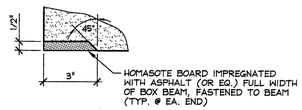

1 NB2 DIMENSIONAL PLAN VIEW IN FORM
1/4" = 1'-0"



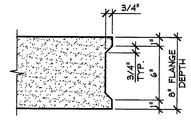

2 NB2 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"



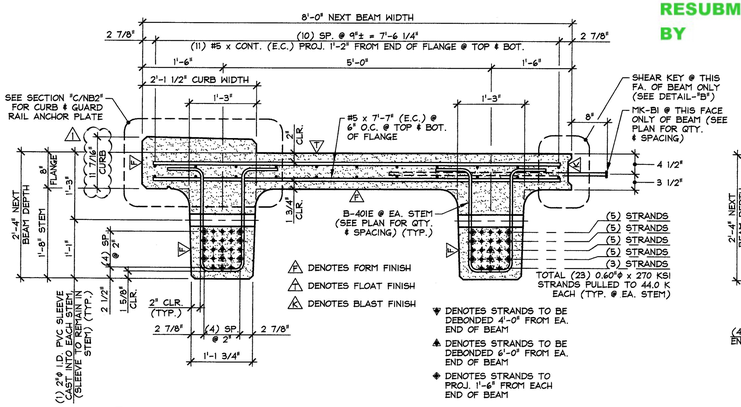

C NB2 CURB & GUARD RAIL ANCHOR PLATE SECTION
1" = 1'-0"
TYP. BEAM REINF. NOT SHOWN FOR CLARITY



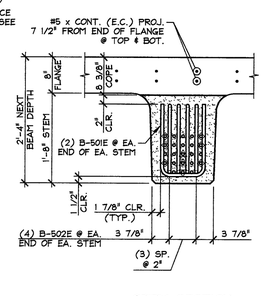

DETAIL - "A"
3" = 1'-0"



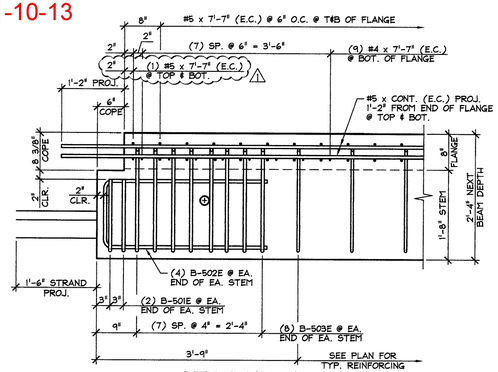

DETAIL - "B"
3" = 1'-0"




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

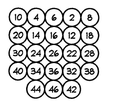



STEM SECTION




STEM ELEVATION

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




DETENSIONING SCHEDULE
N.T.S.

Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT ____ APPROVED X
BY KMH DATE 1-10-13

SUBMITTED
JAN 9 2013
J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

| MARK: B-NB1 | QTY.: 1 | WT.: 52.52 T | VOL.: 25.94 cy |
|---|---|---|---|

MATERIAL LIST / BOX BEAM

| ITEM | MARK | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | B-401E | #4 BENT BAR (EPOXY COATED) | 130 |
| 2 | | #4 x 7'-7" (EPOXY COATED) | 18 |
| 3 | | | |
| 4 | B-501E | #5 BENT BAR (EPOXY COATED) | 8 |
| 5 | B-502E | #5 BENT BAR (EPOXY COATED) | 16 |
| 6 | B-503E | #5 BENT BAR (EPOXY COATED) | 32 |
| 7 | B-504E | #5 BENT BAR (EPOXY COATED) | 93 |
| 8 | | #5 x 7'-7" (EPOXY COATED) | 282 |
| 9 | | #5 x 72'-4" (W/ (3) 3'-0" STAGGERED LAPS) (EPOXY COATED) | 22 |
| 10 | | | |
| 11 | MK-B1 | #5 x 4'-1" HRC 555 HEADED REBAR (EPOXY COATED) | 138 |
| 12 | A | 1/2"ø x 3' B16 COIL LOOP INSERT (ELECTRO-PLATED FINISH) | 18 |
| 13 | | GUARD RAIL ANCHOR PLATE (GALV.) | 8 |
| 14 | | SET OF (4) 0.60"ø x 270 KSI STRAND LIFTING LOOPS | 4 |
| 15 | | | |

A 1-3-13 REVISED AS NOTED
1 12-10-12 REVISED AS NOTED

APPROVAL STAMP:

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

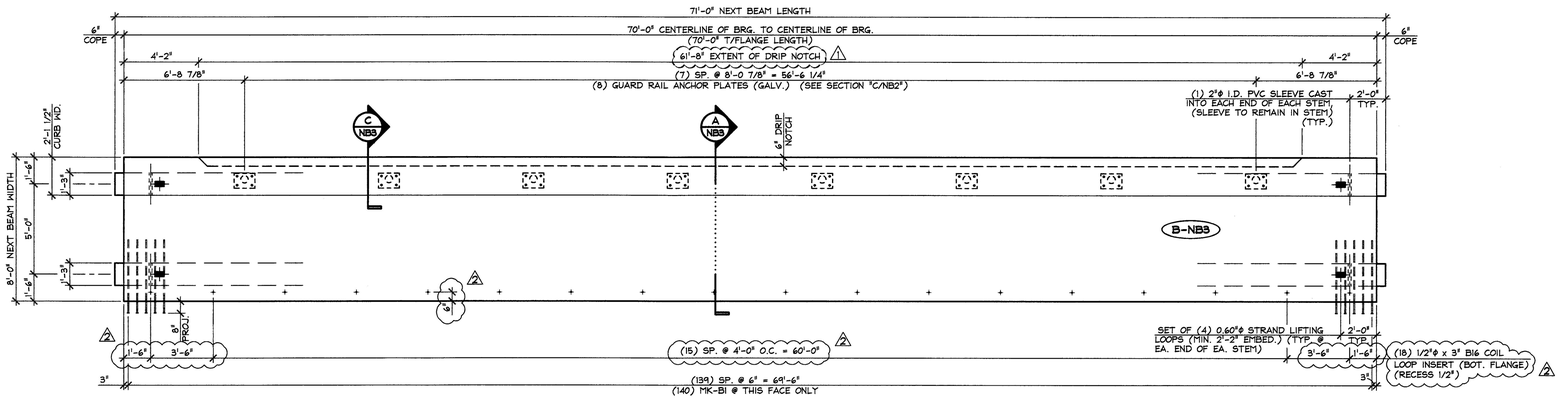
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ESSEX

TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

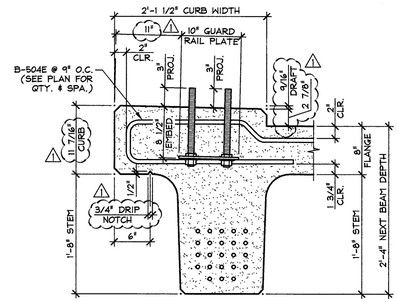
PRESTRESSED NEXT BEAM DETAILS

DATE: OCT. 30, 2012
SCALE: NOTED
CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012
DWG. NO: NB2

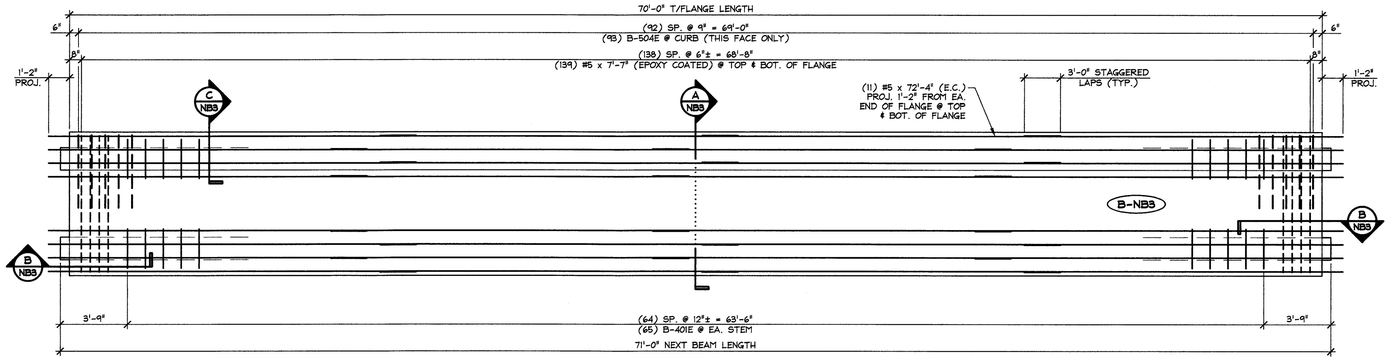
F:\VT-Bridges\23382-12 Hancock\23384-NB2-2.dwg, 1/9/2013 9:32:32 AM



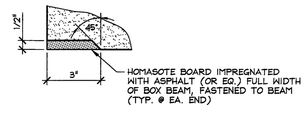

1 NB3 DIMENSIONAL PLAN VIEW IN FORM
1/4" = 1'-0"



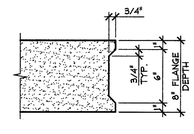

C NB2 CURB & GUARD RAIL ANCHOR PLATE SECTION
1" = 1'-0"
TYP. BEAM REINF. NOT SHOWN FOR CLARITY




2 NB3 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"



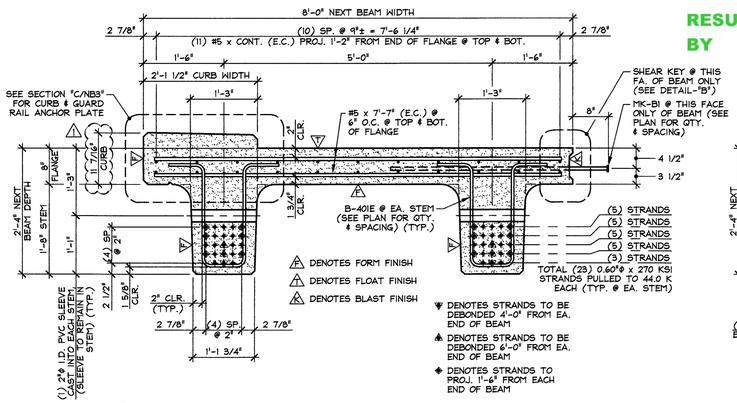

DETAIL - "A"
3" = 1'-0"



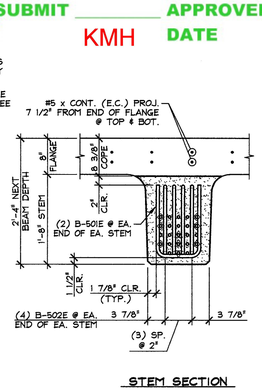

DETAIL - "B"
3" = 1'-0"

Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT ____ APPROVED X
BY KMH DATE 1-10-13

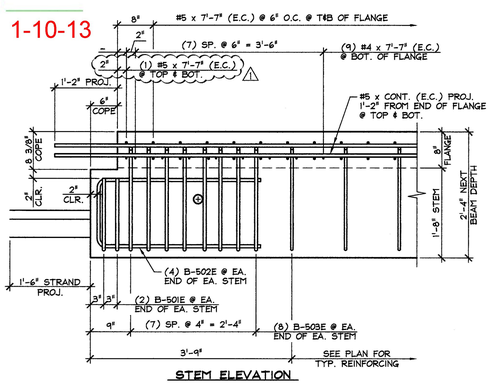
SUBMITTED
JAN 9 2013
J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753




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




STEM SECTION




STEM ELEVATION

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

DETENSIONING SCHEDULE
N.T.S.

| MARK: B-NB3 | QTY.: 1 | WT.: 52.52 T | VOL.: 25.94 cy |
|---|---|---|---|

MATERIAL LIST / BOX BEAM

| ITEM | MARK | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | B-401E | #4 BENT BAR (EPOXY COATED) | 130 |
| 2 | | #4 x 7'-7" (EPOXY COATED) | 18 |
| 3 | | | |
| 4 | B-501E | #5 BENT BAR (EPOXY COATED) | 8 |
| 5 | B-502E | #5 BENT BAR (EPOXY COATED) | 16 |
| 6 | B-503E | #5 BENT BAR (EPOXY COATED) | 32 |
| 7 | B-504E | #5 BENT BAR (EPOXY COATED) | 93 |
| 8 | | #5 x 7'-7" (EPOXY COATED) | 282 |
| 9 | | #5 x 72'-4" (W/ (3) 3'-0" STAGGERED LAPS) (EPOXY COATED) | 22 |
| 10 | | | |
| 11 | MK-B1 | #5 x 4'-1" HRC 555 HEADED REBAR (EPOXY COATED) | 140 |
| 12 | A2 | 1/2"ø x 3" B16 COIL LOOP INSERT (ELECTRO-PLATED FINISH) | 18 |
| 13 | | GUARD RAIL ANCHOR PLATE (GALV.) | 8 |
| 14 | | SET OF (4) 0.60"ø x 270 K5I STRAND LIFTING LOOPS | 4 |
| 15 | | | |

A2 1-3-13 REVISED AS NOTED
A1 12-10-12 REVISED AS NOTED

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 ESSEX

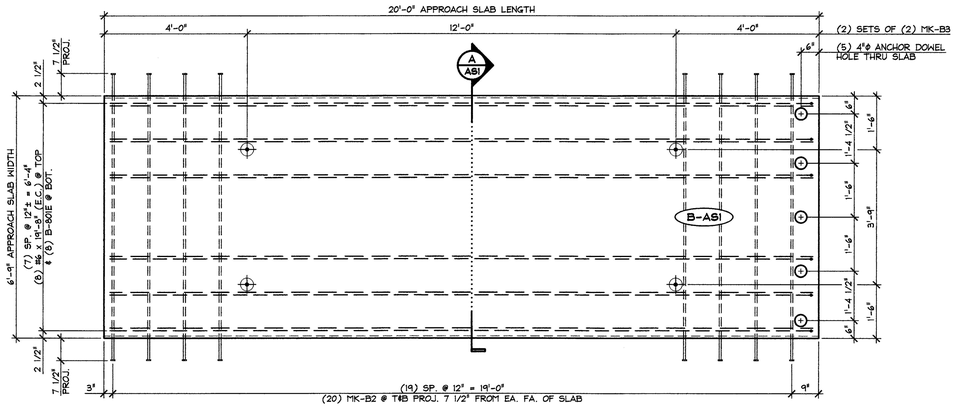
DATE: OCT. 30, 2012
SCALE: NOTED
CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012

TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

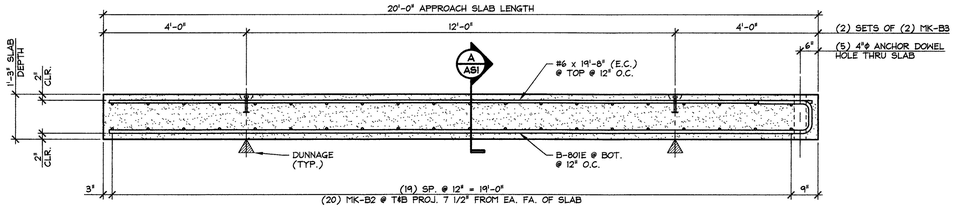
PRESTRESSED NEXT BEAM DETAILS

DWG. NO: NB3

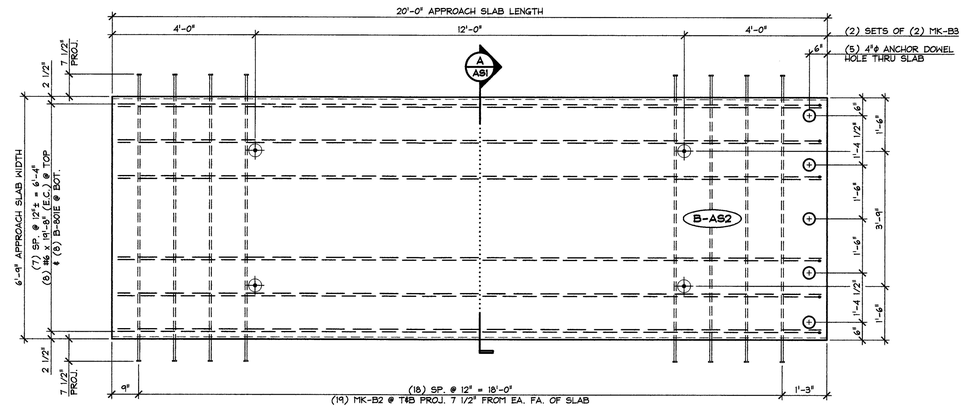
F:\VT-Bridges\23382-12 Hancock\23384-NB3-2.dwg, 1/9/2013 10:00:24 AM



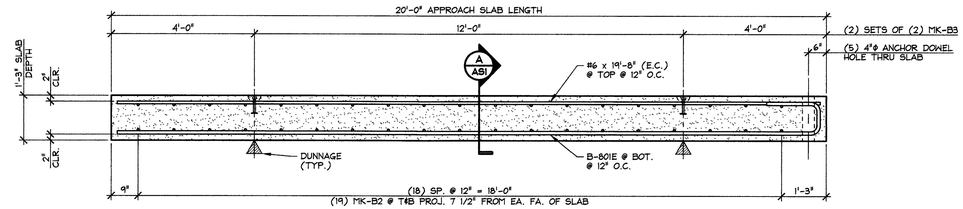

1 AS1 PLAN VIEW IN FORM
1/2" = 1'-0"



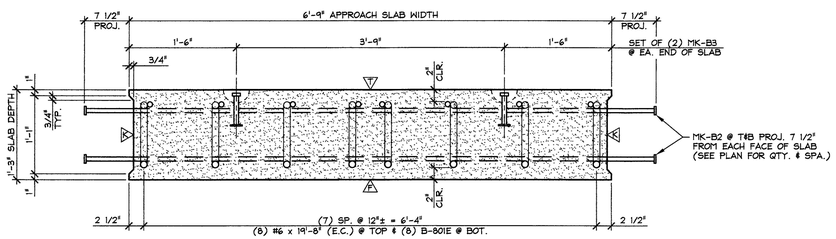

2 AS1 ELEVATION
1/2" = 1'-0"




3 AS1 PLAN VIEW IN FORM
1/2" = 1'-0"




4 AS1 ELEVATION
1/2" = 1'-0"




A AS1 APPROACH SLAB SECTION
1" = 1'-0"

Δ1 DENOTES FORM FINISH
Δ2 DENOTES FLOAT FINISH
Δ3 DENOTES BLAST FINISH

SUBMITTED
JAN 9 2013
J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

| MARK: B-AS1 | QTY.: 2 | WT.: 12.46 T | VOL.: 6.16 cy |
|---|---|---|---|
| MARK: B-AS2 | QTY.: 2 | WT.: 12.46 T | VOL.: 6.16 cy |

MATERIAL LIST / APPROACH SLAB

| ITEM | MARK | DESCRIPTION | QTY./SLAB B-AS1 | QTY./SLAB B-AS2 |
|---|---|---|---|---|
| 1 | | #6 x 19'-8" (EPOXY COATED) | 8 | 8 |
| 2 | | | | |
| 3 | B-801E | #8 BENT BAR (EPOXY COATED) | 8 | 8 |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | MK-B2 | #5 x 8'-0" HRC 555 DOUBLE-HEADED REBAR (EPOXY COATED) | 40 | 36 |
| 8 | MK-B3 | 4T x 5 1/2" SWIFT LIFT LIFTER | 4 | 4 |
| 9 | | | | |
| 10 | | | | |

Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT ____ APPROVED X
BY KMH DATE 1-10-13

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 ESSEX

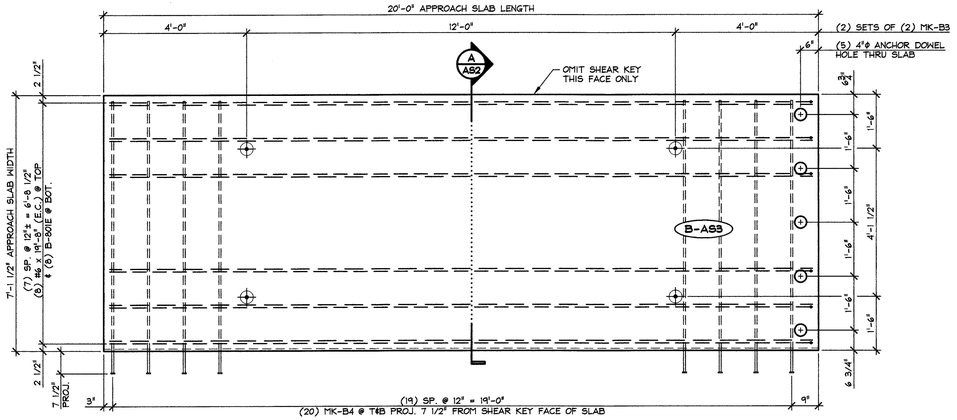
DATE: OCT. 30, 2012
SCALE: NOTED
CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012

TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

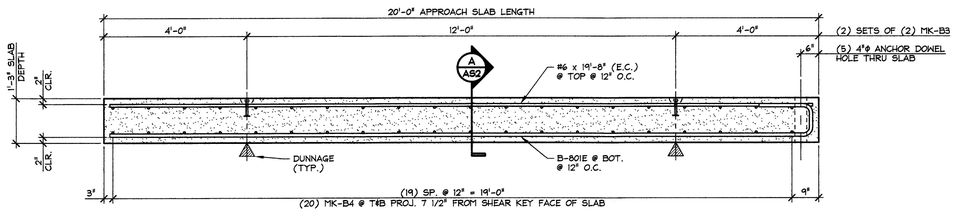
PRECAST APPROACH SLAB DETAILS

DWG. NO: AS1

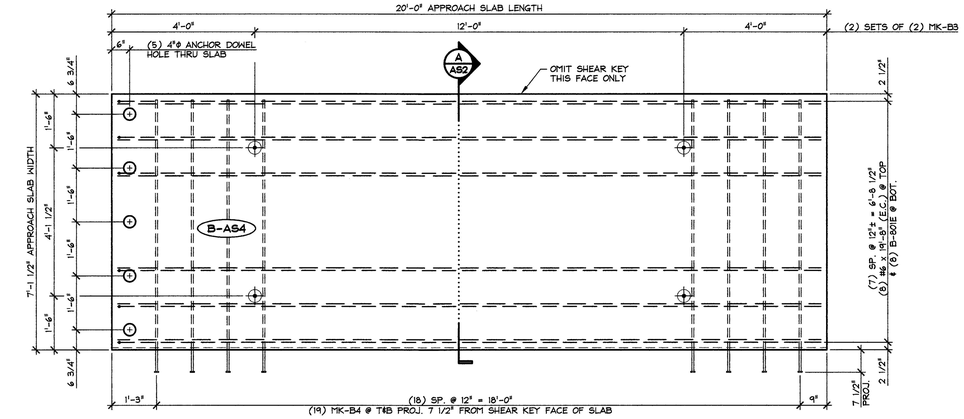
F:\VT-Bridges\23384-12 Brighton\23384-AS1.dwg, 1/28/2012 10:27:10 AM



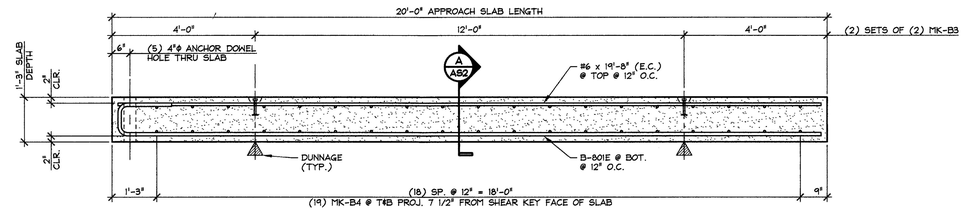

1 AS2 PLAN VIEW IN FORM
1/2" = 1'-0"



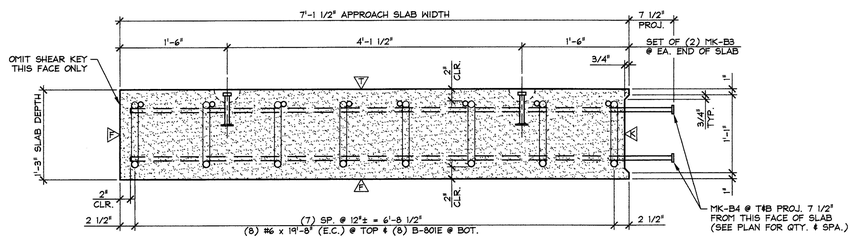

2 AS2 ELEVATION
1/2" = 1'-0"




3 AS2 PLAN VIEW IN FORM
1/2" = 1'-0"




4 AS2 ELEVATION
1/2" = 1'-0"




A AS2 APPROACH SLAB SECTION
1" = 1'-0"

A DENOTES FORM FINISH
A DENOTES FLOAT FINISH
A DENOTES BLAST FINISH

SUBMITTED
JAN 9 2013
J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

| MARK: B-AS3 | QTY.: 2 | WT.: 13.26 T | VOL.: 6.55 cy |
|---|---|---|---|
| MARK: B-AS4 | QTY.: 2 | WT.: 13.26 T | VOL.: 6.55 cy |

MATERIAL LIST / APPROACH SLAB

| ITEM | MARK | DESCRIPTION | QTY./SLAB B-AS3 | QTY./SLAB B-AS4 |
|---|---|---|---|---|
| 1 | | #6 x 19'-8" (EPOXY COATED) | 8 | 8 |
| 2 | | | | |
| 3 | B-801E | #8 BENT BAR (EPOXY COATED) | 8 | 8 |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | MK-B3 | 4T x 5 1/2" SWIFT LIFT LIFTER | 4 | 4 |
| 9 | MK-B4 | #5 x 7'-7" HRC 555 HEADED REBAR (EPOXY COATED) | 40 | 38 |
| 10 | | | | |

Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT BY KMH APPROVED X DATE 1-10-13

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

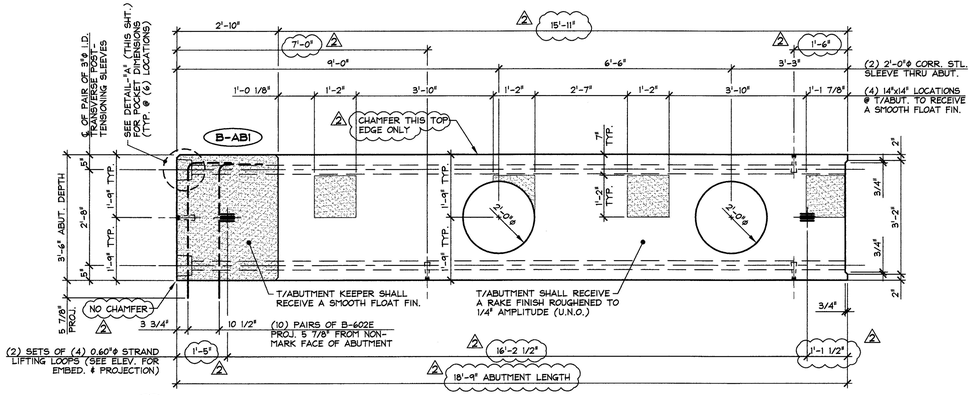
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ESSEX

TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

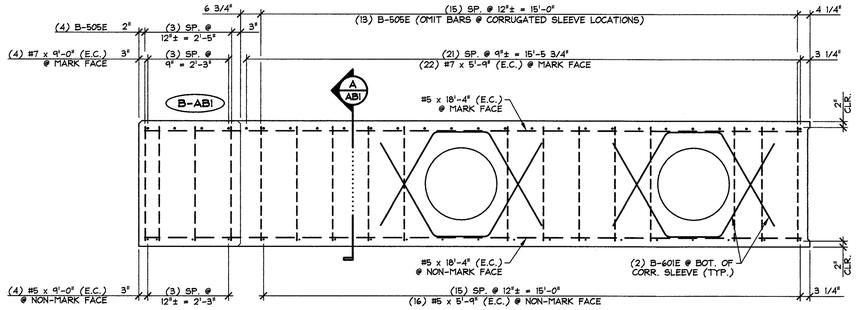
PRECAST APPROACH SLAB DETAILS

DATE: OCT. 30, 2012
SCALE: NOTED
CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012
DWG. NO: AS2

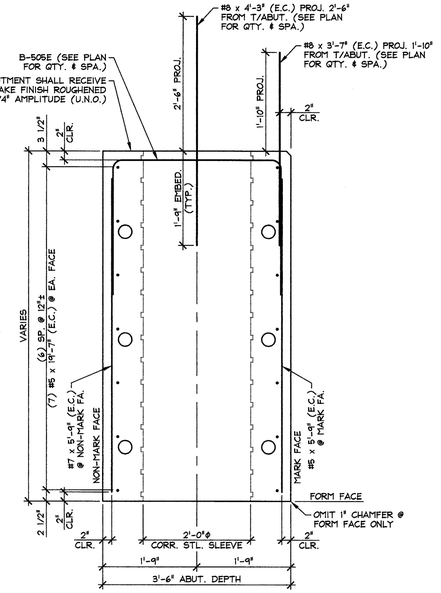
F:\VT-Bridges\23384-12 Brighton\23384-AS2.dwg, 11/28/2012 10:28:10 AM



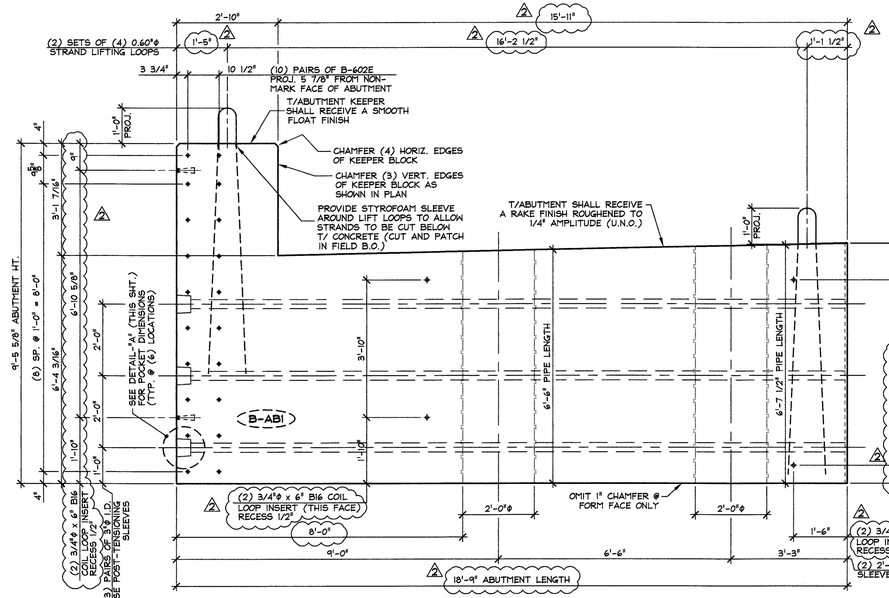

1 AB1 ABUTMENT DIMENSIONAL PLAN VIEW IN FORM
1/2" = 1'-0"



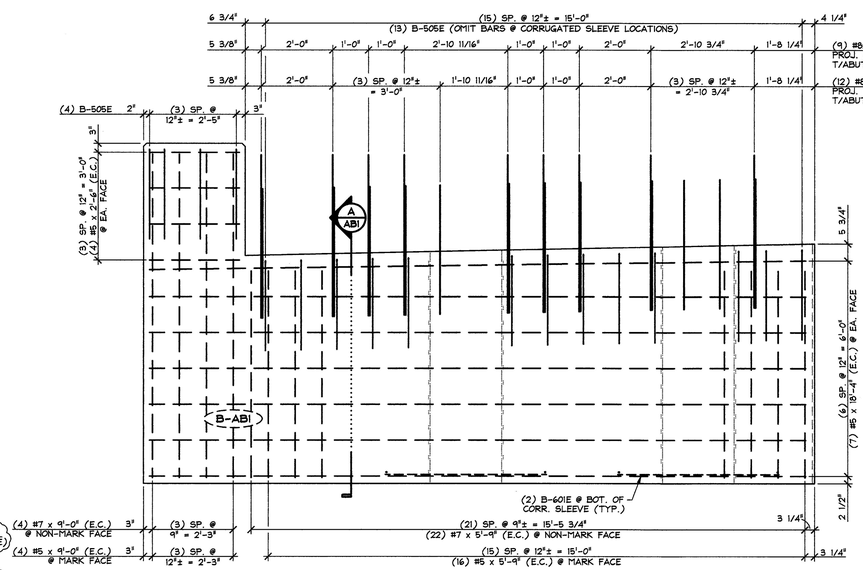

3 AB1 ABUTMENT REINFORCING PLAN VIEW IN FORM
1/2" = 1'-0"



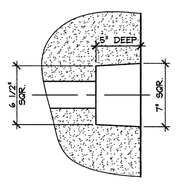

A AB1 ABUTMENT SECTION
3/4" = 1'-0"




2 AB1 ABUTMENT DIMENSIONAL NON-MARK FACE ELEVATION
1/2" = 1'-0"




4 AB1 ABUTMENT REINFORCING NON-MARK FACE ELEVATION
1/2" = 1'-0"




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

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

| MARK: B-AB1 | QTY.: 1 | WT.: 31.15 T | VOL.: 15.38 cy |
|---|---|---|---|

**MATERIAL LIST / ABUTMENT**

| ITEM | MARK | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | B-505E | #5 BENT BAR (EPOXY COATED) | 17 |
| 2 | | #5 x 2'-6" (EPOXY COATED) | 8 |
| 3 | | #5 x 5'-9" (EPOXY COATED) | 16 |
| 4 | | #5 x 9'-0" (EPOXY COATED) | 4 |
| 5 | | #5 x 18'-4" (EPOXY COATED) | 14 |
| 6 | | | |
| 7 | B-601E | #6 BENT BAR (EPOXY COATED) | 4 |
| 8 | B-602E | #6 BENT BAR (EPOXY COATED) | 20 |
| 9 | | | |
| 10 | | #7 x 5'-9" (EPOXY COATED) | 22 |
| 11 | | #7 x 9'-0" (EPOXY COATED) | 4 |
| 12 | | | |
| 13 | | #8 x 3'-7" (EPOXY COATED) | 12 |
| 14 | | #8 x 4'-3" (EPOXY COATED) | 9 |
| 15 | | 3/4"ø x 6" B16 COIL INSERT (ELECTRO-PLATED FINISH) | 8 |
| 16 | | 2'-0"ø x 6'-7 1/2" CORRUGATED STEEL PIPE (GALV.) | 1 |
| 17 | | 2'-0"ø x 6'-6" CORRUGATED STEEL PIPE (GALV.) | 1 |
| 18 | | SET OF (4) 0.60"ø x 270 KSI STRAND LIFTING LOOPS | 2 |
| 19 | | | |
| 20 | | | |

2 1-3-13 GENERAL REVISIONS
1 12-10-12 GENERAL REVISIONS

SUBMITTED
JAN 9 2013
J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT BY KMH APPROVED X DATE 1-10-13

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 ESSEX

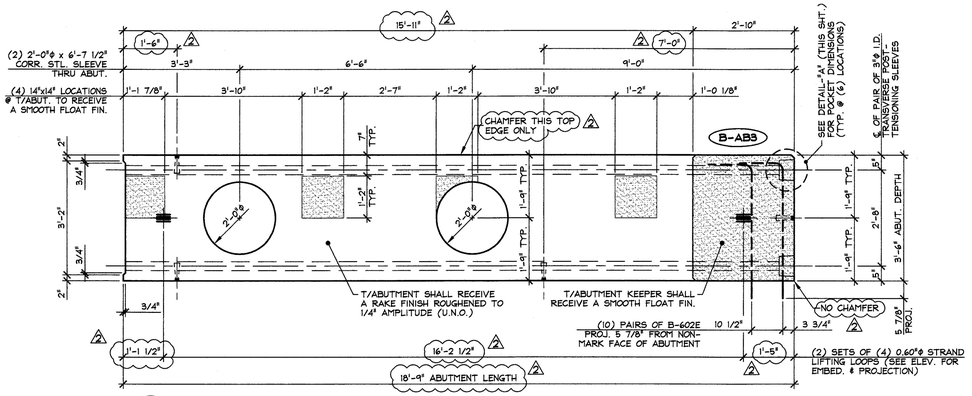
DATE: OCT. 30, 2012
SCALE: NOTED
CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012

TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

# PRECAST ABUTMENT DETAILS

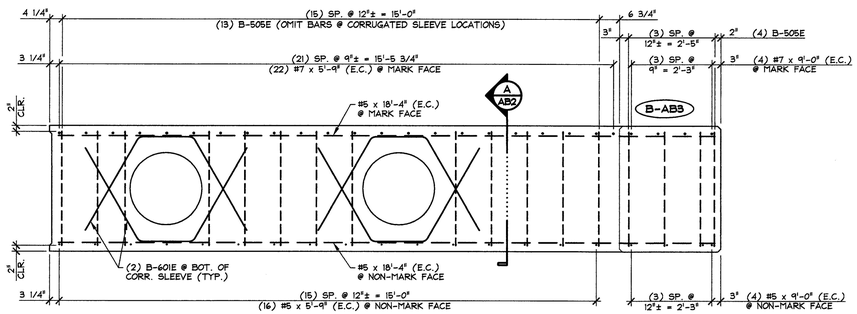
DWG. NO: AB1

F:\VT-Bridges\23382-12 Hancock\23384-AB1-2.dwg, 1/9/2013 2:47:23 PM



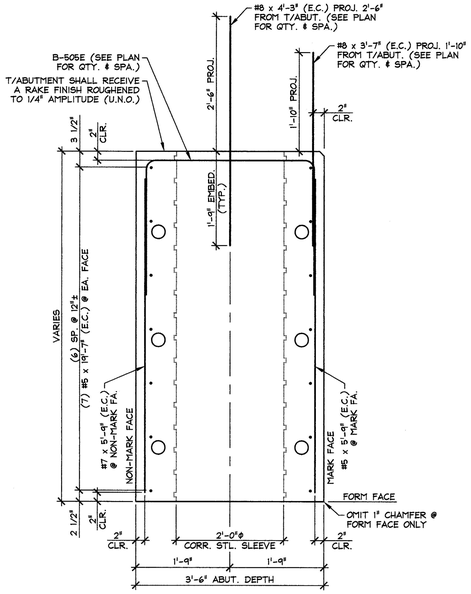

1 AB2 ABUTMENT DIMENSIONAL PLAN VIEW IN FORM

1/2" = 1'-0"



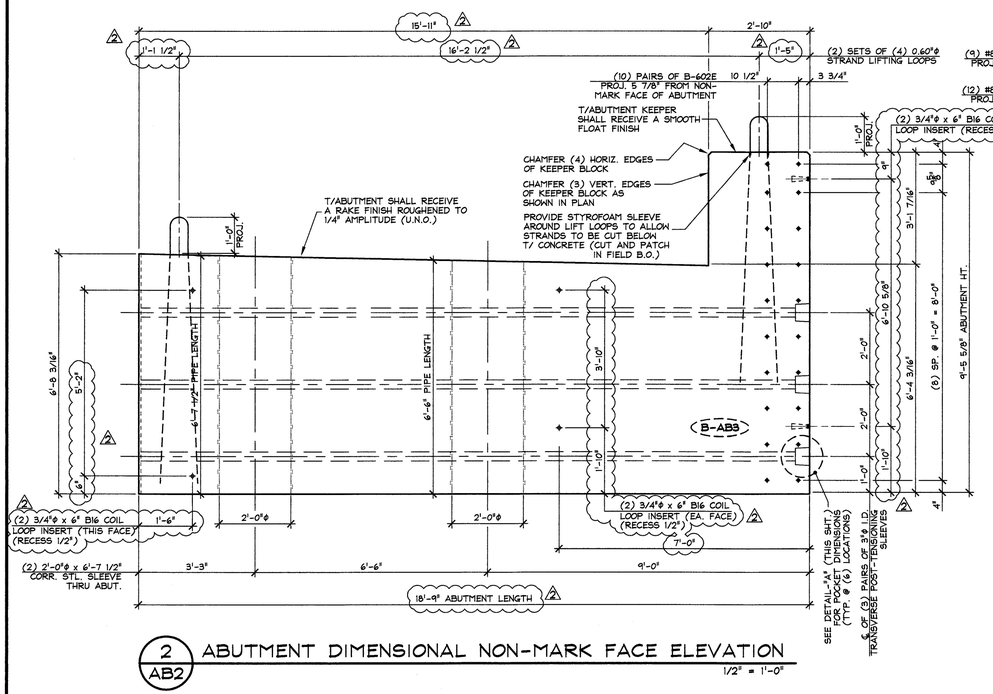

3 AB2 ABUTMENT REINFORCING PLAN VIEW IN FORM

1/2" = 1'-0"



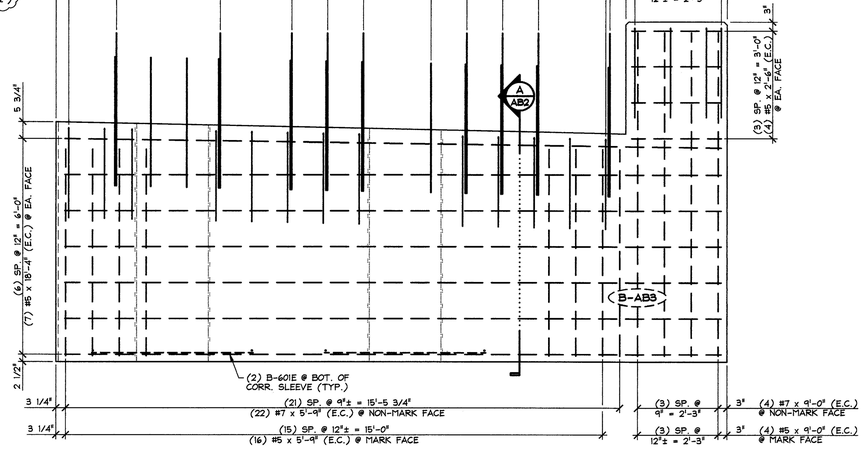

A AB2 ABUTMENT SECTION

3/4" = 1'-0"




2 AB2 ABUTMENT DIMENSIONAL NON-MARK FACE ELEVATION

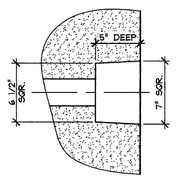
1/2" = 1'-0"




4 AB2 ABUTMENT REINFORCING NON-MARK FACE ELEVATION

1/2" = 1'-0"

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




DETAIL - "A"

1 1/2" = 1'-0"

| MARK: B-AB3 | QTY.: 1 | WT.: 31.15 T | VOL.: 15.38 cy |
|---|---|---|---|

MATERIAL LIST / ABUTMENT

| ITEM | MARK | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | B-505E | #5 BENT BAR (EPOXY COATED) | 17 |
| 2 | | #5 x 2'-6" (EPOXY COATED) | 8 |
| 3 | | #5 x 5'-9" (EPOXY COATED) | 16 |
| 4 | | #5 x 9'-0" (EPOXY COATED) | 4 |
| 5 | | #5 x 18'-4" (EPOXY COATED) | 14 |
| 6 | | | |
| 7 | B-601E | #6 BENT BAR (EPOXY COATED) | 4 |
| 8 | B-602E | #6 BENT BAR (EPOXY COATED) | 20 |
| 9 | | | |
| 10 | | #7 x 5'-9" (EPOXY COATED) | 22 |
| 11 | | #7 x 9'-0" (EPOXY COATED) | 4 |
| 12 | | | |
| 13 | | #8 x 3'-7" (EPOXY COATED) | 12 |
| 14 | | #8 x 4'-3" (EPOXY COATED) | 9 |
| 15 | 2 | 3/4"ø x 6" B16 COIL INSERT (ELECTRO-PLATED FINISH) | 8 |
| 16 | | 2'-0"ø x 6'-7 1/2" CORRUGATED STEEL PIPE (GALV.) | 1 |
| 17 | | 2'-0"ø x 6'-6" CORRUGATED STEEL PIPE (GALV.) | 1 |
| 18 | | SET OF (4) 0.60"ø x 270 KSI STRAND LIFTING LOOPS | 2 |
| 19 | | | |
| 20 | | | |

2 1-3-13 GENERAL REVISIONS
1 12-10-12 GENERAL REVISIONS

SUBMITTED
JAN 9 2013
J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT ____ APPROVED X
BY KMH DATE 1-10-13

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

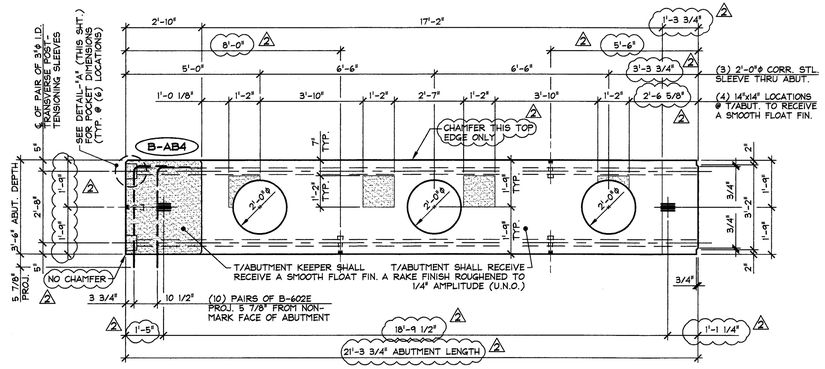
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ESSEX

TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

PRECAST ABUTMENT DETAILS

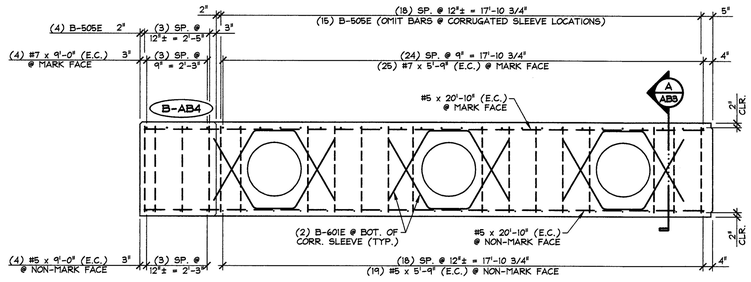
DATE: OCT. 30, 2012
SCALE: NOTED
CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012
DWG. NO: AB2

F:\VT-Bridges\23382-12 Hancock\23384-AB2-2.dwg, 1/9/2013 8:39:35 AM



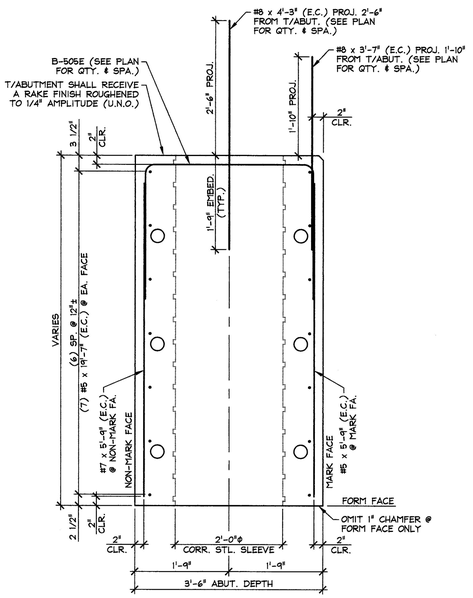

1 AB3 ABUTMENT DIMENSIONAL PLAN VIEW IN FORM

3/8" = 1'-0"



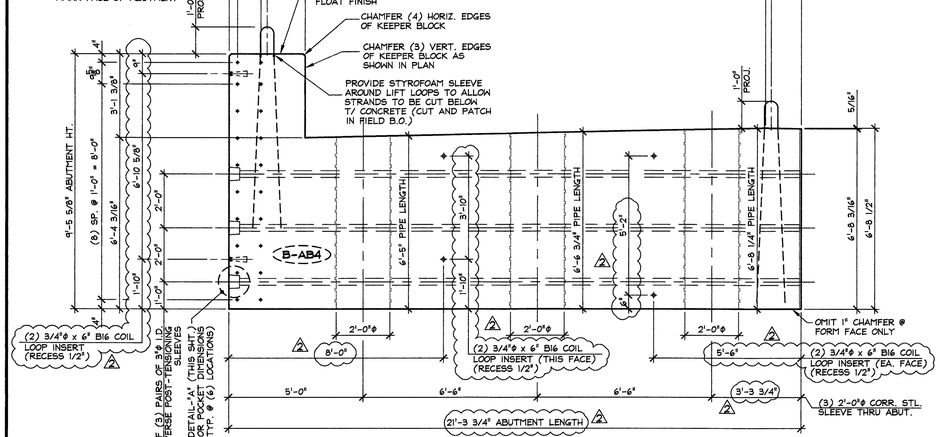

4 AB3 ABUTMENT REINFORCING PLAN VIEW IN FORM

3/8" = 1'-0"




A AB3 ABUTMENT SECTION

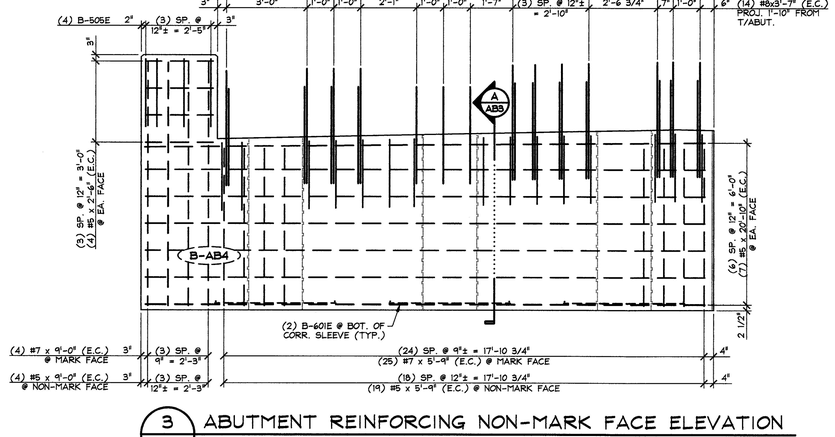
3/4" = 1'-0"




2 AB3 ABUTMENT DIMENSIONAL NON-MARK FACE ELEVATION

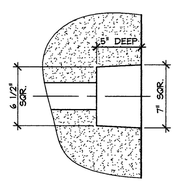
3/8" = 1'-0"

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




3 AB3 ABUTMENT REINFORCING NON-MARK FACE ELEVATION

3/8" = 1'-0"




DETAIL - "A"

1 1/2" = 1'-0"

SUBMITTED
JAN 9 2013
J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

| MARK: B-AB4 | QTY.: 1 | WT.: 34.01 T | VOL.: 16.80 cy |
|---|---|---|---|

MATERIAL LIST / ABUTMENT

| ITEM | MARK | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | B-505E | #5 BENT BAR (EPOXY COATED) | 19 |
| 2 | | #5 x 2'-6" (EPOXY COATED) | 8 |
| 3 | | #5 x 5'-9" (EPOXY COATED) | 19 |
| 4 | | #5 x 9'-0" (EPOXY COATED) | 4 |
| 5 | | #5 x 20'-10" (EPOXY COATED) | 14 |
| 6 | | | |
| 7 | B-601E | #6 BENT BAR (EPOXY COATED) | 6 |
| 8 | B-602E | #6 BENT BAR (EPOXY COATED) | 20 |
| 9 | | | |
| 10 | | #7 x 5'-9" (EPOXY COATED) | 25 |
| 11 | | #7 x 9'-0" (EPOXY COATED) | 4 |
| 12 | | | |
| 13 | | #8 x 3'-7" (EPOXY COATED) | 14 |
| 14 | | #8 x 4'-3" (EPOXY COATED) | 11 |
| 15 | | 2 (3/4"ø x 6" B16 COIL INSERT (ELECTRO-PLATED FINISH)) | 8 |
| 16 | | 2'-0"ø x 6'-5" CORRUGATED STEEL PIPE (GALV.) | 1 |
| 17 | | 2'-0"ø x 6'-6 3/4" CORRUGATED STEEL PIPE (GALV.) | 1 |
| 18 | | 2'-0"ø x 6'-8 1/4" CORRUGATED STEEL PIPE (GALV.) | 1 |
| 19 | | SET OF (4) 0.60"ø x 270 KSI STRAND LIFTING LOOPS | 2 |
| 20 | | | |

2 1-3-13 GENERAL REVISIONS

Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT ____ APPROVED X
BY KMH DATE 1-10-13

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

J.A. McDONALD, INC.
CONTRACTOR
LYNDON CENTER, VERMONT

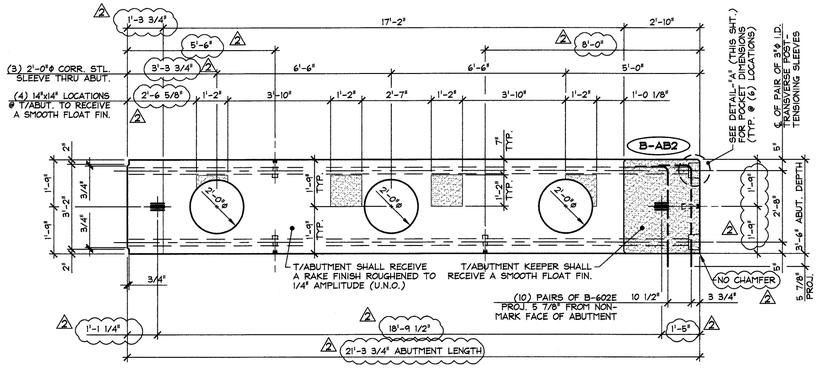
STATE OF VERMONT AGENCY OF TRANSPORTATION
COUNTY OF ESSEX

TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

PRECAST ABUTMENT DETAILS

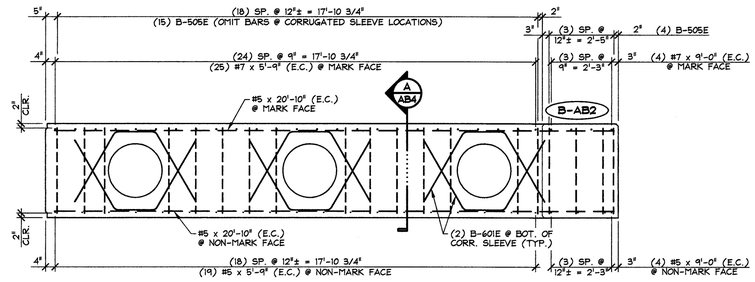
DATE: OCT. 30, 2012
SCALE: NOTED
CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012
DWG. NO: AB3

F:\VT-Bridges\23382-12 Hancock\23384-AB3 2.dwg, 1/9/2013 9:08:58 AM



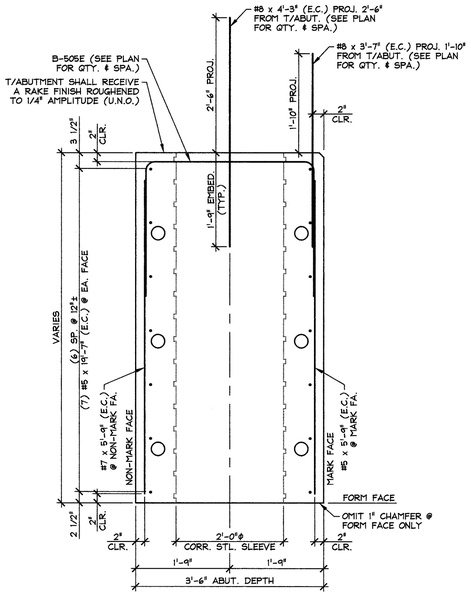

1 AB4 ABUTMENT DIMENSIONAL PLAN VIEW IN FORM

3/8" = 1'-0"



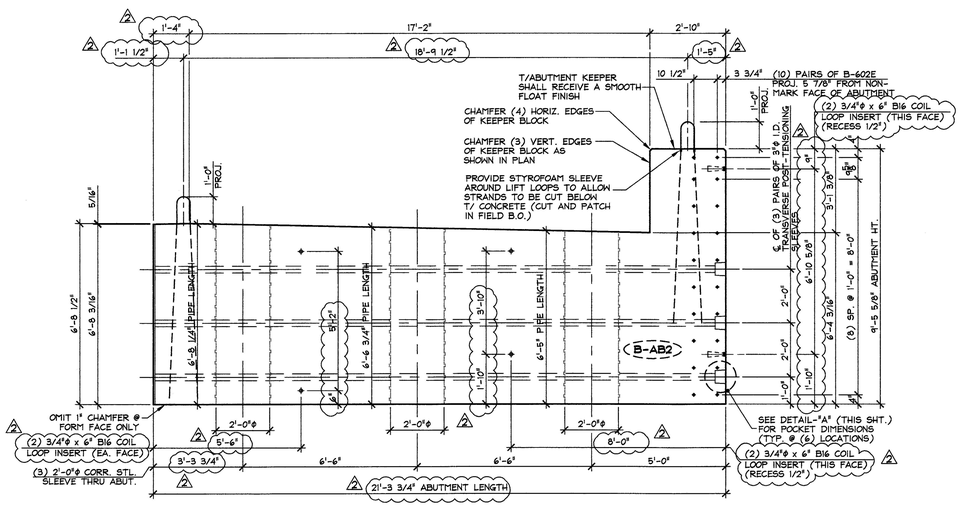

4 AB4 ABUTMENT REINFORCING PLAN VIEW IN FORM

3/8" = 1'-0"



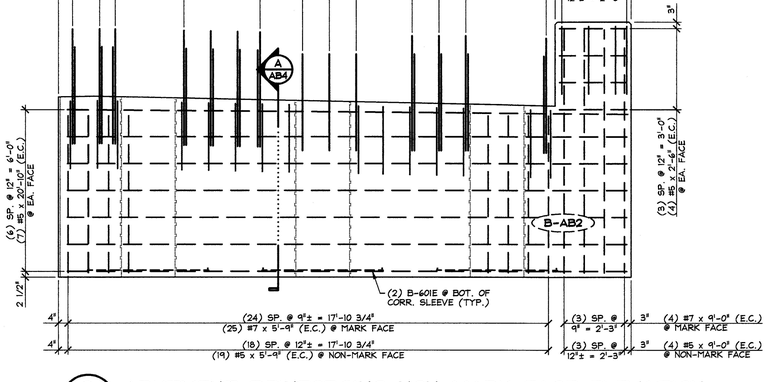

A AB4 ABUTMENT SECTION

3/4" = 1'-0"




3 AB4 ABUTMENT DIMENSIONAL NON-MARK FACE ELEVATION

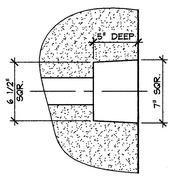
3/8" = 1'-0"




3 AB4 ABUTMENT REINFORCING NON-MARK FACE ELEVATION

3/8" = 1'-0"

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




DETAIL - "A"

1 1/2" = 1'-0"

SUBMITTED
JAN 9 2013
J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

| MARK: B-AB2 | QTY.: 1 | WT.: 34.01 T | VOL.: 16.80 cy |
|---|---|---|---|

MATERIAL LIST / ABUTMENT

| ITEM | MARK | DESCRIPTION | QTY. |
|---|---|---|---|
| 1 | B-505E | #5 BENT BAR (EPOXY COATED) | 19 |
| 2 | | #5 x 2'-6" (EPOXY COATED) | 8 |
| 3 | | #5 x 5'-9" (EPOXY COATED) | 19 |
| 4 | | #5 x 9'-0" (EPOXY COATED) | 4 |
| 5 | | #5 x 20'-10" (EPOXY COATED) | 14 |
| 6 | | | |
| 7 | B-601E | #6 BENT BAR (EPOXY COATED) | 6 |
| 8 | B-602E | #6 BENT BAR (EPOXY COATED) | 20 |
| 9 | | | |
| 10 | | #7 x 5'-9" (EPOXY COATED) | 25 |
| 11 | | #7 x 9'-0" (EPOXY COATED) | 4 |
| 12 | | | |
| 13 | | #8 x 3'-7" (EPOXY COATED) | 14 |
| 14 | | #8 x 4'-3" (EPOXY COATED) | 11 |
| 15 | | 2 (3/4"ϕ x 6" B16 COIL INSERT (ELECTRO-PLATED FINISH) | 8 |
| 16 | | 2'-0"ϕ x 6'-5" CORRUGATED STEEL PIPE (GALV.) | 1 |
| 17 | | 2'-0"ϕ x 6'-6 3/4" CORRUGATED STEEL PIPE (GALV.) | 1 |
| 18 | | 2'-0"ϕ x 6'-8 1/4" CORRUGATED STEEL PIPE (GALV.) | 1 |
| 19 | | SET OF (4) 0.60"ϕ x 270 KSI STRAND LIFTING LOOPS | 2 |
| 20 | | | |

2 1-3-13 GENERAL REVISIONS

Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT ____ APPROVED X
BY KMH DATE 1-10-13

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 ESSEX

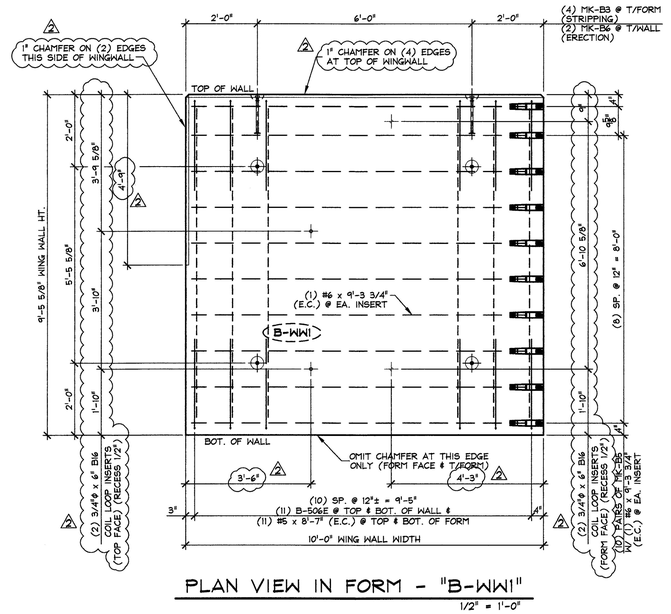
DATE: OCT. 30, 2012
SCALE: NOTED
CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012

TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

PRECAST ABUTMENT DETAILS

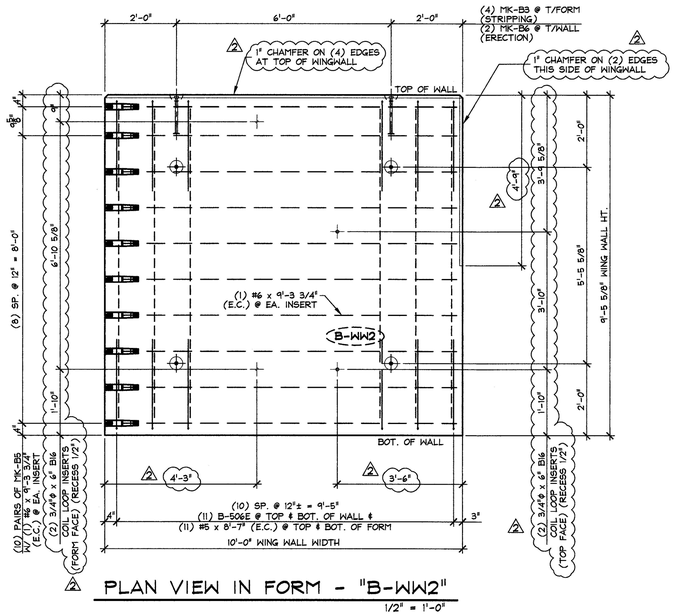
DWG. NO: AB4

F:\VT-Bridges\23382-12 Hancock\23384-AB4-2.dwg, 1/9/2013 9:27:01 AM



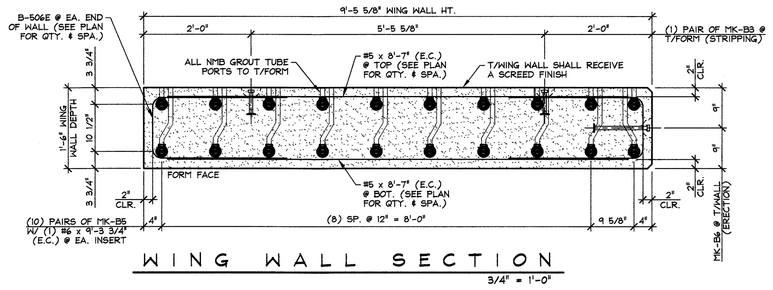

PLAN VIEW IN FORM - "B-WW1"

1/2" = 1'-0"




PLAN VIEW IN FORM - "B-WW2"

1/2" = 1'-0"




WING WALL SECTION

3/4" = 1'-0"

SUBMITTED

JAN 9 2013

J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| MARK: | B-WW1 | QTY.: | 2 | WT.: | 10.65 T | VOL.: | 5.26 cy |
| MARK: | B-WW2 | QTY.: | 2 | WT.: | 10.65 T | VOL.: | 5.26 cy |
| MARK: | ~~B-WW3~~ | QTY.: | 0 | WT.: | - | VOL.: | - |
| MARK: | ~~B-WW4~~ | QTY.: | 0 | WT.: | - | VOL.: | - |

**MATERIAL LIST / WING WALL**

| ITEM | MARK | DESCRIPTION | QTY./WING WALL | | | |
|---|---|---|---|---|---|---|
| | | | B-WW1 | B-WW2 | ~~B-WW3~~ | ~~B-WW4~~ |
| 1 | B-506E | #5 BENT BAR (EPOXY COATED) | 22 | 22 | | |
| 2 | | #5 x 8'-7" (EPOXY COATED) | 22 | 22 | | |
| 3 | | | | | | |
| 4 | | #6 x 9'-3 3/4" (EPOXY COATED) | 20 | 20 | | |
| 5 | | | | | | |
| 6 | MK-B3 | 4T x 5 1/2" SWIFT LIFT LIFTER | 4 | 4 | | |
| 7 | MK-B5 | NMB SPLICE SLEEVE 6U-X(PG) (EPOXY COATED) | 20 | 20 | | |
| 8 | MK-B6 | 6T x 8" 3/8" SWIFT SWIFT LIFTER LIFTER | 2 | 2 | | |
| 9 | 2 | 3/4"ø x 6" B16 COIL LOOP INSERT (ELECTRO-PLATED FIN.) | 4 | 4 | | |
| 10 | | | | | | |

SHOP NOTE:
ALL EDGES OF WING WALLS, FORM FACE & T/WALL FACE, SHALL RECEIVE A 1" CHAMFER (UNLESS NOTED OTHERWISE)

2 1-3-13 REVISED AS NOTED
1 12-10-12 REVISED AS NOTED

Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT ____ APPROVED X
BY KMH DATE 1-10-13

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 ESSEX

DATE: OCT. 30, 2012
SCALE: NOTED

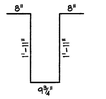
TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012

PRECAST WING WALL DETAILS

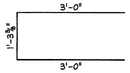
DWG. NO: WW1

F:\VT-Bridges\23382-12 Hancock\23384-WW1-2.dwg, 1/9/2013 10:08:18 AM



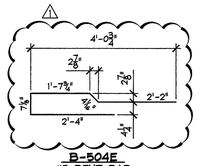

**B-401E**
#4 BENT BAR
(EPOXY COATED)
(520) REQ'D.

**B-501E**
#5 BENT BAR
(EPOXY COATED)
(32) REQ'D.



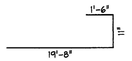

**B-502E**
#5 BENT BAR
(EPOXY COATED)
(64) REQ'D.

**B-503E**
#5 BENT BAR
(EPOXY COATED)
(128) REQ'D.



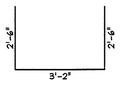

**B-504E**
#5 BENT BAR
(EPOXY COATED)
(186) REQ'D.

## PRESTRESSED NEXT BEAMS

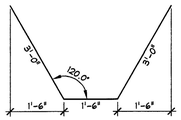



**B-801E**
#8 BENT BAR
(EPOXY COATED)
(64) REQ'D.

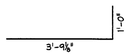
## PRECAST APPROACH SLABS




**B-505E**
#5 BENT BAR
(EPOXY COATED)
(72) REQ'D.

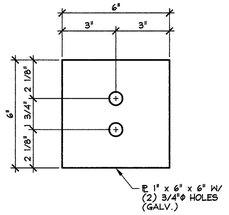



**B-601E**
#6 BENT BAR
(EPOXY COATED)
(20) REQ'D.




**B-602E**
#6 BENT BAR
(EPOXY COATED)
(80) REQ'D.

## PRECAST ABUTMENTS




**E M - B 1**
3" = 1'-0"

**B-506E**
#5 BENT BAR
(EPOXY COATED)
(88) REQ'D.

## PRECAST WING WALLS

## MISCELLANEOUS MATERIALS

| ITEM | MARK | QTY. | DESCRIPTION | REMARKS | |
|---|---|---|---|---|---|
| 1 | | 72 | #4 x 7'-7" (EPOXY COATED) | | PRESTRESSED NEXT BEAMS |
| 2 | | | | | |
| 3 | | 1 1,128 | #5 x 7'-7" (EPOXY COATED) | | |
| 4 | | 88 | #5 x 72'-4" (W/ (3) 3'-0" STAGGERED LAPS) (EPOXY COATED) | | |
| 5 | | | | | |
| 6 | MK-B1 | 837 | #5 x 4'-1" HRC 555 HEADED REBAR | EPOXY COATED | |
| 7 | | | | | |
| 8 | | 18 | GUARD RAIL ANCHOR PLATE (GALV.) | SUPPLIED BY OTHERS | |
| 9 | | 16 | SET OF (4) 0.60"ϕ x 270 KSI STRAND LIFTING LOOPS | | |
| 10 | 2 | 108 | 1/2"ϕ x 3" B16 COIL INSERTS (ELECTRO-PLATE FINISH) | | |
| 11 | | 64 | #6 x 19'-8" (EPOXY COATED) | | |
| 12 | | | | | |
| 13 | MK-B2 | 156 | #5 x 8'-0" HRC 555 DOUBLE-HEADED REBAR | EPOXY COATED | PRECAST APPROACH SLABS |
| 14 | MK-B3 | 32 | 4T x 5 1/2" SWIFT LIFT LIFTER | | |
| 15 | MK-B4 | 156 | #5 x 7'-7" HRC 555 HEADED REBAR | EPOXY COATED | |
| 16 | | | | | |
| 17 | | | | | |
| 18 | | | | | |
| 19 | | | | | |
| 20 | | | | | |
| 21 | | 32 | #5 x 2'-6" (EPOXY COATED) | | PRECAST ABUTMENTS |
| 22 | | 70 | #5 x 5'-9" (EPOXY COATED) | | |
| 23 | | 16 | #5 x 9'-0" (EPOXY COATED) | | |
| 24 | | 28 | #5 x 18'-4" (EPOXY COATED) | | |
| 25 | | 28 | #5 x 20'-10" (EPOXY COATED) | | |
| 26 | | | | | |
| 27 | | 94 | #7 x 5'-9" (EPOXY COATED) | | |
| 28 | | 16 | #7 x 9'-0" (EPOXY COATED) | | |
| 29 | | | | | |
| 30 | | 52 | #8 x 3'-7" (EPOXY COATED) | | |
| 31 | | 40 | #8 x 4'-3" (EPOXY COATED) | | |
| 32 | | | | | |
| 33 | | 8 | SET OF (4) 0.60"ϕ x 270 KSI STRAND LIFTING LOOPS | | |
| 34 | | | | | |
| 35 | | 2 | 2'-0"ϕ x 6'-7 1/2" CORRUGATED STEEL PIPE (GALV.) | | |
| 36 | | 2 | 2'-0"ϕ x 6'-6" CORRUGATED STEEL PIPE (GALV.) | | |
| 37 | | 2 | 2'-0"ϕ x 6'-5" CORRUGATED STEEL PIPE (GALV.) | | |
| 38 | | 2 | 2'-0"ϕ x 6'-6 3/4" CORRUGATED STEEL PIPE (GALV.) | | |
| 39 | | 1 2 | 2'-0"ϕ x 6'-8 1/4" CORRUGATED STEEL PIPE (GALV.) | | |
| 40 | | | | | |
| 41 | EM-B1 | 24 | ℄ 1" x 6" x 6" W/ (2) 3/4"ϕ HOLES (GALV.) | FOR ERECTION; SEE DETAIL THIS SHEET | |
| 42 | | 24 | 1/2"ϕ x 42'-9" POLY-STRAND | FOR ERECTION | |
| 43 | | 48 | 1/2"ϕ SINGLE USE STRESSING CHUCK | FOR ERECTION | |
| 44 | | 12 | COMPRESSIBLE SEALER SELF ADHESIVE | FOR ERECTION | |
| 45 | 2 | 32 | 3/4"ϕ x 6" B16 COIL INSERTS (ELECTRO-PLATE FINISH) | | |
| 46 | | 88 | #5 x 8'-7" (EPOXY COATED) | | PRECAST WING WALLS |
| 47 | | | | | |
| 48 | | 80 | #6 x 9'-3 3/4" (EPOXY COATED) | | |
| 49 | | | | | |
| 50 | MK-H3 | 16 | 4T x 5 1/2" SWIFT LIFT LIFTER | | |
| 51 | MK-B5 | 80 | NMB SPLICE SLEEVE 6U-X(PG) (EPOXY COATED) W/ GROUT TUBES | GROUT TUBE LENGTH AS REQ'D. | |
| 52 | MK-H6 | 8 | 8T x 13 3/8" SWIFT LIFT LIFTER | | |
| 53 | 2 | 16 | 3/4"ϕ x 6" B16 COIL INSERTS (ELECTRO-PLATE FINISH) | | |
| 54 | | | | | |
| 55 | | | | | |

2 1-3-13 REVISED AS NOTED
1 12-10-12 REVISED AS NOTED

SUBMITTED
JAN 9 2013
J. P. CARRARA & SONS, INC.
MIDDLEBURY, VT 05753

Vermont Agency of Transportation
RECEIVED
CK'D BY WDL OK'D BY JTS
January 9th, 2013
RESUBMIT ____ APPROVED X
BY KMH DATE 1-10-13

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 ESSEX

DATE: OCT. 30, 2012
SCALE: NOTED
CHKD: B.C. DFTM: B.L.
JOB NO: 23384-012

TOWN OF BRIGHTON
ROUTE NO. VT 105, MINOR ARTERIAL
BRIDGE NO.: 84 PROJECT NO.: ER STP 034-3(25)

MATERIALS LIST

DWG. NO: M1

F:\VT-Bridges\23382-12 Hancock\23384-M1-2.dwg, 1/9/2013 2:54:35 PM