# STATE OF VERMONT
# AGENCY OF TRANSPORTATION

RECORD PLANS

CONTRACTOR: RENAUD BROTHERS, INC. - VERNON, VT

RESIDENT ENGINEER: CHAD GREENWOOD

CONSTRUCTION BEGAN: JUNE 21, 2016

CONSTRUCTION COMPLETE: AUGUST 26, 2016

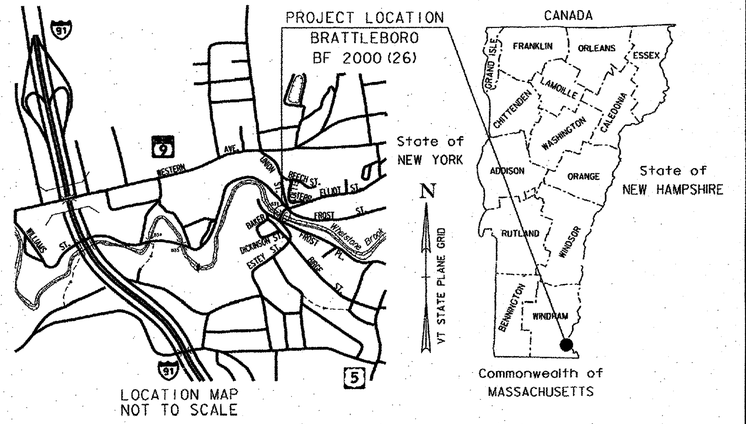
RECORD PLANS BY: CHAD GREENWOOD & JESSE IVES

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

BY Chad E C RESIDENT ENGINEER

DATE 5/26/17

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

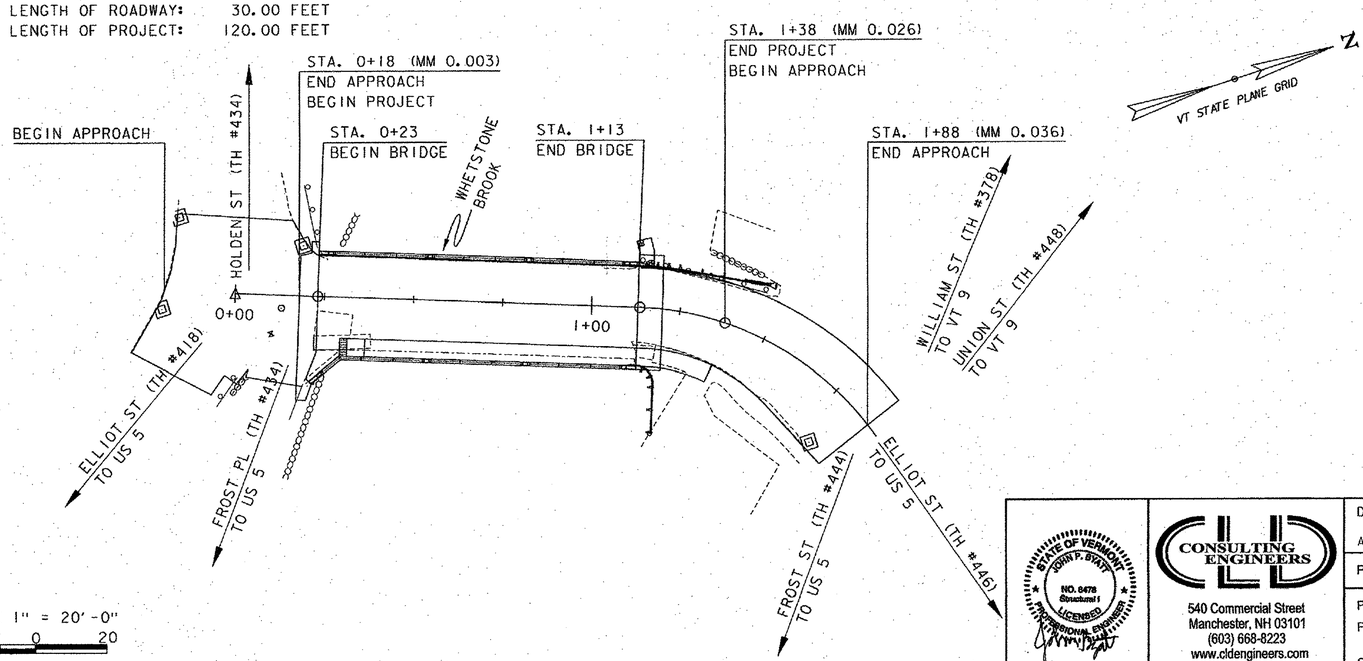



# PROPOSED IMPROVEMENT
# BRIDGE PROJECT
## TOWN OF BRATTLEBORO
## COUNTY OF WINDHAM
## ELLIOT ST (TH #446) (URBAN COLLECTOR) BRIDGE NO. 31

PROJECT LOCATION: LOCATED IN THE TOWN OF BRATTLEBORO, ON ELLIOT ST (TH #446), APPROXIMATELY 0.010 MILES EASTERLY FROM THE INTERSECTION WITH FROST PL (TH #434).

PROJECT DESCRIPTION: WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES THE REPLACEMENT OF THE EXISTING BRIDGE DECK INCLUDING RELATED APPROACH WORK.

LENGTH OF STRUCTURE: 90.00 FEET
LENGTH OF ROADWAY: 30.00 FEET
LENGTH OF PROJECT: 120.00 FEET




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

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

| |
|---|
| QUALITY ASSURANCE PROGRAM : LEVEL 2 |
| SURVEYED BY : CLD<br>SURVEYED DATE : 09/21/2015 |
| DATUM<br>VERTICAL NAVD 88<br>HORIZONTAL NAD 83 |

STATE OF VERMONT
JOHN P. BYARD
NO. 8478
Structural
LICENSED
PROFESSIONAL ENGINEER


CONSULTING ENGINEERS
540 Commercial Street
Manchester, NH 03101
(603) 668-8223
www.cldengineers.com


DIRECTOR OF PROJECT DELIVERY
APPROVED DATE 2/4/2016

PROJECT MANAGER : JENNIFER FITCH, P.E.

PROJECT NAME : BRATTLEBORO
PROJECT NUMBER : BF 2000 (26)

SHEET 1 OF 26 SHEETS

## INDEX OF SHEETS


1. TITLE SHEET
2.-3. INDEX OF SHEETS AND PROJECT NOTES SHEETS 1-2
4. TYPICALS BRIDGE SECTIONS SHEET
5. TYPICAL ROADWAY SECTIONS SHEET
6.-7. QUANTITY SHEETS 1-2
8. CONVENTIONAL SYMBOLOGY LEGEND SHEET
9. LAYOUT SHEET
10. PROFILE SHEET
11. BRIDGE CLOSURE SIGNAGE SHEET
12. SHEAR CONNECTOR DETAILS SHEET
13.-14. DECK DETAILS SHEETS 1-2
15.-16. REMOVAL AND CURTAIN WALL DETAILS SHEETS 1-2
17. JOINT DETAILS SHEET
18. RAIL LAYOUT SHEET
19.-22. BRIDGE RAIL DETAILS SHEETS 1-4
23. APPROACH RAIL DETAILS SHEET
24.-26. REFERENCE PLAN SHEETS 1-3


## STRUCTURE DETAIL SHEETS

| | | |
|---|---|---|
| SD-501.00 | 02/09/2012 | CONCRETE DETAILS AND NOTES |
| SD-502.00 | 10/10/2012 | CONCRETE DETAILS AND NOTES |
| SD-516.10 | 08/29/2011 | BRIDGE JOINT ASPHALTIC PLUG |
| SD-601.00 | 06/04/2010 | STRUCTURAL STEEL DETAILS & NOTES |

## HIGHWAY SAFETY AND DESIGN DETAIL SHEETS

| | | |
|---|---|---|
| HSD-621.06 | 11/03/2015 | GUARDRAIL TERMINAL LABEL DETAIL |

## VAOT STANDARD SHEETS

| | | |
|---|---|---|
| B-5 | 06/1/1994 | EMBANKMENT ON EARTH SLOPE, EMBANKMENT ON ROCK SLOPE,MUCK EXCAVATION, TYPICAL SLOPE ROUNDING |
| B-71 | 07/08/2005 | STANDARDS FOR RESIDENTIAL AND COMMERCIAL DRIVES |
| C-3A | 03/10/2008 | SIDEWALK RAMPS |
| D-3 | 06/01/1994 | TREATED GUTTERS |
| E-193 | 08/18/1995 | PAVEMENT MARKING DETAILS |
| G-1 | 11/10/2015 | STEEL BEAM GUARDRAIL WITH STEEL POSTS, STEEL BEAM GUARDRAIL WITH WOOD POSTS |
| G-1d | 02/10/2014 | STEEL BEAM GUARDRAIL APPROACH END TERMINAL, STEEL BEAM GUARDRAIL TRAILING END TERMINAL |
| T-1 | 08/06/2012 | TRAFFIC CONTROL GENERAL NOTES |
| T-11 | 08/06/2012 | CONSTRUCTION APPROACH SIGNING DIVIDED HIGHWAY ONE LANE CLOSED |
| T-31 | 08/06/2012 | CONSTRUCTION SIGN DETAILS |
| T-42 | 04/09/2014 | BRIDGE NUMBER PLAQUE |
| T-44 | 04/09/2014 | MILEMARKER DETAILS STATE AND TOWN HIGHWAYS |

**LRFR LOAD RATING FACTORS**

| LOADING LEVELS | TRUCK | | | | | | |
|---|---|---|---|---|---|---|---|
| | H-20 | HL-93 | 3S2 | 6 AXLE | 3A. STR. | 4A. STR. | 5A. SEMI |
| TONNAGE | 20 | 36 | 36 | 66 | 30 | 34.5 | 38 |
| INVENTORY | 1.60 | 1.01 | | | | | |
| POSTING | | | | | | | |
| OPERATING | 2.07 | 1.32 | 2.68 | 1.75 | 2.46 | 2.21 | 2.33 |
| COMMENTS: | H-20 CONTROLLED BY DECK, HL-93 AND OTHER TRUCKS CONTROLLED BY EXTERIOR BEAMS SERVICE II | | | | | | |

## PROJECT NOTES

### GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2014, AND ITS LATEST REVISIONS.

2. THE DESIGN LIVE LOAD SHALL BE HL-93.

3. ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS.

4. THE CONTRACTOR IS MADE AWARE THAT EXISTING UTILITIES ARE WITHIN THE CONSTRUCTION LIMITS OF BRIDGE NO. 31. THE LOCATION OF ANY UTILITY INFORMATION ON THE PLANS IS APPROXIMATE. NO CLAIMS ARE MADE TO THE ACCURACY OR COMPLETENESS OF THE UTILITIES SHOWN. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR LOCATING AND PROTECTING FROM DAMAGE ALL UTILITIES ON SITE DURING ALL STAGES OF CONSTRUCTION. ANY DAMAGE TO UTILITIES DUE DIRECTLY TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

5. FOLLOWING THE COMPLETION OF ALL OTHER CONSTRUCTION ACTIVITIES, ALL BEAM SEATS SHALL BE CLEANED OFF. THE COST FOR CLEANING BEAM SEATS WILL BE CONSIDERED INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.

6. ALL PG BINDER USED IN BITUMINOUS CONCRETE PAVEMENT SHALL BE IN ACCORDANCE WITH SUBSECTION 490.03B.

7. EMULSIFIED ASPHALT SHALL BE APPLIED ON ALL COLD PLANED SURFACES AT THE RATE OF 0.08 GAL/SY AND BETWEEN ALL COURSE OF PAVEMENT AT THE RATE OF 0.040 GAL/SY OR AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCIDENTAL TO ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".

8. ANY REQUIRED SAWCUT OF EXISTING PAVEMENT WILL BE CONSIDERED INCIDENTAL TO ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".

9. ANY DAMAGE TO PRIVATE OR PUBLIC PROPERTY DUE DIRECTLY TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.

10. LIMITS OF GROUND SURVEY ARE BETWEEN STA 0+00 AND STA 1+84. OUTSIDE THESE LIMITS ARE APPROXIMATE LOCATION TAKEN FROM AERIAL MAPPING.

### ENVIRONMENTAL

11. THE CONTRACTOR SHALL REVIEW AND UNDERSTAND ALL APPLICABLE ENVIRONMENTAL PERMITS AND ENSURE THAT ALL CONSTRUCTION CONDITIONS ARE MET.

12. EROSION CONTROL MEASURES SHALL BE UTILIZED AS REQUIRED AND SHALL CONFORM TO SECTION 105 OF THE STANDARD SPECIFICATIONS AND THE LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL FROM THE AGENCY OF NATURAL RESOURCES. PAYMENT FOR EROSION CONTROL MEASURES, IF APPLICABLE, WILL BE PAID FOR UNDER EXTRA WORK IN ACCORDANCE WITH 104.03.

13. THE CONTRACTOR SHALL PREVENT ANY MATERIAL FROM ENTERING THE WATERWAY DURING EXCAVATION, PARTIAL REMOVAL OF STRUCTURE, OR CONSTRUCTING THE NEW DECK.

14. THE DESIGN INTENT IS TO ALLOW THE CONTRACTOR TO STAGE IN THE TRAVELED ROADWAY OF THE APPROACHES TO THE BRIDGE DURING THE CLOSURE PERIOD. ANY STAGING AREAS OUTSIDE OF THIS SHALL BE CLEARED FOR RESOURCES THROUGH THE VTRANS ENVIRONMENTAL UNIT.

### TRAFFIC CONTROL

15. AS PART OF ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL INCLUSIVE)", THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN TO THE PROJECT MANAGER FOR APPROVAL IN ACCORDANCE WITH SUBSECTION 105.03 AND SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN AN APPROPRIATE DISCIPLINE IN THE STATE OF VERMONT. THE PLAN SHALL INCLUDE A LAYOUT SHOWING ALL ON- AND OFF-PROJECT SIGNS AND BARRICADES AND ANY OTHER DETAILS ASSOCIATED WITH THE TRAFFIC CONTROL.

16. ALL ITEMS REQUIRED TO PREPARE, SUBMIT, AND IMPLEMENT THE CONTRACTOR'S PLAN, INCLUDING ANY NECESSARY REVISIONS TO THE PLAN, WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)". THE PAY ITEM INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

    TRAFFIC CONTROL PLAN
    TEMPORARY TRAFFIC BARRIERS
    BARRICADES
    DRUMS/CONES
    ON PROJECT CONSTRUCTION SIGNING
    TEMPORARY PAVEMENT MARKINGS (IF REQUIRED)
    REMOVE AND RESET TRAFFIC BARRIER

    TRAFFIC CONTROL ITEMS NOT PAID FOR IN THE UNIT PRICE BID FOR ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)", AND PAID FOR SEPARATELY INCLUDE THE FOLLOWING:

    ITEM 630.10, "UNIFORMED TRAFFIC OFFICERS"
    ITEM 630.15, " FLAGGERS"
    ITEM 641.15, "PORTABLE CHANGEABLE MESSAGE SIGN"

    THE CONTRACTOR SHALL ALLOW TWO WEEKS FOR APPROVAL OF THE TRAFFIC CONTROL PLAN. NO WORK SHALL COMMENCE UNTIL THE CONTRACTOR HAS AN APPROVED TRAFFIC CONTROL PLAN.

    THE EXISTING CONCRETE TRAFFIC BARRIER ADJACENT TO THE BRIDGE IS TOWN OWNED AND SHALL BE REMOVED TO ACCOMMODATE BRIDGE WORK AND RESET ONCE THE BRIDGE WORK IS COMPLETED. SEE LAYOUT PLAN ON SHEET 9. THE CONTRACTOR SHALL CONTACT PUBLIC WORKS DIRECTOR STEVE BARRETT AT 1-802-254-4255 WITH ANY QUESTIONS. THIS WORK WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)" AS NOTED ABOVE. ANY DAMAGE TO THE TRAFFIC BARRIER DUE DIRECTLY TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE OR OWNER.

17. DURING CLOSURE PERIOD, TRAFFIC SHALL BE MAINTAINED BY AN OFF-SITE DETOUR TO BE SIGNED BY THE TOWN OF BRATTLEBORO. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CLOSURE SIGNAGE AS SHOWN ON SHEET 11 IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD AND VTRANS STANDARDS. PAYMENT FOR BRIDGE CLOSURE SIGNAGE WILL BE MADE UNDER ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)". ANY COORDINATION REQUIRED BETWEEN THE CONTRACTOR AND THE TOWN OF BRATTLEBORO WILL BE AT NO ADDITIONAL COST TO THE STATE. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS REGARDING THE CLOSURE PERIOD.

CLD 15-0223 MODEL: Sheet01

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BF 2000(26)

FILE NAME: z15J09Inotes-31.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: S. BEAUMONT
INDEX OF SHEETS & PROJECT NOTES SHEET 1

PLOT DATE: 3/8/2016
DRAWN BY: M. SMITH
CHECKED BY: J. FRENCH

## DECK REMOVAL AND RELATED ITEMS

18. PAVEMENT REMOVAL SHOULD BE LIMITED AS SHOWN ON THE PLANS. THIS WORK SHALL BE IN ACCORDANCE WITH SECTION 529 OF THE STANDARD SPECIFICATIONS.

19. ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE" WILL INCLUDE REMOVAL OF ANY PORTIONS OF THE EXISTING STRUCTURE AS SHOWN ON THE PLANS, INCLUDING THE EXISTING BRIDGE DECK, CURTAIN WALLS, WINGWALLS, AND BRIDGE RAILING. THE EXISTING CONCRETE CURTAIN WALLS AND WINGWALLS SHALL BE REMOVED BY MECHANICAL MEANS AND THE REMAINING CONCRETE SHALL HAVE NEAT LINES AND BE SMOOTH. PROTECT ALL ELEMENTS INTENDED TO REMAIN.

20. DURING EXCAVATION OF BRIDGE CURTAIN WALL, ALL DRAINAGE STRUCTURES AND PIPES SHALL BE SUPPORTED AND SHALL REMAIN IN-PLACE. PAYMENT FOR SUPPORTING DRAINAGE STRUCTURES WILL BE CONSIDERED INCIDENTAL TO 203.15, "COMMON EXCAVATION".

21. AFTER REMOVAL OF THE EXISTING BRIDGE DECK AND CURTAIN WALL, ANY AREAS ON THE CONCRETE BEAM SEAT THAT ARE FOUND TO BE UNSOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE METHOD FOR DETERMINING AREAS OF UNSOUND CONCRETE SHALL BE APPROVED BY THE ENGINEER. THE ENGINEER SHALL MAKE A DETERMINATION AS TO HOW TO REPAIR THE DETERIORATED PORTION OF THE CONCRETE BEAM SEAT AND THE LIMITS OF THE REPAIR. THE REPAIRS WILL BE PAID FOR UNDER ITEM 580.13, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I" OR ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II, AS APPLICABLE. QUANTITIES FOR ITEMS 580.13 AND 580.14 AS SHOWN ON THE QUANTITY SUMMARY SHEETS ARE ESTIMATED.

## STEEL

22. AFTER ALL PAVEMENT AND MEMBRANE ARE REMOVED BUT PRIOR TO THE REMOVAL OF THE EXISTING CONCRETE DECK, THE CONTRACTOR SHALL TAKE TOP OF DECK ELEVATIONS ALONG THE CENTERLINE OF EACH BEAM AT TENTH POINTS FROM CENTERLINE TO CENTERLINE OF BEARING. AFTER THE EXISTING CONCRETE DECK HAS BEEN REMOVED, THE CONTRACTOR SHALL TAKE ELEVATIONS ALONG THE TOP OF EACH BEAM AT TENTH POINTS FROM CENTERLINE TO CENTERLINE OF BEARING. THE TOP OF DECK AND TOP OF BEAM ELEVATIONS SHALL THEN BE SENT TO THE ENGINEER FOR USE IN DETERMINING THE FINAL PROFILE AND HAUNCH DEPTHS. THE CONTRACTOR SHALL EXPECT 3 WORKING DAYS FOR VTRANS TO PREPARE THE REVISED PROFILE AND HAUNCH DEPTH CALCULATIONS.

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

24. UPON REMOVING THE DECK, THE TOPS OF THE BEAMS IN THE AREA OF THE SHEAR STUDS SHALL BE CLEANED IN ACCORDANCE WITH SSPC-SPII REQUIREMENTS AND ALL APPLICABLE PROVISIONS PRIOR TO THE WELDING OF THE SHEAR STUDS. THE CONTRACTOR IS NOT REQUIRED TO APPLY NEW PAINT. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE", EXCEPT AS NOTED IN PROJECT NOTE 25.

25. THE CONTRACTOR SHALL TEST ALL AREAS WHERE EXISTING PAINT IS TO BE REMOVED FOR LEAD. PAYMENT FOR LEAD PAINT TESTING WILL BE CONSIDERED INCIDENTAL TO ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE". IF LEAD PAINT REMOVAL IS REQUIRED, PAINT REMOVAL, SURFACE PREPARATION, CONTAINMENT, AND DISPOSAL WILL BE PAID FOR AS EXTRA WORK IN ACCORDANCE WITH 104.03. THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH ALL NECESSARY LEAD ABATEMENT PERMITS.

26. THE SHEAR CONNECTORS SHALL BE SPACED AS SHOWN ON THE PLANS AND WILL BE PAID FOR UNDER ITEM 508.15, "SHEAR CONNECTORS (1266 - 8" X 7/8")".

## REINFORCED CONCRETE

27. ALL CONCRETE SHALL CONFORM TO THE SPECIFICATIONS FOR CONCRETE, HIGH PERFORMANCE CLASS A. THE CONTRACTOR SHALL PROVIDE TESTING EQUIPMENT FOR CONCRETE IN ACCORDANCE WITH SUBSECTION 631.05.

28. A REINFORCING STEEL SCHEDULE AND SHOP DRAWINGS MEETING THE REQUIREMENTS OF SUBSECTION 105.03 SHALL BE SUBMITTED. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 507.11, "REINFORCING STEEL, LEVEL I" OR TO ITEM 900.640 "SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION)", AS APPLICABLE. ALL REINFORCING STEEL SHALL BE LEVEL I - EPOXY COATED AND MEET THE REQUIREMENTS OF SECTION 507.

29. TEST BARS SHALL BE PROVIDED IN ACCORDANCE WITH THE "VERMONT AGENCY OF TRANSPORTATION MATERIAL SAMPLING MANUAL" AVAILABLE ON THE AGENCY WEBSITE. A MINIMUM OF TWO TEST SECTIONS ARE REQUIRED FOR EACH SIZE, BRAND, AND GRADE OR TYPE OF REINFORCING. SEE THE MANUAL FOR ACCEPTABLE DIMENSIONS OF TEST SECTIONS. EXTRA BARS FOR TESTING PURPOSES SHALL BE SPECIFIED IN THE WORKING DRAWING SUBMITTAL.

30. ALL BEAM SEATS SHALL BE CLEANED OFF AND WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF THE DECK BETWEEN THE DRIP NOTCHES. THIS WORK, INCLUDING CLEANING OF BEAM SEATS, WILL BE PAID FOR UNDER ITEM 514.10, "WATER REPELLENT, SILANE".

31. THE CORK JOINT BETWEEN THE EXISTING CHEEKWALLS AND CAST-IN-PLACE CONCRETE CURTAIN WALL WILL BE CONSIDERED INCIDENTAL TO ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".

32. THE PREFORMED JOINT SEALER, CLOSED CELL FOAM BETWEEN THE CAST-IN-PLACE CONCRETE CURTAIN WALL AND THE EXISTING BRIDGE SEAT SHALL MEET THE REQUIREMENTS OF SUBSECTION 707.09 AND WILL BE CONSIDERED INCIDENTAL TO ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".

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

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

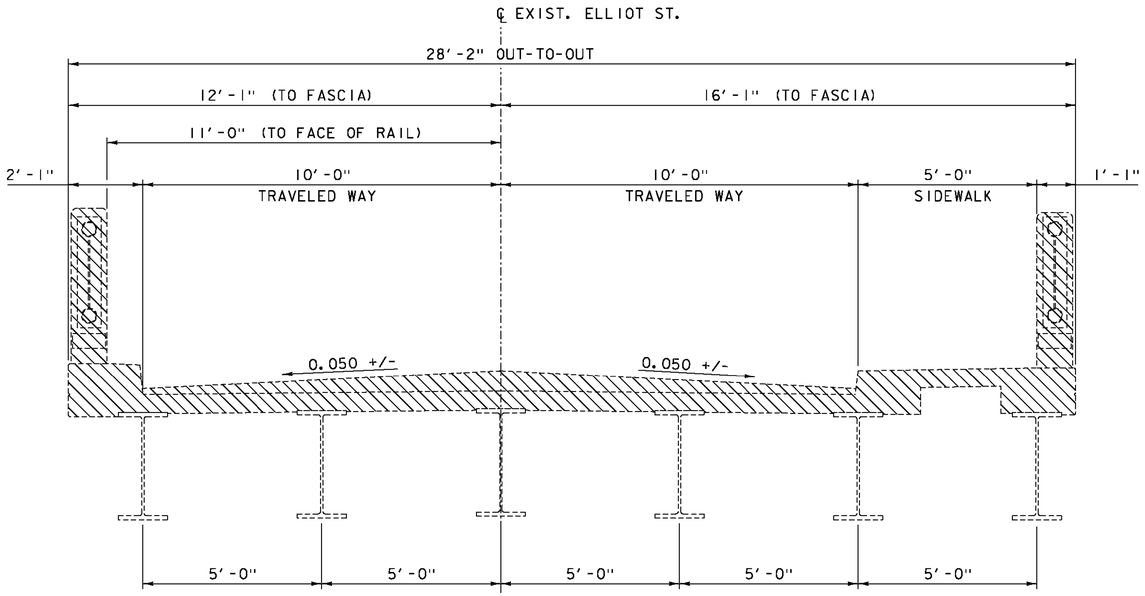
| | |
|---|---|
| ALONG BACK FACES OF WALL AGAINST EARTH: | 2.0 INCH |
| ALONG TOP SURFACE OF DECK SLAB: | 3.0 INCH |
| ALONG BOTTOM SURFACE OF DECK SLAB: | 1.5 INCH |
| ELSEWHERE UNLESS OTHERWISE INDICATED: | 3.0 INCH |

CLD 15-0223 MODEL: Sheet02

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j09notes-31.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: S. BEAUMONT
INDEX OF SHEETS & PROJECT NOTES SHEET 2

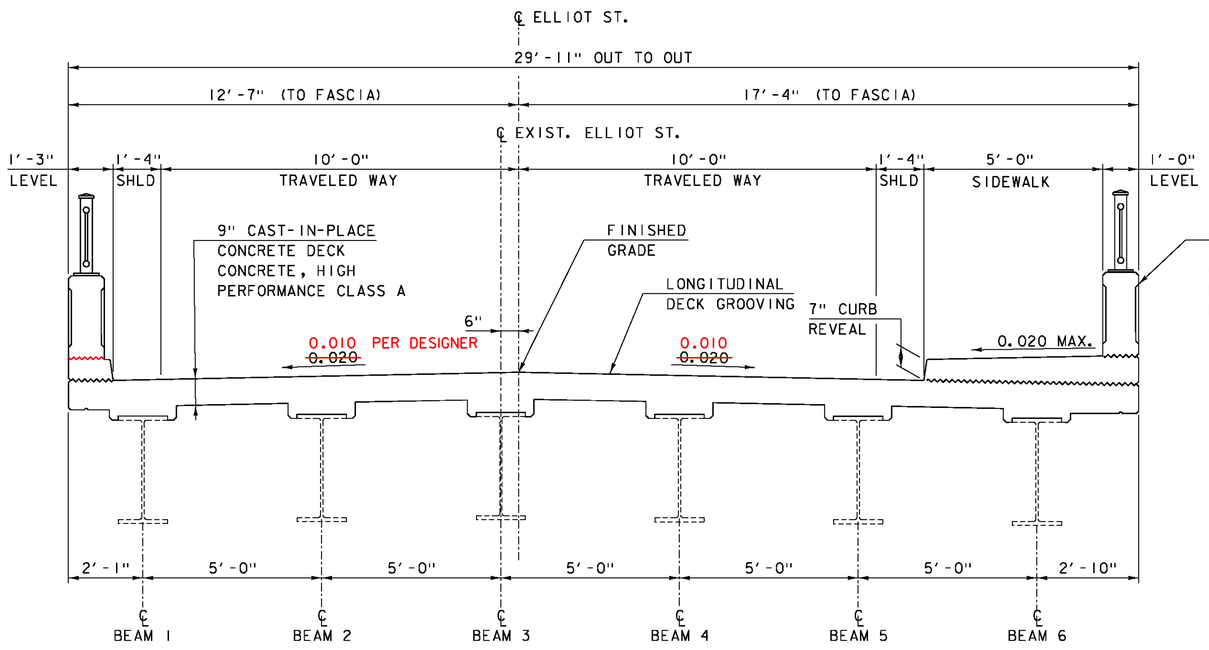
PLOT DATE: 3/8/2016
DRAWN BY: M. SMITH
CHECKED BY: J. FRENCH
SHEET 3 OF 26




## EXISTING TYPICAL BRIDGE SECTION

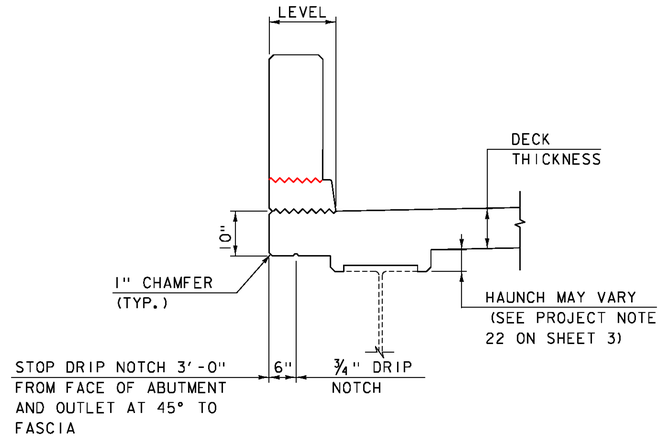
SCALE: 1/2" = 1'-0"

PARTIAL REMOVAL OF STRUCTURE



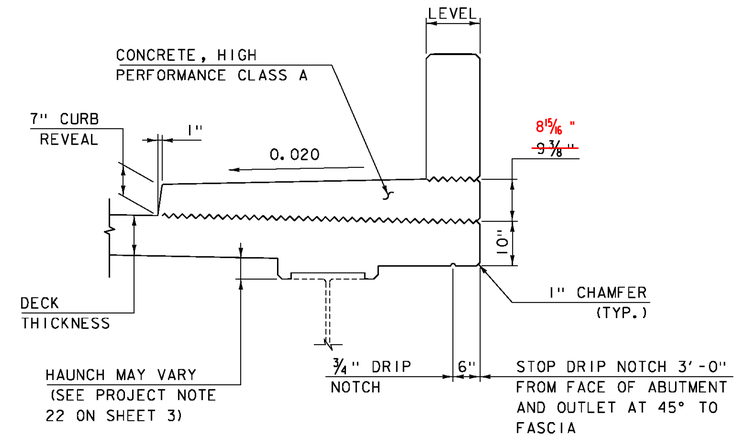

## TYPICAL BRIDGE SECTION

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




## CURB FASCIA AND DRIP NOTCH DETAIL

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

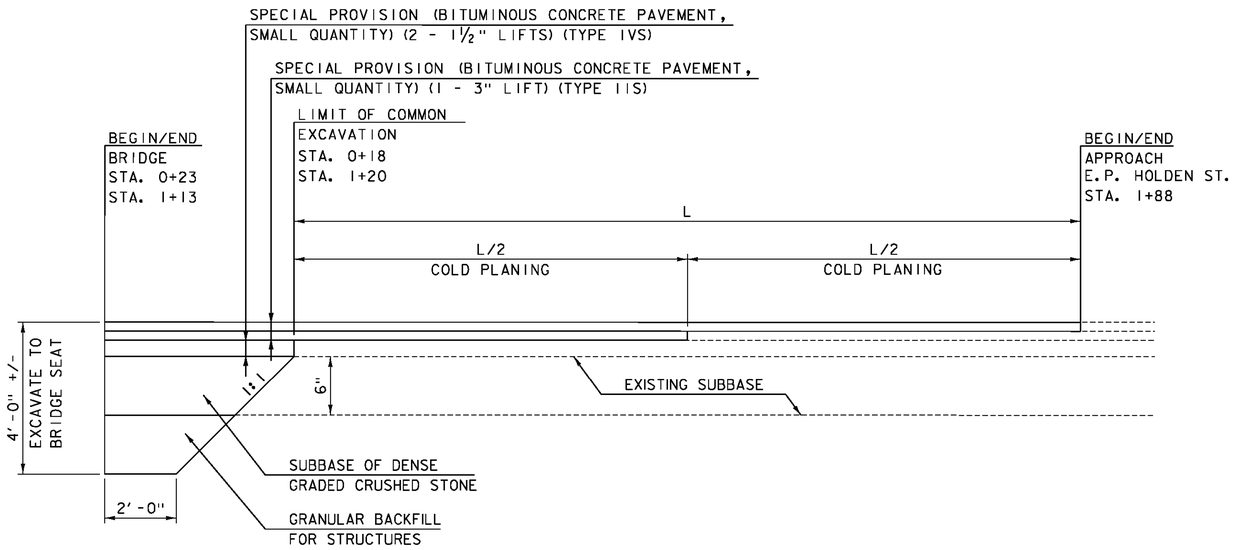



## SIDEWALK FASCIA AND DRIP NOTCH DETAIL

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

CLD 15-0223 MODEL: TYP01

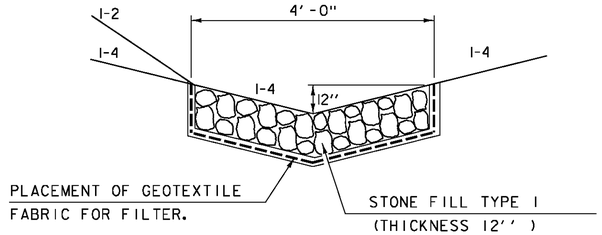
| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BF 2000(26) |
| FILE NAME: z15J09ltyp-31.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: M. SMITH |
| DESIGNED BY: N. CARON | CHECKED BY: S. BEAUMONT |
| TYPICALS BRIDGE SECTIONS SHEET | SHEET 4 OF 26 |




## MATERIAL TRANSITION DIAGRAM

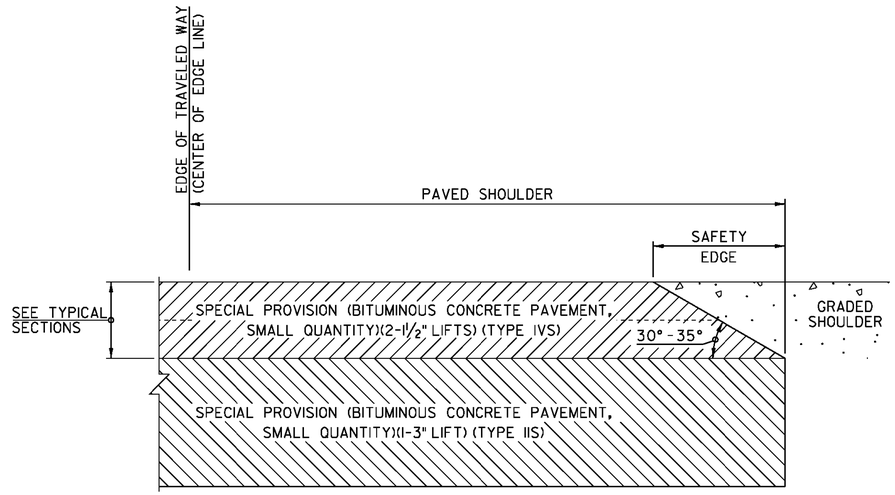
NOT TO SCALE

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




## TYPICAL STONE FILL DITCH

NOT TO SCALE



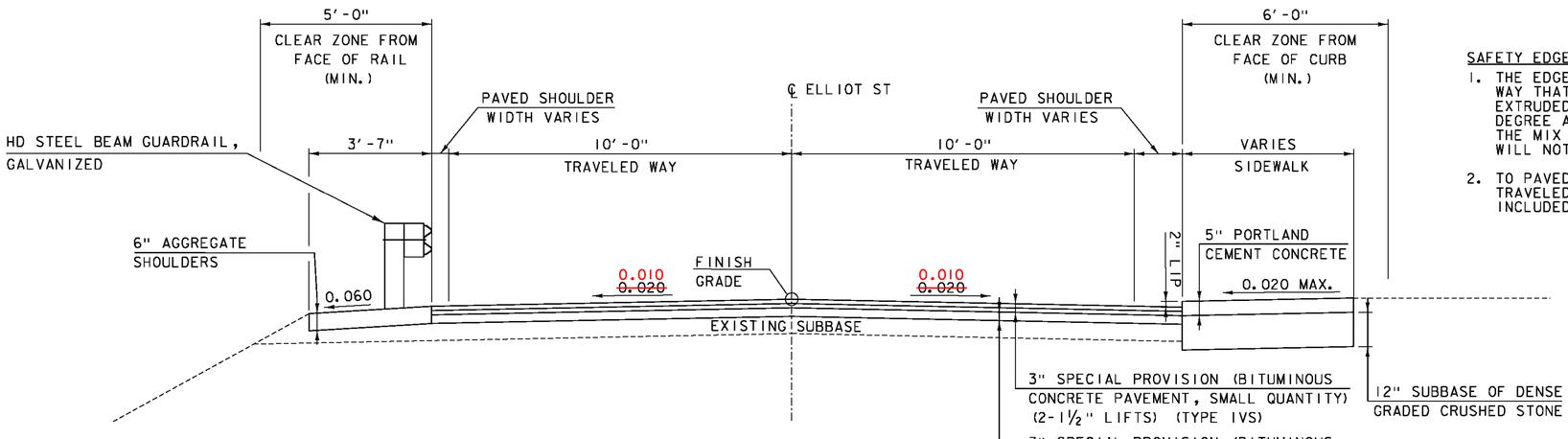

## SAFETY EDGE DETAIL

NOT TO SCALE

SAFETY EDGE NOTES

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

3" SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) (2 - 1½" LIFTS) (TYPE IVS)
3" SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) (1 - 3" LIFT) (TYPE IIS)




## ELLIOT ST (TH #446) TYPICAL SECTION

SCALE: ½" = 1'-0"

CLD 15-0223 MODEL: TYP02

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BF 2000(26) |
| FILE NAME: z15j09ltyp-31.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: P. McKECHNIE |
| DESIGNED BY: L. GREER | CHECKED BY: S. FORTIER |
| TYPICAL ROADWAY SECTIONS SHEET | SHEET 5 OF 26 |

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# QUANTITY SHEET 1

| SUMMARY OF ESTIMATED QUANTITIES | | | | TOTALS | | DESCRIPTIONS | | | | DETAILED SUMMARY OF QUANTITIES | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROADWAY | EROSION CONTROL | BRIDGE NO. 31 | FULL C.E. ITEMS | GRAND TOTAL | FINAL | UNIT | ITEMS | ITEM NUMBER | ROUND | QUANTITIES | UNIT | ITEMS |
| 1 | | | | 1 | | LS | CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS | 201.10 | - | | | |
| 50 | | | | 50 | | CY | COMMON EXCAVATION | 203.15 | 3 | | | |
| 1 | | | | 1 | | CY | TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.) | 204.22 | - | | | |
| 35 | | | | 35 | | CY | GRANULAR BACKFILL FOR STRUCTURES | 204.30 | 5 | | | |
| 425 | | | | 425 | | SY | COLD PLANING, BITUMINOUS PAVEMENT | 210.10 | 8 | | | |
| 15 | | | | 15 | | CY | SUBBASE OF DENSE GRADED CRUSHED STONE | 301.35 | 1.9 | | | |
| 10 | | | | 10 | | TON | AGGREGATE SHOULDERS | 402.12 | 1 | | | |
| 1 | | | | 1 | | LU | PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.) | 406.50 | - | | | |
| | | 110 | | 110 | | CY | CONCRETE, HIGH PERFORMANCE CLASS A | 501.33 | 0.2 | | | |
| | | 20941 | | 20941 | | LB | REINFORCING STEEL, LEVEL I | 507.11 | 0.98 | | | |
| | | 1 | | 1 | | LS | SHEAR CONNECTORS (1266 - 8" X 7/8") | 508.15 | - | | | |
| | | 234 | | 234 | | SY | LONGITUDINAL DECK GROOVING | 509.10 | 0.49 | | | |
| | | 38 | | 38 | | GAL | WATER REPELLENT, SILANE | 514.10 | 0.25 | | | |
| | | 37 | | 37 | | LF | BRIDGE EXPANSION JOINT, ASPHALTIC PLUG | 516.10 | 0.33 | | | |
| | | 23 | | 23 | | LF | JOINT SEALER, HOT POURED | 524.11 | 0.33 | | | |
| | | 1 | | 1 | | EACH | PARTIAL REMOVAL OF STRUCTURE | 529.20 | - | | | |
| | | 10 | | 10 | | SY | REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I | 580.13 | EST. | | | |
| | | 10 | | 10 | | SY | REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II | 580.14 | EST. | | | |
| 4 | | | | 4 | | EACH | REHAB. DROP INLETS, CATCH BASINS, OR MANHOLES, CLASS I | 604.412 | - | | | |
| 1 | | | | 1 | | EACH | CHANGING ELEVATION OF SEWER MANHOLES | 604.42 | - | | | |
| 1 | | | | 1 | | CY | STONE FILL, TYPE I | 613.10 | - | | | |
| 8 | | | | 8 | | LF | CAST-IN-PLACE CONCRETE CURB, TYPE B | 616.28 | - | | | |
| 15 | | | | 15 | | SY | PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH | 618.10 | 1 | | | |
| | | 10 | | 10 | | SF | DETECTABLE WARNING SURFACE | 618.30 | - | | | |
| 37.5 | | | | 37.5 | | LF | HD STEEL BEAM GUARDRAIL, GALVANIZED | 621.21 | - | | | |
| 3 | | | | 3 | | EACH | STEEL BEAM GUARDRAIL OFFSET BLOCK | 621.219 | - | | | |
| 1 | | | | 1 | | EACH | MANUFACTURED TERMINAL SECTION, FLARED | 621.50 | - | | | |
| 2 | | | | 2 | | EACH | ANCHOR FOR STEEL BEAM RAIL | 621.60 | - | | | |
| 40 | | | | 40 | | LF | REMOVAL AND DISPOSAL OF GUARDRAIL | 621.80 | 3 | | | |
| 3 | | | | 3 | | EACH | GUIDE POSTS | 621.85 | - | | | |
| 1 | | | | 1 | | EACH | ADJUST ELEVATION OF VALVE BOX | 629.20 | - | | | |
| 40 | | | | 40 | | HR | UNIFORMED TRAFFIC OFFICERS | 630.10 | - | | | |
| 120 | | | | 120 | | HR | FLAGGERS | 630.15 | - | | | |
| | | | 1 | 1 | | LS | FIELD OFFICE, ENGINEERS | 631.10 | - | | | |
| | | | 1 | 1 | | LS | TESTING EQUIPMENT, CONCRETE | 631.16 | - | | | |
| | | | 1 | 1 | | LS | TESTING EQUIPMENT, BITUMINOUS | 631.17 | - | | | |
| | | | 3000 | 3000 | | DL | FIELD OFFICE TELEPHONE (N.A.B.I.) | 631.26 | - | | | |
| 1 | | | | 1 | | LS | MOBILIZATION/DEMOBILIZATION | 635.11 | - | | | |
| 2 | | | | 2 | | EACH | PORTABLE CHANGEABLE MESSAGE SIGN | 641.15 | - | | | |
| 200 | | | | 200 | | LF | DURABLE 4 INCH WHITE LINE, THERMOPLASTIC | 646.402 | 20 | | | |

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j09qss-31.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: J. FRENCH
QUANTITY SHEET 1

PLOT DATE: 2/26/2016
DRAWN BY: M. SMITH
CHECKED BY: A. GIRALDI
SHEET 6 OF 26

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# QUANTITY SHEET 2

## SUMMARY OF ESTIMATED QUANTITIES

| ROADWAY | EROSION CONTROL | BRIDGE NO. 31 | FULL C.E. ITEMS | GRAND TOTAL | FINAL | UNIT | ITEMS | ITEM NUMBER | ROUND |
|---|---|---|---|---|---|---|---|---|---|
| 350 | | | | 350 | | LF | DURABLE 4 INCH YELLOW LINE, THERMOPLASTIC | 646.412 | 20 |
| 10 | | | | 10 | | LF | DURABLE 24 INCH STOP BAR | 646.480 | - |
| 5 | | | | 5 | | SY | GEOTEXTILE UNDER STONE FILL | 649.31 | 1 |
| 3 | | | | 3 | | EACH | REMOVING SIGNS | 675.50 | - |
| 2 | | | | 2 | | EACH | ERECTING SALVAGED SIGNS | 675.60 | - |
| 1 | | | | 1 | | EACH | SETTING SALVAGED POSTS | 675.61 | - |
| 2 | | | | 2 | | EACH | DELINEATOR WITH STEEL POST | 676.10 | - |
| 6 | | | | 6 | | EACH | SPECIAL PROVISION (CPM SCHEDULE) | 900.620 | - |
| | | 185.13 | | 185.13 | | LF | SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION) | 900.640 | - |
| 1 | | | | 1 | | LS | SPECIAL PROVISION (TRAFFIC CONTROL, ALL INCLUSIVE) | 900.645 | - |
| 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 | - |
| 15 | | | | 15 | | SY | SPECIAL PROVISION (HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES) | 900.675 | 4 |
| 70 | | | | 70 | | TON | SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) | 900.680 | 3 |

## DETAILED SUMMARY OF QUANTITIES

| QUANTITIES | UNIT | ITEMS |
|---|---|---|
| | | **SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)** |
| 61 | TON | TYPE IVS |
| 6 | TON | TYPE IIS |
| 67 | TON | SUBTOTAL |
| 3 | TON | ROUNDING |
| 70 | TON | TOTAL |

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j09qss-31.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: S. BEAUMONT
QUANTITY SHEET 2

PLOT DATE: 2/26/2016
DRAWN BY: M. SMITH
CHECKED BY: A. GIRALDI
SHEET 7 OF 26

## GENERAL INFORMATION

### SYMBOLOGY LEGEND NOTE

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

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

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

## COMMON TOPOGRAPHIC POINT SYMBOLS

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

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

## PROPOSED GEOMETRY CODES

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

## UTILITY SYMBOLOGY

### UNDERGROUND UTILITIES

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

### ABOVE GROUND UTILITIES (AERIAL)

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

## PROJECT CONSTRUCTION SYMBOLOGY

### PROJECT DESIGN & LAYOUT SYMBOLOGY

- CZ — CLEAR ZONE
- PLAN LAYOUT MATCHLINE

### PROJECT CONSTRUCTION FEATURES

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

## CONVENTIONAL BOUNDARY SYMBOLOGY

### BOUNDARY LINES

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

## EPSC LAYOUT PLAN SYMBOLOGY

### EPSC MEASURES

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

### ENVIRONMENTAL RESOURCES

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

### ARCHEOLOGICAL & HISTORIC

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

## CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

### EXISTING FEATURES

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

CLD 15-0223 MODEL: Sheet

CONSULTING ENGINEERS

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BF 2000(26) |
| FILE NAME: z1509legend-3i.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: P. McKECHNIE |
| DESIGNED BY: L. GREER | CHECKED BY: S. FORTIER |
| CONVENTIONAL SYMBOLOGY LEGEND SHEET | SHEET 8 OF 26 |

TREATED TIMBER CURB
I+13 - I+28 LT

EXISTING BRIDGE DATA:

ROLLED BEAMS, CONCRETE DECK
SPAN = 88'-0"
WIDTH = 28'-2" OUT TO OUT
BUILT IN 1947

0+24 LT
ONE LANE BRIDGE R
R

DURABLE 4 INCH WHITE LINE, THERMOPLASTIC
0+23 TO I+13 SOLID LT & RT
DURABLE 4 INCH YELLOW LINE, THERMOPLASTIC
0+23 TO I+88 SOLID LT & RT
DURABLE 24 INCH STOP BAR
0+11 TO 0+20 RT
REMOVING SIGNS
0+24 LT
0+21 RT (2)
ERECTING SALVAGED SIGN
0+21 RT (2)
SETTING SALVAGED POST
0+21 RT

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
I+13 TO I+38 RT
STONE FILL, TYPE I
GEOTEXTILE UNDER STONE FILL
I+13 TO I+17 ~~LT~~ RT
CAST-IN-PLACE CONCRETE CURB, TYPE B (FOR SIDEWALK RAMP TIP DOWN)
I+13 TO I+21 RT
DETECTABLE WARNING SURFACE
0+31 RT

REHAB. DROP INLETS, CATCH BASINS, OR MANHOLES, CLASS I
2 - AS SHOWN AT EP
0+19 LT
I+80 RT
CHANGING ELEVATION OF SEWER MANHOLES
0+13 RT
ADJUST ELEVATION OF VALVE BOX
0+10 RT
~~REMOVE AND RESET TEMPORARY TRAFFIC BARRIER~~
~~0+20 TO 0+21 RT~~

REMOVAL AND DISPOSAL OF GUARDRAIL
I+13 TO I+46 LT
HD STEEL BEAM GUARDRAIL, GALVANIZED
I+13 TO I+23 LT
I+13 TO I+21 RT
ANCHOR FOR STEEL BEAM RAIL
~~I+15 RT~~
I+19 RT
DELINEATOR WITH STEEL POST
I+47 LT
I+21 RT
MANUFACTURED TERMINAL SECTION, FLARED
I+23 TO I+47 LT

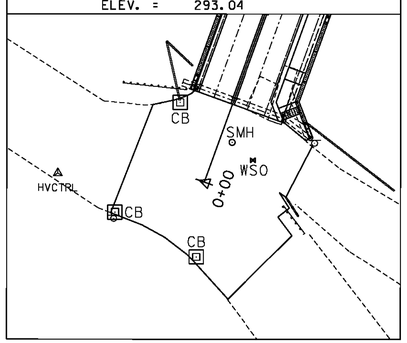
CURVE (1)
DELTA = 54°05'35" RT
D = 67°24'24"
R = 85.00'
T = 43.40'
L = 80.25'
E = 10.44'

VT STATE PLANE GRID

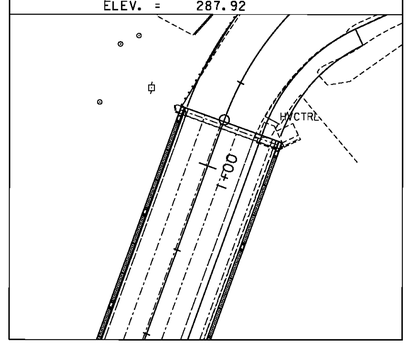
EXISTING RIGHT-OF-WAY
RETAIN EXISTING GUARDRAIL
BEGIN APPROACH MATCH EXISTING
END APPROACH BEGIN PROJECT STA 0+18
BEGIN BRIDGE STA 0+23
EXISTING RIGHT-OF-WAY
WHETSTONE BROOK
PROPOSED GUY WIRE ANCHOR (15 FT LEAD) BY OTHERS
END BRIDGE STA I+13
END PROJECT BEGIN APPROACH STA I+38
PROPOSED GUY WIRE ANCHOR (12 FT LEAD) BY OTHERS
℄ BRG. ABUT. 1 (EXP.)
℄ BRG. ABUT. 2 (FIXED.)
88'-0"
APPROX. LOCATION OF PIPE
PROPOSED UTILITY POLE BY OTHERS
EXISTING UTILITY POLE AND ANCHORS TO BE REMOVED
STA I+50.50 AHD
STA I+57.05 BK
CB
SMH
WSO
0+00
I+00
90°00'-00" ANGLE OF CROSSING
N19°52'17.45"E
FACE OF BRIDGE RAIL (TYP.)
4"WL
4"YL
4"YL
FACE OF CURB
4"WL
TREATED TIMBER CURB
ELLIOT ST (TH #446) TO US 5
LIMITS OF COMMON EXCAVATION
SAWED PAVEMENT JOINT
LIMITS OF COMMON EXCAVATION
NEW 12" CPEP
END APPROACH STA I+88
WILLIAMS STREET
R 10.0
SIDEWALK RAMP (SEE SHEET 14)
SAWED PAVEMENT ~~ASPHALTIC PLUG~~ JOINT
0+21 RT EXISTING RIGHT-OF-WAY
REMOVE AND RESET TRAFFIC BARRIER AS NEEDED TO CONSTRUCT NEW WORK
FROST PL.
Frost Pl R&S
STOP R&S
R&S
PC I+13.65
R 50.0
END GUARDRAIL
N73°57'52.56"E
2+00
PT I+93.90
MATCH PORTLAND CEMENT SIDEWALK TO BRIDGE SIDEWALK. USE CAST-IN-PLACE CONCRETE CURB FOR RAMP TIP DOWN TO MATCH INTO EXISTING.
LIMIT OF CONCRETE SIDEWALK STA I+38
FROST STREET

KEY TO PAVEMENT MARKINGS
WL = SOLID WHITE LINE
YL = SOLID YELLOW LINE

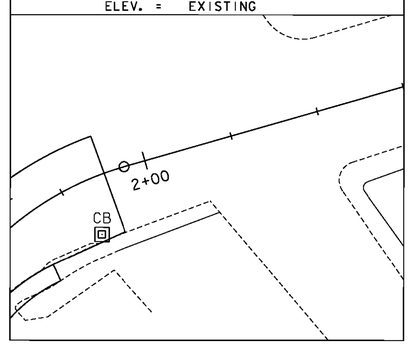
| BEGIN ALIGNMENT | |
|---|---|
| NORTH = | 127326.27 |
| EAST = | 1622191.47 |
| ELEV. = | 293.04 |




| PC I+13.65 | |
|---|---|
| NORTH = | 127483.15 |
| EAST = | 1622230.11 |
| ELEV. = | 287.92 |




| PT I+93.90 | |
|---|---|
| NORTH = | 127535.95 |
| EAST = | 1622286.56 |
| ELEV. = | EXISTING |




NOTE: NO TREES SHALL BE REMOVED.

0 10 20
(SCALE 1" = 10')

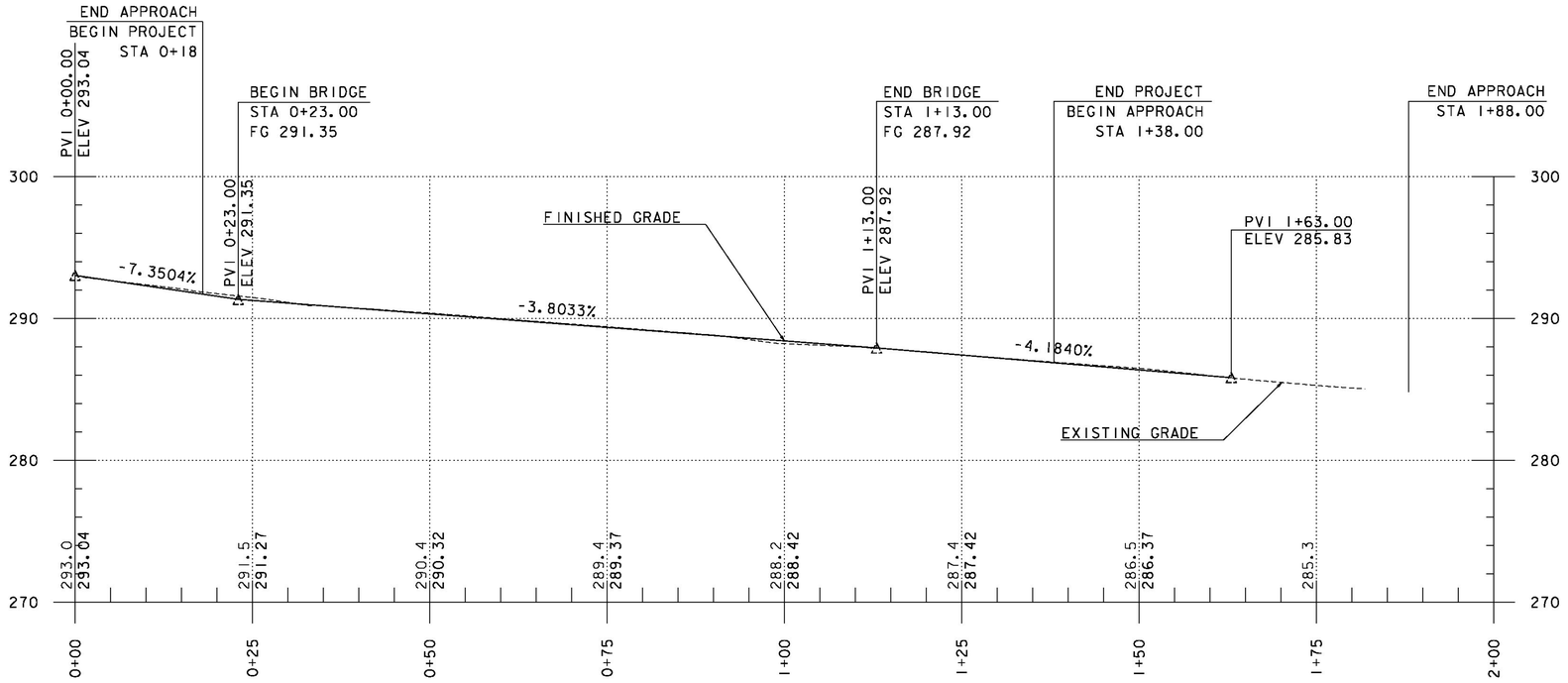
CONSULTING ENGINEERS

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BF 2000(26)

FILE NAME: z15J091bdr-31.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: L. GREER
LAYOUT SHEET

PLOT DATE: 2/26/2016
DRAWN BY: P. McKECHNIE
CHECKED BY: S. FORTIER
SHEET 9 OF 26

CLD 15-0223 MODEL: Layout 01




NOTES

1. STATIONS AND ELEVATIONS ARE IN FEET.
2. THE ELEVATIONS SHOWN TO THE NEAREST TENTH ARE THE EXISTING GROUND ALONG THE CENTERLINE.
3. THE ELEVATIONS SHOWN TO THE NEAREST HUNDRETH ARE THE FINISHED GRADE ALONG THE CENTERLINE.
4. PROPOSED PROFILE SHOWN IS FOR INFORMATIONAL PURPOSES ONLY. FINAL FINISHED GRADE SHALL BE DETERMINED BY THE PROJECT MANAGER AFTER EXISTING TOP OF DECK AND TOP OF BEAM ELEVATIONS ARE SURVEYED. SEE PROJECT NOTE 22 ON SHEET 3.

## ELLIOT STREET PROFILE

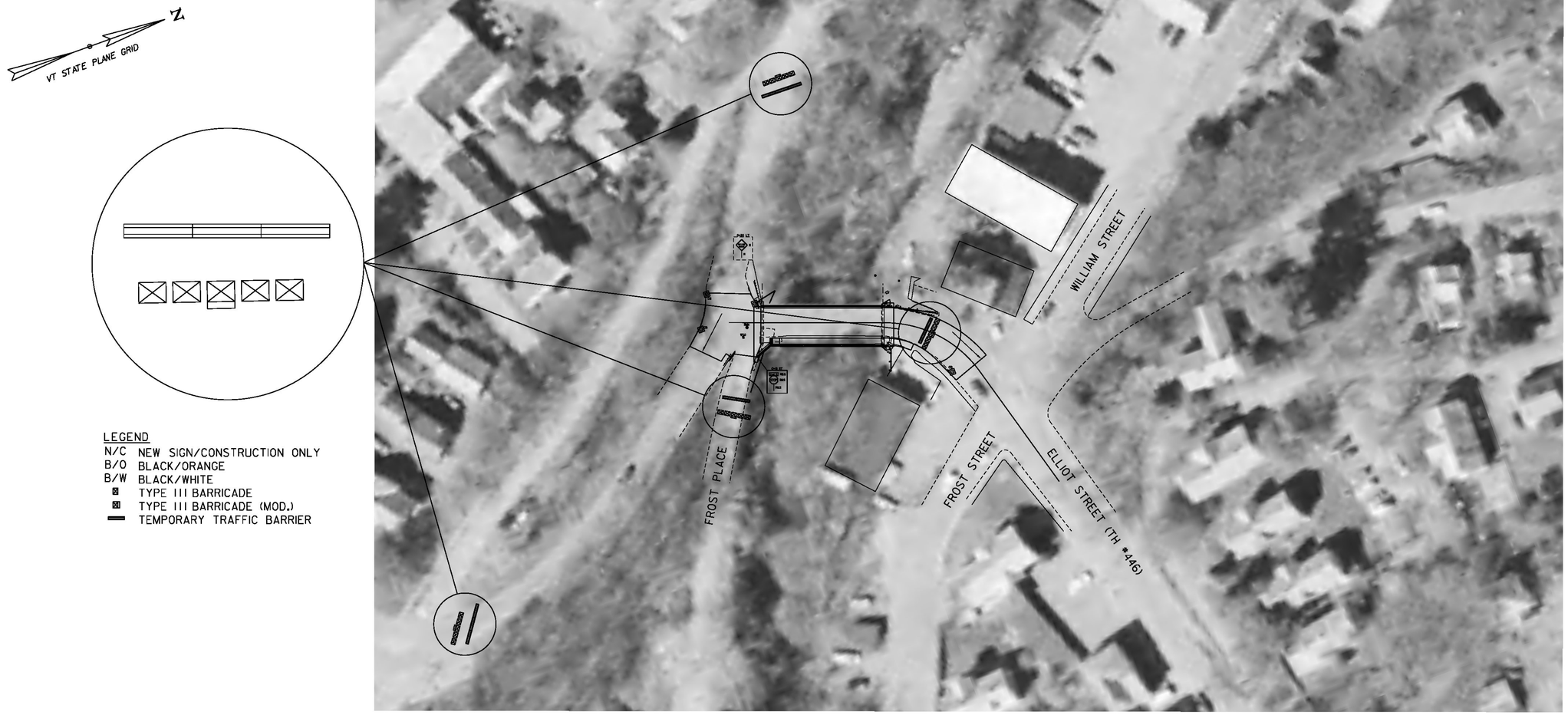
HOR. SCALE 1" = 20'-0"
VER. SCLAE 1" = 10'-0"

CLD 15-0223 MODEL: PROFILE 01

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BF 2000(26)

FILE NAME: z15109lpro-31.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: L. GREER
PROFILE SHEET

PLOT DATE: 2/5/2016
DRAWN BY: J. FOWLER
CHECKED BY: S. FORTIER
SHEET 10 OF 26




LEGEND

| | |
|---|---|
| N/C | NEW SIGN/CONSTRUCTION ONLY |
| B/O | BLACK/ORANGE |
| B/W | BLACK/WHITE |
| ⊠ | TYPE III BARRICADE |
| ⊠ | TYPE III BARRICADE (MOD.) |
| ═ | TEMPORARY TRAFFIC BARRIER |

**TRAFFIC DATA**

| LOCATION | AADT | | DHV | | %T | | %D | | ADTT | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2035 | 2015 | 2035 | 2015 | 2035 | 2015 | 2035 | 2015 | 2035 |
| ELLIOT STREET | 4800 | 4900 | 640 | 650 | 1.4 | 2.1 | 54 | 54 | 60 | 90 |

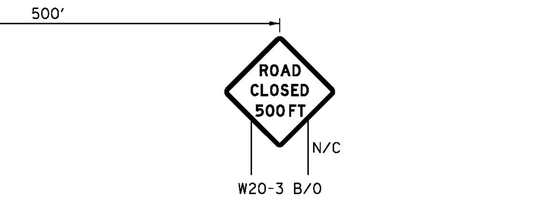
NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SIGNS AND BARRICADES SHOWN ON THIS SHEET. THEY WILL BE PAID FOR UNDER ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".

2. ANY TEMPORARY TRAFFIC BARRIER REQUIRED WILL BE CONSIDERED INCIDENTAL TO PAY ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)" AND FURNISHED IN ACCORDANCE WITH SECTION 621.

3. THE CONTRACTOR WILL PLACE ONE PORTABLE CHANGABLE MESSAGE SIGN ON EACH END OF PROJECT A MINIMUM OF TWO WEEKS PRIOR TO THE CLOSURE OF ELLIOT STREET (TH #446). THE MESSAGE SIGNS SHALL INDICATE THE ANTICIPATED BRIDGE CLOSURE PERIOD AND WILL BE PAID FOR UNDER ITEM 641.15, "PORTABLE CHANGEABLE MESSAGE SIGN".

R11-2 B/W SIGN
MOUNTED ON TYPE I
II BARRICADE
(MODIFIED)




W20-3 B/O

LOCATE ON FROST PLACE, FROST STREET
ELLIOT STREET (TH #446), AND WILLIAM STREET
AS WELL AS BIRGE STREET AND ESTEY STREET TO THE WEST

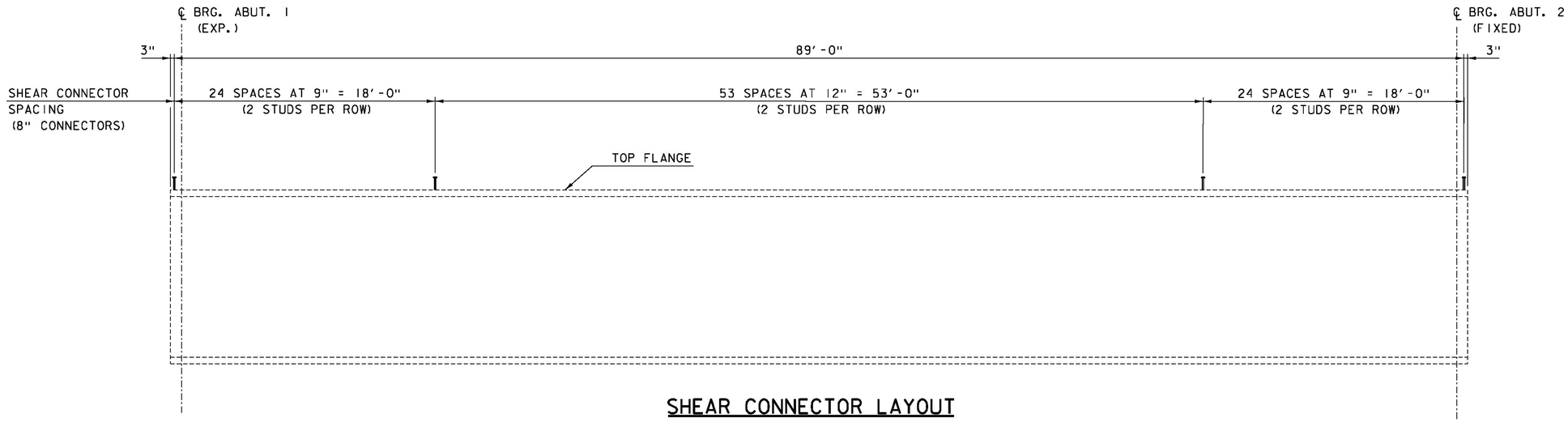
SCALE 1" = 40'-0"
40 0 40

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BF 2000(26)

FILE NAME: z15j09lbdr-tcp-31.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: L. GREER
BRIDGE CLOSURE SIGNAGE SHEET

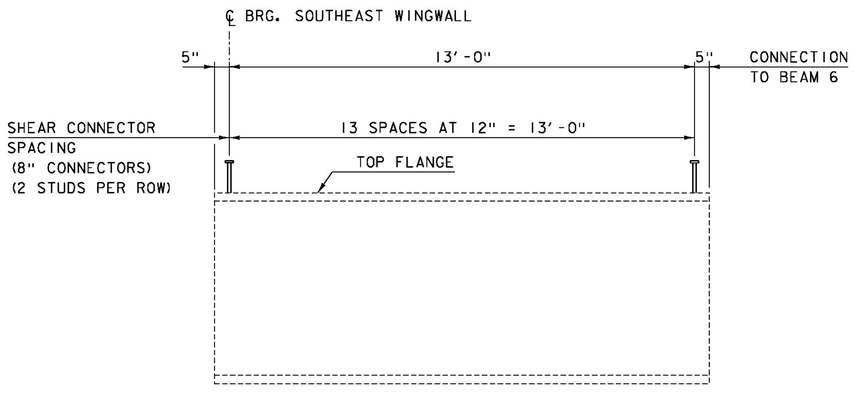
PLOT DATE: 2/5/2016
DRAWN BY: J. FOWLER
CHECKED BY: S. FORTIER
SHEET 11 OF 26

CLD 15-0223 MODEL: Layout 01



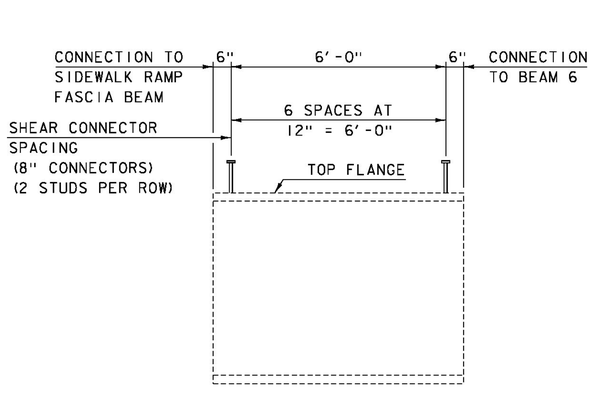

## SHEAR CONNECTOR LAYOUT

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



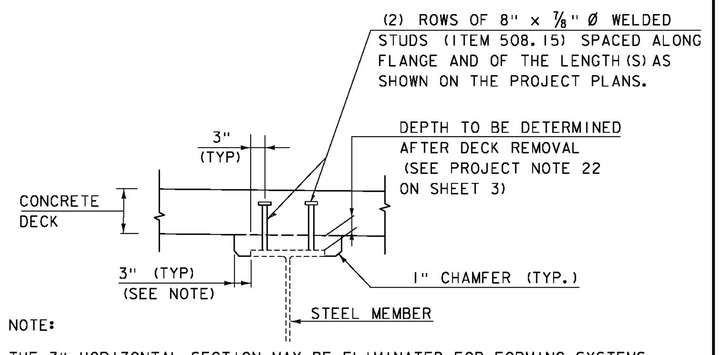

## SHEAR CONNECTOR LAYOUT FOR SIDEWALK RAMP FASCIA BEAM

HORIZONTAL SCALE: 1/2" = 1'-0"
VERTICAL SCALE: 1/8" = 1'-0"




## SHEAR CONNECTOR LAYOUT FOR SIDEWALK RAMP INTERIOR BEAM

HORIZONTAL SCALE: 1/2" = 1'-0"
VERTICAL SCALE: 1/8" = 1'-0"




NOTE:

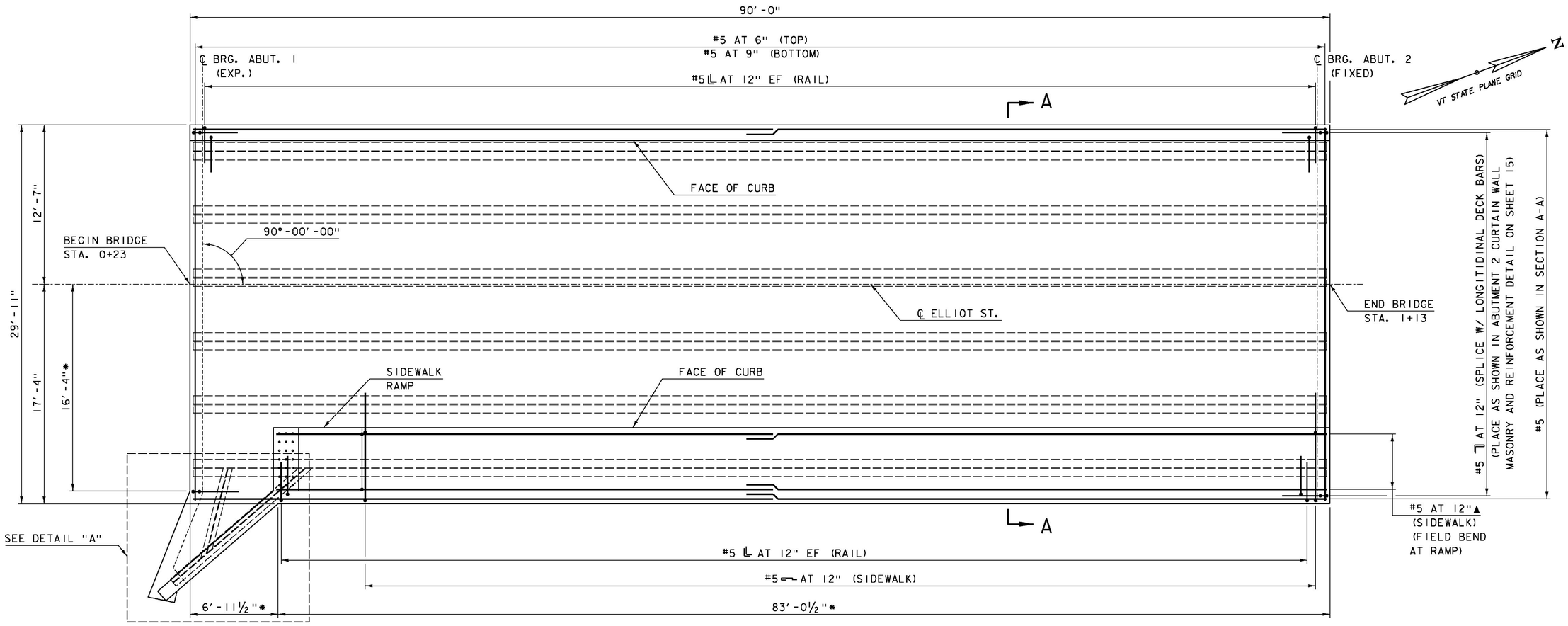
THE 3" HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES. ANY VOIDS RESULTING FROM FORMING SYSTEM ELEMENTS SHALL BE FILLED WITH JOINT SEALER, POLYURETHANE MEETING THE REQUIREMENTS OF SECTION 524. THE COST OF THE JOINT SEALER, POLYURETHANE WILL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

## HAUNCH AND SHEAR CONNECTOR DETAIL

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

CLD 15-0223 MODEL: TYP03

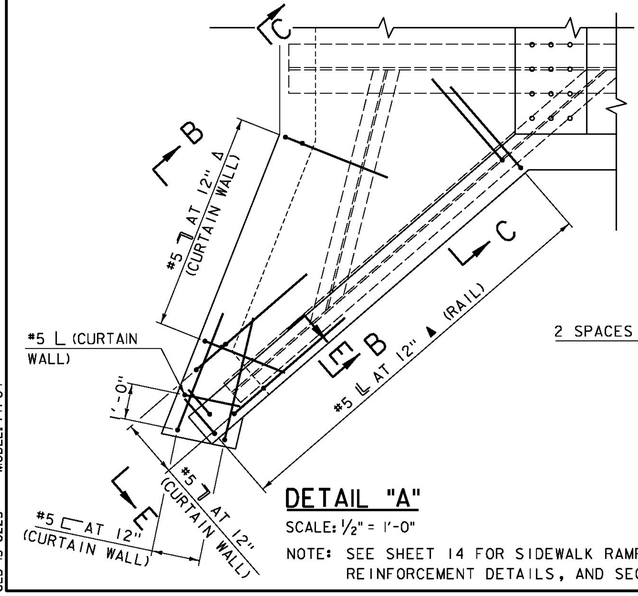
| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BF 2000(26) |
| FILE NAME: z15J091typ-31.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: M. SMITH |
| DESIGNED BY: N. CARON | CHECKED BY: S. BEAUMONT |
| SHEAR CONNECTOR DETAILS SHEET | SHEET 12 OF 26 |




## DECK REINFORCEMENT PLAN

SCALE: ¼" = 1'-0"

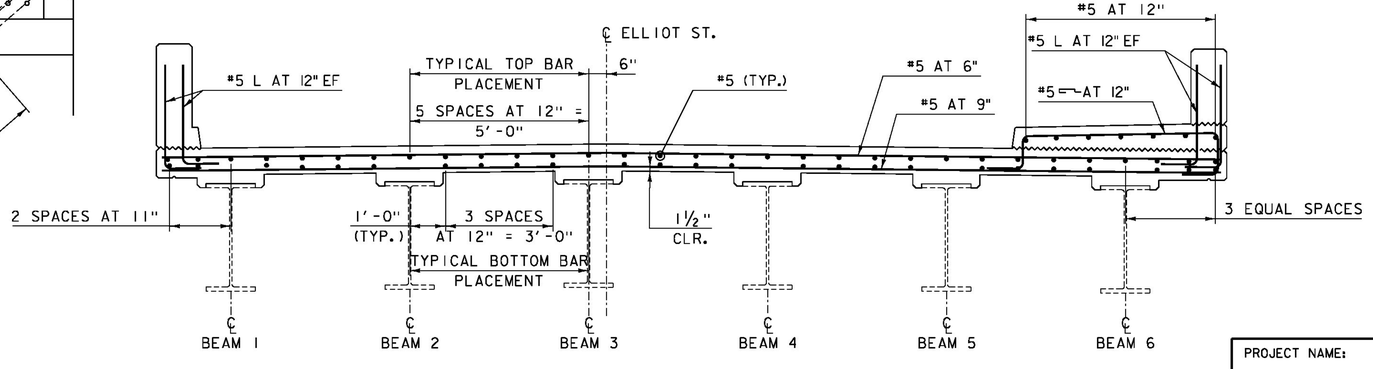
* DIMENSIONS ARE BASED ON FIELD MEASUREMENTS AND ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS.




## DETAIL "A"

SCALE: ½" = 1'-0"

NOTE: SEE SHEET 14 FOR SIDEWALK RAMP MASONRY, ADDITIONAL REINFORCEMENT DETAILS, AND SECTIONS B-B, C-C, AND E-E.




## SECTION A-A

SCALE: ½" = 1'-0"

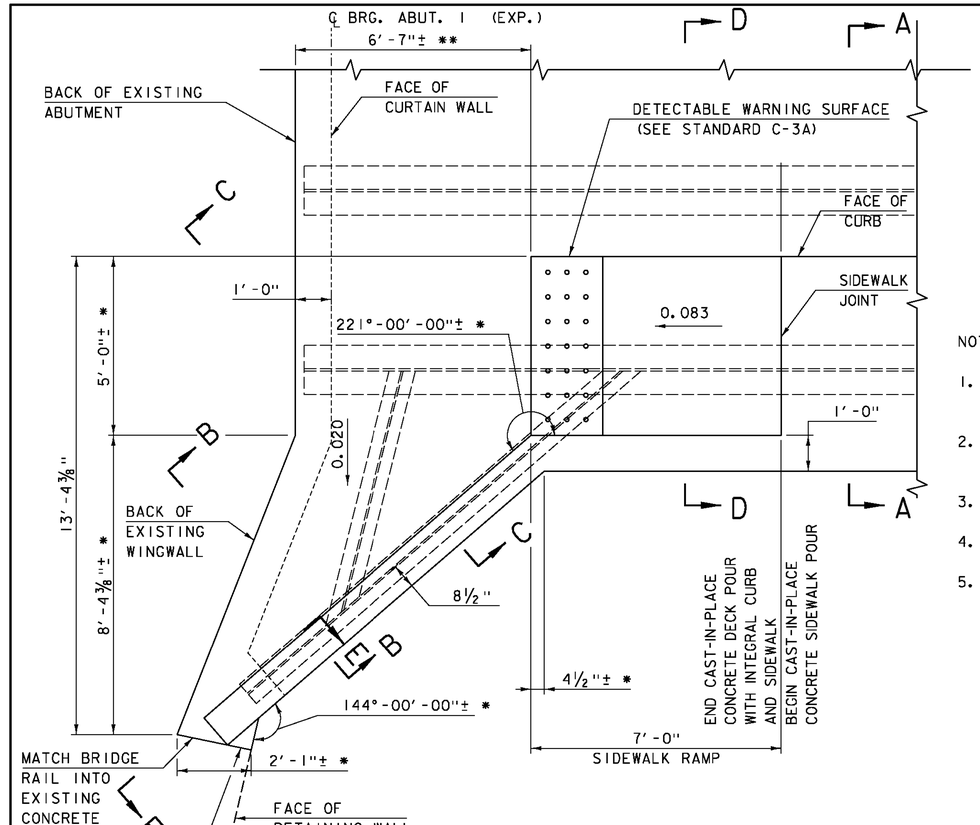
NOTES:

1. 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. 3'-0" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3. 1'-0" HOOK UNLESS OTHERWISE SPECIFIED ON THE PLANS.
4. EF = EACH FACE
5. SEE SHEET 18 FOR RAIL LAYOUT SHEET.

CLD CONSULTING ENGINEERS

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BF 2000(26) |
| FILE NAME: z15J091typ-31.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: M. SMITH |
| DESIGNED BY: S. BEAUMONT | CHECKED BY: J. FRENCH |
| DECK DETAILS SHEET 1 | SHEET 13 OF 26 |

CLD 15-0223 MODEL: TYP04



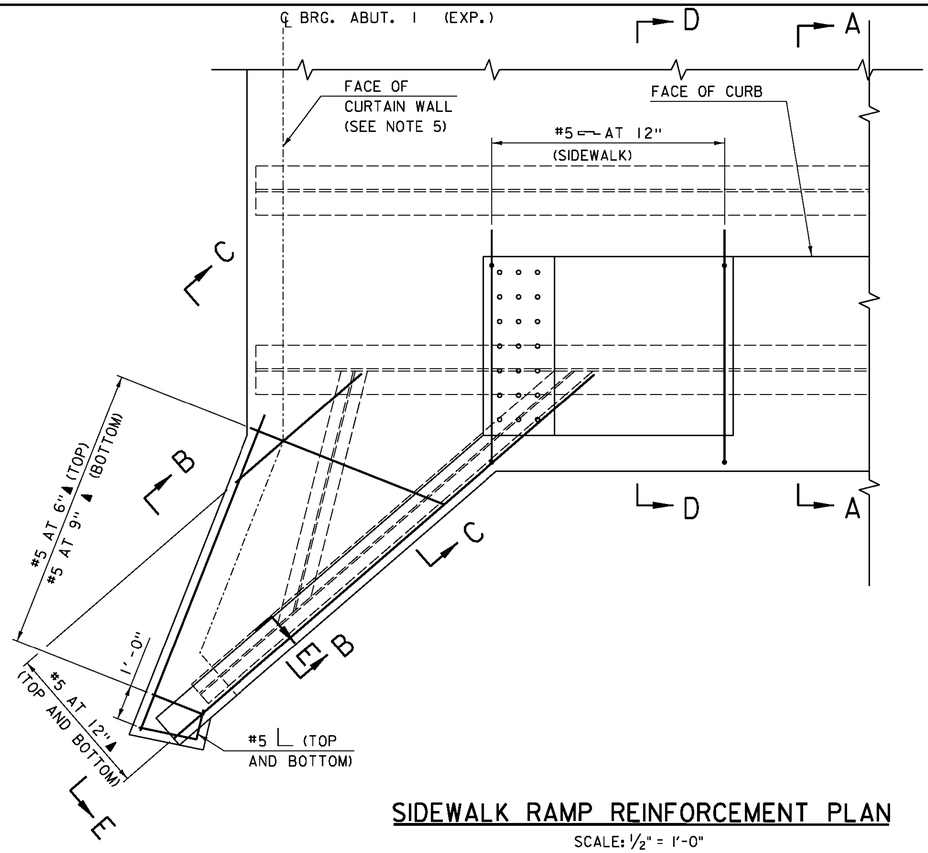

## SIDEWALK RAMP MASONRY PLAN

SCALE: ½" = 1'-0"



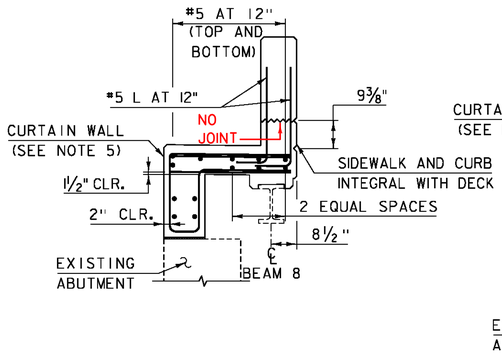

NOTES:

1. 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. 3'-0" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3. EF = EACH FACE
4. SEE SHEET 13 FOR SECTION A-A.
5. SEE TYPICAL CURTAIN WALL SECTION ON SHEET 15 FOR MASONRY AND REINFORCEMENT DETAILS AND SECTION E-E THIS SHEET FOR REINFORCEMENT LAYOUT IN CURTAIN WALL AT SIDEWALK RAMP.



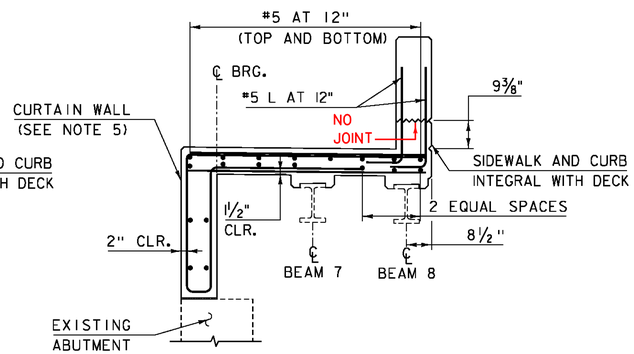

## SIDEWALK RAMP REINFORCEMENT PLAN

SCALE: ½" = 1'-0"



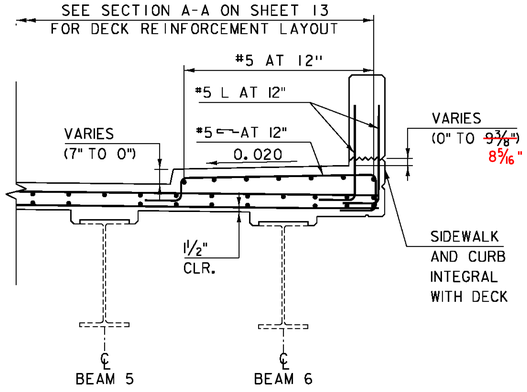

## SECTION B-B

SCALE: ½" = 1'-0"



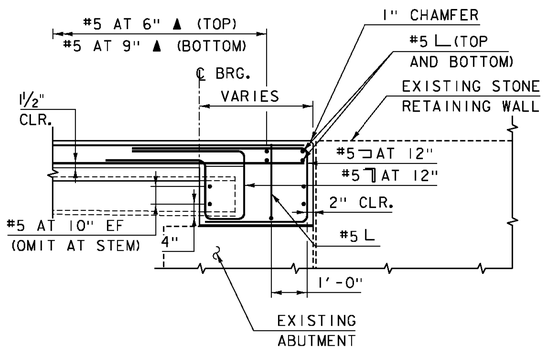

## SECTION C-C

SCALE: ½" = 1'-0"




## SECTION D-D

SCALE: ½" = 1'-0"




## SECTION E-E

SCALE: ½" = 1'-0"

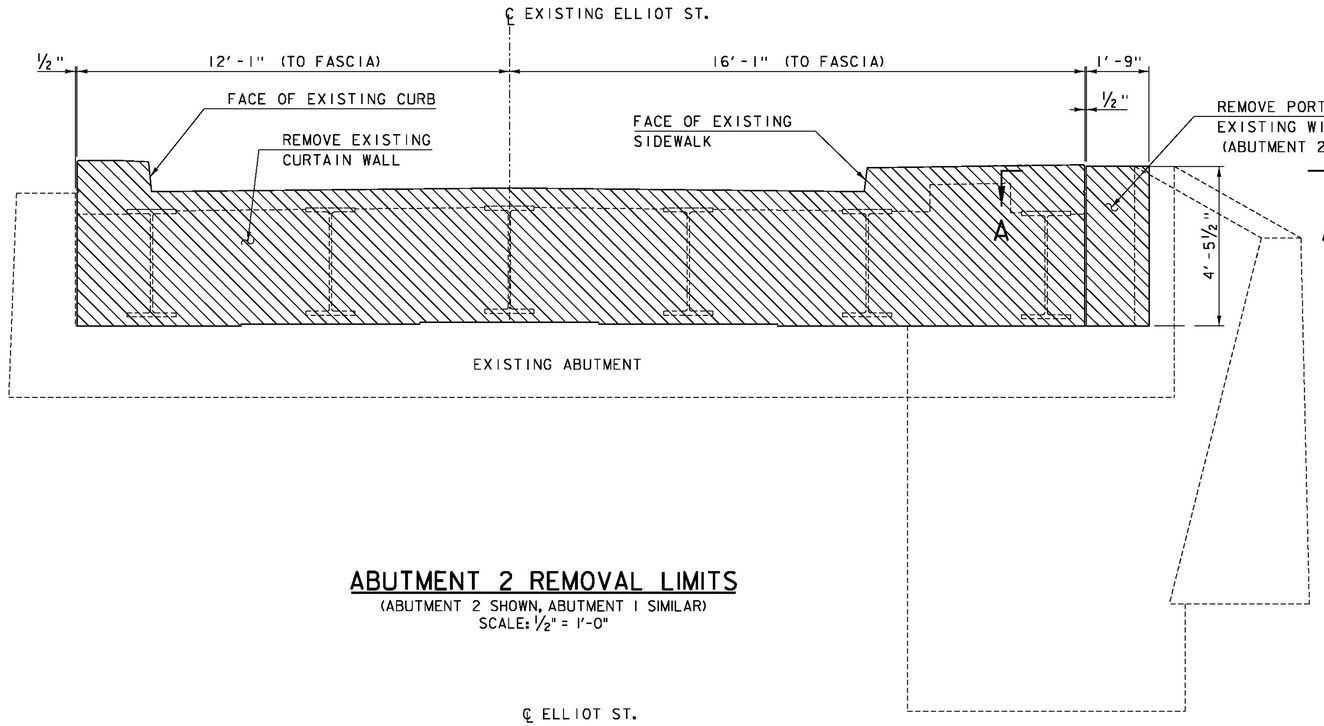
* ALL DIMENSIONS ARE BASED ON FIELD MEASUREMENTS AND ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS.

** SIDEWALK TO END AT BRIDGE RAIL ANGLE POINT.

CLD 15-0223 MODEL: TYP05

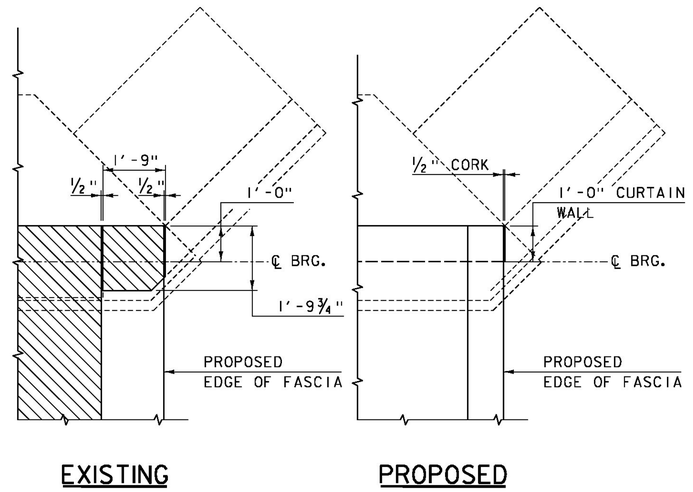
CONSULTING ENGINEERS

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BF 2000(26) |
| FILE NAME: z15j09ityp-31.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: M. SMITH |
| DESIGNED BY: S. BEAUMONT | CHECKED BY: J. FRENCH |
| DECK DETAILS SHEET 2 | SHEET 14 OF 26 |




## ABUTMENT 2 REMOVAL LIMITS

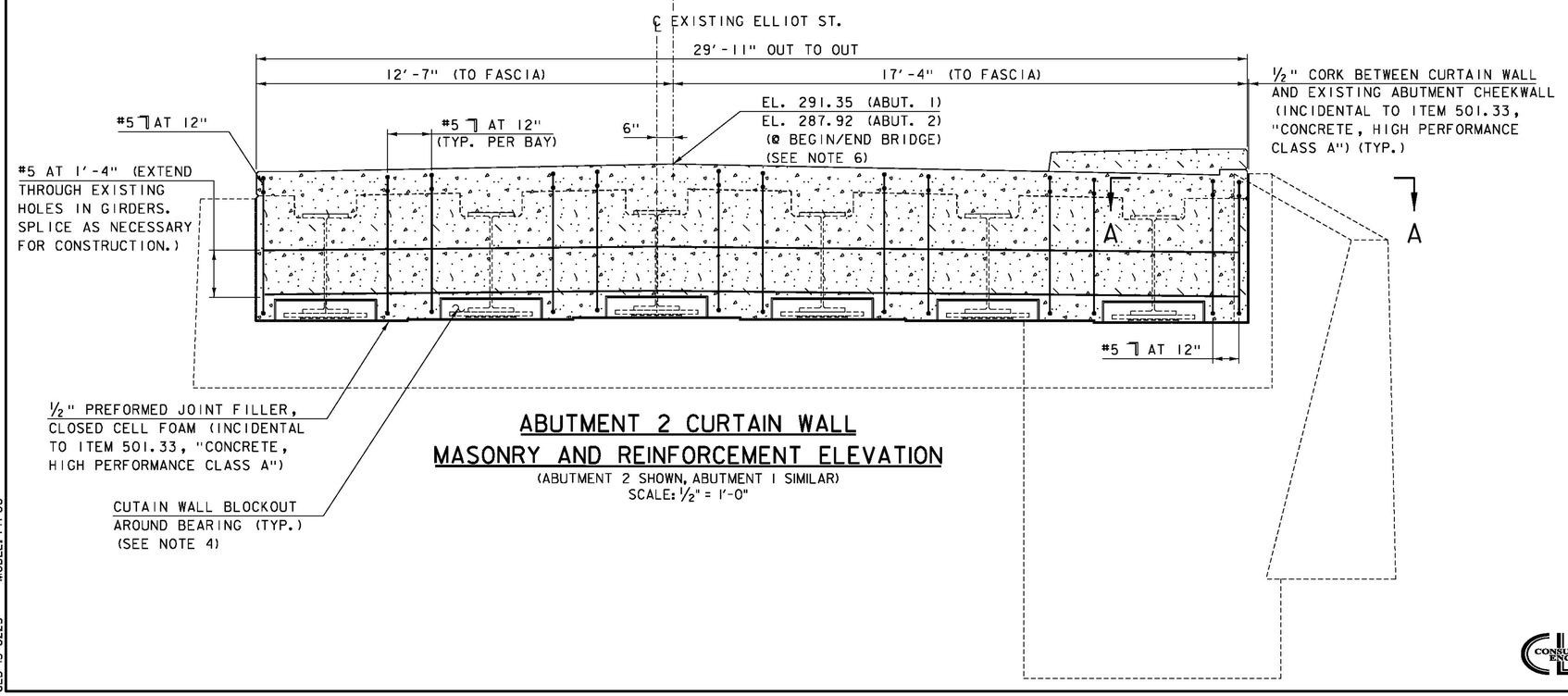
(ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR)
SCALE: ½" = 1'-0"




EXISTING PROPOSED

## SECTION A-A

SCALE: ½" = 1'-0"




## ABUTMENT 2 CURTAIN WALL MASONRY AND REINFORCEMENT ELEVATION

(ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR)
SCALE: ½" = 1'-0"

▨ PARTIAL REMOVAL OF STRUCTURE (SEE NOTE 18 ON SHEET 3)

⁘ CONCRETE, HIGH PERFORMANCE CLASS A

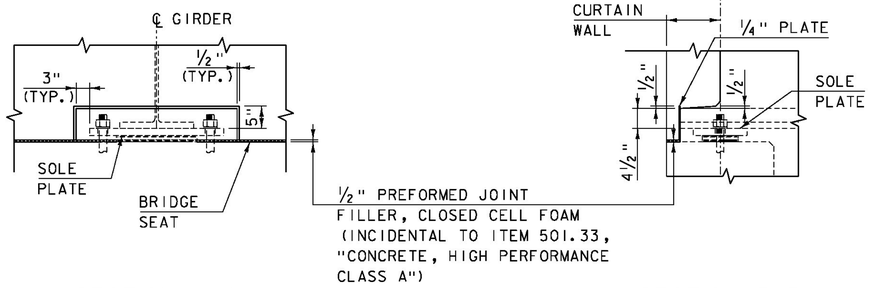
NOTES:

1. 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. 3'-1" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3. EF = EACH FACE
4. SEE SHEET 16 FOR TYPICAL CURTAIN WALL SECTION AND CURTAIN WALL BLOCKOUT AROUND BEARINGS DETAILS.
5. SEE SECTION F-F ON SHEET 14 FOR CURTAIN WALL AT SIDEWALK RAMP REINFORCEMENT LAYOUT.
6. ELEVATIONS ARE FOR INFORMATIONAL PURPOSES ONLY. FINAL FINISHED GRADE SHALL BE DETERMINED BY VTRANS AFTER EXISTING TOP OF DECK AND TOP OF BEAM ELEVATIONS ARE SURVEYED. SEE PROJECT NOTE 22 ON SHEET 3.

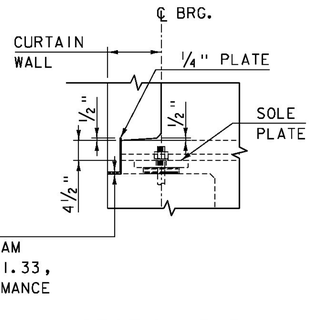
| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BF 2000(26) |
| FILE NAME: z15J091typ-31.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: M. SMITH |
| DESIGNED BY: S. BEAUMONT | CHECKED BY: J. FRENCH |
| REMOVAL & CURTAIN WALL DETAILS SHEET 1 | SHEET 15 OF 26 |

CLD CONSULTING ENGINEERS

CLD 15-0223 MODEL: TYP06



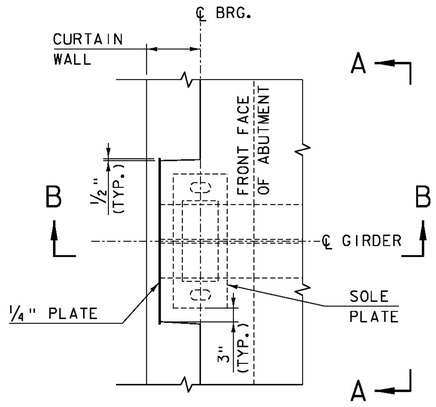

SECTION A-A




SECTION B-B

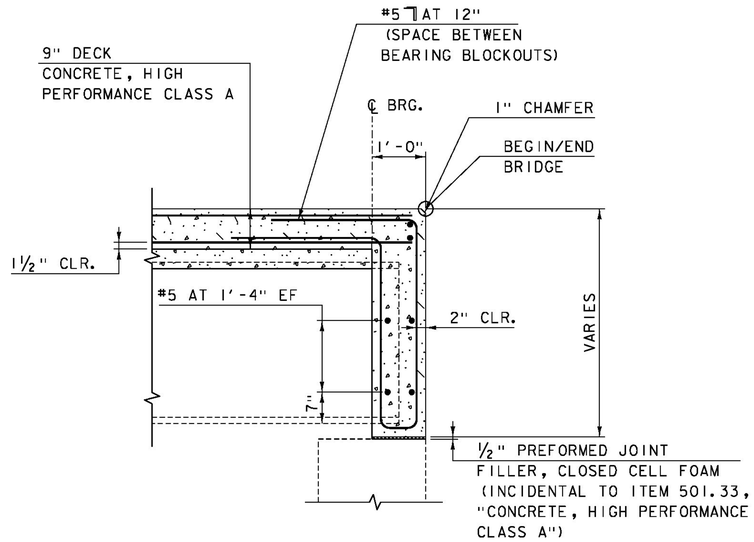
NOTES:

1. 3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. 3'-0" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.
3. EF = EACH FACE
4. SEE SHEET 15 FOR CURTAIN WALL MASONRY AND REINFORCEMENT ELEVATION.




PLAN VIEW

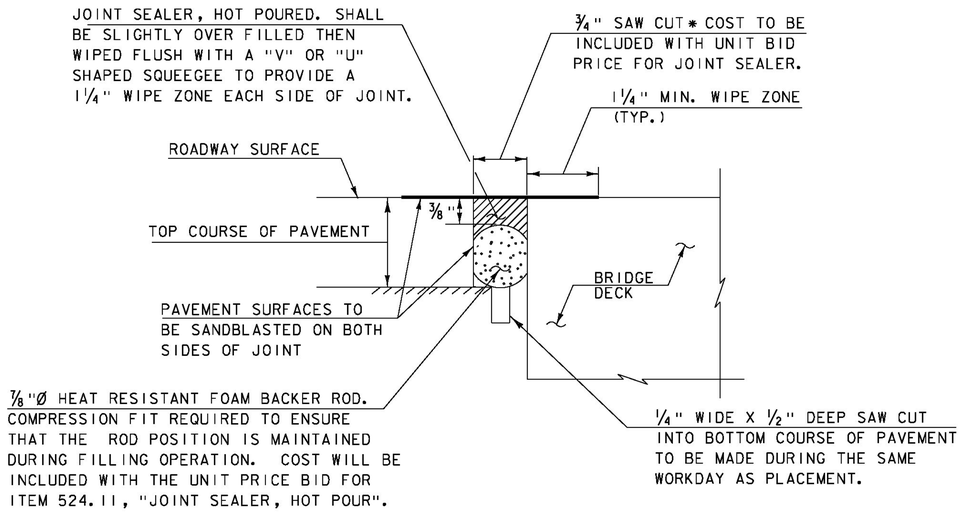
CONCRETE CURTAIN WALL
BLOCKOUTS AROUND BEARINGS
SCALE: ¾" = 1'-0"




TYPICAL CURTAIN WALL SECTION
SCALE: ¾" = 1'-0"

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BF 2000(26) |
| FILE NAME: z15J091typ-31.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: M. SMITH |
| DESIGNED BY: S. BEAUMONT | CHECKED BY: N. CARON |
| REMOVAL & CURTAIN WALL DETAILS SHEET 2 | SHEET 16 OF 26 |

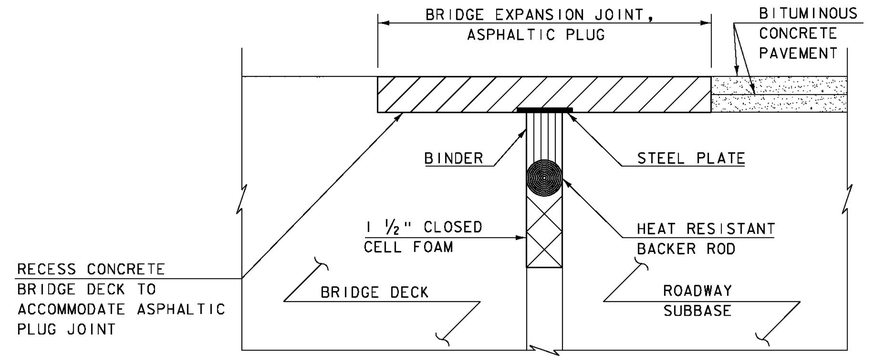
CLD 15-0223 MODEL: TYP07




## SAWED PAVEMENT JOINT DETAIL

(NOT TO SCALE)

* JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUT WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER. ALL WORK WILL BE PAID FOR UNDER ITEM 524.11, "JOINT SEALER, HOT POURED".



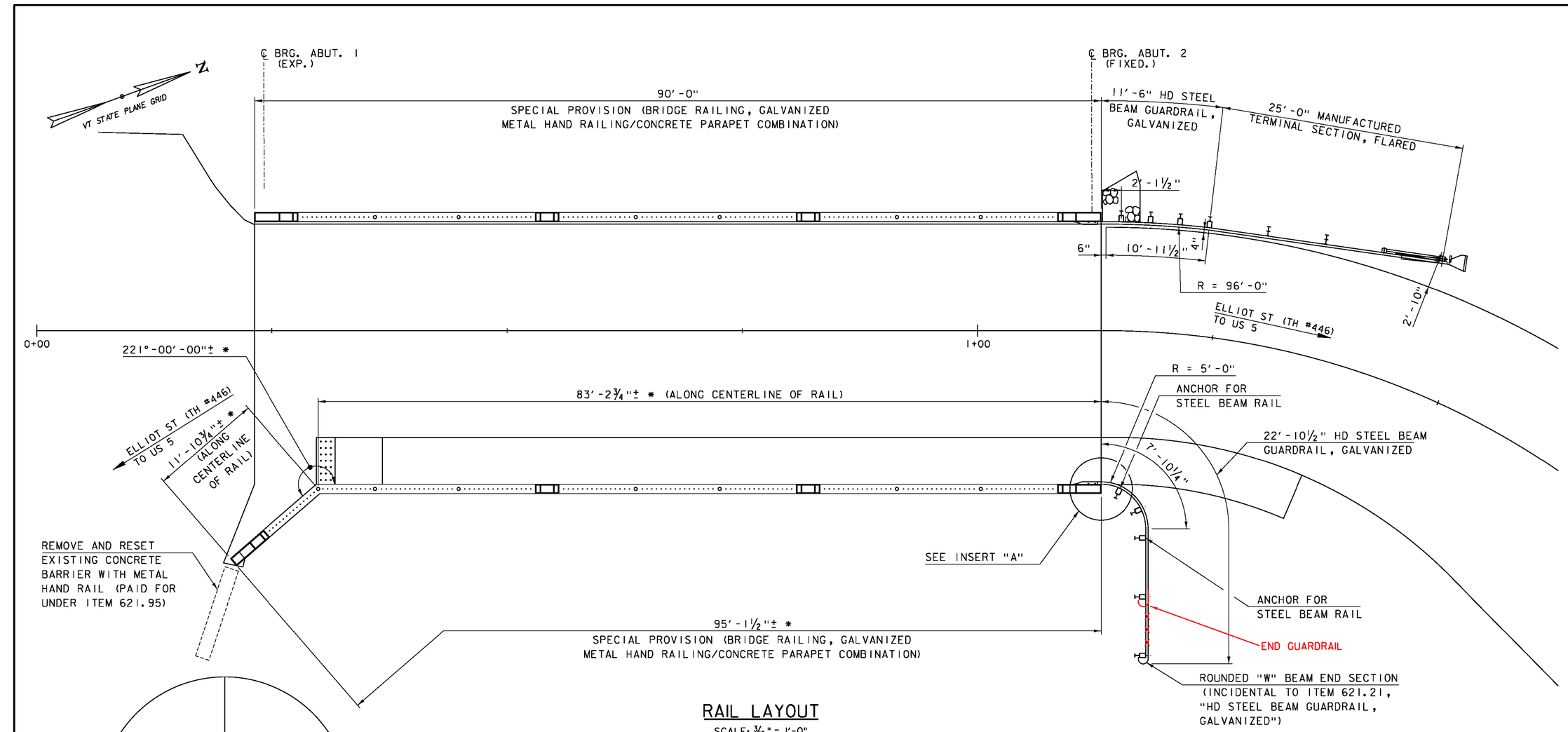

## ASPHALTIC PLUG-TYPE JOINT DETAIL

(NOT TO SCALE)

NOTE: SEE STANDARD SD-516.10 FOR ADDITIONAL INFORMATION.

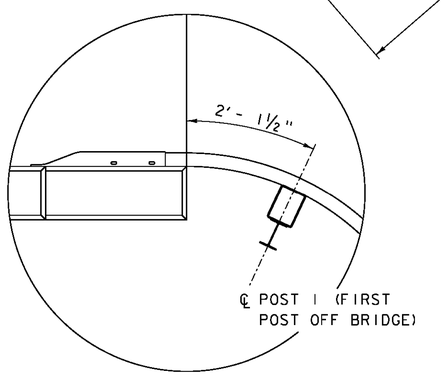
CLD 15-0223 MODEL: TYP08

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BF 2000(26) |
| FILE NAME: z15J091typ-31.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: M. SMITH |
| DESIGNED BY: N. CARON | CHECKED BY: S. BEAUMONT |
| JOINT DETAILS SHEET | SHEET 17 OF 26 |




## RAIL LAYOUT

SCALE: 3/16" = 1'-0"




## INSERT "A"

(NE CORNER SHOWN, NW CORNER SIMILAR)
SCALE: ¾" = 1'-0"

* DIMENSIONS ARE BASED ON FIELD MEASUREMENTS AND ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY EXISTING DIMENSIONS AND MAKE ADJUSTMENTS TO RAIL LAYOUT AS APPLICABLE. SEE SIDEWALK RAMP MASONRY PLAN ON SHEET 14.

NOTES:

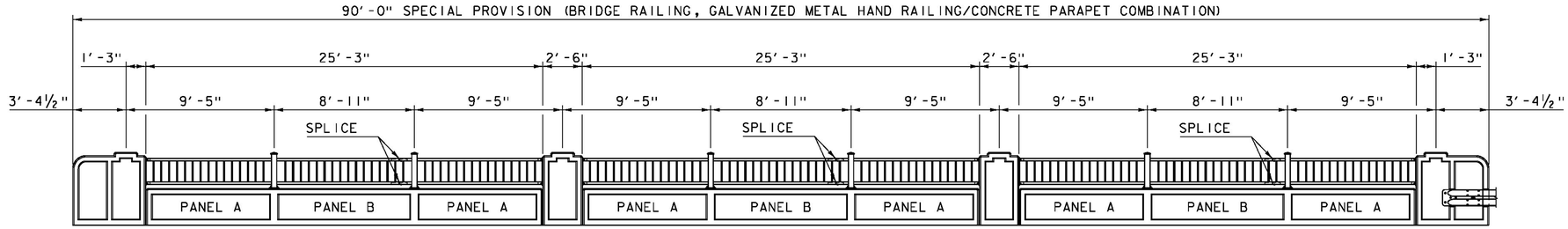
1. REFER TO STANDARDS G-1 AND G-1d.
2. SEE BRIDGE AND APPROACH RAIL DETAILS ON SHEETS 19 TO 23.

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BF 2000(26) |

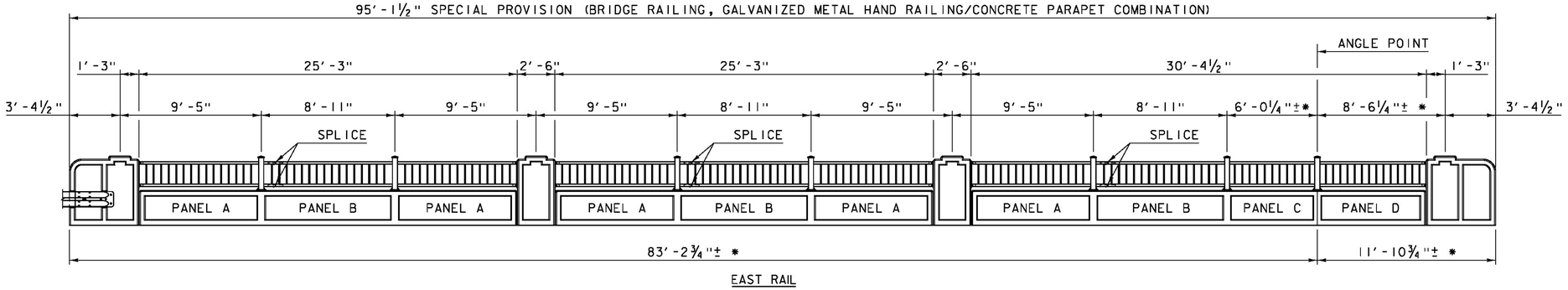
| | |
|---|---|
| FILE NAME: z15J09rail_bdr-31.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: M. SMITH |
| DESIGNED BY: M. SMITH | CHECKED BY: N. CARON |
| RAIL LAYOUT SHEET | SHEET 18 OF 26 |

CLD CONSULTING ENGINEERS

CLD 15-0223 MODEL: Sheet01




WEST RAIL

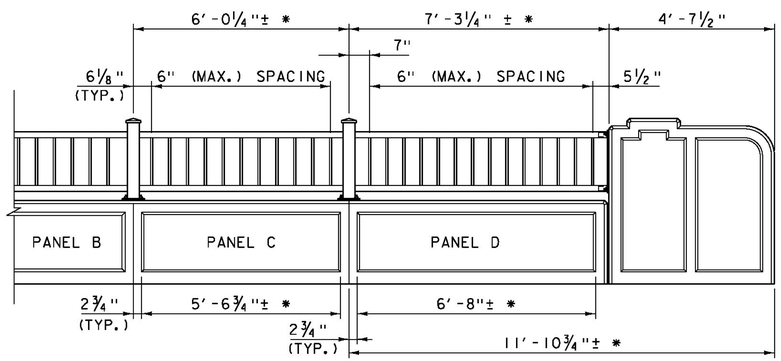



EAST RAIL

## BRIDGE RAIL ELEVATION (INTERIOR FACE)

SCALE: ¼" = 1'-0"

* DIMENSIONS ARE BASED ON FIELD MEASUREMENTS AND ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY EXISTING DIMENSIONS AND MAKE ADJUSTMENTS TO RAIL LAYOUT AS APPLICABLE. SEE SIDEWALK RAMP MASONRY PLAN ON SHEET 14.




## BRIDGE RAIL ELEVATION (INTERIOR FACE) AT SIDEWALK RAMP

SCALE: ½" = 1'-0"

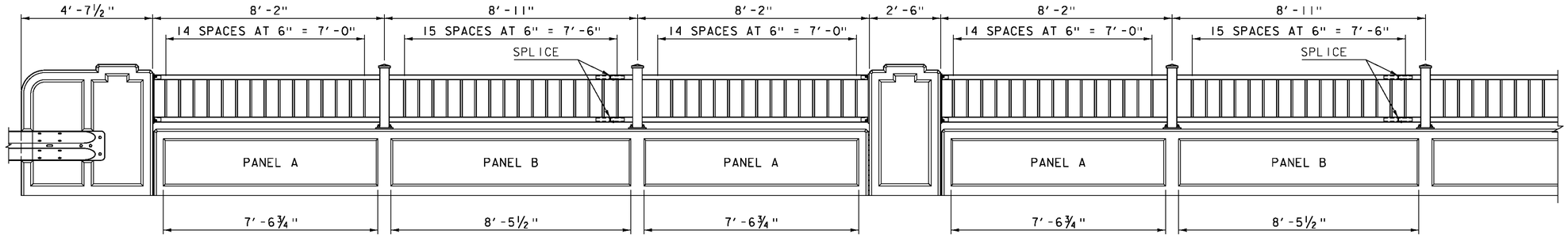
NOTES:

1. ALL DIMENSIONS ARE MEASURED ALONG CENTERLINE OF RAIL UNLESS NOTED OTHERWISE ON PLANS.
2. THE BRIDGE PLAQUE FURNISHED BY THE AGENCY SHALL BE CAST INTO THE BACKFACE OF THE CONCRETE RAIL AT THE NORTHEAST END PILASTER. SEE STANDARD SD-502.00 FOR ADDITIONAL INFORMATION.

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BF 2000(26) |
| FILE NAME: z15J09rail_bdr-31.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: M. SMITH |
| DESIGNED BY: M. SMITH | CHECKED BY: N. CARON |
| BRIDGE RAIL DETAILS SHEET 1 | SHEET 19 OF 26 |

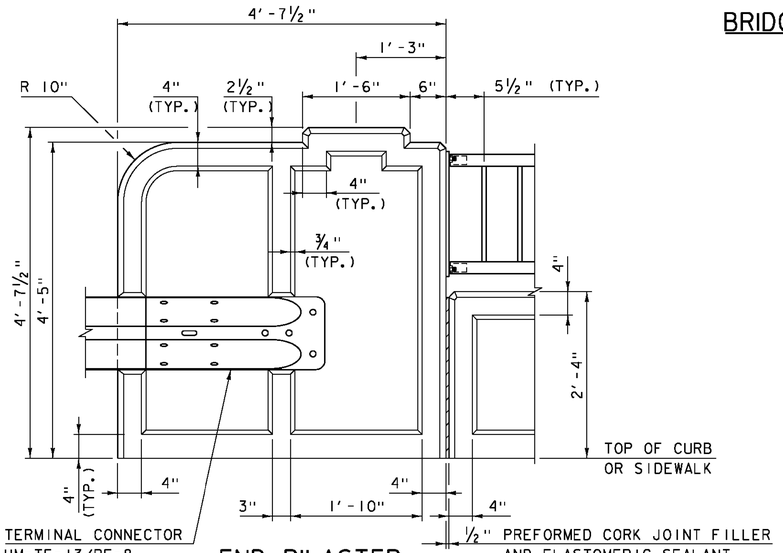
CONSULTING ENGINEERS

CLD 15-0223 MODEL: Sheet02



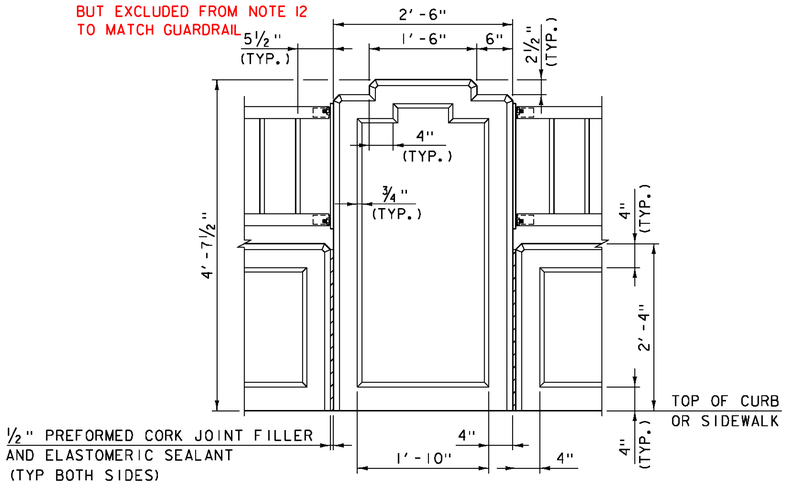

## BRIDGE RAIL ELEVATION (INTERIOR FACE)

SCALE: ½" = 1'-0"

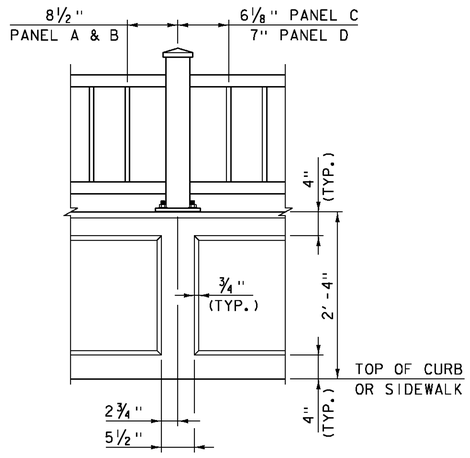



## END PILASTER

FIELD CHANGED TO BE GALVANIZED PER NOT 11 BUT EXCLUDED FROM NOTE 12 TO MATCH GUARDRAIL




## INTERMEDIATE PILASTER




## POST

## BRIDGE RAIL CONCRETE DETAILS

SCALE: 1" = 1'-0"

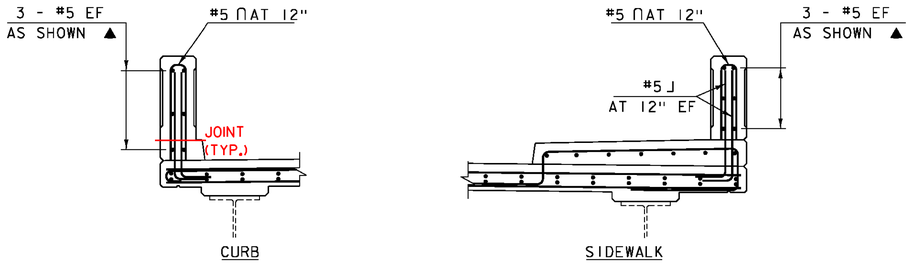
## BRIDGE RAIL NOTES

1. ALL DIMENSIONS TO FACE OF CONCRETE UNLESS NOTED OTHERWISE.
2. RAIL POSTS WILL BE SET NORMAL TO GRADE.
3. BRIDGE RAIL WILL BE PAID FOR UNDER ITEM 900.640, "SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION)".
4. REINFORCING STEEL IN THE BRIDGE RAILING SHALL BE LEVEL 1 - EPOXY COATED, MEET THE REQUIREMENTS OF SECTION 507, AND WILL BE PAID FOR UNDER ITEM 900.640, "SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION)". REINFORCING STEEL EXTENDING FROM THE CONCRETE BRIDGE DECK INTO THE BRIDGE RAILING SHALL BE PAID FOR UNDER ITEM 507.11, "REINFORCING STEEL, EPOXY COATED". SEE PROJECT NOTE 28 ON SHEET 3.
5. METAL HAND RAILING, TO INCLUDE STEEL PIPES, PLATES AND HARDWARE, WILL BE PAID FOR UNDER ITEM 900.640, "SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION)".
6. STEEL PIPES FOR POSTS, TOP AND BOTTOM RAIL, AND PALINGS SHALL BE SEAMLESS, CONFORMING TO SUBSECTION 732.01.
7. STEEL FOR BASE AND ANCHORAGE PLATES SHALL CONFORM TO SUBSECTION 732.03(b).
8. HARDWARE FOR ANCHOR BOLT ASSEMBLIES SHALL CONFORM TO SUBSECTION 732.03(d).
9. ⅛" PAD SHALL CONFORM TO SUBSECTION 731.01 OR 731.02.
10. ALL EXPOSED CUT OR SHEARED EDGES OF STEEL COMPONENTS SHALL BE ROUNDED TO A 1/16" RADIUS AND BE FREE OF BURRS.
11. ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M 111M/M 111, EXCEPT HARDWARE, WHICH SHALL MEET THE REQUIREMENTS OF AASHTO M 232M/M 232.
12. ALL PARTS EXCEPT HARDWARE AND ANCHORAGE PLATES AND TERMINAL CONNECTOR SHALL BE PAINTED BLACK (COLOR CHIP #27038).
13. RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
14. THE FABRICATOR SHALL SUBMIT FABRICATION DRAWINGS INCLUDING WELDING PROCEDURES FOR METAL HAND RAILING IN ACCORDANCE WITH SECTION 105.

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BF 2000(26) |
| FILE NAME: z15j091rail_bdr-31.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: M. SMITH |
| DESIGNED BY: M. SMITH | CHECKED BY: N. CARON |
| BRIDGE RAIL DETAILS SHEET 2 | SHEET 20 OF 26 |

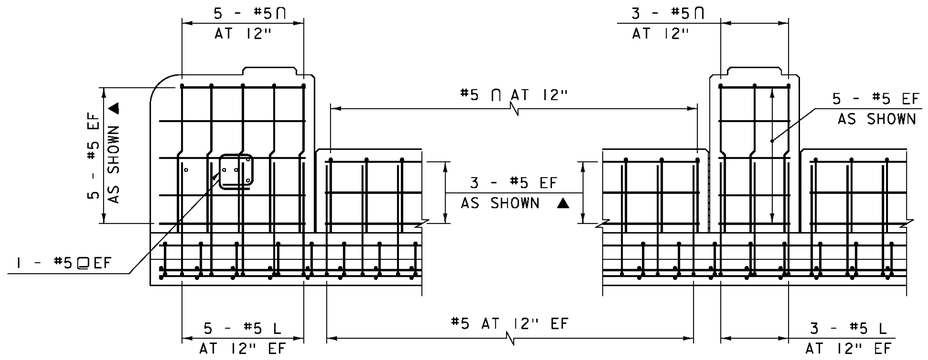
CONSULTING ENGINEERS

CLD 15-0223 MODEL: Sheet03



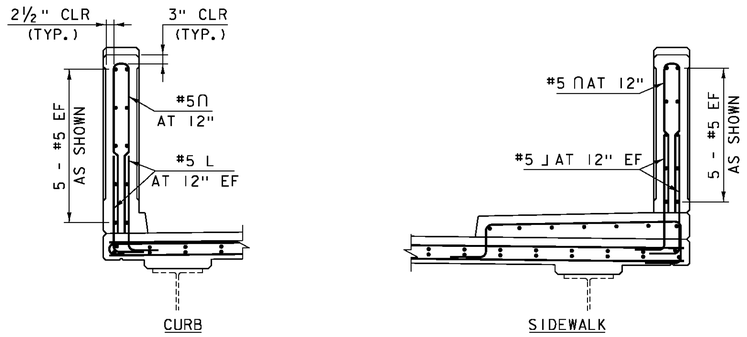

## TYPICAL CONCRETE BASE PARAPET SECTIONS

SCALE: ½" = 1'-0"




## TYPICAL REINFORCING SIDEWALK SIDE

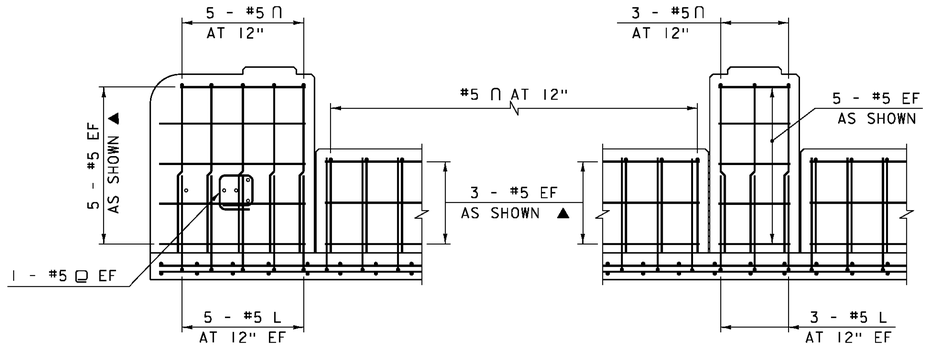
SCALE: ½" = 1'-0"




## TYPICAL INTERMEDIATE PILASTER SECTIONS

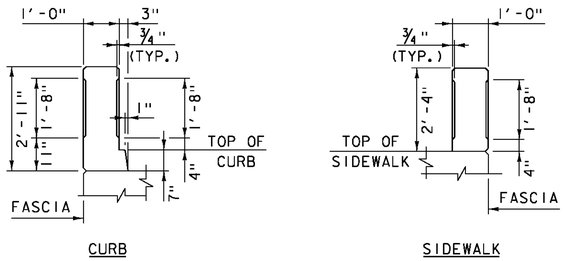
SCALE: ½" = 1'-0"

(END PILASTERS ARE SIMILAR)



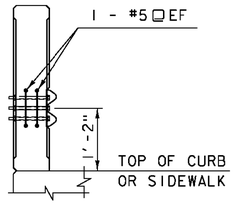

## TYPICAL REINFORCING CURB SIDE

SCALE: ½" = 1'-0"



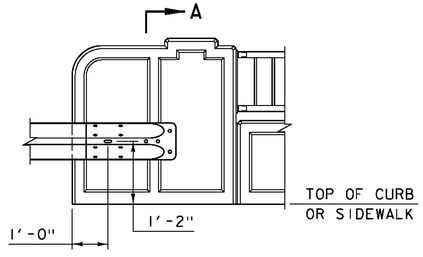

## CONCRETE INSERT DETAILS

SCALE: ½" = 1'-0"




## SECTION "A-A"

SCALE: ½" = 1'-0"




## TERMINAL CONNECTOR LOCATION

SCALE: ½" = 1'-0"

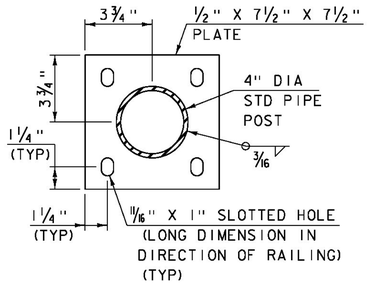
### NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
ALL REINFORCING ON THIS SHEET SHALL BE LEVEL I EPOXY COATED REINFORCING STEEL
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

CONSULTING ENGINEERS

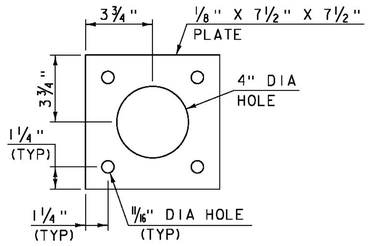
| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BF 2000(26) |
| FILE NAME: z15J091rail_bdr-31.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: M. SMITH |
| DESIGNED BY: M. SMITH | CHECKED BY: N. CARON |
| BRIDGE RAIL DETAILS SHEET 3 | SHEET 21 OF 26 |

CLD 15-0223 MODEL: Sheet04



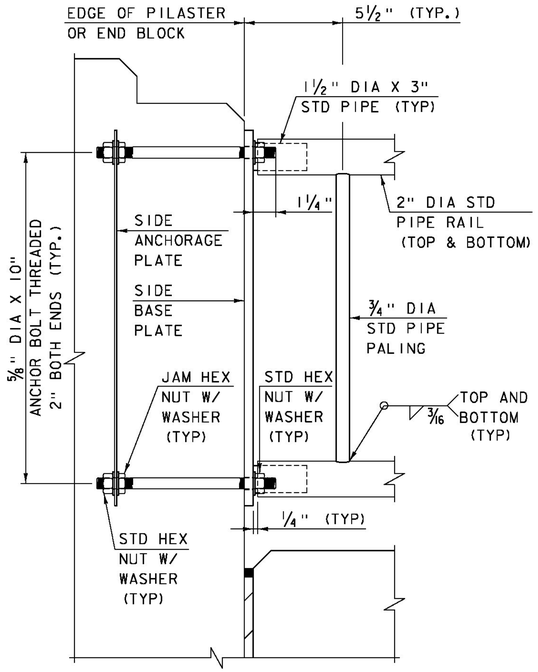

## POST BASE PLATE

SCALE: 3" = 1'-0"



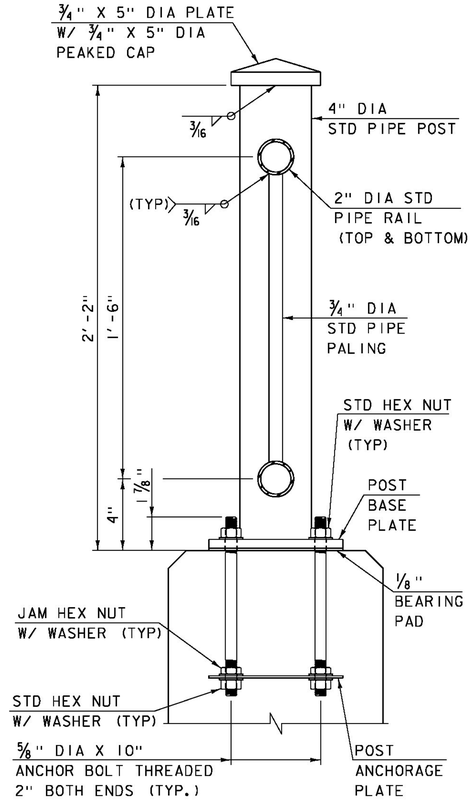

## POST ANCHORAGE PLATE

SCALE: 3" = 1'-0"



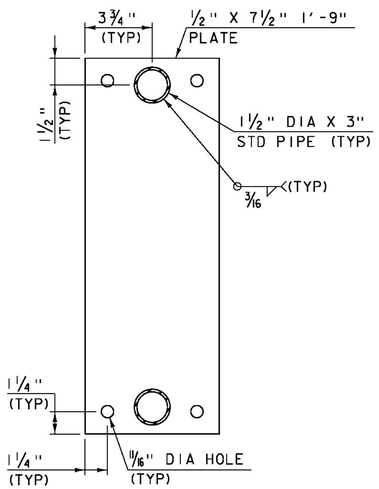

## SIDE PLATE CONNECTION DETAIL

SCALE: 3" = 1'-0"



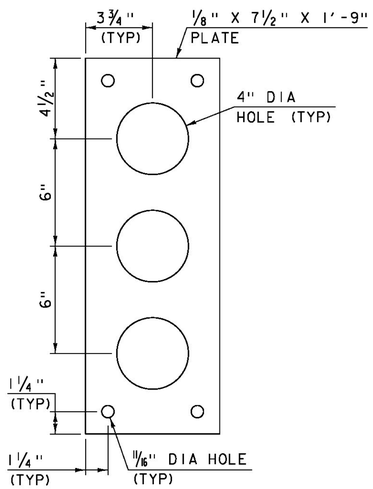

## METAL RAILING DETAIL

SCALE: 3" = 1'-0"



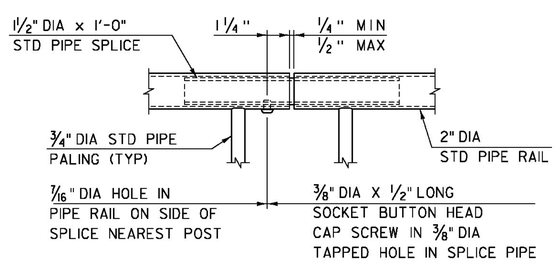

## SIDE BASE PLATE

SCALE: 3" = 1'-0"




## SIDE ANCHORAGE PLATE

SCALE: 3" = 1'-0"



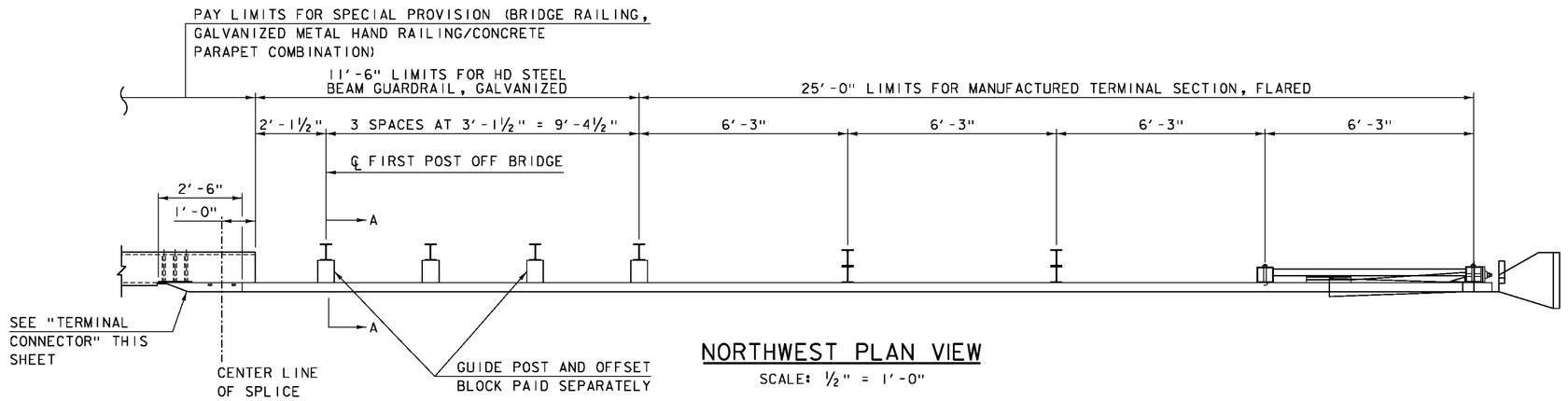

## RAIL SPLICE DETAIL

SCALE: 3" = 1'-0"

| | |
|---|---|
| PROJECT NAME: BRATTLEBORO | |
| PROJECT NUMBER: BF 2000(26) | |
| FILE NAME: z15J09lrail_bdr-3l.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: M. SMITH |
| DESIGNED BY: M. SMITH | CHECKED BY: N. CARON |
| BRIDGE RAIL DETAILS SHEET 4 | SHEET 22 OF 26 |

CLD CONSULTING ENGINEERS

CLD 15-0223 MODEL: Sheet05

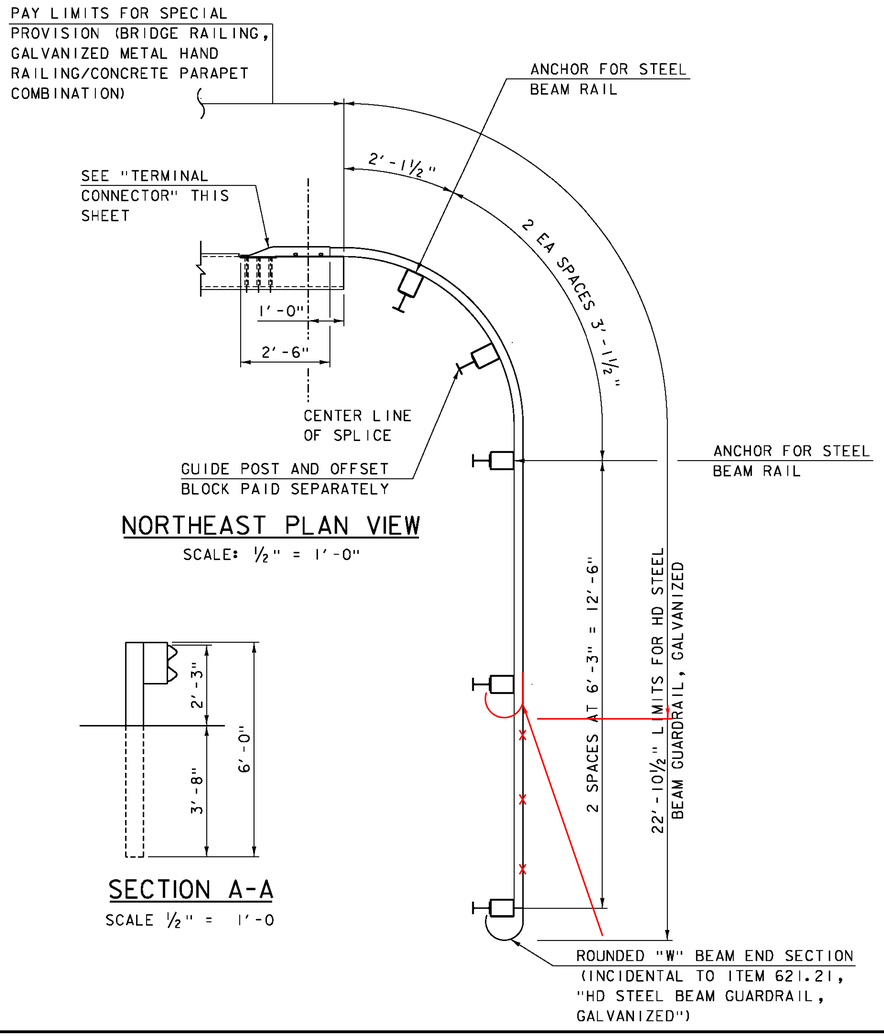



## NORTHWEST PLAN VIEW

SCALE: ½" = 1'-0"

## NOTES

1. A COMPOSITE MATERIAL POST AND/OR BLOCKOUT FROM THE APPROVED PRODUCTS LIST MAY BE SUBSTITUTED FOR A POST AND/OR BLOCKOUT OF SIMILAR DIMENSIONS.
2. REFER TO STANDARD DRAWINGS G-1 AND G-1d FOR ADDITIONAL DETAILS.
3. THE TERMINAL CONNECTOR TO BRIDGE RAIL AND THE CONNECTION PLATE SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 900.640, "SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION)".



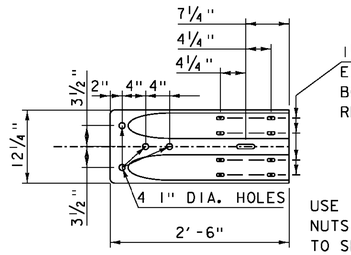

## NORTHEAST PLAN VIEW

SCALE: ½" = 1'-0"



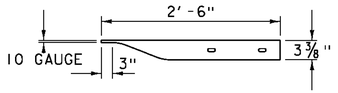

## SECTION A-A

SCALE ½" = 1'-0



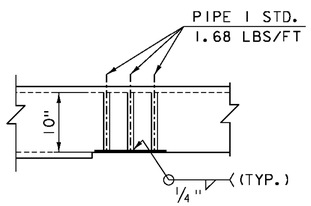

## TERMINAL CONNECTOR ELEVATION

SCALE 1" = 1'-0"



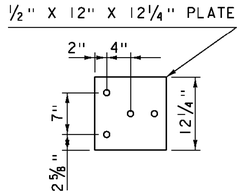

## TERMINAL CONNECTOR PLAN

SCALE 1" = 1'-0"



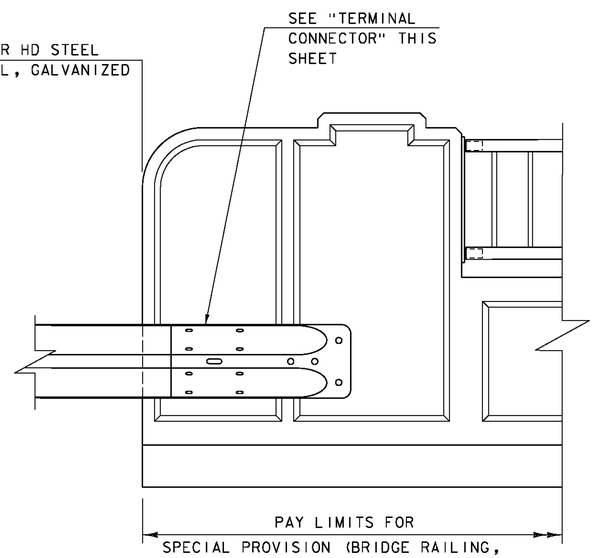

## CONNECTION PLATE DETAIL -PLAN

SCALE 1" = 1'-0"




## CONNECTION PLATE DETAIL- ELEVATION

SCALE 1" = 1'-0"




## RAIL END DETAIL

NTS

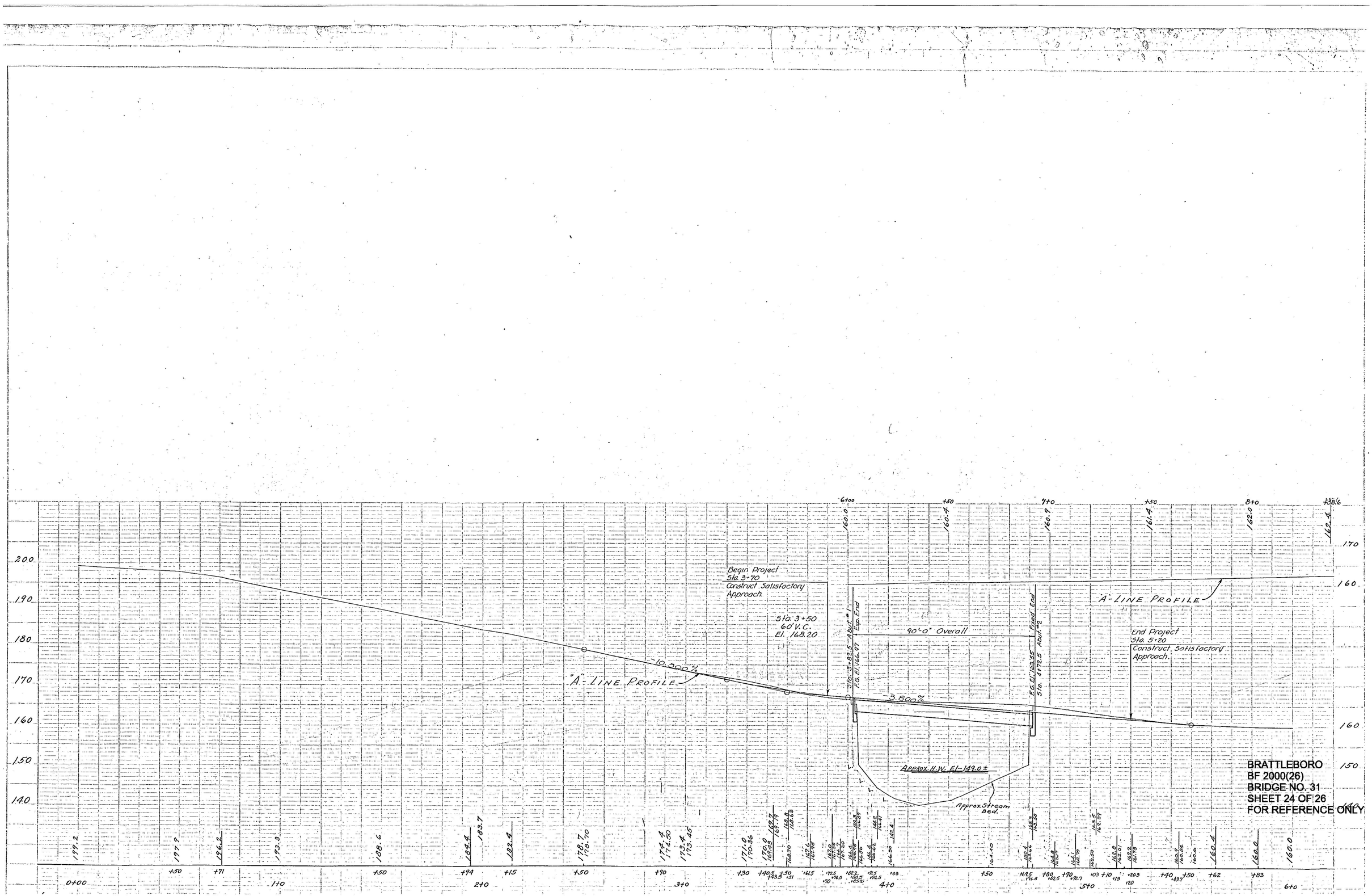
THE USE OF THIS RAILING IS RESTRICTED TO DESIGN SPEEDS OF 45 MPH OR LESS.

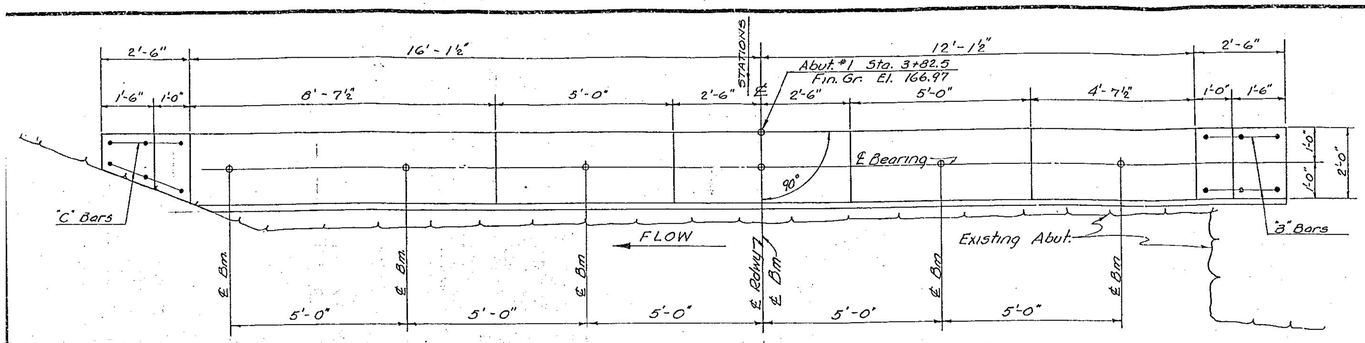
| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BF 2000(26) |

| | |
|---|---|
| FILE NAME: z15j091rail_bdr-31.dgn | PLOT DATE: 2/5/2016 |
| PROJECT LEADER: J. BYATT | DRAWN BY: M. SMITH |
| DESIGNED BY: N. CARON | CHECKED BY: S. BEAUMONT |
| APPROACH RAIL DETAILS SHEET | SHEET 23 OF 26 |

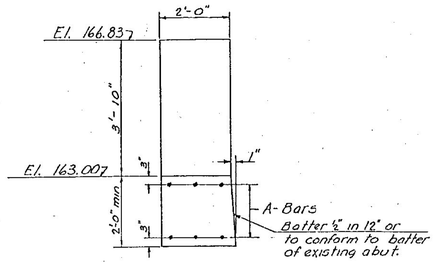
CLD CONSULTING ENGINEERS

CLD 15-0223 MODEL: Sheet06


Begin Project
Sta. 3+70
Construct Satisfactory
Approach
Sta. 3+50
60' V.C.
El. 168.20
Sta. 3+82.5 Abut. #1
Exp. End
F.G. El. 166.97
"A" LINE PROFILE
10.200%
3.600%
90'-0" Overall
F.G. El. 169.85
Sta. 4+72.5 Abut. #2
Fixed End
"A" LINE PROFILE
End Project
Sta. 5+20
Construct. Satisfactory
Approach
Approx. 11 Yr. El. 149.0±
Approx. Stream Bed.
BRATTLEBORO
BF 2000(26)
BRIDGE NO. 31
SHEET 24 OF 26
FOR REFERENCE ONLY



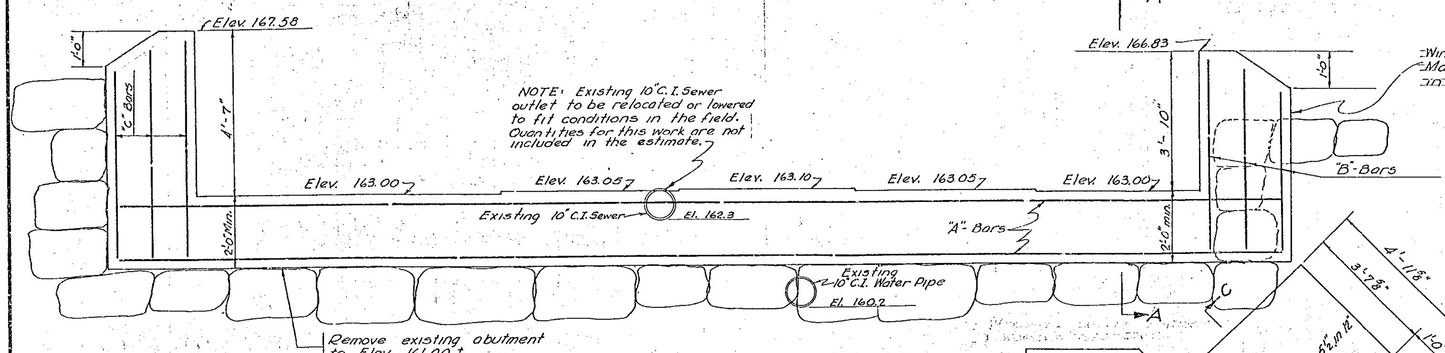

PLAN ABUT. #1



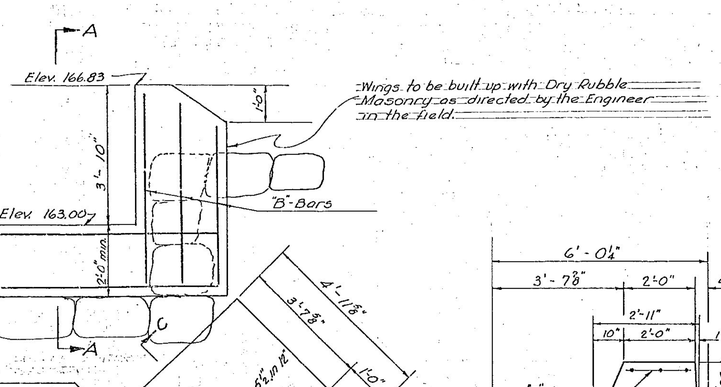

SECT. - "A-A"

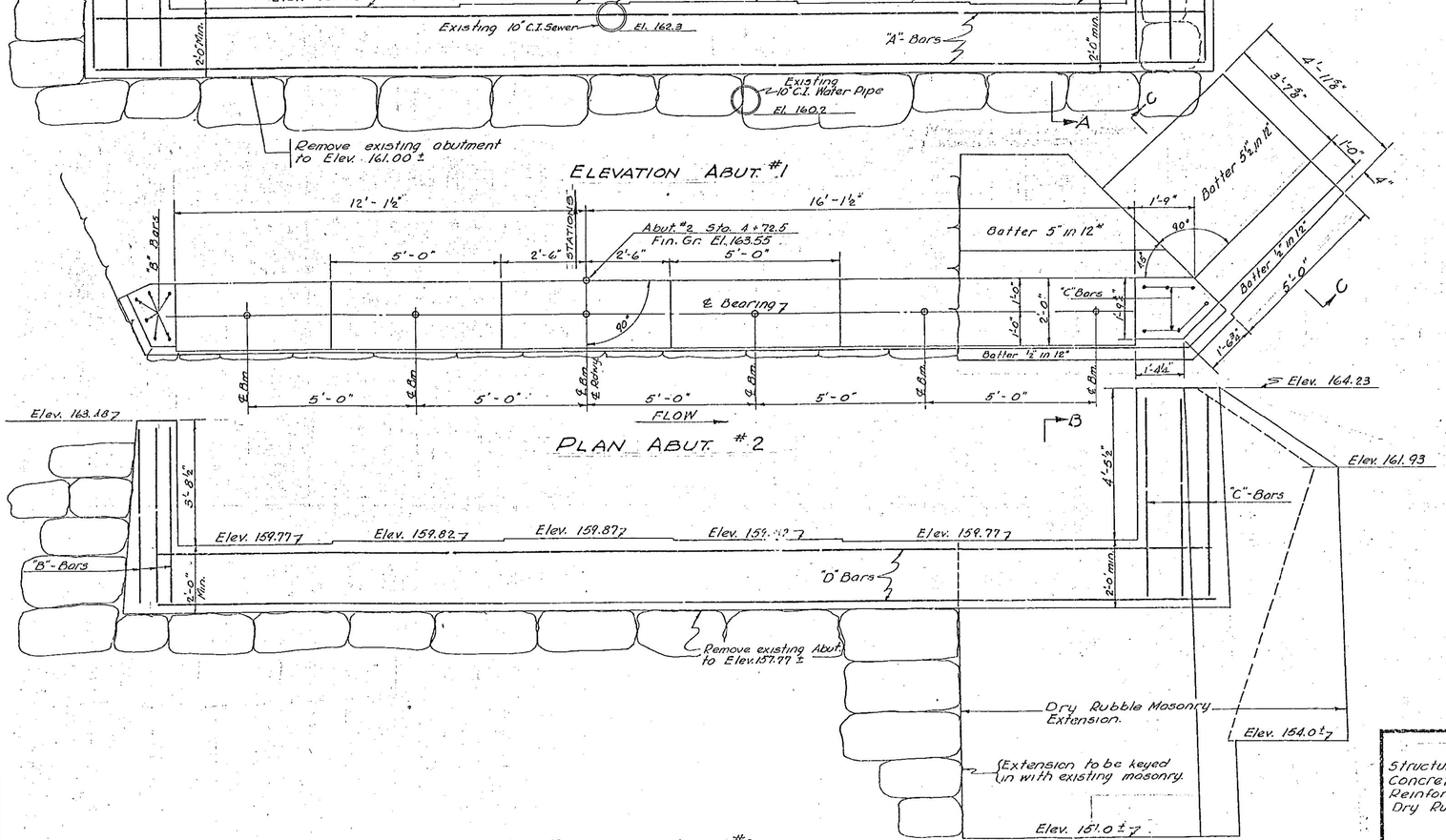
## REINFORCING STEEL

| BAR | SIZE | NO. REQ. ABUT 1 | NO. REQ. ABUT 2 | TOT. LGTH. | DETAIL |
|---|---|---|---|---|---|
| A | ⅝"ϕ | 6 | | 32'-9" | Straight |
| B | ¾"ϕ | 6 | 6 | 5'-0" | " |
| C | ¾"ϕ | 6 | 6 | 6'-0" | " |
| D | ⅝"ϕ | | 6 | 30'-6" | " |




ELEVATION ABUT. #1

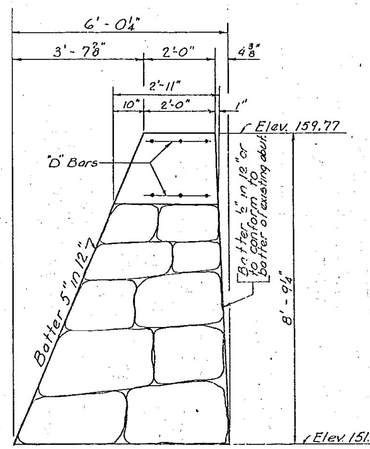


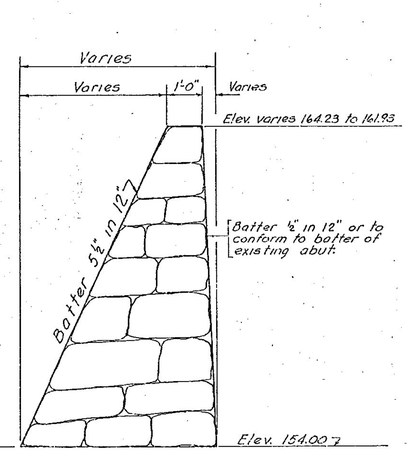

PLAN ABUT. #2




ELEVATION ABUT. #2




SECT. - "B-B"




SECT. - "C-C"

# ABUTMENT DETAILS
# ELLIOT STREET BRIDGE
# BRATTLEBORO

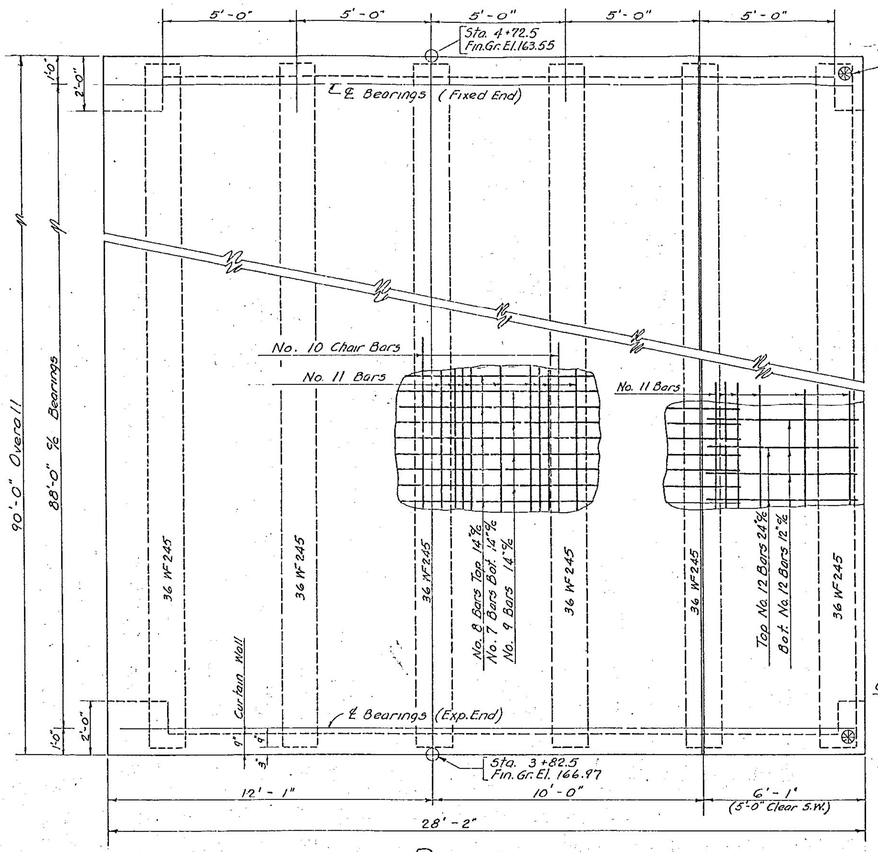
scale: ½"=1'

BRATTLEBORO
BP.2000(26)
BRIDGE NO. 31
SHEET 25 OF 26
FOR REFERENCE ONLY

## ESTIMATED QUANTITIES

| ABUTMENT # 1 | | ABUTMENT # 2 | |
|---|---|---|---|
| Structure Excav. | 25 c.y. | Structure Excav. | 60 c.y. |
| Concrete Class "A" | 7 c.y. | Concrete, Class "A" | 7 c.y. |
| Reinforcing Steel | 303 lbs. | Reinforcing Steel | 290 lbs. |
| Dry Rubble Masonry | 2 c.y. | Dry Rubble Masonry | 15 c.y. |

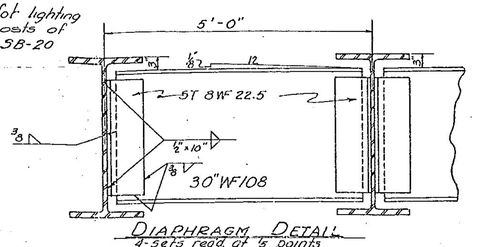
Surveyed by
Designed by E.F.P.
Drawn by E.F.P. 2/1947
Traced by H.W.S.
Checked by L.M.B. 2-25-47
Series T No. 7-1946 Filed
Sheet 4 of 11 Sheets




PLAN

scale: 3/8" = 1'-0"

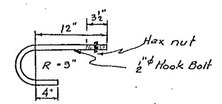
Provide Conduit for lighting system in end posts of Bridge. See Std. SB-20 Detail-M




DIAPHRAGM DETAIL

4-5 sets req'd. at 5 points

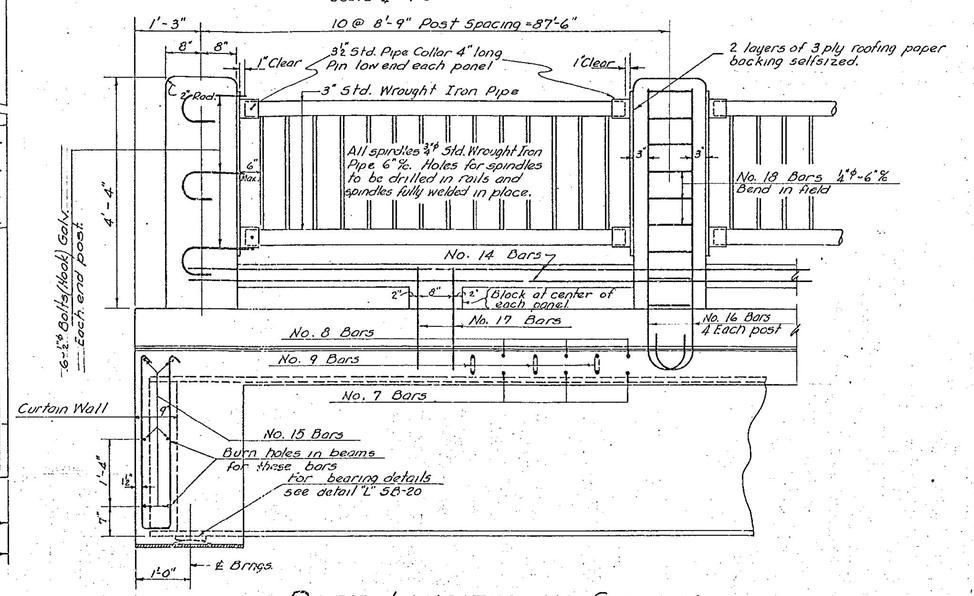
Scale 3/4" = 1'-0"




HOOK BOLT

scale: 1" = 1'-0"

24 Req.




PART LONGITUDINAL SECTION

scale - 3/4" - 1'-0"

| REINFORCING STEEL SCHEDULE | | | | |
|---|---|---|---|---|
| BAR NO. | SIZE | TOTAL REQ'D. | OVERALL LGTH. | DETAIL |
| 7 | ⅝" ϕ | 78 | 23'-4" | Straight |
| 8 | ⅝" ϕ | 78 | 24'-8" | R=18" 23'-0" R=18" 4" 4" |
| 9 | ⅝" ϕ | 77 | 25'-8" | |
| 10 | ¾" ϕ | 15 | 31'-9" | Straight |
| 11 | ½" ϕ | 156 | 31'-3" | " |
| 12 | ⅝" ϕ | 135 | 7'-3" | R=3" 5'-0" R=3" 4" 4" |
| 13 | ⅜" ϕ | 34 | 7'-0" | 6" 3'-0" Bar 13 3'-9" Bar 13-A |
| 13A | ⅜" ϕ | 8 | 8'-6" | |
| 14 | ¾" ϕ | 24 | 31'-4" | Straight |
| 15 | ⅝" ϕ | 12 | 27'-6" | Straight |
| 16 | 1" ϕ | 88 | 6'-5" | 5'-0" R=4" 4" |
| 17 | ½" ϕ | 40 | 4'-10" | 8" 1'-10" |
| 18 | ¼" ϕ | 198 | 3'-6" | Straight - Bend to fit in field |

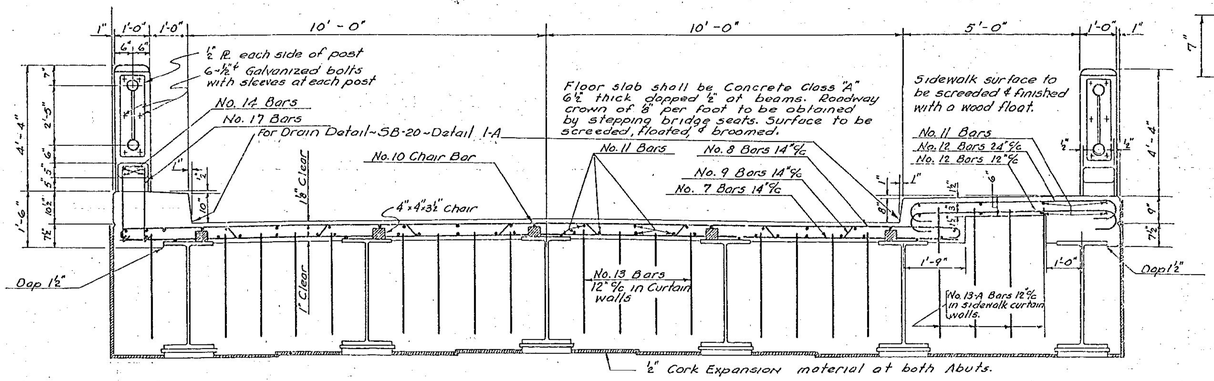
GENERAL NOTES:-

Beams shall be rolled to a true circular camber, the full length of the beam. Middle ordinate for camber 3¾".

All Structural Steel shall be painted as specified under item 43-B of Pamphlet "E", Standard Road & Bridge Specifications, State of Vermont, 1936. Final coat shall be green.

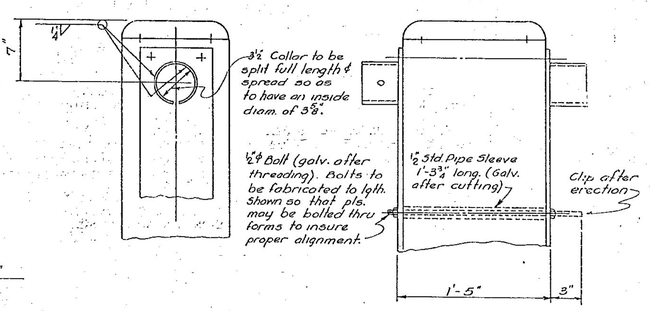
All material & construction shall conform to the Standard Road & Bridge Specifications, State of Vermont, 1936 & A.A.S.H.O. Specifications of 1944.

Designed for H-15(44) live loading & 25" paving allowance.




CROSS SECTION OF BRIDGE

scale: ½" = 1'-0"




DETAIL OF TOP OF POSTS

scale: 1½" = 1'-0"

# SUPERSTRUCTURE DETAILS
## ELLIOT STREET BRIDGE
## BRATTLEBORO, VT.

scales as noted

**BRATTLEBORO**
**BF 2000(26)**
**BRIDGE NO. 31**
**SHEET 26 OF 26**
**FOR REFERENCE ONLY**

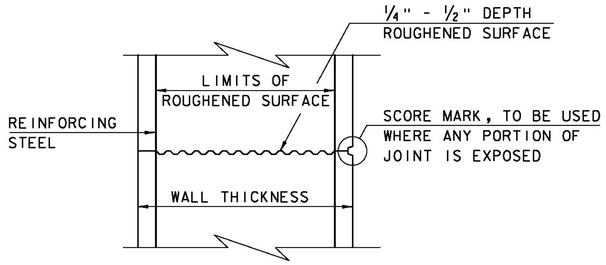
ESTIMATED QUANTITIES

| | |
|---|---|
| Conc. Class "A" | 79 c.y. |
| Reinforcing Steel | 14,300 lbs. |
| Steel Superstructure | 150,500 lbs. |
| Conduit for Lighting System | 1 L.S. |

| | |
|---|---|
| Surveyed by | |
| Designed by | E.F.P. |
| Drawn by | E.F.P. |
| Traced by | H.W.S. |
| Checked by | L.M.B. 2-19-47 |
| Series T-7 | No. 1946 Filed |
| | Sheet 3 of 11 Sheets |

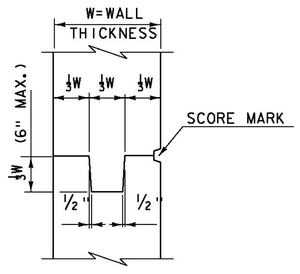
## CONCRETE GENERAL NOTES

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

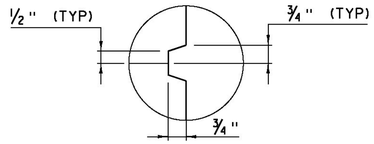



## TYPICAL HORIZONTAL CONSTRUCTION JOINT
(NOT TO SCALE)

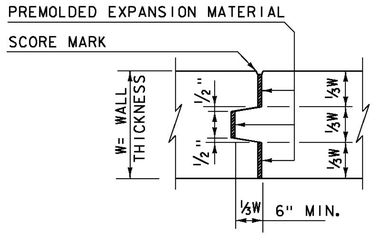
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



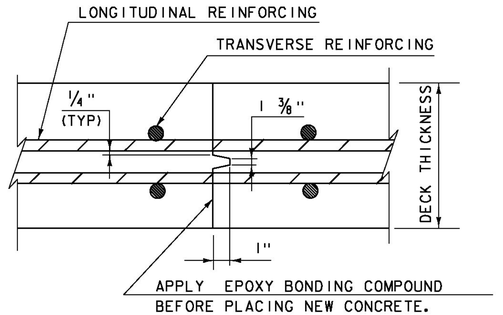

## TYPICAL CONCRETE CONSTRUCTION JOINT
(NOT TO SCALE)



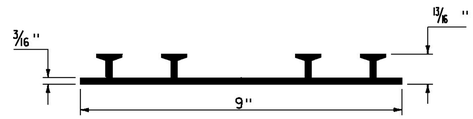

## SCORE MARK DETAIL
(NOT TO SCALE)




## TYPICAL CONCRETE EXPANSION JOINT
(NOT TO SCALE)



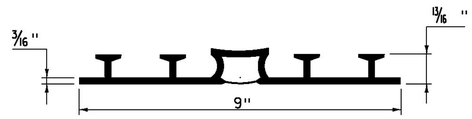

## TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS
(NOT TO SCALE)




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

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

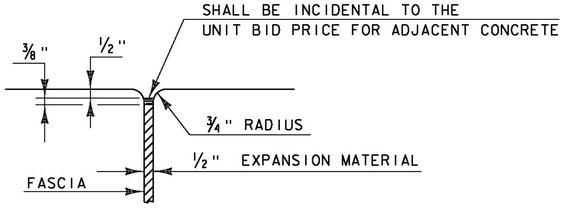
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.




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

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

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




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

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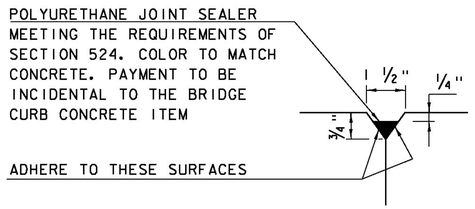
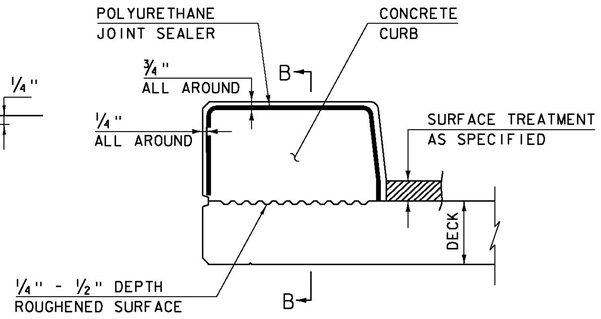
# CONCRETE DETAILS AND NOTES

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES SECTION

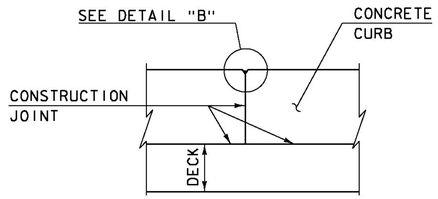
STRUCTURES DETAIL
SD-501.00



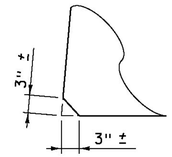

DETAIL "B"
(NOT TO SCALE)




CONCRETE CURB JOINT SECTION
(NOT TO SCALE)




SECTION B - B
(NOT TO SCALE)




ACUTE ANGLE CLIP DETAIL
(NOT TO SCALE)

1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION

## CONCRETE CURB JOINT NOTES

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

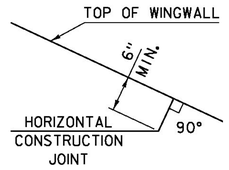
2. IF THE CONTRACTOR CHOOSES NOT TO USE AN APPROVED SHRINKAGE REDUCING ADMIXTURE, THE CURBS SHALL BE CONSTRUCTED WITH CONSTRUCTION JOINTS SPACED AT A MAXIMUM OF 15'-0" CENTER TO CENTER AND 2'-0" MINIMUM FROM THE CENTER OF NEAREST BRIDGE RAILING POST.

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

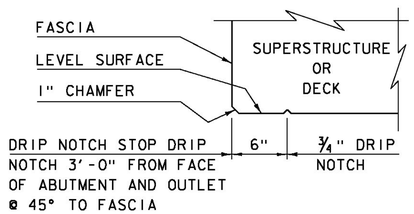
4. WHEN CURB JOINTS ARE USED THE CURBS SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOUR DELAY BETWEEN ADJACENT PLACEMENTS.

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

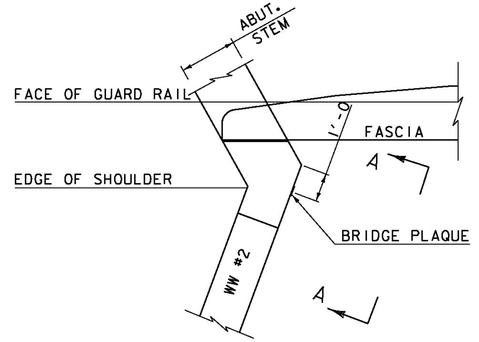
6. THE JOINT SPACING AND DETAILS SHOWN SHALL APPLY TO SIDEWALKS WHEN SHOWN IN THE PLANS.



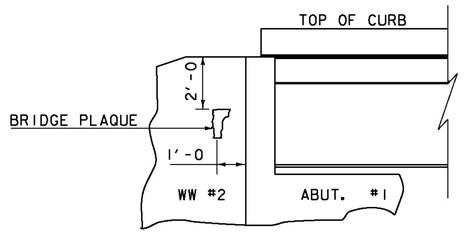

HORIZONTAL WINGWALL CONSTRUCTION JOINT
(NOT TO SCALE)




DRIP NOTCH DETAIL
(NOT TO SCALE)




PLAN




VIEW "A - A"

BRIDGE PLAQUE
(NOT TO SCALE)

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

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

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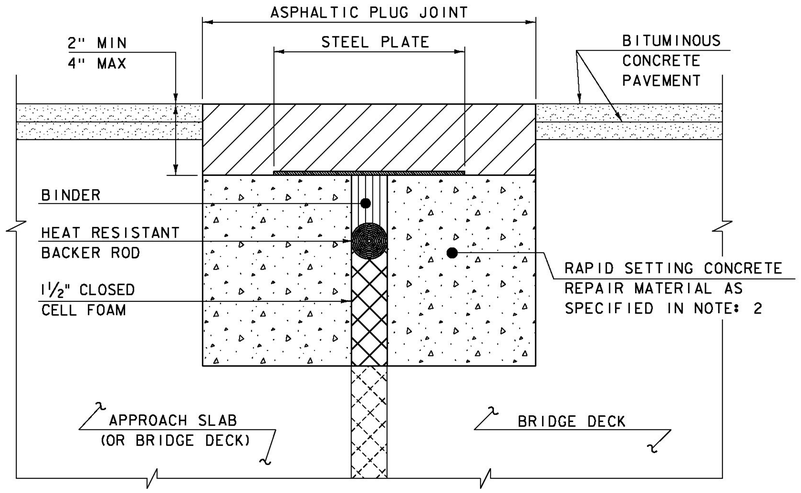
# CONCRETE DETAILS AND NOTES

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL
SD-502.00




## ASPHALTIC PLUG JOINT DETAIL - REHAB

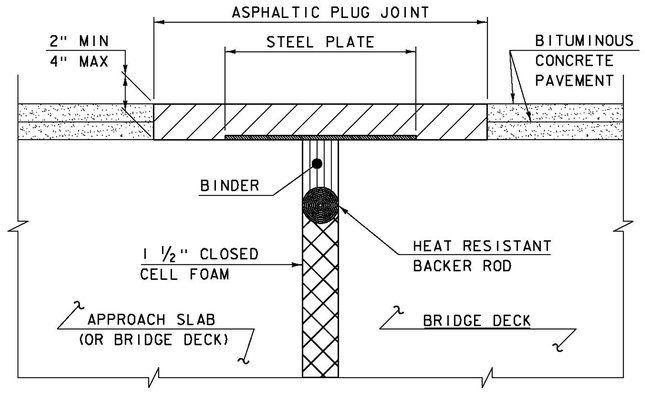
NOTES:

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

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

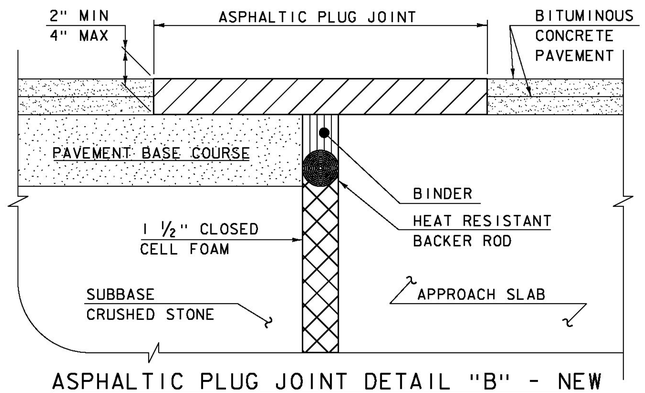
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.

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




## ASPHALTIC PLUG JOINT DETAIL "A" - NEW

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




## ASPHALTIC PLUG JOINT DETAIL "B" - NEW

## ASPHALTIC PLUG JOINT NOTES

INSTALLATION:

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

WEATHER LIMITATIONS

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

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

DETAILS ON THIS SHEET ARE NOT TO SCALE.

| REVISIONS | |
|---|---|
| MAY 7, 2010 | APPROVED FOR USE BY VAOT STRUCTURES SECTION |
| AUGUST 29, 2011 | ADD DETAIL "B" AND REV. NOTES |
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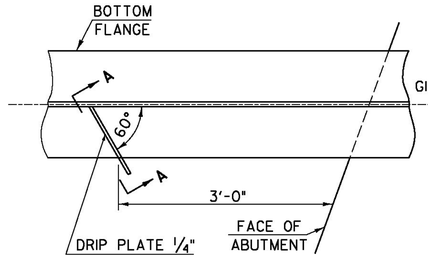
# BRIDGE JOINT
# ASPHALTIC PLUG

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - DIVISION

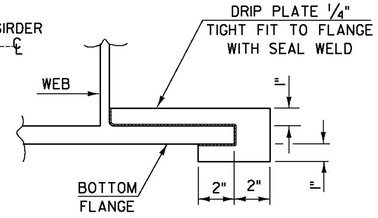
STRUCTURES DETAIL
SD-516.10

STRUCTURAL STEEL GENERAL NOTES:

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

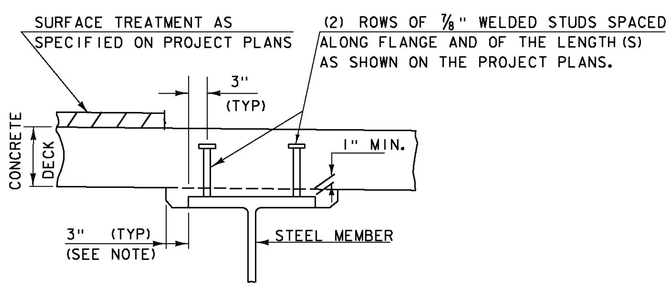



PLAN DRIP PLATE



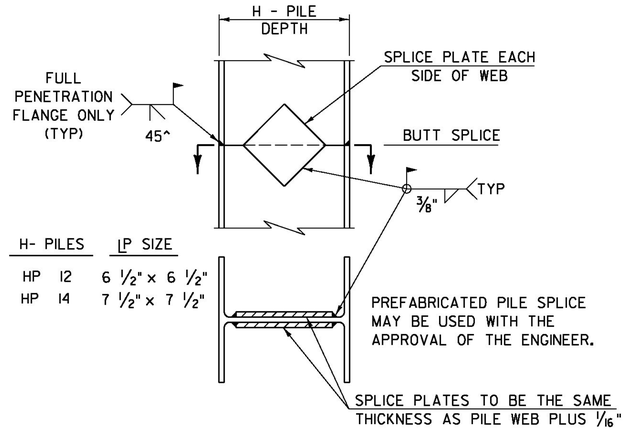

SECTION A - A

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




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

HAUNCH AND SHEAR CONNECTOR DETAIL




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

DETAIL OF PILE SPLICE

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

| REVISIONS | |
|---|---|
| MAY 7, 2010 | APPROVED FOR USE BY VAOT STRUCTURES SECTION |
| JUNE 4, 2010 | MODIFIED NOTES |
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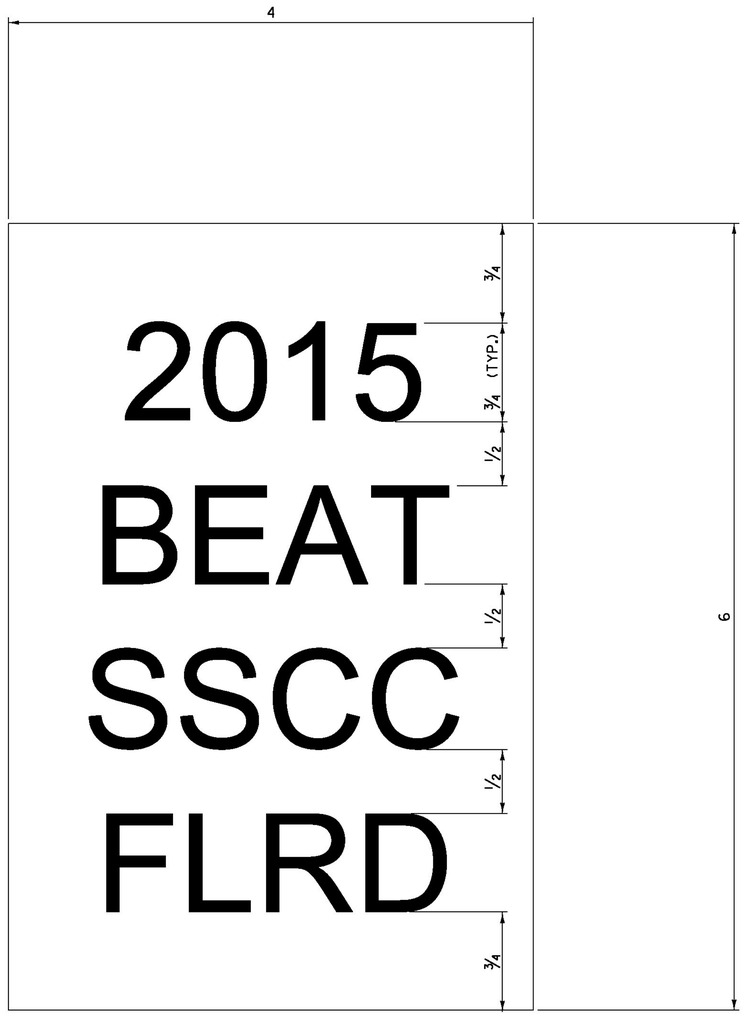
# STRUCTURAL STEEL DETAILS & NOTES

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL
SD-601.00




## GENERAL NOTES:

1. LINE ONE SHALL INDICATE THE INSTALLATION YEAR (YYYY).
2. LINE TWO SHALL INDICATE THE MODEL AS IDENTIFIED ON THE APPROVED PRODUCTS LIST. FOR GENERIC INSTALLATIONS THE STANDARD DRAWING DESIGNATION OR NAME AS IDENTIFIED IN THE FHWA ELIGIBILITY LETTER SHALL BE USED.
3. LINE THREE SHALL SHALL INDICATE ADDITIONIAL MODEL INFORMATION IF NECESSARY.
4. LINE FOUR SHALL INDICATE FLARED (FLRD) OR TANGENT (TANG).
5. LEGEND SHALL BE ONE ARIEL FONT.
6. LEGEND SHALL BE BLACK ON A WHITE BACKGROUND, LENGEND AND BACKGROUND SHALL NOT BE REFLECTIVE.
7. SUITABLE MATERIAL SHALL BE USED SO AS TO NOT DETERIORATE DURING EXPOSURE TO WEATHER.
8. LABELS SHALL BE APPLIED IN SUCH A WAY THAT THEY REMAIN INTACT DURING THE LIFE OF THE TERMINAL.
9. FOR W-BEAM GUARDRAIL, LABEL SHALL BE PLACED ON THE TOP OF POST ONE FACING AWAY FROM TRAFFIC.
10. FOR BOX BEAM GUARDRAIL, LABEL SHALL BE PLACED ON THE BOX BEAM ADJACENT TO POST ONE FACING AWAY FROM TRAFFIC.
11. PAYMENT SHALL BE INCIDENTAL TO OTHER TRAFFIC BARRIER ITEMS.
12. ALL DIMENSIONS IN INCHES.

| REV. | DATE | DESCRIPTION |
|---|---|---|
| 0 | NOV. 3, 2015 | ORIGINAL APPROVAL |
| | | |
| | | |
| | | |
| | | |

OTHER DETAILS REQUIRED: NONE

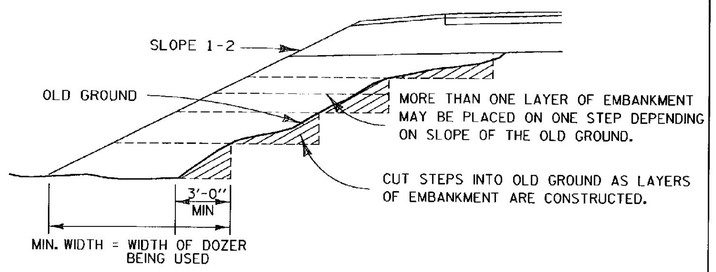
DETAILS APPROVED FOR USE BY HIGHWAY SAFETY & DESIGN

# GUARDRAIL TERMINAL LABEL DETAIL

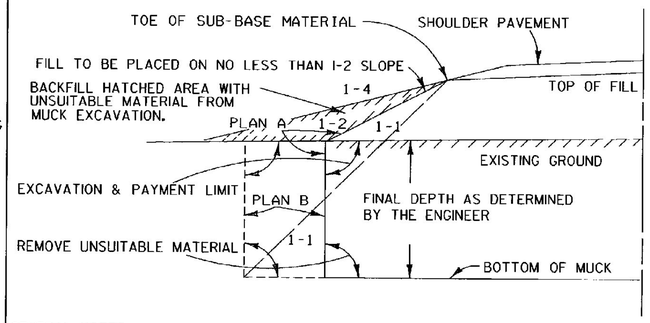
VTrans Working to Get You There
VERMONT AGENCY OF TRANSPORTATION

HIGHWAY SAFETY & DESIGN DETAIL

HSD-621.06




## METHOD FOR CONSTRUCTING AN EMBANKMENT ON EARTH SLOPE



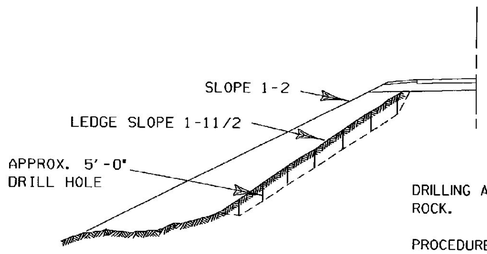

GENERAL NOTES :

THE MUCK OR UNSUITABLE MATERIAL SHALL BE EXCAVATED TO THE NEAT LINES SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER.

EXCAVATION AND PAYMENT LIMIT WILL BE DETERMINED FROM EITHER PLAN "A" OR PLAN "B", WHICHEVER PRODUCES THE GREATER WIDTH IN A GIVEN MUCK AREA.

BACKFILL MATERIAL MUST MEET THE REQUIREMENTS SET FORTH UNDER MUCK EXCAVATION,SECTION 203

## TYPICAL NEAT PAY LINES FOR MUCK EXCAVATION

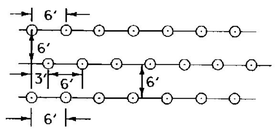



DRILLING AND BLASTING OF SOLID ROCK.

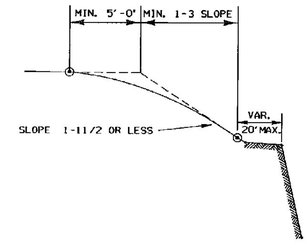
PROCEDURE TO BE FOLLOWED WHEN LEDGE SLOPE ON OLD GROUND IS BETWEEN A 1-1 AND A 1-5 SLOPE.

ALL HOLES TO BE APPROXIMATELY 5'-0" DEEP. HOLES TO BE IN ROWS, SPACED AND STAGGERED AS SHOWN IN DRILL PATTERN, OR AS DIRECTED BY THE ENGINEER, SEE SECTION 205

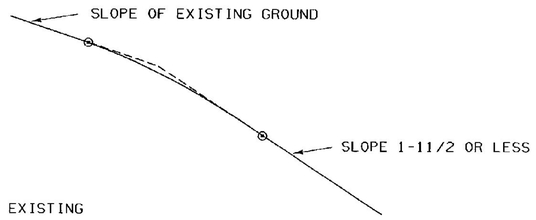
DRILL PATTERN

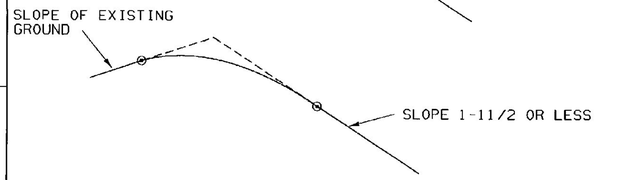



## A METHOD FOR PREPARING LEDGE SLOPE BEFORE CONSTRUCTING AN EMBANKMENT




EARTH SECTIONS ABOVE STABLE ROCK OR EQUIVILENT OUTCROPS TO BE ROUNDED, AS FAR AS POSSIBLE AS THOUGH TOTAL HEIGHT OF SLOPE WAS IN EARTH CUT.

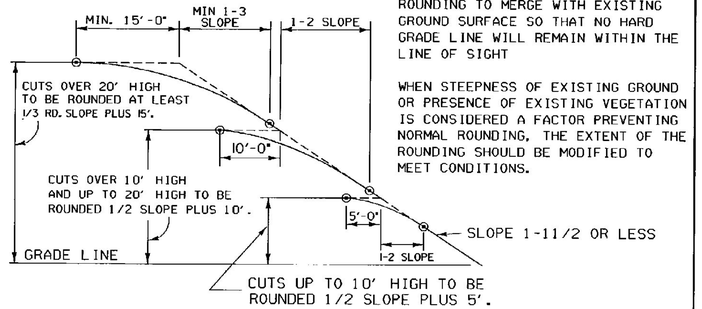



SLOPES TO BE ROUNDED AS SHOWN IN ORDER TO ALLOW FOR PERSPECTIVE FORESHORTENING AS SEEN FROM THE ROAD AND SO THAT FINISHED SLOPES WILL BETTER SUPPORT VEGETATIVE COVER.

ROUNDING TO MERGE WITH EXISTING GROUND SURFACE SO THAT NO HARD GRADE LINE WILL REMAIN WITHIN THE LINE OF SIGHT

WHEN STEEPNESS OF EXISTING GROUND OR PRESENCE OF EXISTING VEGETATION IS CONSIDERED A FACTOR PREVENTING NORMAL ROUNDING, THE EXTENT OF THE ROUNDING SHOULD BE MODIFIED TO MEET CONDITIONS.




## TYPICAL SLOPE ROUNDING

REVISIONS AND CORRECTIONS

DEC. 6, 1971 - ORIGINAL APPROVAL DATE

JUNE 1, 1994 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.

APPROVED

APPROVED FOR THIS PROJECT AND/OR DESIGN IMPLEMENTATION. FHWA FINAL APPROVAL PENDING.

Gordon B. MacArthur PE
DIRECTOR OF ENGINEERING

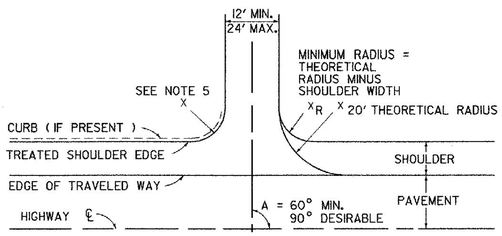
Peter M. Murphy PE
DESIGN ENGINEER

# EMBANKMENT ON EARTH SLOPE
# EMBANKMENT ON ROCK SLOPE
# MUCK EXCAVATION
# TYPICAL SLOPE ROUNDING

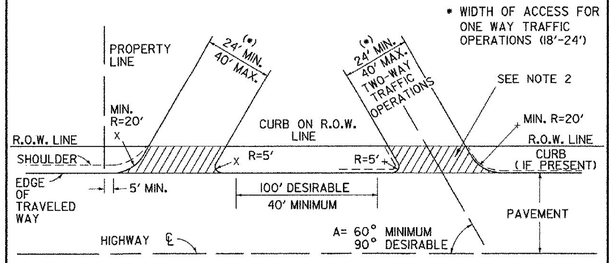
VERMONT AGENCY OF TRANSPORTATION

# STANDARD B-5

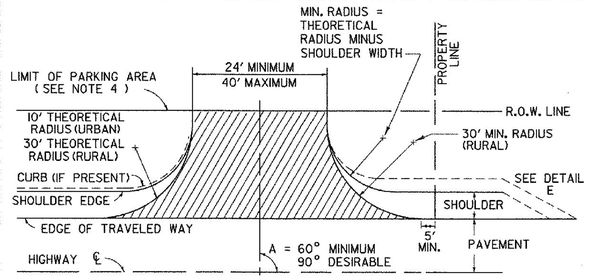
## DETAIL A — RESIDENTIAL DRIVE




## DETAIL B — DUAL COMMERCIAL DRIVE TO BE USED ONLY UNDER SPECIAL CONDITIONS

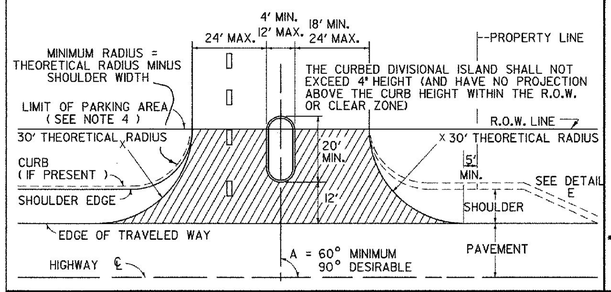



## DETAIL C — TWO-WAY UNDIVIDED COMMERCIAL DRIVE FOR SINGLE STORES, BUSINESSES, SMALL HOUSING DEVELOPMENTS

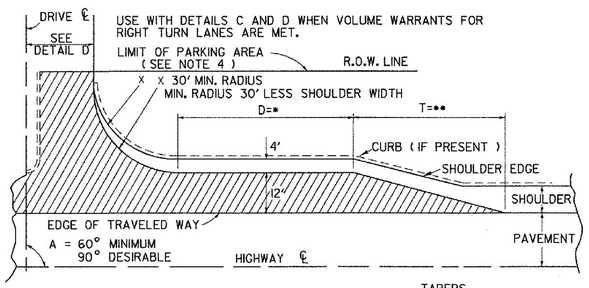



THIS DETAIL WILL ALSO APPLY TO COMMERCIAL SERVICE DRIVES, WHEN AUTHORIZED, HAVING A MAXIMUM WIDTH OF 20'. THE SERVICE DRIVE WILL HAVE A "SERVICE VEHICLES ONLY" SIGN PLACED AT THE HIGHWAY ROW LINE. SIGN SHALL BE 18"X 24" AS PRESCRIBED IN THE "STANDARD HIGHWAY SIGNS BOOK", A SUPPLEMENTAL PUBLICATION TO MUTCD.

## DETAIL D — TWO-WAY COMMERCIAL DRIVE WITH DIVISIONAL ISLAND FOR SHOPPING CENTERS, LARGE HOUSING DEVELOPMENTS, INDUSTRIAL PLANTS AND SERVICE STATIONS




## DETAIL E — RIGHT TURN LANE FOR COMMERCIAL DRIVE (UNSIGNALIZED INTERSECTIONS ONLY)

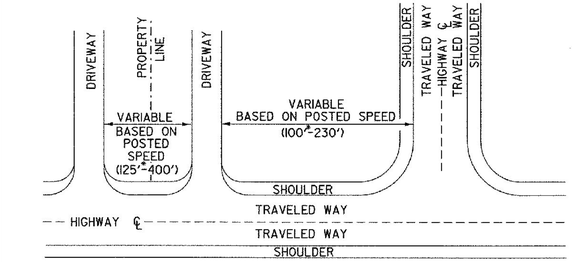



* STORAGE LENGTH IS VARIABLE DEPENDING ON TRAFFIC VOLUME AND MUST BE ADJUSTED TO PROVIDE PROPER DECELERATION LENGTH. REFER TO VAOT STANDARD E-192

TAPERS

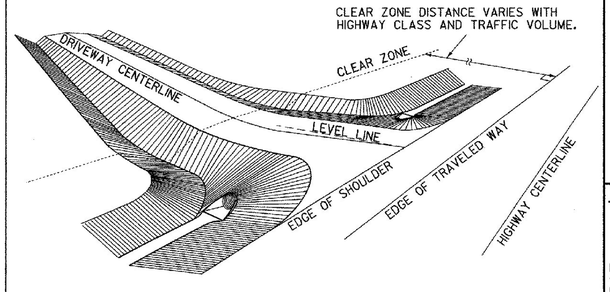
| SPEED (MPH) | 30 | 35 | 40 | 50 |
|---|---|---|---|---|
| **LENGTH (MIN)(FT)(T) | 100 | 120 | 140 | 180 |
| RATE | 8:1 | 10:1 | 12:1 | 15:1 |

## DETAIL F — MINIMUM HORIZONTAL SEPARATION BETWEEN DRIVEWAYS AND INTERSECTING SIDEROADS

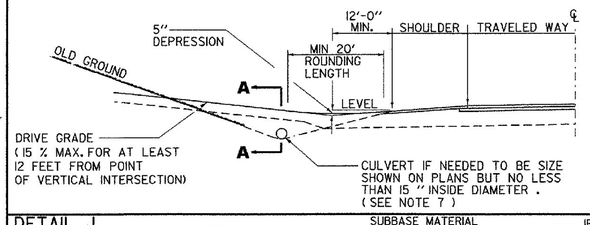



* MINIMUM UNLESS NO OTHER REASONABLE ACCESS IS AVAILABLE AND PRIOR APPROVAL IS GRANTED BY THE VAOT ITEMS SUCH AS TRAFFIC SIGNALS, HIGH TRAFFIC VOLUMES, OR FUNCTIONAL CLASS OF HIGHWAY SHOULD BE CONSIDERED WHEN DETERMINING APPROPRIATE SEPARATION DISTANCE. WHEN CURRENT RECOMMENDED SEPARATION DISTANCE CANNOT BE OBTAINED RESTRICTION OF TURNING MOVEMENTS MAY BE REQUIRED.

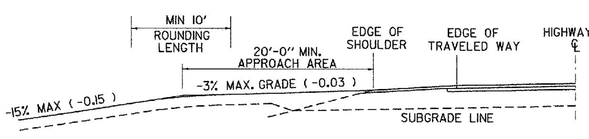
## DETAIL G — PERSPECTIVE SKETCH OF DRIVE INTERSECTION SHOWING DEPRESSION



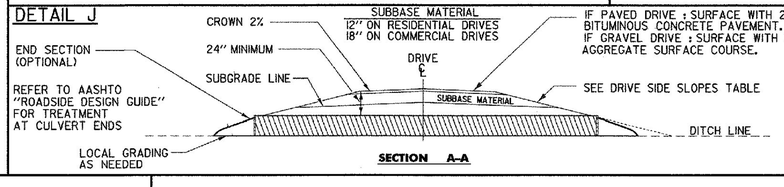

## DETAIL H — PROFILE OF DRIVE INTERSECTION SHOWING 5" DEPRESSION ( CUT SECTION )




## DETAIL I — PROFILE OF DRIVE INTERSECTION ( FILL SECTION )




## DETAIL J




**SECTION A-A**

DRIVE SIDE SLOPES

| LOCATION OF SLOPE | SLOPE RATE |
|---|---|
| V > 40 MPH | 1:6 OR FLATTER |
| URBAN AREAS, OR V ≤ 40 MPH | 1:4 DESIRABLE<br>1:2 ALLOWABLE |
| OUTSIDE CLEAR ZONE | 1:2 OR FLATTER |

NOTES:

1. THIS SHEET IS INTENDED FOR USE BY DESIGNERS ON HIGHWAY PROJECTS AND IN CONJUNCTION WITH A PERMIT FOR WORK WITHIN HIGHWAY RIGHTS OF WAY (FORM TA 210). ALL CONSTRUCTION REQUIRED BY THE PERMIT AND INDICATED ON THIS SHEET SHALL BE THE RESPONSIBILITY OF THE APPLICANT AND IS SUBJECT TO THE APPROVAL OF THE VT. AGENCY OF TRANSPORTATION. WHEN USED WITH THE PLANS FOR A HIGHWAY CONSTRUCTION PROJECT, THIS SHEET IS INTENDED TO BE A GUIDE FOR THE DESIGNER CONCERNING DRIVE WIDTHS, HORIZONTAL, VERTICAL AND GEOMETRIC CHARACTERISTICS.
2. ALL COMMERCIAL DRIVES SHALL BE PAVED FROM THE EDGE OF THE TRAVELED WAY TO THE HIGHWAY RIGHT-OF-WAY, TO THE FARTHEST POINT OF CURVATURE ON THE DRIVEWAY EDGE OR AS DIRECTED BY THE DISTRICT TRANSPORTATION ADMINISTRATOR. THIS PAVING IS INDICATED IN DETAILS (B THRU E) BY HATCHING.
3. DEPTH OF SUBBASE AND PAVEMENT TO BE THE SAME AS HIGHWAY OR AS SHOWN IN DETAIL J WITHIN THE LIMITS OF THE HIGHWAY RIGHT-OF-WAY.
4. VEHICULAR ACCESS FROM PARKING AREAS TO THE RIGHT-OF-WAY AT OTHER THAN APPROVED ACCESS POINTS WILL BE PREVENTED BY THE CONSTRUCTION OF CURBING OR OTHER SUITABLE PHYSICAL BARRIER.
5. IF CURB IS PRESENT, SEE APPROPRIATE CURB DETAIL STANDARD OR MATCH TOWN/CITY STANDARD CURB TREATMENT.
6. WHERE TRAFFIC VOLUME FOR A PROJECT IS SUBSTANTIAL THE AGENCY MAY REQUIRE SPECIAL LANES FOR TURNING, SIGNALS OR OTHER MODIFICATIONS. BASED ON TRAFFIC STUDIES THE AGENCY WILL DETERMINE SPECIFIC TREATMENT TO BE USED. ON DEVELOPER PROJECTS THE AGENCY WILL WORK WITH THE APPLICANT TO IMPLEMENT CHANGES TO THE STATE HIGHWAY.
7. CIRCULAR DRAINAGE CULVERTS UNDER DRIVES SHALL HAVE A MINIMUM INSIDE DIAMETER ( I.D. ) OF 15". PIPE ARCHES USED UNDER DRIVES SHALL HAVE A MINIMUM INSIDE CROSS-SECTIONAL AREA EQUIVALENT TO THAT PROVIDED BY A 15" CIRCULAR PIPE.
8. THE OFFSET BETWEEN THE PROPERTY LINE AND THE EDGE OF THE DRIVEWAY MAY BE GOVERNED BY LOCAL ZONING LAWS. DRIVEWAY WIDTH RESTRICTIONS SHOWN PERTAIN ONLY TO THE AREA WITHIN THE HIGHWAY R.O.W. OR THE END OF THE TURNING RADIUS WHICHEVER IS GREATEST.
9. DRIVEWAY GRADES STEEPER THAN THOSE SHOWN MAY BE ALLOWED AS LONG AS A 20' APPROACH AREA IS ACHIEVED FOR THE VEHICLE TO PAUSE BEFORE ENTERING THE HIGHWAY. (WHERE CURB & SIDEWALKS EXIST, SEE STANDARDS C-2A & C-2B)
10. INTERSECTION SIGHT DISTANCES, EQUAL TO OR GREATER THAN THOSE SHOWN BELOW, SHOULD BE PROVIDED IN BOTH DIRECTIONS FOR ALL DRIVES ENTERING ON PUBLIC HIGHWAYS, UNLESS OTHERWISE APPROVED BY THE AGENCY OF TRANSPORTATION. INTERSECTION SIGHT DISTANCE IS MEASURED FROM A POINT ON THE DRIVE AT LEAST 15 FEET FROM THE EDGE OF TRAVELED WAY OF THE ADJACENT ROADWAY AND MEASURED FROM A HEIGHT OF EYE OF 3.5 FEET ON THE DRIVE TO A HEIGHT OF 3.50 FEET ON THE ROADWAY.

SIGHT DISTANCE CHART

| POSTED SPEED OR DESIGN SPEED ( M.P.H. ) | MINIMUM STOPPING SIGHT DISTANCE (FT) | MINIMUM INTERSECTION SIGHT DISTANCE * (FT) |
|---|---|---|
| 25 | 155 | 280 |
| 30 | 200 | 335 |
| 35 | 250 | 390 |
| 40 | 305 | 445 |
| 45 | 360 | 500 |
| 50 | 425 | 555 |
| 55 | 495 | 610 |
| 60 | 570 | 665 |
| 65 | 645 | 720 |

THE ABOVE VALUES ARE TAKEN FROM THE 2004 AASHTO "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS & STREETS."

NOTE : ADVANCE WARNING SIGNS WILL BE REQUIRED IF OBTAINABLE INTERSECTION SIGHT DISTANCES ARE BELOW MINIMUM STOPPING SIGHT DISTANCES.

THE CHART IS ENTERED TO SELECT DESIGN VALUES BASED ON THE POSTED SPEED LIMIT IN MPH. VALUES FOR DESIGN ARE CALCULATED BASED ON THE DESIGN SPEED IN MPH.

* ASSUMES A GAP OF 7.5 SECONDS IN THE TRAFFIC STREAM ON THE HIGHWAY MAINLINE BASED ON THE HIGHWAY DESIGN SPEED IN MPH. THIS ALLOWS A STOPPED PASSENGER VEHICLE TO ENTER THE MAINLINE FROM THE DRIVE WITHOUT UNDULY INTERFERING WITH THE HIGHWAY OPERATIONS.

REVISIONS AND CORRECTIONS

DEC. 11, 1992 - THIS STANDARD SUPERCEDES B-71(7/23/80R), B-71A (3/12/90), AND B-13 (12/14/71).
JUNE 1, 1994 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.
MAR. 10, 1995 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.
NOV. 16, 2000 - CHANGES MADE TO CONFORM WITH LANGUAGE AND DIMENSIONS IN ACCESS MANAGEMENT PROGRAM GUIDELINES.
FEB 1, 2004 - CHANGES MADE TO SIGHT DISTANCE CHART TO CONFORM WITH NEWEST AASHTO CRITERIA.
JULY 8, 2005 - CHANGE MADE TO OBJECT HEIGHT TO CONFORM WITH NEWEST AASHTO CRITERIA

APPROVED

Richard Tetreault
DIRECTOR OF PROGRAM DEVELOPMENT

Craig S. Keller
CHIEF OF UTILITIES AND PERMITS

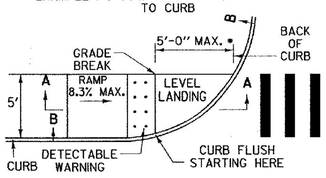
Michael Conyers
FEDERAL HIGHWAY ADMINISTRATION

# STANDARDS FOR RESIDENTIAL AND COMMERCIAL DRIVES

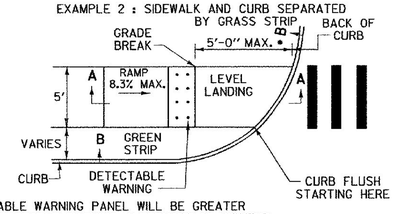
VERMONT AGENCY OF TRANSPORTATION

# STANDARD B-71

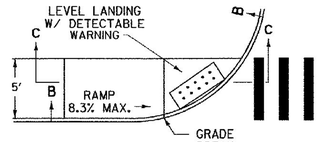
EXAMPLE 1 : SIDEWALK ADJACENT TO CURB




EXAMPLE 2 : SIDEWALK AND CURB SEPARATED BY GRASS STRIP

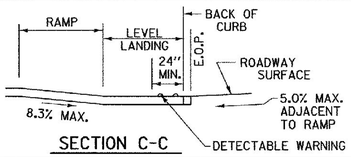



* IF EITHER CORNER OF THE DETECTABLE WARNING PANEL WILL BE GREATER THAN 5'-0" FROM BACK OF CURB, USE DETECTABLE WARNING ALTERNATE PLACEMENT

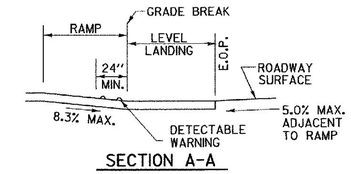



ALTERNATE PLACEMENT IS THE SAME WITH OR WITHOUT THE GRASS STRIP

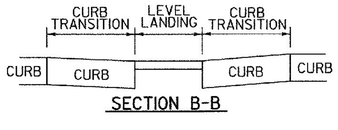
EXAMPLE 1 & 2 DETECTABLE WARNING ALTERNATE PLACEMENT




SECTION C-C



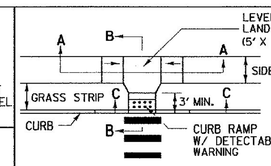

SECTION A-A




SECTION B-B

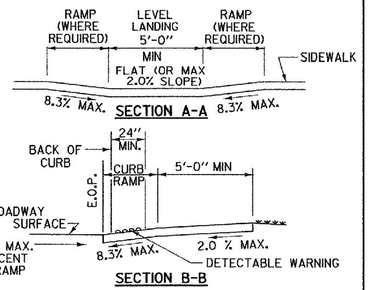
## SIDEWALK RAMP TYPE 1

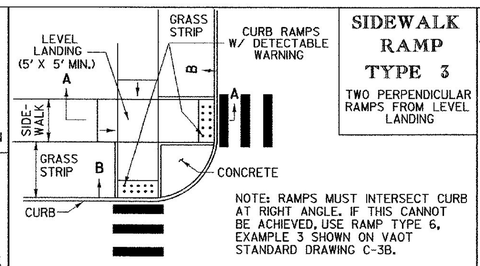
SINGLE WALK-STRAIGHT APPROACH TO PARALLEL RAMP.



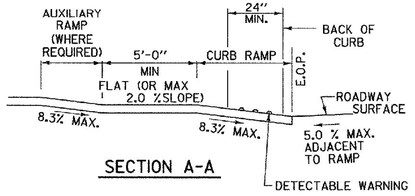

## SIDEWALK RAMP TYPE 2

SINGLE PERPENDICULAR RAMP FROM LEVEL LANDING TANGENT SECTION

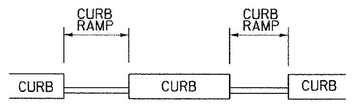



NOTE: RAMPS MUST INTERSECT CURB AT RIGHT ANGLE. IF THIS CANNOT BE ACHIEVED, USE RAMP TYPE 6, EXAMPLE 3 SHOWN ON VAOT STANDARD DRAWING C-3B.




SECTION A-A



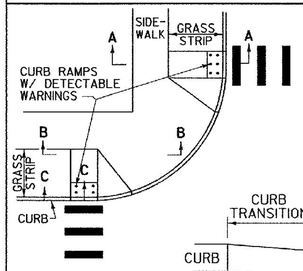

SECTION B-B (ALONG FACE OF CURB)

## SIDEWALK RAMP TYPE 3

TWO PERPENDICULAR RAMPS FROM LEVEL LANDING

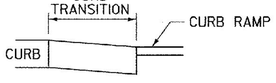
## GENERAL NOTES:

1. THE DIMENSIONS AND GRADES SHOWN ON THIS STANDARD WILL BE ADHERED TO IN THE DESIGN AND THE CONSTRUCTION OF SIDEWALK RAMPS. WHERE SIDEWALKS RUN ADJACENT TO ROADWAYS ON STEEP (5% OR GREATER) GRADES, RAMP GRADES WILL BE AS FLAT AS POSSIBLE. ( ON LOW SIDE OF DRIVES AND INTERSECTING SIDE STREETS, RAMPS SHALL SLOPE TOWARDS DRIVE OR SIDE STREET @ 2% )
2. NOMINAL RAMP DIMENSIONS AND GRADES:
   RAMP WIDTH - 4'-0" MINIMUM
   RAMP SLOPE - 8.3% MAXIMUM
   FLARE SLOPE - 10% MAXIMUM
   RAMP CROSS SLOPE - 2.0% MAXIMUM
3. A LEVEL LANDING (NO GREATER THAN 2.0% SLOPE IN ANY DIRECTION) SHALL BE PROVIDED AT THE TOP OF SIDEWALK RAMPS TO ALLOW FOR STOPPING AND MANEUVERING OF WHEELCHAIRS.
4. LEVEL LANDINGS (NO GREATER THAN 2.0% SLOPE IN ANY DIRECTION) AT THE BOTTOM OF PERPENDICULAR RAMPS SHALL BE WHOLLY CONTAINED WITHIN MARKED CROSSWALKS.
5. DUMMY JOINTS SHALL BE PROVIDED AT TRANSITIONS (GRADE CHANGES) AT TOPS AND BOTTOMS OF RAMPS AND FLARES.
6. VERTICAL DROP-OFF EDGES TO RAMPS WILL NOT BE BUILT UNLESS THE RAMP ABUTS AN AREA WHICH WILL NOT BE USED BY PEDESTRIANS.
7. NO VERTICAL "LIP" OR "CURB REVEAL" WILL BE PROVIDED WHERE THE RAMP ADJOINS THE ROADWAY.
8. AT MARKED CROSSWALKS, THE FULL WIDTH OF THE RAMP OR LANDING SHALL BE CONTAINED WITHIN THE PAVEMENT MARKINGS.
9. WHERE POSSIBLE, RAMP FLARES SHOULD BE LOCATED OUTSIDE THE DIRECT LINE OF TRAVEL MOST LIKELY TO BE FOLLOWED BY THE VISUALLY IMPAIRED.
10. SIGNS, POLES, PLANTERS, MAILBOXES, ETC. SHALL NOT BE LOCATED WHERE THEY WILL INTERFERE WITH THE USE OF SIDEWALK RAMPS.
11. WHERE POSSIBLE, SIDEWALK RAMPS SHOULD NOT BE LOCATED WHERE USERS MUST CROSS DROP INLET GRATES, MANHOLE COVERS OR OTHER ACCESS LIDS. IF THIS CANNOT BE AVOIDED THEN GRATE DESIGN AND PLACEMENT SHALL CONFORM TO ADA REQUIREMENTS.
12. CURB DRAINAGE SHOULD BE CONSTRUCTED SO AS TO PRECLUDE THE FLOW OF WATER PAST THE SIDEWALK RAMP.
13. WHEREVER FEASIBLE, TWO SIDEWALK RAMPS ARE RECOMMENDED IN PREFERENCE TO A SINGLE RAMP.
14. JOINTS WILL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT SIDEWALK SPECIFICATIONS, HOWEVER EXPANSION JOINTS WITHIN THE SIDEWALK RAMP AREA WILL BE AVOIDED WHEREVER POSSIBLE.
15. SIDEWALKS THAT ARE LESS THAN 5' WIDE REQUIRE 5' WIDE BY 5' LONG PASSING AREAS (NO GREATER THAN 2.0% CROSS SLOPE) AT INTERVALS NOT TO EXCEED 200 FEET.
16. E.O.P. = EDGE OF PAVEMENT
17. THE PUBLIC SIDEWALK CURB RAMP STANDARDS DEPICTED HERE MAY NOT BE APPROPRIATE FOR ALL LOCATIONS. FIELD CONDITIONS AT INDIVIDUAL LOCATIONS MAY REQUIRE SPECIFIC DESIGNS. DESIGNS MUST BE CONSISTENT WITH THE PROVISIONS OF THIS SHEET TO THE MAXIMUM EXTENT FEASIBLE ON ALTERATION PROJECTS AND WHEN STRUCTURALLY PRACTICABLE ON NEW CONSTRUCTION PROJECTS AS REQUIRED BY THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES.

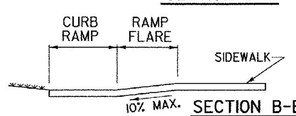



## SIDEWALK RAMP TYPE 4

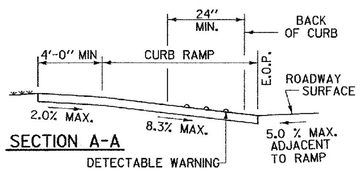
RAMP OFFSET FROM DIRECT LINE OF PEDESTRIAN TRAVEL




SECTION C-C

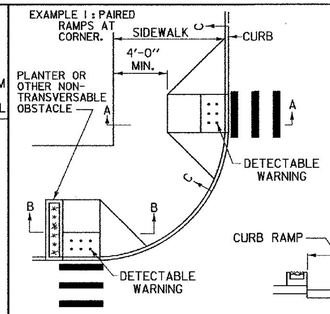


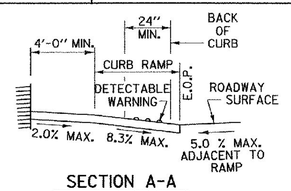

SECTION B-B



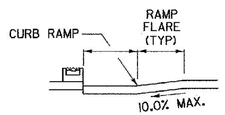

SECTION A-A

EXAMPLE 1 : PAIRED RAMPS AT CORNER.

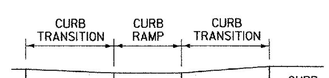



SECTION A-A

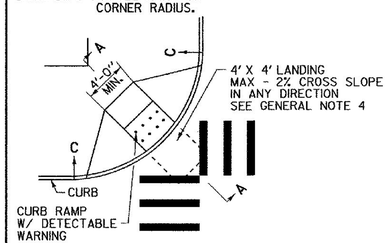



SECTION B-B

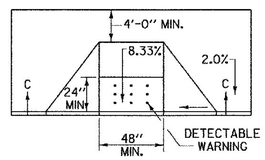



SECTION C-C

EXAMPLE 2 : SINGLE RAMP ON CORNER RADIUS.



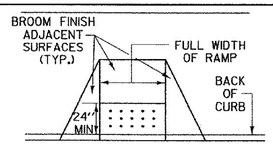

EXAMPLE 3 : RAMP ON TANGENT SECTION



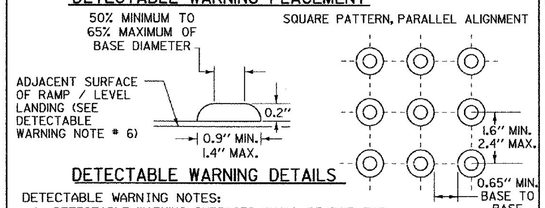

## SIDEWALK RAMP TYPE 5

PERPENDICULAR RAMP IN URBAN SETTING - WIDE SIDEWALK

## DETECTABLE WARNING DETAILS




### DETECTABLE WARNING PLACEMENT




### DETECTABLE WARNING DETAILS

DETECTABLE WARNING NOTES:

1. DETECTABLE WARNING SURFACES SHALL BE PAID FOR AS SPECIFIED IN THE CONTRACT.
2. CONCRETE ADJACENT TO ALL DETECTABLE WARNINGS SHALL HAVE A BROOM FINISH.
3. THE COLOR OF THE DETECTABLE WARNING SHALL PROVIDE A VISUAL CONTRAST TO THE SURROUNDING SURFACE AND SHALL BE AS SPECIFIED IN THE CONTRACT.
4. WHERE FEASIBLE, TRUNCATED DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF PEDESTRIAN TRAVEL.
5. WHERE A RAMP OR LEVEL LANDING MEETS A CURB RADIUS, ALIGN THE EDGE OF THE DETECTABLE WARNING AREA PARALLEL TO THE CURB TO THE MAXIMUM EXTENT FEASIBLE.
6. FOR SURFACE APPLIED TRUNCATED DOME PRODUCTS, A MAXIMUM 0.25" VERTICAL CHANGE IN ELEVATION IS ALLOWED. FOR CHANGES IN ELEVATION BETWEEN 0.25" AND 0.50", A BEVEL WITH A MAXIMUM 1:2 SLOPE IS REQUIRED. CHANGES IN ELEVATION GREATER THAN 0.50" MUST BE TREATED AS A RAMP- 8.3% MAXIMUM SLOPE.
7. IF ANY PORTION OF THE EDGE OF THE DETECTABLE WARNING CLOSEST TO THE CURB WILL BE GREATER THAN 5'-0" FROM THE BACK OF CURB, THEN THE PANEL(S) SHALL BE LOCATED ON THE LEVEL LANDING AS CLOSE TO PARALLEL TO THE CURB LINE AS POSSIBLE.

OTHER STANDARDS REQUIRED: C-2A, C-2B, C-3B AND C-10

REVISIONS AND CORRECTIONS

FEB. 2, 2004 - DATE OF ORIGINAL ISSUE
SEPT. 1, 2004 - MINOR REVISIONS TO COMPLY WITH ADAAG
MAR. 10, 2008 - MINOR REVISIONS TO COMPLY WITH ADA STANDARDS

APPROVED

Alan E. Dawson
LOCAL TRANSPORTATION FACILITIES PROGRAM MANAGER

DIRECTOR OF PROGRAM DEVELOPMENT

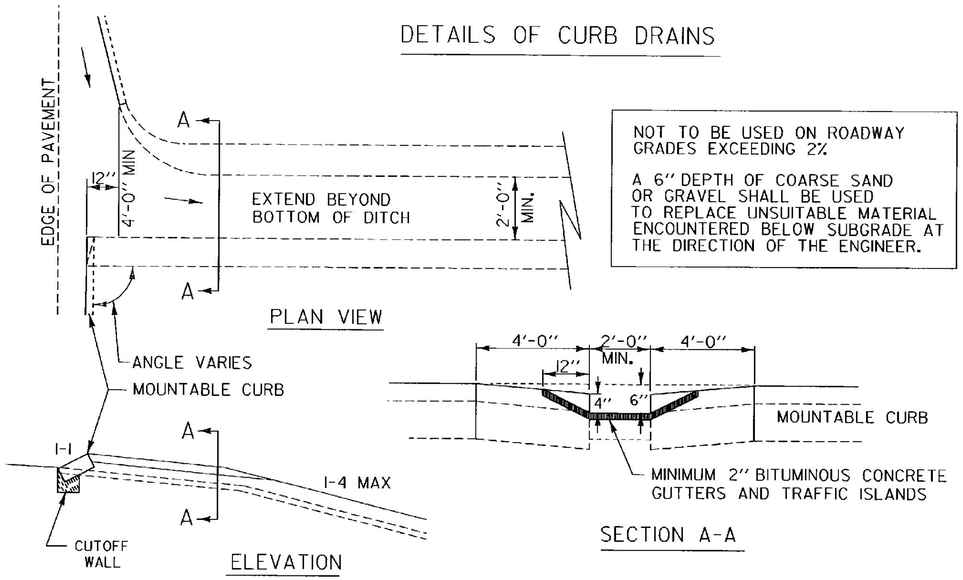
Mark D. Richter
FEDERAL HIGHWAY ADMINISTRATION

# SIDEWALK RAMPS

VERMONT AGENCY OF TRANSPORTATION

STANDARD
C-3A

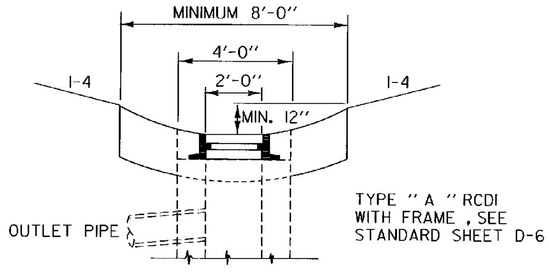
## DETAILS OF CURB DRAINS



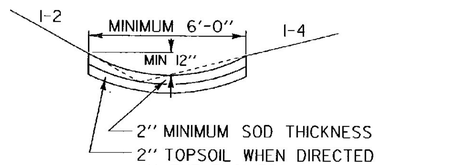

NOT TO BE USED ON ROADWAY GRADES EXCEEDING 2%

A 6'' DEPTH OF COARSE SAND OR GRAVEL SHALL BE USED TO REPLACE UNSUITABLE MATERIAL ENCOUNTERED BELOW SUBGRADE AT THE DIRECTION OF THE ENGINEER.

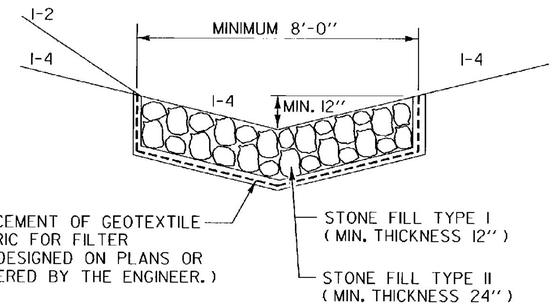
## DROP INLET WITH GRATE IN TREATED GUTTER




## SODDING

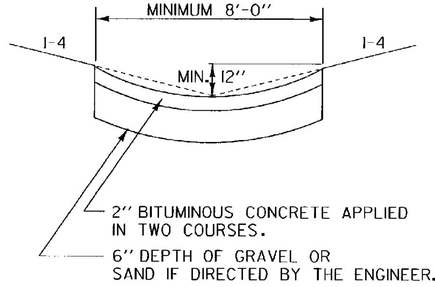



## STONE FILL TYPE I
## STONE FILL TYPE II

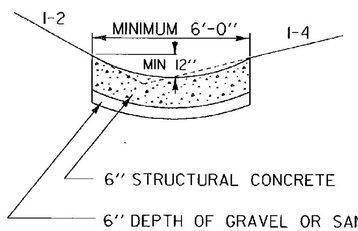



EXCAVATION PAID FOR AS COMMON EXCAVATION.

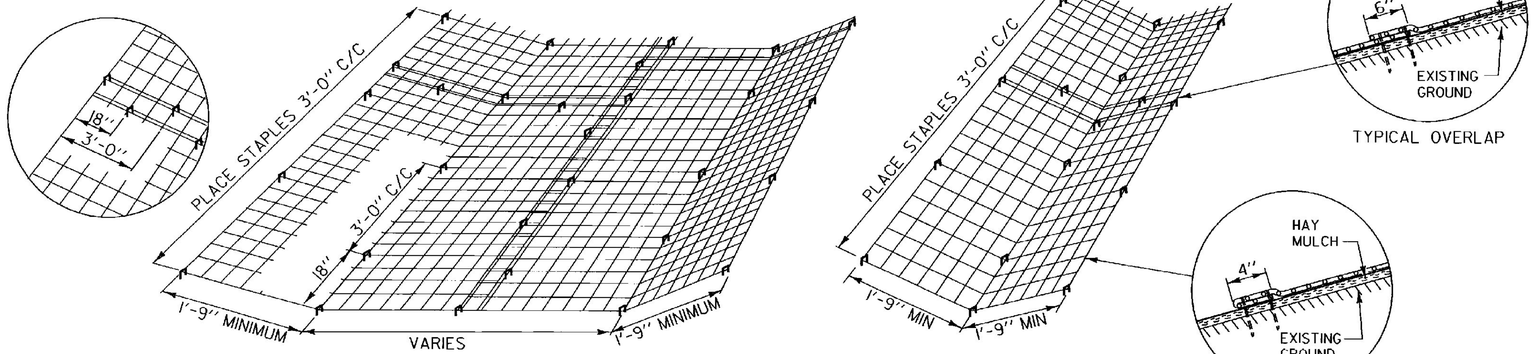
## BITUMINOUS CONCRETE GUTTERS AND TRAFFIC ISLANDS




## PORTLAND CEMENT CONCRETE GUTTER




ON ALL OVERLAPS , PLACE STAPLES EVERY 18'', ALTERNATING ON BOTH SIDES OF 6'' OVERLAP.




## DETAILS OF PLACING EROSION MATTING

REVISIONS AND CORRECTIONS

APR. 2, 1986 - ORIGINAL APPROVAL DATE

JUNE 1, 1994 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.

APPROVED

APPROVED FOR THIS PROJECT AND/OR DESIGN IMPLEMENTATION. FHWA FINAL APPROVAL PENDING.

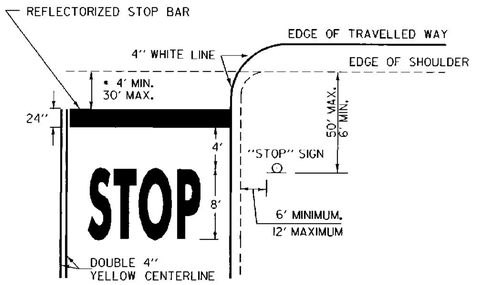
DIRECTOR OF ENGINEERING

DESIGN ENGINEER

# TREATED GUTTERS

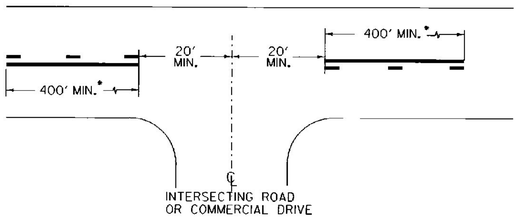
VERMONT AGENCY OF TRANSPORTATION

# STANDARD D-3




• THE "DESIRED STOPPING POINT" IS THE LOCATION BASED ON SITE CONDITIONS THAT BEST ALLOWS THE STOPPED VEHICLE TO VIEW THE APPROACHING TRAFFIC.

**STOP BAR LAYOUT**



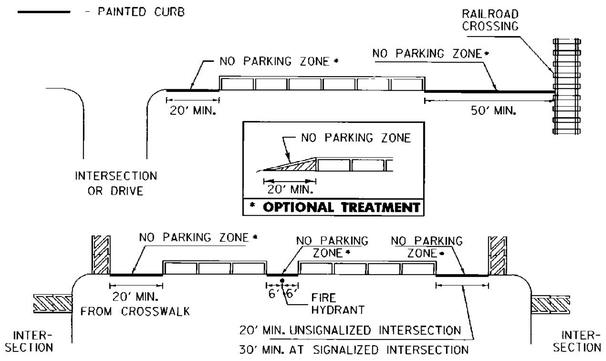

• THE SOLID LINE SHALL BE PAIRED WITH EITHER A SOLID OR DASHED LINE DEPENDING ON SIGHT DISTANCE AVAILABILITY IN THE OPPOSING DIRECTION. ADJUSTMENTS TO THE 40 FOOT CENTERLINE OPENING MAY BE MADE TO ACCOMMODATE SKEWED INTERSECTIONS.

CENTERLINE BREAKES:

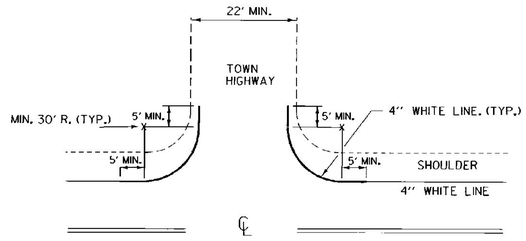
A. AT ALL STATE HIGHWAYS AND TOWN HIGHWAYS, INCLUDING CLASS 4 TH'S. THAT HAVE STOP AND LEGAL LOAD LIMIT SIGNS INSTALLED

B. COMMERCIAL DRIVES:
   1. WHERE A SEPERATE TURN LANE EXISTS ON THE MAIN LINE (LT. OR RT.)
   2. SIGNIFICANT TRAFFIC VOLUMES EXISTS.
   3. IF MOTORISTS NEED ASSISTANCE TO DEFINE ENTRANCE POINTS.

**CENTERLINE LAYOUT**




**NO PARKING LAYOUT DETAILS**

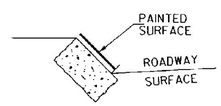



EDGELINES SHALL BE APPLIED TO ALL STATE HIGHWAYS AND SHOULD BE MAINTAINED AT A CONSTANT DISTANCE FROM THE CENTERLINE UNLESS PAVEMENT WIDTH INCREASES TO ALLOW WIDER LANES.

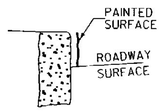
APPLY EDGELINE AS DETAILED ON ALL PAVED CLASS 1 & CLASS 2 TOWN HIGHWAYS AND ANY CLASS 3 TOWN HIGHWAY 22 FEET OR MORE IN WIDTH.

IF MIN. 30 FOOT RADIUS CANNOT BE OBTAINED, OR THE TOWN HIGHWAY IS NOT PAVED, BREAK THE EDGELINE USING AN 80 FOOT GAP AT INTERSECTION.

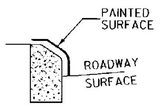
**EDGELINE LAYOUTS**



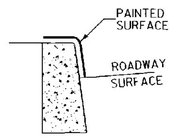

**GRANITE SLOPE EDGING**




**VERTICAL GRANITE CURB**

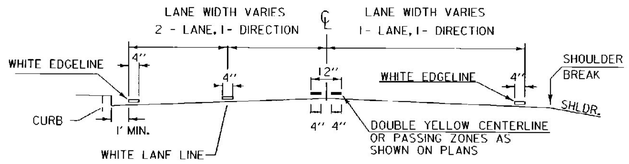



TYPE A (CONCRETE)

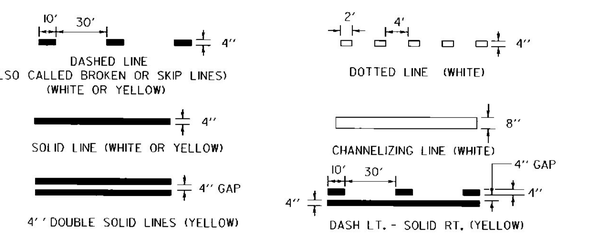



TYPF B (CONCRETE)

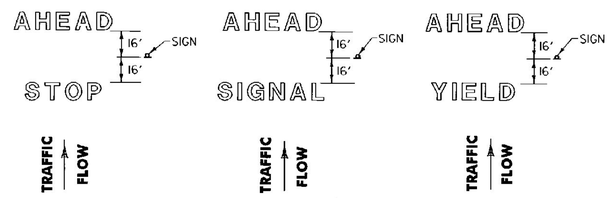
**PAINTED CURB**




**PAVEMENT MARKING PLACEMENT DETAIL**

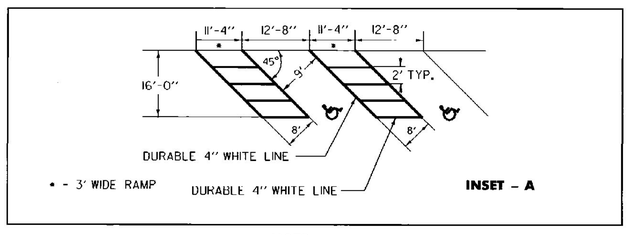



**PAVEMENT MARKING LINE DETAILS**



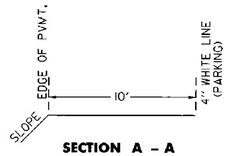

**LETTER IN WORD MARKING SPACING DETAIL**

**NOTE: SINGLE WORDS CENTERED ON SIGN ie: SCHOOL OR YIELD**



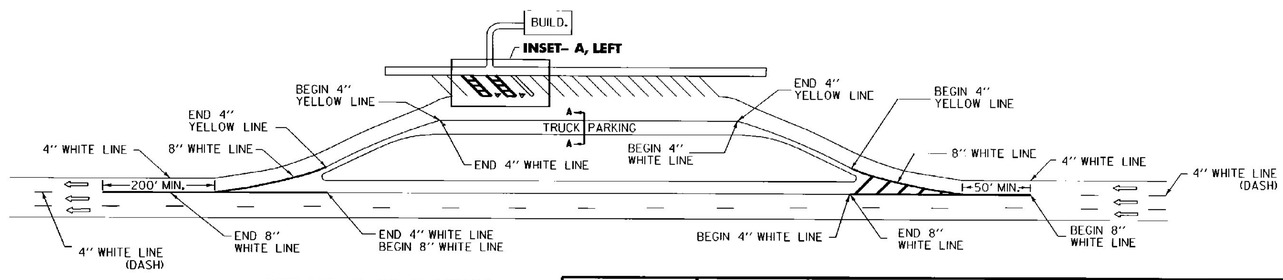

**NOTE:**

SEE STANDARD SHEET E-191 FOR HANDICAP SYMBOL POSITIONING AND DETAIL.




**SECTION A - A**

**TRUCK PARKING DETAIL**




**REST AREA PARKING DETAILS**

**THIS SHEET IS NOT TO SCALE**

**OTHER STDS. E - 191, E - 192 REQUIRED**

REVISIONS AND CORRECTIONS

AUG. 18, 1995 - DATE OF ORIGINAL ISSUE

APPROVED FOR THIS PROJECT AND/OR DESIGN IMPLEMENTATION. FHWA FINAL APPROVAL PENDING.

APPROVED

DIRECTOR OF ENGINEERING

TRAFFIC AND SAFETY ENGINEER

# PAVEMENT MARKING DETAILS

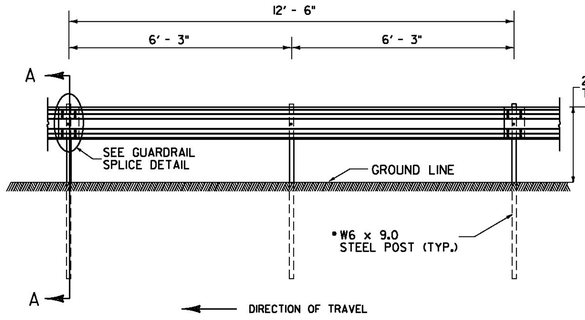
/traf/std/stdel93.dgn/stdel93.i

VERMONT AGENCY OF TRANSPORTATION

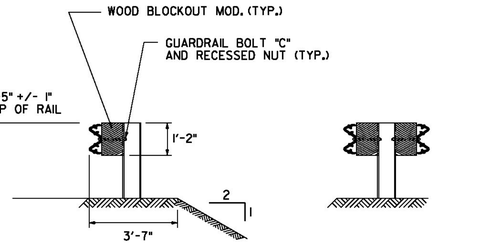
STANDARD

E-193

## "W" BEAM GUARDRAIL WITH STEEL POSTS




ELEVATION FROM ℄ OF ROAD

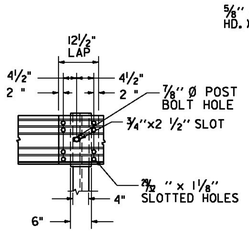



SINGLE - FACED BARRIER

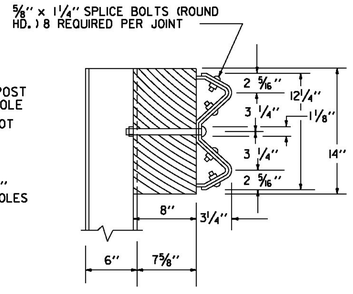


DOUBLE - FACED BARRIER

SECTION A -A

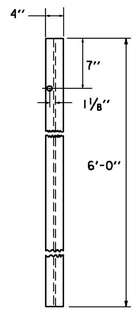



ELEVATION

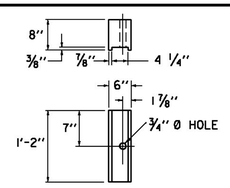



SECTION

GUARDRAIL SPLICE DETAIL




FRONT FACE STEEL POST

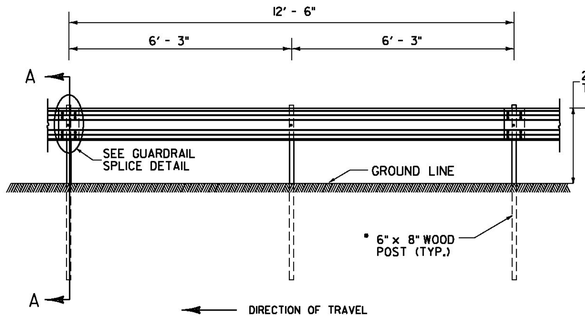



POST FACE
MODIFIED WOOD BLOCKOUT- ROUTED
6" X 8" X 1'-2" (FOR USE W/ STEEL POSTS ONLY)

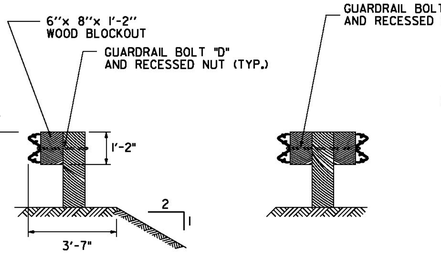
NOTES:

1. BLOCKS SHALL BE MADE OF TIMBER WITH A STRESS GRADE OF 1200 PSI OR MORE. TESTING SHALL BE IN ACCORDANCE WITH WEST COAST LUMBER INSPECTION BUREAU, SOUTHERN PINE INSPECTION BUREAU OR OTHER APPROPRIATE ASSOCIATION. TIMBER FOR BLOCKS SHALL BE ROUGH SAWN (UNPLANED) WITH DIMENSIONS INDICATED. THE SIZE TOLERANCE OF ROUGH SAWN BLOCKS IN THE DIRECTION OF THE BOLT HOLES SHALL BE NOT MORE THAN +/- ¼".
2. SUPPLY WOOD BLOCKS PER AASHTO M 168.
3. TREAT WITH PRESERVATIVE PER AASHTO M 133.
4. BLOCKOUTS MAY ALSO BE MADE OF APPROVED ALTERNATIVE MATERIAL.

## "W" BEAM GUARDRAIL WITH WOOD POSTS




ELEVATION FROM ℄ OF ROAD



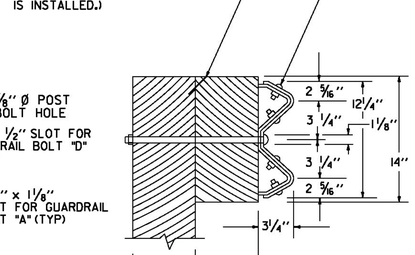

SINGLE - FACED BARRIER

• NOTE : UNLESS OTHERWISE SPECIFIED ON PLANS



DOUBLE - FACED BARRIER

SECTION A -A

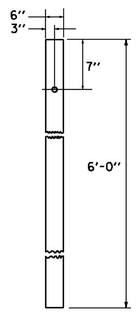



ELEVATION

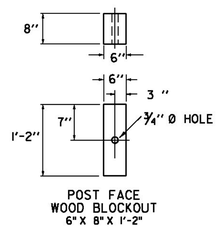



SECTION

GUARDRAIL SPLICE DETAIL




FRONT FACE WOOD POST

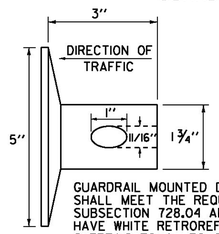



POST FACE
WOOD BLOCKOUT
6" X 8" X 1'-2"

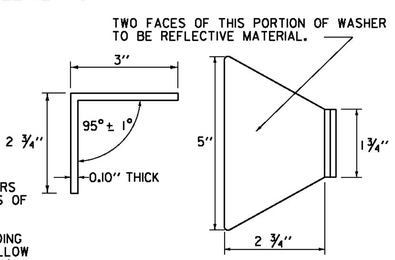
NOTES:

1. BLOCKS SHALL BE MADE OF TIMBER WITH A STRESS GRADE OF 1200 PSI OR MORE. TESTING SHALL BE IN ACCORDANCE WITH WEST COAST LUMBER INSPECTION BUREAU, SOUTHERN PINE INSPECTION BUREAU OR OTHER APPROPRIATE ASSOCIATION. TIMBER FOR BLOCKS SHALL BE ROUGH SAWN (UNPLANED) WITH DIMENSIONS INDICATED. THE SIZE TOLERANCE OF ROUGH SAWN BLOCKS IN THE DIRECTION OF THE BOLT HOLES SHALL BE NOT MORE THAN +/- ¼".
2. SUPPLY WOOD BLOCKS PER AASHTO M 168.
3. TREAT WITH PRESERVATIVE PER AASHTO M 133.
4. BLOCKOUTS MAY ALSO BE MADE OF APPROVED ALTERNATIVE MATERIAL.

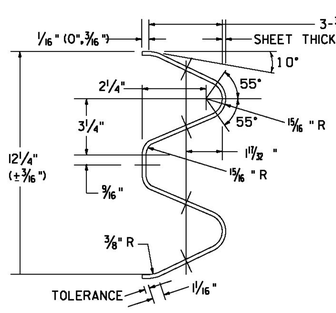
## GUARDRAIL DELINEATOR



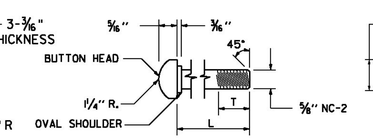

GUARDRAIL MOUNTED DELINEATORS SHALL MEET THE REQUIREMENTS OF SUBSECTION 728.04 AND SHALL HAVE WHITE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING SUBSECTION 750.08(B)(3) OR YELLOW RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING SUBSECTION 750.08(B)(7).




THIS REFLECTORIZED ALUMINUM WASHER IS TO BE PLACED IN VALLEY OF BEAM WHEN MOUNTING BEAM ONTO EACH FIFTH POST. WASHER SHALL MEET SPECIFICATION REQUIREMENTS FOR A.S.T.M. B-209 ALLOY 5052-H32.

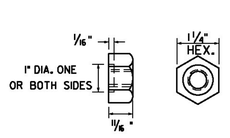



ARTBA RE-3[2@6'-3"=12'-6" CLASS A, TYPE 13-73
TYPICAL GUARDRAIL SECTION




GUARDRAIL BOLT

| GUARDRAIL BOLTS | | | | FASTENER USED IN | |
|---|---|---|---|---|---|
| BOLT DES. | ARTBA REF. NO. | L | T (MIN.) | STEEL POSTS | WOOD POSTS |
| "A" | F-3[1¼]-76 | 1¼" | 1" | X | X |
| "C" | F-3[9½]-76 | 9½" | 1¾" | X | |
| "D" | F-3[18]-76 | 18" | 2½" | | X |
| "F" | F-3[25]-76 | 25" | 2" | | X |






RECESSED NUT FOR GUARDRAIL BOLT







WASHER FOR 5/8" BOLTS
ARTBA F-13-73
NOTE: WASHER IS USED UNDER RECESSED NUT WHERE GUARDRAIL BOLT IS USED WITH WOOD POSTS.

GENERAL NOTES:

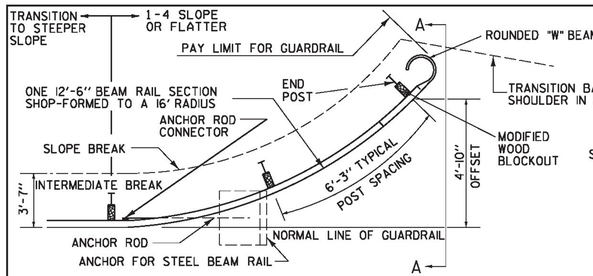
1. GUARDRAIL SHALL MEET THE REQUIREMENTS OF AASHTO M 180, CLASS A, TYPE I, UNLESS OTHERWISE DESIGNATED.
2. GUARDRAIL SHALL BE SINGLE FACED UNLESS OTHERWISE DESIGNATED.
3. GUARDRAIL SECTIONS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW FOR THE LANE NEAREST THE GUARDRAIL.
4. FOR DESCRIPTION AND SPECIFICATION OF PARTS IDENTIFIED BY (ARTBA ...) AND OTHER DETAILS OF POSTS, POST ACCESSORIES, FASTENERS & RAIL ELEMENTS, SEE AASHTO-AGC-ARTBA JOINT TASK FORCE NO. 13, TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE", LATEST EDITION.
5. STANDARD STEEL BEAM TO BE ⅛" AND THE HEAVY DUTY TO BE 7/64" THICK.

| REV. | DATE | DESCRIPTION |
|---|---|---|
| -- | JAN. 3, 2000 | UPDATED TO REFLECT METRIC STD. CHANGES |
| -- | FEB. 10, 2014 | UPDATED TO REFLECT GUARDRAIL HEIGHT |
| | | OF 29"; FHWA LETTER (MAY 17, 2010) |
| -- | NOV. 10, 2015 | UPDATED DELINEATOR RETROREFLECTIVE |
| | | SHEETING NOTES |
| OTHER STANDARDS REQUIRED: G-ID | | |
| VTRANS AND FHWA APPROVAL ON FILE WITH CONTRACT ADMINISTRATION | | |

# STEEL BEAM GUARDRAIL WITH STEEL POSTS
# STEEL BEAM GUARDRAIL WITH WOOD POSTS

VTrans Working to Get You There
VERMONT AGENCY OF TRANSPORTATION

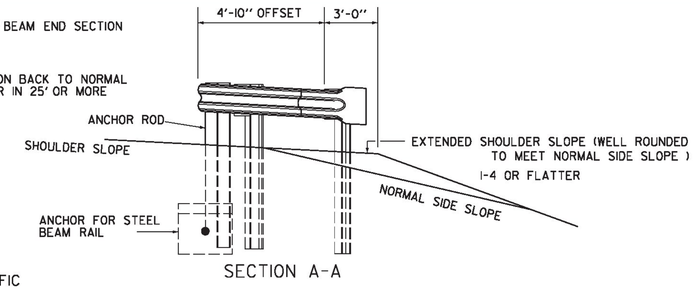
STANDARD
G-1



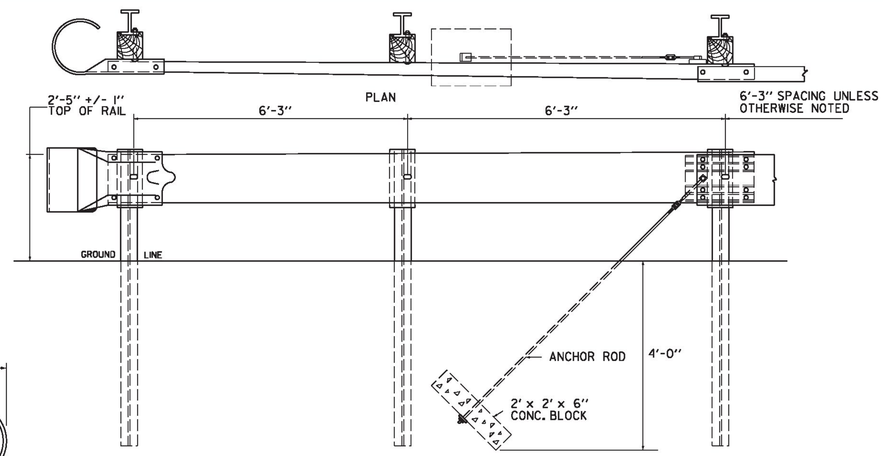

APPROACH END DETAIL

NHS APPROVED FOR USE WHERE DESIGN SPEED IS 40 OR LESS MPH

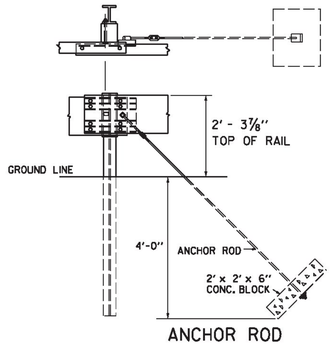
NON-NHS APPROVED FOR USE WHERE DESIGN SPEED IS 50 OR LESS MPH



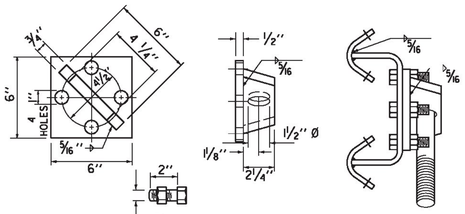

SECTION A-A



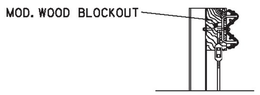

ASSEMBLY ELEVATION

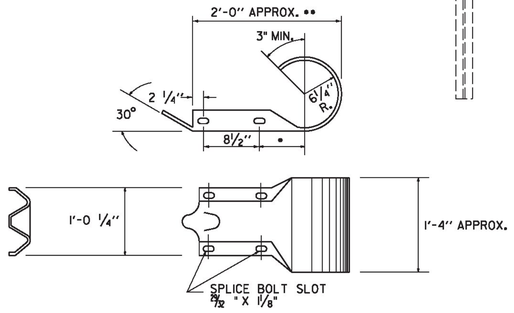



ANCHOR ROD




ANCHOR ROD CONNECTOR

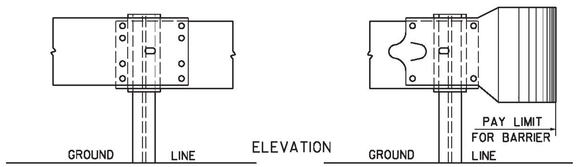


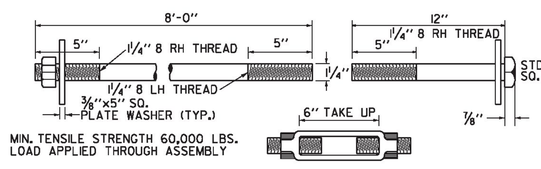




(ARTBA RE-6-79)

ROUNDED "W" BEAM END SECTION

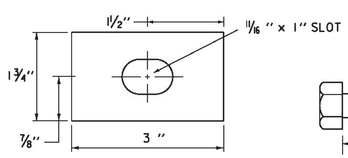
• THIS DIMENSION IS 7½" INRE-7-79. IF THE DIMENSION IS USED IN THIS PART, IT WILL GIVE AN ACCEPTABLE OVERALL LENGTH (••) OF APPROXIMATELY 2'- 11/2. "



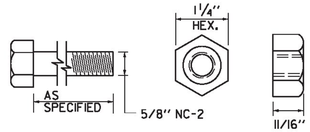

MIN. TENSILE STRENGTH 60,000 LBS. LOAD APPLIED THROUGH ASSEMBLY

TURNBUCKLE




RECTANGULAR GUARDRAIL PLATE WASHER

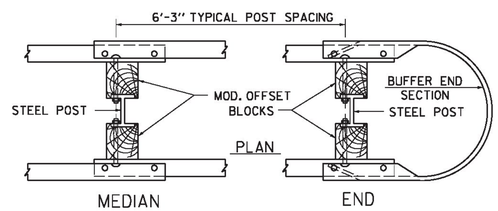
(ARTBA F-12-73)




⅝" HEX NUT AND BOLT "F"

(ARTBA F-8-76)

FASTENER DETAILS




STEEL BEAM MEDIAN BARRIER

NOTE: TO BE USED OUTSIDE CLEAR ZONE ONLY.

TRAILING END TERMINAL FOR USE ON ONE-WAY HIGHWAYS

GENERAL NOTES:

1. ALL METAL PARTS SHALL BE GALVANIZED
2. ALL WOOD POSTS SHALL BE GIVEN A PRESERVATIVE TREATMENT
3. DETAILS PERTINENT TO THE STANDARD INSTALLATION OF "W" BEAM SECTIONS WILL BE FOUND ON STANDARD DRAWING G-1.
4. FOR DESCRIPTION AND SPECIFICATIONS OF PARTS IDENTIFIED BY "(ARTBA...)" AND OTHER DETAILS OF POSTS, POST ACCESSORIES, FASTENERS AND RAIL ELEMENTS, SEE AASHTO-AGC-ARTBA JOINT TASK FORCE NO. 13, TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE", LATEST EDITION.
5. THE TRANSITION FROM THE APPROACH END TO THE STANDARD STEEL BEAM GUARDRAIL SHALL BE 25'-0" UNLESS OTHERWISE SPECIFIED.
6. WHEN STANDARD STEEL BEAM CONNECTS TO BRIDGE APPROACH RAIL OF A DIFFERENT HEIGHT THE LENGTH NEEDED TO TRANSITION THE HEIGHT OF STANDARD STEEL BEAM TO MATCH THE BRIDGE APPROACH RAIL SHALL BE 25'-0" UNLESS OTHERWISE SPECIFIED.
7. WHEN STANDARD STEEL BEAM CONNECTS TO A MANUFACTURED TERMNAL SECTION OF A DIFFERENT HEIGHT THE LENGTH NEEDED TO TRANSITION THE HEIGHT OF STANDARD STEEL BEAM TO MATCH THE MANUFACTURED TERMINAL SECTION SHALL BE 25'-0" UNLESS OTHERWISE SPECIFIED.

**OTHER STANDARD REQUIRED: G-1**

REVISIONS AND CORRECTIONS

JUNE 1, 1994 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.

JAN. 3, 2000 - UPDATED TO REFLECT METRIC STD. CHANGES

FEB. 10, 2014 - UPDATED TO REFLECT GUARDRAIL HEIGHT OF 29"; AS NOTED IN FHWA LETTER DATED MAY 17, 2010

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark B. Richter

FEDERAL HIGHWAY ADMINISTRATION

# STEEL BEAM GUARDRAIL APPROACH END TERMINAL
# STEEL BEAM GUARDRAIL TRAILING END TERMINAL
# ANCHOR FOR STEEL BEAM GUARDRAIL
# STEEL BEAM MEDIAN BARRIER

VERMONT AGENCY OF TRANSPORTATION

STANDARD

G-1d

1. TRAFFIC CONTROL DEVICES NOT DETAILED IN THE VERMONT AGENCY OF TRANSPORTATION (VAOT) "STANDARD DRAWINGS" OR THE PROJECT PLANS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON TRAFFIC CONTROL DEVICES" (MUTCD) AND THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOK (SHSM) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).

2. CONSTRUCTION SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES, DURING PERIODS OF INACTIVITY OR UPON COMPLETION OF THE WORK. EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER.

3. CONSTRUCTION SIGN COVERS SHALL CONSIST OF A PANEL, PAINTED FLAT BLACK, THE SAME SIZE AS THE SIGN IT COVERS. THE PANEL SHALL BE OF WOOD, PLYWOOD, HARDBOARD OR ANY MATERIAL SATISFACTORY TO THE ENGINEER. NO MATERIAL WILL BE APPROVED THAT WILL DETERIORATE BY EXPOSURE TO THE WEATHER DURING THE PROJECT. MOUNTING OF THE PANEL SHALL BE DONE IN SUCH A WAY AS NOT TO DAMAGE THE SIGN FACE MATERIAL.

4. SIGNS SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION SATISFACTORY TO THE ENGINEER. THEY SHALL BE KEPT PLUMB AND LEVEL, AND ALWAYS PRESENT A NEAT APPEARANCE. DAMAGED, DEFACED OR DIRTY SIGNS SHALL BE REPAIRED, CLEANED OR REPLACED AS ORDERED BY THE ENGINEER.

5. NO CROSS-BRACING OR BACK-BRACING TO KEEP POSTS PLUMB WILL BE ALLOWED. CONCRETE FOUNDATIONS, COLLARS OR SOIL BEARING PLATES ARE NOT PERMITTED. CONSTRUCTION SIGNS SHALL BE PLACED ON TWO POSTS.

6. CONSTRUCTION SIGNS INSTALLED ON POSTS SHALL BE SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST FIVE FEET ABOVE THE EDGE OF PAVEMENT AND THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST SIX FEET OUTSIDE THE SHOULDER POINT, FOUR FEET OUTSIDE GUARDRAIL, OR TWO FEET OUTSIDE CURBING OR SIDEWALK. THE INSTALLATION OF SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER. IN URBAN AREAS, THE BOTTOM OF THE SIGN SHALL BE AT LEAST SEVEN FEET ABOVE THE SIDEWALK OR EDGE OF PAVEMENT, WHICHEVER IS HIGHER.

7. PORTABLE SIGNS SHALL BE PLACED ON THE EDGE OF ROADWAY AND A MINIMUM OF ONE FOOT ABOVE THE TRAVELED WAY. ALL VEGETATION THAT INTERFERES WITH VISIBILITY OF THE SIGNS SHALL BE REMOVED. WHEN PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACE SHALL BE ABOVE THE TOP OF THE GUARDRAIL.

8. SIGNS SHALL BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER.

9. ROLL UP CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING THE "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE VI AND TYPE VII UNLESS OTHERWISE NOTED.

10. SOLID SUBSTRATE CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING THE "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE VIII OR IX REQUIREMENTS UNLESS OTHERWISE NOTED.

11. WHERE CONSTRUCTION SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARDRAIL OR OTHER APPROVED TRAFFIC BARRIERS, ALL SIGN STANDS AND POST INSTALLATIONS SHALL MEET "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 OR THE AASHTO "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH). THE APPROPRIATE RESOURCE SHALL BE DETERMINED AS DESCRIBED IN THE MASH PUBLICATION. NO SIGN POSTS SHALL EXTEND OVER THE TOP OF THE SIGN INSTALLED ON SAID POSTS. WHEN ANCHORS ARE INSTALLED, STUBS SHALL NOT BE GREATER THAN FOUR INCHES ABOVE EXISTING GROUND.

12. ROADWAY AND SHOULDER WIDTHS DEPICTED ON THE STANDARD DRAWINGS MAY VARY.

13. THESE STANDARD DRAWINGS ARE INTENDED TO SERVE AS VTRANS STANDARD OPERATING PROCEDURE. IT IS NOTED THAT COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL WORK ZONE MAY BE MODIFIED DUE TO FIELD CONDITIONS, AT THE DISCRETION OF THE ENGINEER.

**OTHER STDS. REQUIRED:** **NONE**

REVISIONS AND CORRECTIONS

AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

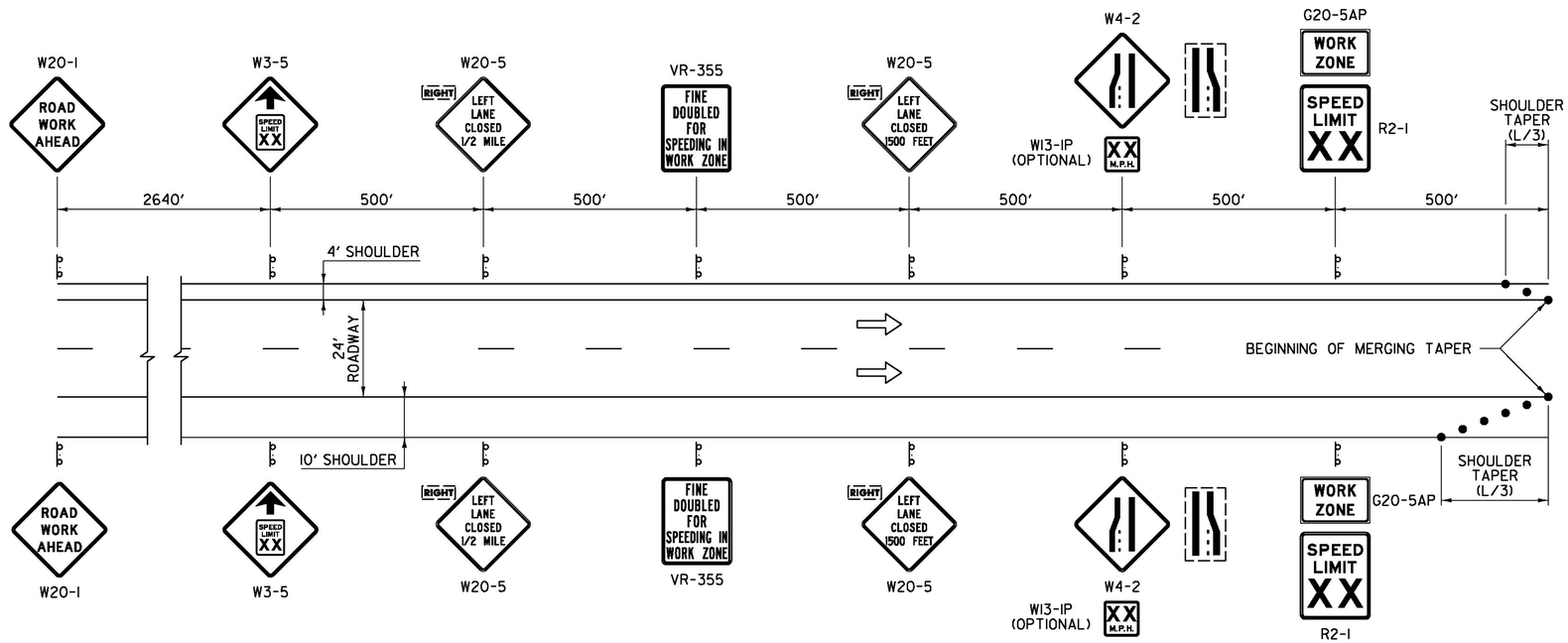
FEDERAL HIGHWAY ADMINISTRATION

# TRAFFIC CONTROL GENERAL NOTES

VERMONT AGENCY OF TRANSPORTATION

STANDARD

T-1




## LEGEND

⇨ FLOW OF TRAFFIC

● RETROREFLECTIVE PLASTIC DRUM

## GENERAL NOTES:

1. IF APPLICABLE, THE CONTRACTOR SHALL HAVE SIGNS FOR CLOSURE OF RIGHT AND LEFT LANES ON PROJECT BEFORE WORK COMMENCES.
2. THE "SPEED LIMIT XX" (R2-1) AND "SPEED REDUCTION WARNING" (W3-5) SIGNS SHALL ONLY BE USED IF A TEMPORARY SPEED LIMIT CERTIFICATE HAS BEEN APPROVED. THE "SPEED LIMIT XX" (R2-1) AND OTHER RELATED SIGNS SHALL BE REMOVED OR COVERED WHEN WORK IS NOT IN PROGRESS AND ROADWAY IS NOT RESTRICTED.
3. "FINE DOUBLED FOR SPEEDING IN WORK ZONE" (VR-355) SHALL ONLY BE USED IF TEMPORARY SPEED LIMIT CERTIFICATE HAS BEEN APPROVED.
4. EXISTING SPEED LIMIT SIGNS SHALL BE COVERED WHEN TEMPORARY SPEED LIMIT SIGNS ARE POSTED.
5. FOR SHORT TERM PROJECTS (THREE CONSECUTIVE DAYS OR LESS) WITH NO OFFICIAL TEMPORARY SPEED LIMIT, THE "SPEED LIMIT XX" (R2-1) AND "SPEED REDUCTION WARNING" (W3-5) SIGNS MAY BE SUBSTITUTED WITH ADVISORY SPEED PLAQUES (W13-1P) MOUNTED AS SUPPLEMENTAL SIGNS BELOW THE "LANE ENDS" (W4-2) SIGNS.
6. FOR AN ANTICIPATED LONG TERM CLOSURE (GREATER THAN THREE CONSECUTIVE DAYS) WITH A NON-MOVING OPERATION, ALL SIGNS SHALL BE POST MOUNTED.
7. FOR A LONG TERM CLOSURE WITH A MOVING OPERATION, THE "ROAD WORK AHEAD" (W20-1) SIGN SHALL BE POST MOUNTED. THE REMAINING SIGNS MAY BE PORTABLE AND SHALL MOVE AS THE WORK AREA CHANGES.
8. FOR A SHORT TERM PROJECT (THREE CONSECUTIVE DAYS OR LESS), SIGNS MAY BE POST MOUNTED OR PORTABLE.
9. THE "SPEED LIMIT XX" (R2-1) SOLID SUBSTRATE SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING AASHTO M 268 [ASTM D 4956] TYPE III.

**OTHER STDS. REQUIRED:** **T-1, T-12, T-31**

REVISIONS AND CORRECTIONS

AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

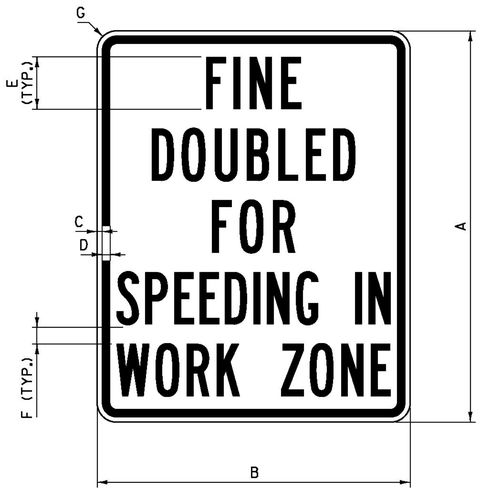
Mark D. Richter

FEDERAL HIGHWAY ADMINISTRATION

# CONSTRUCTION APPROACH SIGNING DIVIDED HIGHWAY ONE LANE CLOSED

VERMONT AGENCY OF TRANSPORTATION

# STANDARD T-11

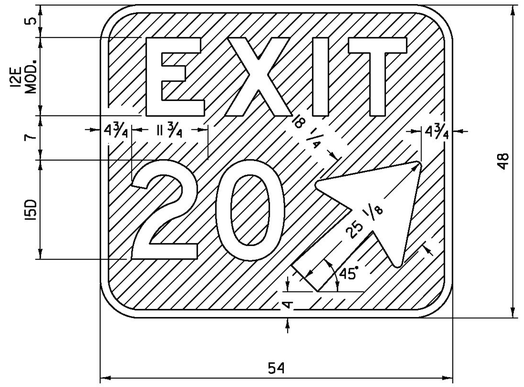



**VR–355**

| SIGN | DIMENSIONS | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G |
| STANDARD | 36 | 30 | 1/2 | 3/4 | 4C | 2 1/4 | 1 7/8 |
| EXPRESSWAY/ FREEWAY | 60 | 48 | 3/4 | 1 1/4 | 8B | 3 | 3 |

## NOTES:

1. "SPEEDING IN" AND "WORK ZONE" SHALL EACH HAVE A SPECIFIED WIDTH OF 26 INCHES FOR STANDARD AND 42 INCHES FOR EXPRESSWAY/FREEWAY.
2. THE SIGN SHALL HAVE BLACK LEGEND AND BORDER ON A WHITE BACKGROUND WITH RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE III.
3. LEGEND SHALL BE CENTERED HORIZONTALLY AND VERTICALLY.




**VC5–1A**

## NOTES:

1. THE SIGN SHALL BE WHITE RETROREFLECTIVE LEGEND ON A GREEN RETROREFLECTIVE BACKGROUND, BOTH SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE III.
2. CORNERS SHALL BE ROUNDED TO A SIX INCH RADIUS.
3. THE SIGN SHALL HAVE A 1 1/4 INCH WIDE BORDER ALONG THE EDGE OF THE SIGN.
4. EXIT NUMBER SHALL BE AS PER PLANS, OPTICALLY SPACED.
5. "EXIT" SHALL BE CENTERED HORIZONTALLY.

## GENERAL NOTES:

1. ALL DIMENSIONS IN INCHES.

**OTHER STDS. REQUIRED:** T–1

REVISIONS AND CORRECTIONS

AUG. 6, 2012 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

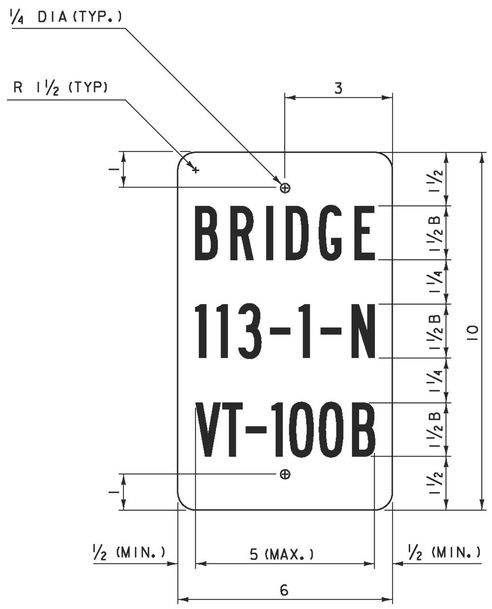
FEDERAL HIGHWAY ADMINISTRATION

# CONSTRUCTION SIGN DETAILS

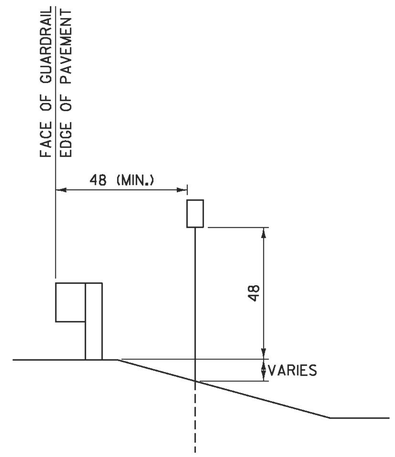
VERMONT AGENCY OF TRANSPORTATION

STANDARD

T-31




**VD-701**




**VD-701 INSTALLATION DETAIL**

## GENERAL NOTES:

1. BRIDGE NUMBER PLAQUES ARE TO BE INSTALLED ALONG THE FEDERAL AID HIGHWAY SYSTEM INCLUDING ALL STATE HIGHWAYS AND TOWN HIGHWAYS ON THE FEDERAL AID HIGHWAY SYSTEM.
2. BRIDGE NUMBER PLAQUES SHALL BE LOCATED ON BOTH BRIDGE APPROACHES AT THE NEAREST VISIBLE LOCATION.
3. THE SIGN BASE MATERIAL SHALL BE 0.063 INCH FLAT SHEET ALUMINUM.
4. THE SIGN SHALL BE WHITE RETROREFLECTIVE LEGEND ON A GREEN RETROREFLECTIVE BACKGROUND, BOTH SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE III.
5. THE SECOND LINE OF TEXT INDICATES THE BRIDGE NUMBER. THE BRIDGE NUMBER CAN BE OBTAINED USING THE VERMONT AGENCY OF TRANSPORTATION (VAOT) ROUTE LOGS OR BY CONSULTING WITH THE VAOT STRUCTURES SECTION.
6. THE THIRD LINE OF TEXT INDICATES THE STATE ROUTE NUMBER. IN ALL CASES THIS WILL BE DEPICTED USING THE LETTER ABBREVIATION, FOLLOWED BY A HYPHEN, FOLLOWED BY THE ROUTE NUMBER. FOR EXAMPLE US ROUTE 2 WOULD BE IDENTIFIED USING US-2.
7. THE SECOND AND THIRD LINES OF TEXT SHALL BE CENTERED HORIZONTALLY AND SHALL BE AS DEFINED IN THE PLANS.
8. A SINGLE 14 GAGE, 1.75 INCH SQUARE STEEL POST AND 12 GAGE, TWO INCH SQUARE ANCHOR SHALL BE USED FOR INSTALLATION. THE ANCHOR SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
9. ALL DIMENSIONS SHOWN IN INCHES.

**OTHER STDS. REQUIRED:** **T-45**

REVISIONS AND CORRECTIONS

APRIL 9, 2014 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

FEDERAL HIGHWAY ADMINISTRATION

# BRIDGE NUMBER PLAQUE

VERMONT AGENCY OF TRANSPORTATION

STANDARD

T-42

| 1 - ADDISON | 2 - BENNINGTON | 3 - CALEDONIA | 4 - CHITTENDEN | 5 - ESSEX | 6 - FRANKLIN | 7 - GRAND ISLE | 8 - LAMOILLE |
|---|---|---|---|---|---|---|---|
| 0101 ADDISON | 0201 ARLINGTON | 0301 BARNET | 0401 BOLTON | 0501 AVERILL | 0601 BAKERSFIELD | 0701 ALBURGH | 0801 BELVIDERE |
| 0102 BRIDPORT | 0202 BENNINGTON | 0302 BURKE | 0402 BUELS GORE | 0502 AVERYS GORE | 0602 BERKSHIRE | 0702 GRAND ISLE | 0802 CAMBRIDGE |
| 0103 BRISTOL | 0203 DORSET | 0303 DANVILLE | 0403 BURLINGTON | 0503 BLOOMFIELD | 0603 ENOSBURG | 0703 ISLE LA MOTTE | 0803 EDEN |
| 0104 CORNWALL | 0204 GLASTENBURY | 0304 GROTON | 0404 CHARLOTTE | 0504 BRIGHTON | 0604 FAIRFAX | 0704 NORTH HERO | 0804 ELMORE |
| 0105 FERRISBURGH | 0205 LANDGROVE | 0305 HARDWICK | 0405 COLCHESTER | 0505 BRUNSWICK | 0605 FAIRFIELD | 0705 SOUTH HERO | 0805 HYDE PARK |
| 0106 GOSHEN | 0206 MANCHESTER | 0306 KIRBY | 0406 ESSEX | 0506 CANAAN | 0606 FLETCHER | | 0806 JOHNSON |
| 0107 GRANVILLE | 0207 PERU | 0307 LYNDON | 0407 HINESBURG | 0507 CONCORD | 0607 FRANKLIN | | 0807 MORRISTOWN |
| 0108 HANCOCK | 0208 POWNAL | 0308 NEWARK | 0408 HUNTINGTON | 0508 EAST HAVEN | 0608 GEORGIA | | 0808 STOWE |
| 0109 LEICESTER | 0209 READSBORO | 0309 PEACHAM | 0409 JERICHO | 0509 FERDINAND | 0609 HIGHGATE | | 0809 WATERVILLE |
| 0110 LINCOLN | 0210 RUPERT | 0310 RYEGATE | 0410 MILTON | 0510 GRANBY | 0610 MONTGOMERY | | 0810 WOLCOTT |
| 0111 MIDDLEBURY | 0211 SANDGATE | 0311 ST JOHNSBURY | 0411 RICHMOND | 0511 GUILDHALL | 0611 RICHFORD | | |
| 0112 MONKTON | 0212 SEARSBURG | 0312 SHEFFIELD | 0412 ST GEORGE | 0512 LEMINGTON | 0612 ST ALBANS CITY | | |
| 0113 NEW HAVEN | 0213 SHAFTSBURY | 0313 STANNARD | 0413 SHELBURNE | 0513 LEWIS | 0613 ST ALBANS TOWN | | |
| 0114 ORWELL | 0214 STAMFORD | 0314 SUTTON | 0414 SO BURLINGTON | 0514 LUNENBURG | 0614 SHELDON | | |
| 0115 PANTON | 0215 SUNDERLAND | 0315 WALDEN | 0415 UNDERHILL | 0515 MAIDSTONE | 0615 SWANTON | | |
| 0116 RIPTON | 0216 WINHALL | 0316 WATERFORD | 0416 WESTFORD | 0516 NORTON | | | |
| 0117 SALISBURY | 0217 WOODFORD | 0317 WHEELOCK | 0417 WILLISTON | 0517 VICTORY | | | |
| 0118 SHOREHAM | | | 0418 WINOOSKI | 0518 WARNERS GRANT | | | |
| 0119 STARKSBORO | | | | 0519 WARREN GORE | | | |
| 0120 VERGENNES | | | | | | | |
| 0121 WALTHAM | | | | | | | |
| 0122 WEYBRIDGE | | | | | | | |
| 0123 WHITING | | | | | | | |

| 9 - ORANGE | 10 - ORLEANS | 11 - RUTLAND | 12 - WASHINGTON | 13 - WINDHAM | 14 - WINDSOR |
|---|---|---|---|---|---|
| 0901 BRADFORD | 1001 ALBANY | 1101 BENSON | 1201 BARRE CITY | 1301 ATHENS | 1401 ANDOVER |
| 0902 BRAINTREE | 1002 BARTON | 1102 BRANDON | 1202 BARRE TOWN | 1302 BRATTLEBORO | 1402 BALTIMORE |
| 0903 BROOKFIELD | 1003 BROWNINGTON | 1103 CASTLETON | 1203 BERLIN | 1303 BROOKLINE | 1403 BARNARD |
| 0904 CHELSEA | 1004 CHARLESTON | 1104 CHITTENDEN | 1204 CABOT | 1304 DOVER | 1404 BETHEL |
| 0905 CORINTH | 1005 COVENTRY | 1105 CLARENDON | 1205 CALAIS | 1305 DUMMERSTON | 1405 BRIDGEWATER |
| 0906 FAIRLEE | 1006 CRAFTSBURY | 1106 DANBY | 1206 DUXBURY | 1306 GRAFTON | 1406 CAVENDISH |
| 0907 NEWBURY | 1007 DERBY | 1107 FAIR HAVEN | 1207 E MONTPELIER | 1307 GUILFORD | 1407 CHESTER |
| 0908 ORANGE | 1008 GLOVER | 1108 HUBBARDTON | 1208 FAYSTON | 1308 HALIFAX | 1408 HARTFORD |
| 0909 RANDOLPH | 1009 GREENSBORO | 1109 IRA | 1209 MARSHFIELD | 1309 JAMAICA | 1409 HARTLAND |
| 0910 STRAFFORD | 1010 HOLLAND | 1110 MENDON | 1210 MIDDLESEX | 1310 LONDONDERRY | 1410 LUDLOW |
| 0911 THETFORD | 1011 IRASBURG | 1111 MIDDLETOWN SPRINGS | 1211 MONTPELIER | 1311 MARLBORO | 1411 NORWICH |
| 0912 TOPSHAM | 1012 JAY | 1112 MT HOLLY | 1212 MORETOWN | 1312 NEWFANE | 1412 PLYMOUTH |
| 0913 TUNBRIDGE | 1013 LOWELL | 1113 MT TABOR | 1213 NORTHFIELD | 1313 PUTNEY | 1413 POMFRET |
| 0914 VERSHIRE | 1014 MORGAN | 1114 PAWLET | 1214 PLAINFIELD | 1314 ROCKINGHAM | 1414 READING |
| 0915 WASHINGTON | 1015 NEWPORT CITY | 1115 PITTSFIELD | 1215 ROXBURY | 1315 SOMERSET | 1415 ROCHESTER |
| 0916 WEST FAIRLEE | 1016 NEWPORT TOWN | 1116 PITTSFORD | 1216 WAITSFIELD | 1316 STRATTON | 1416 ROYALTON |
| 0917 WILLIAMSTOWN | 1017 TROY | 1117 POULTNEY | 1217 WARREN | 1317 TOWNSHEND | 1417 SHARON |
| | 1018 WESTFIELD | 1118 PROCTOR | 1218 WATERBURY | 1318 VERNON | 1418 SPRINGFIELD |
| | 1019 WESTMORE | 1119 RUTLAND CITY | 1219 WOODBURY | 1319 WARDSBORO | 1419 STOCKBRIDGE |
| | | 1120 RUTLAND TOWN | 1220 WORCESTER | 1320 WESTMINSTER | 1420 WEATHERSFIELD |
| | | 1121 KILLINGTON | | 1321 WHITINGHAM | 1421 WESTON |
| | | 1122 SHREWSBURY | | 1322 WILMINGTON | 1422 WEST WINDSOR |
| | | 1123 SUDBURY | | 1323 WINDHAM | 1423 WINDSOR |
| | | 1124 TINMOUTH | | | 1424 WOODSTOCK |
| | | 1125 WALLINGFORD | | | |
| | | 1126 WELLS | | | |
| | | 1127 WEST HAVEN | | | |
| | | 1128 WEST RUTLAND | | | |

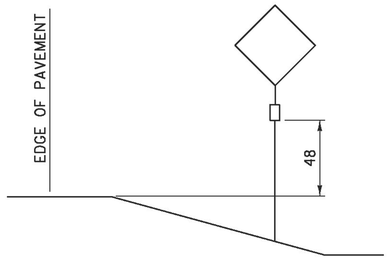
## COUNTY AND TOWN DESIGNATIONS

9020 BARNET STATE HIGHWAY
9025 BENNINGTON NORTH STATE HIGHWAY
9030 BERLIN STATE HIGHWAY
9090 BRATTLEBORO STATE HIGHWAY
9150 CASTLETON STATE HIGHWAY
9180 COVENTRY STATE HIGHWAY
9210 FAIR HAVEN STATE HIGHWAY
9240 FAIRLEE STATE HIGHWAY
9270 FERRISBURGH STATE HIGHWAY
9330 MAIDSTONE STATE HIGHWAY
9360 MIDDLESEX STATE HIGHWAY
9390 MONTPELIER STATE HIGHWAY
9420 MONTPELIER JUNCTION STATE HIGHWAY
9430 NEWBURY STATE HIGHWAY
9480 NORTON STATE HIGHWAY
9540 NORWICH STATE HIGHWAY
9600 PUTNEY STATE HIGHWAY
9630 QUECHEE STATE HIGHWAY
9720 ST ALBANS STATE HIGHWAY SOUTH
9730 ST JOHNSBURY STATE HIGHWAY
9750 SOUTH ALBURGH STATE HIGHWAY
9840 WESTMINSTER STATE HIGHWAY
9870 WILDER STATE HIGHWAY
9900 WINHALL STATE HIGHWAY
9990 WEST RUTLAND - RUTLAND (BUSINESS US-4)
9991 BELLOWS FALLS SOI17 (ROCK - WEST ST)
9992 BELLOWS FALLS SOI17 (BRIDGE ST)
9993 BURLINGTON (ALTERNATE US-7)
9994 DERBY (ALTERNATE US-5)
9995 MONTPELIER (BUSINESS US-2)
9996 NEWPORT (ALTERNATE US-5)
9997 ST JOHNSBURY (ALTERNATE US-5)
9998 SO BURLINGTON - KENNEDY DRIVE

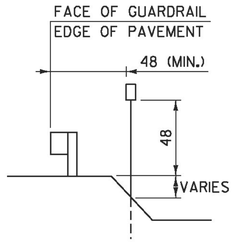
## NAMED STATE AND TOWN HIGHWAYS ROUTE NUMBERS

## GENERAL NOTES:

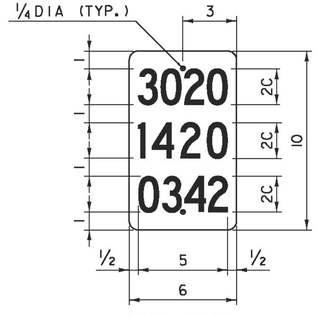
1. MILEMARKERS ARE TO BE INSTALLED ALONG THE FEDERAL AID HIGHWAY SYSTEM INCLUDING ALL STATE HIGHWAYS AND TOWN HIGHWAYS ON THE FEDERAL AID HIGHWAY SYSTEM.
2. MILEMARKERS WILL NORMALLY BE INSTALLED AT EACH 0.20 MILE INTERVAL, ALTERNATING SIDES OF THE ROAD, RESULTING IN A SIGN FACING TRAFFIC EACH 0.40 MILES. A MILEMARKER WILL ALSO BE INSTALLED AT EACH INTERSECTION, ON THE SAME POST AS THE STOP SIGN (MILEMARKER TO BE PLACED PARALLEL TO MAINLINE TRAVELED WAY, VISIBLE TO TRAFFIC). ANY MILEMARKER LOCATION FALLING WITHIN 0.05 MILE OF AN INTERSECTION WILL BE OMITTED. WHEN THE NORMAL LOCATION OF A MILEMARKER IS UNDESIRABLE, SUCH AS ON A LAWN, DRIVEWAY, OR LEDGE, AN ATTEMPT WILL BE MADE TO LOCATE IT ON THE OPPOSITE SIDE OF THE ROAD. IF NO SUITABLE LOCATION CAN BE FOUND WITHIN 20 FEET OF THE NORMAL LOCATION, IT MAY BE OMITTED.
3. ON CLASS I TOWN HIGHWAYS OR OTHER CONGESTED LOCATIONS MILEMARKERS WILL ONLY BE INSTALLED ON EXISTING SIGN POSTS AND WILL CARRY THE ACTUAL MILEAGE TO THAT LOCATION. A MILEMARKER LOCATED EVERY 0.10 MILES IS DESIRABLE THROUGH THESE LOCATIONS.
4. THE FIRST LINE OF TEXT ON MILEMARKERS INDICATE THE STATE ROUTE NUMBER. THE FOURTH NUMERAL BEING THE CORRESPONDING ROUTE NUMBER LETTER DESIGNATION. FOR EXAMPLE US-2 (WHICH HAS NO LETTER DESIGNATION) WOULD BE IDENTIFIED USING 0020 AND VT-100B WOULD BE IDENTIFIED USING 1002. FOR ANY NAMED FEDERAL AID HIGHWAY SYSTEM HIGHWAYS, THE FOUR DIGIT ROUTE NUMBER (9000 SERIES) LISTED UNDER "NAMED STATE AND TOWN HIGHWAYS ROUTE NUMBERS" SHALL BE UTILIZED.
5. THE SECOND LINE OF TEXT ON MILEMARKERS INDICATE THE COUNTY AND TOWN. THE COUNTY IS INDICATED IN THE FIRST AND SECOND NUMERALS AND THE TOWN IN THE THIRD AND FOURTH NUMERALS. THE APPROPRIATE FOUR DIGIT DESIGNATIONS ARE LISTED PER TOWN, UNDER "COUNTY AND TOWN DESIGNATIONS."
6. THE THIRD LINE OF TEXT ON MILEMARKERS INDICATE THE MILEAGE, IN HUNDREDTHS, FROM THE TOWN LINE OR BEGINNING OF A ROUTE. MILEAGE IS ALWAYS MEASURED TRAVELING FROM THE SOUTH TO NORTH OR FROM THE WEST TO EAST. THE ROUTE DIRECTION IS ESTABLISHED USING THE VERMONT AGENCY OF TRANSPORTATION (VAOT) ROUTE LOGS.
7. THE SIGN BASE MATERIAL SHALL BE 0.063 INCH FLAT SHEET ALUMINUM.
8. THE SIGN SHALL BE WHITE RETROREFLECTIVE LEGEND ON A GREEN RETROREFLECTIVE BACKGROUND, BOTH SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS" (AASHTO) M 268 ["AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) D 4956] TYPE III.
9. CORNERS SHALL BE ROUNDED TO A ½ INCH RADIUS.
10. ALL LINES OF TEXT SHALL BE CENTERED HORIZONTALLY AND SHALL BE AS IDENTIFIED IN THE PLANS. THE THREE LINES OF TEXT WILL EACH CONTAIN FOUR NUMERALS.
11. WHEN INSTALLED ON ITS OWN POST, A SINGLE 14 GAGE, 1.75 INCH SQUARE STEEL POST AND 12 GAGE, 2 INCH SQUARE ANCHOR SHALL BE USED FOR INSTALLATION. THE ANCHOR SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
12. ALL DIMENSIONS SHOWN IN INCHES.




## VD-700 INSTALLATION DETAIL SUPPLEMENTARY SIGN




## VD-700 INSTALLATION DETAIL




## VD-700

**OTHER STDS. REQUIRED:** T-45

REVISIONS AND CORRECTIONS

APRIL 9, 2014 - ORIGINAL APPROVAL DATE

APPROVED

HIGHWAY SAFETY & DESIGN ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT

Mark D. Richter

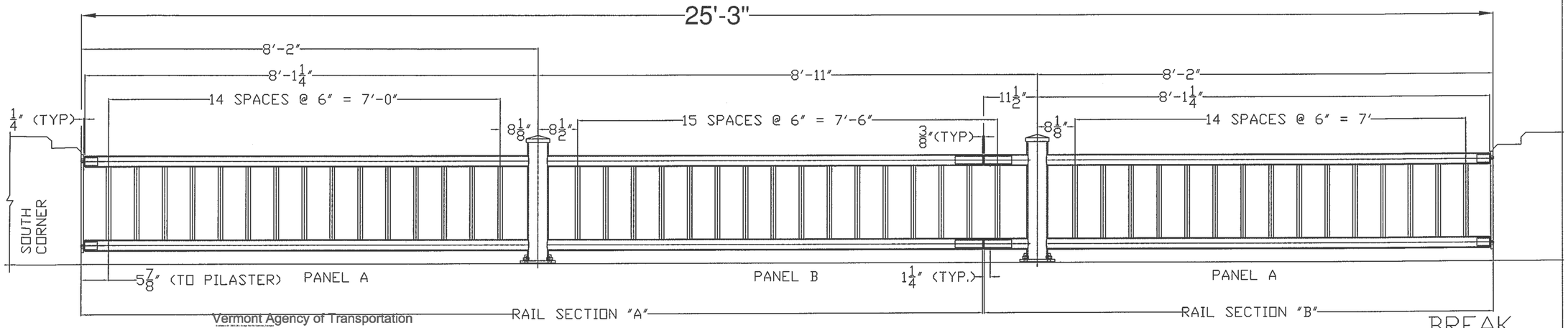
FEDERAL HIGHWAY ADMINISTRATION

# MILEMARKER DETAILS STATE AND TOWN HIGHWAYS

VERMONT AGENCY OF TRANSPORTATION

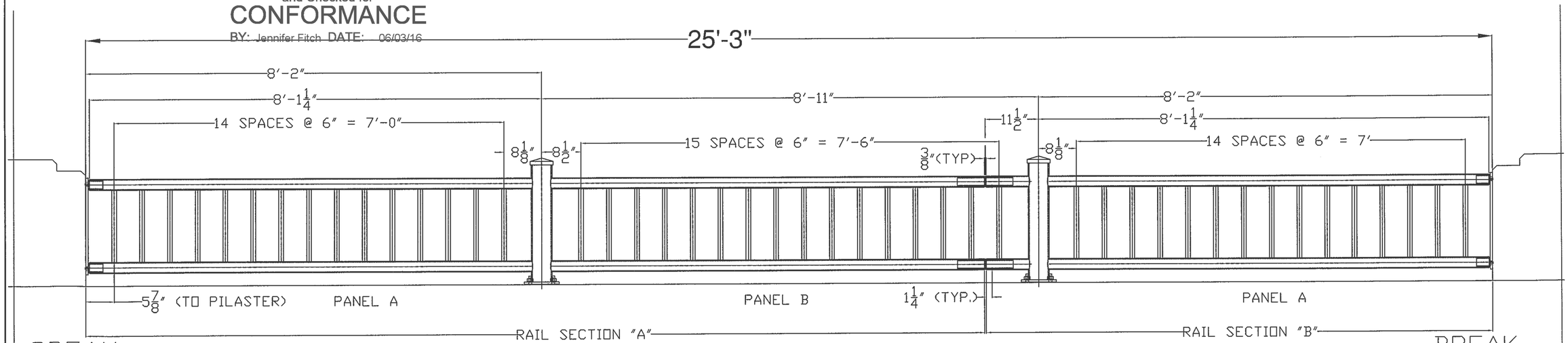
STANDARD

T-44




WEST RAILING, FACING WEST

Vermont Agency of Transportation
RECEIVED
ON: June 2, 2016
and Checked for
CONFORMANCE
BY: Jennifer Fitch DATE: 06/03/16




WEST RAILING, FACING WEST

BRIDGE RAIL NOTES

1. ALL DIMENSIONS TO FACE OF CONCRETE UNLESS NOTED OTHERWISE.
2. RAIL POSTS SHALL BE SET NORMAL TO GRADE.
3. PAYMENT SHALL BE MADE UNDER PAY ITEM 900.640 SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION).
4. REINFORCING STEEL SHALL CONFORM TO SECTION 507 FOR LEVEL II REINFORCMENT. PAYMENT SHALL BE MADE UNDER PAY ITEM SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION).
5. METAL HAND RAILING, TO INCLUDE STEEL PIPES, PLATES AND HARDWARE, SHALL BE PAID FOR UNDER ITEM SPECIAL PROVISION(BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION).
6. STEEL PIPES FOR POSTS, TOP AND BOTTOM RAIL AND PALINGS SHALL BE SEAMLESS, CONFORMING TO SUBSECTION 732.01.
7. STEEL FOR BASE AND ANCHORAGE PLATES SHALL CONFORM TO SUBSECTION 732.03(b).
8. HARDWARE FOR ANCHOR BOLT ASSEMBLIES SHALL CONFORM TO SUBSECTION 732.03(d).
9. 1/8" PAD SHALL CONFORM TO SUBSECTION 731.01 OR 731.02.
10. ALL EXPOSED CUT OR SHEARED EDGES OF STEEL COMPONENTS SHALL BE ROUNDED TO A 1/16" RADIUS AND BE FREE OF BURRS.
11. ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M 111M/M 111 (ASTM A123), EXCEPT HARDWARE, WHICH SHALL MEET THE REQUIREMENTS OF AASHTO M 232M/M 232 (ASTM A153).
12. ALL PARTS EXCEPT HARDWARE AND ANCHORAGE PLATES SHALL BE PAINTED BLACK (COLOR CHIP #27038).
13. RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
14. THE FABRICATOR SHALL SUBMIT FABRICATION DRAWINGS INCLUDING WELDING PROCEDURES FOR METAL HAND RAILING IN ACCORDANCE WITH SECTION 105.

**SHOP DRAWING REVIEW**

☒ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ APPROVED AS NOTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DID NOT RELIEVE CONTRACTOR FROM COMPLIANCEWITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING THEIR WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING THEIR WORK IN A SAFE AND SATISFACTORY MANNER.

CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-669-8223

Job Number: 150223
Reviewed by: SRB
Date: 06/03/2016

ITEM #: 900.640

APPROVED BY:

SHEET 1 OF 5

# BRIDGE RAIL DETAILS SHEET

BRATTLEBORO BR 2000 (26)
VERMONT

| R E V | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| | 1 | 6/2/16 | REVISED PER 5/18/16 DWG REVIEW | E.P. |

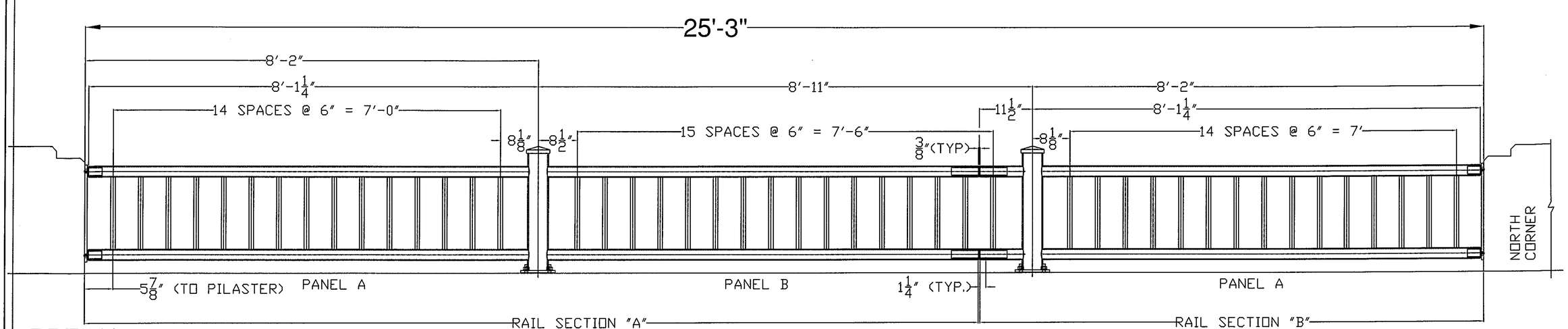
| R E V | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| | | | | |

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

AISC CERTIFIED FABRICATOR

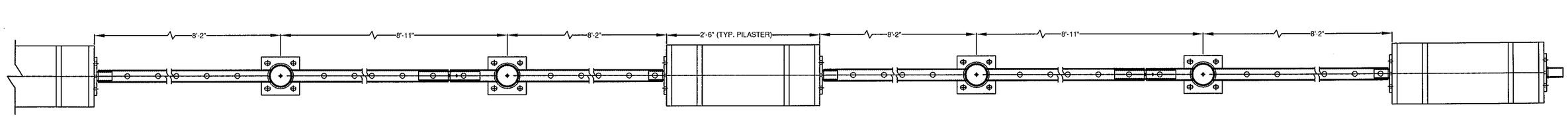
| | | |
|---|---|---|
| DRAWN | E.P. | 5/4/16 |
| CHECKED | D.L. | 5/4/16 |
| APPROVED | . | . |
| SCALE | SCHEMATIC | |

DRAWING NO. F.R. LAFAYETTE-BRATTLEBORO (26)




BREAK LINE "B"

## WEST RAILING, FACING WEST



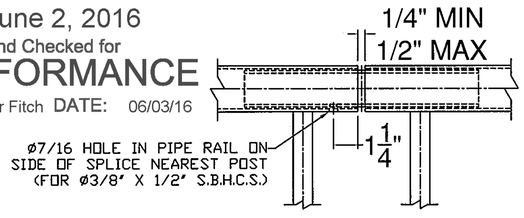

SOUTH CORNER

PLAN VIEW OF A SECTION OF THE WEST RAIL

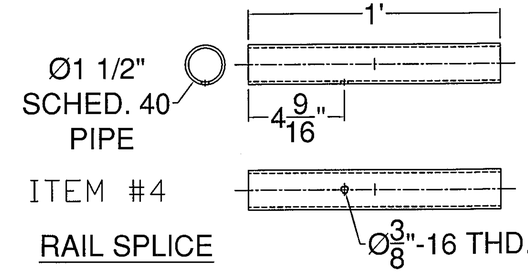
| BILL OF MATERIAL | | | |
|---|---|---|---|
| ITEM | QTY | DESCRIPTION | ASTM DESIGNATION |
| 1 | 5 | RAIL SECTION "A" W/ BASE PLATE | A500/A53 Gr. B/A572 Gr. 50 CVN |
| 2 | 6 | RAIL SECTION "B" W/ BASE PLATE | A500/A53 Gr. B/A572 Gr. 50 CVN |
| 3 | 1 | RAIL SECTION "C" W/ BASE PLATE | A500/A53 Gr. B/A572 Gr. 50 CVN |
| 4 | 12 | RAIL SPLICE (1 1/2" SCHEDULE 40) | A500/A53 Grade B |
| 5 | 12 | ø3/8" X 1/2" SOCKET, BUTTON HEAD CAP SCREW | A307 (ZINC PLATED - IMPORTS) |
| 6 | 13 | POST ANCHOR PLATES, 1/8" X 7 1/2" X 7 1/2" | A36 |
| 7 | 12 | SIDE ANCHOR PLATES, 1/8" X 7 1/2" X 1'-9" | A36 |
| 8 | 12 | SIDE BASE PLATES, 1/2" X 7 1/2" X 1'-9" | A572 Gr. 50 CVN |
| 9 | *102 | ø 5/8" X 10" FULLY THREADED ANCHOR STUDS | A449 |
| 10 | 100 | ø 5/8" HEX JAM NUTS | A563 |
| 11 | 202 | ø 5/8" HEAVY HEX NUTS | A563 |
| 12 | 302 | ø 5/8" FLAT WASHERS | F436 |
| 13 | 13 | 1/8" X 7 1/2" X 7 1/2" POST BEARING PAD | AASHTO M251 |
| 14 | 2 | "W" PANEL TERMINAL CONNECTOR, 10 Ga. | AASHTO M180 |
| 15 | 2 | CONNECTION PLATE W/ 1" SCHED. 40 PIPE | A500/A53 Grade B/A36 |
| 16 | 16 | ø 5/8" PANEL BOLTS, NUTS | A307 |
| 17 | 12 | ø 7/8" X 12" FULLY THREADED ANCHOR STUDS | A449 |
| 18 | 24 | ø 7/8" HEAVY HEX NUTS | A563 |
| 19 | 24 | ø 7/8" FLAT WASHERS | F436 |

* - TWO ADDITIONAL FOR Vtrans QA TESTING

Vermont Agency of Transportation
RECEIVED
ON: June 2, 2016
and Checked for
CONFORMANCE
BY: Jennifer Fitch DATE: 06/03/16




RAIL SPLICE DETAIL




ITEM #4

RAIL SPLICE

**SHOP DRAWING REVIEW**

☒ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ APPROVED AS NOTED

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 150223
Reviewed by: SRB
Date: 06/03/2016

ITEM #: 900.640

APPROVED BY:

SHEET 2 OF 5

# BRIDGE RAIL DETAILS SHEET

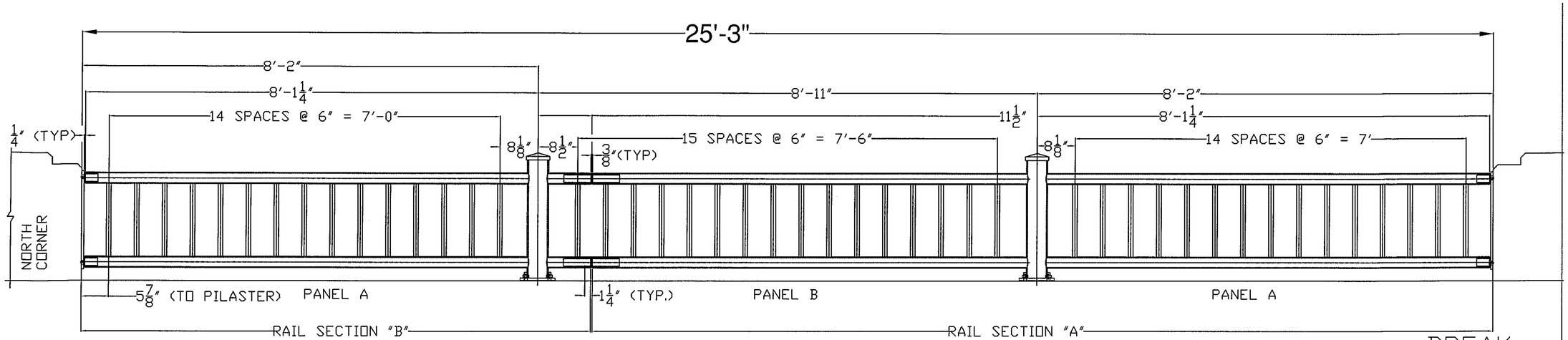
BRATTLEBORO BR 2000 (26)
VERMONT

| REV | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| | 1 | 6/2/16 | REVISED PER 5/18/16 DWG REVIEW | E.P. |

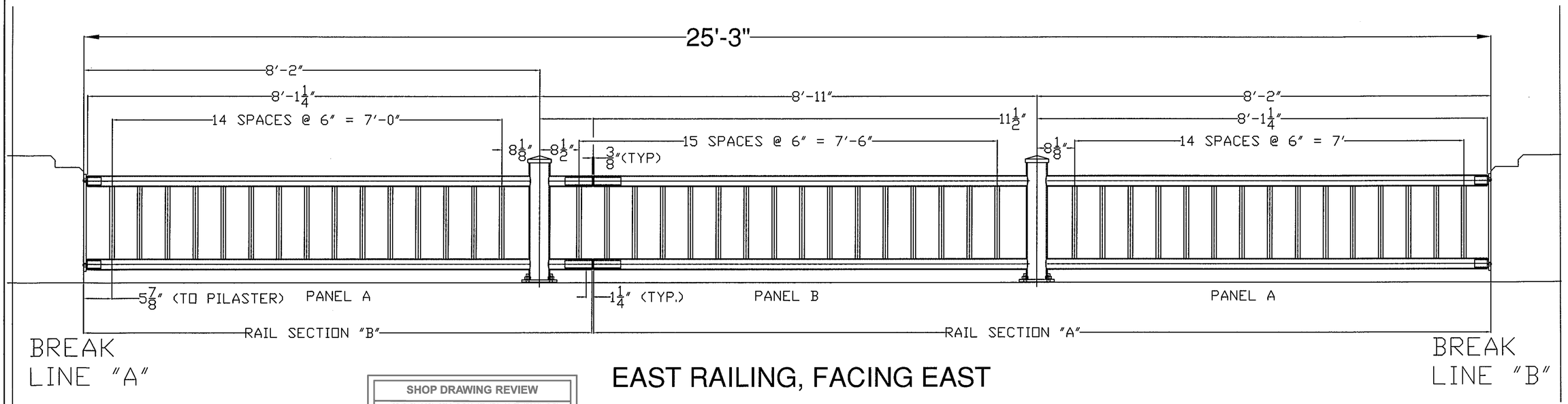
| | | |
|---|---|---|
| DRAWN | E.P. | 5/4/16 |
| CHECKED | D.L. | 5/4/16 |
| APPROVED | . | . |
| SCALE | SCHEMATIC | |
| DRAWING NO. | F.R. LAFAYETTE-BRATTLEBORO (26) | |

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

CERTIFIED FABRICATOR




EAST RAILING, FACING EAST




EAST RAILING, FACING EAST

**SHOP DRAWING REVIEW**

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 150223
Reviewed by: SRB
Date: 06/03/2016

Vermont Agency of Transportation
RECEIVED
ON: June 2, 2016
and Checked for
CONFORMANCE
BY: Jennifer Fitch DATE: 06/03/16

ITEM #: 900.640

APPROVED BY:

SHEET 3 OF 5

# BRIDGE RAIL DETAILS SHEET

BRATTLEBORO BR 2000 (26)
VERMONT

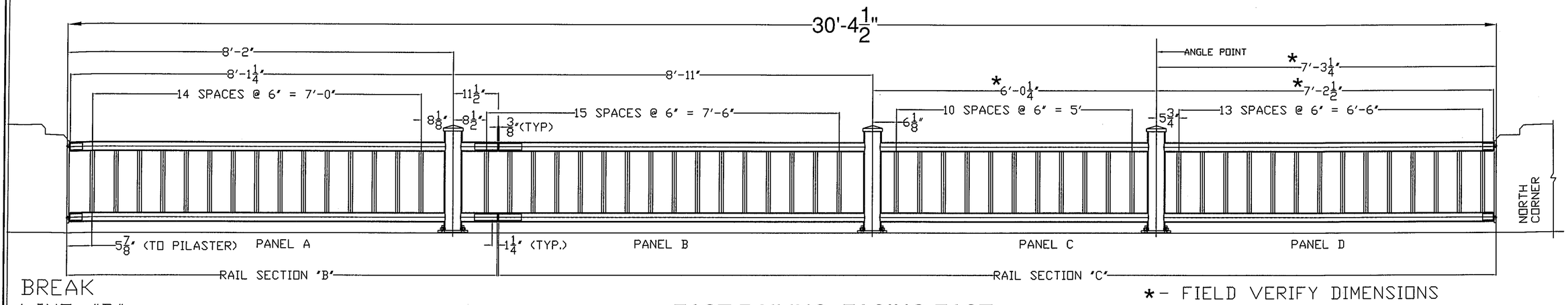
| R E V | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| | 1 | 6/2/16 | REVISED PER 5/18/16 DWG REVIEW | E.P. |

| R E V | 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

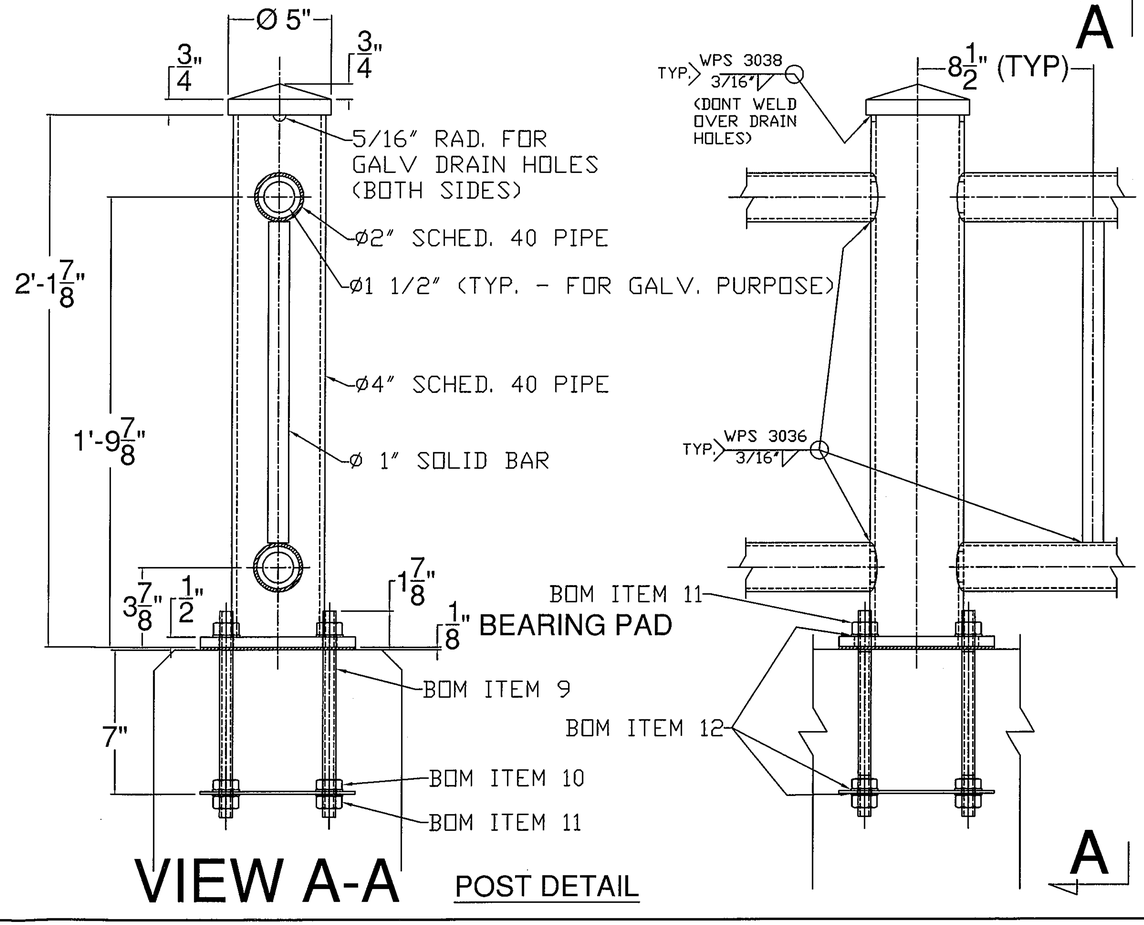
| | | |
|---|---|---|
| DRAWN | E.P. | 5/4/16 |
| CHECKED | D.L. | 5/4/16 |
| APPROVED | . | . |
| SCALE | SCHEMATIC | |
| DRAWING NO. | F.R. LAFAYETTE-BRATTLEBORO (26) | |




BREAK LINE "B"

*- FIELD VERIFY DIMENSIONS

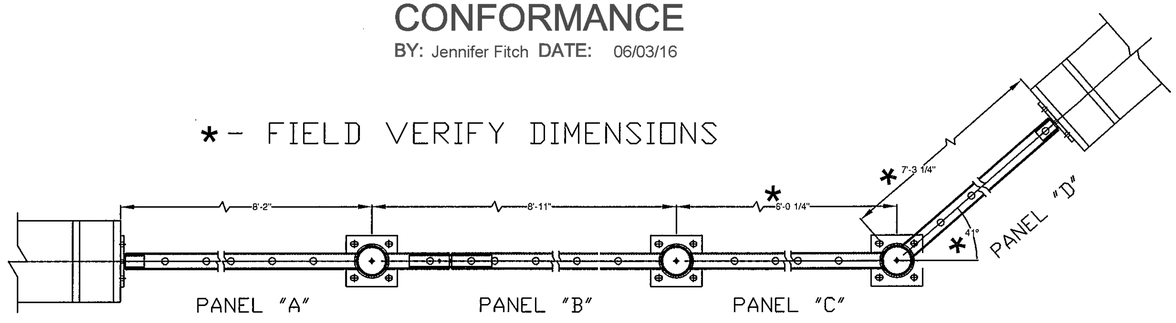
## EAST RAILING, FACING EAST




VIEW A-A POST DETAIL

Vermont Agency of Transportation
RECEIVED
ON: June 2, 2016
and Checked for
CONFORMANCE
BY: Jennifer Fitch DATE: 06/03/16

*- FIELD VERIFY DIMENSIONS




PLAN VIEW OF A SECTION OF THE EAST RAIL

NOTE: HANDRAIL TUBING TO BE WELDED PER D1.1, POST TO BASE TO BE PER D1.5

**SHOP DRAWING REVIEW**

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 150223
Reviewed by: SRB
Date: 06/03/2016

ITEM #: 900.640

APPROVED BY:

SHEET 4 OF 5

# BRIDGE RAIL DETAILS SHEET

BRATTLEBORO BR 2000 (26)
VERMONT

| R | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| E | 1 | 6/2/16 | REVISED PER 5/18/16 DWG REVIEW | E.P. |
| V | | | | |

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

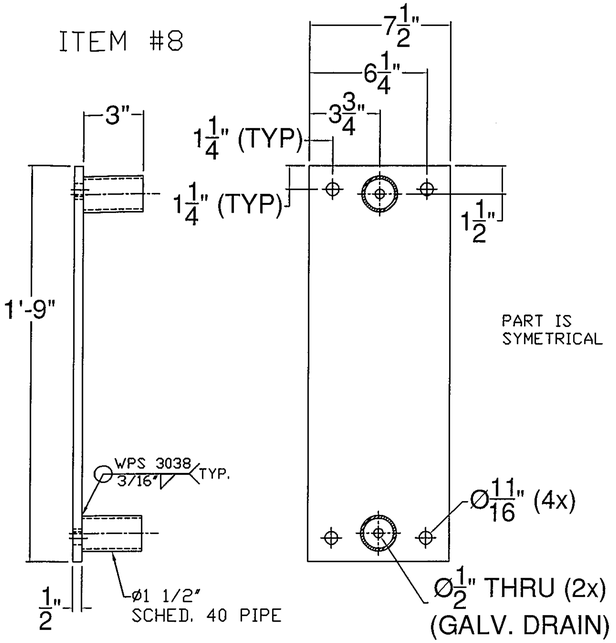
ELDERLEE, INC.
OAKS CORNERS, NEW YORK 14518
E-Mail: dlong@elderlee.com
Tel: 315-789-6670 Fax: 315-789-6615

AISC CERTIFIED FABRICATOR

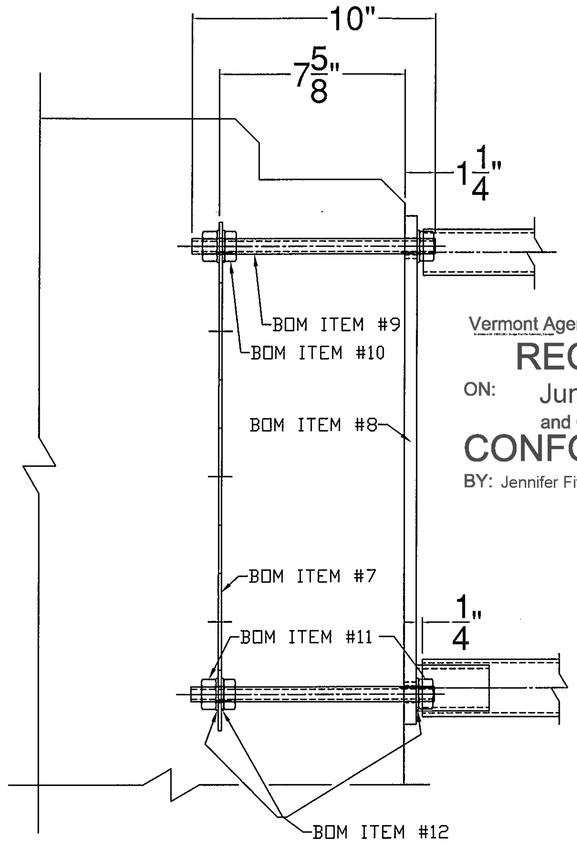
| | | |
|---|---|---|
| DRAWN | E.P. | 5/4/16 |
| CHECKED | D.L. | 5/4/16 |
| APPROVED | . | . |
| SCALE | SCHEMATIC | |

DRAWING NO. F.R. LAFAYETTE-BRATTLEBORO (26)

ITEM #8




SIDE BASE PLATE




SIDE PLATE CONNECTION DETAIL

SHOP DRAWING REVIEW

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 150223
Reviewed by: SRB
Date: 06/03/2016

Vermont Agency of Transportation

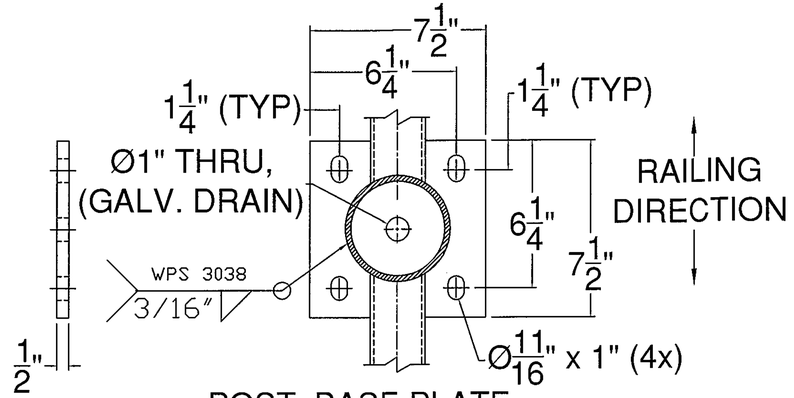
RECEIVED

ON: June 2, 2016

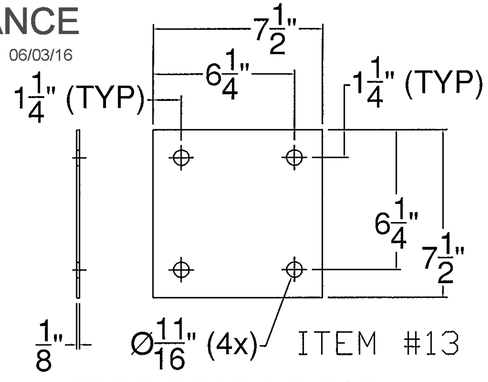
and Checked for

CONFORMANCE

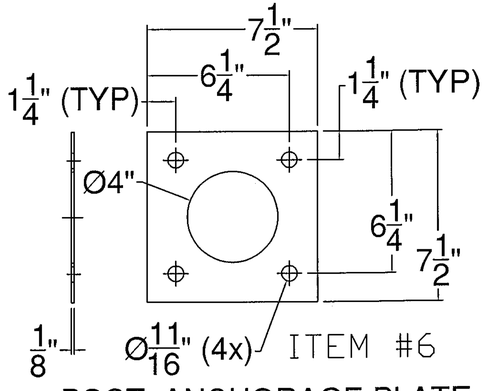
BY: Jennifer Fitch DATE: 06/03/16




POST BASE PLATE

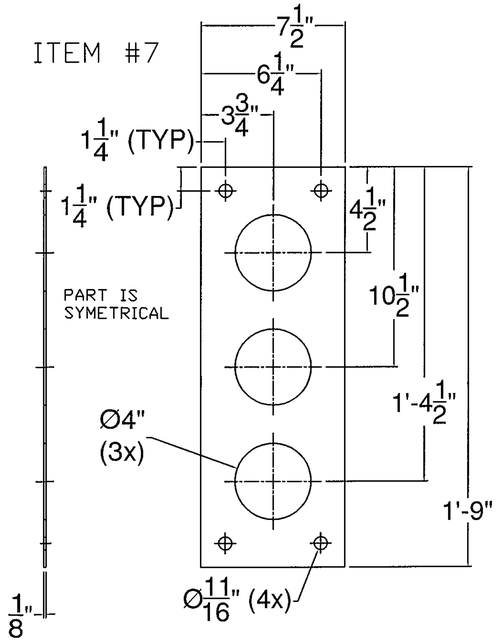



POST BEARING PAD

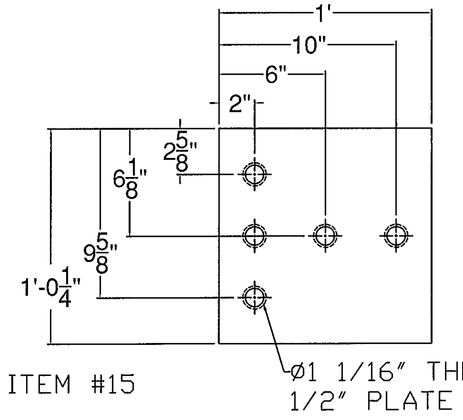



POST ANCHORAGE PLATE

ITEM #7

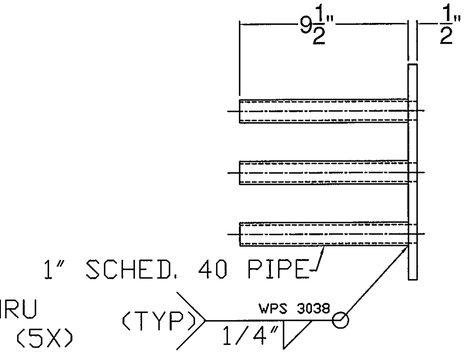


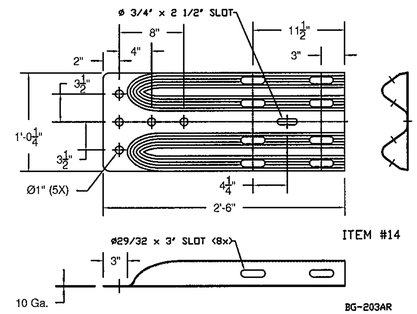

SIDE ANCHORAGE PLATE




ITEM #15

CONNECTION PLATE DETAIL




ITEM #14

ITEM #: 900.640

SHEET 5 OF 5

APPROVED BY:

# BRIDGE RAIL DETAILS SHEET

BRATTLEBORO BR 2000 (26)
VERMONT

| R E V | NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|---|
| | 1 | 6/2/16 | REVISED PER 5/18/16 DWG REVIEW | E.P. |

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


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

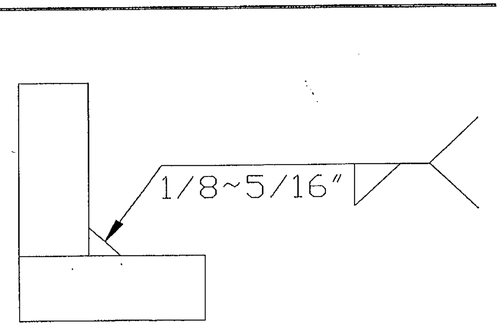

CERTIFIED FABRICATOR

| | | |
|---|---|---|
| DRAWN | E.P. | 5/4/16 |
| CHECKED | D.L. | 5/4/16 |
| APPROVED | . | . |
| SCALE | SCHEMATIC | |
| DRAWING NO. | F.R. LAFAYETTE-BRATTLEBORO (26) | |

## WELDING PROCEDURE SPECIFICATION

| | | | |
|---|---|---|---|
| Material Specification | ASTM-A500-A53-GRADE B TO A572 GRADE 50 | | |
| Welding Process | FCAW | | |
| Manual or Machine | SEMAUTOMATIC | | |
| Position of Welding | FLAT VERTICAL OVERHEAD 5G | | |
| Filler Metal Specification | A5.20 | | |
| Filler Metal Classification | E71T-1/T-1M ESAB DUAL SHIELD 7000 | | |
| Flux | N/A | | |
| Shielding Gas | CO 2 | Dew Point -40DEG F | FLOW RATE 50 CFH |
| Single or Multiple Pass | SINGLE | | |
| Single or Multiple Arc | SINGLE | | |
| Welding Current | DC | | |
| Polarity | REVERSE ELECTRODE POSITIVE | | |
| Welding Progression | STRINGER | | |
| Root Treatment | PER D1.1 | | |
| Preheat and Interpass Temperature | PER D1.1 | | |
| Postheat Temperature | NONE | | |
| Heat Input | Min | Max | |

### WELDING PROCEDURE

| Pass no. | Electrode size | Welding Current Amperes | Welding Current Volts | Travel speed | Joint detail |
|---|---|---|---|---|---|
| 1 | .035 | 110 | 21 | 6IPM |  |
| Variable | LIMITS | 121 TO 99 | 23 TO 19 | 7 TO 5 | |



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

Procedure No. 3036
Revision No.

Contractor Elderlee, Inc.
Authorized By RANDY SCOTT
Date 6/2/2016

Form III-2

**SHOP DRAWING REVIEW**

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 150223
Reviewed by: SRB
Date: 06/03/2016

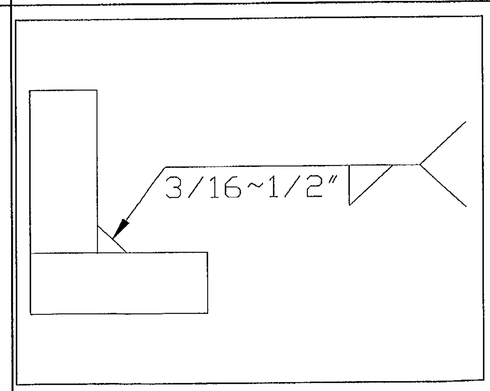
Vermont Agency of Transportation
RECEIVED
ON: June 2, 2016
and Checked for
CONFORMANCE
BY: Jennifer Fitch DATE: 06/03/16

## WELDING PROCEDURE SPECIFICATION

PQR ELDERLEE #3

| | |
|---|---|
| Material Specification | ASTM-A500-A53-GRADE B TO A572 GRADE 50 |
| Welding Process | FCAW-G |
| Manual or Machine | SEMAUTOMATIC |
| Position of Welding | FLAT/HORIZONTAL |
| Filler Metal Specification | A5.29 |
| Filler Metal Classification | E81T1-Ni1C-JH4 |
| Flux | N/A |
| Shielding Gas | CO 2 Dew Point -40DEG F Flow Rate 50CFH |
| Single or Multiple Pass | SINGLE |
| Single or Multiple Arc | SINGLE |
| Welding Current | DC |
| Polarity | REVERSE ELECTRODE POSITIVE |
| Welding Progression | STRINGER |
| Root Treatment | D1.5 |
| Preheat and Interpass Temperature | D1.5 |
| Postheat Temperature | NONE |
| Heat Input | Min _____ Max _____ |

### WELDING PROCEDURE

| Pass no. | Electrode size | Welding Current Amperes | Welding Current Volts | Travel speed | Joint detail |
|---|---|---|---|---|---|
| 1 | 1/16 | 310 | 25 | 11 |  |
| Variable | LIMITS | 341 TO 279 | 27 TO 23 | 12 TO 10 | |



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

Procedure No. 3038

Revision No. _____

Contractor Elderlee, Inc.

Authorized By RANDY SCOTT

Date 6/2/2016

SHOP DRAWING REVIEW

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Job Number: 150223
Reviewed by: SRB
Date: 06/03/2016

Vermont Agency of Transportation

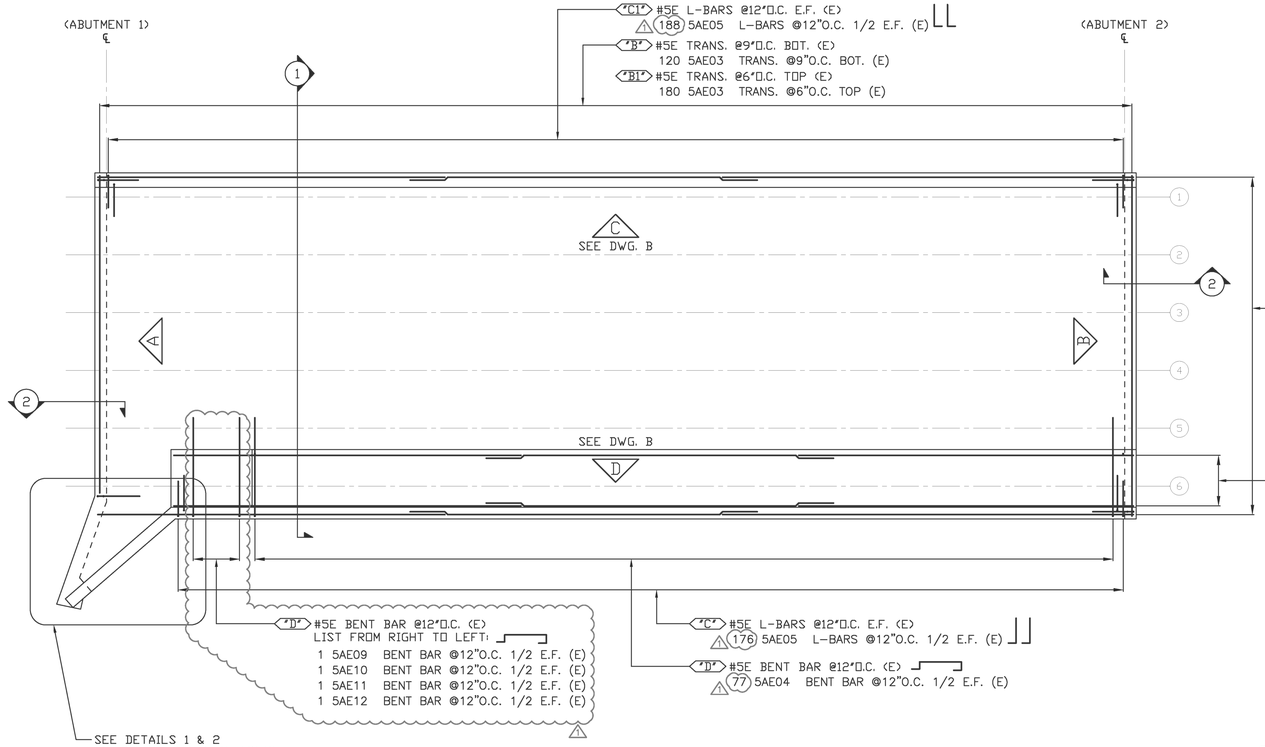
RECEIVED

ON: June 2, 2016

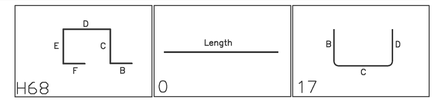
and Checked for

CONFORMANCE

BY: Jennifer Fitch DATE: 06/03/16




| Release Number: | | | | | BAR LIST | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bar Mark | Qty | Size | Total Length | Type | 'A' | 'B' | 'C' | 'D' | 'E' | 'F' | 'G' | 'H' | 'J' | 'K' | 'O' | 'R' |
| 5AE01 | 18 | #5 | 13'-7" | H68 | | 3'-0" | 3'-4 ½" | △0'-7" | 3'-7 ½" | 3'-0" | | | | | | |
| 5AE02 | 18 | #5 | 14'-0" | H68 | | 3'-0" | 3'-7" | △0'-7" | 3'-10" | 3'-0" | | | | | | |
| 5AE03 | 308 | #5 | 29'-5" | | | 29'-5" | | | | | | | | | | |
| 5AE04 | 77 | #5 | 9'-1" | H68 | | 0'-10" | 0'-11" | 5'-5" | 1'-1" | 0'-10" | | | | | | |
| 5AE05 | 364 | #5 | 4'-3" | 17 | | 1'-0" | 3'-3" | | | | | | | | | |
| 5AE06 | 7 | #5 | 28'-6" | | | 28'-6" | | | | | | | | | | |
| 5AE07 | 126 | #5 | 30'-0" | | | 30'-0" | | | | | | | | | | |
| 5AE08 | 56 | #5 | 35'-6" | | | 35'-6" | | | | | | | | | | |
| 5AE09 | 1 | #5 | 8'-11" | H68 | | 0'-10" | 0'-10" | 5'-5" | 1'-0" | 0'-10" | | | | | | |
| 5AE10 | 1 | #5 | 8'-8" | H68 | | 0'-10" | 0'-8 ½" | 5'-5" | 0'-10 ½" | 0'-10" | | | | | | |
| 5AE11 | 1 | #5 | 8'-6" | H68 | | 0'-10" | 0'-7 ½" | 5'-5" | 0'-9 ½" | 0'-10" | | | | | | |
| 5AE12 | 1 | #5 | 8'-3" | H68 | | 0'-10" | 0'-6" | 5'-5" | 0'-8" | 0'-10" | | | | | | |



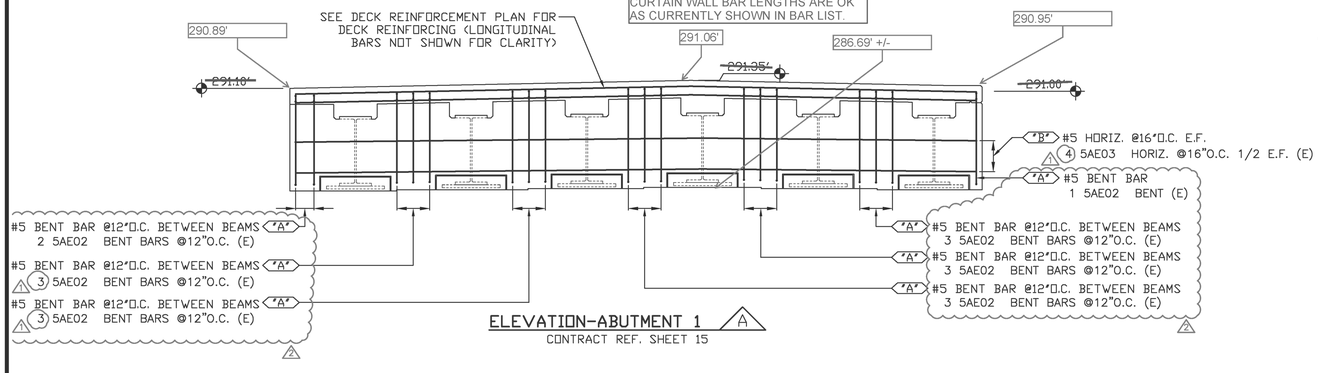

ALL REINF. EPOXY

Vermont Agency of Transportation

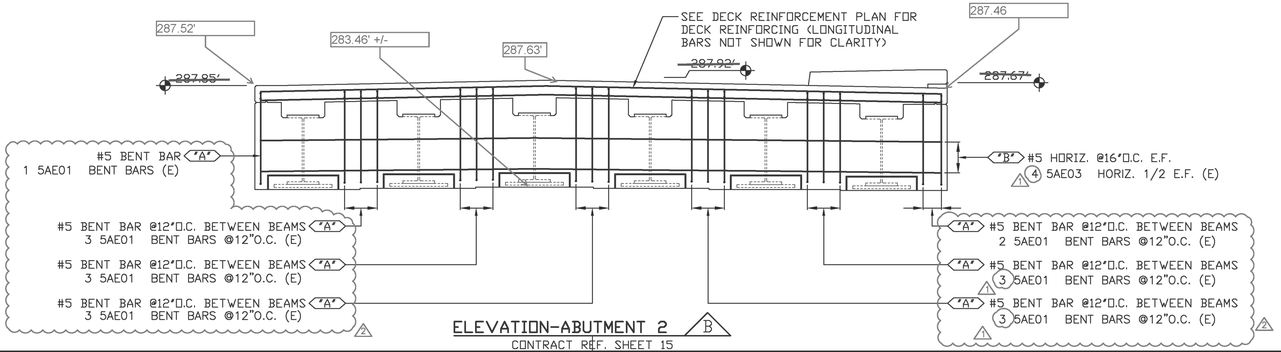
RECEIVED
ON: June 29, 2016
and Checked for
CONFORMANCE
BY: Jennifer Fitch DATE: 06/29/16

## DECK REINFORCEMENT PLAN
CONTRACT REF. SHEET 13

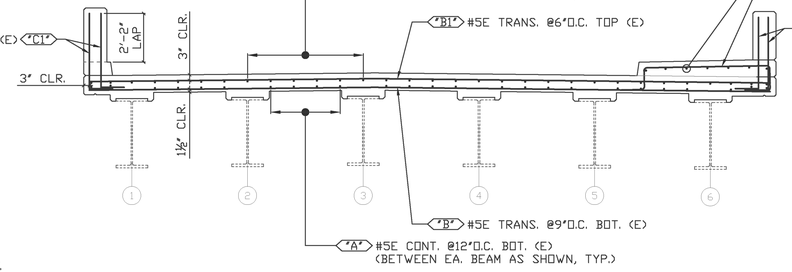
PLEASE NOTE - THE FINISHED GRADE ELEVATIONS HAVE BEEN REVISED ALONG THE LENGTH OF THE BRIDGE. SEE NEW ELEVATIONS BELOW. HOWEVER, IT APPEARS THAT THE CURTAIN WALL BAR LENGTHS ARE OK AS CURRENTLY SHOWN IN BAR LIST.




## ELEVATION-ABUTMENT 1 A
CONTRACT REF. SHEET 15




## ELEVATION-ABUTMENT 2 B
CONTRACT REF. SHEET 15




## SECTION 1
CONTRACT REF. SHEET 13

### SHOP DRAWING REVIEW

☐ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☒ APPROVED AS NOTED

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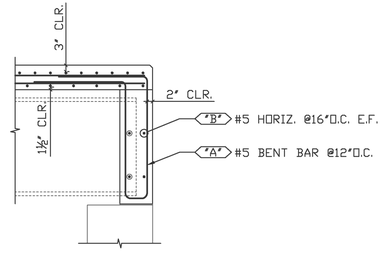
CLD Consulting Engineers
949 Commercial Street
Manchester, NH 03101
603-669-6223

Job Number: 150223
Reviewed by: SRB
Date: 06/30/2016




## SECTION 2
CONTRACT REF. SHEET 16

FOR APPROVAL

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

EPOXY REINF. BARS ASTM A615 GRADE 60, MARKED (E)

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

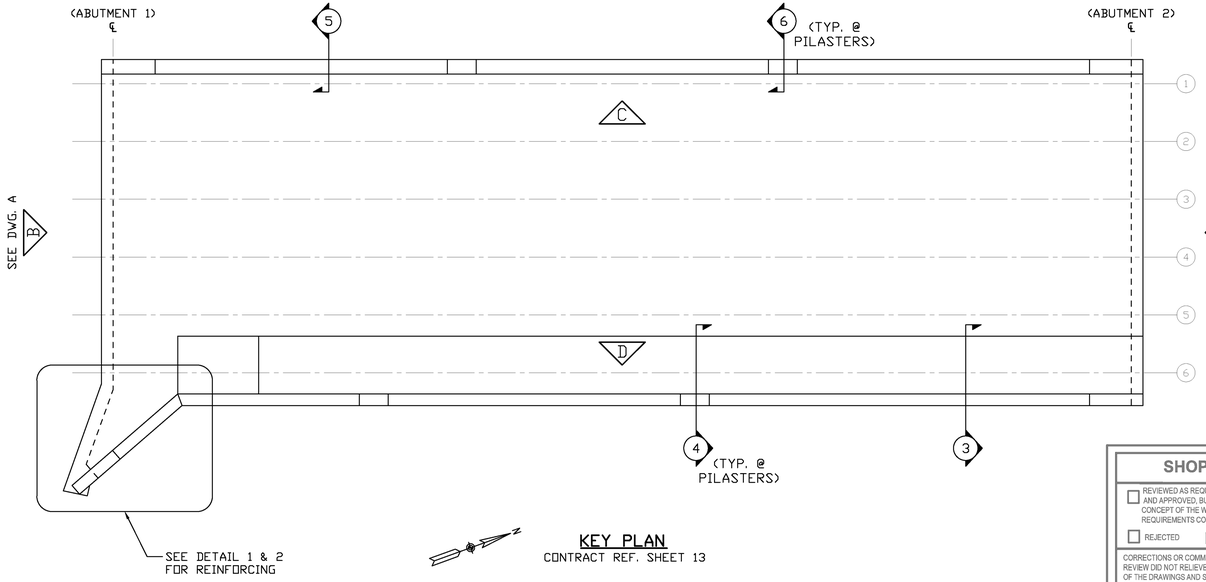
LEGEND:
CONT.-CONTINUOUS
TRANS.-TRANSVERSE
LONG.-LONGITUDINAL
LAT.-LATITUDINAL
DWLS.-DOWELS
VERTS.-VERTICAL
HORIZ.-HORIZONTAL
T&B -TOP & BOTTOM
I.F.-INNER FACE
O.F.-OUTER FACE
E.E.-EACH END
E.F.-EACH FACE
F.F.-FRONT FACE
R.F.-REAR FACE
E.W.-EACH WAY
O.C.-ON CENTER
L.W.-LONG WAY
S.W.-SHORT WAY

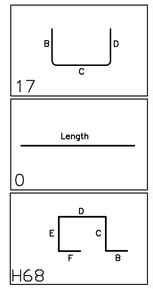
| | | | |
|---|---|---|---|
| 6 | | | |
| 5 | | | |
| 4 | | | |
| 3 | 6/27/16 | △3 | REVISED AS NOTED/FOR APPROVAL |
| 2 | 6/21/16 | △2 | REVISED AS NOTED/FOR APPROVAL |
| 1 | 6/13/16 | – | FOR APPROVAL |
| | DATE | REV.# | SENT FOR |

DIMENSION
DIMENSION FABRICATORS INC.
2000 7TH STREET
SCOTIA, N.Y. 12302
PH: (518) 374-1936
FAX (518) 374-1630
www.dimensionfabricators.com

| | |
|---|---|
| STRUCTURE | VTAOT BRATTLEBORO BF2000(26) |
| LOCATION | ELLITO ST. OVER WHETSTONE BROOK<br>BRATTLEBORO, VT |
| ARCHITECT | N/A |
| ENGINEER | CLD CONSULTING ENGINEERS |
| CUSTOMER | RENAUD BROS., INC. |

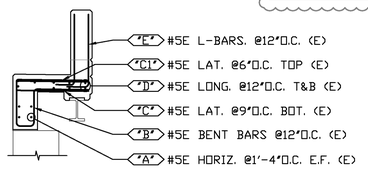
| DRAWN BY | DATE | DFI # |
|---|---|---|
| STEPHEN B. | 5/13/16 | 9744 |
| DRAWING COVERS | | DRAWING # |
| DECK & SIDEWALK REINF. | | A |



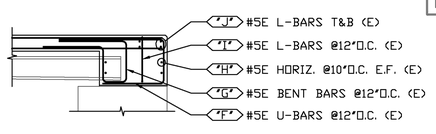




KEY PLAN
CONTRACT REF. SHEET 13

CONTRACTOR IS TO CONFIRM ELEVATIONS DURING DEMOLITION ⚠1




SECTION 1
CONTRACT REF. SHEET 13




SECTION 2
CONTRACT REF. SHEET 13

Vermont Agency of Transportation
RECEIVED
ON: June 29, 2016
and Checked for
CONFORMANCE
BY: Jennifer Fitch DATE: 06/29/16

## SHOP DRAWING REVIEW

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CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 150223
Reviewed by: SRB
Date: 06/30/2016

Release Number:

BAR LIST

| Bar Mark | Qty | Size | Total Length | Type | 'A' | 'B' | 'C' | 'D' | 'E' | 'F' | 'G' | 'H' | 'J' | 'K' | 'O' | 'R' |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5AE01 | 28 | #5 | 4'-3" | 17 | | 1'-0" | 3'-3" | | | | | | | | | |
| 5AE02 | 2 | #5 | 18'-0" | | | 18'-0" | | | | | | | | | | |
| 5AE03 | 2 | #5 | 17'-7" | | | 17'-7" | | | | | | | | | | |
| 5AE04 | 2 | #5 | 2'-9" | 17 | | 1'-0" | 1'-9" | | | | | | | | | |
| 5AE05 | 2 | #5 | 14'-11" | | | 14'-11" | | | | | | | | | | |
| 5AE06 | 2 | #5 | 12'-3" | | | 12'-3" | | | | | | | | | | |
| 5AE07 | 2 | #5 | 9'-6" | | | 9'-6" | | | | | | | | | | |
| 5AE08 | 2 | #5 | 6'-10" | | | 6'-10" | | | | | | | | | | |
| 5AE09 | 2 | #5 | 4'-1" | | | 4'-1" | | | | | | | | | | |
| 5AE10a | 1 | #5 | 1'-7" | | | 1'-7" | | | | | | | | | | |
| 5AE10b | 1 | #5 | 2'-2" | | | 2'-2" | | | | | | | | | | |
| 5AE10c | 1 | #5 | 2'-10" | | | 2'-10" | | | | | | | | | | |
| 5AE10d | 1 | #5 | 3'-5" | | | 3'-5" | | | | | | | | | | |
| 5AE10e | 1 | #5 | 4'-1" | | | 4'-1" | | | | | | | | | | |
| 5AE10f | 1 | #5 | 4'-8" | | | 4'-8" | | | | | | | | | | |
| 5AE10g | 1 | #5 | 5'-4" | | | 5'-4" | | | | | | | | | | |
| 5AE10h | 1 | #5 | 5'-11" | | | 5'-11" | | | | | | | | | | |
| 5AE10i | 1 | #5 | 6'-7" | | | 6'-7" | | | | | | | | | | |
| 5AE10j | 1 | #5 | 7'-2" | | | 7'-2" | | | | | | | | | | |
| 5AE10k | 1 | #5 | 7'-10" | | | 7'-10" | | | | | | | | | | |
| 5AE11a | 1 | #5 | 1'-7" | | | 1'-7" | | | | | | | | | | |
| 5AE11b | 1 | #5 | 1'-11" | | | 1'-11" | | | | | | | | | | |
| 5AE11c | 1 | #5 | 2'-4" | | | 2'-4" | | | | | | | | | | |
| 5AE11d | 1 | #5 | 2'-9" | | | 2'-9" | | | | | | | | | | |
| 5AE11e | 1 | #5 | 3'-1" | | | 3'-1" | | | | | | | | | | |
| 5AE11f | 1 | #5 | 3'-6" | | | 3'-6" | | | | | | | | | | |
| 5AE11g | 1 | #5 | 3'-11" | | | 3'-11" | | | | | | | | | | |
| 5AE11h | 1 | #5 | 4'-3" | | | 4'-3" | | | | | | | | | | |
| 5AE11i | 1 | #5 | 4'-8" | | | 4'-8" | | | | | | | | | | |
| 5AE11j | 1 | #5 | 5'-1" | | | 5'-1" | | | | | | | | | | |
| 5AE11k | 1 | #5 | 5'-5" | | | 5'-5" | | | | | | | | | | |
| 5AE11l | 1 | #5 | 5'-10" | | | 5'-10" | | | | | | | | | | |
| 5AE11m | 1 | #5 | 6'-3" | | | 6'-3" | | | | | | | | | | |
| 5AE11n | 1 | #5 | 6'-7" | | | 6'-7" | | | | | | | | | | |
| 5AE11o | 1 | #5 | 7'-0" | | | 7'-0" | | | | | | | | | | |
| 5AE11p | 1 | #5 | 7'-5" | | | 7'-5" | | | | | | | | | | |
| 5AE11q | 1 | #5 | 7'-10" | | | 7'-10" | | | | | | | | | | |
| 5AE12 | 1 | #5 | 5'-4" | 17 | | 1'-7" | 2'-2" | 1'-7" | | | | | | | | |
| 5AE13 | 2 | #5 | 7'-4" | 17 | | 2'-7" | 1'-9" | 3'-0" | | | | | | | | |
| 5AE14 | 2 | #5 | 10'-4" | H68 | | 3'-0" | 1'-7" | 1'-0" | 1'-9" | 3'-0" | | | | | | |
| 5AE15 | 9 | #5 | 9'-2" | H68 | | 3'-0" | ⚠2 1'-8" | ⚠1 0'-7" | ⚠2 1'-7" | 3'-0" | | | | | | |
| 5AE16 | 6 | #5 | 13'-6" | | | 13'-6" | | | | | | | | | | |

1'-8 1/2"
1'-11 1/2"

FOR APPROVAL

# ALL REINF. EPOXY

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

EPOXY REINF. BARS ASTM A615 GRADE 60, MARKED (E)

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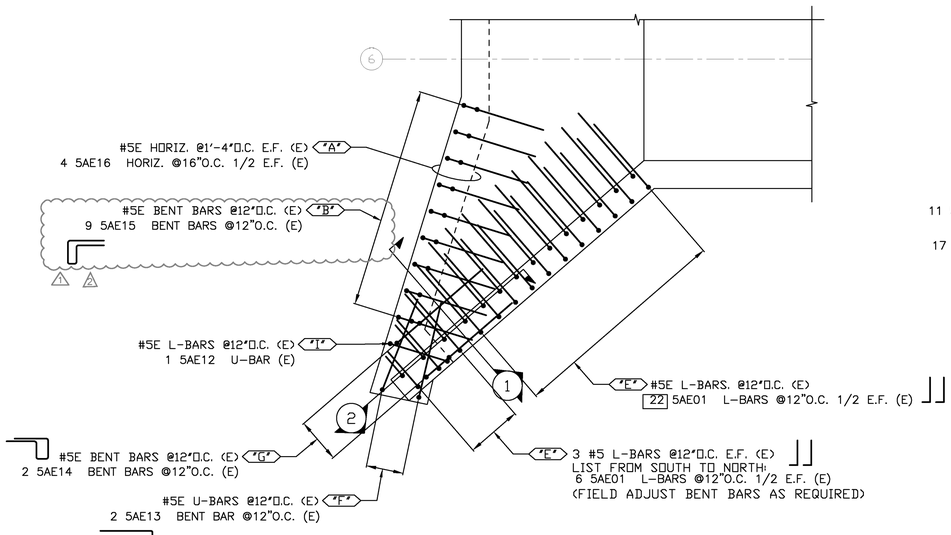
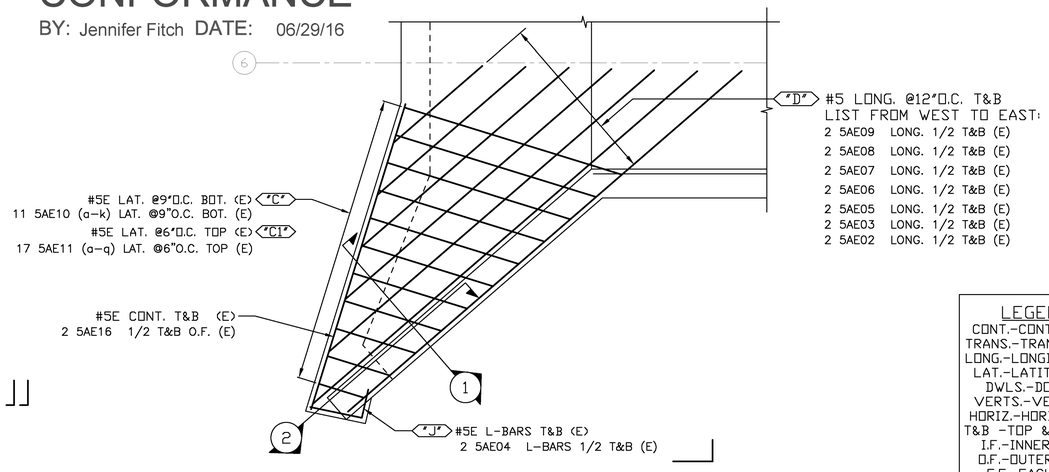



DETAIL 1 - BACKWALL AND BARRIER REINF.
CONTRACT REF. SHEET 13




DETAIL 2 - CONT. & TRANS. REINF.
CONTRACT REF. SHEET 14

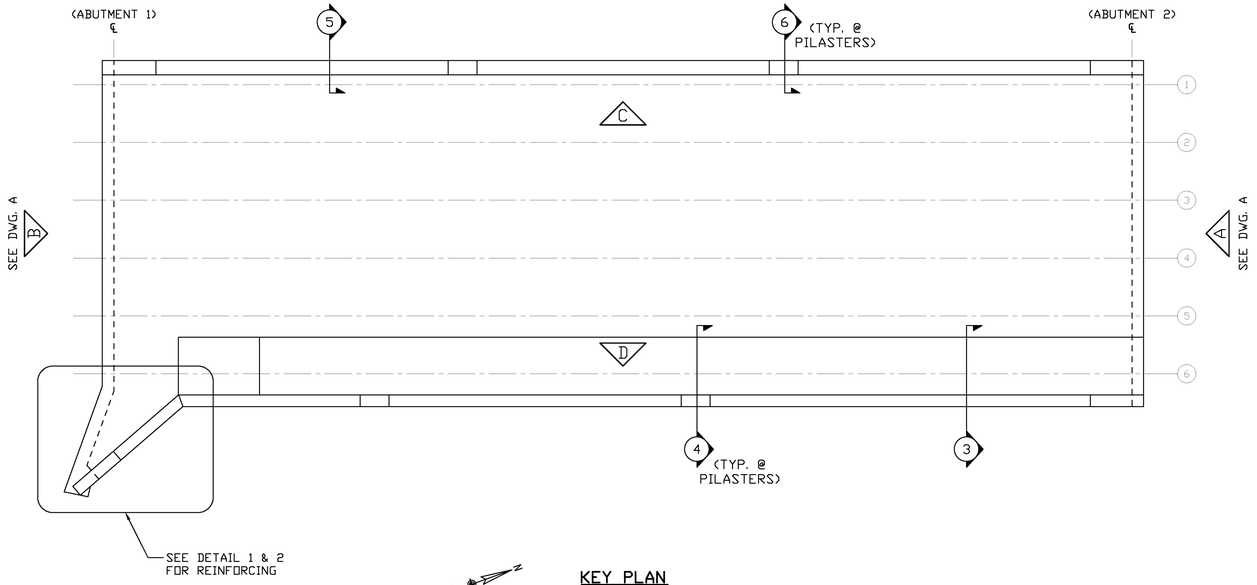
LEGEND:
CONT.-CONTINUOUS
TRANS.-TRANSVERSE
LONG.-LONGITUDINAL
LAT.-LATITUDINAL
DWLS.-DOWELS
VERTS.-VERTICAL
HORIZ.-HORIZONTAL
T&B -TOP & BOTTOM
I.F.-INNER FACE
O.F.-OUTER FACE
E.E.-EACH END
E.F.-EACH FACE
F.F.-FRONT FACE
R.F.-REAR FACE
E.W.-EACH WAY
O.C.-ON CENTER
L.W.-LONG WAY
S.W.-SHORT WAY

| | | | |
|---|---|---|---|
| 6 | | | |
| 5 | | | |
| 4 | | | |
| 3 | 6/29/16 | ⚠2 | Revised 5AE15 |
| 2 | 6/21/16 | ⚠1 | REVISED AS NOTED/FOR APPROVAL |
| 1 | 6/13/16 | – | FOR APPROVAL |
| | DATE | REV.# | SENT FOR |

DIMENSION
DIMENSION FABRICATORS INC.
2000 7TH STREET
SCOTIA, N.Y. 12302
PH: (518) 374-1936
FAX (518) 374-4630
www.dimensionfabricators.com

| | |
|---|---|
| STRUCTURE | VTAOT BRATTLEBORO VF 2000(26) |
| LOCATION | ELLIOT ST. OVER WHETSTONE BROOK<br>BRATTLEBORO, VT |
| ARCHITECT | N/A |
| ENGINEER | CLD CONSULTING ENGINEERS |
| CUSTOMER | RENAUD BROS., INC. |

| DRAWN BY | DATE | DFI # |
|---|---|---|
| STEPHEN B | 5/13/16 | 9744 |
| DRAWING COVERS | | DRAWING # |
| DECK REINFORCING DETAIL | | B |




KEY PLAN
CONTRACT REF. SHEET 13

**TEST BARS:**
2 5CE10 #5 EPOXY COATED TEST BARS

| Release Number: | | | | | BAR LIST | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bar Mark | Qty | Size | Total Length | Type | 'A' | 'B' | 'C' | 'D' | 'E' | 'F' | 'G' | 'H' | 'J' | 'K' | 'O' | 'R' |
| 5CE01 | 6 | #5 | 6'-0" | 3 | | 3'-0" | 3'-0" | | | | | 1'-11 ½" | | 2'-3 ½" | 5'-3 ½" | |
| 5CE02 | 6 | #5 | 6'-9" | | | 6'-9" | | | | | | | | | | |
| 5CE03 | 6 | #5 | 23'-10" | | | 23'-10" | | | | | | | | | | |
| 5CE04 | 40 | #5 | 2'-0" | | | 2'-0" | | | | | | | | | | |
| 5CE05 | 30 | #5 | 24'-9" | | | 24'-9" | | | | | | | | | | |
| 5CE06 | 40 | #5 | 4'-2" | | | 4'-2" | | | | | | | | | | |
| 5CE07 | 164 | #5 | 4'-8" | 17 | | 2'-1" | 0'-6" | 2'-1" | | | | | | | | |
| 5CE08 | 32 | #5 | 8'-10" | 17 | | 4'-2" | 0'-6" | 4'-2" | | | | | | | | |
| 5CE09 | 4 | #5 | 5'-0" | T2 | 0'-6" | 1'-0" | 1'-0" | 1'-0" | 1'-0" | | 0'-6" | | | | | |
| 5CE10 | 2 | #5 | 5'-0" | | | 5'-0" | | | | | | | | | | |

Vermont Agency of Transportation

RECEIVED
ON: June 29, 2016
and Checked for
CONFORMANCE
BY: Jennifer Fitch DATE: 06/29/16

**SHOP DRAWING REVIEW**

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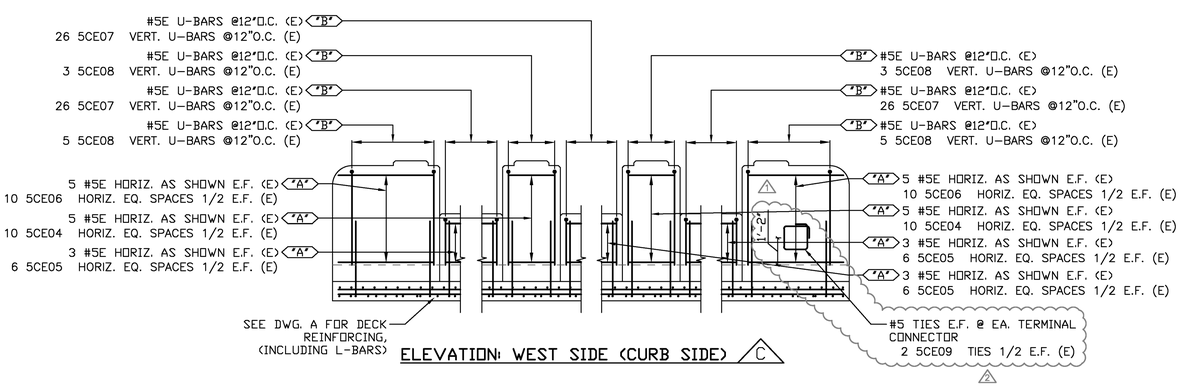
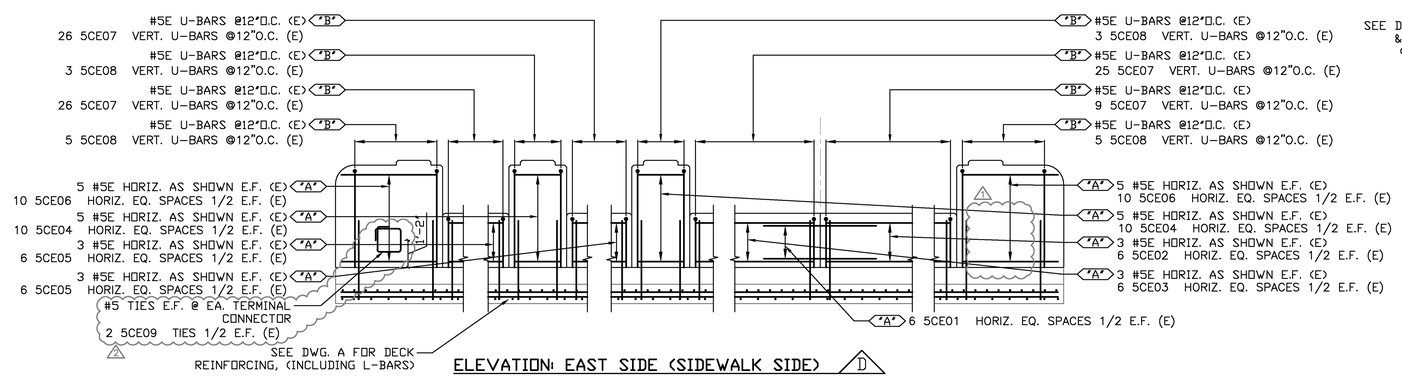
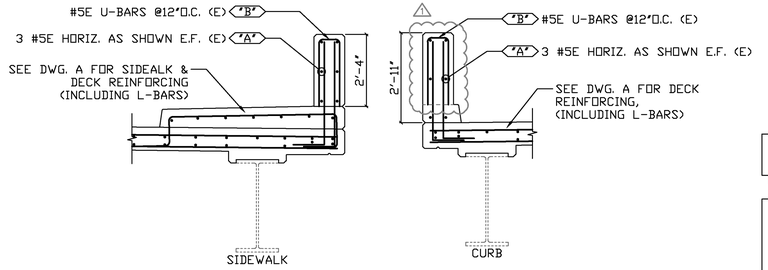
CLD Consulting Engineers
540 Commercial Street
Manchester, NH 03101
603-668-8223

Job Number: 150223
Reviewed by: SRB
Date: 06/30/2016

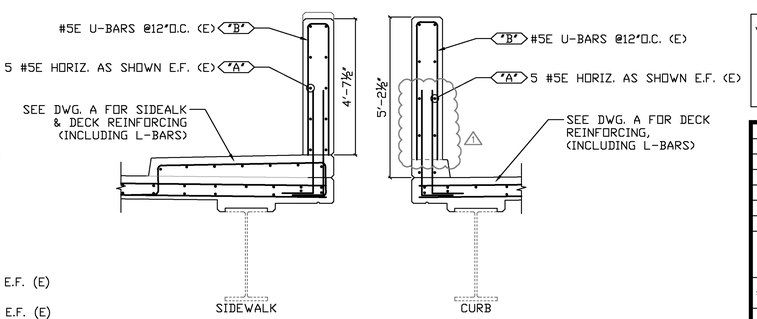
ALL REINF. EPOXY




TYPICAL CONCRETE BASE PARAPET SECTIONS
CONTRACT REF. SHEET 21




TYPICAL INTERMEDIATE PILASTER SECTIONS
CONTRACT REF. SHEET 21

**FOR APPROVAL**

LEGEND:
CONT.-CONTINUOUS
TRANS.-TRANSVERSE
LONG.-LONGITUDINAL
LAT.-LATITUDINAL
DWLS.-DOWELS
VERTS.-VERTICAL
HORIZ.-HORIZONTAL
T&B -TOP & BOTTOM
I.F.-INNER FACE
O.F.-OUTER FACE
E.E.-EACH END
E.F.-EACH FACE
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EPOXY REINF. BARS ASTM A615 GRADE 60, MARKED (E)

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| | | | |
|---|---|---|---|
| 6 | | | |
| 5 | | | |
| 4 | | | |
| 3 | 6/27/16 | 2 | REVISED AS NOTED/FOR APPROVAL |
| 2 | 6/21/16 | 1 | REVISED AS NOTED/FOR APPROVAL |
| 1 | 6/13/16 | – | FOR APPROVAL |
| | DATE | REV.# | SENT FOR |

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PH: (518) 374-1936
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| | |
|---|---|
| STRUCTURE | VTAOT BRATTLEBORO VF 2000(26) |
| LOCATION | ELLIOT ST. OVER WHETSTONE BROOK<br>BRATTLEBORO, VT |
| ARCHITECT | N/A |
| ENGINEER | CLD CONSULTING ENGINEERS |
| CUSTOMER | RENAUD BROS., INC. |

| DRAWN BY | DATE | DFI # |
|---|---|---|
| STEPHEN B | 5/13/16 | 9744 |
| DRAWING COVERS | | DRAWING # |
| DECK REINFORCING DETAIL | | C |