

**Stantec Consulting Services Inc.**

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To: **Douglas E. Bonneau, P.E.** From: Thomas Knight  
Company: VTrans  For Your Information  
Address: Douglas.Bonneau@state.vt.us  For Your Approval  
Phone: **(802) 828-3874**  For Your Review  
 As Requested  
Date: February 18, 2015  
File: Waterbury IM 089-2(43) - 195310438  
Delivery: Electronic

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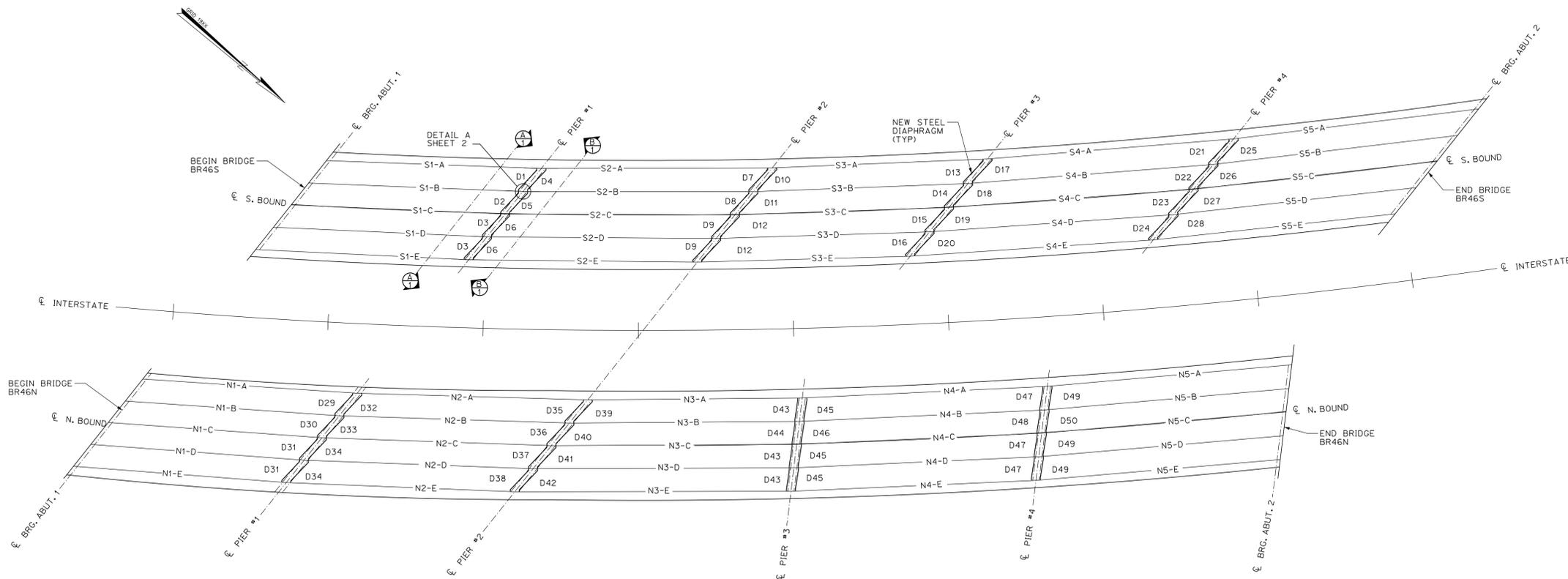
**Reference: BR46NS Steel Diaphragm Fabrication**

Attachment:

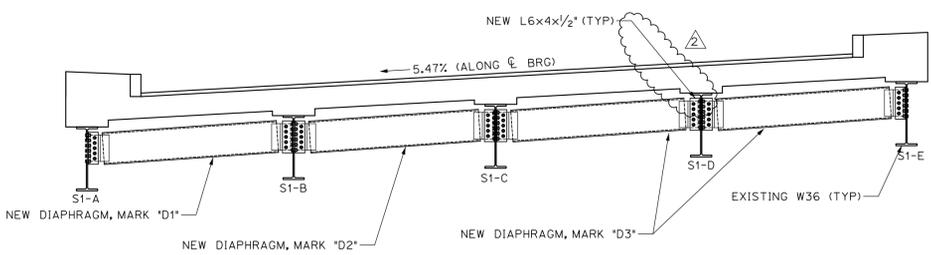
| Copies | Doc Date   | Pages      | Description  |
|--------|------------|------------|--|
| 1      | 02/16/2015 | 1,2,3 & M1 | DWG:1,3 AND M1 -- Approved<br>DWG: 2 – Revise as noted, resubmission not required. |

**STANTEC CONSULTING SERVICES INC.**

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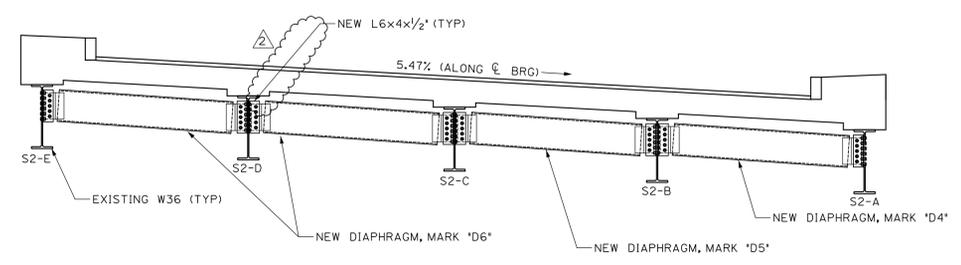


LAYOUT PLAN  
SCALE: 1" = 20'



A SOUTHBOUND SECTION AT PIER #1  
(LOOKING UPSTATION)  
1/4" = 1'-0"

(SECTION AT SOUTHBOUND PIERS 2-4 AND NORTHBOUND PIERS 1-4, SIMILAR. SEE LAYOUT PLAN FOR DIAPHRAGM LOCATIONS)



B SOUTHBOUND SECTION AT PIER #1  
(LOOKING BACKSTATION)  
1/4" = 1'-0"

(SECTION AT SOUTHBOUND PIERS 2-4 AND NORTHBOUND PIERS 1-4, SIMILAR. SEE LAYOUT PLAN FOR DIAPHRAGM LOCATIONS)

GENERAL FABRICATION NOTES

- MATERIAL SPECIFICATIONS**
- ALL MATERIAL SHALL BE ASTM AASHTO M 270M/M 270 GRADE 50 (ASTM A709 GRADE 50) (UNO)
  - ALL A709 GRADE 50 MATERIAL DENOTED "CVN" SHALL MEET THE CHARPY V-NOTCH TESTING REQUIREMENTS OF ZONE 2, H FREQUENCY: 15 FT-LB AT 40° (UP TO 2" WELDED)
- ITEMS SHALL CALL OUT "CVN" FOR EACH APPLICABLE ITEM IN THE BILL OF MATERIALS
- BOLTS SHALL BE HIGH STRENGTH BOLTS ASTM A325, TYPE 1 GALVANIZED NUTS SHALL BE A563 GRADE C3 OR D13 WASHERS SHALL BE ASTM F436, TYPE 3
  - BOLTS AND NUTS SHALL BE ROTATIONAL CAPACITY TESTED. DO NOT MIX NUTS AND BOLTS FROM DIFFERENT CONTAINERS UNLESS ALL NUTS AND BOLTS HAVE THE SAME LOT NUMBER.
- FABRICATION**
- DIE STAMPING IS ALLOWED IN SPECIFIC LOCATIONS WITH THE APPROVAL OF THE ENGINEER.
  - ALL EDGES OF FLAME CUT MATERIAL SUBJECTED TO CALCULATED STRESSES SHALL BE ROUNDED TO A MINIMUM RADIUS OF 1/16", OR AN EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE.
  - ALL PLATES, FLAME CUT FROM LARGER PLATES, SHALL BE CUT SO THAT THE PRIMARY DIRECTION OF ROLLING IS PARALLEL TO THE MAIN TENSILE OR COMPRESSIVE STRESS. STANDARD SPEC. 504.18, DECEMBER, 2002.
- WELDING**
- ALL WELDING PROCEDURES SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF SUBSECTION 506.10.
  - NON DESTRUCTIVE TESTING OF WELDS SHALL BE IN ACCORDANCE WITH ANSI/AASHTO/AWS D1.5 - SECTION 6.
- FIELD CONNECTIONS**
- FIELD BOLTS SHALL HAVE A HEAVY HEX NUT, HEX HEAD, AND ONE HARD WASHER EACH.
  - PIECE MARKS WILL BE LOCATED AS SHOWN ON ERECTION DRAWINGS. ALL ERECTION MARKS, MATCH MARKS, AND WEIGHT MARKS MUST NOT BE EXPOSED IN THE FINISHED STRUCTURE.
  - HARDENED WASHERS ARE REQUIRED OVER OVERSIZED HOLES.
- CLEANING AND PAINTING**
- THE NEW DIAPHRAGMS SHALL BE PAINTED WITH THREE (3) COATS, ZINC RICH SYSTEM DESCRIBED BELOW, PRIOR TO DELIVERY TO THE SITE. FIELD PAINTING IS ONLY REQUIRED WHERE NEW DIAPHRAGMS CONNECT TO THE EXISTING BEAMS.
  - COATING SYSTEMS SHALL BE NORTHEAST PROTECTIVE COATING COMMITTEE (NEPCOAT) SSC(O3)-01 AS FOLLOWS:
    - PRIMER: CARBOZINC 859
    - INTERMEDIATE COAT: CARBOGUARD 888
    - TOP COAT: CARBOTHANE 133LH
  - PAINTED SURFACES WITHIN 3" OF AN OPE HOLE SHALL BE PRIMED ONLY AND DEVELOP A CLASS B SLIP COEFFICIENT.

**CONTRACTOR VERIFY:**  
DIMENSIONS FOR EXISTING DETAILS ARE TAKEN FROM THE REFERENCE PLANS AND MUST BE VERIFIED PRIOR TO FABRICATION OF NEW DIAPHRAGMS.

Vermont Agency of Transportation  
**RECEIVED**  
OK'D BY JWC OK'D BY D Bonneau  
February 17, 2015  
RESUBMIT No Approved  
BY D Bonneau DATE 02/19/15

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements

APPROVED AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED

Date: 2/18/2015

By: *[Signature]*

This review by Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc. approves the detail design inherent in the shop drawings. Responsibility for which shall remain with the Contractor. Submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in Documents. The contractor is responsible for meeting all requirements of the Contract (circled) at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subtrades.

**Stantec**

|   |                    |  |                                 |
|---|--------------------|--|---------------------------------|
| PROJECT No. IM 089-2(43)<br>ITEM No. 506.50 |                    |  |                                 |
| FINISH                                      | N/A                |  |                                 |
| MATERIAL                                    | SEE DETAIL SHEETS  |  |                                 |
| HOLES                                       |                    |  |                                 |
| ELECTRODES                                  | PER WELD PROCEDURE | 2/16/15  | BILL OF MTL'S DLM               |
| WELDS                                       | PER WELD PROCEDURE | 2/10/15  | Arrows and title block DLM      |
| SURFACE PREP                                |                    | 1/19/15  | dim. reference chart (sh-3) DLM |
|   | NO                 | DATE   | DESCRIPTION                     |
|   |                    |  | BY                              |
| REVISIONS                                   |                    |  |                                 |
| <b>ARC</b><br>ENTERPRISES, INC.             |                    | ADVANCED RESOURCES & CONST.<br>ENTERPRISES, INCORPORATED<br>P.O. BOX 120 KINGFIELD, ME. 04947<br>PHONE: (207) 265-2646 - FAX: (207) 265-4054 |                                 |
| DRAFTER                                     | DLM                | BR46S STEEL DIAPHRAGMS   | PROJECT NO.<br>14-148           |
| DATE  | JAN. 2015          | WATERBURY, VT. (BRIDGE 46 North and South<br>I-89 EXIT RAMP over STOWE ST. & TRATCHER BROOK  | DWG. NO.<br>1                   |
| CHECKED                                     | GNM                | BY: BECK & BELLUCCI  |                                 |
| DATE  | JAN. 2015          |  |                                 |

| BILL OF MATERIALS (PIER#1 SOUTHBOUND) |           |          |            |   |                                      |           |          |
|---------------------------------------|-----------|----------|------------|---|--------------------------------------|-----------|----------|
| SHIP                                  | SHIP MARK | NO. PCS. | PIECE MARK | DESCRIPTION   | LENGTH                               | WEIGHT    | MATERIAL |
| 1                                     | D1        |          |            | DIAPHRAGM   | 9'-2 <sup>5</sup> / <sub>16</sub> "  | 357# EACH |          |
|                                       |           | 2        | B1         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M1         | MC18x42.7   | 8'-3 <sup>3</sup> / <sub>8</sub> "   |           |          |
| 1                                     | D2        |          |            | DIAPHRAGM   | 8'-11 <sup>5</sup> / <sub>16</sub> " | 357# EACH |          |
|                                       |           | 2        | B1         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M2         | MC18x42.7   | 8'-0 <sup>3</sup> / <sub>4</sub> "   |           |          |
| 2                                     | D3        |          |            | DIAPHRAGM   | 9'-2"                                | 357# EACH |          |
|                                       |           | 2        | B1         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M3         | MC18x42.7   | 8'-2 <sup>5</sup> / <sub>8</sub> "   |           |          |
| 1                                     | D4        |          |            | DIAPHRAGM   | 9'-2 <sup>5</sup> / <sub>16</sub> "  | 362# EACH |          |
|                                       |           | 2        | B2         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M4         | MC18x42.7   | 8'-4 <sup>1</sup> / <sub>16</sub> "  |           |          |
| 1                                     | D5        |          |            | DIAPHRAGM   | 9'-0 <sup>1</sup> / <sub>16</sub> "  | 352# EACH |          |
|                                       |           | 2        | B2         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M5         | MC18x42.7   | 8'-1 <sup>1</sup> / <sub>2</sub> "   |           |          |
| 2                                     | D6        |          |            | DIAPHRAGM   | 9'-2 <sup>1</sup> / <sub>16</sub> "  | 357# EACH |          |
|                                       |           | 2        | B2         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M6         | MC18x42.7   | 8'-3 <sup>3</sup> / <sub>8</sub> "   |           |          |

| BILL OF MATERIALS (PIER#2 SOUTHBOUND) |           |          |            |   |                                     |           |          |
|---------------------------------------|-----------|----------|------------|---|-------------------------------------|-----------|----------|
| SHIP                                  | SHIP MARK | NO. PCS. | PIECE MARK | DESCRIPTION   | LENGTH                              | WEIGHT    | MATERIAL |
| 1                                     | D7        |          |            | DIAPHRAGM   | 9'-6 <sup>5</sup> / <sub>16</sub> " | 372# EACH |          |
|                                       |           | 2        | B2         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M7         | MC18x42.7   | 8'-7 <sup>1</sup> / <sub>2</sub> "  |           |          |
| 1                                     | D8        |          |            | DIAPHRAGM   | 9'-3 <sup>3</sup> / <sub>4</sub> "  | 362# EACH |          |
|                                       |           | 2        | B2         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M8         | MC18x42.7   | 8'-4 <sup>9</sup> / <sub>16</sub> " |           |          |
| 2                                     | D9        |          |            | DIAPHRAGM   | 9'-6 <sup>1</sup> / <sub>16</sub> " | 372# EACH |          |
|                                       |           | 2        | B2         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M9         | MC18x42.7   | 8'-6 <sup>1</sup> / <sub>16</sub> " |           |          |
| 1                                     | D10       |          |            | DIAPHRAGM   | 9'-7"                               | 372# EACH |          |
|                                       |           | 2        | B3         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> "  | 1'-3"                               |           |          |
|                                       |           | 1        | M10        | MC18x42.7   | 8'-8 <sup>1</sup> / <sub>16</sub> " |           |          |
| 1                                     | D11       |          |            | DIAPHRAGM   | 9'-3 <sup>5</sup> / <sub>16</sub> " | 362# EACH |          |
|                                       |           | 2        | B3         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> "  | 1'-3"                               |           |          |
|                                       |           | 1        | M11        | MC18x42.7   | 8'-5"                               |           |          |
| 2                                     | D12       |          |            | DIAPHRAGM   | 9'-6 <sup>1</sup> / <sub>4</sub> "  | 372# EACH |          |
|                                       |           | 2        | B3         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> "  | 1'-3"                               |           |          |
|                                       |           | 1        | M12        | MC18x42.7   | 8'-7 <sup>9</sup> / <sub>16</sub> " |           |          |

| BILL OF MATERIALS (PIER#3 SOUTHBOUND) |           |          |            |  |                                      |           |          |
|---------------------------------------|-----------|----------|------------|--|--------------------------------------|-----------|----------|
| SHIP                                  | SHIP MARK | NO. PCS. | PIECE MARK | DESCRIPTION  | LENGTH                               | WEIGHT    | MATERIAL |
| 1                                     | D13       |          |            | DIAPHRAGM  | 9'-10 <sup>1</sup> / <sub>16</sub> " | 387# EACH |          |
|                                       |           | 2        | B3         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M13        | MC18x42.7  | 8'-11 <sup>3</sup> / <sub>4</sub> "  |           |          |
| 1                                     | D14       |          |            | DIAPHRAGM  | 9'-7 <sup>7</sup> / <sub>16</sub> "  | 377# EACH |          |
|                                       |           | 2        | B3         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M14        | MC18x42.7  | 8'-8 <sup>1</sup> / <sub>16</sub> "  |           |          |
| 1                                     | D15       |          |            | DIAPHRAGM  | 9'-9 <sup>3</sup> / <sub>16</sub> "  | 387# EACH |          |
|                                       |           | 2        | B3         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M15        | MC18x42.7  | 8'-10 <sup>7</sup> / <sub>16</sub> " |           |          |
| 1                                     | D16       |          |            | DIAPHRAGM  | 9'-9 <sup>1</sup> / <sub>2</sub> "   | 387# EACH |          |
|                                       |           | 2        | B3         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M16        | MC18x42.7  | 8'-10 <sup>1</sup> / <sub>2</sub> "  |           |          |
| 1                                     | D17       |          |            | DIAPHRAGM  | 9'-10 <sup>1</sup> / <sub>16</sub> " | 387# EACH |          |
|                                       |           | 2        | B4         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M17        | MC18x42.7  | 9'-0 <sup>1</sup> / <sub>4</sub> "   |           |          |
| 1                                     | D18       |          |            | DIAPHRAGM  | 9'-7 <sup>1</sup> / <sub>16</sub> "  | 377# EACH |          |
|                                       |           | 2        | B4         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M18        | MC18x42.7  | 8'-9 <sup>3</sup> / <sub>16</sub> "  |           |          |
| 1                                     | D19       |          |            | DIAPHRAGM  | 9'-10"                               | 387# EACH |          |
|                                       |           | 2        | B4         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M19        | MC18x42.7  | 8'-11 <sup>3</sup> / <sub>16</sub> " |           |          |
| 1                                     | D20       |          |            | DIAPHRAGM  | 9'-9 <sup>5</sup> / <sub>16</sub> "  | 387# EACH |          |
|                                       |           | 2        | B4         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M15        | MC18x42.7  | 8'-10 <sup>1</sup> / <sub>16</sub> " |           |          |

| BILL OF MATERIALS (PIER#4 SOUTHBOUND) |           |          |            |  |                                      |           |          |
|---------------------------------------|-----------|----------|------------|--|--------------------------------------|-----------|----------|
| SHIP                                  | SHIP MARK | NO. PCS. | PIECE MARK | DESCRIPTION  | LENGTH                               | WEIGHT    | MATERIAL |
| 1                                     | D21       |          |            | DIAPHRAGM  | 10'-3 <sup>5</sup> / <sub>16</sub> " | 402# EACH |          |
|                                       |           | 2        | B4         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M20        | MC18x42.7  | 9'-5 <sup>3</sup> / <sub>16</sub> "  |           |          |
| 1                                     | D22       |          |            | DIAPHRAGM  | 10'-0 <sup>5</sup> / <sub>16</sub> " | 392# EACH |          |
|                                       |           | 2        | B4         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M21        | MC18x42.7  | 9'-1 <sup>3</sup> / <sub>16</sub> "  |           |          |
| 1                                     | D23       |          |            | DIAPHRAGM  | 10'-2 <sup>1</sup> / <sub>16</sub> " | 402# EACH |          |
|                                       |           | 2        | B4         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M22        | MC18x42.7  | 9'-3 <sup>3</sup> / <sub>16</sub> "  |           |          |
| 1                                     | D24       |          |            | DIAPHRAGM  | 10'-2 <sup>1</sup> / <sub>16</sub> " | 402# EACH |          |
|                                       |           | 2        | B4         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M23        | MC18x42.7  | 9'-3 <sup>3</sup> / <sub>16</sub> "  |           |          |
| 1                                     | D25       |          |            | DIAPHRAGM  | 10'-3 <sup>3</sup> / <sub>16</sub> " | 407# EACH |          |
|                                       |           | 2        | B5         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M24        | MC18x42.7  | 9'-5 <sup>1</sup> / <sub>16</sub> "  |           |          |
| 1                                     | D26       |          |            | DIAPHRAGM  | 10'-0 <sup>5</sup> / <sub>16</sub> " | 392# EACH |          |
|                                       |           | 2        | B5         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M25        | MC18x42.7  | 9'-2 <sup>5</sup> / <sub>16</sub> "  |           |          |
| 1                                     | D27       |          |            | DIAPHRAGM  | 10'-2 <sup>5</sup> / <sub>16</sub> " | 402# EACH |          |
|                                       |           | 2        | B5         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M26        | MC18x42.7  | 9'-4 <sup>1</sup> / <sub>16</sub> "  |           |          |
| 1                                     | D28       |          |            | DIAPHRAGM  | 10'-2 <sup>1</sup> / <sub>16</sub> " | 402# EACH |          |
|                                       |           | 2        | B5         | BENT PLATE 1/2' x 10 <sup>1</sup> / <sub>4</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M27        | MC18x42.7  | 9'-4 <sup>1</sup> / <sub>16</sub> "  |           |          |

| BILL OF MATERIALS (PIER#1 NORTHBOUND) |           |          |            |   |                                      |           |          |
|---------------------------------------|-----------|----------|------------|---|--------------------------------------|-----------|----------|
| SHIP                                  | SHIP MARK | NO. PCS. | PIECE MARK | DESCRIPTION   | LENGTH                               | WEIGHT    | MATERIAL |
| 1                                     | D29       |          |            | DIAPHRAGM   | 9'-0 <sup>5</sup> / <sub>16</sub> "  | 347# EACH |          |
|                                       |           | 2        | B6         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M28        | MC18x42.7   | 8'-0 <sup>5</sup> / <sub>16</sub> "  |           |          |
| 1                                     | D30       |          |            | DIAPHRAGM   | 8'-9 <sup>5</sup> / <sub>16</sub> "  | 337# EACH |          |
|                                       |           | 2        | B6         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M29        | MC18x42.7   | 7'-9 <sup>5</sup> / <sub>16</sub> "  |           |          |
| 2                                     | D31       |          |            | DIAPHRAGM   | 8'-11 <sup>3</sup> / <sub>4</sub> "  | 347# EACH |          |
|                                       |           | 2        | B6         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M30        | MC18x42.7   | 8'-0 <sup>1</sup> / <sub>16</sub> "  |           |          |
| 1                                     | D32       |          |            | DIAPHRAGM   | 9'-0 <sup>7</sup> / <sub>16</sub> "  | 357# EACH |          |
|                                       |           | 2        | B7         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M2         | MC18x42.7   | 8'-0 <sup>3</sup> / <sub>4</sub> "   |           |          |
| 1                                     | D33       |          |            | DIAPHRAGM   | 8'-9 <sup>1</sup> / <sub>16</sub> "  | 347# EACH |          |
|                                       |           | 2        | B7         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M31        | MC18x42.7   | 7'-10 <sup>5</sup> / <sub>16</sub> " |           |          |
| 2                                     | D34       |          |            | DIAPHRAGM   | 8'-11 <sup>3</sup> / <sub>4</sub> "  | 387# EACH |          |
|                                       |           | 2        | B7         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                                |           |          |
|                                       |           | 1        | M30        | MC18x42.7   | 8'-0 <sup>1</sup> / <sub>16</sub> "  |           |          |

| BILL OF MATERIALS (PIER#2 NORTHBOUND) |           |          |            |   |                                     |           |          |
|---------------------------------------|-----------|----------|------------|---|-------------------------------------|-----------|----------|
| SHIP                                  | SHIP MARK | NO. PCS. | PIECE MARK | DESCRIPTION   | LENGTH                              | WEIGHT    | MATERIAL |
| 1                                     | D35       |          |            | DIAPHRAGM   | 9'-3 <sup>3</sup> / <sub>16</sub> " | 357# EACH |          |
|                                       |           | 2        | B7         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M32        | MC18x42.7   | 8'-4 <sup>1</sup> / <sub>16</sub> " |           |          |
| 1                                     | D36       |          |            | DIAPHRAGM   | 9'-0 <sup>1</sup> / <sub>16</sub> " | 347# EACH |          |
|                                       |           | 2        | B7         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M33        | MC18x42.7   | 8'-1 <sup>3</sup> / <sub>16</sub> " |           |          |
| 1                                     | D37       |          |            | DIAPHRAGM   | 9'-3"                               | 347# EACH |          |
|                                       |           | 2        | B7         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M34        | MC18x42.7   | 8'-3 <sup>3</sup> / <sub>16</sub> " |           |          |
| 1                                     | D38       |          |            | DIAPHRAGM   | 9'-2 <sup>3</sup> / <sub>4</sub> "  | 357# EACH |          |
|                                       |           | 2        | B7         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M6         | MC18x42.7   | 8'-3 <sup>1</sup> / <sub>8</sub> "  |           |          |
| 1                                     | D39       |          |            | DIAPHRAGM   | 9'-3 <sup>3</sup> / <sub>4</sub> "  | 362# EACH |          |
|                                       |           | 2        | B8         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M8         | MC18x42.7   | 8'-4 <sup>1</sup> / <sub>16</sub> " |           |          |
| 1                                     | D40       |          |            | DIAPHRAGM   | 9'-1"                               | 357# EACH |          |
|                                       |           | 2        | B8         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M35        | MC18x42.7   | 8'-1 <sup>1</sup> / <sub>16</sub> " |           |          |
| 1                                     | D41       |          |            | DIAPHRAGM   | 9'-3 <sup>1</sup> / <sub>4</sub> "  | 357# EACH |          |
|                                       |           | 2        | B8         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M32        | MC18x42.7   | 8'-4 <sup>1</sup> / <sub>16</sub> " |           |          |
| 1                                     | D42       |          |            | DIAPHRAGM   | 9'-2 <sup>5</sup> / <sub>16</sub> " | 347# EACH |          |
|                                       |           | 2        | B8         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M34        | MC18x42.7   | 8'-3 <sup>3</sup> / <sub>16</sub> " |           |          |

| BILL OF MATERIALS (PIER#3 NORTHBOUND) |           |          |            |   |                                     |           |          |
|---------------------------------------|-----------|----------|------------|---|-------------------------------------|-----------|----------|
| SHIP                                  | SHIP MARK | NO. PCS. | PIECE MARK | DESCRIPTION   | LENGTH                              | WEIGHT    | MATERIAL |
| 3                                     | D43       |          |            | DIAPHRAGM   | 7'-3 <sup>5</sup> / <sub>16</sub> " | 262# EACH |          |
|                                       |           | 2        | B9         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M36        | MC18x42.7   | 6'-1 <sup>1</sup> / <sub>4</sub> "  |           |          |
| 1                                     | D44       |          |            | DIAPHRAGM   | 7'-1 <sup>1</sup> / <sub>16</sub> " | 257# EACH |          |
|                                       |           | 2        | B9         | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M37        | MC18x42.7   | 5'-11 <sup>1</sup> / <sub>4</sub> " |           |          |
| 3                                     | D45       |          |            | DIAPHRAGM   | 7'-3 <sup>1</sup> / <sub>16</sub> " | 262# EACH |          |
|                                       |           | 2        | B10        | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M36        | MC18x42.7   | 6'-1 <sup>1</sup> / <sub>4</sub> "  |           |          |
| 1                                     | D46       |          |            | DIAPHRAGM   | 7'-1 <sup>5</sup> / <sub>16</sub> " | 257# EACH |          |
|                                       |           | 2        | B10        | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> " | 1'-3"                               |           |          |
|                                       |           | 1        | M37        | MC18x42.7   | 5'-11 <sup>1</sup> / <sub>4</sub> " |           |          |

| BILL OF MATERIALS (PIER#4 NORTHBOUND) |           |          |            |   |                                     |           |          |
|---------------------------------------|-----------|----------|------------|---|-------------------------------------|-----------|----------|
| SHIP                                  | SHIP MARK | NO. PCS. | PIECE MARK | DESCRIPTION                                       | LENGTH                              | WEIGHT    | MATERIAL |
| 3                                     | D47       |          |            | DIAPHRAGM   | 7'-4 <sup>5</sup> / <sub>16</sub> " | 267# EACH |          |
|                                       |           | 2        | B10        | BENT PLATE 1/2' x 10 <sup>5</sup> / <sub>16</sub> |                                     |           |          |

DIMENSIONAL REFERENCE CHART (SEE SECTION A-A)

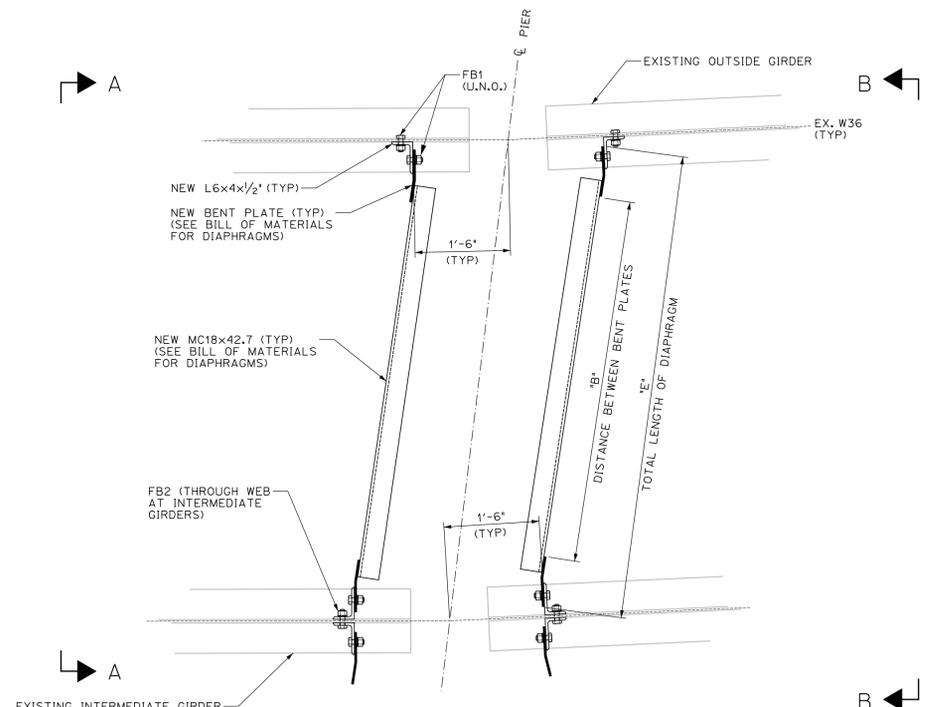
| DIAPHRAGM | *A*     | *B*         | *C*         | *D*     | *E*         |
|-----------|---------|-------------|-------------|---------|-------------|
| D1        | 6 3/8"  | 7'-8 1/16"  | 8'-3 3/8"   | 1 3/16" | 9'-2 3/16"  |
| D2        | 6 3/8"  | 7'-5 7/16"  | 8'-0 3/4"   | 1 3/16" | 8'-11 5/16" |
| D3        | 6 3/8"  | 7'-7 3/8"   | 8'-2 3/8"   | 1 3/16" | 9'-2"       |
| D7        | 6 3/8"  | 8'-7 15/16" | 8'-7 1/2"   | 1 3/16" | 9'-6 5/8"   |
| D8        | 6 3/8"  | 8'-5 1/16"  | 8'-4 3/8"   | 1 3/16" | 9'-3 3/4"   |
| D9        | 6 3/8"  | 8'-7 3/8"   | 8'-6 13/16" | 1 3/16" | 9'-6 1/16"  |
| D13       | 6 3/8"  | 8'-4 1/2"   | 8'-11 3/4"  | 1 3/16" | 9'-10 1/16" |
| D14       | 6 3/8"  | 8'-1 1/16"  | 8'-8 1/16"  | 1 3/16" | 9'-7 5/8"   |
| D15       | 6 3/8"  | 8'-3 3/8"   | 8'-10 7/8"  | 1 3/16" | 9'-9 3/16"  |
| D16       | 6 3/8"  | 8'-3 1/4"   | 8'-10 1/2"  | 1 3/16" | 9'-9 1/2"   |
| D21       | 6 1/4"  | 8'-9 3/4"   | 9'-5 3/16"  | 1 1/16" | 10'-0 3/16" |
| D22       | 6 1/4"  | 8'-6 3/8"   | 9'-1 3/16"  | 1 1/16" | 10'-0 5/16" |
| D23       | 6 1/4"  | 8'-8 1/2"   | 9'-3 7/8"   | 1 1/16" | 10'-2 1/16" |
| D24       | 6 1/4"  | 8'-8 3/16"  | 9'-3 3/16"  | 1 1/16" | 10'-2 1/8"  |
| D29       | 6 3/8"  | 7'-5 5/16"  | 8'-0 5/8"   | 7/8"    | 9'-0 5/16"  |
| D30       | 6 1/2"  | 7'-2 3/16"  | 7'-9 7/8"   | 7/8"    | 8'-9 3/16"  |
| D31       | 6 1/2"  | 7'-4 3/8"   | 8'-0 1/16"  | 7/8"    | 8'-11 3/4"  |
| D35       | 6 3/8"  | 7'-8 7/8"   | 8'-4 1/8"   | 1 3/16" | 9'-3 3/16"  |
| D36       | 6 1/2"  | 7'-6 1/16"  | 8'-1 3/8"   | 7/8"    | 9'-0 13/16" |
| D37       | 6 3/8"  | 7'-8 5/16"  | 8'-3 3/8"   | 1 3/16" | 9'-3"       |
| D38       | 6 3/8"  | 7'-8"       | 8'-3 3/8"   | 1 3/16" | 9'-2 3/4"   |
| D43       | 6 3/4"  | 5'-6 5/16"  | 6'-1 1/4"   | 1 3/16" | 7'-3 5/8"   |
| D44       | 6 3/4"  | 5'-4 1/4"   | 5'-11 1/4"  | 1 3/16" | 7'-1 1/16"  |
| D47       | 6 3/16" | 5'-7 1/16"  | 6'-2"       | 1 3/16" | 7'-4 5/16"  |
| D48       | 6 5/16" | 5'-5 1/8"   | 6'-0 1/16"  | 1 1/4"  | 7'-2 7/16"  |

NOTE:  
 \*A\* = CHANGE IN ELEVATION  
 \*B\* = DISTANCE BETWEEN BENT PLATES  
 \*C\* = LENGTH OF CHANNEL  
 \*D\* = RISE PER LINEAR FOOT  
 \*E\* = OVERALL LENGTH OF DIAPHRAGM

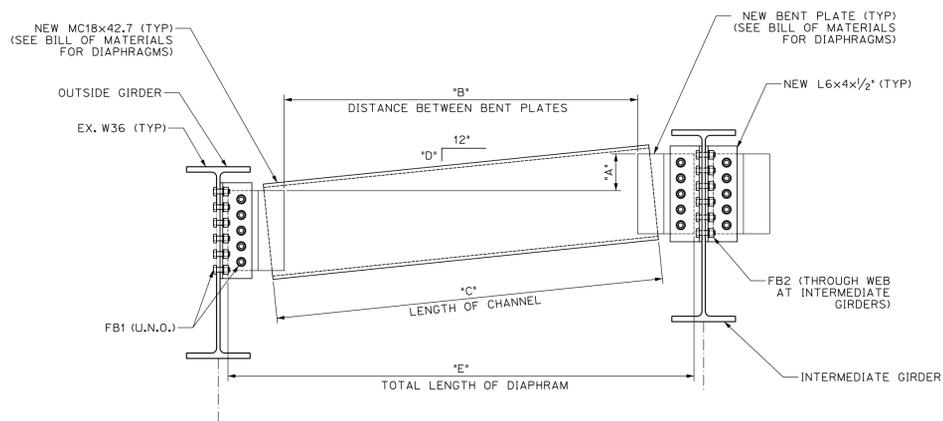
DIMENSIONAL REFERENCE CHART (SEE SECTION B-B)

| DIAPHRAGM | *A*     | *B*         | *C*         | *D*     | *E*         |
|-----------|---------|-------------|-------------|---------|-------------|
| D4        | 6 3/8"  | 7'-8 1/2"   | 8'-4 13/16" | 1 3/16" | 9'-2 3/16"  |
| D5        | 6 3/8"  | 7'-5 13/16" | 8'-1 1/8"   | 1 3/16" | 9'-0 1/16"  |
| D6        | 6 3/8"  | 7'-7 13/16" | 8'-3 1/8"   | 1 3/16" | 9'-2 1/16"  |
| D10       | 6 3/8"  | 8'-9 13/16" | 8'-8 1/8"   | 1 3/16" | 9'-7"       |
| D11       | 6 3/8"  | 8'-5 3/16"  | 8'-5"       | 1 3/16" | 9'-3 5/16"  |
| D12       | 6 3/8"  | 8'-7 13/16" | 8'-7 5/16"  | 1 3/16" | 9'-6 1/4"   |
| D17       | 6 3/8"  | 8'-5"       | 9'-0 1/4"   | 1 3/16" | 9'-10 7/8"  |
| D18       | 6 3/8"  | 8'-1 5/16"  | 8'-9 3/8"   | 1 3/16" | 9'-7 3/16"  |
| D19       | 6 3/8"  | 8'-4 1/4"   | 8'-11 3/8"  | 1 3/16" | 9'-10"      |
| D20       | 6 3/8"  | 8'-3 3/4"   | 8'-10 7/8"  | 1 3/16" | 9'-9 5/8"   |
| D25       | 6 1/4"  | 8'-10 1/4"  | 9'-5 11/16" | 1 1/16" | 10'-3 3/16" |
| D26       | 6 1/4"  | 8'-6 15/16" | 9'-2 3/8"   | 1 1/16" | 10'-0 7/16" |
| D27       | 6 1/4"  | 8'-9 1/16"  | 9'-4 7/16"  | 1 1/16" | 10'-2 5/8"  |
| D28       | 6 1/4"  | 8'-8 1/16"  | 9'-4 1/16"  | 1 1/16" | 10'-2 5/16" |
| D32       | 6 3/8"  | 7'-5 3/4"   | 8'-0 3/4"   | 7/8"    | 9'-0 7/16"  |
| D33       | 6 1/2"  | 7'-3"       | 7'-10 5/16" | 7/8"    | 8'-9 11/16" |
| D34       | 6 1/2"  | 7'-5 1/16"  | 8'-0 1/16"  | 7/8"    | 8'-11 3/4"  |
| D39       | 6 1/2"  | 7'-9 5/16"  | 8'-4 3/8"   | 1 3/16" | 9'-3 3/4"   |
| D40       | 6 1/4"  | 7'-6 3/16"  | 8'-1 3/16"  | 1 3/16" | 9'-1"       |
| D41       | 6 3/8"  | 7'-8 13/16" | 8'-4 1/8"   | 1 3/16" | 9'-3 1/4"   |
| D42       | 6 1/4"  | 7'-8 1/2"   | 8'-3 3/8"   | 1 3/16" | 9'-2 5/16"  |
| D45       | 6 3/16" | 5'-6 7/16"  | 6'-1 1/4"   | 1 3/16" | 7'-3 11/16" |
| D46       | 6 5/16" | 5'-4 3/8"   | 5'-11 1/4"  | 1 1/4"  | 7'-1 5/8"   |
| D49       | 6 3/16" | 5'-7 3/16"  | 6'-2"       | 1 3/16" | 7'-4 3/8"   |
| D50       | 6 5/16" | 5'-5 1/4"   | 6'-0 1/16"  | 1 1/4"  | 7'-2 7/16"  |

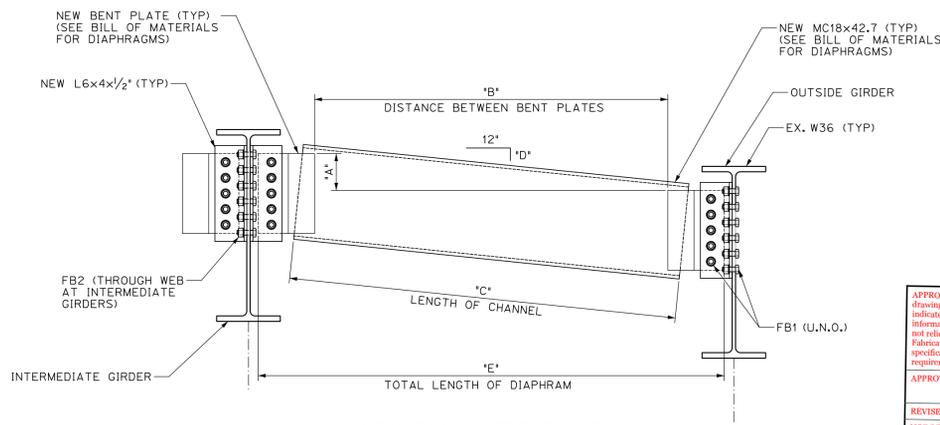
NOTE:  
 \*A\* = CHANGE IN ELEVATION  
 \*B\* = DISTANCE BETWEEN BENT PLATES  
 \*C\* = LENGTH OF CHANNEL  
 \*D\* = RISE PER LINEAR FOOT  
 \*E\* = OVERALL LENGTH OF DIAPHRAGM



SEE DIMENSIONAL REFERENCE CHART  
 DIMENSIONAL PLAN DETAIL  
 SCALE: 3/4" = 1'-0"



SEE DIMENSIONAL REFERENCE CHART  
 DIMENSIONAL SECTION A-A  
 SCALE: 3/4" = 1'-0"  
 (LOOKING UPSTATION)



SEE DIMENSIONAL REFERENCE CHART  
 DIMENSIONAL SECTION B-B  
 SCALE: 3/4" = 1'-0"  
 (LOOKING BACKSTATION)

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements.

APPROVED AS NOTED

REVISE AND RESUBMIT

NOT REVIEWED

Date: 2/18/2015

By: *[Signature]*

This review by Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc. approves the detail design inherent in the shop drawings. Responsibility for which shall remain with the Contractor. Submitting same, and such the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subtrades.

Stantec

Vermont Agency of Transportation  
**RECEIVED**  
 CK'D BY JWC OK'D BY D Bonneau  
 February 17, 2015  
 RESUBMIT No Approved  
 BY D Bonneau DATE 02/19/15

PROJECT No. IM 089-2(43)  
 ITEM No. 506.50

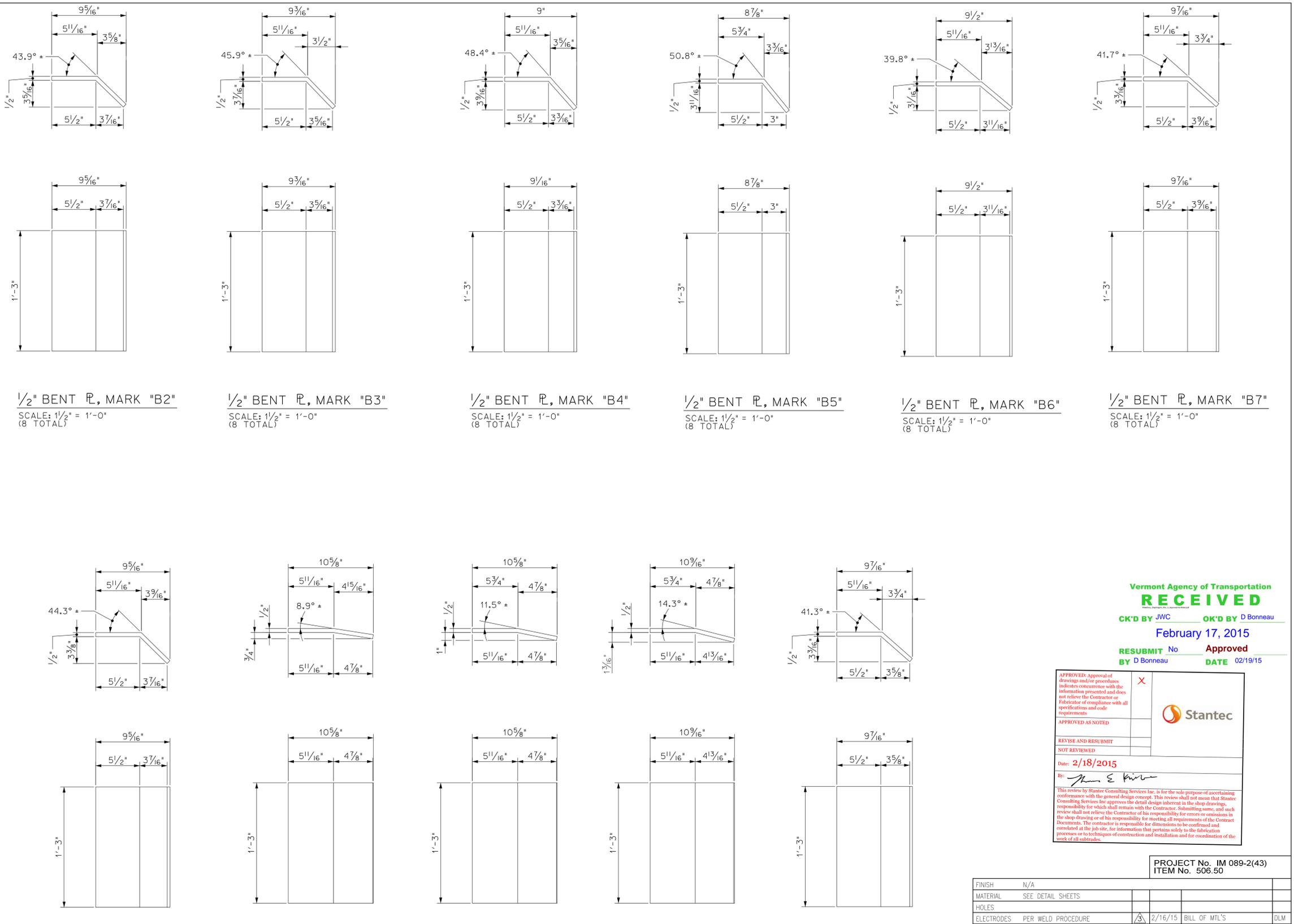
| FINISH  | N/A                |  |                             |             |
|---|--------------------|--|-----------------------------|-------------|
| MATERIAL  | SEE DETAIL SHEETS  |  |                             |             |
| HOLES   |                    |  |                             |             |
| ELECTRODES  | PER WELD PROCEDURE | 2/16/15  | BILL OF MTL'S               | DLM         |
| WELDS   | PER WELD PROCEDURE | 2/10/15  | Title Block                 | DLM         |
| SURFACE PREP  |                    | 1/19/15  | dim. reference chart (sh-3) | DLM         |
|   | NO                 | DATE   | DESCRIPTION                 | BY          |
| REVISIONS   |                    |  |                             |             |
| ADVANCED RESOURCES & CONST. ENTERPRISES, INCORPORATED<br>P.O. BOX 120 KINGFIELD, ME. 04947<br>PHONE: (207) 265-2646 - FAX: (207) 265-4054 |                    |  |                             |             |
| DRAFTER   | DLM                | BR46 STEEL DIAPHRAGMS                          |                             | PROJECT NO. |
| DATE  | JAN. 2015          |  |                             | 14-148      |
| CHECKED   | GNM                | WATERBURY VT. (BRIDGE 46 North and South)      |                             | DWG. NO.    |
| DATE  | JAN. 2015          | I-89 EXIT RAMP over STONE ST. & TRATCHER BROOK |                             | 3           |
|   |                    | BY: BECK & BELLUCCI                            |                             |             |

| BILL OF MATERIALS |           |          |            |                            |            |           |          |
|-------------------|-----------|----------|------------|----------------------------|------------|-----------|----------|
| SHIP              | SHIP MARK | NO. PCS. | PIECE MARK | DESCRIPTION                | LENGTH     | WEIGHT    | MATERIAL |
| 128               | L1        |          |            | L6x4x1/2'                  | 1'-6"      | 25# EACH  |          |
| 1                 | M1        |          |            | MC18x42.7                  | 8'-3 3/8"  | 355# EACH |          |
| 2                 | M2        |          |            | MC18x42.7                  | 8'-0 3/4"  | 355# EACH |          |
| 2                 | M3        |          |            | MC18x42.7                  | 8'-2 5/8"  | 355# EACH |          |
| 1                 | M4        |          |            | MC18x42.7                  | 8'-4 1/4"  | 360# EACH |          |
| 1                 | M5        |          |            | MC18x42.7                  | 8'-1 1/8"  | 350# EACH |          |
| 3                 | M6        |          |            | MC18x42.7                  | 8'-3 1/4"  | 355# EACH |          |
| 1                 | M7        |          |            | MC18x42.7                  | 8'-7 1/2"  | 370# EACH |          |
| 2                 | M8        |          |            | MC18x42.7                  | 8'-4 3/8"  | 360# EACH |          |
| 2                 | M9        |          |            | MC18x42.7                  | 8'-6 1/8"  | 370# EACH |          |
| 1                 | M10       |          |            | MC18x42.7                  | 8'-8 1/8"  | 370# EACH |          |
| 1                 | M11       |          |            | MC18x42.7                  | 8'-5"      | 360# EACH |          |
| 2                 | M12       |          |            | MC18x42.7                  | 8'-7 5/8"  | 370# EACH |          |
| 1                 | M13       |          |            | MC18x42.7                  | 8'-11 3/4" | 385# EACH |          |
| 1                 | M14       |          |            | MC18x42.7                  | 8'-8 1/16" | 375# EACH |          |
| 2                 | M15       |          |            | MC18x42.7                  | 8'-10 7/8" | 385# EACH |          |
| 1                 | M16       |          |            | MC18x42.7                  | 8'-10 1/2" | 385# EACH |          |
| 1                 | M17       |          |            | MC18x42.7                  | 9'-0 1/4"  | 385# EACH |          |
| 1                 | M18       |          |            | MC18x42.7                  | 8'-9 3/8"  | 375# EACH |          |
| 1                 | M19       |          |            | MC18x42.7                  | 8'-11 3/8" | 385# EACH |          |
| 1                 | M20       |          |            | MC18x42.7                  | 9'-5 3/8"  | 400# EACH |          |
| 1                 | M21       |          |            | MC18x42.7                  | 9'-1 3/16" | 390# EACH |          |
| 1                 | M22       |          |            | MC18x42.7                  | 9'-3 7/8"  | 400# EACH |          |
| 1                 | M23       |          |            | MC18x42.7                  | 9'-3 3/16" | 400# EACH |          |
| 1                 | M24       |          |            | MC18x42.7                  | 9'-5 1/16" | 405# EACH |          |
| 1                 | M25       |          |            | MC18x42.7                  | 9'-2 5/8"  | 390# EACH |          |
| 1                 | M26       |          |            | MC18x42.7                  | 9'-4 7/8"  | 400# EACH |          |
| 1                 | M27       |          |            | MC18x42.7                  | 9'-4 1/16" | 400# EACH |          |
| 1                 | M28       |          |            | MC18x42.7                  | 8'-0 5/8"  | 345# EACH |          |
| 1                 | M29       |          |            | MC18x42.7                  | 7'-9 3/8"  | 335# EACH |          |
| 4                 | M30       |          |            | MC18x42.7                  | 8'-0 1/16" | 345# EACH |          |
| 1                 | M31       |          |            | MC18x42.7                  | 7'-10 5/8" | 345# EACH |          |
| 2                 | M32       |          |            | MC18x42.7                  | 8'-4 1/8"  | 355# EACH |          |
| 1                 | M33       |          |            | MC18x42.7                  | 8'-1 3/8"  | 345# EACH |          |
| 2                 | M34       |          |            | MC18x42.7                  | 8'-3 3/16" | 345# EACH |          |
| 1                 | M35       |          |            | MC18x42.7                  | 8'-1 3/16" | 355# EACH |          |
| 6                 | M36       |          |            | MC18x42.7                  | 6'-1 1/4"  | 260# EACH |          |
| 2                 | M37       |          |            | MC18x42.7                  | 5'-11 1/4" | 255# EACH |          |
| 6                 | M38       |          |            | MC18x42.7                  | 6'-2"      | 265# EACH |          |
| 2                 | M39       |          |            | MC18x42.7                  | 6'-0 1/16" | 255# EACH |          |
| 8                 | B1        |          |            | BENT PLATE 1/2" x 10 5/16" | 1'-3"      | 1# EACH   |          |
| 16                | B2        |          |            | BENT PLATE 1/2" x 10 5/16" | 1'-3"      | 1# EACH   |          |
| 16                | B3        |          |            | BENT PLATE 1/2" x 10 1/4"  | 1'-3"      | 1# EACH   |          |
| 16                | B4        |          |            | BENT PLATE 1/2" x 10 1/4"  | 1'-3"      | 1# EACH   |          |
| 8                 | B5        |          |            | BENT PLATE 1/2" x 10 1/4"  | 1'-3"      | 1# EACH   |          |
| 8                 | B6        |          |            | BENT PLATE 1/2" x 10 5/16" | 1'-3"      | 1# EACH   |          |
| 16                | B7        |          |            | BENT PLATE 1/2" x 10 5/16" | 1'-3"      | 1# EACH   |          |
| 8                 | B8        |          |            | BENT PLATE 1/2" x 10 5/16" | 1'-3"      | 1# EACH   |          |
| 8                 | B9        |          |            | BENT PLATE 1/2" x 10 5/8"  | 1'-3"      | 1# EACH   |          |
| 16                | B10       |          |            | BENT PLATE 1/2" x 10 5/8"  | 1'-3"      | 1# EACH   |          |
| 8                 | B11       |          |            | BENT PLATE 1/2" x 10 5/8"  | 1'-3"      | 1# EACH   |          |

\*THE DIAPHRAGMS (MC18x42.7) ARE SQUARE CUTS AND THEREFORE NOT DETIALED

| COMPLETE BOLT SCHEDULE |            |        |   |   |
|------------------------|------------|--------|---|---|
| NO. BOLTS              | PIECE MARK | LENGTH | DESCRIPTION                                     | LOCATION  |
| 832                    | FB1        | 2 1/2" | 3/8" φ BOLT w/ N&W ASTM A325, TYPE 1 GALVANIZED | -NEW BENT PLATE AT NEW "L" CONNECTION PLATES<br>-NEW "L" CONNECTION PLATES TO WEB OF EXISTING OUTSIDE GIRDERS |
| 288                    | FB2        | 3"     | 3/8" φ BOLT w/N&W ASTM A325, TYPE 1 GALVANIZED  | NEW "L" CONNECTION PLATES TO WEB OF EXISTING INTERMEDIATE GIRDERS   |

NOTE: REQUIRED BOLT LENGTH SHALL BE FIELD VERIFIED BY THE CONTRACTOR. (SEE NOTE 9 ON SHEET 169 OF 252 IN CONTRACT PLANS)



1/2" BENT PL, MARK "B8" SCALE: 1 1/2" = 1'-0" (8 TOTAL)  
 1/2" BENT PL, MARK "B9" SCALE: 1 1/2" = 1'-0" (8 TOTAL)  
 1/2" BENT PL, MARK "B10" SCALE: 1 1/2" = 1'-0" (8 TOTAL)  
 1/2" BENT PL, MARK "B11" SCALE: 1 1/2" = 1'-0" (8 TOTAL)  
 1/2" BENT PL, MARK "B1" SCALE: 1 1/2" = 1'-0" (8 TOTAL)

Vermont Agency of Transportation  
**RECEIVED**  
 CK'D BY JWC OK'D BY D Bonneau  
 February 17, 2015  
 RESUBMIT No Approved  
 BY D Bonneau DATE 02/19/15

APPROVED: Approval of drawings and/or procedures indicates concurrence with the information presented and does not relieve the Contractor or Fabricator of compliance with all specifications and code requirements.

APPROVED AS NOTED

REVISION AND RESUBMIT NOT REVIEWED

Date: 2/18/2015

By: *[Signature]*

This review by Stantec Consulting Services Inc. is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Stantec Consulting Services Inc. approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor. Submitting same, and such the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for coordination of the work of all subtrades.

PROJECT No. IM 089-2(43)  
 ITEM No. 506.50

|  |                    |   |                                 |
|--|--------------------|---|---------------------------------|
| FINISH   | N/A                |   |                                 |
| MATERIAL   | SEE DETAIL SHEETS  |   |                                 |
| HOLES  |                    |   |                                 |
| ELECTRODES   | PER WELD PROCEDURE | 2/16/15   | BILL OF MTL'S DLM               |
| WELDS  | PER WELD PROCEDURE | 2/10/15   | Title Block DLM                 |
| SURFACE PREP   |                    | 1/19/15   | dim. reference chart (sh-3) DLM |
|  | NO                 | DATE  | DESCRIPTION                     |
|  |                    |   | BY                              |
| REVISIONS  |                    |   |                                 |
|  |                    |   |                                 |
| <b>ADVANCED RESOURCES &amp; CONST. ENTERPRISES, INCORPORATED</b><br>P.O. BOX 120 KINGFIELD, ME. 04947<br>PHONE: (207) 265-2646 - FAX: (207) 265-4054 |                    |   |                                 |
| DRAFTER  | DLM                | BR46 STEEL DIAPHRAGMS   |                                 |
| DATE   | JAN. 2015          | WATERBURY VT. (BRIDGE 46 North and South I-89 EXIT RAMP over STOWE ST. & TRATHER BROOK) |                                 |
| CHECKED  | GNM                | BY: BECK & BELLUCCI   |                                 |
| DATE   | JAN. 2015          | PROJECT NO.   | 14-148                          |
|  |                    | DWG. NO.  | M1                              |