SEE SHEET 2 FOR INDEX OF SHEETS

# STATE OF VERMONT
# AGENCY OF TRANSPORTATION

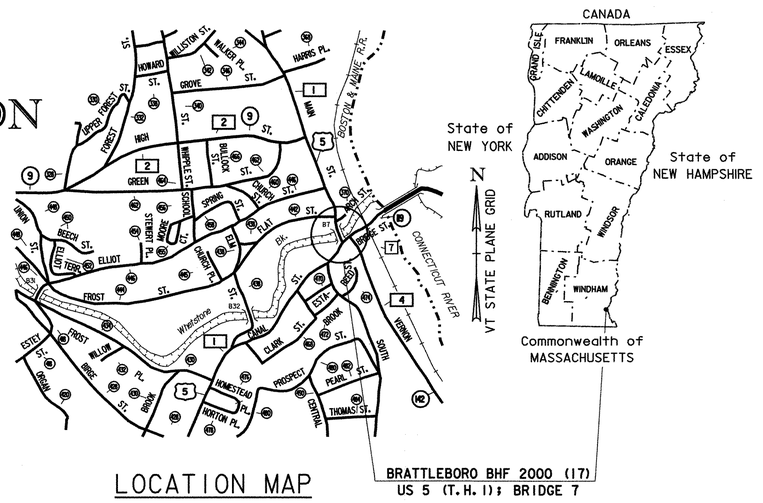
# PROPOSED IMPROVEMENT
# BRIDGE PROJECT
## TOWN OF BRATTLEBORO
## COUNTY OF WINDHAM

ROUTE NO : US 5 (T.H.1)  BRIDGE NO : 7

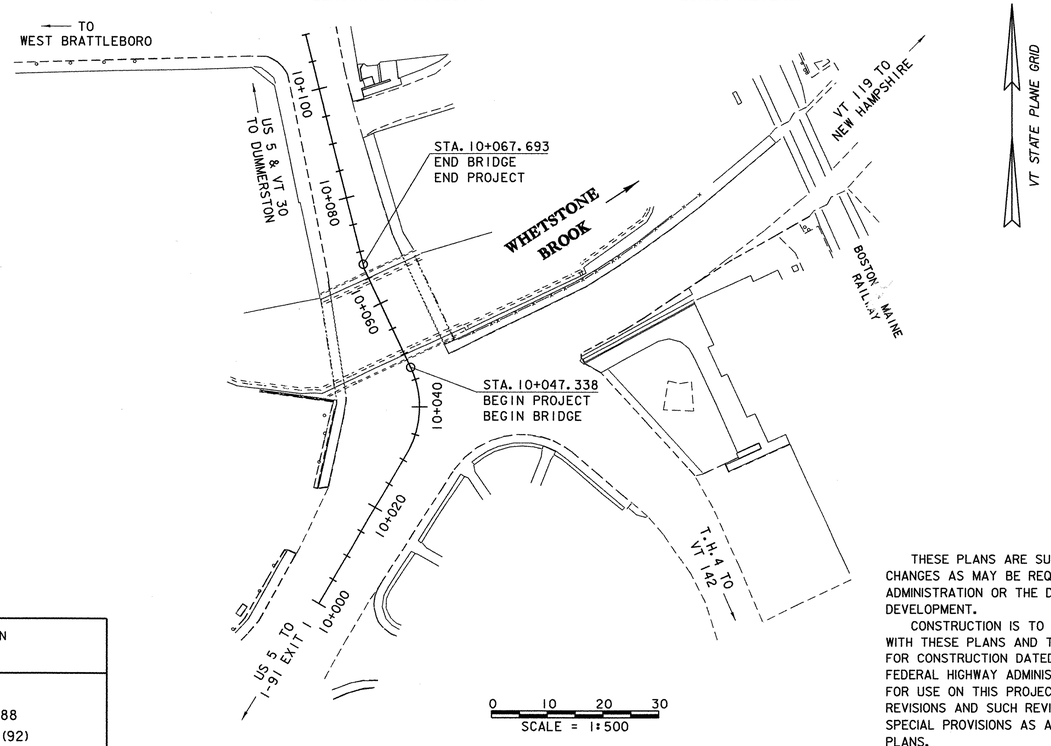
PROJECT LOCATION : BEGINNING APPROXIMATELY 0.010 KM FROM THE INTERSECTION OF US 5, VT 119, AND VT 142 AND PROCEEDING NORTHERLY FOR APPROXIMATELY 0.020 KM.

PROJECT DESCRIPTION : THE PROJECT SHALL CONSIST OF THE REHABILITATION OF BRIDGE NO.7 ALONG WITH RELATED ROADWAY APPROACH WORK.

| | |
|---|---|
| LENGTH OF STRUCTURE : | 20.355 METERS. |
| LENGTH OF ROADWAY : | 0.000 METERS. |
| LENGTH OF PROJECT : | 20.355 METERS. |




LOCATION MAP




## CONVENTIONAL SYMBOLS

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

SURVEYED BY : R. GILMAN
SURVEYED DATE : 6/96

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

### RECORD PLANS

CONTRACTOR: RENAUD BROTHERS, INC. - VERNON, VT
RESIDENT ENGINEER: FRED ROSS
CONSTRUCTION BEGAN: MAY 6, 2003
CONSTRUCTION COMPLETE: NOVEMBER 26, 2003
RECORD PLANS BY: FRED ROSS

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

BY Frederick W. Ross III RESIDENT ENGINEER
DATE 10-4-05

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.

MDOT Metric
UNLESS NOTED OTHERWISE
STATIONS ARE IN KILOMETERS
ELEVATIONS ARE IN METERS
DIMENSIONS ARE IN MILLIMETERS

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

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2001 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

DIRECTOR OF PROJECT DEVELOPMENT
APPROVED _____ DATE _____

PROJECT MANAGER : R. R. WHITCOMB

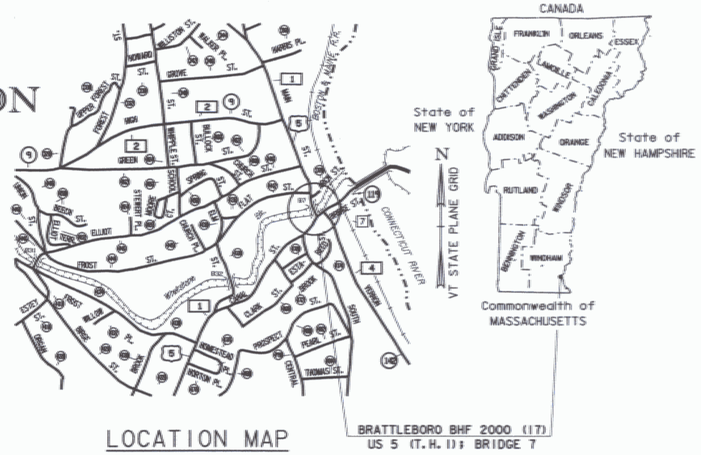
PROJECT NAME : BRATTLEBORO
PROJECT NUMBER : BHF 2000(17)

SHEET 1 OF 71 SHEETS

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SEE SHEET 2 FOR INDEX OF SHEETS

# STATE OF VERMONT
# AGENCY OF TRANSPORTATION




LOCATION MAP

# PROPOSED IMPROVEMENT
# BRIDGE PROJECT

TOWN OF BRATTLEBORO

COUNTY OF WINDHAM

ROUTE NO : US 5 (T.H.1) BRIDGE NO : 7

PROJECT LOCATION : BEGINNING APPROXIMATELY 0.010 KM FROM THE INTERSECTION OF US 5, VT 119, AND VT 142 AND PROCEEDING NORTHERLY FOR APPROXIMATELY 0.020 KM.

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| LENGTH OF STRUCTURE : | 20.355 METERS. |
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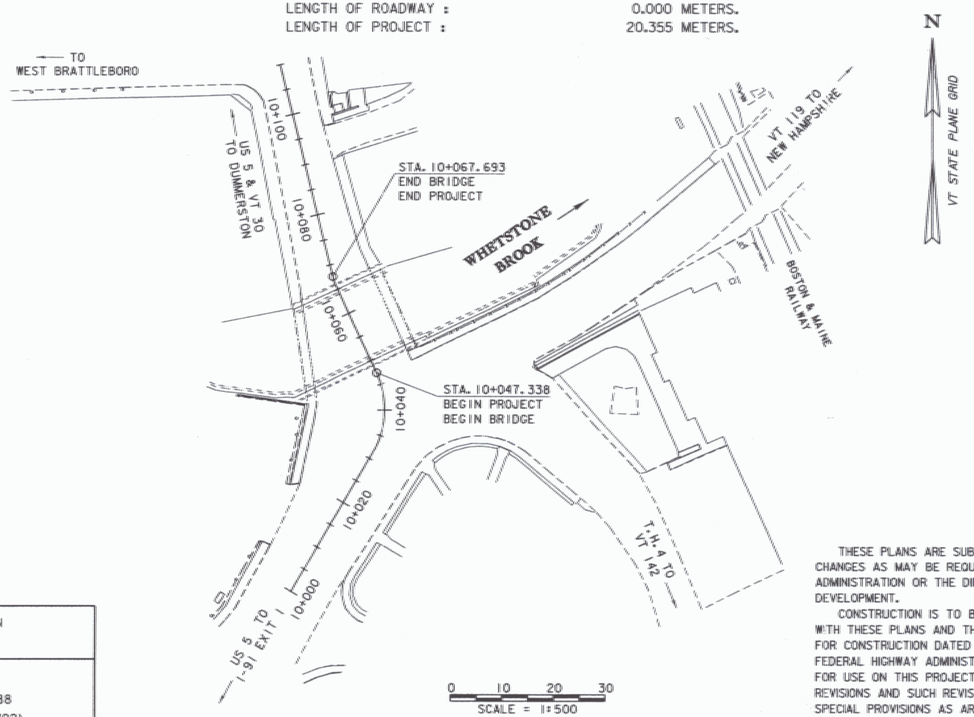
Renaud Bros., Inc.
Contractor

Signature

Vice President
Title

Rebecca A. McDonald
~~Director of Finance and Administration~~
or Duly Authorized Agent

4/1/03
Date




## CONVENTIONAL SYMBOLS

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

SURVEYED BY : R. GILMAN
SURVEYED DATE : 6/96

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

Metric
UNLESS NOTED OTHERWISE
STATIONS ARE IN KILOMETERS
ELEVATIONS ARE IN METERS
DIMENSIONS ARE IN MILLIMETERS

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

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2001 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

DIRECTOR OF PROJECT DEVELOPMENT
APPROVED DATE 2/5/03

PROJECT MANAGER : R. R. WHITCOMB

PROJECT NAME : BRATTLEBORO
PROJECT NUMBER : BHF 2000(17)

SHEET 1 OF 71 SHEETS

94J078\Structures\sj078tit.dgn sj078tit.i 05-FEB-2003

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# PRELIMINARY INFORMATION SHEET

Metric

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2. PRELIMINARY INFORMATION SHEET
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6-7. PHASE CONSTRUCTION DETAILS
8. TIE SHEET
9. LAYOUT SHEET
10-11. PROFILE AND BANKING DIAGRAM SHEETS
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23. TRAFFIC SIGN SUMMARY SHEET
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### LIST OF STANDARDS

| | | |
|---|---|---|
| C-1M | CURBS, BITUMINOUS CONCRETE SIDEWALKS<br>GRANITE SLOPE EDGING, VERTICAL GRANITE CURB<br>PRECAST REINFORCED CONCRETE CURB<br>CAST IN PLACE CONCRETE CURB<br>BITUMINOUS CONCRETE CURB, TREATED TIMBER CURB | 01/03/2000 |
| C-5M | SIDEWALK RAMPS | 01/03/2000 |
| D-6M | REINF. CONCRETE DROP INLET W/GRATE (DITCHES) | 08/13/1997 |
| D-11M | GRATES & COVERS (TYPE A) | 08/13/1997 |
| D-15M | PRECAST REINF. CONC. MANHOLE GRATES (BICYCLE S<br>CAST IRON GRATE WITH FRAME,TYPE D<br>CAST IRON GRATE WITH FRAME,TYPE E | 08/13/1997 |
| E-100M | CONSTRUCTION APPROACH SIGNS | 08/13/1997 |
| E-101M | CONSTRUCTION SIGN DETAILS | 08/13/1997 |
| E-102M | CONSTRUCTION SIGN DETAILS | 08/13/1997 |
| E-102AM | CONSTRUCTION SIGN DETAILS | 08/13/1997 |
| E-103M | TRAFFIC CONTROL - MISCELLANEOUS DETAILS | 08/13/1997 |
| E-107M | DELINEATION, BARRICADES AND DETOURS FOR<br>U-TURNS ON DIVIDED HIGHWAY | 08/13/1997 |
| E-107AM | BREAKAWAY BARRICADE DETAILS | 08/13/1997 |
| E-121M | STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD | 08/13/1997 |
| E-123M | GUIDE SIGN PLACEMENT - MISCELLANEOUS DETAILS | 08/13/1997 |
| E-135M | INTERSTATE ROUTE MARKER SIGN DETAIL | 08/13/1997 |
| E-136AM | U.S. ROUTE MARKER SIGN DETAILS | 08/13/1997 |
| E-136BM | STATE ROUTE MARKER SIGN DETAILS | 08/13/1997 |
| E-136CM | STATE NUMBERED TOWN HIGHWAY SIGN DETAILS | 08/13/1997 |
| E-140M | REGULATORY SIGN DETAILS | 08/13/1997 |
| E-145M | REGULATORY SIGN DETAILS | 08/13/1997 |
| E-152M | WARNING SIGN DETAILS | 08/13/1997 |
| E-160M | FLANGED CHANNEL STEEL SIGN POST | 08/13/1997 |
| E-163M | TUBULAR STEEL SIGN POST | 08/13/1997 |
| E-173M | PULL BOXES AND JUNCTION BOXES | 08/13/1997 |
| E-175M | POWER DROP STANCHIONS | 08/13/1997 |
| E-180AM | STREET LIGHTING DETAILS | 08/13/1997 |
| E-180BM | STREET LIGHTING DETAILS | 08/13/1997 |
| E-181M | TYPICAL BRIDGE MOUNTING DETAILS FOR STREET LIG | 08/13/1997 |
| E-191M | PAVEMENT MARKING DETAILS | 02/01/2000 |
| E-193M | PAVEMENT MARKING DETAILS | 08/13/1997 |
| T-1M | TEMPORARY EROSION CONTROL DETAILS | 08/13/1997 |
| T-2M | TEMPORARY EROSION CONTROL DETAILS | 08/13/1997 |

## FINAL HYDRAULIC REPORT

### HYDROLOGIC DATA

Date: March 1, 2001

DRAINAGE AREA: 72.6 sq. km
CHARACTER OF TERRAIN: Hilly, forested upland, developed suburban & urban lowlands
STREAM CHARACTERISTICS: Perennial, non-alluvial, sinuous, not braided or anabranched
NATURE OF STREAMBED: Ledge with some gravel and cobble deposits

PEAK FLOW DATA

| | | | |
|---|---|---|---|
| Q 2.33 = | 42 cms | Q 50 = | 161 cms |
| Q 10 = | 96 cms | Q 100 = | 224 cms |
| Q 25 = | 142 cms | Q 500 = | 346 cms |

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

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

### EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single-span steel girder bridge
YEAR BUILT: 1938
CLEAR SPAN(NORMAL TO STREAM): 15.1 m
VERTICAL CLEARANCE ABOVE STREAMBED: 4.8 m (Ave. low beam = 76.3 m)
WATERWAY OF FULL OPENING: 65 sq. m
DISPOSITION OF STRUCTURE: Re-using abutments in rehabilitation
TYPE OF MATERIAL UNDER SUBSTRUCTURE: Ledge

WATER SURFACE ELEVATIONS AT:

| | | | |
|---|---|---|---|
| Q2.33 = | Unknown | VELOCITY = | Unknown |
| Q10 = | 72.8 m * | " | Unknown |
| Q25 = | Unknown | " | Unknown |
| Q50 = | 73.5 m * | " | Unknown |
| Q100 = | 74.0 m * | " | Unknown |

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: > Q100
RELIEF ELEVATION: 77.4 m
DISCHARGE OVER ROAD @Q100: None

### UPSTREAM STRUCTURE

TOWN: Brattleboro — DISTANCE: 425 m
HIGHWAY #: TH 438 (FAU Elm St.) — STRUCTURE #: Br# 32
CLEAR SPAN: 25.6 m — CLEAR HEIGHT: 4.6 m
YEAR BUILT: 1999 — FULL WATERWAY: Unknown
STRUCTURE TYPE: Single-span prestressed concrete box girder bridge

### DOWNSTREAM STRUCTURE

TOWN: Brattleboro — DISTANCE: 90 m
HIGHWAY #: Railroad — STRUCTURE #: Unknown
CLEAR SPAN: Unknown — CLEAR HEIGHT: Unknown
YEAR BUILT: Unknown — FULL WATERWAY: Unknown
STRUCTURE TYPE: Stone and concrete arch bridge

### LOAD FACTOR LOAD RATING (TONS)

| LOADING LEVELS | TRUCK M | MS | 3S2 | 6 AXLE | 3A. STR. | 4A. STR. | SA. SEMI |
|---|---|---|---|---|---|---|---|
| INVENTORY | 35 | 43 | | | | | |
| POSTED | 49 | 60 | 80 | | 54 | 55 | 69 |
| OPERATING | | 71 | 95 | 110 | 64 | 66 | |

COMMENTS: SERVICEABILITY GOVERNS

### TRAFFIC DATA

| YEAR | ADT | DHV | %D | %T | ADTT |
|---|---|---|---|---|---|
| 1999 | 15260 | 1526 | 54 | 2 | 765 |
| 2019 | 19730 | 1975 | 54 | 2 | 950 |

20 year ESAL for flexible pavement: 1999 to 2019 : 7,338,000
40 year ESAL for flexible pavement: 1999 to 2039 : 22,496,000
Design Speed: 40 km/h

### PROPOSED STRUCTURE

STRUCTURE TYPE: Single-span steel girder bridge
CLEAR SPAN(NORMAL TO STREAM): 15.1 m
VERTICAL CLEARANCE ABOVE STREAMBED: 5.1 m
WATERWAY OF FULL OPENING: 73 sq. m

WATER SURFACE ELEVATIONS AT:

| | | | |
|---|---|---|---|
| Q2.33 = | Unknown | VELOCITY= | Unknown |
| Q10 = | 72.8 m * | " | Unknown |
| Q25 = | Unknown | " | Unknown |
| Q50 = | 73.5 m * | " | Unknown |
| Q100 = | 74.0 m * | " | Unknown |

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: > Q100
RELIEF ELEVATION: 77.4 m
DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 75.8 m
VERTICAL CLEARANCE: @ Q50 = 2.3 m

SCOUR: None, Channel bottom & Abutments on Ledge
REQUIRED CHANNEL PROTECTION: N/A

### PERMIT INFORMATION

| | | |
|---|---|---|
| AVERAGE DAILY FLOW: | 2 cms | |
| ORDINARY LOW WATER: | 1 cms | DEPTH OR ELEVATION: 0.3 m |
| ORDINARY HIGH WATER: | 18 cms | 0.6 m |

### TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: N/A
CLEAR SPAN (NORMAL TO STREAM): N/A
VERTICAL CLEARANCE ABOVE STREAMBED: N/A
WATERWAY AREA OF FULL OPENING: N/A

### ADDITIONAL INFORMATION

* Water Surface Elevations taken from FEMA Flood Insurance Study for the Town of Brattleboro, Dated Dec. 4, 1985

Note: A detailed hydraulic analysis was not performed due to limited survey and the fact that this is a rehabilitation of a hydraulically adequate bridge with no new adverse hydraulic conditions.

### DESIGN CRITERIA

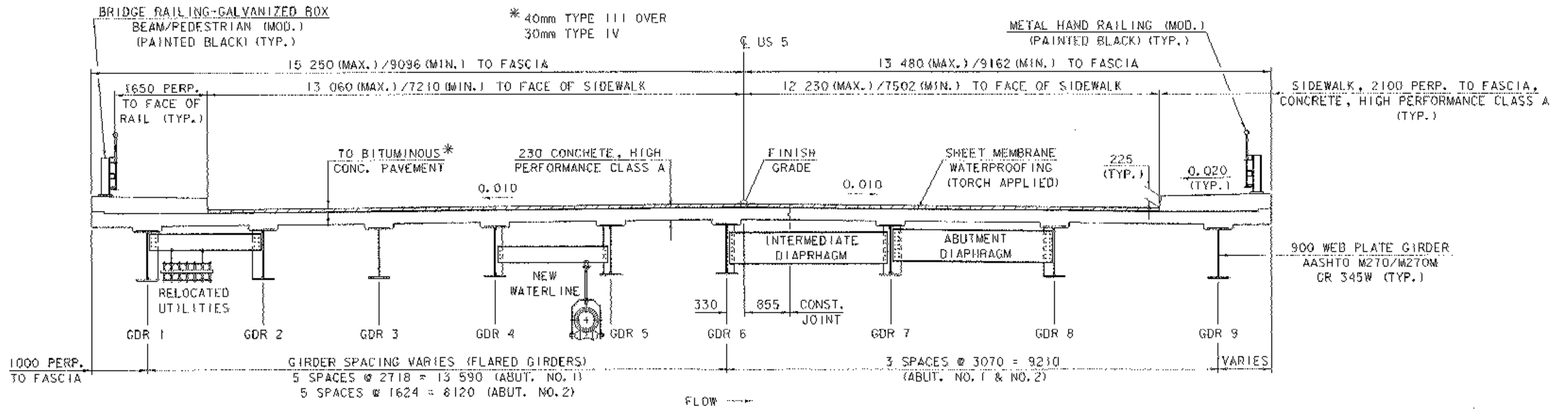
1. DESIGN LIVE LOAD AASHTO: MS 22.5
2. DESIGN SPAN: 19m ALONG CENTERLINE U.S. 5
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL: N/A
   ON LEDGE
4. ALLOWABLE LOAD FOR PILING: N/A
   TYPE: N/A
   ESTIMATED LENGTH: N/A
5. STRUCTURAL STEEL, AASHTO M270/M270M GRADE: 345W
6. REINFORCING STEEL GRADE: 420
7. CONCRETE CLASS A (HPC-A) f'c: 30 MPa
   CONCRETE CLASS B (HPC-B) f'c: 25 MPa
8. SOIL UNIT WEIGHT: 22.00 Kn/m³
9. DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL: N/A

### TRAFFIC MAINTENANCE

1. IS TRAFFIC TO BE MAINTAINED? YES
   IF YES, ON EXISTING STRUCTURE? YES, (COMBINATION ON BRIDGE & DETOUR)
   OR ON TEMPORARY BRIDGE? N/A
   ONE OR TWO-WAY TRAVEL? N/A
2. TRAFFIC CONTROL SIGNALS REQUIRED? NO
3. ARE SIDEWALKS REQUIRED? YES, ON DOWNSTREAM SIDE OF EXISTING
   IF SO, ON WHAT SIDE? BRIDGE DURING PHASE ONE, UPSTREAM SIDE OF NEW BRIDGE DURING PHASE TWO.

PROJECT NAME: **BRATTLEBORO**
PROJECT NUMBER: **BHF 2000 (17)**

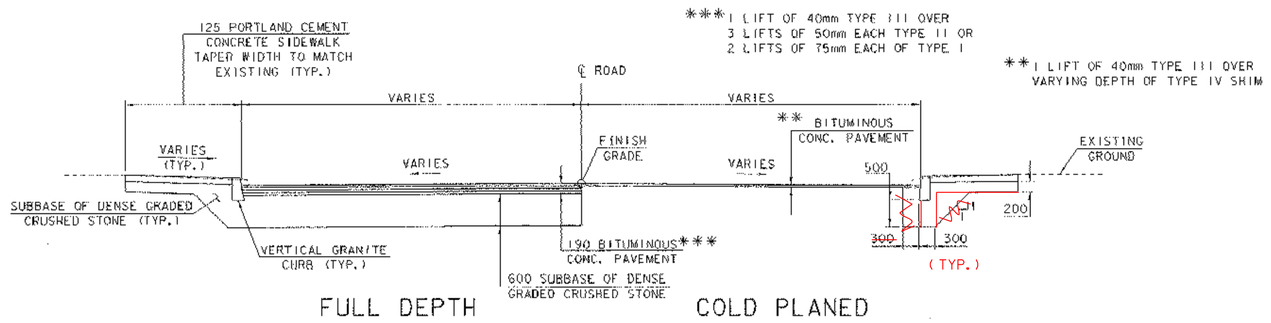
FILE NAME: 194)078\Structures\sj078pi.xls — PLOT DATE: 01/28/2003
PROJECT MANAGER: R. R. WHITCOMB — DRAWN BY: G. ROY
DESIGNED BY: T. SUMNER — CHECKED BY: T. SUMNER
PRELIMINARY INFORMATION SHEET — SHEET 2 OF 71




## BRIDGE TYPICAL SECTION @ MIDSPAN

0 1 2 3 4 5

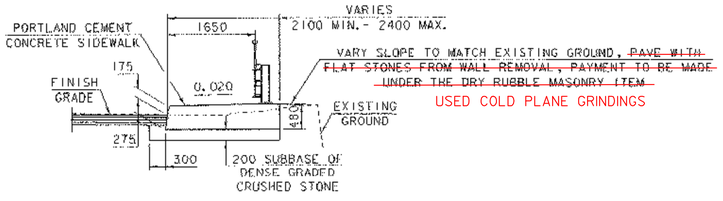
SCALE = 1:50




## ROADWAY APPROACH SECTION

0 1 2 3 4 5

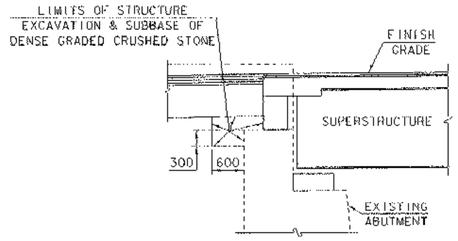
SCALE = 1:50




## SIDEWALK TYPICAL SECTION
## STA. 20+020.20 RT. - STA. 20+040.26 RT.

0 1 2 3 4 5

SCALE = 1:50




## ABUTMENT TYPICAL SECTION

0 1 2 3 4 5

SCALE = 1:50

| MATERIAL ITEM | TOLERANCE |
|---|---|
| PAVEMENT | ±5 mm TOTAL THICKNESS |
| BASE COURSE | ±10 mm |
| SUBBASE | ±30 mm |
| SAND BORROW | ±30 mm |

## PROJECT TYPICAL SHEET

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 941078\Structures\sj078typ.1 PLOT DATE: 06-FEB-2003
PROJECT MANAGER: R.R. WHITCOMB DRAWN BY: C. ROY
DESIGNED BY: T. SUMNER CHECKED BY: T. SUMNER
SHEET 3 OF 71

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# QUANTITY SHEET

Metric

| SUMMARY OF ESTIMATED QUANTITIES | | | | | | | | | | | | | | | TOTALS | | | | DESCRIPTIONS | | | | DETAILED SUMMARY OF QUANTITIES | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | FULL C.E. ITEMS | | ROADWAY | | JUNCTION BOX | | ABUTMENT NO.2 | | ABUTMENT NO.1 | | DECK | BRIDGE QUANTITY | ROUND | GRAND TOTAL | FINAL | UNIT | ITEMS | ITEM NUMBER | QUANTITIES | UNIT | ITEMS |
| | | | | | | 410 | | | | | | | | | | | 410 | | CM | COMMON EXCAVATION | 203.15 | | | BITUMINOUS CONCRETE PAVEMENT (PG 70-28) |
| | | | | | | 20 | | | | | | 10 | | | 10 | | 30 | | CM | SOLID ROCK EXCAVATION | 203.16 | | | ROADWAY: |
| | | | | | | 50 | | | | | | | | | | | 50 | | CM | TRENCH EXCAVATION OF EARTH | 204.20 | 156 | T | TYPE I OR TYPE II |
| | | | | | | 25 | | | | | | | | | | | 25 | | CM | TRENCH EXCAVATION OF ROCK | 204.21 | 215 | T | TYPE III |
| | | | | | | | | | | 20 | | 40 | | | 60 | | 60 | | CM | STRUCTURE EXCAVATION | 204.25 | 26 | T | TYPE IV (6mm LEVELING COURSE) |
| | | | | | | 15 | | 15 | | 20 | | 20 | | | 40 | | 70 | | CM | GRANULAR BACKFILL FOR STRUCTURES | 204.30 | 397 | T | SUBTOTAL |
| | | | | | | | | 40 | | | | | | | | | 40 | | CM | COFFERDAM EXCAVATION, EARTH | 208.30 | | | |
| | | | | | | | | 2 | | | | | | | | | 2 | | CM | COFFERDAM EXCAVATION, ROCK | 208.35 | | | BRIDGE: |
| | | | | | | | | 1 | | | | | | | | | 1 | | LS | COFFERDAM | 208.40 | 36 | T | TYPE III |
| | | | | | | 1820 | | | | | | | | | | | 1820 | | SM | COLD PLANING-BIT.PAVEMENT | 210.10 | 27 | T | TYPE IV |
| | | | | | | 450 | | | | | | | | | | | 450 | | CM | SUBBASE OF DENSE GRADED CRUSHED STONE | 301.35 | 63 | T | SUBTOTAL |
| | | | | | | 490 | | | | | | | | 40 | 40 | | 530 | | KG | EMULSIFIED ASPHALT | 404.65 | | | |
| | | | | | | 397 | | | | | | | | 63 | 63 | | 460 | | T | BITUMINOUS CONCRETE PAVEMENT (PG 70-28) | 406.25 | | | |
| | | | | | | | | | | | | | | 148 | 148 | | 148 | | CM | CONCRETE, HIGH PERFORMANCE CLASS A | 501.33 | | | |
| | | | | | | 13 | | 13 | | 18 | | 33 | | | 51 | | 77 | | CM | CONCRETE, HIGH PERFORMANCE CLASS B | 501.34 | | | |
| | | | | | | | | | | 1 | | 1 | | | 2 | | 2 | | CM | MORTAR, TYPE IV | 501.58 | | | |
| | | | | | | | | | | | | | | 53160 | 53160 | | 53160 | | KG | STRUCTURAL STEEL(PLATE GIRDER) | 506.55 | | | |
| | | | | | | 680 | | 1070 | | 1590 | | 2560 | | | 4150 | | 5900 | | KG | REINFORCING STEEL | 507.15 | | | |
| | | | | | | | | | | 60 | | 95 | | | 155 | | 155 | | M | DRILLING AND GROUTING DOWELS | 507.16 | | | |
| | | | | | | 510 | | | | | | | | 26260 | 26260 | | 26770 | | KG | EPOXY COATED REINFORCING STEEL | 507.17 | | | |
| | | | | | | | | | | | | | | 1 | 1 | | 1 | | LS | SHEAR CONNECTORS (2155 - 22 DIA. X 178 STUDS) | 508.15 | | | |
| | | | | | | | | | | 5 | | 10 | | 10 | 25 | | 25 | | L | WATER REPELLENT | 514.10 | | | |
| | | | | | | | | | | | | | | 15 | 15 | | 15 | | M | BRIDGE EXPANSION JOINT (ASPHALTIC PLUG-TYPE) | 516.10 | | | |
| | | | | | | | | | | | | | | 381 | 381 | | 381 | | SM | SHEET MEMBRANE WATERPROOFING (TORCH APPLIED) | 519.20 | | | |
| | | | | | | | | | | | | | | 50 | 50 | | 50 | | M | METAL HAND RAILING (MOD.) | 525.15 | | | |
| | | | | | | | | | | | | | | 46 | 46 | | 46 | | M | BRIDGE RAILING -GALVANIZED BOX BEAM/PEDESTRIAN (MOD.) | 525.32 | | | |
| | | | | | | 1 | | | | | | | | | | | 1 | | LS | MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS | 527.10 | | | |
| | | | | | | | | | | | | | | 346 | 346 | | 346 | | SM | REMOVAL OF BRIDGE PAVEMENT | 529.10 | | | |
| | | | | | | | | | | | | | | 1 | 1 | | 1 | | EACH | PARTIAL REMOVAL OF STRUCTURE | 529.20 | | | |
| | | | | | | | | | | 9 | | 10 | | | 19 | | 19 | | EACH | BEARING DEVICE ASSEMBLY | 531.10 | | | |
| | | | | | | 5.5 | | | | | | | | | | | 6 | | M | 450 mm RCP CLASS III | 601.0815 | | | |
| | | | | | | 5.5 | | | | | | | | | | | 6 | | M | 1050 mm RCP CLASS III | 601.0850 | | | |
| | | | | | | | | | | | | | | | | | | | | *** BEGIN PIPE OPTIONS *** | | | | |
| | | | | | | 20.8 | | | | | | | | | | | 21 | | M | 450 mm RCP CLASS III | 601.0815 | | | |
| | | | | | | 20.8 | | | | | | | | | | | 21 | | M | 450 mm CPEP (SL) | 601.2615 | | | |
| | | | | | | | | | | | | | | | | | | | | *** END PIPE OPTIONS *** | | | | |
| | | | | | | | | | | | | 4 | | | 4 | | 4 | | CM | DRY RUBBLE MASONRY | 602.20 | | | |
| | | | | | | | | 1 | | | | | | | | | 1 | | EACH | PRECAST REINFORCED CONCRETE MANHOLE WITH CAST IRON COVER | 604.21 | | | |
| | | | | | | 8 | | | | | | | | | | | 8 | | EACH | CHANGING ELEV. OF DROP INLETS, CATCH BASINS OR MANHOLES | 604.40 | | | |
| | | | | | | 2 | | | | | | | | | | | 2 | | EACH | CHANGING ELEVATION OF SEWER MANHOLE | 604.42 | | | |
| | | | | | | 4 | | | | | | | | | | | 4 | | EACH | CAST IRON GRATE WITH FRAME, TYPE D | 604.47 | | | |
| | | | | | | 10 | | | | | | | | | | | 10 | | HR | ALL PURPOSE EXCAVATOR RENTAL, TYPE I | 608.25 | | | |
| | | | | | | 62 | | | | | | | | | | | 62 | | M | VERTICAL GRANITE CURB | 616.21 | | | |

PROJECT NAME: **BRATTLEBORO**

PROJECT NUMBER: **BHF 2000 (17)**

FILE NAME: **\94j078\Structures\sj078qs.xls**
PROJECT MANAGER: **R. R. WHITCOMB**
DESIGNED BY: **T. SUMNER**
**QUANTITY SHEET #1**

PLOT DATE: **02/04/2003**
DRAWN BY: **G. ROY**
CHECKED BY: **T. SUMNER**
SHEET **4** OF **71**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# QUANTITY SHEET

Metric

| SUMMARY OF ESTIMATED QUANTITIES | | | | | | | | | | | | | | | | | TOTALS | | | | DESCRIPTIONS | | | DETAILED SUMMARY OF QUANTITIES | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | FULL C.E. ITEMS | | ROADWAY | | JUNCTION BOX | | ABUTMENT NO.2 | | ABUTMENT NO.1 | | DECK | | BRIDGE QUANTITY | ROUND | GRAND TOTAL | FINAL | UNIT | ITEMS | ITEM NUMBER | QUANTITIES | UNIT | ITEMS |
| | | | | | | 115 | | | | | | | | | | | | 115 | | SM | PORTLAND CEMENT CONCRETE SIDEWALK,125 MM | 618.10 | | | |
| | | | | | | 33 | | | | | | | | | | | | 33 | | SM | PORTLAND CEMENT CONCRETE SIDEWALK, 200 MM (MOD.) | 618.11 | | | |
| | | | | | | 25 | | | | | | | | | | | | 25 | | M | REMOVING AND RESETTING FENCE | 620.50 | | | |
| | | | | | | 100 | | | | | | | | | | | | 100 | | M | SNOW FENCE (MOD.) | 620.70 | | | |
| | | | | | | 3 | | | | | | | | | | | | 3 | | EACH | ENERGY ABSORPTION ATTENUATOR | 621.56 | | | |
| | | | | | | 150 | | | | | | | | | | | | 150 | | M | TEMPORARY TRAFFIC BARRIER | 621.90 | | | |
| | | | | | | | | | | | | | | 1 | | 1 | | 1 | | LS | DUCTS ON BRIDGE | 625.16 | | | |
| | | | | | | 6 | | | | | | | | | | | | 6 | | EACH | ADJUST ELEVATION OF VALVE BOX | 629.20 | | | |
| | | | | | | 1 | | | | | | | | | | | | 1 | | LS | TRANSFER TO NEW SYSTEM-WATER SYSTEM (MOD.) | 629.42 | | | |
| | | | | | | | | | | | | | | 1 | | 1 | | 1 | | LS | WATER MAIN ON BRIDGE | 629.60 | | | |
| | | | | | | 1200 | | | | | | | | | | | | 1200 | | HR | UNIFORMED TRAFFIC OFFICERS | 630.10 | | | |
| | | | | | | 800 | | | | | | | | | | | | 800 | | 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 | | | |
| | | | | 1 | | | | | | | | | | | | | | 1 | | LU | FIELD OFFICE - TELEPHONE (N.A.B.I.) | 631.25 | | | |
| | | | | | | 1 | | | | | | | | | | | | 1 | | LS | MOBILIZATION | 635.10 | | | |
| | | | | | | 2 | | | | | | | | | | | | 2 | | EACH | PORTABLE CHANGEABLE MESSAGE SIGN | 641.15 | | | |
| | | | | | | 473 | | | | | | | | | | | | 473 | | M | DURABLE 100 mm WHITE LINE | 646.40 | | | |
| | | | | | | 392 | | | | | | | | | | | | 392 | | M | DURABLE 100 mm YELLOW LINE | 646.41 | | | |
| | | | | | | 24 | | | | | | | | | | | | 24 | | M | DURABLE 600 mm STOP BAR | 646.46 | | | |
| | | | | | | 72 | | | | | | | | | | | | 72 | | EACH | DURABLE LETTER OR SYMBOL | 646.50 | | | |
| | | | | | | 65 | | | | | | | | | | | | 65 | | M | DURABLE CROSSWALK MARKINGS W/DIAGONAL LINES | 646.51 | | | |
| | | | | | | 181 | | | | | | | | | | | | 181 | | M | TEMPORARY 100 mm WHITE LINE | 646.60 | | | |
| | | | | | | 227 | | | | | | | | | | | | 227 | | M | TEMPORARY 100 mm YELLOW LINE | 646.61 | | | |
| | | | | | | 9 | | | | | | | | | | | | 9 | | M | TEMPORARY 600 mm STOP BAR | 646.66 | | | |
| | | | | | | 29 | | | | | | | | | | | | 29 | | EACH | TEMPORARY LETTERS OR SYMBOLS | 646.70 | | | |
| | | | | | | 45 | | | | | | | | | | | | 45 | | M | TEMPORARY CROSSWALK MARKINGS W/DIAGONAL LINES | 646.71 | | | |
| | | | | | | 125 | | | | | | | | | | | | 125 | | SM | REMOVAL OF EXISTING PAVEMENT MARKINGS | 646.85 | | | |
| | | | | | | 79 | ⚠1 | | | | | | | | | | | 79 ⚠1 | | SM | TRAFFIC SIGNS, TYPE A (MOD.) | 675.20 | | | |
| | | | | | | 320 | ⚠1 | | | | | | | | | | | 320 ⚠1 | | M | FLANGED CHANNEL SIGN POST (MOD.) | 675.301 | | | |
| | | | | | | 438 | ⚠1 | | | | | | | | | | | 438 ⚠1 | | KG | TUBULAR STEEL SIGN POSTS (MOD.) | 675.33 | | | |
| | | | | | | 29 | ⚠1 | | | | | | | | | | | 29 ⚠1 | | EACH | REMOVING SIGNS | 675.50 | | | |
| | | | | | | 20 | ⚠1 | | | | | | | | | | | 20 ⚠1 | | EACH | ERECTING SALVAGED SIGNS | 675.60 | | | |
| | | | | | | 4 | ⚠1 | | | | | | | | | | | 4 ⚠1 | | EACH | SETTING SALVAGED POSTS | 675.61 | | | |
| | | | | | | | | | | | | | | 65 | | 65 | | 65 | | M | WIRED CONDUIT | 678.23 | | | |
| | | | | | | | | | | | | | | 1 | | 1 | | 1 | | EACH | JUNCTION BOX | 678.26 | | | |
| | | | | | | | | | | | | | | 4 | | 4 | | 4 | | EACH | LIGHT POLE BASE | 679.21 | | | |
| | | | | | | | | | | | | | | 4 | | 4 | | 4 | | EACH | LIGHT POLE | 679.45 | | | |
| | | | | | | | | | | | | | | 8 | | 8 | | 8 | | EACH | BRACKET ARM | 679.47 | | | |
| | | | | | | | | | | | | | | 12 | | 12 | | 12 | | EACH | LUMINAIRE | 679.50 | | | |

**REVISIONS BY VAOT**

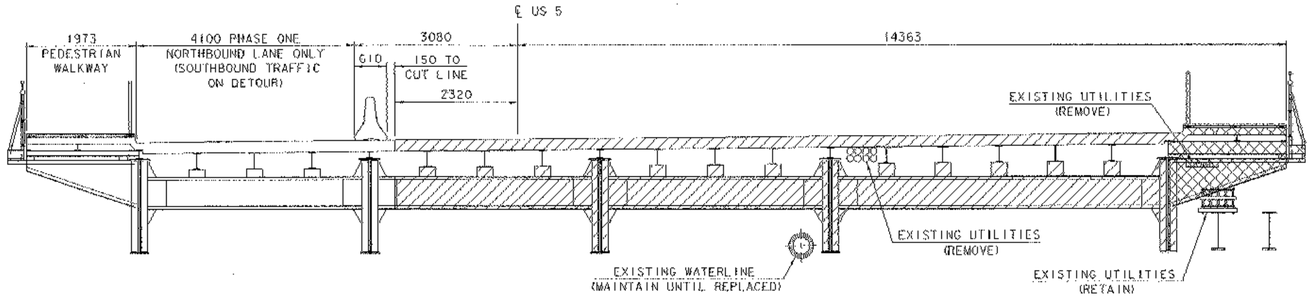
⚠1 SIGN SIZES AND NUMBERS 03-10-03

PROJECT NAME: **BRATTLEBORO**
PROJECT NUMBER: **BHF 2000 (17)**

FILE NAME: **\94j078\Structures\sj078qs.xls**
PROJECT MANAGER: **R. R. WHITCOMB**
DESIGNED BY: **T. SUMNER**
**QUANTITY SHEET #2**

PLOT DATE: **03/10/2003**
DRAWN BY: **G. ROY**
CHECKED BY: **T. SUMNER**
SHEET **5** OF **71**

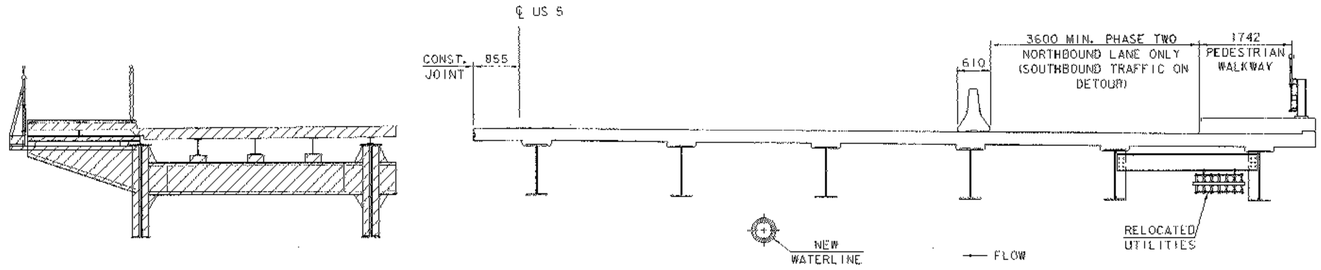
Metric



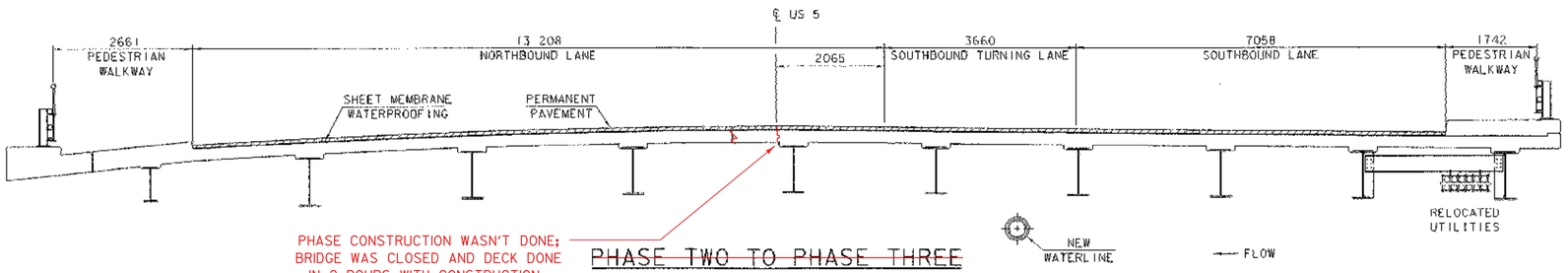

PHASE ONE
ABUTMENT NO. 1
(LOOKING BACK STATION)
(ALONG CENTERLINE OF BEARING)

INDICATES REMOVAL OF EXISTING BRIDGE.

INDICATES EXISTING SIDEWALK AND BRACING REMOVED BY PREVIOUS CONTRACT WITH VERIZON.




PHASE ONE TO PHASE TWO
ABUTMENT NO. 1
(LOOKING BACK STATION)
(ALONG CENTERLINE OF BEARING)




PHASE CONSTRUCTION WASN'T DONE;
BRIDGE WAS CLOSED AND DECK DONE
IN 2 POURS WITH CONSTRUCTION
JOINT @ CL ( SEE CO #1, DATED 5-28-03 )

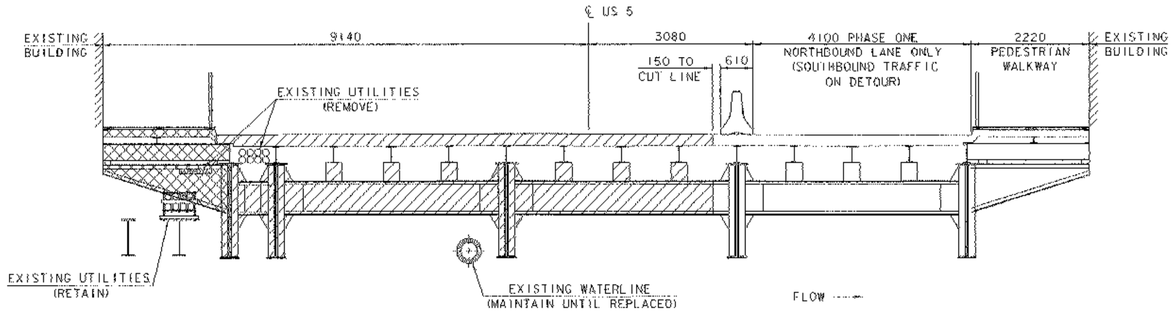
~~PHASE TWO TO PHASE THREE~~
ABUTMENT NO. 1
(LOOKING BACK STATION)
(ALONG CENTERLINE OF BEARING)

0 1 2 3 4 5
SCALE = 1:50

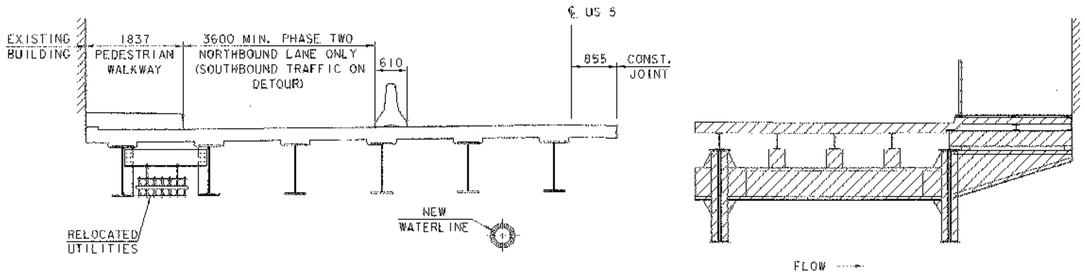
# ~~PHASE CONSTRUCTION~~ DETAILS AT ABUTMENT NO. 1

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |

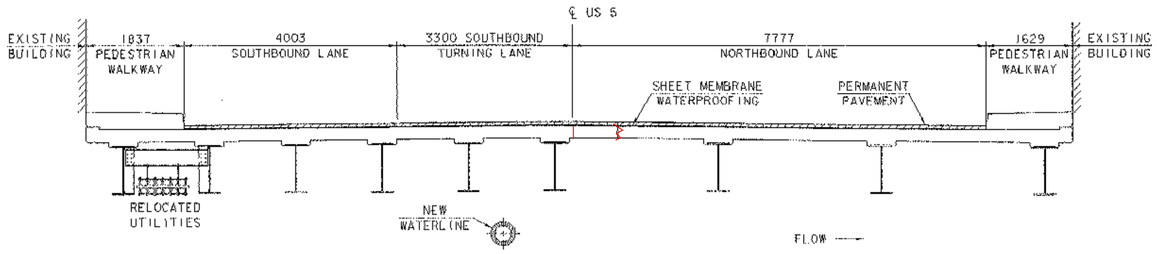
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| FILE NAME: 94j078\Structures\sj078pdd1.i | | PLOT DATE: | 06-FEB-2003 |
| PROJECT MANAGER: | R. R. WHITCOMB | DRAWN BY: | G. ROY |
| DESIGNED BY: | T. SUMNER | CHECKED BY: | T. SUMNER |
| | | SHEET | 6 OF 71 |




## PHASE ONE
## ABUTMENT NO. 2
(LOOKING FORWARD STATION)
(ALONG CENTERLINE OF BEARING)




## PHASE ONE TO PHASE TWO
## ABUTMENT NO. 2
(LOOKING FORWARD STATION)
(ALONG CENTERLINE OF BEARING)




## PHASE TWO TO PHASE THREE
## ABUTMENT NO. 2
(LOOKING FORWARD STATION)
(ALONG CENTERLINE OF BEARING)

## ~~PHASE CONSTRUCTION~~ NOTES

ALL DIMENSIONS ARE ALONG CENTERLINE OF BEARING.

PHASE ONE: PLACE TEMPORARY BARRIER AT THE LOCATION SHOWN TO MAINTAIN ONE-WAY TRAFFIC. DIRECT NORTHBOUND TRAFFIC TO DOWNSTREAM SIDE OF BRIDGE. MAINTAIN PEDESTRIAN TRAFFIC ON DOWNSTREAM SIDE OF BRIDGE AND SOUTHBOUND TRAFFIC ON DETOUR. CUT EXISTING DECK AT THE LOCATION SHOWN AND REMOVE PORTION OF EXISTING BRIDGE INDICATED BY THE HATCH LINES. WITH TRAFFIC IN PHASE ONE CONDITION, CONSTRUCT NEW BRIDGE SECTION ONE TO CONSTRUCTION JOINT AS SHOWN AND INSTALL DRAINAGE AT 10+71 LT.

PHASE TWO: RESET TEMPORARY BARRIER AS SHOWN AND MOVE NORTHBOUND TRAFFIC TO THE UPSTREAM SIDE OF BRIDGE. MAINTAIN PEDESTRIAN TRAFFIC ON UPSTREAM SIDE OF BRIDGE. REMOVE REMAINING PORTION OF EXISTING BRIDGE INDICATED BY THE HATCH LINES. WITH TRAFFIC IN PHASE TWO CONDITION, CONSTRUCT NEW BRIDGE SECTION TWO AS SHOWN. RELOCATE UTILITIES TO NEW LOCATION UNDER BRIDGE SECTION TWO AS SHOWN AND COMPLETE DRAINAGE NORTH OF BRIDGE.

PHASE THREE: REMOVE TEMPORARY BARRIER. PLACE SHEET MEMBRANE AND PAVEMENT. REDIRECT TRAFFIC AS SHOWN TO HAVE TWO SOUTHBOUND TRAVEL LANES AND ONE NORTHBOUND TRAVEL LANE. ALLOW PEDESTRIAN TRAFFIC TO USE BOTH SIDEWALKS ON BRIDGE.

INDICATES REMOVAL OF EXISTING BRIDGE DECK.

INDICATES EXISTING SIDEWALK AND BRACING REMOVED BY PREVIOUS CONTRACT WITH VERIZON.

0 1 2 3 4 5
SCALE = 1:50

## ~~PHASE CONSTRUCTION~~ DETAILS AT ABUTMENT NO. 2

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sj078pcd2.j PLOT DATE: 06-FEB-2003
PROJECT MANAGER: R.R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: T. SUMNER CHECKED BY: T. SUMNER
SHEET 7 OF 71

## GPS CONTROL POINTS

**RIVERVIEW**
STATION MARK IS A SURVEY DISK SET ONTO A BRIDGE ABUTMENT.
THE MARK IS STAMPED RIVERVIEW 1996.

APPROX. LATITUDE: 425105 N
APPROX. LONGITUDE: 0723325 W
APPROX. ELEVATION: 235 FT

**LOCATION:**
BRATTLEBORO, VT

TO REACH FROM THE JUNCTION OF VT ROUTE 9 AND VT ROUTE 119 IN BRATTLEBORO, PROCEED EASTERLY ALONG VT ROUTE 119 FOR 0.10 MI (0.16 KM) TO A BRIDGE OVER THE CONNECTICUT RIVER AND THE MARK IS ON THE LEFT. THE MARK IS SET ON THE NORTH SIDE OF THE WESTERLY ABUTMENT BEFORE THE WOODEN WALK. IT IS 14.4 FT (4.4 M) NNW OF THE CENTERLINE OF VT ROUTE 119, 14.4 FT (4.4 M) ENE OF POLE 172 AND 8.4 FT (2.6 M) SSE OF THE SOUTHEAST CORNER OF A BUILDING (RIVERVIEW RESTAURANT).

**NORMS MARINA**
STATION MARK IS A SURVEY DISK SURROUNDED BY A MASS OF CONCRETE.
THE MARK IS STAMPED NORMS MARINA 1996.

APPROX. LATITUDE: 425052 N
APPROX. LONGITUDE: 0723257 W
APPROX. ELEVATION: 200 FT

**LOCATION:**
HINESDALE, NH

TO REACH FROM THE JUNCTION OF VT ROUTE 9 AND VT ROUTE 119 IN BRATTLEBORO, PROCEED EASTERLY ALONG VT ROUTE 119 CROSSING OVER THE CONNECTICUT RIVER FOR 0.5 MI (0.8 KM). TURN RIGHT AT NORMS MARINA AND PROCEED SOUTHERLY, TO THE RIGHT OF AN AUTO BODY SHOP AND ALONG THE CONNECTICUT RIVER TO THE MARK ON THE RIGHT. THE MARK IS SET IN THE TOP OF THE NORTHWEST CORNER OF A 4 FT (1.2 M) X 4 FT (1.2 M) X 4 FT (1.2 M) CONCRETE MASS FOR BOAT DOCKS. IT IS THE SECOND CONCRETE PAD SOUTH OF A PAVED BOAT LAUNCH. IT IS LOCATED 42 FT (12.8 M) SOUTH OF A 18 INCH MAPLE AND 33 FT (10.1 M) NORHTWEST OF A 12 INCH WHITE BIRCH.

**K51**
STATION MARK IS A SURVEY DISK SET ONTO CONCRETE RETAINING WALL.
THE MARK IS STAMPED NORMS K51.

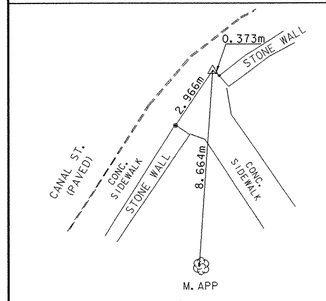
NORTHING: 38975.346
EASTING: 495265.874
ELEVATION: 78.230 m

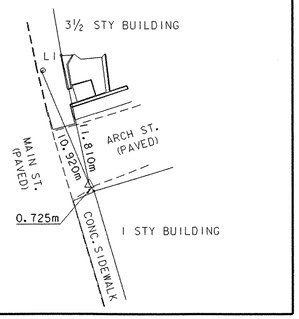
**LOCATION:**
BRATTLEBORO, VT

THE MARK IS 37 M (121.4 FT) NORTHWEST OF THE INTERSECTION OF U.S. ROUTE 5 AND VT ROUTES 119 AND 142, SET IN THE TOP OF A CONCRETE RETAINING WALL AT THE NORTH EDGE OF A PARKING LOT FOR THE BROOKSIDE PLAZA SHOPPING CENTER. IT IS 8.8 M (28.9 FT) WEST OF POLE NO. 1 B (WITH LUMEN), 27.6 M (90.6 FT) WEST OF THE SOUTHWEST CORNER OF THE U.S. ROUTE 5 BRIDGE OVER WHETSTONE BROOK, 0.5 M (1.6 FT) SOUTH OF THE WEST END OF A WROUGHT IRON FENCE, AND 0.3 M (1.0 FT) HIGHER THAN THE PARKING LOT. NOTE--PART OF THE RETAINING WALL NEAR THE MARK IS SEVERELY CRACKED.

## TRAVERSE TIES

| TRAV. PT. 3 | TRAV. PT. 4 |
|---|---|
| N = 38962.0462 | N = 39021.3885 |
| E = 495317.2681 | E = 495299.4659 |
| Z = 77.260 | Z = 77.895 |




## ALIGNMENT TIES

| ML 1 POB | ML 1 PC | ML 1 PT | ML 1 PI | ML 1 POE |
|---|---|---|---|---|
| STA. 10+000.000 | STA. 10+031.350 | STA. 10+047.268 | STA. 10+066.745 | STA. 10+110.000 |
| N = 38936.3120 | N = 38963.3628 | N = 38978.6475 | N = 38996.2600 | N = 39038.2019 |
| E = 495290.0660 | E = 495305.9121 | E = 495306.5910 | E = 495298.2750 | E = 495287.6988 |

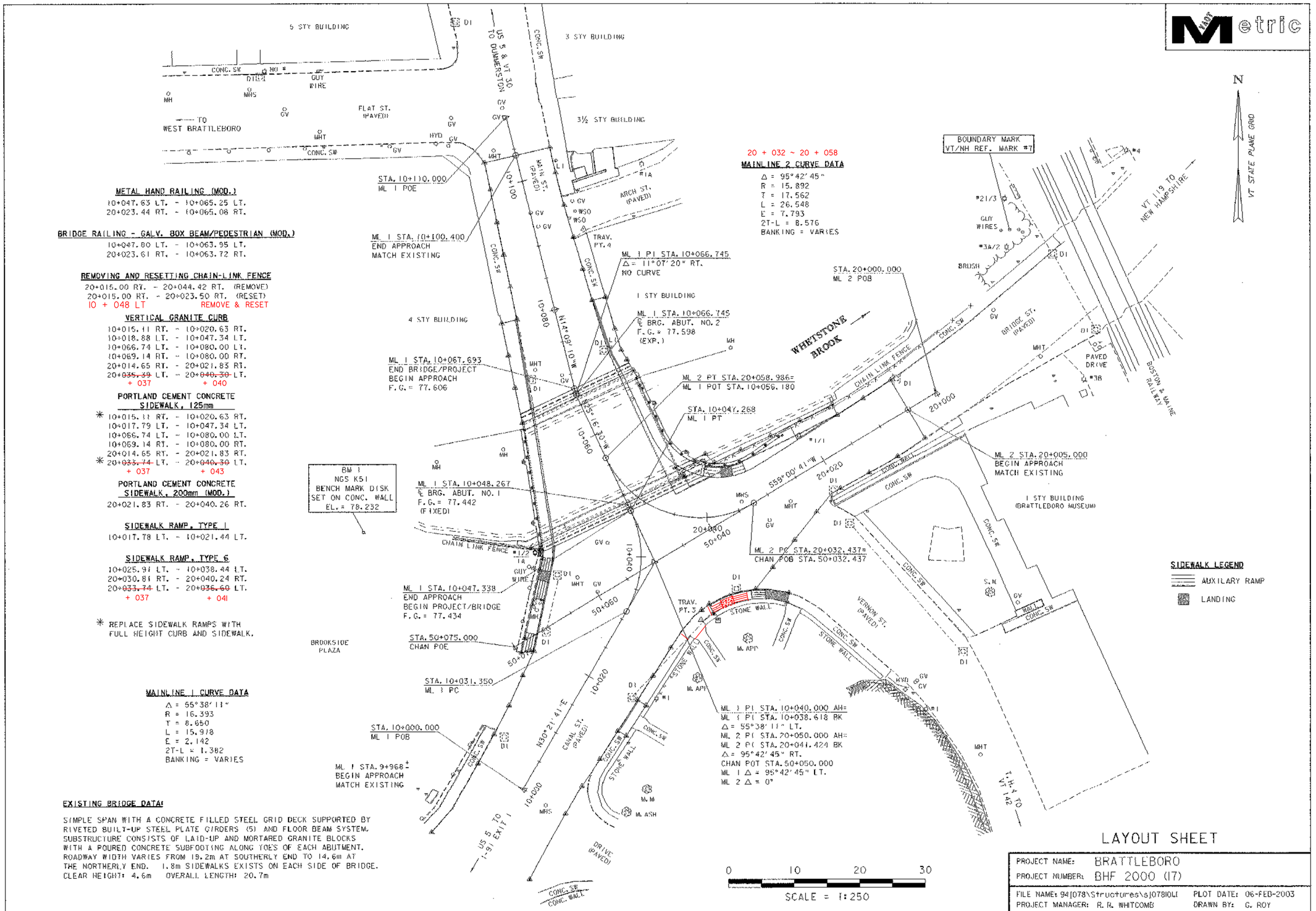
| ML 2 POB | ML 2 PC | ML 2 PT |
|---|---|---|
| STA. 20+000.000 | STA. 20+032.437 | STA. 20+058.986 |
| N = 38996.5690 | N = 38979.8678 | N = 38986.7062 |
| E = 495353.1470 | E = 495325.3390 | E = 495302.7856 |

# TIE SHEET

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sj078tie.i
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 06-FEB-2003
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER

Metric




**METAL HAND RAILING (MOD.)**
10+047.63 LT. - 10+065.25 LT.
20+023.44 RT. - 10+065.08 RT.

**BRIDGE RAILING - GALV. BOX BEAM/PEDESTRIAN (MOD.)**
10+047.80 LT. - 10+063.95 LT.
20+023.61 RT. - 10+063.72 RT.

**REMOVING AND RESETTING CHAIN-LINK FENCE**
20+015.00 RT. - 20+044.42 RT. (REMOVE)
20+015.00 RT. - 20+023.50 RT. (RESET)
10 + 048 LT REMOVE & RESET

**VERTICAL GRANITE CURB**
10+015.11 RT. - 10+020.63 RT.
10+018.88 LT. - 10+047.34 LT.
10+066.74 LT. - 10+080.00 LT.
10+069.14 RT. - 10+080.00 RT.
20+014.65 RT. - 20+021.83 RT.
20+~~035.39~~ LT. - 20+~~040.30~~ LT.
+ 037 + 040

**PORTLAND CEMENT CONCRETE SIDEWALK, 125mm**
* 10+015.11 RT. - 10+020.63 RT.
10+017.79 LT. - 10+047.34 LT.
10+066.74 LT. - 10+080.00 LT.
10+069.14 RT. - 10+080.00 RT.
20+014.65 RT. - 20+021.83 RT.
* 20+~~033.74~~ LT. - 20+~~040.30~~ LT.
+ 037 + 043

**PORTLAND CEMENT CONCRETE SIDEWALK, 200mm (MOD.)**
20+021.83 RT. - 20+040.26 RT.

**SIDEWALK RAMP, TYPE I**
10+017.78 LT. - 10+021.44 LT.

**SIDEWALK RAMP, TYPE G**
10+025.91 LT. - 10+038.44 LT.
20+030.81 RT. - 20+040.24 RT.
20+~~033.74~~ LT. - 20+~~036.60~~ LT.
+ 037 + 041

* REPLACE SIDEWALK RAMPS WITH FULL HEIGHT CURB AND SIDEWALK.

**MAINLINE 1 CURVE DATA**
Δ = 55°38'11"
R = 16.393
T = 8.650
L = 15.918
E = 2.142
2T-L = 1.382
BANKING = VARIES

**20 + 032 ~ 20 + 058**
**MAINLINE 2 CURVE DATA**
Δ = 95°42'45"
R = 15.892
T = 17.562
L = 26.548
E = 7.793
2T-L = 8.576
BANKING = VARIES

**EXISTING BRIDGE DATA:**

SIMPLE SPAN WITH A CONCRETE FILLED STEEL GRID DECK SUPPORTED BY RIVETED BUILT-UP STEEL PLATE GIRDERS (5) AND FLOOR BEAM SYSTEM. SUBSTRUCTURE CONSISTS OF LAID-UP AND MORTARED GRANITE BLOCKS WITH A POURED CONCRETE SUBFOOTING ALONG TOES OF EACH ABUTMENT. ROADWAY WIDTH VARIES FROM 19.2m AT SOUTHERLY END TO 14.6m AT THE NORTHERLY END. 1.8m SIDEWALKS EXISTS ON EACH SIDE OF BRIDGE. CLEAR HEIGHT: 4.6m OVERALL LENGTH: 20.7m

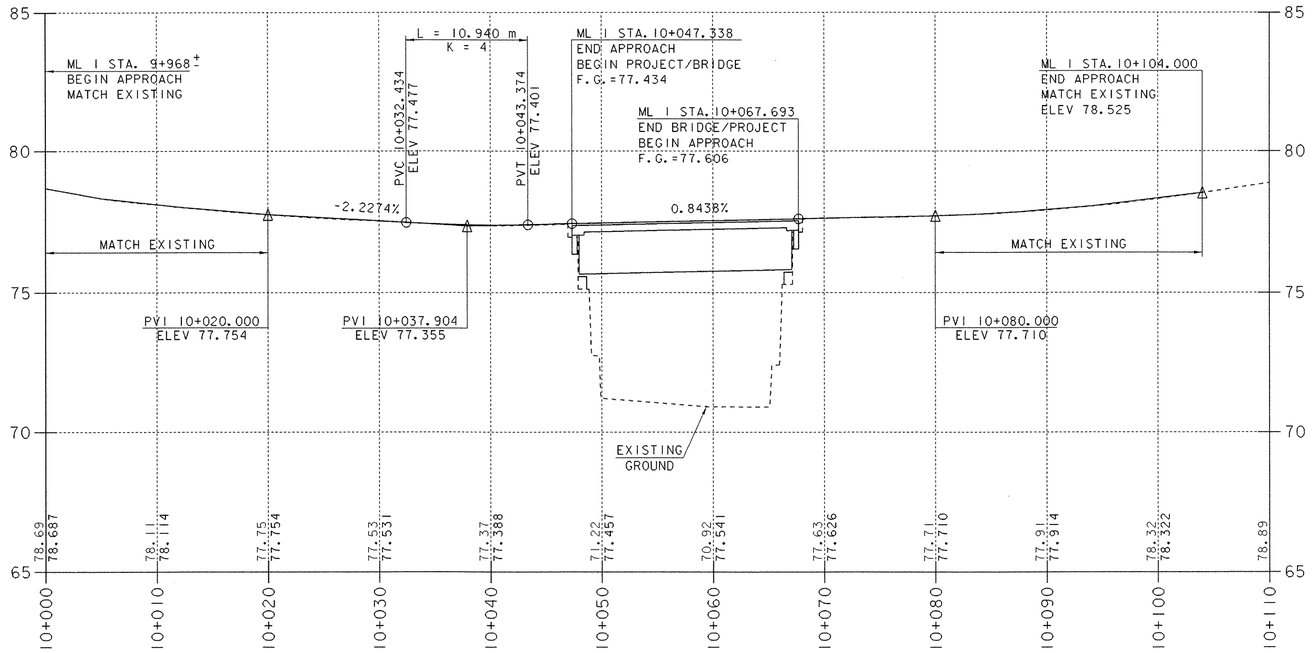
**SIDEWALK LEGEND**
AUXILARY RAMP
LANDING

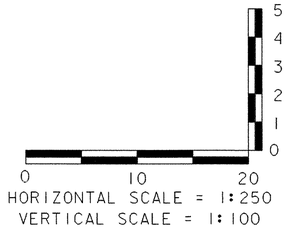
# LAYOUT SHEET

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |
| FILE NAME: 94I078\Structures\sI078I01.I | PLOT DATE: 06-FEB-2003 |
| PROJECT MANAGER: R. R. WHITCOMB | DRAWN BY: G. ROY |
| DESIGNED BY: G. ROY | CHECKED BY: T. SUMNER |
| | SHEET 9 OF 71 |

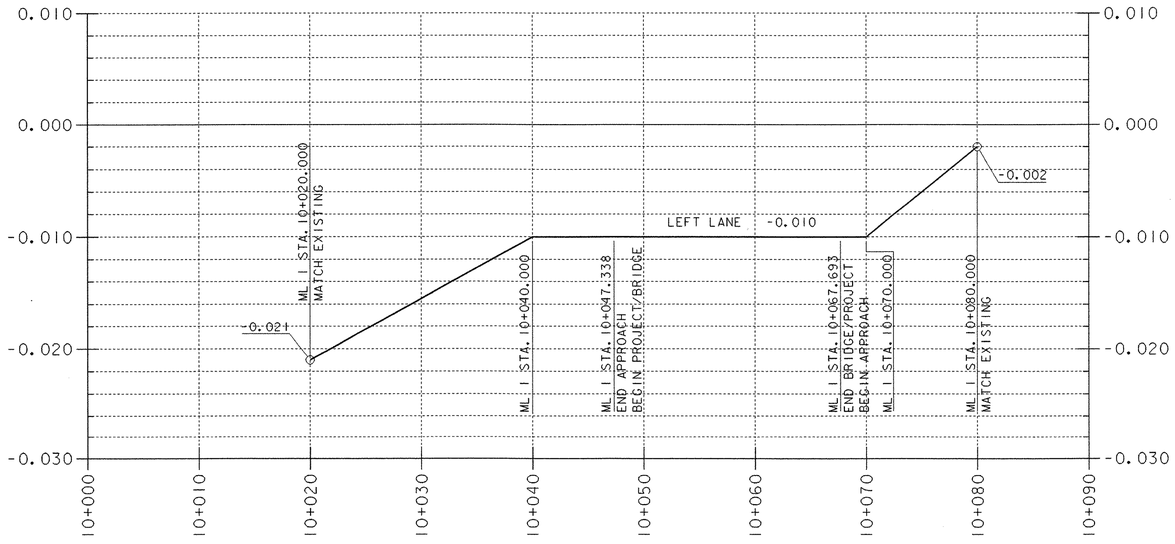
Metric

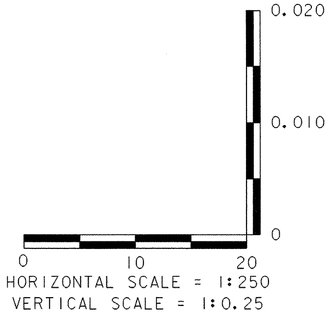
# Profile Along Centerline Canal St. to Main St.




NOTE:
ELEVATIONS TO THE NEAREST HUNDREDTH ARE EXISTING GROUND ALONG PROPOSED CENTERLINE.
ELEVATIONS TO THE NEAREST THOUSANDTH ARE FINISH GRADE ALONG PROPOSED CENTERLINE.




# Banking Diagram For Left Travel Lane - Canal St. to Main St.

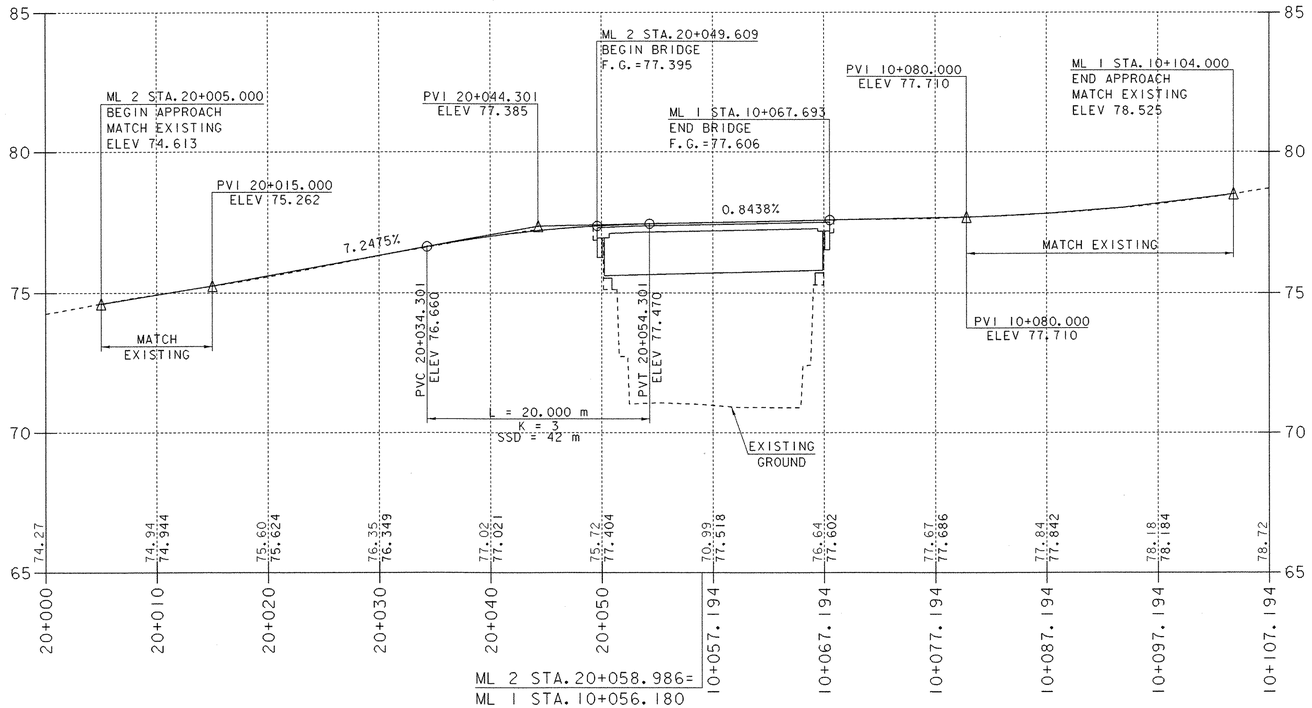
## PROFILE & BANKING DIAGRAM (1)

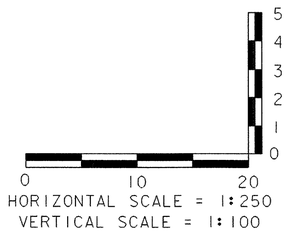
| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |

| | | | |
|---|---|---|---|
| FILE NAME: 94J078\Structures\sj078pf1.i | | PLOT DATE: 06-FEB-2003 | |
| PROJECT MANAGER: R. R. WHITCOMB | | DRAWN BY: G. ROY | |
| DESIGNED BY: G. ROY | | CHECKED BY: T. SUMNER | |
| | | SHEET 10 OF 71 | |

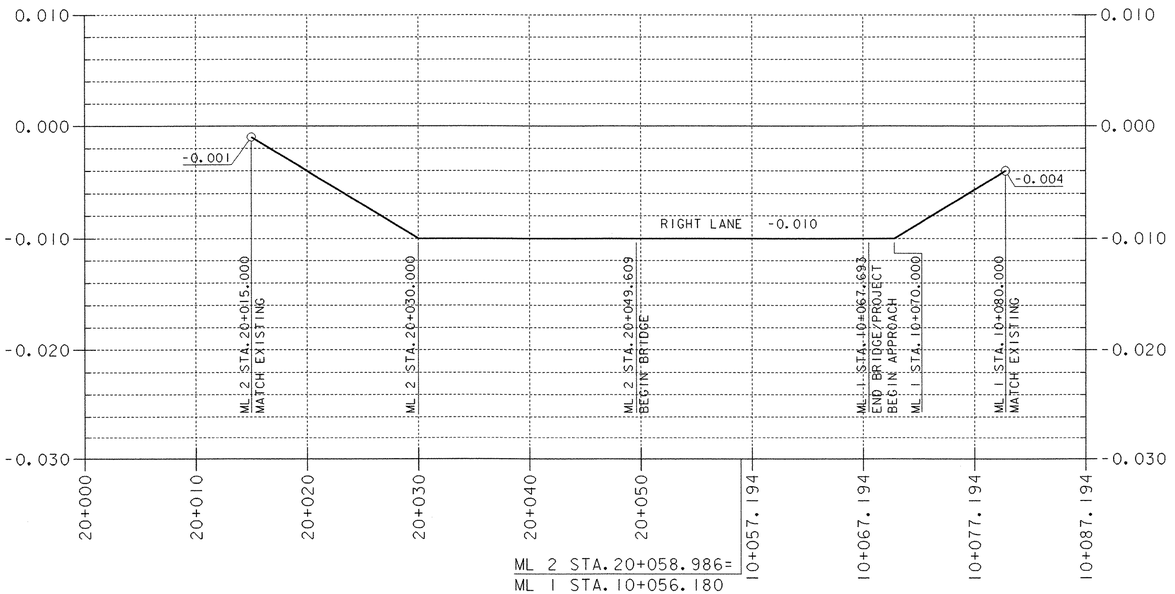
Metric

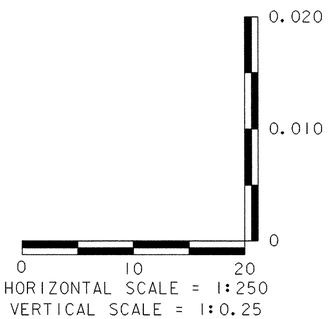
# Profile Along Centerline Bridge St. to Main St.




NOTE:
ELEVATIONS TO THE NEAREST HUNDREDTH ARE EXISTING GROUND ALONG PROPOSED CENTERLINE.
ELEVATIONS TO THE NEAREST THOUSANDTH ARE FINISH GRADE ALONG PROPOSED CENTERLINE.




Banking Diagram For Right Travel Lane - Bridge St. to Main St.

## PROFILE & BANKING DIAGRAM (2)

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |

| | | | |
|---|---|---|---|
| FILE NAME: 94j078\Structures\sj078pf2.i | | PLOT DATE: | 06-FEB-2003 |
| PROJECT MANAGER: | R. R. WHITCOMB | DRAWN BY: | G. ROY |
| DESIGNED BY: | G. ROY | CHECKED BY: | T. SUMNER |
| | | SHEET | 11 OF 71 |

Metric

## REMOVAL OF EXISTING PAVEMENT MARKINGS

10+027.6 RT.
20+011.6 RT.
① S. MAIN ST. (2 EA.)
② CANAL ST. (2 EA.)

20+014.2 RT.

① S. MAIN ST.
② CANAL ST. (2 EA)

10+012.8 CL.
10+027.6 RT.
① S. MAIN ST.

② CANAL ST. (2 EA.)

10+030.8 RT.

20+013.4 CL.

20+036.5 RT. (2 EA.)

PAVEMENT MARKINGS ALREADY WARN OFF

9+980.0 RT. - 10+030.3 LT. CENTER LINE
20+014.8 LT. - 20+038.9 LT. CENTER LINE
① S. MAIN ST. 6.2m CENTER LINE
② CANAL ST. 10.0m CENTERLINE

10+010.0 RT. - 10+039.3 RT. TRAVEL LANE
20+010.6 RT. - 20+039.3 RT. TRAVEL LANE
① S. MAIN ST. 6.2m TRAVEL LANE
② CANAL ST. 10.0m TRAVEL LANE

19+986.1 RT. - 20+016.2 RT. EDGE LINE

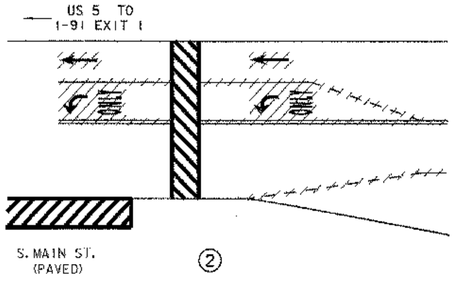
9+980.0 LT. - 10+009.6 LT. DOTTED LINE
9+985.5 RT. - 10+010.0 RT. DOTTED LINE

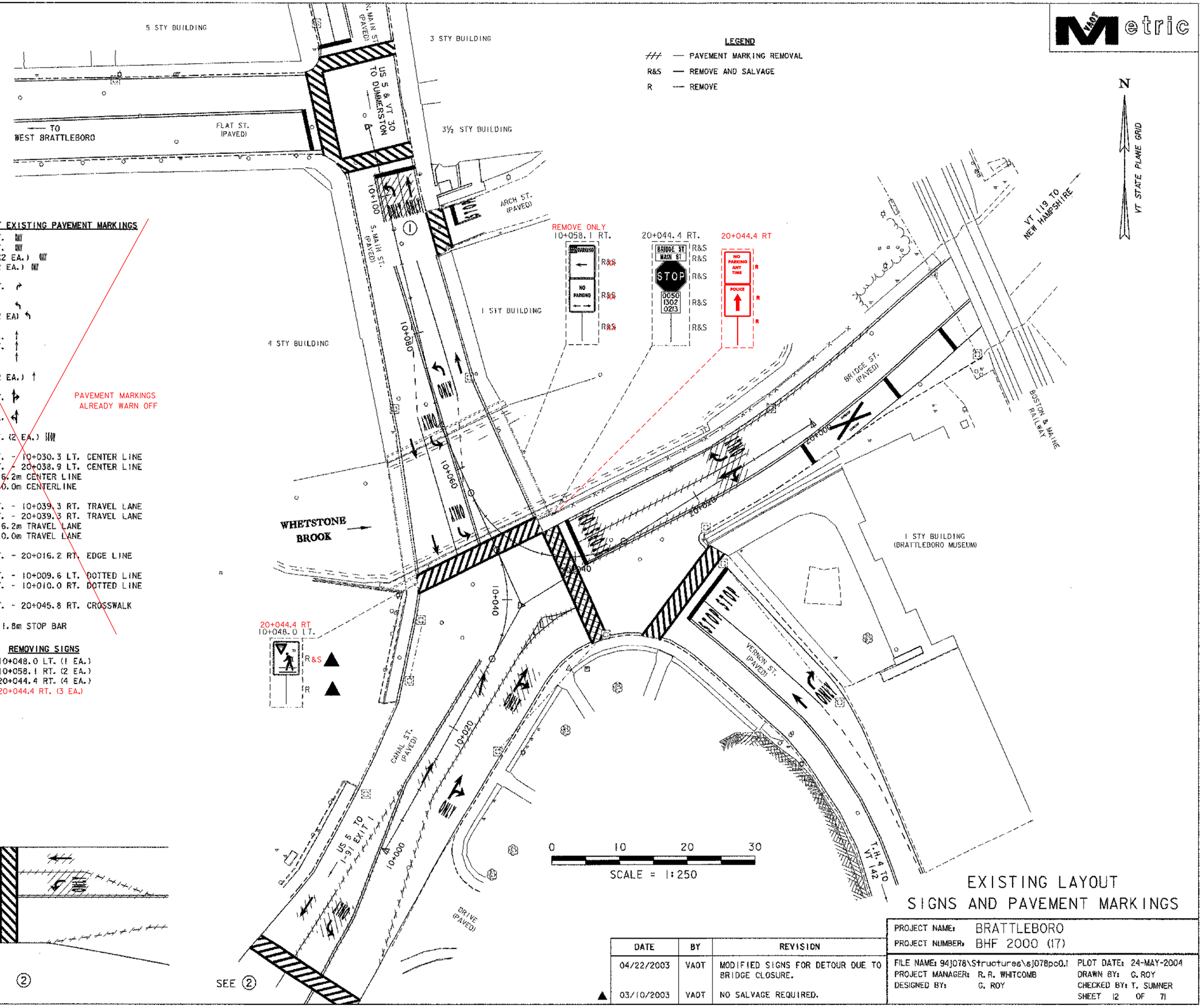
20+037.8 LT. - 20+045.8 RT. CROSSWALK

① S. MAIN ST. 1.8m STOP BAR

## REMOVING SIGNS

10+048.0 LT. (1 EA.)
10+058.1 RT. (2 EA.)
20+044.4 RT. (4 EA.)
20+044.4 RT. (3 EA.)




## REMOVING SIGNS

10+048.0 LT. (1 EA.)
10+058.1 RT. (2 EA.)
20+044.4 RT. (4 EA.)
20+044.4 RT. (3 EA.)

# EXISTING LAYOUT SIGNS AND PAVEMENT MARKINGS

| DATE | BY | REVISION |
|---|---|---|
| 04/22/2003 | VAOT | MODIFIED SIGNS FOR DETOUR DUE TO BRIDGE CLOSURE. |
| 03/10/2003 | VAOT | NO SALVAGE REQUIRED. |

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sj078pc0.1 PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: C. ROY
DESIGNED BY: C. ROY CHECKED BY: T. SUMNER
SHEET 12 OF 71

Metric

**TEMPORARY TRAFFIC BARRIER**
10+029.7 LT. - 20+014.9 RT.

**TEMPORARY 100mm YELLOW LINE**
9+980.0 LT. - 10+011.6 LT. (DOUBLE)
20+003.2 LT. - 20+037.8 LT. (DOUBLE)
② CANAL ST. 10.4m (DOUBLE)

**TEMPORARY 100mm WHITE LINE**
9+984.4 RT. - 10+016.7 RT. TRAVEL LANE
10+019.1 LT. - 10+029.7 LT. EDGE LINE
10+090.0 RT. - 10+102.6 RT. EDGE LINE
19+986.1 RT. - 20+021.2 RT. EDGE LINE
② CANAL ST. 13.7m DOTTED LINE

**TEMPORARY 600mm STOP BAR**
20+038.2 LT. - 20+038.8 LT.

**TEMPORARY CROSSWALK WITH DIAGONAL LINES**
10+017.7 LT. - 10+017.7 RT.
20+005.2 RT. - 20+023.5 LT.

**TEMPORARY LETTERS OR SYMBOLS**
9+985.2 LT.
~~10+003.7 LT.~~

~~9+985.0 RT.~~
9+988.6 LT.
10+007.1 LT.

9+991.5 LT.
10+010.1 RT.

~~9+988.3 RT.~~

20+036.1 CL.

**ERECTING SALVAGED SIGNS**
20+036.7 RT. (4 EA.)

**SETTING SALVAGED POSTS**
~~20+036.7 RT. (1 EA.)~~

~~PORTLAND CEMENT CONCRETE SIDEWALK, 125mm~~
~~10+015.11 RT. - 10+020.63 RT.~~

**SIDEWALK RAMP, TYPE 6**
10+015.11 RT. - 10+020.63 RT.
MADE WITH HOT MIX (TEMP.)

**TRAFFIC SIGNS, TYPE A**
9+984.8 RT. (1 EA.)
10+015.8 RT. (2 EA.)
10+019.0 LT. (2 EA.)
10+096.5 RT. (1 EA.)
10+101.7 RT. (1 EA.)
20+006.3 LT. (2 EA.)
20+007.6 LT. (2 EA.)
20+035.0 LT. (2 EA.)

NOTE:
CONTRACTOR SHALL INSTALL SIDEWALK DETOUR SIGNS SHOWN ON CONSTRUCTION SIGN DETAIL (2) AS NEEDED TO REDIRECT PEDESTRIAN TRAFFIC AROUND BRIDGE PROJECT.

**LEGEND**
⊗ — REFLECTORIZED PLASTIC DRUMS (SEE STD. E-106M)
— TYPE III BARRICADES (SEE STD. E-107AM)
— TYPE III BARRICADES (MOD.) (SEE STD. E-107AM)
— TEMPORARY TRAFFIC BARRIER (SEE STD. G-18M)
— ENERGY ABSORPTION ATTENUATOR FOR 55km/h DESIGN SPEED
— SNOW FENCE
S — SALVAGE
N — NEW

N
VT STATE PLANE GRID

5 STY BUILDING
3 STY BUILDING
3½ STY BUILDING
1 STY BUILDING
4 STY BUILDING
1 STY BUILDING (BRATTLEBORO MUSEUM)
FLAT ST. (PAVED)
TO WEST BRATTLEBORO
US 5 & VT 30 TO DUMMERSTON
S. MAIN ST. (PAVED)
ARCH ST. (PAVED)
CANAL ST. (PAVED)
BRIDGE ST. (PAVED)
VERNON ST. (PAVED)
DRIVE (PAVED)
WHETSTONE BROOK
BOSTON & MAINE RAILWAY
VT 119 TO NEW HAMPSHIRE
T.H. 4 TO VT 142
US 5 TO I-91 EXIT 1
S. MAIN ST. (PAVED) ②
SEE ②

LOOKING SOUTH
LOOKING NORTH
SIDEWALK CLOSED AT BRIDGE USE DETOUR
SIDEWALK DETOUR
SIDEWALK
ROAD CLOSED
DETOUR
SIDEWALK CLOSED
SIDEWALK CLOSED CROSS HERE
BRIDGE CLOSED
ONE WAY
PLAZA ONLY
THRU TRAFFIC
STOP
BRIDGE ST. MAIN ST.
0050 1302 9213

10+101.7 RT.
10+096.5 RT.
20+036.7 RT.
20+006.3 RT.
20+007.6 LT.
10+019.0 LT.
10+015.8 RT.
20+035.0 LT.
9+984.8 RT.

3.05m
4.05m
20+020
20+040
10+080
10+060
10+040
10+020

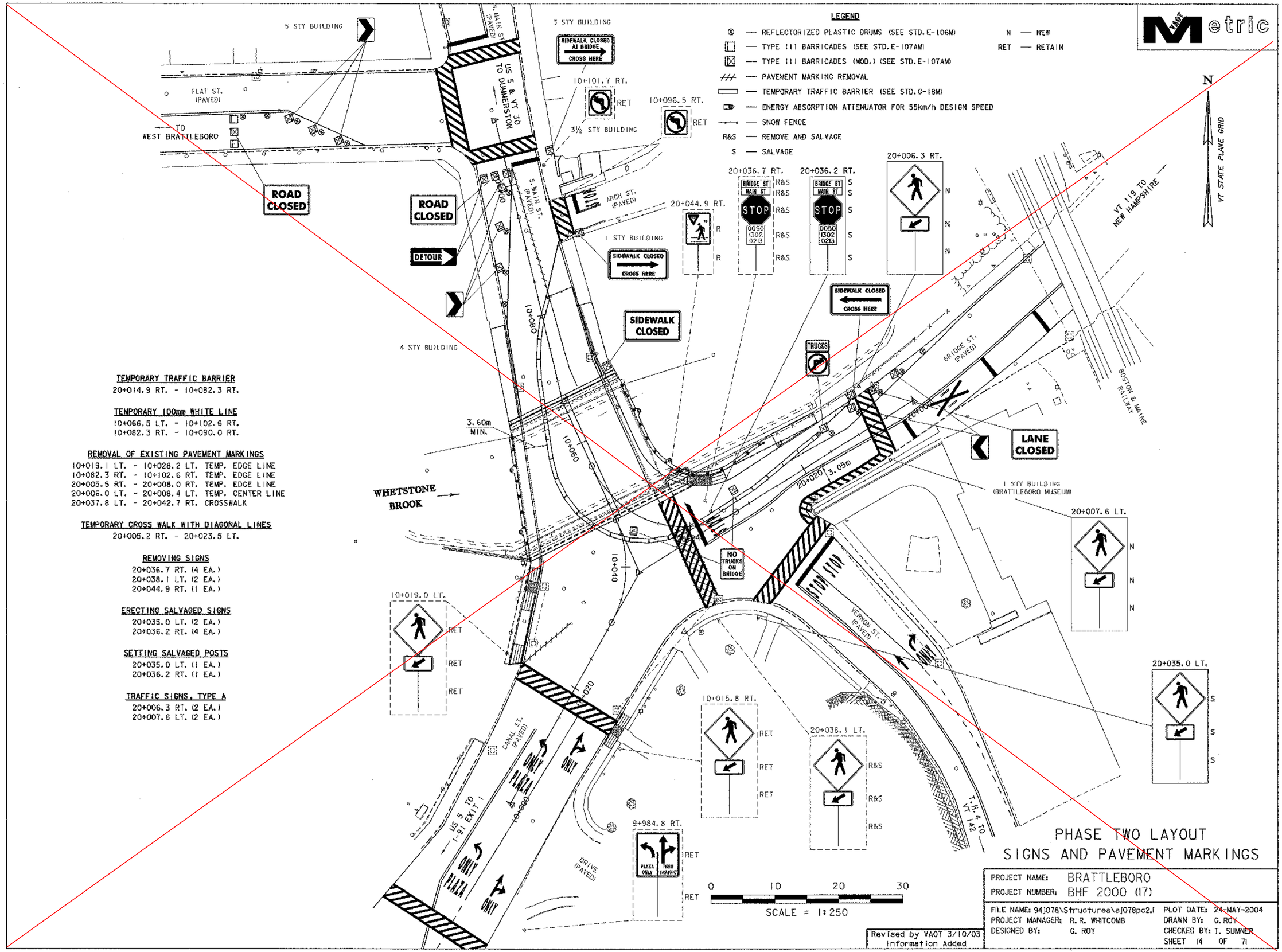
0 10 20 30
SCALE = 1:250

# CONSTRUCTION LAYOUT SIGNS AND PAVEMENT MARKINGS

| DATE | BY | REVISION |
|---|---|---|
| 04/22/2003 | VAOT | MODIFIED SIGNS FOR DETOUR DUE TO BRIDGE CLOSURE. |
| 03/10/2003 | VAOT | INFORMATION ADDED. |

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sj078pc1.i
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 24-MAY-2004
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 13 OF 71




**TEMPORARY TRAFFIC BARRIER**
20+014.9 RT. - 10+082.3 RT.

**TEMPORARY 100mm WHITE LINE**
10+066.5 LT. - 10+102.6 RT.
10+082.3 RT. - 10+090.0 RT.

**REMOVAL OF EXISTING PAVEMENT MARKINGS**
10+019.1 LT. - 10+028.2 LT. TEMP. EDGE LINE
10+082.3 RT. - 10+102.6 RT. TEMP. EDGE LINE
20+005.5 RT. - 20+008.0 RT. TEMP. EDGE LINE
20+006.0 LT. - 20+008.4 LT. TEMP. CENTER LINE
20+037.8 LT. - 20+042.7 RT. CROSSWALK

**TEMPORARY CROSS WALK WITH DIAGONAL LINES**
20+005.2 RT. - 20+023.5 LT.

**REMOVING SIGNS**
20+036.7 RT. (4 EA.)
20+038.1 LT. (2 EA.)
20+044.9 RT. (1 EA.)

**ERECTING SALVAGED SIGNS**
20+035.0 LT. (2 EA.)
20+036.2 RT. (4 EA.)

**SETTING SALVAGED POSTS**
20+035.0 LT. (1 EA.)
20+036.2 RT. (1 EA.)

**TRAFFIC SIGNS, TYPE A**
20+006.3 RT. (2 EA.)
20+007.6 LT. (2 EA.)

# PHASE TWO LAYOUT
# SIGNS AND PAVEMENT MARKINGS

Revised by VAOT 3/10/03
Information Added

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |
| FILE NAME: 94J078\Structures\sJ078pc2.i | PLOT DATE: 24-MAY-2004 |
| PROJECT MANAGER: R. R. WHITCOMB | DRAWN BY: G. ROY |
| DESIGNED BY: G. ROY | CHECKED BY: T. SUMNER |
| | SHEET 14 OF 71 |

Metric

## REMOVAL OF EXISTING PAVEMENT MARKINGS

~~19+986.1 RT. - 20+005.0 RT. TEMP. EDGE LINE~~

### DURABLE 100mm WHITE LINE

9+980.0 LT. - 10+028.7 LT. EDGE LINE
9+980.0 LT. - 9+990.7 LT. TRAVEL LANE
9+990.7 LT. - 10+009.6 LT. DOTTED LINE
9+985.5 RT. - 10+010.0 RT. DOTTED LINE
10+010.0 RT. - 10+036.7 RT. TRAVEL LANE
9+980.0 RT. - 20+035.4 LT. EDGE LINE
10+035.3 LT. - 10+104.5 LT. EDGE LINE
10+044.6 LT. - 10+068.7 LT. TRAVEL LANE
+046 10+~~057.3~~ LT. - 10+070.4 RT. DOTTED LINE
10+068.7 LT. - 10+~~081.6~~ LT. DOTTED LINE +090
10+070.4 RT. - 10+090.0 RT. TRAVEL LANE
20+003 ~~19+986.1~~ RT. - 20+034.1 RT. EDGE LANE
20+003 ~~20+007.0~~ RT. - 20+031.9 RT. TRAVEL LANE
20+041.0 RT. - 10+090.0 RT. EDGE LANE
① S. MAIN ST. 6.2m TRAVEL LANE
① S. MAIN ST. 6.2m EDGE LANE
② CANAL ST. 10.0m TRAVEL LANE
② CANAL ST. 10.0m EDGE LINE
20+003 - 20+021LT EDGELINE

### DURABLE 100mm YELLOW LINE

9+980.0 RT. - 10+030.3 LT. (DOUBLE)
10+045.7 LT. - 10+090.0 LT. (DOUBLE)
+003 20+~~005.0~~ LT. - 20+031.6 LT. (DOUBLE)
① S. MAIN ST. 6.2m (DOUBLE)
② CANAL ST. 10.0m (DOUBLE)

### DURABLE 600mm STOP BAR

20+031.3 LT. - 20+031.3 RT.
① S. MAIN ST. 6.2m

### DURABLE CROSSWALK WITH DIAGONAL LINES

10+028.4 LT. - 10+047.0 RT.
039 20+~~033.6~~ LT. - 20+036.2 RT.
④ CANAL ST. 17m
10+105 LT - RT

### REMOVING SIGNS

9+984.8 RT. (1 EA.)
10+015.8 RT. (2 EA.)
10+019.0 LT. (2 EA.)
10+096.5 RT. (1 EA.)
10+101.7 RT. (1 EA.)
20+006.3 RT. (2 EA.)
20+007.6 LT. (2 EA.)
20+036.2 RT. (4 EA.)

### DURABLE LETTERS OR SYMBOLS

10+009.7 RT. ONLY
10+027.6 RT. ONLY
10+051.2 LT. ONLY
10+067.8 LT. ONLY
10+071.4 RT. ONLY
20+008.3 RT. ONLY
~~① S. MAIN ST. (2 EA.) ONLY~~
② CANAL ST. (~~2 EA.~~) ONLY 1EA.

20+011.3 RT.

10+048.0 LT.
10+064.7 LT.
10+074.5 RT.
① S. MAIN ST.
② CANAL ST. (2 EA.)

10+012.8 CL.
10+027.6 RT.
10+048.3 LT.
10+065.4 LT.
10+074.0 RT.
① S. MAIN ST.
② CANAL ST. (2 EA.)

10+013.0 RT.
10+030.8 RT.

20+011.3 CL.

20+028.6 RT.
20+028.6 CL.

### ERECTING SALVAGED SIGNS

10+048.8 LT. (2 EA.)
10+057.4 RT. (2 EA.)
20+029.5 RT. (4 EA.)
20+032.6 RT. (2 EA.)

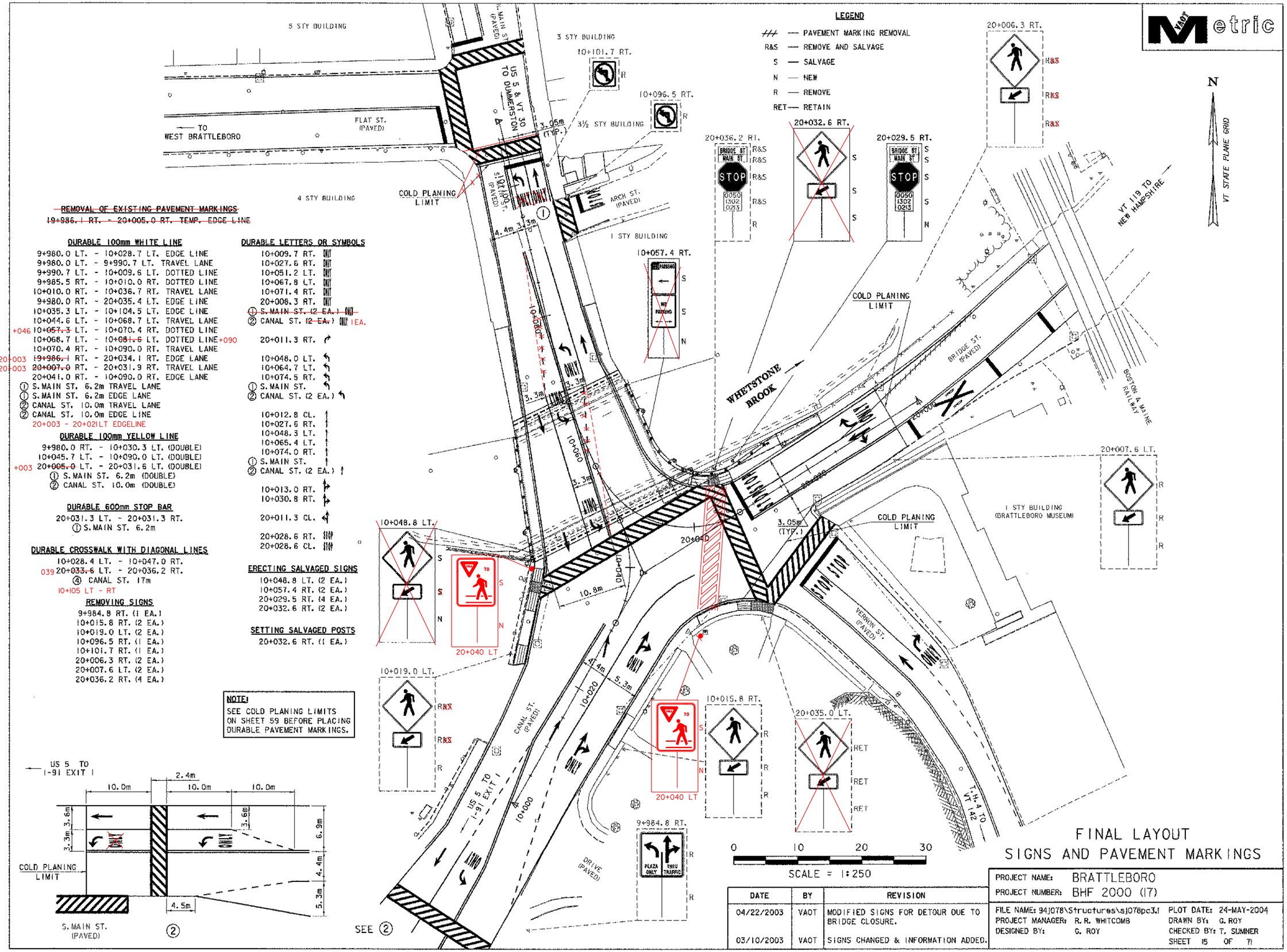
### SETTING SALVAGED POSTS

20+032.6 RT. (1 EA.)

**NOTE:**
SEE COLD PLANING LIMITS ON SHEET 59 BEFORE PLACING DURABLE PAVEMENT MARKINGS.

### LEGEND

/// — PAVEMENT MARKING REMOVAL
R&S — REMOVE AND SALVAGE
S — SALVAGE
N — NEW
R — REMOVE
RET — RETAIN







| DATE | BY | REVISION |
|---|---|---|
| 04/22/2003 | VAOT | MODIFIED SIGNS FOR DETOUR DUE TO BRIDGE CLOSURE. |
| 03/10/2003 | VAOT | SIGNS CHANGED & INFORMATION ADDED. |

# FINAL LAYOUT
# SIGNS AND PAVEMENT MARKINGS

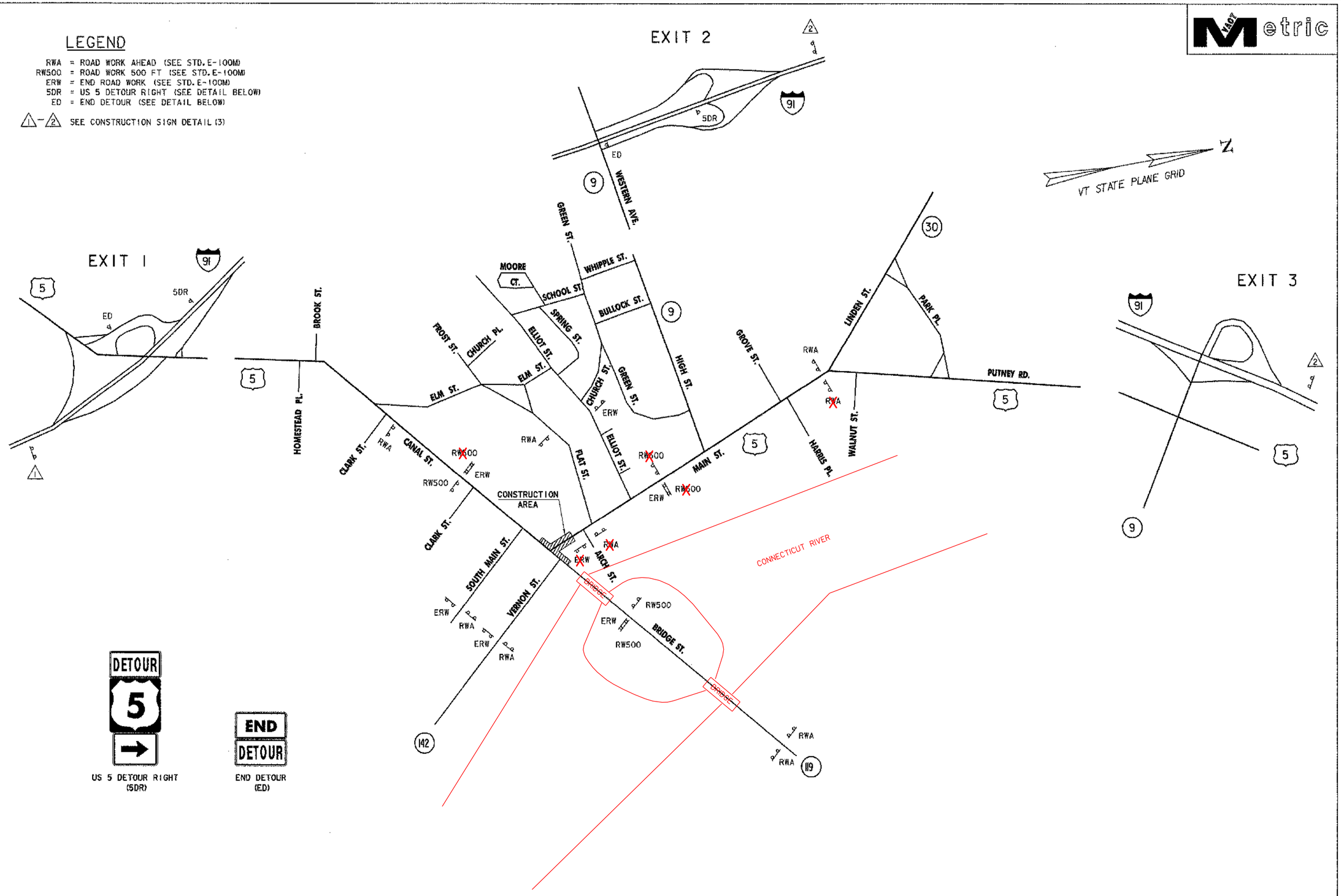
PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sj078pc3.1
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 24-MAY-2004
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 15 OF 71

## LEGEND

RWA = ROAD WORK AHEAD (SEE STD. E-100M)
RW500 = ROAD WORK 500 FT (SEE STD. E-100M)
ERW = END ROAD WORK (SEE STD. E-100M)
5DR = US 5 DETOUR RIGHT (SEE DETAIL BELOW)
ED = END DETOUR (SEE DETAIL BELOW)

1-2 SEE CONSTRUCTION SIGN DETAIL (3)







US 5 DETOUR RIGHT
(5DR)




END DETOUR
(ED)

# CONSTRUCTION APPROACH SIGNING

| DATE | BY | REVISION |
|---|---|---|
| 04/22/2003 | VAOT | MODIFIED SIGNS FOR DETOUR DUE TO BRIDGE CLOSURE. |

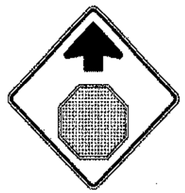
PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sj078cas1 PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
SHEET 16A OF 71

VAOT Metric

## LEGEND

| | |
|---|---|
| SA | = STOP AHEAD |
| NLT | = NO LEFT TURN |
| DNE | = DO NOT ENTER |
| WW | = WRONG WAY |
| OWL | = ONE WAT LEFT |
| OWR | = ONE WAY RIGHT |
| S3W | = STOP W/ 3-WAY PLAQUE |
| S3WDR | = STOP W/ 3-WAY PLAQUE/NORTH US 5 DETOUR RIGHT |
| S3WDL | = STOP W/ 3-WAY PLAQUE/NORTH US 5 DETOUR LEFT |
| EDT | = END DETOUR |
| N5DL | = NORTH US 5 DETOUR LEFT |
| N5DR | = NORTH US 5 DETOUR RIGHT |
| N5D | = NORTH US 5 DETOUR |
| N5ED | = NORTH US 5 END DETOUR |
| S5DL | = SOUTH US 5 DETOUR LEFT |
| S5DR | = SOUTH US 5 DETOUR RIGHT |
| S5D | = SOUTH US 5 DETOUR |
| N5DL/S5D | = NORTH US 5 DETOUR LEFT/SOUTH US 5 DETOUR |
| 5DL | = US 5 DETOUR LEFT |
| 5D | = US 5 DETOUR |
| DA5N | = DETOUR AHEAD NORTH US 5 |
| DA5S | = DETOUR AHEAD SOUTH US 5 |









































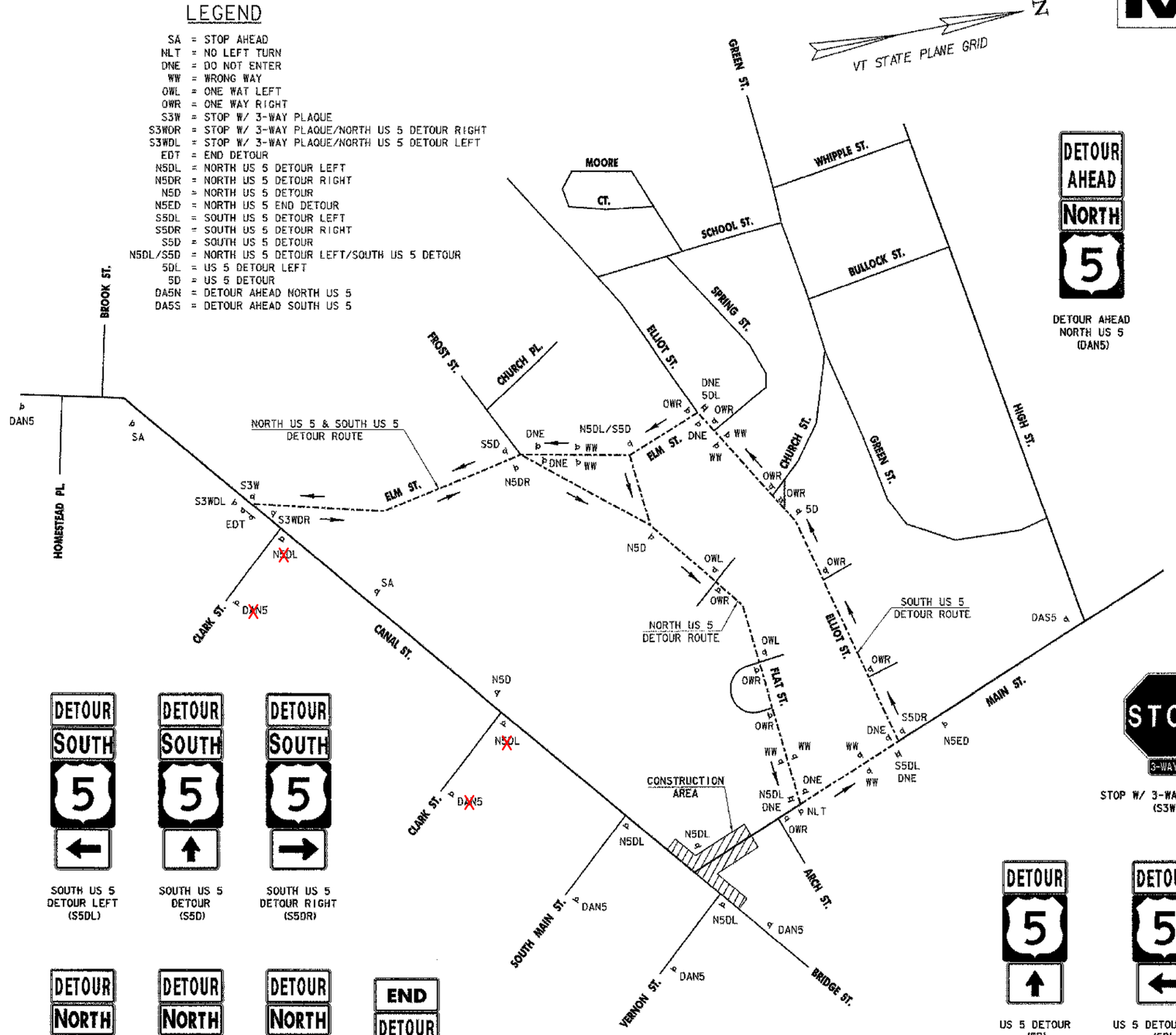


























# DETOUR SIGNING

| DATE | BY | REVISION |
|---|---|---|
| 04/22/2003 | VAOT | MODIFIED SIGNS FOR DETOUR DUE TO BRIDGE CLOSURE. |

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078ds.i
PROJECT MANAGER: R.R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 24-MAY-2004
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 16B OF 71

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**

# DETOUR SIGN SUMMARY SHEET (1)

VAOT Metric

| KILOMETER MARKER, STATION, OR SIGN NUMBER | SIGN LEGEND | SIGN DIMENSIONS EA | WIDTH (mm) | HEIGHT (mm) | NEW & SALVAGED SIGNS "A" | "B" | SALV SIGN | SALV TIS | EXIST POST RETAIN | SALVAGE | NEW SIGN POSTS NO. OF POSTS | FLANGED CHANNEL kg/m 1.7 | 3.0 | 4.5 | SQUARE STEEL (mm) kg/m 44 3.4 | 50 3.9 | 63 5.0 | ANCHOR | SLEEVE | TUBULAR ALUMINUM Ø (mm) kg/m 75 1.9 | 100 2.5 | 100 MOD 2.5 | TUBULAR STEEL Ø (mm) FOUNDATION | kg/m 75 11.3 | 89 13.4 | 100 16.1 | 125 21.7 | W-SHAPE STEEL FTG. SIZE 600 mm | 750 mm | WEIGHT | POST SIZE | SIGN FRAME REQUIRED | REMARKS | SIGN DETAIL DETAIL ON SHEET NUMBER | STD. SHEET NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | OPTION ITEMS | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5DR | DETOUR | 2 | 600 | 300 | 0.36 | | | | | | 2 | | | 8.85 | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | 5 | 2 | 600 | 600 | 0.72 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | → | 2 | 525 | 375 | 0.39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-1 | | E-136AM |
| ED | END | 2 | 600 | 300 | 0.36 | | | | | | 2 | | | 7.50 | | | | | | | | | | | | | | | | | | | | M4-6 | | E-140M |
| | DETOUR | 2 | 600 | 300 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ⚠1 | US 5/MAIN ST. BRIDGE CLOSED USE EXIT 1 TO VT 9 EAST FOR DOWNTOWN | 1 | 5200 | 1800 | | 9.36 | | | | | 2 | | | | | | | | | | | | 2 | | | ~~183.5~~ | | | | | | | SEE CONSTRUCTION SIGN DETAIL (3) | 26 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ⚠2 | US 5/MAIN ST. BRIDGE CLOSED USE EXIT 1 TO US 5 NORTH FOR CANAL ST. | 2 | 5200 | 1800 | | 18.72 | | | | | 4 | | | | | | | | | | | | 2<br>~~4~~ | | | 183.6*<br>~~367.1~~ | | | | | | | SEE CONSTRUCTION SIGN DETAIL (3) | 26 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SA | | 2 | 900 | 900 | 1.62 | | | | | | 2 | | | 9.46 | | | | | | | | | | | | | | | | | | | | W3-1A | | E-150M |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NLT | | 1 | 600 | 600 | 0.36 | | | | | | 1 | | | 3.75 | | | | | | | | | | | | | | | | | | | | R3-2 | | E-143M |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DNE | DO NOT ENTER | 8 | 750 | 750 | 4.50 | | | | | | 5 | | | 19.50 | | | | | | | | | | | | | | | | | | | | R5-1 | | E-143M |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WW | WRONG WAY | 8 | 900 | 600 | 4.32 | | | | | | 8 | | | 30.00 | | | | | | | | | | | | | | | | | | | | R5-1A | | E-143M |
| | | | | | | | | | | | | m | m | m<br>79.06 | m | m | m | | EA | kg | kg | kg | | kg | kg | kg<br>550.6 | kg | | | | | | | |
| **TOTALS** | | | | | $m^2$<br>12.99 | $m^2$<br>28.08 | EA. | $m^2$ | | | | m<br>79.06 | | | m | | | | | kg | | | EA.<br>6 | kg<br>550.6 | | | | EA. | EA. | kg | | | | | |

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S "SIGN POST DESIGN GUIDELINE."

* SEE CHANGE ORDER #2 DATED 7-9-03 FWR

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sj078tss2.dgn PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
REVISED BY VAOT 04/22/2003 SHEET 17 OF 71

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**

# DETOUR SIGN SUMMARY SHEET (2)

Metric

| KILOMETER MARKER, STATION, OR SIGN NUMBER | SIGN LEGEND | SIGN DIMENSIONS EA | WIDTH (mm) | HEIGHT (mm) | NEW & SALVAGED SIGNS "A" | "B" | SALV SIGN | SALV TIS | EXIST POST RETAIN | EXIST POST SALVAGE | NEW SIGN POSTS NO. OF POSTS | FLANGED CHANNEL kg/m 1.7 | FLANGED CHANNEL kg/m 3.0 | FLANGED CHANNEL kg/m 4.5 | SQUARE STEEL (mm) 44 kg/m 3.4 | SQUARE STEEL (mm) 50 kg/m 3.9 | SQUARE STEEL (mm) 63 kg/m 5.0 | ANCHOR | SLEEVE | TUBULAR ALUMINUM Ø (mm) 75 kg/m 1.9 | TUBULAR ALUMINUM Ø (mm) 100 kg/m 2.5 | TUBULAR ALUMINUM Ø (mm) 100 MOD kg/m 2.5 | TUBULAR STEEL Ø (mm) FOUNDATION | TUBULAR STEEL Ø (mm) 75 kg/m 11.3 | TUBULAR STEEL Ø (mm) 89 kg/m 13.4 | TUBULAR STEEL Ø (mm) 100 kg/m 16.1 | TUBULAR STEEL Ø (mm) 125 kg/m 21.7 | W-SHAPE STEEL FTG. SIZE 600 mm | W-SHAPE STEEL FTG. SIZE 750 mm | W-SHAPE STEEL WEIGHT | W-SHAPE STEEL POST SIZE | SIGN FRAME REQUIRED | REMARKS | SIGN DETAIL DETAIL ON SHEET NUMBER | SIGN DETAIL STD. SHEET NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | OPTION ITEMS | | | | | | | | | | | | | | | | | | | | | | | | |
| OWL | ONE WAY | 2 | 900 | 300 | 0.54 | | | | | | 2 | | 6.90 | | | | | | | | | | | | | | | | | | | | R6-1L | | E-142M |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OWR | ONE WAY | 10 | 900 | 300 | 2.70 | | | | | | 10 | | 34.50 | | | | | | | | | | | | | | | | | | | | R6-1R | | E-142M |
| S3W | STOP | 1 | 750 | 750 | 0.56 | | | | | | 1 | | | 4.05 | | | | | | | | | | | | | | | | | | | R1-1 | | E-143M |
| | 3-WAY | 1 | 300 | 150 | 0.05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) | 25 | |
| S3WDR | DETOUR | 1 | 600 | 300 | 0.18 | | | | | | 1 | | | 5.18 | | | | | | | | | | ~~1~~ | ~~72.1~~ | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | NORTH | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-1 | | E-136AM |
| | 5 | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | | 1 | 525 | 375 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-1 | | E-136AM |
| | STOP | 1 | 750 | 750 | 0.56 | | | | | | | | | | | | | | | | | | | | | | | | | | | | R1-1 | | E-143M |
| | 3-WAY | 1 | 300 | 150 | 0.05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) | 25 | |
| S3WDL | DETOUR | 1 | 600 | 300 | 0.18 | | | | | | 1 | | | 5.18 | | | | | | | | | | ~~1~~ | ~~72.1~~ | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | NORTH | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-1 | | E-136AM |
| | 5 | | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | | 1 | 525 | 375 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-1 | | E-136AM |
| | STOP | 1 | 750 | 750 | 0.56 | | | | | | | | | | | | | | | | | | | | | | | | | | | | R1-1 | | E-143M |
| | 3-WAY | 1 | 300 | 150 | 0.05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) | 25 | |
| | | | | | | | | | | | | m | m | m | m | m | m | | EA | kg | kg | kg | | kg | kg | kg | kg | | | | | | | |
| | | | | | | | | | | | | | 41.40 | 4.05 | | | | | | | | | | | 144.2 | | | | | | | | | | |
| **TOTALS** | | | m² 6.91 | m² | EA. | m² | | | | | | m 45.45 | | | m | | | | | kg | | | EA. 2 | kg 144.2 | | | | EA. | EA. | kg | | | | |

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S "SIGN POST DESIGN GUIDELINE."

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078tss3.J PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
REVISED BY VAOT 04/22/2003 SHEET 18 OF 71

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**

# DETOUR SIGN SUMMARY SHEET (3)

VAOT Metric

| KILOMETER MARKER, STATION, OR SIGN NUMBER | SIGN LEGEND | SIGN DIMENSIONS EA | WIDTH (mm) | HEIGHT (mm) | NEW & SALVAGED SIGNS "A" | "B" | SALV SIGN | SALV TIS | EXIST POST RETAIN | EXIST POST SALVAGE | NEW SIGN POSTS NO. OF POSTS | FLANGED CHANNEL kg/m 1.7 | 3.0 | 4.5 | SQUARE STEEL (mm) kg/m 44 3.4 | 50 3.9 | 63 5.0 | ANCHOR | SLEEVE | TUBULAR ALUMINUM Ø (mm) kg/m 75 1.9 | 100 2.5 | 100 MOD 2.5 | TUBULAR STEEL Ø (mm) FOUNDATION | kg/m 75 11.3 | 89 13.4 | 100 16.1 | 125 21.7 | W-SHAPE STEEL FTG. SIZE 600 mm | 750 mm | WEIGHT | POST SIZE | SIGN FRAME REQUIRED | REMARKS | SIGN DETAIL DETAIL ON SHEET NUMBER | STD. SHEET NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | OPTION ITEMS | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDT | END | 1 | 600 | 300 | 0.18 | | | | | | 2 | | | | | | | | | | | | 2 | 186.5 | | | | | | | | X | M4-6 | | E-140M |
| | DETOUR | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) | 25 | |
| | NORTH | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-1 | | E-136AM |
| | 5 | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | ← | 1 | 525 | 375 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-1 | | E-136AM |
| | TO | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M4-5 | | E-136BM |
| | EAST | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-2 | | E-136BM |
| | VERMONT 119 | 1 | 750 | 600 | 0.45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-5 | | E-136BM |
| | SOUTH | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-3 | | E-136BM |
| | VERMONT 142 | 1 | 750 | 600 | 0.45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-5 | | E-136BM |
| | ← | 1 | 525 | 375 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-1 | | E-136BM |
| | SOUTH | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-3 | | E-136AM |
| | 5 | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | → | 1 | 525 | 375 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-1 | | E-136AM |
| | TO | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M4-5 | | E-135M |
| | INTERSTATE 91 | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-1 | | E-135M |
| | → | 1 | 525 | 375 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-1 | | E-135M |
| | | | | | | | | | | | | m | m | m | m | m | m | | EA | kg | kg | kg | | kg 186.5 | kg | kg | kg | | | | | | | | |
| **TOTALS** | | | | | m² 4.22 | m² | EA. | m² | | | | m | | | m | | | | | kg | | | EA. 2 | kg 186.5 | | | | EA. | EA. | kg | | | | | |

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S 'SIGN POST DESIGN GUIDELINE.'

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078tss4.I PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
REVISED BY VAOT 04/22/2003 SHEET 19 OF 71

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**

# DETOUR SIGN SUMMARY SHEET (4)

VAOT Metric

| KILOMETER MARKER, STATION, OR SIGN NUMBER | SIGN LEGEND | SIGN DIMENSIONS EA | WIDTH (mm) | HEIGHT (mm) | NEW & SALVAGED SIGNS "A" | "B" | SALV SIGN | SALV TIS | EXIST POST RETAIN | SALVAGE | NEW SIGN POSTS NO. OF POSTS | FLANGED CHANNEL kg/m 1.7 | 3.0 | 4.5 | SQUARE STEEL (mm) kg/m 44 3.4 | 50 3.9 | 63 5.0 | ANCHOR | SLEEVE | TUBULAR ALUMINUM Ø (mm) kg/m 75 1.9 | 100 2.5 | 100 MOD 2.5 | TUBULAR STEEL Ø (mm) FOUNDATION | kg/m 75 11.3 | 89 13.4 | 100 16.1 | 125 21.7 | W-SHAPE STEEL FTG. SIZE 600 mm | 750 mm | WEIGHT | POST SIZE | SIGN FRAME REQUIRED | REMARKS | SIGN DETAIL DETAIL ON SHEET NUMBER | STD. SHEET NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | OPTION ITEMS | | | | | | | | | | | | | | | | | | | | | | | | | |
| N5DL | DETOUR | 6 | 600 | 300 | 1.08 | | | | | | 6 | | | 28.35 | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | NORTH | 6 | 600 | 300 | 1.08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-1 | | E-136AM |
| | 5 | 6 | 600 | 600 | 2.16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | ← | 6 | 525 | 375 | 1.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-1 | | E-136AM |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| N5DR | DETOUR | 1 | 600 | 300 | 0.18 | | | | | | 1 | | | 4.73 | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | NORTH | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-1 | | E-136AM |
| | 5 | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | → | 1 | 525 | 375 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-1 | | E-136AM |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| N5D | DETOUR | 2 | 600 | 300 | 0.36 | | | | | | 2 | | | 9.45 | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | NORTH | 2 | 600 | 300 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-1 | | E-136AM |
| | 5 | 2 | 600 | 600 | 0.72 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | ↑ | 2 | 525 | 375 | 0.39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-3 | | E-136AM |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **TOTALS** | | | | | m² 8.25 | m² | EA. | m² | | | | m 42.53 | | | m | | | | EA | kg | | | EA. | kg | | | | EA. | EA. | kg | | | | | | |

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PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sj078tss5.i PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
REVISED BY VAOT 04/22/2003 SHEET 20 OF 71

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**

# DETOUR SIGN SUMMARY SHEET (5)

VAOT Metric

| KILOMETER MARKER, STATION, OR SIGN NUMBER | SIGN LEGEND | SIGN DIMENSIONS EA | WIDTH (mm) | HEIGHT (mm) | NEW & SALVAGED SIGNS "A" | "B" | SALV SIGN | SALV TIS | EXIST POST RETAIN | SALVAGE | NEW SIGN POSTS NO. OF POSTS | FLANGED CHANNEL kg/m 1.7 | 3.0 | 4.5 | SQUARE STEEL (mm) kg/m 44 3.4 | 50 3.9 | 63 5.0 | ANCHOR | SLEEVE | TUBULAR ALUMINUM Ø (mm) kg/m 75 1.9 | 100 2.5 | 100 MOD 2.5 | FOUNDATION | TUBULAR STEEL Ø (mm) kg/m 75 11.3 | 89 13.4 | 100 16.1 | 125 21.7 | W-SHAPE STEEL FTG. SIZE 600 mm | 750 mm | WEIGHT | POST SIZE | SIGN FRAME REQUIRED | REMARKS | SIGN DETAIL DETAIL ON SHEET NUMBER | STD. SHEET NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | OPTION ITEMS | | | | | | | | | | | | | | | | | | | | | | | | | |
| N5ED | END | 1 | 600 | 300 | 0.18 | | | | | | 1 | | | 4.65 | | | | | | | | | | | | | | | | | | | | M4-6 | | E-140M |
| | DETOUR | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | NORTH | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-1 | | E-136AM |
| | 5 | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S5DL | DETOUR | 1 | 600 | 300 | 0.18 | | | | | | 1 | | | 4.73 | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | SOUTH | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-3 | | E-136AM |
| | 5 | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | ← | 1 | 525 | 375 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-1 | | E-136AM |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S5DR | DETOUR | 1 | 600 | 300 | 0.18 | | | | | | 1 | | | 4.73 | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | SOUTH | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-3 | | E-136AM |
| | 5 | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | → | 1 | 525 | 375 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-1 | | E-136AM |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | m 14.11 | m | m | m | m | m | m | EA | kg | kg | kg | | kg | kg | kg | kg | | | | | | | | | |
| **TOTALS** | | | | | m² 2.74 | m² | EA. | m² | | | m 14.11 | | | | m | | | | kg | | | EA. | | kg | | | EA. | EA. | kg | | | | | | |

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S 'SIGN POST DESIGN GUIDELINE.'

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078tss6.I PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
REVISED BY VAOT 04/22/2003 SHEET 21 OF 71

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**

# DETOUR SIGN SUMMARY SHEET (6)

VAOT Metric

| KILOMETER MARKER, STATION, OR SIGN NUMBER | SIGN LEGEND | SIGN DIMENSIONS EA | WIDTH (mm) | HEIGHT (mm) | NEW & SALVAGED SIGNS "A" | "B" | SALV SIGN | SALV TIS | EXIST POST RETAIN | EXIST POST SALVAGE | NO. OF POSTS | NEW SIGN POSTS: FLANGED CHANNEL kg/m 1.7 | 3.0 | 4.5 | SQUARE STEEL (mm) kg/m 44 3.4 | 50 3.9 | 63 5.0 | ANCHOR | SLEEVE | TUBULAR ALUMINUM Ø (mm) kg/m 75 1.9 | 100 2.5 | 100 MOD 2.5 | TUBULAR STEEL Ø (mm) FOUNDATION | kg/m 75 11.3 | 89 13.4 | 100 16.1 | 125 21.7 | W-SHAPE STEEL FTG. SIZE 600 mm | 750 mm | WEIGHT | POST SIZE | SIGN FRAME REQUIRED | REMARKS | SIGN DETAIL: DETAIL ON SHEET NUMBER | STD. SHEET NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | OPTION ITEMS | | | | | | | | | | | | | | | | | | | | | | | | |
| BRIDGE ST. RT. |  | 2 | 450 | 600 | 0.54 | | | | | | 4 | | 9.60 | | | | | | | | | | | | | | | | | | | | W1-8 ORANGE BACKGROUND MOUNT ON TYPE III BARRICADE (MOD.) | | E-101M |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | LANE CLOSED | 1 | 1200 | 750 | 0.90 | | | | | | 2 | | 5.10 | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) MOUNT ON TYPE III BARRICADE (MOD.) | 24 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | TRUCKS | 1 | 600 | 300 | 0.18 | | | | | | 1 | | 4.05 | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) | 25 | |
| |  | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | R3-1 | | E-143M |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | NO TRUCKS ON BRIDGE | 1 | 600 | 750 | 0.45 | | | | | | 2 | | 5.10 | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) MOUNT ON TYPE III BARRICADE (MOD.) | 24 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| |  | 1 | 750 | 750 | 0.56 | | | | | | 1 | | 4.20 | | | | | | | | | | | | | | | | | | | | W11-2 ORANGE BACKGROUND | | E-152M |
| |  | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) | 25 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SIDEWALK CLOSED CROSS HERE | 1 | 600 | 300 | 0.18 | | | | | | 2 | | 4.20 | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) MOUNT ON TYPE III BARRICADE (MOD.) | 25 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FLAT ST. |  | 3 | 450 | 600 | 0.81 | | | | | | 6 | | 14.40 | | | | | | | | | | | | | | | | | | | | W1-8 ORANGE BACKGROUND MOUNT ON TYPE III BARRICADE (MOD.) | | E-101M |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ROAD CLOSED | 1 | 1200 | 750 | 0.90 | | | | | | 2 | | 5.10 | | | | | | | | | | | | | | | | | | | | R11-2 MOUNT ON TYPE III BARRICADE (MOD.) | | E-102AM |
| | | | | | | | | | | | m | m 51.75 | m | m | m | m | EA | kg | kg | kg | | kg | kg | kg | kg | | | | | | | | |
| **TOTALS** | | m2 5.06 | m2 | EA. | m2 | | | | | | m | 51.75 | | m | | | | kg | EA. | kg | | | | | | EA. | EA. | kg | | | | | | |

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S "SIGN POST DESIGN GUIDELINE."

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078tss7.i PLOT DATE: 06-FEB-2003
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
SHEET 22 OF 71

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**

# DETOUR SIGN SUMMARY SHEET (6)

VAOT Metric

| KILOMETER MARKER, STATION, OR SIGN NUMBER | SIGN LEGEND | SIGN DIMENSIONS EA | WIDTH (mm) | HEIGHT (mm) | NEW & SALVAGED SIGNS "A" | "B" | SALV SIGN | SALV TIS | EXIST POST RETAIN | SALVAGE | NEW SIGN POSTS NO. OF POSTS | FLANGED CHANNEL kg/m 1.7 | 3.0 | 4.5 | SQUARE STEEL (mm) kg/m 44 3.4 | 50 3.9 | 63 5.0 | ANCHOR | SLEEVE | TUBULAR ALUMINUM Ø (mm) kg/m 75 1.9 | 100 2.5 | 100 MOD 2.5 | FOUNDATION | TUBULAR STEEL Ø (mm) kg/m 75 11.3 | 89 13.4 | 100 16.1 | 125 21.7 | W-SHAPE STEEL FTG. SIZE 600 mm | 750 mm | WEIGHT | POST SIZE | SIGN FRAME REQUIRED | REMARKS | SIGN DETAIL DETAIL ON SHEET NUMBER | STD. SHEET NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | OPTION ITEMS | | | | | | | | | | | | | | | | | | | | | | | | | |
| S5D | DETOUR | 1 | 600 | 300 | 0.18 | | | | | | 1 | | | 4.73 | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | SOUTH | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-3 | | E-136AM |
| | 5 | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | ↑ | 1 | 525 | 375 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-3 | | E-136AM |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| N5DL/S5D | DETOUR | 1 | 600 | 300 | 0.18 | | | | | | 2 | | | 9.46 | | | | | | | | | | | | | | | | | | X | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | NORTH | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-1 | | E-136AM |
| | 5 | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | ← | 1 | 525 | 375 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-1 | | E-136AM |
| | DETOUR | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | SOUTH | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-3 | | E-136AM |
| | 5 | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | ↑ | 1 | 525 | 375 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-3 | | E-136AM |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5DL | DETOUR | 1 | 600 | 300 | 0.18 | | | | | | 1 | | | 4.43 | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | 5 | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | ← | 1 | 525 | 375 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-1 | | E-136AM |
| | | | | | m² | m² | EA. | m² | | | m | m | m | m | m | m | | EA | kg | kg | kg | | kg | kg | kg | kg | EA. | EA. | kg | | | | | |
| | **TOTALS** | | | | 3.50 | | | | | | | | | 18.62 | | | | | | | | | | | | | | | | | | | | | |

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S 'SIGN POST DESIGN GUIDELINE.'

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078tss7.I PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
REVISED BY VAOT 04/22/2003 SHEET 22A OF 71

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**

# DETOUR SIGN SUMMARY SHEET (7)

VAOT Metric

| KILOMETER MARKER, STATION, OR SIGN NUMBER | SIGN LEGEND | SIGN DIMENSIONS EA | WIDTH (mm) | HEIGHT (mm) | NEW & SALVAGED SIGNS "A" | "B" | SALV SIGN | SALV TIS | EXIST POST RETAIN | SALVAGE | NEW SIGN POSTS NO. OF POSTS | FLANGED CHANNEL kg/m 1.7 | 3.0 | 4.5 | SQUARE STEEL (mm) kg/m 44 3.4 | 50 3.9 | 63 5.0 | ANCHOR | SLEEVE | TUBULAR ALUMINUM Ø (mm) kg/m 75 1.9 | 100 2.5 | 100 MOD 2.5 | TUBULAR STEEL Ø (mm) FOUNDATION kg/m 75 11.3 | 89 13.4 | 100 16.1 | 125 21.7 | W-SHAPE STEEL FTG. SIZE 600 mm | 750 mm | WEIGHT | POST SIZE | SIGN FRAME REQUIRED | REMARKS | SIGN DETAIL DETAIL ON SHEET NUMBER | STD. SHEET NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | OPTION ITEMS | | | | | | | | | | | | | | | | | | | | | | | | |
| 5D | DETOUR | 1 | 600 | 300 | 0.18 | | | | | | 1 | | | 4.43 | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | 5 | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | ↑ | 1 | 525 | 375 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | M6-3 | | E-136AM |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DA5N | DETOUR AHEAD | ~~6~~ 4 | 600 | 600 | ~~2.16~~ 1.44 | | | | | | 6 | | | 27.9 | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | NORTH | ~~6~~ 4 | 600 | 300 | ~~1.08~~ 0.72 | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-1 | | E-136AM |
| | 5 | ~~6~~ 4 | 600 | 600 | ~~2.16~~ 1.44 | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DA5S | DETOUR AHEAD | 1 | 600 | 600 | 0.36 | | | | | | 1 | | | 4.65 | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | SOUTH | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | M3-3 | | E-136AM |
| | 5 | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | M1-4 | | E-136AM |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CANAL ST. LT. | SIDEWALK CLOSED USE DETOUR | 1 | 600 | 300 | 0.18 | | | | | | 2 | | 4.20 | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) MOUNT ON TYPE III BARRICADE (MOD.) | 25 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CANAL ST. LT. | ❯ | 2 | 450 | 600 | 0.54 | | | | | | 4 | | 9.60 | | | | | | | | | | | | | | | | | | | W1-8 ORANGE BACKGROUND MOUNT ON TYPE III BARRICADE (MOD.) | | E-101M |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CANAL ST. LT. | BRIDGE CLOSED | 1 | 1200 | 750 | 0.90 | | | | | | 2 | | 5.10 | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) MOUNT ON TYPE III BARRICADE (MOD.) | 24 | |
| | | | | | m² | m² | EA. | m² | | | m | | | | m | | | | | EA | kg | | | kg | | | | | EA. | EA. | kg | | | | |
| | | | | | | | | | | | 18.90 | | 36.98 | | | | | | | | | | | | | | | | | | | | | | |
| **TOTALS** | | | | | ~~8.66~~ 6.86 | | | | | | 55.88 | | | | | | | | | | | | | | | | | | | | | | | | | |

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S "SIGN POST DESIGN GUIDELINE."

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sj078ss8.dgn PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
REVISED BY VAOT 04/22/2003 SHEET 22B OF 71

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**

# DETOUR SIGN SUMMARY SHEET (8)

VAOT Metric

| KILOMETER MARKER, STATION, OR SIGN NUMBER | SIGN LEGEND | SIGN DIMENSIONS EA | WIDTH (mm) | HEIGHT (mm) | NEW & SALVAGED SIGNS "A" | "B" | SALV SIGN | SALV TIS | EXIST POST RETAIN | SALVAGE | NO. OF POSTS | NEW SIGN POSTS: FLANGED CHANNEL Kg/m 1.7 | 3.0 | 4.5 | SQUARE STEEL (mm) Kg/m 44 1.7 | 50 3.4 | 63 3.9 | ANCHOR | SLEEVE | TUBULAR ALUMINUM Ø (mm) Kg/m 75 1.9 | 100 2.5 | 100 MOD 2.5 | FOUNDATION | TUBULAR STEEL Ø (mm) Kg/m 75 11.3 | 89 13.4 | 100 16.1 | 125 21.7 | W-SHAPE STEEL FTG. SIZE 600 mm | 750 mm | WEIGHT | POST SIZE | SIGN FRAME REQUIRED | REMARKS | SIGN DETAIL: DETAIL ON SHEET NUMBER | STD. SHEET NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | OPTION ITEMS | | | | | | | | | | | | | | | | | | | | | | | | | |
| CANAL ST. LT. | SIDEWALK DETOUR | 1 | 600 | 300 | 0.18 | | | | | | 2 | | 4.20 | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) MOUNT ON TYPE III BARRICADE (MOD.) | 25 | |
| MAIN ST. LT. | SIDEWALK CLOSED | 1 | 600 | 300 | 0.18 | | | | | | 2 | | 4.20 | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) MOUNT ON TYPE III BARRICADE (MOD.) | 25 | |
| MAIN ST. LT. | ROAD CLOSED | 1 | 1200 | 750 | 0.90 | | | | | | 2 | | 5.10 | | | | | | | | | | | | | | | | | | | | | RII-2 MOUNT ON TYPE III BARRICADE (MOD.) | | E-102AM |
| MAIN ST. LT. | SIDEWALK CLOSED AT BRIDGE USE DETOUR | 1 | 600 | 300 | 0.18 | | | | | | 2 | | 4.20 | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) MOUNT ON TYPE III BARRICADE (MOD.) | 25 | |
| MAIN ST. RT. | SIDEWALK CLOSED | 1 | 600 | 300 | 0.18 | | | | | | 2 | | 4.20 | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) MOUNT ON TYPE III BARRICADE (MOD.) | 25 | |
| MAIN ST. RT. | ROAD CLOSED | 1 | 1200 | 750 | 0.90 | | | | | | 2 | | 5.10 | | | | | | | | | | | | | | | | | | | | | RII-2 MOUNT ON TYPE III BARRICADE (MOD.) | | E-102AM |
| MAIN ST. RT. | SIDEWALK CLOSED AT BRIDGE USE DETOUR | 2 | 600 | 300 | 0.36 | | | | | | 4 | | 8.40 | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) MOUNT ON TYPE III BARRICADE (MOD.) | 25 | |
| MAIN ST. RT. | DETOUR | 1 | 1200 | 450 | 0.54 | | | | | | 2 | | 4.50 | | | | | | | | | | | | | | | | | | | | | M4-10(R) ORANGE BACKGROUND MOUNT ON TYPE III BARRICADE (MOD.) | | E-102AM |
| MAIN ST. RT. | SIDEWALK DETOUR | 1 | 600 | 300 | 0.18 | | | | | | 2 | | 4.20 | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) MOUNT ON TYPE III BARRICADE (MOD.) | 25 | |
| | | | | | | | | | | | | m 44.10 | m | m | m | m | m | | EA | kg | kg | kg | | kg | kg | kg | kg | | | | | | | | |
| **TOTALS** | | | | | $m^2$ 3.60 | $m^2$ | EA. | $m^2$ | | | | m 44.10 | | | m | | | | | kg | | | EA. | kg | | | | EA. | EA. | kg | | | | | | |

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S 'SIGN POST DESIGN GUIDELINE.'

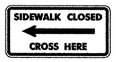
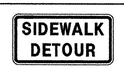
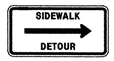
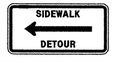
PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078tss9.I PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
REVISED BY VAOT 04/22/2003 SHEET 22C OF 71

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**

# DETOUR SIGN SUMMARY SHEET (9)

VAOT Metric

| KILOMETER MARKER, STATION, OR SIGN NUMBER | SIGN LEGEND | SIGN DIMENSIONS EA | WIDTH (mm) | HEIGHT (mm) | NEW & SALVAGED SIGNS "A" | "B" | SALV SIGN | SALV TIS | EXIST POST RETAIN | SALVAGE | NEW SIGN POSTS NO. OF POSTS | FLANGED CHANNEL kg/m 1.7 | 3.0 | 4.5 | SQUARE STEEL (mm) kg/m 44 3.4 | 50 3.9 | 63 5.0 | ANCHOR | SLEEVE | TUBULAR ALUMINUM Ø (mm) kg/m 75 1.9 | 100 2.5 | 100 MOD 2.5 | TUBULAR STEEL Ø (mm) FOUNDATION | kg/m 75 11.3 | 89 13.4 | 100 16.1 | 125 21.7 | W-SHAPE STEEL FTG. SIZE 600 mm | 750 mm | WEIGHT | POST SIZE | SIGN FRAME REQUIRED | REMARKS | SIGN DETAIL DETAIL ON SHEET NUMBER | STD. SHEET NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | OPTION ITEMS | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BRIDGE ST. RT. |  | 2 | 450 | 600 | 0.54 | | | | | | 4 | | 9.60 | | | | | | | | | | | | | | | | | | | | | WI-8 ORANGE BACKGROUND<br>MOUNT ON TYPE III BARRICADE (MOD.) | | E-101M |
| BRIDGE ST. RT. |  | 2 | 1200 | 750 | 1.80 | | | | | | 4 | | 10.20 | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1)<br>MOUNT ON TYPE III BARRICADE (MOD.) | 24 | |
| BRIDGE ST. RT. |  | 1 | 600 | 300 | 0.18 | | | | | | 2 | | 4.20 | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2)<br>MOUNT ON TYPE III BARRICADE (MOD.) | 25 | |
| BRIDGE ST. RT. |  | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | R3-1 | | E-143M |
| FLAT ST. |  | 1 | 600 | 300 | 0.18 | | | | | | 2 | | 4.20 | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2)<br>MOUNT ON TYPE III BARRICADE (MOD.) | 25 | |
| SIDEWALK DETOUR (NOT SHOWN) |  | 4 | 600 | 300 | 0.72 | | | | | | 8 | | 33.6 | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2)<br>MOUNT ON TYPE III BARRICADE (MOD.) | 25 | |
| SIDEWALK DETOUR (NOT SHOWN) |  | 2 | 600 | 300 | 0.36 | | | | | | 4 | | 8.40 | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2)<br>MOUNT ON TYPE III BARRICADE (MOD.) | 25 | |
| SIDEWALK DETOUR (NOT SHOWN) |  | 2 | 600 | 300 | 0.36 | | | | | | 4 | | 8.40 | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2)<br>MOUNT ON TYPE III BARRICADE (MOD.) | 25 | |
| | | | | | | | | | | | m | m | m | m | m | m | | EA | kg | kg | kg | | kg | kg | kg | kg | | | | | | | | |
| | | | | | | | | | | | 78.60 | | | | | | | | | | | | | | | | | | | | | | | | | |
| **TOTALS** | | m² 4.50 | m² | EA. | m² | | m 78.60 | | m | | | kg | | EA. | kg | | | | EA. | EA. | kg | | | | | | | | | | | | | | | |

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S 'SIGN POST DESIGN GUIDELINE.'

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078tss10.I PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
REVISED BY VAOT 04/22/2003 SHEET 22D OF 71

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**

# DETOUR SIGN SUMMARY SHEET (10)

VAOT Metric

| KILOMETER MARKER, STATION, OR SIGN NUMBER | SIGN LEGEND | SIGN DIMENSIONS EA | WIDTH (mm) | HEIGHT (mm) | NEW & SALVAGED SIGNS "A" | "B" | SALV SIGN | SALV TIS | EXIST POST RETAIN | SALVAGE | NO. OF POSTS | NEW SIGN POSTS: FLANGED CHANNEL kg/m 1.7 | 3.0 | 4.5 | SQUARE STEEL (mm) kg/m 44 3.4 | 50 3.9 | 63 5.0 | ANCHOR | SLEEVE | TUBULAR ALUMINUM Ø (mm) kg/m 75 1.9 | 100 2.5 | 100 MOD 2.5 | TUBULAR STEEL Ø (mm) FOUNDATION | 75 11.3 | 89 13.4 | 100 16.1 | 125 21.7 | W-SHAPE STEEL FTG. SIZE 600 mm | 750 mm | WEIGHT | POST SIZE | SIGN FRAME REQUIRED | REMARKS | SIGN DETAIL: DETAIL ON SHEET NUMBER | STD. SHEET NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | OPTION ITEMS | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9+984.8 RT. | PLAZA ONLY / THRU TRAFFIC | 1 | 900 | 900 | 0.81 | | | | | | 1 | | | 4.05 | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (1) | 24 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10+015.8 RT. | | 1 | 750 | 750 | 0.56 | | | | | | 1 | | | 4.20 | | | | | | | | | | | | | | | | | | | | WI1-2 ORANGE BACKGROUND | | E-152M |
| | | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) | 25 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10+019.0 LT. | | 1 | 750 | 750 | 0.56 | | | | | | 1 | | | 4.20 | | | | | | | | | | | | | | | | | | | | WI1-2 ORANGE BACKGROUND | | E-152M |
| | | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) | 25 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10+096.5 RT. | | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | R3-2 MOUNT TO EXISTING SIGN POST | | E-143M |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10+101.7 RT. | | 1 | 600 | 600 | 0.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | R3-2 MOUNT TO EXISTING LIGHT POLE | | E-143M |
| 20+006.3 RT. | | 1 | 750 | 750 | 0.56 | | | | | | 1 | | | 4.20 | | | | | | | | | | | | | | | | | | | | WI1-2 ORANGE BACKGROUND | | E-152M |
| | | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) | 25 | |
| 20+007.6 LT. | | 1 | 750 | 750 | 0.56 | | | | | | 1 | | | 4.20 | | | | | | | | | | | | | | | | | | | | WI1-2 ORANGE BACKGROUND | | E-152M |
| | | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) | 25 | |
| 20+035.0 LT. | | 1 | 750 | 750 | 0.56 | | | | | | 1 | | | 4.20 | | | | | | | | | | | | | | | | | | | | WI1-2 ORANGE BACKGROUND | | E-152M |
| | | 1 | 600 | 300 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | SEE CONSTRUCTION SIGN DETAIL (2) | 25 | |
| | | | | | | | | | | | | m | m | m | m | m | m | | EA | kg | kg | kg | | kg | kg | kg | kg | | | | | | | | |
| | | | | | | | | | | | | | | 25.05 | | | | | | | | | | | | | | | | | | | | | | | |
| **TOTALS** | | | | | m² 5.23 | m² | EA. | m² | | | | m 25.05 | | | m | | | | | kg | | | EA. | kg | | | | EA. | EA. | kg | | | | | | |

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S "SIGN POST DESIGN GUIDELINE."

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078tss11.i PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
REVISED BY VAOT 04/22/2003 SHEET 22E OF 71

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**

# TRAFFIC SIGN SUMMARY SHEET

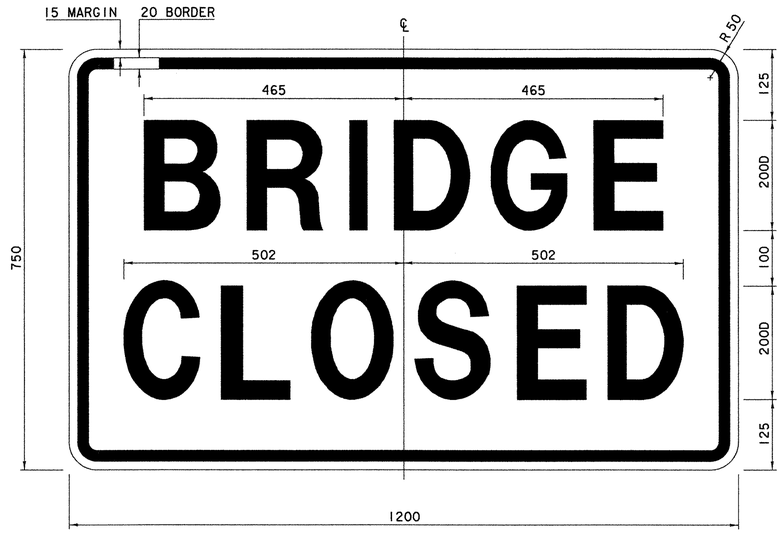
VAOT Metric

| KILOMETER MARKER, STATION, OR SIGN NUMBER | SIGN LEGEND | SIGN DIMENSIONS EA | WIDTH (mm) | HEIGHT (mm) | NEW & SALVAGED SIGNS "A" | "B" | SALV SIGN | SALV TIS | EXIST POST RETAIN | SALVAGE | NEW SIGN POSTS NO. OF POSTS | FLANGED CHANNEL kg/m 1.7 | 3.0 | 4.5 | SQUARE STEEL (mm) kg/m 44 3.4 | 50 3.9 | 63 5.0 | ANCHOR | SLEEVE | TUBULAR ALUMINUM Ø (mm) kg/m 75 1.9 | 100 2.5 | 100 MOD 2.5 | FOUNDATION | TUBULAR STEEL Ø (mm) kg/m 75 11.3 | 89 13.4 | 100 16.1 | 125 21.7 | W-SHAPE STEEL FTG. SIZE 600 mm | 750 mm | WEIGHT | POST SIZE | SIGN FRAME REQUIRED | REMARKS | SIGN DETAIL DETAIL ON SHEET NUMBER | STD. SHEET NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | OPTION ITEMS | | | | | | | | | | | | | | | | | | | | | | | |
| 10+048.8 LT. |  | | | | | | 1 | | | | 1 | | | 3.90 | | | | | | | | | | | | | | | | | | | | SALVAGE FROM STA. 10+019.0 LT. MOUNT POST TO VEHICULAR TRAFFIC RAIL BY METHOD APPROVED BY ENGINEER | | |
| |  | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | SALVAGE FROM STA. 10+019.0 LT. | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10+057.4 RT. |  | | | | | | 1 | | | | 1 | | | 3.60 | | | | | | | | | | | | | | | | | | | | SALVAGE FROM STA. 10+058.1 RT. MOUNT POST TO VEHICULAR TRAFFIC RAIL BY METHOD APPROVED BY ENGINEER | | |
| |  | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | SALVAGE FROM STA. 10+058.1 RT. | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20+029.5 RT. | BRIDGE ST | | | | | | 1 | | | | 1 | | | 4.20 | | | | | | | | | | | | | | | | | | | | SALVAGE FROM 20+036.7 RT. MOUNT POST TO VEHICULAR TRAFFIC RAIL BY METHOD APPROVED BY ENGINEER | | |
| | MAIN ST | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | SALVAGE FROM 20+036.7 RT. | | |
| | STOP | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | SALVAGE FROM 20+036.7 RT. | | |
| | 0050 1302 0213 | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | SALVAGE FROM 20+036.7 RT. | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20+032.6 RT. |  | | | | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | SALVAGE FROM STA. 20+006.3 RT. | | |
| |  | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | SALVAGE FROM STA. 20+006.3 RT. | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **TOTALS** | | m² | | | m² | | EA. 10 | m² | | | | m 11.70 | | | m | | | | | kg | | | EA. | kg | | | | EA. | EA. | kg | | | | | | |

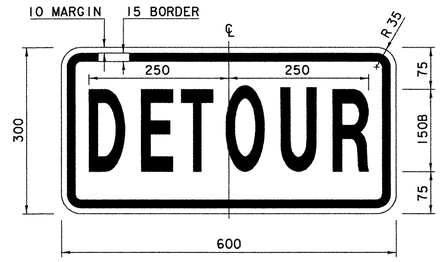
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S 'SIGN POST DESIGN GUIDELINE.'

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078tssi.I
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: G. ROY
REVISED BY VAOT 04/22/2003
PLOT DATE: 24-MAY-2004
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 23 OF 71

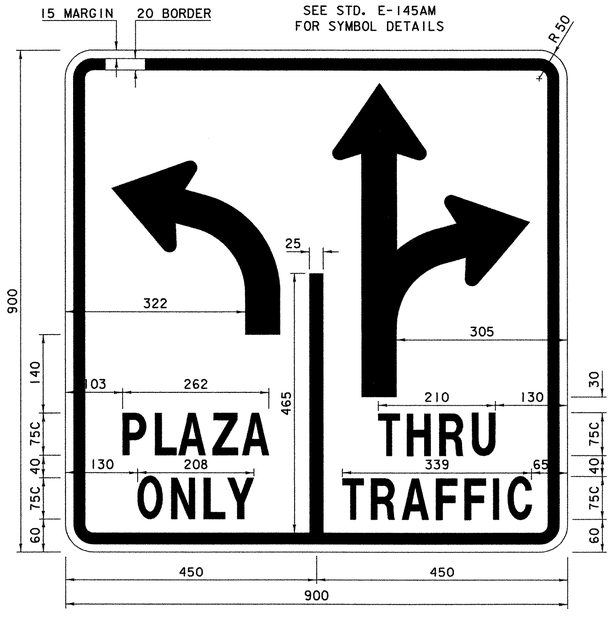



COLORS: BACKGROUND - REFL. WHITE
TEXT & BORDER - BLACK

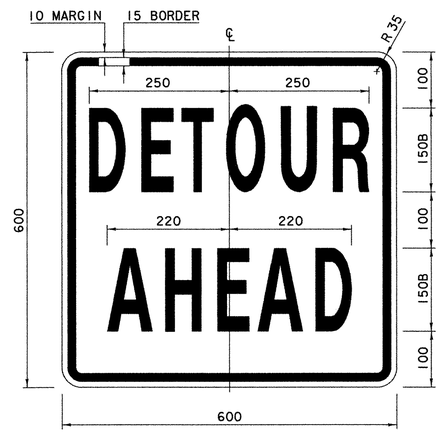



M4-8

COLORS: BACKGROUND - REFL. ORANGE
TEXT & BORDER - BLACK




COLORS: BACKGROUND - REFL. WHITE
TEXT & BORDER - BLACK




COLORS: BACKGROUND - REFL. ORANGE
TEXT & BORDER - BLACK

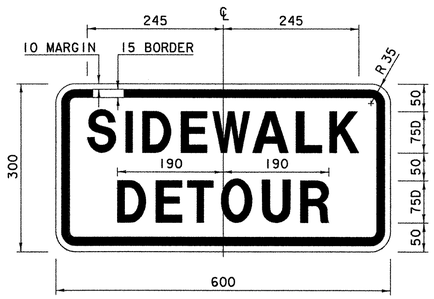
TEXT LAYOUT DIMENSIONS ARE BASED ON THE "LETTER & NUMERAL WIDTHS AND SPACE" TABLES FOUND IN THE "STANDARD HIGHWAYS SIGNS" BOOKLET. MINOR VARIATIONS IN TEXT DIMENSIONS ARE ACCEPTABLE BASED ON INDIVIDUAL MANUFACTURER'S LETTER FABRICATION. SIGNIFICANT CHANGES WHICH AFFECT SIGN APPEARANCE SHALL BE BROUGHT TO THE ATTENTION OF THE VAOT'S TRAFFIC DESIGN UNIT BEFORE FABRICATION.

SEE STD. E-100M FOR SIGN MATERIALS.

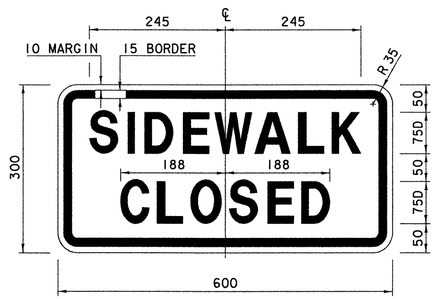
# CONSTRUCTION SIGN DETAIL (1)

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |
| FILE NAME: 94J078\Structures\sJ078csd1.i | PLOT DATE: 24-MAY-2004 |
| PROJECT MANAGER: R. R. WHITCOMB | DRAWN BY: G. ROY |
| DESIGNED BY: G. ROY | CHECKED BY: T. SUMNER |
| | SHEET 24 OF 71 |

| DATE | BY | REVISION |
|---|---|---|
| 04/22/2003 | VAOT | MODIFIED SIGNS FOR DETOUR DUE TO BRIDGE CLOSURE. |

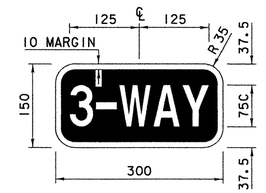



COLORS: BACKGROUND - REFL. ORANGE
TEXT & BORDER - BLACK



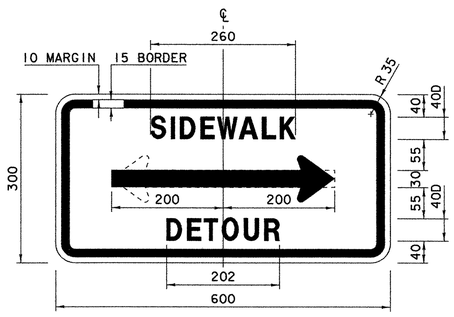

R9-9

COLORS: BACKGROUND - REFL. WHITE
TEXT & BORDER - BLACK

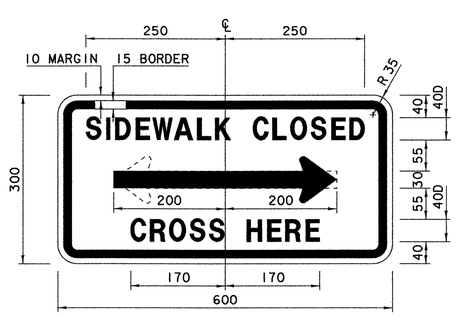



R1-3

COLORS: BACKGROUND - REFL. RED
TEXT & BORDER - REFL. WHITE

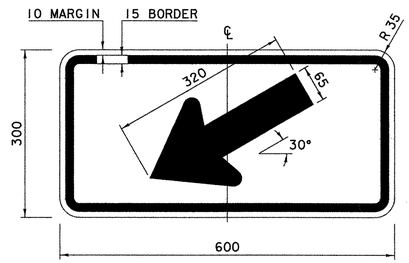



COLORS: BACKGROUND - REFL. ORANGE
TEXT & BORDER - BLACK



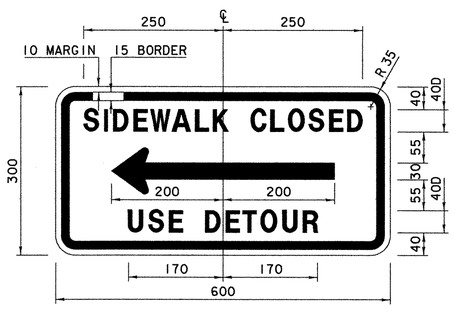

R9-11a

COLORS: BACKGROUND - REFL. WHITE
TEXT & BORDER - BLACK

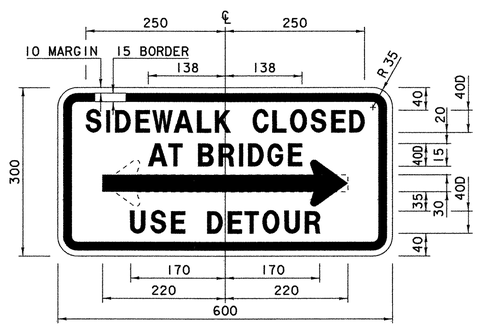



W16-7P

COLORS: BACKGROUND - REFL. ORANGE
TEXT & BORDER - BLACK




COLORS: BACKGROUND - REFL. WHITE
TEXT & BORDER - BLACK




COLORS: BACKGROUND - REFL. WHITE
TEXT & BORDER - BLACK

TEXT LAYOUT DIMENSIONS ARE BASED ON THE "LETTER & NUMERAL WIDTHS AND SPACE" TABLES FOUND IN THE "STANDARD HIGHWAYS SIGNS" BOOKLET. MINOR VARIATIONS IN TEXT DIMENSIONS ARE ACCEPTABLE BASED ON INDIVIDUAL MANUFACTURER'S LETTER FABRICATION. SIGNIFICANT CHANGES WHICH AFFECT SIGN APPEARANCE SHALL BE BROUGHT TO THE ATTENTION OF THE VAOT'S TRAFFIC DESIGN UNIT BEFORE FABRICATION.

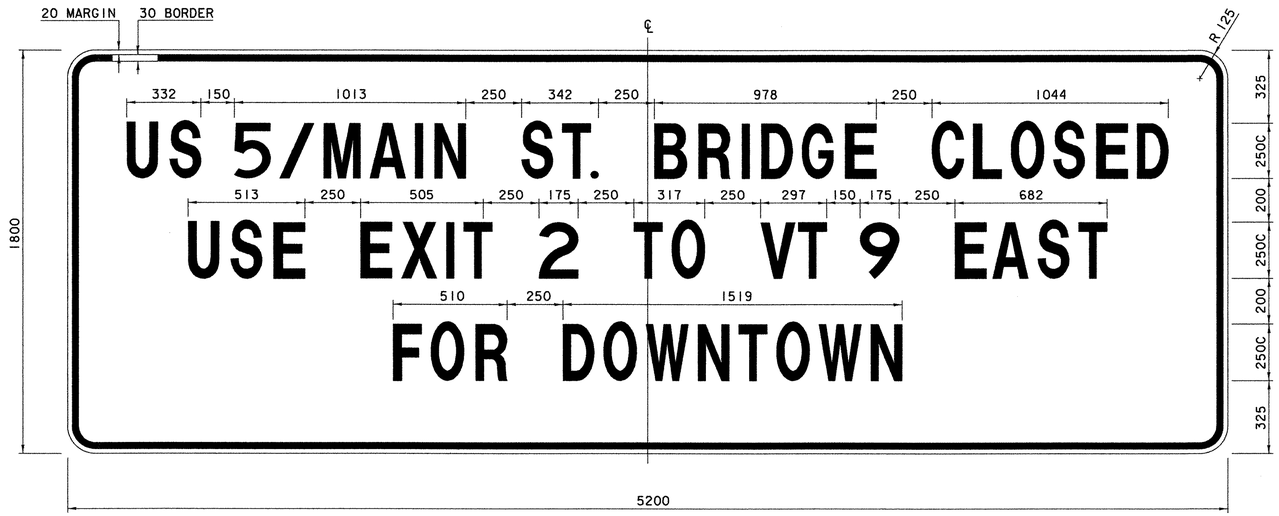
SEE STD. E-100M FOR SIGN MATERIALS.

# CONSTRUCTION SIGN DETAIL (2)

| DATE | BY | REVISION |
|---|---|---|
| 04/22/2003 | VAOT | MODIFIED SIGNS FOR DETOUR DUE TO BRIDGE CLOSURE. |

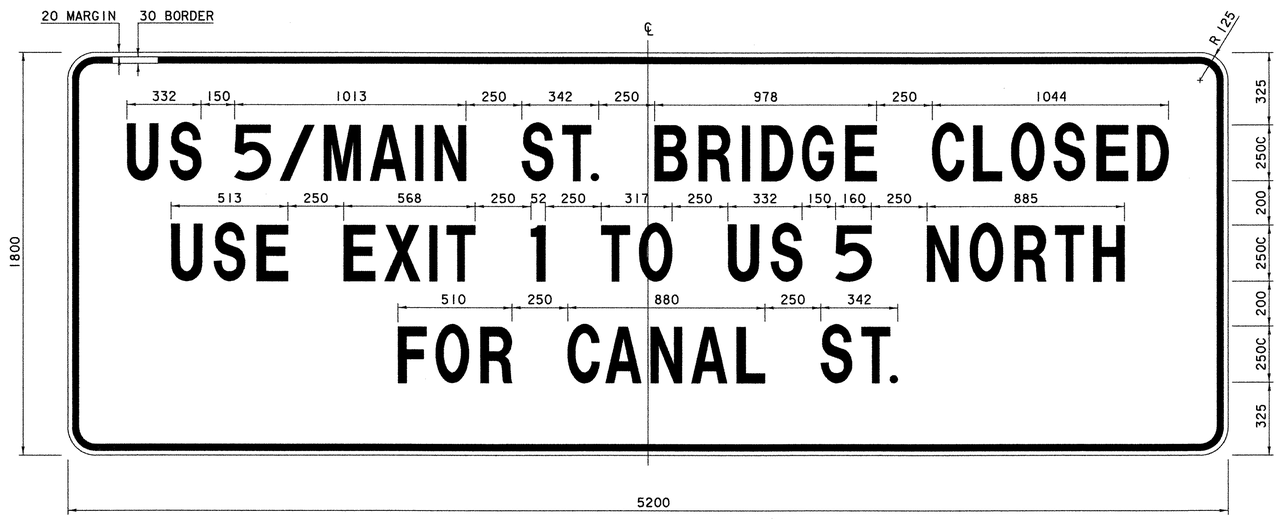
PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078csd2.I PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
SHEET 25 OF 71




COLORS: BACKGROUND - REFL. ORANGE
TEXT & BORDER - BLACK

SIGN NO. 1




COLORS: BACKGROUND - REFL. ORANGE
TEXT & BORDER - BLACK

SIGN NO. 2

TEXT LAYOUT DIMENSIONS ARE BASED ON THE "LETTER & NUMERAL WIDTHS AND SPACE" TABLES FOUND IN THE "STANDARD HIGHWAYS SIGNS" BOOKLET. MINOR VARIATIONS IN TEXT DIMENSIONS ARE ACCEPTABLE BASED ON INDIVIDUAL MANUFACTURER'S LETTER FABRICATION. SIGNIFICANT CHANGES WHICH AFFECT SIGN APPEARANCE SHALL BE BROUGHT TO THE ATTENTION OF THE VAOT'S TRAFFIC DESIGN UNIT BEFORE FABRICATION.

SEE STD. E-100M FOR SIGN MATERIALS.

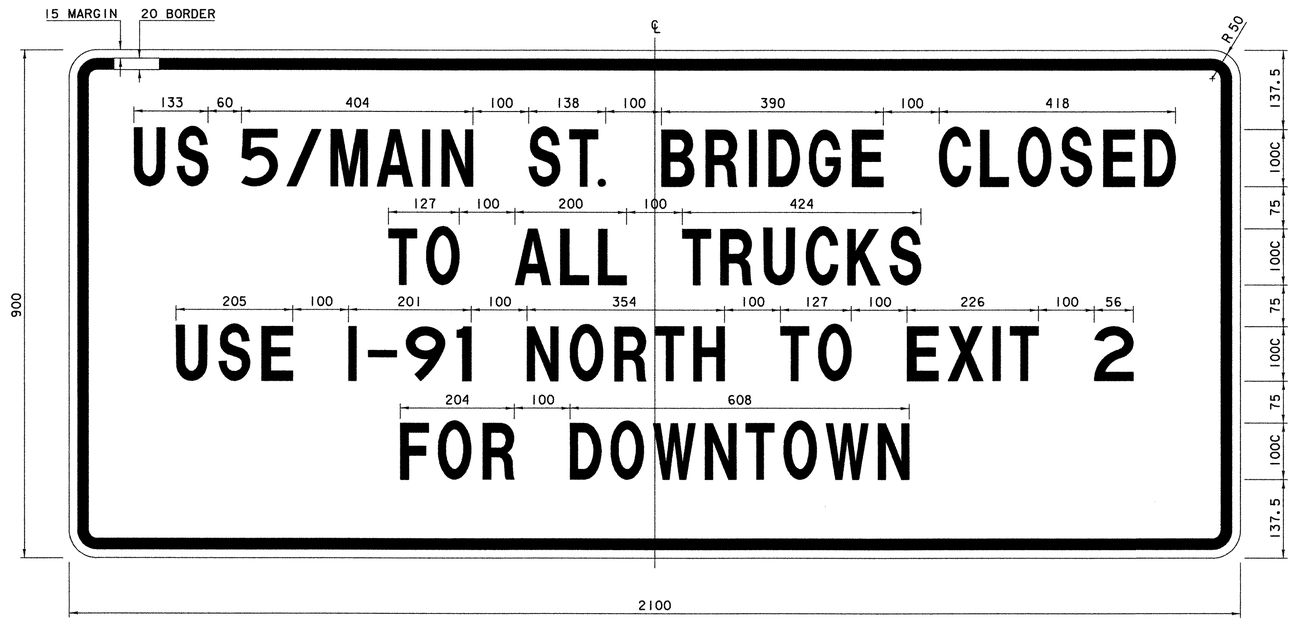
# CONSTRUCTION SIGN DETAIL (3)

| DATE | BY | REVISION |
|---|---|---|
| 04/22/2003 | VAOT | MODIFIED SIGNS FOR DETOUR DUE TO BRIDGE CLOSURE. |

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

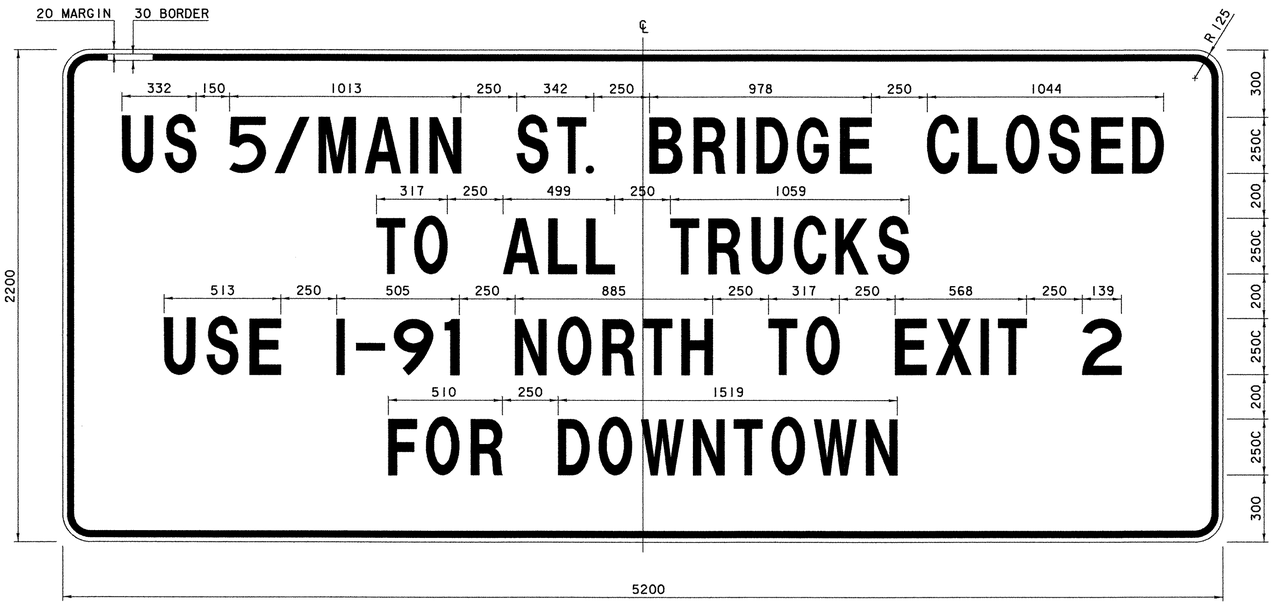
FILE NAME: 94J078\Structures\sJ078csd3.I PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
SHEET 26 OF 71

Metric




COLORS: BACKGROUND - REFL. ORANGE
TEXT & BORDER - BLACK

SIGN NO. 3




COLORS: BACKGROUND - REFL. ORANGE
TEXT & BORDER - BLACK

SIGN NO. 4
△

TEXT LAYOUT DIMENSIONS ARE BASED ON THE "LETTER & NUMERAL WIDTHS AND SPACE" TABLES FOUND IN THE "STANDARD HIGHWAYS SIGNS" BOOKLET. MINOR VARIATIONS IN TEXT DIMENSIONS ARE ACCEPTABLE BASED ON INDIVIDUAL MANUFACTURER'S LETTER FABRICATION. SIGNIFICANT CHANGES WHICH AFFECT SIGN APPEARANCE SHALL BE BROUGHT TO THE ATTENTION OF THE VAOT'S TRAFFIC DESIGN UNIT BEFORE FABRICATION.

SEE STD. E-100M FOR SIGN MATERIALS.

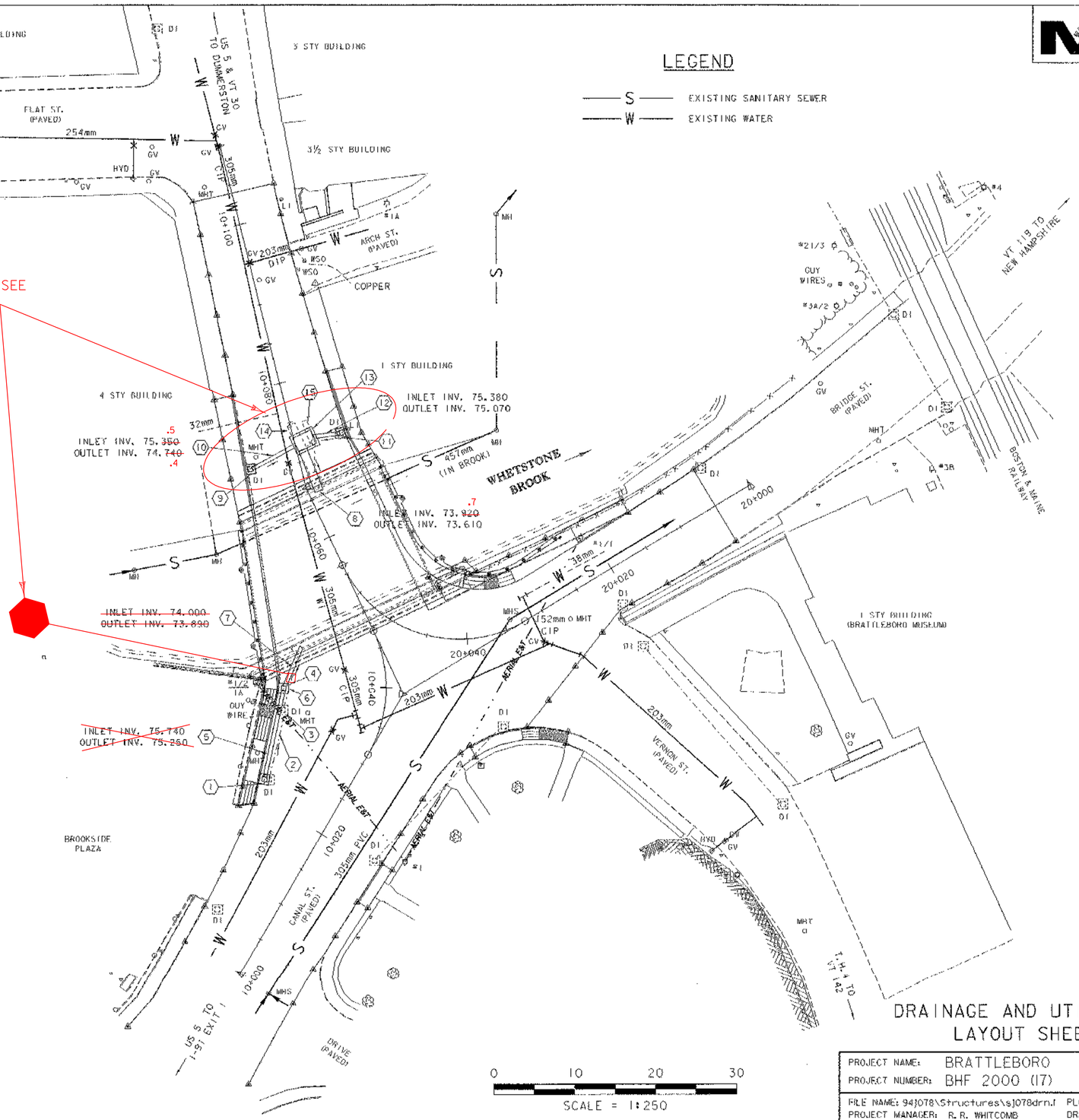
△ Revised by VAOT 3/10/03
Size of Sign Changed

# CONSTRUCTION SIGN DETAIL (4)

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078csd4.I PLOT DATE: 24-MAY-2004
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
SHEET 27 OF 71

Metric




**ADJUST ELEVATION OF VALVE BOX**
10+031.84 LT.
10+043.10 LT.
10+070.15 LT
10+092.88 RT.
10+095.13 RT.
20+031.74 LT.

**CHANGE ELEVATION OF SEWER MANHOLE**
9+999.60 RT.
20+034.06 RT.

**CHANGING ELEVATION OF DROP INLETS CATCH BASINS OR MANHOLES**
~~10+005.49 LT. DI~~
10+020.50 RT. DI
~~10+024.60 LT. MHT~~
~~10+032.78 LT. MHT~~
~~10+074.91 LT. MHT~~
~~20+021.07 LT. DI~~
~~20+027.49 LT. MHT~~
~~20+037.79 LT. DI~~

**REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE, TYPE D**
~~10+022.48 LT.~~
10+039.70 LT.
10+070.62 LT.
10+072.19 RT.
10 + 043 LT*

**CONCRETE JUNCTION BOX WITH CAST IRON COVER**
10+~~072.38~~ RT.
+ 071

SEE DRAINAGE DETAIL SHEET FOR DRAINAGE PIPE INFORMATION

NOTE:
UNDERGROUND TELEPHONE UTILITIES ARE NOT SHOWN. CONTACT VERIZON FOR LOCATION.

* 4 x 4 JUNCTION BOX WITH CAST IRON ROUND "DRAIN" COVER

# DRAINAGE AND UTILITIES LAYOUT SHEET

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |
| FILE NAME: 94J078\Structures\sJ078drn1 | PLOT DATE: 06-FEB-2003 |
| PROJECT MANAGER: R. R. WHITCOMB | DRAWN BY: G. ROY |
| DESIGNED BY: G. ROY | CHECKED BY: T. SUMNER |
| | SHEET 28 OF 71 |

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# DRAINAGE DETAIL SHEET

Metric

## DRAINAGE STRUCTURES

| DRAINAGE FLAG NO. | STATION km + m | STATION km + m | POS. | ASKEW | INLET/OUTLET TYPE | | DITCH | | PIPE ARCH | | | PIPE | | ALLOWABLE OPTIONS | | | | | | PIPE ELBOW | ES | CB | RRCDI | DEPTH DI | CONC CL B | REINF STEEL | DI GRATE | CHAN ELEV | CRM | TRENCH EXCAVATION | | COMM EXC | UNC CHAN EXC | STRUCT EXCAV | GRAN BKFILL STRUCT | GRAN BORR | EROS MATT | STONE FILL | | MARKER POSTS | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | INLET | OUTLET | IN | OUT | SPAN mm | RISE mm | L m | D mm | L m | PCCSP mm | CAAP mm | RCP CL | CSP mm | CPEP SL | PCCSP PI mm | NO. DEG | EA | EA | | mm | $m^3$ | kg | TYPE | EA | $m^3$ | EARTH $m^3$ | ROCK $m^3$ | $m^3$ | $m^3$ | $m^3$ | $m^3$ | $m^3$ | $m^2$ | $m^3$ | TYPE | LT ea | RT ea | |
| 1 | 10+022.2 | | LT | | | | | | | | | | | | | | | | | | | | 2400 | 2.84 | 155 | I-D | | | 5 | 3 | | | | | | | | | REMOVE EXISTING RCDI ~~AND CONSTRUCT NEW 1200 X 1200 RCDI~~ |
| 2 | 10+022.8 | 10+030.5 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | EXISTING 310mm RCP - REMOVE (PAY FOR REMOVAL UNDER TRENCH EXCAVATION OF NEW PIPE) |
| 3 | 10+030.8 | | LT | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | EXISTING RCDI - REMOVE |
| 4 | 10+031.1 | 10+038.6 | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | EXISTING 310mm RCP - REMOVE (PAY FOR REMOVAL UNDER TRENCH EXCAVATION OF NEW PIPE) |
| 5 | 10+022.7 | 10+038.3 | LT | | ~~RCDI~~ EXISTING 12' CULVERT | RCDI | | | | | | 450 | ~~14.0~~ 14.2 | | | 111 | | X | | | | | | | | | | | 13 | | | | | | | | | | NEW 450mm OPTION PIPE |
| 6 | 10+039.7 | | LT | | | | | | | | | | | | | | | | | | | | 3450 | 4.00 | 212 | I-D | | | 10 | | | | | | | | | | NEW 1200 X 1200 RCDI |
| 7 | 10+040.4 | 10+049.2 | LT | | RCDI | RCJB | | X | | | | 450 | ~~5.5~~ 2.2 | | | 111 | | | | | | | | | | | | | 2 | 2 | | | | | | | | | NEW 450mm RCP PIPE - OUTLET INTO ~~WHETSTONE BROOK~~ RCJB |
| 8 | 10+065.7 | 10+071.4 | RT | | RCDI | | | X | | | | 1050 | 5.5 | | | 111 | | | | | | | | | | | | | 5 | 10 | | | | | | | | | NEW 1050mm RCP PIPE - OUTLET INTO WHETSTONE BROOK |
| 9 | 10+070.6 | | LT | | | | | | | | | | | | | | | | | | | | 2400 | 2.84 | 155 | I-D | | | 5 | 5 | | | | | | | | | REMOVE EXISTING RCDI AND CONSTRUCT NEW 1200 X 1200 RCDI |
| 10 | 10+070.6 | 10+072.2 | LT | | RCDI | RCJB | | | | | | 450 | 6.1 | | | 111 | | X | | | | | | | | | | | 5 | 2 | | | | | | | | | NEW 450mm OPTION PIPE, REMOVE EXISTING PIPE |
| 11 | 10+072.2 | | RT | | | | | | | | | | | | | | | | | | | | 2400 | 2.84 | 155 | I-D | | | 5 | 5 | | | | | | | | | REMOVE EXISTING RCDI AND CONSTRUCT NEW 1200 X 1200 RCDI |
| 12 | 10+072.2 | 10+072.6 | RT | | RCDI | RCJB | | | | | | 450 | 3.7 | | | 111 | | X | | | | | | | | | | | 2 | 1 | | | | | | | | | NEW 450mm OPTION PIPE, REMOVE EXISTING PIPE |
| 13 | ~~10+072.4~~ 10+071 | | ~~RT~~ RT | CL | | | | | | | | | | | | | | | | | | | 3600 | * | * | * | | | * | * | | | | * | | | | | NEW REINFORCED CONCRETE JUNCTION BOX (RCJB) & PRECAST REINFORCED CONCRETE MANHOLE W/ CAST IRON COVER *(SEE SHEET 4 FOR QUANTITIES AND SHEET 55 FOR DETAILS) |
| 14 | 10+073.2 | | RT | | | RCJB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | EXISTING 1067mm RCP - OUTLET INTO RCJB |
| 15 | 10+071.9 | 10+073.5 | RT | | | RCJB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | EXISTING 610mm CLAY PIPE - REMOVE 2 SECTIONS AND AND OUTLET INTO RCJB |
| 16 | 10 + 043 | | LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NEW 1200 x 1200 RCJB, OUTLETS THROUGH EXIST 24" x 27" HOLE THROUGH ABUT #1 INTO WHETSTONE BROOK |
| TOTALS | | | | | | | | | | | | 450 | 20.8 | | | 111 | | X | | | | | | 12.52 | 677 | 4-D | | | 52 | 31 | | | | | | | | | |
| | | | | | | | | | | | | 450 | 5.5 | | | 111 | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | 1050 | 5.5 | | | 111 | | | | | | | | | | | | | | | | | | | | | | | | |

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BRO 2000 (17)

FILE NAME: 94J078\structures\sJ078dds.I
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: G. ROY
DRAINAGE DETAIL SHEET

PLOT DATE: 06-FEB-2003
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 29 OF 71

# STREET LIGHTING NOTES

A. CONDUIT AND JUNCTION BOXES

1. 50 MM (INSIDE DIAMETER) CONDUIT SHALL BE USED THROUGHOUT THE PROJECT. ALL CONDUIT SHALL BE PVC SCHEDULE 40 ELECTRICAL CONDUIT (UNDERGROUND) AND PVC SCHEDULE 80 CONDUIT (ABOVE GROUND AND IN CONCRETE) AS DETAILED IN THESE PLANS.

2. SEE SECTION 679.04 CONCERNING THE PLACING OF CONDUIT, PULL BOXES AND JUNCTION BOXES.

B. GROUNDING

1. ALUMINUM WIRE SHALL NOT BE USED FOR GROUND WIRE.

2. SEE SECTION 679.08 CONCERNING GROUNDING AND TESTING.

C. LUMINAIRES, POLES, ANCHOR BASES

1. THE LIGHT POLES SHALL BE "MOLDCAST" 127 MM DIAMETER X 4.27 METER LONG ~~STRAIGHT~~ FLUTED SHAFT ALUMINUM POLE (DB10-5R14-250). THE POLE WILL HAVE THE REQUIRED TENON ADAPTER TO FIT THE TOP MOUNTED LUMINAIRE FIXTURE. LIGHTING FOR EACH POLE SHALL CONSIST OF THREE "MOLDCAST, PEDESTRIAN CONTRACLINE" LUMINAIRES (70MH). ONE LUMINAIRE WILL BE POLE MOUNTED (PCCI AND TWO WILL BE SCROLL ARM MOUNTED (TRA-ILI. EACH POLE SHALL HAVE A WEATHERPROOF RECEPTACLE MOUNTED NEAR THE TOP OF THE POLE FOR WIRING ACCESS TO THE LUMINAIRES. THE COST AND INSTALLATION OF THE TENON ADAPTER WILL BE INCIDENTAL TO ITEM 679.45 " LIGHT POLE".

2. EACH POLE SHALL BE MOUNTED TO A CONCRETE BASE WITH FOUR ANCHOR BOLTS, NUTS, AND WASHERS AS PROVIDED WITH THE LIGHT POLE. SEE "LIGHT POST BASE DETAILS" SHEET 35 FOR ANCHORAGE TO BRIDGE. WIRING ACCESS SHALL BE A 102 MM X 152 MM TAMPER RESISTANT HANDHOLE IN THE POLE BASE. THE POLE ANCHOR BASE SHALL HAVE FOUR ANCHOR BOLT HOLES AND A TWO PIECE CLAMSHELL BASE COVER.

3. FINAL FINISH SHALL BE A FLAT BLACK COLOR, ACHIEVED IN TWO APPLICATIONS WITH TOUCH-UP PAINT USED AS REQUIRED AFTER POLE INSTALLATION.

D. WIRE

1. ALL WIRING BETWEEN THE METER AND THE FIRST POLE AND/OR PULLBOX AND BETWEEN POLES AND/OR PULLBOXES SHALL BE COPPER AND CONFORM TO SECTION 679.02 (G). ALL WIRE SHALL HAVE TYPE XHHW INSULATION OR EQUIVALENT.

2. ALL CONDUITS SHALL INCLUDE A GROUNDING CONDUCTOR.

3. SEE SECTION 678.09, 679.06 AND 679.07 CONCERNING ELECTRIC POWER SERVICE AND WIRING.

4. THE WIRED CONDUIT SHALL BE ATTACHED TO THE FRONT FACE OF THE EXISTING UPSTREAM RETAINING WALL AND THE FRONT FACE OF ABUTMENT ONE BACKWALL. THE COST OF HARDWARE, EQUIPMENT, TOOLS AND LABOR REQUIRED TO ATTACH THE CONDUIT, WILL BE INCIDENTAL TO ITEM 678.23 "WIRED CONDUIT".

E. GENERAL

1. ALL ELECTRICAL MATERIAL AND INSTALLATION SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE, STATE AND LOCAL CODES AND THE LOCAL UTILITY COMPANY REQUIREMENTS.

2. THE LOAD ON EACH BRANCH OF A THREE WIRE CIRCUIT SHALL AS BALANCED AS POSSIBLE. LOAD TO NEUTRAL.

3. CONDUIT LOCATIONS SHOWN ON THIS DRAWING ARE APPROXIMATE. ACTUAL LOCATIONS SHALL BE DETERMINED IN THE FIELD.

4. THE CONTRACTOR SHALL CONTACT UTILITY COMPANIES WITH UNDERGROUND FACILITIES WHEN EXCAVATING IN THE AREA OF THESE UTILITIES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR CONTACTING AND SCHEDULING WORK WITH LOCAL UTILITIES WITH FACILITIES IN THE PROJECT AREA FOR LOCATION OF POWER SOURCES.

5. ONE PHOTOCELL FOR THE LIGHTING CIRCUIT SHALL BE LOCATED AT THE POWER SOURCE OR SOME COMMON POINT, AS DIRECTED BY THE ENGINEER. ONE PHOTO CELL ON EACH POST

6. THE CONTRACTOR MAY OPEN THE BRIDGE TO TRAFFIC WITHOUT THE STREET LIGHTING IN OPERATION. HOWEVER, THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN SAFE PASSAGE OF VEHICLES WHILE WORKERS ARE COMPLETING ALL STREET LIGHTING WORK.

7. SIX EXTRA REPLACEMENT BULBS SHALL BE PROVIDED AND DELIVERED TO THE CITY OF BRATTLEBORO FOR THEIR USE. THE COST OF THESE BULBS IS TO BE INCIDENTAL TO ITEM 679.50, "LUMINAIRE".

8. IF THE LOCATION OF THE POWER SOURCE, ~~JUNCTION BOX,~~ AND METER VARIES FROM THE PROPOSED LOCATIONS SHOWN ON THE PLANS, THE NEW LOCATION WILL BE APPROVED BY THE ENGINEER AND THE TOWN OF BRATTLEBORO.

F. WORK TO BE PERFORMED BY THE CONTRACTOR

1. COORDINATE ALL ITEMS REGARDING PROJECT POWER WITH THE TOWN OF BRATTLEBORO BEFORE COMMENCING WORK.

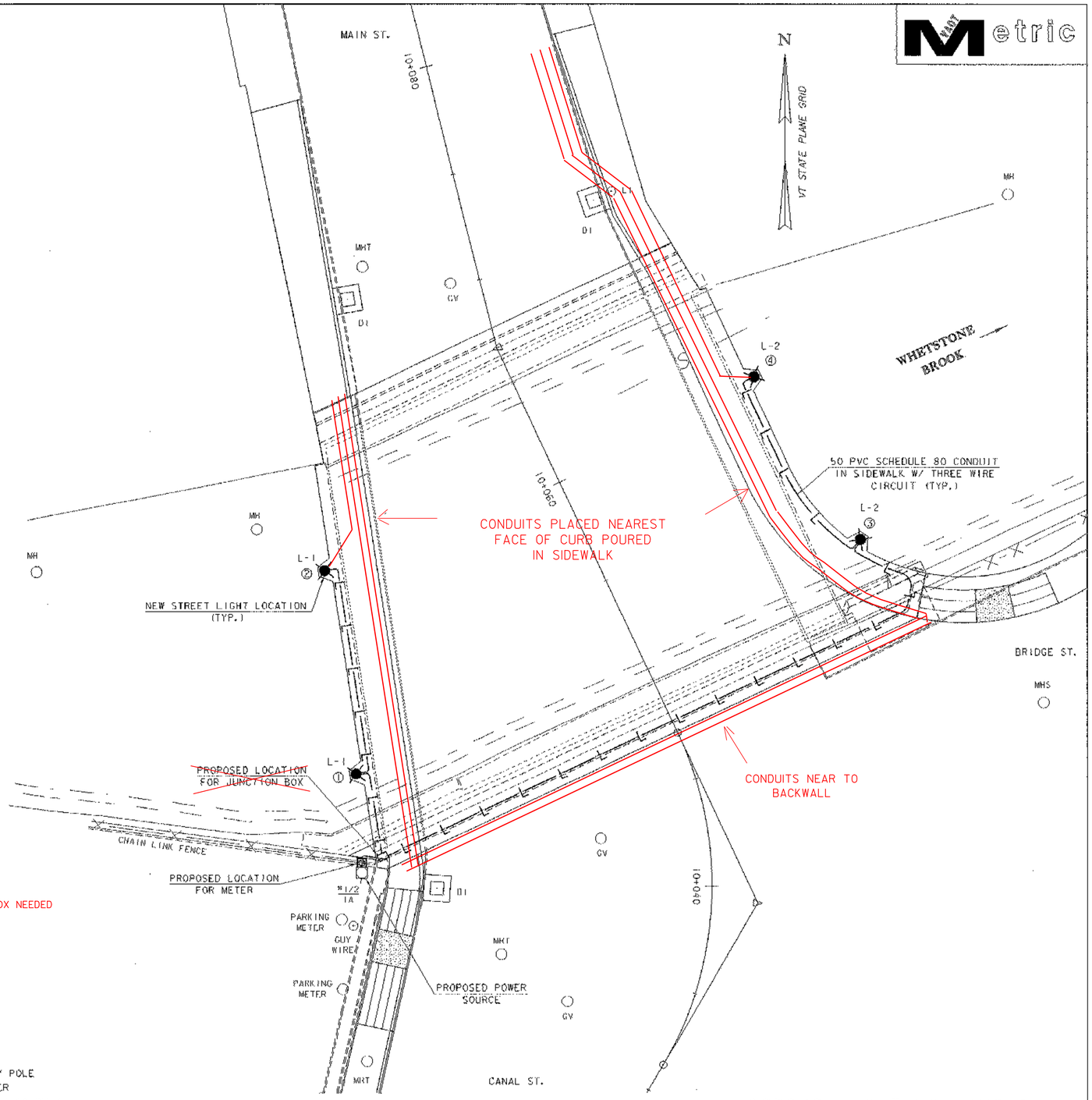
2. INSTALL ALL LIGHT POLES, LUMINAIRES, WIRING AND DISCONNECT PLUG KITS.

3. INSTALL ALL ~~JUNCTION BOXES~~, THE CONDUIT, PHOTOCELL AND WIRING AS DETAILED ON PLAN DRAWINGS. NO JUNCTION BOX NEEDED

4. INSTALL POWER DROP STANCHION, ~~OPTION #3, SEE STD. E-175M.~~ ON EXISTING POLE

5. INSTALL REMOTE TWO RELAYS WITH CIRCUIT BREAKERS FOR AUTOMATIC SWITCHING OF THE TWO LIGHTING CIRCUITS.

6. THE CONTRACTOR IS DIRECTED TO SECTION 679.09 REGARDING POWER COSTS FOR THE STREET LIGHTING.




| STREET LIGHTING LOCATIONS TABLE | | | | |
|---|---|---|---|---|
| POLE NO. | LOCATION | OFFSET* | LUMINAIRE WATTS TYPE | MOUNT HEIGHT |
| ① | 10+051.890 LT. | 14.210 M | 75W Me Ha | 4.3 M |
| ② | 10+060.950 LT. | 11.530 M | 75W Me Ha | 4.3 M |
| ③ | 10+051.710 RT. | 11.430 M | 75W Me Ha | 4.3 M |
| ④ | 10+060.510 RT. | 10.180 M | 75W Me Ha | 4.3 M |

NOTE: Me Ha = METAL HALIDE
* = OFFSET TO CENTERLINE POLE & FOUNDATION

## LEGEND

- ☼ EXISTING UTILITY POLE
- ② LIGHT POLE NUMBER
- —L— PROPOSED LIGHTING CONDUIT
- L-1 CIRCUIT NUMBER
- ✱ PROPOSED ORNAMENTAL LIGHT
- □ JUNCTION BOX
- ■ METER BOX
- —— ADDITIONAL CONDUITS INSTALLED BY TOWN FOR FUTURE USE 2" - TWO RUNS &¾" FOR LIGHTS

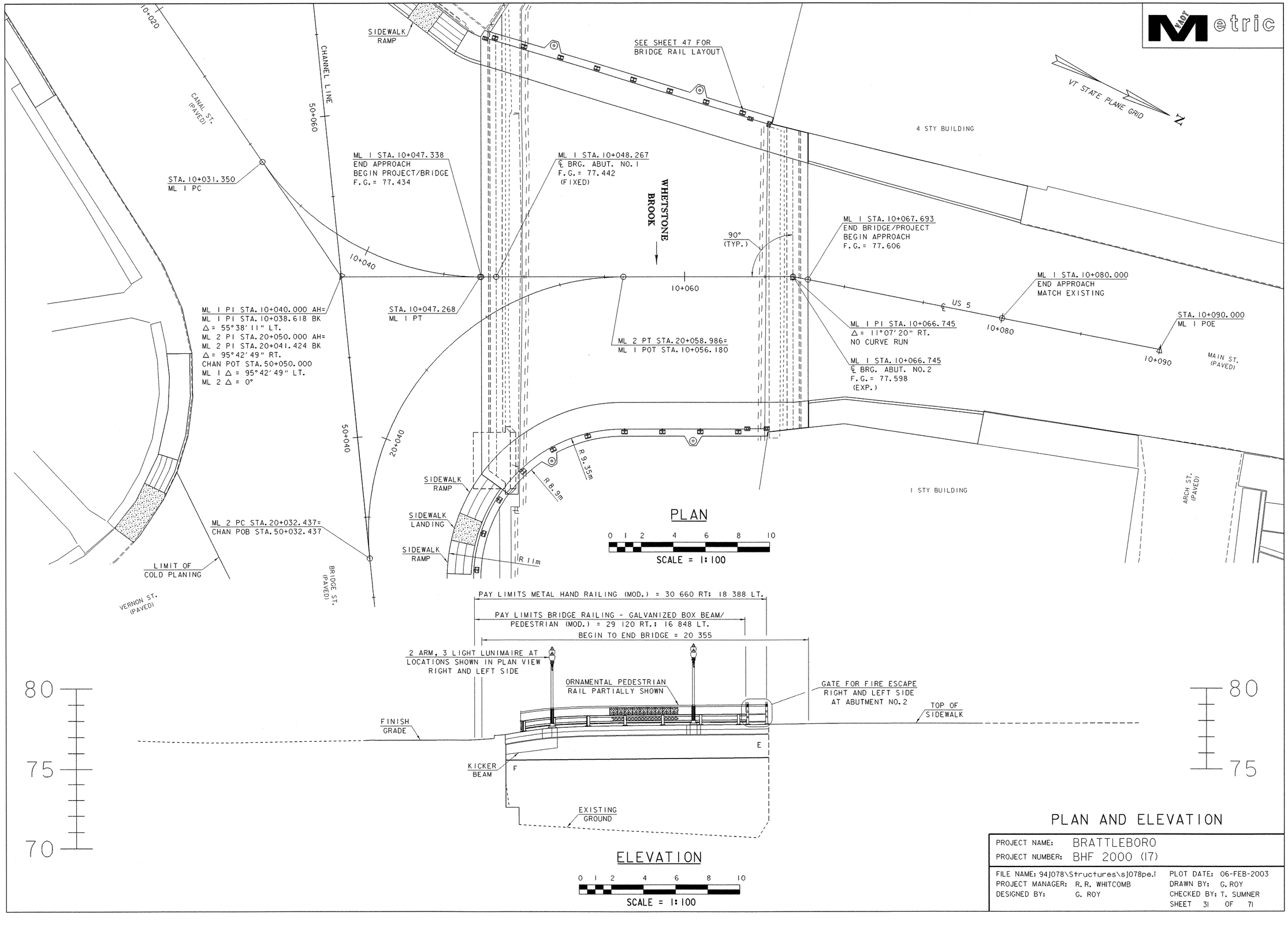
0 1 2 4 6 8 10
SCALE = 1:100

# STREET LIGHTING LAYOUT

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078ill.f
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 06-FEB-2003
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 30 OF 71

Metric




## PLAN

0 1 2 4 6 8 10

SCALE = 1:100




## ELEVATION

0 1 2 4 6 8 10

SCALE = 1:100

# PLAN AND ELEVATION

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |

| | | | |
|---|---|---|---|
| FILE NAME: 94J078\Structures\sJ078pe.I | | PLOT DATE: | 06-FEB-2003 |
| PROJECT MANAGER: | R. R. WHITCOMB | DRAWN BY: | G. ROY |
| DESIGNED BY: | G. ROY | CHECKED BY: | T. SUMNER |
| | | SHEET | 31 OF 71 |

Metric

## GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 1996, AND ITS LATEST REVISIONS.

2. IN STREAM CONSTRUCTION SHALL BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO OCTOBER 1. ANY DEVIATION FROM THIS TIME PERIOD SHALL BE APPROVED IN WRITING BY THE AGENCY OF NATURAL RESOURCES.

3. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 20 DEGREES CELSIUS.

4. THE EXISTING STRUCTURAL STEEL ON THIS PROJECT WAS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE STRUCTURAL STEEL.

5. THE EXISTING CONCRETE JERSEY BARRIER ON THE UPSTREAM SIDE OF BRIDGE BELONGS TO THE TOWN OF BRATTLEBORO. THE CONTRACTOR SHALL REMOVE AND DELIVER THE BARRIER TO A SITE SELECTED BY BRATTLEBORO PUBLIC WORKS DIRECTOR, STEVE BARRETT. THE EQUIPMENT AND LABOR FOR THIS WORK WILL BE INCIDENTAL TO ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE".

6. PEDESTRIAN ACCESS TO ALL OF THE BUILDINGS WITHIN THE PROJECT APPROACH LIMITS SHALL BE MAINTAINED AT ALL TIMES FOR RESIDENCES AND DURING BUSINESS HOURS OR OPERATING HOURS FOR PUBLIC OR PRIVATE ESTABLISHMENTS. ACCESS TO THE EXISTING FIRE ESCAPES AT ABUTMENT NO.2 (LT. & RT.) DOES NOT HAVE TO BE MAINTAINED DURING CONSTRUCTION.

7. THE EXISTING GREEN, ORNATE BRIDGE RAIL ON THE DOWNSTREAM SIDE WILL BECOME THE PROPERTY OF THE TOWN OF BRATTLEBORO. THE CONTRACTOR SHALL REMOVE AND DELIVER THE RAIL IN LENGTHS EQUAL TO THE SPACING OF THE BRIDGE RAIL FASCIA SUPPORTS TO A SITE SELECTED BY BRATTLEBORO PUBLIC WORKS DIRECTOR, STEVE BARRETT. THE EQUIPMENT AND LABOR FOR THIS WORK WILL BE INCIDENTAL TO ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE".

8. BRATTLEBORO POLICE DEPARTMENT HAS EXPRESSED INTEREST IN PROVIDING OFFICERS FOR THE ITEM 630.10,"UNIFORMED TRAFFIC OFFICERS".

## EARTHWORK AND RELATED ITEMS

9. THE FOLLOWING WILL BE PAID FOR UNDER ITEM 529.20,"PARTIAL REMOVAL OF STRUCTURE":
   - -REMOVAL AND DISPOSAL OF EXISTING SUPERSTRUCTURE
   - -SALVAGE AND DELIVERY OF EXISTING CONCRETE JERSEY BARRIER AND BRIDGE RAIL TO THE TOWN OF BRATTLEBORO.
   - -REMOVAL AND DISPOSAL OF EXISTING TELEPHONE CONDUIT BEAMS.
   - -PARTIAL REMOVAL AND DISPOSAL OF EXISTING BACKWALLS.
   - -PARTIAL REMOVAL AND DISPOSAL OF EXISTING FIRE ESCAPES.

10. ALL SUBSTRUCTURE WORK SHALL BE KEPT SEPARATED FROM THE STREAM BY MEANS APPROVED BY THE ENGINEER.

11. WHEREVER PAVEMENT IS WITHIN EXCAVATION AREAS, THE OUTSIDE LIMITS OF EXCAVATION WILL BE SAW CUT TO THE FULL DEPTH OF PAVEMENT TO PROVIDE A NEAT CUT LINE. SAW CUT SHALL BE DONE BEFORE NEW PAVEMENT IS PLACED. PAYMENT FOR THE SAW CUTTING WILL BE INCIDENTAL TO ADJACENT EXCAVATION PAY ITEMS.

12. EXCAVATION OF THE PORTION OF THE EXISTING LAID-UP STONE RETAINING WALL REQUIRED FOR CONSTRUCTING THE NEW ABUTMENT EXTENSION BEARING CAP WILL BE PAID FOR AS ITEM 204.25, "STRUCTURE EXCAVATION".

13. STONES FROM THE RETAINING WALL EXCAVATION WILL BE SALVAGED AND STOCKPILED. THE STONES WILL BE USED TO REBUILD AREAS OF THE LAID-UP STONE RETAINING WALL DISTURBED DURING EXCAVATION AND TO PAVE THE SURFACE AREA BETWEEN THE TOP OF WALL AND BACK OF NEW SIDEWALK. THE COST OF SALVAGING, STOCKPILING, PAVING AND REBUILDING THE RETAINING WALL SHALL BE INCLUDED IN THE ITEM 602.20, "DRY RUBBLE MASONRY".

14. CARE SHALL BE TAKEN WHEN EXCAVATING FOR THE ABUTMENT EXTENSION AND THE CAST-IN-PLACE SIDEWALK ALONG BRIDGE STREET SO AS TO NOT DISTURB OR DAMAGE THE REMAINING PORTION OF THE LAID-UP STONE RETAINING WALL. ANY DAMAGE DONE OUTSIDE THE IMMEDIATE VICINITY OF THE REQUIRED EXCAVATION WILL BE REPAIRED BY THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE.

15. ITEM 208.40, COFFERDAM, HAS BEEN INCLUDED AT THE REINFORCED CONCRETE JUNCTION BOX LOCATION TO PAY FOR MEASURES NECESSARY TO PROTECT WORKERS AND THE TRAVELING PUBLIC DURING THE CONSTRUCTION OF THIS DEEP DRAINAGE STRUCTURE.

16. NOT USED

17. NOT USED

## CONCRETE AND REINFORCING STEEL

18. THE DECK AND SIDEWALK CONCRETE ON BRIDGE SHALL BE CONCRETE, HIGH PERFORMANCE CLASS A. ALL OTHER CONCRETE SHALL BE CONCRETE, HIGH PERFORMANCE CLASS B UNLESS NOTED OTHERWISE.

19. SURFACES OF BRIDGE SEATS UNDER THE BEARING DEVICES SHALL BE LEVEL. OTHER AREAS OF THE BRIDGE SEAT SHALL BE SLOPED 2 PERCENT. THE ABUTMENT SEATS SHALL BE SLOPED FULL WIDTH TOWARD MIDSPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE GIVEN A STEEL TROWEL OR MAGNESIUM FLOAT FINISH.

20. CONCRETE PORTIONS OF THE ABUTMENT AND ABUTMENT EXTENSION ABOVE THE ADJACENT BRIDGE SEAT ELEVATIONS SHALL NOT BE PLACED UNTIL THE FINISH GRADE HAS BEEN DETERMINED BY THE RESIDENT ENGINEER.

21. THE DECK FOR EACH PHASE IS TO BE PLACED IN ONE CONTINUOUS PLACEMENT WITH A MAXIMUM DURATION OF EIGHT HOURS. IF CIRCUMSTANCES PREVENT THIS FROM BEING ACCOMPLISHED, A CONSTRUCTION JOINT SHALL BE USED. A 96-HOUR DELAY BETWEEN THE COMPLETION OF ONE DAY'S PLACEMENT AND THE BEGINNING OF ANOTHER PLACEMENT SHALL BE OBSERVED.

22. WHEN POURING THE DECK, THE CONCRETE SHALL BE DEPOSITED PARALLEL TO THE CENTERLINE OF BEARING SO AS TO LOAD THE GIRDERS EQUALLY.

23. NO TRAFFIC SHALL BE ALLOWED ON THE NEW DECK UNTIL THE CURE PERIOD FOR DECK AND SIDEWALK IS UP AND THE 28-DAY DESIGN STRENGTH IS ATTAINED, AS EVIDENCED BY TEST CYLINDERS CURED UNDER FIELD CONDITIONS.

24. THE KEY-IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT. UPWARD KEYS SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.

25. JOINTS AND SCORE MARKS IN THE CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

26. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 25 MILLIMETERS X 25 MILLIMETERS.

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

28. THE MINIMUM COVER FOR REINFORCING STEEL IN THE SUBSTRUCTURES SHALL BE 75 MILLIMETERS UNLESS DETAILED OTHERWISE.

29. ALL REINFORCING STEEL IN THE CONCRETE DECK AND BRIDGE CURBS SHALL BE EPOXY COATED AND PAID FOR UNDER THE ITEM 507.17,"EPOXY COATED REINFORCING STEEL".

30. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:

| | |
|---|---|
| SPACING: | +/- 25 MILLIMETERS |
| CLEARANCE: | +/- 6 MILLIMETERS |

## STRUCTURAL STEEL

31. ALL STRUCTURAL STEEL PAID UNDER THE ITEM 506.55,"STRUCTURAL STEEL (PLATE GIRDER)" SHALL CONFORM TO AASHTO M270/M270M GRADE 345W UNLESS NOTED OTHERWISE ON PLANS.

32. THE CHARPY V-NOTCH TEST IS REQUIRED ONLY FOR THOSE MEMBERS DESIGNATED AS SUCH ON THE PLANS AS SPECIFIED IN SUBSECTION 714.01 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

33. AFTER THE SUPERSTRUCTURE STEEL HAS BEEN SET ON THE BEARINGS, ELEVATIONS SHALL BE TAKEN ALONG THE TOP OF EACH GIRDER UNDER THE DIRECTION OF THE RESIDENT ENGINEER. THESE ELEVATIONS SHALL BE USED IN DETERMINING THE FINAL GRADE.

34. ALL FIELD CONNECTIONS SHALL BE MADE USING M22 X 2.5 TYPE 3 BOLTS CONFORMING TO AASHTO M 164M TYPE 3. HOLES SHALL BE 24 MILLIMETER DIAMETER, UNLESS OTHERWISE NOTED.

35. FLEMING BRACKETS OR SIMILAR FALSE WORK SHALL BE DESIGNED BY THE CONTRACTOR AND SHALL BE LIMITED TO A MAXIMUM SPACING OF 1200 MILLIMETERS.

36. ANY HOLES IN THE FASCIA BEAMS NOT OTHERWISE FILLED SHALL BE FITTED WITH BUTTON HEAD OR HEX HEAD BOLTS CONFORMING TO AASHTO M164M TYPE 3 AND SUBSECTION 506.19 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

## TELEPHONE LINES

37. THE EXISTING TELEPHONE CONDUIT SUPPORT BEAMS SHALL BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR. THE COST OF THIS WORK WILL BE PAID FOR UNDER ITEM 529.20,"PARTIAL REMOVAL OF STRUCTURE".

38. THE COST AND INSTALLATION OF THE TELEPHONE CONDUIT DIAPHRAGMS AND CONNECTIONS WILL BE PAID FOR AS ITEM 506.55,"STRUCTURAL STEEL (PLATE GIRDER)".

39. THE CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING FOUR NEW TELEPHONE CONDUITS BETWEEN THE FRONT FACES OF THE BACKWALLS AND HANGING ALL TWELVE TELEPHONE CONDUITS (4 NEW, 8 EXISTING) FROM THE DIAPHRAGMS INCLUDING FIELD DRILLING OF HOLES IN THE DIAPHRAGMS FOR THE HANGERS. THE COST OF DRILLING HOLES, LABOR, TOOLS AND EQUIPMENT REQUIRED FOR THIS WORK WILL BE PAID FOR AS ITEM 625.16, "DUCTS ON BRIDGE". VERIZON WILL PROVIDE CONTRACTOR WITH THE HANGER ASSEMBLIES, NEW CONDUITS AND ALL ASSOCIATED HARDWARE AND MATERIALS NEEDED TO DO THE WORK.

## WATERLINE

40. THE COST AND INSTALLATION OF WATERLINE DIAPHRAGMS AND CONNECTION PLATES WILL BE PAID FOR AS ITEM 506.55,"STRUCTURAL STEEL (PLATE GIRDER)".

41. CONTRACTOR WILL VERIFY LOCATION OF WATER MAIN IN THE FIELD TO INSURE THAT IT WILL NOT INTERFERE WITH THE ANCHOR BOLTS OF THE NEW BEARINGS. A MINIMUM OF 100 MILLIMETERS CLEARANCE BETWEEN OUTERMOST EDGE OF WATER MAIN AND ANCHOR BOLT IS REQUIRED.

42. THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER WHO WILL CONTACT STEVE BARRETT OF BRATTLEBORO PUBLIC WORKS AT (802) 254-4255, TWO WEEKS PRIOR TO COMMENCING WORK ON THE WATERLINE.

43. THE 25mm DIAMETER THREADED HANGER RODS USED IN THE WATERLINE INSTALLATION SHALL CONFORM TO ASTM A449.

## FIRE ESCAPES

44. A PORTION OF THE TOP STEP OR PLATFORM OF THE EXISTING FIRE ESCAPES WILL NEED TO BE TRIMMED OFF IN ORDER TO ALLOW ENOUGH CLEARANCE FOR THE NEW BRIDGE DECK. THE COST OF THIS REMOVAL AND DISPOSAL WILL BE PAID FOR UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE".

45. IF ANY ADDITIONAL MODIFICATIONS OR SUPPORTS ARE REQUIRED TO MAINTAIN THE SAFETY AND INTEGRITY OF THE FIRE ESCAPE, THE COST OF THIS WORK WILL BE PAID FOR AS EXTRA WORK ON A FORCE ACCOUNT BASIS AS DESCRIBED IN SECTION 109.06 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

## GUARD RAIL

46. THE ORNAMENTAL PEDESTRIAN RAIL, INCLUDING ORNAMENTAL POSTS, ANCHORAGE ASSEMBLES, BASE PLATES AND GATES FOR THE FIRE ESCAPES, WILL BE PAID FOR AS ITEM 525.15, "METAL HAND RAILING (MOD.)". THE PEDESTRIAN RAILING WILL BE PAINTED BLACK.

47. THE THREE-RAIL BOX BEAM BRIDGE RAIL WILL BE PAID FOR AS ITEM 525.32,"BRIDGE RAILING-GALVANIZED BOX BEAM/PEDESTRIAN (MOD.)". THE BRIDGE RAIL WILL BE GALVANIZED AND PAINTED BLACK.

## DETOURS AND SIGNING

48. ALL NEW SIGNS AND POSTS DETAILED IN THE DETOUR SIGN SUMMARY SHEETS WILL BE REMOVED BY THE CONTRACTOR AT THE END OF THE PROJECT OR AS DIRECTED BY THE RESIDENT ENGINEER. THE SIGNS WILL BE STOCKPILED AS DIRECTED BY THE RESIDENT ENGINEER AND WILL BECOME THE PROPERTY OF THE TOWN OF BRATTLEBORO. THE COST OF REMOVING THESE SIGNS AND STOCKPILING THEM WILL BE INCIDENTAL TO ITEM 675.20, "TRAFFIC SIGNS (TYPE A) (MOD.)". THE COST OF REMOVING THE POSTS WILL BE INCIDENTAL TO ITEM 675.301,"FLANGED CHANNEL SIGN POST (MOD.)". SALVAGED SIGNS DETAILED IN THE TRAFFIC SIGN SUMMARY SHEET WILL REMAIN IN THEIR FINAL PLACEMENT AS SHOWN IN THE PLANS AFTER PROJECT COMPLETION.

49. ALL OTHER CONSTRUCTION APPROACH SIGNING NOT DETAILED IN THE DETOUR SIGN SUMMARY SHEETS WILL BE INCIDENTAL TO ITEM 527.10,"MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS".

50. ALL COSTS INVOLVED IN MAINTAINING AND ADJUSTING ALL DETOUR SIGNING AS DIRECTED BY THE RESIDENT ENGINEER WILL BE CONSIDERED INCIDENTAL TO ITEM 527.10,"MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS".

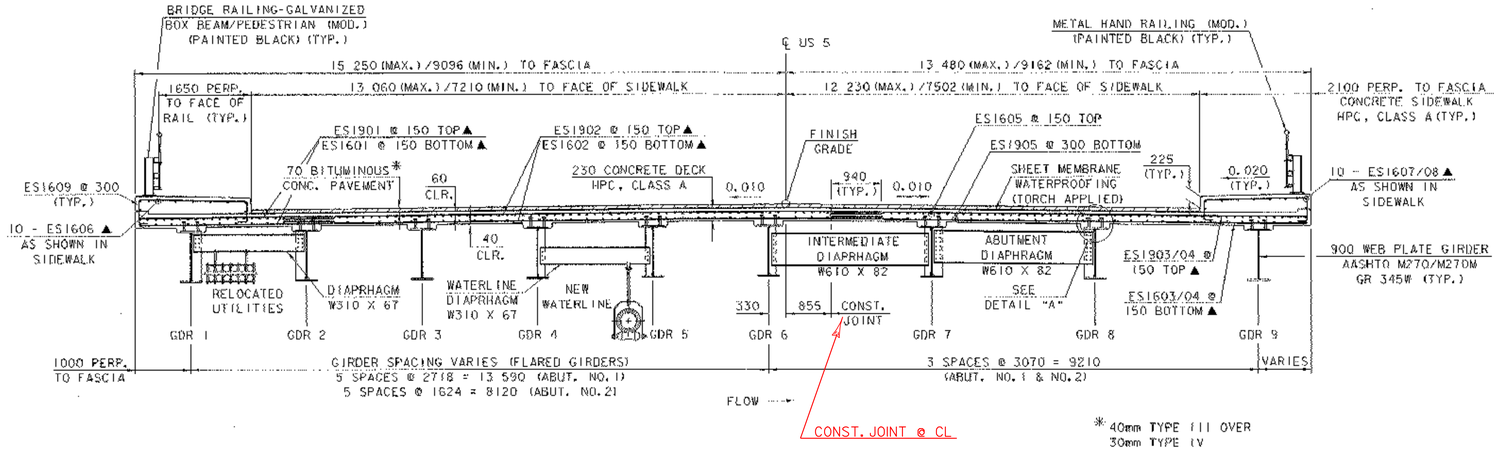
51. THE TEMPORARY TRAFFIC BARRIER SHALL BE PAID FOR BY THE UNIT PRICE FOR EACH PHASE INSTALLATION AS SHOWN ON THE PLANS. ANY INCIDENTAL MOVES MADE TO ACCOMMODATE THE CONTRACTORS OPERATIONS WILL NOT BE PAID FOR UNLESS APPROVED BY THE ENGINEER PRIOR TO THE NEW PLACEMENT.

# PROJECT NOTES

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |

| | | | |
|---|---|---|---|
| FILE NAME: 94J078\Structures\sJ078pn.i | | PLOT DATE: 06-FEB-2003 | |
| PROJECT MANAGER: | R.R. WHITCOMB | DRAWN BY: | G. ROY |
| DESIGNED BY: | T. SUMNER | CHECKED BY: | T. SUMNER |
| | | SHEET 32 OF 71 | |

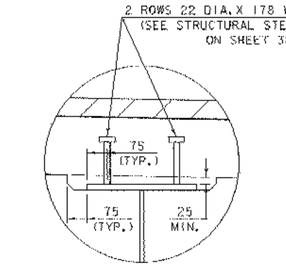
Metric




## BRIDGE TYPICAL SECTION @ MIDSPAN

0 1 2 3 4 5

SCALE = 1:50




## DETAIL "A"

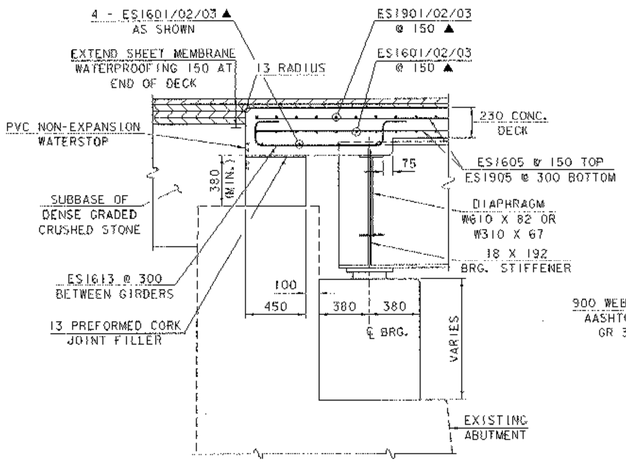
0 0.5 1

SCALE = 1:10

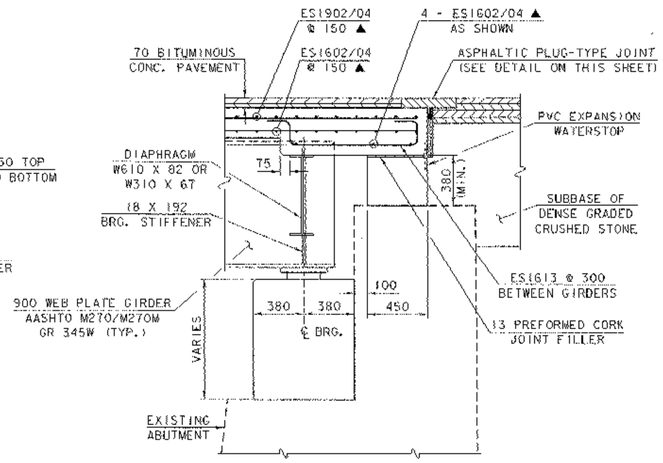
* 40mm TYPE III OVER 30mm TYPE IV

**PLUG JOINT NOTES:**

1. THE CLOSED CELL FOAM SHALL BE ADHERED TO THE BRIDGE DECK WITH AN APPROVED STRUCTURAL ADHESIVE.
2. SUBBASE MATERIAL SHALL BE TIGHTLY COMPACTED AGAINST THE FOAM FROM THE BOTTOM OF THE BRIDGE DECK TO THE TOP OF THE FOAM MATERIAL.
3. ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS ASSOCIATED WITH THE INSTALLATION OF THE ASPHALTIC PLUG-TYPE JOINT, INCLUDING THE FOAM AND STRUCTURAL ADHESIVE, SHALL BE PAID FOR UNDER THE UNIT PRICE BID FOR ITEM 516.10, "BRIDGE EXPANSION JOINT".




## ABUTMENT NO. 1 (FIXED)

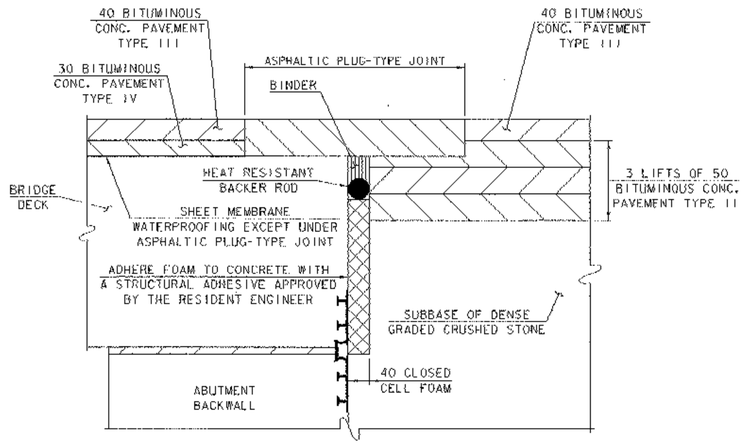



## ABUTMENT NO. 2 (EXPANSION)

## ABUTMENT END DETAILS

0 1 2

SCALE = 1:20



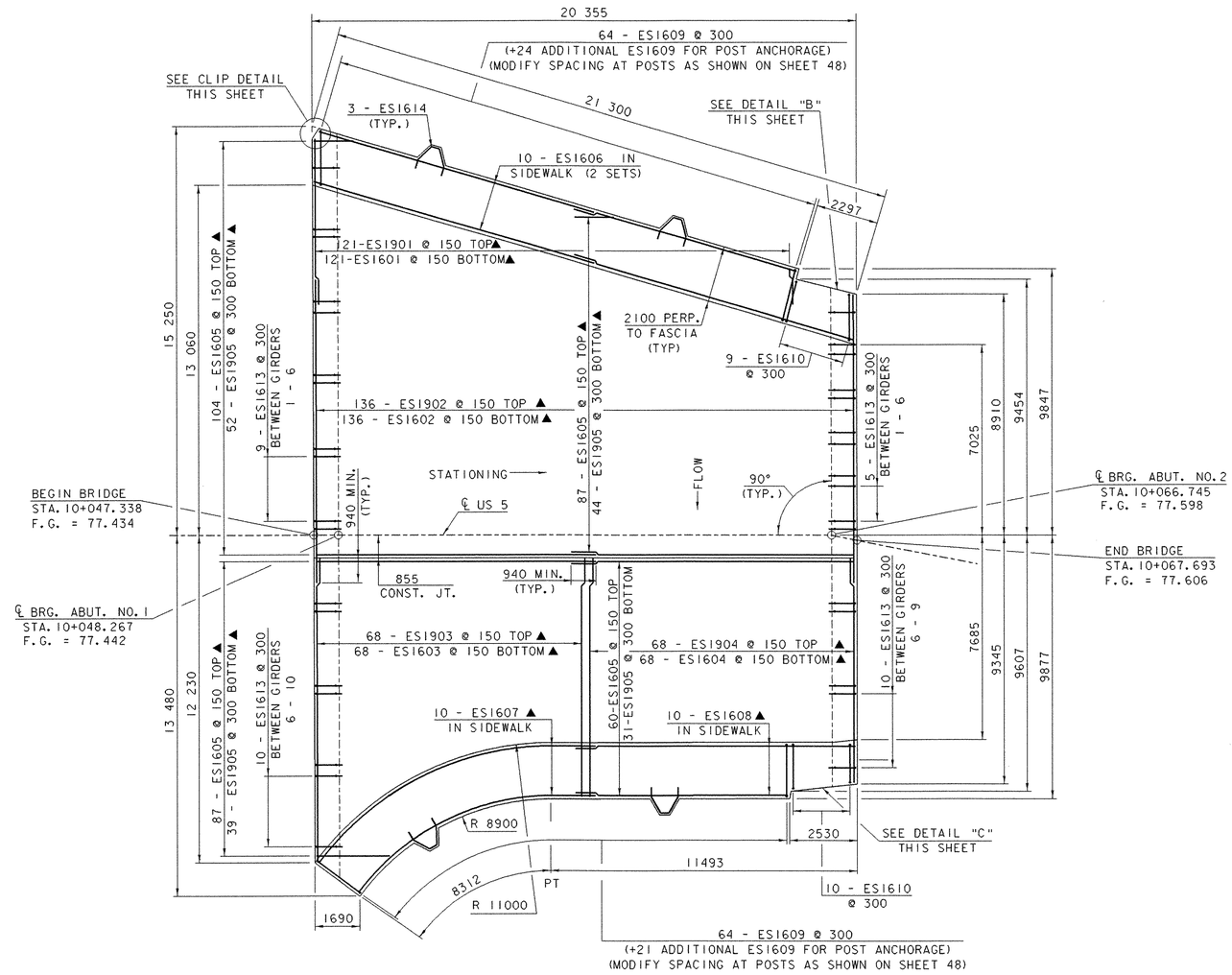

## ASPHALTIC PLUG-TYPE JOINT DETAIL

0 0.25 0.5

SCALE = 1:5

## BRIDGE TYPICAL SECTION

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |
| FILE NAME: 94J078\Structures\sJ078bts.I | PLOT DATE: 06-FEB-2003 |
| PROJECT MANAGER: R. R. WHITCOMB | DRAWN BY: B. MAURICE |
| DESIGNED BY: T. SUMNER | CHECKED BY: T. SUMNER |
| | SHEET 33 OF 71 |




## DECK REINFORCING PLAN

0 1 2 4 6 8 10

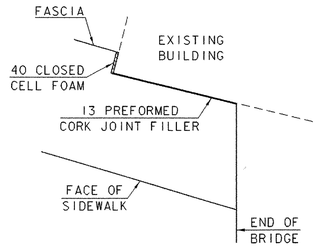
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## CLIP DETAIL

0 1 2

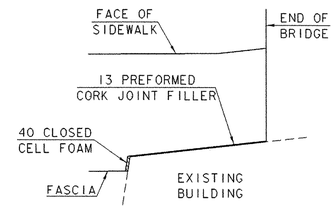
SCALE = 1:20




## DETAIL "B"

0 1 2 3 4 5

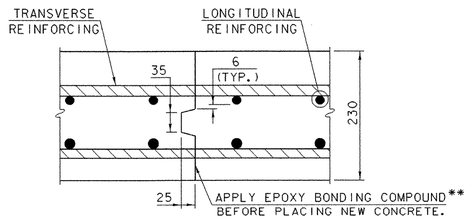
SCALE = 1:50




## DETAIL "C"

0 1 2 3 4 5

SCALE = 1:50




## LONGITUDINAL BRIDGE DECK CONSTRUCTION JOINT DETAILS

0 0.25 0.5

SCALE = 1:5

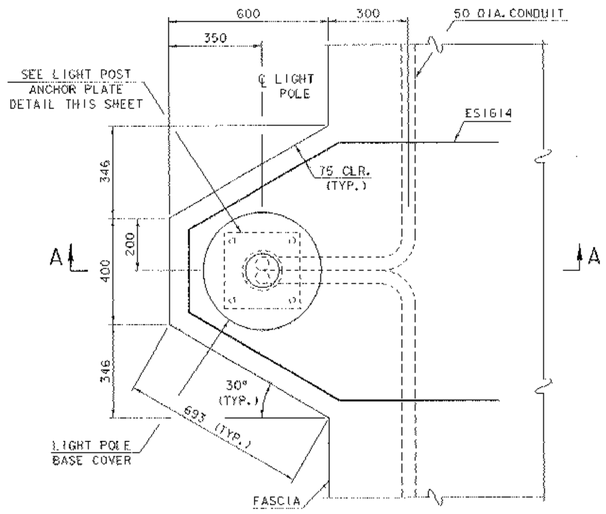
** PAYMENT SHALL BE MADE SUBSIDIARY TO ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".

DECK REINFORCING PLAN

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94j078\Structures\sj078drp.i
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: T. SUMNER
PLOT DATE: 06-FEB-2003
DRAWN BY: B. MAURICE
CHECKED BY: T. SUMNER
SHEET 34 OF 71

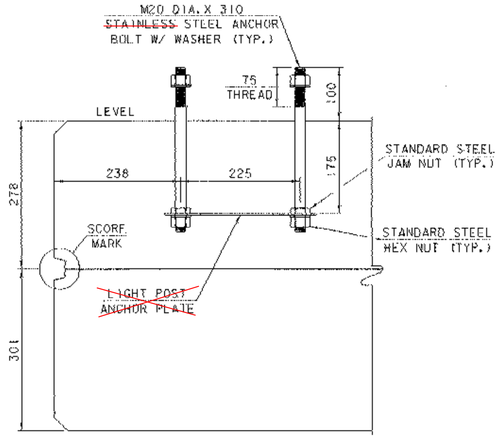
Metric




LIGHT POLE BASE REINFORCING DETAIL

0 0.5 1

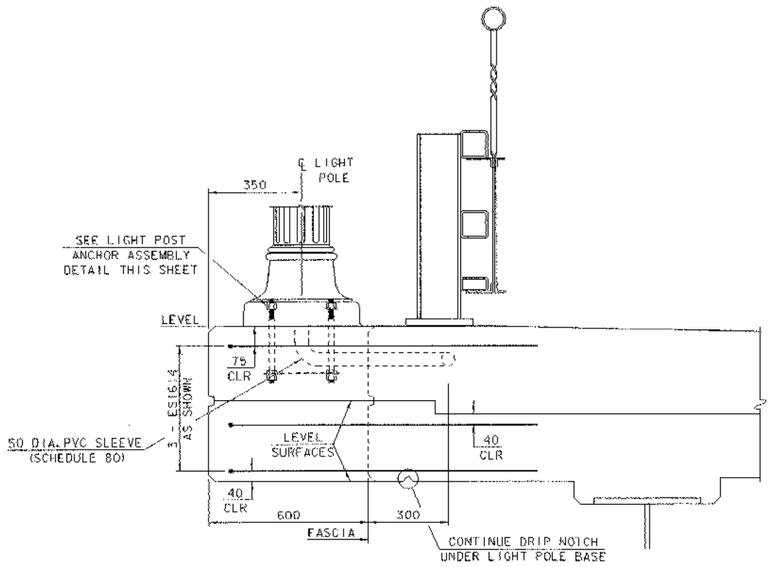
SCALE = 1:10




LIGHT POST ANCHOR ASSEMBLY

0 0.25 0.5

SCALE = 1:5

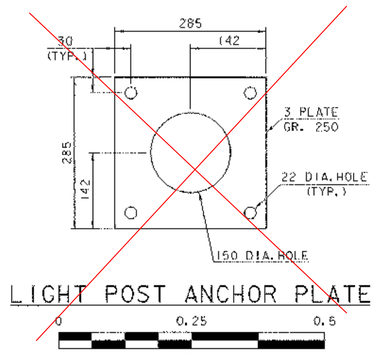



SECTION A-A

0 0.5 1

SCALE = 1:10

ANCHOR BOLTS DRILLED AND EPOXIED INTO PLACE




LIGHT POST ANCHOR PLATE

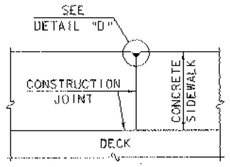
0 0.25 0.5

SCALE = 1:5

# LIGHT POST BASE DETAILS

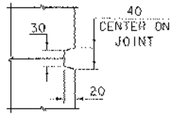
| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |

| | | | |
|---|---|---|---|
| FILE NAME: 94J078\Structures\sj078lbd.l | | PLOT DATE: | 06-FEB-2003 |
| PROJECT MANAGER: | R. R. WHITCOMB | DRAWN BY: | G. ROY |
| DESIGNED BY: | T. SUMNER | CHECKED BY: | T. SUMNER |
| | | SHEET | 35 OF 71 |

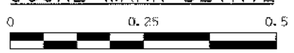



SECTION B-B

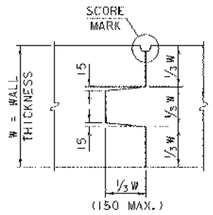
NOT TO SCALE




SCORE MARK DETAIL

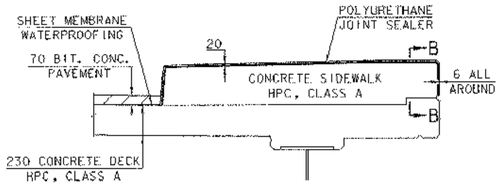



SCALE = 1:5



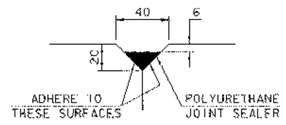

TYPICAL CONCRETE
CONSTRUCTION JOINT

NOT TO SCALE




TYPICAL SECTION THROUGH
SIDEWALK CONSTRUCTION JOINT

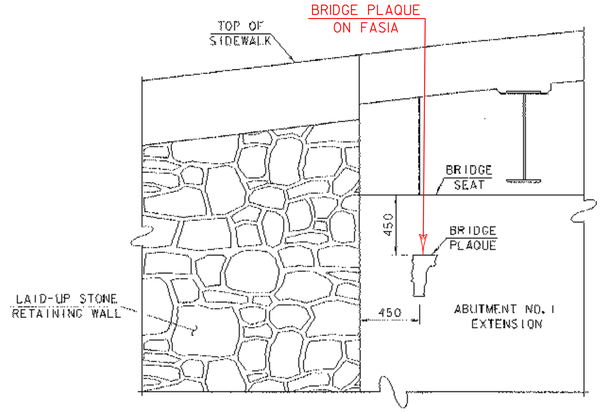
NOT TO SCALE




DETAIL "D"

NOT TO SCALE

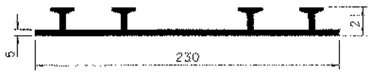
POLYURETHANE JOINT SEALER PER SUBSECTION 524.06(d). COLOR TO MATCH CONCRETE. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".




BRIDGE PLAQUE DETAIL

NOT TO SCALE

THE BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AS SHOWN OR AS DIRECTED BY THE ENGINEER.




P.V.C. WATERSTOP FOR NON-EXPANSION JOINTS

NOT TO SCALE




P.V.C. WATERSTOP FOR EXPANSION JOINTS

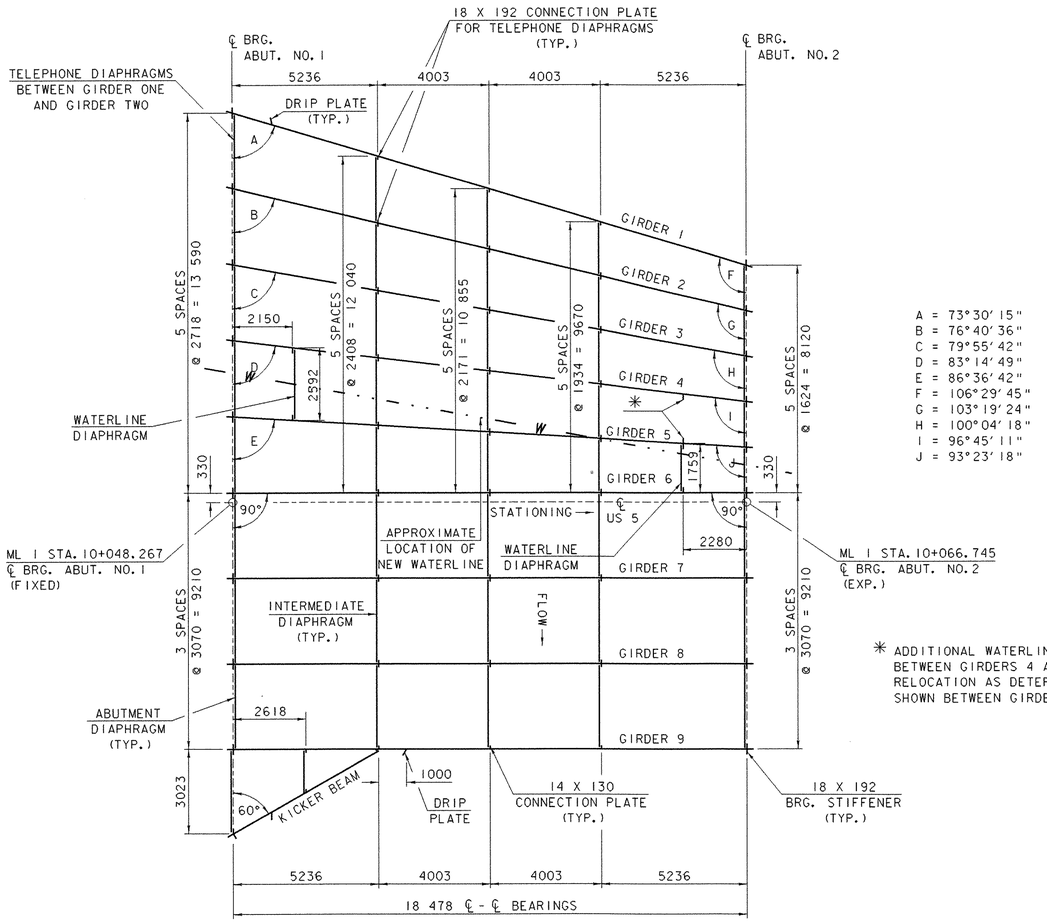
NOT TO SCALE

## NOTES

1. SHEET MEMBRANE WATERPROOFING SHALL EXTEND TO FACE OF SIDEWALK.
2. CONSTRUCTION JOINTS THROUGH CONCRETE SIDEWALK SHALL BE SPACED A MAXIMUM OF 4500 CENTER TO CENTER AND SHALL BE 550 MINIMUM FROM THE CENTER OF THE NEAREST BRIDGE RAIL POST. CONCRETE SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOURS DELAY BETWEEN ADJACENT POURS.
3. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CONSTRUCTION JOINTS. SIDEWALK REINFORCING STIRRUP BARS SHALL BE TURNED AS REQUIRED TO FIT.
4. THE COST FOR P.V.C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A". OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.

## MISCELLANEOUS PROJECT DETAILS

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |
| FILE NAME: 94J078\Structures\sj078mpd.l | PLOT DATE: 06-FEB-2003 |
| PROJECT MANAGER: R. R. WHITCOMB | DRAWN BY: G. ROY |
| DESIGNED BY: T. SUMNER | CHECKED BY: T. SUMNER |
| | SHEET 36 OF 71 |



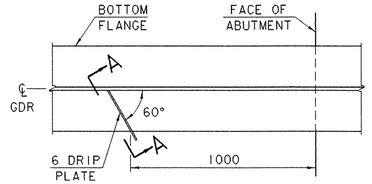

A = 73°30'15"
B = 76°40'36"
C = 79°55'42"
D = 83°14'49"
E = 86°36'42"
F = 106°29'45"
G = 103°19'24"
H = 100°04'18"
I = 96°45'11"
J = 93°23'18"

✳ ADDITIONAL WATERLINE DIAPHRAGM CONNECTION PLATES REQUIRED BETWEEN GIRDERS 4 AND 5 IN ORDER TO ACCOMMODATE WATERLINE RELOCATION AS DETERMINED IN THE FIELD. (SAME LOCATION AS SHOWN BETWEEN GIRDERS 5 AND 6)

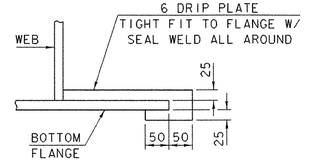
## FRAMING PLAN

0 1 2 4 6 8 10

SCALE = 1:100




## DRIP PLATE PLAN



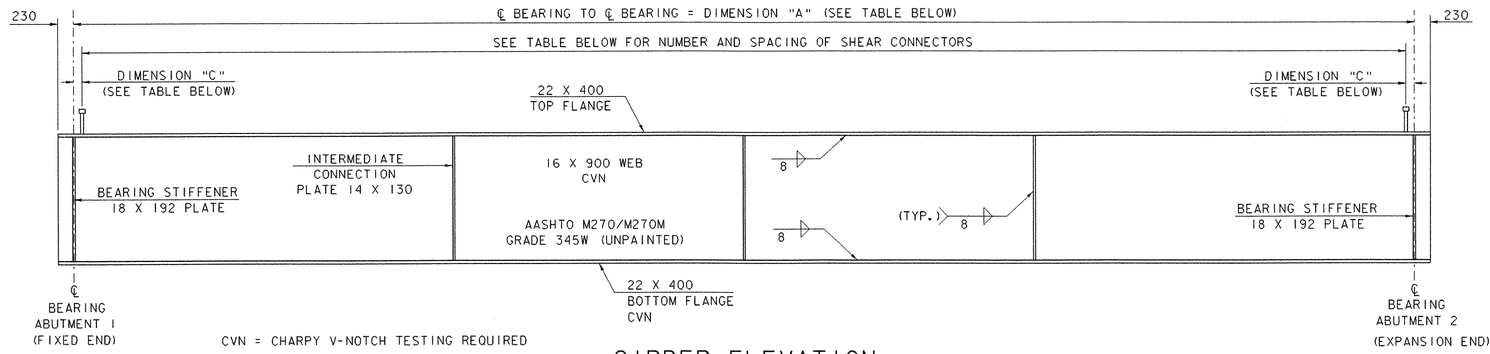

## SECTION A-A

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

# FRAMING PLAN

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |

| | | | |
|---|---|---|---|
| FILE NAME: 94J078\Structures\sj078fp1 | | PLOT DATE: | 06-FEB-2003 |
| PROJECT MANAGER: | R. R. WHITCOMB | DRAWN BY: | B. MAURICE |
| DESIGNED BY: | T. SUMNER | CHECKED BY: | T. SUMNER |
| | | SHEET | 37 OF 71 |




CVN = CHARPY V-NOTCH TESTING REQUIRED

## GIRDER ELEVATION

0 1 2 3 4

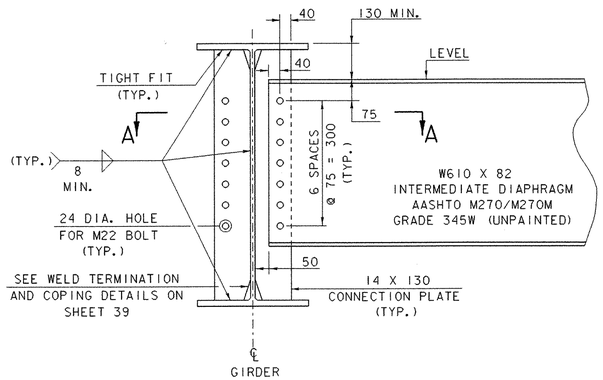
HORIZONTAL SCALE = 1:40

0 1 2

VERTICAL SCALE = 1:20

| GIRDER LENGTHS | | | SHEAR CONNECTORS | | |
|---|---|---|---|---|---|
| GIRDER NUMBER | DIMENSION "A" | TOTAL LENGTH | SPACING | NUMBER OF STUDS | DIMENSION "C" |
| 1 | 19 271 | 19 731 | 120 AT 160 | 242 | 36 |
| 2 | 18 989 | 19 449 | 118 AT 160 | 238 | 55 |
| 3 | 18 767 | 19 227 | 117 AT 160 | 236 | 24 |
| 4 | 18 607 | 19 067 | 116 AT 160 | 234 | 24 |
| 5 | 18 510 | 18 970 | 115 AT 160 | 232 | 55 |
| 6,7,8,9 | 18 478 | 18 938 | 115 AT 160 | 232 | 39 |

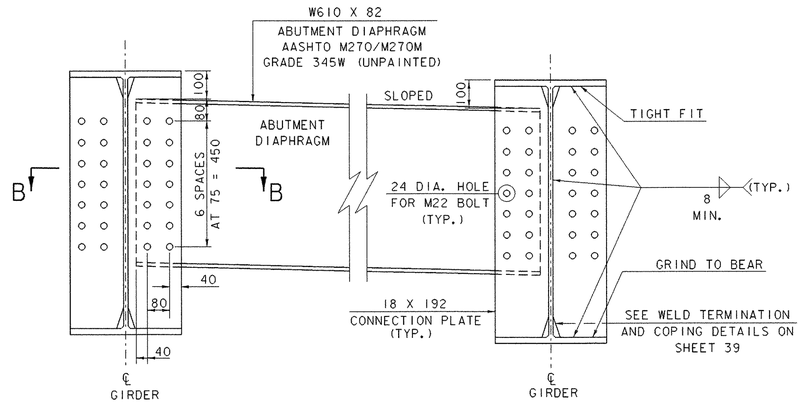
NOTES:
1. CVN - SHALL MEET CHARPY V-NOTCH TEST
2. ALL STRUCTURAL STEEL SHALL BE AASHTO M270/M270M, GRADE 345W, UNPAINTED.




## INTERMEDIATE DIAPHRAGM AND INTERMEDIATE CONNECTION PLATE

0 0.5 1

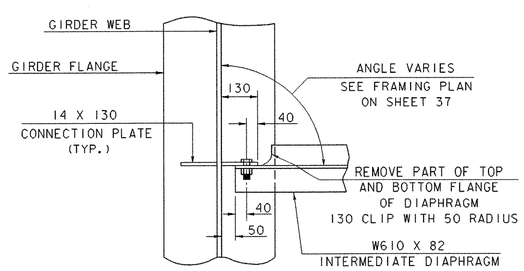
SCALE = 1:10




## ABUTMENT DIAPHRAGM AND ABUTMENT CONNECTION PLATE

0 0.5 1

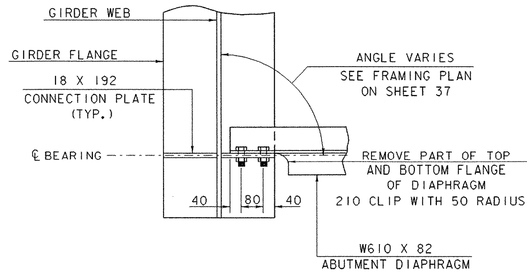
SCALE = 1:10




## SECTION A-A

0 0.5 1

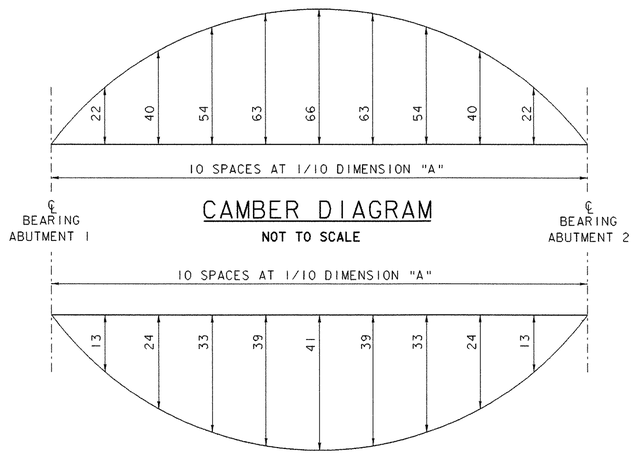
SCALE = 1:10




## SECTION B-B

0 0.5 1

SCALE = 1:10




## CAMBER DIAGRAM

NOT TO SCALE

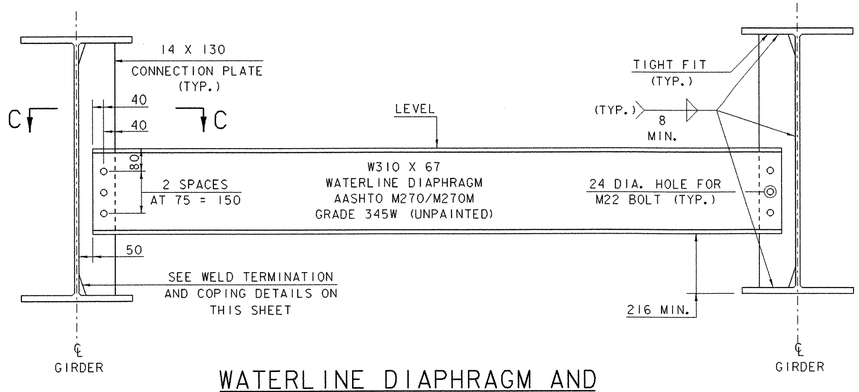
## DEAD LOAD DEFLECTION

NOT TO SCALE

## GIRDER DETAILS

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

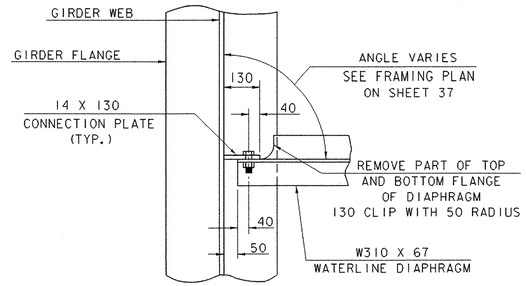
FILE NAME: 94J078\Structures\sj078stl.i
PROJECT MANAGER: R.R. WHITCOMB
DESIGNED BY: T. SUMNER
PLOT DATE: 06-FEB-2003
DRAWN BY: B. MAURICE
CHECKED BY: T. SUMNER
SHEET 38 OF 71




## WATERLINE DIAPHRAGM AND WATERLINE CONNECTION PLATE

0 0.5 1

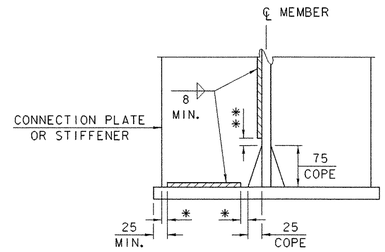
SCALE = 1:10




## SECTION C-C

0 0.5 1

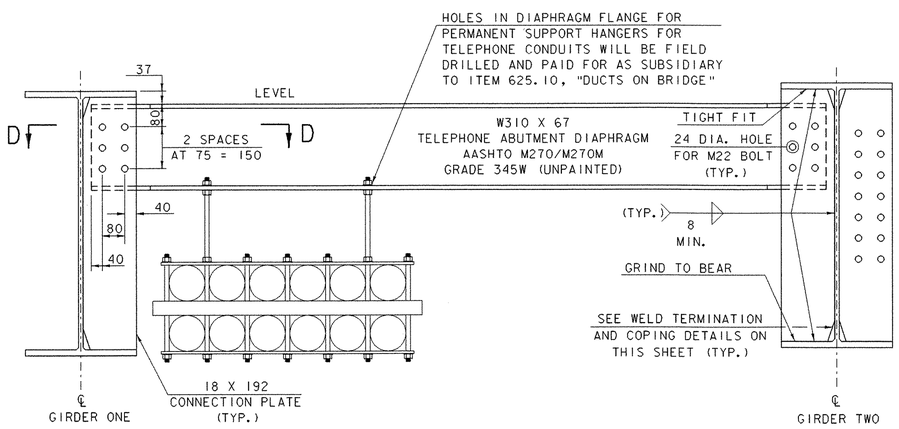
SCALE = 1:10




## WELD TERMINATION AND COPING DETAIL FOR STEEL MEMBERS

* NO WELD FOR 6 MIN., 12 MAX. (EXCEPT MUST MAINTAIN 25 MIN. FROM EDGE OF FLANGE)

** 12 ± 6 FOR CONNECTION PLATE OR STIFFENER TO WEB WELD ONLY.

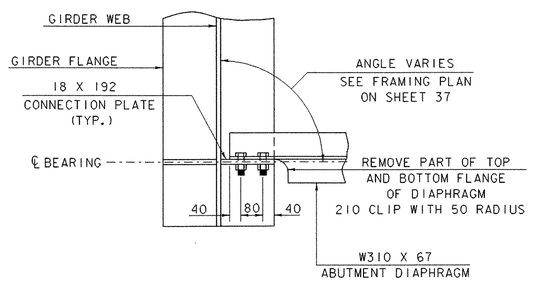



## TELEPHONE ABUTMENT DIAPHRAGM AND TELEPHONE ABUTMENT CONNECTION PLATE BETWEEN GIRDER ONE AND GIRDER TWO

0 0.5 1

SCALE = 1:10

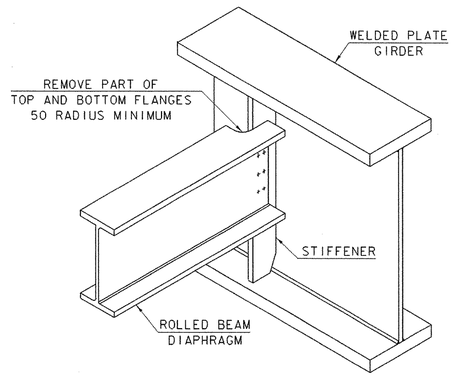
TELEPHONE INTERMEDIATE DIAPHRAGM AND TELEPHONE INTERMEDIATE CONNECTION PLATE DETAILS WILL BE THE SAME AS TELEPHONE ABUTMENT DIAPHRAGM AND TELEPHONE ABUTMENT CONNECTION PLATES BETWEEN GIRDER ONE AND GIRDER TWO EXCEPT FOR GRIND TO BEAR CAN BE REPLACED WITH TIGHT FIT.




## SECTION D-D

0 0.5 1

SCALE = 1:10



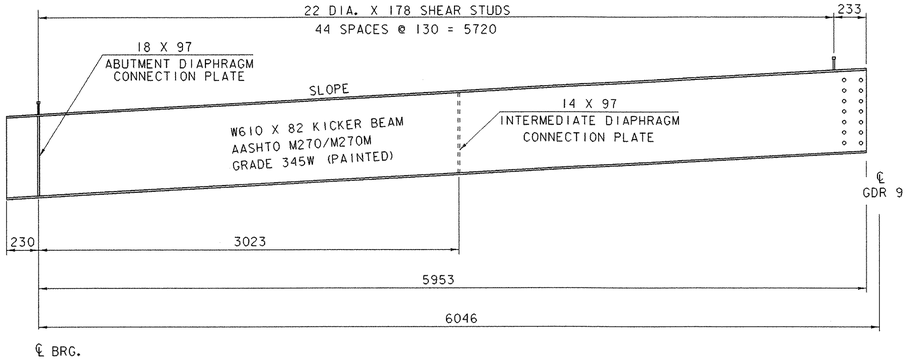

SEE CONTRACT DRAWINGS FOR SIZES OF MEMBERS AND CONNECTION DETAILS

## ROLLED BEAM USED AS DIAPHRAGM

# UTILITY DIAPRAGM DETAILS

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |

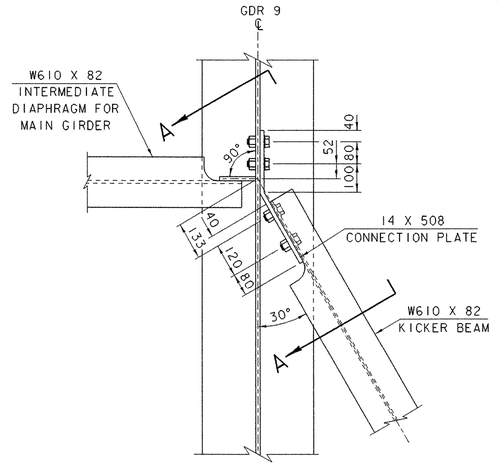
| | | | |
|---|---|---|---|
| FILE NAME: 94j078\structures\sj078st2.1 | | PLOT DATE: | 06-FEB-2003 |
| PROJECT MANAGER: | R.R. WHITCOMB | DRAWN BY: | B. MAURICE |
| DESIGNED BY: | T. SUMNER | CHECKED BY: | T. SUMNER |
| | | SHEET | 39 OF 71 |




## KICKER BEAM ELEVATION

0 1 2

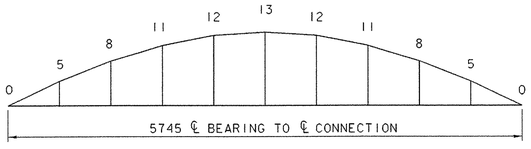
SCALE = 1:20




## KICKER BEAM CONNECTION TO GIRDER 9 DETAIL

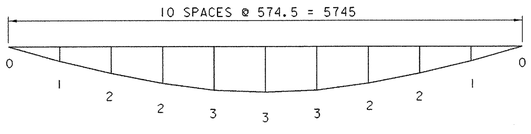
0 0.5 1

SCALE = 1:10



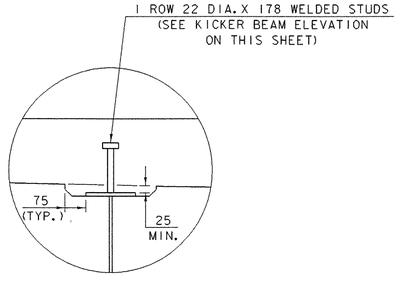

## CAMBER DIAGRAM

NOT TO SCALE




## DEAD LOAD DEFLECTION

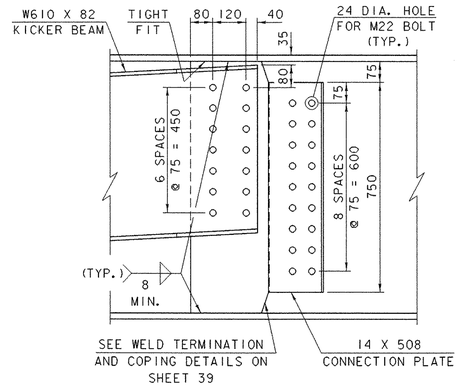
NOT TO SCALE




## KICKER BEAM SHEAR STUD DETAIL

0 0.5 1

SCALE = 1:10



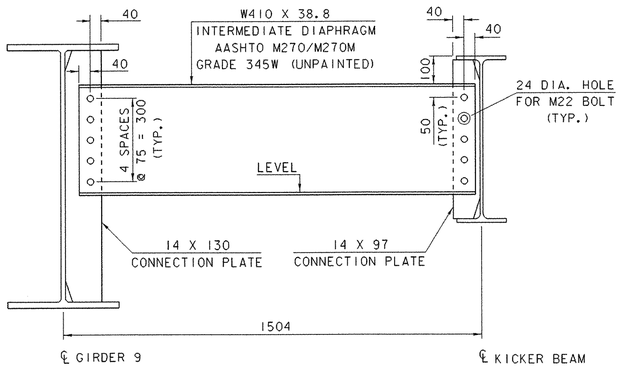

## SECTION A-A

0 0.5 1

SCALE = 1:10

# KICKER BEAM DETAILS

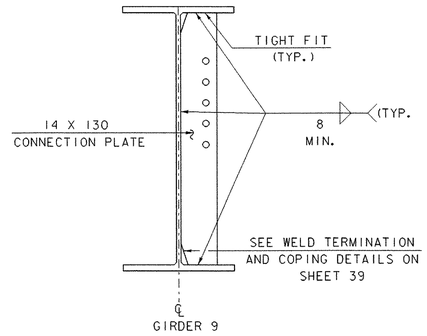
| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |
| FILE NAME: 94J078\Structures\sj078kbd.i | PLOT DATE: 06-FEB-2003 |
| PROJECT MANAGER: R.R. WHITCOMB | DRAWN BY: B. MAURICE |
| DESIGNED BY: T. SUMNER | CHECKED BY: T. SUMNER |
| | SHEET 40 OF 71 |




## KICKER BEAM INTERMEDIATE DIAPHRAGM

0 0.5 1

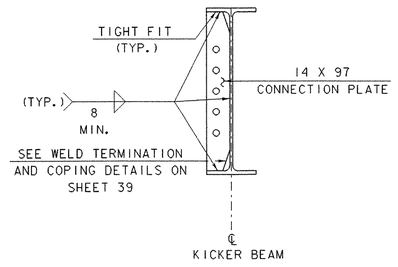
SCALE = 1:10




## KICKER BEAM INTERMEDIATE DIAPHRAGM CONNECTION PLATE

0 0.5 1

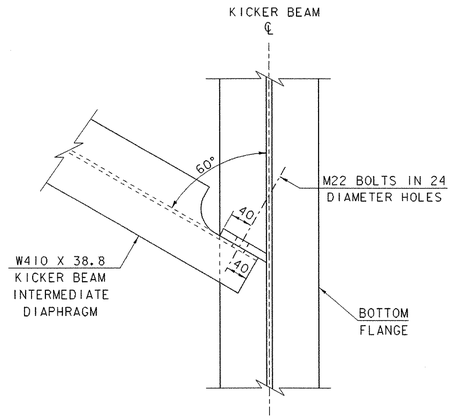
SCALE = 1:10




## KICKER BEAM INTERMEDIATE DIAPHRAGM CONNECTION PLATE

0 0.5 1

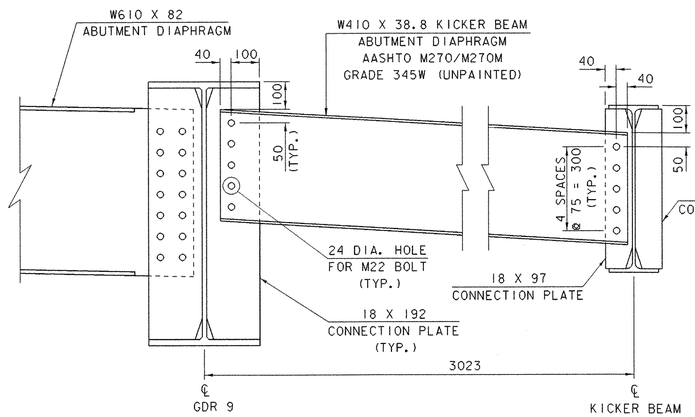
SCALE = 1:10




## KICKER BEAM INTERMEDIATE DIAPHRAGM CONNECTION DETAIL

0 0.25 0.5

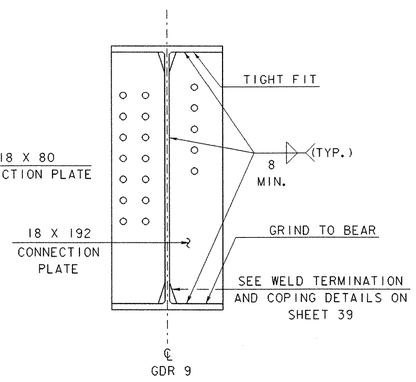
SCALE = 1:5




## KICKER BEAM ABUTMENT DIAPHRAGM CONNECTIONS

0 0.5 1

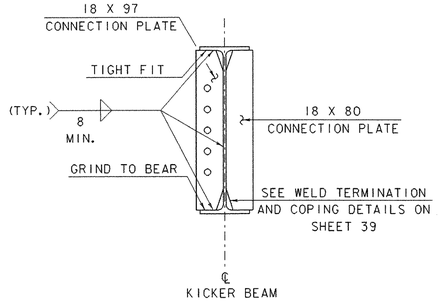
SCALE = 1:10




## KICKER BEAM ABUTMENT DIAPHRAGM CONNECTION PLATE

0 0.5 1

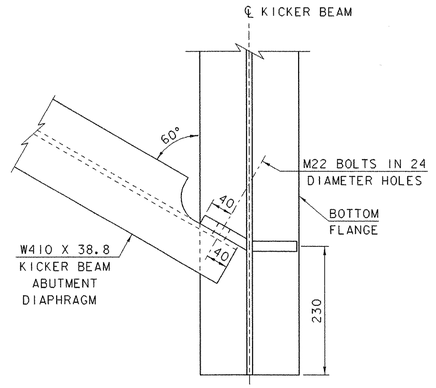
SCALE = 1:10




## KICKER BEAM ABUTMENT DIAPHRAGM CONNECTION PLATE

0 0.5 1

SCALE = 1:10




## KICKER BEAM ABUTMENT DIAPHRAGM CONNECTION DETAIL

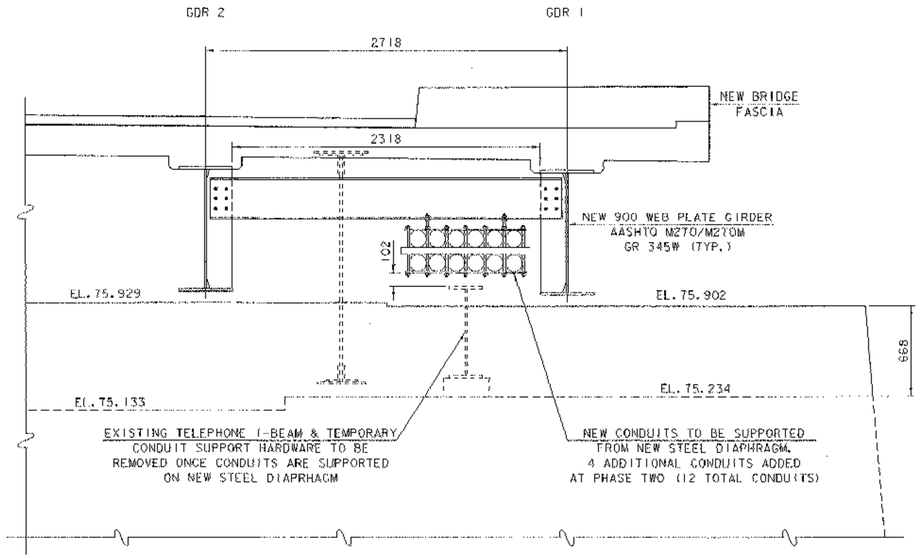
0 0.25 0.5

SCALE = 1:5

# KICKER BEAM DIAPHRAGM DETAILS

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

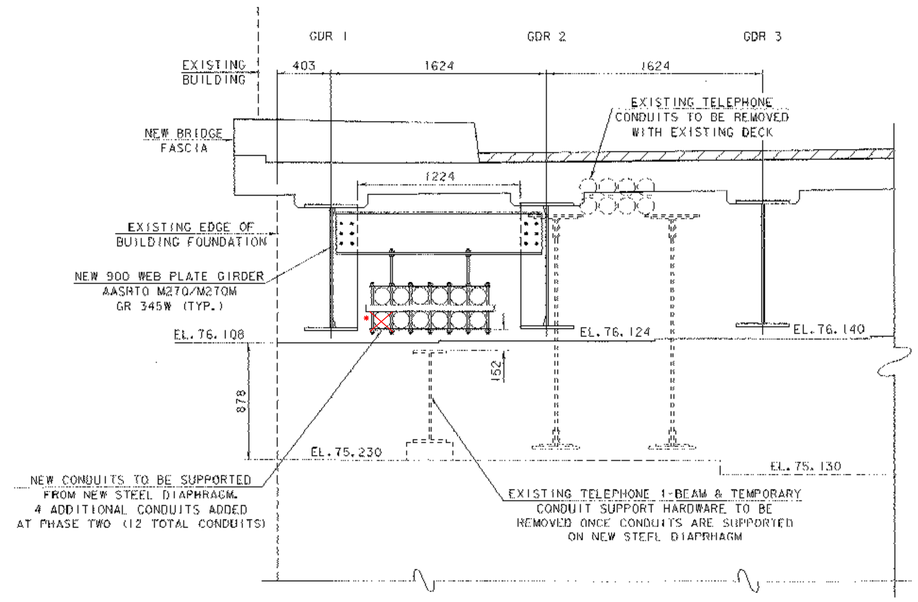
FILE NAME: 94j078\Structures\sj078kdm.i
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: T. SUMNER
PLOT DATE: 06-FEB-2003
DRAWN BY: B. MAURICE
CHECKED BY: T. SUMNER
SHEET 41 OF 71




## EXISTING UTILITIES @ ABUTMENT NO. 1, LEFT SIDE

0 1 2

SCALE = 1:20




## EXISTING UTILITIES @ ABUTMENT NO. 2, LEFT SIDE

0 1 2

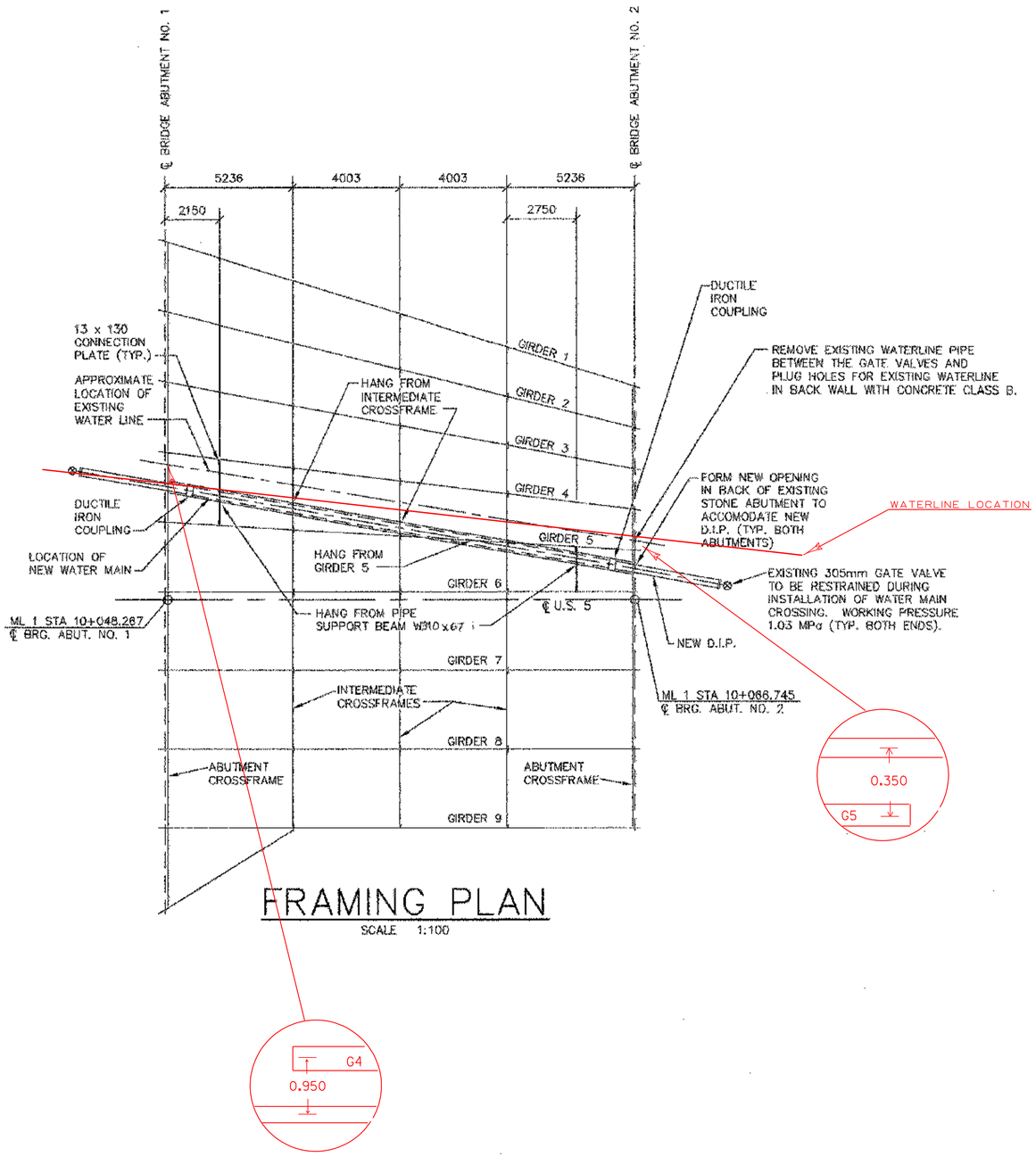
SCALE = 1:20

* SEE DAILY REPORT #46, DATED 6/18/03
UNABLE TO CONNECT THIS CONDUIT -
WOULD HAVE HAD TO CUT BEARING PLATE
OK'D BY NEIL SNYDER OF VERIZON

## TELEPHONE UTILITY DETAILS

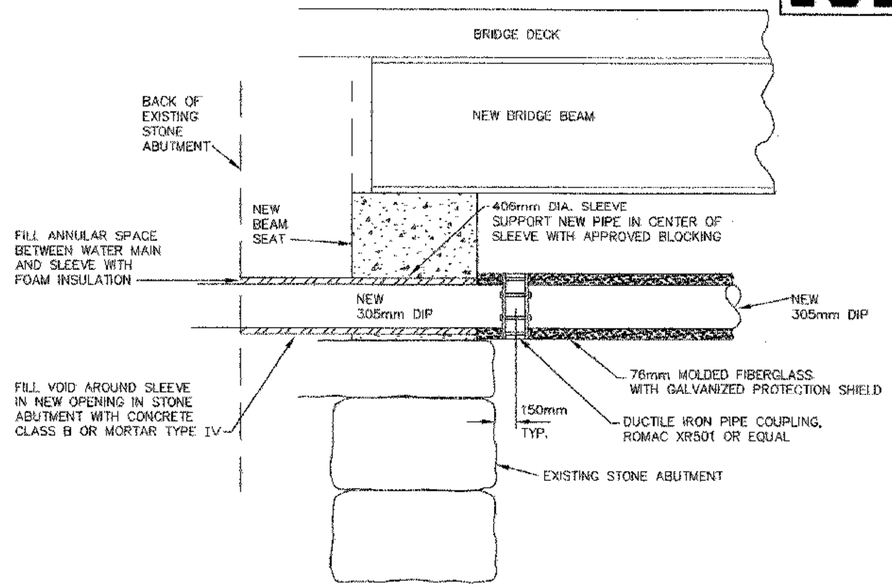
| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |

| | | | |
|---|---|---|---|
| FILE NAME: 94J078\Structures\sJ078tud.j | | PLOT DATE: | 06-FEB-2003 |
| PROJECT MANAGER: | R.R. WHITCOMB | DRAWN BY: | G. ROY |
| DESIGNED BY: | T. SUMNER | CHECKED BY: | T. SUMNER |
| | | SHEET | 42 OF 71 |



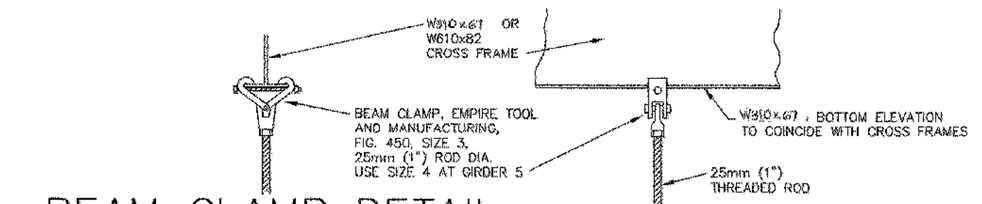

# FRAMING PLAN

SCALE 1:100



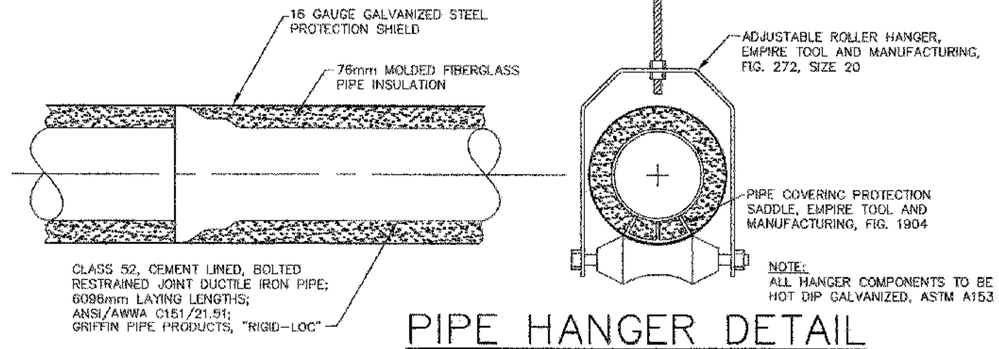

# CONNECTION AT ABUTMENT

SCALE 1:20




# BEAM CLAMP DETAIL

NO SCALE




NOTE:
ALL HANGER COMPONENTS TO BE HOT DIP GALVANIZED, ASTM A153

# PIPE HANGER DETAIL

NO SCALE

SVE PROJ. NO. 0828230, DWG. NO 2823D01

| REVISION | DESCRIPTION | BY & DATE | CHK. & DATE |
|---|---|---|---|
| 3 | ADDED INSULATION NOTE. | TJS 1/24/02 | |
| 2 | REV. CROSSFRAME SPACING; REV. BEAM SIZES; ADD NOTE. | TJS 8/30/02 | |
| 1 | PIPE LOCATION, NOTES, DETAILS | TJS 2/15/02 | |

STATE OF VERMONT — DEPARTMENT OF PUBLIC SERVICE — REGISTERED PROFESSIONAL ENGINEER

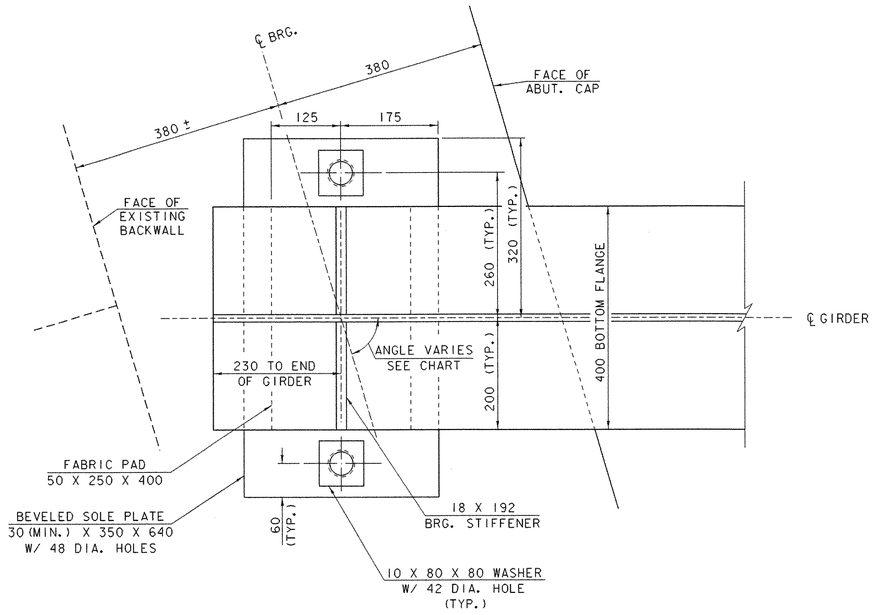
WATER MAIN CROSSING
PLAN AND DETAILS
PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

SVE Associates © 2002
Engineering Surveying Landscape Architecture Planning
P.O.Box 1818, Brattleboro, VT 05302-1818 Phone (802) 257-0561 Fax (802) 257-0782
website: www.sveassoc.com

DATE PLAN: 1/30/02
DATE SURVEY: N/A
DESIGNED BY: TB
DRAWN BY: TJS
CHECKED BY: TB
SCALE: AS SHOWN



P:\project\0828230\dwg\2823D01.dwg 08/30/2002 04:53:45 AM EDT



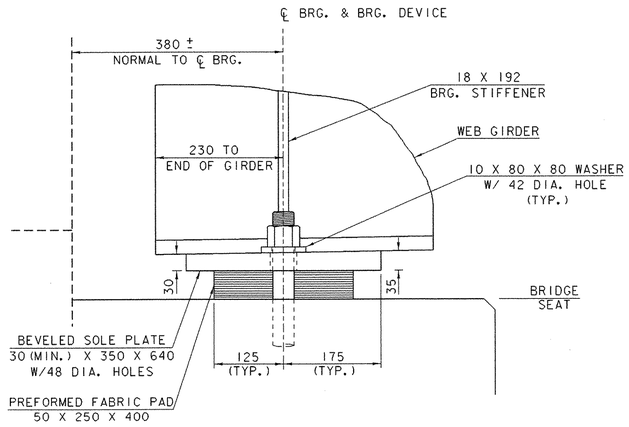

## PLAN VIEW

**ABUTMENT NO. 1 BEARING ANGLE TABLE**

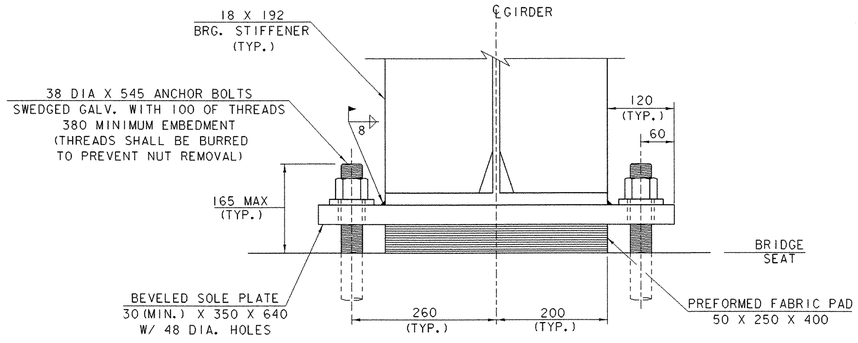
| GIRDER NO. | ANGLE |
|---|---|
| NO. 1 | 73°30'15" |
| NO. 2 | 76°40'36" |
| NO. 3 | 79°55'42" |
| NO. 4 | 83°14'49" |
| NO. 5 | 86°36'42" |
| NO. 6 | 90°00'00" |
| NO. 7 | 90°00'00" |
| NO. 8 | 90°00'00" |
| NO. 9 | 90°00'00" |

## ABUTMENT BEARING NOTES

1. BEARINGS SHALL CONFORM TO THE APPLICABLE PROVISIONS OF SECTIONS 531 AND 731 OF THE STANDARD SPECIFICATIONS.
2. BEARINGS SHALL BE PAID FOR UNDER ITEM 531.10 "BEARING DEVICE ASSEMBLY".
3. SHOP DRAWINGS SHALL BE SUBMITTED AS PER STANDARD SPECIFICATION 531.03. THE SUBMITTAL SHALL INCLUDE ASSOCIATED WELDING AND BONDING PROCEDURES.
4. DESIGN CRITERIA:
   - A. DESIGN FABRIC PAD TO CONCRETE PRESSURE: 6.9 MPa MAXIMUM
   - B. DESIGN ROTATION: 0.015 RADIANS MINIMUM
   - C. DESIGN VERTICAL LOAD: 679 kN
   - D. DESIGN HORIZONTAL LOAD: MINIMUM 10% OF VERTICAL LOAD
5. THE "B" DISTANCE IS THE FINAL SETTING FOR THE BEARING PAD AFTER THE CONCRETE SLAB, CURB, PAVEMENT AND BRIDGE RAIL HAVE BEEN PLACED. THE "A" DISTANCE IS FOR SETTING THE BEARING AFTER THE STRUCTURAL STEEL IS ERECTED AND BEFORE THE CONCRETE DECK IS POURED. THE DIFFERENCE IS THE THEORETICAL ELONGATION OF THE BOTTOM FLANGE DUE TO DEAD LOAD DEFLECTION. THE FINAL "B" DISTANCE SHOWN IN THE TABLE MUST BE ATTAINED WITHIN 3 mm.
6. THE CONCRETE SURFACE UNDER THE BEARING DEVICE SHALL BE LEVEL.
7. ANCHOR BOLTS SHALL HAVE A MINIMUM 380 mm EMBEDMENT INTO THE CONCRETE AND SHALL CONFORM TO STANDARD SPECIFICATION 714.08.
8. ALL STEEL IN BEARING DEVICES (EXCEPT STAINLESS STEEL) SHALL BE AASHTO M270/270M, GRADE 250.
9. ALL BEARING DEVICES SHALL BE GALVANIZED OR METALIZED AS PER STANDARD SPECIFICATIONS 506.15 AND 531.04(b), AS MODIFIED BY THE GENERAL SPECIAL PROVISIONS. IF THE BEARINGS ARE METALIZED, THEY SHALL BE SEALED WITH AN APPROVED SEALER AS SPECIFIED IN GENERAL SPECIAL PROVISION 506.15. AREAS OF GALVANIZING OR METALIZING DAMAGED BY FIELD WELDING OR HANDLING SHALL BE REPAIRED IN CONFORMANCE WITH SUPPLEMENTAL SPECIFICATION 513.
10. ALL ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. ALL WASHERS SHALL BE 10 mm PLATE MINIMUM. PAYMENT FOR ANCHOR BOLTS, NUTS, WASHERS AND THEIR INSTALLATIONS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 531.10, "BEARING DEVICE ASSEMBLY".




## SIDE VIEW




## FRONT VIEW

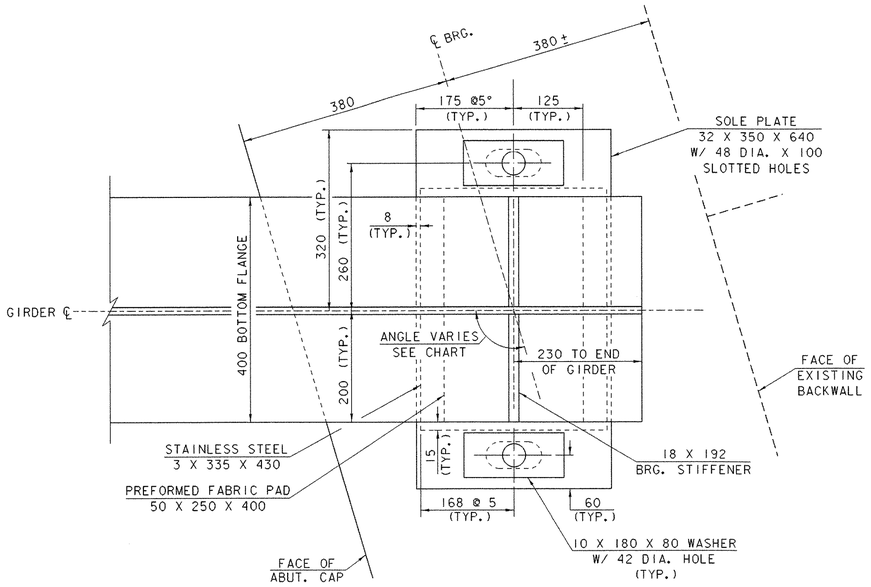
0 0.25 0.5

SCALE = 1:5

# FIXED BEARING DETAILS ABUTMENT NO. 1

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |

| | | | |
|---|---|---|---|
| FILE NAME: 94J078\Structures\sj078fbd.i | | PLOT DATE: | 06-FEB-2003 |
| PROJECT MANAGER: | R. R. WHITCOMB | DRAWN BY: | B. MAURICE |
| DESIGNED BY: | T. SUMNER | CHECKED BY: | T. SUMNER |
| | | SHEET | 44 OF 71 |



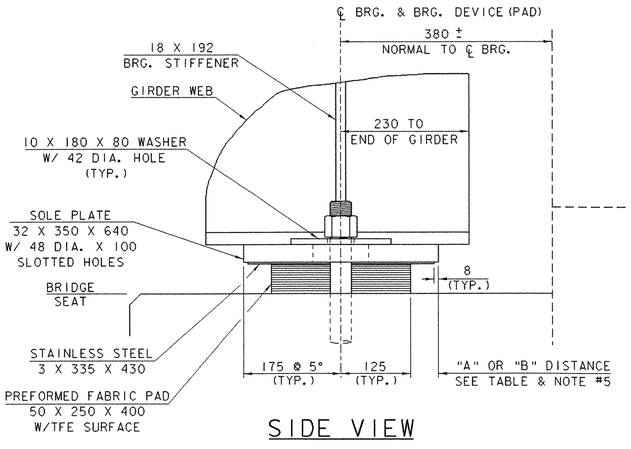

PLAN VIEW

**ABUTMENT NO. 2 TEMPERATURE SETTING TABLE**

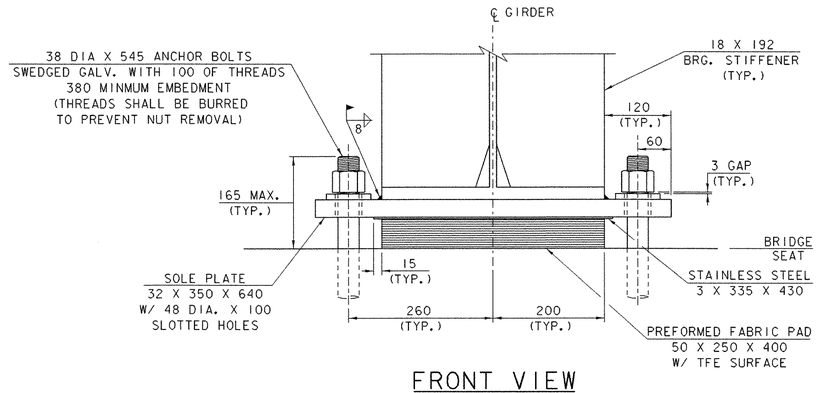
| TEMP | "B" DIST. | "A" DIST. |
|---|---|---|
| -25°C | 41 | 33 |
| -15°C | 44 | 36 |
| -5°C | 47 | 39 |
| 5°C | 50 | 42 |
| 15°C | 53 | 45 |
| 25°C | 56 | 48 |
| 35°C | 59 | 51 |
| 45°C | 63 | 55 |

**ABUTMENT NO. 2 BEARING ANGLE TABLE**

| GIRDER NO. | ANGLE |
|---|---|
| NO. 1 | 106° 29' 45" |
| NO. 2 | 103° 19' 24" |
| NO. 3 | 100° 04' 18" |
| NO. 4 | 96° 45' 11" |
| NO. 5 | 93° 23' 18" |
| NO. 6 | 90° 00' 00" |
| NO. 7 | 90° 00' 00" |
| NO. 8 | 90° 00' 00" |
| NO. 9 | 90° 00' 00" |




SIDE VIEW




FRONT VIEW

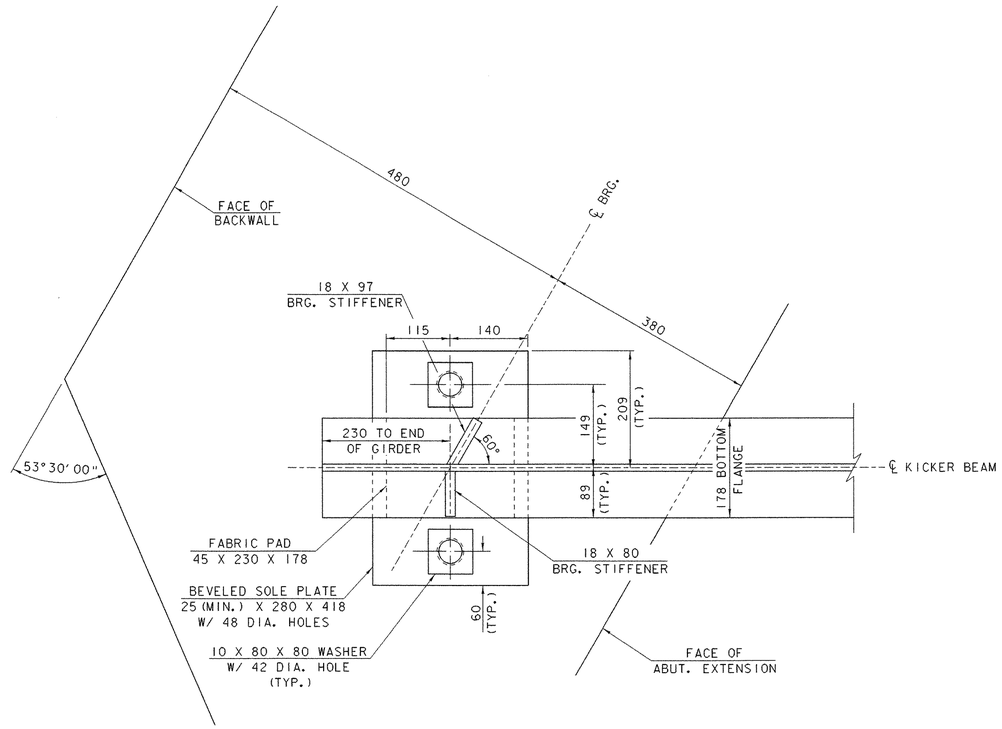
0 0.25 0.5

SCALE = 1:5

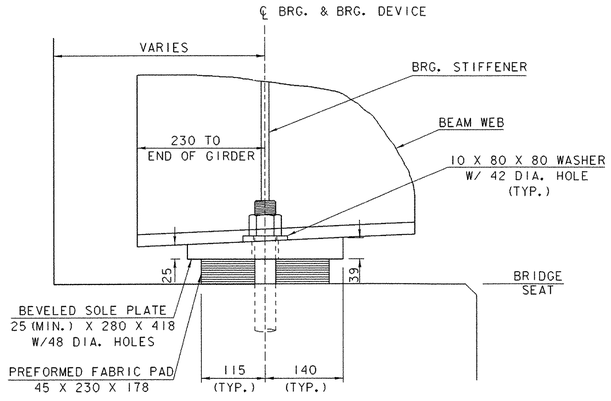
# EXPANSION BEARING DETAILS
# ABUTMENT NO. 2

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

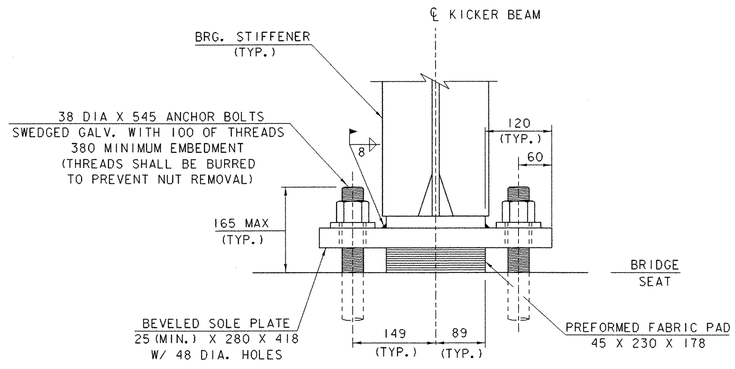
FILE NAME: 94J078\Structures\sj078ebd.I
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: T. SUMNER
PLOT DATE: 06-FEB-2003
DRAWN BY: B. MAURICE
CHECKED BY: T. SUMNER
SHEET 45 OF 71




PLAN VIEW




SIDE VIEW




FRONT VIEW

0 0.25 0.5

SCALE = 1:5

# KICKER BEAM BEARING DETAILS

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\structures\sj078kbg.i
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: T. SUMNER
PLOT DATE: 06-FEB-2003
DRAWN BY: B. MAURICE
CHECKED BY: T. SUMNER
SHEET 46 OF 71

N

VT STATE PLANE GRID

MAIN ST.

10+080

10+060

10+040

10+020

20+040

BRIDGE ST.

CANAL ST.

ROTATE 90° THIS BASE PLATE ONLY

GHP2

LEFT GATE ASSEMBLY

GLP

135 ALONG FASCIA

1200

400

570

8080 VEHICLE RAIL LENGTH

FACE OF VEHICLE RAIL

7650 ORNAMENTAL RAIL LENGTH

6 SPACES @ 2360 = 14 160

SIDEWALK

20 SPLICE GAP

8748 VEHICLE RAIL LENGTH

450

9538 ORNAMENTAL RAIL LENGTH

1888

EP

570

443 ALONG FASCIA

20 ALONG FASCIA

RIGHT GATE ASSEMBLY

GHP1

GLP

1200

570

7650 ORNAMENTAL RAIL LENGTH

400

8080 VEHICLE RAIL LENGTH

7537 TO PC

SIDEWALK

PC

FASCIA

6 SPACES @ 2360 = 14 160

5 SPACES @ 2360 = 11 800

8890 ORNAMENTAL RAIL LENGTH

7070 ORNAMENTAL RAIL LENGTH

5750 ORNAMENTAL RAIL LENGTH

570

EP

R 9350

2260

PT

450

400

5346 TO PT

5570 VEHICLE RAIL LENGTH

20 SPLICE GAP

8250 VEHICLE RAIL LENGTH

FACE OF VEHICLE RAIL

1710

13 JOINT

537

20 SPLICE GAP

7050 VEHICLE RAIL LENGTH

20 SPLICE GAP

0 1 2 4 6 8 10

SCALE = 1:100

NOTES:

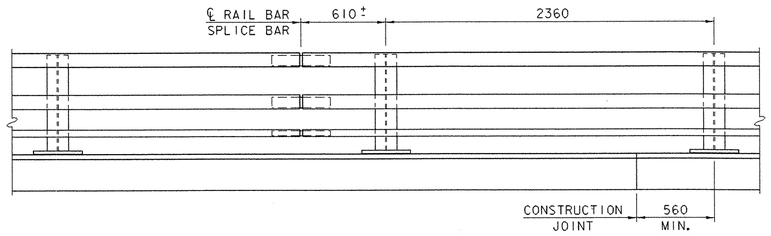
1. ALL DIMENSIONS GIVEN ALONG FACE OF VEHICLE RAIL.
2. ✳ INDICATES LOCATION OF ORNAMENTAL RAIL SPLICE.
3. ✳✳ INDICATES LENGTH OF ORNAMENTAL RAIL THAT HAS 4 SECTIONS OF PANEL "A" BETWEEN BRIDGE RAIL POSTS
4. GHP1 - GATE HINGE POST ONE
   GHP2 - GATE HINGE POST TWO
   GLP - GATE LATCH POST
   EP - END POST

⚠1 REVISED POST LAYOUT ON SIDEWALK AND UPDATED RAIL LENGTHS. BY: GFR DATE: 08/18/2003

# RAIL LAYOUT SHEET

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BRO 2000 (17)

FILE NAME: 94J078\structures\sJ078rls.i
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 24-MAY-2004
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 47 OF 71

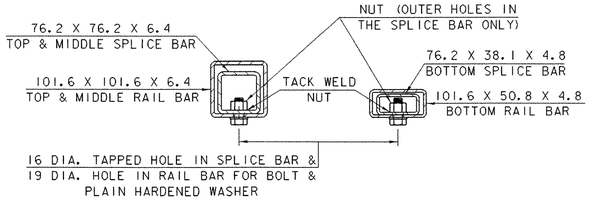


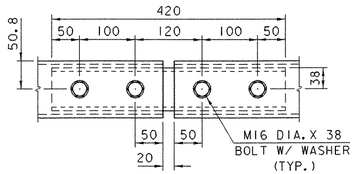

## BRIDGE RAIL ELEVATION

0 1 2

SCALE = 1:20

(ORNAMENTAL RAILING NOT SHOWN)

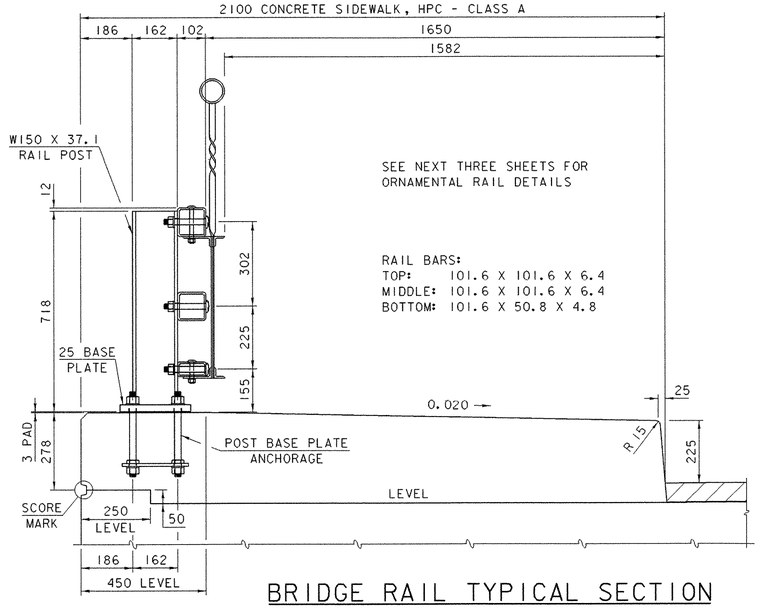



## RAIL SPLICE BAR DETAILS

0 0.25 0.5

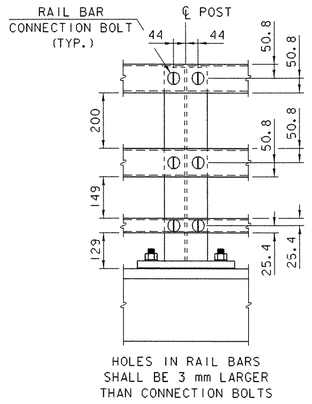
SCALE = 1:5




## BRIDGE RAIL TYPICAL SECTION

0 0.5 1

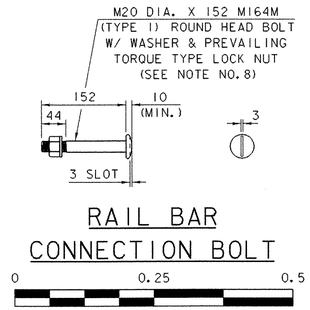
SCALE = 1:10




## POST ELEVATION

0 0.5 1

SCALE = 1:10




## RAIL BAR CONNECTION BOLT

0 0.25 0.5

SCALE = 1:5

NOTE: ONLY FULL DIAMETER BODY BOLTS WILL BE ALLOWED.

## NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE PROVISIONS OF SECTION 525 - RAILINGS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
2. TUBING AND POSTS SHALL MEET THE REQUIREMENTS OF SECTION 732 - RAILING MATERIALS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
3. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 1.6 mm RADIUS AND BE FREE OF BURRS.
4. RAIL POSTS SHALL BE SET NORMAL TO GRADE.
5. SECTIONS OF RAIL BAR SHALL BE ATTACHED TO A MINIMUM OF TWO [2] RAIL POSTS AND PREFERABLY TO AT LEAST FOUR [4] POSTS.
6. ALL RAILING PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SUBSECTION 506.15 AND PAINTED BLACK, COLOR CHIP #27038 IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 513.
7. RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ⅛ TURN.
8. RAIL BARS SHALL BE ATTACHED USING M20 FULL DIAMETER BODY AASHTO M164M (TYPE 1) ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE BAR. HOLES IN POSTS SHALL BE 2 mm LARGER THAN THE BOLT SIZE.
9. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.
10. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH THE PROVISION OF 506.04, DRAWINGS AND PROCEDURES. ALL WELDING SHALL CONFORM WITH SECTION 506.10.
11. THE DROP-WEIGHT TEAR TEST IN SECTION 732 SHALL NOT APPLY TO THE STRUCTURAL TUBING ON THESE DETAILS.
12. HOLES IN RAILS FOR RAIL BAR ATTACHMENT MAY BE FIELD DRILLED. THE HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH BLACK PAINT.

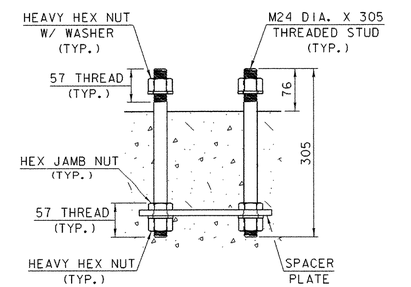
## MATERIALS

RAIL BARS..... ASTM A500, GRADE B OR ASTM A501
RAIL POSTS..... ASTM A709/A709M, GRADE 345
ALL OTHER SHAPES & PLATES..... ASTM A709/A709M, GRADE 250
ANCHOR STUDS..... ASTM F568M, CLASS 8.8
ALL OTHER BOLTS [UNLESS NOTED]..... AASHTO M164M, TYPE 1

NUTS FOR AASHTO M164M BOLTS SHALL COMPLY WITH AASHTO M291M. NUTS FOR ANCHOR BOLTS SHALL COMPLY WITH AASHTO M291M.

WASHERS SHALL COMPLY WITH AASHTO M293M (ASTM F436M) SPECIFICATION.

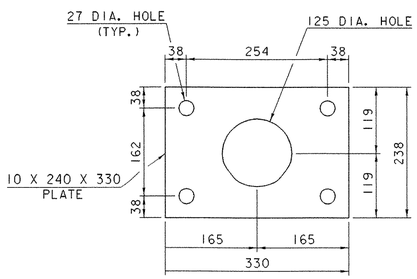
3 mm PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSCETION 731.01 OR 731.02.




## POST BASE PLATE ANCHORAGE

0 0.25 0.5

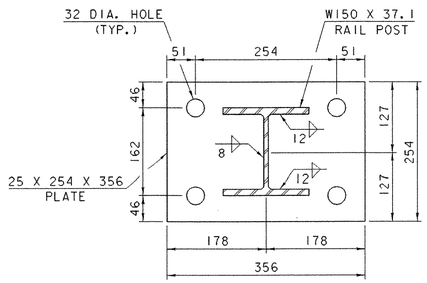
SCALE = 1:5




## SPACER PLATE

0 0.25 0.5

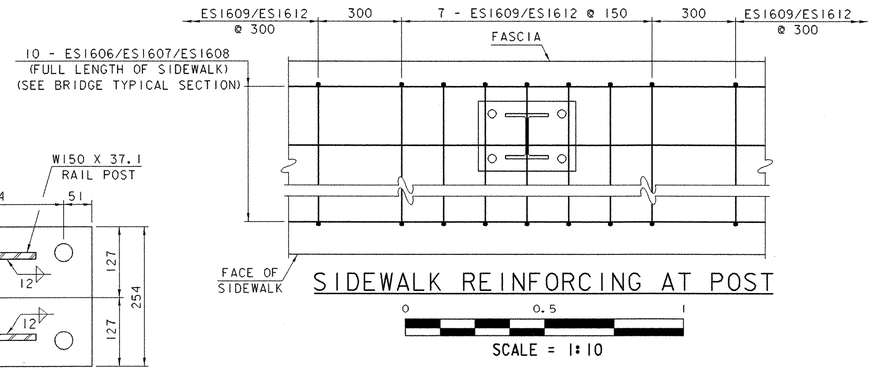
SCALE = 1:5




## POST BASE PLATE

0 0.25 0.5

SCALE = 1:5




## SIDEWALK REINFORCING AT POST

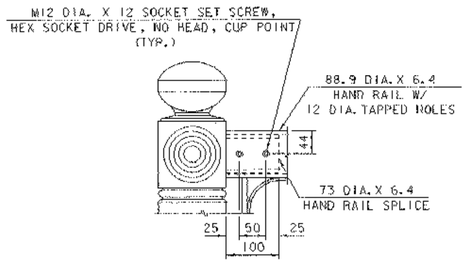
0 0.5 1

SCALE = 1:10

# BRIDGE RAIL DETAILS

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BRO 2000 (17)

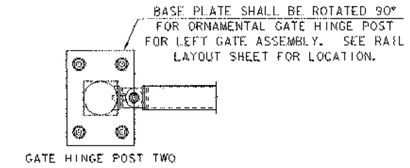
FILE NAME: 94j078\structures\sj078brdl.i
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 06-FEB-2003
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 48 OF 71

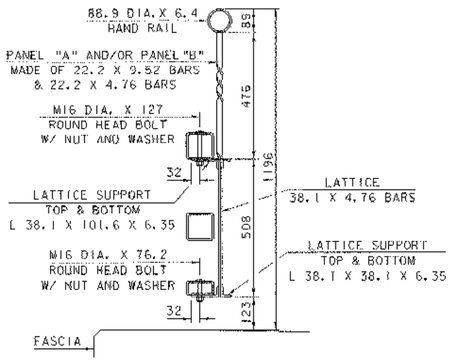



DETAIL "A"

0 0.25 0.5

SCALE = 1:5

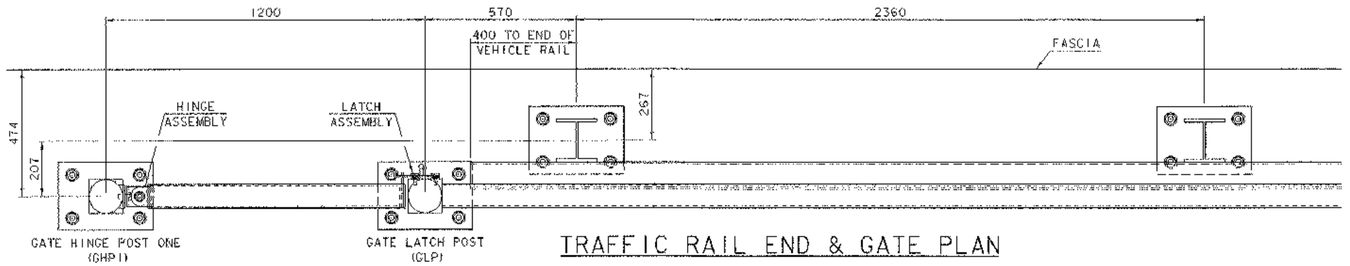



SECTION A-A

0 0.5 1

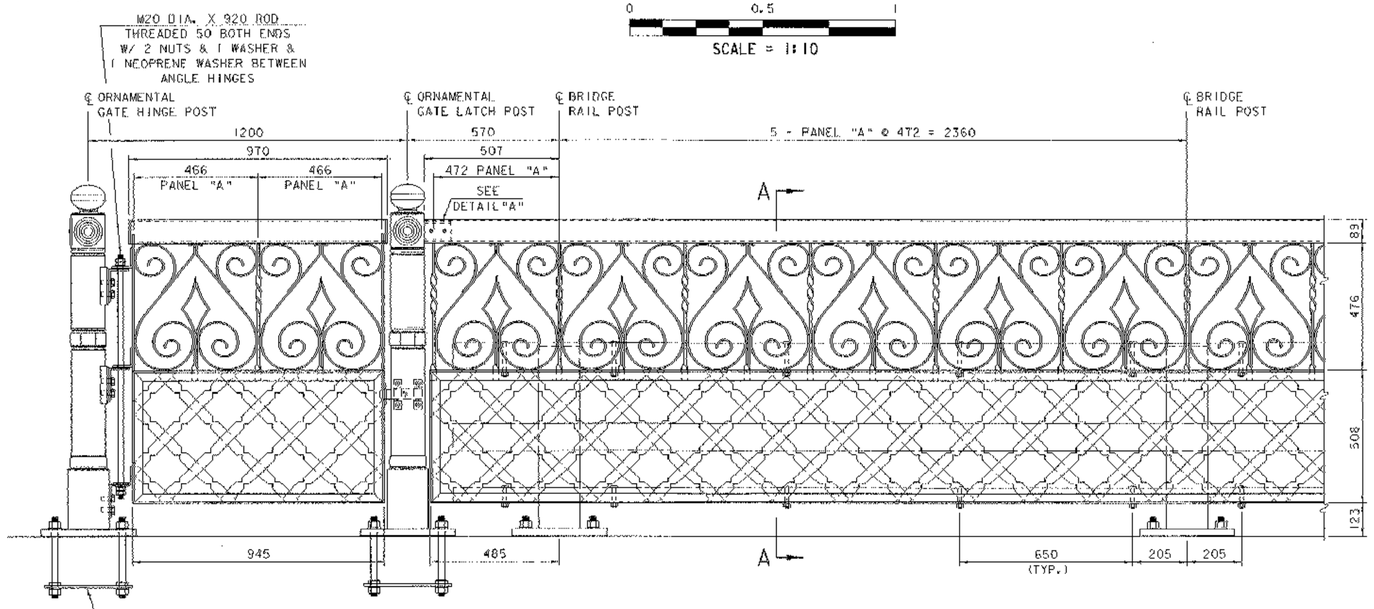
SCALE = 1:10




TRAFFIC RAIL END & GATE PLAN

0 0.5 1

SCALE = 1:10




TRAFFIC RAIL END & GATE ELEVATION

0 0.5 1

SCALE = 1:10

CAST BOLTS HAD DIFFERENT BOLT PATTERN HAD TO CUT BOLTS POURED IN PLACE, DRILL & EPOXY NEW ONES IN PLACE

## NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE PROVISIONS OF SECTION 525 - RAILINGS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
2. ORNAMENTAL RAILING, CONSISTING OF RAILING, GATE ASSEMBLIES, POSTS, BASE PLATES, ANCHORAGE ASSEMBLIES, AND ANY OTHER COMPONENTS NECESSARY TO COMPLETE THE WORK SHALL BE PAID FOR UNDER ITEM 525.15, "METAL HAND RAILING (MOD.)".
3. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 1.6 mm RADIUS AND BE FREE OF BURRS.
4. ORNAMENTAL POSTS SHALL BE SET NORMAL TO GRADE.
5. ORNAMENTAL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ⅓ TURN.
6. ORNAMENTAL RAIL SHALL BE FABRICATED IN SECTIONS AND SPLICED AT BRIDGE RAIL POST LOCATIONS AS SHOWN ON THE THE RAIL LAYOUT SHEET.
7. THE ORNAMENTAL RAILING SHALL BE SHOP PAINTED WITH A PROTECTIVE PAINT SYSTEM PER SECTION 513 - PROTECTIVE COATINGS. THE TOP COATING SHALL BE BLACK, COLOR PAINT CHIP #27038. PAYMENT FOR PAINTING OF THE ORNAMENTAL RAILING SHALL BE MADE SUBSIDIARY TO ITEM 525.15, "METAL HAND RAILING (MOD.)".
8. ORNAMENTAL RAIL SHALL BE ATTACHED TO THE BRIDGE RAIL STRUCTURAL TUBING USING M16 FULL DIAMETER BODY AASHTO M164M (TYPE 1) ROUND HEAD BOLTS INSERTED THROUGH THE TOP OF THE STRUCTURAL TUBING. HOLES IN TUBING SHALL BE 2 mm LARGER THAN THE BOLT SIZE.
9. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.
10. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH THE PROVISION OF 506.04, DRAWINGS AND PROCEDURES. ALL WELDING SHALL CONFORM WITH SECTION 506.10.
11. THE FABRICATOR MAY SUBMIT ALTERNATE GATE HINGE AND LATCH ASSEMBLY DETAILS TO THE STRUCTURES ENGINEER FOR APPROVAL.
12. ORNAMENTAL RAIL POSTS SHALL BE MADE OF GRAY IRON CASTINGS CONFORMING TO SECTION 715 - MISCELLANEOUS METALS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. MINIMUM POST WALL THICKNESS SHALL BE 10mm.

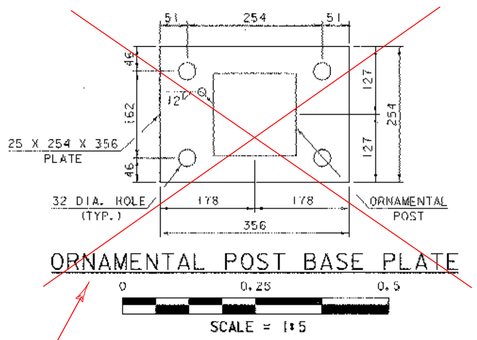
## MATERIALS

ALL STEEL ROLLED SHAPES..... ASTM A36/ A36M
ANCHOR STUDS..... ASTM F568M, CLASS 8.8
ALL OTHER BOLTS (UNLESS NOTED)..... AASHTO M164M, TYPE 1
ORNAMENTAL POSTS..... AASHTO M105, CLASS NO.30B
SOCKET SET SCREWS.....ASTM F912M

NUTS FOR AASHTO M164M BOLTS SHALL COMPLY WITH AASHTO M291M. NUTS FOR ANCHOR BOLTS SHALL COMPLY WITH AASHTO M291M.

WASHERS SHALL COMPLY WITH AASHTO M293M (ASTM F436M) SPECIFICATION.

3 mm PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSCETION 731.01 OR 731.02.




ORNAMENTAL POST BASE PLATE

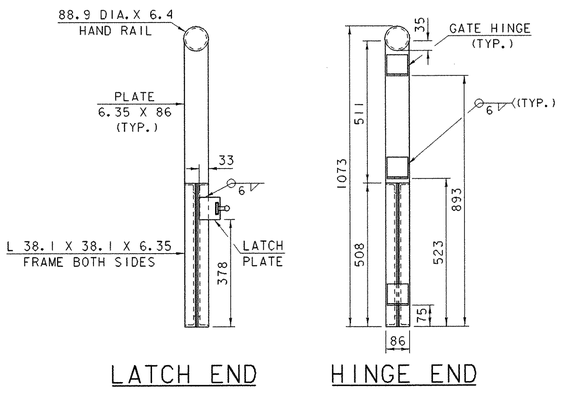
0 0.25 0.5

SCALE = 1:5

# ORNAMENTAL RAIL DETAILS (1)

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BRO 2000 (17) |

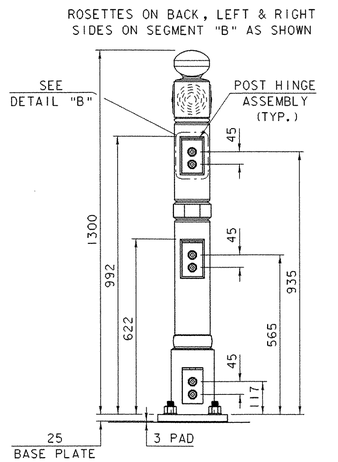
FILE NAME: 94J078\structures\sj078ordt1
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 06-FEB-2003
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 49 OF 71




LATCH END HINGE END

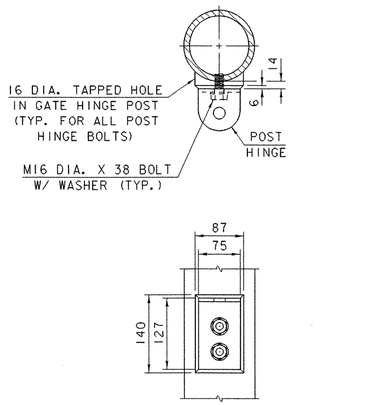
GATE END DETAILS

SCALE = 1:10



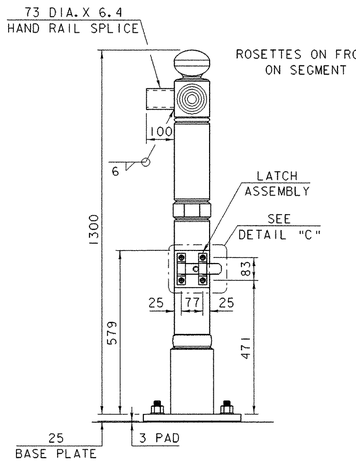

GATE HINGE POST

SCALE = 1:10



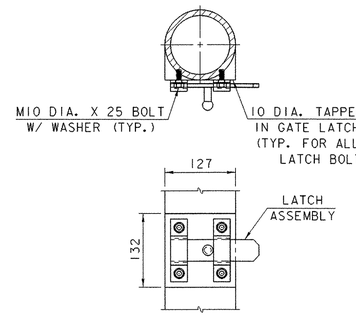

DETAIL "B"

SCALE = 1:5



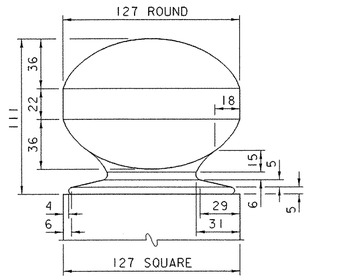

GATE LATCH POST

SCALE = 1:10

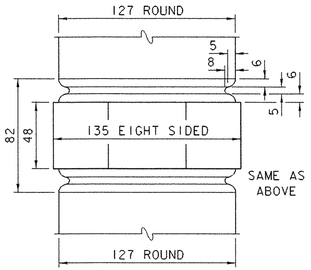



DETAIL "C"

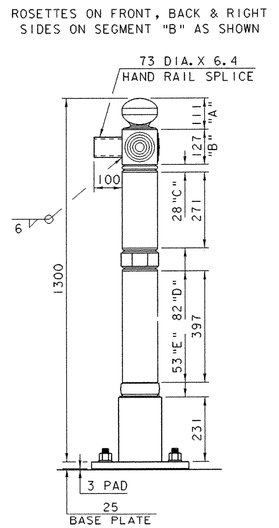
SCALE = 1:5




SEGMENT "A"

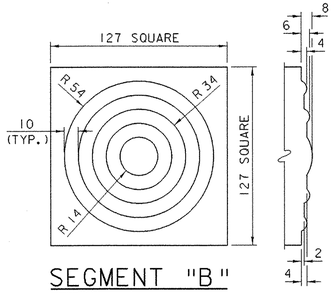



SEGMENT "D"

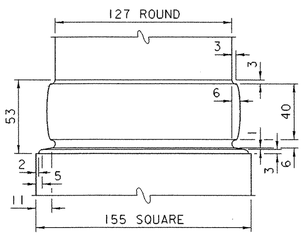



END POST

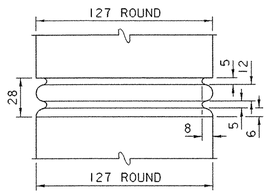
SCALE = 1:10




SEGMENT "B"



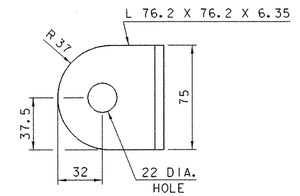

SEGMENT "E"




SEGMENT "C"

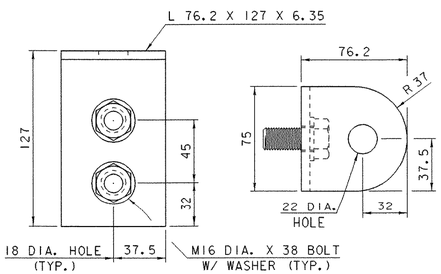
POST SEGMENT DETAILS

SCALE = 1:2



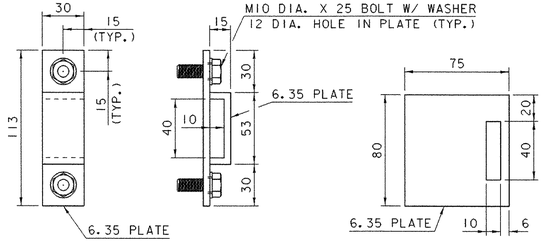

GATE HINGE DETAIL

SCALE = 1:2

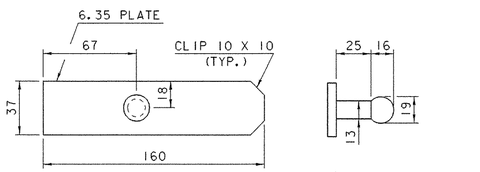



POST HINGE DETAILS

SCALE = 1:2




LATCH BRACKET LATCH PLATE




LATCH SLIDE

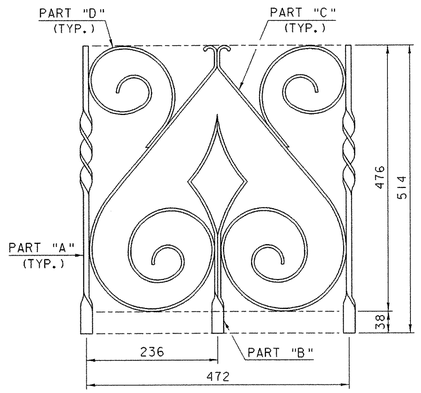
LATCH ASSEMBLY DETAILS

SCALE = 1:2

# ORNAMENTAL RAIL DETAILS (2)

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BRO 2000 (17)

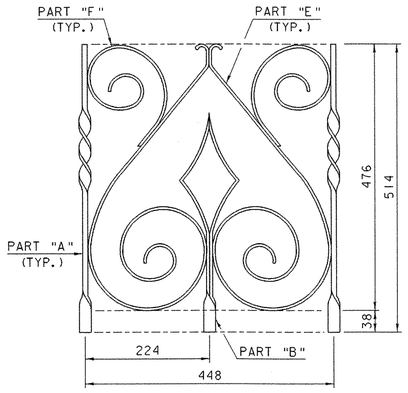
FILE NAME: 94J078\structures\sj078ord2.i PLOT DATE: 06-FEB-2003
PROJECT MANAGER: R. R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: G. ROY CHECKED BY: T. SUMNER
SHEET 50 OF 71




PANEL "A"

0 0.25 0.5

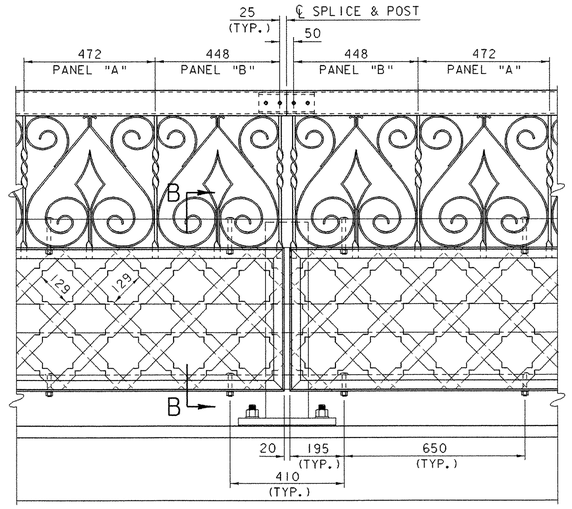
SCALE = 1:5




PANEL "B"

0 0.25 0.5

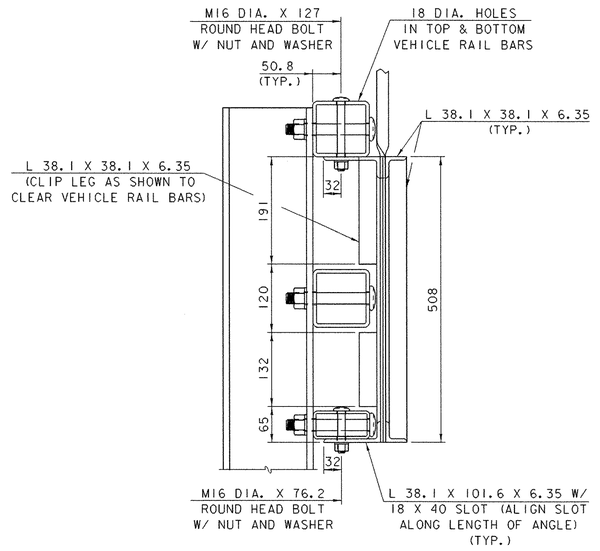
SCALE = 1:5




ORNAMENTAL RAIL SPLICE ELEVATION

0 0.5 1

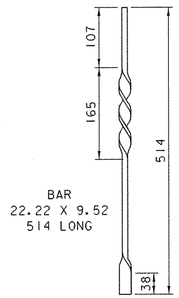
SCALE = 1:10



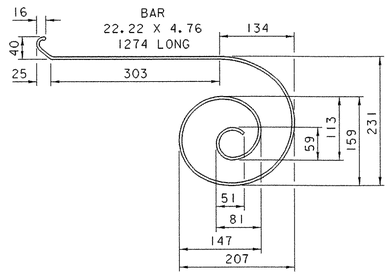

VIEW B-B

0 0.25 0.5

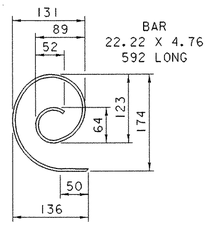
SCALE = 1:5



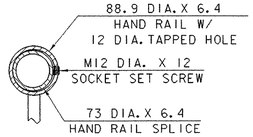

PART "A"

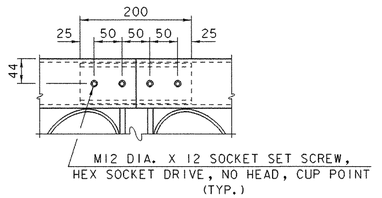



PART "C"




PART "D"

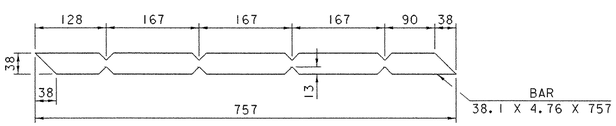



HAND RAIL SPLICE DETAILS

0 0.25 0.5

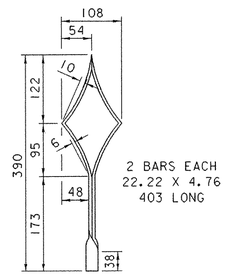
SCALE = 1:5



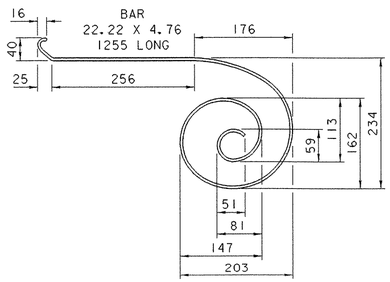

LATTICE DETAIL

0 0.25 0.5

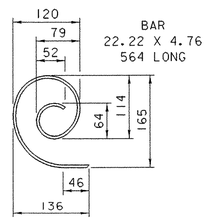
SCALE = 1:5




PART "B"




PART "E"




PART "F"

PANEL PARTS

0 0.25 0.5

SCALE = 1:5

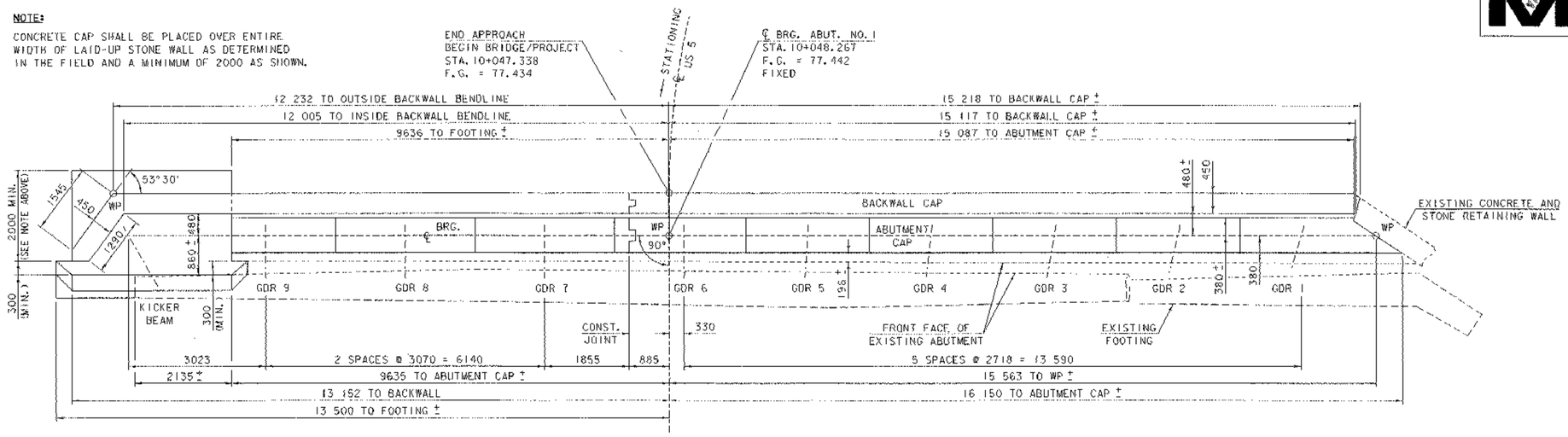
NOTE:
CONNECTIONS REQUIRED TO ASSEMBLE THE ORNAMENTAL RAIL COMPONENTS SHALL BE DETERMINED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL. ALL INTERSECTING PIECES SHALL BE CONNECTED.

# ORNAMENTAL RAIL DETAILS (3)

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BRO 2000 (17) |
| FILE NAME: 94j078\structures\sj078ord3.i | PLOT DATE: 06-FEB-2003 |
| PROJECT MANAGER: R. R. WHITCOMB | DRAWN BY: G. ROY |
| DESIGNED BY: G. ROY | CHECKED BY: T. SUMNER |
| | SHEET 51 OF 71 |

NOTE:

CONCRETE CAP SHALL BE PLACED OVER ENTIRE WIDTH OF LAID-UP STONE WALL AS DETERMINED IN THE FIELD AND A MINIMUM OF 2000 AS SHOWN.




ABUTMENT NO. 1 PLAN

0 1 2 3 4 5

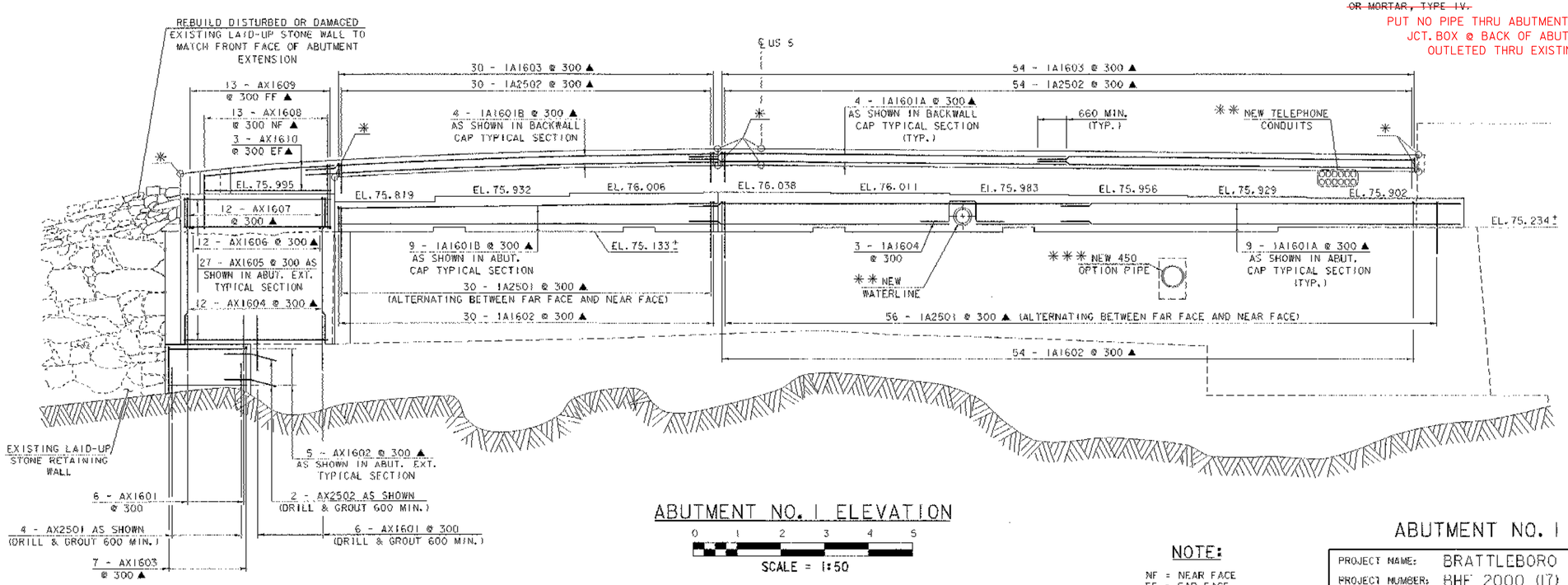
SCALE = 1:50

* THESE ELEVATIONS ARE TO BE DETERMINED IN THE FIELD AFTER THE STRUCTURAL STEEL HAS BEEN ERECTED.

** THESE ARE APPROXIMATE LOCATIONS. ACTUAL LOCATIONS WILL BE DEPENDENT ON FIELD CONDITIONS.

*** ~~FILL VOIDS AROUND PIPE TO A DEPTH OF 300mm INTO ABUTMENT WITH CONCRETE, HIGH PERFORMANCE CLASS B OR MORTAR, TYPE IV.~~

PUT NO PIPE THRU ABUTMENT, BUILT 4' x 4' JCT. BOX @ BACK OF ABUTMENT THAT OUTLETED THRU EXISTING HOLE




ABUTMENT NO. 1 ELEVATION

0 1 2 3 4 5

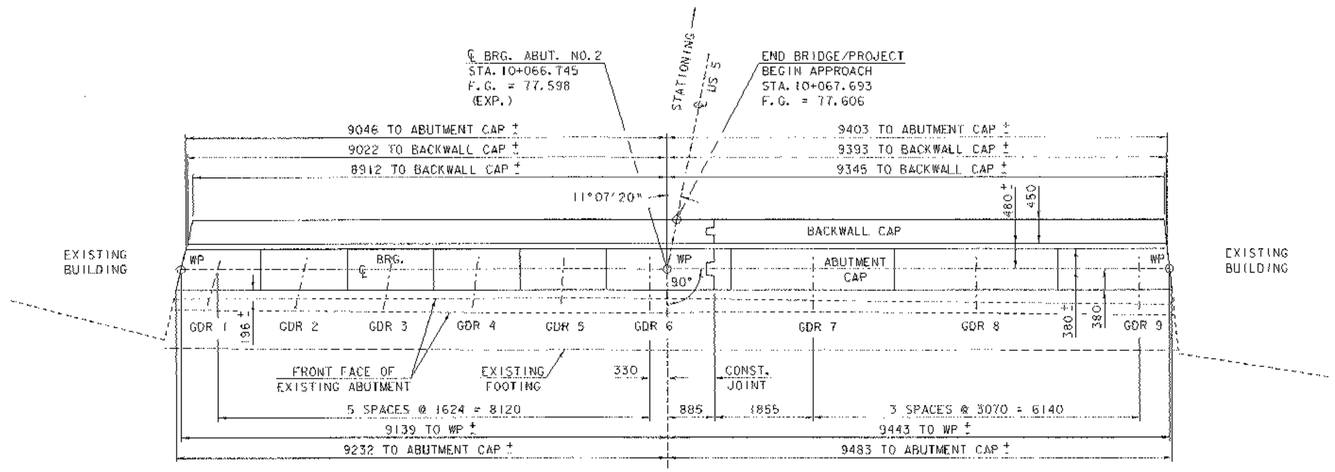
SCALE = 1:50

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
75 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

# ABUTMENT NO. 1 DETAILS

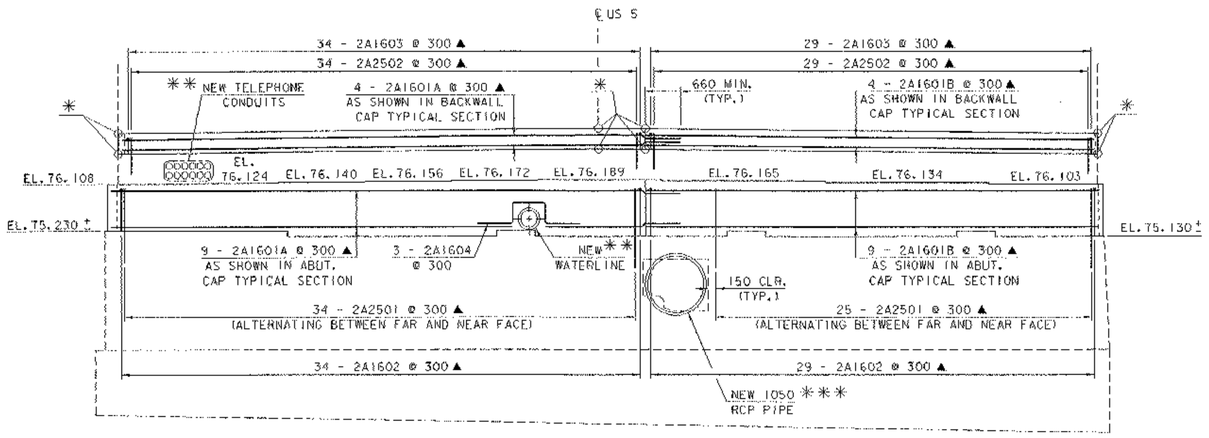
| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |
| FILE NAME: 94J078\Structures\sJ078abl.1 | PLOT DATE: 06-FEB-2003 |
| PROJECT MANAGER: R. R. WHITCOMB | DRAWN BY: S. SCRIBNER |
| DESIGNED BY: T. SUMNER | CHECKED BY: T. SUMNER |
| | SHEET 52 OF 71 |




## ABUTMENT NO. 2 PLAN

0 1 2 3 4 5

SCALE = 1:50




## ABUTMENT NO. 2 ELEVATION

0 1 2 3 4 5

SCALE = 1:50

* THESE ELEVATIONS ARE TO BE DETERMINED IN THE FIELD AFTER THE STRUCTURAL STEEL HAS BEEN ERECTED.

** THESE ARE APPROXIMATE LOCATIONS. ACTUAL LOCATIONS WILL BE DEPENDENT ON FIELD CONDITIONS.

*** FILL VOIDS AROUND PIPE TO A DEPTH OF 300mm INTO ABUTMENT WITH CONCRETE, HIGH PERFORMANCE CLASS B ~~OR MORTAR, TYPE IV.~~ IF IT IS NECESSARY TO ENLARGE THE EXISTING HOLE IN THE ABUTMENT TO ACCOMMODATE THE NEW 1050 RCP PIPE, PORTIONS OF THE SURROUNDING STONE BLOCKS SHALL BE CAREFULLY REMOVED BY DRILLING, CHIPPING OR OTHER METHOD APPROVED BY THE ENGINEER. THE OPENING SHALL BE CUT LARGE ENOUGH TO PROVIDE A MINIMUM OF 80mm OF CONCRETE OR MORTAR BETWEEN THE STONES AND THE NEW PIPE. COSTS FOR REMOVAL SHALL BE INCIDENTAL TO THE ADJACENT PIPE PAY ITEM.

**NOTE:**

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
75 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

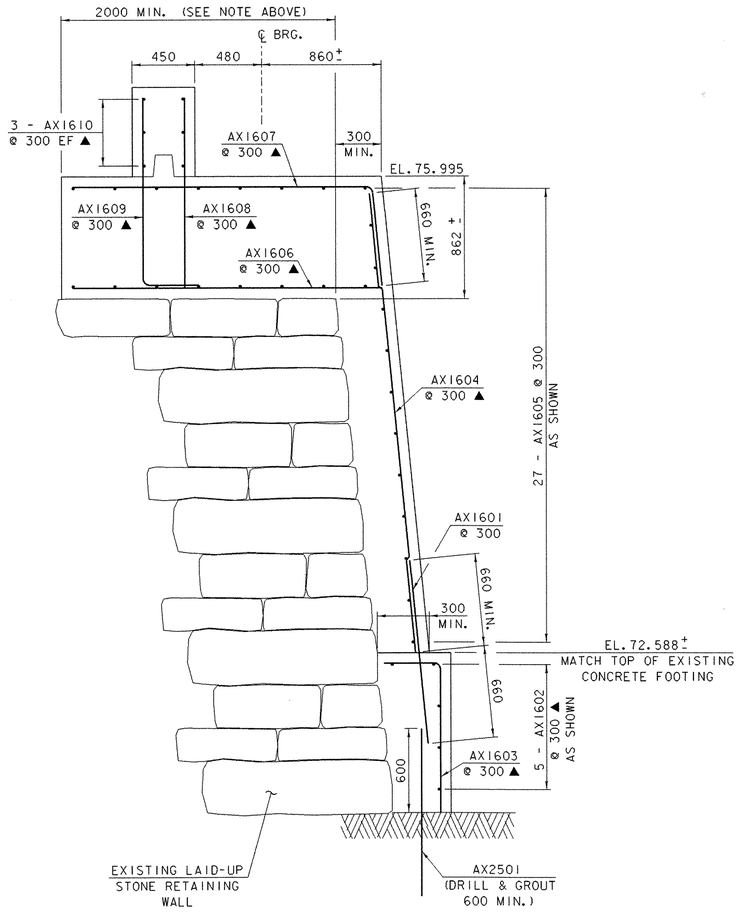
# ABUTMENT NO. 2 DETAILS

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078ab2.d
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: T. SUMNER
PLOT DATE: 06-FEB-2003
DRAWN BY: S. SCRIBNER
CHECKED BY: T. SUMNER
SHEET 53 OF 71

**NOTE:**

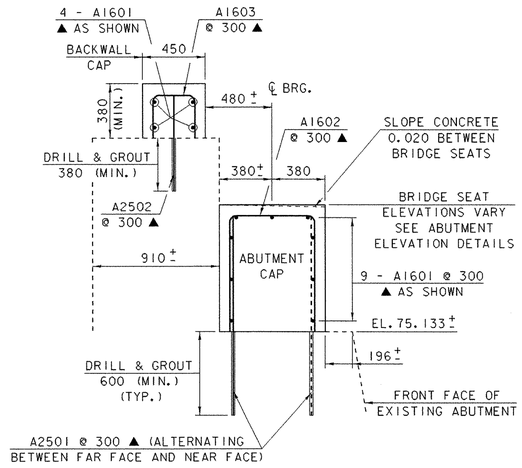
CONCRETE CAP SHALL BE PLACED OVER ENTIRE WIDTH OF LAID-UP STONE WALL AS DETERMINED IN THE FIELD AND A MINIMUM OF 2000 AS SHOWN.




## ABUTMENT EXTENSION TYPICAL SECTION

0 1 2

SCALE = 1:20




## ABUTMENT CAP AND BACKWALL CAP TYPICAL SECTION

0 1 2

SCALE = 1:20

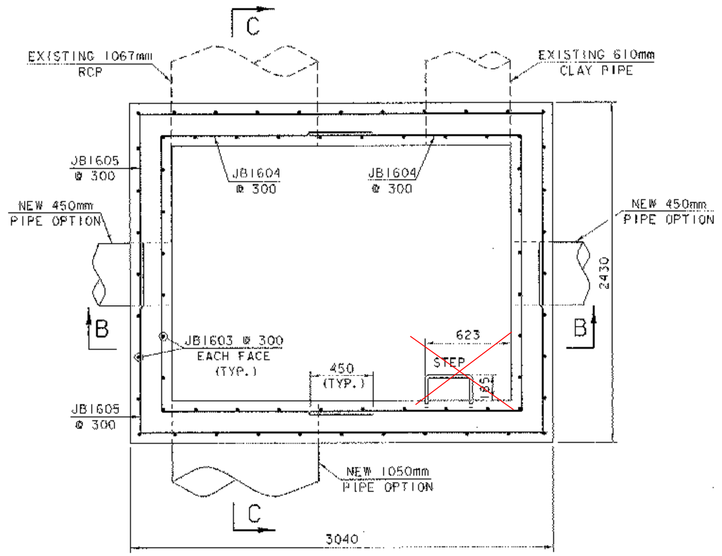
**NOTE:**

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
75 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

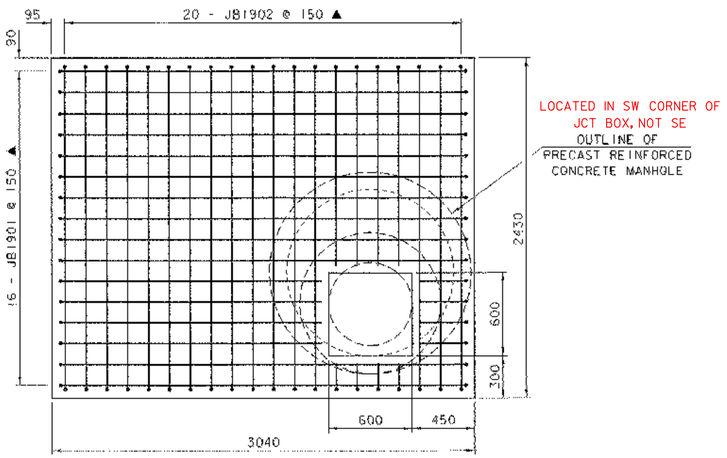
# ABUTMENT TYPICAL SECTIONS

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |

| | | | |
|---|---|---|---|
| FILE NAME: 94J078\Structures\sj078abt.i | | PLOT DATE: | 06-FEB-2003 |
| PROJECT MANAGER: | R. R. WHITCOMB | DRAWN BY: | S. SCRIBNER |
| DESIGNED BY: | T. SUMNER | CHECKED BY: | T. SUMNER |
| | | SHEET | 54 OF 71 |

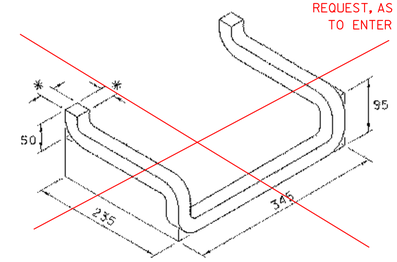



SECTION A-A




PLAN VIEW OF ADAPTER TOP

STEPS REMOVED AS PER PUBLIC WORKS SUPT. STEVE BARRETT'S REQUEST, AS MUST USE A LADDER TO ENTER "ENCLOSED SPACE".

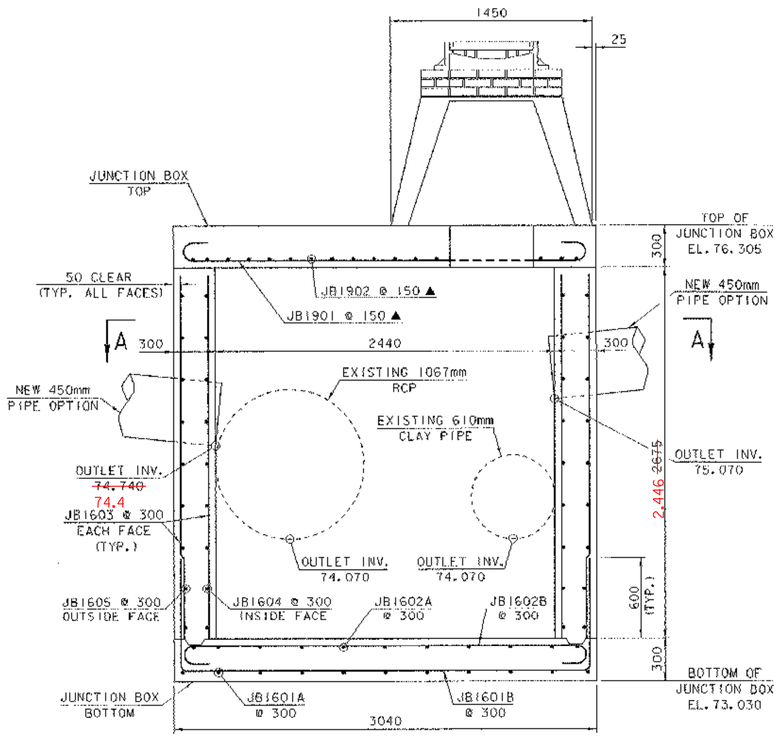



ALUMINUM STEP-DROP FRONT

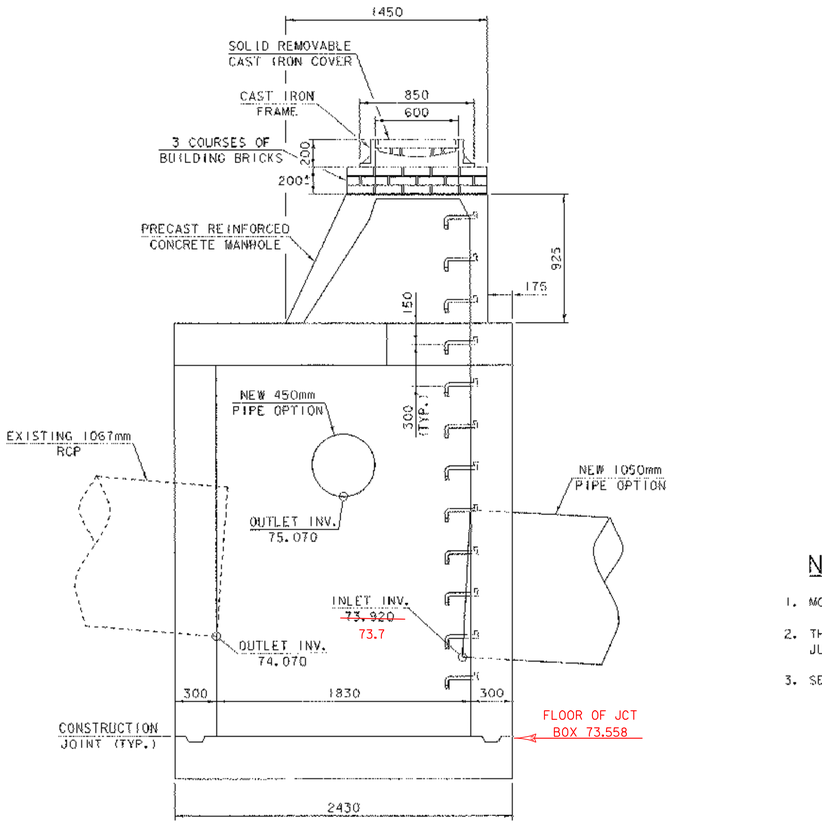
(NOT TO SCALE)

* - INDIVIDUAL METAL RUNGS SHALL BE A MINIMUM DIMENSION OF 25mm AND SHALL BE PAINTED OR OTHERWISE TREATED TO RESIST CORROSION AND RUSTING.

75.30 = BOTTOM H2O LINE @ 10+073 & @ 0.45 LT. CL



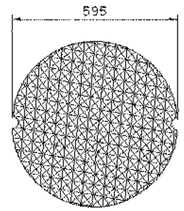

SECTION B-B



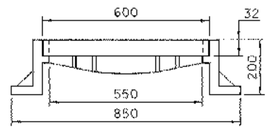

SECTION C-C

0 1 2

SCALE = 1:20




PLAN




ELEVATION

CAST IRON COVER AND FRAME DETAILS

(NOT TO SCALE)

## NOTES

1. MORTAR TYPE II TO BE USED FOR JOINT FILLER AND LAYING OF BRICKS.
2. THE PRECAST REINFORCED CONCRETE MANHOLE SHALL BE PLACED ON THE JUNCTION BOX SO AS TO PROVIDE DIRECT ACCESS TO STEPS.
3. SEE REINFORCING STEEL SCHEDULE FOR REINFORCING BAR DETAILS

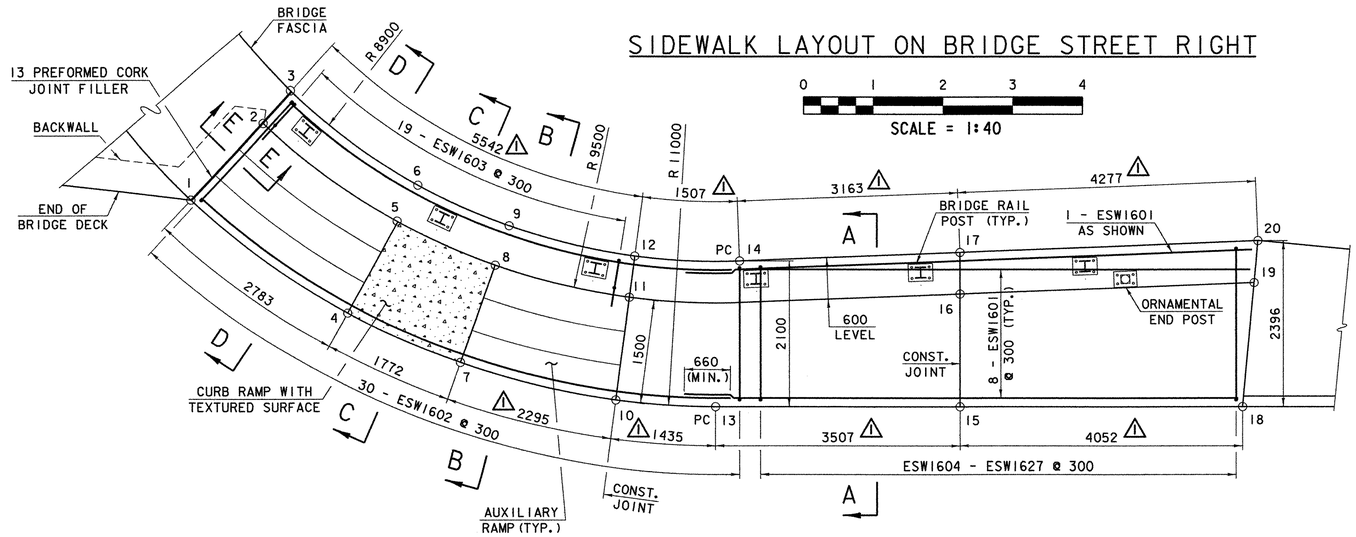
# JUNCTION BOX DETAILS

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sJ078jb.i
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: T. SUMNER
PLOT DATE: 06-FEB-2003
DRAWN BY: S. SCRIBNER
CHECKED BY: T. SUMNER
SHEET 55 OF 71

VTrans Metric

# SIDEWALK LAYOUT ON BRIDGE STREET RIGHT




0 1 2 3 4

SCALE = 1:40

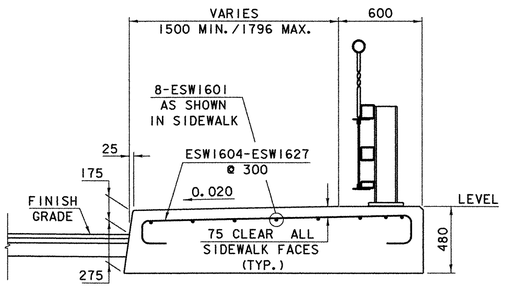
## ⚠ SIDEWALK OFFSETS & ELEVATIONS

| POINT NO. | STATION | OFFSET RIGHT | *TOP OF SIDEWALK ELEV. | BOTTOM OF SIDEWALK ELEV. |
|---|---|---|---|---|
| 1 | 20+040.238 | 6319 | 77.196 | 76.696 |
| 2 | 20+039.523 | 7766 | 77.226 | --- |
| 3 | 20+039.160 | 8338 | 77.226 | 76.696 |
| 4 | 20+035.943 | 5618 | 76.719 | 76.444 |
| 5 | 20+035.241 | 7058 | 76.749/76.953 | --- |
| 6 | 20+034.891 | 7628 | 76.953 | 76.444 |
| 7 | 20+033.356 | 5155 | 76.540 | 76.265 |
| 8 | 20+032.684 | 6594 | 76.570/76.761 | --- |
| 9 | 20+032.391 | 7164 | 76.761 | 76.265 |
| 10 | 20+030.822 | 4676 | 76.536 | 76.086 |
| 11 | 20+030.651 | 6167 | 76.566 | --- |
| 12 | 20+030.582 | 6763 | 76.566 | 76.086 |
| 13 | 20+029.389 | 4606 | 76.436 | 75.986 |
| 14 | 20+029.077 | 6718 | 76.466 | 75.986 |
| 15 | 20+025.882 | 4664 | 76.190 | 75.740 |
| 16 | 20+025.909 | 6293 | 76.222 | --- |
| 17 | 20+025.919 | 6893 | 76.222 | 75.740 |
| 18 | 20+021.831 | 4730 | 75.908 | 75.458 |
| 19 | 20+021.694 | 6526 | 75.934 | --- |
| 20 | 20+021.648 | 7129 | 75.931 | 75.445 |

**NOTES:**

*1. FIRST ELEVATION DENOTES TOP OF LANDING. SECOND ELEVATION DENOTES TOP OF SIDEWALK FOR MOUNTING BRIDGE RAIL POST.

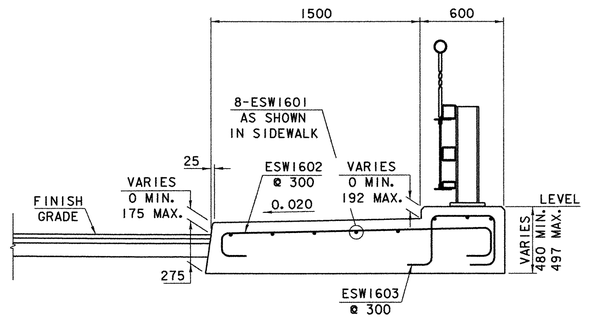
2. SEE STD. C-3M FOR ALL OTHER DETAILS AND NOTES.




## SECTION A-A

0 1 2

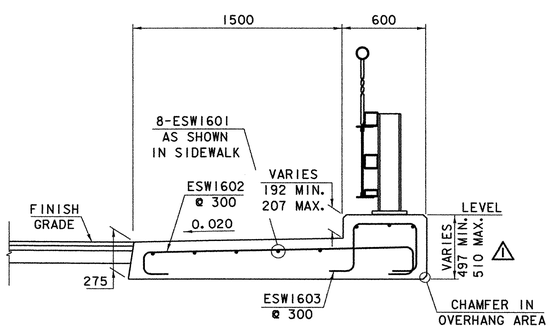
SCALE = 1:20




## SECTION B-B

0 1 2

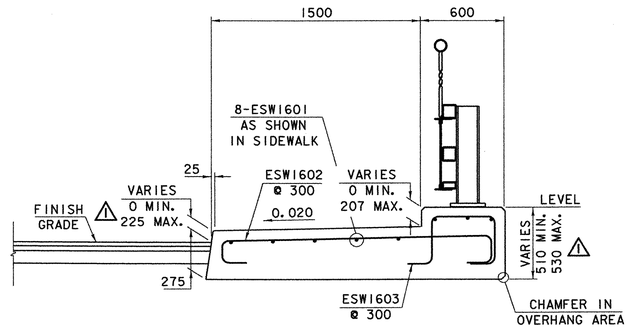
SCALE = 1:20




## SECTION C-C

0 1 2

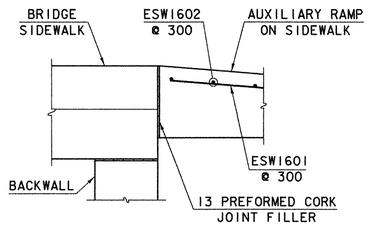
SCALE = 1:20




## SECTION D-D

0 1 2

SCALE = 1:20




## SECTION E-E

0 1 2

SCALE = 1:20

⚠ REVISED SIDEWALK LAYOUT OFFSETS AND ELEVATIONS.
BY: GFR DATE: 08/18/2003

# DETAILS FOR PORTLAND CEMENT CONCRETE SIDEWALK, 200mm (MOD.)

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sj078swd.i
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: T. SUMNER
PLOT DATE: 24-MAY-2004
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 56 OF 71

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# REINFORCING STEEL SCHEDULE

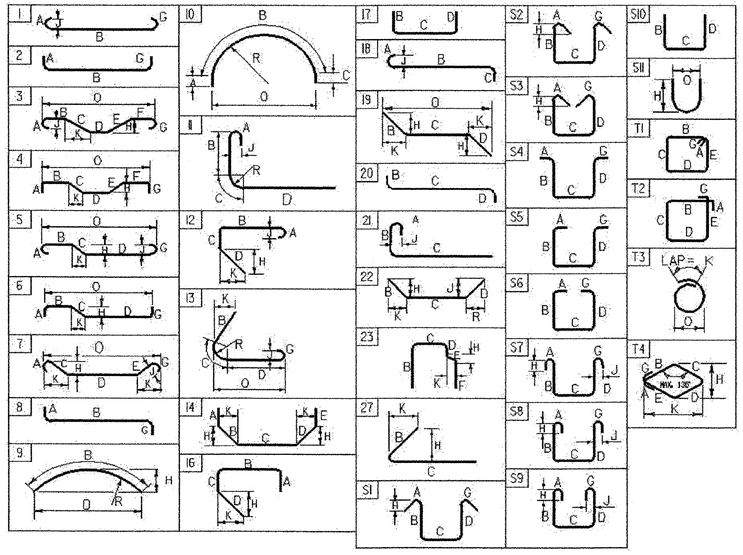
Metric

| ITEM | EACH | SIZE | LENGTH | MARK | TYPE | A | B | C | D | E | F | G | H | J | K | R | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **DECK** | | | | | | | | | | | | | | | | | |
| ✳ ▲ | 126 | 16 | 6670 | ES1601 | STR | | | | | | | | | | | | |
| ▲ | 144 | 16 | 11250 | ES1602 | STR | | | | | | | | | | | | |
| ▲ | 72 | 16 | 12550 | ES1603 | STR | | | | | | | | | | | | |
| ✳ ▲ | 73 | 16 | 8950 | ES1604 | STR | | | | | | | | | | | | |
| ▲ | 338 | 16 | 10580 | ES1605 | STR | | | | | | | | | | | | |
| | 20 | 16 | 11050 | ES1606 | STR | | | | | | | | | | | | |
| ▲ | 10 | 16 | 11300 | ES1607 | STR | | | | | | | | | | | | |
| ▲ | 10 | 16 | 11300 | ES1608 | STR | | | | | | | | | | | | |
| | 173 | 16 | 3080 | ES1609 | S6 | 175 | 370 | 1930 | 430 | | | 175 | | | | | |
| | 19 | 16 | 2670 | ES1610 | S6 | 175 | 370 | 1530 | 420 | | | 175 | | | | | |
| | | | | ES1611 | S6 | NOT USED | | | | | | | | | | | |
| | | | | ES1612 | S5 | NOT USED | | | | | | | | | | | |
| | 140 | 16 | 1710 | ES1613 | S5 | 175 | 200 | 960 | 200 | | | 175 | | | | | |
| | 12 | 16 | 2810 | ES1614 | 14 | 600 | 650 | 310 | 650 | 600 | | | 560 | | 325 | | |
| ✳ ▲ | 122 | 19 | 6670 | ES1901 | STR | | | | | | | | | | | | |
| ▲ | 136 | 19 | 11250 | ES1902 | STR | | | | | | | | | | | | |
| ▲ | 68 | 19 | 12550 | ES1903 | STR | | | | | | | | | | | | |
| ✳ ▲ | 69 | 19 | 8950 | ES1904 | STR | | | | | | | | | | | | |
| ▲ | 166 | 19 | 10580 | ES1905 | STR | | | | | | | | | | | | |
| **ABUTMENT NO. 1** | | | | | | | | | | | | | | | | | |
| ▲ | 26 | 16 | 9140 | 1A1601A | STR | | | | | | | | | | | | |
| ▲ | 13 | 16 | 9410 | 1A1601B | STR | | | | | | | | | | | | |
| ▲ | 84 | 16 | 2270 | 1A1602 | S10 | | 830 | 610 | 830 | | | | | | | | |
| ▲ | 84 | 16 | 2120 | 1A1603 | S10 | | 910 | 300 | 910 | | | | | | | | |
| | 3 | 16 | 2990 | 1A1604 | S4 | 660 | 530 | 610 | 530 | | | 660 | | | | | |
| ▲ | 86 | 25 | 1430 | 1A2501 | STR | | | | | | | | | | | | |
| ▲ | 84 | 25 | 1290 | 1A2502 | STR | | | | | | | | | | | | |
| **ABUTMENT NO. 1 EXTENSION** | | | | | | | | | | | | | | | | | |
| | 12 | 16 | 1260 | AX1601 | STR | | | | | | | | | | | | |
| ▲ | 5 | 16 | 2000 | AX1602 | STR | | | | | | | | | | | | |
| ▲ | 12 | 16 | 3330 | AX1604 | STR | | | | | | | | | | | | |
| ✳ | 28 | 16 | 3370 | AX1605 | STR | | | | | | | | | | | | |
| ▲ | 12 | 16 | 3000 | AX1606 | STR | | | | | | | | | | | | |
| ▲ | 13 | 16 | 1500 | AX1608 | STR | | | | | | | | | | | | |
| ▲ | 7 | 16 | 1510 | AX1603 | 17 | | 1100 | 410 | --- | | | | | | | | |
| ▲ | 12 | 16 | 3660 | AX1607 | 19 | | 660 | 3000 | --- | | | | 700 | | 70 | | |
| ▲ | 13 | 16 | 1900 | AX1609 | 17 | | 1500 | 400 | --- | | | | | | | | |
| ▲ | 6 | 16 | 3980 | AZ1610 | 19 | | 1500 | 2480 | --- | | | | 1205 | | 890 | | |
| **ABUTMENT NO. 2** | | | | | | | | | | | | | | | | | |
| ▲ | 13 | 16 | 10710 | 2A1601A | STR | | | | | | | | | | | | |
| ✳ ▲ | 14 | 16 | 8530 | 2A1601B | STR | | | | | | | | | | | | |
| ▲ | 83 | 16 | 2590 | 2A1602 | S10 | | 990 | 610 | 990 | | | | | | | | |
| ▲ | 83 | 16 | 2120 | 2A1603 | S10 | | 910 | 300 | 910 | | | | | | | | |
| | 3 | 16 | 2830 | 2A1604 | S4 | 660 | 450 | 610 | 450 | | | 660 | | | | | |
| △ ▲ | 61 | 25 | 1600 | 2A2501 | STR | | | | | | | | | | | | |
| ▲ | 63 | 25 | 1290 | 2A2502 | STR | | | | | | | | | | | | |
| **SIDEWALK** | | | | | | | | | | | | | | | | | |
| | 17 | 16 | 8380 | ESW1601 | STR | | | | | | | | | | | | |
| ✳ | 31 | 16 | 2640 | ESW1602 | S6 | 175 | 160 | 1930 | 200 | | | 175 | | | | | |
| | 19 | 16 | 1520 | ESW1603 | S5 | 175 | 360 | 450 | 360 | | | 175 | | | | | |
| | 1 | 16 | 2650 | ESW1604 | S6 | 175 | 160 | 1940 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2660 | ESW1605 | S6 | 175 | 160 | 1950 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2675 | ESW1606 | S6 | 175 | 160 | 1965 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2685 | ESW1607 | S6 | 175 | 160 | 1975 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2700 | ESW1608 | S6 | 175 | 160 | 1990 | 200 | | | 175 | | | | | |
| ✳ | 2 | 16 | 2710 | ESW1609 | S6 | 175 | 160 | 2000 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2725 | ESW1610 | S6 | 175 | 160 | 2015 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2735 | ESW1611 | S6 | 175 | 160 | 2025 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2750 | ESW1612 | S6 | 175 | 160 | 2040 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2760 | ESW1613 | S6 | 175 | 160 | 2050 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2775 | ESW1614 | S6 | 175 | 160 | 2065 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2785 | ESW1615 | S6 | 175 | 160 | 2075 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2800 | ESW1616 | S6 | 175 | 160 | 2090 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2810 | ESW1617 | S6 | 175 | 160 | 2100 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2825 | ESW1618 | S6 | 175 | 160 | 2115 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2835 | ESW1619 | S6 | 175 | 160 | 2125 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2850 | ESW1620 | S6 | 175 | 160 | 2140 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2860 | ESW1621 | S6 | 175 | 160 | 2150 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2875 | ESW1622 | S6 | 175 | 160 | 2165 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2885 | ESW1623 | S6 | 175 | 160 | 2175 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2900 | ESW1624 | S6 | 175 | 160 | 2190 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2910 | ESW1625 | S6 | 175 | 160 | 2200 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2920 | ESW1626 | S6 | 175 | 160 | 2210 | 200 | | | 175 | | | | | |
| | 1 | 16 | 2935 | ESW1627 | S6 | 175 | 160 | 2225 | 200 | | | 175 | | | | | |

| ITEM | EACH | SIZE | LENGTH | MARK | TYPE | A | B | C | D | E | F | G | H | J | K | R | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **JUNCTION BOX** | | | | | | | | | | | | | | | | | |
| | 68 | 16 | 2625 | JB1603 | STR | | | | | | | | | | | | |
| ✳ | 12 | 16 | 4030 | JB1601A | 17 | | 850 | 2330 | 850 | | | | | | | | |
| | 9 | 16 | 4620 | JB1601B | 17 | | 840 | 2940 | 840 | | | | | | | | |
| | 11 | 16 | 2680 | JB1602A | 1 | 175 | 2330 | | | | | 175 | | | | | |
| | 9 | 16 | 3290 | JB1602B | 1 | 175 | 2940 | | | | | 175 | | | | | |
| ✳ | 19 | 16 | 5010 | JB1604 | 17 | | 1520 | 1970 | 1520 | | | | | | | | |
| | 18 | 16 | 5870 | JB1605 | 17 | | 1380 | 2910 | 1380 | | | | | | | | |
| ✳ ▲ | 17 | 19 | 3340 | JB1901 | 1 | 200 | 2940 | | | | | 200 | | | | | |
| ✳ ▲ | 21 | 19 | 2730 | JB1902 | 1 | 200 | 2330 | | | | | 200 | | | | | |

## ~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING 55M SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31M (ASTM A 615M-SI). ALL BARS SHALL BE GRADE 420, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E DENOTES EPOXY COATED REINFORCING STEEL.




**ASTM STANDARD REINFORCING BARS**

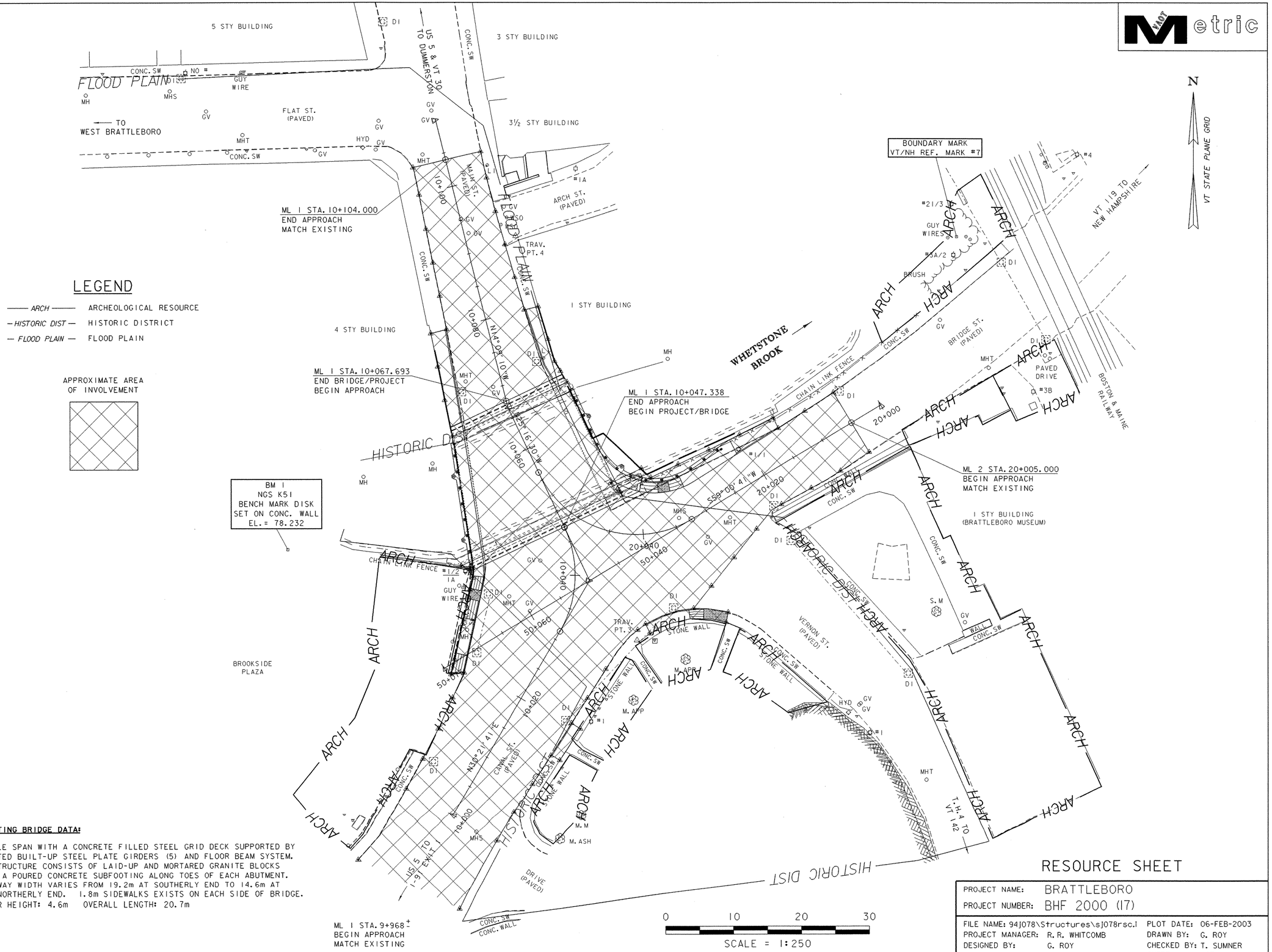
| BAR SIZE | NOMINAL MASS (Kg/m) | NOMINAL DIMENSIONS ROUND SECTION | | |
|---|---|---|---|---|
| | | DIAMETER (mm) | CROSS SECTIONAL AREA ($mm^2$) | PERIMETER (mm) |
| #10 | 0.560 | 9.5 | 71 | 29.84 |
| #13 | 0.994 | 12.7 | 129 | 39.90 |
| #16 | 1.552 | 15.9 | 199 | 49.95 |
| #19 | 2.235 | 19.1 | 284 | 60.00 |
| #22 | 3.042 | 22.2 | 387 | 69.74 |
| #25 | 3.973 | 25.4 | 510 | 79.80 |
| #29 | 5.060 | 28.7 | 645 | 90.16 |
| #32 | 6.404 | 32.3 | 819 | 101.47 |
| #36 | 7.907 | 35.8 | 1006 | 112.47 |
| #43 | 11.380 | 43.0 | 1452 | 135.09 |
| #57 | 20.240 | 57.3 | 2581 | 180.01 |

PROJECT NAME: **BRATTLEBORO**
PROJECT NUMBER: **BHF 2000 (17)**

FILE NAME: **94j078\Structures\sj078rss.xls**
PROJECT MANAGER: **R. R. WHITCOMB**
DESIGNED BY: **T. SUMNER**
**REINFORCING STEEL SCHEDULE SHEET #1**

PLOT DATE: **02/03/2003**
DRAWN BY: **G. ROY**
CHECKED BY: **T. SUMNER**
SHEET **57** OF **71**

Metric



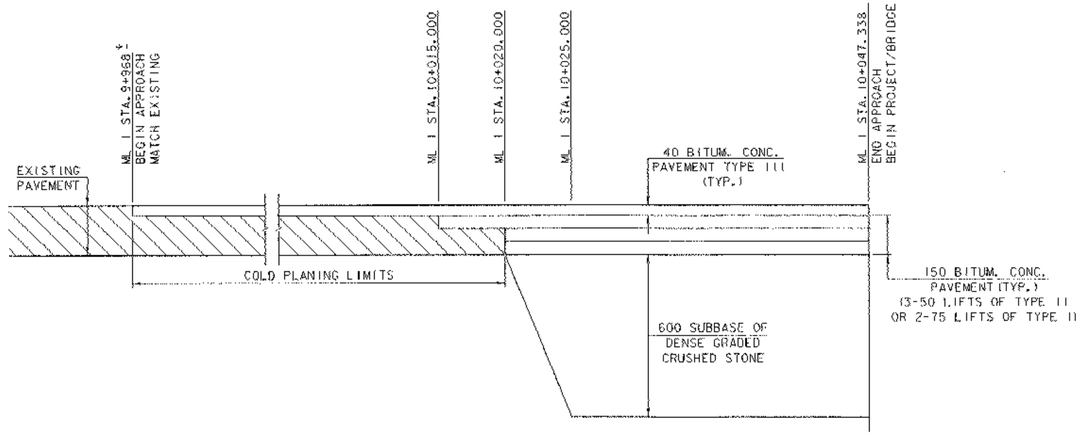

**EXISTING BRIDGE DATA:**

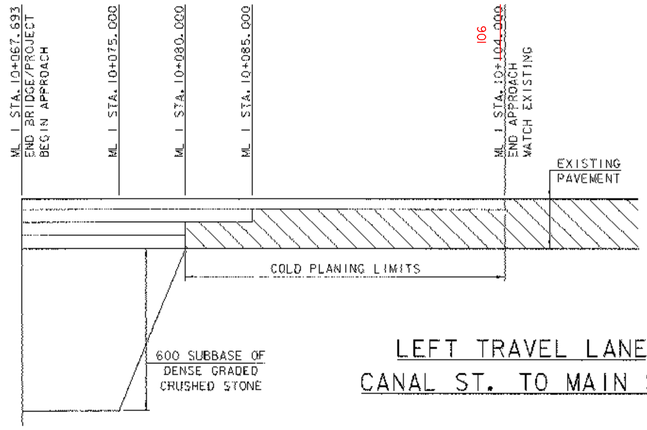
SIMPLE SPAN WITH A CONCRETE FILLED STEEL GRID DECK SUPPORTED BY RIVETED BUILT-UP STEEL PLATE GIRDERS (5) AND FLOOR BEAM SYSTEM. SUBSTRUCTURE CONSISTS OF LAID-UP AND MORTARED GRANITE BLOCKS WITH A POURED CONCRETE SUBFOOTING ALONG TOES OF EACH ABUTMENT. ROADWAY WIDTH VARIES FROM 19.2m AT SOUTHERLY END TO 14.6m AT THE NORTHERLY END. 1.8m SIDEWALKS EXISTS ON EACH SIDE OF BRIDGE.
CLEAR HEIGHT: 4.6m OVERALL LENGTH: 20.7m

# RESOURCE SHEET

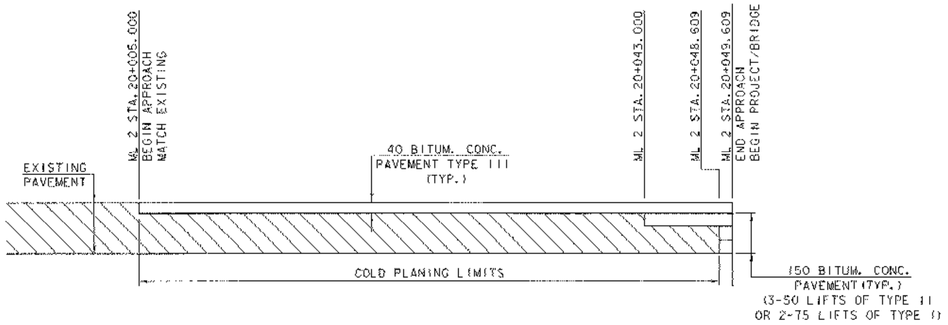
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|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |

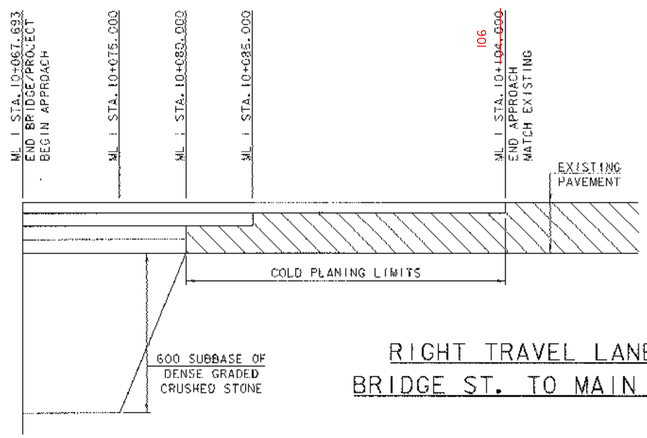
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| PROJECT MANAGER: | R. R. WHITCOMB | DRAWN BY: | G. ROY |
| DESIGNED BY: | G. ROY | CHECKED BY: | T. SUMNER |
| | | SHEET | 58 OF 71 |



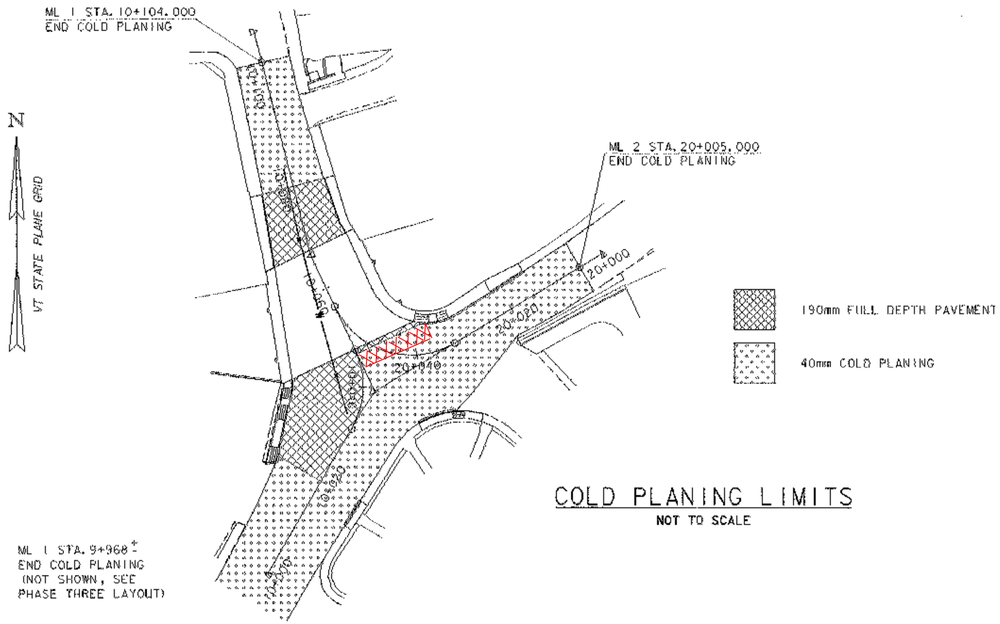




LEFT TRAVEL LANE
CANAL ST. TO MAIN ST.




RIGHT TRAVEL LANE
BRIDGE ST. TO MAIN ST.




COLD PLANING LIMITS
NOT TO SCALE

HORIZ.: 0 10 20
SCALE = 1:200

VERT.: 0 0.5 1
SCALE = 1:10

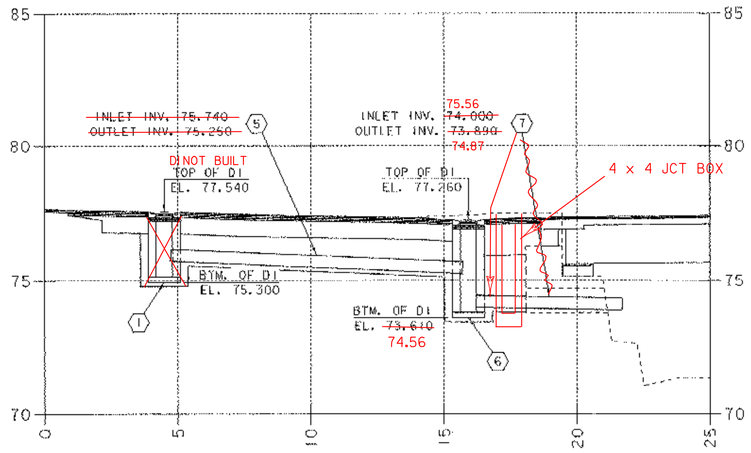
# MATERIAL TRANSITION & COLD PLANING DETAILS

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

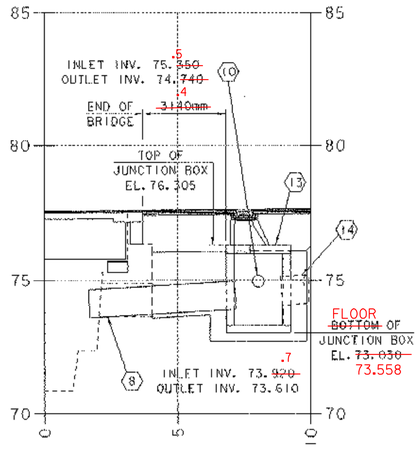
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PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 06-FEB-2003
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 59 OF 71

Metric

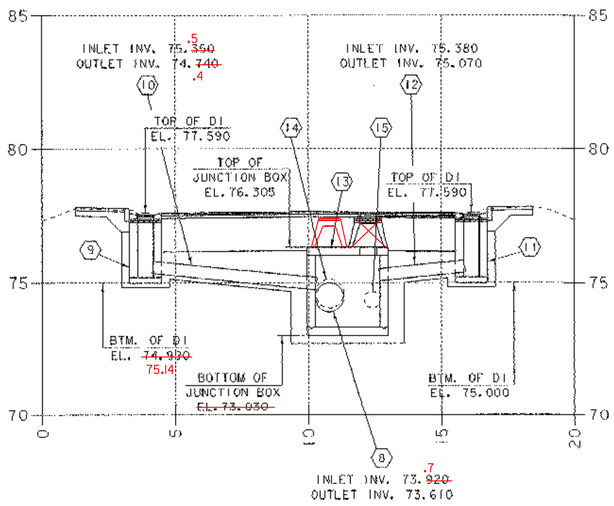
## Pipe Profile
## Sta. 10+018.26 Lt. - Sta. 10+051.54 Lt.

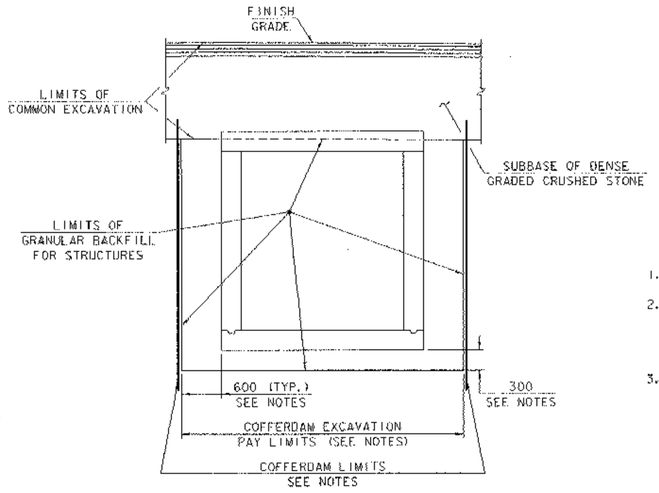



## Pipe Profile
## Sta. 10+064.01 Rt. - Sta. 10+074.22 Rt.




## Pipe Profile
## Sta. 10+070.09 Lt. - Sta. 10+072.73 Rt.




## JUNCTION BOX EARTHWORK TYPICAL

(NOT TO SCALE)

## NOTES

1. COFFERDAM SIZE TO BE DETERMINED BY THE CONTRACTOR.
2. THE PAY LIMITS OF "COFFERDAM EXCAVATION, EARTH" AND "COFFERDAM EXCAVATION, ROCK" SHALL BE 600 OUTSIDE THE PERIMETER OF THE JUNCTION BOX, UP TO EXISTING GROUND OR BOTTOM OF SUBBASE, WHICHEVER IS LOWER.
3. 300 UNDERCUT AT JUNCTION BOX AS DETERMINED NECESSARY BY THE RESIDENT ENGINEER.

0 1 2 4 6 8 10

HORIZONTAL SCALE = 1:100

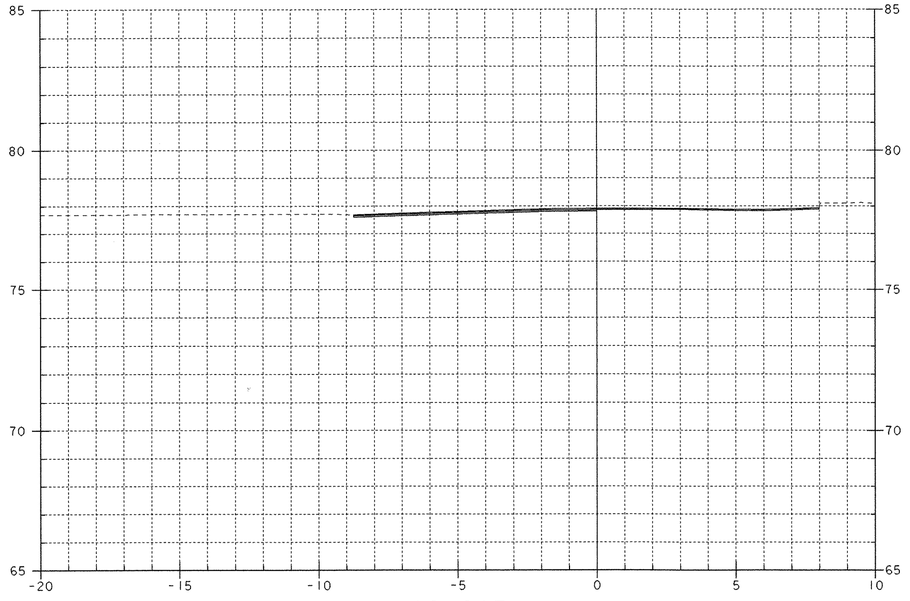
VERTICAL SCALE = 1:100

SEE DRAINAGE DETAIL SHEET
FOR DRAINAGE PIPE INFORMATION

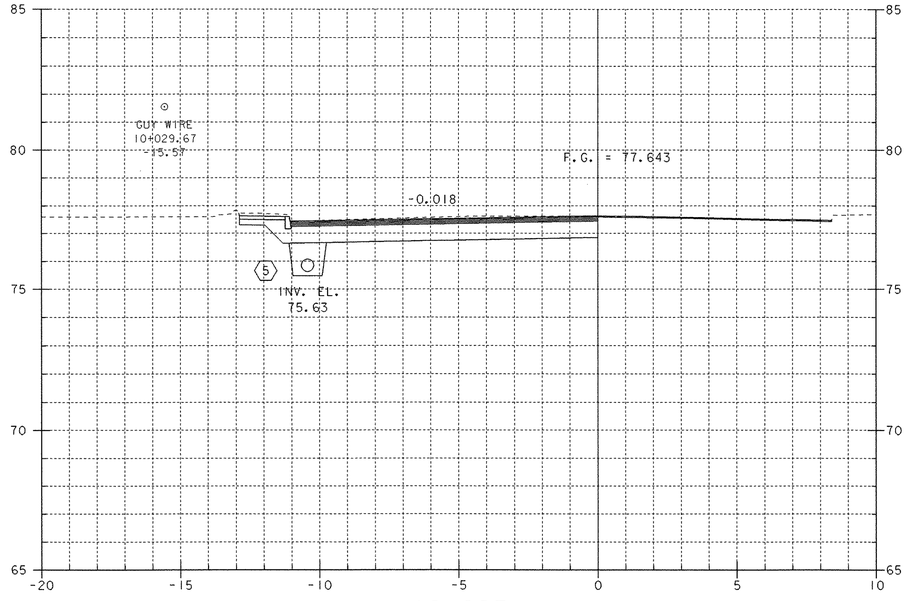
# DRAINAGE PIPE PROFILES

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

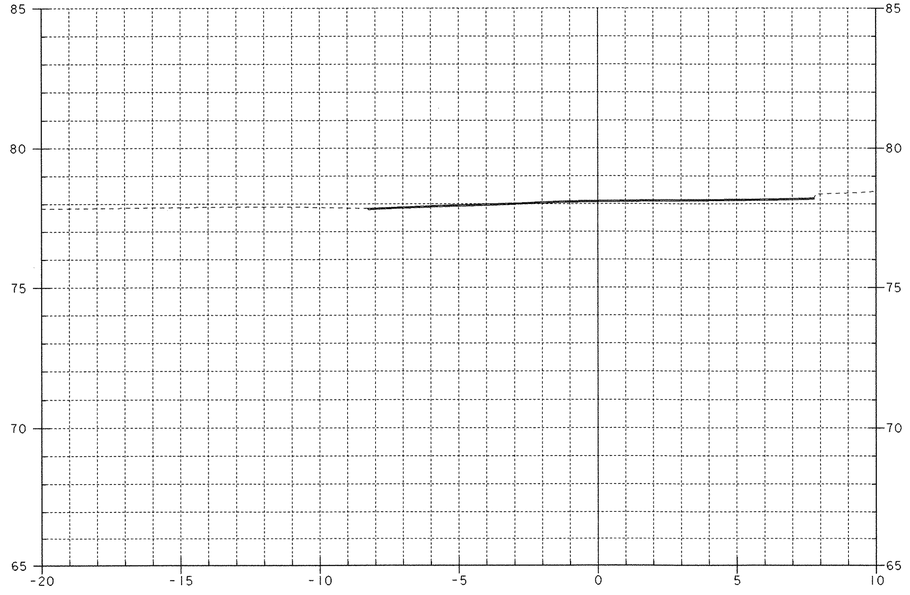
FILE NAME: 94J078\Structures\sj078dppj
PROJECT MANAGER: R.R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 06-FEB-2003
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 60 OF 71




10+015

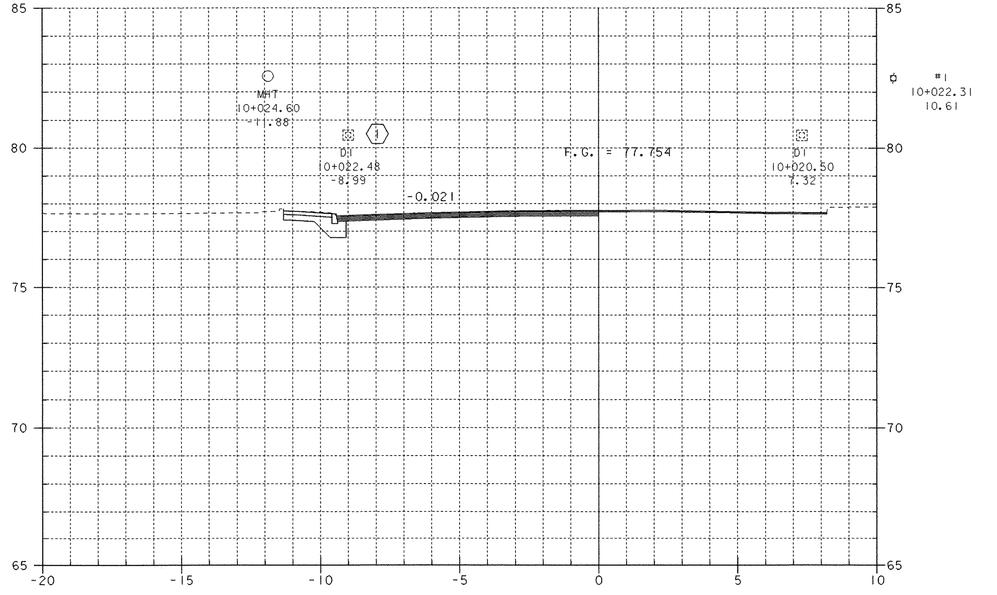



10+025




10+010

ML 1 STA. 9+968± BEGIN APPROACH MATCH EXISTING




10+020

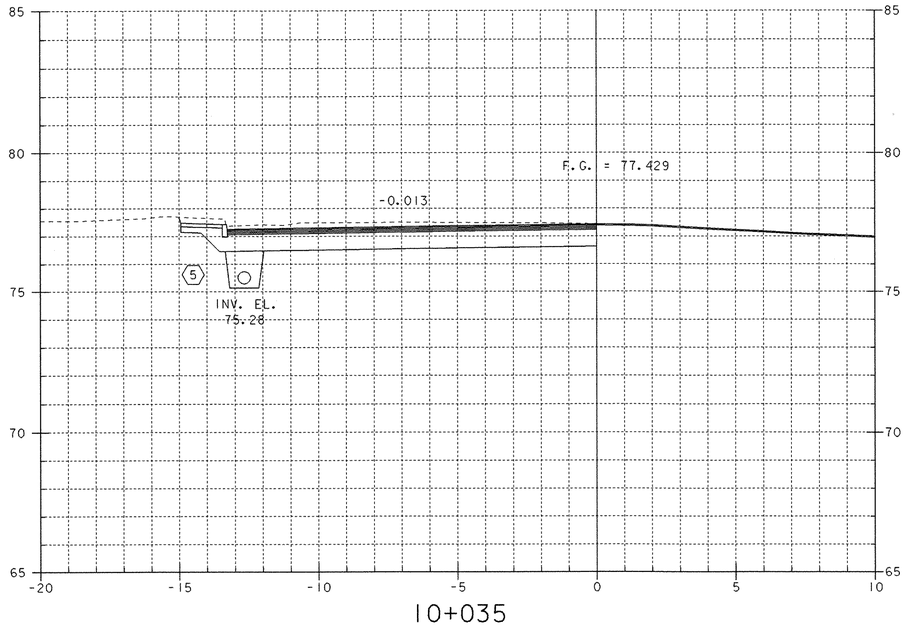
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SCALE = 1:100

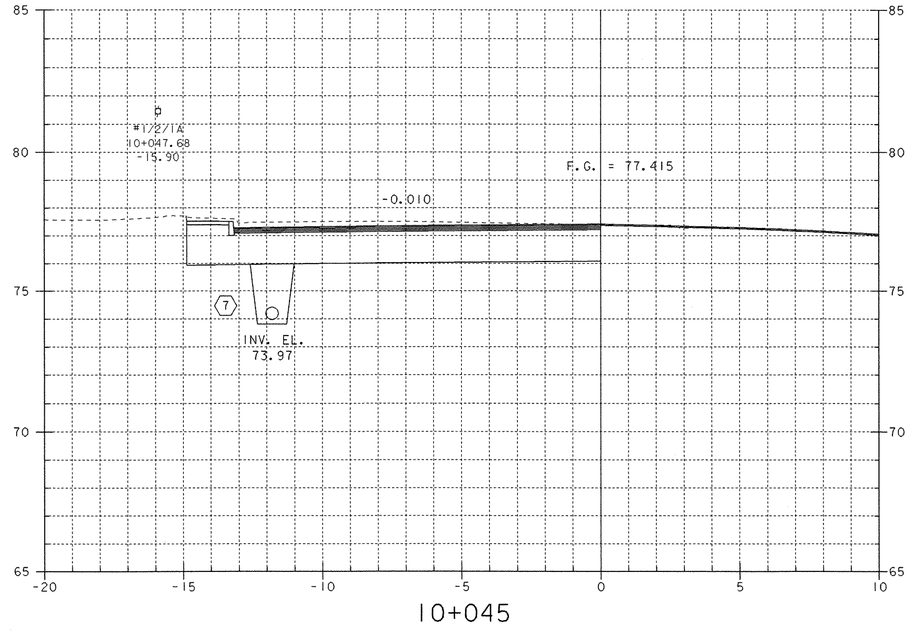
# MAIN ST. CROSS SECTIONS (1)

| | |
|---|---|
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| PROJECT NUMBER: | BHF 2000 (17) |

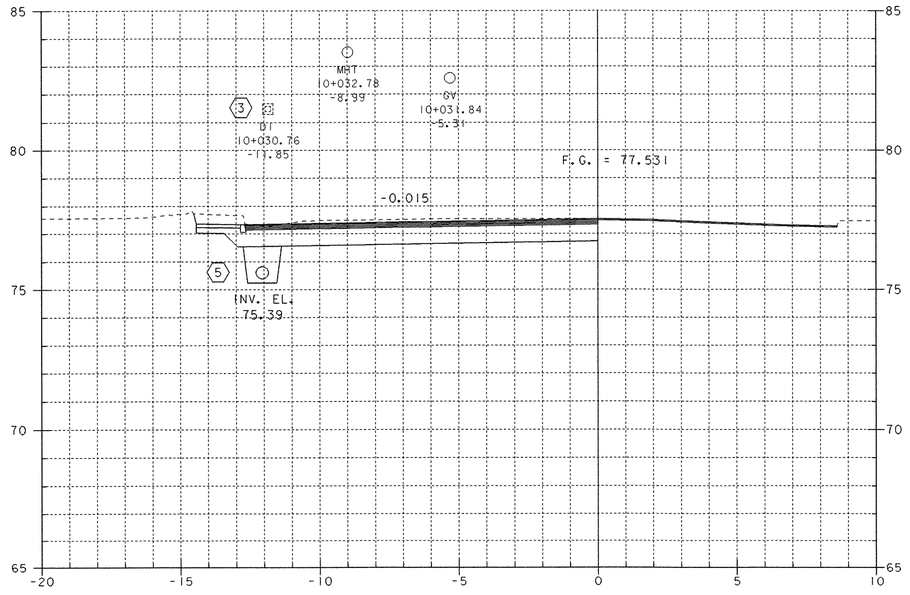
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| PROJECT MANAGER: | R. R. WHITCOMB | DRAWN BY: | G. ROY |
| DESIGNED BY: | G. ROY | CHECKED BY: | T. SUMNER |
| | | SHEET | 61 OF 71 |



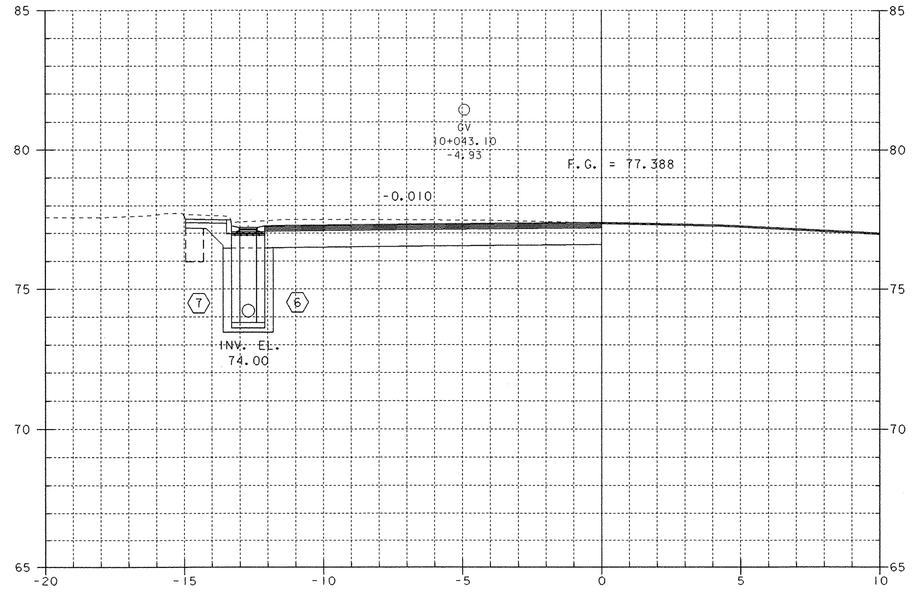

10+035




10+045




10+030




10+040

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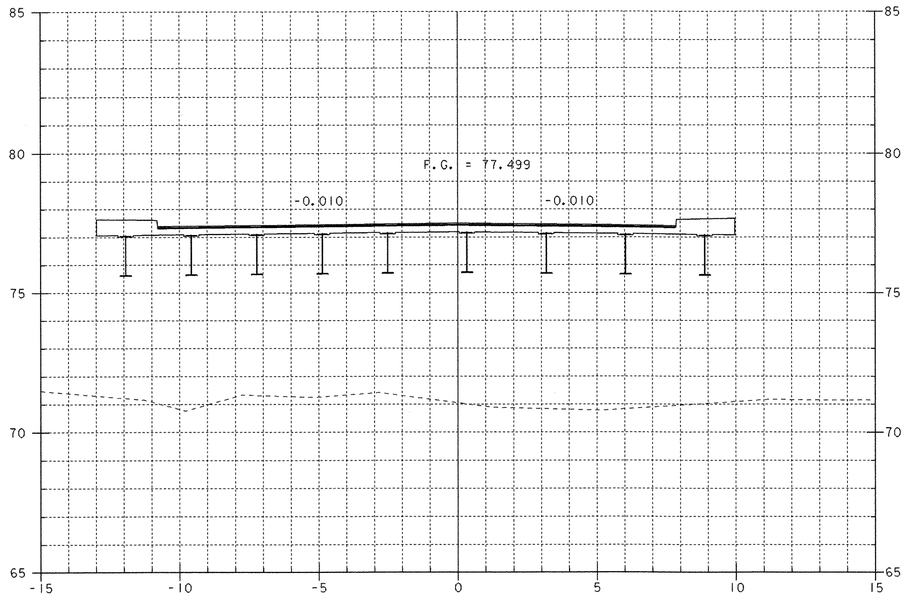
SCALE = 1:100

# MAIN ST. CROSS SECTIONS (2)

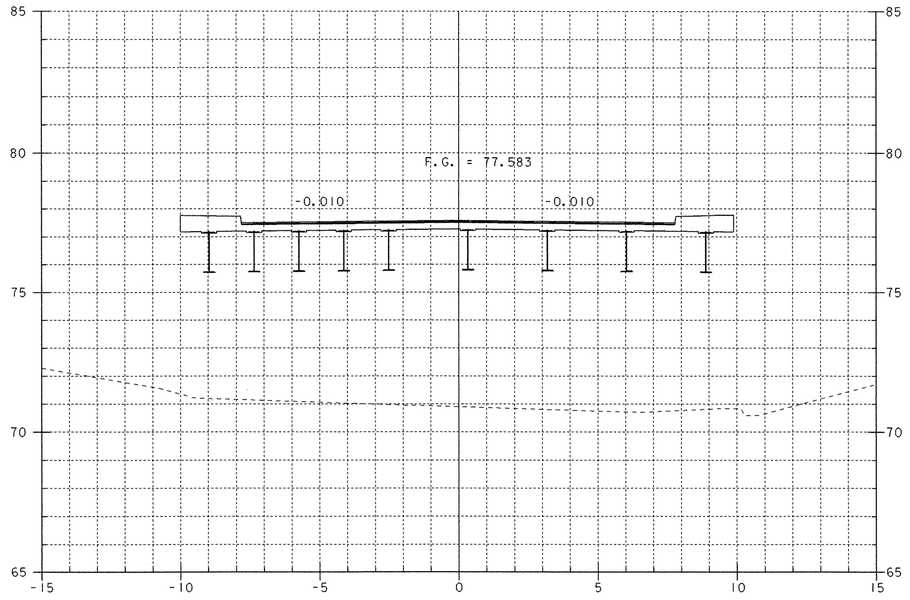
PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94j078\Structures\sj078m02.1
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: G. ROY

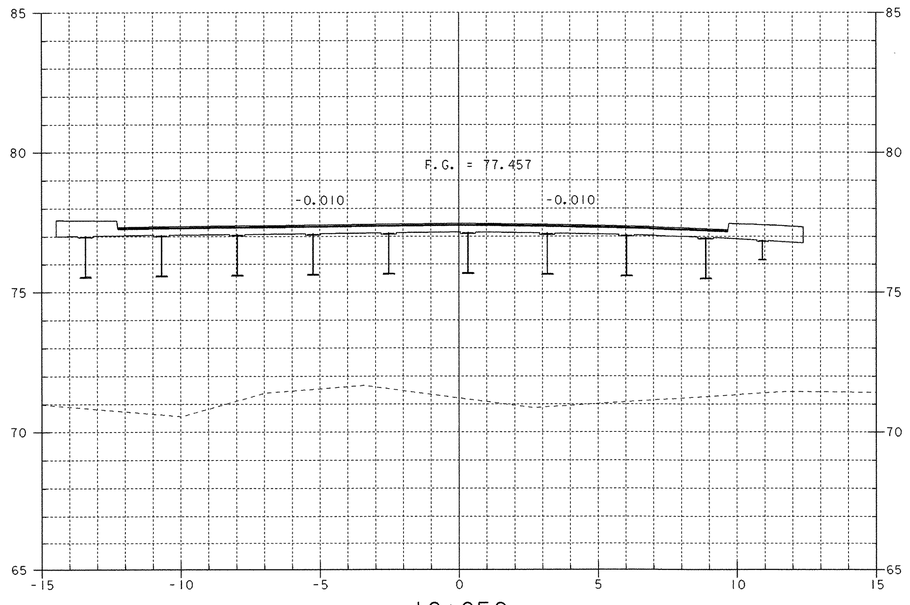
PLOT DATE: 06-FEB-2003
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 62 OF 71




10+055

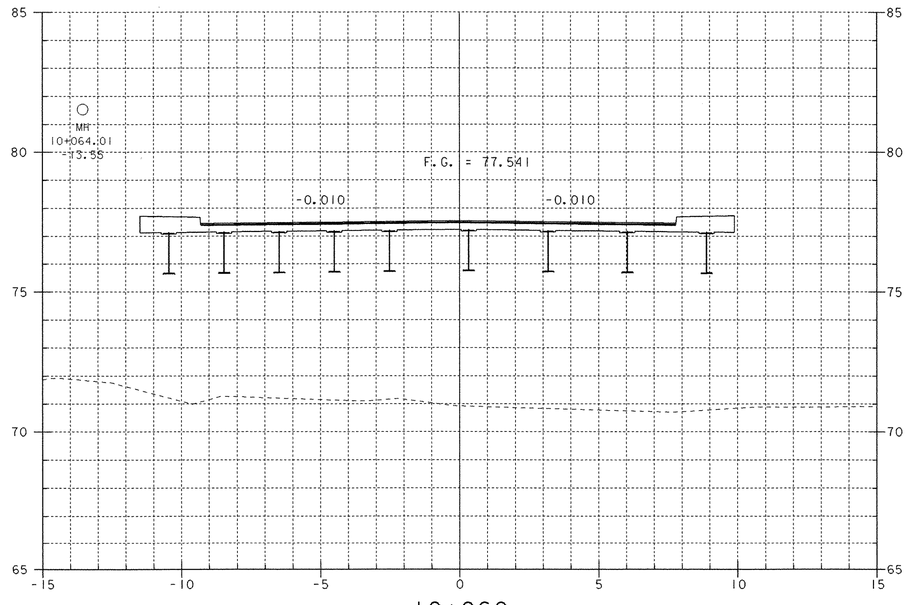



10+065




10+050

ML 1 STA. 10+047.338
END APPROACH
BEGIN PROJECT/BRIDGE




10+060

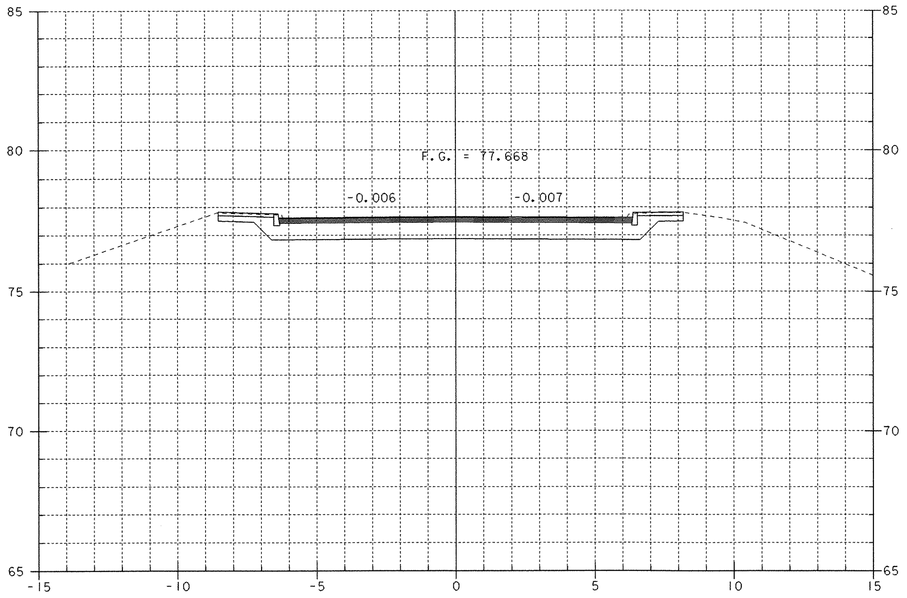
0 1 2 4 6 8 10

SCALE = 1:100

# MAIN ST. CROSS SECTIONS (3)

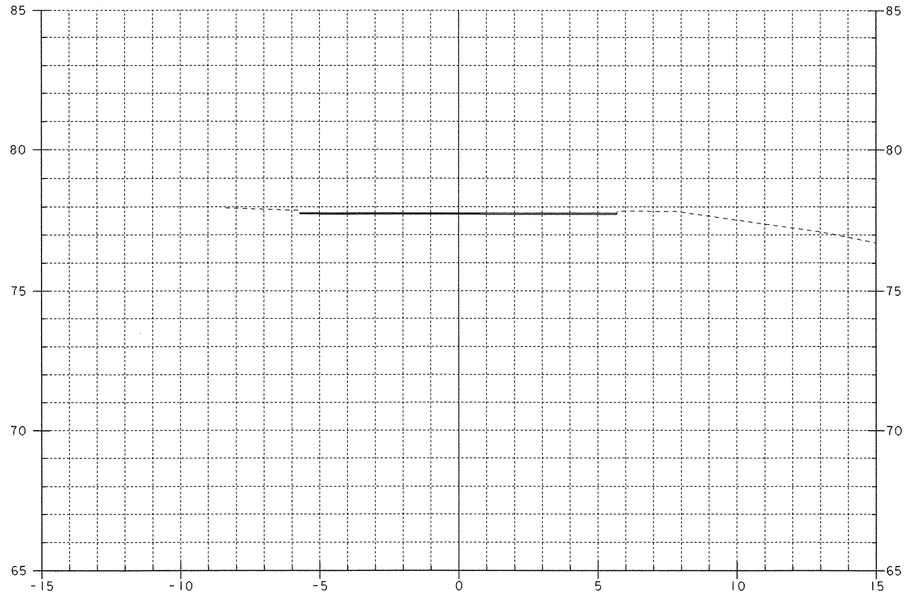
PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sj078m03.1
PROJECT MANAGER: R.R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 06-FEB-2003
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 63 OF 71

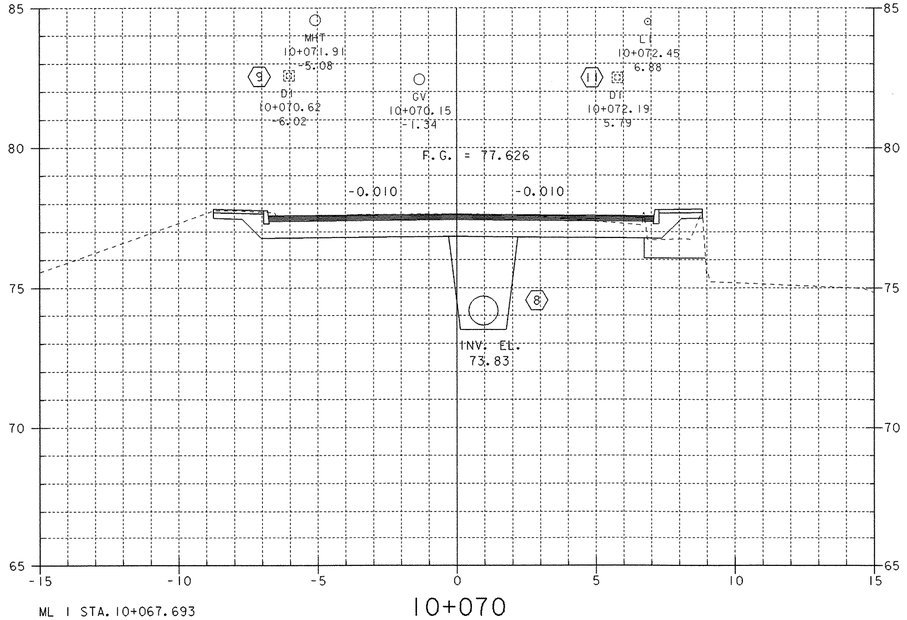



10+075

ML 1 STA. 10+104.000
END APPROACH
MATCH EXISTING

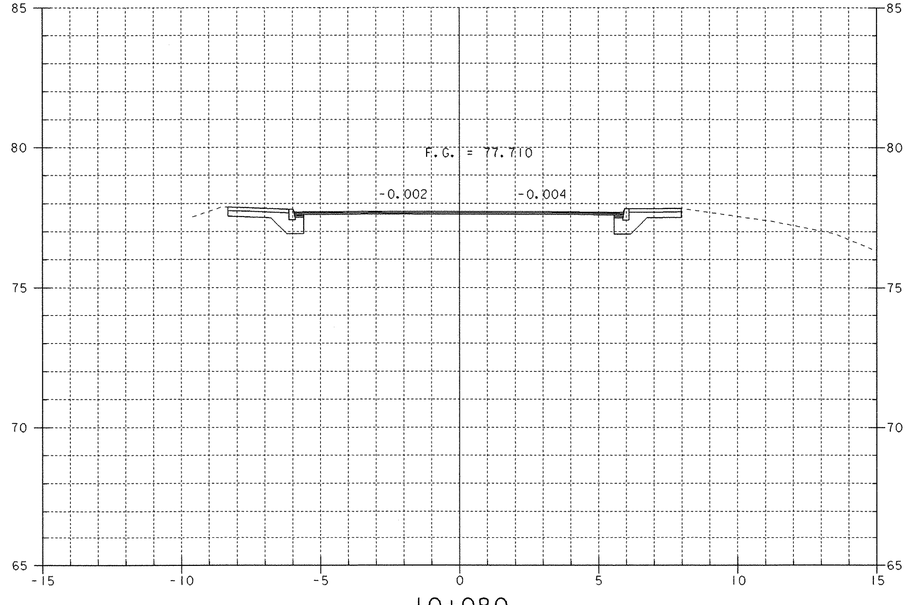



10+085




10+070

ML 1 STA. 10+067.693
END BRIDGE/PROJECT
BEGIN APPROACH

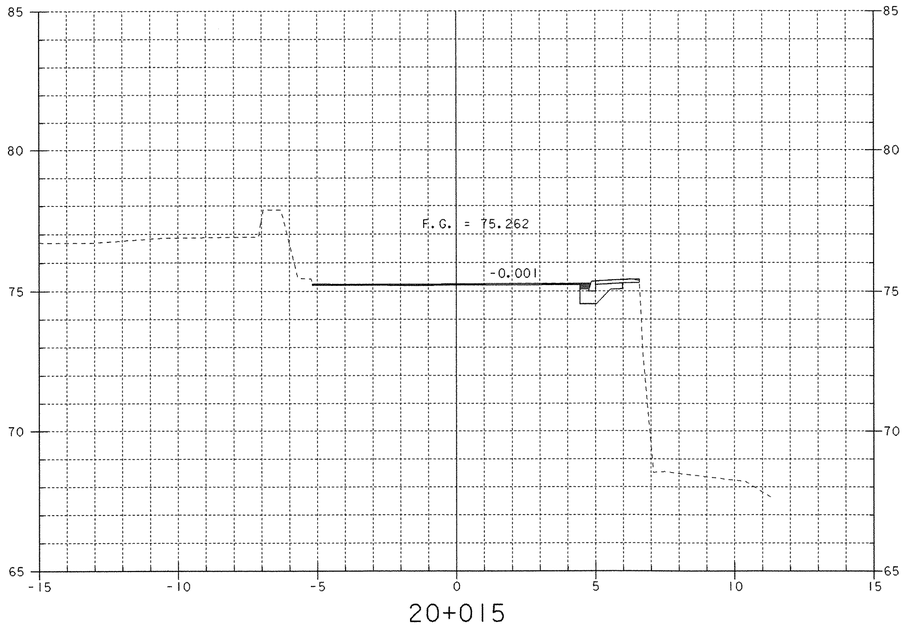



10+080

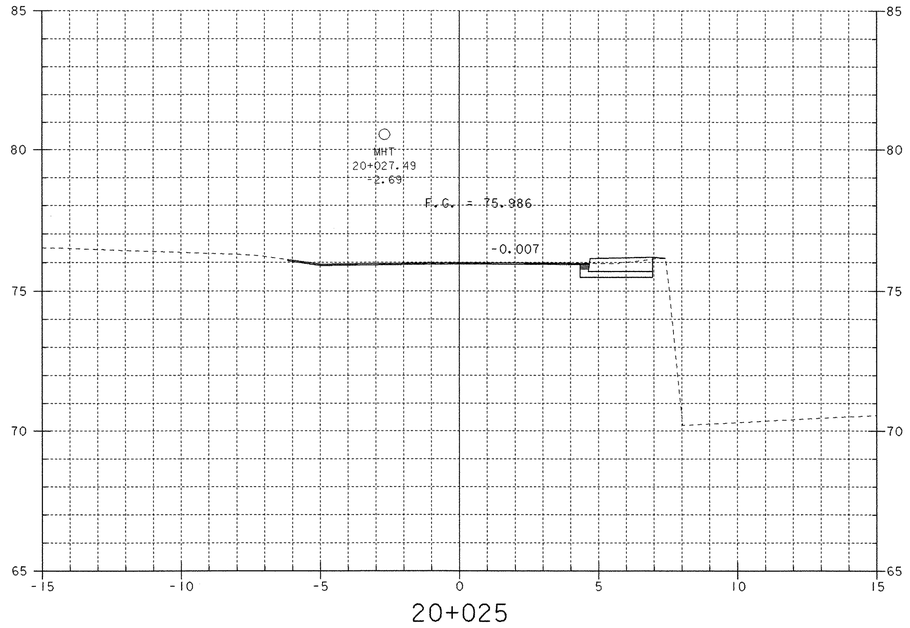
0 1 2 4 6 8 10
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# MAIN ST. CROSS SECTIONS (4)

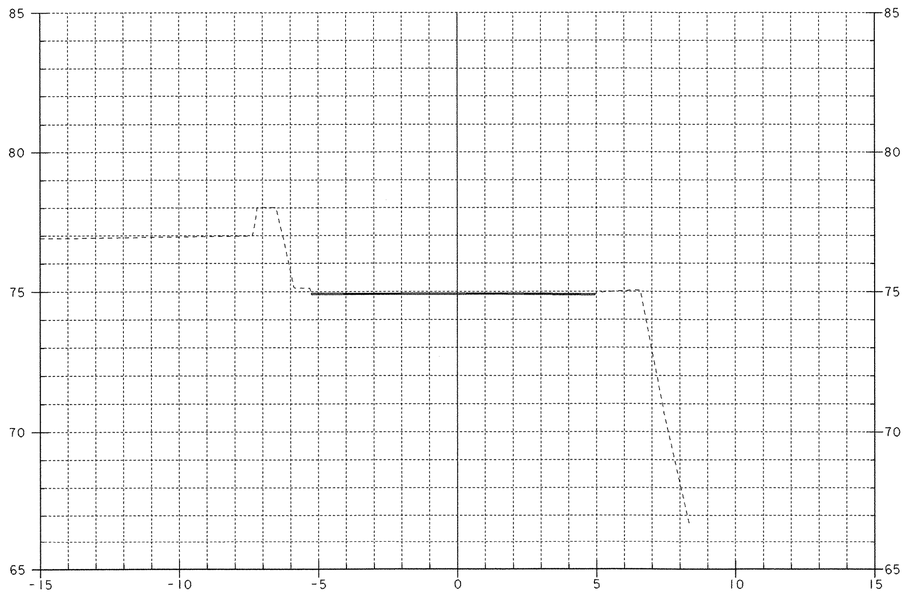
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|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |
| FILE NAME: 94J078\Structures\sj078m04.i | PLOT DATE: 06-FEB-2003 |
| PROJECT MANAGER: R.R. WHITCOMB | DRAWN BY: G. ROY |
| DESIGNED BY: G. ROY | CHECKED BY: T. SUMNER |
| | SHEET 64 OF 71 |




20+015

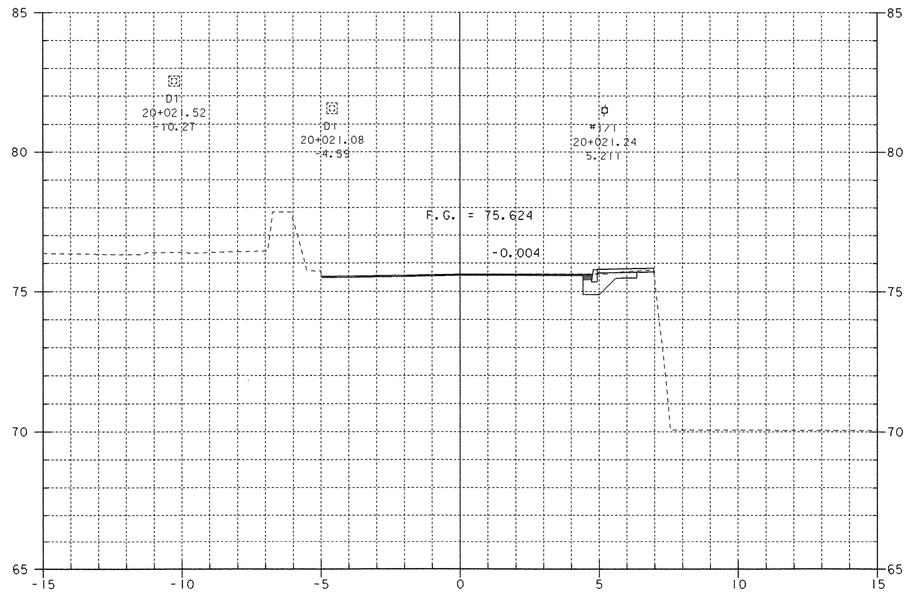



20+025




20+010

ML 2 STA. 20+005.000
BEGIN APPROACH
MATCH EXISTING




20+020

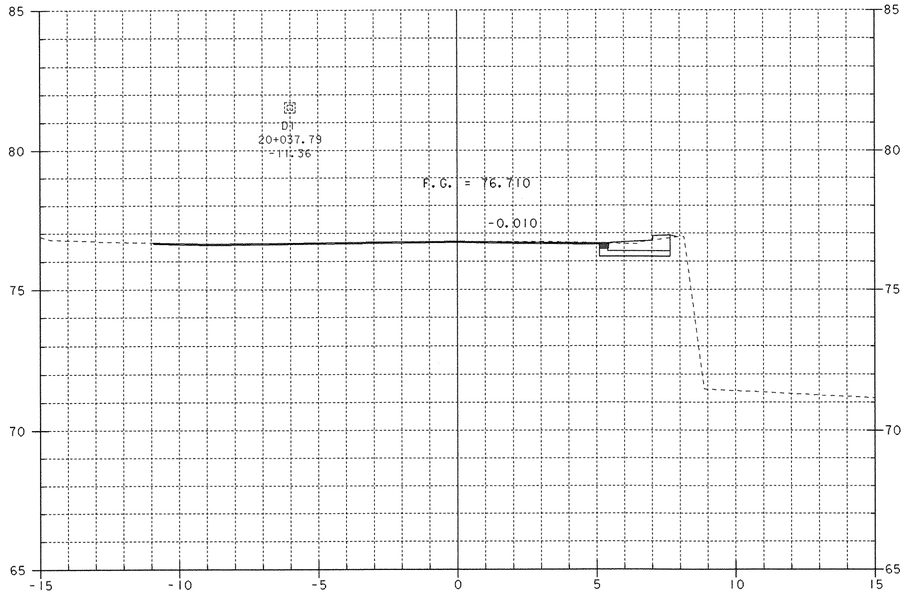
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SCALE = 1:100

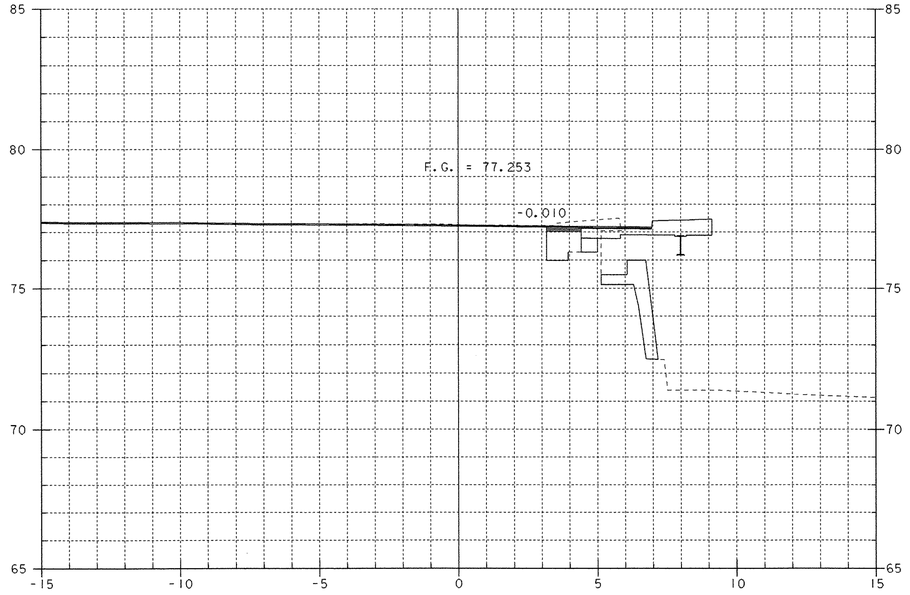
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PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

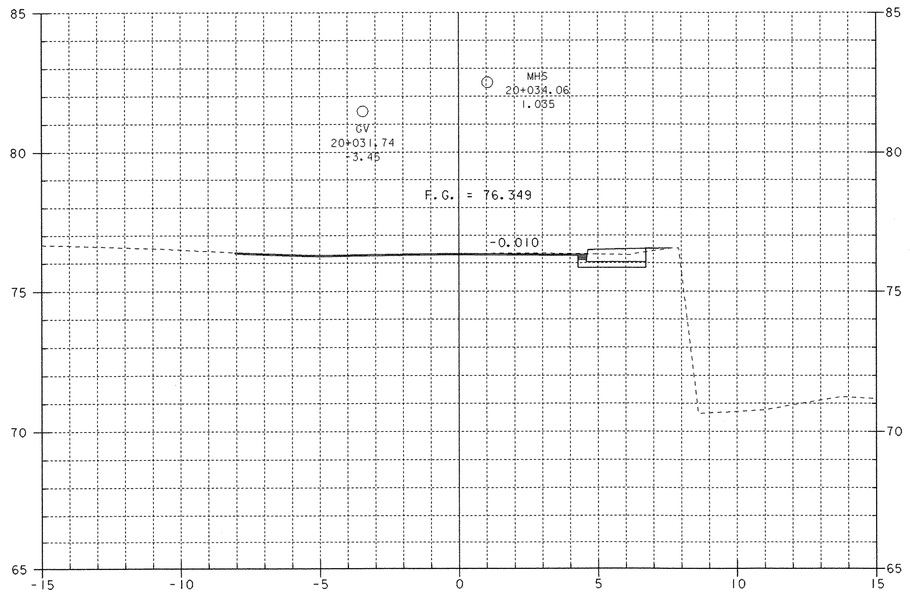
FILE NAME: 94J078\Structures\sj078m05.1
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 06-FEB-2003
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 65 OF 71



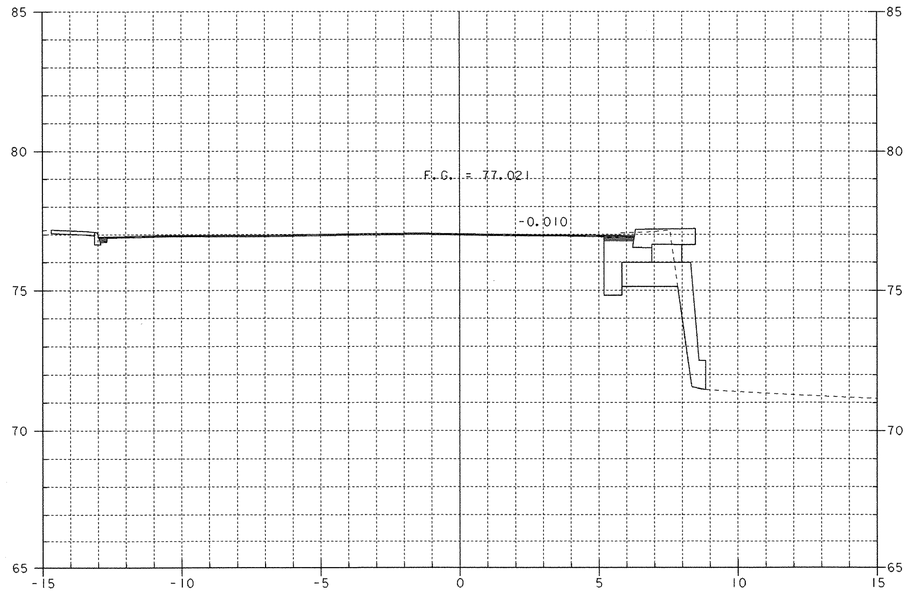

20+035




20+045




20+030




20+040

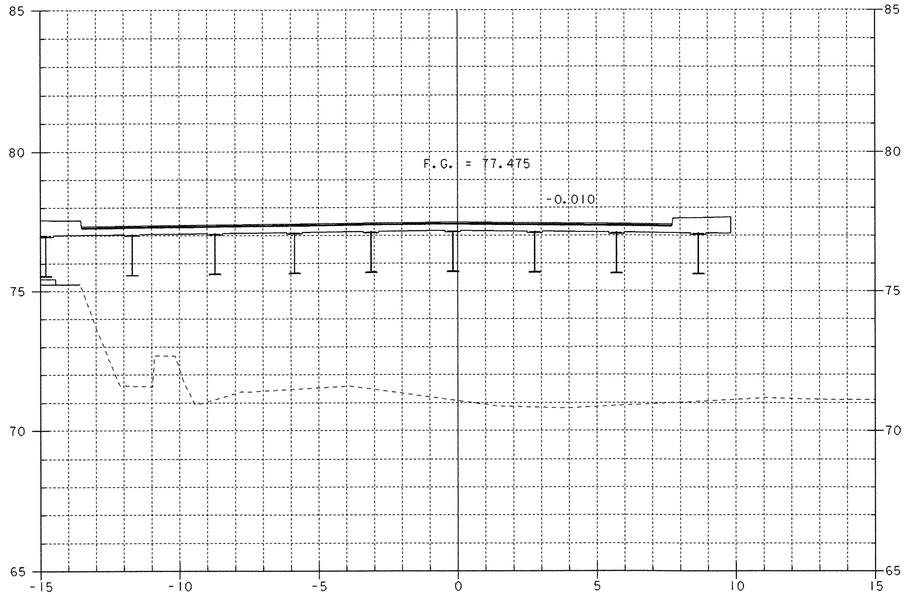
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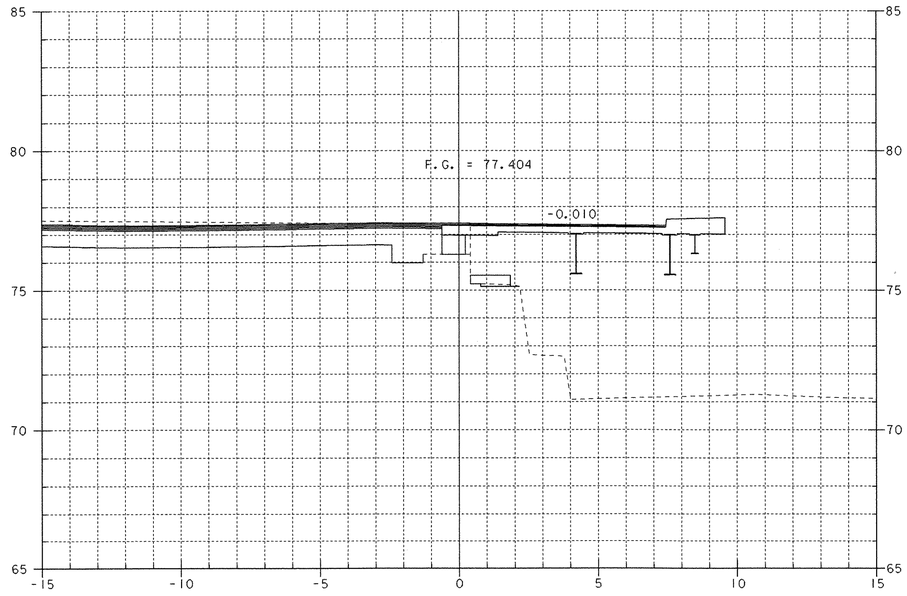
SCALE = 1:100

PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sj078m06.i
PROJECT MANAGER: R.R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 06-FEB-2003
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 66 OF 71




20+055




ML 2 STA. 20+049.609
BEGIN BRIDGE

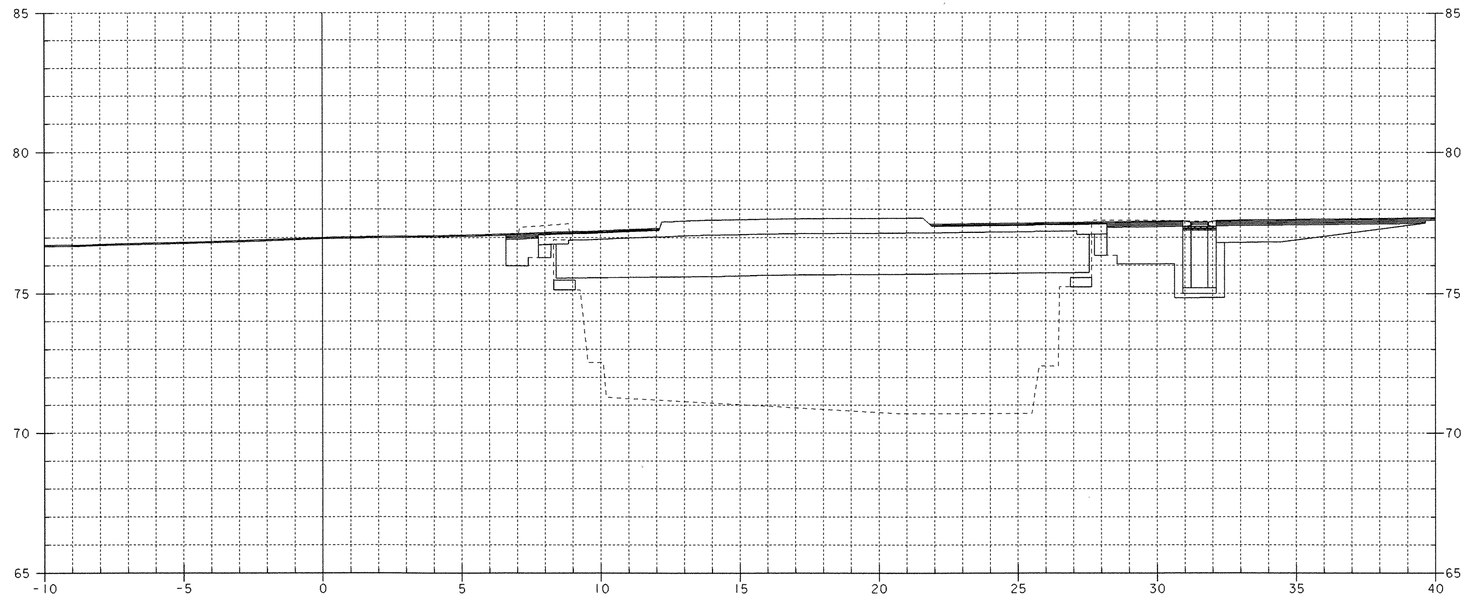
20+050

0 1 2 4 6 8 10

SCALE = 1:100

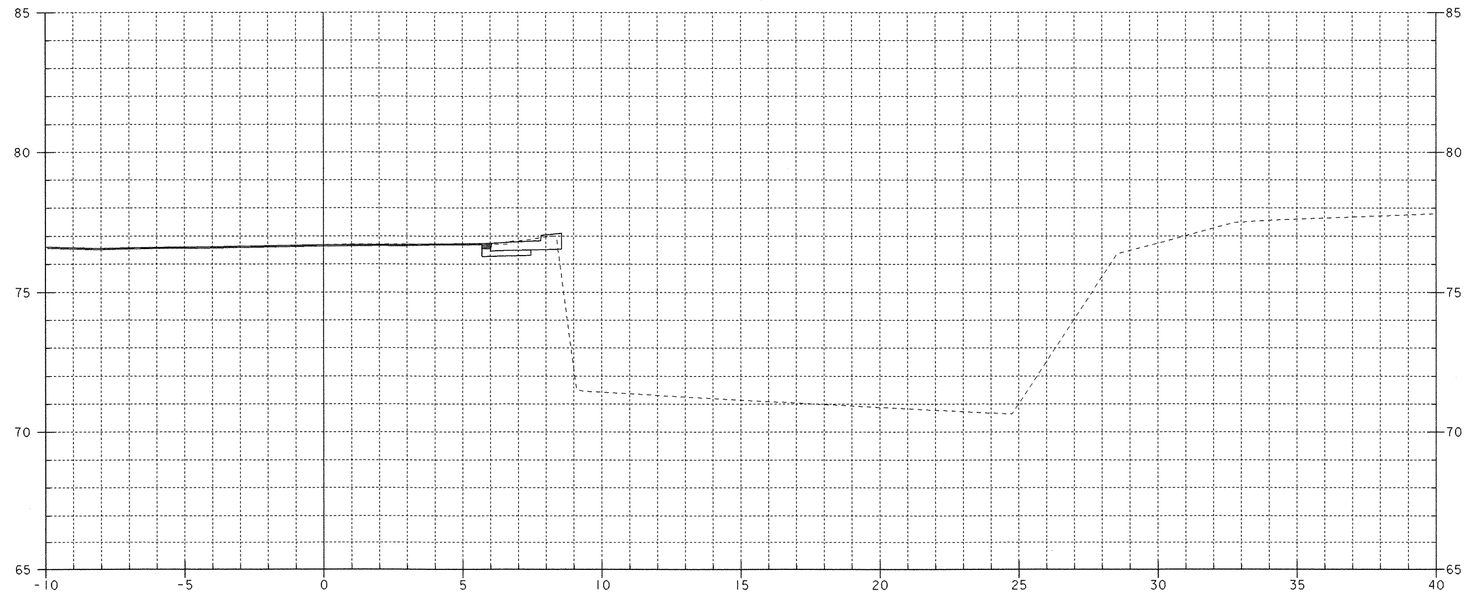
# MAINLINE 2 CROSS SECTIONS (3)

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|---|---|
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| PROJECT NUMBER: | BHF 2000 (17) |
| FILE NAME: 94J078\Structures\sj078m07.i | PLOT DATE: 06-FEB-2003 |
| PROJECT MANAGER: R.R. WHITCOMB | DRAWN BY: G. ROY |
| DESIGNED BY: G. ROY | CHECKED BY: T. SUMNER |
| | SHEET 67 OF 71 |




50+040

CHANNEL STA. 50+037.83 FAR RT.
BEGIN STRUCTURE EXCAVATION
GRANULAR BACKFILL FOR STRUCTURES




50+035

CHANNEL STA. 50+035.00 RT.
BEGIN STRUCTURE EXCAVATION
GRANULAR BACKFILL FOR STRUCTURES

0 1 2 4 6 8 10

SCALE = 1:100

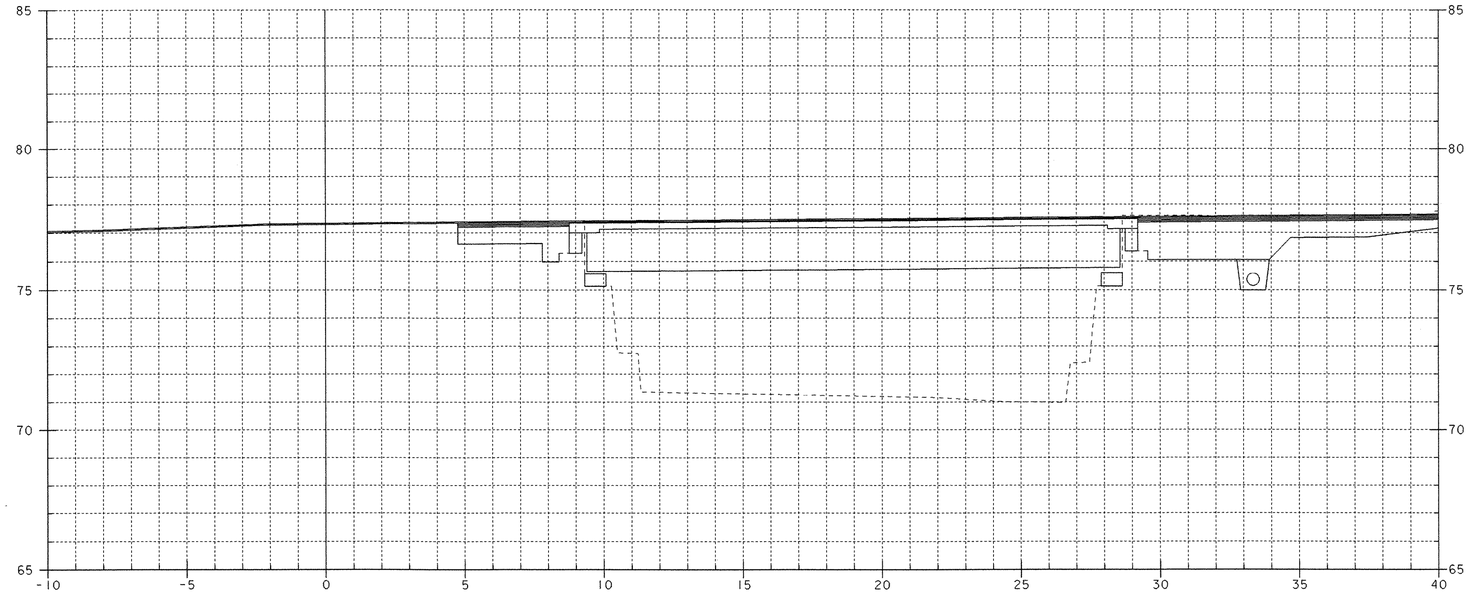
NOTE:
SEE SHEET 60 FOR DRAINAGE
DETAILS AT END OF ABUT. NO. 2

# CHANNEL CROSS SECTIONS (1)

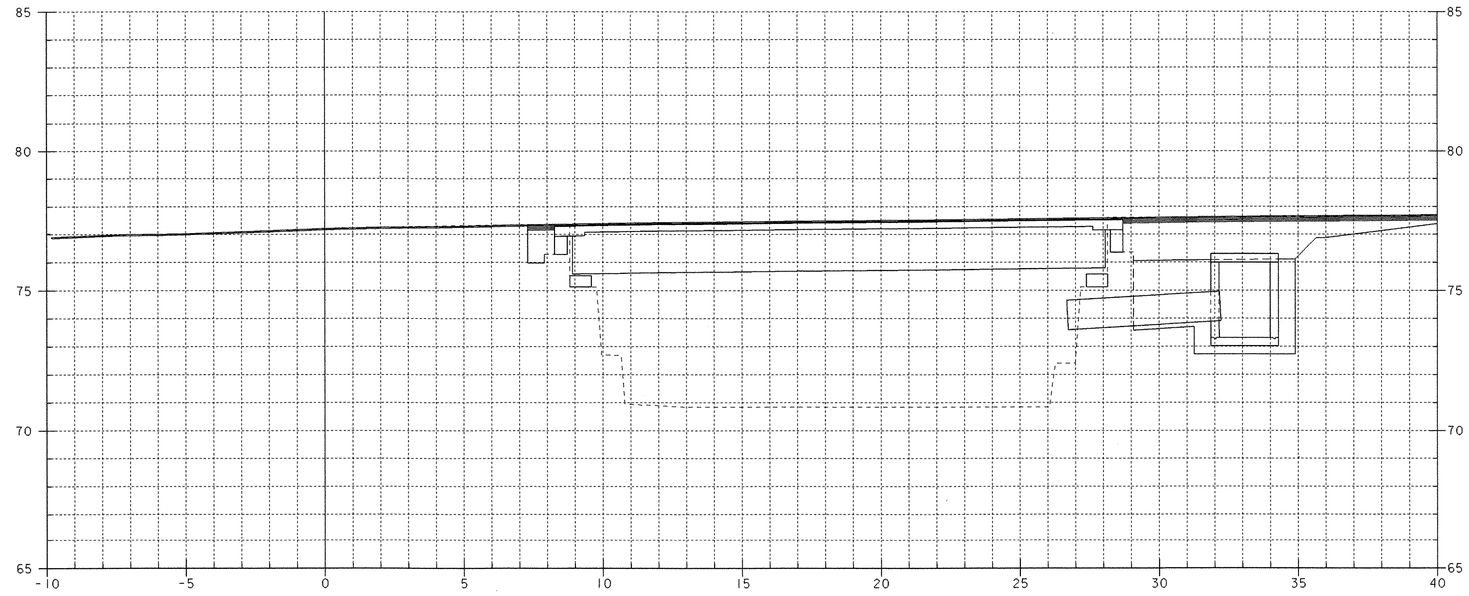
PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94j078\Structures\sj078c01.i
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: G. ROY

PLOT DATE: 06-FEB-2003
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 68 OF 71




50+050




50+045

0 1 2 4 6 8 10

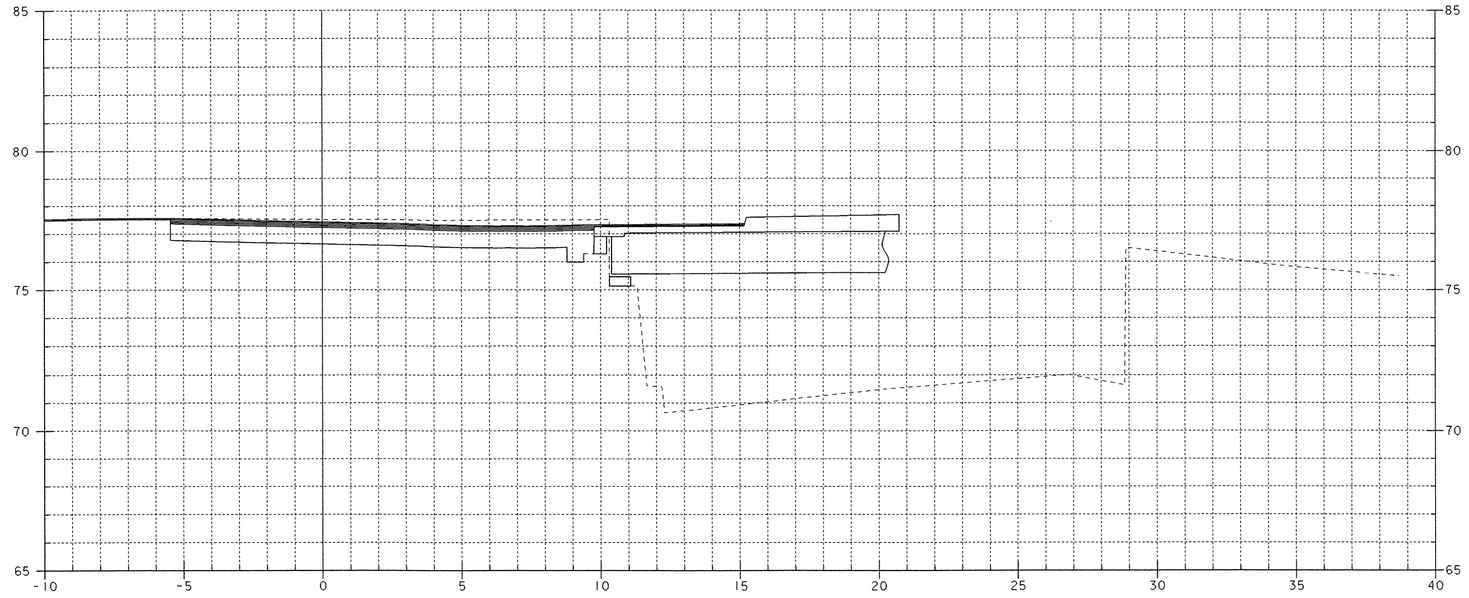
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NOTE:
SEE SHEET 60 FOR DRAINAGE DETAILS AT END OF ABUT. NO. 2

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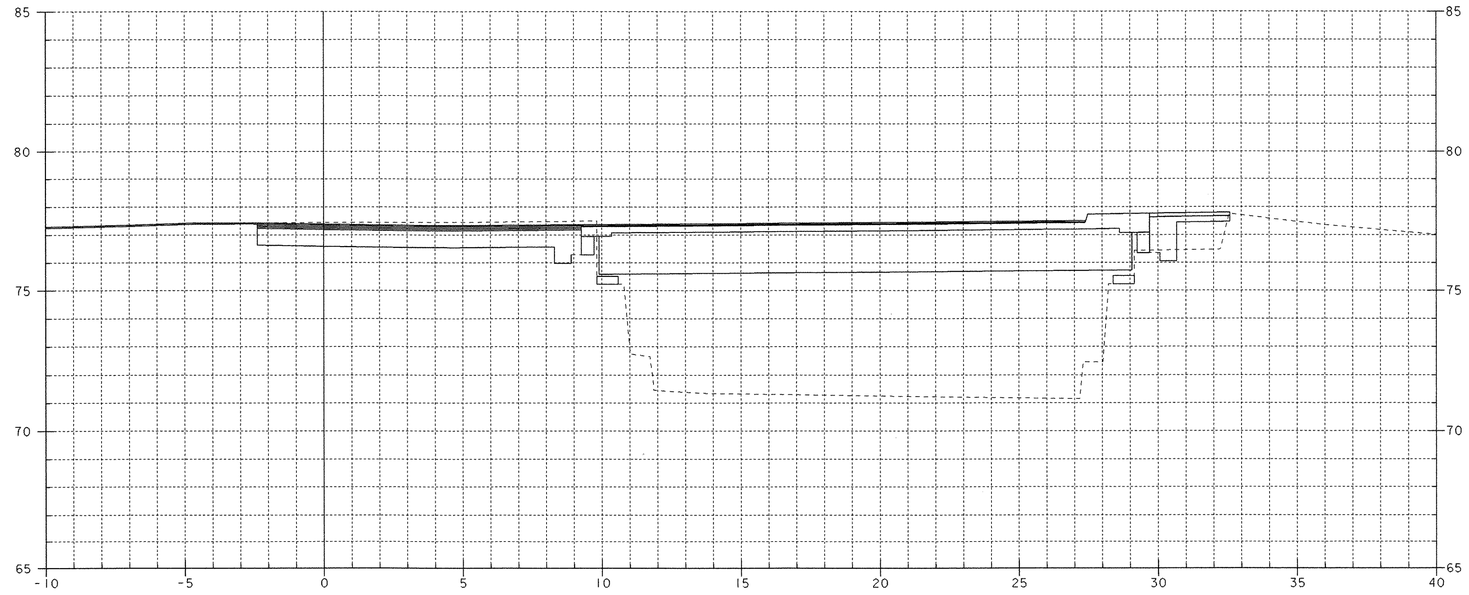
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|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |

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| FILE NAME: 94J078\Structures\sj078c02.i | | PLOT DATE: | 06-FEB-2003 |
| PROJECT MANAGER: | R. R. WHITCOMB | DRAWN BY: | G. ROY |
| DESIGNED BY: | G. ROY | CHECKED BY: | T. SUMNER |
| | | SHEET | 69 OF 71 |




50+060

CHANNEL STA. 50+055.97 FAR RT.
END STRUCTURE EXCAVATION
GRANULAR BACKFILL FOR STRUCTURES



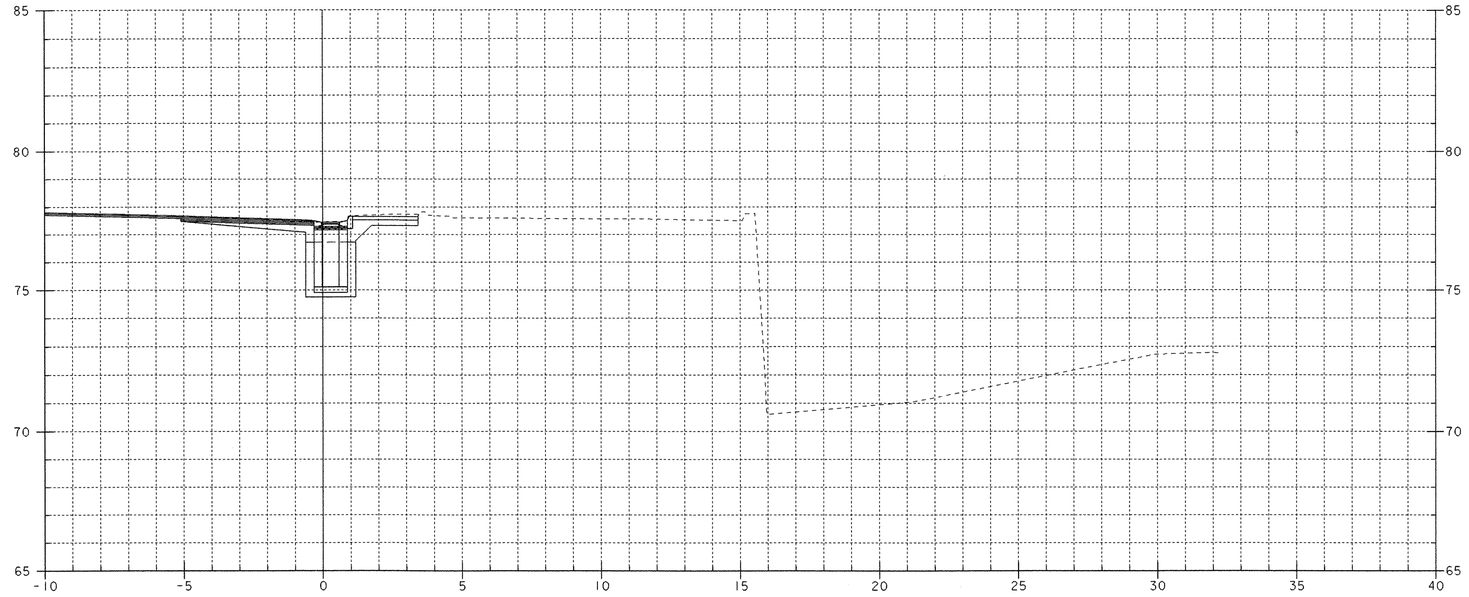

50+055

0 1 2 4 6 8 10
SCALE = 1:100

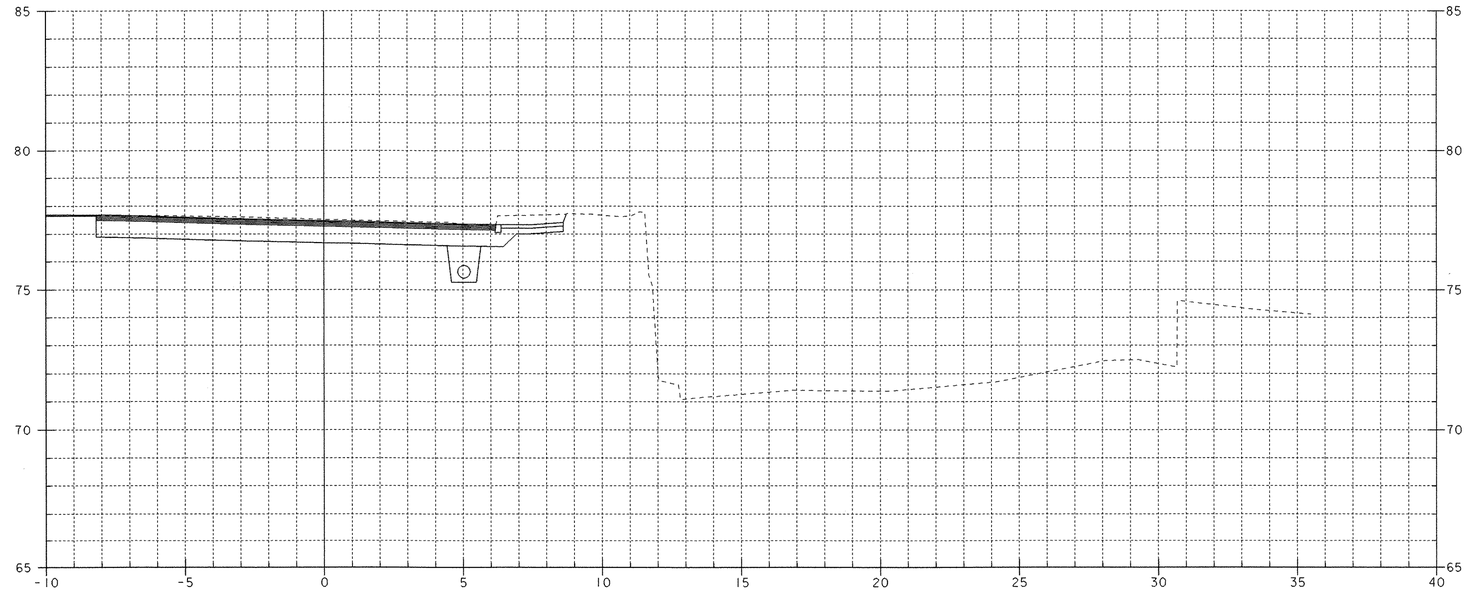
## CHANNEL CROSS SECTIONS (3)

| | |
|---|---|
| PROJECT NAME: | BRATTLEBORO |
| PROJECT NUMBER: | BHF 2000 (17) |

| | | | |
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| FILE NAME: 94J078\Structures\sj078c03.i | | PLOT DATE: | 06-FEB-2003 |
| PROJECT MANAGER: | R. R. WHITCOMB | DRAWN BY: | G. ROY |
| DESIGNED BY: | G. ROY | CHECKED BY: | T. SUMNER |
| | | SHEET | 70 OF 71 |




50+070




50+065

CHANNEL STA. 50+064.69 RT.
END STRUCTURE EXCAVATION
GRANULAR BACKFILL FOR STRUCTURES

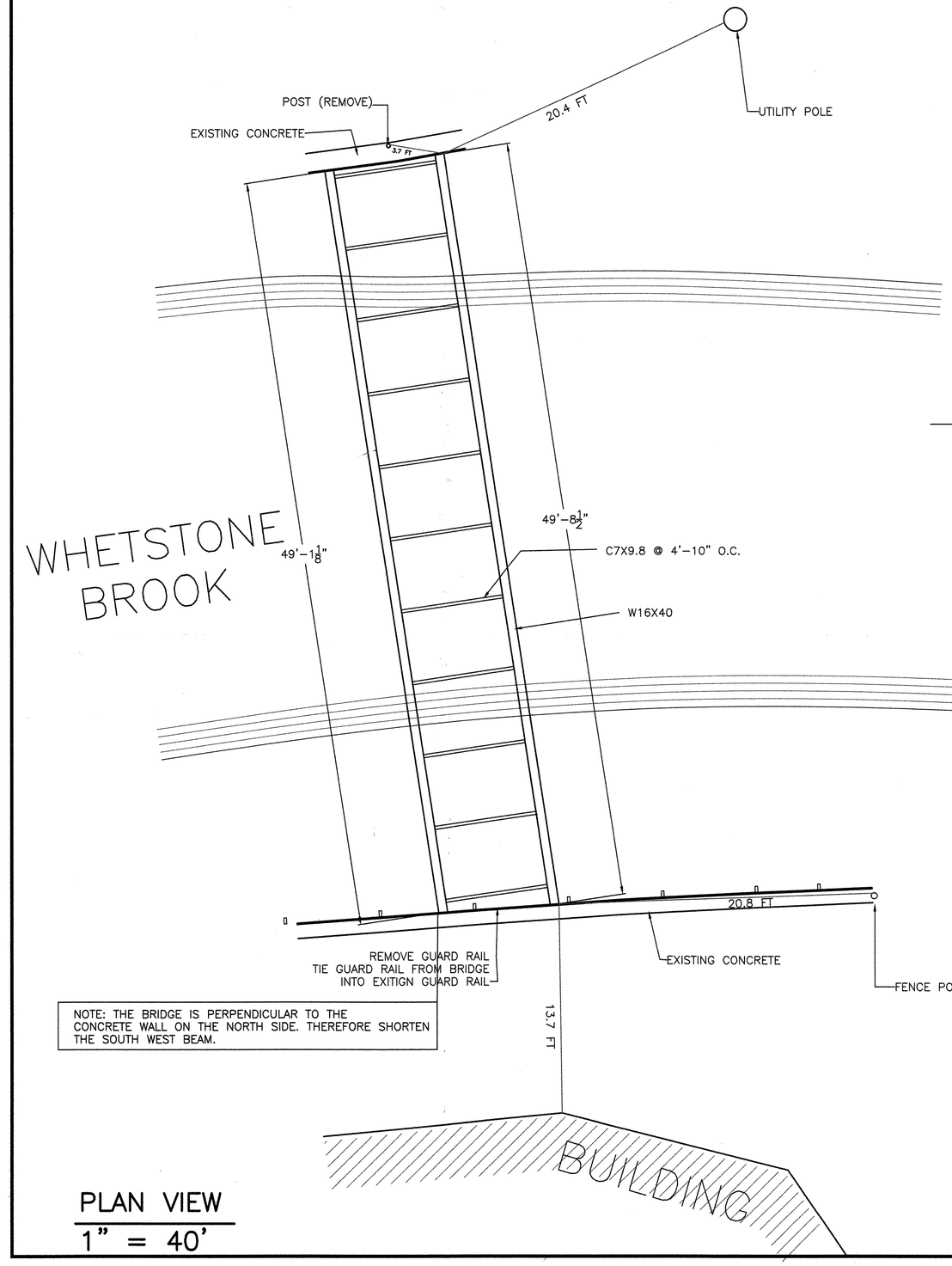
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# CHANNEL CROSS SECTIONS (4)

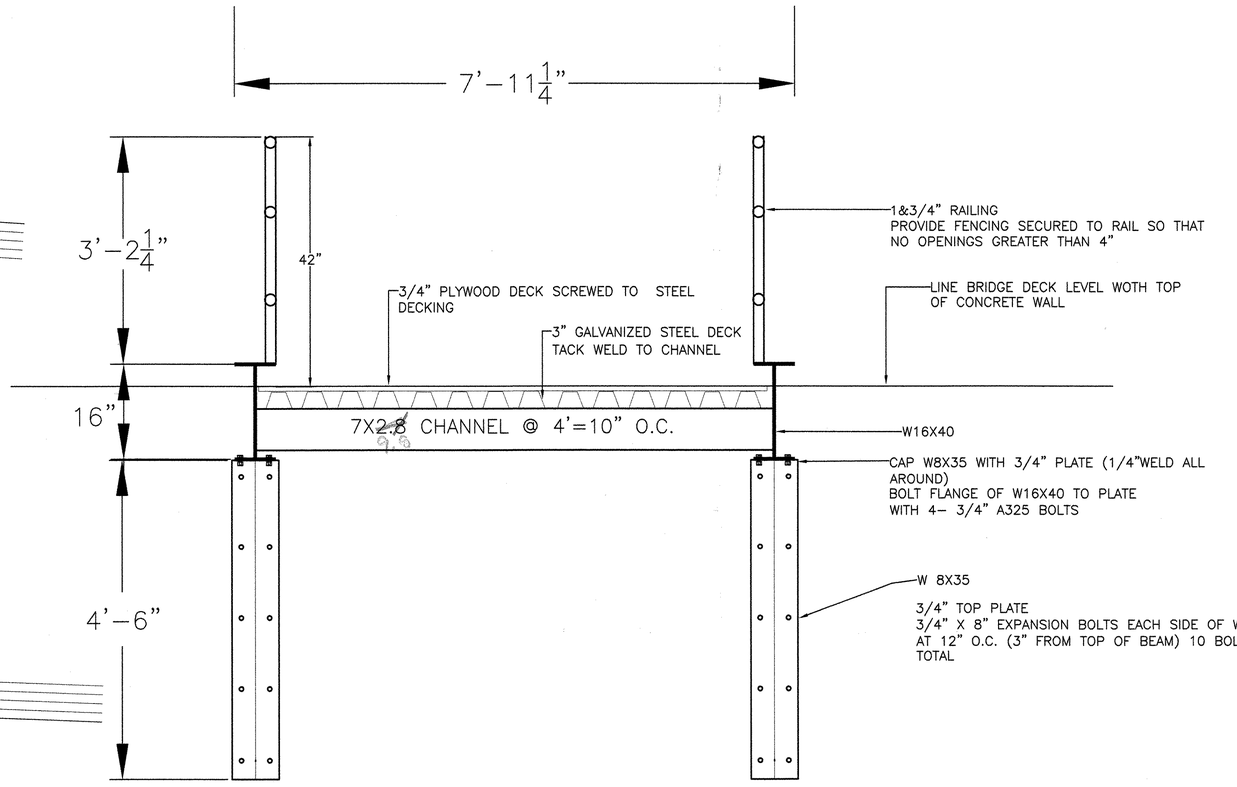
PROJECT NAME: BRATTLEBORO
PROJECT NUMBER: BHF 2000 (17)

FILE NAME: 94J078\Structures\sj078c04.i
PROJECT MANAGER: R.R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 06-FEB-2003
DRAWN BY: G. ROY
CHECKED BY: T. SUMNER
SHEET 71 OF 71




NOTE: THE BRIDGE IS PERPENDICULAR TO THE CONCRETE WALL ON THE NORTH SIDE. THEREFORE SHORTEN THE SOUTH WEST BEAM.

## PLAN VIEW
1" = 40'




## CROSS SECTION THROUGH BRIDGE DECK
1" = 1'

STATE OF VERMONT
RONALD R. BELL
NO. 6904
PROFESSIONAL ENGINEER

# PEDESTRIAN BRIDGE
# FOR THE MAIN STREET BRIDGE REPAIR
# BRATTLEBORO, VT

BELL ENGINEERING
CIVIL & ENVIRONMENTAL
17 ECHO COVE WAY
SPOFFORD, NH 03462
(603) 363-9966

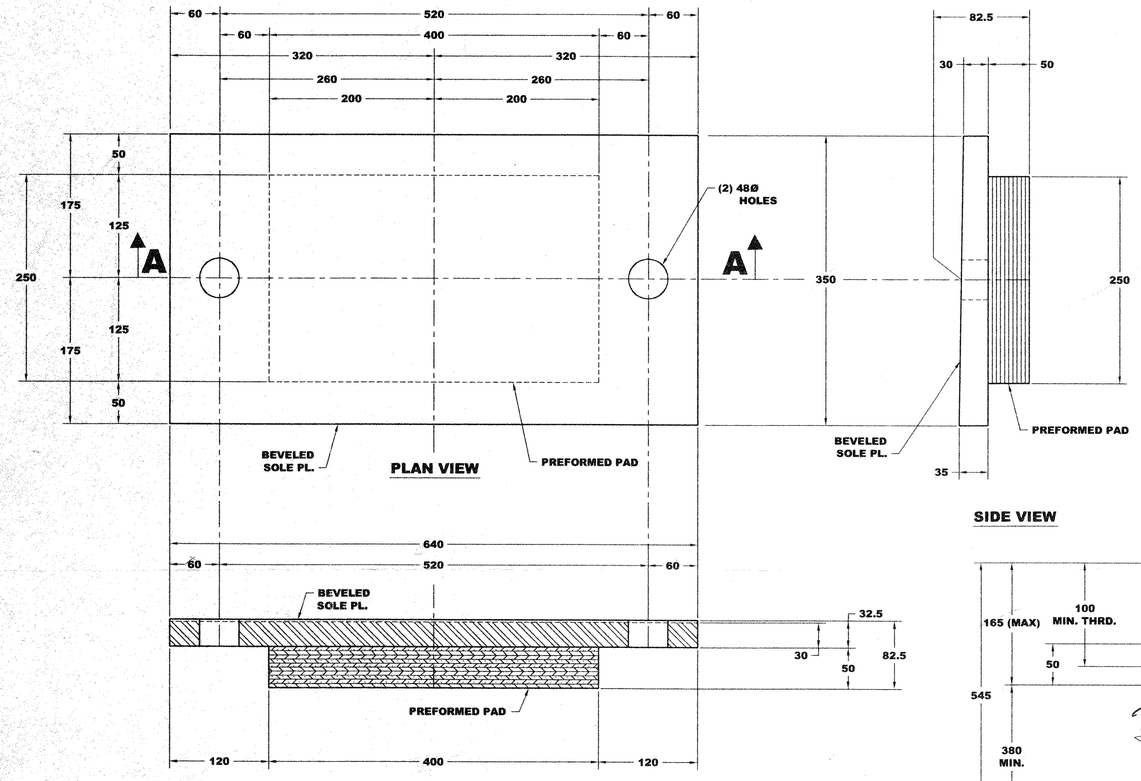
DATE: 5-01-03
DESIGNED BY: RONALD BELL, PE
DRAWN BY: RONALD BELL, PE
SCALE: AS SHOWN

PROJECT NUMBER 03-025

SHEET 1 072

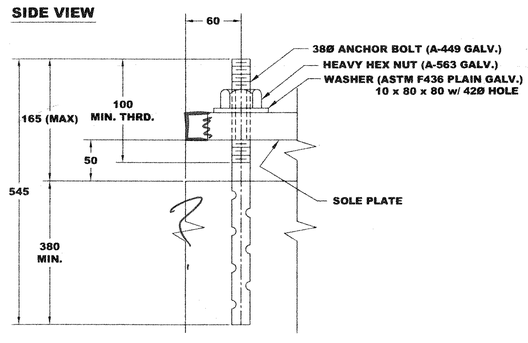
Rec'd. 5/5/03

| REVISION | BY | DESCRIPTION | C'K'D' | DATE |
|---|---|---|---|---|
| | | | | |
| | | | | |




SECTION A-A

SIDE VIEW




ANCHOR BOLT DETAILS

# FIXED BEARING DETAIL- ABUTMENT NO. 1

**(9 REQ'D)**

NOTES:

1. BEARINGS TO BE MANUFACTURED ACCORDING TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 16th. EDITION, 1996 WITH CURRENT INTERIMS (1997 & 1998, SECTION #14.)
2. THE BEARINGS ARE DESIGNED SO THAT THE SUPERSTRUCTURE MAY BE ERECTED WHEN THE AMBIENT AIR TEMPERATURE IS WITHIN THE RANGE OF 4 DEG. C. TO 32 DEG. C.
3. ALL STEEL IN BEARINGS SHALL BE AASHTO M270/270M GRADE 250. U.N.O.
4. ALL STEEL PRODUCED IN THE U.S.A.
5. CONTACT PETER SOMOGYI , COORDINATOR.
6. TOLERANCES: THICKNESS -0+1/8
   PLAN -0+1/8
7. MANUFACTURING FACILITY LOCATION:
   AMSCOT STRUCTURAL PRODUCTS INC.
   241 EAST BLACKWELL STREET
   DOVER, NJ 07801
8. ALL DIMENSIONS ARE IN METRIC.
9. ALL BEARING DEVICES SHALL BE GALVANIZED OR METALIZED AS PER STANDARD SPECIFICATIONS 506.15 AND 531.04(b), AS MODIFIED BY THE GENERAL SPECIAL PROVISIONS. IF THE BEARINGS ARE METALIZED, THEY SHALL BE SEALED WITH AN APPROVED SEALER AS SPECIFIED IN GENERAL SPECIAL PROVISION 506.15.
10. ALL ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.
11. Prior to galvanizing or metalizing, all corners and edges of steel plates, shapes, etc. shall be ground to a 1/16 inch radius (Typ)
12. A minimum thickness of six mils shall be applied to metalized surfaces.
13. Exterior surfaces shall be sealed with an approved sealant conforming to the recommendations of the thermal spray supplier.

VAOT
RECEIVED
CK'D BY _____ OK'D BY _____
APR 24 2003
RESUBMIT _____ APPROVED As Noted
BY RRW DATE 5-2-03

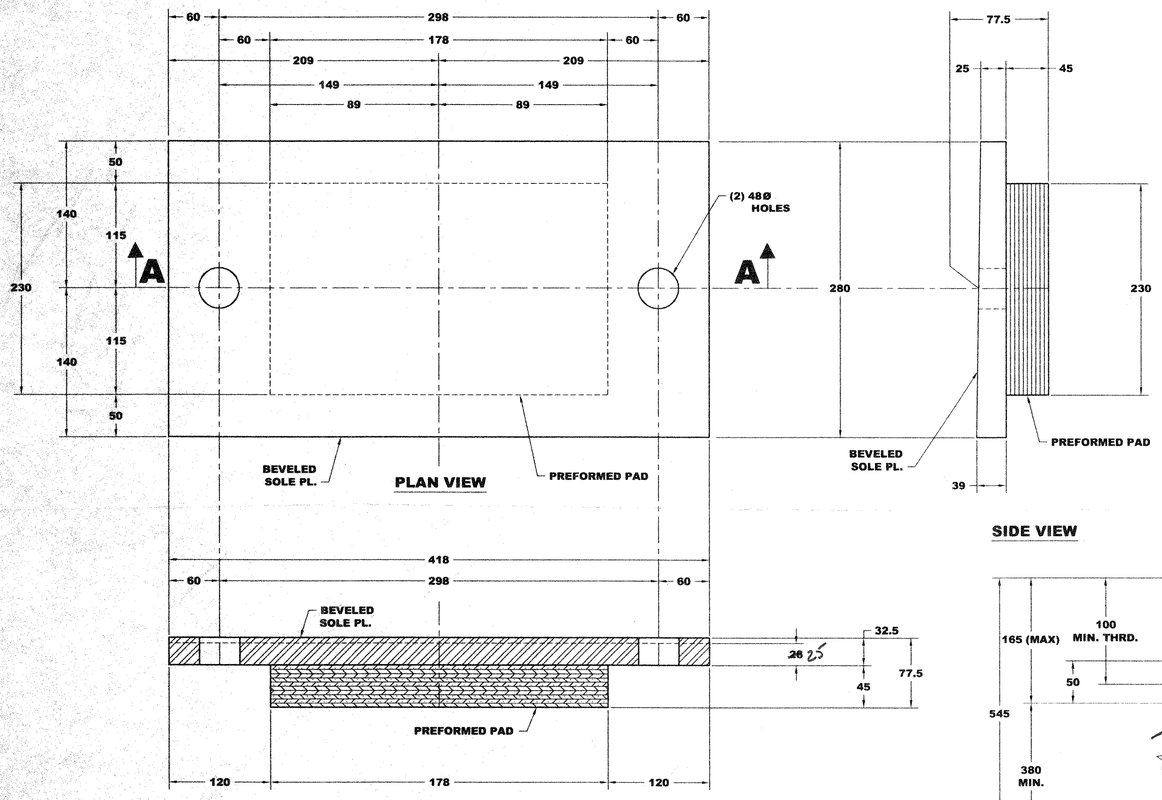
FILE SET

| BRIDGE NO. 7 | PROJECT NO.: BHF 2000 (17) |
|---|---|

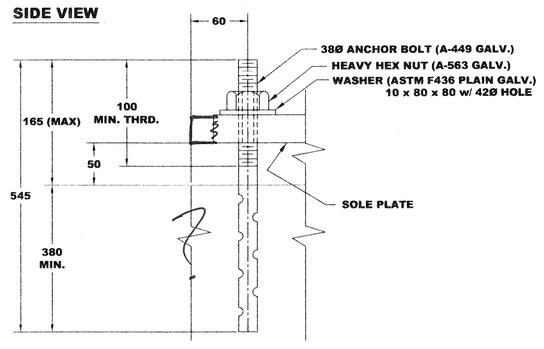
FIXED BEARING DETAILS
ABUTMENT NO. 1
US RT 5 (T.H.I), TOWN OF BRATTLEBORO
COUNTY OF WINDHAM

| PRIME CONTRACTOR: RENAUD BROS., INC. | SCALE = N.T.S. |
|---|---|
| FABRICATOR: AMSCOT STRUCTURAL PRODUCTS INC. | AMSCOT #1630 |
| DWG. NO.: RB03A1R0 | SHEET NO. 1 OF 3 |

| REVISION | BY | DESCRIPTION | C'K'D' | DATE |
|---|---|---|---|---|
| | | | | |
| | | | | |




SECTION A-A




ANCHOR BOLT DETAILS

# FIXED BEARING DETAIL- ABUTMENT NO. 1 KICKER

**(1 REQ'D)**

NOTES:

1. BEARINGS TO BE MANUFACTURED ACCORDING TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 16th. EDITION, 1996 WITH CURRENT INTERIMS (1997 & 1998, SECTION #14.)
2. THE BEARINGS ARE DESIGNED SO THAT THE SUPERSTRUCTURE MAY BE ERECTED WHEN THE AMBIENT AIR TEMPERATURE IS WITHIN THE RANGE OF 4 DEG. C. TO 32 DEG. C.
3. ALL STEEL IN BEARINGS SHALL BE AASHTO M270/270M GRADE 250. U.N.O.
4. ALL STEEL PRODUCED IN THE U.S.A.
5. CONTACT PETER SOMOGYI , COORDINATOR.
6. TOLERANCES: THICKNESS -0+1/8
   PLAN -0+1/8
7. MANUFACTURING FACILITY LOCATION:
   AMSCOT STRUCTURAL PRODUCTS INC.
   241 EAST BLACKWELL STREET
   DOVER, NJ 07801
8. ALL DIMENSIONS ARE IN METRIC.
9. ALL BEARING DEVICES SHALL BE GALVANIZED OR METALIZED AS PER STANDARD SPECIFICATIONS 506.15 AND 531.04(b), AS MODIFIED BY THE GENERAL SPECIAL PROVISIONS. IF THE BEARINGS ARE METALIZED, THEY SHALL BE SEALED WITH AN APPROVED SEALER AS SPECIFIED IN GENERAL SPECIAL PROVISION 506.15.
10. ALL ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.

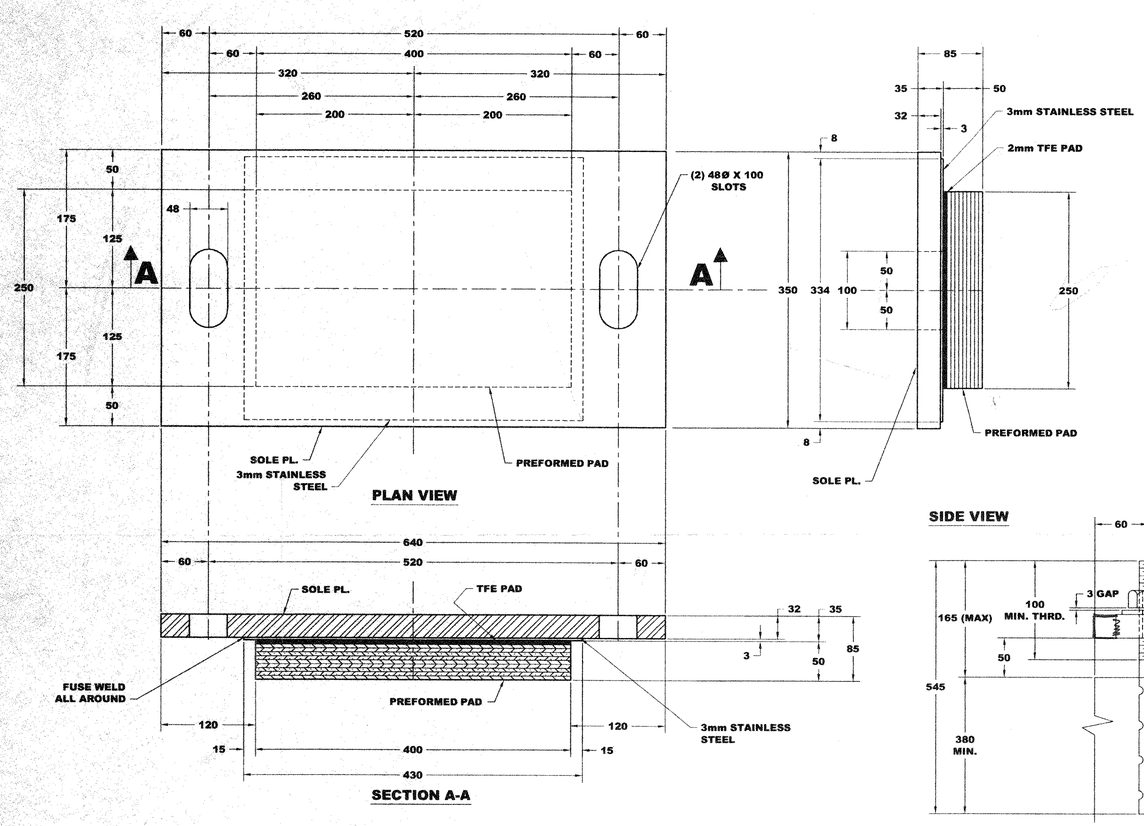
Add same notes as sheet 1.

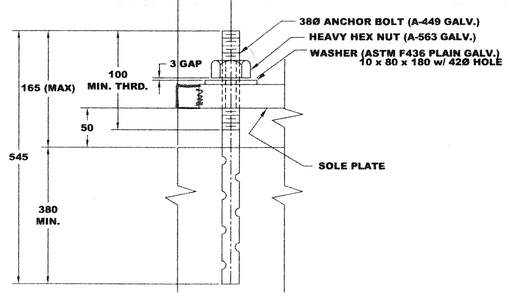
VAOT
RECEIVED
CK'D BY_____ OK'D BY_____
APR 2 4 2003
RESUBMIT_____ APPROVED As Noted
BY RRW DATE 5-2-03

| BRIDGE NO. 7 | PROJECT NO.: BHF 2000 (17) |
|---|---|
| FIXED BEARING DETAILS<br>ABUTMENT NO. 1 KICKER<br>US RT 5 (T.H.I), TOWN OF BRATTLEBORO<br>COUNTY OF WINDHAM | |
| PRIME CONTRACTOR: RENAUD BROS., INC. | SCALE = N.T.S. |
| FABRICATOR: AMSCOT STRUCTURAL PRODUCTS INC. | AMSCOT #1630 |
| DWG. NO.: RB03A2R0 | SHEET NO. 2 OF 3 |

074

| REVISION | BY | DESCRIPTION | C'K'D' | DATE |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |




NOTES:

1. BEARINGS TO BE MANUFACTURED ACCORDING TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 16th. EDITION, 1996 WITH CURRENT INTERIMS (1997 & 1998, SECTION #14.)
2. THE BEARINGS ARE DESIGNED SO THAT THE SUPERSTRUCTURE MAY BE ERECTED WHEN THE AMBIENT AIR TEMPERATURE IS WITHIN THE RANGE OF 4 DEG. C. TO 32 DEG. C.
3. ALL STEEL IN BEARINGS SHALL BE AASHTO M270/270M GRADE 250. U.N.O.
4. STAINLESS STEEL SHALL BE ~~AASHTO M167~~ ASTM A240 TYPE 304.
5. ALL STEEL PRODUCED IN THE U.S.A.
6. CONTACT PETER SOMOGYI , COORDINATOR.
7. TOLERANCES: THICKNESS -0+1/8
   PLAN -0+1/8
8. MANUFACTURING FACILITY LOCATION:
   AMSCOT STRUCTURAL PRODUCTS INC.
   241 EAST BLACKWELL STREET
   DOVER, NJ 07801
9. ALL DIMENSIONS ARE IN METRIC.
10. ALL BEARING DEVICES SHALL BE GALVANIZED OR METALIZED AS PER STANDARD SPECIFICATIONS 506.15 AND 531.04(b), AS MODIFIED BY THE GENERAL SPECIAL PROVISIONS. IF THE BEARINGS ARE METALIZED, THEY SHALL BE SEALED WITH AN APPROVED SEALER AS SPECIFIED IN GENERAL SPECIAL PROVISION 506.15.
11. ALL ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.

Add same notes as sheet 1 plus: "The surface finish of the contact (sliding) face shall have a mirror finish as per spec. 731.05."

# EXPANSION BEARING DETAIL- ABUTMENT NO. 2

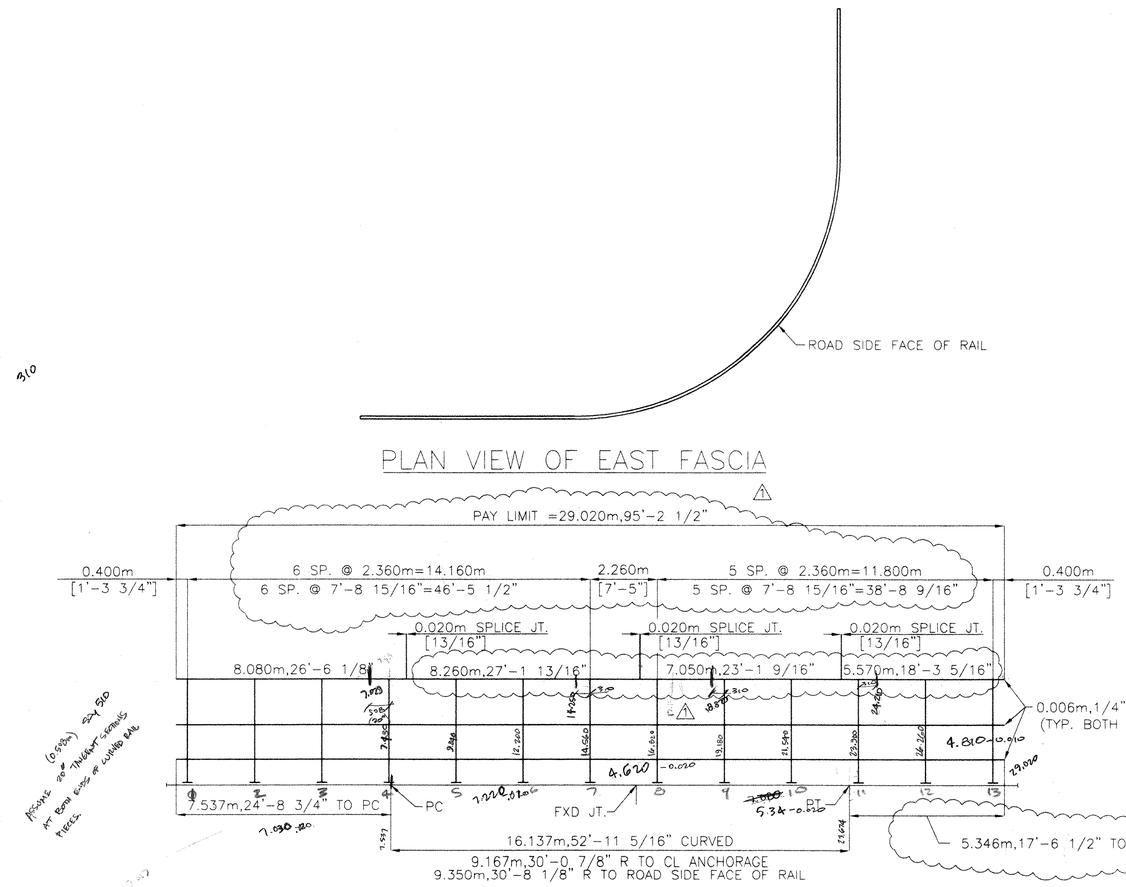
**(9 REQ'D)**

ANCHOR BOLT DETAILS

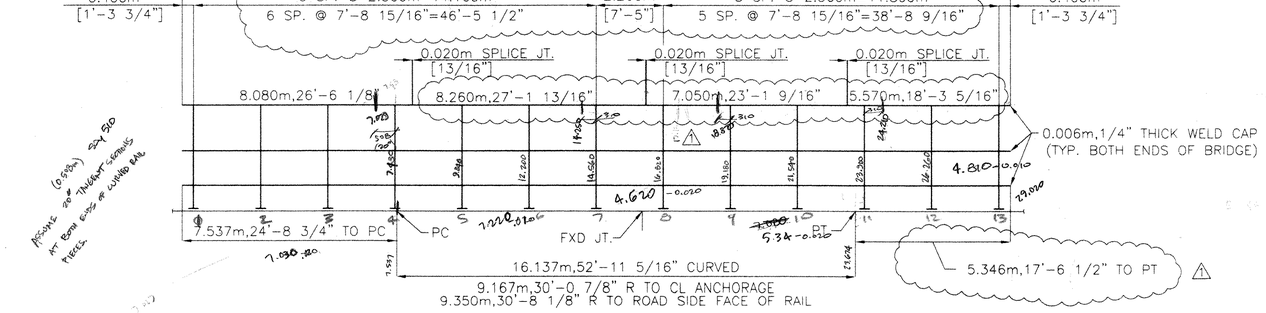
VAOT
RECEIVED
OK'D BY _____ OK'D BY _____
APR 2 4 2003
RESUBMIT _____ APPROVED As Noted
BY RRW DATE 5-2-03

| BRIDGE NO. 7 | PROJECT NO.: BHF 2000 (17) |
|---|---|
| EXPANSION BEARING DETAILS<br>ABUTMENT NO. 2<br>US RT 5 (T.H.I), TOWN OF BRATTLEBORO<br>COUNTY OF WINDHAM | |
| PRIME CONTRACTOR: RENAUD BROS., INC. | SCALE = N.T.S. |
| FABRICATOR: AMSCOT STRUCTURAL PRODUCTS INC. | |
| DWG. NO.: RB03A3R0 | SHEET NO. 3 OF 3 |

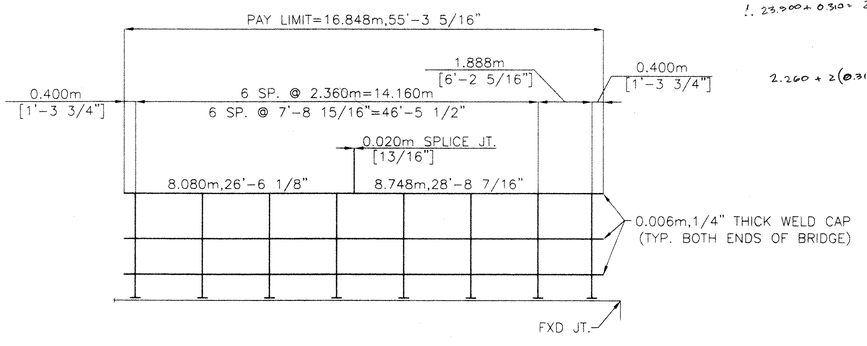
075




PLAN VIEW OF EAST FASCIA




DEVELOPED EAST ELEV. VIEW LOOKING EAST




WEST ELEV. VIEW LOOKING EAST

## BILL OF MATERIAL

| KG EACH | LBS. EACH | SHAPE (METRIC) | LENGTH METERS U.N.O. | MARK OR USE | QTY. | SHAPE (AMERICAN) | SHAPE FT. | SHAPE IN. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 159.3 | 351.3 | T.S. 101.6mmx101.6mmx6.4mmx8.742m | 8.748 | RAIL | 2 | T.S. 4"X4"X1/4"X28'-8 3/16" | 28 | 8 7/16 | A500 GR B W/PL1/4"X3 15/16"X3 15/16" A36(M) |
| 149.0 | 328.5 | T.S. 101.6mmx101.6mmx6.4mm | 8.260 | RAIL | 2 | T.S. 4"X4"X1/4" WALL | 27 | 1 3/16 | A500 GR B 30'-8 1/8" R |
| 147.2 | 324.6 | T.S. 101.6mmx101.6mmx6.4mmx8.074m | 8.080 | RAIL | 2 | T.S. 4"X4"X1/4"X26'-5 7/8" | 26 | 6 1/8 | A500 GR B W/PL1/4"X3 15/16"X3 15/16" A36(M) |
| 147.2 | 324.6 | T.S. 101.6mmx101.6mmx6.4mmx8.074m | 8.080 | RAIL | 2 | T.S. 4"X4"X1/4"X26'-5 7/8" | 26 | 6 1/8 | A500 GR B W/PL1/4"X3 15/16"X3 15/16" A36(M) |
| | | | | | | | | | 24'-8 1/2" STR., 1'-9 3/8" CRV. @ 30'-8 1/8" R |
| 128.3 | 282.8 | T.S. 101.6mmx101.6mmx6.4mm | 7.050 | RAIL | 2 | T.S. 4"X4"X1/4" WALL | 23 | 1 9/16 | A500 GR B 30'-8 1/8" R |
| 104.3 | 230.0 | T.S. 101.6mmx101.6mmx6.4mmx5.564m | 5.570 | RAIL | 2 | T.S. 4"X4"X1/4"X18'-3 1/16" | 18 | 3 5/16 | A500 GR B W/PL1/4"X3 15/16"X3 15/16" A36(M) |
| | | | | | | | | | 17'-6 1/4" STR., 8 13/16" CRV. @ 30'-8 1/8" R |
| 5.6 | 12.3 | T.S. 76.2mmx76.2mmx6.4mm | .420 | FIXED SPLICE | 8 | T.S. 3"X3"X1/4" WALL | 1 | 4 9/16 | A500 GR B W/2-5/8"ø H.S. NUTS |
| .05 | .1 | M16ø HEX BOLT | .038 | SPLICE BOLT | 32 | 5/8"ø HEX BOLT | | 1 1/2 | A325-1 W/FW(F568M CL. 8.8.1) |
| 89.6 | 197.6 | T.S. 101.6mmx50.8mmx4.8mmx8.742m | 8.748 | RAIL | 1 | T.S. 4"X2"X3/16"X28'-8 3/16" | 28 | 8 7/16 | A500 GR B W/PL1/4"X1 15/16"X3 15/16" A36(M) |
| 83.8 | 184.8 | T.S. 101.6mmx50.8mmx4.8mm | 8.260 | RAIL | 1 | T.S. 4"X2"X3/16" WALL | 27 | 1 3/16 | A500 GR B 30'-8 1/8" R |
| 82.7 | 182.4 | T.S. 101.6mmx50.8mmx4.8mmx8.074m | 8.080 | RAIL | 1 | T.S. 4"X2"X3/16"X26'-5 7/8" | 26 | 6 1/8 | A500 GR B W/PL1/4"X1 15/16"X3 15/16" A36(M) |
| 82.7 | 182.4 | T.S. 101.6mmx50.8mmx4.8mmx8.074m | 8.080 | RAIL | 1 | T.S. 4"X2"X3/16"X26'-5 7/8" | 26 | 6 1/8 | A500 GR B W/PL1/4"X1 15/16"X3 15/16" A36(M) |
| | | | | | | | | | 24'-8 1/2" STR., 1'-9 3/8" CRV. @ 30'-8 1/8" R |
| 72.2 | 159.1 | T.S. 101.6mmx50.8mmx4.8mm | 7.050 | RAIL | 1 | T.S. 4"X2"X3/16" WALL | 23 | 1 9/16 | A500 GR B 30'-8 1/8" R |
| 58.6 | 129.3 | T.S. 101.6mmx50.8mmx4.8mmx5.564m | 5.570 | RAIL | 1 | T.S. 4"X2"X3/16"X18'-3 1/16" | 18 | 3 5/16 | A500 GR B W/PL1/4"X1 15/16"X3 15/16" A36(M) |
| | | | | | | | | | 17'-6 1/4" STR., 8 13/16" CRV. @ 30'-8 1/8" R |
| 3.2 | 7.0 | T.S. 76.2mmx38.1mmx4.8mm | .420 | FIXED SPLICE | 4 | T.S. 3"x1 1/2"x3/16" WALL | 1 | 4 9/16 | A500 GR B W/2-5/8"ø H.S. NUTS |
| .05 | .1 | M16ø HEX BOLT | .038 | SPLICE BOLT | 16 | 5/8"ø HEX BOLT | | 1 1/2 | A325-1 W/FW(F568M CL. 8.8.1) |
| .5 | 1.0 | M20ø ROUND HEAD SLOTTED BOLT | .152 | RAIL POST BOLT | 126 | 3/4"ø ROUND HEAD SLOTTED BOLT | | 6 | A325-1 W/ FW&PREVAILING TORQUE NUT |
| | | | | | | | | | (F568M CL. 8.8.1) |
| 43.8 | 96.6 | W150X37.1X.693m | .718 | POST | 21 | W6X25X2'-3 5/16" | 2 | 4 1/4 | A572 GR 50 (345)W/PL1"X10"X 14" |
| 5.9 | 13.0 | PL 10mmX.240m | .330 | SPACER PLATE | 21 | PL3/8"X9 7/16" | 1 | 1 | A36(M) |
| 1.6 | 3.5 | M24ø FULLY THREADED | .305 | ANCHOR STUD | 84 | 1"ø FULLY THREADED | 1 | 0 | A449 W/3N,2FW(F568M CL. 8.8) |

PAY LIMIT FOR 3 RAIL= 45.868m, 150.4856 FT. (APPROX.)

— FILE SET —

NOTE: VERTICAL BENDING OF RAIL SHALL BE PERFORMED IN FIELD TO MEET REQUIRED CONTOUR.

RECEIVED
CK'D BY G.B.S. 9-19-03 OK'D BY
SEP 15 2003
RESUBMIT APPROVED X
BY RBW DATE 9-17-03

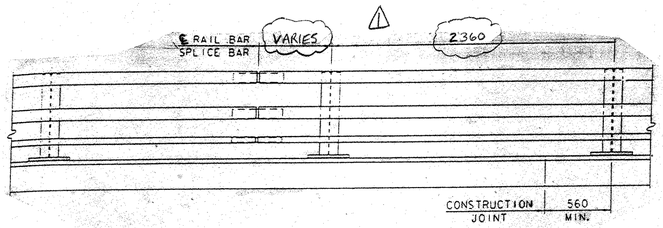
ALL DIMENSIONS MUST BE FIELD VERIFIED PRIOR TO FABRICATION BY CONTRACTOR

1 REVISED PER MARK-UP & PHONE CONV. WITH GASTON ROY ON 9/8/2003.

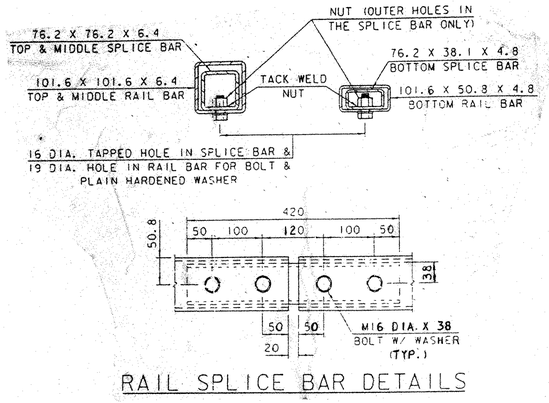
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|---|---|---|---|
| THW | 7/23/03 | DCK | 1 OF 2 |

BRIDGE RAILING LAYOUT
STATE OF VERMONT AGENCY OF TRANSPORTATION
U.S. ROUTE 5(BRIDGE#7)OVER WHETSTONE BROOK
IN THE TOWN OF BRATTLEBORO IN THE COUNTY OF WINDHAM

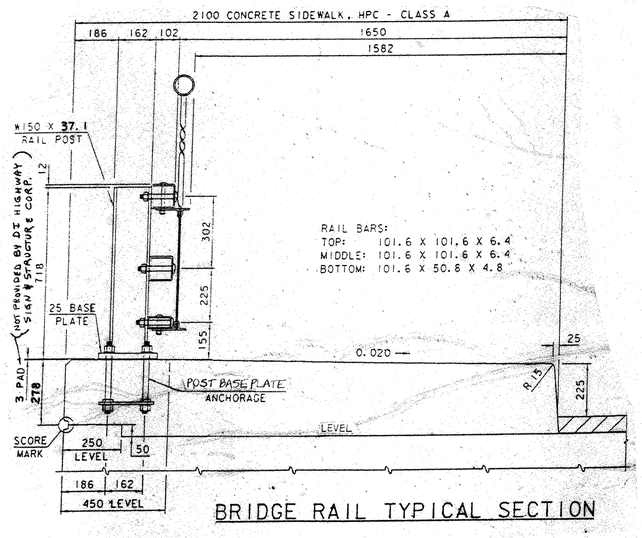
CONT. NO. BRO2000(17) PROJ. NO. BRATTLEBORO
GEN. CONT. RENAUD BRO.
ERECTOR: RIVERSIDE FAB., INC. 076
FABRICATOR: DI HIGHWAY SIGN & STRUCTURE CORP. P.O. BOX 123, NEW YORK MILLS, N.Y. 13417
JOB NO. 6350-220



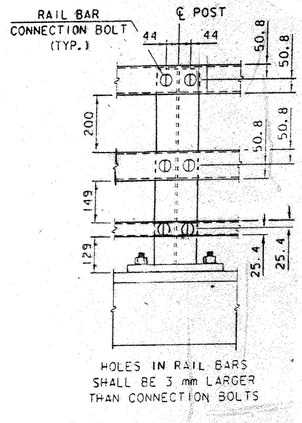

BRIDGE RAIL ELEVATION



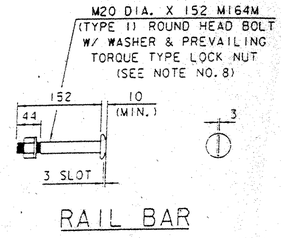

RAIL SPLICE BAR DETAILS



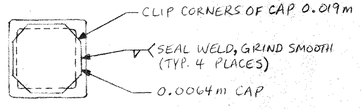

BRIDGE RAIL TYPICAL SECTION




POST ELEVATION




RAIL BAR
CONNECTION BOLT




TOP & MIDDLE RAIL SHOWN
BOTTOM RAIL SIMILAR

## NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE PROVISIONS OF SECTION 525 RAILINGS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
2. TUBING AND POSTS SHALL MEET THE REQUIREMENTS OF SECTION 732 - RAILING MATERIALS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
3. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 1.6 mm RADIUS AND BE FREE OF BURRS.
4. RAIL POSTS SHALL BE SET NORMAL TO GRADE.
5. SECTIONS OF RAIL BAR SHALL BE ATTACHED TO A MINIMUM OF TWO (2) RAIL POSTS AND PREFERABLY TO AT LEAST FOUR (4) POSTS.
6. ALL RAILING PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SUBSECTION 506.15 AND PAINTED BLACK, COLOR CHIP #27038 IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 513. (PAINTING WILL NOT BE DONE BY DI HIGHWAY SIGN & STRUCTURE CORP.)
7. RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
8. RAIL BARS SHALL BE ATTACHED USING M20 FULL DIAMETER BODY AASHTO M164M (TYPE 1) ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE BAR. HOLES IN POSTS SHALL BE 2 mm LARGER THAN THE BOLT SIZE.
9. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.
10. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH THE PROVISION OF 506.04, DRAWINGS AND PROCEDURES. ALL WELDING SHALL CONFORM WITH SECTION 506.10.
11. THE DROP-WEIGHT TEAR TEST IN SECTION 732 SHALL NOT APPLY TO THE STRUCTURAL TUBING ON THESE DETAILS.
12. HOLES IN RAILS FOR RAIL BAR ATTACHMENT MAY BE FIELD DRILLED. THE HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH ~~BLACK PAINT.~~ COLD GALV. PAINT FOLLOWED BY A TOP COAT OF BLACK PAINT. BLACK PAINT MUST BE THE SAME AS THE PAINT USED TO PAINT THE RAIL PRIOR TO INSTALLATION

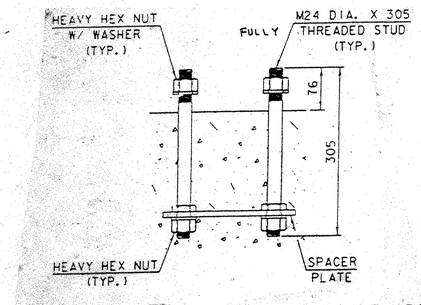
## MATERIALS

RAIL BARS..... ASTM A500, GRADE B OR ASTM A501
RAIL POSTS..... ASTM A709/A709M, GRADE 345
ALL OTHER SHAPES & PLATES..... ASTM A709/A709M, GRADE 250
ANCHOR STUDS..... ASTM F568M, CLASS 8.8
ALL OTHER BOLTS (UNLESS NOTED)..... AASHTO M164M, TYPE 1
NOTE: THIS IS A HEX BOLT CLASS

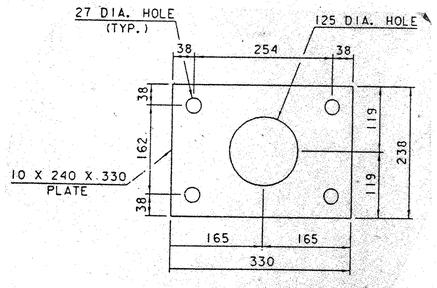
NUTS FOR AASHTO M164M BOLTS SHALL COMPLY WITH AASHTO M291M. NUTS FOR ANCHOR BOLTS SHALL COMPLY WITH AASHTO M291M.

WASHERS SHALL COMPLY WITH AASHTO M293M (ASTM F436M) SPECIFICATION.

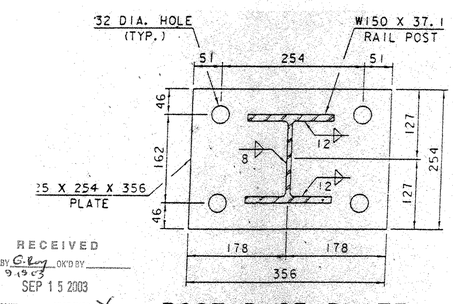
3 mm PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSCETION 731.01 OR 731.02. (NOT PROVEDED BY DI HIGHWAY SIGN & STRUCTURE CORP.)




POST BASE PLATE ANCHORAGE




SPACER PLATE




POST BASE PLATE

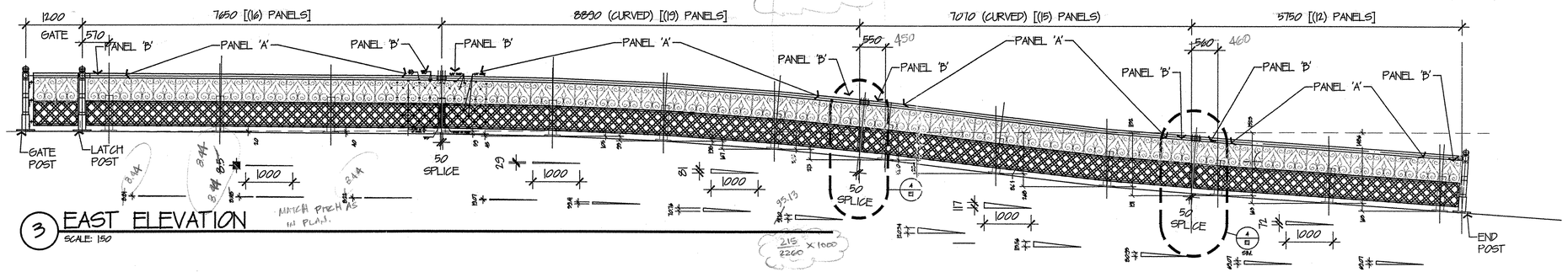
RECEIVED
CK'D BY G.Roy 9.19.03 CK'D BY
SEP 15 2003
RESUBMIT APPROVED X
BY RLW DATE 9-17-03

△ REVISED PER MARKUP FROM CONV. WITH GASTON ROY ON 9/8/2003.

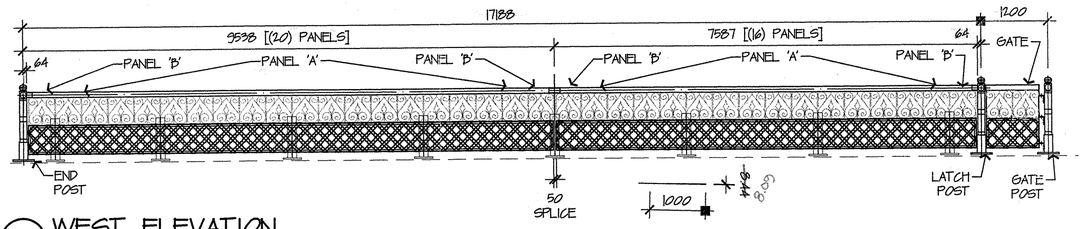
| DRAWN BY | DATE | CHECKED BY | SHEET No. |
|---|---|---|---|
| THW | 7/23/03 | DCK | 2 OF 2 |

BRIDGE RAILING DETAILS
STATE OF VERMONT AGENCY OF TRANSPORTATION
U.S. ROUTE 5 (BRIDGE #7) OVER WHETSTONE BROOK
IN THE TOWN OF BRATTLEBORO IN THE COUNTY OF WINDHAM

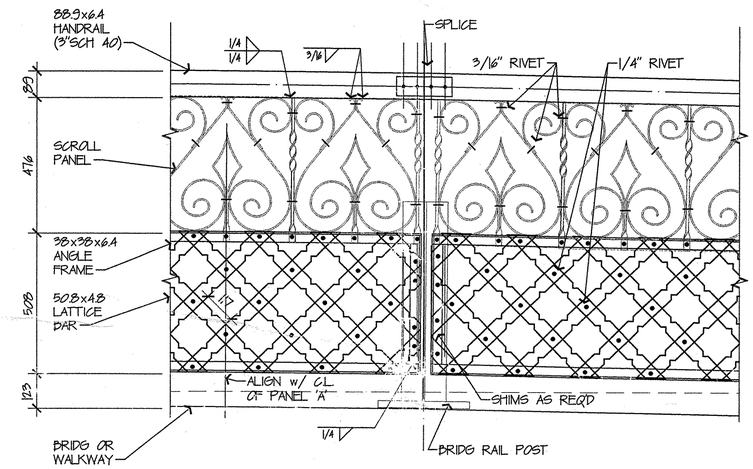
CONT. No. BRO2000(17) PROJ. NO. BRATTLEBORO
GENERAL CONTRACTOR: RENAUD BRO. 077
ERECTOR: RIVERSIDE FAB., INC. JOB No. 6350-220
FABRICATOR: DI HIGHWAY SIGN + STRUCTURE P.O. BOX 123, NEW YORK MILLS, NY 13417



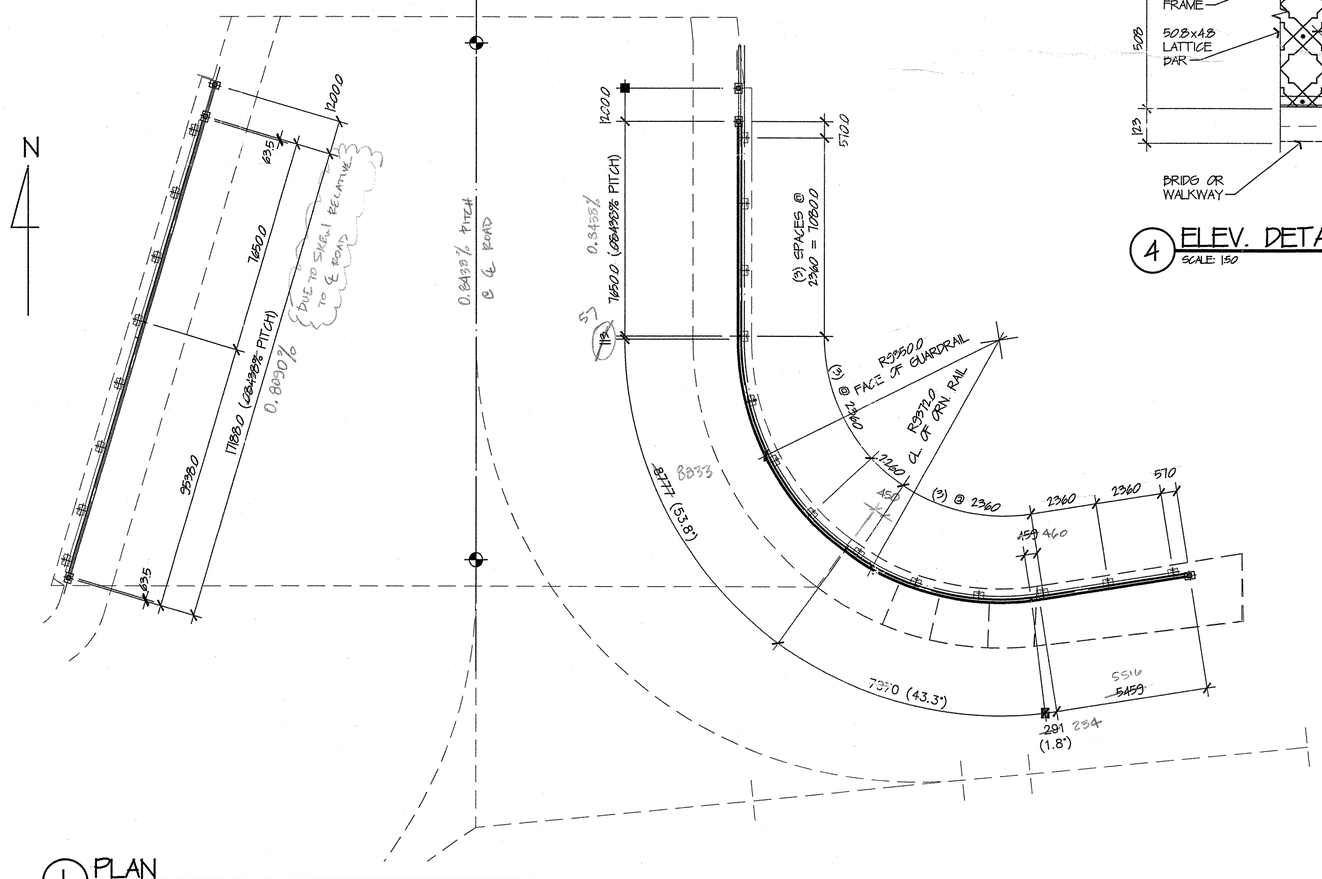

## 3 EAST ELEVATION
SCALE: 1:50




## 2 WEST ELEVATION
SCALE: 1:50




## 4 ELEV. DETAILS
SCALE: 1:50




## 1 PLAN
SCALE: 1:50

NOTE:
1. ALL DETAILS AS PER SHTS 49, 50, & 51 OF DRAWINGS PREPARED BY THE STATE OF VERMONT, AGENCY OF TRANSPORTATION

FILE SET

RECEIVED
OK'D BY G Roy OK'D BY
SEP 08 2003
RESUBMIT APPROVED AS NOTED
BY RKL DATE 9-9-03

| REVISIONS | REMARKS |
|---|---|
| | |


ONE PRUYN'S ISLAND DR.
GLENS FALLS, N.Y. 12801

**RIVERSIDE FAB, INC.**

PHONE # 1(518) 798-3533
FAX # 1(518) 798-1711

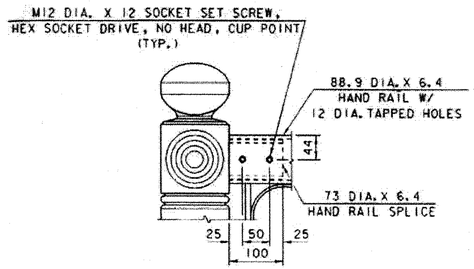

| | |
|---|---|
| DATE | 8/28/03 |
| DRAWN BY | CCE |
| CHK'D BY | |
| HOLES | |
| BOLTS | |
| PAINT | |
| SCALE | AS NOTED |

| | |
|---|---|
| PROJECT | PROPOSED IMPROVMENT BRIDGE PROJECT |
| LOCATION | BRATTLEBORO, VT. |
| CUSTOMER | RENAUD BROTHERS, INC. |
| ARCHITECT | STATE OF VERMONT, AGENCY OF TRANSPORTATION |
| JOB NO. | RFC 589 |
| SHEET NAME | PLANS & ELEVATIONS |

PRINT RECORD

| DATE | NO. | |
|---|---|---|
| | | |
| | | |
| | | 078 |
| | | |

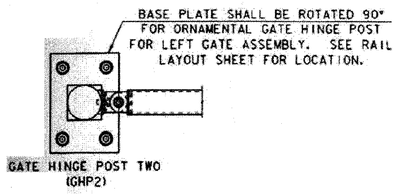
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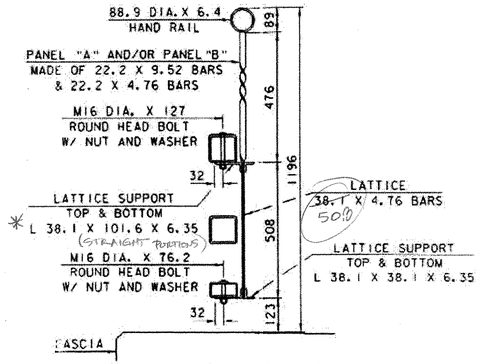



## DETAIL "A"

0 0.25 0.5

SCALE = 1:5



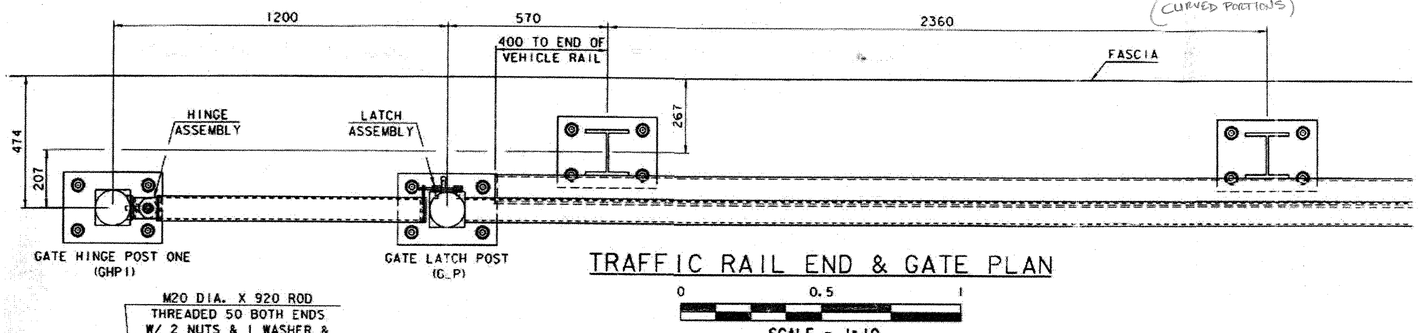




## SECTION A-A

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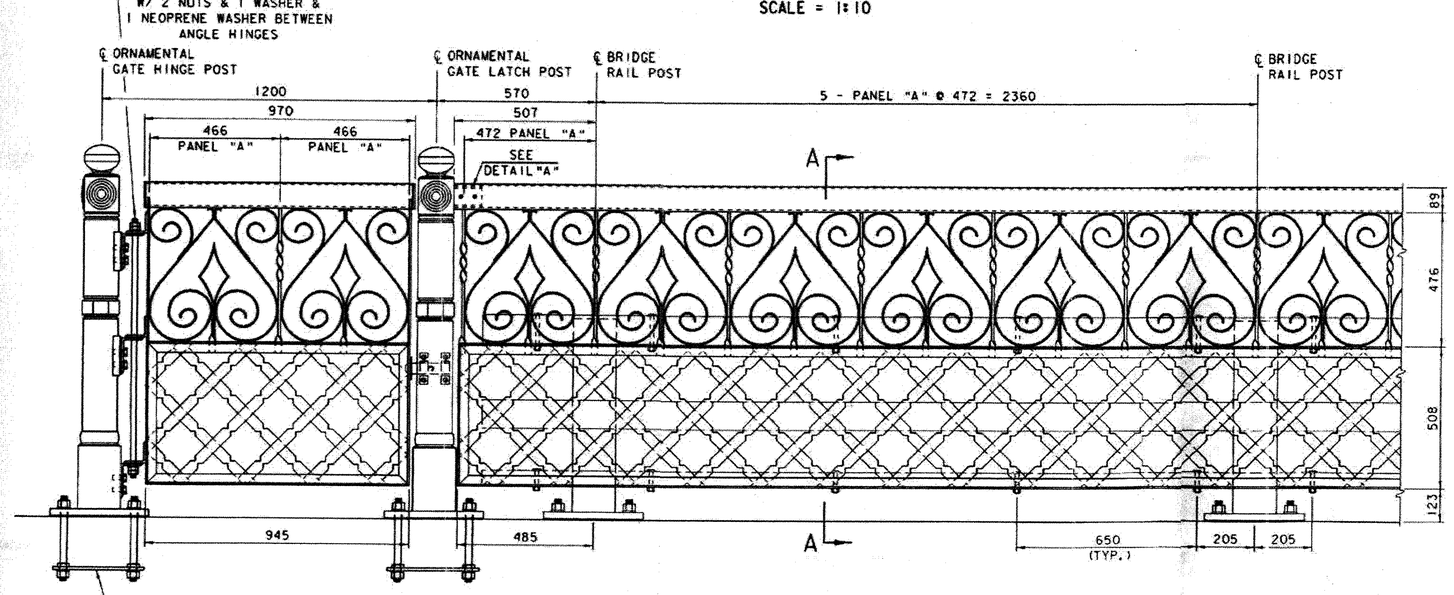
* L38.1 X 38.1 X 6.35 W/ 64 X 762 X 635 TAB (CURVED PORTIONS)




## TRAFFIC RAIL END & GATE PLAN

0 0.5 1

SCALE = 1:10




## TRAFFIC RAIL END & GATE ELEVATION

0 0.5 1

SCALE = 1:10

## NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE PROVISIONS OF SECTION 525 - RAILINGS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
2. ORNAMENTAL RAILING, CONSISTING OF RAILING, GATE ASSEMBLIES, POSTS, BASE PLATES, ANCHORAGE ASSEMBLIES, AND ANY OTHER COMPONENTS NECESSARY TO COMPLETE THE WORK SHALL BE PAID FOR UNDER ITEM 525.15, "METAL HAND RAILING (MOD.)".
3. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 1.6 mm RADIUS AND BE FREE OF BURRS.
4. ORNAMENTAL POSTS SHALL BE SET NORMAL TO GRADE.
5. ORNAMENTAL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
6. ORNAMENTAL RAIL SHALL BE FABRICATED IN SECTIONS AND SPLICED AT BRIDGE RAIL POST LOCATIONS AS SHOWN ON THE THE RAIL LAYOUT SHEET.
7. THE ORNAMENTAL RAILING SHALL BE SHOP PAINTED WITH A PROTECTIVE PAINT SYSTEM PER SECTION 513 - PROTECTIVE COATINGS. THE TOP COATING SHALL BE BLACK, COLOR PAINT CHIP #27038. PAYMENT FOR PAINTING OF THE ORNAMENTAL RAILING SHALL BE MADE SUBSIDIARY TO ITEM 525.15, "METAL HAND RAILING (MOD.)".
8. ORNAMENTAL RAIL SHALL BE ATTACHED TO THE BRIDGE RAIL STRUCTURAL TUBING USING M16 FULL DIAMETER BODY AASHTO M164M (TYPE 1) ROUND HEAD BOLTS INSERTED THROUGH THE TOP OF THE STRUCTURAL TUBING. HOLES IN TUBING SHALL BE 2 mm LARGER THAN THE BOLT SIZE.
9. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.
10. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH THE PROVISION OF 506.04, DRAWINGS AND PROCEDURES. ALL WELDING SHALL CONFORM WITH SECTION 506.10.
11. THE FABRICATOR MAY SUBMIT ALTERNATE GATE HINGE AND LATCH ASSEMBLY DETAILS TO THE STRUCTURES ENGINEER FOR APPROVAL.
12. ORNAMENTAL RAIL POSTS SHALL BE MADE OF GRAY IRON CASTINGS CONFORMING TO SECTION 715 - MISCELLANEOUS METALS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. MINIMUM POST WALL THICKNESS SHALL BE 10mm.

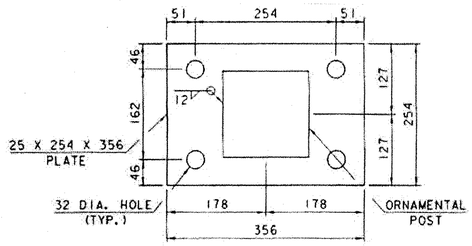
## MATERIALS

ALL STEEL ROLLED SHAPES..... ASTM A36/ A36M
ANCHOR STUDS..... ASTM F568M, CLASS 8.8
ALL OTHER BOLTS (UNLESS NOTED)..... AASHTO M164M, TYPE 1
ORNAMENTAL POSTS..... AASHTO M105, CLASS NO.30B
SOCKET SET SCREWS..... ASTM F912M

NUTS FOR AASHTO M164M BOLTS SHALL COMPLY WITH AASHTO M291M. NUTS FOR ANCHOR BOLTS SHALL COMPLY WITH AASHTO M291M.

WASHERS SHALL COMPLY WITH AASHTO M293M (ASTM F436M) SPECIFICATION.

3 mm PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSCETION 731.01 OR 731.02.




## ORNAMENTAL POST BASE PLATE

0 0.25 0.5

SCALE = 1:5

RECEIVED
OK'D BY G. Roy OK'D BY
2003
SEP 08 2003
RESUBMIT APPROVED AS NOTED
BY DATE 9-9-03

| REVISIONS | REMARKS |
|---|---|
| | |

ONE PRUYN'S ISLAND DR. GLENS FALLS, N.Y. 12801
RIVERSIDE FAB, INC.
PHONE # 1(518) 798-3533
FAX # 1(518) 798-1711

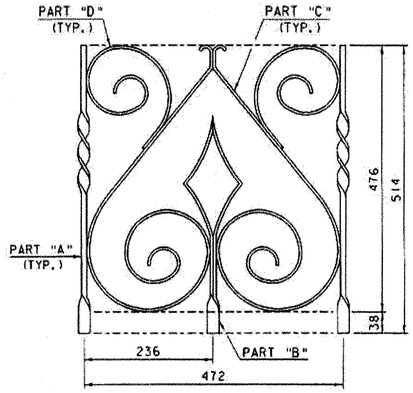
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| DATE | 8/28/03 |
| DRAWN BY | CCE |
| CHK'D BY | |
| HOLES | |
| BOLTS | |
| PAINT | |
| SCALE | AS NOTED |

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|---|---|
| PROJECT | PROPOSED IMPROVMENT BRIDGE PROJECT |
| LOCATION | BRATTLEBORO, VT. |
| CUSTOMER | RENAUD BROTHERS, INC. |
| ARCHITECT | STATE OF VERMONT, AGENCY OF TRANSPORTATION |
| JOB NO. | RFC 589 |
| SHEET NAME | RAILING DETAILS & NOTES |

PRINT RECORD

| DATE | NO. | |
|---|---|---|
| | | |
| | | |
| | | 079 |

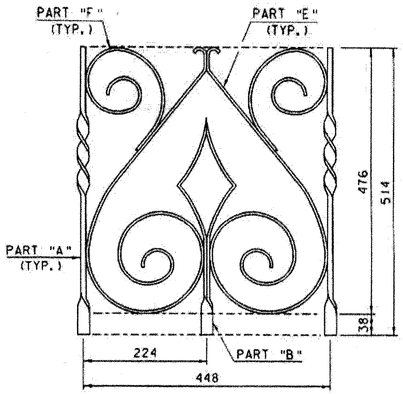
DRAWING NUMBER **E2**




PANEL "A"

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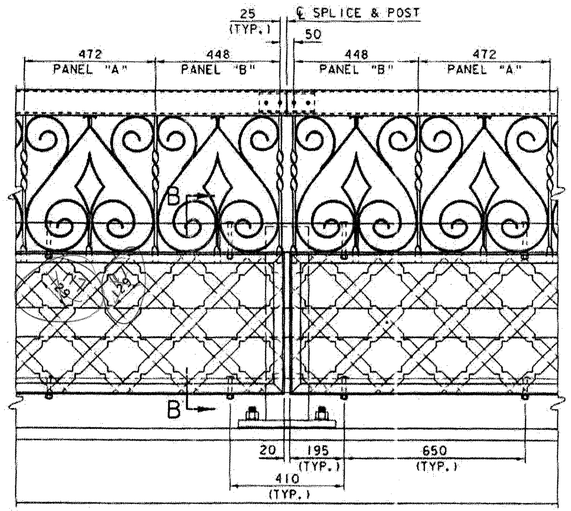
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PANEL "B"

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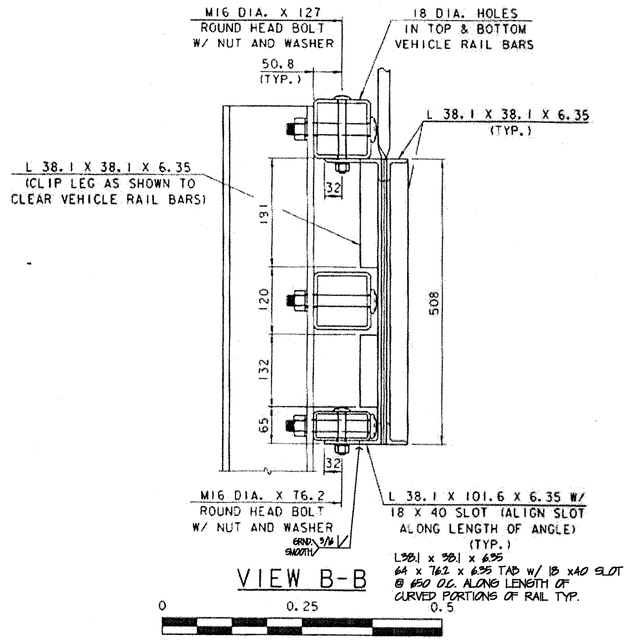
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ORNAMENTAL RAIL SPLICE ELEVATION

0 0.5 1

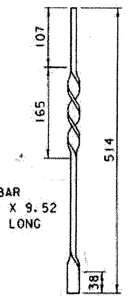
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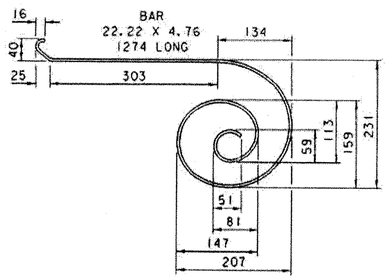

VIEW B-B

0 0.25 0.5

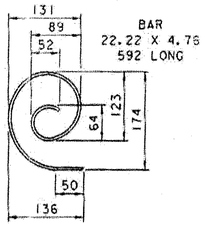
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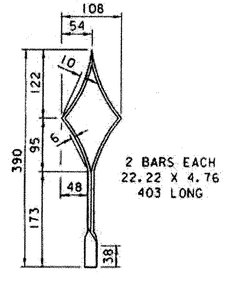

PART "A"



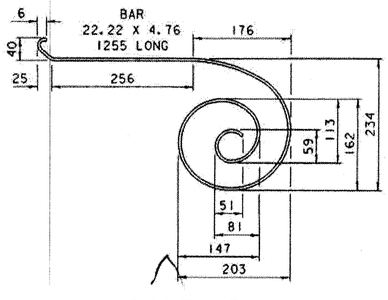

PART "C"



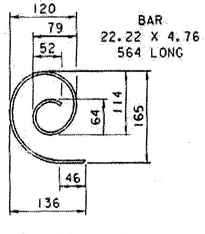

PART "D"




PART "B"




PART "E"

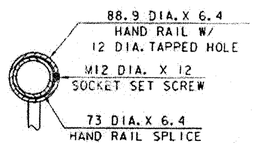


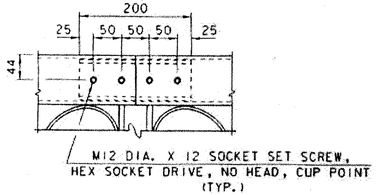

PART "F"

PANEL PARTS

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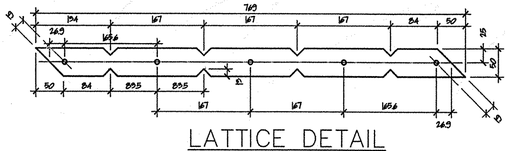



HAND RAIL SPLICE DETAILS

0 0.25 0.5

SCALE = 1:5




LATTICE DETAIL

0 0.25 0.5

SCALE = 1:5

RECEIVED
CK'D BY G. Roy OK'D BY
9-8-03
SEP 08 2003
RESUBMIT APPROVED AS NOTED
BY RRW DATE 9.9.03

| REVISIONS | REMARKS |
|---|---|
| | |

ONE PRUYN'S ISLAND DR.
GLENS FALLS, N.Y. 12801

**RIVERSIDE FAB, INC.**

PHONE # 1(518) 798-3533
FAX # 1(518) 798-1711

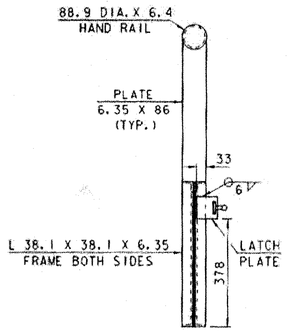
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| DATE | 8/28/03 |
| DRAWN BY | CCE |
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| HOLES | |
| BOLTS | |
| PAINT | |
| SCALE | AS NOTED |

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|---|---|
| PROJECT | PROPOSED IMPROVMENT BRIDGE PROJECT |
| LOCATION | BRATTLEBORO, VT. |
| CUSTOMER | RENAUD BROTHERS, INC. |
| ARCHITECT | STATE OF VERMONT, AGENCY OF TRANSPORTATION |
| JOB NO. | RFC 589 |
| SHEET NAME | PANEL PIECES & DETAILS |

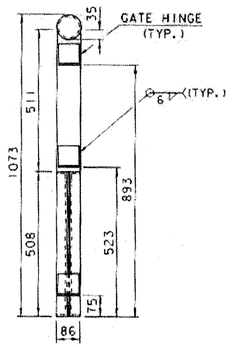
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DRAWING NUMBER **F1**




LATCH END

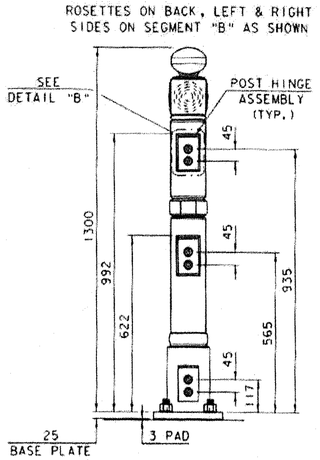



HINGE END

GATE END DETAILS

0 0.5 1

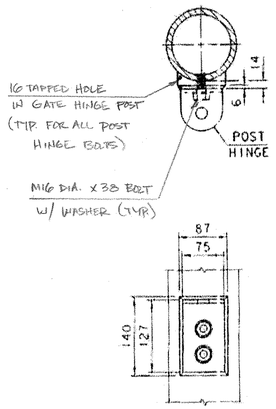
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GATE HINGE POST

0 0.5 1

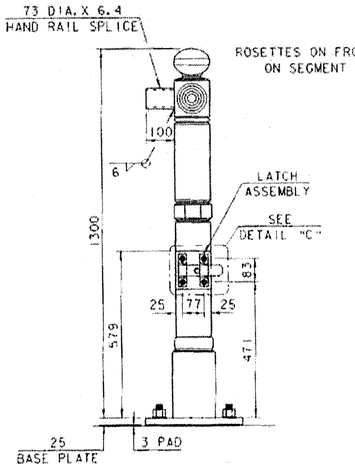
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DETAIL "B"

0 0.25 0.5

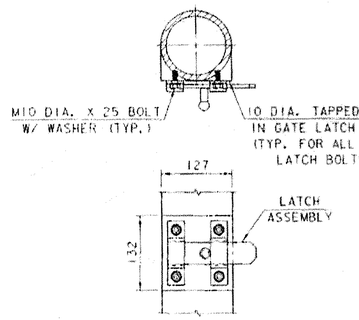
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GATE LATCH POST

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SCALE = 1:10

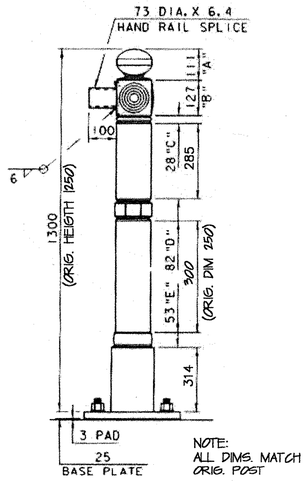



DETAIL "C"

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SCALE = 1:5

ROSETTES ON FRONT, BACK & RIGHT
SIDES ON SEGMENT "B" AS SHOWN

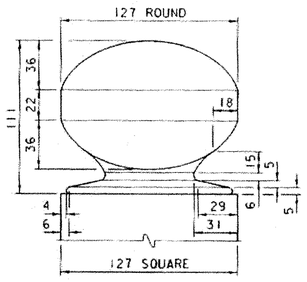



NOTE:
ALL DIMS. MATCH
ORIG. POST

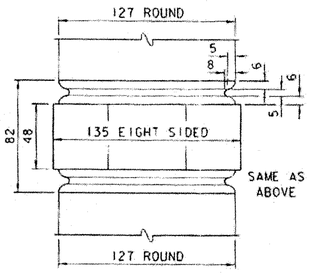
END POST

0 0.5 1

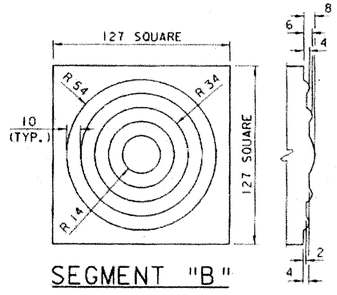
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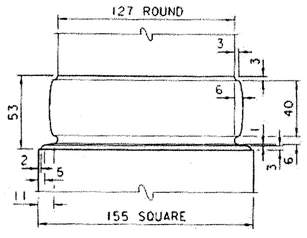

SEGMENT "A"



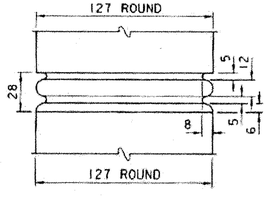

SEGMENT "D"




SEGMENT "B"




SEGMENT "E"

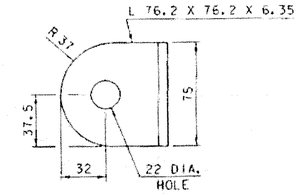



SEGMENT "C"

POST SEGMENT DETAILS

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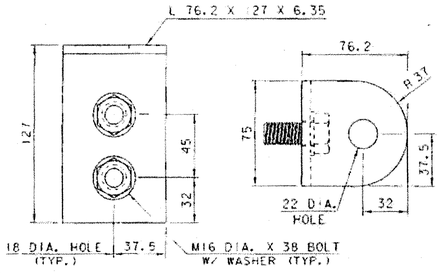
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GATE HINGE DETAIL

0 0.1 0.2

SCALE = 1:2




POST HINGE DETAILS

0 0.1 0.2

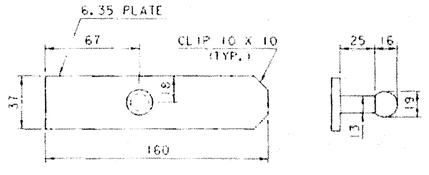
SCALE = 1:2




LATCH BRACKET




LATCH PLATE




LATCH SLIDE

LATCH ASSEMBLY DETAILS

0 0.1 0.2

SCALE = 1:2

RECEIVED
CK'D BY G.Roy OK'D BY AS NOTED
9.8.03
SEP 08 2003
RESUBMIT _____ APPROVED _____
BY Rlud DATE 9-9-03

| REVISIONS | REMARKS |
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| | |


ONE PRUYN'S ISLAND DR.
GLENS FALLS, N.Y. 12801

RIVERSIDE FAB, INC.

PHONE # 1(518) 798-3533
FAX # 1(518) 798-1711


| | |
|---|---|
| DATE | 8/28/03 |
| DRAWN BY | CCE |
| CHK'D BY | |
| HOLES | |
| BOLTS | |
| PAINT | |
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| JOB NO. | RFC 589 |
| SHEET NAME | POST & GATE DETAILS |

PRINT RECORD

| DATE | NO. | |
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| | | 081 |

DRAWING NUMBER: F2

## GENERAL NOTES

CONSTRUCTION SPECIFICATIONS

1). ALL MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001 WITH LATEST REVISIONS.

DESIGN SPECIFICATIONS

1). AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (A.A.S.H.T.O) STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1996 EDITION WITH LATEST REVISIONS.

MATERIAL SPECIFICATIONS

1). UNLESS NOTED, ALL STEEL TO BE AASHTO M270 GRADE 345W (ASTM A709-345W).

2). HIGH STRENGTH BOLTS: AASHTO M164 (ASTM A325) 22mm (7/8") DIA. TYPE 3 BOLTS SHALL BE USED FOR UNPAINTED CONNECTIONS.

3). GIRDER WEB & BOTTOM FLANGES SHALL BE CHARPY V NOTCH TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF VERMONT STANDARD SPECIFICATIONS. DRAWINGS SHALL CALL OUT "H2-3" FOR EACH APPLICABLE ITEM IN THE BILLS OF MATERIAL.

FABRICATION

1). ALL HOLES SHALL BE PUNCHED OR DRILLED FULL SIZE (UN).
2). STUDS ARE FURNISHED AND FIELD APPLIED BY OTHERS.
3). HOLES NOTED "DA" SHALL BE DRILLED DURING ASSEMBLY WITH PARTS ASSEMBLED.

WELDING

1). THE CONFIGURATION OF THE WELD JOINTS AND ALL WELDING PROCEDURES SHALL BE IN ACCORDANCE WITH AASHTO/AWS D1.5-02 BRIDGE WELDING CODE AND IN ADDITION TO SPECIFICATIONS SHOWN ABOVE. ALL WELDING WILL BE DETAILED TO PRE-QUALIFIED JOINTS, UNLESS PROHIBITED BY THE DESIGNER.

2). WELDING OF MAIN LOAD CARRYING MEMBERS AND ATTACHMENTS SHALL BE PERFORMED USING THE AUTOMATIC SUBMERGED ARC & SHIELDED METAL ARC PROCESSES. ALL WELDS ARE CONTINUOUS U.N.

3). NON DESTRUCTIVE TESTING OF WELDS SHALL BE IN ACCORDANCE WITH THE REFERENCED SPECIFICATION.

CLEANING:

1). ALL STEEL SHALL BE BLAST CLEANED AS PER SSPC SP-10 PER SPEC. 506.14(a)

PAINTING

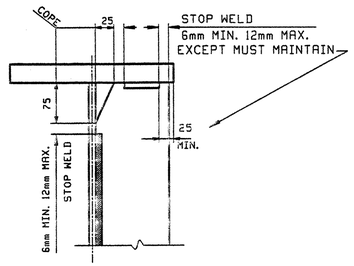
1). NONE

FIELD CONNECTIONS

1). ALL FIELD CONNECTIONS SHALL BE MADE WITH 22mm (7/8") DIAMETER HIGH STRENGTH A-325 TYPE 3 BOLTS, INSTALLED PER SECTION 506.19(c).

2). BOLTS SHALL HAVE HEAVY HEX NUT, HEX HEAD, & ONE FLAT WASHER EACH (WASHER TO BE PLACED UNDER TURNED ELEMENT).

3). PIECE MARKS WILL BE LOCATED AS SHOWN ON ERECTION DRAWINGS.




DETAIL "WS1"

NOTE TO ENGINEER:
THESE NOTES ARE NOT INTENDED TO BE ALL INCLUSIVE AND COMPLIANCE WITH RELEVANT SPECIFICATIONS REMAIN UNCHANGED.

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | OUT FOR APPROVAL | 4/4/03 | | | | | | | | | |
| | OUT FOR APPROVAL | | | | | | | | | | |
| | ISSUED TO SHOP | | | | | | | | | | |
| | FIELD & OFFICE | | | | | | | | | | |

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm ($\frac{15}{16}$")Ø | |

SURFACE PREP. & PAINT:

-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

FILE SET

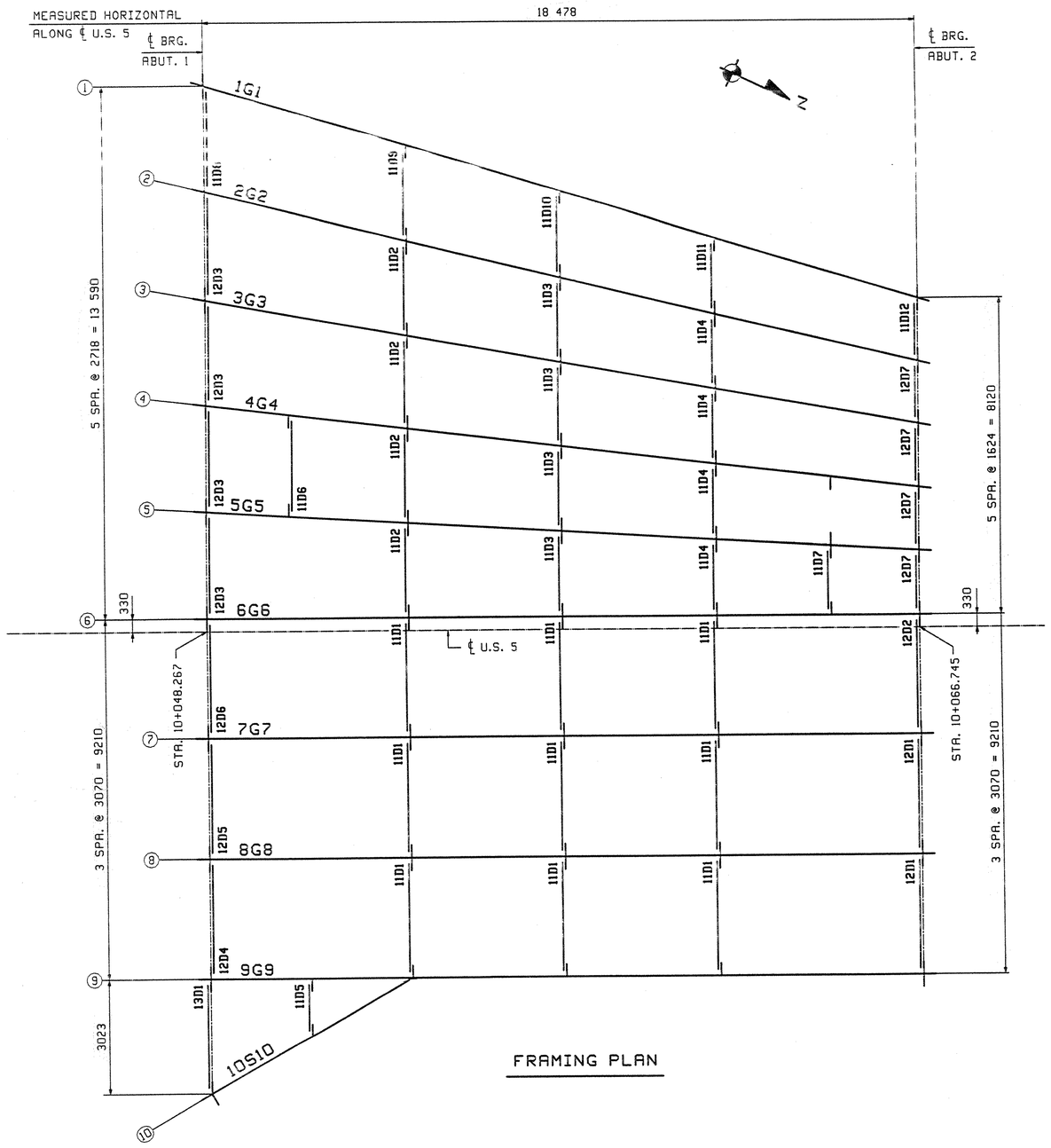
V.A.O.T.
RECEIVED
APR 15 2003

| DESCRIPTION: GENERAL NOTES | DRAWN BY | DATE |
|---|---|---|
| JOB: US 5 OVER WHETSTONE BROOK<br>BRIDGE NO. 7<br>BRATTLEBORO, VERMONT (WINDHAM COUNTY)<br>CONTRACTOR: RENAUD BROTHERS | JAK | 03/17 |
| | CHKD BY | |
| | JTB | 03/19 |
| | APPROV BY | |
| | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 082 |


TENSOR 2348
**CASCO BAY STEEL STRUCTURES, INC.**
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179


| JOB NO. | DRG. NO. |
|---|---|
| 194 | GN1 |
| | REV. △ |

JTB Wed Mar 19 08:28:26 EST 2003 /users/jak/2348/GN1.Rev0




FRAMING PLAN

| FIELD BOLT LIST | | | | | | | A325 Type 3 BOLTS | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LINE | NO REQ'D. | BOLT DIAM. | BOLT LEN. | BOLTS / CONN. | # OF CONN. | GRIP | THICKNESS OF PCS. CONNECTED | | | | | | WASH CODE | PIECES CONNECTED AND REMARKS |
| 1 | | | | | | | | | | | | | | **KICKER BEAM TO GIRDER 9G9** |
| 2 | 14 | 7/8 | 2 1/2 | 14 | 1 | 24 | 10 | 14 | | | | | 1 | BEAM WEB TO BENT CONNECTION PLATE |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | **ABUTMENT DIAPHRAGMS** |
| 5 | 392 | 7/8 | 2 1/2 | 14 | 28 | 29 | 10 | 18 | | | | | 1 | DIAPHRAGM WEB TO BEARING STIFFENER |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | **ABUTMENT DIAPHRAGM 13D1** |
| 9 | 10 | 7/8 | 2 1/2 | 5 | 2 | 24 | 6 | 18 | | | | | 1 | DIAPHRAGM WEB TO BEARING STIFFENER |
| 9 | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | **TELEPHONE DIAPHRAGMS** |
| 11 | 60 | 7/8 | 2 1/2 | 6 | 10 | 27 | 9 | 18 | | | | | 1 | DIAPHRAGM WEB TO CONNECTION PLATE |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | **INTERMEDIATE DIAPHRAGMS** |
| 14 | 294 | 7/8 | 2 1/4 | 7 | 42 | 24 | 10 | 14 | | | | | 1 | DIAPHRAGM WEB TO CONNECTION PLATE |
| 15 | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | **WATERLINE DIAPHRAGMS** |
| 17 | 12 | 7/8 | 2 1/4 | 3 | 4 | 23 | 9 | 14 | | | | | 1 | DIAPHRAGM WEB TO CONNECTION PLATE |
| 18 | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | **DIAPHRAGM 11D5** |
| 20 | 10 | 7/8 | 2 1/4 | 5 | 2 | 20 | 6 | 14 | | | | | 1 | DIAPHRAGM WEB TO CONNECTION PLATE |

1: 1 Hard Flat Washer

| FIELD BOLT SUMMARY | | | 5% ADDED, MIN. 2 EXTRA | | | |
|---|---|---|---|---|---|---|
| LINE | NO. OF BOLTS | BOLT DIAM. | TYPE | BOLT LEN | ACTUAL COUNT | REMARKS |
| 1 | 357 | 7/8 | A325 Type 3 | 2 1/4 | 340 | |
| 2 | 475 | 7/8 | A325 Type 3 | 2 1/2 | 452 | |
| 3 | | | | | | |
| 4 | 832 | Hard Flat Washers | for 7/8 ø | BOLT | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

1. All bolt diameters and lengths are shown in inches (english unit of measurement).
2. All grip values are shown in metric units.

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. |
|---|---|---|---|---|---|---|
| | OUT FOR APPROVAL | 4/14/03 | | | | |
| | OUT FOR APPROVAL | | | | | |
| | ISSUED TO SHOP | | | | | |
| | FIELD & OFFICE | | | | | |

| NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|
| | | | | |

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm ($\frac{15}{16}$")ø | |

SURFACE PREP. & PAINT:

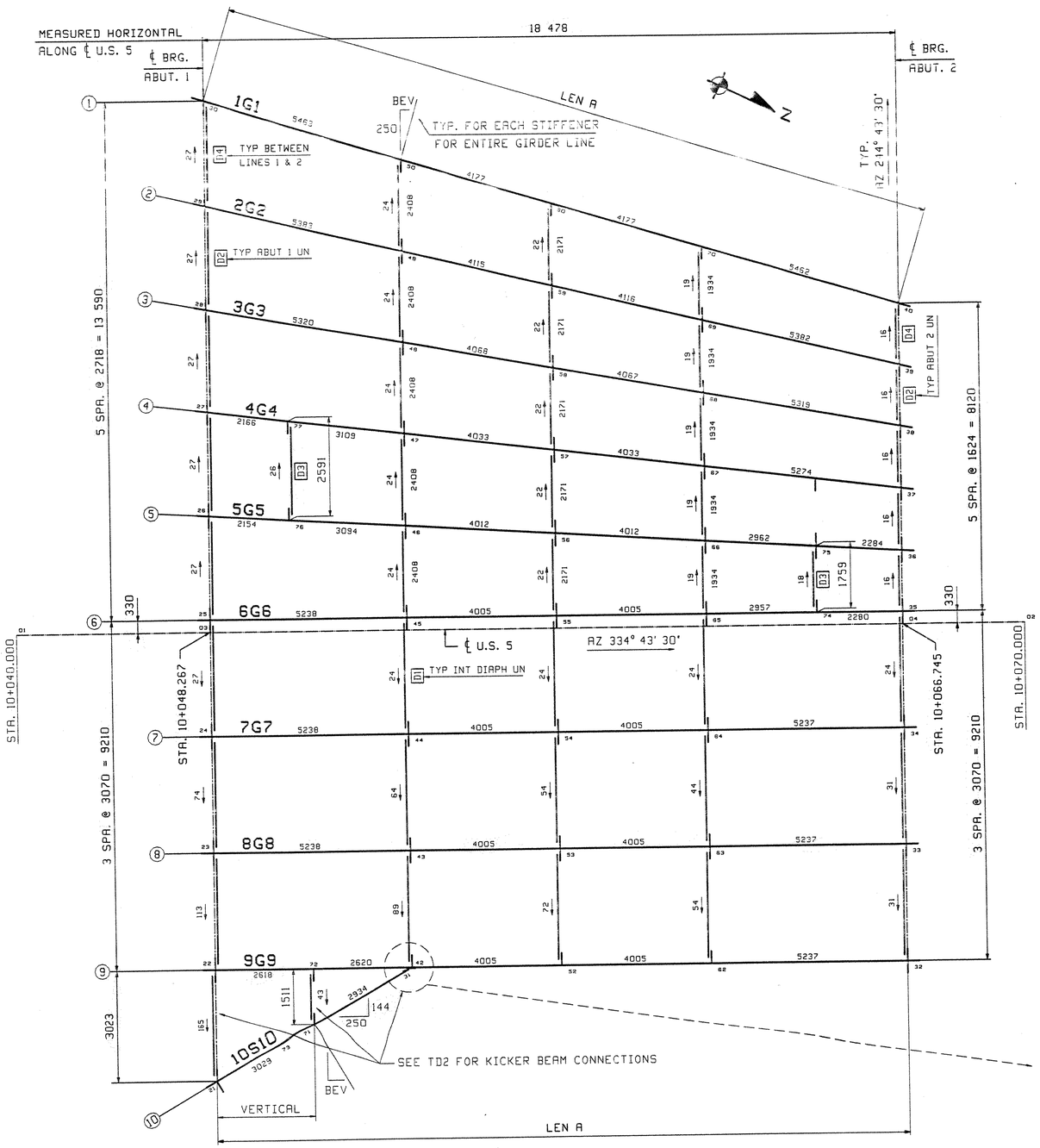
-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

V.A.O.T.
RECEIVED
CK'D BY 2.S.S. OK'D BY JMR 4/15/03
4/16/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

| DESCRIPTION: FRAMING PLAN | DRAWN BY | DATE |
|---|---|---|
| JOB: US 5 OVER WHETSTONE BROOK | JTB | 03/21 |
| BRIDGE NO. 7 | CHKD BY | |
| BRATTLEBORO, VERMONT (WINDHAM COUNTY) | EPE | 04/07 |
| CONTRACTOR: RENAUD BROTHERS | APPROV BY | |
| | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 083 |
| **CASCO BAY STEEL STRUCTURES, INC.** | JOB NO. | DRG. NO. |
| 75 SPRING HILL ROAD SACO, MAINE 04072 | 194 | E1 |
| PHONE (207) 282-7360 FAX. (207) 282-1179 | | REV. △ |

TENSOR 2348

JTB Tue Apr 8 11:31:26 EDT 2003 /users/jobs/2348/E1.dgn Rev:0




FRAMING PLAN

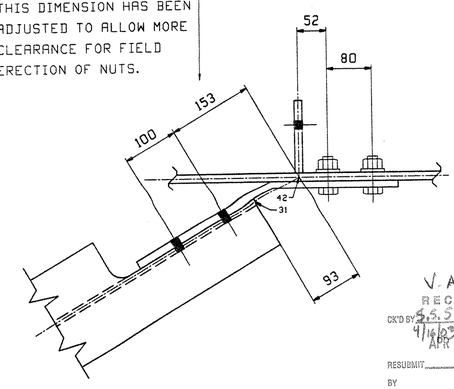
| Line | LEN A | GRADES ABUT. 1 | GRADES ABUT. 2 | BEV |
|---|---|---|---|---|
| 1 | 19 279 | .0158 | .0061 | 74 |
| 2 | 18 996 | .0154 | .0056 | 59 |
| 3 | 18 774 | .0150 | .0051 | 44 |
| 4 | 18 615 | .0146 | .0045 | 30 |
| 5 | 18 518 | .0141 | .0040 | 15 |
| 6 | 18 485 | .0135 | .0034 | 0 |
| 7 | 18 485 | .0143 | .0033 | 0 |
| 8 | 18 485 | .0160 | .0059 | 0 |
| 9 | 18 486 | .0204 | .0103 | 0 |
| 10 | 5963 | .0593 | .0487 | 144 |

**** NOTE ****
**THE PURPOSE OF THIS DRAWING IS TO COORDINATE GEOMETRIC CONTROL INFORMATION. THIS DWG IS SUBMITTED FOR INFORMATION ONLY AND IS NOT INTENDED FOR SHOP FABRICATION.**

NOTES
1. LONGITUDINAL DIMENSIONS ARE SLOPING ALONG TOP OF WEB WITH CORRECTIONS MADE FOR VERTICAL CURVE, GRADE & DL CAMBER (UN).
2. TRANSVERSE DIMENSIONS ARE IN A NORMAL PLANE (UN).
3. ARROW POINTS TOWARDS LOW END OF MEMBER.
4. ENDS OF STRGRDS AND BRG. STIFF'S ARE VERTICAL AFTER DL ROTATION.
5. DIAPH. STIFF ARE NORMAL TO GRADE U.N.
6. BOTT PT NUMBERS = TOP PT NUMBERS + 100
7. FOR LAYOUTS SEE DWG TD1 & TD2.
8. COMBINE DIAPHRAGMS FOR DIFF IN DROPS OF +/- 3mm.
9. DIAPHRAGM DROPS ARE CALCULATED IN THEIR FINAL POSITION.

DETAILER NOTE !!
THIS DIMENSION IS TRUE ONLY AT TOP OF WEB AS KICKER BEAM CONNECTION IS VERTICAL WHILE WEB STIFFENER CONNECTION IS NORMAL TO GRADE.

DETAILER NOTE !!
THIS DIMENSION HAS BEEN ADJUSTED TO ALLOW MORE CLEARANCE FOR FIELD ERECTION OF NUTS.




V.A.O.T.
RECEIVED
OK'D BY S.S.S. 4/16/03 OK'D BY JMB 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | OUT FOR APPROVAL | 4-14-03 | | | | | | | | | |
| | OUT FOR APPROVAL | | | | | | | | | | |
| | ISSUED TO SHOP | | | | | | | | | | |
| | FIELD & OFFICE | | | | | | | | | | |

MATERIAL: M270M-345W
ELECTRODES:
HOLES: 24mm (15/16")ø
SHOP BOLTS:

SURFACE PREP. & PAINT:
-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

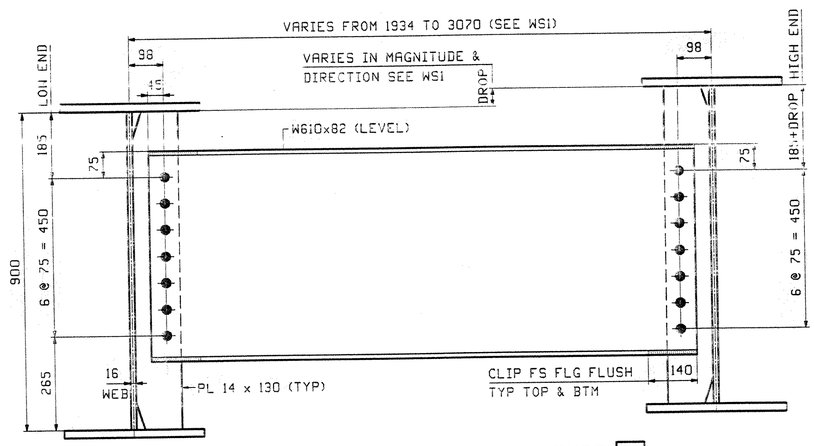
DESCRIPTION: CALCULATION PLAN
JOB: US 5 OVER WHETSTONE BROOK
BRIDGE NO. 7
BRATTLEBORO, VERMONT (WINDHAM COUNTY)
CONTRACTOR: RENAUD BROTHERS
PROJ NO. BHF 2000(17)
CUSTOMER: VERMONT AGENCY OF TRANSPORTATION

| | |
|---|---|
| DRAWN BY | DATE |
| JAK | 03/17 |
| CHKD BY | |
| WMJ | 3/18 |
| APPROV BY | |
| SUPERVISOR | W. J. GATTI |
| Q.A. | |
| | 084 |
| JOB NO. | DRG. NO. |
| 194 | WS1 |
| | REV. △ |

TENSOR 2348

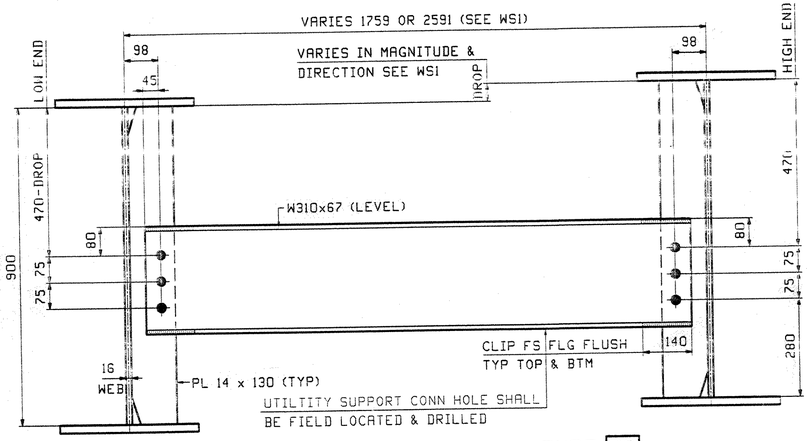
**CASCO BAY STEEL STRUCTURES, INC.**
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

WMJ Mon Mar 24 11:07:08 EST 2003 /users/jbk/2348/WS1.fr=0




## INTERMEDIATE DIAPHRAGM - TYPE D1

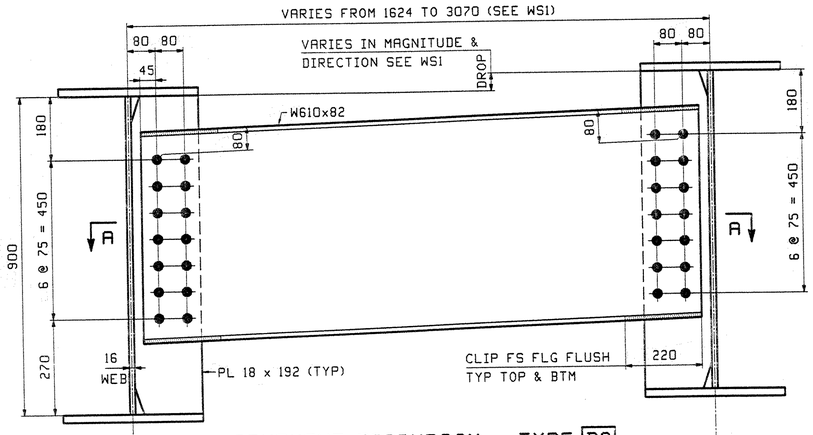
LOOKING UPSTATION




## WATERLINE DIAPHRAGM - TYPE D3

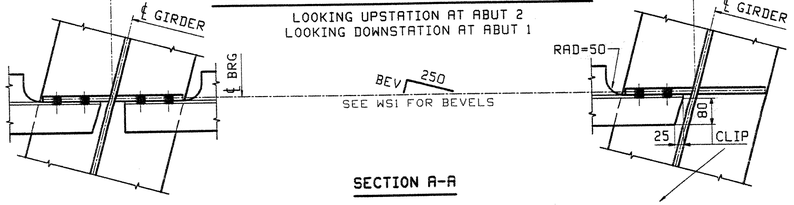
DETAILER NOTE:
LINES 1, 9 & THE KICKER BEAM HAVE 1 DRIP PLATE EACH

DETAILER NOTE:
ADDITIONAL WATERLINE CONNECTION PLATES ARE
REQUIRED BETWEEN LINES 4-5 2280mm FROM ABUT 2 (REF 37 OF 71)



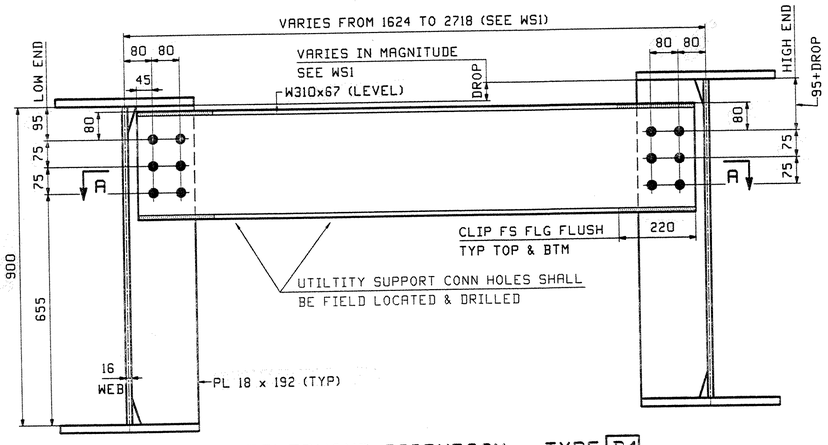

## ABUTMENT DIAPHRAGM - TYPE D2

LOOKING UPSTATION AT ABUT 2
LOOKING DOWNSTATION AT ABUT 1




SECTION A-A

CLIP NOTE:
CLIP TOP & BTM FLG AT LINES 1 THRU 5 - ABUT 1
CLIP TOP & BTM FLG AT LINES 2 THRU 6 - ABUT 2
(ACUTE ANGLE SIDE ONLY)




## TELEPHONE DIAPHRAGM - TYPE D4

LOOKING UPSTATION BETWEEN LINES 1 & 2
LOOKING DOWNSTATION AT ABUT 1

V.A.O.T.
RECEIVED
CK'D BY S.S.S. 4/16/03 OK'D BY JMS 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

NOTES:
1. ALL MATERIAL TO BE M270 GR345W.
2. SHOP BOLTS TO BE 7/8"ϕ A325 TYPE 3.

**** NOTE ****
**THE PURPOSE OF THIS DRAWING IS TO COORDINATE GEOMETRIC CONTROL INFORMATION AND CONNECTION SPACING. THIS DWG IS SUBMITTED FOR INFORMATION ONLY & IS NOT INTENDED FOR SHOP FABRICATION. DETAIL DWGS WILL SHOW ALL WELDING AND DIMENSIONS REQ'D FOR FABRICATION.**

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | OUT FOR APPROVAL | 4-14-03 | | | | | | | | | |
| | OUT FOR APPROVAL | | | | | | | | | | |
| | ISSUED TO SHOP | | | | | | | | | | |
| | FIELD & OFFICE | | | | | | | | | | |

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm (15/16"Ø) | |

SURFACE PREP. & PAINT:

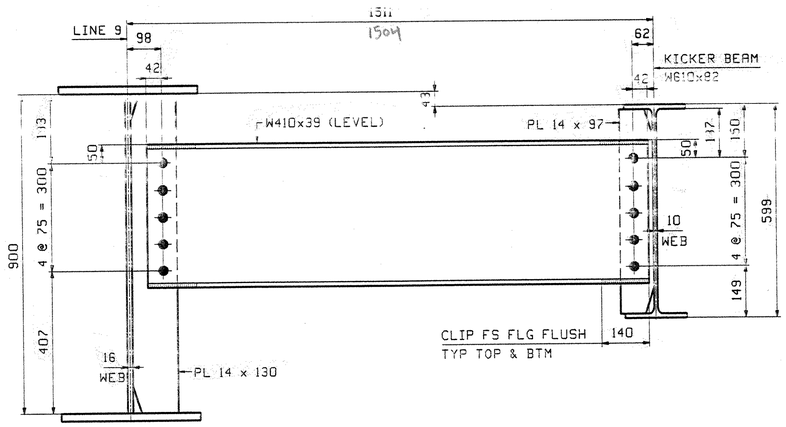
-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

| | | | |
|---|---|---|---|
| DESCRIPTION: | LAYOUTS | DRAWN BY | DATE |
| JOB: | US 5 OVER WHETSTONE BROOK | JTB | 03/18 |
| | BRIDGE NO. 7 | CHKD BY | |
| | BRATTLEBORO, VERMONT (WINDHAM COUNTY) | WMJ | 03/19 |
| TENSOR 0348 | CONTRACTOR: RENAUD BROTHERS | APPROV BY | |
| | | SUPERVISOR | W. J. GATTI |
| PROJ NO. | BHF 2000(17) | Q.A. | |
| CUSTOMER: | VERMONT AGENCY OF TRANSPORTATION | | 085 |


**CASCO BAY STEEL STRUCTURES, INC.**
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

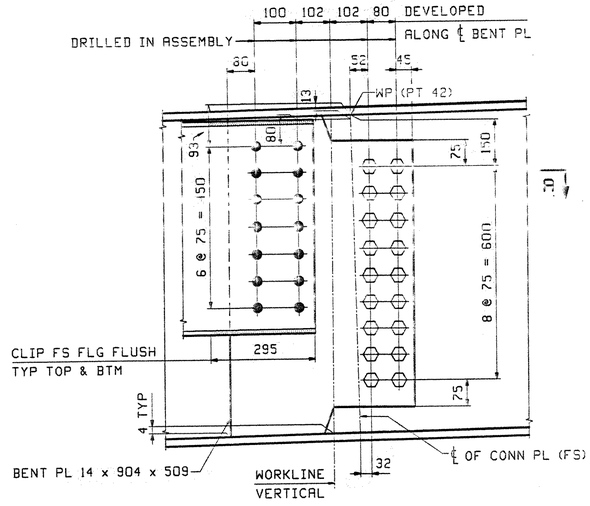

| JOB NO. | DRG. NO. |
|---|---|
| 194 | TD1 |
| | REV. △ |

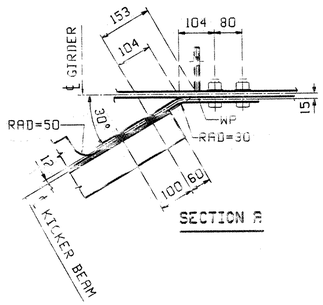

MMT Mon Mar 24 11:27:18 EST 2003 /users/jobs/2348/TD1.dwg




## KICKER BEAM INT DIAPHRAGM

LOOKING UPSTATION

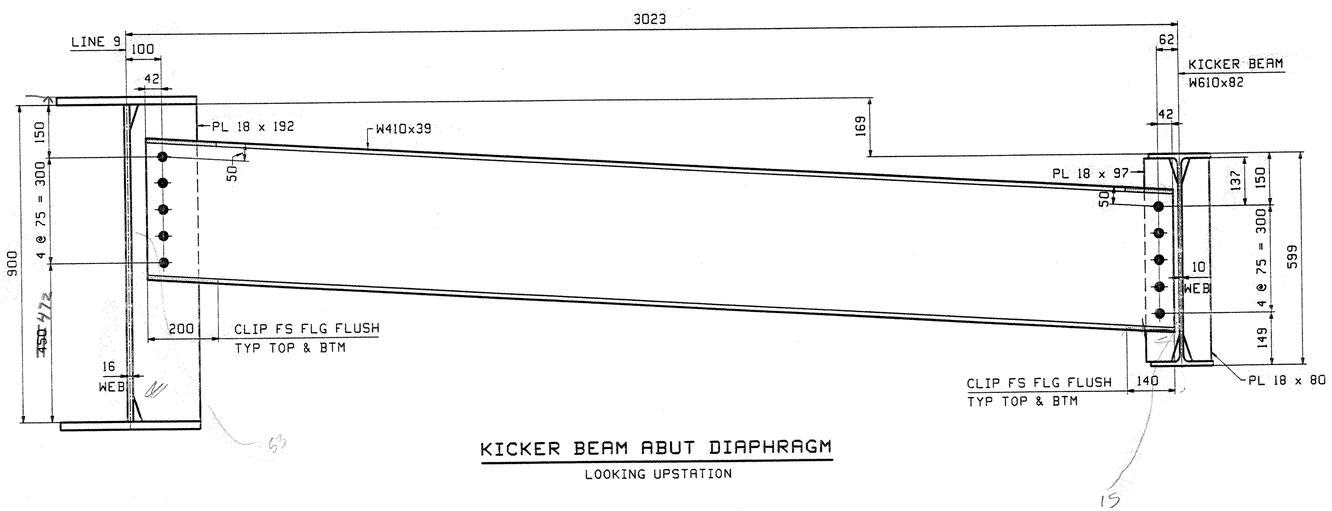



SECTION A

## KICKER BEAM TO LINE 9 GIRDER CONNECTION

LOOKING WEST




## KICKER BEAM ABUT DIAPHRAGM

LOOKING UPSTATION

**** NOTE ****
**THE PURPOSE OF THIS DRAWING IS TO COORDINATE GEOMETRIC CONTROL INFORMATION AND CONNECTION SPACING. THIS DWG IS SUBMITTED FOR INFORMATION ONLY & IS NOT INTENDED FOR SHOP FABRICATION. DETAIL DWGS WILL SHOW ALL WELDING AND DIMENSIONS REQ'D FOR FABRICATION.**

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | OUT FOR APPROVAL | 4/4/03 | | | | | | | | | |
| | OUT FOR APPROVAL | | | | | | | | | | |
| | ISSUED TO SHOP | | | | | | | | | | |
| | FIELD & OFFICE | | | | | | | | | | |

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm ($\frac{15}{16}$")ø | |

SURFACE PREP. & PAINT:

-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

V.A.O.T.
RECEIVED
CK'D BY SSS 4/16/03 OK'D BY JNF 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED AS NOTED
BY / DATE

NOTES:

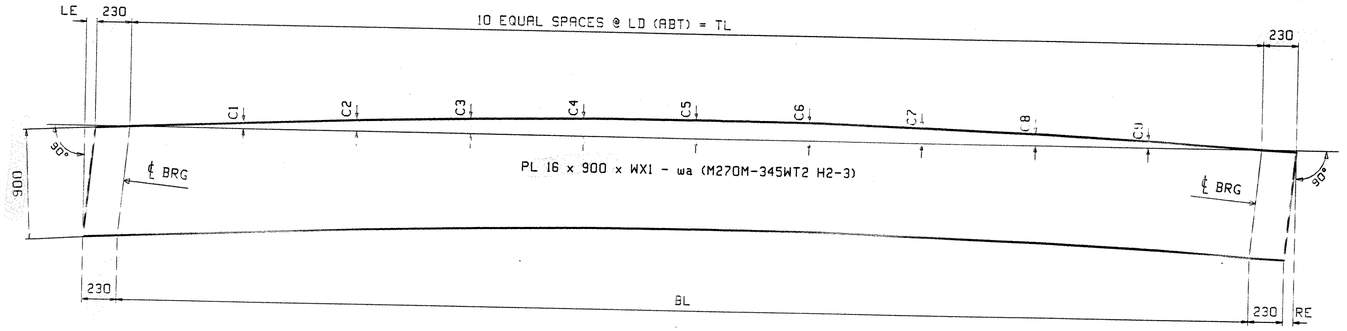
1. ALL MATERIAL TO BE M270 GR345W.
2. SHOP BOLTS TO BE 7/8"ø A325 TYPE 3.

| DESCRIPTION: LAYOUTS | DRAWN BY | DATE |
|---|---|---|
| JOB: US 5 OVER WHETSTONE BROOK | JTB | 03/18 |
| BRIDGE NO. 7 | CHKD BY | |
| BRATTLEBORO, VERMONT (WINDHAM COUNTY) | WMJ | 03/19 |
| CONTRACTOR: RENAUD BROTHERS | APPROV BY | |
| | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 086 |

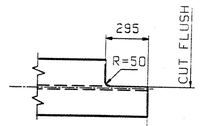

**CASCO BAY STEEL STRUCTURES, INC.**
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179


| JOB NO. | DRG. NO. |
|---|---|
| 194 | TD2 |
| | REV. △ |

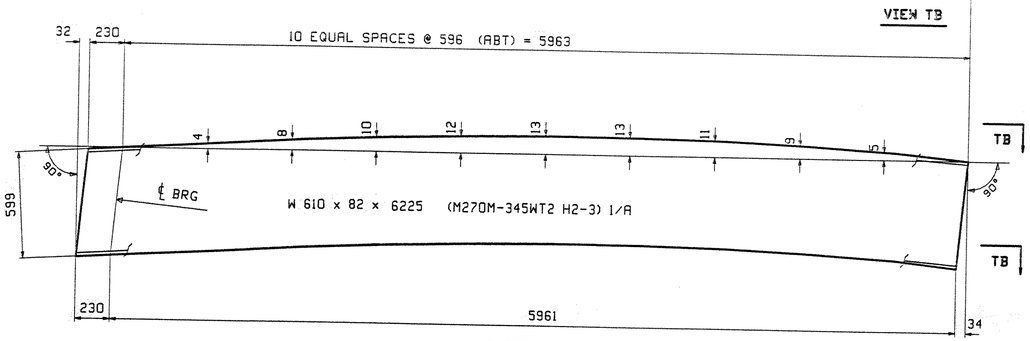

WMJ Mon Mar 24 11:27:28 EST 2003 /users/jobs/2348/TD2.dgn Rev:0




| MARK | TL | BL | LE | RE | WX1 | LD | C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | PG/LINE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1G1 | 19 279 | 19 267 | 4 | 16 | 19 743 | 1930 | 22 | 40 | 54 | 63 | 66 | 63 | 54 | 40 | 22 | 1/ Q |
| 2G2 | 18 996 | 18 983 | 3 | 16 | 19 459 | 1900 | 22 | 40 | 54 | 63 | 66 | 63 | 54 | 40 | 22 | 1/ S |
| 3G3 | 18 774 | 18 762 | 3 | 15 | 19 237 | 1875 | 22 | 40 | 54 | 63 | 66 | 63 | 54 | 40 | 22 | 1/ U |
| 4G4 | 18 615 | 18 602 | 2 | 15 | 19 077 | 1860 | 22 | 40 | 54 | 63 | 66 | 63 | 54 | 40 | 22 | 1/ W |
| 5G5 | 18 518 | 18 506 | 2 | 14 | 18 980 | 1850 | 22 | 40 | 54 | 63 | 66 | 63 | 54 | 40 | 22 | 1/ Y |
| 6G6 | 18 485 | 18 472 | 1 | 14 | 18 946 | 1850 | 22 | 40 | 54 | 63 | 66 | 63 | 54 | 40 | 22 | 1/ Y |
| 7G7 | 18 485 | 18 472 | 1 | 14 | 18 946 | 1850 | 23 | 42 | 56 | 65 | 68 | 64 | 55 | 41 | 22 | 1/ N |
| 8G8 | 18 485 | 18 472 | 3 | 16 | 18 948 | 1850 | 22 | 40 | 54 | 63 | 66 | 63 | 54 | 40 | 22 | 1/ Y |
| 9G9 | 18 486 | 18 473 | 7 | 20 | 18 953 | 1850 | 22 | 40 | 54 | 63 | 66 | 63 | 54 | 40 | 22 | 1/ Y |

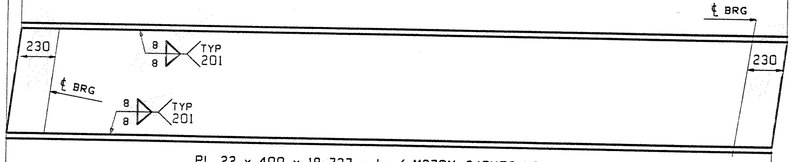



VIEW TB




CAMBER DIAGRAM FOR 1OS1O

| | | |
|---|---|---|
| 1G1 | 4 | PL 22 x 400 x 19 739 - ta ( M270M-345W ) 2/A |
| 2G2 | 3 | PL 22 x 400 x 19 456 - ta ( M270M-345W ) 2/C |
| 3G3 | 3 | PL 22 x 400 x 19 234 - ta ( M270M-345W ) 2/E |
| 4G4 | 2 | PL 22 x 400 x 19 075 - ta ( M270M-345W ) 2/G |
| 5G5 | 2 | PL 22 x 400 x 18 978 - ta ( M270M-345W ) 2/J |
| 6G6 | 1 | PL 22 x 400 x 18 945 - ta ( M270M-345W ) 2/J |
| 7G7 | 1 | PL 22 x 400 x 18 945 - ta ( M270M-345W ) 2/J |
| 8G8 | 3 | PL 22 x 400 x 18 945 - ta ( M270M-345W ) 2/J |
| 9G9 | 7 | PL 22 x 400 x 18 946 - ta ( M270M-345W ) 2/J |




| | |
|---|---|
| 1G1 | PL 22 x 400 x 19 727 - ba ( M270M-345WT2 H2-3 ) 1/C |
| 2G2 | PL 22 x 400 x 19 443 - ba ( M270M-345WT2 H2-3 ) 1/E |
| 3G3 | PL 22 x 400 x 19 222 - ba ( M270M-345WT2 H2-3 ) 1/G |
| 4G4 | PL 22 x 400 x 19 062 - ba ( M270M-345WT2 H2-3 ) 1/J |
| 5G5 | PL 22 x 400 x 18 966 - ba ( M270M-345WT2 H2-3 ) 1/L |
| 6G6 | PL 22 x 400 x 18 932 - ba ( M270M-345WT2 H2-3 ) 1/L |
| 7G7 | PL 22 x 400 x 18 932 - ba ( M270M-345WT2 H2-3 ) 1/L |
| 8G8 | PL 22 x 400 x 18 932 - ba ( M270M-345WT2 H2-3 ) 1/L |
| 9G9 | PL 22 x 400 x 18 933 - ba ( M270M-345WT2 H2-3 ) 1/L |

FLANGE DIAGRAM FOR 1G1 THRU 9G9

V.A.O.T.
RECEIVED
CK'D BY 555 4/7/03 OK'D BY SMP 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

## NOTES:

1. FOR GENERAL NOTES AND WELD DETAILS SEE SHT. GN1.
2. H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TEST AT H FREQ. FOR ZONE 2 OF 20 J @ 4° C

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| OUT FOR APPROVAL | 4-14-03 | | | | | | | | | |
| OUT FOR APPROVAL | | | | | | | | | | |
| ISSUED TO SHOP | | | | | | | | | | |
| FIELD & OFFICE | | | | | | | | | | |
| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |

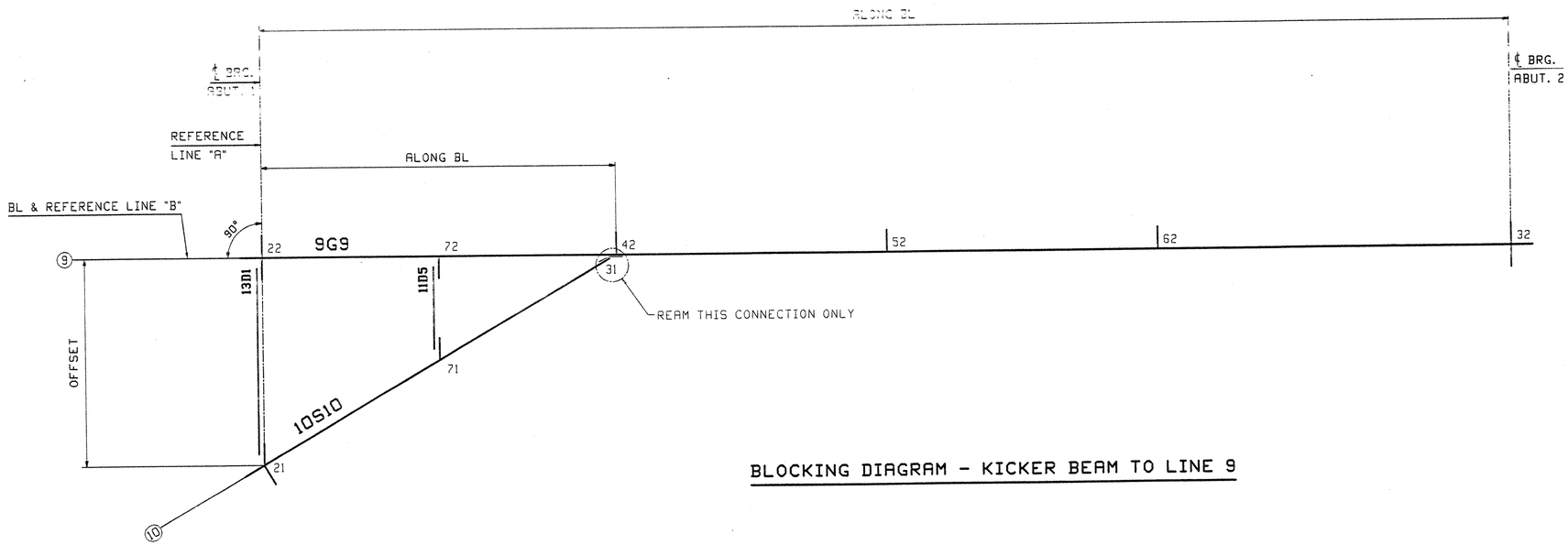
| | | | |
|---|---|---|---|
| MATERIAL: M270M-345W | ELECTRODES: | HOLES: 24mm ($\frac{15}{16}$")Ø | SHOP BOLTS: |

SURFACE PREP. & PAINT:

-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

| | | |
|---|---|---|
| DESCRIPTION: CAMBER AND FLANGE DIAGRAMS | DRAWN BY | DATE |
| JOB: US 5 OVER WHETSTONE BROOK BRIDGE NO. 7 BRATTLEBORO, VERMONT (WINDHAM COUNTY) CONTRACTOR: RENAUD BROTHERS | JAK | 03/17 |
| | CHKD BY | |
| | WMJ | 3/18 |
| | APPROV BY | |
| TENSOR 2348 | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 087 |
| **CASCO BAY STEEL STRUCTURES, INC.** | JOB NO. | DRG. NO. |
| 75 SPRING HILL ROAD SACO, MAINE 04072 PHONE (207) 282-7360 FAX. (207) 282-1179 | 194 | C1 |
| | | REV. △ |

JHK Wed Mar 19 13:45:25 EST 2003 /users/jobs/2348/C1 | Rev:0




## BLOCKING DIAGRAM - KICKER BEAM TO LINE 9

| POINT | OFFSET | ALONG BL | ELEV | |
|---|---|---|---|---|
| 22 | 0 | 0 | 187 | ℄ OF LINE 9 |
| 72 | 0 | 2618 | 258 | |
| 42 | 0 | 5237 | 320 | |
| 52 | 0 | 9242 | 395 | |
| 62 | 0 | 13 247 | 443 | |
| 32 | 0 | 18 484 | 471 | |
| 21 | 3023 | 3 | 0 | ℄ OF LINE 10 |
| 71 | 1511 | 2621 | 178 | |
| 31 | 46 | 5159 | 325 | END OF KICKER BEAM |

V.A.O.T.
RECEIVED
CK'D BY SSS 4/17/03 CK'D BY JMP 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

NOTES
1. FOR GENERAL NOTES SEE DRAWING GN1.
2. ALL DIMENSIONS ARE GIVEN RELATIVE TO A HORIZONTAL DATUM PLANE.
3. ALL TRANSVERSE EXTENSION DIMENSIONS (ALONG BL) ARE FROM REFERENCE LINE "A".
4. ALL LONGITUDINAL EXTENSION DIMENSIONS (OFFSET) ARE FROM REFERENCE LINE "B".
5. DIAPHRAGMS 13D1 & 11D5 ARE OPTIONAL MEMBERS OF THE SHOP ASSEMBLY. REAMING IS NOT REQUIRED FOR THESE TWO DIAPHRAGMS
6. ELEVATIONS ARE GIVEN TO THE TOP OF THE TOP FLANGE OF LINES 9 & 10.

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. |
|---|---|---|---|---|---|---|
| | OUT FOR APPROVAL | 4-14-03 | | | | |
| | OUT FOR APPROVAL | | | | | |
| | ISSUED TO SHOP | | | | | |
| | FIELD & OFFICE | | | | | |

| NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|
| | | | | |

MATERIAL: M270M-345W
ELECTRODES:
HOLES: 24mm (15/16")ø
SHOP BOLTS:

SURFACE PREP. & PAINT:
-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

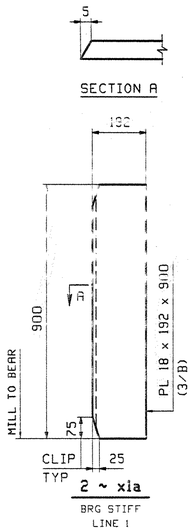
DESCRIPTION: SHOP ASSEMBLY
JOB: US 5 OVER WHETSTONE BROOK
BRIDGE NO. 7
BRATTLEBORO, VERMONT (WINDHAM COUNTY)
CONTRACTOR: RENAUD BROTHERS
PROJ NO. BHF 2000(17)
CUSTOMER: VERMONT AGENCY OF TRANSPORTATION

| | |
|---|---|
| DRAWN BY | DATE |
| JTB | 03/21 |
| CHKD BY | |
| EPE | 04/07 |
| APPROV BY | |
| SUPERVISOR | W. J. GATTI |
| Q.A. | |
| | 088 |
| JOB NO. | DRG. NO. |
| 194 | SA1 |
| | REV. △ |

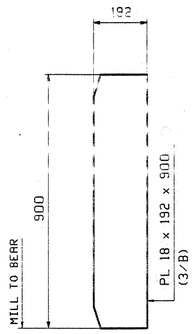

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179



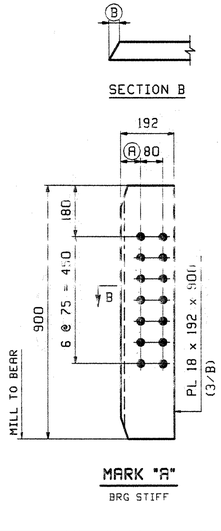
JTB Fri Mar 21 14:34:44 EST 2003 /users/jobs/2348/sh1.dwg




**2 ~ x1a**
BRG STIFF
LINE 1

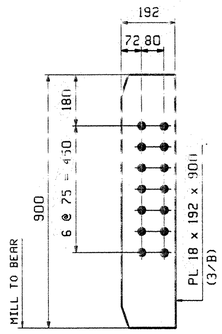



**1 ~ x1b**
BRG STIFF
LINE 9 - ABUT 2

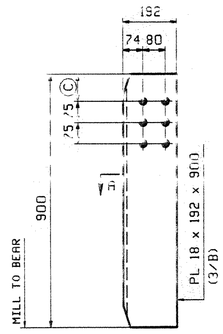



**MARK "A"**
BRG STIFF

| MARK "A" | QTY | Ⓐ | Ⓑ | |
|---|---|---|---|---|
| **x1c** | 2 | 74 | 4 | LINE 2 |
| **x1d** | 8 | 73 | 2 | LINES 3 & 4 |

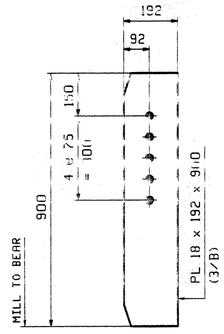



**18 ~ x1f**
BRG STIFF
LINES 5, 6, 7, 8 & 9

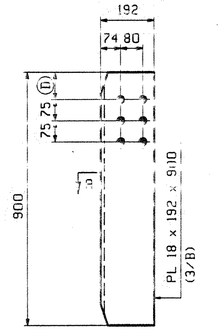



**MARK "B"**
BRG STIFF
LINES 1 & 2

| MARK "B" | QTY | Ⓒ | |
|---|---|---|---|
| **x1g** | 2 | 95 | LINE 1 |
| **x1h** | 1 | 122 | LINE 2 (DROP 27) |
| **x1k** | 1 | 111 | LINE 2 (DROP 16) |

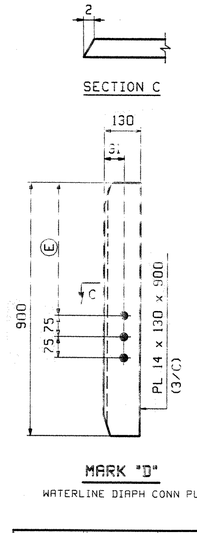



**1 ~ x1m**
BRG STIFF
LINE 9 - ABUT 1



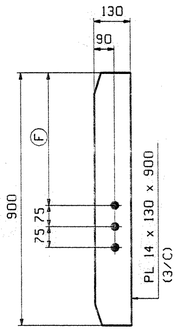

**MARK "C"**
INT TELE DIAPH CONN PL
LINES 1 & 2

| MARK "C" | QTY | Ⓓ | |
|---|---|---|---|
| **x1n** | 3 | 95 | LINE 1 |
| **x1p** | 3 | 117 | LINE 2 (DROPS 24, 22 & 19) |



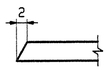

**MARK "D"**
WATERLINE DIAPH CONN PL

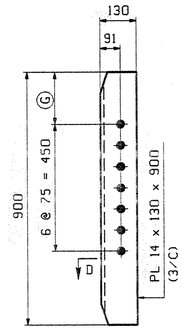
| MARK "D" | QTY | Ⓔ | |
|---|---|---|---|
| **x1t** | 1 | 444 | DROP 25 |
| **x1v** | 1 | 452 | DROP 18 |




**MARK "E"**
WATERLINE DIAPH CONN PL

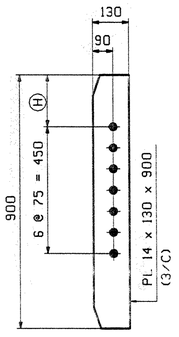
| MARK "E" | QTY | Ⓕ | |
|---|---|---|---|
| **x1w** | 3 | 470 | HIGH END (LINES 5 & 6) |
| **x1y** | 1 | 452 | DROP 18 (LINE 5) |



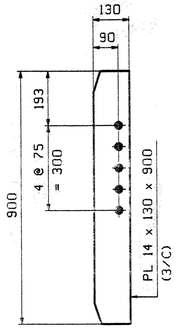

**MARK "F"**
INT DIAPH CONN PL

| MARK "F" | QTY | Ⓖ | |
|---|---|---|---|
| **x1aa** | 6 | 207 | HIGH END (LINES 2, 3 & 4) |
| **x1ab** | 9 | 185 | LOW END (LINES 2, 3 & 4) |

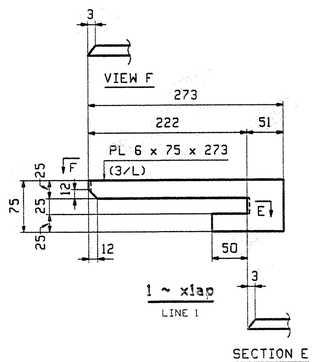



**MARK "G"**
INT DIAPH CONN PL

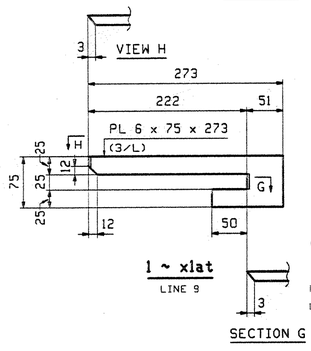
| MARK "G" | QTY | Ⓗ | |
|---|---|---|---|
| **x1ac** | 1 | 274 | DROP 89 |
| **x1ad** | 1 | 257 | DROP 72 |
| **x1af** | 1 | 249 | DROP 54 |
| **x1ag** | 2 | 239 | DROP 54 |
| **x1ah** | 1 | 229 | DROP 44 |
| **x1ak** | 9 | 207 | DROP 19, 22 & 24 |
| **x1am** | 12 | 185 | LOW END |




**1 ~ x1an**
KICK BEAM INT DIAPH CONN PL
LINE 9




**1 ~ x1ap**
LINE 1




**1 ~ x1at**
LINE 9

V.A.O.T.
RECEIVED
OK'D BY S.S.S. 4/17/03 OK'D BY SAB 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

NOTES:
1. ALL MATERIAL TO BE M270-345W.
2. FOR GENERAL NOTES SEE DRAWING GN1.
3. ALL BOLT HOLES SHALL BE $\frac{15}{16}$"Ø FOR $\frac{7}{8}$"Ø HSB.

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | OUT FOR APPROVAL | 4-14-03 | | | | | | | | | |
| | OUT FOR APPROVAL | | | | | | | | | | |
| | ISSUED TO SHOP | | | | | | | | | | |
| | FIELD & OFFICE | | | | | | | | | | |

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm ($\frac{15}{16}$")Ø | |

SURFACE PREP. & PAINT:

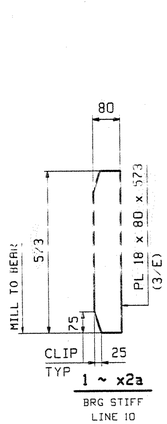
-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

| DESCRIPTION: GIRDER STANDARDS | DRAWN BY | DATE |
|---|---|---|
| JOB: US 5 OVER WHETSTONE BROOK | JTB | 03/20 |
| BRIDGE NO. 7 | CHKD BY | |
| BRATTLEBORO, VERMONT (WINDHAM COUNTY) | EPE | 04/07 |
| CONTRACTOR: RENAUD BROTHERS | APPROV BY | |
| TENSOR 2348 | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 089 |


**CASCO BAY STEEL STRUCTURES, INC.**
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

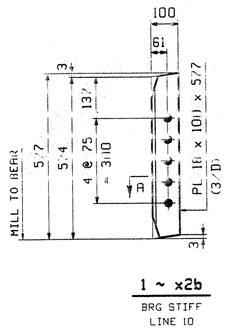

| JOB NO. | DRG. NO. |
|---|---|
| 194 | X1 |
| | REV. △ |


JTB Tue Apr 8 11:31:08 EDT 2003 c:\work\jobs\2348\01.r Rev0



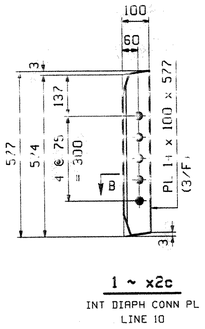

1 ~ x2a

BRG STIFF
LINE 10



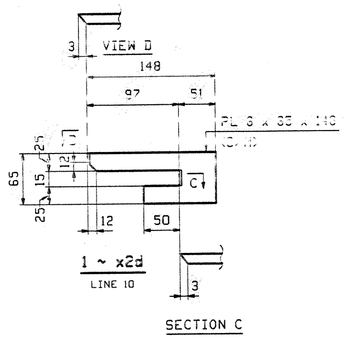

1 ~ x2b

BRG STIFF
LINE 10




1 ~ x2c

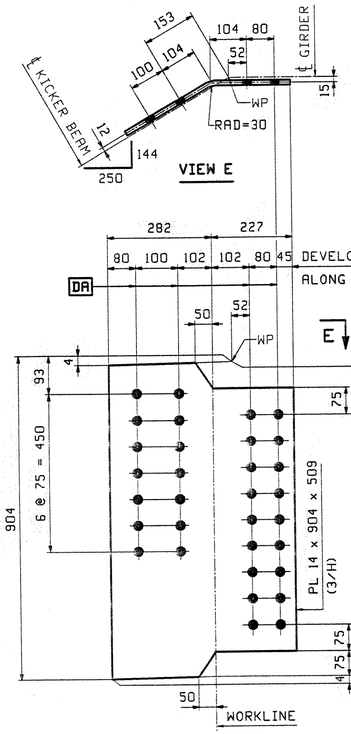
INT DIAPH CONN PL
LINE 10




1 ~ x2d

LINE 10

SECTION C




1 ~ x2f

KICKER CONN PL
LINE 10 TO LINE 9

NOTES:

1. ALL MATERIAL TO BE M270-345W.
2. FOR GENERAL NOTES SEE DRAWING GN1.
3. ALL BOLT HOLES SHALL BE $\frac{15}{16}$"ø FOR $\frac{7}{8}$"ø HSB.
4. DA DENOTES HOLES TO BE DRILL ASSEMBLED.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| OUT FOR APPROVAL | 4/14/03 | | | | | | | | | |
| OUT FOR APPROVAL | | | | | | | | | | |
| ISSUED TO SHOP | | | | | | | | | | |
| FIELD & OFFICE | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm ($\frac{15}{16}$")ø | |

SURFACE PREP. & PAINT:

-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

| | | |
|---|---|---|
| DESCRIPTION: KICKER BEAM STANDARDS | DRAWN BY | DATE |
| JOB: US 5 OVER WHETSTONE BROOK<br>BRIDGE NO. 7<br>BRATTLEBORO, VERMONT (WINDHAM COUNTY)<br>CONTRACTOR: RENAUD BROTHERS | JTB | 03/20 |
| | CHKD BY | |
| | EPE | 04/07 |
| | APPROV BY | |
| | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 090 |

TENSOR 2348

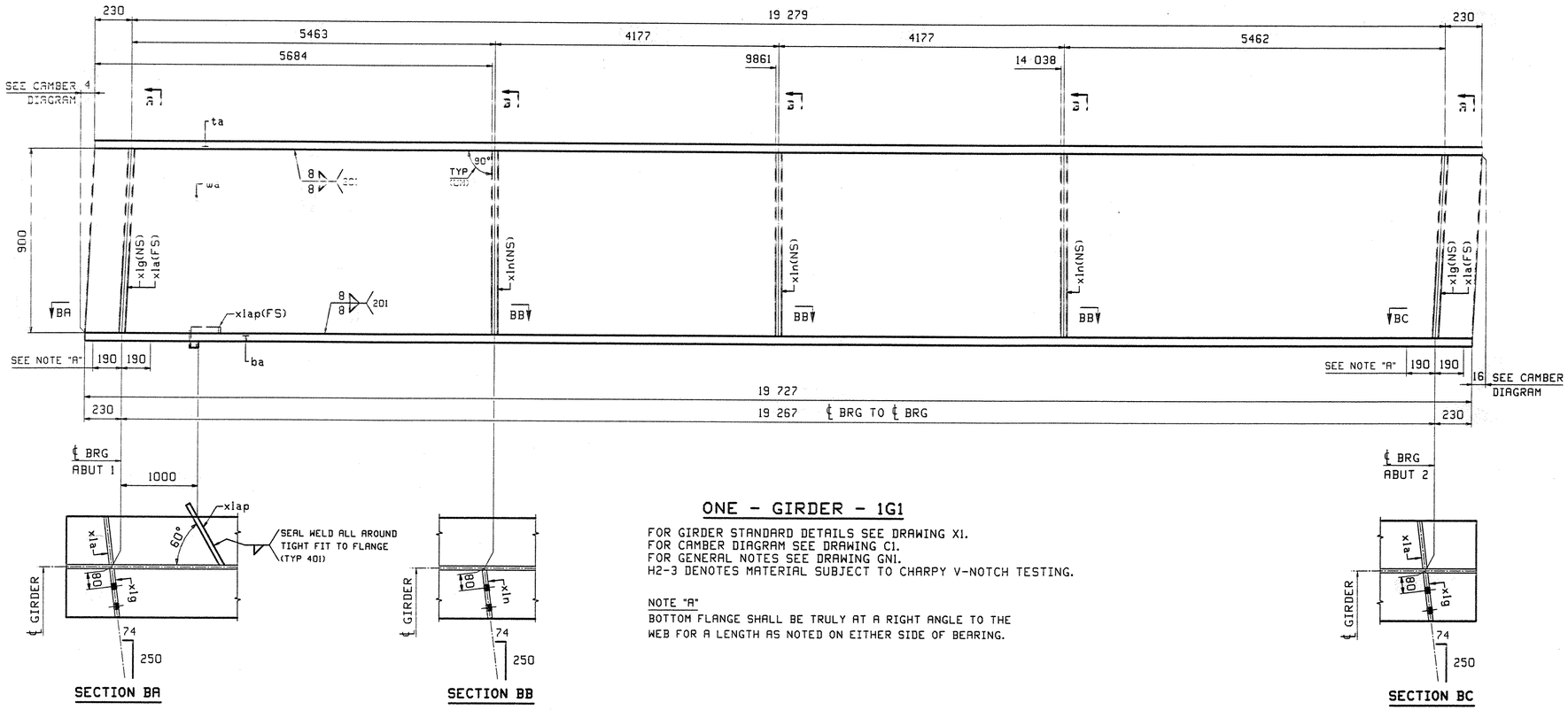
**CASCO BAY STEEL STRUCTURES, INC.**

75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

| JOB NO. | DRG. NO. |
|---|---|
| 194 | X2 |
| | REV. △ |

V.A.O.T.
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CK'D BY S.S.S. 4/10/03 OK'D BY JMP 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

ITB Tue Apr 8 11:54:54 EDT 2003 /users/jobs/2348/42.1 Rev=0




## ONE - GIRDER - 1G1

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAM SEE DRAWING C1.
FOR GENERAL NOTES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

NOTE "A"
BOTTOM FLANGE SHALL BE TRULY AT A RIGHT ANGLE TO THE WEB FOR A LENGTH AS NOTED ON EITHER SIDE OF BEARING.




CAMBER DIAGRAM
SEE DWG C1







| ABM INFO | | SHIP | BILL OF MATERIAL | | | | | JOB NO. | DRAWING NO. | REV. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 1 | |
| PAGE | LINE | MARK | QTY | MARK | MATERIAL | LENGTH m | LENGTH mm | REMARKS | WT | PROCUREMENT NOTES |
| | | 1G1 | 1 | | GIRDER | | | | 5294 kg (11671 lbs) | |
| 1 | Q | | 1 | ya | PL 16x966 | 19 | 743 | (M270M-345W,T2) | (H2-3) | |
| 2 | A | | 1 | ta | PL 22x400 | 19 | 739 | | | |
| 1 | C | | 1 | ba | PL 22x400 | 19 | 727 | (M270M-345W,T2) | (H2-3) | |
| 3 | B | | 2 | xlg | PL 18x192 | 0 | 900 | MIE | | |
| 3 | B | | 2 | xla | PL 18x192 | 0 | 900 | MIE | | |
| 3 | B | | 3 | xln | PL 18x192 | 0 | 900 | | | |
| 3 | L | | 1 | xlap | PL 6x75 | 0 | 273 | | | |

| OUT FOR APPROVAL | 4-14-03 |
|---|---|
| OUT FOR APPROVAL | |
| ISSUED TO SHOP | |
| FIELD & OFFICE | |

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. |
|---|---|---|---|---|---|---|

| NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm ($\frac{15}{16}$")ø | |

SURFACE PREP. & PAINT:

-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

| DESCRIPTION: GIRDER - 1G1 | DRAWN BY | DATE |
|---|---|---|
| JOB: US 5 OVER WHETSTONE BROOK BRIDGE NO. 7 BRATTLEBORO, VERMONT (WINDHAM COUNTY) CONTRACTOR: RENAUD BROTHERS | JTB | 03/20 |
| | CHKD BY | |
| | EPE | 04/07 |
| | APPROV BY | |
| | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 091 |

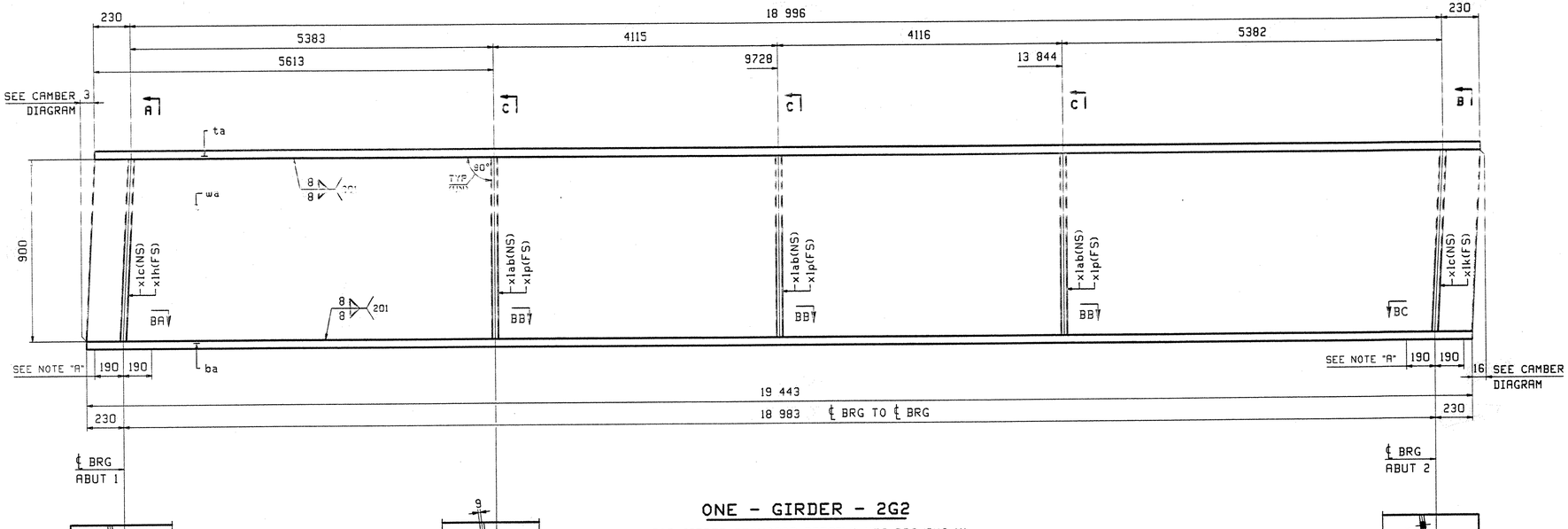
TENSOR 2348

**CASCO BAY STEEL STRUCTURES, INC.**
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

| JOB NO. | DRG. NO. |
|---|---|
| 194 | 1 |
| | REV. △ |

V.A.O.T.
RECEIVED
CK'D BY 4/17/03 OK'D BY 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

JTB Fri Mar 21 09:36:26 EST 2003 /users/jobs/2340/1.1 Rev0







SECTION BA

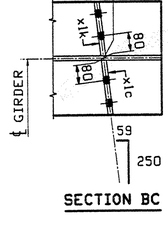



SECTION BB

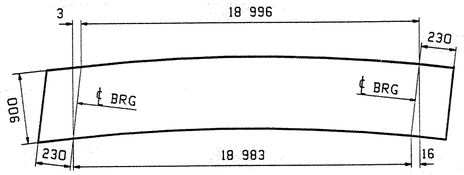
## ONE - GIRDER - 2G2

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAM SEE DRAWING C1.
FOR GENERAL NOTES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

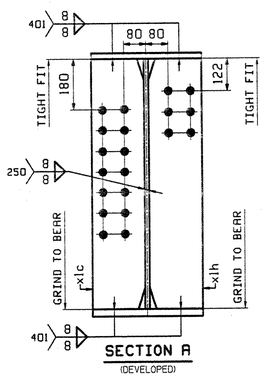
NOTE "A"
BOTTOM FLANGE SHALL BE TRULY AT A RIGHT ANGLE TO THE WEB FOR A LENGTH AS NOTED ON EITHER SIDE OF BEARING.

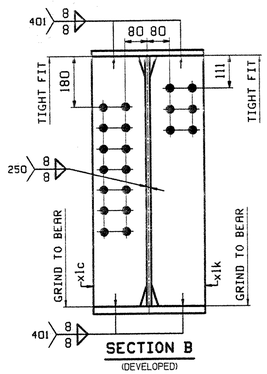


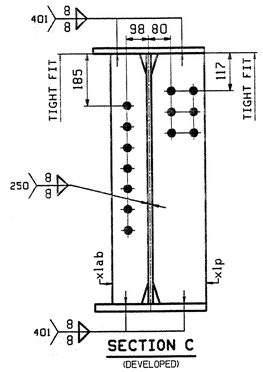

SECTION BC




CAMBER DIAGRAM
SEE DWG C1




| ABM INFO | | SHIP | BILL OF MATERIAL | | | | | JOB NO. | DRAWING NO. | REV. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 2 | |

| PAGE | LINE | MARK | QTY | MARK | MATERIAL | LENGTH m | LENGTH mm | REMARKS | WT | PROCUREMENT NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2G2 | 1 | | GIRDER | | | | 5258 kg (11591 lbs | |
| 1 | 3 | | 1 | wa | PL 16x868 | 19 | 459 | (M270M-248W12) | (H2-3) | |
| 2 | C | | 1 | ta | PL 22x400 | 19 | 456 | | | |
| 1 | E | | 1 | ba | PL 22x400 | 19 | 443 | (M270M-345W12) | (H2-3) | |
| 3 | B | | 2 | x1c | PL 18x192 | 0 | 900 | MIE | | |
| 3 | B | | 1 | x1h | PL 18x192 | 0 | 900 | MIE | | |
| 3 | C | | 3 | x1ab | PL 14x130 | 0 | 900 | | | |
| 3 | B | | 3 | x1p | PL 18x192 | 0 | 900 | | | |
| 3 | B | | 1 | x1k | PL 18x192 | 0 | 900 | MIE | | |

| OUT FOR APPROVAL | 4-14-03 |
|---|---|
| OUT FOR APPROVAL | |
| ISSUED TO SHOP | |
| FIELD & OFFICE | |

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|---|---|---|---|---|---|---|

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm ($\frac{15}{16}$")ø | |

SURFACE PREP. & PAINT:

-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

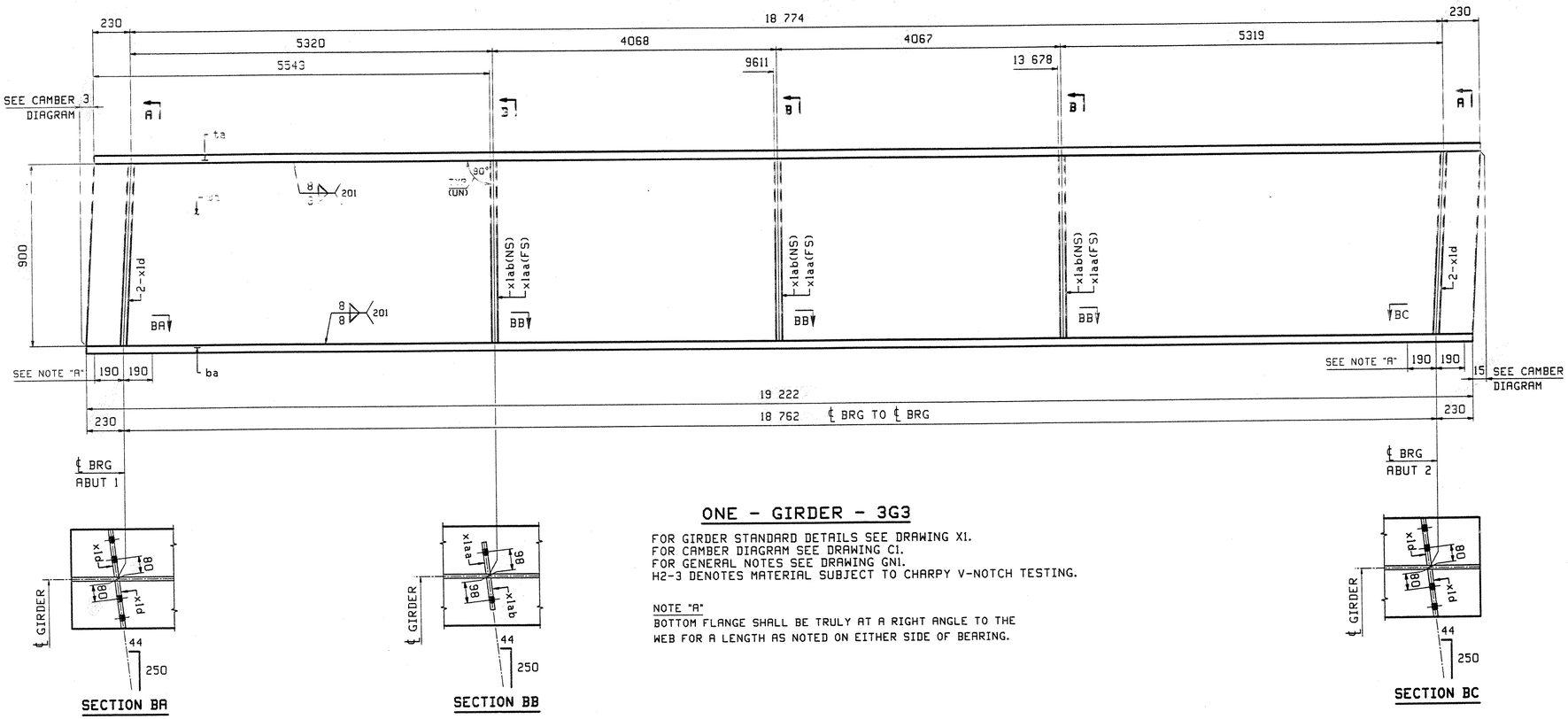
V.A.O.T.
RECEIVED
CK'D BY S.S.S. 4/16/03 CK'D BY JMF 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

| DESCRIPTION: GIRDER - 2G2 | DRAWN BY | DATE |
|---|---|---|
| JOB: US 5 OVER WHETSTONE BROOK | JTB | 03/20 |
| BRIDGE NO. 7 | CHKD BY | |
| BRATTLEBORO, VERMONT (WINDHAM COUNTY) | EPE | 04/07 |
| CONTRACTOR: RENAUD BROTHERS | APPROV BY | |
| TENSOR 2348 | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 092 |


**CASCO BAY STEEL STRUCTURES, INC.**
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179


| JOB NO. | DRG. NO. |
|---|---|
| 194 | 2 |
| | REV. △ |


JTB Tue Apr 15 10:57:46 EDT 2003 c:\users\john\2348\2 | Rev0







SECTION BA




SECTION BB

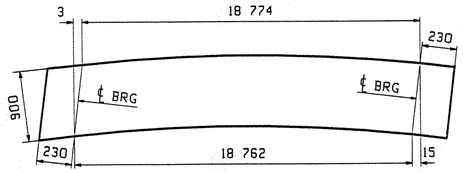
## ONE - GIRDER - 3G3

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAM SEE DRAWING C1.
FOR GENERAL NOTES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

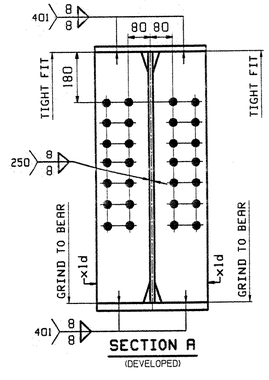
NOTE "A"
BOTTOM FLANGE SHALL BE TRULY AT A RIGHT ANGLE TO THE WEB FOR A LENGTH AS NOTED ON EITHER SIDE OF BEARING.



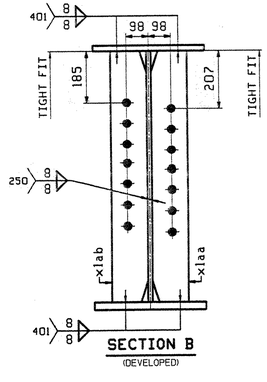

SECTION BC




CAMBER DIAGRAM
SEE DWG C1




SECTION A
(DEVELOPED)




SECTION B
(DEVELOPED)

| ABM INFO | | SHIP | BILL OF MATERIAL | | | | | JOB NO. | DRAWING NO. | REV. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 3 | |
| PAGE | LINE | MARK | QTY | MARK | MATERIAL | LENGTH m | LENGTH mm | REMARKS | WT | PROCUREMENT NOTES |
| | | 3G3 | 1 | | GIRDER | | | | 5165 kg 11386 lbs | |
| 1 | U | | 1 | wa | PL 16x366 | 19 | 237 | (M270M-345WT2) (H2-3) | | |
| 2 | E | | 1 | ta | PL 22x400 | 19 | 234 | | | |
| 1 | G | | 1 | ba | PL 22x400 | 19 | 222 | (M270M-345WT2) (H2-3) | | |
| 3 | B | | 4 | xld | PL 16x192 | 0 | 900 | | | |
| 3 | C | | 3 | xlab | PL 14x130 | 0 | 900 | | | |
| 3 | C | | 3 | xlaa | PL 14x130 | 0 | 900 | | | |

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | OUT FOR APPROVAL | 4/14/03 | | | | | | | | | |
| | OUT FOR APPROVAL | | | | | | | | | | |
| | ISSUED TO SHOP | | | | | | | | | | |
| | FIELD & OFFICE | | | | | | | | | | |

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm ($\frac{15}{16}$")ø | |

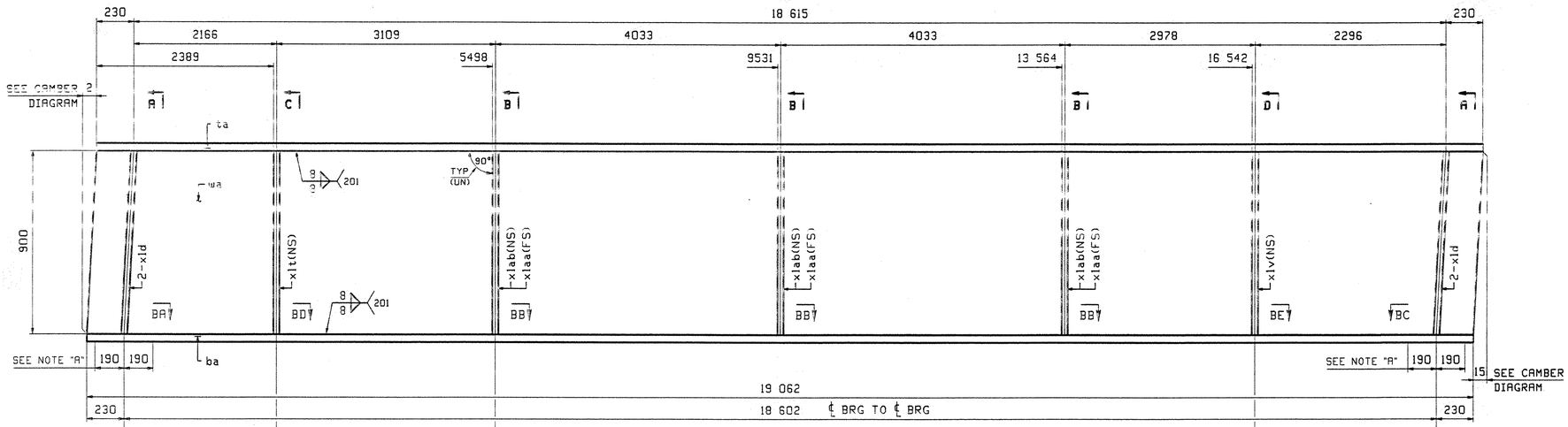
SURFACE PREP. & PAINT:

-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

| DESCRIPTION: GIRDER - 3G3 | DRAWN BY | DATE |
|---|---|---|
| JOB: US 5 OVER WHETSTONE BROOK | JTB | 03/20 |
| BRIDGE NO. 7 | CHKD BY | |
| BRATTLEBORO, VERMONT (WINDHAM COUNTY) | EPE | 04/07 |
| CONTRACTOR: RENAUD BROTHERS | APPROV BY | |
| TENSOR 2348 | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 093 |
| CASCO BAY STEEL STRUCTURES, INC. | JOB NO. | DRG. NO. |
| 75 SPRING HILL ROAD SACO, MAINE 04072 | 194 | 3 |
| PHONE (207) 282-7360 FAX. (207) 282-1179 | | REV. △ |

V.A.O.T.
RECEIVED
CK'D BY S.S.S. 4/14/03 CK'D BY JMP 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

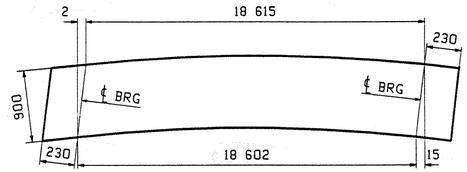
J19 Tue Apr 8 11:58:26 EDT 2003 /users/jobs/2348/3.dwg




## ONE - GIRDER - 4G4

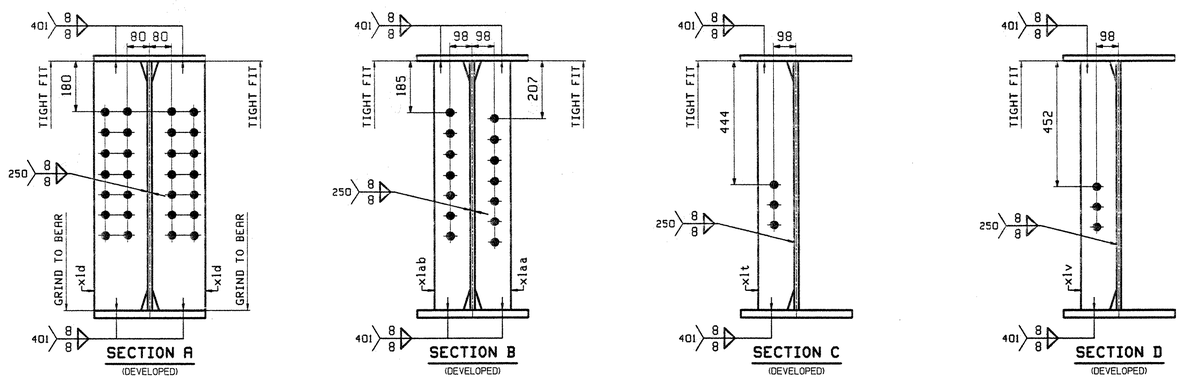
FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAM SEE DRAWING C1.
FOR GENERAL NOTES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

NOTE "A"
BOTTOM FLANGE SHALL BE TRULY AT A RIGHT ANGLE TO THE WEB FOR A LENGTH AS NOTED ON EITHER SIDE OF BEARING.




CAMBER DIAGRAM
SEE DWG C1

| ABM INFO | | SHIP | BILL OF MATERIAL | | | | | JOB NO. | DRAWING NO. | REV. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 4 | |
| PAGE | LINE | MARK | QTY | MARK | MATERIAL | LENGTH m | LENGTH mm | REMARKS | WT | PROCUREMENT NOTES |
| | | 4G4 | 1 | | GIRDER | | | | 5150 kg 11353 lbs | |
| 1 | W | | 1 | wa | PL 18x966 | 18 | 077 | (M270M-345W12) | (H2-3) | |
| 2 | G | | 1 | ta | PL 22x400 | 18 | 075 | | | |
| 1 | J | | 1 | ba | PL 22x400 | 19 | 062 | (M270M-345W12) | (H2-3) | |
| 3 | B | | 4 | x1d | PL 18x192 | 0 | 900 | MIE | | |
| 3 | C | | 1 | x1t | PL 14x130 | 0 | 900 | | | |
| 3 | C | | 3 | x1ab | PL 14x130 | 0 | 900 | | | |
| 3 | C | | 3 | x1aa | PL 14x130 | 0 | 900 | | | |
| 3 | C | | 1 | x1v | PL 14x130 | 0 | 900 | | | |




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RECEIVED
CK'D BY S.S.S. 4/18/03 OK'D BY JMP 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. |
|---|---|---|---|---|---|---|
| | OUT FOR APPROVAL | 4-14-03 | | | | |
| | OUT FOR APPROVAL | | | | | |
| | ISSUED TO SHOP | | | | | |
| | FIELD & OFFICE | | | | | |

| NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|
| | | | | |

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm ($\frac{15}{16}$")ø | |

SURFACE PREP. & PAINT:

-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

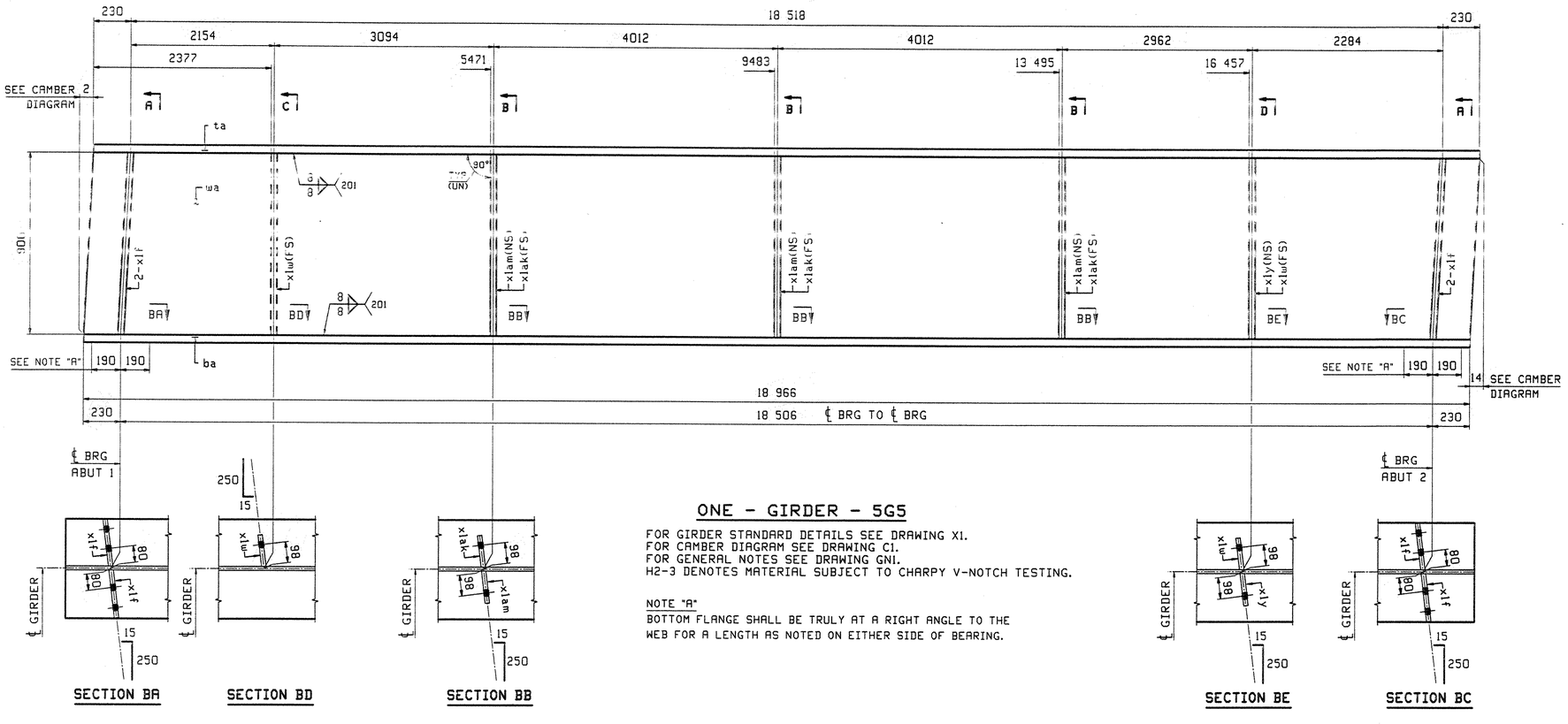
| DESCRIPTION: GIRDER - 4G4 | DRAWN BY | DATE |
|---|---|---|
| JOB: US 5 OVER WHETSTONE BROOK | JTB | 03/20 |
| BRIDGE NO. 7 | CHKD BY | |
| BRATTLEBORO, VERMONT (WINDHAM COUNTY) | EPE | 04/07 |
| CONTRACTOR: RENAUD BROTHERS | APPROV BY | |
| TENSOR 2348 | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 094 |

**CASCO BAY STEEL STRUCTURES, INC.**
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

| JOB NO. | DRG. NO. |
|---|---|
| 194 | 4 |
| | REV. △ |

JTB Fri Mar 21 08:58:11 EST 2003 /users/jobs/2348/4.1 RevD

| ABM INFO | | SHIP | BILL OF MATERIAL | | | | | JOB NO. | DRAWING NO. | REV. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 5 | |
| PAGE | LINE | MARK | QTY | MARK | MATERIAL | LENGTH m | LENGTH mm | REMARKS | WT | PROCUREMENT NOTES |
| | | 5G5 | 1 | | GIRDER | | | | 5137 kg 11325 lbs | |
| 1 | Y | | 1 | wa | PL 16x366 | 18 | 980 | (M270M-345WT2) | (H2-3) | |
| 2 | J | | 1 | ta | PL 22x400 | 18 | 978 | | | |
| 1 | L | | 1 | ba | PL 22x400 | 18 | 966 | (M270M-345WT2) | (H2-3) | |
| 3 | B | | 4 | xif | PL 18x192 | 0 | 900 | MIE | | |
| 3 | C | | 2 | xlw | PL 14x130 | 0 | 900 | | | |
| 3 | C | | 2 | xlak | PL 14x130 | 0 | 900 | | | |
| 3 | C | | 1 | xly | PL 14x130 | 0 | 900 | | | |




SECTION BA

SECTION BD

SECTION BB

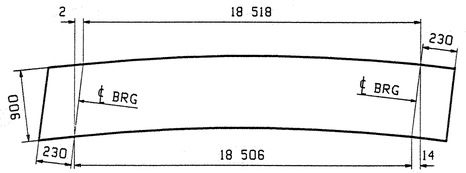
SECTION BE

SECTION BC

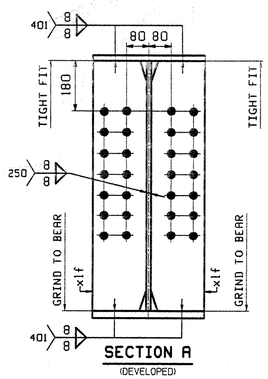
## ONE - GIRDER - 5G5

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAM SEE DRAWING C1.
FOR GENERAL NOTES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

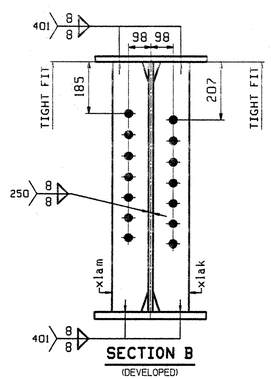
NOTE "A"
BOTTOM FLANGE SHALL BE TRULY AT A RIGHT ANGLE TO THE WEB FOR A LENGTH AS NOTED ON EITHER SIDE OF BEARING.



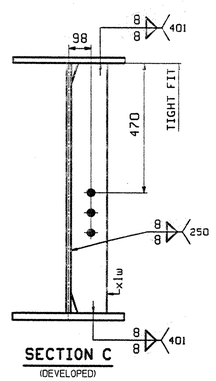

CAMBER DIAGRAM
SEE DWG C1



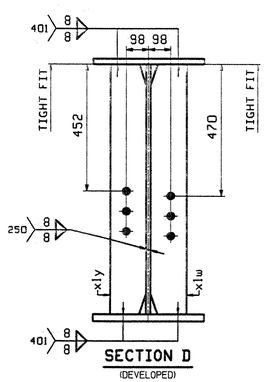

SECTION A
(DEVELOPED)




SECTION B
(DEVELOPED)




SECTION C
(DEVELOPED)




SECTION D
(DEVELOPED)

V.A.O.T.
RECEIVED
CK'D BY S.S.S. 4/18/03 OK'D BY 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| OUT FOR APPROVAL | 4/14/03 | | | | | | | | | |
| OUT FOR APPROVAL | | | | | | | | | | |
| ISSUED TO SHOP | | | | | | | | | | |
| FIELD & OFFICE | | | | | | | | | | |
| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm ($\frac{15}{16}$")ø | |

SURFACE PREP. & PAINT:

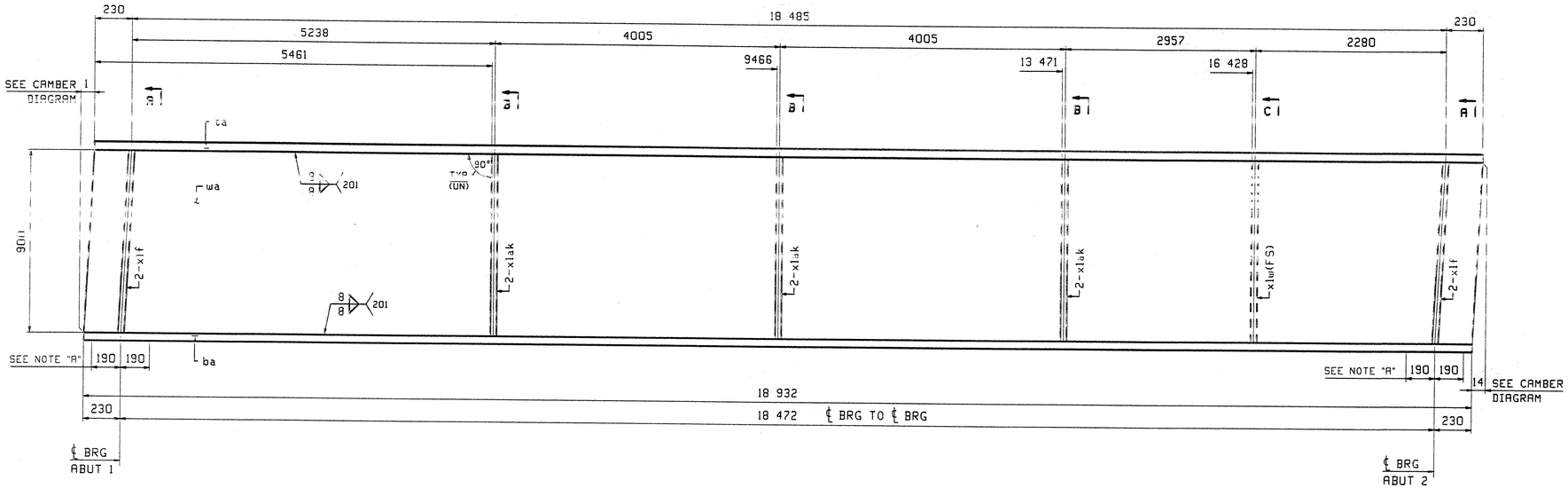
-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

| DESCRIPTION: GIRDER - 5G5 | DRAWN BY | DATE |
|---|---|---|
| JOB: US 5 OVER WHETSTONE BROOK | JTB | 03/20 |
| BRIDGE NO. 7 | CHKD BY | |
| BRATTLEBORO, VERMONT (WINDHAM COUNTY) | EPE | 04/07 |
| CONTRACTOR: RENAUD BROTHERS | APPROV BY | |
| | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 095 |

**CASCO BAY STEEL STRUCTURES, INC.**

| JOB NO. | DRG. NO. |
|---|---|
| 194 | 5 |
| | REV. △ |

75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

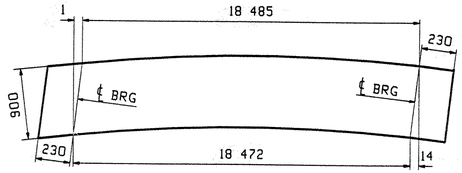



| ABM INFO | | SHIP | BILL OF MATERIAL | | | | | JOB NO. | DRAWING NO. | REV. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 6 | |
| PAGE | LINE | MARK | QTY | MARK | MATERIAL | LENGTH m | LENGTH mm | REMARKS | WT | PROCUREMENT NOTES |
| | | 6G6 | 1 | | GIRDER | | | | 5103 kg 11250 lbs | |
| 1 | Y | | 1 | wa | PL 16x966 | 18 | 946 | (M270M-345WT2) | (H2-3) | |
| 2 | J | | 1 | ta | PL 22x400 | 18 | 945 | | | |
| 1 | L | | 1 | ba | PL 22x400 | 18 | 932 | (M270M-345WT2) | (H2-3) | |
| 3 | B | | 4 | x1f | PL 18x192 | 01 | 900 | MIE | | |
| 3 | C | | 6 | x1ak | PL 14x130 | 01 | 900 | | | |
| 3 | C | | 1 | x1w | PL 14x130 | 01 | 900 | | | |

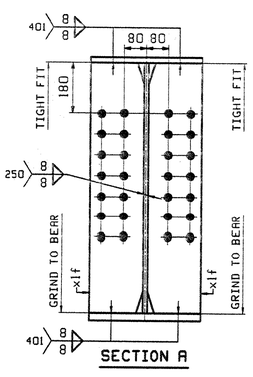
## ONE - GIRDER - 6G6

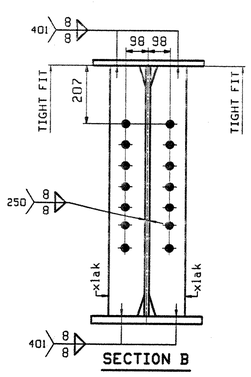
FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAM SEE DRAWING C1.
FOR GENERAL NOTES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

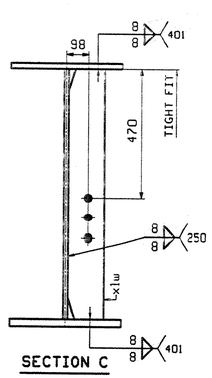
NOTE "A"
BOTTOM FLANGE SHALL BE TRULY AT A RIGHT ANGLE TO THE WEB FOR A LENGTH AS NOTED ON EITHER SIDE OF BEARING.




CAMBER DIAGRAM
SEE DWG C1




V.A.O.T.
RECEIVED
CK'D BY S.S.S. 4/10/03 OK'D BY 4/12/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OUT FOR APPROVAL | 4/4/03 | | | | | | | | | | |
| OUT FOR APPROVAL | | | | | | | | | | | |
| ISSUED TO SHOP | | | | | | | | | | | |
| FIELD & OFFICE | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm ($\frac{15}{16}$")Ø | |

SURFACE PREP. & PAINT:

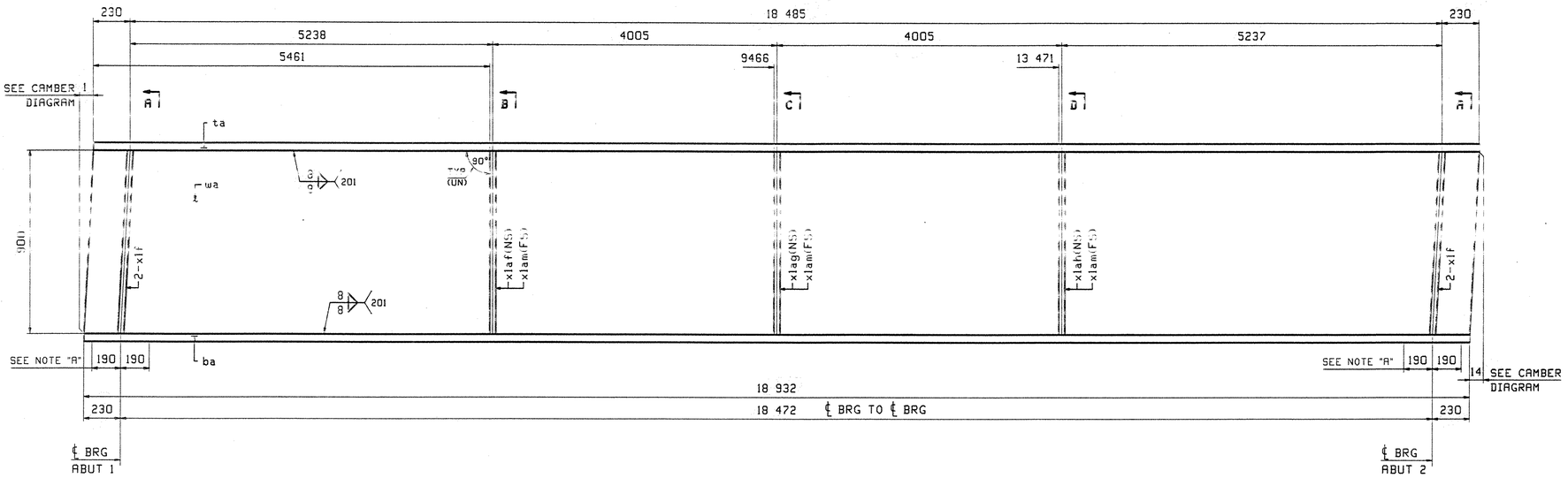
-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

| DESCRIPTION: GIRDER - 6G6 | DRAWN BY | DATE |
|---|---|---|
| JOB: US 5 OVER WHETSTONE BROOK | JTB | 03/20 |
| BRIDGE NO. 7 | CHK'D BY | |
| BRATTLEBORO, VERMONT (WINDHAM COUNTY) | EPE | 04/07 |
| CONTRACTOR: RENAUD BROTHERS | APPROV BY | |
| TENSOR 2348 | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 096 |

**CASCO BAY STEEL STRUCTURES, INC.**
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

| JOB NO. | DRG. NO. |
|---|---|
| 194 | 6 |
| | REV. △ |

JTB Fri Mar 21 10:00:08 EST 2003 c:\data\jobs\2348\6 | Rev:0

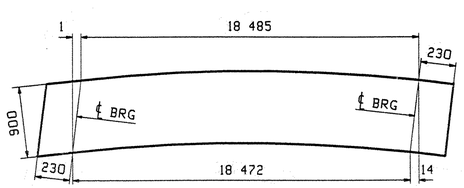



| ABM INFO | | SHIP | BILL OF MATERIAL | | | | | JOB NO. | DRAWING NO. | | REV. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 7 | | |
| PAGE | LINE | MARK | QTY | MARK | MATERIAL | LENGTH m | LENGTH mm | REMARKS | WT | PROCUREMENT NOTES | |
| | | 7G7 | 1 | | GIRDER | | | | 5099 kg 11232 lbs | | |
| 1 | N | | 1 | wa | PL 16x968 | 18 | 946 | (M270M-345WT2) | (H2-3) | | |
| 2 | J | | 1 | ta | PL 22x400 | 18 | 345 | | | | |
| 1 | L | | 1 | ba | PL 22x400 | 18 | 332 | (M270M-345WT2) | (H2-3) | | |
| 3 | B | | 1 | xlaf | PL 18x198 | 01 | 900 | | | | |
| 3 | C | | 1 | xlag | PL 14x130 | 01 | 900 | | | | |
| 3 | C | | 1 | xlah | PL 14x130 | 01 | 900 | | | | |

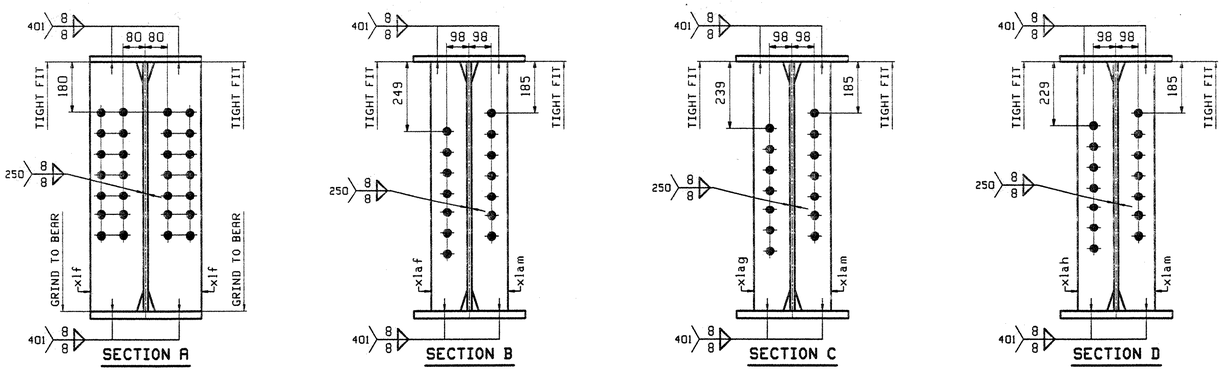
## ONE - GIRDER - 7G7

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAM SEE DRAWING C1.
FOR GENERAL NOTES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

NOTE "A"
BOTTOM FLANGE SHALL BE TRULY AT A RIGHT ANGLE TO THE WEB FOR A LENGTH AS NOTED ON EITHER SIDE OF BEARING.




CAMBER DIAGRAM
SEE DWG C1




| OUT FOR APPROVAL | 4/14/03 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| OUT FOR APPROVAL | | | | | | | | | |
| ISSUED TO SHOP | | | | | | | | | |
| FIELD & OFFICE | | | | | | | | | |

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|---|---|---|---|---|---|---|

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm ($\frac{15}{16}$")ø | |

SURFACE PREP. & PAINT:

-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

V.A.O.T.
RECEIVED
CK'D BY S.S.S. 4/16/03 OK'D BY JMP 4/16/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

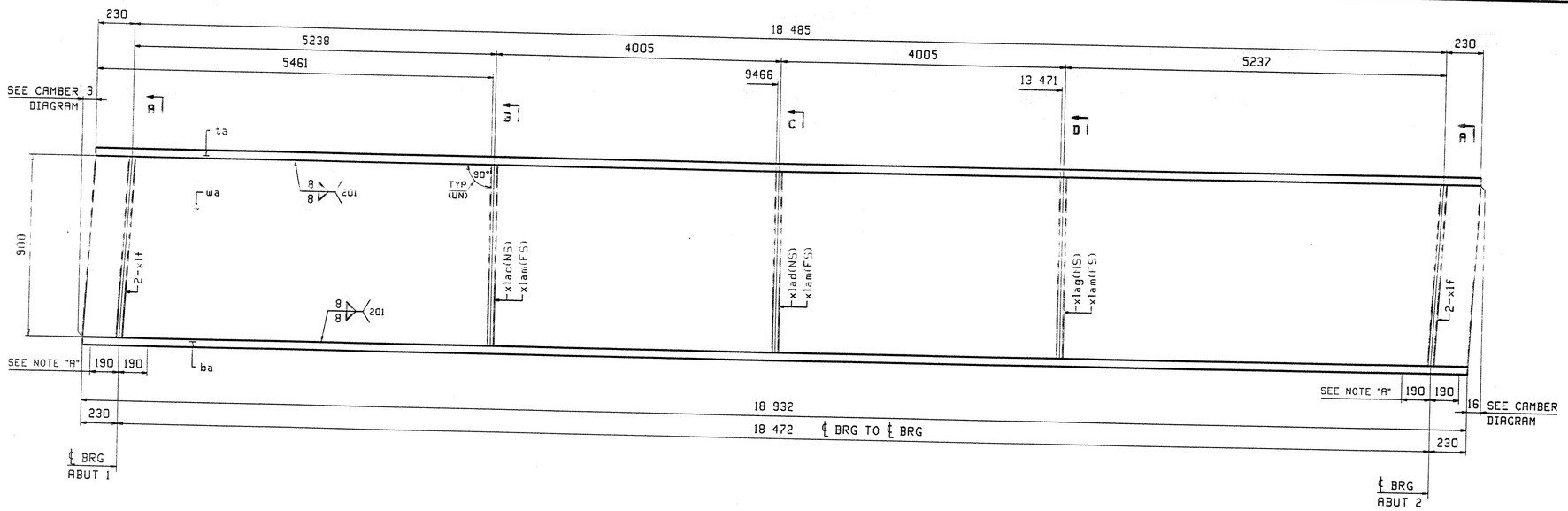
| DESCRIPTION: GIRDER - 7G7 | DRAWN BY | DATE |
|---|---|---|
| JOB: US 5 OVER WHETSTONE BROOK | JTB | 03/20 |
| BRIDGE NO. 7 | CHKD BY | |
| BRATTLEBORO, VERMONT (WINDHAM COUNTY) | EPE | 04/07 |
| CONTRACTOR: RENAUD BROTHERS | APPROV BY | |
| TENSOR 2348 | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 097 |

**CASCO BAY STEEL STRUCTURES, INC.**

| JOB NO. | DRG. NO. |
|---|---|
| 194 | 7 |
| | REV. △ |

75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

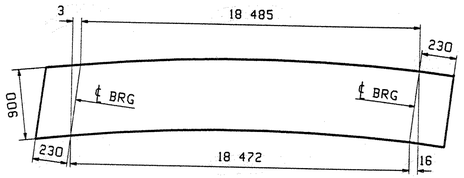
JTB Fri Mar 21 10:01:02 EST 2003 /users/jtb/2187/ - Rev0




## ONE - GIRDER - 8G8

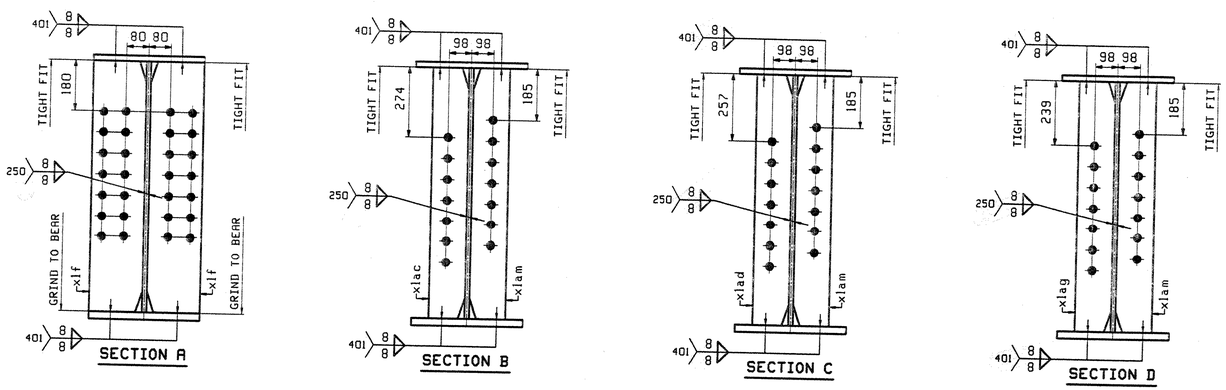
FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAM SEE DRAWING C1.
FOR GENERAL NOTES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

NOTE "A"
BOTTOM FLANGE SHALL BE TRULY AT A RIGHT ANGLE TO THE WEB FOR A LENGTH AS NOTED ON EITHER SIDE OF BEARING.




CAMBER DIAGRAM
SEE DWG C1

| ABM INFO | | SHIP | BILL OF MATERIAL | | | | | JOB NO. | DRAWING NO. | | REV. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 8 | | |
| PAGE | LINE | MARK | QTY | MARK | MATERIAL | LENGTH m | LENGTH mm | REMARKS | WT | PROCUREMENT NOTES | |
| | | 8G8 | 1 | | GIRDER | | | | 5090 kg (11221 lbs | | |
| 1 | Y | | 1 | wa | PL 16x866 | 18 | 948 | (M270M-345WT2) | (H2-3) | | |
| 2 | J | | 1 | ta | PL 22x400 | 18 | 345 | | | | |
| 1 | L | | 1 | ba | PL 22x400 | 18 | 932 | (M270M-345WT2) | (H2-3) | | |
| 3 | B | | 4 | xlf | PL 18x192 | 0 | 900 | | | | |
| 3 | C | | 1 | xlac | PL 14x130 | 0 | 900 | | | | |
| 3 | C | | 3 | xlam | PL 14x130 | 0 | 900 | | | | |
| 3 | C | | 1 | xlad | PL 14x130 | 0 | 900 | | | | |
| 3 | C | | 1 | xlag | PL 14x130 | 0 | 900 | | | | |




V.A.O.T.
RECEIVED
CK'D BY S.S.S 4/18/03 OK'D BY 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. |
|---|---|---|---|---|---|---|
| | OUT FOR APPROVAL 4-14-03 | | | | | |
| | OUT FOR APPROVAL | | | | | |
| | ISSUED TO SHOP | | | | | |
| | FIELD & OFFICE | | | | | |

| NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|
| | | | | |

MATERIAL: M270M-345W
ELECTRODES:
HOLES: 24mm (15/16")ø
SHOP BOLTS:

SURFACE PREP. & PAINT:
-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

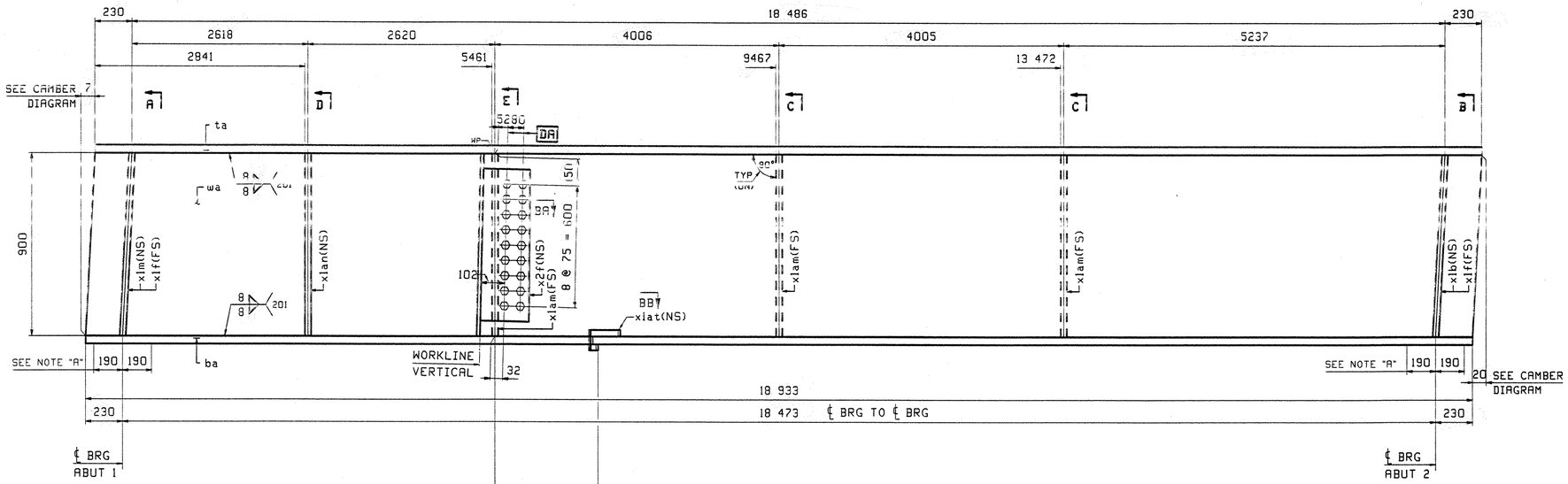
DESCRIPTION: GIRDER - 8G8
JOB: US 5 OVER WHETSTONE BROOK
BRIDGE NO. 7
BRATTLEBORO, VERMONT (WINDHAM COUNTY)
CONTRACTOR: RENAUD BROTHERS
TENSOR 2348
PROJ NO. BHF 2000(17)
CUSTOMER: VERMONT AGENCY OF TRANSPORTATION

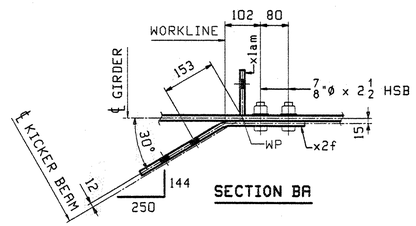
| | DRAWN BY | DATE |
|---|---|---|
| | JTB | 03/20 |
| | CHKD BY | |
| | EPE | 04/07 |
| | APPROV BY | |
| | SUPERVISOR | W. J. GATTI |
| | Q.A. | |
| | | 078 |

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

| JOB NO. | DRG. NO. |
|---|---|
| 194 | 8 |
| | REV. △ |

JTB Fri Mar 21 10:03:56 EST 2003 /users/jtb/2348/8 : Rev0

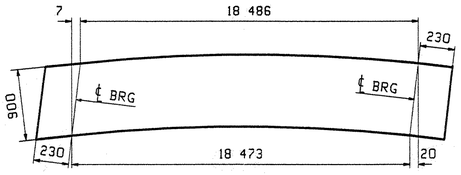



## ONE - GIRDER - 9G9

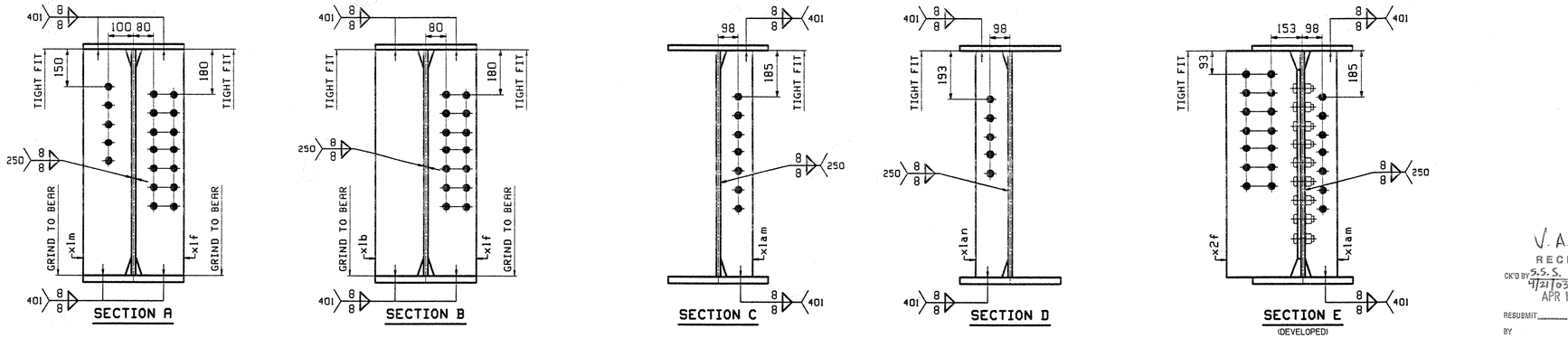
FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAM SEE DRAWING C1.
FOR GENERAL NOTES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

NOTE "A"
BOTTOM FLANGE SHALL BE TRULY AT A RIGHT ANGLE TO THE WEB FOR A LENGTH AS NOTED ON EITHER SIDE OF BEARING.




CAMBER DIAGRAM
SEE DWG C1

| ABM INFO | | SHIP | BILL OF MATERIAL | | | | | JOB NO. | DRAWING NO. | REV. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 9 | |
| PAGE | LINE | MARK | QTY | MARK | MATERIAL | LENGTH m | LENGTH mm | REMARKS | WT | PROCUREMENT NOTES |
| | | 9G9 | 1 | | GIRDER | | | | 5124 kg 11296 lbs | |
| 1 | Y | | 1 | wa | PL 16x966 | 18 | 953 | (M270M-345W12) | (H2-3) | |
| 2 | J | | 1 | ta | PL 22x400 | 18 | 946 | | | |
| 1 | L | | 1 | ba | PL 22x400 | 18 | 933 | (M270M-345W12) | (H2-3) | |
| 3 | B | | 1 | x1m | PL 18x192 | 0 | 900 | MIE | | |
| 3 | B | | 2 | x1f | PL 18x192 | 0 | 900 | MIE | | |
| 3 | C | | 1 | x1an | PL 14x130 | 0 | 900 | | | |
| 3 | H | | 1 | x2f | PL 14x804 | 0 | 509 | BENT | | |
| 3 | C | | 3 | x1am | PL 14x130 | 0 | 900 | | | |
| 3 | B | | 1 | x1b | PL 18x192 | 0 | 900 | MIE | | |
| 3 | L | | 1 | x1at | PL 6x75 | 0 | 273 | | | |
| 5 | B | | 18 | | 7/8 ø HSB | 0 | 2 1/2 | (A325-3) | | |
| 5 | F | | 18 | | 7/8 ø HSW | | | (F436W) | | |




V.A.O.T.
RECEIVED
CK'D BY S.S.S. 4/21/03 OK'D BY JMP 4/21/03
APR 15 2003
RESUBMIT____ APPROVED X
BY DATE

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| OUT FOR APPROVAL | 4-14-03 | | | | | | | | | |
| OUT FOR APPROVAL | | | | | | | | | | |
| ISSUED TO SHOP | | | | | | | | | | |
| FIELD & OFFICE | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm (15/16")ø | |

SURFACE PREP. & PAINT:

-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

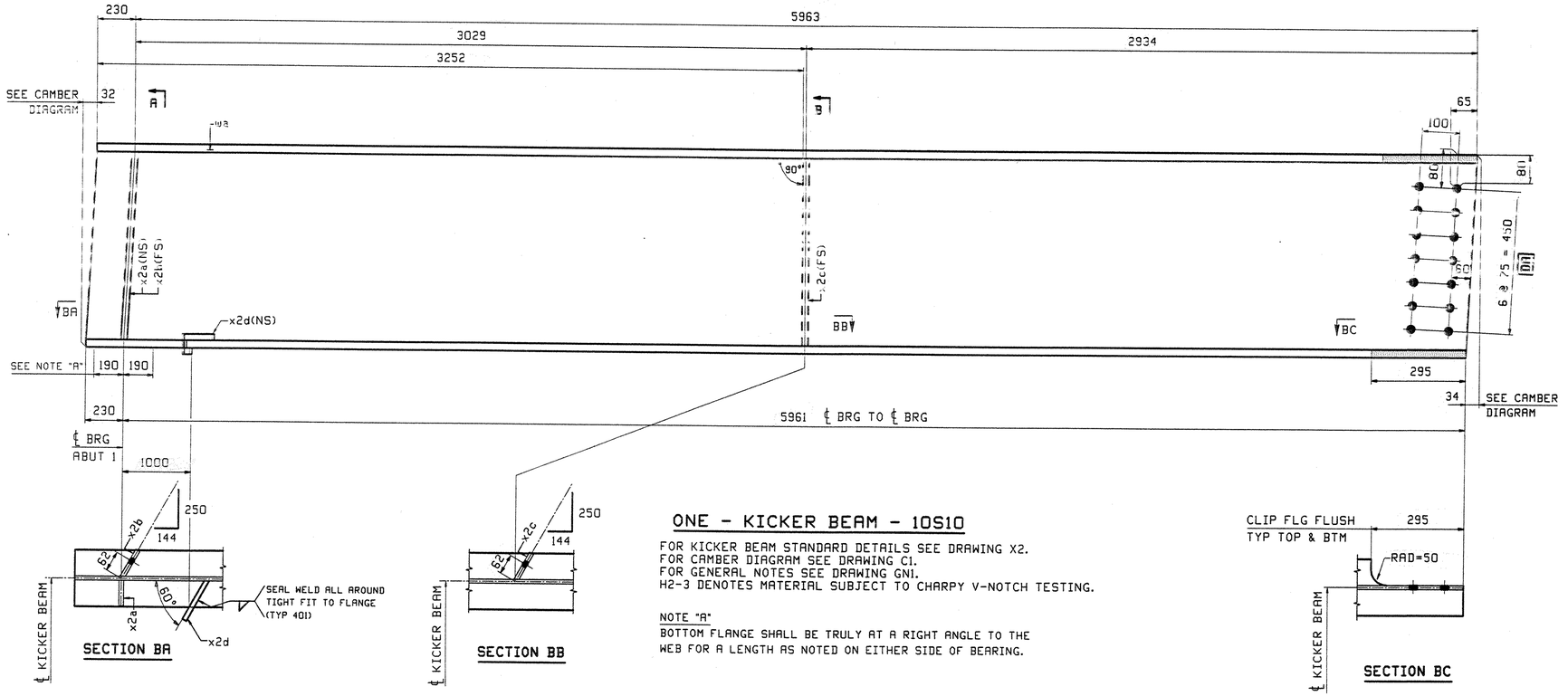
| DESCRIPTION: GIRDER - 8G8 | DRAWN BY | DATE |
|---|---|---|
| JOB: US 5 OVER WHETSTONE BROOK | JTB | 03/20 |
| BRIDGE NO. 7 | CHKD BY | |
| BRATTLEBORO, VERMONT (WINDHAM COUNTY) | EPE | 04/07 |
| CONTRACTOR: RENAUD BROTHERS | APPROV BY | |
| PROJ NO. BHF 2000(17) | SUPERVISOR | W. J. GATTI |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | Q.A. | |
| | | 099 |

TENSOR 2348

**CASCO BAY STEEL STRUCTURES, INC.**
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

| JOB NO. | DRG. NO. |
|---|---|
| 194 | 9 |
| | REV. △ |

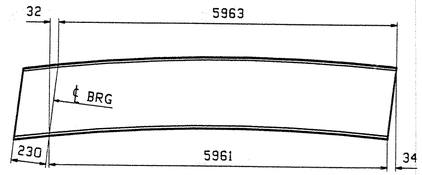
JTB Tue Apr 8 13:50:50 EDT 2003 /users/jobs/2348/9 - Rev0



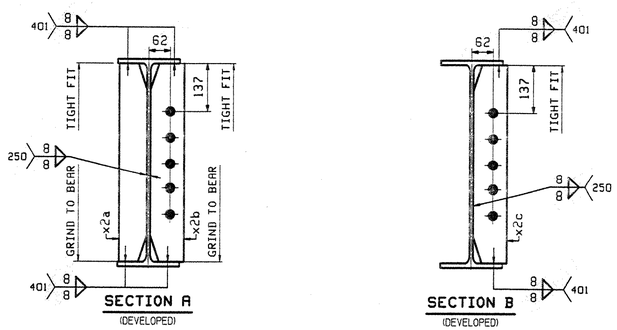

## ONE - KICKER BEAM - 10S10

FOR KICKER BEAM STANDARD DETAILS SEE DRAWING X2.
FOR CAMBER DIAGRAM SEE DRAWING C1.
FOR GENERAL NOTES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

NOTE "A"
BOTTOM FLANGE SHALL BE TRULY AT A RIGHT ANGLE TO THE WEB FOR A LENGTH AS NOTED ON EITHER SIDE OF BEARING.




CAMBER DIAGRAM
SEE DWG C1







| ABM INFO PAGE | ABM INFO LINE | SHIP MARK | QTY | MARK | MATERIAL | LENGTH m | LENGTH mm | REMARKS | WT | PROCUREMENT NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 10S10 | 1 | | STRINGER | | | | 532 kg 1172 lbs | |
| 1 | A | | 1 | wa | W 610x82 | 6 | 225 | (M270M-345WT2) | (H2-3) | |
| 3 | E | | 1 | x2a | PL 18x80 | 0 | 573 | MIE | | |
| 3 | D | | 1 | x2b | PL 18x100 | 0 | 577 | MIE | | |
| 3 | F | | 1 | x2c | PL 14x100 | 0 | 577 | | | |
| 3 | M | | 1 | x2d | PL 6x65 | 0 | 148 | | | |

BILL OF MATERIAL — JOB NO. — DRAWING NO. 10 — REV.

| | | | | | | |
|---|---|---|---|---|---|---|
| OUT FOR APPROVAL | 4-14-03 | | | | | |
| OUT FOR APPROVAL | | | | | | |
| ISSUED TO SHOP | | | | | | |
| FIELD & OFFICE | | | | | | |

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. |
|---|---|---|---|---|---|---|

| NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm ($\frac{15}{16}$")Ø | |

SURFACE PREP. & PAINT:

-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

| DESCRIPTION: KICKER BEAM - 10S10 | DRAWN BY | DATE |
|---|---|---|
| JOB: US 5 OVER WHETSTONE BROOK<br>BRIDGE NO. 7<br>BRATTLEBORO, VERMONT (WINDHAM COUNTY)<br>CONTRACTOR: RENAUD BROTHERS | JTB | 03/20 |
| | CHKD BY | |
| | EPE | 04/07 |
| | APPROV BY | |
| | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 100 |

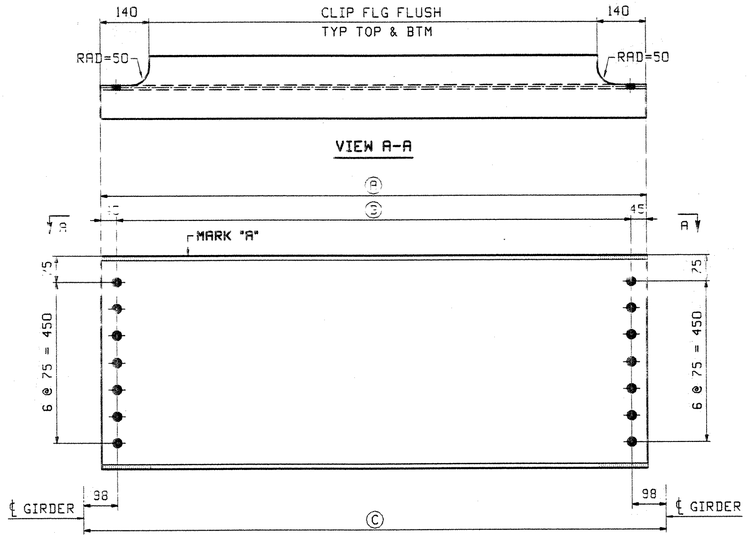
**CASCO BAY STEEL STRUCTURES, INC.**
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

| JOB NO. | DRG. NO. |
|---|---|
| 194 | 10 |
| | REV. △ |

TENSOR 2348

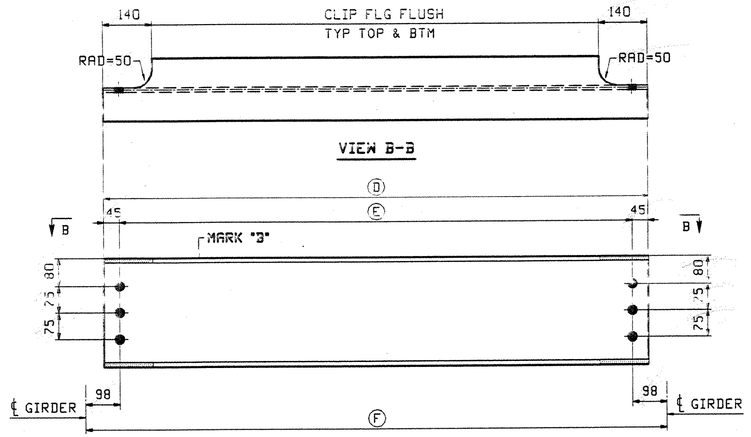
V.A.O.T. RECEIVED
CK'D BY S.S.S. 4/21/03 OK'D BY JMP 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

JTB Tue Apr 8 13:26:17 EDT 2003 /users/jobs/2348/10 | 8x10




## INTERMEDIATE DIAPHRAGM - MARK "A"

| MARK "A" | QTY | Ⓐ | Ⓑ | Ⓒ |
|---|---|---|---|---|
| **11D1** | 9 | 2964 | 2874 | 3070 |
| **11D2** | 4 | 2302 | 2212 | 2408 |
| **11D3** | 4 | 2065 | 1975 | 2171 |
| **11D4** | 4 | 1828 | 1738 | 1934 |

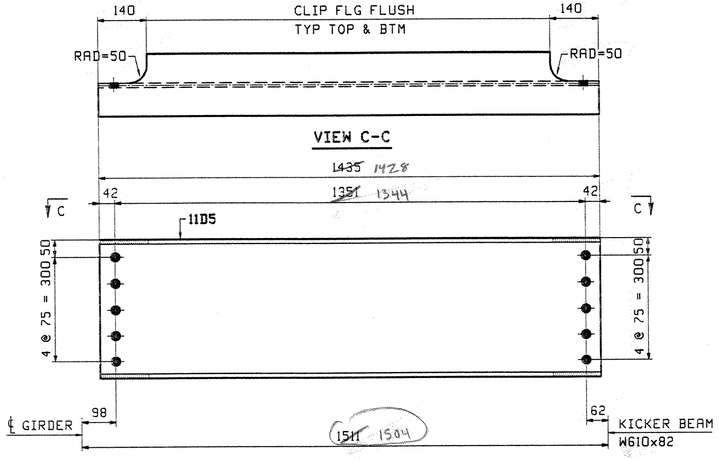



## WATERLINE DIAPHRAGM - MARK "B"

| MARK "B" | QTY | Ⓓ | Ⓔ | Ⓕ |
|---|---|---|---|---|
| **11D6** | 1 | 2485 | 2395 | 2591 |
| **11D7** | 1 | 1653 | 1563 | 1759 |

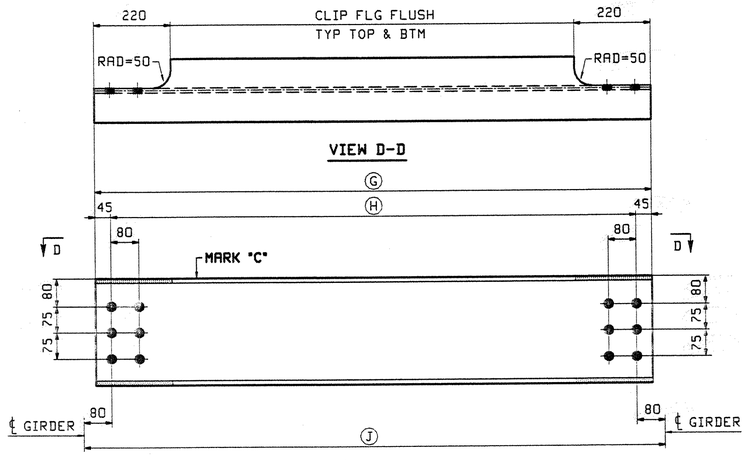
| ABM INFO | | SHIP | BILL OF MATERIAL | | | JOB NO. | DRAWING NO. | REV. |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | 11 | |

| PAGE | LINE | MARK | QTY | MARK | MATERIAL | LENGTH m | LENGTH mm | REMARKS | WT | PROCUREMENT NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | INTERMEDIATE DIAPHRAGMS | | | | | |
| 4 | C | 11D1 | 9 | | W 610x82 | 2 | 964 | | 243 kg 535 lbs | |
| 4 | D | 11D2 | 4 | | W 610x82 | 2 | 302 | | 189 kg 416 lbs | |
| 4 | E | 11D3 | 4 | | W 310x82 | 2 | 065 | | 169 kg 372 lbs | |
| 4 | F | 11D4 | 4 | | W 310x82 | 1 | 828 | | 150 kg 330 lbs | |
| | | | | | INT DIAPHRAGM | | | | | |
| 4 | L | 11D5 | 1 | | W 410x39 | 1 | 435 | 1428 | 56 kg 123 lbs | |
| | | | | | WATERLINE DIAPHRAGMS | | | | | |
| 4 | S | 11D6 | 1 | | W 310x67 | 2 | 485 | | 166 kg 365 lbs | |
| 4 | S | 11D7 | 1 | | W 310x67 | 1 | 653 | | 111 kg 244 lbs | |
| | | | | | TELEPHONE DIAPHRAGMS | | | | | |
| 4 | T | 11D8 | 1 | | W 310x67 | 2 | 648 | | 177 kg 390 lbs | |
| 4 | T | 11D9 | 1 | | W 310x67 | 2 | 338 | | 157 kg 346 lbs | |
| 4 | T | 11D10 | 1 | | W 310x67 | 2 | 101 | | 141 kg 310 lbs | |
| 4 | T | 11D11 | 1 | | W 310x67 | 1 | 864 | | 125 kg 275 lbs | |
| 4 | T | 11D12 | 1 | | W 310x67 | 1 | 554 | | 104 kg 229 lbs | |




## 1 - INT DIAPHRAGM - 11D5

AT KICKER BEAM




## TELEPHONE DIAPHRAGM - MARK "C"

| MARK "C" | QTY | Ⓖ | Ⓗ | Ⓙ |
|---|---|---|---|---|
| **11D8** | 1 | 2648 | 2558 | 2718 |
| **11D9** | 1 | 2338 | 2248 | 2408 |
| **11D10** | 1 | 2101 | 2011 | 2171 |
| **11D11** | 1 | 1864 | 1774 | 1934 |
| **11D12** | 1 | 1554 | 1464 | 1624 |

V.A.O.T.
RECEIVED
CK'D BY JSS 4/21/03 OK'D BY JMP 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED AS NOTED
BY DATE

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. |
|---|---|---|---|---|---|---|
| | OUT FOR APPROVAL | 4.14.03 | | | | |
| | OUT FOR APPROVAL | 4.21.03 | | | | |
| | ISSUED TO SHOP | | | | | |
| | FIELD & OFFICE | | | | | |

| NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|
| | | | | |

MATERIAL: M270M-345W
ELECTRODES:
HOLES: 24mm ($\frac{15}{16}$")Ø
SHOP BOLTS:

SURFACE PREP. & PAINT:

-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

DESCRIPTION: INTERMEDIATE DIAPHRAGM

JOB: US 5 OVER WHETSTONE BROOK
BRIDGE NO. 7
BRATTLEBORO, VERMONT (WINDHAM COUNTY)
CONTRACTOR: RENAUD BROTHERS

TENSOR 2348

PROJ NO. BHF 2000(17)

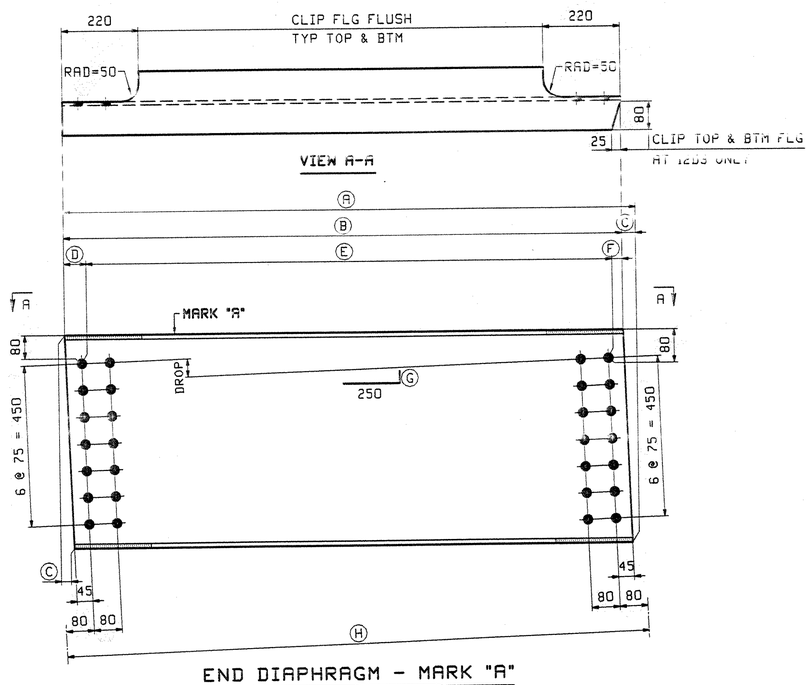
CUSTOMER: VERMONT AGENCY OF TRANSPORTATION

| DRAWN BY | DATE |
|---|---|
| JTB | 03/21 |
| CHKD BY | |
| EPE | 04/07 |
| APPROV BY | |
| SUPERVISOR | W. J. GATTI |
| Q.A. | |
| | 10/ |

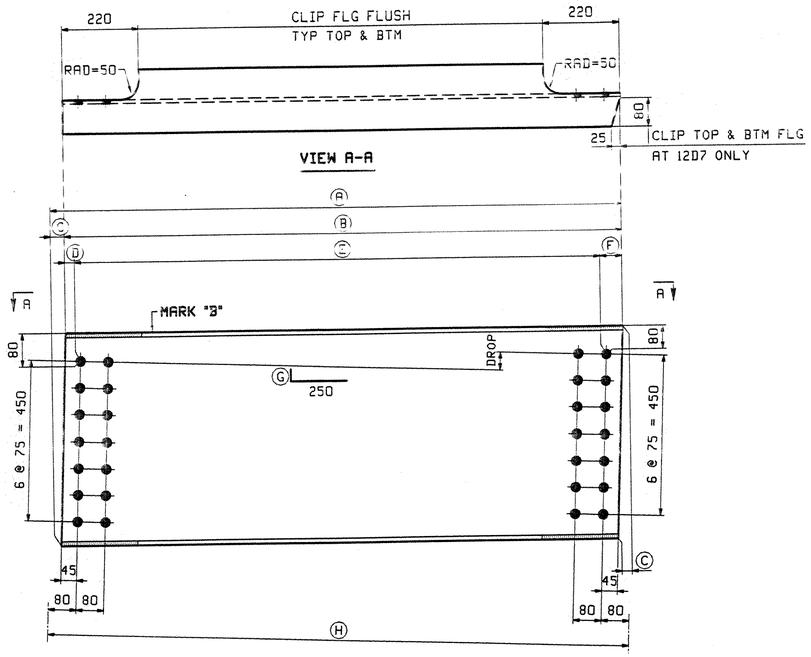
**CASCO BAY STEEL STRUCTURES, INC.**
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

| JOB NO. | DRG. NO. |
|---|---|
| 194 | 11 |
| | REV. △ |

JTB Fri Mar 21 12:45:12 EST 2003 /users/jobs/2348/11.dw=0




END DIAPHRAGM - MARK "A"




END DIAPHRAGM - MARK "B"

| MARK "A" | QTY | Drop | Ⓐ | Ⓑ | Ⓒ | Ⓓ | Ⓔ | Ⓕ | Ⓖ | Ⓗ |
|---|---|---|---|---|---|---|---|---|---|---|
| **12D1** | 2 | 31 | 3006 | 3000 | 6 | 46 | 2910 | 44 | 3 | 3070 |
| **12D2** | 1 | 24 | 3005 | 3000 | 5 | 46 | 2910 | 44 | 2 | 3070 |
| **12D3** | 4 | 27 | 2654 | 2648 | 6 | 46 | 2558 | 44 | 3 | 2718 |

| MARK "B" | QTY | Drop | Ⓐ | Ⓑ | Ⓒ | Ⓓ | Ⓔ | Ⓕ | Ⓖ | Ⓗ |
|---|---|---|---|---|---|---|---|---|---|---|
| **12D4** | 1 | 113 | 3025 | 3002 | 23 | 42 | 2912 | 48 | 10 | 3070 |
| **12D5** | 1 | 74 | 3016 | 3001 | 15 | 43 | 2911 | 47 | 6 | 3070 |
| **12D6** | 1 | 27 | 3006 | 3000 | 6 | 44 | 2910 | 46 | 2 | 3070 |
| **12D7** | 4 | 16 | 1561 | 1554 | 7 | 44 | 1464 | 46 | 3 | 1624 |

## BILL OF MATERIAL

JOB NO. | DRAWING NO. 12 | REV.

| ABM INFO PAGE | LINE | SHIP MARK | QTY | MARK | MATERIAL | LENGTH m | mm | REMARKS | WT | PROCUREMENT NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | END DIAPHRAGMS | | | | | |
| 4 | C | 12D1 | 2 | | W 610x82 | 3 | 006 | | 246 kg 542 lbs | |
| 4 | C | 12D2 | 1 | | W 610x82 | 3 | 005 | | 246 kg 542 lbs | |
| 4 | B | 12D3 | 4 | | W 610x82 | 2 | 654 | | 319 kg 703 lbs | |
| 4 | C | 12D4 | 1 | | W 610x82 | 3 | 025 | | 249 kg 546 lbs | |
| 4 | C | 12D5 | 1 | | W 610x82 | 3 | 016 | | 247 kg 544 lbs | |
| 4 | C | 12D6 | 1 | | W 610x82 | 3 | 006 | | 246 kg 542 lbs | |
| 4 | G | 12D7 | 4 | | W 610x82 | 1 | 551 | | 128 kg 282 lbs | |

| OUT FOR APPROVAL | 4-14-03 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| OUT FOR APPROVAL | | | | | | | | | |
| ISSUED TO SHOP | | | | | | | | | |
| FIELD & OFFICE | | | | | | | | | |

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|---|---|---|---|---|---|---|

MATERIAL: M270M-345W | ELECTRODES: | HOLES: 24mm ($\frac{15}{16}$")Ø | SHOP BOLTS:

SURFACE PREP. & PAINT:

-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

V.A.O.T.
RECEIVED
CK'D BY S.S.S. 4/21/03 CK'D BY JMP 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED X
BY DATE

DESCRIPTION: END DIAPHRAGM

JOB: US 5 OVER WHETSTONE BROOK
BRIDGE NO. 7
BRATTLEBORO, VERMONT (WINDHAM COUNTY)
CONTRACTOR: RENAUD BROTHERS

TENSOR 2348

PROJ NO. BHF 2000(17)

CUSTOMER: VERMONT AGENCY OF TRANSPORTATION

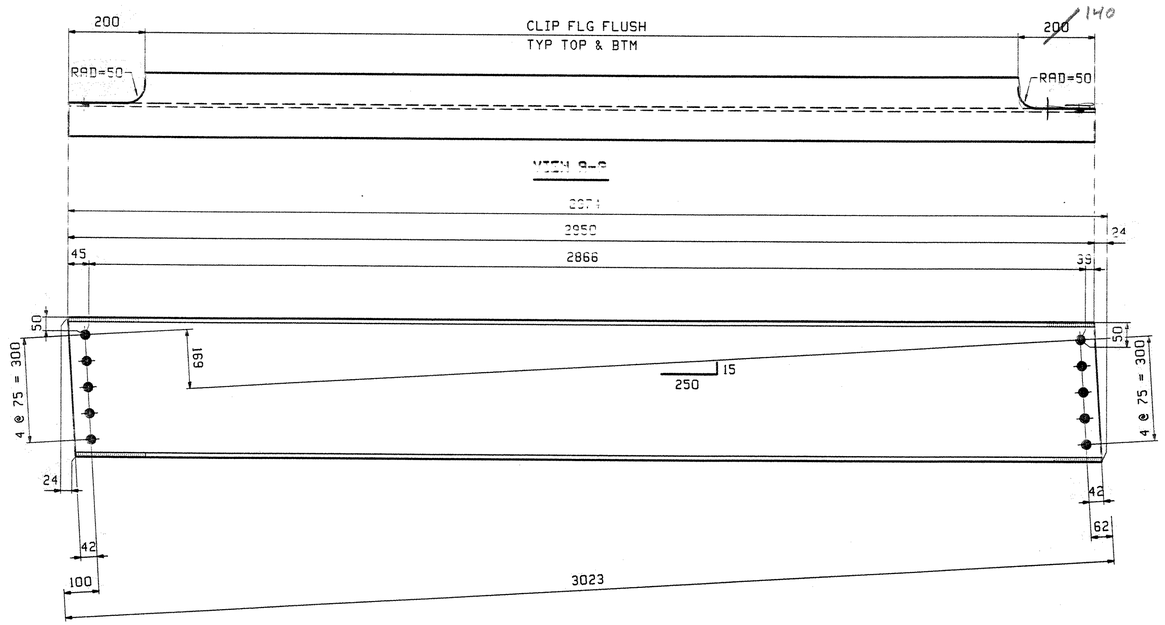
| DRAWN BY | DATE |
|---|---|
| JTB | 03/21 |
| CHKD BY | |
| EPE | 04/07 |
| APPROV BY | |
| SUPERVISOR | W. J. GATTI |
| Q.A. | |

102


**CASCO BAY STEEL STRUCTURES, INC.**
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179


| JOB NO. | DRG. NO. |
|---|---|
| 194 | 12 |
| | REV. △ |

JTB Fri Mar 21 10:55:55 EST 2003 /users/jobs/2348/12 - Rev0




1 - END DIAPHRAGM - 13D1

| ABM INFO | | SHIP | BILL OF MATERIAL | | | | | JOB NO. | DRAWING NO. | | REV. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 13 | | |
| PAGE | LINE | MARK | QTY | MARK | MATERIAL | LENGTH m | LENGTH mm | REMARKS | WT | PROCUREMENT NOTES | |
| | | | | | END DIAPHRAGMS | | | | | | |
| 4 | K | 13D1 | 1 | | W 410x39 | 2 | 974 | | 118 kg 255 lbs | | |

| OUT FOR APPROVAL | 4/4/03 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| OUT FOR APPROVAL | | | | | | | | | | |
| ISSUED TO SHOP | | | | | | | | | | |
| FIELD & OFFICE | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| REV. | REMARKS | DATE | DWN | CHK | APP | Q.A. | NO. | DIA. | LGT | TYPE | WASHER |
|---|---|---|---|---|---|---|---|---|---|---|---|

| MATERIAL: | ELECTRODES: | HOLES: | SHOP BOLTS: |
|---|---|---|---|
| M270M-345W | | 24mm ($\frac{15}{16}$")Ø | |

SURFACE PREP. & PAINT:

-ALL STEEL SHALL BE BLAST CLEANED AND LEFT UNPAINTED.

V.A.O.T.
RECEIVED
CK'D BY S.S.S 4/21/03 CK'D BY SMP 4/21/03
APR 15 2003
RESUBMIT ____ APPROVED AS NOTED
BY DATE

| DESCRIPTION: END DIAPHRAGM | DRAWN BY | DATE |
|---|---|---|
| JOB: US 5 OVER WHETSTONE BROOK | JTB | 03/21 |
| BRIDGE NO. 7 | CHKD BY | |
| BRATTLEBORO, VERMONT (WINDHAM COUNTY) | EPE | 04/07 |
| CONTRACTOR: RENAUD BROTHERS | APPROV BY | |
| | SUPERVISOR | W. J. GATTI |
| PROJ NO. BHF 2000(17) | Q.A. | |
| CUSTOMER: VERMONT AGENCY OF TRANSPORTATION | | 103 |

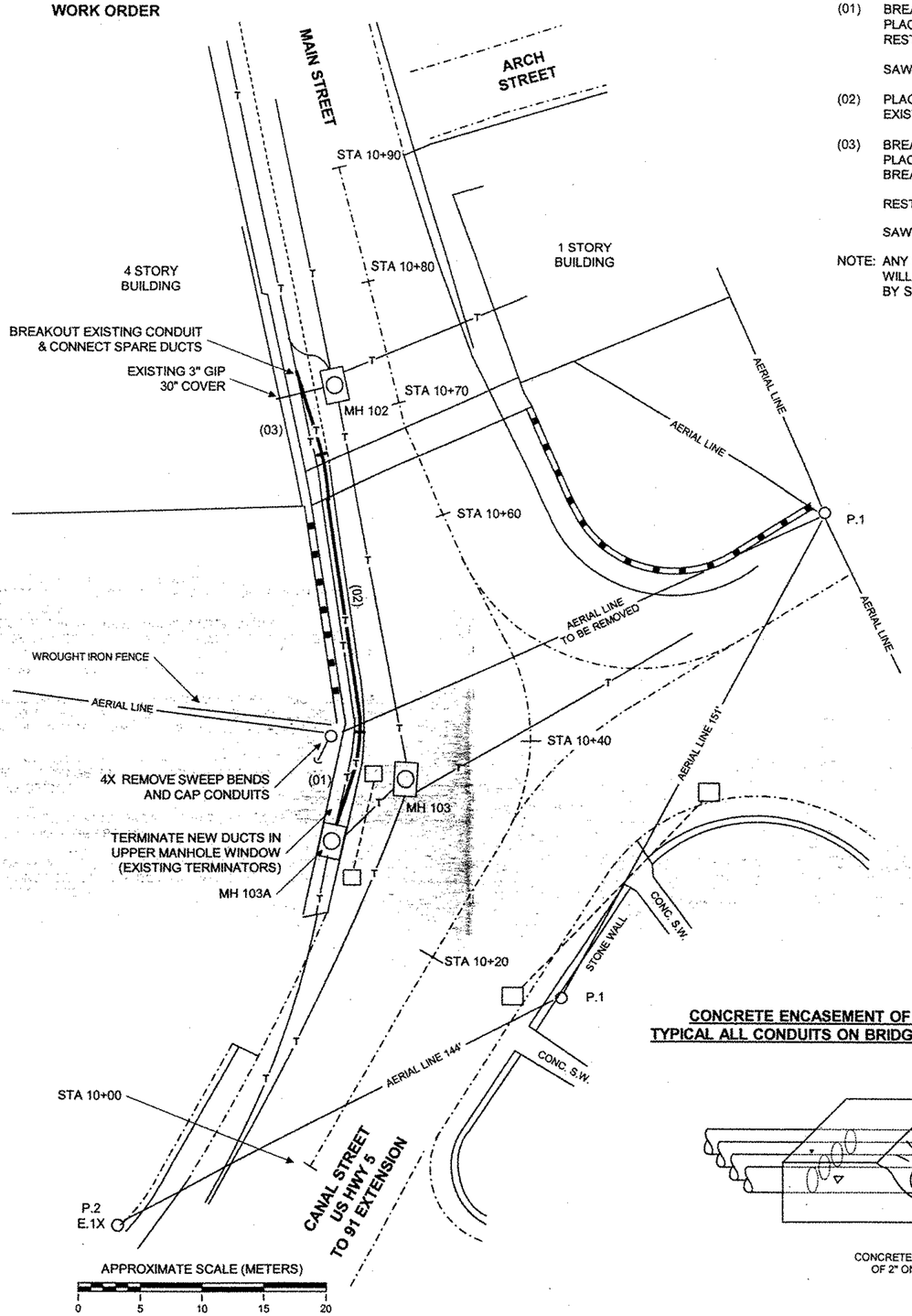
TENSOR 2348


**CASCO BAY STEEL STRUCTURES, INC.**
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179


| JOB NO. | DRG. NO. |
|---|---|
| 194 | 13 |
| | REV. △ |

JTB Fri Mar 21 12:45:46 EST 2003 /users/jtb/2187/13 : Rev0

**WORK ORDER**



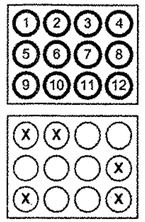

(01) BREAKOUT 4" CONCRETE SIDEWALK FOR 35' (19.5 SQ YDS) ITEM # 158A
PLACE 12 4" C-PLASTIC CONDUIT, CONCRETE ENCASED. ITEM # 61C
RESTORE SIDEWALK AREA WITH 2" ASPHALT (20 SQ YDS) ITEM # 153B
COMPACTED GRAVEL (7 CU YDS) ITEM # 141
SAW CUT 4" CONCRETE (5') ITEM # 173

(02) PLACE 8 FIBERGLASS CONDUITS TEMPORARILY SUPPORTED ON TOP OF EXISTING I-BEAM. (SEE DETAIL DRAWINGS) SCHED C

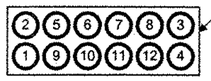
(03) BREAKOUT 4" CONCRETE SIDEWALK FOR 30' (17 SQ YDS) ITEM # 158A
PLACE 12 "C" PLASTIC CONDUIT, CONCRETE ENCASED. ITEM # 61C
BREAKOUT EXISTING CONDUIT AND CONNECT SPARE DUCTS.
SAND ENCASE FOR FUTURE REARRANGEMENTS SCHED C
RESTORE SIDEWALK AREA WITH 2" ASPHALT (20 SQ YDS) ITEM # 153B
COMPACTED GRAVEL (5.5 CU YDS) ITEM # 141
SAW CUT 4" CONCRETE (5') ITEM # 173

NOTE: ANY SIDEWALK, CURB, OR PAVED ROADWAY THAT IS REMOVED WILL BE RESTORED WITH 2" ASPHALT PENDING REPLACEMENT BY STATE BRIDGE CONTRACT

MH 103A FACING BRIDGE




NEW FORMATION AT BRIDGE ABUTMENT 5" STEEL SLEEVES THROUGH BRIDGE HEADWALL

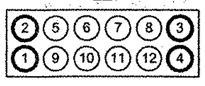



NOTE:
DUCTS 1 THROUGH 4 ARE TO BE TERMINATED IN THREADED COUPLINGS FLUSH MOUNTED IN BRIDGE HEADWALL FOR EXTENSION ON PHASE "B"

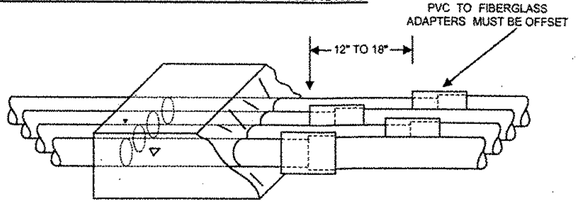
NEW FORMATION ON BRIDGE PHASE "A"




NEW FORMATION ON BRIDGE PHASE "B"




**CONCRETE ENCASEMENT OF CONDUITS**
**TYPICAL ALL CONDUITS ON BRIDGE APPROACHES**




CONCRETE ENCASE CONDUITS WITH A MINIMUM OF 2" ON TOP, BOTTOM AND SIDES AND 1" BETWEEN CONDUITS

7AA01S

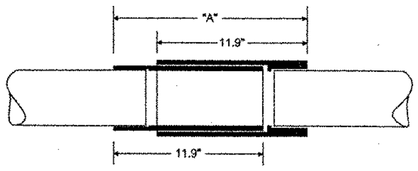
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| | | | | |
|---|---|---|---|---|
| SAFETY NOTES: NO SURVEY MADE | | MOD/REV NO. | DATE | EWO NO. 7AA01S |
| | | | | PRINT 13 OF |
| | | | | PREPARED BY: NEIL E. SNYDER |
| | | LT. NOTICE | - | C.O. /EXCHANGE NAME: |
| SIGNATURE DATE 1/30/2002 | | TYPE | RECORD REF: | BRATTLEBORO |
| | | AERIAL | 7B | C.O. /EXCHANGE CODE: |
| PRE CT YES ☐ NO ☒ | | UNDERGROUND | —— | 4731 |
| PRIMARY VOLTAGE TO GROUND | | BLOCK (NYT) | —— | MUNICIPALITY: |
| 7.2 KV MGN SYSTEM | | CONDUIT | —— | BRATTLEBORO |
| CABLE PRESS. | UNDER PRESS. YES ☐ NO ☒ | BUFFER YES ☐ NO ☒ | | MANHOLE LOCATION MH# NA |
| TRANSMISSION | 26GA LIMIT YES ☐ NO ☒ | AMT. BRIDGE TAP | - KF | |

**GENERAL NOTES:**

1. THE CONTRACTOR IS REQUIRED TO COMPLY WITH ALL NATIONALLY ACCEPTED SAFETY PRACTICES.
2. THE CONTRACTOR IS REQUIRED TO COMPLY WITH ALL LOCAL, STATE, FEDERAL AND VERIZON REGULATIONS.
3. BELL ATLANTIC WILL OBTAIN THE NECESSARY STATE AND LOCAL PERMITS REQUIRED TO COMPLETE THE TELEPHONE WORK ON THE BRIDGE AND BRIDGE APPROACHES.
4. THE DESIGN CABLE LOAD IS 7.0 POUNDS PER FOOT FOR EACH OF TWELVE DUCTS. THE TOTAL CONDUIT AND HANGER LOAD AT EACH SUPPORTS 1644 LB.. BASED ON A NOMINAL SPACING OF 17.2 FEET.
5. THE TEMPORARY UTILITY SUPPORTS ARE TO BE FABRICATED FROM 3" x 1/4" CHANNEL STEEL AND WELDED TO THE TOP OF THE EXISTING VERIZON I-BEAM.
6. THE CONTRACTOR MUST LOCATE AND PROTECT ALL EXISTING UNDERGROUND CONDUITS DURING EXCAVATION ON BRIDGE APPROACHES.
7. SPECIFIED FIBERGLASS CONDUIT AMERICAN U-TEL [PN 12370]
   A. 4" DIAMETER FIBERGLASS DUCTS WITH THREADED JOINTS WITH 3000 LB.. PULLOUT STRENGTH.
   B. ULTIMATE TENSILE STRENGTH 10,000 PSI PER ASTM D-2105.
   C. 4" IPS 4.5" OUTSIDE DIAMETER x 4.36" INSIDE DIAMETER x 30 FT LENGTHS.
   D. CAPABLE OF HANGER SUPPORT SPANS OF 17.2" FOR 7 LBS.PER FT. CABLE BASED. ON LESS THAN 5/8" MIDSPAN DEFLECTION.
8. ALL DRAWINGS ARE BASED ON AVAILABLE CONTRACT DRAWINGS WHICH MAY VARY FROM ACTUAL AS-BUILT CONDITIONS. THE CONTRACTOR SHALL VERIFY ALL PERTINENT DIMENSIONS BEFORE FABRICATION OR INSTALLATION.
9. CONDUIT DRAINAGE. THE CONTRACTOR SHALL INSURE THAT ALL CONDUITS ARE SLOPED TO PROVIDE DRAINAGE FROM THE BRIDGE TO THE FIRST MANHOLE ON EITHER SIDE OF THE BRIDGE.
10. GASKETED EXPANSION JOINTS MUST BE PRESET FOR THE AMBIENT TEMPERATURE AT THE TIME OF INSTALLATION. (SEE BELOW)
11. ALL CONDUIT ON BRIDGE APPROACHES IS TO BE CONCRETE ENCASED WITH A MINIMUM OF 2" OF CONCRETE ON TOP, BOTTOM, AND SIDES. DUCTS WILL BE SEPARATED BY 1" OF CONCRETE

**TYPICAL EXPANSION JOINT**
12 EACH NORTH END OF BRIDGE




| PRESET LENGTH "A" BASED ON AMBIENT TEMPERATURE | |
|---|---|
| -20° F | 17.0" |
| 0° F | 17.2" |
| 20° F | 17.4" |
| 40° F | 17.5" |
| 60° F | 17.6" |
| 80° F | 17.8" |
| 100° F | 18.0" |

10/7/2002

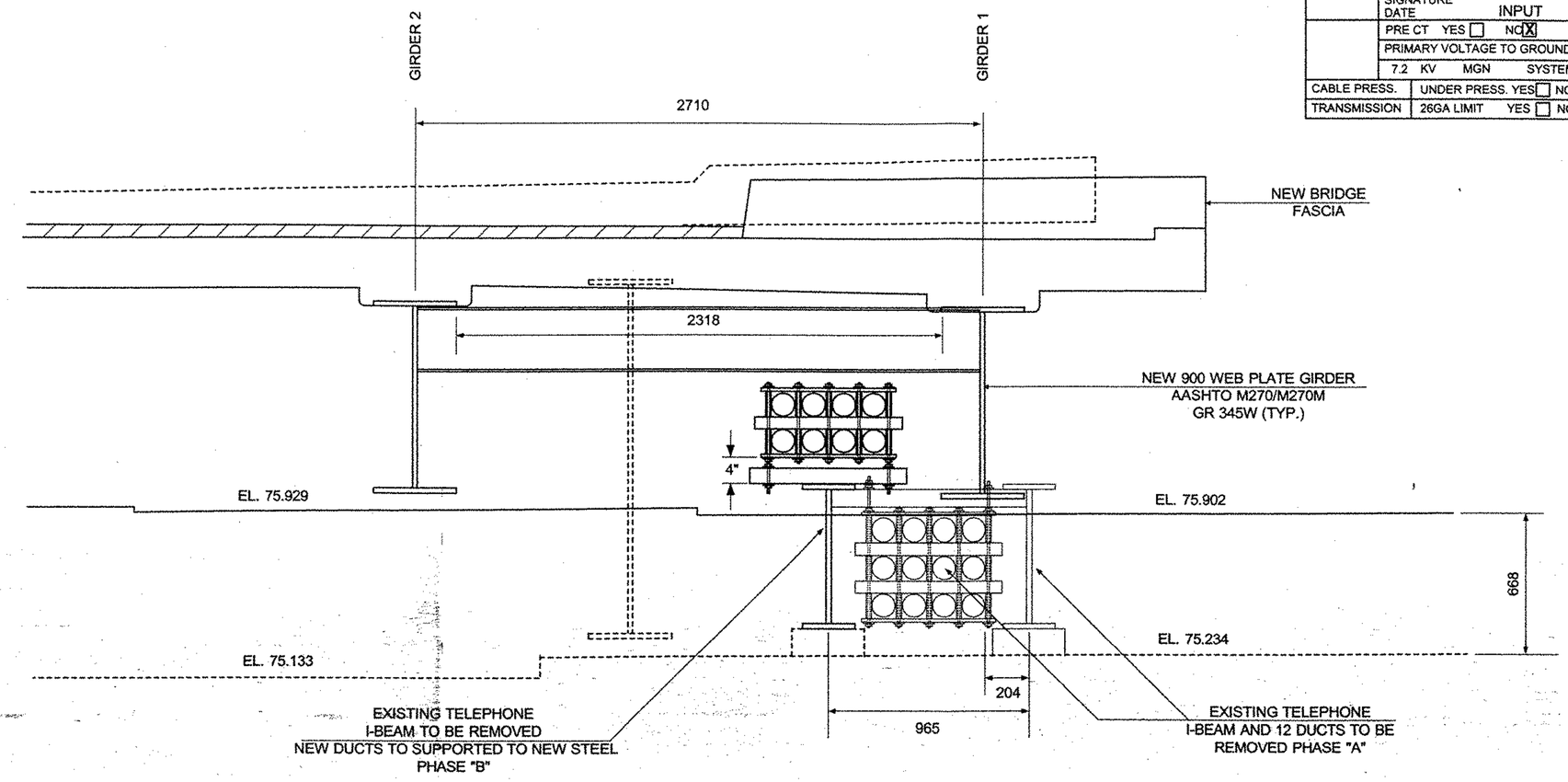
104

**WORK ORDER**

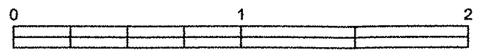
7AA01S

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| | | | | |
|---|---|---|---|---|
| | SAFETY NOTES: INPUT | MOD/REV NO. | DATE | EWO NO. 7AA01S |
| | | | | PRINT 16 OF |
| | | | | PREPARED BY: |
| | | | | NEIL E. SNYDER |
| | | LT. NOTICE | INPUT | C.O. /EXCHANGE NAME: |
| | | TYPE | RECORD REF: | INPUT |
| | SIGNATURE DATE INPUT | AERIAL | INPUT | C.O. /EXCHANGE CODE: |
| | PRE CT YES ☐ NO ☒ | UNDERGROUND | —— | INPUT |
| | PRIMARY VOLTAGE TO GROUND | BLOCK (NYT) | —— | MUNICIPALITY: |
| | 7.2 KV MGN SYSTEM | CONDUIT | —— | INPUT |
| CABLE PRESS. | UNDER PRESS. YES ☐ NO ☒ | BUFFER YES ☐ NO ☒ | | MANHOLE LOCATION MH# NA |
| TRANSMISSION | 26GA LIMIT YES ☐ NO ☒ | AMT. BRIDGE TAP | - | KF |




**EXISTING AND PROPOSED TELEPHONE FACILITIES @ ABUTMENT NO. 1, LEFT SIDE**
**PHASE "A"**




**SCALE = 1 : 20**

10/7/2002

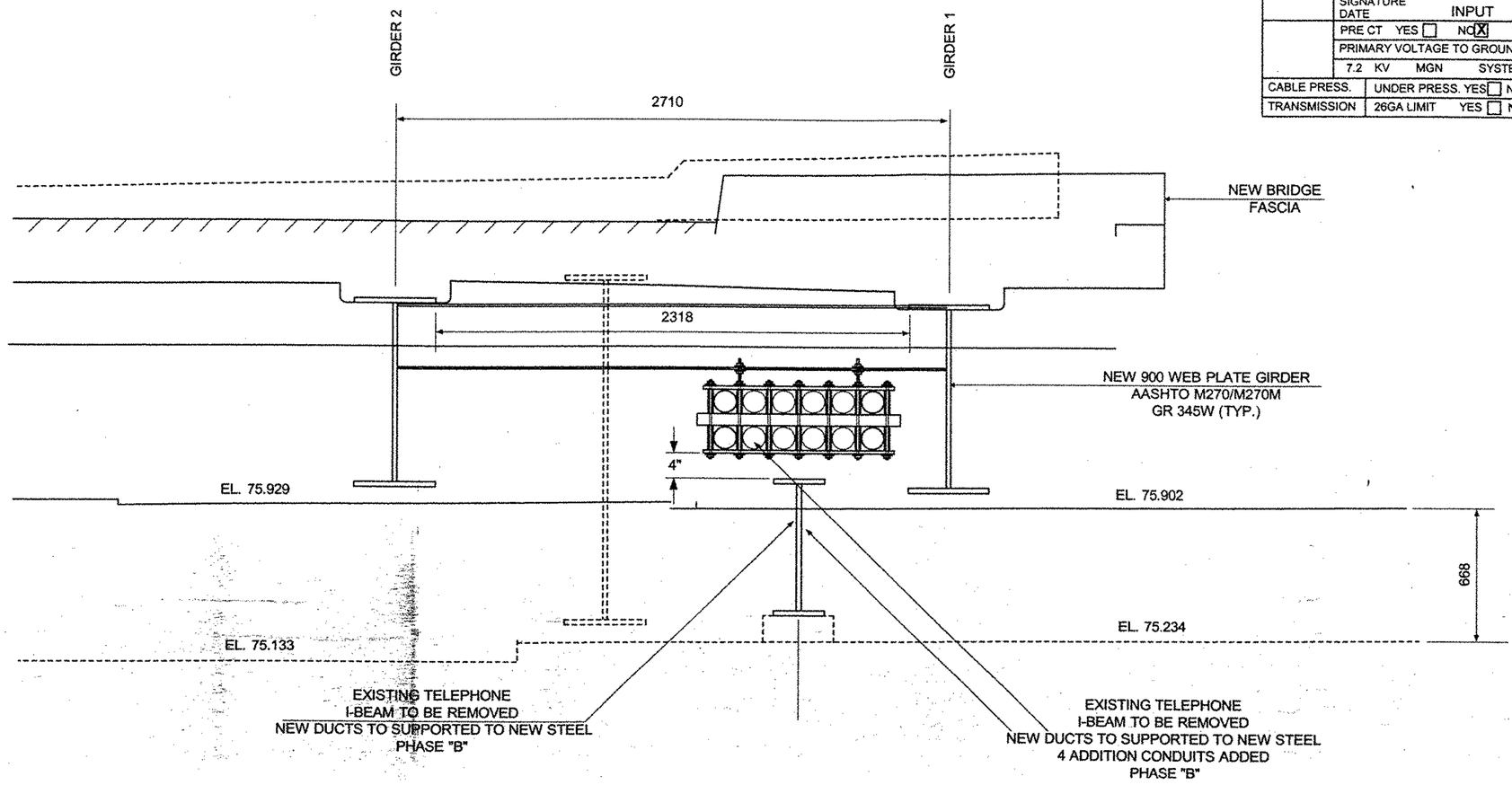
105

**WORK ORDER**

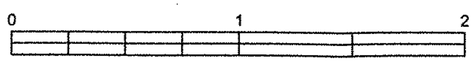
7AA01S

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| | | | | |
|---|---|---|---|---|
| SAFETY NOTES: INPUT | | MOD/REV NO. | DATE | EWO NO. 7AA01S |
| | | | | PRINT 17 OF |
| | | | | PREPARED BY: |
| | | | | NEIL E. SNYDER |
| | | LT. NOTICE | INPUT | C.O. /EXCHANGE NAME: |
| | | TYPE | RECORD REF: | INPUT |
| SIGNATURE DATE INPUT | | AERIAL | INPUT | C.O. /EXCHANGE CODE: |
| PRE CT YES ☐ NO ☒ | | UNDERGROUND | —— | INPUT |
| PRIMARY VOLTAGE TO GROUND | | BLOCK (NYT) | —— | MUNICIPALITY: |
| 7.2 KV MGN SYSTEM | | CONDUIT | —— | INPUT |
| CABLE PRESS. | UNDER PRESS. YES ☐ NO ☒ | BUFFER YES ☐ NO ☒ | | MANHOLE LOCATION MH# NA |
| TRANSMISSION | 26GA LIMIT YES ☐ NO ☒ | AMT. BRIDGE TAP | - | KF |




**EXISTING AND PROPOSED TELEPHONE FACILITIES @ ABUTMENT NO. 1, LEFT SIDE**
**PHASE "B"**




**SCALE = 1 : 20**

10/7/2002

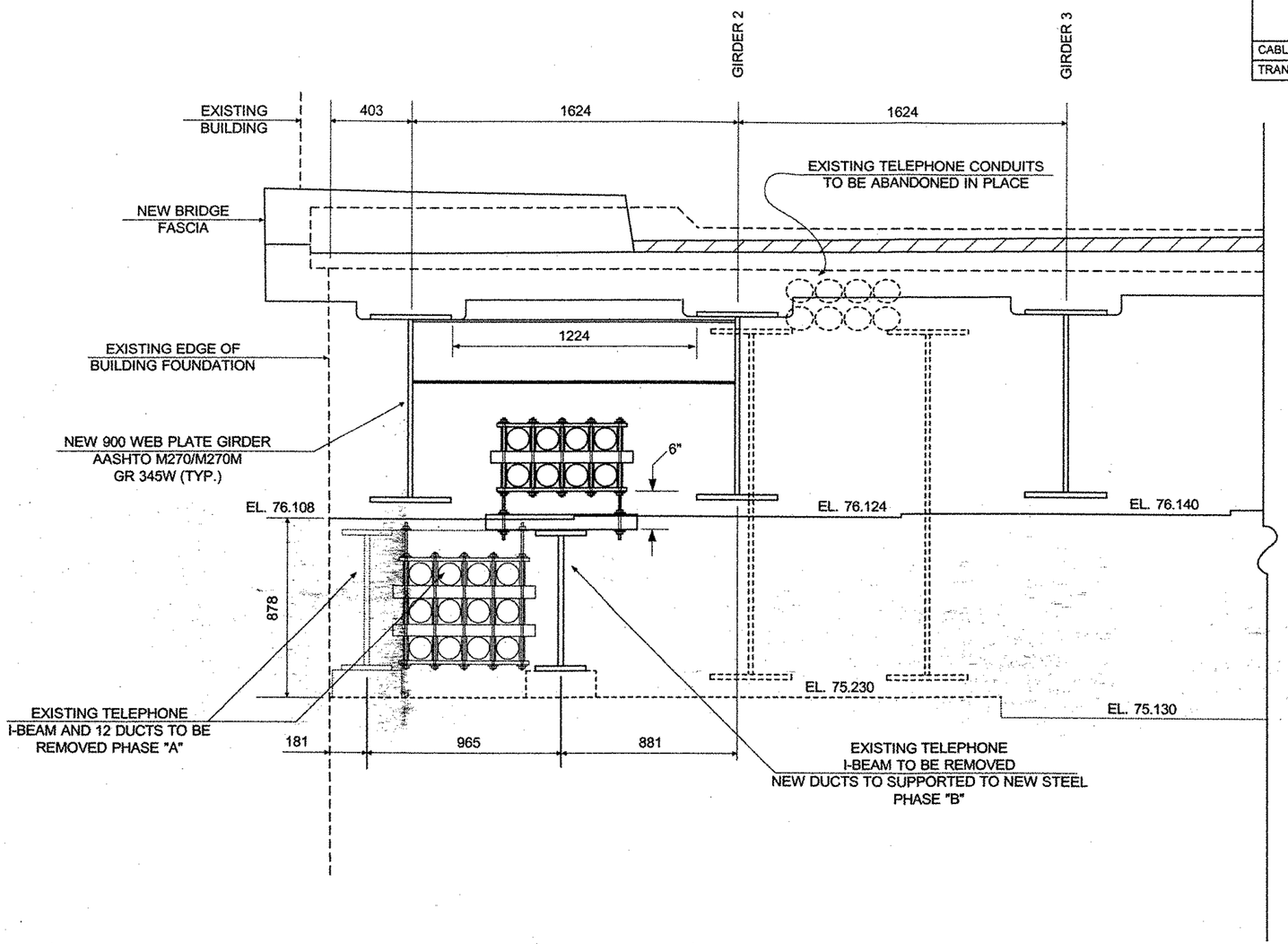
106

**WORK ORDER**

7AA01S

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| | | | | |
|---|---|---|---|---|
| SAFETY NOTES: INPUT | | MOD/REV NO. | DATE | EWO NO. 7AA01S |
| | | | | PRINT 14 OF |
| | | | | PREPARED BY: |
| | | | | NEIL E. SNYDER |
| | | LT. NOTICE | | C.O. /EXCHANGE NAME: |
| | | TYPE | RECORD REF: | BRATTLEBORO |
| SIGNATURE DATE INPUT | | AERIAL | INPUT | C.O. /EXCHANGE CODE: |
| | PRE CT YES ☐ NO ☒ | UNDERGROUND | —— | 4731 |
| | PRIMARY VOLTAGE TO GROUND | BLOCK (NYT) | —— | MUNICIPALITY: |
| | 7.2 KV MGN SYSTEM | CONDUIT | —— | BRATTLEBORO |
| CABLE PRESS. | UNDER PRESS. YES ☐ NO ☒ | BUFFER YES ☐ NO ☒ | | MANHOLE LOCATION MH# NA |
| TRANSMISSION | 26GA LIMIT YES ☐ NO ☒ | AMT. BRIDGE TAP | - | KF |




**EXISTING AND PROPOSED TELEPHONE FACILITIES @ ABUTMENT NO. 2, LEFT SIDE**
**PHASE "A"**

0 1 2

**SCALE = 1 : 20**

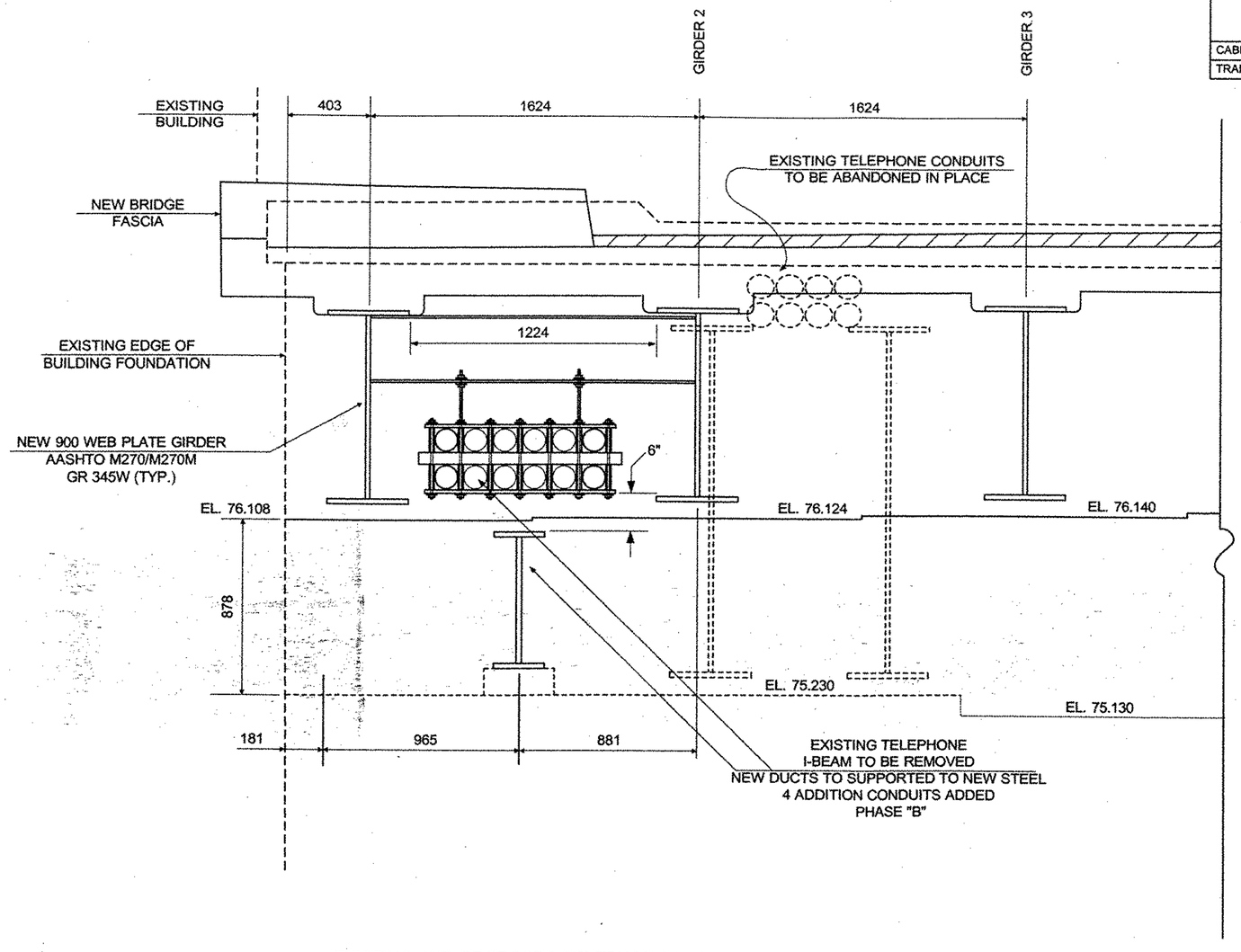
10/7/2002

**WORK ORDER**

7AA01S

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| | | | | |
|---|---|---|---|---|
| SAFETY NOTES: **INPUT** | | MOD/REV NO. | DATE | EWO NO. 7AA01S |
| | | | | PRINT 15 OF |
| | | | | PREPARED BY: |
| | | | | NEIL E. SNYDER |
| | | LT. NOTICE | | C.O. /EXCHANGE NAME: |
| SIGNATURE | | TYPE | RECORD REF: | BRATTLEBORO |
| DATE | INPUT | AERIAL | INPUT | C.O. /EXCHANGE CODE: |
| PRE CT YES ☐ NO ☒ | | UNDERGROUND | —— | 4731 |
| PRIMARY VOLTAGE TO GROUND | | BLOCK (NYT) | —— | MUNICIPALITY: |
| 7.2 KV MGN SYSTEM | | CONDUIT | —— | BRATTLEBORO |
| CABLE PRESS. | UNDER PRESS. YES ☐ NO ☒ | BUFFER YES ☐ NO ☒ | | MANHOLE LOCATION MH# NA |
| TRANSMISSION | 26GA LIMIT YES ☐ NO ☒ | AMT. BRIDGE TAP | - | KF |




**EXISTING AND PROPOSED TELEPHONE FACILITIES @ ABUTMENT NO. 2, LEFT SIDE**
**PHASE "B"**

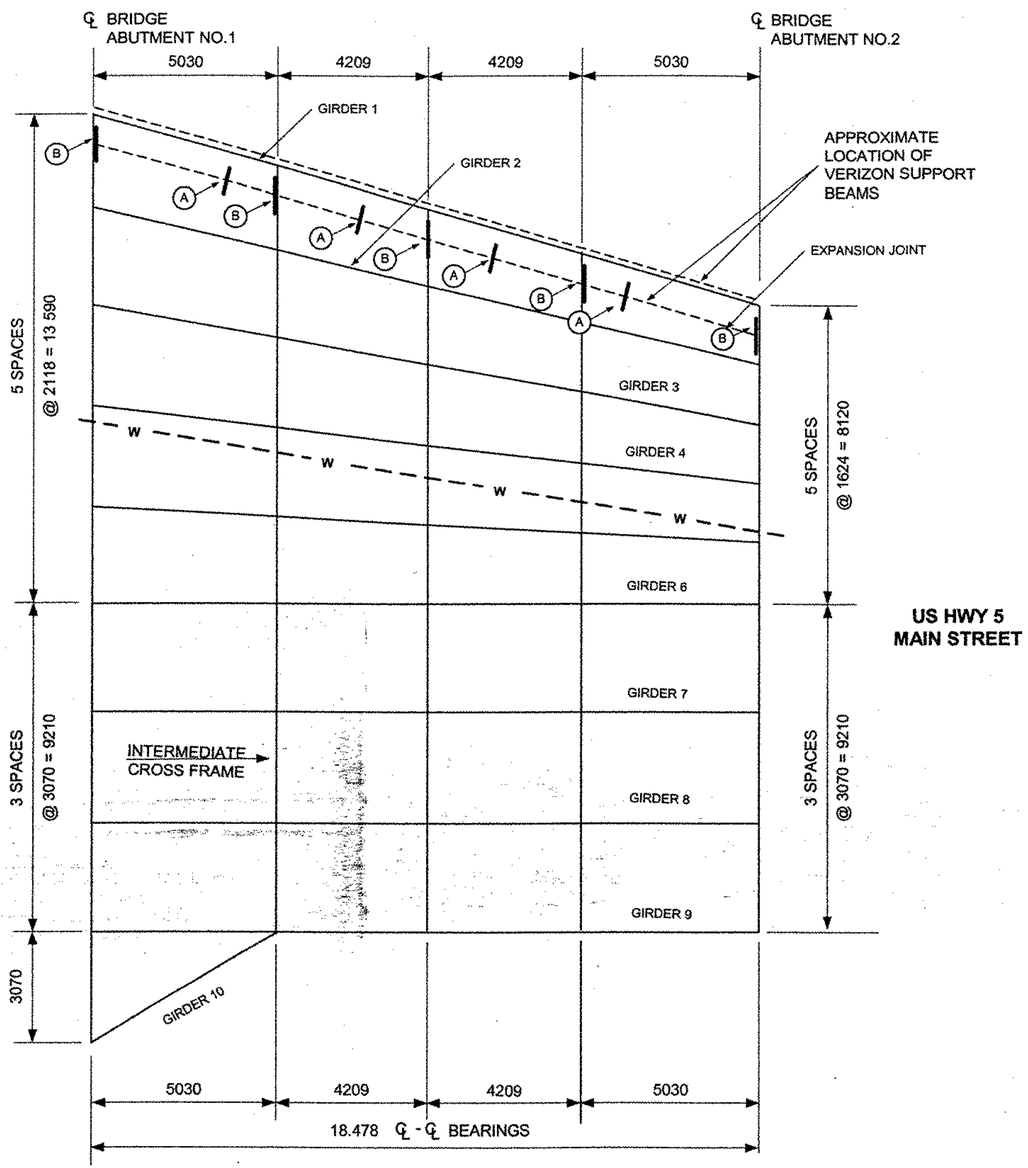
0 1 2

**SCALE = 1 : 20**

10/7/2002

108

**WORK ORDER**




**US HWY 5**
**MAIN STREET**

**NEW BRIDGE BEAM STRUCTURE**

0 1 2 4 6 8 10

WHETSTONE BROOK

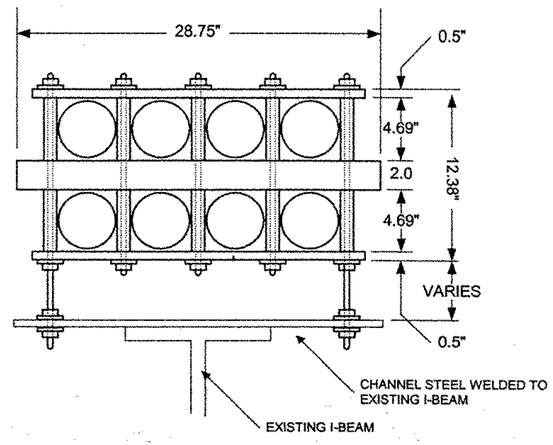
10/7/2002

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| | | | | |
|---|---|---|---|---|
| SAFETY NOTES: **NO SURVEY MADE** | | MOD/REV NO. | DATE | EWO NO. **7AA01S** |
| | | | | PRINT **18** OF |
| | | | | PREPARED BY: |
| | | | | NEIL E. SNYDER |
| | | LT. NOTICE | | C.O. /EXCHANGE NAME: |
| | | TYPE | RECORD REF: | BRATTLEBORO |
| SIGNATURE DATE 8/22/2002 | | AERIAL | - | C.O. /EXCHANGE CODE: |
| | PRE CT YES ☐ NO ☒ | UNDERGROUND | —— | 4731 |
| | PRIMARY VOLTAGE TO GROUND | BLOCK (NYT) | —— | MUNICIPALITY: |
| | 7.2 KV MGN SYSTEM | CONDUIT | —— | BRATTLEBORO |
| CABLE PRESS. | UNDER PRESS. YES ☐ NO ☒ | BUFFER YES ☐ NO ☒ | | MANHOLE LOCATION MH# NA |
| TRANSMISSION | 26GA LIMIT YES ☐ NO ☒ | AMT. BRIDGE TAP | - | KF |

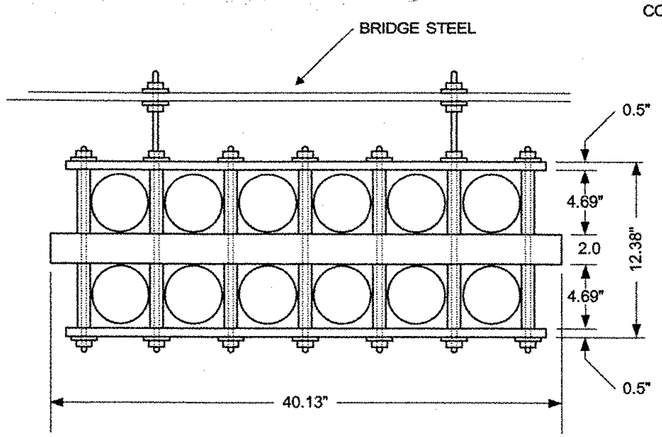
**Ⓐ DETAIL TEMPORARY SUPPORT HANGERS**
(4 HANGERS ON 12.6' CENTERS)

DESIGN WEIGHS:
FIBERGLASS CONDUIT 6.8 lb./ft
(8 @ .85lbs>/ft)
COPPER CABLE MAX 56.0 lb./ft.
(8 @ 7.0lbs>/ft)

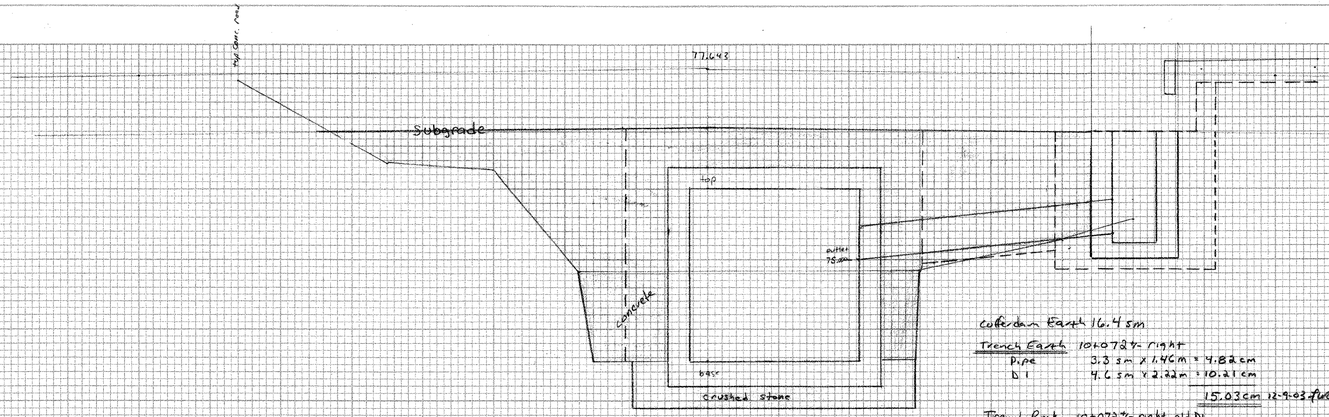



**Ⓑ DETAIL PERMANENT SUPPORT HANGERS**
(5 HANGERS ON INTERMEDIATE CROSS FRAME MEMBERS)

DESIGN WEIGHTS:
FIBERGLASS CONDUIT 10.2 lb./ft
(12 @ .85lbs>/ft)
COPPER CABLE MAX 84.0 lb./ft.
(12 @ 7.0lbs>/ft)



Brattleboro BHF 2000(17)
Sheet # 1




10+072 use for 10+072.6 (bott)

Cofferdam Earth 16.4 sm

Trench Earth 10+072± right
Pipe 3.3 sm x 1.46 m = 4.82 cm
D I 4.6 sm x 2.22 m = 10.21 cm
15.03 cm 12-9-03 ftw

Trench Rock 10+072± right old DI
1.22 x 1.22 x 2.60 high (MIF ftw) = 3.87 cm 12-19-03 ftw

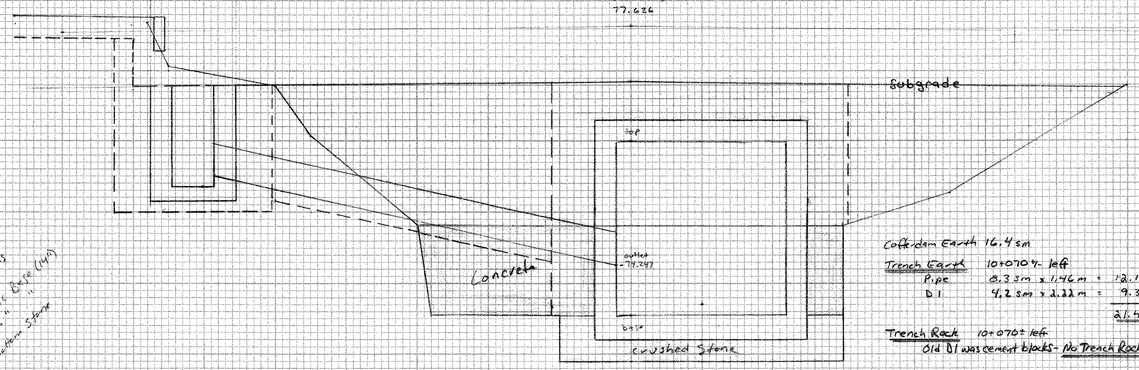
Cofferdam Earth

| station | endarea | ave. endarea | distance | volume |
|---|---|---|---|---|
| 10+068.97 (bott) | 16.4 | | | |
| | | 16.4 | 3.63 | 59.53 |
| 10+072.60 (bott) | 16.4 | | | |

tot = 59.53 cm 12-9-03 ftw

| | finish grade | | subgrade |
|---|---|---|---|
| 10+080 | 77.710 | -0.790 | 76.920 |
| + 072 | 77.643 | | 76.853 |
| 10+070 | 77.626 | -0.790 | 76.836 |
| +0685 | 77.613 | -0.790 | 76.823 |
| 10+067.693 | 77.606 | -0.990 | 76.816 |

77.949 = Top Curb
75.501 = Invert
75.349 = Invert Pump
75.145 = Bott Base




76.805 = Top of Tee
75.197 = Top conc walls
73.558 = Invert Left Large Pipe (rcp)
73.202 = bottom "
72.902 = bottom Storm

10+070 use for 10+068.97 (bott)

Cofferdam Earth 16.4 sm

Trench Earth 10+070± left
Pipe 3.3 sm x 1.46 m = 12.12 cm
D I 4.2 sm x 2.22 m = 9.32 cm
21.44 cm 12-9-03 ftw

Trench Rock 10+070± left
Old DI was cement blocks - No Trench Rock

Trench Earth for 1050 mm RCP outlet pipe 10+068± right
Length outside CoR-Ltd Exs to ABut = 0.46 m (MIF ftw)
Depth below Subgrade = 3.5 m
Avg width of Trench = 2.05 m
0.46 x 3.5 x 2.05 = 3.30 cm 12-9-03 ftw

No T.E. for existing 40" + 24" (coming into jet box) - all within Cofferdam limits 12-9-03 ftw

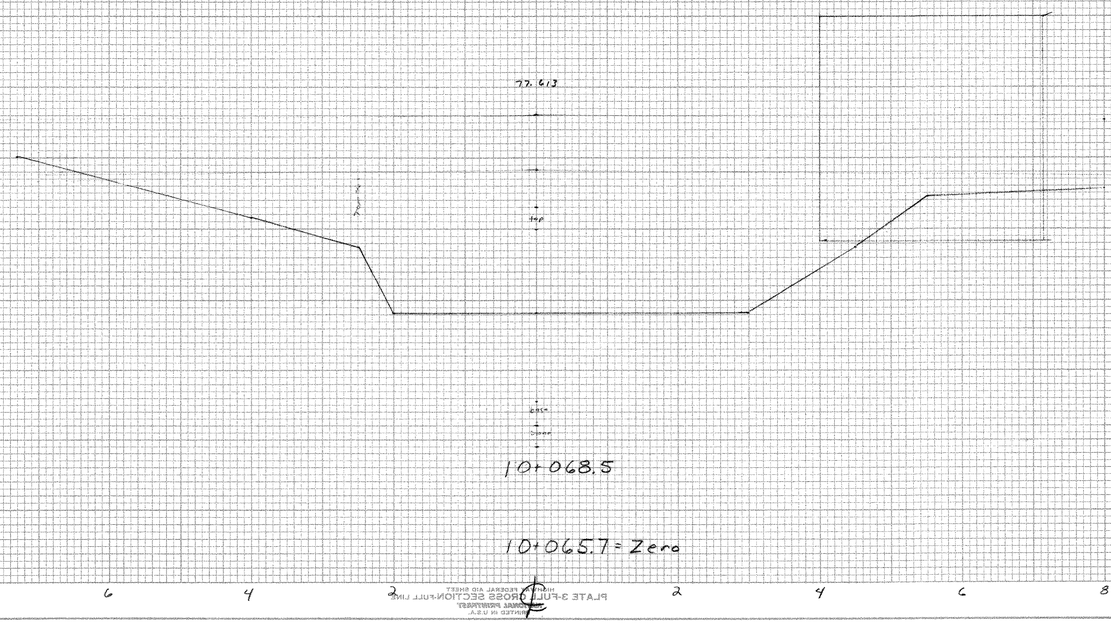
Granular Backfill for Structures
Jet Box 3.04 m wide, 2.43 m long, 3.103 m H
3.04 x 2.43 x 3.103 = 22.92 cm
Cofferdam Earth - volume Jet Box = Gran. bkfill for Structures
59.53 - 22.92 = 36.61 cm 12-9-03 ftw

Culvert right: trench earth minus volume culvert
$\pi r^2$ x length $\pi .225^2 \times 1.9 = 0.30$ cm
4.82 - 0.30 = 4.52 cm 12-9-03 ftw

DI right: trench earth minus volume DI
1.22 x 1.22 x 1.8 (MH) = 2.68 cm
10.21 - 2.68 = 7.53 cm 12-9-03 ftw

Culvert left: trench earth minus volume culvert
$\pi r^2$ x length $\pi .225^2 \times 3.9 = 0.62$ cm
12.12 - 0.62 = 11.50 cm 12-19-03 ftw

DI left: trench earth minus volume DI
1.22 x 1.22 x 1.6 (MH) = 2.38 cm
9.32 - 2.38 = 6.94 cm 12-19-03 ftw



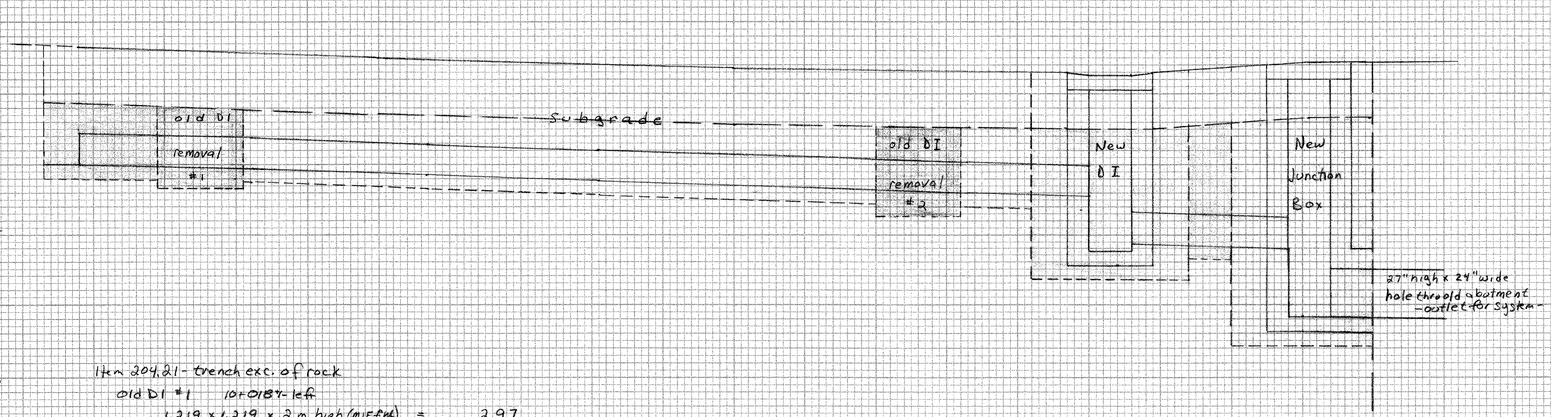

10+068.5

10+065.7 = Zero

wgrnk = 77.567
inlet = 75.379
Sump
6" = 0.152 = 75.227
bottom
14" = 0.356 = 75.023

PLATE 3-FULL CROSS SECTION-FULL LINE
FEDERAL AID SHEET
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Brattleboro BHF 2000(17)
Sheet #2




Item 204.21 - trench exc. of rock

old DI #1 10+018 ℄ left
1.219 x 1.219 x 2m high (MIFFM) = 2.97

old DI #2 10+036 ℄ left
1.219 x 1.219 x 2.2m high (MIFFM) = 3.27

Item 204.20 - trench exc. of earth

New 18" RCP approx 10+020 ~ 10+038 left
12.7sm x 1.6 = 20.32

New DI, approx 10+039 left
4.8sm x 2.2 = 10.56

New Junction Box approx 10+043 left
6.5sm x 2.2 = 14.30

New 18" RCP approx 10+040 + 10+049 left
1.2sm x 1.6 = 1.92

Item 204.30 - Granular Backfill for Structures

New 18" RCP approx 10+020 ~ 10+038 left
trench earth minus volume culvert plus old DI volume
$\pi r^2$ x length = $\pi .225^2$ x 13.4 = 2.13cm
20.32 - 2.13 x 1.71(#1) + 1.93(#2) = 21.83

New DI, approx 10+039 left
trench earth minus volume DI
10.56 - 3.20 = 7.36

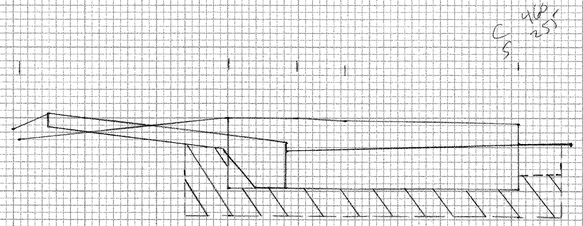
New Junction Box, approx 10+043 left
trench earth minus volume jct Box
14.30 - 4.76 = 9.54

New 18" RCP, approx 10+040 ~ 10+049 left
trench earth minus volume pipe
$\pi r^2$ x length - $\pi .225^2$ x 0.6 + 0.10cm
1.92 - 0.10 = 1.82

Abutment #1 Extension (See page 30135-10 for sketch/dimensions and also page 30134-4)
(3.40 x 0.50 x 0.84) + (0.82 x 0.50 x 0.91) = 1.80


ORIGINAL PLANS
DATE
BY
DESCRIPTION
INSTALL CONCRETE STOP LOG
WARNING CONTROLLED DRAWING
JOB
SHEET
PLATE 3-PUBL. CROSS SECTION-FULL LINE
HIGHWAY FEDERAL AID SHEET
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Brattleboro BHF2000(17)
Sheet #3




19.5 rt ℄

Item 203.15 - Common Excavation

| location | distance | end area | ave. end area | volume |
|---|---|---|---|---|
| 13.856 (BWM) | | 1.06 | | |
| | 2.644 | | 1.075 | 2.84 |
| 16.5 | | 1.09 | | |
| | 3.0 | | 1.12 | 3.36 |
| 19.5 | | 1.15 | | |
| | 3.0 | | 1.19 | 3.57 |
| 22.5 | | 1.23 | | |
| | 3.0 | | 1.255 | 3.77 |
| 25.5 | | 1.28 | | |
| | 2.0 | | 1.28 | 2.56 |
| 27.5 (BWM) | | 1.28 | | |

16.10 cm 4-9-04 fwl

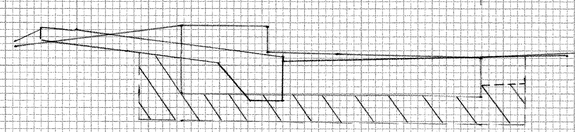
Item 301.35 - Subbase of Dense Graded Crushed Stone

| location | distance | end area | ave. end area | volume |
|---|---|---|---|---|
| 13+856 (BWM) | | 0.46 | | |
| | 2.644 | | 0.545 | 1.44 |
| 16.5 | | 0.63 | | |
| | 3.0 | | 0.635 | 1.91 |
| 19.5 | | 0.64 | | |
| | 3.0 | | 0.64 | 1.92 |
| 22.5 | | 0.64 | | |
| | 3.0 | | 0.665 | 2.00 |
| 25.5 | | 0.69 | | |
| | 2.0 | | 0.69 | 1.38 |
| 27.5 (BWM) | | 0.69 | | |

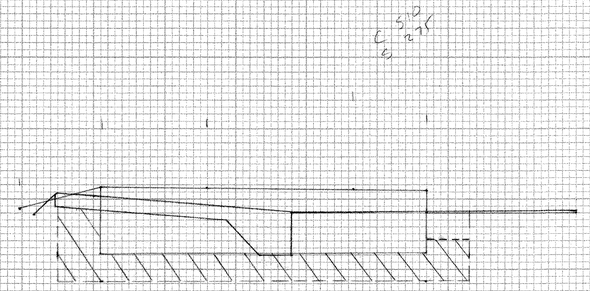
8.65 cm 4-13-04 fwl

= Common Excavation

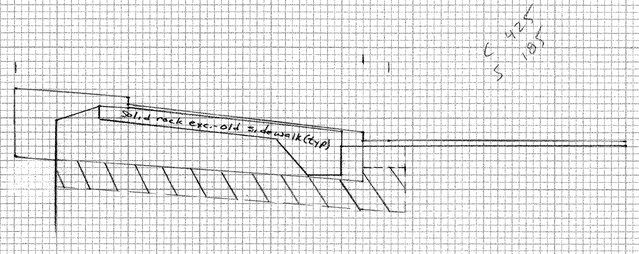
= Subbase of Dense Graded Crushed Stone



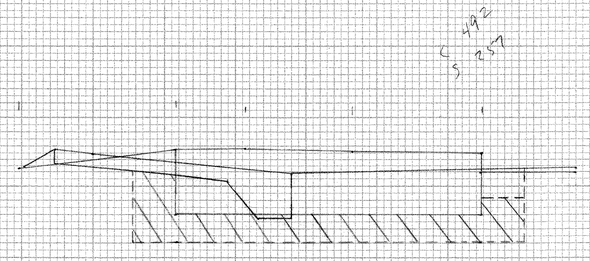

16.5 rt ℄



25.5 rt ℄ use for 27.5 rt (butt)




13.5 rt ℄ use for 13.856 rt (butt)



22.5 rt ℄

PLATE 3-FULL CROSS SECTION-FULL LINE