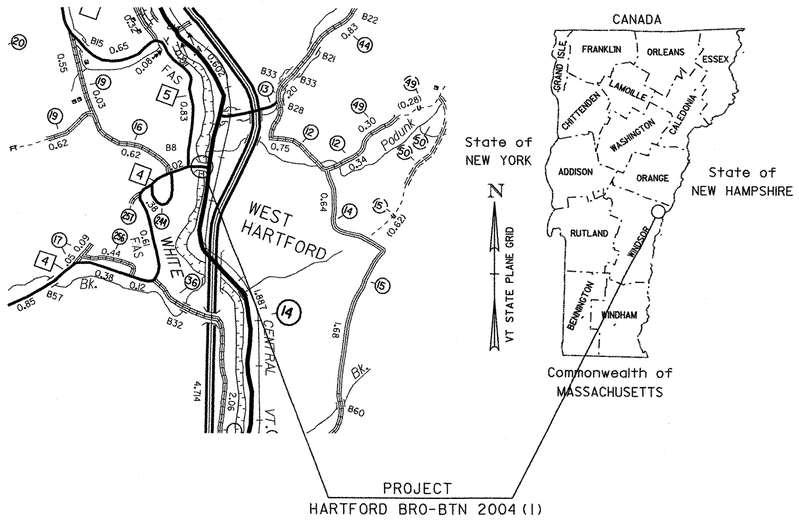
# STATE OF VERMONT
# AGENCY OF TRANSPORTATION




# PROPOSED IMPROVEMENT
# BRIDGE PROJECT

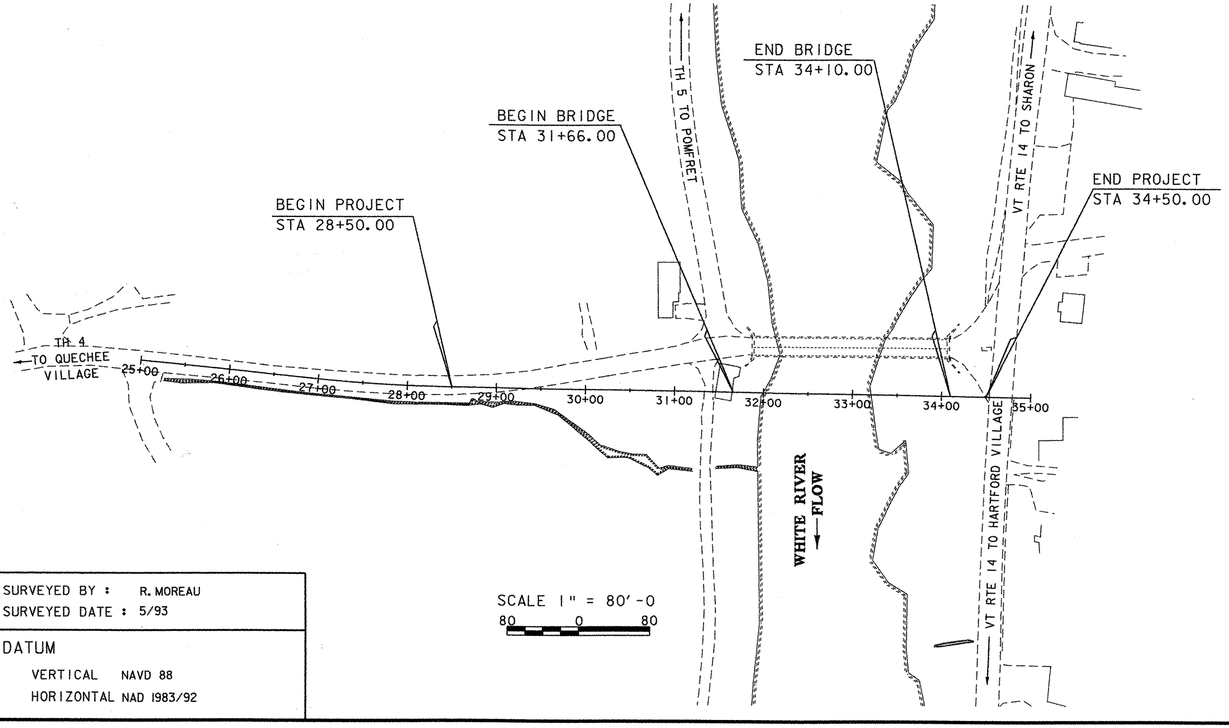
TOWN OF HARTFORD
COUNTY OF WINDSOR

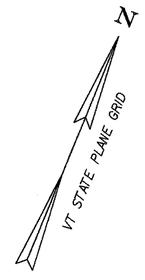
ROUTE NO : TH 4 FAS 166 BRIDGE NO : 8

PROJECT LOCATION : LOCATED IN THE COUNTY OF WINDSOR, TOWN OF HARTFORD, ON TH 4: BRIDGE 8 OVER THE WHITE RIVER, APPROXIMATELY 0.1 MILE WEST OF THE JUNCTION WITH VT ROUTE 14.

PROJECT DESCRIPTION : THE REPLACEMENT OF THE EXISTING STRUCTURE ALONG WITH RELATED CHANNEL AND ROADWAY WORK.

| | |
|---|---|
| LENGTH OF STRUCTURE : | 244.00 FEET. |
| LENGTH OF ROADWAY : | 356.00 FEET. |
| LENGTH OF PROJECT : | 600.00 FEET. |




## 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. MOREAU
SURVEYED DATE : 5/93

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 1983/92

## RECORD PLANS

CONTRACTOR: FW WHITCOMB CONSTRUCTION CORP. – WALPOLE, NH
RESIDENT ENGINEER: CHRIS BARKER
CONSTRUCTION BEGAN: MAY 13, 2005
CONSTRUCTION COMPLETE: , 2007
RECORD PLANS BY: CHRIS BARKER & JUDY. GILMORE

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

BY _____ RESIDENT ENGINEER
DATE 04/16/07

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.

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

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 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.

89j045/structures/sj045bdr.dgn sj045tit.i

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED _____ DATE 11/3/05

PROJECT MANAGER : C. P. WILLIAMS

PROJECT NAME : HARTFORD
PROJECT NUMBER : BRO-BTN 2004(1)

SHEET 1 OF 97 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# PRELIMINARY INFORMATION SHEET

## INDEX OF SHEETS


| | |
|---|---|
| 1. | TITLE SHEET |
| 2. | PRELIMINARY INFORMATION SHEET |
| 3.-5. | QUANTITY SHEETS |
| 6. | BRIDGE TYPICAL SECTIONS |
| 7. | ROADWAY TYPICAL SECTIONS |
| 8. | TRAVERSE & GEODETIC CONTROL INFORMATION |
| 9. | ALIGNMENT TIE SHEET |
| 10.-13. | LAYOUT SHEET 1-4 |
| 14.-15. | TH 4 PROFILE |
| 16. | TH 5 PROFILE |
| 17. | DRIVE PROFILE |
| 18.-21. | TRAFFIC CONTROL PLAN 1-4 |
| 22. | DRAINAGE SHEET |
| 23. | DRAINAGE PIPE SECTIONS |
| 24. | TRAFFIC SIGNS AND LINES |
| 25. | TRAFFIC SIGNS SUMMARY SHEET |
| 26. | BORING INFORMATION SHEET |
| 27.-31 | BORING PROFILE SHEET 1-5 |
| 32. | PLAN AND ELEVATION |
| 33. | GENERAL NOTES |
| 34. | SPAN #1 DETAILS |
| 35. | SPAN #3 DETAILS |
| 36. | SPAN #2 MAIN SPAN REINFORCING DETAILS |
| 37. | MAIN SPAN FRAMING PLAN |
| 38. | CAMBER DIAGRAM |
| 39. | MISCELLANEOUS STEEL DETAILS |
| 40. | EXPANSION BEARING DETAILS |
| 41. | FIXED BEARING DETAILS |
| 42. | BEARING NOTES |
| 43. | EXPANSION JOINT DETAILS |
| 44. | EXPANSION JOINT PLAN |
| 45. | CURB PLATE DETAILS |
| 46. | DOWNSPOUT DETAILS |
| 47. | APPROACH SLAB 1 & 2 DETAILS |
| 48. | ABUTMENT #1 DETAILS |
| 49. | ABUTMENT #2 DETAILS |
| 50. | WINGWALL 1 & 2 DETAILS |
| 51. | WINGWALL 3 & 4 DETAILS |
| 52. | FOOTING REINFORCEMENT DETAILS |
| 53. | PIER #1 DETAILS |
| 54. | PIER #2 DETAILS |
| 55. | CURB DETAILS |
| 56. | RAILING LAYOUT PLAN |
| 57-59. | ALUMINUM RAILING DETAILS 1-3 |
| 60-61. | REINFORCING STEEL SCHEDULE SHEET #1-#2 |
| 62-64. | RIGHT OF WAY SHEETS |
| 65-70. | TH 4 CROSS SECTIONS |
| 71-73. | TH 5 CROSS SECTIONS |
| 74-76. | DRIVE CROSS SECTIONS |
| 77-81. | VT RT 14 CROSS SECTIONS |
| 82-87. | CHANNEL CROSS SECTIONS |
| 88. | EROSION CONTROL NARRATIVE |
| 89-90 | EROSION CONTROL PLAN #1-#2 |
| 91. | FINAL CONDITIONS |
| 92. | SILT FENCE DETAILS |
| 93. | CHECK DAM DETAILS |
| 94. | DROP INLET PROTECTION DETAILS |
| 95. | CONSTRUCTION ENTRANCE DETAILS |
| 96. | DITCH AND SIDE SLOPE PROTECTION DETAILS |
| 97. | TURBIDITY CURTAIN DETAILS |


## INDEX OF STANDARDS

| | |
|---|---|
| B-5 | 6/1/1994 |
| E-100 | 1/2/2004 |
| E-100A | 1/2/2004 |
| E-101 | 3/10/1997 |
| E-102 | 5/30/2003 |
| E-102A | 5/1/2004 |
| E-107 | 6/30/2003 |
| E-107A | 8/8/1995 |
| E-123 | 3/16/2004 |
| E-124 | 8/8/1995 |
| E-138 | 5/30/2003 |
| E-142 | 9/20/1995 |
| E-143 | 6/15/2004 |
| E-191 | 2/1/1999 |
| E-193 | 8/18/1995 |
| G-1 | 1/3/2000 |
| G-1D | 1/3/2000 |
| G-6A | 6/1/1994 |

FINAL HYDRAULIC REPORT

## HYDROLOGIC DATA

Date: 9-25-01

DRAINAGE AREA : 692.0 sq. mi.
CHARACTER OF TERRAIN : Hilly to mountainous
STREAM CHARACTERISTICS : Straight to sinuous, semi-alluvial, probably incised and stable
NATURE OF STREAMBED : Mostly ledge with some gravel, cobbles and boulders

PEAK FLOW DATA

| | | | |
|---|---|---|---|
| Q 2.33 = | 17,300 cfs | Q 50 = | 53,800 cfs |
| Q 10 = | 33,100 cfs | Q 100 = | 65,100 cfs |
| Q 25 = | 44,100 cfs | Q 500 = | 98,700 cfs |

DATE OF FLOOD OF RECORD : November 4, 1927
ESTIMATED DISCHARGE: 120,000 cfs at USGS gage 700' upstream of bridge #8.
WATER SURFACE ELEV.: 403.8' at USGS gage 700' upstream of bridge #8.
NATURAL STREAM VELOCITY : @ Q25 = 11.3 fps
ICE CONDITIONS : Moderate to heavy
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 truss bridge
YEAR BUILT: 1929
CLEAR SPAN(NORMAL TO STREAM): 216'
VERTICAL CLEARANCE ABOVE STREAMBED: 32' maximum
WATERWAY OF FULL OPENING: 4,670 sq. ft.
DISPOSITION OF STRUCTURE: Remove after new bridge is completed.
TYPE OF MATERIAL UNDER SUBSTRUCTURE: Abutments founded on ledge.

WATER SURFACE ELEVATIONS AT:

| | | | |
|---|---|---|---|
| Q2.33 = | 385.7' | VELOCITY= | 7.5 fps |
| Q10 = | 390.0' | " | 10.8 fps |
| Q25 = | 392.3' | " | 12.9 fps |
| Q50 = | 394.1' | " | 14.6 fps |
| Q100 = | 396.3' | " | 16.8 fps |

LONG TERM STREAMBED CHANGES: Little or no changes anticipated due to ledge.

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
FREQUENCY: Q60
RELIEF ELEVATION: 393.8'
DISCHARGE OVER ROAD @Q100: 140 cfs

## UPSTREAM STRUCTURE

TOWN: Sharon — DISTANCE: 22,000'
HIGHWAY# : Central VT Railway — STRUCTURE #: NA
CLEAR SPAN: Not Available — CLEAR HEIGHT: NA
YEAR BUILT: NA — FULL WATERWAY: NA
STRUCTURE TYPE: NA

## DOWNSTREAM STRUCTURE

TOWN: Hartford — DISTANCE: 4,000'
HIGHWAY# : I89 — STRUCTURE #: 11
CLEAR SPAN: 1014' — CLEAR HEIGHT: 60'+-
YEAR BUILT: 1967 — FULL WATERWAY: NA
STRUCTURE TYPE: six span steel beam bridge

## LFD - LOAD RATING (TONS)

| LOADING LEVELS | TRUCK H | HS | 3S2 | 6 AXLE | 3A. STR. | 4A. STR. | SA. SEMI |
|---|---|---|---|---|---|---|---|
| INVENTORY (A=2.17) | 37 | 50 | | | | | |
| POSTED (A=1.55) | 52 | 70 | 99 | | 58 | 60 | 85 |
| OPERATING (A=1.3) | | 83 | 119 | 114 | 69 | 72 | |

COMMENTS:

STRENGTH RF = $\frac{\phi M_n - 1.3\, M_{DL}}{A \times M_{(LL+I)}}$

## TRAFFIC DATA

| YEAR | ADT | DHV | % D | % T | ADTT |
|---|---|---|---|---|---|
| 1996 | 1670 | 230 | 69 | <1 | 3.5 |
| 2016 | 2280 | 320 | 69 | <1 | 1.5 |

20 year ESAL for flexible pavement from 1996 to 2016 : 258000
40 year ESAL for flexible pavement from 1996 to 2036 : 685000
Design Speed : 35 mph

## PROPOSED STRUCTURE

STRUCTURE TYPE: 3 span bridge. Plate girder main span w/ conc. slab approach spans.

CLEAR SPAN(NORMAL TO STREAM): 232' total
VERTICAL CLEARANCE ABOVE STREAMBED: 32' maximum
WATERWAY OF FULL OPENING: 5,200 sq. ft.

WATER SURFACE ELEVATIONS AT:

| | | | |
|---|---|---|---|
| Q2.33 = | 385.7' | VELOCITY= | 7.4 fps |
| Q10 = | 389.9' | " | 10.4 fps |
| Q25 = | 392.2' | " | 12.3 fps |
| Q50 = | 394.0' | " | 13.8 fps |
| Q100 = | 395.9' | " | 15.7 fps |

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
FREQUENCY: Q 80
RELIEF ELEVATION: 393.8'
DISCHARGE OVER ROAD @Q100: 45 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 396.7' (395.6 minimum)
VERTICAL CLEARANCE: @ Q25 = 4.5' average (3.2' minimum)

SCOUR: Ledge is exposed in the channel with shallow overburden on the banks.
Calculated scour depths are to ledge. All substructures should be founded on ledge.
REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV where required.

## PERMIT INFORMATION

| | | |
|---|---|---|
| AVERAGE DAILY FLOW: | 1,300 cfs | DEPTH OR ELEVATION: |
| ORDINARY LOW WATER: | 500 cfs | Elevation 375.0' at bridge |
| ORDINARY HIGH WATER: | 7,000 cfs | Elevation 378.0' at bridge |

## TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Traffic will be maintained on existing bridge.
CLEAR SPAN (NORMAL TO STREAM): 216'
VERTICAL CLEARANCE ABOVE STREAMBED: 32'
WATERWAY AREA OF FULL OPENING: 4,670 sq. ft.

## ADDITIONAL INFORMATION

## DESIGN CRITERIA

1. DESIGN LIVE LOAD AASHTO HS-25
2. DESIGN SPAN 46'-150'-46'
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL ---
   ON LEDGE 10 ksi
4. ALLOWABLE LOAD FOR PILING ---
   TYPE ---
   ESTIMATED LENGTH ---
5. STRUCTURAL STEEL AASHTO GRADE 50W + 70W
6. REINFORCING STEEL GRADE 60
7. CONCRETE CLASS A (HPC-A) f'c : 5000 psi
   CONCRETE CLASS B (HPC-B) f'c : 3500 psi
8. SOIL UNIT WEIGHT 140 pcf
9. DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL ---

## TRAFFIC MAINTENANCE

1. IS TRAFFIC TO BE MAINTAINED? YES
   IF YES, ON EXISTING STRUCTURE? YES
   OR ON TEMPORARY BRIDGE? NO
   ONE OR TWO-WAY TRAVEL? ---
2. TRAFFIC CONTROL SIGNALS REQUIRED? ---
3. ARE SIDEWALKS REQUIRED? ---
   IF SO, ON WHAT SIDE? ---

PROJECT NAME: **Hartford**
PROJECT NUMBER: **BRO-BTN 2004(1)**

FILE NAME: **sj045pi.xls** — PLOT DATE: **2/16/2005**
PROJECT MANAGER: **C.P. Williams** — DRAWN BY: **R.S. Young**
DESIGNED BY: **K.M. Higgins** — CHECKED BY: **K.M. Higgins**
**PRELIMINARY INFORMATION SHEET** — SHEET **2** OF **97**

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

# QUANTITY SHEET

## SUMMARY OF ESTIMATED QUANTITIES

| ROADWAY | APPR. SLAB #1 | APPR. SLAB #2 | | SPAN #1 | SPAN #2 | SPAN #3 | | ABUT. #1 | ABUT. #2 | | PIER #1 | PIER #2 | | EROSION CONTROL | E & C ITMES | BRIDGE QUANTITY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | |
| 2500 | | | | | | | | | | | | | | | | |
| | | | | | | | | 750 | 470 | | | | | | | |
| 90 | | | | | | | | | | | | | | | | |
| 680 | | | | | | | | | | | | | | | | |
| 530 | | | | | | | | | | | | | | | | |
| 70 | | | | | | | | | | | | | | 10 | | |
| | | | | | | | | 820 | 1380 | | | | | | | |
| | | | | | | | | 480 | 150 | | 80 | 700 | | | | |
| | | | | | | | | 525 | 15 | | 280 | 5 | | | | |
| | | | | | | | | 1 | | | | | | | | |
| | | | | | | | | | 1 | | | | | | | |
| | | | | | | | | | | | 1 | | | | | |
| | | | | | | | | | | | | 1 | | | | |
| 925 | | | | | | | | | | | | | | | | |
| 1340 | | | | | | | | | | | | | | 10 | | |
| 40 | | | | | | | | | | | | | | | | |
| 7 | .25 | .25 | | .5 | .5 | 1.5 | | | | | | | | | | |
| 890 | 9 | 6 | | 13 | 41 | 13 | | | | | | | | | | |
| | | | | | | | | 46 | 107 | | 48 | 18 | | | | |
| | | | | 149 | 175 | 135 | | | | | | | | | | |
| | 50 | 31 | | | | | | 278 | 199 | | 134 | 100 | | | | |
| | | | | | 166738 | | | | | | | | | | | |
| | | | | | 78900 | | | | | | | | | | | |
| | | | | | | | | 28410 | 20710 | | 16663 | 11809 | | | | |
| | | | | | | | | 80 | 70 | | 230 | 70 | | | | |
| | 5660 | 3360 | | 22411 | 56693 | 19057 | | 623 | 483 | | 343 | 217 | | | | |
| | | | | | 1 | | | | | | | | | | | |
| | | | | | 1 | | | | | | | | | | | |
| | | | | | 1 | | | | | | | | | | | |
| | | | | 4 | 10 | 3 | | 6 | 4 | | 11 | 7 | | | | |
| | | | | | 34 | | | | | | | | | | | |
| | | | | | 34 | | | | | | | | | | | |
| | | | | 160 | 508 | 152 | | | | | | | | | | |
| | | | | | 491 | | | | | | | | | | | |
| | | | | | 1 | | | | | | | | | | | |
| 570 | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | |
| | | | | | 4 | | | | | | | | | | | |
| | | | | | 4 | | | | | | | | | | | |

## TOTALS

| ROUND | GRAND TOTAL | FINAL |
|---|---|---|
| | 1 | |
| | 2500 | |
| | 1220 | |
| | 90 | |
| | 680 | |
| | 530 | |
| | 80 | |
| | 2200 | |
| | 1410 | |
| | 825 | |
| | 1 | |
| | 1 | |
| | 1 | |
| | 925 | |
| | 1350 | |
| | 40 | |
| | 10 | |
| | 972 | |
| | 219 | |
| | 459 | |
| | 792 | |
| | 166738 | |
| | 78900 | |
| | 77592 | |
| | 450 | |
| | 108847 | |
| | 1 | |
| | 1 | |
| | 1 | |
| | 45 | |
| | 34 | |
| | 34 | |
| | 820 | |
| | 491 | |
| | 1 | |
| | 570 | |
| | 1 | |
| | 1 | |
| | 4 | |
| | 4 | |

## DESCRIPTIONS

| UNIT | ITEMS | ITEM NUMBER |
|---|---|---|
| LS | CLEARING AND GRUBBING (INCL. INDV. TREES & STUMPS) | 201.10 |
| CY | COMMON EXCAVATION | 203.15 |
| CY | UNCLASSIFIED CHANNEL EXCAVATION | 203.27 |
| CY | EXCAVATION OF SURFACES AND PAVEMENTS | 203.28 |
| CY | EARTH BORROW | 203.30 |
| CY | SAND BORROW | 203.31 |
| CY | TRENCH EXCAVATION OF EARTH | 204.20 |
| CY | GRANULAR BACKFILL FOR STRUCTURES | 204.30 |
| CY | COFFERDAM EXCAVATION, EARTH | 208.30 |
| CY | COFFERDAM EXCAVATION, ROCK | 208.35 |
| LS | COFFERDAM (Abutment No. 1) | 208.40 |
| LS | COFFERDAM (Pier No. 1) | 208.40 |
| LS | COFFERDAM (Pier No. 2) | 208.40 |
| LS | COFFERDAM (Abutment No. 2) | 208.40 |
| SY | COLD PLANING-BIT.PAVEMENT | 210.10 |
| CY | SUBBASE OF GRAVEL | 301.15 |
| CY | AGGREGATE SURFACE COURSE | 401.10 |
| CWT | EMULSIFIED ASPHALT | 404.65 |
| TON | BITUMINOUS CONCRETE PAVEMENT (PG 58-34) | 406.25 |
| CY | CONCRETE, CLASS C | 501.30 |
| CY | CONCRETE, HIGH PERFORMANCE CLASS A (MOD.-5000 Psi) | 501.33 |
| CY | CONCRETE, HIGH PERFORMANCE CLASS B | 501.34 |
| LB | STRUCTURAL STEEL(PLATE GIRDER) | 506.55 |
| LB | STRUCTURAL STEEL(PLATE GIRDER)(MOD.-HPS70W) | 506.55 |
| LB | REINFORCING STEEL | 507.15 |
| LF | DRILLING AND GROUTING DOWELS | 507.16 |
| LB | EPOXY COATED REINFORCING STEEL | 507.17 |
| EA | SHEAR CONNECTORS (1208 - 7/8" DIA.x 7" SHEAR STUDS) | 508.15 |
| LS | STRUCTURAL PAINTING,SHOP APPLIED (3.2 TONS) | 513.25 |
| LS | SURFACE PREPARATION,SHOP (3.2 TONS) | 513.40 |
| GAL | WATER REPELLENT (MOD.-SILANE) | 514.10 |
| LF | BRIDGE EXPANSION JOINT (VERMONT) | 516.10 |
| LF | BRIDGE EXPANSION JOINT (ASPHALTIC PLUG TYPE) | 516.10 |
| SY | SHEET MEMBRANE WATERPROOFING (MOD.-TORCH APPLIED) | 519.20 |
| LF | BRIDGE RAILING-ALUMINUM / PEDESTRIAN (ANODIZED BLACK) | 525.23 |
| LS | MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS | 527.10 |
| SY | REMOVAL OF BRIDGE PAVEMENT | 529.10 |
| EACH | REMOVAL OF STRUCTURE | 529.15 |
| EACH | REMOVAL OF STRUCTURE (MOD. RELOCATE BARN) | 529.15 |
| EACH | BEARING DEVICE ASSEMBLY STA. 32+12.00 (PEDSTL.) | 531.10 |
| EACH | BEARING DEVICE ASSEMBLY STA. 33+33.00 (ELAST.) | 531.10 |

## DETAILED SUMMARY OF QUANTITIES

| QUANTITIES | UNIT | ITEMS |
|---|---|---|

PROJECT NAME: **HARTFORD**
PROJECT NUMBER: **BRO-BTN 2004 (1)**

FILE NAME: **s89j045quant.xls**
PROJECT MANAGER: **C.P. WILLIAMS**
DESIGNED BY: **K.M. HIGGINS**
**QUANTITY SHEET #1**

PLOT DATE: **1/13/2005**
DRAWN BY: **M.LONGSTREET**
CHECKED BY: **K.M. HIGGINS**
SHEET **3** OF **97**

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

# QUANTITY SHEET

| SUMMARY OF ESTIMATED QUANTITIES | | | | | | | | | | | | | | | | TOTALS | | | DESCRIPTIONS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROADWAY | APPR. SLAB #1 | APPR. SLAB #2 | | SPAN #1 | SPAN #2 | SPAN #3 | | ABUT. #1 | ABUT. #2 | | PIER #1 | PIER #2 | | EROSION CONTROL | E & C ITMES | BRIDGE QUANTITY | ROUND | GRAND TOTAL | FINAL | UNIT | ITEMS | ITEM NUMBER |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | **BEGIN PIPE OPTIONS** | |
| 144 | | | | | | | | | | | | | | | | | | 144 | | LF | 18" CAAP .075 (2-2/3X1/2) | 601.0216 |
| 144 | | | | | | | | | | | | | | | | | | 144 | | LF | 18" PCCSP .079 (2-2/3 X 1/2) | 601.0416 |
| 144 | | | | | | | | | | | | | | | | | | 144 | | LF | 18" CPEP | 601.0915 |
| | | | | | | | | | | | | | | | | | | | | | | |
| 56 | | | | | | | | | | | | | | | | | | 56 | | LF | 36" CAAP .075 (2-2/3 X 1/2) | 601.0246 |
| 56 | | | | | | | | | | | | | | | | | | 56 | | LF | 36" PCCSP .109 (2-2/3 X 1/2) | 601.0447 |
| 56 | | | | | | | | | | | | | | | | | | 56 | | LF | 36" CPEP | 601.0930 |
| | | | | | | | | | | | | | | | | | | | | | **END PIPE OPTIONS** | |
| 20 | | | | | | | | | | | | | | | | | | 20 | | HR | ALL PURPOSE EXCAVATOR RENTAL, TYPE I | 608.25 |
| 20 | | | | | | | | | | | | | | | | | | 20 | | MGAL | DUST CONTROL WITH WATER | 609.10 |
| 20 | | | | | | | | | | | | | | | | | | 20 | | TON | DUST & ICE CONTROL WITH CALCIUM CHLORIDE | 609.15 |
| 347 | | | | | | | | 1 | 2 | | | | | | | | | 350 | | CY | STONE FILL, TYPE I | 613.10 |
| | | | | | | | | | | | | | | 10 | | | | 10 | | CY | STONE FILL, TYPE I (MOD.-CHECK DAMS) | 613.10 |
| | | | | | | | | | | | | | | 10 | | | | 10 | | CY | STONE FILL, TYPE I (MOD.-STABILIZED CONST. ENTRANCE) | 613.10 |
| | | | | | | | | 680 | 260 | | 50 | 20 | | | | | | 1010 | | CY | STONE FILL, TYPE IV | 613.13 |
| | | | | | | | | | | | | | | 1800 | | | | 1800 | | LF | SNOW FENCE (MOD.-PDF) | 620.70 |
| 333 | | | | | | | | | | | | | | | | | | 333 | | LF | HVY DUTY STEEL BEAM GUARD RAIL | 621.21 |
| 4 | | | | | | | | | | | | | | | | | | 4 | | EACH | ANCHOR FOR STEEL BEAM RAIL | 621.60 |
| 1 | | | | | | | | | | | | | | | | | | 1 | | EACH | ANCHOR FOR CABLE RAIL AT OPNGS | 621.66 |
| 100 | | | | | | | | | | | | | | | | | | 100 | | LF | ALUMINUM APPROACH RAILING (ANODIZED BLACK) | 621.74 |
| 200 | | | | | | | | | | | | | | | | | | 200 | | HR | FLAGGERS | 630.15 |
| | | | | | | | | | | | | | | | 1 | | | 1 | | LS | FIELD OFFICE-ENGINEERS | 631.10 |
| | | | | | | | | | | | | | | | 1 | | | 1 | | LS | TESTING EQUIPMENT - CONCRETE | 631.16 |
| | | | | | | | | | | | | | | | 1 | | | 1 | | LS | TESTING EQUIPMENT - BITUMINOUS (MOD.) | 631.17 |
| | | | | | | | | | | | | | | | 1 | | | 1 | | LU | FIELD OFFICE - TELEPHONE (NABI) | 631.25 |
| 1 | | | | | | | | | | | | | | | | | | 1 | | LS | MOBILIZATION/DEMOBILIZATION | 635.11 |
| 1295 | | | | | | | | | | | | | | | | | | 1295 | | LF | DURABLE 4" WHITE LINE | 646.40 |
| 1210 | | | | | | | | | | | | | | | | | | 1210 | | LF | DURABLE 4" YELLOW LINE | 646.41 |
| 32 | | | | | | | | | | | | | | | | | | 32 | | LF | DURABLE 24" STOP BAR | 646.46 |
| 8 | | | | | | | | | | | | | | | | | | 8 | | EACH | DURABLE LETTER OR SYMBOL | 646.50 |
| 1295 | | | | | | | | | | | | | | | | | | 1295 | | LF | TEMPORARY 4" WHITE LINE | 646.60 |
| 1210 | | | | | | | | | | | | | | | | | | 1210 | | LF | TEMPORARY 4" YELLOW LINE | 646.61 |
| 32 | | | | | | | | | | | | | | | | | | 32 | | LF | TEMPORARY 24" STOP BAR | 646.66 |
| 8 | | | | | | | | | | | | | | | | | | 8 | | EACH | TEMPORARY LETTERS OR SYMBOLS | 646.70 |
| | | | | | | | | | | | | | | 1860 | | | | 1860 | | SY | GEOTEXTILE UNDER STONE FILL | 649.31 |
| | | | | | | | | | | | | | | 350 | | | | 350 | | SY | GEOTEXTILE FOR SILT FENCE | 649.51 |
| | | | | | | | | | | | | | | 70 | | | | 70 | | SY | GEOTEXTILE FOR FILTER CURTAIN | 649.61 |
| | | | | | | | | | | | | | | 30 | | | | 30 | | LB | SEED | 651.15 |
| | | | | | | | | | | | | | | 20 | | | | 20 | | LB | SEED-WINTER RYE | 651.17 |
| | | | | | | | | | | | | | | 200 | | | | 200 | | LB | FERTILIZER | 651.18 |
| | | | | | | | | | | | | | | 1 | | | | 1 | | TON | AGRICULTURAL LIMESTONE | 651.20 |
| | | | | | | | | | | | | | | 1 | | | | 1 | | TON | HAYMULCH | 651.25 |
| | | | | | | | | | | | | | | 10 | | | | 10 | | EACH | HAYBALES FOR EROSION CONTROL | 651.26 |

| DETAILED SUMMARY OF QUANTITIES | | |
|---|---|---|
| QUANTITIES | UNIT | ITEMS |
| | | |

PROJECT NAME: **HARTFORD**
PROJECT NUMBER: **BRO-BTN 2004 (1)**

FILE NAME: **s89j045quant.xls**
PROJECT MANAGER: **C.P. WILLIAMS**
DESIGNED BY: **K.M. HIGGINS**
**QUANTITY SHEET #2**

PLOT DATE: **12/9/98**
DRAWN BY: **M.LONGSTREET**
CHECKED BY: **K.M. HIGGINS**
SHEET **4** OF **97**

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

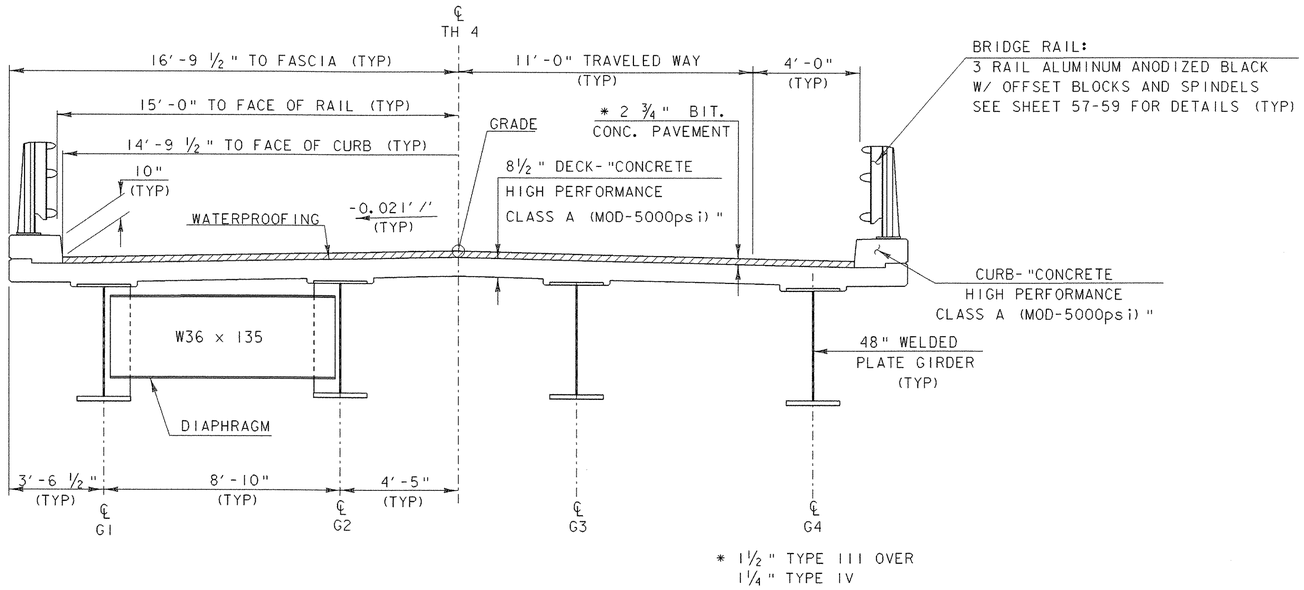
# QUANTITY SHEET

| SUMMARY OF ESTIMATED QUANTITIES | | | | | | | | | | | | | | | | TOTALS | | | DESCRIPTIONS | | | DETAILED SUMMARY OF QUANTITIES | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROADWAY | APPR. SLAB #1 | APPR. SLAB #2 | | SPAN #1 | SPAN #2 | SPAN #3 | | ABUT. #1 | ABUT. #2 | | PIER #1 | PIER #2 | | EROSION CONTROL | E & C ITMES | BRIDGE QUANTITY | ROUND | GRAND TOTAL | FINAL | UNIT | ITEMS | ITEM NUMBER | QUANTITIES | UNIT | ITEMS |
| | | | | | | | | | | | | | | 30 | | | | 30 | | CY | TOP SOIL | 651.35 | | | |
| | | | | | | | | | | | | | | 200 | | | | 200 | | SY | GRUBBING MATERIAL | 651.40 | | | |
| | | | | | | | | | | | | | | 1 | | | | 1 | | LS | EROSION & SEDIMENT CONTROL PLAN | 652.10 | | | |
| | | | | | | | | | | | | | | 100 | | | | 100 | | HR | MONITORING EROSION & SEDIMENT CONTROL | 652.20 | | | |
| | | | | | | | | | | | | | | 1 | | | | 1 | | LU | FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN (NABI) | 652.30 | | | |
| | | | | | | | | | | | | | | 850 | | | | 850 | | SY | EROSION MATTING | 654.10 | | | |
| 6 | | | | | | | | | | | | | | | | | | 6 | | EACH | DECIDUOUS SHRUBS (Syringa vulgaris) | 656.35 | | | |
| 18 | | | | | | | | | | | | | | | | | | 18 | | SF | TRAFFIC SIGNS, TYPE A | 675.20 | | | |
| 56 | | | | | | | | | | | | | | | | | | 56 | | LF | FLANGED CHANNEL SIGN POSTS | 675.301 | | | |
| 9 | | | | | | | | | | | | | | | | | | 9 | | EACH | REMOVING SIGNS | 675.50 | | | |
| 8 | | | | | | | | | | | | | | | | | | 8 | | EACH | DELINEATORS W/STEEL POSTS | 676.10 | | | |

PROJECT NAME: **HARTFORD**
PROJECT NUMBER: **BRO-BTN 2004 (1)**

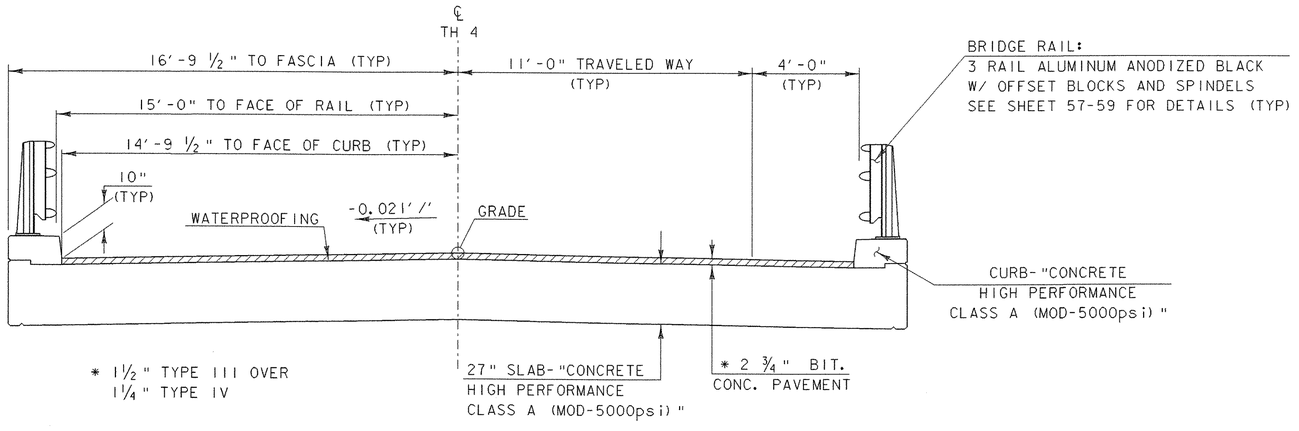
FILE NAME: **s89j045quant.xls**
PROJECT MANAGER: **C.P. WILLIAMS**
DESIGNED BY: **K.M. HIGGINS**
**QUANTITY SHEET #3**

PLOT DATE: **12/9/98**
DRAWN BY: **M.LONGSTREET**
CHECKED BY: **K.M. HIGGINS**
SHEET **5** OF **97**




## TYPICAL BRIDGE SECTION MAIN SPAN (SPAN #2)

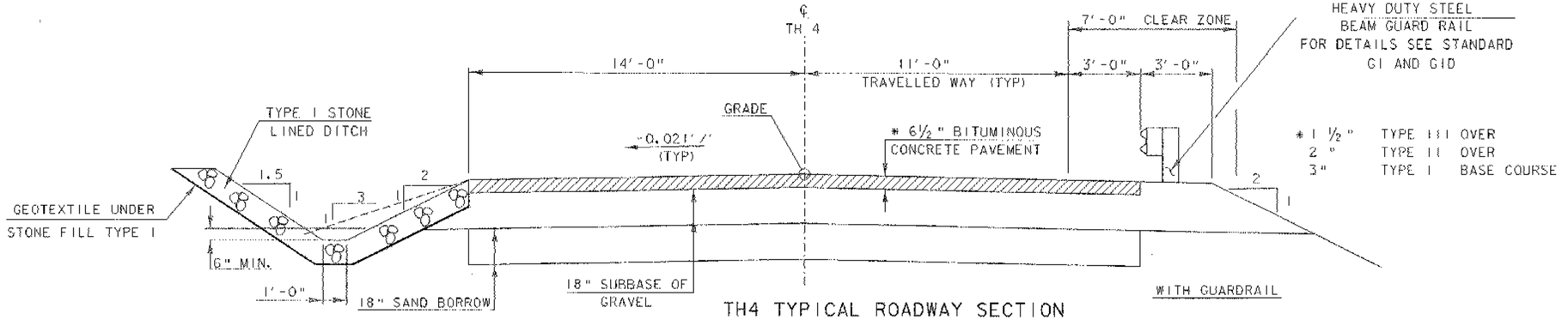
SCALE 3/8" = 1'-0




## TYPICAL BRIDGE SECTION (SPANS 1 & 3)

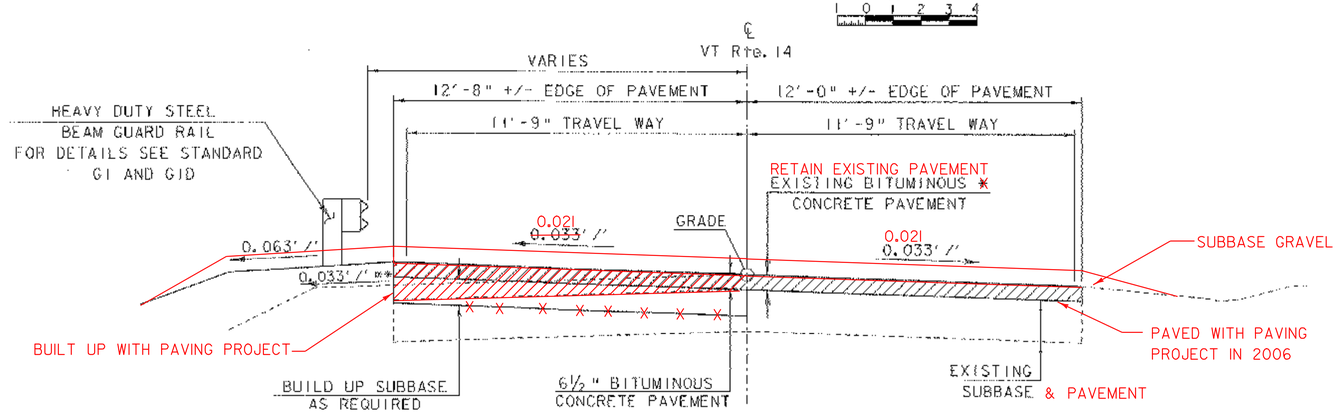
SCALE 3/8" = 1'-0

| | | | |
|---|---|---|---|
| PROJECT: HARTFORD | | | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: | 89J045/structures/sj045typ.dgn | | |
| IPARM FILE NAME: | sj045typ1.i | PLOT DATE: | 11-FEB-2005 |
| SURVEYED BY: | R. MOREAU | SURVEY DATE: | 5/93 |
| SQUAD LEADER: | C. P. WILLIAMS | DRAWN BY: | K.M. HIGGINS |
| BRIDGE TYPICAL SECTIONS | | SHEET: | 6 OF 97 |




## TH4 TYPICAL ROADWAY SECTION

SCALE ⅜" = 1'-0

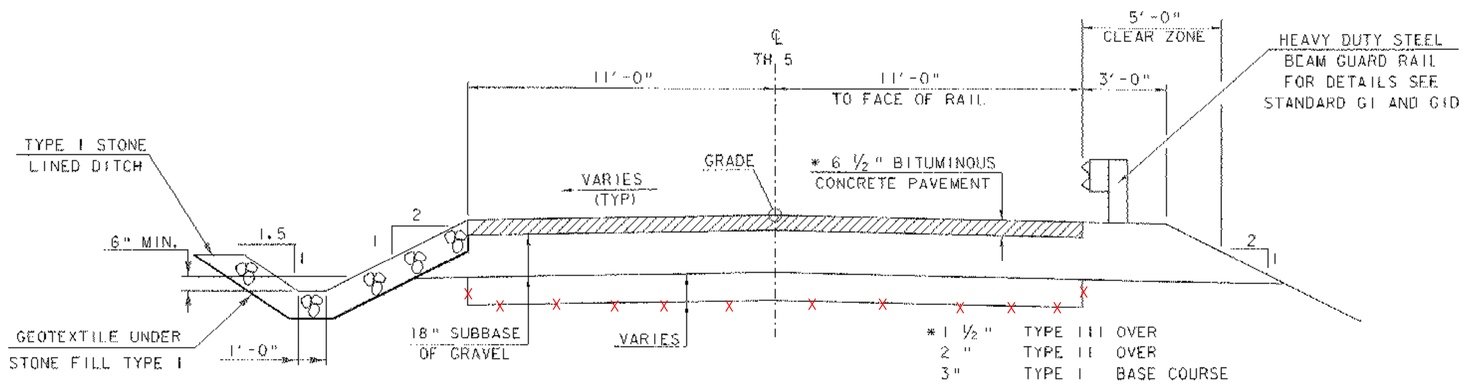



* COLD PLANE

** EXISTING BANKING

## VT Rte. 14 TYPICAL ROADWAY SECTION

SCALE ⅜" = 1'-0




## TH5 TYPICAL ROADWAY SECTION

SCALE ⅜" = 1'-0

NOTE:

ALUMINIMUM APPROACH RAIL SHALL BE ANODIZED BLACK

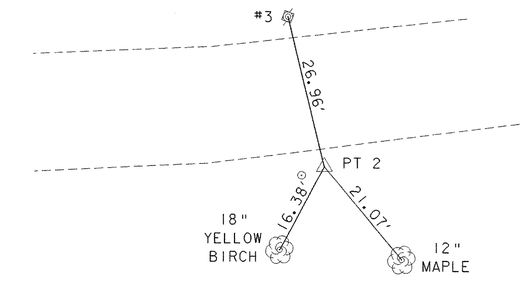
| MATERIAL ITEM | TOLERANCE |
|---|---|
| PAVEMENT | ±¼" TOTAL THICKNESS |
| AGGREGATE SURFACE COURSE | ± ½" |
| BASE COURSE | ± ½" |
| SUBBASE | ± 1" |
| SAND BORROW | ± 1" |
| GRANULAR BORROW | ± 1" |

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89J045/structures/sj045typ.dgn | |
| XPARM FILE NAME: sj045typ2.l | PLOT DATE: 11-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: K.M. HIGGINS |
| ROADWAY TYPICAL SECTIONS | SHEET: 7 OF 97 |

# GEODETIC CONTROL INFORMATION

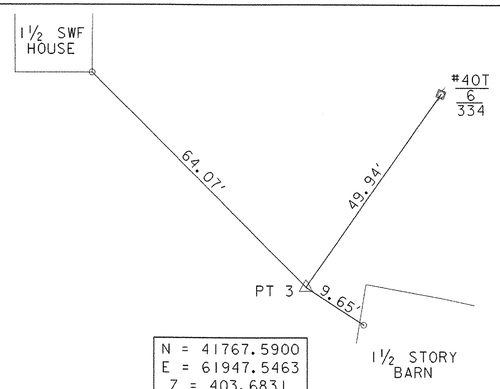
# TRAVERSE TIE INFORMATION

## POINT #2



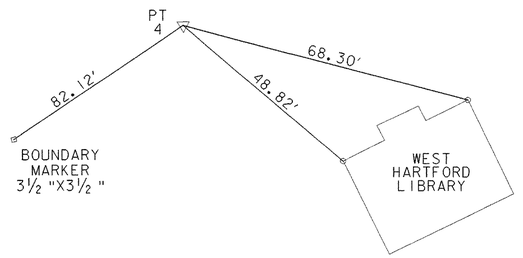

N = 41652.0275
E = 61745.9361
Z = 432.1989

## POINT #3



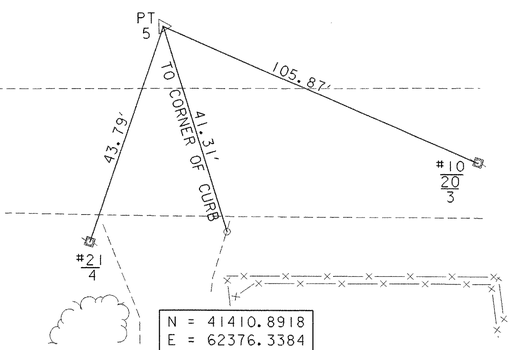

N = 41767.5900
E = 61947.5463
Z = 403.6831

## POINT #4



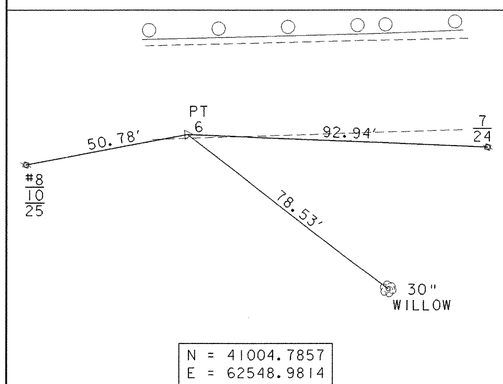

N = 41911.8935
E = 62260.4316
Z = 393.3030

## POINT #5



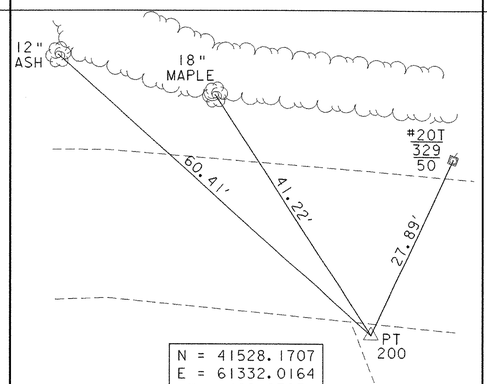

N = 41410.8918
E = 62376.3384
Z = 390.9146

## POINT #6



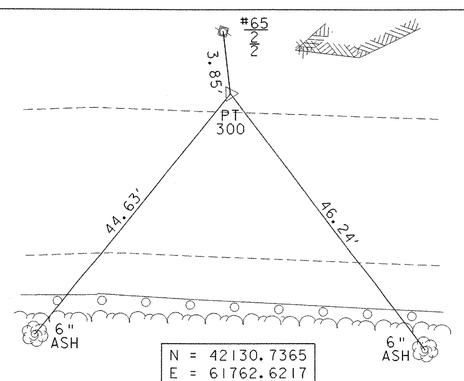

N = 41004.7857
E = 62548.9814
Z = 396.5009

## POINT #200



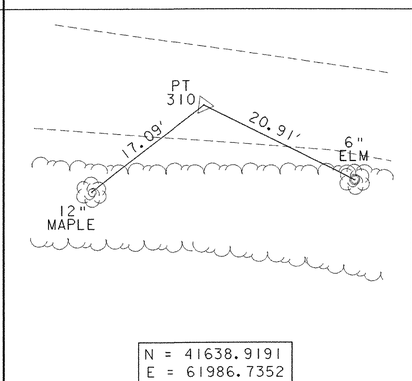

N = 41528.1707
E = 61332.0164
Z = 468.2723

## POINT #300



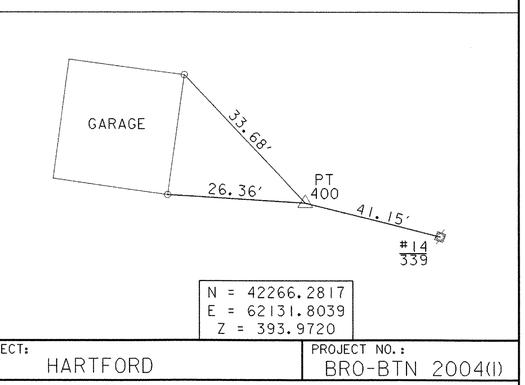

N = 42130.7365
E = 61762.6217
Z = 395.6073

## POINT #310




N = 41638.9191
E = 61986.7352
Z = 394.1320

## POINT #400




N = 42266.2817
E = 62131.8039
Z = 393.9720

**DATUM**
VERTICAL NAVD 1988
HORIZONTAL NAD 1983/92

ALL TIES SHOWN NOT TO SCALE

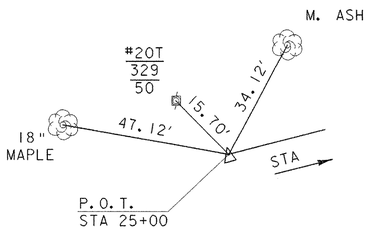
PROJECT: HARTFORD
PROJECT NO.: BRO-BTN 2004(1)

DESIGN FILE NAME: 89j045/structures/sj045tie.dgn
IPARM FILE NAME: sj045tie1.i
SURVEYED BY: R. MOREAU
SQUAD LEADER: C.P. WILLIAMS
TRAVERSE & GEODETIC CONTROL INFORMATION
PLOT DATE: 11-FEB-2005
SURVEY DATE: 05/93
DRAWN BY: P.G. JARVIS
SHEET: 8 OF 97

PLOTTED 11-FEB-2005

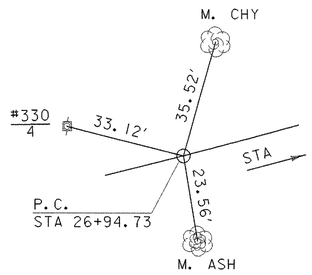
# NEW ALIGNMENT TIE INFORMATION

## MAINLINE POB STA 25+00.00



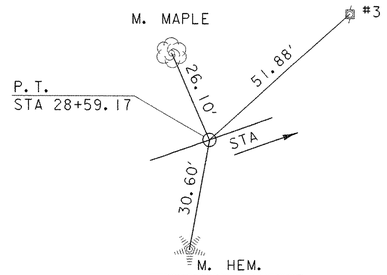

N = 41544.9060
E = 61345.5230

## MAINLINE PC STA 26+94.73



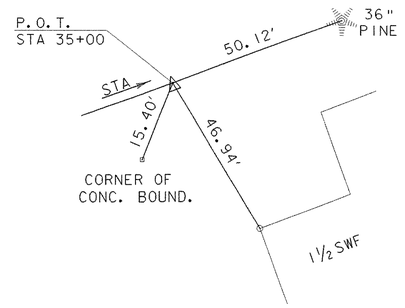

N = 41592.7289
E = 61534.2862

## MAINLINE PT STA 28+59.17




N = 41639.9233
E = 61691.7599

## MAINLINE POE STA 35+00.00

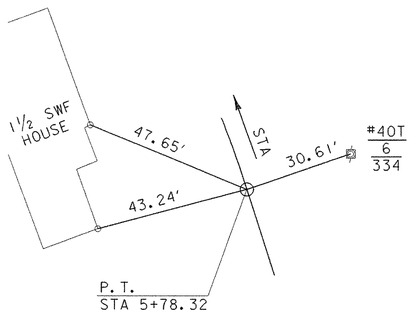



N = 41850.1417
E = 62297.1254

## TH5 POB STA 5+00.00

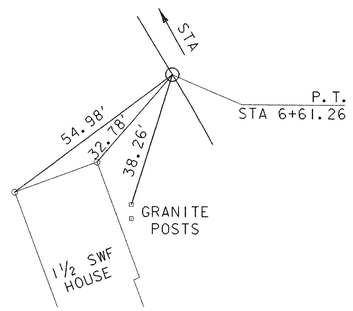
N = 41731.3904
E = 61955.1574

## TH5 PC STA 5+78.32




N = 41805.9878
E = 61931.3025

## TH5 PT STA 6+61.26




N = 41881.1002
E = 61896.6222

## TH5 POE STA 6+80.00

N = 41897.0247
E = 61886.7357

## DRIVE POB STA 10+00.00

N = 41725.4856
E = 61938.1535

## DRIVE PC #1 STA 10+31.99

N = 41695.1379
E = 61948.2782

## DRIVE PT #1 STA 10+66.52

N = 41664.8800
E = 61964.5647

## DRIVE PC #2 STA 10+74.20

N = 41658.8417
E = 61969.3050

## DRIVE PT #2 STA 11+14.90

N = 41623.8424
E = 61989.8390

## DRIVE POE STA 11+84.43

N = 41559.6877
E = 62016.6317

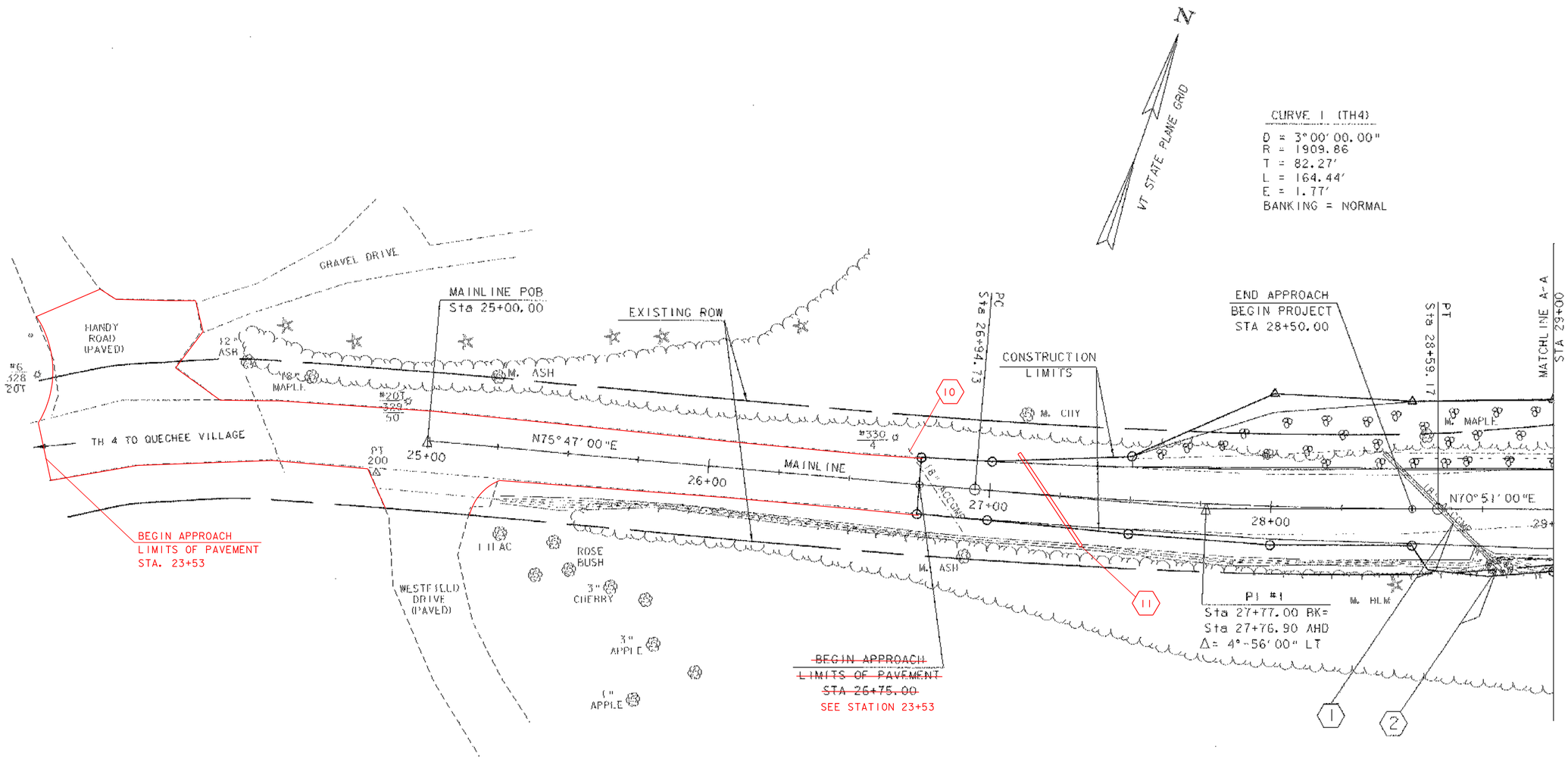
**DATUM**
VERTICAL NAVD 1988
HORIZONTAL NAD 1983/92

PROJECT: HARTFORD
PROJECT NO.: BRO-BTN 2004(I)

DESIGN FILE NAME: 89j045/structures/sj045tie.dgn
IPARM FILE NAME: sj045tie2.i
SURVEYED BY: R. MOREAU
SQUAD LEADER: C.P. WILLIAMS
ALIGNMENT TIE SHEET

PLOT DATE: 11-FEB-2005
SURVEY DATE: 05/93
DRAWN BY: K. M. HIGGINS
SHEET: 9 OF 97

PLOTTED 11-FEB-2005




SEE SHEET 22-23 FOR
DRAINAGE INFORMATION

# LAYOUT SHEET 1

SCALE 1" = 20'-0

20 0 20

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

PROJECT: HARTFORD
PROJECT NO.: BRO-BTN 2004(I)

DESIGN FILE NAME: 89J045/structures/sj045bdr.dgn
PARM FILE NAME: sj045lal.i
SURVEYED BY: R. MOREAU
SQUAD LEADER: C. P. WILLIAMS
LAYOUT SHEET 1
PLOT DATE: 8-FEB-2005
SURVEY DATE: 5/93
DRAWN BY: K.M. HIGGINS
SHEET: 10 OF 97

REMOVAL & DISPOSAL OF GUARD RAIL
ML STA 31+70.00 - 31+83.00 LT
TH5 STA 5+64.00 - 6+43.00 RT
ML STA 34+11.00 - 34+34.00 LT

ALUMINUM BRIDGE RAILING-ANODIZED BLACK
ML Sta 31+65.25 LT - Sta 34+09.75 LT
ML Sta 31+66.25 RT - Sta 34+09.75 RT

ALUMINUM APPROACH RAILING-ANODIZED BLACK
TH5 Sta 5+46.20 RT - ML Sta 31+65.23 LT
ML Sta 31+41.30 RT - ML Sta 31+66.25 RT
ML Sta 34+09.75 LT - ML Sta 34+34.20 LT
ML Sta 34+09.75 RT - ML Sta 34+33.30 RT

HEAVY DUTY STEEL BEAM GUARDRAIL
TH5 Sta 5+46.20 RT - TH5 Sta 6+~~34~~.00 RT 30
ML Sta 31+41.30 RT - DRIVE Sta 11+~~09~~.00 LT 11
ML Sta 34+34.50 LT - VT14 Sta 209+~~27.50~~ LT 25
ML Sta 34+33.30 RT - VT14 Sta 207+~~62~~.00 LT 64

ANCHOR FOR STEAL BEAM GUARDRAIL
TH5 Sta ~~6+22~~.00 RT 3+60
DRIVE Sta 10+~~98~~.00 LT 31
VT14 Sta 207+~~75~~.00 LT 72
VT14 Sta 209+~~18~~.00 LT 12

~~ANCHOR FOR CABLE RAIL~~
~~Sta 6+30.00 RT (APPROXIMATE)~~

CONSTRUCTION LIMITS

CURVE 2 (TH5)
D = 17°00'00.00"
R = 337.03
T = 41.68'
L = 82.94'
E = 2.57'
BANKING = TRANSITION TO EXISTING

TH5 POE
Sta 6+80.00

PT
Sta 6+61.26

PC
Sta 5+78.32

EXISTING 12" CGMP

REPLACE

TH 5 TO POMFRET (PAVED)

TH 4 TO QUECHEE

WOODS ROAD

1½ SWF HOUSE

GRAVEL DRIVE

(2) 6" ELM

6" WILLOW

12" OAK

12" ASH

6" ASH

6" ELM

(2) 3" ELM

END APPROACH
LIMITS OF PAVEMENT
STA 6+50.00

CHANNEL POE
Sta 54+00.00

PI #2
Sta 6+20.00 BK =
Sta 6+19.58 AHD
Δ = 14°06'00" LT

END PROJECT
BEGIN APPROACH
STA 5+75.00

EXISTING ROW

BENCHMARK #1
CHISLED SQUARE
ELEV = 400.668

CHANNEL LINE

END PROJECT
BEGIN APPROACH
STA 34+50.00

CAREX GARBERI (SEE NOTES)

℄ BRG. PIER #2
Sta 33+63.00
FG = 400.59

℄ PIER #2
Sta 33+64.17

TEMPORARY CONSTRUCTION LIMITS

℄ BRG. PIER #1
Sta 32+13.00
FG = 403.88

℄ PIER #1
Sta 32+11.83

END BRIDGE
Sta 34+10.00
FG = 398.36

CONSTRUCTION LIMITS

BEGIN BRIDGE
Sta 31+66.00
FG = 404.91

POT
ML Sta 31+38.00 =
TH5 Sta 5+00.00
Δ = 88°35'00" LT

POT
ML Sta 31+20.00 =
DRIVE Sta 10+00.00
Δ = 90°42'00" RT

CONCRETE ROAD BLOCK

FOUNDATION

PC
Sta 10+31.99

PT
Sta 10+66.52

EXISTING 36" CGMP

WOOD WALL

PC
Sta 10+74.20

PI #3
Sta 10+49.43 BK=
Sta 10+49.08 AHD
Δ = 19°-41'00" LT

PI #4
Sta 10+94.68 BK=
Sta 10+94.42 AHD
Δ = 15°28'00" RT

PT
Sta 11+14.90

DRIVE POE
Sta 11+84.43

GRAVEL RD

CURVE 3 (DRIVE)
D = 57°00'
R = 100.52'
T = 17.44'
L = 34.53'
E = 1.50'
BANKING = NORMAL

CURVE 4 (DRIVE)
D = 38°00'
R = 150.78'
T = 20.48'
L = 40.70'
E = 1.38'
BANKING = NORMAL

CONSTRUCT DRIVE
TH4 STA 30+09.00 LT 12' FIELD DRIVE W/5' PAVED APRON
TH4 STA 31+20 RT SEE SHEET 17 FOR DETAILS
TH5 STA 5+89.00 LT - 24' WIDE W/5' PAVED APRON

SEE SHEET 22-23 FOR DRAINAGE INFORMATION
SEE SHEET 24 TRAFFIC SIGNS AND PAVEMENT MARKINGS

REMOVAL OF STRUCTURE (MOD)
~~(RELOCATE BARN)~~ (REMOVE)
STA 31+50.00

EXISTING BRIDGE DATA:
216 ' STEEL TRUSS
20' CURB TO CURB
14'-11" VERTICAL CLEARANCE
BUILT IN 1928

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

VT STATE PLANE GRID

MATCH LINE A-A
STA 29+00

MAINLINE

N17°44'W

S18°27'00"E

N70°51'00"E

S22°40'00"E

N19°00'00"W

N18°39'00"W

WHITE RIVER
FLOW

CHANNEL POB
Sta 50+00.00

MATCHLINE C-C
STA 210+00

END APPROACH
STA ~~209+75.00~~ 212+02
MITS OF PAVEMENT GUIDE POST

18" CGMP

GUIDE POST

GUY

VT 14 TO SHARON

#335 50

#336 TO 17

GUY

R=16'
R=13'
R=142'
R=125'
R=38' (TYP)

CRAVEL DRIVE

6" SPRUCE

WEST HARTFORD LIBRARY

GRANITE PAD & MONUMENT

SHRUBS FLAG POLE

BENCHMARK #2
CHISELED SQUARE
ELEV = 399.51

209+00 PT

ML Sta 34+61.00 =
VT 14 POST Sta 208+32.00
Δ = 84°30' 00" LT

POE
Sta 35+00.00

BOUNDARY MARKER 3½"x3½"

36" PINE

3" MAPLE

36" MAPLE

FLOWER GARDEN

LILAC

LILAC

LILAC

1½ SWF

208+00

#18 20T 606

CRAVEL DRIVE

GRAVEL DRIVE

12" MAPLE

24" APPLE

VT 14 HARTFORD VILLAGE

CURVE 5 (VT 14)
D = 0°-45'-00"
R = 7639.44'
T = 328.30'
L = 656.21'
E = 7.05'
BANKING = EXISTING

P.I. #5
Sta 208+00.00 BK =
Sta 207+99.57 AHD
Δ = 5° 00' 00" RT

POT
ML Sta 33+00.00 =
Channel Sta 52+00.00
Δ = 90° 00' 00"

6" ASH

~~BEGIN APPROACH~~
~~STA 207+25.00~~ 205+45
LIMITS OF PAVEMENT

MATCHLINE B-B
STA 207+00

18" YELLOW BIRCH

12" MAPLE

IP.

# LAYOUT SHEET 2

SCALE 1" = 20'-0

20 0 20

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89J045/structures/sJ045bdr.dgn | |
| IPARM FILE NAME: sJ045la2.I | PLOT DATE: 11-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: K.M. HIGGINS |
| LAYOUT SHEET 2 | SHEET: 11 OF 97 |

MATCHLINE B-B
STA 207+00

6" CEDAR
12" APPLE
1½ SWF
18" MAPLE
#2 T3
12" SPRUCE
12" SPRUCE
60" WILLOW
15" RCP
3" PINE
PAVED DRIVE
REX ASSOCIATES GARAGE
#10 20
(3) 6" PINE
HOUSE
GRAVEL DRIVE
#21 4
3" ASH
2" SPRUCE
12" WILLOW
12" ASH
6" ASH
6" BASS
6" ELM
6" ELM
PT 5
12" RCP
SPEED LIMIT 35
206+00
205+00
204+00
203+00
VT 14 TO HARTFORD VILLAGE

WHITE RIVER — FLOW

GRAVEL RD
PT 311
18" HEMLOCK
18" OAK

N
VT STATE PLANE GRID

NOTE:
NOT ALL TRAFFIC SIGNS SHOWN.
SOME SIGNS THAT ARE NOT WITH IN THE PROJECT LIMTS WERE NOT LABELED ON THESE SHEETS.

ANY PERMANENT SIGNS DEEMED AS CONFLICTING IN MESSAGE WITH TEMPORARY CONSTRUCTION ZONE SIGNS SHOULD BE COVERED UNTIL THE TEMPORARY SIGNS ARE REMOVED.

# LAYOUT SHEET 3

SCALE 1" = 20'-0
20 0 20

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89J045/structures/sj045bdr.dgn | |
| IPARM FILE NAME: sj045la3.i | PLOT DATE: 11-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: K.M. HIGGINS |
| LAYOUT SHEET 3 | SHEET: 12 OF 97 |

18" ACCOMP

#65
PT 300

6" ASH

WHITE RIVER
FLOW

TH 5 POMFRET ROAD
TO POMFRET (PAVED)

#65
500

6 "ELM
6 "ASH
GUY
(2) 6 "ELM

VT 14 POE
Sta 214+00

214+00

#340
13

EXISTING RIGHT OF WAY

IP

(2) 6"
WILLOW

2 SWF

LILAC

#14
339

LILACS
GUY

OLD STORE

GARAGE

GRAVEL
DRIVE

PT
400

N13°39' W

213+00

VT 14
TO SHARON

DEPOT STREET (PAVED)

212+00

STEPS

WEST HARTFORD
STORE

#338
10
15
20T

FLAG POLE
YARD LIGHT

GUY

UTILITY -
TELEPHONE

PAVED DRIVE

PT
Sta 211+33.12

211+00

GRAVEL
DRIVE

GUY
GUY
GRAVEL SHOULDER

MH
UNDERGROUND
TELEPHONE

GUY

FLOWER
GARDEN

#6
33
16

12" RCP

GRAVEL
DRIVE

MATCHLINE C-C
STA 210+00

N

VT STATE PLANE GRID

NOTE:
NOT ALL TRAFFIC SIGNS SHOWN. SOME SIGNS THAT ARE NOT WITH IN THE PROJECT LIMTS WERE NOT LABELED ON THESE SHEETS.

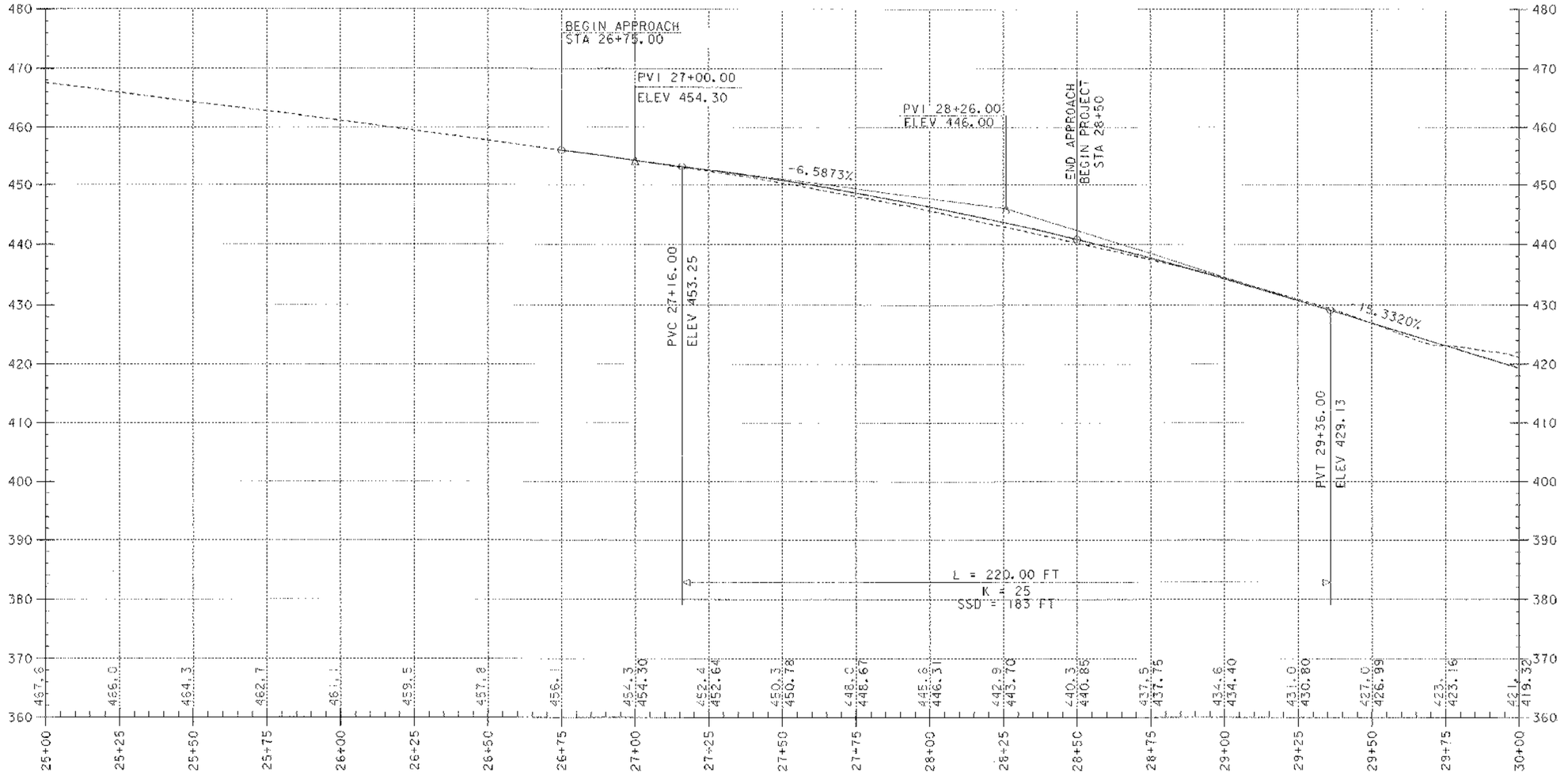
ANY PERMANENT SIGNS DEEMED AS CONFLICTING IN MESSAGE WITH TEMPORARY CONSTRUCTION ZONE SIGNS SHOULD BE COVERED UNTIL THE TEMPORARY SIGNS ARE REMOVED.

# LAYOUT SHEET 4

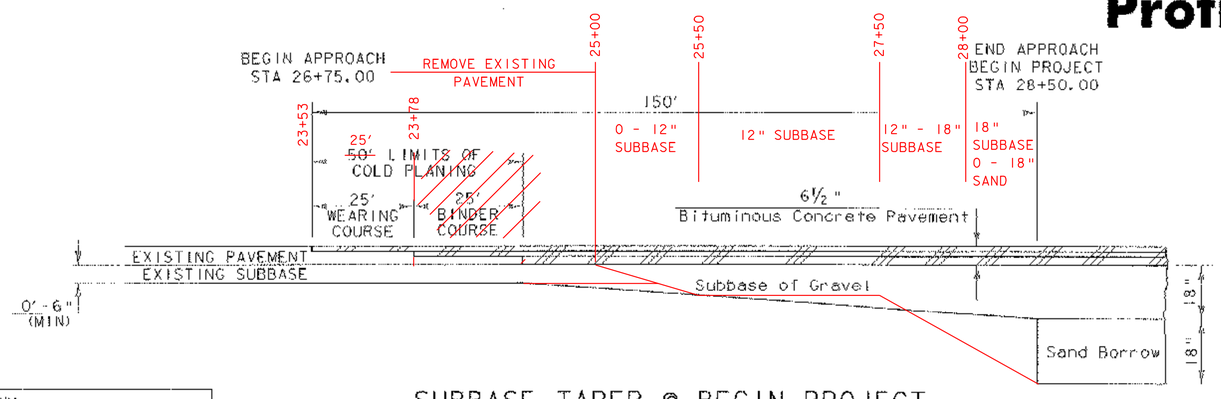
SCALE 1" = 20'-0

20 0 20

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89j045/structures/sj045bdr.dgn | |
| IPARM FILE NAME: sj045la4.i | PLOT DATE: 11-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: K.M. HIGGINS |
| LAYOUT SHEET 4 | SHEET: 13 OF 97 |



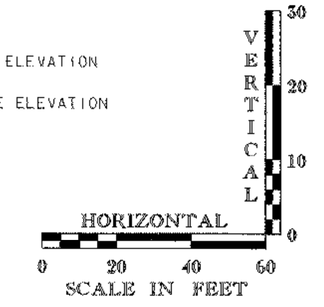

# Profile TH4




SUBBASE TAPER @ BEGIN PROJECT

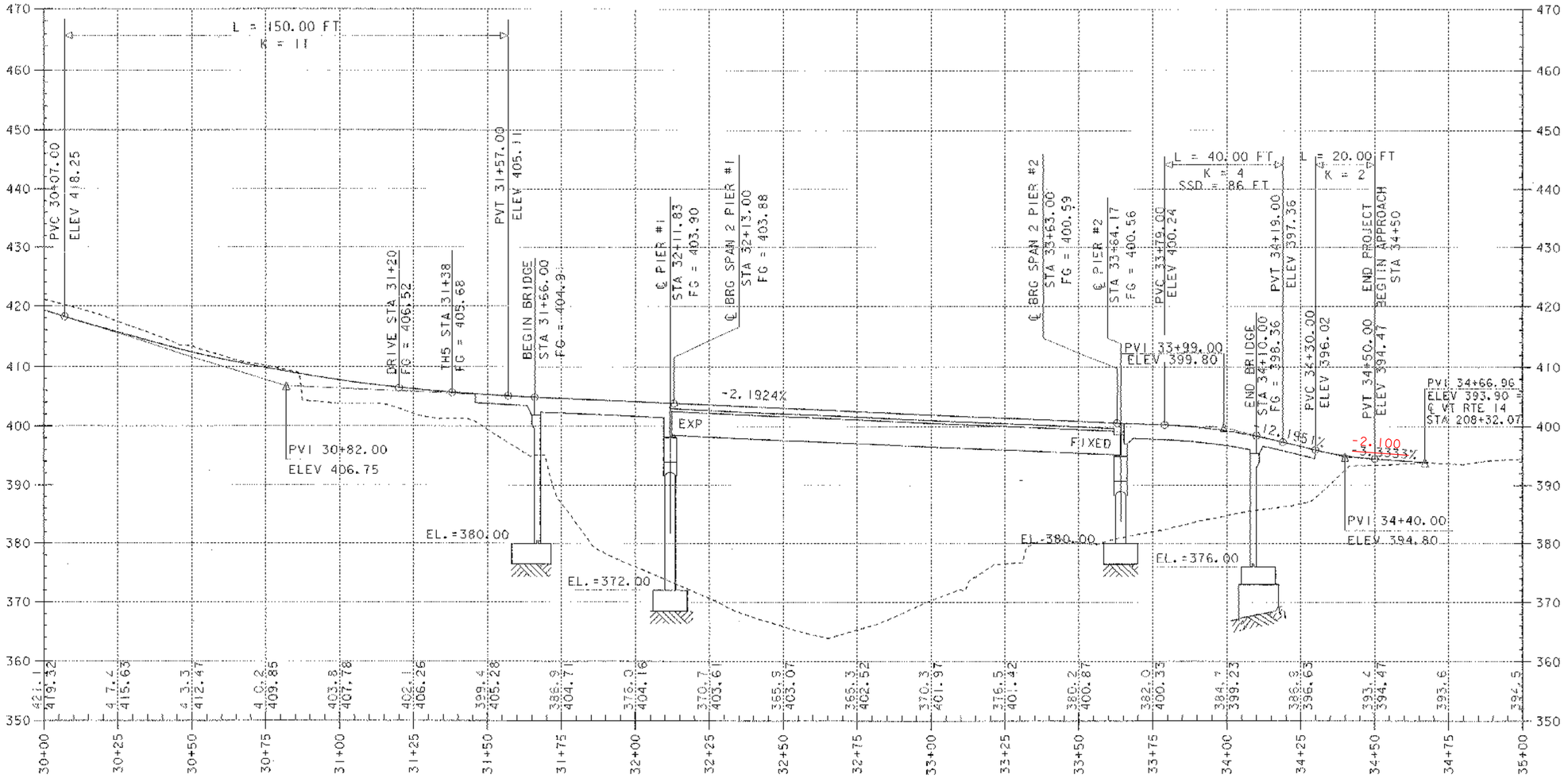
nts

NOTE: GRADES SHOWN TO THE NEAREST TENTH REPRESENT EXISTING GROUND ELEVATION ALONG THE REVISED CENTERLINE.
GRADES SHOWN TO THE NEAREST HUNDREDTH REPRESENT FINISH GRADE ELEVATION ALONG THE REVISED CENTERLINE.



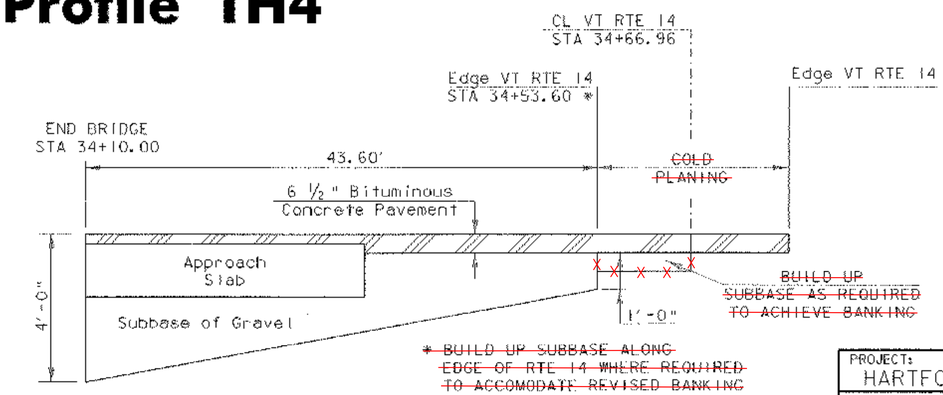

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

PROJECT: HARTFORD
PROJECT NO.: BRO-BTN 2004(I)
DESIGN FILE NAME: /89J045/structures/sj045pro.dgn
IPARM FILE NAME: sj045pri.i
SURVEYED BY: R. MOREAU
SQUAD LEADER: C. F. WILLIAMS
TH 4 PROFILE
PLOT DATE: 11-FEB-2005
SURVEY DATE: 5/93
DRAWN BY: K. M. HIGGINS
SHEET: 14 OF 97



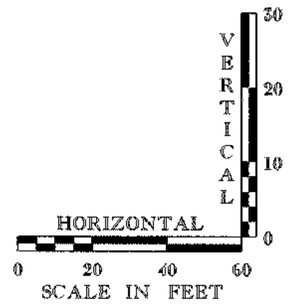

NOTE: GRADES SHOWN TO THE NEAREST TENTH REPRESENT EXISTING GROUND ELEVATION ALONG THE REVISED CENTERLINE.
GRADES SHOWN TO THE NEAREST HUNDREDTH REPRESENT FINISH GRADE ELEVATION ALONG THE REVISED CENTERLINE.

# Profile TH4



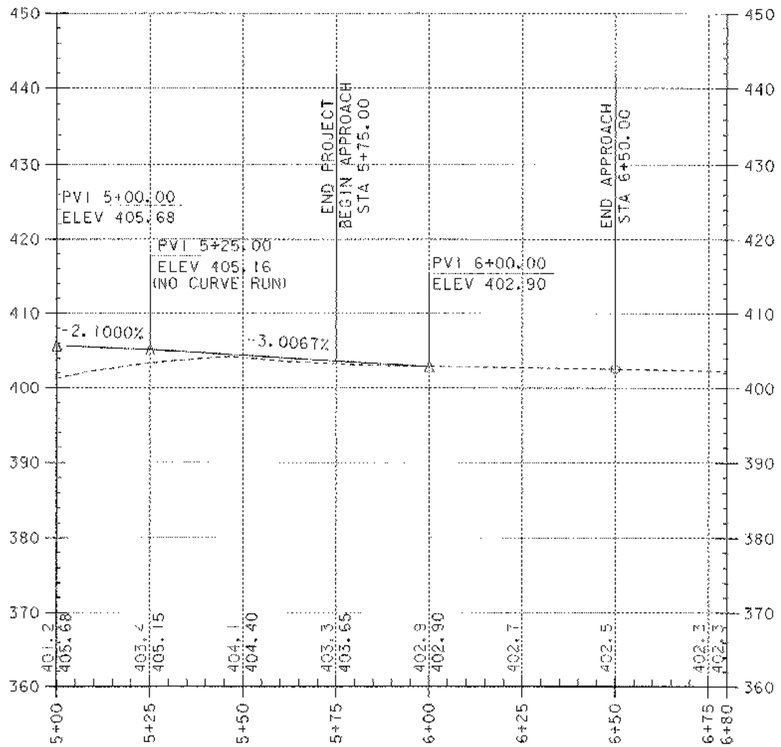

SUBBASE TAPER @ INTERSECTION OF TH 4 & VT RTE 14

nts




DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: /893045/structures/sj045pro.dgn | |
| IPARM FILE NAME: sj045pr2.I | PLOT DATE: 11-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: K. M. HIGGINS |
| TH 4 PROFILE | SHEET: 15 OF 97 |

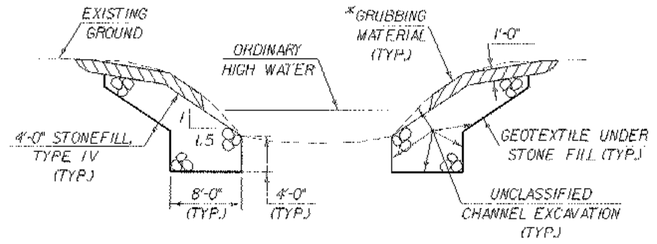



# Profile TH5

NOTE: GRADES SHOWN TO THE NEAREST TENTH REPRESENT EXISTING GROUND ELEVATION ALONG THE REVISED CENTERLINE.
GRADES SHOWN TO THE NEAREST HUNDREDTH REPRESENT FINISH GRADE ELEVATION ALONG THE REVISED CENTERLINE.

## NOTES

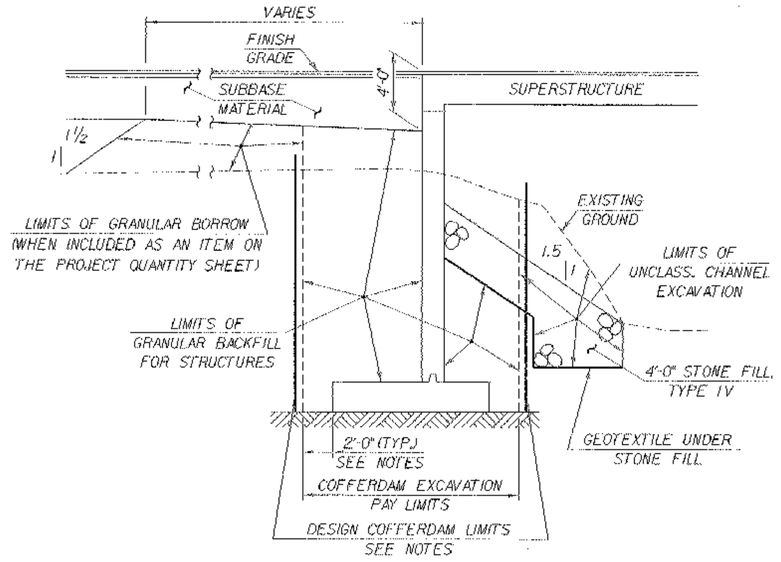
1. ACTUAL COFFERDAM LIMITS TO BE DETERMINED BY THE CONTRACTOR.
2. THE DESIGN LIMITS OF "COFFERDAM EXCAVATION, EARTH" AND "COFFERDAM EXCAVATION, ROCK" SHALL BE 2'-0" OUTSIDE THE PERIMETER OF THE FOOTING OR SUBFOOTING, UP TO EXISTING GROUND OR BOTTOM OF SUBBASE, WHICHEVER IS LOWER.
3. IF A COFFERDAM IS CONSTRUCTED WHICH IS LARGER THAN THE INDICATED COFFERDAM EXCAVATION PAY LIMITS, PAYMENT FOR ALL UNCLASSIFIED CHANNEL EXCAVATION, INCLUDING THAT PORTION WHICH IS INSIDE THE COFFERDAM BUT OUTSIDE THE COFFERDAM EXCAVATION PAY LIMITS, WILL BE MADE AT THE CONTRACT UNIT PRICE FOR UNCLASSIFIED CHANNEL EXCAVATION. IF A COFFERDAM IS CONSTRUCTED WHICH IS SMALLER THAN THE INDICATED COFFERDAM PAY LIMITS, PAYMENT WILL BE MADE FOR WHAT IS EXCAVATED WITHIN THE CONSTRUCTED COFFERDAM UNDER THE APPROPRIATE COFFERDAM EXCAVATION ITEMS LISTED ABOVE.




## TYPICAL CHANNEL SECTION

(NOT TO SCALE)

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

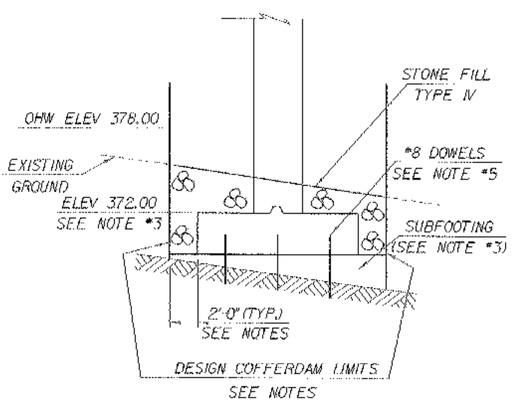



## TYPICAL ABUTMENT SECTION PIER NO. 2 SIMILAR

(NOT TO SCALE)

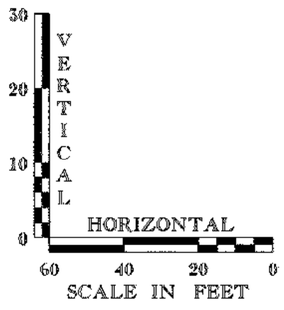
## NOTES

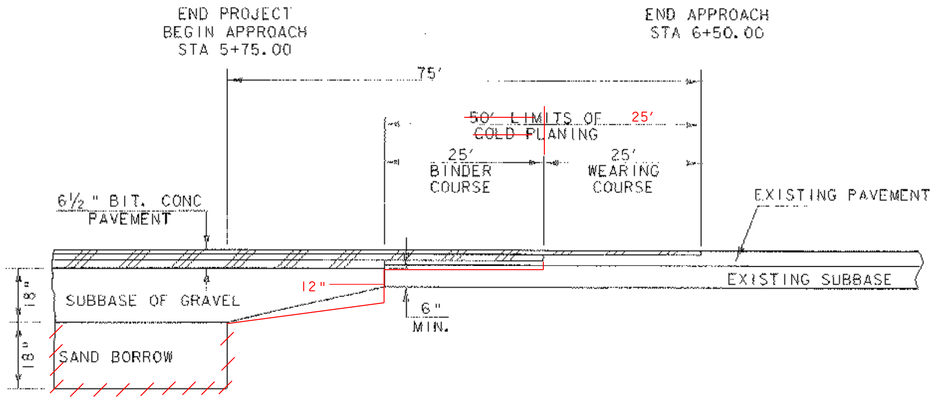
1. ACTUAL COFFERDAM LIMITS TO BE DETERMINED BY THE CONTRACTOR.
2. THE DESIGN LIMITS OF "COFFERDAM EXCAVATION, EARTH" AND "COFFERDAM EXCAVATION, ROCK" SHALL BE 2'-0" OUTSIDE THE PERIMETER OF THE FOOTING, UP TO EXISTING GROUND.
3. A MAXIMUM OF 6" OF LEDGE REMOVAL HAS BEEN ASSUMED TO REACH COMPETENT ROCK. IF A SEAL IS PROPOSED BY THE CONTRACTOR TO DEWATER THE COFFERDAM, THE FOOTING MAY BE RAISED AND MAY BE CAST ON THE CONCRETE SEAL. ANY EXCAVTION REQUIRED BEYOND 6" SHALL BE INCIDENTAL TO ITEM 208.40 "COFFERDAM"
4. CONCRETE FOR SUBFOOTING SHALL MEET THE REQUIREMENTS OF ITEM 501.30 "CONCRETE CLASS C"
5. #8 DOWELS HAVE BEEN EXTENDED TO 8' IN LENGTH TO ALLOW FOR DRILLING AND GROUTING THROUGH THE CONCRETE SUBFOOTING AND 2' INTO THE LEDGE.




## TYPICAL PIER #1 SECTION

(NOT TO SCALE)



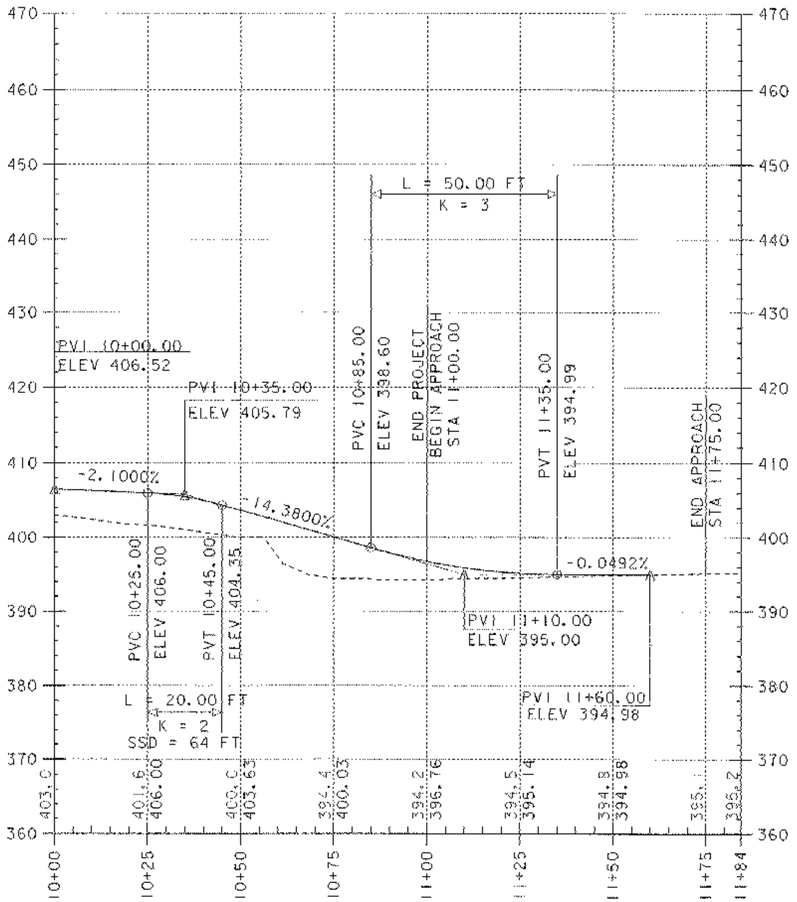



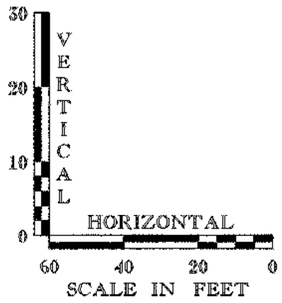

## SUBBASE TAPER @ END PROJECT (TH5)

nts

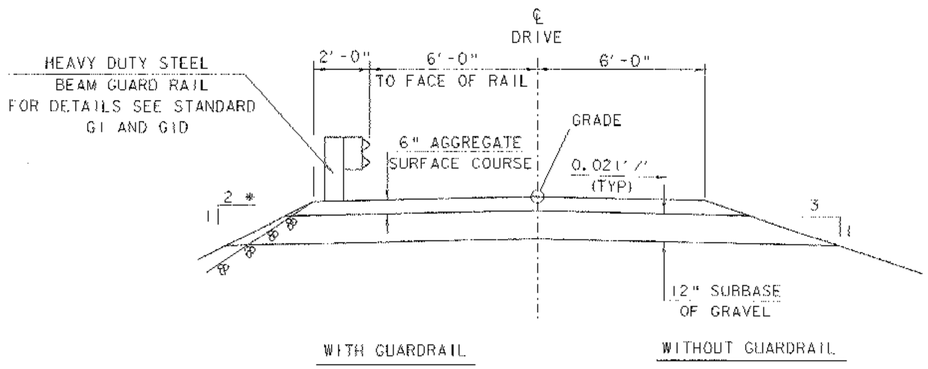
DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: /89J045/structures/sJ045pro.dgn | |
| IPARM FILE NAME: sJ045pr3.i | PLOT DATE: 11-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: K. M. HIGGINS |
| TH 5 PROFILE & EARTHWORK TYPICALS | SHEET: 16 OF 97 |




# Profile Drive

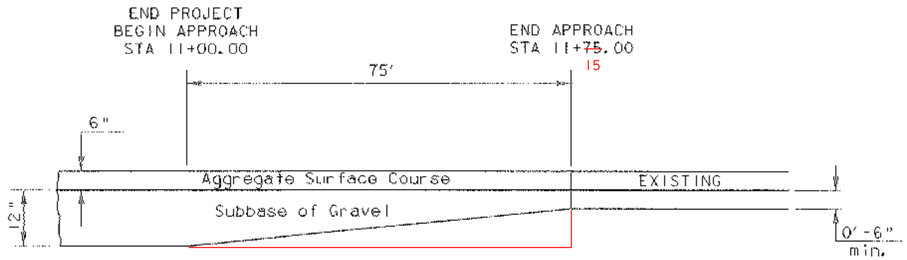



* SLOPE VARIES FROM 1 ON 1 1/2. GUARDRAIL POSTS SHALL BE LONGER AND DRIVEN 2' DEEPER TO ACCOUNT FOR REDUCED WIDTH BEHIND FACE OF RAIL

## DRIVE TYPICAL SECTION

SCALE 3/8" = 1'-0



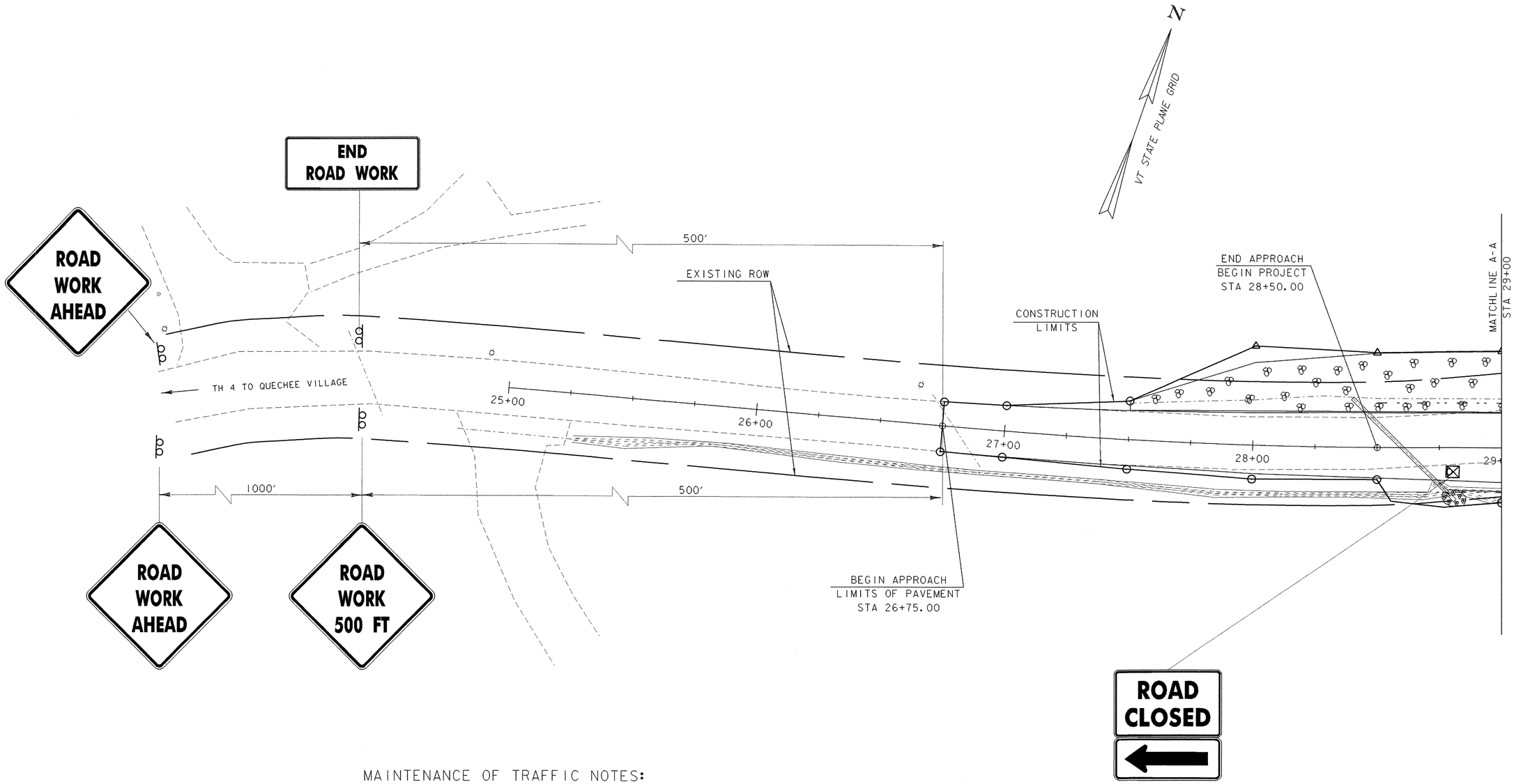

## SUBBASE TAPER @ END PROJECT (DRIVE)

nts

NOTE: GRADES SHOWN TO THE NEAREST TENTH REPRESENT EXISTING GROUND ELEVATION ALONG THE REVISED CENTERLINE.
GRADES SHOWN TO THE NEAREST HUNDREDTH REPRESENT FINISH GRADE ELEVATION ALONG THE REVISED CENTERLINE.

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

| | | | |
|---|---|---|---|
| PROJECT: HARTFORD | | PROJECT NO.: BRO-BTN 2004(0) | |
| DESIGN FILE NAME: | /89J045/structures/sj045pro.dgn | | |
| IPARM FILE NAME: | sj045pr4.i | PLOT DATE: | 4-FEB-2005 |
| SURVEYED BY: | R. MOREAU | SURVEY DATE: | 5/93 |
| SQUAD LEADER: | C. P. WILLIAMS | DRAWN BY: | K. M. HIGGINS |
| DRIVE PROFILE | | SHEET: 17 | OF 97 |




## MAINTENANCE OF TRAFFIC NOTES:

1. TEMPORARY APPROACH TRAFFIC SIGNS SHALL BE ACCORDING TO VERMONT STANDARD E-107 AND E-100A UNLESS DETAILED OTHERWISE ON THIS SHEET.
2. FOR ADDITIONAL SIGNING INSTRUCTION SEE STDS E-100, E100A, E101, E102, E102A, AND E106.

LEGEND

- SIGN POSTS
- TEMP. TRAFFIC BARRIER
- TYPE III BARRICADES MOD. (WITH CHEVRONS)

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

# TRAFFIC CONTROL PLAN SHEET 1

NTS

| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
|---|---|
| DESIGN FILE NAME: 89j045/structures/sj045bdr.dgn | |
| IPARM FILE NAME: sj045tcpl.i | PLOT DATE: 11-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: K.M. HIGGINS |
| TRAFFIC CONTROL PLAN SHEET 1 | SHEET: 18 OF 97 |

## MAINTENANCE OF TRAFFIC NOTES:

1. TEMPORARY APPROACH TRAFFIC SIGNS SHALL BE ACCORDING TO VERMONT STANDARD E-107 AND E-100A UNLESS DETAILED OTHERWISE ON THIS SHEET.
2. FOR ADDITIONAL SIGNING INSTRUCTION SEE STDS E-100, E100A, E101, E102, E102A, AND E106.
3. SWITCH BARRICADES AND SIGNING TO OLD BRIDGE ONCE TRAFFIC IS ON NEW BRIDGE (PHASE 2).

N

VT STATE PLANE GRID

STOP

ROAD CLOSED

SPEED LIMIT 35

END APPROACH
LIMITS OF PAVEMENT
STA 6+50.00

END PROJECT
BEGIN APPROACH
STA 5+75.00

MATCH LINE A-A
STA 29+00

CONSTRUCTION LIMITS

PHASE 2

TEMPORARY CONSTRUCTION LIMITS

EXISTING ROW

CAREX GARBERI (SEE NOTES)

℄ BRG. PIER #2
Sta 33+63.00
FG = 400.59

℄ PIER #2
Sta 33+64.17

℄ BRG. PIER #1
Sta 32+13.00
FG = 403.88

℄ PIER #1
Sta 32+11.83

BEGIN BRIDGE
Sta 31+66.00
FG = 404.91

END BRIDGE
Sta 34+10.00
FG = 398.36

END APPROACH
STA 209+75.00
LIMITS OF PAVEMENT

END PROJECT
BEGIN APPROACH
STA 34+50.00

MATCHLINE C-C
STA 210+00

CONSTRUCTION LIMITS

BEGIN APPROACH
STA 207+25.00
LIMITS OF PAVEMENT

MATCHLINE B-B
STA 207+00

N13°39'00"W

N18°39'00"W

S22°40'00"E

GRAVEL RO

WHITE RIVER FLOW

00+80 · 00+90 · 01+00 · 01+84 · 30+00 · 31+00 · 32+00 · 33+00 · 34+00 · 35+00 · 209+00 · 208+00

LEGEND

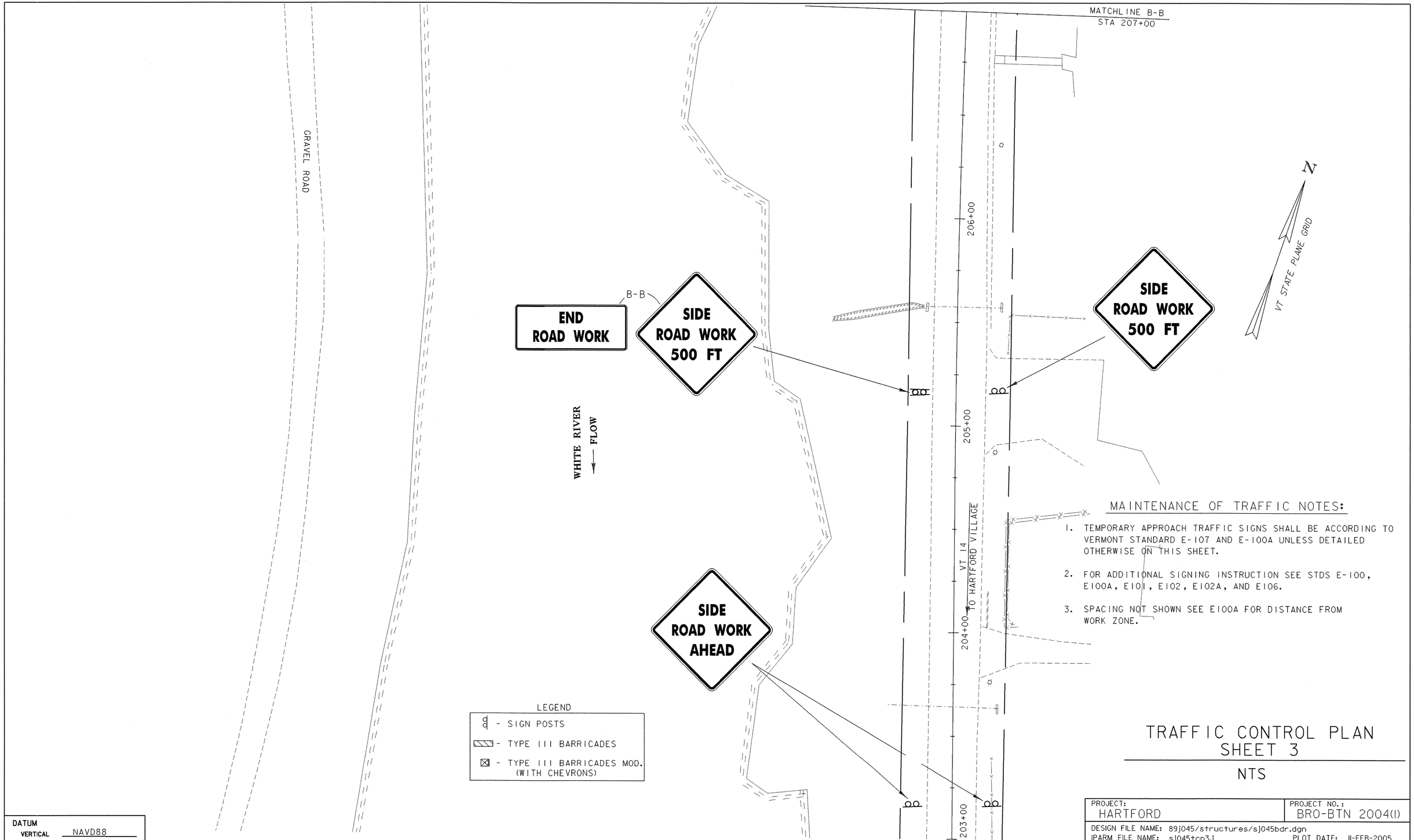
- SIGN POSTS
- TEMP. TRAFFIC BARRIER
- TYPE III BARRICADES MOD. (WITH CHEVRONS)

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

# TRAFFIC CONTROL PLAN SHEET 2

NTS

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89j045/structures/sj045bdr.dgn | |
| IPARM FILE NAME: sj045tcp2.i | PLOT DATE: 11-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: K.M. HIGGINS |
| TRAFFIC CONTROL PLAN SHEET 2 | SHEET: 19 OF 97 |




## MAINTENANCE OF TRAFFIC NOTES:

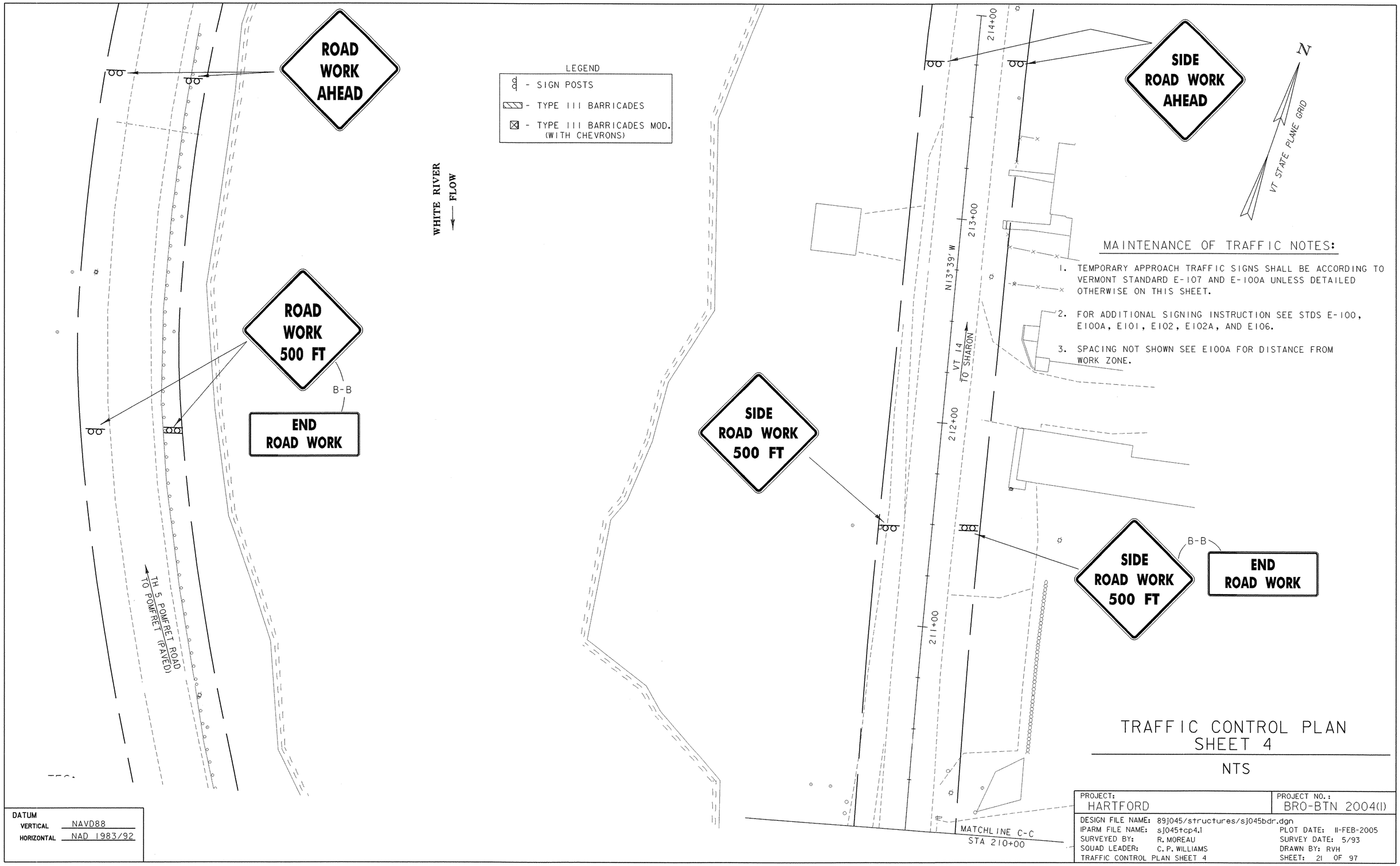
1. TEMPORARY APPROACH TRAFFIC SIGNS SHALL BE ACCORDING TO VERMONT STANDARD E-107 AND E-100A UNLESS DETAILED OTHERWISE ON THIS SHEET.
2. FOR ADDITIONAL SIGNING INSTRUCTION SEE STDS E-100, E100A, E101, E102, E102A, AND E106.
3. SPACING NOT SHOWN SEE E100A FOR DISTANCE FROM WORK ZONE.

# TRAFFIC CONTROL PLAN SHEET 3

NTS

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
|---|---|
| DESIGN FILE NAME: 89j045/structures/sj045bdr.dgn | |
| IPARM FILE NAME: sj045tcp3.i | PLOT DATE: 11-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: RVH |
| TRAFFIC CONTROL PLAN SHEET 3 | SHEET: 20 OF 97 |




## MAINTENANCE OF TRAFFIC NOTES:

1. TEMPORARY APPROACH TRAFFIC SIGNS SHALL BE ACCORDING TO VERMONT STANDARD E-107 AND E-100A UNLESS DETAILED OTHERWISE ON THIS SHEET.
2. FOR ADDITIONAL SIGNING INSTRUCTION SEE STDS E-100, E100A, E101, E102, E102A, AND E106.
3. SPACING NOT SHOWN SEE E100A FOR DISTANCE FROM WORK ZONE.

# TRAFFIC CONTROL PLAN SHEET 4

NTS

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89j045/structures/sj045bdr.dgn | |
| IPARM FILE NAME: sj045tcp4.i | PLOT DATE: II-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: RVH |
| TRAFFIC CONTROL PLAN SHEET 4 | SHEET: 21 OF 97 |

# ITEM DETAIL AND DRAINAGE SHEET

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

## DRAINAGE STRUCTURES

| STA. | STA. | POSITION | ASKEW | TYPE IN/OUT | DITCH IN | DITCH OUT | PIPE ARCH S IN | PIPE ARCH R IN | PIPE ARCH L FT | PIPE D IN | PIPE L FT | ALLOWABLE OPTIONS PCCSP TH | CAAP TH | RCP CL | CSP TH | CPEP SL | PCCSP FL TH | PIPE ELBOW NO-DEG | ES EA | CB | PROTECT | DEPTH DI | CONC CL B CY | REIN STEEL LBS | DI GRATE TYPE | CHAN ELEV | CRM CY | TR EXCAV EARTH CY | TR EXCAV ROCK CY | COMM EXC CY | UNC CHAN EXC CY | STRUC EXCAV CY | GRAN BKF STRUC CY | GRAN BORR CY | EROS MATT SY | STONE FILL CY | STONE FILL TYPE | MRKR POSTS LT | MRKR POSTS RT | DRAINAGE FLAG | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 28+46 | 28+73 | LT-RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ① | REMOVE EXISTING 18" ACCMP |
| 28+40 | 28+81 | LT-RT | 45° | | X | X | | | | 18 | 58 | .064 | .060 | | | X | | | | | | | | | | | | | | | | | | | 3 | 1 | 1 | 1 | | ② | NEW 18" PIPE - SEE CROSS SECTION ON SHEET 23.<br>INLET INVERT ELEV = 438.75/OUTLET INVERT ELEV = 433.75<br>ADJUST EXISTING ROADWAY DITCH AS REQUIRED STA 28+50 - 29+50 |
| 29+91 | 30+23 | LT-LT | | | X | X | | | | 18 | 32 | .064 | .060 | | | X | | | | | | | | | | | | | | | | | | | | | 2 | 0 | ③ | NEW 18" PIPE UNDER FIELD DRIVE.<br>INLET INVERT ELEV = 417.60/OUTLET INVERT ELEV = 412.50<br>ADJUST ROADWAY DITCH GRADE AS REQUIRED STA 29+75 - 29+91 |
| 5+53 | 5+76 | LT-RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ④ | REMOVE EXISTING 12" CMP |
| 5+53 | 5+71<br>53 | LT-RT | 70° | | X | X | | | | 18 | 54<br>64 | .064 | .060 | | | X | | | | | | | | | | | | | | | | | | | | | 1 | 1 | ⑤ | NEW 18" PIPE - SEE CROSS SECTION ON SHEET 23.<br>INLET INVERT ELEV = 401.50/OUTLET INVERT ELEV = 399.25 |
| 5+25 | 5+53 | LT-LT | | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 50 | I | | | ⑥ | NEW STONE FILL TYPE I SPECIAL DITCH<br>GRADE DITCH TO MATCH THE INLET INVERT ELEVATION AT ⑤ |
| 10+83 | 10+89 | RT-LT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ⑦ | REMOVE EXISTING 36" CMP AND HEADWALLS |
| 10+75 | 10+98 | RT-LT | 70° | | X | X | | | | 36 | 56 | .079 | .075 | | | X | | | X | | | | | | | | | | | | | | | | | 5 | IV | 1 | 1 | ⑧ | NEW 36" PIPE W/END SECTION - SEE CROSS SECTION ON SHEET 23.<br>INLET INVERT ELEV = 387.90/OUTLET INVERT ELEV = 385.00 |
| 30+85 | 10+75 | RT-RT | | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 20 | I | | | ⑨ | CONSTRUCT SWALE FROM ROADWAY DITCH TO INLET OF NEW PIPE ⑧ |
| 21+79 | | ℄ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 10 | REMOVE EXISTING 18" ACCGMP |
| 27+10 | 27+30 | LT -RT | | | X | X | | | | 18 | 43 | .079 | .075 | | | | | | | | | | | | | | | | | | | | | | | | | | 11 | NEW 18" PIPE |
| TOTALS | | | | | | | | | | 18<br>36 | 144<br>61 | .064<br>.079 | .060<br>.075 | | | X<br>X | | | 1 | | | | | | | | | | | | | | | | | 5 | 3 | | | | |

SEE 20 SCALE LAYOUT SHEETS 10 & 11.

NOTE: FINAL LOCATION AND ELEVATION OF DRAINAGE ITEMS MAY BE ADJUSTED IN THE FIELD AS DEEMED NECESSARY BY THE RESIDENT ENGINEER.

## GUARD RAIL

| STA. | STA. | LT. | RT. | END TREATMENT |
|---|---|---|---|---|
| TOTALS | | | | |

## UNDERDRAIN

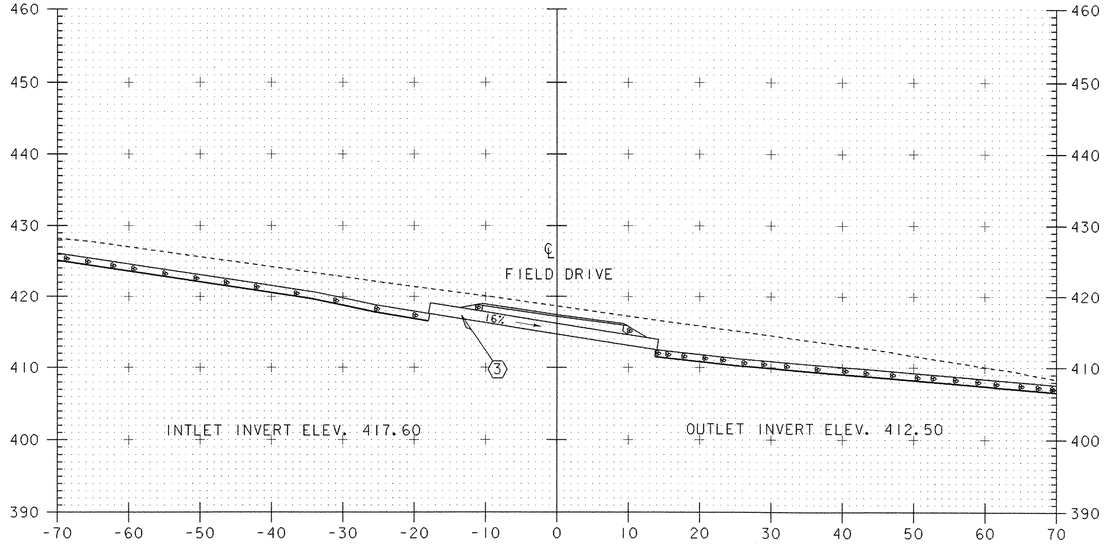
| STA. | STA. | POS. | D | L | TRENCH E | TRENCH R | GRAN BKF | FB | MKR PST |
|---|---|---|---|---|---|---|---|---|---|
| TOTALS | | | | | | | | | |

PROJECT: HARTFORD

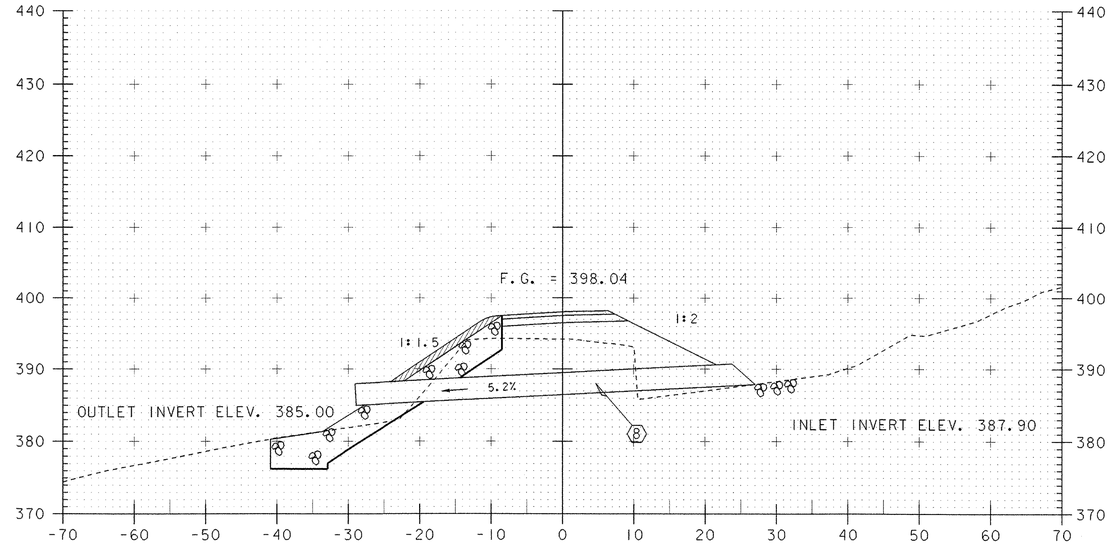
PROJECT NO.: BRO-BTN 2004(I)

DESIGN FILE NAME: 89J045/structures/sj045drn.dgn
IPARM FILE NAME: sj045drn.i
SURVEYED BY: R. MOREAU
SQUAD LEADER: C.P. WILLIAMS
DRAINAGE SHEET

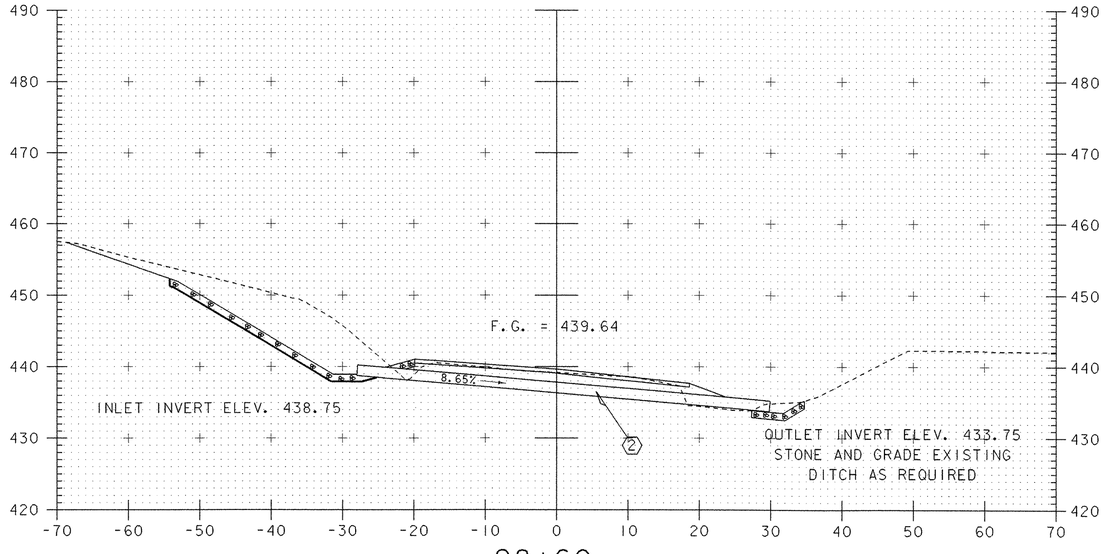
PLOT DATE: 11-FEB-2005
SURVEY DATE: 5/93
DRAWN BY: K. M. HIGGINS
SHEET: 22 OF 97



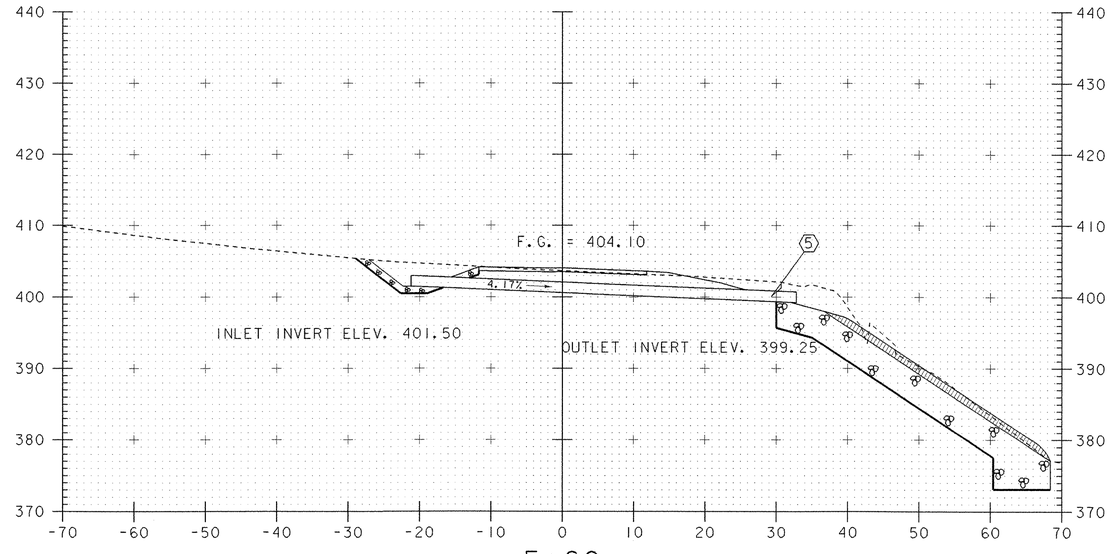

STA 30+09 20.85' LT
SECTION THROUGH PIPE @ ℄ FIELD DRIVE)




10+89
(SKEWED PIPE SECTION - DRIVE STA 10+75 RT - 10+98 LT)




28+60
(SKEWED PIPE SECTION - ML STA 28+40 LT - 28+81 RT)




5+60
(SKEWED PIPE SECTION - TH5 STA 5+53 LT - 5+71 RT)

SCALE 1" = 10'-0
10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn | |
| IPARM FILE NAME: sj045pipsec.i | PLOT DATE: 11-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C.P. WILLIAMS | DRAWN BY: KMH |
| DRAINAGE PIPE SECTIONS | SHEET: 23 OF 97 |

N

VT STATE PLANE GRID

LEGEND
ALL SIGNS AND POSTS WILL BE NEW UNLESS OTHERWISE NOTED:

R - REMOVE
R&S - REMOVE & SALVAGE
S - SALVAGE
RET - RETAIN

SPEED LIMIT 35 N

SPEED LIMIT 35 R

STOP R

0179
1408
0600
R

POMFRET RD R&S

LEGAL LOAD LIMIT 12 TONS R

LEGAL LOAD LIMIT 12 TONS

R

END APPROACH
LIMITS OF PAVEMENT
STA 6+50.00

END PROJECT
BEGIN APPROACH
STA 5+75.00

EXISTING ROW

END APPROACH
STA 209+75.00
MITS OF PAVEMENT

MATCHLINE C-C
STA 210+00

END PROJECT
BEGIN APPROACH
STA 34+50.00

MATCH LINE A-A
STA 29+00

CONSTRUCTION
LIMITS

(SEE NOTES)

℄ BRG. PIER #2
Sta 33+63.00
FG = 400.59

℄ PIER #2
Sta 33+64.17

TEMPORARY
CONSTRUCTION
LIMITS

N13°39'00"W

QUECHEE /POMFRET R & S

B-B

STOP R

STOP AHEAD

STOP N

0179
1408
0600
N

STOP

℄ BRG. PIER #1
Sta 32+13.00
FG = 403.88

℄ PIER #1
Sta 32+11.83

BEGIN BRIDGE
Sta 31+66.00
FG = 404.91

END BRIDGE
Sta 34+10.00
FG = 398.36

CONSTRUCTION
LIMITS

N18°39'00"W

WHITE RIVER
FLOW

STOP N

BEGIN APPROACH
STA 207+25.00
LIMITS OF PAVEMENT

MATCHLINE B-B
STA 207+00

S22°40'00"E

TRAFFIC SIGNS, TYPE A

TH 5 STA. 5+30 LT (2)
TH 5 STA. 6+22 RT
STA. 34+23 RT (2)
29+75 RT

RESET SALVAGED SIGN

TH 5 STA. 5+30 RT
34+39 LT

REMOVE SIGNS

TH 5 STA. 5+35 RT (2)
TH 5 STA. 5+74 RT
TH 5 STA. 6+22 RT
ML STA. 31+88 LT
VT 14 STA. 208+70 LT
VT 14 STA. 208+84 LT (2)
VT 14 STA. 208+93 LT

DURABLE 4" WHITE LINE

TH5 STA. 6+50 RT - VT 14 STA. 209+75 LT
TH5 STA. 5+35 - STA. 6+50 LT
STA. 31+45 RT - VT 14 STA. 207+25 LT
VT 14 STA 207+25 - STA 209+75 RT

DURABLE 4" YELLOW LINE (CENTERLINE)

STA. 31+45 - STA. 34+39
TH5 STA 5+35 - STA 6+50
VT 14 STA. 207+25 - STA. 208+00
VT 14 STA. 208+55 - STA. 209+75

DURABLE LETTER OR SYMBOL
STA. 34+33 (STOP)

TEMPORARY 4" WHITE LINE

TH5 STA. 6+50 RT - VT 14 STA. 209+75 LT
TH5 STA. 5+35 - STA. 6+50 LT
STA. 31+45 RT - VT 14 STA. 207+25 LT
VT 14 STA 207+25 - STA 209+75 RT

TEMPORARY 4" YELLOW LINE (CENTERLINE)

STA. 31+45 - STA. 34+39
TH5 STA 5+35 - STA 6+50
VT 14 STA. 207+25 - STA. 208+00
VT 14 STA. 208+55 - STA. 209+75

TEMPORARY 24" STOP BAR
STA. 34+39 (20')

TEMPORARY LETTER OR SYMBOL
STA. 34+33 (STOP)

DURABLE 24" STOP BAR
STA. 34+39 (20')
STA. 5+35 (14')

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

# TRAFFIC SIGNS AND LINES

SCALE 1" = 20'-0
20 0 20

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89J045/structures/sJ045bdr.dgn | |
| IPARM FILE NAME: sJ045tsl.I | PLOT DATE: 8-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: RVH |
| TRAFFIC SIGNS AND LINES | SHEET: 24 OF 97 |

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# TRAFFIC SIGN SUMMARY SHEET

| MILEMARKER, STATION, OR SIGN NUMBER | SIGN LEGEND | SIGN DIMENSIONS EA | WIDTH (in) | HEIGHT (in) | NEW & SALVAGED SIGNS "A" | "B" | SALV SIGN | SALV TIS | EXIST POST RETAIN | SALVAGE | NO. OF POSTS | FLANGED CHANNEL lb/ft 1.42 | 2.0 | 3.0 | SQUARE STEEL (in) lb/ft 1.75 1.88 | 2.0 2.16 | 2.5 3.35 | ANCHOR | SLEEVE | NEW SIGN POSTS TUBULAR ALUMINUM Ø (in) lb/ft 3.0 1.3 | 4.0 1.7 | 4.0 MOD 1.7 | FOUNDATION | TUBULAR STEEL Ø (in) lb/ft 3.0 7.6 | 3.5 9.0 | 4.0 10.8 | 5.0 14.6 | W-SHAPE STEEL FTG. SIZE 24" | 30" | WEIGHT | POST SIZE | SIGN REQUIRED | REMARKS | SIGN DETAIL DETAIL ON SHEET NUMBER | STD. SHEET NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | OPTION ITEMS | | | | | | | | | | | | | | | | | | | | | | | | | |
| TH 5 5+~~30~~ LT 19 | STOP | 1 | 30 | 30 | 6.25 | | | | | | 1 | | | X 16' | | | | | | | | | | | | | | | | | | | | RI-1 | | E-143 |
| | 1000 1415 0402 | 1 | 6 | 8 | 0.33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | E-138 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TH 5 5+~~42~~ RT 19 | POMFRET RD | 1 | | | | | X | | | | 1 | | | X 14' | | | | | | | | | | | | | | | | | | | | | | E-123 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TH 5 6+~~22~~ RT 00 | SPEED LIMIT 35 | 1 | 24 | 30 | 5.0 | | | | | | 1 | | | X 14' | | | | | | | | | | | | | | | | | | | | R2-4 | | E-142 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34+23 RT | STOP | 1 | 30 | 30 | 6.25 | | | | | | 1 | | | X 14' | | | | | | | | | | | | | | | | | | | | RI-1 | | E-143 |
| 29+75 | | 1 | 36 | 36 | 9.0 | | | | | | 2 | | | 14' | | | | | | | | | | | | | | | | | | | | | | |
| 34+39 | QUEECHEE / POMFRET | | | | | | | | | | 1 | | | 14' | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **TOTALS** | | SF ~~17.83~~ 26.83 | SF | EA. | SF | | | | | | | FT ~~56~~ | FT 100 | FT ~~100~~ 56 | FT | FT | FT | | EA | LB | LB | LB | | LB | LB | LB | LB | EA. | EA. | LB | | | | | |

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: HARTFORD
PROJECT NO.: BRO-BTN 2004(I)
DESIGN FILE NAME: 89j045/structures/sj045trf.dgn
IPARM FILE NAME: sj045iss.1
SURVEYED BY: R. MOREAU
SQUAD LEADER: C. P. WILLIAMS
TRAFFIC SIGN SUMMARY SHEET
PLOT DATE: 11-FEB-2005
SURVEY DATE: 5/93
DRAWN BY: RVH
SHEET: 25 OF 97

## SOIL CLASSIFICATION

AASHTO

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

## ROCK QUALITY DESIGNATION

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

## SHEAR STRENGTH

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

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

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

## COMMONLY USED SYMBOLS

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

COLOR

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

## DEFINITIONS (AASHTO)

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

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

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

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

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

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

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

**VARVED** - Alternate layers of silt and clay.

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

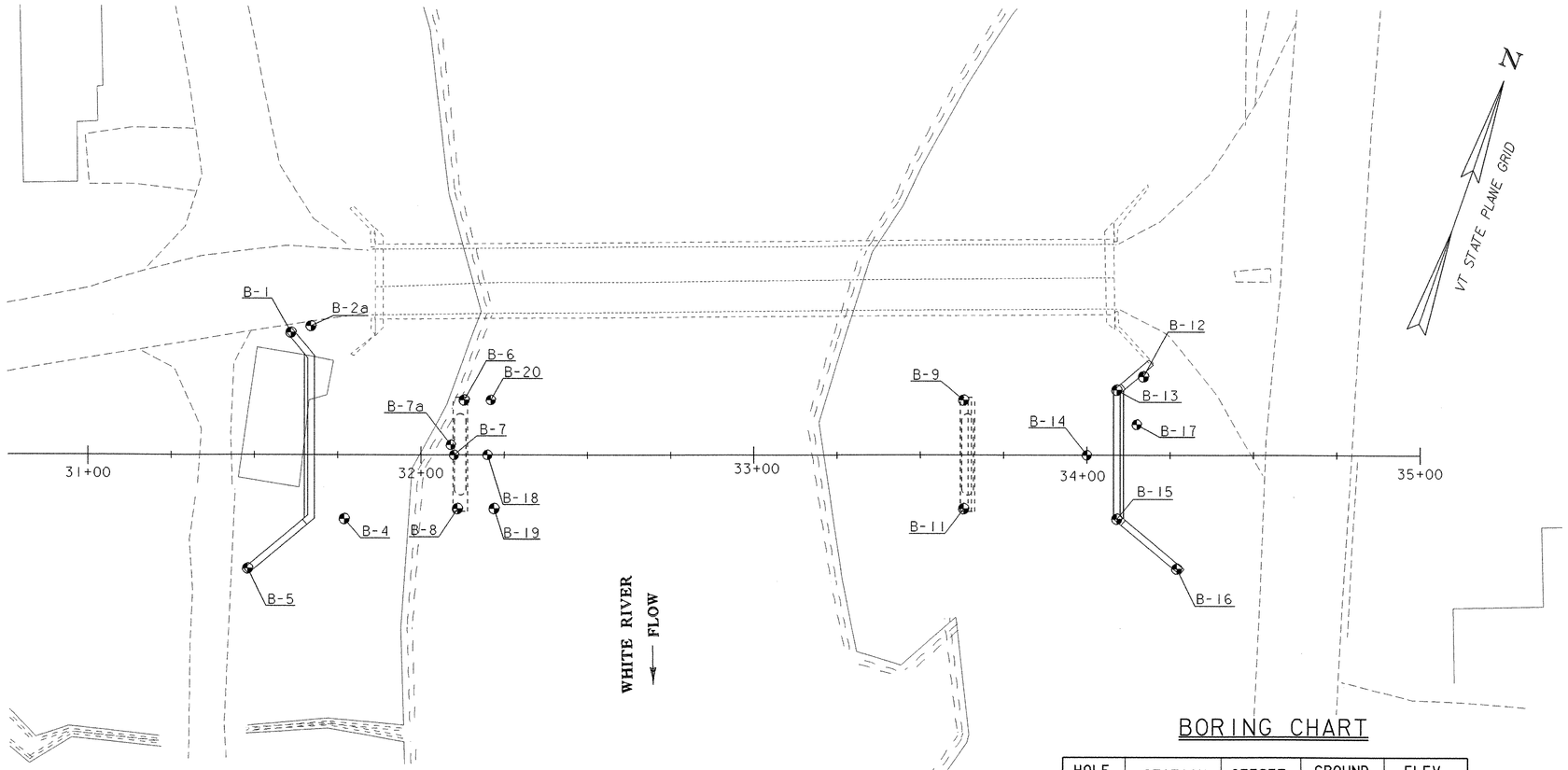
**MUCK** - Soft organic soil (containing > 10% organic material.

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

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

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

**DIP** - Inclination of bed with a horizontal plane.




## BORING CHART

| HOLE NO. | STATION | OFFSET | GROUND ELEV. | ELEV. TLOB |
|---|---|---|---|---|
| B-1 | 31+61 | 36' LT | 403.04 | 391.8 |
| B-2a | 31+67 | 38' LT | 402.83 | 386.3 |
| B-4 | 31+77 | 19' RT | 381.56 | 375.8 |
| B-5 | 31+48 | 34' RT | 397.18 | 385.4 |
| B-6 | 32+13 | 16' LT | 375.54 | 367.0 |
| B-7 | 32+10 | 0 | 374.69 | 368.9 |
| B-7a | 32+09 | 3' LT | 374.91 | 368.9 |
| B-8 | 32+11 | 16' RT | 374.18 | 365.8 |

## BORING LAYOUT

SCALE 1" = 20'-0

20 0 20

## BORING CHART

| HOLE NO. | STATION | OFFSET | GROUND ELEV. | ELEV. TLOB |
|---|---|---|---|---|
| B-9 | 33+63 | 16' LT | 381.76 | 377.8 |
| B-11 | 33+63 | 16' RT | 380.56 | 376.6 |
| B-12 | 34+17 | 23' LT | 388.19 | 365.2 |
| B-13 | 34+09 | 19' LT | 386.47 | 365.0 |
| B-14 | 34+00 | 0 | 384.55 | 369.6 |
| B-15 | 34+09 | 19' RT | 385.93 | 372.4 |
| B-16 | 34+27 | 34' RT | 386.63 | 379.6 |
| B-17 | 34+15 | 9' LT | 385.63 | 367.6 |
| B-18 | 32+20.50 | 0 | 372.40 | 368.4 |
| B-19 | 32+22 | 16' RT | 373.40 | 360.9 |
| B-20 | 32+21 | 9' LT | 372.19 | 364.2 |

## GENERAL NOTES

1. The subsurface explorations shown herein were made between 7/30/01 and 8/28/01 by the Agency.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgement was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgement by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.

# STATE OF VERMONT
## AGENCY OF TRANSPORTATION

| | |
|---|---|
| Town Of HARTFORD | Bridge No. 8 |
| Highway No. TH 4 | Log Sta. / Surv. Sta. |
| TH 4 OVER WHITE RIVER | |
| *BORING INFORMATION SHEET* | |
| Designed By K. M. HIGGINS | Drawn By K. M. HIGGINS |
| Checked By Date 6/2000 | Bridge Design Supervisor C. P. WILLIAMS Date 6/2000 |
| PROJECT HARTFORD | PROJECT NO. BRO-BTN 2004 (1) |
| I.G.C. Info. 89j045/structures/sj045bor.dgn | sj045bor.i |
| Bridge Sheet No. | Sheet 26 of 97 |



PLOTTED 11-FEB-2005

## STATE OF VERMONT
## AGENCY OF TRANSPORTATION
## MATERIALS & RESEARCH DIVISION
## SUBSURFACE INFORMATION

HOLE NO.: B-01
SHEET 1 OF 1
DATE STARTED: 7/30/01
DATE COMPLETED: 7/30/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 31+61.00
GROUND EL.: 403.04

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: -36.00
G.W. DEPTH: No water found 7/31/01

BORING CREW
CREW CHIEF: YOUNG
DRILLER: CHABOT
LOGGER: RUSSELL

BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG ABUT#1 * ELEV. = 380.0

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| 5 | | A-2-4, SiSa, brn, Moist, Rec. = 1.25' | 6 | 19.4 | 19.3 | 50.3 | 30.4 | | |
| 10 | | A-1-a, SaGr, Lt/gry, Dry, Rec. = 0.60' | R | 7.3 | 52.7 | 37.8 | 9.5 | | |
| | | | Top of bedrock @ 11.2' | | | | | | |
| | | Run#1: BXDC, 11.2'-16.2', Rec. = 4.5', See Geologist's Report. | RUN | REC% | RQD% | Dip° | | | |
| | | | 1 | 90 | 80 | 30-40 | | | |
| 15 | | Run#2: BXDC, 16.2'-21.2', Rec. = 4.0', See Geologist's Report. | 2 | 80 | 40 | 50 | | | |
| 20 | | | Hole stopped @ 21.80' | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |
| 40 | | | | | | | | | |
| 45 | | | | | | | | | |

DRILLER'S NOTES:

Small seam @ 15.50'.
No water found on 07/31/01.

GEOLOGIST'S REPORT:

Run#1: Gray quartz muscovite schist with quartz veins, Hard, Unweathered, Competent.

Run#2: Same as Run#1 with closely spaced jointing along foliation.

## STATE OF VERMONT
## AGENCY OF TRANSPORTATION
## MATERIALS & RESEARCH DIVISION
## SUBSURFACE INFORMATION

HOLE NO.: B-02A
SHEET 1 OF 1
DATE STARTED: 7/30/01
DATE COMPLETED: 7/31/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 31+67.00
GROUND EL.: 402.83

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: -38.00
G.W. DEPTH: No water found 8/1/01

BORING CREW
CREW CHIEF: YOUNG
DRILLER: CHABOT
LOGGER: RUSSELL

BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG ABUT#1 * ELEV. = 380.0

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| 5 | | A-4, SiSa, brn, MTW, Rec. = 0.01', Stone in end of sampler. | 5 | 23 | 2.1 | 55.8 | 42.1 | | |
| 10 | | A-2-4, SiSa, brn, Moist, Rec. = 0.45' | 9 | 19.5 | 9.6 | 63.8 | 26.6 | | |
| | | Run#1: BXGDC, 11.5'-16.5', Rec. = 1.5', Possible Boulders See Geologist's Report. | RUN | REC% | RQD% | Dip° | | | |
| | | | 1 | 30 | 0 | — | | | |
| 15 | | | Possible Top of bedrock @ 16.5' | | | | | | |
| | | Run#2: BXGDC, 16.5'-21.5', Rec. = 0.9', See Geologist's Report. | 2 | 18 | 0 | 35 | | | |
| 20 | | Run#3: BXGDC, 21.5'-22.5', Rec. = 0.9' See Geologist's Report. | 3 | 90 | 0 | 35 | | | |
| | | Run#4: BXGDC, 22.5'-27.5', Rec. = 2.8', See Geologist's Report. | 4 | 56 | 0 | 40 | | | |
| 25 | | | Hole stopped @ 27.5' | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |
| 40 | | | | | | | | | |
| 45 | | | | | | | | | |

DRILLER'S NOTES:

No water found 08/01/01.

GEOLOGIST'S REPORT:

Run#1: Run consists of short pieces of quartz, schist and quartz schist with garnet. Core is very broken up. Run does not appear to represent bedrock. Possible boulders. Drillers report numerous breaks from 12.4'-15.5'

Run#2: Gray quartz muscovite schist, Hard, Unweathered, May contain nurmerous foliation joints, Not competent.

Run#3: Same as Run#2, Not competent.

Run#4: Same as Run#2, Not competent.

## STATE OF VERMONT
## AGENCY OF TRANSPORTATION
## MATERIALS & RESEARCH DIVISION
## SUBSURFACE INFORMATION

HOLE NO.: B-04
SHEET 1 OF 1
DATE STARTED: 8/7/01
DATE COMPLETED: 8/7/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 31+77.00
GROUND EL.: 381.56

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: 19.00
G.W. DEPTH: 4.5 (08/07/01)

BORING CREW
CREW CHIEF: YOUNG
DRILLER: CHABOT
LOGGER: RUSSELL

BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG ABUT#1 * ELEV. = 380.0

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| 5 | | BXGDC, 3.75'-4.75', Boulder | Top of bedrock @ 5.75' | | | | | | |
| | | Run#1: BXGDC, 5.75'-8.75' Rec. = 1.33' See Geologist's Report. | RUN | REC% | RQD% | Dip° | | | |
| | | | 1 | 44 | 0 | 40 | | | |
| 10 | | Run#2: BXGDC, 8.75'-13.75' Rec. = 2.66' See Geologist's Report. | 2 | 53 | 32 | 40 | | | |
| 15 | | Run#3: BXGDC, 13.75'-17.75' Rec. = 2.0' See Geologist's Report. | 3 | 50 | 25 | 40 | | | |
| 20 | | | Hole stopped @ 17.75' | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |
| 40 | | | | | | | | | |
| 45 | | | | | | | | | |

DRILLER'S NOTES:

Water elev. @ 4.5' (8/07/01)

GEOLOGIST'S REPORT:

Run#1: Gray quartz schist, Hard, Unweathered.
Run#2: Same as Run#1.
Run#3: Same as Run#1.

## STATE OF VERMONT
## AGENCY OF TRANSPORTATION
## MATERIALS & RESEARCH DIVISION
## SUBSURFACE INFORMATION

HOLE NO.: B-05
SHEET 1 OF 1
DATE STARTED: 8/1/01
DATE COMPLETED: 8/1/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 31+48.00
GROUND EL.: 397.18

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: 34.00
G.W. DEPTH: No water found 8/1/01

BORING CREW
CREW CHIEF: YOUNG
DRILLER: CHABOT
LOGGER: TALLMAN

BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG ABUT#1 * ELEV. = 380.0

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| 5 | | A-4, SaSi, brn, Moist, Rec. = 0.9' | 4 | 16 | 16 | 41 | 43 | | |
| 10 | | No Sample, Boulder | Top of bedrock @ 11.8' | | | | | | |
| | | Run#1: BXGDC, 11.8'-16.8' Rec. = 1.85' See Geologist's Report. | RUN | REC% | RQD% | Dip° | | | |
| | | | 1 | 37 | 0 | 45 | | | |
| 15 | | Run#2: BXGDC, 16.8'-21.8' Rec. = 4.5', See Geologist's Report. | 2 | 90 | 65 | 45 | | | |
| 20 | | Run#3: BXGDC, 21.8'-24.8' Rec. = 2.5', See Geologist's Report. | 3 | 83 | 75 | 45 | | | |
| 25 | | | Hole stopped @ 24.80' | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |
| 40 | | | | | | | | | |
| 45 | | | | | | | | | |

DRILLER'S NOTES:

No water found 08/01/01.

GEOLOGIST'S REPORT:

Run#1: Light gray quartz schist, Hard, Unweathered, Poor RQD
Run#2: Same as Run#1.
Run#3: Same as Run#1.

* THE TOP OF THE FOOTING ELEVATION FOR ABUTMENT #1 WAS SET BASED ON THE LEDGE ELEVATION DETERMINED FROM B-04. ADJUSTMENTS IN FOOTING ELEVATION AND GEOMETRY ARE EXPECTED AS ACTUAL LEDGE ELEVATION AND CONDITION IS DETERMINED THROUGH EXCAVATION.

SURVEYED BY _____ DATE _____
DRAWN BY J.TOUCHETTE DATE 10/01
SQUAD LEADER C.C. BENDA
DESIGN FILE NO. /M&R/89J045/mJ045bor.dgn
IPARM FILE 89J045/sJ045bol.i DATE PLOTTED 11-FEB-2005
PROJ. NAME HARTFORD
PROJ. NO. BTN 2004 (I)
SHEET 27 OF 97 SHEETS

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**
**MATERIALS & RESEARCH DIVISION**
**SUBSURFACE INFORMATION**

HOLE NO.: B-06
SHEET 1 OF 1
DATE STARTED: 8/2/01
DATE COMPLETED: 8/2/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 32+13.00
GROUND EL.: 375.54
PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: -16.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: YOUNG
DRILLER: TALLMAN
LOGGER: CHABOT
BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG PIER #1
ELEV. = 372.00

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| | | Sand | | | | | | | |
| 5 | | Run#1: BXGDC, 3.5'-8.5', Rec. = 0.65', Boulders See Geologist's Report. | RUN 1 | REC% Boulders | RQD% | Dip° | | | |
| | | | Top of bedrock @ 8.5' | | | | | | |
| 10 | | Run#2: BXGDC, 8.5'-11.5', Rec. = 1.95', See Geologist's Report. | 2 | 65 | 53 | 40 | | | |
| | | Run#3: BXGDC, 11.5'-16.5' Rec. = 3.25' See Geologist's Report. | 3 | 65 | 50 | 45 | | | |
| 15 | | | Hole stopped @ 16.50' | | | | | | |
| 20 | | GEOLOGIST'S REPORT: | | | | | | | |
| | | Run#1: Boulders | | | | | | | |
| | | Run#2: Light gray quartz schist, Hard, Unweathered. | | | | | | | |
| | | Run#3: Same as Run#2. | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |
| 40 | | | | | | | | | |
| 45 | | | | | | | | | |

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**
**MATERIALS & RESEARCH DIVISION**
**SUBSURFACE INFORMATION**

HOLE NO.: B-07
SHEET 1 OF 1
DATE STARTED: 8/8/01
DATE COMPLETED: 8/8/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 32+10.00
GROUND EL.: 374.69
PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: 0.00
G.W. DEPTH: Drilled in water.

BORING CREW
CREW CHIEF: YOUNG
DRILLER: CHABOT
LOGGER: SOMERS
BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG PIER #1
ELEV. = 372.00

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| | | Sand | | | | | | | |
| 5 | | A-2-4,Sa with Rock Chips, brn, Moist, Rec. = 1.1' | R | 13.9 | Visual Class. | | | | |
| | | | Top of bedrock @ 5.8' | | | | | | |
| | | Run#1: BXGDC, 5.8'-8.8', Rec. = 1.1' See Geologist's Report. | RUN 1 | REC% 37 | RQD% 12 | Dip° 45 | | | |
| 10 | | Run#2: BXGDC, 8.8'-13.8', Rec. = 2.8', See Geologist's Report. | 2 | 56 | 28 | 45 | | | |
| 15 | | Run#3: BXGDC, 13.8'-18.3' Rec. = 2.9', See Geologist's Report. | 3 | 73 | 68 | 45 | | | |
| | | | Hole stopped @ 18.30' | | | | | | |
| 20 | | GEOLOGIST'S REPORT: | | | | | | | |
| | | Run#1: Gray quartz schist, Hard, Unweathered, Poor RQD. | | | | | | | |
| | | Run#2: Same as Run#1, but weathered open joint at 10.3', Poor RQD. | | | | | | | |
| | | Run#3: Same as Run#1, but color becomes darker at 14.8' | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |
| 40 | | | | | | | | | |
| 45 | | | | | | | | | |

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**
**MATERIALS & RESEARCH DIVISION**
**SUBSURFACE INFORMATION**

HOLE NO.: B-07A
SHEET 1 OF 1
DATE STARTED: 10/1/01
DATE COMPLETED: 10/3/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 32+09.00
GROUND EL.: 374.91
PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: -3.00
G.W. DEPTH: River level

BORING CREW
CREW CHIEF: YOUNG
DRILLER: YOUNG
LOGGER: SOMERS
BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG PIER #1
ELEV. = 372.00

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Sand | | | | | | | |
| 5 | | 4.5'-5.5', Boulder | Top of bedrock @ 6.0' | | | | | | |
| | | Run#1: BXMDC, 6.0'-9.0', Rec. = 1.55', See Geologist's Report. | RUN 1 | REC% 52 | RQD% 0 | Dip° 40 | SD | Co | Eo |
| 10 | | Run#2: NXMDC, 9.0'-10.5' Rec. = 1.10' See Geologist's Report. | 2 | 73 | 0 | 40 | | | |
| | | Run#3: NXMDC, 10.5'-14.5' Rec. = 3.90' See Geologist's Report. | 3 | 98 | 65 | 40 | 11.2 | 3,212 | 2450 |
| 15 | | Run#4: NXMDC, 14.5'-19.0', Rec. = 4.25', See Geologist's Report. | 4 | 94 | 92 | 40 | 15.2 | 2,640 | 1243 |
| | | | | | | | 16.3 | 13,553 | 9131 |
| | | | | | | | 17.5 | 5,087 | 2927 |
| | | | | | | | 18.0 | 2,071 | 1214 |
| | | | Hole stopped @ 19.0' | | | | | | |
| 20 | | GEOLOGIST'S REPORT: | | | | | | | |
| | | Run#1: BXMDC, Gray quartz-biotite-sericite schist, Hard, Slightly weathered, Close to very closely spaced jointing, Poor RQD. | | | | | | | |
| | | Run#2: NXMDC, Same as Run#1, Poor RQD. | | | | | | | |
| | | Run#3: NXMDC, Gray quartz-sericite schist, Hard, Unweathered. | | | | | | | |
| | | Run#4: NXMDC, Gray quartz-sericite schist, Hard, Unweathered. | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | SD = Sample Center Depth, ft. | | | | | | | |
| | | Co = Uniaxial Compressive Strength of Intact Rock, psi | | | | | | | |
| 35 | | Eo = Elastic Modulus of Intact Rock, ksi | | | | | | | |
| 40 | | | | | | | | | |
| 45 | | | | | | | | | |

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**
**MATERIALS & RESEARCH DIVISION**
**SUBSURFACE INFORMATION**

HOLE NO.: B-08
SHEET 1 OF 1
DATE STARTED: 8/6/01
DATE COMPLETED: 8/6/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 32+11.00
GROUND EL.: 374.83
PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: 16.00
G.W. DEPTH: Drilled in River

BORING CREW
CREW CHIEF: YOUNG
DRILLER: CHABOT
LOGGER: TALLMAN
BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG PIER #1
ELEV. = 372.00

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| | | 1.5'-2.5', Boulder | | | | | | | |
| 5 | | 4.5'-5.5, No Sample, Boulders | | | | | | | |
| | | | Top of bedrock @ 9.0' | | | | | | |
| 10 | | Run#1: BXGDC, 9.0'-14.0', Rec. = 1.83', See Geologist's Report. | RUN 1 | REC% 37 | RQD% 0 | Dip° 40 | | | |
| 15 | | Run#2: BXGDC, 14.0'-16.0' Rec. = 1.63', See Geologist's Report. | 2 | 82 | 82 | 40 | | | |
| | | Run#3: BXGDC, 16.0'-19.0' Rec. = 2.58', See Geologist's Report. | 3 | 86 | 86 | 40 | | | |
| | | | Hole stopped @ 19.0' | | | | | | |
| 20 | | GEOLOGIST'S REPORT: | | | | | | | |
| | | Run#1: Gray quartz sericite schist, Hard, Unweathered, Poor Recovery and RQD. | | | | | | | |
| | | Run#2: Same as Run#1. | | | | | | | |
| | | Run#3: Same as Run#1. | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |
| 40 | | | | | | | | | |
| 45 | | | | | | | | | |

SURVEYED BY _____ DATE _____
DRAWN BY J.TOUCHETTE DATE 10/01
SQUAD LEADER C.C. BENDA
DESIGN FILE NO. /M&R/89J045/mj045bor.dgn
IPARM FILE 89J045/sj045bo2.i DATE PLOTTED 11-FEB-2005
PROJ. NAME HARTFORD
PROJ. NO. BTN 2004 (I)
SHEET 28 OF 97 SHEETS

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**
**MATERIALS & RESEARCH DIVISION**
**SUBSURFACE INFORMATION**

HOLE NO.: B-09
SHEET 1 OF 1
DATE STARTED: 8/28/01
DATE COMPLETED: 8/28/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 33+63.00
GROUND EL.: 381.76

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: -16.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: YOUNG
DRILLER: YOUNG
LOGGER: SOMERS

BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG PIER #2
ELEV. = 380.00

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| | | Top of bedrock @ 4.0' | | | | | | | |
| | | Run#1: BXGDC, 4.0'-8.5', Rec. = 2.1', See Geologist's Report. | RUN 1 | REC% 47 | RQD% 22 | Dip° 35 | | | |
| | | Run#2: BXGDC, 8.5'-13.5', Rec. = 2.75', See Geologist's Report. | 2 | 55 | 33 | 35 | | | |
| | | Run#3: BXGDC, 13.5'-18.5', Rec. = 2.1', See Geologist's Report. | 3 | 42 | 17 | 35 | | | |
| | | Hole stopped @ 18.5' | | | | | | | |

GEOLOGIST'S REPORT:

Run#1: Gray garnet schist with garnet porphyroblasts, Moderately hard, Unweathered.

Run#2: Same as Run#1.

Run#3: Same as Run#1.

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**
**MATERIALS & RESEARCH DIVISION**
**SUBSURFACE INFORMATION**

HOLE NO.: B-11
SHEET 1 OF 1
DATE STARTED: 8/23/01
DATE COMPLETED: 8/23/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 33+63.00
GROUND EL.: 380.56

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: 16.00
G.W. DEPTH: 3.2 (08/23/01)

BORING CREW
CREW CHIEF: YOUNG
DRILLER: YOUNG
LOGGER: SOMERS

BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG PIER #2
ELEV. = 380.00

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| | | Top of bedrock @ 4.0' | | | | | | | |
| | | Run#1: BXGDC, 4.0'-6.5', Rec. = 1.7', See Geologist's Report. | RUN 1 | REC% 68 | RQD% 60 | Dip° 45 | | | |
| | | Run#2: BXGDC, 6.5'-11.5', Rec. = 2.8', See Geologist's Report. | 2 | 56 | 50 | 45 | | | |
| | | Run#3: BXGDC, 11.5'-16.5' Rec. = 3.4', See Geologist's Report. | 3 | 68 | 60 | 45 | | | |
| | | Hole stopped @ 16.5' | | | | | | | |

DRILLER'S NOTES:

Water elev. @ 3.2' (08/23/01).

GEOLOGIST'S REPORT:

Run#1: Gray quartz-sericite schist with garnet porphyroblasts, Hard, Unweathered.

Run#2: Same as Run#1.

Run#3: Same as Run#1.

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**
**MATERIALS & RESEARCH DIVISION**
**SUBSURFACE INFORMATION**

HOLE NO.: B-12
SHEET 1 OF 1
DATE STARTED: 8/14/01
DATE COMPLETED: 8/15/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 34+17.00
GROUND EL.: 388.19

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: -23.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: YOUNG
DRILLER: SOMERS
LOGGER: RUSSELL

BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG ABUT #2 (WW3)
ELEV. = 376.00

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| | | A-2-4, SiSa, brn, MTW, Rec. = 0.33' | 5 | 22.2 | 17 | 60.7 | 22.3 | | |
| | | A-2-4, GrSa with Wood particles, gry, MTW, Rec. = 1.0' | 5 | 22.8 | 29.9 | 50.8 | 19.3 | | |
| | | A-1-b, SiSaGr with Wood particles, gry, Moist, Rec. = 0.4' | 13 | 18.9 | 51.4 | 27.8 | 20.8 | | |
| | | Visual Class: Wood with little Gravel, brn, Moist, Rec. = 0.5' | R | | | | | | |
| | | Top of bedrock @ 23.0' | | | | | | | |
| | | Run#1: BXGDC, 23.0'-27.5' Rec. = 0.66', See Geologist's Report. | RUN 1 | REC% 15 | RQD% 0 | Dip° 40 | | | |
| | | Run#2: BXGDC, 27.5'-29.5' Rec. = 0.15', See Geologist's Report. | 2 | 7 | 0 | 40 | | | |
| | | Run#3: BXGDC, 29.5'-34.5' Rec. = 2.6', See Geologist's Report. | 3 | 52 | 48 | 40 | | | |
| | | Run#4: BXGDC, 34.5'-39.5' Rec. = 3.33', See Geologist's Report. | 4 | 67 | 67 | 40 | | | |
| | | Hole stopped @ 39.5' | | | | | | | |

GEOLOGIST'S REPORT:

Run#1: Gray quartz sericite schist with some garnet porphyroblasts, Hard, Unweathered.

Run#2: Same as Run#1.

Run#3: Same as Run#1.

Run#4: Same as Run#1.

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**
**MATERIALS & RESEARCH DIVISION**
**SUBSURFACE INFORMATION**

HOLE NO.: B-13
SHEET 1 OF 1
DATE STARTED: 8/13/01
DATE COMPLETED: 8/14/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 34+09.00
GROUND EL.: 386.47

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: -19.00
G.W. DEPTH: 5.5 08/14/01

BORING CREW
CREW CHIEF: YOUNG
DRILLER: CHABOT
LOGGER: SOMERS

BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG ABUT #2
ELEV. = 376.00

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| | | A-2-4, SiGrSa, brn, MTW, Rec. = 1.0' | 2 | 25.6 | 27.5 | 49.1 | 23.4 | | |
| | | BXGDC, 10.0'-11.5', No Rec., Boulder | | | | | | | |
| | | No Sample, Stone in end of sampler. | 7 | | | | | | |
| | | BXGDC, 19.5'-21.5', No Rec., Boulders & Seams | | | | | | | |
| | | Top of bedrock @ 21.5' | | | | | | | |
| | | Run#1: BXGDC, 21.5'-25.5' Rec. = 2.0', See Geologist's Report. | RUN 1 | REC% 50 | RQD% 0 | Dip° 40 | | | |
| | | Run#2: BXGDC, 25.5'-30.5' Rec. = 2.0', See Geologist's Report. | 2 | 40 | 0 | 40 | | | |
| | | Run#3: BXGDC, 30.5'-35.5' Rec. = 2.9', See Geologist's Report. | 3 | 58 | 45 | 40 | | | |
| | | Hole stopped @ 35.5' | | | | | | | |

DRILLER'S NOTES:

Water elev. @ 5.5' (8/14/01)

GEOLOGIST'S REPORT:

Run#1: Gray quartz sericite schist, Hard, Unweathered, Poor Recovery and RQD may be due to mechanical breakage.

Run#2: Same as Run#1.

Run#3: Same as Run#1.

SURVEYED BY _____ DATE _____
DRAWN BY J.TOUCHETTE DATE 10/01
SQUAD LEADER C.C. BENDA
DESIGN FILE NO. /M&R/89J045/mj045bor.dgn
IPARM FILE 89J045/sj045bo3.i DATE PLOTTED 11-FEB-2005
PROJ. NAME HARTFORD
PROJ. NO. BTN 2004 (I)
SHEET 29 OF 97 SHEETS

## STATE OF VERMONT
## AGENCY OF TRANSPORTATION
## MATERIALS & RESEARCH DIVISION
## SUBSURFACE INFORMATION

HOLE NO.: B-14
SHEET 1 OF 1
DATE STARTED: 8/20/01
DATE COMPLETED: 8/21/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 34+00.00
GROUND EL.: 384.55

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: 0.00
G.W. DEPTH: 6.2 (08/21/01)

BORING CREW
CREW CHIEF: YOUNG
DRILLER: YOUNG
LOGGER: SOMERS

BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG ABUT #2
ELEV. = 376.00

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| 5 | | No Rec., Boulder | 3 | | | | | | |
| 10 | | A-1-a, Gr, gry, Dry, Rec. = 0.5' | 17 | 9.2 | 80.2 | 15.2 | 4.6 | | |
| 15 | | BXGDC, 13.9'-15.0', No Rec., Boulder | Top of bedrock @ 15.0' | | | | | | |
| | | Run#1: BXGDC, 15.0'-20.0' Rec. = 2.75' See Geologist's Report. | RUN 1 | REC% 55 | RQD% 42 | Dip° 40 | | | |
| 20 | | Run#2: BXGDC, 20.0'-25.0' Rec. = 2.6', See Geologist's Report. | 2 | 52 | 52 | 40 | | | |
| 25 | | Run#3: BXGDC, 25.0'-30.0' Rec. = 1.5', See Geologist's Report. | 3 | 30 | 30 | 40 | | | |
| 30 | | Hole stopped @ 30.0' | | | | | | | |

DRILLER'S NOTES:

Water elev. @ 6.2' (08/21/01)

GEOLOGIST'S REPORT:

Run#1: Dark gray quartz biotite sericite schist, Moderately hard, Unweathered.

Run#2: Same as Run#1, but with some garnet porphyroblasts

Run#3: Same as Run#2.

## STATE OF VERMONT
## AGENCY OF TRANSPORTATION
## MATERIALS & RESEARCH DIVISION
## SUBSURFACE INFORMATION

HOLE NO.: B-15
SHEET 1 OF 1
DATE STARTED: 8/21/01
DATE COMPLETED: 8/22/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 34+09.00
GROUND EL.: 385.93

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: 19.00
G.W. DEPTH: 7.7 (08/22/01)

BORING CREW
CREW CHIEF: YOUNG
DRILLER: YOUNG
LOGGER: SOMERS

BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG ABUT #2
ELEV. = 376.00

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| 5 | | A-1-a, SaGr with Wood particles, brn, Moist, Rec. = 0.75' | 7 | 11.1 | 51.8 | 42.3 | 5.9 | | |
| 10 | | A-1-b, Sa, gry, Moist, Rec. = 0.5' | 10 | 15.1 | 1.2 | 94.8 | 4 | | |
| 15 | | Run#1: BXGDC, 13.5'-18.0' Rec. = 1.0', See Geologist's Report. | Top of bedrock @ 13.5' RUN 1 | REC% 22 | RQD% 0 | Dip° 40 | | | |
| 20 | | Run#2: BXGDC, 18.0'-23.0' Rec. = 2.5', See Geologist's Report. | 2 | 50 | 50 | 40 | | | |
| 25 | | Run#3: BXGDC, 23.0'-28.0' Rec. = 1.6', See Geologist's Report. | 3 | 32 | 32 | 40 | | | |
| 30 | | Hole stopped @ 28.0' | | | | | | | |

DRILLER'S NOTES:

Water elev. @ 7.7' (08/22/01)

GEOLOGIST'S REPORT:

Run#1: Gray quartz sericite schist, Hard, Unweathered.

Run#2: Same as Run#1, but with some biotite and garnet porphyroblasts.

Run#3: Same as Run#2, but with quartz vein at 24.5'.

## STATE OF VERMONT
## AGENCY OF TRANSPORTATION
## MATERIALS & RESEARCH DIVISION
## SUBSURFACE INFORMATION

HOLE NO.: B-16
SHEET 1 OF 1
DATE STARTED: 8/22/01
DATE COMPLETED: 8/22/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 34+27.00
GROUND EL.: 386.63

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: 34.00
G.W. DEPTH: 5.5 (08/23/01)

BORING CREW
CREW CHIEF: YOUNG
DRILLER: YOUNG
LOGGER: SOMERS

BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG WW #4
ELEV. = 380.00

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| 5 | | A-2-4, SiSa with Trace of Organics, gry, MTW, Rec. = 1.2', Tested 1.2% Organic | 4 | 29.3 | 3.3 | 74.7 | 22 | | |
| 10 | | Run#1: BXGDC, 7.0'-11.0', Rec. = 3.0', See Geologist's Report. | Top of bedrock @ 7.0' RUN 1 | REC% 75 | RQD% 0 | Dip° 40 | | | |
| | | Run#2: BXGDC, 11.0'-16.0' Rec. = 2.75' See Geologist's Report. | 2 | 55 | 20 | 40 | | | |
| 15 | | Run#3: BXGDC, 16.0'-18.0' Rec. = 1.9' See Geologist's Report. | 3 | 95 | 80 | 45 | | | |
| 20 | | Hole stopped @ 18.0' | | | | | | | |

DRILLER'S NOTES:

Water elev. @ 5.5' (08/22/01)

GEOLOGIST'S REPORT:

Run#1: Gray quartz-sericite schist, Very close to closely spaced jointing, Hard, Unweathered, Poor RQD.

Run#2: Same as Run#1, but less jointing, Poor RQD.

Run#2: Same as Run#1, but with minor jointing, Competent.

## STATE OF VERMONT
## AGENCY OF TRANSPORTATION
## MATERIALS & RESEARCH DIVISION
## SUBSURFACE INFORMATION

HOLE NO.: B-17
SHEET 1 OF 1
DATE STARTED: 10/3/01
DATE COMPLETED: 10/4/01

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 34+15.00
GROUND EL.: 385.63

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: -9.00
G.W. DEPTH: 7.5 (10/4/01)

BORING CREW
CREW CHIEF: YOUNG
DRILLER: YOUNG
LOGGER: SOMERS

BORING RIG: TRACK RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG ABUT #2
ELEV. = 376.00

| DEPTH | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | Top of bedrock @ 18.0' RUN | REC% | RQD% | Dip° | SD | Co | Eo |
|---|---|---|---|---|---|---|---|---|---|
| 5 | | 4.5'-5.5', Boulder, No sample | | | | | | | |
| 10 | | 10.0'-12.0', No sample | | | | | | | |
| 15 | | 14.0'-15.5', Boulder, No sample | | | | | | | |
| 20 | | Run#1: NXMDC, 18.0'-23.0' Rec. = 4.45' See Geologist's Report. | 1 | 89 | 85 | 40-45 | 18.9<br>20.1<br>20.7 | 3,112<br>6,167<br>2,957 | 1616<br>3249<br>878 |
| 25 | | Run#2: NXMDC, 23.0'-28.0' Rec. = 5.00' See Geologist's Report. | 2 | 100 | 90 | 40-45 | 24.2<br>25.4 | 10,094<br>3,147 | 5640<br>2130 |
| 30 | | Hole stopped @ 28.0' | | | | | | | |

DRILLER'S NOTES:

Water elev. @ 7.5' (10/4/01)

GEOLOGIST'S REPORT:

Run#1: Gray quartz-sericite schist with some quartz veins and scattered garnet, Hard, Unweathered,

Run#2: Same as Run#1.

SD = Sample Center Depth, ft.
Co = Uniaxial Compressive Strength of Intact Rock, psi
Eo = Elastic Modulus of Intact Rock, ksi

| | | |
|---|---|---|
| SURVEYED BY | | DATE |
| DRAWN BY | J.TOUCHETTE | DATE 10/01 |
| SQUAD LEADER | C.C. BENDA | |
| DESIGN FILE NO. | /M&R/89J045/mJ045bor.dgn | |
| IPARM FILE | 89J045/sJ045bo4.i | DATE PLOTTED 11-FEB-2005 |
| PROJ. NAME | HARTFORD | |
| PROJ. NO. | BTN 2004 (I) | |
| SHEET | 30 OF 97 SHEETS | |

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**
**MATERIALS & RESEARCH DIVISION**
**SUBSURFACE INFORMATION**

HOLE NO.: B-18
SHEET 1 OF 1
DATE STARTED: 9/4/02
DATE COMPLETED: 9/5/02

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 32+20.50
GROUND EL.: 372.40

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: 0.00
G.W. DEPTH: Drilled in River

BORING CREW
CREW CHIEF: YOUNG
DRILLER: YOUNG
LOGGER: TALLMAN

BORING RIG: SMALL SKID RIG & RAFT
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG PIER #1
ELEV. = 372.00

| DEPTH | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|
| | 0.5'-3.0', Boulders | | | | | | | |
| | Top of bedrock @ 4.0' | | | | | | | |
| 5 | Run#1: NXMDC, 4.0'-6.0', Rec. = 1.4' See Geologist's Report. | RUN 1 | REC% 70 | RQD% 0 | Dip° 45 | | | |
| | Run#2: NXMDC, 6.0'-11.0', Rec. = 4.4', See Geologist's Report. | 2 | 88 | 26 | 45 | | | |
| 10 | Run#3: NXMDC, 11.0'-14.0', Rec. = 2.9', See Geologist's Report. | 3 | 97 | 50 | 45 | | | |
| 15 | Hole stopped @ 14.0' | | | | | | | |

GEOLOGIST'S REPORT:

Run#1: Gray quartz sericite schist, Hard, Unweathered, Poor Competency.

Run#2: Same as Run #1, but fair to poor competency.

Run#3: Same as Run #1, but with felsic veins at 11.7', Fair competency.

20 25 30 35 40 45

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**
**MATERIALS & RESEARCH DIVISION**
**SUBSURFACE INFORMATION**

HOLE NO.: B-19
SHEET 1 OF 1
DATE STARTED: 9/5/02
DATE COMPLETED: 9/11/02

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 32+22.00
GROUND EL.: 373.40

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: 16.00
G.W. DEPTH: Drilled in River

BORING CREW
CREW CHIEF: YOUNG
DRILLER: YOUNG
LOGGER: TALLMAN

BORING RIG: SMALL SKID RIG & RAFT
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG PIER #1
ELEV. = 372.00

| DEPTH | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|
| 5 | A-1-b, GrSa, brn, Moist, Rec. = 1.0' | 22 | 16.3 | 25.3 | 64.3 | 10.4 | | |
| 10 | NXDC, 9.5'-12.5', No sample, Boulders | | | | | | | |
| | Top of bedrock @ 12.5' | | | | | | | |
| | Run#1: NXGDC, 12.5'-16.0', Rec. = 1.3', See Geologist's Report. | RUN 1 | REC% 37 | RQD% 26 | Dip° 40 | | | |
| 15 | Run#2: NXGDC, 16.0'-20.0', Rec. = 3.5', See Geologist's Report. | 2 | 88 | 0 | 45 | | | |
| 20 | Run#3: NXGDC, 20.0'-21.0' Rec. = 0.8' | 3 | 80 | 0 | 45 | | | |
| | Run#4: NXGDC, 21.0'-23.0' Rec. = 1.3' | 4 | 65 | 0 | 45 | | | |
| | Run#5: NXGDC, 23.0'-26.0' Rec. = 1.75', See Geologist's Report. | 5 | 58 | 0 | 45 | | | |
| 25 | Run#6: NXGDC, 26.0'-27.5' Rec. = 0.75', | 6 | 50 | 0 | 45 | | | |
| | Run#7: NXGDC, 27.5'-28.25' Rec. = 0.65' | 7 | 87 | 0 | 45 | | | |
| | Run#8: NXGDC, 28.25'-31.45' Rec. = 1.8' See Geologist's Report. | 8 | 56 | 25 | 45 | | | |
| 30 | Run#9: NXGDC, 31.45'-32.45' Rec. = 0.5', | 9 | 50 | 0 | 45 | | | |
| | Run#10: NXGDC, 32.45'-33.45', Rec. = 1.0' See Geologist's Report. | 10 | 100 | 0 | 45 | | | |
| 35 | Hole stopped @ 33.45' | | | | | | | |

GEOLOGIST'S REPORT:
Core barrel plugged on every attempt of coring each Run.

Run#1: Greenish gray amphibolite meta-volcanic, Very hard, Unweathered, May be loose rock (boulder).

Run#2: 16.0'-17.20' Gray quartz sericite schist, Hard, Unweathered, May be loose rock (boulder).
17.20'-20.0' Greenish gray quartz sericite schist with numerous felsic veins. hard to very hard, Unweathered, Poor RQD may be due to mechanical breakage during drilling.

Run#3, to Run#10: Greenish gray quartz sericite schist with numerous felsic veins. hard to very hard, Unweathered, Poor RQD may be due to mechanical breakage during drilling.

40 45

DRILLER'S NOTES: Could not advance casing below 16.0'. Fragments of rock would fall in hole and create problems.

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**
**MATERIALS & RESEARCH DIVISION**
**SUBSURFACE INFORMATION**

HOLE NO.: B-20
SHEET 1 OF 1
DATE STARTED: 9/3/02
DATE COMPLETED: 9/4/02

PROJECT NAME: HARTFORD
SITE NAME: BR #8
STATION: 32+21.00
GROUND EL.: 372.19

PROJECT NUMBER: BTN 2004(I)
SITE NO.: TH #4
OFFSET: -16.00
G.W. DEPTH: Drilled in River

BORING CREW
CREW CHIEF: YOUNG
DRILLER: YOUNG
LOGGER: TALLMAN

BORING RIG: SMALL SKID RIG & RAFT
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

TOP OF FTG PIER #1
ELEV. = 372.00

| DEPTH | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|
| | A-1-a, SaGr, brn, Wet, Rec. = 0.9' | 9 | 11.1 | 52.7 | 43 | 4.3 | | |
| 5 | A-1-a, SaGr, brn-gry, Wet, Rec. = 0.5' | 35 | 7.5 | 69.7 | 24.7 | 5.6 | | |
| | Two pieces of broken rock | R | | | | | | |
| | Top of bedrock @ 8.0' | | | | | | | |
| | Run#1: NXMDC, 8.0'-13.0', Rec. = 4.6', See Geologist's Report. | RUN 1 | REC% 92 | RQD% 66 | Dip° 45 | | | |
| 10 | Run#2: NXMDC, 13.0'-18.05' Rec. = 5.05', See Geologist's Report. | 2 | 100 | 100 | 45 | | | |
| 15 | Hole stopped @ 18.05' | | | | | | | |

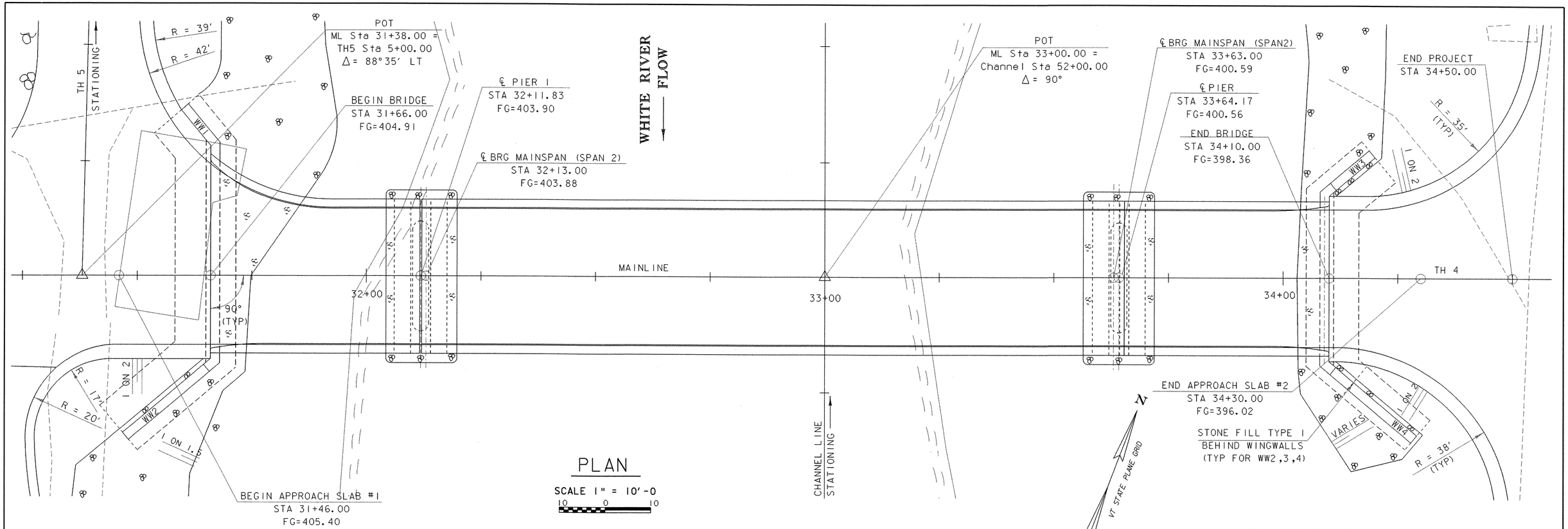
GEOLOGIST'S REPORT:

Run#1: Gray quartz sericite schist, Hard, Unweathered, Competent.

Run#2: Same as Run#1.

20 25 30 35 40 45

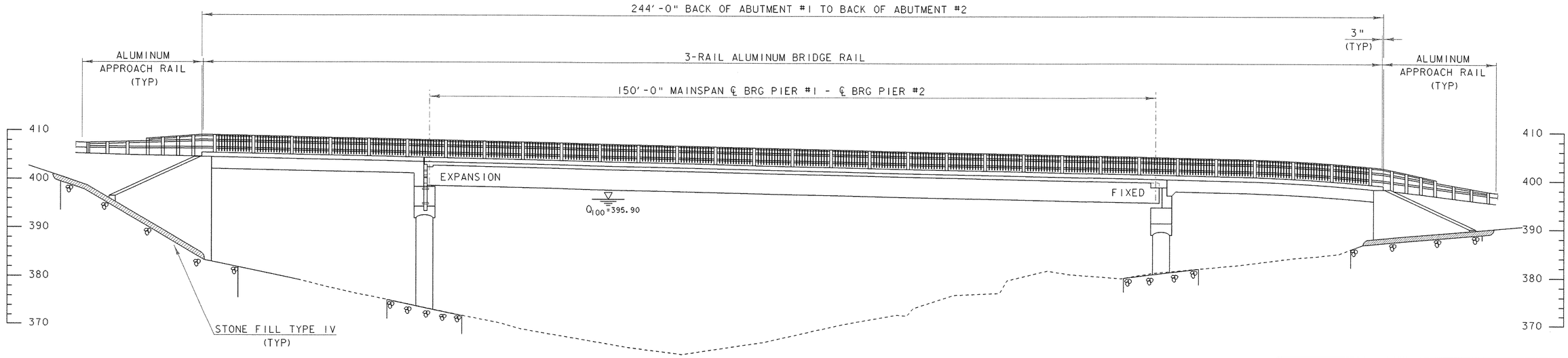
SURVEYED BY _____ DATE _____
DRAWN BY J.TOUCHETTE DATE 09/02
SQUAD LEADER C.C. BENDA
DESIGN FILE NO. /M&R/89J045/mJ045bor.dgn
IPARM FILE 89J045/sJ045bo5.i DATE PLOTTED 11-FEB-2005
PROJ. NAME HARTFORD
PROJ. NO. BTN 2004 (I)
SHEET 31 OF 97 SHEETS




## PLAN

SCALE 1" = 10'-0

NOTE: SEE SHEETS 56 - 59 FOR RAILING DETAILS




## ELEVATION @ DOWNSTREAM FASCIA

SCALE 1" = 10'-0

| | |
|---|---|
| PROJECT NAME: | HARTFORD |
| PROJECT NUMBER: | BRO-BTN 2004(I) |
| FILE NAME: 89j045/structures/sj045pe. | PLOT DATE: 11-FEB-2005 |
| PROJECT LEADER: sj045pe.i | DRAWN BY: K. M. HIGGINS |
| DESIGNED BY: K. M. HIGGINS | CHECKED BY: M.LONGSTREET |
| PLAN AND ELEVATION | SHEET 32 OF 97 |

## GENERAL NOTES:

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

2. DESIGN IS FOR HS-25-44 LIVE LOADING.

3. TWO-WAY TRAFFIC SHALL BE MAINTAINED ON THE EXISTING BRIDGE UPSTREAM OF THE NEW STRUCTURE.

4. THE TOWN WILL MAINTAIN RESPONSIBILITY FOR SNOW REMOVAL ON THE EXISTING BRIDGE THROUGHOUT THE DURATION OF THE PROJECT.

5. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES F OR AS NOTED OTHERWISE.

6. ALL ON-PROJECT SIGNS AND BARRICADES AS REQUIRED BY THE RESIDENT ENGINEER WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE INCIDENTAL TO THE ITEM "MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS". ALL OFF-PROJECT SIGNING SHALL BE THE RESPONSIBILITY OF THE TOWN.

7. EXISTING SIGNS NOT REUSED SHALL REMAIN THE PROPERTY OF THE TOWN OF HARTFORD. THESE SIGNS SHALL BE STOCKPILED ON THE PROJECT AND THEN LOADED ON A TRUCK SUPPLIED BY THE TOWN. CONTACT DIRECTOR OF PUBLIC WORKS RICH MENGE AT (802)295-3622 TO ARRANGE REMOVAL.

8. ITEM 529.15 "REMOVAL OF STRUCTURE" SHALL BE USED FOR REMOVAL OF THE EXISTING TRUSS SUPERSTRUCTURE AND ANY PORTIONS OF THE SUBSTRUCTURE NOT REMOVED UNDER THE ITEMS "COFFERDAM EXCAVATION, ROCK" OR "UNCLASSIFIED CHANNEL EXCAVATION".

9. THE EXISTING STEEL IN THE TRUSS TO BE REMOVED UNDER THE ITEM 529.15 "REMOVAL OF STRUCTURE" IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. ALL STEEL REMOVED UNDER THIS ITEM IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR MAY DISPOSE OF IT OR RETAIN IT FOR FUTURE USE. THE CONTRACTOR SHALL INFORM THE ENGINEER OF HIS/HER PLANS FOR THE STEEL PRIOR TO ITS REMOVAL.

10. ITEM 529.15 "REMOVAL OF STRUCTURE (MOD) SHALL BE USED FOR THE REMOVAL AND RELOCATION OF THE EXISTING BARN AT STATION 31+ 50 SEE SPECIAL PROVISIONS.

11. THE STONEFILL TYPE IV UNDER THE BRIDGE SHALL BE PLACED BEFORE THE SUPERSTRUCTURES ARE SET.

12. TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT A RATE OF 0.015 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT OR AS DIRECTED BY THE ENGINEER.

13. THE MINIMUM COVER FOR REINFORCING STEEL IN THE SUBSTRUCTURES SHALL BE TWO INCHES ALONG WALL FACES AGAINST EARTH, AND THREE INCHES ELSEWHERE UNLESS DETAILED OTHERWISE.

14. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:

    SPACING +/- 1"
    CLEARANCE +/-¼"

15. ALL REINFORCING STEEL IN THE CONCRETE DECK AND BRIDGE CURBS SHALL BE EPOXY COATED AND PAID FOR UNDER THE ITEM 507.17. WHEN EPOXY COATED REINFORCING STEEL IS CUT THE UNCOATED ENDS SHALL BE REPAIRED WITH MATERIALS AND PROCEDURES APPROVED BY THE COATING MANUFACTURER. FLAME CUTTING OF EPOXY COATED REINFORCING STEEL WILL NOT BE PERMITTED.

16. THE BANKING ON VT RTE 14 SOUTHBOUND SHALL BE MODIFIED AS SHOWN ON THE BANKING DIAGRAM ON SHEET 81. ALL SIGNS REQUIRED FOR THIS WORK SHALL BE PAID FOR UNDER THE ITEM 527.10 "MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS". ALL OTHER NECESSARY ITEMS HAVE BEEN INCLUDED UNDER THEIR APPROPRIATE ITEM NUMBERS.

CONCRETE NOTES:

17. ALL PORTIONS OF THE SUPERSTRUCTURE , SHALL BE "CONCRETE, HIGH PERFORMANCE- CLASS A" (MOD-5000PSI).

18. ALL PORTIONS OF THE SUBSTRUCTURES INCLUDING PIERS SHALL BE "CONCRETE, HIGH PERFORMANCE - CLASS B".

19. ALL PORTIONS OF THE SUBFOOTING SHALL BE "CONCRETE, CLASS C".

20. SURFACES OF BRIDGE SEATS UNDER THE BEARING DEVICES SHALL BE LEVEL. OTHER AREAS OF THE BRIDGE SEAT SHALL BE SLOPED ¼" PER FOOT TOWARD MIDSPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE GIVEN A STEEL TROWEL OR MAGNESIUM FLOAT FINISH.

21. SPAN #2 DECK IS TO BE PLACED IN ONE CONTINUOUS PLACEMENT WITH A MAXIMUM DURATION OF EIGHT HOURS. IF CIRCUMSTANCES BEYOND THE CONTRACTORS CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A CONSTRUCTION JOINT SHALL BE USED. A 96 HOUR DELAY BETWEEN THE COMPLETION OF ONE DAYS PLACEMENT AND THE BEGINNING OF ANOTHER PLACEMENT SHALL BE OBSERVED.

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

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

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

25. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1"X1".

STRUCTURAL STEEL NOTES:

26. ALL STRUCTURAL STEEL PAID UNDER THE ITEM 506.55 "STRUCTURAL STEEL (PLATE GIRDER (MOD-ERECTION PLAN))" SHALL CONFORM TO AASHTO M-270 GRADE 50W. ALL STRUCTURAL STEEL PAID FOR UNDER THE ITEM 506.55 "STRUCTURAL STEEL (PLATE GIRDER) (MOD HPS70W) SHALL CONFORM TO ASTM A709-00 GRADE HPS70W. SEE SPECIAL PROVISIONS FOR SPECIFICATIONS FOR GRADE HPS70W STEEL

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

28. FLEMMING BRACKETS SHALL BE DESIGNED BY THE CONTRACTOR, BUT SHALL BE LIMITED TO A MAXIMUM SPACING OF 4'-0".

29. ANY HOLES IN THE FASCIA BEAMS NOT OTHERWISE FILLED SHALL BE FILLED WITH BOLTS CONFORMING TO AASHTO M 164 TYPE III.

30. THE END OF THE GIRDERS AT PIER #1 SHALL BE GIVEN A SHOP APPLIED PAINT SYSTEM FOR A DISTANCE EQUAL TO 8' AND GREASED AFTER INSTALLATION PER SUPPLEMENTAL SPECIFICATION 513. THE DIAPHRAGMS AT PIER #1 SHALL ALSO BE PAINTED AND GREASED. THE PAINT SHALL BE BROWN COLOR CHIP #20059

31. THE FAYING SURFACES ON THE CONNECTION PLATES SHALL BE PREPARED AS CLASS "C". THESE SURFACES SHALL BE PROTECTED FROM DAMAGE AND CORROSION PRIOR TO THE CONNECTION.

SUBSTRUCTURE ON LEDGE:

32. FOOTINGS AND SUB-FOOTINGS SHALL BE FOUNDED ON LEDGE WHICH HAS BEEN CLEANED OF ALL LOOSE ROCK AND DEBRIS TO ENSURE THAT SUBSTRUCTURES ARE PLACED ON COMPETENT ROCK.

33. LEDGE THAT IS EXCAVATED FOR PLACEMENT OF FOOTINGS SHALL BE EXCAVATED TO PROVIDE A LEVEL SURFACE OR AS DIRECTED BY THE RESIDENT ENGINEER.

34. A MAXIMUM OF 6" OVERBREAKAGE WILL BE REPLACED WITH " HIGH PERFORMANCE CLASS B CONCRETE". OVERBREAKAGE BEYOND 6" SHALL BE REPLACED WITH HIGH PERFORMANCE CLASS B CONCRETE" AT THE EXPENSE OF THE CONTRACTOR.

35. THE LIMITS OF THE SUBFOOTING SHALL BE 1'-0" OUTSIDE THE LIMITS OF THE FOOTING.

36. THE SUBSTRUCTURE UNITS HAVE BEEN DESIGNED FOR THE TOP OF FOOTING ELEVATIONS SHOWN ON THE PLANS. IF THE LEDGE ELEVATION IS GREATER THAN 1'-0" BELOW THE DESIGN BOTTOM OF FOOTING, A SUBFOOTING SHALL BE POURED SO THAT THE DESIGN TOP OF FOOTING IS AT THE REQUIRED ELEVATION.

37. FOR ALL SUBSTRUCTURE, WHERE LEDGE IS WITHIN ONE FOOT FROM THE BOTTOM OF THE FOOTING AS DESIGNED, THE FOOTING MAY BE POURED TO THE TOP OF THE LEDGE USING "HIGH PERFORMANCE CLASS B CONCRETE".

38. FOR ALL SUBSTRUCTURE UNITS WHERE LEDGE IS BELOW TOP OF FOOTING BY LESS THAN THE DEPTH OF FOOTING, THE LEDGE SHALL BE EXCAVATED DOWN TO THE INDICATED BOTTOM OF FOOTING FOR THE FULL WIDTH (TOE TO HEEL) OF THE CONFIGURATION.

39. IF LEDGE IS ABOVE THE DESIGN TOP OF FOOTING, THE FOOTING MAY BE RAISED. BEFORE ANY UPWARD ADJUSTMENT IS MADE IN FOOTING ELEVATION, THE PROJECT MANAGER SHALL BE CONTACTED AND PROVIDED WITH A LEDGE PROFILE. NO FURTHER WORK SHALL BE DONE UNTIL APPROVAL OF THE CONFIGURATION IS RECEIVED.

40. #8 DOWELS SHALL BE DRILLED AND GROUTED INTO THE LEDGE AS SHOWN ON THE PLANS. THE DOWELS SHALL HAVE A 2'-0" EMBEDMENT INTO THE LEDGE AND SHALL EXTEND INTO THE FOOTING A MINIMUM OF 1'-6". IN AREAS WHERE A SUBFOOTING IS REQUIRED # 8 DOWELS WILL ALSO BE USED AT THE INTERFACE BETWEEN SUBFOOTING AND FOOTING. THE DRILLING AND GROUTING SHALL BE PAID FOR UNDER THE ITEM 507.16 DRILLING AND GROUTING DOWELS", HOWEVER, THE DOWELS SHALL BE PAID FOR UNDER THE ITEM 507.15 "REINFORCING STEEL".

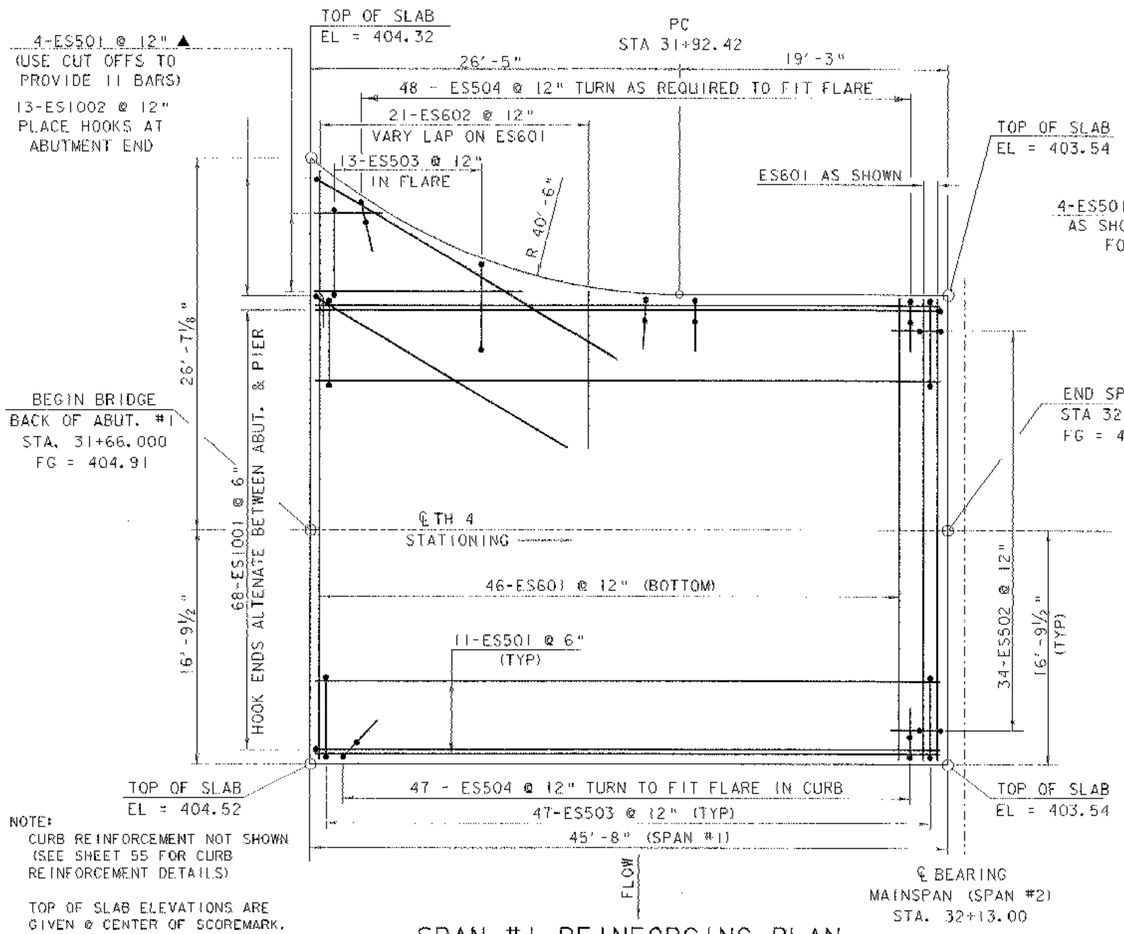
41. IF BLASTING IS REQUIRED AND/OR PERMISSIBLE IN THIS LOCATION, THE CONTRACTOR SHALL ACT IN ACCORDANCE WITH VERMONT STANDARD SPCIFICATION 501.10 (f).

ENVIRONMENTAL CONCERNS:

42. DUE TO THE PRESENCE OF AN ENDANGERED PLANT (CAREX GARBERI) AT PIER #2 AND ABUTMENT #2, SNOW FENCING SHALL BE ERECTED TO PROTECT THESE PLANTS DURING CONSTRUCTION. APPROXIMATE PLANT LOCATION IS SHOWN ON THE PLANS. VTRANS BIOLOGIST JOHN LEPORE SHALL BE NOTIFIED PRIOR TO THE START OF CONSTRUCTION AND SHALL DETERMINE THE EXACT LOCATION OF THE FENCING. PAYMENT FOR THE FENCING SHALL BE MADE UNDER THE ITEM 620.70 SNOW FENCE (MOD-PDF). HAY BALES MAY BE USED TO SECURE THE FENCING WHERE LEDGE PREVENTS THE DRIVING OF POSTS.

| PROJECT: | PROJECT NO.: |
|---|---|
| HARTFORD | BRO-BTN 2004 (1) |

DESIGN FILE NAME: 89j045/structures/sj045notes.dgn
IPARM FILE NAME: sj045notes.i
PLOT DATE: 11-FEB-2005
DESIGNED BY: K. M. HIGGINS
DRAWN BY: K. M. HIGGINS
SQUAD LEADER: C. P. WILLIAMS
CHECKED BY: M. LONGSTREET
GENERAL NOTES
SHEET: 33 OF 97

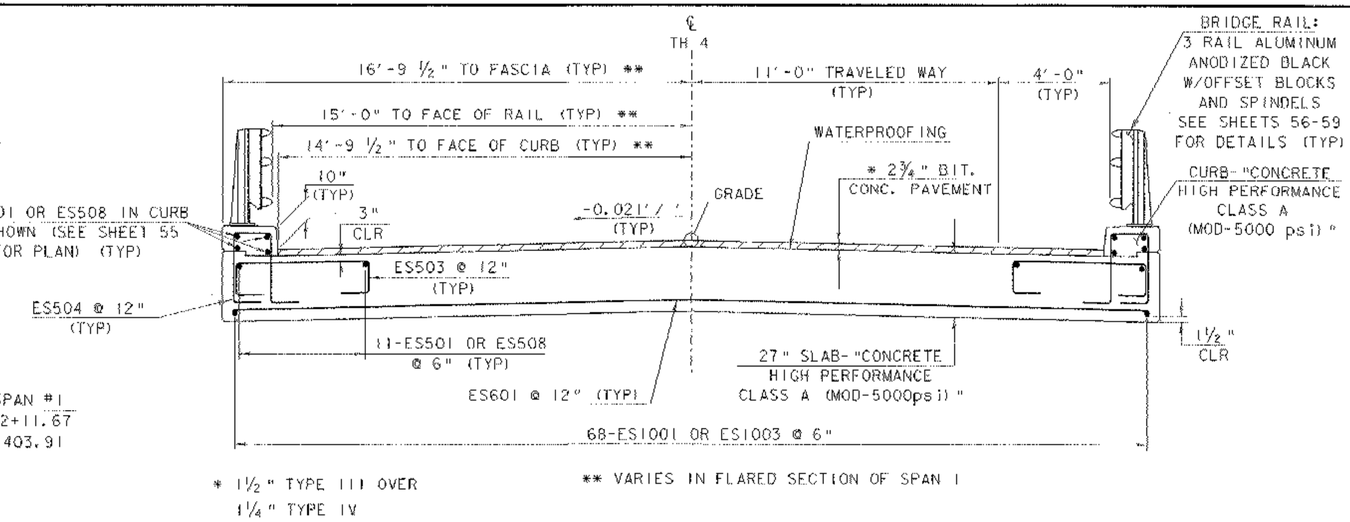



NOTE:
CURB REINFORCEMENT NOT SHOWN (SEE SHEET 55 FOR CURB REINFORCEMENT DETAILS)

TOP OF SLAB ELEVATIONS ARE GIVEN @ CENTER OF SCOREMARK.

## SPAN #1 REINFORCING PLAN

SCALE 3/16" = 1'-0

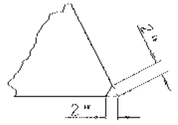



* 1 1/2" TYPE III OVER 1 1/4" TYPE IV

** VARIES IN FLARED SECTION OF SPAN 1

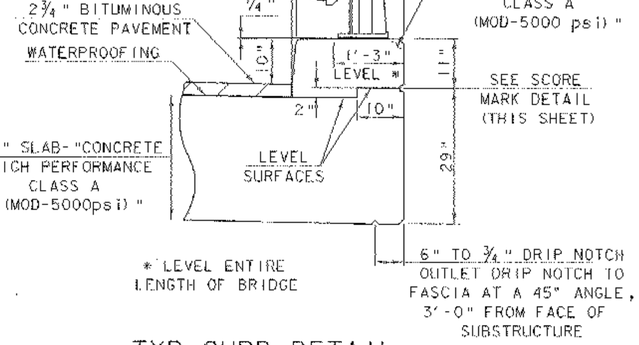
## TYPICAL BRIDGE SECTION (SPANS 1 & 3)

SCALE 3/8" = 1'-0




## ACUTE CORNER DETAIL

NTS

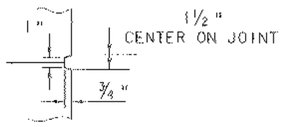



* LEVEL ENTIRE LENGTH OF BRIDGE

## TYP CURB DETAIL

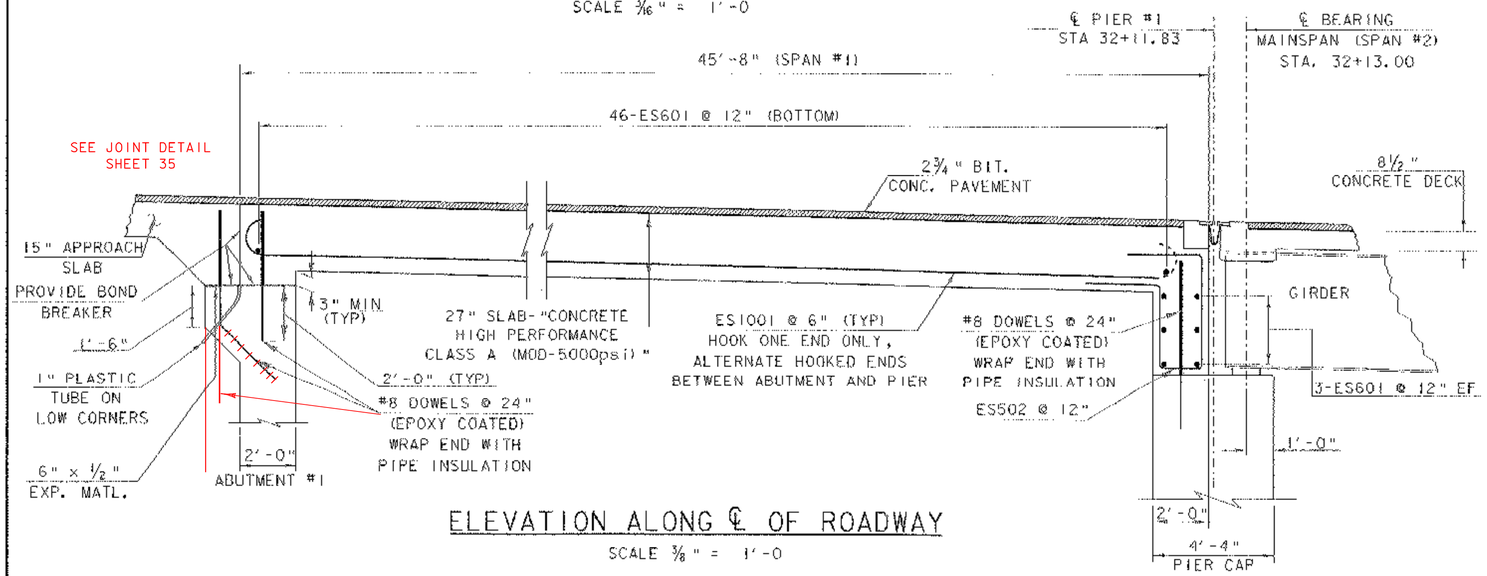
SCALE 3/4" = 1'-0

CURB DETAIL TYPICAL SPAN #1 & SPAN #3




## SCORE MARK DETAIL

NTS




## ELEVATION ALONG ℄ OF ROADWAY

SCALE 3/8" = 1'-0

NOTE:

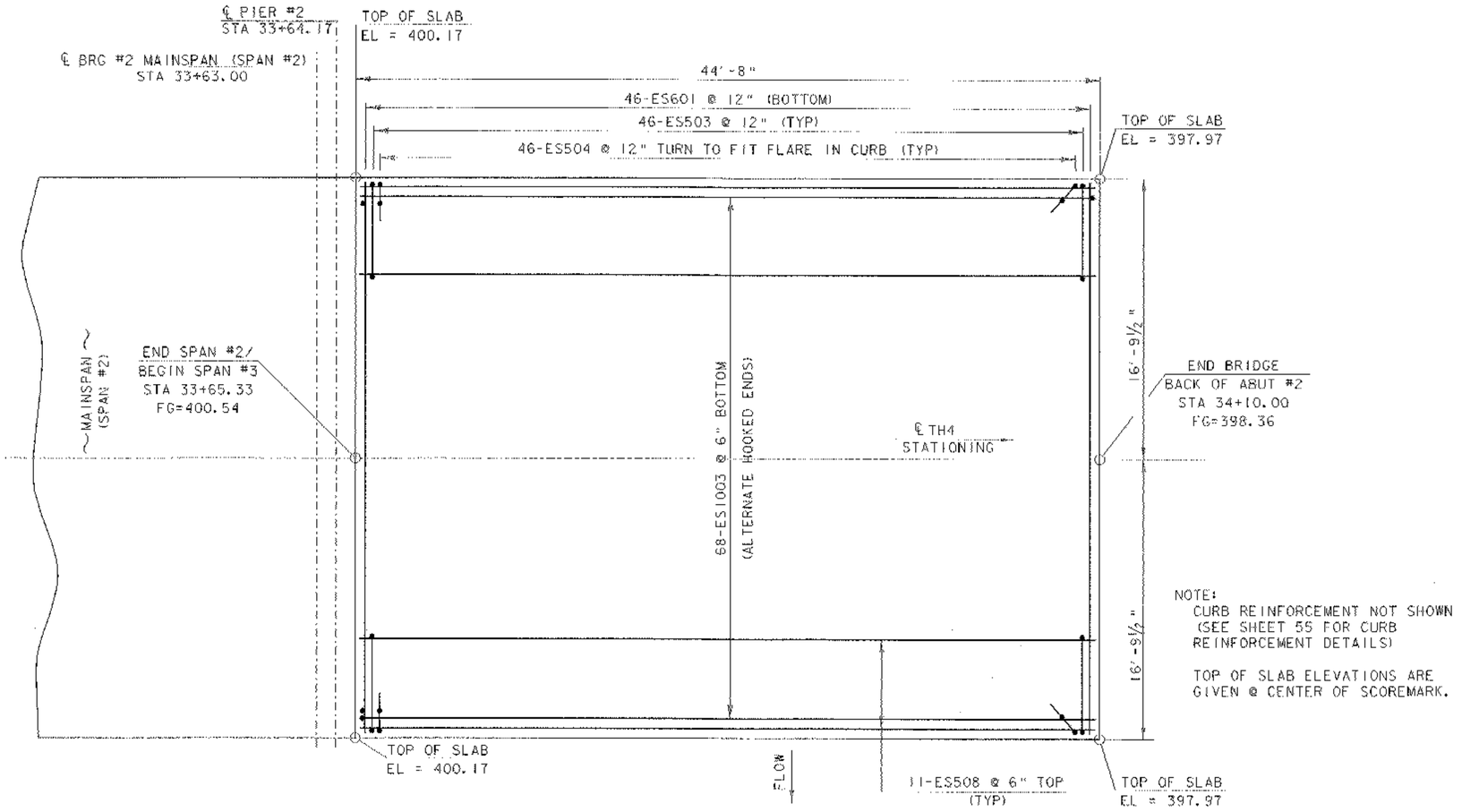
1. ▲ = CUT TO FIT IN FIELD
2. 3" CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS

SCALE 3/16" = 1'-0
1 0 2 4 6 8

SCALE 3/8" = 1'-0
1 0 1 2 3 4

SCALE 3/4" = 1'-0
1 0 1 2

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004 (1) |
| DESIGN FILE NAME: 89j045/structures/sj045asup.dgn | |
| IPARM FILE NAME: sj045span1.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: T. HUSK |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| SPAN #1 DETAILS | SHEET: 34 OF 97 |

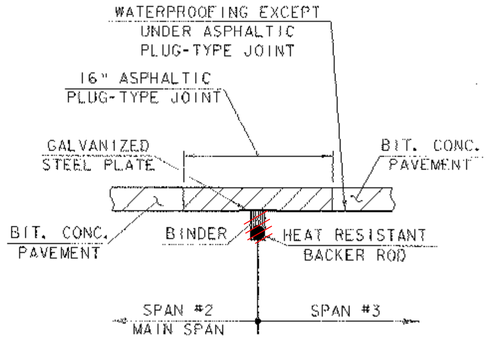



## SPAN #3 REINFORCING PLAN

SCALE ¼" = 1'-0

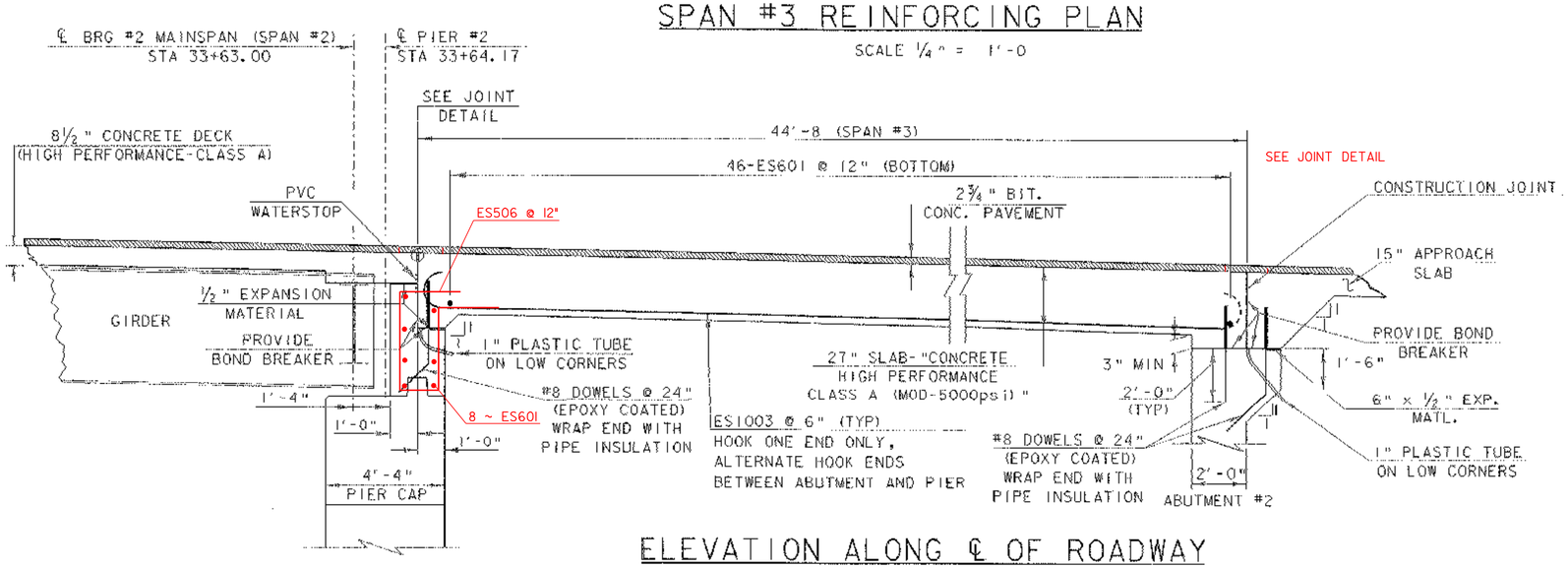
NOTE:
CURB REINFORCEMENT NOT SHOWN
(SEE SHEET 55 FOR CURB
REINFORCEMENT DETAILS)

TOP OF SLAB ELEVATIONS ARE
GIVEN @ CENTER OF SCOREMARK.




## ASPHALTIC PLUG-TYPE JOINT DETAIL

NTS




## ELEVATION ALONG ℄ OF ROADWAY

SCALE ⅜" = 1'-0

NOTE:

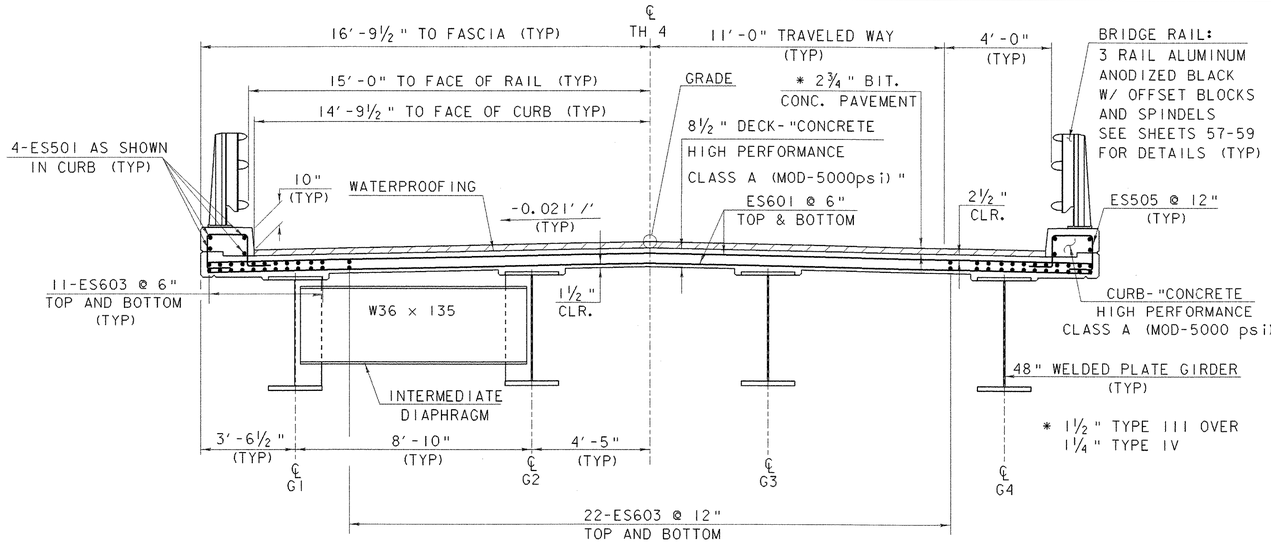
1. SEE SHEET 38 FOR BRIDGE CAMBER
2. ▲ = CUT TO FIT IN FIELD
3. 3" CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS

SCALE ¼" = 1'-0
1 0 2 4 6

SCALE ⅜" = 1'-0
1 0 1 2 3 4

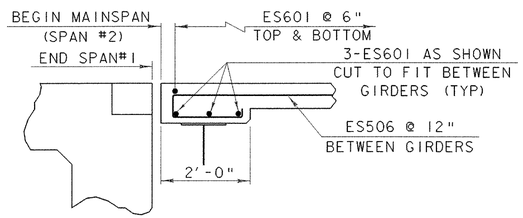
SCALE ¾" = 1'-0
0 1 2

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
| DESIGN FILE NAME: B9j045/structures/sj045asup.dgn | |
| IPARM FILE NAME: sj045span3.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: T. HUSK |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| SPAN #3 DETAILS | SHEET: 35 OF 97 |



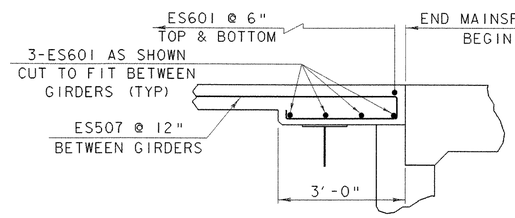

## TYPICAL BRIDGE SECTION MAINSPAN (SPAN #2)

SCALE ⅜" = 1'-0



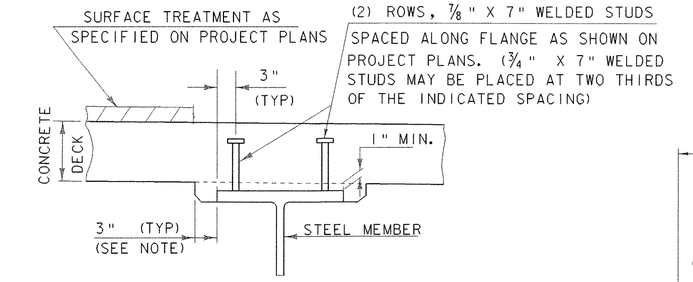

## SECTION A-A

NTS




## SECTION B-B

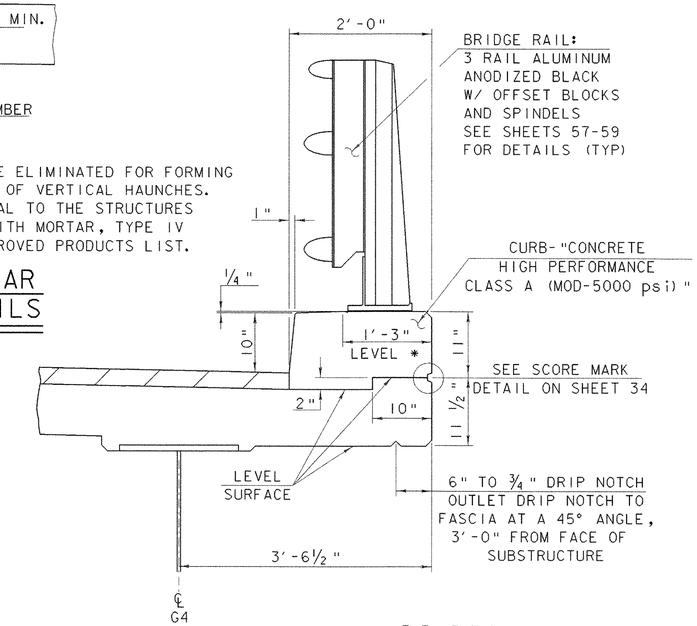
NTS




NOTE: THE 3" HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES. SYSTEMS SHALL BE SUBMITTED FOR APPROVAL TO THE STRUCTURES ENGINEER. ALL VOIDS SHALL BE FILLED WITH MORTAR, TYPE IV OR AN EQUIVALENT PRODUCT FROM THE APPROVED PRODUCTS LIST.

## HAUNCH AND SHEAR CONNECTOR DETAILS

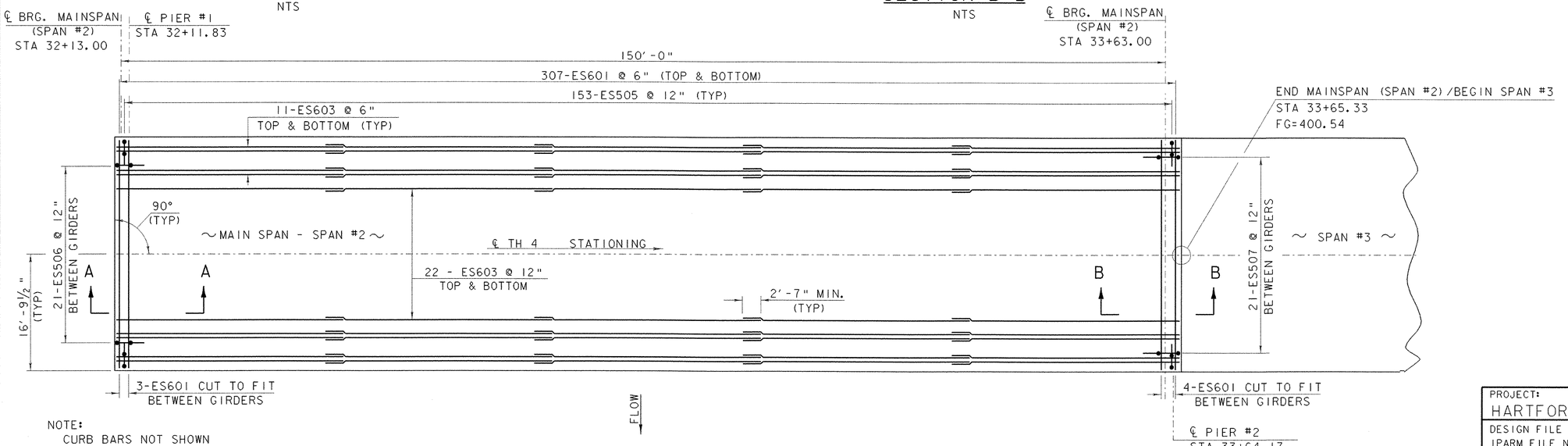
NTS




* LEVEL ENTIRE LENGTH OF BRIDGE

## CURB DETAIL

SCALE 1" = 1'-0




NOTE:
CURB BARS NOT SHOWN
(SEE SHEET 55 FOR CURB BAR DETAILS)

## MAINSPAN (SPAN #2) REINFORCING PLAN

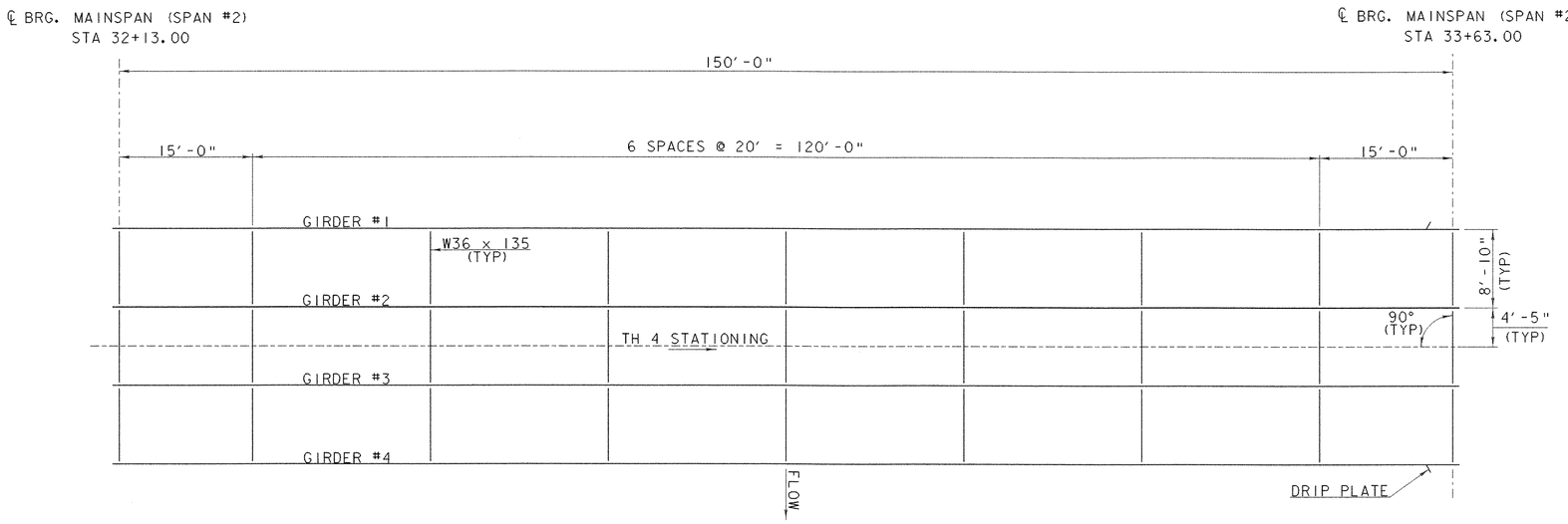
SCALE ⅛" = 1'-0

SCALE ⅛" = 1'-0
1 0 2 4 6 8

SCALE ⅜" = 1'-0
1 0 1 2 3 4

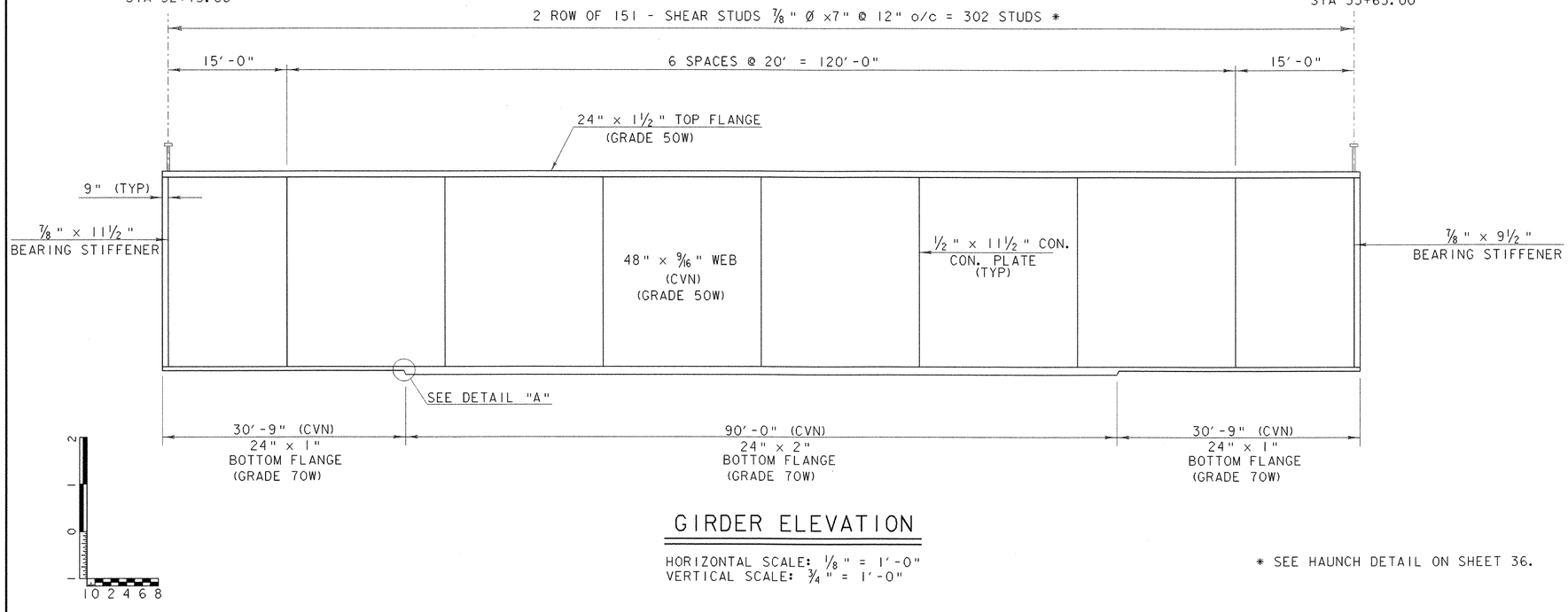
SCALE 1" = 1'-0
1 9 6 3 0 1 2

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
| DESIGN FILE NAME: 89J045/structures/sj045msup.dgn | |
| IPARM FILE NAME: sj045deckplan.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: T. HUSK |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| SPAN #2 MAINSPAN REINFORCING DETAILS | SHEET: 36 OF 97 |



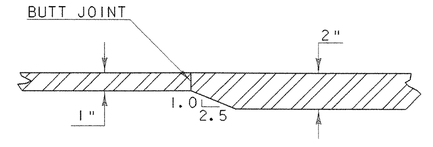

## FRAMING PLAN

SCALE 1/8" = 1'-0
1 0 2 4 6 8




## GIRDER ELEVATION

HORIZONTAL SCALE: 1/8" = 1'-0"
VERTICAL SCALE: 3/4" = 1'-0"

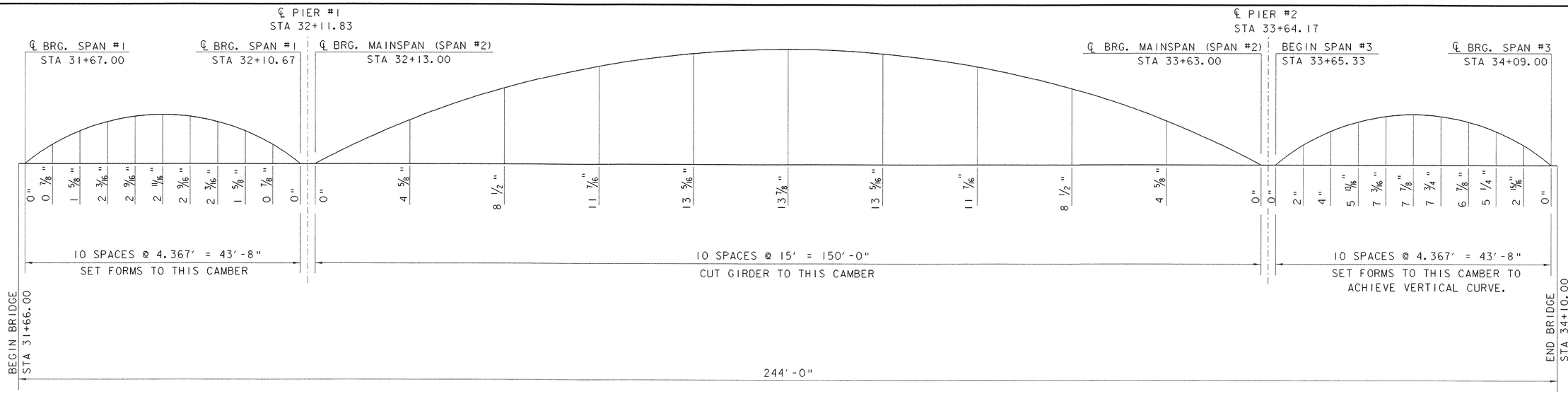



## DETAIL "A"

SCALE 3" = 1'-0
1 9 6 3 0 1

* SEE HAUNCH DETAIL ON SHEET 36.

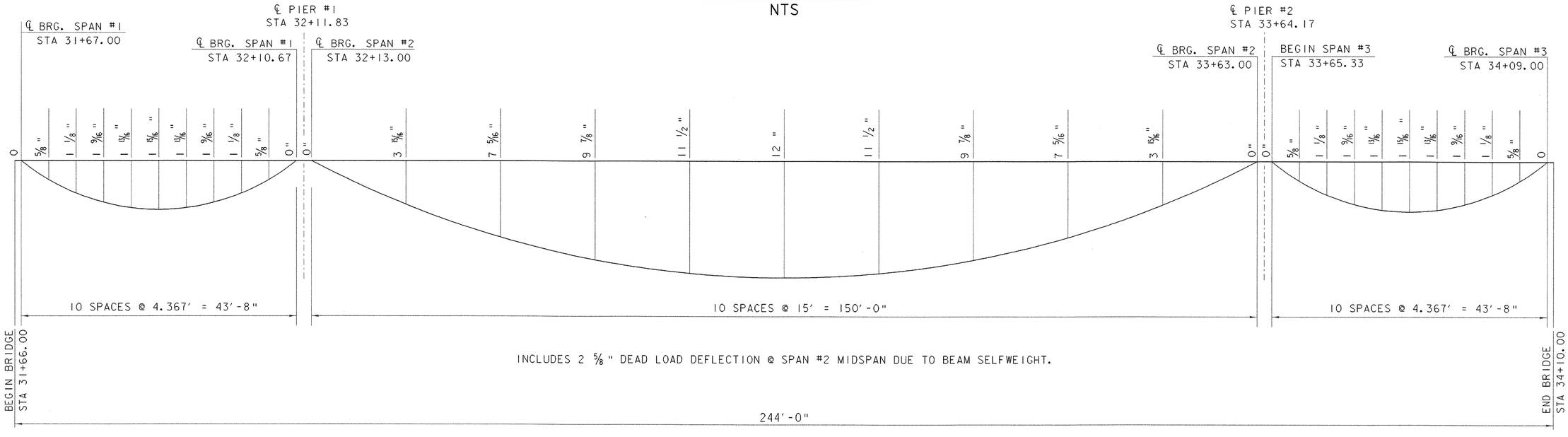
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004 (1) |
|---|---|
| DESIGN FILE NAME: 89j045/structures/sj045msup.dgn | |
| IPARM FILE NAME: sj045framing.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: T. HUSK |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| MAINSPAN FRAMING PLAN | SHEET: 37 OF 97 |




NOTE: CAMBER DIAGRAM INCLUDES 2 5/8" DEAD LOAD DEFLECTION @ SPAN #2 MIDSPAN DUE TO BEAM SELFWEIGHT. CALCULATED CAMBER @ SPAN #2 MIDSPAN MEASURED WHEN BEAM IS SUPPORTED ONLY AT ℄ BEARING POINTS SHALL BE 11 1/4"

## CAMBER DIAGRAM

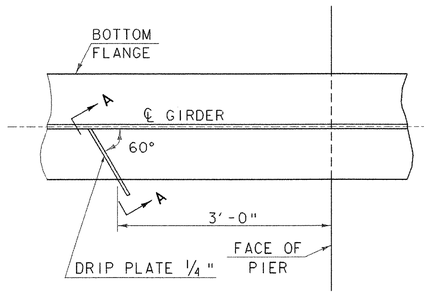
NTS




## DEADLOAD DEFLECTION DIAGRAM

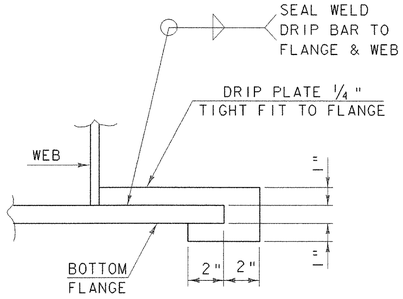
NTS

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004 (1) |
| DESIGN FILE NAME: 89j045/structures/sj045msup.dgn | |
| IPARM FILE NAME: sj045camber.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: K. M. HIGGINS |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: M. LONGSTREET |
| CAMBER DIAGRAM | SHEET: 38 OF 97 |



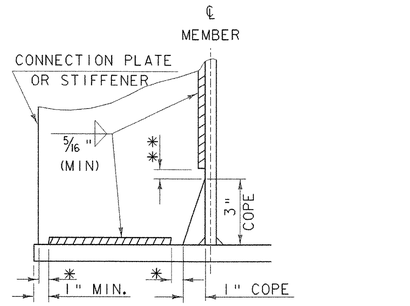

PLAN DRIP PLATE

NTS




SECTION A - A

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

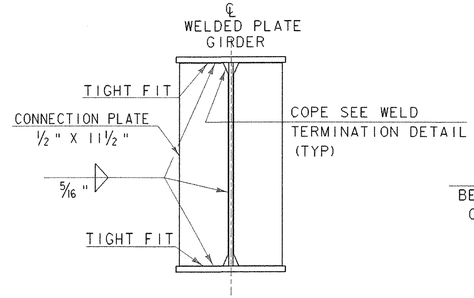



* NO WELD FOR 1/4" MIN. 1/2" MAX. (EXCEPT MUST MAINTAIN 1" MINIMUM FROM EDGE OF FLANGE)

** 1/2" ± 1/4" FOR CONNECTION PLATE OR STIFFENER TO WEB WELDS ONLY.

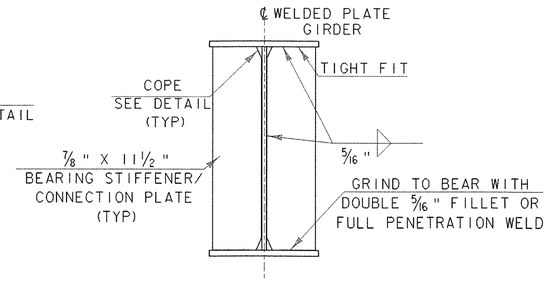
WELD TERMINATION AND COPING DETAILS FOR STEEL MEMBERS

NTS



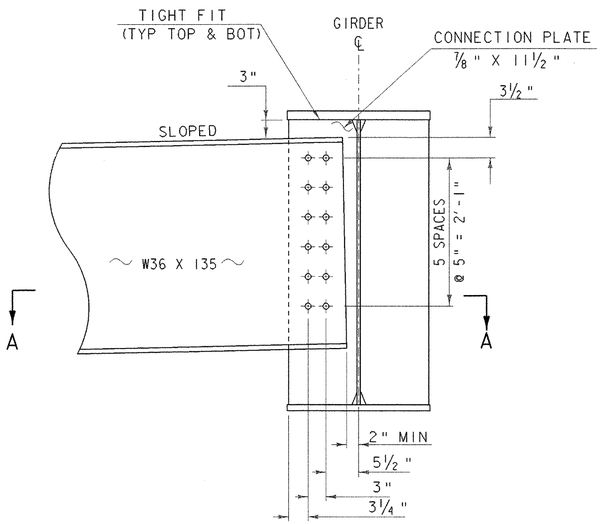

INTERMEDIATE CONNECTION PLATES

NTS




PIER BEARING STIFFENERS/ CONNECTION PLATE

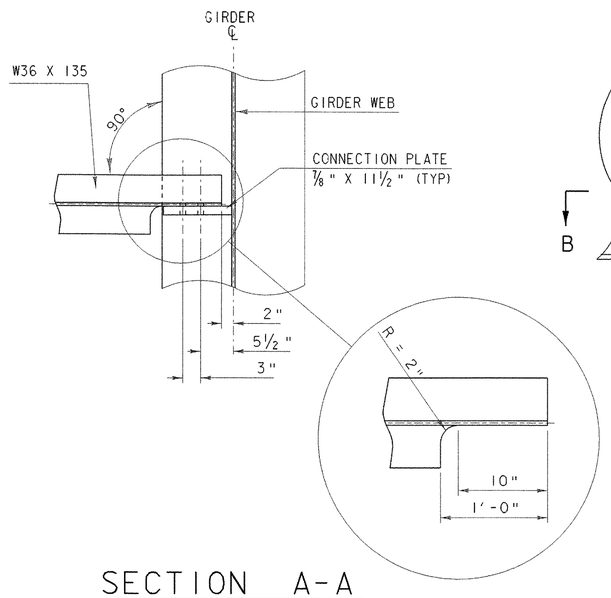
NTS




PIER DIAPHRAGM

SCALE 1" = 1'-0

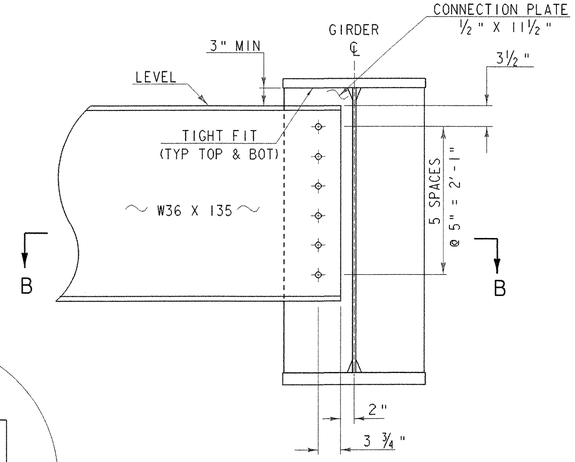
1 9 6 3 0 1 2




SECTION A-A

SCALE: 1"= 1'-0"

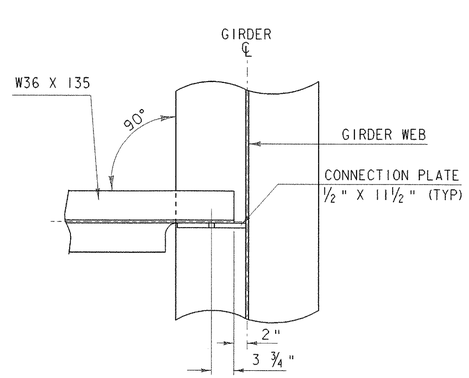
ALL CONNECTIONS SHALL BE MADE USING 7/8" DIAMETER, AASHTO M164 BOLTS. ALL HOLES IN THE DIAPHRAGMS SHALL BE 15/16" DIAMETER. ALL HOLES IN THE CONNECTION PLATES SHALL BE 1" DIAMETER.




INTERMEDIATE DIAPHRAGM

SCALE 1" = 1'-0

1 9 6 3 0 1 2

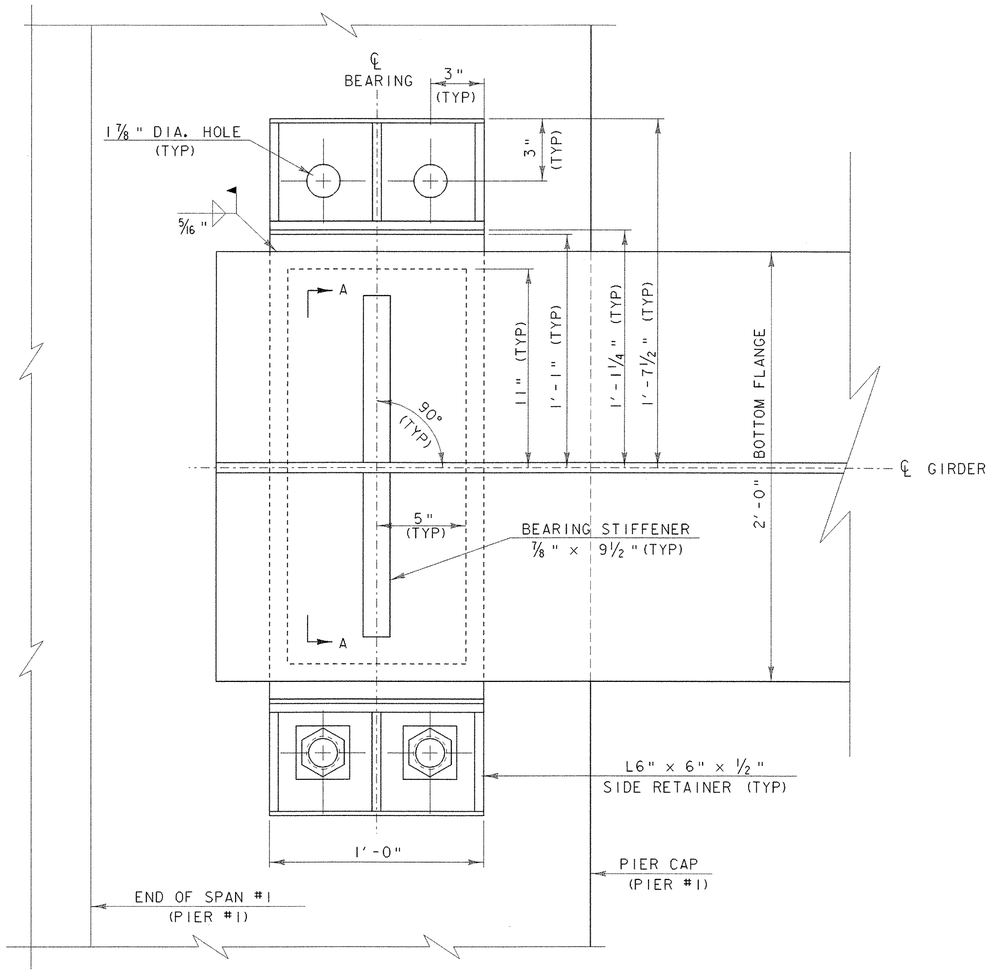



SECTION B-B

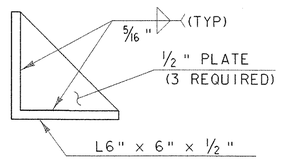
SCALE: 1"= 1'-0"

ALL CONNECTIONS SHALL BE MADE USING 7/8" DIAMETER, AASHTO M164 BOLTS. ALL HOLES IN THE DIAPHRAGMS SHALL BE 15/16" DIAMETER. ALL HOLES IN THE CONNECTION PLATES SHALL BE 1" DIAMETER.

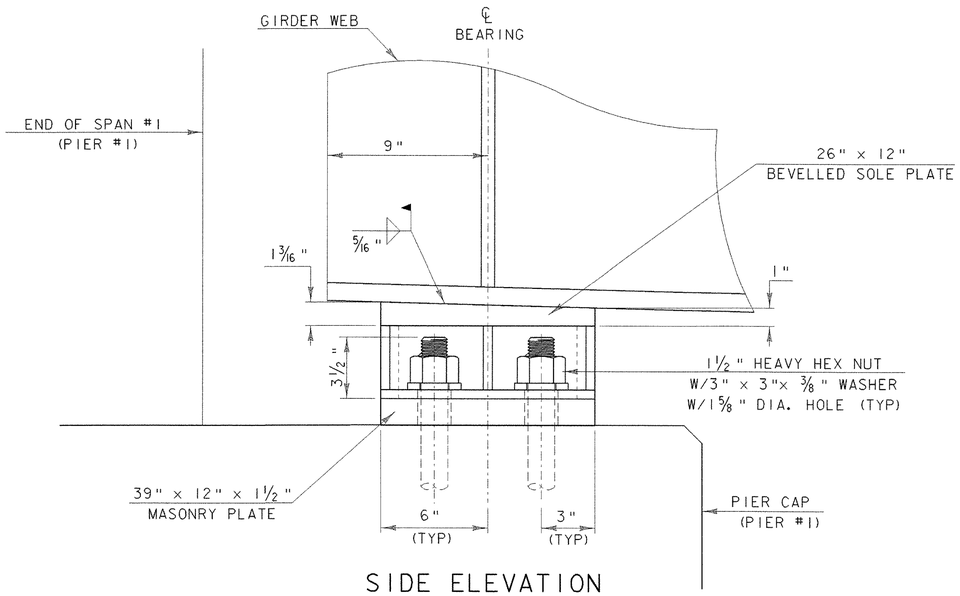
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
|---|---|
| DESIGN FILE NAME: 89j045/structures/sj045msup.dgn | |
| IPARM FILE NAME: sj045steeldet.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: T. HUSK |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| MISCELLANEOUS STEEL DETAILS | SHEET: 39 OF 97 |



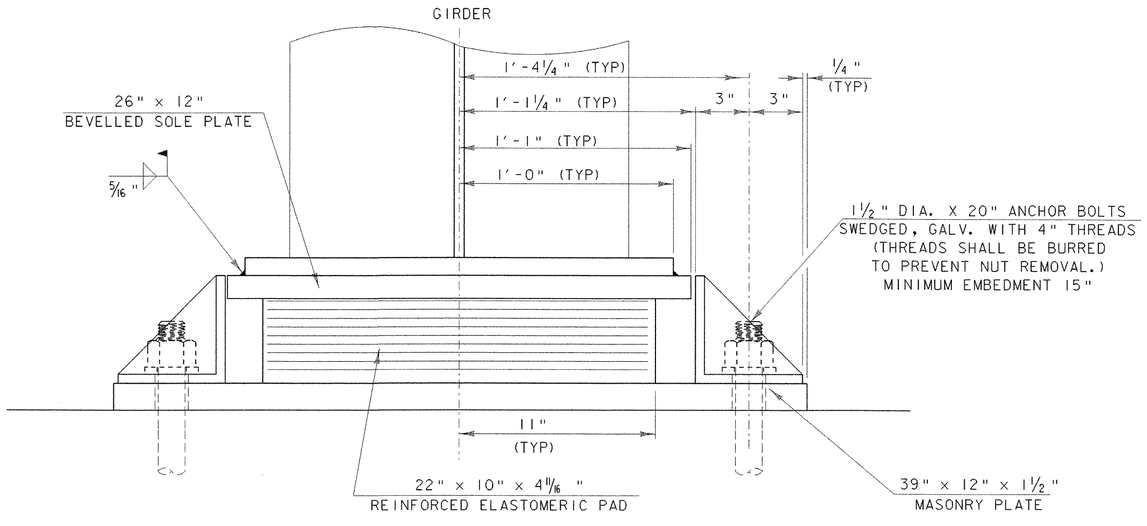

PLAN VIEW



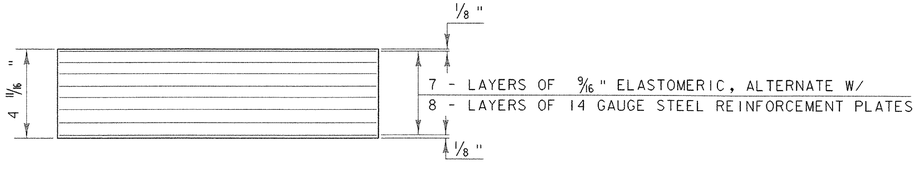

SIDE RETAINER
(2 REQUIRED)




SIDE ELEVATION




FRONT ELEVATION

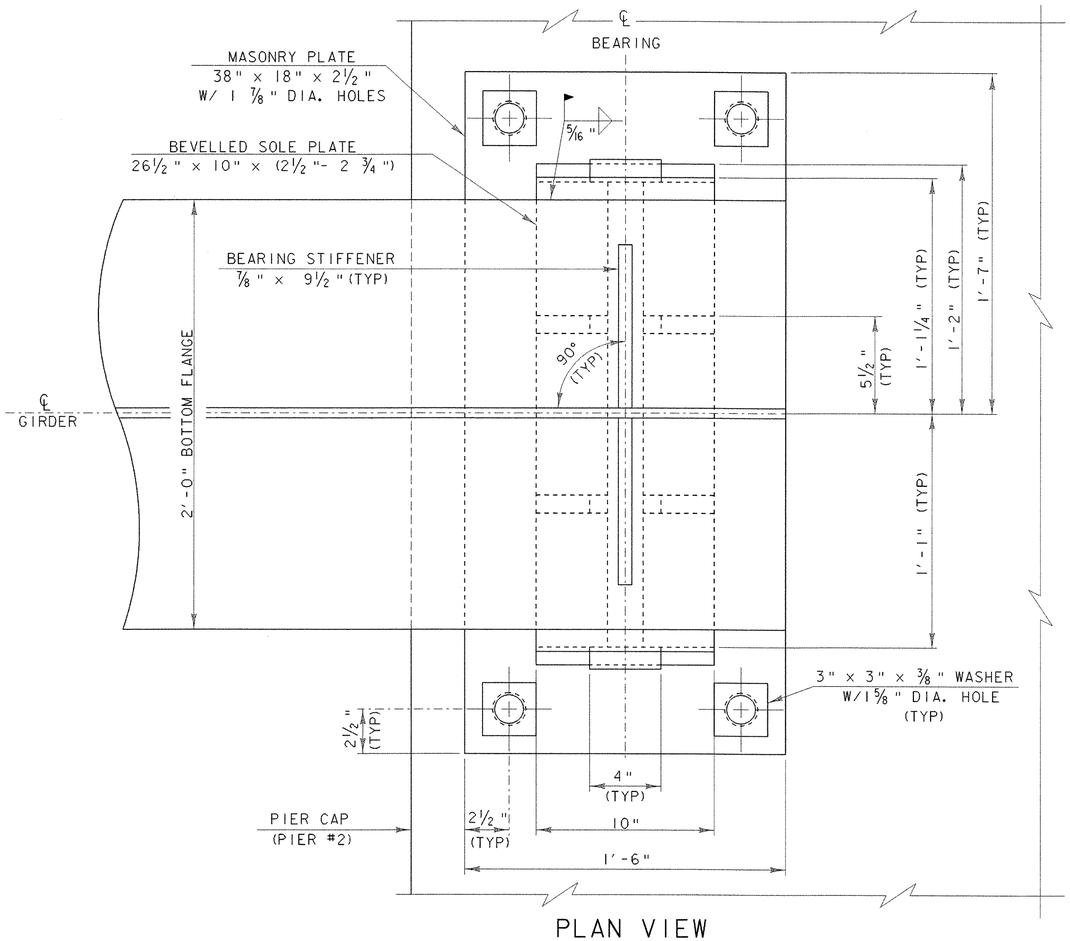



SECTION A-A

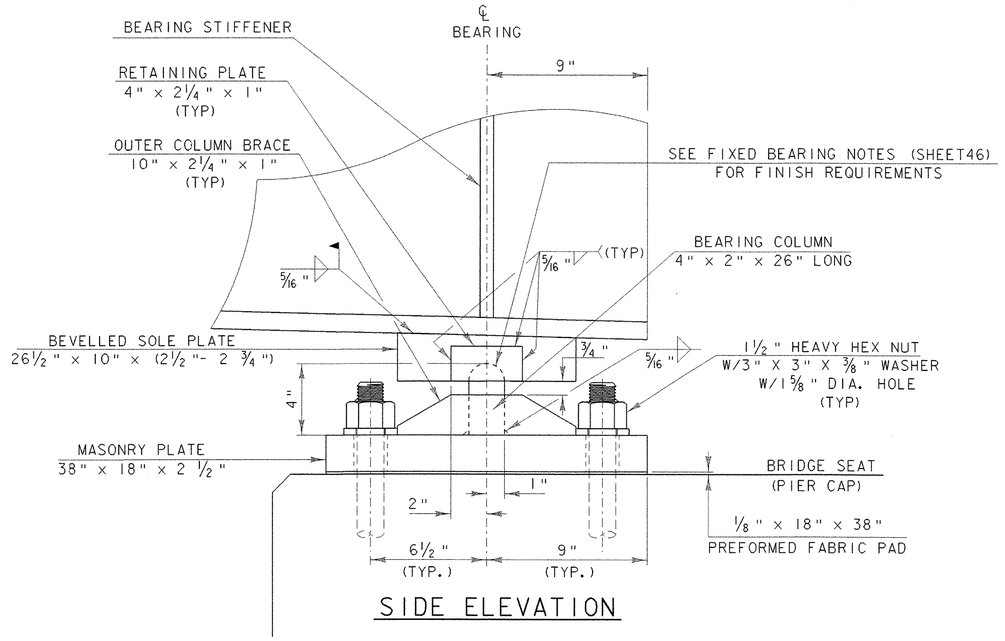
SCALE 3" = 1'-0
1 9 6 3 0 1

| PROJECT: | PROJECT NO.: |
|---|---|
| HARTFORD | BRO-BTN 2004(1) |

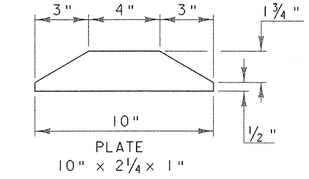
DESIGN FILE NAME: /89j045/structures/sj045brg.dgn
IPARM FILE NAME: sj045expbrg.i — PLOT DATE: 11-FEB-2005
DESIGNED BY: K. M. HIGGINS — DRAWN BY: K. M. HIGGINS
SQUAD LEADER: C. P. WILLIAMS — CHECKED BY: M. LONGSTREET
EXPANSION BEARING DETAILS (PIER #1) — SHEET: 40 OF 97




PLAN VIEW

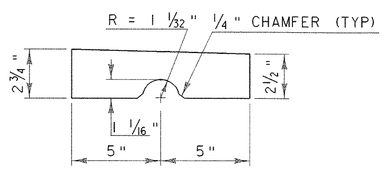



SIDE ELEVATION

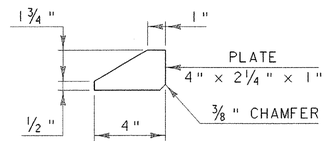



OUTER COLUMN BRACE DETAIL

(2 REQUIRED)

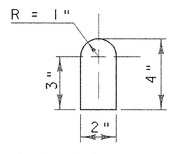



SOLE PLATE DETAIL

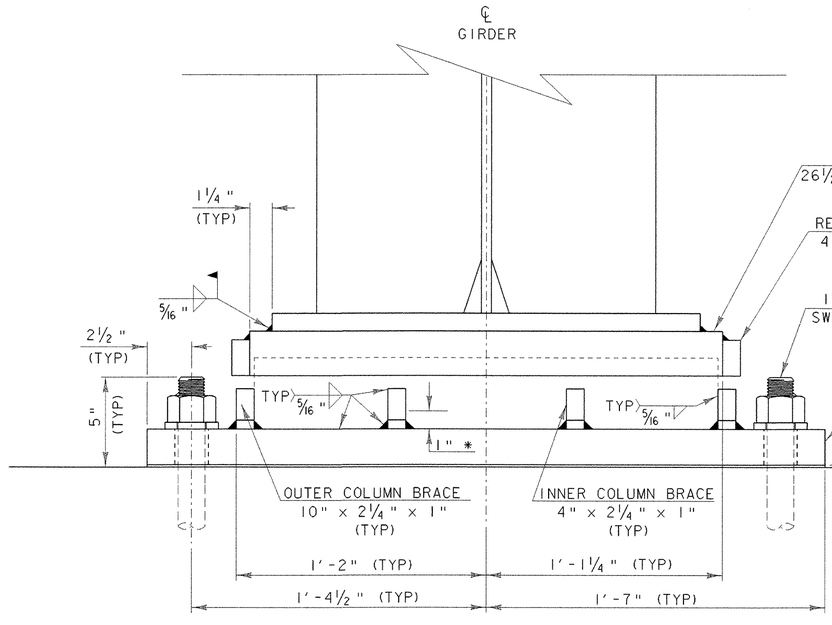



INNER COLUMN BRACE DETAIL

(4 REQUIRED)




BEARING COLUMN DETAIL




FRONT ELEVATION

* NO WELD FOR 1"
(VERT. LEG OF BRACE ONLY)
(TYP ALL BRACES)

SCALE 3" = 1'-0

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004 (1) |
| DESIGN FILE NAME: /89j045/structures/sj045brg.dgn | |
| IPARM FILE NAME: sj045fixbrg.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: K. M. HIGGINS |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: M. LONGSTREET |
| FIXED BEARING DETAILS (PIER #2) | SHEET: 41 OF 97 |

## EXPANSION BEARING NOTES

1. EXPANSION BEARINGS SHALL BE PAID FOR UNDER THE ITEM 531.10 "BEARING DEVICE ASSEMBLY (EXPANSION)" AND SHALL CONFORM TO APPLICABLE SUBSECTIONS OF SECTION 531 AND 731.

2. THE FIELD WELD CONNECTING THE BOTTOM FLANGE WITH THE BEARING DEVICE SHALL BE MADE WITH E7018 RODS. AREAS OF METALIZING DAMAGED BY WELDING AND/OR HANDLING SHALL BE REPAIRED BY METALIZING IN ACCORDANCE WITH ASTM A 760/760M.

3. SHOP DRAWINGS CONFORMING TO SUBSECTION 531.03 SHALL BE SUBMITTED AND INCLUDE ANY NECESSARY WELDING OR BONDING PROCEDURES. THE SHOP DRAWINGS SUBMITTAL SHALL ALSO INCLUDE ALL APPLICABLE CERTIFICATIONS FOR ELASTOMERIC MATERIAL.

4. ALL STEEL COMPONENTS SHALL BE METALIZED AS PER SECTION 531.04(b) AND 506.15. AFTER THE BEARINGS ARE METALIZED, THEY SHALL BE SEALED WITH AN APPROVED PRIMER AS SPECIFIED IN SUBSECTION 506.15(c). ALL WASHERS SHALL BE ⅜" PLATE MINIMUM. PAYMENT FOR ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "BEARING DEVICE ASSEMBLY (EXPANSION)". ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER AASHTO M 232/M 232M.

5. ALL STEEL IN BEARING DEVICES SHALL BE AASHTO M 270/M 270M GRADE 50.

6. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMERIC SHALL BE STEEL ASTM A36. ALL INTERNAL STEEL PLATES SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST, AND MILL SCALE. THE PLATES SHALL BE FREE OF SHARP EDGES AND BURRS.

7. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM OF ⅛" EDGE SEAL OF ELASTOMER INTEGRAL WITH THE BEARING OVER ALL INTERNAL PLATES.

8. FOR ELASTOMERIC BEARINGS, ALL MATERIALS AND FABRICATION SHALL BE PER AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, EDITION 1996 AND ITS LATEST REVISIONS AND AASHTO M 251/M 251M.

9. ALTERNATE CONFIGURATIONS FOR BEARINGS MAY BE SUBMITTED FOR APPROVAL. ANY ALTERNATE SUBMITTED SHALL BE DESIGNED AND CERTIFIED TO MEET THE DESIGN LOADS AND CRITERIA SHOWN ON THIS SHEET. THE ALTERNATE SHALL MAINTAIN THE ANCHORAGE SYSTEM SHOWN AND SHALL BE DESIGNED PER AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES 1996 EDITION AND ITS LATEST REVISIONS.

10. BRIDGE SEAT ELEVATIONS MAY BE REVISED TO ACCOMMODATE AN ALTERNATIVE CONFIGURATION.

11. DESIGN CRITERIA:
    - A. MASONRY PLATE TO CONCRETE DESIGN PRESSURE = 462 psi
    - B. DESIGN ROTATION = 0.02 RAD
    - C. HORIZONTAL CAPACITY SHALL BE MINIMUM OF 20% VERTICAL LOAD IN ANY RESTRAINED DIRECTION.
    - D. DESIGN LOAD PER BEARING
      RDL = 138.30 Kips
      RLL = 74.28 Kips
    - E. TEMPERATURE RANGE = -30° TO 120°F
    - F. ELASTOMER SHALL HAVE NOMINAL HARDNESS OF 60 ON SHORE 'A' SCALE. ELASTOMER SHALL HAVE A SHEAR MODULUS BETWEEN 140 AND 175 psi. THE RAW ELASTOMER SHALL BE VIRGIN NEOPRENE CLASSIFIED AS LOW TEMPERATURE GRADE 4 AS DEFINED IN TABLE 18.4.5.1 - 1A OF AASHTO, DIVISION II, SECTION 18.
    - G. NO FABRIC REINFORCEMENT WILL BE ALLOWED IN ELASTOMERIC PADS

12. THE STEEL SOLE PLATES AND MASONRY PLATES SHALL BE HOT BONDED TO THE REINFORCED ELASTOMERIC PAD DURING THE VULCANIZATION PROCESS. THE STEEL SURFACES TO BE BONDED TO THE PAD SHALL NOT BE METALIZED.

13. THE BEARING TOLERANCES SHALL MEET THOSE GIVEN IN AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED 1996 AND ITS LATESTS REVISIONS, DIVISION II SECTION 18.

## FIXED BEARING NOTES

1. FIXED BEARINGS SHALL BE PAID FOR UNDER THE ITEM 531.10 "BEARING DEVICE ASSEMBLY (FIXED)", AND SHALL CONFORM TO APPLICABLE SUBSECTIONS OF 531 AND 731.

2. THE FIELD WELD CONNECTING THE BOTTOM FLANGE WITH THE BEARING DEVICE SHALL BE MADE WITH E7018 RODS. AREAS OF METALIZING DAMAGED BY WELDING AND/OR HANDLING SHALL BE REPAIRED BY METALIZING IN ACCORDANCE WITH ASTM A 760/760M.

3. SHOP DRAWINGS CONFORMING TO SUBSECTION 531.03 SHALL BE SUBMITTED AND INCLUDE ANY NECESSARY WELDING PROCEDURES.

4. ALL STEEL COMPONENTS SHALL BE METALIZED AS PER SECTION 531.04(b) AND 506.15(c). AFTER THE BEARINGS ARE METALIZED, THEY SHALL BE SEALED WITH AN APPROVED PRIMER AS SPECIFIED IN SUBSECTION 506.15(c). ALL WASHERS SHALL BE ⅜" PLATE MINIMUM. PAYMENT FOR ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "BEARING DEVICE ASSEMBLY (FIXED)". ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER AASHTO M 232/M 232M.

5. ALL STEEL IN FIXED BEARING DEVICES SHALL BE AASHTO M 270/M 270M GRADE 50.

6. DESIGN CRITERIA:
    - A. MASONRY PLATE ON CONCRETE DESIGN PRESSURE IS 300 psi.
    - B. HORIZONTAL CAPACITY SHALL BE A MINIMUM OF 20% DEAD LOAD IN ANY RESTRAINED DIRECTION.
    - C. DESIGN LOAD PER BEARING
      RDL = 138.30 Kips
      RLL = 74.28 Kips

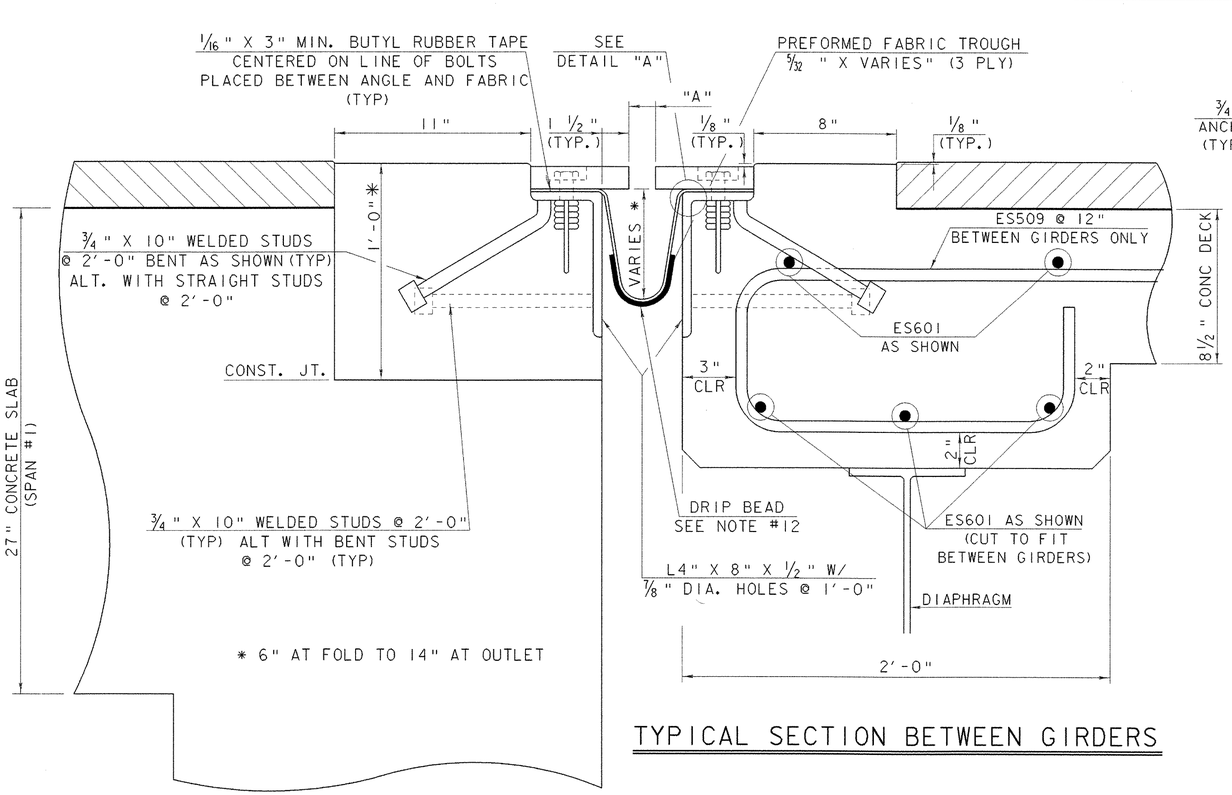
7. ALTERNATE CONFIGURATIONS FOR BEARINGS MAY BE SUBMITTED FOR APPROVAL. ANY ALTERNATE SUBMITTED SHALL BE DESIGNED AND CERTIFIED TO MEET THE DESIGN LOADS AND CRITERIA SHOWN ON THIS SHEET. THE ALTERNATE SHALL MAINTAIN THE ANCHORAGE SYSTEM SHOWN AND SHALL BE DESIGNED PER AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES 1996 EDITION AND ITS LATEST REVISIONS.

8. BRIDGE SEAT ELEVATIONS MAY BE REVISED TO ACCOMMODATE AN ALTERNATE CONFIGURATION.

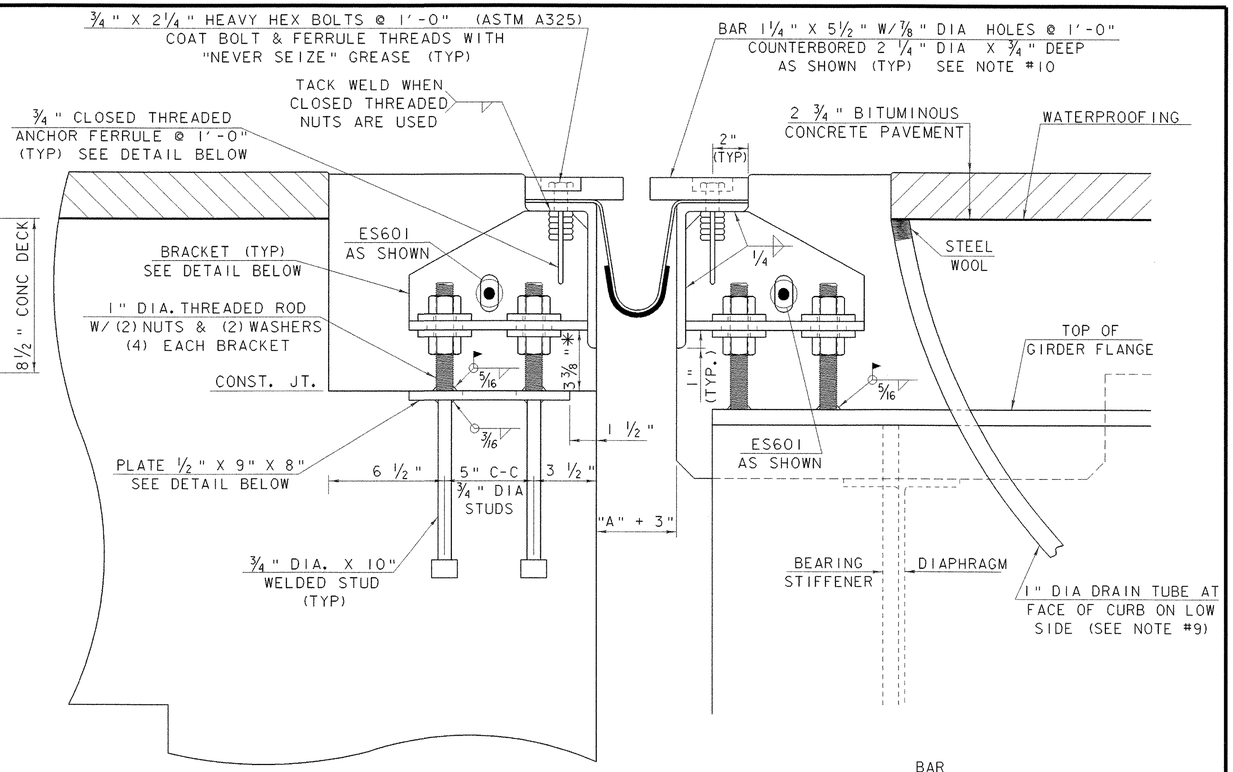
9. THE BEARING TOLERANCES SHALL MEET THOSE GIVEN IN AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED 1996 AND ITS LATEST REVISIONS, DIVISION II SECTION 18. THE CONTACT SUFACES OF THE CURVED BEARING SURFACES OF THE BEARING COLUMN AND SOLE PLATES SHALL MEET THE TOLERANCES AND FINISH REQUIREMENTS OF BEARING PINS AND BUSHINGS.

10. THE CURVED CONTACT SURFACES SHALL NOT BE METALIZED.

| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
|---|---|
| DESIGN FILE NAME: /89j045/structures/sj045brg.dgn | |
| IPARM FILE NAME: sj045brgnotes.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: K. M. HIGGINS |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: M. LONGSTREET |
| BEARING NOTES | SHEET: 42 OF 97 |

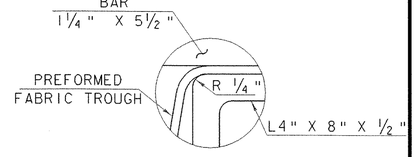



## TYPICAL SECTION BETWEEN GIRDERS




## TYPICAL SECTION AT GIRDERS

*THESE DIMENSIONS ARE THEORETICAL AND MAY CHANGE DEPENDING UPON THE OUTCOME OF THE BEAM PROFILES.




## DETAIL "A"

NOT TO SCALE

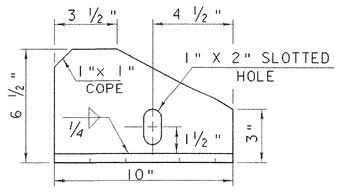
| TEMP | "A" DIST |
|---|---|
| 0° F | 3 1/16 |
| 15° F | 2 7/8" |
| 30° F | 2 5/16" |
| 45° F | 2 1/2" |
| 60° F | 2 11/16" |
| 75° F | 2 1/8" |
| 90° F | 1 15/16" |
| 105° F | 1 3/4" |

"A" IS THE SETTING BEFORE DEAD LOADS ARE IN PLACE.

SCALE 3" = 1'-0



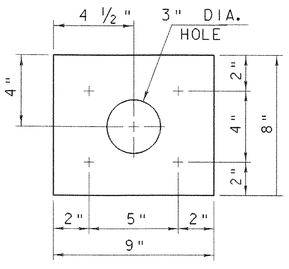

## BRACKET PLAN



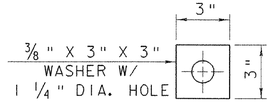

## BRACKET ELEVATION

1. DETAILS ON THIS SHEET ARE FOR ITEM 516.10 "BRIDGE EXPANSION JOINT".
2. PREFORMED FABRIC MATERIAL SHALL BE CONTINUOUS AND SHALL CONFORM TO SUBSECTION 707.07.
3. BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO SPECIFICATION M-198, TYPE II.
4. THE FINAL FINISH OF THE EXPANSION DEVICE SHALL BE COVERED DURING THE PLACING OF BRIDGE DECK CONCRETE.
5. ALL STEEL COMPONENTS SHALL BE AASHTO M270 GRADE 36 GALVANIZED OR METALIZED AS PER SUBSECTION 506.15(a) OR (b) UNLESS OTHERWISE SPECIFIED.
6. THE ITEM "BRIDGE EXPANSION JOINT" SHALL INCLUDE THE FABRICATION AND ERECTION OF THE COMPLETE JOINT ASSEMBLY INCLUDING ALL STEEL PLATES, BRACKETS, ANGLES, WELDED STUDS OR RODS, PREFORMED FABRIC DRAIN TROUGH MATERIAL AND PLASTIC DRAIN TUBES, BUTYL RUBBER TAPE AND ANY OTHER MISCELLANEOUS MATERIAL NECESSARY TO INSTALL JOINT.
7. THE 4" X 8" X 1/2" ANGLES SHALL BE FURNISHED AS ONE CONTINUOUS PIECE. THE 1 1/4" X 5 1/2" BARS EACH SIDE OF THE JOINT SHALL BE PROVIDED IN TWO EQUAL LENGTHS.
8. COAT CONCRETE CONTACT SURFACES WITH EPOXY BONDING COMPOUND MEETING THE REQUIREMENTS OF SUBSECTION 719.02. PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 516.10 "BRIDGE EXPANSION JOINT".
9. A 1" DIAMETER PLASTIC DRAIN TUBE SHALL BE INSTALLED AS SHOWN AT THE FACE OF CURB. THE UPPER END IS TO BE PLUGGED WITH STEEL WOOL AND THE LOWER END IS TO EXTEND BELOW THE BOTTOM OF THE ADJACENT GIRDER. THE DRAIN TUBES SHALL BE FASTENED TO THE GIRDERS USING A METHOD APPROVED BY THE ENGINEER.
10. FILL COUNTERBORED HOLES WITH HOT POURED JOINT SEALER AFTER BOLT INSTALLATION. PAYMENT FOR THE WORK SHALL BE SUBSIDIARY TO ITEM 516.10.
12. A DRIP BEAD OF 1/4" X 7" STRIP OF PREFORMED MATERIAL SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH USING AN ADHESIVE APPROVED BY THE MANUFACTURER. THE DRIP BEAD SHALL BE APPLIED 1" FROM THE DOWNSPOUT END OF THE TROUGH.
13. FABRIC TROUGH SHALL BE THOROUGHLY CLEANED AND FLUSHED AFTER PAVING OPERATION.
14. THE EXPANSION JOINT SHALL BE SHOP ASSEMBLED AND SHIPPED AS ONE UNIT.
15. ALL CONCRETE SHALL BE HIGH PERFORMANCE-CLASS A (MOD-5000PSI)

ALL PLATES 1/2"




## PLATE PLAN




## WASHER FOR BRACKET

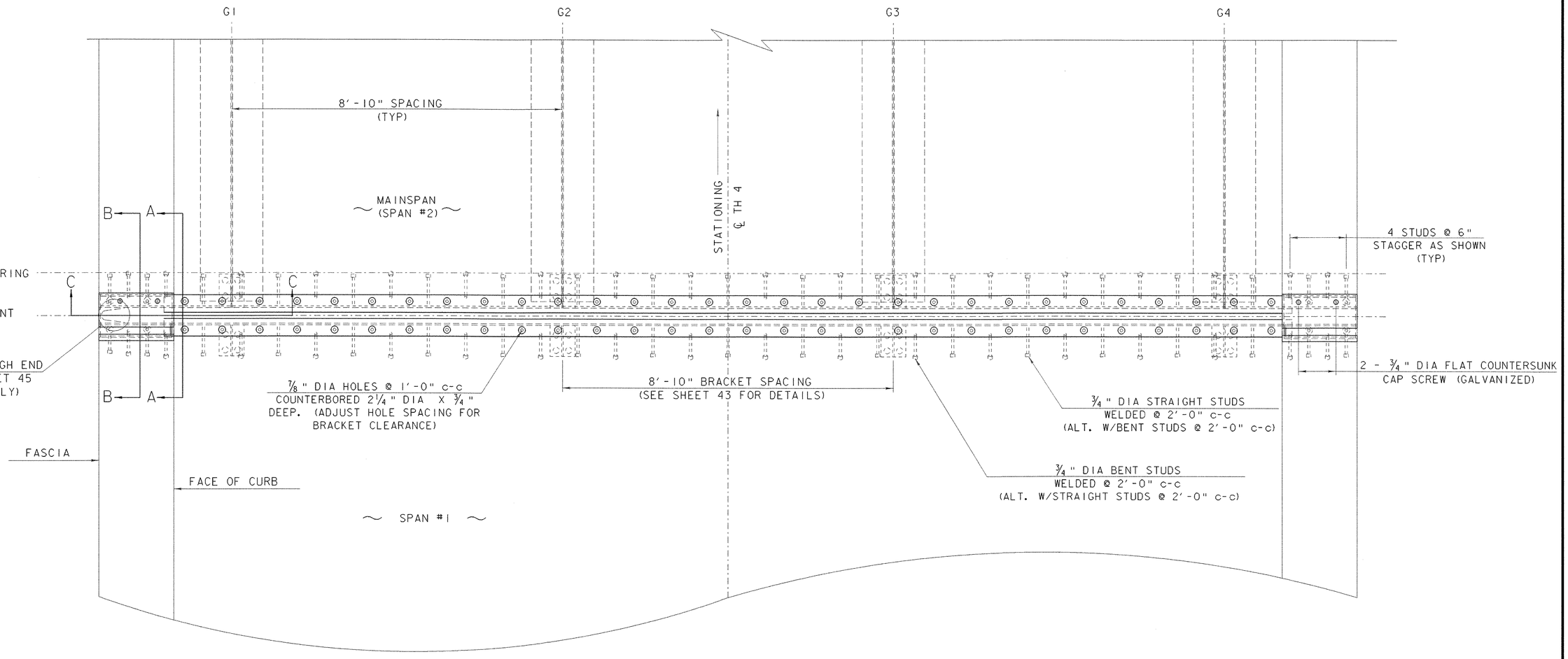


## ANCHOR FERRULE DETAIL

NOTE:
CLOSED THREADED FERRULE NUTS
WITHOUT ANCHOR LOOPS MAY BE USED.

| PROJECT: | PROJECT NO.: |
|---|---|
| HARTFORD | BRO-BTN 2004(1) |

DESIGN FILE NAME: 89j045/structures/sj045exp.dgn
IPARM FILE NAME: sj045expl.i — PLOT DATE: 11-FEB-2005
DESIGNED BY: K. M. HIGGINS — DRAWN BY: K. M. HIGGINS
SQUAD LEADER: C. P. WILLIAMS — CHECKED BY: M. LONGSTREET
EXPANSION JOINT DETAILS (PIER #1) — SHEET: 43 OF 97



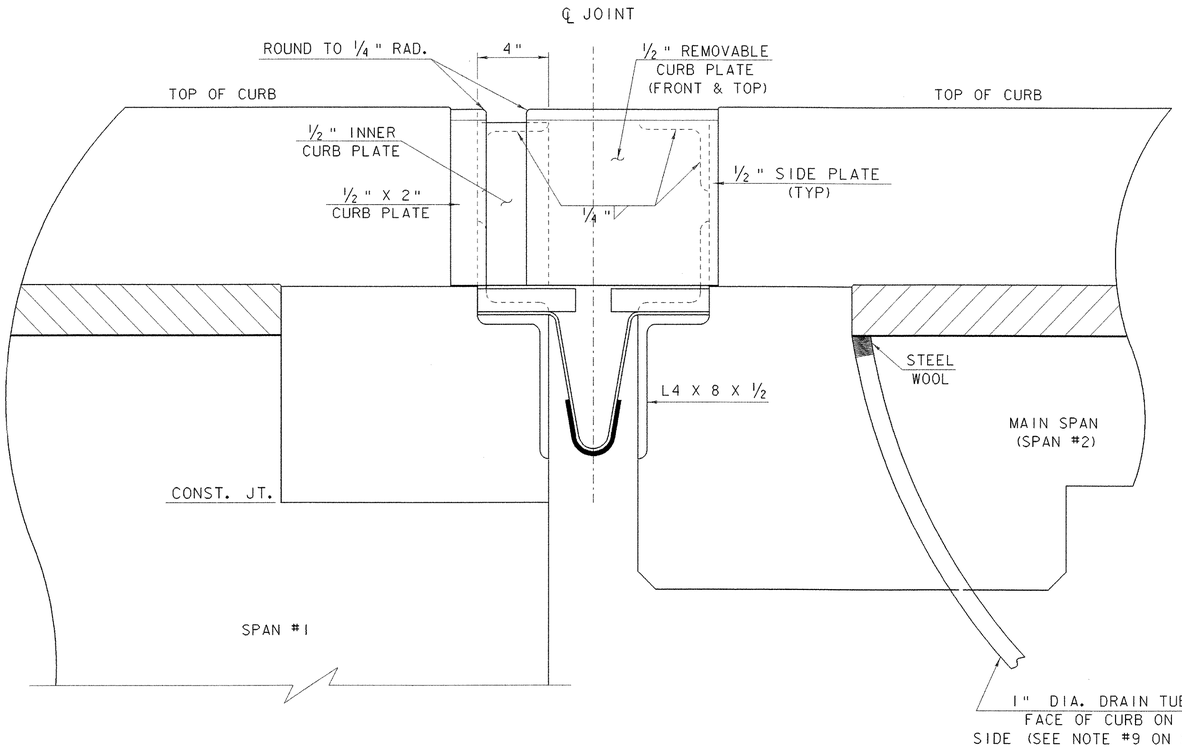

## EXPANSION JOINT AT PIER NO. 1

SCALE 3/4" = 1'-0

SECTIONS A-A , B-B & C-C
ARE SHOWN ON PAGE 45

| PROJECT: | PROJECT NO.: |
|---|---|
| HARTFORD | BRO-BTN 2004 (1) |

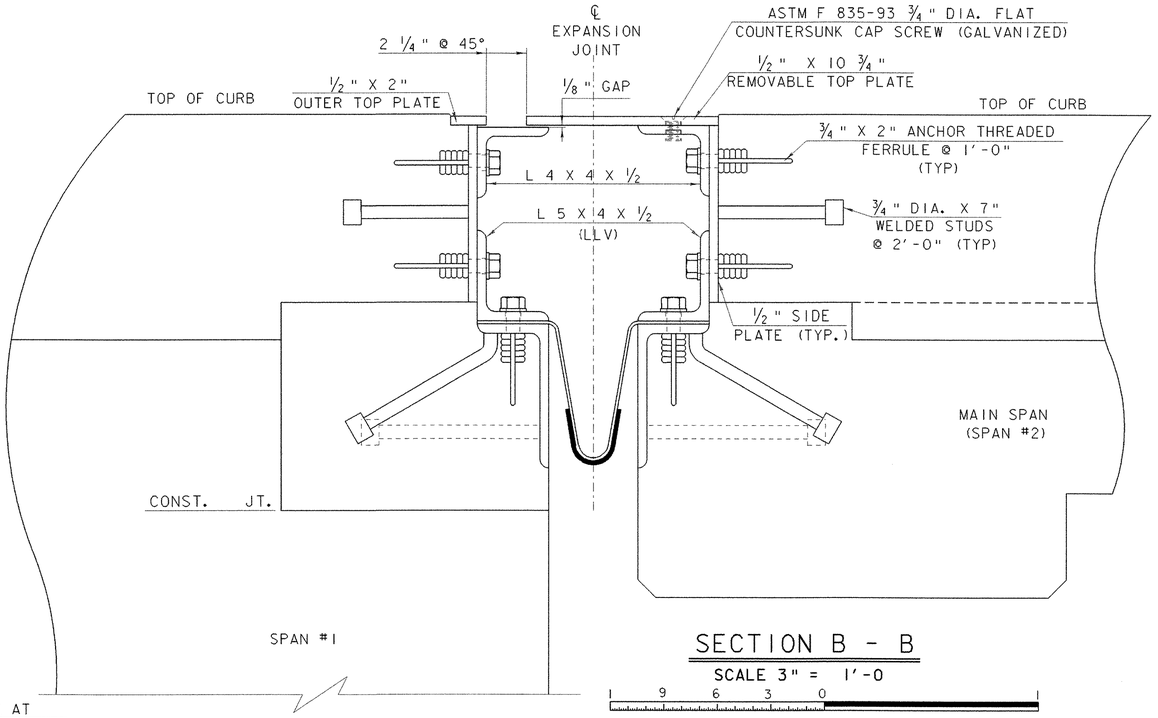
DESIGN FILE NAME: 89j045/structures/sj045exp.dgn
IPARM FILE NAME: sj-45exp2.i — PLOT DATE: 11-FEB-2005
DESIGNED BY: K. M. HIGGINS — DRAWN BY: K. M. HIGGINS
SQUAD LEADER: C. P. WILLIAMS — CHECKED BY: M. LONGSTREET
EXPANSION JOINT PLAN (PIER #1) — SHEET: 44 OF 97




## SECTION A-A

SCALE 3" = 1'-0



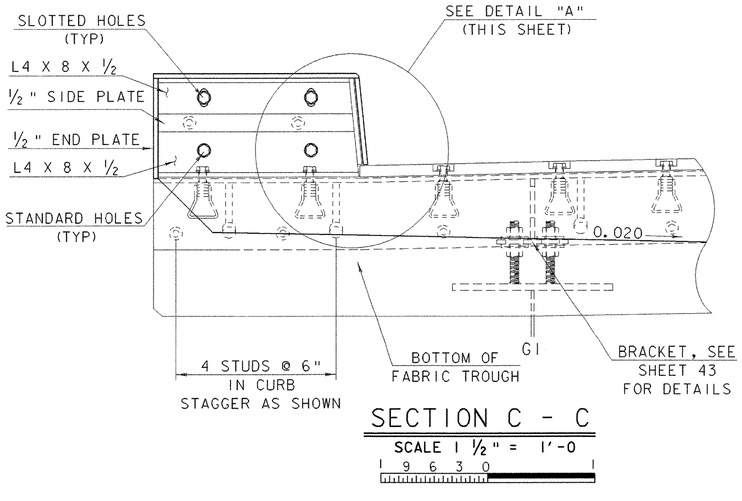




## SECTION B - B

SCALE 3" = 1'-0



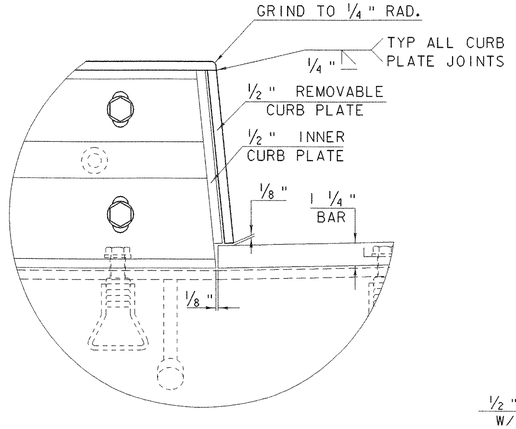

LLV-LONG LEG VERTICAL




## SECTION C - C

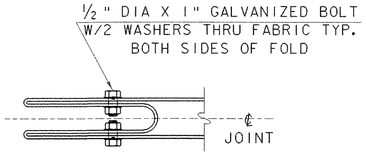
SCALE 1 1/2" = 1'-0



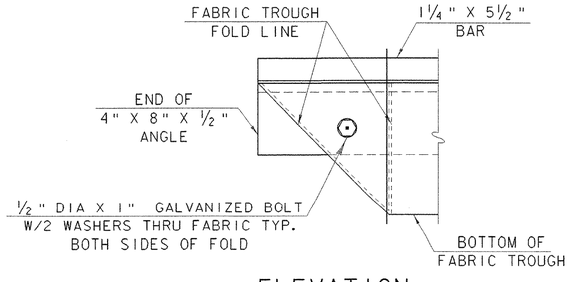




## DETAIL "A"

SCALE 3" = 1'-0




## PLAN



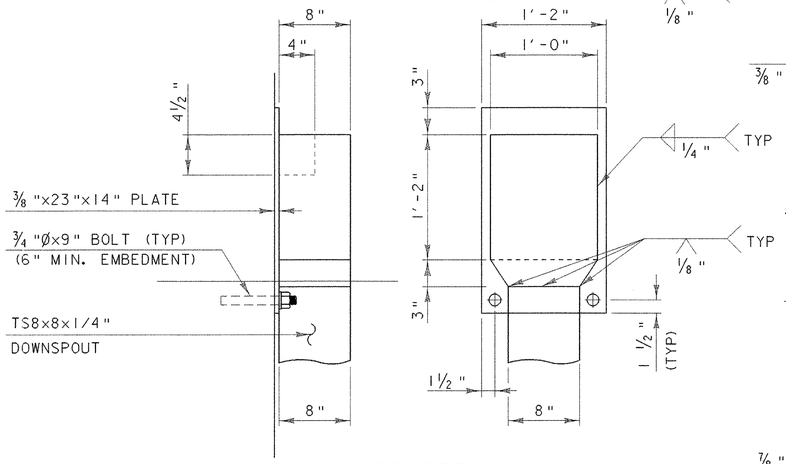

## ELEVATION

## FOLDED TROUGH END DETAILS

NOT TO SCALE

PLAN VIEW OF EXPANSION JOINT SHOWN ON PAGE 44

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
| DESIGN FILE NAME: 89j045/structures/sj045exp.dgn | |
| IPARM FILE NAME: sj045exp3.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: K. M. HIGGINS |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: M. LONGSTREET |
| CURB PLATE DETAILS | SHEET: 45 OF 97 |



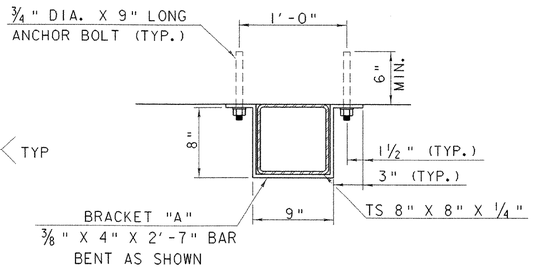

## HOPPER DETAILS

SCALE: 1½" = 1'-0"



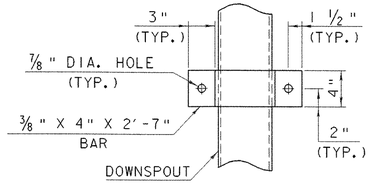







## DETAILS FOR ATTACHING DOWNSPOUT TO SPAN 1 & PIER 1

SCALE: 1½" = 1'-0"

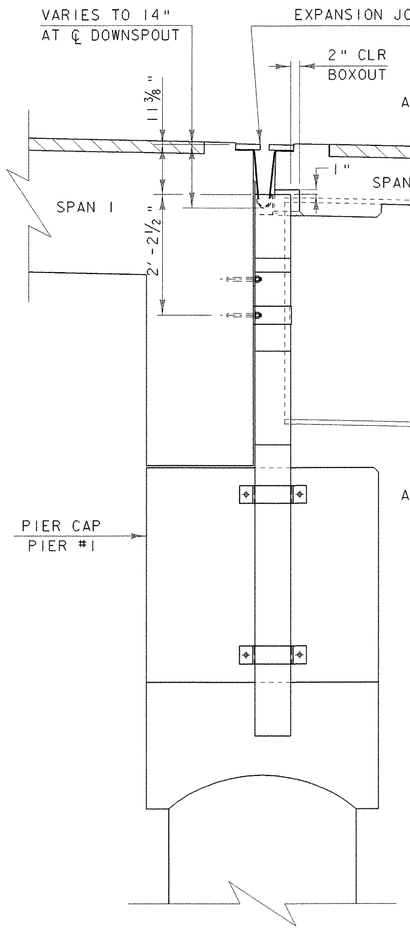



## ELEVATION VIEW OF BRACKET "A"

SCALE: 1½" = 1'-0"

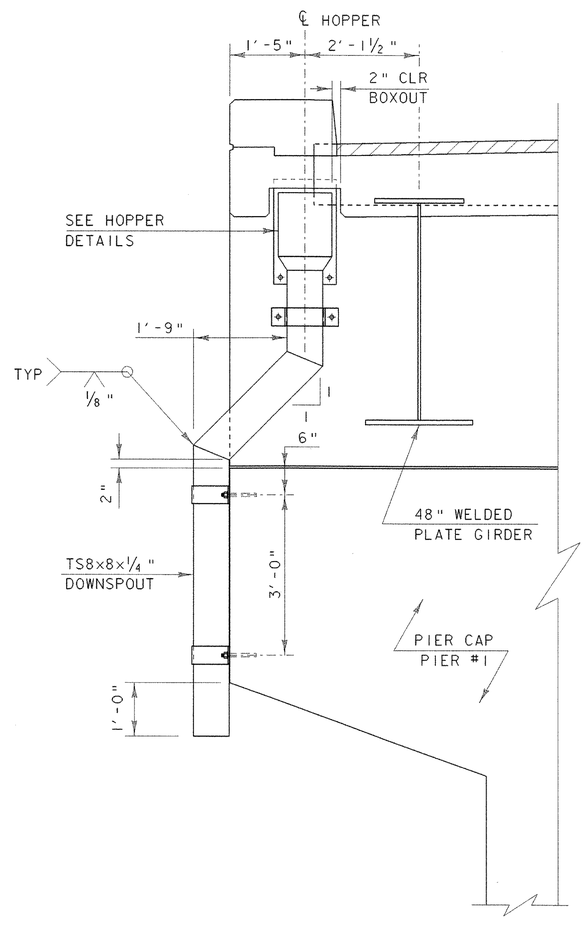
## DOWNSPOUT NOTES

1. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO A-500 OR A-501.
2. ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO AASHTO M270 GR. 36.
3. DOWNSPOUT SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-123 AFTER FABRICATION.
4. ALL BOLTS AND RELATED HARDWARE SHALL BE ASTM A-307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 (AASHTO M232).
5. ANY PLACE WHERE THE GALVANIZING HAS BEEN REMOVED FROM THE DOWNSPOUT EITHER BY CUTTING, BURNING, WELDING, PLACING, OR ANY OTHER MEANS, IT SHALL BE REPAIRED BY THOROUGHLY CLEANING THE DAMAGED AREAS WITH A WIRE BRUSH AND PAINTING THE DAMAGED AREAS WITH AN APPROVED SEALANT.
6. ALL STEEL PLATES AND TUBES FOR THE DOWNSPOUT SHALL BE PAID FOR UNDER THE ITEM 506. 55 "STRUCTURAL STEEL (PLATE GIRDER)". ALL ANCHOR BOLTS AND RELATED HARDWARE SHALL BE SUBSIDIARY TO ITEM 506.55 "STRUCTURAL STEEL (PLATE GIRDER)".




## DOWNSPOUT ELEVATION

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




## DOWNSPOUT SECTION A-A

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

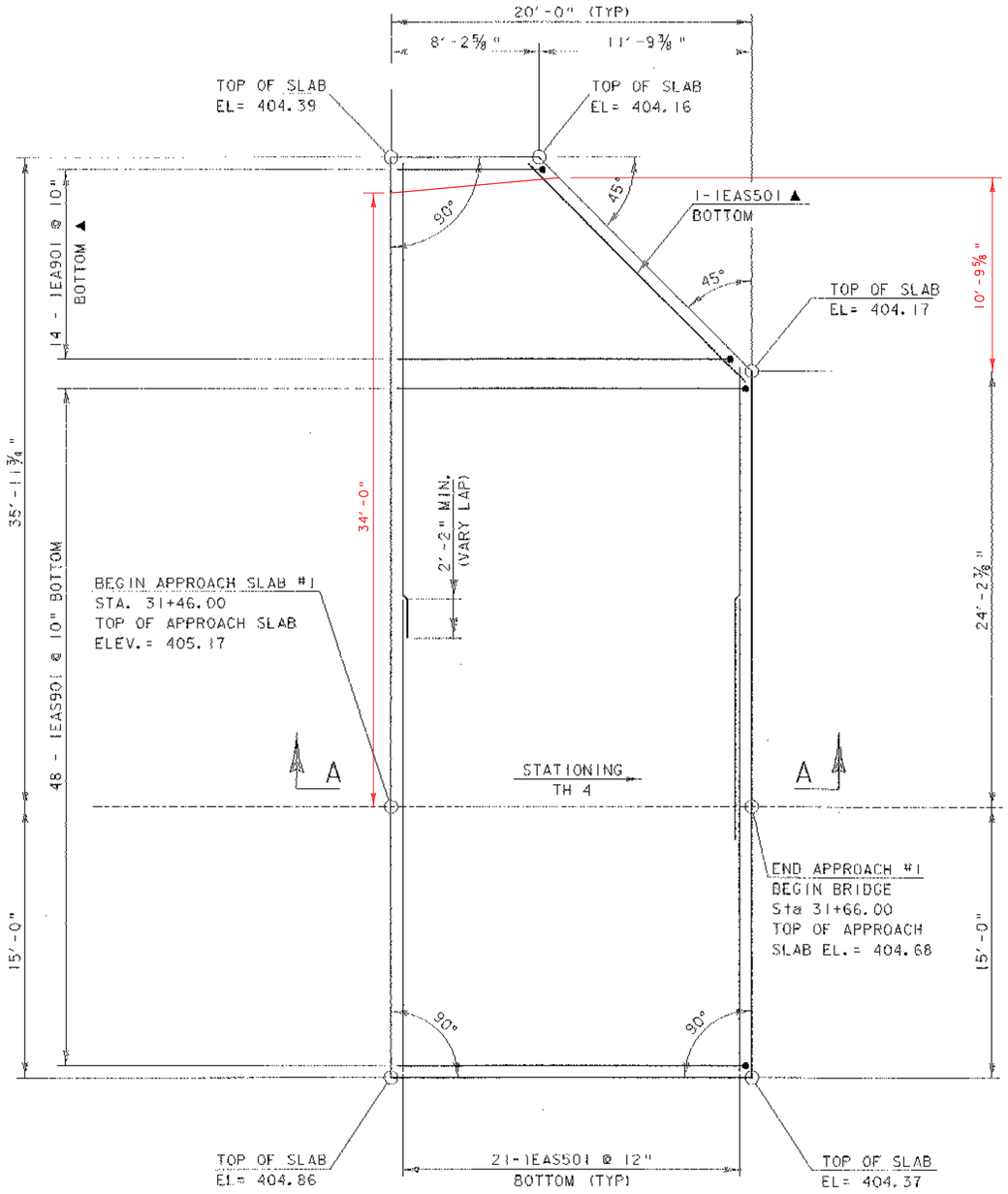
SCALE 1½" = 1'-0

0 1 2

SCALE 3/4" = 1'-0

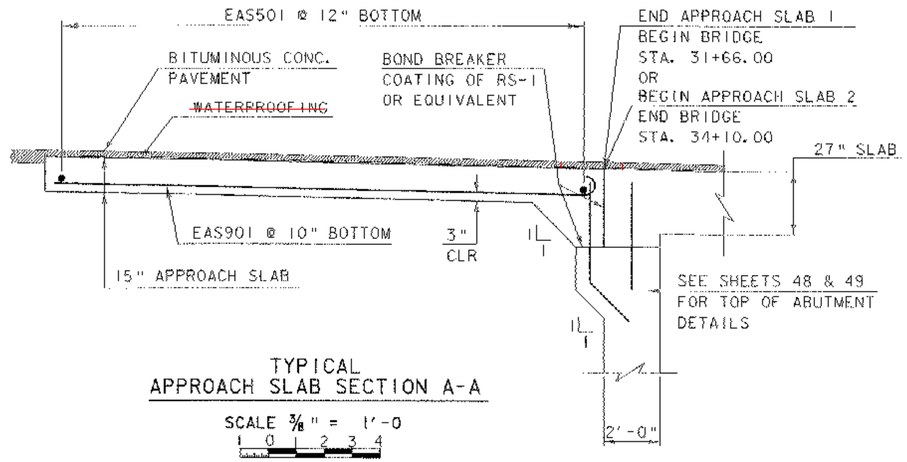
0 1 2

| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004 (1) |
|---|---|
| DESIGN FILE NAME: 89j045/structures/sj045exp.dgn | |
| IPARM FILE NAME: sj045downspout.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: M. LONGSTREET |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| DOWNSPOUT DETAILS | SHEET: 46 OF 97 |



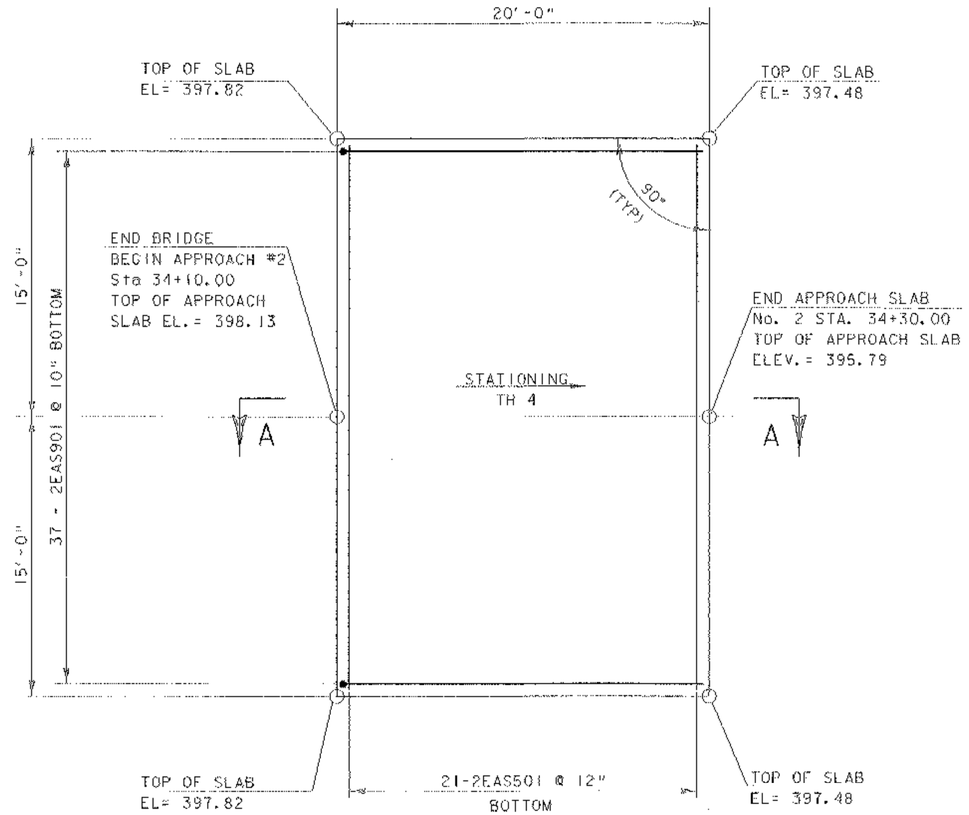

APPROACH SLAB No. 1 PLAN

SCALE ¼" = 1'-0




TYPICAL
APPROACH SLAB SECTION A-A

SCALE ⅜" = 1'-0




APPROACH SLAB No. 2 PLAN

SCALE ¼" = 1'-0

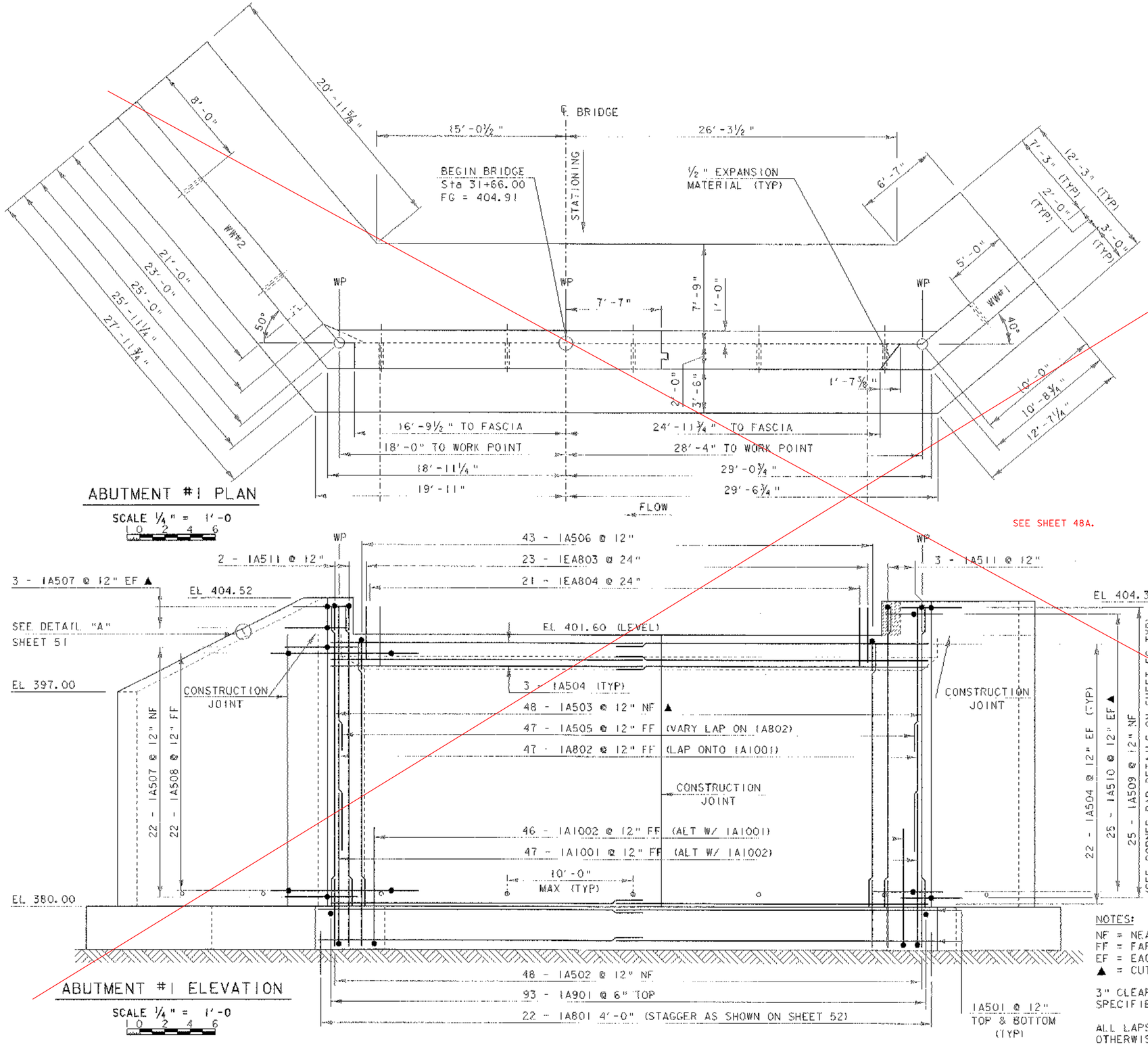
NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

3" CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS

ALL LAPS ARE 2'-2" UNLESS OTHERWISE SPECIFIED ON PLANS

| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
|---|---|
| DESIGN FILE NAME: 89j045/structures/sj045sub.dgn | |
| IPARM FILE NAME: sj045applx2.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: M LONGSTREET |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| APPROACH SLAB 1 & 2 DETAILS | SHEET: 47 OF 97 |

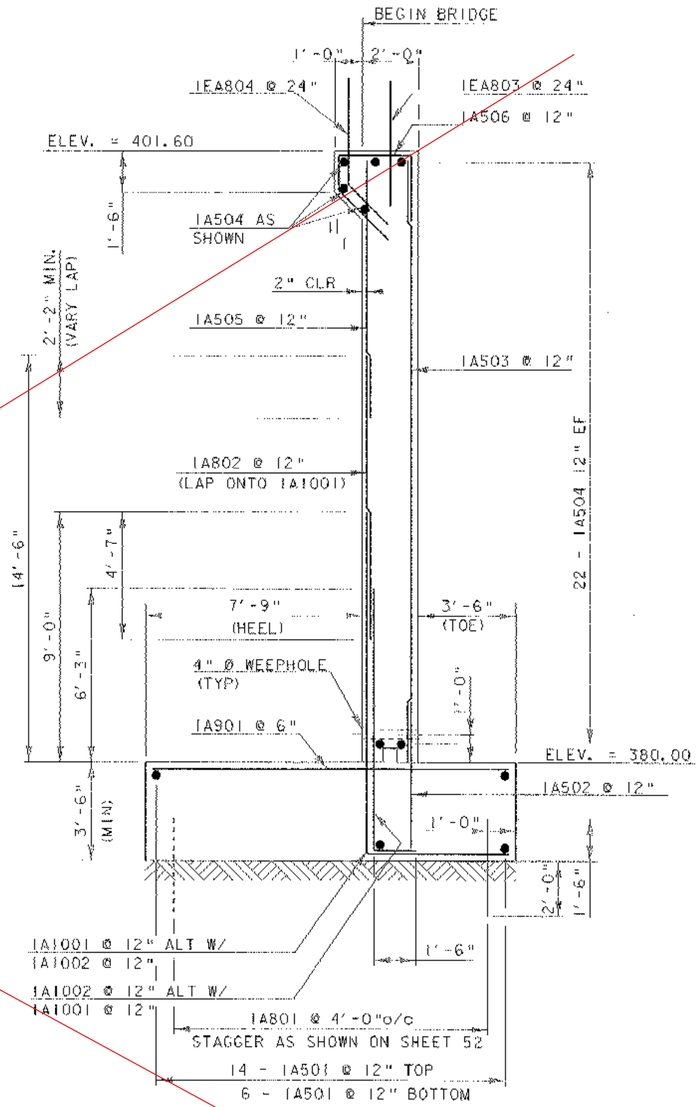



## ABUTMENT #1 PLAN

SCALE ¼" = 1'-0

## ABUTMENT #1 ELEVATION

SCALE ¼" = 1'-0




## ABUTMENT #1 TYPICAL SECTION

SCALE ⅜" = 1'-0

NOTE:

THE TOP OF THE FOOTING ELEVATION FOR ABUTMENT #1 WAS SET BASED ON THE LEDGE ELEVATION DETERMINED FROM B-04. ADJUSTMENTS IN FOOTING ELEVATION AND GEOMETRY ARE EXPECTED AS ACTUAL LEDGE ELEVATION AND CONDITION IS DETERMINED THROUGH EXCAVATION. THE ELEVATION AND GEOMETRY SHOWN REPRESENT THE LOWEST LEDGE ELEVATION EXPECTED.

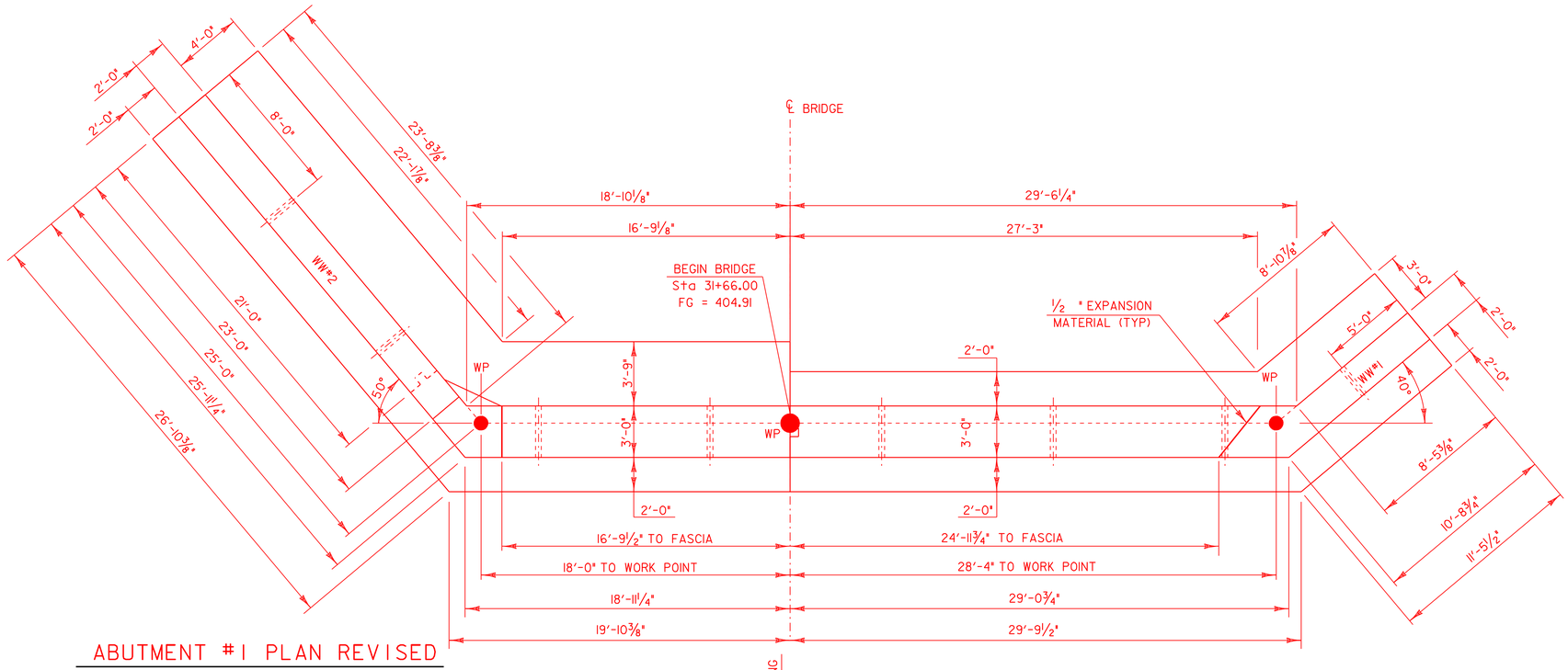
NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

3" CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS

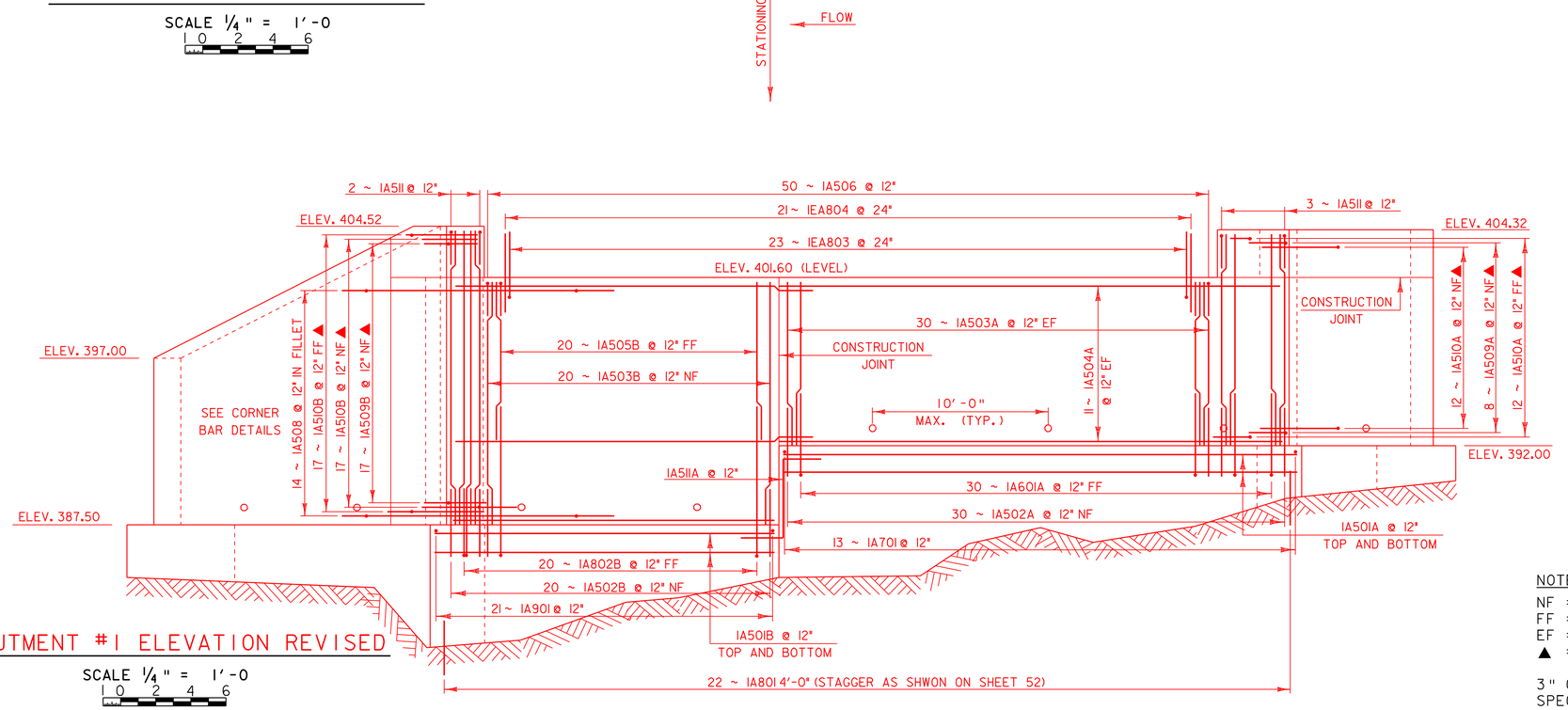
ALL LAPS ARE 2'-2" UNLESS OTHERWISE SPECIFIED ON PLANS

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004 (1) |
| DESIGN FILE NAME: 89j045/structures/sj045sub.dgn | |
| IPARM FILE NAME: sj045abt1.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: M LONGSTREET |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| ABUTMENT #1 DETAILS | SHEET: 48 OF 97 |



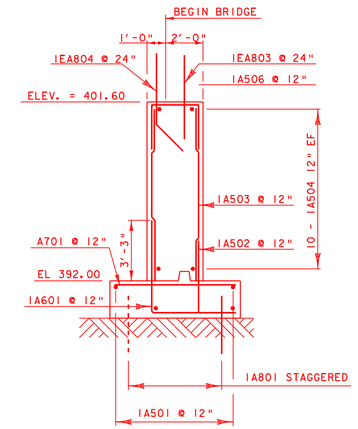

## ABUTMENT #1 PLAN REVISED

SCALE 1/4" = 1'-0
0 2 4 6



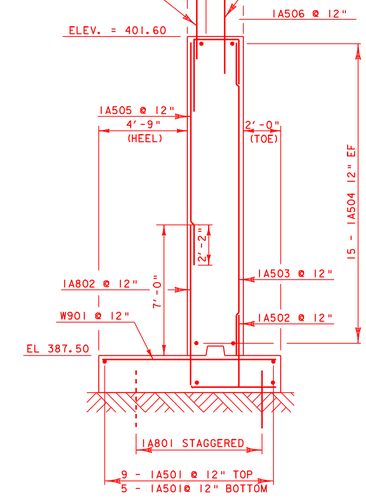

## ABUTMENT #1 ELEVATION REVISED

SCALE 1/4" = 1'-0
0 2 4 6




## ABUTMENT #1 TYPICAL SECTION

WITH NEW STEEL
LEFT SIDE




## ABUTMENT #1 TYPICAL SECTION

WITH NEW STEEL
RIGHT SIDE

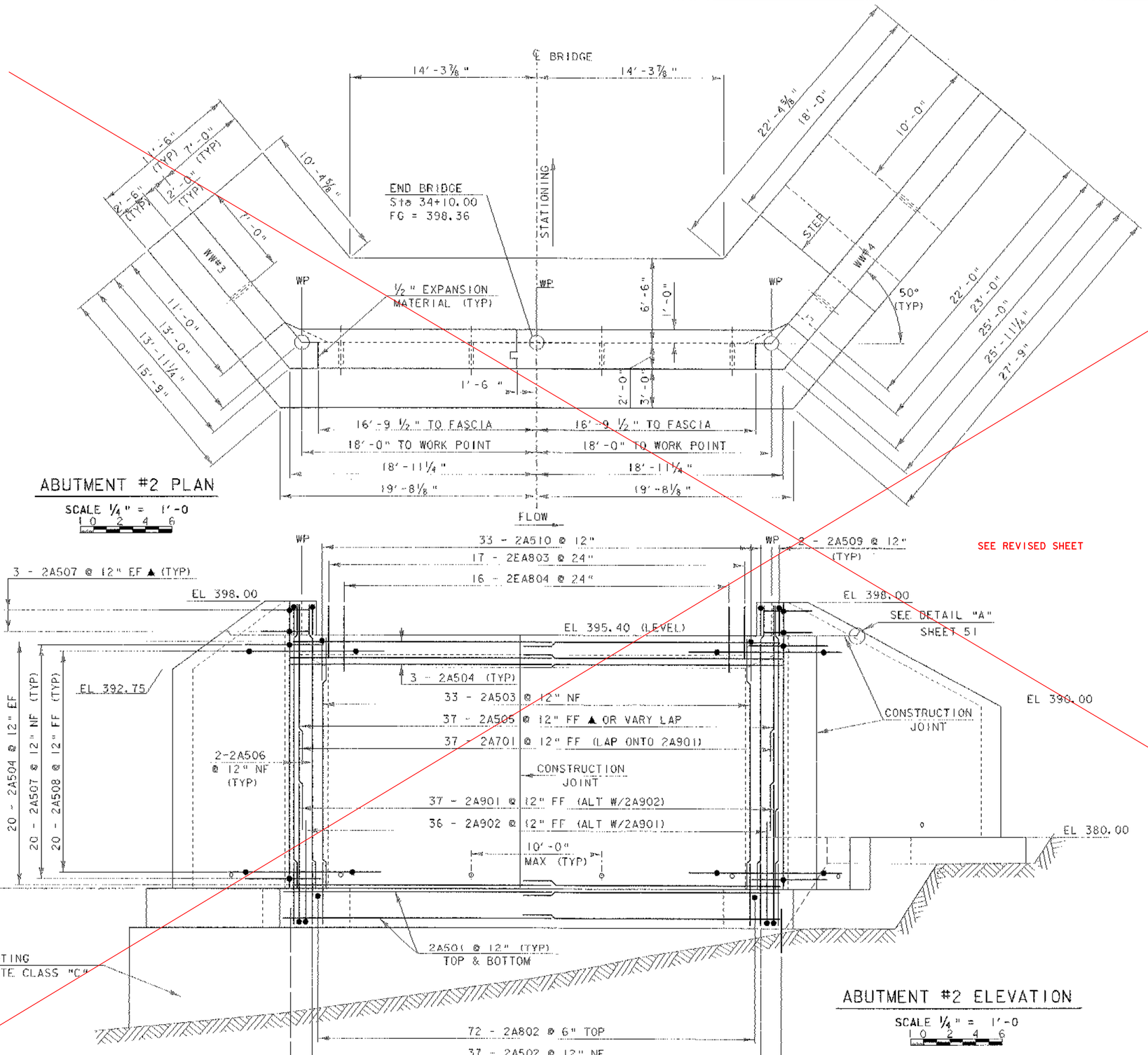
NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

3" CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS

ALL LAPS ARE 2'-2" UNLESS OTHERWISE SPECIFIED ON PLANS

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
| DESIGN FILE NAME: 89j045/structures/sj045sub.dgn | |
| IPARM FILE NAME: sj045ab1.i | PLOT DATE: 09-MAY-2007 13:08 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: M LONGSTREET |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| ABUTMENT #1 DETAILS | SHEET: 48A OF 97 |



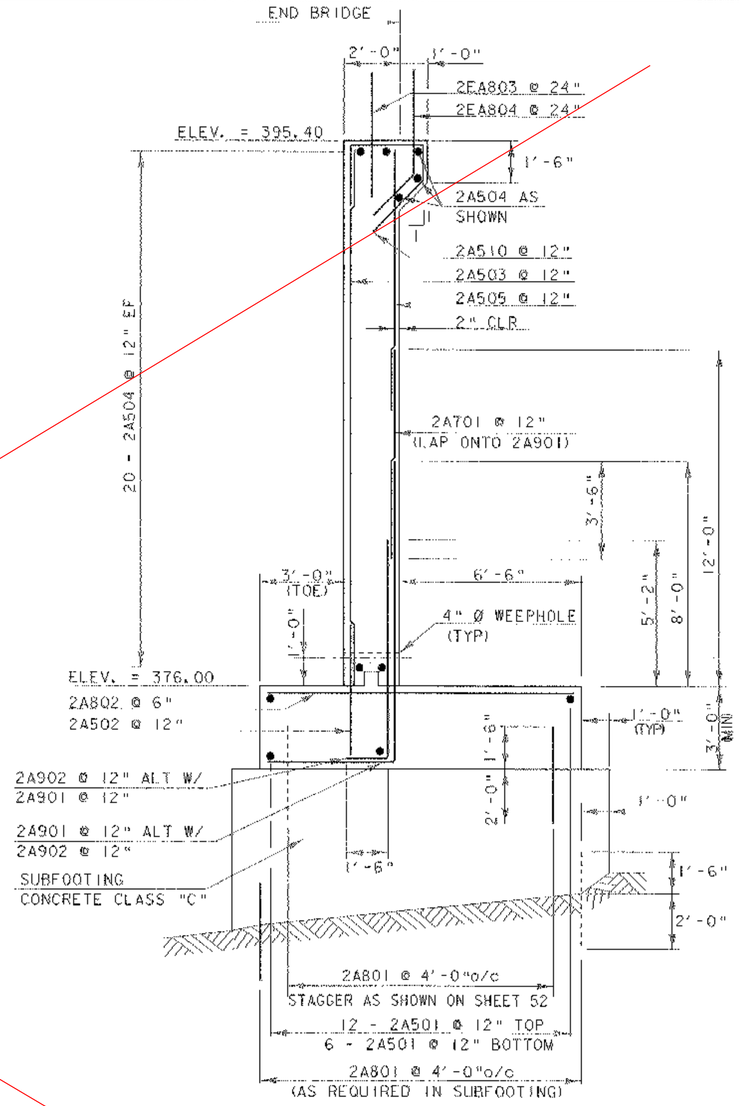

SEE REVISED SHEET

## ABUTMENT #2 PLAN

SCALE ¼" = 1'-0
1 0 2 4 6

## ABUTMENT #2 ELEVATION

SCALE ¼" = 1'-0
1 0 2 4 6




## ABUTMENT #2 TYPICAL SECTION

SCALE ⅜" = 1'-0
1 0 1 2 3 4

NOTES:

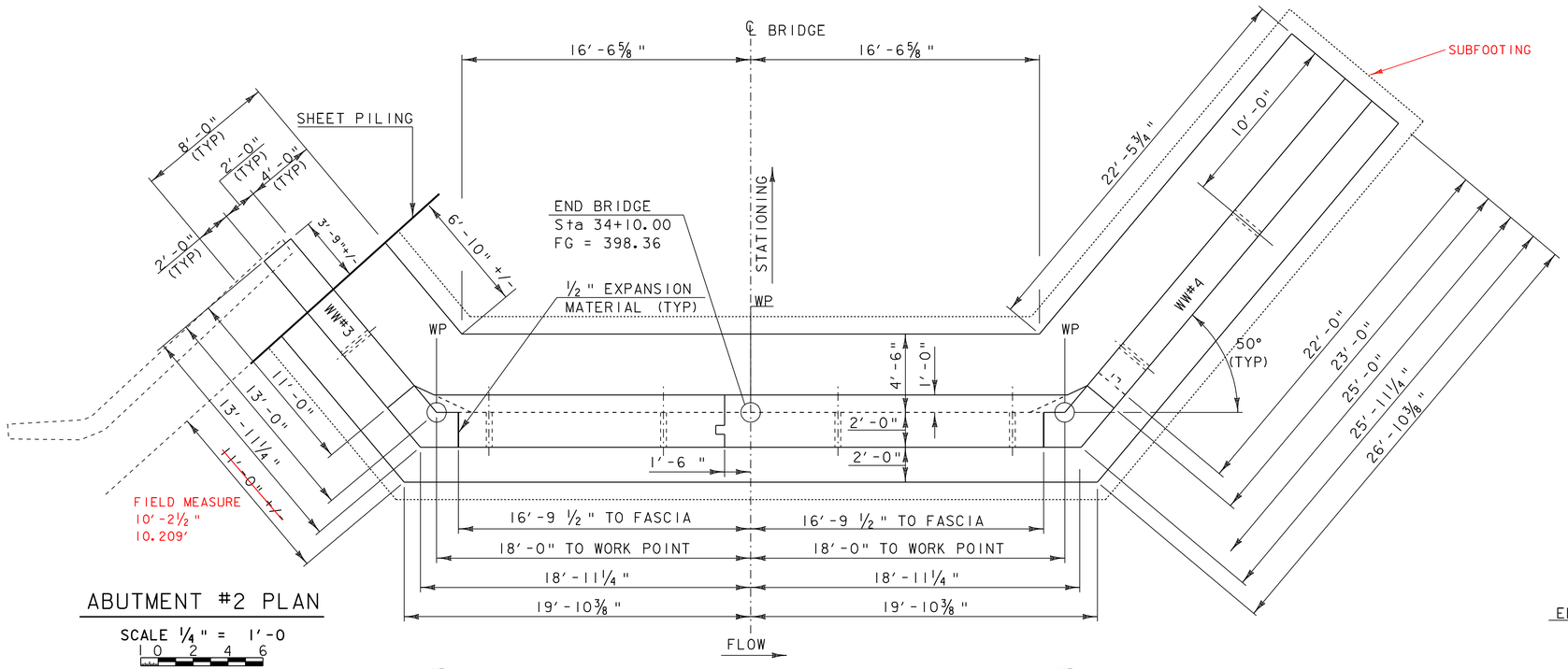
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

3" CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS

ALL LAPS ARE 2'-2" UNLESS OTHERWISE SPECIFIED ON PLANS

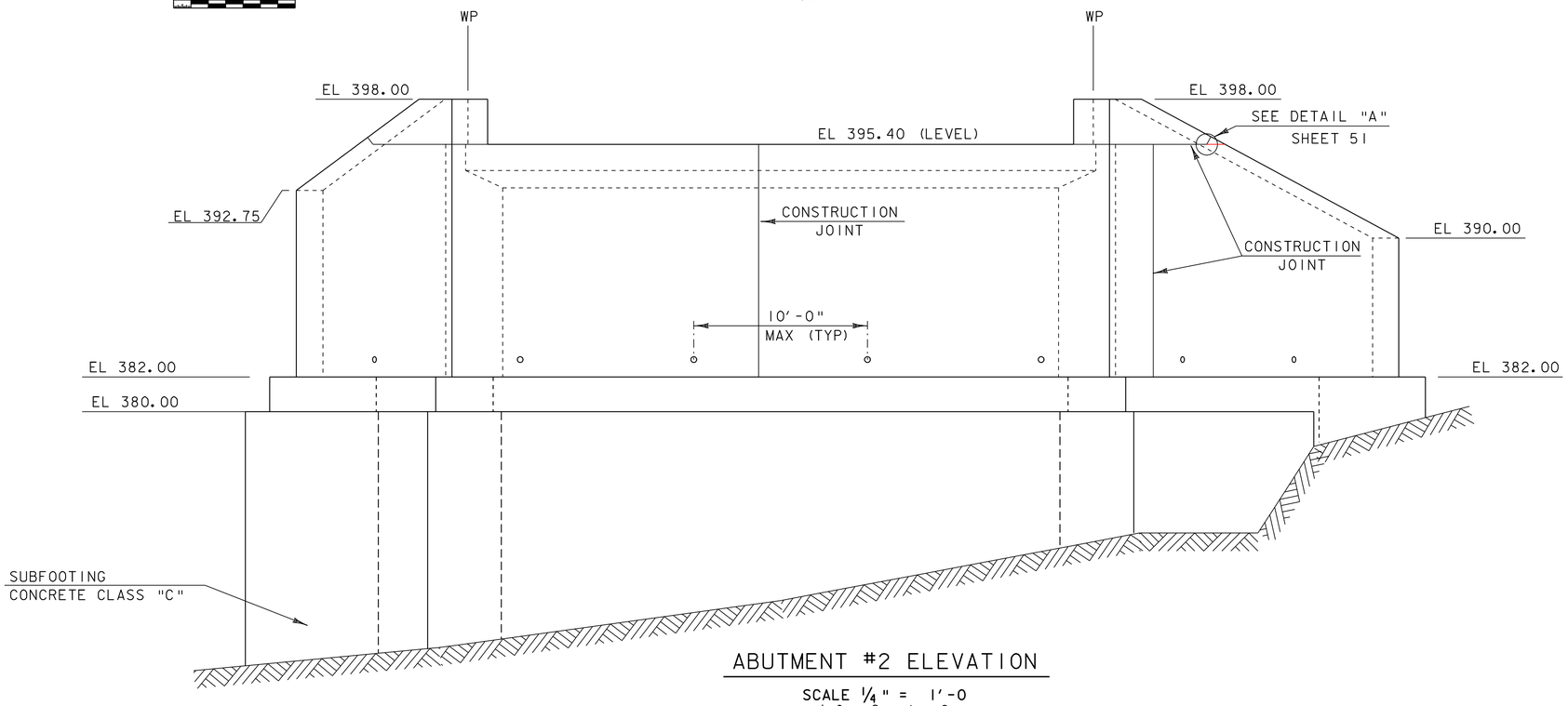
| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
| DESIGN FILE NAME: 89j045/structures/sj045sub.dgn | |
| IPARM FILE NAME: sj045ab2.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: E. L. RUSTAY |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| ABUTMENT #2 DETAILS | SHEET: 49 OF 97 |

PLOT 1:48



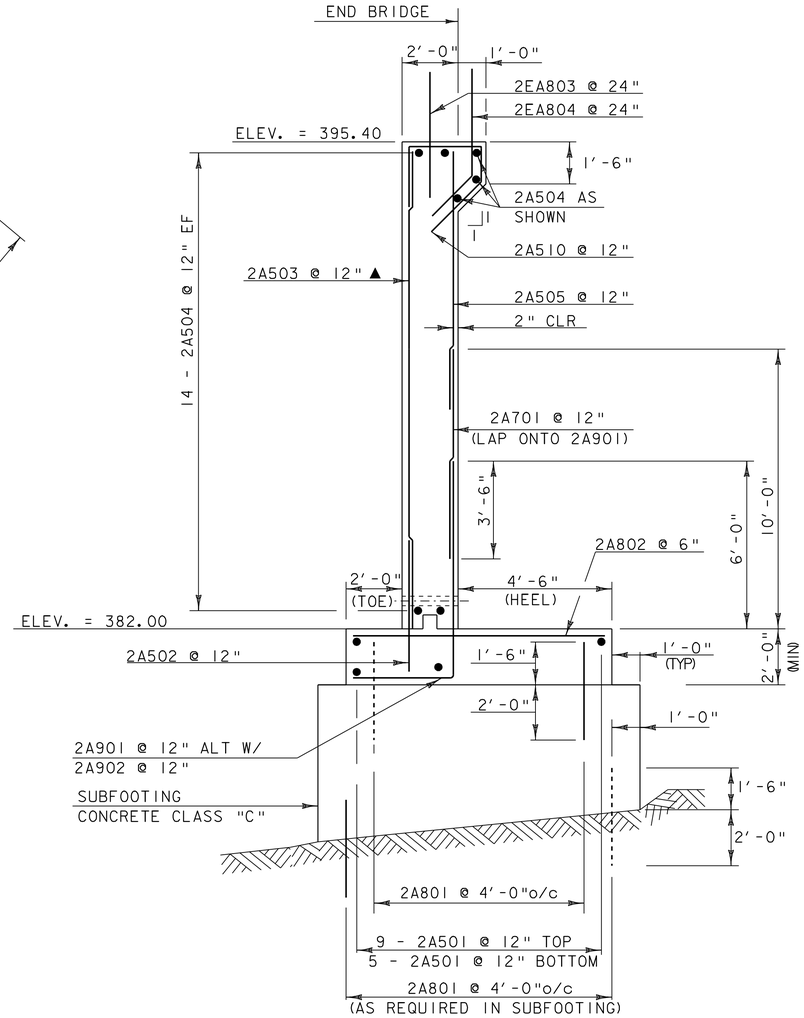

## ABUTMENT #2 PLAN

SCALE ¼" = 1′-0




## ABUTMENT #2 ELEVATION

SCALE ¼" = 1′-0




## ABUTMENT #2 TYPICAL SECTION

SCALE ⅜" = 1′-0

NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

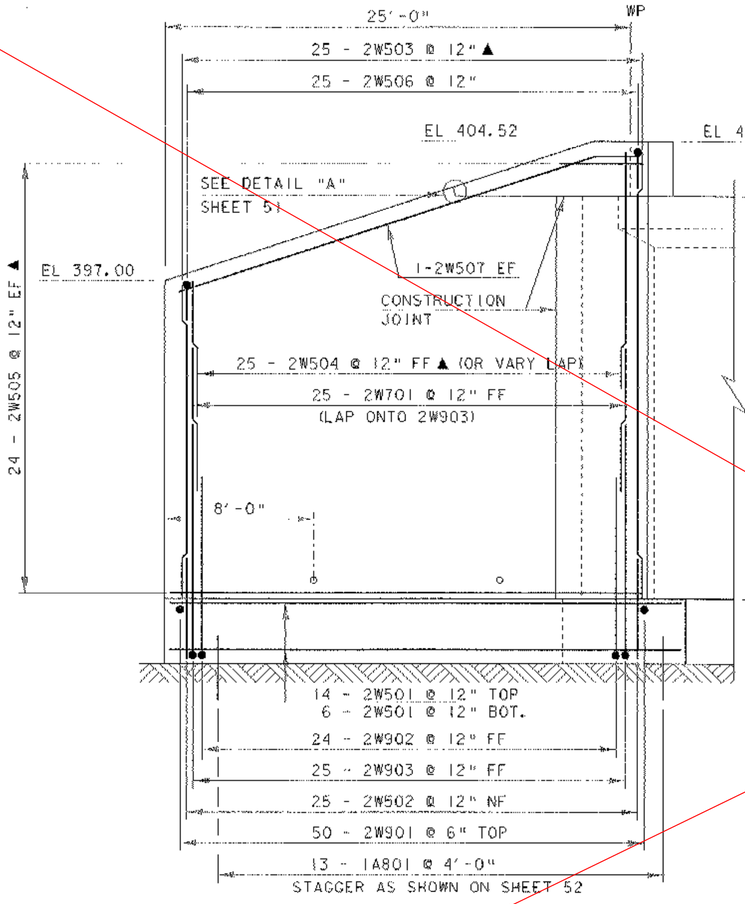
3" CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS

ALL LAPS ARE 2′-2" UNLESS OTHERWISE SPECIFIED ON PLANS

Revised Per Onsite Meeting 6/23/2005

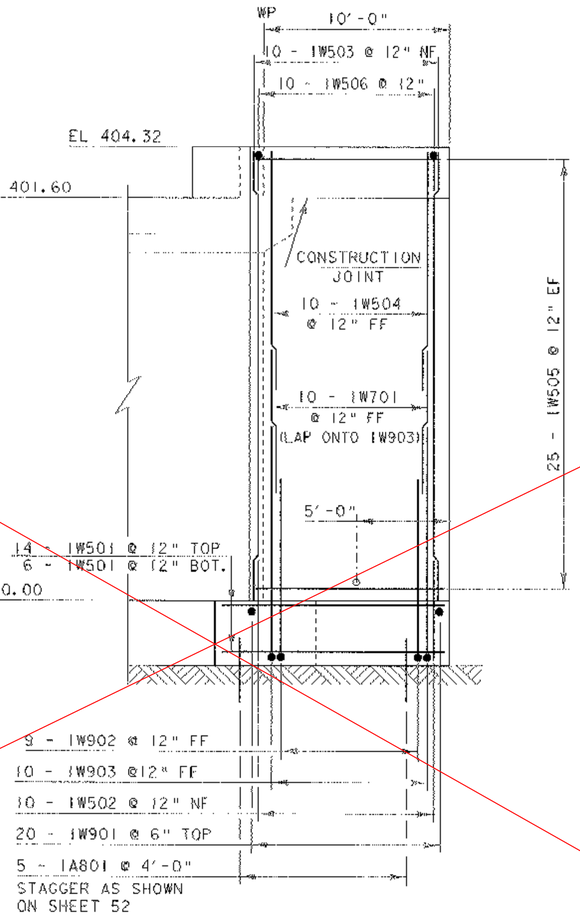
| PROJECT: | PROJECT NO.: |
|---|---|
| HARTFORD | BRO-BTN 2004(1) |

DESIGN FILE NAME: 89j045/structures/sj045sub.dgn
IPARM FILE NAME: sj045ab2.i
PLOT DATE: 09-MAY-2007 13:08
DESIGNED BY: K. M. HIGGINS
DRAWN BY: E. L. RUSTAY
SQUAD LEADER: C. P. WILLIAMS
CHECKED BY: K. M. HIGGINS
ABUTMENT #2 DETAILS
SHEET: 49A OF 97



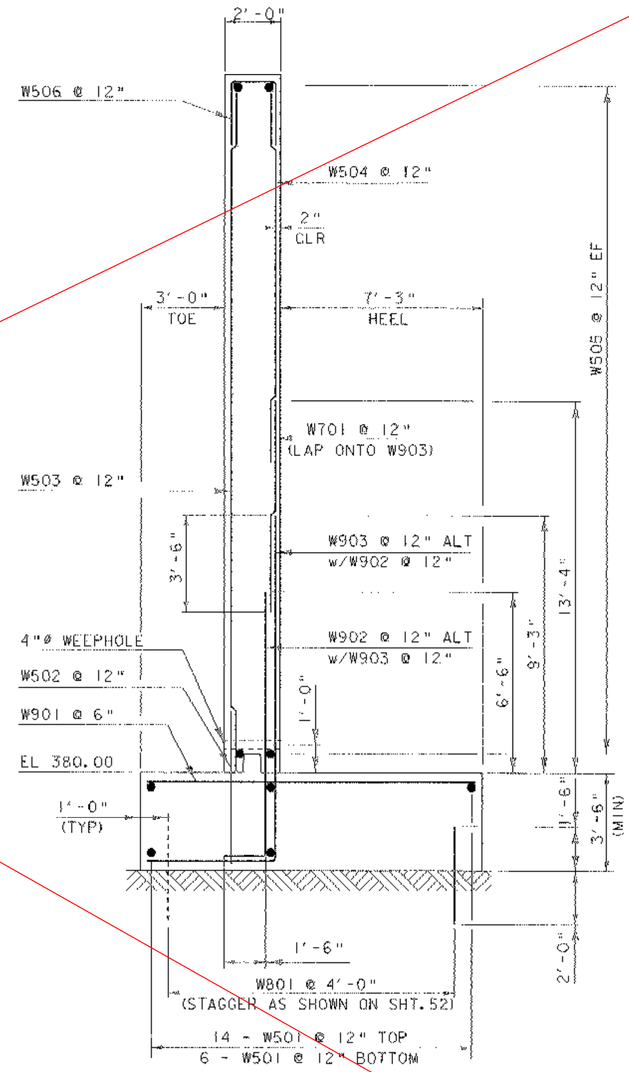

## WINGWALL #2 ELEVATION

SCALE 1/4" = 1'-0




## WINGWALL #1 ELEVATION

SCALE 1/4" = 1'-0




## WINGWALL #1 & #2 TYPICAL SECTION

SCALE 3/8" = 1'-0

SEE REVISED SHEET 50A

NOTE:

THE TOP OF THE FOOTING ELEVATION FOR ABUTMENT #1 WAS SET BASED ON THE LEDGE ELEVATION DETERMINED FROM B-04. ADJUSTMENTS IN FOOTING ELEVATION AND GEOMETRY ARE EXPECTED AS ACTUAL LEDGE ELEVATION AND CONDITION IS DETERMINED THROUGH EXCAVATION. THE ELEVATION AND GEOMETRY SHOWN REPRESENT THE LOWEST LEDGE ELEVATION EXPECTED.

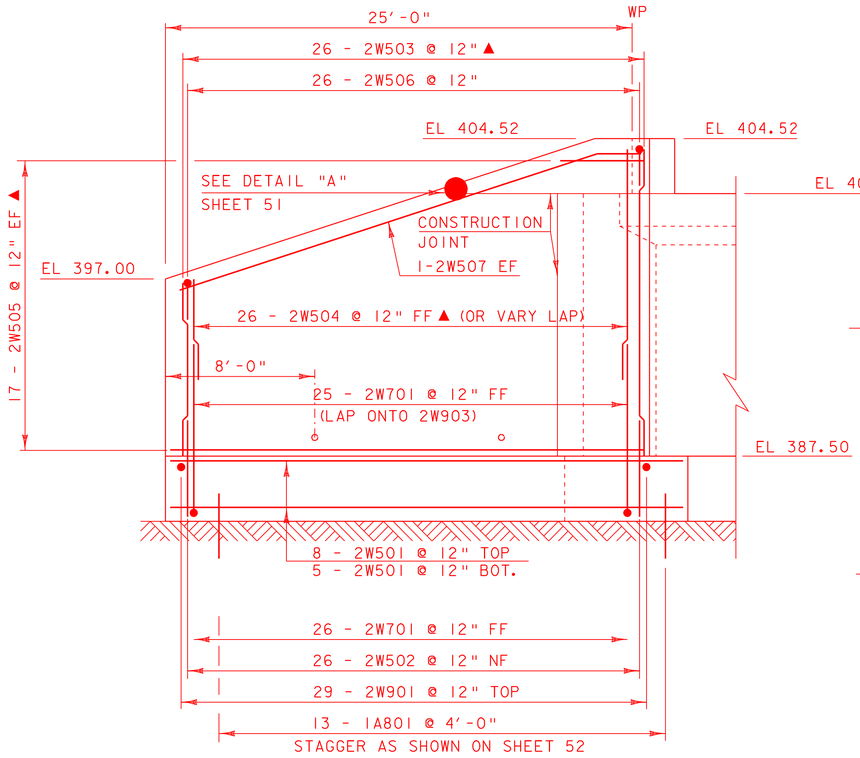
NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

3" CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS

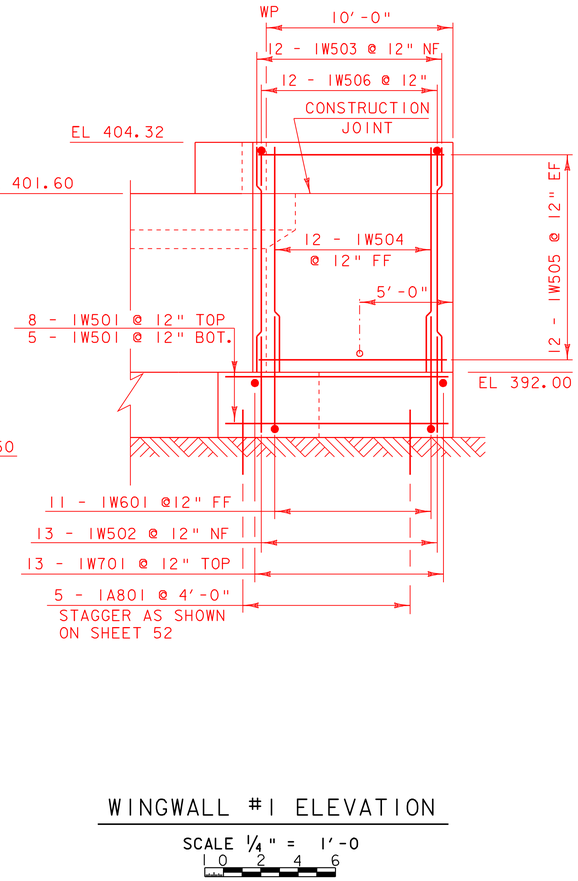
ALL LAPS ARE 2'-2" UNLESS OTHERWISE SPECIFIED ON PLANS

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
| DESIGN FILE NAME: 89\045\structures\sj045sub.dgn | |
| IPARM FILE NAME: sj045ww1x2.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: M LONGSTREET |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| WINGWALL 1 & 2 DETAILS | SHEET: 50 OF 97 |



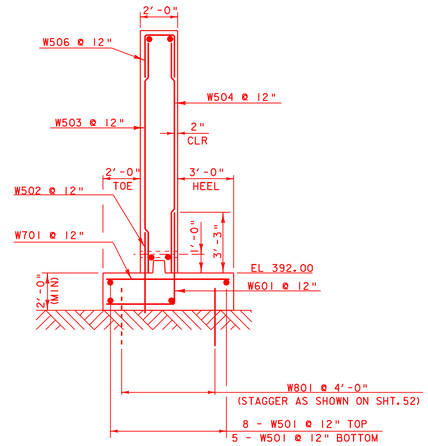

## WINGWALL #2 ELEVATION

SCALE 1/4" = 1'-0



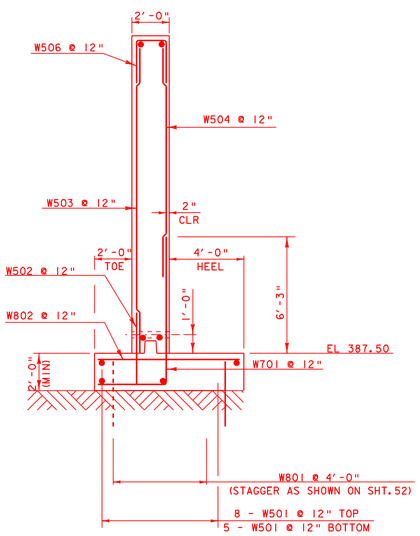

## WINGWALL #1 ELEVATION

SCALE 1/4" = 1'-0




## WINGWALL #1 TYPICAL SECTION

WITH NEW STEEL




## WINGWALL #2 TYPICAL SECTION

WITH NEW STEEL

NOTE:

THE TOP OF THE FOOTING ELEVATION FOR ABUTMENT #1 WAS SET BASED ON THE LEDGE ELEVATION DETERMINED FROM B-04. ADJUSTMENTS IN FOOTING ELEVATION AND GEOMETRY ARE EXPECTED AS ACTUAL LEDGE ELEVATION AND CONDITION IS DETERMINED THROUGH EXCAVATION. THE ELEVATION AND GEOMETRY SHOWN REPRESENT THE LOWEST LEDGE ELEVATION EXPECTED.

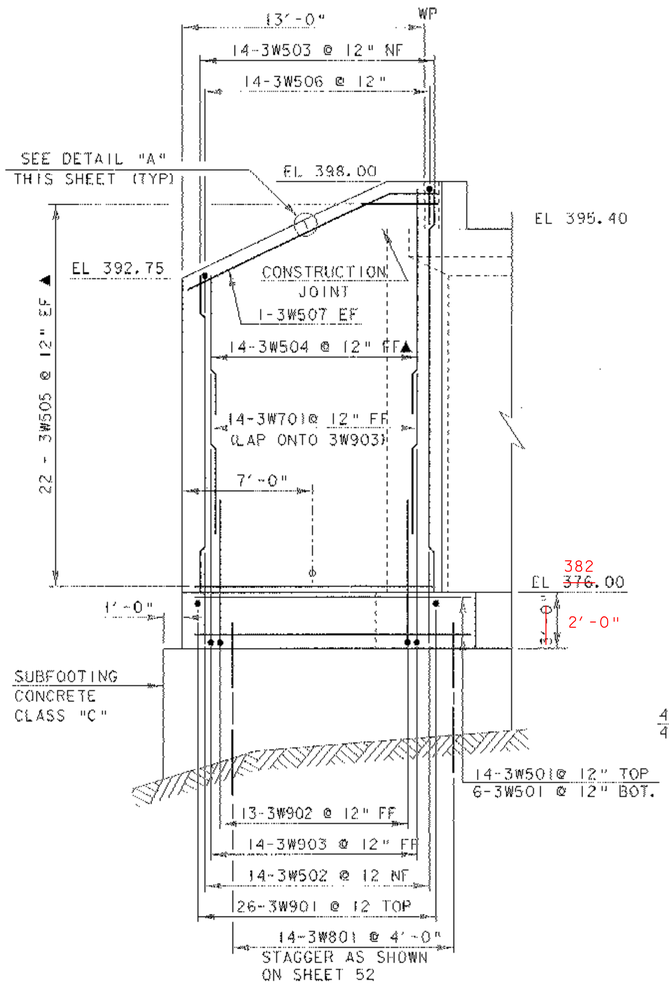
NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

3" CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS

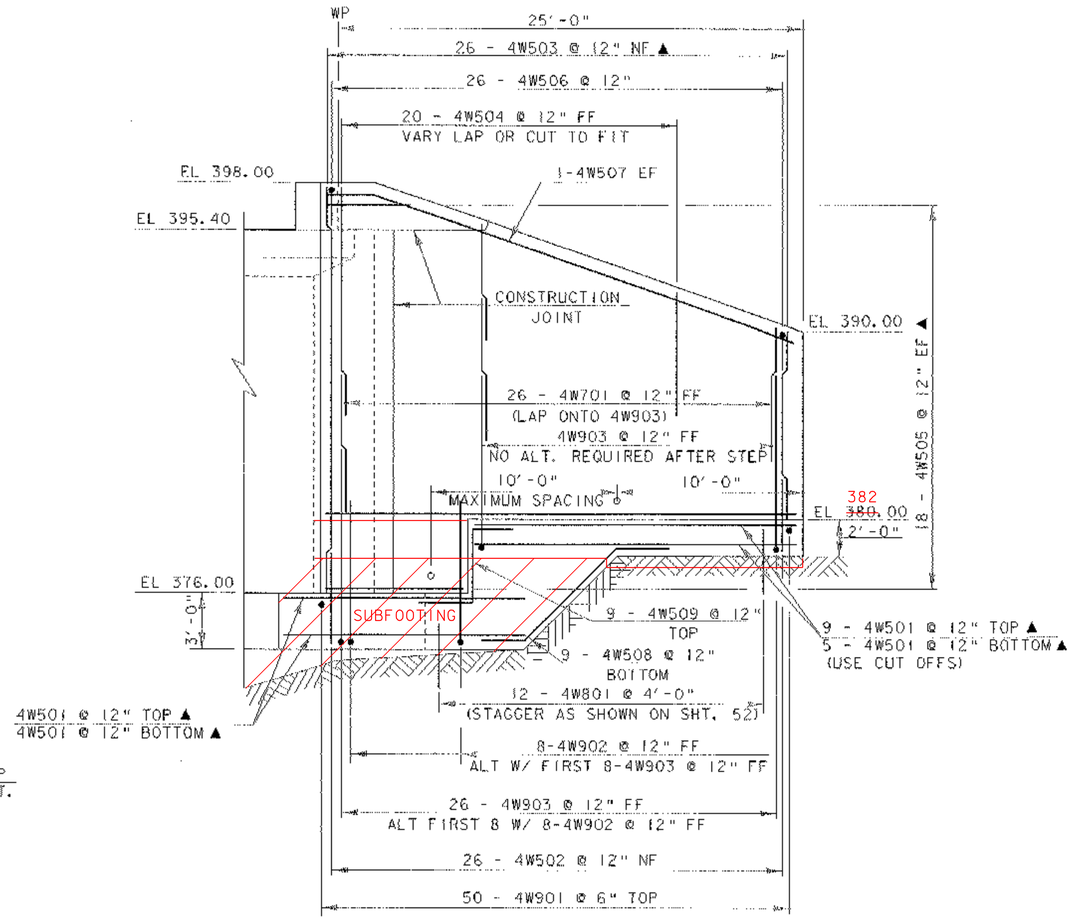
ALL LAPS ARE 2'-2" UNLESS OTHERWISE SPECIFIED ON PLANS

| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004 (1) |
|---|---|
| DESIGN FILE NAME: 89j045/structures/sj045sub.dgn | |
| IPARM FILE NAME: sj045wwlx2.i | PLOT DATE: 09-MAY-2007 13:08 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: M LONGSTREET |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| WINGWALL 1 & 2 DETAILS | SHEET: 50A OF 97 |




## WINGWALL #3 ELEVATION

SCALE 1/4" = 1'-0
1 0 2 4 6



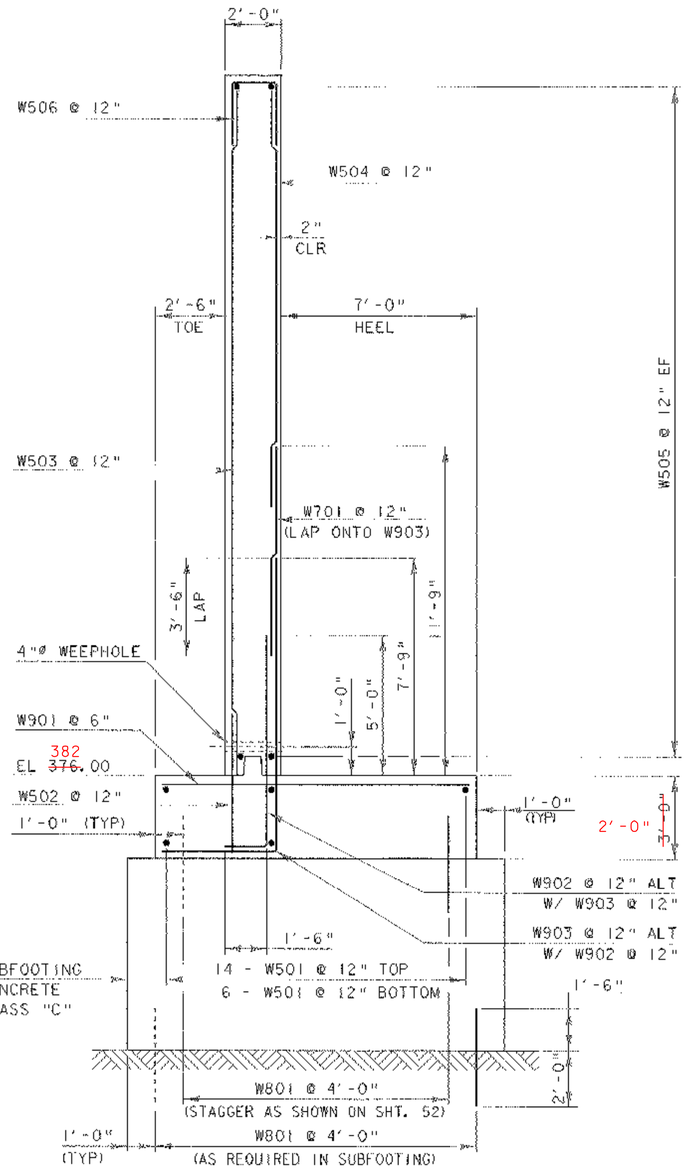

## WINGWALL #4 ELEVATION

SCALE 1/4" = 1'-0
1 0 2 4 6




## DETAIL "A"

NTS




## WINGWALL #3 & #4 TYPICAL SECTION

SCALE 3/8" = 1'-0
1 0 1 2 3 4

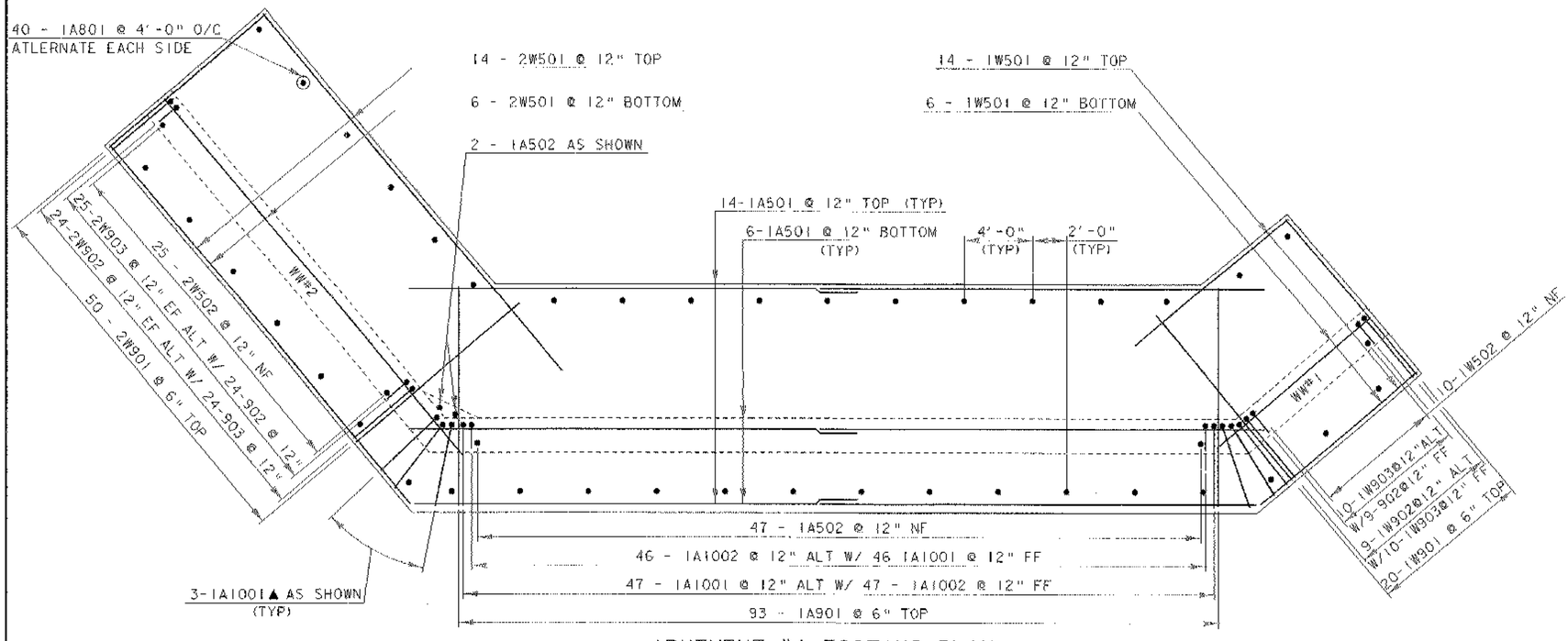
NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

3" CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS

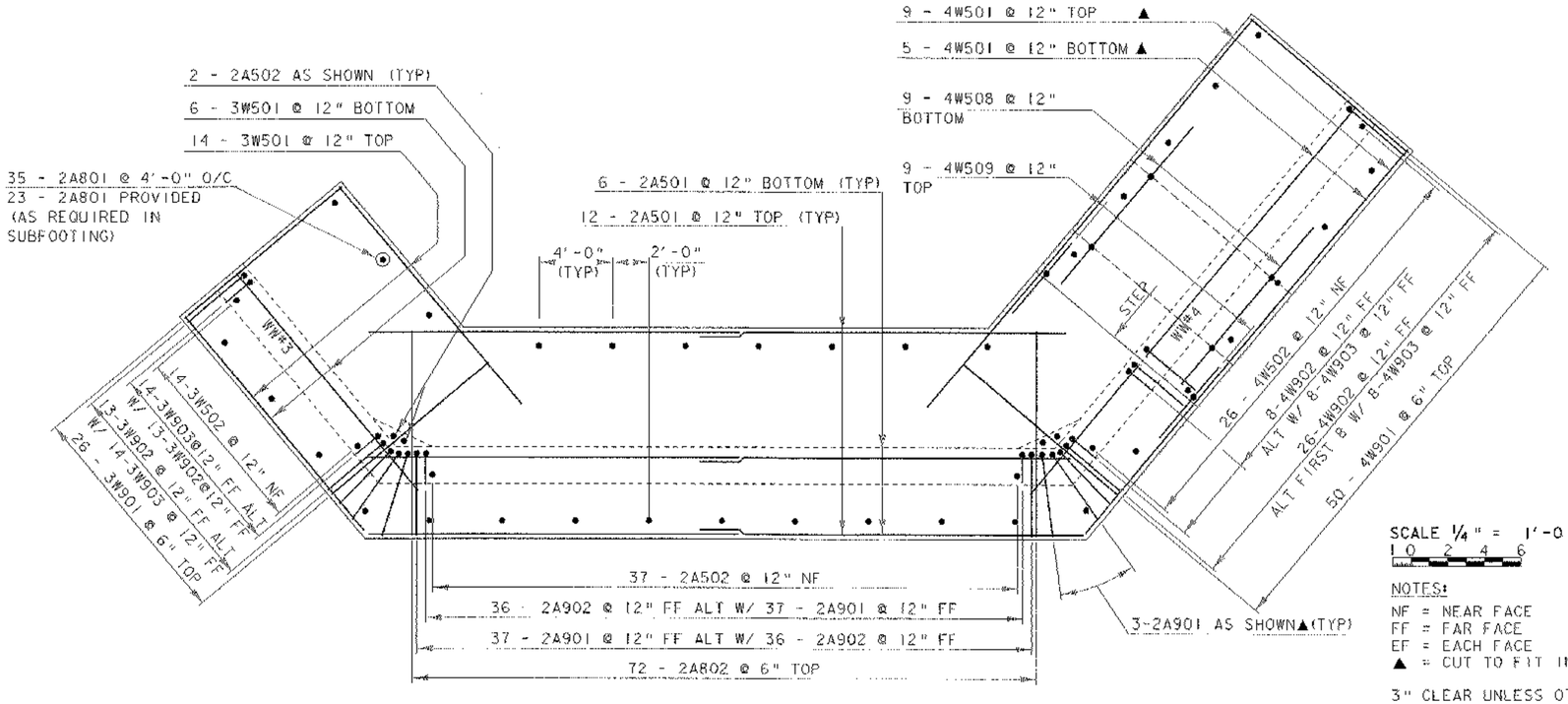
ALL LAPS ARE 2'-2" UNLESS OTHERWISE SPECIFIED ON PLANS

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004 (1) |
| DESIGN FILE NAME: 89j045/structures/sj045sub.dgn | |
| IPARM FILE NAME: sj045ww3x4.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: M LONGSTREET |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| WINGWALL 3 & 4 DETAILS | SHEET: 51 OF 97 |




ABUTMENT #1 FOOTING PLAN

SCALE 1/4" = 1'-0




ABUTMENT #2 FOOTING PLAN

SCALE 1/4" = 1'-0

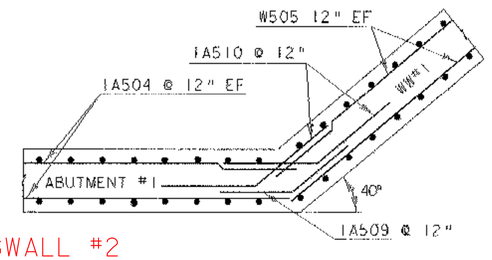
SCALE 1/4" = 1'-0
1 0 2 4 6

NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

3" CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS

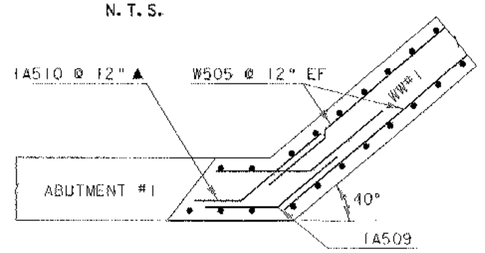
ALL LAPS ARE 2'-2" UNLESS OTHERWISE SPECIFIED ON PLANS




WINGWALL #2

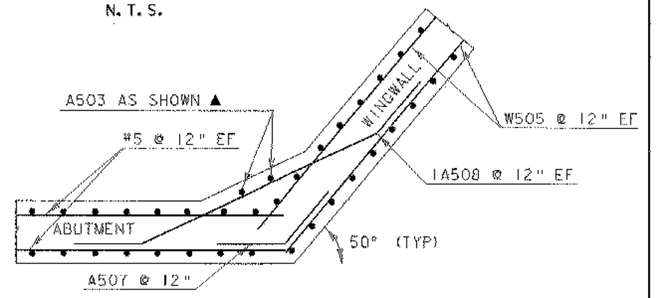
WINGWALL #1 CORNER DETAIL BELOW BRIDGE SEAT

N.T.S.



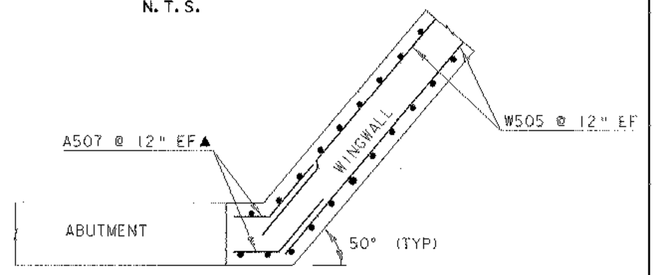

WINGWALL #1 CORNER DETAIL ABOVE BRIDGE SEAT

N.T.S.




TYPICAL WINGWALL CORNER DETAIL BELOW BRIDGE SEAT

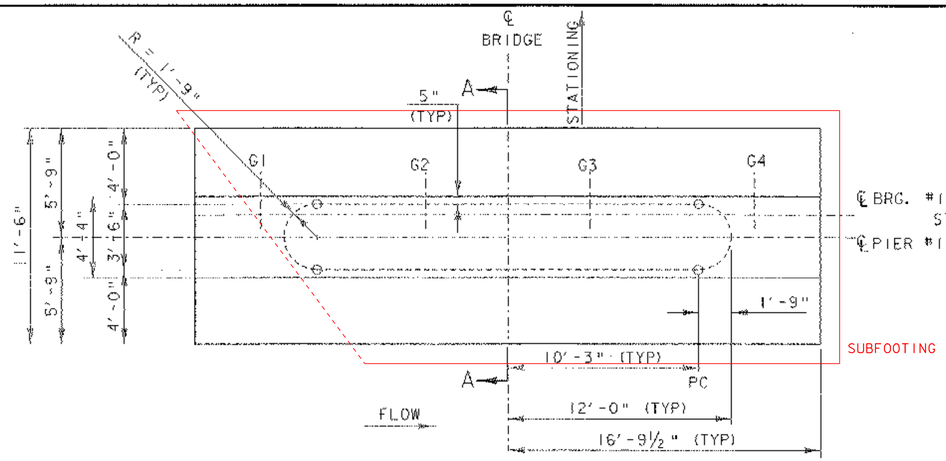
N.T.S.




TYPICAL WINGWALL CORNER DETAIL ABOVE BRIDGE SEAT

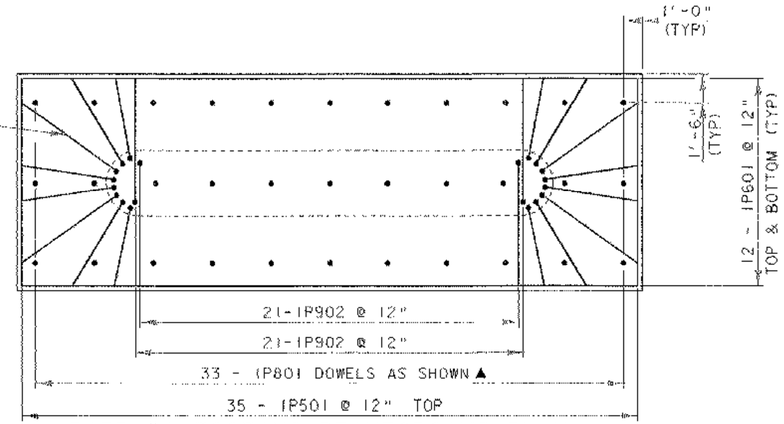
N.T.S.

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004 (1) |
| DESIGN FILE NAME: 89J045/structures/sj045sub.dgn | |
| IPARM FILE NAME: sj045ftg.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: E. L. RUSTAY |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| FOOTING REINFORCEMENT DETAILS | SHEET: 52 OF 97 |



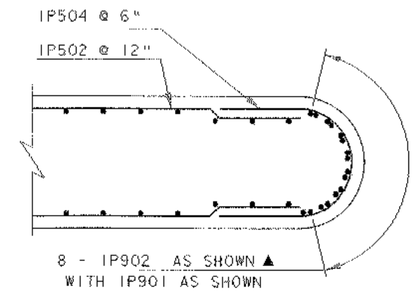

## PIER #1 PLAN

SCALE: ¼" = 1'-0"



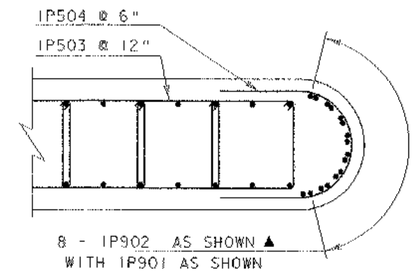

## PIER #1 FOOTING REINFORCING PLAN

SCALE: ¼" = 1'-0"




## PIER #1 NOSING DETAIL STRAIGHT BAR

SCALE: ½" = 1'-0"




## PIER #1 NOSING DETAIL STIRRUP BARS

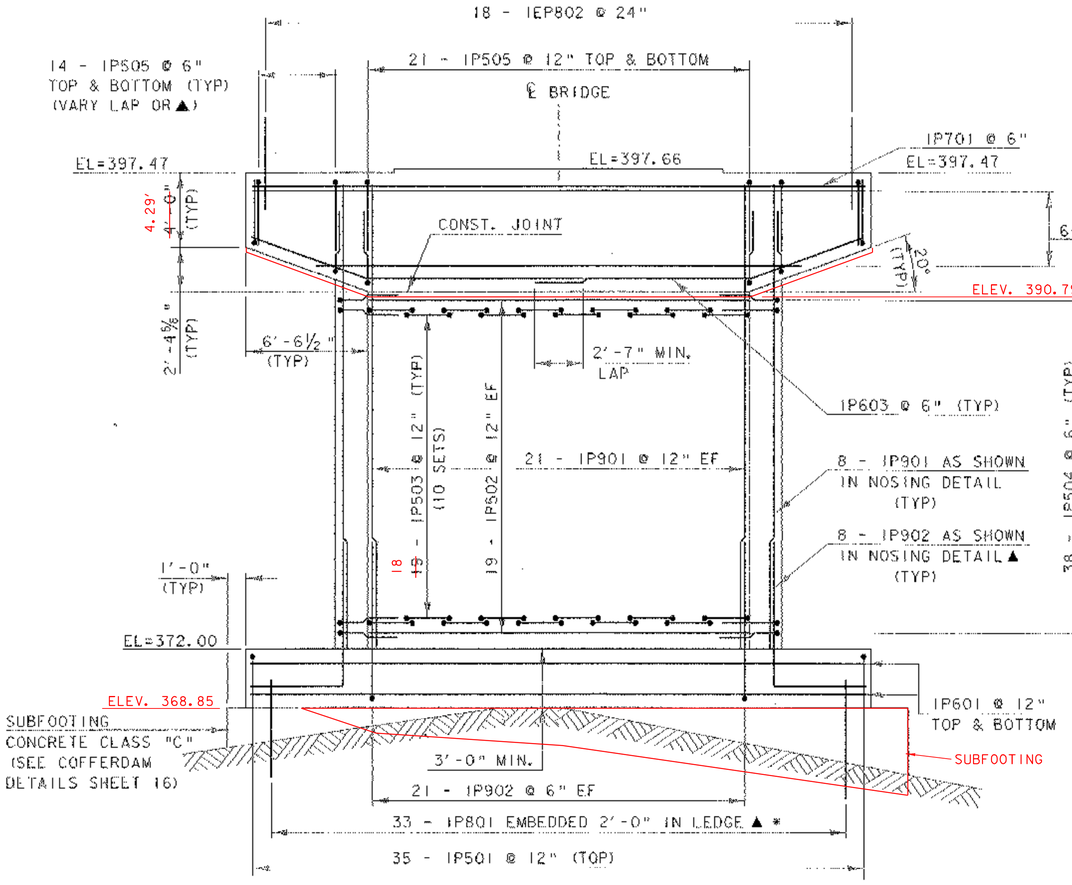
SCALE: ½" = 1'-0"

0 2 4 6

SCALE ¼" = 1'-0

0 1 2

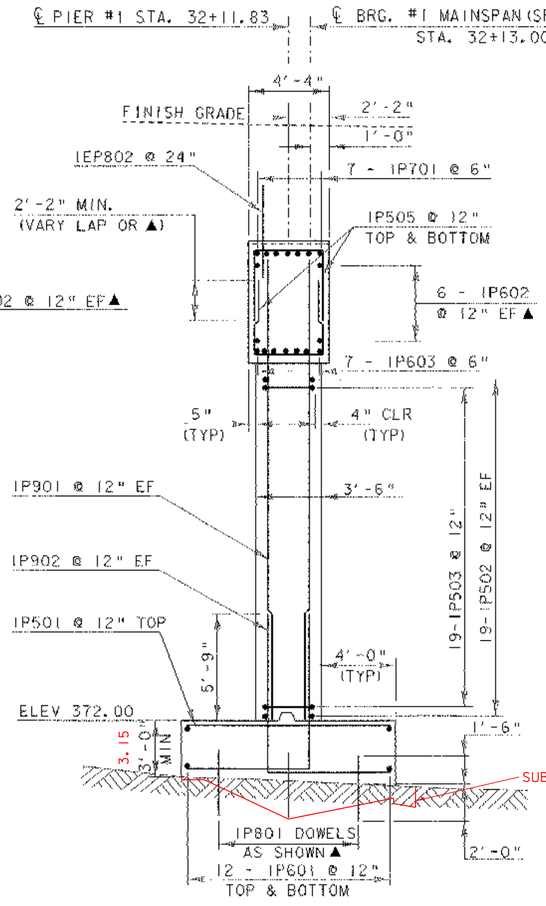
SCALE ½" = 1'-0




## PIER #1 ELEVATION

SCALE: ¼" = 1'-0"

* BAR LENGTH OVERSIZED TO ALLOW EXTENSION THROUGH SUBFOOTING




## PIER #1 SECTION A-A

SCALE: ¼" = 1'-0"

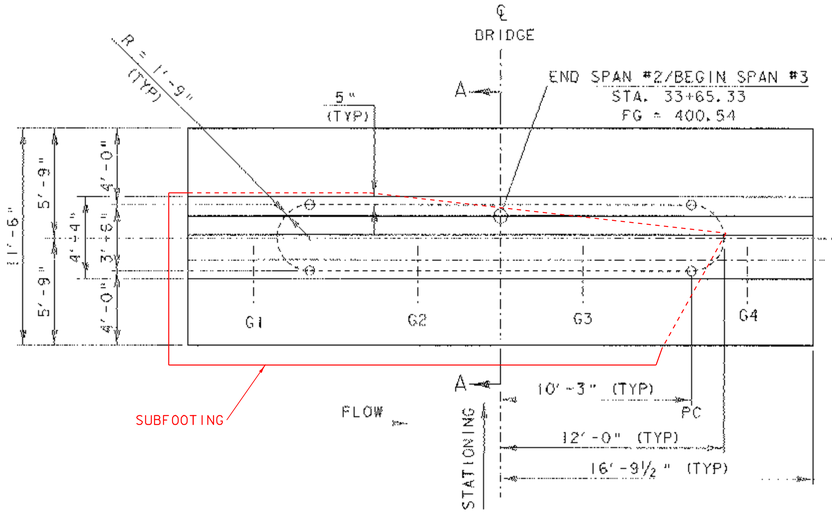
NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

3" CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS

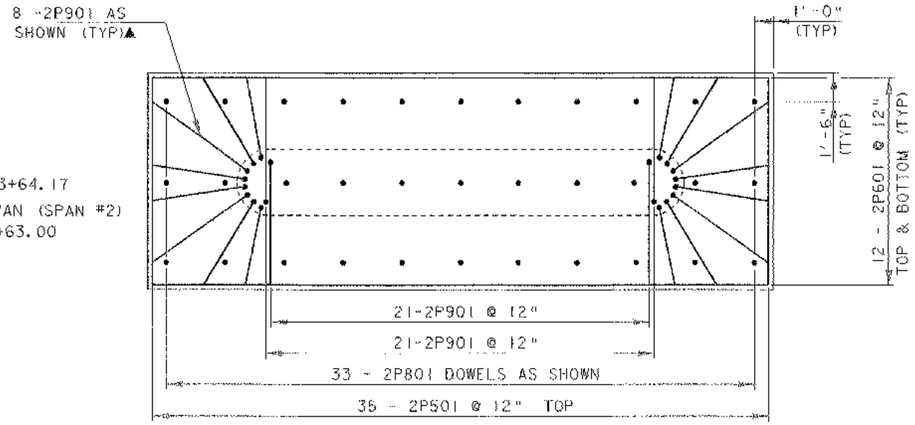
ALL LAPS ARE 2'-2" UNLESS OTHERWISE SPECIFIED ON PLANS

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
| DESIGN FILE NAME: 89j045/structures/sj045pier.dgn | |
| IPARM FILE NAME: sj045pier1.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: E. L. RUSTAY |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| PIER #1 DETAILS | SHEET: 53 OF 97 |



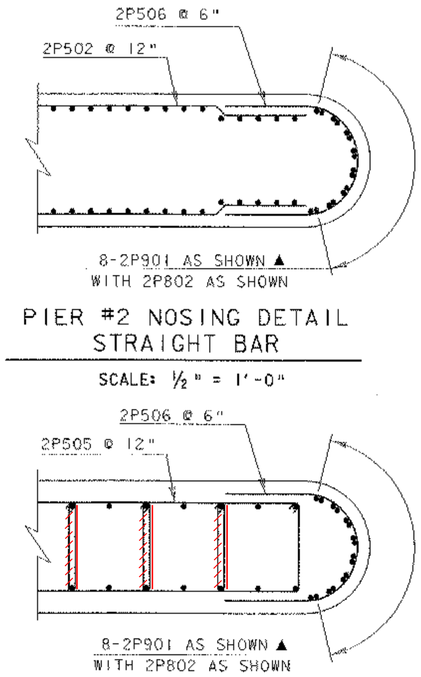

## PIER #2 PLAN

SCALE: ¼" = 1'-0"




## PIER #2 FOOTING REINFORCING PLAN

SCALE: ¼" = 1'-0"



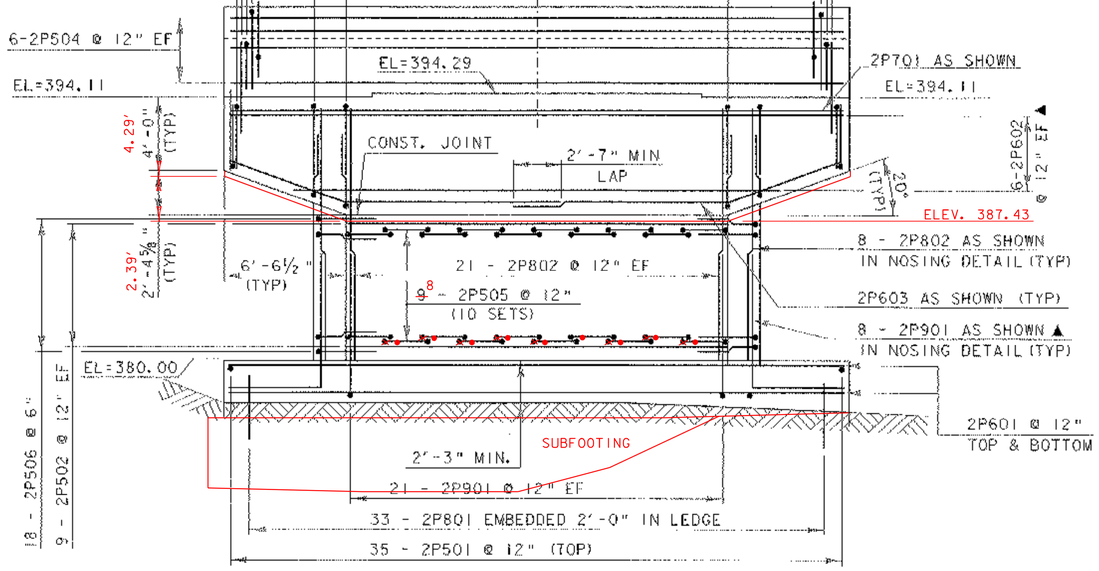

## PIER #2 NOSING DETAIL STRAIGHT BAR

SCALE: ½" = 1'-0"



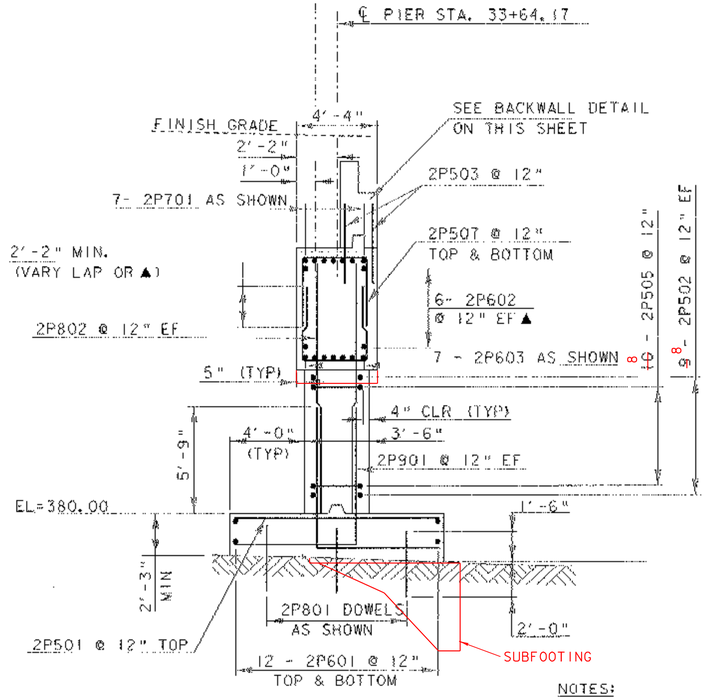

## PIER #2 NOSING DETAIL STIRRUP BARS

SCALE: ½" = 1'-0"



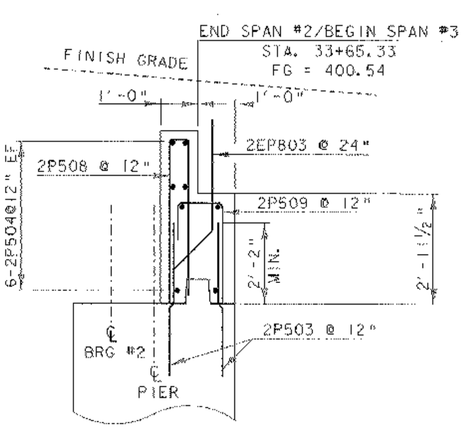

## PIER #2 ELEVATION

SCALE: ¼" = 1'-0"




## PIER #2 SECTION @ ℄

SCALE: ¼" = 1'-0"




## BACKWALL DETAIL

SCALE: ½" = 1'-0"

NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

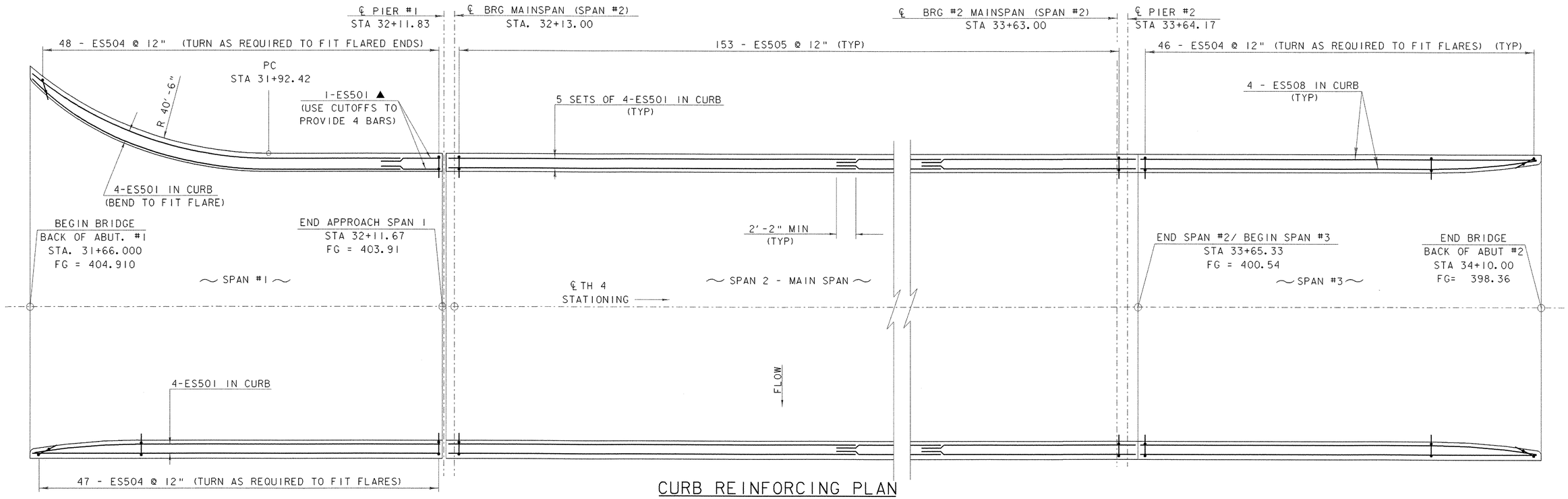
3" CLEAR UNLESS OTHERWISE SPECIFIED ON PLANS

ALL LAPS ARE 2'-2" UNLESS OTHERWISE SPECIFIED ON PLANS

SCALE ½" = 1'-0" (0, 1, 2)

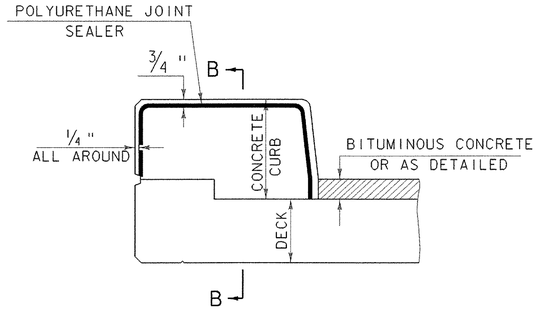
SCALE ¼" = 1'-0" (0, 2, 4, 6)

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
| DESIGN FILE NAME: 89J045/structures/sj045pier.dgn | |
| IPARM FILE NAME: sj045pier2.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: E. L. RUSTAY |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| PIER #2 DETAILS | SHEET: 54 OF 97 |



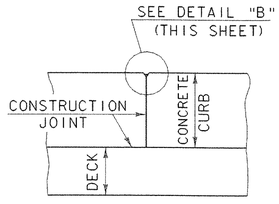

## CURB REINFORCING PLAN

SCALE 3/16" = 1'-0
1 0 2 4 6 8

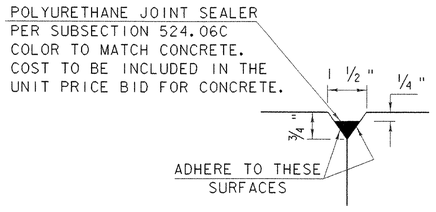



## TYPICAL SECTION THROUGH CONCRETE CURB CONSTRUCTION JOINT

NTS

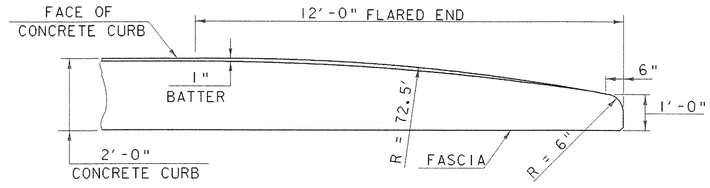



## SECTION B - B




## DETAIL "B"

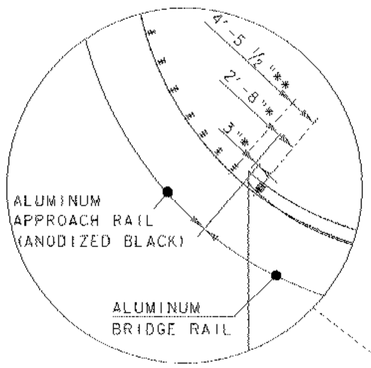
NOTES:
1. CONSTRUCTION JOINTS THROUGH CONCRETE CURBS SHALL BE SPACED MAXIMUM 15'-0" CENTER TO CENTER AND SHALL BE 1'-6" MINIMUM FROM THE CENTER OF THE NEAREST BRIDGE RAIL POST. CONCRETE SHALL BE PLACED IN ALTERNATING SECTIONS WITH A MINIMUM OF 48 HOURS DELAY BETWEEN ADJACENT POURS.
2. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CURB CONSTRUCTION JOINTS.
3. CONSTRUCTION JOINTS THROUGH SIDEWALKS SHALL BE SIMILAR TO CONCRETE CURB CONSTRUCTION JOINTS.



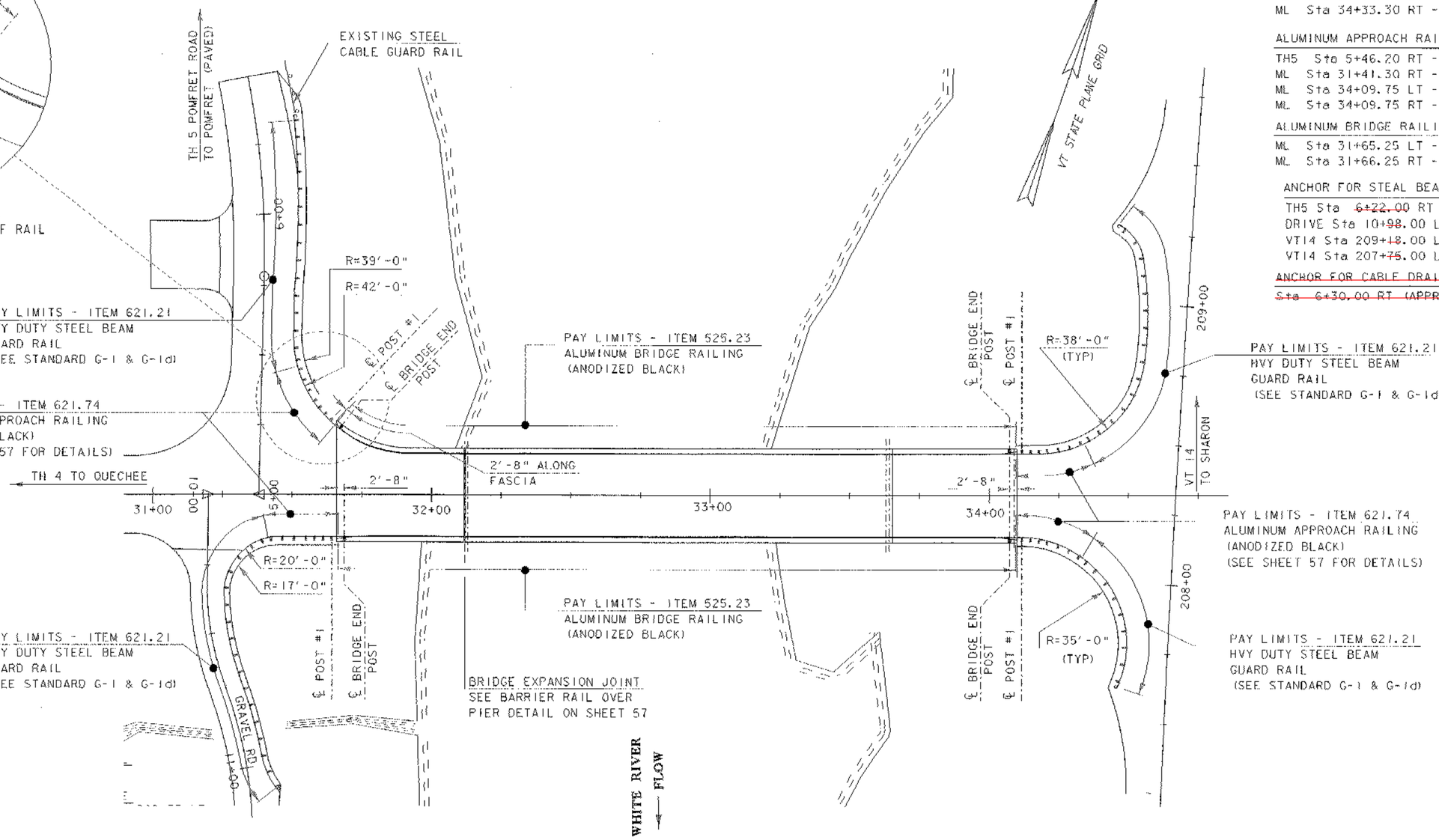

## FLARED END DETAIL FOR 2'-0" CURB

NTS

| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004 (1) |
|---|---|
| DESIGN FILE NAME: 89j045/structures/sj045asup.dgn | |
| IPARM FILE NAME: sj045curb.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: K. M. HIGGINS |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: M. LONSTREET |
| CURB DETAILS | SHEET: 55 OF 97 |




* MEASURED ALONG FASCIA
** MEASURED ALONG FACE OF RAIL




## RAILING LAYOUT PLAN

SCALE 1" = 20'-0
20 0 20

HEAVY DUTY STEEL BEAM GUARDRAIL

TH5 Sta 5+46.20 RT - TH5 Sta 6+~~34~~.00 RT 30
ML Sta 31+41.30 RT - DRIVE Sta 11+~~09~~.00 LT 11
ML Sta 34+34.50 LT - VT14 Sta 209+~~27.50~~ LT 25
ML Sta 34+33.30 RT - VT14 Sta 207+~~62~~.00 LT 64

ALUMINUM APPROACH RAILING

TH5 Sta 5+46.20 RT - ML Sta 31+65.23 LT
ML Sta 31+41.30 RT - ML Sta 31+66.25 RT
ML Sta 34+09.75 LT - ML Sta 34+34.50 LT
ML Sta 34+09.75 RT - ML Sta 34+33.30 RT

ALUMINUM BRIDGE RAILING

ML Sta 31+65.25 LT - Sta 34+09.75 LT
ML Sta 31+66.25 RT - Sta 34+09.75 RT

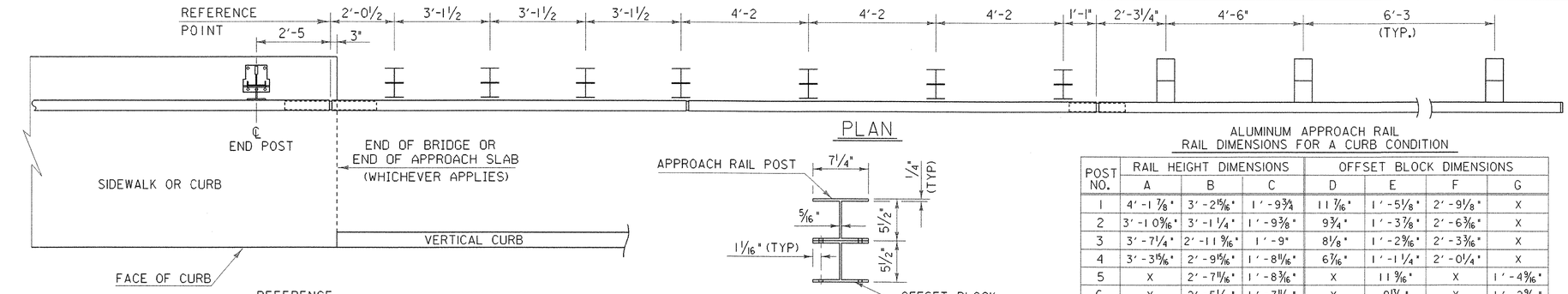
ANCHOR FOR STEAL BEAM GUARDRAIL

TH5 Sta ~~6+22.00~~ RT 5+60
DRIVE Sta 10+~~98~~.00 LT 31
VT14 Sta 209+~~18~~.00 LT 12
VT14 Sta 207+~~75~~.00 LT 72

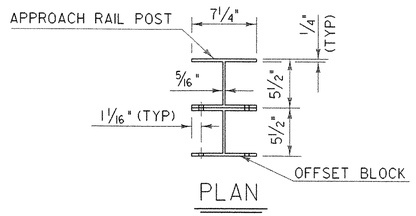
ANCHOR FOR CABLE DRAIL

~~Sta 6+30.00 RT (APPROXIMATE)~~

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004 (I) |
| DESIGN FILE NAME: 89j045/structures/sj045rail.dgn | |
| IPARM FILE NAME: sj045railplan.i | PLOT DATE: 11-FEB-2005 |
| DESIGN BY: K.M. HIGGINS | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: M.LONGSTREET |
| RAILING LAYOUT PLAN | SHEET: 56 OF 97 |




PLAN




PLAN

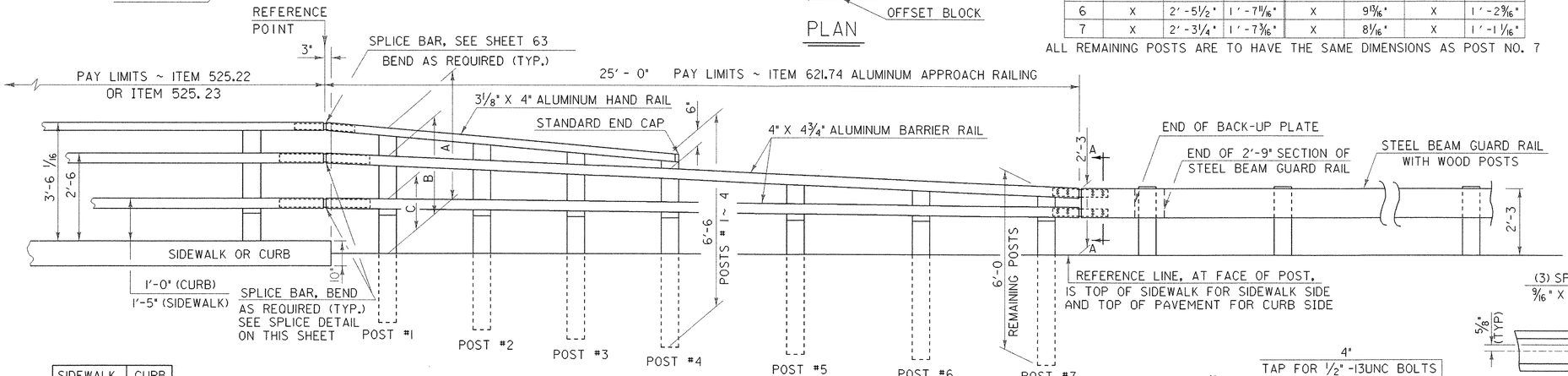
ALUMINUM APPROACH RAIL
RAIL DIMENSIONS FOR A CURB CONDITION

| POST NO. | RAIL HEIGHT DIMENSIONS | | | OFFSET BLOCK DIMENSIONS | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G |
| 1 | 4'-1 1/8" | 3'-2 5/16" | 1'-9¾" | 11 7/16" | 1'-5 1/8" | 2'-9 1/8" | X |
| 2 | 3'-10 9/16" | 3'-1 ¼" | 1'-9⅜" | 9¾" | 1'-3⅞" | 2'-6 3/16" | X |
| 3 | 3'-7¼" | 2'-11 5/16" | 1'-9" | 8⅛" | 1'-2 9/16" | 2'-3 3/16" | X |
| 4 | 3'-3 15/16" | 2'-9 15/16" | 1'-8 11/16" | 6 7/16" | 1'-1 ¼" | 2'-0¼" | X |
| 5 | X | 2'-7 11/16" | 1'-8⅜" | X | 11 5/16" | X | 1'-4 9/16" |
| 6 | X | 2'-5½" | 1'-7 11/16" | X | 9 13/16" | X | 1'-2 5/16" |
| 7 | X | 2'-3¼" | 1'-7 3/16" | X | 8 1/16" | X | 1'-1 1/16" |

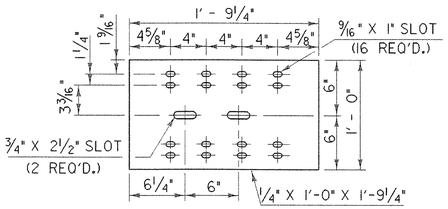
ALL REMAINING POSTS ARE TO HAVE THE SAME DIMENSIONS AS POST NO. 7

## NOTES

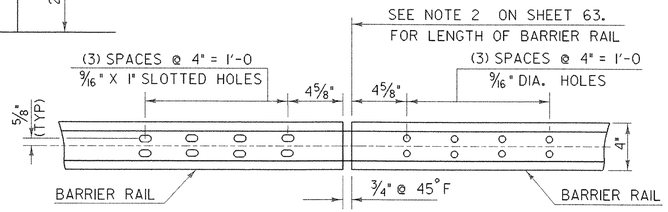
1. POST 1 THROUGH 7 SHALL BE EXTRUDED ALUMINUM.
2. ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 36 GALVANIZED AFTER FABRICATION.
3. ALL ITEMS NOT OTHERWISE INDICATED SHALL MEET THE SPECIFICATION REQUIREMENTS OF THE STANDARD SHEETS ON WHICH THEY ARE DETAILED.
4. SEE STANDARD G-1 FOR STEEL BEAM GUARD RAIL DETAILS. SEE SHEETS 62 AND 63 FOR ALUMINUM BRIDGE RAILING DETAILS.
5. THE COST OF ALL MATERIALS AND LABOR FOR THE SPLICE BETWEEN THE ALUMINUM APPROACH RAILING AND THE STEEL BEAM GUARD RAIL SHALL BE SUBSIDIARY TO ITEM 621.74, ALUMINUM APPROACH RAILING (ANODIZED BLACK).
6. DETAILS ARE SHOWN FOR TRANSITION TO A 3 RAIL ALUMINUM BRIDGE RAILING.
7. DIMENSIONS SHOWN ARE FROM A REFERENCE LINE AT THE FACE OF POST FOR A NORMAL CROWNED SECTION. APPROPRIATE CORRECTIONS SHALL BE MADE FOR CROSS SLOPES OTHER THAN A NORMAL SECTION.




ELEVATION



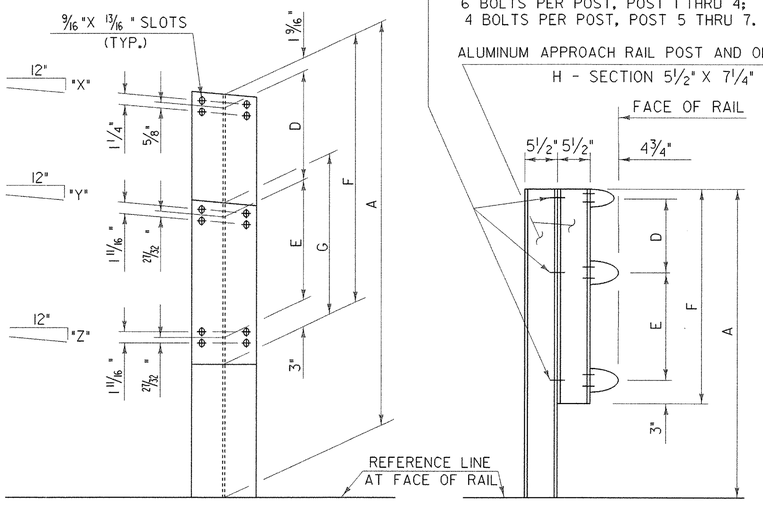

BACK-UP PLATE DETAILS




ELEVATION OF BARRIER RAIL (FROM BACK) AT INTERMEDIATE RAIL SPLICES

| SIDEWALK SIDE | CURB SIDE |
|---|---|
| "X" | 1/8" |
| "Y" | 9/16" |
| "Z" | 1 1/16" |

ATTACH OFFSET BLOCK TO POST WITH ½" -13 UNC X 1½" LONG STAINLESS STEEL HEX HEAD BOLTS, NUTS AND WASHERS. 6 BOLTS PER POST, POST 1 THRU 4; 4 BOLTS PER POST, POST 5 THRU 7.

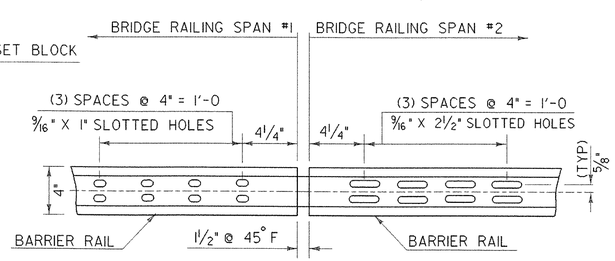



FRONT ELEVATION

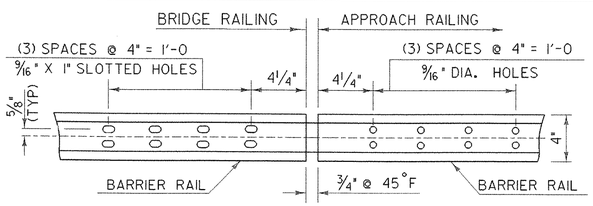



SIDE ELEVATION

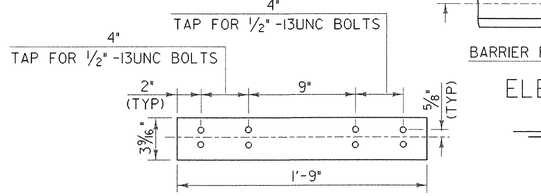
APPROACH RAIL DETAILS



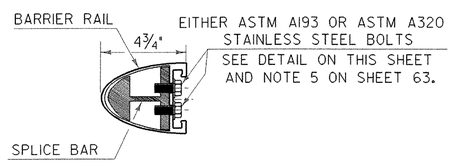

ELEVATION OF BARRIER RAIL (FROM BACK) @ PIER #1 (BRIDGE EXPANSION JOINT)



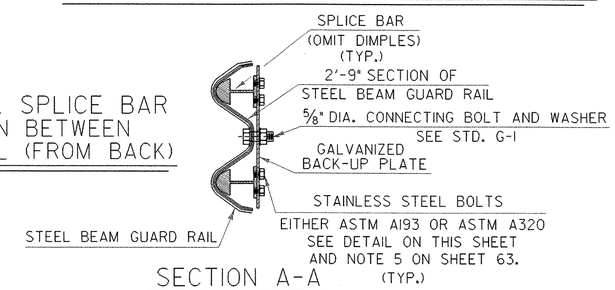

ELEVATION OF BARRIER RAIL (FROM BACK)



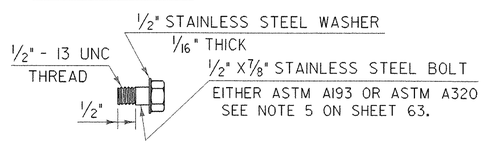

ELEVATION OF BARRIER RAIL SPLICE BAR TO BE USED AT TRANSITION BETWEEN APPROACH RAIL & GUARD RAIL (FROM BACK)




TYPICAL SECTION THROUGH BARRIER RAIL SPLICE



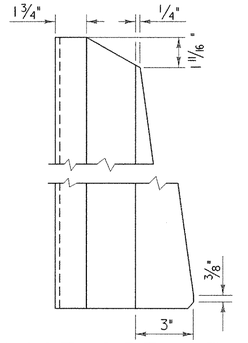

SECTION A-A



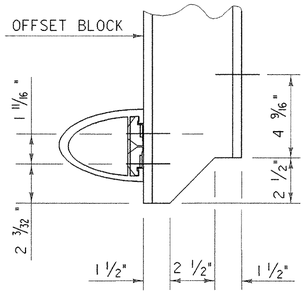

STAINLESS STEEL BOLT DETAILS

| PROJECT: | PROJECT NO.: |
|---|---|
| HARTFORD | BRO-BTN 2004 (1) |

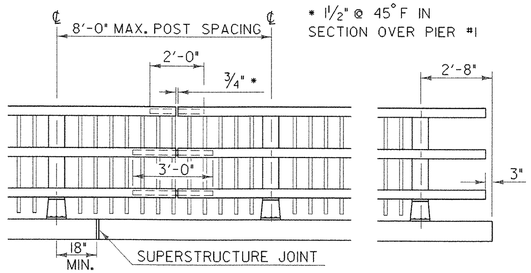
DESIGN FILE NAME: 9j045/structures/sj045rail.dgn
IPARM FILE NAME: sj045rail1.i
DESIGNED BY: K. M. HIGGINS
SQUAD LEADER: C. P. WILLIAMS
ALUMINUM RAILING DETAILS 1
PLOT DATE: 11-FEB-2005
DRAWN BY: M. LONGSTREET
CHECKED BY: K. M. HIGGINS
SHEET: 57 OF 97




POST SIDE VIEW



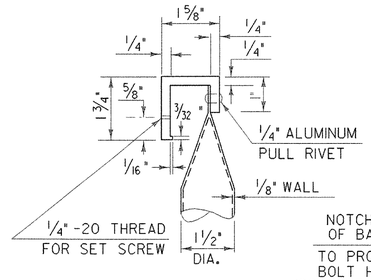

COPING DETAIL



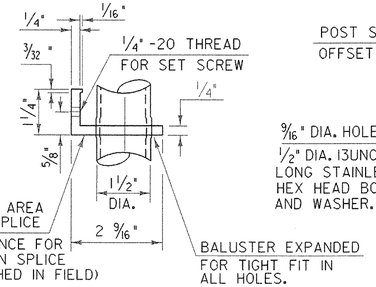

* 1 1/2" @ 45° F IN SECTION OVER PIER #1

FRONT ELEVATION OF THREE RAIL WITH SPINDLES

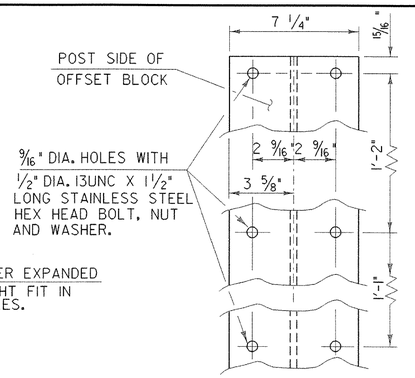
NOTE : RAIL POSTS ARE TO BE SET NORMAL TO GRADE UNLESS OTHERWISE DESIGNATED ON BRIDGE PLANS. ALL DIMENSIONS ARE TYPICAL UNLESS OTHERWISE DESIGNATED ON BRIDGE PLANS.



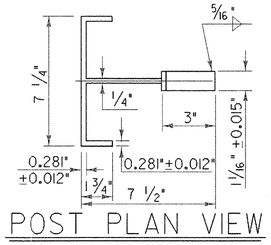

DETAIL A




DETAIL B




OFFSET BLOCK CONNECTION




POST PLAN VIEW

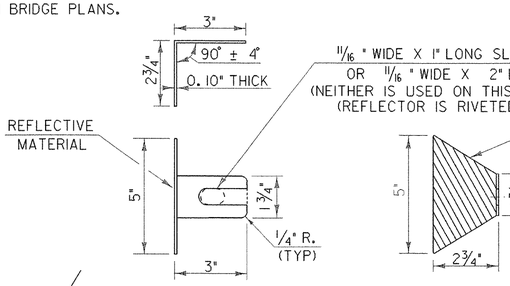
THIS REFLECTORIZED ALUMINUM DELINEATOR IS TO BE ERECTED EVERY 30 FEET (OR CLOSEST POST) WITH 2 NO. 8 X 3/4" SELF-TAPPING SCREWS.

DELINEATORS SHALL MEET SPECIFICATION REQUIREMENTS FOR ASTM B209 ALLOY 5052-H32.

REFLECTIVE MATERIAL SHALL MEET THE REQUIREMENTS OF SUBSECTION 750.08 AND SHALL BE OF ASTM TYPE III SHEETING SILVER OR AMBER. AMBER IS TO BE INSTALLED ON THE DRIVER'S LEFT AND SILVER ON THEIR RIGHT.

ON BRIDGES WITH A SIDEWALK, DELINEATORS ARE NOT TO BE INSTALLED ON THE SIDEWALK SIDE OF THE BRIDGE (I.E. DELINEATORS INSTALLED ONLY ON THE CURB SIDE AND ON THE APPROACH RAIL ON THE CURB SIDE)

PAYMENT SHALL BE SUBSIDIARY TO ALL OTHER ITEMS.

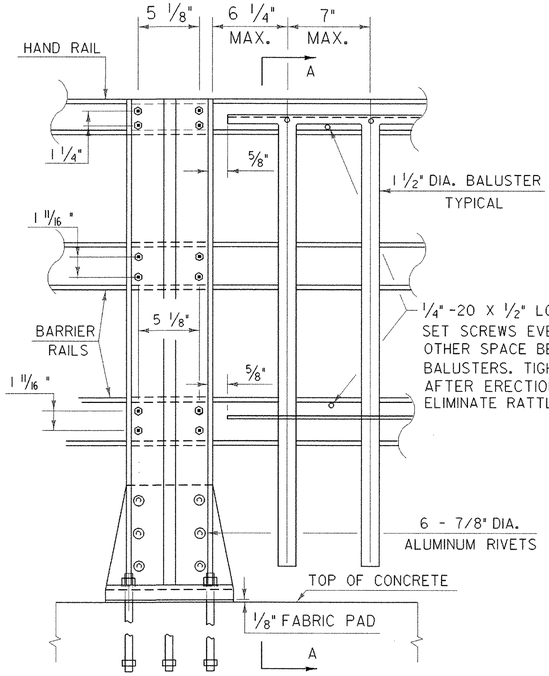



REFLECTOR DETAILS

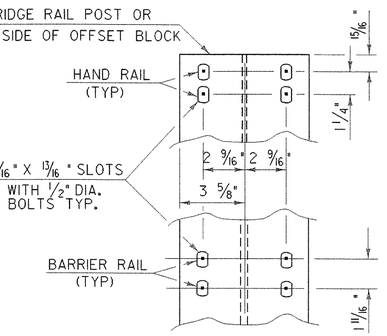
ALLOWABLE STRESSES:

RAILING : 21,000 PSI TENSION
22,000 PSI COMPRESSION

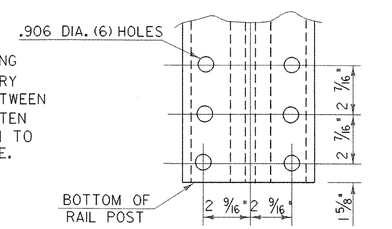
POSTS : 17,000 PSI TENSION
19,000 PSI COMPRESSION



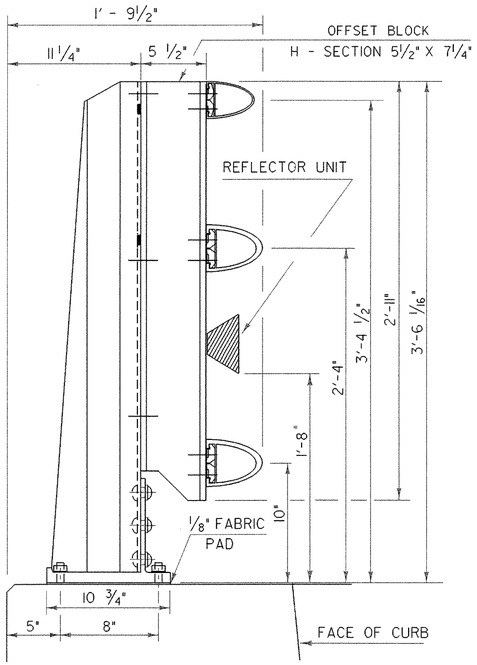

OUTSIDE ELEVATION OF THREE RAIL POST & SPINDLES



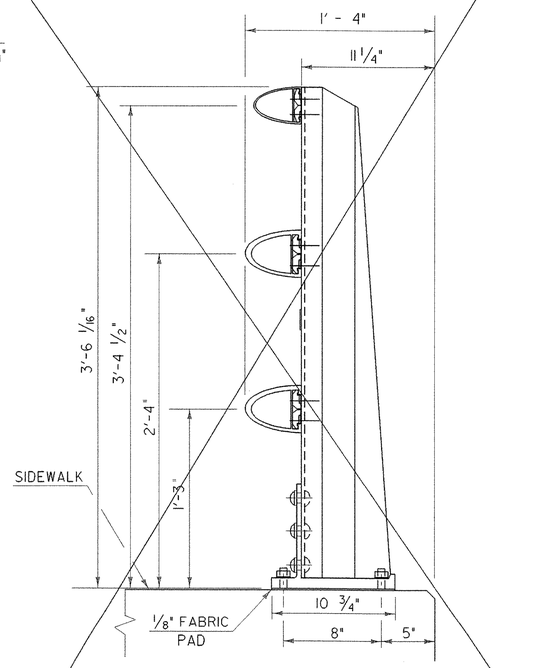

RAIL CONNECTION




POST BASE BOLT HOLE DETAILS

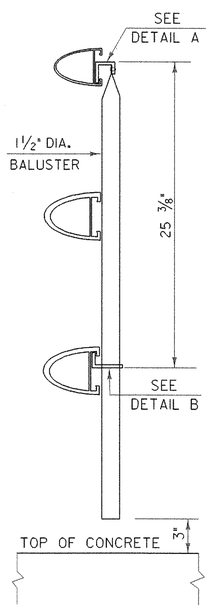



SIDE ELEVATION OF THREE RAIL TO BE USED ON CURB SIDE




SIDE ELEVATION OF THREE RAIL TO BE USED ON SIDEWALK SIDE

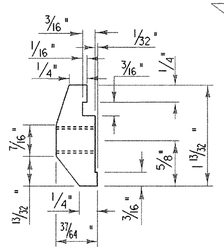
RAIL POST DETAILS ON SUPERSTRUCTURE



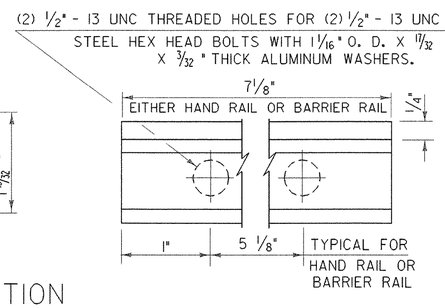

SECTION AA

DETAILS OF SPINDLES FOR ALUMINUM RAILING

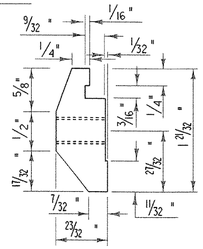
| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004 (1) |
| DESIGN FILE NAME: 9j045/structures/sj045rail.dgn | |
| IPARM FILE NAME: sj045rail2.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: M. LONGSTREET |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| ALUMINUM RAILING DETAILS 2 | SHEET: 58 OF 97 |



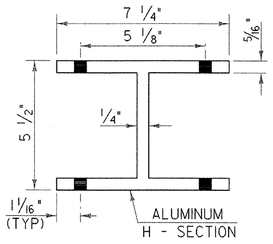

POST CONNECTION HAND RAIL SECTION



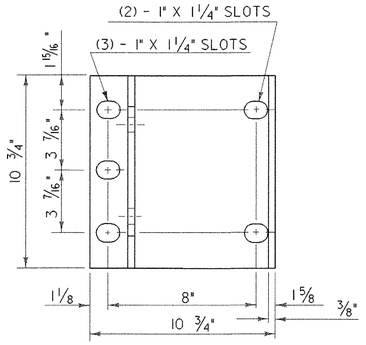

POST CONNECTION ELEVATION



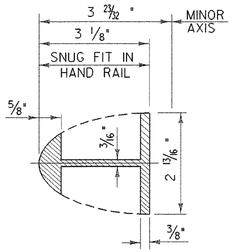

POST CONNECTION BARRIER RAIL SECTION



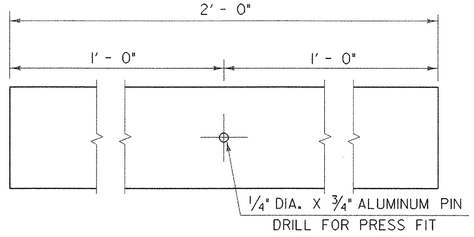

PLAN VIEW OF OFFSET BLOCK (TO BE USED ON SUPERSTRUCTURE ON CURB SIDE)



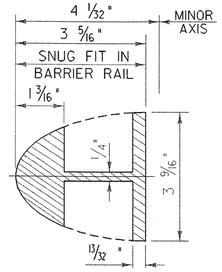

POST BASE PLAN




HAND RAIL SPLICE SECTION

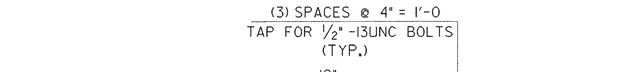



ELEVATION OF HAND RAIL SPLICE BAR

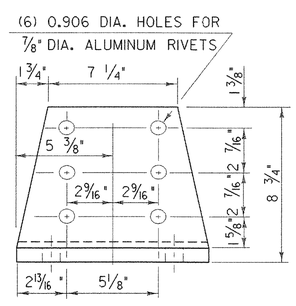



BARRIER RAIL SPLICE SECTION

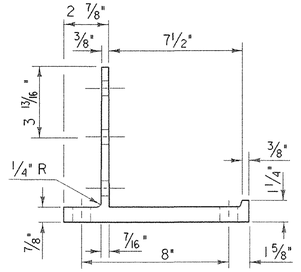
(SEE SHEET 61 FOR ELEVATION OF BARRIER RAIL SPLICE BAR)



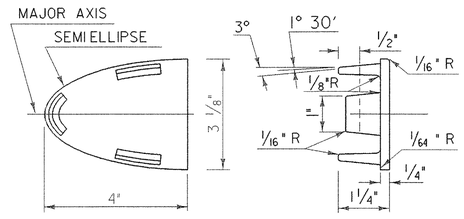

ELEVATION OF STD. BARRIER RAIL SPLICE BAR (FROM BACK)



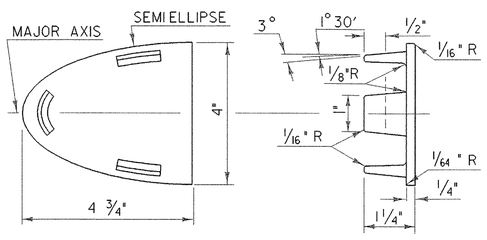

POST BASE FRONT ELEVATION



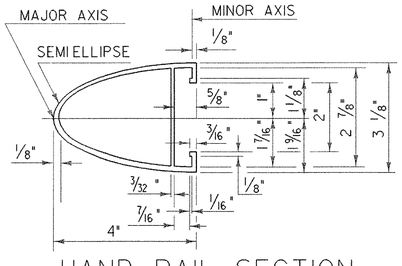

POST BASE SECTION



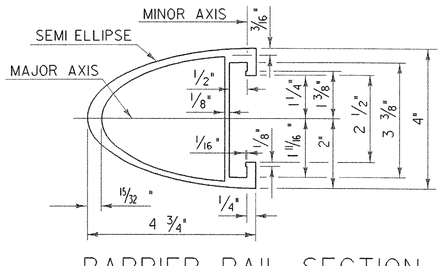

HAND RAIL END CAP




BARRIER RAIL END CAP

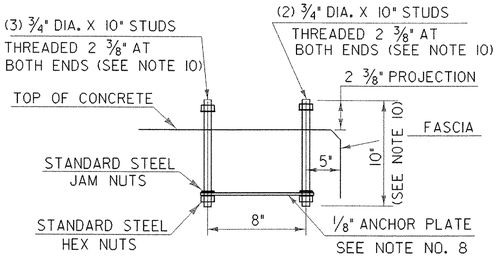



HAND RAIL SECTION

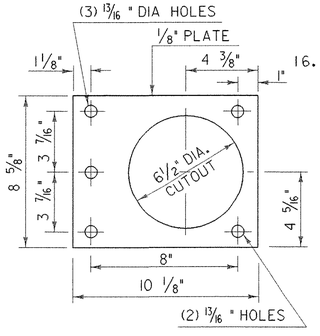



BARRIER RAIL SECTION

(SEE SHEET 61 FOR ELEVATION OF BARRIER RAIL)




POST ANCHOR ASSEMBLY




ANCHOR PLATE

## NOTES

1. ANCHOR BOLTS, WASHERS AND HEAVY HEX NUTS MAY BE ANY OF THE FOLLOWING:
   - A. ASTM A449 GALVANIZED, OR
   - B. AASHTO M164 (ASTM A325) GALVANIZED
   - C. BOLTS AND WASHERS OF STAINLESS STEEL ASTM A276, TYPE 304 (MINIMUM ULTIMATE STRENGTH OF 100,000 PSI) WITH STAINLESS STEEL NUTS OF ASTM A194, GRADE 8NA.
2. ALUMINUM POSTS, POST BASES, SPLICE BARS, CONNECTION BARS, RAILS AND BALUSTER FRAMES SHALL CONFORM TO ASTM B221 ALLOY 6061-T6 OR ALLOY 6351-T5. MINIMUM ALLOWABLE STRESS $F_y$ = 35,000 PSI.
3. ALUMINUM BALUSTER TUBES SHALL CONFORM TO ASTM B210 ALLOY 6061-T5 OR 6063-T5.
4. ALUMINUM RAIL END CAPS SHALL CONFORM TO ASTM B26 ALLOY 356-T6.
5. THE POST, RAIL, AND OFFSET BLOCK CONNECTION BOLTS SHALL BE EITHER ASTM A193 OR ASTM A320. EITHER ONE SHALL BE CLASS 1, B8 GRADE AISI 304 WITH AN ULTIMATE TENSILE STRENGTH OF 75,000 PSI. NUTS FOR EITHER OF THE ABOVE BOLTS SHALL BE ASTM A194, GRADE 8, STAINLESS STEEL WITH AN ULTIMATE TENSILE STRENGTH OF 75,000 PSI.
6. SET SCREWS FOR ATTACHING BALUSTERS TO RAILING SHALL BE ASTM F880, TYPE 303 MATERIAL.
7. RIVETS SHALL BE COLD DRIVEN HIGH BUTTON HEAD "CONE POINT", CONFORMING TO ASTM B316 ALLOY 6061-T6.
8. THE ANCHOR PLATE FOR THE POST ANCHOR ASSEMBLY SHALL BE ASTM A36 STRUCTURAL STEEL.
9. WELDING SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 506.10 USING THE GMAW-INERT GAS PROCESS AND AWS ER 5356 ELECTRODE WIRE.
10. UNLESS OTHERWISE SPECIFIED, ANCHOR BOLTS SHALL BE CAST INTO THE CONCRETE AS DETAILED.
11. WHENEVER FEASIBLE BARRIER RAIL AND HAND RAIL SECTIONS, SHALL BE FULL LENGTH SECTIONS (40' ± ) AND WHEN POSSIBLE SHALL BE ATTACHED TO THREE POSTS. RAILS SHALL BE SPLICED AT EACH DECK JOINT AND INTERMITTENTLY AS REQUIRED. SPLICES SHALL OCCUR WITHIN THE SAME PANEL.
12. ENDS OF RAILS SHALL BE CUT SQUARE AND GROUND FREE OF BURRS OR RAGGED EDGES. EXPOSED ENDS SHALL BE CAPPED.
13. THE CONCRETE CONTACT SURFACE AT THE POST BASE SHALL BE BUSH HAMMERED AND/OR SHIMMED AS REQUIRED FOR PROPER POST ALIGNMENT. POST HEIGHT ADJUSTMENTS LESS THAN 1/4" SHALL BE WITH 1/16" AND 1/8" SHIMS. CORRECTIONS EXCEEDING 1/4" SHALL BE WITH EPOXY MORTAR CONFORMING WITH SECTION 530. FABRIC BEARING PADS AND ANY REQUIRED SHIMS OR EPOXY MORTAR ARE SUBSIDIARY TO THE UNIT PRICE BID FOR THE RAILING.
14. SHIMS AND 1/8" FABRIC BEARING PADS SHALL BE 10 3/4" SQUARE WITH SLOTTED HOLES SIZED AND LOCATED THE SAME AS THE POST BASE DETAIL. FABRIC BEARING PADS SHALL CONFORM TO SUBSECTION 731.01 OR 731.02, SHIM MATERIAL SHALL BE ASTM B 209 ALLOY 1100-0.
15. EXTRUDED SECTIONS ARE DETAILED TO COMPLY WITH CURRENT AASHTO-AGC-ARTBA STANDARDS. MINOR VARIATIONS OF THE DETAILS SHOWN MAY BE CONSIDERED PROVIDING THEY DO NOT REDUCE THE STRENGTH CAPACITY OF THE RAIL SYSTEM.
16. ALUMINUM WASHERS SHALL BE ASTM B209 ALLOY ACLAD 2024-T4.

| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004 (1) |
|---|---|
| DESIGN FILE NAME: 9j045/structures/sj045rail.dgn | |
| IPARM FILE NAME: sj045rail3.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: K. M. HIGGINS | DRAWN BY: M. LONGSTREET |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: K. M. HIGGINS |
| ALUMINUM RAILING DETAILS 3 | SHEET: 59 OF 97 |

STATE OF VERMONT
AGENCY OF TRANSPORTATION

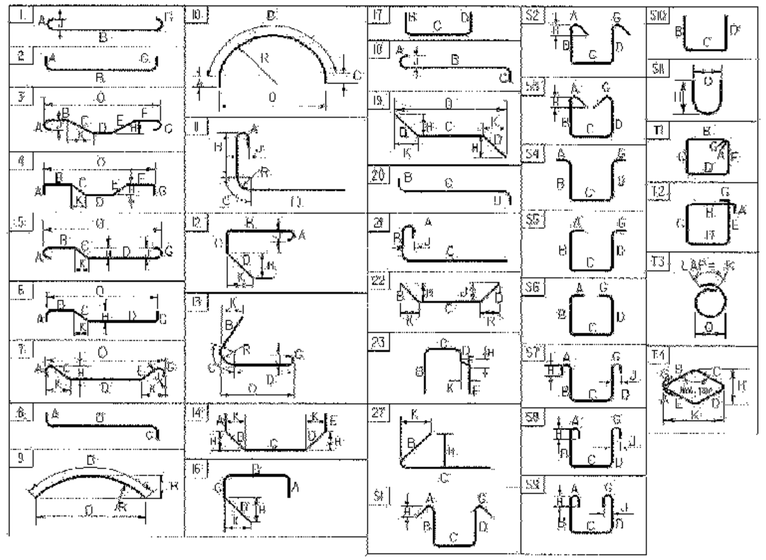
# REINFORCING STEEL SCHEDULE

| ITEM | EACH | SIZE | LENGTH | MARK | TYPE | A | B | C | D | E | F | G | H | J | K | R | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SUPERSTRUCTURE** | | | | | | | | | | | | | | | | | |
| **SPAN #1** | | | | | | | | | | | | | | | | | |
| ▲ | 36 | 5 | 46'- 2" | ES501 | STR | | | | | | | | | | | | |
| | 62 | 6 | 33'- 1" | ES601 | STR | | | | | | | | | | | | |
| * | 22 | 6 | 12'- 5" | ES602 | STR | | | | | | | | | | | | |
| | 34 | 5 | 14'- 1" | ES502 | S5 | 2'- 2" | 4'- 6" | 1'- 6" | 3'- 9" | | | 2'- 2" | | | | | |
| | 107 | 5 | 10'- 5" | ES503 | S6 | 1'- 0" | 1'- 8" | 5'- 1" | 1'- 8" | | | 1'- 0" | | | | | |
| * | 98 | 5 | 8'- 11" | ES504 | S5 | 1'- 0" | 2'- 8" | 1'- 5" | 2'- 9" | | | 1'- 0" | | | | | |
| | 68 | 10 | 46'- 7" | ES1001 | 1 | 1'- 5" | 45'- 2" | | | | | --- | | | | | |
| * | 14 | 10 | 26'- 5" | ES1002 | 1 | 1'- 5" | 25'- 0" | | | | | --- | | | | | |
| **MAINSPAN (SPAN #2)** | | | | | | | | | | | | | | | | | |
| | 40 | 5 | 45'- 2" | ES501 | STR | | | | | | | | | | | | |
| * | 922 | 6 | 33'- 1" | ES901 | STR | | | | | | | | | | | | |
| | 440 | 6 | 32'- 7" | ES603 | STR | | | | | | | | | | | | |
| | 306 | 5 | 6'- 4" | ES505 | S5 | 1'- 0" | 1'- 7" | 1'- 5" | 1'- 4" | | | 1'- 0" | | | | | |
| | 21 | 5 | 6'- 9" | ES506 | S8 | 4'- 0" | 0'- 9" | 1'- 8" | 0'- 6" | | | --- | | | | | |
| | 21 | 5 | 9'- 0" | ES507 | S6 | 5'- 3" | 0'- 8" | 2'- 6" | 0'- 6" | | | ---- | | | | | |
| **SPAN #3** | | | | | | | | | | | | | | | | | |
| | 30 | 5 | 44'- 2" | ES508 | STR | | | | | | | | | | | | |
| | 54 | | | | | | | | | | | | | | | | |
| | 46 | 6 | 33'- 1" | ES601 | STR | | | | | | | | | | | | |
| | 92 | 5 | 10'- 5" | ES503 | S6 | 1'- 0" | 1'- 8" | 5'- 1" | 1'- 8" | | | 1'- 0" | | | | | |
| | 92 | 5 | 8'- 11" | ES504 | S5 | 1'- 0" | 2'- 9" | 1'- 5" | 2'- 9" | | | 1'- 0" | | | | | |
| | 34 | 5 | 156 | ES505 | | 3'- 0" | 4'- 6" | 1'- 6" | 3'- 6" | | | 1'- 0" | | | | | |
| * | 89 | 10 | 45'- 7" | ES1003 | 1 | 1'- 5" | 44'- 2" | | | | | --- | | | | | |
| **APPROACH SLAB #1** | | | | | | | | | | | | | | | | | |
| * ▲ | 44 | 5 | 26'- 4" | 1EAS501 | STR | | | | | | | | | | | | |
| * ▲ | 83 | 9 | 20'- 9" | 1EAS901 | 1 | 1'- 3" | 19'- 6" | | | | | --- | | | | | |
| **APPROACH SLAB #2** | | | | | | | | | | | | | | | | | |
| * | 22 | 5 | 29'- 8" | 2EAS501 | STR | | | | | | | | | | | | |
| * | 38 | 9 | 20'- 9" | 2EAS901 | 1 | 1'- 3" | 19'- 6" | | | | | --- | | | | | |
| **WINGWALL #1** | | | | | | | | | | | | | | | | | |
| | 11 | 5 | 12'-6" | IW501 | STR | | | | | | | | | | | | |
| | 13 | 5 | 4'-6" | IW502 | STR | | | | | | | | | | | | |
| | 12 | 5 | 12'-0" | IW503 | STR | | | | | | | | | | | | |
| | 12 | 5 | 12'-0" | IW504 | STR | | | | | | | | | | | | |
| | 24 | 5 | 10'-2" | IW505 | STR | | | | | | | | | | | | |
| | 12 | 5 | 5'-10" | IW506 | 17 | 2'-2" | 1'-6" | 2'-2" | | | | | | | | | |
| | 11 | 5 | 8'-6" | IW601 | 17 | 3'-6" | 5'-0" | | | | | | | | | | |
| | 13 | 5 | 6'-6" | IW701 | STR | | | | | | | | | | | | |
| | 24 | 5 | 4'-3" | IEA803 | STR | | | | | | | | | | | | |
| **ABUTMENT #1A** | | | | | | | | | | | | | | | | | |
| | 21 | 5 | 29'-0" | IA501A | STR | | | | | | | | | | | | |
| | 30 | 5 | 4'-6" | IA502A | STR | | | | | | | | | | | | |
| | 60 | 5 | 9'-4" | IA503A | STR | | | | | | | | | | | | |
| | 22 | 5 | 29'-0" | IA504A | STR | | | | | | | | | | | | |
| | 30 | 5 | 6'-6" | IA505A | STR | | | | | | | | | | | | |
| | 30 | 5 | 6'-10" | IA506A | 17 | 2'-2" | 2'-6" | 2'-2" | | | | | | | | | |
| | 8 | 5 | 16'-4" | IA508A | 19 | 5'-0" | 6'-4" | 5'-0" | | | | | | | | | |
| | 8 | 5 | 4'-8" | IA509A | 22 | 2'-4" | 2'-4" | | | | 1'-6" | | 1'-9" | | | | |
| | 24 | 5 | 9'-10" | IA510A | 19 | 3'-11" | 5'-11" | | | | 2'-6" | | 3'-0" | | | | |
| | 30 | 6 | 9'-9" | IA601A | 17 | 4'-9" | 5'-0" | | | | | | | | | | |
| | 30 | 7 | 6'-6" | IA701A | STR | | | | | | | | | | | | |
| | 8 | 5 | 10'-6" | IA5I1A | 20 | 3'-0" | 4'-6" | 3'-0" | | | | | | | | | |
| **ABUTMENT #1B** | | | | | | | | | | | | | | | | | |
| | 14 | 5 | 19'-8" | IA501B | STR | | | | | | | | | | | | |
| | 20 | 5 | 4'-6" | IA502B | STR | | | | | | | | | | | | |
| | 20 | 5 | 13'-10" | IA503B | STR | | | | | | | | | | | | |
| | 30 | 5 | 18'-8" | IA504B | STR | | | | | | | | | | | | |
| | 20 | 5 | 9'-1" | IA505B | STR | | | | | | | | | | | | |
| | 20 | 5 | 6'-10" | IA506B | 17 | 2'-2" | 2'-6" | 2'-2" | | | | | | | | | |
| | 17 | 5 | 4'-8" | IA509B | 22 | 2'-4" | 2'-4" | | | | 1'-9" | | 1'-6" | | | | |
| | 34 | 5 | 9'-10" | IA510B | 19 | 3'-11" | 5'-11" | | | | 3'-0" | | 2'-6" | | | | |
| | 12 | 8 | 3'-6" | IA801B | STR | | | | | | | | | | | | |
| | 20 | 8 | 13'-3" | IA802B | 17 | 4'-6" | 8'-9" | | | | | | | | | | |
| | 21 | 9 | 8'-3" | IA901B | STR | | | | | | | | | | | | |
| | 21 | 8 | 6'-3" | IEA804 | STR | | | | | | | | | | | | |

| ITEM | EACH | SIZE | LENGTH | MARK | TYPE | A | B | C | D | E | F | G | H | J | K | R | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ABUTMENT #1** | | | | | | | | | | | | | | | | | |
| | 40 | 5 | 25'- 7" | 1A501 | STR | | | | | | | | | | | | |
| * | 50 | 5 | 5'- 5" | 1A502 | STR | | | | | | | | | | | | |
| ▲ | 60 | 5 | 24'- 3" | 1A503 | STR | | | | | | | | | | | | |
| | 47 | 5 | 28'- 0" | 1A504 | STR | | | | | | | | | | | | |
| ▲ | 47 | 5 | 12'- 0" | 1A505 | STR | | | | | | | | | | | | |
| * | 23 | 8 | 3'- 6" | 1A801 | STR | | | | | | | | | | | | |
| | 47 | 8 | 10'- 1" | 1A802 | STR | | | | | | | | | | | | |
| * | 24 | 8 | 4'- 3" | 1EA803 | STR | | | | | | | | | | | | |
| * | 94 | 9 | 12'- 9" | 1A901 | STR | | | | | | | | | | | | |
| * | 44 | 6 | 8'- 9" | 1A506 | 18 | 2'- 2" | 2'- 7" | 1'- 2" | 2'- 10" | | | | | | | | |
| ▲ | 28 | 5 | 4'- 8" | 1A507 | 22 | | 2'- 4" | 2'- 4" | | | | | | | | 1'- 9" | 1'- 6" |
| | 22 | 5 | 15'- 0" | 1A508 | 22 | | 2'- 2" | 10'- 8" | 2'- 2" | | | | | | | 1'- 4" 1'- 3" | 1'- 8" 1'- 8" |
| | 25 | 5 | 4'- 8" | 1A509 | 22 | | 2'- 4" | 2'- 4" | | | | | | | | 1'- 8" | 1'- 9" |
| ▲ | 50 | 5 | 7'- 10" | 1A510 | 22 | | 3'- 11" | 3'- 11" | | | | | | | | 2'- 6" | 3'- 0" |
| | 5 | 5 | 5'- 11" | 1A511 | S10 | | 2'- 2" | 1'- 7" | 2'- 2" | | | | | | | | |
| | 21 | 8 | 6'- 3" | 1EA804 | 22 | | 2'- 6" | 3'- 9" | | | | | | | | | |
| * | 48 | 10 | 16'- 10" | 1A1001 | 17 | | 4'- 7" | 12'- 3" | --- | | | | | | | | |
| * | 47 | 10 | 11'- 0" | 1A1002 | 17 | | 1'- 6" | 9'- 6" | ---- | | | | | | | | |
| **WINGWALL #1** | | | | | | | | | | | | | | | | | |
| | 20 | 5 | 12'- 1" | 1W501 | STR | | | | | | | | | | | | |
| | 10 | 5 | 5'- 5" | 1W502 | STR | | | | | | | | | | | | |
| | 10 | 5 | 24'- 0" | 1W503 | STR | | | | | | | | | | | | |
| | 10 | 5 | 12'- 11" | 1W504 | STR | | | | | | | | | | | | |
| | 50 | 5 | 10'- 2" | 1W505 | STR | | | | | | | | | | | | |
| | 10 | 7 | 7'- 7" | 1W701 | STR | | | | | | | | | | | | |
| * | 6 | 8 | 3'- 6" | 1W801 | STR | | | | | | | | | | | | |
| | 20 | 9 | 11'- 9" | 1W901 | STR | | | | | | | | | | | | |
| | 10 | 5 | 5'- 11" | 1W506 | S10 | | 2'- 2" | 1'- 7" | 2'- 2" | | | | | | | | |
| * | 10 | 9 | 11'- 3" | 1W902 | 17 | | 1'- 6" | 9'- 9" | --- | | | | | | | | |
| | 10 | 9 | 17'- 1" | 1W903 | 17 | | 4'- 7" | 12'- 6" | --- | | | | | | | | |
| **WINGWALL #2** | | | | | | | | | | | | | | | | | |
| | 20 | 5 | 27'- 5" | 2W501 | STR | | | | | | | | | | | | |
| | 25 | 5 | 5'- 5" | 2W502 | STR | | | | | | | | | | | | |
| ▲ | 25 | 5 | 24'- 3" | 2W503 | STR | | | | | | | | | | | | |
| ▲ | 25 | 5 | 13'- 2" | 2W504 | STR | | | | | | | | | | | | |
| ▲ | 48 | 5 | 25'- 5" | 2W505 | STR | | | | | | | | | | | | |
| | 25 | 7 | 7'- 7" | 2W701 | STR | | | | | | | | | | | | |
| | 13 | 8 | 3'- 6" | 2W801 | STR | | | | | | | | | | | | |
| | 50 | 9 | 11'- 9" | 2W901 | STR | | | | | | | | | | | | |
| | 25 | 5 | 5'- 10" | 2W506 | S10 | | 2'- 2" | 1'- 6" | 2'- 2" | | | | | | | | |
| | 2 | 6 | 25'- 11" | 2W507 | 22 | | 2'- 0" | 23'- 11" | --- | | | | 0'- 7" | | 1'- 11" | | |
| | 24 | 9 | 11'- 9" | 2W902 | 17 | | 1'- 6" | 9'- 6" | --- | | | | | | | | |
| | 25 | 9 | 17'- 1" | 2W903 | 17 | | 4'- 7" | 12'- 6" | --- | | | | | | | | |
| **WINGWALL #2** | | | | | | | | | | | | | | | | | |
| | 13 | 5 | 27'-6" | 2W501 | STR | | | | | | | | | | | | |
| | 26 | 5 | 4'-6" | 2W502 | STR | | | | | | | | | | | | |
| | 26 | 5 | 16'-9" | 2W503 | STR | | | | | | | | | | | | |
| | 26 | 5 | 13'-0" | 2W504 | STR | | | | | | | | | | | | |
| | 34 | 5 | 25'-5" | 2W505 | STR | | | | | | | | | | | | |
| | 26 | 5 | 5'-10" | 2W506 | 17 | | 2'-2" | 1'-6" | 2'-2" | | | | | | | | |
| | 26 | 7 | 11'-6" | 2W701 | 17 | | 3'-6" | 8'-0" | | | | | | | | | |
| | 12 | 8 | 3'-6" | 2W801 | STR | | | | | | | | | | | | |
| | 29 | 8 | 7'-6" | 2W802 | STR | | | | | | | | | | | | |

## ~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-91). ALL BARS SHALL BE GRADE 60, 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.
9. ▲ 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 DESIGNATION | WEIGHT POUNDS PER FOOT | NOMINAL DIMENSIONS ROUND SECTION DIAMETER INCHES | AREA INCHES $^2$ | PERIMETER INCHES |
|---|---|---|---|---|
| #3 | 0.376 | 0.375 | 0.11 | 1.178 |
| #4 | 0.668 | 0.500 | 0.20 | 1.571 |
| #5 | 1.043 | 0.625 | 0.31 | 1.963 |
| #6 | 1.502 | 0.750 | 0.44 | 2.356 |
| #7 | 2.044 | 0.875 | 0.60 | 2.749 |
| #8 | 2.670 | 1.000 | 0.79 | 3.142 |
| #9 | 3.400 | 1.128 | 1.00 | 3.544 |
| #10 | 4.303 | 1.270 | 1.27 | 3.990 |
| #11 | 5.313 | 1.410 | 1.56 | 4.430 |
| #14 | 7.65 | 1.693 | 2.25 | 5.32 |
| #18 | 13.60 | 2.257 | 4.00 | 7.09 |

PROJECT NAME: HARTFORD
PROJECT NUMBER: BRO-BTN 2004 (1)

FILE NAME: s89j045reinf.xls
PROJECT MANAGER: C.P. WILLIAMS
DESIGNED BY: K.M. HIGGINS
REINFORCING STEEL SCHEDULE SHEET #1

PLOT DATE: 11/10/2004
DRAWN BY: M. LONGSTREET
CHECKED BY: K.M. HIGGINS
SHEET 60 OF 97

STATE OF VERMONT
AGENCY OF TRANSPORTATION

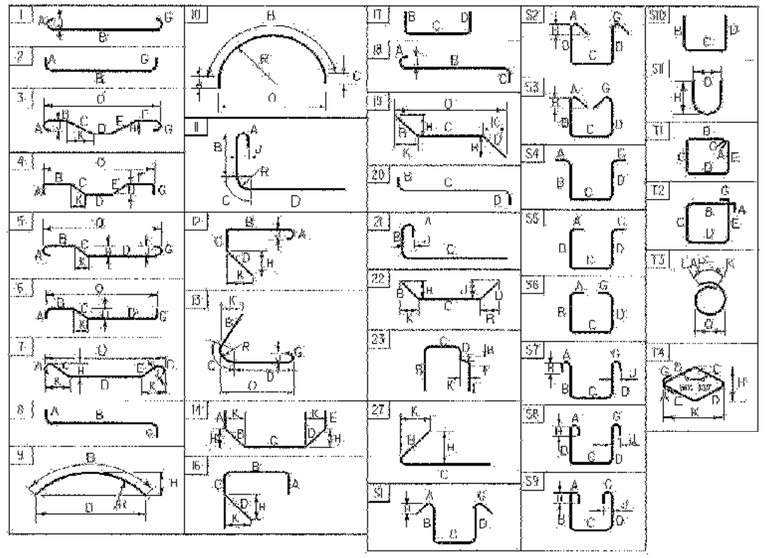
# REINFORCING STEEL SCHEDULE

| ITEM | EACH | SIZE | LENGTH | MARK | TYPE | A | B | C | D | E | F | G | R | J | K | R | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **ABUTMENT #2** | | | | | | | | | | | | | | | | |
| | 38 | 5 | 20'- 4" | 2A501 | STR | | | | | | | | | | | | |
| | 41 | 5 | 4'- 11" | 2A502 | STR | | | | | | | | | | | | |
| ▲ | 33 | 5 | 19'- 1" | 2A503 | STR | | | | | | | | | | | | |
| 62 | ~~46~~ | 5 | 20'- 0" | 2A504 | STR | | | | | | | | | | | | |
| | 38 | 5 | 11'- 11" | 2A505 | STR | | | | | | | | | | | | |
| | 4 | 5 | 21'- 9" | 2A506 | STR | | | | | | | | | | | | |
| * | 17 | 8 | 3'- 6" | 2A801 | STR | | | | | | | | | | | | |
| | 72 | 8 | 11'- 0" | 2A802 | STR | | | | | | | | | | | | |
| * | 19 | 8 | 4'- 3" | 2EA803 | STR | | | | | | | | | | | | |
| * | 38 | 7 | 7'- 6" | 2A701 | STR | | | | | | | | | | | | |
| ▲ | 49 | 5 | 4'- 8" | 2A507 | 22 | | 2'- 4" | 2'- 4" | | | | | 1'- 9" | | 1'- 8" | | |
| | 40 | 5 | 15'- 0" | 2A508 | 22 | | 2'- 2" | 10'- 8" | 2'- 2" | | | | 0'- 11" | | 2'- 0" | | |
| | 4 | 5 | 5'- 10" | 2A508 | 22 | 2'- 2" | 1'- 6" | 2'- 2" | | | | | | | | | |
| | 34 | 5 | 8'- 9" | 2A510 | 16 | 2'- 2" | 2'- 7" | 1'- 2" | 2'- 10" | | | | | | | | |
| | 18 | 8 | 6'- 3" | 2EA804 | 22 | | 2'- 6" | 3'- 9" | | | | | | | | | |
| | 43 | 8 | 9'- 5" | 2A901 | 17 | | 1'- 6" | 7'- 11" | --- | | | | | | | | |
| | 38 | 9 | 15'- 4" | 2A902 | 17 | | 4'- 7" | 10'- 8" | --- | | | | | | | | |
| | **WINGWALL #3** | | | | | | | | | | | | | | | | |
| * | 21 | 5 | 16'- 3" | 3W501 | STR | | | | | | | | | | | | |
| | 14 | 5 | 4'- 11" | 3W502 | STR | | | | | | | | | | | | |
| ▲ | 14 | 5 | 21'- 9" | 3W503 | STR | | | | | | | | | | | | |
| ▲ | 14 | 5 | 12'- 2" | 3W504 | STR | | | | | | | | | | | | |
| ▲ | 44 | 5 | 13'- 6" | 3W505 | STR | | | | | | | | | | | | |
| * | 15 | 7 | 7'- 6" | 3W701 | STR | | | | | | | | | | | | |
| | 7 | 8 | 3'- 8" | 3W801 | STR | | | | | | | | | | | | |
| | 28 | 9 | 11'- 3" | 3W901 | STR | | | | | | | | | | | | |
| | 14 | 5 | 5'- 11" | 3W506 | S10 | | 2'- 2" | 1'- 7" | 2'- 2" | | | | | | | | |
| | 2 | 5 | 26'- 8" | 3W507 | 19 | | 2'- 8" | 24'- 0" | --- | | | | 0'- 11" | | 2'- 6" | | |
| * | 14 | 9 | 9'- 3" | 3W902 | 17 | | 1'- 6" | 7'- 9" | --- | | | | | | | | |
| | 14 | 9 | 14'- 7" | 3W903 | 17 | | 4'- 1" | 10'- 6" | --- | | | | | | | | |
| | **WINGWALL #4** | | | | | | | | | | | | | | | | |
| ▲ | 14 | 5 | 30'- 0" | 4W501 | STR | | | | | | | | | | | | |
| * | 27 | 5 | 3'- 11" | 4W502 | STR | | | | | | | | | | | | |
| ▲ | 26 | 5 | 21'- 9" | 4W503 | STR | | | | | | | | | | | | |
| ▲ | 20 | 5 | 12'- 2" | 4W504 | STR | | | | | | | | | | | | |
| ▲ | 36 | 5 | 25'- 5" | 4W505 | STR | | | | | | | | | | | | |
| * | 13 | 8 | 3'- 5" | 4W801 | STR | | | | | | | | | | | | |
| | 9 | | | | | | | | | | | | | | | | |
| | 50 | 8 | 11'- 0" | 4W901 | STR | | | | | | | | | | | | |
| | 28 | 5 | 5'- 11" | 4W506 | S10 | | 2'- 2" | 1'- 7" | 2'- 2" | | | | | | | | |
| | 2 | 5 | 26'- 1" | 4W507 | 22 | | 2'- 0" | 24'- 1" | --- | | | | 0'- 10" | | 1'- 10" | | |
| | 9 | 5 | 10'- 0" | 4W508 | 18 | | 2'- 2" | 5'- 8" | 2'- 2" | | | | | | | | |
| | 9 | 5 | 8'- 4" | 4W509 | 20 | | 2'- 2" | 4'- 0" | 2'- 2" | | | | | | | | |
| | 8 | 9 | 9'- 3" | 4W902 | 17 | | 1'- 6" | 7'- 9" | --- | | | | | | | | |
| * | 27 | 9 | 14'- 7" | 4W903 | 17 | | 4'- 1" | 10'- 6" | --- | | | | | | | | |
| | 24 | 7 | 7'-6" | 4W701 | | | | | | | | | | | | | |

| ITEM | EACH | SIZE | LENGTH | MARK | TYPE | A | B | C | D | E | F | G | R | J | K | R | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **PIER #1** | | | | | | | | | | | | | | | | |
| △ | 37 | 5 | 11'- 0" | 1P501 | STR | | | | | | | | | | | | |
| | 38 | 5 | 20'- 6" | 1P502 | STR | | | | | | | | | | | | |
| * | 25 | 6 | 33'- 1" | 1P601 | STR | | | | | | | | | | | | |
| ▲ | 12 | 6 | 33'- 1" | 1P602 | STR | | | | | | | | | | | | |
| △ | 10 | 7 | 33'- 1" | 1P701 | STR | | | | | | | | | | | | |
| * ▲ | 34 | 8 | 6'- 6" | 1P801 | STR | | | | | | | | | | | | |
| * | 19 | 8 | 6'- 9" | 1EP802 | STR | | | | | | | | | | | | |
| | 58 | 9 | 25'- 0" | 1P901 | STR | | | | | | | | | | | | |
| | 190 | 5 | 10'- 10" | 1P503 | T1 | 0'- 6" | 2'- 1" | 2'- 10" | 2'- 1" | 2'- 10" | | | 0'- 6" | | | | |
| | 76 | 5 | 6'- 6" | 1P504 | S11 | | | | | | | | | | | | |
| | 98 | 5 | 12'- 0" | 1P505 | S10 | | 4'- 2" | 3'- 8" | 4'- 2" | | | | | | | | |
| * | 15 | 8 | 18'- 2" | 1P603 | ~~22~~ 3 | | 6'- 8" | 11'- 6" | --- | | | | | | | | |
| * ▲ | 59 | 9 | 15'- 4" | 1P902 | 17 | | 6'- 11" | 8'- 6" | --- | | | | | | | | |
| | **PIER #2** | | | | | | | | | | | | | | | | |
| △ | 37 | 5 | 11'- 0" | 2P501 | STR | | | | | | | | | | | | |
| | 18 | 5 | 20'- 6" | 2P502 | STR | | | | | | | | | | | | |
| | 70 | 5 | 4'- 6" | 2P503 | STR | | | | | | | | | | | | |
| | 12 | 5 | 32'- 11" | 2P504 | STR | | | | | | | | | | | | |
| | 24 | 6 | 33'- 1" | 2P601 | STR | | | | | | | | | | | | |
| * ▲ | 13 | 6 | 32'- 11" | 2P602 | STR | | | | | | | | | | | | |
| △ | 9 | 7 | 32'- 11" | 2P701 | STR | | | | | | | | | | | | |
| △ | 36 | 8 | 3'- 6" | 2P801 | STR | | | | | | | | | | | | |
| | 58 | 8 | 19'- 10" | 2P802 | STR | | | | | | | | | | | | |
| | 18 | 8 | 4'- 6" | 2EP803 | 19 | | 1'- 6" | 3'- 0" | --- | | | | | | | | |
| | 90 | 5 | 11'- 10" | 2P505 | T1 | 0'- 6" | 2'- 1" | 3'- 10" | 2'- 1" | 2'- 10" | | | 0'- 6" | | | | |
| | 36 | 5 | 6'- 6" | 2P506 | S11 | | | | | | | | | | | | |
| | 98 | 5 | 12'- 0" | 2P507 | 17 | | 4'- 2" | 3'- 8" | 4'- 2" | | | | | | | | |
| * | 15 | 8 | 18'- 2" | 2P603 | 22 | | 6'- 8" | 11'- 6" | --- | | | | | | | | |
| △ ▲ | 60 | 9 | 15'- 5" | 2P901 | 17 | | 6'- 11" | 8'- 8" | --- | | | | | | | | |
| | 35 | 5 | 8'-6" | 2P508 | 17 | | 4'-0" | 0'-6" | 4'-0" | | | | | | | | |
| | 35 | 5 | 5'-8½" | 2P509 | 17 | | 2'-8½" | 1'-6" | 1'-6" | | | | | | | | |

## ~ NOTES ~

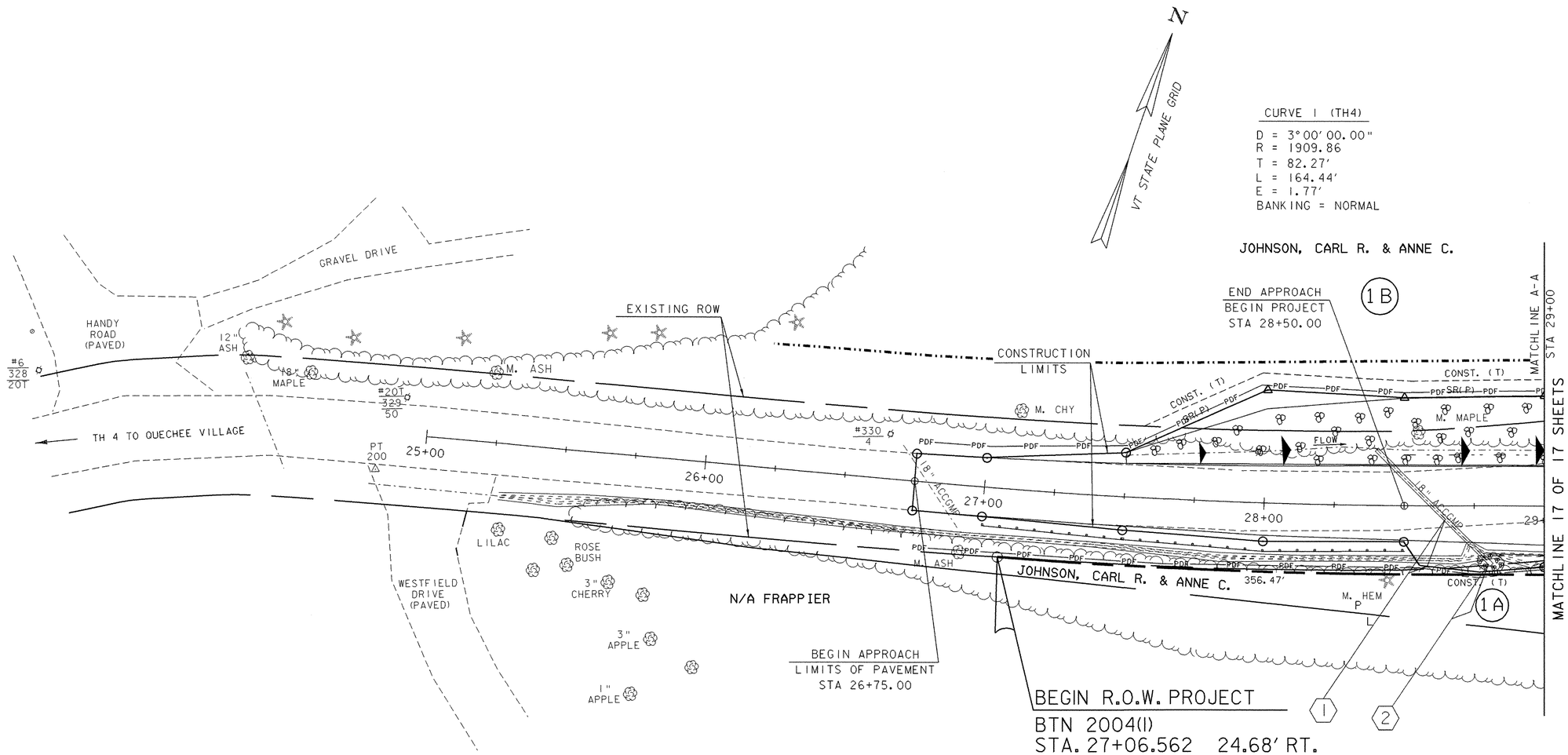
1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-91). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
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 DESIGNATION | WEIGHT POUNDS PER FOOT | NOMINAL DIMENSIONS ROUND SECTION DIAMETER INCHES | AREA INCHES ² | PERIMETER INCHES |
|---|---|---|---|---|
| #3 | 0.376 | 0.375 | 0.11 | 1.178 |
| #4 | 0.668 | 0.500 | 0.20 | 1.571 |
| #5 | 1.043 | 0.625 | 0.31 | 1.963 |
| #6 | 1.502 | 0.750 | 0.44 | 2.356 |
| #7 | 2.044 | 0.875 | 0.60 | 2.749 |
| #8 | 2.670 | 1.000 | 0.79 | 3.142 |
| #9 | 3.400 | 1.128 | 1.00 | 3.544 |
| #10 | 4.303 | 1.270 | 1.27 | 3.990 |
| #11 | 5.313 | 1.410 | 1.56 | 4.430 |
| #14 | 7.65 | 1.693 | 2.25 | 5.32 |
| #18 | 13.60 | 2.257 | 4.00 | 7.09 |

| | |
|---|---|
| PROJECT NAME: | HARTFORD |
| PROJECT NUMBER: | BRO-BTN 2004 (1) |
| FILE NAME: s89j045reinf.xls | PLOT DATE: 10/02/2003 |
| PROJECT MANAGER: C.P. WILLIAMS | DRAWN BY: M. LONGSTREET |
| DESIGNED BY: K.M. HIGGINS | CHECKED BY: K.M. HIGGINS |
| REINFORCING STEEL SCHEDULE SHEET #2 | SHEET 61 OF 97 |




SEE SHEET 22-23 FOR DRAINAGE INFORMATION

| LEGEND | |
|---|---|
| -·-·-·-·- | FILTER CURTAIN |
| ——— | SILT FENCE |
| | SAND BAGS |
| ▶ ▶ ▶ | STONE CHECK DAMS |
| -·-·-·-·- | SOIL BOUNDARY |
| P / L | PROPERTY LINE |
| —PDF— | PROJECT DEMARCATION FENCE |

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

# R. O. W.
# LAYOUT SHEET 1

SCALE 1" = 20'-0

20 0 20

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
|---|---|
| DESIGN FILE NAME: 89j045/structures/sj045bdr.dgn | |
| IPARM FILE NAME: sj045lal.i | PLOT DATE: 11-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: K.M. HIGGINS |
| LAYOUT SHEET 1 R.O.W. SHEET 16 OF 17 | SHEET 62 OF 97 |

MATCHLINE 16 OF 17 SHEETS

MATCH LINE A-A STA 29+00

REMOVAL & DISPOSAL OF GUARD RAIL
ML STA 31+70.00 - 31+83.00 LT
TH5 STA 5+64.00 - 6+43.00 RT
ML STA 34+11.00 - 34+34.00 LT

ALUMINUM BRIDGE RAILING-ANODIZED BLACK
ML Sta 31+65.25 LT - Sta 34+09.75 LT
ML Sta 31+66.25 RT - Sta 34+09.75 RT

ALUMINUM APPROACH RAILING-ANODIZED BLACK
TH5 Sta 5+46.20 RT - ML Sta 31+65.23 LT
ML Sta 31+41.30 RT - ML Sta 31+66.25 RT
ML Sta 34+09.75 LT - ML Sta 34+34.20 LT
ML Sta 34+09.75 RT - ML Sta 34+33.30 RT

HEAVY DUTY STEEL BEAM GUARDRAIL
TH5 Sta 5+46.20 RT - TH5 Sta 6+34.00 RT
ML Sta 31+41.30 RT - DRIVE Sta 11+09.00 LT
ML Sta 34+34.50 LT - VT14 Sta 209+27.50 LT
ML Sta 34+33.30 RT - VT14 Sta 207+62.00 LT

ANCHOR FOR STEAL BEAM GUARDRAIL
TH5 Sta 6+22.00 RT
DRIVE Sta 10+98.00 LT
VT14 Sta 207+75.00 LT
VT14 Sta 209+18.00 LT

ANCHOR FOR CABLE DRAIL
Sta 6+30.00 RT (APPROXIMATE)

CONSTRUCTION LIMITS

PROPOSED SEDIMENT DEWATERING LOCATION (CONTRACTOR TO PROVIDE DETAILS AND METHODOLOGY WITH COFFERDAM DESIGN, SEE EROSION AND SEDIMENT CONTROL NOTES 9 & 10)

CURVE 2 (TH5)
D = 17°00'00.00"
R = 337.03
T = 41.68
L = 82.94
E = 2.57
BANKING = TRANSITION TO EXISTING

END APPROACH
LIMITS OF PAVEMENT
STA 6+50.00

CHANNEL POE
Sta 54+00.00

END APPROACH
STA 209+75.00
LIMITS OF PAVEMENT

MATCHLINE C-C
STA 210+00

GUIDE POST

EXISTING ROW

TOWN OF HARTFORD

END PROJECT
BEGIN APPROACH
STA 34+50.00

GOFBERG, LAWRENCE H. & GERDA

END PROJECT
BEGIN APPROACH
STA 5+75.00

BENCHMARK #1
CHISLED SQUARE
ELEV = 400.668

BENCHMARK #2
CHISELED SQUARE
ELEV = 399.51

TH 5 POMFRET ROAD TO POMFRET (PAVED)

1½ SWF HOUSE

GRAVEL DRIVE

EXISTING 12" CGMPP

CAREX GARBERI (SEE NOTES)

℄ BRG. PIER #2
Sta 33+63.00
FG = 400.59

℄ PIER #2
Sta 33+64.17

TEMPORARY CONSTRUCTION LIMITS

EXISTING DRAINAGE

TH 4 TO QUECHEE

CONCRETE ROAD BLOCK

1½ STRY BARN

℄ BRG. PIER #1
Sta 32+13.00
FG = 403.88

℄ PIER #1
Sta 32+11.83

BEGIN BRIDGE
Sta 31+66.00
FG = 404.91

END BRIDGE
Sta 34+10.00
FG = 398.36

CONSTRUCTION LIMITS

END R.O.W. PROJECT
BTN 2004(I)
STA. 32+12.382 27.11' LT.

WHITE RIVER FLOW

CHANNEL POB
Sta 50+00.00

CHANNEL LINE

VT 14 TO SHARON

VT 14 TO HARTFORD VILLAGE

GRANITE PAD & MONUMENT

WEST HARTFORD LIBRARY

SHRUBS FLAG POLE

BOUNDARY MARKER 3½"x3½"

CURVE 3 (DRIVE)
D = 57°00'
R = 100.52'
T = 17.44'
L = 34.53'
E = 1.50'
BANKING = NORMAL

JOHNSON, CARL R. & ANNE C.
CONSTRUCT DRIVE
TH4 STA 30+09.00 LT - 12' FIELD DRIVE W/5' PAVED APRON
TH4 STA 31+20 RT SEE SHEET 17 FOR DETAILS
TH5 STA 5+89.00 LT - 24' WIDE W/5' PAVED APRON

SEE SHEET 22-23 FOR DRAINAGE INFORMATION
SEE SHEET 24 TRAFFIC SIGNS AND PAVEMENT MARKINGS

REMOVAL OF STRUCTURE (MOD)
(RELOCATE BARN)
STA 31+50.00

CURVE 4 (DRIVE)
D = 38°00'
R = 150.78'
T = 20.48'
L = 40.70'
E = 1.38'
BANKING = NORMAL

CURVE 5 (VT 14)
D = 0°-45'-00"
R = 7639.44'
T = 328.30'
L = 656.21'
E = 7.05'
BANKING = EXISTING

TOWN OF HARTFORD
BEGIN APPROACH
STA 207+25.00
LIMITS OF PAVEMENT
MATCHLINE B-B
STA 207+00

LEGEND
FILTER CURTAIN
SILT FENCE
SAND BAGS
STONE CHECK DAMS
SOIL BOUNDARY
P/L PROPERTY LINE
PDF PROJECT DEMARCATION FENCE

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

EXISTING BRIDGE DATA:
216 ' STEEL TRUSS
20' CURB TO CURB
14'-11" VERTICAL CLEARANCE
BUILT IN 1928

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

# R. O. W. LAYOUT SHEET 2

SCALE 1" = 20'-0
20 0 20

| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
|---|---|
| DESIGN FILE NAME: 89J045/structures/sj045bdr.dgn | |
| IPARM FILE NAME: sj045la2.i | PLOT DATE: 11-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: K.M. HIGGINS |
| LAYOUT SHEET 2 | R.O.W. SHEET 17 OF 17 SHEET 63 OF 97 |

# STATE OF VERMONT
# AGENCY OF TRANSPORTATION
# RIGHT OF WAY PLANS
# DETAIL SHEET

## TABLE OF PROJECT PROPERTY ACQUISITION

| PARCEL NO. | GRANTOR | SHEET NO. | BEGINNING STATION | ENDING STATION | TAKING | REM. | RIGHTS | TITLE TAKEN | DATE | TOWN OR CITY RECORDED | BK. | PG. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1A | JOHNSON, CARL R. & ANNE C. | 16,17 | 27+06.562 RT. | 30+60.776 RT. | 0.07A± | | | WDOE | 01-29-04 | HARTFORD | 368 | 628-631 | 3038 S.F.± |
| | | | 28+67.673 RT. | 28+86.838 RT. | | | CONST. (T) 12 S.F.± | | | | | | INCLUDES EROSION CONTROL |
| | | | 29+11.548 RT. | 30+62.915 RT. | | | CONST. (T) 866 S.F.± | | | | | | INCLUDES EROSION CONTROL |
| | | | 29+35.746 RT. | 30+62.137 RT. | | | DITCH (P) 481 S.F.± | | | | | | |
| | | | 29+63.436 RT. | | | | DRAINAGE (P) | | | | | | |
| | | | 30+77.821 RT. | 30+97.267 RT. | | | DIT.& DR. (P) 116 S.F.± | | | | | | |
| | | | 30+97.788 RT. | 31+61.521 RT. | | | CULVERT & DRAINAGE (P) | | | | | | |
| | | | 31+25.000 RT. | | | | DRIVE (T) | | | | | | 14' GRAVEL DRIVE |
| | | | 30+71.803 RT. | 31+26.485 RT. | | | INSTALL (T) 525 S.F.± | | | | | | EROSION CONTROL |
| | | | 31+31.501 RT. | 31+45.973 RT. | | | INSTALL & MAINTAIN (P) | | | | | | GUARDRAIL |
| | | | 31+34.734 RT. | 31+63.711 RT. | | | CHANNEL (P) 1,004 S.F.± | | | | | | |
| | | | 31+49.390 RT. | 31+69.099 RT. | | | INSTALL (T) 438 S.F.± | | | | | | EROSION CONTROL DEVICE |
| | | | 31+22.281 RT. | 31+47.663 RT. | | | REMOVE (T) | | | | | | CULVERT & WOOD WALLS |
| 1B | | | 27+55.772 LT. | 29+30.423 LT. | | | CONST. (T) 944 S.F.± | | | | | | INCLUDES EROSION CONTROL |
| | | | 27+69.831 LT. | 29+27.996 LT. | | | SLOPE (P) 1,522 S.F.± | | | | | | |
| | | | 29+79.674 LT. | 29+98.878 LT. | | | CONST. (T) 31 S.F.± | | | | | | INCLUDES EROSION CONTROL |
| | | | 29+84.380 LT. | 30+58.194 LT. | | | SLOPE (T) 310 S.F.± | | | | | | |
| | | | 30+09.000 LT. | | | | | | | | | | 12' GRAVEL DRIVE |
| | | | 30+10.134 LT. | 30+58.172 LT. | | | CONST. (T) 99 S.F.± | | | | | | INCL. EROSION CONTROL |
| 2A | GOFBERG, LAWRENCE H. & GERDA | 17 | 30+58.428 LT. | 32+12.382 LT. | 0.27A± | | | | | HARTFORD | | | 11,637 S.F.± |
| | | | 31+45.158 RT. | 31+73.772 LT. | | | ALL R.T.& I. | | | | | | BARN |
| 2B | | | 30+58.163 LT. | 30+82.314 LT. | | | CONST. (T) 32 S.F.± | | | | | | INCLUDES EROSION CONTROL |
| | | | 30+58.154 LT. | 30+77.884 LT. | | | SLOPE (T) 40 S.F.± | | | | | | |
| | | | TH5 5+89.000 LT. | | | | DRIVE (T) | | | | | | 24' GRAVEL |
| 2C | | | 31+68.712 LT. | 31+87.695 LT. | | | CHANNEL (P) 274 S.F.± | | | | | | |
| | | | 31+68.644 LT. | 31+92.363 LT. | | | INSTALL (T) 137 S.F.± | | | | | | EROSION CONTROL |
| 3 | VERIZON NEW ENGLAND, INC. | | | | | | | | | | | | UTILITY |
| 4 | CENTRAL VERMONT PUBLIC SERVICE CORPORATION | | | | | | | | | | | | UTILITY |
| 5 | ADELPHIA CABLE COMMUNICATIONS | | | | | | | | | | | | UTILITY |

| REVISION NO. | SHEET | DESCRIPTION OF REVISION | DATE | MADE BY | APPROVED BY |
|---|---|---|---|---|---|
| 1 | 15,17 | PARCEL NO. 2 CHANGE SLOPE (P) STA. 30+58.154LT.-30+77.884LT. FROM (P) TO (T). ALSO, TITLE CHANGE FROM CONROY, FRANK L. & BARBARA D. TO GOFBERG, LAWRENCE H. & GERDA PER C.O. 9284 | 03-10-03 | P.J.H. | R.P.D. |
| 2 | 15,17 | PARCEL NO. 1 CHANGE SLOPE (P) STA. 29+84.38LT.-30+58.194LT. FROM (P) TO (T) PER C.O. 9285 | 03-10-03 | P.J.H. | R.P.D. |
| | | ELECTRONIC FILES TO STRUCTURES | 06-01-04 | | |

DR.(P)- DRAINAGE RIGHT
DIT.(P)- DITCHING RIGHT
CH.(P)- CHANNEL RT.
DRIVE (T)- DRIVE RIGHT
CUL.(P)- CULVERT RIGHT
W - WATER SOURCES

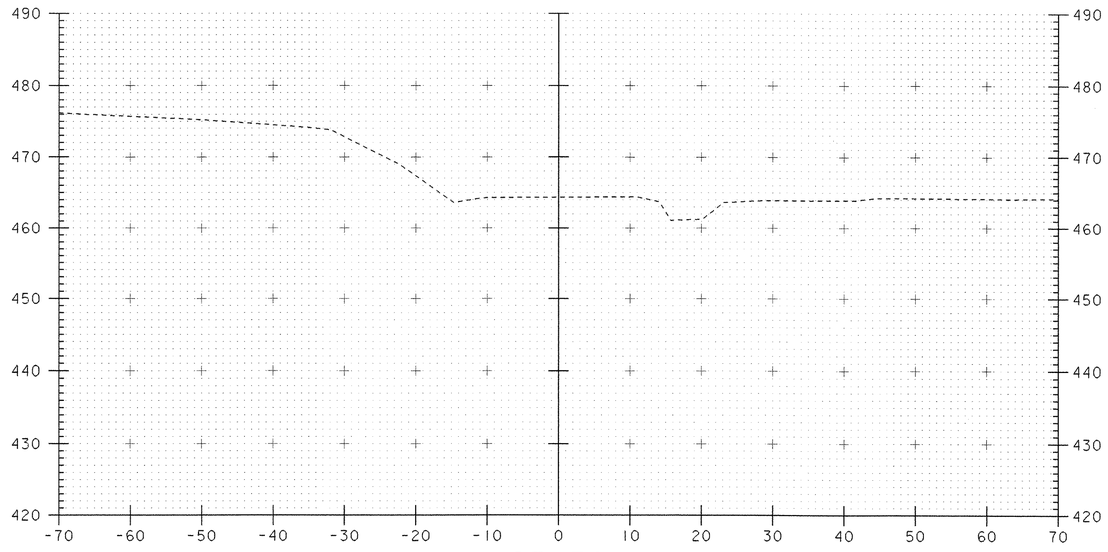
PRESENT R.O.W.
TAKING WITHOUT ACCESS
TAKING WITHOUT ACCESS ALONG PROPERTY LINE
TAKING WITH ACCESS
PERMANENT EASEMENT
TEMPORARY EASEMENT

LEGEND
C&T (P) CLEARING & TRIMMING
CZ (P) CLEAR ZONE
CONST.(T) CONSTRUCTION EASEMENT
SR SR SLOPE RIGHTS
P PROPERTY LINE
L
TOP OF CUT
TOE OF SLOPE

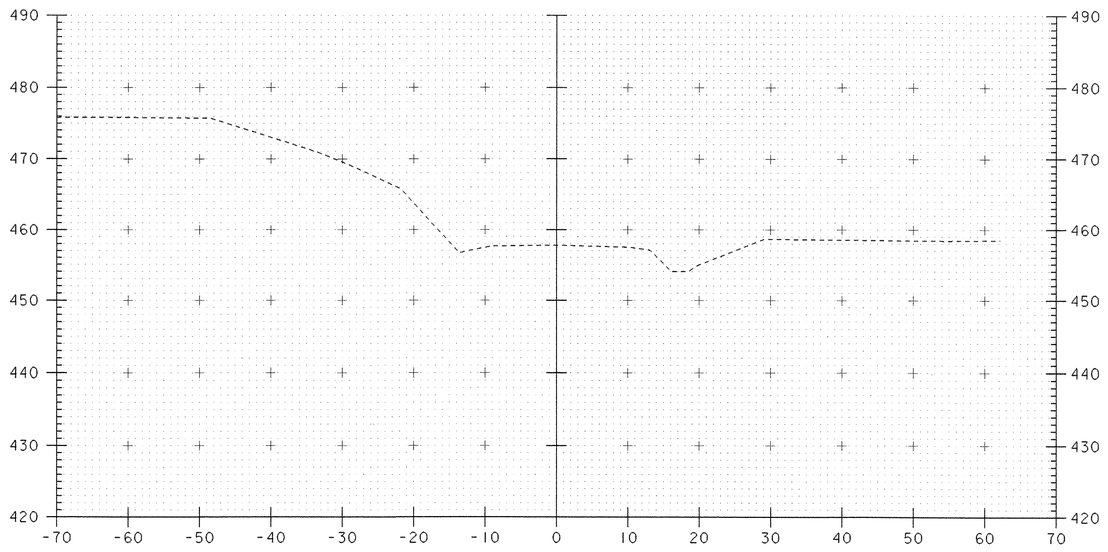
APPROVED: ROGER P. DUMAS DATE: 07-18-02
AGENT D. PLANS & TITLES

R.O.W. PLANS
HARTFORD
BTN 2004(1)
15 17
SHEET 64 OF 97

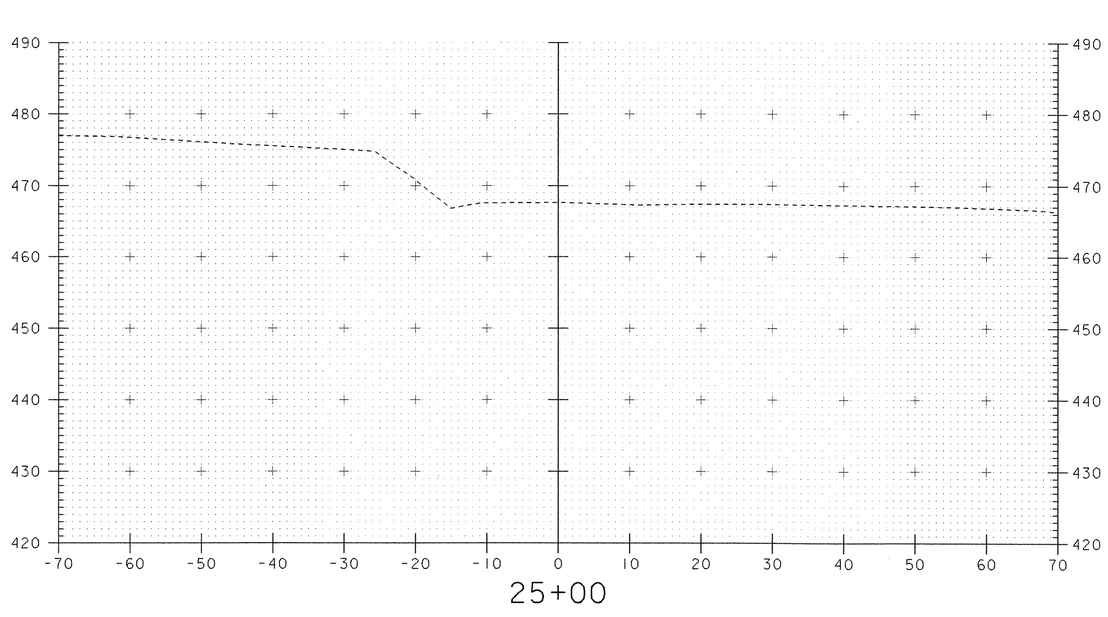
ACCT. mcassidy
IP_PWP:dms02019\rj045d.dgn
DATE PLOTTED 11-FEB-2005



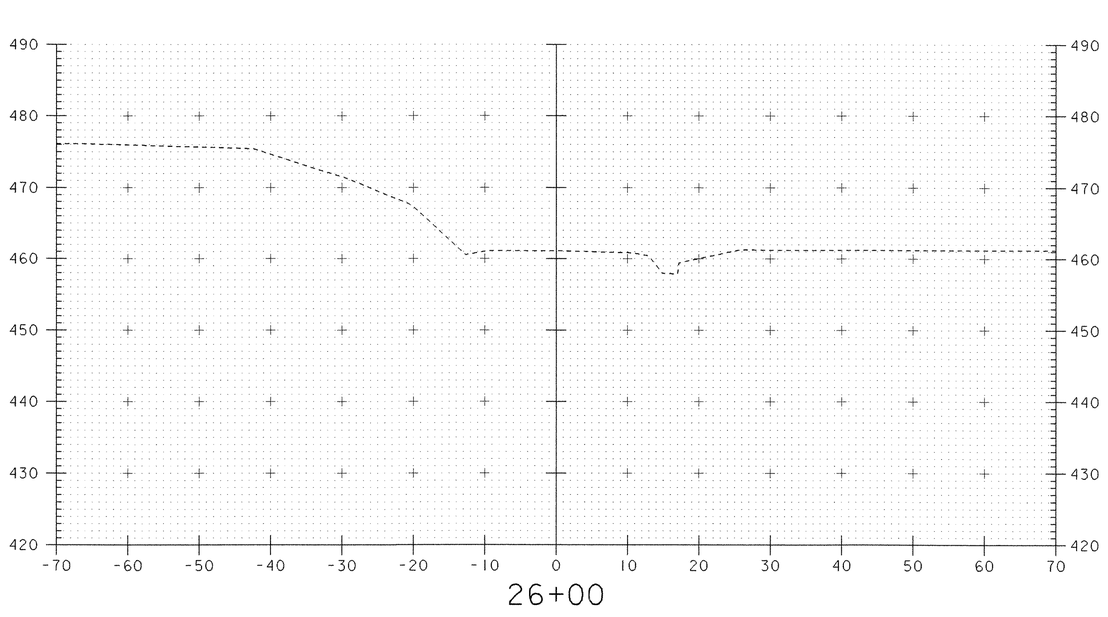

25+50




26+50



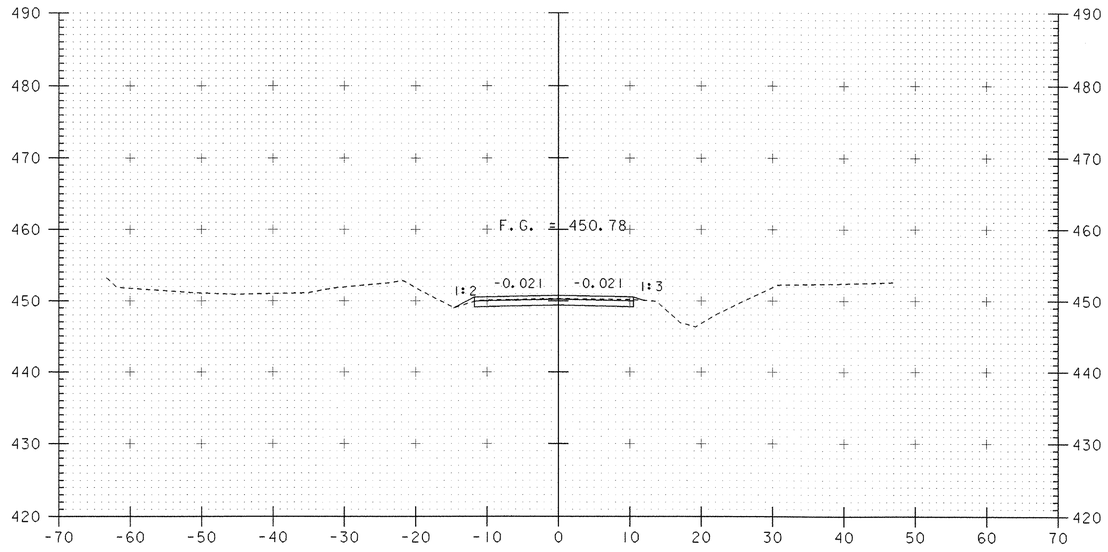

25+00



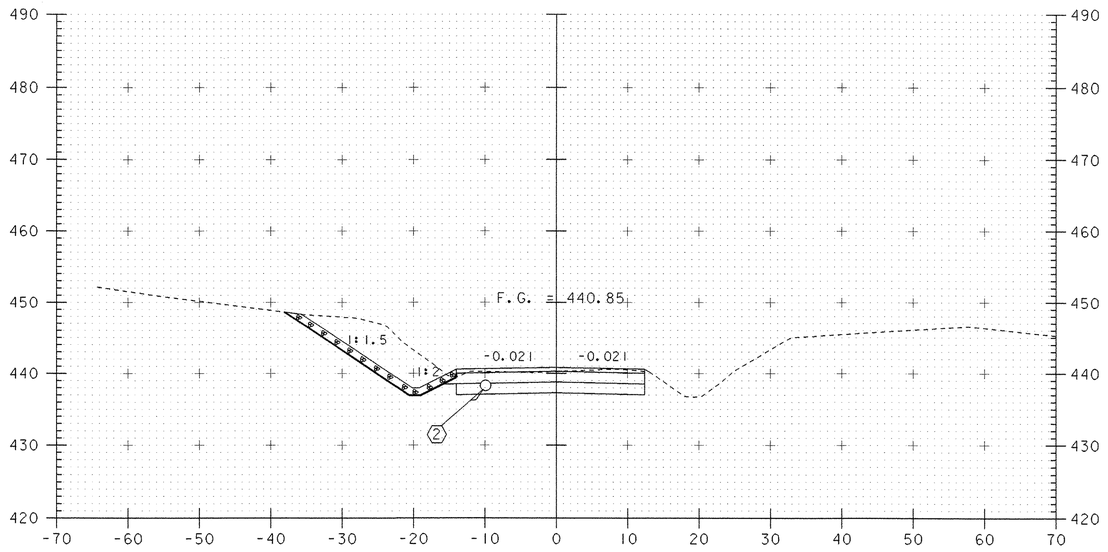

26+00

SCALE 1" = 10'-0
10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045mll.i | PLOT DATE: 11-FEB-2005 |
| TH 4 CROSS SECTIONS | |
| SECTION 25+00 THROUGH 26+50 | SHEET: 65 OF 97 |

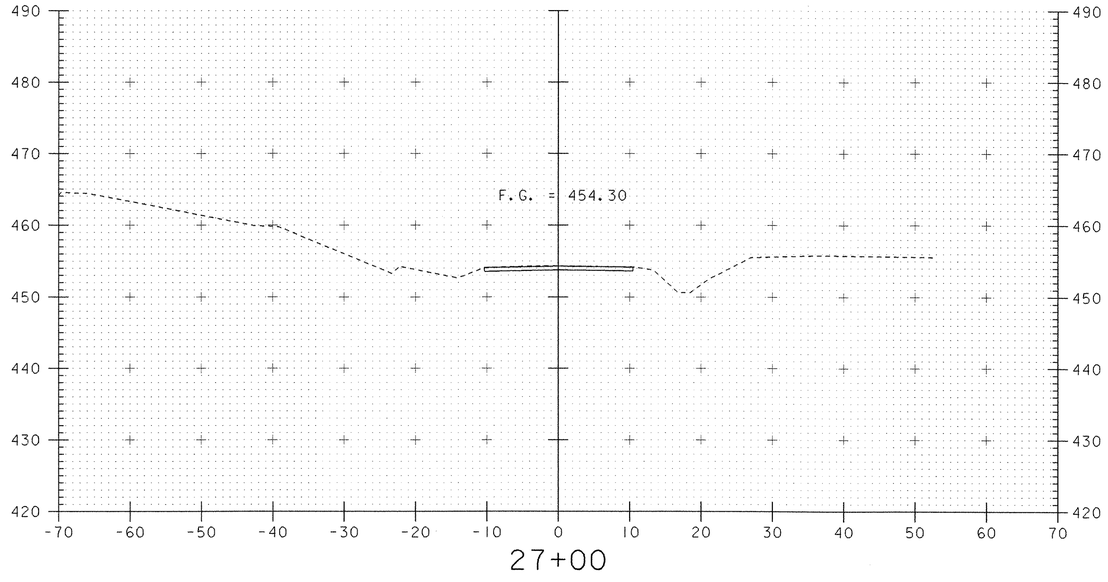



27+50



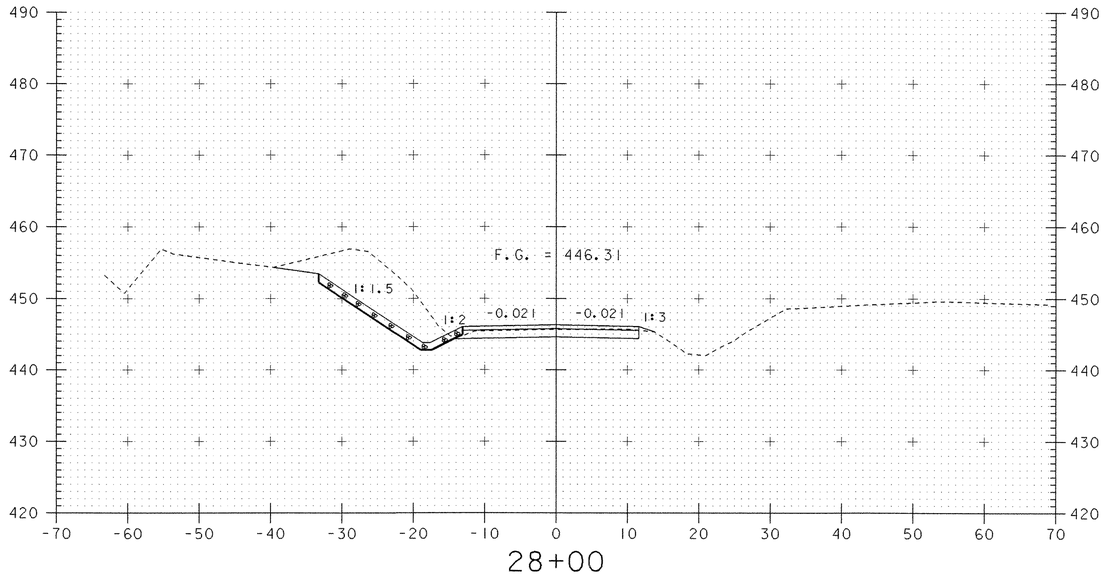

28+50

END APPROACH/BEGIN PROJECT
STA 28+50




27+00

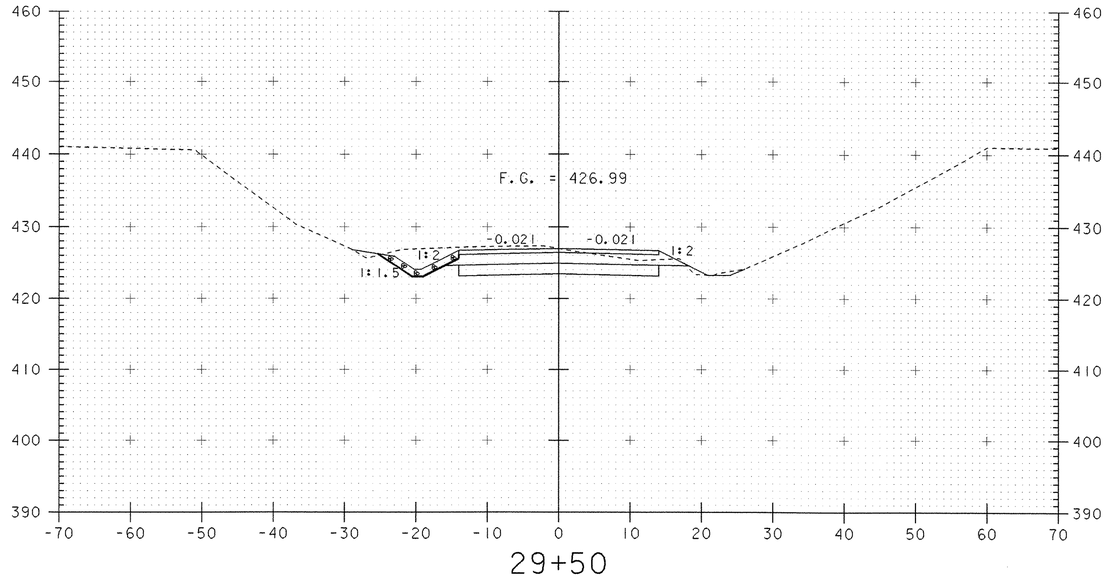
BEGIN APPROACH
STA 26+75.00



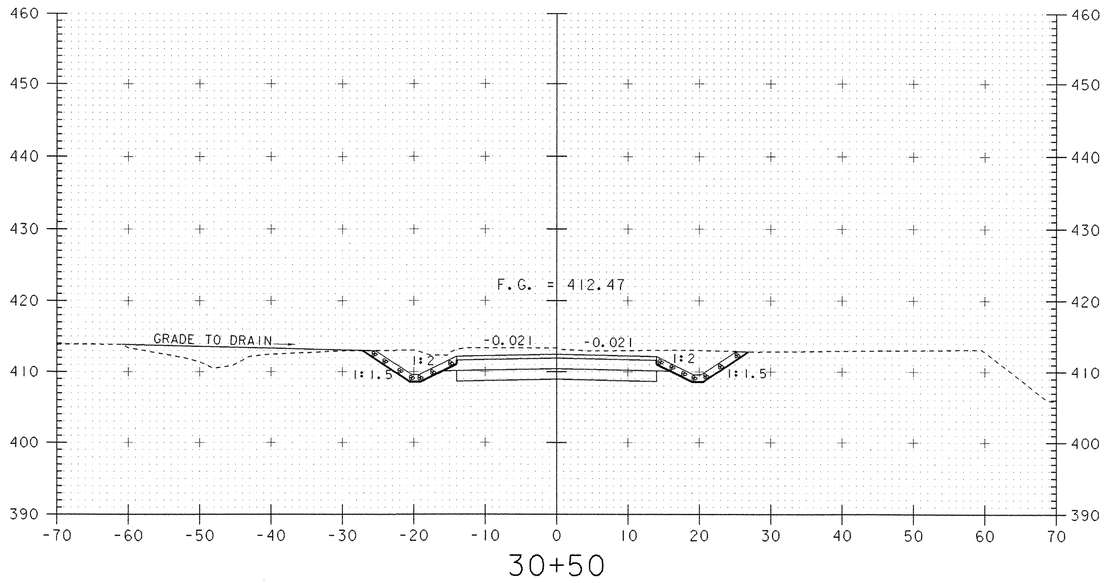

28+00

SCALE 1" = 10'-0
10 0 10

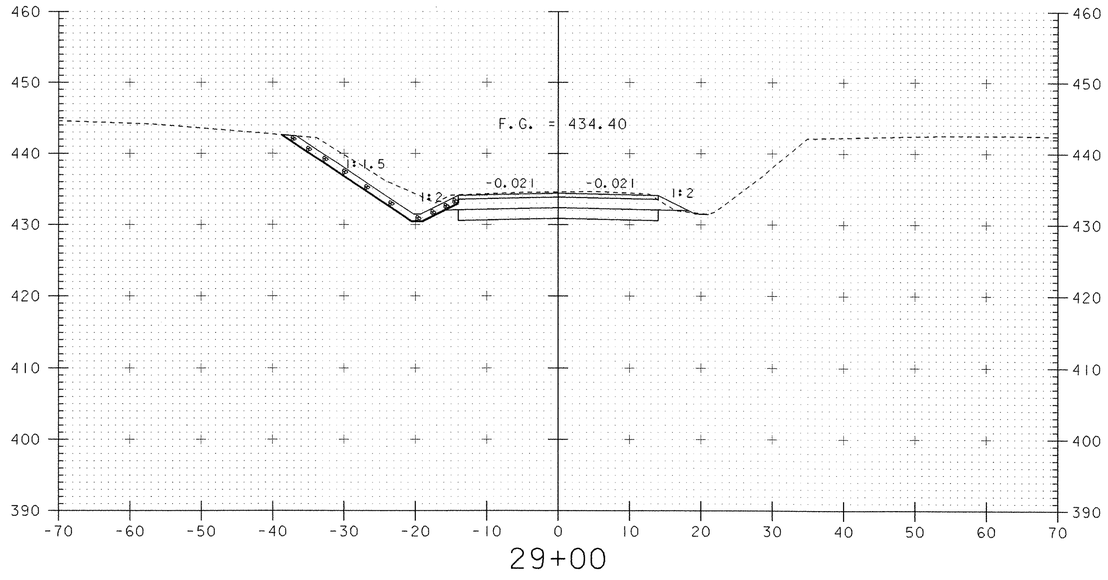
| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045ml2.i | PLOT DATE: 11-FEB-2005 |
| TH 4 CROSS SECTIONS | |
| SECTION 27+00 THROUGH 28+50 | SHEET: 66 OF 97 |



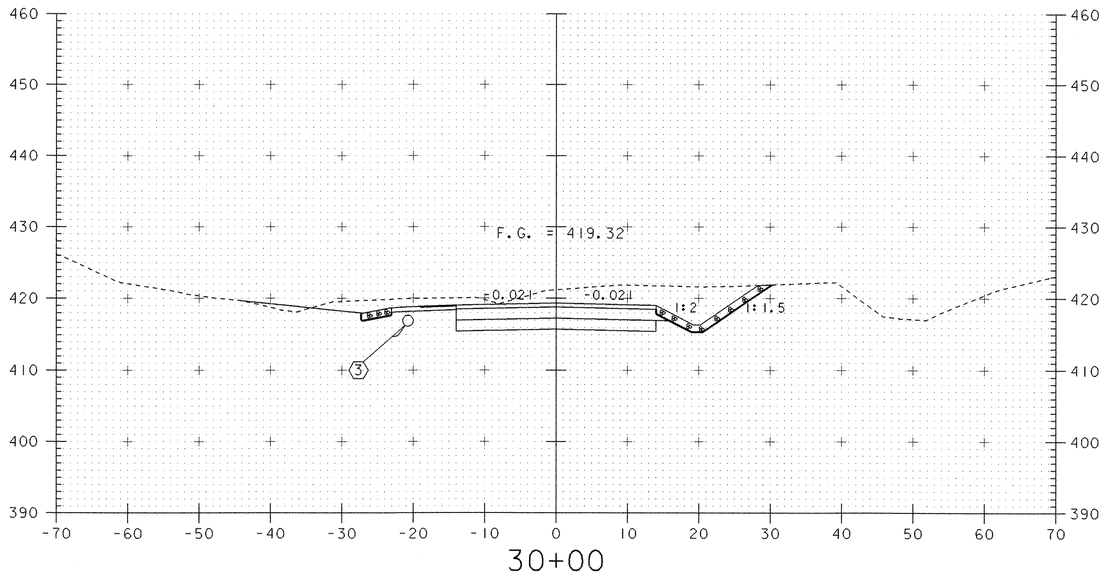

29+50




30+50




29+00

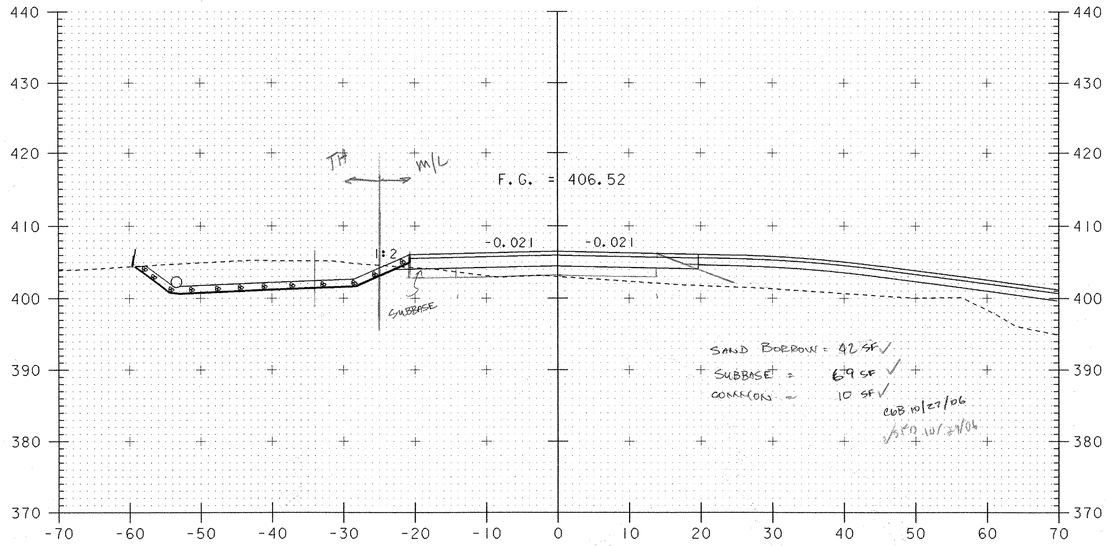



30+00

SCALE 1" = 10'-0

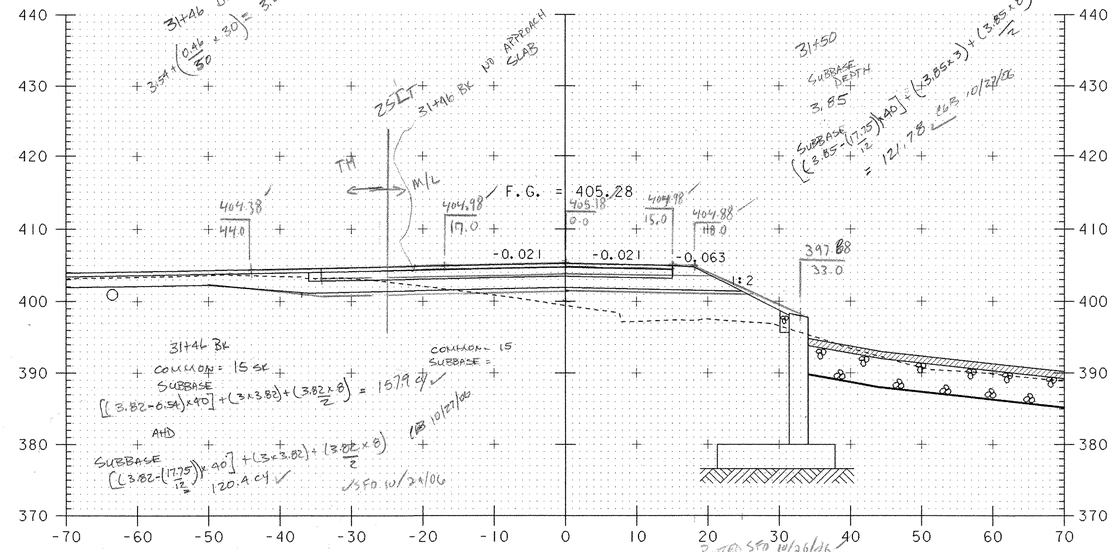
10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045ml3.i | PLOT DATE: 11-FEB-2005 |
| TH 4 CROSS SECTIONS | |
| SECTION 29+00 THROUGH 30+50 | SHEET: 67 OF 97 |



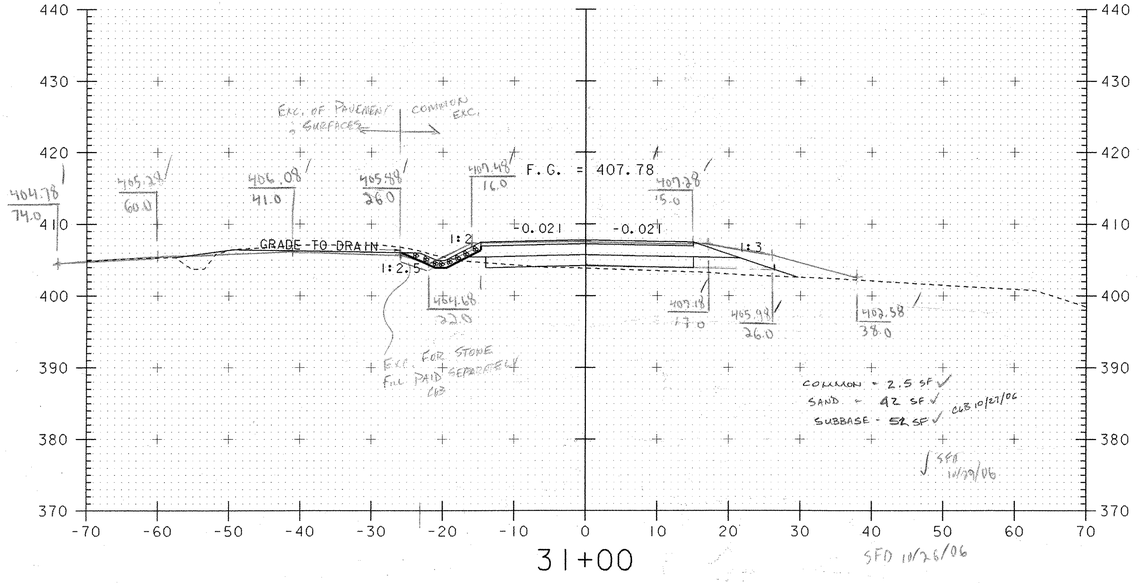

31+20

31+16 BEGIN SUBBASE & SAND TAPER



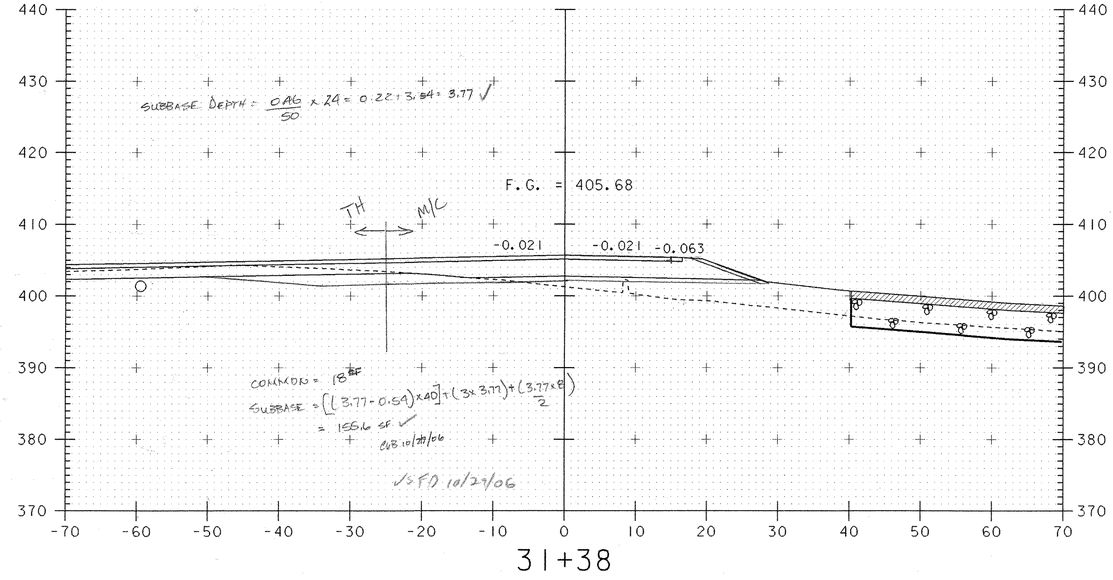

31+50

31+40 END SAND BORROW - SUBBASE = 3.23' DEPTH




31+00

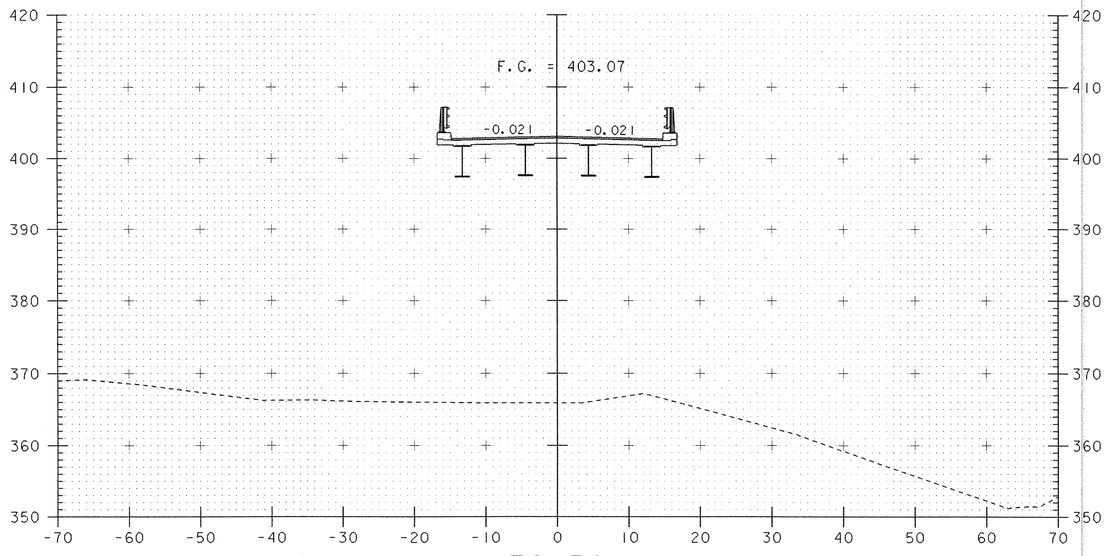
SFD 10/26/06



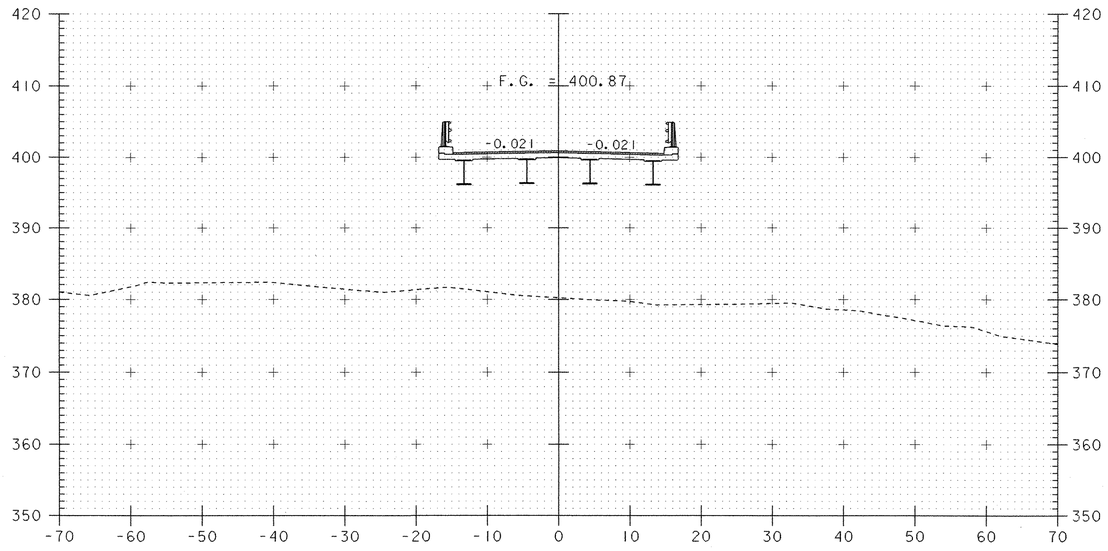

31+38

SCALE 1" = 10'-0

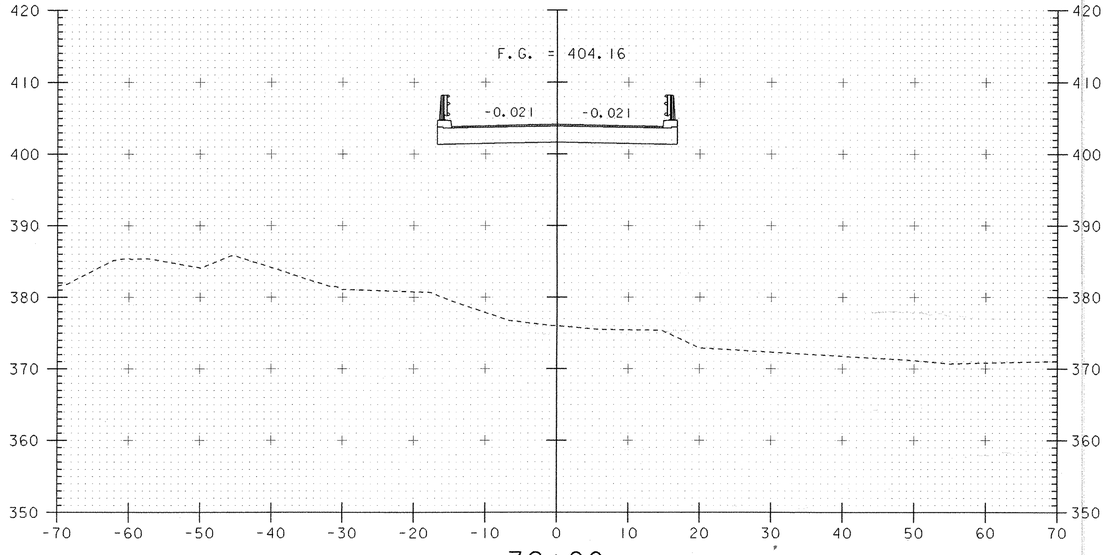
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
|---|---|
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045ml4.i | PLOT DATE: 11-FEB-2005 |
| TH 4 CROSS SECTIONS | |
| SECTION 31+00 THROUGH 31+50 | SHEET: 68 OF 97 |




32+50

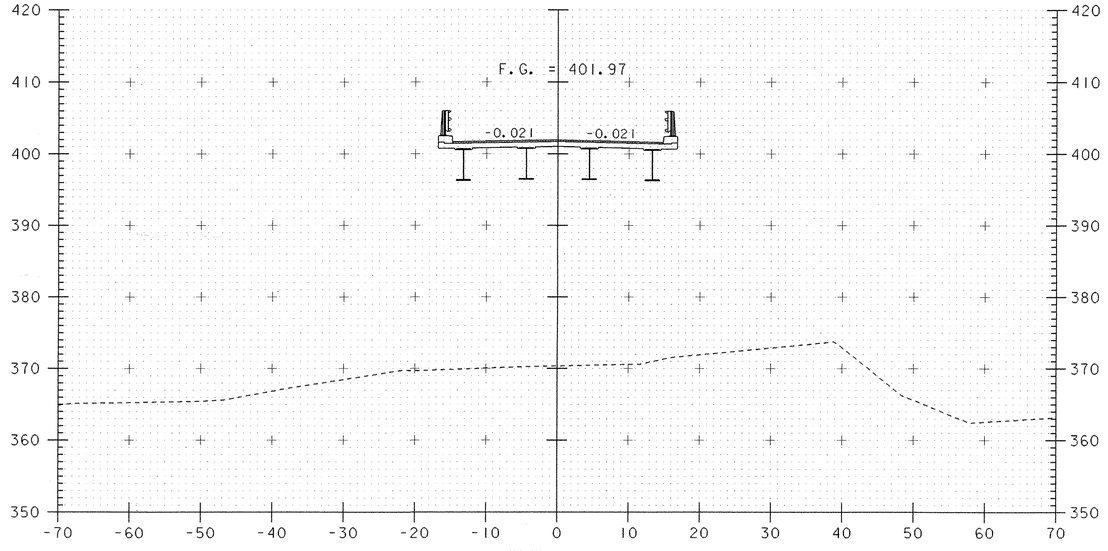



33+50




32+00

BEGIN BRIDGE
STA 31+66.00




33+00

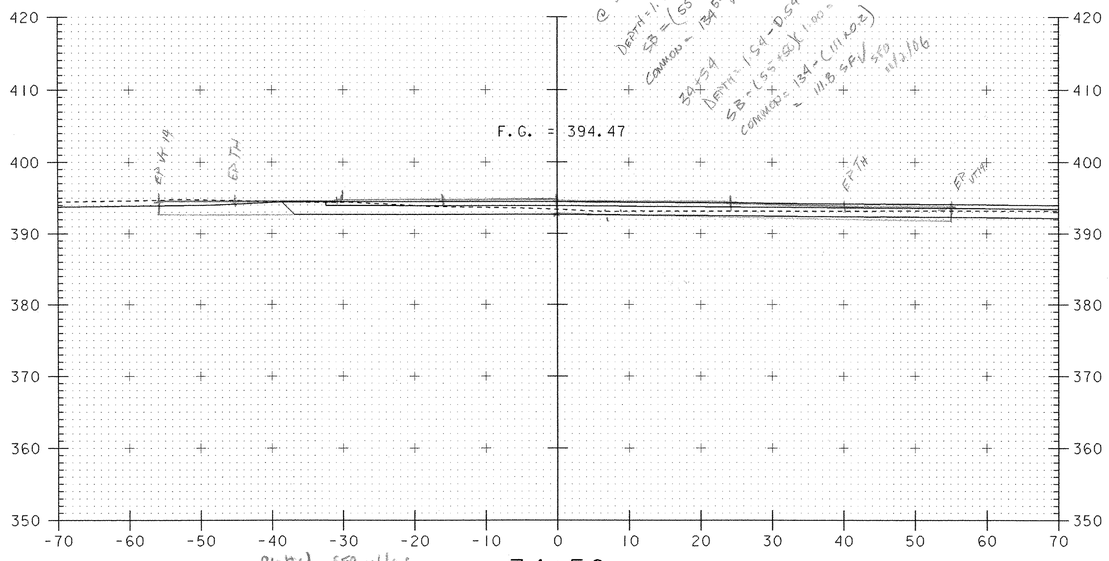
SCALE 1" = 10'-0
10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045ml5.i | PLOT DATE: 11-FEB-2005 |
| TH 4 CROSS SECTIONS | |
| SECTION 32+00 THROUGH 33+50 | SHEET: 69 OF 97 |

@ 34+50
Depth = 1.74 - 0.54 = 1.20
SB = (55+58)(1.20) = 133.2 SF
Common = 134 SF

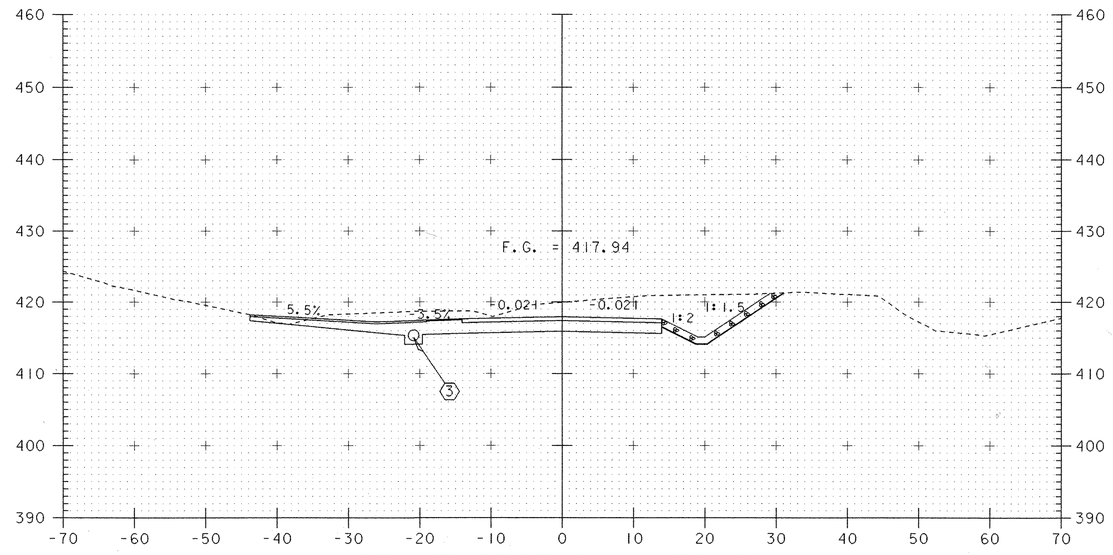
34+54
Depth = 1.54 - 0.54 = 1.00
SB = (55+58)(1.00) = 111 SF
Common = 134 - (111+0.2)
= 111.8 SF SFD 11/2/06

NB 11/02/06

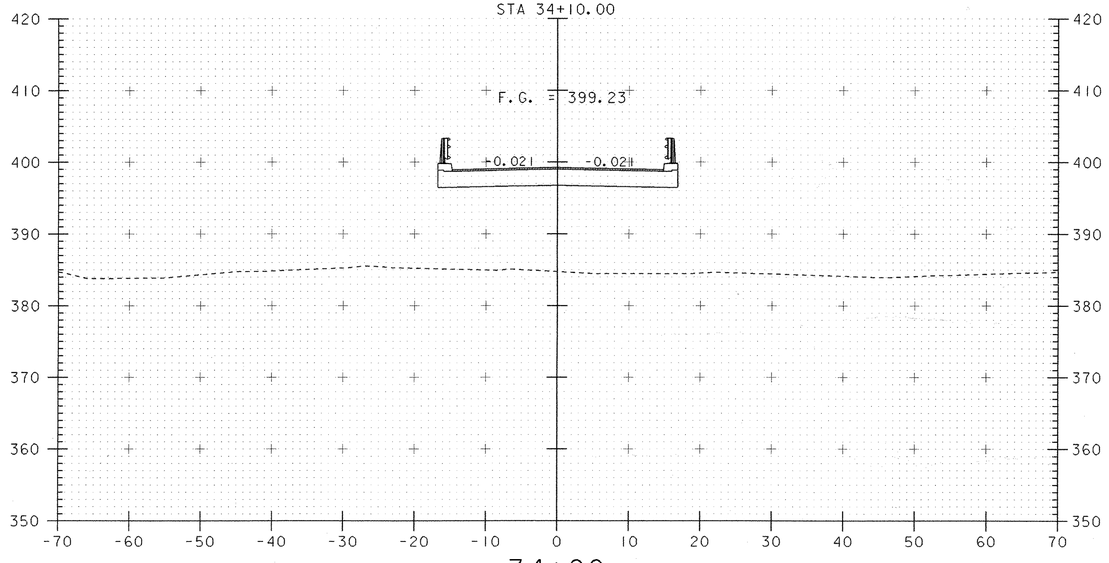



Plotted SFD 11/1/06

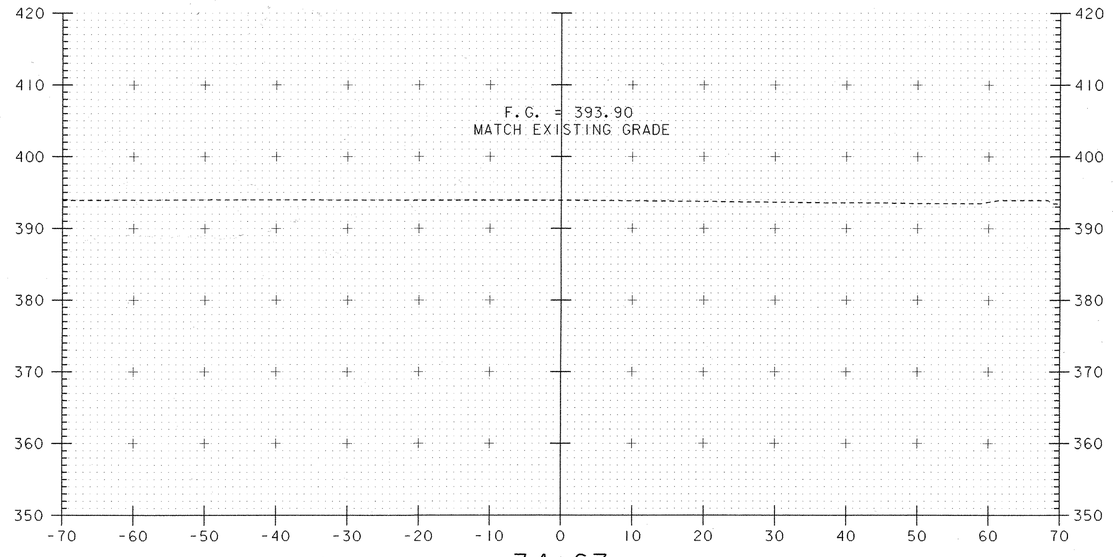
34+50
END PROJECT
STA 34+50.00
END BRIDGE
STA 34+10.00




DRIVE SECTION @ 30+09



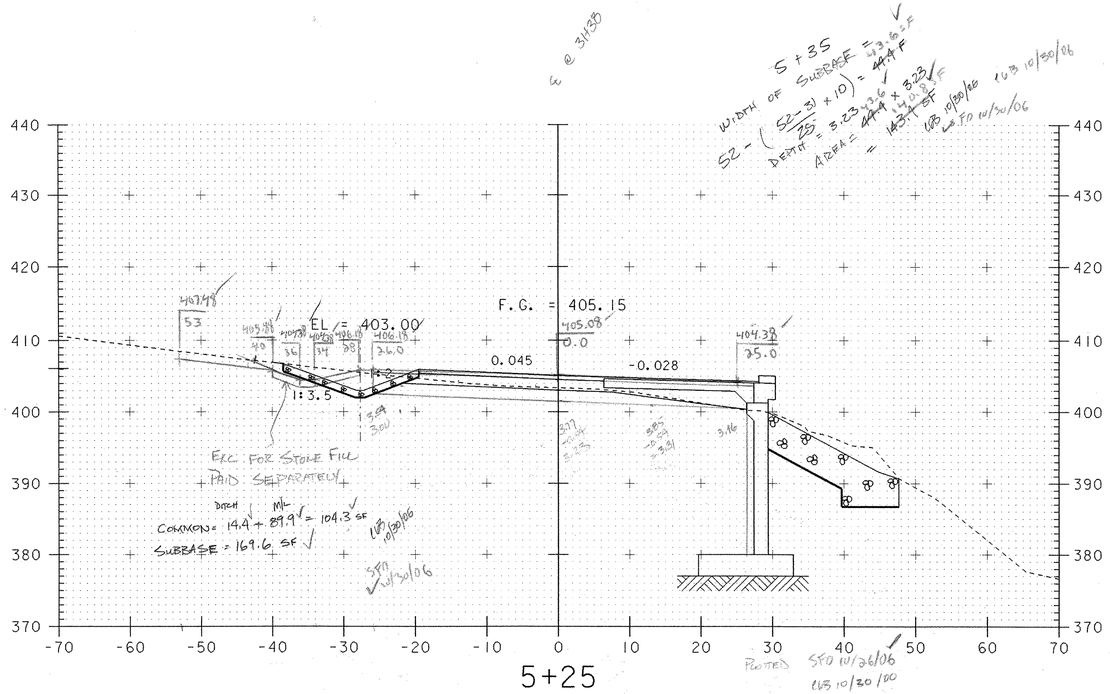

34+00

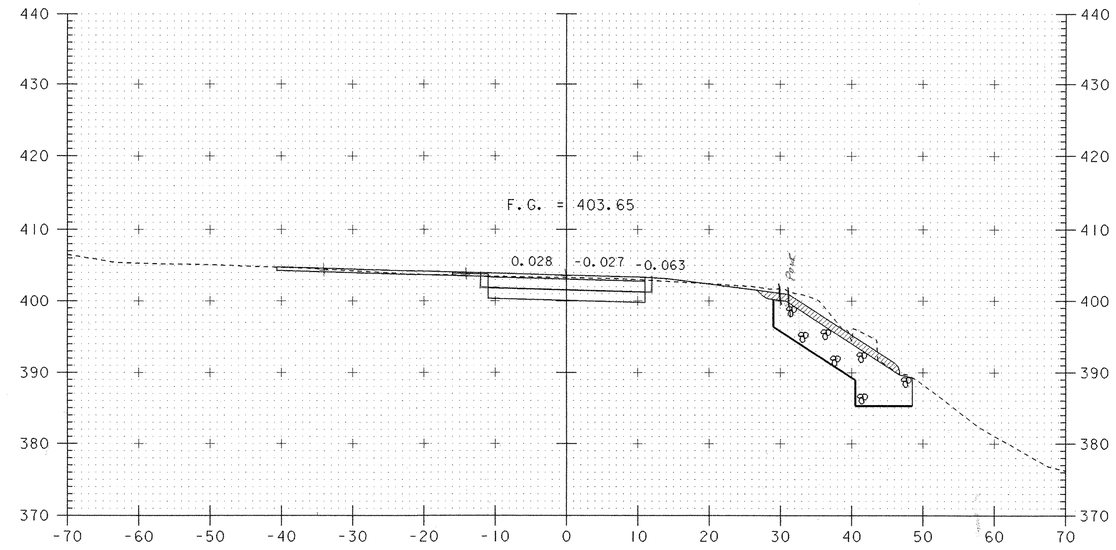



34+67

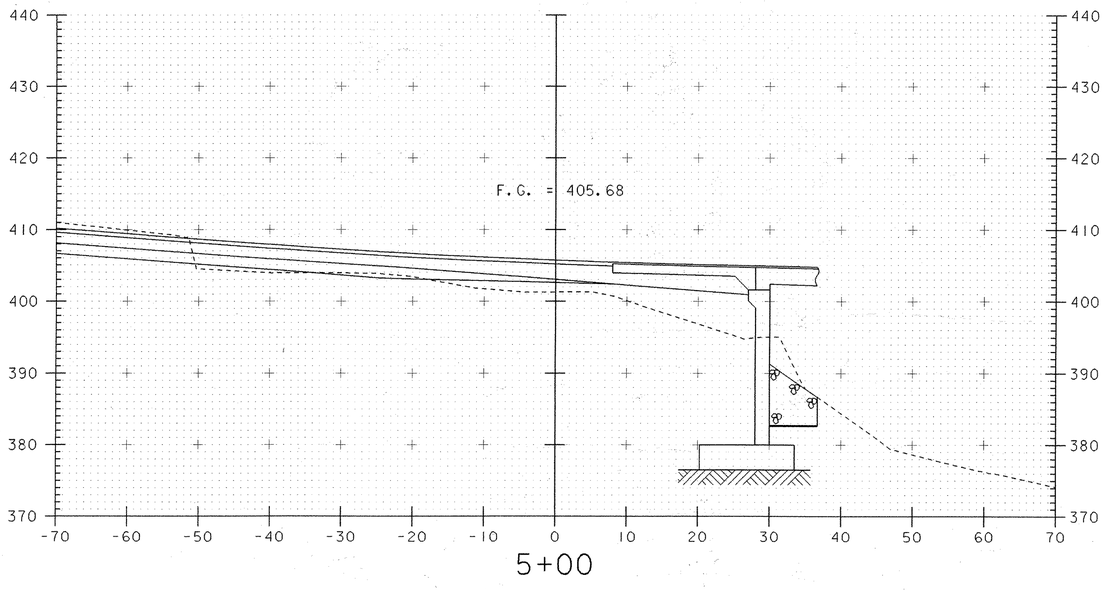
SCALE 1" = 10'-0
10 0 10

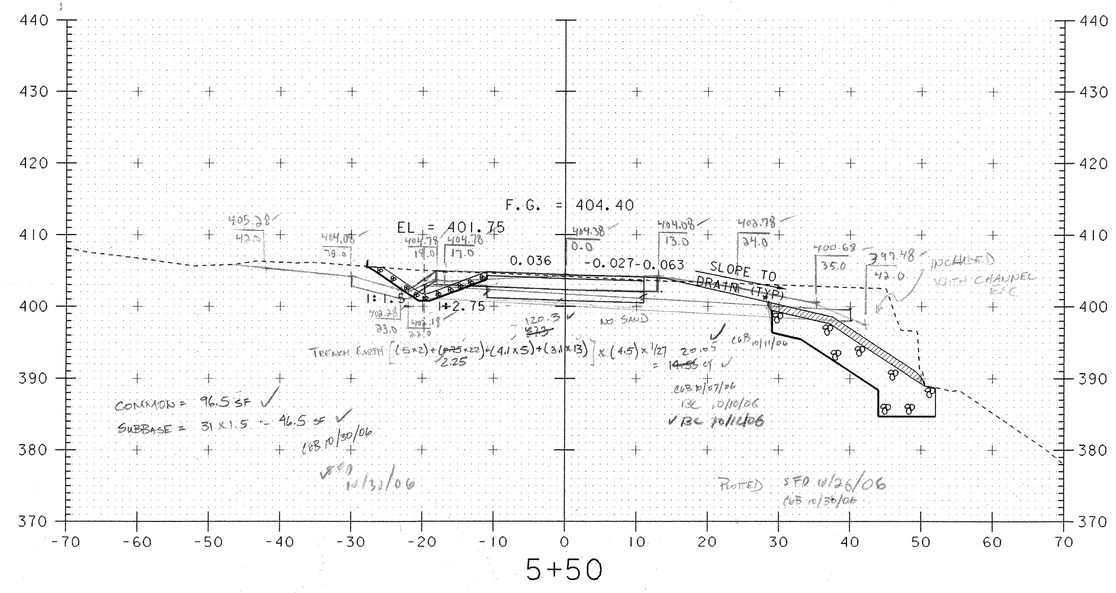
| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045ml6.i | PLOT DATE: 11-FEB-2005 |
| TH 4 CROSS SECTIONS | |
| SECTION 34+00 THROUGH 34+67 | SHEET: 70 OF 97 |



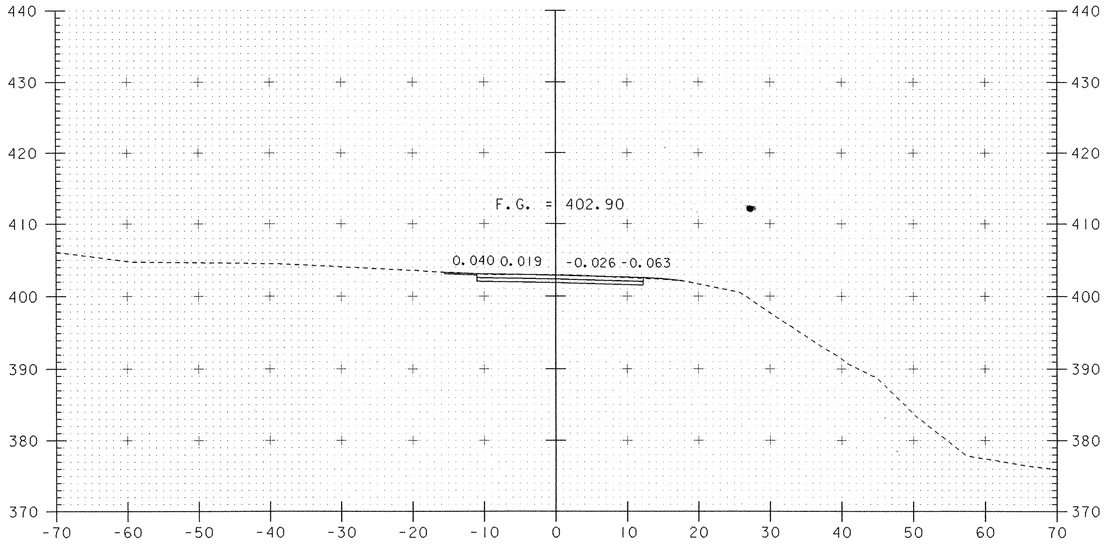

END PROJECT/BEGIN APPROACH
STA 5+75.00



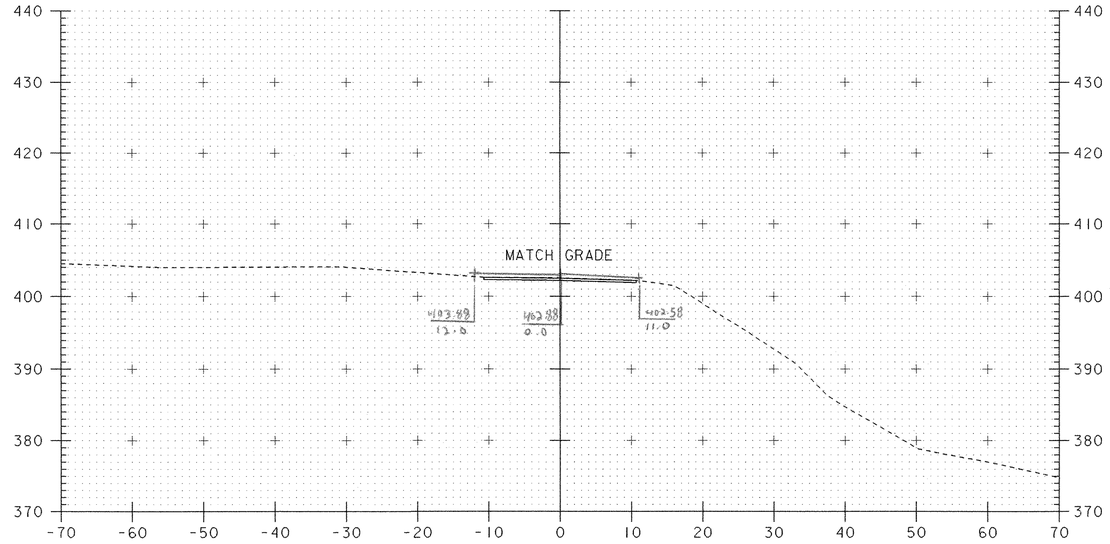




SCALE 1" = 10'-0
10 0 10

| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
|---|---|
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045th5l.i | PLOT DATE: 11-FEB-2005 |
| TH 5 CROSS SECTIONS | |
| SECTION 5+00 THROUGH 5+75 | SHEET: 71 OF 97 |

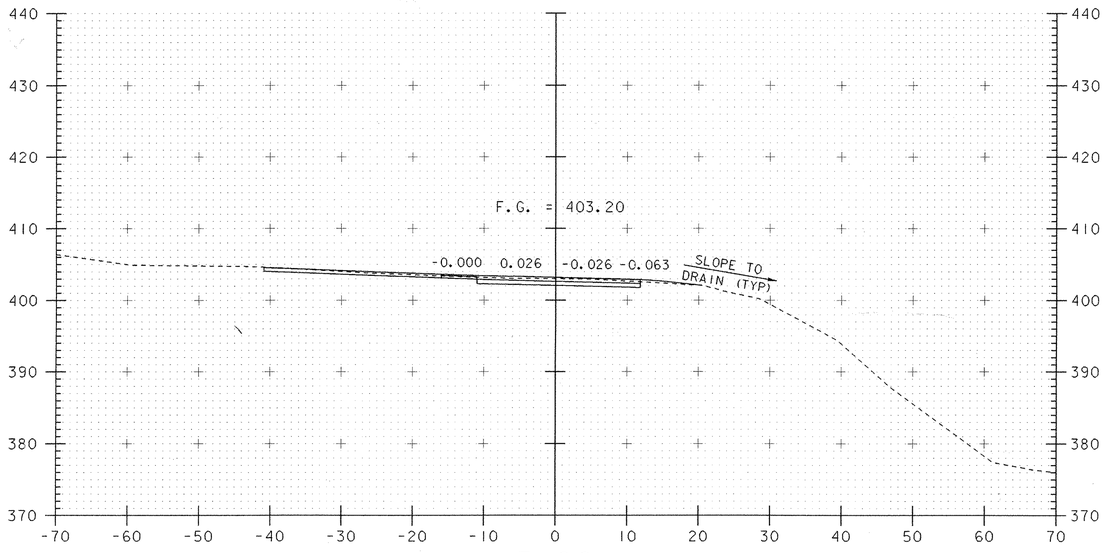



6+00

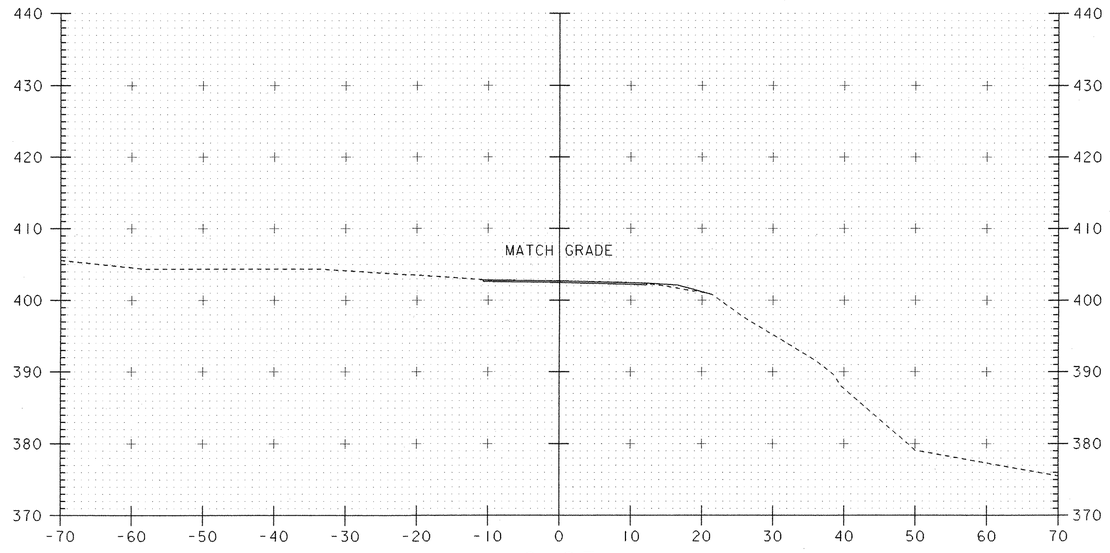



6+50

END APPROACH
STA 6+50.00



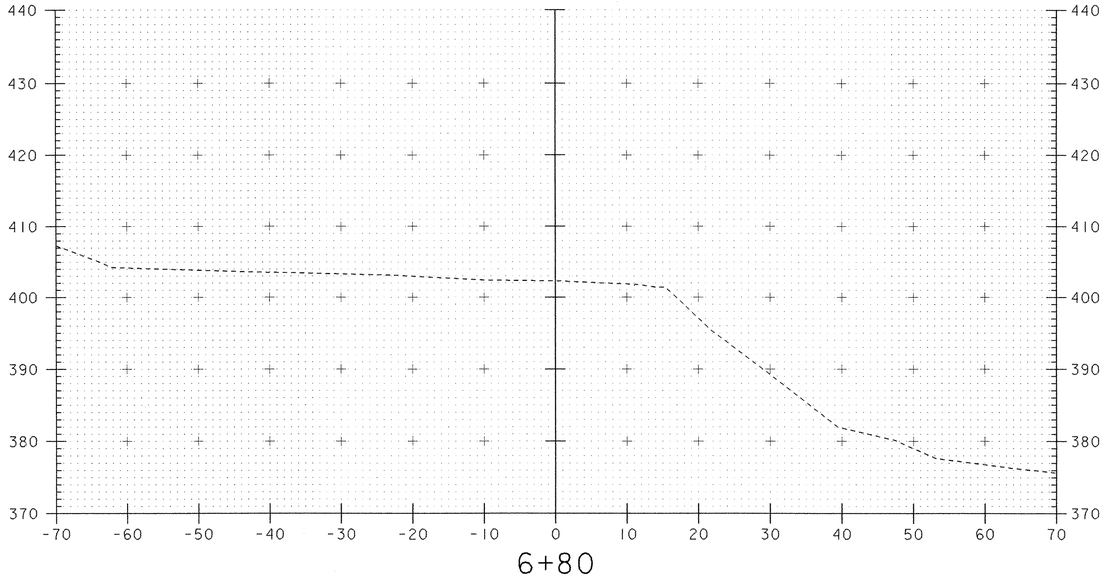

5+90



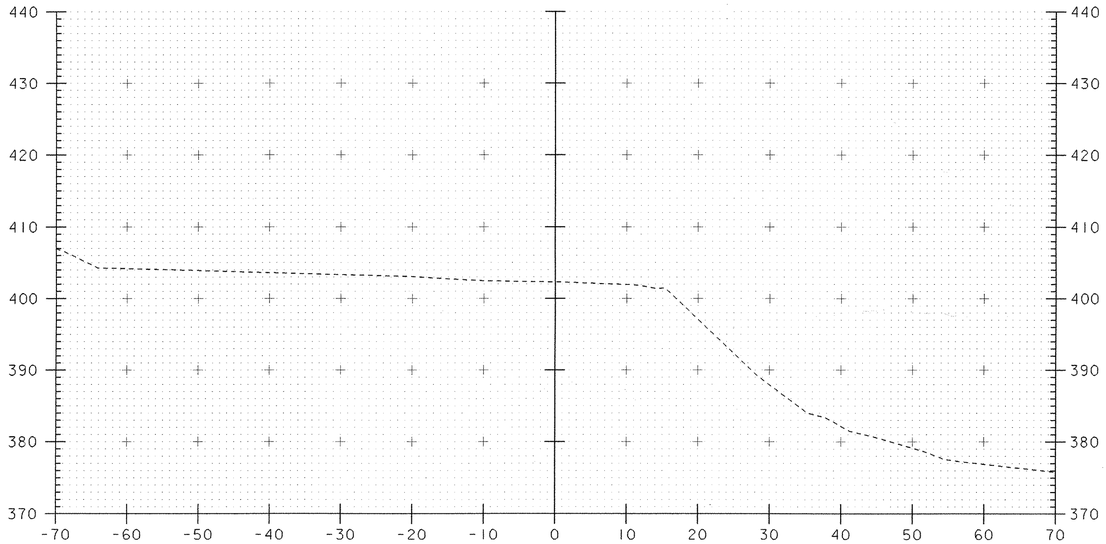

6+25

SCALE 1" = 10'-0
10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045th52.i | PLOT DATE: 11-FEB-2005 |
| TH 5 CROSS SECTIONS | |
| SECTION 5+90 THROUGH 6+50 | SHEET: 72 OF 97 |




6+80

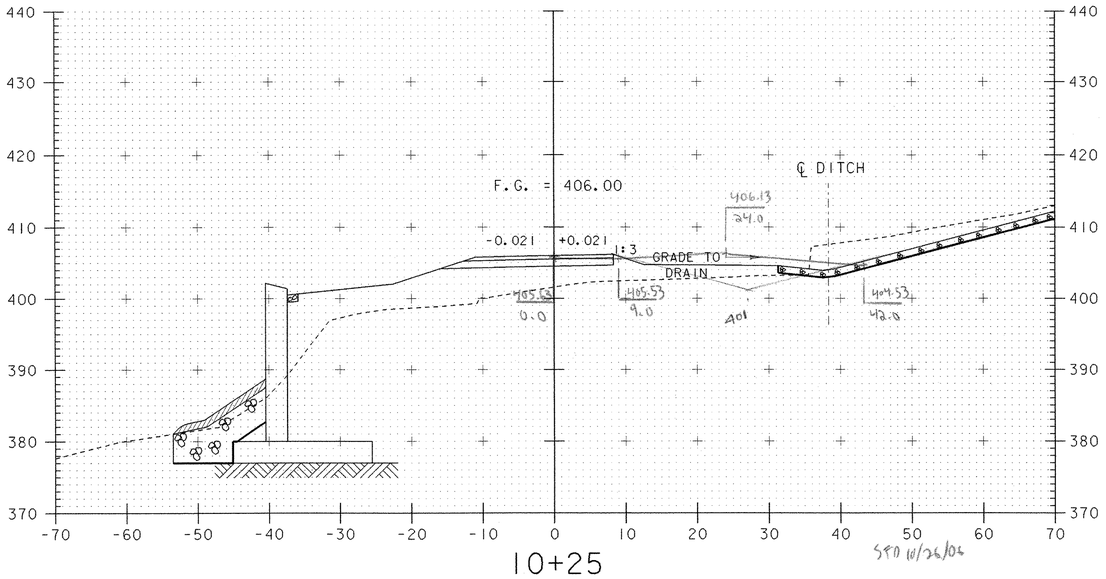



6+75

SCALE 1" = 10'-0

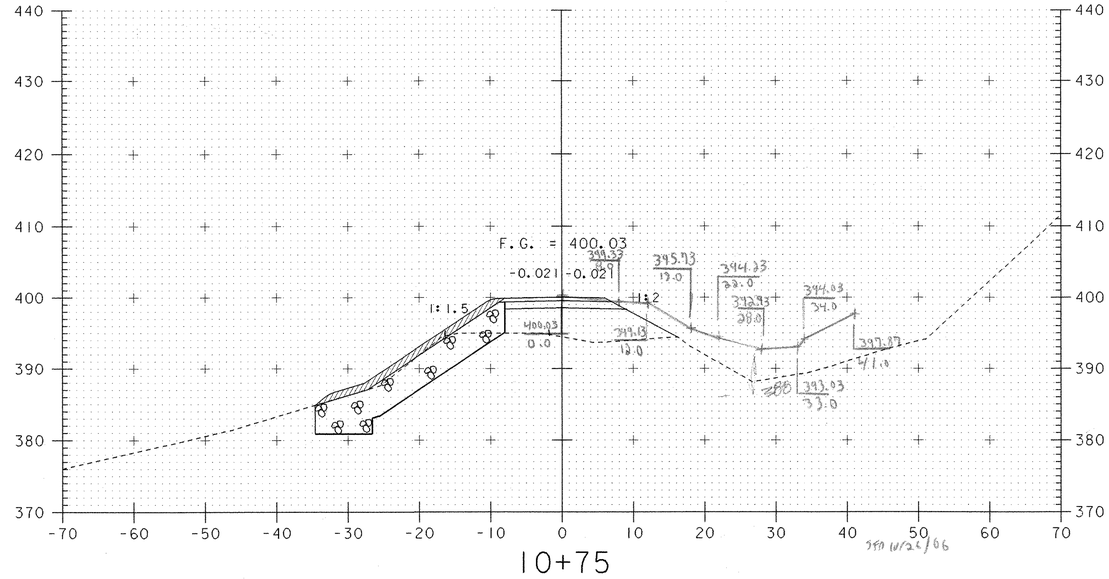
10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045th53.i | PLOT DATE: 11-FEB-2005 |
| TH 5 CROSS SECTIONS | |
| SECTION 6+75 THROUGH 6+80 | SHEET: 73 OF 97 |



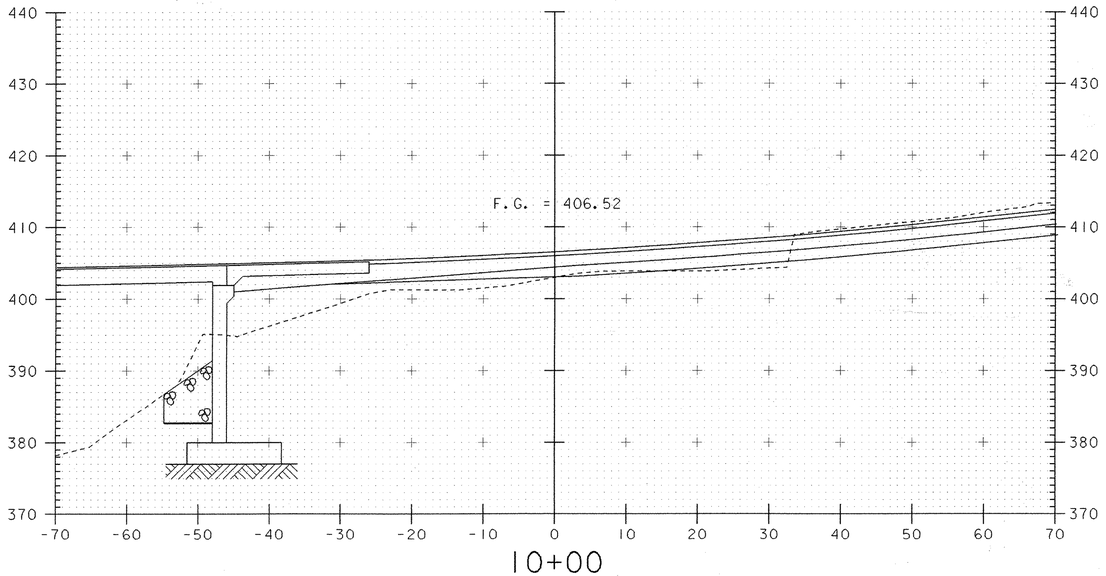

10+25

SFD 10/26/06

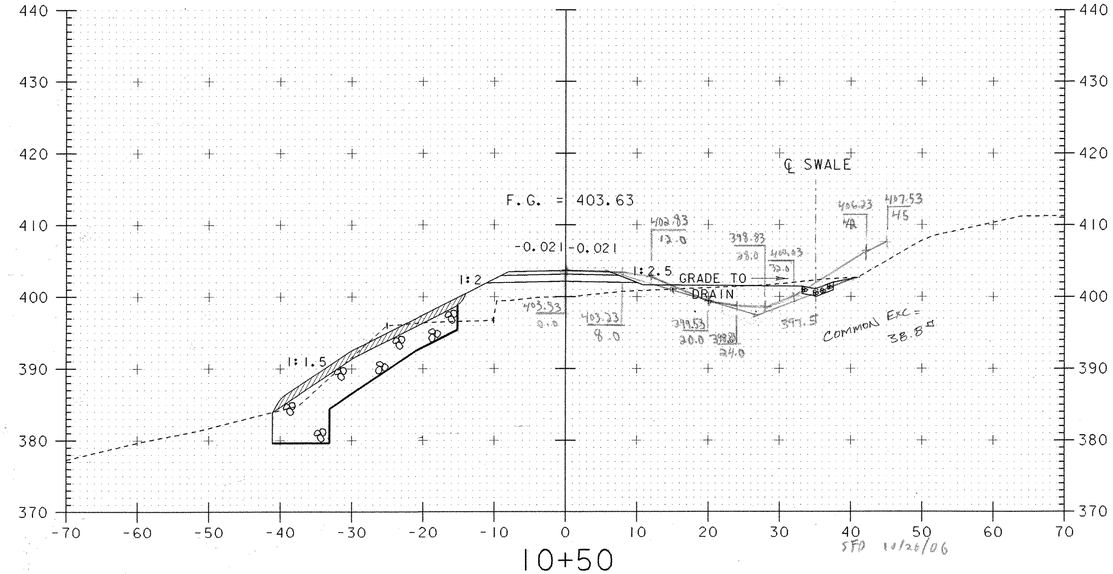



10+75

SFD 10/26/06




10+00



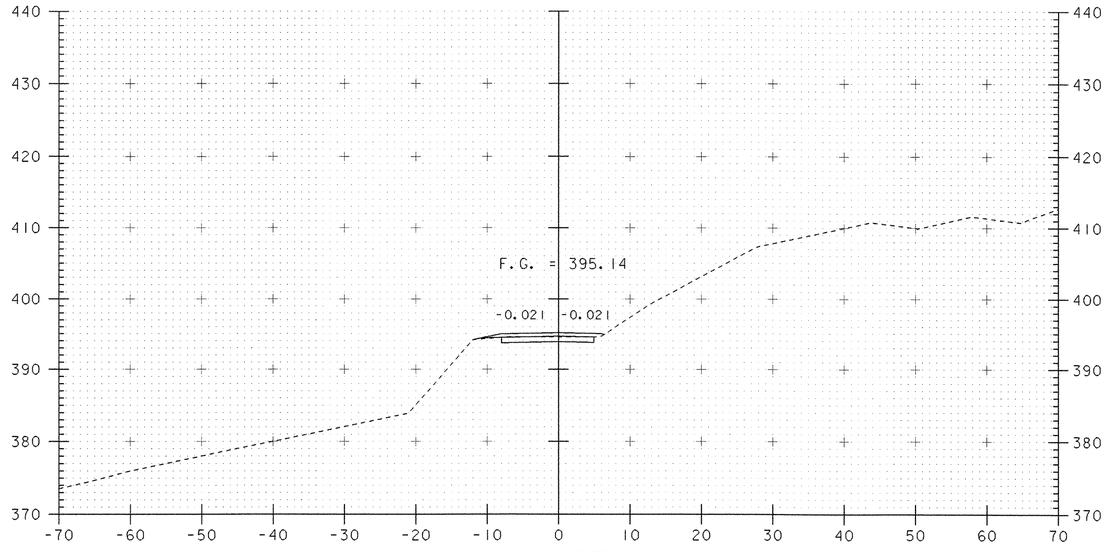

10+50

SFD 10/26/06

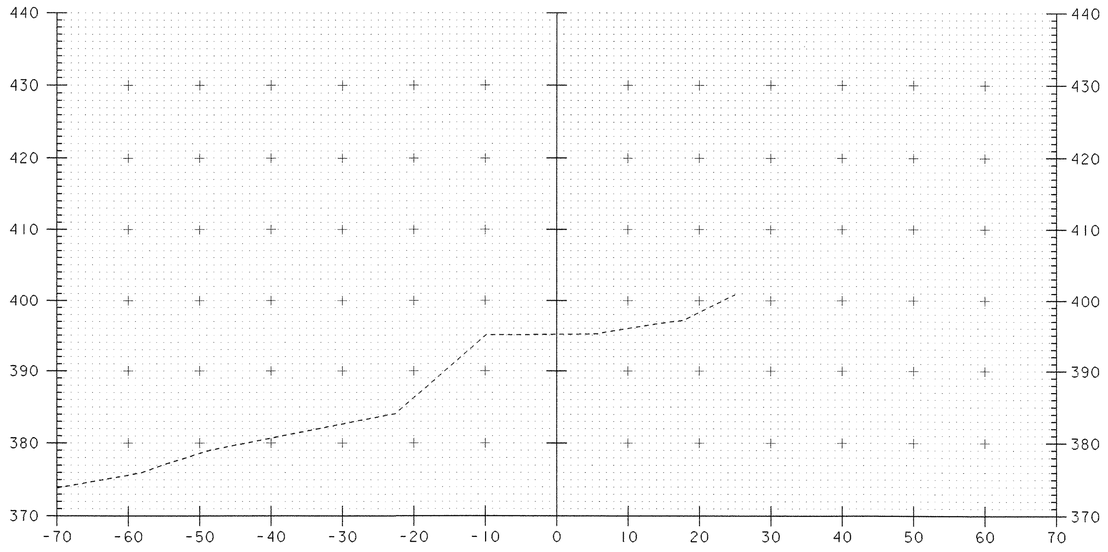
SCALE 1" = 10'-0

10 0 10

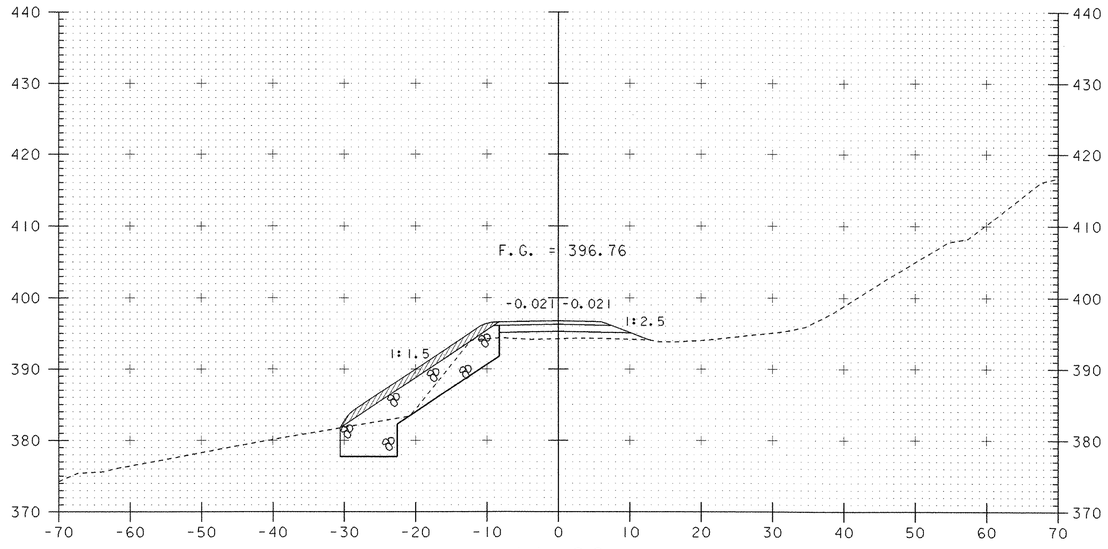
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
|---|---|
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045drl.i | PLOT DATE: 11-FEB-2005 |
| DRIVE CROSS SECTIONS | |
| SECTION 10+00 THROUGH 10+75 | SHEET: 74 OF 97 |




11+25

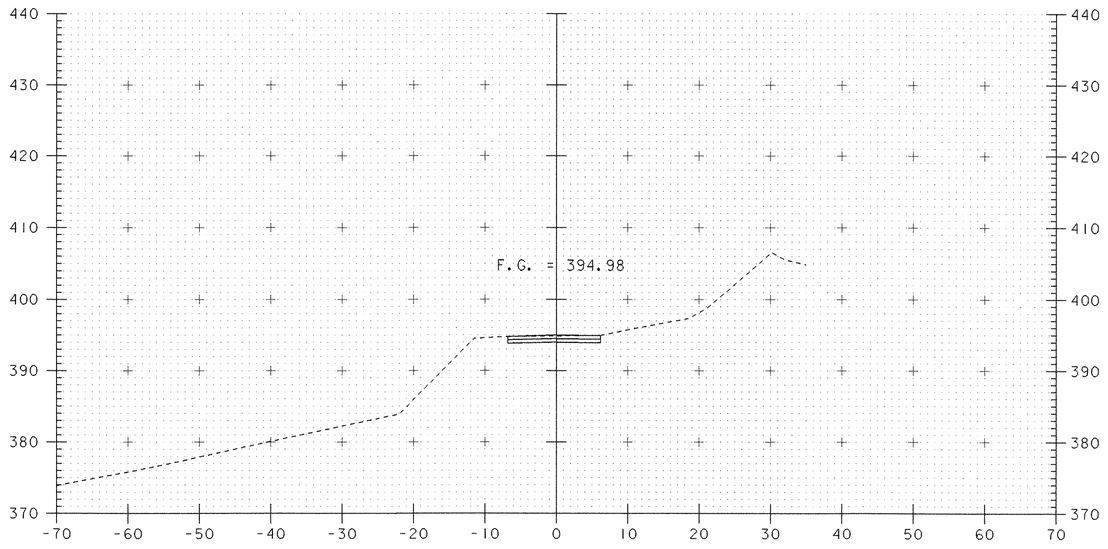


11+75




11+00

END PROJECT/BEGIN APPROACH
STA 11+00.00

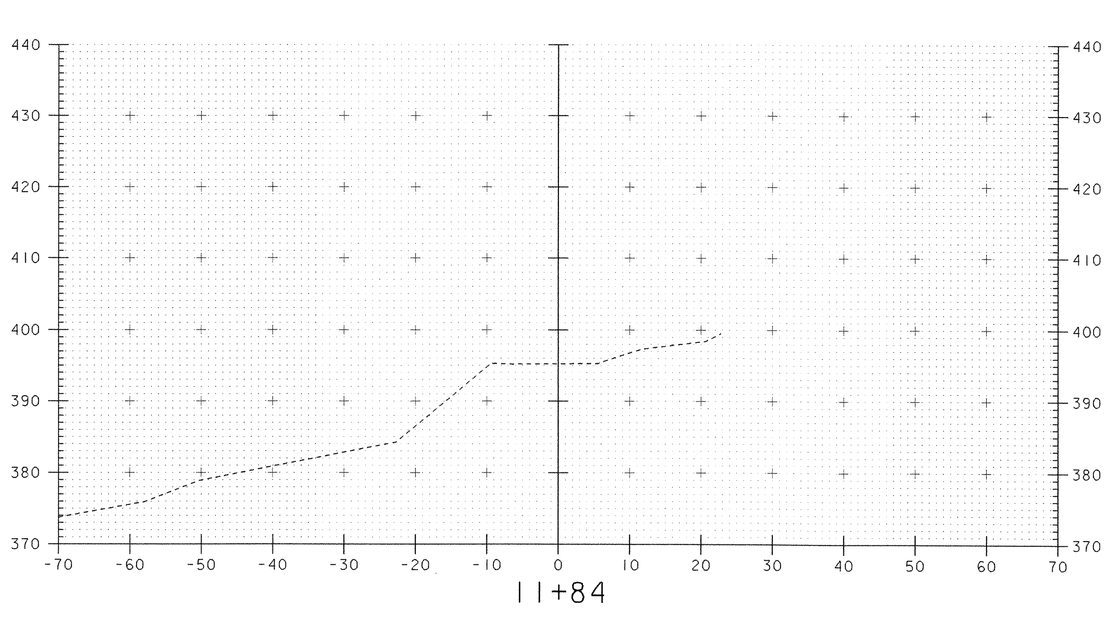



11+50

END APPROACH
STA 11+50.00

SCALE 1" = 10'-0
10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045dr2.i | PLOT DATE: 11-FEB-2005 |
| DRIVE CROSS SECTIONS | |
| SECTION 11+00 THROUGH 11+75 | SHEET: 75 OF 97 |

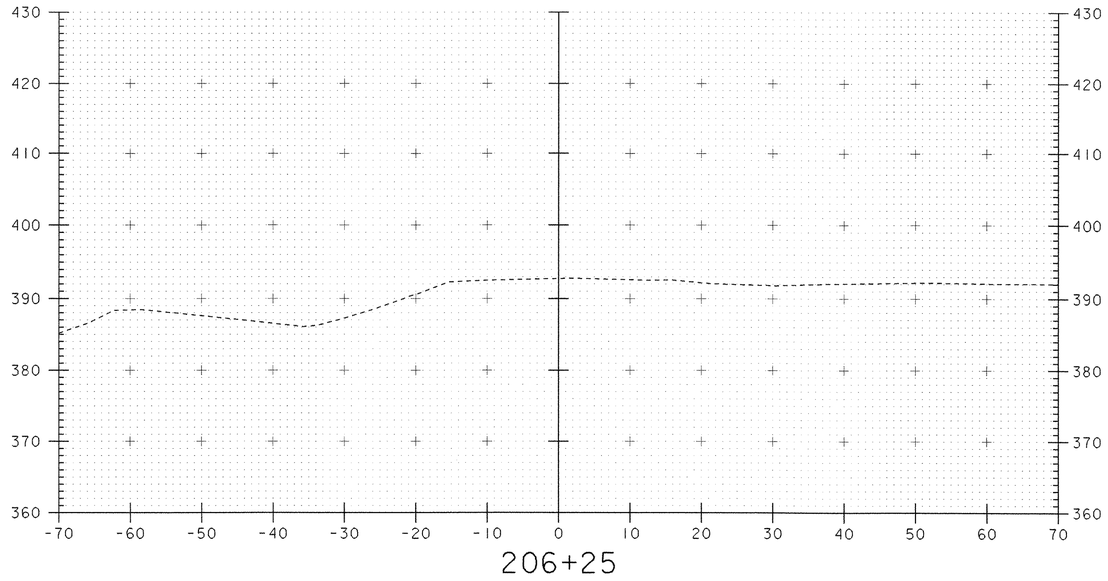



11+84

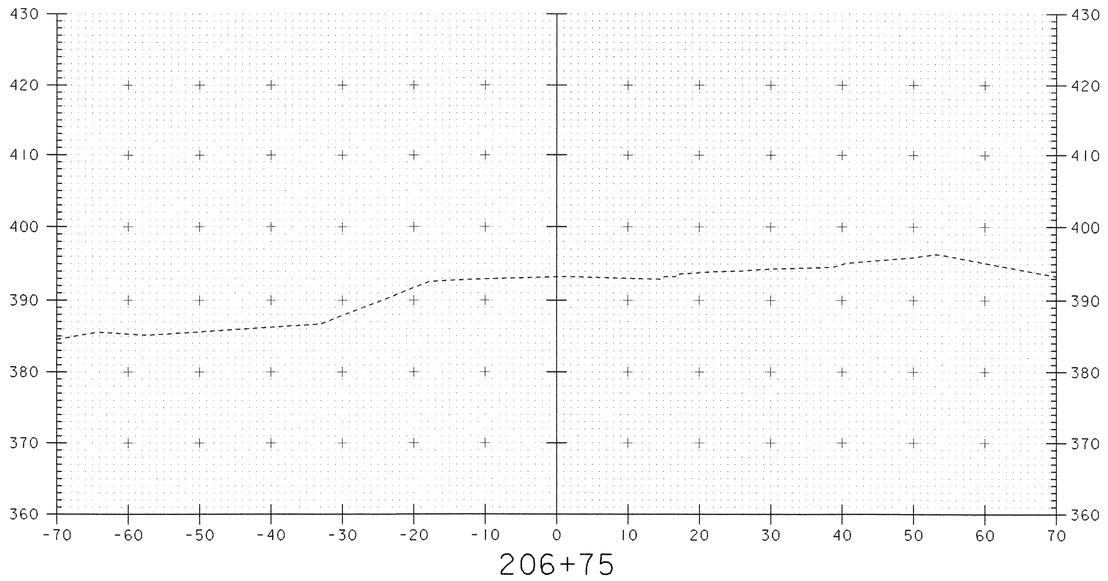
SCALE 1" = 10'-0

10 0 10

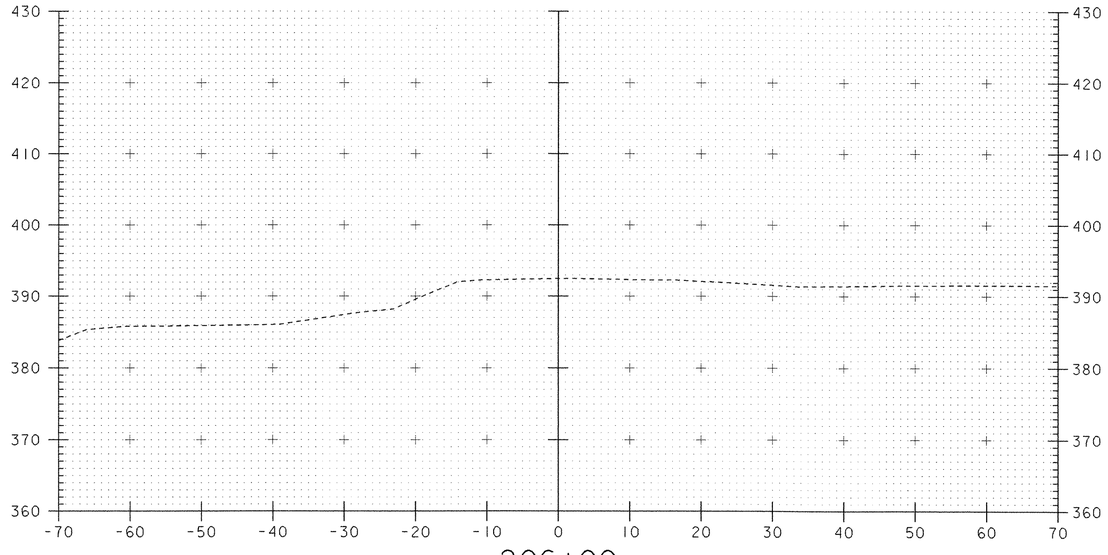
| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(1) |
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045dr3.i | PLOT DATE: 11-FEB-2005 |
| DRIVE CROSS SECTIONS | |
| SECTION 12+00 | SHEET: 76 OF 97 |



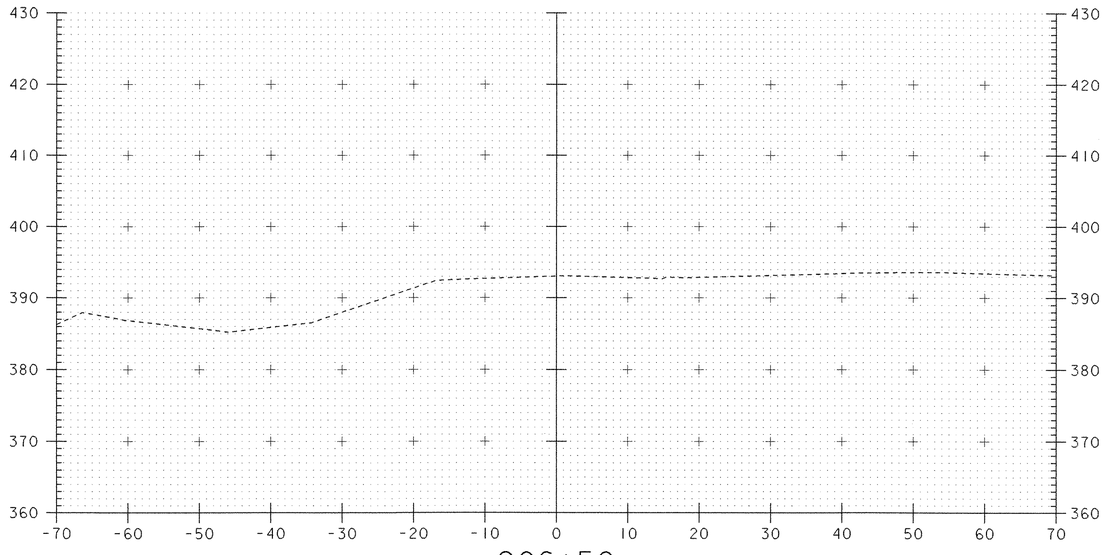

206+25




206+75




206+00

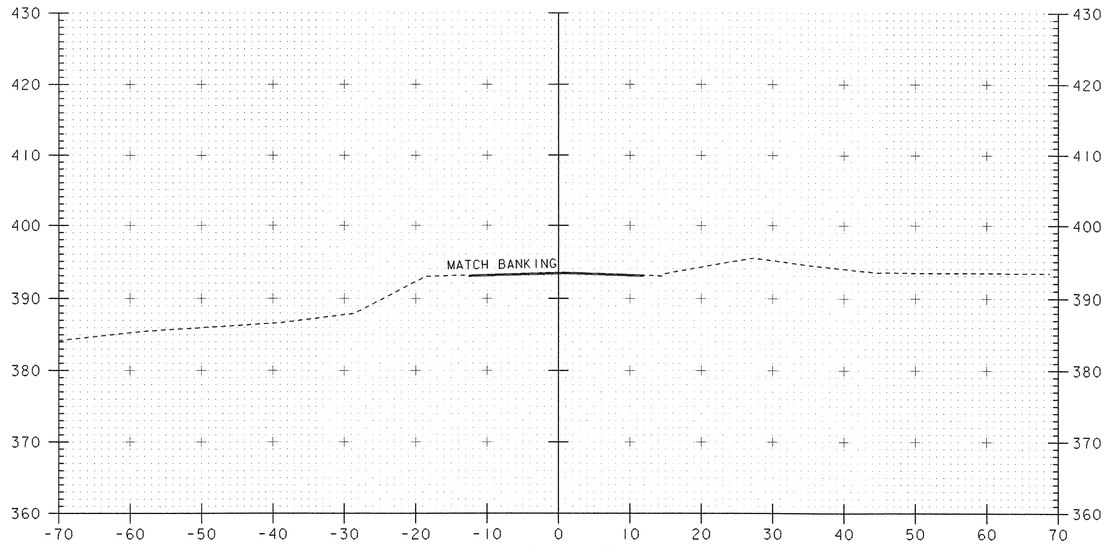



206+50

SCALE 1" = 10'-0

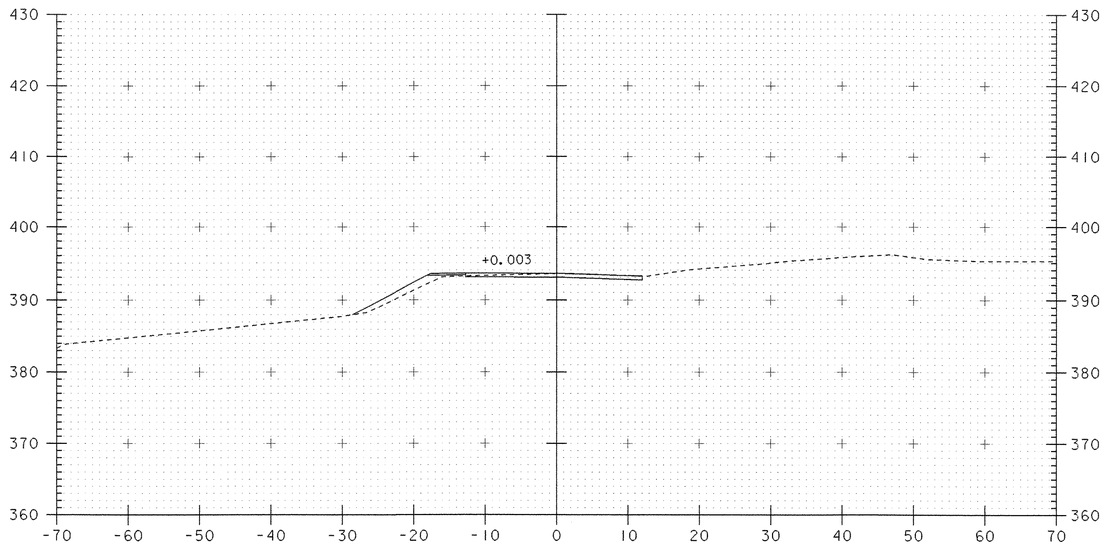
10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89J045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045vtl.i | PLOT DATE: 11-FEB-2005 |
| VT RT 14 CROSS SECTIONS | |
| SECTION 206+00 THROUGH 206+75 | SHEET: 77 OF 97 |

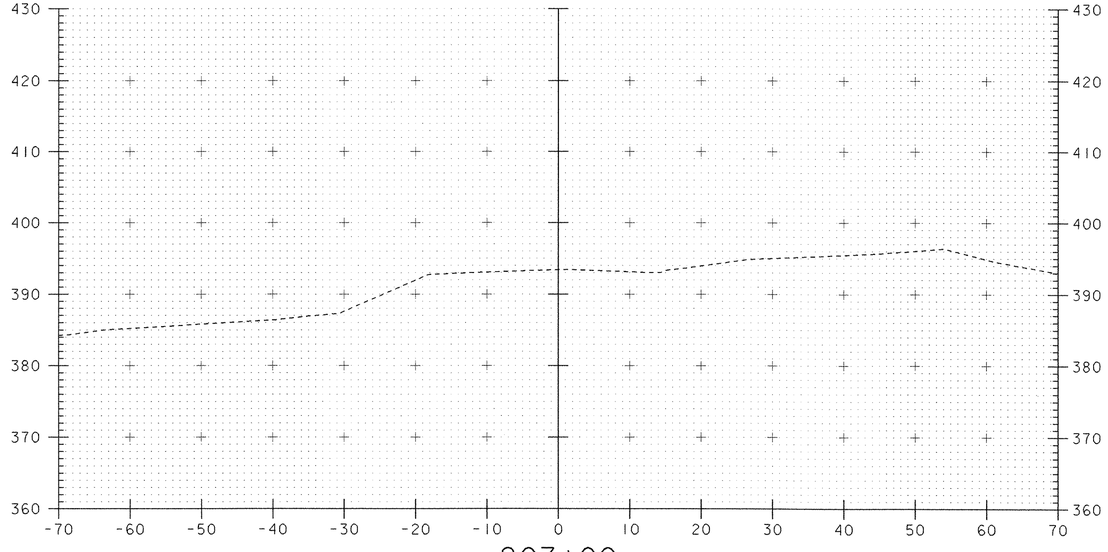



207+25

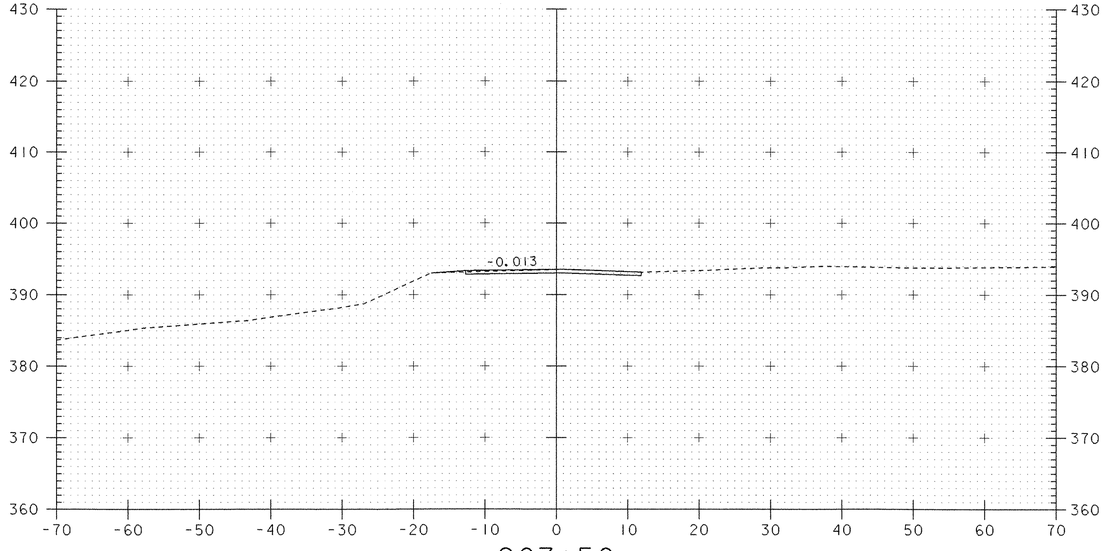
BEGIN APPROACH
BEGIN COLDPLANING
STA 207+25.00




207+75



207+00

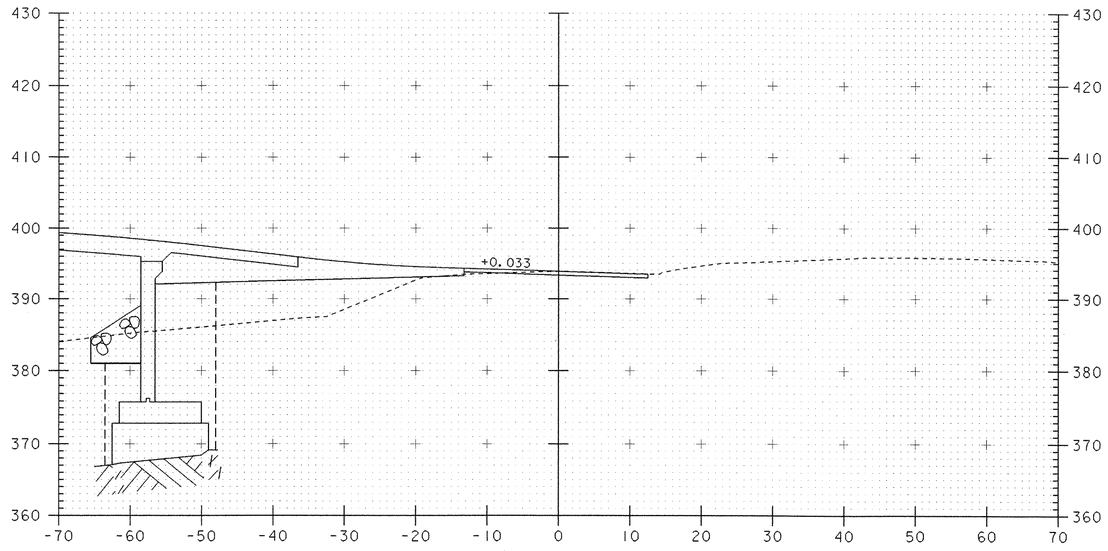



207+50

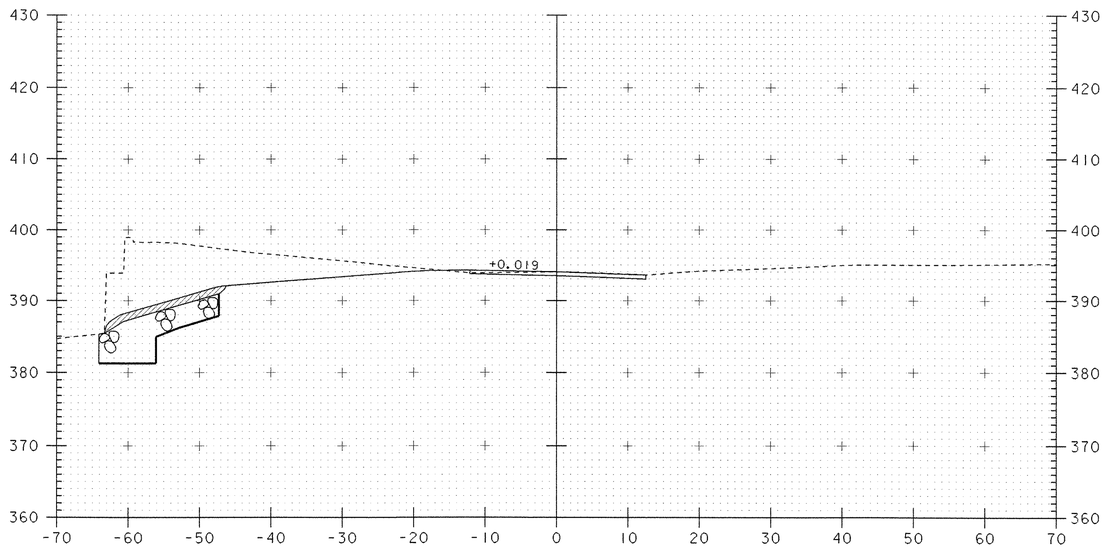
SCALE 1" = 10'-0

10 0 10

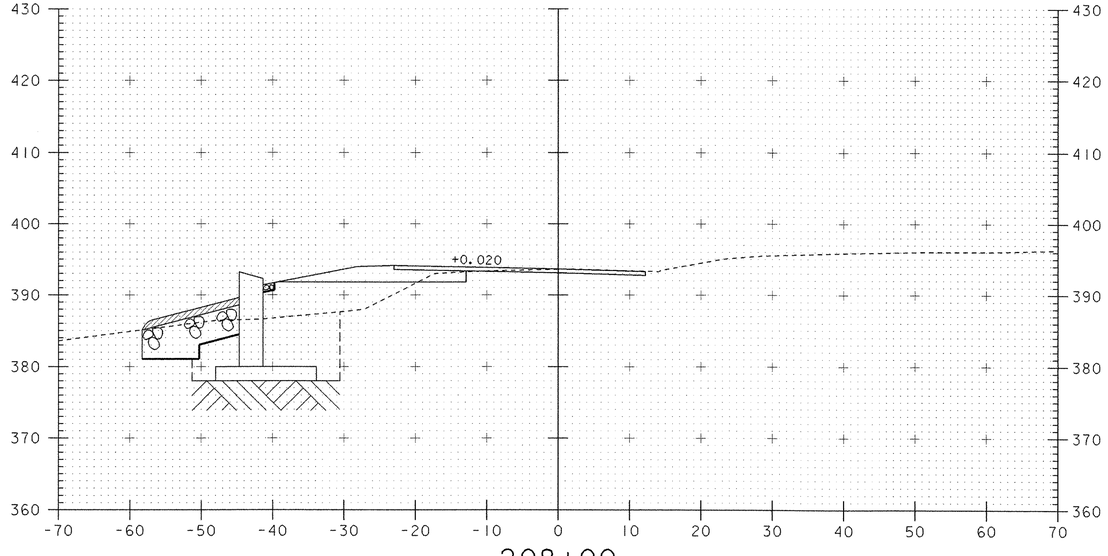
| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89J045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045vt2.i | PLOT DATE: 11-FEB-2005 |
| VT RT 14 CROSS SECTIONS | |
| SECTION 207+00 TRHOUGH 207+75 | SHEET: 78 OF 97 |



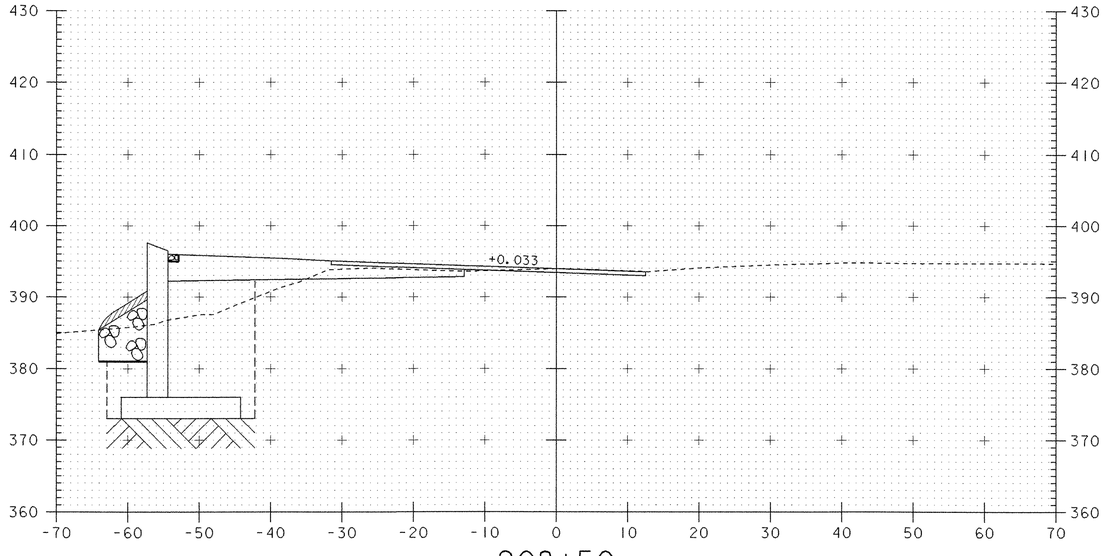

208+25




208+75




208+00

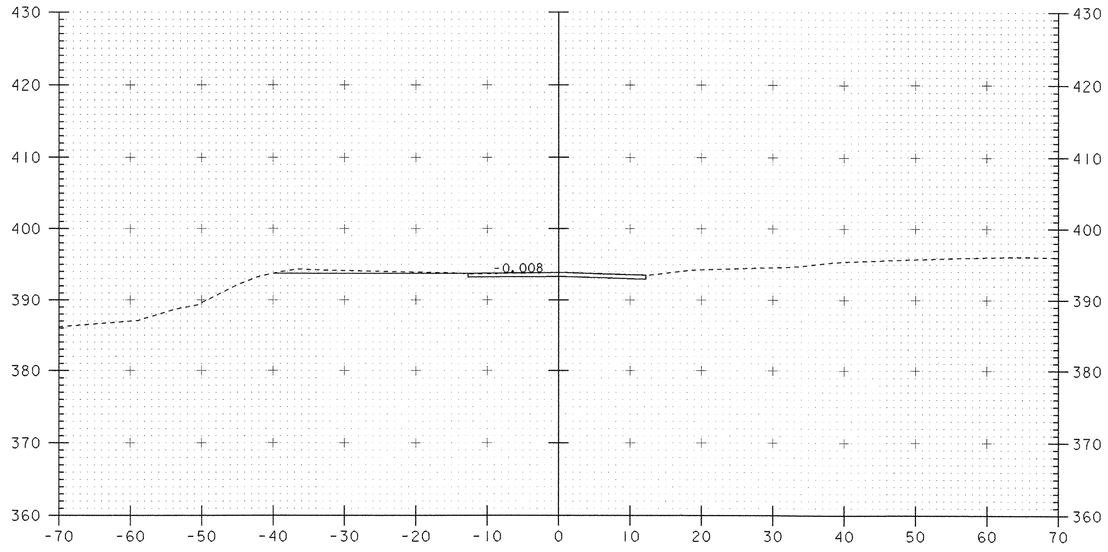



208+50

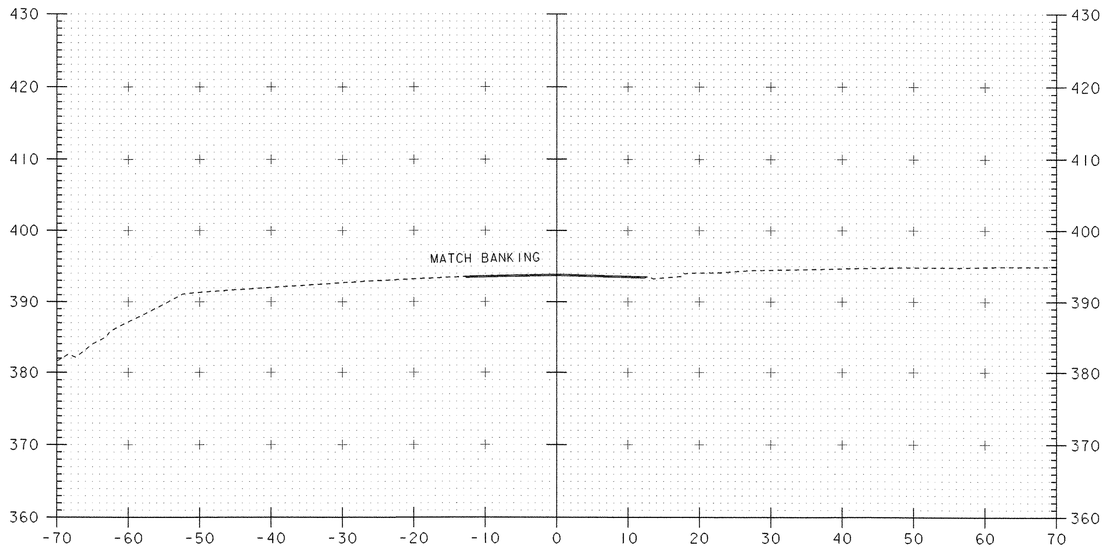
SCALE 1" = 10'-0

10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045vt3.i | PLOT DATE: 11-FEB-2005 |
| VT RT 14 CROSS SECTIONS | |
| SECTION 208+00 THROUGH 208+75 | SHEET: 79 OF 97 |

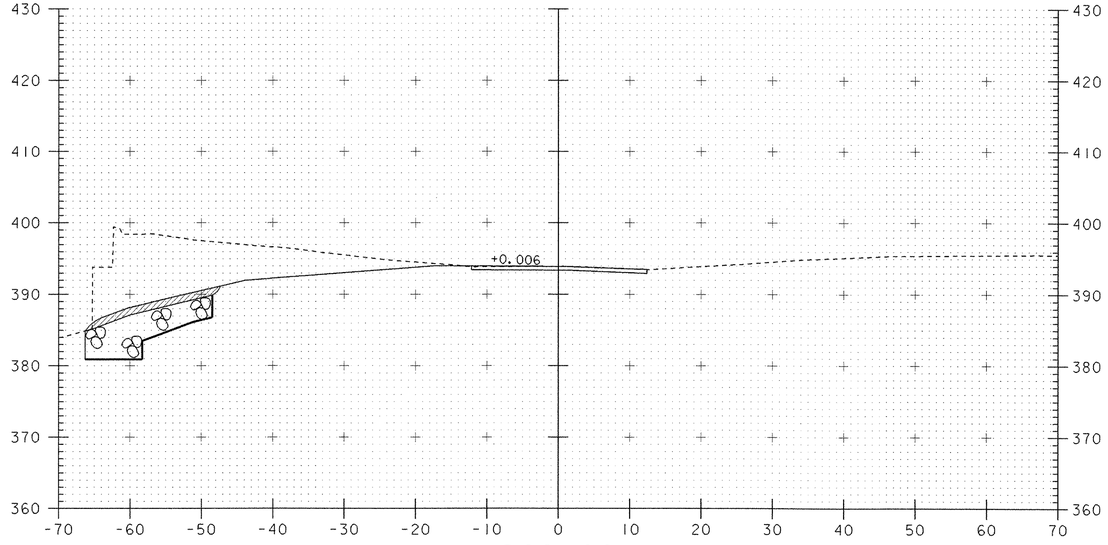



209+25

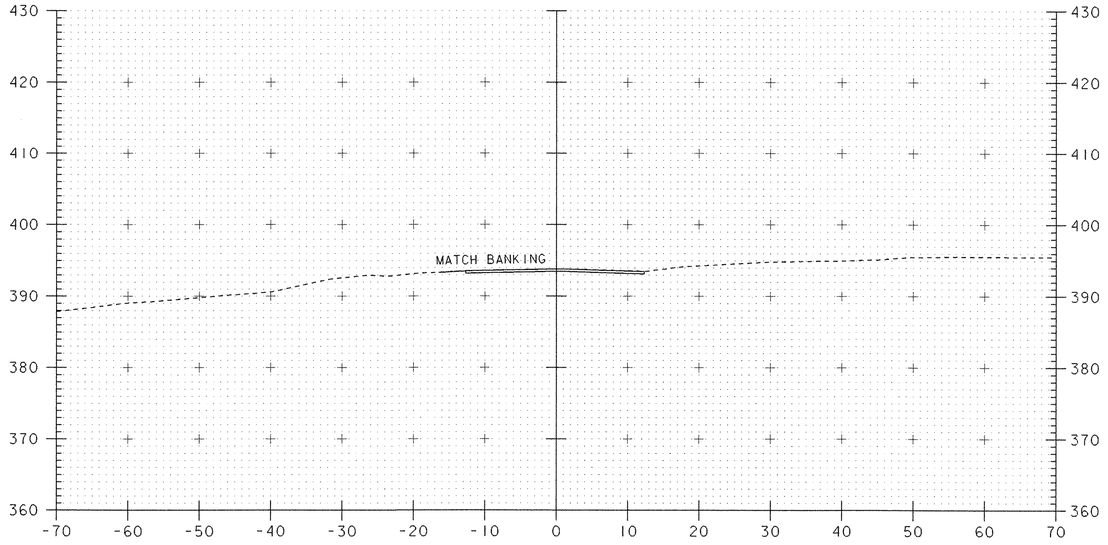



209+75

END APPROACH
STA 209+75.00



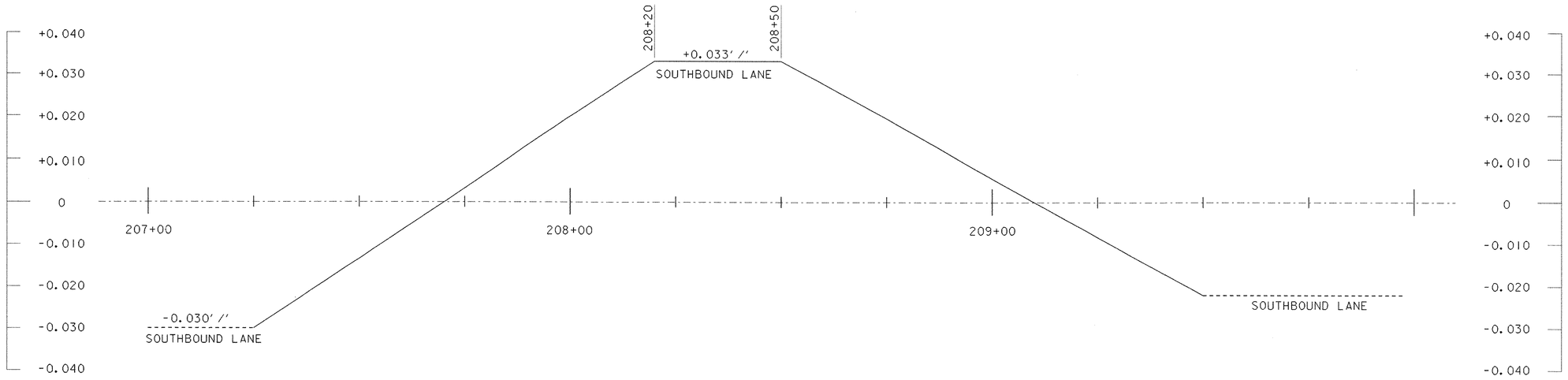

209+00




209+50

SCALE 1" = 10'-0
10 0 10

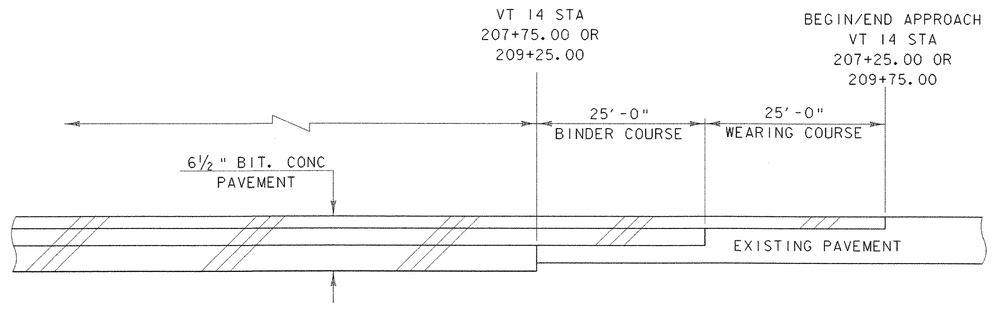
| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89J045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045vt4.i | PLOT DATE: 11-FEB-2005 |
| VT RT 14 CROSS SECTIONS | |
| SECTION 209+00 THROUGH 209+75 | SHEET: 80 OF 97 |




## BANKING DIAGRAM FOR VT RTE 14 (STA. 207+25 THROUGH 209+50 LEFT LANE ONLY)

NTS



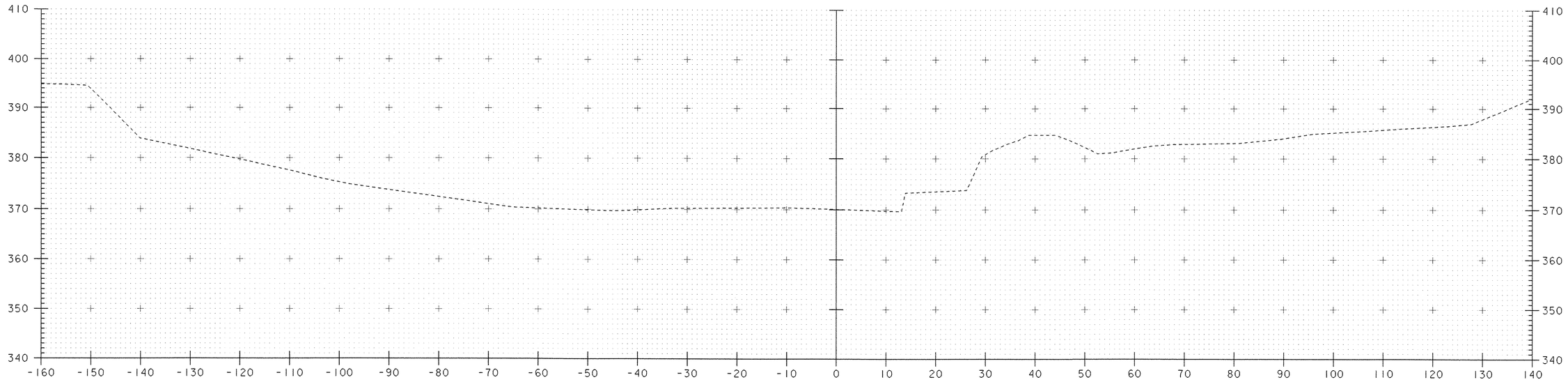




## BEGIN/END APPROACH FOR VT RTE 14

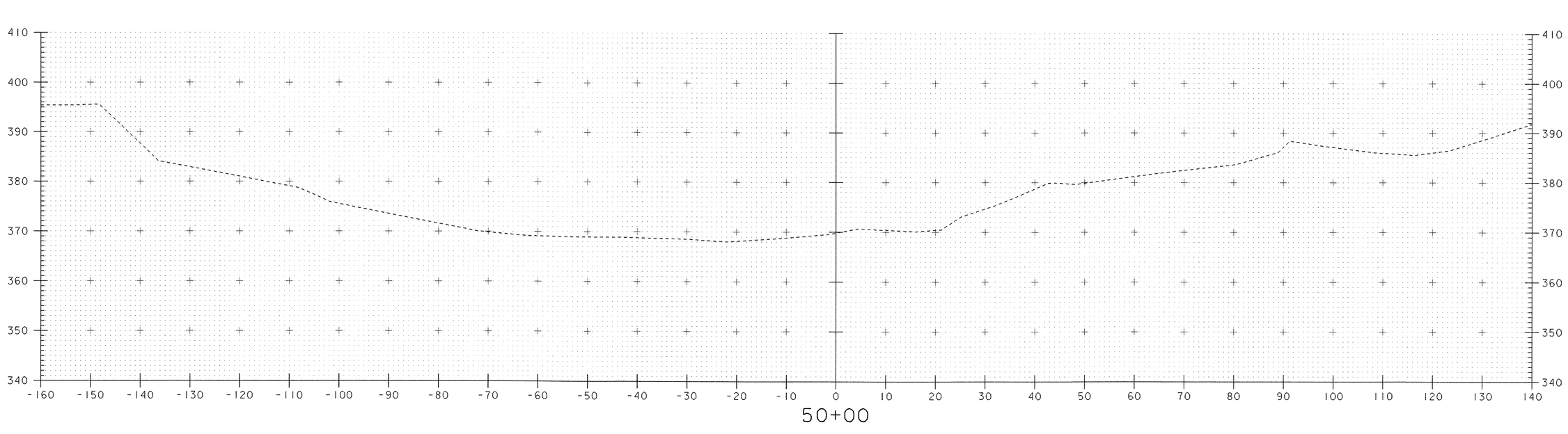
NTS

SCALE 1" = 10'-0
10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89J045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045vt5.i | PLOT DATE: 11-FEB-2005 |
| VT RT 14 CROSS SECTIONS | |
| SECTION 210+00 | SHEET: 81 OF 97 |



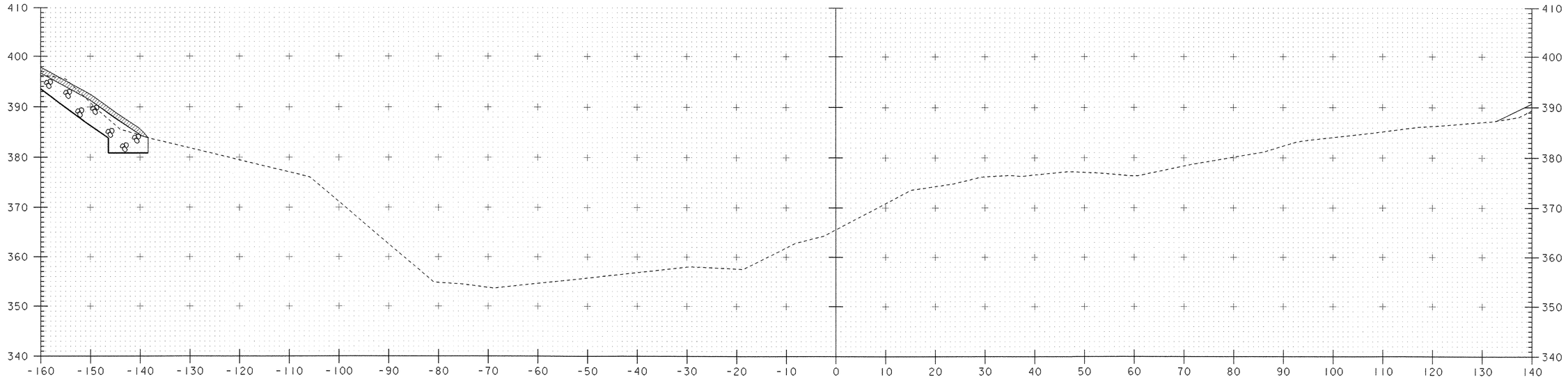

50+50



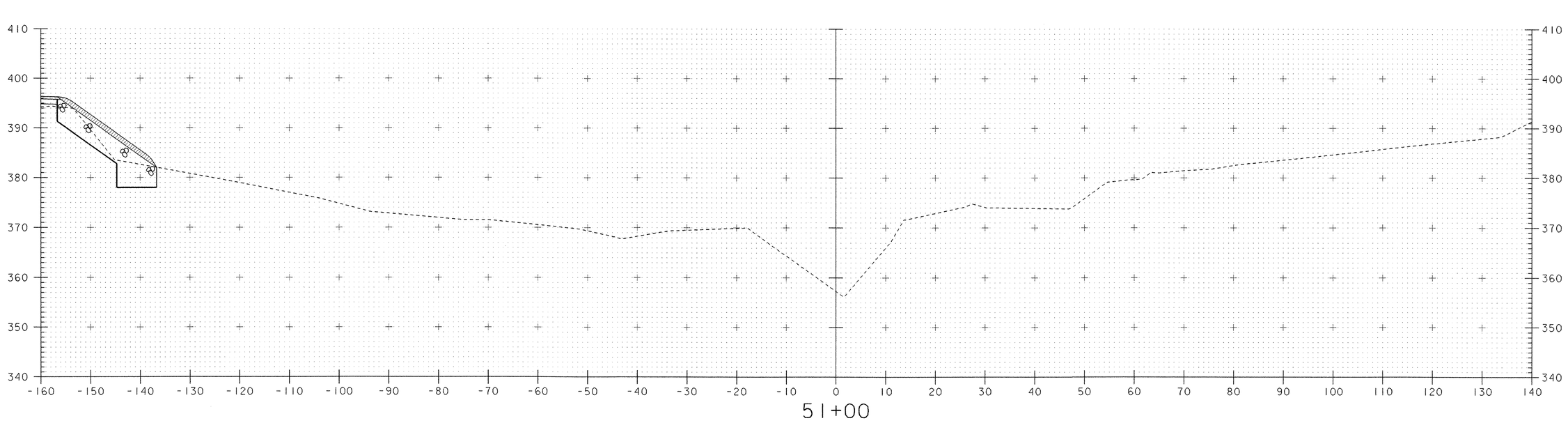

50+00

SCALE 1" = 10'-0
10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045chl.i | PLOT DATE: 11-FEB-2005 |
| CHANNEL CROSS SECTIONS | |
| SECTION 50+00 THROUGH 50+50 | SHEET: 82 OF 97 |




51+50

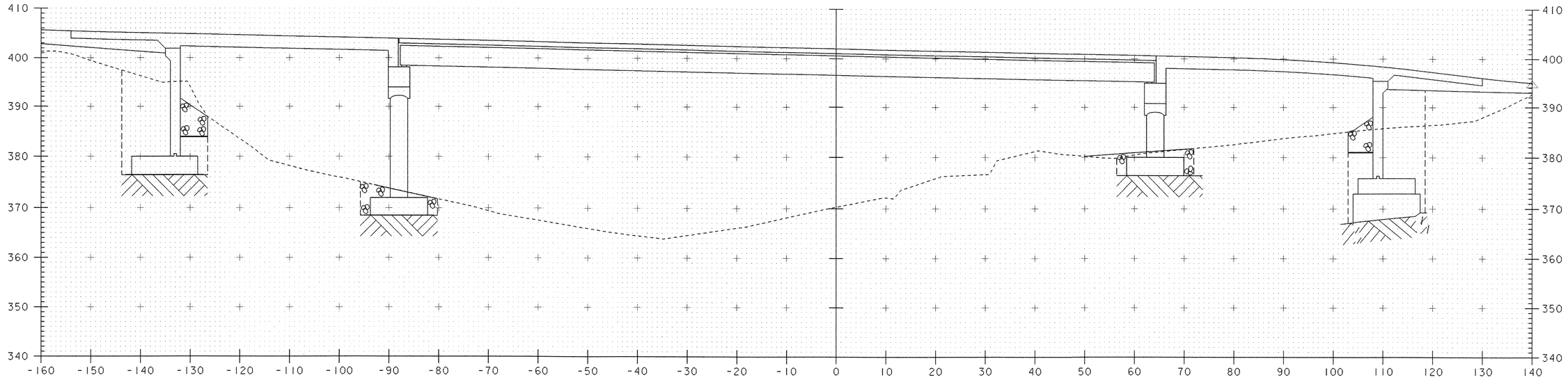



51+00

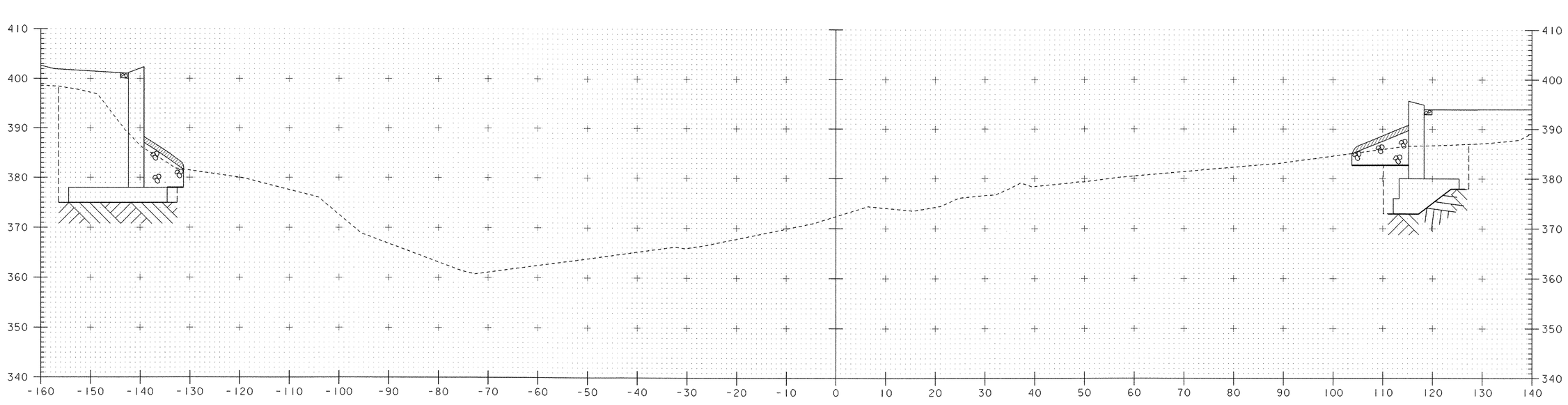
STA 50+85.00 LT
BEGIN STONE FILL TYPE IV
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN GRUBBING MATERIAL

SCALE 1" = 10'-0
10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89J045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045ch2.i | PLOT DATE: 11-FEB-2005 |
| CHANNEL CROSS SECTIONS | |
| SECTION 51+00 THROUGH 51+50 | SHEET: 83 OF 97 |




52+00

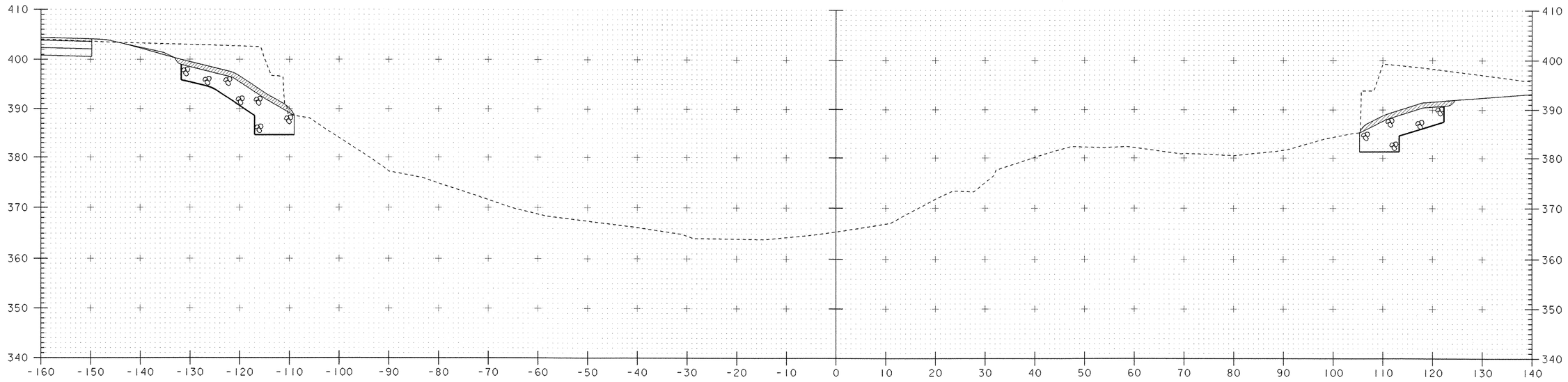



51+75

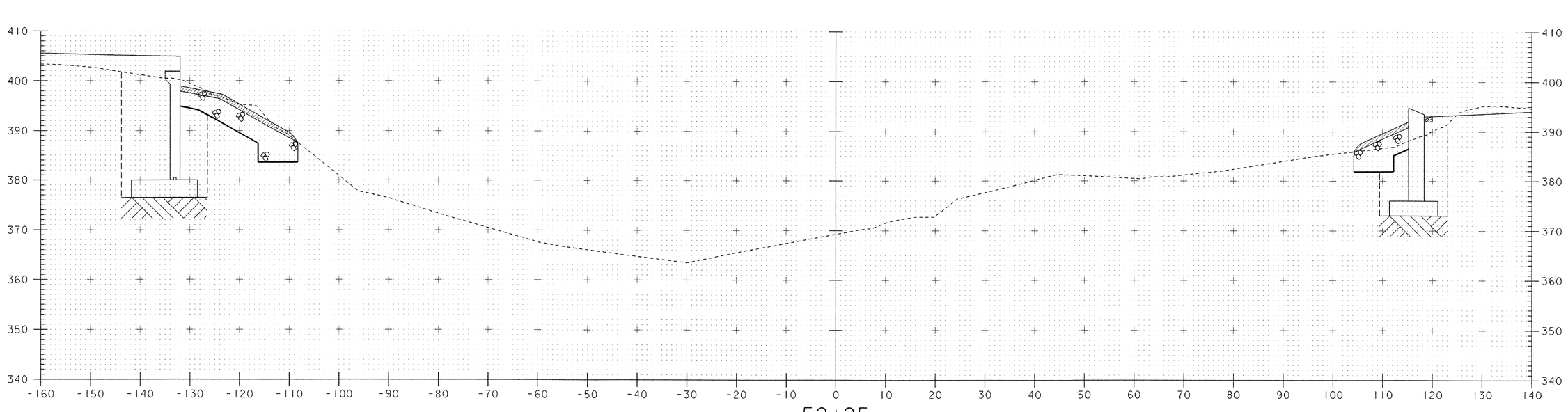
STA 51+58.00 RT
BEGIN STONE FILL TYPE IV
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN GRUBBING MATERIAL

SCALE 1" = 10'-0
10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89j045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045ch3.i | PLOT DATE: 11-FEB-2005 |
| CHANNEL CROSS SECTIONS | |
| SECTION 51+75 THROUGH 52+00 | SHEET: 84 OF 97 |



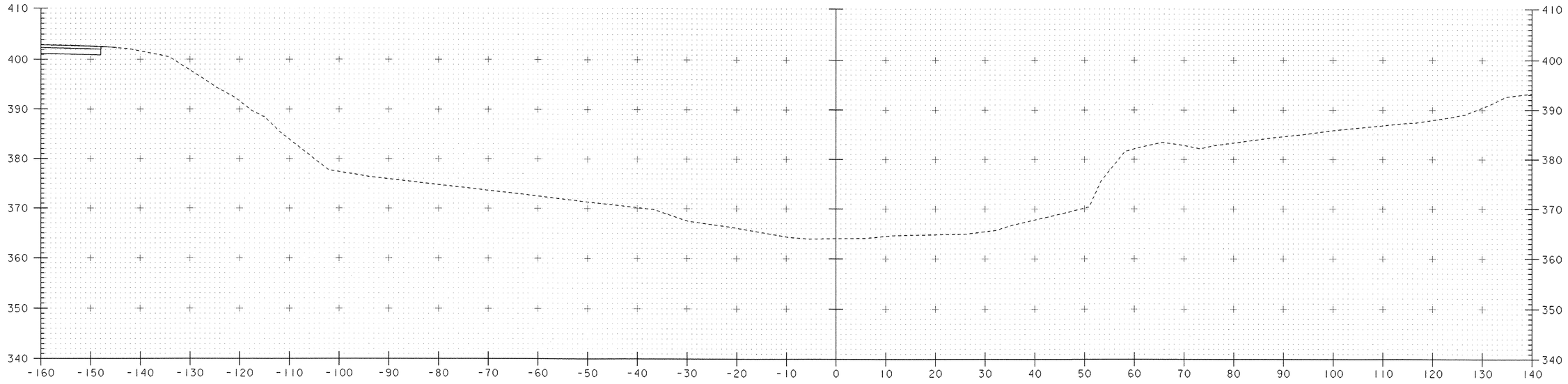

52+50




52+25

SCALE 1" = 10'-0
10 0 10

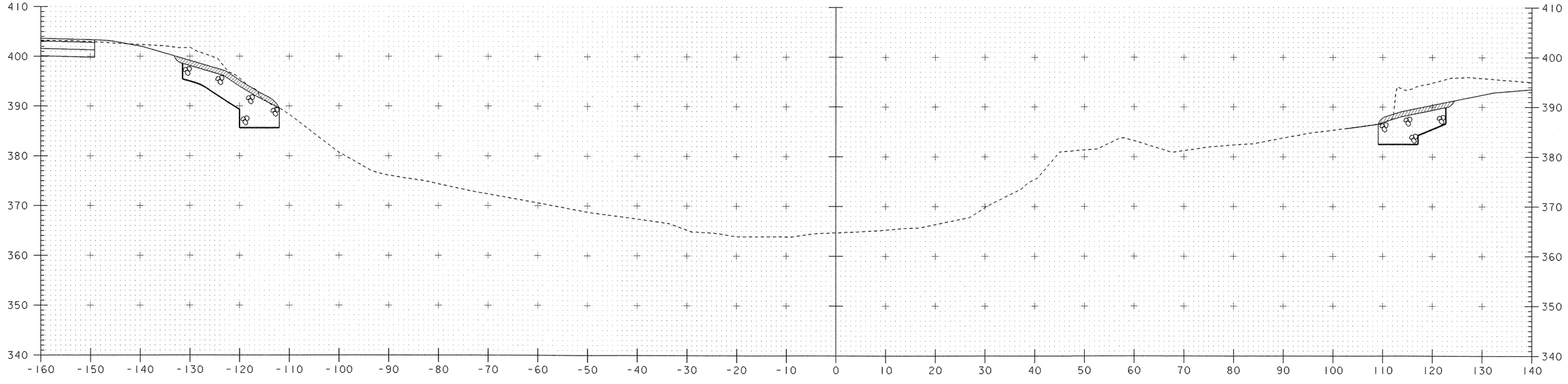
| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89J045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045ch4.i | PLOT DATE: 11-FEB-2005 |
| CHANNEL CROSS SECTIONS | |
| SECTION 52+25 THROUGH 52+50 | SHEET: 85 OF 97 |




STA 52+95.00 LT
END STONE FILL TYPE IV
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END GRUBBING MATERIAL

53+00

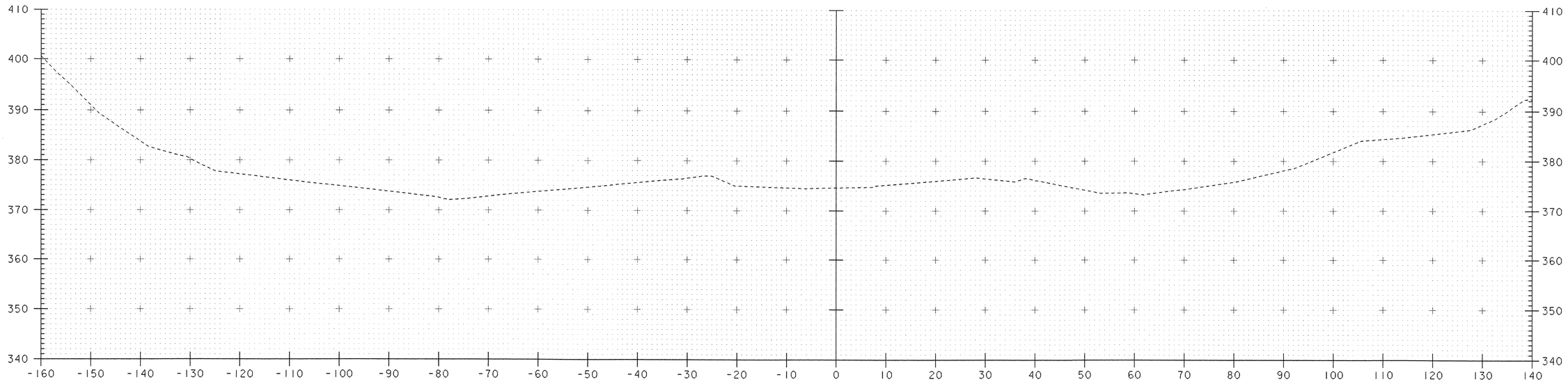
STA 52+80.00 RT
END STONE FILL TYPE IV
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END GRUBBING MATERIAL



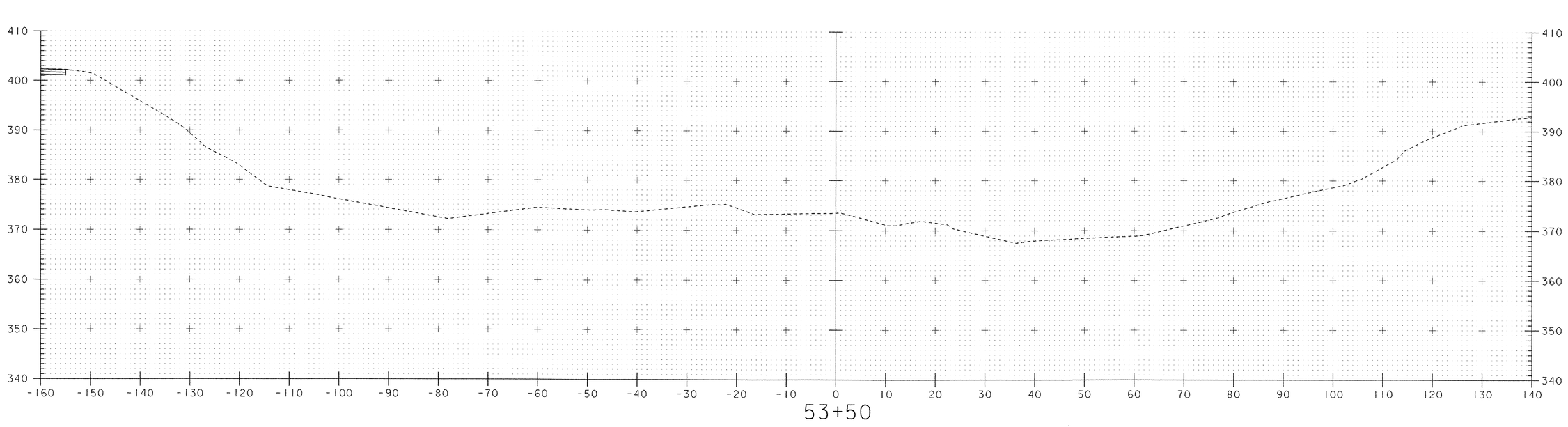

52+75

SCALE 1" = 10'-0
10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89J045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045ch5.i | PLOT DATE: 11-FEB-2005 |
| CHANNEL CROSS SECTIONS | |
| SECTION 52+75 THROUGH 53+00 | SHEET: 86 OF 97 |




54+00




53+50

SCALE 1" = 10'-0
10 0 10

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89J045/structures/sj045xsl.dgn<br>IPARM FILE NAME: sj045ch6.i | PLOT DATE: 11-FEB-2005 |
| CHANNEL CROSS SECTIONS | |
| SECTION 53+50 THROUGH 54+00 | SHEET: 87 OF 97 |

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# EROSION CONTROL NARRATIVE

## DESCRIPTION OF PROJECT

This project involves the reconstruction of a bridge #8 over the White River. The project is on TH4 (FAS 166) which is paved and in the village of West Hartford. A new two lane, three span bridge, plate girder main span with concrete Slab approach spans will be constructed downstream of the existing bridge. Traffic is to be maintained on the existing truss bridge during construction. Following completion of the new bridge, the existing truss bridge and abutments will be removed. The length of the project including approach work on VT route 14, TH5 and a field drive is approximately 1,160 feet. The project is in close proximity to a house and involves the relocation of a historic barn to the recreational park. approximately 1 mile from the project site.

The site is located, based upon NAD 83/92 at 41767.5900 N, 61947.5463 E (point 3 - see Tie sheets)

It is anticipated that this project will last two construction seasons.

Total disturbed area (including waste, borrow and staging areas): 1.30 acre

## SITE INVENTORY & ANALYSIS

**OFF SITE DRAINAGE CHARACTERISTICS:**
The property surrounding the project site consists of well established vegetation, moderate to steeply sloping, mixed softwood and hardwood trees with well defined drainageways.
Runoff water entering the project site will be primarily limited to that which is conveyed along roadway ditches, and that follows TH4 (15.3%) The current roadway ditches are fairly well defined and consist of gravel and grass but are not not lined with stone.

**DRAINAGE, WATERWAYS, BODIES OF WATER:**
The White River is located in the project area. There are no other waterbodies or wetlands within the project area. The White River is classified as hilly to mountainous, containing a straight streambed of mostly ledge with some gravel, cobbles and boulders. The contributing drainage area at the bridge crossing is 692 square miles.

**TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES:**
The topography of the project site is hilly with wooded areas along with residential lawns. Vermont Route 14 runs parallel along the east side of the river while TH 5 and a field drive runs parallel along the west side. The west bank the river, along TH 5 and the field drive is steep. There is an existing house and a historic barn within close proximity to the bridge There are utility lines and poles which are to remain in place. Except those being temporarily located during the barn relocation.

**VEGETATION:**
The land on and adjacent to the site is rural and consists of woods, farmland and residential property. The vegatative cover on the project varies greatly as it ranges from grass lawns to wooded areas. The majority of the wooded areas on the project site can be found on the western side of the White River. There is a great deal of ledge along the river banks.

**SOILS:**
According to a soil survey copmleted by the United States Department of Aggriculture Soil Conservation, there are three soil types present on this project site. Eichcock Silt Loam (k=0.49) is located between stations 27+00 and 29+25. Due to the relative steepness of the land, this region has potential for being highly erodible. Windsor Loamy Fine Sand (k=0.32) is found from approximate station 29+25 to the west river bank. This area is moderate to highly erodible as slopes reach as much as 60%. Ninegret Fine Sandy Loam (k=0.17)is found on the east side of the river and is considered potentially low for erodibility. Slopes in this region range from 0-8%.

**SENSITIVE RESOURCE AREAS:**
Carex Garberi, an endangered plant species, is located on the east bank of the river. Approximate locations have been outlined on the plans. see the project general notes for required treatment of affected areas. The moving of a historic barn located on the west side of the river will be necessary prior to constructing the new bridge.

**PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES:**
Disturbance of soils near natural or made-made waterways consists of that which is necessary to construct two new concrete bridge abutments, two piers, applicable roadway approaches as well as the removal of the existing bridge. Stabilization of disturbances to stream banks will be accomplished with Stone Fill, Type IV.

## TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL

Temporary erosion prevention measures to be utilized include:

"Project Demarcation Fencing," denoted -PDF- on the plans, to delineate the limits the contractor can access with construction equipment. This measure limits the area that can be disturbed and exposed to erosion. Payment for this fensing is under the item 620.70 "Snow Fence (Mod-PDF)

Seeding, mulching and biodegradable erosion control matting, or an equivalent product, will be ulitized on all slopes steeper than 3:1 that are not lined with stone fill. See the road way and channel sections for sideslope grades. These slopes shall be stabilized with in 48 hours of reaching final grade or during intermitant phases of the construction activity.

Tracking of all exposed slopes, combined with temporary mulching, will also be utilized on a regular basis. Any slopes to be exposed for several days prior to final grading shall be tracked and mulched. The forecast of rainfall events shall also trigger protection of exposed slopes.

Temporary stone check dams will be placed in ditches to reduce flow velocities and thus reduce the potential for erosion. Check dams will be placed along the ditches such that the elevation of the top of each check dam corresponds with the elevation of the toe of the preceding upslope check dam. See 'Erosion Controls Details' sheet. The check dams may be removed once the stone lining of the ditches is complete and the surrounding area stabilized.

Temporary measures to control sediment transport include:

Silt fence will be installed a distance of 5'-10' (1500 - 3000) from the toe of slopes to prevent sediment transport to down gradient areas. Each line of silt fence will be placed along the contour with ends turned slightly uphill to create a ponding effect should water try to run along the fencing and around the ends. The maximum slope length between separate runs of silt fence is 100' (30 000). Silt fence shall be installed prior to any upslope earthwork.

Sand bags filled with clean, small diameter stone, or an equivalent barrier, will be utilized around the drop inlet to create a temporary ponding area for particles to settle out as water drains through the barrier. Inlet protection shall be installed as soon as there is the possibility of water flowing to the structure. The height of the barrier shall be limited such that the ponding area does not present a hazard to the traveling public. Alternative inlet control measures shall be approved by the Engineer prior to implementation.

Measures such as temporary stone check dams, silt fence, and sand bags shall be checked regulary for accumulation of sediment. Sediment build-up shall be removed when the level of sediment reaches one-half the height of the control measure. Sediments shall be disposed of in an approved area such that they will not be subject to erosion.

Stabilized construction entrances to the project site, staging areas, as well as to waste and borrow areas shall be established. The minimum size of a stabilized construction entrance is 12' x 50' (3700 x 15 000). All surface water flowing to or diverted towards a construction entrance shall be piped under the stone. Pipes shall be appropriately sized for the contributing area, however, no pipes smaller than 150mm diameter shall be used. See typical detail on 'Erosion & Sediment Control Plan' sheet for materials and construction method to be utilized when constructing a stabilized entrance.

Temporary sediment settling basins may or may not be utilized on this project. If a sediment settling basin is to be used for dewatering a cofferdam, it should be sized based upon the following criteria:
(See Sediment Settling Basin Sizing Criteria.)

## PERMANENT EROSION CONTROL MEASURES

Several permanent erosion control measures will be utilized:

Stone lining of roadway ditches with clean, angular Stone Fill, Type I will be used to prevent erosion during storm events. See 'Erosion Control Details' sheet for typical ditch section.

Stone lining of the stream banks with Stone Fill, Type IV as specified by VTrans Eydraulics personnel is specified. This stone will protect from stream bank erosion during design storm events.

Stone Fill, Type I will be utilized at culvert outlets to dissipate water velocities and reduce erosion potential.

Grass, or other suitable ground cover will be established outside of the roadway limits where stone lining has not been specified. Top soil shall be used to established residential lawn at approximate station 30+25 to 31+25 LT. Seeding, mulching and biodegradable erosion control matting or an equivalent product, will be ulitized on all slopes steeper than 3:1 that are not lined with stone fill. See the road way and channel sections for sideslope grades. These slopes shall be stabilized with in 48 hours of reaching final grade.

## GENERAL EROSION & SEDIMENT CONTROL GUIDELINES

The Erosion Control Plans are meant as a guideline for preventing erosion and controlling sediment transport. The work outlined in this narrative consists of applying measures throughout the life of the project to control erosion and minimize the sedimentation of receiving waters. The measures include stabilization and structural practices, stormwater controls and other pollution prevention controls.

Coordinate the installation, use, and removal of erosion and sediment control measures with contruction activities to ensure economical, effective and continuous erosion and sediment control. Employ temporary stabilization practices in incremental stages as construction proceeds. The contractor will use additional erosion control measures as necessitated by the sequence of construction and as directed by the Engineer. See section 105.23 of the Vermont AOT Standard Specifications for Construction, dated 2001.

Install all erosion and sediment control measures as shown in the Erosion Control Plan or as directed by the Engineer. Do not modify the type, size or location of any control or practice without approval of the Engineer. Any changes shall be noted on the plans, in the weekly inspection report, and reported to the appropriate authority in a timely manner. Inspect all control measures weekly and after each rainfall event. Repair measures

Preventing initial soil erosion is much more effective than treating eroded sediment. Therefore, stabilize all disturbed areas promptly after construction activity has temporarily or permanently ceased. Temporary vegetation shall be established if the area is to be without construction activity for a period of 14 days. Perimeter control measures shall be installed following clearing, but prior to the start of any grubbing or grading activity, install other temporary controls in incremental stages as construction proceeds.

Maintaining vegetated buffers along stream banks, wetlands or other sensitive areas is a crucial erosion and sediment control measure that should be established wherever possible.

Control only sediment-laden runoff generated by the project site. Collect and route clean offsite runoff around or through the project site using diversion berms, diversion channels, culverts and/or temporary pipes.

Do not allow construction equipment to operate on the downslope side of perimeter control measures.

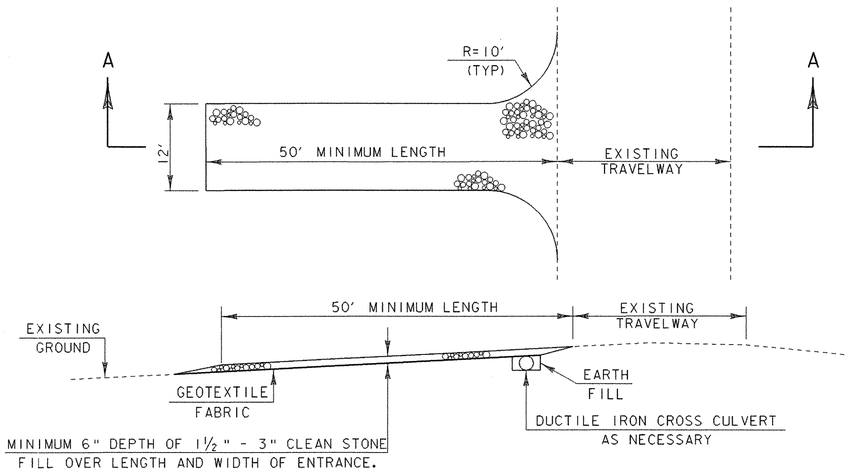
## SEDIMENT SETTLING BASIN SIZING CRITERIA

| PUMP FLOW RATE | | REQUIRED SURFACE AREA | | LENGTH / WIDTH = 2:1 | | | |
|---|---|---|---|---|---|---|---|
| Q(gpm) | Q(m^3/s) | (ft^2) | (m^2) | L (ft) | W (ft) | L (m) | W (m) |
| 50 | 0.0032 | 595 | 55 | 35.0 | 17.0 | 10.6 | 5.3 |
| 100 | 0.0063 | 1200 | 111 | 49.0 | 24.5 | 15.0 | 7.5 |
| 150 | 0.0095 | 1776 | 165 | 59.6 | 29.8 | 18.2 | 9.1 |
| 200 | 0.0126 | 2368 | 220 | 68.8 | 34.4 | 21.0 | 10.5 |
| 250 | 0.0158 | 2970 | 276 | 77.0 | 38.5 | 23.4 | 11.7 |
| 300 | 0.0189 | 3560 | 330 | 84.4 | 42.2 | 25.8 | 12.9 |
| 350 | 0.0221 | 4155 | 386 | 91.2 | 45.6 | 27.8 | 13.9 |

PROJECT NAME: HARTFORD
PROJECT NUMBER: BRO-BTN 2004(1)

FILE NAME: erosionnotes.xls
PROJECT LEADER: C.P. Williams
DESIGNED BY: J.L. Schultz
EROSION CONTROL NARRATIVE

PLOT DATE: 4/1/2004
DRAWN BY: K.M. Higgins
CHECKED BY: K.M. Higgins
SHEET 88 OF 97




SECTION A-A

## STABILIZED CONSTRUCTION ENTRANCE

NTS

**NOTES:**

SILT FENCE INSTALLATION MAY REQUIRE PHASING TO MAXIMIZE EFFECTIVENESS. INSTALL AND/OR MOVE SILT FENCE AS CONSTRUCTION PROGRESSES TO OBTAIN THE GREATEST PREVENTION OF SEDIMENT TRANSPORT. ALL SILT FENCE INSTALLATION SHALL BE PROPERLY KEYED INTO THE GROUND AND SUPPORTED AS DETAILED ON THE 'EROSION CONTROL DETAILS' SHEET. SILT FENCE SHOULD BE INSTALLED ALONG THE CONTOURS TO PREVENT CONCENTRATION OF RUNOFF. THE ENDS OF EACH RUN OF SILT FENCE SHOULD BE TURNED UPHILL TO PROVIDE A SMALL POOL FOR SILT SHOULD WATER TRY TO RUN AROUND THE END OF THE SILT FENCE.

TEMPORARY STONE CHECK DAMS SHALL BE KEYED INTO THE GROUND AND CONSTRUCTED AS PER THE 'EROSION CONTROL DETAILS' SHEET. THE PURPOSE OF TEMPORARY CHECK DAMS IS TO REDUCE RUNOFF VELOCITIES THUS PREVENTING EROSION.

SURFACE ROUGHENING HELPS REDUCE RUNOFF VELOCITIES AND INCREASES INFILTRATION RATES. ROUGHENING MAY BE ACCOMPLISHED BY A NUMBER OF METHODS SUCH AS TRACKING UP AND DOWN THE SLOPE WITH A BULLDOZER, TRACKING ACROSS THE SLOPE WITH A WHEELED VEHICLE OR ANY METHOD OF SCARIFYING THE SLOPE SUCH THAT THE GROOVES CREATED RUN PERPENDICULAR TO THE DIRECTION OF WATER RUNOFF.

## SEEDING FORMULA
## RURAL AREAS

| % WT. | LBS./A. | NAME | PUR % | GERM % |
|---|---|---|---|---|
| 37.5 | 22.5 | CREEPING RED FESCUE | 98 | 85 |
| 37.5 | 22.5 | TALL FESCUE | 95 | 90 |
| 5.0 | 3.0 | RED TOP | 95 | 90 |
| 15.0 | 9.0 | BIRDSFOOT TREFOIL | 98 | 85 |
| 5.0 | 3.0 | ANNUAL RYEGRASS | 95 | 85 |
| 100.0 | 60.0 | | | |

**GENERAL NOTES**

SEED MIXTURE: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.

SEED: TO BE APPLIED PER SEEDING FORMULAS OR AS DIRECTED BY THE ENGINEER.

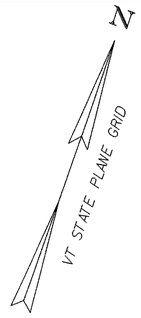
FERTILIZER: FORMULA 10-20-10. TO BE USED WITH SEED, APPLIED AT THE RATE OF 500 LBS./ACRE. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).

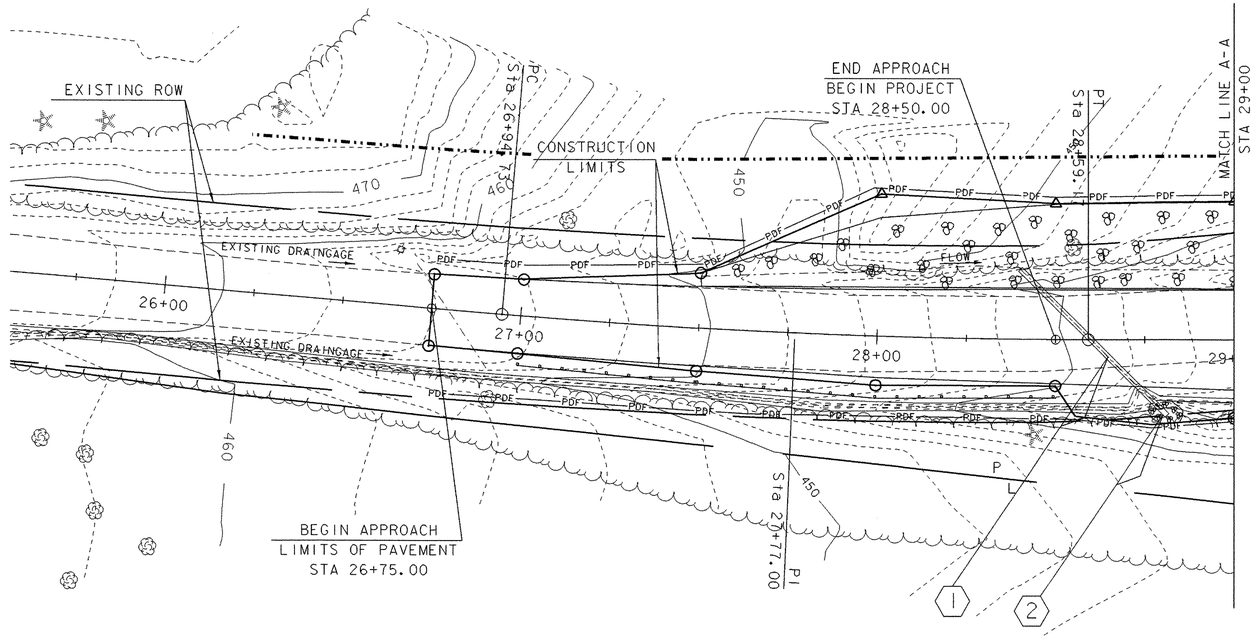
AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

| SOIL INFORMATION |
|---|
| HITCHCOCK SILT LOAM |
| 3 - 8% SLOPES |
| HYDROLOGIC SOIL GROUP: B |
| DEPTH TO BED ROCK: UNKNOWN |
| DEPTH TO WATER TABLE: UNKNOWN |
| POTENTIALLY HIGHLY ERODIBLE LAND |




SEE SHEET 22-23 FOR DRAINAGE INFORMATION

| LEGEND |
|---|
| FILTER CURTAIN |
| SILT FENCE |
| SAND BAGS |
| STONE CHECK DAMS |
| SOIL BOUNDARY |
| P/L PROPERTY LINE |
| PDF PROJECT DEMARCATION FENCE |

# TEMPORARY EROSION CONTROL LAYOUT SHEET 1

SCALE 1" = 20'-0

20 0 20

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

| PROJECT: | PROJECT NO.: |
|---|---|
| HARTFORD | BRO-BTN 2004(I) |

| | | | |
|---|---|---|---|
| DESIGN FILE NAME: | 89J045/structures/sj045bdr.dgn | | |
| IPARM FILE NAME: | sj045erol.i | PLOT DATE: | 11-FEB-2005 |
| SURVEYED BY: | R. MOREAU | SURVEY DATE: | 5/93 |
| SQUAD LEADER: | C. P. WILLIAMS | DRAWN BY: | J. L. SCHULTZ |
| TEMPORARY EROSION CONTROL LAYOUT SHEET 1 | | SHEET: | 89 OF 97 |

NOTES:

1. CHECK DAMS TO BE USED PRIOR TO STONE LINING DITCHES.
2. THE CHECK DAM SPACING SHOWN IS APPROXIMATE. ACTUAL SPACING WILL DEPEND ON THE SLOPE OF THE DITCH. SEE CHECK DAM DETAIL ON SHEET 35A
3. WHERE LEDGE IS EXPOSED, SAND BAGS MAY BE USED INSTEAD OF SILT FENCE TO PREVENT SEDIMENT MOVEMENT

| SOIL INFORMATION |
|---|
| WINDSOR LOAMY FINE SAND |
| 25 - 60% SLOPES |
| HYDROLOGIC SOIL GROUP: A |
| DEPTH TO BED ROCK: 8' - 17' |
| DEPTH TO WATER TABLE: 4' |
| MODERATE ERODIBILITY |

N

VT STATE PLANE GRID

MATCH LINE A-A STA 29+00

PROPOSED SEDIMENT DEWATERING LOCATION (CONTRACTOR TO PROVIDE DETAILS AND METHODOLOGY WITH COFFERDAM DESIGN, SEE EROSION AND SEDIMENT CONTROL NOTES 9 & 10)

CONSTRUCTION LIMITS

EXISTING DRAINAGE

FLOW

END APPROACH LIMITS OF PAVEMENT P L STA 6+50.00

CHANNEL POE Sta 54+00.00

END PROJECT BEGIN APPROACH STA 5+75.00

EXISTING ROW

CHANNEL LINE

END APPROACH STA 209+75.00 LIMITS OF PAVEMENT

MATCHLINE C-C STA 210+00

END PROJECT BEGIN APPROACH STA 34+50.00

CAREX CARBERI (SEE NOTES)

℄ BRG. PIER #2 Sta 33+63.00 FG = 400.59

℄ PIER #2 Sta 33+64.17

TEMPORARY CONSTRUCTION LIMITS

℄ BRG. PIER #1 Sta 32+13.00 FG = 403.88

℄ PIER #1 Sta 32+11.83

BEGIN BRIDGE Sta 31+66.00 FG = 404.91

END BRIDGE Sta 34+10.00 FG = 398.36

CONSTRUCTION LIMITS

WHITE RIVER FLOW

CHANNEL POB Sta 50+00.00

BEGIN APPROACH STA 207+25.00 LIMITS OF PAVEMENT

MATCHLINE B-B STA 207+00

POE Sta 35+00.00

N13°39'00"W

N18°39'00"W

S22°40'00"E

N00°00'01"W

| DRAINAGE STRUCTURE EROSION AND SEDIMENT CONTROL INDEX | | |
|---|---|---|
| NO. | LOCATION | DESCRIPTION |
| 1 | 28+46LT - 28+73RT | EXISTING PIPE INLET & OUTLET CONTROL |
| 2 | 28+40LT - 28+81RT | PROPOSED PIPE INLET & OUTLET CONTROL |
| 3 | 29+78LT - 30+25RT | PROPOSED PIPE INLET & OUTLET CONTROL |
| 4 | 5+53LT - 5+76RT | EXISTING PIPE INLET & OUTLET CONTROL |
| 5 | 5+53LT - 5+71RT | PROPOSED PIPE INLET & OUTLET CONTROL |
| 6 | 5+25LT - 5+53LT | CONSTRUCT STONE CHECK DAMS |
| 7 | 10+83RT - 10+89LT | EXISTING PIPE INLET & OUTLET CONTROL |
| 8 | 10+75RT - 10+98LT | PROPOSED PIPE INLET & OUTLET CONTROL |
| 9 | 30+60RT - 10+75RT | CONSTRUCT STONE CHECK DAMS |

NOTE: SEE EROSION AND SEDIMENT CONTROL DETAIL SHEET 35A

| SOIL INFORMATION |
|---|
| NINIGRET FINE SANDY LOAM |
| 0 - 8% SLOPES |
| HYDROLOGIC SOIL GROUP: B |
| DEPTH TO BED ROCK: 4' - 23' |
| DEPTH TO WATER TABLE: 3' - 8' |
| LOW TO MODERATE ERODIBILITY |

LEGEND

- FILTER CURTAIN
- SILT FENCE
- SAND BAGS
- STONE CHECK DAMS
- SOIL BOUNDARY
- P L PROPERTY LINE
- PDF PROJECT DEMARCATION FENCE

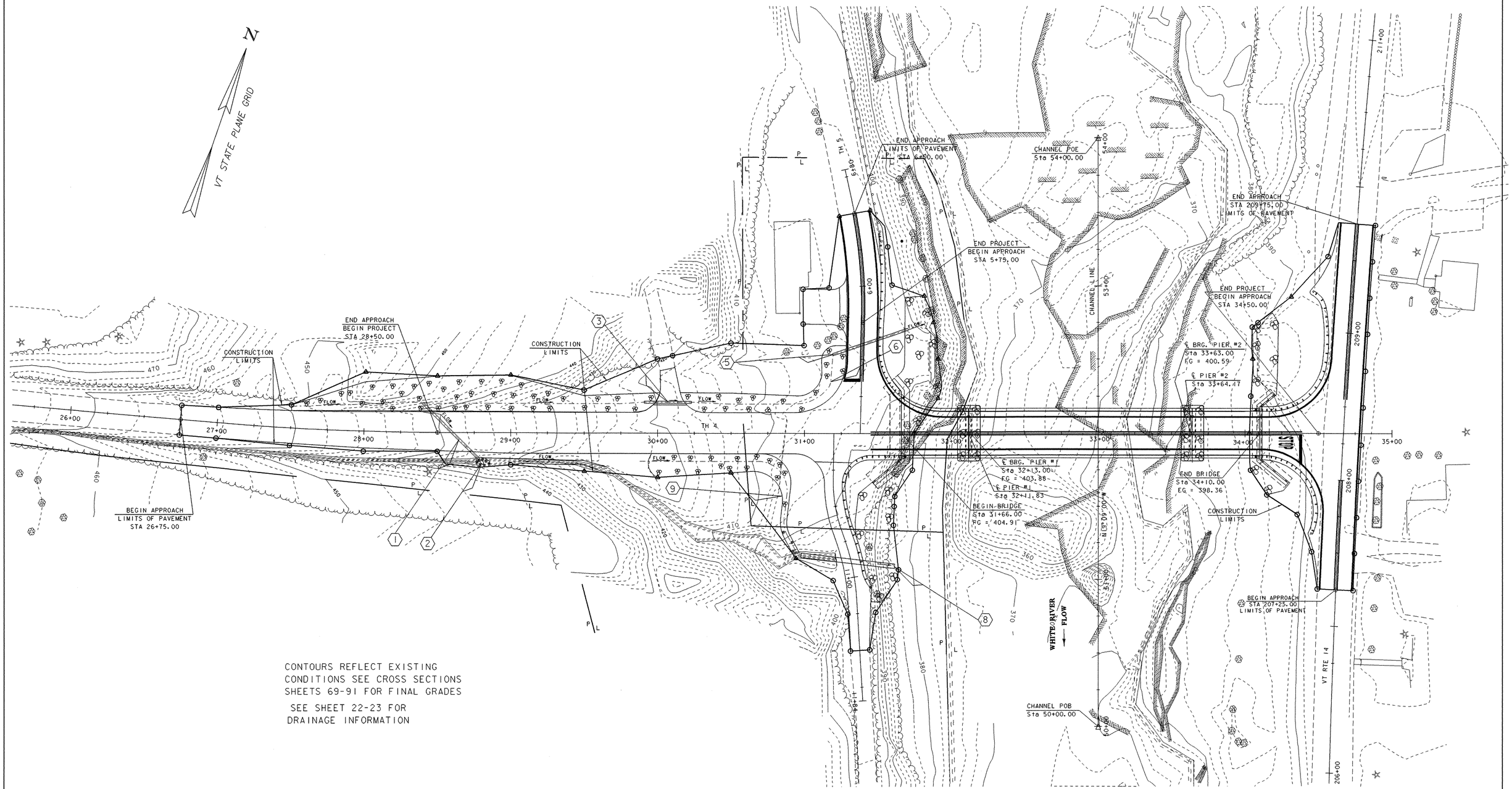
DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

# TEMPORARY EROSION CONTROL LAYOUT SHEET 2

SCALE 1" = 20'-0

20 0 20

| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
|---|---|
| DESIGN FILE NAME: 89j045/structures/sj045bdr.dgn | |
| IPARM FILE NAME: sj045ero2.i | PLOT DATE: 11-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: J. L. SCHULTZ |
| TEMPORARY EROSION CONTROL LAYOUT SHEET 2 | SHEET: 90 OF 97 |




CONTOURS REFLECT EXISTING
CONDITIONS SEE CROSS SECTIONS
SHEETS 69-91 FOR FINAL GRADES

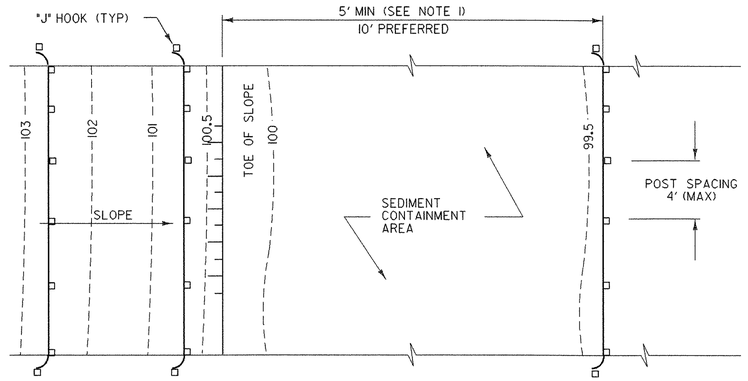
SEE SHEET 22-23 FOR
DRAINAGE INFORMATION

## FINAL CONDITIONS PLAN

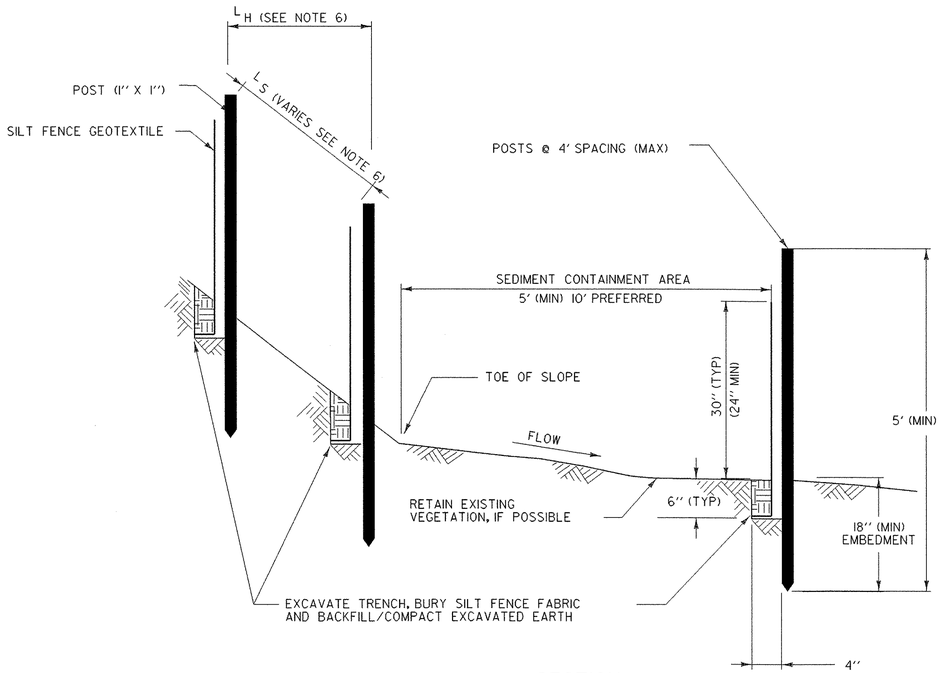
SCALE 1" = 30'-0
30 0 30

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 1983/92

| | |
|---|---|
| PROJECT: HARTFORD | PROJECT NO.: BRO-BTN 2004(I) |
| DESIGN FILE NAME: 89j045/structures/sj045ero.dgn | |
| IPARM FILE NAME: sj045final.i | PLOT DATE: 11-FEB-2005 |
| SURVEYED BY: R. MOREAU | SURVEY DATE: 5/93 |
| SQUAD LEADER: C. P. WILLIAMS | DRAWN BY: K. M. HIGGINS |
| FINAL CONDITIONS PLAN | SHEET: 91 OF 97 |




PLAN




SECTION
SILT FENCE - TEMPORARY

# SILT FENCE

## APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF SILT FENCE IS TO REDUCE RUNOFF VELOCITY AND TRAP SEDIMENT. VELOCITY IS REDUCED, WATER IS IMPOUNDED BEHIND THE MEASURE, AND SEDIMENT FALLS OUT OF SUSPENSION.

B. SILT FENCE SHALL BE INSTALLED ON A LINE OF EQUAL ELEVATION (CONTOUR). IT MAY BE INSTALLED AT INTERMEDIATE POINTS UP SLOPES AS WELL AS AT THE BOTTOM, AS SHOWN IN THE DETAIL.

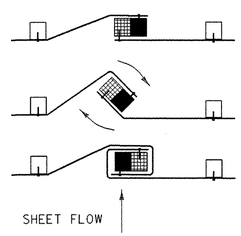
C. SILT FENCE SHALL NOT BE USED ACROSS CONCENTRATED FLOW.

## GENERAL NOTES:

1. SILT FENCE SHALL GENERALLY BE PLACED A MINIMUM OF 5 FEET BEYOND TOE OF SLOPE, 10 FEET PREFERRED, TO PROVIDE ADEQUATE AREA FOR SEDIMENT STORAGE AND FACILITATE MAINTENANCE OF SEDIMENT CONTAINMENT AREA.
2. ALL ENDS SHALL BE "J" HOOKED TO TRAP SEDIMENT.
3. IN AREAS WITH TWO SLOPES, SILT FENCE SHALL BE USED TO ERECT A DAM AND TRAP SEDIMENT AT THE BASE OF THE STEEPER SLOPE.
4. THE BOTTOM EDGE OF SILT FENCE SHALL BE BURIED A MINIMUM OF 6 INCHES BELOW GROUND, AND KEYED IN 4 INCHES. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC.
5. MAXIMUM DRAINAGE AREA TRIBUTARY TO 100 FEET OF SILT FENCE SHALL BE 0.25 ACRES.
6. THE FOLLOWING ARE MAXIMUM SLOPE LENGTHS FOR THESE MEASURES:

| CONSTRUCTED SLOPE | SLOPE LENGTH (LS) FT | HORIZONTAL LENGTH (LH) FT |
|---|---|---|
| 3 : 1 | 80 | 75 |
| 4 : 1 | 130 | 125 |
| 5 : 1 | 200 | 200 |
| > 5 : 1 | 250 | 250 |

7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
8. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
9. SILT FENCE SHALL BE REMOVED WHEN THE AREA HAS BEEN STABILIZED. AT TIME OF REMOVAL OF THE SILT FENCE, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
10. PAYMENT FOR INSTALLATION AND REMOVAL OF SILT FENCE SHALL BE MADE UNDER THE GEOTEXTILE FOR SILT FENCE ITEM.
11. PAYMENT FOR MONITORING SILT FENCE SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
12. PAYMENT FOR MAINTAINING SILT FENCE SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.




1. PLACE THE END POST OF ONE FENCE INSIDE THE END POST OF THE OTHER FENCE.
2. ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL
3. DRIVE BOTH POSTS 18 INCHES INTO THE GROUND AND BURY THE FLAP IN THE TRENCH.

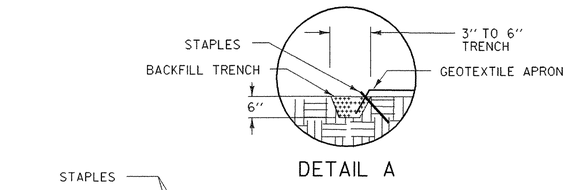
SPLICING DETAIL

# EROSION PREVENTION & SEDIMENT CONTROL DETAILS SILT FENCE

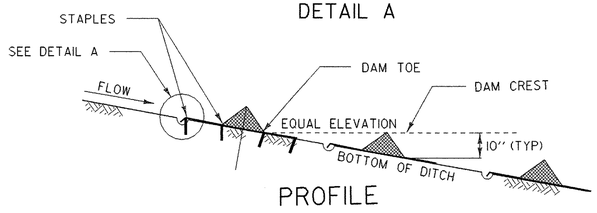
EPSC1

| PROJECT: | PROJECT NO.: |
|---|---|
| BRADFORD | TH3-9641 |

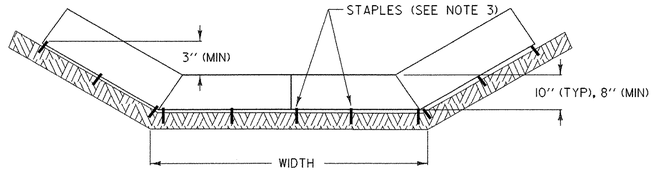
DESIGN FILE NAME: 96j286/Structures/s96j286ecnotes.dgn
IPARM FILE NAME: s96j286epsc1.i
PLOT DATE: 11-FEB-2005
DESIGNED BY: M. FESSEL
DRAWN BY: M. FESSEL
SQUAD LEADER: C. P. WILLIAMS
CHECKED BY:
SILT FENCE
SHEET: 92 OF 97



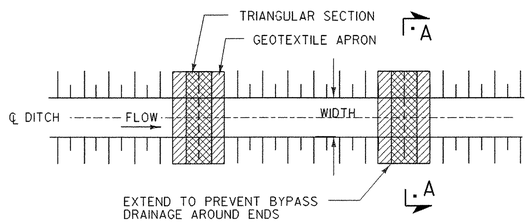

DETAIL A




PROFILE




SECTION A-A

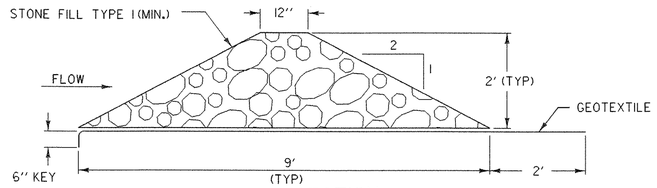



PLAN

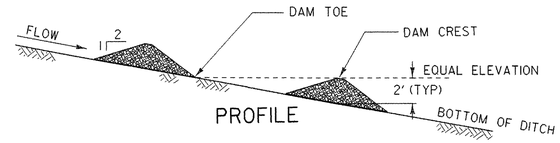
## CHECK DAM - TEMPORARY (PREFABRICATED)

| PREFABRICATED CHECK DAM PLACEMENT INTERVAL | |
|---|---|
| DITCH SLOPE | PLACEMENT INTERVAL ** |
| 1% | 50 FT |
| 2 % | 40 FT |
| 3 % | 25 FT |
| 4 % | 20 FT |
| 5 % | 15 FT |

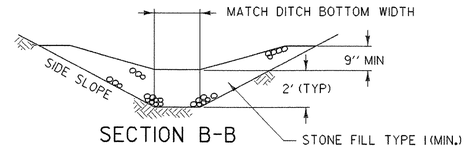
** BASED ON 10'' TYPICAL HEIGHT



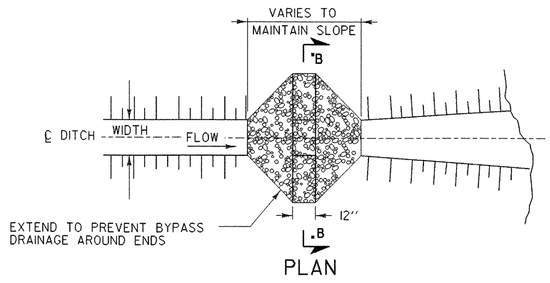

CROSS SECTION




PROFILE




SECTION B-B




PLAN

## CHECK DAM - TEMPORARY (STONE)

| STONE CHECK DAM PLACEMENT INTERVAL | |
|---|---|
| DITCH SLOPE | PLACEMENT INTERVAL ** |
| 1% | 200 FT |
| 2 % | 100 FT |
| 3 % | 65 FT |
| 4 % | 50 FT |
| 5 % | 40 FT |
| 6 % | 30 FT |
| 8 % | 25 FT |
| 10 % | 20 FT |

** BASED ON 2' TYPICAL HEIGHT

# CHECK DAMS

## APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF A CHECK DAM IS TO REDUCE EROSION IN A CHANNEL BY REDUCING FLOW VELOCITY.

B. CHECK DAMS WILL CAPTURE SEDIMENT THAT FALLS OUT OF SUSPENSION BEHIND THE CHECK DAM DUE TO DECREASED VELOCITY.

C. CHECK DAMS ARE NOT INTENDED TO FILTER SEDIMENT FROM TURBID WATER.

D. DETAILS SHOWN SHALL BE USED FOR TEMPORARY INSTALLATION ONLY.

E. PREFABRICATED DAMS ARE NOT TO BE USED ON SLOPES GREATER THAN 5% OR PER MANUFACTURER'S SPECIFICATIONS.

F. PREFABRICATED DAM SPECIFICATIONS SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

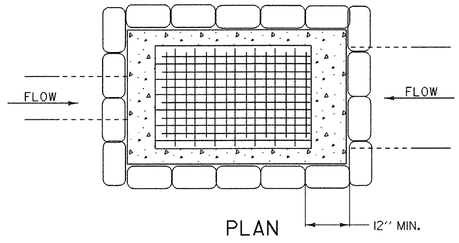
## GENERAL NOTES:

1. GEOTEXTILE SHALL BE INSTALLED UNDER STONE FILL. IT SHALL BE KEYED IN ON THE UP HILL END AND SHALL EXTEND 2 FEET BEYOND THE STONE ON THE DOWN HILL END.
2. CORE MATERIAL FOR THE STONE CHECK DAM SHALL MEET THE GRADATION REQUIREMENTS OF STONE FILL TYPE I (MIN.). STONE SIZE SHOULD BE INCREASED WITH INCREASED SLOPE AND VELOCITY.
3. THE UPHILL END OF THE APRON FOR THE PREFABRICATED CHECK DAM SHALL BE STAPLED AND BURIED AS SHOWN IN DETAIL "A" OR AS RECOMMENDED BY THE MANUFACTURERS LITERATURE.
4. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
5. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
6. AT TIME OF REMOVAL OF THE CHECK DAMS, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
7. PAYMENT FOR INSTALLATION AND REMOVAL OF CHECK DAMS SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.
8. PAYMENT FOR MONITORING CHECK DAMS SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
9. PAYMENT FOR MAINTAINING CHECK DAMS SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

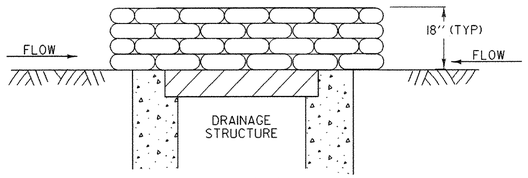
# EROSION PREVENTION & SEDIMENT CONTROL DETAILS CHECK DAMS

EPSC2

| PROJECT: BRADFORD | PROJECT NO.: TH3-9641 |
|---|---|
| DESIGN FILE NAME: 96j286/Structures/s96j286ecnotes.dgn | |
| IPARM FILE NAME: s96j286epsc2.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: M. FESSEL | DRAWN BY: M. FESSEL |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: |
| CHECK DAMS | SHEET: 93 OF 97 |

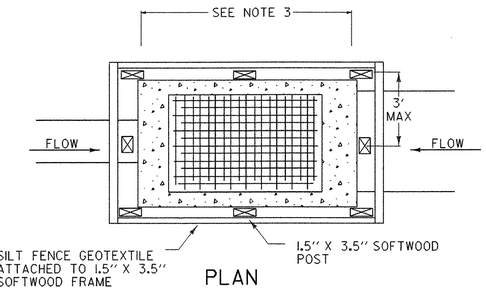



PLAN

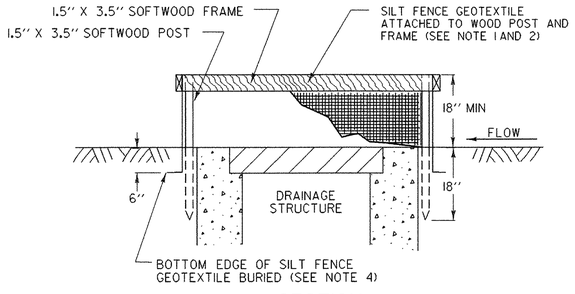



SECTION

## GRAVEL BAG DROP INLET PROTECTION

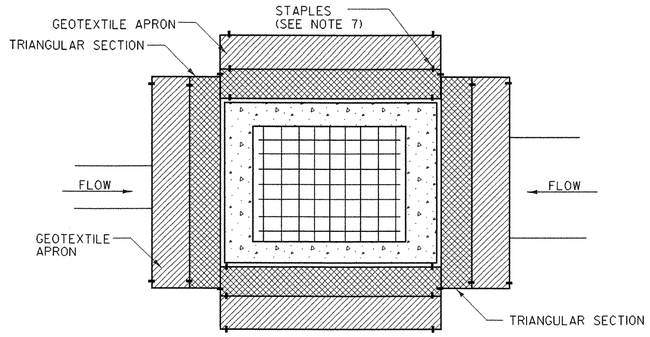



PLAN

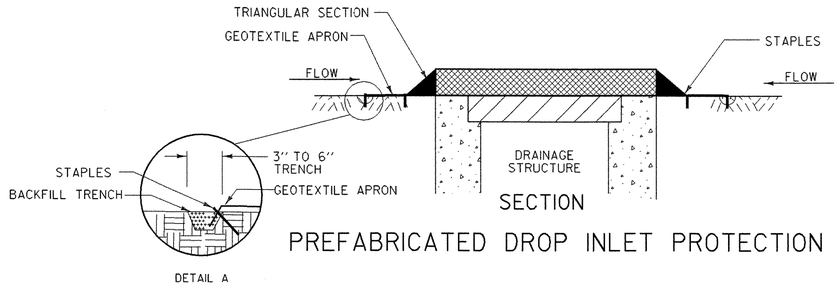



SECTION

## SILT FENCE DROP INLET PROTECTION



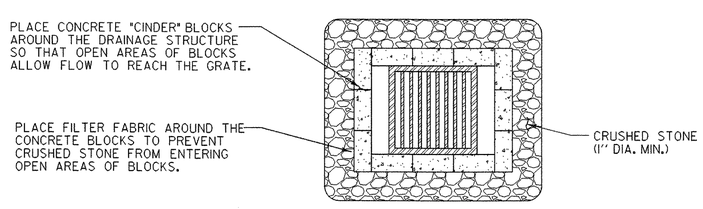

PLAN



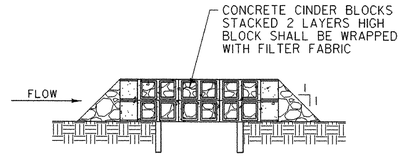

SECTION

DETAIL A

## PREFABRICATED DROP INLET PROTECTION




PLAN




SECTION

## ROCK BARRIER DROP INLET PROTECTION TEMPORARY PAVED AREAS

# DROP INLET PROTECTION

## APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF DRAINAGE STRUCTURE INLET PROTECTION IS TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM BY PONDING WATER WHICH ALLOWS SEDIMENT TO FALL OUT OF SUSPENSION.

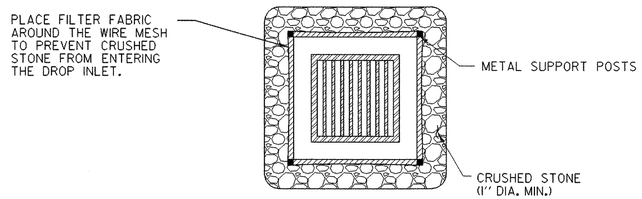
B. THESE EXAMPLES OF DROP INLET PROTECTION ARE NOT INTENDED FOR USE ON GRADES. ON GRADE THEY MAY CAUSE WATER TO BYPASS THE STRUCTURE, CREATING ADDITIONAL EROSION OR FLOODING.

C. POSSIBLE MODIFICATIONS FOR USE ON GRADE INCLUDE ADDING A BERM DOWNSTREAM OF THE INLET TO CREATE PONDING. CHECK DAMS MAY ALSO BE USED UPSTREAM OF THE INLET TO SLOW VELOCITIES.

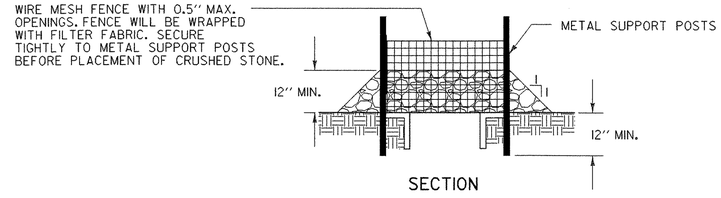
D. PREFABRICATED DROP INLET PROTECTION SPECIFICATIONS SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

## GENERAL NOTES:

1. THE TOP OF THE INLET PROTECTION SHALL BE SET AT THE MAXIMUM DESIRED WATER LEVEL, BASED ON FIELD LOCATION AND CONDITIONS.
2. SILT FENCE GEOTEXTILE SHALL BE A SINGLE CONTINUOUS PIECE TO ELIMINATE JOINTS.
3. SPACE SILT FENCE POSTS EVENLY AROUND INLET WITH A MAXIMUM SPACING OF 3 FEET. DRIVE POSTS A MINIMUM OF 18 INCHES INTO GROUND. WIRE MESH MAY BE REQUIRED BEHIND GEOTEXTILE TO PROVIDE SUPPORT.
4. SILT FENCE GEOTEXTILE SHALL BE EMBEDDED A MINIMUM OF 6 INCHES AND BACKFILLED. GEOTEXTILE SHALL BE SECURELY FASTENED TO POSTS AND FRAME.
5. GRAVEL BAGS SHALL BE FILLED WITH CLEAN STONE, RATHER THAN SAND, TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM IF BAGS ARE DAMAGED DURING USE.
6. GRAVEL BAGS SHALL BE INDIVIDUALLY TIED, DOUBLE BAGGED AND INVERSELY INSERTED. GRAVEL BAGS SHALL LAP THE JOINTS BETWEEN THE BAGS IN THE LAYER BELOW.
7. SECURE THE ENDS OF THE APRON FOR THE PREFABRICATED DRAINAGE STRUCTURE INLET PROTECTION WITH STAPLES AS DETAILED IN THE PLAN VIEW OR AS RECOMMENDED BY THE MANUFACTURERS LITERATURE.
8. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
9. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED, SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
10. PAYMENT OF INLET PROTECTION SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.
11. PAYMENT FOR MONITORING INLET PROTECTION SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
12. PAYMENT FOR MAINTAINING INLET PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.




PLAN



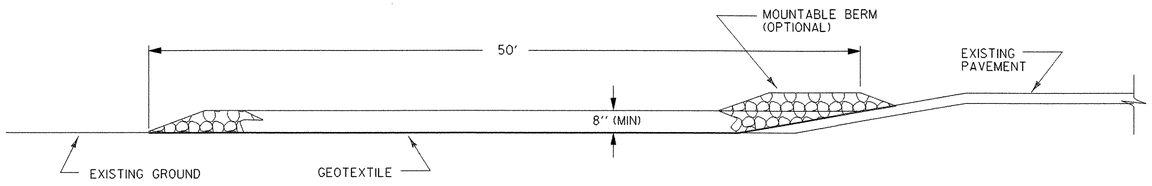

SECTION

## ROCK BARRIER INLET PROTECTION TEMPORARY UNPAVED AREAS

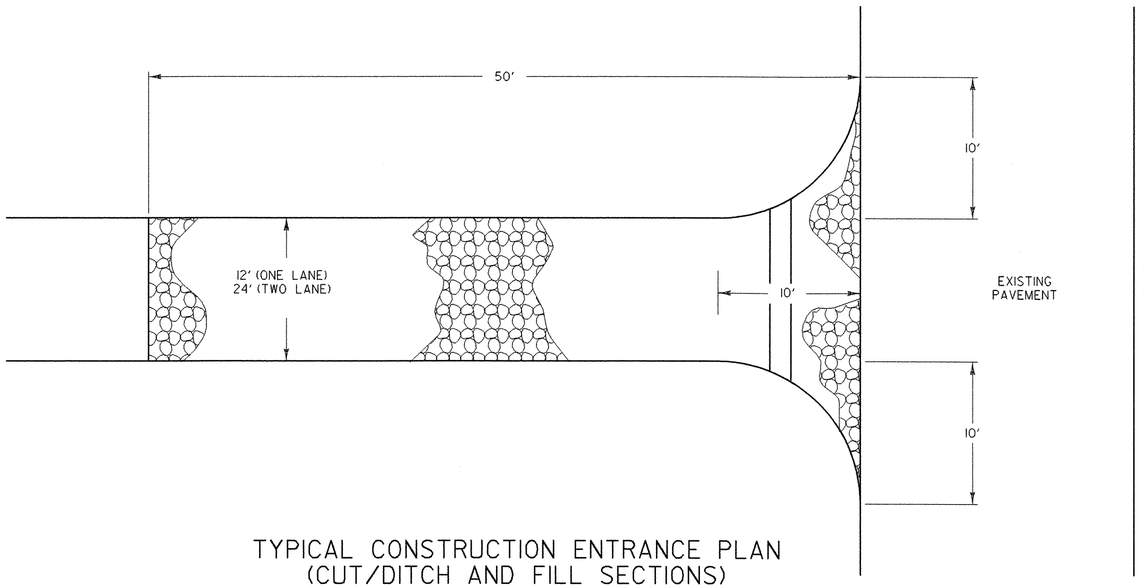
# EROSION PREVENTION & SEDIMENT CONTROL DETAILS DROP INLET PROTECTION

EPSC3

| PROJECT: | PROJECT NO.: |
|---|---|
| BRADFORD | TH3-9641 |
| DESIGN FILE NAME: 96j286/Structures/s96j286ecnotes.dgn | |
| IPARM FILE NAME: s96j286epsc3.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: M.FESSEL | DRAWN BY: M.FESSEL |
| SQUAD LEADER: C.P.WILLIAMS | CHECKED BY: |
| DROP INLET PROTECTION | SHEET: 94 OF 97 |




TYPICAL CONSTRUCTION ENTRANCE PROFILE
(CUT AND DITCH SECTIONS)




TYPICAL CONSTRUCTION ENTRANCE PLAN
(CUT/DITCH AND FILL SECTIONS)

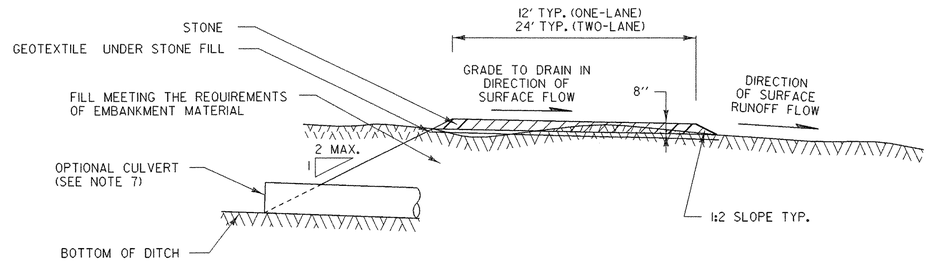
# STABILIZED CONSTRUCTION ENTRANCE

## APPLICATION NOTES:

A. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY OR STREETS.

## GENERAL NOTES:

1. STONE SIZE - USE CLEAN STONE WITH GRADATION BETWEEN 2 INCHES AND 4 INCHES .
2. LENGTH - 50 FEET (MIN)
3. THICKNESS - 18 INCHES (MIN)
4. WIDTH - 12 FEET (MIN)
5. GEOTEXTILE UNDER STONE WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE AS DIRECTED BY THE ENGINEER. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. PROPOSED DRAINAGE PIPES SHALL BE SIZED WITH SUFFICIENT CAPACITY TO CARRY DITCH FLOWS. ALTERNATIVE WAYS OF TRANSPORTING DITCH DRAINAGE ACROSS CONSTRUCTION ENTRANCES MAY BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER.
8. WHEN WASHING OF VEHICLE IS NECESSARY, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
10. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
11. AT THE TIME OF REMOVAL OF THE STABILIZED CONSTRUCTION ENTRANCE THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
12. PAYMENT OF THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.
13. PAYMENT FOR MONITORING STABILIZED CONSTRUCTION ENTRANCES SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
14. PAYMENT FOR MAINTAINING THE CONSTRUCTION ENTRANCE SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

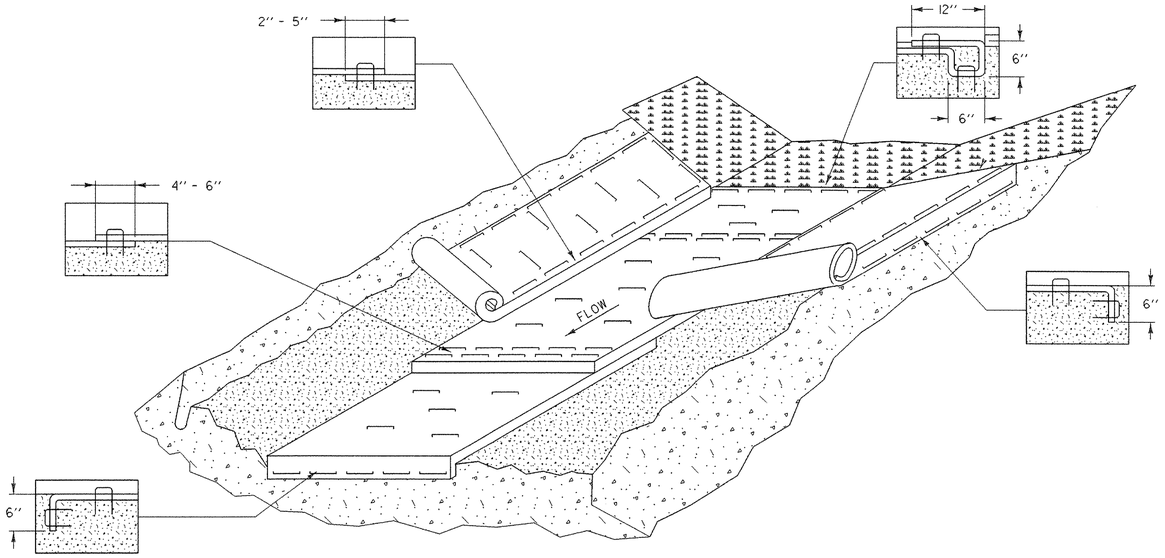



TYPICAL CONSTRUCTION ENTRANCE SECTION

# EROSION PREVENTION & SEDIMENT CONTROL DETAILS CONSTRUCTION ENTRANCE

EPSC4

| PROJECT: BRADFORD | PROJECT NO.: TH3-9641 |
|---|---|
| DESIGN FILE NAME: 96j286/Structures/s96j286ecnotes.dgn | |
| IPARM FILE NAME: s96j286epsc4.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: M.FESSEL | DRAWN BY: M.FESSEL |
| SQUAD LEADER: C.P.WILLIAMS | CHECKED BY: |
| CONSTRUCTION ENTRANCE | SHEET: 95 OF 97 |




## EROSION PROTECTION FOR DITCHES

### APPLICATION NOTES:

A. THE PURPOSE OF LINING THE DITCH WITH EROSION MATTING IS TO REDUCE EROSION AND AID THE ESTABLISHMENT OF VEGETATION AT LOW VELOCITIES.

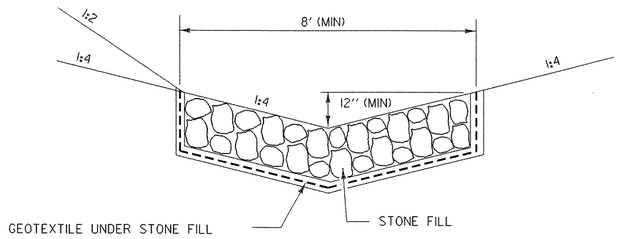
B. THE FOLLOWING CHARTS SHALL BE USED TO DETERMINE THE APPROPRIATE EROSION CONTROL MEASURE:

| DITCH AND CHANNEL PROTECTION | |
|---|---|
| SLOPE | LINING |
| < 1% | GRASS |
| 1% TO 4 % | EROSION MATTING |
| 4 % TO 10 % | STONE FILL, TYPE I |
| > 10 % | STONE FILL, TYPE II |

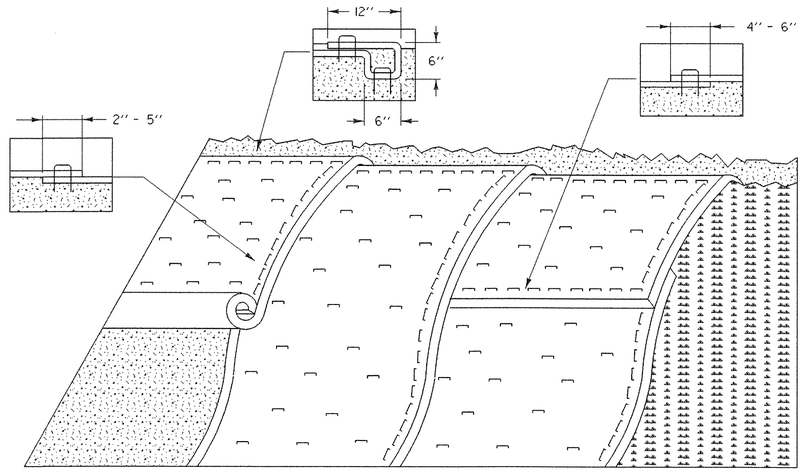
| STONE FILL THICKNESS | |
|---|---|
| STONE FILL TYPE | THICKNESS |
| TYPE I | 1 FT |
| TYPE II | 2 FT |

### GENERAL NOTES:

1. WATER MAY NEED TO BE DIVERTED TO ALLOW PROPER MATTING INSTALLATION.
2. GRADE AND SMOOTH CHANNEL TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
3. APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
4. INSTALL MATTING IN THE CENTER OF THE CHANNEL, IN THE DIRECTION OF THE WATER FLOW.
5. INSTALL MATTING ON THE SIDE SLOPES OF THE CHANNEL, OVERLAPPING THE CENTER MAT.
6. ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INTALLATION INSTRUCTIONS.
7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
8. MEASURES SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
9. PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
10. PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
11. PAYMENT FOR MAINTAINING DITCH PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.




TEMPORARY
STONE LINED
DITCH




## EROSION PREVENTION FOR SIDE SLOPES

### APPLICATION NOTES:

A. THE PURPOSE OF MATTING ON SIDE SLOPES IS TO REDUCE EROSION AND AID THE STABLISHMENT OF VEGETATION

B. EROSION CONTROL MATTING SHALL BE USED FOR THE FOLLOWING REASONS:

- SIDE SLOPES > 3:1 (H:V)
- AREAS WHERE SEED AND MULCH WILL NOT STAY IN PLACE ALONE
- WHERE SEEDING IS OUTSIDE THE GROWING SEASON.

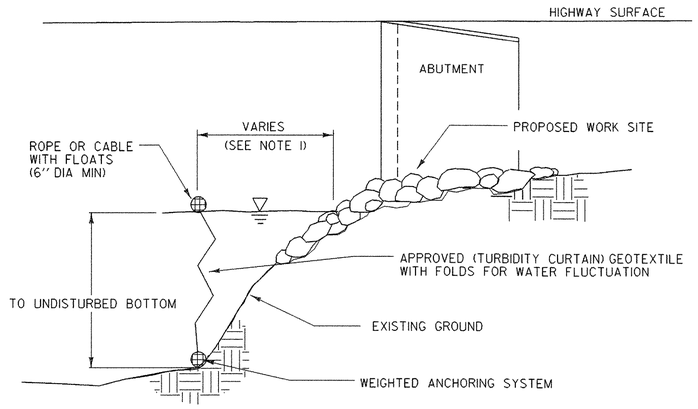
### GENERAL NOTES:

1. GRADE AND SMOOTH THE SLOPE TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
2. APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
3. ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INTALLATION INSTRUCTIONS.
4. UNROLL MATTING VERTICALLY DOWN SLOPE IN THE DIRECTION OF WATER FLOW.
5. OVERLAP UPPER MATTING OVER LOWER MATTING AS SHOWN.
6. OVERLAP ADJACENT MATTING AS SHOWN.
7. CUT EXCESS MATTING AT END OF SLOPE AND ANCHOR THE END.
8. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
9. MATTING SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
10. PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
11. PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
12. PAYMENT FOR MAINTAINING SLOPE PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

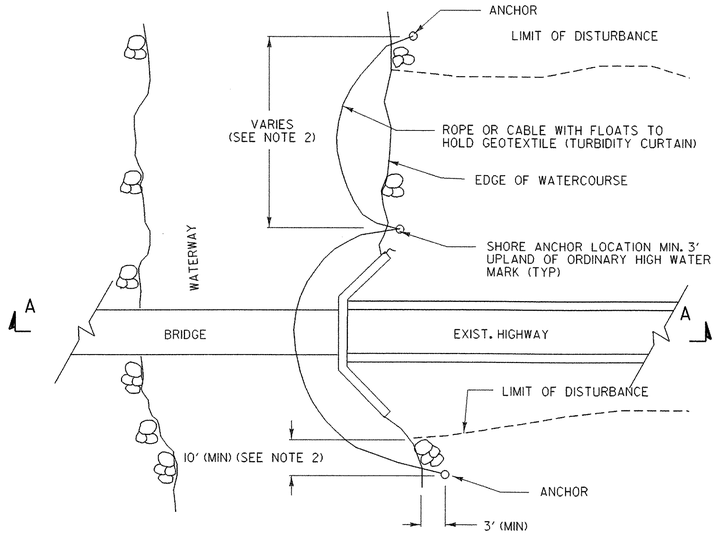
# EROSION PREVENTION & SEDIMENT CONTROL DETAILS DITCH & SLOPE PROTECTION

EPSC5

| PROJECT: | PROJECT NO.: |
|---|---|
| BRADFORD | TH3-9641 |
| DESIGN FILE NAME: 96j286/Structures/s96j286ecnotes.dgn | |
| IPARM FILE NAME: s96j286epsc5.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: M. FESSEL | DRAWN BY: M. FESSEL |
| SQUAD LEADER: C. P. WILLIAMS | CHECKED BY: |
| DITCH AND SLOPE PROTECTION | SHEET: 96 OF 97 |




SECTION A-A




PLAN

TURBIDITY CURTAIN - TEMPORARY

# TURBIDITY CURTAIN

## APPLICATION NOTES:

A. THE PURPOSE OF A TURBIDITY CURTAIN IS TO SEPARATE WORK AREAS IN OR ADJACENT TO WATERS, TO PREVENT SEDIMENT FROM ENTERING THE WATERS.

B. TURBIDITY CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY, OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN 1.5 FT/SEC.

C. TURBIDITY CURTAIN SHALL NOT BE PLACED AT THE OUTLET OF A CULVERT OR DITCH UNLESS THE VELOCITY DOES NOT EXCEED 1.5 FT/SEC.

D. THE DETAIL DEPICTS WORK AT A BRIDGE LOCATION, BUT TURBIDITY CURTAIN MAY BE APPLIED AT OTHER LOCATIONS.

## GENERAL NOTES:

1. THE TURBIDITY CURTAIN SHALL BE PLACED AS CLOSE TO THE WORK AS POSSIBLE WITHOUT INTERFERING WITH CONSTRUCTION OPERATIONS.

2. THE TURBIDITY CURTAIN SHALL BE A MAXIMUM OF 100 FEET LONG BETWEEN ANCHORS. LAST SECTION SHALL TERMINATE A MINIMUM OF 10 FEET BEYOND THE LIMIT OF DISTURBANCE.

3. THE CONTRACTOR SHALL MONITOR THE TURBIDITY CURTAIN, TAKING INTO ACCOUNT WEATHER PATTERNS AND PREVAILING WIND DIRECTIONS THAT MAY AFFECT WATER LEVELS, VELOCITY AND MOVEMENT OF THE TURBIDITY CURTAIN.

4. THE TURBIDITY CURTAIN SHALL BE REMOVED BY SLOWLY PULLING TOWARD THE SHORE TO MINIMIZE ESCAPE OF SEDIMENTS INTO THE WATERWAY.

5. THE WEIGHTED ANCHOR SYSTEM SHALL BE A TYPE THAT ALLOWS THE CURTAIN TO CONFORM TO THE CONTOUR ON THE BOTTOM OF THE WATERWAY.

6. PAYMENT FOR INSTALLATION AND REMOVAL OF THE TURBIDITY CURTAIN SHALL BE MADE UNDER THE GEOTEXTILE FOR FILTER CURTAIN ITEM.

7. PAYMENT FOR MONITORING TURBIDITY CURTAIN SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.

8. PAYMENT FOR MAINTAINING TURBIDITY CURTAIN SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

# EROSION PREVENTION & SEDIMENT CONTROL DETAILS TURBIDITY CURTAIN

EPSC6

| PROJECT: BRADFORD | PROJECT NO.: TH3-9641 |
|---|---|
| DESIGN FILE NAME: 96j286/Structures/s96j286ecnotes.dgn | |
| IPARM FILE NAME: s96j286epsc6.i | PLOT DATE: 11-FEB-2005 |
| DESIGNED BY: M.FESSEL | DRAWN BY: M.FESSEL |
| SQUAD LEADER: C.P.WILLIAMS | CHECKED BY: |
| TURBIDITY CURTAIN | SHEET: 97 OF 97 |

# GENERAL NOTES

## 1 CONSTRUCTION SPECIFICATIONS:

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

## 2 MATERIAL SPECIFICATIONS:

UNLESS NOTED, ALL STEEL TO BE AASHTO M270 GRADE 50W (ASTM A709-50W)
STEEL FOR GIRDER BOTTOM FLANGES TO BE ASTM A709-HPS70W

MATERIAL NOTED "CVN" ON DETAIL DRAWINGS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF VERMONT STANDARD SPECIFICATIONS.

HIGH STRENGTH BOLTS: AASHTO M164 (ASTM A325) 7/8" DIA.
IN 15/16" DIAMETER HOLES (U.N).
TYPE 3 SHALL BE USED FOR UNPAINTED CONNECTIONS.
TYPE 1 (GALV.) SHALL BE USED FOR PAINTED CONNECTIONS.

## 3. FABRICATION:

ALL HOLES SHALL BE PUNCHED OR DRILLED FULL SIZE.

STUDS ARE FURNISHED AND FIELD APPLIED BY OTHERS.

## 4 WELDING:

THE CONFIGURATION OF THE WELD JOINTS AND ALL WELDING PROCEDURES SHALL BE IN ACCORDANCE WITH AASHTO/AWS D.1.5-02 BRIDGE WELDING CODE AND WITH THE SPECIFICATIONS SHOWN BESIDE. ALL WELDING WILL BE DETAILED TO PRE-QUALIFIED JOINTS, UNLESS PROHIBITED BY THE DESIGNER.

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

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

## 5 CLEANING:

ALL STEEL THAT WILL REMAIN UNPAINTED SHALL BE BLAST CLEANED AS PER SSPC SP-10 PER SPEC. 506.14(a)

ALL STEEL THAT WILL BE PAINTED SHALL BE BLAST CLEANED AS PER SSPC SP-6 PER SPEC. 513.04(a)

## ⚠ 6 PAINT:

ALL STEEL COMPONENTS WITHIN A DISTANCE OF 8'-0" (END DIAPHRAGMS INCLUDED) FROM THE EXPANSION END OF GIRDERS (PIER #1) SHALL BE COATED WITH THE PROTECTIVE SYSTEM ACCORDING TO SECTION 513 OF THE SPECIFICATION. PAINT SYSTEM MUST BE LISTED ON THE QUALIFIED PRODUCT LIST. THE PAINT SHALL BE BROWN COLOR CHIP NO.20059 PER SECTION 513.02. PROTECTIVE GREASE SHALL BE APPLIED IN THE FIELD BY OTHERS PER SUPPLEMENTAL SPECIFICATION 513.

PAINT MANUFACTURER:
CARBOLINE COMPANY.

PRODUCT SYSTEM:
PRIMER COAT: CARBOLINE 859 ORGANIC ZINC RICH EPOXY PRIMER, ~~3-5~~ 3-6 MILS DFT
INTERMEDIATE COAT: CARBOLINE 888 EPOXY, ~~3-5~~ MILS DFT 3-10
TOP COAT: CARBOLINE 133HB ALIPHATIC POLYURETHANE, 3-5 MILS DFT

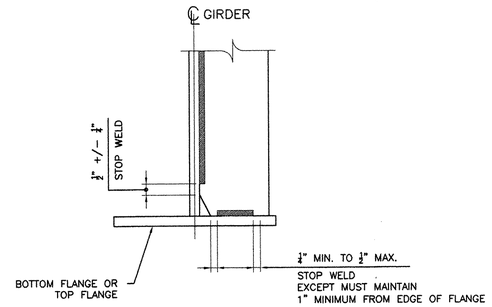
THE FAYING SURFACES ON THE CONNECTION PLATES SHALL BE PREPARED AS CLASS "C" THESE SURFACES SHALL BE PROTECTED FROM DAMAGE AND CORROSION PRIOR TO THE CONNECTION.

## 7 FIELD CONNECTIONS:

ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH STRENGTH A-325 BOLTS TYPE 3 OR 1 AS NOTED, IN 15/16" DIAMETER HOLES UNLESS OTHERWISE NOTED. INSTALLED PER 506.19(c) AND SPECIAL PROVISIONS.

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

PIECE MARKS WILL BE LOCATED AS SHOWN ON ERECTION DRAWING.




TYPICAL WELD DETAIL

Structures Copy

RECEIVED
CK'D BY Knull OK'D BY _____
SEP 2 0 2005
RESUBMIT _____ APPROVED As Noted
BY CPW DATE 10/31/05

RESERVED FOR STAMPS

| REV | DATE | DESCRIPTION |
|---|---|---|
| ⚠ | 09/02/05 | AS PER APPROVAL COMMENTS |

| QTY | DATE | ISSUED TO | FOR |
|---|---|---|---|
| 8 | 7/14/05 | FW WHITCOMB | APPROVAL |
| 8 | 7/14/05 | FW Whitcomb | Approval |

NOTICE
This drawing shall not be used or reproduced in any manner, nor shall any similar drawings or structures be made therefrom, nor shall the information thereon be used for any purpose other than that for which it is released without the written consent of an officer of EASTERN BRIDGE LLC

EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

tenca 1028

| | | | |
|---|---|---|---|
| PROJECT: BRIDGE 8 OVER THE WHITE RIVER, PROJECT NO BRO-BTN 2004(1) | | | |
| LOCATION: TOWN OF HARTFORD, COUNTY OF WINDSOR, VERMONT | | | |
| ENGINEER: STATE OF VERMONT, AGENCY OF TRANSPORTATION | | | |
| CUSTOMER: FW WHITCOMB CONSTRUCTION CO. | | | |
| DRAWING TITLE: GENERAL NOTES | | | |
| DRAWN BY: YT | 06/02/05 | JOB NUMBER: 6005 | SHEET NUMBER: GN1 |
| CHECKED BY: GG | 06/06/05 | | |

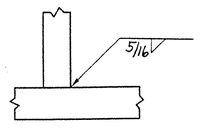
098 SS

**EASTERN BRIDGE, LLC**
WELDING PROCEDURE SPECIFICATION

| | |
|---|---|
| WPS NUMBER:SMAW PL#00-02 | ISSUE DATE:7/11/05 |
| PROJECT:VT AOT BRO-BTN 2004 (1) | EB JOB NO.:6005 |
| BASE METAL:A709 GR 345W | |
| WELDING PROCESS:SMAW | |
| FILLER METAL SPEC.:A5.5 , LINCOLN E8018 C3 | |
| FLUX / SHIELDING GAS:N/A | |
| CURRENT AND POLARITY:DCEP | ELEC STICKOUT:N/A |
| WELDING POSITION:2F | |
| PREHEAT AND INTERPASS TEMP.:AWS D1.5 TABLE 4.4 | WPS QUALIFICATION:PREQUALIFIED |
| HEAT INPUT:29.04 - 137.7 KILOJOULES | SUPPORTING PQR#:N/A |

| ELECTRODE SIZE | WELDING AMPS | CURRENT VOLTS | TRAVEL SPEED |
|---|---|---|---|
| 1/8" | 110-130 | 22-26 | 3-5 IPM |
| 5/32" | 130-170 | 22-26 | 3-5 IPM |
| 3/16" | 170-255 | 24-27 | 3-5 IPM |

JOINT DETAIL AND AWS NUMBER:FILLET 2F




NOTES:
FOR WELDING
GR 345W TO GR 345W
GR 345W TO GR 485W

VTrans RECEIVED
OK'D BY_____OK'D BY_____
JUL 2 1 2005
RESUBMIT_____APPROVED_____
BY DATE 8-1-05

MIMUM PREHEAT AND INTERPASS TEMPERATURES SHALL BE AS FOLLOWS:
MAXIMUM INTERPASS TEMPERATURE SHALL BE 450F

| THICKNESS OF THICKEST PART AT POINT OF WELDING | TEMPERATURE, F ASTM A709 GR 345W STEEL |
|---|---|
| UP TO 3/4" | 50F |
| 3/4" TO 1 1/2" | 125F |
| 1 1/2" TO 2 1/2" | 175F |
| OVER 2 1/2" | 225F |

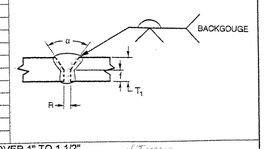
THIS PROCEDURE MAY VARY DUE TO FABRICATION SEQUENCE, FIT UP, PASS SIZE, ETC. WITHIN THE LIMITS PROVIDED IN THE CONTRACT DOCUMENTS AND THE AWS D1.5 BRIDGE WELDING CODE.

**EASTERN BRIDGE, LLC**
WELDING PROCEDURE SPECIFICATION

| | |
|---|---|
| WPS NUMBER: 2005-3-1 | ISSUE DATE:7/11/05 |
| PROJECT: VT AOT BRO-BTN 2004 (1) | EB JOB NO.:6005 |
| BASE METAL: ASTM A709 GR 345W | |
| WELDING PROCESS: SUBMERGED ARC WELDING | |
| FILLER METAL SPEC.:AWS A5.23 LINCOLN LA75 | |
| FLUX / SHIELDING GAS:LINCOLN 960 | |
| CURRENT AND POLARITY:DCEP | ELEC STICKOUT:1" +/- 1/4" |
| WELDING POSITION:1G | |
| PREHEAT AND INTERPASS TEMP.:AWS D1.5 TABLE 4.4 | WPS QUALIFICATION:AWS D1.5 / 5.13 |
| HEAT INPUT:50.68 - 73.92 KILOJOULES | SUPPORTING PQR#: 2005-3 |

| ELECTRODE SIZE | WELDING AMPS | CURRENT VOLTS | TRAVEL SPEED |
|---|---|---|---|
| 3/32" | 396 - 440 | 28.8 - 31.5 | 11.25 - 13.5 |

JOINT DETAIL AND AWS NUMBER: BL2c-S




NOTES:
OVER 1/2" TO 1"
R = 0
F = 1/4"
A = 60 DEGREES

OVER 1" TO 1 1/2"
R = 0
F = 1/2"
A = 60 DEGREES

VTrans RECEIVED
OK'D BY_____OK'D BY_____
JUL 2 1 2005
RESUBMIT_____APPROVED_____
BY DATE 8-1-05

MIMUM PREHEAT AND INTERPASS TEMPERATURES SHALL BE AS FOLLOWS:
MAXIMUM INTERPASS TEMPERATURE SHALL BE 450F

| THICKNESS OF THICKEST PART AT POINT OF WELDING | TEMPERATURE, F ASTM A709 GR 345W STEEL |
|---|---|
| UP TO 3/4" | 50F |
| 3/4" TO 1 1/2" | 70F |
| 1 1/2" TO 2 1/2" | 150F |
| OVER 2 1/2" | 225F |

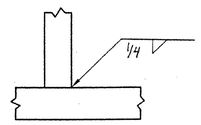
THIS PROCEDURE MAY VARY DUE TO FABRICATION SEQUENCE, FIT UP, PASS SIZE, ETC. WITHIN THE LIMITS PROVIDED IN THE CONTRACT DOCUMENTS AND THE AWS D1.5 BRIDGE WELDING CODE.

**EASTERN BRIDGE, LLC**
WELDING PROCEDURE SPECIFICATION

| | |
|---|---|
| WPS NUMBER:SMAW PL#00-02-6 | ISSUE DATE:7/11/05 |
| PROJECT: VT AOT BRO-BTN 2004 (1) | EB JOB NO.:6005 |
| BASE METAL:A709 GR 345W | |
| WELDING PROCESS:SMAW | |
| FILLER METAL SPEC.:A5.5 LINCOLN E8018 C3 | |
| FLUX / SHIELDING GAS:N/A | |
| CURRENT AND POLARITY:DCEP | ELEC STICKOUT:N/A |
| WELDING POSITION:2F | |
| PREHEAT AND INTERPASS TEMP.:AWS D1.5 TABLE 4.4 | WPS QUALIFICATION:PREQUALIFIED |
| HEAT INPUT:29.04 - 137.7 KILOJOULES | SUPPORTING PQR#:N/A |

| ELECTRODE SIZE | WELDING AMPS | CURRENT VOLTS | TRAVEL SPEED |
|---|---|---|---|
| 1/8" | 110-130 | 22-26 | 3-5 IPM |
| 5/32" | 130-170 | 22-26 | 3-5 IPM |
| 3/16" | 170-255 | 24-27 | 3-5 IPM |

JOINT DETAIL AND AWS NUMBER:FILLET 2F




NOTES: 6MM FILLET

VTrans RECEIVED
OK'D BY_____OK'D BY_____
JUL 2 1 2005
RESUBMIT_____APPROVED_____
BY DATE 8-1-05

MIMUM PREHEAT AND INTERPASS TEMPERATURES SHALL BE AS FOLLOWS:
MAXIMUM INTERPASS TEMPERATURE SHALL BE 450F

| THICKNESS OF THICKEST PART AT POINT OF WELDING | TEMPERATURE, F ASTM A709 GR 345W STEEL |
|---|---|
| UP TO 3/4" | 50F |
| 3/4" TO 1 1/2" | 125F |
| 1 1/2" TO 2 1/2" | 175F |
| OVER 2 1/2" | 225F |

THIS PROCEDURE MAY VARY DUE TO FABRICATION SEQUENCE, FIT UP, PASS SIZE, ETC. WITHIN THE LIMITS PROVIDED IN THE CONTRACT DOCUMENTS AND THE AWS D1.5 BRIDGE WELDING CODE.

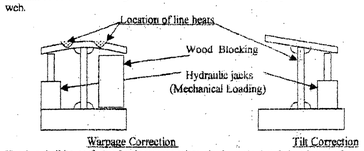
**EASTERN BRIDGE, LLC**
**RR 2, BOX 302**
**CLAREMONT, NH 03743**

PHONE (603) 542-5202 FAX (603) 542-5317

**Warpage and Tilt of Flange Correction Procedure, Rev. 1 NYS**

SCOPE: This procedure is to be used to correct unacceptable amounts of warpage, (deviation from flatness) or flange tilt, (deviation of flanges from a line normal to the centerline of the web) in fabricated girders or rolled beams. Correction shall be achieved through the use of line heating on the girder web, or flanges, or both, in combination with the use of moderate mechanical loading if needed.

1. The area to be heated shall be determined by the correction required, see sketch below. Warpage shall be corrected through the use of line heats on the flanges. Flange tilt shall be corrected through the use of line heats on the appropriate surface of the web.




Warpage Correction Tilt Correction

2. Heating shall be performed using appropriate sized rosebud style heating torches. Heating shall be confined to areas described in step 3 and shall be performed so as to bring the steel in those areas to a temperature between 1,000 F and 1,100 F as rapidly as possible without overheating the steel.
3. Heating patterns shall be marked on the steel prior to heating. Line heats shall be marked so as to avoid the areas of high restraint directly opposite fillet welds. The line heat length shall be determined by the amount of flange tilt or flange warpage requiring correction.
4. Heating shall begin at one end of the line and not proceed to the other end until the initial area is brought up to a temperature between 1,000 F and 1,100 F. The torch operator shall have 1,000 F, 1,100 F, & 1,150 F temperature indicating crayons. The steel surface temperature shall be monitored frequently during the heating process. and the temperature shall be controlled so as to achieve 1,100 F and not to exceed 1,150 F.
5. Apply mechanical loading until the bottom flange moves, but no more than ¼". The force applied shall be a minimum to maintain and support position during the heating process. Mechanical loading shall be achieved using hydraulic jacks in the locations shown for the two types of correction being performed.
6. The QA representative for the state shall be notified prior to implementation of this procedure.

VTRANS RECEIVED
OK'D BY_____OK'D BY JWC
MAY 19 2005
RESUBMIT_____APPROVED ✓
BY DATE 5-23-05

**EASTERN BRIDGE, LLC**
**RR 2, BOX 302**
**CLAREMONT, NH 03743**

PHONE (603) 542-5202 FAX (603) 542-5317

**HEAT CAMBERING AND CORRECTIVE HEAT CAMBERING PROCEDURE**

1. Support girder, with web in vertical position, at girder ends and at intermediate points as necessary to produce a uniform curvature in the member.
2. Intermediate safety catch blocks shall be maintained at mid distance between supports of the member and not more than 2" below the flanges at all times.
3. The beam being cambered shall be supported or braced to prevent deflection laterally and overturning during the heating process.
4. Heating shall be performed using a properly sized rosebud style heating tip. Heating shall be confined to areas described in Step 5 and shall be performed so as to bring the steel in these areas to a temperature not exceeding 1,150F as rapidly as possible without overheating the steel.
5. Heating patterns shall be marked on the girders prior to heating. Heat patterns will be located at even distances in a quantity sufficient to produce the desired camber. Whenever possible heating patterns shall be centered on stiffener locations. Additional blank stiffeners may be required at panel midpoints to provide sufficient heating sites in an effort to prevent or reduce web distortion. Patterns shall be truncated triangles with the base of the triangle being that flange which shall be concave in the finished girder. The apex of the triangle shall be located in the web at a point not less than 75% of the depth of the beam from the base of the triangle. The total included angle of the triangle shall not exceed 20 degrees and the base of the triangle shall not exceed 10".
6. Heating shall begin at the apex of the triangle and not proceed toward the base until the truncated area is brought up to a temperature not exceeding 1,150F. Once heating begins to progress towards the base of the triangle it shall not return to the apex. The torch operator shall have 1,000 F, 1,100 F, and 1,150 F temperature indicating crayons. The steel surface temperature shall be monitored frequently during the heating process.
7. No weight shall be applied without prior approval of the state.
8. After application of heating patterns the member being cambered shall stay in the vertical position until the heated areas cool to below 200F, to check and record results.
9. The heated areas shall be allowed to cool to below 600F in ambient conditions. After which time, the areas may be cooled in an accelerated manner using dry, compressed air.
10. The QA representative for the state shall be notified prior to implementation of this procedure.

VTRANS RECEIVED
OK'D BY_____OK'D BY JWC
MAY 19 2005
RESUBMIT_____APPROVED ✓
BY DATE 5-23-05

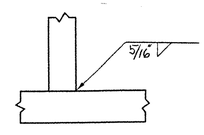
** TOTAL PAGE.04

**EASTERN BRIDGE, LLC**
WELDING PROCEDURE SPECIFICATION

| | |
|---|---|
| WPS NUMBER: 2005-3-2 | ISSUE DATE:7/11/05 |
| PROJECT: VT AOT BRO-BTN 2004 (1) | EB JOB NO.:6005 |
| BASE METAL: ASTM A709 GR 345W | |
| WELDING PROCESS: SUBMERGED ARC WELDING | |
| FILLER METAL SPEC.:AWS A5.23 LINCOLN LA75 | |
| FLUX / SHIELDING GAS:LINCOLN 960 | |
| CURRENT AND POLARITY:DCEP | ELEC STICKOUT:1" +/- 1/4" |
| WELDING POSITION:2F | |
| PREHEAT AND INTERPASS TEMP.:AWS D1.5 TABLE 4.4 | WPS QUALIFICATION:AWS D1.5 / 5.13 |
| HEAT INPUT:50.68 - 73.92 KILOJOULES | SUPPORTING PQR#: 2005-3 |

| ELECTRODE SIZE | WELDING AMPS | CURRENT VOLTS | TRAVEL SPEED |
|---|---|---|---|
| 3/32" | 396 - 440 | 28.8 - 31.5 | 11.25 - 13.5 |

JOINT DETAIL AND NY SCM NUMBER: FILLET




NOTES:
FOR WELDING
GR 345W TO 345W
GR 345W TO 485W

VTRANS RECEIVED
OK'D BY_____OK'D BY_____
JUL 2 1 2005
RESUBMIT_____APPROVED ✓
BY DATE 8-1-05

MIMUM PREHEAT AND INTERPASS TEMPERATURES SHALL BE AS FOLLOWS:
MAXIMUM INTERPASS TEMPERATURE SHALL BE 450F

| THICKNESS OF THICKEST PART AT POINT OF WELDING | TEMPERATURE, F ASTM A709 GR 345W STEEL |
|---|---|
| UP TO 3/4" | 50F |
| 3/4" TO 1 1/2" | 125F |
| 1 1/2" TO 2 1/2" | 175F |
| OVER 2 1/2" | 225F |

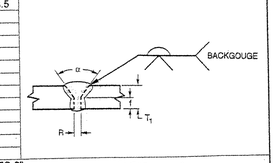
THIS PROCEDURE MAY VARY DUE TO FABRICATION SEQUENCE, FIT UP, PASS SIZE, ETC. WITHIN THE LIMITS PROVIDED IN THE CONTRACT DOCUMENTS AND THE AWS D1.5 BRIDGE WELDING CODE.

**EASTERN BRIDGE, LLC**
WELDING PROCEDURE SPECIFICATION

| | |
|---|---|
| WPS NUMBER:SAW PL#14-3 | ISSUE DATE:7/11/05 |
| PROJECT:VT AOT BRO-BTN 2004 (1) | EB JOB NO.:6005 |
| BASE METAL:ASTM A709 GR 485W | |
| WELDING PROCESS:SUBMERGED ARC WELDING | |
| FILLER METAL SPEC.:AWS A5.23-97 LINCOLN LA85 H4 MAX | |
| FLUX / SHIELDING GAS:LINCOLN MIL800 HPNI | |
| CURRENT AND POLARITY:DCEP | ELEC STICKOUT:1" +/- 1/4" |
| WELDING POSITION:1G | |
| PREHEAT AND INTERPASS TEMP.:HPS70 GUIDE TABLE 3 | WPS QUALIFICATION:AWS D1.5 5.13 |
| HEAT INPUT:50.68 - 73.92 KILOJOULES | SUPPORTING PQR#:SAW A332-3 PL#14 |

| ELECTRODE SIZE | WELDING AMPS | CURRENT VOLTS | TRAVEL SPEED |
|---|---|---|---|
| 3/32" | 396-440 | 28.8-30 | 11.25-13.5 |

JOINT DETAIL: GROOVE B-L2c-S




NOTES:
OVER 1/2" TO 1"
R = 0
f = 1/4" min
a = 60 degrees

OVER 1 1/2" TO 2"
R = 0
f = 3/8" min
a = 60 degrees

VTRANS RECEIVED
OK'D BY_____OK'D BY_____
JUL 2 1 2005
RESUBMIT_____APPROVED ✓
BY DATE 8-1-05

MIMUM PREHEAT AND INTERPASS TEMPERATURES SHALL BE AS FOLLOWS:
MAXIMUM INTERPASS TEMPERATURE SHALL BE 400F

| THICKNESS OF THICKEST PART AT POINT OF WELDING | TEMPERATURE, F ASTM A709 GR 485W STEEL |
|---|---|
| UP TO 3/4" | 50F |
| 3/4" TO 1 1/2" | 125F |
| 1 1/2" TO 2 1/2" | 125F |
| OVER 2 1/2" | 225F |

THIS PROCEDURE MAY VARY DUE TO FABRICATION SEQUENCE, FIT UP, PASS SIZE, ETC. WITHIN THE LIMITS PROVIDED IN THE CONTRACT DOCUMENTS AND THE AWS D1.5 BRIDGE WELDING CODE.

**EASTERN BRIDGE, LLC**
**RR 2, BOX 302**
**CLAREMONT, NH 03743**

PHONE (603) 542-5202 FAX (603) 542-5317

**HEAT CURVING AND SWEEP CORRECTION PROCEDURE STRIP HEAT METHOD**

1. Support girder, with web in horizontal position, at girder ends and at intermediate points as necessary to produce a uniform curvature in the member.
2. Intermediate safety catch blocks shall be maintained at mid distance between supports of the member and not more than 2" below the flanges at all times.
3. Heating shall be performed using large (1") rosebud style MAPP gas heating torches. Heating shall be confined to areas described in Step 4 and shall be performed so as to bring the steel in these areas to a temperature between 1,000 F and 1,150 F as rapidly as possible without overheating the steel.
4. Heat shall be applied to those edges of the girder flanges, which shall be on the concave side after completion.
5. Heating shall be done beginning at the center of the girder and working out to either end. Care shall be taken to heat both top and bottom flange edges at the same time.
6. If heating torches are mounted on an automatic Bug-O type carriage, the torch head proximity and travel speed shall be set to achieve 1,000 F as measured on the flange edge at a distance of 6" behind the torch head. The steel temperature shall be checked frequently to see that the temperature achieves 1,000 F and does not exceed 1,150 F.
7. If heating is done manually, care shall be taken to ensure that the heating is done in a consistent manner to achieve predictable results. The torch operators shall monitor the steel temperature frequently to see that the temperature reaches 1000 F and does not exceed 1,150 F. The rate of progression along the flange edge shall likewise be carefully controlled.
8. Edge heats may be done continuously or intermittently, depending on the amount of final horizontal curvature required. If heats are done intermittently, the individual heats shall be allowed to cool below 200F before beginning the next heating cycle.
9. The heated areas shall be allowed to cool to below 600 F in ambient conditions. After which time, the areas may be cooled in an accelerated manner using dry, compressed air
10. The intermediate safety catch blocks under the girder shall be monitored to maintain a space of no more than 2" during the heating process. It will be necessary to substitute different thickness catch blocks to maintain this space as the girder begins to contract and move.
11. The member being heated shall not be moved until the steel has reached ambient temperature.
12. The QA representative for the state shall be notified prior to implementation of this procedure.

VTRANS RECEIVED
OK'D BY_____OK'D BY JWC
MAY 19 2005
RESUBMIT_____APPROVED ✓
BY DATE 5-23-05

RECEIVED
OK'D BY_____OK'D BY_____
JUL 2 1 2005
RESUBMIT ✓ APPROVED ✓
BY GW GW DATE 8-1-05 8/15/05
RESERVED FOR STAMPS 10/31/05

| REV | DATE | DESCRIPTION |
|---|---|---|
| △ | - | - |

| QTY | DATE | ISSUED TO | FOR |
|---|---|---|---|
| 8 - | 7/14/05 | FW Whitcomb | Approval |


NOTICE
This drawing shall not be used or reproduced in any manner, nor shall any similar drawings or structures be made therefrom, nor shall the information thereon be used for any purpose other than that for which it is released without the written consent of an officer of EASTERN BRIDGE LLC.


tenca 1028

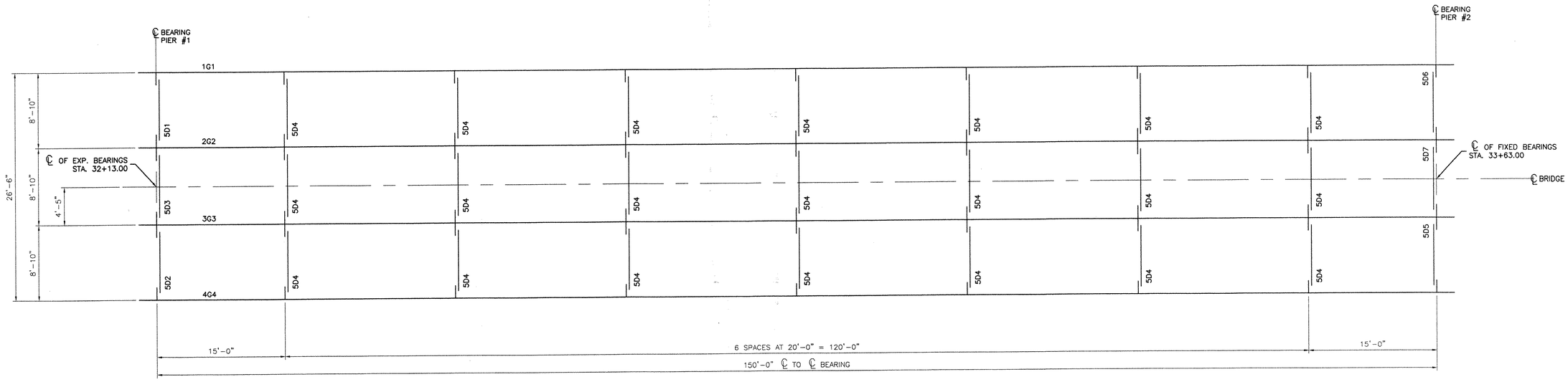
EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

| | |
|---|---|
| PROJECT: | BRIDGE 8 OVER THE WHITE RIVER, PROJECT NO BRO-BTN 2004(1) |
| LOCATION: | TOWN OF HARTFORD, COUNTY OF WINDSOR, VERMONT |
| ENGINEER: | STATE OF VERMONT, AGENCY OF TRANSPORTATION |
| CUSTOMER: | FW WHITCOMB CONSTRUCTION CO. |
| DRAWING TITLE: | WELD PROCEDURES |
| DRAWN BY: YT | 06/02/05 |
| CHECKED BY: GG | 06/06/05 |
| JOB NUMBER: | 6005 |
| SHEET NUMBER: | WP1 |

09955

## BILL OF MATERIAL

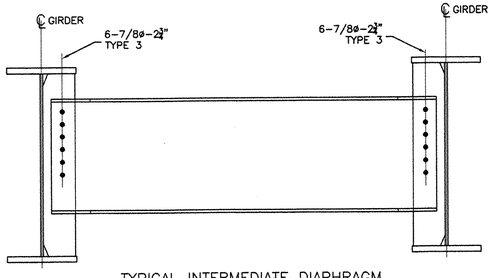
| Drawing Number | Revision Number | Ship Mark | Piece Mark | Qty | Type of Material | Size of Material | Grade | Length | Finish | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| E1 | | | | 252 | H.S. BOLT | 7/8ø | A325–TYPE 3 | 2 3/4 | | |
| E1 | | | | 72 | H.S. BOLT | 7/8ø | A325–TYPE 3 | 3 | | |
| E1 | | | | 72 | H.S. BOLT | 7/8ø | A325–TYPE 1 | 3 | GALVANIZED | |
| E1 | | | | 324 | H. HEX. NUT | 7/8ø | A563 GRADE DH3 | | | |
| E1 | | | | 648 | WASHER | 7/8ø | F436–TYPE 3 | | | |
| E1 | | | | 72 | H. HEX. NUT | 7/8ø | A563 GRADE DH | | GALVANIZED | |
| E1 | | | | 144 | WASHER | 7/8ø | F436 | | GALVANIZED | |



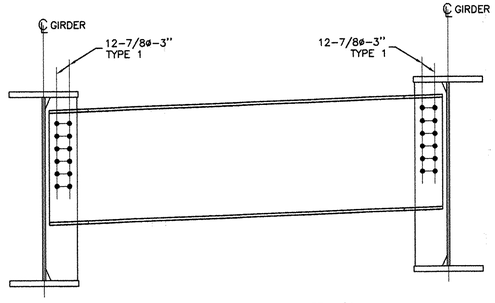

BRIDGE FRAMING PLAN

NOTES:

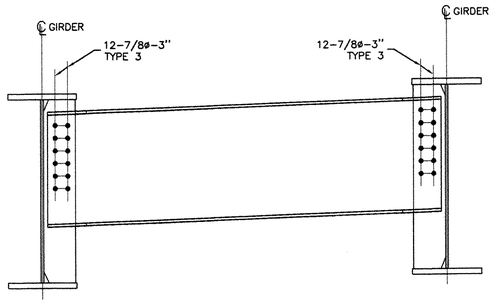
1– GENERAL NOTES: SEE GN1
2– PAINT: SEE GN1
3– HOLES: 15/16ø IN DIAPHRAGM MEMBERS & 1"ø IN STIFFENERS
4– ALL BOLTS ARE COMPLETED WITH ONE (1) HEAVY HEX NUT & TWO (2) HARDENED FLAT WASHERS




TYPICAL INTERMEDIATE DIAPHRAGM
(LOOKING DOWNSTATION)




TYPICAL DIAPHRAGM AT PIER #1
(LOOKING DOWNSTATION)




TYPICAL DIAPHRAGM AT PIER #2
(LOOKING UPSTATION)

RECEIVED
CK'D BY KVW CK'D BY
SEP 2 0 2005
RESUBMIT APPROVED
BY OPW DATE 10/31/05

RESERVED FOR STAMPS

| REV | DATE | DESCRIPTION |
|---|---|---|
| △ | - | - |

| QTY | DATE | ISSUED TO | FOR |
|---|---|---|---|
| 8 - | 9/16/05 | FW Whitcomb | Approval |

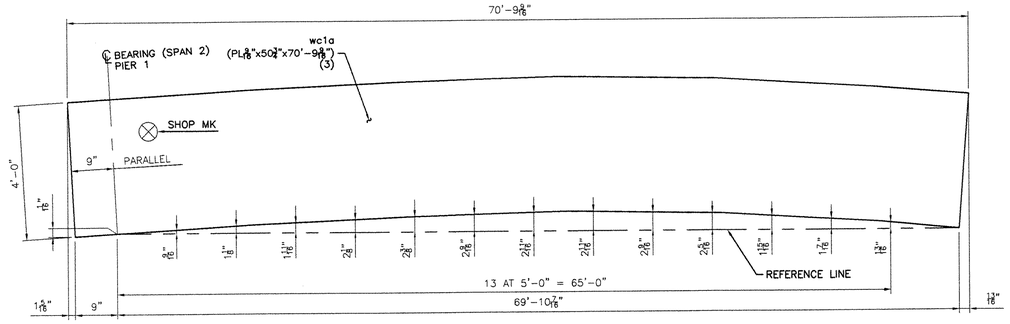
NOTICE
This drawing shall not be used or reproduced in any manner, nor shall any similar drawings or structures be made therefrom, nor shall the information thereon be used for any purpose other than that for which it is released without the written consent of an officer of EASTERN BRIDGE LLC.

tenca 1028

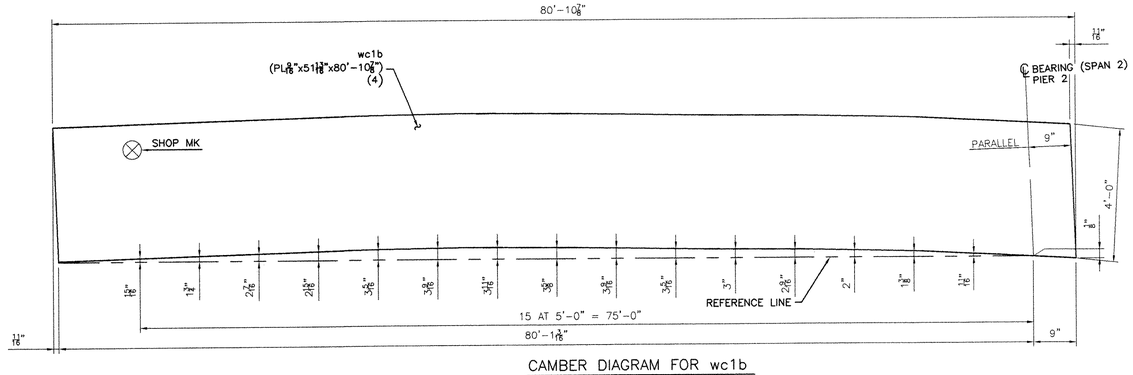
EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603–542–5202

| | | | |
|---|---|---|---|
| PROJECT: BRIDGE 8 OVER THE WHITE RIVER, PROJECT NO BRO–BTN 2004(1) | | | |
| LOCATION: TOWN OF HARTFORD, COUNTY OF WINDSOR, VERMONT | | | |
| ENGINEER: STATE OF VERMONT, AGENCY OF TRANSPORTATION | | | |
| CUSTOMER: FW WHITCOMB CONSTRUCTION CO. | | | |
| DRAWING TITLE: BRIDGE FRAMING PLAN | | | |
| DRAWN BY: YT | 06/03/05 | JOB NUMBER: 6005 | SHEET NUMBER: E1 |
| CHECKED BY: GG | 06/06/05 | | |

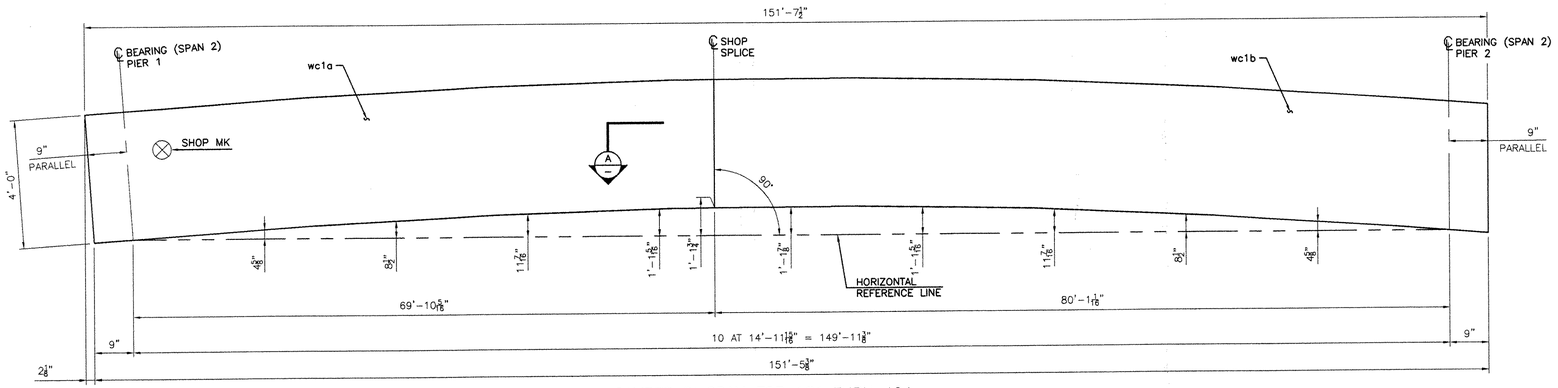
10055



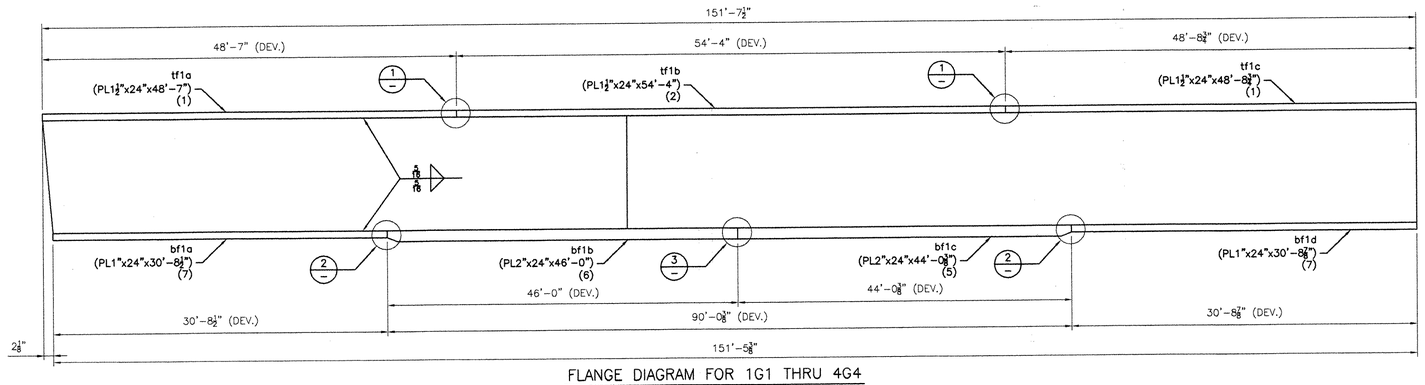

CAMBER DIAGRAM FOR wc1a



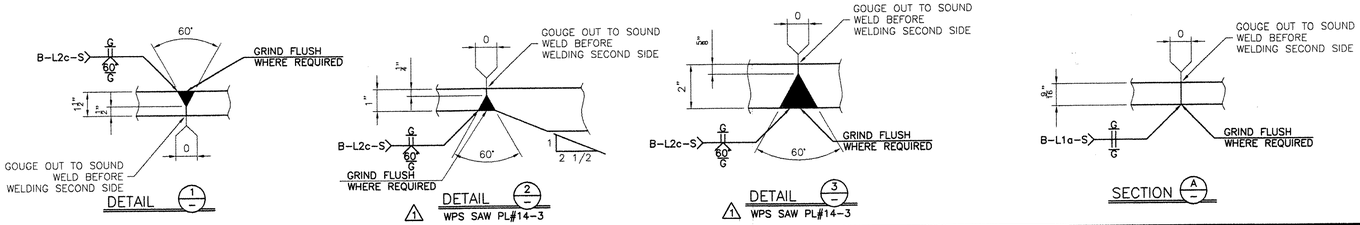

CAMBER DIAGRAM FOR wc1b




CAMBER DIAGRAM FOR 1G1 THRU 4G4




FLANGE DIAGRAM FOR 1G1 THRU 4G4




NOTES:

1- GENERAL NOTES: SEE GN1

RECEIVED
OK'D BY _____ OK'D BY _____
SEP 2 0 2005
RESUBMIT _____ APPROVED ✓
BY GPW DATE 10/31/05

RESERVED FOR STAMPS

| REV | DATE | DESCRIPTION |
|---|---|---|
| 1 | 09/02/05 | AS PER APPROVAL COMMENTS |

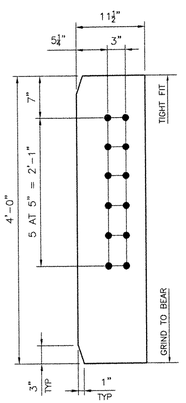
| QTY | DATE | ISSUED TO | FOR |
|---|---|---|---|
| 8 | 9/16/05 | FW Whitcomb | Approval |
| B | 07/14/05 | FW WHITCOMB | APPROVAL |

NOTICE
This drawing shall not be used or reproduced in any manner, nor shall any similar drawings or structures be made therefrom, nor shall the information thereon be used for any purpose other than that for which it is released without the written consent of an officer of EASTERN BRIDGE LLC.

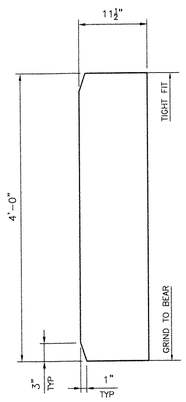
EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

| | |
|---|---|
| PROJECT: | BRIDGE 8 OVER THE WHITE RIVER, PROJECT NO BRO-BTN 2004(1) |
| LOCATION: | TOWN OF HARTFORD, COUNTY OF WINDSOR, VERMONT |
| ENGINEER: | STATE OF VERMONT, AGENCY OF TRANSPORTATION |
| CUSTOMER: | FW WHITCOMB CONSTRUCTION CO. |
| DRAWING TITLE: | WEB CAMBER AND FLANGE DIAGRAMS |
| DRAWN BY: GG 06/03/05 | JOB NUMBER: 6005 |
| CHECKED BY: YT 06/06/05 | SHEET NUMBER: WC1 |

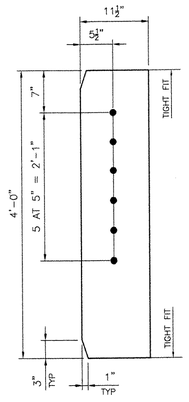
101 55



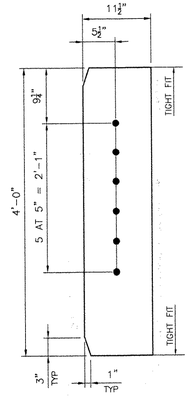

ITEM x1pa (12 REQ'D)
(PL 7/8 x 11 1/2 x 4'-0)
(ABM #8)



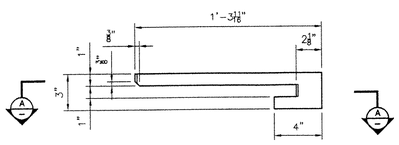

ITEM x1pb (4 REQ'D)
(PL 7/8 x 11 1/2 x 4'-0)
(ABM #8)



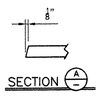

ITEM x1pc (28 REQ'D)
(PL 1/2 x 11 1/2 x 4'-0)
(ABM #9)

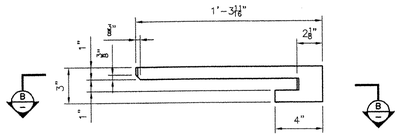



ITEM x1pd (14 REQ'D)
(PL 1/2 x 11 1/2 x 4'-0)
(ABM #9)

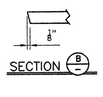



ITEM x1pf (1 REQ'D)
(PL 1/4 x 3 x 1'-3 11/16)
(ABM #10)




ITEM x1pg (1 REQ'D)
(PL 1/4 x 3 x 1'-3 11/16)
(ABM #10)




NOTES:

1- GENERAL NOTES: SEE GN1
2- HOLES: 1"ø

RECEIVED
CK'D BY KWH CK'D BY
SEP 2 0 2005
RESUBMIT APPROVED
BY CPW DATE 10/31/05

RESERVED FOR STAMPS

| REV | DATE | DESCRIPTION |
|---|---|---|
| △ | - | - |

| QTY | DATE | ISSUED TO | FOR |
|---|---|---|---|
| 8 - | 9/16/05 | F W Whitcomb | Approval |

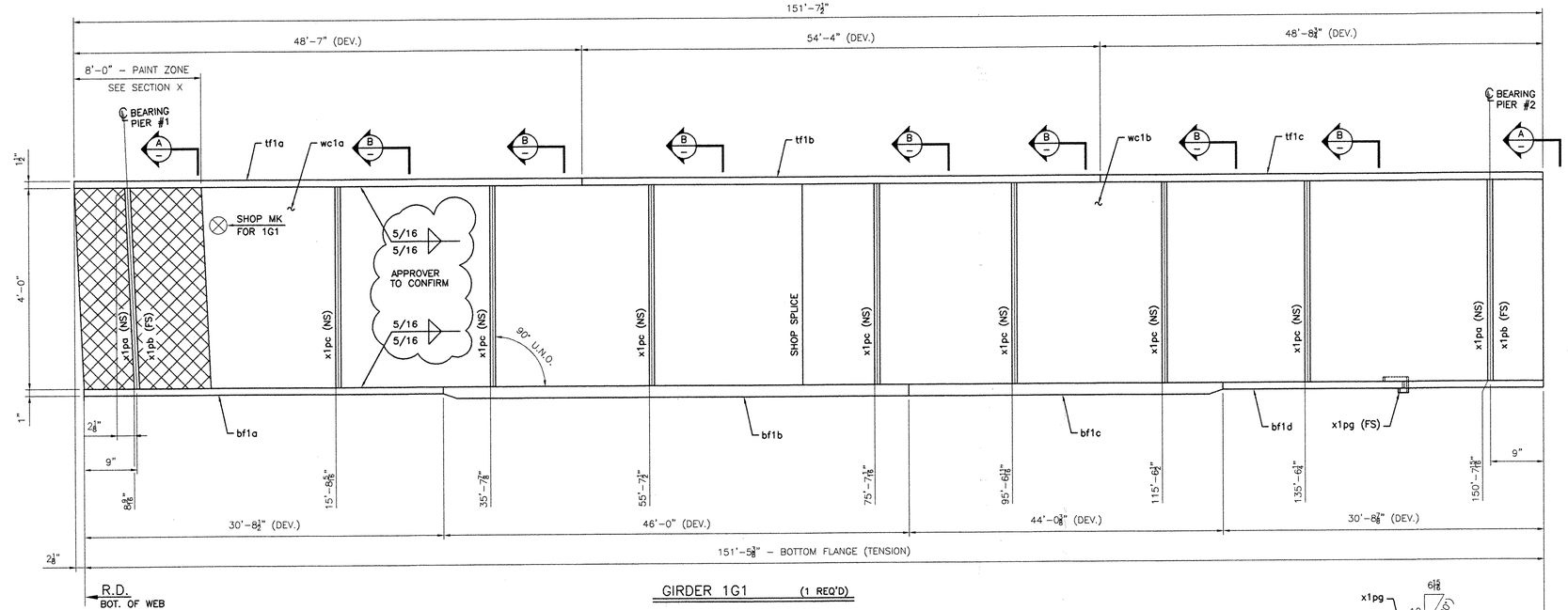
NOTICE
This drawing shall not be used or reproduced in any manner, nor shall any similar drawings or structures be made therefrom, nor shall the information thereon be used for any purpose other than that for which it is released without the written consent of an officer of EASTERN BRIDGE LLC

tenca 1028

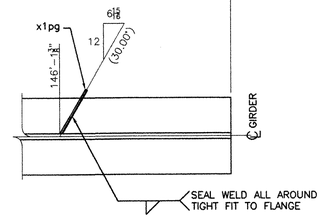
EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

| | | | |
|---|---|---|---|
| PROJECT: BRIDGE 8 OVER THE WHITE RIVER, PROJECT NO BRO-BTN 2004(1) | | | |
| LOCATION: TOWN OF HARTFORD, COUNTY OF WINDSOR, VERMONT | | | |
| ENGINEER: STATE OF VERMONT, AGENCY OF TRANSPORTATION | | | |
| CUSTOMER: FW WHITCOMB CONSTRUCTION CO. | | | |
| DRAWING TITLE: DETAILS | | | |
| DRAWN BY: YT | 06/03/05 | JOB NUMBER: 6005 | SHEET NUMBER: X1 |
| CHECKED BY: GG | 06/06/05 | | |

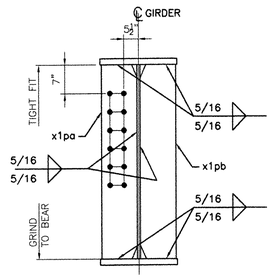
10255



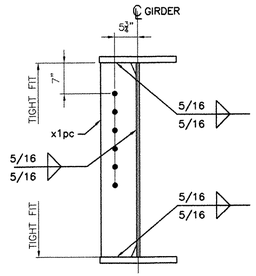

GIRDER 1G1 (1 REQ'D)



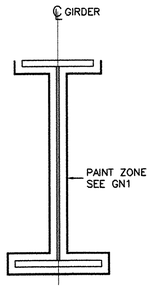

SECTION BA



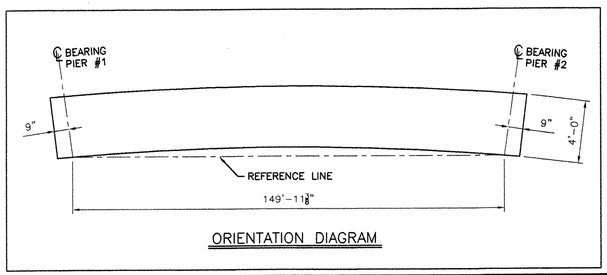

SECTION A




SECTION B




SECTION X




ORIENTATION DIAGRAM

BILL OF MATERIAL

| Drawing Number | Revision Number | Ship Mark | Piece Mark | Qty | Type of Material | Size of Material | Grade | Length | Finish | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 1G1 | | 1 | | | Total weight: | | 53343 lbs | |
| 1 | | 1G1 | wc1a | 1 | PL Plate | 9/16x48 | A709-GR50W | 70'-9 9/16 | CVN | 3 |
| 1 | | 1G1 | wc1b | 1 | PL Plate | 9/16x48 | A709-GR50W | 80'-10 7/8 | CVN | 4 |
| 1 | | 1G1 | tf1a | 1 | PL Plate | 1 1/2x24 | A709-GR50W | 48'-7 | | 1 |
| 1 | | 1G1 | tf1b | 1 | PL Plate | 1 1/2x24 | A709-GR50W | 54'-4 | | 2 |
| 1 | | 1G1 | tf1c | 1 | PL Plate | 1 1/2x24 | A709-GR50W | 48'-8 3/4 | | 1 |
| 1 | | 1G1 | bf1a | 1 | PL Plate | 1x24 | A709-HPS70W | 30'-8 1/2 | CVN | 7 |
| 1 | | 1G1 | bf1b | 1 | PL Plate | 2x24 | A709-HPS70W | 46'-0 | CVN | 6 |
| 1 | | 1G1 | bf1c | 1 | PL Plate | 2x24 | A709-HPS70W | 44'-0 3/8 | CVN | 5 |
| 1 | | 1G1 | bf1d | 1 | PL Plate | 1x24 | A709-HPS70W | 30'-8 7/8 | CVN | 7 |
| 1 | | 1G1 | x1pa | 2 | PL Plate | 7/8x11 1/2 | A709-GR50W | 4'-0 | | 8 |
| 1 | | 1G1 | x1pb | 2 | PL Plate | 7/8x11 1/2 | A709-GR50W | 4'-0 | | 8 |
| 1 | | 1G1 | x1pc | 7 | PL Plate | 1/2x11 1/2 | A709-GR50W | 4'-0 | | 9 |
| 1 | | 1G1 | x1pg | 1 | PL Plate | 1/4x3 | A709-GR50W | 1'-3 11/16 | | 10 |

NOTES:

1- GENERAL NOTES: SEE GN1
2- PAINT: SEE GN1
3- HOLES: 1"ø
4- FOR WEB & FLANGE DETAILS, SEE WC1

RECEIVED
CK'D BY KWW OK'D BY
SEP 2 0 2005
RESUBMIT APPROVED ✓
BY GPW DATE 10/31/05

RESERVED FOR STAMPS

| REV | DATE | DESCRIPTION |
|---|---|---|
| △ | - | - |

| QTY | DATE | ISSUED TO | FOR |
|---|---|---|---|
| 8 - | 9/16/05 | FW Whitcomb | Approval |

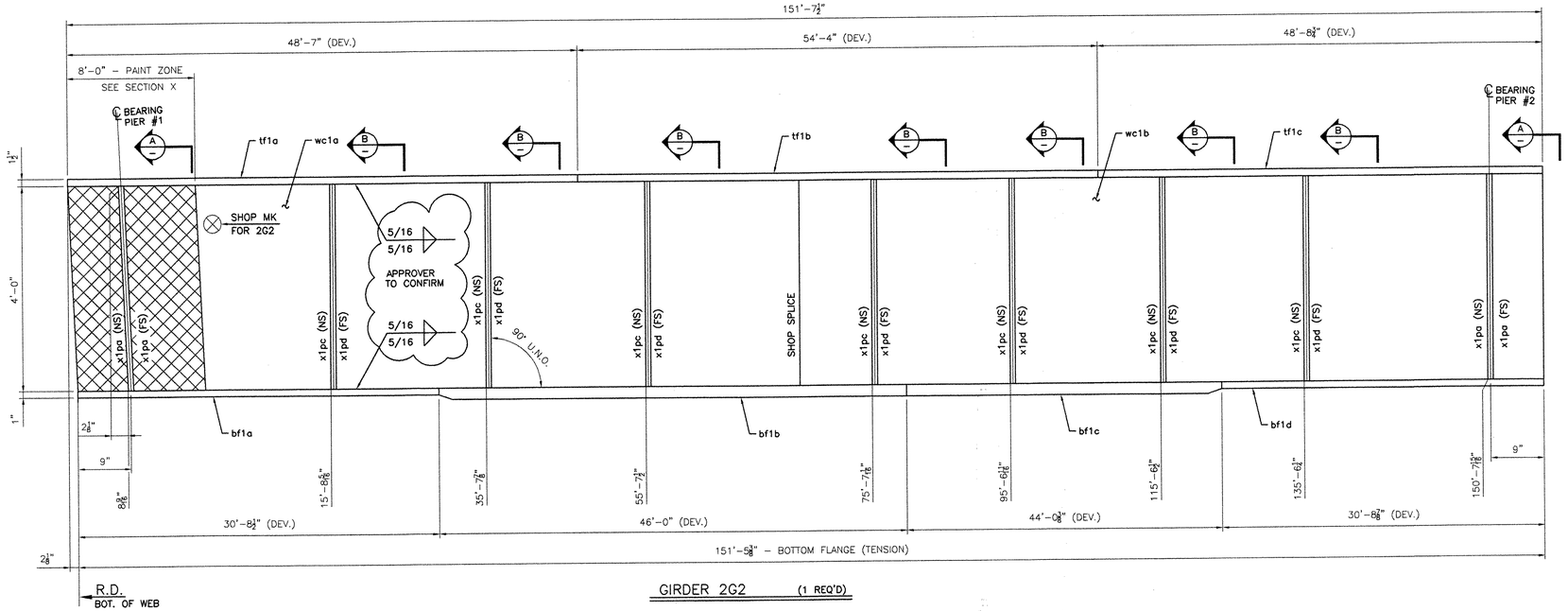
NOTICE
This drawing shall not be used or reproduced in any manner, nor shall any similar drawings or structures be made therefrom, nor shall the information thereon be used for any purpose other than that for which it is released without the written consent of an officer of EASTERN BRIDGE LLC.

tenca 1028

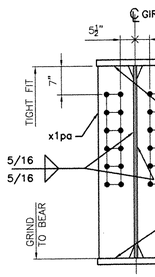
EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

| | | | |
|---|---|---|---|
| PROJECT: BRIDGE 8 OVER THE WHITE RIVER, PROJECT NO BRO-BTN 2004(1) | | | |
| LOCATION: TOWN OF HARTFORD, COUNTY OF WINDSOR, VERMONT | | | |
| ENGINEER: STATE OF VERMONT, AGENCY OF TRANSPORTATION | | | |
| CUSTOMER: FW WHITCOMB CONSTRUCTION CO. | | | |
| DRAWING TITLE: GIRDER 1G1 | | | |
| DRAWN BY: YT | 06/03/05 | JOB NUMBER: 6005 | SHEET NUMBER: 1 |
| CHECKED BY: GG | 06/06/05 | | |

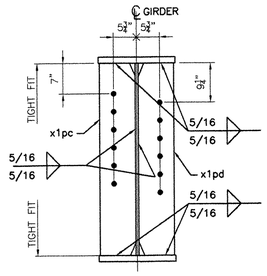
1035S



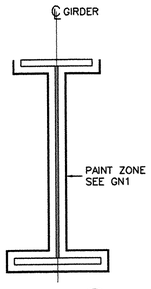

GIRDER 2G2 (1 REQ'D)



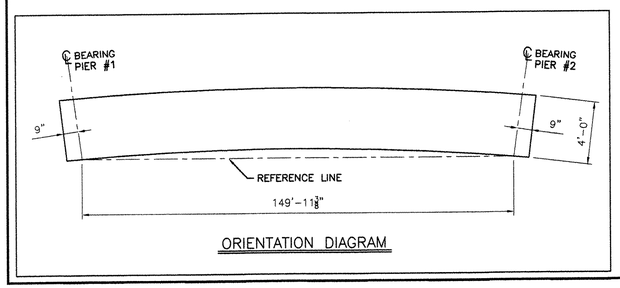

SECTION (A)




SECTION (B)




SECTION (X)




ORIENTATION DIAGRAM

NOTES:

1- GENERAL NOTES: SEE GN1
2- PAINT: SEE GN1
3- HOLES: 1"ø
4- FOR WEB & FLANGE DETAILS, SEE WC1

BILL OF MATERIAL

| Drawing Number | Revision Number | Ship Mark | Piece Mark | Qty | Type of Material | Size of Material | Grade | Length | Finish | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | | 2G2 | | 1 | | | Total weight: | | 53888 lbs | |
| 2 | | 2G2 | wc1a | 1 | PL Plate | 9/16x48 | A709-GR50W | 70'-9 9/16 | CVN | 3 |
| 2 | | 2G2 | wc1b | 1 | PL Plate | 9/16x48 | A709-GR50W | 80'-10 7/8 | CVN | 4 |
| 2 | | 2G2 | tf1a | 1 | PL Plate | 1 1/2x24 | A709-GR50W | 48'-7 | | 1 |
| 2 | | 2G2 | tf1b | 1 | PL Plate | 1 1/2x24 | A709-GR50W | 54'-4 | | 2 |
| 2 | | 2G2 | tf1c | 1 | PL Plate | 1 1/2x24 | A709-GR50W | 48'-8 3/4 | | 1 |
| 2 | | 2G2 | bf1a | 1 | PL Plate | 1x24 | A709-HPS70W | 30'-8 1/2 | CVN | 7 |
| 2 | | 2G2 | bf1b | 1 | PL Plate | 2x24 | A709-HPS70W | 46'-0 | CVN | 6 |
| 2 | | 2G2 | bf1c | 1 | PL Plate | 2x24 | A709-HPS70W | 44'-0 3/8 | CVN | 5 |
| 2 | | 2G2 | bf1d | 1 | PL Plate | 1x24 | A709-HPS70W | 30'-8 7/8 | CVN | 7 |
| 2 | | 2G2 | x1pa | 4 | PL Plate | 7/8x11 1/2 | A709-GR50W | 4'-0 | | 8 |
| 2 | | 2G2 | x1pc | 7 | PL Plate | 1/2x11 1/2 | A709-GR50W | 4'-0 | | 9 |
| 2 | | 2G2 | x1pd | 7 | PL Plate | 1/2x11 1/2 | A709-GR50W | 4'-0 | | 9 |

RECEIVED
CK'D BY ____ OK'D BY ____
SEP 2 0 2005
RESUBMIT ____ APPROVED ____
BY CPW DATE 10/31/05

RESERVED FOR STAMPS

| REV | DATE | DESCRIPTION |
|---|---|---|
| △ | - | - |

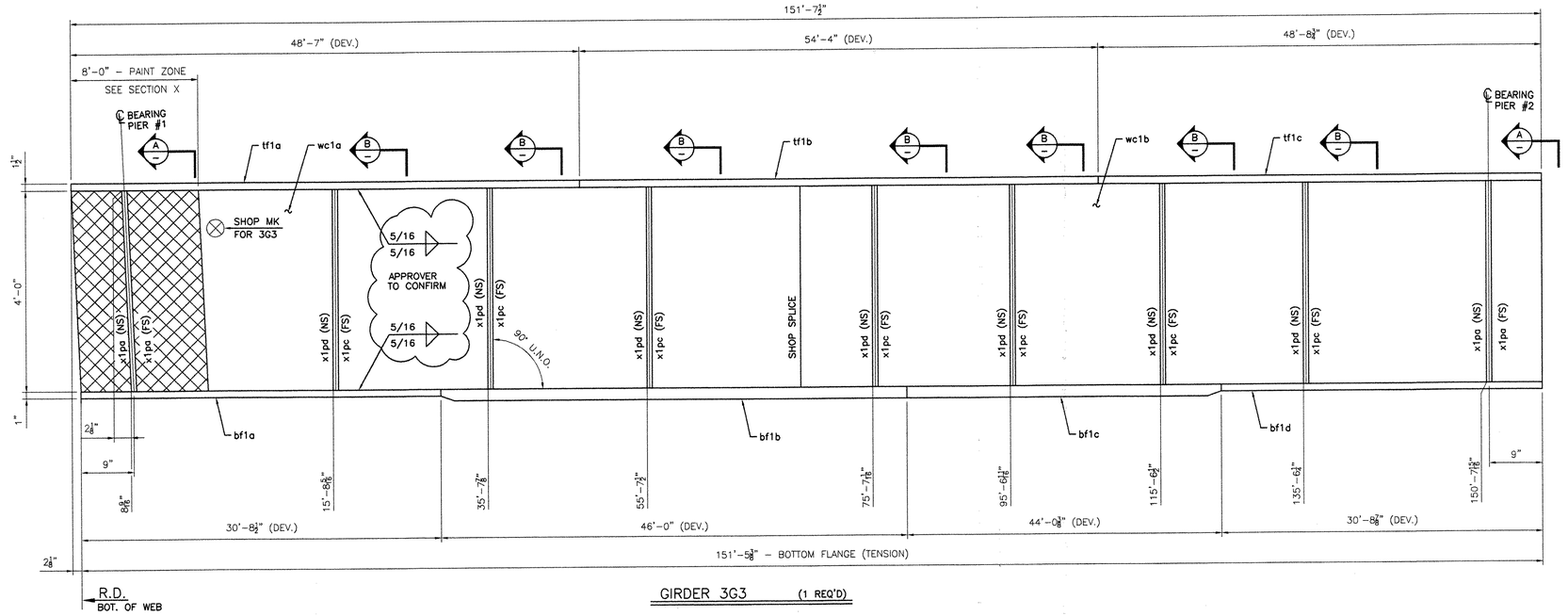
| QTY | DATE | ISSUED TO | FOR |
|---|---|---|---|
| 8 - | 9/16/05 | F W Whitcomb | Approval |

NOTICE
This drawing shall not be used or reproduced in any manner, nor shall any similar drawings or structures be made therefrom, nor shall the information thereon be used for any purpose other than that for which it is released without the written consent of an officer of EASTERN BRIDGE LLC.

tenca 1028
EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

| | |
|---|---|
| PROJECT: | BRIDGE 8 OVER THE WHITE RIVER, PROJECT NO BRO-BTN 2004(1) |
| LOCATION: | TOWN OF HARTFORD, COUNTY OF WINDSOR, VERMONT |
| ENGINEER: | STATE OF VERMONT, AGENCY OF TRANSPORTATION |
| CUSTOMER: | FW WHITCOMB CONSTRUCTION CO. |
| DRAWING TITLE: | GIRDER 2G2 |
| DRAWN BY: YT | 06/06/05 |
| CHECKED BY: GG | 06/06/05 |
| JOB NUMBER: | 6005 |
| SHEET NUMBER: | 2 |

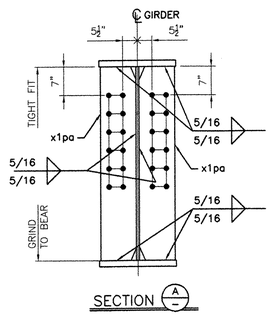
104 SS



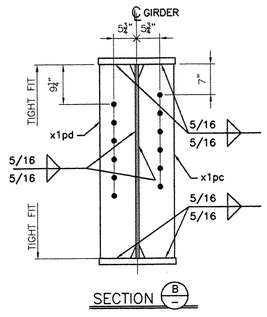

GIRDER 3G3 (1 REQ'D)

BILL OF MATERIAL

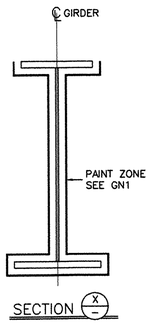
| Drawing Number | Revision Number | Ship Mark | Piece Mark | Qty | Type of Material | Size of Material | Grade | Length | Finish | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | | 3G3 | | 1 | | | Total weight: | | 53888 lbs | |
| 3 | | 3G3 | wc1a | 1 | PL Plate | 9/16x48 | A709-GR50W | 70'-9 9/16 | CVN | 3 |
| 3 | | 3G3 | wc1b | 1 | PL Plate | 9/16x48 | A709-GR50W | 80'-10 7/8 | CVN | 4 |
| 3 | | 3G3 | tf1a | 1 | PL Plate | 1 1/2x24 | A709-GR50W | 48'-7 | | 1 |
| 3 | | 3G3 | tf1b | 1 | PL Plate | 1 1/2x24 | A709-GR50W | 54'-4 | | 2 |
| 3 | | 3G3 | tf1c | 1 | PL Plate | 1 1/2x24 | A709-GR50W | 48'-8 3/4 | | 1 |
| 3 | | 3G3 | bf1a | 1 | PL Plate | 1x24 | A709-HPS70W | 30'-8 1/2 | CVN | 7 |
| 3 | | 3G3 | bf1b | 1 | PL Plate | 2x24 | A709-HPS70W | 46'-0 | CVN | 6 |
| 3 | | 3G3 | bf1c | 1 | PL Plate | 2x24 | A709-HPS70W | 44'-0 3/8 | CVN | 5 |
| 3 | | 3G3 | bf1d | 1 | PL Plate | 1x24 | A709-HPS70W | 30'-8 7/8 | CVN | 7 |
| 3 | | 3G3 | x1pa | 4 | PL Plate | 7/8x11 1/2 | A709-GR50W | 4'-0 | | 8 |
| 3 | | 3G3 | x1pc | 7 | PL Plate | 1/2x11 1/2 | A709-GR50W | 4'-0 | | 9 |
| 3 | | 3G3 | x1pd | 7 | PL Plate | 1/2x11 1/2 | A709-GR50W | 4'-0 | | 9 |




SECTION A



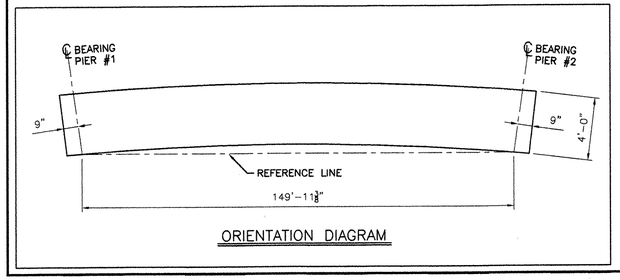

SECTION B




SECTION X

NOTES:

1- GENERAL NOTES: SEE GN1
2- PAINT: SEE GN1
3- HOLES: 1"ø
4- FOR WEB & FLANGE DETAILS, SEE WC1




ORIENTATION DIAGRAM

RECEIVED
CK'D BY XMM OK'D BY
SEP 2 0 2005
RESUBMIT APPROVED
BY OPW DATE 10/31/05

RESERVED FOR STAMPS

| REV | DATE | DESCRIPTION |
|---|---|---|
| 8 - | 9/16/05 | FW Whitcomb |

| QTY | DATE | ISSUED TO | FOR |
|---|---|---|---|
| 8 - | 9/16/05 | FW Whitcomb | Approval |

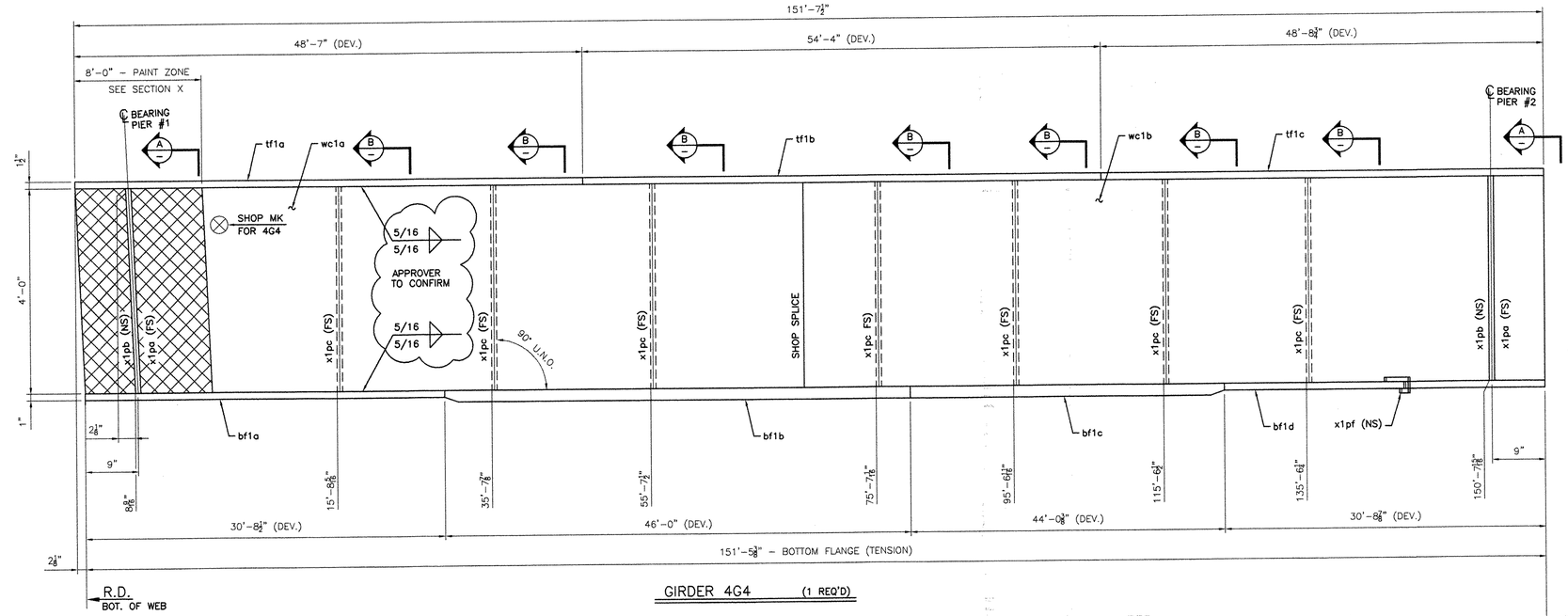
NOTICE
This drawing shall not be used or reproduced in any manner, nor shall any similar drawings or structures be made therefrom, nor shall the information thereon be used for any purpose other than that for which it is released without the written consent of an officer of EASTERN BRIDGE LLC.

tenca 1028

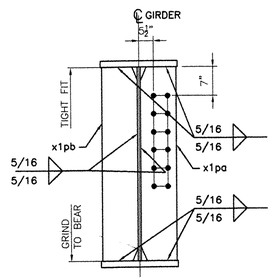
EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

| | | | |
|---|---|---|---|
| PROJECT: BRIDGE 8 OVER THE WHITE RIVER, PROJECT NO BRO-BTN 2004(1) | | | |
| LOCATION: TOWN OF HARTFORD, COUNTY OF WINDSOR, VERMONT | | | |
| ENGINEER: STATE OF VERMONT, AGENCY OF TRANSPORTATION | | | |
| CUSTOMER: FW WHITCOMB CONSTRUCTION CO. | | | |
| DRAWING TITLE: GIRDER 3G3 | | | |
| DRAWN BY: YT | 06/06/05 | JOB NUMBER: 6005 | SHEET NUMBER: 3 |
| CHECKED BY: GG | 06/06/05 | | |

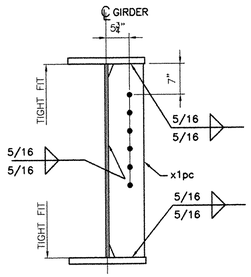
105 SS



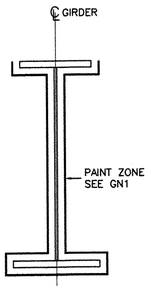

GIRDER 4G4 (1 REQ'D)



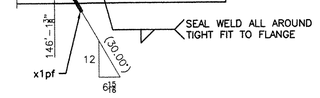

SECTION (A)



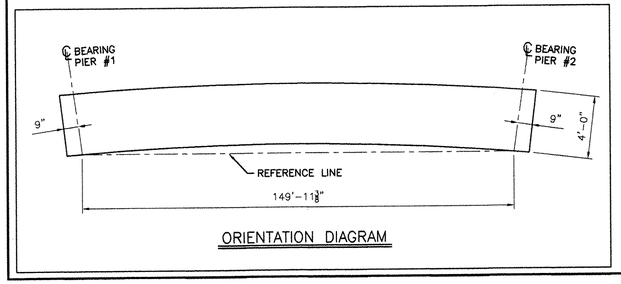

SECTION (B)




SECTION (X)




SECTION (BA)




ORIENTATION DIAGRAM

BILL OF MATERIAL

| Drawing Number | Revision Number | Ship Mark | Piece Mark | Qty | Type of Material | Size of Material | Grade | Length | Finish | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | | 4G4 | | 1 | | | Total weight: | | 53343 lbs | |
| 4 | | 4G4 | wc1a | 1 | PL Plate | 9/16x48 | A709-GR50W | 70'-9 9/16 | CVN | 3 |
| 4 | | 4G4 | wc1b | 1 | PL Plate | 9/16x48 | A709-GR50W | 80'-10 7/8 | CVN | 4 |
| 4 | | 4G4 | tf1a | 1 | PL Plate | 1 1/2x24 | A709-GR50W | 48'-7 | | 1 |
| 4 | | 4G4 | tf1b | 1 | PL Plate | 1 1/2x24 | A709-GR50W | 54'-4 | | 2 |
| 4 | | 4G4 | tf1c | 1 | PL Plate | 1 1/2x24 | A709-GR50W | 48'-8 3/4 | | 1 |
| 4 | | 4G4 | bf1a | 1 | PL Plate | 1x24 | A709-HPS70W | 30'-8 1/2 | CVN | 7 |
| 4 | | 4G4 | bf1b | 1 | PL Plate | 2x24 | A709-HPS70W | 46'-0 | CVN | 6 |
| 4 | | 4G4 | bf1c | 1 | PL Plate | 2x24 | A709-HPS70W | 44'-0 3/8 | CVN | 5 |
| 4 | | 4G4 | bf1d | 1 | PL Plate | 1x24 | A709-HPS70W | 30'-8 7/8 | CVN | 7 |
| 4 | | 4G4 | x1pa | 2 | PL Plate | 7/8x11 1/2 | A709-GR50W | 4'-0 | | 8 |
| 4 | | 4G4 | x1pb | 2 | PL Plate | 7/8x11 1/2 | A709-GR50W | 4'-0 | | 8 |
| 4 | | 4G4 | x1pc | 7 | PL Plate | 1/2x11 1/2 | A709-GR50W | 4'-0 | | 9 |
| 4 | | 4G4 | x1pf | 1 | PL Plate | 1/4x3 | A709-GR50W | 1'-3 11/16 | | 10 |

NOTES:

1- GENERAL NOTES: SEE GN1
2- PAINT: SEE GN1
3- HOLES: 1"ø
4- FOR WEB & FLANGE DETAILS, SEE WC1

RECEIVED
CK'D BY KMM OK'D BY
SEP 2 0 2005
RESUBMIT APPROVED
BY OPW DATE 10/3/05

RESERVED FOR STAMPS

| REV | DATE | DESCRIPTION |
|---|---|---|
| △ | - | - |

| QTY | DATE | ISSUED TO | FOR |
|---|---|---|---|
| 8 - | 9/16/05 | F W Whitcomb | Approval |

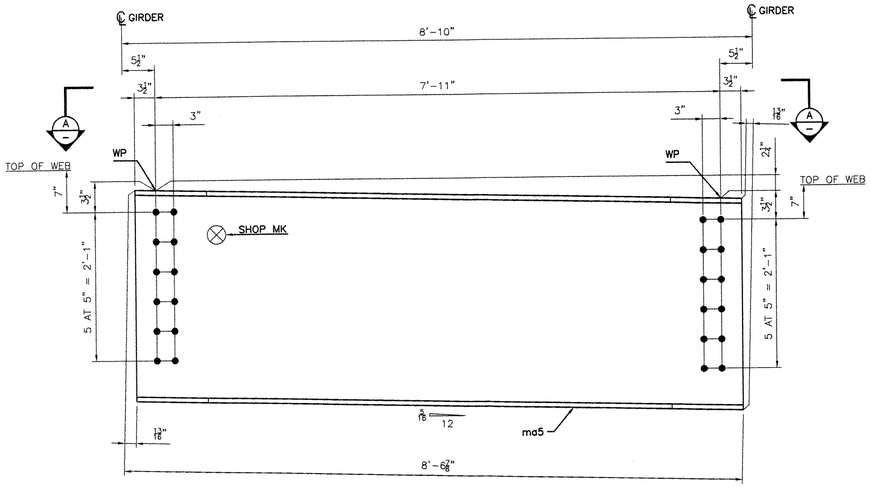
NOTICE
This drawing shall not be used or reproduced in any manner, nor shall any similar drawings or structures be made therefrom, nor shall the information thereon be used for any purpose other than that for which it is released without the written consent of an officer of EASTERN BRIDGE LLC.

tenca 1028

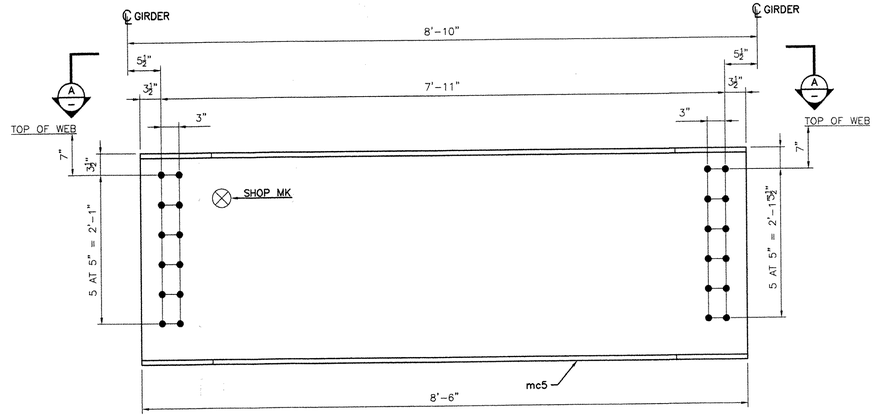
EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

| | | | |
|---|---|---|---|
| PROJECT: BRIDGE 8 OVER THE WHITE RIVER, PROJECT NO BRO-BTN 2004(1) | | | |
| LOCATION: TOWN OF HARTFORD, COUNTY OF WINDSOR, VERMONT | | | |
| ENGINEER: STATE OF VERMONT, AGENCY OF TRANSPORTATION | | | |
| CUSTOMER: FW WHITCOMB CONSTRUCTION CO. | | | |
| DRAWING TITLE: GIRDER 4G4 | | | |
| DRAWN BY: YT | 06/06/05 | JOB NUMBER: 6005 | SHEET NUMBER: 4 |
| CHECKED BY: GG | 06/06/05 | | |

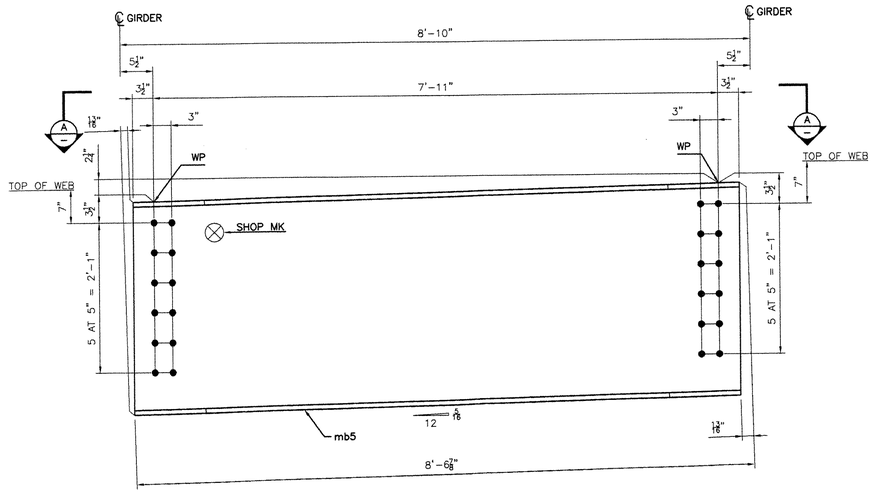
10655



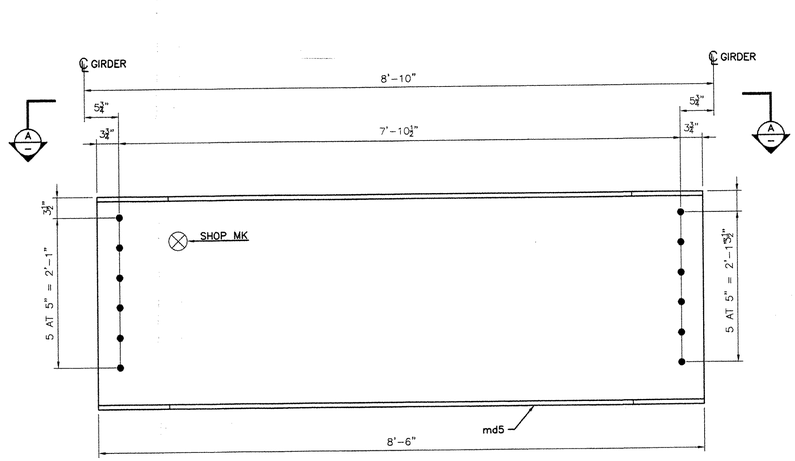

TO BE PAINTED → 5D1 (1 REQ'D)
5D5 (1 REQ'D)



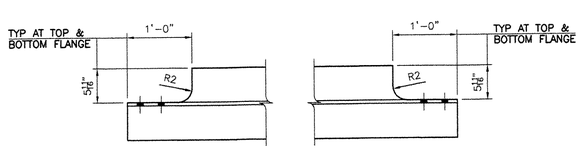

TO BE PAINTED → 5D3 (1 REQ'D)
5D7 (1 REQ'D)




TO BE PAINTED → 5D2 (1 REQ'D)
5D6 (1 REQ'D)




5D4 (21 REQ'D)




SECTION A

NOTES:

1- GENERAL NOTES: SEE GN1
2- PAINT: SEE GN1
3- HOLES: 15/16ø (U.N.O.)

BILL OF MATERIAL

| Drawing Number | Revision Number | Ship Mark | Piece Mark | Qty | Type of Material | Size of Material | Grade | Length | Finish | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | | 5D1 | ma5 | 1 | W Wide Flng | 36x135 | A709-GR50W | 8'-6 7/8 | | 11 |
| | | | | | | | | weight: | 1157 lbs | |
| 5 | | 5D2 | mb5 | 1 | W Wide Flng | 36x135 | A709-GR50W | 8'-6 7/8 | | 11 |
| | | | | | | | | weight: | 1157 lbs | |
| 5 | | 5D3 | mc5 | 1 | W Wide Flng | 36x135 | A709-GR50W | 8'-6 | | 11 |
| | | | | | | | | weight: | 1148 lbs | |
| 5 | | 5D4 | md5 | 21 | W Wide Flng | 36x135 | A709-GR50W | 8'-6 | | 11 |
| | | | | | | | | weight: | 24098 lbs | |
| 5 | | 5D5 | ma5 | 1 | W Wide Flng | 36x135 | A709-GR50W | 8'-6 7/8 | | 11 |
| | | | | | | | | weight: | 1157 lbs | |
| 5 | | 5D6 | mb5 | 1 | W Wide Flng | 36x135 | A709-GR50W | 8'-6 7/8 | | 11 |
| | | | | | | | | weight: | 1157 lbs | |
| 5 | | 5D7 | mc5 | 1 | W Wide Flng | 36x135 | A709-GR50W | 8'-6 | | 11 |
| | | | | | | | | weight: | 1148 lbs | |

RECEIVED
CK'D BY KMH CK'D BY
SEP 2 0 2005
RESUBMIT APPROVED
BY CPW DATE 10/31/05

RESERVED FOR STAMPS

| REV | DATE | DESCRIPTION |
|---|---|---|
| △ | - | - |

| QTY | DATE | ISSUED TO | FOR |
|---|---|---|---|
| 8 - | 9/15/05 | F W Whitcomb | Approval |

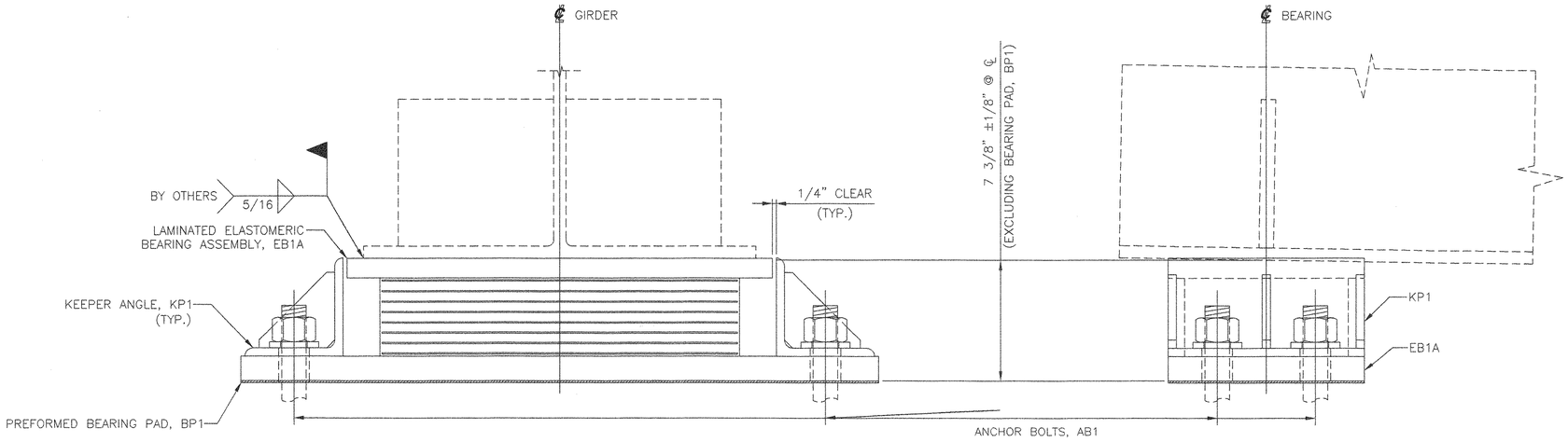
NOTICE
This drawing shall not be used or reproduced in any manner, nor shall any similar drawings or structures be made therefrom, nor shall the information thereon be used for any purpose other than that for which it is released without the written consent of an officer of EASTERN BRIDGE LLC

tenca 1028
EASTERN BRIDGE LLC
RURAL RTE 2, BOX 302
CLAREMONT, NH 03743
603-542-5202

PROJECT: BRIDGE 8 OVER THE WHITE RIVER, PROJECT NO BRO-BTN 2004(1)
LOCATION: TOWN OF HARTFORD, COUNTY OF WINDSOR, VERMONT
ENGINEER: STATE OF VERMONT, AGENCY OF TRANSPORTATION
CUSTOMER: FW WHITCOMB CONSTRUCTION CO.
DRAWING TITLE: DIAPHRAGMS
DRAWN BY: YT 06/03/05 | JOB NUMBER: 6005 | SHEET NUMBER: 5
CHECKED BY: GG 06/06/05

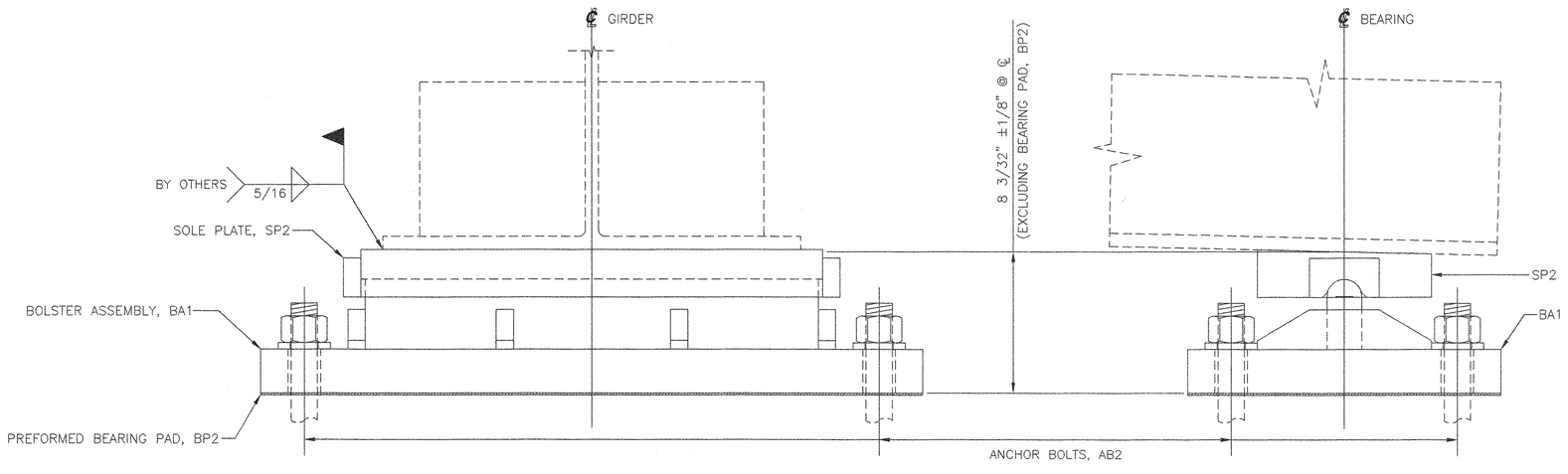
107 55

10/28/05




4 EXPANSION BEARING ASSEMBLIES, EB1-A

LOCATE AT
PIER 1




4 FIXED BEARING ASSEMBLIES, FBA-1

LOCATE AT
PIER 2

## ASSEMBLY AND INSTALLATION NOTES:

1. ALL COMPONENTS SHALL BE ASSEMBLED AND SHIPPED AS AN ASSEMBLY AS MUCH AS PRACTICAL.
2. THE CONTRACTOR IS SOLEY RESPONSIBLE FOR THE CORRECT ORIENTATION, ALLIGNMENT AND MATCHING OF COMPONENTS SHOULD HE ELECT TO DISASSEMBLE THE BEARING ASSEMBLIES FOR ANY REASON.
3. THE CONTRACTOR IS SOLEY RESPONSIBLE FOR THE PROPER PLACEMENT AND SETTING OF THE ANCHOR BOLTS AS REQUIRED BY THE CONTRACT PLANS.
4. AREAS OF METALLIZING DAMAGED BY WELDING AND/OR HANDLING SHALL BE REPAIRED BY METALLIZING IN ACCORDANCE WITH ASTM A760, AT THE CONTRACTOR'S EXPENSE.

SEE SHEET 1 FOR SHOP NOTES.

OFFICE COPY

RECEIVED
VIA BY Jlue COPY HIS
EMAIL
OCT 27 2005
REVIEW APPROVAL
BY CPW 11/3/05

| REV. | | BY: | DATE | CK'D BY: | DATE |
|---|---|---|---|---|---|
| – | | --- | --- | --- | --- |

VERMONT
AGENCY OF TRANSPORTATION

HARTFORD
PROJ. NO. BRO-BTN 2004(1)

COSMEC, INC. — 70 SOUTH STREET WALPOLE, MA. 02081

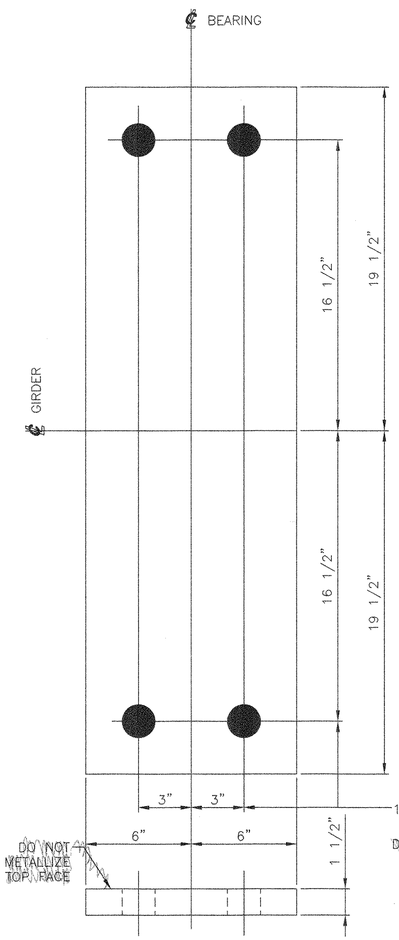
| SCALE: 1/4"=1" | DRAWN BY: JEP | CHECKED BY: PJM |
|---|---|---|
| SHEET: AS1 OF 1 | DATE: 10/05 | DATE 10/05 |

COSMEC BEARINGS

| CUSTOMER | S.O. NUMBER | DRAWING NUMBER | REV. |
|---|---|---|---|
| F. W. WHITCOMB | 60423 | 4516 | 0 |

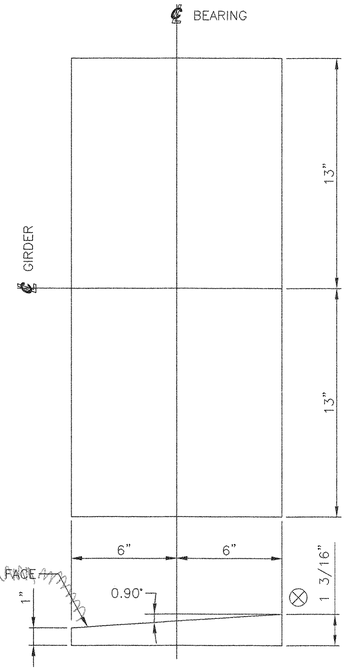
108 BB

| MARK | QTY | DESCRIPTION | IN | 16ths | FAB MARK | MILL MARK | WEIGHT |
|---|---|---|---|---|---|---|---|
| MP1 | 4 | PL 1 1/2" x 12" | 39 | 0 | · | METALLIZED | 796 |
| SP1 | 4 | PL 1 3/16" x 12" | 26 | 0 | · | METALLIZED | 420 |
| KP1 | 8 | L 6" x 6" x 1/2" | 12 | 0 | · | METALLIZED | 157 |
| · | 24 | PL 1/2" x 4 5/8" | 4 | 10 | kpa1 | METALLIZED | 73 |
| | | | | | | TOTAL = | 1446 |



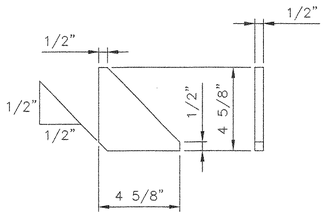

4 EXPANSION MASONRY PLATES, MP1

PL 1 1/2" x 12" x 39"
(TO BE METALLIZED AFTER MASONRY PLATE IS VULCANIZED TO ELASTOMERIC BEARING PAD.)
USE WITH
EXPANSION BEARING ASSEMBLY, EBA-1



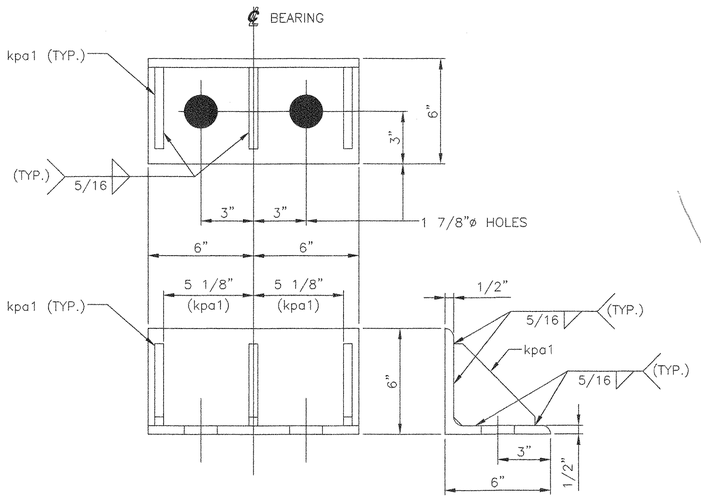

4 EXPANSION SOLE PLATES, SP1

PL 1 3/16" x 12" x 26"
(TO BE METALLIZED AFTER SOLE PLATE IS VULCANIZED TO ELASTOMERIC BEARING PAD.)
USE WITH
EXPANSION BEARING ASSEMBLY EBA-1
SOLE PLATE TO BE FIELD WELDED TO GIRDER.
DO NOT METALLIZE TOP FACE.




24 KEEPER PLATES, kpa1

PL 1/2" x 4 5/8" x 4 5/8"
(METALLIZED)
USE WITH
KEEPER ANGLE, KP1




8 KEEPER ANGLES, KP1

L 6" x 6" x 1/2" x 12"
(METALLIZED)
USE WITH
EXPANSION BEARING ASSEMBLY EBA-1

## SHOP NOTES:

1. MATERIAL NOTED AS AASHTO M270 GR.50 MAY BE EITHER AASHTO M270 GR.50, ASTM A709 GR.50 OR A572 GR.50.
2. MATERIAL NOTED AS GALVANIZED SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 (ASTM A123) OR AASHTO M111 (ASTM A153) AS APPLICABLE.
3. ALL BEARING DEVICES SHALL BE METALLIZED IN ACCORDANCE WITH SUBSECTIONS 531.04(b) AND 506.04(c) AND SEALED WITH AN APPROVED SEALANT IN ACCORDANCE WITH SUBSECTION 531.04(b) OF THE STANDARD SPECIFICATION. 506.15(b) 506.15(b)
4. PREFORMED FABRIC BEARING PADS SHALL BE FABRICATED IN ACCORDANCE WITH AASHTO DIV. II SPEC. 18.4.10.1.
5. LAMINATED ELASTOMERIC BEARING PADS SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES, 1996 EDITION AND IT'S LATEST REVISIONS AND AASHTO M251M.
6. ALL SURFACES OF PLATES SHALL BE SMOOTH AND STRAIGHT. ALL CORNERS AND EDGES SHALL BE GROUND TO A 1/16 INCH RADIUS
7. ⊗ SHOP SHALL MARK HIGH SIDE OF PLATES.
8. COSMEC, INC. REPRESENTATIVE: MR. MATT McANDREWS (508) 668-6600

SEE SHEET AS1 FOR ASSEMBLY NOTES.

RECEIVED
CK'D BY kmd OK'D BY H.I.S
OCT 27 2005
RESUBMIT ____ APPROVED √ As Noted
BY CPW DATE 11/8/05

# VERMONT
## AGENCY OF TRANSPORTATION

HARTFORD
PROJ. NO. BRO-BTN 2004(1)

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

| SCALE: 1/4"=1" | DRAWN BY: JEP | CHECKED BY: PJM |
|---|---|---|
| SHEET: 1 OF 4 | DATE: 10/05 | DATE 10/05 |

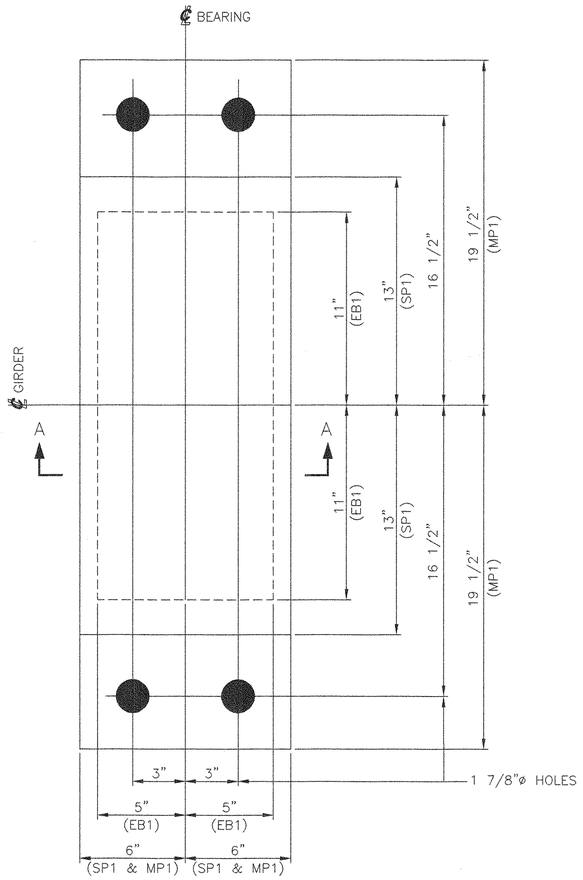
COSMEC BEARINGS

| CUSTOMER | S.O. NUMBER | DRAWING NUMBER | REV. |
|---|---|---|---|
| F. W. WHITCOMB | 60423 | 4517 | 0 |

| REV. | | BY: | DATE | CK'D BY: | DATE |
|---|---|---|---|---|---|
| - | | --- | --- | --- | --- |

10 9 B3

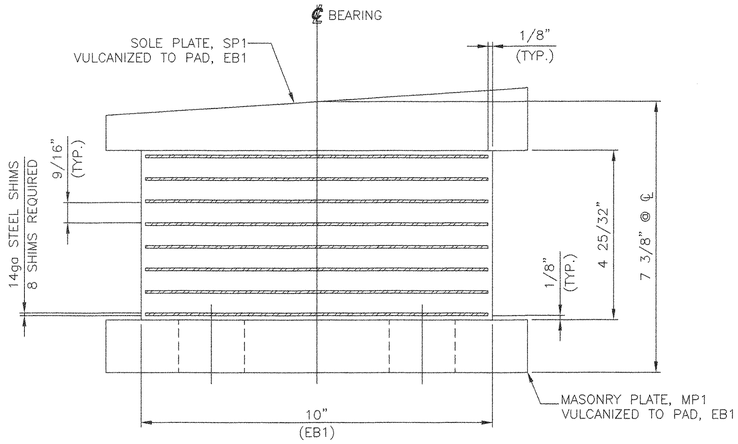
| MARK | QTY | DESCRIPTION | IN | 16ths | FAB MARK | MILL MARK | WEIGHT |
|---|---|---|---|---|---|---|---|
| EB1 | 4 | LAM. ELAST. PAD 4 25/32" x 10" | 22 | 0 | · | 60 DURO. | 328 |
| · | 4 | . | · | · | · | SP1 | 420 |
| · | 4 | . | · | · | · | MP1 | 796 |
| | | | | | | TOTAL = | 1544 |




## 4 ELASTOMERIC BEARING ASSEMBLIES, EB1A

LAMINATED ELASTOMERIC BEARING PAD, 4 25/32" x 10" x 22"
SHIMS – ASTM A36 OR EQUIVALENT
ELASTOMER – 60 DUROMETER, GRADE 3 NEOPRENE - LOW TEMPERATURE RANGE: -30° - 120° F
IN ACCORDANCE WITH AASHTO DIV. II, 18.4.5.1 SECTION 18
VULCANIZED TO
SOLE PLATE SP1
AND
MASONRY PLATE, MP1

SHEAR MODULUS BETWEEN 140 AND 175 PSI




## SECTION A–A

(N.T.S.)
SPACE SHIMS EQUALLY

SEE SHEET AS1 FOR ASSEMBLY NOTES.
SEE SHEET 1 FOR SHOP NOTES.

RECEIVED
CK'D BY KMH OK'D BY HIS
OCT 27 2005
RESUBMIT ____ APPROVED K As Noted
BY OPW DATE 11/8/05

VERMONT
AGENCY OF TRANSPORTATION

HARTFORD
PROJ. NO. BRO–BTN 2004(1)

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

| SCALE: 1/4"=1" | DRAWN BY: JEP | CHECKED BY: PJM |
|---|---|---|
| SHEET: 2 OF 4 | DATE: 10/05 | DATE 10/05 |

COSMEC BEARINGS

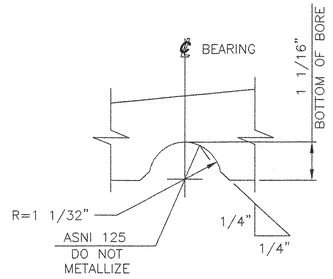
| REV. | | BY: | DATE | CK'D BY: | DATE |
|---|---|---|---|---|---|
| – | | --- | --- | --- | --- |

| CUSTOMER | S.O. NUMBER | DRAWING NUMBER | REV. |
|---|---|---|---|
| F. W. WHITCOMB | 60423 | 4518 | 0 |

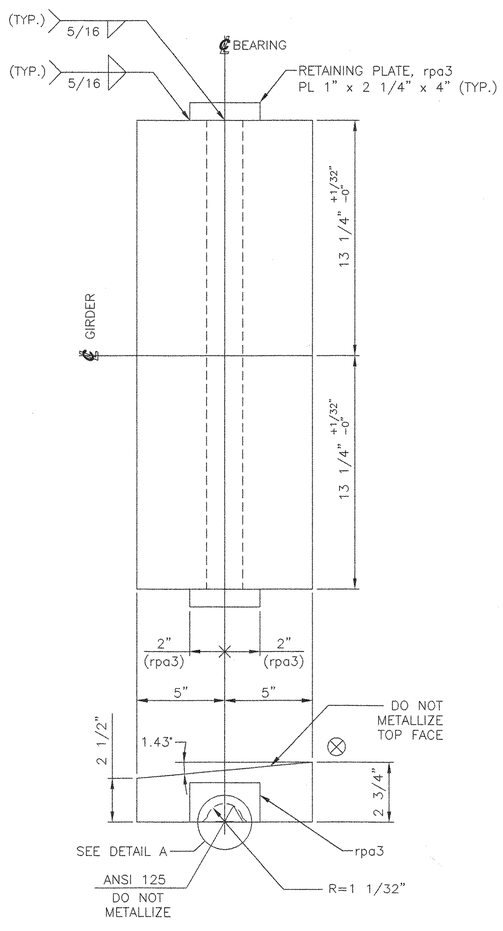
110 BB

| MARK | QTY | DESCRIPTION | IN | 16ths | FAB MARK | MILL MARK | WEIGHT |
|---|---|---|---|---|---|---|---|
| SP2 | 4 | PL 2 3/4" x 10" | 26 | 8 | · | METALLIZED | 827 |
| · | 8 | PL 1" x 2 1/4" | 4 | 0 | rpa3 | METALLIZED | 20 |
| BA1 | 4 | PL 2 1/2" x 18" | 38 | 0 | · | METALLIZED | 1940 |
| · | 4 | PL 2" x 4" | 26 | 0 | wba3 | METALLIZED (AS NOTED) | 236 |
| · | 8 | PL 1" x 2 1/4" | 10 | 0 | epa3 | METALLIZED | 51 |
| · | 16 | PL 1" x 2 1/4" | 4 | 0 | sta3 | METALLIZED | 20 |

TOTAL = 3094

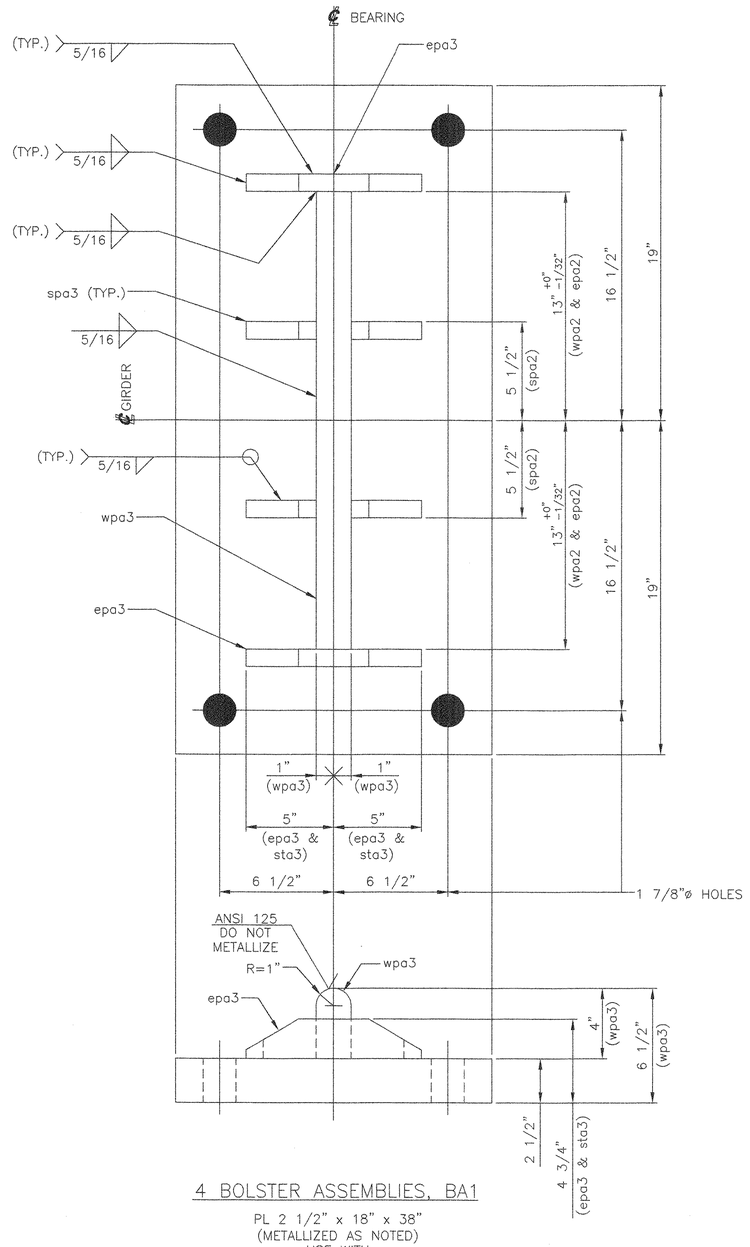



DETAIL A



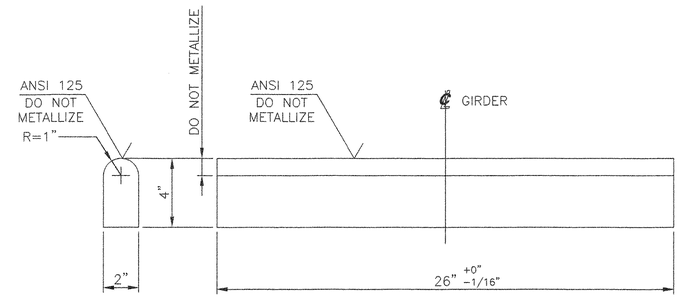

4 FIXED SOLE PLATES, SP2

PL 2 3/4" x 10" x 26 1/2"
(METALLIZED AS NOTED)
USE WITH
FIXED BEARING ASSEMBLY FBA-1
SOLE PLATE TO BE FIELD WELDED TO GIRDER.
DO NOT METALLIZE TOP FACE.




4 BOLSTER ASSEMBLIES, BA1

PL 2 1/2" x 18" x 38"
(METALLIZED AS NOTED)
USE WITH
FIXED BEARING ASSEMBLY, FBA-1




4 WEB PLATES, wpa3

PL 2" x 4" x 26"
(METALLIZED AS NOTED)
USE WITH
BOLSTER ASSEMBLY, BA1




16 STIFFENER PLATES, sta3

PL 1" x 2 1/4" x 4"
(METALLIZED)
USE WITH
BOLSTER ASSEMBLY, BA1




8 END PLATES, epa3

PL 1" x 2 1/4" x 10"
(METALLIZED)
USE WITH
BOLSTER ASSEMBLY, BA1

SEE SHEET AS1 FOR ASSEMBLY NOTES.
SEE SHEET 1 FOR SHOP NOTES.

RECEIVED
CK'D BY KMH OK'D BY HJS
OCT 27 2005
RESUBMIT ____ APPROVED ✓ As Noted
BY CPW DATE 11/8/05

VERMONT
AGENCY OF TRANSPORTATION

HARTFORD
PROJ. NO. BRO-BTN 2004(1)

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

| SCALE: 1/4"=1" | DRAWN BY: JEP | CHECKED BY: PJM |
|---|---|---|
| SHEET: 3 OF 4 | DATE: 10/05 | DATE 10/05 |

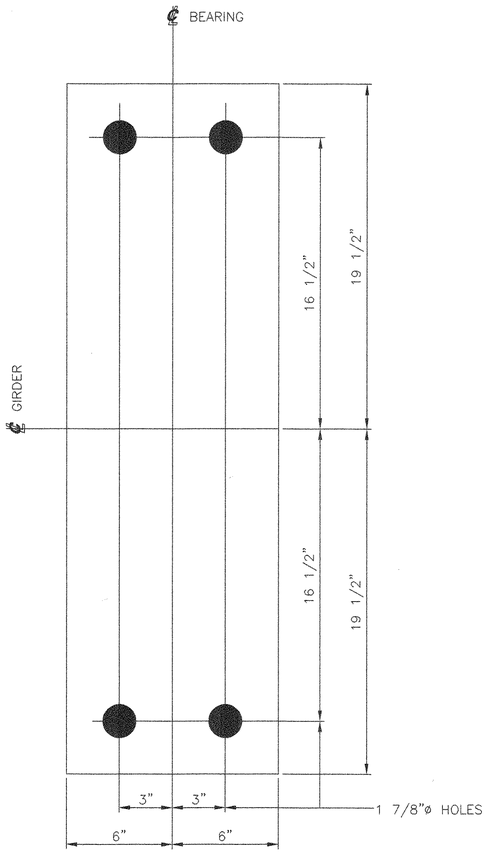
COSMEC BEARINGS

| REV. | | BY: | DATE | CK'D BY: | DATE |
|---|---|---|---|---|---|
| – | | --- | --- | --- | --- |

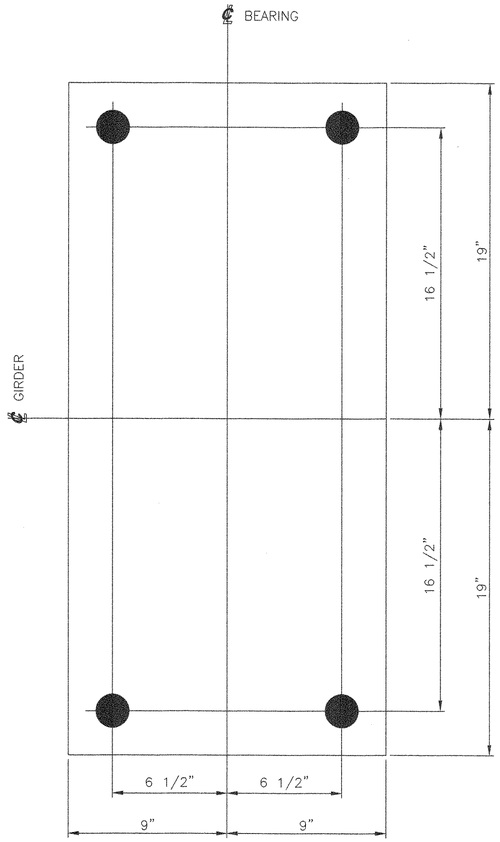
| CUSTOMER | S.O. NUMBER | DRAWING NUMBER | REV. |
|---|---|---|---|
| F. W. WHITCOMB | 60423 | 4519 | 0 |

111 BB

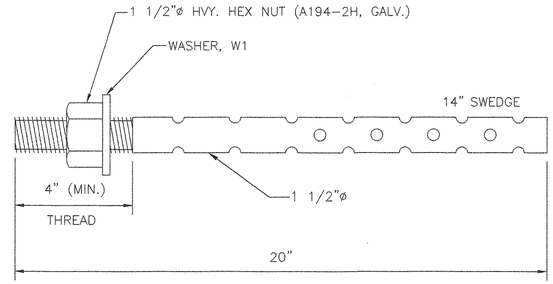
| MARK | QTY | DESCRIPTION | IN | 16ths | FAB MARK | MILL MARK | WEIGHT |
|---|---|---|---|---|---|---|---|
| BP1 | 4 | PREF. PAD 1/8" x 12" | 39 | 0 | · | MIL-C-882 | 18 |
| BP2 | 4 | PREF. PAD 1/8" x 12" 18" | 38 | 0 | · | MIL-C-882 | 19 |
| AB1 | 16 | RD 1 1/2"ø | 20 | 0 | GALV. | F1554 GR. 55 | 160 |
| AB2 | 16 | RD 1 1/2"ø | 22 | 0 | GALV. | F1554 GR. 55 | 176 |
| W1 | 32 | PL 3/8" x 3" | 3 | 0 | · | GALV. | 31 |
| · | 32 | 1 1/2"ø HVY HEX NUTS | · | · | GALV. | A192-2H | 30 |
| | | | | | | TOTAL = | 433 |



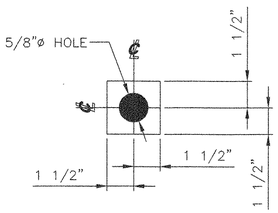

4 BEARING PADS, BP1
PREFORMED FABRIC PAD 1/8" x 12" x 39"
(MIL-C-882)
USE WITH
EXPANSION BEARING ASSEMBLY, EBA-1



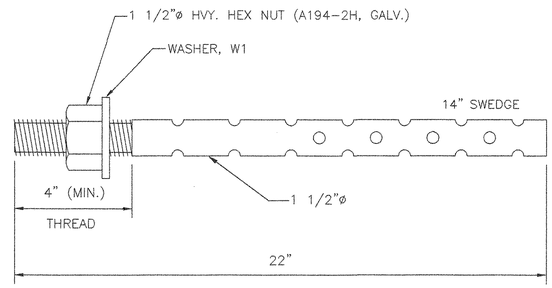

4 BEARING PADS, BP2
PREFORMED FABRIC PAD 1/8" x 18" x 38"
(MIL-C-882)
USE WITH
FIXED BEARING ASSEMBLY, FBA-1




16 ANCHOR BOLTS, AB1
PL 1 1/2"ø x 20"
F1554 GR.55 (GALV.)
MIN. EMBEDMENT=15"
LOCATE AT
PIER 1




32 PLATE WASHERS, W1
PL 3/8" x 3" x 3"
(GALV.)
USE WITH
ANCHOR BOLTS, AB1 & AB2




16 ANCHOR BOLTS, AB2
PL 1 1/2"ø x 22"
F1554 GR.55 (GALV.)
MIN. EMBEDMENT=15"
LOCATE AT
PIER 2

SEE SHEET AS1 FOR ASSEMBLY NOTES.
SEE SHEET 1 FOR SHOP NOTES.

RECEIVED
CK'D BY KMW OK'D BY HIS
OCT 27 2005
RESUBMIT APPROVED As noted
BY OPW DATE 11/8/05

VERMONT
AGENCY OF TRANSPORTATION

HARTFORD
PROJ. NO. BRO-BTN 2004(1)

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

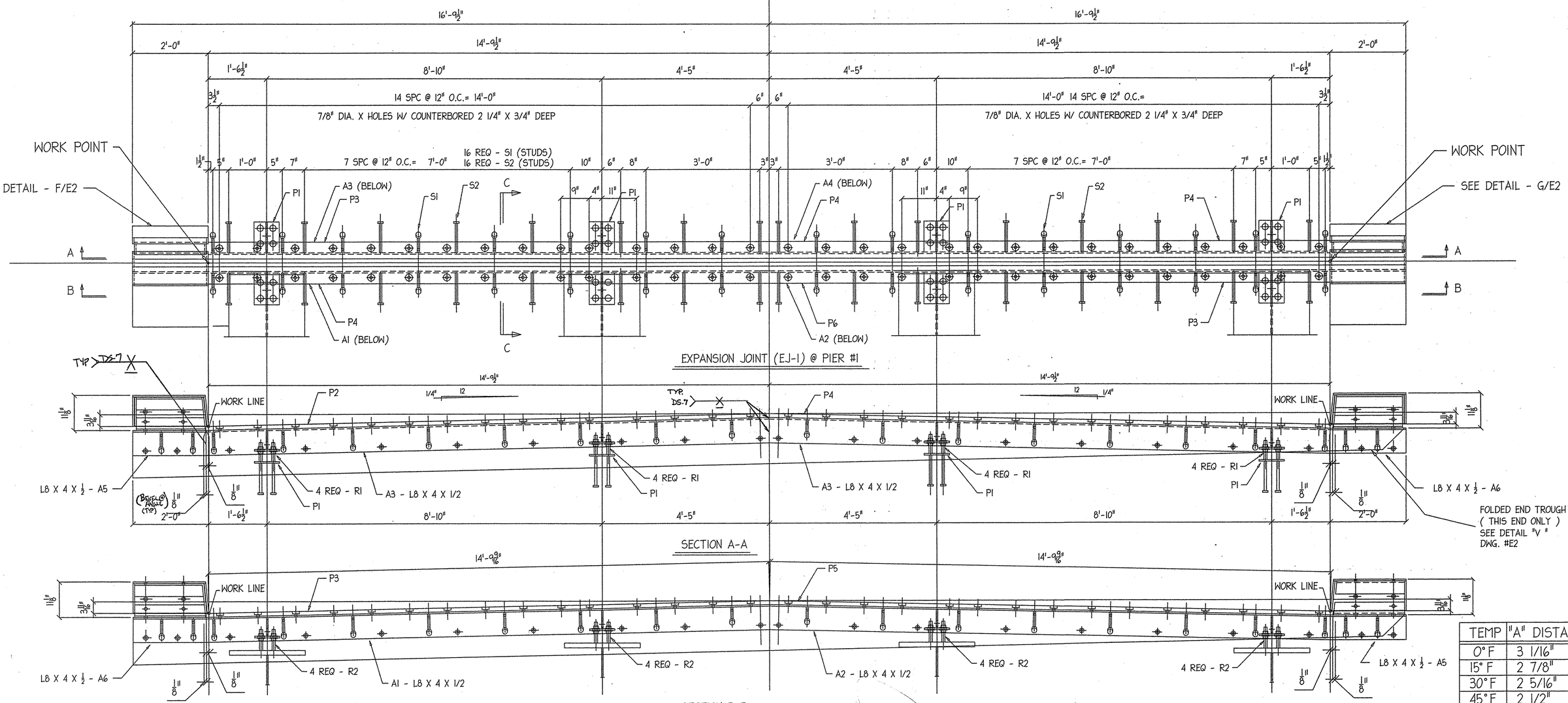
| SCALE: 1/4"=1" | DRAWN BY: JEP | CHECKED BY: PJM |
|---|---|---|
| SHEET: 4 OF 4 | DATE: 10/05 | DATE 10/05 |

COSMEC BEARINGS

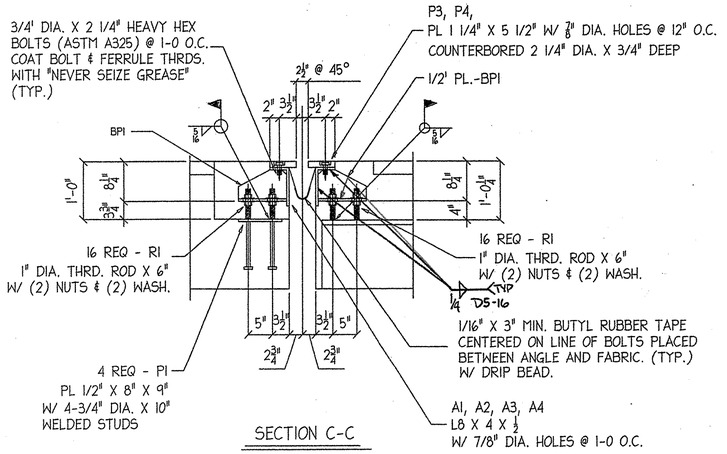
| CUSTOMER | S.O. NUMBER | DRAWING NUMBER | REV. |
|---|---|---|---|
| F. W. WHITCOMB | 60423 | 4520 | 0 |

| REV. | | BY: | DATE | CK'D BY: | DATE |
|---|---|---|---|---|---|
| – | | --- | --- | --- | --- |

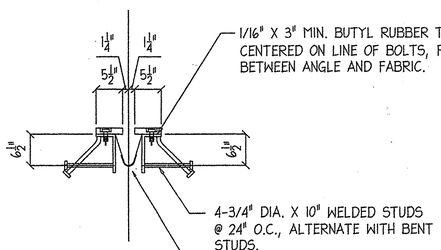
112 BB



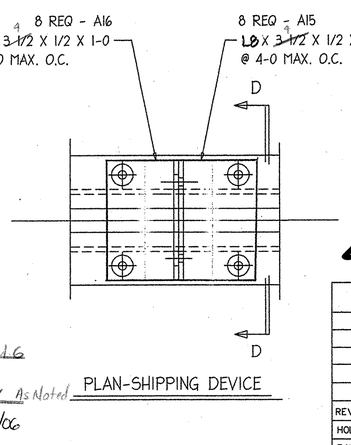

SECTION B-B



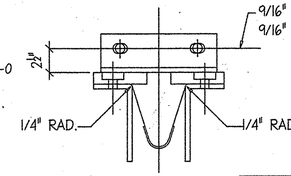

SECTION C-C




SECTION D-D




PLAN-SHIPPING DEVICE




SECTION E-E

| TEMP | "A" DISTANCE |
|---|---|
| 0° F | 3 1/16" |
| 15° F | 2 7/8" |
| 30° F | 2 5/16" |
| 45° F | 2 1/2" |
| 60° F | 2 11/16" |
| 75° F | 2 1/8" |
| 90° F | 1 15/16" |
| 105° F | 1 3/4" |

RECEIVED
CK'D BY KMH CK'D BY MG
FEB 22 2006
RESUBMIT APPROVED ✓ As Noted
BY CPW DATE 3/9/06

STRUCTURES COPY

HARTFORD, VT.
PROJECT NO. = BRO-BTN 2004 (1)

EXPANSION JOINT (EJ-1)@ ABUTMENT "A"

| | | |
|---|---|---|
| DATE SUB. | PROJECT | HARTFORD, VT. BRIDGE |
| | LOCATION | HARTFORD, VT. |
| | ARCHITECT | |
| DATE APP. | ENGINEER | |
| DATE DIST. | CUSTOMER | F.W. WHITCOMB |

| REV. NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 2/13 | Rec'd Rev's |

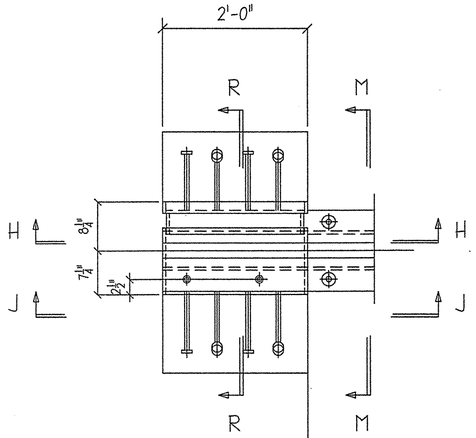
HOLES: 13/16"ø (U.N.O.) DATE: 1-17-06
PAINT: GALVANIZED

MERRIMACK
MISCELLANEOUS IRON STRUCTURAL STEEL FABRICATORS

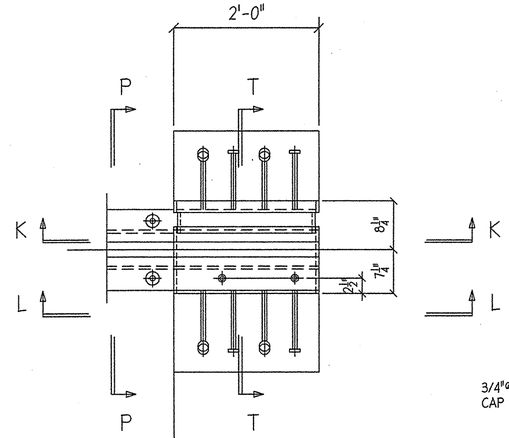
MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224-7766
FAX. (603) 224-7925

DR BY KJM
REV BY JD
JOB NO. 0642
DWG NO. E1

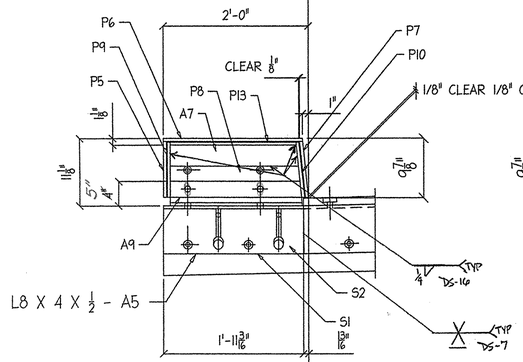
113 BJ



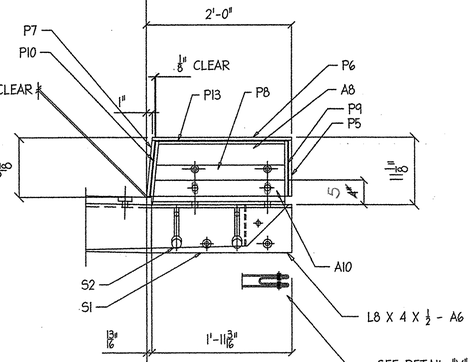

DETAIL - F/EI



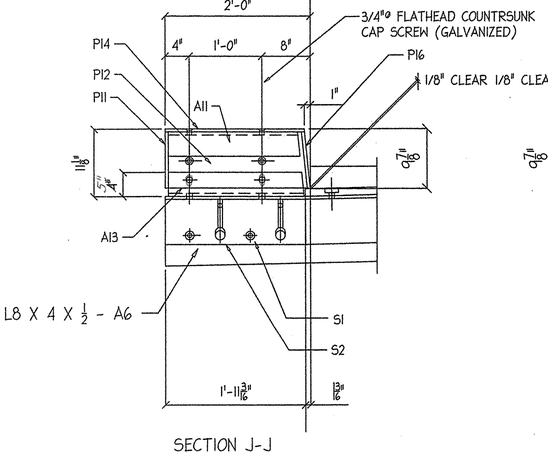

DETAIL - G/EI



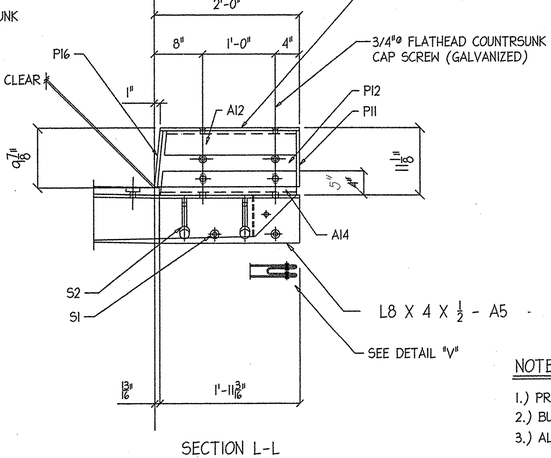

SECTION H-H



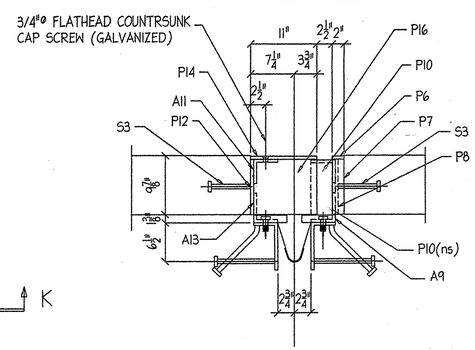

SECTION K-K



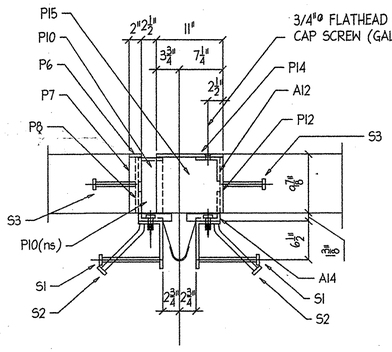

SECTION J-J



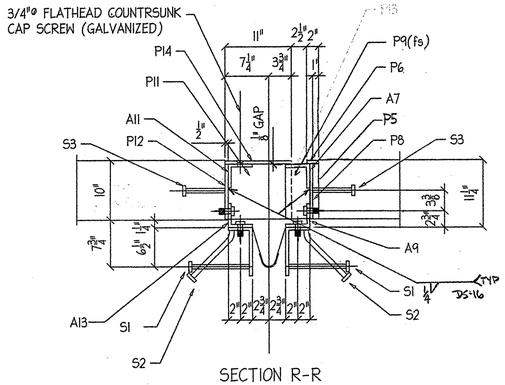

SECTION L-L

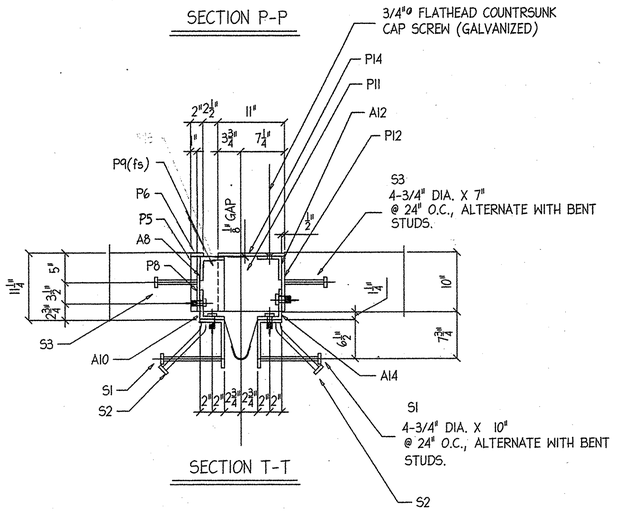


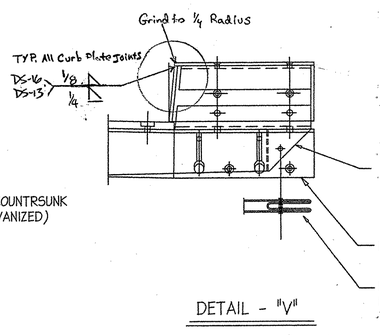

SECTION M-M



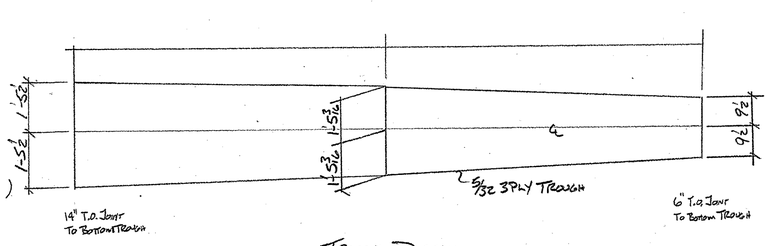

SECTION P-P




DETAIL - "V"




TROUGH DETAIL

NOTES:

1.) PREFORMED FABRIC MATERIAL SHALL BE CONTINUOUS AND SHALL CONFORM TO SUBSECTION 707.07.
2.) BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO SPEC. M-198, TYPE II.
3.) ALL STEEL COMPONENTS SHALL BE AASHTO M270, GRADE 36, GALVANIZED OR METALIZED AS PER SUBSECTION 506.15 (a) OR (b) UNLESS OTHERWISE NOTED.
4.) THE L8 X 4 X 1/2 ANGLES SHALL BE FURNISHED AS ONE CONTINUOUS PIECE. THE 1 1/4" X 5 1/2" BARS EACH SIDE OF THE JOINT SHALLBE PROVIDED IN TWO EQUAL LENGTHS.
5.) A DRIP BEAD OF 1/4" X 7" STRIP OF PREFORMED MATERIAL SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH USING AN ADHESIVE APPROVED BY THE MANUFACTURER. THE DRIP BEAD SHALL BE APPLIED 1" FROM THE DOWNSPOUT END OF THE TROUGH.
6.) THE EXPANSION JOINT SHALL BE SHOP ASSEMBLED AND SHIPPED AS ONE UNIT.
7.) BEVEL ALL EDGES TO 1/16 RADIUS / SEAL WELD EXPOSED JOINTS FOR GALV

RECEIVED
CK'D BY KMH OK'D BY MG
FEB 22 2006
RESUBMIT_____ APPROVED As Noted
BY GPW DATE 3/1/06

| REV. NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 2/13 | PER ENG. |

HOLES: 13/16"ø (U.N.O.) DATE: 1-17-06
PAINT: GALVANIZED

HARTFORD, VT.
PROJECT NO. = BRO-BTN 2004 (1)

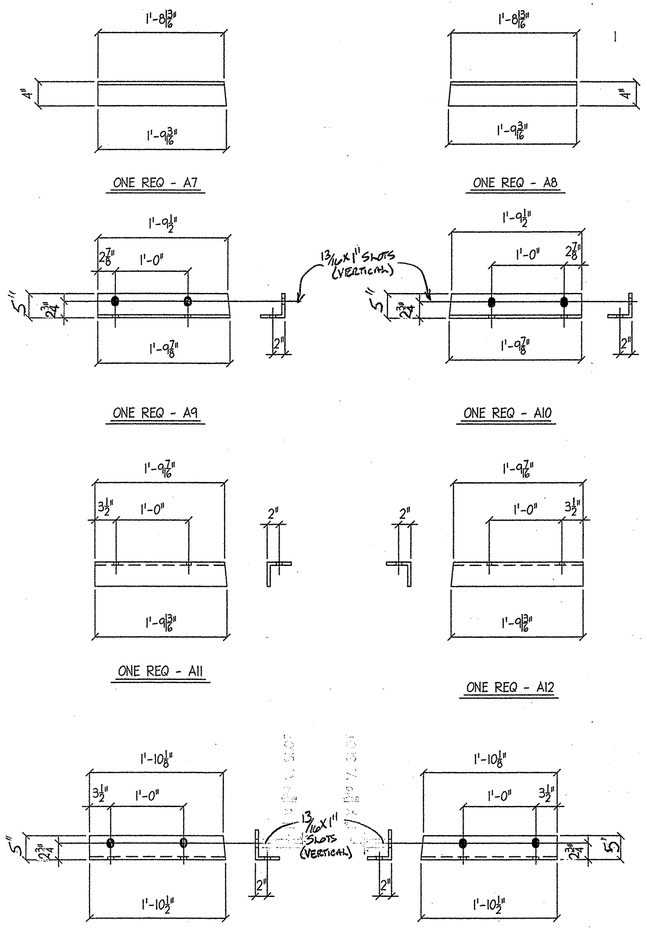
EXPANSION JOINT (EJ-1)@ ABUTMENT "A"

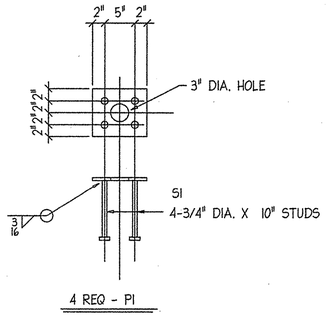
| | | |
|---|---|---|
| DATE SUB. | PROJECT | HARTFORD, VT. BRIDGE |
| | LOCATION | HARTFORD, VT. |
| | ARCHITECT | |
| DATE APP. | ENGINEER | |
| DATE DIST. | CUSTOMER | F.W. WHITCOMB |

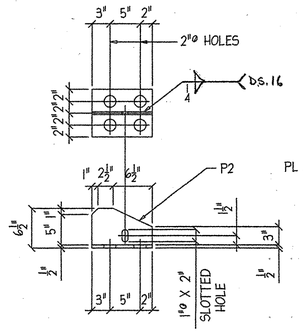

MERRIMACK
MISCELLANEOUS IRON STRUCTURAL STEEL FABRICATORS
MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224-7766
FAX. (603) 224-7925

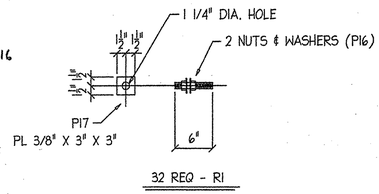

| | |
|---|---|
| DR BY | KJM |
| REV BY | JL |
| JOB NO. | 0642 |
| DWG NO. | E2 |

114 BJ

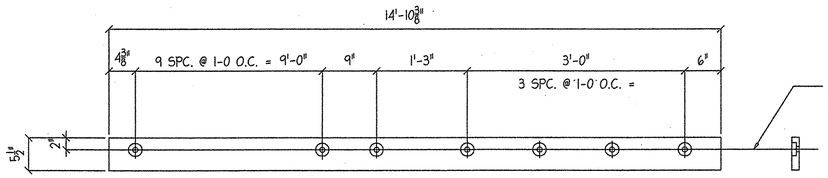


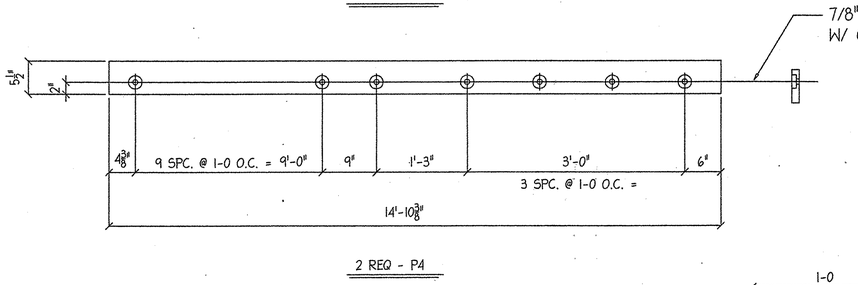



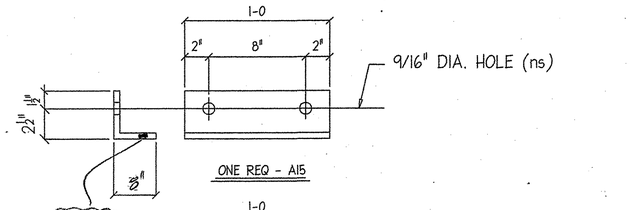



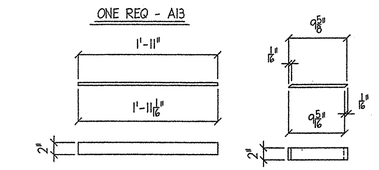



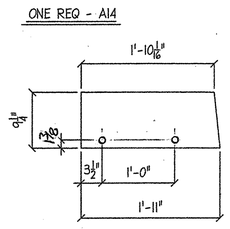

LONG POINT TO LONG POINT @ WORK LINE TO WORK LINE

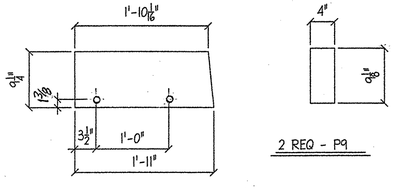


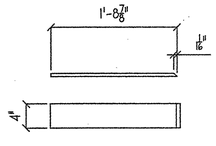



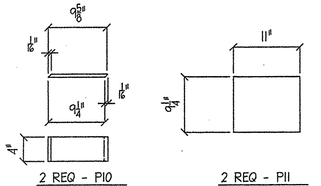



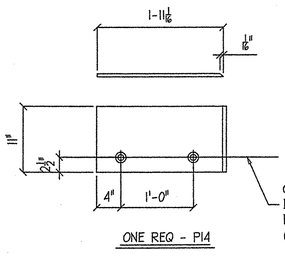



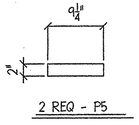



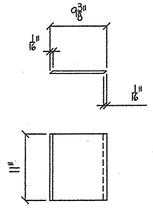



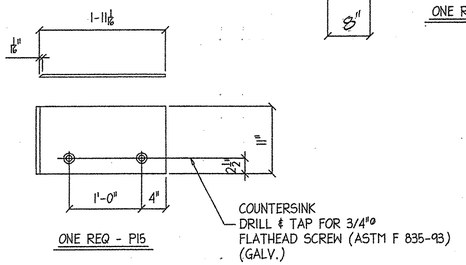







# BILL OF MATERIAL

| QTY | MARK | SHAPE | LENGTH | | REMARKS |
|---|---|---|---|---|---|
| 1 | EJ-1 | EXPANSION JOINT | | | GALV. |
| 1 | A1 | L 8 X 4 X 1/2 | 14 | 10 1/2 | |
| 1 | A2 | L 8 X 4 X 1/2 | 14 | 10 1/2 | |
| 1 | A3 | L 8 X 4 X 1/2 | 14 | 10 1/2 | |
| 1 | A4 | L 8 X 4 X 1/2 | 14 | 10 1/2 | |
| 2 | A5 | L 8 X 4 X 1/2 | 1 | 11 5/16 | |
| 2 | A6 | L 8 X 4 X 1/2 | 1 | 11 5/16 | |
| 1 | A7 | L 4 X 4 X 1/2 | 1 | 9 3/16 | |
| 1 | A8 | L 4 X 4 X 1/2 | 1 | 9 3/16 | |
| 1 | A9 | L 5 X 4 X 1/2 | 1 | 9 7/8 | |
| 1 | A10 | L 5 X 4 X 1/2 | 1 | 9 7/8 | |
| 1 | A11 | L 4 X 4 X 1/2 | 1 | 9 3/16 | |
| 1 | A12 | L 4 X 4 X 1/2 | 1 | 9 3/16 | |
| 1 | A13 | L 5 X 4 X 1/2 | 1 | 9 7/8 | |
| 1 | A14 | L 5 X 4 X 1/2 | 1 | 9 7/8 | |
| 8 | A15 | L 4 X 8 X 1/2 | 1 | 0 | |
| 8 | A16 | L 4 X 8 X 1/2 | 1 | 0 | |
| | | | | | |
| | | | | | |
| 4 | P1 | PL 1/2" X 8" | 0 | 9 | |
| 16 | S1 | 3/4"ø STUDS | 0 | 10 | |
| | | | | | |
| 8 | BP1 | PL 1/2" X 8" | 0 | 10 | |
| 8 | P2 | PL 1/2" X 6" | 0 | 10 | |
| | | | | | |
| 32 | R1 | 1"ø THRD. ROD | 0 | 6 | |
| 64 | P17 | PL 3/8" X 3" | 0 | 3 | |
| | | | | | |
| 2 | P3 | PL 1 1/4" X 5 1/2" | 14 | 10 3/8 | |
| 2 | P4 | PL 1 1/4" X 5 1/2" | 14 | 10 3/8 | |
| | | | | | |
| 16 | S1 | 3/4"ø STUD | 0 | 10 | STR. |
| 16 | S2 | 3/4"ø STUD | 0 | 10 | BENT |
| 8 | S3 | 3/4"ø STUD | 0 | 7 | STR. |
| | | | | | |
| 2 | P5 | PL 1/2' X 2" | 0 | 10 1/2 | NOT DRAWING |
| 2 | P6 | PL 1/2' X 2" | 1 | 11 1/16 | |
| 2 | P7 | PL 1/2' X 2" | 0 | 9 5/8 | |
| 2 | P8 | PL 1/2' X 9 1/4" | 1 | 11 | |
| 2 | P9 | PL 1/2' X 4" | 1 | 9 1/8 | |
| 2 | P10 | PL 1/2' X 4" | 0 | 9 5/8 | |
| 2 | P11 | PL 1/2' X 9 1/4" | 0 | 11 | |
| 2 | P12 | PL 1/2' X 9 1/4" | 1 | 11 | |
| 2 | P13 | PL 1/2' X 4" | 1 | 9 7/8 | |
| 2 | P14 | PL 1/2' X 11" | 1 | 11 1/16 | |
| 2 | P15 | PL 1/2' X 11" | 1 | 11 1/16 | |
| 2 | P16 | PL 1/2' X 9 3/8" | 0 | 11 | |
| | | | | | |
| | | FIELD BOLTS | | | |
| | | | | | |
| 2 - 3/4" DIA. X 1 1/4" FLATHEAD COUNTERSUNK CAP SCREW ( GALV ) ASTM F 835-93 | | | | | |
| 8 - 3/4" DIA. X 2" ANCHOR THREADED FERRULE ( @ CURB ) | | | | | |
| 65 - 3/4" DIA. X 2" ANCHOR THREADED FERRULE ( @ CURB ) | | | | | |
| 20 - 3/4" DIA. X 2 1/4" A325 BOLTS ( @ SHIPPING DEVICE ) | | | | | |

HARTFORD, VT.
PROJECT NO. = BRO-BTN 2004 (1)

RECEIVED
CK'D BY KMH OK'D BY MG
FEB 22 2006
RESUBMIT ____ APPROVED ✓
BY CPW DATE 3/9/06

EXPANSION JOINT (EJ-1)@ ABUTMENT "A"

| | | |
|---|---|---|
| DATE SUB. | PROJECT | HARTFORD, VT. BRIDGE |
| | LOCATION | HARTFORD, VT. |
| | ARCHITECT | |
| DATE APP. | ENGINEER | |
| DATE DIST. | CUSTOMER | F.W. WHITCOMB |

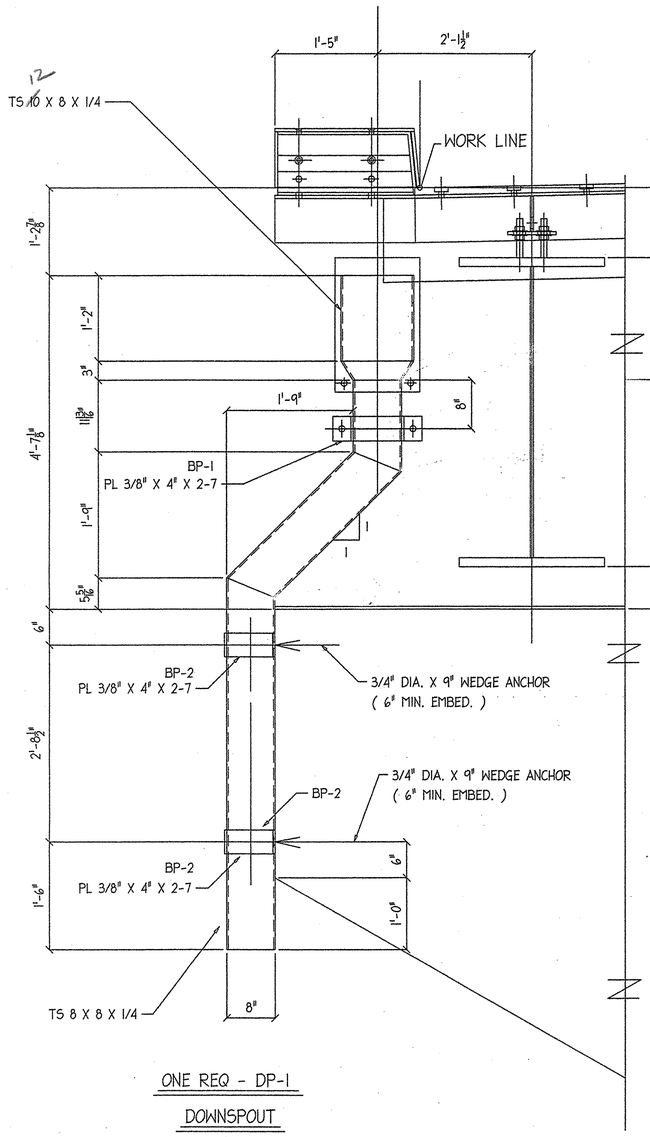
| REV. NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 2/13 | PER ENG |

HOLES: 13/16"ø (U.N.O.) DATE: 1-17-06
PAINT: GALVANIZED


MERRIMACK
MISCELLANEOUS IRON STRUCTURAL STEEL FABRICATORS
MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224-7766
FAX. (603) 224-7925

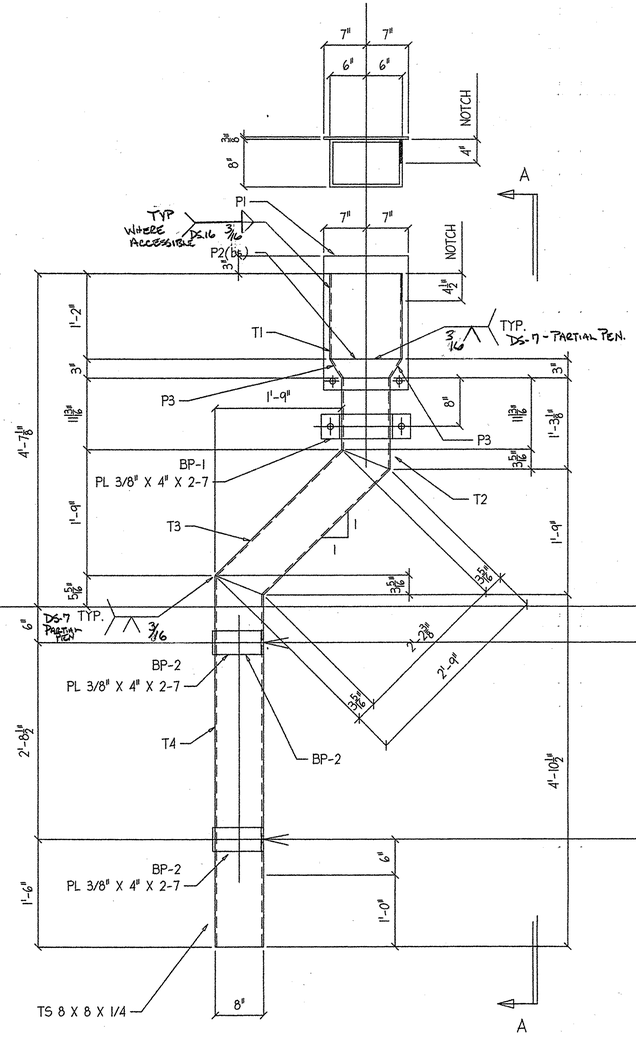

DR BY KJM
REV BY
JOB NO. 0642
DWG NO. F1

115 BJ

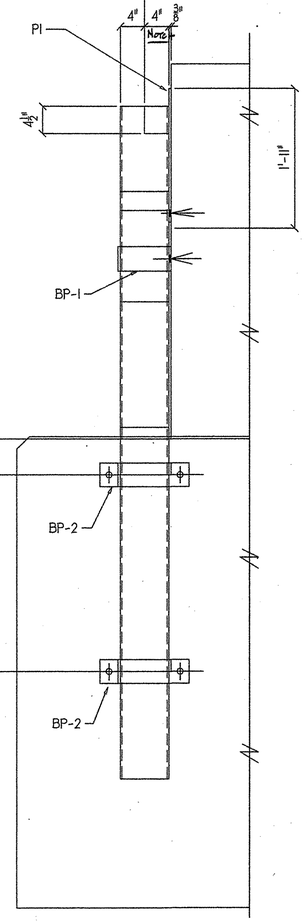



ONE REQ - DP-1

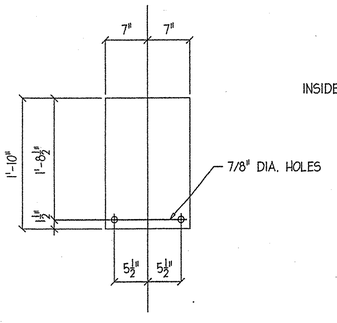
DOWNSPOUT



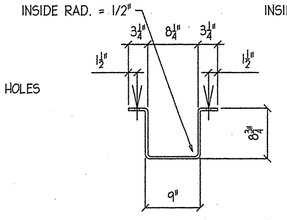

DOWNSPOUT ELEVATION




SECTION A-A

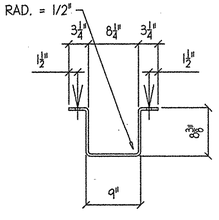



ONE REQ - P1



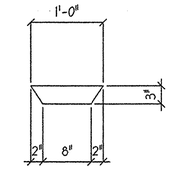

ONE REQ - BP-1

PL 3/8" X 4" X 2-6



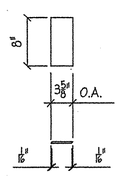

2 REQ - BP-2

PL 3/8" X 4" X 2-5 1/4




2 REQ - P2

PL 3/8" X 3" X 1-0




2 REQ - P3

PL 3/8" X 3 5/8" X 8"

NOTES:

1.) HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO A-500 OR A-501.
2.) ALL PLATES, BAR, AND ANGLES SHALL CONFORM TO AASHTO M270 GR. 36.
3.) DOWNSPOUT SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-123 AFTER FABRICATION.
4.) ALL BOLTS AND RELATED HARDWARE SHALL BE ASTM A-307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 (AASHTO M232).

## BILL OF MATERIAL

| QTY | MARK | SHAPE | LENGTH | | REMARKS |
|---|---|---|---|---|---|
| | | DOWNSPOUT | | | GALV. |
| 1 | T1 | TS 12 X 8 X 1/4 | 1 | 2 | |
| 1 | T2 | TS 8 X 8 X 1/4 | 1 | 3 1/8 | |
| 1 | T3 | TS 8 X 8 X 1/4 | 2 | 9 | |
| 1 | T4 | TS 8 X 8 X 1/4 | 5 | 1 13/16 | |
| 1 | P1 | PL 3/8" X 14" | 1 | 10 | |
| 2 | P2 | PL 3/8" X 3" | 1 | 0 | |
| 2 | P3 | PL 3/8" X 3 5/8" | 0 | 8 | |
| 1 | BP-1 | BENT PL. 3/8" X 4" | 2 | 6 | |
| 2 | BP-2 | BENT PL. 3/8" X 4" | 2 | 5 1/4 | |
| | | FIELD BOLTS | | | |
| 8 - 3/4" DIA. X 9" WEDGE ANCHOR (SLS) ( 6" MIN. EMBED. ) | | | | | |

RECEIVED
CK'D BY KMH CK'D BY RLR
FEB 22 2006
RESUBMIT ____ APPROVED X As Noted
BY [illegible] DATE 3/9/06

| REV. NO. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 2/13 | Per ENG. |

HOLES: 13/16"ø (U.N.O.) DATE: 1-17-06
PAINT: GALVANIZED

HARTFORD, VT.
PROJECT NO. = BRO-BTN 2004 (1)

DOWNSPOUT

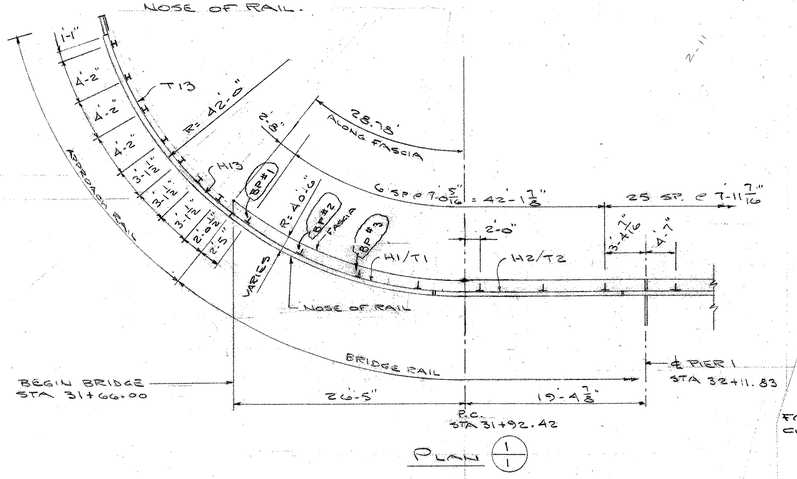
| | | |
|---|---|---|
| DATE SUB. | PROJECT | HARTFORD, VT. BRIDGE |
| | LOCATION | HARTFORD, VT. |
| | ARCHITECT | |
| DATE APP. | ENGINEER | |
| DATE DIST. | CUSTOMER | F.W. WHITCOMB |


MERRIMACK
MISCELLANEOUS IRON STRUCTURAL STEEL FABRICATORS
MERRIMACK SHEET METAL
119 HALL ST.
CONCORD, N.H., 03301
TEL. (603) 224-7766
FAX. (603) 224-7925

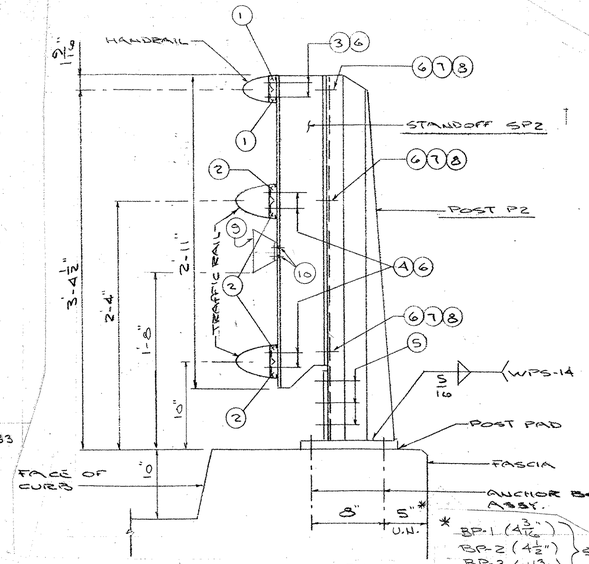

| | |
|---|---|
| DR BY | KJM |
| REV BY | |
| JOB NO. | 0642 |
| DWG NO. | F2 |

1/16 BJ

NOTE-
DIM'S. AT BRIDGE RAIL ARE ALONG FASCIA. DIM'S AT APPROACH RAIL ARE ALONG NOSE OF RAIL.

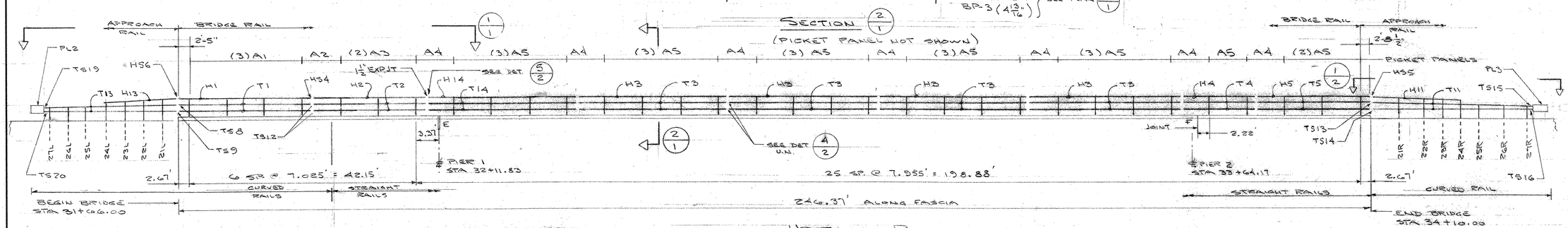



PLAN (1/1)



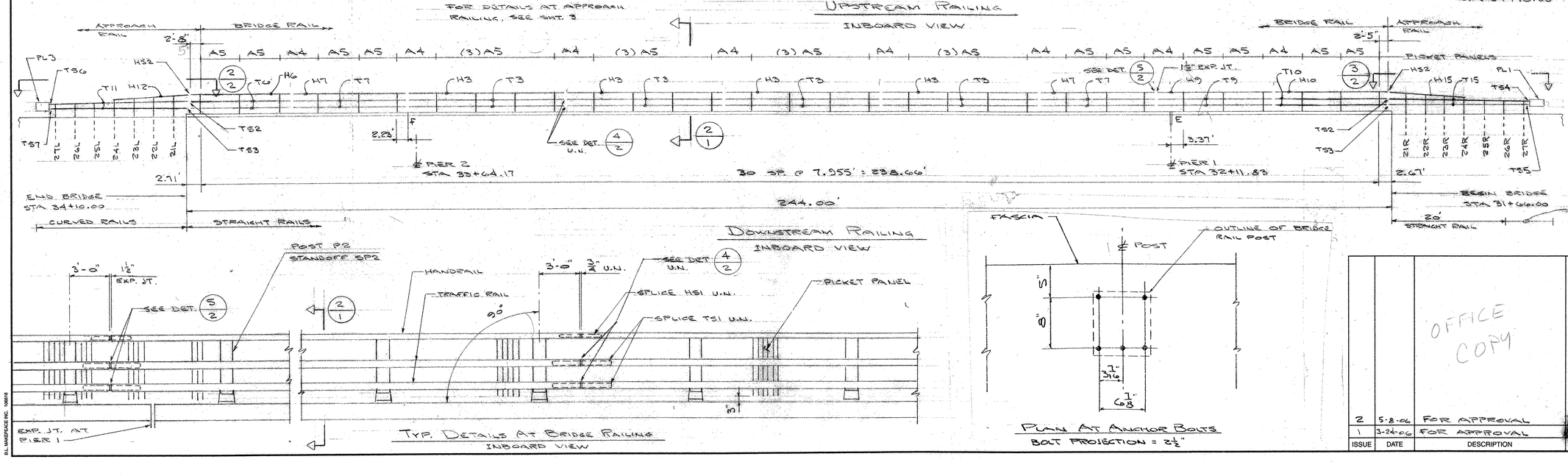

1. *4 CLAMP BAR
2. *1 CLAMP BAR
3. 1/2"-13 x 3/4" HEX HD CAP SCREW (A193, GR. B8)
4. 1/2"-13 x 1" HEX HD CAP SCREW (A193, GR. B8)
5. 7/8" ϕ AL. RIVET (6061-T6)
6. AL. WASHER 1/16" OD x 17/32" ID x 3/32" THK.
7. 1/2"-13 x 1 1/2" HEX HD CAP SCREW (304 ST. STL) 75,000 TENSILE
8. 1/2"-13 HEX NUT (304 ST. STL) 75,000 TENSILE
9. REFLECTORIZED DELINIATOR (WHITE) PER SPECS. LOCATE EVERY 30' (OR CLOSEST POST). TYP. AT BRIDGE RAIL & APPROACH RAIL
10. *8 x 3/4 ST. STL. SELF-TAPPING SCREW. DRILL POSTS IN FIELD.

SECTION (2/1)
(PICKET PANEL NOT SHOWN)




UPSTREAM RAILING
INBOARD VIEW

FOR DETAILS AT APPROACH RAILING, SEE SHT. 3




DOWNSTREAM RAILING
INBOARD VIEW




TYP. DETAILS AT BRIDGE RAILING
INBOARD VIEW




PLAN AT ANCHOR BOLTS
BOLT PROJECTION = 2 1/2"

RECEIVED
CK'D BY KMH OK'D BY
MAY 1 2 2006
RESUBMIT APPROVED
BY DATE
As Noted
5/15/06

| ISSUE | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 2 | 5-8-06 | FOR APPROVAL | |
| 1 | 3-24-06 | FOR APPROVAL | |

OFFICE COPY

**AUCIELLO IRON WORKS INC**
560 MAIN ST. HUDSON, MA (978) 568-8382

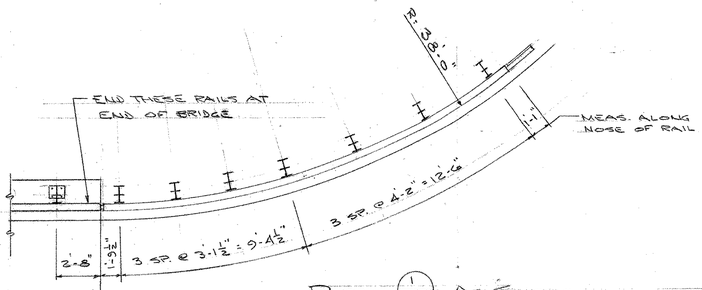
VT AGENCY OF TRANSPORTATION
HARTFORD PROJ# BRO-BTN 2004(1)
BRIDGE #8
T.H. 4 OVER WHITE RIVER

AL. BRIDGE & APPROACH RAILING

| | |
|---|---|
| SURFACE PREP: NONE | FINISH: BLACK ANODIZE |
| FOR: FRANK W. WHITCOMB CORP. | |
| DR: NWM 3-23-06 | DWG. NO. BR-2878 |
| CHK: TF 3-24-06 | |
| JOB NO. AB6.0012-001 | SHEET 1 OF 8 |

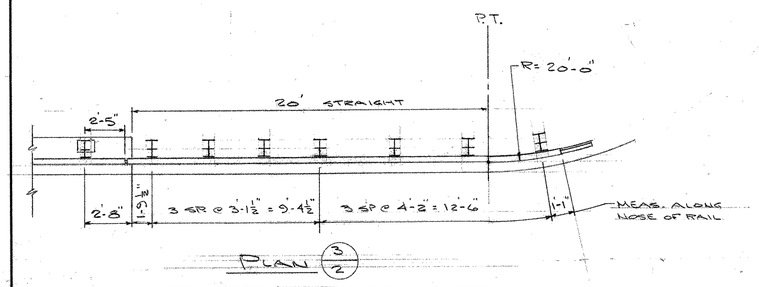
B.L. MAKEPEACE INC. 100518

117 BR

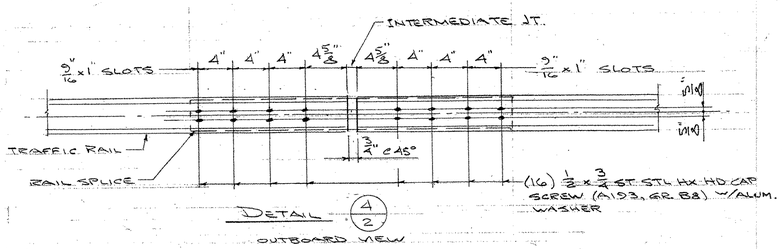



PLAN (1/2) AS SHOWN

PLAN (2/2) OPP. HAND

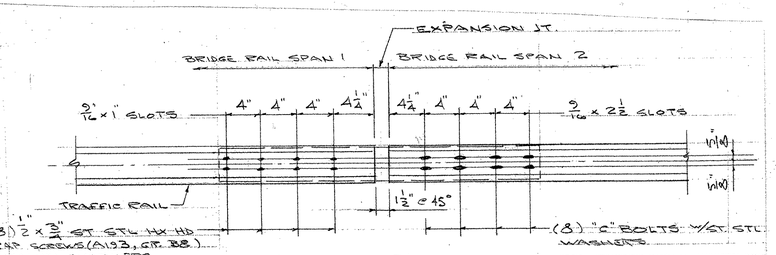



PLAN (3/2)



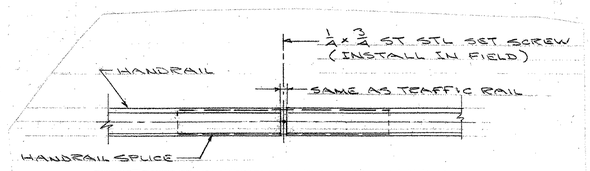

DETAIL (4/2)

OUTBOARD VIEW




DETAIL (5/2)

OUTBOARD VIEW




DET. AT HANDRAIL SPLICE

OUTBOARD VIEW

| QUAN | DESCRIPTION |
|---|---|
| 79 | #4 CLAMP BAR |
| 364 | #1 CLAMP BAR |
| 798 | 1/2 x 3/4 ST. STL. HEX HD CAP SCREW |
| 728 | 1/2 x 1 do |
| 522 | 1/2 x 1 1/2 do |
| 128 | 1/2 x 3/8 "C" BOLT |
| 2048 | 1/2" ALUM. WASHER |
| 128 | 1/2" ST. STL. WASHER |
| | |
| 30 | DELINIATOR (WHITE) |
| 60 | #8 x 3/4 ST. STL. SELF-TAPPING SCREW |
| | |
| 63 | POST PAD |
| | |
| | |
| 63 | ANCHOR PLATE |
| 315 | 3/4 x 10 GALV. HEX HD BOLT |
| 315 | 3/4" GALV. HEX NUT |
| 315 | 3/4" GALV. WASHER |

| QUAN | MK | DESCRIPTION |
|---|---|---|
| 63 | P2 | RAIL POST |
| 2 | 21L | APPROACH POST |
| 2 | 22L | |
| 2 | 23L | |
| 2 | 24L | |
| 2 | 25L | |
| 2 | 26L | |
| 2 | 27L | |
| 2 | 21R | |
| 2 | 22R | |
| 2 | 23R | |
| 2 | 24R | |
| 2 | 25R | |
| 2 | 26R | |
| 2 | 27R | |
| 63 | SP2 | STANDOFF |
| 2 | 21L | |
| 2 | 22L | |
| 2 | 23L | |
| 2 | 24L | |
| 2 | 25L | |
| 2 | 26L | |
| 2 | 27L | |
| 2 | 21R | |
| 2 | 22R | |
| 2 | 23R | |
| 2 | 24R | |
| 2 | 25R | |
| 2 | 26R | |
| 2 | 27R | |
| 15 | HS1 | HANDRAIL SPLICE |
| 2 | HS2 | |
| 1 | HS4 | |
| 1 | HS5 | |
| 1 | HS6 | |
| 30 | TS1 | TRAF. RAIL SPLICE |
| 2 | TS2 | |
| 2 | TS3 | |
| 1 | TS4 | |
| 1 | TS5 | |
| 1 | TS6 | |
| 1 | TS7 | |
| 1 | TS8 | |
| 1 | TS9 | |
| 2 | TS12 | |
| 1 | TS13 | |
| 1 | TS14 | |
| 1 | TS15 | |
| 1 | TS16 | |
| 1 | TS19 | |
| 1 | TS20 | |
| | | |
| 3 | A1 | PICKET PANEL |
| 1 | A2 | |
| 2 | A3 | |
| 15 | A4 | |
| 40 | A5 | |
| 780 | — | 1/4 x 3/4 ST. STL SET SCREW |
| | | |
| 1 | PL1 | GALV. PLATE |
| 1 | PL2 | do |
| 2 | PL3 | do |

4"x3 1/8" HANDRAIL

| QUAN | MK | LGTH |
|---|---|---|
| 1 | H1 | SEE DET. |
| 1 | H2 | SEE DET. |
| 8 | H3 | 31'-9 1/16" |
| 1 | H4 | 15'-10 1/8" |
| 1 | H5 | 23'-7" |
| 1 | H6 | 21'-8 1/4" |
| 2 | H7 | 23-9 3/8 |
| — | H8 | NOT USED |
| 1 | H9 | 23'-8 7/8" |
| 1 | H10 | 23'-2 5/8" |
| 1 | H11 | SEE DET. |
| 1 | H12 | do |
| 1 | H13 | do |
| 1 | H14 | 31'-8 3/8 |
| 1 | H15 | SEE DET. |

4 3/4" x 4" TRAFFIC RAIL

| QUAN | MK | LGTH |
|---|---|---|
| 2 | T1 | SEE DET. |
| 2 | T2 | SEE DET. |
| 16 | T3 | 31'-9 1/16 |
| 2 | T4 | 15'-10 1/8" |
| 2 | T5 | 23'-7" |
| 2 | T6 | 21'-8 1/4" |
| 4 | T7 | 23'-9 3/8 |
| — | T8 | NOT USED |
| 2 | T9 | 23'-8 7/8" |
| 2 | T10 | 23'-2 5/8" |
| 4 | T11 | SEE DET. |
| — | T12 | NOT USED |
| 2 | T13 | SEE DET. |
| 2 | T14 | 31'-8 3/8" |
| 2 | T15 | SEE DET. |

RECEIVED
CK'D BY KMH CK'D BY
MAY 12 2006
RESUBMIT APPROVED ✓
BY CPW DATE 5/15/06

| ISSUE | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 2 | 5-8-06 | FOR APPROVAL | |
| 1 | 3-24-06 | FOR APPROVAL | |

**AUCIELLO IRON WORKS INC**
560 MAIN ST. HUDSON, MA (978) 568-8382

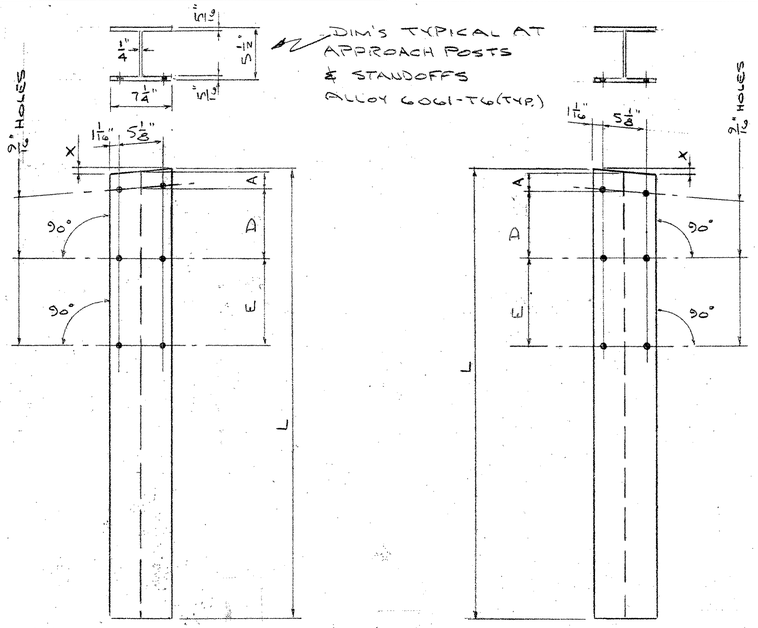
VT. AGENCY OF TRANSPORTATION
HARTFORD PROJ# BRO-BRN 2004(1)
BRIDGE #8
T.H.4 OVER WHITE RIVER

AL. BRIDGE & APPROACH RAILING

SURFACE PREP: NONE
FINISH: BLACK ANODIZE
FOR: FRANK W. WHITCOMB CORP.
DR: WM 3-23-06
CHK: 3-24-06
JOB NO. N&O0012-1001
DWG. NO. BR-2878
SHEET 2 OF 3

118 BR

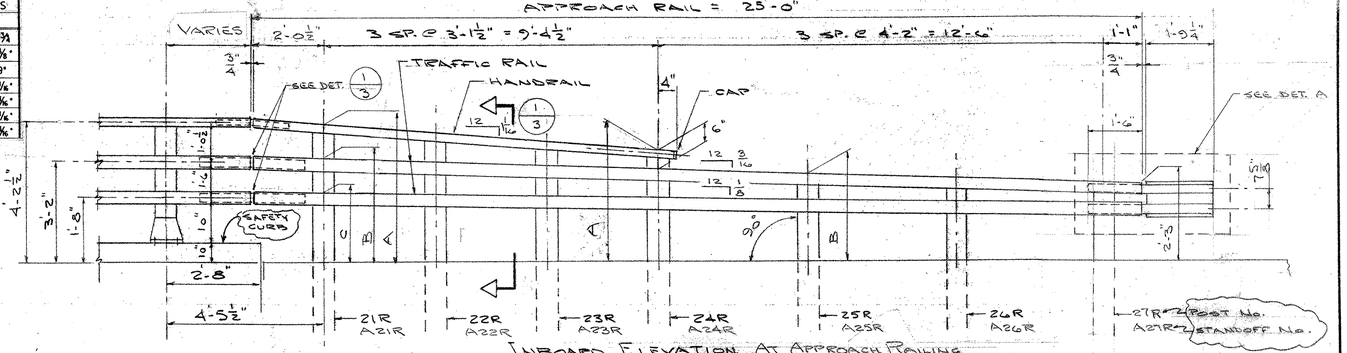
B.L. MAKEPEACE INC. 10/01/6



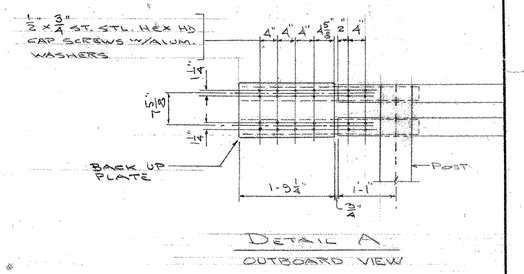

| MK | QUAN | L | X | A | D | E |
|---|---|---|---|---|---|---|
| 21L | 2 | 6'-6" | 5/8" | 1 9/16" | 11 7/16" | 1'-5 1/8" |
| 22L | 2 | 6'-6" | 5/8" | 1 9/16" | 9 3/4" | 1'-3 7/8" |
| 23L | 2 | 6'-6" | 5/8" | 1 9/16" | 8 1/8" | 1'-2 9/16" |
| 24L | 2 | 6'-6" | 5/8" | 1 9/16" | 6 7/16" | 1'-1 1/4" |
| 25L | 2 | 6'-0" | 3/8" | 2" | 0 | 11 9/16" |
| 26L | 2 | 6'-0" | 3/8" | 2" | 0 | 9 13/16" |
| 27L | 2 | 6'-0" | 3/8" | 2" | 0 | 8 1/16" |

| MK | QUAN | L | X | A | D | E |
|---|---|---|---|---|---|---|
| 21R | 2 | 6'-6" | 5/8" | 1 9/16" | 11 7/16" | 1'-5 1/8" |
| 22R | 2 | 6'-6" | 5/8" | 1 9/16" | 9 3/4" | 1'-3 7/8" |
| 23R | 2 | 6'-6" | 5/8" | 1 9/16" | 8 1/8" | 1'-2 9/16" |
| 24R | 2 | 6'-6" | 5/8" | 1 9/16" | 6 7/16" | 1'-1 1/4" |
| 25R | 2 | 6'-0" | 3/8" | 2" | 0 | 11 9/16" |
| 26R | 2 | 6'-0" | 3/8" | 2" | 0 | 9 13/16" |
| 27R | 2 | 6'-0" | 3/8" | 2" | 0 | 8 1/16" |

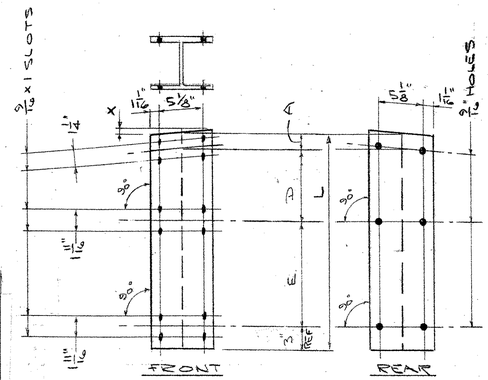
| POST NO. | RAIL HEIGHT DIMENSIONS A | B | C |
|---|---|---|---|
| 21 | 4'-1 3/16" | 3'-2 5/8" | 1'-9 3/4" |
| 22 | 3'-10 5/8" | 3'-1 1/4" | 1'-9 3/8" |
| 23 | 3'-7 1/4" | 2'-11 3/8" | 1'-9" |
| 24 | 3'-3 5/8" | 2'-9 5/8" | 1'-8 5/8" |
| 25 | X | 2'-7 1/8" | 1'-8 3/8" |
| 26 | X | 2'-5 1/2" | 1'-7 7/8" |
| 27 | X | 2'-3 1/4" | 1'-7 3/8" |




INBOARD ELEVATION AT APPROACH RAILING
R.H. AS SHOWN
L.H. OPP. HAND

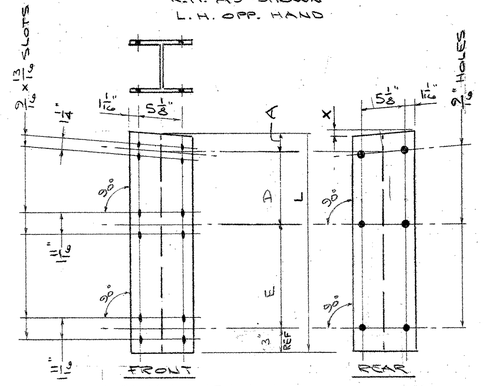



DETAIL A
OUTBOARD VIEW




STANDOFF

| MK | QUAN | L | X | A | D | E |
|---|---|---|---|---|---|---|
| A21L | 2 | 2'-9 1/8" | 5/8" | 1 9/16" | 11 7/16" | 1'-5 1/8" |
| A22L | 2 | 2'-6 1/16" | 5/8" | 1 9/16" | 9 3/4" | 1'-3 7/8" |
| A23L | 2 | 2'-3 1/4" | 5/8" | 1 9/16" | 8 1/8" | 1'-2 9/16" |
| A24L | 2 | 2'-0 1/4" | 5/8" | 1 9/16" | 6 7/16" | 1'-1 1/4" |
| A25L | 2 | 1'-4 9/16" | 3/8" | 2" | 0 | 11 9/16" |
| A26L | 2 | 1'-2 13/16" | 3/8" | 2" | 0 | 9 13/16" |
| A27L | 2 | 1'-1 1/16" | 3/8" | 2" | 0 | 8 1/16" |




STANDOFF

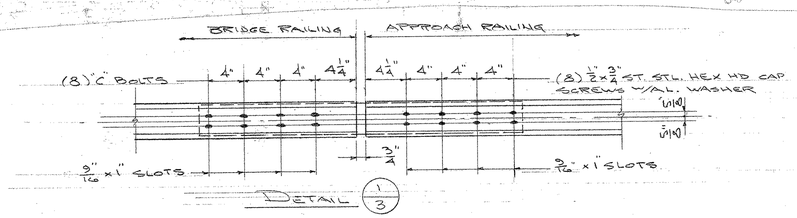
| MK | QUAN | L | X | A | D | E |
|---|---|---|---|---|---|---|
| A21R | 2 | 2'-9 1/8" | 5/8" | 1 9/16" | 11 7/16" | 1'-5 1/8" |
| A22R | 2 | 2'-6 1/16" | 5/8" | 1 9/16" | 9 3/4" | 1'-3 7/8" |
| A23R | 2 | 2'-3 1/4" | 5/8" | 1 9/16" | 8 1/8" | 1'-2 9/16" |
| A24R | 2 | 2'-0 1/4" | 5/8" | 1 9/16" | 6 7/16" | 1'-1 1/4" |
| A25R | 2 | 1'-4 9/16" | 3/8" | 2" | 0 | 11 9/16" |
| A26R | 2 | 1'-2 13/16" | 3/8" | 2" | 0 | 9 13/16" |
| A27R | 2 | 1'-1 1/16" | 3/8" | 2" | 0 | 8 1/16" |




SECTION 1/3



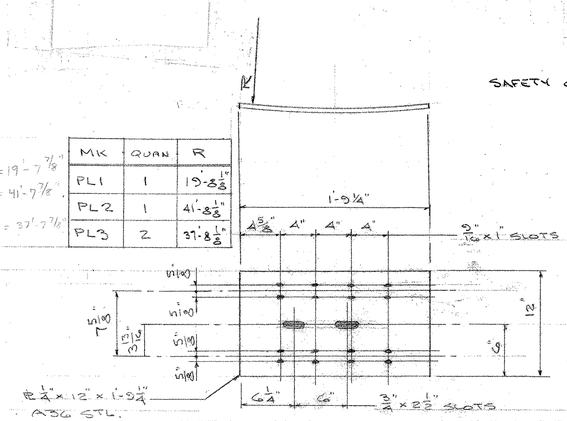

POST REFLECTOR (30-REQD)
MATERIALS PER V.A.T. SPEC.




DETAIL 1/3

19'-11 1/2" - 3.364" - 0.25" = 19'-7 7/8"
41'-11 1/2" - 3.364" - 0.25" = 41'-7 7/8"
37'-11 1/2" - 3.364" - 0.25" = 37'-7 7/8"

| MK | QUAN | R |
|---|---|---|
| PL1 | 1 | 19'-8 1/8" |
| PL2 | 1 | 41'-8 1/8" |
| PL3 | 2 | 37'-8 1/8" |




BACK UP PLATES
GALV. AFTER FAB.

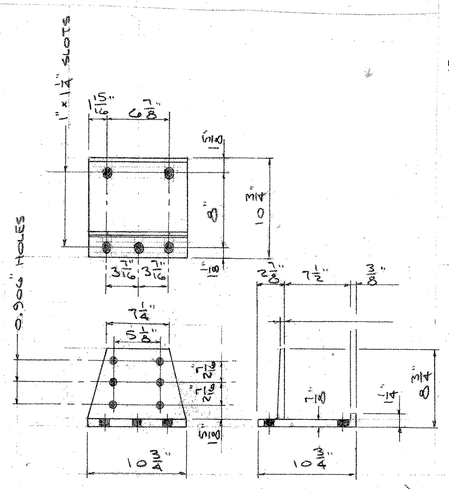
RECEIVED
CK'D BY EJG OK'D BY KMW
MAY 1 2 2006
RESUBMIT ____ APPROVED As Noted
BY CPW DATE 5/15/06

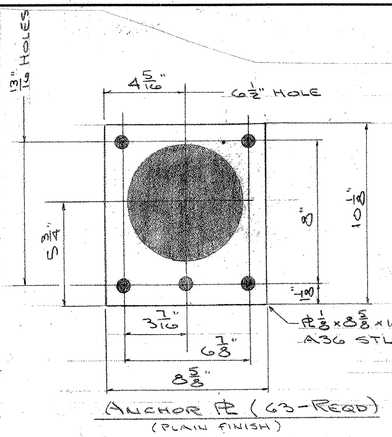
| ISSUE | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 2 | 5-8-06 | FOR APPROVAL | |
| 1 | 3-24-06 | FOR APPROVAL | |

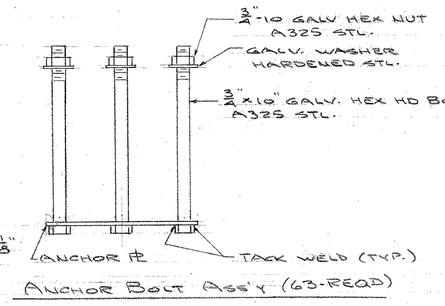
AUCIELLO IRON WORKS INC
560 MAIN ST. HUDSON, MA. (508) 568-8382
V.T. AGENCY OF TRANSPORTATION
HARTFORD - PROJ.# BRS-BTN 2004 (1)
BRIDGE # 8
T.H. 4 OVER WHITE RIVER
APPROACH RAIL AT SAFETY CURB
FOR: FRANK W. WHITCOMB CORP
DR: WM 3-23-06
CHK: EJG 3-24-06
JOB NO. A6-0512-1001
DWG. NO. BR-2878
SHEET 3 OF 8

119 BR

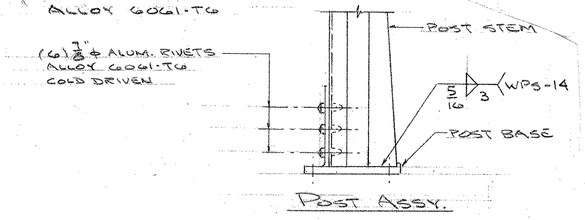
8-93
MAKEPEACE

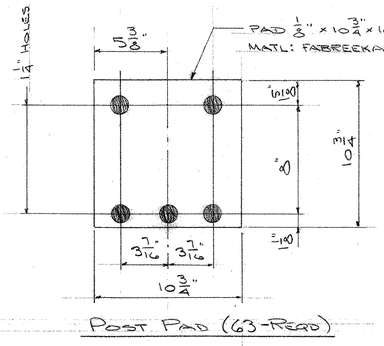


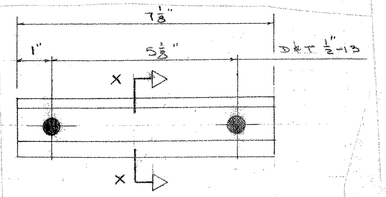



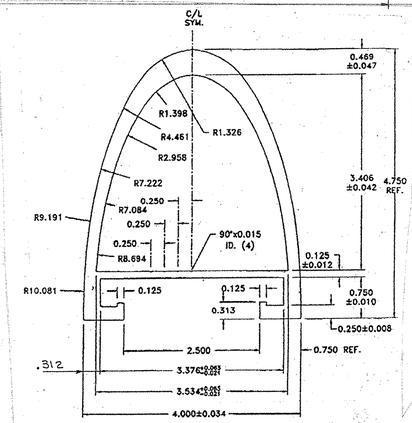



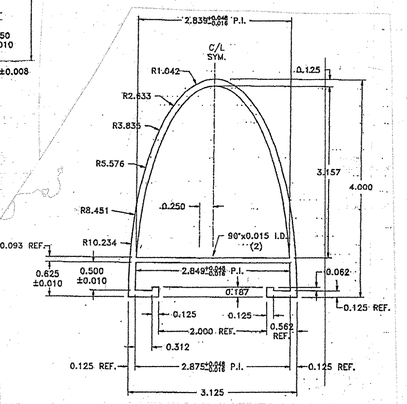

| 3½"x4" HANDRAIL | |
|---|---|
| 31'-9 1/16" | H3 (8-REQD) |
| 15'-10¼" | H4 (1-REQD) |
| 23'-7" | H5 (1-REQD) |
| 21'-8¼" | H6 (1-REQD) |
| 23'-9 5/8" | H7 (2-REQD) |
| NOT USED | H8 — |
| 23'-8 7/8" | H9 (1-REQD) |
| 23'-2 5/8" | H10 (1-REQD) |
| 31'-8 3/8" | H14 (1-REQD) |

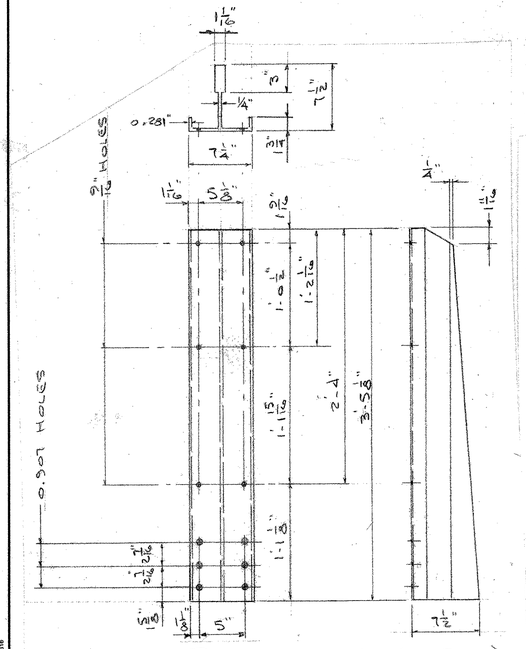


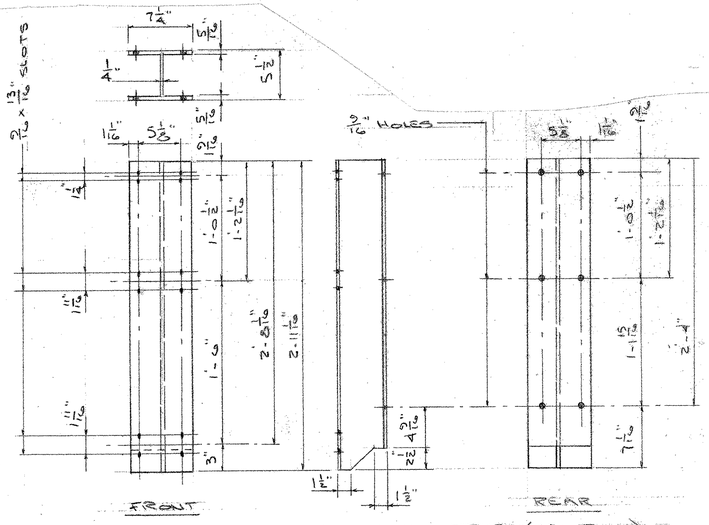



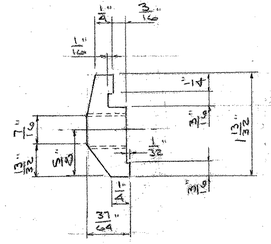



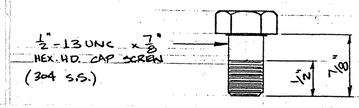




RECEIVED
CK'D BY KMH OK'D BY
MAY 1 2 2006
RESUBMIT APPROVED
BY CPW DATE 5/15/06

| ISSUE | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 2 | 5-8-06 | FOR APPROVAL | |
| 1 | 3-24-06 | FOR APPROVAL | |

**AUCIELLO IRON WORKS INC**
560 MAIN ST. HUDSON, MA (978) 568-8382

VT. AGENCY OF TRANSPORTATION
HARTFORD PROJ# BRO-BTW2004(1)
BRIDGE #8
T.H. 4 OVER WHITE RIVER

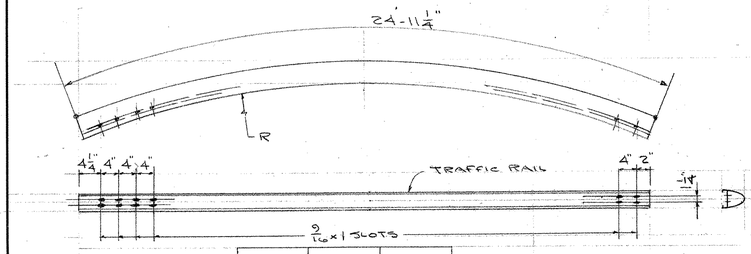
AL. BRIDGE & APPROACH RAILING

SURFACE PREP: NONE
FINISH: BLACK ANODIZE

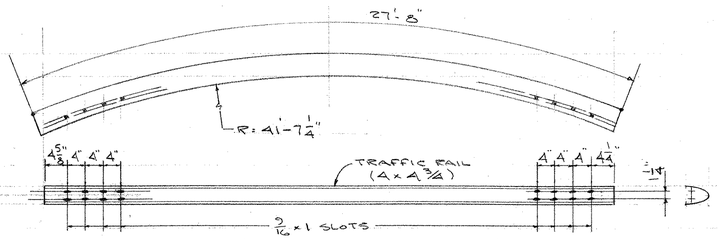
FOR: FRANK W. WHITCOMB CORP.
DR: WM 3-23-06
CHK: ES 3-24-06
JOB NO. AB60012-1001
DWG. NO. BR-2878
SHEET 4 OF 8

120 BR

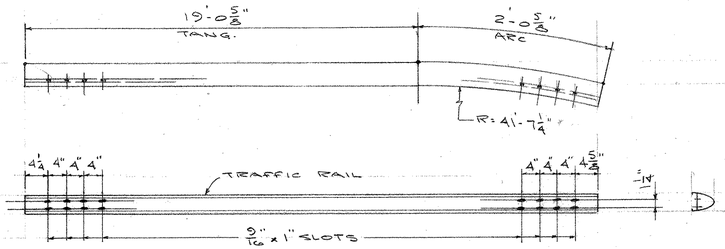
B.L. MAKEPEACE INC. 10619



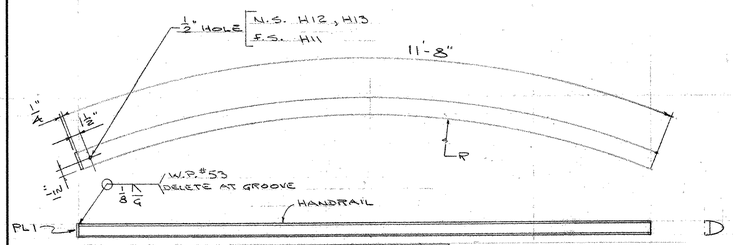

| MK | QUAN | R |
|---|---|---|
| T11 | 4 | 37'-7 1/4" |
| T13 | 2 | 41'-7 1/4" |



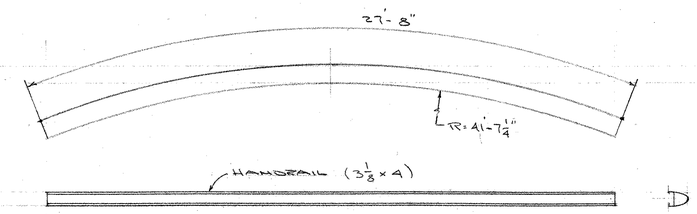

T1 (2-REQD)



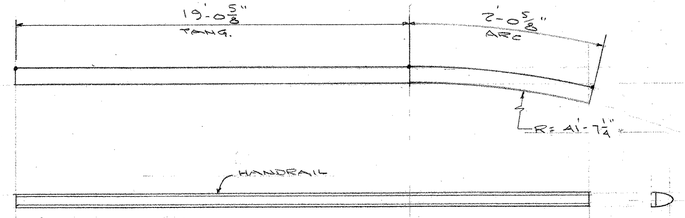

T2 (2-REQD)



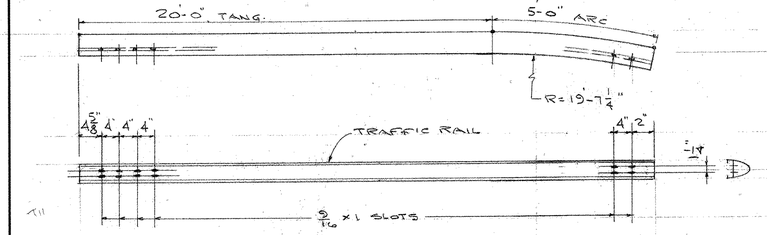

| MK | QUAN | R |
|---|---|---|
| H11 | 1 | 37'-7 1/4" |
| H12 | 1 | 37'-7 1/4" |
| H13 | 1 | 41'-7 1/4" |



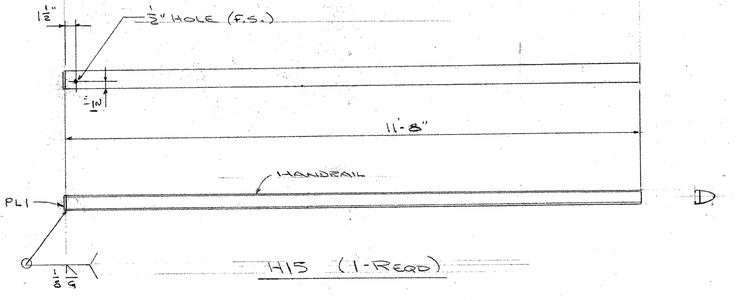

H1 (1-REQD)



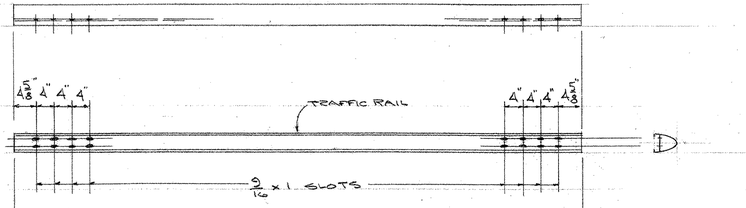

H2 (1-REQD)



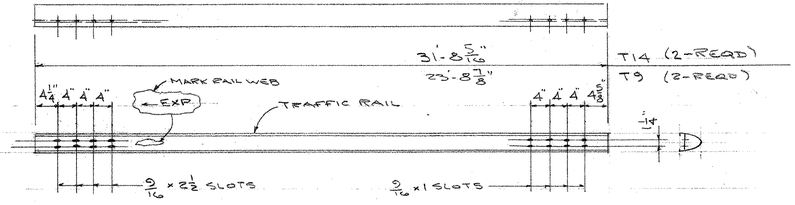

T15 (2-REQD)

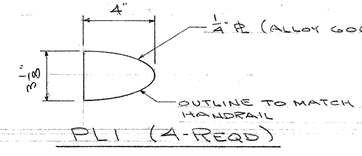



H15 (1-REQD)




| | |
|---|---|
| 31'-9 1/16" | T3 (16-REQD) |
| 15'-10 1/4" | T4 (2-REQD) |
| 23'-7" | T5 (2-REQD) |
| 21'-8 1/4" | T6 (2-REQD) |
| 23'-9 5/8" | T7 (4-REQD) |
| 23'-2 5/8" | T10 (2-REQD) |




PL1 (4-REQD)

RECEIVED
CK'D BY KMH OK'D BY
MAY 12 2006
RESUBMIT APPROVED ✓
BY GPW DATE 5/15/06

| ISSUE | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 2 | 5-8-06 | FOR APPROVAL | |
| 1 | 3-24-06 | FOR APPROVAL | |

**AUCIELLO IRON WORKS INC**
560 MAIN ST. HUDSON, MA (978) 568-8382

VT. AGENCY OF TRANSPORTATION
HARTFORD PROJ.# BRO-BTN 2004(1)
BRIDGE #8
T.H.4 OVER WHITE RIVER

AL. BRIDGE & APPROACH RAILING

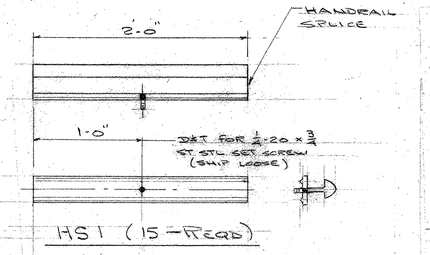
SURFACE PREP: NONE
FINISH: BLACK ANODIZE

FOR: FRANK W. WHITCOMB CORP.

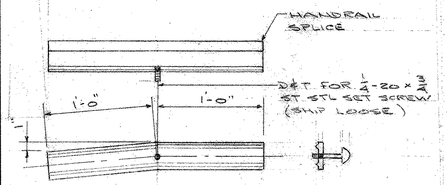
DR: VM 3-23-06
CHK: 3-24-06
JOB NO. AB60012-1001
DWG. NO. BR-2878
SHEET 5 OF 8

121 BR

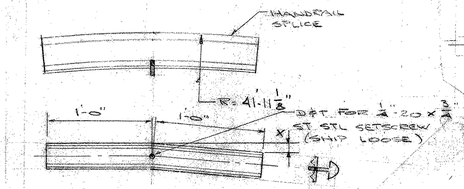
R.L. MAGERFAUSE INC. 10916



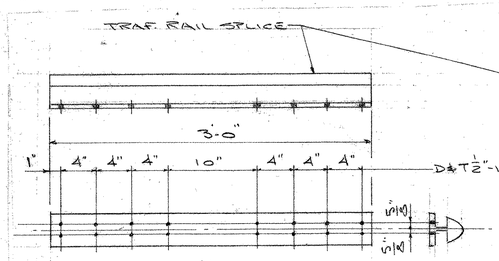

HS1 (15-REQD)



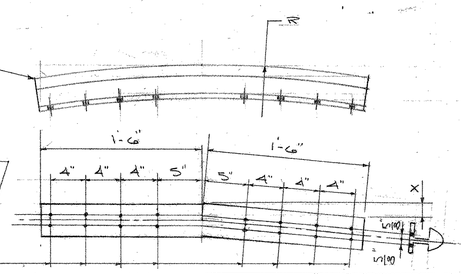

HS2 (2-REQD)



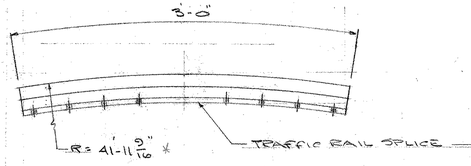

| MK | QUAN | X |
|---|---|---|
| HS6 | 1 | 1" |
| HS4 | 1 | 0 |



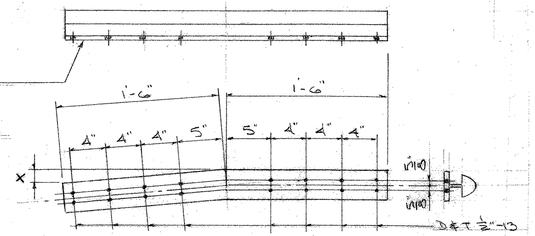

TS1 (30-REQD)



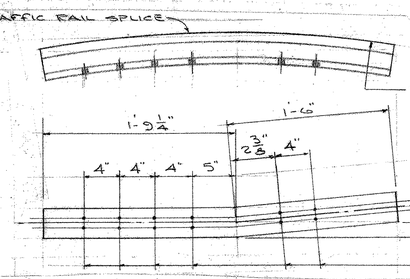

| MK | QUAN | X | R |
|---|---|---|---|
| TS8 | 1 | 13/16" | 41'-11 9/16" * |
| TS9 | 1 | 3/16" | 41'-11 9/16" * |




TS12 (2-REQD)



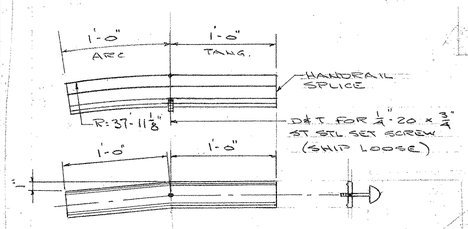

| MK | QUAN | X |
|---|---|---|
| TS2 | 2 | 13/16" |
| TS3 | 2 | 3/16" |



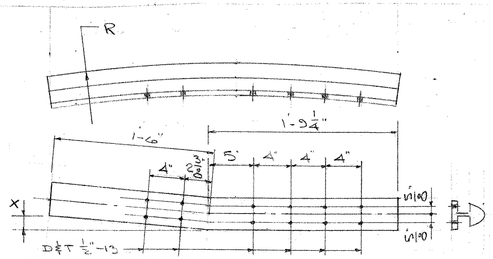

| MK | QUAN | X | R |
|---|---|---|---|
| TS4 | 1 | 13/16" | 19'-11 9/16" * |
| TS5 | 1 | 3/16" | 19'-11 9/16" * |

| MK | QUAN | X | R |
|---|---|---|---|
| TS15 | 1 | 13/16" | 37'-11 9/16" * |
| TS16 | 1 | 3/16" | 37'-11 9/16" * |

Why isn't TS15 = TS6
TS16 = TS7

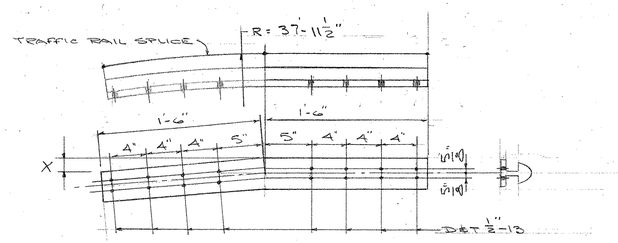



HS5 (1-REQD)

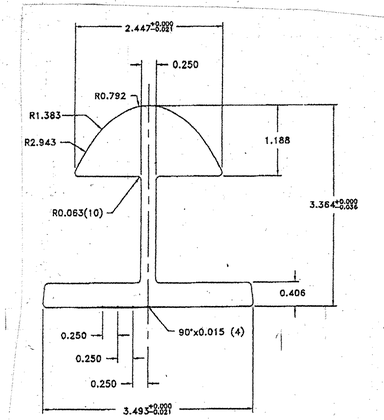



| MK | QUAN | X | R |
|---|---|---|---|
| TS6 | 1 | 13/16" | 37'-11 1/2" |
| TS7 | 1 | 3/16" | 37'-11 1/2" |

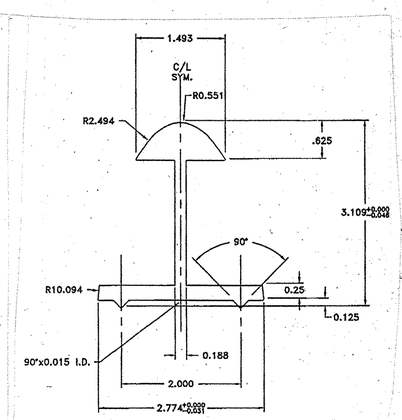
| MK | QUAN | X | R |
|---|---|---|---|
| TS19 | 1 | 13/16" | 41'-11 1/2" |
| TS20 | 1 | 3/16" | 41'-11 1/2" |




| MK | QUAN | X |
|---|---|---|
| TS13 | 1 | 13/16" |
| TS14 | 1 | 3/16" |




TRAFFIC RAIL SPLICE EXTRUSION
ALLOY 6061-T6




HANDRAIL SPLICE EXTRUSION
ALLOY 6061-T6

19'-7 15/16"

* Radius is increased by 1/16" ?

RECEIVED
CK'D BY KMH OK'D BY
MAY 12 2006
RESUBMIT APPROVED As Noted
BY CAW DATE 5/15/06

| ISSUE | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 2 | 5-8-06 | FOR APPROVAL | |
| 1 | 3-24-06 | FOR APPROVAL | |

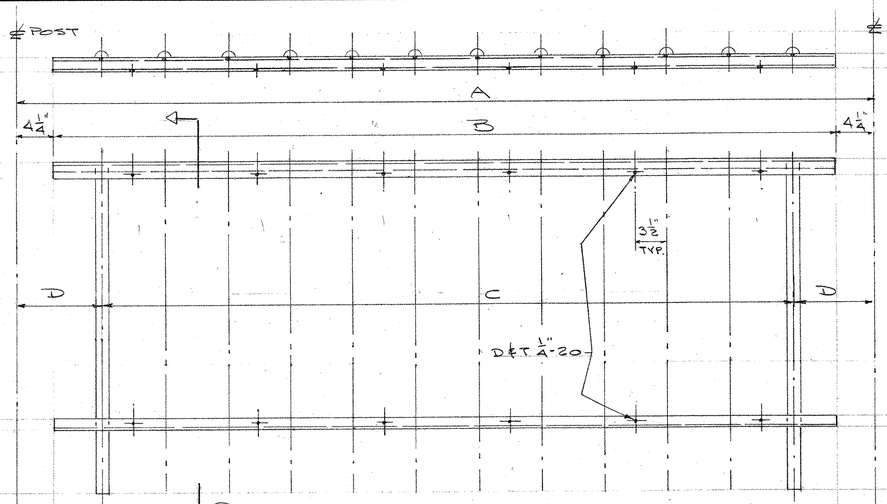
**AUCIELLO IRON WORKS INC**
560 MAIN ST. HUDSON, MA (978) 568-8382

VT. AGENCY OF TRANSPORTATION
HARTFORD PROJ#BRO-BTN 2004(1)
BRIDGE #8
T.H. 4 OVER WHITE RIVER
AL. BRIDGE & APPROACH RAILING

SURFACE PREP: NONE
FINISH: BLACK ANODIZE
FOR: FRANK W. WHITCOMB CORP.
DR: WM 3-23-06
CHK: TB 3-24-06
JOB NO. AB06012-1001
DWG. NO. BR-2878
SHEET 6 OF 8

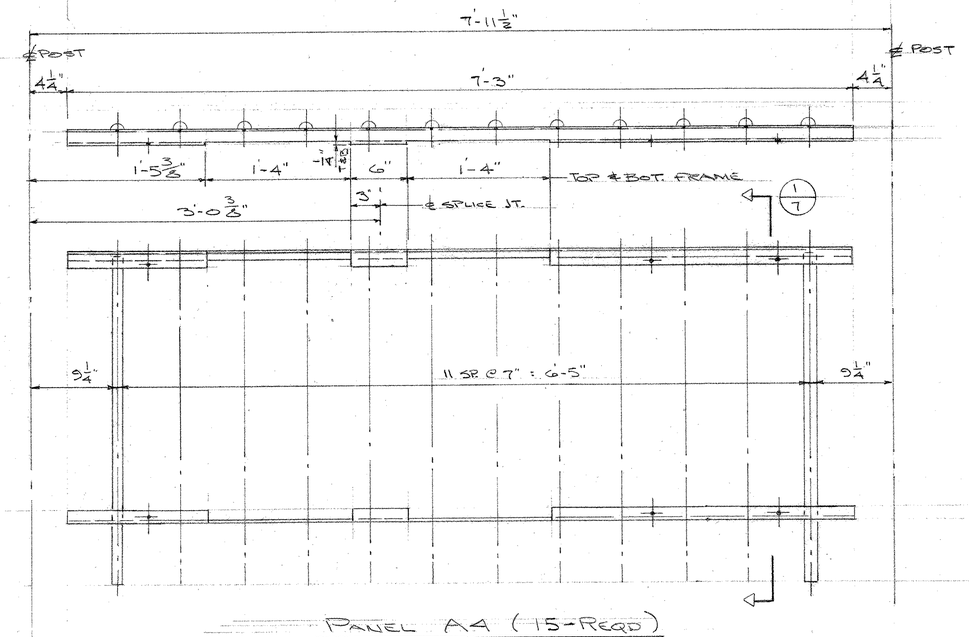
122 BR

BL MARKER/FACE INC. 10/6/16

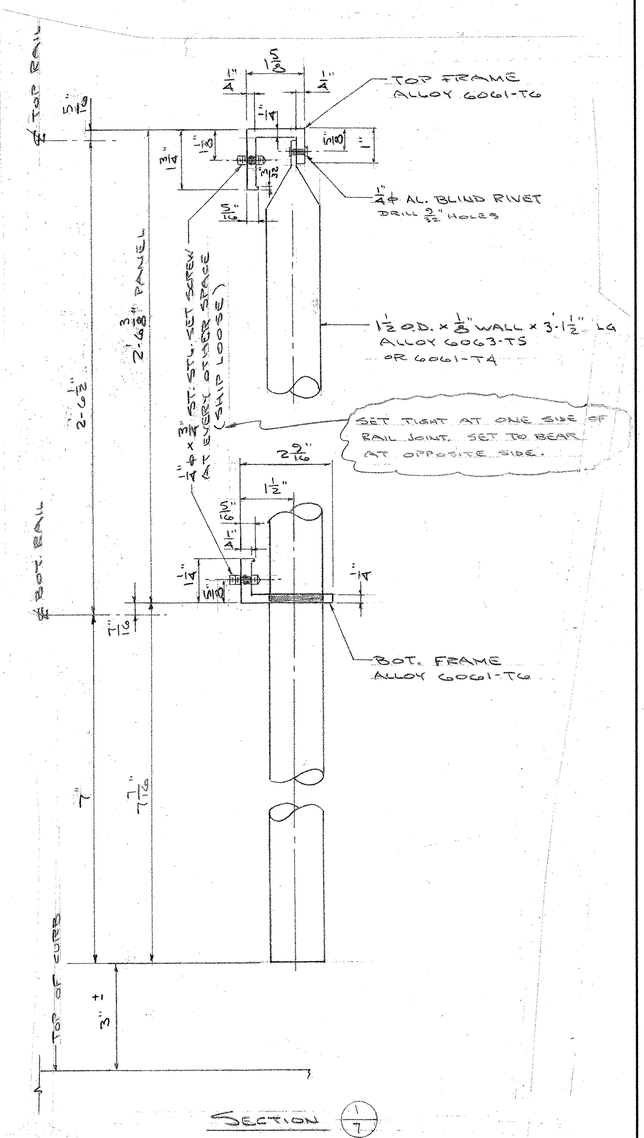



(1/7)

| PANEL No. | QUAN | A | B | C | D |
|---|---|---|---|---|---|
| A3 | 2 | 7'-0 1/4" | 6'-3 3/4" | 10 SP @ 7" = 5'-10" | 7 1/8" |
| A5 | 40 | 7'-11 1/2" | 7'-3" | 11 SP. @ 7" = 6'-5" | 9 1/4" |




PANEL A4 (15-REQD)




RECEIVED
CK'D BY KMH OK'D BY
MAY 1 2 2006
RESUBMIT APPROVED
BY OPW DATE 5/15/06

| ISSUE | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 2 | 5-8-06 | FOR APPROVAL | |
| 1 | 3-24-06 | FOR APPROVAL | |

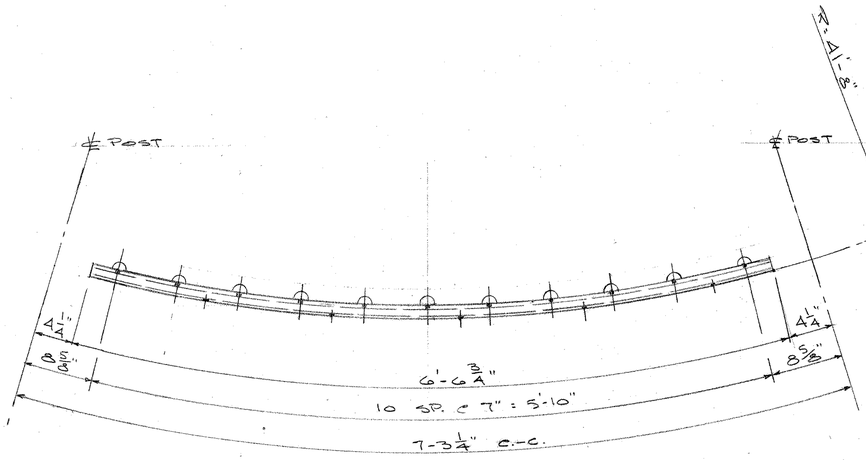
**AUCIELLO IRON WORKS INC**
560 MAIN ST. HUDSON, MA (978) 568-8382

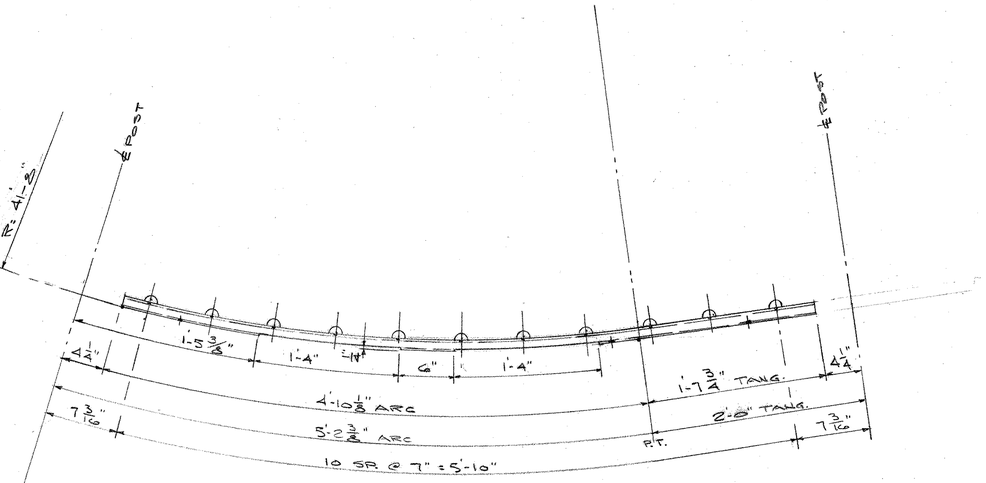
VT. AGENCY OF TRANSPORTATION
HARTFORD PROJ #BRO-BTN2004(1)
BRIDGE #8
T.H.4 OVER WHITE RIVER
ALUM. PICKET PANELS

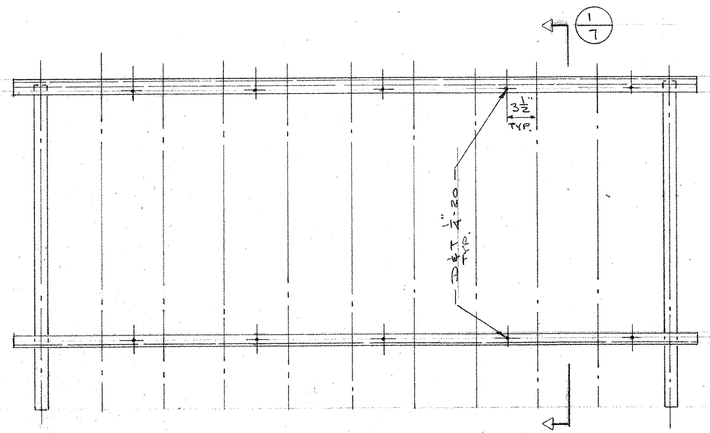
| | |
|---|---|
| SURFACE PREP: NONE | FINISH: BLACK ANODIZE |
| FOR: FRANK W. WHITCOMB CORP. | |
| DR: WM 3-23-06 | DWG. NO. BR-2878 |
| CHK: TS 3-24-06 | |
| JOB NO. AB60012-1001 | SHEET 7 OF 8 |

123 BR

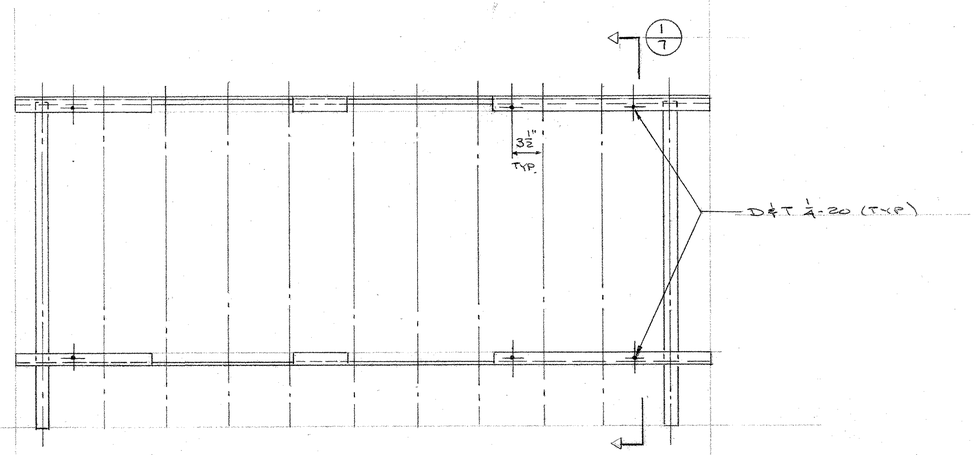
BJ MAKEPEACE INC. 1999/4




PANEL A1 (3-REQD)




PANEL A2 (1-REQD)

RECEIVED
CK'D BY KMH OK'D BY
MAY 1 2 2006
RESUBMIT APPROVED
BY CPW DATE 5/15/06

| ISSUE | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 2 | 5-8-06 | FOR APPROVAL | |
| 1 | 3-24-06 | FOR APPROVAL | |

**AUCIELLO IRON WORKS INC**
560 MAIN ST. HUDSON, MA (978) 568-8382

V.T. AGENCY OF TRANSPORTATION
HARTFORD PROJ# BRO-BTN 2004(1)
BRIDGE #8
I.H.4 OVER WHITE RIVER
ALUM. PICKET PANELS

| SURFACE PREP: NONE | FINISH: BLACK ANODIZE |
|---|---|
| FOR: FRANK W. WHITCOMB CORP. | |
| DR: WM 3-23-06 CHK: 3-24-06 | DWG. NO. BR-2878 |
| JOB NO. A06012-1001 | SHEET 8 OF 8 |

124 BR

BL MAKEPEACE INC. 1999/6