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STATE OF VERMONT
AGENCY OF TRANSPORTATION

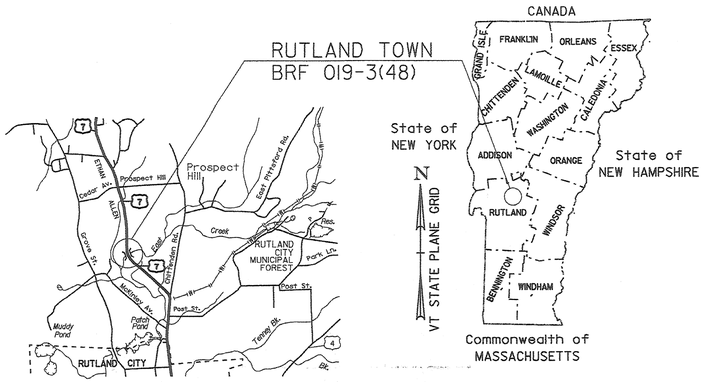
PROPOSED IMPROVEMENT

BRIDGE PROJECT
TOWN OF RUTLAND
COUNTY OF RUTLAND
US 7 (PRINCIPAL ARTERIAL)
BRIDGE #103 OVER EAST CREEK

BEGINNING ON US 7 IN THE TOWN OF RUTLAND APPROXIMATELY 1.869 KM (1.161 MILES) NORTH OF THE CITY OF RUTLAND AND EXTENDING NORTH 0.165 KM (0.103 MILES).

LENGTH OF BRIDGE = 34.506 M
LENGTH OF ROADWAY = 175.494 M
LENGTH OF PROJECT = 210.000 M

WORK TO BE PERFORMED UNDER THIS PROJECT CONSISTS OF REPLACEMENT OF BRIDGE #103 AT EXISTING LOCATION WITH ROADWAY APPROACH WORK.



BUILT AS DESIGNED

RECORD PLANS

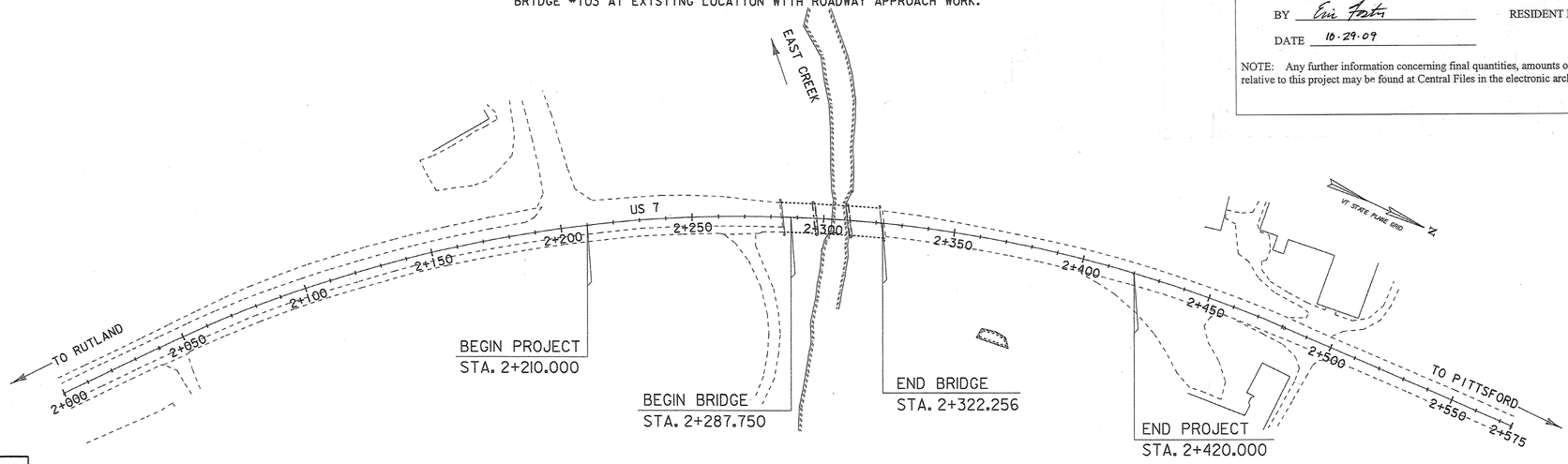
CONTRACTOR: MILLER CONSTRUCTION – WINDSOR, VT
RESIDENT ENGINEER: ERIC FOSTER
CONSTRUCTION BEGAN: JUNE 15, 2008
CONSTRUCTION COMPLETE: SEPTEMBER 9, 2009
RECORD PLANS BY: ERIC FOSTER

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

BY Eric Foster RESIDENT ENGINEER

DATE 10-29-09

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.



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
TOP OF CUT
TOE OF SLOPE

SURVEYED BY : L. ORVIS
SURVEYED DATE : 09/95

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83/92
LEAST SQUARE

0 20 40 60 80
SCALE IN METERS
SCALE 1:1000

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 2006, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

22-FEB-2008

VAOT Metric

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

BUILT AS DESIGNED

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED Richard Peterson DATE 2-22-08

PROJECT MANAGER : R. WHITCOMB

PROJECT NAME : RUTLAND TOWN
PROJECT NUMBER : BRF 019-3(48)

SHEET 1 OF 75 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET

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STANDARDS

B-71	RESIDENTIAL AND COMMERCIAL DRIVES	7/8/2005
C-1	CURBS, BITUMINOUS CONCRETE SIDEWALKS GRANITE SLOPE EDGING VERTICAL GRANITE CURB PRECAST REINFORCED CONCRETE CURB CAST IN PLACE CONCRETE CURB BITUMINOUS CONCRETE CURB TREATED TIMBER CURB	1/3/2000
E-100	CONSTRUCTION APPROACH SIGNS	1/2/2004
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	1/2/2004
E-101	CONSTRUCTION SIGN DETAILS	5/30/2003
E-102	CONSTRUCTION SIGN DETAILS	6/30/2003
E-102A	CONSTRUCTION SIGN DETAILS	5/1/2004
E-106	TRAFFIC CONTROL - MISCELLANEOUS DETAILS	3/1/2004
E-107	DELINEATION, BARRICADES AND DETOURS UTURNS ON DIVIDED HIGHWAYS	6/30/2003
E-107A	BREAKAWAY BARRICADE DETAILS	8/8/1995
E-108	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS	8/18/1995
E-109	TRAFFIC CONTROL DEVICES FOR TEMPORARY TERMINATION OF FREEWAY FACILITIES	8/8/1995
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	8/8/1995
E-136A	U.S. ROUTE MARKER SIGN DETAILS	8/8/1995
G-1	STEEL BEAM GUARDRAIL (50MPH & OVER) HEAVY DUTY STEEL BEAM GUARDRAIL TWISTED END TERMINAL ANCHOR FOR STEEL BEAM RAIL	1/3/2000
G-1D	STEEL BEAM GUARDRAIL (40MPH & LESS) HEAVY DUTY STEEL BEAM GUARDRAIL STEEL BEAM MEDIAN BARRIER ANCHOR FOR STEEL BEAM RAIL	1/3/2000
G-19	GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS	11/15/2002

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: 1-30-08

DRAINAGE AREA : 129.5 sq km
CHARACTER OF TERRAIN : Mountainous and forested
STREAM CHARACTERISTICS : Incised, sinuous to meandering channel with eroded banks.
NATURE OF STREAMBED : Gravel, cobbles and boulders

PEAK FLOW DATA

Q 2.33 =	29.7 cms	Q 50 =	107.6 cms
Q 10 =	65.1 cms	Q 100 =	124.6 cms
Q 25 =	90.6 cms	Q 500 =	165.7 cms

DATE OF FLOOD RECORD : November 1927
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: Unknown
NATURAL STREAM VELOCITY : @ Q50 = 1.2 mps
ICE CONDITIONS : Moderate
DEBRIS: Moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes
IS ORDINARY RISE RAPID? Yes
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Yes
IF YES, DESCRIBE: Several dams are within this watershed to include the Chittenden Reservoir, Glen Dam and the Rutland City Reservoir.

WATERSHED STORAGE: 3%
HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Three span concrete T-beam bridge
YEAR BUILT: 1931
CLEAR SPAN(NORMAL TO STREAM): 29.3 m
VERTICAL CLEARANCE ABOVE STREAMBED: 4.2 m
WATERWAY OF FULL OPENING: 87 sq m
DISPOSITION OF STRUCTURE: Remove
TYPE OF MATERIAL UNDER SUBSTRUCTURE: refer to boring logs

WATER SURFACE ELEVATIONS AT:

Q2.33 =	194.5 m	VELOCITY =	1.4 mps
Q10 =	195.0 m	"	1.9 mps
Q25 =	195.4 m	"	2.2 mps
Q50 =	195.6 m	"	2.5 mps
Q100 =	195.8 m	"	2.7 mps

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Above Q100
RELIEF ELEVATION: 196.6 m
DISCHARGE OVER ROAD @Q100: None

UPSTREAM STRUCTURE

TOWN: Rutland
HIGHWAY# : TH-1 FAS 165
CLEAR SPAN: 40 m
YEAR BUILT: 1995
STRUCTURE TYPE: Single span welded plate girder bridge
DISTANCE: 0.6 km
STRUCTURE #: 5
CLEAR HEIGHT: 3 m
FULL WATERWAY: unknown

DOWNSTREAM STRUCTURE

TOWN: Rutland
HIGHWAY# : TH-19
CLEAR SPAN: 29 m
YEAR BUILT: 1950
STRUCTURE TYPE: Single span rolled beam bridge
DISTANCE: 1.6 km
STRUCTURE #: 9
CLEAR HEIGHT: 4 m
FULL WATERWAY: unknown

LOAD FACTOR - LOAD RATING (METRIC TONS)

LOADING LEVELS	TRUCK						
	M	MS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY	27	41			55	56	
POSTED	38	58	66		55	56	62
OPERATING		69	79	90	65	66	

COMMENTS:

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2006	9400	1100	56	7	830
2026	12400	1200	56	8	1300

20 year ESAL for flexible pavement from 2006 to 2026 : 10464000
40 year ESAL for flexible pavement from 2006 to 2046 : 27425000
Design Speed : 80 km/h

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span integral abutment bridge

CLEAR SPAN(NORMAL TO STREAM): 33 m
VERTICAL CLEARANCE ABOVE STREAMBED: 3.7 m
WATERWAY OF FULL OPENING: 77 sq m

WATER SURFACE ELEVATIONS AT:

Q2.33 =	194.4 m	VELOCITY=	1.4 mps
Q10 =	194.9 m	"	1.9 mps
Q25 =	195.2 m	"	2.2 mps
Q50 =	195.4 m	"	2.4 mps
Q100 =	195.6 m	"	2.7 mps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Above Q100
RELIEF ELEVATION: 196.7 m
DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 196.04 m
VERTICAL CLEARANCE: @ Q50 = 0.6 m

SCOUR: 1 meter of contraction scour at Q500

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

		DEPTH OR ELEVATION:
AVERAGE DAILY FLOW:	3.0 cms	
ORDINARY LOW WATER:	1.5 cms	0.3 m
ORDINARY HIGH WATER:	13.0 cms	1.0 m

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Single span bridge
CLEAR SPAN (NORMAL TO STREAM): 22 m minimum (centered on the stream) *
VERTICAL CLEARANCE ABOVE STREAMBED: Low beam elev. 196.0 m minimum
WATERWAY AREA OF FULL OPENING: 59 sq m (minimum) *

ADDITIONAL INFORMATION

Stone fill should not constrict channel, abutment stems should be set at or below elevation 194.5m (below the stone fill). Piles should be designed to withstand a freestanding load down to elevation 190.3m.
* No fill shall be placed within the 22 m minimum clear span that would reduce the waterway area.

DESIGN CRITERIA

1. DESIGN LIVE LOAD AASHTO LRFD HL-93
2. DESIGN SPAN 34.000 m
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A
   ON LEDGE N/A
4. PILING LOADS See General Notes Sheet
   TYPE STEEL PILING, HP 360 X 132 (HP 14 X 89) Fy = 345 kPa (50 ksi)
   ESTIMATED LENGTH 14 TO 23 m
5. STRUCTURAL STEEL AASHTO M270M/M270 GRADE 345W
6. REINFORCING STEEL GRADE 420
7. CONCRETE, HIGH PERFORMANCE CLASS A f'c: 30 Mpa
   CONCRETE, HIGH PERFORMANCE CLASS B f'c: 25 Mpa
8. DESIGN SOIL UNIT WEIGHT 22.00 kN/m³
9. DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL N/A

TRAFFIC MAINTENANCE

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

PROJECT NAME: **RUTLAND TOWN**
PROJECT NUMBER: **BRF 019-3(48)**

FILE NAME: **s95b172pi.dgn**
PROJECT MANAGER: **R. WHITCOMB**
DESIGNED BY: **T. LACKEY**
PRELIMINARY INFORMATION SHEET

PLOT DATE: **2/27/2008**
DRAWN BY: **T. LACKEY**
CHECKED BY: **R. WHITCOMB**
SHEET **2** OF **75**

Metric

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION 2006 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 3RD EDITION, AND ITS LATEST REVISIONS.

2. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 20 DEGREES CELSIUS.

CONSTRUCTION

1. WATER QUALITY. PREVENT POLLUTION, AND DISCHARGE OF SILT OR RAW CONCRETE INTO THE WATERWAY AS DIRECTED BY THE RESIDENT ENGINEER.

2. IN-STREAM CONSTRUCTION. PERMITS DESIGNATE AND LIMIT THE PERIOD FOR IN-STREAM CONSTRUCTION. THE AGENCY OF NATURAL RESOURCES MUST APPROVE ANY DEVIATION FROM THIS PERIOD IN WRITING.

3. ITEM 528.11 "TWO-WAY TEMPORARY BRIDGE".
MAINTAIN TRAFFIC DURING CONSTRUCTION ON A TWO-WAY TEMPORARY BRIDGE CONSTRUCTED UPSTREAM OF THE EXISTING STRUCTURE.
PAYMENT FOR THIS ITEM SHALL INCLUDE THE DESIGN AND DETAIL OF THE METHOD OF SEPARATING THE TRAVELING PUBLIC FROM THE NEW BRIDGE CONSTRUCTION. INCLUDE DESIGN AND METHOD IN THE TEMPORARY BRIDGE SUBMITTAL.

4. ITEM 641.10 "TRAFFIC CONTROL".
PAYMENT FOR THIS ITEM SHALL INCLUDE THE FOLLOWING WORK. THE CONTRACTOR SHALL ERECT AND MAINTAIN ALL TEMPORARY ON AND OFF-PROJECT SIGNS AND BARRICADES AS SHOWN IN THE PLANS AND AS DIRECTED BY THE RESIDENT ENGINEER. FULL ACCESS TO ALL SIDE ROADS AND DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES.

EARTHWORK

1. ITEM 301.35 "SUBBASE OF DENSE GRADED CRUSHED STONE".
SEE SUBSECTION 301.06 "COMPACTION" OF THE STANDARD SPECIFICATIONS FOR TESTING REQUIREMENTS.

2. ITEM 529.20 "PARTIAL REMOVAL OF STRUCTURE".
REMOVE ALL OF THE SUPERSTRUCTURE.
REMOVE THE SOUTH ABUTMENT TO ELEVATION 195.0.
REMOVE BOTH OF THE PIERS TO ELEVATION 192.5.
REMOVE ALL OF THE NORTH ABUTMENT INCLUDING TIMBER PILES THAT MAY INTERFERE WITH DRIVING NEW PILES.

3. UNDERGROUND FIBER OPTIC CABLES OWNED BY VERIZON COMMUNICATIONS ARE NEAR THE PROJECT ON THE WEST SIDE OF US 7. THE CABLES ARE NEAR THE TOE OF SLOPE OF THE STONE FILL FOR WING WALL 1 AT STA 2+284. SEE SPECIAL PROVISIONS FOR MORE UTILITES INFORMATION AND REQUIREMENTS.

REINFORCED CONCRETE

1. ITEM 501.33 "CONCRETE, HIGH PERFORMANCE CLASS A". USE FOR THE DECK, CURBS, AND INTEGRAL ABUTMENT BACK WALL AND WING WALLS ABOVE THE PILE CAP CONSTRUCTION JOINT. PAYMENT FOR THIS ITEM SHALL INCLUDE INSTALLING THE BRIDGE PLAQUE PROVIDED BY THE AGENCY.

2. ITEM 501.34 "CONCRETE, HIGH PERFORMANCE CLASS B". USE FOR THE APPROACH SLABS, AND INTEGRAL ABUTMENT PILE CAPS AND WING WALLS BELOW THE PILE CAP CONSTRUCTION JOINT.

3. ITEM 507.17 "EPOXY COATED REINFORCING STEEL". ALL REINFORCING STEEL SHALL BE EPOXY COATED REINFORCING STEEL.

4. CONCRETE JOINTS. CONSTRUCT CONCRETE JOINTS AS INDICATED ON THE PLANS OR DIRECTED BY THE RESIDENT ENGINEER. CONSTRUCT SHEAR KEYS MONOLITHICALLY AND CONTINUOUSLY UNLESS OTHERWISE INDICATED. TERMINATE SHEAR KEYS 150 MM FROM ENDS OF JOINTS. IN HORIZONTAL JOINTS, PLACE SHEAR KEYS UPWARD.

5. CHAMFERS. CHAMFER ALL EXPOSED EDGES OF CONCRETE WITH 25 MM BY 25 MM CHAMFERS, UNLESS OTHERWISE NOTED. ROUND THE TOP INSIDE CORNER OF CURBS WITH A 15 MM RADIUS.

6. SCORE MARKS. CONSTRUCT SCORE MARKS AS INDICATED ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.

7. SUPPLEMENTAL SPECIFICATION 514.10 "WATER REPELLENT, SILANE". APPLY REPELLENT TO ALL EXPOSED SURFACES OF CONCRETE ON THE BRIDGE, EXCEPT THE BOTTOM OF THE DECK BETWEEN THE DRIP NOTCHES.

STEEL

1. NEW STRUCTURAL STEEL SHALL BE AASHTO M 270M, GRADE 345W UNLESS OTHERWISE NOTED.

2. ALL STRUCTURAL STEEL WILL BE PAID FOR UNDER ITEM 506.55 "STRUCTURAL STEEL, PLATE GIRDER". (REV. 1)

3. ITEM 531.14 "BEARING DEVICE ASSEMBLY, INTEGRAL ABUTMENT". PAYMENT FOR THIS ITEM SHALL INCLUDE BOLTS, NUTS, WASHERS, AND PLATES. IT SHALL BE FULL COMPENSATION FOR ALL WORK REQUIRED FOR THE CONSTRUCTION INTEGRAL ABUTMENT BEARING DEVICE ASSEMBLY.

4. CHARPY V-NOTCH TEST. TEST STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS IN ACCORDANCE WITH SUBSECTION 714.01 OF THE STANDARD SPECIFICATIONS.

5. BOLTS FOR ALL BOLTED FIELD CONNECTIONS SHALL BE 22 MM DIAMETER HIGH STRENGTH BOLTS IN 24 MM DIAMETER HOLES UNLESS OTHERWISE NOTED.

6. CONNECTIONS NOT SHOWN IN THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE RESIDENT ENGINEER FOR APPROVAL.

7. ITEM 505.28 "STEEL PILING FOR INTEGRAL ABUTMENTS, HP 360 X 132". REINFORCE THE DRIVING TIP ACCORDING TO SUBSECTION 505.04(E) OF THE STANDARD SPECIFICATIONS. NO SUBSTITUTIONS FOR THE NUMBER, SIZE AND GRADE OF THE PILES WILL BE ALLOWED.

   PILE HEAD TOLERANCE. DRIVE OR CUT OFF THE PILE HEAD TO WITHIN 25 MM VERTICALLY OF THE POSITION SHOWN IN THE PLANS.

8. ITEM 505.45 "DYNAMIC PILE LOADING TEST". THE FACTORED AXIAL COMPRESSIVE LOAD FOR EACH PILE IS 2,133 kN. THE RESISTANCE FACTOR FOR DYNAMIC PILE LOADING TESTING IS 0.65. USING THIS RESISTANCE FACTOR, DRIVE PILES TO A REQUIRED NOMINAL PILE DRIVING RESISTANCE OF 3,282 kN.

9. GIRDER PROFILES. AFTER THE SUPERSTRUCTURE STEEL HAS BEEN SET ON THE ANCHOR BOLTS, TAKE ELEVATIONS ALONG THE TOP OF THE GIRDERS AS DIRECTED BY THE RESIDENT ENGINEER FOR DETERMINING HAUNCH DEPTHS.

10. FLEMING BRACKETS OR SIMILAR FALSEWORK. SPACE FLEMING BRACKETS OR SIMILAR FALSEWORK AS REQUIRED BY DESIGN WITH A MAXIMUM SPACING OF 1200 MILLIMETERS. THE DESIGN OF FALSEWORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

11. HOLES IN WEB. FILL ANY BOLT HOLES IN THE WEBS OF FASCIA GIRDERS NOT OTHERWISE FILLED WITH BUTTON HEAD OR HEX HEAD BOLTS MEETING AASHTO M164M TYPE 3. TIGHTEN THE BOLTS IN ACCORDANCE WITH SUBSECTION 506.19 OF THE STANDARD SPECIFICATIONS.

ASPHALTIC PLUG BRIDGE JOINT

1. LOCATE THE JOINT CENTRALLY OVER THE DECK OVERLAY EXPANSION GAP OR FIXED JOINT MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.

2. EXCAVATE THE JOINT AS SHOWN ON THE PLANS WITH SAWS AND PNEUMATIC HAMMER OR A HAMMER AND CHISEL.

3. BLAST CLEAN THE JOINT AREA OF DEBRIS AND ASPHALT. THOROUGHLY DRY THE JOINT AREA WITH HOT COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.

4. REPAIR SPALLED AND DEFECTIVE CONCRETE WITH AN APPROVED MATERIAL AS AGREED UPON BY THE ENGINEER.

5. HEAT AND MIX THE BINDER MATERIAL AND AGGREGATE AS RECOMMENDED BY THE MANUFACTURER.

6. INSTALLATION OF MATERIAL, COMPACTION, AND TOP COATING SHALL BE AS RECOMMENDED BY THE MANUFACTURER.

7. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.

8. PROTECT JOINT FROM TRAFFIC UNTIL THE MATERIAL HAS COOLED TO 51 DEG C (125 DEG F) +/-.

9. WEATHER LIMITATIONS. APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL:
THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING;
THE ROAD SURFACE IS SUFFICIENTLY DRY; AND
WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.

INTEGRAL ABUTMENT CONSTRUCTION SEQUENCE

1. DRIVE AND CUT OFF PILES AT THE ELEVATIONS SHOWN. BEWARE OF EXISTING WOODEN PILES AT THE NORTH ABUTMENT.

2. POUR CONCRETE ABUTMENT PILE CAPS.

3. BACKFILL ABUTMENT PILE CAPS TO 150 MM BELOW THE PILE CAP CONSTRUCTION JOINTS AND PLACE STONE FILL SLOPE PROTECTION AT THE SAME TIME.

4. INSTALL BEARING DEVICE ASSEMBLIES.

5. ERECT GIRDERS AND CROSS FRAMES.

6. PROFILE GIRDERS TO CALCULATE HAUNCHES.

7. POUR CONCRETE ABUTMENT BACKWALLS & DECK.

8. BACKFILL ABUTMENT BACKWALLS.

9. POUR CONCRETE CURBS & TOP OF WING WALLS.

10. POUR CONCRETE APPROACH SLABS.

REVISIONS

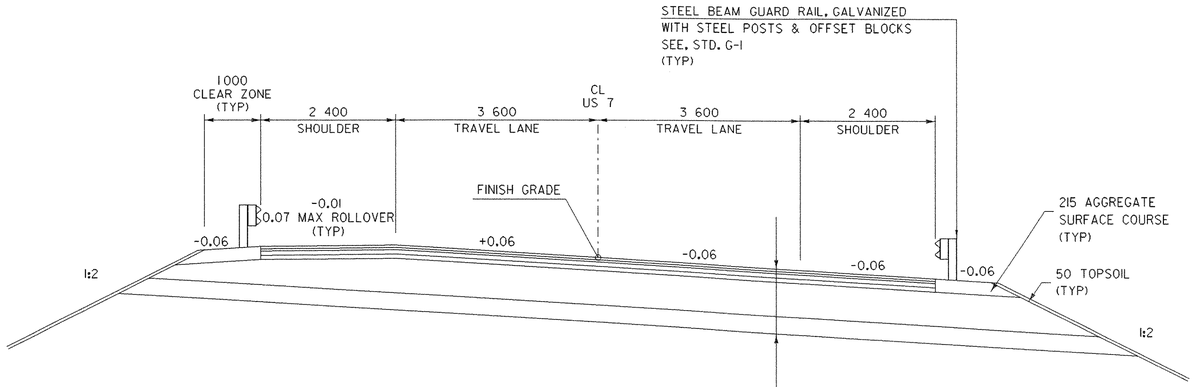
1. 04/03/08 REVISED NOTE STEEL 2.

GENERAL NOTES

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

FILE NAME: sbl72gen.i	PLOT DATE: 04-APR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: T. LACKEY
DESIGNED BY: T. LACKEY	CHECKED BY: R. WHITCOMB
95bl72/str/sbl72gen.dgn	SHEET 3 OF 75

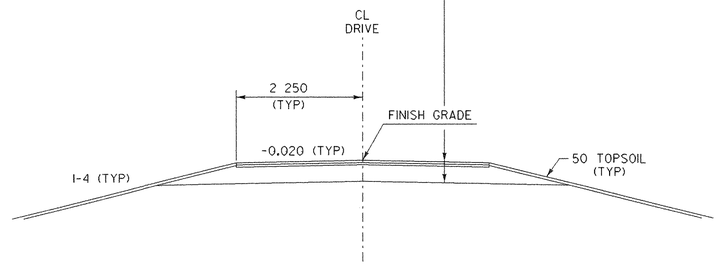
MATERIAL ITEM	TOLERANCE
PAVEMENT	±5 mm TOTAL THICKNESS
AGGREGATE SURFACE COURSE	±10 mm
BASE COURSE	±10 mm
SUBBASE	±30 mm
SAND BORROW	±30 mm



BANKED SECTION IN FILL
WITH GUARDRAIL

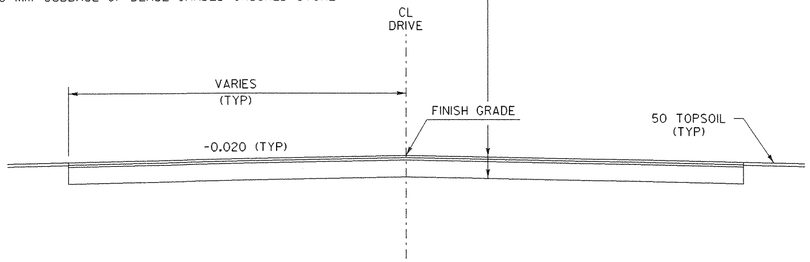
40 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IV-S (PG 64-28)
40 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IV-S (PG 64-28)
75 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE II S (PG 64-28)
75 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE II S (PG 64-28)
600 SUBBASE OF DENSE GRADED CRUSHED STONE
300 SAND BORROW (TYP)

40 mm SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS, (PG 64-28)
40 mm SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS, (PG 64-28)
300 mm SUBBASE OF DENSE GRADED CRUSHED STONE

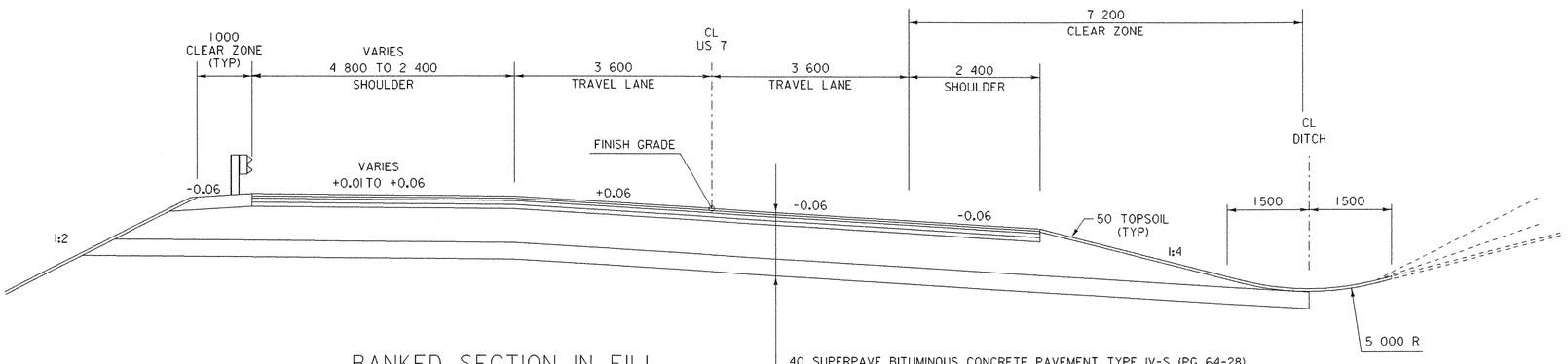


DRIVE
ML 2+263 RT.

40 mm SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS, (PG 64-28)
40 mm SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IVS, (PG 64-28)
300 mm SUBBASE OF DENSE GRADED CRUSHED STONE

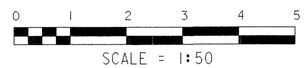


DRIVE
ML 2+200 LT.
ML 2+430 RT.



BANKED SECTION IN FILL
WITH DITCH

40 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IV-S (PG 64-28)
40 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IV-S (PG 64-28)
75 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE II S (PG 64-28)
75 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE II S (PG 64-28)
600 SUBBASE OF DENSE GRADED CRUSHED STONE
300 SAND BORROW (TYP)

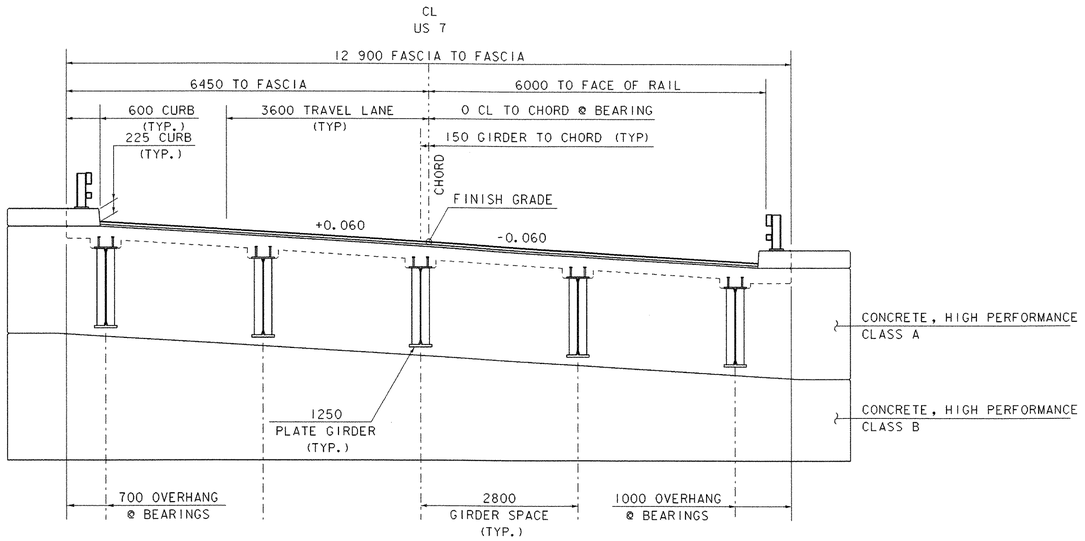


SCALE = 1:50

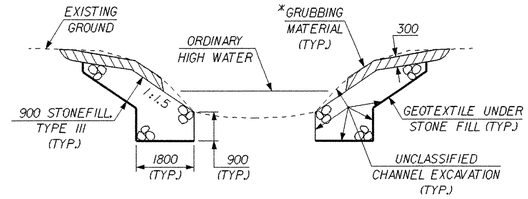
TYPICAL SECTIONS
ROADWAY

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

FILE NAME: sbl72tyl.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: T. LACKEY
DESIGNED BY: T. LACKEY	CHECKED BY: R. WHITCOMB
95bl72/structures/sbl72typ.dgn	SHEET 4 OF 75



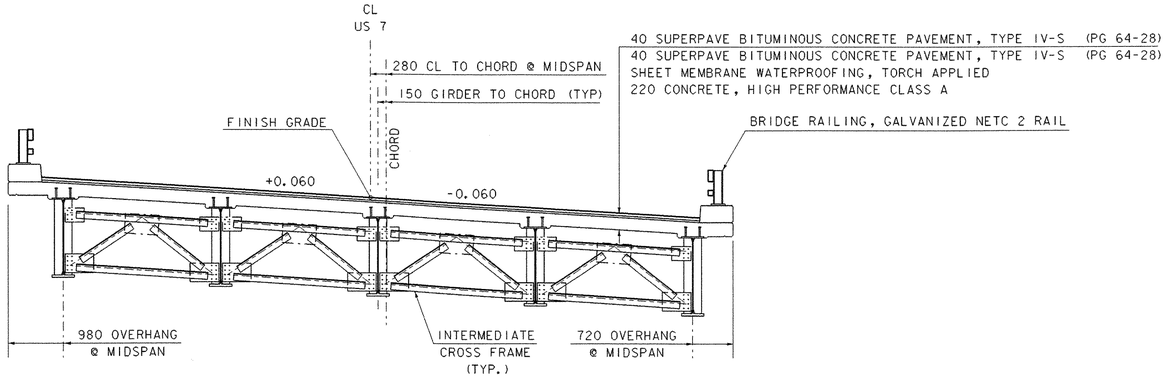
BRIDGE TYPICAL SECTION
AT THE ABUTMENT CENTERLINE



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.



BRIDGE TYPICAL SECTION
AT THE MIDSPAN

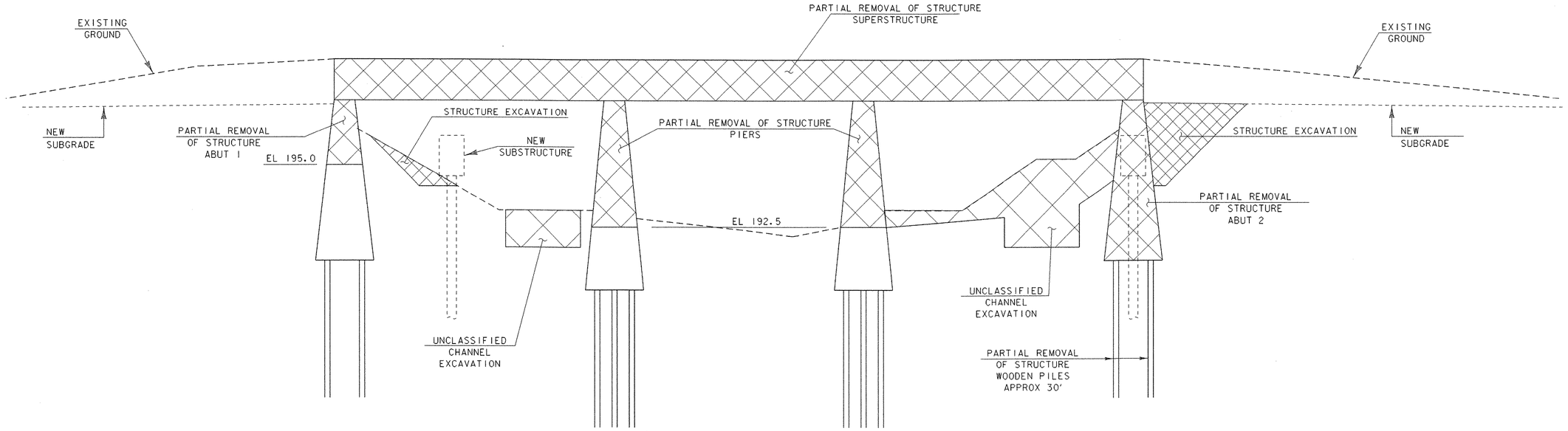
0 1 2 3 4 5

SCALE = 1:50

TYPICAL SECTIONS
STRUCTURE

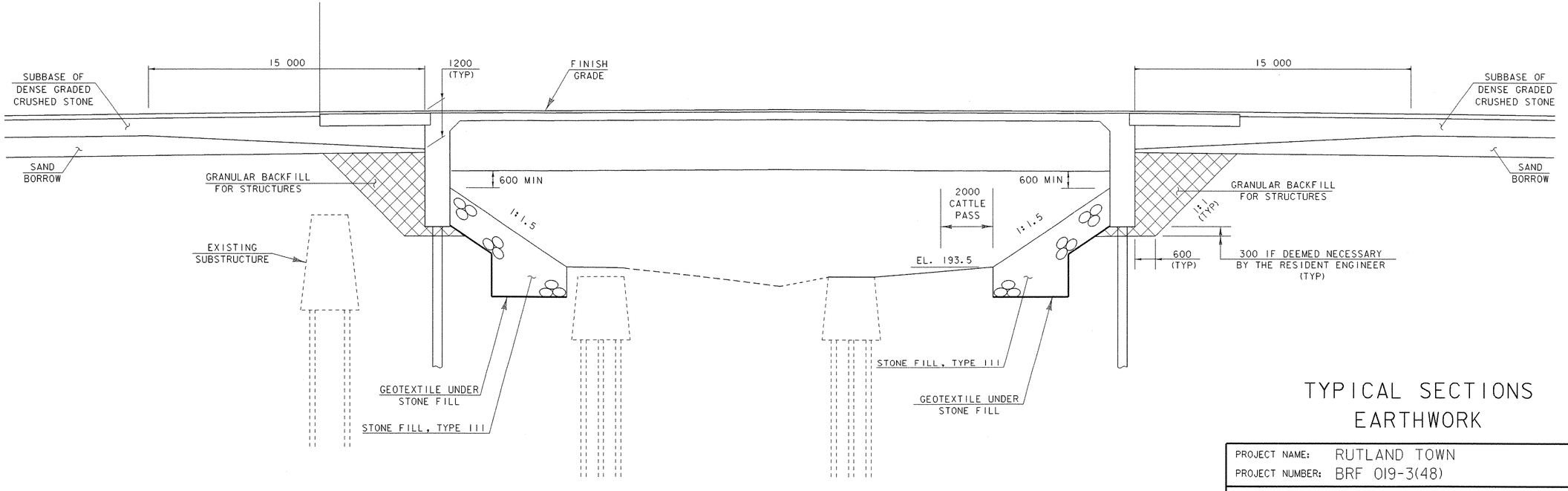
PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

FILE NAME: sbl72ty2.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: T. LACKEY
DESIGNED BY: T. LACKEY	CHECKED BY: R. WHITCOMB
95bl72/structures/sbl72typ.dgn	SHEET 5 OF 75



EXCAVATIONS & REMOVALS

(NOT TO SCALE)



FILLS

(NOT TO SCALE)

TYPICAL SECTIONS EARTHWORK

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

FILE NAME: sbl72ty3.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: T. LACKEY
DESIGNED BY: T. LACKEY	CHECKED BY: R. WHITCOMB
95bl72/structures/sbl72typ.dgn	SHEET 6 OF 75

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

Metric

SUMMARY OF ESTIMATED QUANTITIES

ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL E&C ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND
1					1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10	
2970					2970		CM	COMMON EXCAVATION	203.15	
10					10		CM	SOLID ROCK EXCAVATION	203.16	
			370		370		CM	UNCLASSIFIED CHANNEL EXCAVATION	203.27	
20					20		CM	EARTH BORROW	203.30	
980					980		CM	SAND BORROW	203.31	
		20			20		CM	TRENCH EXCAVATION OF EARTH	204.20	
1					1		CM	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	
			250		250		CM	STRUCTURE EXCAVATION	204.25	
			200		200		CM	GRANULAR BACKFILL FOR STRUCTURES	204.30	
460					460		SM	COLD PLANING, BITUMINOUS PAVEMENT	210.10	
2340		60			2400		CM	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35	
140					140		CM	AGGREGATE SURFACE COURSE	401.10	
890					890		KG	EMULSIFIED ASPHALT	404.65	
1780					1780		T	SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (PG 64-28)	490.30	
			177		177		CM	CONCRETE, HIGH PERFORMANCE CLASS A	501.33	
			116		116		CM	CONCRETE, HIGH PERFORMANCE CLASS B	501.34	
			1		1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10	
			170		170		M	STEEL PILING FOR INTEGRAL ABUTMENTS, HP 360 X 132	505.28	
			2		2		EACH	DYNAMIC PILE LOADING TEST	505.45	
			64890		64890		KG	STRUCTURAL STEEL, PLATE GIRDER	506.55	REV. 2
			42543		42543		KG	EPOXY COATED REINFORCING STEEL	507.17	REV. 1
			1		1		LS	SHEAR CONNECTORS (1700 - 22 X 180)	508.15	
			83		83		L	WATER REPELLENT, SILANE	514.10	
			23		23		M	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10	
			414		414		SM	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20	
			24		24		M	JOINT SEALER, HOT POURED	524.11	
			70		70		M	BRIDGE RAILING, GALVANIZED NETC 2 RAIL	525.33	
1					1		LS	TWO-WAY TEMPORARY BRIDGE (176 SM - EST.)	528.11	
			400		400		SM	REMOVAL OF BRIDGE PAVEMENT	529.10	
			1		1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20	
			10		10		EACH	BEARING DEVICE ASSEMBLY, INTEGRAL ABUTMENT	531.14	
		2			2		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25	
1					1		CM	DUST CONTROL WITH WATER	609.10	
1					1		T	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15	
		10	50		60		CM	STONE FILL, TYPE I	613.10	
			280		280		CM	STONE FILL, TYPE III	613.12	
50					50		M	VERTICAL GRANITE CURB	616.21	
2					2		EACH	RELOCATE MAILBOX, SINGLE SUPPORT	617.10	
		170			170		M	WOVEN WIRE FENCE WITH WOOD POSTS	620.26	

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
		EARTHWORKS SUMMARY
		FILL REQUIRED
219	CM	COMMON FILL (1.15*190 CM)
		FILL AVAILABLE
297	CM	203.15 COMMON EXCAVATION (0.1*2970 CM)
6	CM	204.20 TRENCH EXCAVATION OF EARTH (0.3*20 CM)
75	CM	204.25 STRUCTURE EXCAVATION (0.3*250 CM)
111	CM	203.27 UNCLASSIFIED CHANNEL EXCAVATION (0.3*370 CM)

489	CM	TOTAL
219	CM	FILL REQUIRED
489	CM	FILL AVAILABLE

270	CM	WASTE
20	CM	203.20 EARTH BORROW
		TEMPORARY EPSC ITEMS
20	CM	204.20 TRENCH EXCAVATION OF EARTH
60	CM	301.35 SUBBASE OF DENSE GRADED CRUSHED STONE
2	HR	608.25 ALL PURPOSE EXCAVATOR RENTAL, TYPE I
10	CM	613.10 STONE FILL, TYPE I
170	M	620.26 WOVEN WIRE FENCE WITH WOOD POSTS
490	SM	649.51 GEOTEXTILE FOR SILT FENCE
110	SM	649.61 GEOTEXTILE FOR FILTER CURTAIN
10	KG	651.17 SEED, WINTER RYE
1	LS	652.10 EPSC PLAN
100	HR	652.20 MONITORING EPSC PLAN
1	LU	652.30 MAINTENANCE OF EPSC PLAN (N.A.B.I.)
1640	SM	653.20 TEMPORARY EROSION MATTING
20	CM	653.25 TEMPORARY STONE CHECK DAM, TYPE I
50	CM	653.35 VEHICLE TRACKING PAD
170	M	653.50 BARRIER FENCE
300	M	653.55 PROJECT DEMARCATION FENCE
190	SM	900.675 SPECIAL PROVISION (GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED)

REVISIONS

DATE		REVISION
4/3/2008		1. REMOVE 506.60 "STRUCTURAL STEEL".
4/3/2008		2. INCREASE 506.55 "STRUCTURAL STEEL, PLATE GIRDER".

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: s95b172qty.dgn VAOT_quant.xls
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: T. LACKEY
QUANTITY SHEET #1

PLOT DATE: 04/03/2008
DRAWN BY: T. LACKEY
CHECKED BY: R. WHITCOMB
SHEET 7 OF 75

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

Metric

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
					ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL E&C ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
					39					39		M	REMOVING AND RESETTING FENCE	620.50				
					30					30		M	REMOVAL OF EXISTING FENCE	620.55				
					175					175		M	STEEL BEAM GUARDRAIL, GALVANIZED	621.20				
					4					4		EACH	MANUFACTURED TERMINAL SECTION, FLARED	621.50				
					1					1		EACH	MANUFACTURED TERMINAL SECTION, TANGENT	621.51				
					2					2		EACH	ENERGY ABSORPTION ATTENUATOR, SAND-FILLED PLASTIC BARREL	621.57				
					1					1		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60				
					4					4		EACH	GUARDRAIL APPROACH SECTION, GALVANIZED NETC 2 RAIL	621.72				
					198					198		M	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
					170					170		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
					370					370		HR	FLAGGERS	630.15				
									1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
									1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
									1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
									1	1		LU	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.25				
						520				520		HR	EMPLOYEE TRAINEESHIP	634.10				
					1					1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
					1					1		LS	TRAFFIC CONTROL	641.10				
					620					620		M	100 MM WHITE LINE	646.20				
					620					620		M	100 MM YELLOW LINE	646.21				
					620					620		M	TEMPORARY 100 MM WHITE LINE	646.600				
					620					620		M	TEMPORARY 100 MM YELLOW LINE	646.610				
					100					100		EACH	LINE STRIPING TARGETS	646.76				
								580		580		SM	GEOTEXTILE UNDER STONE FILL	649.31				
							490			490		SM	GEOTEXTILE FOR SILT FENCE	649.51				
							110			110		SM	GEOTEXTILE FOR FILTER CURTAIN	649.61				
							20			20		KG	SEED	651.15				
							10			10		KG	SEED, WINTER RYE	651.17				
							200			200		KG	FERTILIZER	651.18				
							1			1		T	AGRICULTURAL LIMESTONE	651.20				
							3			3		T	HAYMULCH	651.25				
							60			60		CM	TOPSOIL	651.35				
					270					270		SM	GRUBBING MATERIAL	651.40				
							1			1		LS	EPSC PLAN	652.10				
							100			100		HR	MONITORING EPSC PLAN	652.20				
							1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30				
							1640			1640		SM	TEMPORARY EROSION MATTING	653.20				REVISIONS
							20			20		CM	TEMPORARY STONE CHECK DAM, TYPE I	653.25		DATE		REVISION
							50			50		CM	VEHICLE TRACKING PAD	653.35		4/3/2008		1. REMOVE 506.60 "STRUCTURAL STEEL".
							315			315		M	BARRIER FENCE	653.50		4/3/2008		2. INCREASE 506.55 "STRUCTURAL STEEL, PLATE GIRDER".

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: s95b172qty.dgn VAOT_quant.xls
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: T. LACKEY
QUANTITY SHEET #2

PLOT DATE: 04/03/2008
DRAWN BY: T. LACKEY
CHECKED BY: R. WHITCOMB
SHEET 8 OF 75

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 3

Metric

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
						ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL E&C ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
								160			160		M	PROJECT DEMARCATION FENCE	653.55				
						0.6					0.6		SM	TRAFFIC SIGNS, TYPE A	675.20				
														BEGIN OPTION AA					
						6					6		M	FLANGED CHANNEL SIGN POST	675.301				
						6					6		M	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
														END OPTION AA					
						5					5		EACH	REMOVING SIGNS	675.50				
						1					1		EACH	ERECTING SALVAGED SIGNS	675.60				
						2					2		EACH	SETTING SALVAGED POSTS	675.61				
								190			190		SM	SPECIAL PROVISION (GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED)	900.675				

DATE		REVISIONS
		REVISION
4/3/2008		1. REMOVE 506.60 "STRUCTURAL STEEL".
4/3/2008		2. INCREASE 506.55 "STRUCTURAL STEEL, PLATE GIRDER".

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: s95b172qty.dgn VAOT_quant.xls
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: T. LACKEY
QUANTITY SHEET #3

PLOT DATE: 04/03/2008
DRAWN BY: T. LACKEY
CHECKED BY: R. WHITCOMB
SHEET 8 OF 75

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 4

Metric

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
					ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL E&C ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							90	280		370		CM	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
							185	65		250		CM	STRUCTURE EXCAVATION	204.25				
							100	100		200		CM	GRANULAR BACKFILL FOR STRUCTURES	204.30				
				103			37	37		177		CM	CONCRETE, HIGH PERFORMANCE CLASS A	501.33				
					27	27	31	31		116		CM	CONCRETE, HIGH PERFORMANCE CLASS B	501.34				
							1			1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10				
							100	70		170		M	STEEL PILING FOR INTEGRAL ABUTMENTS, HP 360 X 132	505.28				
							1	1		2		EACH	DYNAMIC PILE LOADING TEST	505.45				
				64890						64890		KG	STRUCTURAL STEEL, PLATE GIRDER	506.55	REV. 2 REV. 1			
				17609	2782	2782	9664	9706		42543		KG	EPOXY COATED REINFORCING STEEL	507.17				
				1						1		LS	SHEAR CONNECTORS (1700 - 22 X 180)	508.15				
				83						83		L	WATER REPELLENT, SILANE	514.10				
							12	11		23		M	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
				414						414		SM	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20				
					12	12				24		M	JOINT SEALER, HOT POURED	524.11				
				70						70		M	BRIDGE RAILING, GALVANIZED NETC 2 RAIL	525.33				
				400						400		SM	REMOVAL OF BRIDGE PAVEMENT	529.10				
				1						1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20				
							5	5		10		EACH	BEARING DEVICE ASSEMBLY, INTEGRAL ABUTMENT	531.14				
									50	50		CM	STONE FILL, TYPE I	613.10				
									280	280		CM	STONE FILL, TYPE III	613.12				
									580	580		SM	GEOTEXTILE UNDER STONE FILL	649.31				

REVISIONS

DATE		REVISION
4/3/2008		1. REMOVE 506.60 "STRUCTURAL STEEL"
4/3/2008		2. INCREASE 506.55 "STRUCTURAL STEEL, PLATE GIRDER".

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: s95b172qty.dgn VAOT_quant.xls
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: T. LACKEY
QUANTITY SHEET #4

PLOT DATE: 04/03/2008
DRAWN BY: T. LACKEY
CHECKED BY: R. WHITCOMB
SHEET 10 OF 75

STATE OF VERMONT
AGENCY OF TRANSPORTATION

RIGHT - OF - WAY DETAIL SHEET

Metric

TABLE OF PROPERTY ACQUISITION

PARCEL NO.	PROPERTY OWNER	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKE	REMAINDER	RIGHT			RECORDING DATA					REMARKS
					AREA ±	AREA ±	TYPE	(T)/(P)	AREA ±	TITLE	DATE	TOWN / CITY	BOOK	PAGE	
1A	MARGAR, LLC joined by	18	2+200.8 LT.							WD	8/7/2006	RUTLAND	144	42	PAVED DRIVE 12.2M(40') WIDE MM0233
	VERIZON NEW ENGLAND, INC.		2+271.9 LT.	2+279.1 LT.			CONST.	T	29 SM						INCLUDES PDF, 312 SF±
			2+274.8 LT.				INSTALL	P							GUY WIRE & ANCHOR
1B		17,18	2+156.93 LT.	2+305.00 RT.	0.11 HA		ALL R. T. & I.								US RTE. 7 HWY. EASE.; 0.27A±
1C		17,18	2+249.11 LT.	2+297.49 LT.	165 SM		ALL R. T. & I.								US RTE. 7 HWY. EASE.; 1776 SF±
2A	FAIGNANT, JOHN PAUL	17,18	2+243.9 RT.	2+304.4 RT.			DETOUR	T	254 SM	WD	3/16/2006	RUTLAND	142	65	2734 SF±
			2+234.3± RT.	2+278.0 RT.			CONST.	T	80 SM						INCLUDES PDF, 861 SF±
			2+273.8 RT.	2+281.4 RT.			DRIVE	T	109 SM						PAVED, 4.5M(15') WIDE,
															1173 SF± MM0237(2+263.0 RT.)
			2+285.3 RT.	2+288.7 RT.			UTILITY	P	52 SM						560 SF±
			2+278.8 RT.	2+303.4 RT.			CONST.	T	135 SM						INCLUDES PDF, 1453 SF±
			2+289.2 RT.				INSTALL	P							GUY WIRE & ANCHOR
2B		17,18	2+156.93 RT.	2+305.00 RT.	0.11 HA		ALL R. T. & I.								US RTE. 7 HWY. EASE.; 0.27A±
2C		17	2+156.93 RT.	2+245.78 RT.	490 SM		ALL R. T. & I.								US RTE. 7 HWY. EASE.; 0.12A±
3A	WILLIAMS, SHERWIN L.	18,19	2+303.0 RT.	2+363.5 RT.			CONST.	T	163 SM	WD	2/1/2006	RUTLAND	141	345	INCLUDES PDF, 1755 SF±
			2+303.4 RT.	2+357.3 RT.			DETOUR	T	271 SM						2917 SF±
			2+314.8 RT.	2+315.0 RT.			REMOVE	T							FENCE
			2+326.1 RT.				REMOVE	T							POLE
			2+414.2 RT.	2+418.5 RT.			REMOVE & RESET	T							FENCE
			2+386.2 RT.				REMOVE	T							SIGN
			2+405.7 RT.	2+430.2 RT.			INSTALL	T							PDF
			2+434.7 RT.				DRIVE	T							GRAVEL 12M(39') WIDE MM0248
3B		19	2+415.2 LT.	2+436.6 LT.			CONST.	T	42 SM						INCLUDES PDF, 452 SF±
			2+424.1 LT.	2+427.2 LT.			SLOPE	T	1 SM						11 SF±
3C		18,19	2+304.38 RT.	2+464.08 RT.	0.24 HA		ALL R. T. & I.								US RTE. 7 HWY. EASE.; 0.59A±
3D		18,19	2+305.1 LT.	2+464.06 LT.	0.11 HA		ALL R. T. & I.								US RTE. 7 HWY. EASE.; 0.27A±
4	CENTRAL VERMONT PUBLIC SERVICE CORPORATION	17,18,19	2+156.93 LT.	2+464.08 RT.	1.01 HA		ALL R. T. & I.			QCD	5/26/2006	RUTLAND	143	96	"WATERS OF EAST CREEK" AND FLOWAGE RIGHTS, 2.50 AC.± - UTILITY
5	BAKER, JESSIE L.	18	2+294.39 LT.	2+305.04 LT.	64 SM		ALL R. T. & I.			WD	4/14/2006	RUTLAND	142	221	US RTE. 7 HWY. EASE.; 689 SF±
6	VERIZON NEW ENGLAND, INC.														UTILITY
7	ADELPHIA CABLE COMMUNICATIONS														UTILITY

TABLE OF REVISIONS

REVISION NO.	SHEET NO.	DESCRIPTION	DATE
1	16,17,18	PARCEL NO. 2 FAIGNANT. REMOVE AMBER FAIGNANT	2/17/2006
		FROM PLANS. PER C.O. 9448	
		MADE BY: JB APPROVED BY: RD	
		ELECTRONIC FILES TO STRUCTURES 2-1-07	

PLAN LEGEND

- EXISTING RIGHT-OF-WAY
- TAKING WITH ACCESS
- TAKING WITHOUT ACCESS
- CZ — CLEAR ZONE
- P / L — PROPERTY LINE
- TOE OF SLOPE
- TOP OF CUT
- SR (P) — SLOPE RIGHT
- CONST. (T) — CONSTRUCTION RIGHT
- PDF ——— PDF — PROJECT DEMARCATION FENCE

(P) -PERMANENT
(T) -TEMPORARY
DR. -DRAINAGE RIGHT
DIT. -DITCHING RIGHT
CH. -CHANNEL RIGHT
DRIVE -DRIVE RIGHT
CUL. -CULVERT RIGHT
C&T -CLEARING & TRIMMING RIGHT
SR -SLOPE RIGHT
UE -UTILITY EASEMENT

APPROVED: ROGER P. DUMAS DATE: 03-07-05
CHIEF, PLANS & TITLES

PROJECT NAME: **RUTLAND TOWN**
PROJECT NUMBER: **BRF 019-3(48)**

FILE NAME: **95b172.xls**
PROJECT LEADER: **R. WHITCOMB**
DESIGNED BY: **T. LACKEY**
R.O.W. SHEET 16 OF 19

PLOT DATE: **09/14/04**
DRAWN BY: **G. FUNK**
CHECKED BY: **R. DUMAS**
SHEET **11** OF **75**

CONSTRUCT PAVED DRIVE APRON

2+200.8 LT.

COLD PLANING, BITUMINOUS PAVEMENT

2+160.0 - 2+180.0

UTILITIES

UTILITY WORK TO BE DONE BY OTHERS

REMOVAL AND DISPOSAL OF GUARDRAIL

2+241.6 LT. - 2+260.0 LT.

MANUFACTURED TERMINAL SECTION, FLARED

2+238.7 RT. - 2+250.1 RT.
2+250.1 RT. - 2+260.0 RT.

MANUFACTURED TERMINAL SECTION, TANGENT

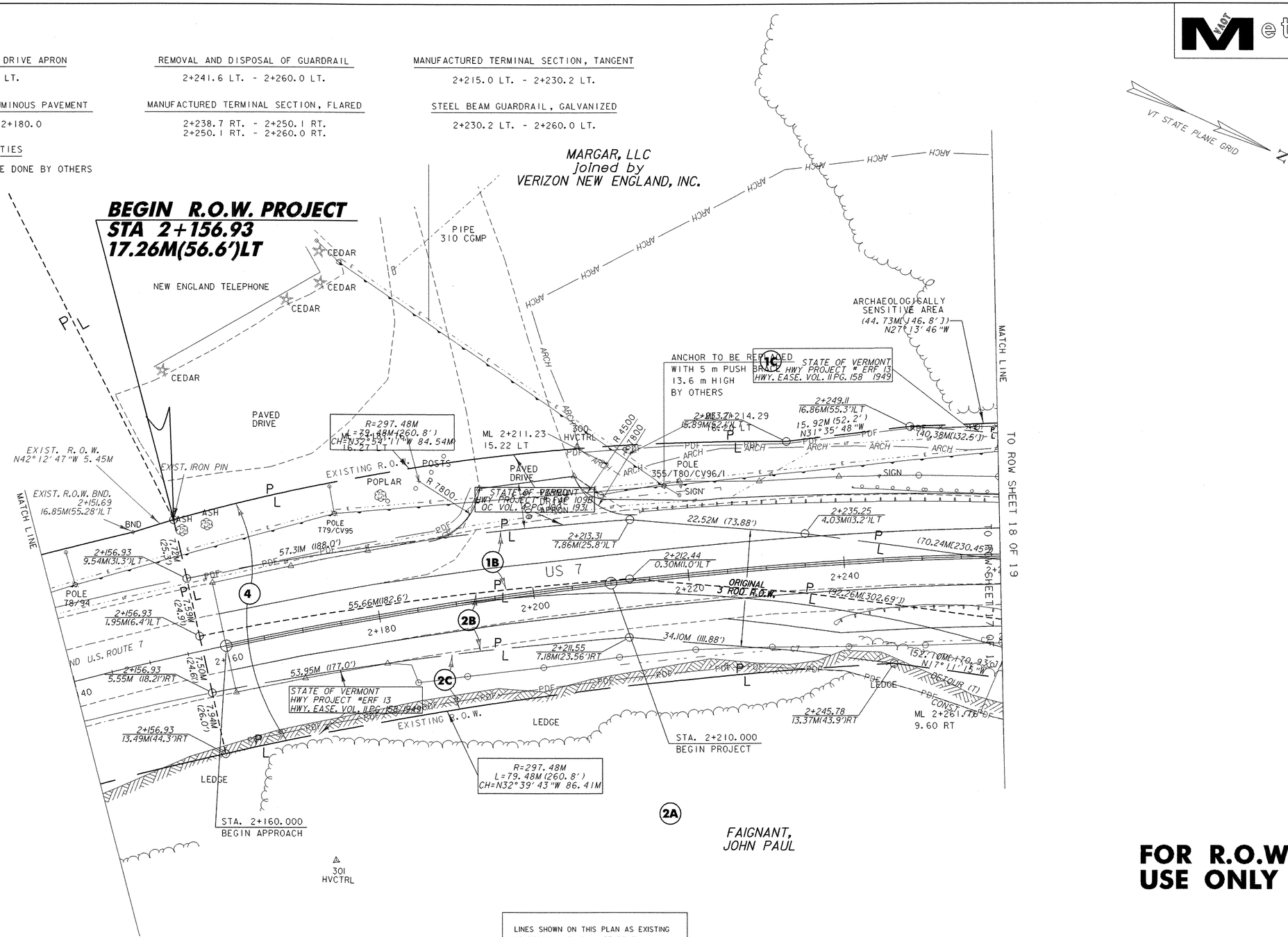
2+215.0 LT. - 2+230.2 LT.

STEEL BEAM GUARDRAIL, GALVANIZED

2+230.2 LT. - 2+260.0 LT.

VAOT Metric

VT STATE PLANE GRID N



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 STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

FOR R.O.W. USE ONLY

R. O. W. LAYOUT PLAN 1

0 10 20 30

SCALE IN METERS

1:250

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sb172pl1	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R.WHITCOMB	DRAWN BY: T. LACKEY
DESIGNED BY: T. LACKEY	CHECKED BY: R.WHITCOMB
ROW SHEET 17 OF 19	SHEET 12 OF 75

Metric

VT STATE PLANE GRID N

Class III Wetlands

MARGAR, LLC Joined by VERIZON NEW ENGLAND, INC.

BAKER, JESSIE L.

STATE OF VERMONT HWY PROJECT # ERF 13 HWY. EASE. VOL. II PG. 158 1949

WILLIAMS, SHERWIN L.

ARCHAEOLOGICALLY SENSITIVE AREA

MATCH LINE

TO ROW SHEET 17 OF 19

TO ROW SHEET 19 OF 19

STA. 2+287.750 BEGIN BRIDGE F.G. 198.156

ANCHOR TO BE REPLACED WITH 5 m ANCHOR 13.6 m HIGH BY OTHERS

ANCHOR TO BE REPLACED WITH PUSH BRACE 12.1 m HIGH BY OTHERS

STA. 2+322.256 END BRIDGE F.G. 198.198

UNDERGROUND FIBER OPTIC CABLE

STONE FILL

TYPE I

TYPE III

STATE OF VERMONT HWY PROJECT # FAP 109B OC VOL. 4 PG. 100 1932

STATE OF VERMONT HWY PROJECT # ERF 13 WDOE. VOL. II PG. 171 1949

STATE OF VERMONT HWY PROJECT # FAP 109B OC VOL. 8 PG. 220 1932

CENTRAL VERMONT PUBLIC SERVICE CORP. FLOWAGE RIGHTS

CATTLE PASS

ORIGINAL 3 ROD R.O.W.

EXISTING R.O.W.

EXISTING 50' WIDE UTILITY EASEMENT VOL.21 PG. 118 CONTINUES TO EXISTING POLE AT 2+278.9 71.8M RT (NOT SHOWN)

FAIGNANT, JOHN PAUL

NEW POLE 97-1X4513 STA 4+032.5 LT 5.0 DEFL 14° LT

POLE & ANCHOR TO BE REMOVED BY OTHERS

REMOVE(T) (COMM. SIGN) RESET FENCE

EAST CREEK

POND

Class III Wetlands

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 STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

0 10 20 30

SCALE IN METERS

1:250

FOR R.O.W. USE ONLY

R.O.W. LAYOUT PLAN 2

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sb172lp2.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R.WHITCOMB	DRAWN BY: T. LACKEY
DESIGNED BY: T. LACKEY	CHECKED BY: R.WHITCOMB
ROW SHEET 18 OF 19	SHEET 13 OF 75

VAOT Metric

ARCHAEOLOGICALLY SENSITIVE AREA

3D
STATE OF VERMONT
HWY PROJECT # ERF 13
WDOE. VOL. 11 PG. 171 1949

MATCH LINE

TO ROW SHEET 18 OF 19

STA. 2+420.000
END PROJECT

3B
WILLIAMS, SHERWIN L.

STATE OF VERMONT
HWY PROJECT # FAP 109B
OC VOL. 8 PG. 220 1932

GRAVEL DRIVE

CONST (T)
SLOPE (T)
N06°14'47"W (110.00M(360.9'))
(100.36M(329.3'))
(80.55M(264.3'))
58.87M (193.1')
2+406.25
2.41M(7.9')RT
2+420
2+440
2+460
2+480
2+500
2+520
2+540
2+560
2+575
R 6600
REMOVE & RESET(T)
ML 2+416.68
12.60 RT
INSTALL(T)
2+408.25
17.37M(57.0')RT
55.51M (182.1')
N16°31'13"W
DRIVE (T)
(99.39M(326.1'))
N17°11'15"W
ML 2+449.39
12.61 RT
3A
WILLIAMS, SHERWIN L.
ORIGINAL 3 ROD R.O.W.
5.09M (16.7')
HVCTRL
MAIL BOX
SIGN
MAPLE
STA. 2+470.000
END APPROACH
ARCHAEOLOGICALLY SENSITIVE AREA
HISTORIC HOUSE
LILAC
APPLE
GRAVEL DRIVE
2+464.05
12.75M(41.8')LT
BW FENCE
5.41M(17.7')
N86°31'29"E
2+464.06
FENCE POST 7.34M(24.1')LT
BND
POLE 2/CV108/T84
FENCE POST
HISTORIC BARN
GRAVEL DRIVE
POLE 109/305/85
GARDEN
EXISTING R.O.W.
U.S. RTE. 7 TO PITTSFORD
100 HVCTRL
SIGN
PK IN PAVEMENT
POLE 109X/85½
11 HVCTRL
TO PITTSFORD

VT STATE PLANE GRID N

END R.O.W. PROJECT
STA 2+464.08
7.74M(25.4')RT

FOR R.O.W. USE ONLY

R.O.W. LAYOUT PLAN 3

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 STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

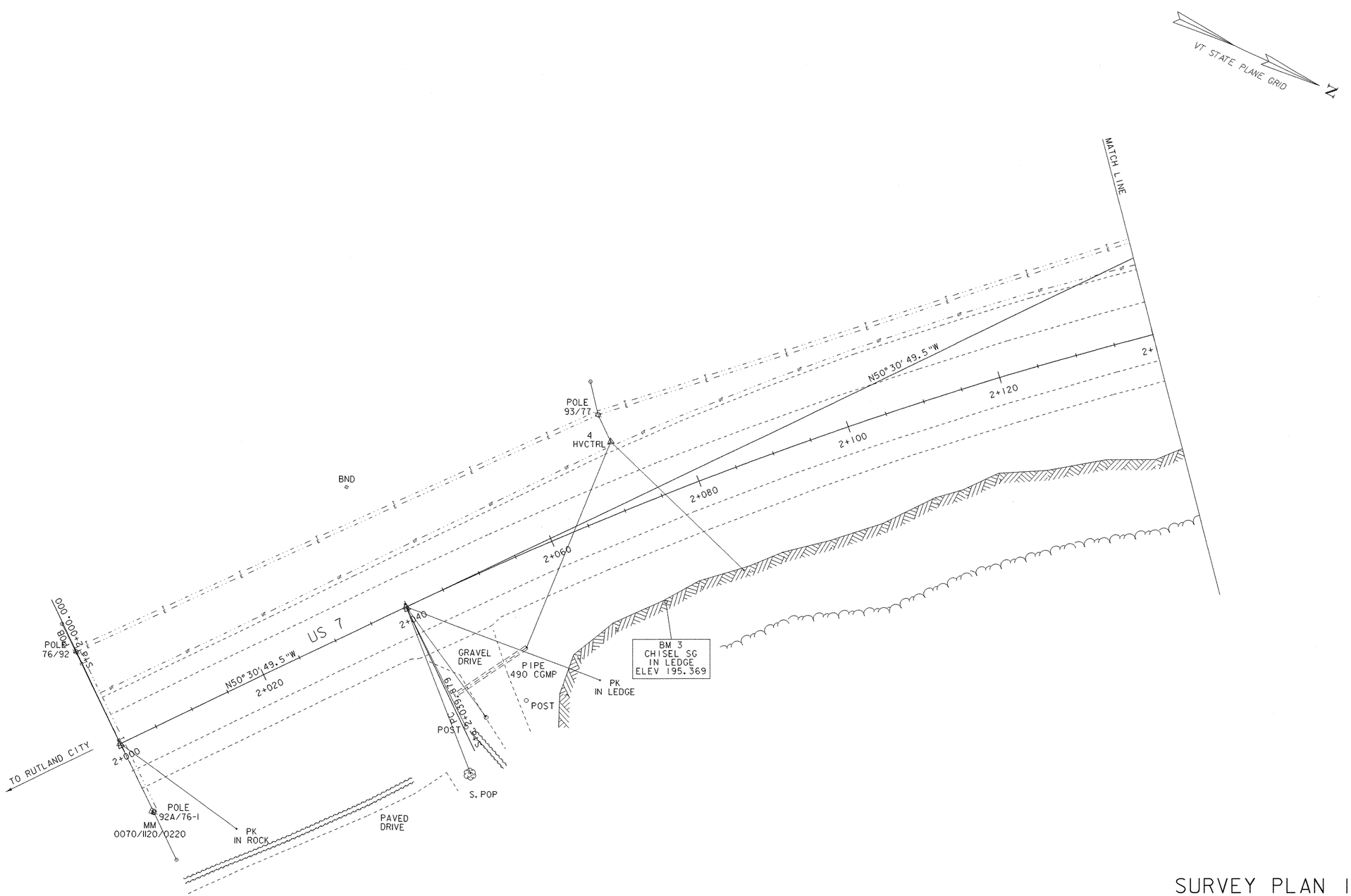
0 10 20 30
SCALE IN METERS
1:250

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: sb172lp3.1
PROJECT LEADER: R.WHITCOMB
DESIGNED BY: T.LACKEY
ROW SHEET 19 OF 19

PLOT DATE: 11-MAR-2008
DRAWN BY: T.LACKEY
CHECKED BY: R.WHITCOMB

VAOT Metric



SURVEY PLAN 1

DATUM	
VERTICAL	NAVD 88 GPS
HORIZONTAL	NAD 83/92 GPS

0 10 20 30

SCALE IN METERS

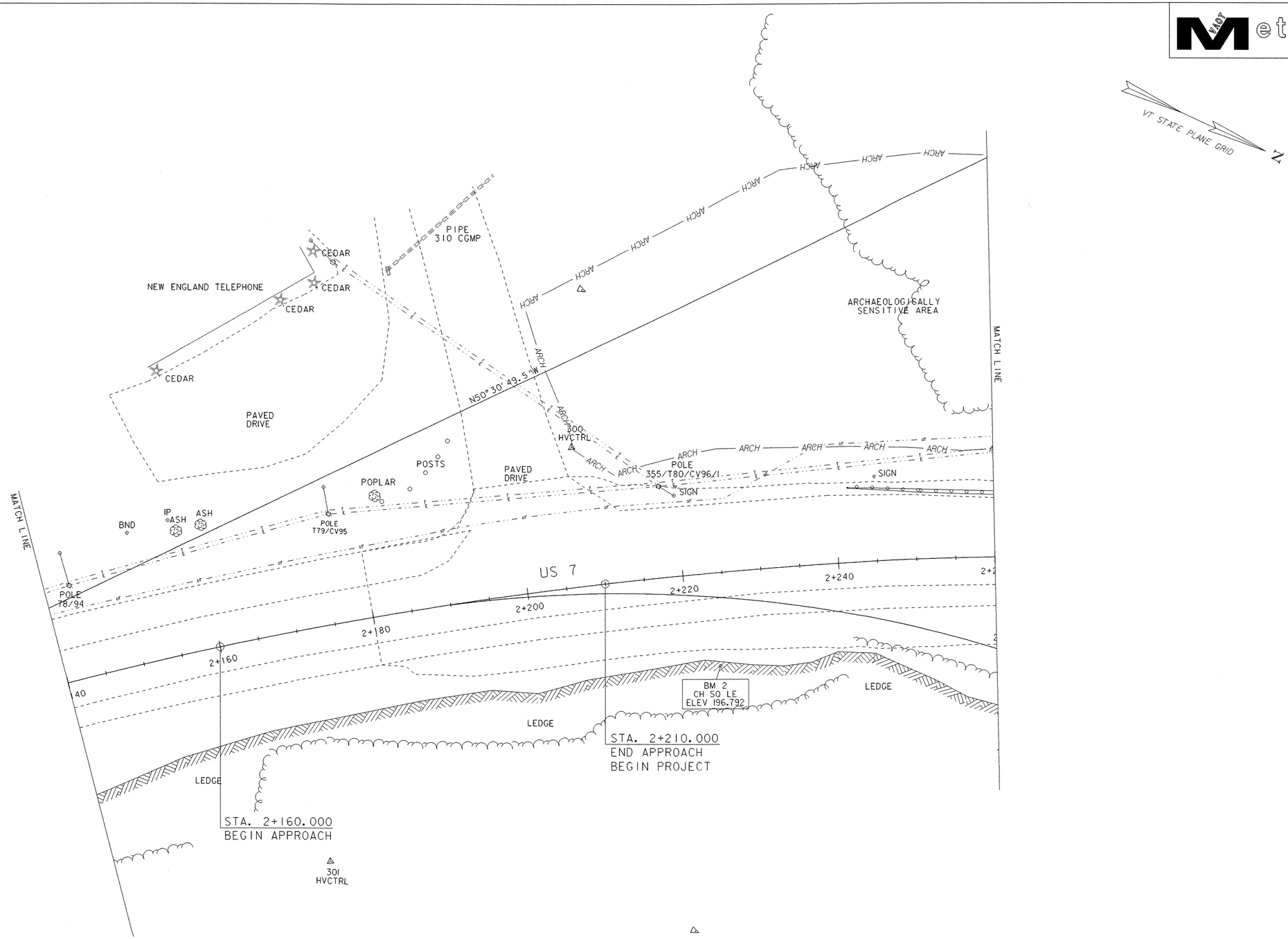
1:250

11-MAR-2008

PROJECT:	PROJECT NO.:
RUTLAND TOWN	BRF 019-3(48)

DESIGN FILE NAME: 95b172/structures/sb172sur.dgn
IPARM FILE NAME: sb197sul.i
SURVEYED BY: L. ORVIS
SQUAD LEADER: R. WHITCOMB
PLOT DATE: 11-MAR-2008
SURVEY DATE: 09/14/95
DRAWN BY: T. LACKEY
SHEET: 15 OF 75

VAOT Metric



SURVEY PLAN 2

DATUM	
VERTICAL	NAVD 88 GPS
HORIZONTAL	NAD 83/92 GPS

0 10 20 30

SCALE IN METERS

1:250 11-MAR-2008

PROJECT:	PROJECT NO.:
RUTLAND TOWN	BRF 019-3(48)

DESIGN FILE NAME: 95b172/structures/sb172sur.dgn
IPARM FILE NAME: sb172su2.i
SURVEYED BY: L. ORVIS
SQUAD LEADER: R. WHITCOMB
PLOT DATE: 11-MAR-2008
SURVEY DATE: 09/14/95
DRAWN BY: T. LACKEY
SHEET: 16 OF 75

VAOT Metric

EXISTING BRIDGE
Concrete T-Beam
Built 1931
Channel 117' x 10'
Roadway 36'-4"
Overall Length 126'
3 Spans @ 39'
Design Load H-15
Waterway 900 sf

VT STATE PLANE GRID N

ARCHAEOLOGICALLY SENSITIVE AREA

PI Sta 2+274.911 Bk= 2+245.934 AH

Channel Curve 1
Delta 23°56'21.6" Lt
R 100.000 m
T 21.200 m
L 41.782 m
E 2.223 m

POE Sta 1+107.733

PT Sta 1+100.392

IRON PIN

1+080

1+100

M=0°00'00"E 54.5

1+060

PI Sta 1+079.810 BK = 1+079.192 AH

IP

201 HVCTRL

ARCH

HDGE

PC Sta 1+058.610

STA. 2+287.750
BEGIN BRIDGE
F.G. 198.156

MATCH LINE

POLE T81/CV97

UNDERGROUND FIBER OPTIC CABLE

PIPE IRRIGATION

STA. 2+322.256
END BRIDGE
F.G. 198.198

POLE 65T/2/CV106/8/182

BW FENCE

BND

N1°32'10.4"W

3 HVCTRL

ML Sta 2+305.000=
CHANNEL Sta 1+030.000
Delta 90°00'00" LT

ML POC 2+263.000=
Drive POT 4+000.000
Delta = 60°00'00" RT

POB Sta 4+000.000

200 HVCTRL

4+080

2+280

2+300

2+320

2+340

2+360

2+380

US 7

MATCH LINE

POLE CV107/183

5 HVCTRL

MH 0070/120/0238

SIGN

POLE 2/CV97-1/T81-1

MAIL BOXES

GUIDE POSTS

PAVED DRIVE

PT Sta 1+015.000

1+020

220 HVCTRL

APPROX. CL TWO WAY TEMPORARY BRIDGE

BW FENCE

STEEL DEL IN. POST

SIGN

BW FENCE

N34°15'40.5"E

4+020

POB Sta 4+019.501

PI Sta 4+029.793 BK= 4+029.620 AH

N52°54'01.6"E

4+040

51 HVCTRL

PT Sta 4+039.466

POB Sta 0+990.000

POE Sta 4+050.000 0+990

4+050

50 HVCTRL

52 HVCTRL

1+000

S75°00'03.5"W

1+040

S68°56'21.6"W

EAST CREEK

Drive Curve 1
Delta 18°38'21.0"
R 60.000 m
T 9.846 m
L 19.519 m
E 0.803 m
e -0.020

Main Line Curve 1
Delta 48°58'39.0" Rt
R 516.000 m
T 235.032 m
L 441.087 m
E 51.006 m
e +0.060

POND

0 10 20 30
SCALE IN METERS
1:250 11-MAR-2008

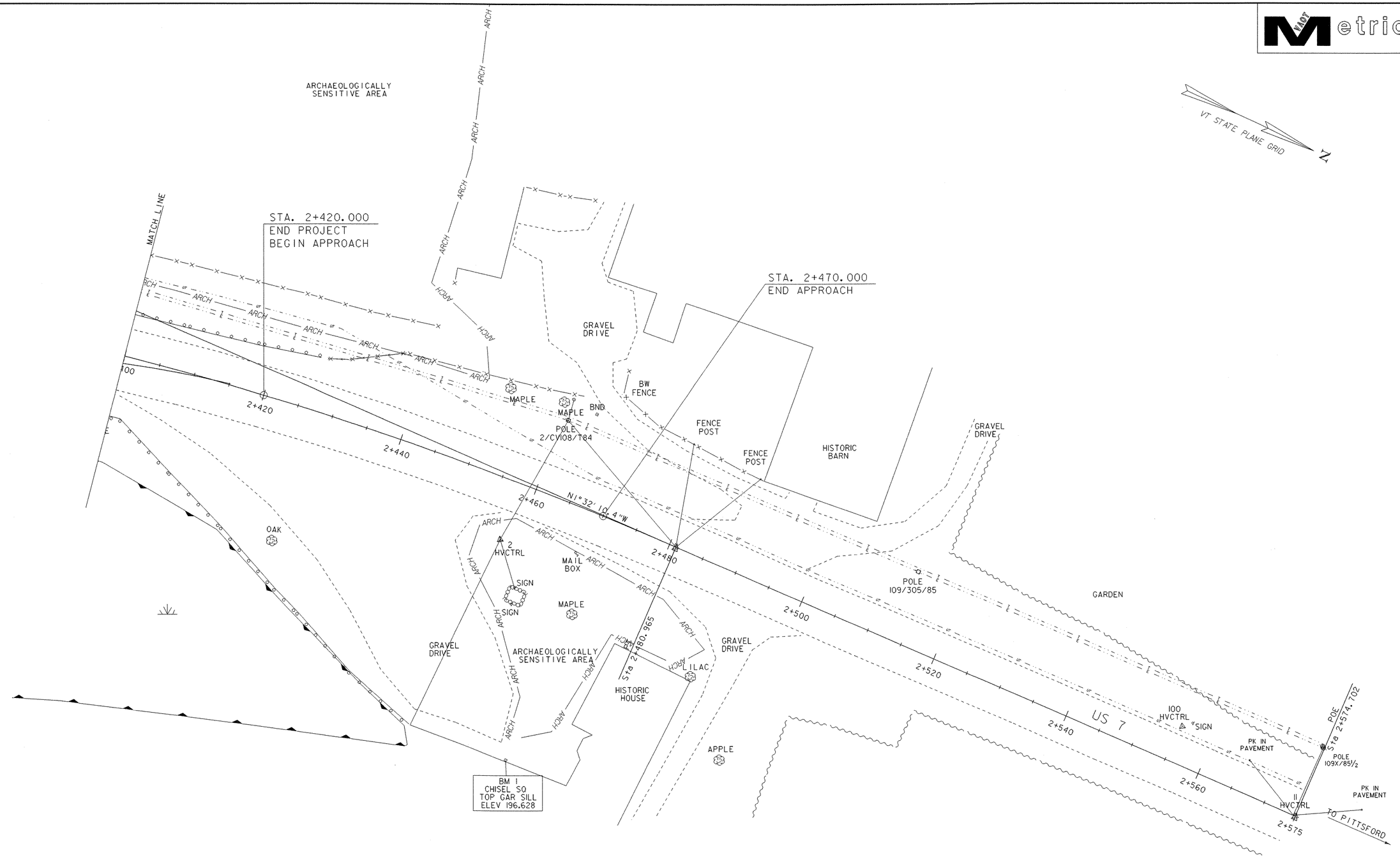
SURVEY PLAN 3

DATUM
VERTICAL NAVD 88 GPS
HORIZONTAL NAD 83/92 GPS

PROJECT:	PROJECT NO.:
RUTLAND TOWN	BRF 019-3(48)

DESIGN FILE NAME: 95b172/structures/sb172sur.dgn
IPARM FILE NAME: sb172su3.i
SURVEYED BY: L. ORVIS
SQUAD LEADER: R. WHITCOMB
PLOT DATE: 11-MAR-2008
SURVEY DATE: 09/14/95
DRAWN BY: T. LACKEY
SHEET: 17 OF 75

VDOT Metric



SURVEY PLAN 4

DATUM

VERTICAL	NAVD 88 GPS
HORIZONTAL	NAD 83/92 GPS

0 10 20 30

SCALE IN METERS

1:250 11-MAR-2008

PROJECT: RUTLAND TOWN	PROJECT NO.: BRF 019-3(48)
DESIGN FILE NAME: 95bl72/structures/sbl72sur.dgn	
IPARM FILE NAME: sbl72su4.i	PLOT DATE: 11-MAR-2008
SURVEYED BY: L. ORVIS	SURVEY DATE: 09/14/95
SQUAD LEADER: R. WHITCOMB	DRAWN BY: T. LACKEY
	SHEET: 18 OF 75

Metric

GPS CONTROL POINTS

HVCTRL # 1

STANDARD DISK STAMPED

RP *

N = 128042.974
E = 460815.963
ELEV. = 200.345

To reach from the junction of US route 7 and US route 4 (Woodstock) in Rutland proceed north on route 7 for 3.1 mi (5.0 km) to a rock outcrop and the station on the right (east).

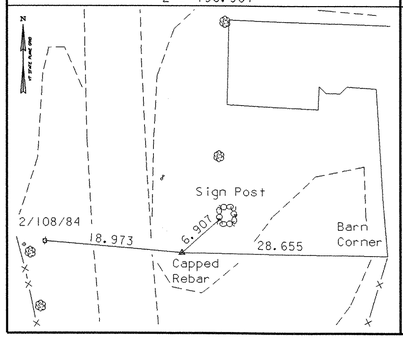
Station is 35.36m (116.01 ft) northwest of the northwest corner of a 2.5 story house, 15 m (49.2 ft) southwest of a utility pole # 114B/90B, 10 m (32.8 ft) northeast of utility pole # 114/90A and a fiberglass witness post, 6.8m (22.3 ft) east of and 1 m (3.3 ft) higher than the centerline of route 7.

* DESCRIPTION PROVIDED BY VERMONT AGENCY OF TRANSPORTATION GEODETIC SURVEY UNIT

TRAVERSE TIES

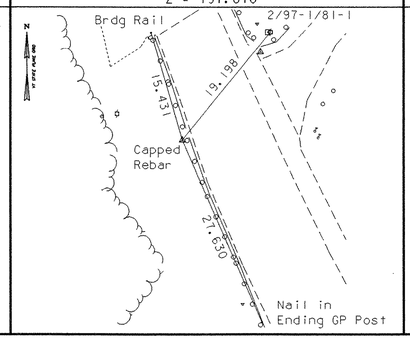
Hvctrl #2

N = 127508.535
E = 460837.951
Z = 196.901



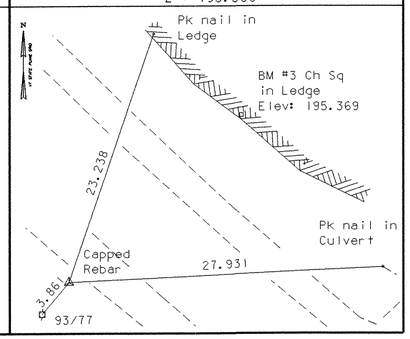
Hvctrl #3

N = 127322.600
E = 460869.700
Z = 197.610



Hvctrl #4

N = 127161.220
E = 460986.450
Z = 195.380

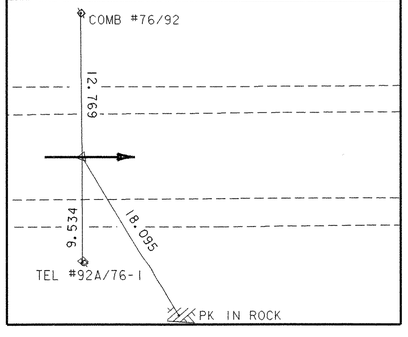


* MAIN TRAVERSE COMPLETED 7/28/95 by L. Orvis P.C. and R. Bullock

ALIGNMENT TIES

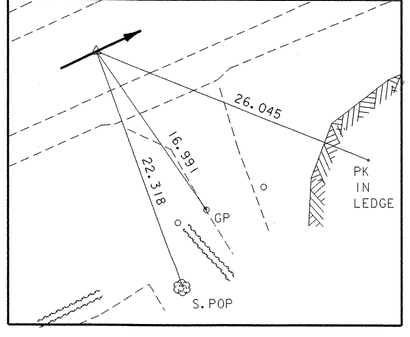
POB 2+000.000

N = 127121.310
E = 461046.988



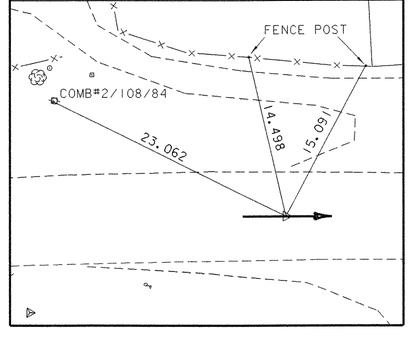
PC 2+039.879

N = 127146.668
E = 461016.211



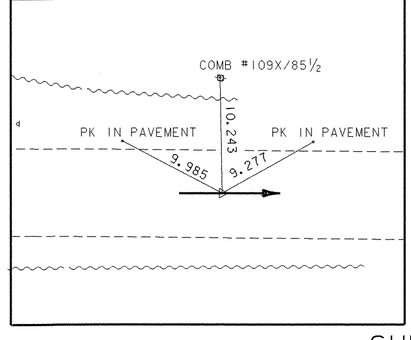
PT 2+480.965

N = 127531.072
E = 460828.517



POE 2+574.702

N = 127624.775
E = 460826.004



* ALIGNMENT COMPLETED: DECEMBER 18, 2002 BY: L.ORVIS PC. & J.HULETT

SURVEY TIES

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83/92
ADJUSTMENT	Least Sq

PROJECT NAME: Rutland Town
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: sb172su5.i
PROJECT LEADER: R. WHITCOMB
DESIGNED BY: T. LACKEY
95b172/str/sb172sur.dgn

PLOT DATE: 11-MAR-2008
DRAWN BY: R. Bullock
CHECKED BY: P.HODGE
SHEET 19 OF 75

VAOT Metric

CONSTRUCT PAVED DRIVE APRON

2+200.8 LT.

COLD PLANING, BITUMINOUS PAVEMENT

2+160.0 - 2+180.0

UTILITIES

UTILITY WORK TO BE DONE BY OTHERS

REMOVAL AND DISPOSAL OF GUARDRAIL

2+241.6 LT. - 2+260.0 LT.

MANUFACTURED TERMINAL SECTION, FLARED

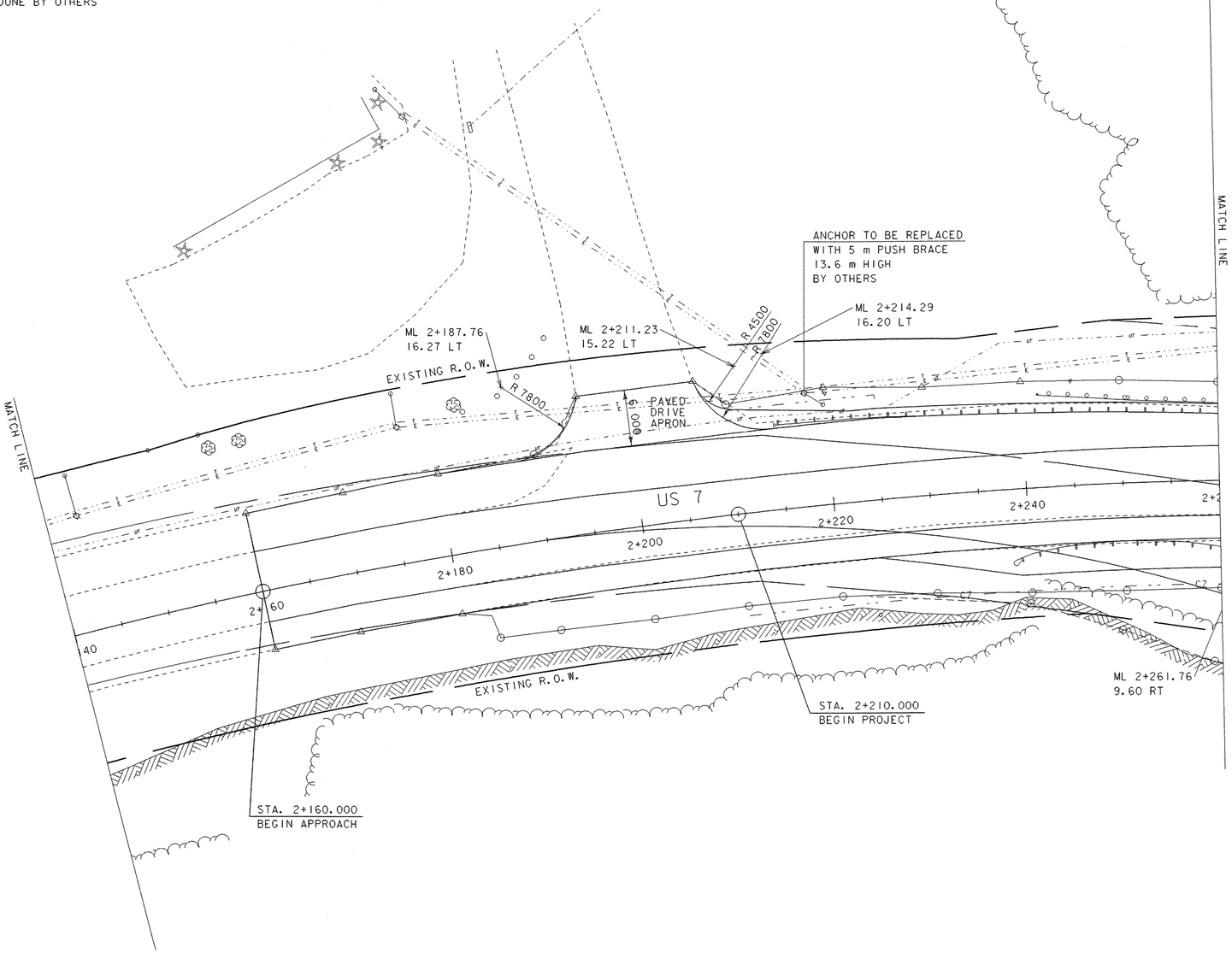
2+238.7 RT. - 2+250.1 RT.
2+250.1 RT. - 2+260.0 RT.

MANUFACTURED TERMINAL SECTION, TANGENT

2+215.0 LT. - 2+230.2 LT.

STEEL BEAM GUARDRAIL, GALVANIZED

2+230.2 LT. - 2+260.0 LT.



LAYOUT PLAN 1

0 10 20 30

SCALE IN METERS

1:250

PROJECT NAME: RUTLAND TOWN	
PROJECT NUMBER: BRF 019-3(48)	
FILE NAME: sbl72lpl.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R.WHITCOMB	DRAWN BY: T. LACKEY
DESIGNED BY: T. LACKEY	CHECKED BY: R.WHITCOMB
95bl72/sbl72bdr.dgn	SHEET 20 OF 75

VAOT Metric

CONSTRUCT PAVED DRIVE

2+263.0 RT. - 4.5 M WIDE, PAVED

REMOVAL AND DISPOSAL OF GUARDRAIL

2+260.0 LT. - 2+283.1 LT.
2+275.6 RT. - 2+285.0 RT.
2+322.0 LT. - 2+400.0 LT.
2+324.4 RT. - 2+370.8 RT.

STEEL BEAM GUARDRAIL, GALVANIZED

2+260.0 LT. - 2+278.8 LT.
2+274.7 RT. - 2+278.3 RT.
2+331.3 LT. - 2+400.0 LT.
2+331.7 RT. - 2+358.6 RT.

MANUFACTURED TERMINAL SECTION, FLARED

2+260.0 RT. - 2+261.5 RT.
2+358.6 RT. - 2+370.0 RT.

REMOVING AND RESETTING FENCE

2+372.7 RT. - 2+418.5 RT.

REMOVAL OF EXISTING FENCE

2+314.2 RT. - 2+315.0 RT.
2+315.3 LT. - 2+316.9 LT.

ANCHOR FOR STEEL BEAM RAIL

DRIVE 4+014.8 LT. - ML 2+274.7 RT.

GUARDRAIL APPROACH SECTION, GALVANIZED NETC 2 RAIL

2+278.8 LT. - 2+287.7 LT.
2+278.3 RT. - 2+287.3 RT.
2+322.3 LT. - 2+331.3 LT.
2+322.7 RT. - 2+331.7 RT.

VERTICAL GRANITE CURB

2+275.6 LT. - 2+287.7 LT.
2+275.2 RT. - 2+287.3 RT.
2+322.3 LT. - 2+334.4 LT.
2+322.7 RT. - 2+335.1 RT.

BRIDGE RAILING, GALVANIZED NETC 2 RAIL

2+287.7 LT. - 2+322.3 LT.
2+287.3 RT. - 2+322.7 RT.

RELOCATE MAILBOX, SINGLE SUPPORT

2+261.2 RT.
2+262.2 RT.

REMOVING SIGNS

2+386 RT

ERECTING SALVAGED SIGNS

2+386 RT

SETTING SALVAGED POSTS

2+386 RT

UTILITIES

UTILITY WORK TO BE DONE BY OTHERS

VT STATE PLANE GRID

STA. 2+287.750
BEGIN BRIDGE
F.G. 198.156

ANCHOR TO BE REPLACED
WITH 5 m ANCHOR
13.6 m HIGH
BY OTHERS

ANCHOR TO BE REPLACED
WITH PUSH BRACE
12.1 m HIGH
BY OTHERS

STA. 2+322.256
END BRIDGE
F.G. 198.198

MATCH LINE

STONE FILL

TYPE I

TYPE II

ROW

EXISTING R.O.W.

MATCH LINE

CATTLE PASS

US 7

NEW LINES

ML 2+277.199
10.90 RT

APPROX.
CL DETOUR

STONE FILL

TYPE I

TYPE II

EXISTING R.O.W.

APPROX. TEMPORARY DETOUR LIMITS

RESET FENCE

POLE & ANCHOR
TO BE REMOVED
BY OTHERS

NEW POLE
97-1/4513
STA 4+032.5 LT 5.0
DEFL 14° LT
5 m ANCHOR
13.6 m HIGH
BY OTHERS

0 10 20 30
SCALE IN METERS
1:250

LAYOUT PLAN 2

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sbl72lp2.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R.WHITCOMB	DRAWN BY: T.LACKEY
DESIGNED BY: T.LACKEY	CHECKED BY: R.WHITCOMB
95bl72/sbl72bdr.dgn	SHEET 21 OF 75

MDOT Metric

CONSTRUCT PAVED DRIVE APRON

2+434.7 RT. - 12 M WIDE, PAVED

REMOVAL OF EXISTING FENCE

2+426.9 LT. - 2+437.0 LT.

REMOVING AND RESETTING FENCE

2+400.0 RT. - 2+405.8 RT.

REMOVAL AND DISPOSAL OF GUARDRAIL

2+400.0 LT. - 2+426.0 LT.

COLD PLANING, BITUMINOUS PAVEMENT

2+450.0 - 2+470.0

STEEL BEAM GUARDRAIL, GALVANIZED

2+400.0 LT. - 2+425.4 LT.

MANUFACTURED TERMINAL SECTION, FLARED

2+425.4 LT. - 2+436.8 LT.

VT STATE PLANE GRID N

ARCHAEOLOGICALLY SENSITIVE AREA

MATCH LINE

STA. 2+420.000
END PROJECT

GRAVEL DRIVE

BW FENCE

FENCE POST

FENCE POST

HISTORIC BARN

GRAVEL DRIVE

MAPLE

MAPLE

BND

POLE 24/CVI08/T84

2+400

2+420

2+440

2+460

2+480

2+500

2+520

2+540

2+560

2+575

R 6600

10 980

PAVED DRIVE APRON

8 920

R 8400

ML 2+416.68
12.60 RT

OAK

2 HVCTRL

MAIL BOX

ML 2+449.39
12.61 RT

SIGN

SIGN

MAPLE

STA. 2+470.000
END APPROACH

ARCHAEOLOGICALLY SENSITIVE AREA

GRAVEL DRIVE

HISTORIC HOUSE

LILAC

APPLE

POLE 109/305/85

GARDEN

EXISTING R.O.W.

EXISTING R.O.W.

100 HVCTRL

SIGN

PK IN PAVEMENT

POLE 109X/85½

PK IN PAVEMENT

11 HVCTRL

TO PITTSFORD

US 7

LAYOUT PLAN 3

0 10 20 30

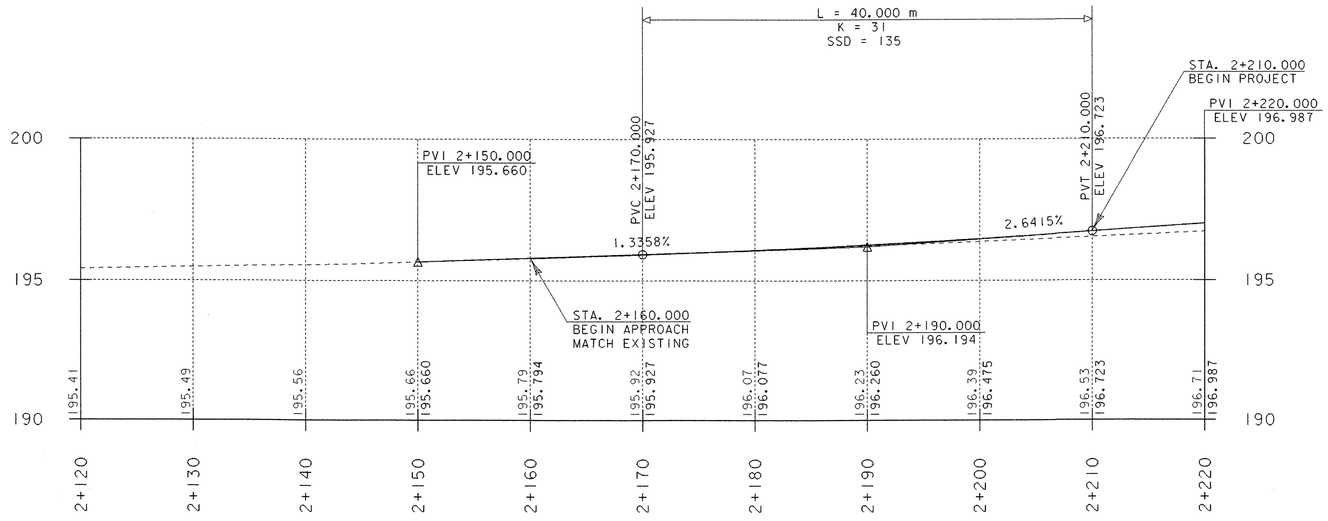
SCALE IN METERS

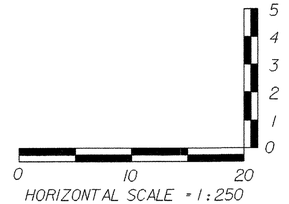
1:250

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

FILE NAME: sbl72lp3.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R.WHITCOMB	DRAWN BY: T. LACKEY
DESIGNED BY: T. LACKEY	CHECKED BY: R.WHITCOMB
95bl72/sbl72bdr.dgn	SHEET 22 OF 75

MAINLINE



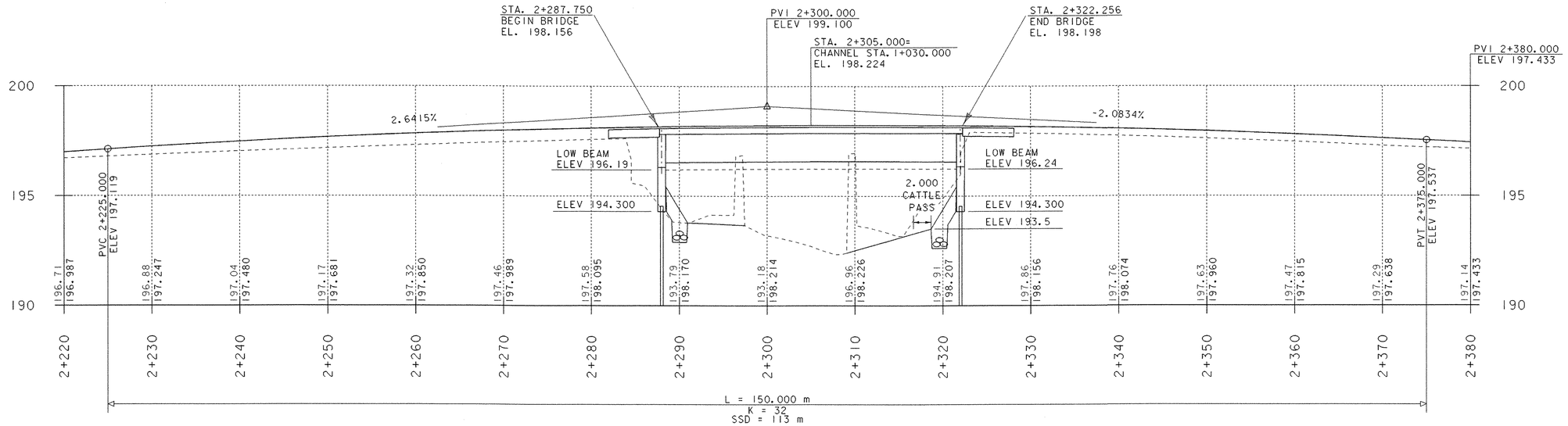


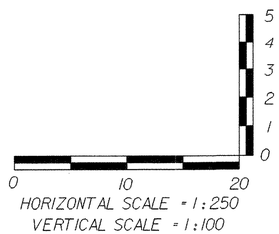
NOTE:
ELEVATIONS TO THE NEAREST HUNDREDTH ARE EXISTING GROUND ALONG PROPOSED CENTERLINE.
ELEVATIONS TO THE NEAREST THOUSANDTH ARE FINISH GRADE ALONG PROPOSED CENTERLINE.

MAINLINE
PROFILE 1

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sbl72pfl.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: T. LACKEY	CHECKED BY: R. WHITCOMB
95bl72/str/sbl72xs2.dgn	SHEET 23 OF 75

MAINLINE



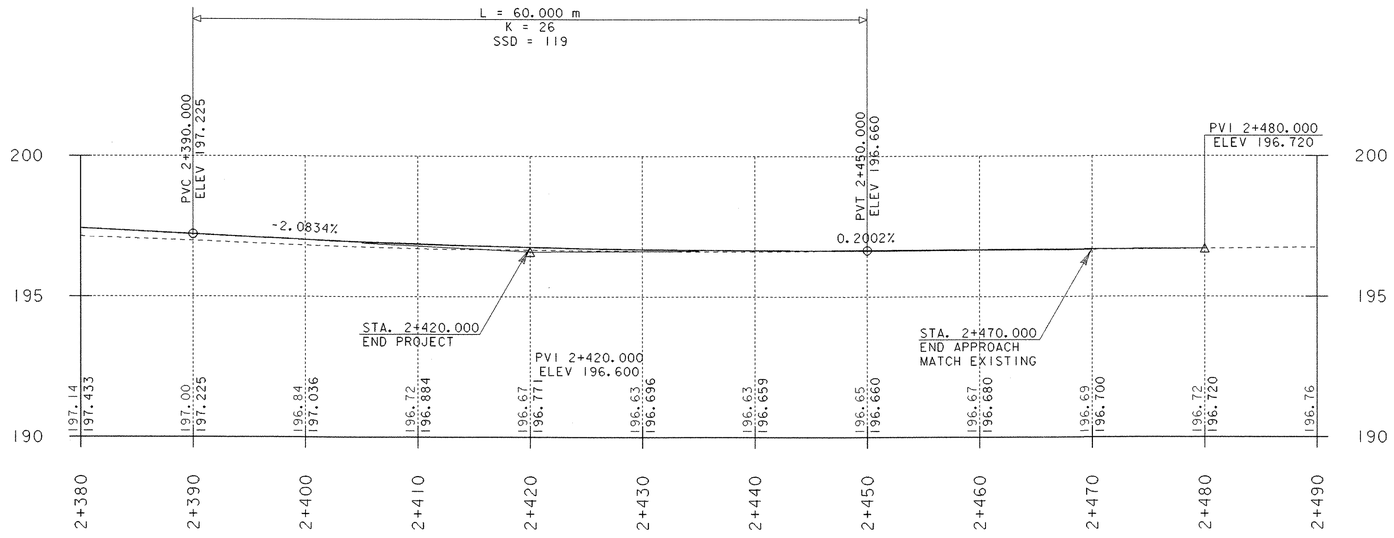


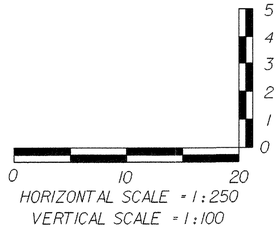
MAINLINE
PROFILE 2

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

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sbl72pf2.1	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: T. LACKEY	CHECKED BY: R. WHITCOMB
95bl72/str/sbl72xs2.dgn	SHEET 24 OF 75

MAINLINE





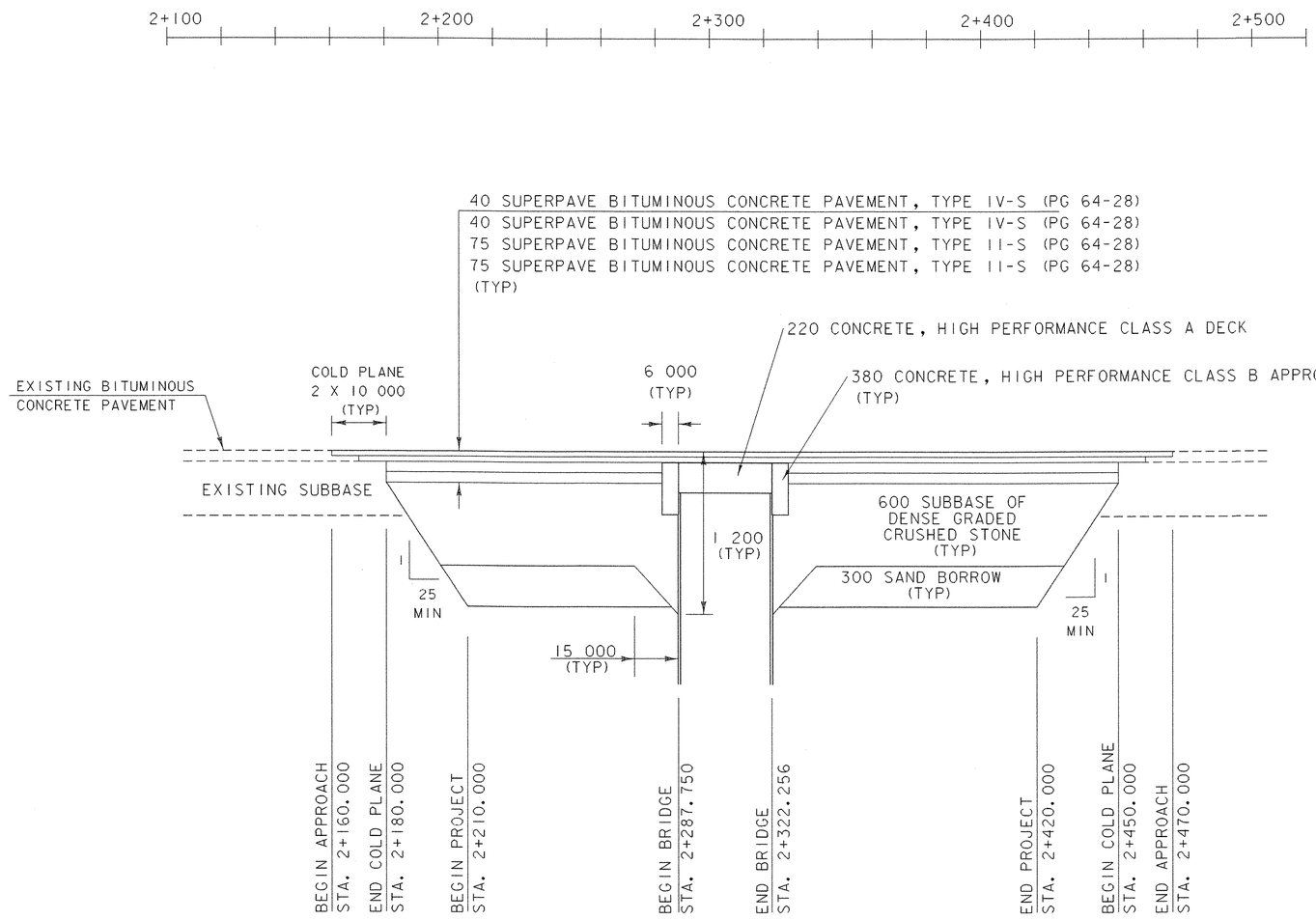
NOTE:
ELEVATIONS TO THE NEAREST HUNDREDTH ARE EXISTING GROUND ALONG PROPOSED CENTERLINE.
ELEVATIONS TO THE NEAREST THOUSANDTH ARE FINISH GRADE ALONG PROPOSED CENTERLINE.

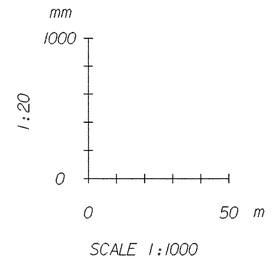
MAINLINE
PROFILE 3

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

FILE NAME: sbl72pf3.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: T. LACKEY	CHECKED BY: R. WHITCOMB
95bl72/str/sbl72xs2.dgn	SHEET 25 OF 75

MATERIAL TRANSITION DETAIL





SCALE 1:1000

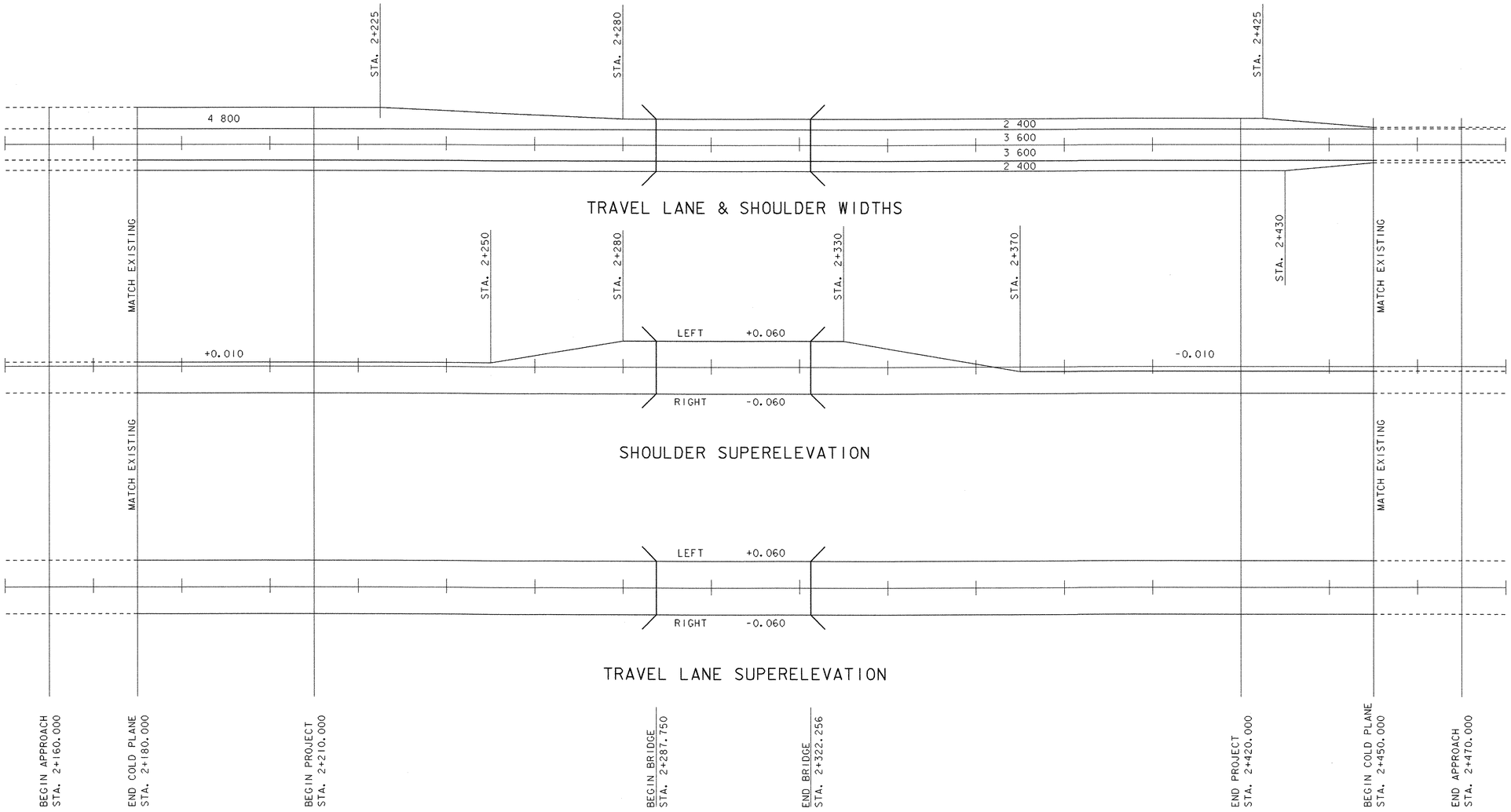
DIMENSIONS SHOWN IN MILLIMETERS

MAINLINE
MATERIAL TRANSITION DETAIL

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

FILE NAME: sbl72pf4.1	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: T. LACKEY	CHECKED BY: R. WHITCOMB
95bl72/str/sbl72xs2.dgn	SHEET 26 OF 75

Metric

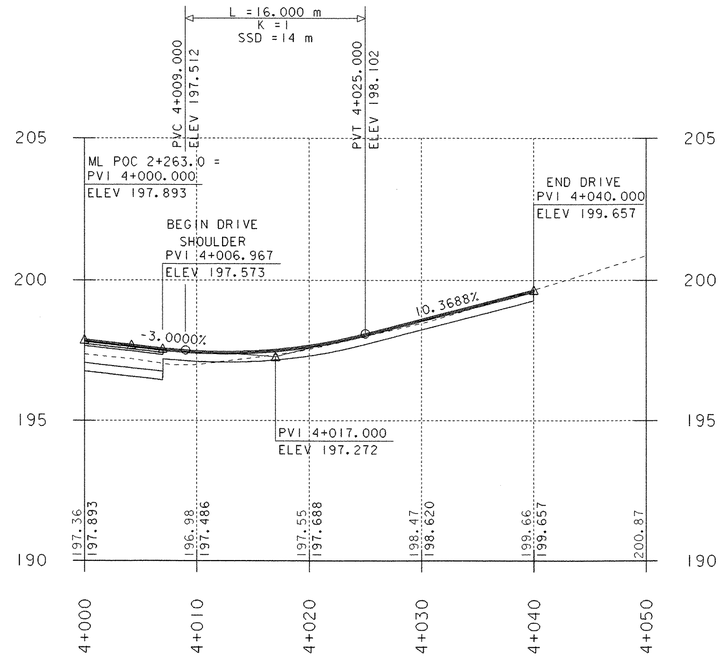


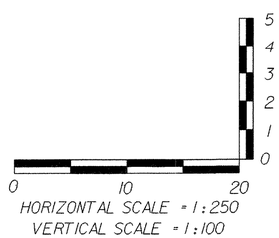
MAINLINE
WIDTHS & SUPERELEVATIONS

0 10 20 30 40 50
SCALE IN METERS
SCALE 1:500

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sbl72pf5.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: T. LACKEY	CHECKED BY: R. WHITCOMB
95bl72/str/sbl72xs2.dgn	SHEET 27 OF 75

DRIVE
(ML 2+263 RT)





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

DRIVE
PROFILE

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sbl72pf6.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: T. LACKEY	CHECKED BY:
95bl72/str/sbl72xs2.dgn	SHEET 28 OF 75

Archaeologically Sensitive Area

Detour Limit of Disturbance

Ordinary High Water

Riparian Corridor

Soil Limit

Wetland Limit

VT STATE PLANE GRID N

RIPARIAN CORRIDOR

RIPARIAN CORRIDOR

59A
Deerfield loamy sand
0-4% slope
low erodability kw 0.17
good ag potential

28
Udifluvents & Fluvaquents
0% slope
low erodability

Class III Wetlands

96
Udipsamments
0% slope
low erodability

STA. 2+287.750
BEGIN BRIDGE
F.G. 198.156

STA. 2+322.256
END BRIDGE
F.G. 198.198

STA. 2+210.000
END APPROACH
BEGIN PROJECT

STA. 2+160.000
BEGIN APPROACH

POLE 18/0V97

59A
Deerfield loamy sand
0-4% slope
low erodability kw 0.17
good ag potential

STA. 2+420.000
END PROJECT
BEGIN APPROACH

STA. 2+470.000
END APPROACH

17 m2

11 m2

410 m2

23 m2

APPROX. TEMPORARY DETOUR LIMITS

96
Udipsamments
0% slope
low erodability

Class III Wetlands

OHW

OHW

East Creek

39B
Galway-Nellis-Farmington complex
3-8% slope
moderate erodability kw 0.32
high ag potential

Impact Areas (m2)			
	Temporary	Permanent	Total
Project Area	1031	6667	7698
Agric. Soil	0	0	0
OHW Fill	17	0	17
Wetlands	410	34	444

RESOURCE PLAN

0 10 20 30 40 50

SCALE IN METERS

SCALE 1:400

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sbl72rsc.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R WHITCOMB	DRAWN BY: T LACKEY
DESIGNED BY: T LACKEY	CHECKED BY: W. LAMMER
95bl72/str/sbl72rsc.dgn	SHEET 29 OF 75

1. EROSION PREVENTION & SEDIMENT CONTROL NARRATIVE

1.1. PROJECT DESCRIPTION

1.1.1. This project "Rutland Town BRF 019-3(48)" will replace Bridge 103 on US 7 over the East Creek River in Rutland Town on existing alignment. The new bridge will be a two lane, single span, steel girder bridge. The project will maintain traffic on a temporary bridge upstream and east of the existing bridge during construction.

1.1.2. The total length of roadway work, including both approaches, drives and existing roadway is approximately 335 m.

1.1.3. The total disturbed area (excluding waste, borrow and staging areas) is approx 0.7681 hectares (1.90 ac.). The temporary bridge will disturb approx. 0.1114 hectares (0.275 ac.).

1.1.4. This project should last one construction season. This Erosion Prevention and Sediment Control Plan is intended for use during the construction season. A separate winter plan shall be submitted for approval if work is to occur from Oct 15th to April 15th, or if vegetation has not been sufficiently established after the completion of construction and by Oct 15th.

1.2. SITE INVENTORY & ANALYSIS

1.2.1. Off Site Drainage Characteristics (Up And Down Gradient). The land in the project area is mountainous and forested.

1.2.2. Drainage, Waterways, Bodies of Water. The bridge crosses the East Creek. The creek is incised, sinuous to meandering with eroded banks. The streambed is gravel, cobbles and boulders. The watershed area is 129.5 sq km.

1.2.3. Topography, Existing Roads, Buildings, Utilities.

1.2.3.1. Topography. The project site is mountainous and forested.

1.2.3.2. Existing Roads. US 7 is a Rural Principal Arterial Highway.

1.2.3.3. Buildings. A historic building is located to the northeast of the project area.

1.2.3.4. Utilities. Power and Utility poles run along the west side of VT 7 the entire length of the project. Power and Utility line cross the project area immediately to the south of the bridge and continue along the drive at 2+263.0 right.

1.2.4. Vegetation. The vegetation consists of fields on the north side, and woods south of the East Creek. Construction will replace some brush and trees. Stone Fill capped with grubbing material will stabilize slopes steeper than 66%. Seed & Mulch will stabilize slopes flatter than 66%.

1.2.5. Soils. The Soil Conservation Service "Soil Survey of Rutland County" identifies four soil types in the project site.

1.2.5.1. 28 Udifluvents & Fluvaquents, 0% slope. This soil is in the floodplain. Udiflevents are well drained to excessively drained, and frequently flooded. Fluvaquents are poorly drained to somewhat poorly drained. Its erodiblilty rating is low. Both soils are similar in use and management.

1.2.5.2. 39B Galway-Nellis-Farmington complex, 3 to 8% slopes. This soil is 40% moderately deep, well drained Galway soil; 40% very deep, well drained Nellis soil; 10% shallow well drained and somewhat excessively drained Farmington soils; and 10% other soils. The soil profile for Galways soil is typically: 0 to 8" very dark grayish brown silt loam; 8 to 20" dark yellowish brown fine sandy loam; 20 to 24" dark yellowish brown gravelly fine sandy loam; bedrock: 24 inches dolostone. The soil profile for Nellis soil is typically: 0 to 8" very dark grayish brown silt loam; 8 to 21" brown gravelly fine sandy loam; 21 to 60" dark grayish brown gravelly fine sandy loam. The soil profile for Farmington soil is typically: 0 to 8" very dark grayish brown silt loam; 8 to 12" dark yellowish brown silt loam; bedrock: 12 inches dolostone. Its erodiblilty rating is moderate (kw = 0.32). This soil has high agricultural potential.

1.2.5.3. 59A Deerfield loamy sand, 0 to 4% slopes. This soil is deep, moderately well drained, and nearly level and gently sloping. The soil profile is typically: 0 to 11' dark brown loamy sand; 11 to 19" yellowish brown sand; 19 to 24" mottled, light olive brown sand; 24 to 32" mottled, yellowish brown sand; 32 to 44" mottled olive brown sand; 44 to 60" mottled olive gray sand. Its erodiblilty rating is low (kw = 0.17).

1.2.5.4. 96 Udipsamments, 0% slope. This soil is nearly level, excessively drained to somewhat poorly drained in previously disturbed areas such as gravel pits and foundry fills. Its erodibility rating is low.

1.2.6. Sensitive Resource Areas

1.2.6.1. The East Creek runs through the project area. The project impacts it at the existing bridge and eastern detour. A Stream Alteration Permit (#HD-1-0359) dated 11/06/03 has been issued for this project.

1.2.6.2. Class III Wetlands are in the riparian corridor upstream, to the east, and downstream, to the west, of the project impacts. The temporary detour impacts the 50' wetland buffer.

1.2.6.3. Archaeologically Sensitive Areas are present within the project area to the west of US 7, and to the northeast of the End Project. BARRIER FENCE protects this area.

1.2.7. Non-Sensitive Resources

1.2.7.1. No Threatened & Endangered Species are present within the project area.

1.2.7.2. A Historic House is located to the northeast of the project area.

1.2.8. Proximity to Natural or Man-Made Water Features: East Creek at the bridge.

1.3. RISK EVALUATION

1.3.1. The project area is greater than 1 acre. Therefore the project falls under the jurisdiction of Construction General Permit 3-9020 (2006).

1.3.2. The project qualifies as a Low Risk project in the Detailed Risk Evaluation of Appendix A of Construction General Permit 3-9020 (2006). The project has storm water discharges from the construction site to receiving waters that do not first pass through a 50 ft vegetated buffer area.

1.3.2.1. To qualify as a Low Risk, the project must "have a maximum of 7 consecutive days of disturbed earth exposure in any location before temporary or final stabilization is implemented."

1.4. EROSION PREVENTION & SEDIMENT CONTROL

1.4.1. Mark Site Boundaries

1.4.1.1. PROJECT DEMARCATION FENCING will delineate the construction area for construction equipment. This measure limits the area that can be disturbed and exposed to erosion.

1.4.2. Limit Disturbance Area

1.4.2.1. PROJECT DEMARCATION FENCING and BARRIER FENCE will delineate the construction area for construction equipment. These measures limit the area that can be disturbed and exposed to erosion. Use BARRIER FENCE within 30 m upslope of receiving waters and to protect sensitive areas.

1.4.3. Stabilize Construction Entrance

1.4.3.1. VEHICLE TRACKING PAD will control tracking of sediment transport on to public roads. The entrance is a stabilized pad of crushed stone located wherever construction vehicles leave construction areas. The sites include: the project site; staging areas; and waste and borrow areas. The minimum area is 3700 x 15 000 (12' x 50'). Pipe all surface water flowing to or diverted towards a construction entrance under the stone. Size pipes for their watersheds. The minimum pipe diameter is 150 mm.

1.4.4. Install Silt Fence

1.4.4.1. SILT FENCE and SPECIAL PROVISION (GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED) placed level on slopes will control sheet flow sediment transport. Place silt fences level and 1500 to 3000 mm (5'-10') from the toe of slopes. Turn the ends of silt fence slightly uphill to stop concentrated water from flowing around the ends. The maximum slope length between separate runs of silt fence is 30 000 (100'). Place silt fence before beginning upslope earthwork. Use SPECIAL PROVISION (GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED) for silt fence within 30 m upslope of receiving waters.

1.4.5. Divert Upland Runoff

1.4.6. Slow Down Channelized Runoff

1.4.6.1. TEMPORARY STONE CHECK DAM, TYPE I placed in ditches will reduce flow velocities and prevent erosion. Place dams in ditches so that the elevation of the top of a check dam is level with the toe of the next upslope check dam. The check dams may be removed once the stone lining of the ditches is complete and the surrounding area stabilized.

1.4.6.2. TURBIDITY CURTAINS will control concentrated flow sediment transport around abutments and piers.

1.4.7. Construct Permanent Controls

1.4.7.1. Roadway Typical Section

1.4.7.1.1. SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (PG 64-28) on the road surface will prevent erosion.

1.4.7.1.2. AGGREGATE SURFACE COURSE on the shoulder will allow runoff to infiltrate and prevent erosion.

1.4.7.2. Channel Typical Section

1.4.7.2.1. STONE FILL, TYPE I at the ends of the wing walls will prevent erosion and control sediment transport.

1.4.7.2.2. STONE FILL, TYPE III around the abutments on slopes greater than 66% will prevent erosion and control sediment transport.

1.4.7.2.3. GEOTEXTILE UNDER STONE FILL will prevent erosion and control sediment transport.

1.4.8. Stabilize Exposed Soils

1.4.8.1. TRACKING & MULCHING will temporarily stabilize slopes. Use tracking for short term (two weeks) exposed slopes. Drive heavy equipment up and down slopes to leave level tracks (small check dams) that will catch water flow. Stabilize slopes within 48 hours or sooner considering rain.

1.4.8.2. SEEDING & MULCHING will establish vegetation on side slopes less than 66% that will prevent erosion and control sediment transport. Add TEMPORARY EROSION MATTING (with 100% natural fibers) to slopes ranging from 33% to 66%.

1.4.8.2.1. ML 2+385 to 2+430 right

1.4.8.2.2. ML 2+440 to 2+460 right

1.4.8.2.3. ML 2+430 to 2+450 left

1.4.8.3. "Stone Check Dams" placed in ditches will reduce flow velocities and prevent erosion. Place dams in ditches so that the elevation of the top of a check dam is level with the toe of the next upslope check dam. The check dams may be removed once the stone lining of the ditches is complete and the surrounding area stabilized.

1.4.8.3.1. ML 2+320 to 2+345 right

1.4.9. Winter Stabilization

1.4.10. Stabilize Soil at Final Grade

1.4.10.1. SEEDING & MULCHING will stabilize slopes ranging from 0% to 66%. Add TEMPORARY EROSION MATTING (with 100% natural fibers) to slopes ranging from 33% to 66%. Use seeding for long term exposed slopes. Allow Grass 2 weeks to establish itself. Stabilize slopes within 48 hours or sooner considering rain.

1.4.10.2. STONE FILL, TYPE I in roadway ditches will prevent erosion and control sediment transport.

1.4.10.3. CULVERTS will convey concentrated flow under roads and prevent erosion.

1.4.10.4. STONE FILL, TYPE I at culvert outlets will dissipate water velocities and prevent erosion and control sediment transport.

1.4.11. Dewatering Activities

1.4.12. Inspect your Site

1.4.12.1. Inspect your site at least once every 7 calendar days and within 24 hours of the end of a storm event resulting in the discharge of stormwater from the construction site.

1.4.12.2. Check measures (e.g. stone check dams, silt fence, and sand bags) regularly for accumulation of sediment. Remove sediment build-up when the level of sediment reaches one-half the height of the control measure. Dispose of sediments in an approved area where they will not be subject to erosion.

1.4.12.3. If there is a discharge of visibly discolored stormwater from the construction site or from the construction site to waters of the state, the Permittee shall take immediate corrective action.

1.4.12.4. If there is a discharge of visibly discolored stormwater from the construction site to waters of the state, the On-Site Plan Coordinator shall, within 72 hours of first discovering the discharge, submit a written report about the discharge and the resulting corrective action to the Vermont Agency Of Natural Resources, Department Of Environmental Conservation (DEC).

Metric

EPSC
NOTES

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sbl72e01.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: W. LAMMER
DESIGNED BY: W. LAMMER	CHECKED BY: T. LACKEY
95bl72\str\sbl72ero.dgn	SHEET 30 OF 75

Soil Limit

Ordinary High Water

50' Riparian Corridor

Wetland Limit

R.O.W. & Property Lines

Sensitive Area (SA)

VT STATE PLANE GRID

N

RIPARIAN CORRIDOR

RIPARIAN CORRIDOR

EAST CREEK

28

59A

96

59B

ARCHAEOLOGICALLY SENSITIVE AREA (SA)

DECIDUOUS WOODS

CONIFER WOODS

CLASS III WETLAND SENSITIVE AREA (SA)

POLE TBI/CV97

OHW

East Creek

SOIL

28
Udifluvents & Fluvaquents
0% slope
low erodability

39B
Galway-Nellis-Farmington complex
3-8% slope
moderate erodability kw 0.32
high ag potential

59A
Deerfield loamy sand
0-4% slope
low erodability kw 0.17
good ag potential

96
Udipsamments
0% slope
low erodability

0 10 20 30 40 50

SCALE IN METERS

SCALE 1:400

EPSC EXISTING PLAN

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

FILE NAME: sbl72e02.1	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R WHITCOMB	DRAWN BY: W. LAMMER
DESIGNED BY: W. LAMMER	CHECKED BY: T LACKEY
95bl72/structures/sbl72ero.dgn	SHEET 31 OF 75

Soil Limit

Ordinary High Water

50' Riparian Corridor

Wetland Limit

R.O.W. & Property Lines

Sensitive Area (SA)

VT STATE PLANE GRID

N

RIPARIAN CORRIDOR

RIPARIAN CORRIDOR

28

59A

96

59B

SA

ARCHAEOLOGICALLY SENSITIVE AREA

Approx. Earthwork Limit

STA. 2+287.500
BEGIN BRIDGE
F.G. 198.155

STA. 2+322.507
END BRIDGE
F.G. 198.197

STA. 2+210.000
END APPROACH
BEGIN PROJECT

STA. 2+160.000
BEGIN APPROACH

STA. 2+420.000
END PROJECT
BEGIN APPROACH

STA. 2+470.000
END APPROACH

EAST CREEK

East Creek

APPROX. TEMPORARY DETOUR LIMITS

CLASS III WETLAND SENSITIVE AREA

CONTROL MEASURES

Seeding & Mulching

PDF Fence

Barrier Fence

Temporary Check Dams

Silt Fence

Woven Wire Reinforced Fence

Stabilized Construction Entrance

Temporary Erosion Matting

Filter Curtain

SOIL

28
Udifluvents & Fluvaquents
0% slope
low erodability

39B
Galway-Nellis-Farmington complex
3-8% slope
moderate erodability kw 0.32
high ag potential

59A
Deerfield loamy sand
0-4% slope
low erodability kw 0.17
good ag potential

96
Udipsamments
0% slope
low erodability

0 10 20 30 40 50

SCALE IN METERS

SCALE 1:400

EPSC CONSTRUCTION PLAN

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: sbl72e03.1
PROJECT LEADER: R WHITCOMB
DESIGNED BY: W. LAMMER
95bl72/structures/sbl72ero.dgn

PLOT DATE: 11-MAR-2008
DRAWN BY: W. LAMMER
CHECKED BY: T LACKEY
SHEET 32 OF 75

MAY Metric

Soil Limit

Ordinary High Water

50' Riparian Corridor

Wetland Limit

R.O.W. & Property Lines

Sensitive Area (SA)

VT STATE PLANE GRID

N

RIPARIAN CORRIDOR

RIPARIAN CORRIDOR

EAST CREEK

28

59A

96

59B

Approx. Earthwork Limit

ARCHAEOLOGICALLY SENSITIVE AREA (SA)

Approx. Earthwork Limit

ARCHAEOLOGICALLY SENSITIVE AREA (SA)

CLASS III WETLAND SENSITIVE AREA (SA)

PAVED DRIVE APRON

10.980

8.920

OHW

East Creek

CONTROL MEASURES

Seeding & Mulching

Erosion Matting

SOIL

28
Udifluvents & Fluvaquents
0% slope
low erodability

39B
Galway-Nellis-Farmington complex
3-8% slope
moderate erodability kw 0.32
high ag potential

59A
Deerfield loamy sand
0-4% slope
low erodability kw 0.17
good ag potential

96
Udipsamments
0% slope
low erodability

0 10 20 30 40 50

SCALE IN METERS

SCALE 1:400

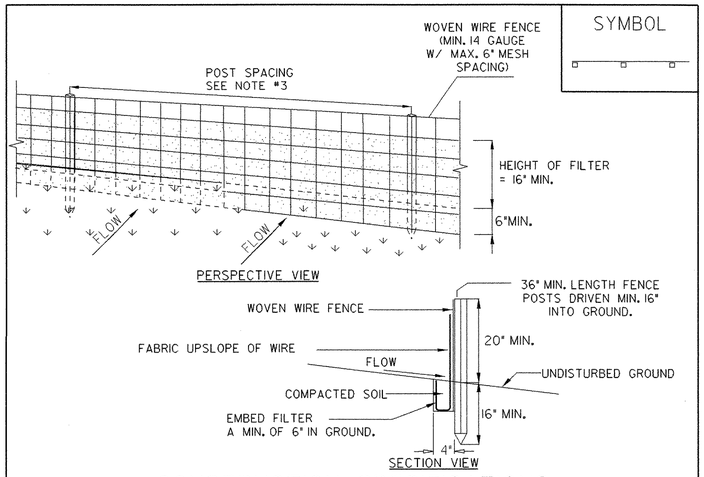
EPSC FINAL PLAN

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: sbl72e04.1
PROJECT LEADER: R WHITCOMB
DESIGNED BY: W. LAMMER
95bl72/structures/sbl72ero.dgn

PLOT DATE: 11-MAR-2008
DRAWN BY: W. LAMMER
CHECKED BY: T LACKEY
SHEET 33 OF 75

SYMBOL



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE REINFORCEMENT IS ONLY REQUIRED WITHIN 100 FT UPSLOPE OF RECEIVING WATERS.

2. WHERE REQUIRED FENCE SHALL BE WOVEN WIRE, MIN. 14 GAUGE WITH A 6" MAXIMUM MESH OPENING. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI100X, STABILINKA T140N OR APPROVED EQUIVALENT.

3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4'. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.

4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.

5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED.

6. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.

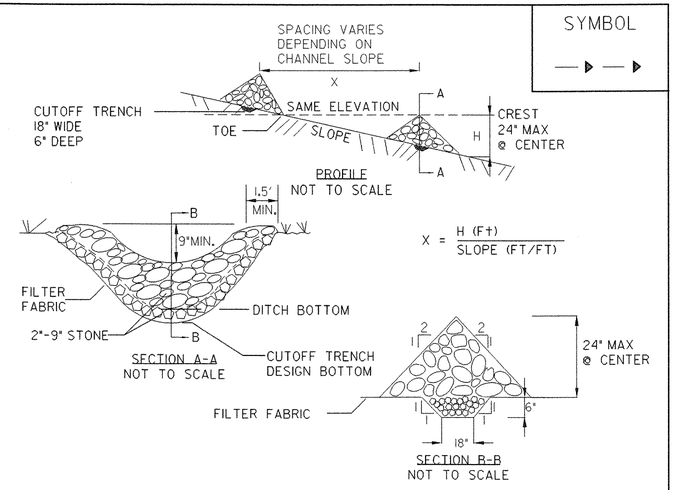
7. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

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

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

THIS ITEM SHALL BE PAID FOR UNDER ITEM
STANDARD SPECIFICIATION 649.51 GEOTEXTILE FOR SILT FENCE OR
SPECIAL PROVISION 900.675 (GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED)

SYMBOL



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION.

2. SET SPACING OF CHECK DAMS SO THAT THE ELEVATION OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM DAM.

3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.

4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.

5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

MAXIMUM DRAINAGE AREA 2 ACRES.

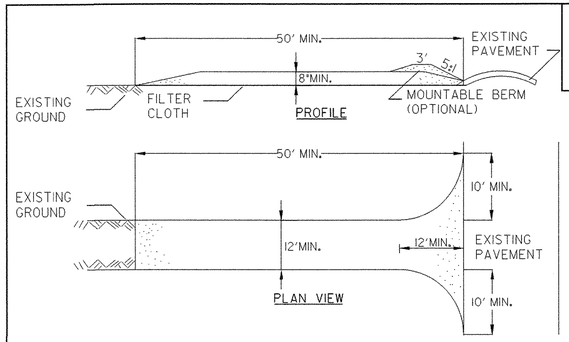
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DECORIGINALLY DEVELOPED BY USDA-NRCSVERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	CHECK DAM

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

THIS ITEM SHALL BE PAID FOR UNDER ITEM
653.25 TEMPORARY STONE CHECK DAM, TYPE I

REVISIONS	
MARCH 8, 2007	JMF

SYMBOL



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 1-4" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.

2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH APPLIES).

3. THICKNESS - NOT LESS THAN EIGHT (8) INCHES.

4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.

5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.

6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.

7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

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

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

THIS ITEM SHALL BE PAID FOR UNDER ITEM
653.35 VEHICLE TRACKING PAD

REVISIONS	
FEBRUARY 9, 2007	WHF
MARCH 8, 2007	JMF

SEEDING FORMULA
RURAL AREAS

% WT.	kg/ha	NAME	PUR %	GERM %
37.5	26.0	CREEPING RED FESCUE	98	85
37.5	26.0	TALL FESCUE	95	90
5.0	4.0	RED TOP	95	90
15.0	10.0	BIRDSFOOT TREFOIL	98	85
5.0	4.0	ANNUAL RYE GRASS	95	85
100.0	70.0			

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 560 kg/ha. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).

AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 4500 kg/ha, OR AS DIRECTED BY THE ENGINEER.

HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 4500 kg/ha, OR AS DIRECTED BY THE ENGINEER.

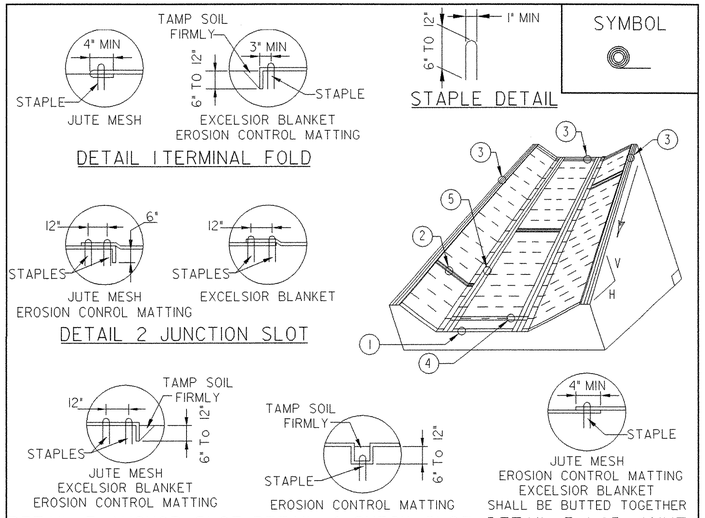
TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

EPSC
DETAILS 1

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: sbl72e05.i
PROJECT LEADER: R. Whitcomb
DESIGNED BY: W. Lammer
95bl72/sbl72ero.dgn

PLOT DATE: 11-MAR-2008
DRAWN BY: str3
CHECKED BY: T. Lackey
SHEET 34 OF 75



SYMBOL

CONSTRUCTION SPECIFICATIONS

1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.

2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.

3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.

4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.

5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: ILLINOIS USDA-NRCS
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

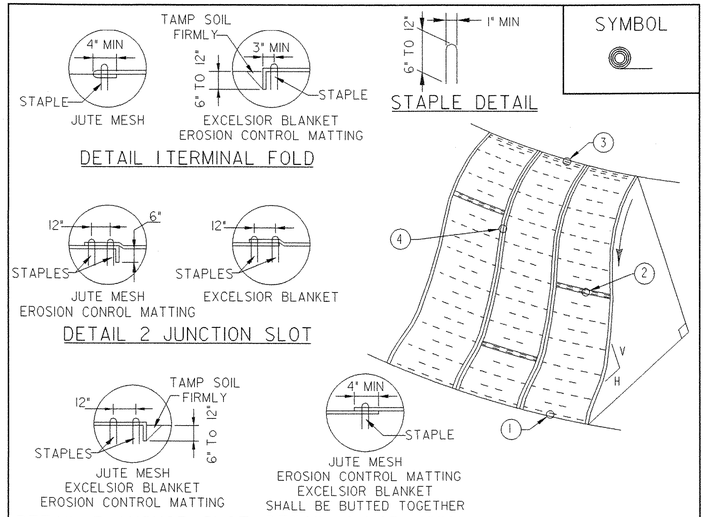
ROLLED EROSION CONTROL PRODUCT (RECP) DITCH

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

THIS ITEM SHALL BE PAID FOR UNDER ITEM
653.20 TEMPORARY EROSION MATTING

FOR ITEM 653.20 TEMPORARY EROSION MATTING
USE ONLY MATTING WITH 100% NATURAL FIBERS

REVISIONS	
MARCH 8, 2007	JMF
APRIL 16, 2007	WHF



SYMBOL

CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.

2. APPLY FERTILIZER, LIME AND SEED PRIOR TO PLACING MATTING.

3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.

4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.

5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: ILLINOIS USDA-NRCS
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

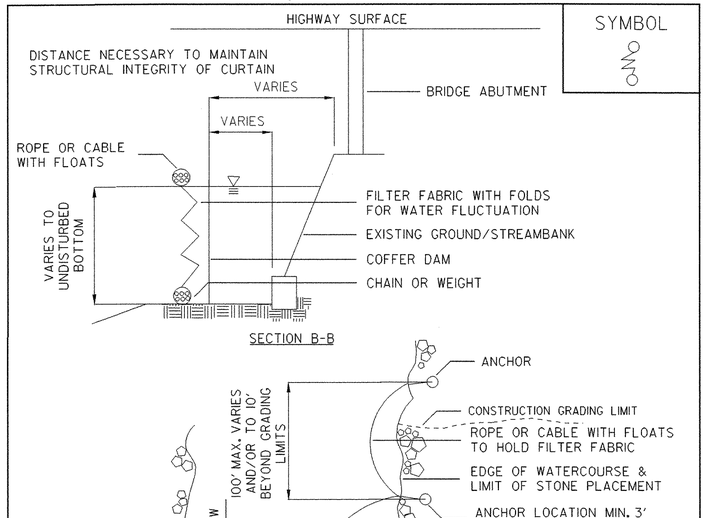
ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

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

THIS ITEM SHALL BE PAID FOR UNDER ITEM
653.20 TEMPORARY EROSION MATTING

FOR ITEM 653.20 TEMPORARY EROSION MATTING
USE ONLY MATTING WITH 100% NATURAL FIBERS

NEW	
APRIL 16, 2007	WHF
REVISIONS	



SYMBOL

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT AGENCY OF TRANSPORTATION

TURBIDITY CURTAIN

NOTES:

THIS ITEM SHALL BE PAID FOR UNDER ITEM
649.61 GEOTEXTILE FOR FILTER CURTAIN

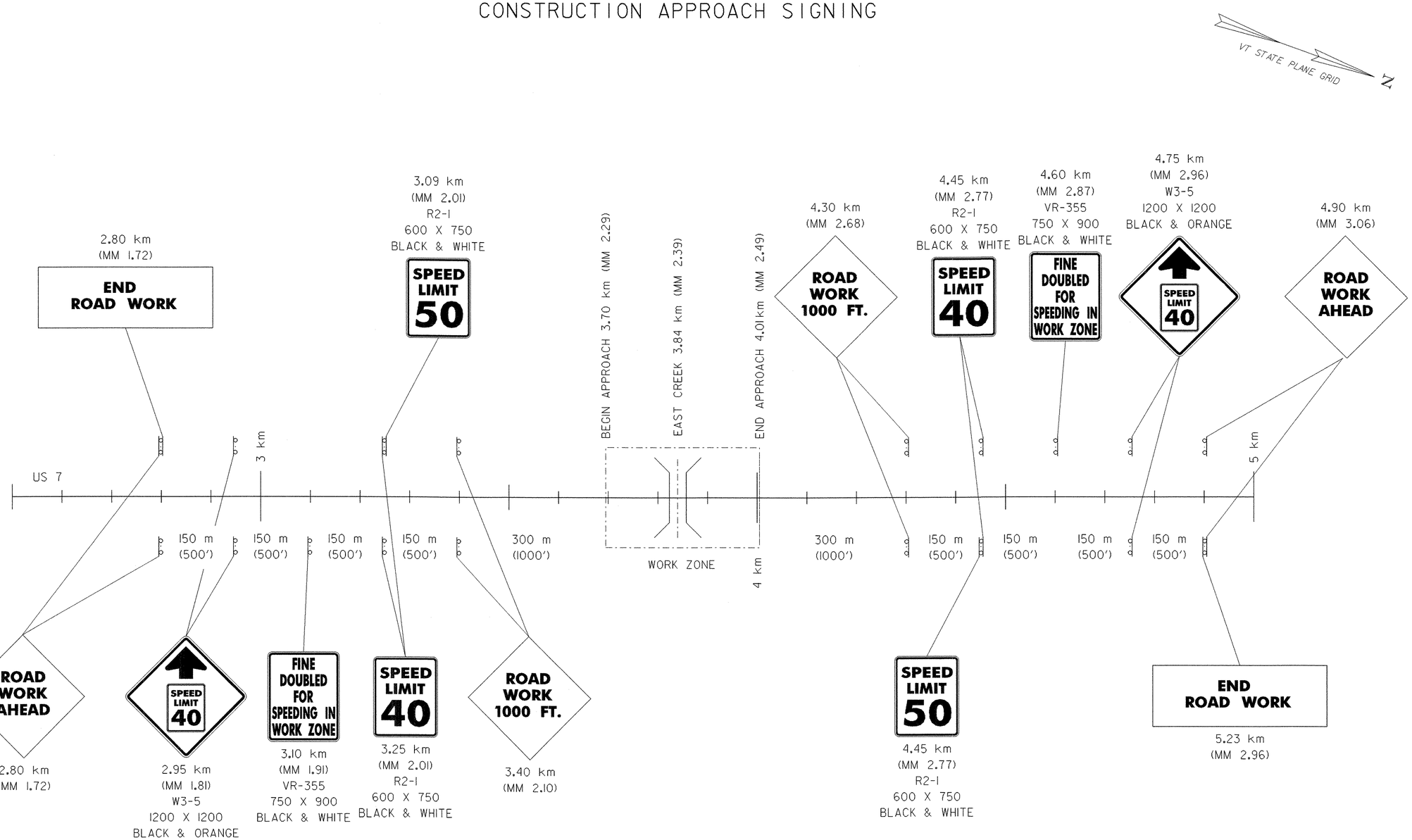
EPSC DETAILS 2

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

FILE NAME: sb172e06.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. Whitcomb	DRAWN BY: str3
DESIGNED BY: W. Lammer	CHECKED BY: T. Lackey
95b172/sb172ero.dgn	SHEET 35 OF 75

VAOT Metric

CONSTRUCTION APPROACH SIGNING



NOTES:

1. SEE STD E-100 "CONSTRUCTION APPROACH SIGNS".

2. INCLUDE PAYMENT FOR SPEED LIMIT REGULATORY AND WARNING SIGNS UNDER ITEM 641.10 "TRAFFIC CONTROL".

0 100 200 300
SCALE 1:4 000

TRAFFIC
CONSTRUCTION PLAN 1

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

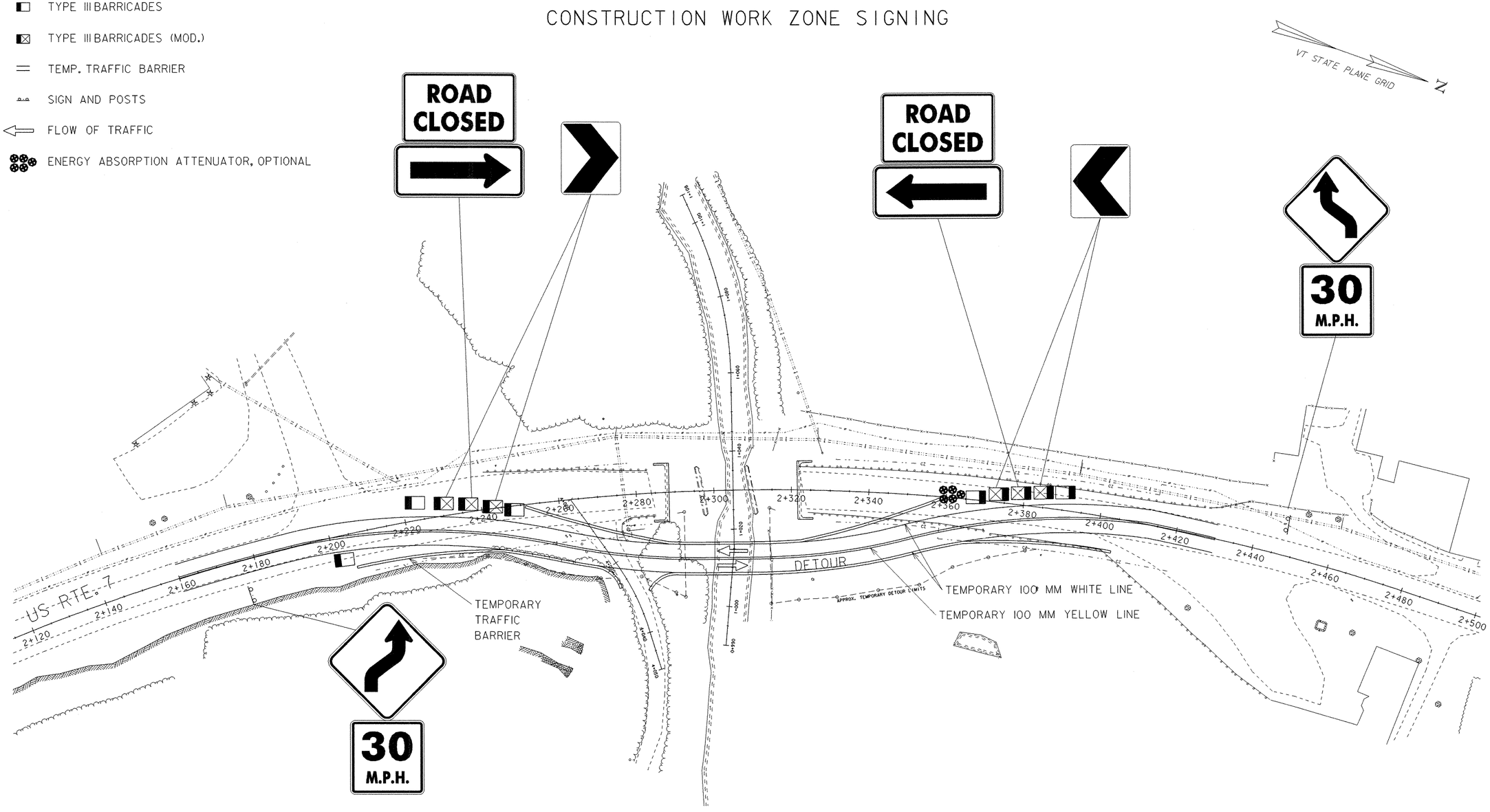
FILE NAME: sbl72tc1.1
PROJECT LEADER: R. WHITCOMB
DESIGNED BY: T. LACKEY
95bl72/str/sbl72tc.dgn

PLOT DATE: 11-MAR-2008
DRAWN BY: T. LACKEY
CHECKED BY: R. WHITCOMB
SHEET 36 OF 75

LEGEND

- TYPE III BARRICADES
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- SIGN AND POSTS
- FLOW OF TRAFFIC
- ENERGY ABSORPTION ATTENUATOR, OPTIONAL

CONSTRUCTION WORK ZONE SIGNING



NOTES:

1. THE MINIMUM CLEAR ZONE DISTANCE IS 4.25 m.

2. THE MINIMUM FLARE RATE FOR TEMPORARY TRAFFIC BARRIER IS 1:9 MINIMUM.

3. USE ITEM 621.57 "ENERGY ABSORPTION ATTENUATOR, SAND-FILLED PLASTIC BARREL" WHERE BARRIER TERMINALS END INSIDE THE CLEAR ZONE. DESIGN ATTENUATORS FOR AT LEAST THE POSTED SPEED, 40 MPH.

4. PAVE DETOUR ACCORDING TO SECTION 528.04 "TEMPORARY BRIDGE, DESIGN AND CONSTRUCTION DETAILS".

5. INCLUDE PAYMENT FOR ALL TEMPORARY TRAFFIC BARRIER UNDER ITEM 528.11 "TWO WAY TEMPORARY BRIDGE".

6. INCLUDE PAYMENT FOR WORK ZONE SIGNING AND BARRICADES UNDER ITEM 641.10 " TRAFFIC CONTROL".

7. SEE STD E-100 "CONSTRUCTION APPROACH SIGNS".

8. SEE STD E-107 "DELINEATION, BARRICADES & DETOURS FOR CONSTRUCTION AREAS".

0 10 20 30
SCALE 1:500

TRAFFIC CONSTRUCTION PLAN 2

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

FILE NAME: sb172tc2.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: T. LACKEY
DESIGNED BY: T. LACKEY	CHECKED BY: R. WHITCOMB
95b172/str/sb172tc.dgn	SHEET 37 OF 75

100 MM WHITE LINE

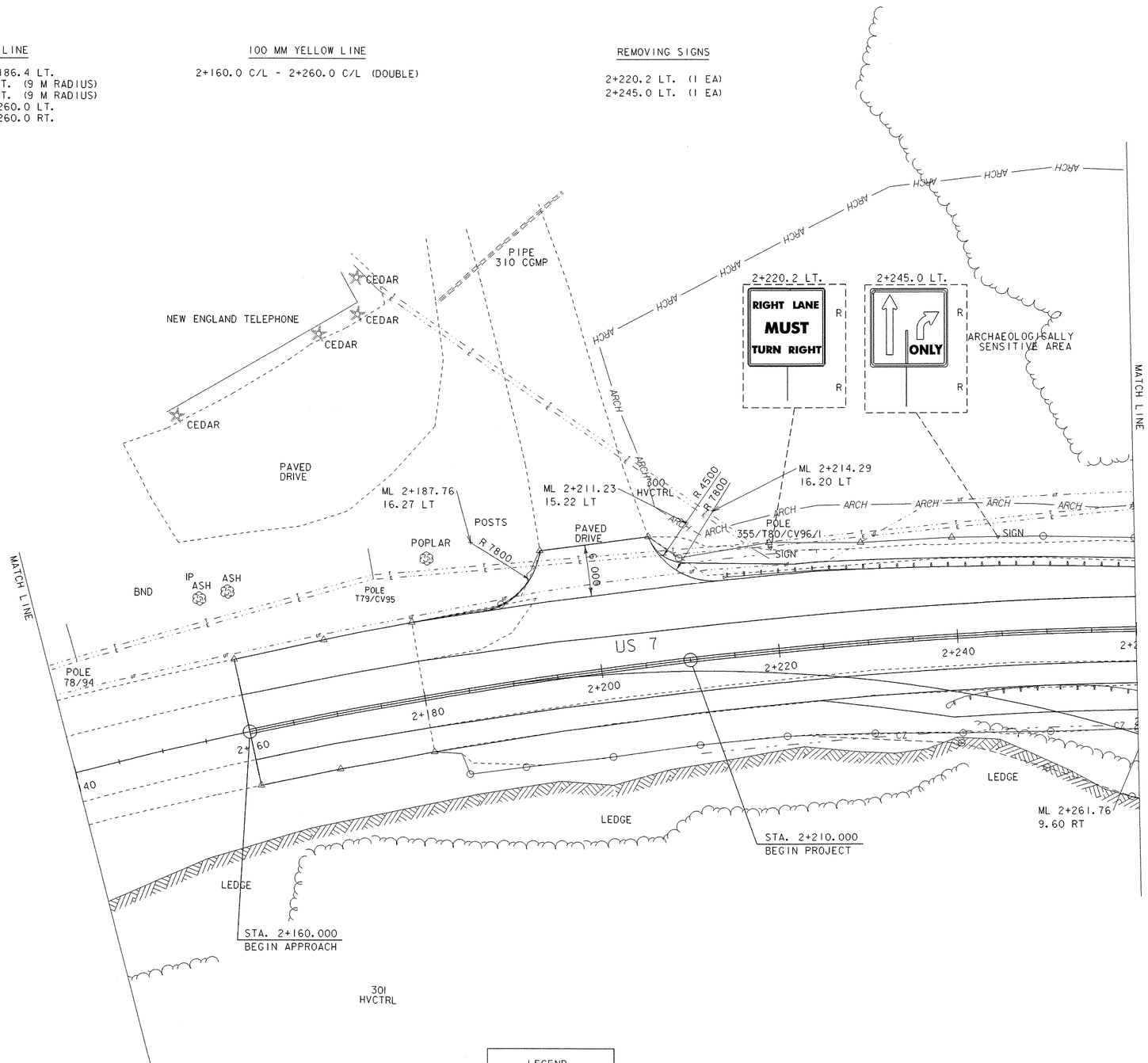
2+160.0 LT. - 2+186.4 LT.
2+186.4 LT. - 2+195.1 LT. (9 M RADIUS)
2+207.0 LT. - 2+216.4 LT. (9 M RADIUS)
2+216.4 LT. - 2+260.0 LT.
2+160.0 RT. - 2+260.0 RT.

100 MM YELLOW LINE

2+160.0 C/L - 2+260.0 C/L (DOUBLE)

REMOVING SIGNS

2+220.2 LT. (1 EA)
2+245.0 LT. (1 EA)



LEGEND

N = NEW
R = REMOVE

0 10 20 30

SCALE IN METERS

1:250

TRAFFIC
FINAL PLAN 1

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sbl72tc3.1	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R.WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: L. BULLOCK	CHECKED BY: T. LACKEY
95bl72/str/sbl72tc.dgn	SHEET 38 OF 75

VAOT Metric

REMOVING SIGNS

2+279 RT
2+386 RT

TRAFFIC SIGNS, TYPE A

2+279 RT

ERECTING SALVAGED SIGNS

2+386 RT

SETTING SALVAGED POSTS

2+386 RT

100 MM WHITE LINE

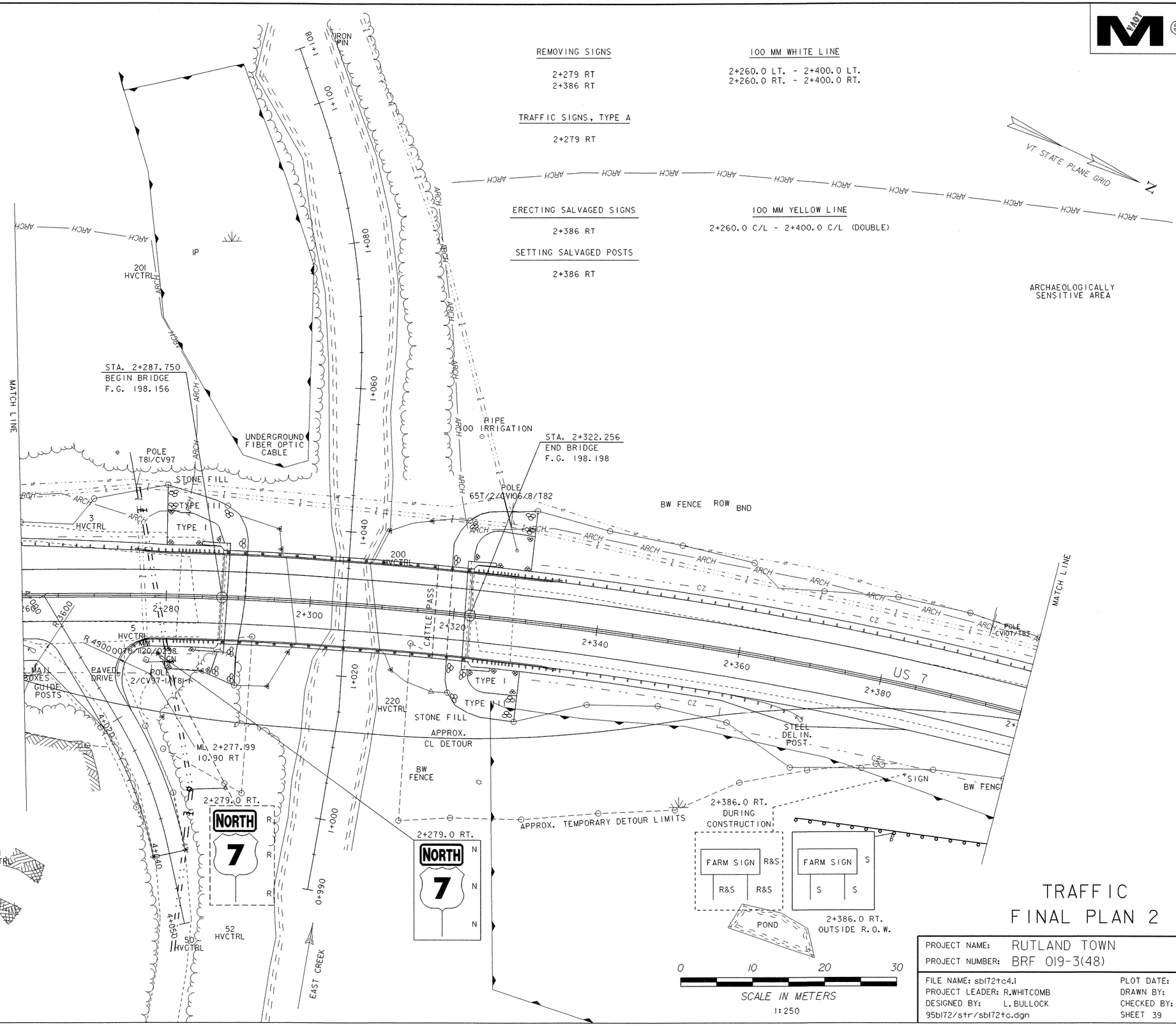
2+260.0 LT. - 2+400.0 LT.
2+260.0 RT. - 2+400.0 RT.

100 MM YELLOW LINE

2+260.0 C/L - 2+400.0 C/L (DOUBLE)

VT STATE PLANE GRID N

ARCHAEOLOGICALLY SENSITIVE AREA



LEGEND

N = NEW
R = REMOVE
S = SALVAGE
RET = RETAIN
EXISTING = -----
NEW = ———

TRAFFIC FINAL PLAN 2

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sbl72tc4.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R.WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: L. BULLOCK	CHECKED BY: T. LACKEY
95bl72/str/sbl72tc.dgn	SHEET 39 OF 75

NOT Metric

ARCHAEOLOGICALLY SENSITIVE AREA

100 MM WHITE LINE

2+400.0 LT. - 2+470.0 LT.
2+400.0 RT. - 2+470.0 RT.

100 MM YELLOW LINE

2+400.0 C/L - 2+430.0 C/L (DOUBLE)
2+439.0 C/L - 2+470.0 C/L (DOUBLE)

VT STATE PLANE GRID N

MATCH LINE

STA. 2+420.000
END PROJECT

ARCH
CZ
2+400
2+420
2+440
2+460
2+480
2+500
2+520
2+540
2+560
2+575
R 6600
R 8400
ML 2+416.68
12.60 RT
ML 2+449.39
12.61 RT
OAK
2
HVCTRL
MAIL BOX
SIGN
MAPLE
STA. 2+470.000
END APPROACH
ARCHAEOLOGICALLY SENSITIVE AREA
GRAVEL DRIVE
BW FENCE
FENCE POST
HISTORIC BARN
BND
POLE 2/CVI08/T84
POLE 109/305/85
GARDEN
HISTORIC HOUSE
LILAC
APPLE
100 HVCTRL
US 7
PK IN PAVEMENT
POLE 109X/85½
11 HVCTRL
TO PITTSFORD

0 10 20 30
SCALE IN METERS
1:250

TRAFFIC
FINAL PLAN 3

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

FILE NAME: sbl72tc5.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R.WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: L. BULLOCK	CHECKED BY: T. LACKEY
95bl72/str/sbl72tc.dgn	SHEET 40 OF 75

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

VAOT Metric

KILOMETER MARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS			NEW & SALVAGED SIGNS				EXIST POST		NEW SIGN POSTS																		REMARKS	SIGN DETAIL	
		EA	WIDTH (mm)	HEIGHT (mm)	"A"	"B"	SALV SIGN	SALV TIS	RETAIN	SALVAGE	NO. OF POSTS	FLANGED CHANNEL kg/m			SQUARE STEEL (mm) kg/m			ANCHOR	SLEEVE	TUBULAR ALUMINUM Ø (mm) kg/m			FOUNDATION	TUBULAR STEEL Ø (mm) kg/m				W-SHAPE STEEL FTG. SIZE		WEIGHT	POST SIZE	SIGN FRAME REQUIRED		DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
												1.7	3.0	4.5	44	50	63			75	100	100 MOD		75	89	100	125	600 mm	750 mm						
															3.4	3.9	5.0			1.9	2.5	2.5		11.3	13.4	16.1	21.7								
											OPTION ITEMS																								
2+279.0 RT.	NORTH	1	600	300	0.18						1		X			X			X															M3-1		E-136A
2+279.0 RT.	7	1	600	600	0.36																													M1-4		E-136A
2+386.0 RT.	FARM SIGN	1					1		2																									REMOVE & ERECT OUTSIDE OF R.O.W.		
TOTALS		m² 0.54			m²		EA. 1	m²				m 6			m 6				EA	kg			EA.	kg				EA.	EA.	kg					

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

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sb172tc6.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: L. BULLOCK	CHECKED BY: T. LACKEY
/95b172/str/sb172tc.dgn	SHEET 41 OF 75

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 kPa	CONSISTENCY
<12	Very Soft
12-24	Soft
24-48	Med. Stiff
48-96	Stiff
96-192	Very Stiff
>192	Hard

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

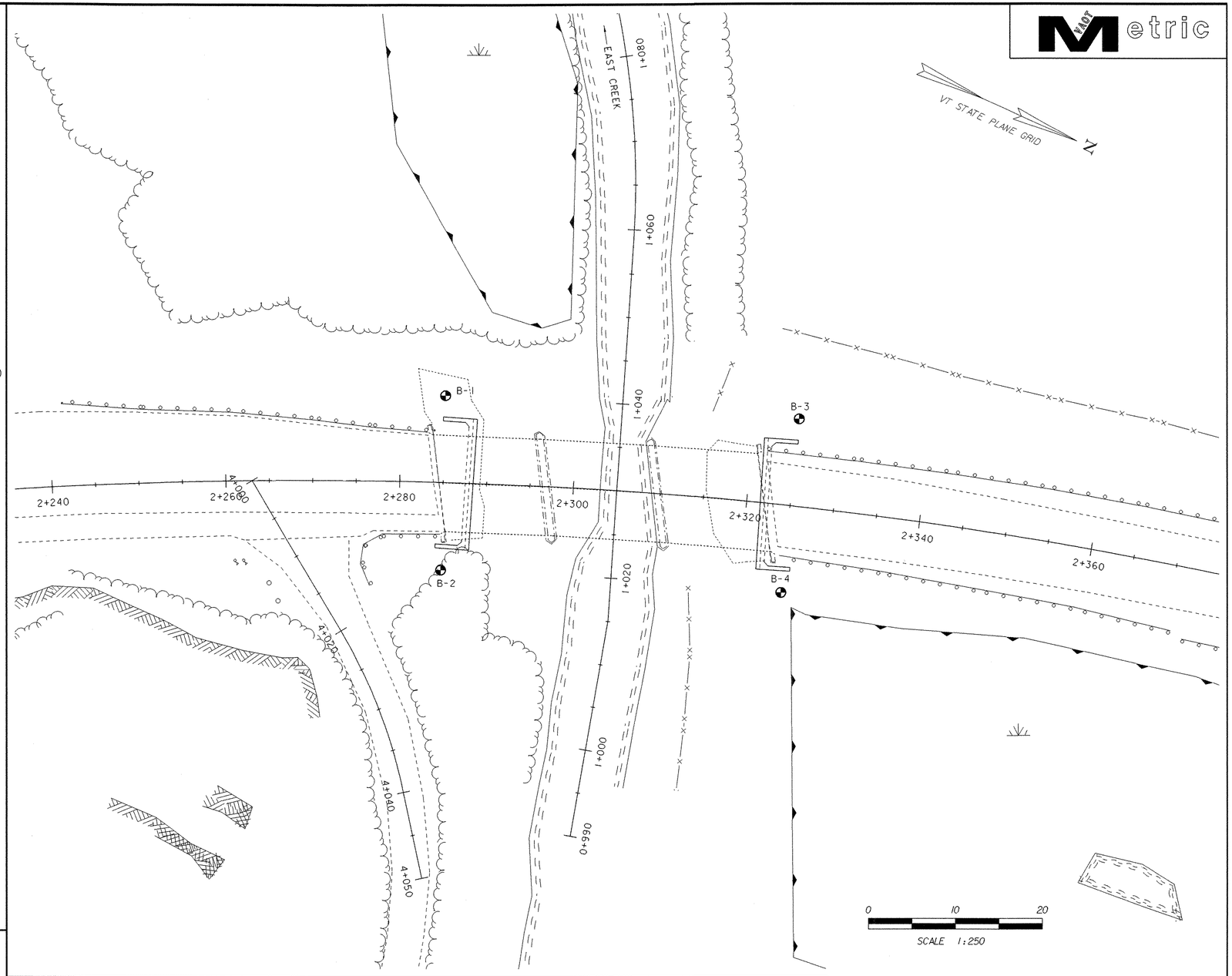
DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

COMMONLY USED SYMBOLS

▼	Water Elevation
●	Standard Penetration Boring
⊕	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per 300 mm For: 50.8 mm O.D. Sampler 35.0 mm I.D. Sampler Hammer Weight Of 63.5 kg. Hammer Fall Of 762 mm
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 30.1mm
BX	Core Size 42.0 mm
NX	Core Size 54.7 mm
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
ROD	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 > 304.8 mm.

COBBLE - Rock fragments with an average dimension between 76.2 and 304.8 mm.

GRAVEL - Rounded particles of rock < 76.2 mm and > 2 mm (#10 sieve).

SAND - Particles of rock < 2 mm (#10 sieve) and > 75 μm (#200 sieve).

SILT - Soil < 75 μm (#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.

GENERAL NOTES

1. The subsurface explorations shown herein were made between 09 JAN 03 and 25 MAR 03 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.

BORING CHART

HOLE NO.	STATION	OFFSET (m)	GROUND ELEV.	BEDROCK ELEV.
B-1	2+287	10 LT	194.34	165.84
B-2	2+285	10 RT	196.63	185.03
B-3	2+325	7 LT	197.75	177.33
B-4	2+325	10 RT	194.27	186.42

PROJECT: RUTLAND TOWN

PROJECT NO.: BRF 019-3(48)

DESIGN FILE NAME: 95b172/structures/sb172bor.dgn

IPARM FILE NAME: sb172bol.i

PLOT DATE: 11-MAR-2008

GEOTECHNICAL PLAN

SHEET: 42 OF 75

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

HOLE NO.: B- 1
SHEET 1 OF 2
DATE STARTED: 2/19/03
DATE COMPLETED: 03/17/03

PROJECT NAME: RUTLAND TOWN
SITE NAME: BR 103
STATION: 2+286.70
GROUND EL.: 194.338

PROJECT NUMBER: BRF 019-3 (48)
SITE NO.: US 7
OFFSET: -10.00
G.W. DEPTH: 1.52 3/18/03

BORING CREW
CREW CHIEF: TALLMAN
DRILLER: TALLMAN
LOGGER: RUSSELL
ADDITIONAL CREW: GARROW

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

BOT WW 1 194.30

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		0.00m-1.10m, Boulders							
		1.10m-1.40m, Concrete							
		NXMDC, 1.15m-1.50m, Cleaned out							
		A-3, Sa, Lt/gry, Moist, Rec. = 0.20m	12	21	5.6	86.4	8		
		NXGDC, 2.60m-3.00m, Cleaned out casing.							
		NXGDC, 3.00m-3.50m, Boulder, Cored ahead.							
		NXGDC, 4.40m-4.50m, Cleaned out							
5		A-1-b, GrSa, gry, Moist, Rec. = 0.04m	11	18.3	43.5	53.6	2.9		
		A-4, Si, gry, Moist, Rec. = 0.40m	8	31.5	2.2	19.2	78.6		
		A-4, SaSi, gry, Moist, Rec. = 0.38m	7	28.1	4.9	47.2	47.9		
		A-4, SaSi, gry, Moist, Rec. = 0.50m	10	27.6	8.4	41.6	50		
10		A-4, Si, gry, Moist, Rec. = 0.28m	11	27.8	14.7	16.7	68.6		
		A-4, Si, gry, Moist, Rec. = 0.18m	4	30.6	6.5	14.9	78.6		
		A-4, Si, gry, Moist, Rec. = 0.32m	7	26.7	17.6	17.7	64.7		

APPROX PILE TIP

GEOLOGISTS REPORT:

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

HOLE NO.: B- 1
SHEET 2 OF 2
DATE STARTED: 2/19/03
DATE COMPLETED: 3/17/03

PROJECT NAME: RUTLAND TOWN
SITE NAME: BR 103
STATION: 2+286.70
GROUND EL.: 194.338

PROJECT NUMBER: BRF 019-3 (48)
SITE NO.: US 7
OFFSET: -10.00
G.W. DEPTH: 1.52 3/18/03

BORING CREW
CREW CHIEF: TALLMAN
DRILLER: TALLMAN
LOGGER: RUSSELL
ADDITIONAL CREW: GARROW

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

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		A-4, SaSi, gry, Moist, Rec. = 0.20m	10	31.1	0.2	31.6	68.2		
		No Rec.	21						
		A-2-4, SiSaGr, gry, Moist, Rec. = 0.18m	32	12.4	34.5	33.1	32.4		
		NXGDC, 19.3m-19.5m, Cleaned out							
20		A-1-b, GrSa, brn, Moist, Rec. = 0.40m	43	18.9	22.4	67	10.6		
		No Rec., Stone in end of sampler	42						
		NXMDC, 22.40m-23.30m, Boulder, No sample.							
		A-2-4, SiGr, brn, Moist, Rec. = 0.15m	R	13.1	56.1	13.9	30		
25		A-2-4, GrSiSa, Lt/gry, Moist, Rec. = 0.15m	R	12.8	22.6	50.5	26.9		
		NXMDC, 26.40m-27.96m, No sample, Boulder							

Top of bedrock @ 28.50 m

	RUN	REC%	RQD%	Dip°
Run#1: NXMDC, 28.50m-29.87m, Rec. = 0.85m See Geologist's Report.	1	62	0	30
Run#2: NXMDC, 29.87m-30.80m, Rec. = 0.50m See Geologist's Report.	2	54	0	30
Run#3: NXMDC, 30.80m-32.32m, Rec. = 0.77m See Geologist's Report.	3	51	0	30

30

32.5 Hole stopped @ 32.32m

APPROX PILE TIP

GEOLOGISTS REPORT:

Run#1: Light gray dolomite with some stained jointing, Hard, Moderately weathered, Poor RQD.

Run#2: Light gray dolomite with stained and weathered jointing, Hard, Moderately weathered, Poor RQD.

Run#3: Light gray dolomite with stained and weathered jointing, Hard, Moderately weathered, Poor RQD.

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

HOLE NO.: B-2
SHEET 1 OF 1
DATE STARTED: 1/09/03
DATE COMPLETED: 2/10/03

PROJECT NAME: RUTLAND TOWN
SITE NAME: BR 103
STATION: 2+285.00
GROUND EL.: 196.631

PROJECT NUMBER: BRF 019-3 (48)
SITE NO.: US 7
OFFSET: 10.00
G.W. DEPTH: Hole caved in at 2.45m

BORING CREW
CREW CHIEF: TALLMAN
DRILLER: TALLMAN
LOGGER: RUSSELL
ADDITIONAL CREW: GARROW

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

196.63

BOT WW 2 194.30

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		NXGDC, 1.25m-1.50m, Cleaned out							
		No Rec.	9						
		NXGDC, 2.80m-3.00m, Cleaned out							
		A-3, GrSa, brn-gry, Moist, Rec. = 0.10m	13	22.3	37.3	56.8	5.9		
		NXGDC, 4.25m-4.50m, Cleaned out							
5		A-1-a, SaGr, brn, Moist, Rec. = 0.20m	14	14.9	59.4	35.8	4.8		
		A-1-b, Sa, brn, Moist, Rec. = 0.30m	15	20	15.2	79.7	5.1		
		A-4, SaSi, brn, Moist, Rec. = 0.28m	8	33.4	1.4	25.2	73.4		
		A-2-4, SaSiGr, brn, Moist, Rec. = 0.25m	26	12.3	44.8	24.7	30.5		
10		NXMDC, 9.90m-11.30m, Boulders, No sample.							

Top of bedrock @ 11.60 m

	RUN	REC%	RQD%	Dip°
Run#1: NXMDC, 11.60m-13.12m, Rec. = 1.46m See Geologist's Report.	1	96	66	30
Run#2: NXMDC, 13.12m-14.64m, Rec. = 1.05m See Geologist's Report.	2	69	0	30

Hole stopped @ 14.64m

APPROX PILE TIP

GEOLOGISTS REPORT:

Run#1: Light gray dolomite, Hard, Unweathered, Competent.

Run#2: Light gray dolomite with staind and weathered jointing, Hard, Moderately weathered, Poor RQD, Poor competency, Drilling break at 13.25m to 13.50m.

GEOTECHNICAL LOGS 1

PROJECT:	PROJECT NO.:
RUTLAND TOWN	BRF 019-3 (48)

DESIGN FILE NAME: /M&R/95b172/mb172bor.dgn
IPARM FILE NAME: sb172bo2.i
SURVEYED BY:
SQUAD LEADER: C.C. BENDA
DATE: 04/03
PLOT DATE: 11-MAR-2008
SURVEY DATE:
DRAWN BY: J.TOUCHETTE
SHEET: 43 OF 75

MAY NOT Metric

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

HOLE NO.: B-3
SHEET 1 OF 2
DATE STARTED: 3/25/03
DATE COMPLETED: 3/31/03

PROJECT NAME: RUTLAND TOWN
SITE NAME: BR 103
STATION: 2+325.00
GROUND EL.: 197.746

PROJECT NUMBER: BRF 019-3 (48)
SITE NO.: US 7
OFFSET: -6.70
G.W. DEPTH: Hole caved in @ 0.75m

BORING CREW
CREW CHIEF: TALLMAN
DRILLER: TALLMAN
LOGGER: RUSSELL
ADDITIONAL CREW: GARROW

BORING RIG: BIG SKID RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

197.75

BOT WW 3 194.30

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		No sample, Boulders							
		A-1-a, SaGr, brn, Moist, Rec. = 0.05m	12	5.6	75.1	20.3	4.6		
		Cleaned out casing.							
5		A-1-a, SaGr, brn, Moist, Rec. = 0.07m	R	11.1	66.7	29.1	4.2		
		5.50m-6.25m, Boulder, Cleaned out casing.							
		No sample, Into Boulder							
		A-2-4, Sa, brn, Moist, Rec. = 0.60m	7	22.8	1.2	87.5	11.3		
10		A-3, Sa, brn, Moist, Rec. = 0.60m	4	18.9	7.2	88	4.8		
		A-3, Sa, brn, Moist, Rec. = 0.60m	4	19.4	0.7	92.4	6.9		
		A-1-b, Sa, gry, Moist, Rec. = 0.35m	5	18.7	13.7	80.5	5.8		

GEOLOGISTS REPORT:

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

HOLE NO.: B-3
SHEET 2 OF 2
DATE STARTED: 3/25/03
DATE COMPLETED: 3/31/03

PROJECT NAME: RUTLAND TOWN
SITE NAME: BR 103
STATION: 2+325.00
GROUND EL.: 197.746

PROJECT NUMBER: BRF 019-3 (48)
SITE NO.: US 7
OFFSET: -6.70
G.W. DEPTH: Hole caved in @ 0.75m

BORING CREW
CREW CHIEF: TALLMAN
DRILLER: TALLMAN
LOGGER: RUSSELL
ADDITIONAL CREW: GARROW

BORING RIG: BIG SKID RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

APPROX PILE TIP

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		A-2-4, SiSa, gry, Moist, Rec. = 0.10m	8	33	0.3	67.8	31.9		
		A-4, SiSa, gry, Moist, Rec. = 0.15m	9	29.5		54.4	45.6		
		A-4, SaSi, gry, Moist, Rec. = 0.38m	8	25.8	10.7	29.8	59.5		
20		A-1-b, Gr, brn, Moist, Rec. = 0.15m	33	4.9	69.8	12.6	17.6		
		Top of bedrock @ 20.42 m							
		Run#1: BXGDC, 20.42m-21.94m, Rec. = 1.52m See Geologist's Report.	RUN 1	REC% 100	RQD% 53	Dip° —			
		Run#2: BXGDC, 21.94m-23.46m, Rec. = 1.38m See Geologist's Report.	2	91	40	—			
		Hole stopped @ 23.46m							
25									

DRILLER'S NOTES:
1. Moved hole 3.30m to the right.

GEOLOGISTS REPORT:

Run#1: Dark gray dolomite with thin calcite veins, Hard, Unweathered, Competent.
Run#2: Dark gray dolomite with thin calcite veins, Hard, Unweathered, Competent.

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

HOLE NO.: B-4
SHEET 1 OF 1
DATE STARTED: 3/17/03
DATE COMPLETED: 3/24/03

PROJECT NAME: RUTLAND TOWN
SITE NAME: BR 103
STATION: 2+325.00
GROUND EL.: 194.272

PROJECT NUMBER: BRF 019-3 (48)
SITE NO.: US 7
OFFSET: 12.00
G.W. DEPTH: 1.38 3/24/03

BORING CREW
CREW CHIEF: TALLMAN
DRILLER: TALLMAN
LOGGER: RUSSELL
ADDITIONAL CREW: GARROW

BORING RIG: BIG SKID RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

BOT WW 4 194.30

APPROX PILE TIP

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		BXDC, 0.76m-1.21m, Boulders							
		A-1-a, SaGr, brn, Moist, Rec. = 0.26m	17	10.8	65.4	27.3	7.3		
		BXDC, 2.20m-3.00m, Cleaned out casing and cored ahead.							
		A-1-a, SaGr, gry, Moist, Rec. = 0.10m	5	13.3	63.6	31.9	4.5		
5		No Rec., Stone in sampler.	2						
		BXDC, 5.95m-6.05m, Boulder							
		BXDC, 6.85m-7.31m Cored ahead.							
		A-3, Sa, br-gy, M, Rec. = 0.15m	R	31.1	0.2	93.2	6.6		
		Top of bedrock @ 7.85 m							
		Run#1: BXGDC, 7.85m-9.37m, Rec. = 1.35m See Geologist's Report.	RUN 1	REC% 89	RQD% 17	Dip° 30			
10		Run#2: BXMDC, 9.37m-10.89m, Rec. = 1.52m See Geologist's Report.	2	100	100	30			
		Hole stopped @ 10.89m							

GEOLOGISTS REPORT:

Run#1: Light gray dolomite with closely spaced horizontal jointing, Hard, Unweathered, Fair to poor RQD.
Run#2: Light gray dolomite, Hard, Moderately weathered, Competent.

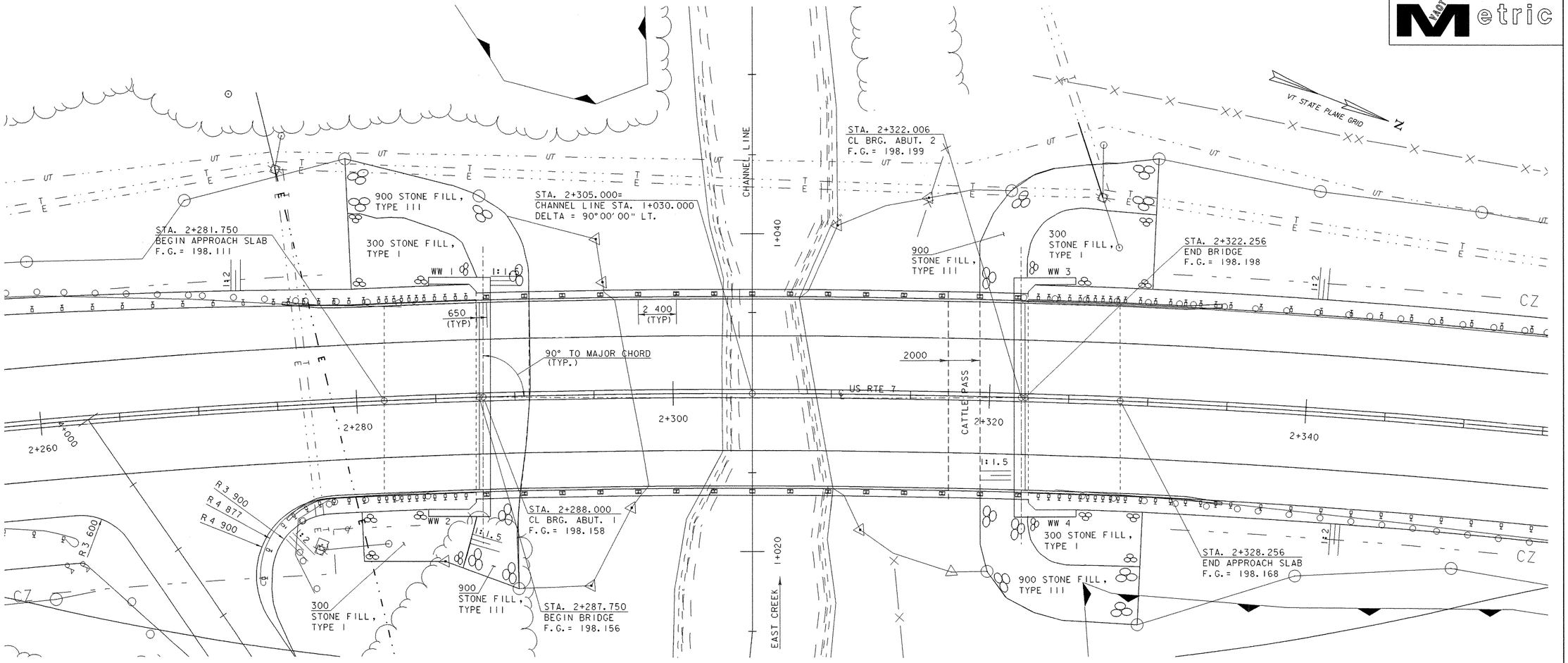
GEOTECHNICAL LOGS 2

PROJECT:	PROJECT NO.:
RUTLAND TOWN	BRF 019-3 (48)

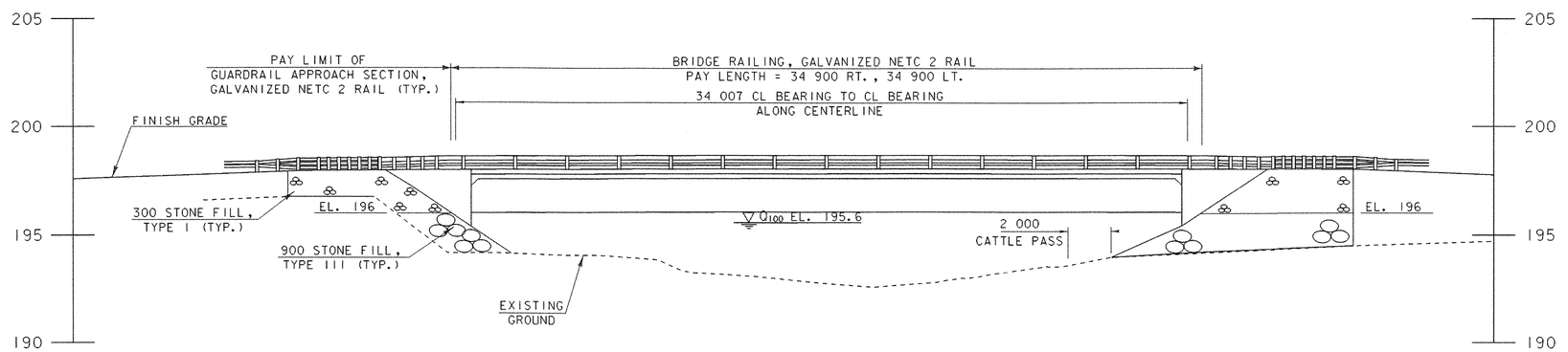
DESIGN FILE NAME: /M&R/95b172/mb172bor.dgn
IPARM FILE NAME: sb172bo3.i
PLOT DATE: 11-MAR-2008
SURVEYED BY:
SURVEY DATE:
SQUAD LEADER: C.C. BENDA
DRAWN BY: J. TOUCHETTE
DATE: 04/03
SHEET: 44 OF 75

VAOT Metric

Metric



PLAN



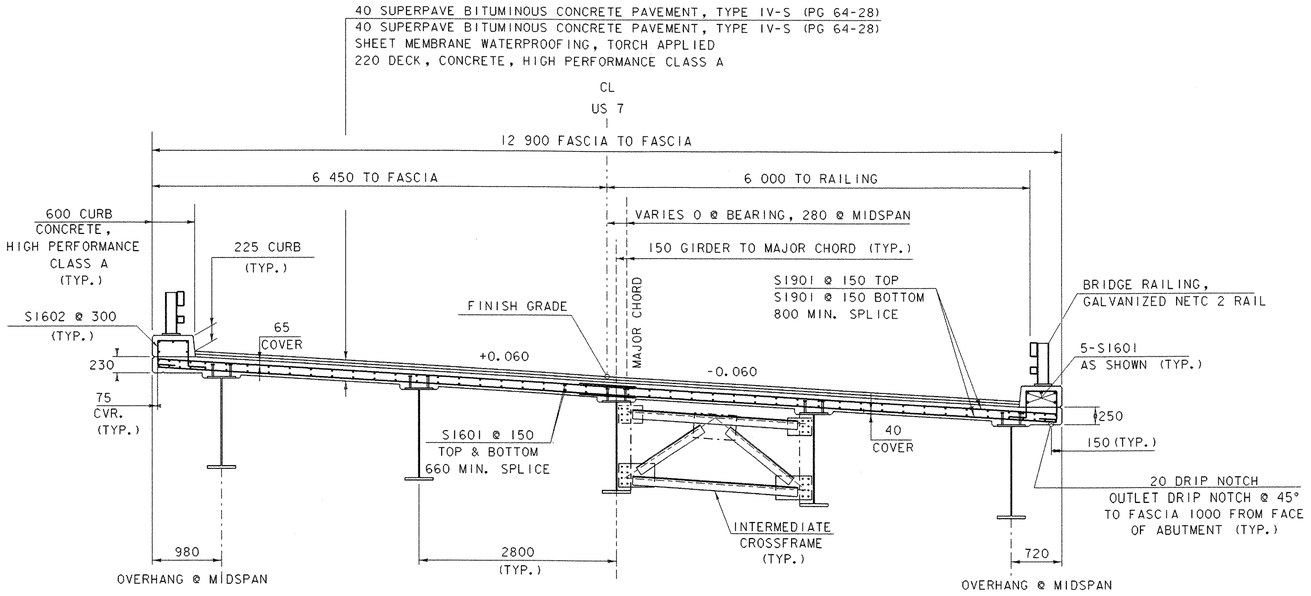
ELEVATION

0 1 2 4 6 8 10

SCALE = 1:125

PLAN & ELEVATION

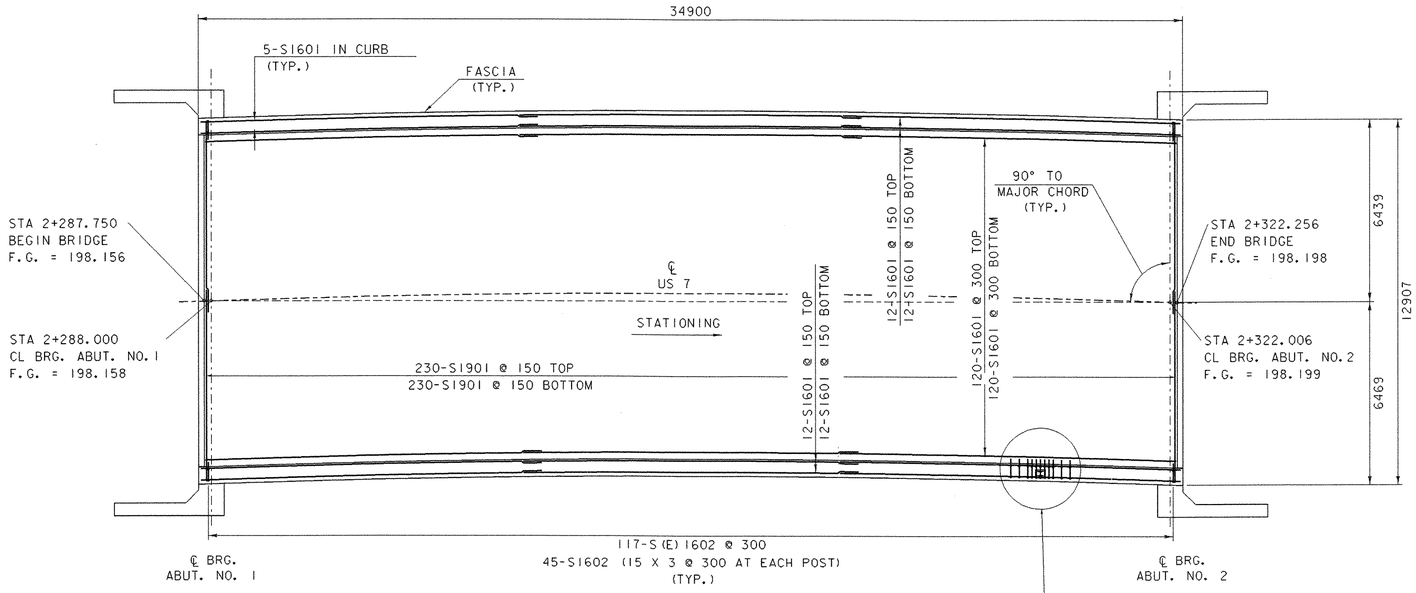
PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sbl72pe.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: T. LACKEY	CHECKED BY: R. WHITCOMB
95bl72/str/sbl72pe.dgn	SHEET 45 OF 75



DECK TYPICAL SECTION @ MIDSPAN

0 2 4

SCALE = 1:40



DECK REINFORCING PLAN

0 2 4 6 8 10

SCALE = 1:100

NOTE:

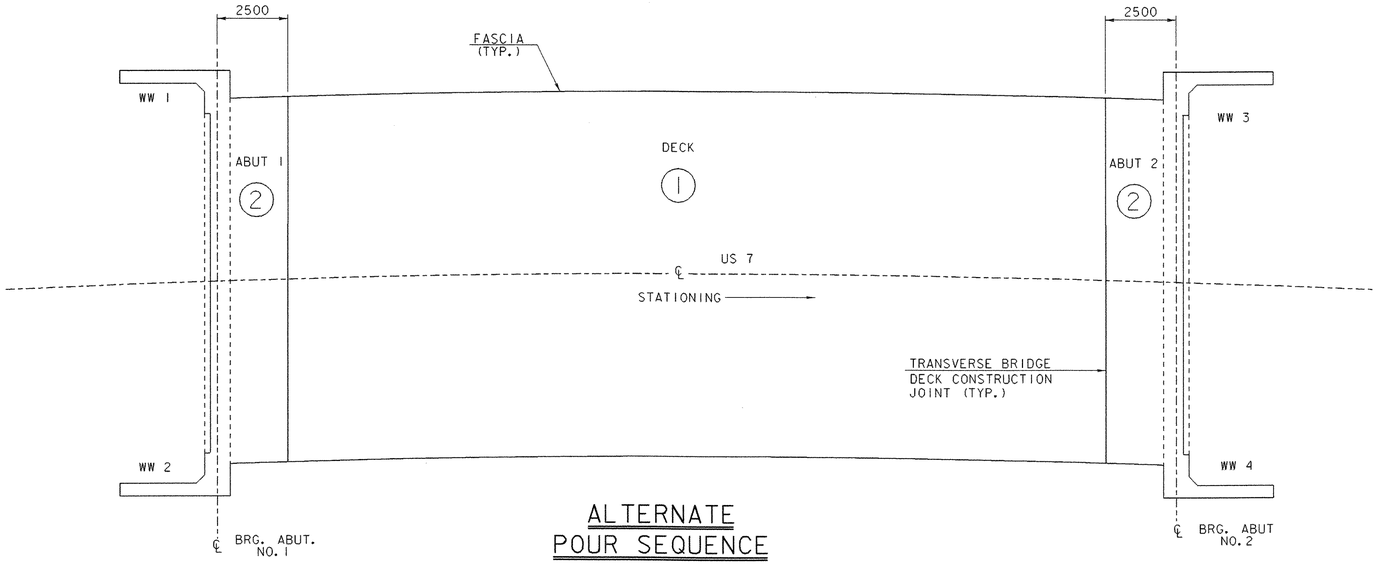
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
75 COVER UNLESS OTHERWISE SPECIFIED ON THE PLANS.
660 MIN. LAP LENGTH UNLESS OTHERWISE SPECIFIED ON THE PLANS

SUPERSTRUCTURE
DECK TYPICAL SECTION & PLAN

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: sbl72spl.i
PROJECT LEADER: R.WHITCOMB
DESIGNED BY: T.LACKEY
95bl72/structures/sbl72sup.dgn

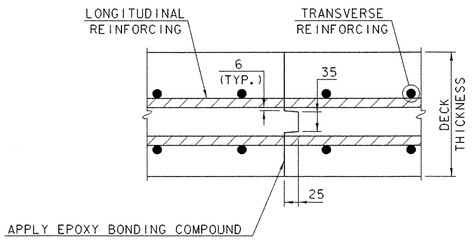
PLOT DATE: 11-MAR-2008
DRAWN BY: D.PETERSON
CHECKED BY: R.WHITCOMB
SHEET 46 OF 75



ALTERNATE POUR SEQUENCE

0 2 4 6 8 10

SCALE = 1:100



APPLY EPOXY BONDING COMPOUND
BEFORE PLACING NEW CONCRETE.
(INCLUDE IN ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A")

TRANSVERSE BRIDGE DECK CONSTRUCTION JOINT DETAILS

0 0.25 0.5

SCALE = 1:5

NOTES:

1. PLACE ALL OF THE BACKWALL, WINGWALL, AND DECK CONCRETE ABOVE THE PILE CAP CONSTRUCTION JOINTS IN ONE CONTINUOUS POUR WITH A MAXIMUM DURATION OF EIGHT HOURS.

2. OTHERWISE THE ALTERNATE POUR SEQUENCE SHOWN ABOVE MUST BE FOLLOWED. A MINIMUM NINETY-SIX HOUR DELAY MUST BE OBSERVED BETWEEN ADJACENT POURS.

NOTE:

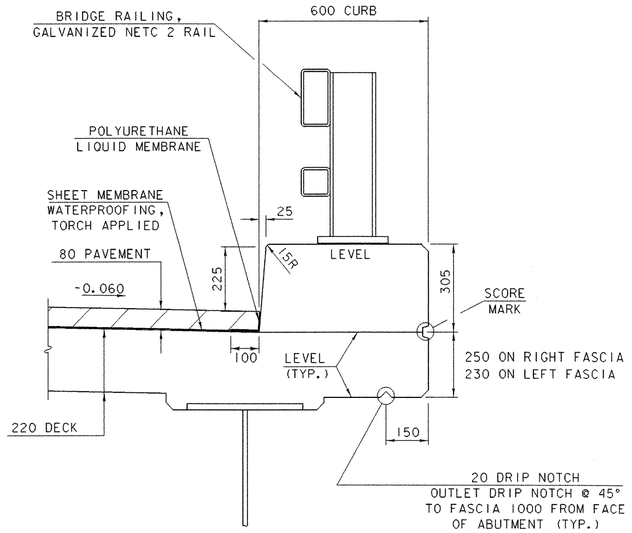
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
75 COVER UNLESS OTHERWISE SPECIFIED ON THE PLANS.
660 MIN. LAP LENGTH UNLESS OTHERWISE SPECIFIED ON THE PLANS

SUPERSTRUCTURE POUR SEQUENCE

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: sbl72sp2.i
PROJECT LEADER: R.WHITCOMB
DESIGNED BY: T.LACKEY
95bl72/structures/sbl72sup.dgn

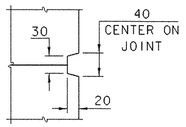
PLOT DATE: 11-MAR-2008
DRAWN BY: D.PETERSON
CHECKED BY: R.WHITCOMB
SHEET 47 OF 75



BRIDGE CURB AND RAIL DETAIL

0 0.5 1

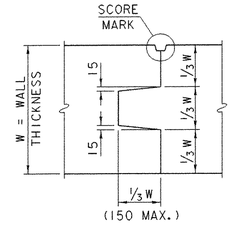
SCALE = 1:10



SCORE MARK DETAIL

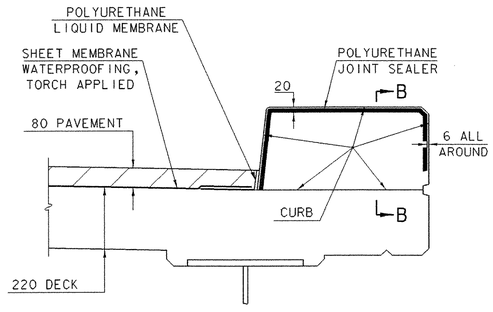
0 0.25 0.5

SCALE = 1:5



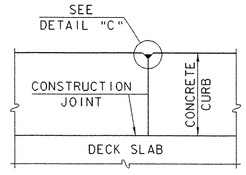
TYPICAL CONCRETE CONSTRUCTION JOINT

NOT TO SCALE



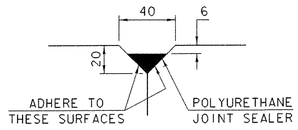
TYPICAL SECTION THROUGH CONCRETE CURB CONSTRUCTION JOINT

NOT TO SCALE



SECTION B-B

NOT TO SCALE



DETAIL "C"

NOT TO SCALE

1. USE POLYURETHANE JOINT SEALER PER SUBSECTION 524.06(c).
2. MATCH COLOR TO CONCRETE.
3. INCLUDE COST IN ITEM 501.33 CONCRETE, HIGH PERFORMANCE CLASS A.

CURB NOTES

1. CONTINUOUS CURB POUR OPTION.
CURBS MAY BE POURED IN ONE CONTINUOUS POUR.
IF SO, INCLUDE AN APPROVED SHRINKAGE REDUCING ADMIXTURE.
INCLUDE PAYMENT FOR THE ADMIXTURE
IN ITEM 501.33 "CONCRETE, HIGH PERFORMANCE, CLASS A".

2. CONSTRUCTION JOINT CURB POUR OPTION.
IF CONSTRUCTION JOINTS ARE USED, PLACE JOINTS A MINIMUM OF 560 MM
FROM THE CENTER OF THE NEAREST BRIDGE RAIL POST.
PLACE CONCRETE IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOURS DELAY
BETWEEN ADJACENT POURS.
PASS LONGITUDINAL REINFORCING THROUGH THE CONSTRUCTION JOINTS.

3. TURN CURB REINFORCING STIRRUP BARS TO FIT IN FLARED ENDS.

SHEET MEMBRANE NOTES

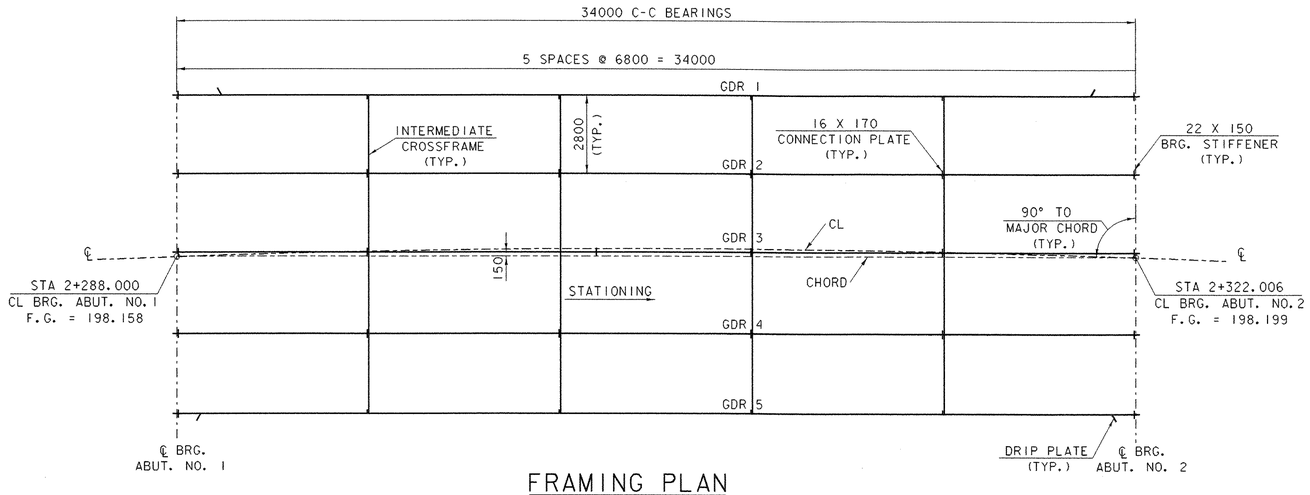
1. POLYURETHANE LIQUID MEMBRANE.
PAYMENT FOR ITEM 519.20 "SHEET MEMBRANE WATERPROOFING, TORCH APPLIED"
INCLUDES POLYURETHANE LIQUID MEMBRANE.

2. SHEET MEMBRANE WATERPROOFING, TORCH APPLIED.
EXTEND SHEET MEMBRANE WATERPROOFING TO FACE OF CURB.

SUPERSTRUCTURE
CURB & RAIL DETAILS

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

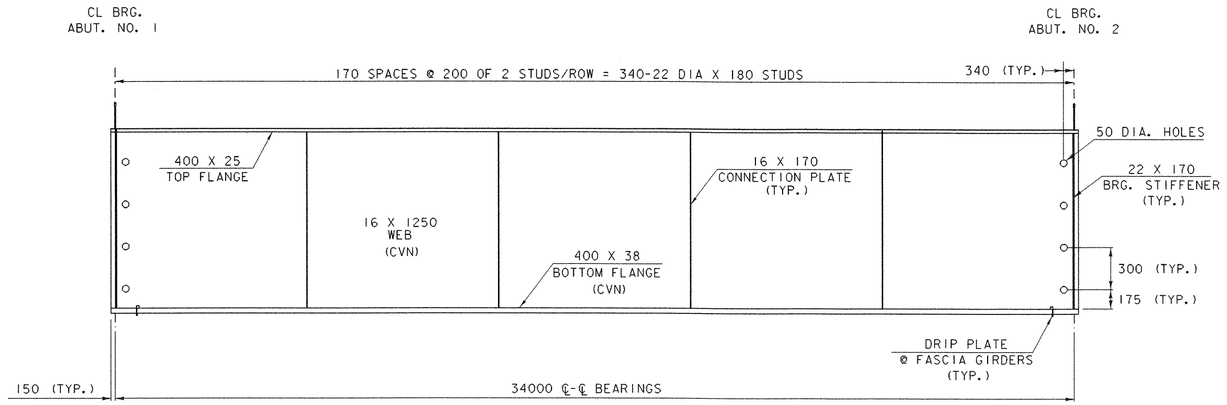
FILE NAME: sbl72sp3.1	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R.WHITCOMB	DRAWN BY: D. PETERSON
DESIGNED BY: T. LACKEY	CHECKED BY: R.WHITCOMB
95bl72/structures/sbl72sup.dgn	SHEET 48 OF 75



FRAMING PLAN

0 2 4 6 8 10

SCALE = 1:100



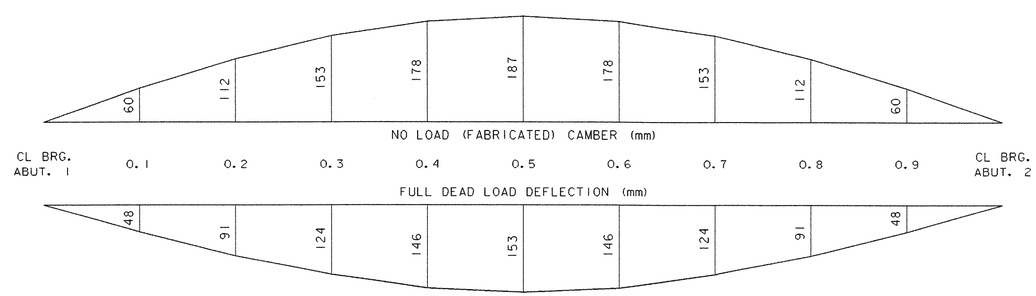
GIRDER ELEVATION

0 2 4 6 8 10

HORIZONTAL SCALE = 1:100

0 1 2

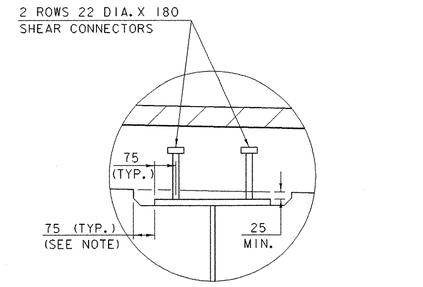
VERTICAL SCALE = 1:20



CAMBER & DEAD LOAD DEFLECTION DIAGRAM

0 2 4 6 8 10

0 100 200 300 400 500

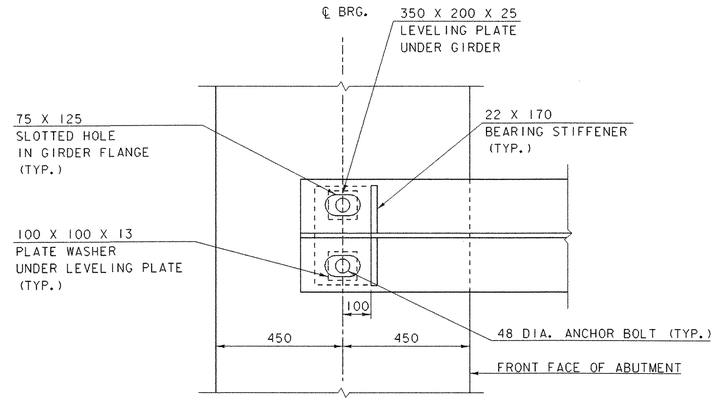


NOTE: THE 75mm HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES. SYSTEMS SHALL BE SUBMITTED FOR APPROVAL TO THE STRUCTURES ENGINEER. ALL VOIDS SHALL BE FILLED WITH MORTAR, TYPE IV OR AN EQUIVALENT PRODUCT FROM THE APPROVED PRODUCTS LIST.

SHEAR CONNECTOR DETAIL

0 0.5 1

SCALE = 1:10



PLAN OF GIRDER END

0 0.5 1

SCALE = 1:10

NOTE:

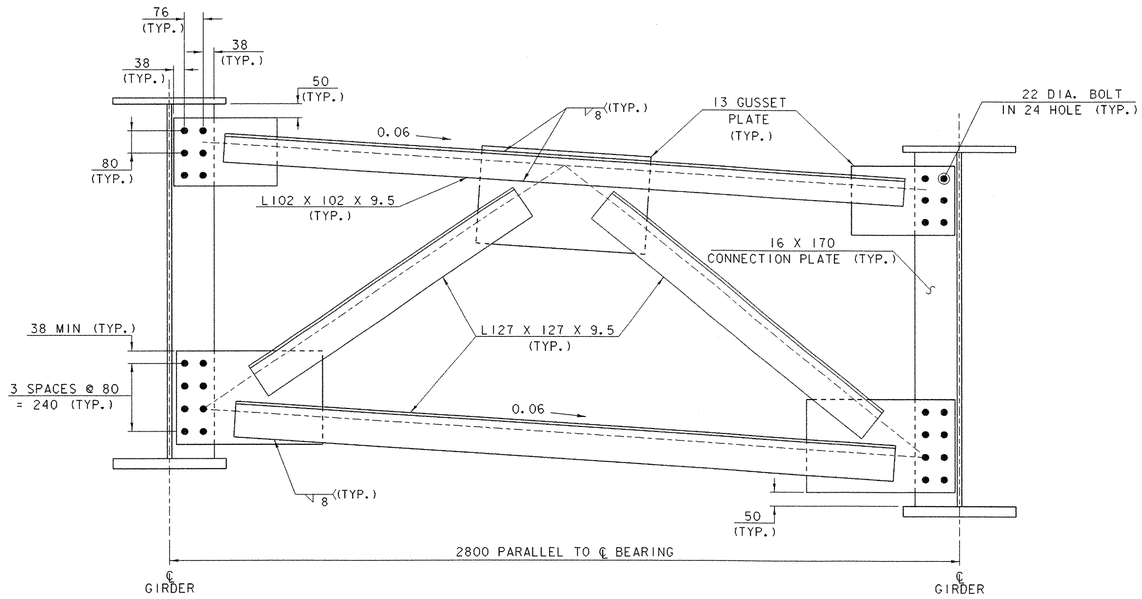
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
75 COVER UNLESS OTHERWISE SPECIFIED ON THE PLANS.
660 MIN. LAP LENGTH UNLESS OTHERWISE SPECIFIED ON THE PLANS

SUPERSTRUCTURE GIRDER DETAILS

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: sbl72sp4.i
PROJECT LEADER: R.WHITCOMB
DESIGNED BY: T.LACKEY
95bl72/structures/sbl72sup.dgn

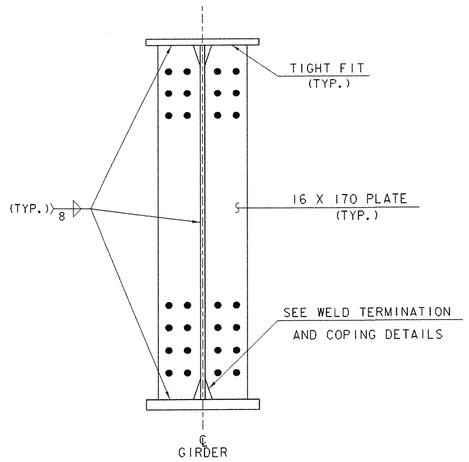
PLOT DATE: 11-MAR-2008
DRAWN BY: D.PETERSON
CHECKED BY: R.WHITCOMB
SHEET 49 OF 75



INTERMEDIATE CROSS FRAME

0 0.5 1

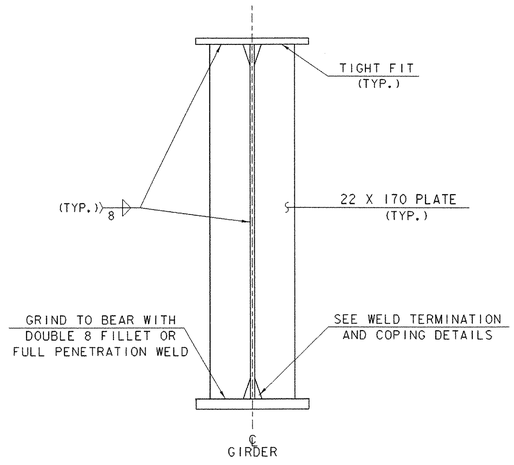
SCALE = 1:10



INTERMEDIATE CROSS FRAME CONNECTION PLATE DETAIL

0 0.5 1

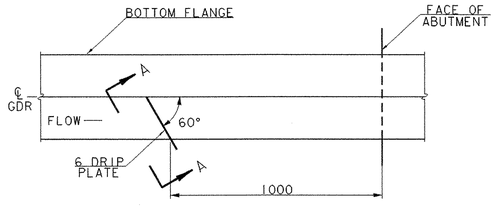
SCALE = 1:10



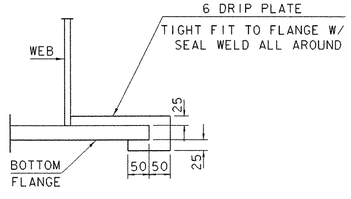
ABUTMENT BEARING STIFFENER DETAIL

0 0.5 1

SCALE = 1:10



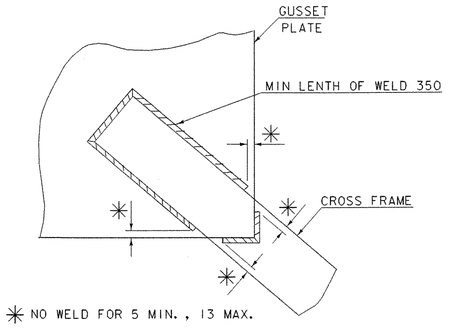
DRIP PLATE PLAN



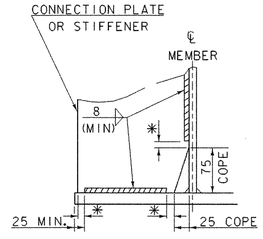
SECTION A-A

NOTES:

DRIP PLATES SHALL BE PLACED ON OUTSIDE EDGE OF FASCIA GIRDERS ON THE HIGH SIDE OF BOTH ABUTMENTS OR AS INICATED ON THE PLANS



WELD LOCATION DETAIL AT INTERMEDIATE CROSS FRAMES



✳ NO WELD FOR 10 MIN. 13 MAX.
(EXCEPT MUST MAINTAIN 25 MINIMUM FROM EDGE OF FLANGE.)

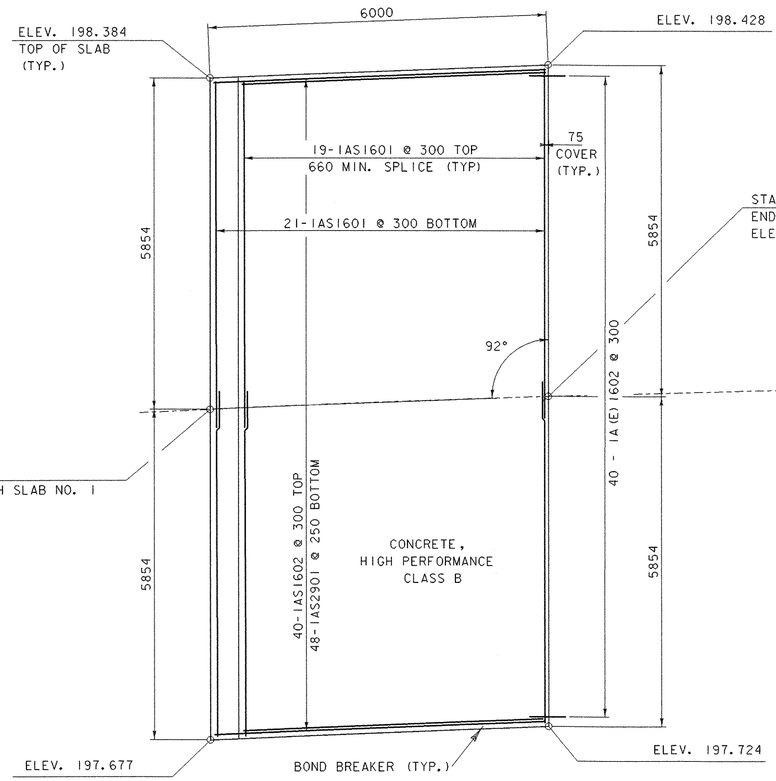
WELD TERMINATION AND COPING DETAIL FOR WELDED PLATE GIRDERS

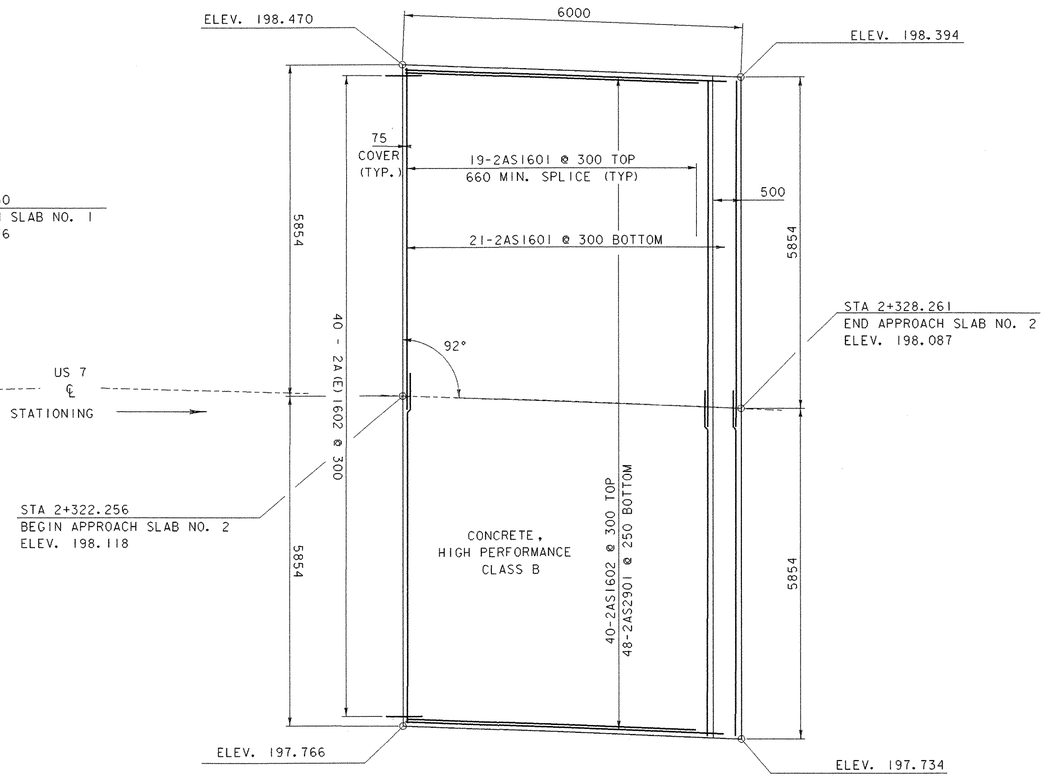
NTS

SUPERSTRUCTURE CROSS FRAMES

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

FILE NAME: sbl72sp5.1	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: D. PETERSON
DESIGNED BY: T. LACKEY	CHECKED BY: R. WHITCOMB
95bl72/structures/sbl72sup.dgn	SHEET 50 OF 75





APPROACH SLAB REINFORCING PLAN

0 1 2 3 4 5

SCALE = 1:50

NOTES:

1. PLACE HOOKED ENDS OF BOTTOM STEEL RUNNING PARALLEL TO CENTERLINE AT ABUTMENT END OF SLAB.

2. ALL ELEVATIONS ARE AT THE TOP OF APPROACH SLAB, NOT THE FINISH GRADE.

3. APPLY 2 COATS OF TAR EMULSION BOND BREAKER BETWEEN APPROACH SLAB AND CURB. INCLUDE IN ITEM 501.34 "CONCRETE, HIGH PERFORMANCE CLASS B".

NOTE:

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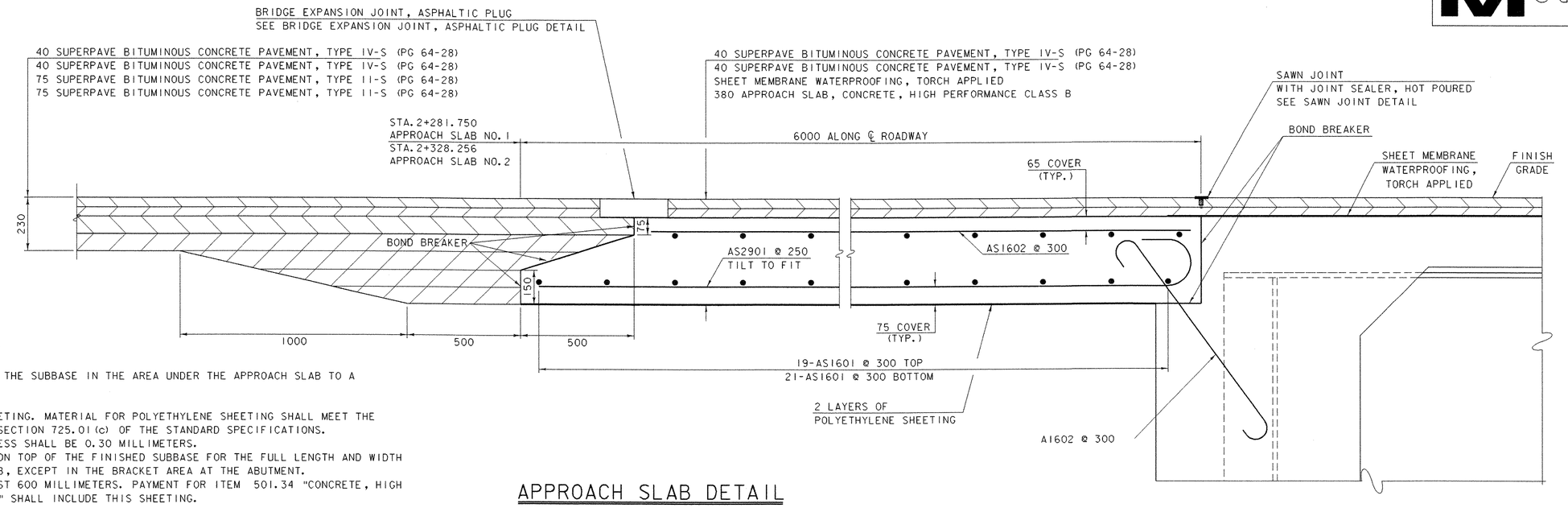
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
75 COVER UNLESS OTHERWISE SPECIFIED ON THE PLANS.
660 MIN. LAP LENGTH UNLESS OTHERWISE SPECIFIED ON THE PLANS

SUPERSTRUCTURE
APPROACH SLABS PLAN

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: sbl72sp6.1
PROJECT LEADER: R.WHITCOMB
DESIGNED BY: T.LACKEY
95bl72/structures/sbl72sup.dgn

PLOT DATE: 11-MAR-2008
DRAWN BY: D.PETERSON
CHECKED BY: R.WHITCOMB
SHEET 51 OF 75



APPROACH SLAB DETAIL

0 0.5 1

SCALE = 1:10

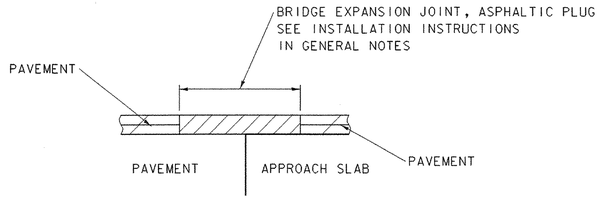
NOTES:

1. SUBBASE. COMPACT THE SUBBASE IN THE AREA UNDER THE APPROACH SLAB TO A SMOOTH SURFACE.

2. POLYETHYLENE SHEETING. MATERIAL FOR POLYETHYLENE SHEETING SHALL MEET THE REQUIREMENTS OF SUBSECTION 725.01(c) OF THE STANDARD SPECIFICATIONS. THE SHEETING THICKNESS SHALL BE 0.30 MILLIMETERS. PLACE THE SHEETING ON TOP OF THE FINISHED SUBBASE FOR THE FULL LENGTH AND WIDTH OF THE APPROACH SLAB, EXCEPT IN THE BRACKET AREA AT THE ABUTMENT. LAP SHEETING AT LEAST 600 MILLIMETERS. PAYMENT FOR ITEM 501.34 "CONCRETE, HIGH PERFORMANCE CLASS B" SHALL INCLUDE THIS SHEETING.

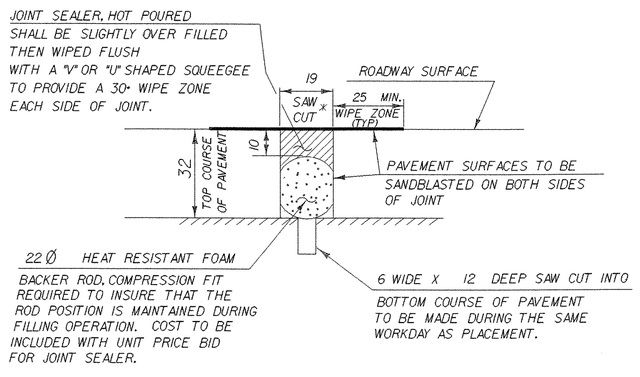
3. CONCRETE. POUR APPROACH SLAB CONCRETE IN THE EARLY MORNING BEFORE THE SUPERSTRUCTURE EXPANDS.

4. BOND BREAKER. APPLY 2 COATS TAR EMULSION. PAYMENT FOR ITEM 501.34 "CONCRETE, HIGH PERFORMANCE CLASS B" SHALL INCLUDE THIS BOND BREAKER.



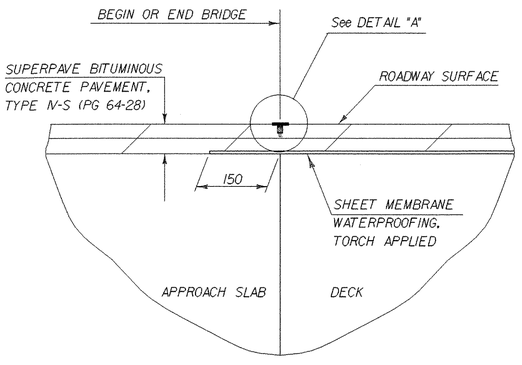
BRIDGE EXPANSION JOINT, ASPHALTIC PLUG DETAIL

NTS



DETAIL "A"

* JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUTS WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER. SEE VT. SPECIFICATION 524.



SAWN JOINT DETAIL

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
75 COVER UNLESS OTHERWISE SPECIFIED ON THE PLANS.
660 MIN. LAP LENGTH UNLESS OTHERWISE SPECIFIED ON THE PLANS

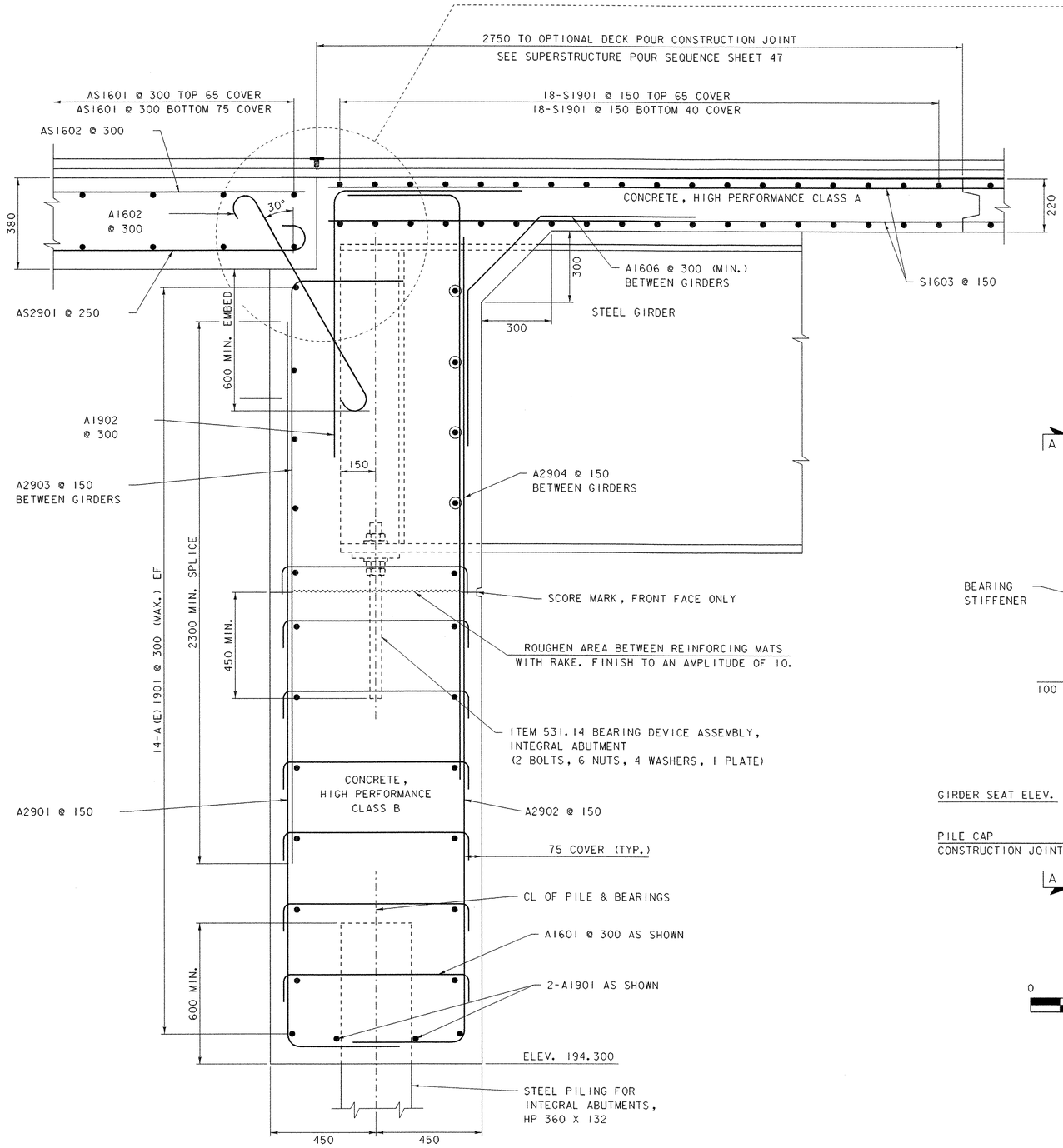
SUPERSTRUCTURE APPROACH SLABS PROFILE

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: sb172sp7.1
PROJECT LEADER: R.WHITCOMB
DESIGNED BY: T. LACKEY
95b172/structures/sb172sup.dgn

PLOT DATE: 11-MAR-2008
DRAWN BY: D. PETERSON
CHECKED BY: R.WHITCOMB
SHEET 52 OF 75

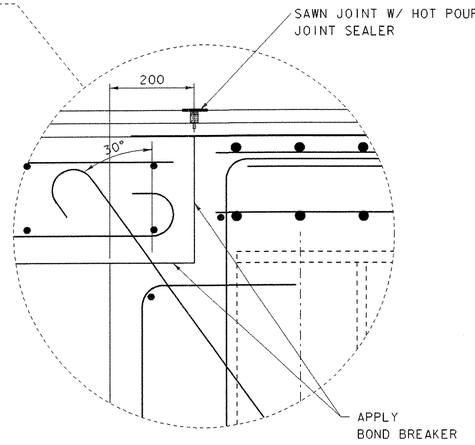
Metric

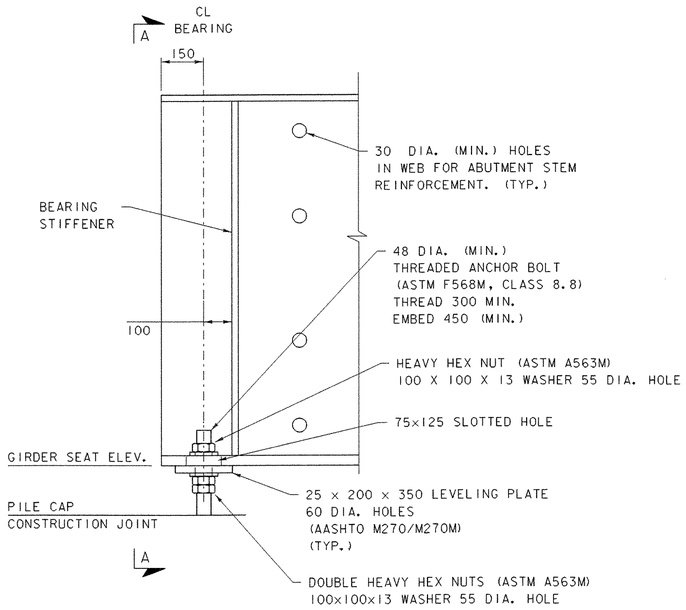


INTEGRAL ABUTMENT DETAIL

0 0.5 1

SCALE = 1:10

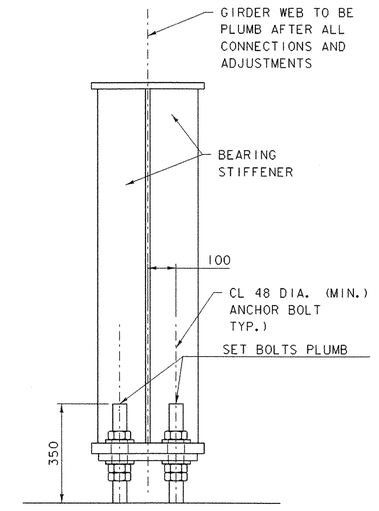




TYPICAL GIRDER ELEVATION

0 0.5 1

SCALE = 1:10



TYPICAL GIRDER VIEW A-A

0 0.5 1

SCALE = 1:10

NOTE:

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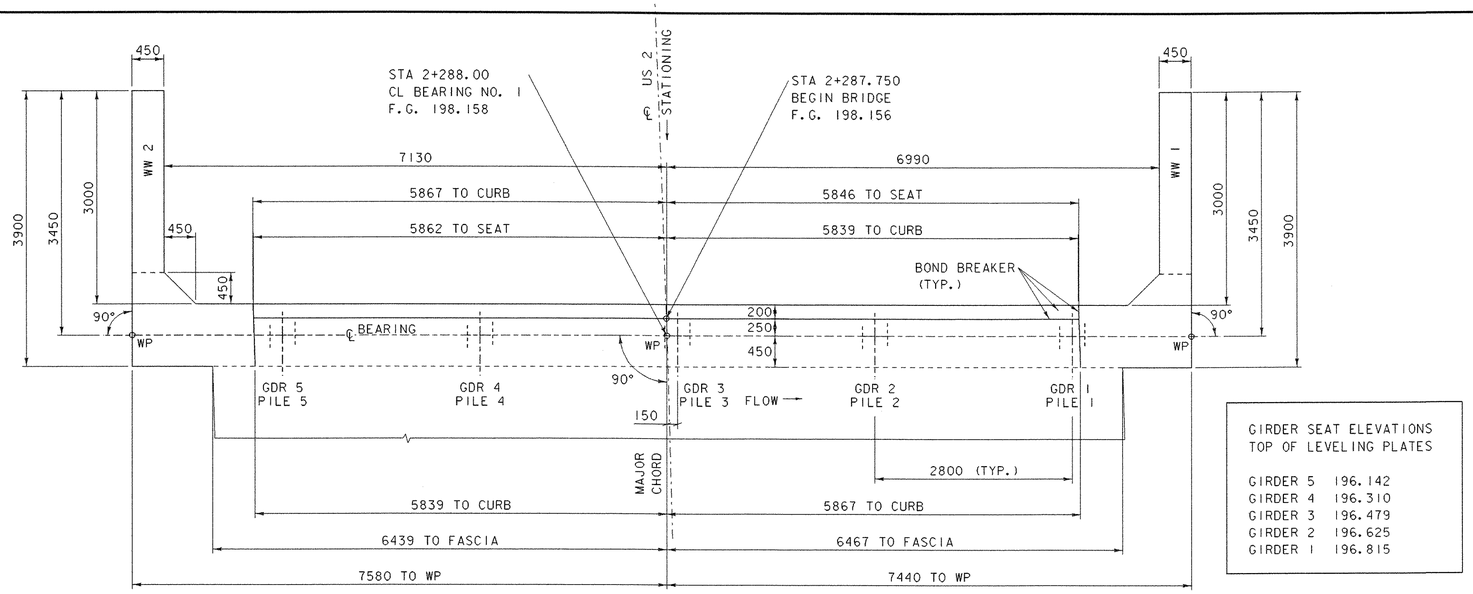
▲ = CUT TO FIT IN FIELD
75 COVER UNLESS OTHERWISE SPECIFIED ON THE PLANS.
660 MIN. LAP LENGTH UNLESS OTHERWISE SPECIFIED ON THE PLANS

SUPERSTRUCTURE BRIDGE END DETAILS

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

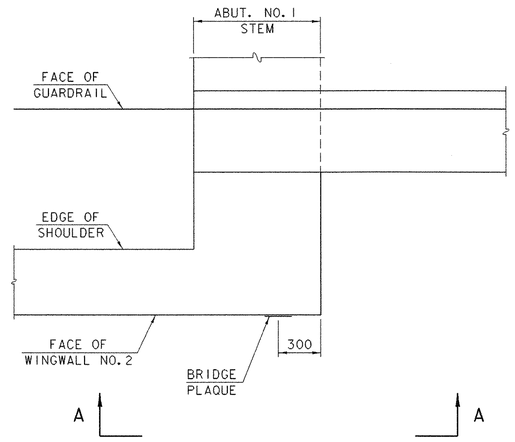
FILE NAME: sbl72sp8.1
PROJECT LEADER: R.WHITCOMB
DESIGNED BY: T.LACKEY
95bl72/structures/sbl72sup.dgn

PLOT DATE: 11-MAR-2008
DRAWN BY: D.PETERSON
CHECKED BY: R.WHITCOMB
SHEET 53 OF 75

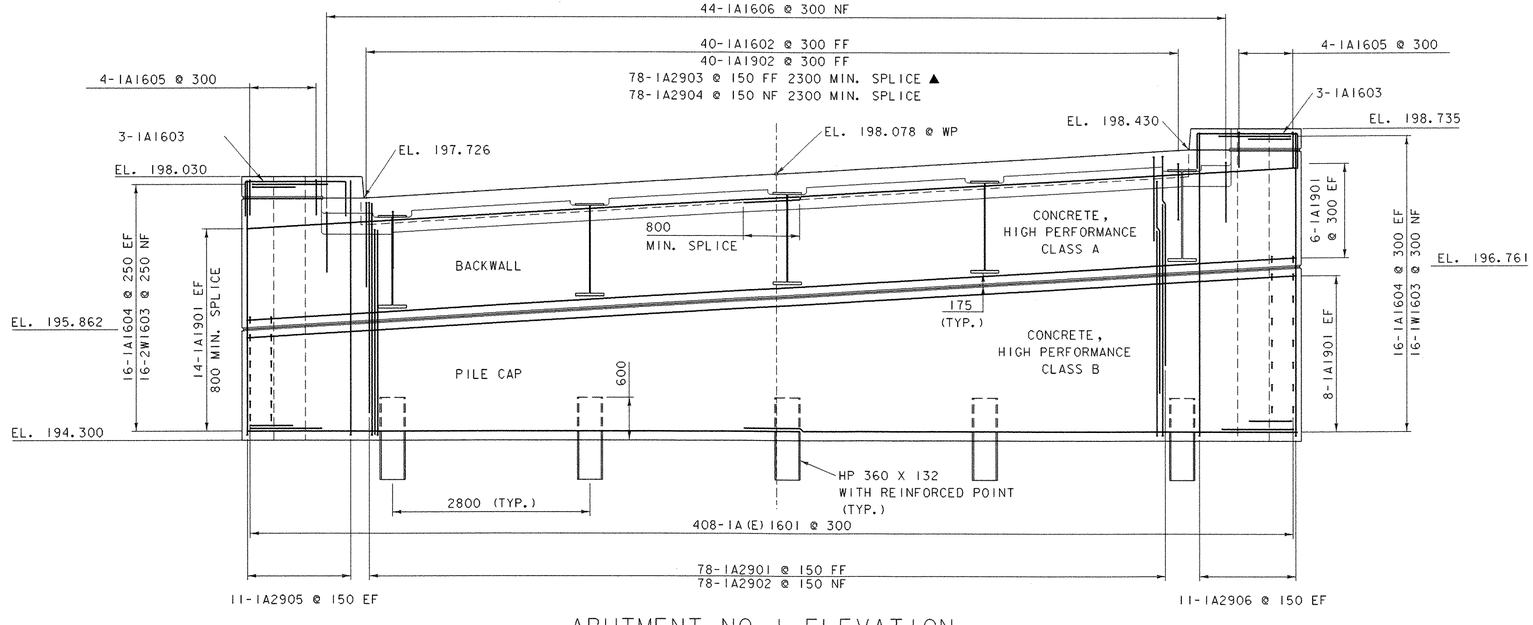


ABUTMENT NO. 1 PLAN

GIRDER SEAT ELEVATIONS TOP OF LEVELING PLATES	
GIRDER 5	196.142
GIRDER 4	196.310
GIRDER 3	196.479
GIRDER 2	196.625
GIRDER 1	196.815



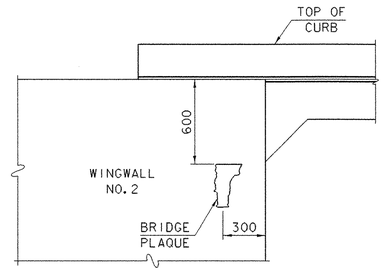
BRIDGE PLAQUE
PLAN
NOT TO SCALE



ABUTMENT NO. 1 ELEVATION

0 1 2 3 4

SCALE = 1:40



BRIDGE PLAQUE
VIEW "A-A"
NOT TO SCALE

BRIDGE PLAQUE NOTES

1. VTRANS WILL SUPPLY THE BRIDGE PLAQUE.
2. INSTALL THE PLAQUE AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. INCLUDE PAYMENT FOR INSTALLATION IN ITEM 501.33 "CONCRETE, HIGH PERFORMANCE CLASS A".

NOTE:

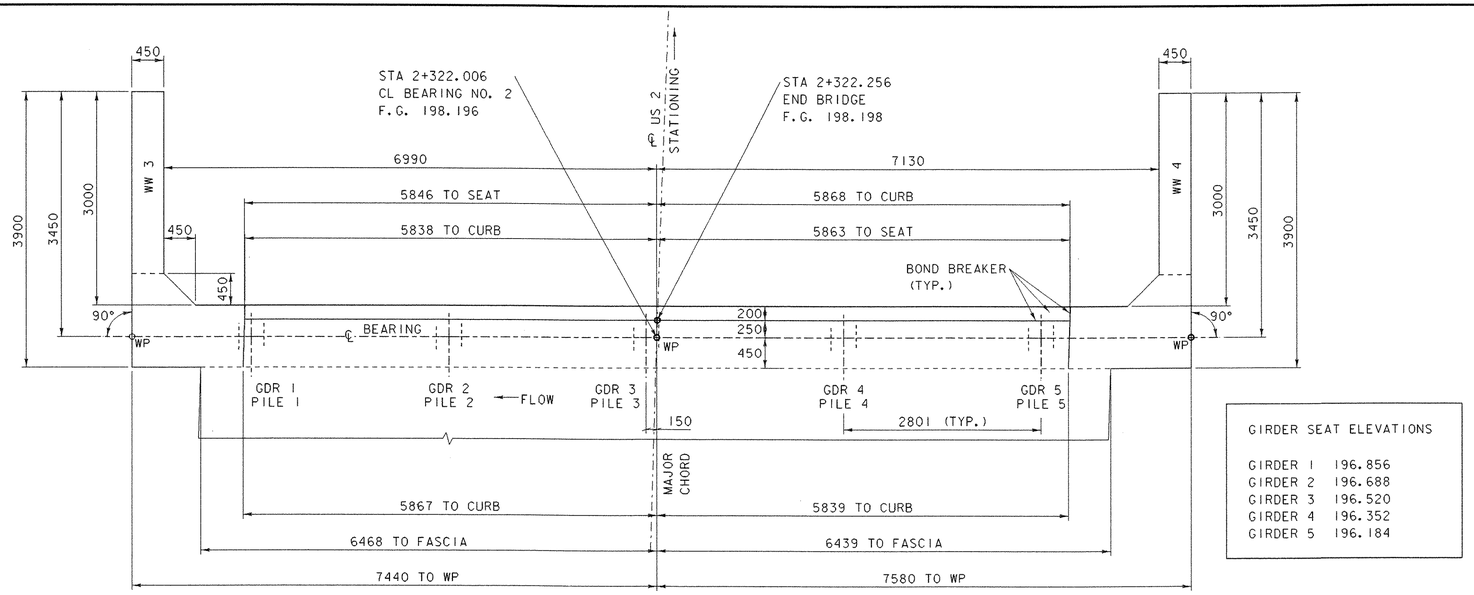
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
75 COVER UNLESS OTHERWISE SPECIFIED ON THE PLANS.
660 MIN. LAP LENGTH UNLESS OTHERWISE SPECIFIED ON THE PLANS

SUBSTRUCTURE
ABUTMENT 1

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: sbl72sb1.i
PROJECT LEADER: R. WHITCOMB
DESIGNED BY: T. LACKEY
95bl72/str/sbl72sub.dgn

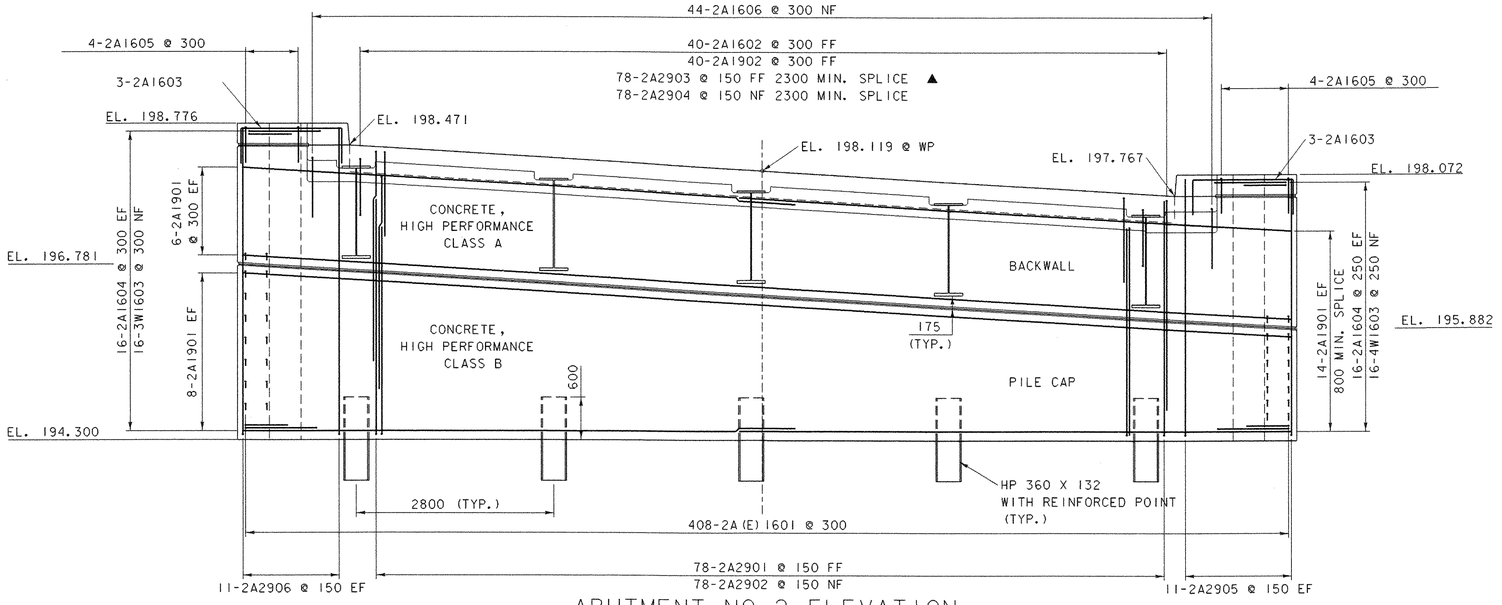
PLOT DATE: 11-MAR-2008
DRAWN BY: D. PETERSON
CHECKED BY:
SHEET 54 OF 75



GIRDER SEAT ELEVATIONS

GIRDER 1	196.856
GIRDER 2	196.688
GIRDER 3	196.520
GIRDER 4	196.352
GIRDER 5	196.184

ABUTMENT NO. 2 PLAN



ABUTMENT NO. 2 ELEVATION

0 1 2 3 4

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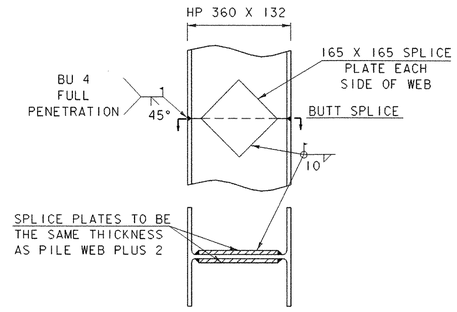

PREFABRICATED PILE SPLICE PLATES MAY BE USED WITH THE APPROVAL OF THE RESIDENT ENGINEER.

PILE SPLICE DETAIL

NTS

NOTES

1. H - INDICATES LOCATION OF A VERTICAL PILE.
2. PILE SIZE: HP 360 X 132 (HP 14 X 89)
3. PILE STEEL: ASTM 572/A572M GR 345
4. WELD PROCEDURES TO BE APPROVED BY THE STRUCTURES ENGINEER PRIOR TO WELDING.

NOTE:

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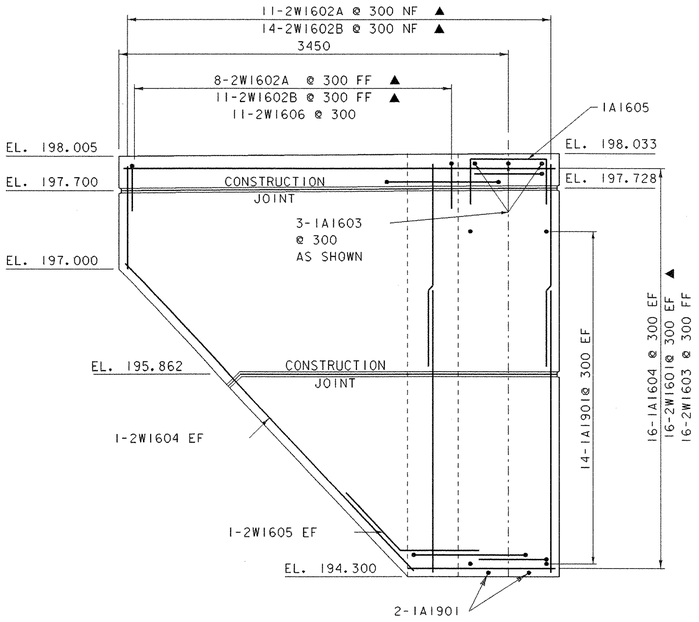
75 COVER UNLESS OTHERWISE SPECIFIED ON THE PLANS.
660 MIN. LAP LENGTH UNLESS OTHERWISE SPECIFIED ON THE PLANS

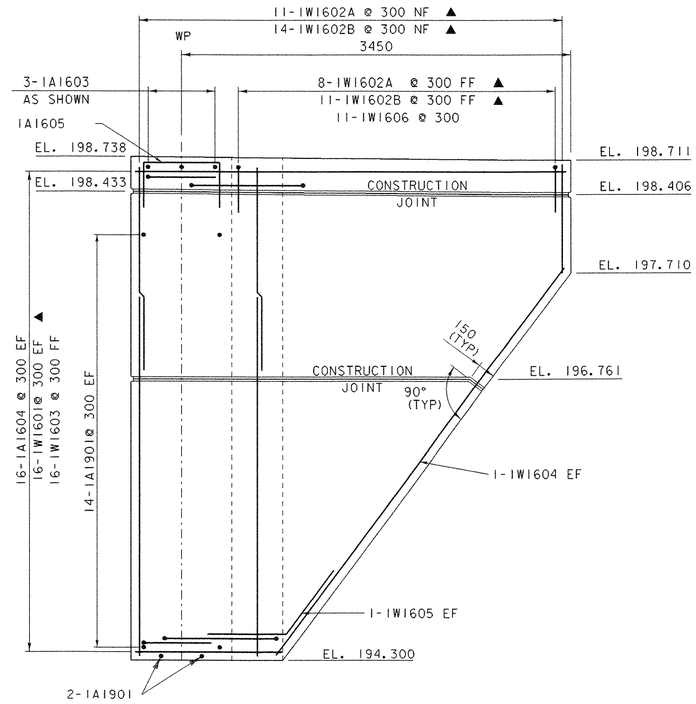
SUBSTRUCTURE
ABUTMENT 2

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

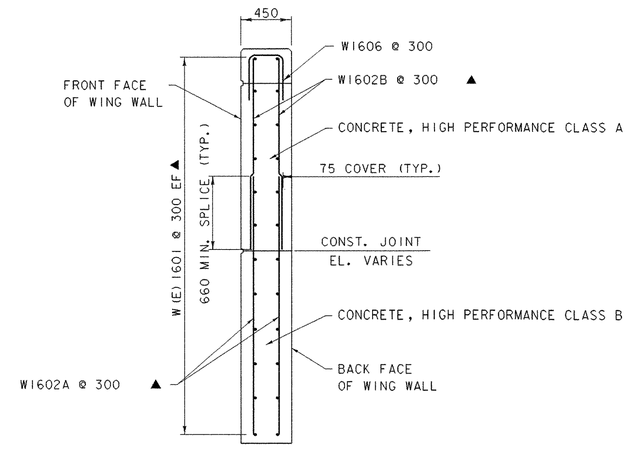
FILE NAME: sbl72sb2.1	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: D. PETERSON
DESIGNED BY: T. LACKEY	CHECKED BY:
95bl72/str/sbl72sub.dgn	SHEET 55 OF 75



WINGWALL NO. 2 ELEVATION



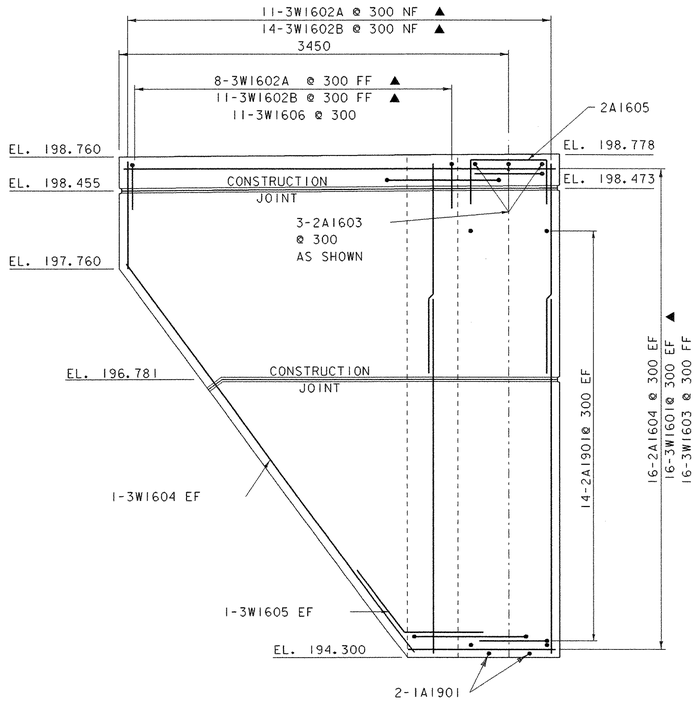
WINGWALL NO. 1 ELEVATION



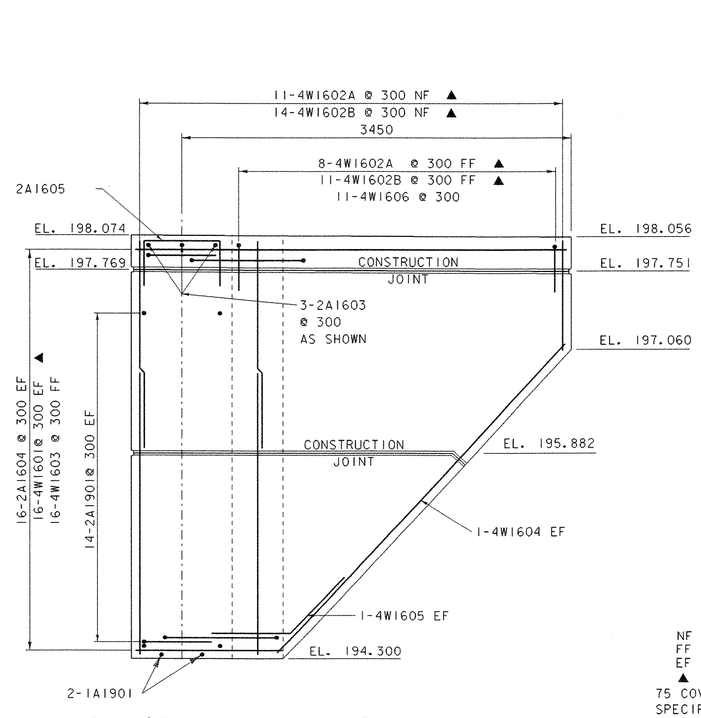
WINGWALL TYPICAL SECTION

0 1 2 3

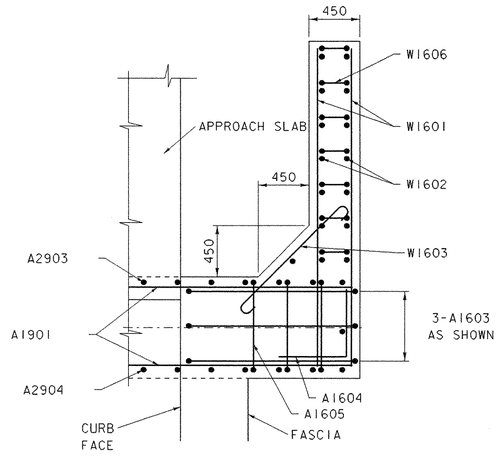
SCALE = 1:25



WINGWALL NO. 3 ELEVATION



WINGWALL NO. 4 ELEVATION



PLAN

INTEGRAL U-WINGWALLS

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
75 COVER UNLESS OTHERWISE SPECIFIED ON THE PLANS.
660 MIN. LAP LENGTH UNLESS OTHERWISE SPECIFIED ON THE PLANS

SUBSTRUCTURE WINGWALLS

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: sbl72sb3.1
PROJECT LEADER: R. WHITCOMB
DESIGNED BY: T. LACKEY
95bl72/str/sbl72sub.dgn

PLOT DATE: 11-MAR-2008
DRAWN BY: D. PETERSON
CHECKED BY:
SHEET 56 OF 75

STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

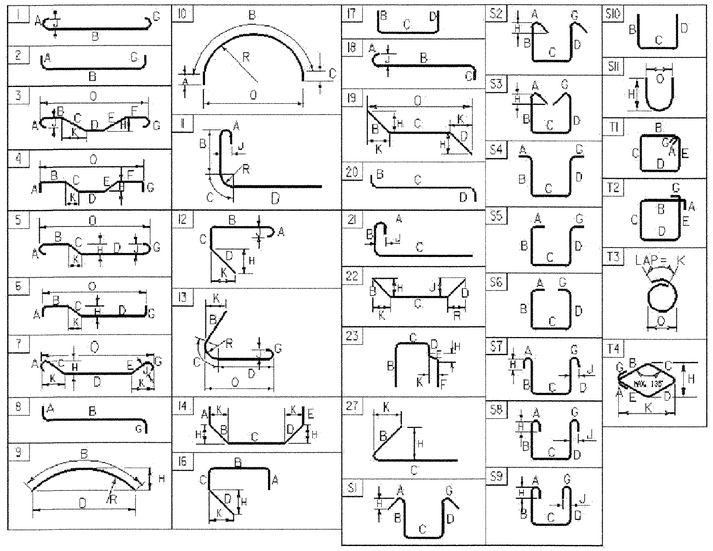
Metric

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	DECK																
△	146	16	12100	S1601	STR												
	324	16	1700	S1602	S5	250	375	450	375			250					
△	922	19	6800	S1901	STR												
	APPROACH SLAB NO. 1																
✳	81	16	6200	1AS1601	STR												
✳	41	16	6125	1AS1602	STR												
△	50	29	6375	1AS2901	1	375	6000					0		300			
	APPROACH SLAB NO. 2																
✳	81	16	6200	2AS1601	STR												
✳	41	16	6125	2AS1602	STR												
△	50	29	6375	2AS2901	1	375	6000					0		300			
	ABUTMENT NO. 1																
	408	16	1050	1A1601	17		150	750	150								
△	42	16	1400	1A1602	1	175	1050					175		130			
	6	16	2425	1A1603	S10		500	1425	500								
	32	16	1200	1A1604	17		600	600	0								
	8	16	1750	1A1605	S10		500	750	500								
	44	16	1450	1A1606	22		500	450	500				355	355	355	355	
△	62	19	7900	1A1901	STR							0					
	40	19	2000	1A1902	2	800	1200					0					
△ ▲	80	29	3375	1A2901	2	475	2900					0					
	78	29	3755	1A2902	2	475	3280					0					
	78	29	3475	1A2903	2	475	3000					0					
	78	29	3455	1A2904	2	475	2980					0					
	22	29	4075	1A2905	2	475	3600					0					
	22	29	4775	1A2906	2	475	4300					0					
	ABUTMENT NO. 2																
	408	16	1050	2A1601	17		150	750	150								
△	42	16	1400	2A1602	1	175	1050					175		130			
	6	16	2425	2A1603	S10		500	1425	500								
	32	16	1200	2A1604	17		600	600	0								
	8	16	1750	2A1605	S10		500	750	500								
	44	16	1450	2A1606	22		500	450	500				355	355	355	355	
△	62	19	7900	2A1901	STR							0					
	40	19	2000	2A1902	2	800	1200					0					
△ ▲	80	29	3415	2A2901	2	475	2940					0					
	78	29	3795	2A2902	2	475	3320					0					
	78	29	3475	2A2903	2	475	3000					0					
	78	29	3455	2A2904	2	475	2980					0					
	22	29	4115	2A2905	2	475	3640					0					
	22	29	4815	2A2906	2	475	4340					0					

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	WINGWALL NO. 1																
△ ▲	34	16	3750	1W1601	STR												
▲	19	16	3200	1W1602A	STR												
▲	25	16	1800	1W1602B	STR												
	16	16	1600	1W1603	1	175	1250					175		130			
	2	16	4250	1W1604	STR												
	2	16	1400	1W1605	22		700	700	0					560	0	420	0
	11	16	1300	1W1606	S10		500	300	500								
	WINGWALL NO. 2																
△ ▲	34	16	3750	2W1601	STR												
▲	19	16	2300	2W1602A	STR												
▲	25	16	2000	2W1602B	STR												
	16	16	1600	2W1603	1	175	1250					175		130			
	2	16	3700	2W1604	STR												
	2	16	1400	2W1605	22		700	700	0					510	0	480	0
	11	16	1300	2W1606	S10		500	300	500								
	WINGWALL NO. 3																
△ ▲	34	16	3750	3W1601	STR												
▲	19	16	3100	3W1602A	STR												
▲	25	16	1900	3W1602B	STR												
	16	16	1600	3W1603	1	175	1250					175		130			
	2	16	4250	3W1604	STR												
	2	16	1400	3W1605	22		700	700	0					560	0	420	0
	11	16	1300	3W1606	S10		500	300	500								
	WINGWALL NO. 4																
△ ▲	34	16	3750	4W1601	STR												
▲	19	16	2200	4W1602A	STR												
▲	25	16	2100	4W1602B	STR												
	16	16	1600	4W1603	1	175	1250					175		130			
	2	16	3700	4W1604	STR												
	2	16	1400	4W1605	22		700	700	0					510	0	480	0
	11	16	1300	4W1606	S10		500	300	500								

~ NOTES ~

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



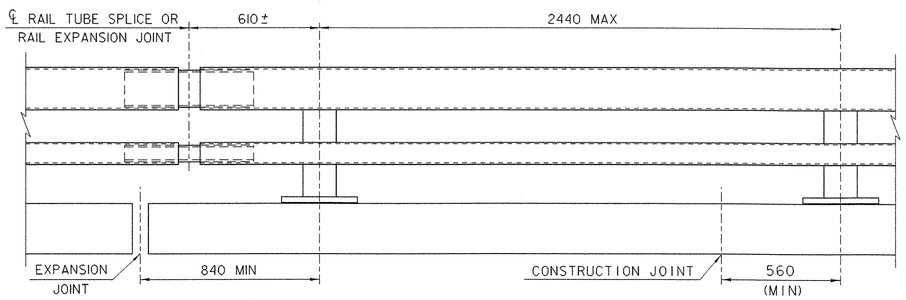
ASTM STANDARD REINFORCING BARS

BAR SIZE	NOMINAL MASS (kg/m)	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER (mm)	CROSS SECTIONAL AREA (mm²)	PERIMETER (mm)
#10	0.560	9.5	71	29.84
#13	0.994	12.7	129	39.90
#16	1.552	15.9	199	49.95
#19	2.235	19.1	284	60.00
#22	3.042	22.2	387	69.74
#25	3.973	25.4	510	79.80
#29	5.060	28.7	645	90.16
#32	6.404	32.3	819	101.47
#36	7.907	35.8	1006	112.47
#43	11.380	43.0	1452	135.09
#57	20.240	57.3	2581	180.01

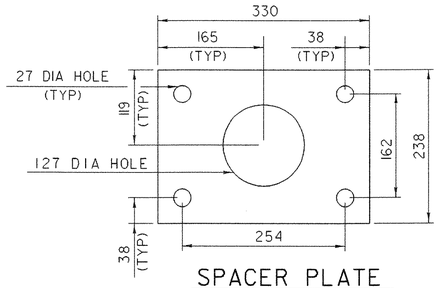
PROJECT NAME: **Rutland Town**
PROJECT NUMBER: **BRF 019-3(48)**

FILE NAME: **95B172/sb172rss.xls**
PROJECT MANAGER: **R. Whitcomb**
DESIGNED BY: **T. Lackey**
REINFORCING STEEL SCHEDULE

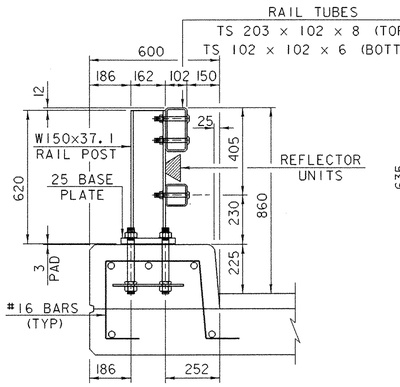
PLOT DATE: **2/21/2008**
DRAWN BY: **T. Lackey**
CHECKED BY:
SHEET **57** OF **75**



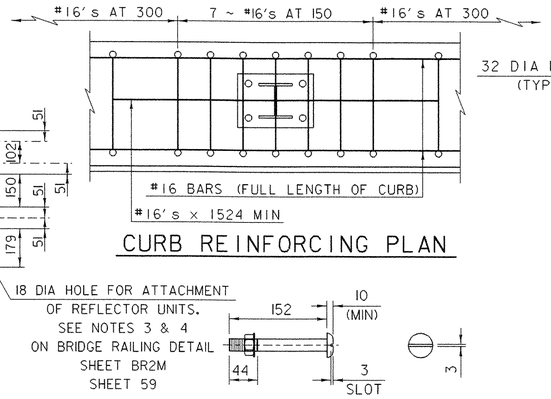
BRIDGE RAILING ELEVATION



SPACER PLATE

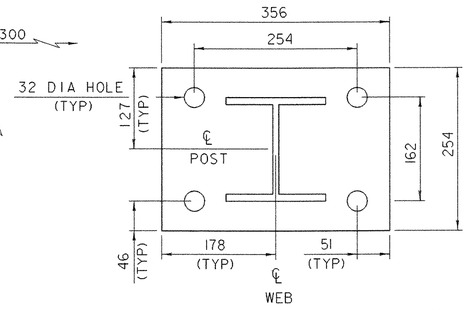


TYPICAL SECTION

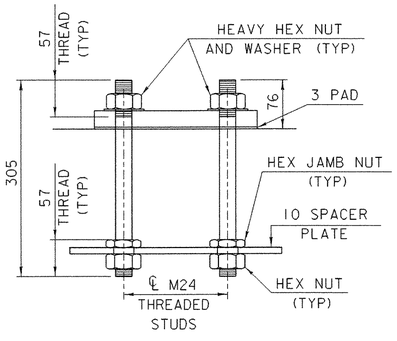


ELEVATION

CURB REINFORCING PLAN



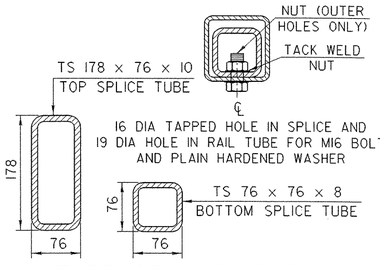
POST AND BASE PLATE



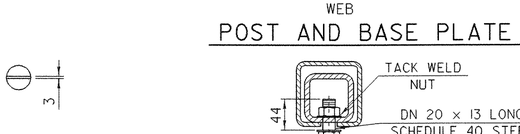
RAIL POST ANCHORAGE

M20 DIA M164M (TYPE I) ROUND HEAD BOLT

(WITH WASHER AND PREVAILING TORQUE TYPE LOCK NUT)
(SEE NOTE #9)
ONLY FULL DIAMETER BODY BOLTS WILL BE ALLOWED.



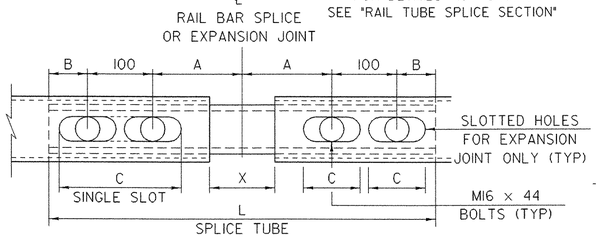
RAIL TUBE SPLICE SECTION



16 DIA TAPPED HOLE IN SPLICE TUBE AND
29 x 'C' SLOT IN RAIL TUBE FOR M16
BOLT AND PLAIN HARDENED WASHER

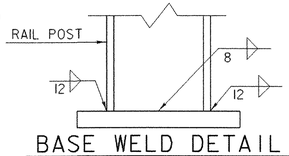
EXPANSION JOINT SECTION

FOR DETAILS NOT SHOWN
SEE "RAIL TUBE SPLICE SECTION"



RAIL TUBE SPLICE AND RAIL EXPANSION JOINT DETAIL

(BOTTOM VIEW)



BASE WELD DETAIL

NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE PROVISIONS OF SECTION 525, "METAL RAILINGS" OF THE STANDARD SPECIFICATION FOR CONSTRUCTION.
2. TUBING SHALL MEET THE REQUIREMENTS OF SECTION 732, "RAILING MATERIALS" OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, EXCEPT THAT THE DROP-WEIGHT TEAR TEST IN SECTION 732 SHALL NOT APPLY TO THE STRUCTURAL TUBING ON THIS PROJECT.
3. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 2mm RADIUS AND BE FREE OF BURRS.
4. RAIL POSTS SHALL BE SET NORMAL TO GRADE.
5. SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO (2) RAIL POSTS AND PREFERABLY TO AT LEAST FOUR (4) POSTS.
6. RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING A SUPERSTRUCTURE EXPANSION JOINT. EXPANSION JOINT WIDTH SHALL BE "X" AT 7°C AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
7. ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111, EXCEPT THAT HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M232M.
8. RAIL POSTS ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
9. RAIL TUBES SHALL BE ATTACHED USING M20 FULL DIAMETER BODY AASHTO M164 (TYPE I) ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE TUBE. HOLES IN POSTS SHALL BE 2mm LARGER THAN THE BOLT SIZE.
10. HOLES IN RAILS FOR RAIL TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.
11. IF THERE IS A CONFLICT BETWEEN THESE STANDARD DETAILS AND THE DESIGN, THE REQUIREMENTS OF THE DESIGN DRAWINGS SHALL BE FOLLOWED.
12. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.
13. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH SUBSECTION 506.04 "DRAWINGS AND PROCEDURES. ALL WELDING SHALL CONFORM WITH SUBSECTION 506.10 "WELDING".
14. RAIL POST AND BASE PLATES SHALL BE TESTED FOR IMPACT PROPERTIES IN ACCORDANCE WITH ASTM A370 CHARPY IMPACT TESTING USING TYPE A SPECIMENS.

MATERIALS

RAIL TUBES.....ASTM A500, GRADE B
RAIL POSTS AND BASE PLATE.....AASHTO M 270M/M 270, GRADE 345
ALL OTHER SHAPES AND PLATES.....AASHTO M 270M/M 270, GRADE 250
ANCHOR STUDS.....ASTM F568M CLASS 8.8
ALL OTHER BOLTS.....AASHTO M164M, TYPE I

NUTS FOR AASHTO M164M (ASTM A325M) BOLTS AND ANCHOR STUDS SHALL COMPLY WITH AASHTO M291M (ASTM A563M).

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

3mm PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.02.

SPLICE TABLE					
T	A	B	C	L	X
NA	100	50	--	510	20
EXPANSION JOINT TABLE					
<100	100	50	65	510	65

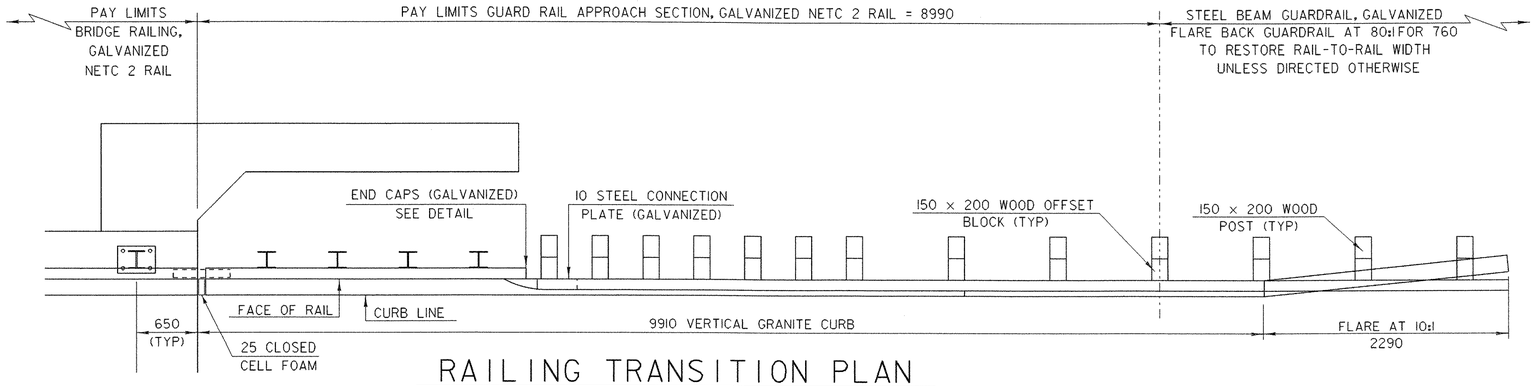
T = TOTAL MOVEMENT BETWEEN BRIDGE EXPANSION JOINTS. SEE NOTE 6
* = SINGLE SLOT

BR1M
BRIDGE RAILING, GALVANIZED N.E.T.C.2 RAIL

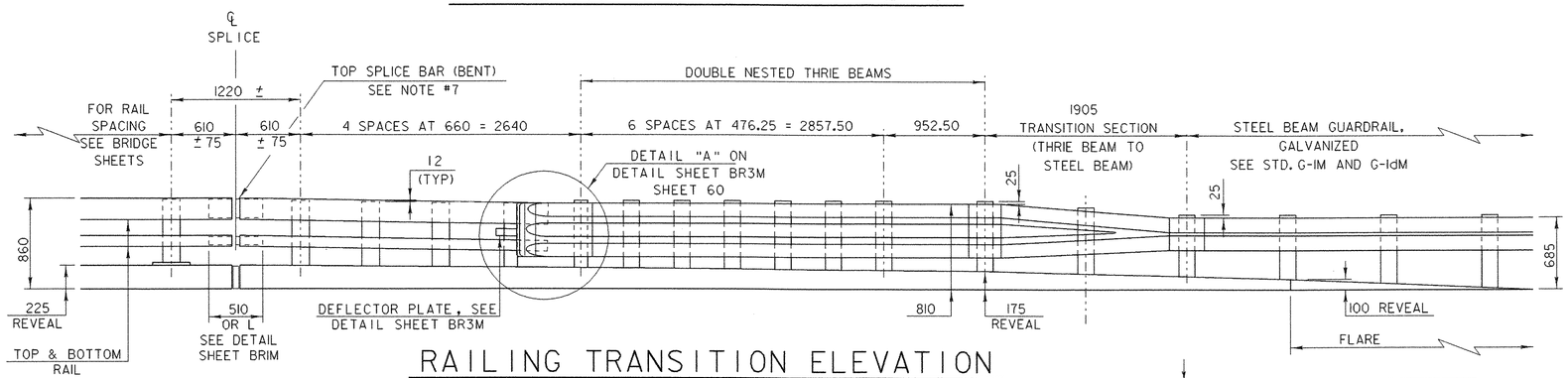
BRIDGE RAILING
DETAIL SHEET BR1M

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

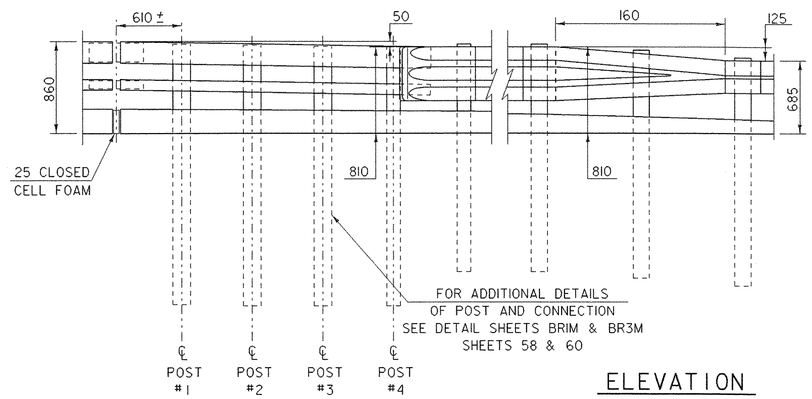
FILE NAME: sbl72br1.i
PROJECT LEADER: R. Whitcomb
DESIGNED BY: VTRANS
95bl72/str/sbl72br.dgn
PLOT DATE: 11-MAR-2008
DRAWN BY: VTRANS
CHECKED BY: T. Lackey
SHEET 58 OF 75



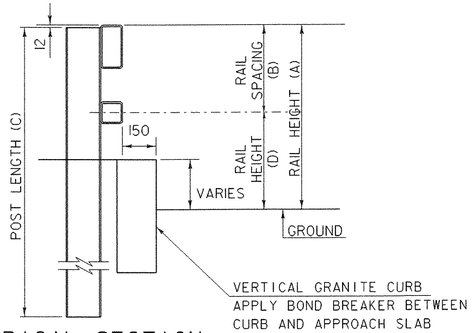
RAILING TRANSITION PLAN



RAILING TRANSITION ELEVATION

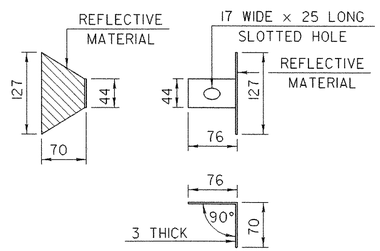


ELEVATION



TYPICAL SECTION

POST NUMBER	RAIL HEIGHT (A)	RAIL SPACING (B)	POST LENGTH (C)	RAIL HEIGHT (D)
1	850	400	2440	450
2	840	395	2440	445
3	825	385	2440	440
4	810	375	2440	435



DELINEATION DEVICE DETAILS

NOTES

1. REFER TO DETAIL SHEET BRIM FOR ADDITIONAL DETAILS, NOTES AND MATERIAL SPECIFICATIONS.
2. PAYMENT FOR "GUARD RAIL APPROACH SECTION, GALVANIZED NETC 2 RAIL SHALL INCLUDE THE TERMINAL CONNECTOR, THE CONNECTION PLATE, THE DEFLECTOR PLATE, RAIL, POSTS, BLOCKS AND ATTACHMENT HARDWARE.
3. THE REFLECTORIZED ALUMINUM DELINEATION IS TO BE ERECTED EVERY 9m (OR CLOSEST POST) WITH A M16 BOLT.
4. REFLECTIVE MATERIAL SHALL MEET REQUIREMENTS OF SUBSECTION 750.08 (b) (3), AND SHALL BE OF ENCAPSULATED LENS SILVER OR AMBER. INSTALL AMBER ON THE DRIVER'S LEFT AND SILVER ON THEIR RIGHT.
5. ALL APPROACH RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW.
6. ALL BRIDGE APPROACH RAIL MATERIALS, DIMENSION SIZES AND NOTES SHALL BE THE SAME AS THOSE OF THE BRIDGE RAIL, UNLESS OTHERWISE NOTED.
7. WELD TOP SPLICE BAR TO FIT BEND. USE COMPLETE PENETRATION WELD (B-U2).
8. PAY ITEM 616.21 "VERTICAL GRANITE CURB" WILL INCLUDE THE GRANITE CURB, APPROACH SLAB BOND BREAKER, AND BRIDGE CURB CLOSED CELL FOAM.

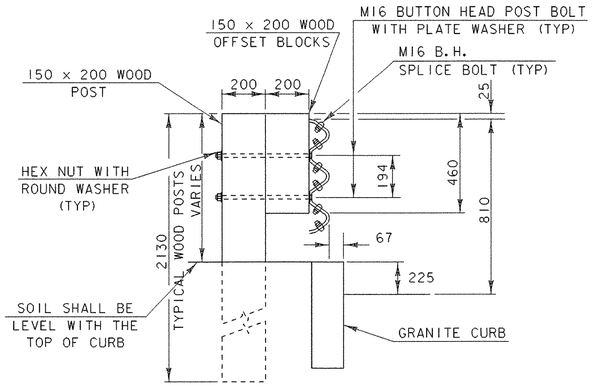
BR2M
BRIDGE RAILING, GALVANIZED N.E.T.C. 2 RAIL THRIE BEAM GUARDRAIL APPROACH RAIL

BRIDGE RAILING
DETAIL SHEET BR2M

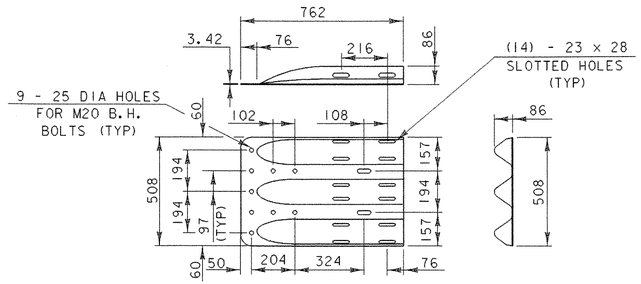
PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

FILE NAME: sbl72br2.i	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. Whitcomb	DRAWN BY: VTRANS
DESIGNED BY: VTRANS	CHECKED BY: T. Lackey
95bl72/str/sbl72br.dgn	SHEET 59 OF 75

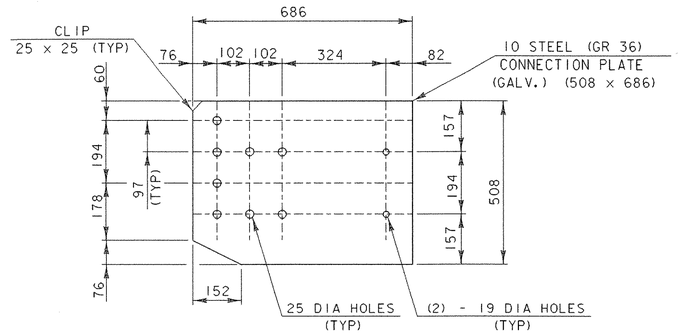
Metric



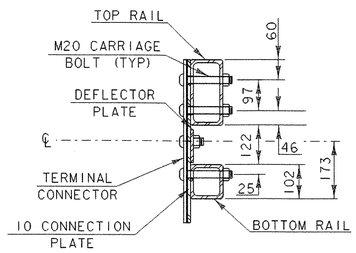
WOOD POST-RAIL ASSEMBLY



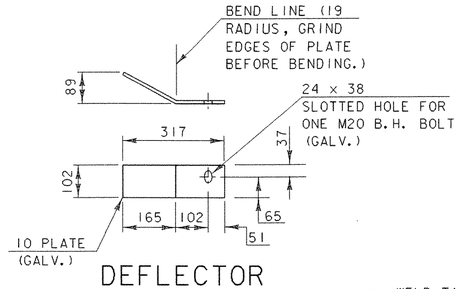
THRIE-BEAM TERMINAL CONNECTOR (HM-TF-13/RE-67)



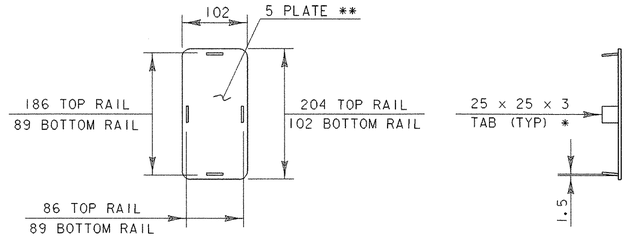
CONNECTION PLATE



SECTION C-C (CONNECTION PLATE)

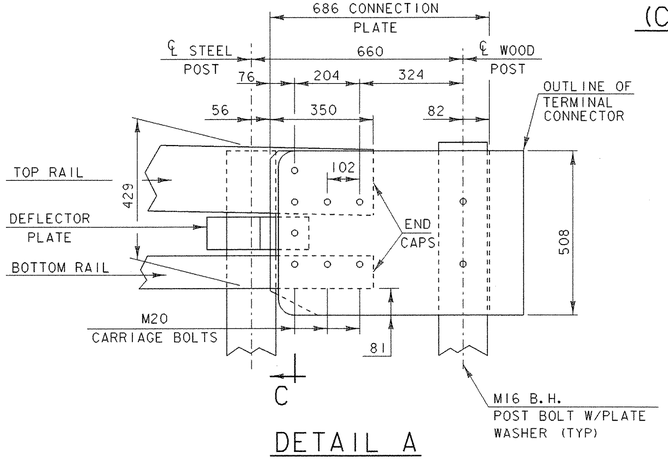


DEFLECTOR PLATE DETAIL

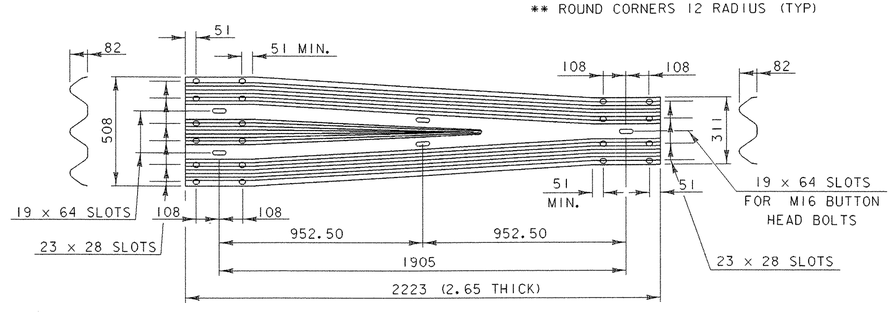


END CAP DETAIL

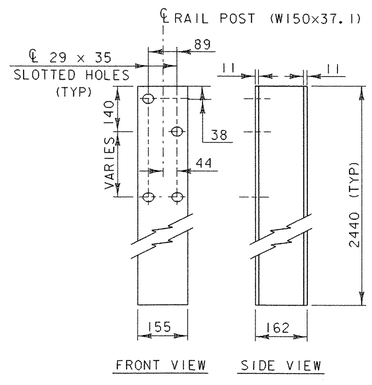
* WELD TABS TO END CAP PLATE IN TAPERED POSITION SO CAP CAN BE JAMMED INTO END OF RAIL TUBE.
** ROUND CORNERS 12 RADIUS (TYP)



DETAIL A



THRIE-BEAM TO STD SB TRANSITION SECTION (HM-TF-13/RE-69)

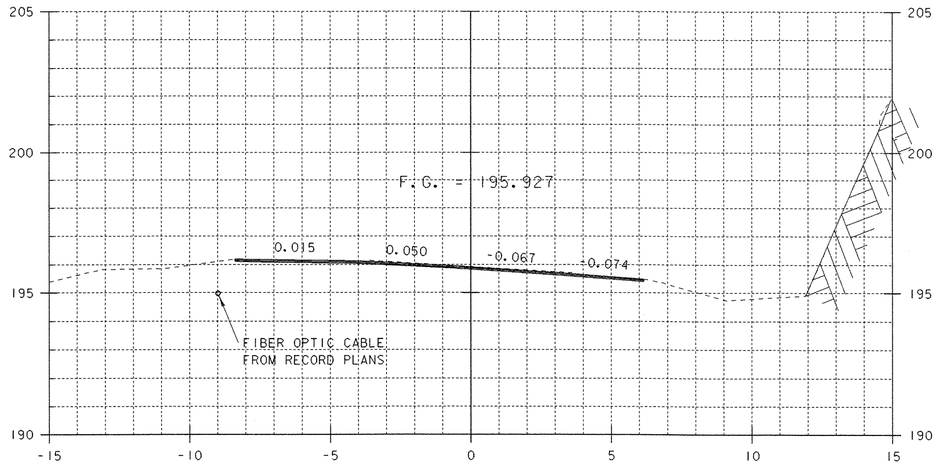


RAIL POST

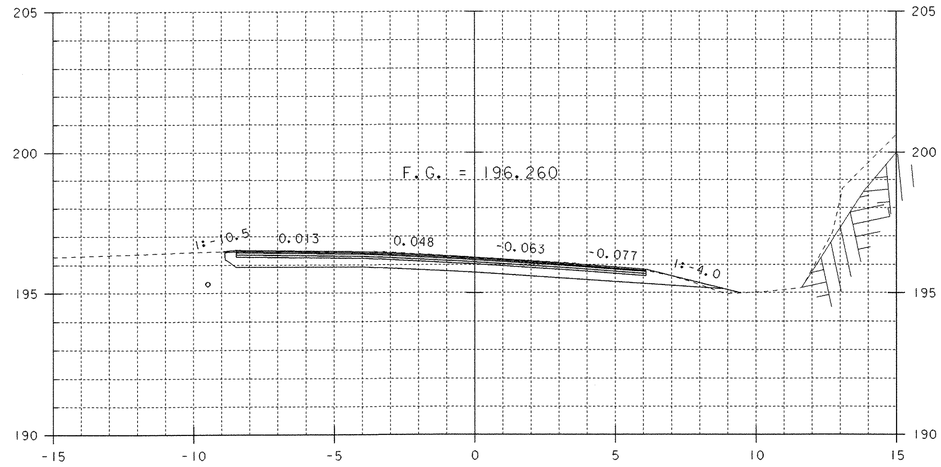
BR3M
BRIDGE RAILING, GALVANIZED N.E.T.C. 2 RAIL
THRIE BEAM GUARDRAIL APPROACH RAIL

BRIDGE RAILING
DETAIL SHEET BR3M

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sbl72br3.1	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. Whitcomb	DRAWN BY: VTRANS
DESIGNED BY: VTRANS	CHECKED BY: T. Lackey
95bl72/str/sbl72br.dgn	SHEET 60 OF 75



2+170.00



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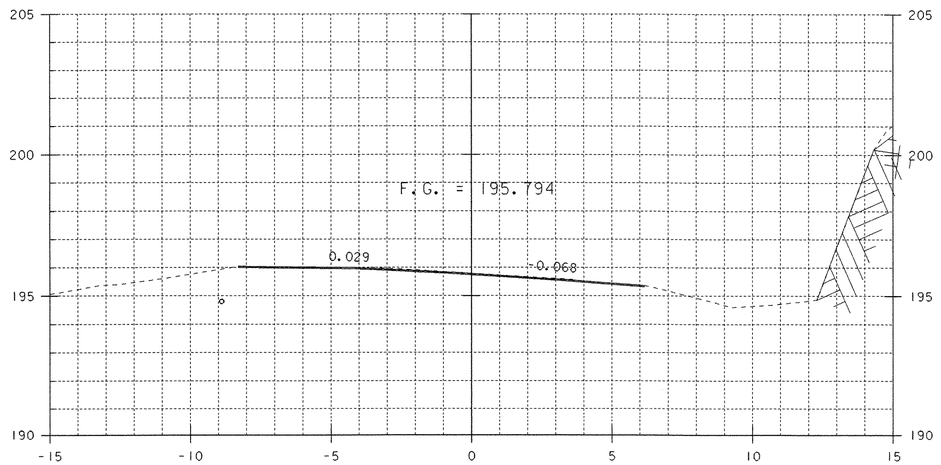
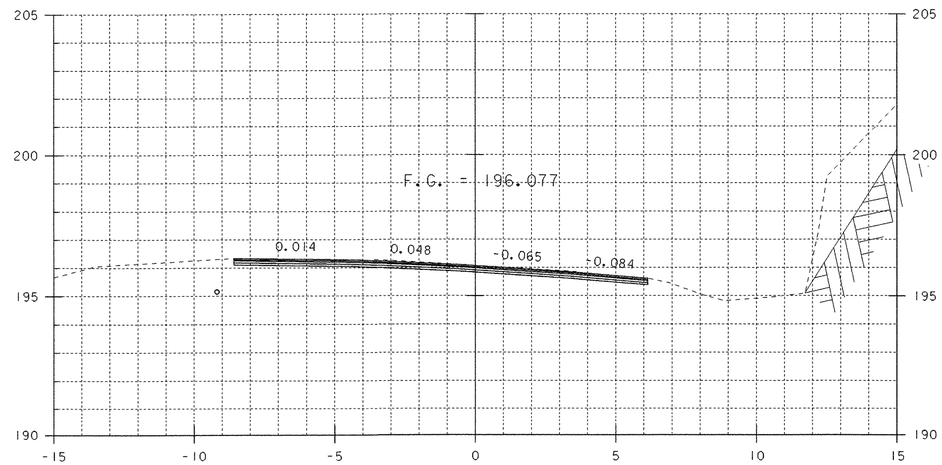


2+160.00

2+160.000 BEGIN APPROACH
MATCH EXISTING



2+180.00

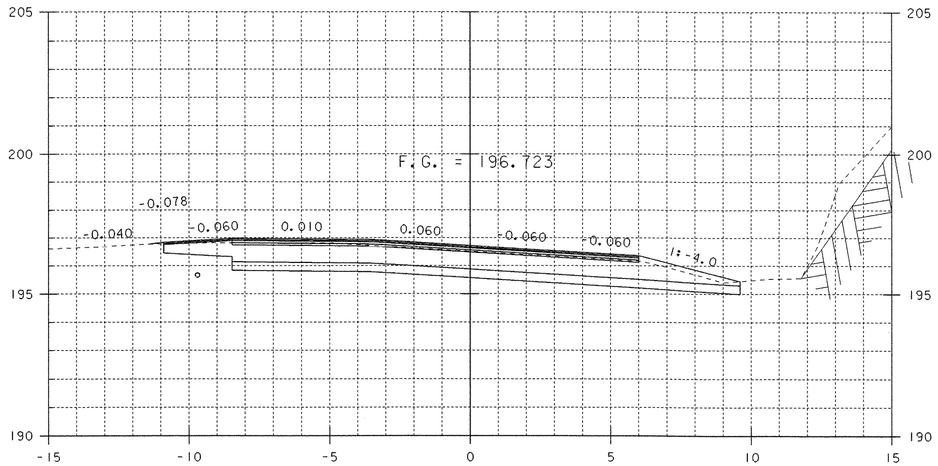
2+180.000 END COLD PLANING

0 2 4 6 8 10
SCALE 1:100

STA. 2+160 TO STA. 2+190

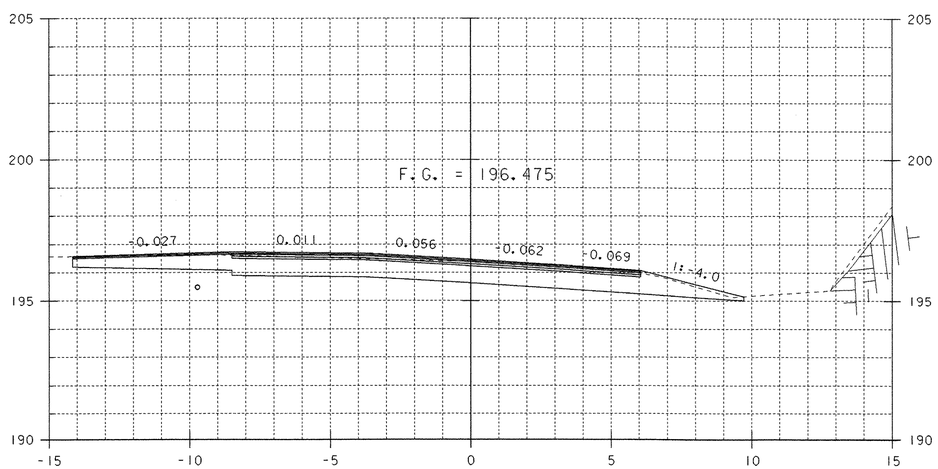
MAINLINE SECTIONS 1

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: 95b172/str/sb172xs2.dgn	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: L. BULLOCK	CHECKED BY: T. LACKEY
sb172m01.1	SHEET 61 OF 75

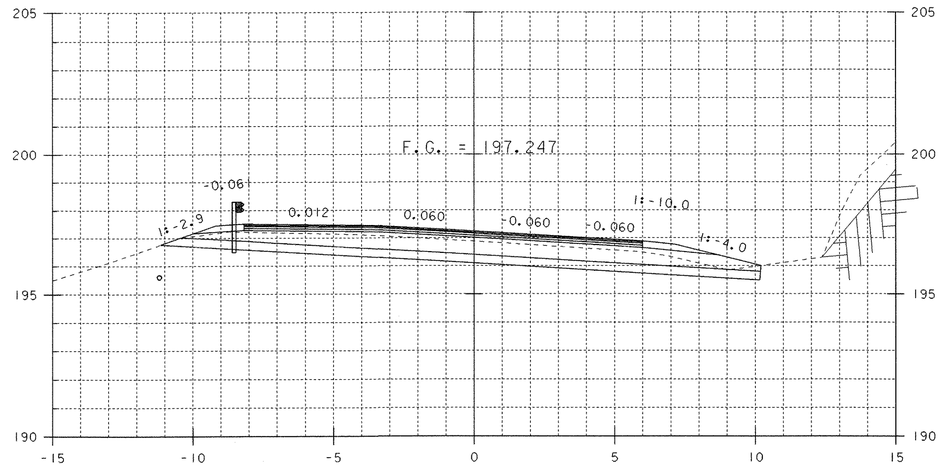


2+210.00

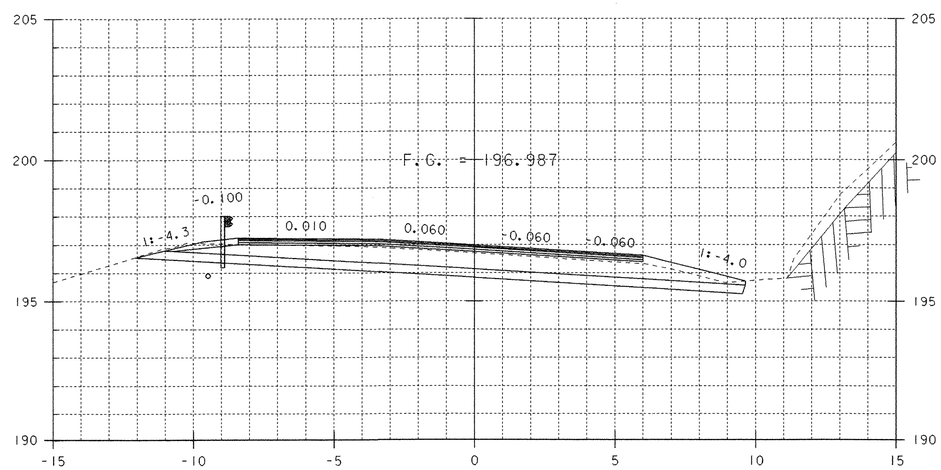
2+210.000 BEGIN PROJECT



2+200.00



2+230.00



2+220.00

MAINLINE SECTIONS 2

0 2 4 6 8 10

SCALE 1:100

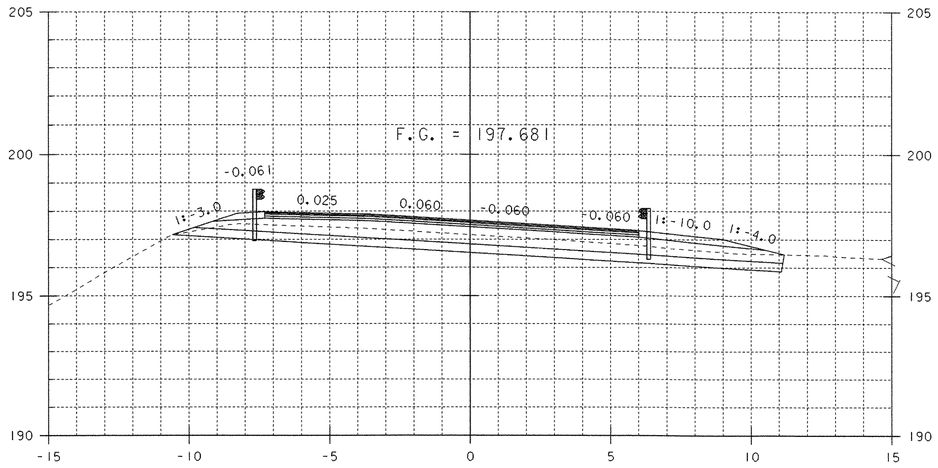
STA. 2+200 TO STA. 2+230

PROJECT NAME: RUTLAND TOWN

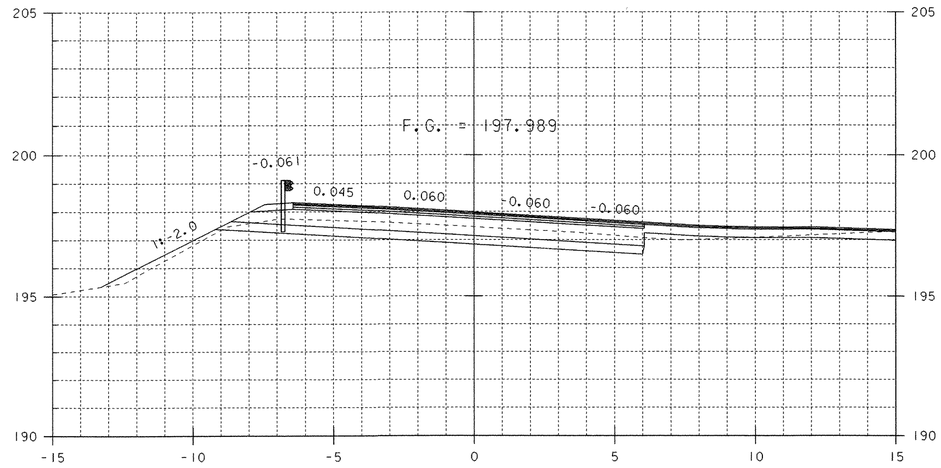
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: 95bl72/str/sbl72xs2.dgn
PROJECT LEADER: R. WHITCOMB
DESIGNED BY: L. BULLOCK
sbl72m02.1

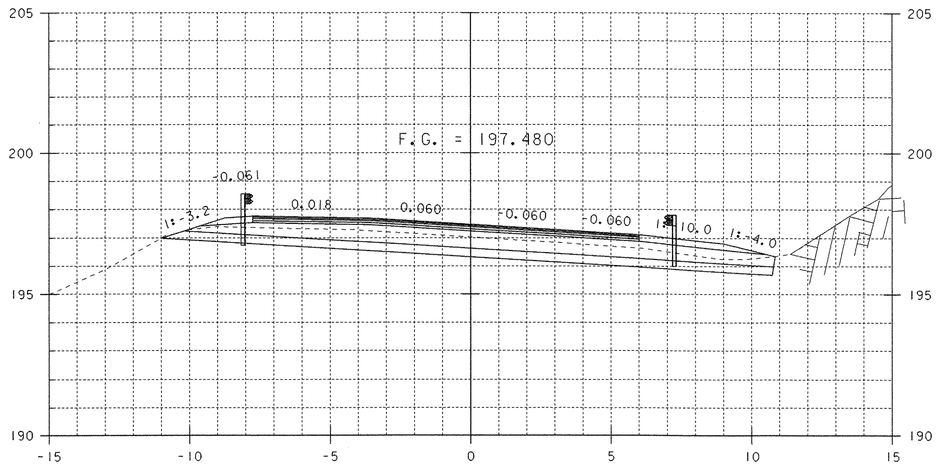
PLOT DATE: 11-MAR-2008
DRAWN BY: L. BULLOCK
CHECKED BY: T. LACKEY
SHEET 62 OF 75



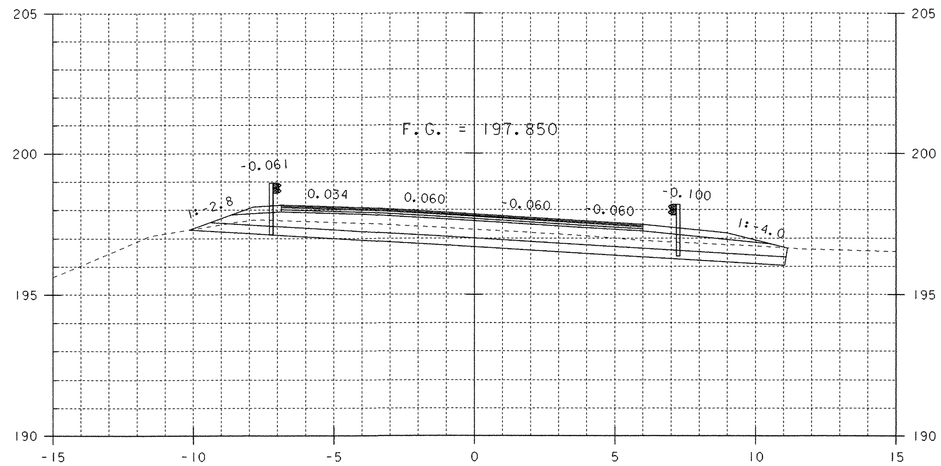
2+250.00



2+270.00



2+240.00



2+260.00

MAINLINE SECTIONS 3

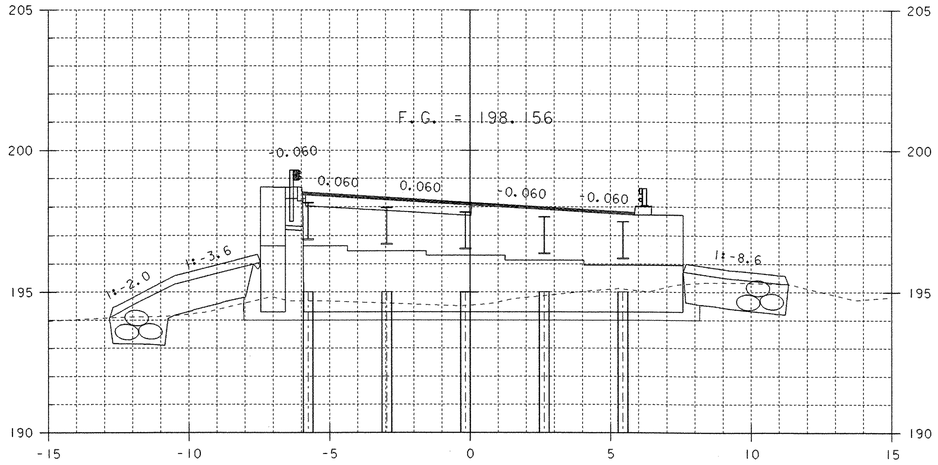
0 2 4 6 8 10
SCALE 1:100

STA. 2+240 TO STA. 2+270

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

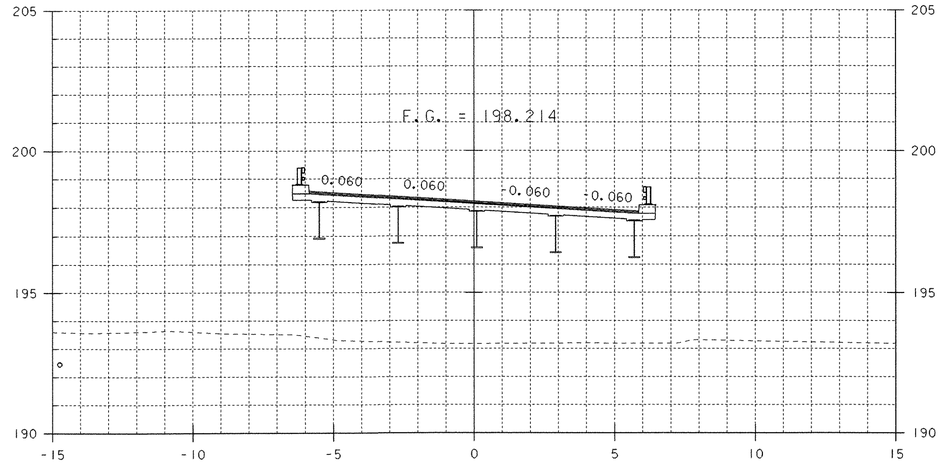
FILE NAME: 95bl72/str/sbl72xs2.dgn
PROJECT LEADER: R. WHITCOMB
DESIGNED BY: L. BULLOCK
sbl72m03.1

PLOT DATE: 11-MAR-2008
DRAWN BY: L. BULLOCK
CHECKED BY: T. LACKEY
SHEET 63 OF 75

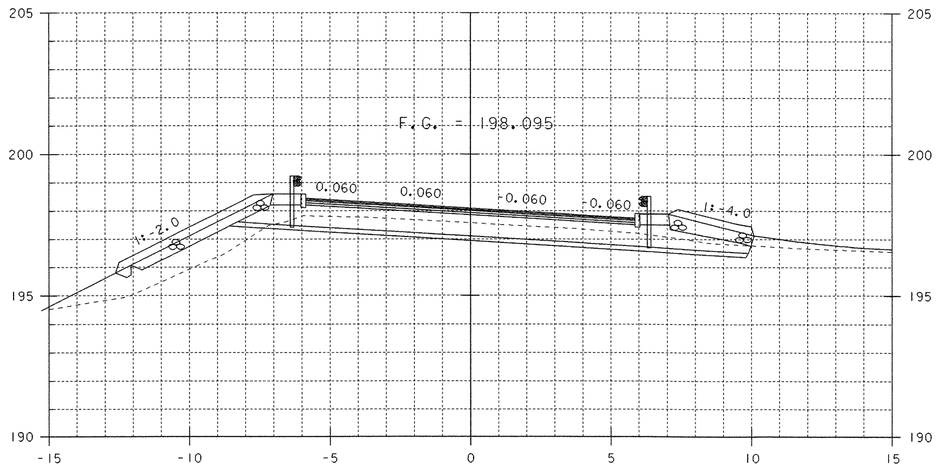


2+287.75

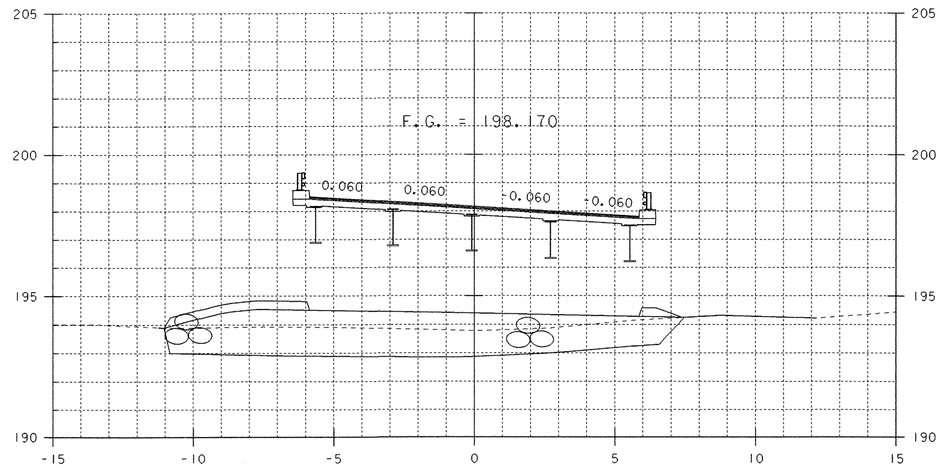
2+287.750 BEGIN BRIDGE



2+300.00



2+280.00



2+290.00

MAINLINE SECTIONS 4

0 2 4 6 8 10

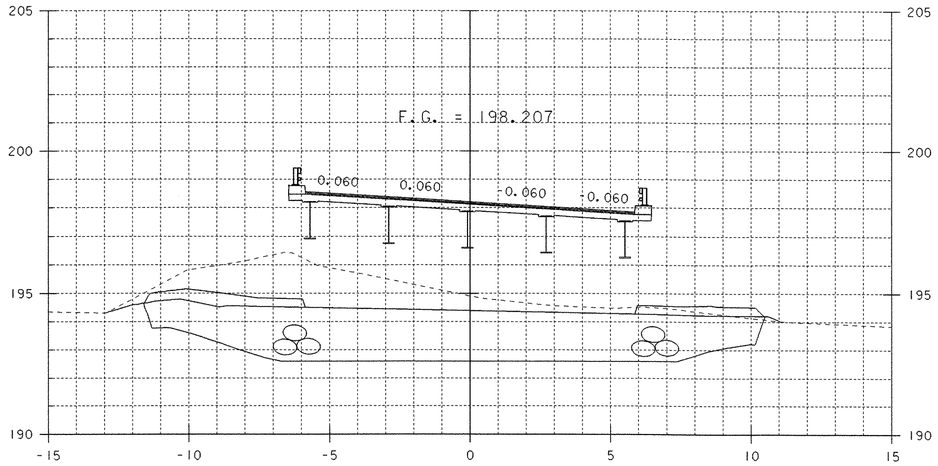
SCALE 1:100

STA. 2+280 TO STA. 2+300

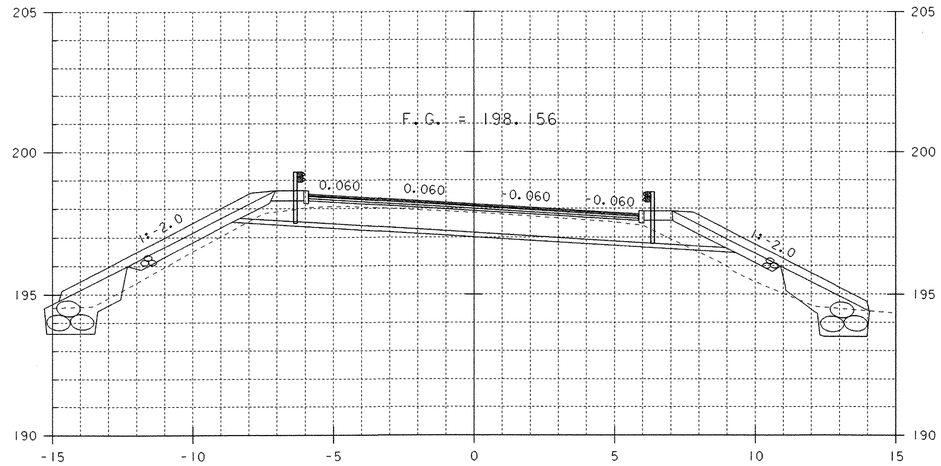
PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: 95bl72/str/sbl72xs2.dgn
PROJECT LEADER: R. WHITCOMB
DESIGNED BY: L. BULLOCK
sbl72m04.1

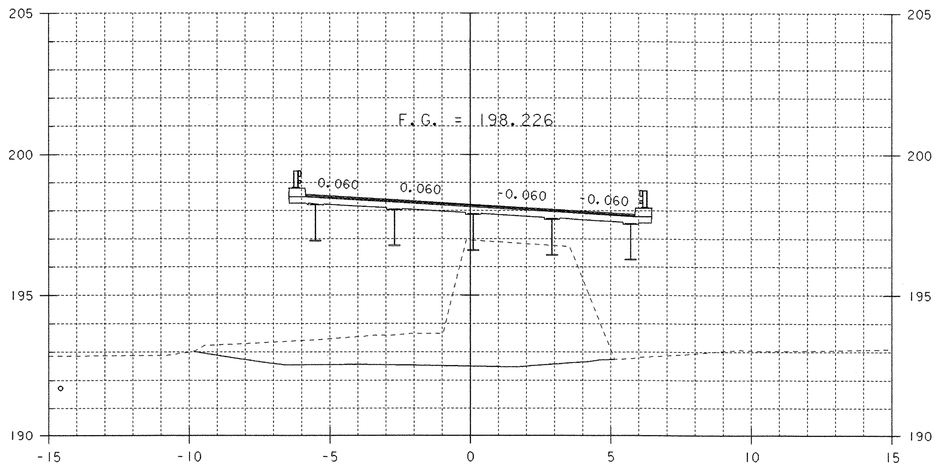
PLOT DATE: 11-MAR-2008
DRAWN BY: L. BULLOCK
CHECKED BY: T. LACKEY
SHEET 64 OF 75



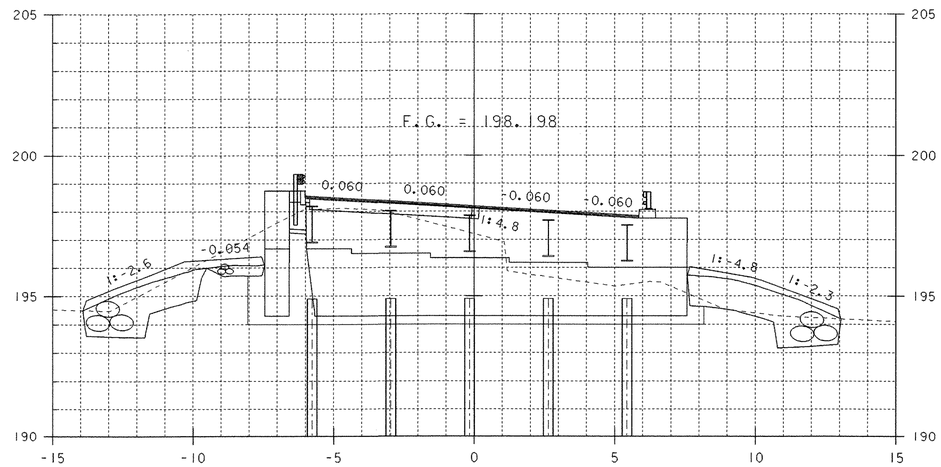
2+320.00



2+330.00



2+310.00



2+322.26

MAINLINE SECTIONS 5

2+322.256 END BRIDGE

0 2 4 6 8 10

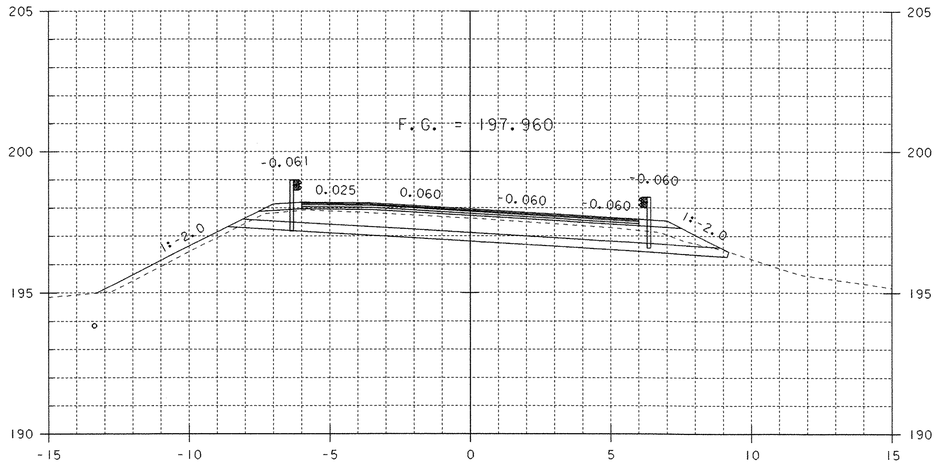
SCALE 1:100

STA. 2+310 TO STA. 2+330

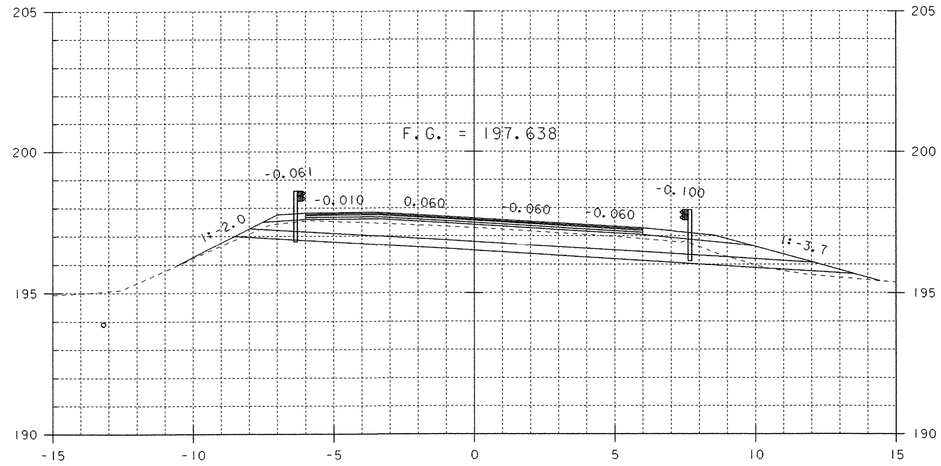
PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: 95bl72/str/sbl72xs2.dgn
PROJECT LEADER: R. WHITCOMB
DESIGNED BY: L. BULLOCK
sbl72m05.1

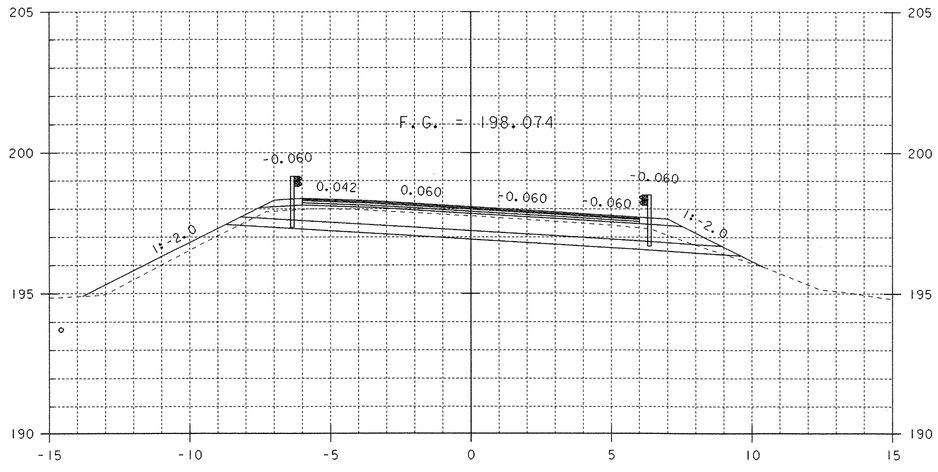
PLOT DATE: 11-MAR-2008
DRAWN BY: L. BULLOCK
CHECKED BY: T. LACKEY
SHEET 65 OF 75



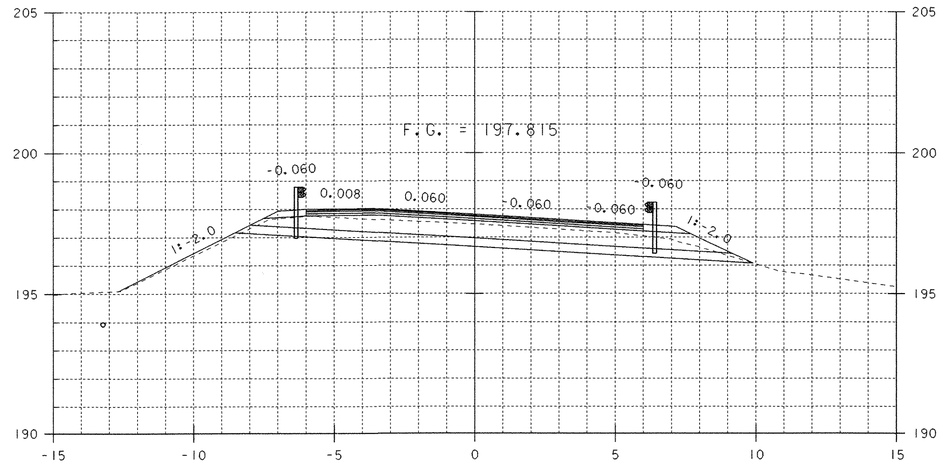
2+350.00



2+370.00



2+340.00



2+360.00

MAINLINE SECTIONS 6

0 2 4 6 8 10

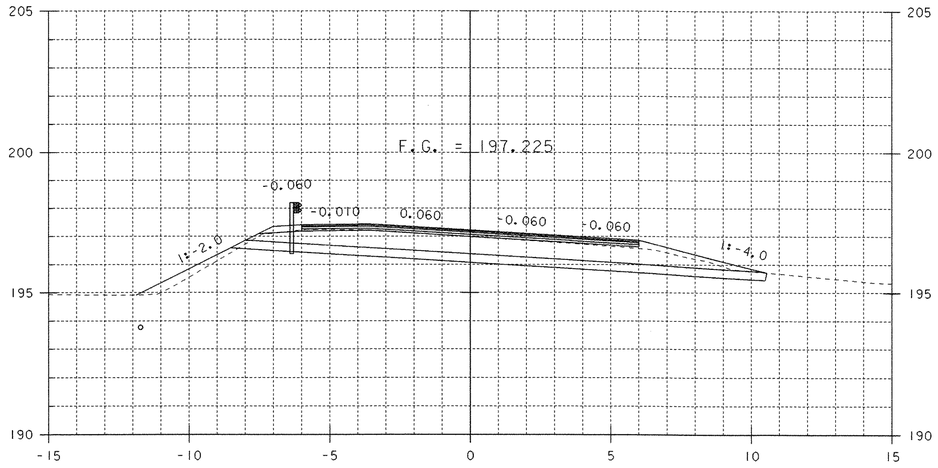
SCALE 1:100

STA. 2+340 TO STA. 2+370

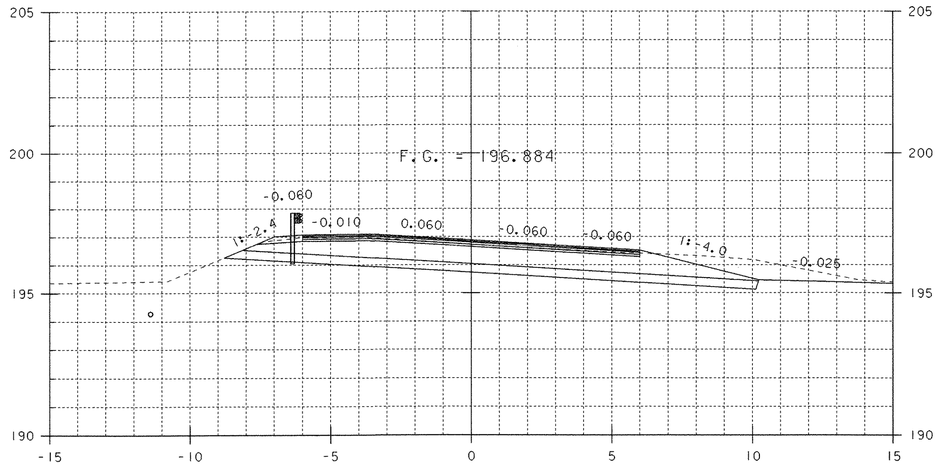
PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: 95bl72/str/sbl72xs2.dgn
PROJECT LEADER: R. WHITCOMB
DESIGNED BY: L. BULLOCK
sbl72m06.i

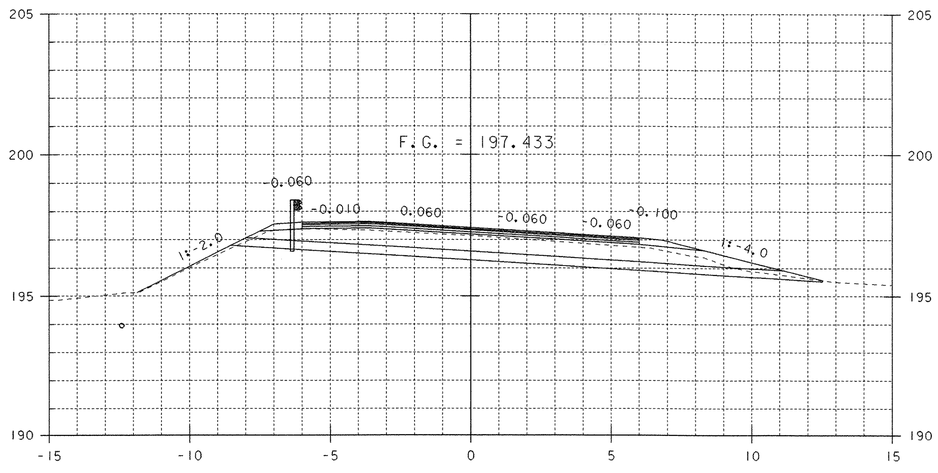
PLOT DATE: 11-MAR-2008
DRAWN BY: L. BULLOCK
CHECKED BY: T. LACKEY
SHEET 66 OF 75



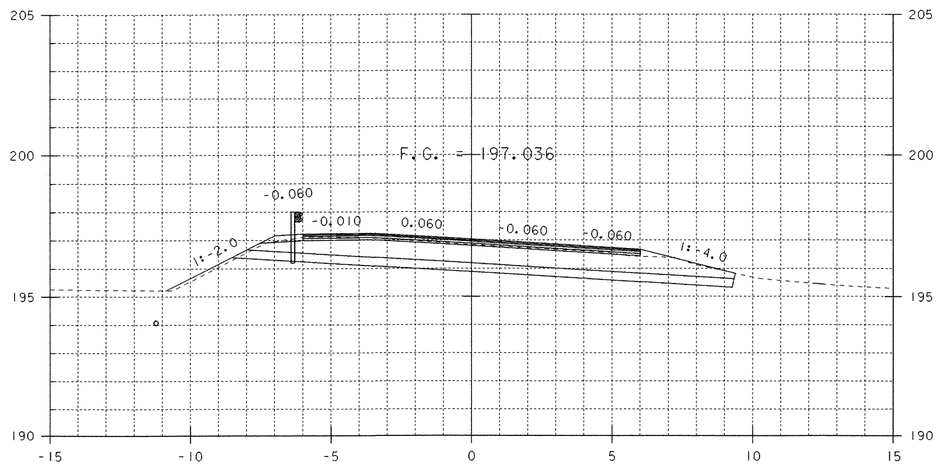
2+390.00



2+410.00



2+380.00



2+400.00

MAINLINE SECTIONS 7

0 2 4 6 8 10

SCALE 1:100

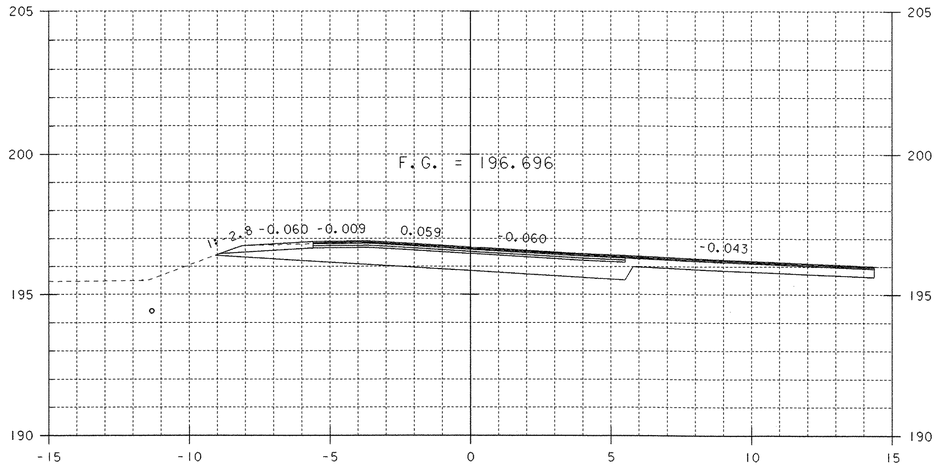
STA. 2+380 TO STA. 2+410

PROJECT NAME: RUTLAND TOWN

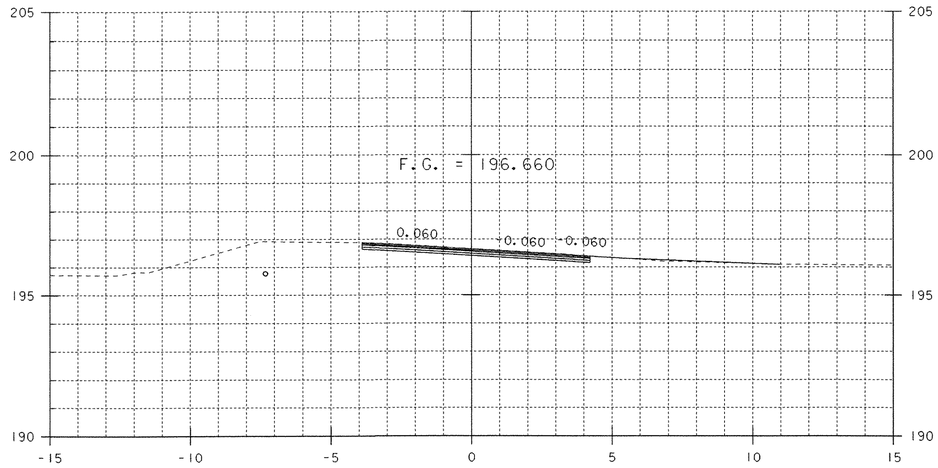
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: 95bl72/str/sbl72xs2.dgn
PROJECT LEADER: R. WHITCOMB
DESIGNED BY: L. BULLOCK
sbl72m07.1

PLOT DATE: 11-MAR-2008
DRAWN BY: L. BULLOCK
CHECKED BY: T. LACKEY
SHEET 67 OF 75

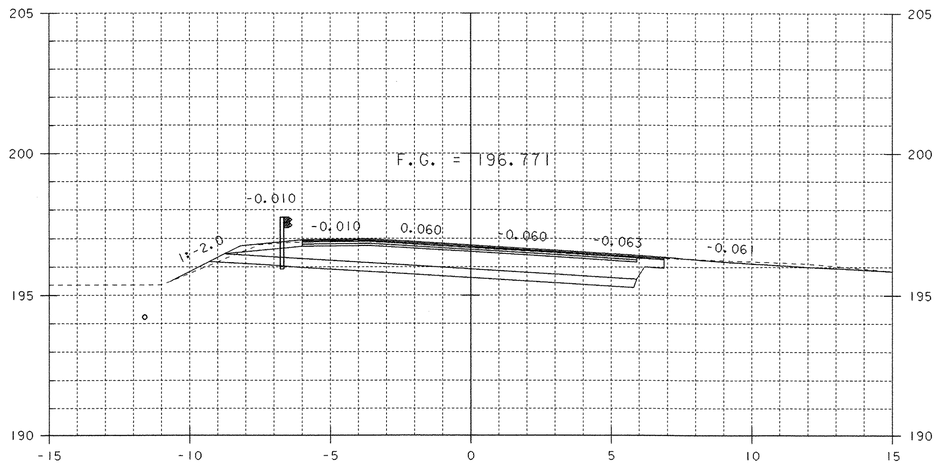


2+430.00



2+450.00

2+450.000 BEGIN COLD PLANING



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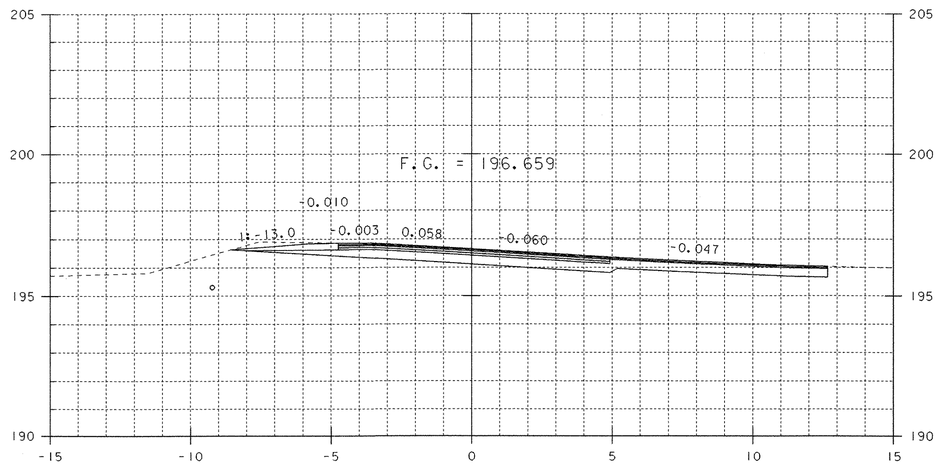
2+420.000 END PROJECT



2+440.00

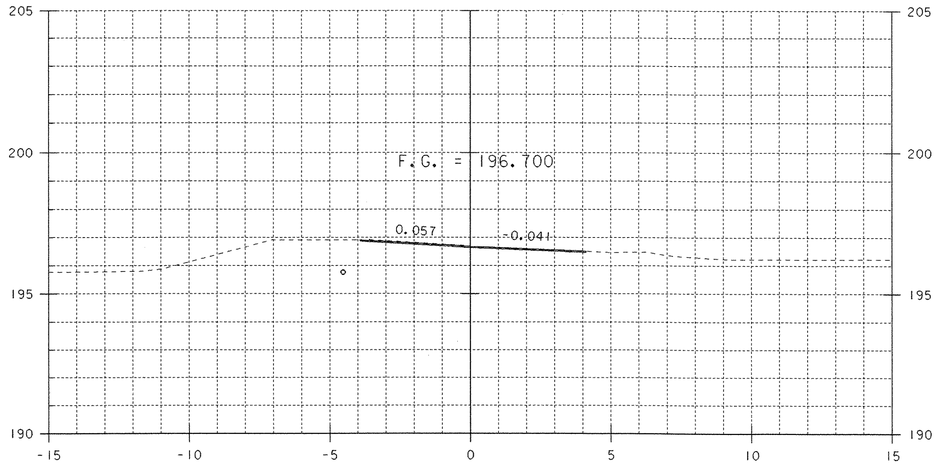
MAINLINE SECTIONS 8

0 2 4 6 8 10

SCALE 1:100

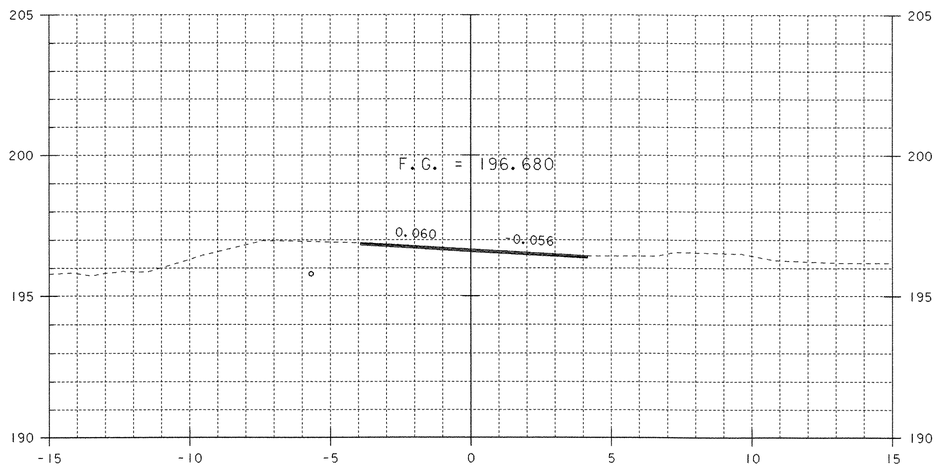
STA. 2+420 TO STA. 2+450

PROJECT NAME: RUTLAND TOWN	
PROJECT NUMBER: BRF 019-3(48)	
FILE NAME: 95bl72/str/sbl72xs2.dgn	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: L. BULLOCK	CHECKED BY: T. LACKEY
sbl72m08.1	SHEET 68 OF 75



2+470.00

2+470.000 END APPROACH
MATCH EXISTING



2+460.00

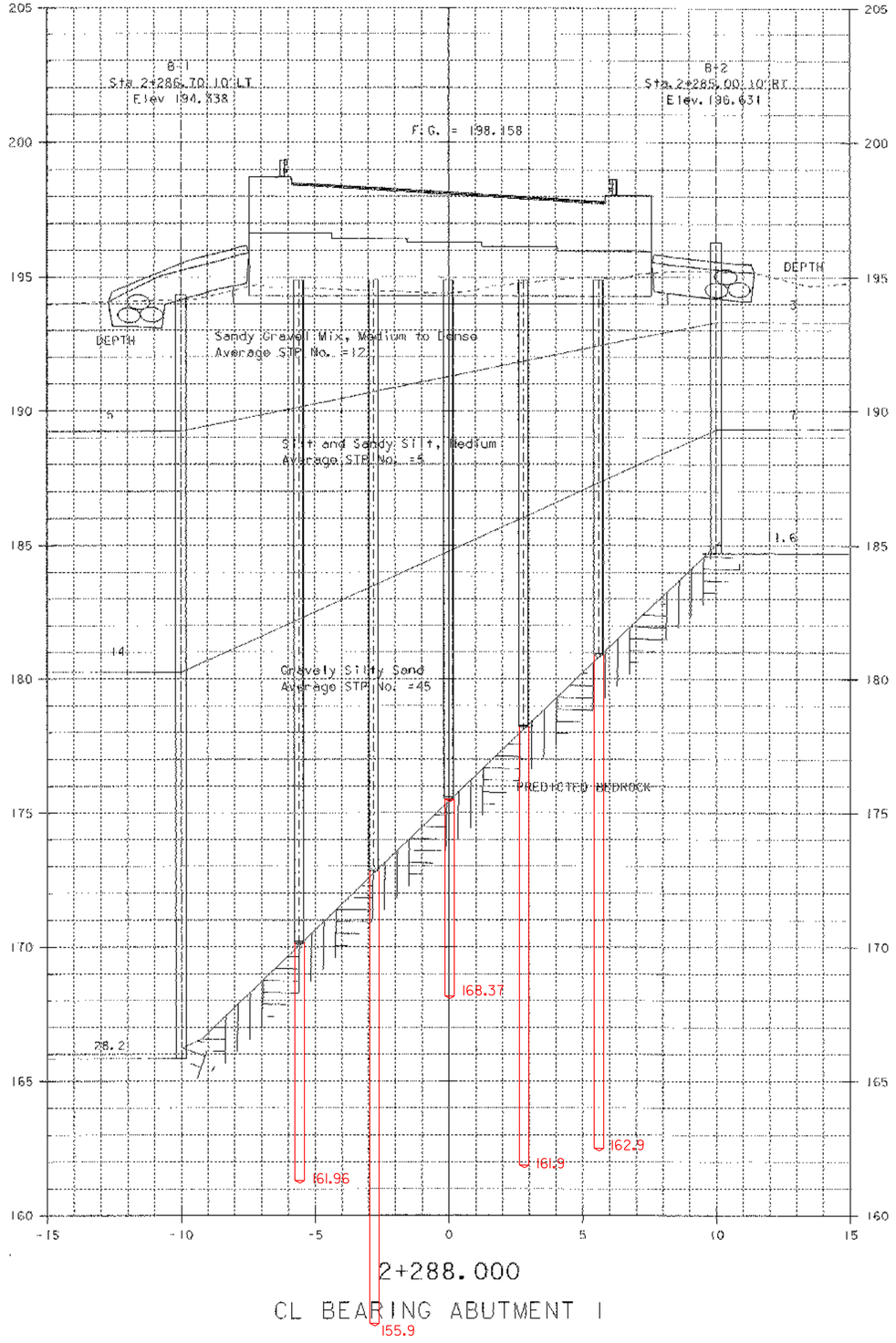
2+450.000 BEGIN COLD PLANING

0 2 4 6 8 10
SCALE 1:100

STA. 2+460 TO STA. 2+470

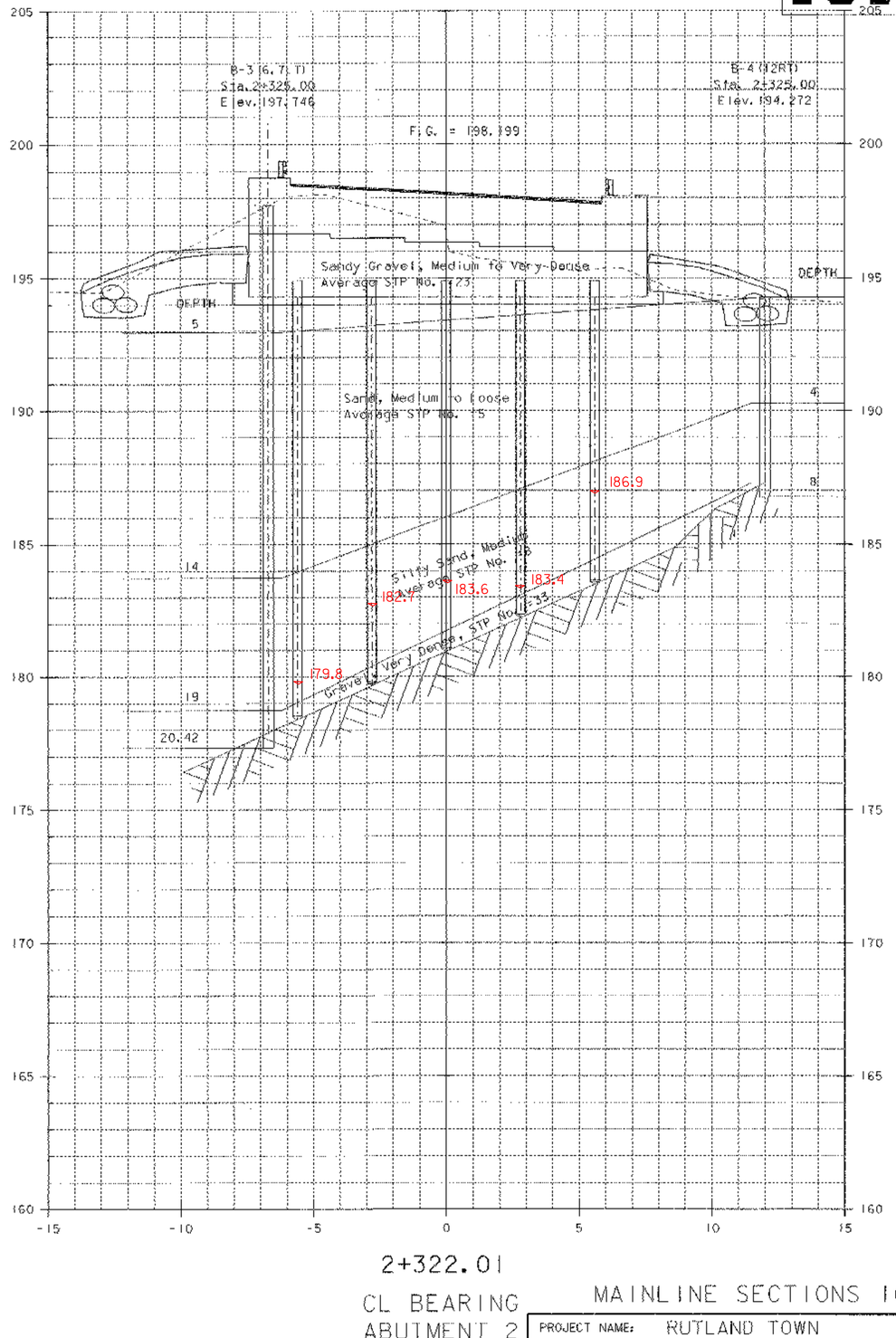
MAINLINE SECTIONS 9

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: 95bl72/str/sbl72xs2.dgn	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: L. BULLOCK	CHECKED BY: T. LACKEY
sbl72m09.i	SHEET 69 OF 75



2+288.000

CL BEARING ABUTMENT 1



2+322.01

CL BEARING ABUTMENT 2

MAINLINE ABUTMENTS

MAINLINE SECTIONS 10

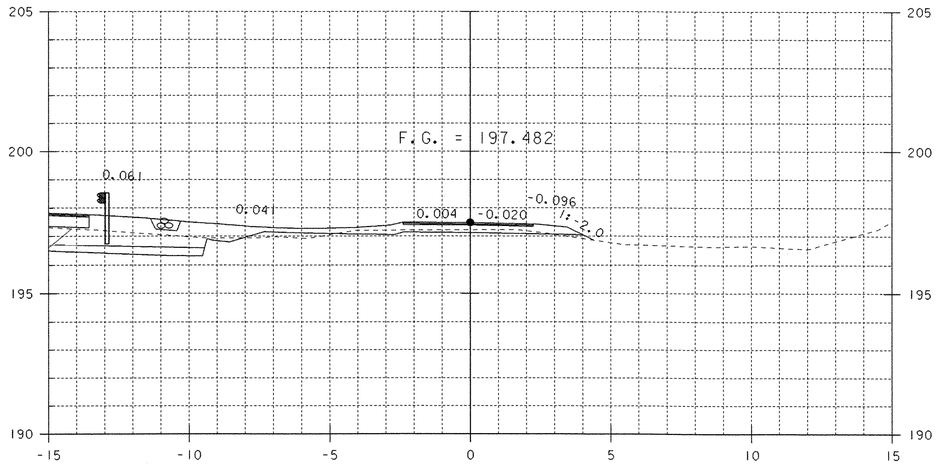
SCALE 1:100

THE GENERAL NOTES ON THE GEOTECHNICAL PLAN SHEET 41 APPLY TO THE GEOTECHNICAL INFORMATION SHOWN ON THIS SHEET.

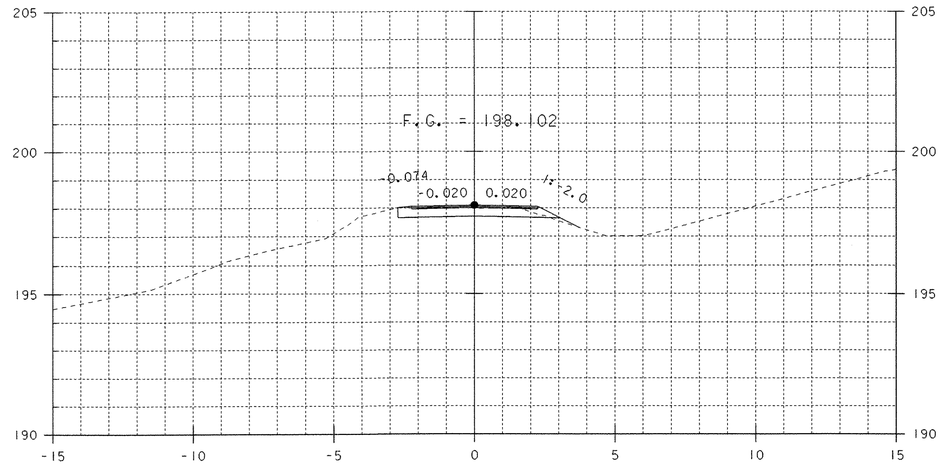
PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: 95bl72/str/sbl72xs2.dgn
PROJECT LEADER: R. WHITCOMB
DESIGNED BY: T. LACKEY
sbl72mi0.1

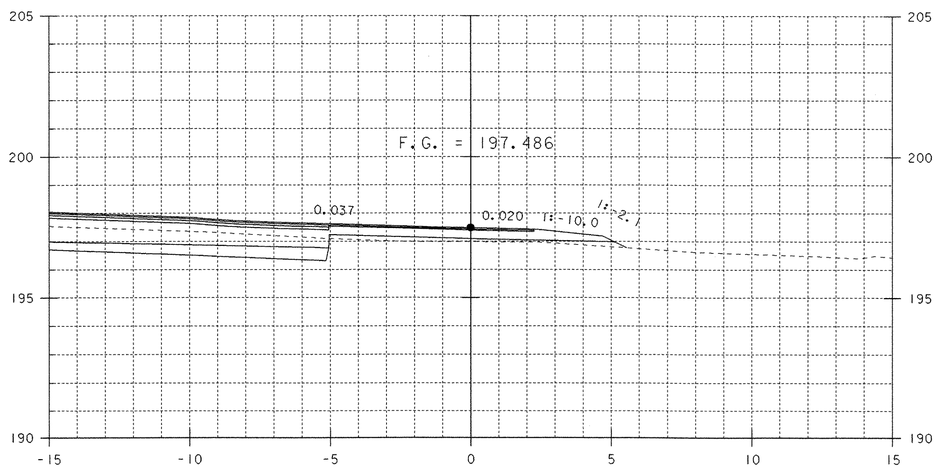
PLOT DATE: 11-MAR-2008
DRAWN BY: T. LACKEY
CHECKED BY:
SHEET 10 OF 75



4+015.00

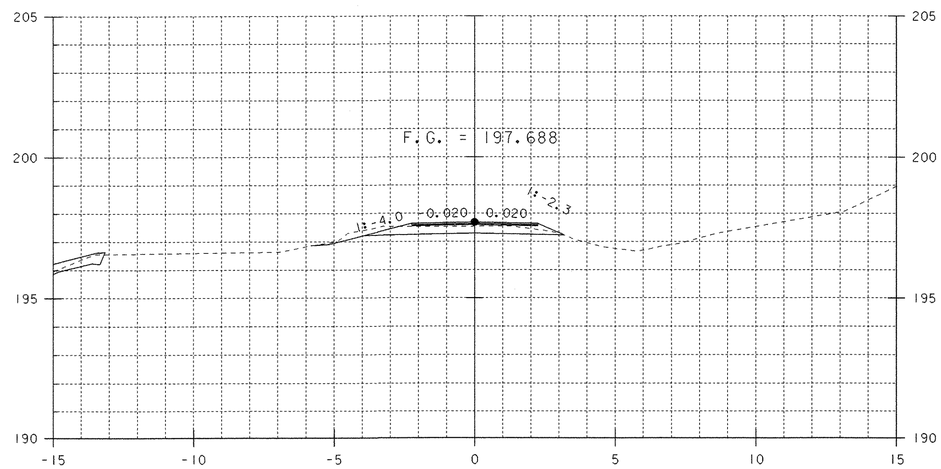


4+025.00



4+010.00

4+006.967 BEGIN DRIVE



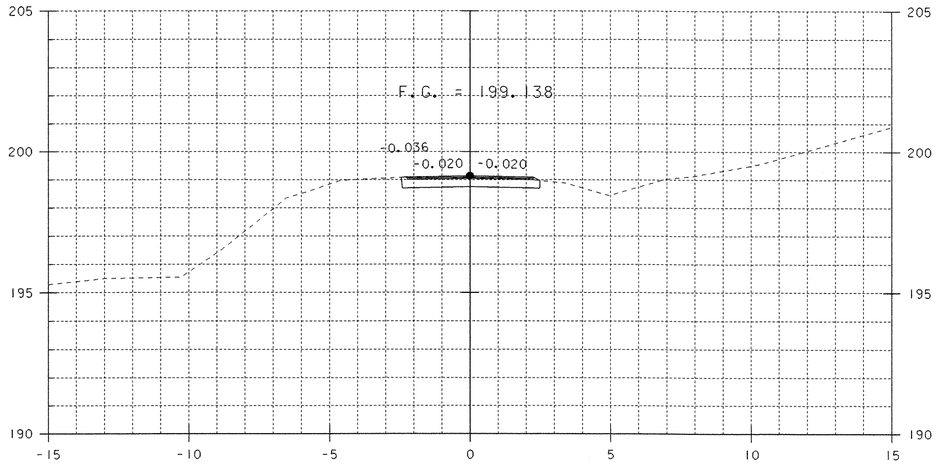
4+020.00

DRIVE SECTIONS 1

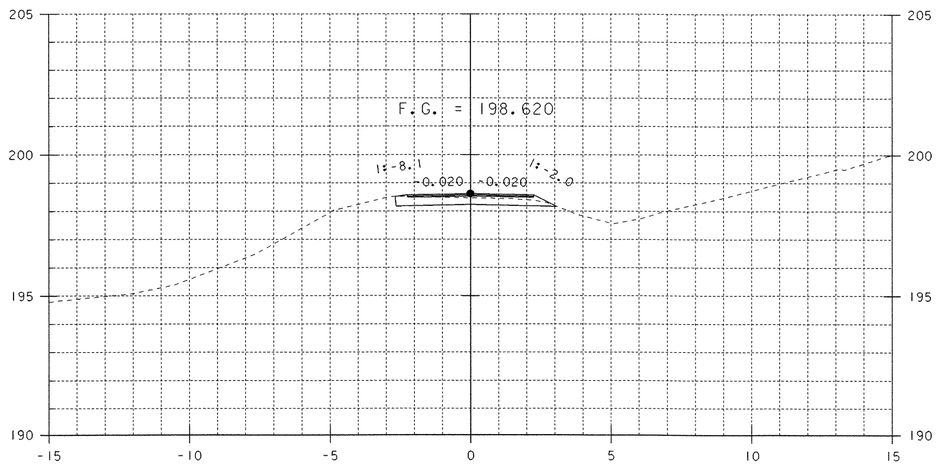
STA. 4+010 TO STA. 4+025

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

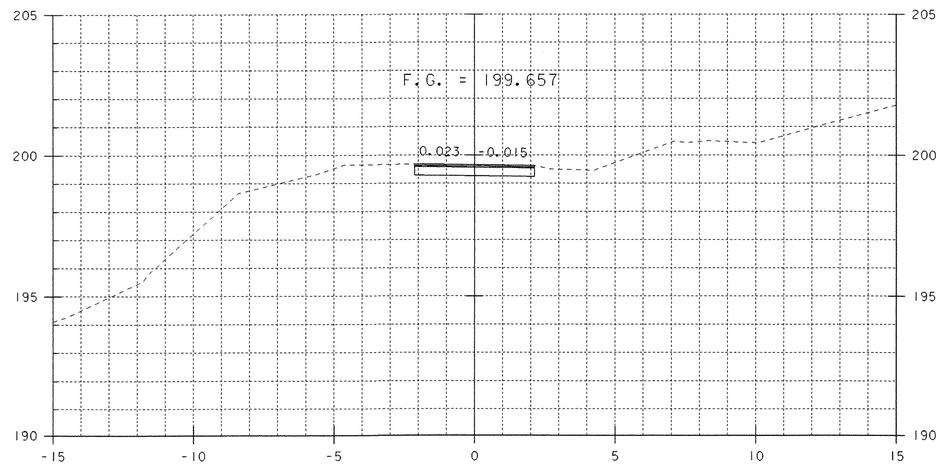
FILE NAME: 95bl72/str/sbl72xs2.dgn	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: L. BULLOCK	CHECKED BY: T. LACKEY
sbl72d01.1	SHEET 71 OF 75



4+035.00



4+030.00



4+040.00

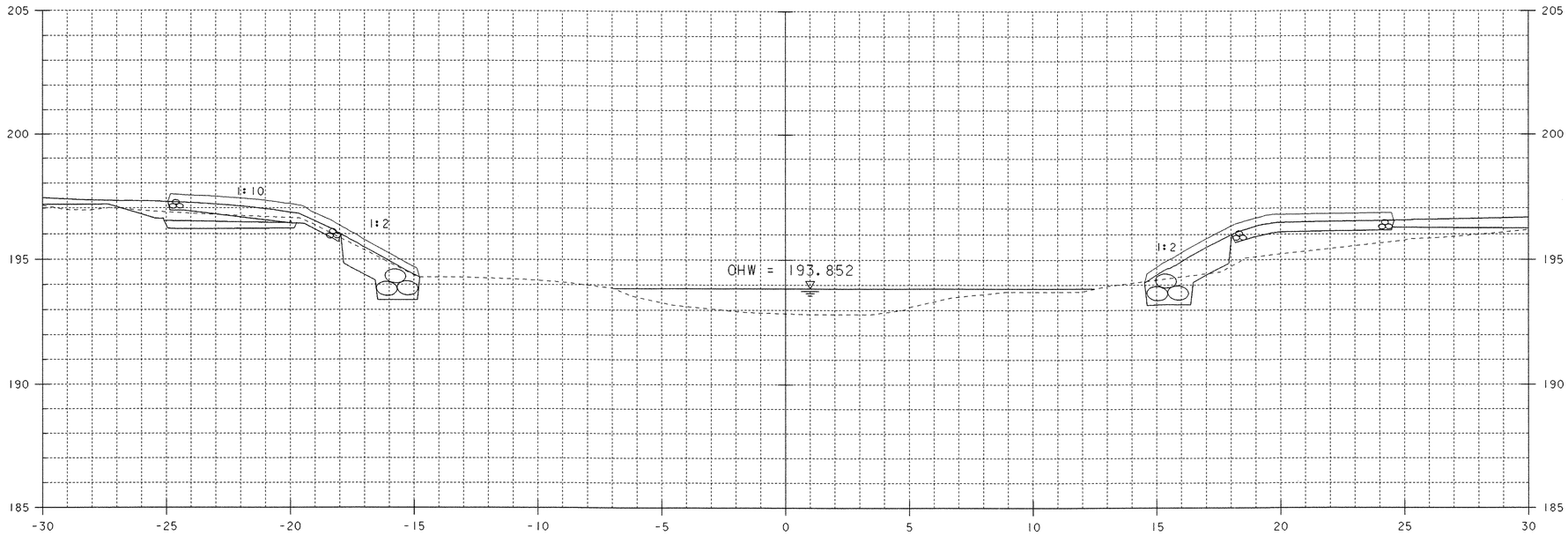
4+040.000 END DRIVE
MATCH EXISTING

STA. 4+030 TO STA. 4+040

DRIVE SECTIONS 2

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)

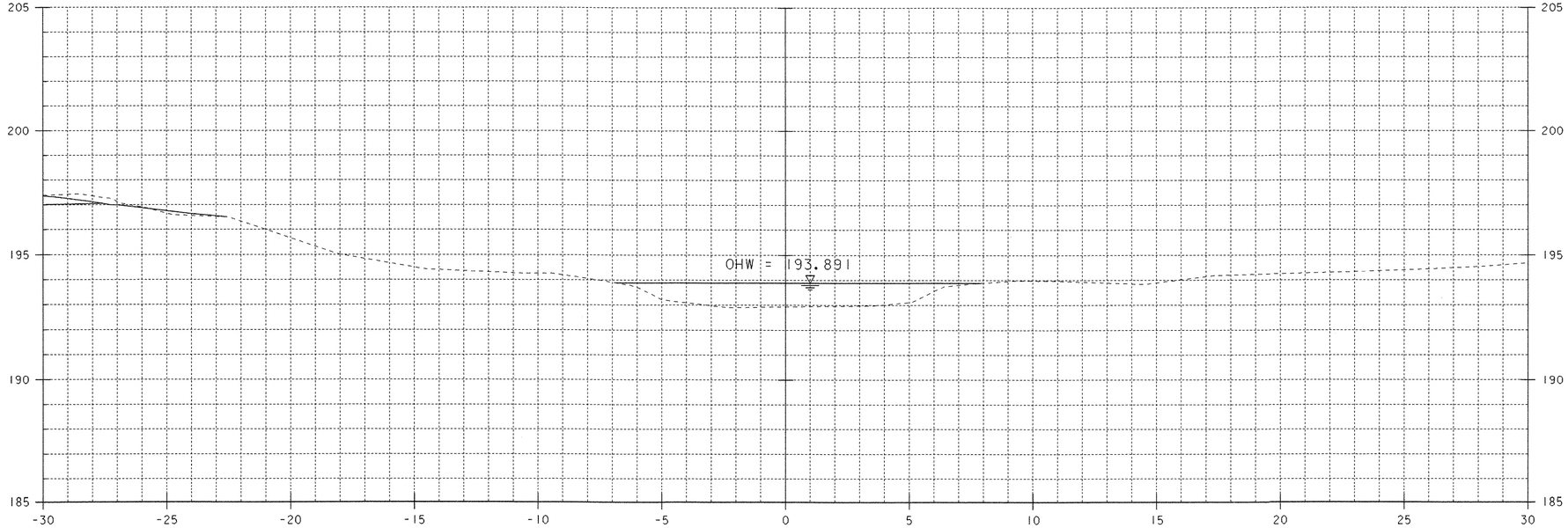
FILE NAME: 95bl72/str/sbl72xs2.dgn	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: L. BULLOCK
DESIGNED BY: L. BULLOCK	CHECKED BY: T. LACKEY
sbl72d02.i	SHEET 72 OF 75



1+020.00

STA. 1+017.60 LT.
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL, TYPE III
BEGIN GRUBBING MATERIAL

STA. 1+015.68 RT.
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL, TYPE III
BEGIN GRUBBING MATERIAL



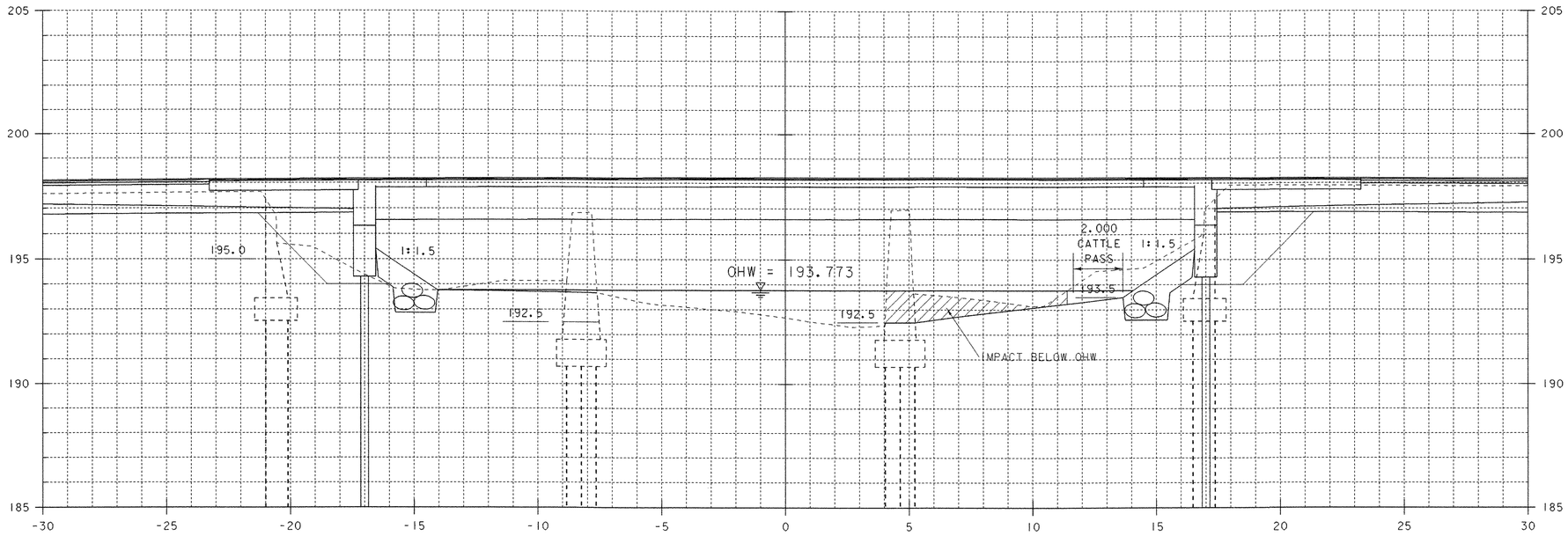
1+015.00

CHANNEL SECTIONS 1

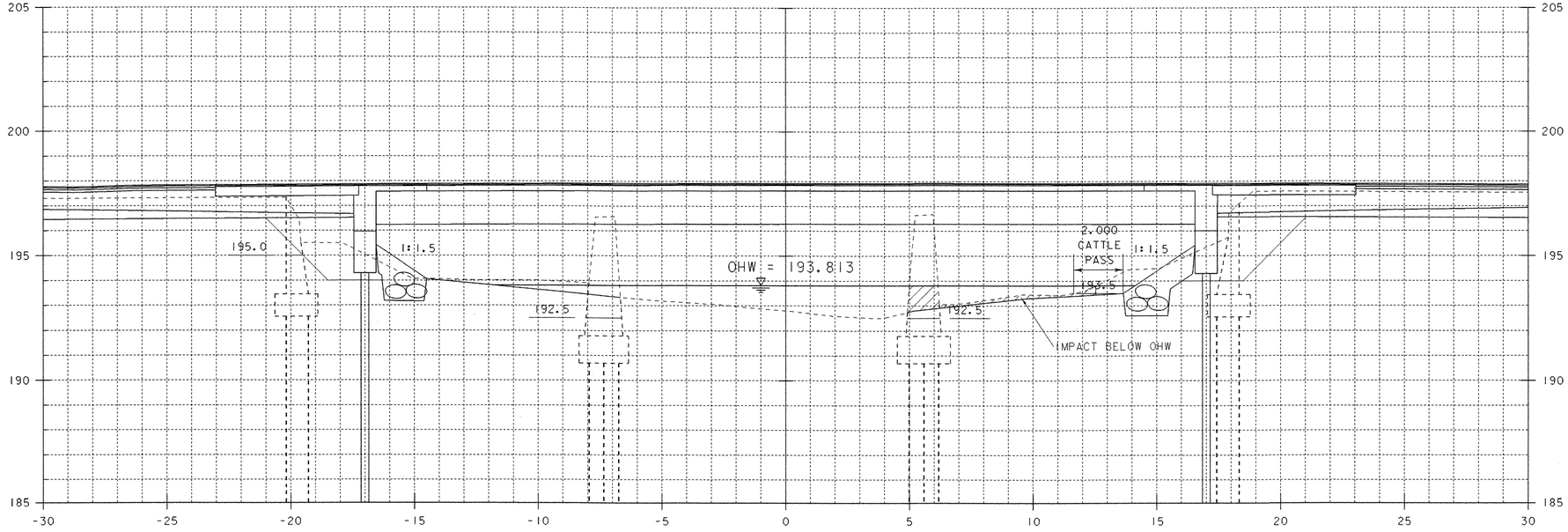
0 2 4 6 8 10
SCALE 1:100

STA. 1+015 TO STA. 1+020

PROJECT NAME:	RUTLAND TOWN
PROJECT NUMBER:	BRF 019-3(48)
FILE NAME: sbl72c01.1	PLOT DATE: 11-MAR-2008
PROJECT LEADER: R. WHITCOMB	DRAWN BY: T. LACKEY
DESIGNED BY: T. LACKEY	CHECKED BY:
95bl72/str/sbl72xs2.dgn	SHEET 73 OF 75



1+030.00



STA. 1+024 LT.
END GRUBBING MATERIAL

1+025.00

STA. 1+024 RT.
END GRUBBING MATERIAL

0 2 4 6 8 10
SCALE 1:100

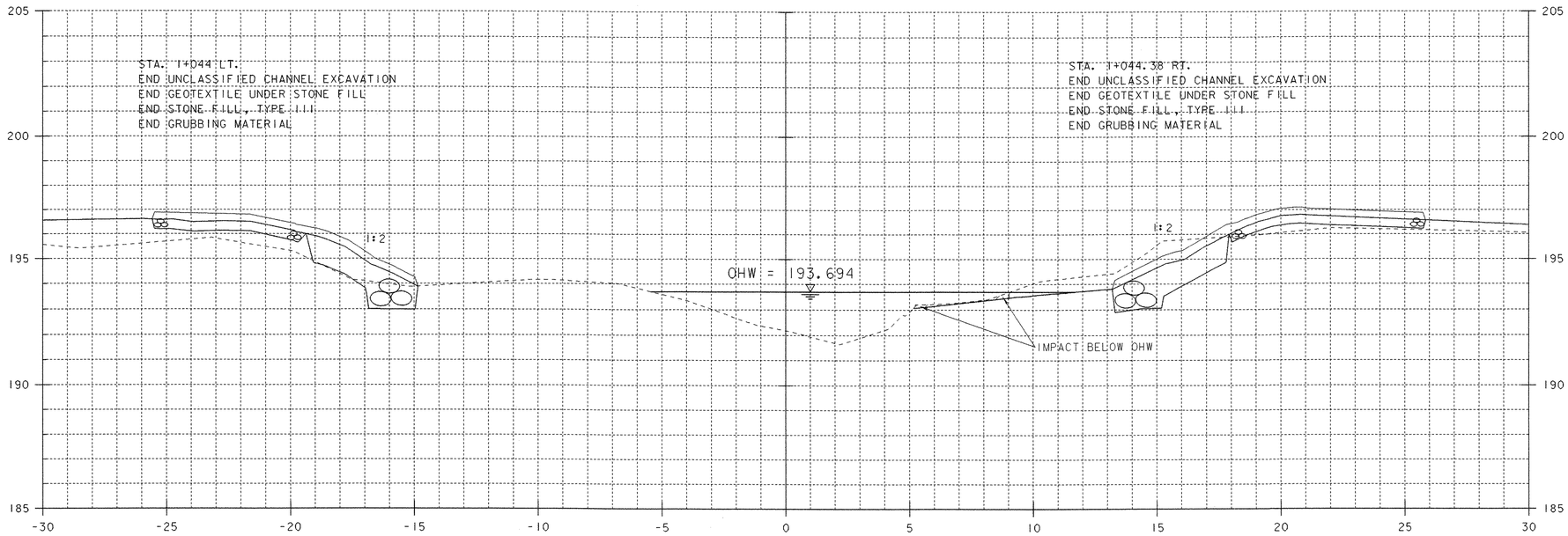
STA. 1+025 TO STA. 1+030

CHANNEL SECTIONS 2

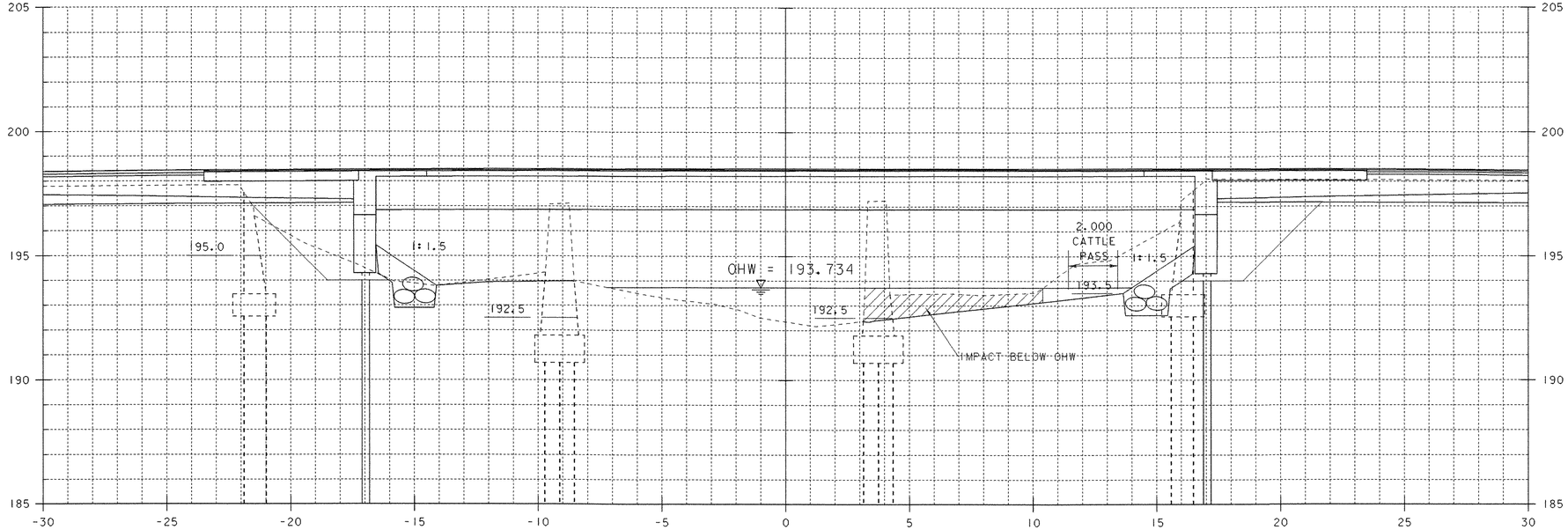
PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: sbl72c02.i
PROJECT LEADER: R. WHITCOMB
DESIGNED BY: T. LACKEY
95bl72/str/sbl72xs2.dgn

PLOT DATE: 11-MAR-2008
DRAWN BY: T. LACKEY
CHECKED BY:
SHEET 74 OF 75



1+040.00



STA. 1+036 LT.
BEGIN GRUBBING MATERIAL

1+035.00

STA. 1+036 RT.
BEGIN GRUBBING MATERIAL

0 2 4 6 8 10
SCALE 1:100

STA. 1+035 TO STA. 1+040

CHANNEL SECTIONS 3

PROJECT NAME: RUTLAND TOWN
PROJECT NUMBER: BRF 019-3(48)

FILE NAME: sbl72c03.1
PROJECT LEADER: R. WHITCOMB
DESIGNED BY: T. LACKEY
95bl72/str/sbl72xs2.dgn

PLOT DATE: 11-MAR-2008
DRAWN BY: T. LACKEY
CHECKED BY:
SHEET 75 OF 75

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS

1). ALL MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006 WITH LATEST REVISIONS AND THE AASHTO ~~STANDARD SPECIFICATIONS~~ FOR HIGHWAY BRIDGES ~~DATED 2002~~ 3RD EDITION AND ITS LATEST REVISIONS. LRFD

MATERIAL SPECIFICATIONS

1). UNLESS OTHERWISE NOTED, ALL STEEL TO BE AASHTO M270M (ASTM A709M) GRADE 345W.

2). MATERIAL NOTED "CVN" OR "H2-3" ON DETAIL DRAWINGS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF VERMONT STANDARD SPECIFICATIONS SECTION 714.01.

3). HIGH STRENGTH BOLTS: $\frac{7}{8}$"ø ASTM A325 TYPE 3 IN $\frac{15}{16}$"ø HOLES.
NUTS SHALL BE A563 GRADE C3.
BOLTS & NUTS SHALL BE ROTATIONAL CAPACITY TESTED.
DO NOT MIX NUTS & BOLTS FROM DIFFERENT CONTAINERS UNLESS ALL BOLTS & NUTS HAVE THE SAME LOT NUMBER.

FABRICATION

1). ALL HOLES SHALL BE PUNCHED OR DRILLED FULL SIZE (UN).

WELDING

1). THE CONFIGURATION OF THE WELD JOINTS AND ALL WELDING PROCEEDURES SHALL BE IN ACCORDANCE WITH AASHTO/AWS D1.5-~~02~~ 08 BRIDGE WELDING CODE AND IN ADDITION TO SPECIFICATIONS SHOWN ABOVE. ALL WELDING WILL BE DETAILED TO PRE-QUALIFIED JOINTS, UNLESS PROHIBITED BY THE DESIGNER.

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

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

4). SEE DETAIL "WS1" ON THIS DRAWING FOR WELD TERMINATION DETAIL.

CLEANING

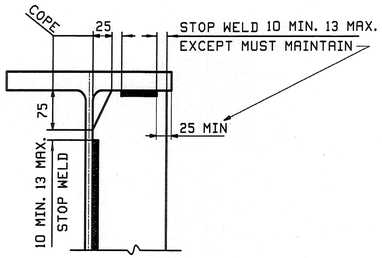
1. ALL STEEL SHALL BE BLAST CLEANED IN ACCORDANCE WITH SSPC SP-6.
2. STRUCTURAL STEEL SHALL NOT BE PAINTED.

FIELD CONNECTIONS

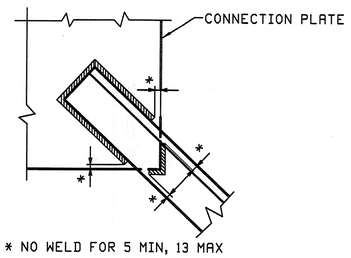
1). ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH STRENGTH A-325 TYPE 3 BOLTS (UN), INSTALLED PER SECTION 506.19(c). SEE DWG E1 FOR FIELD BOLT SIZES.

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

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



DETAIL "WS1"



* NO WELD FOR 5 MIN, 13 MAX

TYP. WELD TERMINATION

RECEIVED
CK'D BY RKW CK'D BY _____
JUL 0 1 2008
RESUBMIT _____ APPROVED As Noted
BY DATE

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

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0		~			5/20/08	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:

DESCRIPTION: GENERAL NOTES

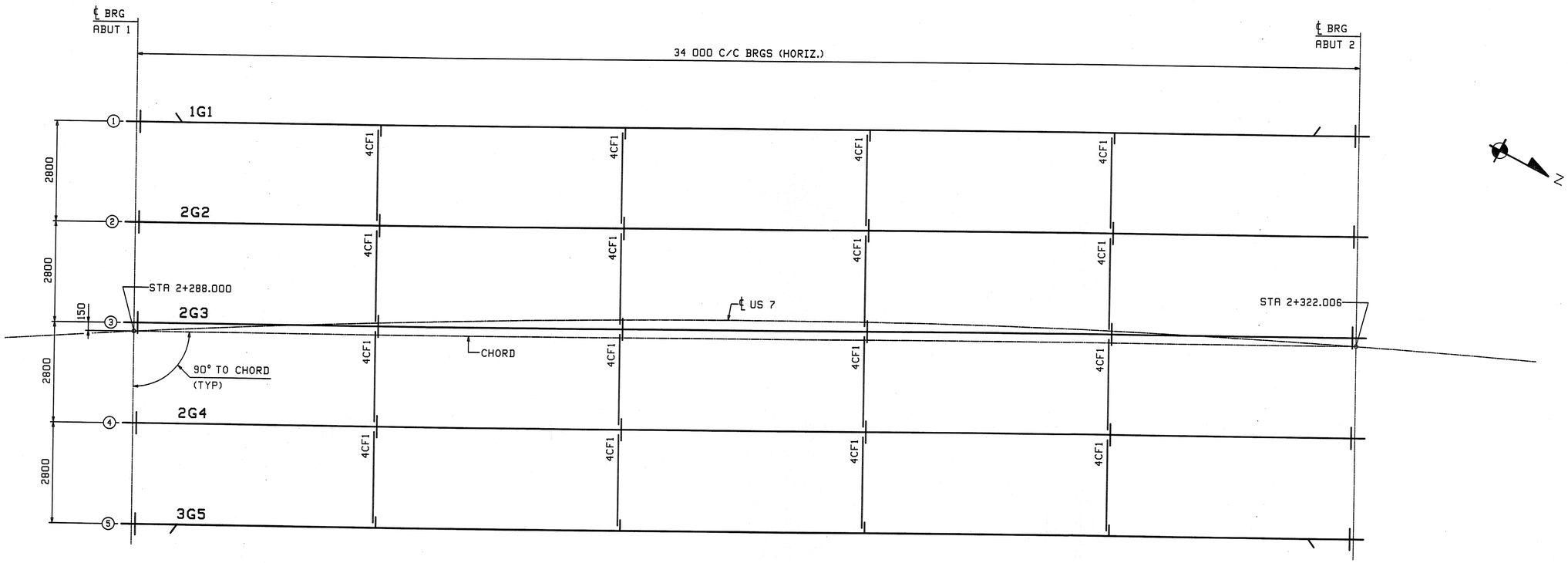
CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179
TENSOR 2788

STRUCTURE: US 7 over EAST CREEK BRIDGE NO 103 RUTLAND COUNTY, VERMONT	DRAWN: JTB	DATE: 04/19	
	CHKD: JF	DATE: 05/16	
LOCATION: TOWN OF RUTLAND	JOB NO.	DWG NO.	
PROJ NO. BRF 019-3(48)	368	GN1	
CUSTOMER: VERMONT AOT		REV. △	

Structures Copy

JTB Thu May 15 1353:49 EDT 2008 /users/jobs/2788/GN1.dgn v8

RevG



FRAMING PLAN

FIELD BOLT LIST							A325 Type 3 BOLTS							
LINE	NO REQ'D.	BOLT DIAM.	BOLT LEN.	BOLTS /CONN.	# OF CONN.	GRIP	THICKNESS OF PCS. CONNECTED						WASH CODE	PIECES CONNECTED AND REMARKS
1														**INT. CROSSFRAMES**
2	192	7/8	2 1/2	6	32	29	13	16					1	TOP GUSSET TO CONNECTION PLATE
3	256	7/8	2 1/2	8	32	29	13	16					1	BTM GUSSET TO CONNECTION PLATE

WASHER CODES

1: 1 Hard Flat Washer

FIELD BOLT SUMMARY	2% + 2 ADDED, MIN. 2 EXTRA					
LINE	NO. OF BOLTS	BOLT DIAM.	TYPE	BOLT LEN	ACTURAL COUNT	REMARKS
1	459	7/8	A325 Type 3	2 1/2	448	
2						
3	459		Hard Flat Washers for 7/8 ø BOLT		F436-3	
4						
5						
6						

RECEIVED
CK'D BY RW OK'D BY
JUL 0 1 2008
RESUBMIT APPROVED ✓
BY RW DATE

NOTE:
FOR GENERAL NOTES SEE DRAWING GN1.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					5/20/08	

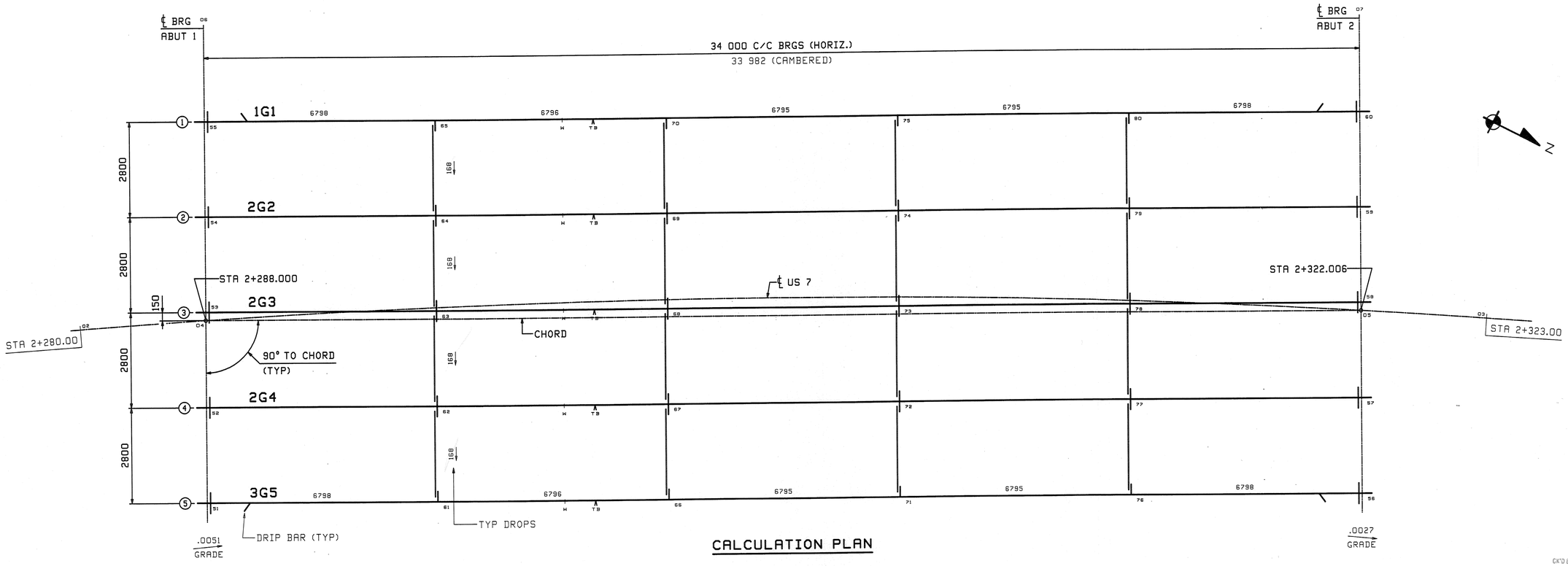
MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:

DESCRIPTION: FRAMING PLAN & FIELD BOLTS

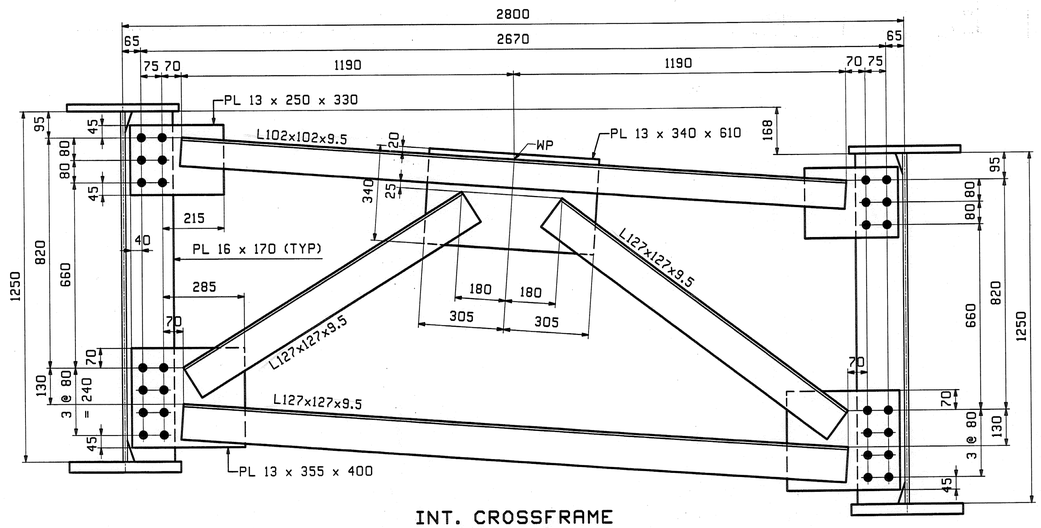
CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179
TENSOR 2788

STRUCTURE: US 7 over EAST CREEK BRIDGE NO 103 RUTLAND COUNTY, VERMONT		DRAWN: JTB	DATE: 04/20
		CHK'D: JF	DATE: 05/16
LOCATION: TOWN OF RUTLAND		JOB NO.	DWG NO.
PROJ NO. BRF 019-3(48)		368	E1
CUSTOMER: VERMONT AOT			REV. △

JTB Thu May 15 152633 EDT 2008 /users/jobs/2788/E1.dwg



CALCULATION PLAN



INT. CROSSFRAME

LOOKING AHEAD-STATION

NOTES:

1. MATERIAL SHALL BE ASTM M270 GRADE 345W.
2. ALL BOLT HOLES SHALL BE $\frac{15}{16}$"ø FOR $\frac{7}{8}$"ø HSB (UN).

CALCULATION PLAN NOTES:

1. LONGITUDINAL DIMENSIONS ARE SLOPING ALONG BOTTOM OF WEBS WITH CORRECTIONS MADE FOR DL CAMBER, V.C. & GRADE (UN).
2. TRANSVERSE DIMENSIONS ARE IN A HORIZONTAL PLANE (UN).
3. ARROW POINTS TOWARD LOW END OF MEMBER.
4. ENDS OF GIRDERS AND BRG STIFFENERS ARE VERTICAL AFTER DL ROTATION.
5. CROSSFRAME STIFFENERS ARE NORMAL TO GRADE.
6. BOTTOM POINT NUMBERS = TOP POINT NUMBERS + 100
7. FOR LAYOUTS SEE "TD" SHEETS.

RECEIVED
CK'D BY RLW OK'D BY
JUL 0 1 2008
RESUBMIT APPROVED ✓
BY RLW DATE 7/3/08

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0		~			5/20/08	

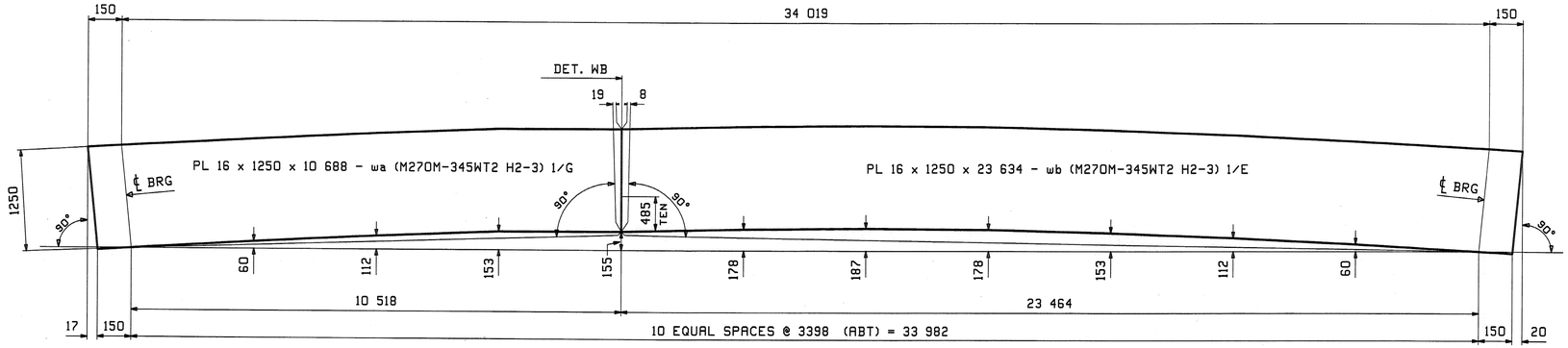
MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:

DESCRIPTION: CALCULATION PLAN & CROSSFRAME LAYOUT

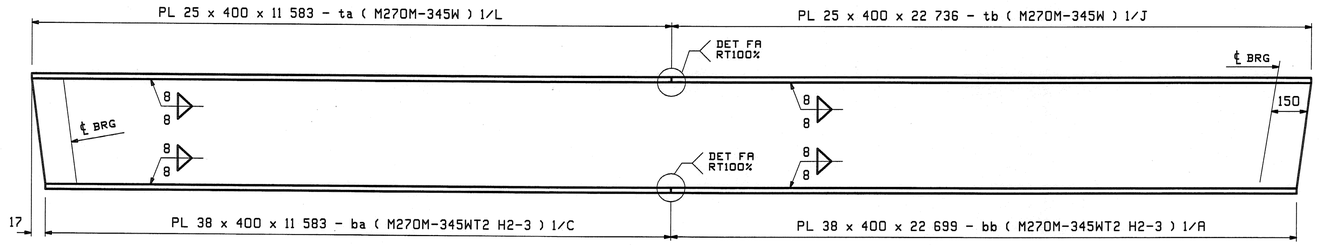
CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179
TENSOR 2788

STRUCTURE: US 7 over EAST CREEK BRIDGE NO 103 RUTLAND COUNTY, VERMONT	DRAWN: JTB	DATE: 04/17
	CHK'D: JF	DATE: 05/16
LOCATION: TOWN OF RUTLAND	JOB NO. 368	DWG NO. WS1
PROJ NO. BRF 019-3(48)		REV. △
CUSTOMER: VERMONT AOT		

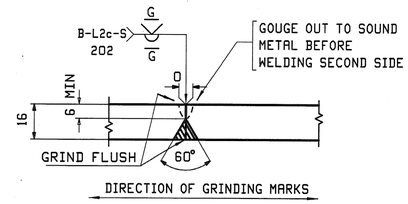
JTB Thu May 15 152855 EDT 2008 //users/jobs/2788/dgn: Rev0



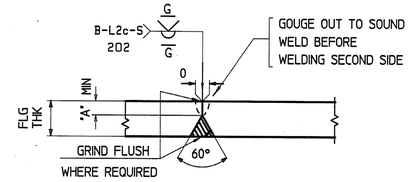
CAMBER DIAGRAM FOR 1G1 THRU 3G5



FLANGE DIAGRAM FOR 1G1 THRU 3G5



WEB PLATE SPLICE DETAIL "WB"



FLANGE PLATE SPLICE DETAIL "FA"

FLG THK	"A"
25	6
38	12

NOTES:

1. FOR GENERAL NOTES SEE DWG GN1.
2. H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TEST AT H FREQ. FOR ZONE 2

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CK'D BY RKW OK'D BY
JUL 0 1 2008
RESUBMIT APPROVED
BY RKW DATE 7/3/08

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					5/20/08	

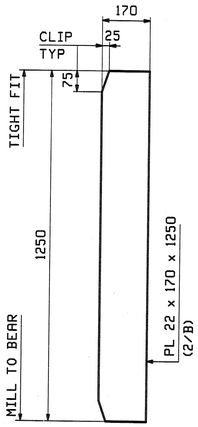
MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:

DESCRIPTION: CAMBER AND FLANGE DIAGRAM

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179
TENSOR 2788

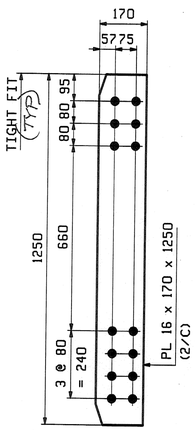
STRUCTURE: US 7 over EAST CREEK BRIDGE NO 103 RUTLAND COUNTY, VERMONT	DRAWN: JTB	DATE: 04/19	
	CHK'D: JF	DATE: 05/16	
LOCATION: TOWN OF RUTLAND	JOB NO.	DWG NO.	
PROJ NO. BRF 019-3(48)	368	C1	
CUSTOMER: VERMONT AOT		REV. △	

JTB Thu May 15 15:32:03 EDT 2008 /users/jobs/2788/C1.dwg



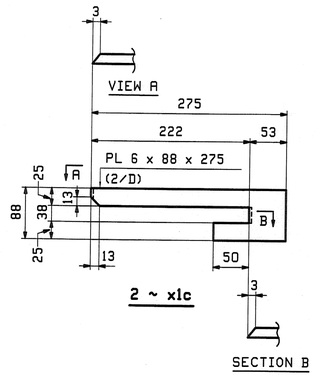
20 ~ x1a

BRG STIFF

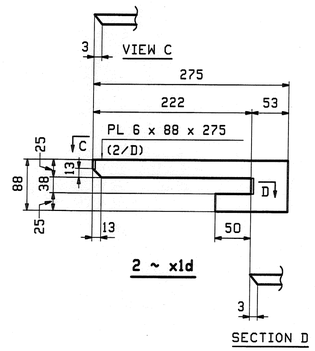


32 ~ x1b

INT. CF CONN.



2 ~ x1c



2 ~ x1d

RECEIVED
CK'D BY RRW OK'D BY _____
JUL 0 1 2008
RESUBMIT _____ APPROVED ✓
BY RRW DATE 7/3/08

NOTES:
ALL MATERIAL SHALL BE M270M-345W.
ALL BOLT HOLES SHALL BE $\frac{15}{16}$"Ø FOR $\frac{7}{8}$"Ø HSB.
FOR GENERAL NOTES SEE DRAWING GN1.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0		~			5/20/08	

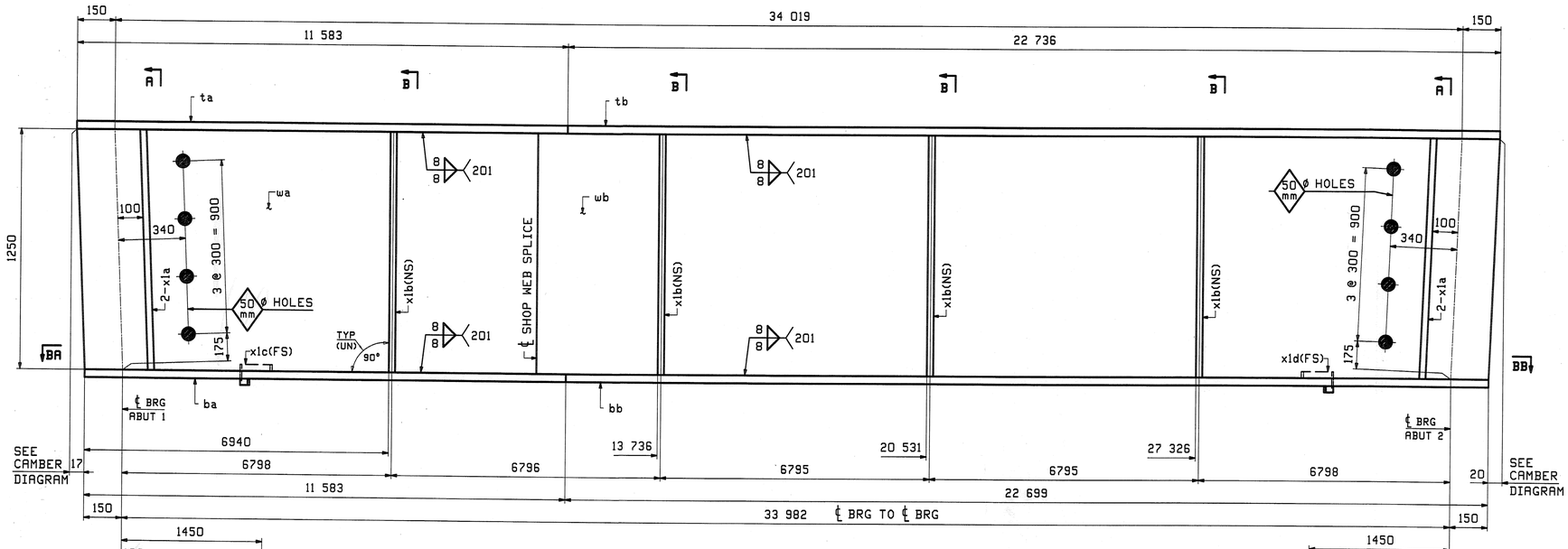
MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345W	AS NOTED ON GN1	$\frac{15}{16}$Ø	NONE

DESCRIPTION: GIRDER STANDARD DETAILS

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179
TENSOR 2788

STRUCTURE: US 7 over EAST CREEK BRIDGE NO 103 RUTLAND COUNTY, VERMONT	DRAWN: JTB	DATE: 04/19
	CHKD: JF	DATE: 05/16
LOCATION: TOWN OF RUTLAND	JOB NO.	DWG NO.
PROJ NO. BRF 019-3(48)	368	X1
CUSTOMER: VERMONT AOT		REV. △

JTB Sun Apr 20 10:33:26 EDT 2008 /users/jobs/2788/X1.i Rev0

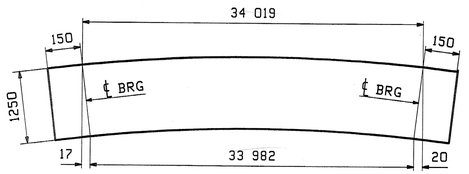


ONE - GIRDER - 1G1

FOR GIRDER STANDARDS SEE DRAWINGS X1.
FOR CAMBER & FLANGE DIAGRAMS SEE DRAWING C1.
FOR GENERAL NOTES & WELD PROCEDURES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO. 368	DRAWING NO. 1	REV.
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH m	LENGTH mm	REMARKS	WT	PROCUREMENT NOTES
		1G1	1		GIRDER				11429 kg 25201 lbs	
1	G		1	wa	PL 16x1250	10	688	(M270M-345WT2)	(H2-3)	
1	E		1	wb	PL 16x1250	23	634	(M270M-345WT2)	(H2-3)	
1	L		1	ta	PL 25x400	11	583			
1	J		1	tb	PL 25x400	22	736			
1	C		1	ba	PL 38x400	11	583	(M270M-345WT2)	(H2-3)	
1	A		1	bb	PL 38x400	22	699	(M270M-345WT2)	(H2-3)	
2	B		4	x1a	PL 22x170	1	250	MIF		
2	C		4	x1b	PL 16x170	1	250			
2	D		1	x1c	PL 6x88	0	275			
2	D		1	x1d	PL 6x88	0	275			

RECEIVED
CK'D BY RLW CK'D BY _____
JUL 0 1 2008
RESUBMIT _____ APPROVED As Noted
BY RLW DATE 7/3/08



ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C1

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					5/20/08	

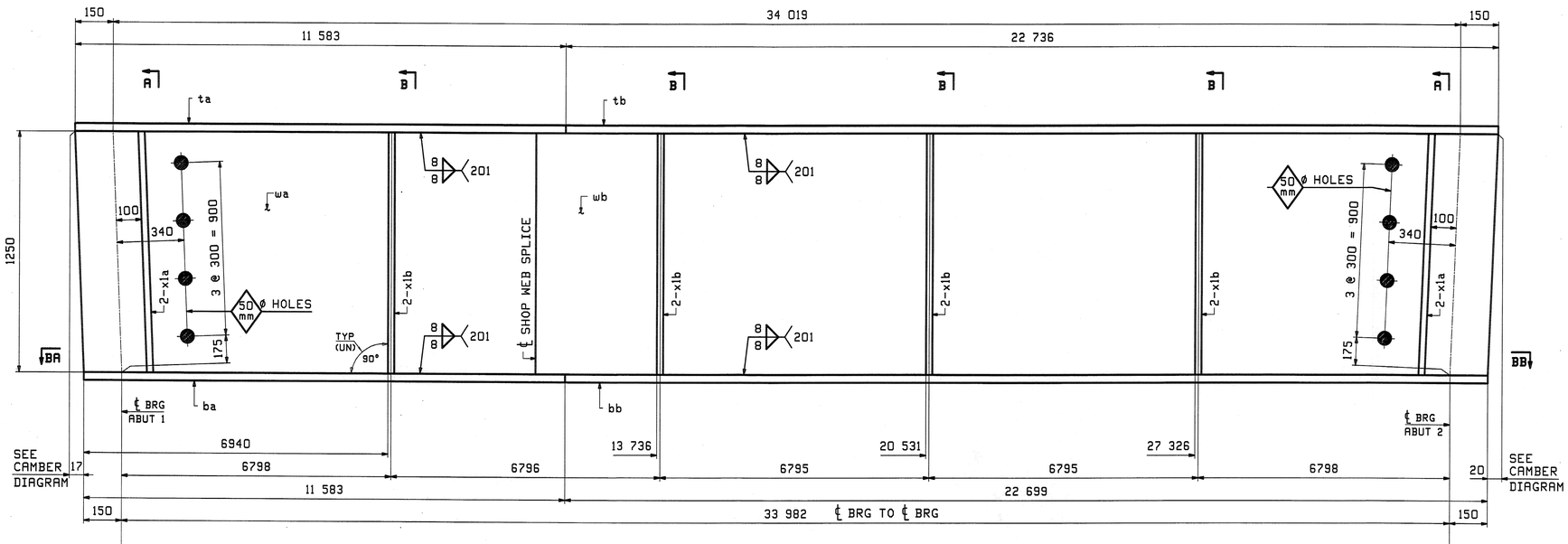
MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345W (UN)	AS NOTED ON GN1	15 16Ø	NONE

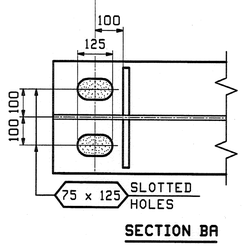
DESCRIPTION: GIRDER - 1G1

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179
TENSOR 2788

STRUCTURE: US 7 over EAST CREEK BRIDGE NO 103 RUTLAND COUNTY, VERMONT	DRAWN: JTB	DATE: 04/19	
	CHK'D: JF	DATE: 05/16	
LOCATION: TOWN OF RUTLAND	JOB NO.	DWG NO.	
PROJ NO. BRF 019-3(48)	368	1	
CUSTOMER: VERMONT AOT		REV. △	

JTB Thu May 15 13:36:31 EDT 2008 /users/jobs/2788/1.dwg



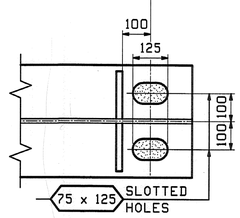


SECTION BA

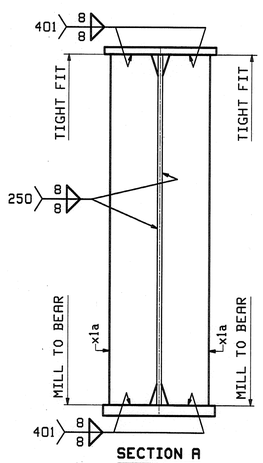
ONE - GIRDER - 2G2
ONE - GIRDER - 2G3
ONE - GIRDER - 2G4

} ALIKE EXCEPT FOR MARK

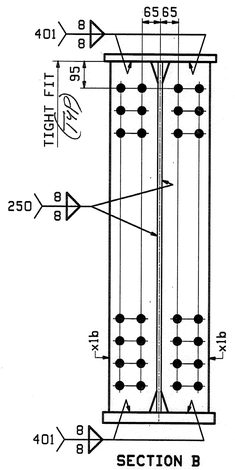
FOR GIRDER STANDARDS SEE DRAWINGS X1.
FOR CAMBER & FLANGE DIAGRAMS SEE DRAWING C1.
FOR GENERAL NOTES & WELD PROCEDURES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.



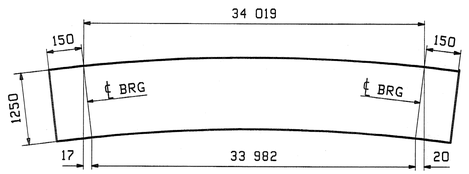
SECTION BB



SECTION A



SECTION B



ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C1

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								368	2	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH m	LENGTH mm	REMARKS	WT	PROCUREMENT NOTES
		2G2	1		GIRDER				12533 kg 27630 lbs	
		2G3	1		GIRDER				12533 kg 27630 lbs	
		2G4	1		GIRDER				12533 kg 27630 lbs	
1	G		3	wa	PL 16x1250	10	688	(M270M-345WT2)	(H2-3)	
1	E		3	wb	PL 16x1250	23	634	(M270M-345WT2)	(H2-3)	
1	L		3	ta	PL 25x400	11	583			
1	J		3	tb	PL 25x400	22	736			
1	C		3	ba	PL 38x400	11	583	(M270M-345WT2)	(H2-3)	
1	A		3	bb	PL 38x400	22	699	(M270M-345WT2)	(H2-3)	
2	B		12	x1a	PL 22x170	1	250	MIE		
2	C		24	x1b	PL 16x170	1	250			

RECEIVED
CK'D BY RLW OK'D BY
JUL 0 1 2008
RESUBMIT APPROVED: As Noted
BY RLW DATE 7/3/08

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					5/20/08	

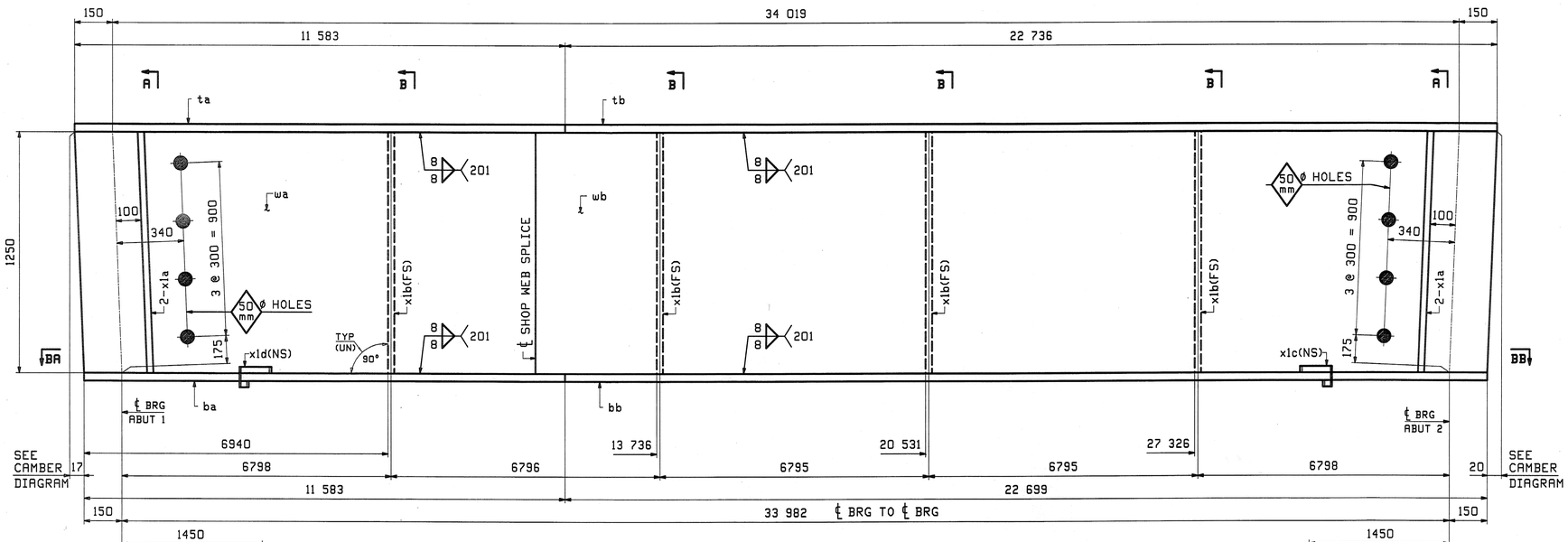
MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345W (UN)	AS NOTED ON GN1	15 16Ø	NONE

DESCRIPTION: GIRDERS - 2G2, 2G3 & 2G4

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179
TENSOR 2788

STRUCTURE: US 7 over EAST CREEK BRIDGE NO 103 RUTLAND COUNTY, VERMONT	DRAWN: JTB	DATE: 04/19
	CHK'D: JF	DATE: 05/16
LOCATION: TOWN OF RUTLAND	JOB NO.	DWG NO.
PROJ NO. BRF 019-3(48)	368	2
CUSTOMER: VERMONT AOT		REV. △

JTB Thu May 15 15:36:05 EDT 2008 c:\users\jtb\c2788\2 - Rev0

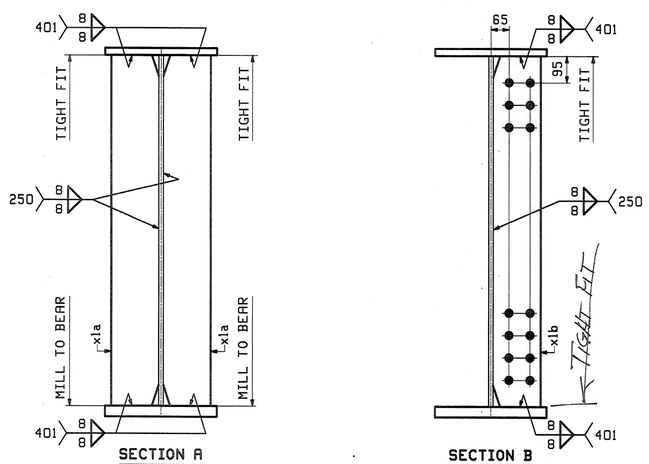


ONE - GIRDER - 3G5

FOR GIRDER STANDARDS SEE DRAWINGS X1.
FOR CAMBER & FLANGE DIAGRAMS SEE DRAWING C1.
FOR GENERAL NOTES & WELD PROCEDURES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

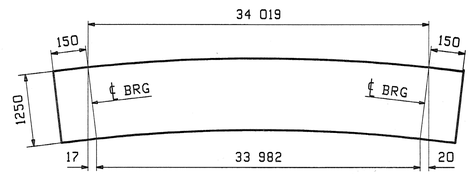
SECTION BA

SECTION BB



SECTION A

SECTION B



ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C1

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								368	3	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH m	LENGTH mm	REMARKS	WT	PROCUREMENT NOTES
		3G5	1		GIRDER				12428 kg 27401 lbs	
1	G		1	wa	PL 16x1250	10	688	(M270M-345WT2)	(H2-3)	
1	E		1	wb	PL 16x1250	23	634	(M270M-345WT2)	(H2-3)	
1	L		1	ta	PL 25x400	11	583			
1	J		1	tb	PL 25x400	22	736			
1	C		1	ba	PL 38x400	11	583	(M270M-345WT2)	(H2-3)	
1	A		1	bb	PL 38x400	22	699	(M270M-345WT2)	(H2-3)	
2	B		4	x1a	PL 22x170	1	250	MIE		
2	C		4	x1b	PL 16x170	1	250			
2	D		1	x1c	PL 6x88	0	275			
2	D		1	x1d	PL 6x88	0	275			

RECEIVED
CK'D BY (RLW) OK'D BY
JUL 0 1 2008
RESUBMIT APPROVED As Noted
BY JRLW DATE 7/3/08

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					5/20/08	

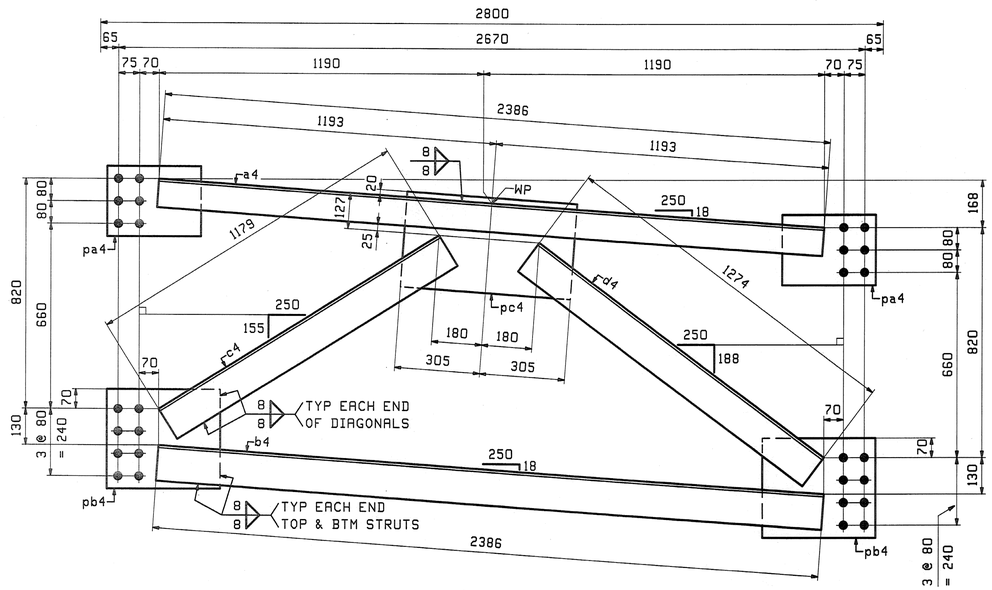
MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345W (UN)	AS NOTED ON GN1	15 16ø	NONE

DESCRIPTION: GIRDER - 3G5

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179
TENSOR 2788

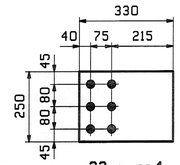
STRUCTURE: US 7 over EAST CREEK BRIDGE NO 103 RUTLAND COUNTY, VERMONT		DRAWN: JTB	DATE: 04/19
		CHK'D: JF	DATE: 05/16
LOCATION: TOWN OF RUTLAND		JOB NO.	DWG NO.
PROJ NO. BRF 019-3(48)		368	3
CUSTOMER: VERMONT AOT			REV. △

JTB Thu May 15 13:38:22 EDT 2008 /users/jobs/2788/3.dwg Rev0



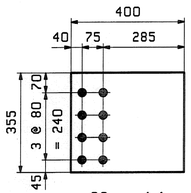
16 - INT. CROSSFRAMES ~ 4CF1

LOOKING AHEAD-STATION



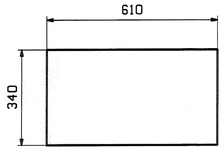
32 ~ pa4

TOP GUSSET



32 ~ pb4

BTM GUSSET



16 ~ pc4

CTR GUSSET

ABM INFO		SHIP	BILL OF MATERIAL			LENGTH		JOB NO. 368	DRAWING NO. 4	REV.
PAGE	LINE	MARK	QTY	MARK	MATERIAL	m	mm	REMARKS	WT	PROCUREMENT NOTES
		4CF1	16		INT. CROSSFRAMES				180 kg 418 lbs	
2	G		16	a4	L 102x102x9.5	2	386			
2	H		16	b4	L 127x127x9.5	2	386			
2	J		16	c4	L 127x127x9.5	1	179			
2	J		16	d4	L 127x127x9.5	1	274			
2	K		32	pa4	PL 13x250	0	330			
2	L		32	pb4	PL 13x355	0	400			
2	M		16	pc4	PL 13x340	0	610			

RECEIVED
CK'D BY RRW CK'D BY
JUL 0 1 2008
RESUBMIT APPROVED V
BY RRW DATE 7/3/08

NOTE:
FOR GENERAL NOTES SEE DRAWING GN1.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					5/20/08	

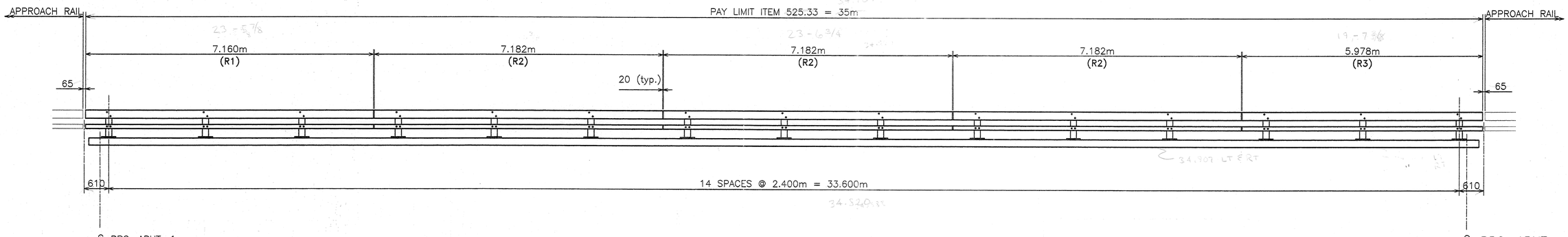
MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270M-345W	AS NOTED ON GN1	15/16Ø	NONE

DESCRIPTION: CROSSFRAMES

CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179
TENSOR 2788

STRUCTURE: US 7 over EAST CREEK BRIDGE NO 103 RUTLAND COUNTY, VERMONT		DRAWN: JTB	DATE: 04/19
		CHK'D: JF	DATE: 05/16
LOCATION: TOWN OF RUTLAND		JOB NO.	DWG NO.
PROJ NO. BRF 019-3(48)		368	4
CUSTOMER: VERMONT AOT			REV. △

JTB Mon May 19 09:23:02 EDT 2008 /users/jobs/2788/4.1 Rev0



ELEVATON – WEST BRIDGE RAIL
FACING WEST FROM ℄ ROAD
EAST BRIDGE RAIL SIMILAR

BILL OF MATERIAL (BOTH SIDES)					
Mk.	Qty.	Description	Size/Shape	length/qty. per unit	Material
	30	BRIDGE RAIL PED POST 620 OAH W/ BASE PLATE			
	30	POST UPRIGHT	W150 x 37	595	M270 Gr. 345
	30	POST BASE PLATE	25 x 254	356	M270 Gr. 345
	8	UPPER SPLICE TUBE FOR 203 x 102 RAIL			
	8	TUBE	TS 178x76x10	510	A500 Gr. B
	16	WELDED LOCK NUT	5/8"	---	A563M
	8	LOWER SPLICE TUBE FOR 102 x 102 RAIL			
	8	TUBE	TS 76x76x8	510	A500 Gr. B
	16	WELDED LOCK NUT	M16	---	A563
R1	2	UPPER RAIL	TS 203x102x8	7.160m	A500 Gr. B
	2	LOWER RAIL	TS 102x102x6	7.160m	A500 Gr. B
R2	6	UPPER RAIL	TS 203x102x8	7.182m	A500 Gr. B
	6	LOWER RAIL	TS 102x102x6	7.182m	A500 Gr. B
R3	2	UPPER RAIL	TS 203x102x8	5.978m	A500 Gr. B
	2	LOWER RAIL	TS 102x102x6	5.978m	A500 Gr. B
	30	ANCHOR PLATE	10 x 238	330	M270 Gr. 250
	120	ANCHOR BOLTS	M24	305	F568M Cl. 8.8
	240	HEAVY HEX NUT	M24	- - -	A563DH
	120	WASHER	M24	- - -	F436M
	120	ROUND HEAD BOLT	M20	152	A325M
	120	LOCK NUT	M20	- - -	A563DH
	120	WASHER	M20	- - -	F436M
	64	CAP SCREW	M16	44	A307M
	64	WASHER	M16	- - -	F436M
	30	BEARING PAD	3x254	356	M251

TOTAL PAY LIMIT ITEM 525.33 = 70 m

NOTE: ALL DIMENSIONS SHOWN ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.

REVISIONS		
No.	Remarks	Date
0	Initial submittal	9/19/08

RECEIVED
CK'D BY THL CK'D BY
SEP 30 2008
RESUBMIT APPROVED
BY RW DATE 10-6-08

RECEIVED
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OCT 22 2008
RESUBMIT APPROVED
BY DATE

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

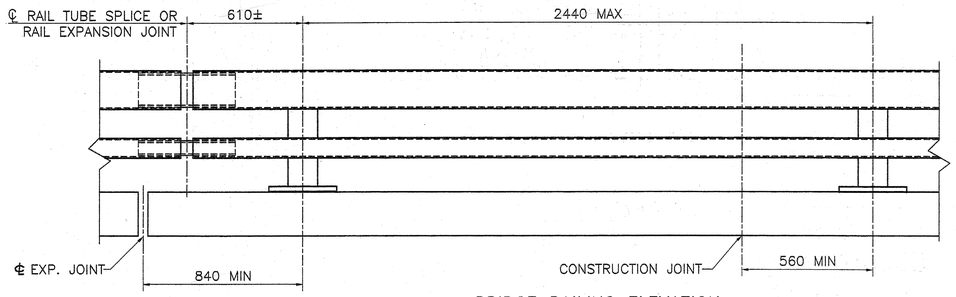
ITEM 525.33 – BRIDGE RAILING-NETC 2 RAIL
BRIDGE #103 OVER EAST CREEK
RUTLAND COUNTY, VT
PROJECT NUMBER BRF 019-3(48)

GENERAL CONTRACTOR

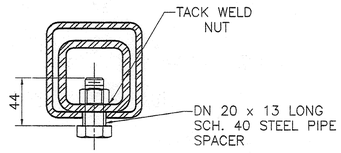
SUB CONTRACTOR F.R. LAFAYETTE, INC.

DRAWN	M Mohamed
CHECKED	P Radice
DATE	9/12/08
SCALE	NONE
HSC REFERENCE NO.	1672
SIZE	D
REVISION	0
SHEET NO.	1 of 3

THL Copy



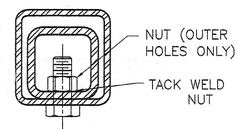
BRIDGE RAILING ELEVATION



16 ø TAPPED HOLE IN SPLICE TUBE AND 29 x 'C' SLOT IN RAIL TUBE FOR BOLT AND PLAIN HARDENED WASHER

EXPANSION JOINT SECTION

FOR DETAILS NOT SHOWN, SEE "RAIL TUBE SPLICE SECTION."



16 ø TAPPED HOLE IN SPLICE TUBE & 19 ø HOLE IN RAIL TUBE FOR BOLT & PLAIN HARDENED WASHER

NOTES:

1. ALL RAILINGS AND MATERIALS SHALL CONFORM TO THE PROVISION OF SECTION 525, "METAL RAILINGS OF THE STANDARD SPECIFICATION FOR CONSTRUCTION".

2. TUBING AND POSTS SHALL MEET THE REQUIREMENTS OF SECTION 732, "RAILINGS MATERIALS OF THE STANDARD SPECIFICATION OF CONSTRUCTION" EXCEPT THE DROP-WEIGHT TEAR TEST IN SECTION 732 SHALL NOT APPLY TO THE STRUCTURAL TUBING SHOWN ON THIS PROJECT.

3. PRIOR TO GALVANIZING, ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 2mm RADIUS AND BE FREE OF BURRS.

4. RAIL POSTS SHALL BE SET NORMAL TO GRADE.

5. SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO (2) RAIL POSTS AND PREFERABLY TO AT LEAST FOUR (4) POSTS.

6. RAIL TUBE EXPANSION JOINT SHALL BE PROVIDED IN ANY RAIL BAY SPANNING A SUPERSTRUCTURE EXPANSION JOINT. EXPANSION JOINT WIDTH SHALL BE "X" AT 7°C AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.

7. ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111, EXCEPT HARDWARE, WHICH SHALL MEET THE REQUIREMENTS OF AASHTO M232M.

8. RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.

9. RAIL TUBES SHALL BE ATTACHED USING M20 FULL DIAMETER BODY AASHTO M164 (TYPE 1) ROUND HEAD BOLT INSERTED THROUGH THE FACE OF THE TUBE. HOLES IN POSTS SHALL BE 2mm LARGER THAN THE BOLT SIZE.

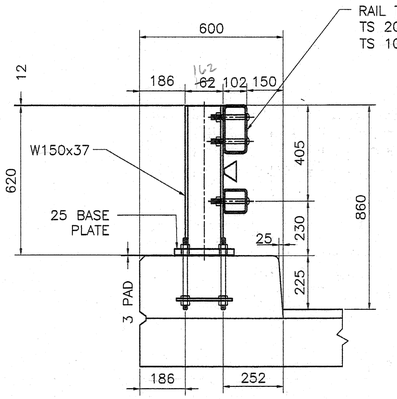
10. HOLES IN RAILS FOR RAIL TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.

11. IF THERE IS A CONFLICT BETWEEN THE DETAILS SHOWN ON THIS SHEET AND THE DESIGN, THE REQUIREMENTS OF THE DESIGN DRAWINGS SHALL BE FOLLOWED.

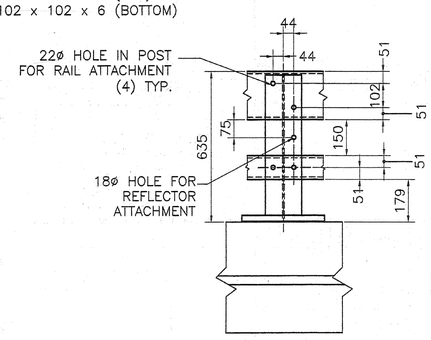
12. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.

13. THE FABICATOR SHALL SUBMIT SHOP DRAWINGS, INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH SUBSECTION 506.04 OF THE STANDARD SPECIFICATIONS. ALL WELDING SHALL CONFORM WITH SUBSECTION 506.10 "WELDING".

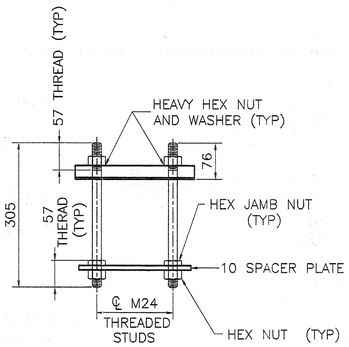
14. RAIL POSTS AND BASE PLATES SHALL BE TESTED FOR IMPACT PROPERTIES IN ACCORDANCE WITH ASTM A370 CHARPY IMPACT TESTING USING TYPE A SPECIMEN.



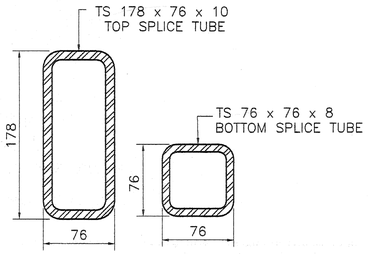
TYPICAL SECTION



ELEVATION



RAIL POST ANCHORAGE



RAIL TUBE SPLICE SECTION

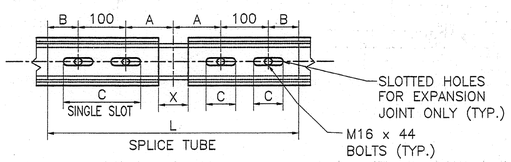
MATERIALS

RAIL TUBES.....ASTM A500, GRADE B
RAIL POSTS AND BASE PLATES.....AASHTO M 270M/M 270 GRADE 345
(AALL) OTHER SHAPRE AND PLATES.....AASHTO M 270M/M 270 GRADE 250
ANCHOR STUDS.....ASTM F568M CLASS 8.8
ALL OTHER BOLTS (UNLESS NOTED).....AASHTO M164M, TYPE1

NUTS FOR AASHTO M164M (ASTM A325M) BOLTS AND ANCHOR STUDS SHALL COMPLY WITH AASTHO M291M (ASTM A563M).

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

3mm PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.02.

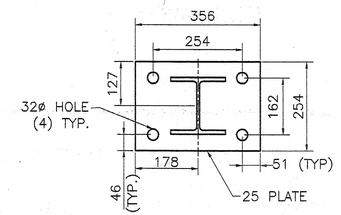


RAIL TUBE SPLICE AND RAIL EXPANSION JOINT DETAIL

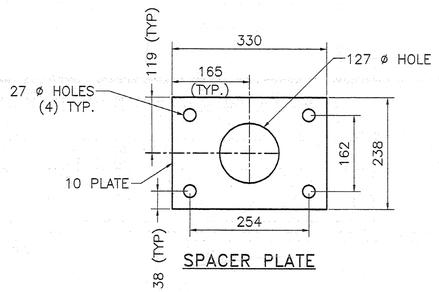
SPLICE TABLE					
T	A	B	C	L	X
N/A	100	50	--	510	20
EXPANSION JOINT TABLE					
<100	100	50	65	510	65

T = TOTAL MOVEMENT BETWEEN BRIDGE EXPANSION JOINTS. SEE NOTE 6

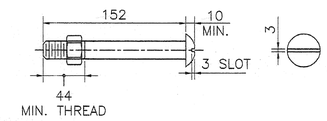
* = SINGLE SLOT



POST AND BASE PLATE



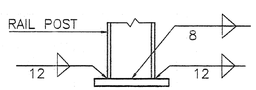
SPACER PLATE



M20 DIA. M164M (TYPE 1) ROUND HEAD BOLT

(WITH WASHER AND PREVAILING TORQUE TYPE LOCK NUT) (SEE NOTE #9)

ONLY FULL DIAMETER BODY BOLTS WILL BE ALLOWED.



BASE WELD DETAIL

REVISIONS		
No.	Remarks	Date
0	Initial submittal	

RECEIVED
CK'D BY THL OK'D BY
SEP 30 2008
RESUBMIT APPROVED As Noted
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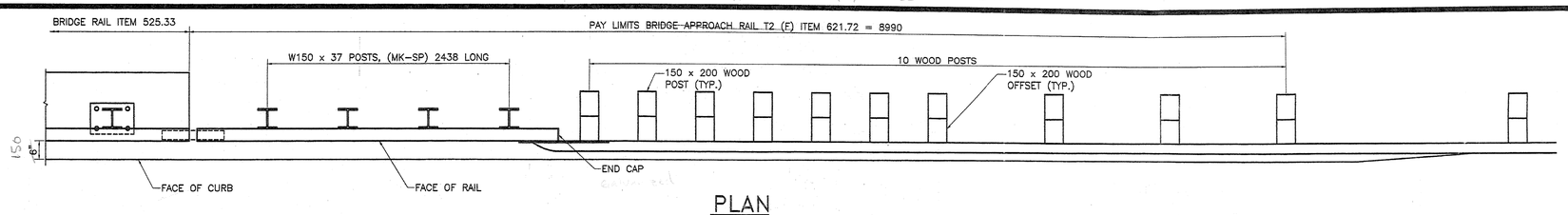
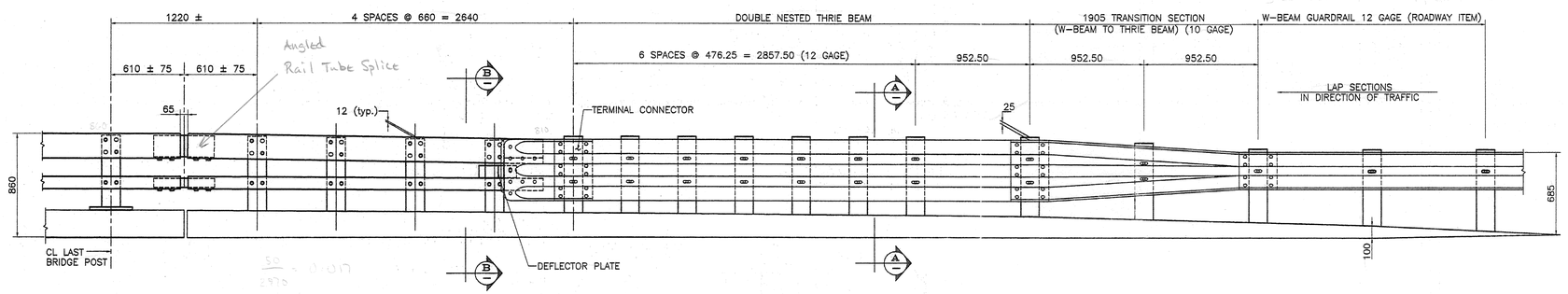
DRAWN M Mohamed
CHECKED P Radice
DATE 9/12/08
SCALE NONE
HSC REFERENCE NO. 1672
SIZE D REVISION 0
SHEET NO. 2 of 3

Guard Rail Approach Section, Galvanized NETC 2 Rail

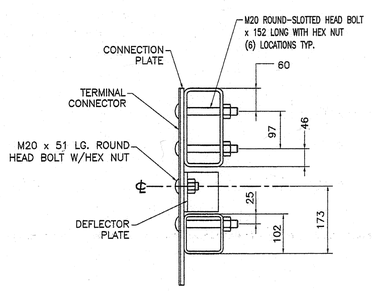


PLAN

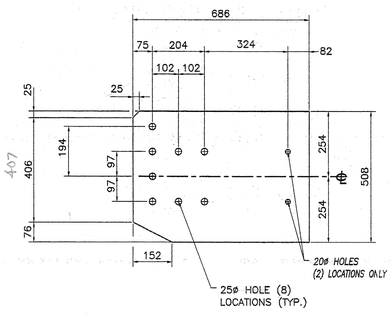


ELEVATION – APPROACH RAIL
4 LOCATIONS
(2) typ. AS SHOWN
(2) typ. OPPOSITE HAND

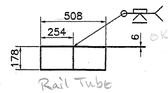
DEFLECTOR PLATE
10 x 102 PLATE (A709M Gr 250)



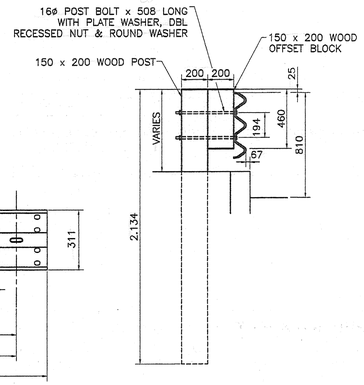
SECTION B–B



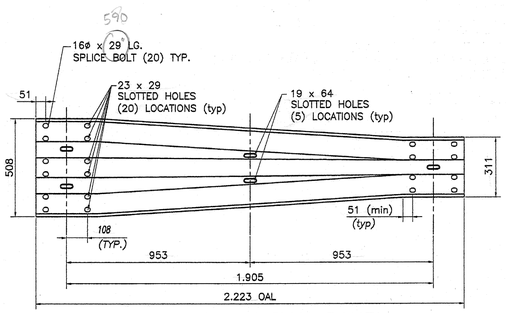
CONNECTION PLATE
10 x 508 x 686 (A709M gr 250)



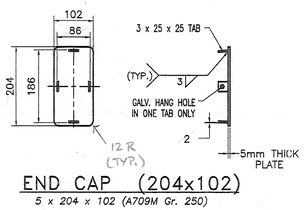
ANGLED SPLICE DETAIL



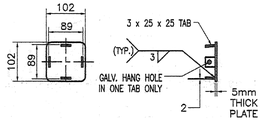
SECTION A–A



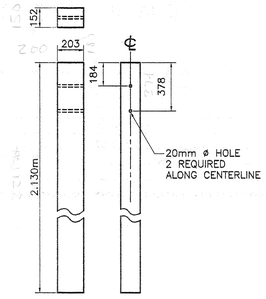
THRIE TRANSITION PANEL
12 GAUGE (AASHTO M180 A2)



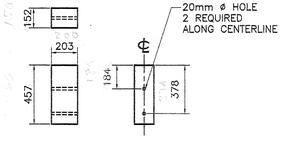
END CAP (204x102)
5 x 204 x 102 (A709M Gr. 250)



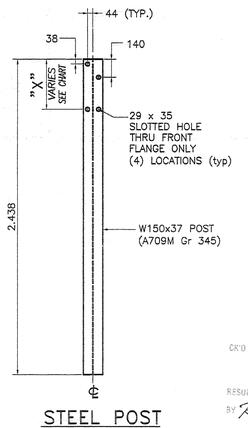
END CAP (102x102)
5 x 102 x 102 (A709M Gr. 250)



WOOD POST

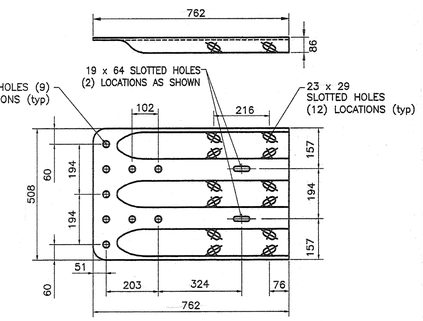


WOOD BLOCK DETAILS



STEEL POST

STEEL POST CHART	
No.	" X "
#1	387
#2	381
#3	375
#4	368



TERMINAL CONNECTOR
10 GAUGE (AASHTO M180 B2)

BILL OF MATERIAL (4 APPROACHES)					
MK.	Qty.	Description	Size/Shape	Length/Qty. Per Unit	Material
	4	APPROACH RAIL TUBE	TS 203x102x8	2.965m	A500 Gr. B
	4	APPROACH RAIL TUBE	TS 102x102x6	2.965m	A500 Gr. B
SP	16	STEEL POST	W150 x 37	2440	M570 Gr. 345
	40	WOOD POST	152 x 203	2130	TIMBER
	40	WOOD BLOCK	150 x 200	457	TIMBER
	4	ANGLED EXP. SPLICE TUBE FOR TS 203x102			
	4	TUBE	TS 178x76x10	508	A500 Gr. B
	8	WELDED LOCK NUTS	M16	---	A563M
	4	EXP. SPLICE TUBE FOR TS 102x102			
	4	TUBE	TS 76x76x8	508	A500 Gr. B
	8	WELDED LOCK NUTS	M16	---	A563M
	4	TERMINAL CONNECTOR	10 Ga.		M180 B2
	4	CONNECTION PLATE	10 x 508	686	A709M Gr. 250
	4	END CAP FOR TS 203x102 RAIL TUBE			
	4	PLATE	5 x 102	204	A709M Gr. 250
	4	END CAP FOR TS 102x102 RAIL TUBE			
	4	PLATE	5 x 102	102	A709M Gr. 250
	2	DEFLECTOR PLATE (LEFT)	10x102	317	A709M Gr. 250
	4	DEFLECTOR PLATE (RIGHT)	10x102	317	A709M Gr. 250
	8	M20 x 51 LG. ROUND HEAD BOLT W/NUT			A307
	4	THRIE TRANSITION PANEL	10 Ga.	2.223m	M180 A2
	4	THRIE BEAM	12 Ga.	3.810m	M180 A2
	92	M20 x 152 ROUND HEAD BOLT W/NUT & ROUND WASHER			A325M
	64	M16 x 508 LG. POST BOLT W/DBL RECESSED NUT, PLATE & ROUND WASHER			A307M
	16	M16 x 457 LG. POST BOLT W/DBL RECESSED NUT, PLATE & ROUND WASHER			A307M
	32	M16 x 44 LG. CAP SCREW W/WASHER			A307M
	128	M16 x 32 LG. PANEL SPLICE BOLT W/DBL RECESSED NUT			A307M
	32	20ø x 12 LG. (SCH 40) SPACER PIPE			A53M

NOTES:
1. ALL APPROACH RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW.

2. ALL BRIDGE APPROACH RAIL MATERIALS, DIMENSION SIZES AND NOTES SHALL BE THE SAME AS THOSE OF THE BRIDGE RAIL, UNLESS OTHERWISE NOTED.

3. WELD TOP SPLICE TUBE TO FIT BEND. USE COMPLETE PENETRATION WELD (B-U2).

4. THRIE BEAM TERMINAL CONNECTOR AND THRIE BEAM TO W-BEAM TRANSITION SECTION SHALL CONFORM TO AASHTO M180.

RECEIVED
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SEP 30 2008
RESUBMIT APPROVED As Noted
BY RLW DATE 10-6-08

NOTE: ALL DIMENSIONS SHOWN ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.

REVISIONS		
No.	Remarks	Date
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SHEET NO.	3 of 3

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SUB CONTRACTOR F.R. LAFAYETTE, INC.