RECORD PLANS

CONTRACTOR CCS CONSTRUCTORS LLC – MORRISVILLE, VT

RESIDENT ENGINEER SCOTT WHEATLEY

CONSTRUCTION BEGAN APRIL 21, 2008

CONSTRUCTION COMPLETE JULY 29, 2009

RECORD PLANS BY. SCOTT WHEATLEY & C. PIERCE

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

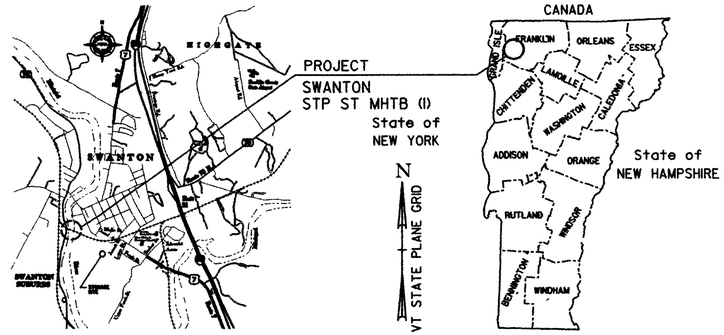
BY _____ RESIDENT ENGINEER

DATE FEB. 25, 2011

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

STATE OF VERMONT
AGENCY OF TRANSPORTATION

RE-ERECTION OF HISTORIC BRIDGE NO. 18
OVER THE MISSISQUOI RIVER
TOWN OF SWANTON
COUNTY OF FRANKLIN



LOCATION MAP

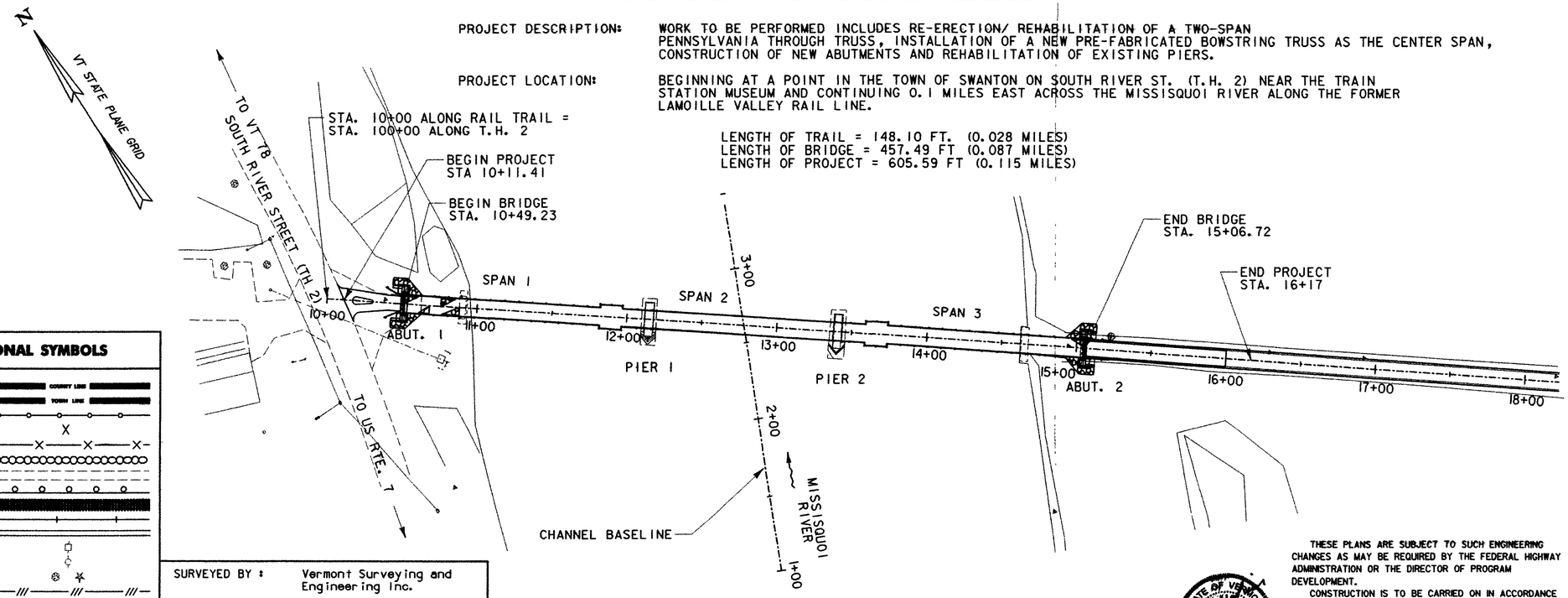
0 0.5 1

SCALE IN MILES

PROJECT DESCRIPTION: WORK TO BE PERFORMED INCLUDES RE-ERECTION/ REHABILITATION OF A TWO-SPAN PENNSYLVANIA THROUGH TRUSS, INSTALLATION OF A NEW PRE-FABRICATED BOWSTRING TRUSS AS THE CENTER SPAN, CONSTRUCTION OF NEW ABUTMENTS AND REHABILITATION OF EXISTING PIERS.

PROJECT LOCATION: BEGINNING AT A POINT IN THE TOWN OF SWANTON ON SOUTH RIVER ST. (T.H. 2) NEAR THE TRAIN STATION MUSEUM AND CONTINUING 0.1 MILES EAST ACROSS THE MISSISQUOI RIVER ALONG THE FORMER LAMOILLE VALLEY RAIL LINE.

LENGTH OF TRAIL = 148.10 FT. (0.028 MILES)
LENGTH OF BRIDGE = 457.49 FT (0.087 MILES)
LENGTH OF PROJECT = 605.59 FT (0.115 MILES)



0 20 40

SCALE IN FEET

1" = 40'

TRAFFIC DATA

(SOUTH RIVER STREET T.H. 2)

2007	AADT	=	540
2007	DHV	=	60
	% T	=	9.2%
	V	=	40 MPH

CONVENTIONAL SYMBOLS

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

SURVEYED BY : Vermont Surveying and Engineering Inc.

SURVEYED DATE : 11-20-03

DATUM

VERTICAL: NGVD 1929

HORIZONTAL: NAD 83

URS

URS CORPORATION
28 CORPORATE DR, STE 200.
CLIFTON PARK, NY 12065
PH* (518) 688-0015

STATE OF VERMONT — NO. 7776 CIVIL — LICENSED PROFESSIONAL ENGINEER

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.

DIRECTOR OF PROGRAM DEVELOPMENT

APPROVED _____ DATE 2-14-08

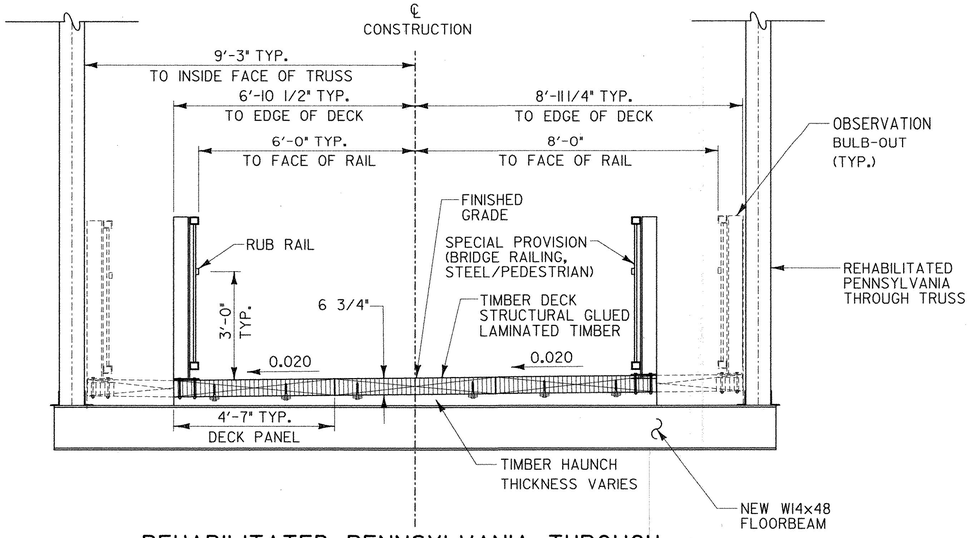
PROJECT MANAGER : SUE SCRIBNER

PROJECT NAME : SWANTON

PROJECT NUMBER : STP ST MHTB (1)

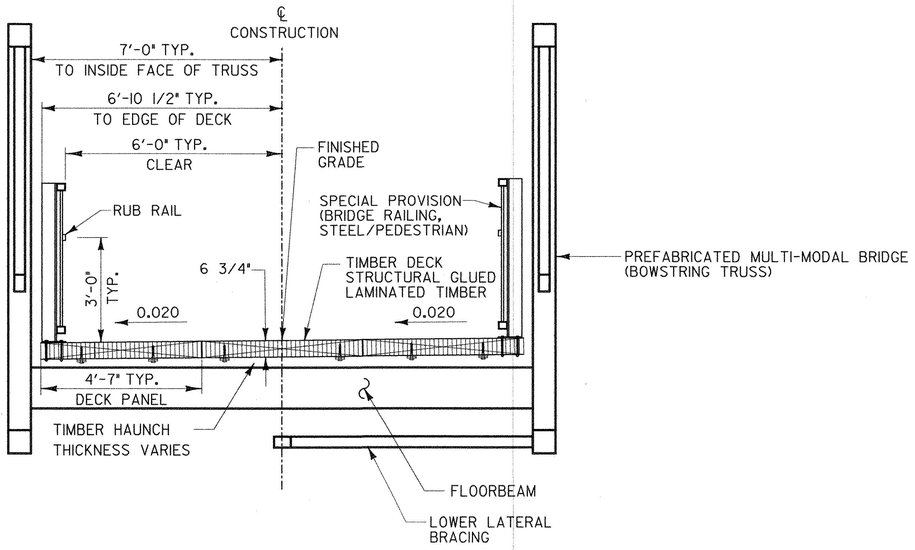
SHEET 1 OF 63 SHEETS

2/13/2008



REHABILITATED PENNSYLVANIA THROUGH TRUSS TYPICAL SECTION

(SPANS 1&3)
SCALE: 1/2" = 1'-0"



PREFABRICATED MULTI-MODAL BRIDGE (BOWSTRING TRUSS) TYPICAL SECTION

(SPAN 2)
SCALE: 1/2" = 1'-0"

FINAL HYDRAULICS REPORT

HYDROLOGIC DATA

DRAINAGE AREA= 851 SQUARE MILES
CHARACTER OF TERRAIN: EAST PORTION-MOUNTAINOUS, WEST PORTION-ROLLING HILLS
CHARACTER & TYPE OF STREAM: CLASS B RIVER

NATURE OF STREAMBED: DENSE, GRAY, FINE TO COARSE SAND

Q2.33= 17,300 CFS
Q10= 22,300 CFS
Q25= 27,000 CFS
Q50= 30,100 CFS
Q100= 33,800 CFS
Q500= 43,600 CFS

DATE OF FLOOD OF RECORD: NOVEMBER, 1927
WATER SURFACE ELEV. = 15 FT. OVER DAMESTIMATED DISCHARGE: ≥Q100
NATURAL STREAM VELOCITY @ Q50= 4.66 FPS
ICE CONDITIONS: HISTORY OF ICE JAMS DEBRIS: NO
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? YES
IS ORDINARY RISE RAPID? YES
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? DOWNSTREAM
IF YES, DESCRIBE: SWANTON VILLAGE DAM REGULATES LOW FLOWS BUT HAS NO SIGNIFICANT FLOOD CONTROL CAPACITY
WATERSHED STORAGE N/A HEADWATERS UNIFORM THROUGHOUT WATERSHED IMMEDIATELY ABOVE SITE

EXISTING STRUCTURE

STRUCTURE TYPE: WOODEN COVERED RAILROAD BRIDGE (NO LONGER IN PLACE)

CLEAR SPAN (NORMAL TO STREAM): SPAN 1- 116 FT., SPAN 2 - 117 FT., SPAN 3 - 116 FT.
VERTICAL CLEARANCE ABOVE STREAMBED: 11.49 FT. MIN., 30.18 FT. MAX.
WATERWAY OF FULL OPENING: +/- 8800 SF
DISPOSITION OF STRUCTURE: PREVIOUS WOODEN COVERED BRIDGE WAS DESTROYED BY FIRE IN 1987
TYPE OF MATERIAL UNDER SUBSTRUCTURE: BLACK SHALE EXISTS 3' TO 8' BELOW STREAMBED BASED ON SOIL BORINGS AT PIERS.
WATER SURFACE ELEV. @ Q2.33=115.36 FT. VELOCITY= 3.40 FPS
Q10= 116.48 FT. " 4.07 FPS
Q25= 117.49 FT. " 4.63 FPS
Q50= 118.09 FT. " 4.98 FPS
Q100= 118.80 FT. " 5.37 FPS

LONG TERM STREAM BED CHANGES: NO SIGNIFICANT CHANGE IN 21 YEARS BASED ON COMPARISON OF SURVEY AND FEMA STUDY.
IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY:
RELIEF ELEVATION: 128.6 FT. DISCHARGE OVER ROAD @ Q100= NONE

UPSTREAM STRUCTURE: TOWN: SWANTON DISTANCE: 2 MILES
HIGHWAY NO.: STRUCTURE NO:
STRUCTURE TYPE: RAILROAD BRIDGE
CLEAR SPAN: CLEAR HEIGHT: +/- 24 FT.
YEAR BUILT: FULL WATERWAY:

DOWNSTREAM STRUCTURE: TOWN: SWANTON DISTANCE: 0.3 MILES
HIGHWAY NO.: N/A STRUCTURE NO.:
STRUCTURE TYPE= SWANTON VILLAGE DAM
CLEAR SPAN: - CLEAR HEIGHT: -
YEAR BUILT: FULL WATERWAY: -

PROPOSED STRUCTURE

STRUCTURE TYPE: PENNSLYVANIA THROUGH TRUSS/PREFABRICATED BOWSTRING TRUSS

CLEAR SPAN (NORMAL TO STREAM): SPAN 1-155.24 FT., SPAN 2-117 FT., SPAN 3-155.24 FT.
VERTICAL CLEARANCE ABOVE STREAMBED: 13.99 FT. MIN., 32.68 FT. MAX.
WATERWAY OF FULL OPENING: +/- 9555 SF

WATER SURFACE ELEV. @ Q2.33= 115.36 FT. VELOCITY= 3.40 FPS
Q10= 116.48 FT. " 4.07 FPS
Q25= 117.49 FT. " 4.63 FPS
Q50= 118.10 FT. " 4.98 FPS
Q100= 118.80 FT. " 5.37 FPS

IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY:
RELIEF ELEVATION: 129.7 FT. DISCHARGE OVER ROAD @ Q100= NONE

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 128 FT
VERTICAL CLEARANCE @ Q100= 9.20 FT. @ MID-SPAN

SCOUR: PIER 1- YS (100) = 19.66 FT., PIER 2 - YS (100) = 17.72 FT.
REQUIRED CHANNEL PROTECTION: NONE

PERMIT INFORMATION

AVERAGE DAILY FLOW: 1,632 CFS
ORNINARY LOW WATER: 960 CFS ELEV. = 110.82 FT.
ORNINARY HIGH WATER: 2,500 CFS ELEV. = 111.82 FT.

TEMPORARY BRIDGE REQUIREMENTS

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

DESIGN CRITERIA:
1. DESIGN LIVE LOAD AASHTO H-10
2. DESIGN SPAN SPAN 1 & 3 = 161 FT.-10 IN./SPAN 2 = 123 FT.-1½ IN.
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A ON LEDGE
4. ALLOWABLE LOAD FOR PILING 30 TON TYPE HP10x42 ESTIMATED LENGTH 40'
5. STRUCTURAL STEEL AASHTO GRADE fy = 36 ksi NEW STEEL (UNLESS NOTED OTHERWISE)
6. REINFORCING STEEL GRADE 60
7. CONCRETE, HIGH PERFORMANCE CLASS B f'_c : 3500 PSI

TRAFFIC MAINTENANCE:
1. IS TRAFFIC TO BE MAINTAINED? N/A IF YES, ON EXISTING STRUCTURE OR ON TEMPORARY BRIDGE
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY N/A TRAFFIC CONTROL SIGNALS REQUIRED N/A
MINIMUM CLEAR SPAN NORMAL TO STREAM VERTICAL CLEARANCE ABOVE STEAMBED:
WATERWAY AT FULL OPENING:
ARE SIDEWALKS REQUIRED? IF SO, ON WHAT SIDE?

WORKING STRESS LOAD RATING (TONS)

STRESS LEVELS	TRUCK						
	H	HS	3S2	6 AXLE	3A.STR.	4A.STR.	5A.SEMI
INVENTORY 0.55Fy	15.6						
POSTED 0.67Fy	22.3						
OPERATING 0.75Fy	25.8						

$RF = \frac{C - 1.0 \cdot DL}{60 \cdot LL}$

URS URS CORPORATION

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON — Bridge No. 18
Highway No. — Log Sta. — Surv. Sta.

RAIL TRAIL OVER MISSISQUOI RIVER

PRELIMINARY INFORMATION SHEET

Designed By	R. SACCHI	Drawn By	R. ROSS
Checked By H. BUI	Date 1/23/08	Bridge Design Supervisor R. SACCHI	Date 1/23/08
PROJECT SWANTON		PROJECT NO. STP ST MHTB(I)	
I.G.C. Info. zf024pli.dgn			
Bridge Sheet No. BR3		Sheet 2 of 63	

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BRIDGE QUANTITY SHEET

NO.	ITEM	QUANTITY BREAKDOWN						
		ROADWAY	BRIDGE	EPSC	TRAINING	E&C ITEMS	TOTAL	UNIT
201.10	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	1					1	LS
203.15	COMMON EXCAVATION		150				150	CY
204.25	STRUCTURE EXCAVATION		187				187	CY
204.30	GRANULAR BACKFILL FOR STRUCTURES		156				156	CY
301.26	SUBBASE OF CRUSHED GRAVEL, FINE GRADED	63					63	CY
406.27	MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT (PG 58-34)	25					25	TON
501.34	CONCRETE, HIGH PERFORMANCE CLASS B		55				55	CY
504.10	FURNISHING EQUIPMENT FOR DRIVING PILING		1				1	LS
505.10	STEEL PILING, HP 10 X 42		640				640	LF
505.45	DYNAMIC PILE LOADING TEST		2				2	EA
506.50	STRUCTURAL STEEL, ROLLED BEAM		17,150				17,150	LBS
506.60	STRUCTURAL STEEL		32,080				32,080	LBS
507.15	REINFORCING STEEL		5,990				5,990	LBS
507.16	DRILLING & GROUTING DOWELS		72				72	LF
513.25	STRUCTURAL PAINTING, SHOP APPLIED (25 TONS)		1				1	LS
513.30	STRUCTURAL PAINTING, FIELD APPLIED (29 TONS)		1				1	LS
513.36	CONTAINMENT & ENVIRONMENTAL PROTECTION, FIELD		1				1	LS
513.41	SURFACE PREPARATION, FIELD (29 TONS)		1				1	LS
514.10	WATER REPELLANT, SILANE		5				5	GAL
522.25	STRUCTURAL LUMBER AND TIMBER, TREATED		1.8				1.8	MFBM
522.40	STRUCTURAL GLUED LAMINATED TIMBER (32 MFBM) (DECK PANELS AND FLOOR BEAM)		1				1	LS
524.21	JOINT SEALER, POLYURETHANE		138				138	LF
529.20	PARTIAL REMOVAL OF STRUCTURE		1				1	EA
529.25	REMOVAL OF CONCRETE OR MASONRY		26				26	CY
531.10	BEARING DEVICE ASSEMBLY, PREFORMED FABRIC PAD		8				8	EA
545.20	PREFABRICATED MULTI-MODAL BRIDGE (1,800 SF - EST.)		1				1	LS
602.30	REPOINTING MASONRY		200				200	SY
613.10	STONE FILL, TYPE I	48	4				52	CY
613.11	STONE FILL, TYPE II	152					152	CY
616.20	GRANITE SLOPE EDGING	32					32	LF
619.14	BOLLARDS	6					6	EA
630.15	FLAGGERS	200					200	HR
631.10	FIELD OFFICE, ENGINEERS					1	1	LS
631.16	TESTING EQUIPMENT, CONCRETE					1	1	LS
631.17	TESTING EQUIPMENT, BITUMINOUS					1	1	LS
631.25	FIELD OFFICE TELEPHONE (N.A.B.I.)					1	1	LU
634.10	EMPLOYEE TRAINEESHIP				520		520	HR
635.11	MOBILIZATION / DEMOBILIZATION	1					1	LS
641.10	TRAFFIC CONTROL	1					1	LS
646.21	4" YELLOW LINE	38					38	LF
646.24	12" WHITE LINE	4					4	LF
649.11	GEOTEXTILE FOR ROADBED SEPARATOR	291					291	SY
649.31	GEOTEXTILE UNDER STONE FILL	350					350	SY
649.41	GEOTEXTILE FOR UNDERDRAIN TRENCH LINING		24				24	SY
649.51	GEOTEXTILE FOR SILT FENCE			146			146	SY
649.61	GEOTEXTILE FOR FILTER CURTAIN			810			810	SY
651.15	SEED			20			20	LBS
651.18	FERTILIZER			160			160	LBS
651.20	AGRICULTURAL LIMESTONE			1			1	TON
651.25	HAY MULCH			1			1	TON
651.35	TOPSOIL			9			9	CY
651.40	GRUBBING MATERIAL	205					205	SY
652.10	EPSC PLAN			1			1	LS
652.20	MONITORING EPSC PLAN			72			72	HR
652.30	MAINTENANCE OF EPSC PLAN (N.A.B.I.)			1			1	LU
653.21	PERMANENT EROSION MATTING			91			91	SY
653.35	VEHICLE TRACKING PAD			16			16	CY
653.55	PROJECT DEMARCATION FENCE			460			460	LF
656.25	EVERGREEN SHRUBS (CALLUNA VULGARIS)			3			3	EA
900.608	SPECIAL PROVISION (GROUT BAGS)		4				4	CY
900.620	SPECIAL PROVISION (THROUGH TRUSS RIVET REPLACEMENT)		160				160	EA
900.640	SPECIAL PROVISION (BRIDGE EXPANSION JOINT AND COVER ASSEMBLY)		28				28	LF
900.640	SPECIAL PROVISION (BRIDGE RAILING, STEEL / PEDESTRIAN)		988				988	LF
900.640	SPECIAL PROVISION (TIMBER FENCE WITH PICKETS)	200					200	LF
900.645	SPECIAL PROVISION (INCORPORATING SALVAGED BRIDGE COMPONENTS)		1				1	LS

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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta.
	Surv. Sta.

RAIL TRAIL OVER MISSISQUOI RIVER

QUANTITIES & INDEX

Designed By BRUCE ERNST	Drawn By M. McINTOSH
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(1)
I.G.C. Info. zf024qsl.dgn	
Bridge Sheet No. BR3	Sheet 3 of 63

URS URS CORPORATION

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GEODETIC CONTROL POINTS

PG 2593 DESIGNATION F (NOT SHOWN)

N = 888641.184
E = 1486201.342
Z = 223.0

GENERAL LOCATION IS ABOUT 5.0 MI SOUTH OF THE U.S. AND CANADIAN BORDER, 1.8 MI EAST OF SWANTON AT THE FRANKLIN COUNTY AIRPORT AND NEAR THE END OF RUNWAY 1.

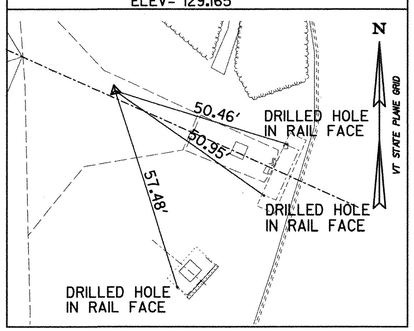
TO REACH THE STATION FROM THE POST OFFICE IN SWANTON, GO EAST ON STATE HIGHWAY 78 FOR 1.85 MI TO A PAVED ROAD LEFT, TURN LEFT ON AIRPORT ACCESS ROAD NORTH FOR 0.6 MI TO AIRPORT TERMINAL BUILDING AND A GATE AHEAD. CONTINUE AHEAD, PASSING THROUGH GATE AND GO NORTH FOR 0.05 MI TO A GRAVELED ROAD BETWEEN 4 SMALL HANGARS. TURN LEFT AND GO WEST FOR 200 FT TO THE TARMAC AND RAMP AHEAD. CONTINUE AHEAD ONTO TARMAC AND RAMP FOR 0.1 MI TO THE RUNWAY. TURN LEFT AND GO SOUTH ON THE RUNWAY FOR 0.2 MI TO THE END OF THE RUNWAY AND THE STATION ON THE LEFT.

THE STATION IS A STANDARD VTDH DISK STAMPED FI1984, SET INTO CONCRETE IN A CAST ALUMINUM PIPE WHICH IS 15 CM IN DIAMETER AND FLUSH WITH THE GROUND 1.0 FT EAST OF A FIBERGLASS WITNESS POST.

TRAVERSE TIES

TRAV. 1

N. = 881517.438
E. = 1477552.988
ELEV= 129.165



TRAV. 2

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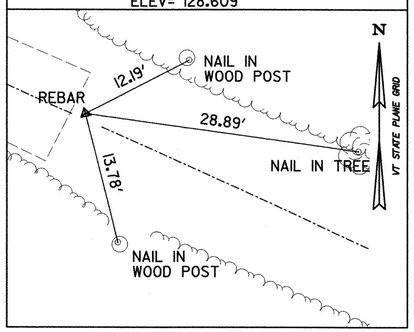
ELEV= 128.609



ALIGNMENT TIES

P.O.B. STA. 10+11.189

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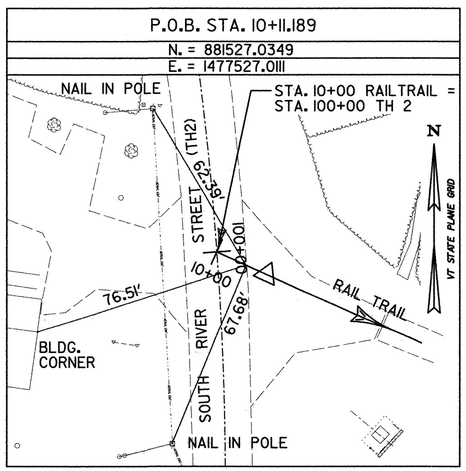

P.O.E. STA. 15+62

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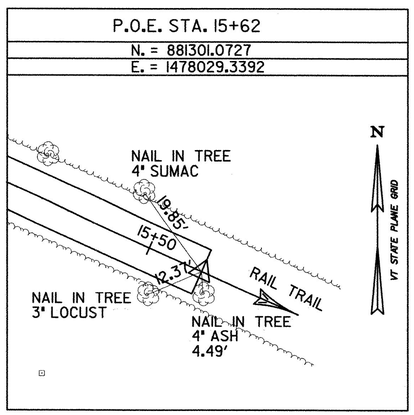

DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 83

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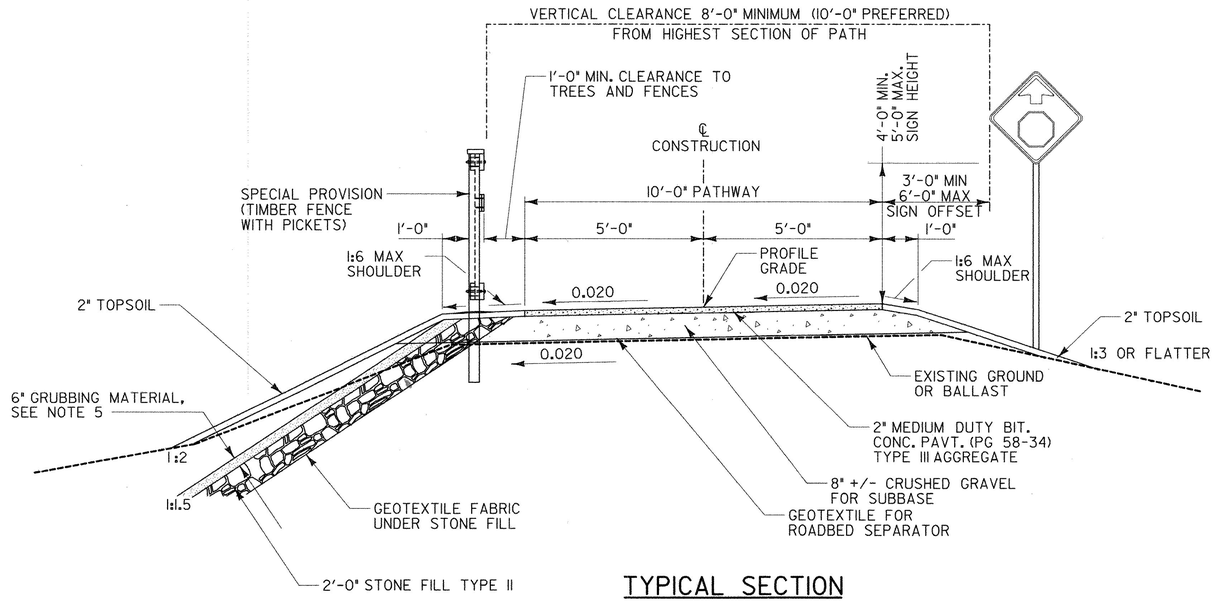
URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH# (518) 688-0015

SHEET NAME: TIES
PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(1)
FILE NAME: zd0241tie1.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/13/2008
DRAWN BY: R. ROSS
CHECKED BY: M. K. CHEVALIER
SHEET 4 OF 63

RE-ERECTION OF HISTORIC BRIDGE NO. 18
RAIL TRAIL
1-10-1

2" MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT (PG 58-34), TYPE III AGGREGATE
8" SUBBASE OF GRAVEL

EARTHWORK SUMMARY	
EARTH EXCAVATION	150 YD^3
PLANIMETERED FILL	62 YD^3
FACTOR	1.15
PLANIMETERED FILL INCLUDING FACTOR	72 YD^3
EXCESS EXCAVATION	78 YD^3



TYPICAL SECTION

(SUPERELEVATED)

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

THICKNESS TOLERANCES

PAVEMENT +/- 1/4" TOTAL DEPTH
SUBBASE +/- 1" TOTAL DEPTH

NOTES

1. THICKNESS OF ALL COURSES SHOWN ON THE DRAWING ARE COMPACTED THICKNESS.
2. ALL MATERIALS SHALL CONFORM TO THE VAOT STANDARD SPECIFICATIONS CURRENTLY IN EFFECT AT TIME OF BIDDING.
3. CROSS SLOPE SHALL VARY TO MATCH EXISTING PAVEMENT CONDITIONS AT THE TERMINATION LIMITS AND AT HISTORIC BRIDGE NO. 18.
4. ANY TREE ROOTS ENCOUNTERED WITHIN THE EXCAVATION LIMITS SHALL BE CUT AND REMOVED. PAYMENT WILL BE INCIDENTAL TO COMMON EXCAVATION.
5. STONE FILL TYPE II IS REQUIRED ON ANY SLOPE STEEPER THAN 1:2. A 6" LAYER OF COVER MATERIAL OVER THE STONE IS ALSO REQUIRED.
   A. ANY SLOPES ADJACENT TO WETLANDS OR STREAMS SHALL USE GRUBBING MATERIAL AS A COVER FOR THE STONE FILL, EXCEPT NO GRUBBING MATERIAL SHALL BE PLACED ON STONE FILL DIRECTLY UNDER THE BRIDGE.
   B. STONE COVERED SLOPES IN DRY AREAS SHALL USE EXCAVATED EARTH AS A COVER MATERIAL. COVER MATERIAL SHALL BE SEEDED AND MULCHED.
6. IF UNSUITABLE MATERIAL IS PRESENT ON TOP OF BALLAST, IT SHALL BE REMOVED PRIOR TO GRADING EXISTING BALLAST SHALL BE GRADED TO A CONSISTENT GRADE AND CROSS SLOPE. PAYMENT FOR THIS WORK WILL BE MADE UNDER CONTRACT ITEM 203.15 COMMON EXCAVATION.
7. SEE STANDARD SHEET A-79 FOR ADDITIONAL INFORMATION.

URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH# (518) 688-0015

SHEET NAME: TYPICAL SECTION
PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(1)

FILE NAME: zf024rtsl.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/13/2008
DRAWN BY: M. McINTOSH
CHECKED BY: M. K. CHEVALIER
SHEET 5 OF 63

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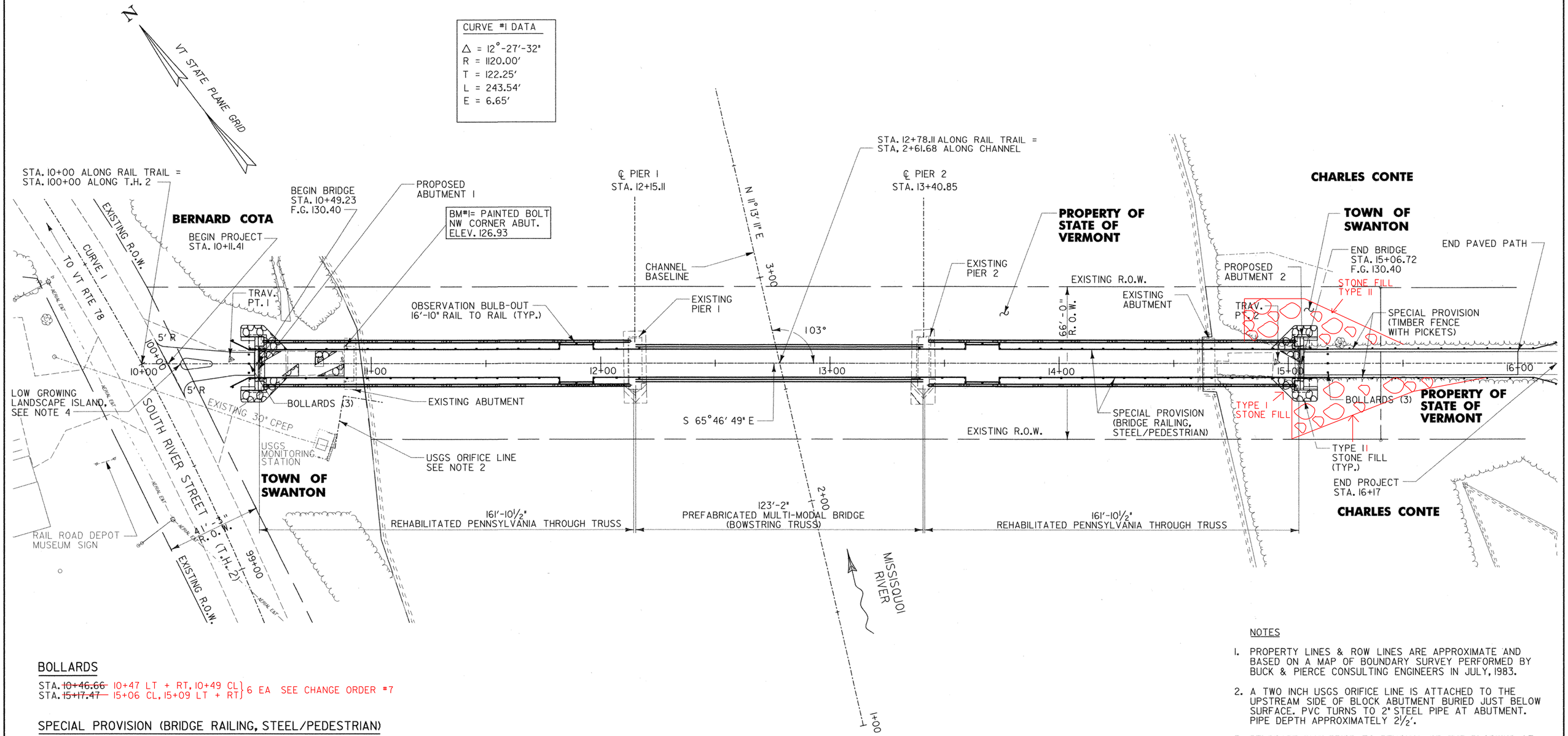


BOLLARDS

STA. ~~10+46.66~~ 10+47 LT + RT, 10+49 CL } 6 EA SEE CHANGE ORDER #7
STA. ~~15+17.47~~ 15+06 CL, 15+09 LT + RT }

SPECIAL PROVISION (BRIDGE RAILING, STEEL/PEDESTRIAN)

STA. 10+38.08 TO ~~15+17.74~~ LT. 15+20 LT }
STA. 10+38.08 TO ~~15+17.74~~ RT. 15+20 RT } CHANGED TO GALVANIZED RAIL SEE COSA #1

CONSTRUCT LANDSCAPE ISLAND

STA. ~~10+16.91~~ TO STA. ~~10+30.66~~
10+19 TO 10+32

SPECIAL PROVISION (TIMBER FENCE WITH PICKETS)

15+10.5 STA. ~~15+17.74~~ TO STA. 16+17.00 LT.
STA. ~~15+17.74~~ TO STA. 16+17.00 RT.
15+10.5

DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 83

PLAN

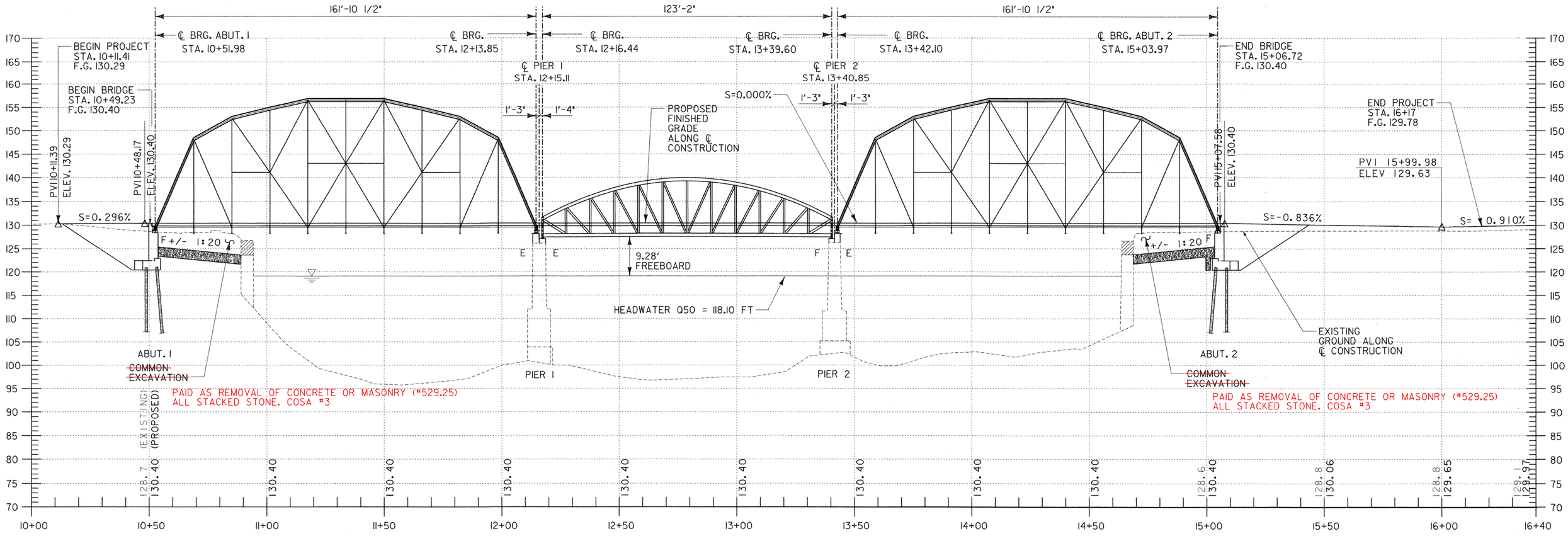
0 20 40
SCALE IN FEET
1" = 20'

NOTES

1. PROPERTY LINES & ROW LINES ARE APPROXIMATE AND BASED ON A MAP OF BOUNDARY SURVEY PERFORMED BY BUCK & PIERCE CONSULTING ENGINEERS IN JULY, 1983.
2. A TWO INCH USGS ORIFICE LINE IS ATTACHED TO THE UPSTREAM SIDE OF BLOCK ABUTMENT BURIED JUST BELOW SURFACE. PVC TURNS TO 2" STEEL PIPE AT ABUTMENT. PIPE DEPTH APPROXIMATELY 2½'.
3. RELOCATE BM#1 PRIOR TO REMOVAL OF THE BLOCKING AT ABUTMENT 1. PAYMENT TO BE INCIDENTAL TO OTHER ITEMS IN THE CONTRACT.
4. THE COST OF PREPARING THE LANDSCAPE ISLAND FOR PLANTING WILL BE PAID FOR UNDER CONTRACT ITEM 651.35.

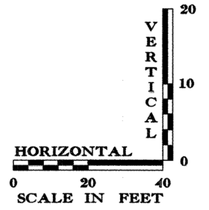
URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH# (518) 688-0015

SHEET NAME: PLAN
PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(1)
FILE NAME: z:f024pll.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/13/2008
DRAWN BY: R. ROSS
CHECKED BY: M. K. CHEVALIER
SHEET 6 OF 63



PROFILE

SCALE: 1" = 20' HORIZONTAL
1" = 10' VERTICAL

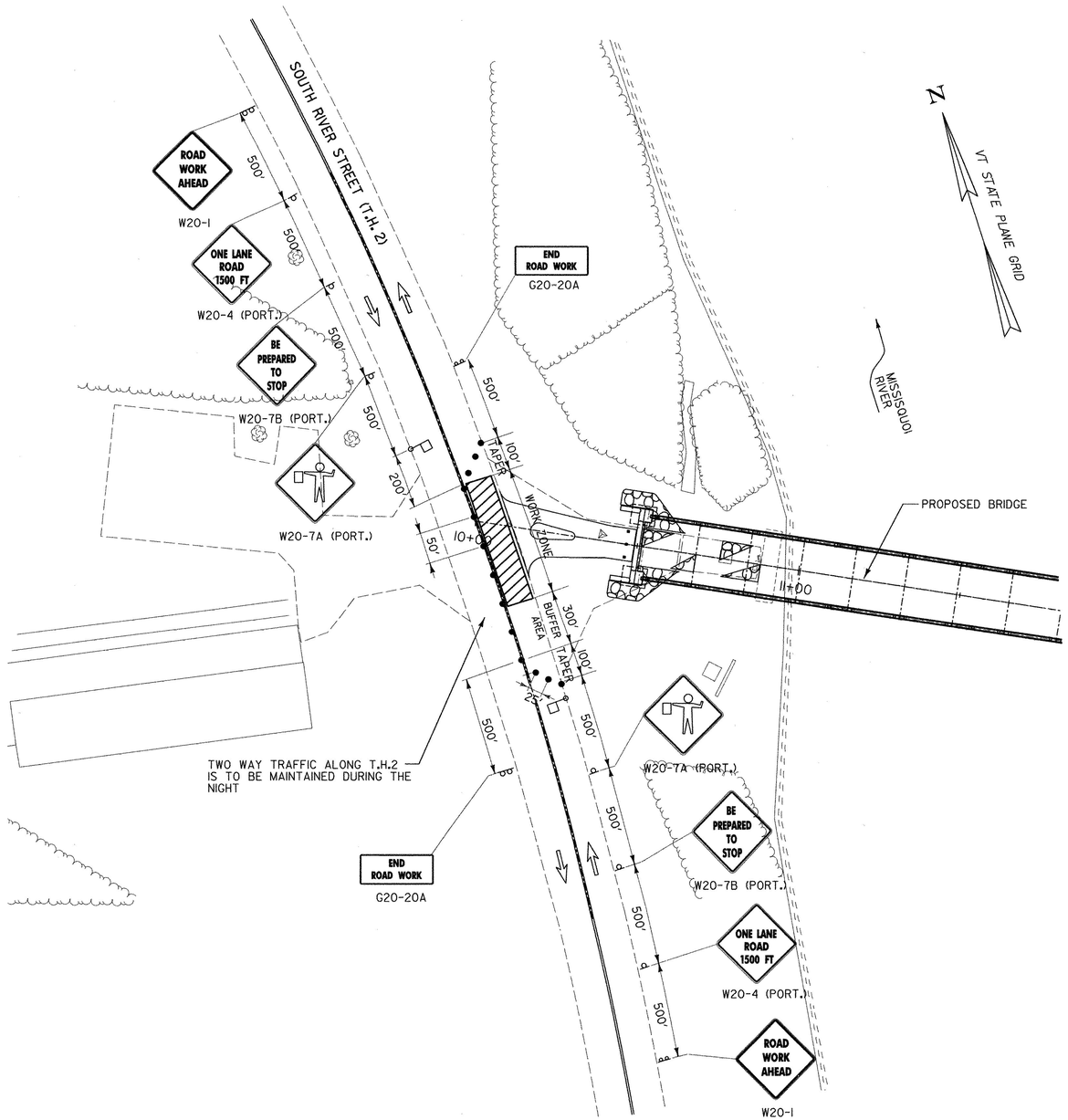


DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 83

URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH# (518) 688-0015

SHEET NAME: PROFILE
PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(1)

FILE NAME: zf024prol.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/13/2008
DRAWN BY: R. ROSS
CHECKED BY: M. K. CHEVALIER
SHEET 7 OF 63



TEMPORARY LANE CLOSURE ON TWO LANE ROAD

(DAY TIME OPERATION)

NOT TO SCALE

LEGEND	
•	DRUMS
F	FLAGGER
F	FIXED SIGN
P	(PORT.) SIGN
▨	WORK ZONE

(PORT.) PROPERLY COVERED AT NIGHT OR REMOVED FROM ITS LOCATION IF FLAGGER IS NOT REQUIRED.

(A.O.B.E.) AS ORDERED BY ENGINEER

WORK ZONE REQUIREMENTS

1. WORK ZONES SHALL BE LIMITED TO ONE SIDE OF THE TRAVELED WAY. WORK ZONE IS DEFINED AS THAT AREA IN WHICH TRAFFIC IS RESTRICTED BECAUSE OF CONSTRUCTION ACTIVITIES, OR THAT AREA WHICH INVOLVES A DROP-OFF NEXT TO THE PAVEMENT.

2. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SAFE AND ADEQUATE INGRESS AND EGRESS TO AND FROM INTERSECTING HIGHWAYS AND COMMERCIAL ESTABLISHMENTS AT ALL TIMES TO THE SATISFACTION OF THE ENGINEER. THE COST OF THIS WILL BE CONSIDERED INCIDENTAL TO CONTRACT ITEM 641.10.

3. THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO AVOID DAMAGING EXISTING PAVEMENT, CURBS AND SIDEWALKS WHEN IT IS NECESSARY TO MOVE EQUIPMENT THROUGH LOCAL STREETS. THE CONTRACTOR SHALL OBSERVE ALL OF THE RULES, REGULATIONS AND DIRECTIONS OF THE LOCAL MUNICIPALITITES RELATIVE TO SUCH HANDLING OF EQUIPMENT AND TAKE SUCH PROTECTIVE MEASURES AS MAY BE ORDERED BY THE ENGINEER. LOCAL STREET PAVEMENTS, CURBS AND SIDEWALKS, ETC. LOCATED WITHIN THE PROJECT LIMITS THAT ARE NOT SCHEDULED TO BE REPLACED AND ARE DAMAGED BY THE CONTRACTOR, SHALL BE RESTORED AT THE CONTRACTORS SOLE COST AND EXPENSE.

4. THE CONTRACTOR SHALL SUBMIT IN WRITING TO THE LOCAL POLICE DEPARTMENT THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PERSON OR PERSONS AUTHORIZED TO SECURE LABOR, MATERIALS AND EQUIPMENT FOR EMERGENCY REPAIRS OUTSIDE OF NORMAL WORKING HOURS. DUPLICATE COPIES OF THE ABOVE SHALL BE FILED WITH THE TOWN.

5. VEHICLES BELONGING TO THE CONTRACTOR OR THE CONTRACTOR'S EMPLOYEES SHALL NOT BE PARKED ALONG ROADWAYS USED BY THE GENERAL PUBLIC, OR ANY OTHER AREAS DEEMED BY THE ENGINEER TO BE HAZARDOUS LOCATIONS. ALSO, THE CONTRACTOR SHALL NOT PARK EQUIPMENT, NOR STORE MATERIALS WHERE IT IS DEEMED BY THE ENGINEER TO BE A SAFETY HAZARD. CONSTRUCTION EQUIPMENT SHALL BE STORED AT LEAST 20 FEET FROM THE EDGE OF ALL TRAVEL LANES DURING NON-WORKING HOURS.

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES

1. MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE PROVIDED IN ACCORDANCE WITH THIS PLAN AND STANDARD SHT. E-110.

2. REFER TO STANDARD SHTS. E-100 & E-102 FOR SIGNS WITH LISTED NUMBERS. SIGN LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. DISTANCES SHOULD BE ADAPTED TO PREVAILING CONDITIONS.

3. ALL TEMPORARY SIGNS SHALL INDICATE ACTUAL CONDITIONS AT ALL TIMES AND SHALL BE COVERED, MOVED, REMOVED OR CHANGED AS DIRECTED BY THE ENGINEER. SIGNS SHALL NOT BE PLACED AT LOCATIONS WHERE THEY ARE OBSCURED BY TEMPORARY OR PERMANENT OBJECTS OR ARE A HAZARD TO PUBLIC SAFETY.

4. THE CONTRACTOR SHALL PROVIDE APPROPRIATE SIGNAGE, FLAGGERS AND OTHER MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL DEVICES WHEN OPERATIONS REQUIRE TRAFFIC TO BE STOPPED FOR, BUT NOT NECESSARILY LIMITED TO, CROSSING OPERATIONS OF EQUIPMENT, DELIVERY/ REMOVAL OF MATERIALS, LIFTING OPERATIONS AND OTHER ACTIVITIES, A.O.B.E.

5. PLASTIC DRUMS USED AS DELINEATORS ARE TO BE OF PROPER SIZE AND REFLECTORIZED IN ACCORDANCE WITH STANDARD SHT. E-106 PLASTIC DRUMS SHALL HAVE A FLUTED SIDE ACCEPTABLE TO THE ENGINEER WHICH PREVENTS ROLLING IN THE EVENT THE DRUM IS KNOCKED OVER.

6. WHEN CONES ARE USED IN CONTROLLING THE MOVEMENT OF TRAFFIC, PRECAUTIONS SHALL BE TAKEN TO PREVENT THE CONES FROM BEING DISPLACED. THIS SHALL BE ACCOMPLISHED BY DOUBLING CONES AND/OR BY USE OF SAND BAG RINGS OR A.O.B.E.

7. ANY EXISTING TRAFFIC SIGNS NOT INDICATED ON THE TRAFFIC CONTROL PLAN, WHICH IN THE OPINION OF THE ENGINEER WOULD CAUSE CONFUSION TO MOTORISTS DURING CONSTRUCTION, SHALL BE COVERED WITH AN OPAQUE MATERIAL OR REMOVED A.O.B.E. EXISTING SIGNS SHALL BE RETURNED TO ORIGINAL CONDITION AFTER COMPLETION OF CONSTRUCTION UNLESS OTHERWISE INDICATED IN THE PLANS.

8. THE CONTRACTOR SHALL PROVIDE PERSONNEL TO PATROL THE CONTRACT AREA AS NECESSARY TO ENSURE THAT CONDITIONS ON THE SITE ARE ADEQUATE FOR PUBLIC SAFETY AND CONVENIENCE AT ALL TIMES DURING THE DAY AND NIGHT.

9. ALL WORK ON THIS SHEET, EXCLUDING FLAGGERS, WILL BE INCLUDED IN THE COST FOR CONTRACT ITEM 641.10. FLAGGERS WILL BE PAID UNDER CONTRACT ITEM 630.15.

10. THE LANE CLOSURE/FLAGGER SIGNS SHOULD ONLY BE DISPLAYED WHEN THERE IS ONE-WAY TRAFFIC CONTROLLED BY FLAGGERS. THE SIGNS SHOULD BE REMOVED WITHIN 15 MINUTES OF CESSATION OF FLAGGING ACTIVITY.

URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH# (518) 688-0015

SHEET NAME: TRAFFIC CONTROL

PROJECT NAME: SWANTON

PROJECT NUMBER: STP ST MHTB(1)

FILE NAME: zJ024MPTI.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST

PLOT DATE: 2/13/2008
DRAWN BY: M. McINTOSH
CHECKED BY: M. K. CHEVALIER

SOIL CLASSIFICATION

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

ROCK QUALITY DESIGNATION

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

SHEAR STRENGTH

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

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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

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

DEFINITIONS (AASHTO)

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

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

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

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

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

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

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

VARVED - Alternate layers of silt and clay.

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

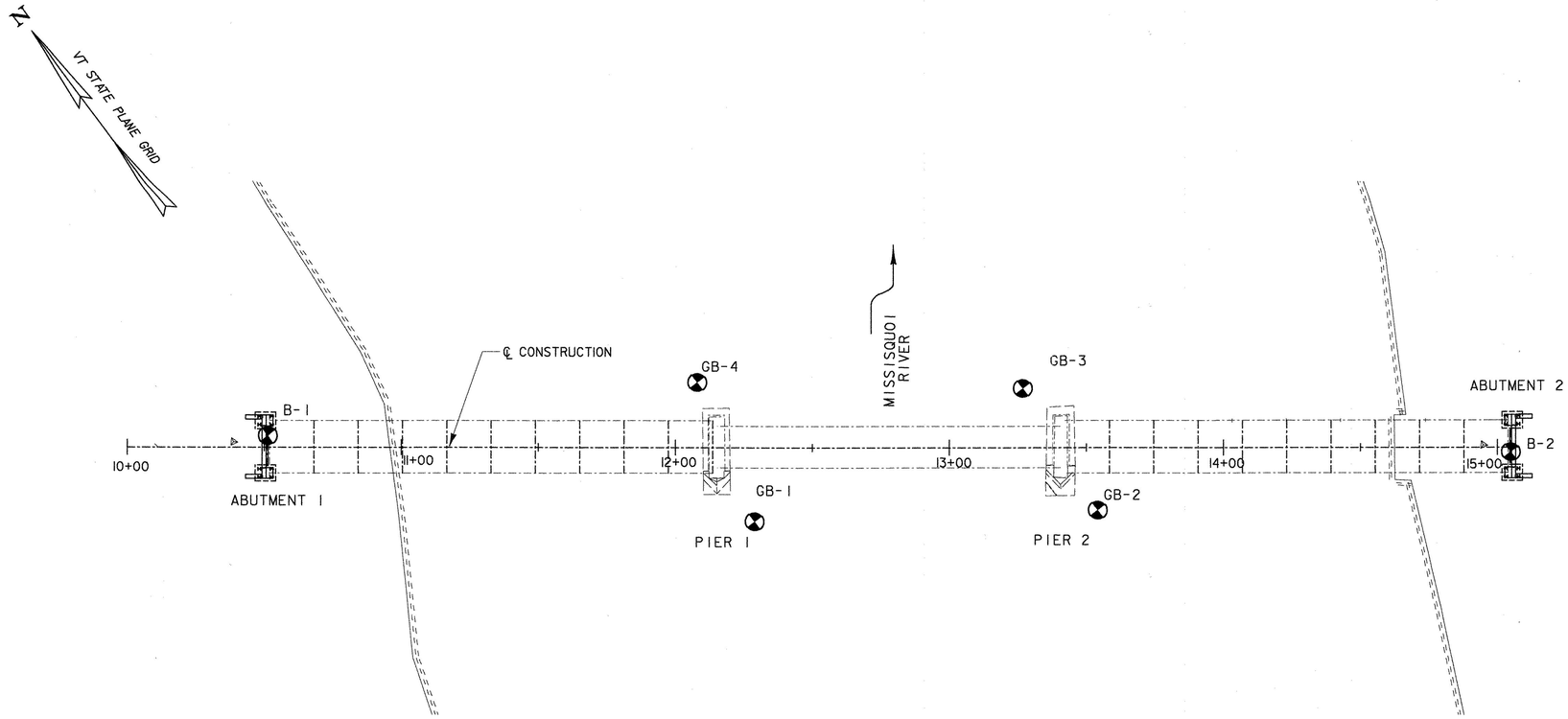
MUCK - Soft organic soil (containing > 10% organic material.

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

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

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

DIP - Inclination of bed with a horizontal plane.



BORING CHART

HOLE NO.	SURV. STATION	OFFSET	GROUND ELEV.	ELEV. TLOB
B-1	10+50.71	4.1' LT	128.6'	89.6'
B-2	15+04.92	1.7' RT	128.7'	91.2'
GB-1	12+27.02	30.2' RT	*108.2'	81.5'
GB-2	13+52.26	26.1 RT	*108.2'	87.2'
GB-3	13+24.93	18.5 LT	*109.2'	94.0
GB-4	12+06.05	20.7 LT	*108.7'	93.7

*RIVER ELEVATION AT TIME OF BORE HOLE
ALL MEASUREMENTS ARE APPROXIMATE

BORING PLAN

0 25 50

SCALE IN FEET
1" = 25'

GENERAL NOTES

1. The subsurface explorations shown herein were made between 02-03-04 and 02-04-04 by SJB Services.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgement was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgement by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. / Surv. Sta.
RAIL TRAIL OVER MISSISQUOI RIVER	
BORING INFORMATION	
Designed By BRUCE ERNST	Drawn By M. McINTOSH
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(1)
I.G.C. Info. zd024bori.dgn	
URS URS CORPORATION	Bridge Sheet No. BR3 Sheet 9 of 63

BORING NO. B-1

ELEV. 128.6

DEPTH	BLOWS ON CASING	STANDARD PENETRATION	SAMPLE NUMBER	MOISTURE	COLOR	LABORATORY CLASSIFICATION OF SOIL
	122	12	1	M	BLK	TOPSOIL 0 - 0.5'
				D	BRN	GrSa 0.5' - 6.0' (POSSIBLE FILL)
	61	12	2	D	GRY	
5	7	12	3	D	BRN	
	8	12	4	M	BRN	SaSi 6.0' - 14.0'
	5	12	5	M	BRN	
10						
	3	12	6	M	BRN	
	5	12	7	M	BRN	
15	4	12	8	M	BRN	CISi 14.0' - 23.5'
20						
	WOH	12	9	M	GRY	
	7	12	10	W	GRY	
25	5	12	11	W	GRY	GLACIAL TILL 23.5' - 34'
	17	12	12	W	GRY	
30	23	12	13	M	GRY	
	23	12	14	W	GRY	
	51	12	15	W	GRY	
35						WEATHERED BEDROCK 34.0' - 39.0'
40	100	0	16			AUGER REFUSAL 39.0' BOTTOM OF BOREHOLE
45						
50						

130
120
110
100
90
80

BOTTOM OF PILE
ABUTMENT 1
ELEVATION = 95.0

BORING NO. B-2

ELEV. 128.7

DEPTH	BLOWS ON CASING	STANDARD PENETRATION	SAMPLE NUMBER	MOISTURE	COLOR	LABORATORY CLASSIFICATION OF SOIL
	22	12	1	M	BLK	TOPSOIL 0 - 0.4'
				D	TN	SaSi 0.4' - 28'
	8	12	2	D	RDTN	
5	7	12	3	D	RDTN	
	8	12	4	D	RDTN	
	4	12	5	D	RDTN	
10						
	4	12	6	D	RDTN	
	6	12	7	D	TN	
15	4	12	8	D	TN	
20						
	1	12	9	W	BRN	
	5	12	10	W	GRYBRN	
25	10	12	11	W	GRY	
						GLACIAL TILL 28.0' - 31.0'
30	24	12	12	M	GRY	
	100	2	13	W	GRY	WEATHERED BEDROCK WITH SOIL SEAMS 31.0' - 35.5'
	113	12	14	D	GRY	
35						POSSIBLE BEDROCK 35.5' -37.5'
40						BOTTOM OF BOREHOLE 37.5'
45						
50						

130
120
110
100
90
80

BOTTOM OF PILE
ABUTMENT 2
ELEVATION = 95.0

PILE #9

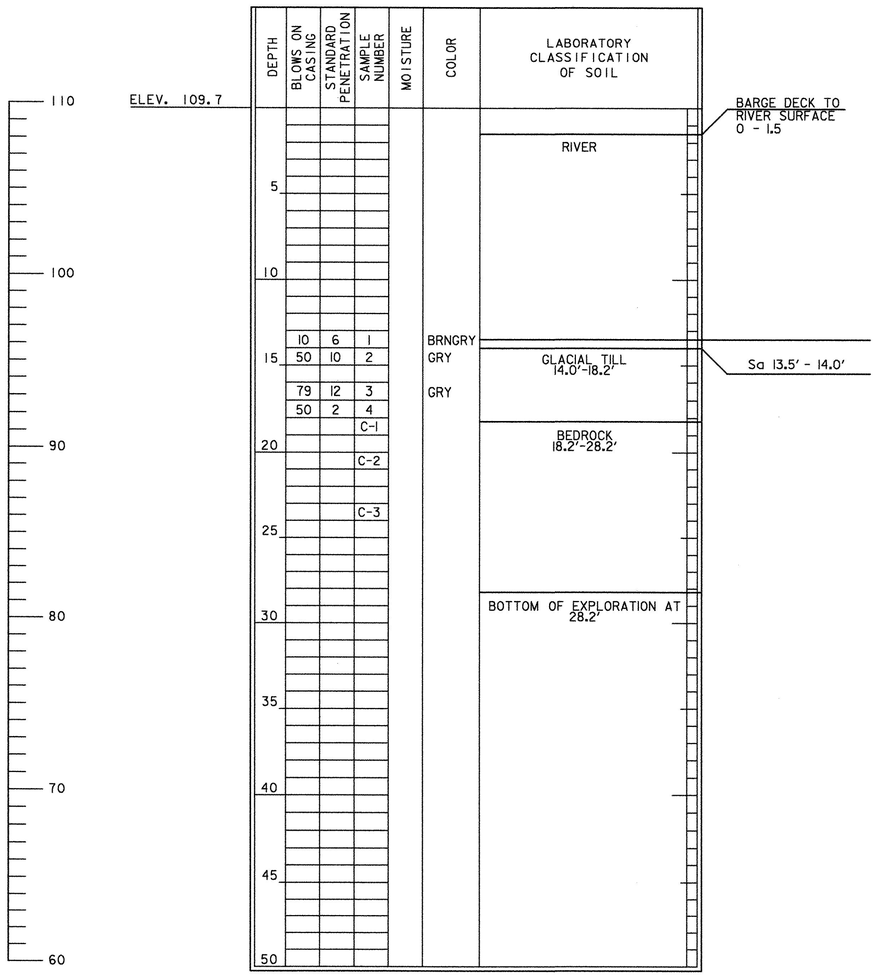
NOTES:

1. SEE BORING INFORMATION SHEET FOR DEFINITIONS AND SYMBOLS.
2. BORINGS PERFORMED BY SJB SERVICES INC. ON FEBRUARY 3 & 4 OF 2004 AND OBSERVED BY GEODESIGN INC. PERSONNEL.

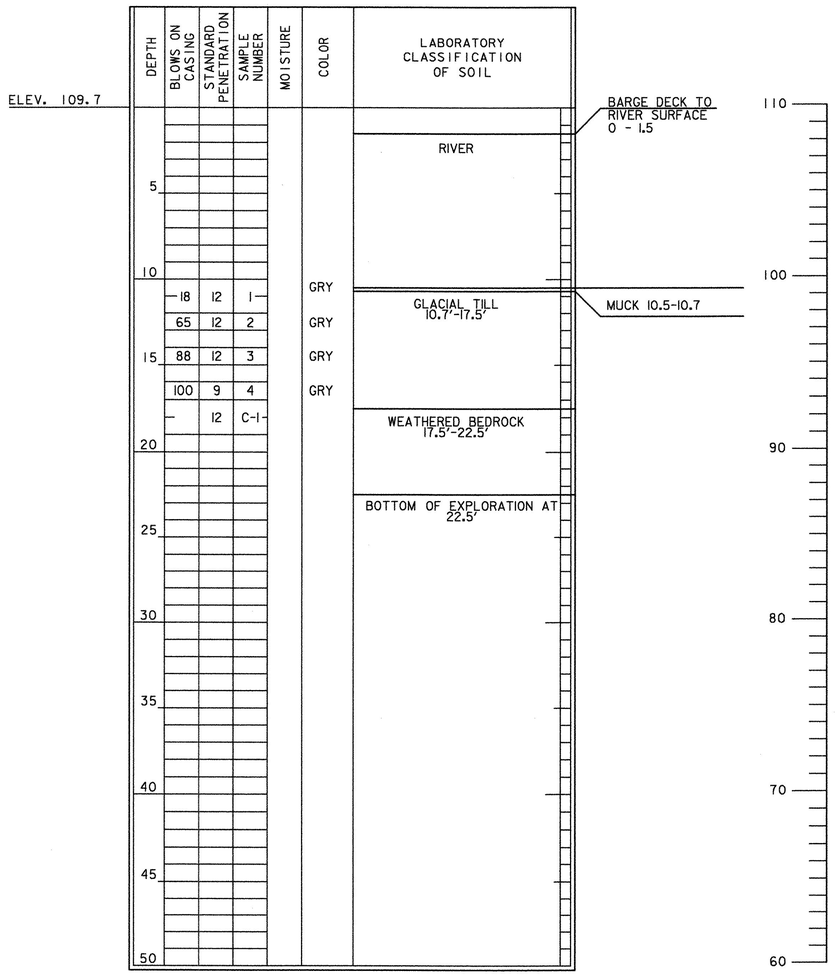
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta.
	Surv. Sta.
RAIL TRAIL OVER MISSISQUOI RIVER	
BORING LOG 1	
Designed By R. SACCHI	Drawn By M. THULIN
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. zd024bor2.dgn	1/30/2008
URS URS CORPORATION	Bridge Sheet No. BR3 Sheet 10 of 63

BORING NO. GB-1



BORING NO. GB-2



NOTES:

1. SEE BORING INFORMATION SHEET FOR DEFINITIONS AND SYMBOLS.
2. BORINGS PERFORMED BY SJB SERVICES INC. ON NOVEMBER 3 & 4 OF 2004 AND OBSERVED BY GEODESIGN INC. PERSONNEL.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
BORING LOG 2	
Designed By R. SACCHI	Drawn By M. THULIN
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
URS URS CORPORATION	L.G.C. Info. ZD024B0R3.dgn 1/30/2008
	Bridge Sheet No. BR3 Sheet 11 of 63

BORING NO. GB-3

ELEV. 110.7

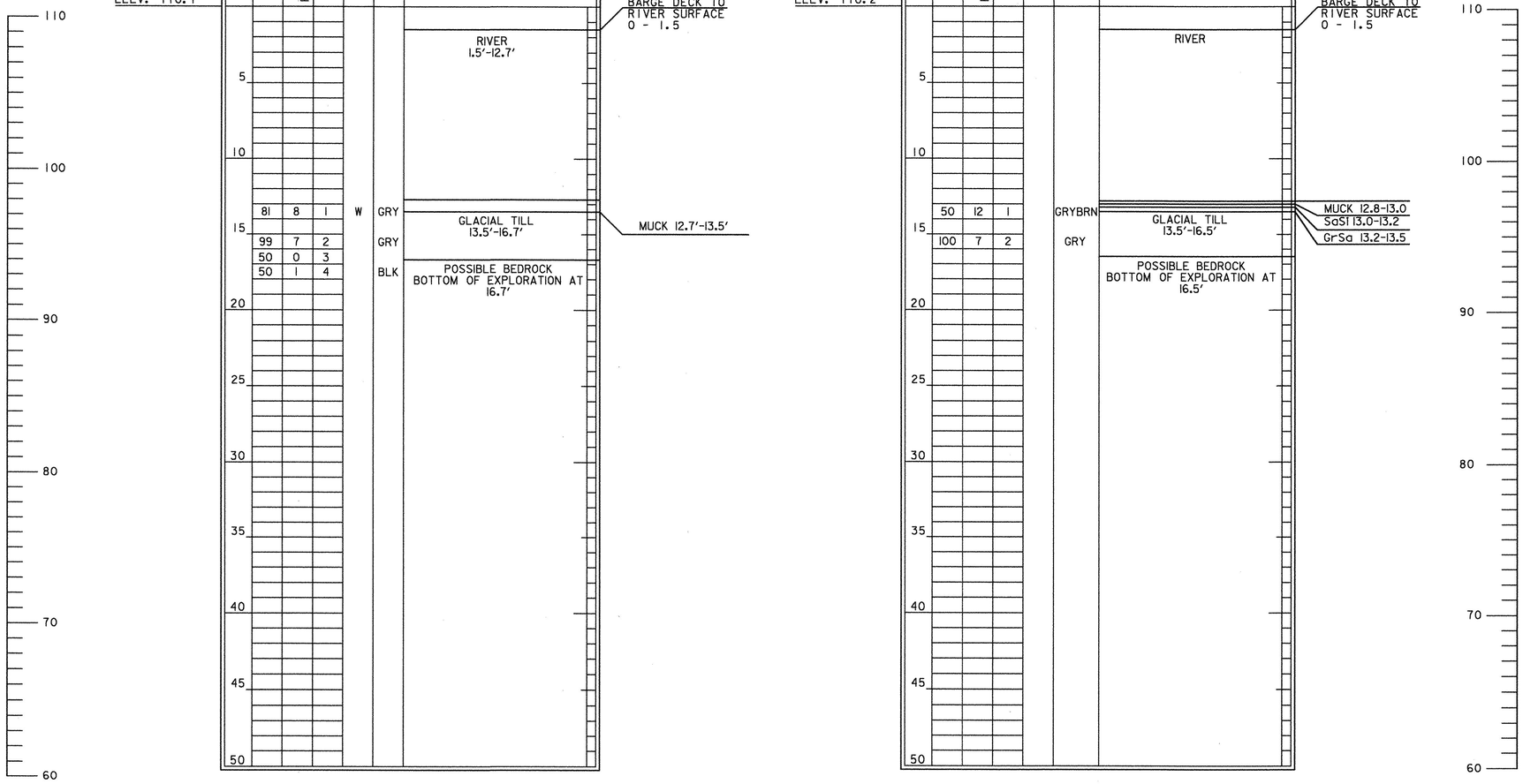
DEPTH	BLOWS ON CASING	STANDARD PENETRATION	SAMPLE NUMBER	MOISTURE	COLOR	LABORATORY CLASSIFICATION OF SOIL
						BARGE DECK TO RIVER SURFACE 0 - 1.5
						RIVER 1.5'-12.7'
5						
10						
	81	8	1	W	GRY	
15	99	7	2		GRY	GLACIAL TILL 13.5'-16.7'
	50	0	3			
	50	1	4		BLK	POSSIBLE BEDROCK BOTTOM OF EXPLORATION AT 16.7'
20						
25						
30						
35						
40						
45						
50						

MUCK 12.7'-13.5'

BORING NO. GB-4

ELEV. 110.2

DEPTH	BLOWS ON CASING	STANDARD PENETRATION	SAMPLE NUMBER	MOISTURE	COLOR	LABORATORY CLASSIFICATION OF SOIL
						BARGE DECK TO RIVER SURFACE 0 - 1.5
						RIVER
5						
10						
	50	12	1		GRYBRN	MUCK 12.8-13.0
						SaSl 13.0-13.2
15	100	7	2		GRY	GrSa 13.2-13.5
						GLACIAL TILL 13.5'-16.5'
						POSSIBLE BEDROCK BOTTOM OF EXPLORATION AT 16.5'
20						
25						
30						
35						
40						
45						
50						



NOTES:

1. SEE BORING INFORMATION SHEET FOR DEFINITIONS AND SYMBOLS.
2. BORINGS PERFORMED BY SJB SERVICES INC. ON NOVEMBER 8 & 9 OF 2004 AND OBSERVED BY GEODESIGN INC. PERSONNEL.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
BORING LOG 3	
Designed By R. SACCHI	Drawn By M. THULIN
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(1)
I.G.C. Info. ZD024B0R4.dgn	1/30/2008
URS URS CORPORATION — Bridge Sheet No. BR3	Sheet 12 of 63

STATE OF VERMONT
AGENCY OF TRANSPORTATION

EROSION CONTROL NARRATIVE

EROSION CONTROL NARRATIVE

I.I PROJECT DESCRIPTION

THE PROJECT INVOLVES THE ADAPTIVE RE-USE OF FORMER MILTON BRIDGE NO. I8, AN HISTORIC TWO-SPAN PENNSYLVIANIA THROUGH TRUSS, AT A NEW LOCATION OVER THE MISSISQUOI RIVER. THE WORK IS BEING UNDERTAKEN IN CONNECTICUT WITH THE CONSTRUCTION OF A NEW SHARED USE PATH ALONG A FORMER LAMOILLE VALLEY RAILLINE IN THE TOWN OF SWANTON.

THE ORIGINAL BRIDGE AT THE SWANTON SITE WAS A WOODEN COVERED RAILROAD BRIDGE CONSTRUCTED IN I898. IT WAS DESTROYED BY FIRE IN I987. THE OLD BRIDGE WAS A THREE-SPAN STRUCTURE SUPPORTED ON TWO RIVER PIERS AND FULL HEIGHT ABUTMENTS LOCATED AT THE EDGES OF THE RIVER.

MILTON BRIDGE NO. I8 ORIGINALLY SERVED TO CARRY TOWN HIGHWAY 40 OVER THE LAMOILLE RIVER UNTIL IT WAS REPLACED WITH A NEW BRIDGE IN I997. BRIDGE NO. I8 STOOD UNUSED IN ITS ORIGINAL LOCATION UNTIL THE DISMANTLING AND STORAGE OF IT IN 2003. THE DISMANTLED TRUSSES ARE CURRENTLY LOCATED AT A STORAGE SITE APPROXIMATELY I500 FEET EAST OF THE PROPOSED CROSSING IN SWANTON.

THE WORK TO BE PERFORMED INCLUDES RE-ERECTION/REHABILITATION OF THE HISTORIC TRUSSES AS THE END SPANS AND INSTALLATION OF A NEW PREFABRICATED BOWSTRING TRUSS AS THE CENTER SPAN OF THE BRIDGE. THE TRUSSES WILL SIT ON NEW ABUTMENTS AND REHABILITATED PIERS. WORK TO THE EXISTING PIERS SHALL CONSIST OF CONSTRUCTING NEW CONCRETE PEDESTALS, REPOINTING STONE MASONRY OF STEMS, AND SHORING UP OF MASONRY FOUNDATION WITH GROUT BAGS. NO DEWATERING IS ANTICIPATED. THE LENGTH OF THE BRIDGE WILL BE 458 FT. THE PROJECT ALSO INCLUDES I48 FT OF APPROACH PATHWAY.

THE TOTAL AREA OF DISTURBANCE WILL BE APPROXIMATELY 0.25 AC. IT IS ANTICIPATED THAT THE PROJECT WILL LAST ONE CONSTRUCTION SEASON.

I.2 SITE INVENTORY

I.2.I OFF SITE DRAINAGE CHARACTERISTICS (UP AND DOWN-GRADIENT)

AT THE BEGINNING OF THE RAIL TRAIL, SOUTH RIVER STREET IS AT A HIGH POINT IN ITS ROAD PROFILE. WATER DRAINS NORTH AND SOUTH AWAY FROM THE PROJECT. RUNOFF ALONG THE EAST SIDE OF SOUTH RIVER STREET DRAINS AS SHEET FLOW DIRECTLY INTO THE RIVER. RUNOFF ALONG THE WEST OF THE SOUTH RIVER STREET IS COLLECTED BY A STORM SEWER SYSTEM THAT OUTLETS AT THE EAST CHANNEL BANK NEAR THE BRIDGE.

THE EAST APPROACH PATHWAY FOR THE PROPOSED BRIDGE WILL UTILIZE AN EXISTING RAILROAD EMBANKMENT FILL THAT RUNS THROUGH A FLOODPLAIN ON THE EAST CHANNEL OVERBANK. RUNOFF FROM THE RAIL TRAIL WILL SHEET FLOW DOWN THE EMBANKMENT TO THE RIVER.

I.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MANMADE WATER FEATURES

THE PROJECT IS LOCATED IN THE MISSISQUOI/PIKE BASIN. THE DRAINAGE AREA UPSTREAM OF THE BRIDGE IS 85I SQUARE MILES IN SIZE. THE EASTERN PORTION OF THE WATERSHED RUNS THROUGH THE GREEN MOUNTAINS AND THE WESTERN PORTION IS CHARACTERIZED BY GENTLY ROLLING HILLS. ELEVATIONS RANGE FROM I00 FT TO 3800 FT. OVER 50 PERCENT OF THE WATERSHED IS COVERED BY FORESTED LAND AND INCLUDES THE WESTERN EDGE OF THE NORTHERN FOREST. LAND USE IS PRIMARILY AGRICULTURAL. THE WATERSHED CAN BE DESCRIBED AS DENSELY SETTLED TOWNS SURROUNDED BY SPARSELY POPULATED FARM AND FOREST PARCELS. THE ONLY URBAN AREA IS THE CITY OF ST. ALBANS.

THE MISSISQUOI RIVER ORIGINATES IN THE TOWN OF LOWELL APPROXIMATELY 55 MILES UPSTREAM OF THE BRIDGE. IT BEGINS BY FLOWING NORTH INTO QUEBEC WHERE IT LOOPS AROUND BACK INTO VERMONT AND FLOWS WESTERLY, EVENTUALLY EMPTYING INTO THE MISSISQUOI BAY OF LAKE CHAMPLAIN. AT MISSISQUOI BAY, THERE IS A NATIONAL WILDLIFE REFUGE. SEVERAL TRIBUTARIES INCLUDING HUNGERFORD BROOK, BLACK CREEK, AND TROUT RIVER JOIN THE MISSISQUOI RIVER ALONG ITS COURSE. THE RIVER IS NAVIGABLE. IN THE PAST, THE RIVER WAS USED BY PADDLE BOATS SUCH AS THE "MISS QUEEN". TODAY THE RIVER IS USED RECREATIONALLY FOR CANOEING AND FISHING. IN THE AREA OF THE BRIDGE, THE AGENCY OF ENVIRONMENTAL CONSERVATION WATER RESOURCES BOARD LISTS THE RIVER AS A TYPE III WATER QUALITY CLASSIFICATION.

THE STREAM BED IS STABLE AND CONSISTS OF LOOSE, GRAY, FINE TO COARSE SAND WITH A D50 OF I.2 MM. THE AVERAGE SLOPE OF THE RIVER IS LESS THAN 0.5%. THE DEPTH OF FLOW OF THE MISSISQUOI RIVER AT THE PROJECT SITE VARIES DEPENDING ON THE SEASON AND WEATHER CONDITIONS. UNDER NORMAL FLOW CONDITIONS THE AVERAGE DEPTH IS APPROXIMATELY I0 FT.

I.2.3 TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES

NEAR THE PROJECT SITE, THE MISSISQUOI RIVER HAS A WELL DEFINED UNIFORM CHANNEL WITH A TRAPAZOIDAL SHAPE. THE CHANNEL BANKS HAVE I:3 SIDE SLOPES THAT STEEPEN TO I:2 NEAR THE ABUTMENTS. THE TOP OF THE WEST BANK IS APPROXIMATELY I4 FT HIGHER THAN THE EAST SIDE. ALONG THE WEST CHANNEL OVERBANK, SOUTH RIVER STREET (TH 2) RUNS PARALLEL WITH THE RIVER. DEVELOPMENT ALONG SOUTH RIVER STREET IS A MIXTURE OF RESIDENTIAL AND COMMERCIAL. THE RAILROAD DEPOT MUSEUM IS LOCATED DIRECTLY ACROSS THE STREET FROM THE BEGINNING OF THE PROPOSED RAIL TRAIL. OVERHEAD UTILITIES RUN ALONG THE EAST SIDE OF SOUTH RIVER STREET. THE EAST CHANNEL OVERBANK IS RELATIVELY FLAT AND ACTS AS A FLOODPLAIN DURING PERIODS OF HIGH WATER. THE AREA IS UNDEVELOPED AND THERE ARE NO UTILITIES PRESENT.

THE USGS HAS A GAGING STATION LOCATED NEAR THE WEST END OF THE BRIDGE THAT HAS BEEN RECORDING STREAMFLOW DATA CONCERNING THE MISSISQUOI RIVER SINCE 1990.

THE SWANTON VILLAGE DAM IS LOCATED APPROXIMATELY 0.3 MILES DOWNSTREAM OF THE BRIDGE. IT IS USED FOR ELECTRIC POWER GENERATION. LOW FLOWS ARE REGULATED BY THE POWER PLANT BUT THE DAM HAS NO SIGNIFICANT FLOOD CONTROL CAPACITY. IT DOES ACT TO CONTROL THE OCCURRENCE OF ICE JAMS UPSTREAM OF THE DAM.

I.2.4 VEGETATION

THE CHANNEL BANKS OF THE MISSISQUOI RIVER ARE VEGETATED WITH MATURE TREES AND BRUSH. ALONG THE WEST CHANNEL OVERBANK, THE PROPERTIES ALONG SOUTH RIVER STREET HAVE GRASS LAWNS WITH SOME TREES. THE FLOODPLAIN ON THE EAST CHANNEL OVERBANK IS VEGETATED WITH TREES, BRUSH AND CLASS II WETLANDS.

IMPACTS TO VEGETATION WILL BE LIMITED TO THAT WHICH IS NECESSARY FOR CONSTRUCTION OF THE NEW BRIDGE. APPROXIMATELY 2000 SF OF SMALL TREES & SHRUBS WILL BE CLEARED ALONG THE SIDE SLOPES OF THE RAILROAD BED ON THE EAST APPROACH. THESE SIDE SLOPES WILL BE SEEDED & MULCHED TO PREVENT EROSION AND WILL EVENTUALLY GROW BACK WITH NATURAL VEGETATION.

I.2.5 SOILS

THE UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE HAS MAPPED THE SOIL THROUGHOUT FRANKLIN COUNTY, VT. THE SOIL TYPES IDENTIFIED FOR THIS PROJECT ALONG THE EASTERN AND WESTERN SIDES OF THE MISSISQUOI RIVER ARE AS FOLLOWS:

THE SOIL TYPE FOR THE WESTERN SIDE IS DEB (DEERFIELD LOAMY FINE SAND, 0 TO 8 PERCENT SLOPES). THE SOIL TYPE IS DESCRIBED AS FOLLOWS: "TYPICALLY THE SURFACE LAYER IS VERY DARK GRAYISH BROWN LOAMY FINE SAND 8 INCHES THICK. THE SUBSOIL IS I0 INCHES THICK. IT IS LOOSE, MOTTLED, YELLOWISH-BROWN SAND IN THE UPPER PART AND MOTTLED, LIGHT OLIVE BROWN SAND IN THE LOWER PART. THE SUBSTRATUM EXTENDS TO A DEPTH OF 60 INCHES. IT IS OLIVE FINE SAND IN THE UPPER PART AND OLIVE SAND IN THE LOWER PART." IT IS CLASSIFIED AS HAVING SLIGHT EROSION POTENTIAL, WITH RAPID TO VERY RAPID PERMEABILITY. THE LISTED SOIL EROSION FACTOR (K) FOR THIS SOIL TYPE IS 0.I5 TO 0.I7.

THE SOIL TYPE FOR THE EASTERN SIDE IS LE (LIMERICK SILT LOAM). THIS SOIL TYPE IS DESCRIBED AS FOLLOWS: "TYPICALLY THE SURFACE LAYER IS DARK GRAYISH BROWN SILT LOAM. BETWEEN DEPTHS OF II TO 60 INCHES, IT IS MOTTLED, GRAYISH BROWN SILT LOAM." IT IS CLASSIFIED AS HAVING SLIGHT EROSION POTENTIAL, WITH MODERATE PERMEABILITY. THE LISTED SOIL EROSION FACTOR (K) FOR THIS SOIL TYPE IS 0.20.

I.2.6 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO

HISTORICAL OR ARCHEOLOGICAL AREAS: NO

PRIME AGRICULTURAL LAND: NO

THREATENED (T) AND ENDANGERED (E) SPECIES: THERE ARE STATE THREATENED AND ENDANGERED MUSSELS KNOWN TO BE IN THE VICINITY OF THE PIERS. THE AGENCY OF TRANSPORTATION WILL BE ARRANGING TO HAVE SUCH MUSSELS RELOCATED PRIOR TO THE CONTRACTOR PERFORMING ANY WORK AT OR AROUND THE PIERS OR BELOW WATER SURFACE ELEVATION PER THE DIRECTION OF THE VERMONT DEPARTMENT OF FISH AND WILDLIFE NON-GAME AND NATURAL HERITAGE PROGRAM. COORDINATION ON TIMING FOR THIS EFFORT WILL BE NEEDED AND WILL BE DISCUSSED AT THE PRE-CONSTRUCTION CONFERENCE.

WATER RESOURCES: MISSISQUOI RIVER, WHICH IS LISTED AS A "RIVER OF CONCERN" UNDER THE ACOE GENERAL PERMIT. A STREAM ALTERATION PERMIT IS IN PLACE WITH IN-STREAM WORK RESTRICTED TO THE PERIOD OF 7/I5 - I0/I. IN-STREAM WORK CONSISTS OF "PLACEMENT OF GROUT BAGS IN PIER VOIDS AND AS PROTECTION AGAINST PIER SCOUR". NO OTHER WORK IN THE RIVER HAS BEEN AUTHORIZED.

WETLANDS: THE MISSISQUOI RIVER AND WETLANDS ALONG THE EAST CHANNEL OVERBANK ARE IDENTIFIED RESOURCES THAT WILL REQUIRE PROTECTION FROM SEDIMENT POLLUTION. CLASS II WETLANDS HAVE BEEN IDENTIFIED ON THE EASTERN SHORE AND CLASS II WETLANDS HAVE BEEN IDENTIFIED ON THE WESTERN SHORE. PLEASE NOTE THE "ALLOWED USE DETERMINATION" FOR IMPACTS COVERED UNDER THE "ALLOWED USE DETERMINATION" ISSUED BY THE VERMONT AGENCY OF NATURAL RESOURCES WETLANDS OFFICE WHICH STATES THAT NO WORK, INCLUDING ANY STAGING AND MOBILIZATION, IS TO TAKE PLACE WITHIN THE LIMITS OF THE CLASS II WETLANDS ON THE EAST SIDE.

I.3. RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF CONSTRUCTION GENERAL PERMIT 3-9020 BASED ON THE PROJECT IMPACT AREA. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGE PLAN OF DEVELOPMENT, THEN THE SELECTED CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL PERMITTING WITH VANR VIA FILING OF THE APPROPRIATE NOTICE OF INTENT UNDER THE CONSTRUCTION GENERAL PERMIT PROCESS.

I.4 EROSION PREVENTATION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE WORK OUTLINED IN THIS NARRATIVE CONSISTS OF APPLYING MEASURES THROUGHOUT THE LIFE OF THE PROJECT MINIMIZING SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION CONTROLS.

PREVENTING INITIAL SOIL EROSION IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE. THEREFORE, STABILIZE ALL DISTURBED AREAS AS SOON AS PRACTICAL BUT NO MORE THAN TWO DAYS AFTER CONSTRUCTION ACTIVITY HAS BEEN TEMPORARILY OR PERMANENTLY CEASED.

THE CONTRACTOR SHALL COORDINATE THE INSTALLATION, USE AND REMOVAL OF EROSION PREVENTION AND SEDIMENT CONTROL MEASURES WITH CONSTRUCTION ACTIVITIES TO ASSURE ECOLOGICAL, EFFECTIVE AND CONTINUOUS EROSION PREVENTION AND SEDIMENT CONTROL. THE CONTRACTOR SHALL EMPLOY TEMPORARY STABILIZATION PRACTICES IN INCREMENTAL STAGES AS CONSTRUCTION PROCEEDS.

THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL PREVENTION AND SEDIMENT CONTROL MEASURES AS SHOWN IN THE ESPC PLANS OR AS DIRECTED BY THE ON-SITE PLAN COORDINATOR. DO NOT MODIFY THE TYPE, SIZE OR LOCATION OF ANY CONTROL OR PRACTICE WITHOUT APPROVAL OF THE ON-SITE PLAN COORDINATOR.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

CONSTRUCTIONS OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER AS TO PREVENT ANY DAMAGE TO THE WATERS OF THE UNITED STATES FROM POLLUTION BY ANY DEBRIS, SEDIMENT OR ANY FOREIGN MATERIAL, OR FROM MANIPULATION OF EQUIPMENT AND/OR MATERIALS IN OR NEAR THE WATERS OF THE UNITED STATES. THE CONTRACTOR SHALL NOT RETURN DIRECTLY TO THE WATERS OF THE UNITED STATES ANY WATER THAT HAS BEEN USED FOR WASH PURPOSES OR OTHER SIMILAR OPERATION WHICH WOULD CAUSE THE WATER TO BECOME POLLUTED WITH SAND, SILT, CEMENT, OIL OR OTHER IMPURITIES. IF THE CONTRACTOR USES WATER FROM THE WATERS OF THE UNITED STATES, THE CONTRACTOR SHALL CONSTRUCT AN INTAKE OR TEMPORARY DAM TO PROTECT AND MAINTAIN STREAM WATER QUALITY. DURING CONSTRUCTION, NO WET OR FRESH CONCRETE OR LEACHATE SHALL BE ALLOWED TO ESCAPE INTO THE WATERS OF THE UNITED STATES, NOR SHALL WASHING FROM CONCRETE TRUCKS, MIXERS OR OTHER DEVICES BE ALLOWED TO ENTER ANY WETLANDS OR WATERS OF THE UNITED STATES.

(REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR EACH PRACTICE REQUIRED ON THE PROJECT TO INCLUDE BUT NOT LIMIT TO THE FOLLOWING.)

I.4.I MARK SITE BOUNDARIES

PROJECT DEMARCATION FENCING, DENOTED -PDF- ON THE PLANS, WILL BE USED TO DELINEATE THE LIMITS THE CONTRACTOR CAN ACCESS WITH CONSTRUCTION EQUIPMENT AND PERSONNEL. THESE MEASURES LIMIT THE AREA THAT CAN BE DISTURBED AND EXPOSED TO EROSION. THE CONTRACTOR SHALL INSTALL THE PERIMETER CONTROLS PRIOR TO STARTING ANY WORK WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL NOT ALLOW ANY CONSTRUCTION EQUIPMENT TO OPERATE OR ACCESS ON THE DOWN SLOPE SIDE OF ANY PERIMETER CONTROL MEASURE. THE CONTRACTOR SHALL NOT ALLOW ANY CROSSING OF A FLOWING STREAM OR DISTURBANCE TO THE EXISTING STREAM BANKS BY CONSTRUCTION EQUIPMENT EXCEPT AS AUTHORIZED BY THE ENGINEER.

I.4.2 LIMIT DISTURBANCE AREA

EMPLOY TEMPORARY STABILIZATION PRACTICES IN INCREMENTAL STAGES (PHASING) AS CONSTRUCTION ACTIVITIES PROCEED. ADDITIONAL MEASURES MAY BE NEEDED DUE TO THE PHASING OF THE PROJECT AND AS DIRECTED BY THE ENGINEER. IN GENERAL, PRESERVE EXISTING VEGETATION, TREES AND SHRUBS WHEN POSSIBLE, AS DIRECTED BY THE ENGINEER.

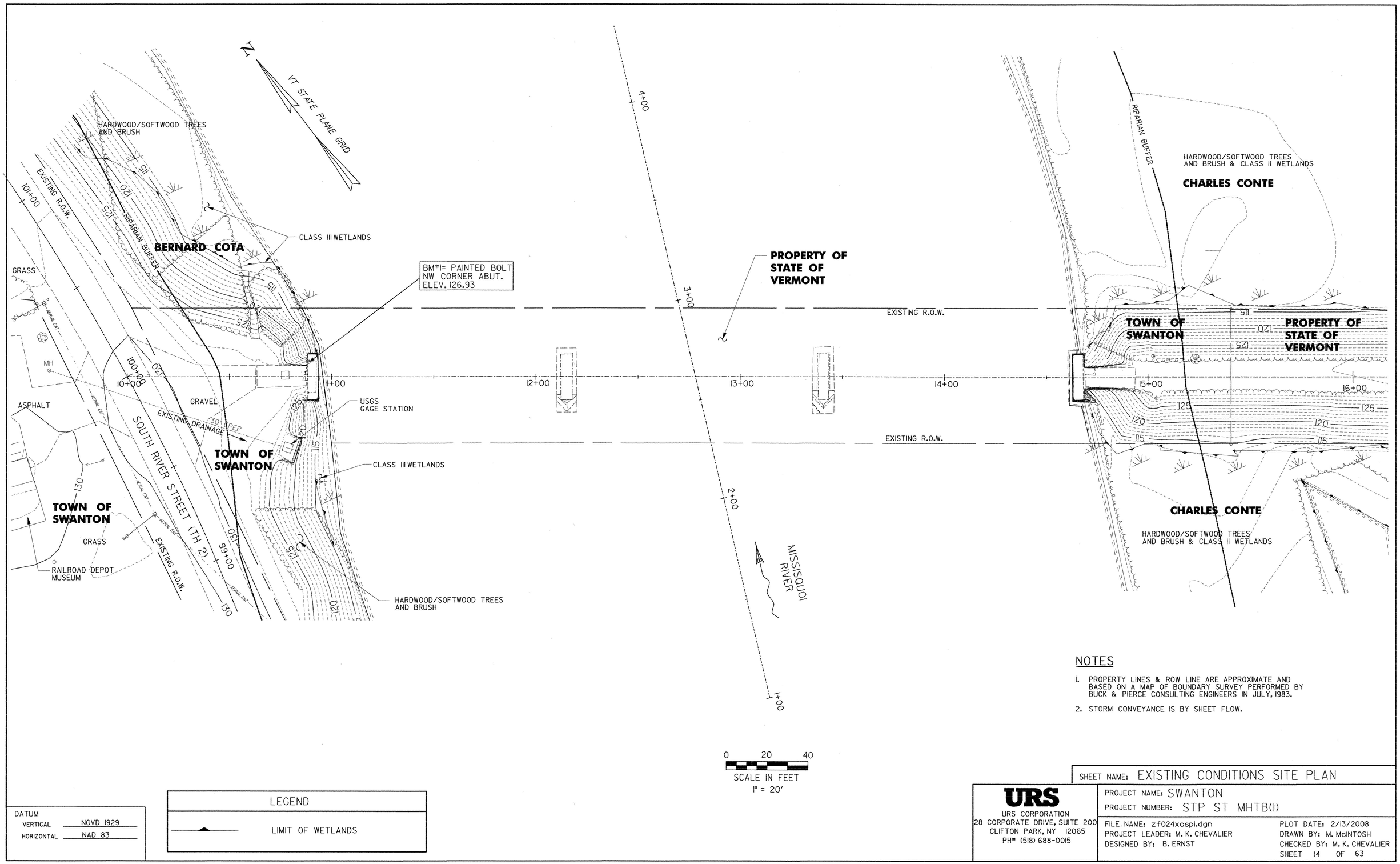
I.4.3 STABILIZE CONSTRUCTION EXIT

STABILIZED CONSTRUCTION ENTRANCE SHALL BE UTILIZED AS NECESSARY. THE CONTRACTOR SHALL NOT ALLOW CONSTRUCTION VEHICLES TO TRACK SEDIMENT OFF-SITE OF THE PROJECT LIMITS.

URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY I2065
PH# (5I8) 688-00I5

SHEET NAME: EROSION CONTROL NARRATIVE
PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(I)

FILE NAME: zd024ecn.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/I3/2008
DRAWN BY: M. McINTOSH
CHECKED BY: M. K. CHEVALIER
SHEET I3 OF 63



NOTES

1. PROPERTY LINES & ROW LINE ARE APPROXIMATE AND BASED ON A MAP OF BOUNDARY SURVEY PERFORMED BY BUCK & PIERCE CONSULTING ENGINEERS IN JULY, 1983.
2. STORM CONVEYANCE IS BY SHEET FLOW.

0 20 40
SCALE IN FEET
1" = 20'

DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 83

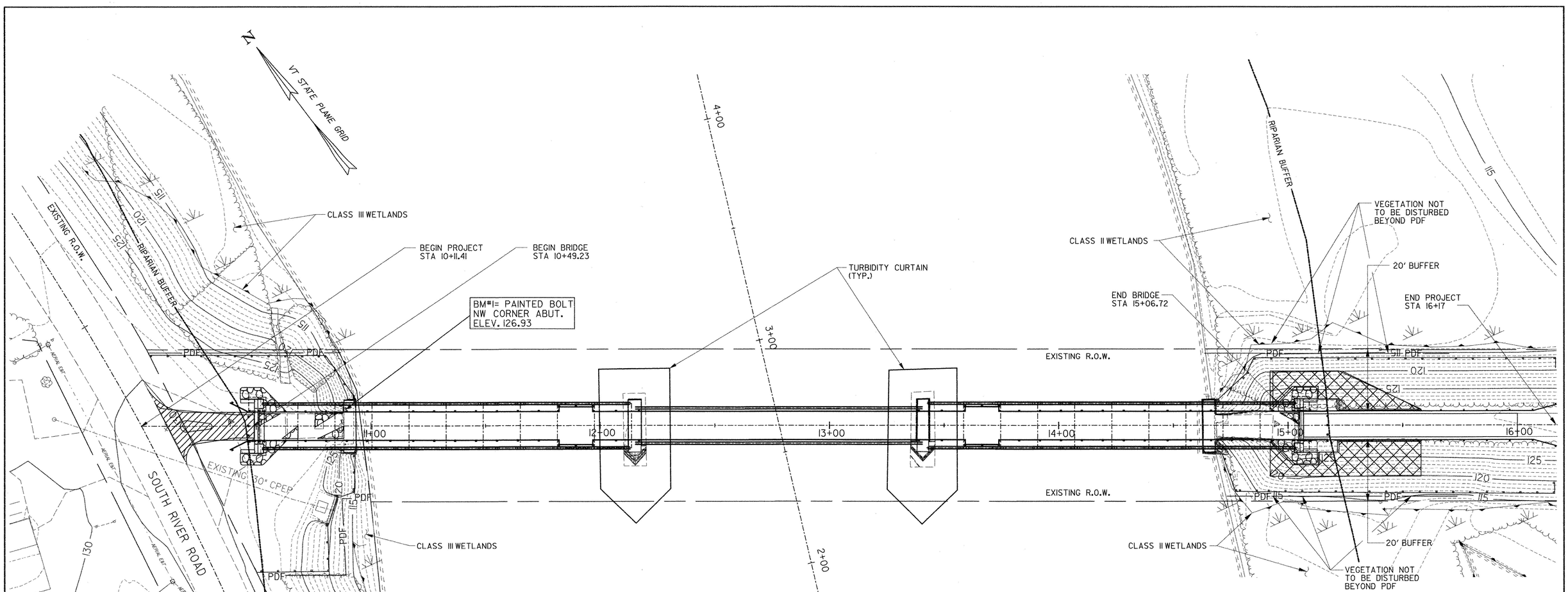
LEGEND
LIMIT OF WETLANDS

SHEET NAME: EXISTING CONDITIONS SITE PLAN

URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH# (518) 688-0015

PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(1)

FILE NAME: zf024xcspl.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/13/2008
DRAWN BY: M. McINTOSH
CHECKED BY: M. K. CHEVALIER
SHEET 14 OF 63



SEED & MULCH DISTURBED AREAS

STA. 10+11 TO 10+93 LT. & RT.

STA. 14+93 TO 15+62 LT. & RT.

SEEDING FORMULA RURAL AREAS

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

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

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

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

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

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

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

LEGEND

- SILT FEFNCE
- STONE FILL, TYPE I
- — PDF — PROJECT DEMARCATION FENCE DEFINING LIMITS OF DISTURBANCE
- PERMANENT EROSION CONTROL MATTING
- STABILIZED CONSTRUCTION ENTRANCE

DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 83

NOTES

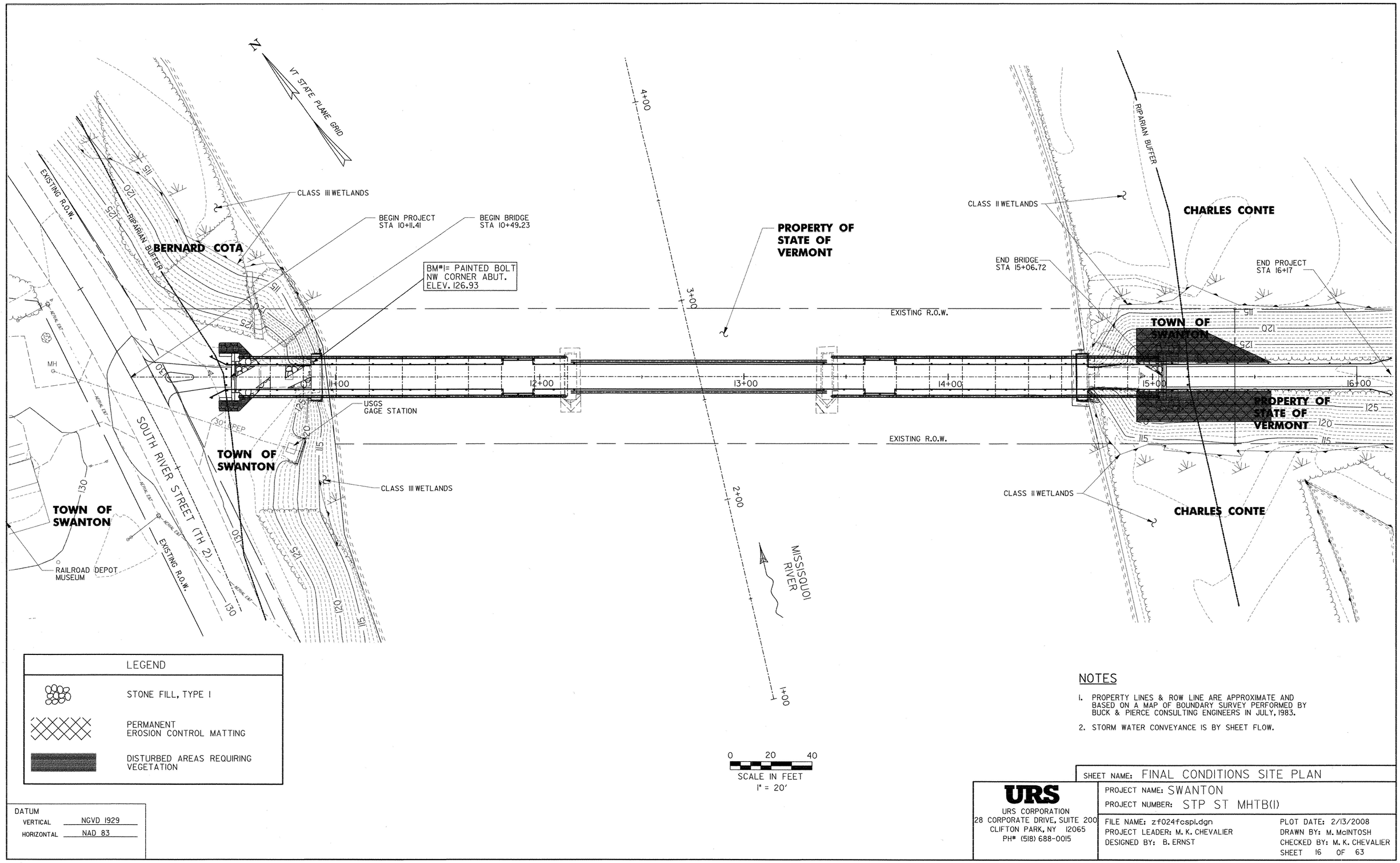
1. STORM CONVEYANCE IS BY SHEET FLOW.
2. PROPOSED CONDITIONS MAINTAIN EXISTING WETLAND BUFFER OF 20 FT.
3. PRIOR TO INSTALLATION OF TURBIDITY CURTAIN AND PLACEMENT OF GROUT BAGS, THREATENED AND ENDANGERED SPECIES OF MUSSELS SHALL BE REMOVED AND RELOCATED BY OTHERS.

SHEET NAME: EROSION PREVENTION & SEDIMENT CONTROL PLAN

URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH# (518) 688-0015

PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(1)

FILE NAME: zf024ecspl.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/13/2008
DRAWN BY: M. McINTOSH
CHECKED BY: M. K. CHEVALIER
SHEET 15 OF 63



LEGEND

- STONE FILL, TYPE I
- PERMANENT EROSION CONTROL MATTING
- DISTURBED AREAS REQUIRING VEGETATION

DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 83

0 20 40
SCALE IN FEET
1" = 20'

NOTES

1. PROPERTY LINES & ROW LINE ARE APPROXIMATE AND BASED ON A MAP OF BOUNDARY SURVEY PERFORMED BY BUCK & PIERCE CONSULTING ENGINEERS IN JULY, 1983.
2. STORM WATER CONVEYANCE IS BY SHEET FLOW.

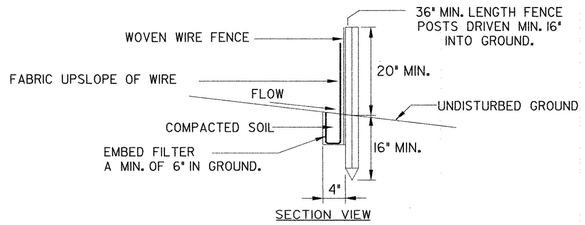
SHEET NAME: FINAL CONDITIONS SITE PLAN

URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH# (518) 688-0015

PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(1)

FILE NAME: zf024fcspl.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/13/2008
DRAWN BY: M. McINTOSH
CHECKED BY: M. K. CHEVALIER
SHEET 16 OF 63

SILT FENCE

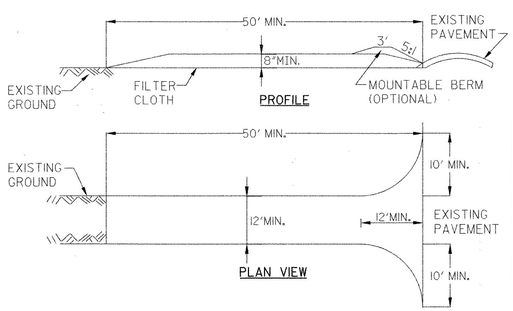


SECTION VIEW

CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE REINFORCEMENT IS ONLY REQUIRED WITHIN 100 FT UPSLOPE OF RECEIVING WATERS.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. 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. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED.
5. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.
7. PAYMENT FOR SILT FENCE SHALL BE MADE UNDER ITEM 649.51, "GEOTEXTILE FOR SILT FENCE".

STABILIZED CONSTRUCTION ENTRANCE



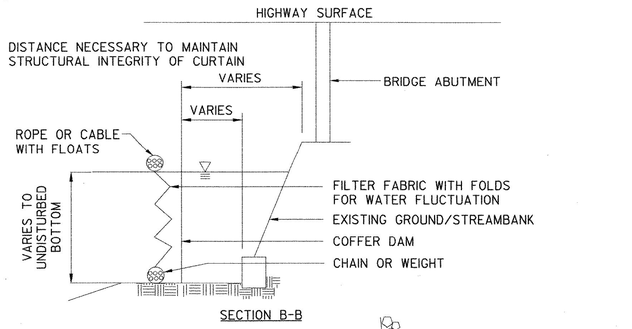
PROFILE

PLAN VIEW

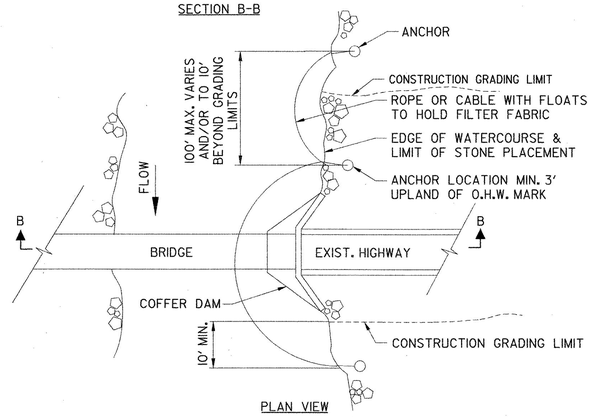
CONSTRUCTION SPECIFICATIONS

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.
10. PAYMENT OF THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MADE UNDER ITEM 653.35. "VEHICLE TRACKING PAD".

TURBIDITY CURTAIN



SECTION B-B



PLAN VIEW

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE A SUBMITTAL, PREPARED BY A QUALIFIED PERSON OR THE MANUFACTURER THAT DEFINES THE FLOATATION, ANCHORAGE, CONFIGURATION, DESIGNED STREAM VELOCITY AND DEPTH.
2. PAYMENT FOR "... THE TURBIDITY CURTAIN SHALL BE MADE UNDER ITEM 649.61, "GEOTEXTILE FOR FILTER CURTAIN".

EROSION CONTROL MATTING FOR SIDE SLOPES

APPLICATION NOTES:

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

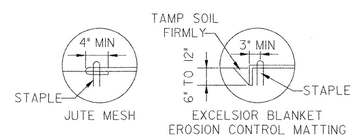
B. EROSION CONTROL MATTING SHALL BE USED FOR THE FOLLOWING REASONS:

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

GENERAL NOTES:

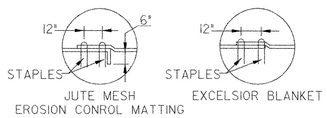
1. GRADE AND SMOOTH THE SLOPE TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
2. APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
3. ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INTALLATION INSTRUCTIONS.
4. UNROLL MATTING VERTICALLY DOWN SLOPE IN THE DIRECTION OF WATER FLOW.
5. OVERLAP UPPER MATTING OVER LOWER MATTING AS SHOWN.
6. OVERLAP ADJACENT MATTING AS SHOWN.
7. CUT EXCESS MATTING AT END OF SLOPE AND ANCHOR THE END.
8. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
9. MATTING SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
10. PAYMENT FOR MATTING SHALL BE MADE UNDER ITEM 653.21, "PERMANENT EROSION MATTING".

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

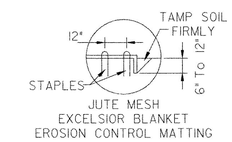


DETAIL 1 TERMINAL FOLD

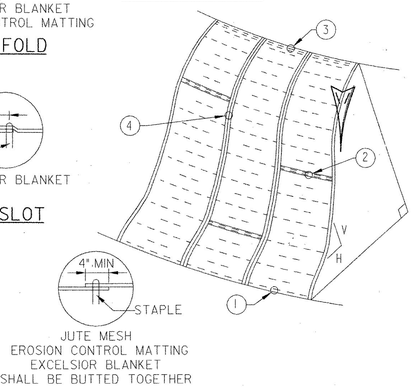
STAPLE DETAIL



DETAIL 2 JUNCTION SLOT



DETAIL 3 ANCHOR SLOT



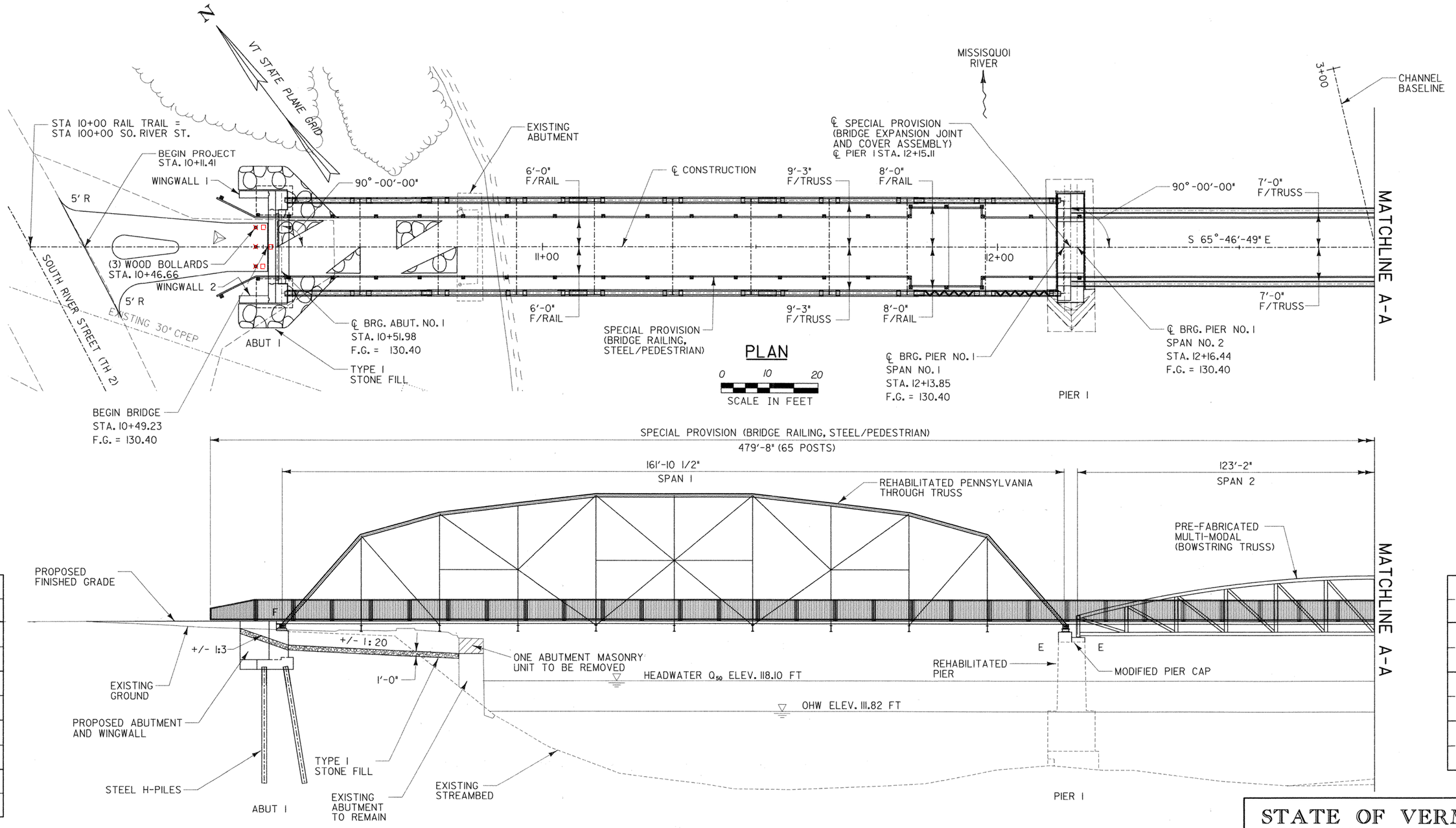
DETAIL 4 LAP JOINT

CONSTRUCTION SPECIFICATIONS

URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH# (518) 688-0015

SHEET NAME: EROSION CONTROL DETAILS
PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(1)

FILE NAME: zd024ecd.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/13/2008
DRAWN BY: M. McINTOSH
CHECKED BY: M. K. CHEVALIER
SHEET 17 OF 63



PLAN

ELEVATION

SCALE: 1" = 10'-0"

STATE OF VERMONT
AGENCY OF TRANSPORTATION

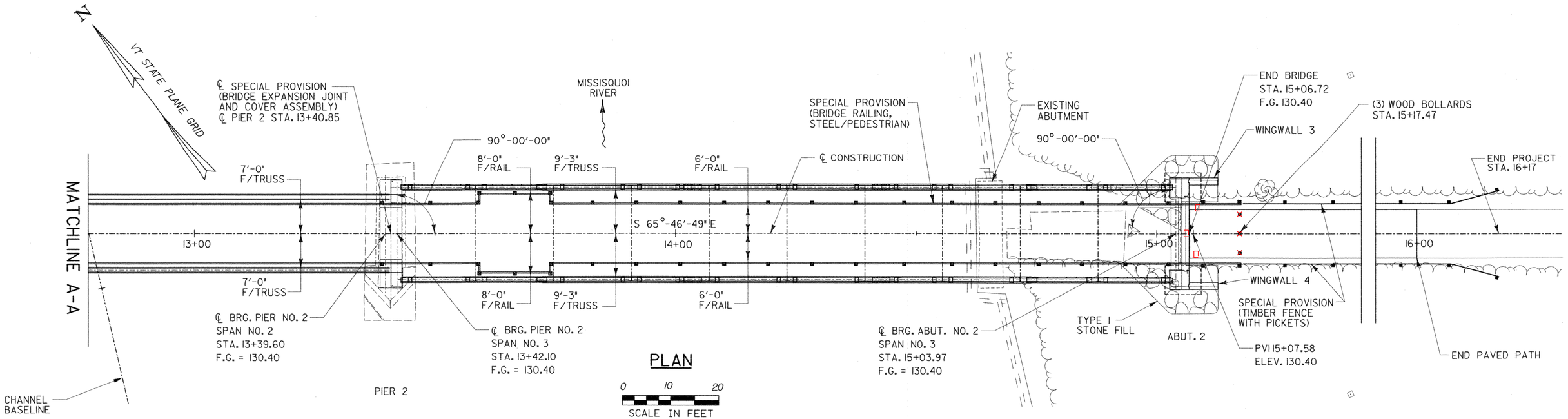
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. / Surv. Sta.

RAIL TRAIL OVER MISSISQUOI RIVER

BRIDGE PLAN AND ELEVATION 1

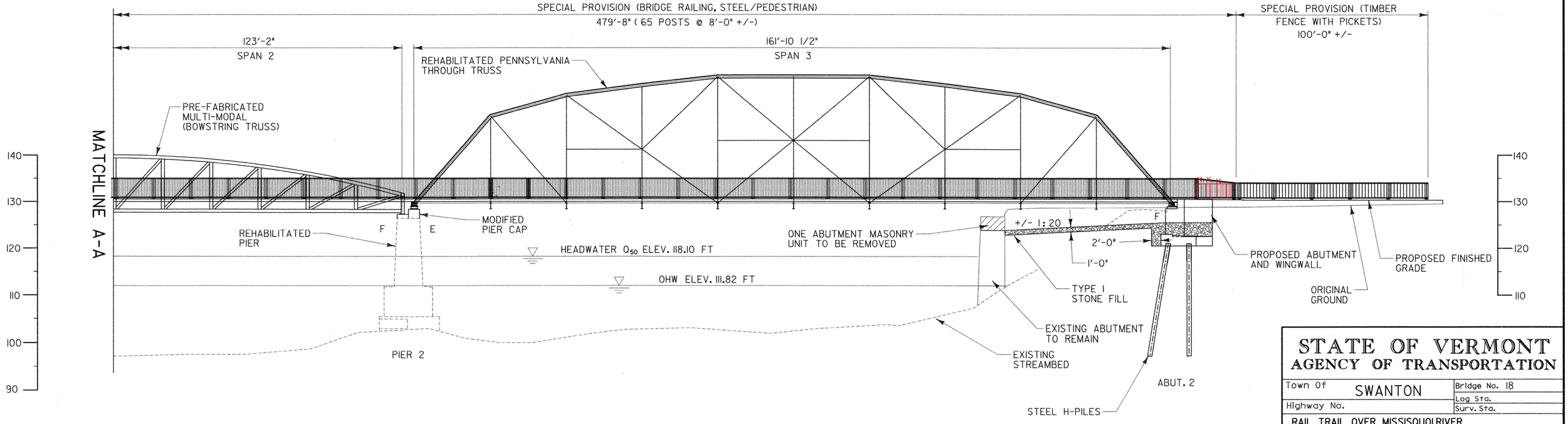
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI — Date 1/23/08	Bridge Design Supervisor R. SACCHI — Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. zf024bp&el.dgn	2/13/2008
Bridge Sheet No. BR5	Sheet 18 of 63

URS URS CORPORATION



PLAN

0 10 20
SCALE IN FEET



ELEVATION

SCALE: 1" = 10'-0"

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. / Surv. Sta.

RAIL TRAIL OVER MISSISQUOI RIVER

BRIDGE PLAN AND ELEVATION 2

Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. zf024bp&e2.dgn	2/13/2008
Bridge Sheet No. BR6	Sheet 19 of 63

URS CORPORATION

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2006 STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, AND ITS LATEST REVISIONS AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 2002, AND ITS LATEST REVISIONS.
2. ALL WORK ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS. NO ADDITIONAL R.O.W. RIGHTS ARE ANTICIPATED FOR THIS PROJECT.
3. THE DESIGN LOAD FOR THE REHABILITATED TRUSSES AND THE NEW PREFABRICATED TRUSS IS AN INVENTORY LOAD OF H-10 OR AN 85 PSF PEDESTRIAN LOADING PER AASHTO "GUIDE SPECIFICATION FOR DESIGN OF PEDESTRIAN BRIDGES", WHICHEVER GOVERNS.
4. THE CONTRACTOR SHALL DETERMINE, PRIOR TO CONSTRUCTION, THE LOCATION OF ALL UTILITIES AND SHALL BE RESPONSIBLE FOR PROTECTING AND MAINTAINING ALL UTILITIES WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL COORDINATE ACTIVITIES WITH INDIVIDUAL UTILITY COMPANY REPRESENTATIVES. THE CONTRACTOR SHALL ACCURATELY LOCATE ALL UNDERGROUND UTILITIES IN AREAS WHERE PROPOSED CONSTRUCTION MAY CONFLICT WITH THEM (I.e. GUARD RAIL INSTALLATION) AND SHALL BE RESPONSIBLE FOR ALL DAMAGES.
5. THERE ARE NO RECORD PLANS FOR THE HISTORICAL TRUSS STRUCTURE. DIMENSIONS OF THE EXISTING TRUSS STRUCTURE SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY AND ARE NOT GUARANTEED. THESE DIMENSIONS WERE DERIVED FROM PREVIOUS REHABILITATION PLANS AND LIMITED FIELD MEASUREMENTS. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO ENSURE PROPER FIT OF THE FINISHED WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY. WHEN WORKING DRAWINGS BASED ON FIELD MEASUREMENTS ARE SUBMITTED FOR APPROVAL, FIELD MEASUREMENTS SHALL ALSO BE SUBMITTED FOR REFERENCE BY THE REVIEWER. THERE SHALL BE NO CLAIM MADE BY THE CONTRACTOR FOR WORK PERTAINING TO SUCH MODIFICATIONS AS MAY BE REQUIRED DUE TO MINOR DIFFERENCES BETWEEN ACTUAL FIELD CONDITIONS AND THOSE SHOWN BY THE DETAILS AND DIMENSIONS ON THE PLANS.
6. THE STRUCTURAL STEEL ON THE HISTORIC TRUSSES IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. ALL STRUCTURAL STEEL THAT IS NOT TO BE RE-USED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE STRUCTURAL STEEL.
7. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES F., UNLESS OTHERWISE NOTED.
8. THE CONTRACTOR SHALL TAKE SPECIAL CARE AND PRECAUTIONS TO ENSURE THAT NO DEBRIS FALLS INTO THE MISSISQUOI RIVER.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GUARDING AND PROTECTING ALL OPEN EXCAVATIONS.
10. ABBREVIATIONS AND SYMBOLS USED ON THE PLANS FOLLOW INDUSTRY AND VERMONT AGENCY OF TRANSPORTATION (VTRANS) STANDARD PRACTICES, UNLESS OTHERWISE NOTED.
11. ADDITIONAL NOTES MAY BE FOUND ON OTHER DRAWINGS. SUCH NOTES, WHILE PERTAINING TO THE SPECIFIC DRAWING THEY ARE PLACED ON, ALSO SUPPLEMENT THE GENERAL NOTES LISTED HEREIN.
12. THE PERMITS THAT HAVE BEEN OBTAINED FOR THIS PROJECT HAVE BEEN INCORPORATED INTO THE CONTRACT DOCUMENTS. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT AN ARMY CORP OF ENGINEERS GENERAL PERMIT FOR THIS PROJECT HAS NOT BEEN OBTAINED. THE CONTRACTOR WILL BE REQUIRED TO COMPLY WITH ALL APPLICABLE CONDITIONS OF THE PERMITS FOR THE PROJECT. IF THE CONTRACTOR PROPOSES ACTIVITES WHICH REQUIRE MODIFICATIONS TO THE PERMITS OR ADDITIONAL PERMITS, THE CONTRACTOR WILL BE RESPONSIBLE FOR AMENDING EXISTING PERMITS OR OBTAINING NEW PERMITS AS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF HIS PROPOSED CONSTRUCTION ACTIVITIES THAT REQUIRE AMENDING PERMITS OR OBTAINING NEW PERMITS PRIOR TO SUBMITTAL TO THE PERMITTING AGENCY.

EARTHWORK AND RELATED ITEMS

1. REMOVAL OF CONCRETE OR MASONRY UNITS SHALL BE PAID FOR UNDER ITEM 529.25 "REMOVAL OF CONCRETE OR MASONRY". REMOVAL AND DISPOSAL OF THE STRUCTURAL STEEL BEING REPLACED SHALL BE PAID FOR UNDER ITEM 529.20 "PARTIAL REMOVAL OF STRUCTURE".
2. BACKFILLING BEHIND ABUTMENTS SHALL NOT BEGIN UNTIL THE ABUTMENT CONSTRUCTION IS COMPLETE AND THE CURING PERIOD IS UP. BACKFILL BEHIND ABUTMENTS SHALL BE PLACED AND COMPACTED ACCORDING TO SECTION 204 OF THE STANDARD SPECIFICATIONS.

CONCRETE AND REINFORCING STEEL

1. ALL CONCRETE SHALL CONFORM TO SECTION 501 FOR CONCRETE, HIGH PERFORMANCE CLASS B UNLESS OTHERWISE NOTED.
2. REINFORCING STEEL SHALL CONFORM TO SECTION 507.
3. THE MINIMUM COVER FOR REINFORCING STEEL IN THE SUBSTRUCTURES SHALL BE 2" INCHES ALONG WALL FACES AGAINST EARTH, AND 3" INCHES ELSEWHERE, UNLESS DETAILED OTHERWISE.
4. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:
   SPACING +/- 1"
   CLEARANCE +/- 1/4"
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1"x1". UNLESS OTHERWISE NOTED.
6. THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT.
7. WHENEVER NEW CONCRETE IS BEING PLACED AGAINST EXISTING CONCRETE, THE SURFACE OF THE EXISTING CONCRETE SHALL BE CLEANED AND PREWETTED IN ACCORDANCE WITH SUBSECTION 501.13 (b).
8. WATER REPELLENT, SILANE, SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES. EXISTING CONCRETE SURFACES SHALL BE PRESSURE WASHED SEVERAL DAYS PRIOR TO APPLICATION OF SILANE. PAYMENT FOR PROVIDING ACCESS TO AND WASHING SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 514.10 "WATER REPELLANT, SILANE".
9. ITEM 507.16 DRILLING AND GROUTING DOWELS SHALL BE USED ON THE PIERS. THE CONTRACTOR IS TO DRILL INTO THE EXISTING MASONRY AND GROUT DOWELS THAT WILL PROVIDE ANCHORAGE BETWEEN THE NEW CONCRETE AND THE MASONRY CAP.

STRUCTURAL STEEL

1. ALL NEW STRUCTURAL STEEL INCLUDING THE NEW PREFABRICATED TRUSS SHALL CONFORM TO SUBSECTION 714.02, UNLESS OTHERWISE NOTED. GRADE 50 STEEL MAY BE USED AS AN ACCEPTABLE ALTERNATE.
2. ALL BOLTS USED FOR STEEL CONNECTIONS SHALL CONFORM TO SUBSECTION 714.05 HIGH STRENGTH BOLTS UNLESS NOTED OTHERWISE IN THE PLANS. ALL HIGH STRENGTH BOLTS SHALL BE TIGHTENED PER SUBSECTION 506.19.
3. ALL HOLES FOR BOLTS SHALL BE 1/16" LARGER THAN THE BOLT UNLESS NOTED OTHERWISE ON THE PLANS.
4. ALL NEW FLOORBEAMS WILL BE PAID FOR UNDER CONTRACT ITEM 506.50 "STRUCTURAL STEEL, ROLLED BEAM." ALL OTHER NEW STRUCTURAL STEEL COMPONENTS SUCH AS LATERAL BRACING, CONNECTION ANGLES, AND TRUSS REPLACEMENT MEMBERS SHALL BE PAID FOR AND INCLUDED UNDER THE ITEM 506.60 "STRUCTURAL STEEL".
5. ALL RIVETS REMOVED FROM THE TRUSS SHALL BE REPLACED WITH EQUIVALENT DIAMETER HIGH STRENGTH BOLTS MEETING THE REQUIREMENT OF SUBSECTION 714.05. ANY MISSING RIVET OR BOLT HOLES NOT OTHERWISE REPLACED SHALL BE FILLED WITH A HIGH STRENGTH BOLT.
6. ALL STRUCTURAL CONNECTIONS ON THE TRUSS ARE BELIEVED TO BE 3/4 INCH DIAMETER RIVETS IN 13/16 INCH DIAMETER HOLES. ALL LACING BARS AND SPACER PLATE CONNECTIONS ON CHORD MEMBERS ARE BELIEVED TO BE 5/8 INCH DIAMETER RIVETS IN 11/16 INCH DIAMETER HOLES. THE CONTRACTOR SHALL VERIFY DIAMETER OF ACTUAL RIVETS OR BOLT SIZE BEFORE ORDERING REPLACEMENTS.
7. WHENEVER HOLES IN EXISTING STEEL ARE USED AS A TEMPLATE FOR NEW HOLES TO BE DRILLED, A HOUGAN OR JANCY BIT, OR APPROVED EQUAL, SHALL BE UTILIZED TO DRILL THE HOLES.
8. ALL HARDWARE (BOLTS, WASHERS, NUTS, ETC.) FOR PEDESTRIAN RAILS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232M/M232 (ASTM A153) UNLESS NOTED OTHERWISE IN THE PLANS.
9. ENDS OF MEMBERS OF THE EXISTING TRUSSES THAT ARE CUT FOR REPAIR SHALL BE GROUND SMOOTH AND FREE OF BURRS.
10. BOLT LENGTHS SHALL BE FIELD VERIFIED BY THE CONTRACTOR TO ALLOW 1/2 INCH MAXIMUM PROJECTION BEYOND THE NUT IN SNUG POSITION, AND HAVE SUFFICIENT THREAD LENGTH TO TIGHTEN AS MUCH AS NECESSARY. EVERY EFFORT SHALL BE MADE TO FACE BOLT HEADS OUTWARD AND KEEP NUTS HIDDEN SO AS TO BEST VISUALLY BLEND WITH THE ORIGINAL RIVETED CONSTRUCTION.
11. ALL MEMBERS AND CONNECTIONS OF THE EXISTING TRUSSES SHALL BE INSPECTED AFTER BEING CLEANED PER SECTION 513. IF A MEMBER EXHIBITS A CROSS SECTIONAL LOSS OF MORE THAN AN AVERAGE OF 1/16" ACROSS THE ENTIRE CROSS SECTION OR IF PITTING EXTENDS DEEPER THAN ONE HALF THE MEMBER THICKNESS AS DETERMINED BY THE ENGINEER, THE PROJECT MANAGER SHALL BE NOTIFIED FOR FURTHER DIRECTION. INSPECTION OF THE EXISTING MEMBERS SHALL BE CONSIDERED INCIDENTAL TO ALL WORK.
12. ANY RIVETS THAT DO NOT MEET THE CRITERIA AS OUTLINED IN THE MISCELLANEOUS STEEL DETAILS SHALL BE REPLACED. RIVET REPLACEMENT SHALL BE PAID FOR UNDER THE ITEM 900.620 SPECIAL PROVISION (THROUGH TRUSS RIVET REPLACEMENT).
13. UNDER A SEPARATE CONTRACT, THE HISTORICAL TRUSSES WERE REMOVED FROM THE SITE AND STORED AT "SWANTON LIMESTONE CORPORATION", OFF BLAKE STREET IN THE TOWN OF SWANTON, VERMONT. THE CONTRACTOR SHALL CONTACT SUE SCRIBNER OF VTRANS AT 802-828-3615 TO COORDINATE ACCESS TO THESE MATERIALS. PAYMENT WILL BE CONSIDERED INCIDENTAL TO CONTRACT ITEM 900.645 "SPECIAL PROVISION (INCORPORATING SALVAGED BRIDGE COMPONENTS)".
14. FOR TRUSS MEMBERS THAT ARE DETAILED TO BE REPAIRED, OR IF ADDITIONAL TRUSS MEMBERS REQUIRE REPAIR BUT ARE NOT IDENTIFIED AS SUCH ON THE PLANS, THEIR CONNECTIONS WILL BE INCLUDED AS PART OF THE STRUCTURAL STEEL ITEM, NOT UNDER THE RIVET REPLACEMENT ITEM.

TIMBER

1. ALL GLUED LAMINATED TIMBER MEMBERS SHALL BE DESIGNED IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DATED 2002, AND ITS LATEST REVISIONS USING THE WORKING STRESS DESIGN (WSD) METHOD.
2. ALL HARDWARE (BOLTS, WASHERS, NUTS, ETC.) FOR FASTENING WOOD MEMBERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232M/M232 (ASTM A153) UNLESS NOTED OTHERWISE IN THE PLANS. ALL STEEL PLATES AND SHAPES USED FOR FASTENING WOOD MEMBERS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH AASHTO M 111M/M111 (ASTM A123) UNLESS OTHERWISE NOTED.
3. STRUCTURAL GLUED LAMINATED TIMBER SHALL BE FABRICATED IN ACCORDANCE WITH THE AMERICAN NATIONAL STANDARDS INSTITUTE ANSI/AITC A190.1 AND THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AITC A117.
4. THE FABRICATION, DELIVERY AND INSTALLATION OF ALL FASTENERS, DECK BRACKETS, STEEL SHAPES AND ANY INCIDENTALS WILL NOT BE CONSIDERED DIRECTLY FOR PAYMENT, BUT WILL BE CONSIDERED INCIDENTAL TO ITEM 522.40 "STRUCTURAL GLUED LAMINATED TIMBER".
5. ALL TIMBER SHALL BE PRESSURE TREATED WITH A TYPE V PRESERVATIVE IN CONFORMANCE WITH SECTION 726.
6. ALL BOLTS AND LAG SCREWS IN THE TIMBER DECK SHALL BE ASTM A-307 GALVANIZED BOLTS. BOLTS SHALL BE TIGHTENED TO THE FULL EFFORT OF A WORKER WITH A WRENCH, BUT NOT SO TIGHT AS TO CRUSH THE WOOD.
7. ALL TIMBER SHALL BE CUT TO SHAPE BEFORE BEING TREATED.
8. ALL HOLES OR CUTS MADE IN THE FIELD ON ANY TREATED TIMBER SHALL BE TREATED WITH A COMPATIBLE LIQUID PRESERVATIVE TREATMENT.

PAINTING

1. ALL STRUCTURAL STEEL (NEW AND EXISTING), EXCEPT THAT SPECIFIED TO BE EITHER GALVANIZED OR METALIZED, SHALL BE PAINTED IN ACCORDANCE WITH SECTION 513. PAINT COLOR SHALL BE CHROME SILVER AND SHALL CONFORM TO FEDERAL STANDARD NO. 595B, COLOR CHIP NO. 37178.
2. ALL EXISTING STRUCTURAL STEEL THAT IS TO REMAIN SHALL BE THOROUGHLY CLEANED PER SECTION 513.
3. THE CONTRACTOR WILL PROVIDE THE HISTORIC PRESERVATION COORDINATOR WITH COLOR SAMPLES AT THE PRE-CONSTRUCTION MEETING.

PREFABRICATED MULTI-MODAL BRIDGE NOTES

1. THE PREFABRICATED TRUSS, TO BE PROVIDED UNDER ITEM 545.20 "PREFABRICATED MULTI-MODE BRIDGE" SHALL BE DESIGNED, DETAILED, FABRICATED, TRANSPORTED TO THE SITE, AND ERECTED BY THE MANUFACTURER/CONTRACTOR.

   THE NEW STRUCTURE SHALL BE A SINGLE SPAN TRUSS MEETING THE FOLLOWING GEOMETRIC CRITERIA:
   a. MUST BE A PONY TYPE TRUSS, I.E. NO CONNECTION BETWEEN THE TOP CHORD OF THE TWO TRUSSES.
   b. MUST CONFORM TO THE LINE, GRADE, PLAN, AND WIDTH AS SHOWN ON THE PLANS.
   c. FLOOR SYSTEM MUST NOT EXTEND BELOW THE BOTTOM CHORD.
   d. LOWEST ELEVATION OF STRUCTURE (EXCLUDING BEARINGS) SHALL BE AT OR ABOVE EL. 127.50.
   e. MUST HAVE END FLOOR BEAM.
   f. TRUSSES MUST BE CAMBERED FOR FULL DEAD LOAD.
2. ALL STEEL IN THE NEW TRUSS SHALL CONFORM TO AASHTO M 270M/M270 GRADE 50. GALVANIZED PER SECTION 506.15(a). HIGH STRENGTH BOLTS, NUTS, AND CIRCULAR WASHERS SHALL CONFORM TO M 164M (ASTM A325), TYPE 1, GALVANIZED. GALVANIZING SHALL BE PAID UNDER ITEM 545.20. ANY SURFACES DAMAGED BEFORE ACCEPTANCE OF WORK SHALL BE REPAIRED AS REQUIRED BY THE SPECIFICATIONS.
3. FABRICATION DRAWING, DESIGN CALCULATIONS, AND WELD PROCEDURE MUST BE PROVIDED (6 WEEKS PRIOR TO FABRICATION OF THE TRUSS) TO THE STRUCTURE ENGINEER FOR HIS INFORMATION AND REVIEW. THE DESIGN CALCULATIONS FOR THE TRUSS, BEARINGS, BEAM PROFILES, DECK, SHALL BE STAMPED AND SIGNED BY A LICENSED PROFESSIONAL ENGINEER (STRUCTURAL OR CIVIL). THE FABRICATION DRAWINGS SHALL INCLUDE ALL TRUSS DEAD LOAD DEFLECTION AND CAMBER INFORMATION AND SHALL BE STAMPED WITH THE CONTRACTOR'S DESIGN ENGINEER'S SHOP DRAWING APPROVAL STAMP OR SHALL BEAR THE ENGINEER'S STAMP AND SIGNATURE.
4. THE DECK SHALL BE DESIGNED AND DETAILED BY THE MANUFACTURER/CONTRACTOR.
5. THE BEARINGS FOR THE NEW TRUSS SHALL BE SELECTED, DESIGNED, AND INSTALLED BY THE CONTRACTOR. BEARING DEVICES SHALL CONFORM TO THE APPLICABLE SUBSECTION OF 531 AND 731. EXPANSION BEARINGS SHALL BE ADJUSTED FOR TEMPERATURE AS SHOWN ON THE FABRICATION DRAWINGS. BEARING DEVICES SHALL BE INCIDENTAL TO ITEM 545.20.
6. ANY LOAD PLATES USED IN THE BEARING DEVICES SHALL BE A MINIMUM OF 1 IN THICK.
7. DETAILS REQUIRED FOR THE ATTACHMENT OF THE EXPANSION JOINT BRACKET PLATES TO THE TRUSS FLOOR SYSTEM AT THE EXPANSION END OF THE BRIDGE SHALL BE SUPPLIED BY THE MANUFACTURER.
8. THE CONTRACTOR/MANUFACTURER SHALL FURNISH FINAL CONCRETE PEDESTAL ELEVATIONS ON THE FABRICATION DRAWING FOR EACH PIER BASED ON THE ACTUAL THICKNESS OF THE BRIDGE AND HEIGHT OF THE BEARINGS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

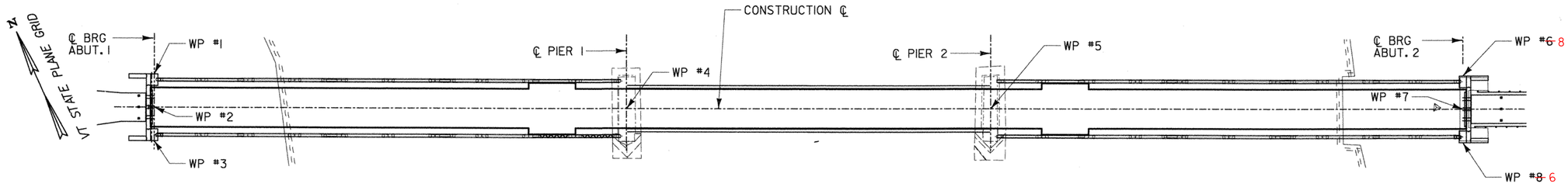
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

GENERAL NOTES

Designed By R. SACCHI	Drawn By A. ZAWILINSKI
Checked By H. BUI — Date 1/23/08	Bridge Design Supervisor R. SACCHI — Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(1)
I.G.C. Info. ZD024GNlr.dgn	2/21/2008
Bridge Sheet No. BR3	Sheet 20 of 63

URS URS CORPORATION



COORDINATE TABLE		
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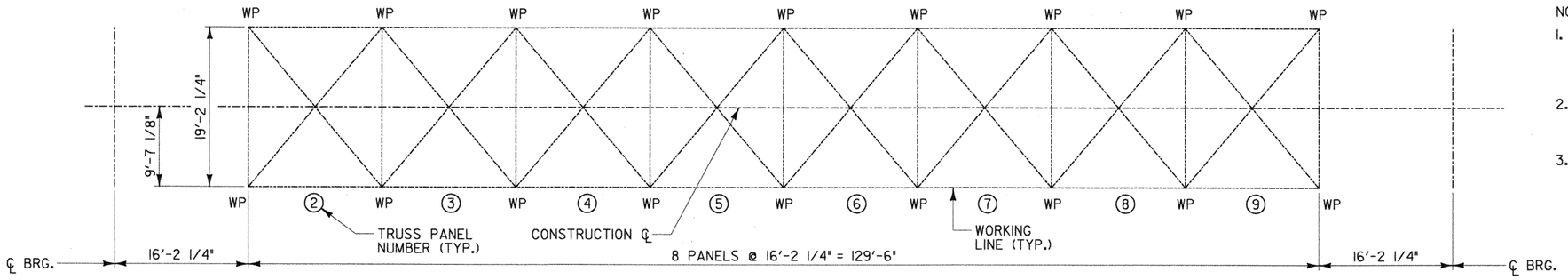
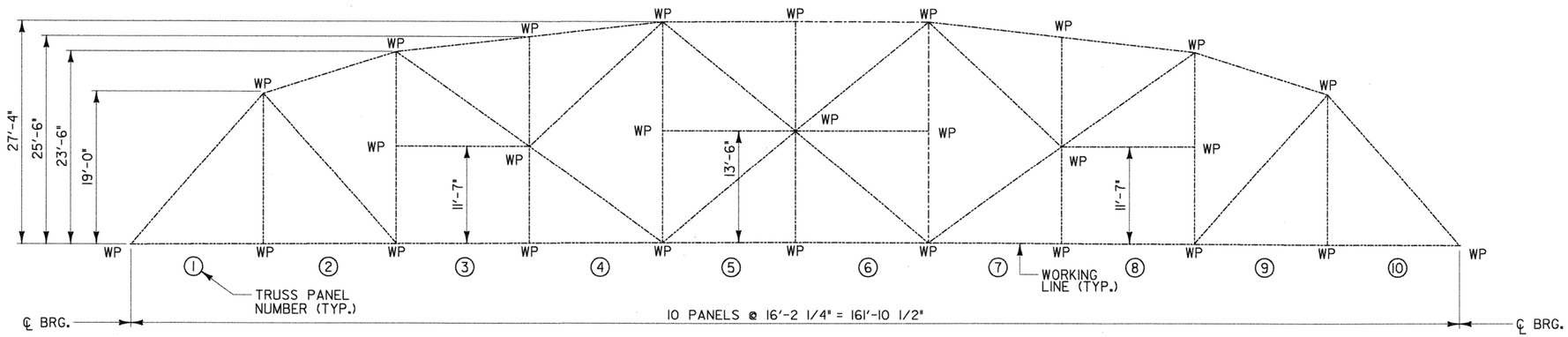
6	881314.31	1477971.66
7	881324.88	1477976.42
8	881335.45	1477981.17

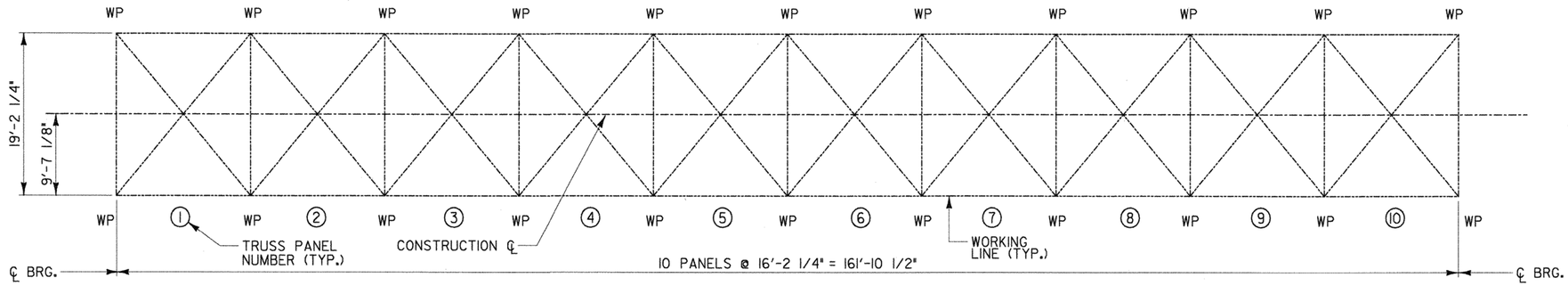
WORKING POINT LAYOUT



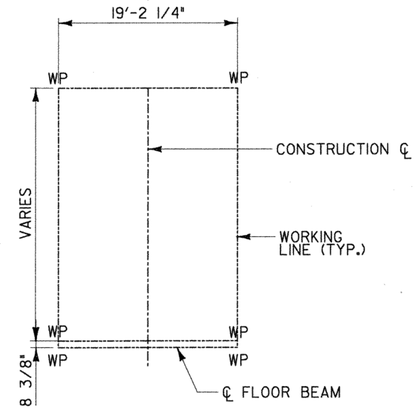
TOP PLAN



SIDE ELEVATION



BOTTOM PLAN



END ELEVATION

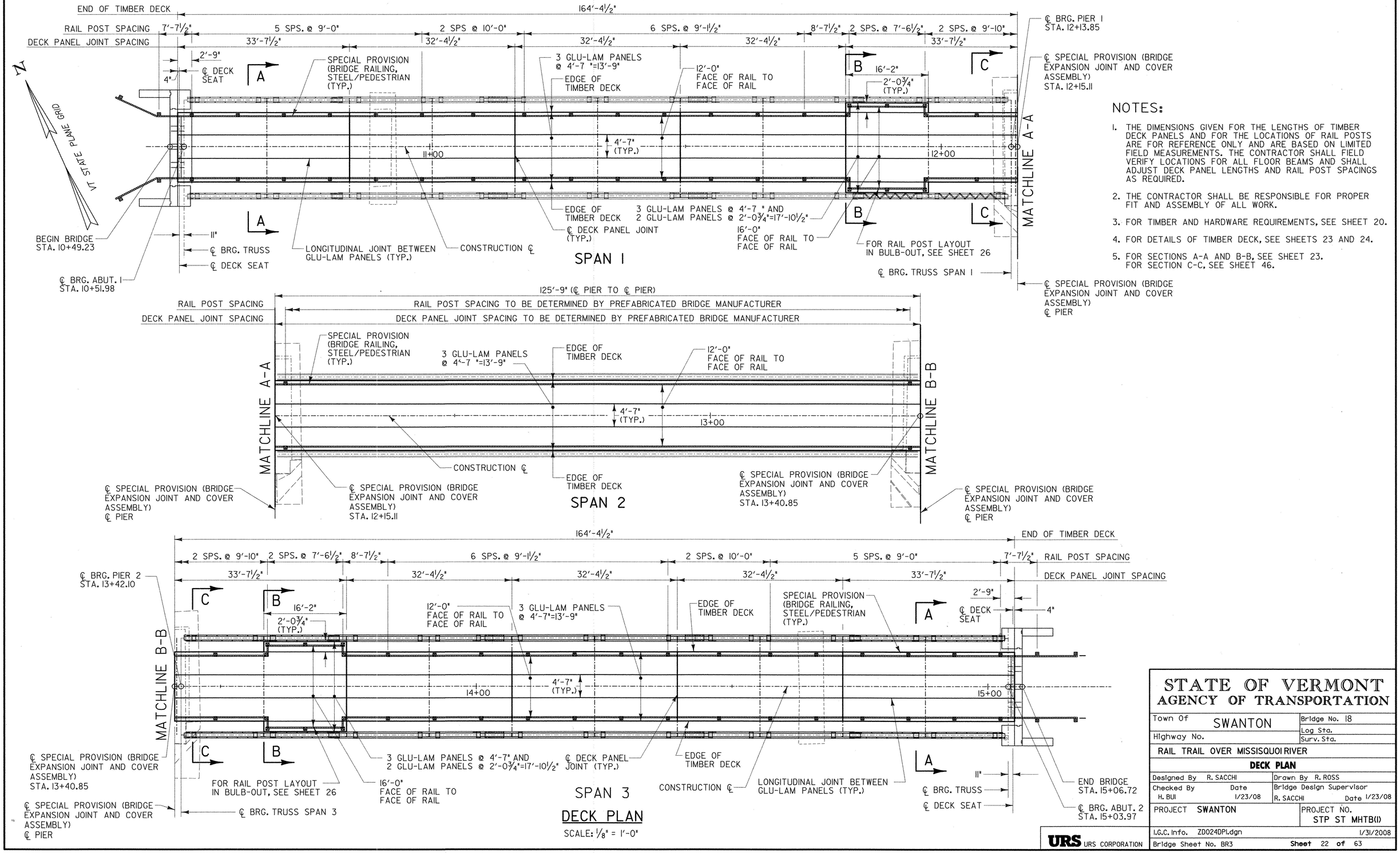
NOTES:

1. THE DIMENSIONS SHOWN ON THIS DRAWING ARE FOR REFERENCE ONLY AND WERE USED TO CALCULATE THE OVERALL GEOMETRY AND LAYOUT OF THE TRUSSES. THESE DIMENSIONS ARE NOT GUARANTEED.
2. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO VERIFY DIMENSIONS AND ASSURE THE PROPER FIT OF THE FINISHED WORK.
3. LOCATION OF ℄ BEARING AND ANCHOR BOLTS FOR THE REHABILITATED PENNSYLVANIA THROUGH TRUSSES ARE SUBJECT TO FINAL ASSEMBLY OF THE TRUSSES AND THE ACTUAL ASSEMBLED LENGTH.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
EXISTING THROUGH TRUSS LAYOUT	
Designed By	Drawn By
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024TLI.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 21 of 63

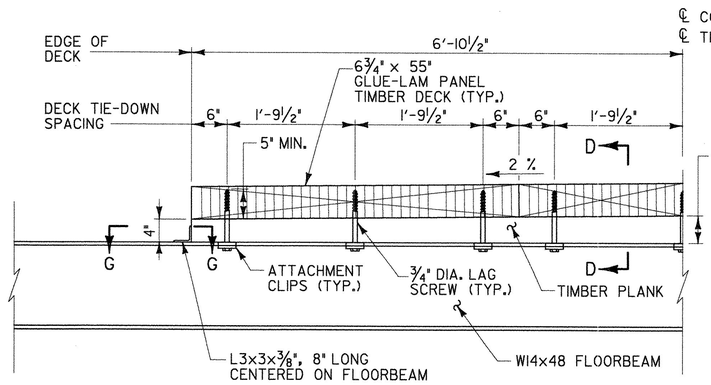
URS URS CORPORATION



STATE OF VERMONT
AGENCY OF TRANSPORTATION

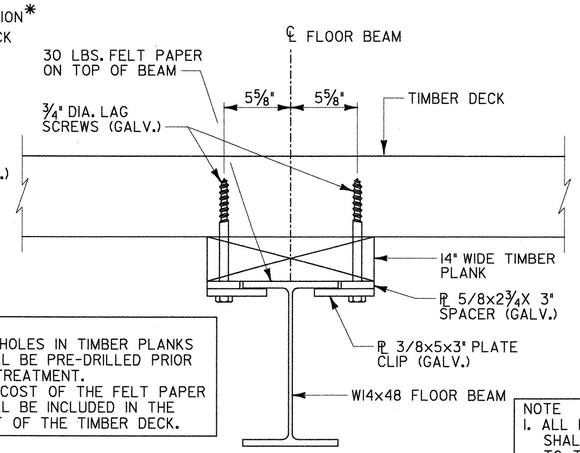
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. / Surv. Sta.
RAIL TRAIL OVER MISSISQUOI RIVER	
DECK PLAN	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI — Date 1/23/08	Bridge Design Supervisor R. SACCHI — Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024DPI.dgn	1/31/2008
Bridge Sheet No. BR3	Sheet 22 of 63

URS URS CORPORATION



SECTION A-A

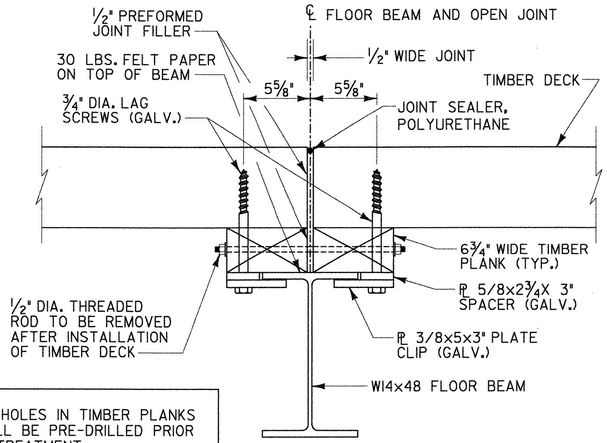
SCALE: 1" = 1'-0"



NOTE
1. ALL HOLES IN TIMBER PLANKS SHALL BE PRE-DRILLED PRIOR TO TREATMENT.
2. THE COST OF THE FELT PAPER SHALL BE INCLUDED IN THE COST OF THE TIMBER DECK.

SECTION D-D

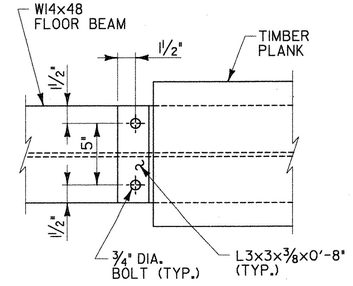
CONTINUOUS DECK
SCALE: 2" = 1'-0"



NOTE
1. ALL HOLES IN TIMBER PLANKS SHALL BE PRE-DRILLED PRIOR TO TREATMENT.
2. THE COST OF THE FELT PAPER SHALL BE INCLUDED IN THE COST OF THE TIMBER DECK.

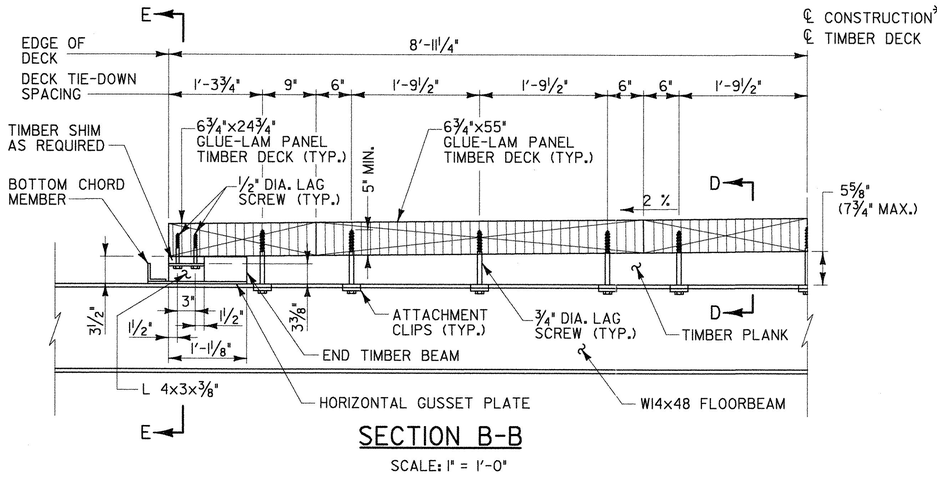
SECTION D-D

AT ½" WIDE JOINT
SCALE: 2" = 1'-0"



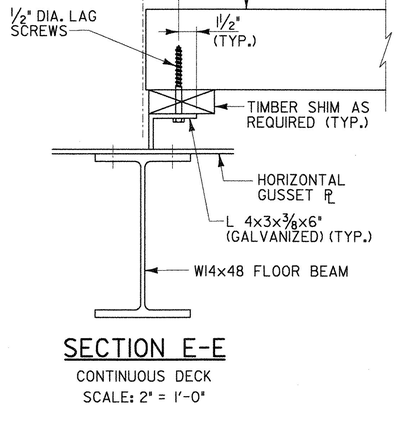
VIEW G-G

SCALE: 2" = 1'-0"



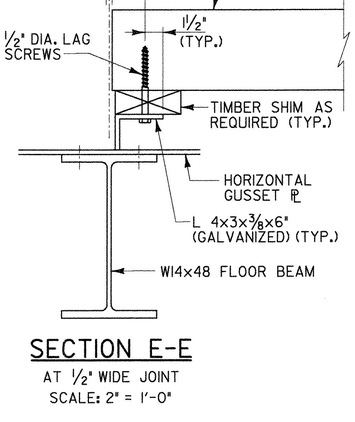
SECTION B-B

SCALE: 1" = 1'-0"



SECTION E-E

CONTINUOUS DECK
SCALE: 2" = 1'-0"



SECTION E-E

AT ½" WIDE JOINT
SCALE: 2" = 1'-0"

* SYMMETRICAL ABOUT ℄ CONSTRUCTION EXCEPT DECK CROSS SLOPE. DECK IS SUPERELEVATED.

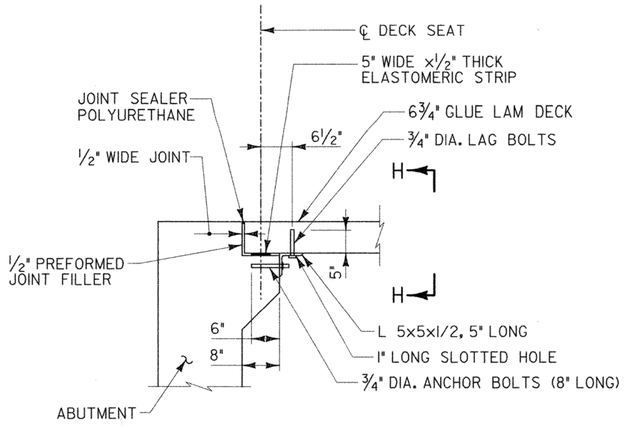
NOTE:

1. ALL TIMBER PLANK AND TIMBER SHIM SHALL BE SOUTHERN YELLOW PINE, GRADE "SELECT STRUCTURAL".

STATE OF VERMONT
AGENCY OF TRANSPORTATION

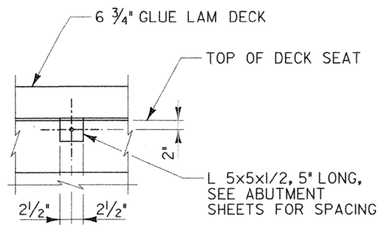
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
TIMBER DECK DETAILS	
Designed By R. SACCHI	Drawn By R. ROSS/A. ZAWILINSKI
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024DDI.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 23 of 63

URS URS CORPORATION



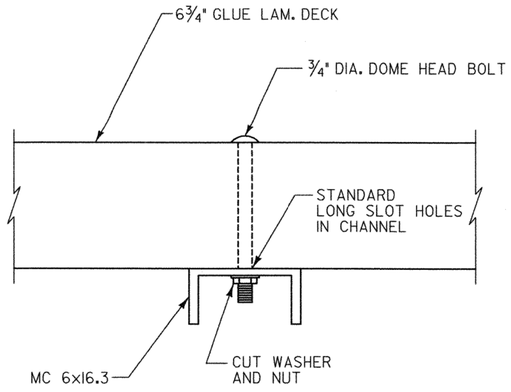
DECK DETAIL @ ABUTMENT

SCALE 3/4"=1'-0"



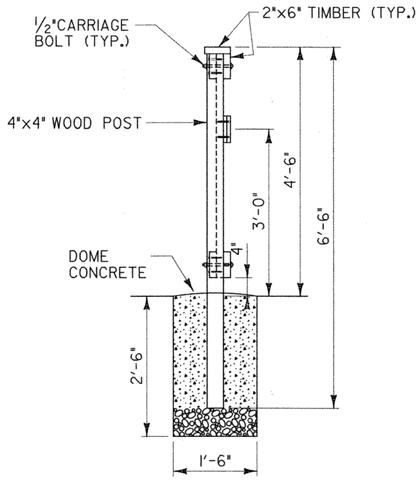
VIEW H-H

SCALE 3/4"=1'-0"



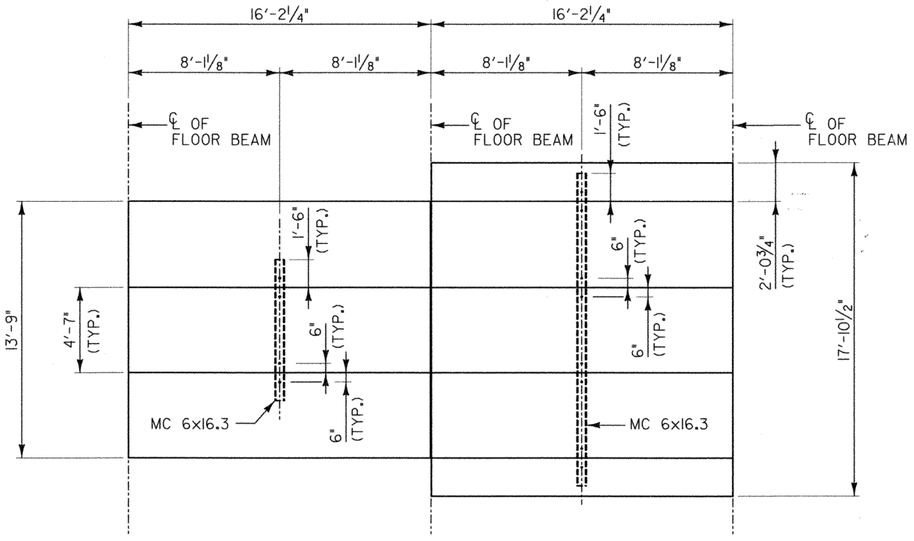
TRANSVERSE STIFFENER CONNECTION

SCALE: 3" = 1'-0"



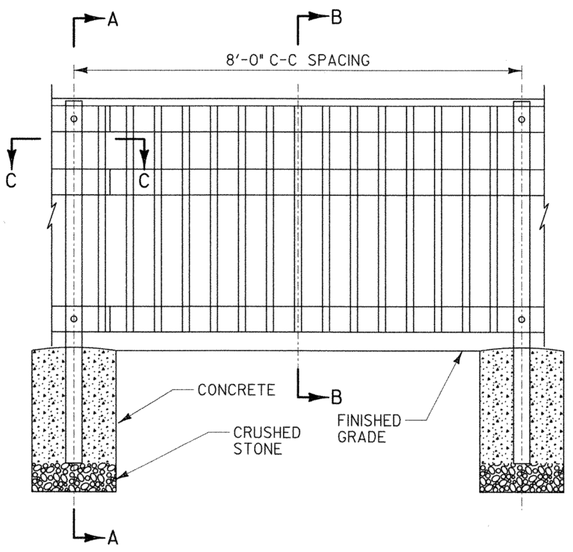
SECTION A-A

SCALE 3/4"=1'-0"



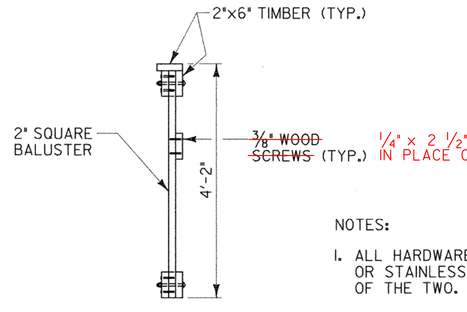
TYPICAL TRANSVERSE STIFFENER LAYOUT

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



ELEVATION

SCALE 3/4"=1'-0"

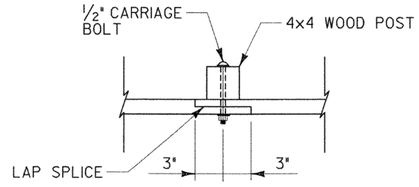


SECTION B-B

SCALE 3/4"=1'-0"

NOTES:

1. ALL HARDWARE SHALL BE EITHER GALVANIZED OR STAINLESS STEEL, BUT NOT A COMBINATION OF THE TWO.
2. ALL WOOD SHALL BE PRESSURE TREATED SOUTHERN YELLOW PINE, GRADE "SELECT STRUCTURAL".



VIEW C-C

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

SPECIAL PROVISION (TIMBER FENCE WITH PICKETS)

STATE OF VERMONT
AGENCY OF TRANSPORTATION

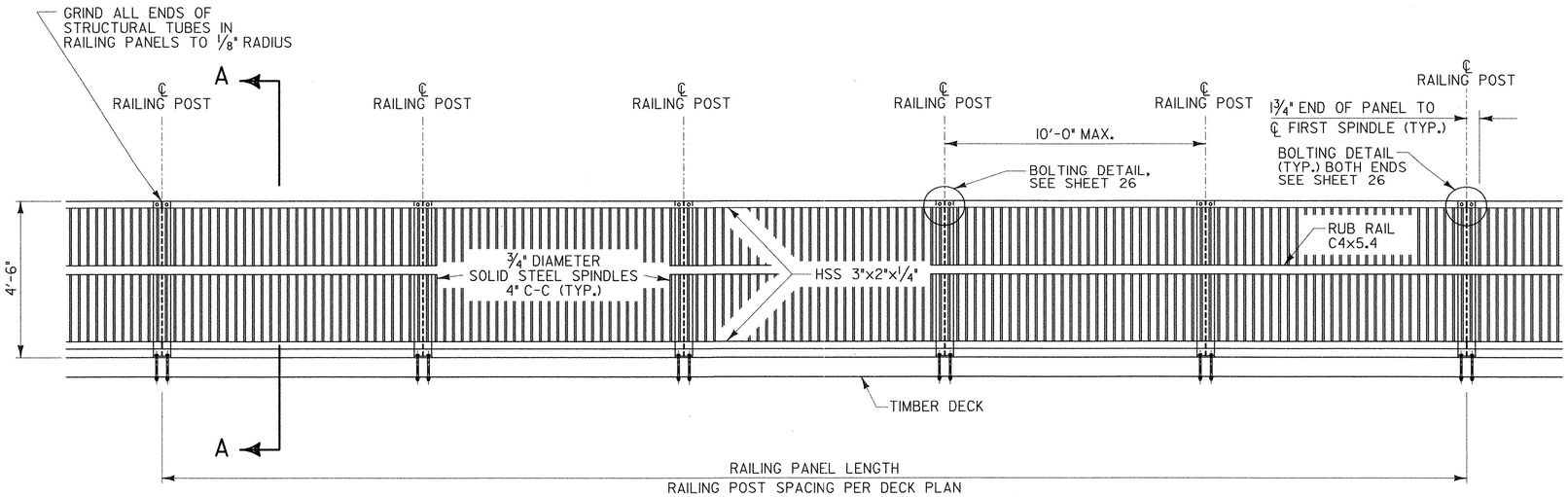
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

TIMBER DECK AND RAIL DETAILS

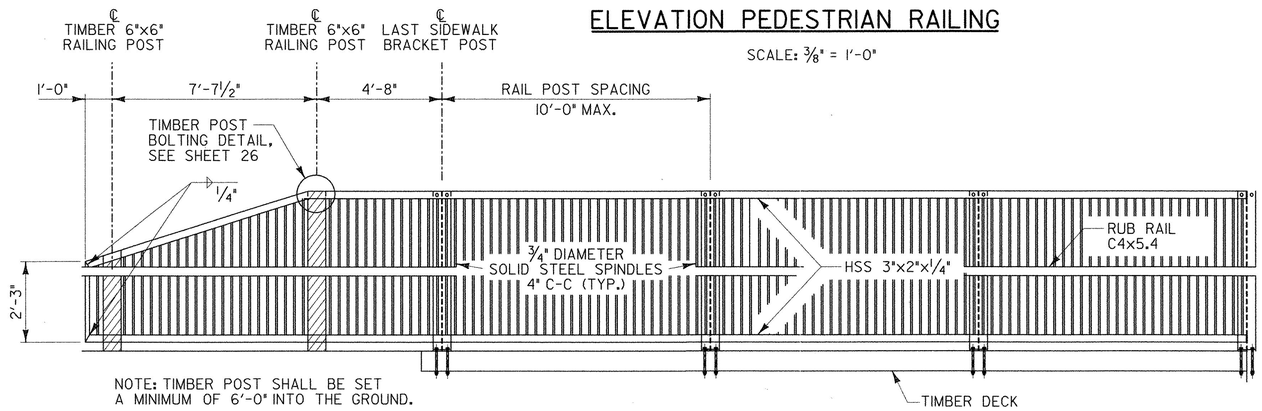
Designed By R. SACCHI	Drawn By R. ROSS/A. ZAWILINSKI
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024DD2.dgn	1/31/2008
Bridge Sheet No. BR3	Sheet 24 of 63

URS URS CORPORATION



ELEVATION PEDESTRIAN RAILING

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

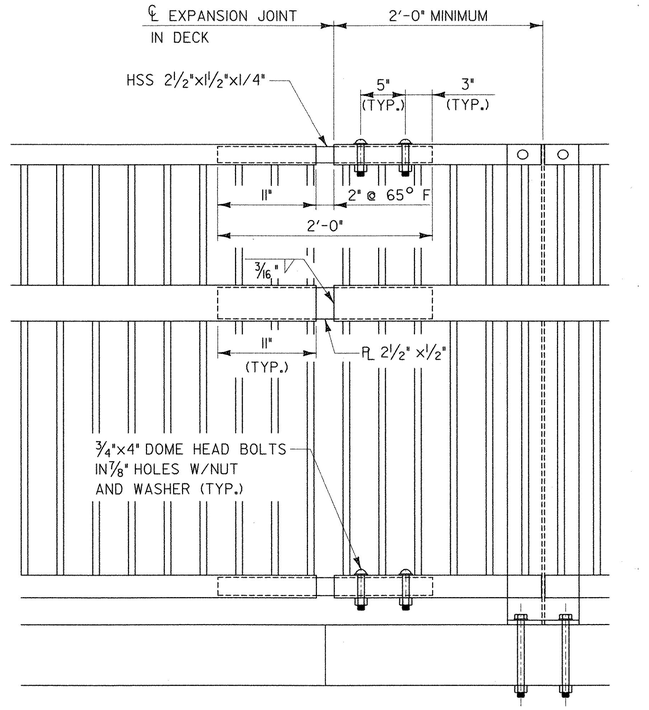


NOTE: TIMBER POST SHALL BE SET A MINIMUM OF 6'-0" INTO THE GROUND.

FOR DETAILS, SEE SIMILAR RAILING DETAILS ON SHEET 24.

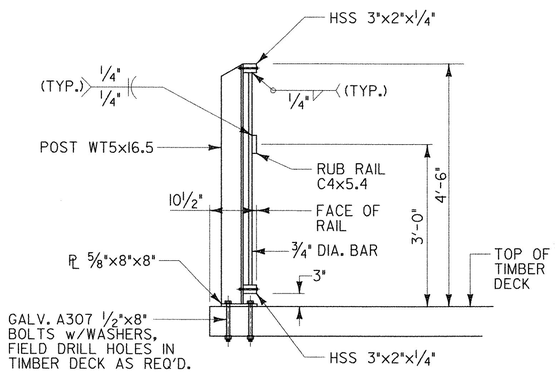
PEDESTRIAN RAIL TERMINATOR

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



PEDESTRIAN RAIL EXPANSION JOINT

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



SECTION A-A

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

NOTES

1. ALL STEEL IN THE PEDESTRIAN RAILING SHALL CONFORM TO AASHTO M270M/M270 GR 36, EXCEPT ALL STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B.
2. THE PEDESTRIAN RAILING TERMINATOR SHALL BE INSTALLED ON BOTH APPROACHES. THE RAILING EXPANSION JOINT SHALL ONLY BE INSTALLED ON THE EXPANSION END OF THE BRIDGE. SEE PEDESTRIAN RAILING EXPANSION JOINT DETAIL.
3. PEDESTRIAN RAILING SHALL BE PAID FOR UNDER ITEM 900.640 SPECIAL PROVISION (BRIDGE RAILING, STEEL/PEDESTRIAN).
4. THE RAILING SHALL BE SHOP PAINTED WITH A PROTECTIVE PAINT SYSTEM PER SECTION 513. THE TOP COAT SHALL BE SILVER. THIS WORK WILL BE PAID FOR UNDER THE RAILING ITEM AS PER SPEC.
5. THE TIMBER RAILING POSTS SHALL BE IN CONFORMANCE WITH SECTION 728.01, AND SHALL BE PAID FOR UNDER THE ITEM 900.640 SPECIAL PROVISION (BRIDGE RAILING, STEEL/PEDESTRIAN).
6. ALL BOLTS IN THE PEDESTRIAN RAILING SHALL BE HIGH-STRENGTH AND SHALL CONFORM TO AASHTO M-164 SPECIFICATION OR ASTM A307, GRADE A SPECIFICATION.
7. PEDESTRIAN RAILING TERMINATION SHALL BE FABRICATED TO FOLLOW THE ELEVATION OF THE PATH OFF THE BRIDGE. THIS MAY OR MAY NOT MEAN DEVIATION FROM A STRAIGHT LINE IN THE VERTICAL DIMENSION. THE SLOPED PORTION OF THE TERMINATOR SHALL BE ANGLED OUTWARD AWAY FROM THE HORIZONTAL LINE AT A SLOPE OF 1:2.
8. THE LENGTH OF THE RAILING PANEL MAY BE ADJUSTED BY THE CONTRACTOR TO REFLECT FIELD CONDITIONS. HOWEVER, A 10'-0" POST SPACING SHALL BE THE MAXIMUM POST SPACING AND EACH RAILING PANEL SHALL BE CONTINUOUS OVER TWO OR MORE RAILING POSTS.

URS URS CORPORATION

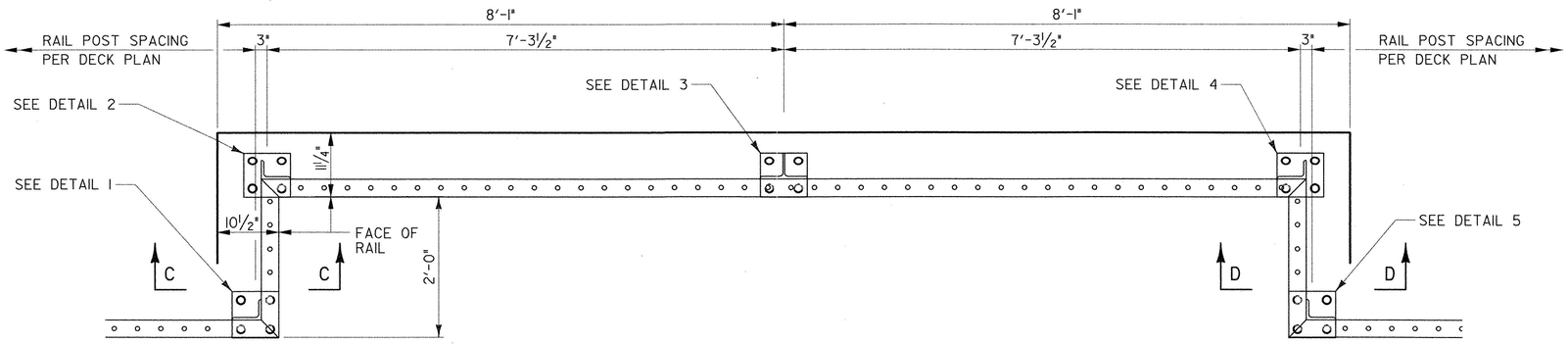
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

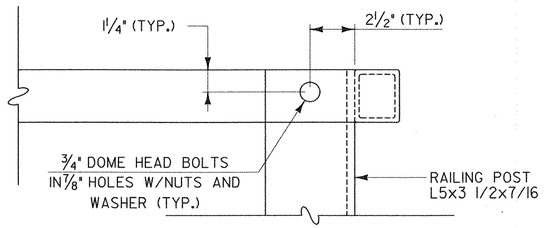
PEDESTRIAN BRIDGE RAIL DETAILS 1

Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(1)
I.G.C. Info. ZD024RD1.dgn	1/31/2008
Bridge Sheet No. BR3	Sheet 25 of 63



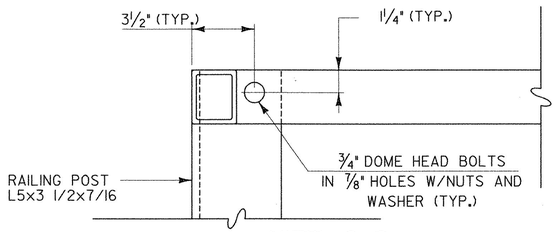
RAIL POST LAYOUT AT OBSERVATION BULB-OUT

SCALE: 1"= 1'-0"



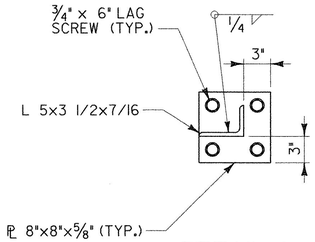
VIEW A-A
VIEW B-B (MIRROR IMAGE)
BOLTING DETAIL

SCALE: 3" = 1'-0"

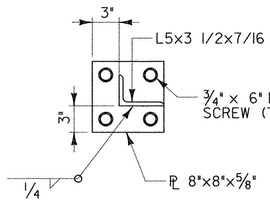


VIEW C-C
VIEW D-D (MIRROR IMAGE)
BOLTING DETAIL

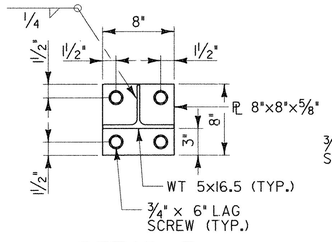
SCALE: 3" = 1'-0"



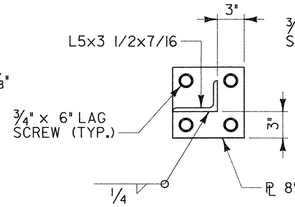
DETAIL 1



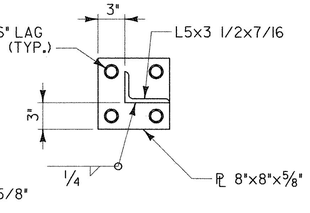
DETAIL 2



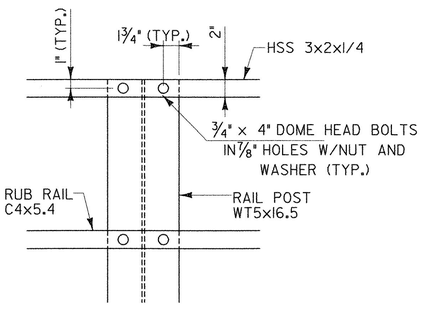
DETAIL 3



DETAIL 4

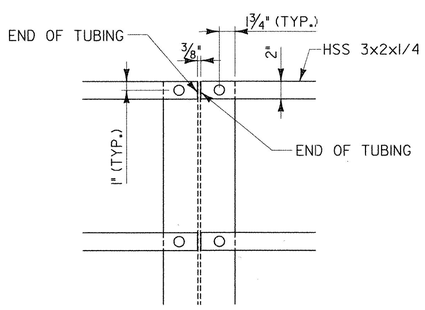


DETAIL 5



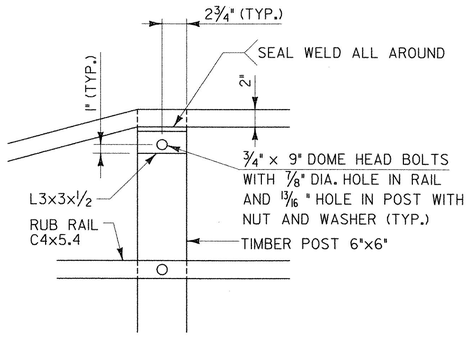
STEEL POST BOLTING ASSEMBLY
INTERMEDIATE POST ELEVATION

SCALE: 1½" = 1'-0"



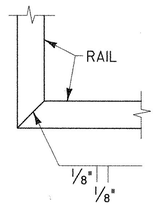
STEEL POST BOLTING ASSEMBLY
END OF PANEL ELEVATION

SCALE: 1½" = 1'-0"



TIMBER POST BOLTING ASSEMBLY
ELEVATION

SCALE: 1½" = 1'-0"



TYPICAL RAIL CORNER DETAIL

SCALE: 1½" = 1'-0"

STATE OF VERMONT
AGENCY OF TRANSPORTATION

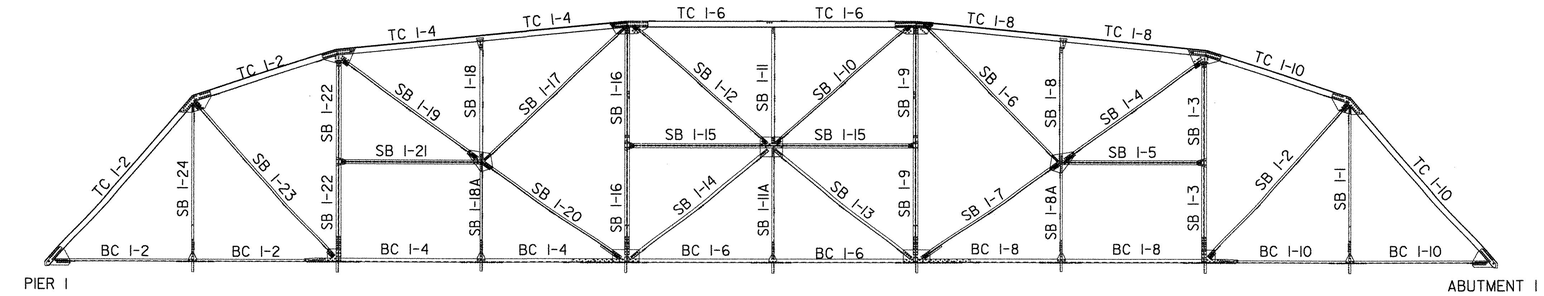
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

PEDESTRIAN BRIDGE RAIL DETAILS 2

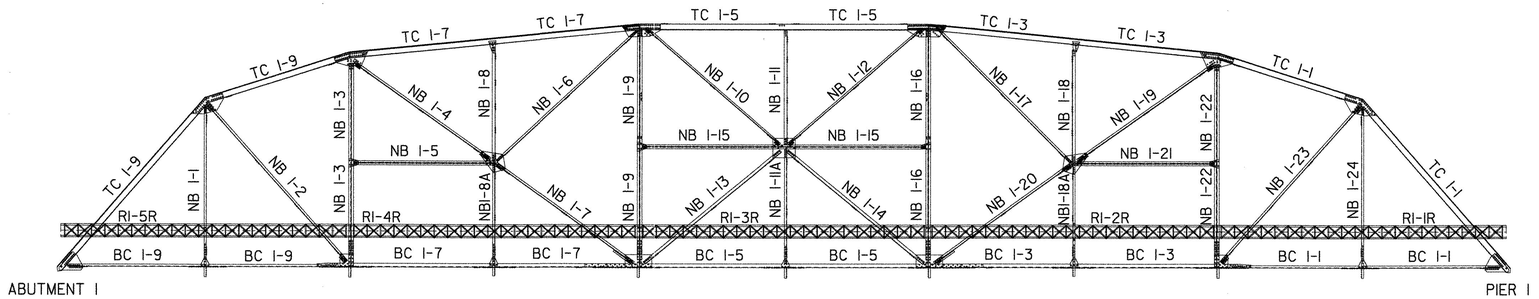
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024RD2.dgn	1/31/2008
Bridge Sheet No. BR3	Sheet 26 of 63

URS URS CORPORATION



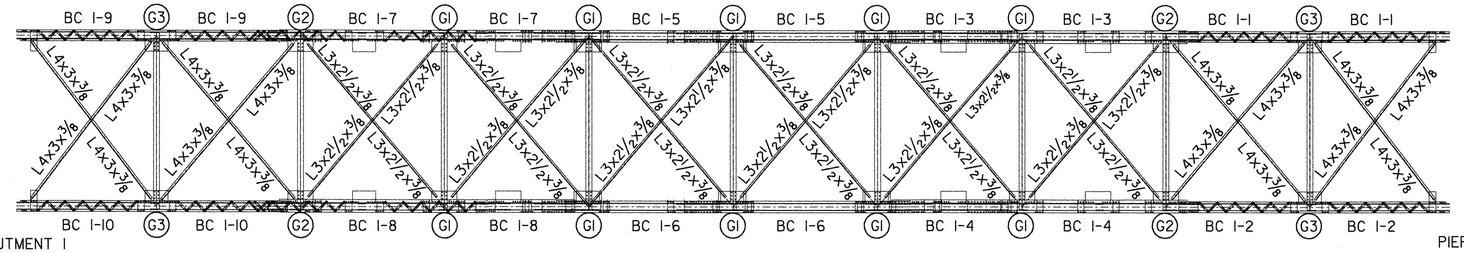
SPAN I- SOUTH TRUSS

(LOOKING FROM BRIDGE DECK)

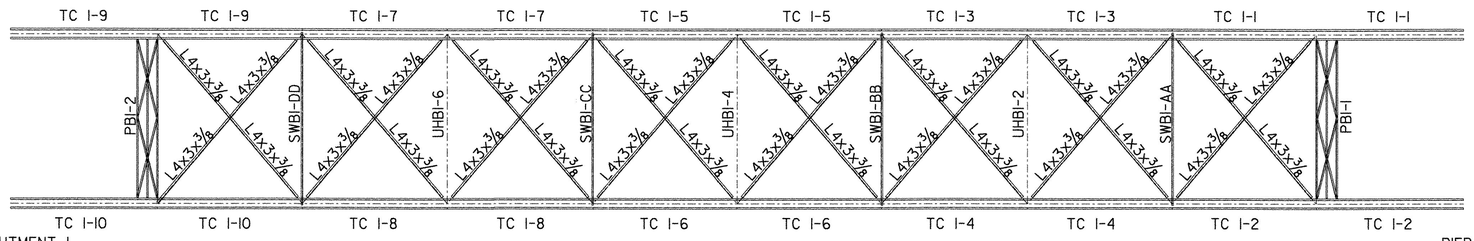


SPAN I- NORTH TRUSS

(LOOKING FROM BRIDGE DECK)



SPAN I- FLOOR PLAN



SPAN I- UPPER BRACING PLAN

NOTES:

1. MEMBER DESIGNATIONS WERE COMPILED FROM AVAILABLE FIELD INFORMATION.
2. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT THERE MAYBE MEMBER IDENTIFICATION TAGS THAT ARE MISSING FROM THE MEMBERS, AND MEMBERS THAT ARE MISLABELED WITH AN INCORRECT DESIGNATION OR A CONFLICTING DESIGNATION. IT SHALL BE UP TO THE CONTRACTOR TO RESOLVE THESE CONFLICTS.
3. (G3) = GUSSET PLATE NUMBER (SEE SHEET 44)

STATE OF VERMONT
AGENCY OF TRANSPORTATION

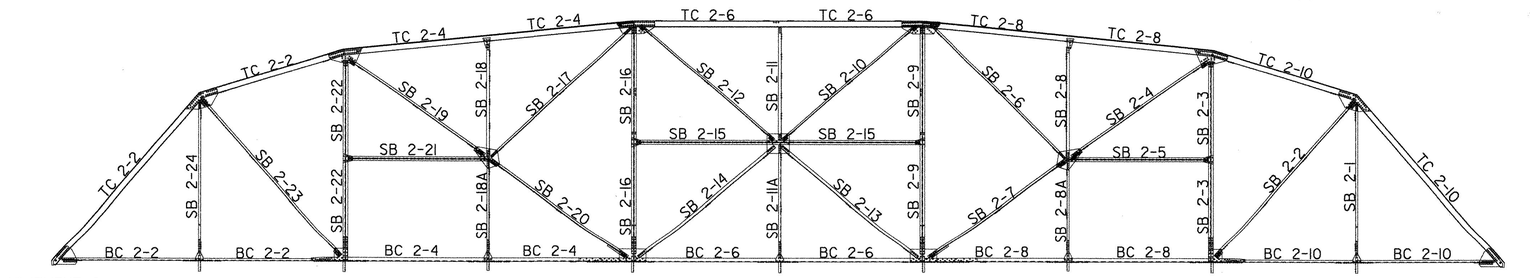
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

EXISTIING THROUGH TRUSS MEMBER DESIGNATIONS 1

Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024TMDI.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 27 of 63

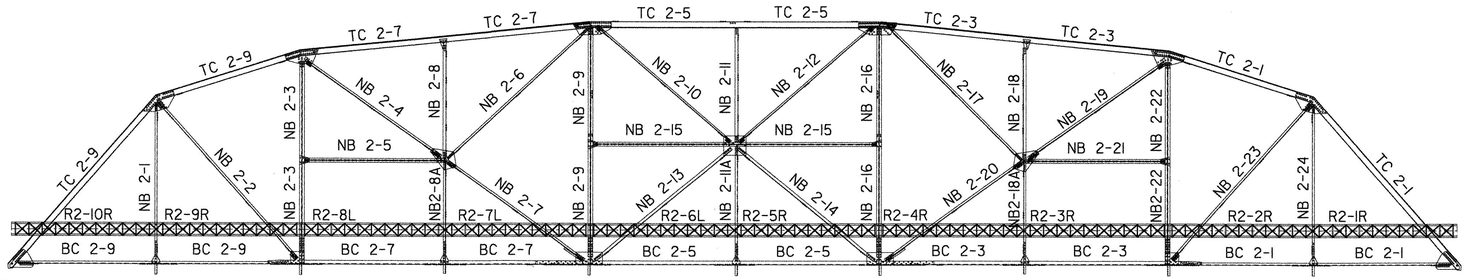
URS URS CORPORATION



ABUTMENT 2 PIER 2

SPAN 3 - SOUTH TRUSS

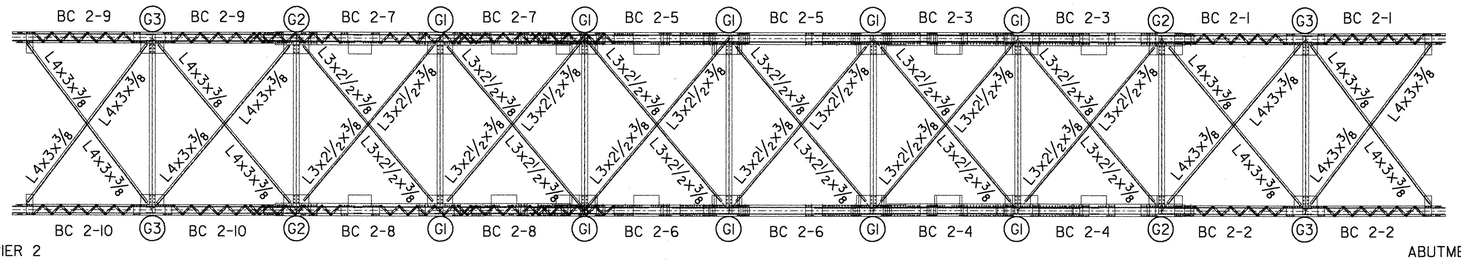
(LOOKING FROM BRIDGE DECK)



PIER 2 ABUTMENT 2

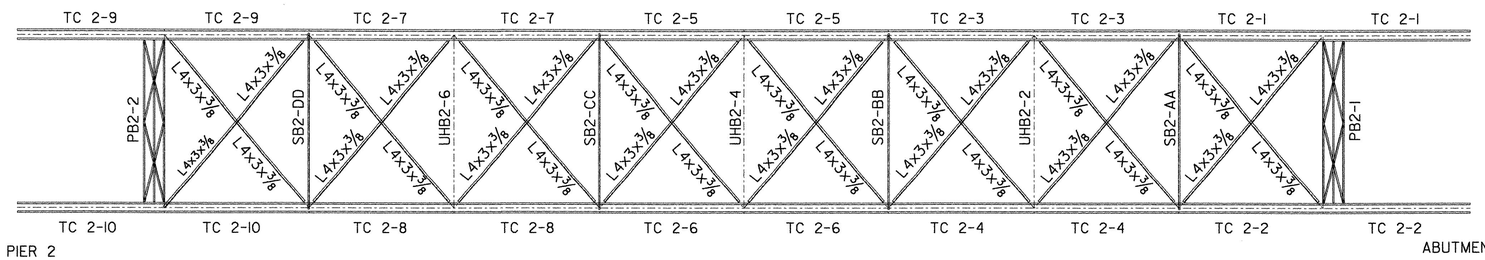
SPAN 3 - NORTH TRUSS

(LOOKING FROM BRIDGE DECK)



PIER 2 ABUTMENT 2

SPAN 3 - FLOOR PLAN



PIER 2 ABUTMENT 2

SPAN 3 - UPPER BRACING PLAN

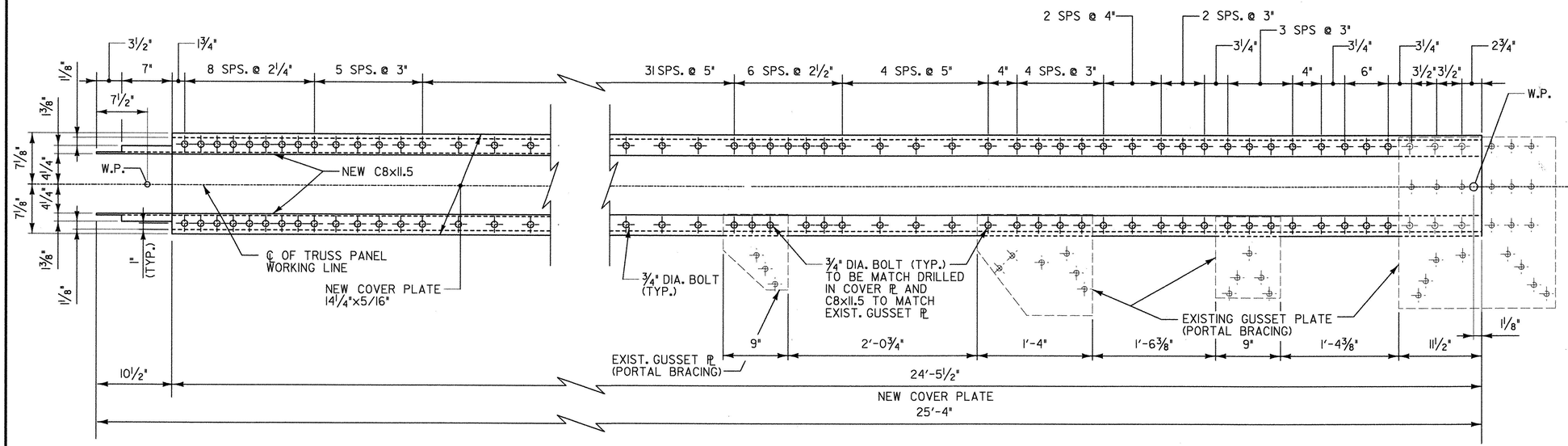
NOTES:

1. MEMBER DESIGNATIONS WERE COMPILED FROM AVAILABLE FIELD INFORMATION.
2. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT THERE MAYBE MEMBER IDENTIFICATION TAGS THAT ARE MISSING FROM THE MEMBERS, AND MEMBERS THAT ARE MISLABELED WITH AN INCORRECT DESIGNATION OR A CONFLICTING DESIGNATION. IT SHALL BE UP TO THE CONTRACTOR TO RESOLVE THESE CONFLICTS.
3. (G3) = GUSSET PLATE NUMBER (SEE SHEET 44)

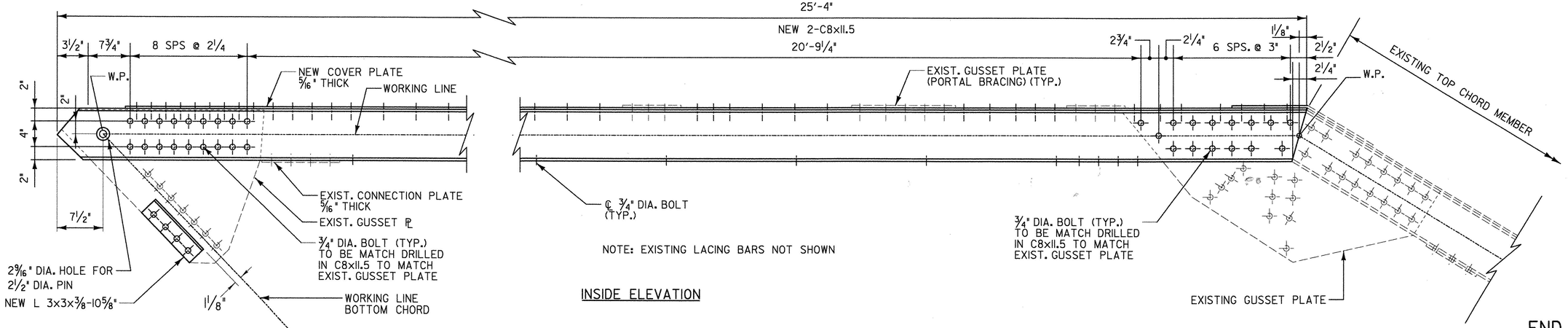
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
EXISTING THROUGH TRUSS MEMBER DESIGNATIONS 2	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024TMD2.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 28 of 63

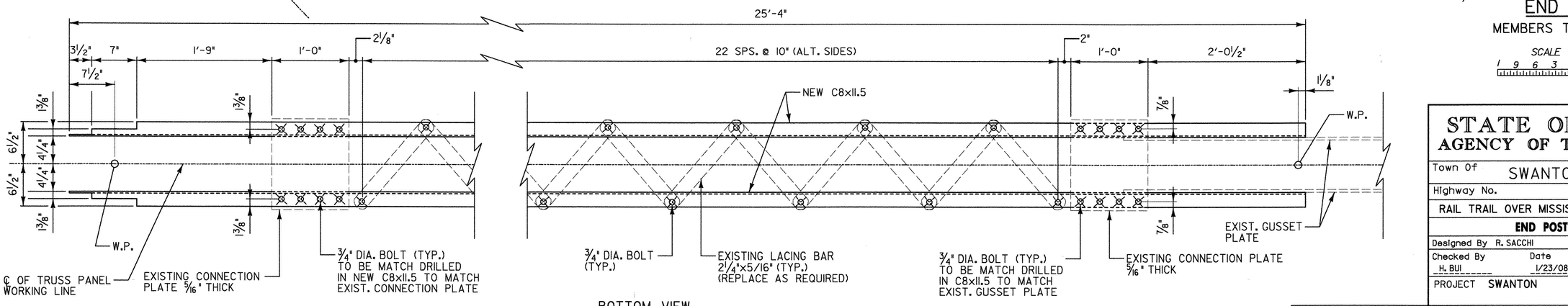
URS URS CORPORATION



TOP VIEW



INSIDE ELEVATION



BOTTOM VIEW

NOTES:

1. THE DIMENSIONS GIVEN FOR LOCATIONS OF GUSSET AND OTHER CONNECTION PLATES ARE FOR REFERENCE ONLY AND ARE BASED ON LIMITED FIELD MEASUREMENTS. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL GUSSET, CONNECTION AND SPLICE PLATES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER FIT AND ASSEMBLY OF ALL WORK.
3. HOLES SHALL BE FIELD DRILLED AS NECESSARY TO MATCH EXISTING HOLES AND TO PROVIDE THE CORRECT GEOMETRY FOR THE END POST AND CONNECTED BRACING.
4. FOR STRUCTURAL STEEL AND HARDWARE REQUIREMENTS, SEE SHEET 20.

END POST

MEMBERS TCI-1 & TCI-2

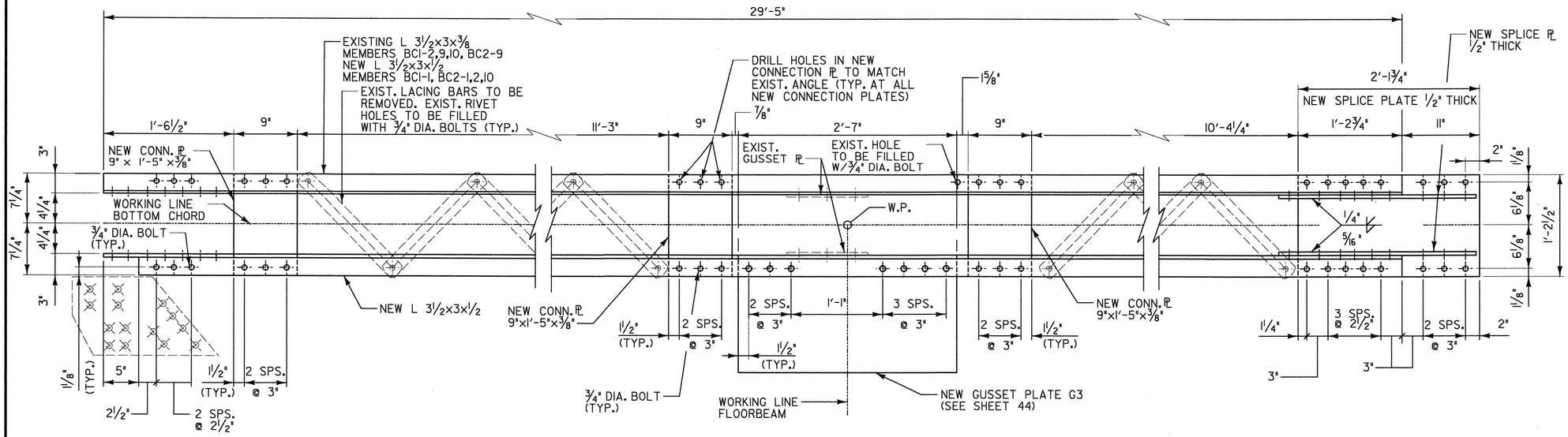
SCALE 1½"= 1'-0

1 9 6 3 0 1

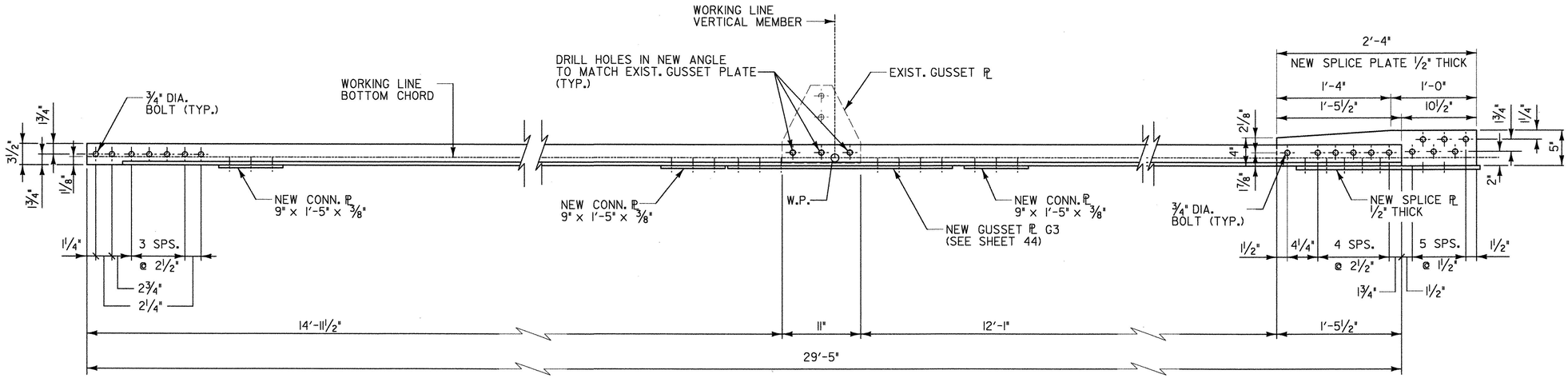
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
END POST REPAIR DETAILS	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024EPI.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 29 of 63

URS URS CORPORATION



TOP VIEW



SIDE VIEW

BOTTOM CHORD

MEMBERS BCI-1, 2, 9, 10, BC2-1, 2, 9 & 10

SCALE 1½" = 1'-0

1 9 6 3 0 1

NOTES:

1. THE DIMENSIONS GIVEN FOR LOCATIONS OF GUSSET, CONNECTION AND SPLICE PLATES ARE FOR REFERENCE ONLY AND ARE BASED ON LIMITED FIELD MEASUREMENTS. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL GUSSET, CONNECTION AND SPLICE PLATES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER FIT AND ASSEMBLY OF ALL WORK.
3. IF AN EXISTING ANGLE IS INTENDED TO BE RE-USED, IT SHALL BE FULLY INSPECTED AFTER BLAST CLEANING. IF ANY AREA OF THE ANGLE EXHIBITS MORE CROSS SECTIONAL LOSS THAN THE FOLLOWING AS DETERMINED BY THE ENGINEER.
   - A. ⅜ SQUARE INCH FOR MEMBERS BCI-1, 2, 9, 10, BC2-1, 2, 9 AND 10
   - B. ½ SQUARE INCH FOR MEMBERS BCI-3, 4, 5, 6, 7, 8, BC2-3, 4, 5, 6, 7 AND 8

   THE EXISTING ANGLE SHALL BE REPLACED WITH AN ANGLE OF THE FOLLOWING SIZE:
   - A. L 3-½x3x½ FOR MEMBERS BCI-1, 2, 9, 10, BC2-1, 2, 9 AND 10
   - B. L 5x5x¾ FOR MEMBERS BCI-3, 4, 7, 8, BC2-3, 4, 7 AND 8
   - C. L 5x3-½x⅝ FOR MEMBERS BC-5, 6, BC2-5 AND 6

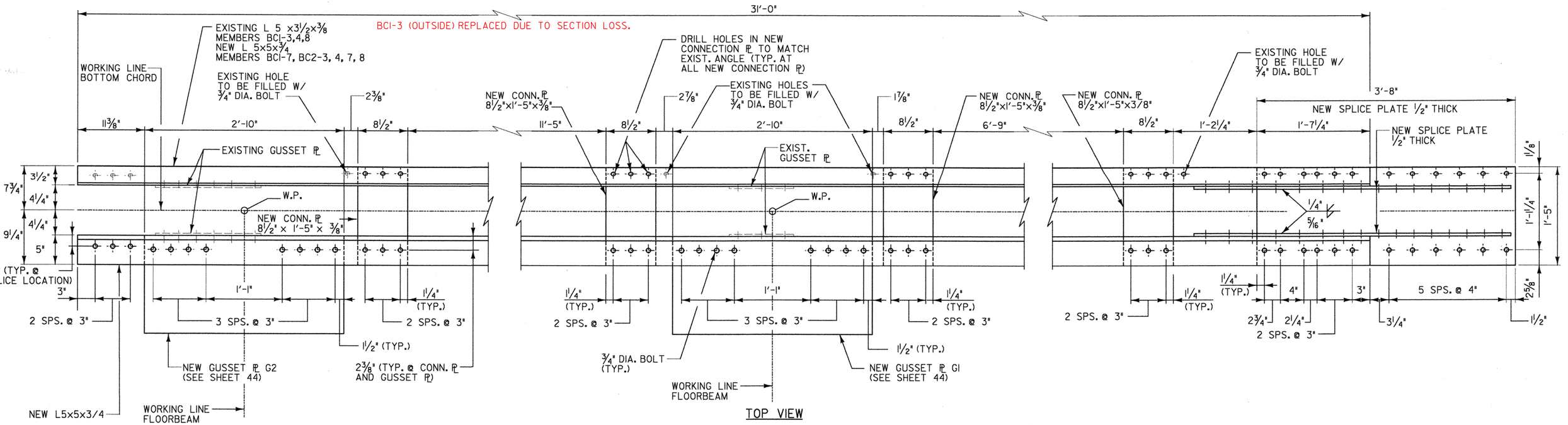
   REPLACEMENT ANGLES WILL BE PAID FOR UNDER CONTRACT ITEM 506.60 "STRUCTURAL STEEL".
4. STRUCTURAL STEEL FOR THE REPLACEMENT ANGLES SHALL BE AASHTO M 270M/M270 GRADE 50.
5. FOR ADDITIONAL STRUCTURAL STEEL AND HARDWARE REQUIREMENTS, SEE SHEET 20.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

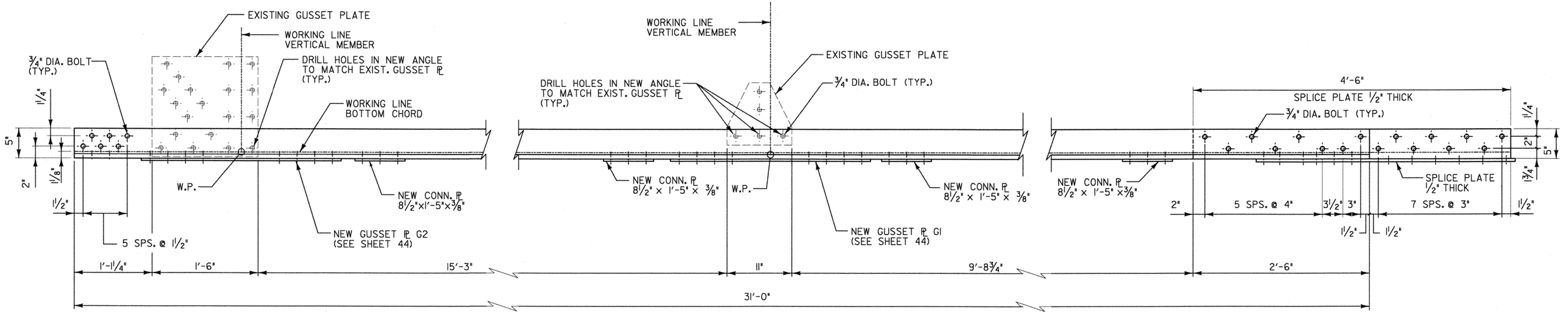
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
LOWER CHORD REPAIR DETAILS 1	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(1)
I.G.C. Info. ZD024LCI.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 30 of 63

URS URS CORPORATION

BCI-3 (OUTSIDE) REPLACED DUE TO SECTION LOSS.



TOP VIEW



SIDE VIEW

NOTES:

1. FOR NOTES ON BOTTOM CHORD REPAIR DETAILS, SEE SHEET 30.

BOTTOM CHORD

MEMBERS BCI-3, 4, 7, 8, BC2-3, 4, 7 & 8

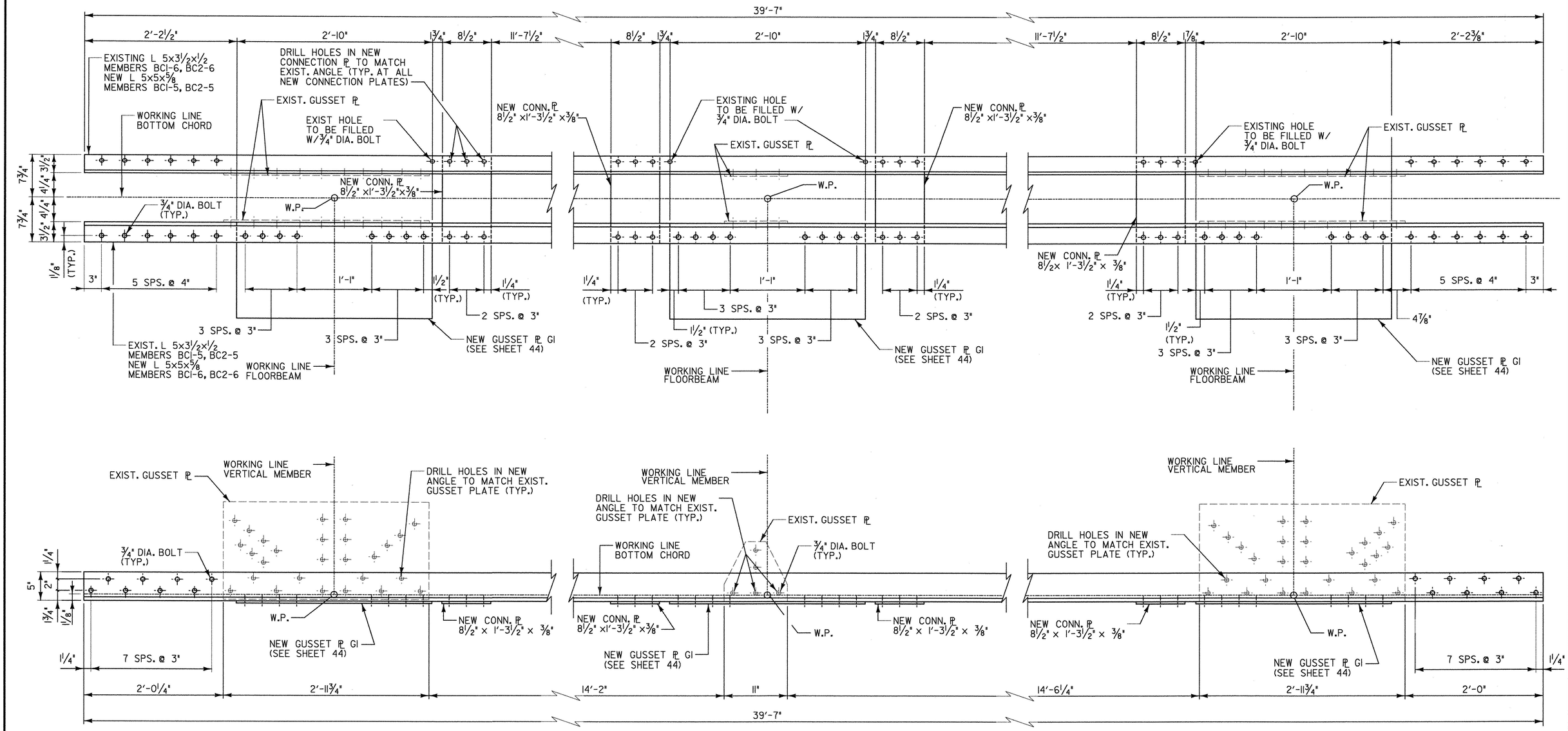
SCALE 1½" - 1'-0

1 9 6 3 0 1

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
LOWER CHORD REPAIR DETAILS 2	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024LC2.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 31 of 63

URS URS CORPORATION



BOTTOM CHORD

MEMBERS BCI-5, 6, BC2-5 & 6

SCALE 1½"= 1'-0

1 9 6 3 0 1

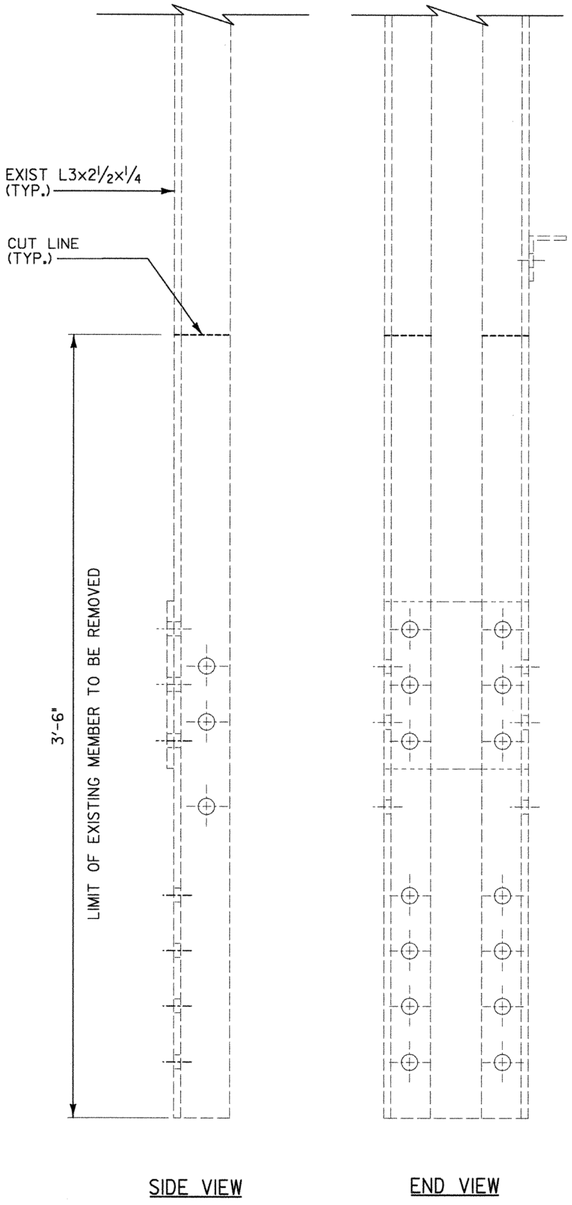
NOTES:

1. FOR NOTES ON BOTTOM CHORD REPAIR DETAILS, SEE SHEET 30.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

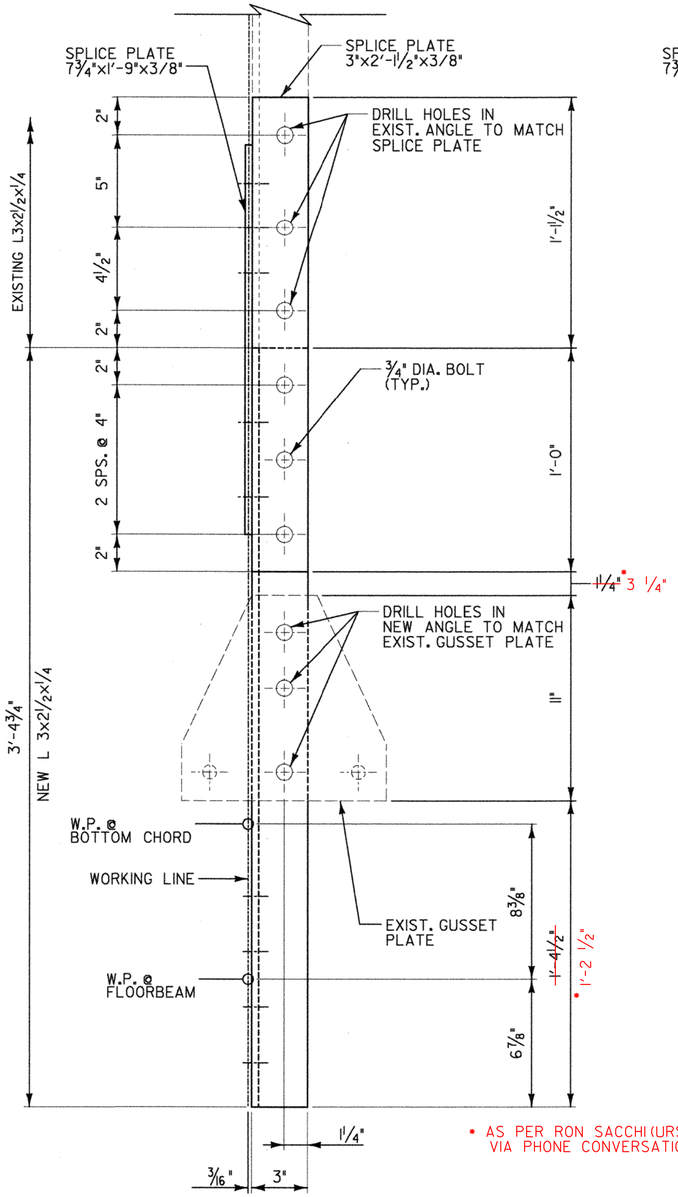
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
LOWER CHORD REPAIR DETAILS 3	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024LC3.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 32 of 63

URS URS CORPORATION



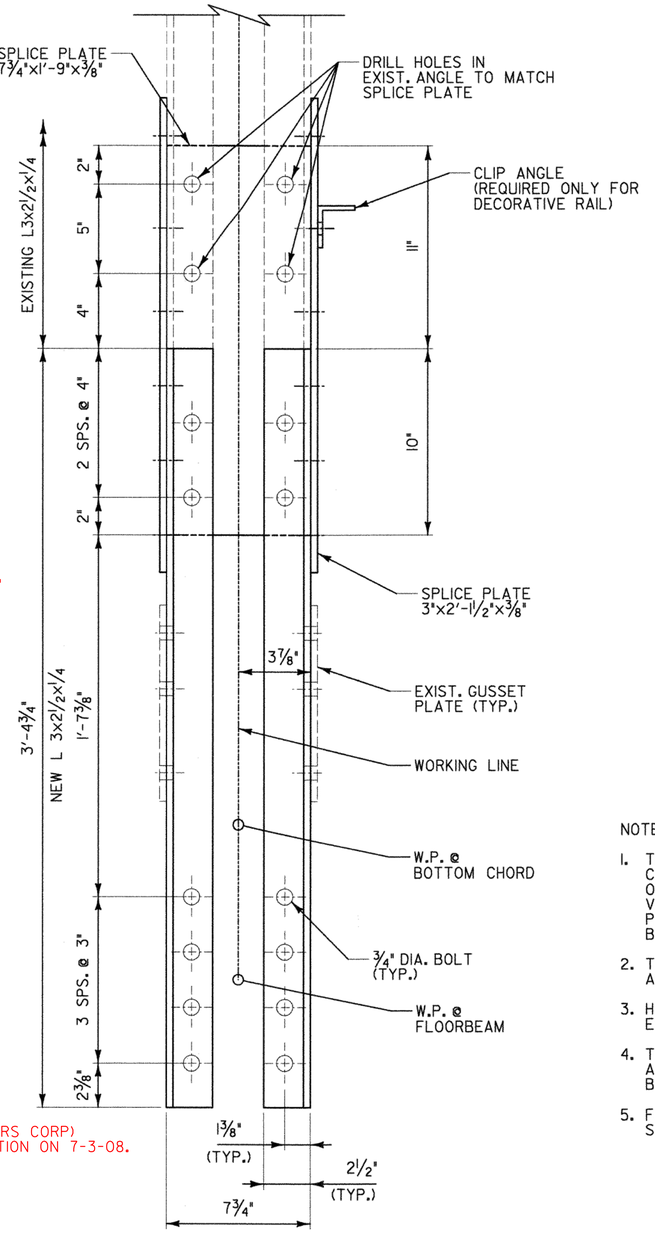
SIDE VIEW END VIEW

EXISTING CONDITION



SIDE VIEW

• AS PER RON SACCHI (URS CORP) VIA PHONE CONVERSATION ON 7-3-08.



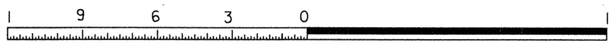
END VIEW

REPAIR DETAIL

VERTICAL MEMBER REPAIR DETAILS

SBI-6A, SBI-I8A, SB2-6A, SB2-I8A
NBI-5A, NBI-I8A, NB2-5A, NB2-I8A

SCALE 3" = 1'-0



NOTES:

1. THE DIMENSIONS GIVEN FOR LOCATIONS OF GUSSET AND OTHER CONNECTION PLATES ARE FOR REFERENCE ONLY AND ARE BASED ON LIMITED FIELD MEASUREMENTS. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL GUSSET, CONNECTION AND SPLICE PLATES TO PROVIDE THE CORRECT GEOMETRY FOR THE FLOOR BEAM AND BOTTOM CHORD CONNECTIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER FIT AND ASSEMBLY OF ALL WORK.
3. HOLES SHALL BE MATCH DRILLED AS REQUIRED TO MATCH EXISTING HOLES.
4. THE CUT ENDS OF THE VERTICALS SHALL BE GROUND SMOOTH AND FREE OF BURRS. FREEHAND FLAME CUTTING WILL NOT BE ALLOWED.
5. FOR STRUCTURAL STEEL AND HARDWARE REQUIREMENTS, SEE SHEET 20.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

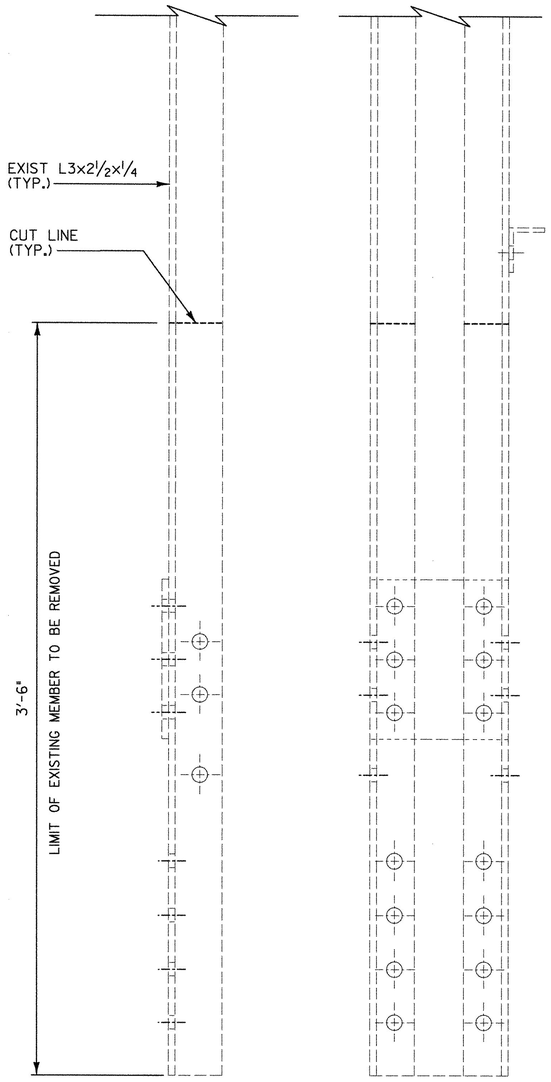
Town Of SWANTON	Bridge No. I8
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

VERTICAL MEMBER REPAIR DETAILS 1

Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024VRI.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 33 of 63

URS URS CORPORATION

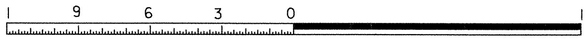


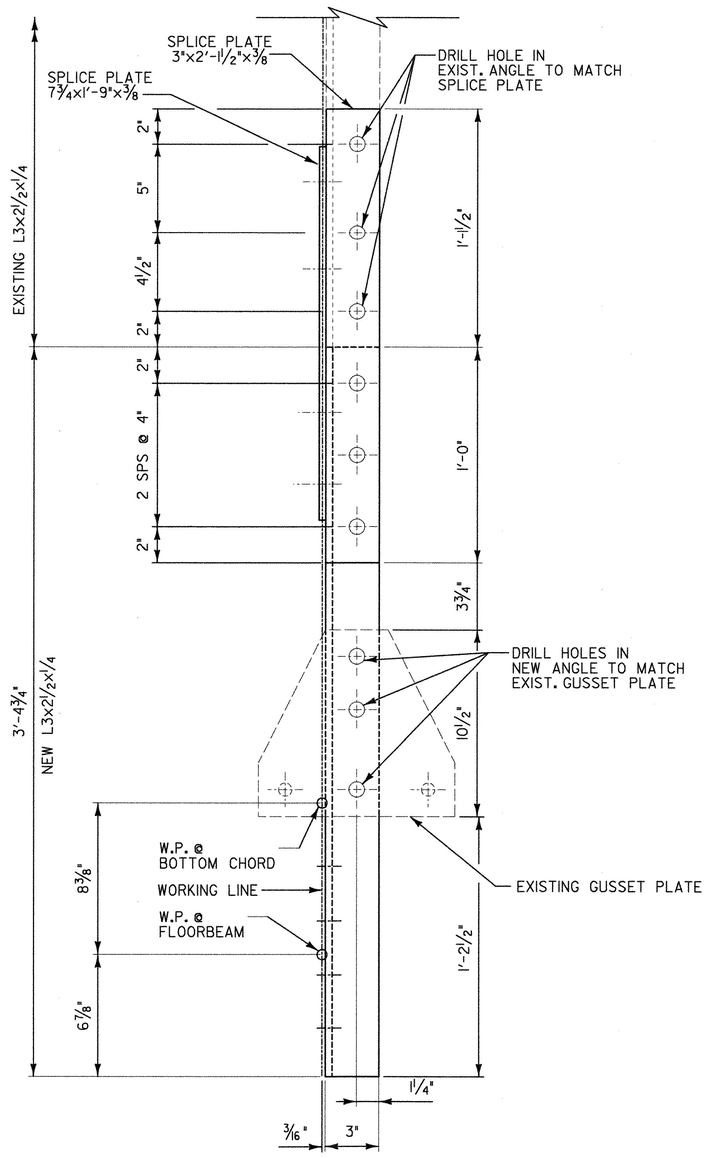
SIDE VIEW

END VIEW

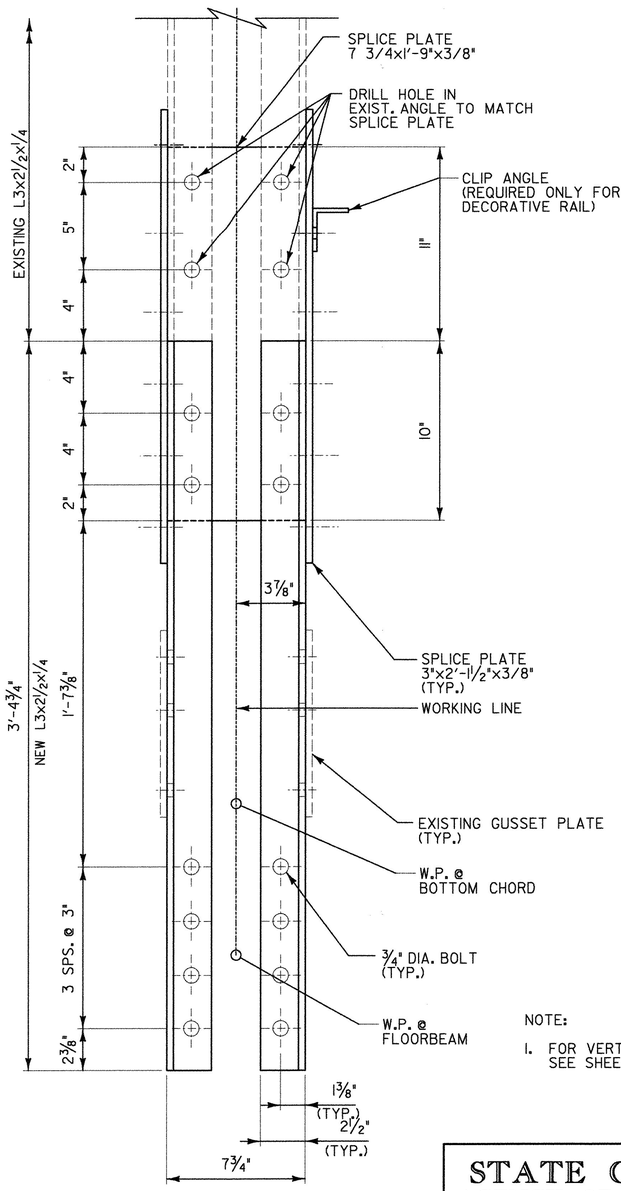
VERTICAL MEMBER REPAIR DETAILS
SB1-11A, SB2-11A
NB1-11A, NB2-11A

SCALE 3" = 1'-0





SIDE VIEW



END VIEW

NOTE:

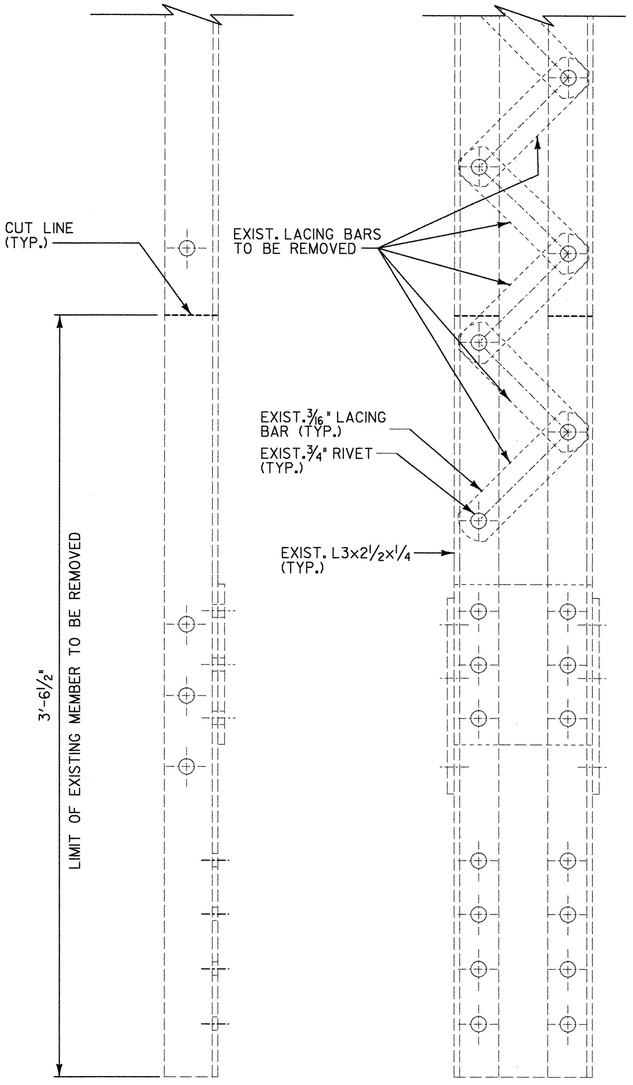
1. FOR VERTICAL MEMBER REPAIR NOTES, SEE SHEET 33.

REPAIR DETAIL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
VERTICAL MEMBER REPAIR DETAILS 2	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(1)
I.G.C. Info. ZD024VR2.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 34 of 63

URS URS CORPORATION



SIDE VIEW

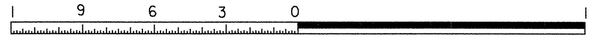
END VIEW

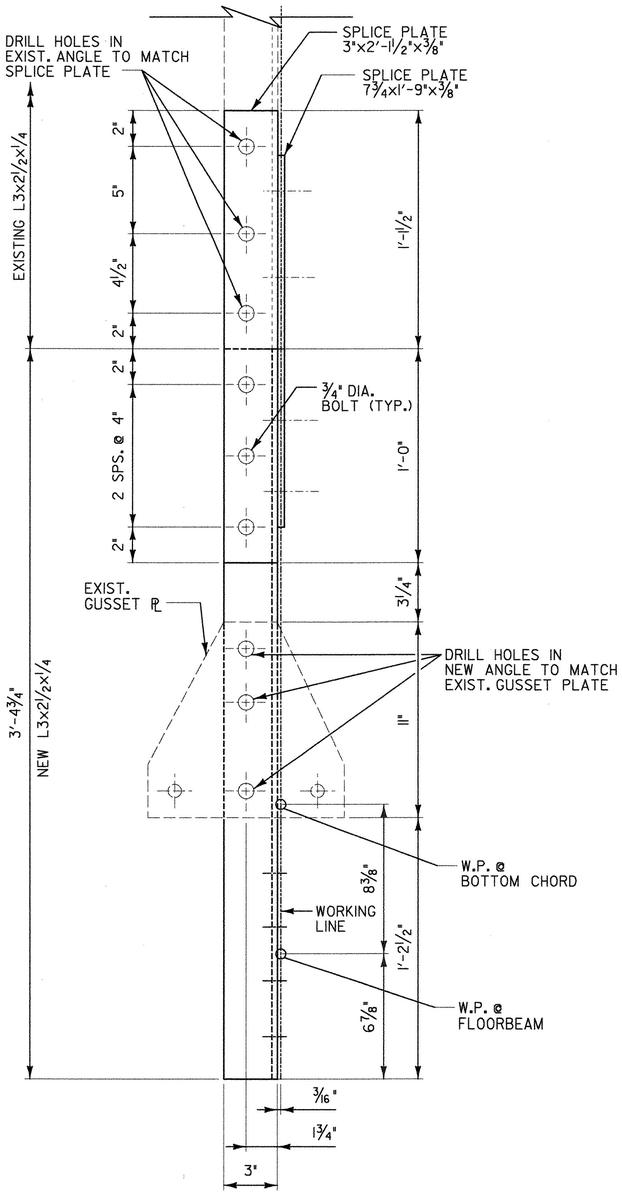
EXISTING CONDITION

VERTICAL MEMBER REPAIR DETAILS

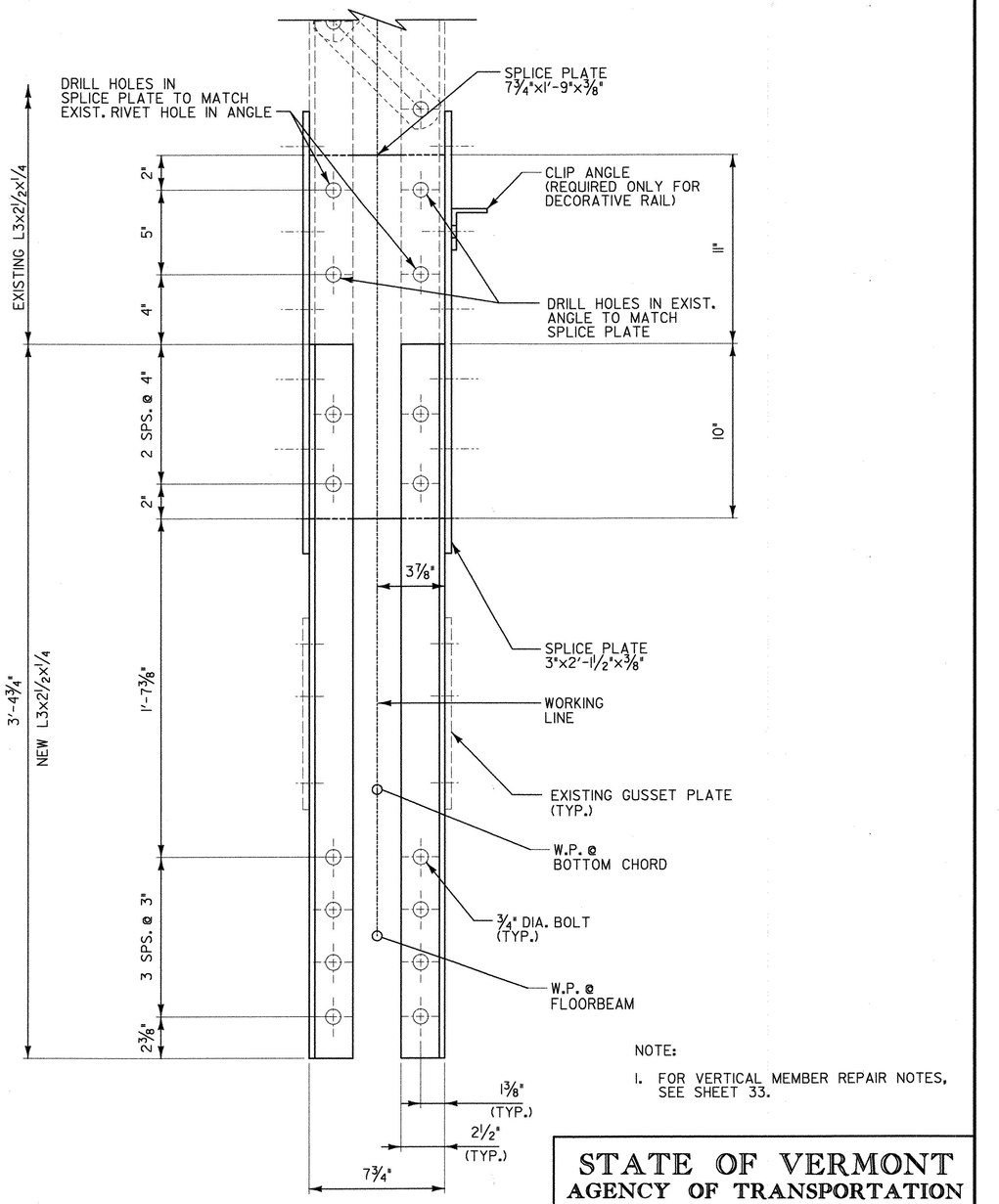
SBI-I, SBI-24, SB2-I, SB2-24
NBI-I, NBI-24, NB2-I, NB2-24

SCALE 3" = I'-0





SIDE VIEW



END VIEW

NOTE:

1. FOR VERTICAL MEMBER REPAIR NOTES, SEE SHEET 33.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

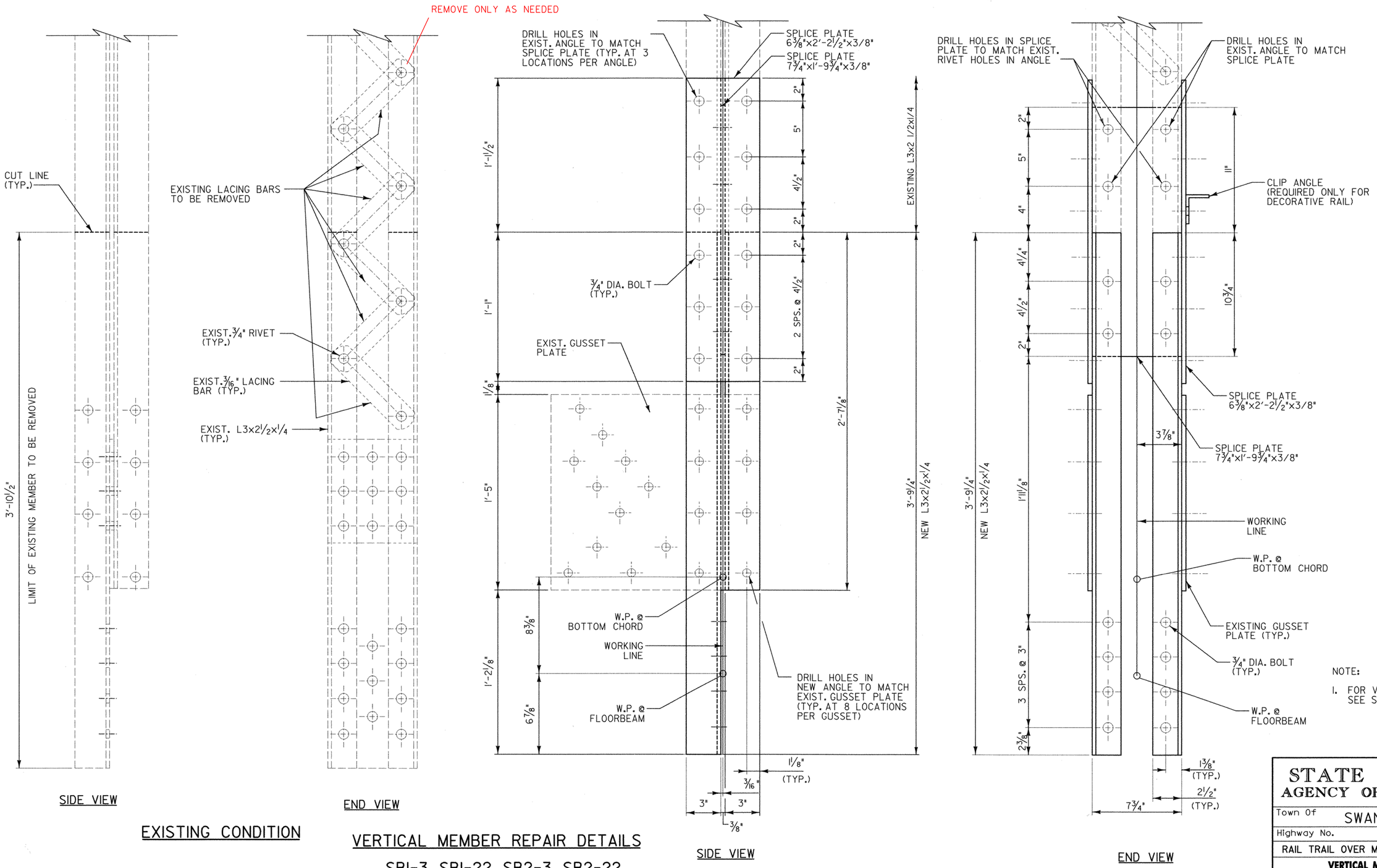
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

VERTICAL MEMBER REPAIR DETAILS 3

Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024VR3.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 35 of 63

URS URS CORPORATION



EXISTING CONDITION

REPAIR DETAIL

NOTE:

1. FOR VERTICAL MEMBER REPAIR NOTES, SEE SHEET 33.

VERTICAL MEMBER REPAIR DETAILS

SBI-3, SBI-22, SB2-3, SB2-22
NBI-3, NBI-22, NB2-3, NB2-22

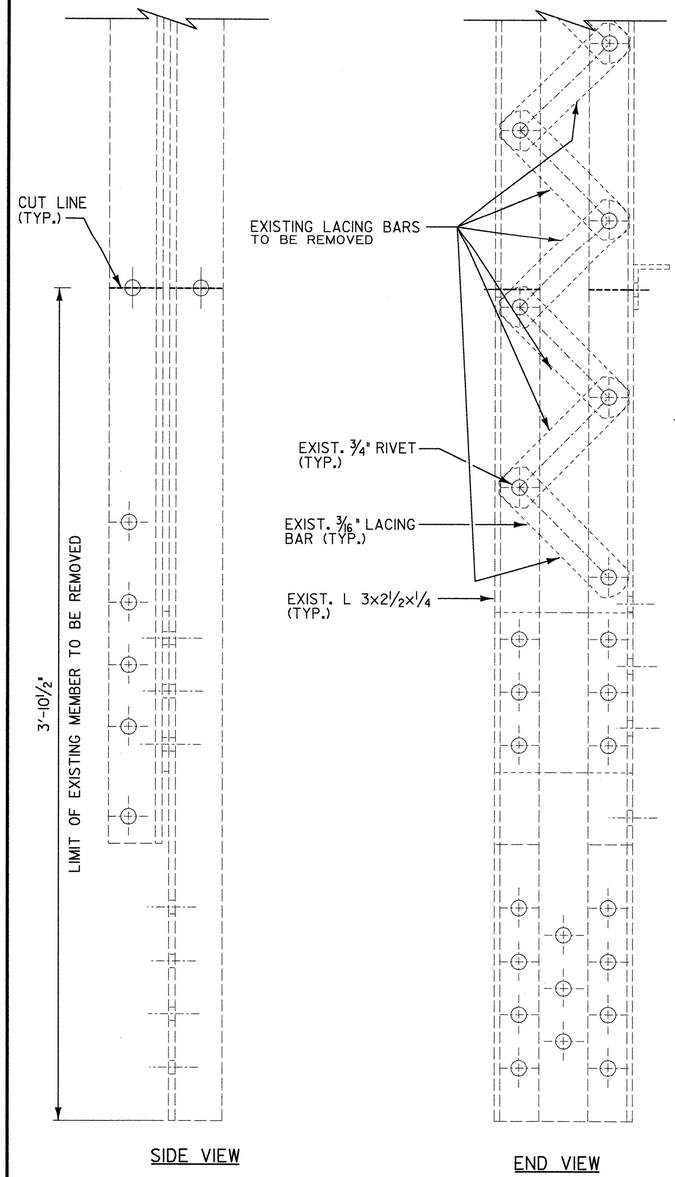
SCALE 3" = 1'-0

1 9 6 3 0 1

URS URS CORPORATION

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
VERTICAL MEMBER REPAIR DETAILS 4	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024VR4.dgn	1/31/2008
Bridge Sheet No. BR3	Sheet 36 of 63



SIDE VIEW

END VIEW

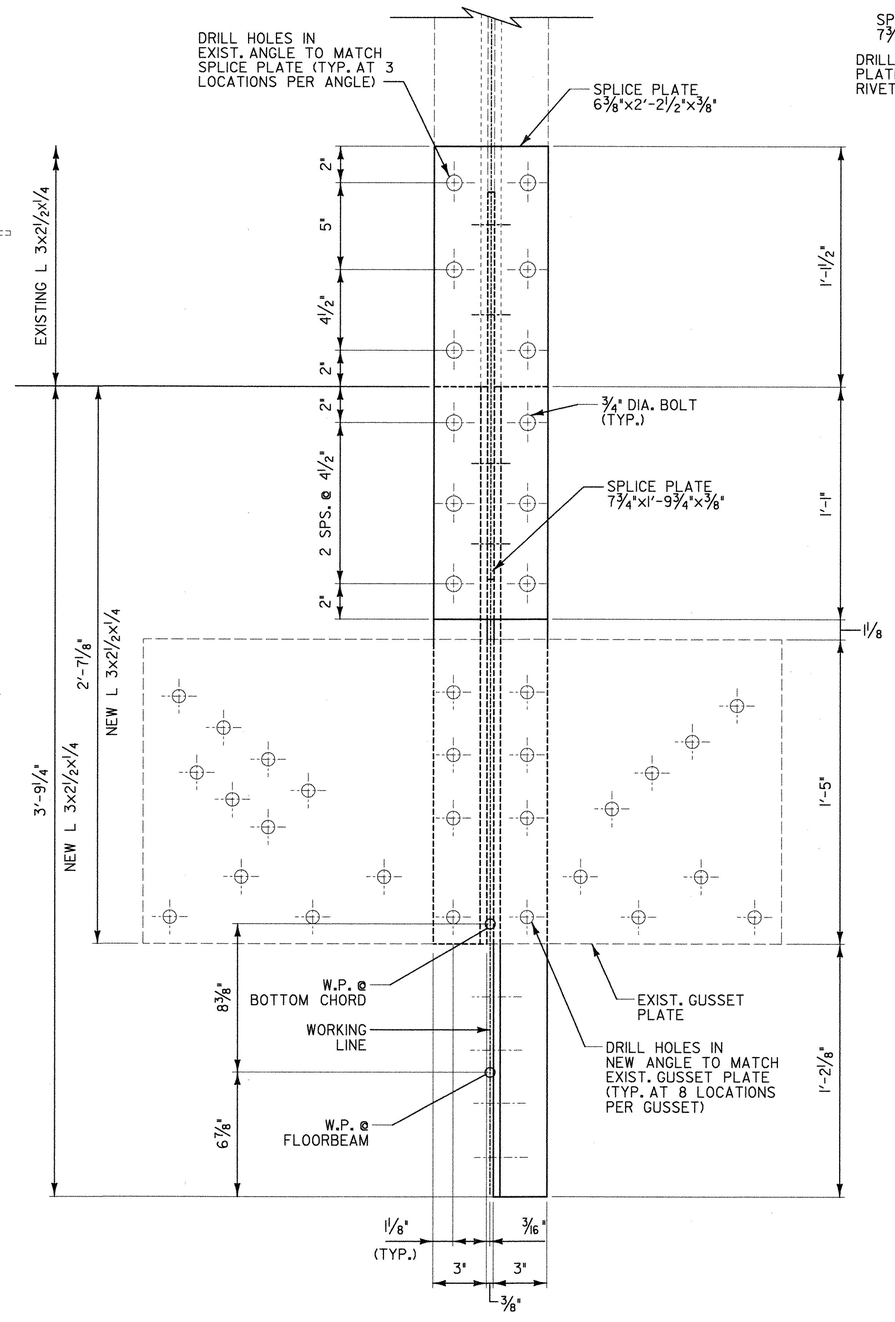
EXISTING CONDITION

VERTICAL MEMBER REPAIR DETAILS

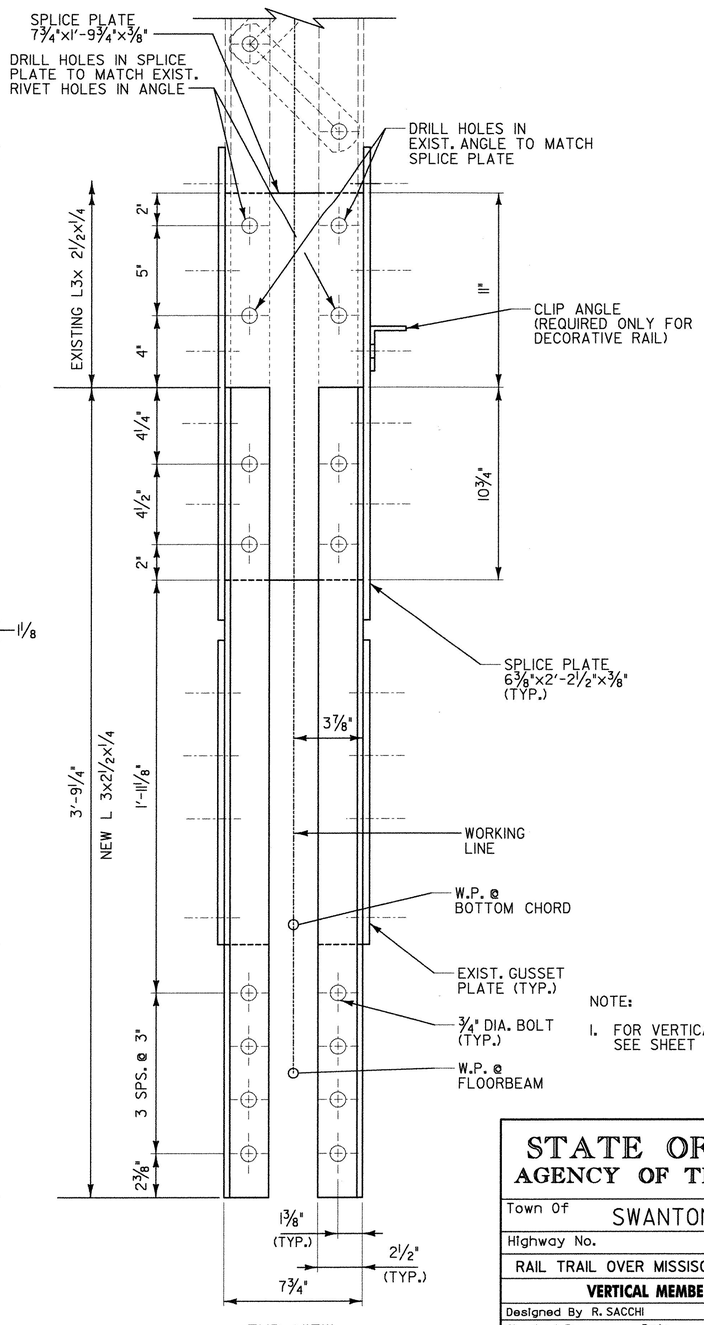
SBI-9, SBI-I6, SB2-9, SB2-I6
NBI-9, NBI-I6, NB2-9, NB2-I6

SCALE 3" = I'-0

I 9 6 3 0 I



SIDE VIEW



END VIEW

REPAIR DETAIL

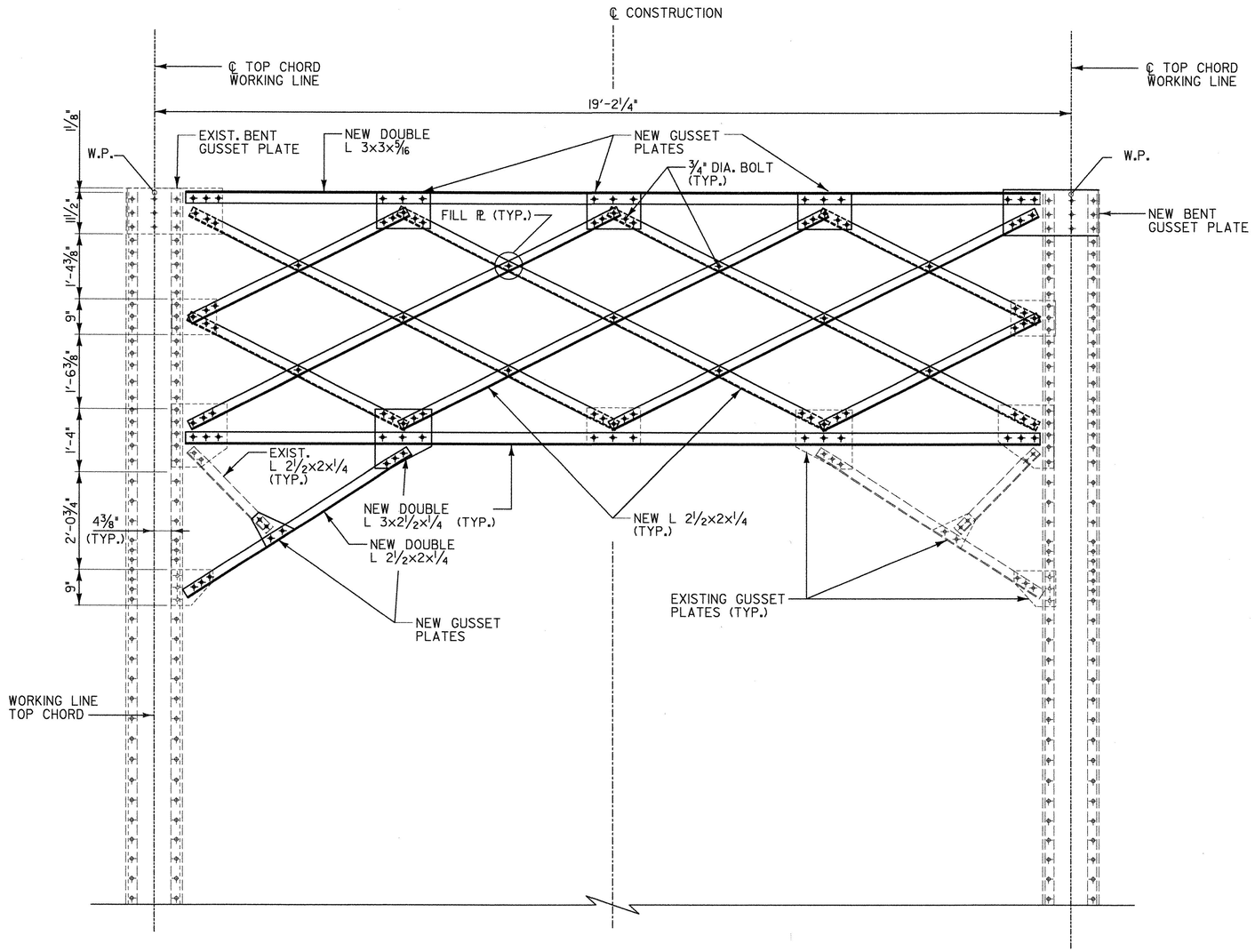
NOTE:

I. FOR VERTICAL MEMBER REPAIR NOTES, SEE SHEET 33.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. I8
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
VERTICAL MEMBER REPAIR DETAILS 5	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date I/23/08	Bridge Design Supervisor R. SACCHI Date I/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024VR5.dgn	I/30/2008
Bridge Sheet No. BR3	Sheet 37 of 63

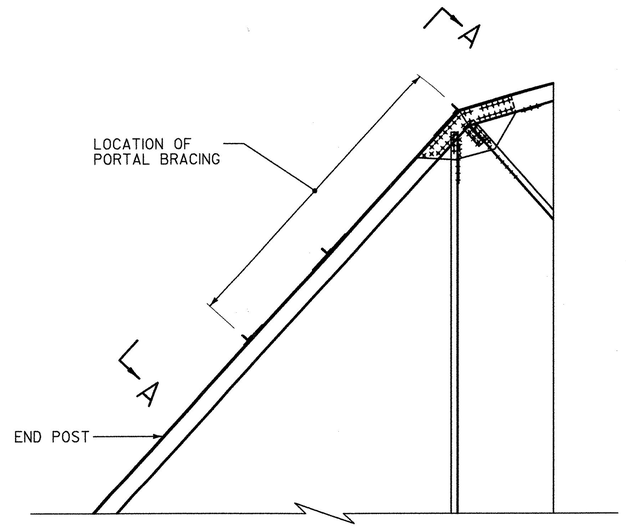
URS URS CORPORATION



VIEW A-A
PORTAL BRACING
MEMBER PB 2-1

SCALE ¾" = 1'-0

1 0 1 2



PORTAL SECTION

SCALE ⅜" = 1'-0

1 0 1 2 3 4

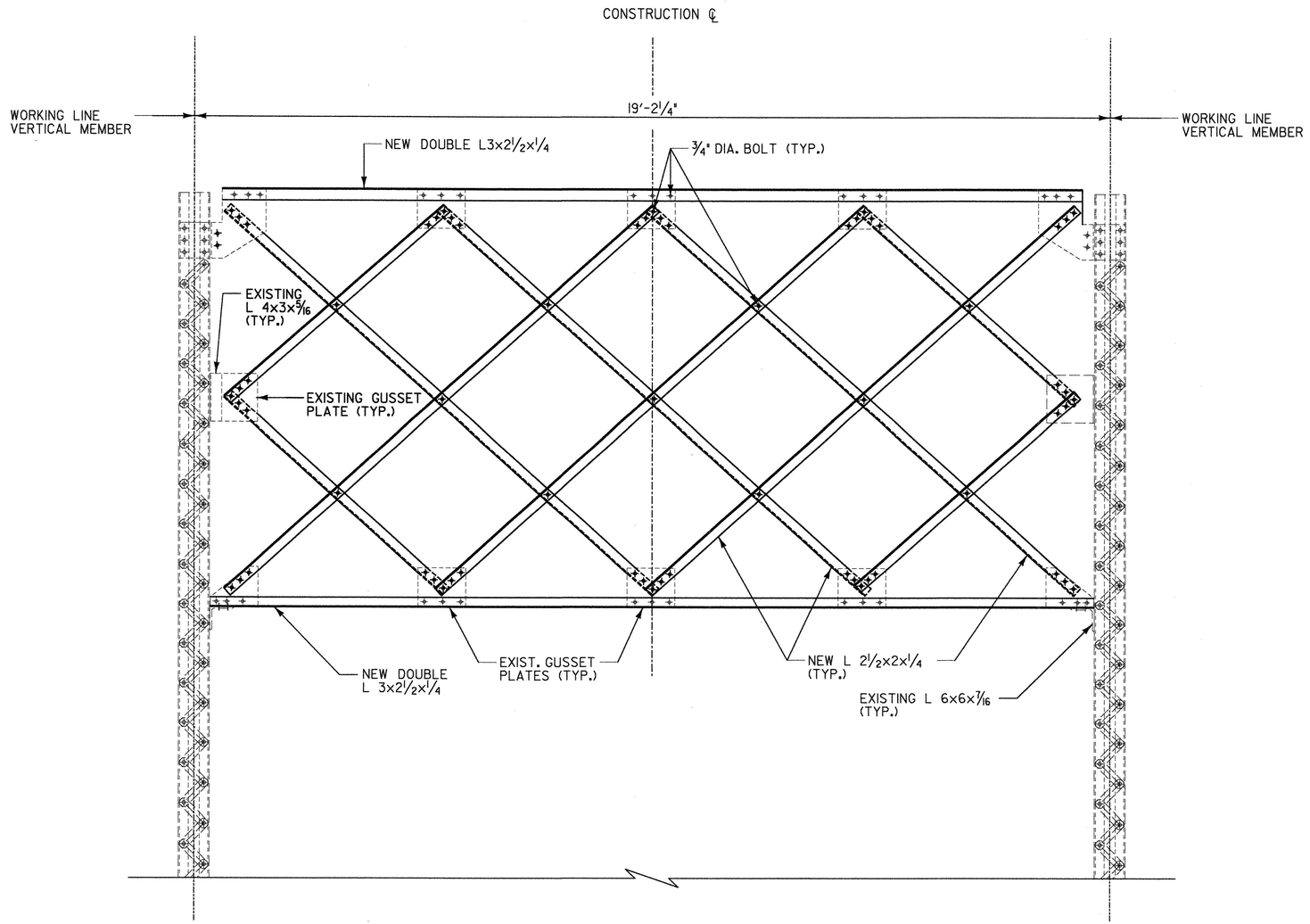
NOTES:

1. THE DIMENSIONS GIVEN FOR LOCATIONS OF GUSSET AND OTHER CONNECTION PLATES ARE FOR REFERENCE ONLY AND ARE BASED ON LIMITED FIELD MEASUREMENTS. THE CONTRACTOR SHALL FIELD-VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF ANY NEW STEEL.
2. STEEL ANGLES AND GUSSET PLATES THAT ARE NOT DAMAGED SHALL BE RE-USED.
3. HOLES SHALL BE FIELD DRILLED AS NECESSARY TO MATCH EXISTING HOLES AND TO PROVIDE THE CORRECT GEOMETRY FOR THE PORTAL BRACING AND THE ASSEMBLED TRUSS.
4. FOR STRUCTURAL STEEL AND HARDWARE REQUIREMENTS, SEE SHEET 20.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
	Log Sta. _____
Highway No.	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
PORTAL BRACING REPAIR DETAILS	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024PBI.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 38 of 63

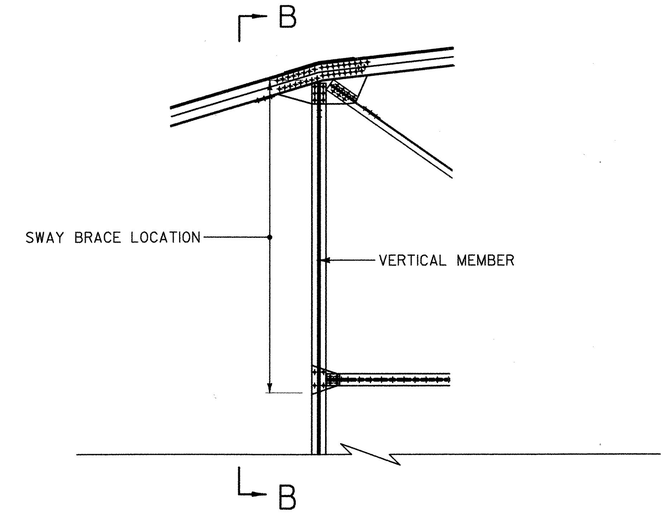
URS URS CORPORATION



VIEW B-B
SWAY BRACING
MEMBER SWB2-AA

SCALE 3/4" = 1'-0

1 0 1 2



SWAY BRACING SECTION

SCALE 3/8" = 1'-0

1 0 1 2 3 4

NOTES:

1. THE DIMENSIONS GIVEN FOR LOCATIONS OF GUSSET AND OTHER CONNECTION PLATES ARE FOR REFERENCE ONLY AND ARE BASED ON LIMITED FIELD MEASUREMENTS. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF ANY NEW STEEL.
2. STEEL ANGLES AND GUSSET PLATES THAT ARE NOT DAMAGED SHALL BE REUSED.
3. HOLES SHALL BE FIELD DRILLED AS NECESSARY TO MATCH EXISTING HOLES AND TO PROVIDE THE CORRECT GEOMETRY FOR THE SWAY BRACING AND THE ASSEMBLED TRUSS.
4. FOR STRUCTURAL STEEL AND HARDWARE REQUIREMENTS, SEE SHEET 20.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
SWAY BRACING REPAIR DETAILS	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024SBRI.dgn	1/30/2008
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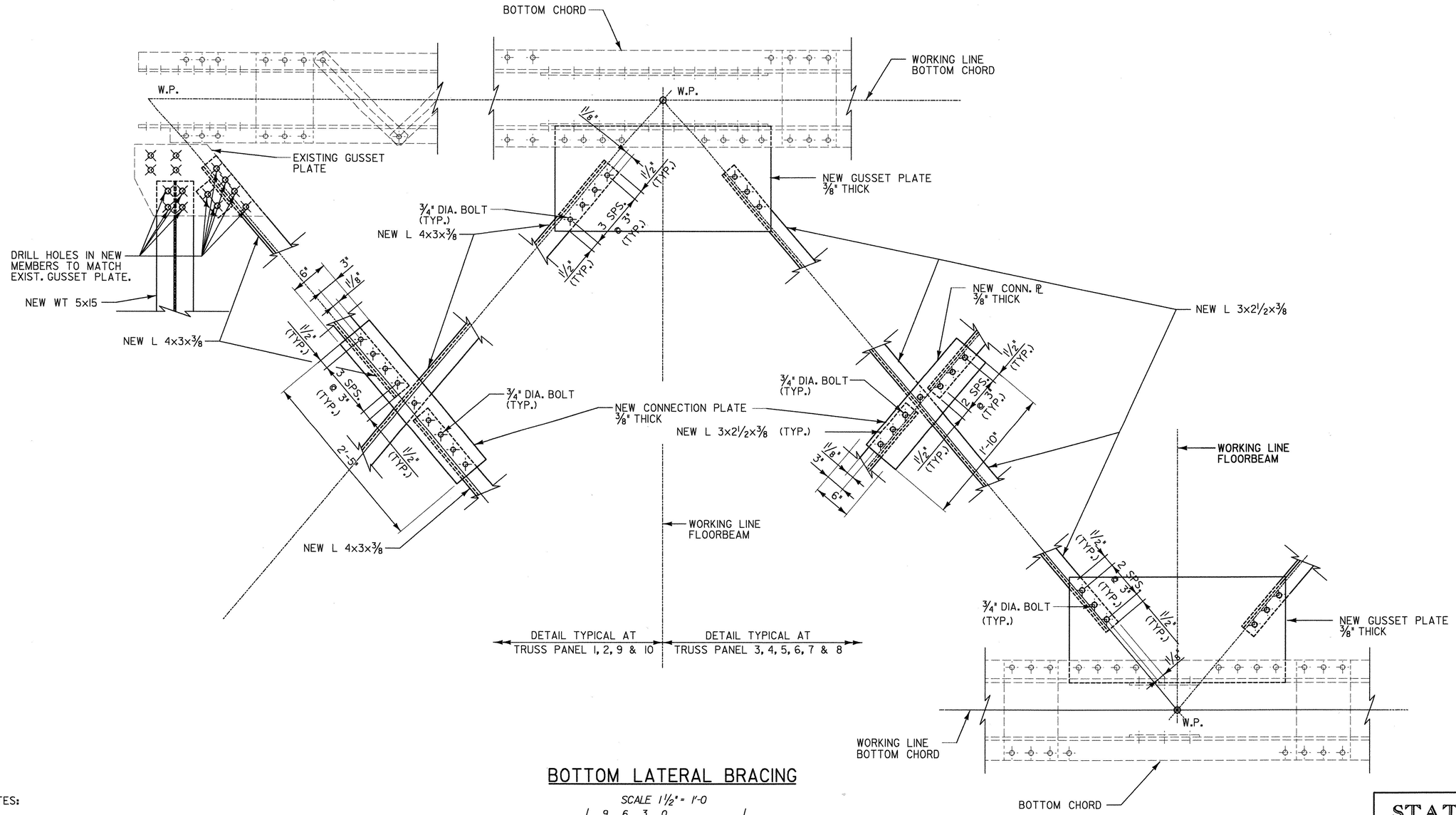
URS URS CORPORATION



BOTTOM LATERAL BRACING

SCALE 1 1/2" = 1'-0

1 9 6 3 0 1

NOTES:

1. THE DIMENSIONS GIVEN FOR LOCATIONS OF GUSSET AND OTHER CONNECTION PLATES ARE FOR REFERENCE ONLY AND ARE BASED ON LIMITED FIELD MEASUREMENTS. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL GUSSET, CONNECTION AND SPLICE PLATES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER FIT AND ASSEMBLY OF ALL WORK.
3. DUE TO UNCERTAINTY OF THE FLOOR BEAM SPACING, HOLES SHALL BE FIELD DRILLED AS NECESSARY TO PROVIDE THE CORRECT GEOMETRY FOR THE LATERAL BRACING ANGLES.
4. ALL BOTTOM LATERAL BRACING IS TO BE REPLACED.
5. FOR STRUCTURAL STEEL AND HARDWARE REQUIREMENTS, SEE SHEET 20.
6. FOR DETAILS OF GUSSET PLATES, SEE SHEET 44.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

BOTTOM LATERAL BRACING DETAILS

Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024MD3.dgn	1/30/2008
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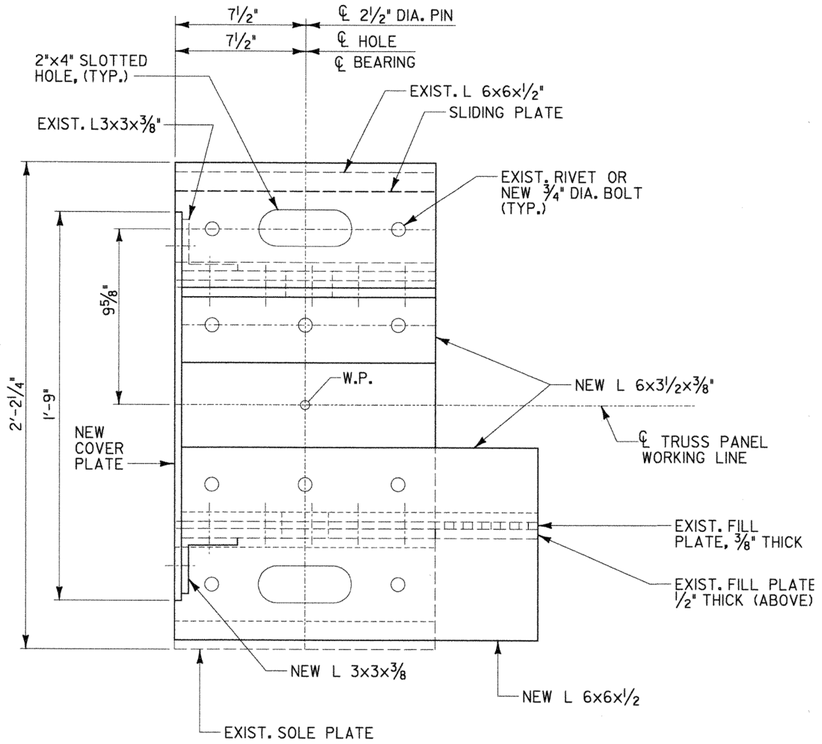
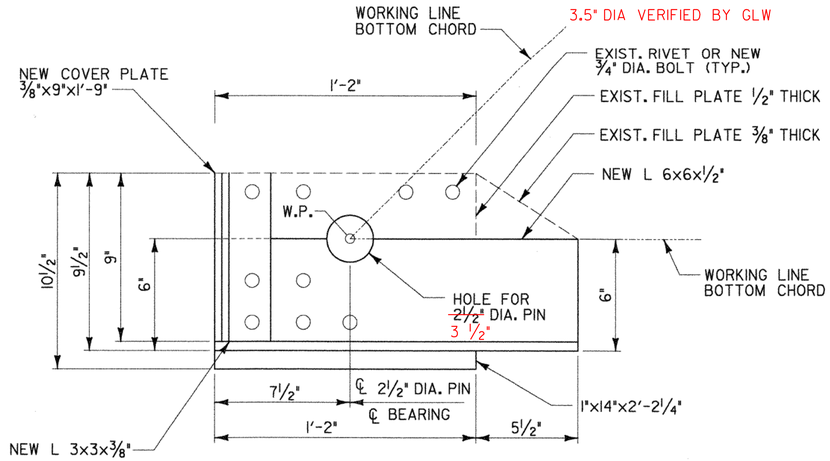
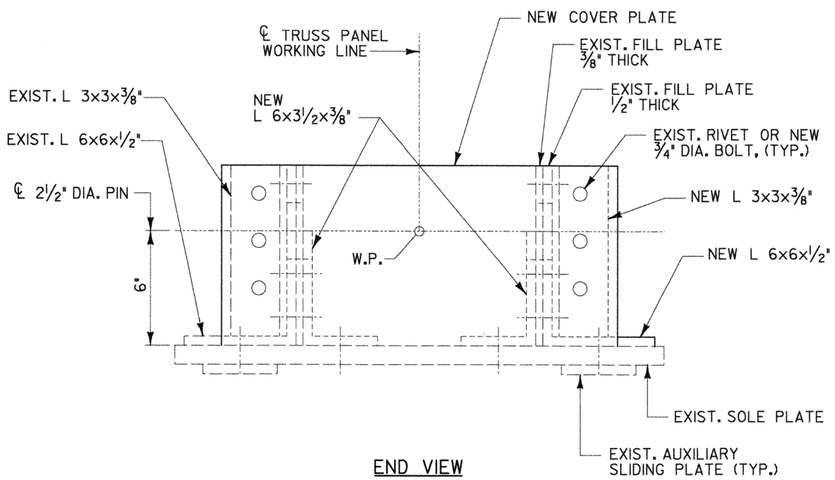
URS URS CORPORATION



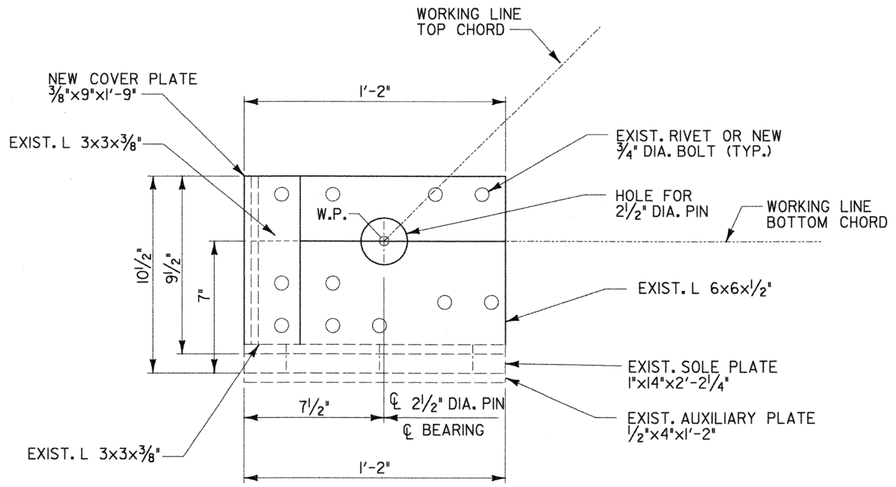
PLAN VIEW



INNER BEARING ELEVATION



END VIEW



OUTER BEARING ELEVATION

NOTES:

1. THE DIMENSIONS AND SIZES SHOWN FOR THE VARIOUS PLATES AND ANGLES THAT COMPRISE THE BEARING SHOES ARE FOR REFERENCE ONLY AND ARE BASED ON LIMITED FIELD MEASUREMENTS. THE CONTRACTOR SHALL FIELD VERIFY ALL PLATE THICKNESSES AND ANGLE SIZES PRIOR TO FABRICATION OF ANY NEW PARTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER FIT AND ASSEMBLY OF ALL WORK.
3. IF EXISTING PLATES AND ANGLES ARE INTENDED TO BE RE-USED, THEY SHALL BE FULLY INSPECTED AFTER BLAST CLEANING. IF ANY AREA OF THE ANGLE OR PLATE EXHIBITS MORE CROSS SECTIONAL LOSS THAN AN AVERAGE OF 1/16" ACROSS THE ENTIRE CROSS SECTION OR IF PITTING EXTENDS DEEPER THAN ONE HALF THE MEMBER THICKNESS AS DETERMINED BY THE ENGINEER, THE PROJECT MANAGER SHALL BE NOTIFIED FOR FURTHER DIRECTION.
4. IN ORDER TO REHABILITATE THE BEARING SHOES, THE 2½" DIAMETER PIN MUST BE REMOVED. AND REPLACED. THE NEW PINS AND HARDWARE SHALL BE PAID FOR UNDER THE ITEM 506.60 'STRUCTURAL STEEL", THE CONTRACTOR SHALL REPLACE THE PIN IN KIND WITH NUTS, WASHERS AND ANY OTHER HARDWARE.
5. ON THE RE-ASSEMBLED SHOES, THE PIN SHALL ALLOW THE FREE MOVEMENT OF THE SHOES. UPON INSPECTION OF THE EXISTING SHOES, THE CONTACT AREA ON THE SHOES WHERE THE PIN SITS SHALL ALSO BE EXAMINED FOR PITTING OR LOSS. IF THE PITTING OR LOSS IS DEEMED EXCESSIVE TO PREVENT THE FREE MOVEMENT OF THE SHOES WHEN REASSEMBLED, THE ANGLE OR PLATE SHALL BE REPLACED. REPLACING THE PIN WITH A LARGER DIAMETER AND REAMING THE HOLES IN THE SHOES LARGER, MAY ALSO BE AN ACCEPTABLE REPAIR METHODOLOGY WITH THE APPROVAL OF THE ENGINEER.
6. FOR STRUCTURAL STEEL AND HARDWARE REQUIREMENTS, SEE SHEET 20.

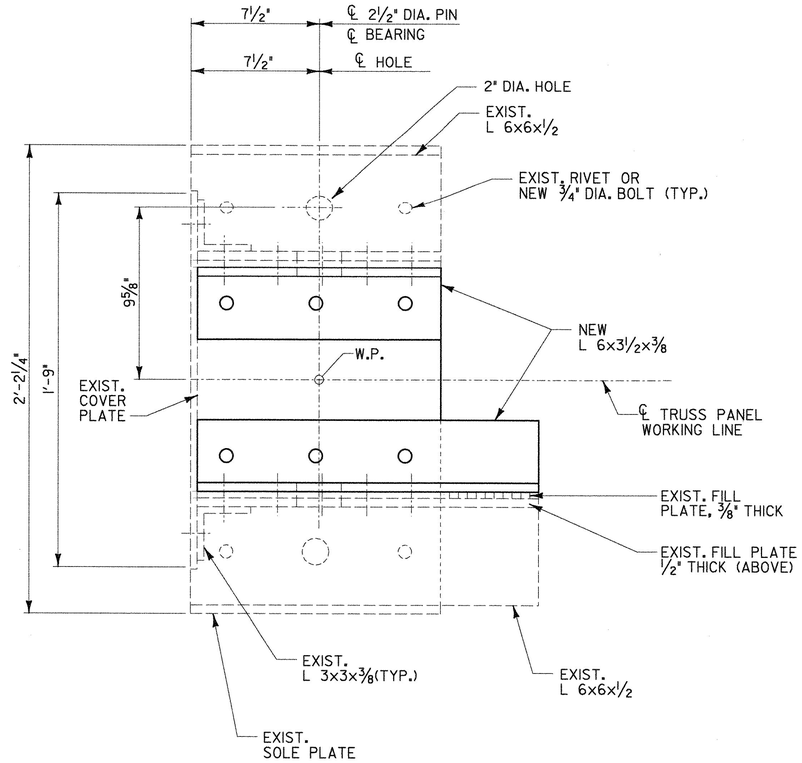
EXPANSION BEARING SHOE

SCALE 3" = 1'-0

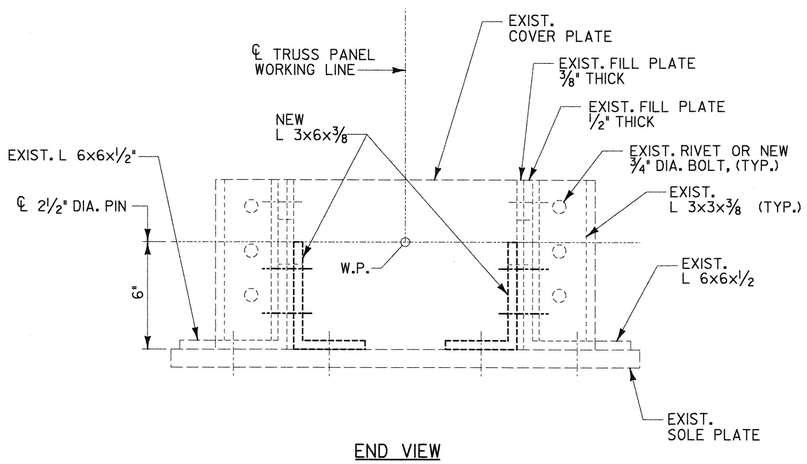
1 9 6 3 0 1

STATE OF VERMONT
AGENCY OF TRANSPORTATION

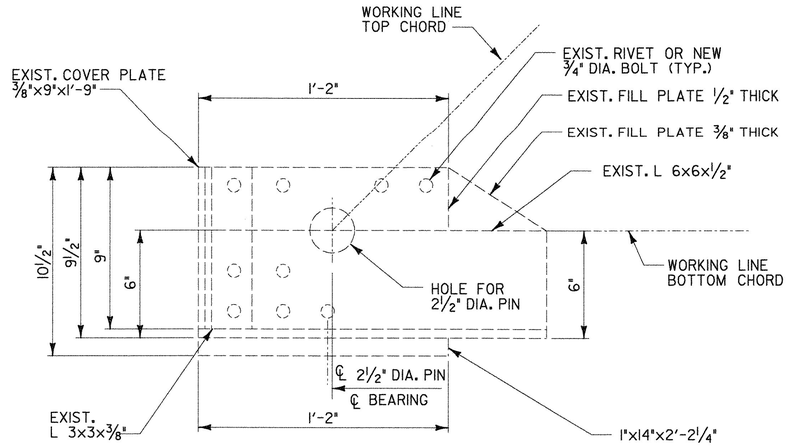
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
EXPANSION BEARING SHOE REPAIR DETAILS	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024BRG3.dgn	1/30/2008
URS URS CORPORATION	Bridge Sheet No. BR3 Sheet 41 of 63



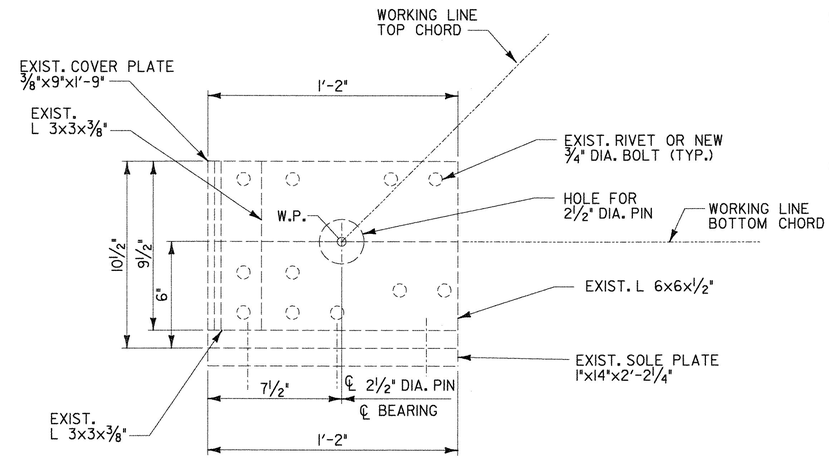
PLAN VIEW



END VIEW



INNER BEARING ELEVATION



OUTER BEARING ELEVATION

NOTES:

1. THE DIMENSIONS AND SIZES SHOWN FOR THE VARIOUS PLATES AND ANGLES THAT COMPRISE THE BEARING SHOES ARE FOR REFERENCE ONLY AND ARE BASED ON LIMITED FIELD MEASUREMENTS. THE CONTRACTOR SHALL FIELD VERIFY ALL PLATE THICKNESSES AND ANGLE SIZES PRIOR TO FABRICATION OF ANY NEW PARTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER FIT AND ASSEMBLY OF ALL WORK.
3. IF EXISTING PLATES AND ANGLES ARE INTENDED TO BE RE-USED, THEY SHALL BE FULLY INSPECTED AFTER BLAST CLEANING. IF ANY AREA OF THE ANGLE OR PLATE EXHIBITS MORE CROSS SECTIONAL LOSS THAN AN AVERAGE OF 1/16" ACROSS THE ENTIRE CROSS SECTION OR IF PITTING EXTENDS DEEPER THAN ONE HALF THE MEMBER THICKNESS AS DETERMINED BY THE ENGINEER, THE PROJECT MANAGER SHALL BE NOTIFIED FOR FURTHER DIRECTION.
4. IN ORDER TO REHABILITATE THE BEARING SHOES, THE 2½" DIAMETER PIN MUST BE REMOVED. AND REPLACED. THE NEW PINS AND HARDWARE SHALL BE PAID FOR UNDER THE ITEM 506.60 "STRUCTURAL STEEL", THE CONTRACTOR SHALL REPLACE THE PIN IN KIND WITH NUTS, WASHERS AND ANY OTHER HARDWARE.
5. ON THE RE-ASSEMBLED SHOES, THE PIN SHALL ALLOW THE FREE MOVEMENT OF THE SHOES. UPON INSPECTION OF THE EXISTING SHOES, THE CONTACT AREA ON THE SHOES WHERE THE PIN SITS SHALL ALSO BE EXAMINED FOR PITTING OR LOSS. IF THE PITTING OR LOSS IS DEEMED EXCESSIVE TO PREVENT THE FREE MOVEMENT OF THE SHOES WHEN REASSEMBLED, THE ANGLE OR PLATE SHALL BE REPLACED. REPLACING THE PIN WITH A LARGER DIAMETER AND REAMING THE HOLES IN THE SHOES LARGER, MAY ALSO BE AN ACCEPTABLE REPAIR METHODOLOGY WITH THE APPROVAL OF THE ENGINEER.
6. FOR STRUCTURAL STEEL AND HARDWARE REQUIREMENTS, SEE SHEET 20.

FIXED BEARING SHOE

SCALE 3" = 1'-0

1 9 6 3 0 1

STATE OF VERMONT
AGENCY OF TRANSPORTATION

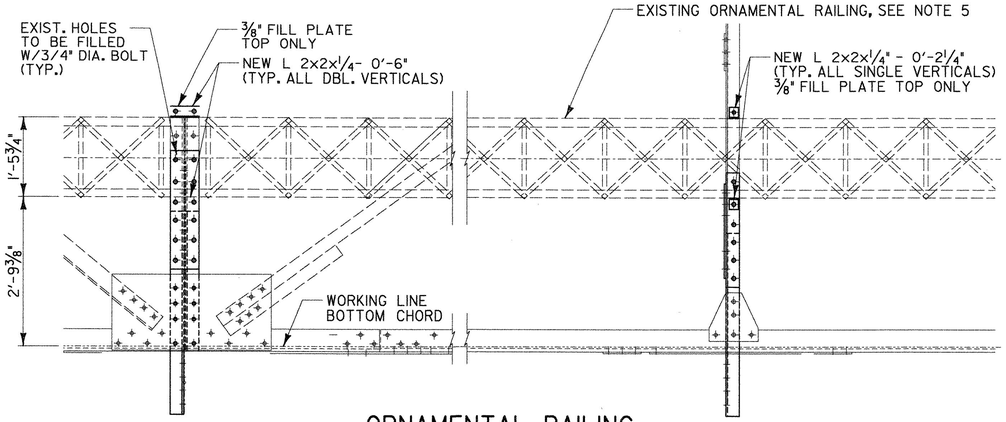
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

FIXED BEARING SHOE REPAIR DETAILS

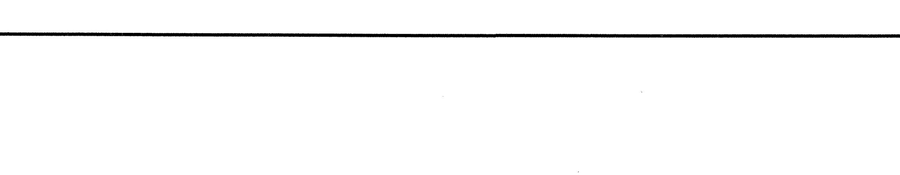
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024BRG4.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 42 of 63

URS URS CORPORATION



ORNAMENTAL RAILING

SCALE 3/4" = 1'-0



NEW CONDITION

MINIMUM ACCEPTABLE CONDITION FOR ANY RIVET

PROVIDED THERE IS NO ADDITIONAL DAMAGE AS DESCRIBED IN NOTE 1 OR NOTE 2

MINIMUM ACCEPTABLE CONDITION 20% OF CONNECTION RIVETS

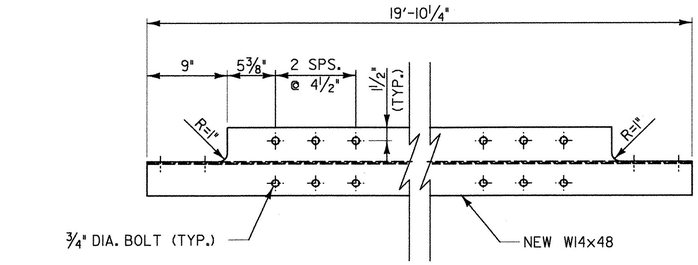
PROVIDED THERE IS NO PRYING ACTION TO SEPARATE CONNECTED PARTS EITHER FROM APPLIED STRESS OR CREVICE CORROSION. IF THIS PERCENTAGE IS EXCEEDED, THE RIVETS OVER THE PRESCRIBED PERCENTAGE SHALL BE REPLACED WITH HIGH STRENGTH BOLTS.

NOTES:

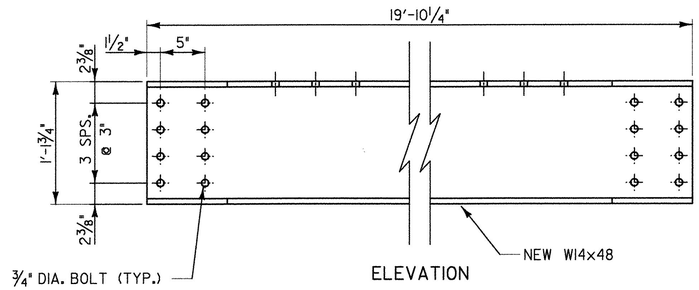
1. ADDITIONAL LOSS IN THE FORM OF PITTS OR GOUGES IN THIS AREA THAT REDUCES THE SECTION BELOW THE LIMITS SHOWN SHALL BE CAUSE FOR REMOVAL OF THE RIVETS.
2. IF CREVICE CORROSION IS PRESENT AT ANY LOCATION THE RIVETS ADJACENT TO THAT AREA SHALL BE REMOVED AND REPLACED WITH H.S. BOLTS AFTER CLEANING BETWEEN THE PARTS.
3. WHEN SELECTING RIVETS FOR REPLACEMENT TO MEET THE CONDITIONS DESCRIBED ABOVE, THE WORST RIVETS IN ANY GROUP OR CONNECTIONS SHALL BE SELECTED FOR REPLACEMENT.
4. PAYMENT FOR RIVET REPLACEMENT WILL BE MADE UNDER CONTRACT ITEM 900.620 SPECIAL PROVISION (THROUGH TRUSS RIVET REPLACEMENT).

EXISTING RIVET REPLACEMENT CRITERIA

NOT TO SCALE



TOP VIEW



ELEVATION

FLOOR BEAM (WI4x48)

SCALE 1 1/2" = 1'-0

NOTES:

1. THE DIMENSIONS SHOWN ARE FOR REFERENCE ONLY AND ARE BASED ON LIMITED FIELD MEASUREMENTS. THE CONTRACTOR SHALL FIELD VERIFY THE LENGTHS OF FLOOR BEAMS PRIOR TO FABRICATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER FIT AND ASSEMBLY OF ALL WORK.
3. ALL FLOOR BEAMS ARE TO BE REPLACED.
4. FOR STRUCTURAL STEEL AND HARDWARE REQUIREMENTS, SEE SHEET 20.
5. RAILING SHALL BE REVIEWED IN THE FIELD. ANY PIECES DEEMED SALVAGABLE BY THE ENGINEER SHALL BE INCORPORATED INTO THE RE-ASSEMBLED TRUSSES. THE COST OF SALVAGING THE RAILING SHALL BE PAID FOR UNDER ITEM 900.645 SPECIAL PROVISION (INCORPORATING SALVAGED BRIDGE CONPONENTS.)

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

MISCELLANEOUS STEEL REPAIR DETAILS

Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(1)
I.G.C. Info. ZD024MD2.dgn	1/30/2008
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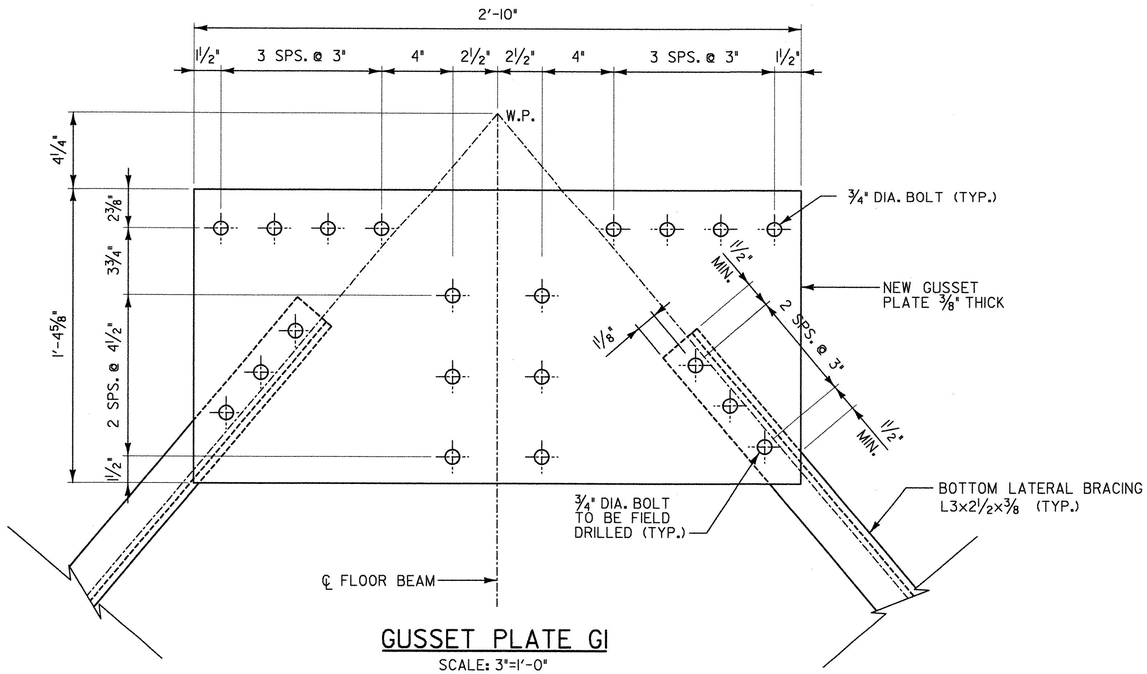
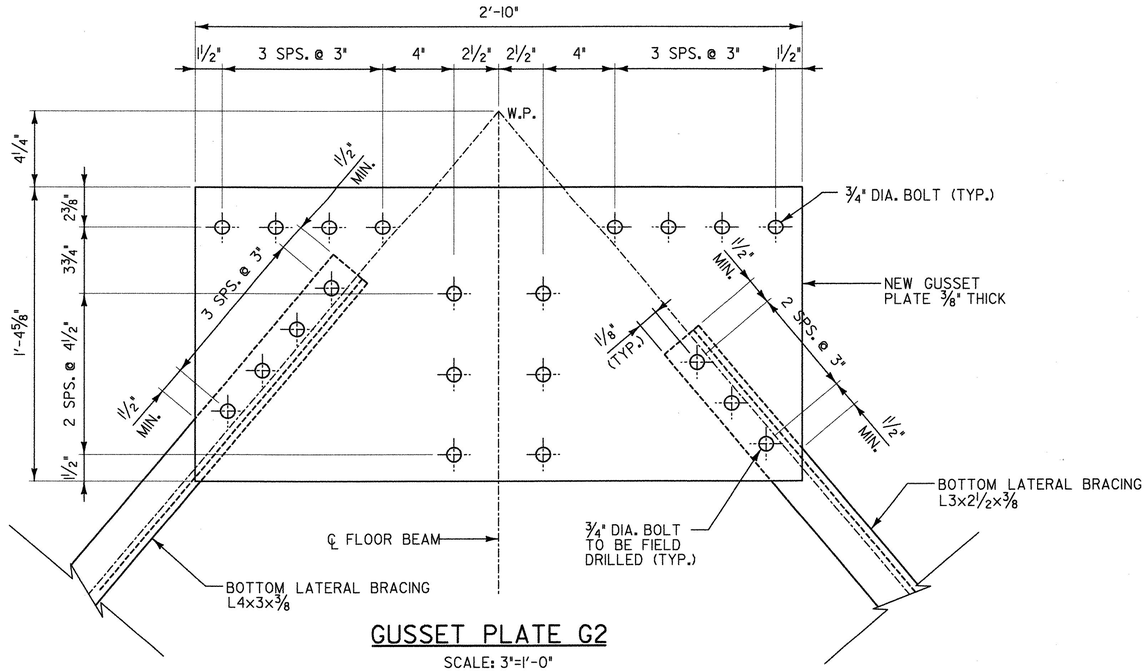
URS URS CORPORATION



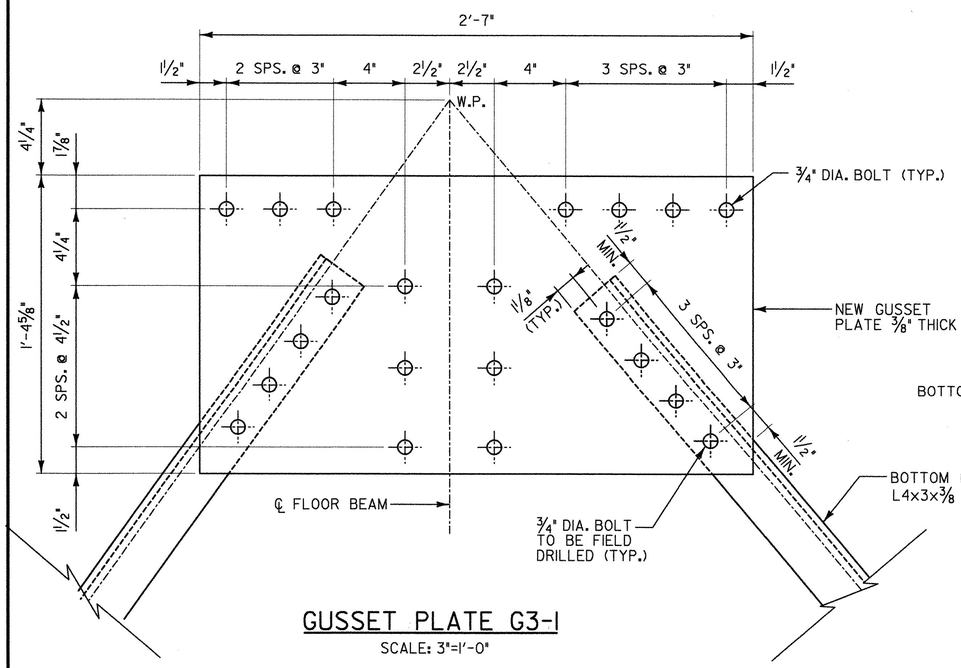
GUSSET PLATE G1

SCALE: 3"=1'-0"



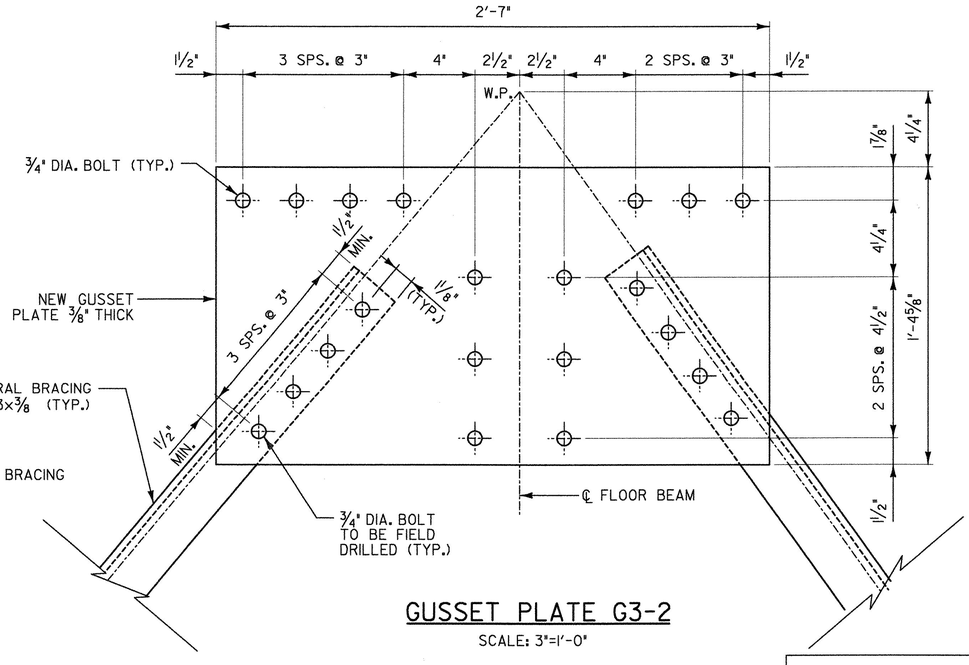
GUSSET PLATE G2

SCALE: 3"=1'-0"



GUSSET PLATE G3-1

SCALE: 3"=1'-0"



GUSSET PLATE G3-2

SCALE: 3"=1'-0"

NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY/FIELD DRILL LOCATIONS OF HOLES FOR BOTTOM LATERAL BRACING BASED ON ACTUAL SPACING OF FLOOR BEAMS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER FIT AND ASSEMBLY OF ALL WORK.
3. FOR STRUCTURAL STEEL AND HARDWARE REQUIREMENTS, SEE SHEET 20.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

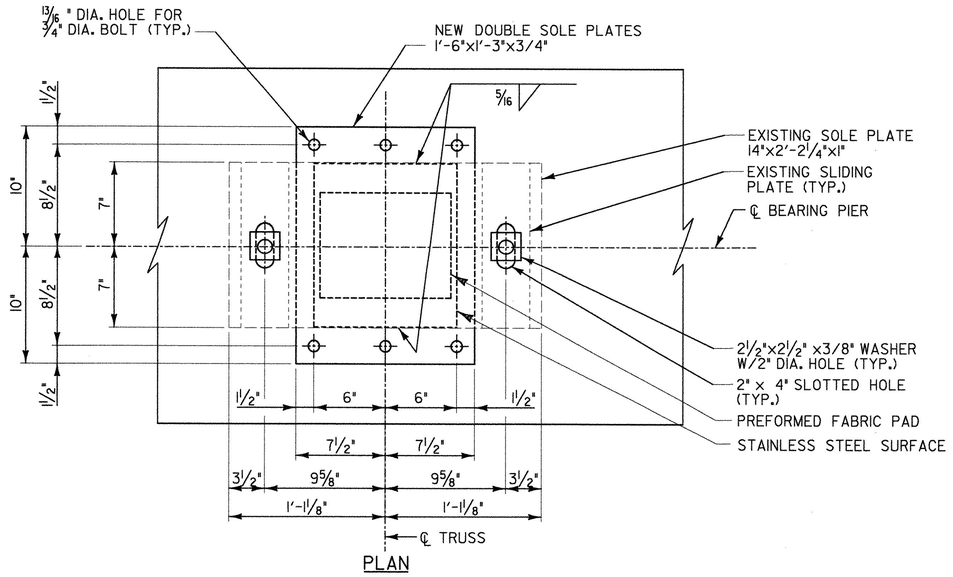
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

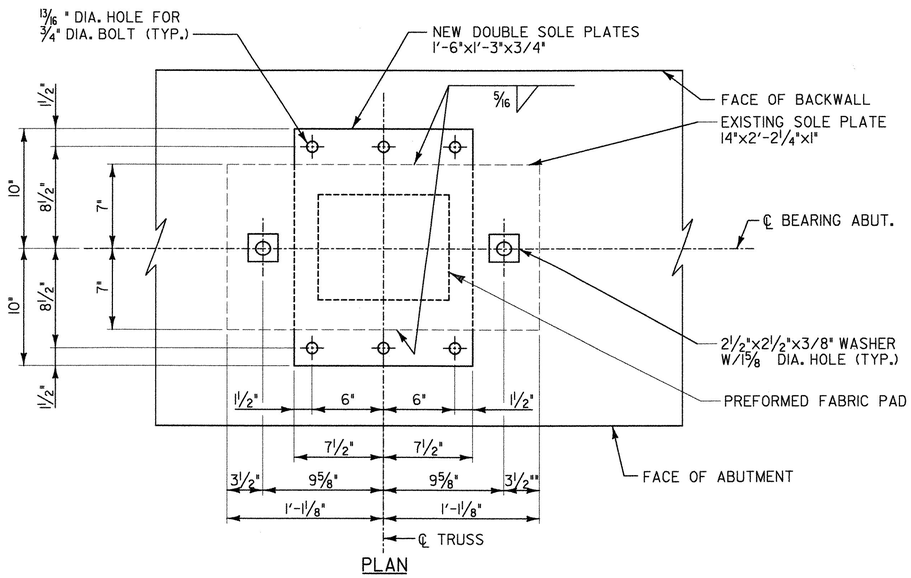
GUSSET PLATE STEEL REPAIR DETAILS

Designed By R. SACCHI	Drawn By R. DEWEY
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024GPI.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 44 of 63

URS URS CORPORATION



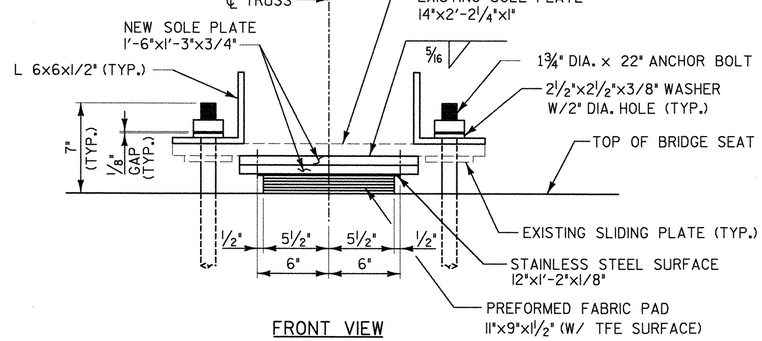
PLAN



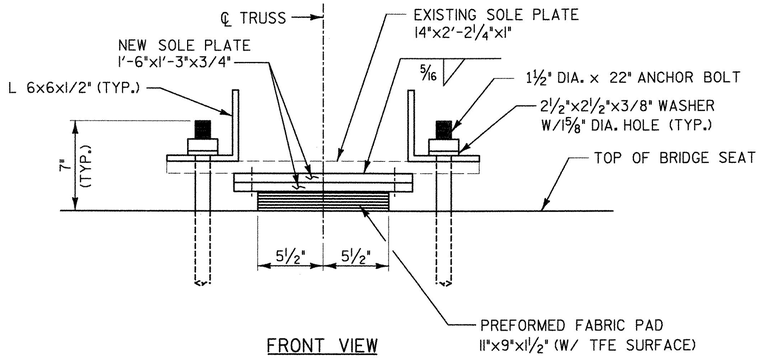
PLAN

NOTES:

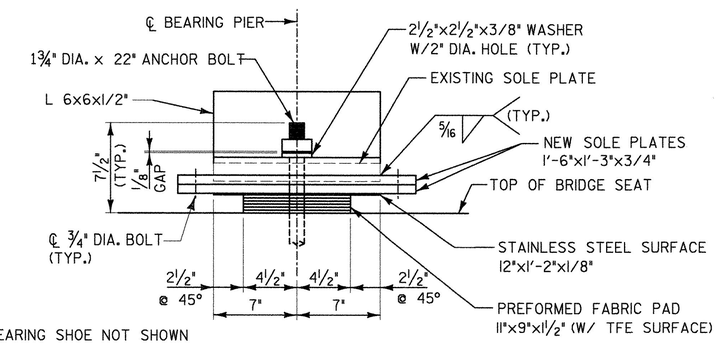
1. PAYMENT FOR BEARINGS WILL BE MADE UNDER CONTRACT ITEM 531.10.
2. SEE SHEETS 41 & 42 FOR BEARING SHOE REPAIR DETAILS.



FRONT VIEW



FRONT VIEW

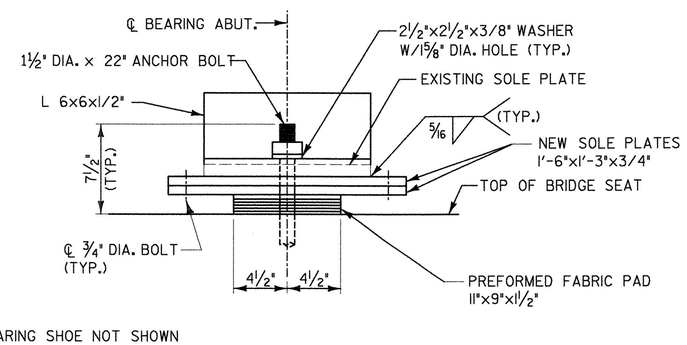


NOTE: BEARING SHOE NOT SHOWN

SIDE ELEVATION

BEARING DETAILS

(EXPANSION)



NOTE: BEARING SHOE NOT SHOWN

SIDE ELEVATION

BEARING DETAILS

(FIXED)

SCALE 2" = 1'-0

1 9 6 3 0 1

STATE OF VERMONT
AGENCY OF TRANSPORTATION

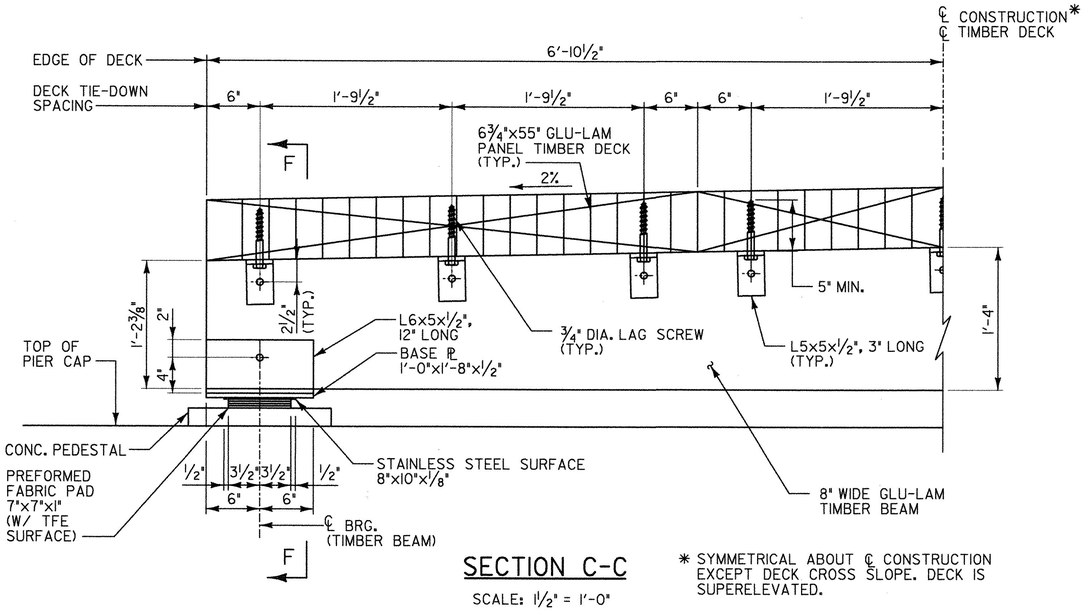
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

BEARING DETAILS (TRUSS)

Designed By R. SACCHI/H. BUI	Drawn By A. ZAWILINSKI
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
L.G.C. Info. ZD024BRG2.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 45 of 63

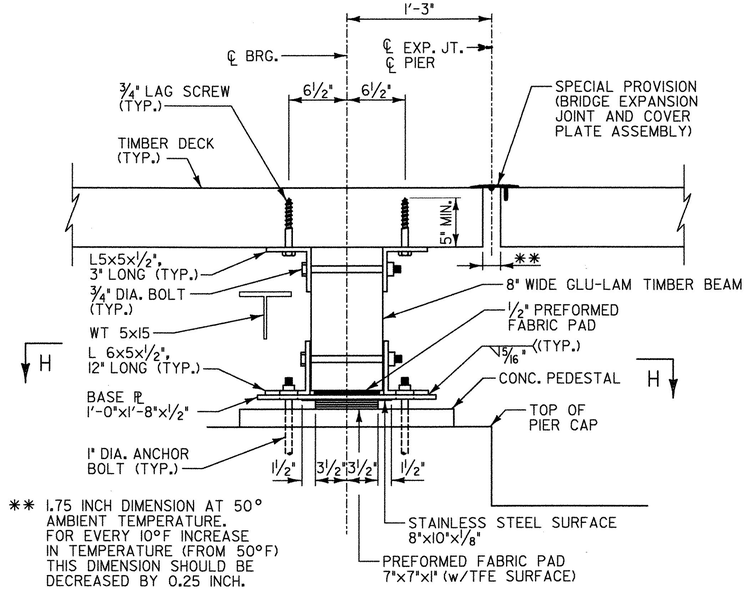
URS URS CORPORATION



SECTION C-C

SCALE: 1½" = 1'-0"

* SYMMETRICAL ABOUT ℄ CONSTRUCTION EXCEPT DECK CROSS SLOPE. DECK IS SUPERELEVATED.



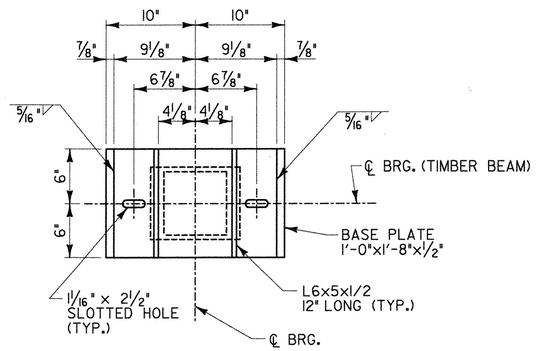
** 1.75 INCH DIMENSION AT 50° AMBIENT TEMPERATURE. FOR EVERY 10°F INCREASE IN TEMPERATURE (FROM 50°F) THIS DIMENSION SHOULD BE DECREASED BY 0.25 INCH.

SECTION F-F

SCALE: 1½" = 1'-0"

NOTE:

1. PAYMENT FOR BEARINGS WILL BE MADE UNDER CONTRACT ITEM 531.10.



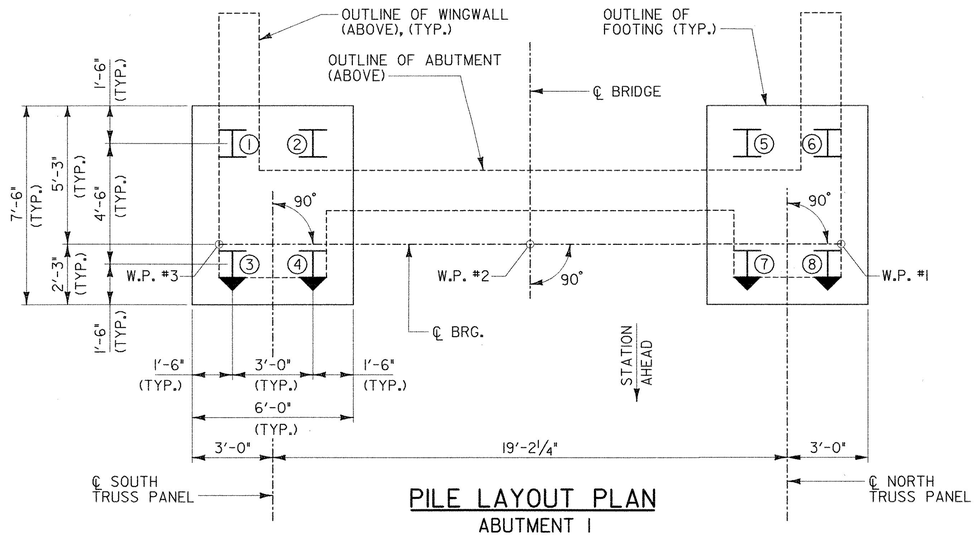
VIEW H-H

SCALE: 1½" = 1'-0"

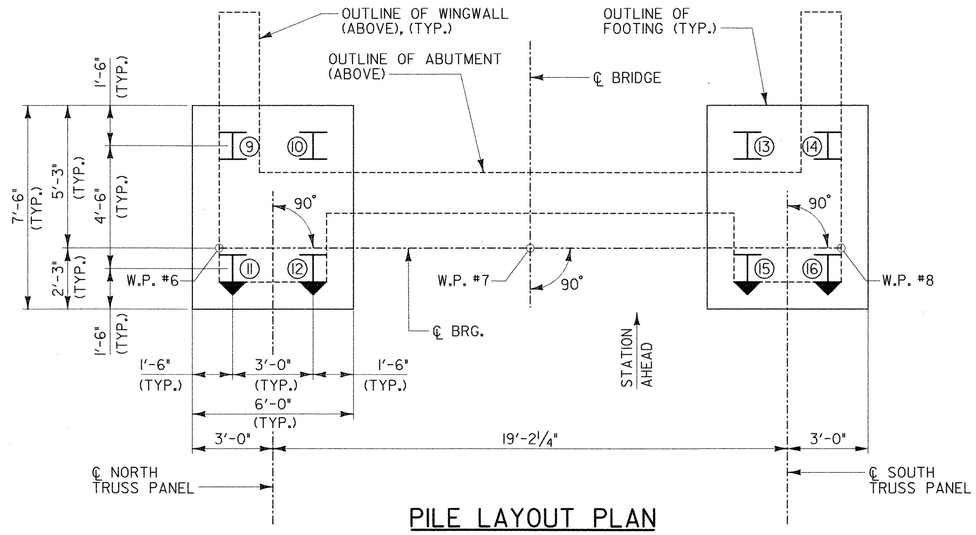
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
	Log Sta. _____
Highway No.	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
BEARING DETAILS (DECK SUPPORT BEAM)	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024PIER3.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 46 of 63

URS URS CORPORATION



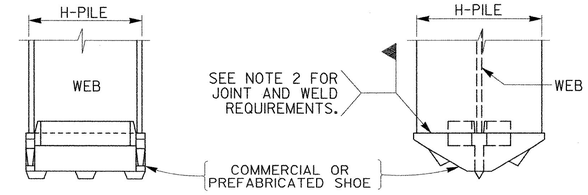
PILE LAYOUT PLAN
ABUTMENT 1
SCALE ⅜" = 1'-0"



PILE LAYOUT PLAN
ABUTMENT 2
SCALE ⅜" = 1'-0"

PILE LEGEND

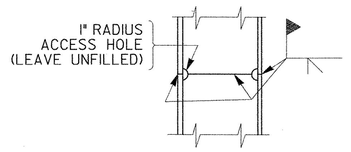
- HP 10 x 42 VERTICAL PILE
- HP 10 x 42 BATTERED PILE (1 ON 6 BATTER)
- (#) PILE NUMBER



NOTES:

1. COMMERCIAL OR PREFABRICATED SHOES SHALL BE APPROVED BY THE ENGINEER.
2. THE SHOE WELD JOINT DESIGN SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION, AND SECTION 506 OF THE STANDARD SPECIFICATIONS.

STEEL PILE SHOES
NOT TO SCALE



SPLICE FOR STEEL PILE
NOT TO SCALE

NOTES:

1. ALL PILES SHALL BE HP 10 x 42 CONFORMING TO THE REQUIREMENTS SECTION 505.
2. ALL PILES SHALL BE DRIVEN TO REFUSAL OR BEDROCK. PILE REFUSAL CRITERIA = 15 BLOWS PER INCH, SUBJECT TO DYNAMIC MONITORING RESULTS.
3. MAXIMUM DESIGN PILE LOAD = 30 KIPS (GROUP I). ULTIMATE PILE CAPACITY = 135 KIPS (INCLUDES 2.25 F.S.).
4. ESTIMATED PILE LENGTH:
   ABUTMENT NO. 1 = 40 FEET PER PILE
   ABUTMENT NO. 2 = 40 FEET PER PILE
5. PRIOR TO DRIVING PILES, THE CONTRACTOR SHALL SUBMIT PILE DRIVING EQUIPMENT, METHOD AND SEQUENCE FOR APPROVAL.
6. FOR WORKING POINT COORDINATES, SEE SHEET 21.
7. A DYNAMIC PILE LOADING TEST WILL BE PERFORMED ON PILES 1 & 9.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

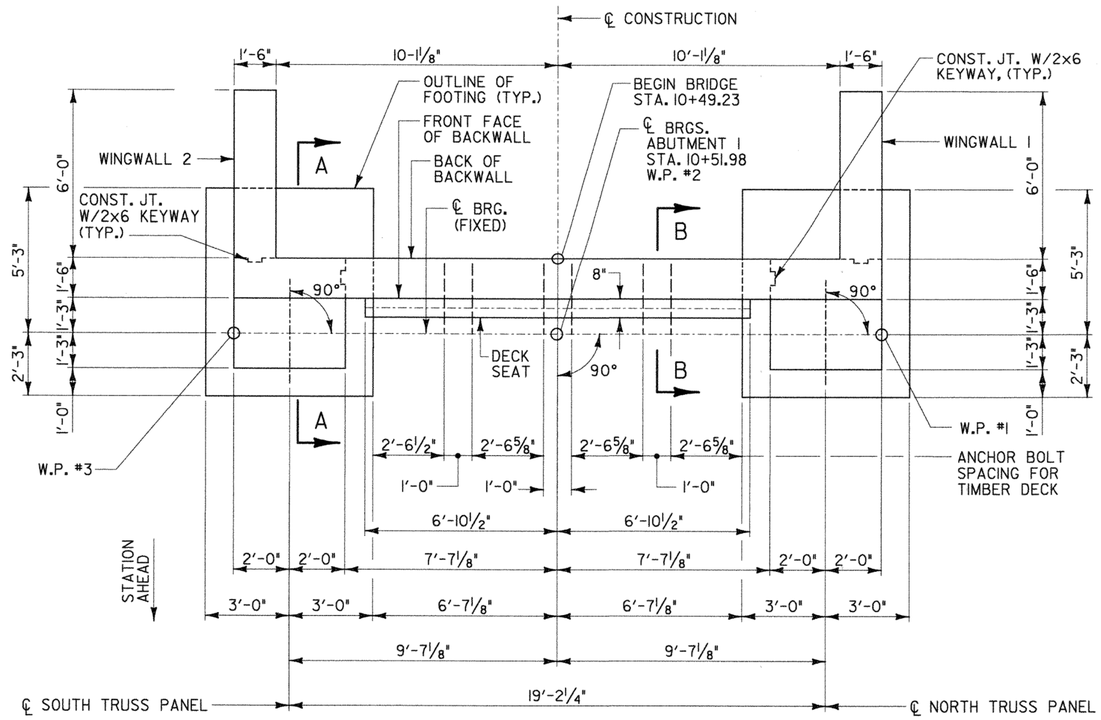
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Std. _____

RAIL TRAIL OVER MISSISQUOI RIVER

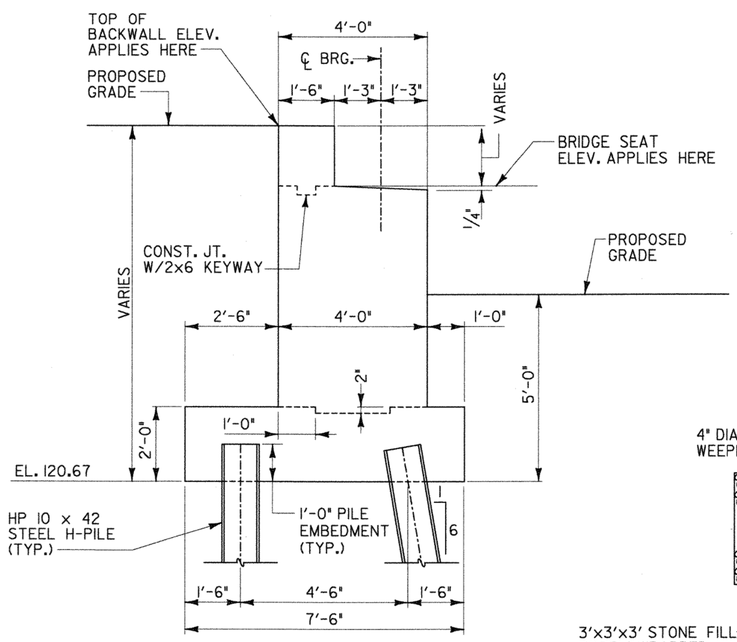
PILE LAYOUT PLAN AND DETAILS

Designed By R. SACCHI	Drawn By R. ROSS/A. ZAWILINSKI
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024FLI.dgn	2/13/2008
Bridge Sheet No. BR3	Sheet 47 of 63

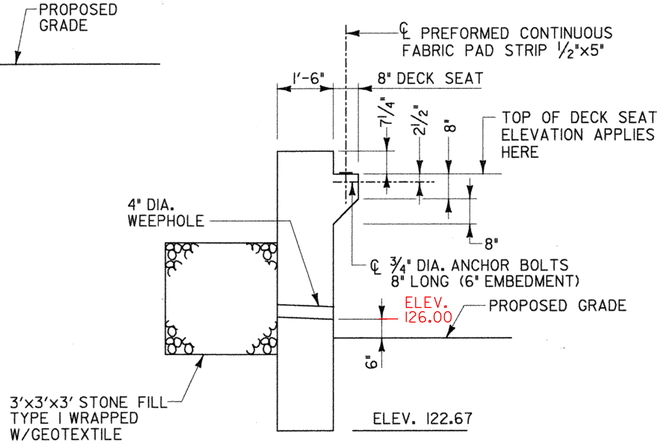
URS URS CORPORATION



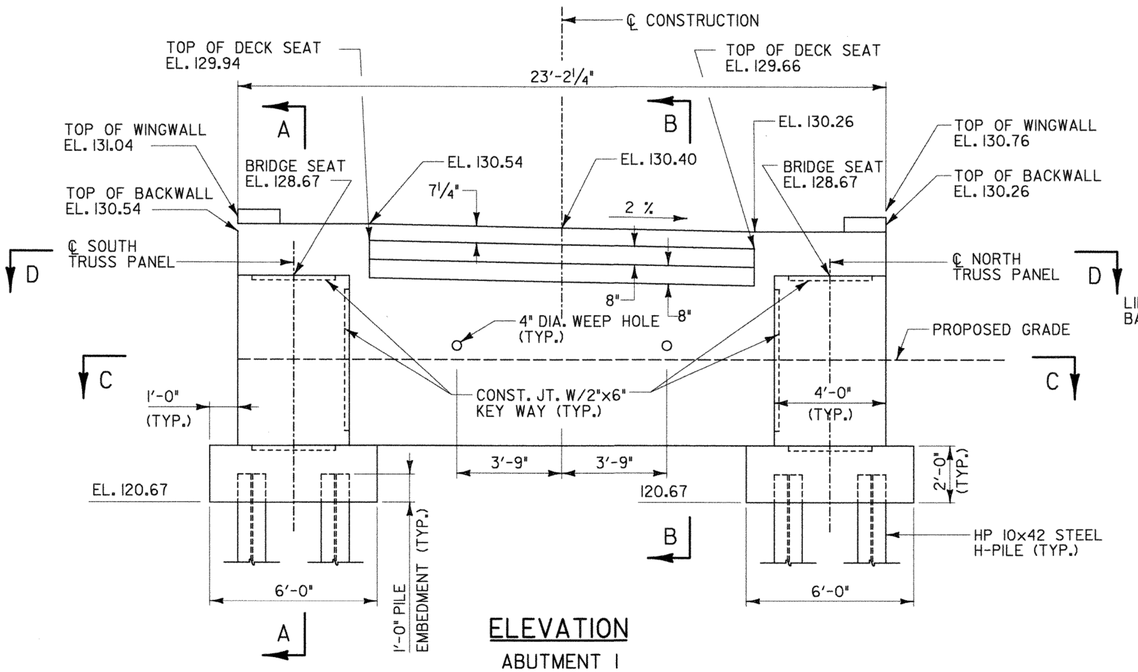
PLAN
ABUTMENT 1
SCALE ⅜" = 1'-0"



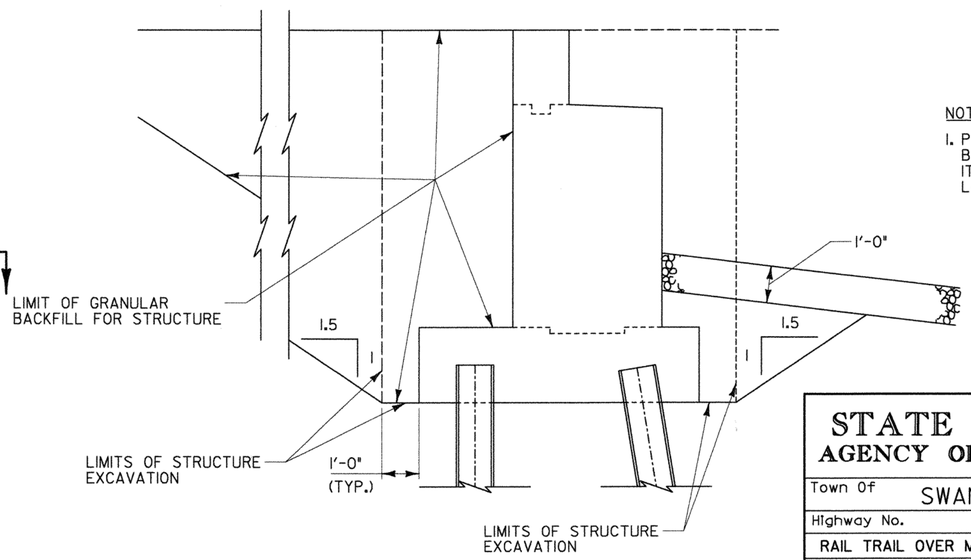
SECTION A-A
ABUTMENT 1
SCALE ½"=1'-0"



SECTION B-B
ABUTMENT 1
SCALE: ½"=1'-0"



ELEVATION
ABUTMENT 1
SCALE ⅜" = 1'-0"



LIMIT OF EXCAVATION & BACKFILL
ABUTMENT 1 AND ABUTMENT 2
SCALE 1/2 "=1'-0"

NOTE:

1. PREFORMED FABRIC PAD WILL BE PAID FOR UNDER CONTRACT ITEM 522.40 "STRUCTURAL GLUED LAMINATED TIMBER".

STATE OF VERMONT
AGENCY OF TRANSPORTATION

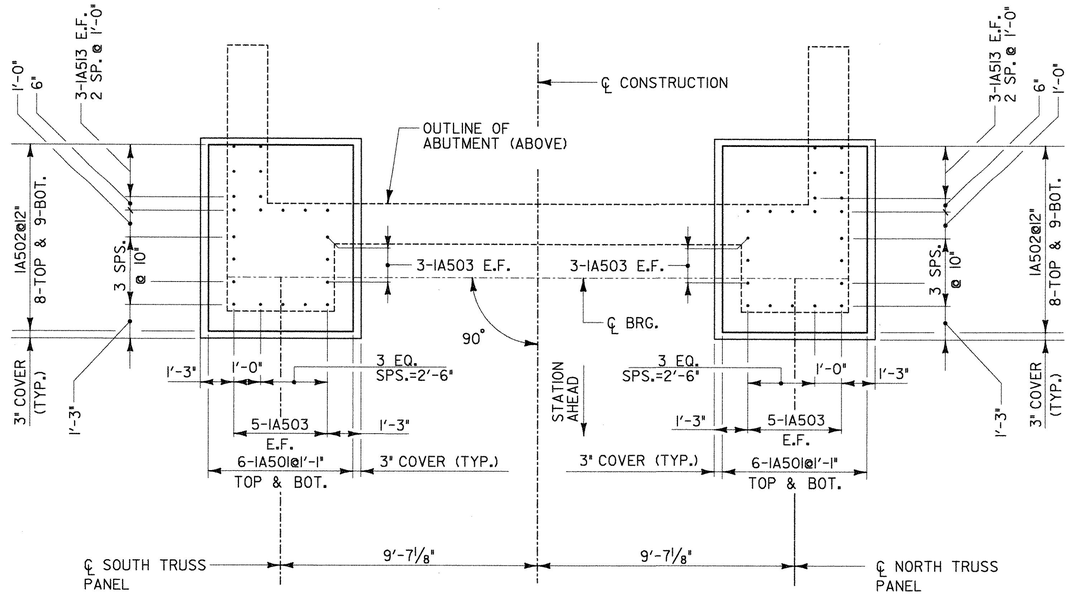
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

ABUTMENT 1 - PLAN, ELEVATION AND SECTIONS

Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024ABUTI-I.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 48 of 63

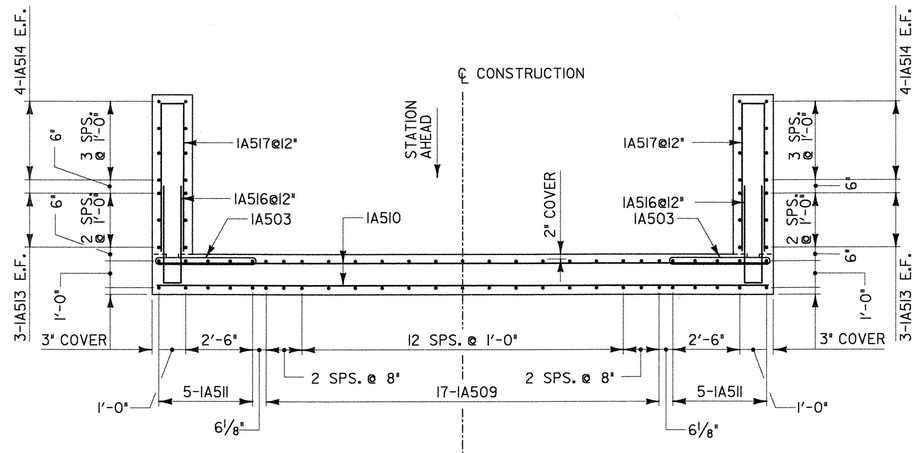
URS URS CORPORATION



FOOTING REINFORCEMENT LAYOUT

ABUTMENT I

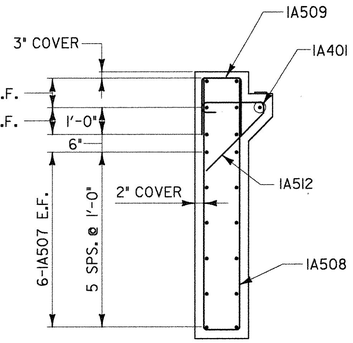
SCALE 3/8" = 1'-0"



SECTION D-D

ABUTMENT I

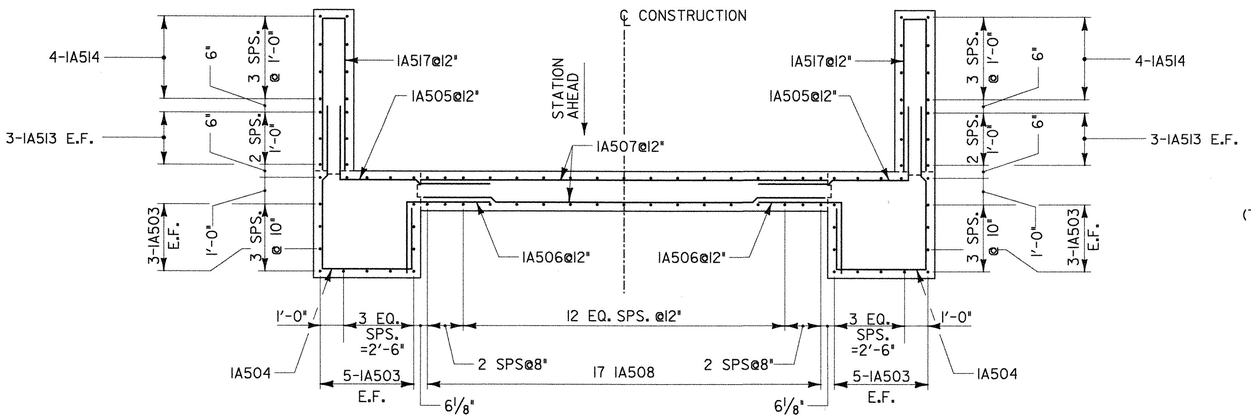
SCALE 3/8" = 1'-0"



SECTION B-B

ABUTMENT I

SCALE 1/2 " = 1'-0"

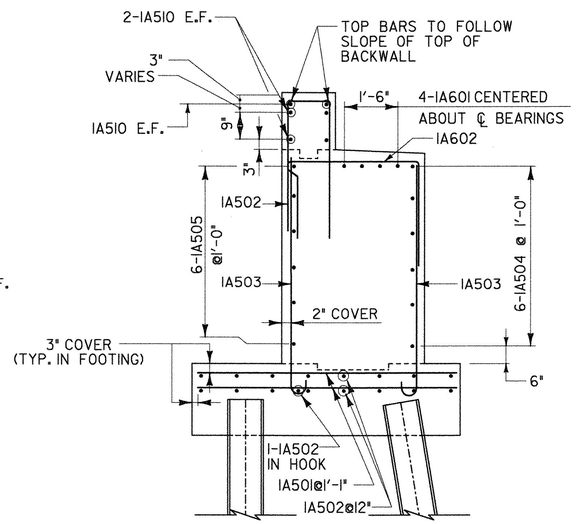


SECTION C-C

ABUTMENT I

SCALE 3/8" = 1'-0"

NOTE:
1. SEE SHEET 50 FOR BRIDGE SEAT REINFORCEMENT DETAIL



SECTION A-A

ABUTMENT I

SCALE 1/2 " = 1'-0"

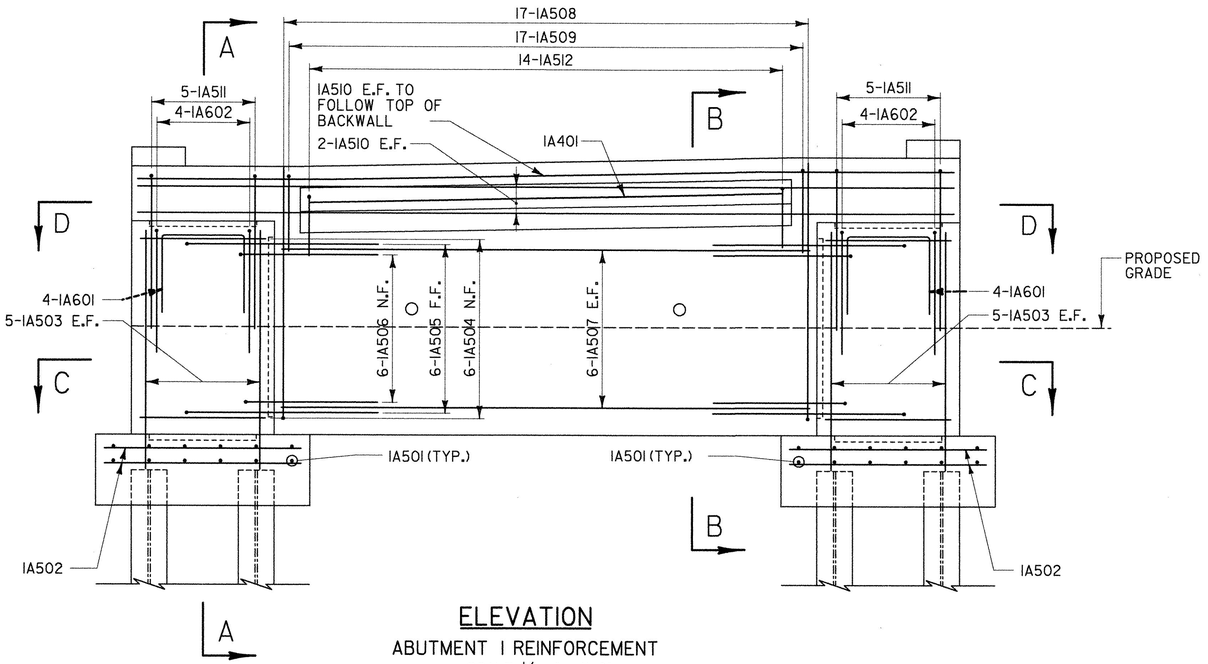
LEGEND:

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

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
ABUTMENT 1 - REINFORCEMENT LAYOUT 1	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024RLI.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 49 of 63

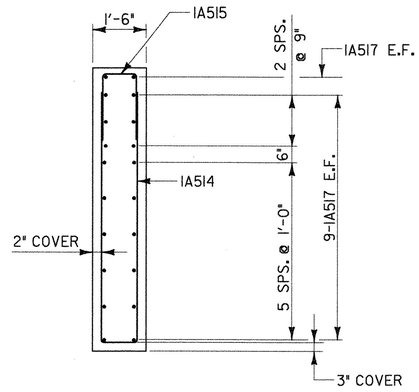
URS URS CORPORATION



ELEVATION

ABUTMENT 1 REINFORCEMENT

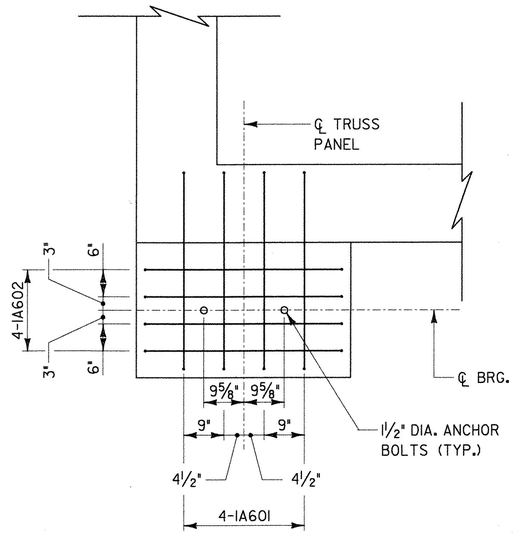
SCALE 1/2 " = 1'-0"



SECTION E-E

ABUTMENT 1

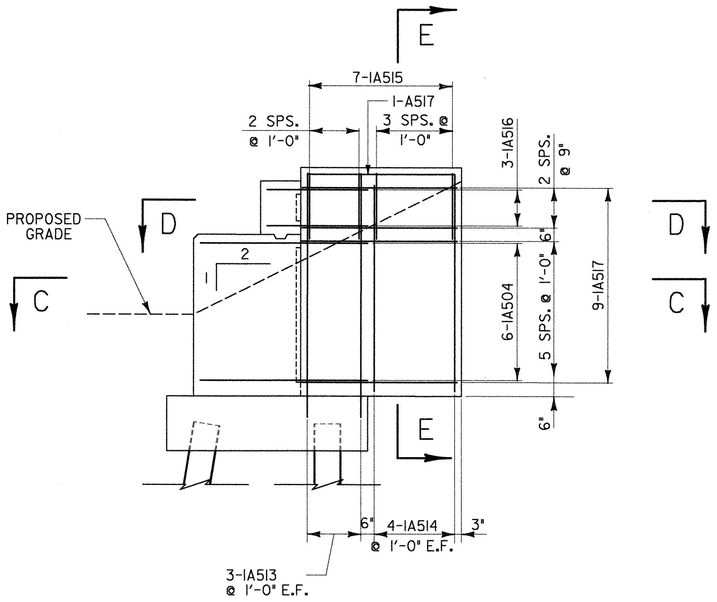
SCALE 1/2 " = 1'-0"



BRIDGE SEAT REINFORCEMENT

ABUTMENT 1

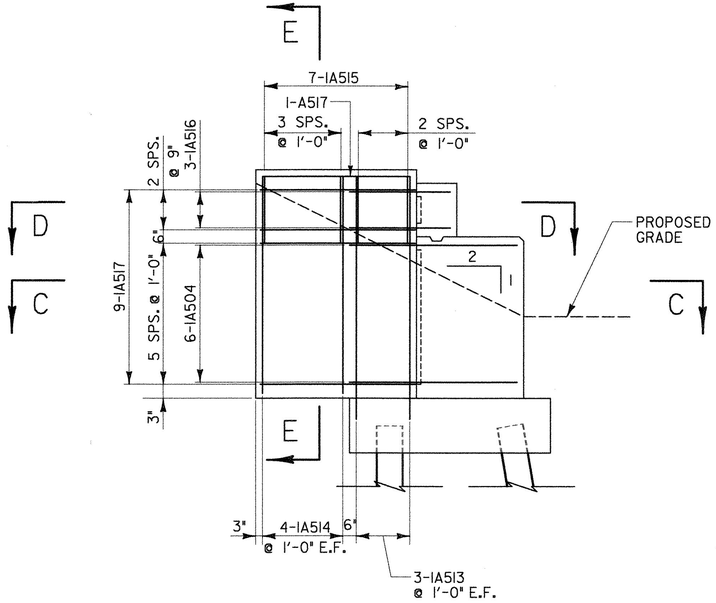
SCALE 3/4" = 1'-0"



WINGWALL 1 REINFORCEMENT

ABUTMENT 1

SCALE 3/8" = 1'-0"



WINGWALL 2 REINFORCEMENT

ABUTMENT 1

SCALE 3/8" = 1'-0"

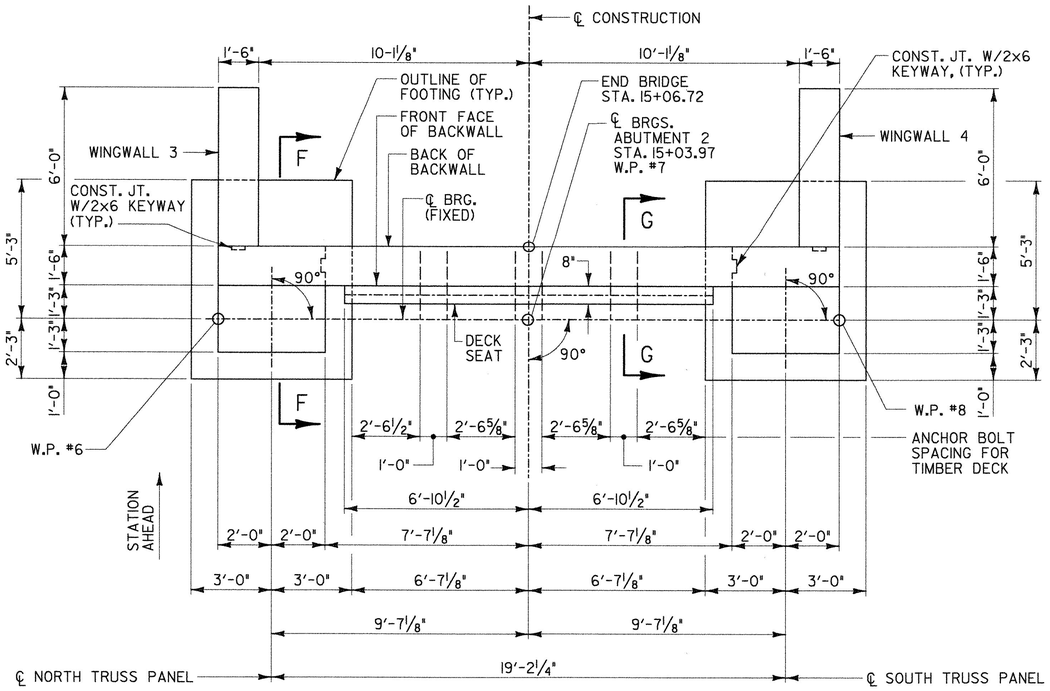
LEGEND:

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

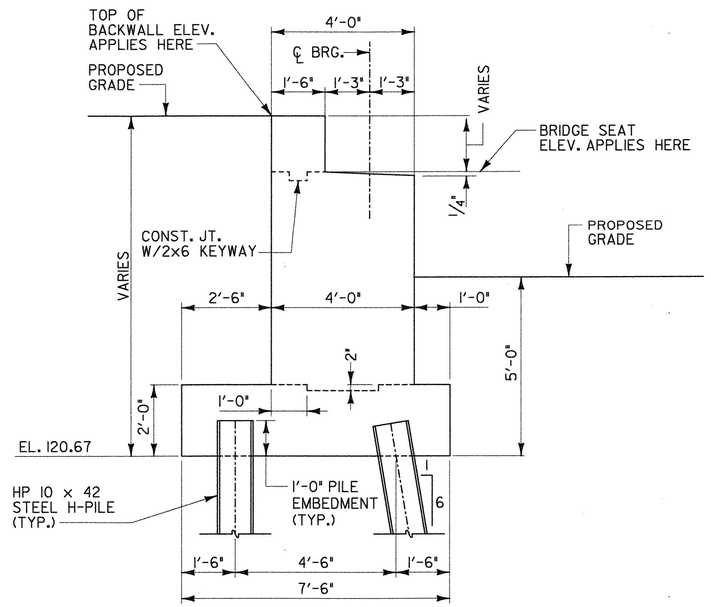
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
ABUTMENT 1 - REINFORCEMENT LAYOUT 2	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024RL2.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 50 of 63

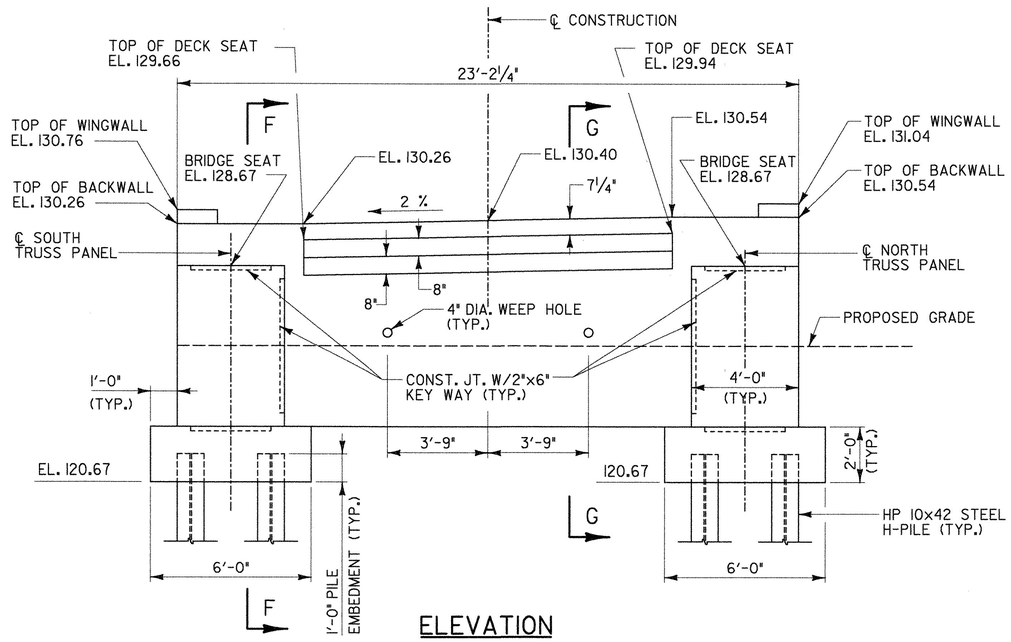
URS URS CORPORATION



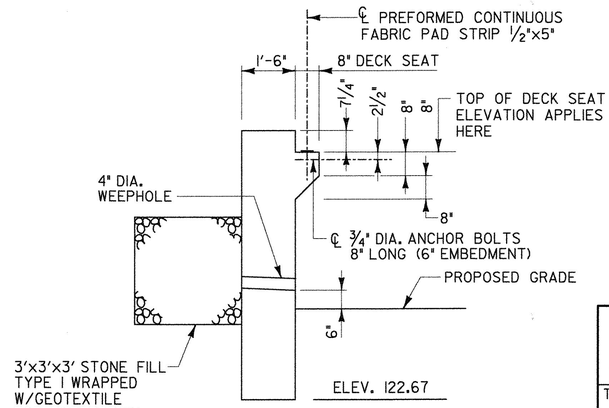
PLAN
ABUTMENT 2
SCALE ⅜" = 1'-0"



SECTION F-F
ABUTMENT 2
SCALE ½"=1'-0"



ELEVATION
ABUTMENT 2
SCALE ⅜" = 1'-0"



SECTION G-G
ABUTMENT 2
SCALE: ½"=1'-0"

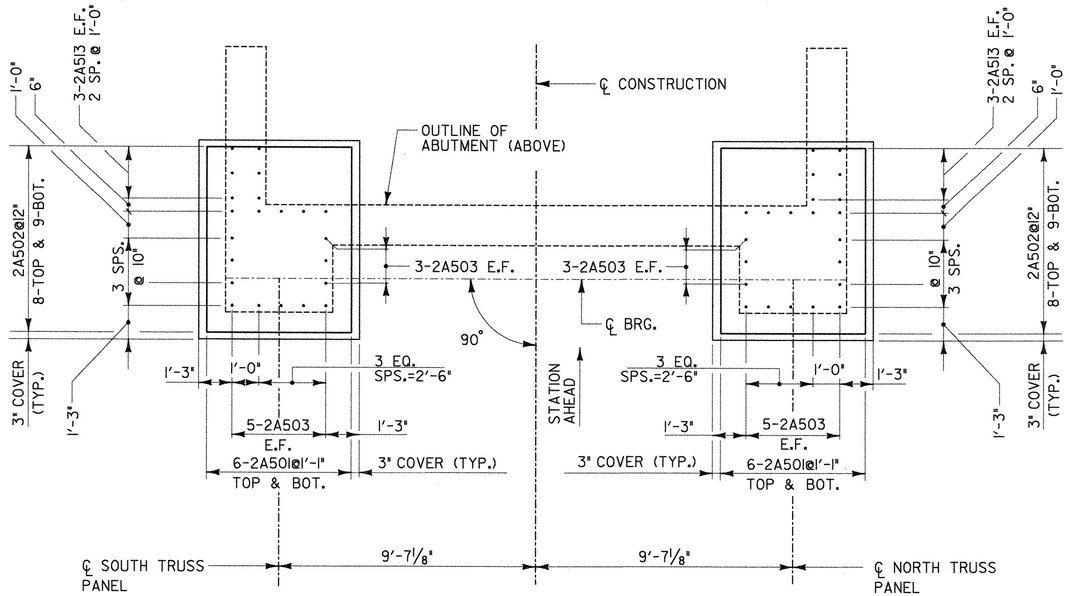
NOTE:

1. PREFORMED FABRIC PAD WILL BE PAID FOR UNDER CONTRACT ITEM 522.40 "STRUCTURAL GLUED LAMINATED TIMBER".

STATE OF VERMONT
AGENCY OF TRANSPORTATION

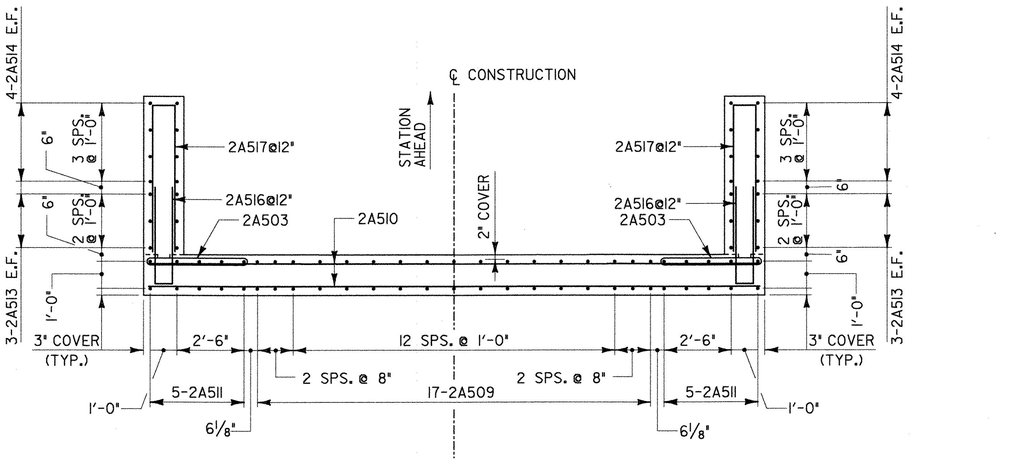
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
ABUTMENT 2 - PLAN, ELEVATION AND SECTIONS	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024ABUT2-I.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 51 of 63

URS URS CORPORATION



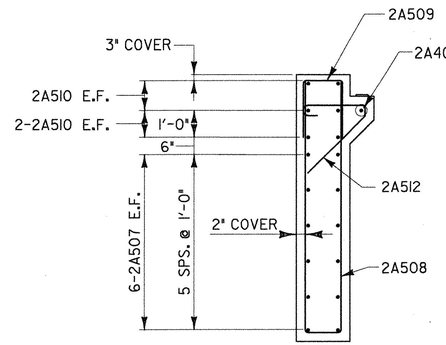
FOOTING REINFORCEMENT LAYOUT

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



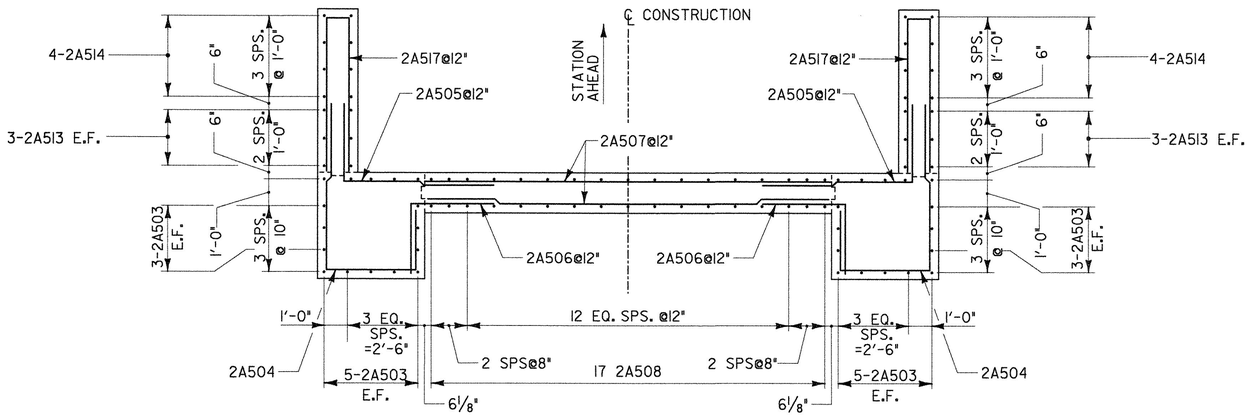
SECTION 1-1

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



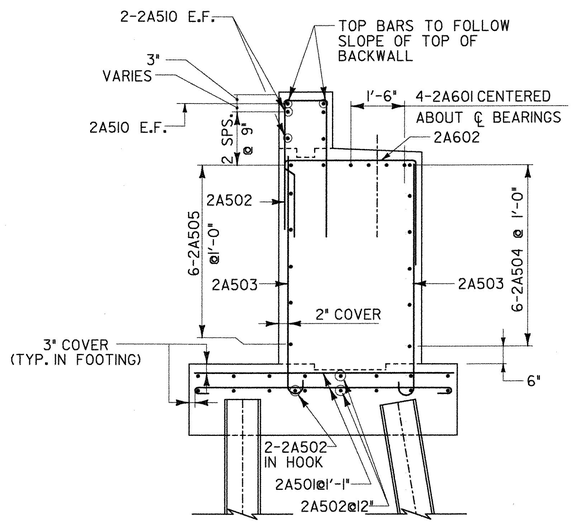
SECTION G-G

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



SECTION H-H

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



SECTION F-F

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

NOTE:
1. SEE SHEET 53 FOR BRIDGE SEAT REINFORCEMENT DETAIL

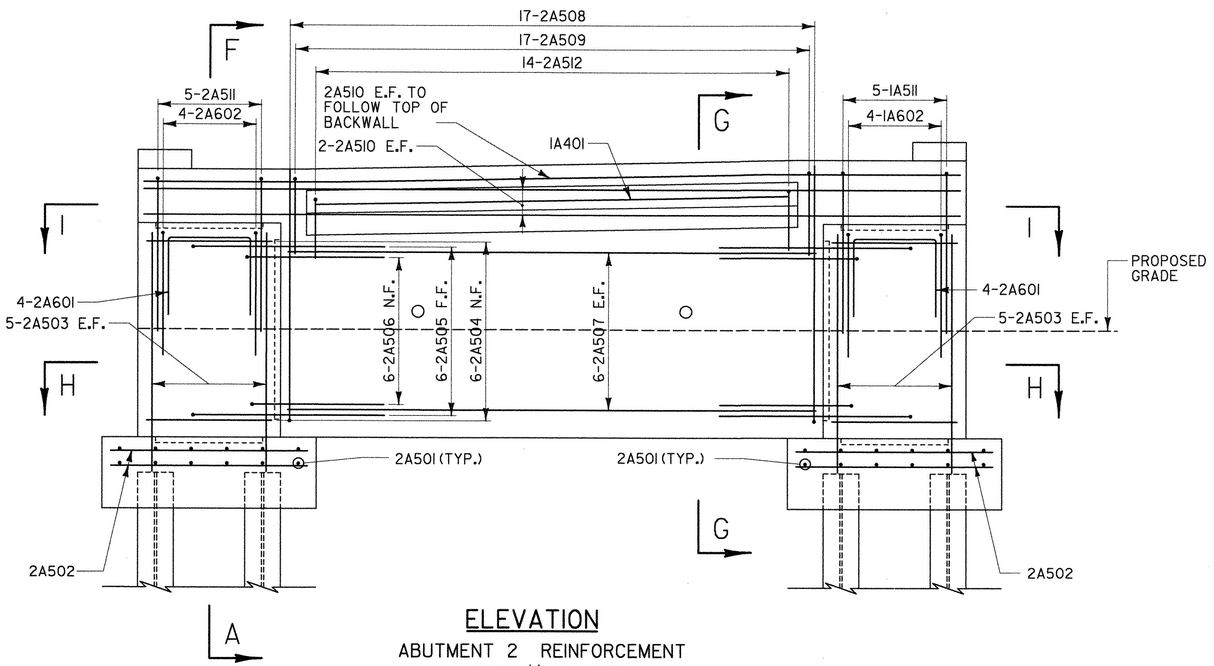
LEGEND:

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

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
ABUTMENT 2 - REINFORCEMENT LAYOUT 1	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024RL3.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 52 of 63

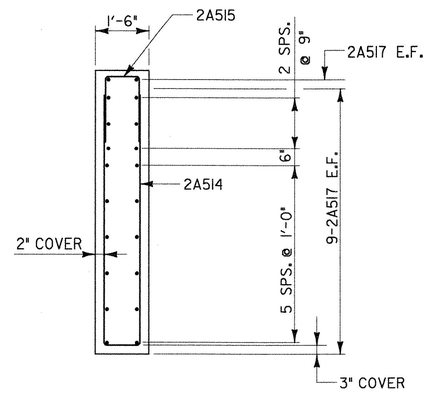
URS URS CORPORATION



ELEVATION

ABUTMENT 2 REINFORCEMENT

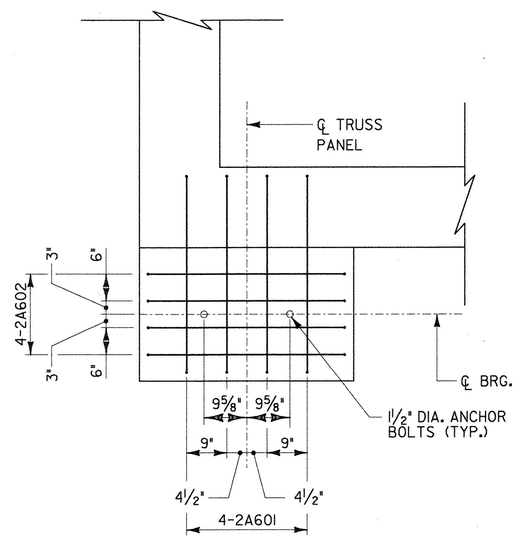
SCALE ½ " = 1'-0"



SECTION J-J

ABUTMENT 1

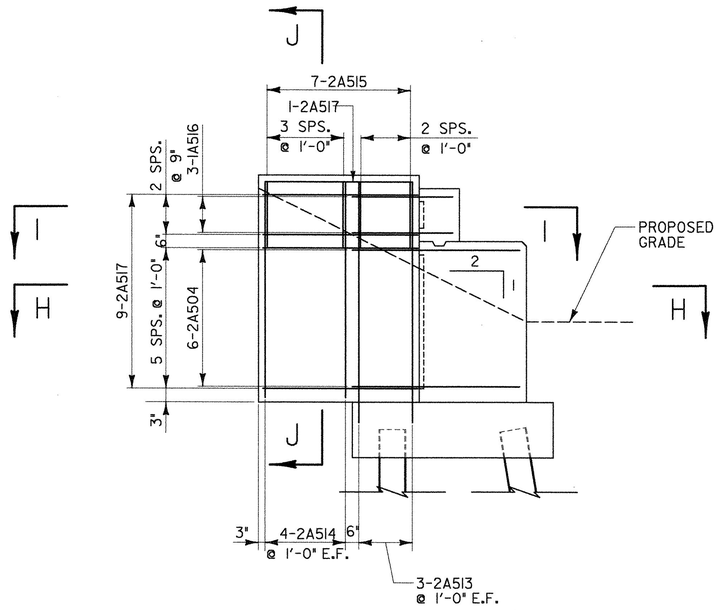
SCALE ½" = 1'-0"



BRIDGE SEAT REINFORCEMENT

ABUTMENT 2

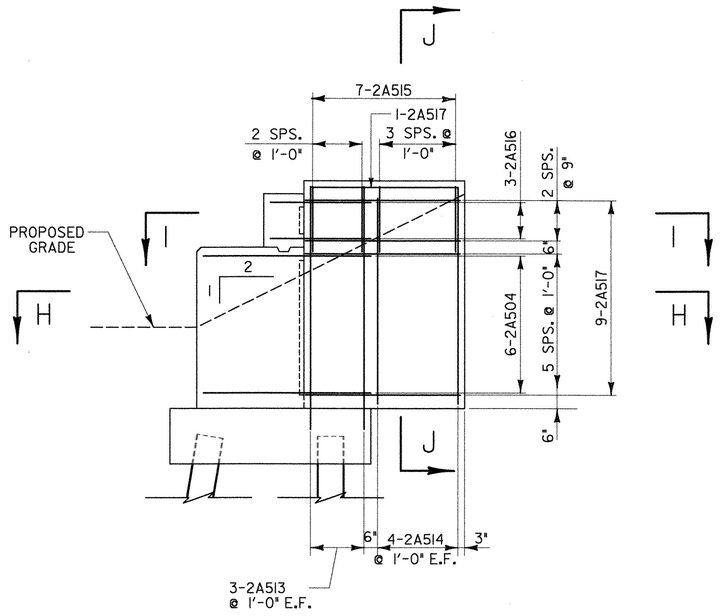
SCALE¾" = 1'-0"



WINGWALL 3 REINFORCEMENT

ABUTMENT 1

SCALE ⅜" = 1'-0"



WINGWALL 4 REINFORCEMENT

ABUTMENT 2

SCALE ⅜" = 1'-0"

LEGEND:

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

STATE OF VERMONT
AGENCY OF TRANSPORTATION

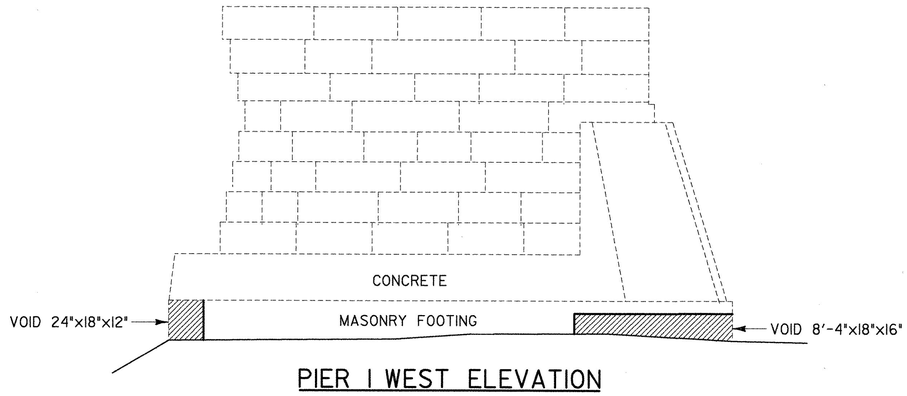
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

ABUTMENT 2 - REINFORCEMENT LAYOUT 2

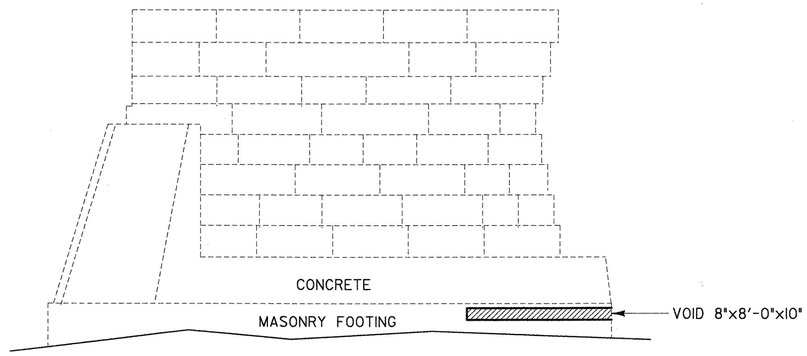
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024RL2a.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 53 of 63

URS URS CORPORATION



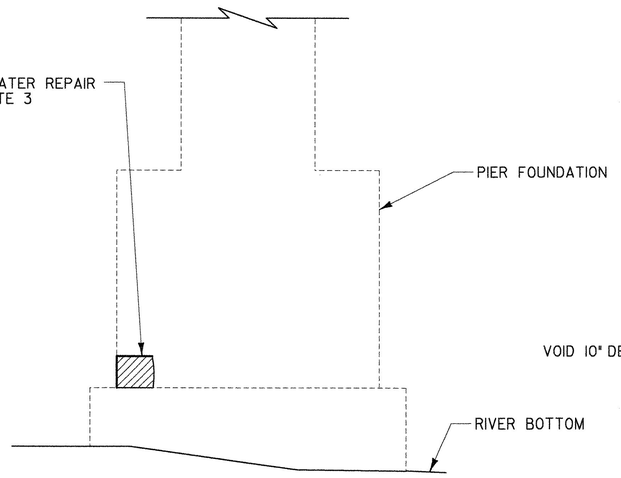
PIER I WEST ELEVATION

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



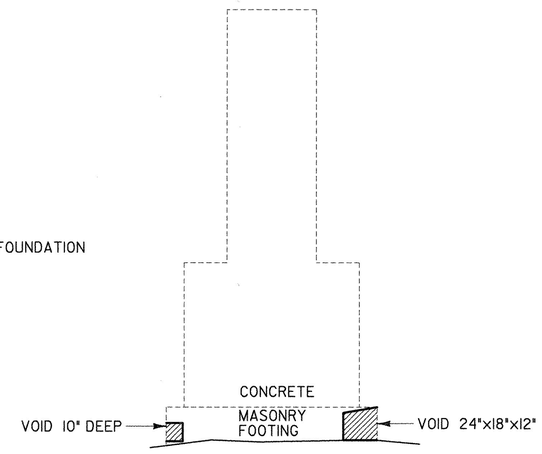
PIER I EAST ELEVATION

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



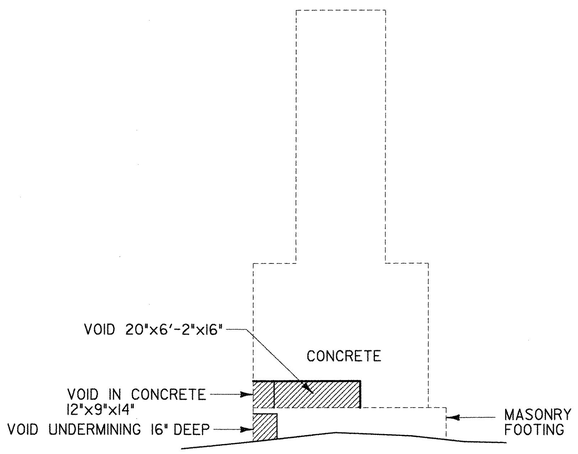
REPAIR DETAIL

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



PIER I NORTH ELEVATION

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



PIER I SOUTH ELEVATION

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

NOTES:

1. "HAND PLACED CONCRETE", "BAGGED CONCRETE" AND "PUMP FILLED GROUT BAGS" SHALL BE PAID FOR UNDER ITEM 900.608, SPECIAL PROVISION (GROUT BAGS).

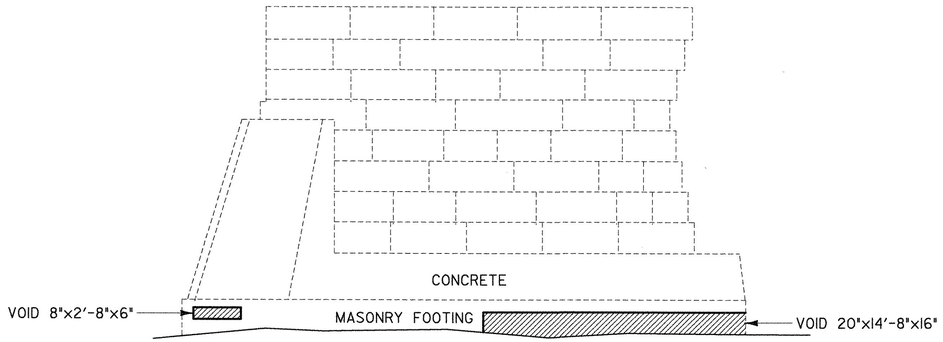
SUGGESTED REPAIR SEQUENCE

1. CREATE BENCH IN RIVER BOTTOM AROUND REPAIR AREA TO COMPLETELY EXPOSE ANY VOIDS IN THE PIER FOUNDATION AND FOR PLACEMENT OF SPECIAL PROVISION (GROUT BAGS).
2. CLEAN VOIDS IN THE PIER FOUNDATION OF SEDIMENT AND DEBRIS.
3. USE "HAND PLACED CONCRETE", "BAGGED CONCRETE" OR "PUMP FILLED GROUT BAGS" TO FILL VOIDS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

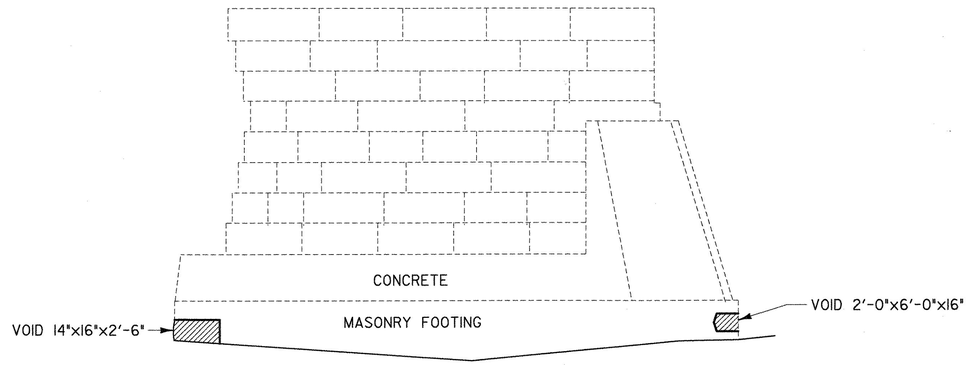
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
EXISTING PIER CONDITIONS - PIER 1	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(1)
I.G.C. Info. ZD024PIER4.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 54 of 63

URS URS CORPORATION



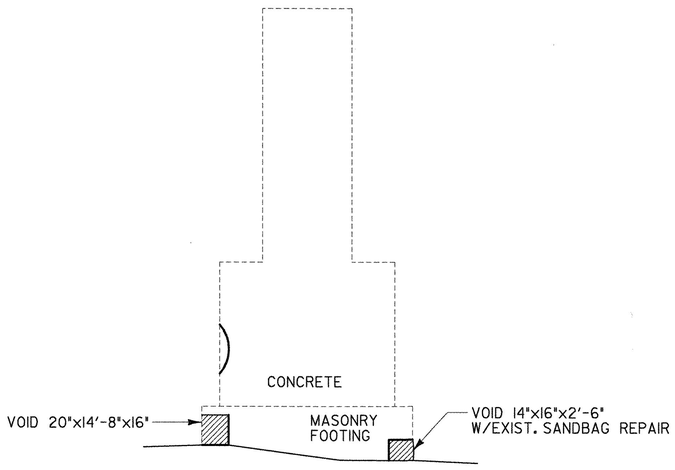
PIER 2 EAST ELEVATION

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



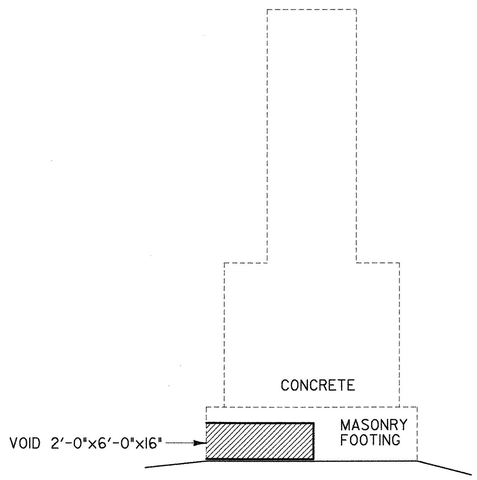
PIER 2 WEST ELEVATION

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



PIER 2 NORTH ELEVATION

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



PIER 2 SOUTH ELEVATION

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

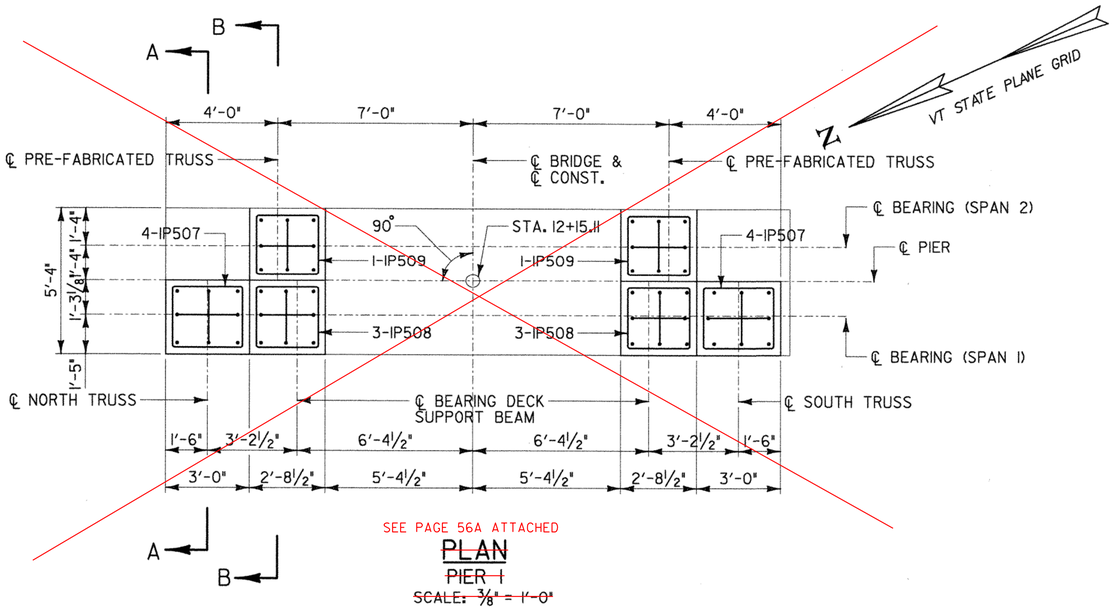
NOTES:

1. SEE SUGGESTED REPAIR SEQUENCE SHEET 54.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

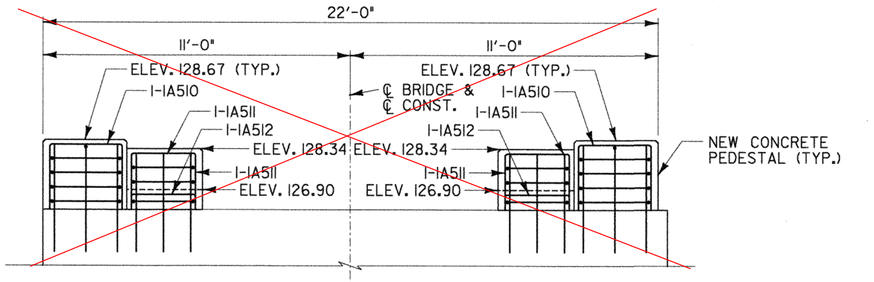
Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____
RAIL TRAIL OVER MISSISQUOI RIVER	
EXISTING PIER CONDTIONS - PIER 2	
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(1)
I.G.C. Info. ZD024PIER5.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 55 of 63

URS URS CORPORATION



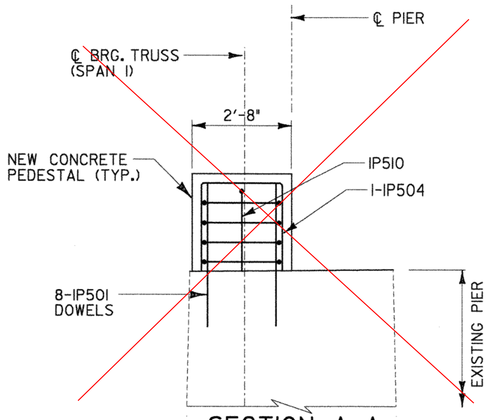
SEE PAGE 56A ATTACHED

PLAN
PIER 1
SCALE: 3/8" = 1'-0"



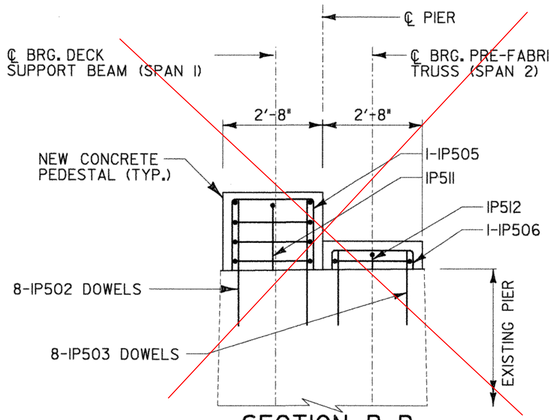
ELEVATION
PIER 1
SCALE: 3/8" = 1'-0"

SEE PAGE 56B ATTACHED



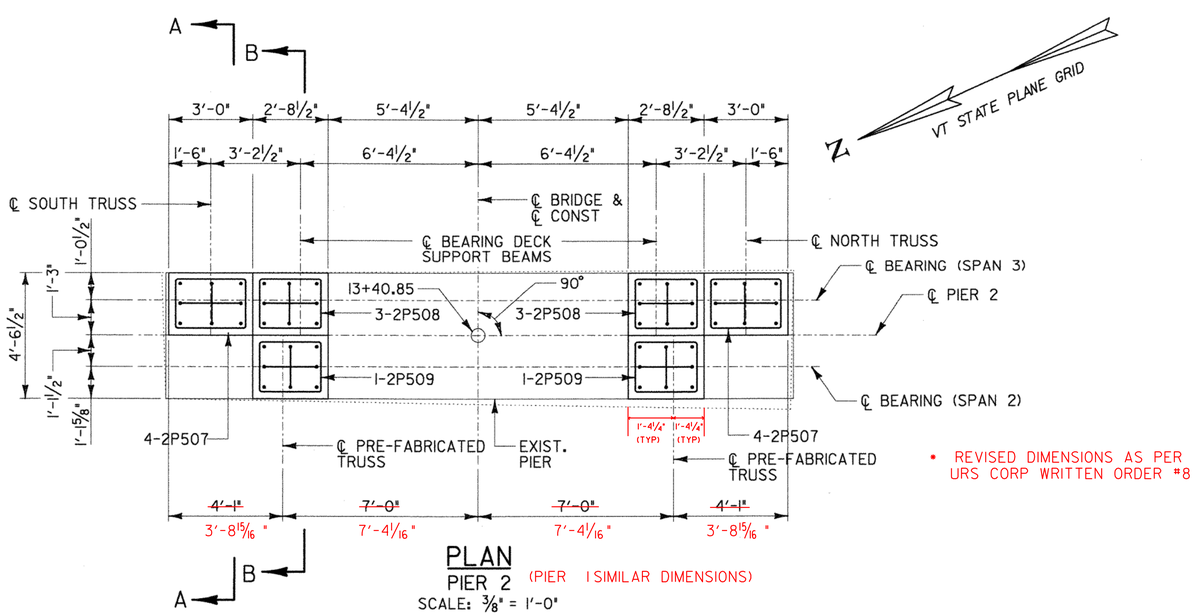
SECTION A-A
PIER 1
SCALE: 1/2" = 1'-0"

SEE PAGE 56C ATTACHED



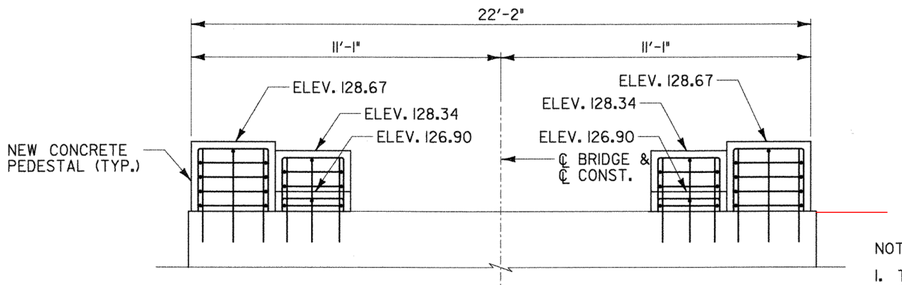
SECTION B-B
PIER 1
SCALE: 1/2" = 1'-0"

SEE PAGE 56C ATTACHED



PLAN
PIER 2 (PIER 1 SIMILAR DIMENSIONS)
SCALE: 3/8" = 1'-0"

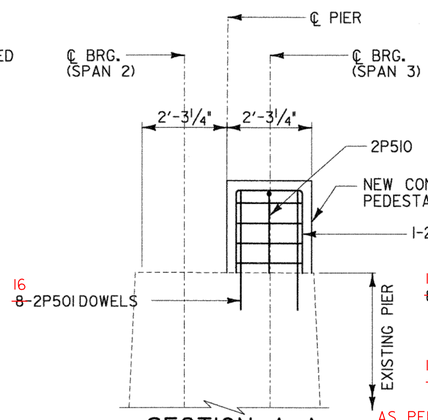
• REVISED DIMENSIONS AS PER URS CORP WRITTEN ORDER #8



ELEVATION
PIER 2
SCALE: 3/8" = 1'-0"

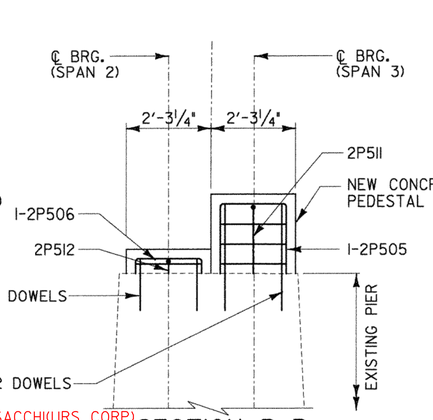
NOTES:

1. THE CONTRACTOR SHALL VERIFY THE ELEVATION OF THE CONCRETE PAD WITH THE PRE-FABRICATED TRUSS MANUFACTURER PRIOR TO CONSTRUCTION OF THE PAD.
2. LOCATION OF L BEARING AND ANCHOR BOLTS FOR THE HISTORIC TRUSSES ARE SUBJECT TO FINAL ASSEMBLY OF THE TRUSSES AND THE ACTUAL ASSEMBLED LENGTH.
3. ALL DOWELS SHALL BE INSTALLED WITH AN APPROVED ADHESIVE. EMBEDMENT DEPTH FOR DRILLED AND GROUTED DOWELS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. THE ULTIMATE TENSILE STRENGTH OF THE GROUTED DOWELS SHALL NOT BE LESS THAN THE YIELD STRENGTH.



SECTION A-A
PIER 2
SCALE: 1/2" = 1'-0"

AS PER RON SACCHI(URS CORP) VIA PHONE CALL



SECTION B-B
PIER 2
SCALE: 1/2" = 1'-0"

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
Highway No.	Log Sta. _____
	Surv. Sta. _____

RAIL TRAIL OVER MISSISQUOI RIVER

PIERS 1 & 2 MODIFICATIONS

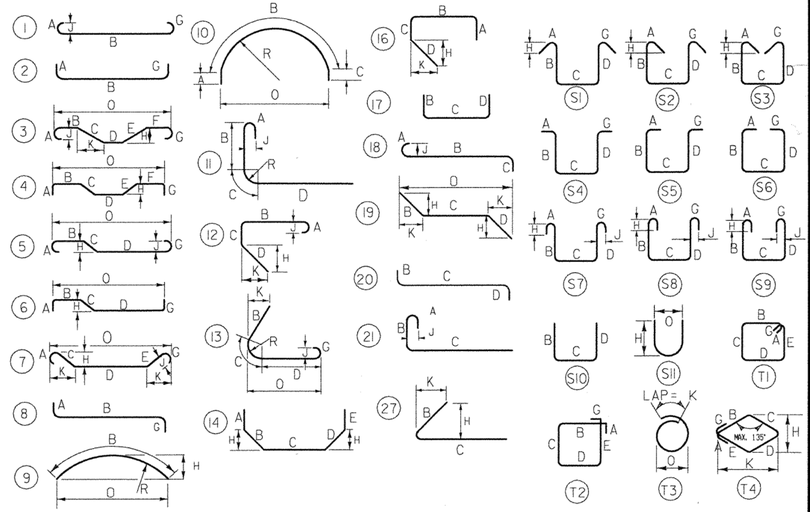
Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024PIER1.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 56 of 63

URS URS CORPORATION

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	G	H	K
1													
2			ABUTMENT 1										
3													
4													
5	24	5	7'-0"	1A501	STR								
6 ✳	35	5	5'-6"	1A502	STR								
7 ✳	33	5	7'-0"	1A503	1	0'-7"	6'-5"						
8	12	5	12'-3"	1A504	17		2'-6"	3'-6"	6'-3"				
9	12	5	8'-2"	1A505	2	2'-9"	5'-5"						
10	12	5	5'-7"	1A506	2	3'-1"	2'-6"						
11	12	5	15'-2"	1A507	STR								
12 ▲	17	5	15'-9"	1A508	17		7'-4"	1'-1"	7'-4"				
13	17	5	4'-9"	1A509	17		1'-10"	1'-1"	1'-10"				
14	6	5	22'-8"	1A510	STR								
15	10	5	9'-11"	1A511	17		4'-5"	1'-1"	4'-5"				
16	14	5	4'-9"	1A512	12	0'-7"	1'-9"	0'-2"	2'-3"			1'-7"	1'-7"
17	12	5	9'-2"	1A513	1	0'-7"	8'-7"						
18	8	5	16'-3"	1A514	17		7'-7"	1'-1"	7'-7"				
19	14	5	4'-9"	1A515	17		1'-10"	1'-1"	1'-10"				
20	6	5	8'-11"	1A516	17		3'-11"	1'-1"	3'-11"				
21	20	5	12'-1"	1A517	17		5'-6"	1'-1"	5'-6"				
22 ✳	9	6	7'-10"	1A601	17		2'-2"	3'-6"	2'-2"				
23 ✳	9	6	9'-1"	1A602	17		3'-5"	3'-6"	2'-2"				
24	1	4	13'-3"	1A401	STR								
25													
26													
27			PIER 1										
28													
29													
30	8	5	3'-9"	1P501	STR								
31	8	5	3'-4"	1P502	STR								
32	8	5	2'-0"	1P503	STR								
33 ✳	3	5	6'-10"	1P504	17		2'-4"	2'-2"	2'-4"				
34 ✳	3	5	6'-4"	1P505	17		2'-0"	2'-2"	2'-2"				
35	2	5	3'-2"	1P506	17		0'-6"	2'-2"	0'-6"				
36	8	5	10'-4"	1P507	T2	0'-6"	2'-2"	2'-6"	2'-2"	2'-6"	0'-6"		
37	6	5	9'-8"	1P508	T2	0'-6"	2'-2"	2'-2"	2'-2"	2'-2"	0'-6"		
38	2	5	9'-8"	1P509	T2	0'-6"	2'-2"	2'-2"	2'-2"	2'-2"	0'-6"		
39	2	5	7'-2"	1P510	17		2'-4"	2'-6"	2'-4"				
40	2	5	6'-2"	1P511	17		2'-0"	2'-2"	2'-0"				
41	2	5	3'-2"	1P512	17		0'-6"	2'-2"	0'-6"				
42													
43													
44													
45			PIER 2										
46													
47													
48	8	5	3'-9"	2P501	STR								
49	8	5	3'-4"	2P502	STR								
50	8	5	2'-0"	2P503	STR								
51 ✳	3	5	6'-5"	2P504	17		2'-4"	1'-9"	2'-4"				
52 ✳	3	5	5'-9"	2P505	17		2'-0"	1'-9"	2'-0"				
53	2	5	2'-9"	2P506	17		0'-6"	1'-9"	0'-6"				
54	8	5	9'-6"	2P507	T2	0'-6"	1'-9"	2'-6"	1'-9"	2'-6"	0'-6"		
55	6	5	8'-10"	2P508	T2	0'-6"	1'-9"	2'-2"	1'-9"	2'-2"	0'-6"		
56	2	5	8'-10"	2P509	T2	0'-6"	1'-9"	2'-2"	1'-9"	2'-2"	0'-6"		
57	2	5	7'-2"	2P510	17		2'-4"	2'-6"	2'-4"				
58	2	5	6'-2"	2P511	17		2'-0"	2'-2"	2'-0"				
59	2	5	3'-2"	2P512	17		0'-6"	2'-2"	0'-6"				
60													
61													
62													
63			ABUTMENT 2										
64													
65													
66	24	5	7'-0"	2A501	STR								
67 ✳	35	5	5'-6"	2A502	STR								
68 ✳	33	5	7'-0"	2A503	1	0'-7"	6'-5"						
69	12	5	12'-3"	2A504	17		2'-6"	3'-6"	6'-3"				
70	12	5	8'-2"	2A505	2	2'-9"	5'-5"						
71	12	5	5'-7"	2A506	2	3'-1"	2'-6"						
72	12	5	15'-2"	2A507	STR								
73 ▲	17	5	15'-9"	2A508	17		7'-4"	1'-1"	7'-4"				
74	17	5	4'-9"	2A509	17		1'-10"	1'-1"	1'-10"				
75	6	5	22'-8"	2A510	STR								
76	10	5	9'-11"	2A511	17		4'-5"	1'-1"	4'-5"				
77	14	5	4'-9"	2A512	12	0'-7"	1'-9"	0'-2"	2'-3"			1'-7"	1'-7"
78	12	5	9'-2"	2A513	1	0'-7"	8'-7"						
79	8	5	16'-3"	2A514	17		7'-7"	1'-1"	7'-7"				
80	14	5	4'-9"	2A515	17		1'-10"	1'-1"	1'-10"				
81	6	5	8'-11"	2A516	17		3'-11"	1'-1"	3'-11"				
82	20	5	12'-1"	2A517	17		5'-6"	1'-1"	5'-6"				
83 ✳	9	6	7'-10"	2A601	17		2'-2"	3'-6"	2'-2"				
84 ✳	9	6	9'-1"	2A602	17		3'-5"	3'-6"	2'-2"				
85	1	4	13'-3"	2A401	STR								
86													
87													
88													
89													
90													
91													
92													
93													
94													
95													
96													
97													
98													

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-91). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. "E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	CROSS SECTIONAL AREA SQ. INCHES	PERIMETER INCHES
#3	.376	.375	.11	1.178
#4	.668	.500	.20	1.571
#5	1.043	.625	.31	1.963
#6	1.502	.750	.44	2.356
#7	2.044	.875	.60	2.749
#8	2.670	1.000	.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

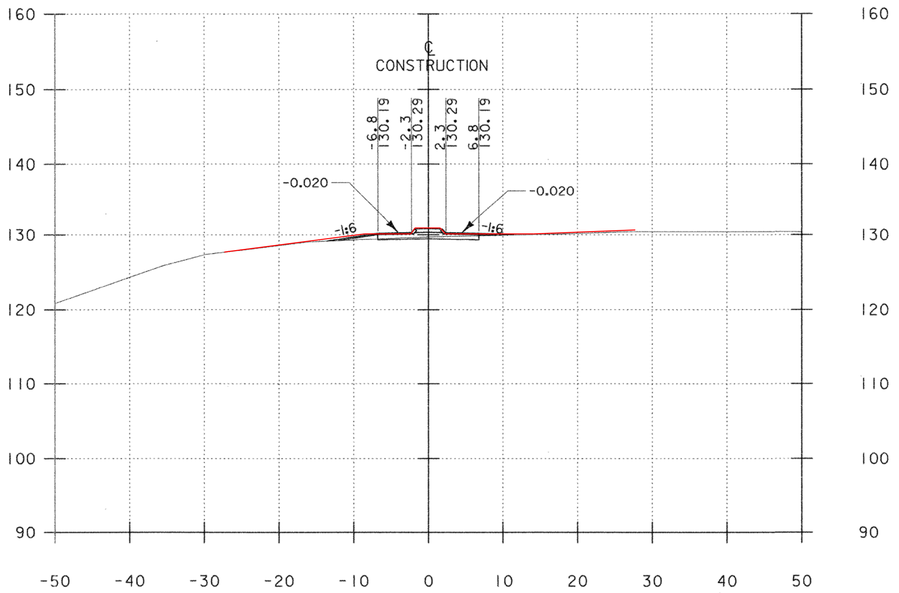
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of SWANTON	Bridge No. 18
	Log Sta. _____
Highway No.	Surv. Sta. _____

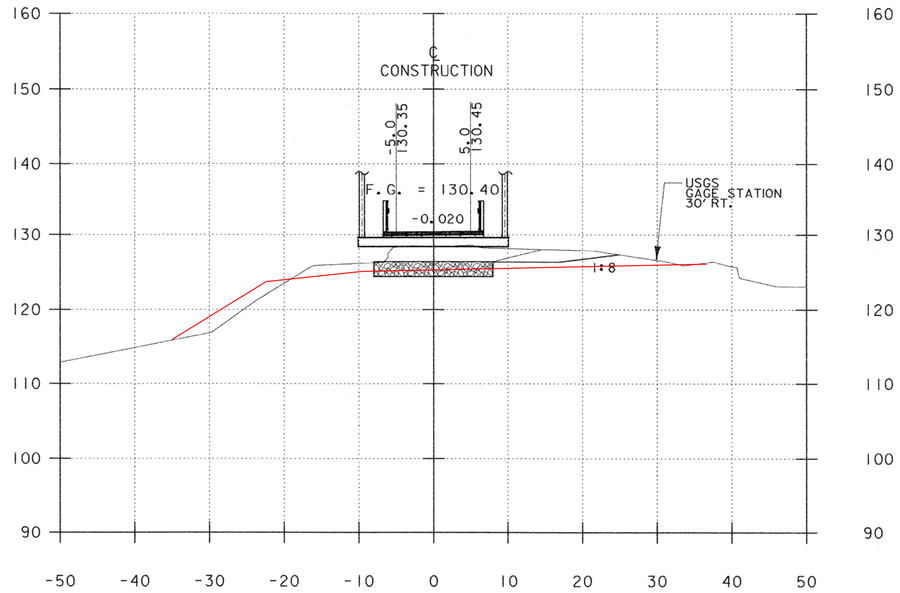
RAIL TRAIL OVER MISSISQUOI RIVER

REINFORCING STEEL SCHEDULE

Designed By R. SACCHI	Drawn By R. ROSS
Checked By H. BUI Date 1/23/08	Bridge Design Supervisor R. SACCHI Date 1/23/08
PROJECT SWANTON	PROJECT NO. STP ST MHTB(I)
I.G.C. Info. ZD024RTI.dgn	1/30/2008
Bridge Sheet No. BR3	Sheet 57 of 63

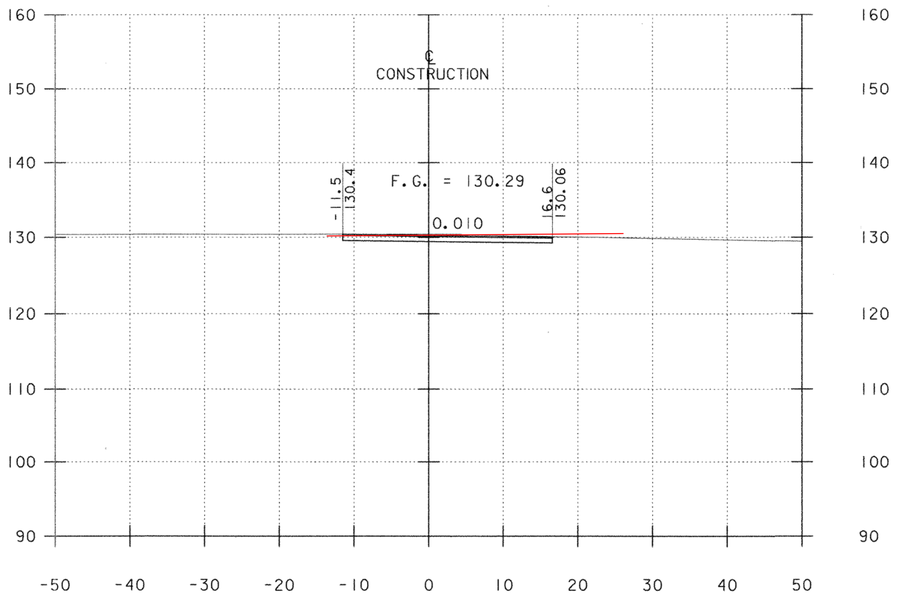


10+25

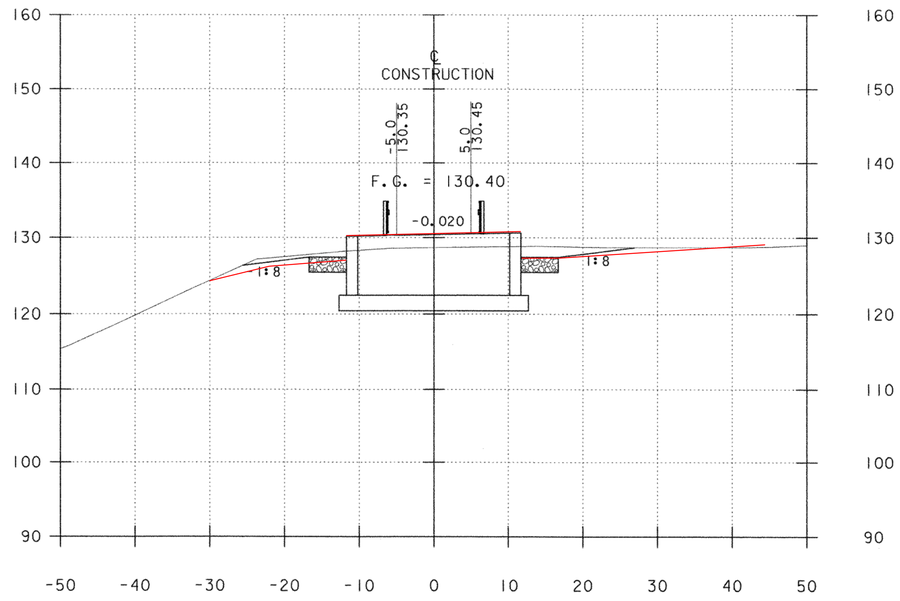


10+75

REFER TO "EXCAVATION SHEET" 13 OF 13
FOR COMMON EXCAVATION CALCULATIONS.



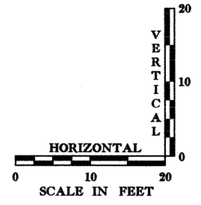
10+11.39
SKEW ANGLE 62.5°
BEGIN PROJECT 10+11.41



10+50
BEGIN BRIDGE 10+49.23

ROADWAY CROSS SECTIONS

SCALE: 1"=10' HORIZONTAL
1"=10' VERTICAL

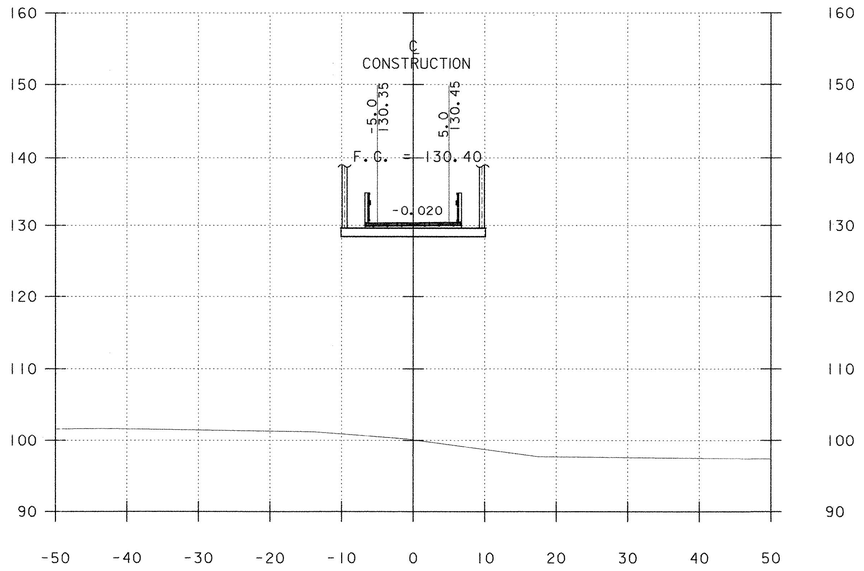


DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 83

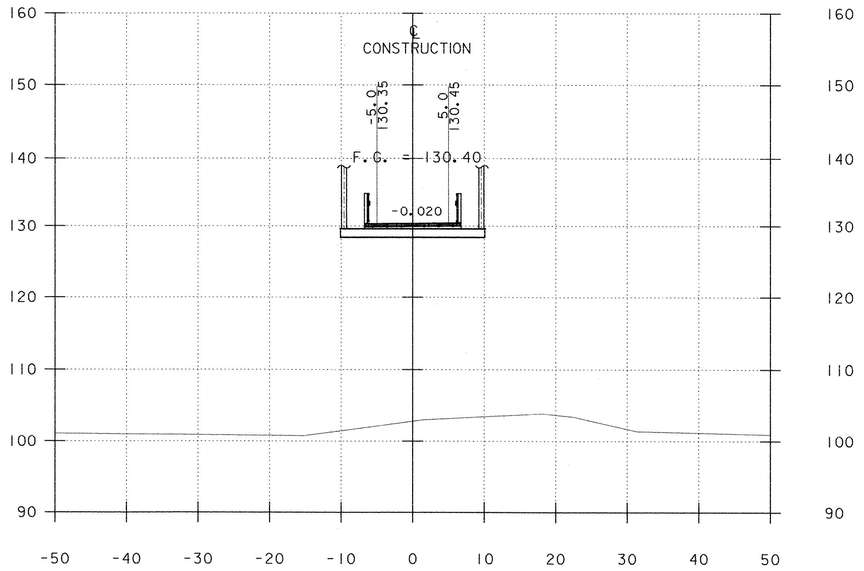
URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH# (518) 688-0015

SHEET NAME: ROADWAY CROSS SECTION - SHEET 1
PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(1)

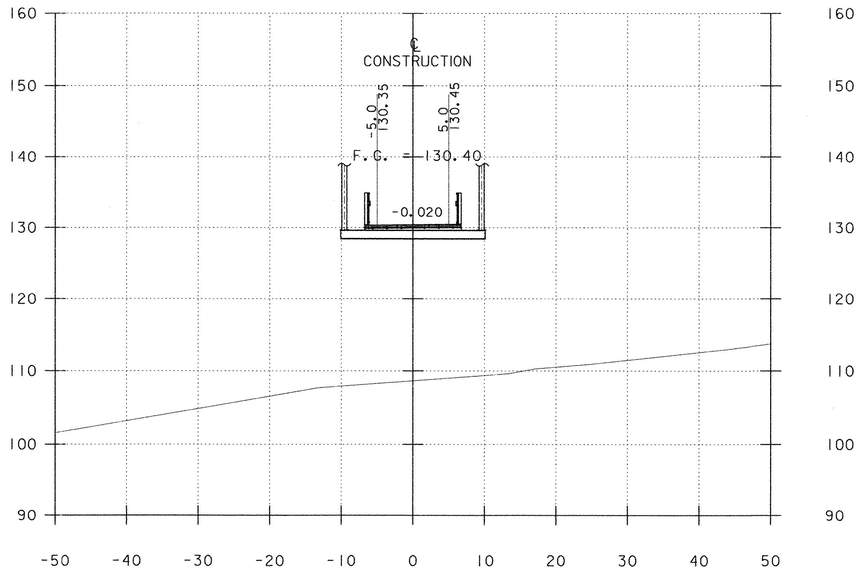
FILE NAME: zd024rcsl.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/13/2008
DRAWN BY: M. McINTOSH
CHECKED BY: M. K. CHEVALIER
SHEET 58 OF 63



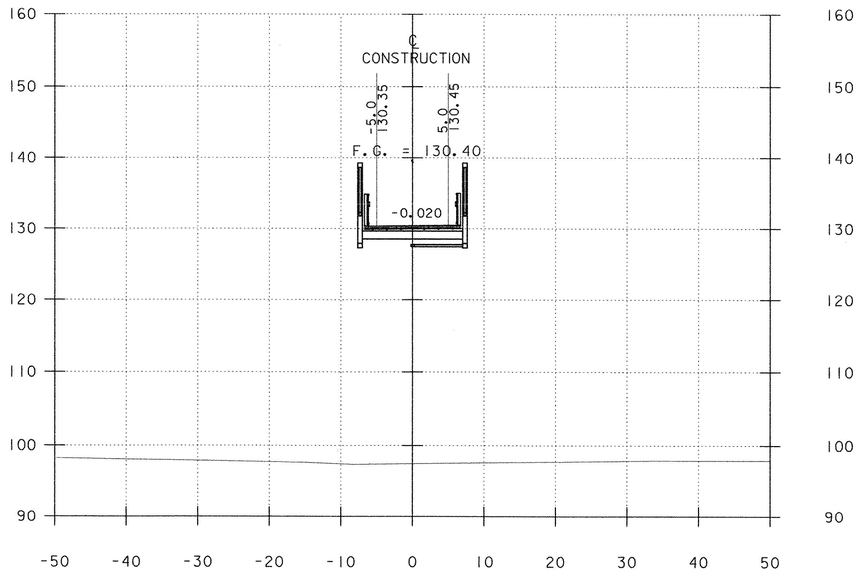
12+00



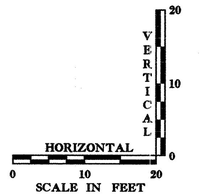
14+00



11+00



13+00



ROADWAY CROSS SECTIONS

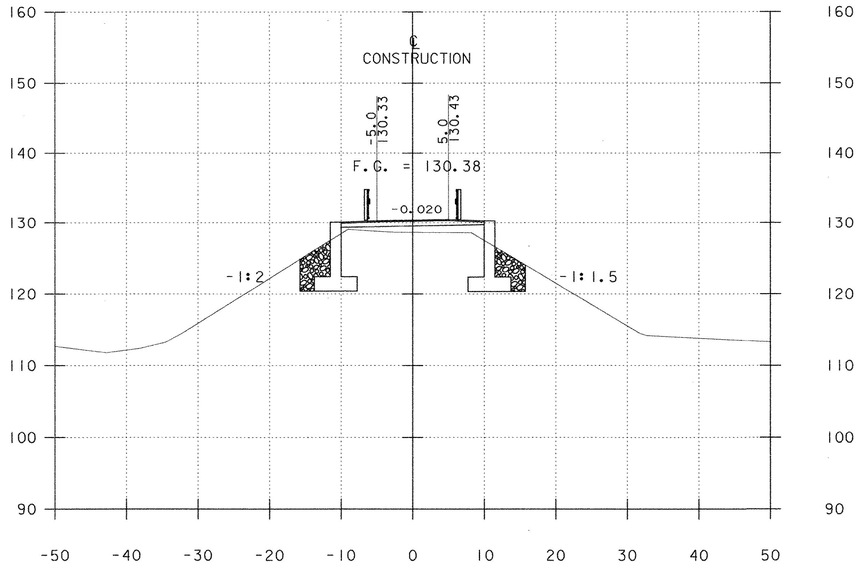
SCALE: 1"=10' HORIZONTAL
1"=10' VERTICAL

DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 83

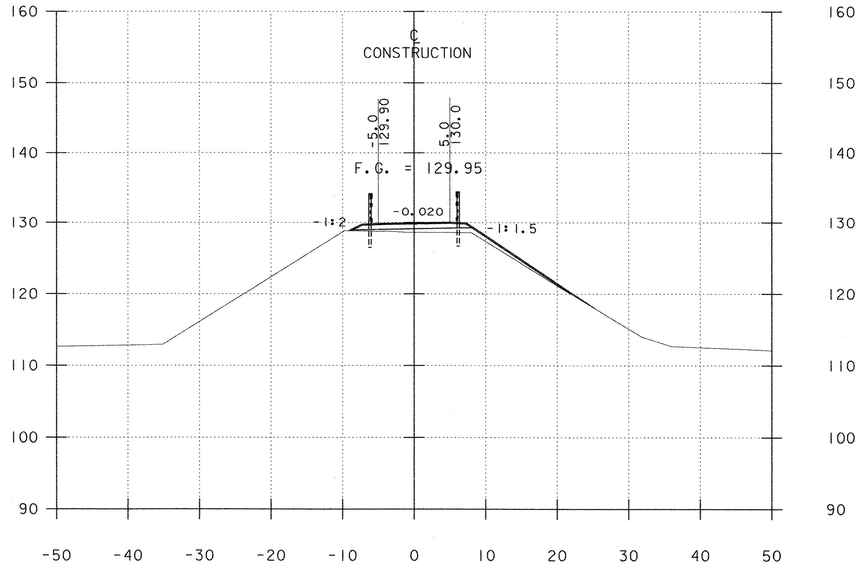
URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH* (518) 688-0015

SHEET NAME: ROADWAY CROSS SECTION - SHEET 2
PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(1)

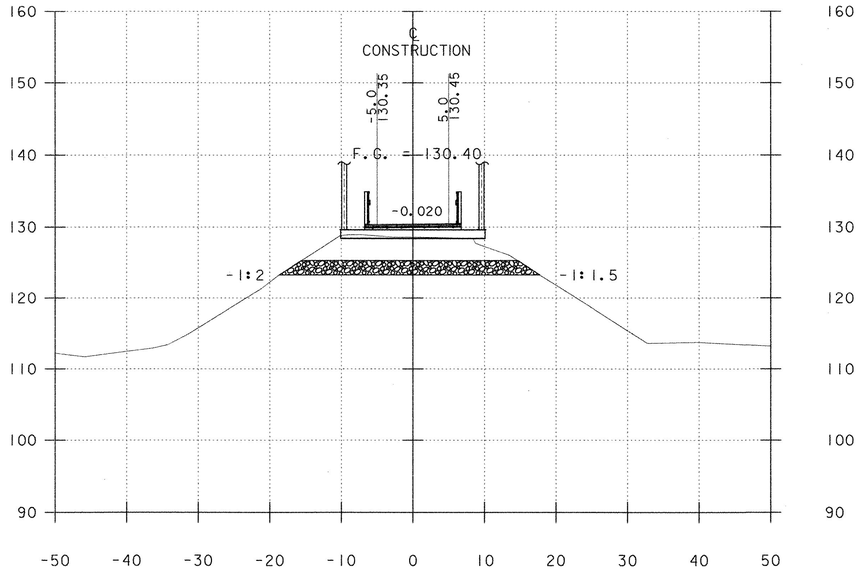
FILE NAME: zd024rcs2.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/13/2008
DRAWN BY: M. McINTOSH
CHECKED BY: M. K. CHEVALIER
SHEET 59 OF 63



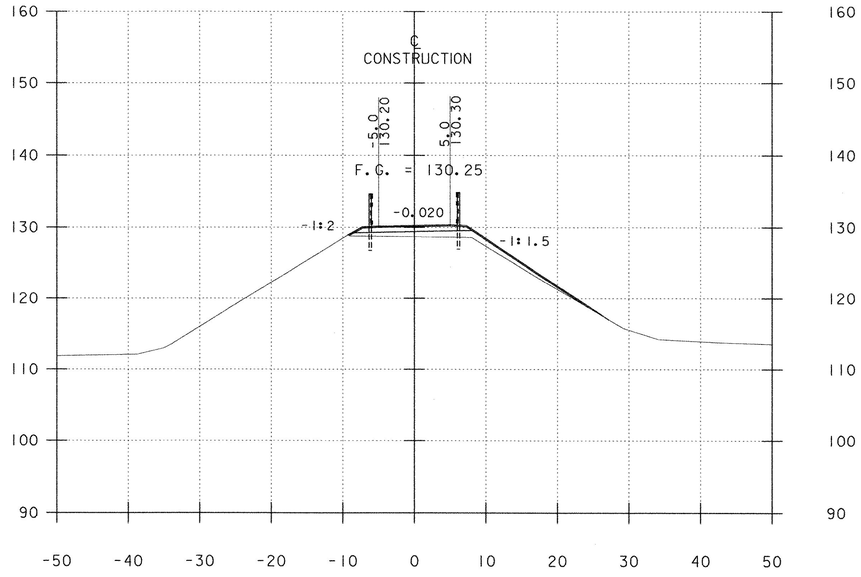
15+10
END BRIDGE 15+06.72



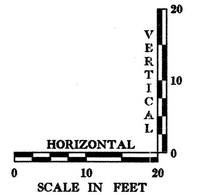
15+62
END PROJECT 16+17



15+00



15+25



ROADWAY CROSS SECTIONS

SCALE: 1"=10' HORIZONTAL
1"=10' VERTICAL

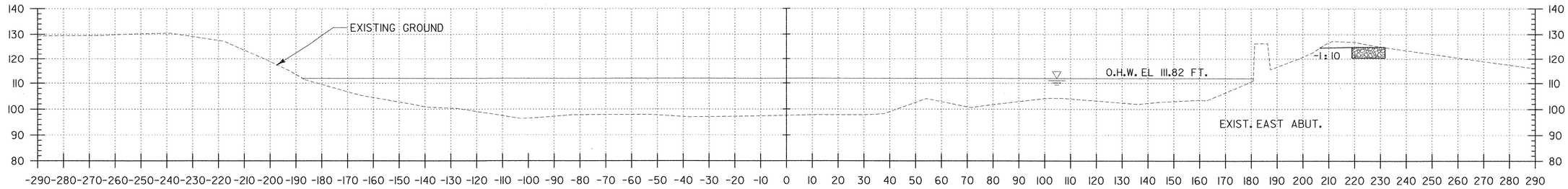
DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 83

URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH# (518) 688-0015

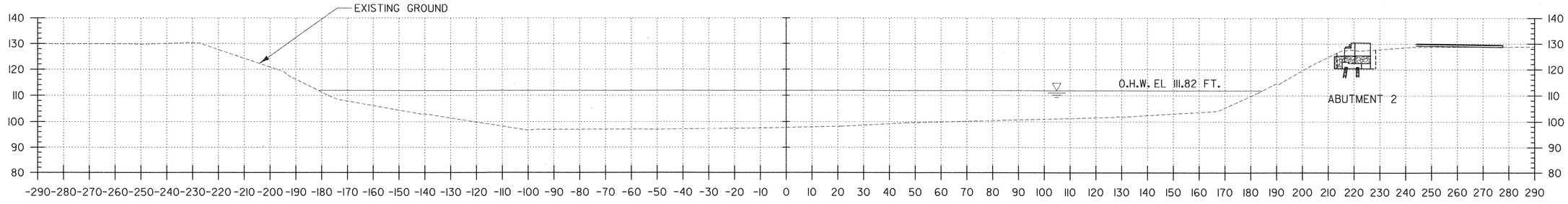
SHEET NAME: ROADWAY CROSS SECTION - SHEET 3
PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(1)

FILE NAME: zd024rcs3.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/13/2008
DRAWN BY: M. McINTOSH
CHECKED BY: M. K. CHEVALIER
SHEET 60 OF 63

STA. 2+27.18 RT.
END UNCLASSIFIED CHANNEL EXCAVATION,
STONE FILL TYPE I, & GEOTEXTILE UNDER STONE FILL

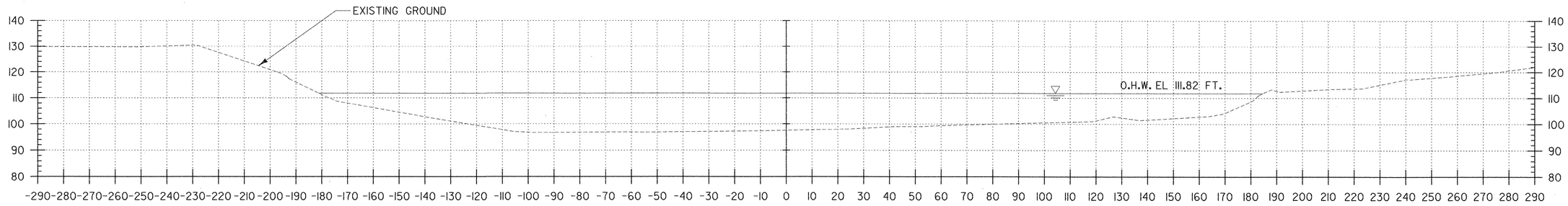


2+25

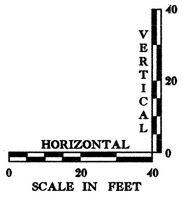


2+00

STA. 1+92.98 RT.
BEGIN UNCLASSIFIED CHANNEL EXCAVATION,
STONE FILL TYPE I, & GEOTEXTILE UNDER STONE FILL



1+75



CHANNEL CROSS SECTIONS

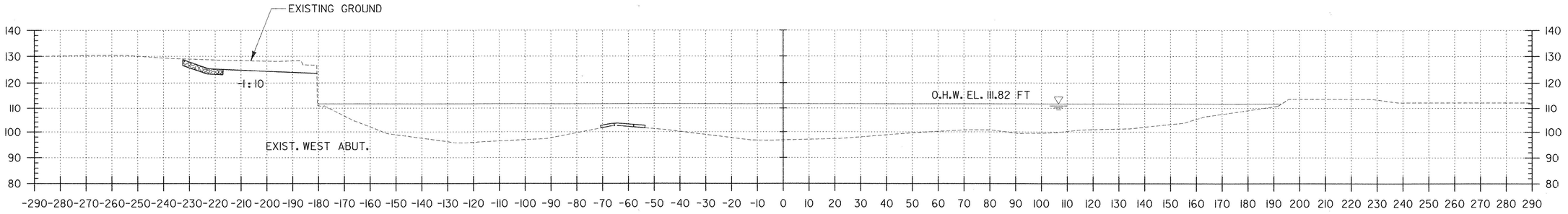
SCALE: 1"=20' HORIZONTAL
1"=20' VERTICAL

DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 83

URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH# (518) 688-0015

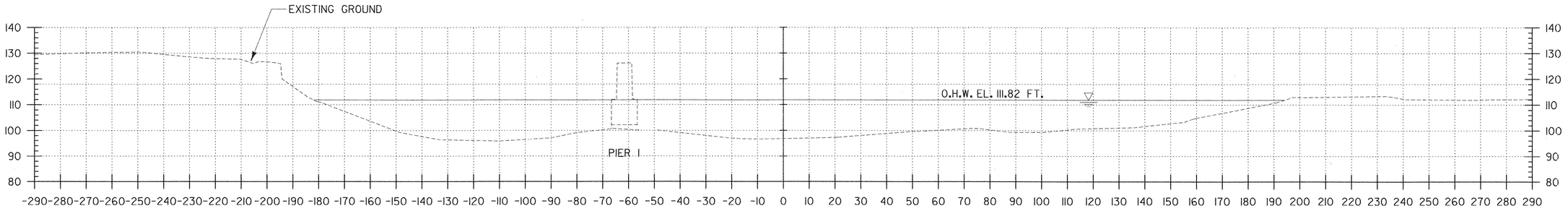
SHEET NAME: CHANNEL CROSS SECTION - SHEET 1
PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(1)

FILE NAME: zd024scs1.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/13/2008
DRAWN BY: M. McINTOSH
CHECKED BY: M. K. CHEVALIER
SHEET 61 OF 63

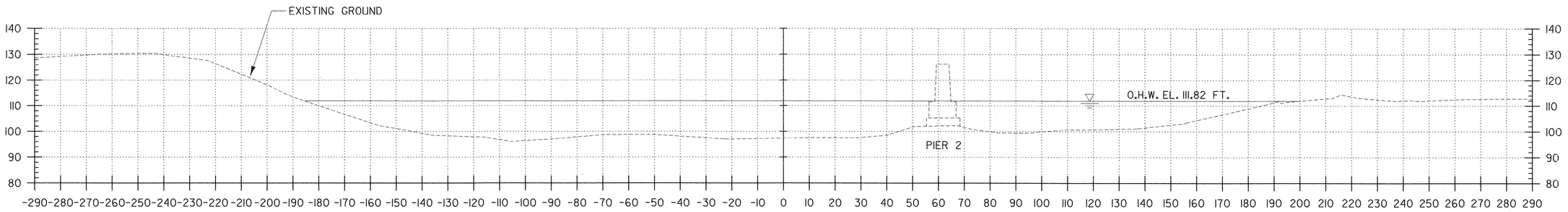


3+00

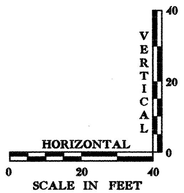
STA. 2+96.19 LT.
BEGIN UNCLASSIFIED CHANNEL EXCAVATION,
STONE FILL TYPE I, & GEOTEXTILE UNDER STONE FILL



2+75



2+50



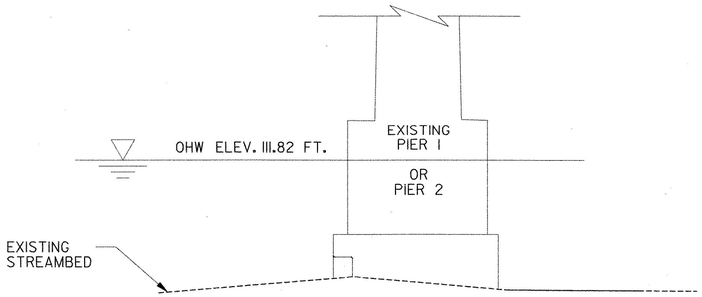
CHANNEL CROSS SECTIONS

SCALE: 1"=20' HORIZONTAL
1"=20' VERTICAL

DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 83

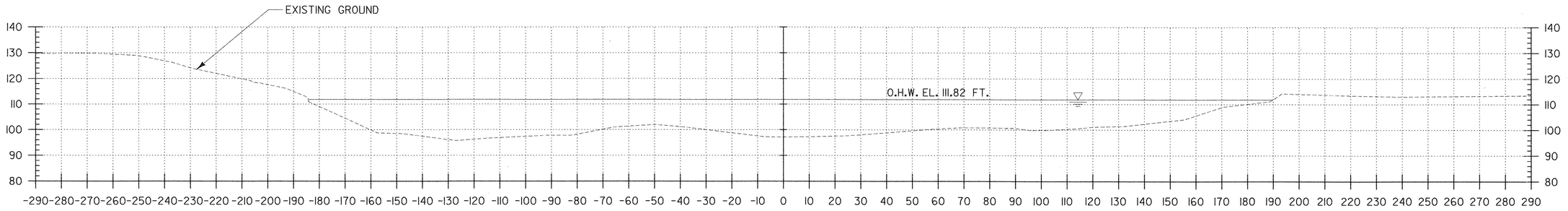
URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH# (518) 688-0015

SHEET NAME: CHANNEL CROSS SECTION - SHEET 2
PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(1)
FILE NAME: zd024scs2.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/13/2008
DRAWN BY: M. McINTOSH
CHECKED BY: M. K. CHEVALIER
SHEET 62 OF 63



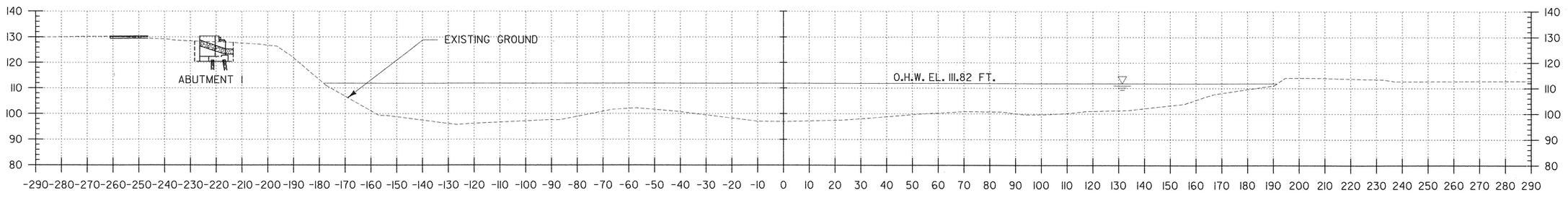
TYPICAL CHANNEL SECTION

(NOT TO SCALE)

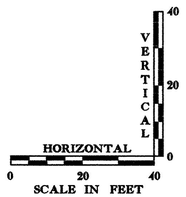


3+50

STA. 3+30.71 LT.
END UNCLASSIFIED CHANNEL EXCAVATION,
STONE FILL TYPE I, & GEOTEXTILE UNDER STONE FILL



3+25



CHANNEL CROSS SECTIONS

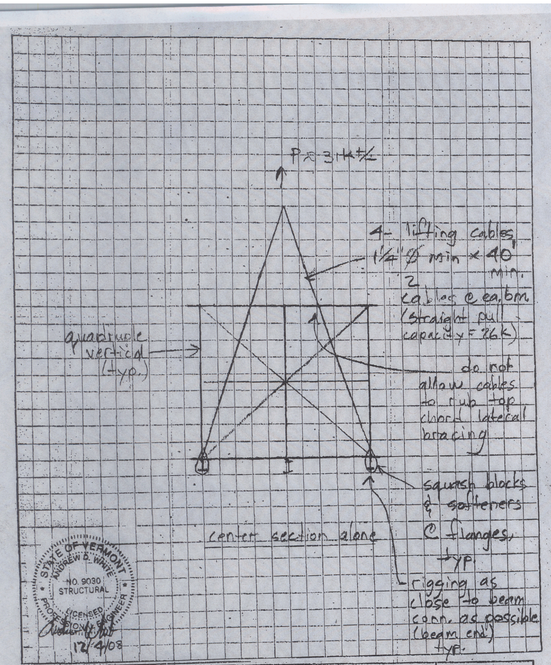
SCALE: 1"=20' HORIZONTAL
1"=20' VERTICAL

DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 83

URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NY 12065
PH# (518) 688-0015

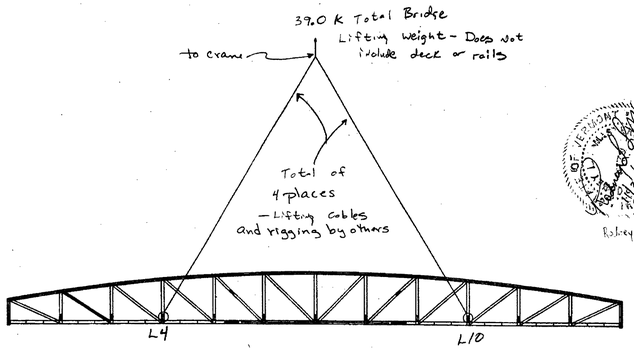
SHEET NAME: CHANNEL CROSS SECTION - SHEET 3
PROJECT NAME: SWANTON
PROJECT NUMBER: STP ST MHTB(1)

FILE NAME: zd024scs3.dgn
PROJECT LEADER: M. K. CHEVALIER
DESIGNED BY: B. ERNST
PLOT DATE: 2/13/2008
DRAWN BY: M. McINTOSH
CHECKED BY: M. K. CHEVALIER
SHEET 63 OF 63



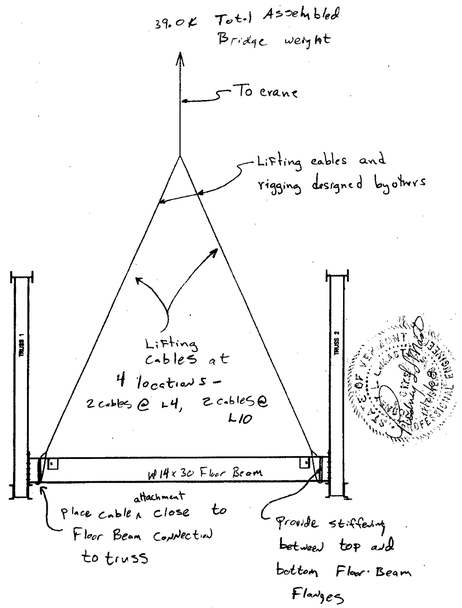
CCS CONSTRUCTORS, LLC 138 MUNSON AVE. MORRISVILLE, VT 05661 PH. 802-888-7701 FX. 802-888-4746	PROJECT NAME Swanton	PROJECT NO. STPST MHTB(1)
	Alt. Pick	DRAWING NO. R1-3 Alt
	SCALE / DATE	

Town of Swanton, Vermont
Franklin County
123'-2" x 12'-0" Pedestrian Bridge



Robert Lee LeMasters
#6179

Town of Swanton, Vermont
Franklin County
123'-2" x 12'-0" Pedestrian Bridge



Swanton, Vermont 11-21-08

Lifting Calculations

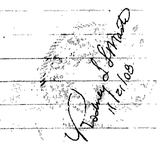
Approximate Lifting weight of assembled bridge 39.0 K

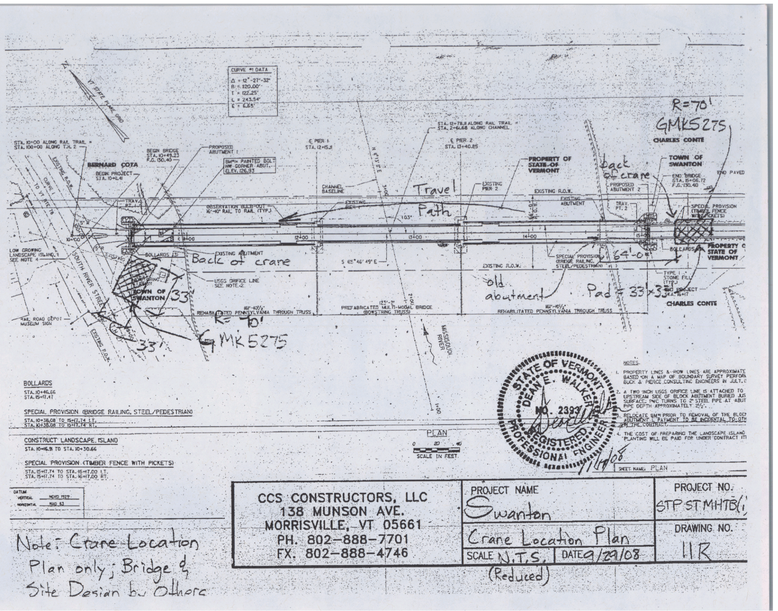
Divide weight into four lifting points = 9.75K

Floor beam connection to truss = 10 FCS, 7/8"Ø A325 bolts.

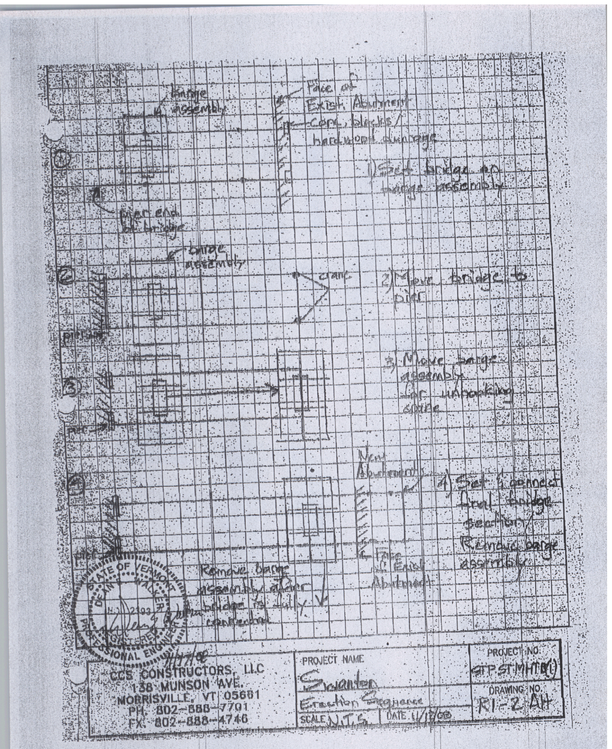
shear capacity of 7/8"Ø bolt = $(0.601in^2)(15Ksi)$
= 9.0 K/Bolt

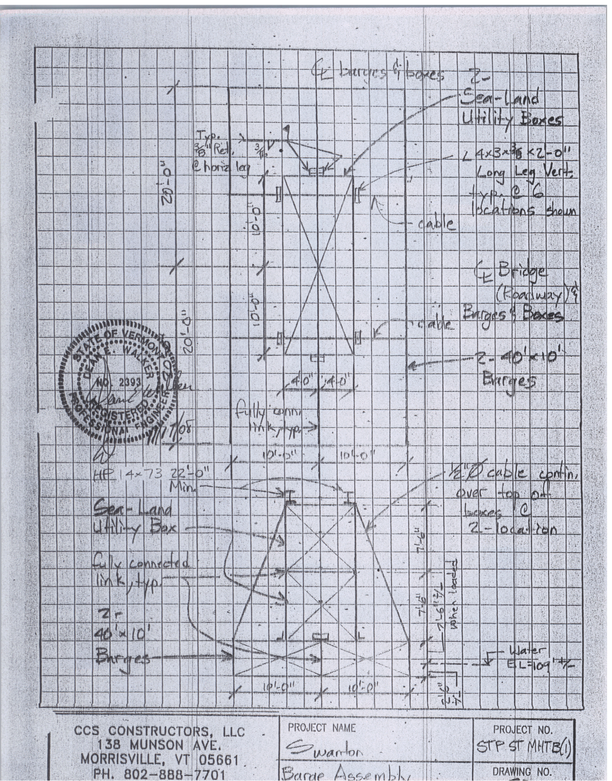
Connection good for (9.0K/Bolt)(10 Bolts)
= 90K > 9.75K, OK

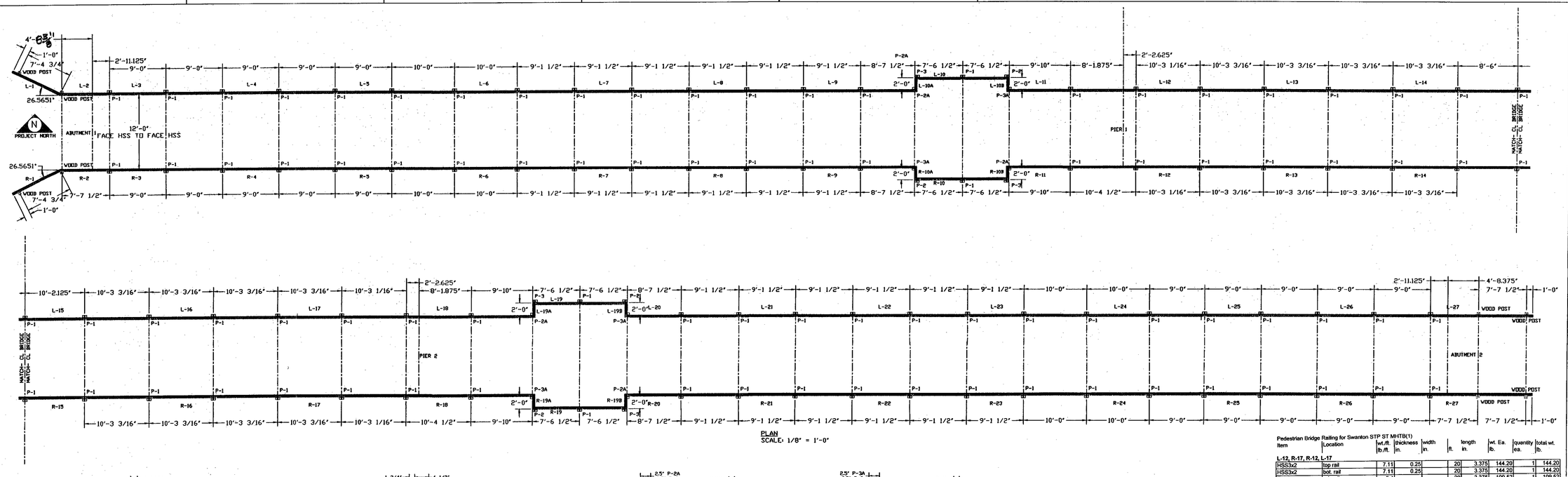




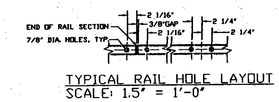
Note: Crane Location Plan only; Bridge & Site Design by Others


Barge w/ assembly
Face of Existing Abutment
Cover blocks / hardwood dunnage
1) Set bridge on barge assembly
Pier end of bridge
Barge assembly
crane
2) Move bridge to pier
3) Move barge assembly w/ hooking cable
New Abutment
4) Set & connect final bridge section
Remove barge assembly after bridge is fully connected
Face of Exist. Abutment
Remove barge assembly
PROFESSIONAL ENGINEER
STATE OF VERMONT
CCS CONSTRUCTORS, LLC
138 MUNSON AVE.
NORRISVILLE, VT 05661
PH. 802-888-7791
FX. 802-888-4746
PROJECT NAME
Swanton
Erection Sequence
SCALE N.T.S.
DATE 11/2000
PROJECT NO.
STP STMHTP(1)
DRAWING NO.
R1-2 AH

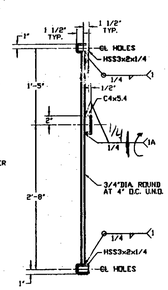

℄ barges & boxes
2- Sea-Land Utility Boxes
Typ. 3/4" Rod, 2 horiz leg
L 4x3x3/8 x 2'-0" Long Leg Vert. typ. @ 6 locations shown
cable
℄ Bridge (Roadway)
Barges & Boxes
2- 40'x10' Barges
40'-0"
40'-0"
Fully connn. link, typ.
10'-0"
10'-0"
HP 14x73 22'-0" Min.
Sea-Land Utility Box
Fully connected link, typ.
2- 40'x10' Barges
3/4" ø cable contin. over top of boxes @ 2- location
Typical Wale
Water EL=109'+/-
10'-0"
10'-0"
20'-0"
10'-0"
10'-0"
7'-6"
7'-6"
7'-6"
7'-6"
1'-0"
1'-0"
1'-0"
1'-0"
1'-0"
1'-0"
STATE OF VERMONT
VINCENT WALKER
No. 2393
REGISTERED PROFESSIONAL ENGINEER
CCS CONSTRUCTORS, LLC
138 MUNSON AVE.
MORRISVILLE, VT 05661
PH. 802-888-7701
PROJECT NAME
Swanton
Barge Assembly
PROJECT NO.
STP ST MHTB(1)
DRAWING NO.



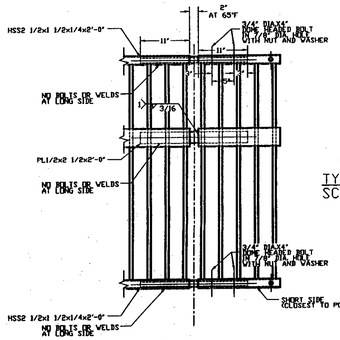
PLAN
SCALE: 1/8" = 1'-0"



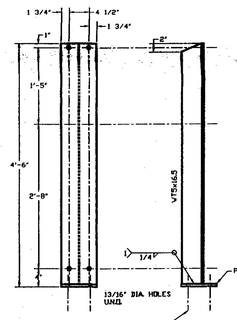
TYPICAL RAIL HOLE LAYOUT
SCALE: 1.5" = 1'-0"



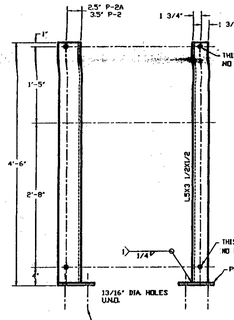
TYPICAL RAIL SECTION
SCALE: 1.5" = 1'-0"



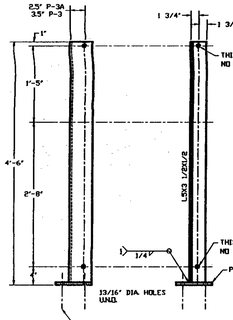
EXPANSION JOINT DETAIL
SCALE: 1.5" = 1'-0"



TYPICAL WT POST, P-1
90 EACH REQUIRED
SCALE: 0.75" = 1'-0"



L POST, P-2 & P-2A
8 EACH REQUIRED
SCALE: 1.5" = 1'-0"



L POST, P-3 & P-3A
8 EACH REQUIRED
SCALE: 1.5" = 1'-0"

RECEIVED
CK'D BY _____ CK'D BY _____
OCT 0 3 2008
RESUBMIT _____ APPROVED _____
BY _____ DATE _____

NOTES:

1) ALL PLATE, WTS, AND ANGLES ASHTO M270, GRADE 36, ALL HSS ASTM A500, GRADE B

2) PAINT SYSTEM BY SHERVIN WILLIAMS-PRIME COAT- ZINC CLAD III HS ZR EPOXY, INTERMEDIATE COAT- MACROPOXY 646 FAST CURE EXPOXY, TOP COAT- SHERVIN WILLIAMS-FIRETHANE ACRYLIC POLYURETHANE. PRIME COAT TO BE 3 TO 5 MILS, INTERMEDIATE COAT TO BE 5 TO 10 MILS, AND TOP COAT TO BE 3 TO 5 MILS DRY FILM THICKNESS. TOP COAT COLOR TO BE SILVER, AS AVAILABLE FOR THIS SYSTEM, COLOR ORDER #5449-0035346

3) ALL BOLTS TO BE ASTM A307, GRADE A OR ASHTO M-164. ALL BOLTS 3/4" DIA IN 13/16" DIA HOLES UNLESS NOTED OTHERWISE. ALL BOLTS, NUTS, AND WASHERS TO BE GALVANIZED ACCORDING TO ASTM A153/ AASHTO M232.

4) GRIND ALL EDGES OF HSS RAILS TO A 1/8 INCH RADIUS. ALL OTHER EDGES AND CORNERS TO BE TO A 1/16 INCH RADIUS PRIOR TO PAINTING.

ACROLON

DOES THIS MEET COLOR # 37178? Please verify

Hardware:

Item	Location	quantity
3/4"x4"long	HSS Joints	34
3/4"x5"long	WT posts	408
3/4"x8"long	wood posts	4
3/4"x10"long	wood posts	4
5/8"x9"long	WT post base plates	360
3/4"x6" lag screw	L post base plates	69

All items listed above are galvanized dome-headed through bolts, supplied with nuts and washers ASTM A307 or A325 unless noted otherwise.

Pedestrian Bridge Railing for Swanton STP ST MHTB(1)

Item	Location	wt./ft. lb./ft.	thickness in.	width in.	ft.	length in.	wt. Ea. lb.	quantity ea.	total wt. lb.
P-1									
WT5x16.5	post	16.5			4	5.375	73.39	1	73.39
PL	base PL	11.34	0.625	8	0	8	7.56	1	7.56
							Total part wt. ea.:		80.95
P-2, P-2A									
L5x3 1/2	post	13.6	0.5		4	5.375	60.49	1	60.49
PL	base PL	11.34	0.625	8	0	8	7.56	1	7.56
							Total part wt. ea.:		68.05
P-3, P-3A									
L5x3 1/2	post	13.6	0.5		4	5.375	60.49	1	60.49
PL	base PL	11.34	0.625	8	0	8	7.56	1	7.56
							Total part wt. ea.:		68.05

Pedestrian Bridge Railing for Swanton STP ST MHTB(1)

Item	Location	wt./ft. lb./ft.	thickness in.	width in.	ft.	length in.	wt. Ea. lb.	quantity ea.	total wt. lb.
L-12, R-17, R-12, L-17									
HSS3x2	top rail	7.11	0.25		20	3.375	144.20	1	144.20
HSS3x2	bot. rail	7.11	0.25		20	3.375	144.20	1	144.20
C4x5.4	rub rail	5.4			20	3.375	109.52	1	109.52
round 3/4"	spindle	0.48			3	11	1.87	61	114.33
							Total part wt. ea.:		512.24
L-13, R-16, R-13, L-16									
HSS3x2	top rail	7.11	0.25		20	6	145.76	1	145.76
HSS3x2	bot. rail	7.11	0.25		20	6	145.76	1	145.76
C4x5.4	rub rail	5.4			20	6	110.70	1	110.70
round 3/4"	spindle	0.48			3	11	1.87	61	114.33
							Total part wt. ea.:		516.54
L-14, R-15, R-14, L-15									
HSS3x2	top rail	7.11	0.25		20	6	145.76	1	145.76
HSS3x2	bot. rail	7.11	0.25		20	6	145.76	1	145.76
C4x5.4	rub rail	5.4			20	6	110.70	1	110.70
round 3/4"	spindle	0.48			3	11	1.87	62	116.20
							Total part wt. ea.:		518.41
L-27, R-27									
HSS3x2	top rail	7.11	0.25		7	10.0625	55.73	1	55.73
HSS3x2	top rail	7.11	0.25		8	7.5625	61.36	1	61.36
HSS3x2	bot. rail	7.11	0.25		16	2.8125	115.43	1	115.43
HSS3x2	end rail	7.11	0.25		2	3	16.00	1	16.00
C4x5.4	rub rail	5.4			12	9.4375	69.05	1	69.05
round 3/4"	spindle	0.48			3	11	1.87	24	44.98
round 3/4"	spindle	0.48			3	10.3125	1.85	1	1.85
round 3/4"	spindle	0.48			3	9.375	1.81	1	1.81
round 3/4"	spindle	0.48			3	8.4375	1.77	1	1.77
round 3/4"	spindle	0.48			3	7.4375	1.73	1	1.73
round 3/4"	spindle	0.48			3	6.5	1.69	1	1.69
round 3/4"	spindle	0.48			3	5.5625	1.66	1	1.66
round 3/4"	spindle	0.48			3	4.625	1.62	1	1.62
round 3/4"	spindle	0.48			3	3.625	1.58	1	1.58
round 3/4"	spindle	0.48			3	2.6875	1.54	1	1.54
round 3/4"	spindle	0.48			3	1.75	1.51	1	1.51
round 3/4"	spindle	0.48			3	0.8125	1.47	1	1.47
round 3/4"	spindle	0.48			2	11.8125	1.43	1	1.43
round 3/4"	spindle	0.48			2	10.875	1.39	1	1.39
round 3/4"	spindle	0.48			2	9.9375	1.35	1	1.35
round 3/4"	spindle	0.48			2	9	1.32	1	1.32
round 3/4"	spindle	0.48			2	8	1.28	1	1.28
round 3/4"	spindle	0.48			2	7.0625	1.24	1	1.24
round 3/4"	spindle	0.48			2	6.125	1.20	1	1.20
round 3/4"	spindle	0.48			2	5.1875	1.16	1	1.16
round 3/4"	spindle	0.48			2	4.1875	1.12	1	1.12
round 3/4"	spindle	0.48			2	3.25	1.09	1	1.09
round 3/4"	spindle	0.48			2	2.3125	1.05	1	1.05
round 3/4"	spindle	0.48			2	1.375	1.01	1	1.01
round 3/4"	spindle	0.48			2	0.375	0.97	1	0.97
PL	rub rail end cap	0.66	0.25	2.3125	0	4	0.22	1	0.22
L3x3	post mount	9.4	0.5		0	6.1875	4.85	1	4.85
L3x3	post mount	9.4	0.5		0	4.5	4.31	1	4.31
							Total part wt. ea.:		405.76

UNLESS OTHERWISE SPECIFIED		DATE	NAME
DIMENSIONS ARE IN INCHES	DRAWN		SPT
TOLERANCES:	CHECKED		ADW
FRACTIONAL±	ENG APPR.		
ANGULAR: MACH± BEND ±	MFG APPR.		
TWO PLACE DECIMAL ±	Q.A.		
THREE PLACE DECIMAL ±	COMMENTS:		
INTERPRET GEOMETRIC TOLERANCING PER:			
MATERIAL M270-36, A500-B			
FINISH SW PRIMER			

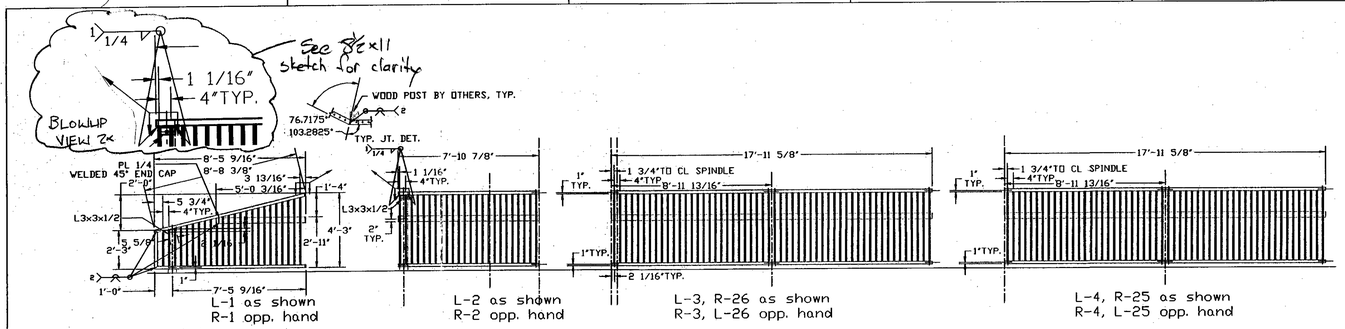
CCS Constructors LLC
138 Munson Avenue
Morrisville, VT 05661
Ph: 802-881-7701 f: 802-888-4746

LWI Metalworks
MORRISVILLE, VT 05661
802-888-2394

TITLE: SWANTON STP ST MHTB(1)

SIZE	DWG. NO.	REV
B	R-1	10/1 /08

SCALE: A.N. | WEIGHT: SCH. | SHEET 1 OF 2

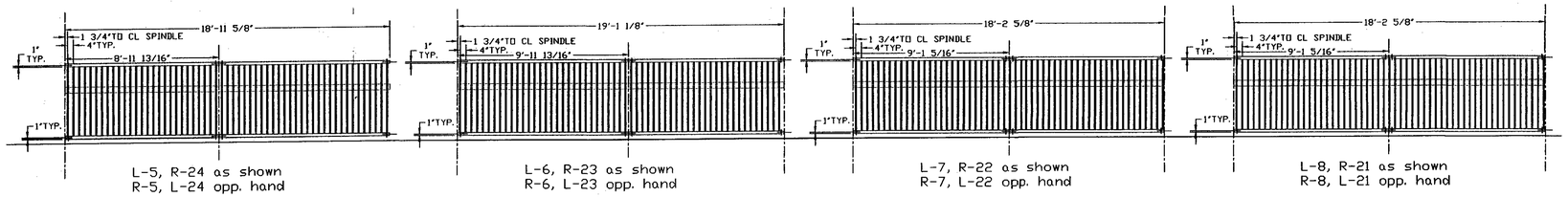


L-1 as shown
R-1 opp. hand

L-2 as shown
R-2 opp. hand

L-3, R-26 as shown
R-3, L-26 opp. hand

L-4, R-25 as shown
R-4, L-25 opp. hand

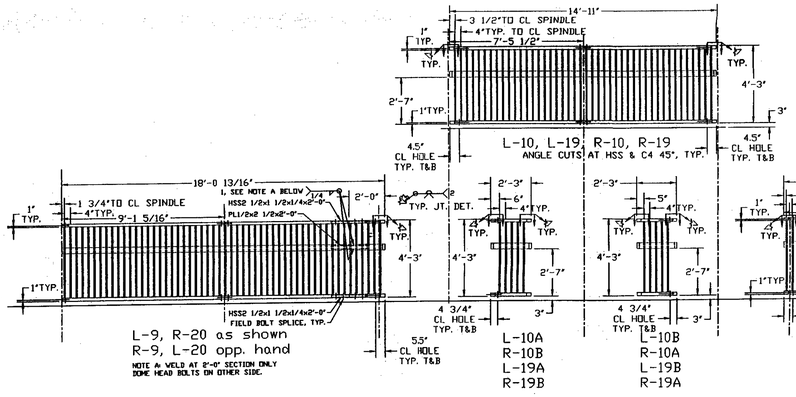


L-5, R-24 as shown
R-5, L-24 opp. hand

L-6, R-23 as shown
R-6, L-23 opp. hand

L-7, R-22 as shown
R-7, L-22 opp. hand

L-8, R-21 as shown
R-8, L-21 opp. hand



L-10, L-19, R-10, R-19
ANGLE CUTS AT HSS & C4 45°, TYP.

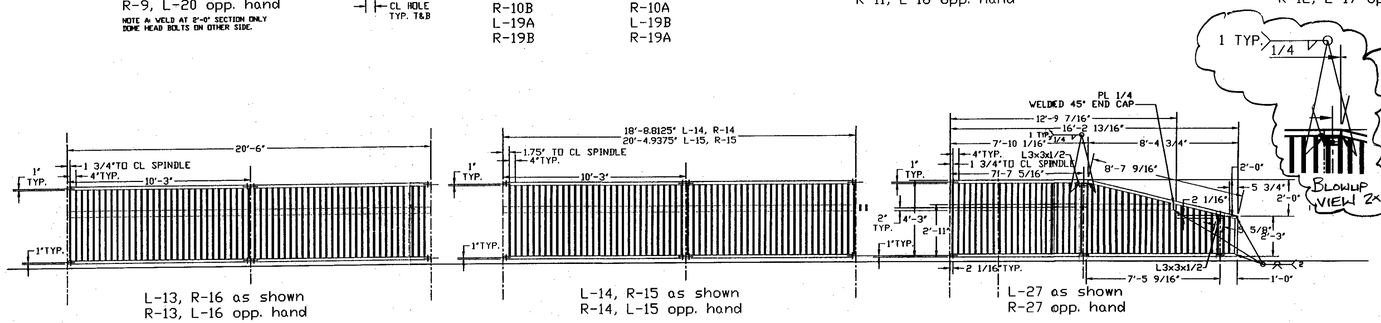
L-9, R-20 as shown
R-9, L-20 opp. hand
NOTE A: WELD AT 2'-0" SECTION ONLY
DOME HEAD BOLTS ON OTHER SIDE.

L-10A
L-10B
L-19A
L-19B

L-10B
L-10A
L-19B
L-19A

L-11, R-18 as shown
R-11, L-18 opp. hand

L-12, R-17 as shown
R-12, L-17 opp. hand



L-13, R-16 as shown
R-13, L-16 opp. hand

L-14, R-15 as shown
R-14, L-15 opp. hand

L-27 as shown
R-27 opp. hand

RECEIVED
CK'D BY _____ CK'D BY _____
OCT 03 2008
RESUBMIT _____ APPROVED _____
BY _____ DATE _____

Pedestrian Bridge Railing for Swanton STP ST MHTB(1)

Item	Location	wt./ft. lb./ft.	thickness in.	width in.	length ft.	length in.	wt. Ea. lb.	quantity ea.	total wt. lb.
L-1, R-1									
HSS3x2	bot. rail	7.11	0.25		8	5.5625	60.18	1	60.18
HSS3x2	top rail	7.11	0.25		8	8.375	61.84	1	61.84
C4x5.4	rub rail	5.4			5	0.1875	27.08	1	27.08
round 3/4"	spindle	0.48			3	10.125	1.84	1	1.84
round 3/4"	spindle	0.48			3	9.1875	1.80	1	1.80
round 3/4"	spindle	0.48			3	8.25	1.76	1	1.76
round 3/4"	spindle	0.48			3	7.3125	1.73	1	1.73
round 3/4"	spindle	0.48			3	6.375	1.69	1	1.69
round 3/4"	spindle	0.48			3	5.375	1.65	1	1.65
round 3/4"	spindle	0.48			3	4.4375	1.61	1	1.61
round 3/4"	spindle	0.48			3	3.5	1.58	1	1.58
round 3/4"	spindle	0.48			3	2.5625	1.54	1	1.54
round 3/4"	spindle	0.48			3	1.625	1.50	1	1.50
round 3/4"	spindle	0.48			3	0.6875	1.46	1	1.46
round 3/4"	spindle	0.46			2	11.75	1.43	1	1.43
round 3/4"	spindle	0.48			2	10.8125	1.39	1	1.39
round 3/4"	spindle	0.48			2	9.8125	1.35	1	1.35
round 3/4"	spindle	0.48			2	8.875	1.31	1	1.31
round 3/4"	spindle	0.48			2	7.9375	1.27	1	1.27
round 3/4"	spindle	0.48			2	7	1.24	1	1.24
round 3/4"	spindle	0.48			2	6.0625	1.20	1	1.20
round 3/4"	spindle	0.48			2	5.125	1.16	1	1.16
round 3/4"	spindle	0.48			2	4.1875	1.12	1	1.12
round 3/4"	spindle	0.48			2	3.25	1.09	1	1.09
round 3/4"	spindle	0.48				2.25	0.09	1	0.09
round 3/4"	spindle	0.46			2	1.3125	1.01	1	1.01
round 3/4"	spindle	0.48			2	0.375	0.97	1	0.97
round 3/4"	spindle	0.48			2	3	1.08	1	1.08
PL	rub rail end cap	0.66	0.25	2.3125	0	4	0.22	1	0.22
L3x3	post mount	9.4	0.5		0	6.1875	4.85	1	4.85
HSS3x2	end rail	7.11	0.25		2	3	16.00	1	16.00
							Total part wt. ea.:		204.03
L-2, R-2									
HSS3x2	top rail	7.11	0.25		7	10.875	56.21	1	56.21
HSS3x2	bot. rail	7.11	0.25		7	10.875	56.21	1	56.21
C4x5.4	rub rail	5.4			7	10.875	42.69	1	42.69
round 3/4"	spindle	0.46			3	11	1.87	24	44.98
L3x3	post mount	9.4	0.5		0	5.5	4.31	1	4.31
							Total part wt. ea.:		204.41
L-3, R-26, R-3, L-26									
HSS3x2	top rail	7.11	0.25		17	11.625	127.76	1	127.76
HSS3x2	bot. rail	7.11	0.25		17	11.625	127.76	1	127.76
C4x5.4	rub rail	5.4			17	11.625	97.03	1	97.03
round 3/4"	spindle	0.48			3	11	1.87	54	101.21
							Total part wt. ea.:		453.75
L-4, R-25, R-4, L-25									
HSS3x2	top rail	7.11	0.25		17	11.625	127.76	1	127.76
HSS3x2	bot. rail	7.11	0.25		17	11.625	127.76	1	127.76
C4x5.4	rub rail	5.4			17	11.625	97.03	1	97.03
round 3/4"	spindle	0.48			3	11	1.87	54	101.21
							Total part wt. ea.:		453.75
L-5, R-24, R-5, L-24									
HSS3x2	top rail	7.11	0.25		18	11.625	134.87	1	134.87
HSS3x2	bot. rail	7.11	0.25		18	11.625	134.87	1	134.87
C4x5.4	rub rail	5.4			18	11.625	102.43	1	102.43
round 3/4"	spindle	0.48			3	11	1.87	57	106.83
							Total part wt. ea.:		479.00
L-6, R-23, R-6, L-23									
HSS3x2	top rail	7.11	0.25		19	1.125	135.76	1	135.76
HSS3x2	bot. rail	7.11	0.25		19	1.125	135.76	1	135.76
C4x5.4	rub rail	5.4			19	1.125	103.11	1	103.11
round 3/4"	spindle	0.48			3	11	1.87	57	106.63
							Total part wt. ea.:		481.45
L-7, R-22, R-7, L-22									
HSS3x2	top rail	7.11	0.25		18	2.625	129.54	1	129.54
HSS3x2	bot. rail	7.11	0.25		18	2.625	129.54	1	129.54
C4x5.4	rub rail	5.4			18	2.625	98.38	1	98.38
round 3/4"	spindle	0.48			3	11	1.87	55	103.08
							Total part wt. ea.:		460.53
L-8, R-21, R-8, L-21									
HSS3x2	top rail	7.11	0.25		18	2.625	129.54	1	129.54
HSS3x2	bot. rail	7.11	0.25		18	2.625	129.54	1	129.54
C4x5.4	rub rail	5.4			18	2.625	98.38	1	98.38
round 3/4"	spindle	0.48			3	11	1.87	55	103.08
							Total part wt. ea.:		460.53
L-9, R-20, R-9, L-20									
HSS3x2	top rail	7.11	0.25		18	0.8125	128.46	1	128.46
HSS3x2	bot. rail	7.11	0.25		18	0.8125	128.46	1	128.46
C4x5.4	rub rail	5.4			18	0.8125	97.57	1	97.57
round 3/4"	spindle	0.48			3	11	1.87	54	101.21
							Total part wt. ea.:		455.69
L-10, R-19, R-10, L-19									
HSS3x2	top rail	7.11	0.25		14	11	106.06	1	106.06
HSS3x2	bot. rail	7.11	0.25		14	11	106.06	1	106.06
C4x5.4	rub rail	5.4			14	11	80.55	1	80.55
round 3/4"	spindle	0.46			3	11	1.87	44	82.46
							Total part wt. ea.:		375.13
L-10A, R-19B, R-10B, L-19A									
HSS3x2	top rail	7.11	0.25		2	3	16.00	1	16.00
HSS3x2	bot. rail	7.11	0.25		2	3	16.00	1	16.00
C4x5.4	rub rail	5.4			2	3	12.15	1	12.15
round 3/4"	spindle	0.48			3	11	1.87	5	9.37
							Total part wt. ea.:		53.52
L-10B, R-19A, R-10A, L-19B									
HSS3x2	top rail	7.11	0.25		2	3	16.00	1	16.00
HSS3x2	bot. rail	7.11	0.25		2	3	16.00	1	16.00
C4x5.4	rub rail	5.4			2	3	12.15	1	12.15
round 3/4"	spindle	0.48			3	11	1.87	5	9.37
							Total part wt. ea.:		53.52
L-11, R-18, R-11, L-18									
HSS3x2	top rail	7.11	0.25		19	11.8125	142.09	1	142.09
HSS3x2	bot. rail	7.11	0.25		19	11.8125	142.09	1	142.09
C4x5.4	rub rail	5.4			19	11.8125	107.92	1	107.92
round 3/4"	spindle	0.48			3	11	1.87	60	112.45
HSS2 1/2x1 1/2	exp. Jt. @ T& B rails	5.41	0.25		2	0	10.82	2	21.64
PL	exp. Jt. @ rub rail	8.51	0.5	2.5	2	0	17.01	1	17.01
							Total part wt. ea.:		543.20

UNLESS OTHERWISE SPECIFIED		DATE	NAME
DIMENSIONS ARE IN INCHES	DRAWN		SPT
TOLERANCES: FRACTIONAL±	CHECKED		ADW
ANGULAR: MACH± BEND ±	ENG APPR.		
TWO PLACE DECIMAL ±	MFG APPR.		
THREE PLACE DECIMAL ±	Q.A.		
INTERPRET GEOMETRIC TOLERANCING PER:			
MATERIAL M270-36, A500-B			
FINISH SW PRIMER			

COMMENTS:

CCS Contructors LLC
138 Mulson Avenue
Morrisvib, VT 05661
Ph: 802-888-7701 f: 802-888-4746

LWI Metalworks
MORRISVILLE, VT 05661
802-888-2394

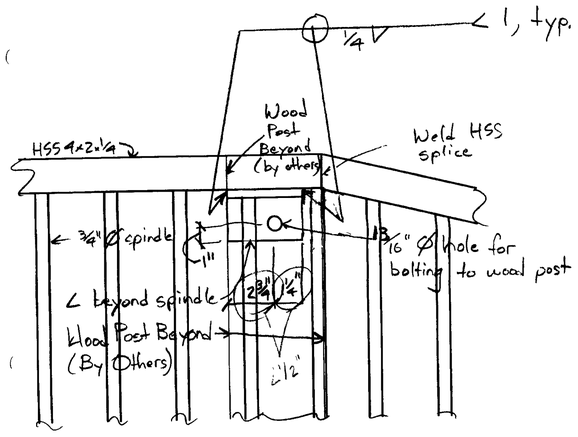
TITLE: SWANTON STP ST MHTB(1)

SIZE	DWG. NO.	REV
B	R-2	10/1/08

SCALE: 1/4" | WEIGHT: SCH. | SHEET 2 OF 2

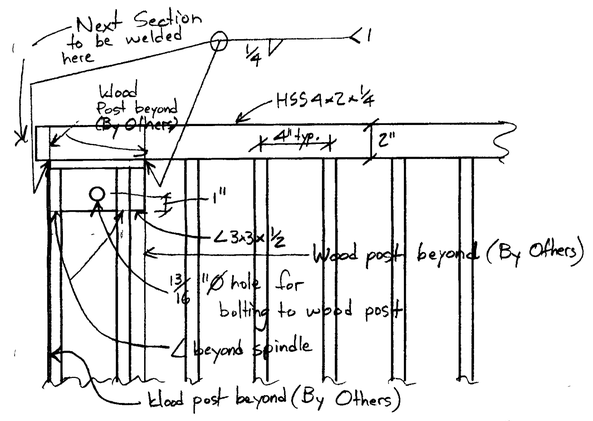
Swanton STP ST MHTB(1)
Pedestrian Bridge Railing
LWI Metal Works

Scale: 3"=1'-0"



Swanton STP ST MHTB(1)
Pedestrian Bridge Railing
LWI Metal Works

Scale: 3"=1'-0"



RECEIVED
CK'D BY_____ OK'D BY_____
OCT 10 2008
RESUBMIT_____ APPROVED ✓
BY _____ DATE 10/10/08

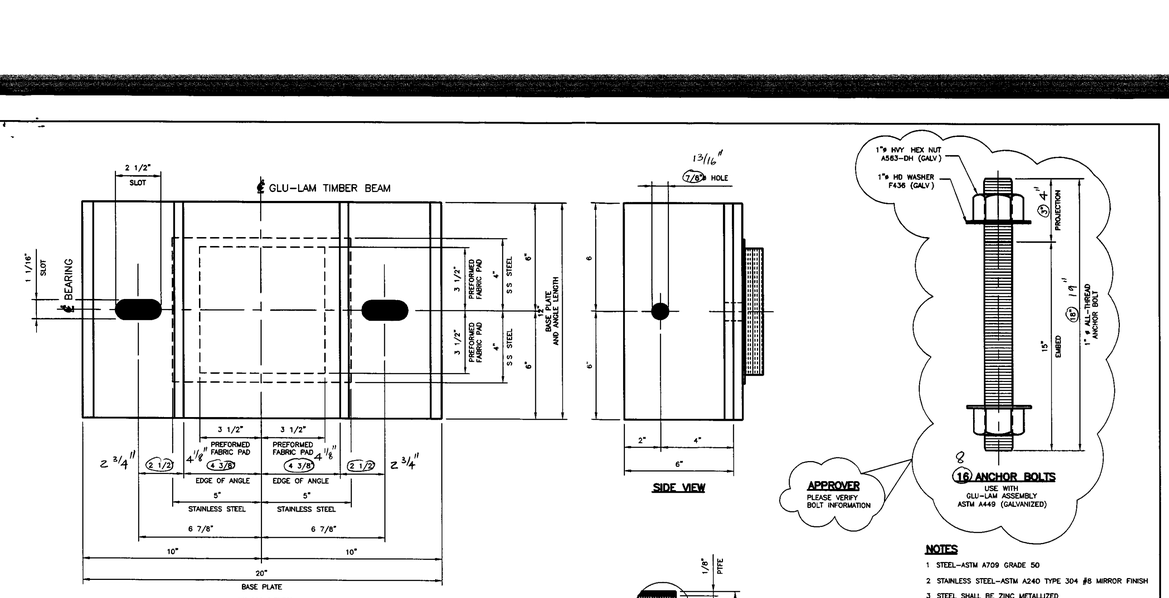
UNLESS OTHERWISE SPECIFIED		DATE	NAME
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		SPT
	CHECKED		ADW
	ENG APPR		
	MFG APPR		
	Q A		
INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:		
MATERIAL M270-36, A500-B			
FINISH SW PRIMER			

LWI Metalworks
MORRISVILLE, VT 05661
802-888-2394

TITLE: SWANTON STP ST MHTB(1)

SIZE	DWG. NO.	REV
B	R-3	10/7/08

SCALE: A.N. | WEIGHT: SCH. | SHEET 3 OF 3



NOTES

1 STEEL–ASTM A709 GRADE 50
2 STAINLESS STEEL–ASTM A240 TYPE 304 #8 MIRROR FINISH
3 STEEL SHALL BE ZINC METALLIZED
4 PREFORMED FABRIC–AASHTO 18491 MIL–C–882
5 ANCHOR BOLTS–ASTM A449 (GALVANIZED)
6 PIN–ASTM M102F GRADE 50
7 PIN NUTS–ASTM A563 GRADE A
8 PTFE–ASTM D 4894 VIRGIN UNFILLED EPOXY BONED TO PREFORMED FABRIC

RECEIVED
CK'D BY HKB OK'D BY
AUG 29 2008
RESUBMIT ____ APPROVED ✓
BY RGS DATE 9/09/08

GLU-LAM BEARING ASSEMBLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

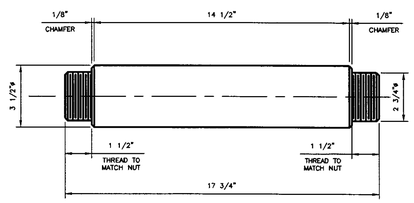
STATE	TOWN	CONTRACT NO
VT	SWANTON	N/A

FED AID PROJECT NO STP ST MHTB (1)

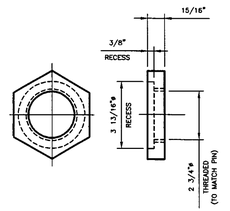
DYNAMIC RUBBER
A DIVISION OF COSMEC INC
1301 ROCKY RIDGE ROAD
ATHENS TX 75751

SCALE NONE	DRAWN BY KTW	CHECKED BY CLS
	DATE 8/28/2008	DATE 8/28/2008

SHT 1 OF 2 DRR NO : 0947



BEARING PIN- 8 REQUIRED
ASTM M102F, GRADE 50 STEEL
(NO PAINT)



RECESSED PIN NUTS- 8 REQUIRED
ASTM A563 GRADE A

CONTRACTOR:
PLEASE VERIFY ALL DIMENSIONS FOR BEARING PIN

RECEIVED
CK'D BY HK6 OK'D BY
AUG 29 2008
RESUBMIT ____ APPROVED ✓
BY RGS DATE 9/09/08

PIN DETAIL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE	COUNTY	CONTRACT NO
VT	SWANTON	N/A

FED. AID PROJECT NO STP ST MNTB (1)

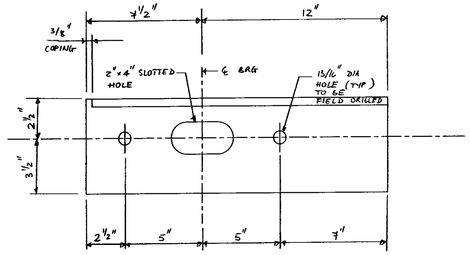
DYNAMIC RUBBER
A DIVISION OF COSMEC, INC
1501 ROCKY RIDGE ROAD
ATHENS, TX 75751

SCALE: NONE | DRAWN BY KW DATE: 8/25/2008 | CHECKED BY ELS DATE: 8/26/2008

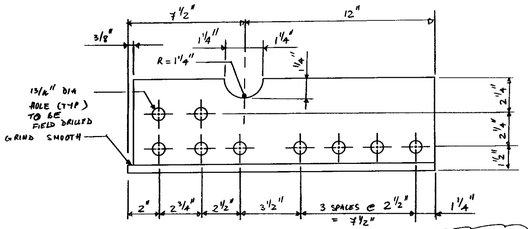
SHEET 2 OF 2 | DRP NO.: 9947

CUSTOMER: CCS CONSTRUCTORS, LLC | DRAWING NUMBER/REV: 9947-02 | 0

REV	DESCRIPTION	BY	DATE	CK'D	DATE



TOP VIEW

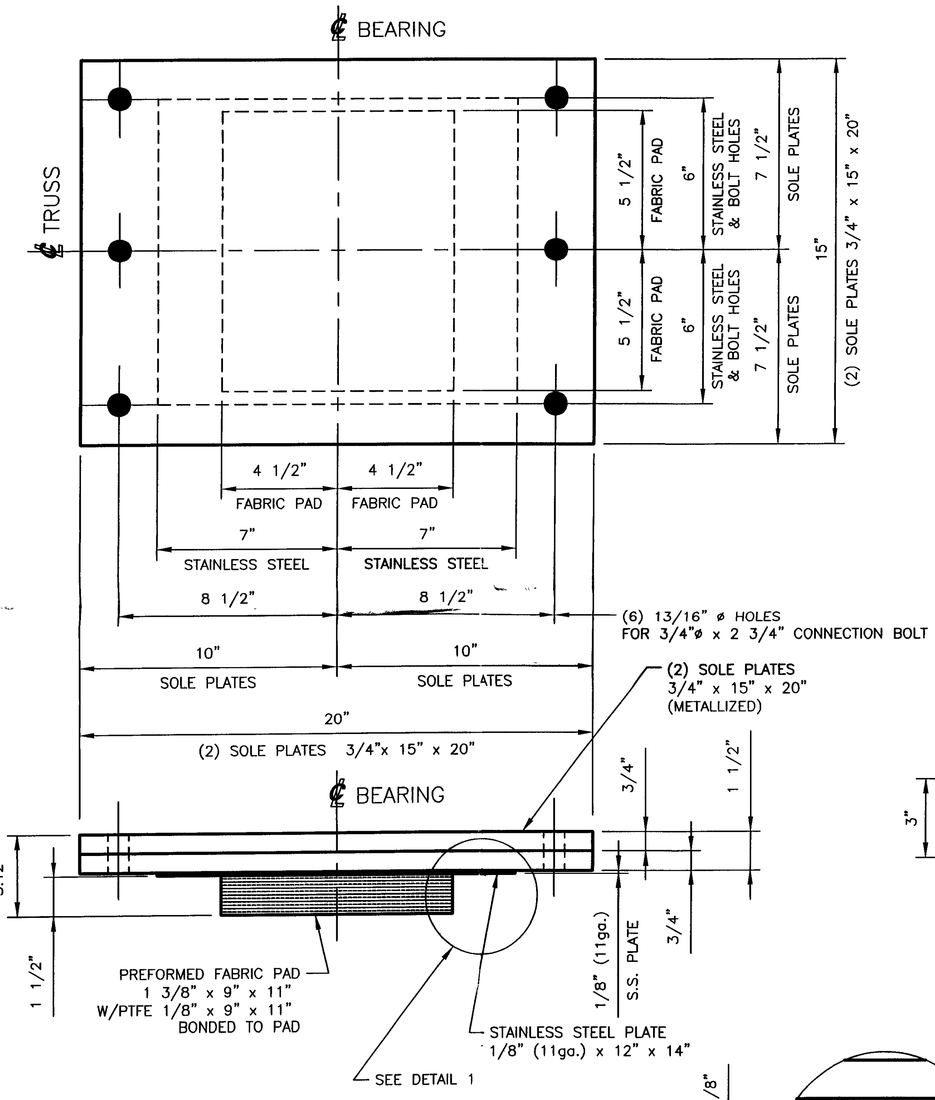


SIDE VIEW

CONTRACTOR:
PLEASE VERIFY
ALL DIMENSIONS

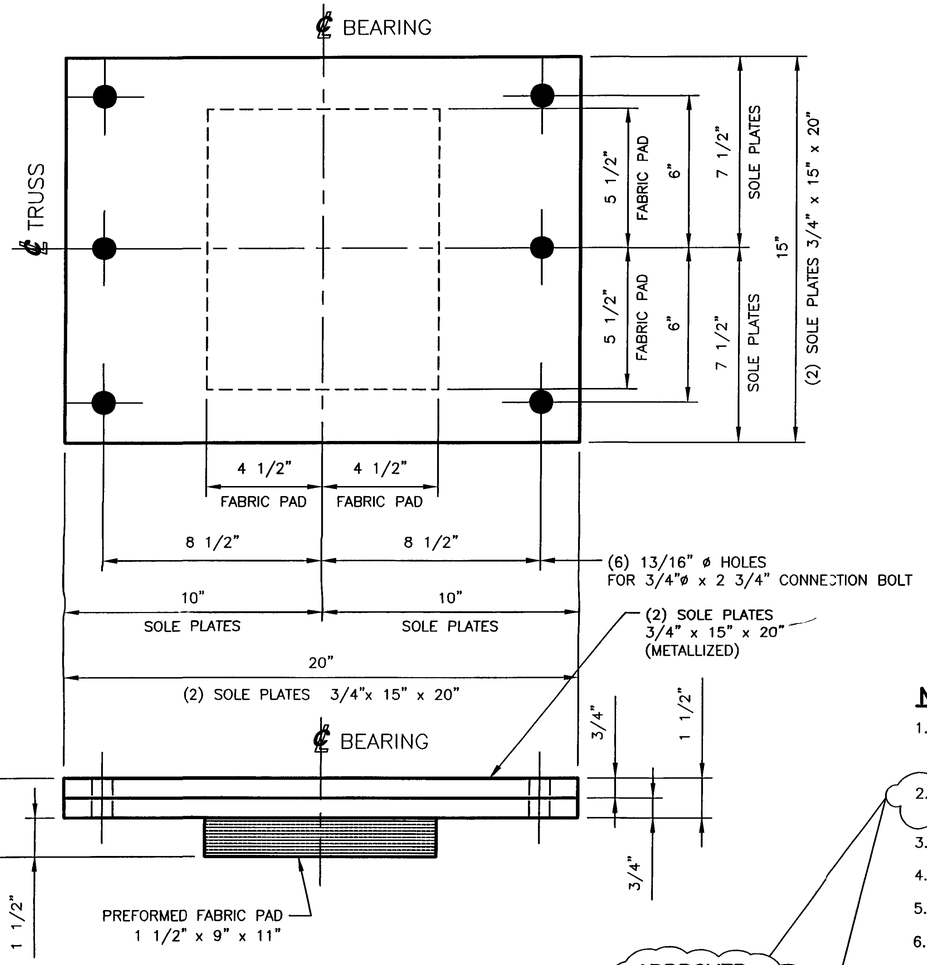
4 LOOSE ANGLES, L1
L 6 x 6 x 1/2 x 19 1/2"

LOCATED AT
EXPANSION BEARING ASSEMBLY, EB 1



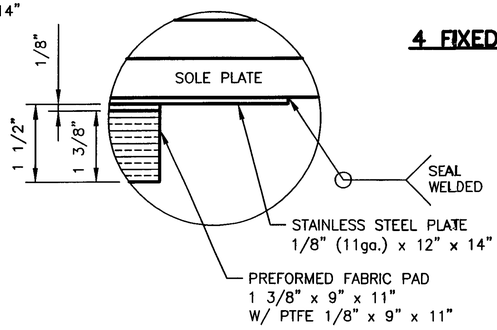
4 EXPANSION BEARING ASSEMBLIES, EB1

LOCATED AT
PIER TRUSS

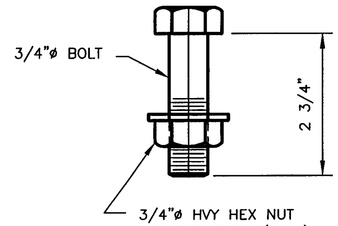


4 FIXED BEARING ASSEMBLIES, FB1

LOCATED AT
ABUTMENT TRUSS



DETAIL 1



48 CONNECTION BOLTS, CB1

HEADED BOLT 3/4"ø x 2 3/4"
ASTM A325 (GALV)
LOCATED AT
(24) @ FIXED BEARING ASSEMBLY, FB1
(24) @ EXPANSION BEARING ASSEMBLY, EB1

RECEIVED
GK'D BY HKB OK'D BY
MAY 1 3 2008
PESUBMIT APPROVED RGS
BY DATE 5/22/08

NOTES:

1. BEARING SHALL CONFORM TO THE APPLICABLE SUBSECTION 531 AND 731 OF STANDARD SPECIFICATIONS.
2. SURFACES TO BE METALLIZED SHALL BE PREPARED AND COATED IN ACCORDANCE WITH AWS C2.18
3. STEEL – ASTM A709 GR 50 (METALLIZED)
4. PREFORMED FABRIC PAD – MIL-C-882
5. ANCHOR BOLTS – ASTM A449 A307 - Ok to use A449
6. CONNECTION BOLTS – ASTM A325

APPROVER:
PLEASE VERIFY PLATES & ANGLES TO BE METALLIZED OR GALVANIZED.

METALLIZED IS OK

EXPANSION BEARING ASSEMBLY
FIX BEARING ASSEMBLY
VERMONT AGENCY OF TRANSPORTAION
TOWN OF SWANTON
HISTORIC BRIDGE No. 18
OVER THE MISSISQUOI RIVER

STATE	COUNTY	CONTRACT NO.
VT	FRANKLIN	N/A

FED. AID PROJECT NO.: STP ST MHTB (1)

DYNAMIC RUBBER
A DIVISION OF COSMEC, INC.
1501 ROCKY RIDGE ROAD
ATHENS, TX 75751

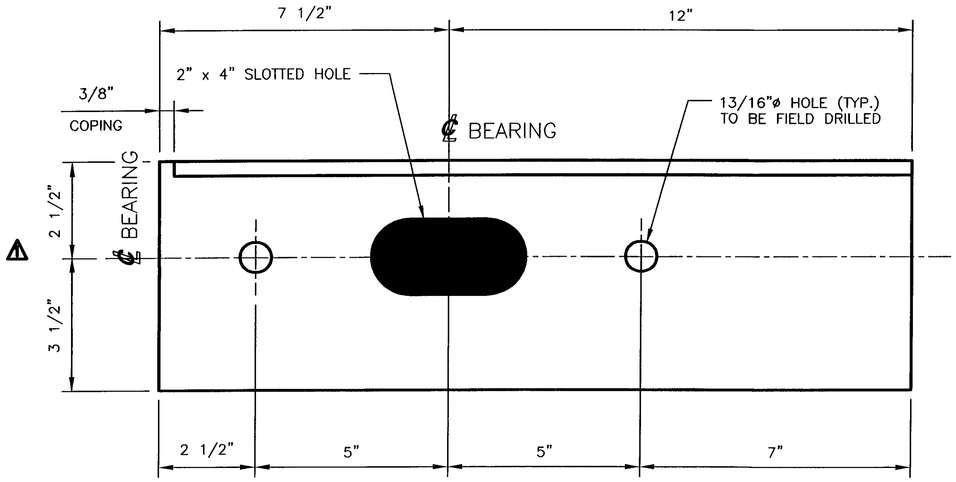
SCALE: NONE | DRAWN BY: KYW | DATE: 4/7/208 | CHECKED BY: JR | DATE: 4/25/2008

SHEET 1 OF 2 | DRP NO.: 9824

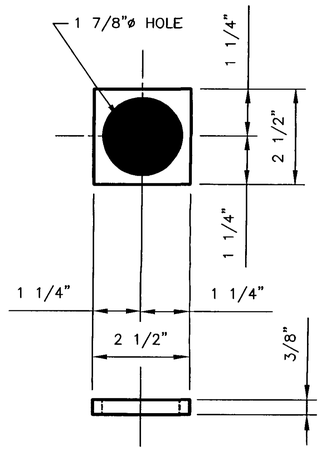
REV.	DESCRIPTION	BY	DATE	CK'D	DATE

CUSTOMER: CCS CONSTRUCTORS LLC | DRAWING NUMBER: 9824-D1 | REV: 0

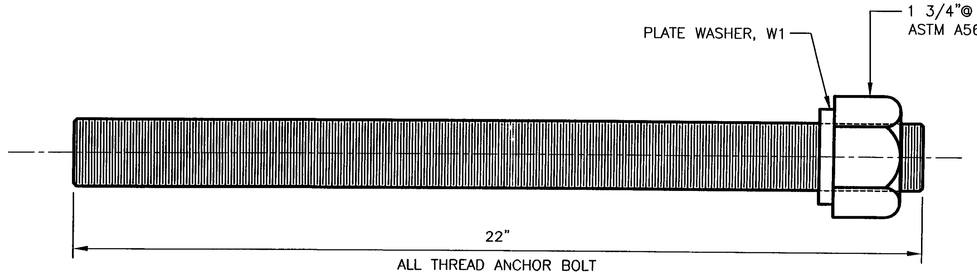
CCS Constructors LLC
138 Munson Avenue
Morrisville, VT 05661
Ph 802-888-7701 f 802-888-4746



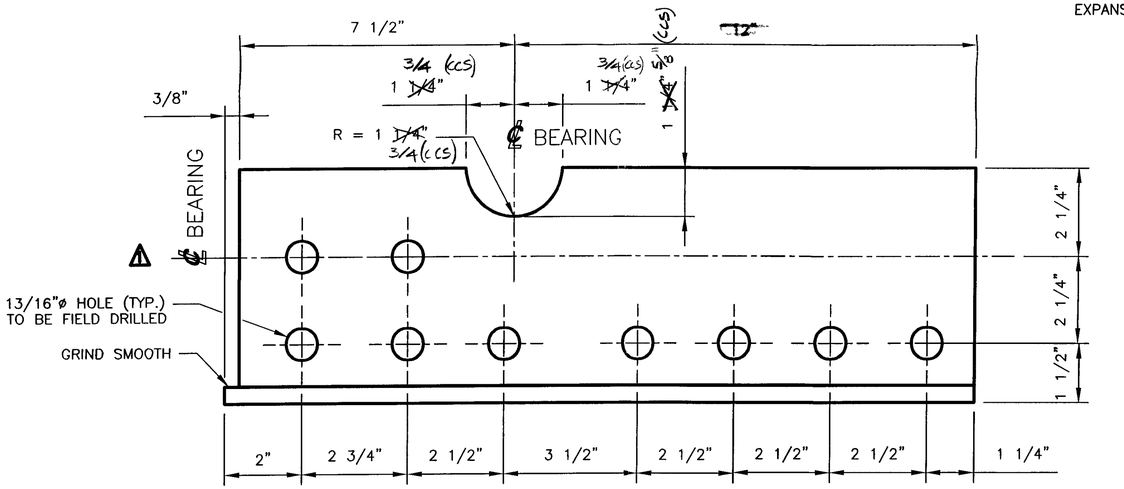
⚠ **TOP VIEW**



8 PLATE WASHER, W1
PLATE 3/8" x 2 1/2" x 2 1/2"
ASTM A709 GR 50 (GALVANIZED)
LOCATED AT
EXPANSION BEARING ASSEMBLY, EB1

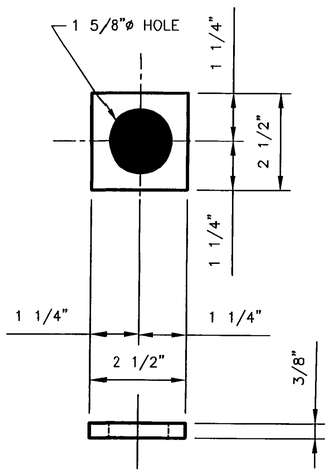


8 ANCHOR BOLTS, AB1
1 3/4"ø x 22" ALL THREAD
ASTM A449 GALVANIZED
LOCATED AT
(8) AT EXPANSION BEARING ASSEMBLY, EB1

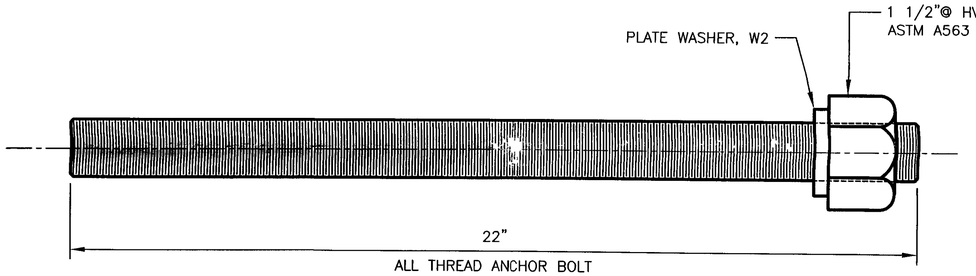


SIDE VIEW

⚠ **4 LOOSE ANGLES, L1**
L 6" x 6" x 1/2" x 19 1/2"
ASTM A709 GR 50 (ZINC METALLIZED)
LOCATED AT
EXPANSION BEARING ASSEMBLY, EB1



8 PLATE WASHER, W2
PLATE 3/8" x 2 1/2" x 2 1/2"
ASTM A709 GR 50 (GALVANIZED)
LOCATED AT
FIXED BEARING ASSEMBLY, FB1



8 ANCHOR BOLTS, AB2
1 1/2"ø x 22" ALL THREAD
ASTM A449 GALVANIZED
LOCATED AT
(8) AT FIXED BEARING ASSEMBLY, FB1

RECEIVED
CK'D BY HKB OK'D BY
JUL 09 2008
RESUBMIT APPROVED ✓
BY RSG DATE 7/16/08

SEE SHEET 1 FOR SHOP NOTES

CONNECTION DETAILS

VERMONT AGENCY OF TRANSPORTAION
TOWN OF SWANTON
HISTORIC BRIDGE No. 18
OVER THE MISSISQUOI RIVER

STATE	COUNTY	CONTRACT NO.
VT	FRANKLIN	N/A

FED. AID PROJECT NO.: STP ST MHTB (1)

DYNAMIC RUBBER
A DIVISION OF COSMEC, INC.
1501 ROCKY RIDGE ROAD
ATHENS, TX 75751

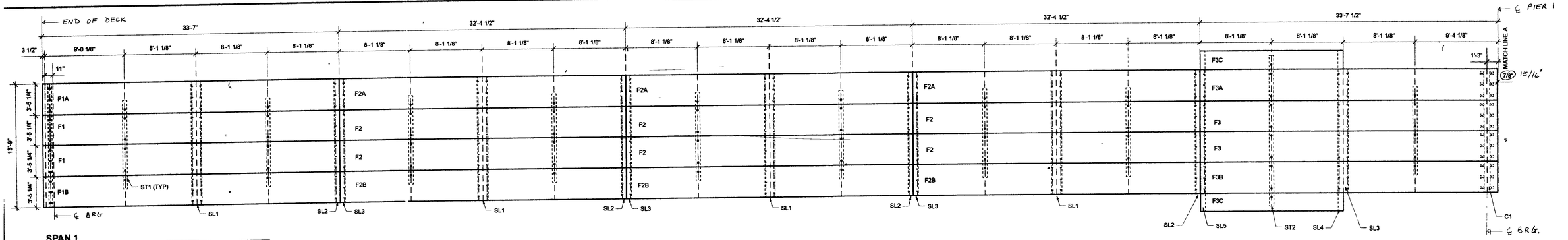
CCS Constructors LLC
138 Munson Avenue
Morrisville, VT 05661
Ph 802-888-7701 f 802-888-4746

SCALE: NONE | DRAWN BY: KYW DATE: 4/7/208 | CHECKED BY JR DATE: 4/25/2008

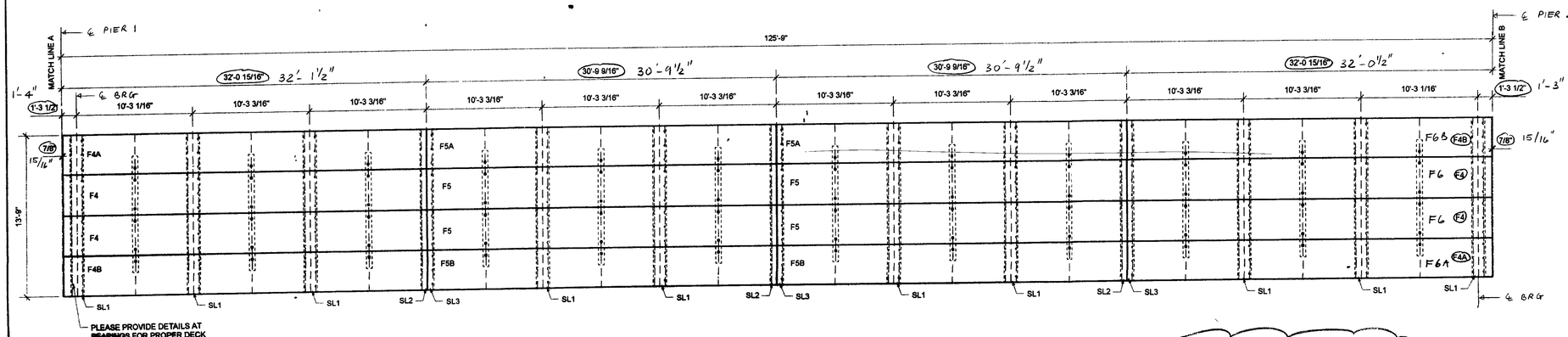
REV.	DESCRIPTION	BY	DATE	CK'D	DATE
⚠ 1	CHANGE IN ANGLES	KIH	07/03	ELS	07/03

SHEET 2 OF 2 | **DRP NO.: 9824**

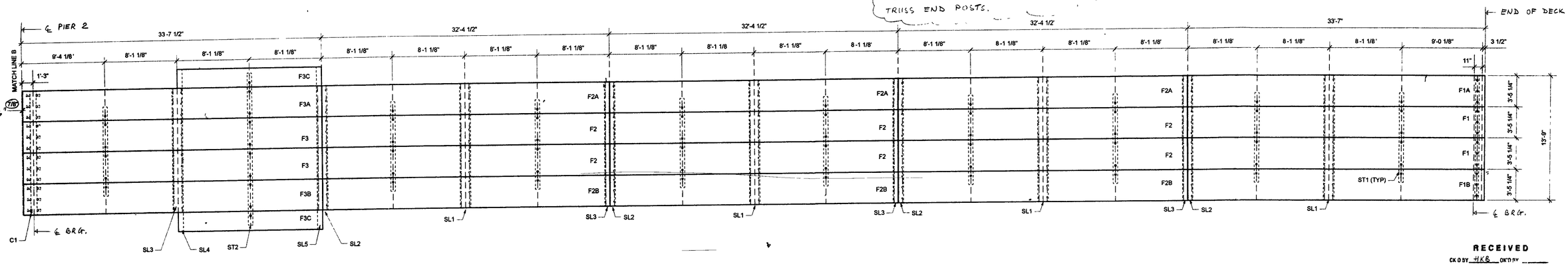
CUSTOMER: CCS CONSTRUCTORS LLC | DRAWING NUMBER: 9824–D2 | REV: 1



SPAN 1



SPAN 2



SPAN 3

ALL DIMENSIONS FOR THE HISTORIC TRUSS ARE BASED ON LIMITED FIELD MEASUREMENTS. THE CONTRACTOR SHALL FIELD VERIFY THESE DIMENSION FOR PROPER FIT

END DECK PANELS ON SPAN 2 WILL REQUIRED SOME CUTTINGS TO AVOID CONFLICT WITH PRE FAB TRUSS END POSTS.

RECEIVED
CK'D BY HKB OK'D BY
JUL 3 1 2003
RESUBMIT APPROVED ✓
BY RGS DATE 8/6/08

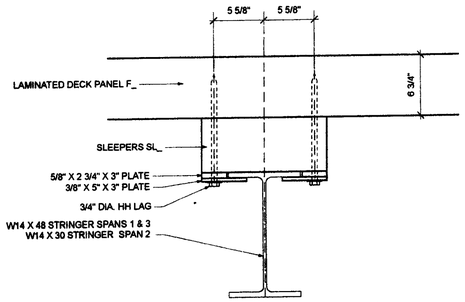
CCS Constructors LLC
138 Munson Avenue
Morrisville, VT 05661
Ph: 802-888-7701 f 802-888-4746

LAMINATED CONCEPTS INC.
P.O. BOX 369
3310 STATE RTE 352
BIG FLATS, NEW YORK 14814
PHONE 607 562 8110
FAX 607 562 8105

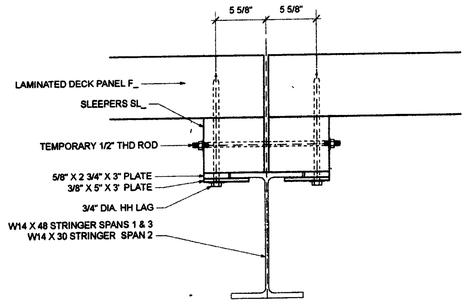
DRAWN	DATE
MSS	6/3/08
CHK'D	DATE
APP'D	DATE
SCALE	

REVISIONS			
NO	DATE	BY	REVISIONS
1	7/21/08	SS	REVISE PANELS

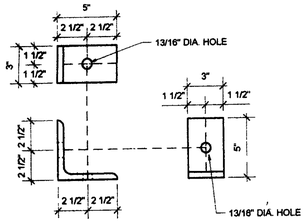
PROJECT NAME	PROJECT JOB NO
STP ST MHTB(I) BRIDGE NO 18 TOWN OF SWANTON COUNTY OF FRANKLIN, VERMONT	1008-460-LT
PREPARED FOR CCS CONSTRUCTORS, LLC MORRISVILLE, VT	SHEET NO 1 OF 3



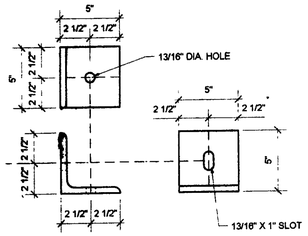
DECK TO STEEL DETAIL



DECK TO STEEL DETAIL @ DECK SPLICE

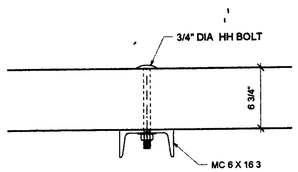


BEARING ANGLES 5" X 5" X 1/2" 3" LG 48 REQ'D

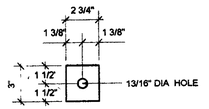


BEARING ANGLES 5" X 5" X 1/2" 5" LG 24 REQ'D

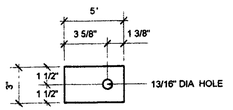
CONTRACTOR - PLEASE REVISE ANCHOR BOLT SPACINGS ACCORDINGLY



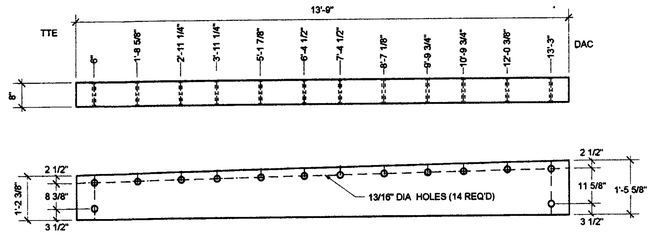
TYPICAL DECK TO STIFFENER DETAIL



SPACER PLATE 5/8" X 2 3/4" X 3" 144 REQ'D



CLIP PLATE 3/8" X 5" X 3" 144 REQ'D



MK-C1 8" X 17 5/8" X 13'-9" 2 REQ'D COMB. 48 APPROX. WT. = 600#

. **SCOPE**

This standard is intended to augment, or support, design requirements that may be issued by the owner

2. DEFINITIONS AND ABBREVIATIONS

AITC American Institute of Timber Construction, **APA/EWS** American Wood Systems members, a related Corp of the American Plywood Association, **AWPA** American Wood Preservers Association, **NDS** National Design Specifications **TTE** tag this end **UNO** unless noted otherwise **DAC** Dimensions are cumulative **NIC** not in contract

3. CODES AND STANDARDS

In addition to complying with all pertinent codes and regulations, materials shall comply with the following

3 1 American Association of State Highway and Transportation Officials (AASHTO)

3 2 American National Standard for Wood Products-Structural Glued Laminated Timber ANSI A190 1 Latest Edition

3 3 Proof-loading system for laminated finger joints to be in accordance with ANSI A190 1

4. CERTIFICATIONS

4 1 Certifications required by the laminator

4 1 1 The AITC or APA/EWS Certificate of Conformance with ANSI A190 1 Latest Edition

4 2 Preservative treatment certification required (if applicable)

4 2.1 Certificate of treatment furnished by a certified AWPA treating facility

5. STRUCTURAL DESIGN

The structure shall be designed to carry the following loads

5 1 Dead Load

5 2 Live Load H-10 or Pedestrian load (85 psf)

6. MATERIALS

6 1 Lumber-intended for structural use with design stress shall be graded in conformance with accepted standards for allowable unit stresses Select Structural for timber plank .(See AASHTO Section 13)

6 2 Grade-Industrial Appearance Grade as per AITC 110

6 3 All lumber to be incised Southern Yellow Pine Glulam as per AITC 117-04

6 4 Adhesive all members bonded with exterior "wet-use" conforming to ASTM D 2559

7. PRESERVATIVE TREATMENT

7 1 All GLU-lam material to be treated with the preservative ACQ-C conforming to AWPA Use Standard s U1-07 Retention level shall be 0 40 PCF

8. HARDWARE

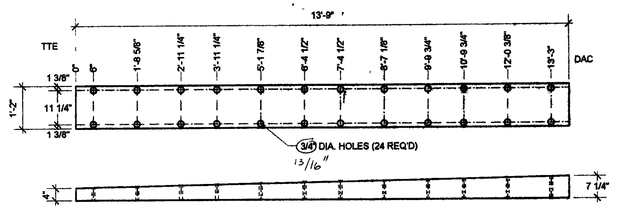
8 1 All bolts and nuts shall galvanized (A-153) steel ASTM A307 , unless noted otherwise,

8 2 All steel shapes and plates shall galvanized (A-123) steel ASTM A36 , unless noted otherwise,

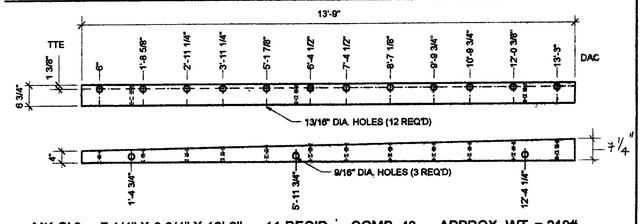
9. MISC

9 1 LCI is not responsible for materials or manufacturing not shown on these drawings

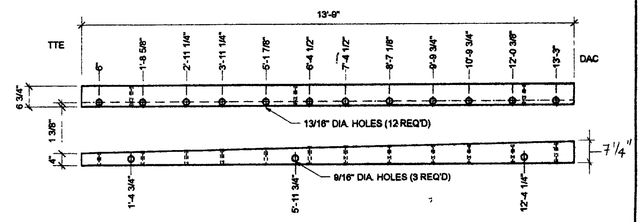
9 2 Contractor is responsible for verification of all sizes, quantities and dimensions shown on shop drawings



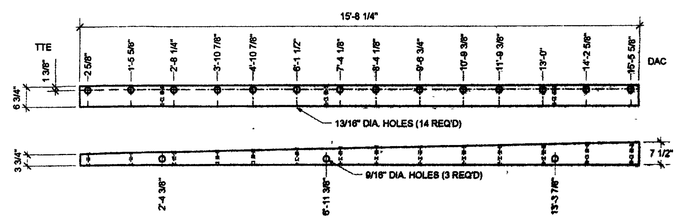
MK-SL1 7 1/4" X 14" X 13'-9" 18 REQ'D COMB. 48 APPROX. WT = 430#



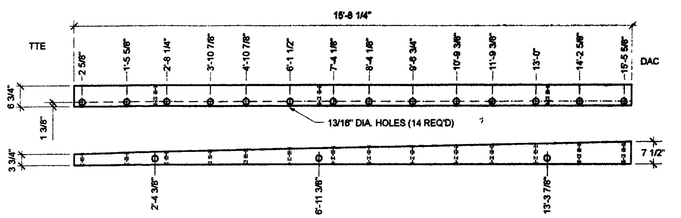
MK-SL2 7 1/4" X 6 3/4" X 13'-9" 11 REQ'D COMB 48 APPROX. WT. = 210#



MK-SL3 7 1/4" X 6 3/4" X 13'-9" 11 REQ'D COMB 48 APPROX. WT = 210#



MK-SL4 7 1/2" X 6 3/4" X 15'-8 1/4" 2 REQ'D COMB. 48 APPROX. WT. = 250#



MK-SL5 7 1/2" X 6 3/4" X 15'-8 1/4" 2 REQ'D COMB 48 APPROX. WT. = 250#

RECEIVED
CK'D BY HKB OK'D BY
JUL 3 1 2008
RESUBMIT APPROVED ✓
BY R&S DATE 8/6/08

P O BOX 369
3310 STATE RTE 352
BIG FLATS, NEW YORK 14814
PHONE 607 562 8110
FAX. 607 562 8105

DRAWN	DATE
MSS	6/4/08
CHK'D	DATE
APP'D	DATE
SCALE	

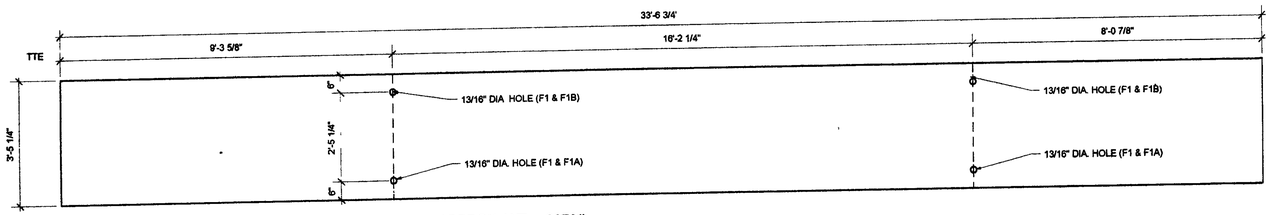
REVISIONS			
NO	DATE	BY	REVISIONS
1	7/22/08	ss	revise panels

PROJECT NAME: STP ST MHTB(I) BRIDGE NO 18
TOWN OF SWANTON
COUNTY OF FRANKLIN, VERMONT

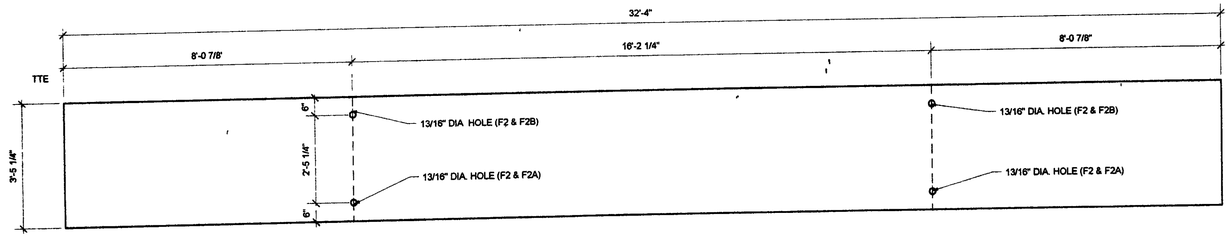
PROJECT JOB NO.: 1008-460-LT

PREPARED FOR: CCS CONSTRUCTORS, LLC
MORRISVILLE, VT

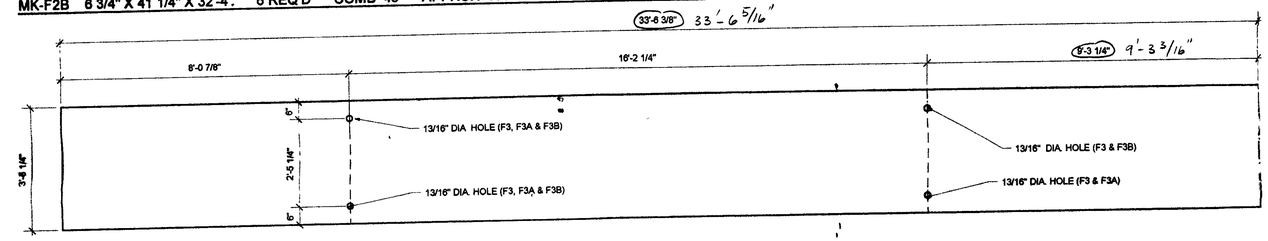
SHEET NO: 2 OF 3



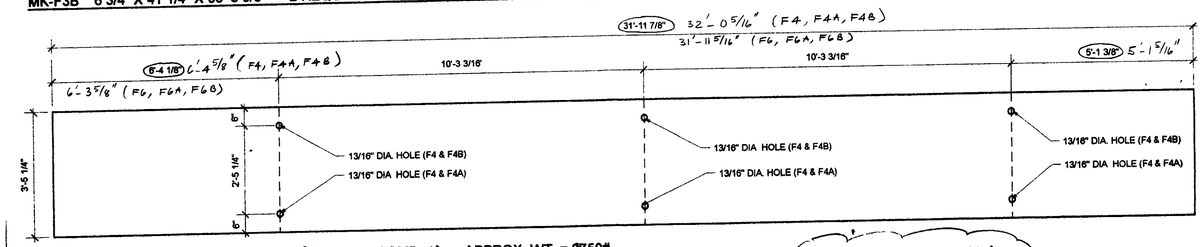
MK-F1	6 3/4" X 41 1/4" X 33'-6 3/4"	4 REQ'D	COMB 48	APPROX. WT = 2870#
MK-F1A	6 3/4" X 41 1/4" X 33'-6 3/4"	2 REQ'D	COMB 48	APPROX WT = 2870#
MK-F1B	6 3/4" X 41 1/4" X 33'-6 3/4"	2 REQ'D	COMB 48	APPROX WT = 2870#



MK-F2	6 3/4" X 41 1/4" X 32'-4"	12 REQ'D	COMB 48	APPROX. WT = 2800#
MK-F2A	6 3/4" X 41 1/4" X 32'-4"	6 REQ'D	COMB 48	APPROX. WT. = 2800#
MK-F2B	6 3/4" X 41 1/4" X 32'-4".	6 REQ'D	COMB 48	APPROX WT = 2800#

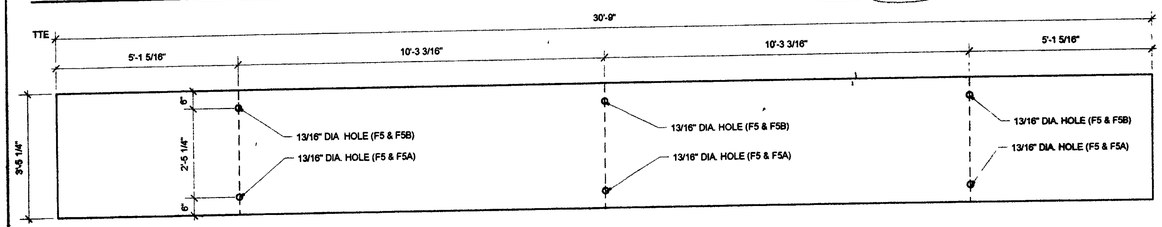


MK-F3	6 3/4" X 41 1/4" X 33'-6 3/8"	4 REQ'D	COMB. 48	APPROX. WT = 2880#
MK-F3A	6 3/4" X 41 1/4" X 33'-6 3/8"	2 REQ'D	COMB 48	APPROX WT = 2880#
MK-F3B	6 3/4" X 41 1/4" X 33'-6 3/8"	2 REQ'D	COMB 48	APPROX. WT = 2880#

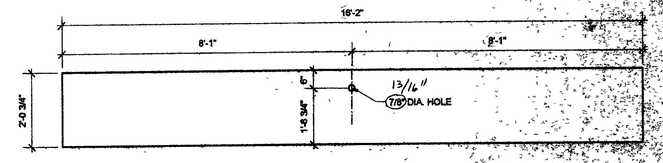


MK-F4	6 3/4" X 41 1/4" X 31'-11 7/8"	2 ④REQ'D	COMB. 48	APPROX. WT. = 2750#
MK-F4A	6 3/4" X 41 1/4" X 31'-11 7/8"	1 ②REQ'D	COMB 48	APPROX. WT = 2750#
MK-F4B	6 3/4" X 41 1/4" X 31'-11 7/8"	1 ②REQ'D	COMB 48	APPROX WT = 2750#

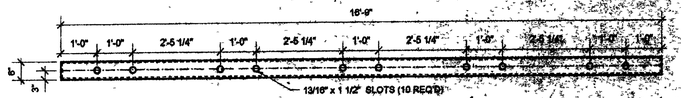
ADD F6, F6A & F6B



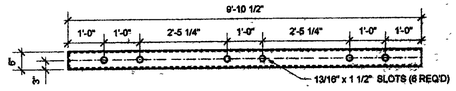
MK-F5	6 3/4" X 41 1/4" X 30'-8"	4 REQ'D	COMB. 48	APPROX WT = 2640#
MK-F5A	6 3/4" X 41 1/4" X 30'-9"	2 REQ'D	COMB 48	APPROX. WT = 2640#
MK-F5B	6 3/4" X 41 1/4" X 30'-9"	2 REQ'D	COMB. 48	APPROX. WT = 2640#



MK-F3C 6 3/4" X 24 3/4" X 16'-2" 4 REQ'D COMB. 48 APPROX. WT. = 850#

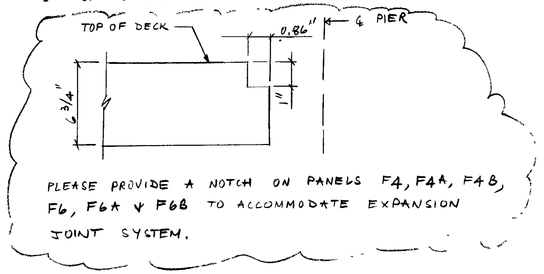


MK-ST2 MC 6 X 16.3 16'-9" LG. 2 REQ'D



MK-ST1 MC 6 X 16 3 9'-10 1/2" LG. 30 REQ'D

CONTRACTOR
PLEASE MAKE SURE DECK SURFACES ADJACENT TO THE EXPANSION JOINT ARE AT THE SAME ELEVATION.



PLEASE PROVIDE A NOTCH ON PANELS F4, F4A, F4B, F6, F6A & F6B TO ACCOMMODATE EXPANSION JOINT SYSTEM.

RECEIVED
CK'D BY HKB CK'D BY
JUL 3 1 2008
RESUBMIT APPROVED
BY RGS DATE 8/06/08

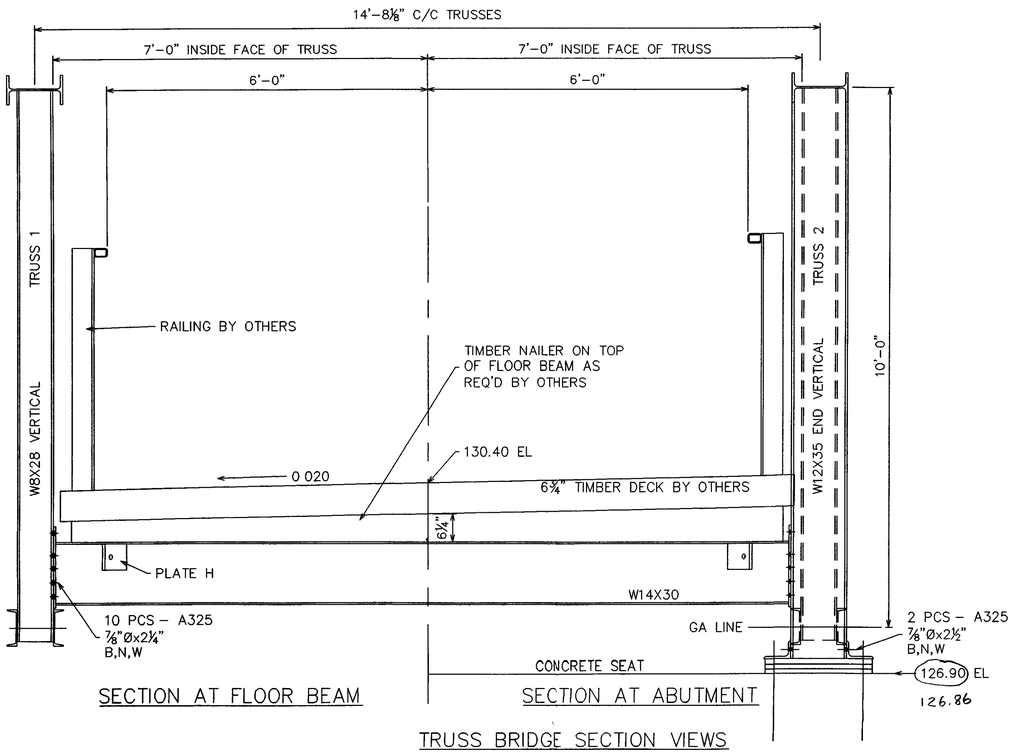
LAMINATED CONCEPTS INC. LIST OF HARDWARE MATERIALS
10 08 460 LT Swanton, VT

	description	qty	dia.	lgt	wh	wn	n	type
bolts	Deck to steel beams	372	3/4"	11"	F			Hex Head Lags
		372	3/4"	12"	F			Hex Head Lags
	Sleeper stitch rods	33	1/2"	16"	F	F	2	Threaded Rods
	Deck to stiffeners	289	3/4"	9"		F	1	Cross Head Bolts
	Deck to Abutment angles	24	3/4"	6"	F			Hex Head Lags
	Deck to Cap angles	28	3/4"	6"	F			Hex Head Lags
	Cap angles to cap	24	3/4"	11"	F	F	1	Hex Head Bolts
		70	1/2"					Flat Washers
		1050	3/4"					Flat Washers
		35	1/2"		1			Hex Nuts
		300	3/4"					Hex Nuts

NOTE: wh = washer type at bolt head, wn = washer type at nut, n = nuts, washer type (F=Plate / R=Plate / D=Bev)

	description	qty	thk	width	length	type
steel	Deck Clip Steel	744	3/8"	3"	3"	Plate
	Deck Spacer Plate	744	5/8"	6 3/4"	3"	Plate
	Abutment angles 5" x 5"	24	1/2"		6'-0"	Angle
	Stiffener ST1 MC 6 x 16.3	36			9'-10 1/2"	Channel
	Stiffener ST2 MC 6 x 16.3	2			16'-9"	Channel
	Deck to Cap Angles 5" x 5"	48	1/2"		3"	Angle

| | qty | type | | | | |



TRUSS BRIDGE SECTION VIEWS

DESIGN SPECIFICATIONS
AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17th EDITION (2002), DIVISION I, WITH ALL INTERIM SPECIFICATIONS IN EFFECT

LIVE LOAD
AASHTO H10
85 PSF PEDESTRIAN REDUCED AS ALLOWED BY AASHTO GUIDE SPECIFICATIONS FOR DESIGN OF PEDESTRIAN BRIDGES

MATERIAL
ALL SUPERSTRUCTURE STEEL SHALL BE AASHTO M270 (ASTM A709), GRADE 50 ALL STEEL GALVANIZED AFTER FABRICATION

ALL FASTENERS UNLESS NOTED OTHERWISE HIGH STRENGTH BOLTS, ASTM A325 TYPE 1 (GALV) WITH ASTM A563 GRADE C NUT AND ONE ASTM F436 WASHER PER BOLT. FASTENERS SHALL BE FURNISHED WITH ROTATIONAL CAPACITY TEST

CONSTRUCTION/FABRICATION
AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17th EDITION (2002), DIVISION II, WITH ALL INTERIM SPECIFICATIONS IN EFFECT

WELDING
ALL WELDING SHALL BE IN ACCORDANCE WITH AASHTO/AWS D1 5 BRIDGE WELDING CODE AND THE AASHTO FRACTURE CONTROL, WHERE APPLICABLE

NON-DESTRUCTIVE TESTING OF WELDS SHALL BE PERFORMED AS FOLLOWS

FILLET WELDS - VISUAL - 100%
- MT. - ONE FT IN 10' EVERY WELD

FIELD TOUCHUP
THREADS OF LATERAL BRACING RODS SHALL BE FIELD COATED WITH ZINC RICH PAINT AFTER FINAL ADJUSTMENTS OF RODS PAINT SHALL BE APPLIED WITH BRUSH

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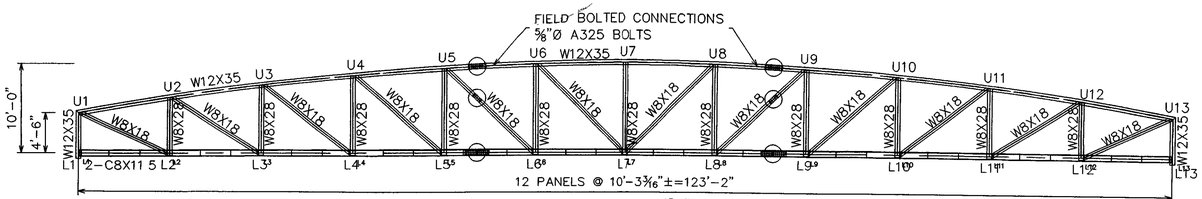
AUG 18 2008
RESUBMIT APPROVED ✓
BY RGS DATE 9/25/08

TRUSS SHOE REACTION

DEAD LOAD	26.50K
VEHICLE LIVE LOAD (H 10)	19 00K
IMPACT	3 80K
PEDESTRAIN LIVE LOAD (65 PSF)	24 02K

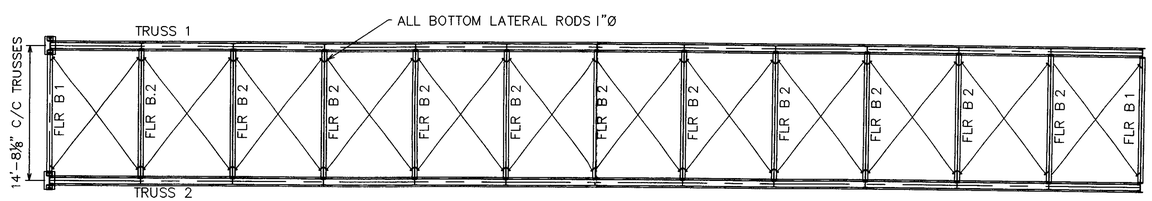
BOLT CHART	7/8" A325 TYPE 1 GALVANIZED				
LOCATION	BOLT LENGTH				
	2 1/4"	2 1/2"	2 3/4"	3"	3 1/4"
FLOORBEAM TO TRUSS	260				
TRUSS BEARING ANGLE TO TRUSS		16			
TOTAL REQ'D	260	16			
TOTAL ORDERED	273	26			

BOLT CHART	5/8" A325 TYPE 1 GALVANIZED				
LOCATION	BOLT LENGTH				
	1 3/4"	2 1/4"	2 1/2"		
TOP CHORD SPLICE FLANGE			128		
TOP CHORD SPLICE WEB		72			
DIAGONAL SPLICE FLANGE	64				
DIAGONAL SPLICE WEB		32			
BOTTOM SPLICE FLANGE		192			
TOTAL REQ'D	64	296	128		
TOTAL ORDERED	74	311	138		



TOTAL CAMBER = 1Ⅼ3⅜16"
TRUSS BRIDGE LIFTING WEIGHT = 14 2K (DOES NOT INCLUDE FLOOR)

ELEVATION



FRAMING PLAN

CCS Constructors LLC
138 Munson Avenue
Morrisville, VT 05661
Ph 802-888-7701 f 802-888-4746

NO:	DATE	REVISIONS	BY
1	7-9-08	CONNECTION DETAILS & BEARINGS	CRM
2	8-12-08	REVISED PER REDLINE	CRM

123'-2" C/C BEARINGS 12'-0" CLEAR WALKWAY
TOWN OF SWANTON
FRANKLIN COUNTY, VT

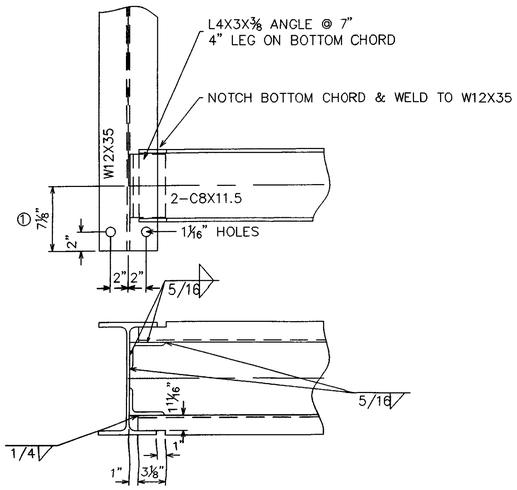
DESIGN	DRAWN	DATE	DRAWING NO	SHEET
SCOTT	CRM	4-21-08	80691	1 OF 4
CHECK/DATE	FABRICATOR		JOB NO.	
	US BRIDGE CORP		41217	

8/5/08

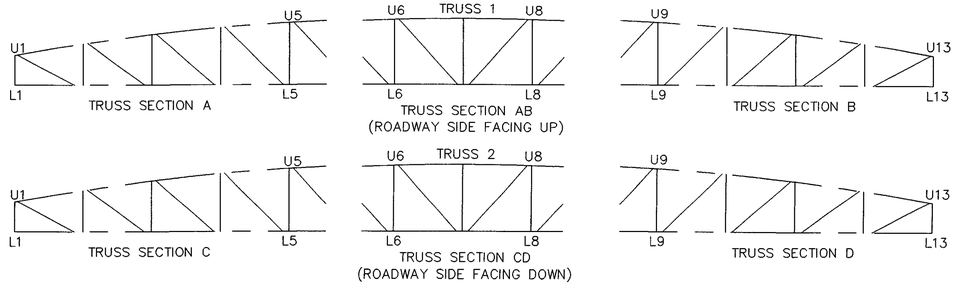
NOTE DRAWINGS RELATIVE DO NOT SCALE

MATERIAL SCHEDULE

PC	QTY	DESCRIPTION	MATERIAL	FINISH	WEIGHT
1	ASSY	TRUSS SECTION A	A572	Galvanized	4737#
1	ASSY	TRUSS SECTION AB	A572	Galvanized	3528#
1	ASSY	TRUSS SECTION B	A572	Galvanized	4737#
1	ASSY	TRUSS SECTION C	A572	Galvanized	4737#
1	ASSY	TRUSS SECTION CD	A572	Galvanized	3528#
1	ASSY	TRUSS SECTION D @	A572	Galvanized	4737#
4	PCS	T1 W12x35 @ 45'-3 1/2"	A572	Galvanized	1585#
2	PCS	T2 W12x35 @ 33'-8 11/16"	A572	Galvanized	1180#
4	PCS	D1 W8x18 @ 10'-11 3/16"	A572 CVN	Galvanized	197#
4	PCS	D2 W8x18 @ 11'-7 13/16"	A572 CVN	Galvanized	210#
4	PCS	D3 W8x18 @ 12'-5 9/16"	A572 CVN	Galvanized	224#
4	PCS	D4 W8x18 @ 13'-1 13/16"	A572 CVN	Galvanized	237#
4	PCS	D5 W8x18 @ 4'-10 3/16"	A572 CVN	Galvanized	87#
4	PCS	D6 W8x18 @ 8'-9 15/16"	A572 CVN	Galvanized	159#
4	PCS	D7 W8x18 @ 13'-10 11/16"	A572 CVN	Galvanized	250#
4	PCS	V1 W8x28 @ 5'-4 9/16"	A572	Galvanized	151#
4	PCS	V2 W8x28 @ 6'-5 9/16"	A572	Galvanized	181#
4	PCS	V3 W8x28 @ 7'-10 1/16"	A572	Galvanized	219#
4	PCS	V4 W8x28 @ 8'-10 3/4"	A572	Galvanized	249#
4	PCS	V5 W8x28 @ 9'-7 11/16"	A572	Galvanized	270#
4	PCS	V6 W8x28 @ 10'-1 "	A572	Galvanized	282#
2	PCS	V7 W8x28 @ 10'-2 13/16"	A572	Galvanized	287#
4	PCS	B1 C8x11 5 @ 44'-8"	A572 CVN	Galvanized	513#
2	PCS	B2 C8x11 5 @ 33'-8 1/2"	A572 CVN	Galvanized	388#
70	PCS	STIFFENERS PL 1/2" x 6" x 8 1/8"	A572	Galvanized	7#
8	PCS	BOTTOM CHORD SHOE ANGLE L4x3x3/8 @ 7"	A572	Galvanized	5#
2	ASSY	FLOOR BEAM 1 W14x30 @ 13'-6 5/8"	A572 CVN	Galvanized	407#
11	ASSY	FLOOR BEAM 2 W14x30 @ 13'-11"	A572 CVN	Galvanized	418#
26	PCS	FLOOR BEAM END PLATE PL 1/2" x 7" x 18"	A572 CVN	Galvanized	18#
48	PCS	ANCHOR PLATE H PL 3/4" x 6" x 7 3/4"	A572	Galvanized	10#
8	ASSY	TOP CHORD SPLICE PLATE PL 3/8" x 6 1/2" x 23 1/2"	A572	Galvanized	16#
8	ASSY	TOP CHORD SPLICE PLATE PL 3/8" x 9" x 16"	A572	Galvanized	15#
16	ASSY	TOP CHORD SPLICE PLATE PL 3/8" x 2 1/2" x 23 1/2"	A572	Galvanized	6#
8	ASSY	DIAGONAL SPLICE PL 3/8" x 5 1/4" x 13 1/2"	A572 CVN	Galvanized	8#
8	ASSY	DIAGONAL SPLICE PL 3/8" x 6" x 11"	A572 CVN	Galvanized	7#
16	ASSY	BOTTOM CHORD SPLICE PL 3/8" x 6" x 32"	A572 CVN	Galvanized	20#
12	ASSY	U BOLT WITH 1/4" PLATE	A572	Galvanized	
24	ASSY	LATERAL ROD 6" THD BOTH ENDS W/2N,2W 1" Dia Round Rod @ 15'-9"	A572	Galvanized	42#
8	ASSY	TRUSS BEARING ANGLE L6x4x1/2 @ 8"	A572	Galvanized	11#
2	ASSY	FIXED SOLE PLATE PL 1" x 14" x 24"	A572	Galvanized	95#
2	ASSY	FIXED CONSLIDE PAD 1"X10"X14"			
2	ASSY	FIXED MASONRY PLATE PL 1" x 14" x 24"	A572	Galvanized	95#
2	ASSY	EXPANSION SOLE PLATE PL 3/4" x 14" x 24"	A572	Galvanized	72#
2	ASSY	EXPANSION SLIDING PLATE 3/8"ZX12"X15" WITH 20GA SS			
2	ASSY	EXPANSION CONSLIDE PAD 1"X10"X14"			
2	ASSY	EXPANSION MASONRY PLATE PL 3/4" x 14" x 24"	A572	Galvanized	72#
8	ASSY	ANCHOR BOLT PLATE WASHER PL 1/4" x 4" x 6"	A572	Galvanized	2#
273	ASSY	7/8" DIA X 2 1/4" TYPE 1 B N W	A325	Galvanized	
26	ASSY	7/8" DIA X 2 1/2" TYPE 1 B N W	A325	Galvanized	
74	ASSY	5/8" DIA. X 1 3/4" TYPE 1 B N W	A325	Galvanized	
311	ASSY	5/8" DIA X 2 1/4" TYPE 1 B N W	A325	Galvanized	
138	ASSY	5/8" DIA X 2 1/2" TYPE 1 B N W	A325	Galvanized	

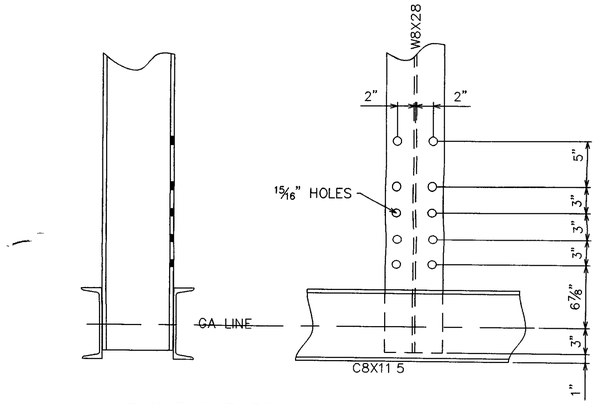


L1,L13 DETAIL

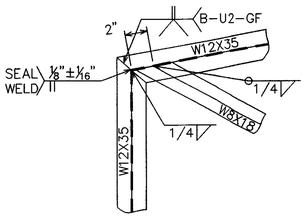


TRUSS MATCH MARKINGS

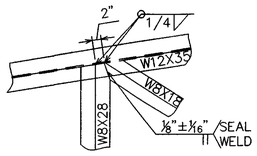
NOTE– MATCH MARK LETTERS STAMPED ON BOTTOM CHORD CHANNELS & MEMBERS AT CONNECTIONS WITH ½" LETTER STAMPS



TYP FLOOR BEAM TO VERT DETAIL

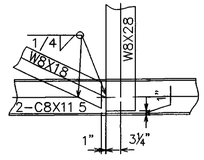


U1,U13 DETAIL



U2 THRU U12 DETAIL ①

NOTE– NO WELD AT CHANGE OF PLANE HOLD BACKS AT CHANGE OF PLANE ¼" (±⅛")



L1 THRU L12 DETAIL ①

NOTE– NO WELD AT CHANGE OF PLANE HOLD BACKS AT CHANGE OF PLANE ¼" (±⅛")

RECEIVED
CK'D BY HVB OK'D BY
AUG 18 2008
RESUBMIT APPROVED
BY RGS DATE 8/25/08

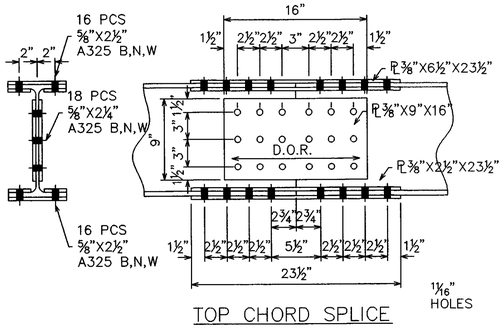
NO	DATE	REVISIONS	BY
1	7-9-08	CONNECTION DETAILS & BEARINGS	CRM
2	8-12-08	REVISED PER REDLINE	CRM

123'-2" C/C BEARINGS 12'-0" CLEAR WALKWAY
TOWN OF SWANTON
FRANKLIN COUNTY, VT

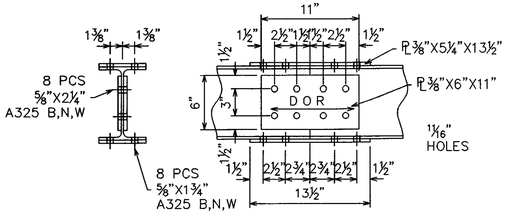
DESIGN	DRAWN	DATE	DRAWING NO	SHEET
SCOTT	CRM	4-21-08	80691	2 OF 4
CHECK/DATE	FABRICATOR: US BRIDGE CORP		JOB NO: 41217	

NOTE DRAWINGS RELATIVE DO NOT SCALE

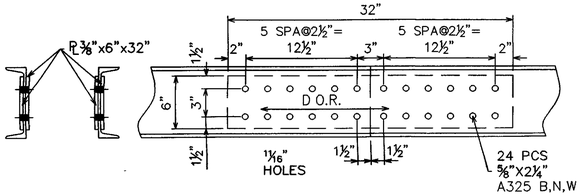
8/13/08



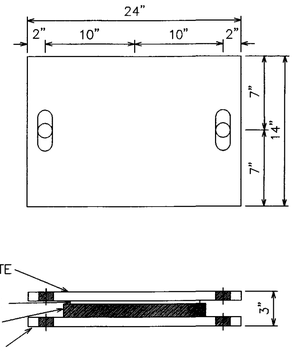
TOP CHORD SPLICE



DIAGONAL SPLICE



BOTTOM CHORD SPLICE

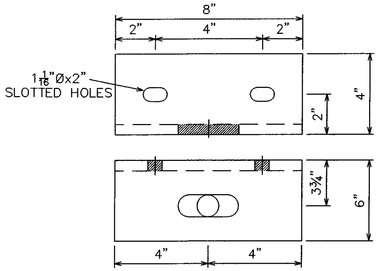


① TRUSS BEARING PLATES

FIXED BEARINGS
2 PCS – SOLE PLATE PL 1"x14"x24" W/ 1¾"Ø HOLES
2 PCS – CON-SLIDE PADS 1"x8"x13"
2 PCS.– MASONRY PLATE PL 1"x14"x24" W/ 1¾"Ø HOLES

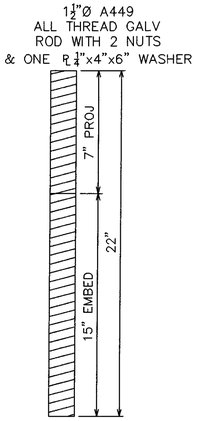
EXPANSION BEARINGS
2 PCS – SOLE PLATE PL ¾"x14"x24" W/ 1¾"Øx4½" SLOTTED HOLES
2 PCS – SLIDING PLATE PL ⅛"x12"x15" W/ 20 GA. STAINLESS STEEL PLATE BONDED TO THE BOTTOM
2 PCS – CON-SLIDE PADS 1"x8"x13" W/PTFE SURFACING
2 PCS – MASONRY PLATE PL ¾"x14"x24" W/ 1¾"Ø HOLES

* PER LAST SUBMITTAL, AASHTO ROTATION CRITERIA WAS CITED, BUT TO COMPLY WITH VAOT STRUCTURE MANUAL, SECTION 2315 AND FIGURE 23-3, PLEASE INCREASE BEARING THICKNESS TO 1"2".



TRUSS BEARING ANGLES ①

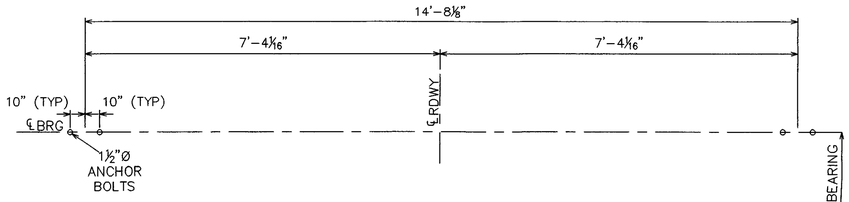
L6"x4"x½"
4 W/ 1¾"Øx4½" SLOTTED HOLES
4 W/ 1¾"Ø HOLES



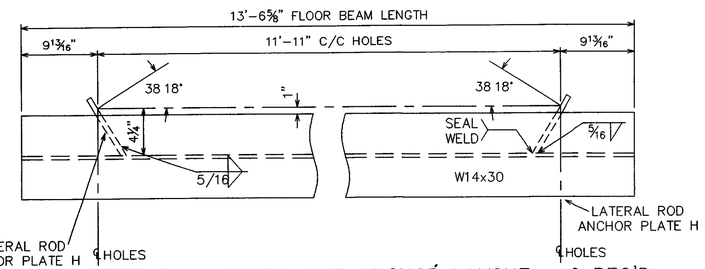
TRUSS ANCHOR BOLT

8 REQ'D

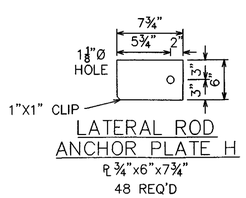
RECEIVED
CK'D BY HKB OK'D BY
AUG 18 2008
RESUBMIT APPROVED ✓
BY RGS DATE 8/25/08



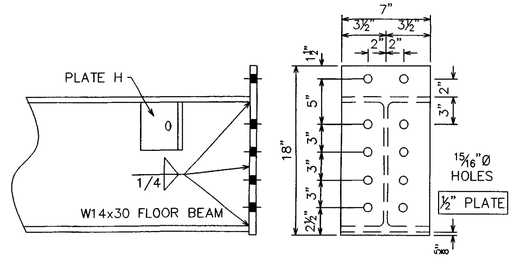
ANCHOR BOLT LAYOUT



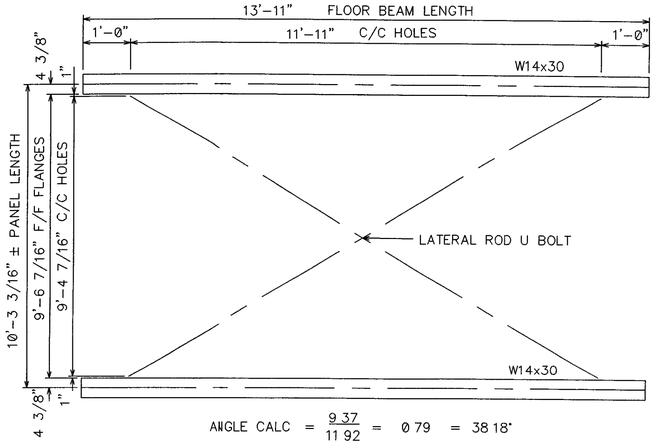
FLOOR BEAM 1 – LATERAL ROD ANCHOR LAYOUT – 2 REQ'D
END FLOOR BEAMS – L1–L13



LATERAL ROD ANCHOR PLATE H
PL ¾"x6"x7¾"
48 REQ'D



FLOOR BEAM END PLATE DETAIL – 26 REQ'D

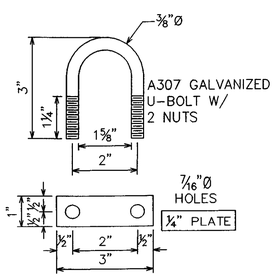


ANGLE CALC = $\frac{9\ 37}{11\ 92}$ = 0 79 = 38 18'

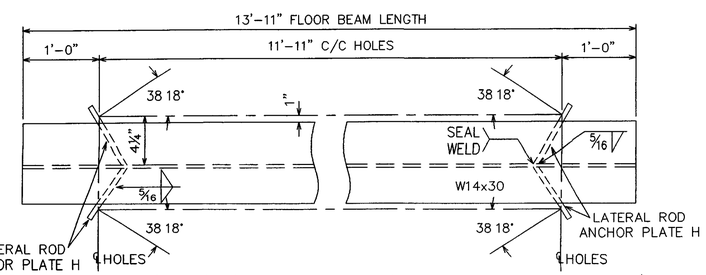
LENGTH CALC = $\frac{11\ 92}{\text{COS}\ 38.18}$ = 15.16'

LATERAL ROD LENGTHS

24 PCS– 1"Ø ROD– 15'–9" WITH 6" THREAD, NUT & WASHER EACH END



LATERAL ROD U BOLT–12 REQ'D



FLOOR BEAM 2 – LATERAL ROD ANCHOR LAYOUT – 11 REQ'D
INTERIOR FLOOR BEAMS – L2 THRU L12

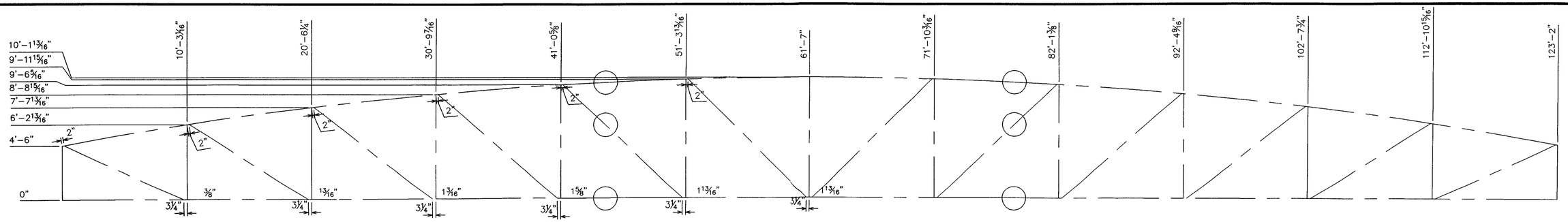
NOTE DRAWINGS RELATIVE DO NOT SCALE

8/13/08

NO.	DATE	REVISIONS	BY
1	7-9-08	CONNECTION DETAILS & BEARINGS	CRM
2	8-12-08	REVISED PER REDLINE	CRM

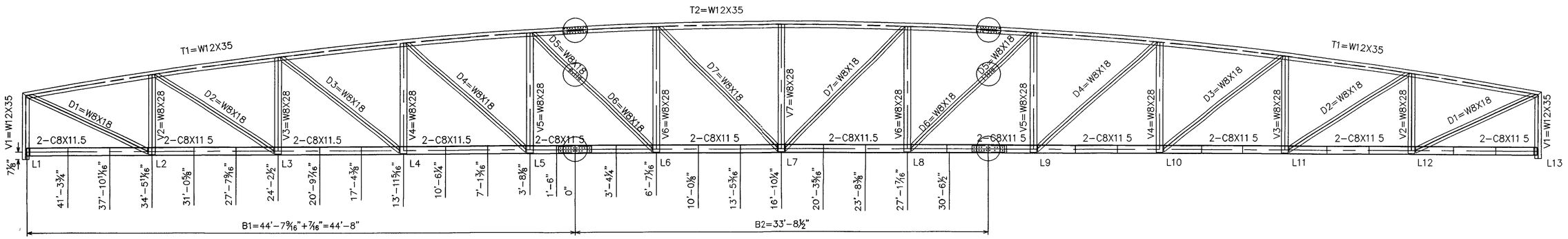
123'–2" C/C BEARINGS 12'–0" CLEAR WALKWAY
TOWN OF SWANTON
FRANKLIN COUNTY, VT

DESIGN	DRAWN	DATE	DRAWING NO	SHEET
SCOTT	CRM	4-21-08	80691	3 OF 4
CHECK/DATE	FABRICATOR		JOB NO.	
	US BRIDGE CORP		41217	

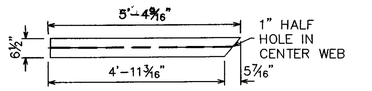


NOTE:
LAYOUT HEIGHTS INCLUDE DEAD LOAD CAMBERS

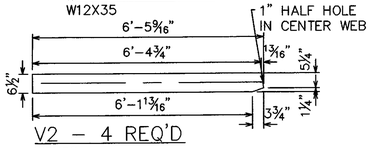
ACTUAL TRUSS LAYOUT



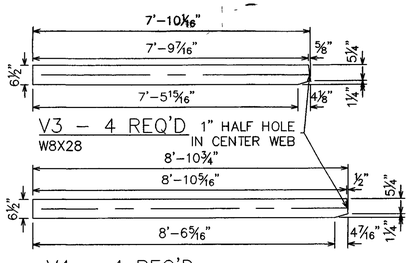
LAYOUT DESIGN BASED ON GALVANIZED
1" CLEARANCE AT DIAGONAL TO VERTICAL (TOP & BOTTOM)
1" CLEARANCE AT BOTTOM VERTICAL & DIAGONAL OFF BOTTOM OF BOTTOM CHORD
1 13/16" CAMBER RUNS FROM L1 TO L5,L6 SPLICE & L8,L9 TO L13



V1 – 4 REQ'D
W12X35

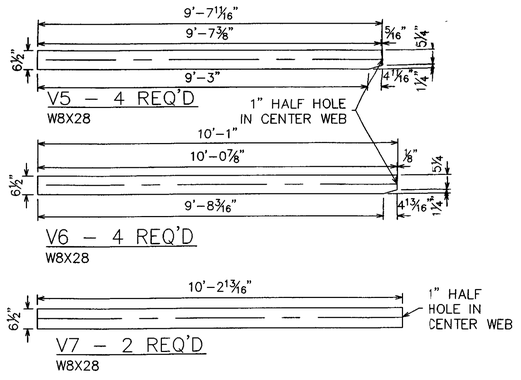


V2 – 4 REQ'D
W8X28



V3 – 4 REQ'D
W8X28

V4 – 4 REQ'D
W8X28

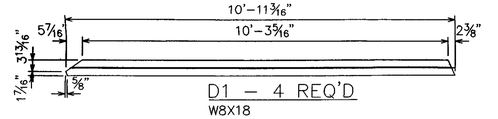


V5 – 4 REQ'D
W8X28

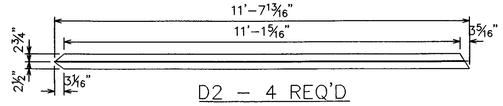
V6 – 4 REQ'D
W8X28

V7 – 2 REQ'D
W8X28

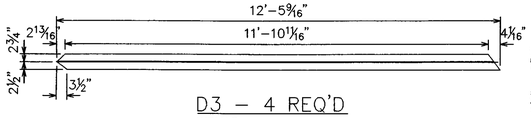
2-C8X11 5 BOTTOM CHORD STIFFENERS 1/2"x6"x8 1/8" 70-REQ'D



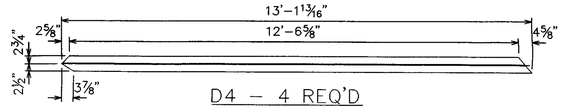
D1 – 4 REQ'D
W8X18



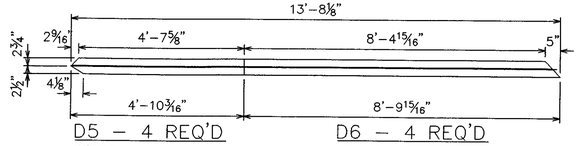
D2 – 4 REQ'D
W8X18



D3 – 4 REQ'D
W8X18

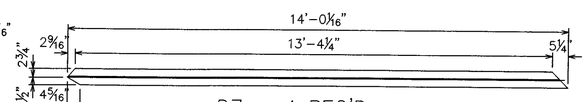


D4 – 4 REQ'D
W8X18



D5 – 4 REQ'D
W8X18

D6 – 4 REQ'D
W8X18



D7 – 4 REQ'D
W8X18

T1 – 4 REQ'D
W12X35

T2 – 2 REQ'D
W12X35

BOTTOM CHORD SPACER PLATE DETAIL

RECEIVED
CK'D BY HK6 OK'D BY
AUG 18 2008
RESUBMIT APPROVED
BY RGS DATE 8/25/08

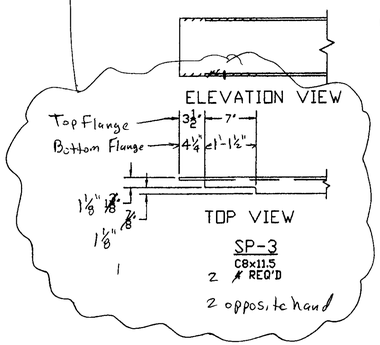
NOTE DRAWINGS RELATIVE DO NOT SCALE

NO	DATE	REVISIONS	BY
1	7-9-08	CONNECTION DETAILS & BEARINGS	CRM
2	8-12-08	REVISED PER REDLINE	CRM

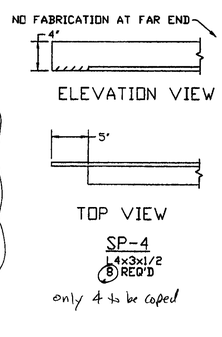
123'-2" C/C BEARINGS 12'-0" CLEAR WALKWAY
TOWN OF SWANTON
FRANKLIN COUNTY, VT

DESIGN	DRAWN	DATE	DRAWING NO.	SHEET
SCOTT	CRM	4-21-08	80691	4 OF 4
CHECK/DATE	FABRICATOR		JOB NO	
	US BRIDGE CORP		41217	

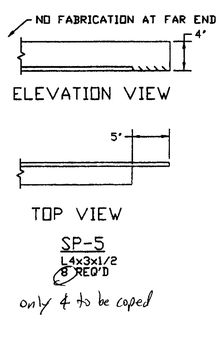
Contractor to field verify all dimensions prior to fabrication



SP-3
C8x11.5
2 REQ'D
2 opposite hand



SP-4
L4x3x1/2
8 REQ'D
only 4 to be coped



SP-5
L4x3x1/2
8 REQ'D
only 4 to be coped

Contractor, please verify that no angle substitutions changed these plate sizes

4 each w/ copes

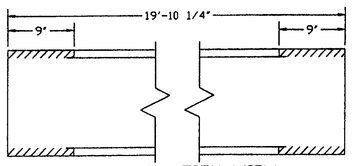
Swanton STP ST MHTB(1)

item	thickness in	width in	ft	length in	Wt / FT lb	Sheet	Total/Sht ea	Total ea	Wt Ea lb	Total Wt. lb	Grade ksi	Location	Ship & Reference	Mark
PL	**0.375**	14 25	24	5 5		29	2	2	444 7	889 5	50	top ch Cover PL	**4 ea. 12'-2.75"**	1
L4	0 5	3	30	0	10 2	30	8	8	306	2448 0	**50 CVN**	bot Chord	**16 ea.SP-4**	3
L4	0 5	3	30	0	10 2	30	8	8	306	2448 0	**50 CVN**	bot Chord	**16 ea.SP-5**	3
PL	0 375	9	1	2½ 6		30	24	24	16 26953	390 5	50	bot Ch Tie PL	24 ea As shown	6
bar	0 5	5	2	4		30	16	16	19 84954	317 6	50	vert Ch splice PL	**32 ea. SP-2**	7
PL	0 375	8 5	1	5 OK		31	32	32	15 4	491 7	50	bot Ch Tie PL	32 ea As shown	8
			1	3 5		32	16	16	14 00987	224 2	50	bot Ch Tie PL	16 ea As shown	9
PL	0 375	7 75	1	9 ~~9.375~~		33	8	8	17 61536	140 9	50	web splice PL	**8 ea. As shown**	12
			1	9		34	4				50	web splice PL	incl Below	
			1	9		35	8	12	17 30632	207 7	50	web splice PL	**12 ea. As shown**	13
			1	9 75		36	8				50	web splice PL	incl Below	
			1	9 75		37	8	16	17 9244	286 8	50	web splice PL	**16 ea. As shown**	14
PL	0 375	6 375	2	2 5		36	16				50	web splice PL	incl Below	
			2	2 5		37	16	32	17 96427	574 9	50	web splice PL	32 ea As shown	16
PL	0 375	6	1	10		40	~~8 12~~ 8	~~8 12~~ 8	~~14 03646~~ 14	168 4	50	latteral br Ctr Conn	12 ea As shown	21
			2	5		40	~~12 8~~ 12	~~12 8~~ 12	~~18 5026~~ 18	148 0	50	latteral br Ctr Conn	8 ea As shown	22
PL	0 375	16 625	2	10		44	~~20 8~~ 20				50	Gusset G1	16 ea As shown	25
			2	10		44	8	~~16~~ 16	60 10688	961 7	50	Gusset G2	incl In above	
			2	7		44	~~4 10~~ 4				50	Gusset G3-1	20 ea As shown	26
			2	7		44	~~4 10~~ 4	20	~~54~~ 80333	1096 1	50	Gusset G3-2	incl In above	
W14			19	10 25	48	43	18	18	953	17154 0	50	floor beam drawing	**18 ea. SP-1**	27
C8			30	0	11 5	29	~~4~~ 4	~~4~~ 4	345 0	1380	50	top chord	**4 ea. SP-3**	28
PL	0 375	11	1	5 75		-	-	8	20 8	166.1	50	bot Ch Tie PL	**8 ea. SP-6**	29

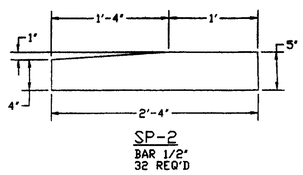
Notes

1) **All material listed** as Grade 50 is AASHTO M270, grade 50 All material listed as Grade 50 CVN is to have the Charpy V-Notch test performed for each **heat number** ~~representing~~ all pieces listed CVN is to be zone 2 All Grade 50 CVN material is AASHTO M270, grade 50 All material listed as A36 is to be ~~ASTM~~ A36

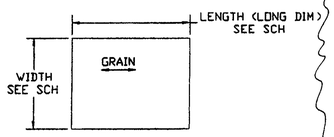
2) Sheet numbers correspond to the VAOT contract drawings



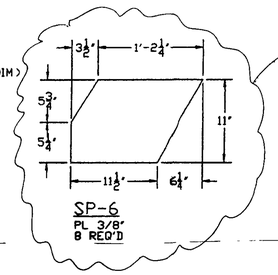
SP-1
W14x48
18 REQ'D



SP-2
BAR 1/2"
32 REQ'D



TYP. PLATE



SP-6
PL 3/8"
8 REQ'D

Contractor to field verify dimensions prior to fabrication

RECEIVED
CK'D BY _____ OK'D BY Dig
MAY 2 2 2008
RESUBMIT _____ APPROVED ✓
BY RLS DATE 5/30/08

⚠ **Note: All details on this drawing were supplied by CCS Constructors. Casco Bay Steel Structures assumes no responsibility for errors in detailing. Casco Bay Steel Structures will fabricate to details shown.**

OUT FOR APPROVAL	5/13/08										
OUT FOR APPROVAL											
ISSUED TO SHOP											
FIELD & OFFICE											
⚠ Added Note	5/20/08										
REV. REMARKS	DATE	DWN	CHK	APP.	Q.A.	NO.	DIA.	LGT	TYPE	WASHER	

PROJECT NO. STP-ST-MHTB-1 STATE PROJECT NO.

MATERIAL: ASTM A572-50 ELECTRODES: HOLES: SHOP BOLTS:

SURFACE PREP. & PAINT:

FIELD APPLIED

DESCRIPTION: TRUSS REBUILD PARTS

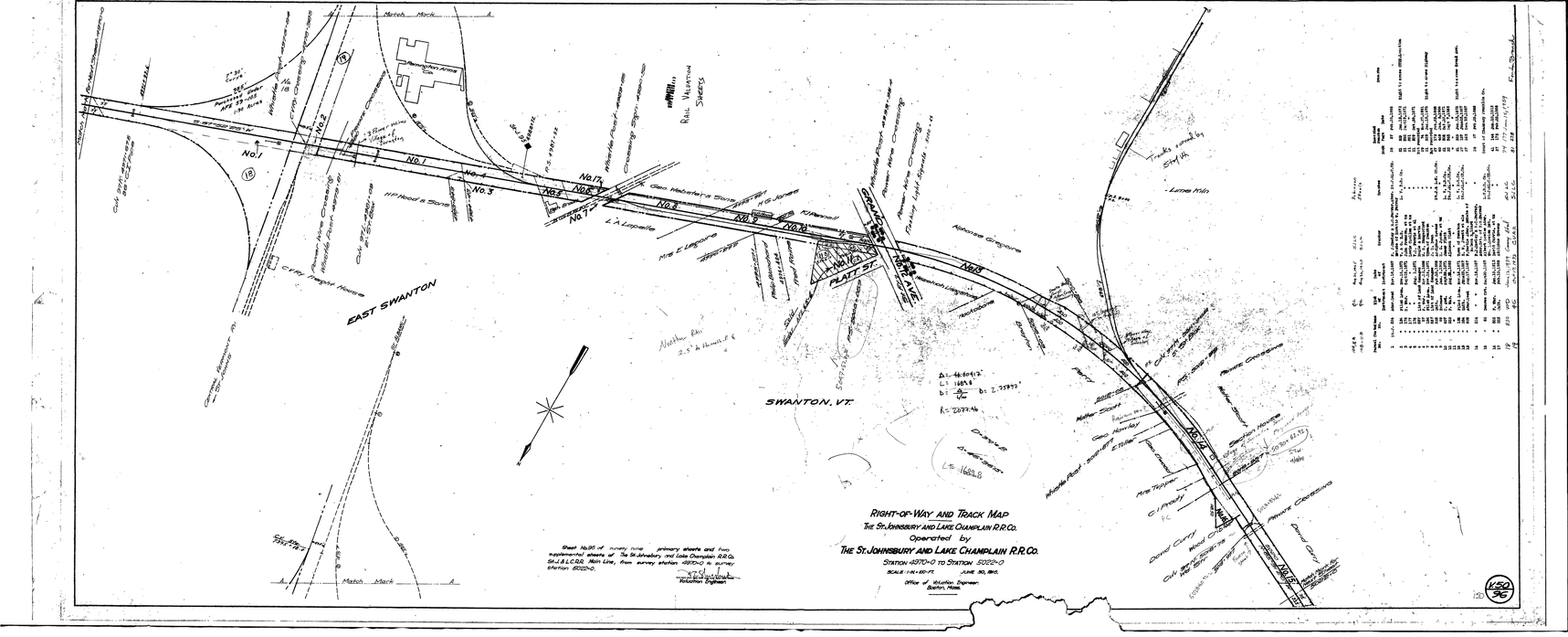
JOB: RAIL TRAIL OVER MISSISQUOI RIVER
TRUSS REBUILD
SWANTON, VT
PROJECT # STP-ST-MHTB (1)

CUSTOMER: C.C.S. - VT A.O.T

DRAWN BY	DATE
CCS	
CHK'D BY	
CCS	
APPROV BY	
Q.A.	

JOB NO. 5.0.#079 | DRG. NO. 1 | REV. ⚠

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


Match Mark
EAST SWANTON
SWANTON, VT.
PLATT ST.
GRAND AVE.
No.1
No.2
No.3
No.4
No.5
No.6
No.7
No.8
No.9
No.10
No.11
No.12
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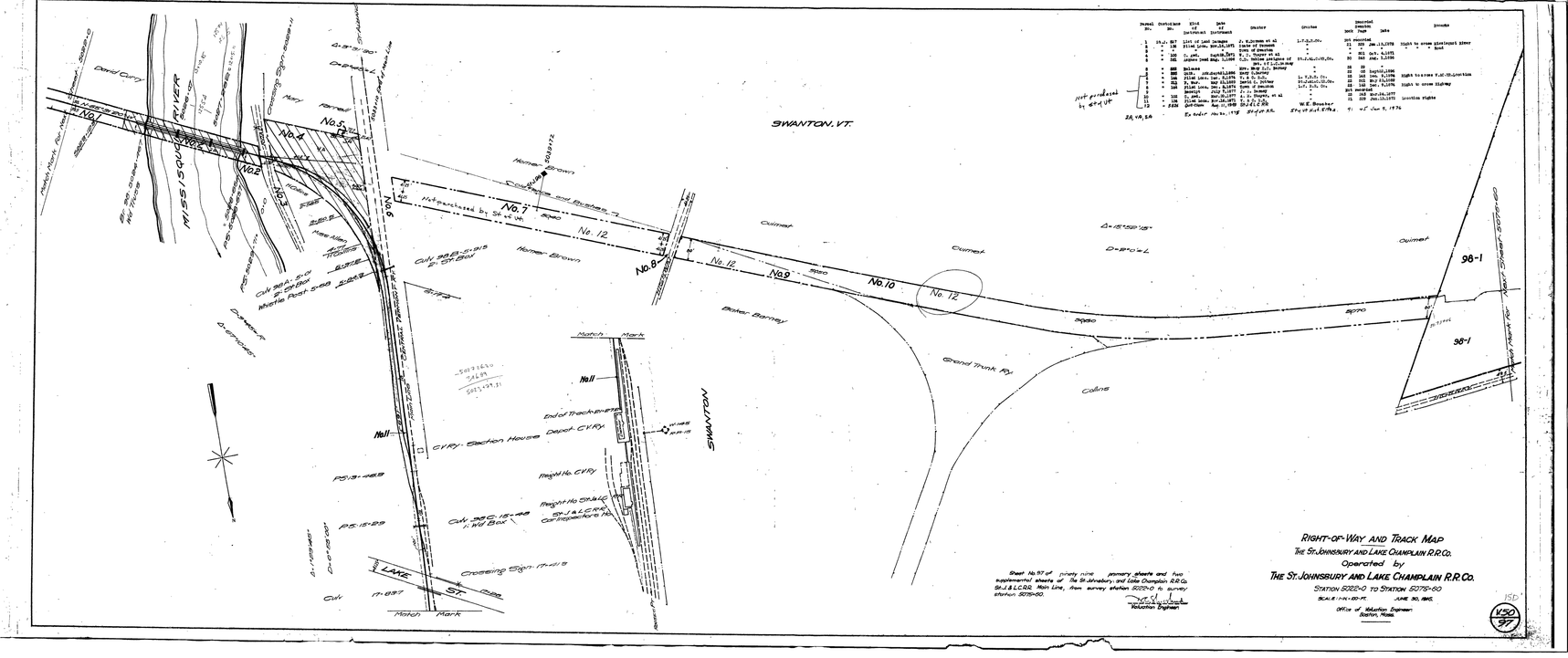
No.36
No.37
No.38
No.39
No.40


SWANTON, VT.
MISSISSQUOI RIVER
No. 1
No. 2
No. 3
No. 4
No. 5
No. 6
No. 7
No. 8
No. 9
No. 10
No. 12
Curve
Tangent
Grand Trunk Ry.
Baker Barney
Horace Brown
Hall
Mail
Crossing Sign
Mile Post
Station House
Depot
Freight House
Engine House
Coal Chute
Water Tank
Switch
Main Track
Side Track
Lake St.
Road
Creek
Bridge
Culvert
Telegraph Line
Fence
Buildings
Trees
Rocks
Swamp
Meadow
Orchard
Pasture
Cultivated
Woods
Dwelling
Barn
Shed
Office
Store
Post Office
Blacksmith Shop
Grain Elevator
Lumber Yard
Coal Yard
Water Tower
Turntable
Switch Stand
Semaphore
Signal
Platform
Wharf
Dock
Boat
Ferry
Bridge
Culvert
Tunnel
Cut
Fill
Grade
Level
Tangent
Curve
Spiral
Compound
Reverse
Transition
Superelevation
Gauge
Rail
Tie
Ballast
Subgrade
Roadbed
Right of Way
Property Line
Boundary
Monument
Bench Mark
Station
Mile
Kilometer
Chain
Link
Foot
Inch
Degree
Minute
Second
Radius
Length
Tangent
Intersection
Point
Angle
Deflection
Azimuth
Bearing
Distance
Elevation
Grade
Slope
Cut
Fill
Excavation
Embankment
Borrow
Waste
Haul
Overhaul
Unit Price
Quantity
Amount
Total
Estimate
Contract
Specification
Drawing
Plan
Profile
Cross Section
Detail
Scale
Date
Signature
Witness
Notary
Seal
Certificate
Deed
Lease
Agreement
Easement
Release
Mortgage
Lien
Judgment
Court
Jury
Verdict
Appeal
Damages
Compensation
Benefits
Assessment
Taxes
Insurance
Bond
Guarantee
Indemnity
Liability
Negligence
Accident
Injury
Death
Claim
Settlement
Payment
Receipt
Voucher
Invoice
Account
Ledger
Journal
Balance
Sheet
Report
Memorandum
Letter
Telegram
Telephone
Telegraph
Railroad
Railway
Railroad Company
Railway Company
St. Johnsbury and Lake Champlain R.R. Co.
St. J. & L. C. R. R. Co.
St. J. & L. C. R.
St. J. & L. C.
St. J. & L.
St. J.
St. J. & L. C. R. R. Co.
St. J. & L. C. R. R