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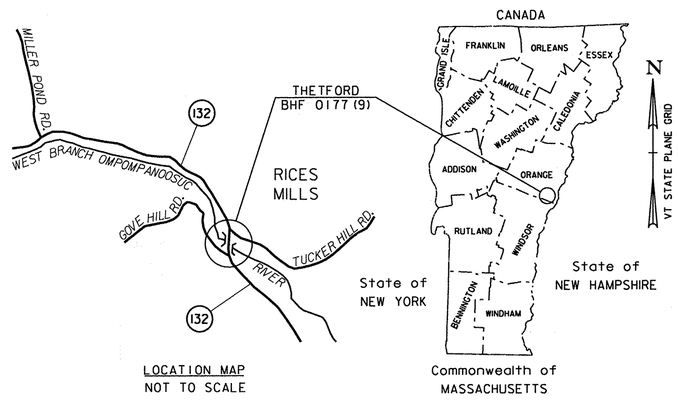
STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF THETFORD
COUNTY OF ORANGE
VT 132 (TH 1), BRIDGE NO. 8
MAJOR COLLECTOR

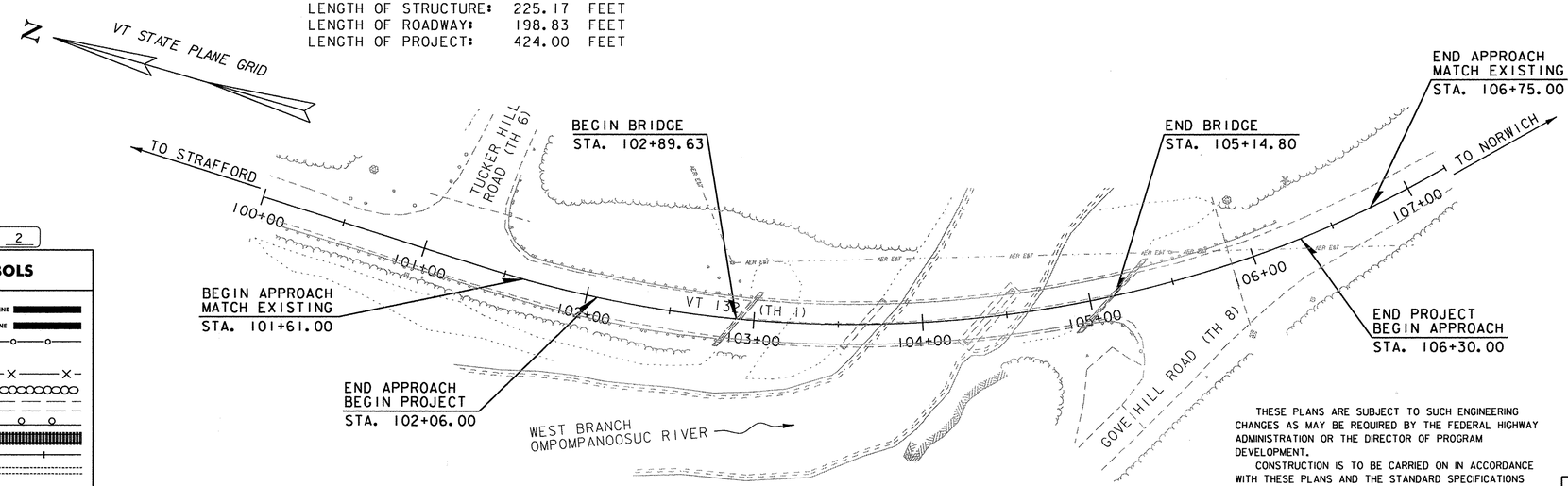


LOCATION MAP
NOT TO SCALE

PROJECT LOCATION: LOCATED IN THE COUNTY OF ORANGE, TOWN OF THETFORD, ON VT 132 (TH 1); BRIDGE 8 OVER THE WEST BRANCH OMPOMPANOOSUC RIVER, APPROXIMATELY 0.03 MILES EAST OF THE INTERSECTION OF TUCKER HILL ROAD (TH 6) AND VT 132 (TH 1).

PROJECT DESCRIPTION: REMOVAL AND REPLACEMENT OF EXISTING SUPERSTRUCTURE WITH A CONCRETE DECK AND CURVED STEEL PLATE GIRDERS; REHABILITATION OF EXISTING SUBSTRUCTURE AND MINOR APPROACH WORK.

LENGTH OF STRUCTURE: 225.17 FEET
LENGTH OF ROADWAY: 198.83 FEET
LENGTH OF PROJECT: 424.00 FEET



SCALE 1" = 40'-0
40 0 40

QUALITY ASSURANCE PROGRAM: LEVEL 2

CONVENTIONAL SYMBOLS

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

SURVEYED BY : VTRANS
SURVEYED DATE : APRIL, 1995

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

RECORD PLANS

CONTRACTOR: AL ST ONGE CONTRACTOR INC. – MONTGOMERY, VT
RESIDENT ENGINEER: PAUL PERRY
CONSTRUCTION BEGAN: MAY 30, 2012
CONSTRUCTION COMPLETE: SEPTEMBER 12, 2013
RECORD PLANS BY: PAUL PERRY & JENNA HYDE

I HEREBY CERTIFY THAT ALL THE CONSTUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.
BY Paul K. Perry RESIDENT ENGINEER
DATE 6-09-14

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.

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

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

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
SCOTT E. BUSHEY
2-15-12
No. 7686
Structural I
REGISTERED PROFESSIONAL ENGINEER

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED Richard Hathaway DATE 2-17-12

PROJECT MANAGER : MARK D. SARGENT

PROJECT NAME : THETFORD
PROJECT NUMBER : BHF 0177 (9)

SHEET 1 OF 78 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version 09.02.03

LRFD

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STANDARDS LIST

E-100	CONSTRUCTION APPROACH SIGNS	01-02-2004
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	01-02-2004
E-102	CONSTRUCTION SIGN DETAILS	06-30-2003
E-102A	CONSTRUCTION SIGN DETAILS	05-01-2004
E-106	TRAFFIC CONTROL- MISCELLANEOUS DETAILS	03-01-2004
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	06-30-2003
E-107A	BREAKAWAY BARRICADE DETAILS	06-08-2009
E-108	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS	06-08-2009
E-108A	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS FOR PAVING	06-08-2009
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
E-123	GUIDE SIGN PLACEMENT - MISCELLANEOUS DETAILS	03-16-2004
E-135	INTERSTATE ROUTE MARKER SIGN DETAILS	08-18-1995
E-136C	STATE NUMBERED TOWN HIGHWAY SIGN DETAILS	08-08-1995
E-141	REGULATORY SIGN DETAILS	09-20-1995
E-144	REGULATORY SIGN DETAILS	03-29-1999
E-151	WARNING SIGN DETAILS	05-01-2004
E-155	WARNING SIGN DETAILS	05-01-2004
E-164	SQUARE STEEL SIGN POST	06-08-2009
E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	01-03-2000
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)	01-03-2000
SB-R6-82	BRIDGE RAILING - HEAVY DUTY STEEL BEAM	01-06-1995
SB-R7-90	BRIDGE RAILING - HEAVY DUTY STEEL BEAM	01-11-1995

STRUCTURES DETAILS

SD-501.00	CONCRETE DETAILS AND NOTES	05-07-2010
SD-502.00	CONCRETE DETAILS AND NOTES	06-04-2010
SD-601.00	STRUCTURAL STEEL DETAILS & NOTES	06-04-2010
SD-602.00	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	05-02-2011

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2012	1400	180	65	6.7	100
2032	1600	200	65	10.3	170

20 year ESAL for flexible pavement from 2012 to 2032 : 536000

40 year ESAL for flexible pavement from 2012 to 2052 : 1245000

Design Speed : 25 mph

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: N/A

DRAINAGE AREA : Approximately 56.4 sq. mi.
CHARACTER OF TERRAIN : Steep banks near river to rolling hills, mostly forested
STREAM CHARACTERISTICS : Wide and curving with moderate current
NATURE OF STREAMBED : Gravel, cobbles, boulders and ledge

PEAK FLOW DATA

Q 2.33 =	Unknown	Q 50 =	Unknown
Q 10 =	Unknown	Q 100 =	Unknown
Q 25 =	Unknown	Q 500 =	Unknown

DATE OF FLOOD OF RECORD : Unknown
ESTIMATED DISCHARGE: --
WATER SURFACE ELEV.: --
NATURAL STREAM VELOCITY : Unknown
ICE CONDITIONS : Unknown
DEBRIS: Unknown
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Unknown
IS ORDINARY RISE RAPID? Unknown
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Unknown
IF YES, DESCRIBE: --

WATERSHED STORAGE: --
HEADWATERS:
UNIFORM:
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Three span steel beam bridge with concrete deck
YEAR BUILT: 1946
CLEAR SPAN(NORMAL TO STREAM): 150'
VERTICAL CLEARANCE ABOVE STREAMBED: 22'
WATERWAY OF FULL OPENING: 2500 sq. ft.
DISPOSITION OF STRUCTURE: Remove & replace superstructure, repair substruct.
TYPE OF MATERIAL UNDER SUBSTRUCTURE: Unknown

WATER SURFACE ELEVATIONS AT:

Q2.33 =	Unknown	VELOCITY =	--
Q10 =	Unknown	"	--
Q25 =	Unknown	"	--
Q50 =	Unknown	"	--
Q100 =	Unknown	"	--

LONG TERM STREAMBED CHANGES: Unknown

IS THE ROADWAY OVERTOPPED BELOW Q100: Unknown
FREQUENCY: --
RELIEF ELEVATION: --
DISCHARGE OVER ROAD @Q100: --

UPSTREAM STRUCTURE

TOWN: Strafford DISTANCE: 19,000'
HIGHWAY # : Private Drive off VT 132 (TH 1) STRUCTURE #: N/A
CLEAR SPAN: Unknown CLEAR HEIGHT: Unknown
YEAR BUILT: Unknown FULL WATERWAY: Unknown
STRUCTURE TYPE: Single span bridge, unknown superstructure/substructure

DOWNSTREAM STRUCTURE

TOWN: Thetford DISTANCE: 4,000'
HIGHWAY # : Government Road (USACE) STRUCTURE #: Unknown
CLEAR SPAN: Unknown CLEAR HEIGHT: Unknown
YEAR BUILT: Unknown FULL WATERWAY: No
STRUCTURE TYPE: Single span steel beam bridge

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A_STR	4A_STR	5A_SEMI
TONNAGE	**20**	**36**	**36**	**66**	**30**	**34.5**	**38**
INVENTORY	1.31	1.02					
POSTING							
OPERATING	1.70	1.32	2.80	1.74	2.44	2.18	2.45
COMMENTS:							

PROPOSED STRUCTURE

STRUCTURE TYPE: 3 span bridge with curved continuous steel plate girders and composite concrete deck
CLEAR SPAN(NORMAL TO STREAM): 150'
VERTICAL CLEARANCE ABOVE STREAMBED: 22'
WATERWAY OF FULL OPENING: 2500 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	Unknown	VELOCITY=	--
Q10 =	Unknown	"	--
Q25 =	Unknown	"	--
Q50 =	Unknown	"	--
Q100 =	Unknown	"	--

IS THE ROADWAY OVERTOPPED BELOW Q100: Unknown
FREQUENCY: --
RELIEF ELEVATION: --
DISCHARGE OVER ROAD @Q100: --

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: Matches existing
VERTICAL CLEARANCE: @ Q25 = Unknown

SCOUR: Unknown

REQUIRED CHANNEL PROTECTION: Unknown

PERMIT INFORMATION

AVERAGE DAILY FLOW:	Unknown	
ORDINARY LOW WATER:	Unknown	DEPTH OR ELEVATION: --
ORDINARY HIGH WATER:	Unknown	--

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge required.
CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

* Hydraulics at this site can be affected by the Union Village Flood Control Dam which is approx. 3.1 miles downstream. The dam is owned and operated by the U.S. Army Corps of Engineers.
* For this project, the existing hydraulic opening and water surface elevations will be unchanged.

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD		HL-93
2. FUTURE PAVEMENT	d_p:	3.0 INCH
3. ABUTMENT BEARING TO BEARING LENGTH (THREE SPANS) (73.69 - 75.07 - 73.47) FT	L:	222.23 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	---
5. PRESTRESSING STRAND	f_y:	---
6. PRESTRESSED CONCRETE STRENGTH	f'_c:	---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	---
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f'_c:	---
9. CONCRETE, HIGH PERFORMANCE CLASS A LOW CEMENT	f'_c:	4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B	f'_c:	3.5 KSI
11. CONCRETE, CLASS C	f'_c:	---
12. REINFORCING STEEL	f_y:	60 KSI
13. STRUCTURAL STEEL AASHTO M 270M/M 270 (WEATHERING)	f_y:	50 KSI
14. SOIL UNIT WEIGHT	γ:	0.140 KCF
15. NOMINAL BEARING RESISTANCE OF SOIL	q_n:	---
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
17. NOMINAL BEARING RESISTANCE OF ROCK	q_n:	---
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
19. NOMINAL AXIAL PILE RESISTANCE	q_p:	---
20. PILE YIELD STRENGTH ASTM A572	f_y:	---
21. PILE SIZE		---
22. EST. PILE LENGTH	L_p:	
23. PILE RESISTANCE FACTOR	ϕ:	---
24. LATERAL PILE DEFLECTION	Δ:	---
25. BASIC WIND SPEED	V_{3s}:	---
26. MINIMUM GROUND SNOW LOAD	p_g:	---
27. SEISMIC DATA PGA: ---	S_s:	---
	S_1:	---

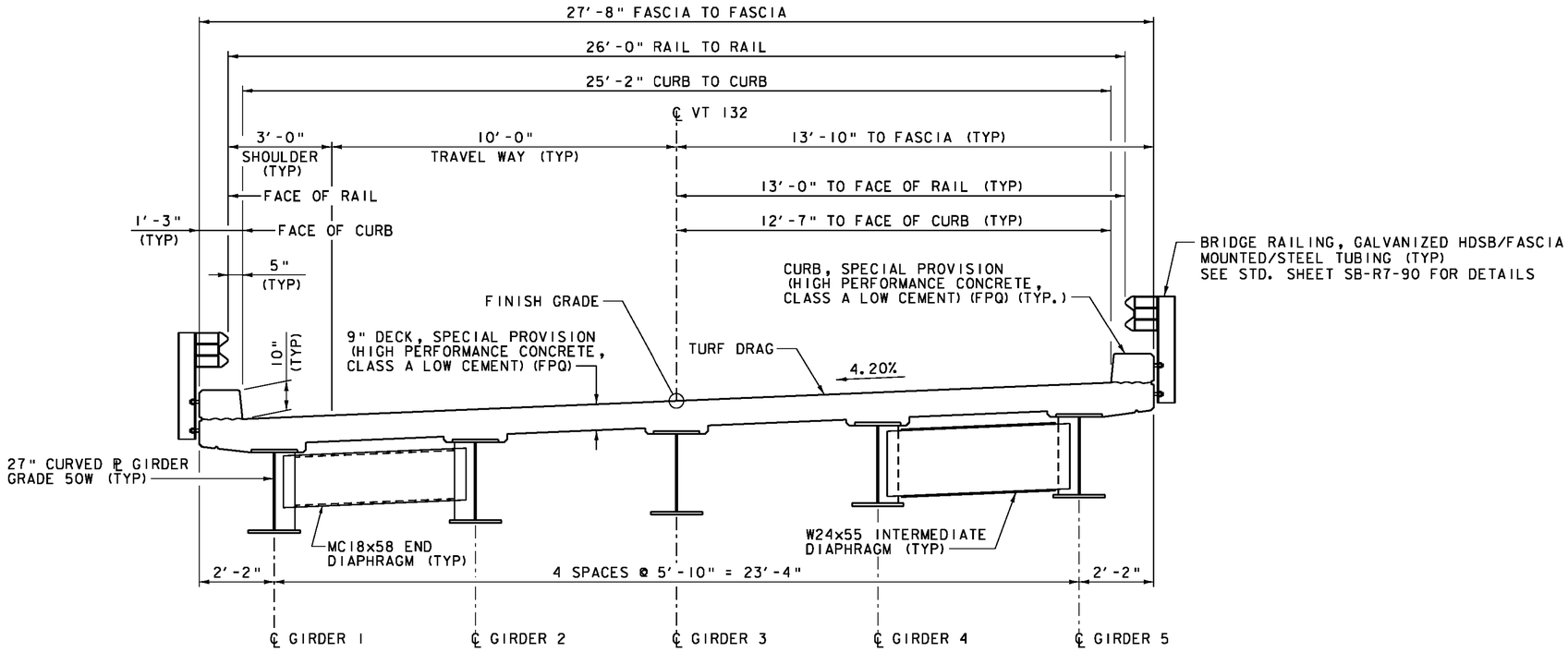
PROJECT NAME: **THETFORD**
PROJECT NUMBER: **BHF 0177(9)**

FILE NAME: **z08j174pi.dgn**
PROJECT LEADER: **M.A. COLGAN**
DESIGNED BY: **B.M. KLINEFELTER**
PRELIMINARY INFORMATION SHEET

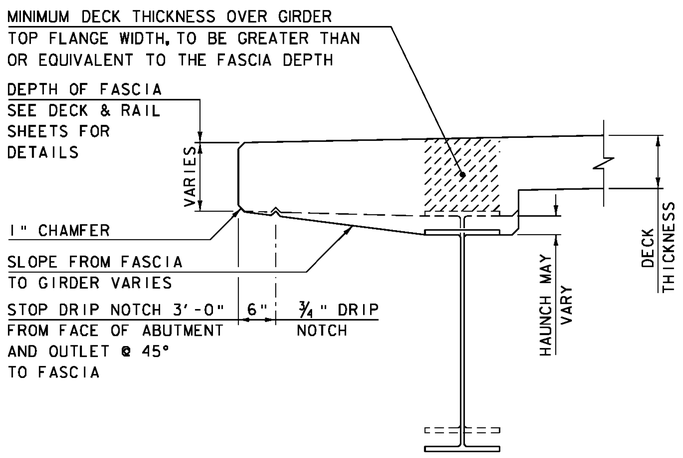
PLOT DATE: 2/14/2012
DRAWN BY: **B.M. KLINEFELTER**
CHECKED BY: **S.E. BURBANK**
SHEET 2 OF 78

VHB Vanasse Hangen Brustlin, Inc.

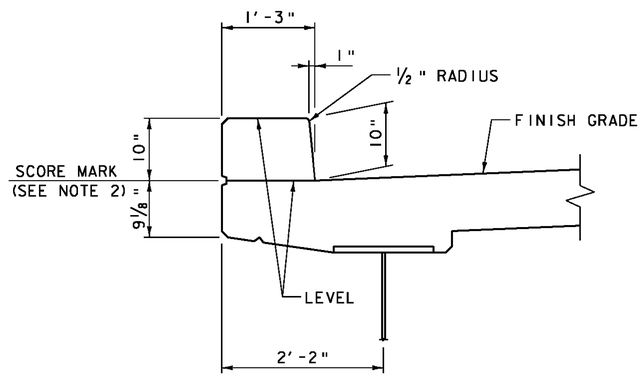
VHB 57325



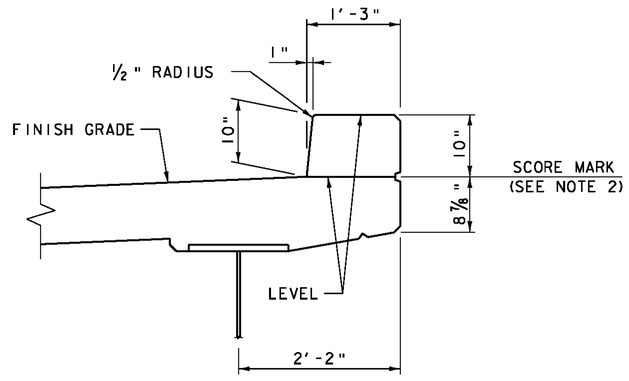
TYPICAL BRIDGE SECTION
SCALE ½" = 1'-0"



FASCIA & DRIP NOTCH DETAIL
NOT TO SCALE



CURB SECTION - LEFT FASCIA
SCALE 1" = 1'-0"



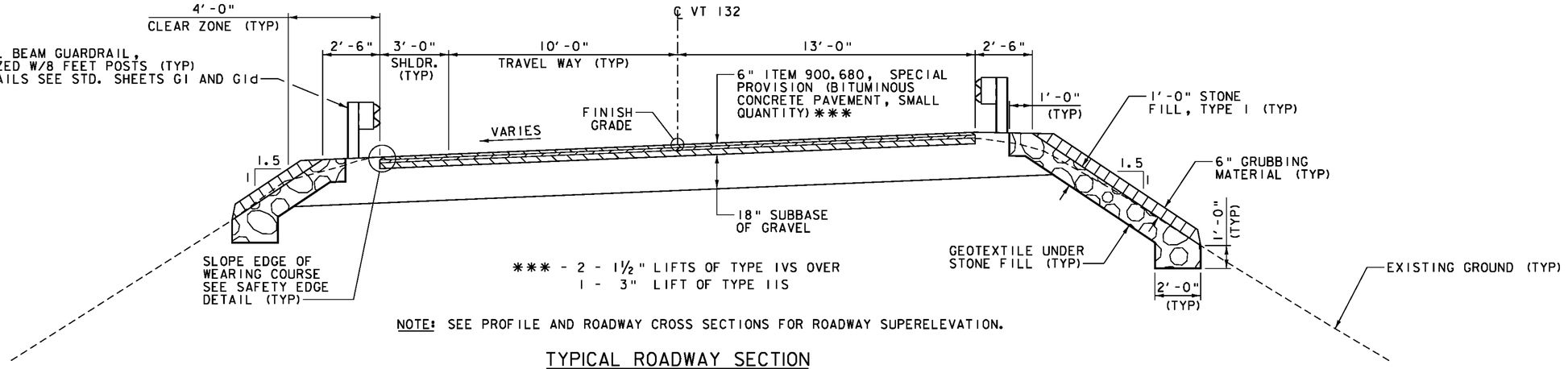
CURB SECTION - RIGHT FASCIA
SCALE 1" = 1'-0"

NOTES:

1. ~~METAL STAY IN PLACE FORMS NOT SHOWN FOR CLARITY.~~
2. SEE VAOT STRUCTURES DETAIL SHEET SD-501.00 FOR SCORE MARK DETAIL AND ADDITIONAL INFORMATION.

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174typ.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.J. MASSE
DESIGNED BY: G.S. GOODRICH	CHECKED BY: S.E. BURBANK
TYPICAL BRIDGE SECTION	SHEET 3 OF 78



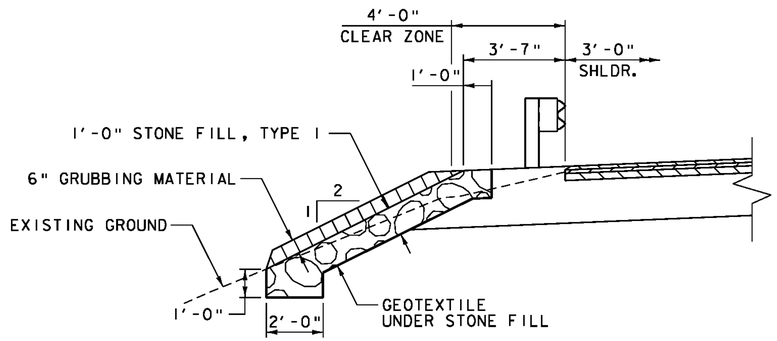
*** - 2 - 1½" LIFTS OF TYPE IVS OVER
1 - 3" LIFT OF TYPE IIS

NOTE: SEE PROFILE AND ROADWAY CROSS SECTIONS FOR ROADWAY SUPERELEVATION.

TYPICAL ROADWAY SECTION

SCALE ⅜" = 1'-0"

STA. 102+06.00 - STA. 102+89.63

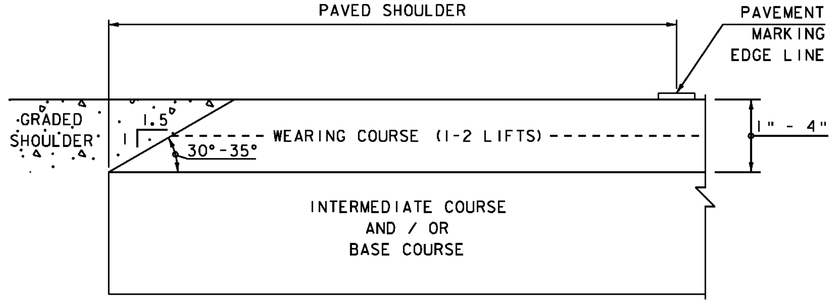


NOTE: SEE TYPICAL ROADWAY SECTIONS FOR INFORMATION NOT SHOWN.

TYPICAL 1:2 SLOPE SECTION

SCALE ⅜" = 1'-0"

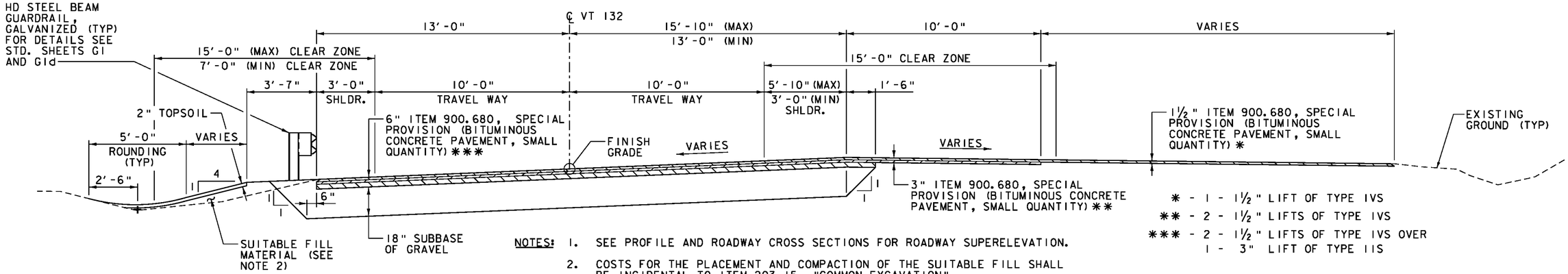
STA. 105+39.00 - STA. 105+50.00, LT



NOTE: COST FOR FORMING AND COMPACTING SAFETY EDGE SHALL BE INCIDENTAL TO ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".

SAFETY EDGE DETAIL

NOT TO SCALE



* - 1 - 1½" LIFT OF TYPE IVS
** - 2 - 1½" LIFTS OF TYPE IVS
*** - 2 - 1½" LIFTS OF TYPE IVS OVER
1 - 3" LIFT OF TYPE IIS

NOTES:
1. SEE PROFILE AND ROADWAY CROSS SECTIONS FOR ROADWAY SUPERELEVATION.
2. COSTS FOR THE PLACEMENT AND COMPACTION OF THE SUITABLE FILL SHALL BE INCIDENTAL TO ITEM 203.15, "COMMON EXCAVATION".

MATERIAL TOLERANCES

PAVEMENT TOLERANCE = +/-¼" TOTAL THICKNESS
SUBBASE OF GRAVEL TOLERANCE = +/- 1"

TYPICAL ROADWAY SECTION

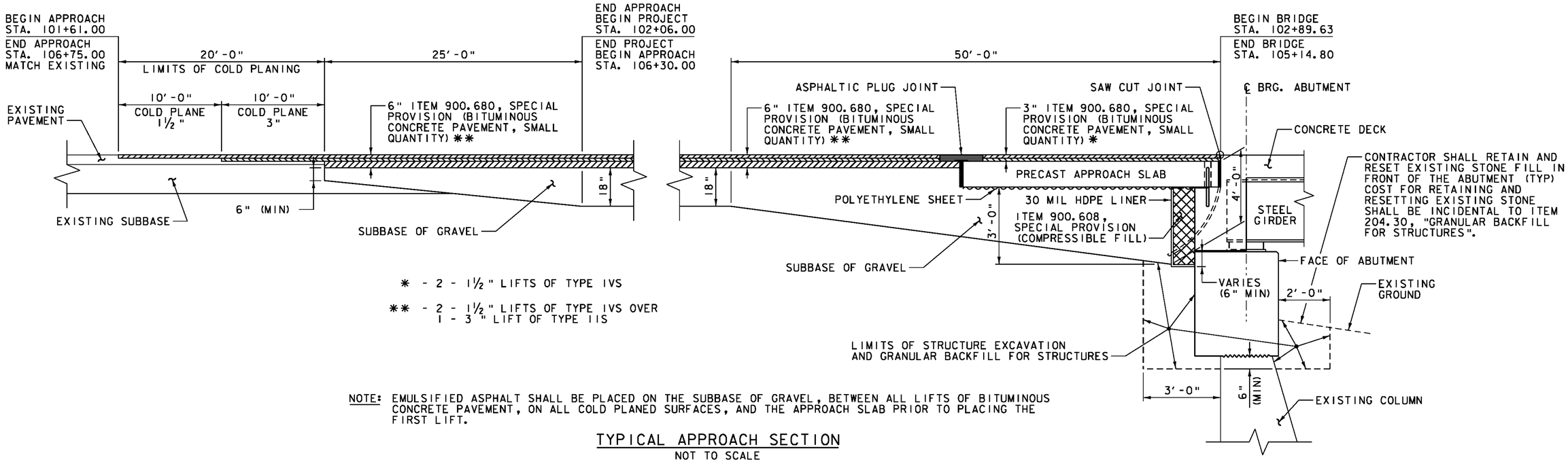
SCALE ⅜" = 1'-0"

STA. 105+14.80 - STA. 106+30.00

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08jl74typ.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
TYPICAL ROADWAY SECTIONS	SHEET 4 OF 78

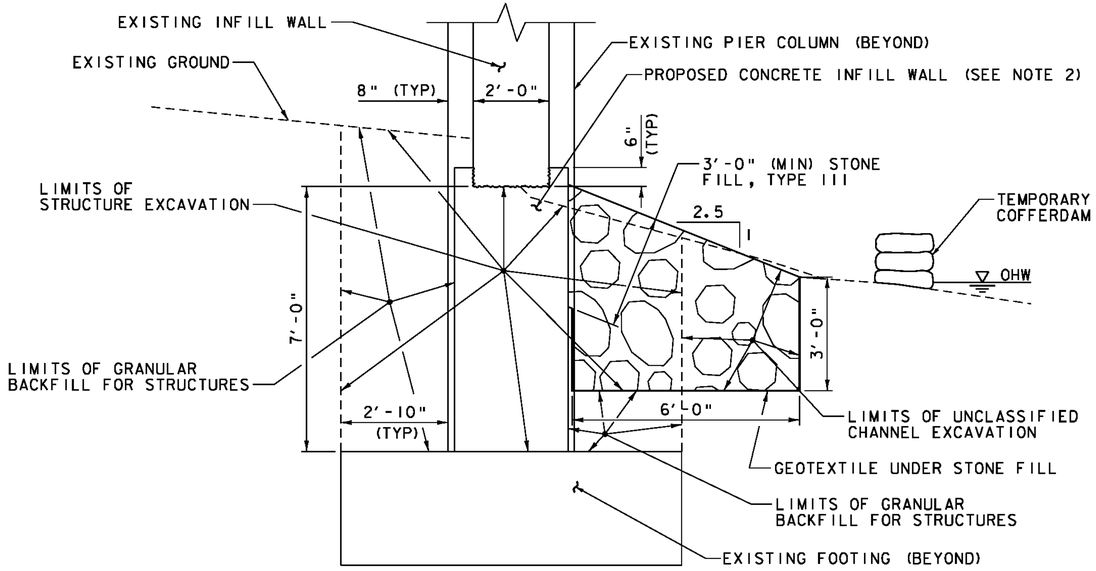
VHB 57325



NOTE: EMULSIFIED ASPHALT SHALL BE PLACED ON THE SUBBASE OF GRAVEL, BETWEEN ALL LIFTS OF BITUMINOUS CONCRETE PAVEMENT, ON ALL COLD PLANED SURFACES, AND THE APPROACH SLAB PRIOR TO PLACING THE FIRST LIFT.

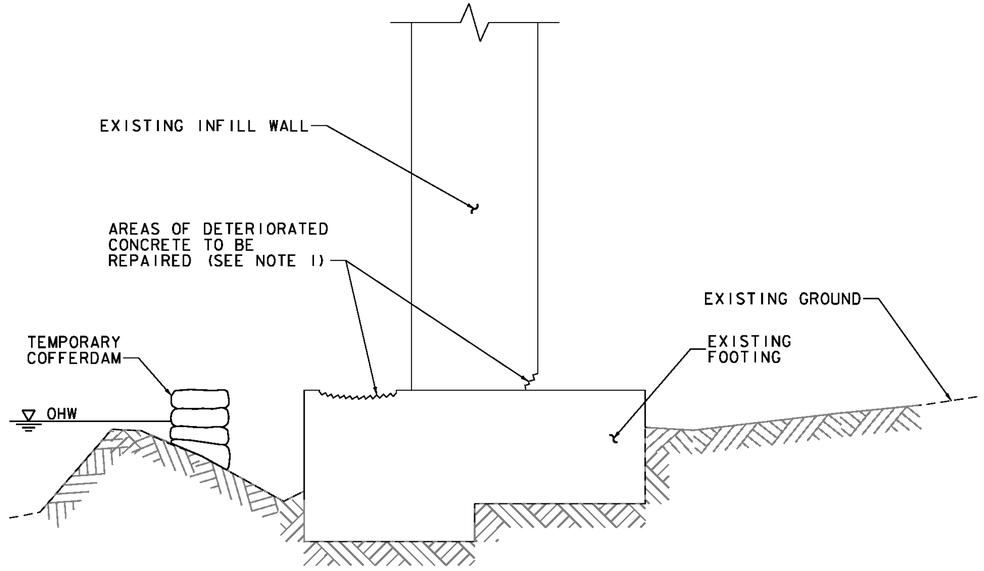
TYPICAL APPROACH SECTION

NOT TO SCALE



PIER 1 EARTHWORK SECTION

NOT TO SCALE



PIER 2 EARTHWORK SECTION

NOT TO SCALE

NOTES:

1. SEE SHEET 32 FOR CONCRETE REMOVAL AND REPAIR NOTES.
2. SEE SHEET 56 FOR PROPOSED INFILL WALL DETAILS.

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08l174typ.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
TYPICAL EARTHWORK SECTIONS	SHEET 5 OF 78

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES				TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
												EARTHWORKS SUMMARY
1				1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				
												FILL REQUIRED
680				680		CY	COMMON EXCAVATION	203.15		40	CY	SUITBALE FILL MATERIAL
5				5		CY	SOLID ROCK EXCAVATION	203.16				
												FILL AVAILABLE
		25		25		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27		680	CY	COMMON EXCAVATION
1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22		5	CY	SOLID ROCK EXCAVATION
										25	CY	UNCLASSIFIED CHANNEL EXCAVATION
		155		155		CY	STRUCTURE EXCAVATION	204.25		0	CY	TRENCH EXCAVATION OF EARTH
		110		110		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30		155	CY	STRUCTURE EXCAVATION
		1		1		LS	COFFERDAM (PIER NO. 1)	208.40		865	CY	SUBTOTAL
		1		1		LS	COFFERDAM (PIER NO. 2)	208.40		0	CY	ROUNDING
515				515		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10		865	CY	TOTAL
450				450		CY	SUBBASE OF GRAVEL	301.15				
6				6		CWT	EMULSIFIED ASPHALT	404.65		865	CY	FILL AVAILABLE
1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50		40	CY	FILL REQUIRED
		37		37		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34		0	CY	BORROW
		210875		210875		LB	STRUCTURAL STEEL, CURVED PLATE GIRDER (FPQ)	506.56		825	CY	WASTE
		2460		2460		LB	REINFORCING STEEL	507.15				
		196		196		LF	DRILLING AND GROUTING DOWELS	507.16				
		60000		60000		LB	EPOXY COATED REINFORCING STEEL (FPQ)	507.17				
		1		1		LS	SHEAR CONNECTORS (3345 - 7/8" X 7")	508.15				
		76		76		GAL	WATER REPELLENT, SILANE	514.10				
		54		54		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
		78		78		LF	JOINT SEALER, HOT POURED	524.11				
		463		463		LF	BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING	525.44				
		600		600		SY	REMOVAL OF BRIDGE PAVEMENT	529.10				
		1		1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20				
		50		50		CY	REMOVAL OF CONCRETE OR MASONRY	529.25				
		20		20		EACH	BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD	531.11				
		1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1)	540.10				
		1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2)	540.10				
		1		1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 1)	540.10				
		1		1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 2)	540.10				
		50		50		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	580.13				
		30		30		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14				
		10		10		CY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	580.15				
100				100		MGAL	DUST CONTROL WITH WATER	609.10				
	155			155		CY	STONE FILL, TYPE I	613.10				
	20			20		CY	STONE FILL, TYPE II	613.11				
	30			30		CY	STONE FILL, TYPE III	613.12				
203				203		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED	621.21				
516				516		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED W/8 FEET POSTS	621.215				

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)
FILE NAME: z08j174qs.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: B.M. KLINEFELTER
QUANTITY SHEET #1
PLOT DATE: 02/13/2012
DRAWN BY: E.A. FIALA
CHECKED BY: S.E. BURBANK
SHEET 8 OF 78

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES				TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
4				4		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60				
590				590		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
400				400		HR	FLAGGERS	630.15				
			1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
			1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
			1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
			3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
1				1		LS	TRAFFIC CONTROL	641.10				
14				14		DAY	PORTABLE CHANGEABLE MESSAGE SIGN RENTAL	641.17				
1100				1100		LF	4 INCH WHITE LINE	646.20				
1050				1050		LF	4 INCH YELLOW LINE	646.21				
71				71		LF	24 INCH STOP BAR	646.26				
8				8		EACH	LETTER OR SYMBOL	646.30				
	580			580		SY	GEOTEXTILE UNDER STONE FILL	649.31				
	200			200		SY	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515				
	125			125		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61				
	20			20		LB	SEED	651.15				
	130			130		LB	FERTILIZER	651.18				
	0.6			0.6		TON	AGRICULTURAL LIMESTONE	651.20				
	0.6			0.6		TON	HAY MULCH	651.25				
	45			45		CY	TOPSOIL	651.35				
	440			440		SY	GRUBBING MATERIAL	651.40				
	1			1		LS	EPSC PLAN	652.10				
	140			140		HR	MONITORING EPSC PLAN	652.20				
	1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30				
	14			14		SY	TEMPORARY EROSION MATTING	653.20				
	30			30		CY	VEHICLE TRACKING PAD	653.35				
	1			1		EACH	INLET PROTECTION DEVICE, TYPE I	653.40				
	1270			1270		LF	PROJECT DEMARCATION FENCE	653.55				
120				120		SF	TRAFFIC SIGNS, TYPE A	675.20				
270				270		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
11				11		EACH	REMOVING SIGNS	675.50				
1				1		EACH	ERECTING SALVAGED SIGNS	675.60				
		9		9		CY	SPECIAL PROVISION (COMPRESSIBLE FILL)	900.608				
		222		222		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT) (FPQ)	900.608				
		25		25		GAL	SPECIAL PROVISION (EPOXY INJECTION FOR CRACK SEALING)	900.625				
1				1		LU	SPECIAL PROVISION (INCENTIVE/DISINCENTIVE) (N.A.B.I)	900.650				
1				1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I.)	900.650				

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174qs.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: B.M. KLINEFELTER
QUANTITY SHEET #2

PLOT DATE: 02/13/2012
DRAWN BY: E.A. FIALA
CHECKED BY: S.E. BURBANK
SHEET 7 OF 73

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 3

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
						ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
						1				1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N.A.B.I.)	900.650				
						275				275		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174qs.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: B.M. KLINEFELTER
QUANTITY SHEET #3

PLOT DATE: 02/13/2012
DRAWN BY: E.A. FIALA
CHECKED BY: S.E. BURBANK
SHEET 8 OF 78

VHB 57325

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE QUANTITY SHEET 1

SUMMARY OF BRIDGE QUANTITIES								TOTALS	DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES		
SUPER-STRUCTURE	APPROACH SLAB NO. 1	APPROACH SLAB NO. 2	ABUTMENT NO. 1	ABUTMENT NO. 2	PIER NO. 1	PIER NO. 2	BRIDGE TOTAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS
					25		25	CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27			
			43	56	56		155	CY	STRUCTURE EXCAVATION	204.25			
			34	45	31		110	CY	GRANULAR BACKFILL FOR STRUCTURES	204.30			
					1		1	LS	COFFERDAM (PIER NO. 1)	208.40			
						1	1	LS	COFFERDAM (PIER NO. 2)	208.40			
					27	10	37	CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34			
210875							210875	LB	STRUCTURAL STEEL, CURVED PLATE GIRDER (FPQ)	506.56			
					1770	690	2460	LB	REINFORCING STEEL	507.15			
					112	84	196	LF	DRILLING AND GROUTING DOWELS	507.16			
60000							60000	LB	EPOXY COATED REINFORCING STEEL (FPQ)	507.17			
1							1	LS	SHEAR CONNECTORS (3345 - 7/8" X 7")	508.15			
43			3	4	13	13	76	GAL	WATER REPELLENT, SILANE	514.10			
	27	27					54	LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10			
			33	45			78	LF	JOINT SEALER, HOT POURED	524.11			
463							463	LF	BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING	525.44			
600							600	SY	REMOVAL OF BRIDGE PAVEMENT	529.10			
1							1	EACH	PARTIAL REMOVAL OF STRUCTURE	529.20			
			15	20	7	8	50	CY	REMOVAL OF CONCRETE OR MASONRY	529.25			
20							20	EACH	BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD	531.11			
			1				1	LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1)	540.10			
				1			1	LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2)	540.10			
	1						1	LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 1)	540.10			
		1					1	LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 2)	540.10			
					15	35	50	SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	580.13			
					10	20	30	SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14			
					3	7	10	CY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	580.15			
			4	5			9	CY	SPECIAL PROVISION (COMPRESSIBLE FILL)	900.608			
222							222	CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT) (FPQ)	900.608			
					11	14	25	GAL	SPECIAL PROVISION (EPOXY INJECTION FOR CRACK SEALING)	900.625			

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174qs.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: B.M. KLINEFELTER
BRIDGE QUANTITY SHEET #1

PLOT DATE: 02/13/2012
DRAWN BY: E.A. FIALA
CHECKED BY: S.E. BURBANK
SHEET 9 OF 78

GPS CONTROL POINTS

HVCTRL #1

UNION VILLAGE
NORTH = 471637.23
EAST = 1704501.32
ELEV. = 583.20

GENERAL LOCATION, THETFORD, VT., ON THE UNION VILLAGE DAM, ABOUT 11.5 MI (18.5 KM) NORTHEAST OF WHITE RIVER JCT, ABOUT 30 MI (48.3 KM) SOUTHEAST OF BARRE, AND ABOUT 2.5 MI (4.0 KM) NORTHWEST OF THE VERMONT/NEW HAMPSHIRE STATE LINE. OWNERSHIP, U.S. ARMY CORPS OF ENGINEERS, CONTACT GORDON PARKER, POST MILLS, VT. 05058. PHONE UNLISTED. TO REACH FROM THE INTERSECTION OF VT ROUTE 132 AND U.S. ROUTE 5 IN POMPANOOSUC GO NORTHWEST ALONG VT ROUTE 132 FOR 2.0 MI (3.2 KM) TO A REVERSE Y INTERSECTION. BEAR RIGHT AND CONTINUE NORTH ALONG VT ROUTE 132 FOR 0.5 MI (0.8 KM) TO THE Y INTERSECTION OF ACADEMY ROAD RIGHT. BEAR RIGHT AND GO NORTHEAST ALONG ACADEMY ROAD FOR 0.6 MI (1.0 KM) TO UNION VILLAGE AND THE INTERSECTION OF A ROAD RIGHT TO A COVERED BRIDGE. CONTINUE STRAIGHT AHEAD AND GO NORTHEAST ALONG A PAVED ROAD FOR 0.1 MI (0.2 KM) TO A GATE TO THE UNION VILLAGE DAM RECREATIONAL AREA. PASS THROUGH GATE AND CONTINUE NORTHEAST ALONG PAVED ROAD FOR 0.2 MI (0.3 KM) TO THE U.S. ARMY CORPS OF ENGINEERS OFFICE AND MAINTENANCE BUILDING ON THE LEFT. CONTINUE STRAIGHT AHEAD, WINDING UPHILL ALONG PAVED ROAD FOR 0.3 MI (0.5 KM) TO THE TOP OF THE WEST END OF THE DAM. CONTINUE EAST ACROSS THE TOP OF THE DAM FOR 0.15 MI (0.24 KM) TO THE SITE OF MARK ON THE RIGHT, SET IN THE TOP OF THE EAST SIDE OF A 1.4 M (4.6 FT) X 1.5 M (4.9 FT) CONCRETE ACCESS STRUCTURE WITH STEEL LADDER. THE MARK IS 99.1 M (325.1 FT) WEST OF THE SOUTHWEST CORNER OF THE BRICK BUILDING AT THE EAST END OF THE DAM, 5.0 M (16.4 FT) SOUTH OF AND ABOUT LEVEL WITH THE CENTERLINE OF THE ROAD ON THE TOP OF THE DAM, 1.3 M (4.3 FT) SOUTH OF A STEEL BEAM GUARD RAIL, 0.7 M (2.3 FT) NORTH OF THE SOUTH EDGE OF THE CONCRETE ACCESS STRUCTURE, 0.1 M (0.3 FT) WEST OF THE EAST EDGE OF THE STRUCTURE, AND 0.16 M (0.52 FT) WEST OF A FIBERGLASS WITNESS POST.

HVCTRL #2

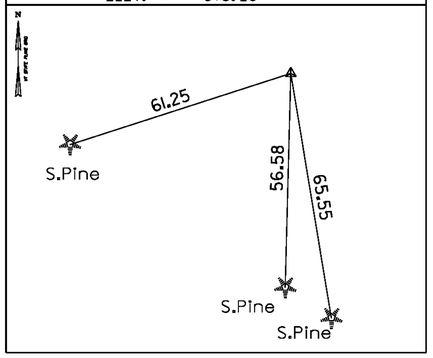
UNION VILLAGE AZ MK
NORTH = 481748.59
EAST = 1699661.60
ELEV. = 709.25

GENERAL LOCATION, THETFORD, VT., ABOUT 13 MI (20.9 KM) NORTHEAST OF WHITE RIVER JCT, ABOUT 28 MI (45.1 KM) SOUTHEAST OF BARRE, AND ABOUT 4.5 MI (7.2 KM) NORTHWEST OF THE VERMONT/NEW HAMPSHIRE STATE LINE. OWNERSHIP, MATTHEW I. WIENCKE, RR 1 BOX 32, THETFORD CENTER, VT 05075. TO REACH FROM THE INTERSECTION OF VT ROUTE 132 AND U.S. ROUTE 5 IN POMPANOOSUC GO NORTHWEST ALONG VT ROUTE 132 FOR 2.0 MI (3.2 KM) TO A REVERSE Y INTERSECTION. BEAR RIGHT AND CONTINUE NORTH ALONG VT ROUTE 132 FOR 0.5 MI (0.8 KM) TO THE Y INTERSECTION OF ACADEMY ROAD RIGHT. BEAR LEFT AND CONTINUE NORTHWEST ALONG VT ROUTE 132 FOR 3.4 MI (5.5 KM) TO THE INTERSECTION OF TUCKER HILL ROAD RIGHT, JUST NORTH OF THE VT ROUTE 132 BRIDGE OVER THE OMPOMPANOOSUC RIVER. TURN RIGHT AND GO EAST ALONG TUCKER HILL ROAD FOR 0.6 MI (1.0 KM) TO THE INTERSECTION OF A FIELD DRIVE LEFT, JUST EAST OF A LARGE BRICK HOUSE, WOODEN ATTACHED BARN, AND 2 CAR GARAGE. OBTAIN PERMISSION FROM MR. WIENCKE AT THE HOUSE AND TURN LEFT THROUGH AN OPENING IN A STONE WALL AND GO NORTH ALONG FIELD DRIVE FOR ABOUT 130 M (426.5 FT) TO THE TOP OF THE EAST SIDE OF A SMALL BARE KNOB AND AND SITE OF MARK ABOUT 80 M (262.5 FT) NORTHEAST OF THE BRICK HOUSE. THE MARK IS 44.0 M (144.4 FT) EAST OF A LONE 70 CM PINE, 18.0 M (59.1 FT) SOUTHWEST OF A 30 CM APPLE, 34.6 M (113.5 FT) SOUTHEAST OF THE EAST EDGE OF THE MOST EASTERLY OF 2 LARGE BOULDERS, 8.0 M (26.2 FT) WEST OF A FLOWERING BUSH, AND 14.5 M (47.6 FT) SOUTHEAST OF A FIBERGLASS WITNESS POST. IT IS SET IN THE TOP OF AN ALUMINUM MONUMENT.

TRAVERSE TIES

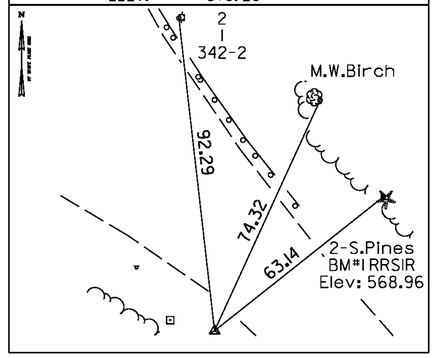
HVCTRL #5

NORTH = 480868.07
EAST = 1698650.65
ELEV. = 573.28



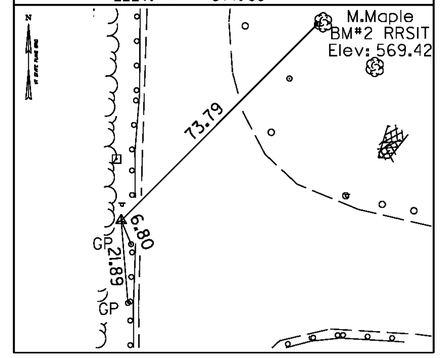
HVCTRL #6

NORTH = 481793.80
EAST = 1697202.06
ELEV. = 570.20



HVCTRL #7

NORTH = 482299.14
EAST = 1697054.00
ELEV. = 571.00



• Main Traverse Completed 04/05/95 by R.Gilman & T.Morse

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)
ADJUSTMENT Compass

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08jl74ti.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: VTRANS
TIE SHEET

PLOT DATE: 2/15/2012
DRAWN BY: R. BULLOCK
CHECKED BY: VTRANS
SHEET 10 OF 78

VHB 57325

N

VT STATE PLANE GRID

HD STEEL BEAM GUARDRAIL, GALVANIZED W/8 FEET POSTS
STA. 101+50, 89.98' LT - STA. 102+50, LT
STA. 100+05 - STA. 102+50, RT

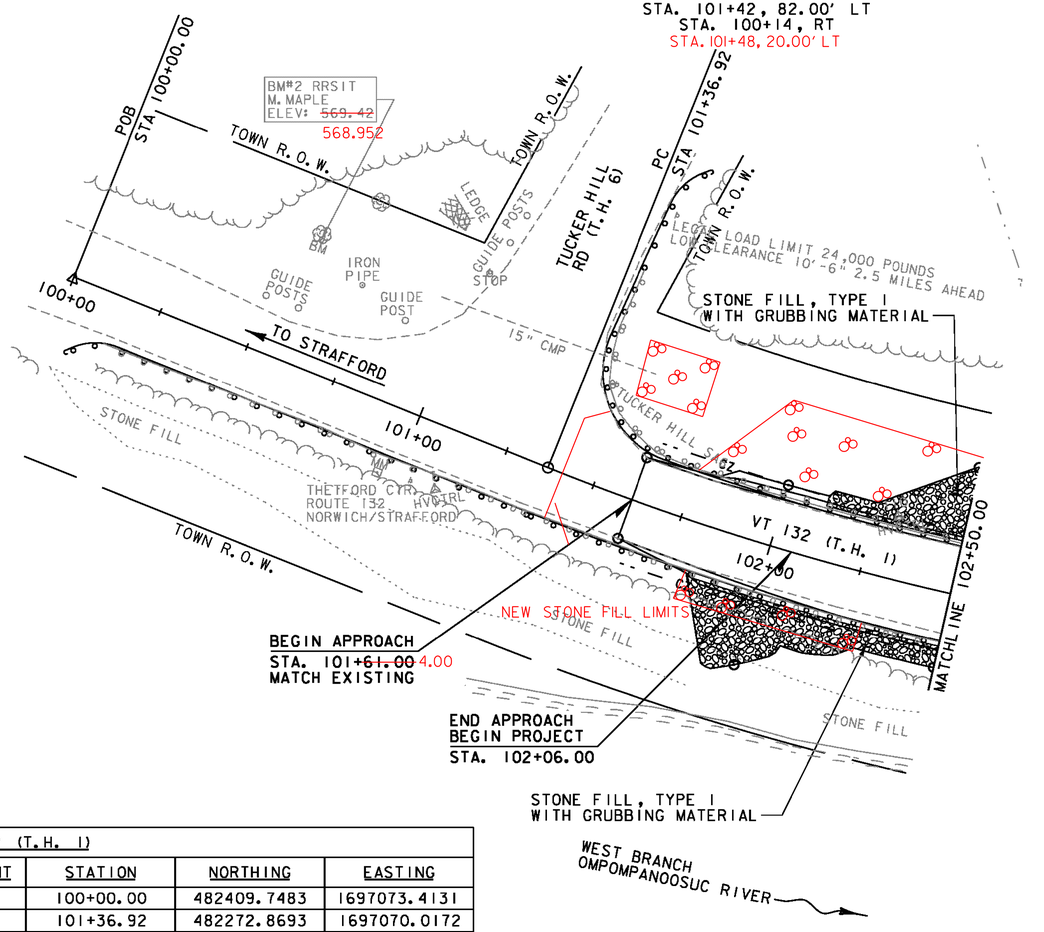
COLD PLANING, BITUMINOUS PAVEMENT
STA. 101+61 - STA. 101+81, LT & RT

EDGE OF PAVEMENT (EOP) WIDTH TRANSITIONS
STA. 101+61.00 = 12'-0" LT & 11'-0" RT (EOP)
STA. 101+81.00 = 12'-0" LT & 11'-4" RT (EOP)
STA. 102+06.00 = 13'-0" LT (EOP)
STA. 102+22.75 = 13'-0" RT (EOP)

REMOVAL AND DISPOSAL OF GUARDRAIL
STA. 101+42, 58.75' LT - STA. 102+50, LT
STA. 100+14 - STA. 102+50, RT

ANCHOR FOR STEEL BEAM RAIL
STA. 101+42, 82.00' LT
STA. 100+14, RT
STA. 101+48, 20.00' LT

VT 132 (T.H. 1)
CURVE NO. 1 DATA
△ = 37°04'04.31"
D = 7°59'32.44"
R = 716.88'
T = 240.34'
L = 463.79'
E = 39.21'
BANK = MATCH EXISTING/VARIES (SEE CROSS SECTIONS)



VT 132 (T.H. 1)			
ELEMENT	STATION	NORTHING	EASTING
POB	100+00.00	482409.7483	1697073.4131
PC	101+36.92	482272.8693	1697070.0172
PI	104+91.63	481918.2649	1697061.2199
PCC	106+00.71	481837.3004	1697204.1221
PT	107+82.23	481706.3815	1697328.9980
POE	108+25.00	481679.8406	1697362.5404
WEST BRANCH OMPOMPANOOSUC RIVER			
ELEMENT	STATION	NORTHING	EASTING
POB	10+00.00	482044.0281	1697008.3301
POE	12+25.00	481968.6726	1697220.3361

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

SCALE 1" = 20'-0
20 0 20

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174bdr_nul.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: D.M. PECK
LAYOUT SHEET (1OF 2)
PLOT DATE: 2/15/2012
DRAWN BY: B.M. KLINEFELTER
CHECKED BY: S.E. BURBANK
SHEET 11 OF 78

VHB 57325

N

VT STATE PLANE GRID

VT 132 (T.H. 1)
CURVE NO. 1 DATA

△ = 37°04'04.31"
D = 7°59'32.44"
R = 716.88'
T = 240.34'
L = 463.79'
E = 39.21'
BANK = MATCH EXISTING/VARIES (SEE CROSS SECTIONS)

BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/ STEEL TUBING

STA. 102+96 - STA. 105+38, LT
STA. 102+78 - STA. 104+99, RT

HD STEEL BEAM GUARDRAIL, GALVANIZED

STA. 105+38 - STA. 106+60, LT
STA. 104+99, RT - STA. 105+14, 53.16' RT

HD STEEL BEAM GUARDRAIL, GALVANIZED W/8 FEET POSTS

STA. 102+50 - STA. 102+96, LT
STA. 102+50 - STA. 102+78, RT

ANCHOR FOR STEEL BEAM RAIL

STA. 106+51, LT
STA. 105+22, 49.00' RT

COLD PLANING, BITUMINOUS PAVEMENT

STA. 106+55 - STA. 106+75, LT & RT
STA. 105+06, 64.55' LT - STA. 105+15, 81.09' RT

REMOVAL AND DISPOSAL OF GUARDRAIL

STA. 102+50 - STA. 103+01, LT
STA. 102+50 - STA. 102+82, RT
STA. 105+32 - STA. 106+20, LT
STA. 104+94 - STA. 105+22, RT

VT 132 (T.H. 1)
CURVE NO. 2 DATA

△ = 15°59'59.89"
D = 8°48'53.05"
R = 650.00'
T = 91.35'
L = 181.51'
E = 6.39'
BANK = MATCH EXISTING/VARIES (SEE CROSS SECTIONS)

REMOVE DEBRIS AND BREAK UP LARGE BOULDERS AS REQUIRED TO RE-GRADE SLOPE TO PREVENT FURTHER ACCUMULATION OF DEBRIS. COST FOR REMOVING DEBRIS AND BREAKING UP LARGE BOULDERS SHALL BE INCIDENTAL TO ITEM 203.27, "UNCLASSIFIED CHANNEL EXCAVATION".

STONE FILL, TYPE I WITH GRUBBING MATERIAL

VT 132 POC STA. 104+08.72 = CHANNEL POT STA. 11+12.50

WEST BRANCH OMPOMPANOOSUC RIVER

POE STA 12+25.00

STONE WALL

AER E&T

GUY POLE

TOWN R.O.W.

GUY

℄ BRG. PIER 1
STA. 103+64.55
F.G. = 570.78

℄ BRG. PIER 2
STA. 104+39.62
F.G. = 570.74

MATCHLINE 102+50.00

STONE FILL

NEW STONE FILL LIMITS

BEGIN BRIDGE
STA. 102+89.63
F.G. = 570.63

END BRIDGE
STA. 105+14.80
F.G. = 570.53

50°07'49"

TEMPORARY COFFERDAM

TOWN R.O.W.
STONE FILL, TYPE III

STONE FILL, TYPE I WITH GRUBBING MATERIAL

POB 10+00.00

STONE FILL, TYPE II WITH GRUBBING MATERIAL

GOVE HILL RD
NO DUMPING

GUIDE POST

R = 22'-6"

GOVE HILL ROAD (T.H. 8)

TOP

GRAVEL

LEDGE

IRON PIPE

SPEED LIMIT 35

PI STA 104+91.63

15" CMP

GUIDE POSTS

24" RCP

DTL

PCC STA 106+00.71

BM#1 RRSIR
2-S.PINES
ELEV= 568.96

HVCTRL

CZ

VT 132 (T.H. 1) 106+00

R = 300'-0"

END APPROACH
STA. 106+75.00
MATCH EXISTING

END PROJECT BEGIN APPROACH
STA. 106+30.00

PT STA 107+82.23

POE STA 108+25.00

TO NORWICH

107+00

108+00

108+25

EDGE OF PAVEMENT (EOP) AND EDGE OF SHOULDER (EOS) WIDTH TRANSITIONS

STA. 106+04.25 = 13'-0" RT (EOS)
STA. 106+11.25 = 13'-0" LT (EOP)
STA. 106+55.00 = 11'-3" LT (EOP) & 15'-0½" RT (EOS)
STA. 106+75.00 = 11'-2" LT (EOP) & 15'-10" RT (EOP)

EXISTING BRIDGE DATA

225' STEEL BEAM/CONC. DECK
24' CURB TO CURB
22' VERTICAL CLEARANCE
BUILT IN 1946

SCALE 1" = 20'-0
20 0 20

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (92)

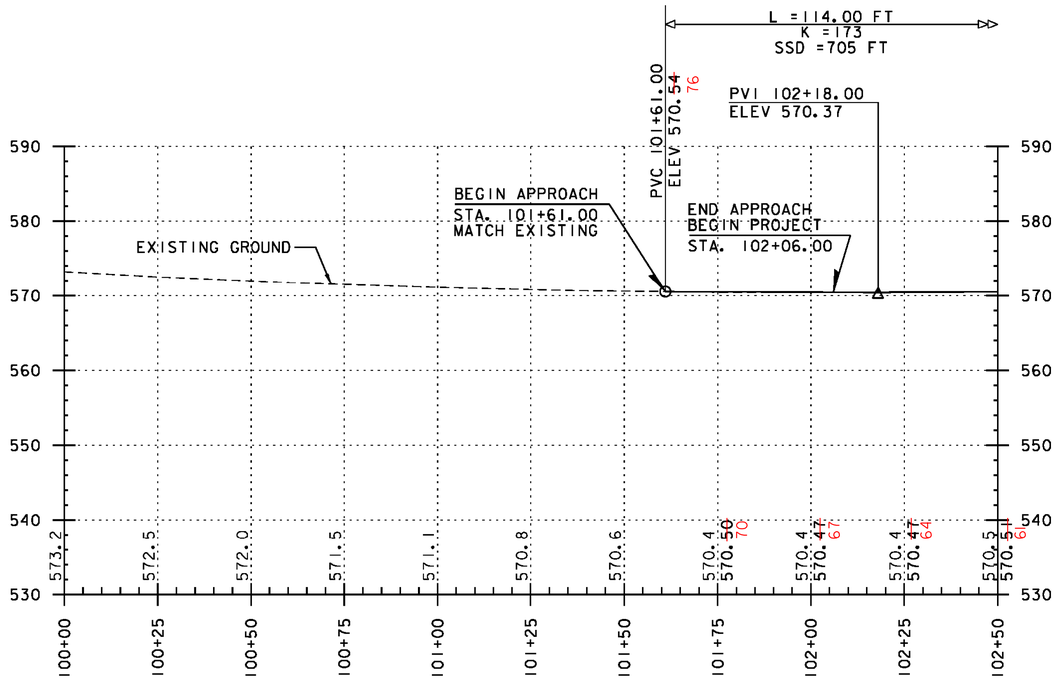
Vanasse Hangen Brustlin, Inc.

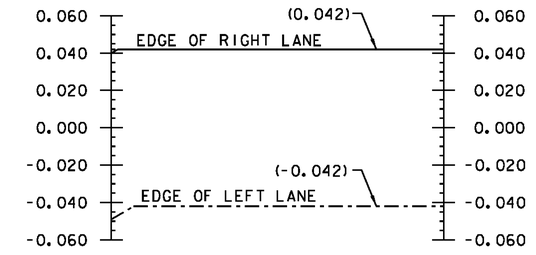
PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

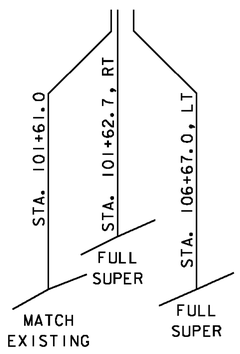
FILE NAME: z08j174bdr_nul.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: D.M. PECK
LAYOUT SHEET (2 OF 2)

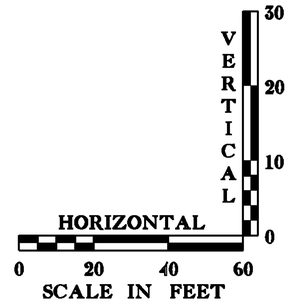
PLOT DATE: 2/15/2012
DRAWN BY: B.M. KLINEFELTER
CHECKED BY: S.E. BURBANK
SHEET 12 OF 78

VHB 57325









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

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174pro.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: J.W. GOLEK
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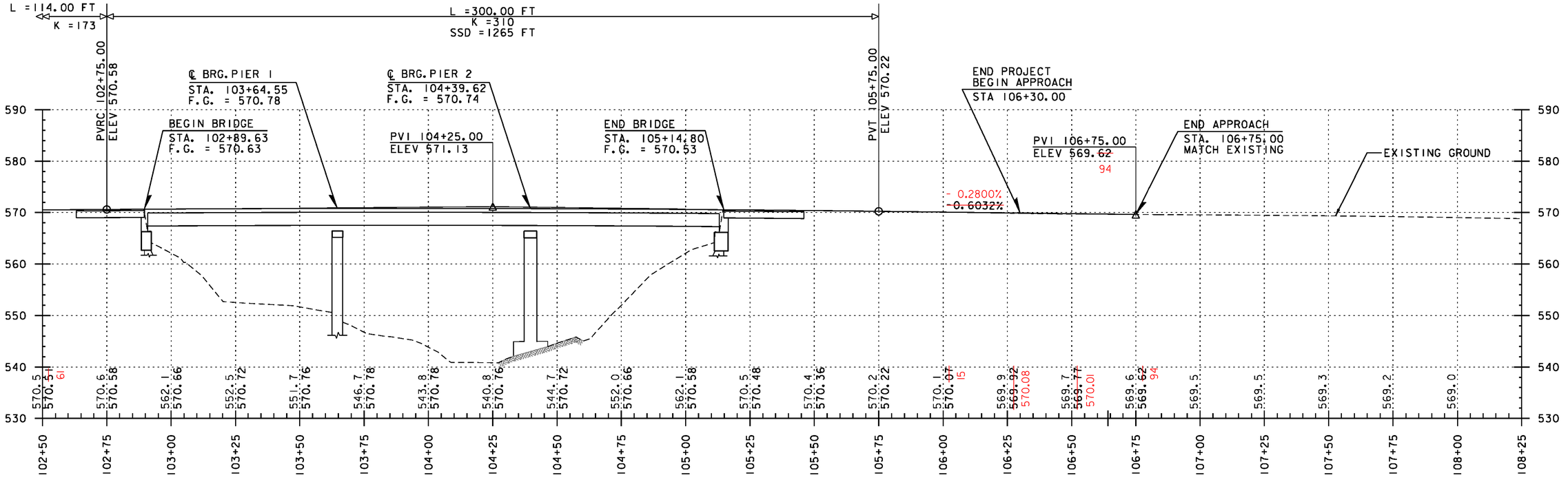
PROFILE SHEET (1 OF 2)	SHEET 13 OF 78



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

Vanasse Hangen Brustlin, Inc.

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PROFILE SHEET (2 OF 2)	SHEET 14 OF 78

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL AND REPLACEMENT OF THE SUPERSTRUCTURE AND REHABILITATION OF THE SUBSTRUCTURE FOR BRIDGE NO. 8 ON VT ROUTE 132 (TH 1). THE NEW SUPERSTRUCTURE WILL BE A BARE CONCRETE DECK WITH CURVED CONTINUOUS STEEL PLATE GIRDERS, BEARINGS AND BRIDGE RAILINGS SPANNING THE WEST BRANCH OMPOMPANOOSUC RIVER ON THE EXISTING SUBSTRUCTURE ALONG THE SAME ALIGNMENT. THE SUBSTRUCTURE REHABILITATION WILL INCLUDE MINOR REWORKING OF THE BRIDGE SEATS AND REPAIR OF THE EXISTING CONCRETE ABUTMENTS AND CONCRETE PIERS. BRIDGE NO. 8 IS LOCATED IN THE TOWN OF THETFORD, ON VT ROUTE 132 (TH 1), APPROXIMATELY 0.03 MILES SOUTH OF THE INTERSECTION OF VT ROUTE 132 (TH 1) AND TUCKER HILL ROAD (TH 6).

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.80 ACRES. IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS STEEP WOODED BANKS ASCENDING FROM THE WEST BRANCH OMPOMPANOOSUC RIVER TO ROLLING HILLS MOSTLY COVERED BY FOREST WITH OCCASIONAL OPEN AREAS. VT ROUTE 132 (TH 1), GOVE HILL ROAD (TH 8), AND TUCKER HILL ROAD (TH 6) ARE WITHIN THE PROJECT SITE. THERE IS A RESIDENCE TO THE SOUTH OF THE PROJECT SITE ON A HILL ABOVE VT 132 (TH 1) WITH A TREE BUFFER.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE WEST BRANCH OMPOMPANOOSUC RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE RIVER IS CLASSIFIED AS WIDE AND CURVING WITH A BEND UPSTREAM OF THE PROJECT SITE AND A MODERATE CURRENT. THE RIVER BED CONSISTS OF GRAVEL, COBBLES, BOULDERS AND LEDGE. THE TRIBUTARY AREA AT THE BRIDGE CROSSING IS APPROXIMATELY 56.4 SQ. MILES. THERE ARE TWO CULVERTS WITHIN THE PROJECT AREA. A CONCRETE DROP INLET COLLECTS RUNOFF FROM AN AREA TO THE SOUTH OF GOVE HILL ROAD (TH 8) AND DRAINS TO A 24" RCP CULVERT WHICH PASSES BENEATH VT ROUTE 132 (TH 1) AND DAYLIGHTS TO A SWALE WHICH DRAINS TO THE RIVER. THERE IS A 15" CMP CULVERT BENEATH TUCKER HILL ROAD (TH 6). THIS CULVERT COLLECTS RUNOFF FROM AN AREA TO THE NORTH OF TUCKER HILL ROAD (TH 6) AND DAYLIGHTS NEAR THE BOTTOM OF THE SLOPE ON THE NORTHEAST SIDE OF VT 132 (TH 1) AND DRAINS TO THE RIVER OVER A RELATIVELY FLAT GRASSY AREA. THE UNION VILLAGE DAM IS APPROXIMATELY 3.1 MILES DOWNSTREAM.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD AND SOFTWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING BRIDGE SUPERSTRUCTURE, SUBSTRUCTURE REHABILITATION, AND THE RECONSTRUCTION OF THE APPROACH ROADWAY. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES, EXCEPT ON THE SIDE SLOPES OF THE NORTH APPROACHES WHERE DUE TO THE STEEPNESS OF THE SIDE SLOPES STONE FILL, TYPE I WILL BE USED FOR SLOPE STABILIZATION.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF ORANGE, VERMONT. SOILS ON THE PROJECT SITE ARE:

COLRAIN VERY STONY FINE SANDY LOAM (CsD), 8% TO 25% SLOPES, "K FACTOR" = 0.24, CONSIDERED MODERATELY ERODIBLE, SOUTHERN HALF OF PROJECT SITE.

WINOOSKI VERY FINE SANDY LOAM (Wo), "K FACTOR" = 0.49, CONSIDERED HIGHLY ERODIBLE, NORTHERN HALF OF PROJECT SITE.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:
0.0-0.23 = LOW EROSION POTENTIAL
0.24-0.36 = MODERATE EROSION POTENTIAL
0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: NO
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: WEST BRANCH OMPOMPANOOSUC RIVER
WETLANDS: NO

1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFIC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

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

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

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.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

WOVEN WIRE REINFORCED SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

FILTER FABRIC DROP INLET PROTECTION WILL BE INSTALLED AT THE DROP INLET ON GOVE HILL RD AS PROPOSED ON THE EPSC PLAN.

TURBIDITY FILTERS WILL BE INSTALLED WHERE WORK MUST TAKE TAKE PLACE WITHIN THE LIMITS OF THE WEST BRANCH OMPOMPANOOSUC RIVER AS PROPOSED ON THE EPSC PLAN.

1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

THE PROJECT AREA IS RELATIVELY FLAT. THEREFORE IT IS NOT ANTICIPATED THAT DIVERSIONARY MEASURES WILL BE NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

CHECK STRUCTURES ARE NOT ANTICIPATED FOR THIS PROJECT.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

PERMANENT EROSION CONTROL STRUCTURES ARE NOT ANTICIPATED FOR THIS PROJECT.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3. STONE FILL, TYPE I SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:2.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH. FOR SLOPES STEEPER THAN 1:2, STONE FILL, TYPE I SHALL BE USED INSTEAD OF BIODEGRADABLE EROSION CONTROL MATTING.

1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

TREATMENT OF DEWATERING COFFERDAM IS ANTICIPATED. A LOCATION FOR TREATMENT HAS BEEN PROPOSED AND IS SHOWN ON THE PLANS. HOWEVER THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

1.5.1 CONSTRUCTION SEQUENCE

1.5.2 OFF-SITE ACTIVITIES

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SUBSECTIONS 105.25 - 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

N

VT STATE PLANE GRID

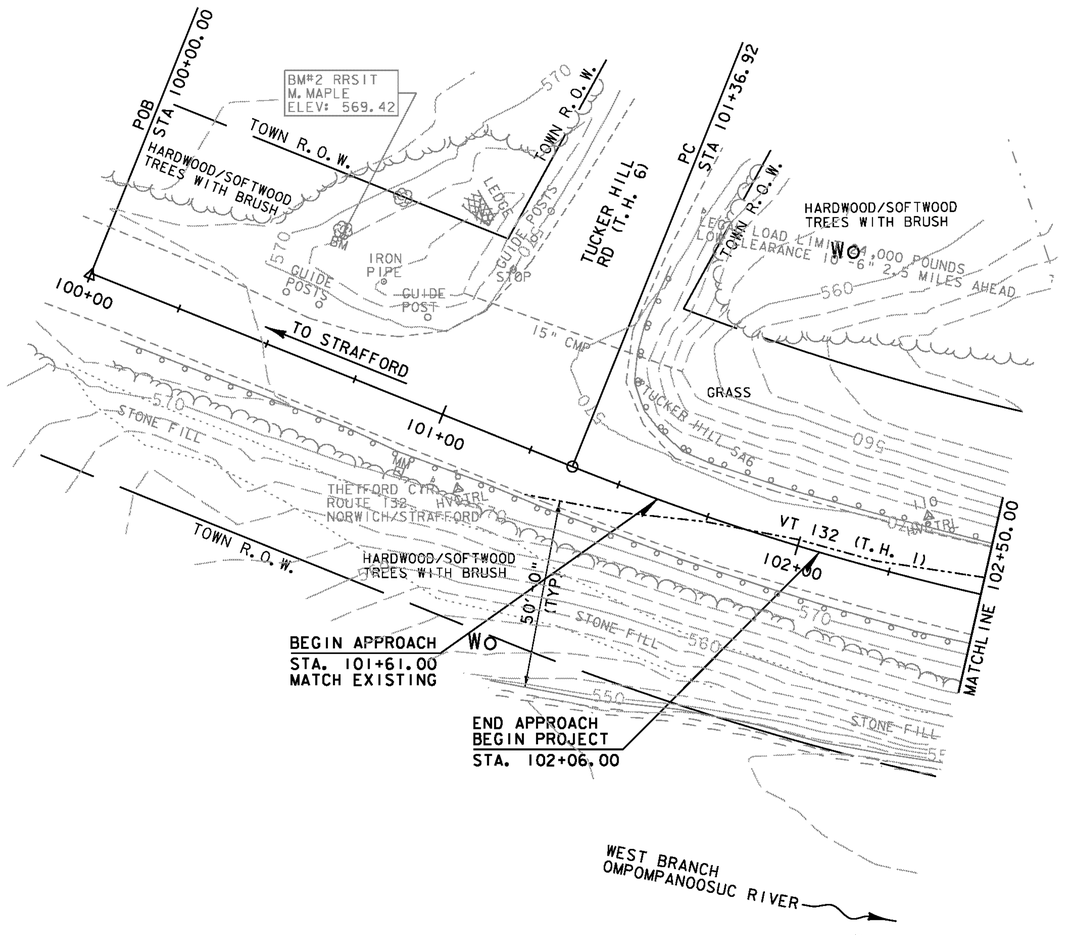
SOIL CLASSIFICATION

WINOOSKI VERY FINE SANDY LOAM (Wo)
"K FACTOR" = 0.49
CLASSIFIED HIGH EROSION POTENTIAL

LEGEND

— AER E&T — AERIAL ELECTRIC & TELEPHONE

----------- RIPARIAN BUFFER ZONE



DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (92)

SCALE 1" = 20'-0
20 0 20

Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHF 0177(9)
FILE NAME: z08j174bdr_ero.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
EPSC EXISTING COND. SITE PLAN (1 OF 2)	SHEET 16 OF 78

N

VT STATE PLANE GRID

LEGEND

— AER E&T — AERIAL ELECTRIC & TELEPHONE

-·-·-·-·-·- RIPARIAN BUFFER ZONE

WEST BRANCH OMPOMPANOOSUC RIVER

50'-0" (TYP)

50'-0" (TYP)

POE STA 112+25.00

POE STA 108+25.00

PT STA 107+82.23

PCC STA 105+00.71

VT 132 POC STA: 104+08.72 = CHANNEL POT STA. 11+12.50

POB 10+00.00

MATCHLINE 102+50.00

HARDWOOD/SOFTWOOD TREES WITH BRUSH

GRASS

STONE FILL

STONE WALL

TOWN R.O.W.

AER E&T

GUY

HVCTRL

BM#1 RRSIR 2-S.PINES ELEV. 568.96

VT 132 (T.H. 1)

TO NORWICH

GOVE HILL ROAD (T.H. 8)

GOVE HILL RD TH8 NO PLOWING

GUIDE POST

STOP

SPEED LIMIT 35

IRON PIPE

24" RCP

15" CMP

PI STA 104+91.63

END APPROACH STA. 106+75.00 MATCH EXISTING

END PROJECT BEGIN APPROACH STA. 106+30.00

50°07'49"

SCALE 1" = 20'-0

20 0 20

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8% TO 25% SLOPES
"K FACTOR" = 0.24
CLASSIFIED MODERATE EROSION POTENTIAL

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EPSC EXISTING COND. SITE PLAN (2 OF 2)	SHEET 17 OF 78

VHB 57325

N

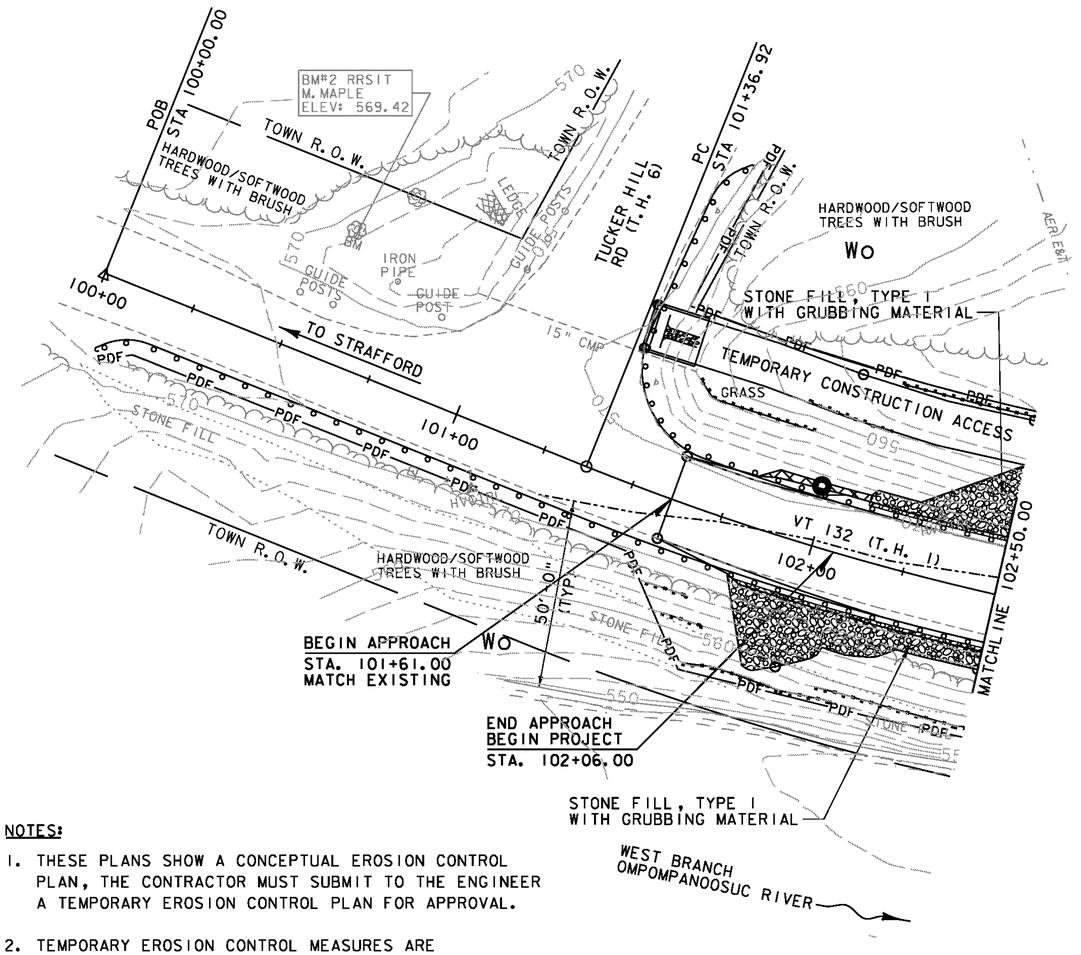
VT STATE PLANE GRID

SOIL CLASSIFICATION

WINOOSKI VERY FINE SANDY LOAM (Wo)
"K FACTOR" = 0.49
CLASSIFIED HIGH EROSION POTENTIAL

LEGEND

- WOVEN WIRE REINFORCED SILT FENCE
- LIMITS OF SOIL DISTURBANCE
- EROSION MATTING
- PDF——PDF PROJECT DEMARCATION FENCE
- RIPARIAN BUFFER ZONE
- — AER E&T — AERIAL ELECTRIC & TELEPHONE
- STABILIZED CONSTRUCTION ENTRANCE



NOTES:

1. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN, THE CONTRACTOR MUST SUBMIT TO THE ENGINEER A TEMPORARY EROSION CONTROL PLAN FOR APPROVAL.
2. TEMPORARY EROSION CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON-SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON-SITE COORDINATOR.
4. REFER TO TEMPORARY EROSION CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.

SCALE 1" = 20'-0
20 0 20

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

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SHEET 18 OF 78

LEGEND

- FILTER CURTAIN
- WOVEN WIRE REINFORCED SILT FENCE
- LIMITS OF SOIL DISTURBANCE
- EROSION MATTING
- PDF PROJECT DEMARCATION FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- RIPARIAN BUFFER ZONE
- FILTER FABRIC DROP INLET PROTECTION
- AER E&T AERIAL ELECTRIC & TELEPHONE
- PROPOSED DEWATERING AREA

WEST BRANCH OMPOMPANOOSUC RIVER

HARDWOOD/SOFTWOOD TREES WITH BRUSH

STONE WALL

50'-0" (TYP)

POE STA 12+25.00

STONE FILL, TYPE I WITH GRUBBING MATERIAL

GUY POLE

VT 132 POC STA. 104+08.72 = CHANNEL POT STA. 11+12.50

TEMPORARY CRANE PAD (AS REQUIRED)

TOWN R.O.W.

GUY TEMPORARY CONSTRUCTION ACCESS

GRASS

MATCHLINE 102+50.00

STONE FILL

103+00

104+00

105+00

106+00

107+00

108+00

108+25

WO

CsD

TEMPORARY COFFERDAM

STONE FILL, TYPE II

STONE FILL, TYPE I WITH GRUBBING MATERIAL

POB 10+00.00

STONE FILL, TYPE II WITH GRUBBING MATERIAL

HARDWOOD/SOFTWOOD TREES WITH BRUSH

TOWN R.O.W.

PI STA 104+91.63

GOVE HILL ROAD (T.H. 8)

PCC STA 105+00.21

BM#1 RRSIR 2-S.PINES ELEV. 568.96

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GRAVEL

IRON PIPE

15" CMP

24" RCP

AER E&T

PDF

VT 132 (T.H. 1)

PT STA 107+82.23

POE STA 108+25.00

TO NORWICH

END APPROACH STA. 106+75.00 MATCH EXISTING

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VT STATE PLANE GRID

SOIL CLASSIFICATION

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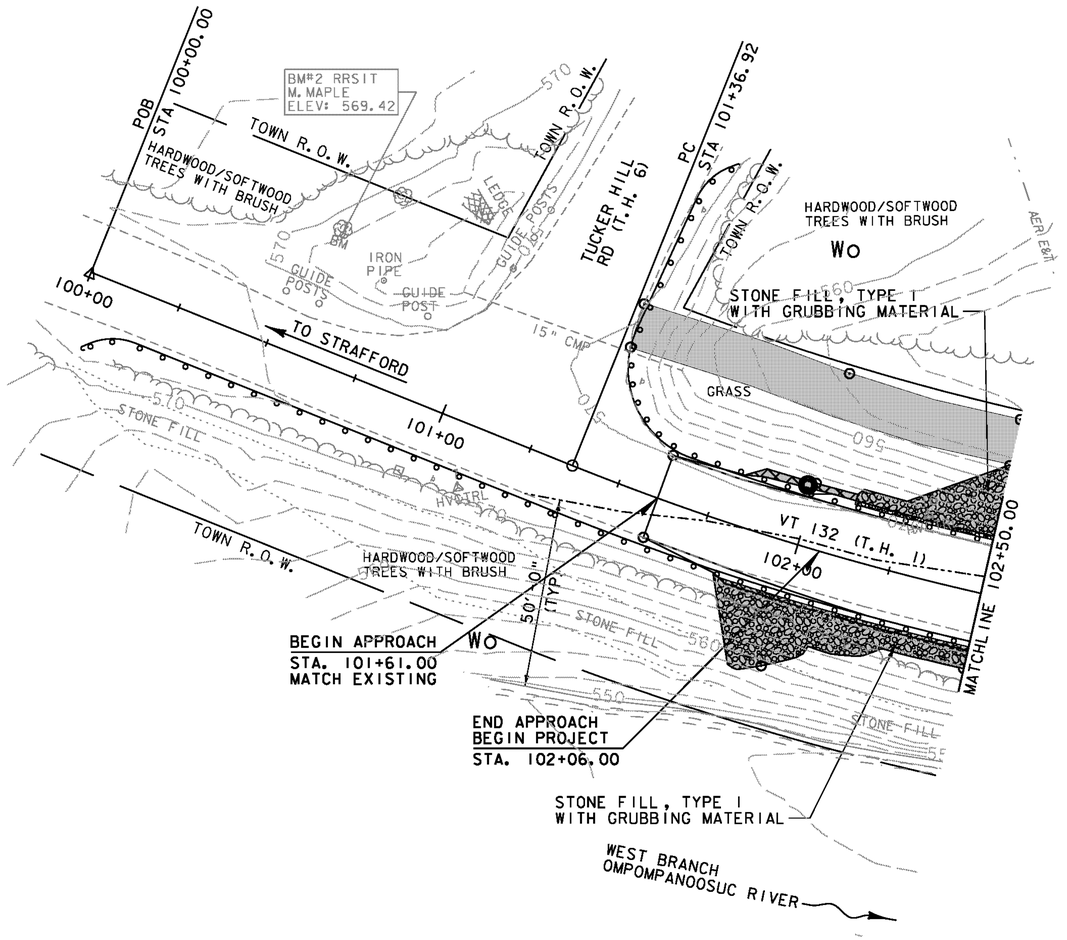
CLASSIFIED HIGH EROSION POTENTIAL

LEGEND

- AER E&T — AERIAL ELECTRIC & TELEPHONE
- DISTURBED AREAS REQUIRING RE-VEGETATION
- EROSION MATTING
- LIMITS OF SOIL DISTURBANCE
- RIPARIAN BUFFER ZONE



NOTE: FOR FINAL GRADE SEE PROFILE ON SHEETS 13 AND 14 AND ROADWAY CROSS SECTIONS ON SHEETS 64 THRU 66.

SCALE 1" = 20'-0
20 0 20

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174bdr_ero.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: S.E. BURBANK
EPSC FINAL COND. SITE PLAN (1 OF 2)
PLOT DATE: 2/15/2012
DRAWN BY: B.M. KLINEFELTER
CHECKED BY: S.E. BURBANK
SHEET 20 OF 78

VHB 57325

N

VT STATE PLANE GRID

LEGEND

- AER E&T — AERIAL ELECTRIC & TELEPHONE
- DISTURBED AREAS REQUIRING RE-VEGETATION
- EROSION MATTING
- LIMITS OF SOIL DISTURBANCE
- RIPARIAN BUFFER ZONE

WEST BRANCH OMPOMPANOOSUC RIVER

HARDWOOD/SOFTWOOD TREES WITH BRUSH

STONE FILL, TYPE I WITH GRUBBING MATERIAL

GUY POLE

VT 132 POC STA. 104+08.72 = CHANNEL POT STA. 11+12.50

TOWN R.O.W.

AER E&T

GUY

MATCHLINE 102+50.00

GRASS

STONE FILL

103+00

104+00

105+00

106+00

107+00

108+00

108+25

50°07'49"

11.00

12+00

POE 12+25.00

50'-0" (TYP)

WO

CsD

STONE WALL

HVCTRL

PCC STA 105+00.71

VT 132 (T.H. 1)

24" RCP

BM#1 RRSIR 2-S.PINES ELEV. 568.96

PT STA 107+82.23

POE STA 108+25.00

TO NORWICH

END APPROACH
STA. 106+75.00
MATCH EXISTING

END PROJECT
BEGIN APPROACH
STA. 106+30.00

STONE FILL, TYPE II

STONE FILL, TYPE II WITH GRUBBING MATERIAL

POB 10+00.00

10+00

GOVE HILL ROAD (T.H. 8)

PI STA 104+91.63

15" CMP

IRON PIPE

GRAVEL

SOIL CLASSIFICATION

COLRAIN VERY STONY FINE SANDY LOAM (CsD)
8% TO 25% SLOPES
"K FACTOR" = 0.24
CLASSIFIED MODERATE EROSION POTENTIAL

WINOOSKI VERY FINE SANDY LOAM (Wo)
"K FACTOR" = 0.49
CLASSIFIED HIGH EROSION POTENTIAL

NOTE: FOR FINAL GRADE SEE PROFILE ON SHEETS 13 AND 14 AND ROADWAY CROSS SECTIONS ON SHEETS 64 THRU 66.

SCALE 1" = 20'-0
20 0 20

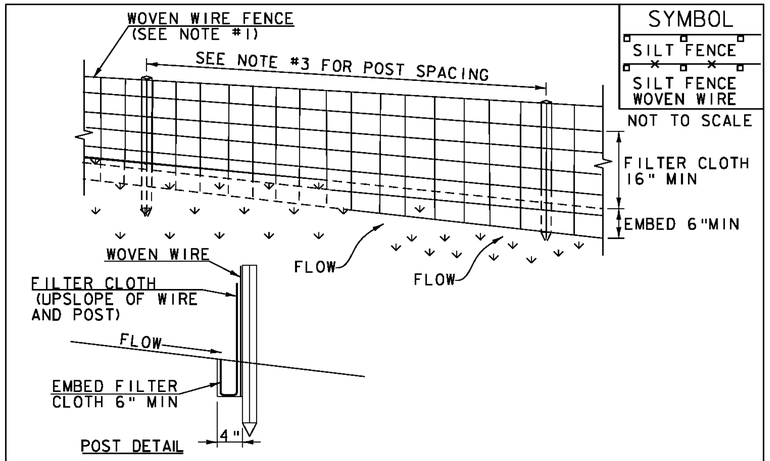
DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174bdr_ero.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: S.E. BURBANK
EPSC FINAL COND. SITE PLAN (2 OF 2)
PLOT DATE: 2/15/2012
DRAWN BY: B.M. KLINEFELTER
CHECKED BY: S.E. BURBANK
SHEET 21 OF 78

VHB 57325



SYMBOL

SILT FENCE

SILT FENCE WOVEN WIRE

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

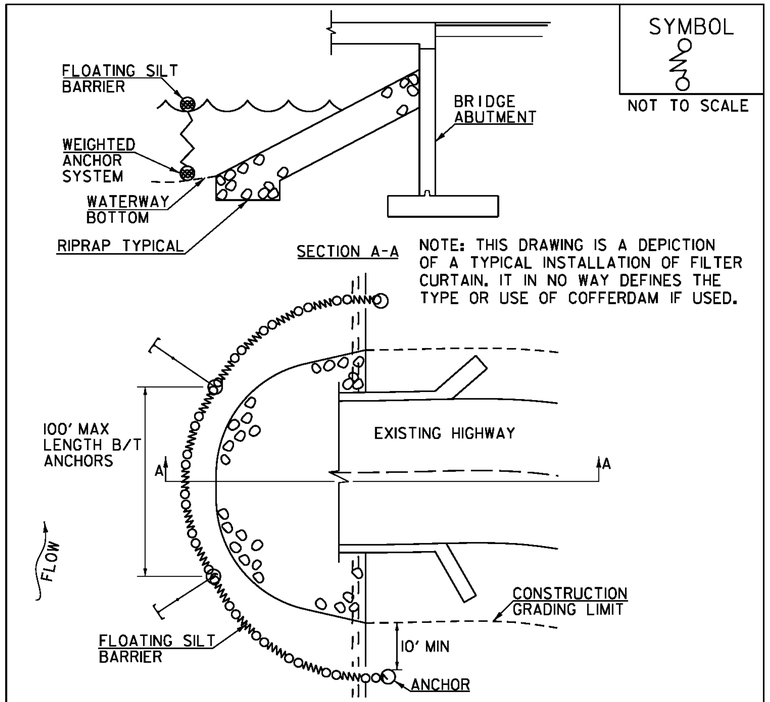
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR ~~GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) OR~~ GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

REVISIONS	
MARCH 21, 2008	WHF
DECEMBER 11, 2008	WHF
JANUARY 13, 2009	WHF



SYMBOL

NOT TO SCALE

NOTE: THIS DRAWING IS A DEPICTION OF A TYPICAL INSTALLATION OF FILTER CURTAIN. IT IN NO WAY DEFINES THE TYPE OR USE OF COFFERDAM IF USED.

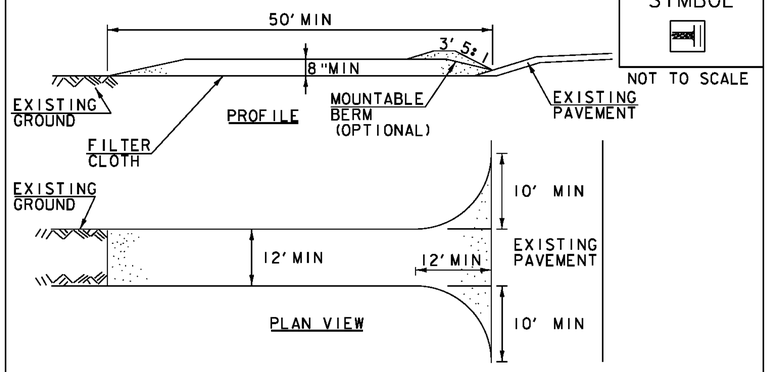
CONSTRUCTION SPECIFICATIONS

1. FILTER CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY, OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN 1.5 FEET/SECOND.
2. MAXIMUM 100' LENGTH BETWEEN ANCHORS.
3. LAST SECTION SHALL TERMINATE A MINIMUM OF 10' BEYOND LIMIT OF DISTURBANCE.
4. THE WEIGHTED ANCHOR SYSTEM SHALL BE A TYPE WHICH ALLOWS THE CURTAIN TO CONFORM TO THE BOTTOM OF THE WATERWAY.
5. THE CURTAIN SHALL BE REMOVED BY SLOWLY PULLING TOWARD THE SHORE MINIMIZING THE ESCAPE OF SEDIMENTS INTO WATERWAY.

FILTER CURTAIN

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.61).

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF
SEPTEMBER 4, 2009	WHF



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
3. THICKNESS- NOT LESS THAN 8".
4. WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

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

STABILIZED CONSTRUCTION ENTRANCE

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.

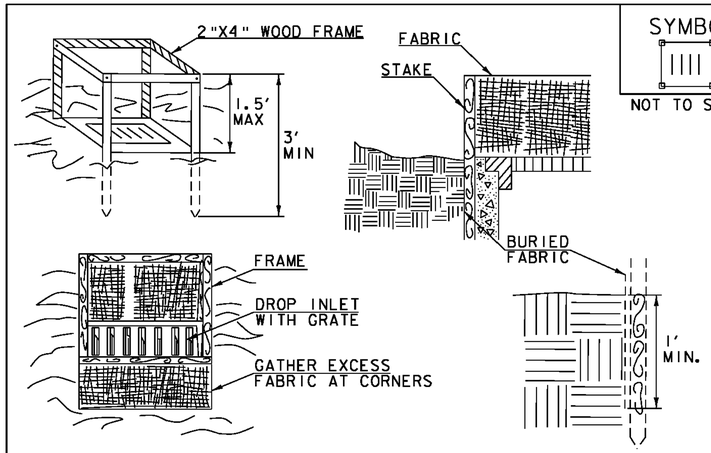
REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174ero_details.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: VTRANS
EPSC DETAILS (1 OF 2)

PLOT DATE: 2/15/2012
DRAWN BY: B.M. KLINEFELTER
CHECKED BY: S.E. BURBANK
SHEET 22 OF 78



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN APPARENT OPENING SIZE OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2"x 4" WOOD OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3'.
4. SPACE STAKES EVENLY AROUND INLET 3' APART AND DRIVE A MINIMUM 18" DEEP. SPANS GREATER THAN 3' MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1' MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.
7. MAXIMUM DRAINAGE AREA 1 ACRE

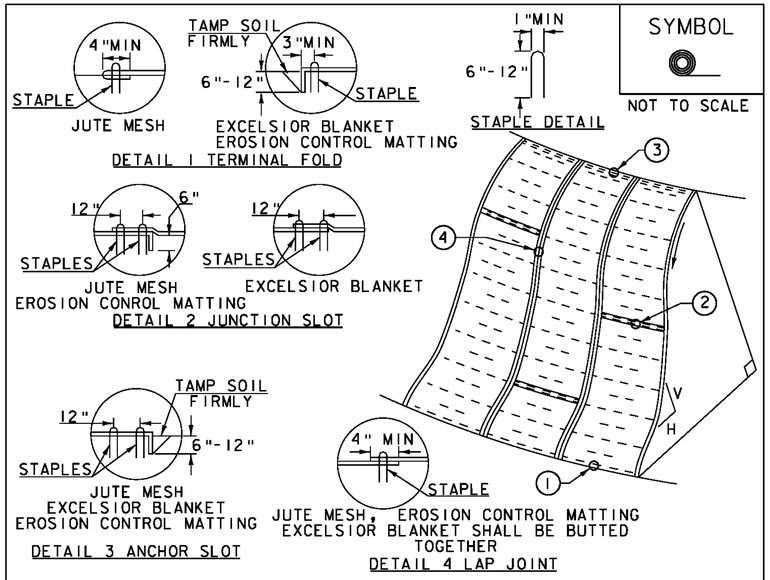
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FILTER FABRIC DROP INLET PROTECTION

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR INLET PROTECTION DEVICE, TYPE I (PAY ITEM 653.40).

REVISIONS	
MARCH 7, 2008	WHF
JANUARY 13, 2009	WHF



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H: IV OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

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

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

NOTES:
REFER TO 'THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) ~~OR PERMANENT EROSION MATTING (PAY ITEM 653.21)~~.

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

VAOT RURAL AREA MIX

	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
37.5%	22.5	45	CREEPING RED FESCUE	85%	98%
37.5%	22.5	45	TALL FESCUE	90%	95%
5.0%	3	6	RED TOP	90%	95%
15.0%	9	18	BIRDSFOOT TREFOIL	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	85%	95%
100%	60	120			

VAOT URBAN AREA MIX

	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
42.5%	34	68	CREEPING RED FESCUE	85%	98%
10.0%	8	16	PERENNIAL RYE GRASS	90%	95%
42.5%	34	68	KENTUCKY BLUE GRASS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	85%	95%
100%	80	160			

GENERAL GUIDANCE

FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	19-19-19	PELLETIZED	LIQUID
500 LBS/AC		2 TONS/AC	4.4 GAL/AC

CONSTRUCTION GUIDANCE

1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
7. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED
8. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

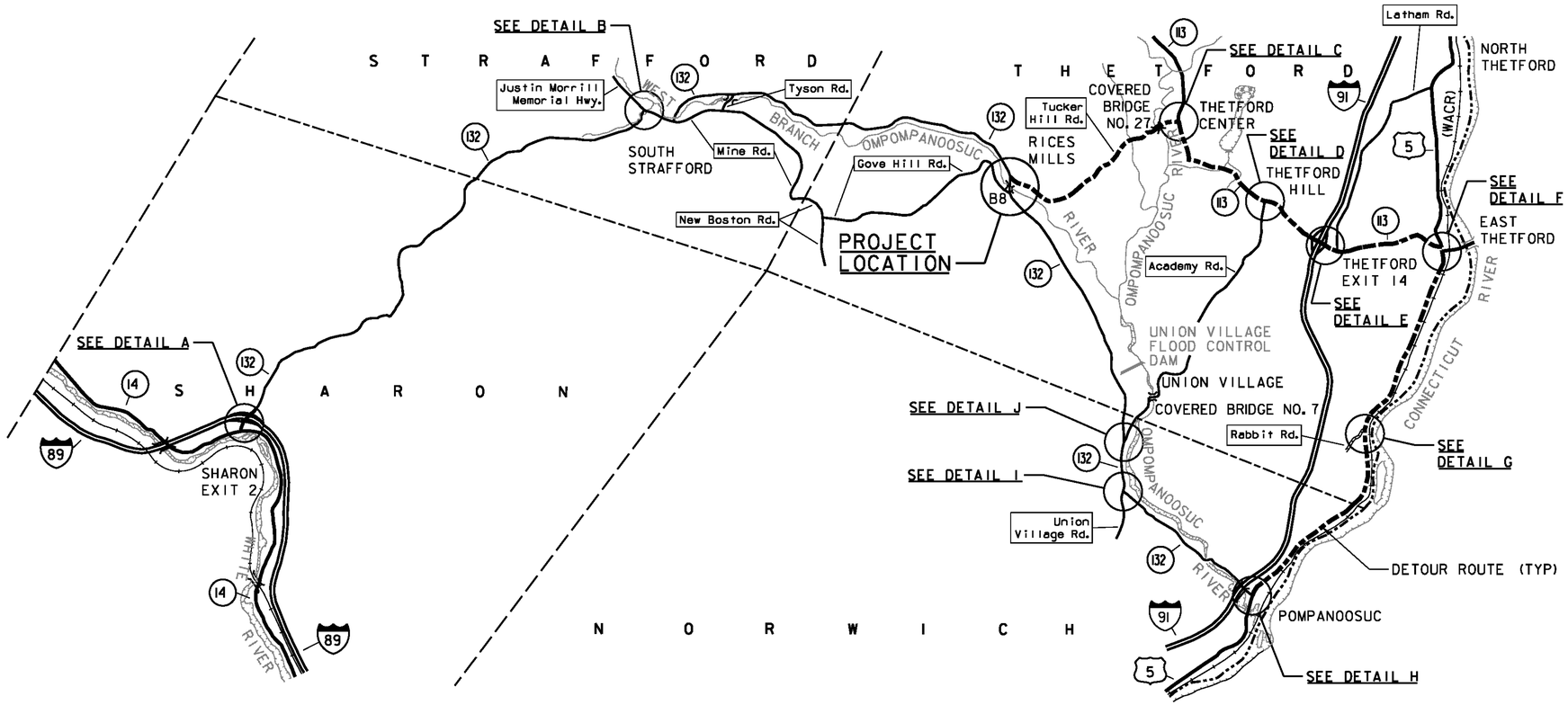
ADAPTED FROM VTRANS TECHNICAL LANSCAPE MAUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

REVISIONS	
JUNE 23, 2009	WHF
JANUARY 15, 2010	WHF

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174ero_details.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: VTRANS	CHECKED BY: S.E. BURBANK
EPSC DETAILS (2 OF 2)	SHEET 23 OF 78



TRAFFIC CONTROL PLAN

SCALE 1" = 4000'

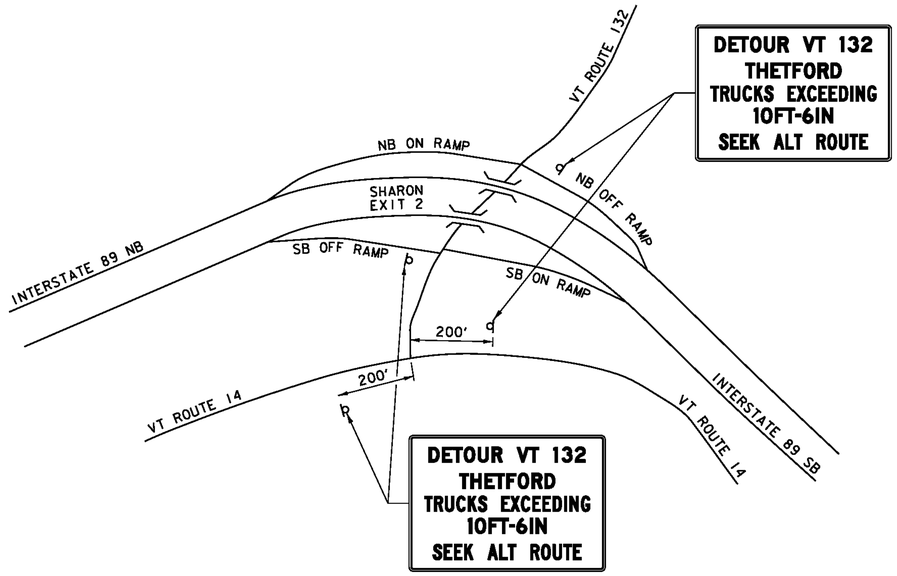
4000 0 4000

TRAFFIC CONTROL NOTES:

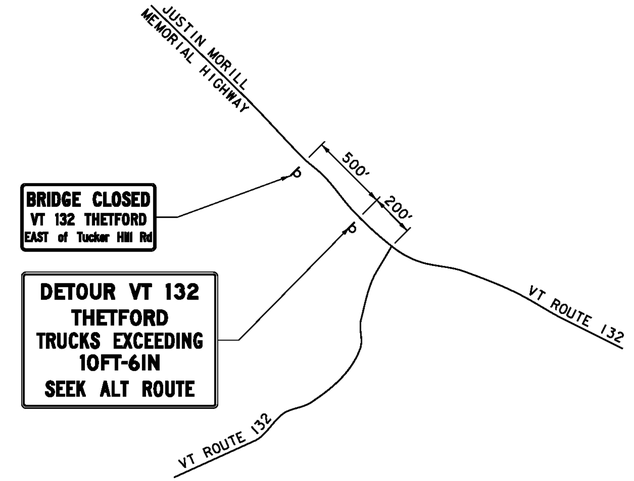
1. ALL SIGNS SHALL BE LOCATED SO THEY ARE VISIBLE AND ABLE TO BE READ BY THE TRAVELING PUBLIC. SIGNS SHALL BE INSTALLED SO AS NOT TO OBSTRUCT EXISTING SIGNS.
2. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND THE "STANDARD HIGHWAY SIGNS" BOOK (SHS) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).
3. SOLID SUBSTRATE CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) TYPE VII, VIII OR IX REQUIREMENTS, UNLESS OTHERWISE NOTED. SOLID SUBSTRATE REGULATORY SIGNS (WHITE BACKGROUND) SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING ASTM TYPE III.
4. SIGNS SHALL BE ERECTED BEFORE THE START OF ANY WORK AND SHALL BE COVERED UNTIL WORK COMMENCES, AND UPON COMPLETION OF THE WORK. EACH SIGN SHALL BE ERECTED IN A NEAT AND WORKMANLIKE MANNER. SIGNS SHALL BE REMOVED UPON COMPLETION OF THE WORK AT THE DISCRETION OF THE ENGINEER.
5. FIXED SIGNS SHALL BE SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST SEVEN FEET ABOVE THE EDGE OF PAVEMENT. THE NEAREST EDGE OF A SIGN SHALL BE AT LEAST SIX FEET OUTSIDE THE SHOULDER POINT OR FOUR FEET OUTSIDE GUARDRAIL.
6. WHERE SIGN INSTALLATIONS ARE NOT PROTECTED BY GUARDRAIL OR OTHER APPROVED TRAFFIC BARRIERS, ALL SIGN STANDS AND POST INSTALLATIONS SHALL BE "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 COMPLIANT. NO SIGN POSTS SHALL EXTEND OVER THE TOP OF THE SIGN INSTALLED ON SAID POST(S). WHEN ANCHORS ARE INSTALLED STUB SHALL NOT BE GREATER THAN FOUR INCHES ABOVE EXISTING GROUND.
7. DETOUR ROUTE MARKER ASSEMBLIES SHALL BE INSTALLED ADJACENT TO THE EXISTING ROUTE MARKER ASSEMBLIES AT THE INTERSECTIONS.
8. THE PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE USED IN ACCORDANCE WITH SECTION 6F.60 OF THE MUTCD.
9. SEE TRAFFIC CONTROL SHEETS 2-4 (SHEETS 25 - 27) FOR DETAILS A-J.

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174detour.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
TRAFFIC CONTROL SHEET (1 OF 6)	SHEET 24 OF 78



DETAIL A
NOT TO SCALE



DETAIL B
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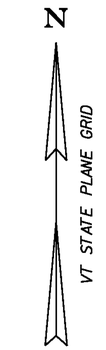
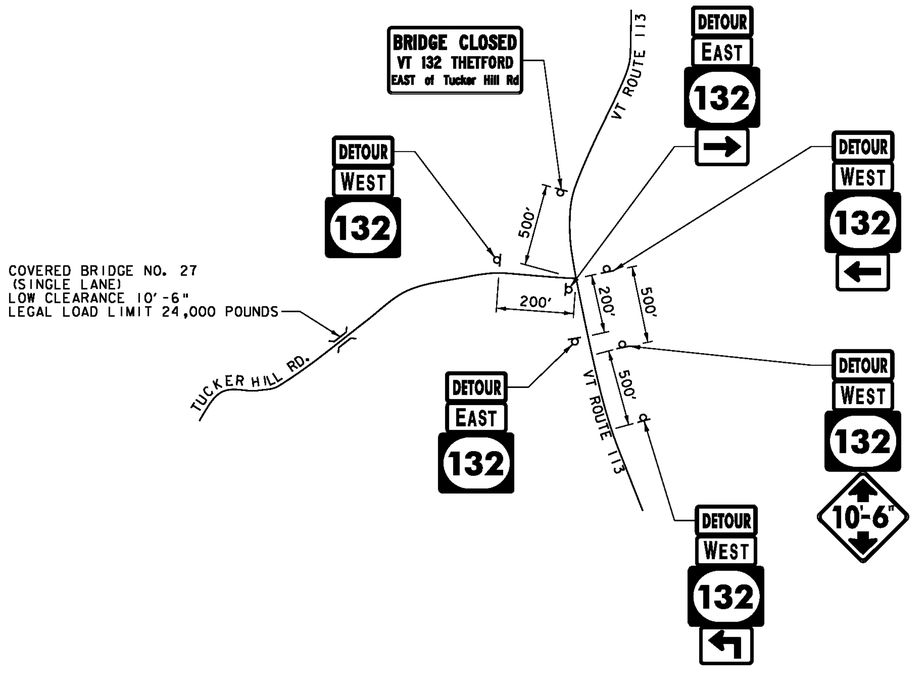
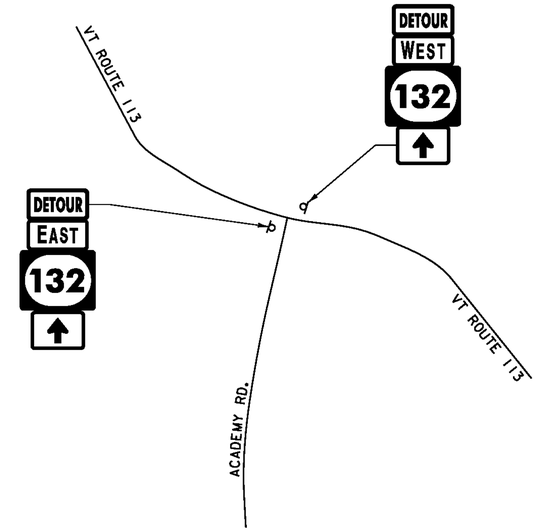




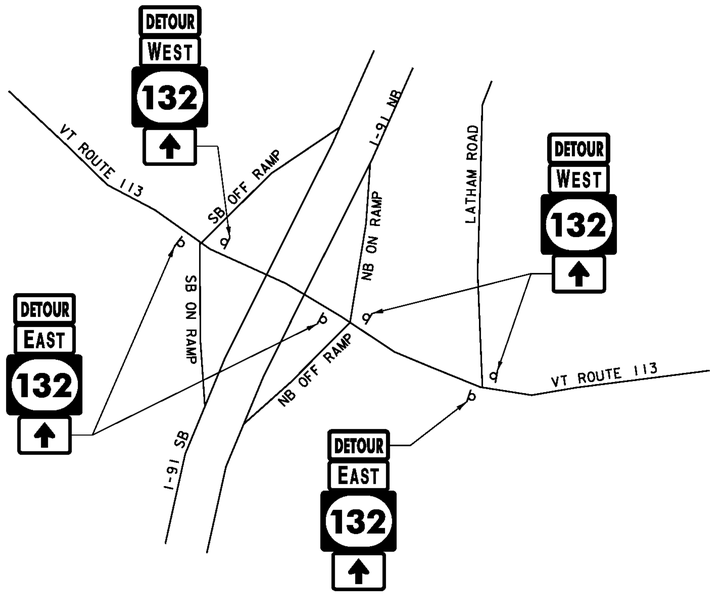
DETAIL C
NOT TO SCALE



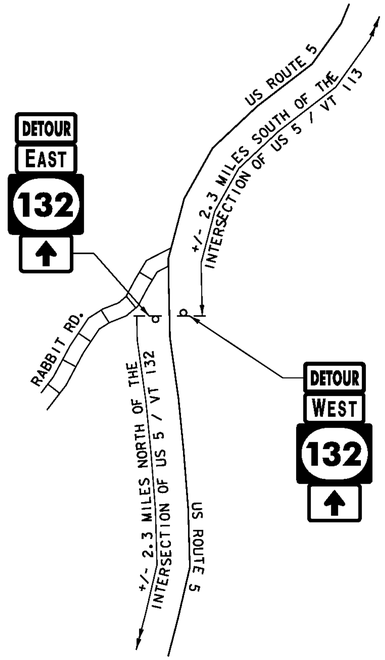
DETAIL D
NOT TO SCALE

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08l174detour_details.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
TRAFFIC CONTROL SHEET (2 OF 6)	SHEET 25 OF 78

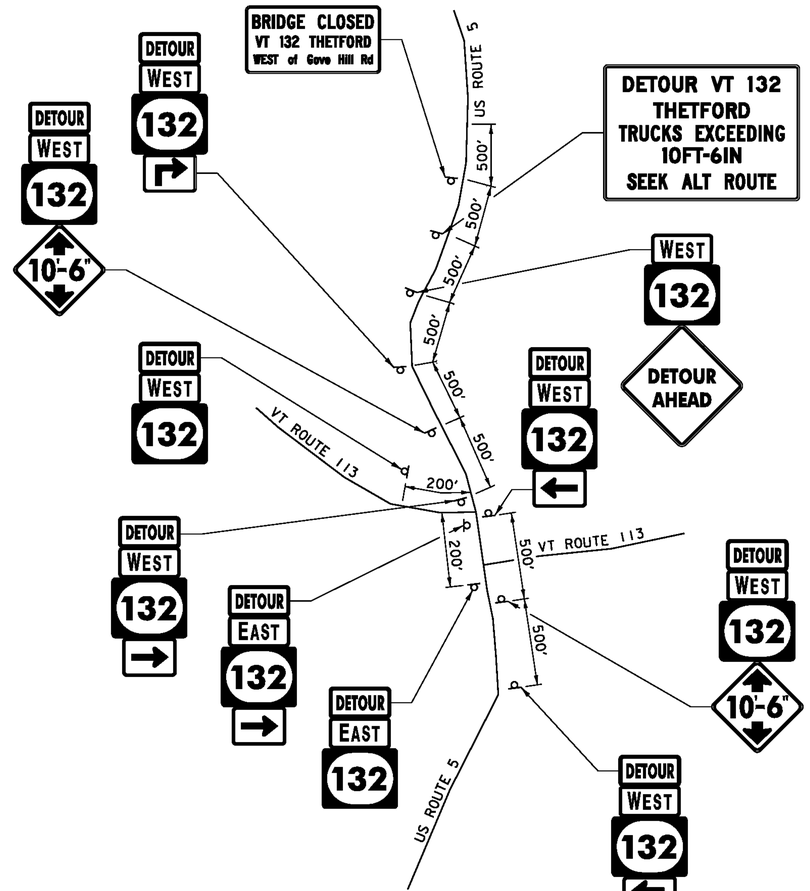
VHB *Vanasse Hangen Brustlin, Inc.*



DETAIL E
NOT TO SCALE



DETAIL G
NOT TO SCALE



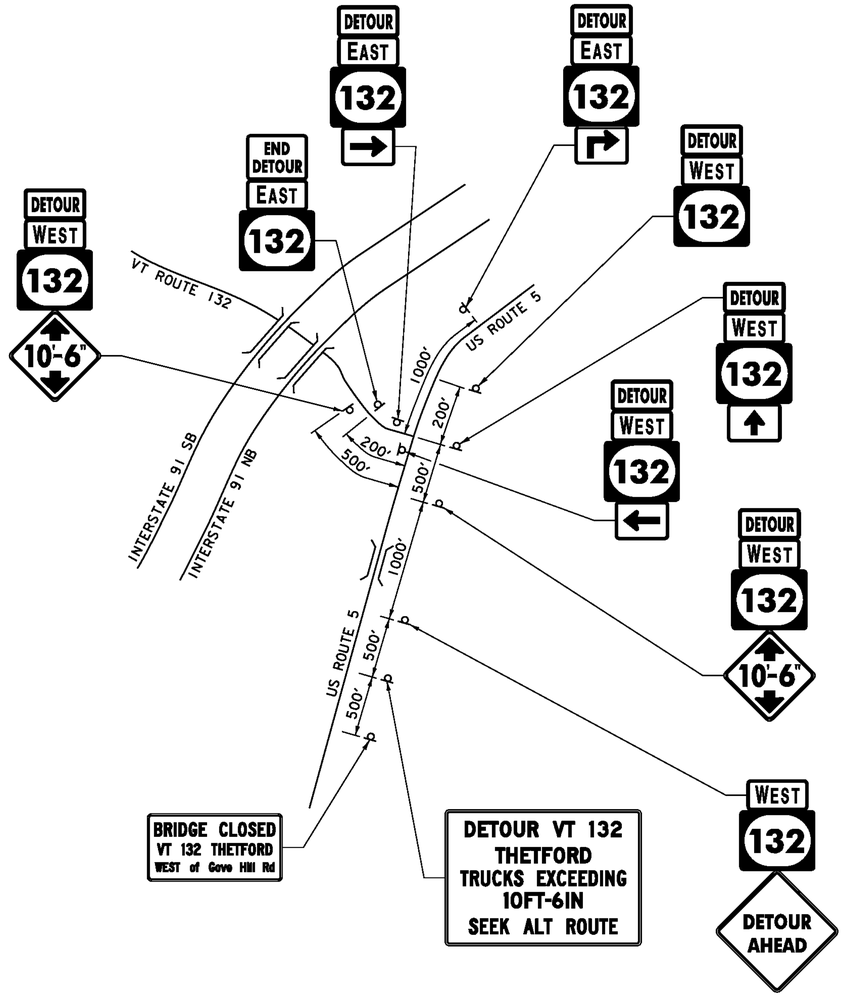
DETAIL F
NOT TO SCALE

N

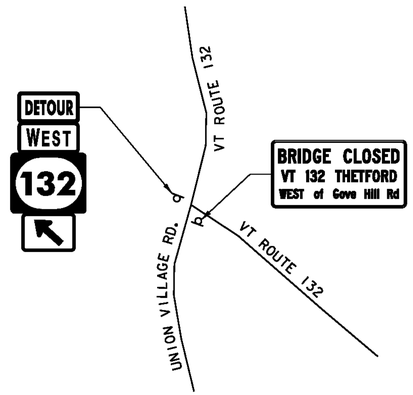
VT STATE PLANE GRID

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174detour_details.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
TRAFFIC CONTROL SHEET (3 OF 6)	SHEET 26 OF 78

VHB Vanasse Hangen Brustlin, Inc.



DETAIL H
NOT TO SCALE



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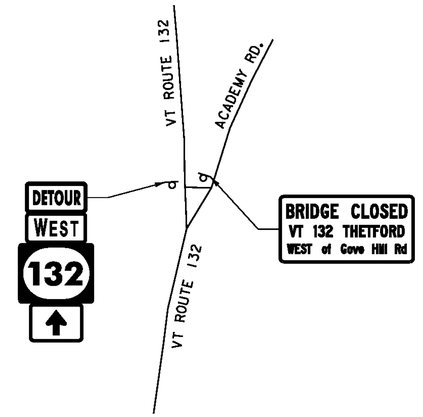

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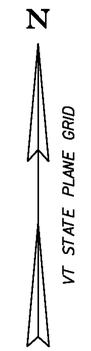
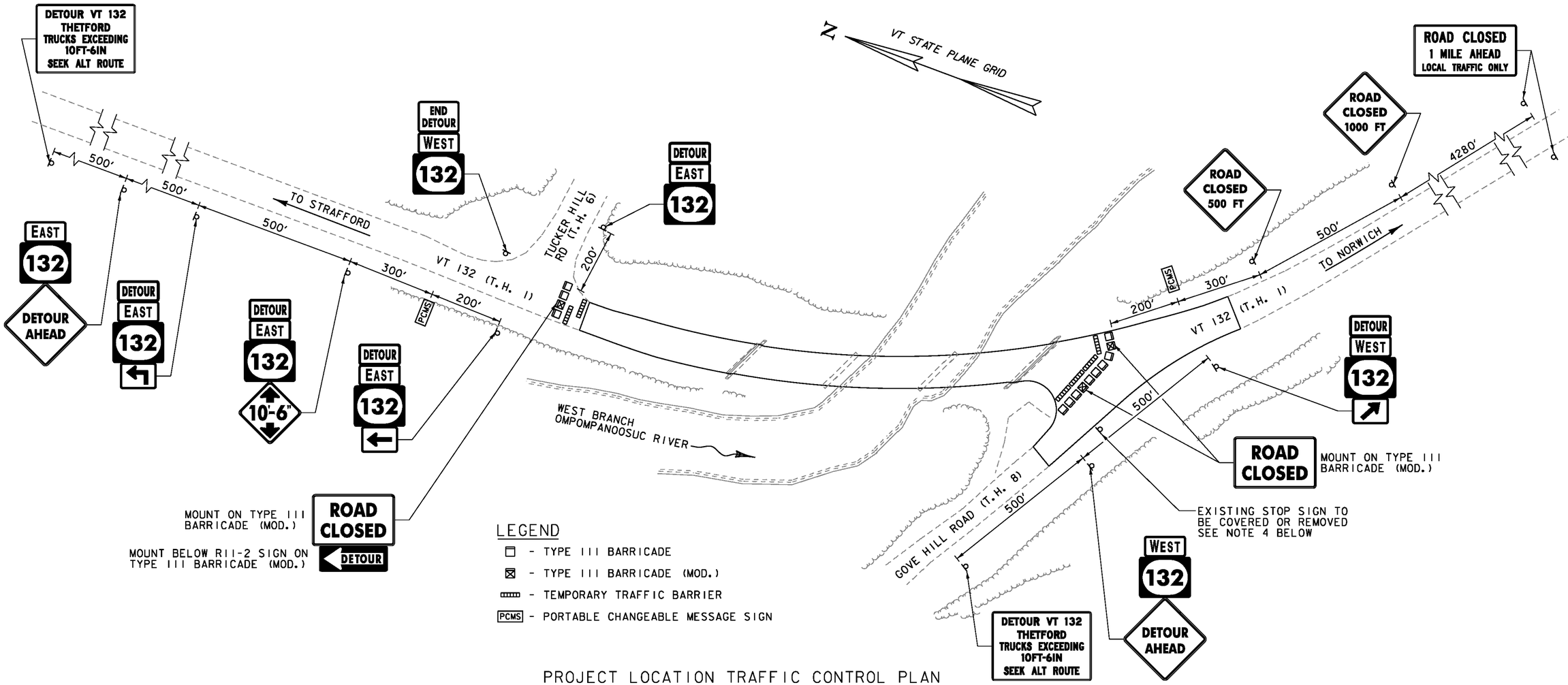


Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174detour_details.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
TRAFFIC CONTROL SHEET (4 OF 6)	SHEET 27 OF 78



LEGEND

- ☐ - TYPE III BARRICADE
- ☒ - TYPE III BARRICADE (MOD.)
- ▭ - TEMPORARY TRAFFIC BARRIER
- PCMS - PORTABLE CHANGEABLE MESSAGE SIGN

PROJECT LOCATION TRAFFIC CONTROL PLAN

NOT TO SCALE

NOTES:

1. THE NUMBER OF TYPE III BARRICADES AND OTHER TRAFFIC CONTROL DEVICES SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED ARE TO BE DETERMINED BASED ON INDIVIDUAL ROADWAY CLOSURE REQUIREMENTS.
2. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE PLACED OFF THE EDGE OF THE ROADWAY, OUTSIDE THE CLEAR ZONE, BUT SHALL BE VISIBLE FROM THE ROADWAY. ANY VEGETATION THAT INTERFERES WITH VISIBILITY OF THE PCMS SHALL BE REMOVED. REMOVAL OF THE VEGETATION SHALL BE INCIDENTAL TO ITEM 641.17, "PORTABLE CHANGEABLE MESSAGE SIGN RENTAL".
3. THE PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL DISPLAY THE MESSAGE SHOWN ONE WEEK (7 DAYS) PRIOR TO THE CLOSURE OF THE BRIDGE. THE PCMS SHALL NOT BE A PART OF THE DETOUR AND SHALL BE REMOVED ONCE THE DETOUR IS IMPLEMENTED AND THE BRIDGE IS CLOSED.
4. THE STOP SIGN ON GOVE HILL ROAD SHALL BE COVERED OR REMOVED WHEN THE DETOUR IS IMPLEMENTED. THE STOP SIGN SHALL BE UNCOVERED OR IF THE STOP SIGN WAS REMOVED IT SHALL BE REPLACED WITH A NEW STOP SIGN AND POST AT THE LOCATION SHOWN ON THE TRAFFIC SIGNS AND MARKINGS SHEET (1 OF 2) WHEN THE DETOUR IS NO LONGER IN USE. THE COST FOR COVERING THE SIGN SHALL BE INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL". THE COST FOR REMOVING THE EXISTING STOP SIGN AND POST AND INSTALLING A NEW STOP SIGN AND POST WILL BE PAID UNDER ITEMS 675.50, "REMOVING SIGNS", 675.20, "TRAFFIC SIGNS, TYPE A", AND 675.341, "SQUARE TUBE SIGN POST AND ANCHOR". THE CONTRACTOR WILL ONLY BE PAID ONCE UNDER ITEM 675.50, "REMOVING SIGNS" FOR THE REMOVAL OF THE EXISTING STOP SIGN AND POST AND ONCE UNDER ITEM 675.20, "TRAFFIC SIGNS, TYPE A" FOR INSTALLING A NEW STOP SIGN AND ONCE UNDER ITEM 675.341, "SQUARE TUBE SIGN POST AND ANCHOR" FOR INSTALLATION OF A NEW POST REGARDLESS OF WHEN THIS WORK IS PERFORMED.

MESSAGES FOR PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)

MESSAGE 1	MESSAGE 2	
VT 132	**MM/DD**	(DATE)
BRIDGE	**THRU**	
CLOSED	**MM/DD**	(DATE)

Vanasse Hangen Brustlin, Inc.

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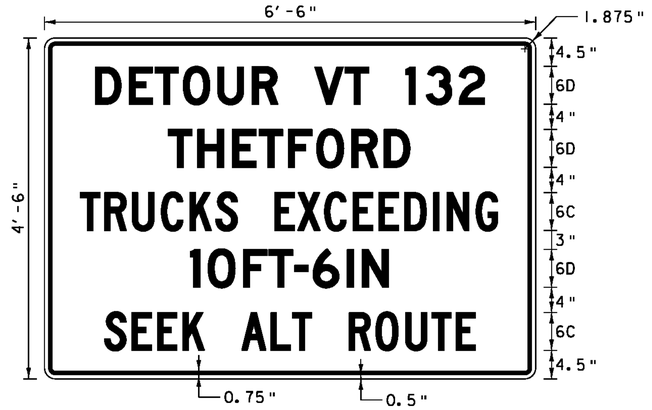
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
TRAFFIC CONTROL SHEET (5 OF 6)	SHEET 28 OF 78

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH (IN)	SIZE OF SIGN HEIGHT (IN)	TEXT	NUMBER OF SIGNS REQ'D	REMARKS
MI-5B	30	24	132	45	SEE NOTE 7
M3-2	24	12	EAST	17	SEE NOTE 7
M3-4	24	12	WEST	28	SEE NOTE 7
M4-8	24	12	DETOUR	39	MOUNT ABOVE THE M3-2 OR M3-4
M4-8A	24	18	END DETOUR	2	MOUNT ABOVE THE M3-2 OR M3-4
M4-10L	48	18	DETOUR	1	MOUNT ON TYPE III BARRICADE (MOD.)
M5-1L	21	15		3	MOUNT BELOW THE MI-5B
M5-1R	21	15		2	MOUNT BELOW THE MI-5B
M6-1L	21	15		4	MOUNT BELOW THE MI-5B
M6-1R	21	15		4	MOUNT BELOW THE MI-5B
M6-2L	21	15		1	MOUNT BELOW THE MI-5B
M6-2R	21	15		1	MOUNT BELOW THE MI-5B
M6-3	21	15		12	MOUNT BELOW THE MI-5B
W12-2	36	36	10'-6"	6	SEE NOTE 7
W20-2	48	48	DETOUR AHEAD	4	MOUNT BELOW THE MI-5B
W20-3	48	48	ROAD CLOSED 500 FT	1	---
W20-3	48	48	ROAD CLOSED 1000 FT	1	---
R11-2	48	30	ROAD CLOSED	3	MOUNT ON TYPE III BARRICADE (MOD.)

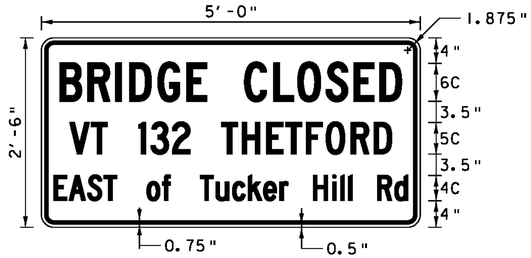
IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH (IN)	SIZE OF SIGN HEIGHT (IN)	TEXT	NUMBER OF SIGNS REQ'D	REMARKS
R11-3B	60	30	ROAD CLOSED 1 MILE AHEAD LOCAL TRAFFIC ONLY	2	MOUNT ON TWO POSTS
SP-1	78	54	DETOUR VT 132 THETFORD TRUCKS EXCEEDING 10FT-6IN SEEK ALT ROUTE	9	MOUNT ON TWO POSTS
SP-2	60	30	BRIDGE CLOSED VT 132 THETFORD EAST of Tucker Hill Rd	2	MOUNT ON TWO POSTS
SP-3	60	30	BRIDGE CLOSED VT 132 THETFORD WEST of Gove Hill Rd	4	MOUNT ON TWO POSTS

NOTES:

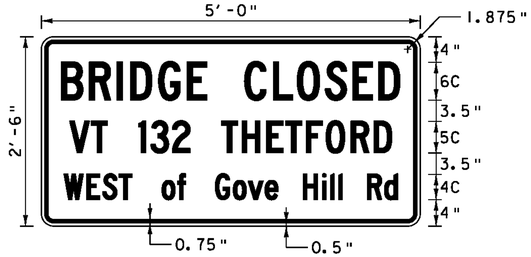
1. COLORS FOR THE MI-5B, M3-2, AND M3-4 SIGNS SHALL MATCH THE COLORS SHOWN ON VTRANS STD. E-136C.
2. COLORS FOR THE M5-1L, M5-1R, M6-1L, M6-1R, M6-2L, M6-2R, AND THE M6-3 SIGNS SHALL BE A BLACK ARROW AND BORDER ON RETROREFLECTIVE ORANGE BACKGROUND.
3. COLORS FOR THE W12-2 SIGN SHALL MATCH THE COLORS SHOWN ON VTRANS STD. E-155.
4. COLORS FOR THE SP-1 SIGN SHALL BE BLACK TEXT AND BORDER ON RETROREFLECTIVE ORANGE BACKGROUND.
5. COLORS FOR THE SP-2 AND SP-3 SIGNS SHALL BE BLACK TEXT AND BORDER ON RETROREFLECTIVE WHITE BACKGROUND.
6. TWO ORANGE FLAGS (ONE EACH SIDE) SHALL BE PLACED AT THE TOP OF THE R11-3B, SP-2 AND SP-3 SIGNS.
7. THE MI-5B, M3-2, M3-4, AND THE W12-2 SIGNS SHALL BECOME THE PROPERTY OF THE TOWN OF THETFORD AFTER THEY ARE REMOVED FROM THE DETOUR. THE CONTRACTOR SHALL DELIVER THE SIGNS TO THE TOWN AT THE TOWN GARAGE LOCATED AT 3901 VT 113, THETFORD CENTER, VT. CONTACT THE TOWN ROAD FOREMAN, DOUG STONE AT (802) 785-4679. ALL COSTS ASSOCIATED WITH PROVIDING THE SIGNS TO THE TOWN SHALL BE INCIDENTAL TO ITEM 641.10 "TRAFFIC CONTROL".



SP-1
N. T. S.



SP-2
N. T. S.



SP-3
N. T. S.

VHB *Vanasse Hangen Brustlin, Inc.*

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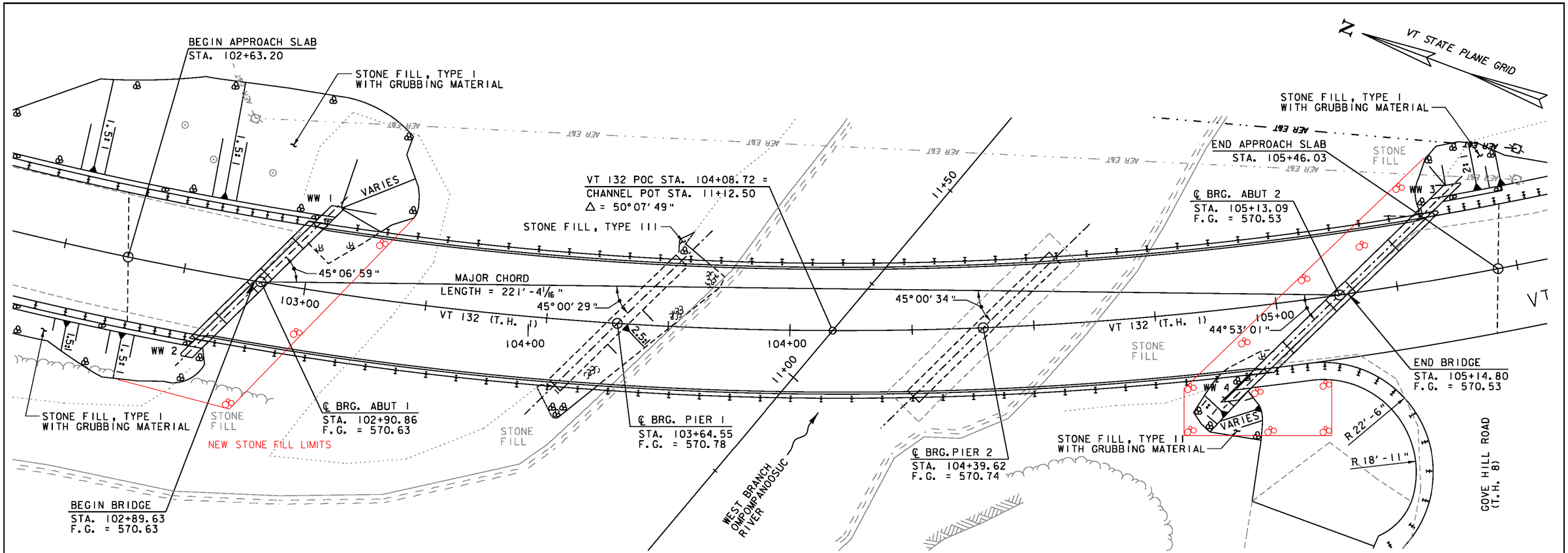
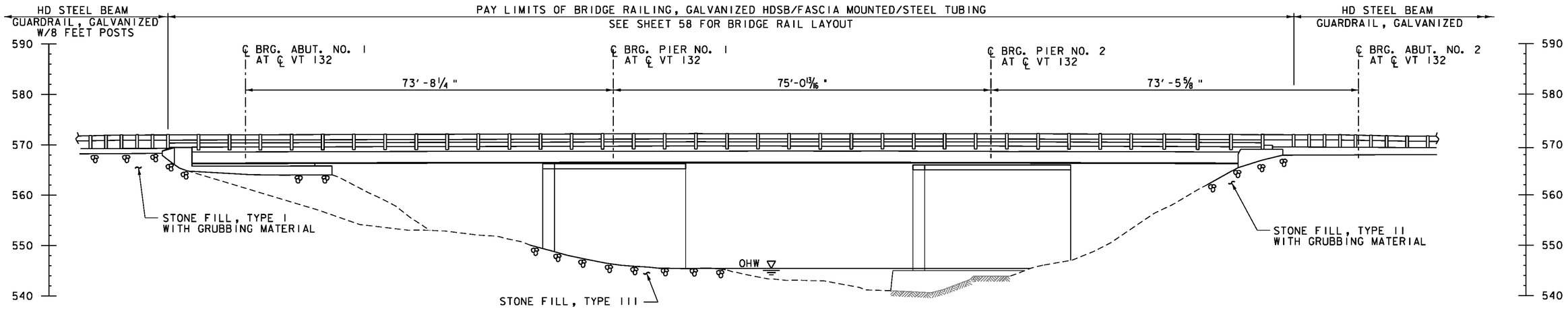
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
TRAFFIC CONTROL SHEET (6 OF 6)	SHEET 29 OF 78



PLAN
SCALE 1" = 10'-0"



ELEVATION AT UPSTREAM FASCIA
SCALE 1" = 10'-0"

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174pe.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: S.E. BURBANK
PLAN AND ELEVATION

PLOT DATE: 2/15/2012
DRAWN BY: J.W. GOLEK
CHECKED BY: S.E. BURBANK
SHEET 30 OF 78

VHB 57325

PROJECT NOTES

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION, AND ITS LATEST REVISIONS.

2. THE BRIDGE IS DESIGNED FOR HL-93 LIVE LOAD WITH A 3.0 INCH ALLOWANCE FOR FUTURE PAVEMENT.

3. SALVAGED SIGNS NOT REUSED SHALL REMAIN THE PROPERTY OF THE TOWN OF THETFORD. PER NOTE 7 ON SHEET 29 THE CONTRACTOR SHALL DELIVER THE SIGNS TO THE TOWN AT THE TOWN GARAGE.

4. ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS.

5. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION, ESPECIALLY THE DISCHARGE OF RAW CONCRETE, INTO ANY BROOK, STREAM, OR RIVER.

6. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT UNLESS NOTED OTHERWISE.

7. FEATURES OF THE EXISTING BRIDGE SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND LIMITED FIELD INVESTIGATION AND MAY NOT ACCURATELY REFLECT ACTUAL FIELD CONDITIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING STRUCTURE COMPONENTS IMPACTED BY THE NEW WORK TO ASSURE CONSISTENCY WITH THE PROPOSED MODIFICATIONS. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER, OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER BEFORE ADVANCING THE WORK.

8. THE LIMITS OF THE COFFERDAM ARE TO BE DETERMINED BY THE CONTRACTOR.

9. ITEM 529.20 “PARTIAL REMOVAL OF STRUCTURE” IS FOR THE COMPLETE REMOVAL AND DISPOSAL OF THE EXISTING BRIDGE SUPERSTRUCTURE, INCLUDING ALL BRIDGE RAIL, BEARINGS AND ANCHOR BOLTS.

10. THE EXISTING STRUCTURAL STEEL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR’S USE OR DISPOSITION OF THE REMOVED EXISTING STRUCTURAL STEEL.

11. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL BURIED AND AERIAL UTILITIES AND POLES PRIOR TO STARTING WORK. SOME UTILITIES WERE RELOCATED DURING THE PREPARATION OF THESE PLANS AND THE CONTRACTOR WILL NEED TO COORDINATE WITH ALL UTILITY OWNERS TO CONFIRM ACTUAL LOCATIONS PRIOR TO CONSTRUCTION.

TRAFFIC MAINTENANCE DURING CONSTRUCTION

12. THE CONTRACTOR SHALL IMPLEMENT THE ROAD CLOSURE, TRAFFIC CONTROL, AND DETOUR AS SHOWN ON THE PLANS.

13. THE CONTRACTOR SHALL NOTIFY THE TOWN A MINIMUM OF TWO (2) WEEKS PRIOR TO CLOSING THE ROAD.

14. UNLESS COVERED UNDER INDIVIDUAL PAY ITEMS OR NOTED OTHERWISE, ALL COSTS FOR WORK SHOWN ON THE TRAFFIC CONTROL SHEETS AND FOR TEMPORARY TRAFFIC CONTROL DEVICES WILL BE CONSIDERED TO BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR TRAFFIC CONTROL, ITEM 641.10, "TRAFFIC CONTROL". THIS INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING ITEMS:

    TEMPORARY TRAFFIC BARRIERS
    RETROREFLECTIVE DRUMS
    SIGNS
    SIGN POSTS

    TEMPORARY TRAFFIC BARRIER SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 621.

15. THE CONTRACTOR SHALL HAVE THE OPTION OF ALLOWING ALTERNATING ONE-WAY TRAFFIC ON THE BRIDGE PRIOR TO THE INSTALLATION OF THE CONCRETE CURBS AND BRIDGE RAILING IN ORDER TO MINIMIZE THE BRIDGE CLOSURE TIME. PRIOR TO OPENING THE BRIDGE TO ALTERNATING ONE-WAY TRAFFIC THE CONCRETE DECK SHALL HAVE BEEN CURED AND ATTAINED THE REQUIRED COMPRESSIVE STRENGTH IN ACCORDANCEE WITH SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT) (FPQ) AND SECTION 501. THE ALTERNATING ONE-WAY TRAFFIC SHALL BE MAINTAINED ON THE BRIDGE WITH CONCRETE MEDIAN BARRIER (CMB) PLACED ON EACH SIDE OF THE SINGLE TRAFFIC LANE TO PROVIDE A MINIMUM CLEAR DISTANCE/LANE WIDTH OF 11’-0”. THE CMB SHALL BE LOCATED A MINIMUM CLEAR DISTANCE OF 3’-0” FROM THE NON-TRAFFIC SIDE OF THE CMB TO THE EDGE (FASICA) OF THE CONCRETE DECK. THE CMB SHALL BE FLARED AT A RATE OF 1:9 ON THE APPROACHES. IF IT IS NOT POSSIBLE TO PROPERLY FLARE THE CMB AT THE APPROACHES AN ENERGY ABSORPTION ATTENUATOR SHALL BE PLACED AT THE ENDS OF THE CMB.

16. IF THE CONTRACTOR CHOOSES TO OPEN THE BRIDGE TO ALTERNATING ONE-WAY TRAFFIC, THE CONTRACTOR SHALL SUBMIT A TEMPOARY TRAFFIC CONTROL PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL FOUR WEEKS PRIOR TO OPENING THE BRIDGE TO ALTERNATING ONE-WAY TRAFFIC. THE TEMPORARY TRAFFIC CONTROL PLAN SHALL SHOW THE LOCATIONS OF THE TEMPORARY PORTABLE TRAFFIC CONTROL SIGNALS, PORTABLE LIGHT TOWERS, TRAFFIC CONTROL SIGNS, CONCRETE MEDIAN BARRIER (CMB), AND IF NECESSARY PHASING OF THE ALTERNATING ONE-WAY TRAFFIC ON THE BRIDGE TO ALLOW FOR THE INSTALLATION OF THE CONCRETE CURBS AND BRIDGE RAILING. ALL COSTS ASSOCIATED WITH PROVIDING A TEMPORARY TRAFFIC CONTROL PLAN, IMPLEMENTING THE TEMPOARY TRAFFIC CONTROL PLAN, INCLUDING THE COSTS OF FURNISHING, INSTALLING AND REMOVING THE TEMPORARY PORTABLE TRAFFIC CONTROL SIGNALS, PORTABLE LIGHT TOWERS, SIGNS, SIGN POSTS, CMB, REMOVING AND RESETTING THE CMB, ETC. SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 641.10, “TRAFFIC CONTROL”.

17. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND THE "STANDARD HIGHWAY SIGNS" BOOK (SHS) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).

18. ALL TEMPORARY PORTABLE TRAFFIC CONTROL SIGNALS AND PORTABLE LIGHT TOWERS SHALL BE IN ACCORDANCE WITH SECTION 678 AND THE CURRENT ADDITION OF THE “MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES” (MUTCD).

SHORING SUPERSTRUCTURE AT PIERS

19. IN ORDER TO FACILITATE A REDUCTION OF THE BRIDGE CLOSURE DURATION, THE CONTRACTOR MAY CHOOSE TO MAKE TEMPORARY MODIFICATIONS TO THE EXISTING PIER BRIDGE SEATS AND SUPPORT THE NEW SUPERSTRUCTURE ON TEMPORARY BEARING BOLSTERS WITH THE OBJECTIVE OF COMPLETING FINAL MODIFICATIONS TO THE PIER BRIDGE SEATS AFTER OPENING THE NEW SUPERSTRUCTURE TO TRAFFIC. IF THE CONTRACTOR OPTS TO PERFORM FINAL PIER BRIDGE SEAT MODIFICATIONS AFTER CONSTRUCTION OF THE SUPERSTRUCTURE, THE SUPERSTRUCTURE SHALL BE SHORED IN ACCORDANCE WITH SECTION 502 “SHORING SUPERSTRUCTURES”. SHORING SHALL BE DESIGNED TO ACCOMMODATE THE FULL DESIGN HL-93 LIVE LOAD. ASSOCIATED DETAILS, PROCEDURES, AND CALCULATIONS FOR SHORING AND JACKING SHALL BE PREPARED BY A PROFESSIONAL ENGINEER IN ACCORDANCE WITH SECTION 502. ALL COSTS FOR TEMPORARY SHORING OF THE SUPERSTRUCTURE WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

CONCRETE

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

21. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1” BY 1”.

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

23. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).

24. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:

SPACING	± 1”
CLEARANCE	± ¼”

25. CONCRETE FOR THE DECK, CURBS AND CURTAIN WALLS SHALL BE ITEM 900.608, “SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT) (FPQ)”.

26. ALL SUBSTRUCTURE CONCRETE SHALL BE CONCRETE, HIGH PERFORMANCE CLASS B UNLESS OTHERWISE NOTED.

27. MINIMUM COVER FOR REINFORCING STEEL SHALL BE 2” ALONG THE BACK FACES OF WALLS AGAINST EARTH, 1 ½" ALONG THE BOTTOM SURFACE OF THE DECK AND 3" ELSEWHERE, UNLESS OTHERWISE NOTED.

28. THE CONSTRUCTION LOADS AND DEFLECTIONS OF STEEL SUPERSTRUCTURE WERE CALCULATED ASSUMING THE POURING SEQUENCE SHOWN IN THE PLANS. ANY CHANGE TO THE POURING SEQUENCE SHOWN IN THE PLANS MUST BE APPROVED BY THE PROJECT MANAGER BEFORE THE STRUCTURAL STEEL FABRICATION DRAWINGS HAVE BEEN APPROVED.

29. STAY-IN-PLACE CORRUGATED METAL FORMS (SIPCMF) SHALL BE USED TO FORM THE UNDERSIDE OF THE CONCRETE BRIDGE DECK BETWEEN THE STEEL GIRDERS. THE SIPCMF AND THEIR COMPONENTS, ATTACHMENTS, ETC. SHALL BE GALVANIZED OR STAINLESS STEEL. THE SIPCMF SHALL BE LOCATED TO MAINTAIN A CONSTANT CONCRETE DECK THICKNESS OF 9” FROM THE TOP OF THE SIPCMF’S CORRUGATIONS. THE CORRUGATIONS SHALL BE FILLED WITH FOAM OR A LIGHT WEIGHT MATERIAL APPROVED BY THE MANUFACTURER OR AS DIRECTED BY THE ENGINEER.

30. FOR BRIDGE DECK POURS, THE MAXIMUM TIME LIMIT FOR ANY COMBINATION OF POURS DONE IN ANY ONE DAY SHALL BE EIGHT HOURS. THERE SHALL BE A MINIMUM OF 96 HOURS BETWEEN THE COMPLETION OF ONE DAY’S POUR AND THE BEGINNING OF OTHER ADJACENT POURS. ALL INDIVIDUAL DECK POURS SHALL START FROM THE LOW END OF THE BRIDGE.

31. NO CONCRETE IN THE ABUTMENTS OR WINGWALLS SHALL BE PLACED ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT UNTIL THE GIRDERS HAVE BEEN PROFILED AND THE FINISHED GRADE OF THE DECK HAS BEEN DETERMINED.

32. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED ½” PER FOOT TOWARDS MID-SPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTH STEEL TROWEL FINISHED.

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

34. CONCRETE FORMWORK AND SUPPORTS.
    A. FLEMING BRACKETS OR SIMILAR FALSE WORK SHALL BE DESIGNED BY THE CONTRACTOR AND PLACED AT A MAXIMUM SPACING OF 4’-0”. THE BRACKETS SHALL BEAR NEAR THE BOTTOM FLANGE AND IN NO CASE SHALL THEY BEAR ABOVE THE BOTTOM QUARTER OF THE WEB DEPTH.

    B. PER SUBSECTION 501.09, THE CONTRACTOR SHALL SUBMIT A CONCRETE FORMWORK DESIGN FOR THE PIER.

PRECAST ABUTMENT NOTES

35. ALL CONCRETE AND REINFORCING STEEL IN THE ABUTMENTS SHALL BE PAID FOR UNDER ITEM 540.10, “PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1)” OR “PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2)” RESPECTIVELY. THIS SHALL INCLUDE ALL WORK NECESSARY TO FABRICATE, DELIVER, AND ASSEMBLE EACH ABUTMENT COMPLETE AND IN PLACE AS SHOWN ON THE PLANS. ALL APPURTENANCES SHALL BE INCIDENTAL TO THE APPROPRIATE CONTRACT ITEM.

36. FABRICATION DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH SECTION 540 AND SHALL INCLUDE AN ASSEMBLY PLAN WITH TEMPORARY BRACING REQUIREMENTS AS REQUIRED FOR ERECTION AND INSTALLATION. ALL COSTS SHALL BE INCIDENTAL TO THE APPROPRIATE PRECAST ITEM. SEE ADDITIONAL REQUIREMENTS IN SECTION 540.

37. JOINTS IN PRECAST MEMBERS MAY BE INTRODUCED IF REQURIED. ALL JOINTS SHALL BE CLEARLY INDICATED ON THE FABRICATION DRAWINGS AND SHALL UTILIZE THE PRECAST JOINT DETAILS SHOWN IN THE PLANS UNLESS OTHERWISE APPROVED BY THE AGENCY.

38. ALL COSTS FOR GROUTING MATERIAL AND RAPID SETTING CONCRETE USED IN THE PRECAST MEMBERS SHALL BE INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.

39. TEMPORARY BRACING OR SUPPORTS SHALL BE REQUIRED IF THE STRUCTURE IS BACKFILLED PRIOR TO OBTAINING FULL MOMENT CAPACITY BETWEEN ALL CONNECTED ELEMENTS. ALL DETAILS SHALL BE INCLUDED IN THE FABRICATION DRAWINGS AND ASSEMBLY PLAN.

40. ONE ASSEMBLY PLAN SHALL DOCUMENT ALL ASPECTS OF THE BRIDGE SYSTEM. THE BRIDGE SYSTEM INCLUDES GROUT AND PRECAST MEMBERS. THE ASSEMBLY PLAN SHALL BE STAMPED BY A LICENSED PROFESSIONAL ENGINEER AND SUBMITTED TO THE AGENCY FOR APPROVAL. THE ENGINEER OF RECORD FOR THE ENTIRE ASSEMBLY PLAN SHALL BE CLEARLY INDICATED. ALL SUPPLEMENTAL CALCULATIONS SHALL BE INCLUDED IN THE SUBMITTAL. THE ASSEMBLY PLAN SHALL BE INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.

41. MECHANICAL GROUTED SPLICES SHALL BE USED TO PROVIDE MOMENT CONNECTIONS BETWEEN PRECAST MEMBERS. GROUTED SPLICES SHALL DEVELOP A MINIMUM OF 125% OF THE SPECIFIED YIELD STRENGTH OF THE REINFORCING BAR BEING SPLICED. GROUT PORTS SHALL BE ON THE BACK FACE OF ELEMENTS (HIDDEN FROM VIEW) WHENEVER POSSIBLE. ALL COSTS FOR THE GROUTED SPLICES SHALL BE INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.

42. NO VERTICAL JOINTS SHALL BE ALLOWED WITHIN THE LIMITS OF THE BEARING PLATES OR WITHIN 1’-6” OF THE EDGE OF THE BEARING PLATE. VERTICAL JOINTS BETWEEN GIRDER BEARINGS SHALL BE HALF-WAY BETWEEN BEARINGS TO THE EXTENT PRACTICABLE. SEE ABUTMENT DETAILS FOR RECOMMENDED VERTICAL JOINT LOCATION.

43. SHEET MEMBRANE SHALL BE APPLIED TO THE BACK OF ALL VERTICAL AND HORIZONTAL JOINTS IN THE SUBSTRUCTURE MEMBERS. A 2’-0” WIDE STRIP SHALL BE CENTERED OVER THE JOINT. ALL COSTS FOR MEMBRANE SHALL BE INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.

44. THE PROPOSED TEMPORARY SUPPORT LOCATIONS FOR THE PRECAST ABUTMENTS, IF REQUIRED, SHALL BE INCLUDED IN THE FABRICATION DRAWINGS AND ASSEMBLY PLAN.

45. GROUT FOR MECHANICAL GROUTED SPLICES AT VERTICAL AND HORIZONTAL JOINTS SHALL MEET THE REQUIREMENTS OF SECTION 540.11. CONCRETE FOR RAPID SETTING CONCRETE REPAIR MATERIAL SHALL MEET THE REQUIREMENTS OF SUBSECTION 580. ALL GROUT AND RAPID SETTING CONCRETE REPAIR MATERIAL SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5,000 PSI.

46. SEE “CONCRETE” NOTES ON THIS SHEET FOR ADDITIONAL NOTES AS APPLICABLE.

PRECAST ABUTMENT REINFORCING NOTES

47. ALL REINFORCING STEEL SHALL BE UNCOATED (BLACK).

48. ALL REINFORCEMENT SHALL HAVE A MINIMUM CLEAR COVER OF 3” TO OUTER SURFACES. MECHANICAL GROUTED SPLICES SHALL HAVE A MINIMUM OF 1 ½” CLEAR COVER FROM CONCRETE SURFACES UNLESS DETAILED OTHERWISE. ACTUAL CLEAR COVER TO REINFORCEMENT SHALL BE DETAILED ON THE FABRICATION DRAWINGS.

49. REINFORCING IN OPPOSING FACES OF MEMBERS SHALL BE ALIGNED.

50. THE REINFORCEMENT DETAILED IN THE PLANS SHALL BE UTILIZED TO THE EXTENT PRACTICABLE. THE SPACING OF SHEAR REINFORCEMENT SHALL NOT BE ADJUSTED UNLESS A RE-DESIGN IS COMPLETED. ALL NEW DESIGNS AND CALCULATIONS SHALL BE STAMPED BY A LICENSED PROFESSIONAL ENGINEER AND SUBMITTED TO THE AGENCY FOR APPROVAL.

51. HORIZONTAL MOMENT REINFORCING SHOWN IN THE PLANS SHALL EXTEND CONTINUOUSLY THROUGH THE REINFORCING STEEL BLOCKOUTS.

VHB *Vanasse Hangen Brustlin, Inc.*

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174pn.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: S.E. BURBANK
PROJECT NOTES (1 OF 2)
PLOT DATE: 3/7/2012
DRAWN BY: B.M. KLINEFELTER
CHECKED BY: G.S. GOODRICH
SHEET 31 OF 78

VHB 57325

PROJECT NOTES CONT'D...

STONE FILL

52. STONE FILL, TYPE I AND II SHALL BE PLACED IN FRONT OF THE ABUTMENTS BEFORE THE STRUCTURAL STEEL HAS BEEN SET.

53. STONE FILL, TYPE III SHALL BE PLACED AROUND PIER NO. 1 BEFORE THE STRUCTURAL STEEL HAS BEEN SET.

STRUCTURAL STEEL

54. ALL STRUCTURAL STEEL PAID UNDER ITEM 506.56, "STRUCTURAL STEEL, CURVED PLATE GIRDER (FPQ)" SHALL CONFORM TO AASHTO M 270M/M 270 GRADE 50W.

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

56. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH-STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SECTION 506.

57. ANY HOLES IN FASCIA GIRDERS NOT OTHERWISE FILLED SHALL BE FILLED WITH BOLTS CONFORMING TO ASTM A325 TYPE III. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19.

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

59. ANY CONNECTIONS THAT ARE NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.

60. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.

61. ALL MEMBERS MARKED (CVN) MUST MEET THE CHARPY V-NOTCH TESTING REQUIREMENTS AS INDICATED IN SUBSECTION 714.01.

62. BEARING STIFFENERS AND GIRDER ENDS SHALL BE VERTICAL UNDER FULL DEAD LOAD DEFLECTION.

63. GIRDERS AND DIAPHRAGMS SHALL BE FABRICATED SO THAT GIRDER WEBS ARE PLUMB UNDER FULL DEAD LOAD.

64. MEMBERS SHALL BE CURVED PRIOR TO WELDING THE CONNECTION PLATES AND BEARING STIFFENERS TO THE FLANGES.

65. ALL STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).

BACKFILL

66. THE HEIGHT OF FILL BEHIND ABUTMENTS WILL BE LIMITED TO THE BRIDGE SEAT ELEVATION UNTIL THE DECK AND CURTAIN WALL HAVE BEEN POURED AND THE CURING PERIOD IS UP.

REMOVAL AND REPAIR NOTES

67. REMOVAL OF EXISTING BRIDGE PAVEMENT SHALL BE PAID AS ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT".

68. THE CONTRACTOR'S METHODS FOR PARTIAL REMOVAL OF THE EXISTING STRUCTURE SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY REMOVAL WORK.

69. THE ENGINEER SHALL ESTABLISH ACTUAL REMOVAL AND REPAIR LIMITS ON THE PIERS AFTER A JOINT INSPECTION BY THE CONTRACTOR AND THE ENGINEER. AREAS OF THE CONCRETE FOUND TO BE SPALLED, DELAMINATED, OR OTHERWISE UNSOUND WILL BE REMOVED. THE CONTRACTOR SHALL SUPPLY ANY STAGING AND LADDERS REQUIRED FOR THIS INSPECTION. EXISTING ELEVATIONS SHALL BE FIELD VERIFIED TO ENSURE THE REMOVAL LIMITS ARE ADEQUATE TO OBTAIN THE REQUIRED DIMENSIONS AND ELEVATIONS OF THE NEW CONSTRUCTION. ALL COSTS ASSOCIATED WITH THE INSPECTION AND FIELD VERIFICATION WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

70. SAWCUTS SHALL BE 1 INCH DEEP AT THE LOCATIONS SHOWN AND ALONG ALL EXPOSED REMOVAL LINES WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE.

71. THE PIERS HAVE SIGNIFICANT AREAS OF CONCRETE REMOVAL AND REPAIR ESTIMATED ON SHEETS 54 AND 55. THIS ANTICIPATED WORK IS BASED UPON A SEPTEMBER 2009 INSPECTION AND IS FOR INFORMATION ONLY. ACTUAL REMOVAL LIMITS WILL BE ESTABLISHED DURING THE JOINT INSPECTION BY THE CONTRACTOR AND THE ENGINEER.

72. EXISTING REINFORCING STEEL EXPOSED DURING REMOVAL OPERATIONS, WITHIN THE LIMITS OF THE NEW SUBSTRUCTURE, SHALL BE RETAINED AND INCORPORATED INTO THE NEW SUBSTRUCTURE UNLESS OTHERWISE NOTED. EXISTING REINFORCING STEEL TO BE RETAINED SHALL BE CLEANED OF ALL CONCRETE, DIRT, RUST, PAINT, OIL AND OTHER FOREIGN SUBSTANCES. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE".

73. THE ENGINEER SHALL ORDER REPLACEMENT OF ANY EXISTING SUBSTRUCTURE REINFORCING STEEL THAT IS DETERIORATED (WITH MORE THAN 25% SECTION LOSS) WITH NEW REINFORCING STEEL OF THE SAME SIZE. ALL REINFORCING STEEL SHALL HAVE A MINIMUM 2'-2" LAP SPLICE. ALL NEW SUBSTRUCTURE REINFORCING SHALL BE PAID UNDER ITEM 507.15, "REINFORCING STEEL".

FIELD BENDING EXISTING REINFORCING BARS

74. THE CONTRACTOR SHALL SUBMIT A FIELD BENDING PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO FIELD BENDING THE REINFORCING BARS. THE CONTRACTOR SHALL USE A METHOD THAT AVOIDS DAMAGE TO THE EXISTING CONCRETE.

75. THE EXISTING FIELD BENDING SHALL NOT BE PERFORMED ON BAR SIZES NO. 14 TO 18, WHEN THE AIR TEMPERATURE IS LOWER THAN 45°F OR BY MEANS OF HAMMER BLOWS OR PIPE SLEEVES OR WHILE THE BAR TEMPERATURE IS IN THE RANGE OF 400 TO 700°F.

76. THE CONTRACTOR SHALL BEND THE BAR GRADUALLY USING A BENDING TOOL EQUIPPED WITH A BENDING DIAMETER AS FOLLOWS:

    HEAT NOT APPLIED (COLD BENDING)
    NO. 3 & NO. 4 - SIX (6) TIMES THE BAR DIAMETER
    NO. 5 & NO. 6 - EIGHT (8) TIMES THE BAR DIAMETER

    HEAT APPLIED
    NO. 7 TO NO. 9 - EIGHT (8) TIMES THE BAR DIAMETER
    NO. 10 & NO. 11 - TEN (10) TIMES THE BAR DIAMETER

    THE BAR SHALL BE STRAIGHTENED BY MOVING A HICKEY BAR (IF USED) PROGRESSIVELY AROUND THE BEND.

77. PER THE EXISTING PLANS (SEE SHEETS 75 AND 78) THE EXISTING DIAGONAL REINFORCING BARS ARE THE EQUIVALENT OF A NO. 6 BAR (3/4" IN DIAMETER). THEREFORE THE CONTRACTOR SHALL BEND THE EXISTING DIAGONAL REINFORCING BARS WITHOUT HEAT AS DESCRIBED ABOVE. IF IT IS DETERMINED IN THE FIELD THAT THE BAR SIZE IS GREATER THAN A NO. 6 BAR THEN THE CONTRACTOR SHALL HEAT BEND THE BAR IN ACCORDANCE WITH THE NOTES BELOW.

78. THE CONCRETE SHALL BE INSULATED WITHIN SIX (6) INCHES OF THE HEATED AREA. APPLY TWO (2) HEAT TIPS SIMULTANEOUSLY AT OPPOSITE SIDES OF THE BAR TO HEAT THE ENTIRE THICKNESS OF THE BAR INCLUDING ITS CENTER WITHIN THE BEND AREA.

79. ENSURE BY MEANS OF TEMPERATURE INDICATING CRAYONS, OR OTHER SUITABLE MEANS, THAT THE STEEL TEMPERATURE NEVER EXCEEDS THE MAXIMUM TEMPERATURE SHOWN BELOW:

    NO. 7 TO NO. 9 - 1,150 TO 1,250°F
    NO. 10 & NO. 11 - 1,200 TO 1,300°F

    MAINTAIN THE TEMPERATURE WITHIN THE REQUIRED RANGE SHOWN ABOVE DURING THE ENTIRE BENDING PROCESS.

80. BEND THE BAR IMMEDIATELY AFTER THE REQUIRED TEMPERATURE HAS BEEN REACHED. HEAT AT LEAST AS MUCH OF THE BAR AS INDICATED BELOW:

    NO. 7 TO NO. 9 - EIGHT (8) TIMES THE BAR DIAMETER
    NO 10 & NO. 11 - NINE (9) TIMES THE BAR DIAMETER

    LOCATE THE HEATED SECTION OF THE BAR TO INCLUDE THE ENTIRE BENDING LENGTH AND NEVER COOL THE BARS ARTIFICIALLY WITH WATER, FORCED AIR, OR OTHER MEANS.

ELASTOMERIC BEARING NOTES

81. BEARINGS SHALL CONFORM TO APPLICABLE SUBSECTIONS OF SECTIONS 531 AND 731.

82. BEARINGS SHALL BE PAID FOR UNDER ITEM 531.11 "BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD".

83. FABRICATION DRAWINGS CONFORMING TO SUBSECTION 531.03 SHALL BE SUBMITTED TO INCLUDE WELDING AND BONDING PROCEDURES.

84. THE CONCRETE SURFACE UNDER THE BEARING DEVICE SHALL BE LEVEL.

85. ALL STEEL IN BEARING DEVICES (EXCEPT STAINLESS) SHALL BE AASHTO M 270M/M 270 GRADE 50.

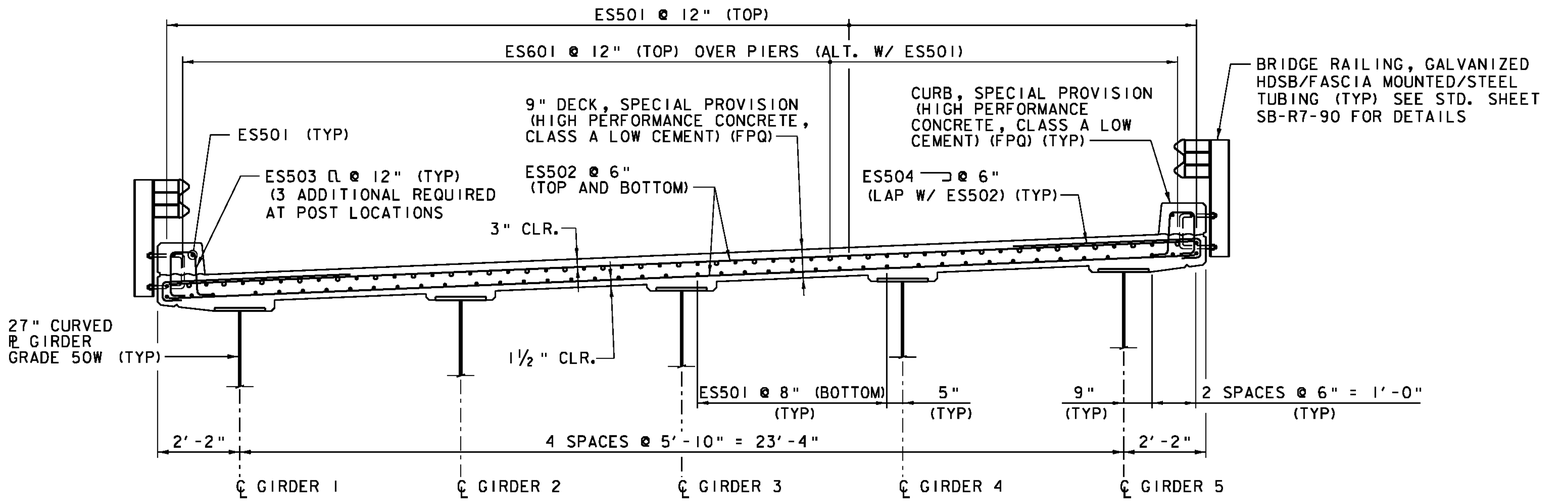
86. ANCHOR BOLTS SHALL HAVE A MINIMUM EMBEDMENT OF 1'-3" INTO THE CONCRETE AND SHALL CONFORM TO SUBSECTION 714.08.

87. ALL BEARING DEVICES SHALL BE GALVANIZED OR METALIZED AS PER SUBSECTION 531.04(b). ANY FIELD WELDING OR DAMAGE DUE TO HANDLING SHALL BE PAINTED WITH A ZINC RICH PAINT IN ACCORDANCE WITH SECTION 513.

88. ALL ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. ALL WASHERS SHALL BE 3/8" PLATE (MINIMUM). PAYMENT FOR DRILLING AND GROUTING OF ANCHOR BOLTS SHALL BE INCLUDED IN THE BID PRICE FOR CONTRACT ITEM 531.11, "BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD".

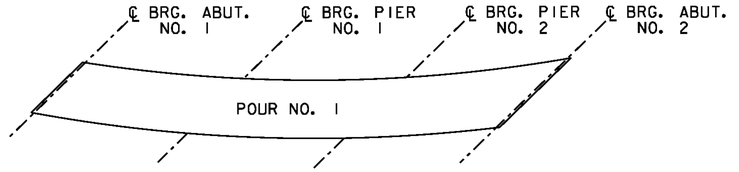
89. ALTERNATE BEARING DESIGNS MAY BE SUBMITTED FOR APPROVAL.

90. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.



NOTE: METAL STAY-IN-PLACE FORMS NOT SHOWN FOR CLARITY.

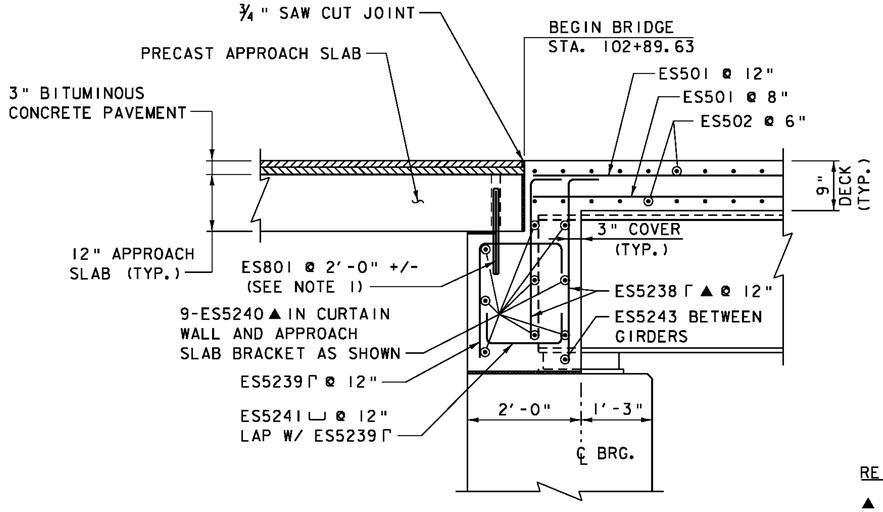
TYPICAL BRIDGE SECTION
SCALE ½" = 1'-0"



DECK POUR
NOT TO SCALE

NOTES:

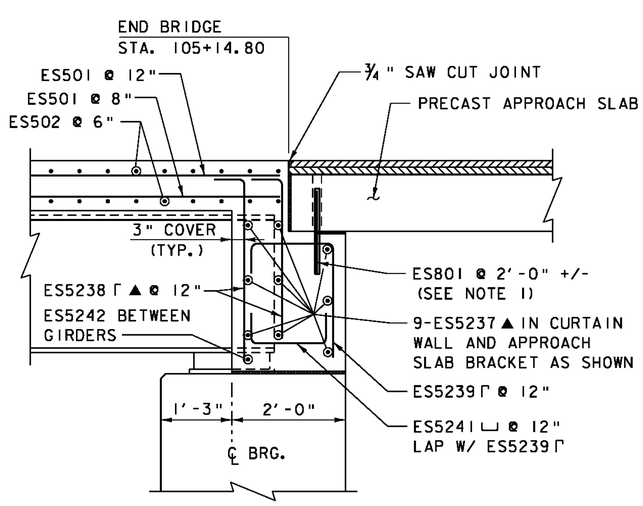
1. THE CONCRETE SHALL BE DEPOSITED BY BEGINNING AT THE LOWER END OF THE BRIDGE AND WORKING TOWARD THE UPPER END OF THE BRIDGE.
2. IF AN ALTERNATE POUR SEQUENCE IS USED, IT MUST BE APPROVED BY THE PROJECT MANAGER PRIOR TO THE APPROVAL OF THE STEEL FABRICATION DRAWINGS.



REINFORCING KEY:

▲ CUT IN FIELD

BRIDGE END DETAIL ABUTMENT NO. 1
SCALE ¾" = 1'-0"



BRIDGE END DETAIL ABUTMENT NO. 2
SCALE ¾" = 1'-0"

NOTE:

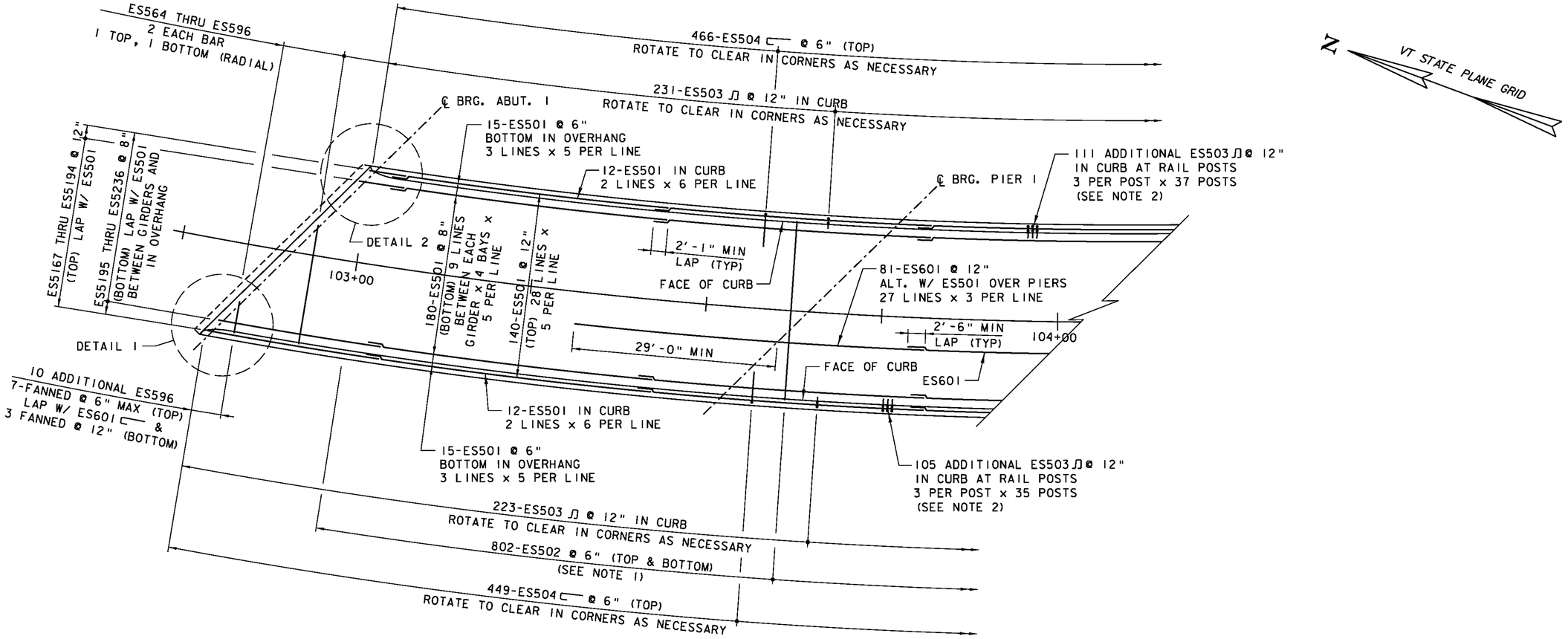
1. APPROACH SLAB DOWEL LOCATIONS TO BE COORDINATED WITH PRECAST APPROACH SLAB FABRICATOR TO ENSURE PROPER FIT-UP IN FIELD.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

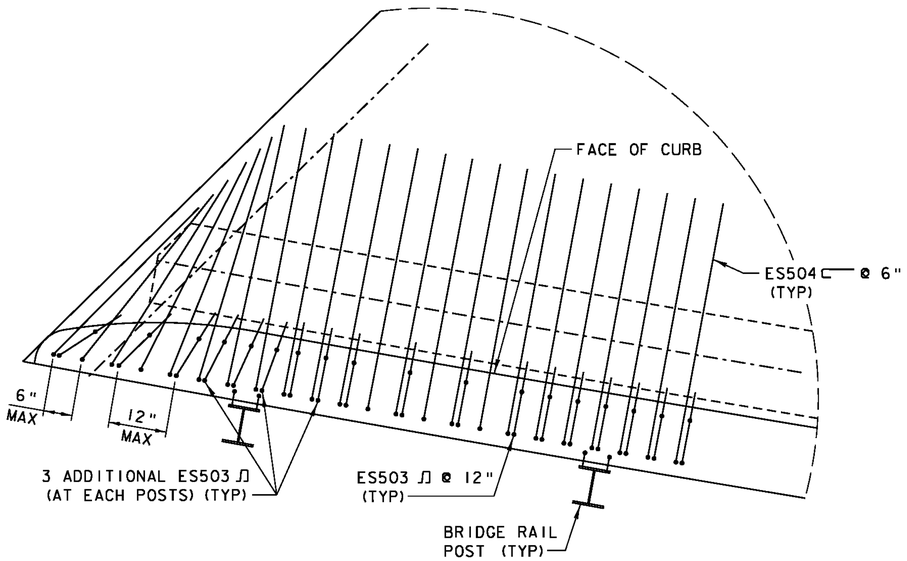
FILE NAME: z08l174deckr3.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: G.S. GOODRICH
TYPICAL DECK SECTIONS

PLOT DATE: 2/15/2012
DRAWN BY: K.D. WENTWORTH
CHECKED BY: M.J. MOZER
SHEET 33 OF 78

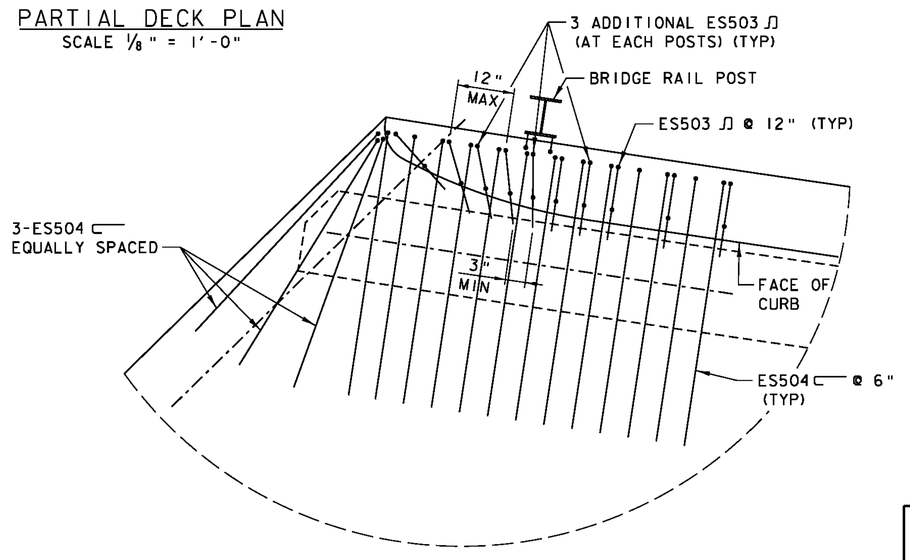
VHB Vanasse Hangen Brustlin, Inc.



PARTIAL DECK PLAN
SCALE 1/8" = 1'-0"



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



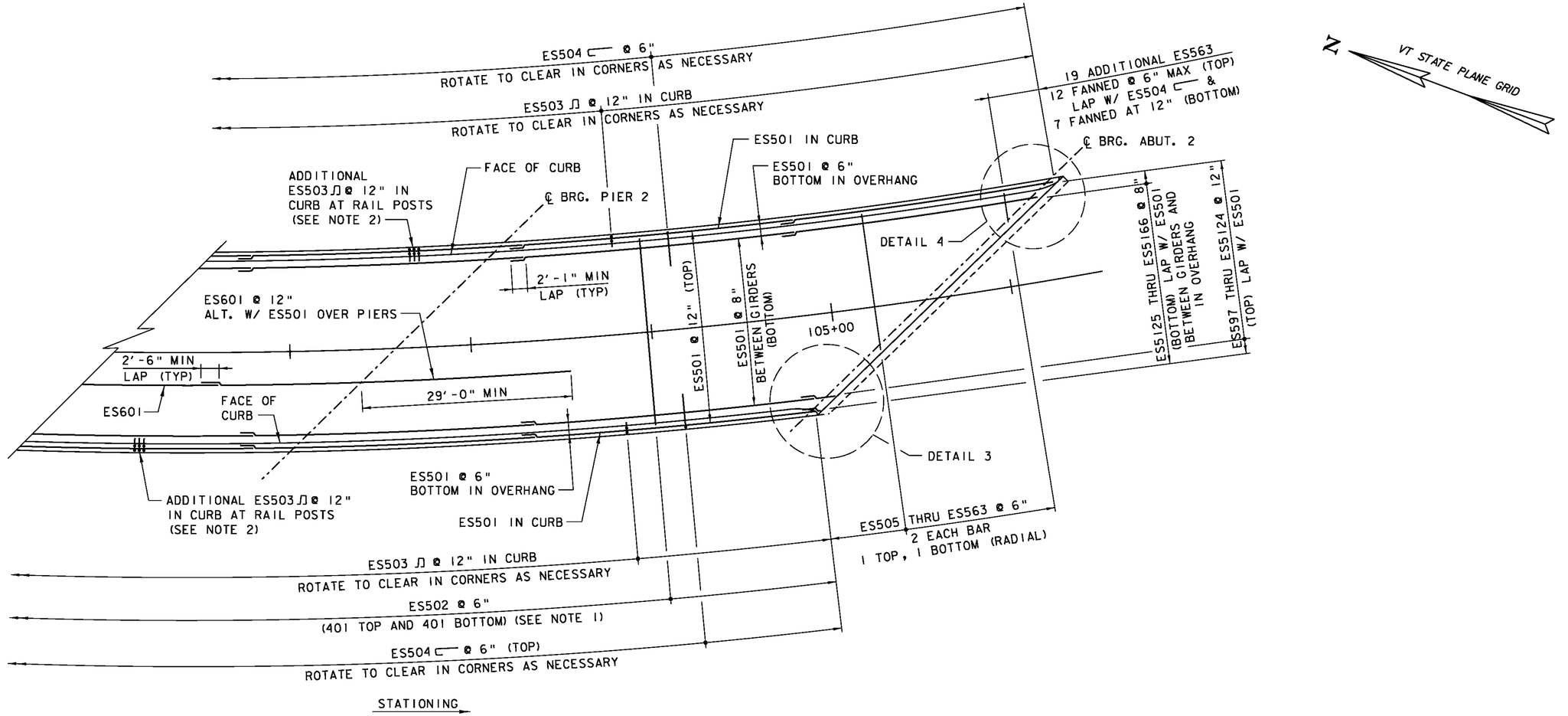
DETAIL 2
SCALE 3/4" = 1'-0"

NOTES:

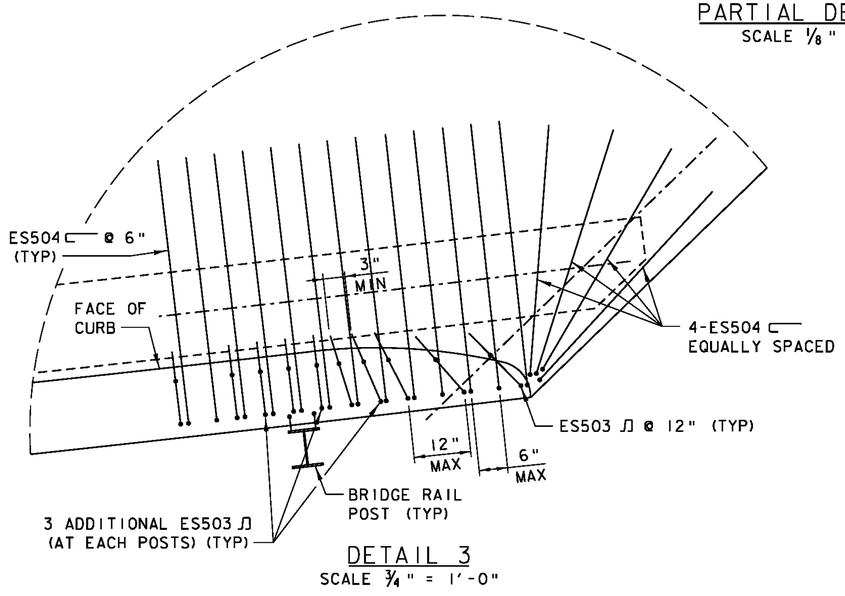
1. TRANSVERSE BARS IN DECK SHALL BE PLACED RADIALLY WITH SPACING BETWEEN BARS SET ALONG THE OUTSIDE GIRDER (G5).
2. SEE SHEET 58 FOR BRIDGE RAIL POST LAYOUT.

VHB Vanasse Hangen Brustlin, Inc.

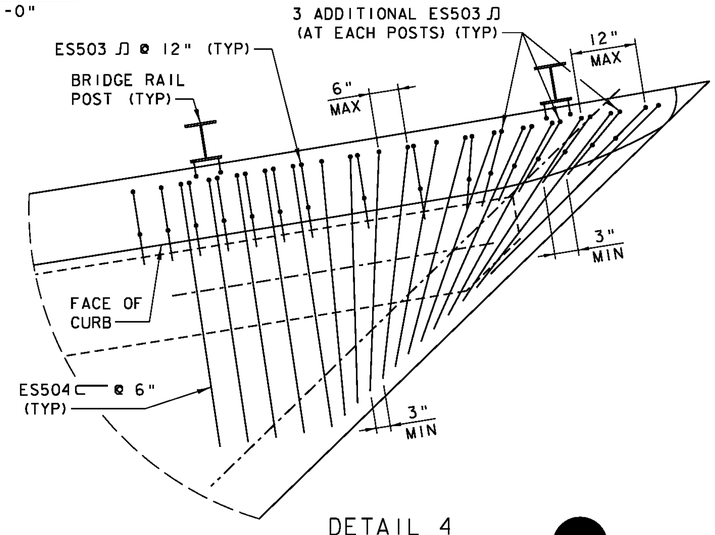
PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174deckr2.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.J. MASSE
DESIGNED BY: G.S. GOODRICH	CHECKED BY: M.J. MOZER
DECK REINFORCING PLAN (1 OF 2)	SHEET 34 OF 78



PARTIAL DECK PLAN
SCALE 1/8" = 1'-0"



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



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

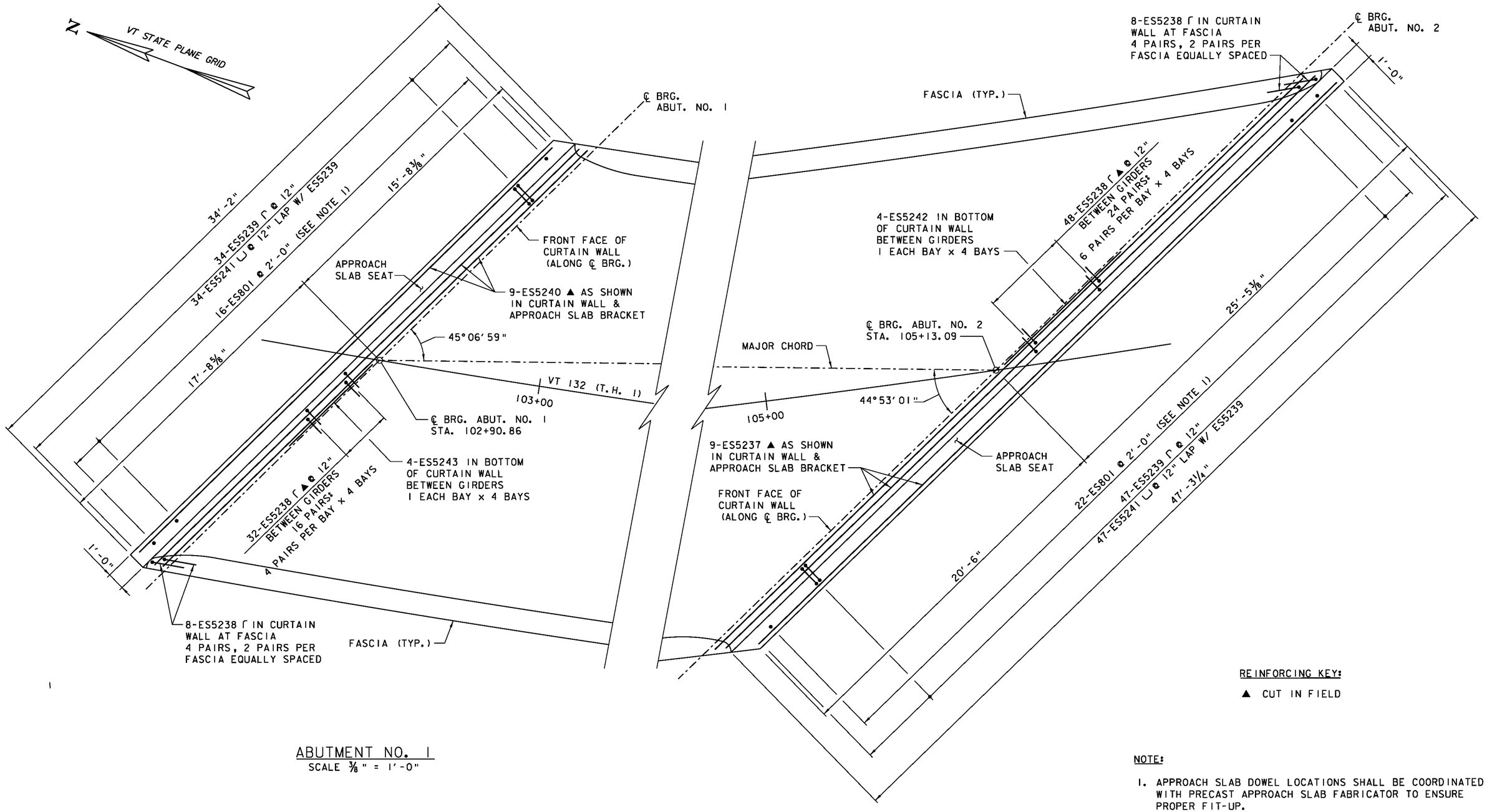
NOTES:

1. TRANSVERSE BARS IN DECK SHALL BE PLACED RADIALLY WITH SPACING BETWEEN BARS SET ALONG THE OUTSIDE GIRDER (G5).
2. SEE SHEET 58 FOR BRIDGE RAIL POST LAYOUT.

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174deckr1.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.J. MASSE
DESIGNED BY: G.S. GOODRICH	CHECKED BY: M.J. MOZER
DECK REINFORCING PLAN (2 OF 2)	SHEET 35 OF 78

VHB 57325



ABUTMENT NO. 1
SCALE ⅜" = 1'-0"

ABUTMENT NO. 2
SCALE ⅜" = 1'-0"

REINFORCING KEY:

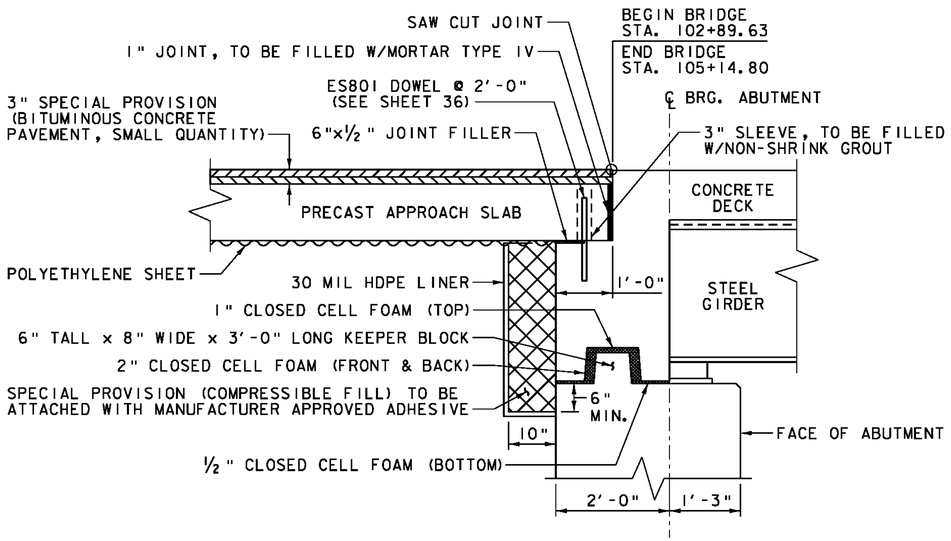
▲ CUT IN FIELD

NOTE:

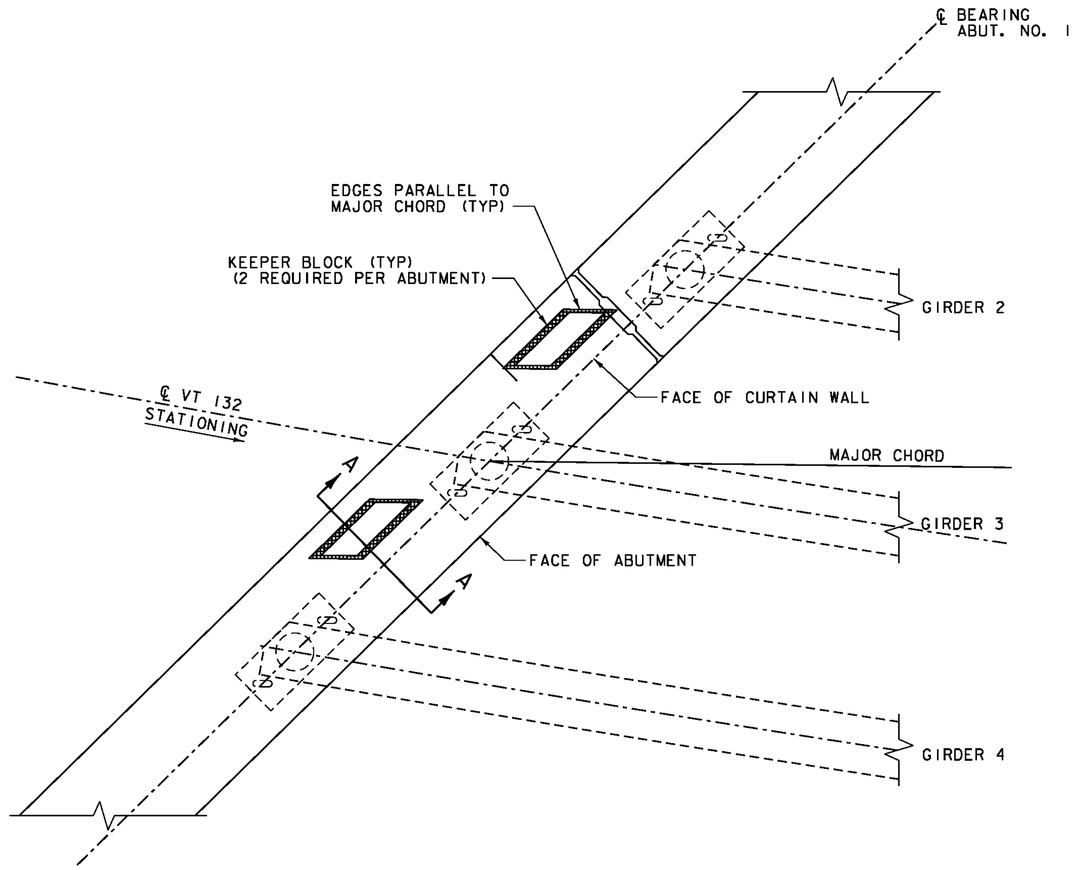
1. APPROACH SLAB DOWEL LOCATIONS SHALL BE COORDINATED WITH PRECAST APPROACH SLAB FABRICATOR TO ENSURE PROPER FIT-UP.

VHB Vanasse Hangen Brustlin, Inc.

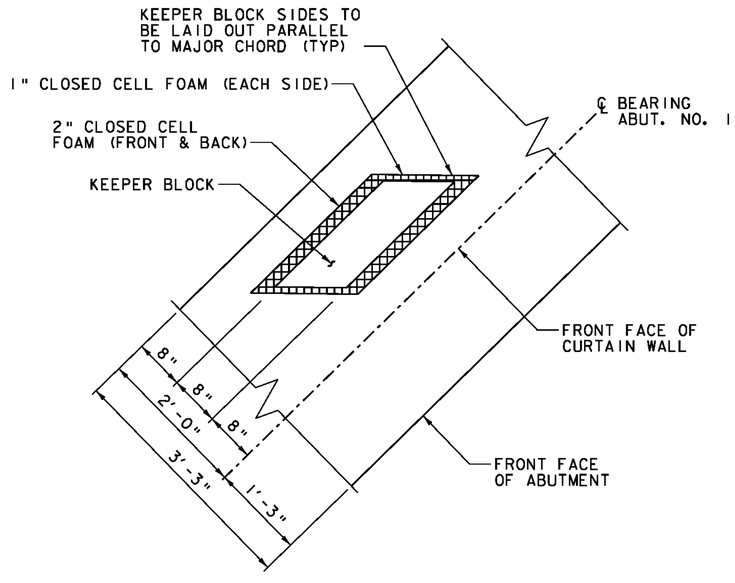
PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174deckr4.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.J. MASSE
DESIGNED BY: G.S. GOODRICH	CHECKED BY: M.J. MOZER
CURTAIN WALL REINFORCING PLAN	SHEET 36 OF 78



CURTAIN WALL SECTION A-A
NOT TO SCALE



CURTAIN WALL KEY LAYOUT
NOT TO SCALE



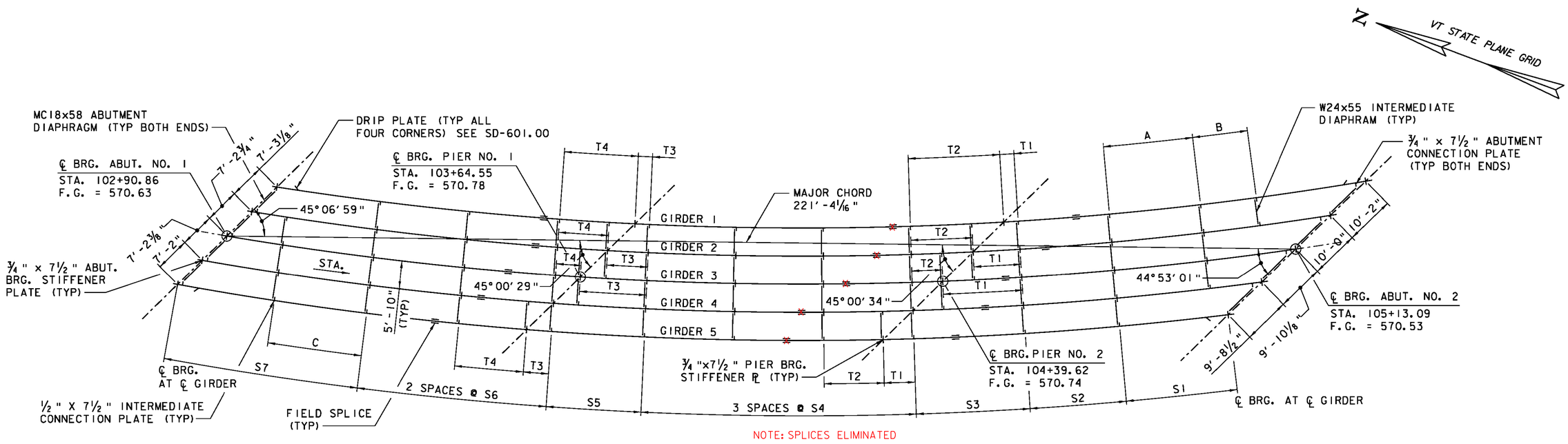
CURTAIN WALL KEY DETAIL
NOT TO SCALE

NOTES:

1. ABUTMENT NO. 1 SHOWN, ABUTMENT NO. 2 SIMILAR, EXCEPT KEEPER BLOCK SHALL BE 2'-0" LONG AT ABUTMENT NO. 2.
2. COST FOR PROVIDING AND INSTALLING CLOSED CELL FOAM AROUND THE KEEPER BLOCKS SHALL BE INCIDENTAL TO ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT)".
3. COST FOR PROVIDING AND INSTALLING THE POLYETHYLENE SHEET AND THE MORTAR TYPE IV SHALL BE INCIDENTAL TO ITEM 540.10, "PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 1)" AND "PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 2)".

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174cwall.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: G.S. GOODRICH	CHECKED BY: S.E. BURBANK
CURTAIN WALL DETAILS	SHEET 37 OF 78



NOTE: SPLICES ELIMINATED

FRAMING PLAN

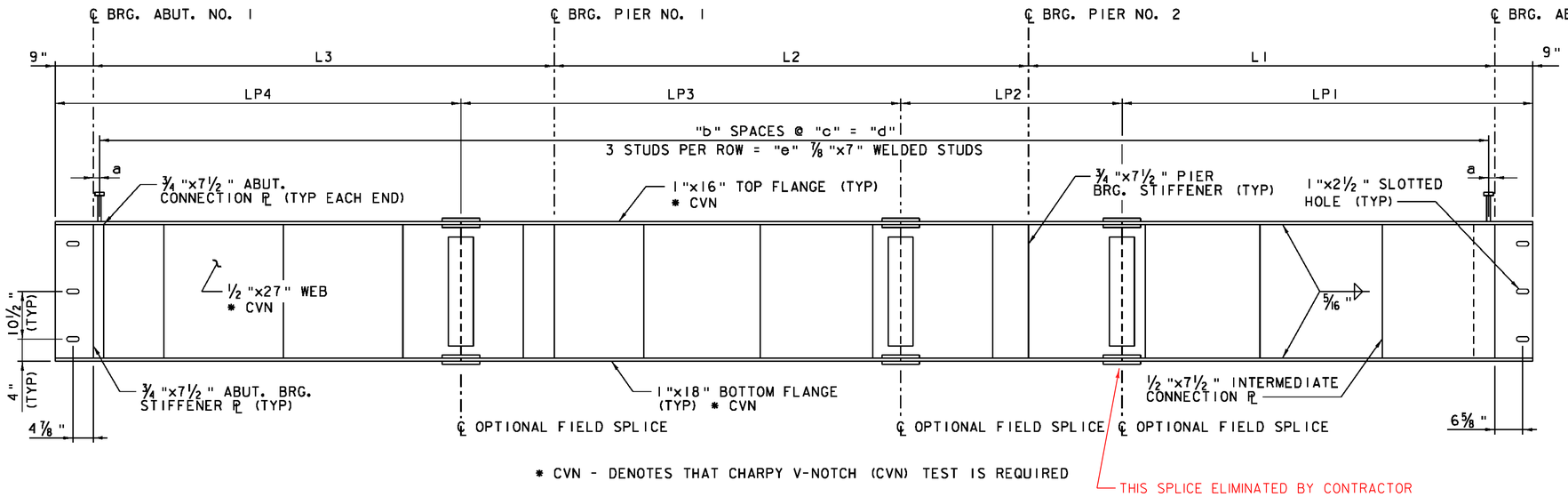
SCALE 1/32 " = 1'-0"

GIRDER DIMENSIONS

	SPAN 1	SPAN 2	SPAN 3	RADIUS	S7	C	S6	T4	T3	S5	S4	T2	T1	S3	S2	S1	A	B
GIRDER 1	74'-6 5/8"	76'-4 5/16"	75'-6"	705'-2 5/8"	21'-7 1/2"	-	18'-7 7/16"	15'-8 1/4"	3'-0"	18'-8 1/4"	17'-11 15/16"	19'-4 1/2"	3'-0"	22'-4 9/16"	18'-11 13/16"	53'-6 3/16"	18'-11 13/16"	11'-7 5/8"
GIRDER 2	74'-1 5/16"	75'-8 3/8"	74'-5 7/16"	711'-0 5/8"	26'-1 5/8"	18'-9 5/16"	18'-9 5/16"	10'-5 1/16"	8'-5 1/16"	18'-10 1/8"	18'-1 1/16"	12'-10 1/4"	9'-8 9/16"	22'-6 13/16"	19'-1 1/16"	45'-7 3/16"	19'-1 1/16"	11'-8 3/4"
GIRDER 3	73'-8 1/4"	75'-0 13/16"	73'-5 5/8"	716'-10 5/8"	30'-7 15/16"	18'-11 3/16"	18'-11 3/16"	5'-2 5/16"	13'-9 11/16"	19'-0"	18'-3 1/2"	6'-4 3/4"	16'-4 1/4"	22'-9 1/16"	19'-3 9/16"	37'-9 13/16"	19'-3 9/16"	-
GIRDER 4	73'-3 3/8"	74'-5 5/8"	72'-6 9/16"	722'-8 5/8"	35'-1 3/8"	19'-1"	19'-1"	-	-	19'-1 7/8"	18'-5 1/4"	-	-	22'-11 1/4"	19'-5 7/8"	30'-1 7/8"	19'-5 7/16"	-
GIRDER 5	72'-10 11/16"	73'-10 3/4"	71'-8 1/8"	728'-6 5/8"	39'-6 7/8"	19'-2 7/8"	19'-2 7/8"	14'-0 15/16"	5'-1 15/16"	19'-3 5/8"	18'-7 1/16"	12'-3 1/16"	6'-4"	23'-1 1/2"	19'-7 5/16"	22'-7 5/16"	-	-

Vanasse Hangen Brustlin, Inc.

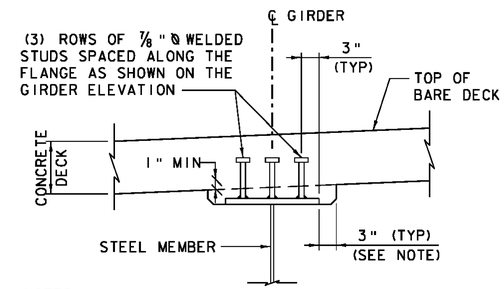
PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHF 0177(9)
FILE NAME: z08j174sup01.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: G.S. GOODRICH	CHECKED BY: M.J. MOZER
FRAMING PLAN AND GIRDER DETAILS	SHEET 38 OF 78



* CVN - DENOTES THAT CHARPY V-NOTCH (CVN) TEST IS REQUIRED

GIRDER ELEVATION

NOT TO SCALE



NOTES:

1. METAL STAY-IN-PLACE FORMS NOT SHOWN FOR CLARITY.
2. THE 3" HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES. ANY VOIDS RESULTING FROM FORMING SYSTEM ELEMENTS SHALL BE FILLED WITH JOINT SEALER, POLYURETHANE MEETING THE REQUIREMENTS OF SECTION 524. THE COST OF THE JOINT SEALER, POLYURETHANE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

HAUNCH AND SHEAR CONNECTOR DETAIL

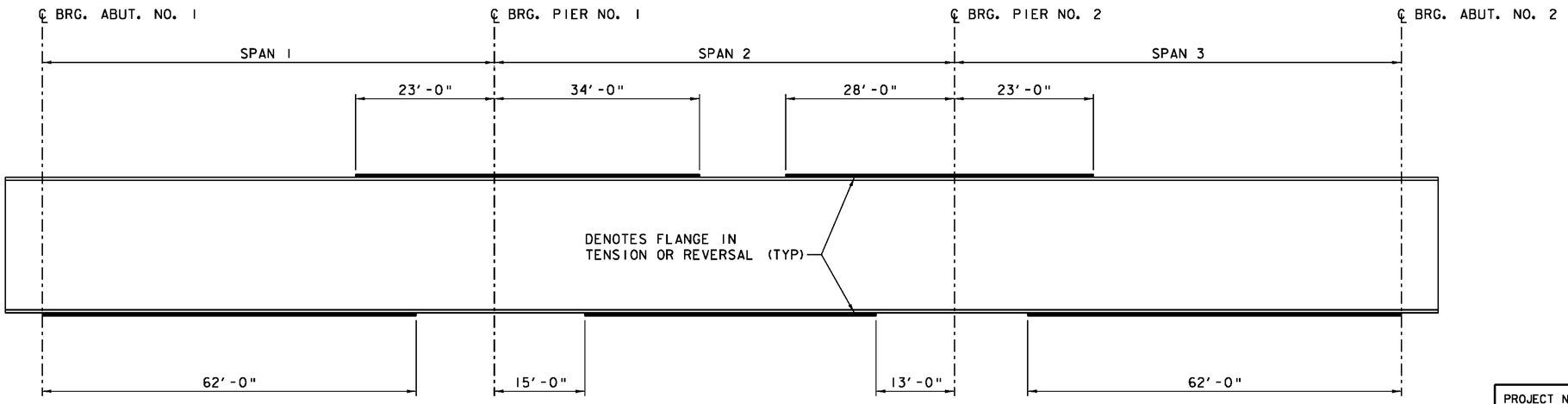
NOT TO SCALE

STUD SHEAR CONNECTOR LAYOUT

	a	b	c	d	e
GIRDER 1	3"	226	1'-0"	225'-10⅝"	681
GIRDER 2	2"	224	1'-0"	223'-11⅛"	675
GIRDER 3	2"	222	1'-0"	221'-10¾"	669
GIRDER 4	2"	220	1'-0"	219'-11⅜"	663
GIRDER 5	3"	218	1'-0"	217'-11⅜"	657

GIRDER DIMENSIONS ALONG ℄ GIRDER

	L3	L2	L1	LP4	LP3	LP2	LP1
GIRDER 1	74'-6⅝"	76'-4⅝"	75'-6"	56'-3⅝"	72'-4⅝"	38'-0"	61'-3"
GIRDER 2	74'-1⅝"	75'-8⅜"	74'-5⅞"	59'-10⅝"	70'-8⅜"	35'-0"	60'-2⅞"
GIRDER 3	73'-8¼"	75'-0⅛"	73'-5⅝"	59'-5¼"	70'-0⅛"	33'-0"	61'-2⅝"
GIRDER 4	73'-3⅜"	74'-5⅝"	72'-6⅜"	59'-0⅜"	66'-5⅝"	38'-0"	58'-3⅜"
GIRDER 5	72'-10⅛"	73'-10¾"	71'-8⅛"	54'-7⅛"	72'-10¾"	35'-0"	57'-5⅛"



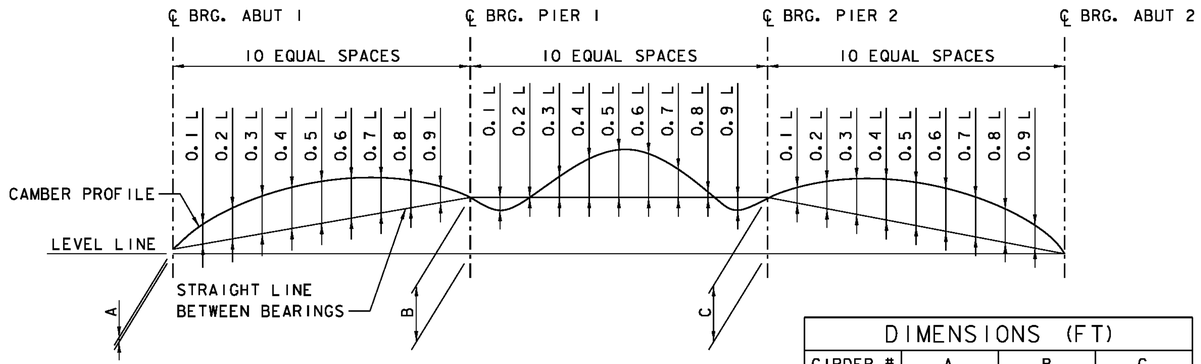
TENSION ZONE DIAGRAM

NOT TO SCALE

Vanasse Hangen Brustlin, Inc.

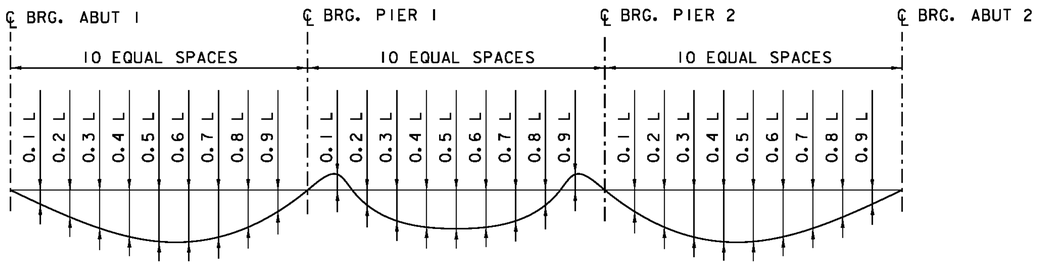
PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174sup02.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: G.S. GOODRICH	CHECKED BY: M.J. MOZER
GIRDER ELEVATION	SHEET 39 OF 78

		CAMBER TABLE (SPAN 1) @ 1/10 POINTS (INCHES)											CAMBER TABLE (SPAN 2) @ 1/10 POINTS (INCHES)										CAMBER TABLE (SPAN 3) @ 1/10 POINTS (INCHES)									
	POINT ON BEAM	℄ BRG. ABUT 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ BRG. PIER 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ BRG. PIER 2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ BRG. ABUT 2
GIRDER 1	STEEL DL	0.00	-0.11	-0.20	-0.26	-0.29	-0.29	-0.26	-0.20	-0.12	-0.06	0.00	0.00	-0.02	-0.03	-0.05	-0.05	-0.04	-0.02	0.00	0.00	0.00	-0.08	-0.16	-0.24	-0.30	-0.34	-0.33	-0.29	-0.22	-0.12	0.00
	CONCRETE SLAB	0.00	-0.42	-0.76	-0.98	-1.08	-1.08	-0.97	-0.76	-0.46	-0.23	0.00	-0.01	-0.06	-0.12	-0.18	-0.19	-0.16	-0.08	0.00	0.01	0.00	-0.30	-0.62	-0.89	-1.14	-1.26	-1.25	-1.09	-0.82	-0.45	0.00
	SUPERIMPOSED DL	0.00	-0.12	-0.21	-0.27	-0.30	-0.30	-0.27	-0.21	-0.13	-0.06	0.00	0.00	-0.02	-0.03	-0.05	-0.05	-0.05	-0.02	0.00	0.00	0.00	-0.08	-0.16	-0.24	-0.31	-0.34	-0.34	-0.30	-0.23	-0.12	0.00
	TOTAL DEFLECTION	0.00	-0.65	-1.17	-1.51	-1.67	-1.67	-1.50	-1.17	-0.71	-0.35	0.00	-0.01	-0.10	-0.18	-0.28	-0.29	-0.25	-0.12	0.00	0.01	0.00	-0.46	-0.94	-1.37	-1.75	-1.94	-1.92	-1.68	-1.27	-0.69	0.00
	RESIDUAL CAMBER	0.00	0.39	0.70	0.91	1.00	1.00	0.90	0.70	0.42	0.21	0.00	0.12	0.28	0.63	0.94	1.00	0.94	0.63	0.28	0.12	0.00	0.24	0.49	0.70	0.91	1.00	0.99	0.87	0.65	0.35	0.00
	TOTAL CAMBER	0.00	1.04	1.87	2.42	2.67	2.67	2.40	1.87	1.13	0.56	0.00	0.13	0.38	0.81	1.22	1.29	1.19	0.75	0.28	0.11	0.00	0.70	1.43	2.07	2.66	2.94	2.91	2.55	1.92	1.04	0.00
GIRDER 2	STEEL DL	0.00	-0.10	-0.20	-0.26	-0.29	-0.28	-0.25	-0.20	-0.13	-0.05	0.00	0.01	-0.01	-0.03	-0.04	-0.04	-0.04	-0.03	-0.01	0.01	0.00	-0.06	-0.14	-0.21	-0.26	-0.29	-0.29	-0.26	-0.19	-0.11	0.00
	CONCRETE SLAB	0.00	-0.40	-0.76	-0.99	-1.09	-1.07	-0.96	-0.78	-0.50	-0.21	0.00	0.03	-0.05	-0.12	-0.16	-0.17	-0.16	-0.10	-0.02	0.02	0.00	-0.22	-0.53	-0.79	-0.98	-1.09	-1.09	-0.97	-0.73	-0.40	0.00
	SUPERIMPOSED DL	0.00	-0.10	-0.20	-0.26	-0.28	-0.28	-0.25	-0.20	-0.13	-0.06	0.00	0.01	0.00	-0.02	-0.03	-0.04	-0.03	-0.02	0.00	0.01	0.00	-0.05	-0.13	-0.20	-0.25	-0.28	-0.28	-0.25	-0.19	-0.10	0.00
	TOTAL DEFLECTION	0.00	-0.60	-1.16	-1.51	-1.66	-1.63	-1.46	-1.18	-0.76	-0.32	0.00	0.05	-0.06	-0.17	-0.23	-0.25	-0.23	-0.15	-0.03	0.04	0.00	-0.33	-0.80	-1.20	-1.49	-1.66	-1.66	-1.48	-1.11	-0.61	0.00
	RESIDUAL CAMBER	0.00	0.37	0.70	0.91	1.00	0.98	0.89	0.71	0.46	0.19	0.00	0.12	0.28	0.63	0.94	1.00	0.94	0.63	0.28	0.12	0.00	0.20	0.48	0.72	0.89	1.00	1.00	0.89	0.67	0.37	0.00
	TOTAL CAMBER	0.00	0.97	1.86	2.42	2.66	2.61	2.35	1.89	1.22	0.51	0.00	0.07	0.34	0.80	1.17	1.25	1.17	0.78	0.31	0.08	0.00	0.53	1.28	1.92	2.38	2.66	2.66	2.37	1.78	0.98	0.00
GIRDER 3	STEEL DL	0.00	-0.11	-0.20	-0.27	-0.30	-0.29	-0.25	-0.20	-0.14	-0.06	0.00	0.01	0.00	-0.02	-0.04	-0.04	-0.03	-0.03	-0.01	0.01	0.00	-0.06	-0.12	-0.19	-0.24	-0.27	-0.26	-0.23	-0.18	-0.09	0.00
	CONCRETE SLAB	0.00	-0.42	-0.77	-1.02	-1.15	-1.09	-0.97	-0.78	-0.54	-0.23	0.00	0.02	-0.01	-0.10	-0.16	-0.16	-0.14	-0.10	-0.05	0.02	0.00	-0.24	-0.46	-0.74	-0.93	-1.02	-1.01	-0.90	-0.68	-0.36	0.00
	SUPERIMPOSED DL	0.00	-0.11	-0.20	-0.26	-0.29	-0.28	-0.25	-0.20	-0.14	-0.06	0.00	0.01	0.01	-0.01	-0.02	-0.03	-0.02	-0.01	0.00	0.01	0.00	-0.06	-0.11	-0.18	-0.23	-0.25	-0.25	-0.23	-0.17	-0.09	0.00
	TOTAL DEFLECTION	0.00	-0.64	-1.17	-1.55	-1.74	-1.66	-1.47	-1.18	-0.82	-0.35	0.00	0.04	0.00	-0.13	-0.22	-0.23	-0.19	-0.14	-0.06	0.04	0.00	-0.36	-0.69	-1.11	-1.40	-1.54	-1.52	-1.36	-1.03	-0.54	0.00
	RESIDUAL CAMBER	0.00	0.37	0.67	0.89	1.00	0.96	0.85	0.68	0.47	0.20	0.00	0.12	0.28	0.63	0.94	1.00	0.94	0.63	0.28	0.12	0.00	0.24	0.45	0.72	0.91	1.00	0.99	0.88	0.67	0.36	0.00
	TOTAL CAMBER	0.00	1.01	1.84	2.44	2.74	2.62	2.32	1.86	1.29	0.55	0.00	0.08	0.28	0.76	1.16	1.23	1.13	0.77	0.34	0.08	0.00	0.60	1.14	1.83	2.31	2.54	2.51	2.24	1.70	0.90	0.00
GIRDER 4	STEEL DL	0.00	-0.12	-0.21	-0.28	-0.31	-0.31	-0.26	-0.21	-0.15	-0.08	0.00	0.00	0.00	-0.02	-0.04	-0.04	-0.04	-0.03	-0.01	0.00	0.00	-0.07	-0.14	-0.19	-0.24	-0.27	-0.27	-0.24	-0.18	-0.10	0.00
	CONCRETE SLAB	0.00	-0.46	-0.81	-1.07	-1.20	-1.18	-1.00	-0.80	-0.56	-0.30	0.00	0.01	0.00	-0.06	-0.14	-0.17	-0.16	-0.11	-0.05	-0.02	0.00	-0.28	-0.51	-0.71	-0.92	-1.03	-1.03	-0.92	-0.70	-0.38	0.00
	SUPERIMPOSED DL	0.00	-0.12	-0.21	-0.28	-0.31	-0.30	-0.26	-0.20	-0.14	-0.07	0.00	0.00	0.00	-0.01	-0.03	-0.03	-0.03	-0.01	0.00	0.00	0.00	-0.07	-0.13	-0.18	-0.24	-0.26	-0.26	-0.23	-0.18	-0.09	0.00
	TOTAL DEFLECTION	0.00	-0.70	-1.23	-1.63	-1.82	-1.79	-1.52	-1.21	-0.85	-0.45	0.00	0.01	0.00	-0.09	-0.21	-0.24	-0.23	-0.15	-0.06	-0.02	0.00	-0.42	-0.78	-1.08	-1.40	-1.56	-1.56	-1.39	-1.06	-0.57	0.00
	RESIDUAL CAMBER	0.00	0.38	0.68	0.89	1.00	0.99	0.84	0.66	0.47	0.25	0.00	0.12	0.28	0.63	0.94	1.00	0.94	0.63	0.28	0.12	0.00	0.27	0.50	0.68	0.89	1.00	1.00	0.89	0.68	0.37	0.00
	TOTAL CAMBER	0.00	1.08	1.91	2.52	2.82	2.78	2.36	1.87	1.32	0.70	0.00	0.11	0.28	0.72	1.15	1.24	1.17	0.78	0.34	0.14	0.00	0.69	1.28	1.76	2.29	2.56	2.56	2.28	1.74	0.94	0.00
GIRDER 5	STEEL DL	0.00	-0.13	-0.24	-0.30	-0.34	-0.35	-0.32	-0.25	-0.16	-0.08	0.00	0.02	0.00	-0.01	-0.03	-0.04	-0.04	-0.03	-0.01	0.00	0.00	-0.05	-0.14	-0.20	-0.25	-0.29	-0.29	-0.27	-0.21	-0.11	0.00
	CONCRETE SLAB	0.00	-0.50	-0.89	-1.15	-1.29	-1.30	-1.19	-0.95	-0.59	-0.30	0.00	0.06	0.02	-0.03	-0.10	-0.15	-0.15	-0.12	-0.04	0.01	0.00	-0.18	-0.51	-0.77	-0.94	-1.08	-1.11	-1.01	-0.78	-0.43	0.00
	SUPERIMPOSED DL	0.00	-0.14	-0.24	-0.31	-0.35	-0.35	-0.32	-0.26	-0.16	-0.08	0.00	0.02	0.00	-0.01	-0.03	-0.04	-0.04	-0.03	-0.01	0.00	0.00	-0.05	-0.14	-0.22	-0.26	-0.30	-0.30	-0.27	-0.21	-0.12	0.00
	TOTAL DEFLECTION	0.00	-0.77	-1.37	-1.76	-1.98	-2.00	-1.83	-1.46	-0.91	-0.46	0.00	0.10	0.02	-0.05	-0.16	-0.23	-0.23	-0.18	-0.06	0.01	0.00	-0.28	-0.79	-1.19	-1.45	-1.67	-1.70	-1.55	-1.20	-0.66	0.00
	RESIDUAL CAMBER	0.00	0.39	0.68	0.88	0.99	1.00	0.91	0.73	0.46	0.23	0.00	0.12	0.28	0.63	0.94	1.00	0.94	0.63	0.28	0.12	0.00	0.16	0.46	0.69	0.85	0.98	1.00	0.91	0.70	0.39	0.00
	TOTAL CAMBER	0.00	1.16	2.05	2.64	2.97	3.00	2.74	2.19	1.37	0.69	0.00	0.02	0.26	0.68	1.10	1.23	1.17	0.81	0.34	0.11	0.00	0.44	1.25	1.88	2.30	2.65	2.70	2.46	1.90	1.05	0.00



CAMBER DIAGRAM

DIMENSIONS (FT)			
GIRDER #	A	B	C
1	0.20	0.32	0.26
2	0.14	0.28	0.23
3	0.09	0.26	0.21
4	0.05	0.21	0.19
5	0.02	0.18	0.17



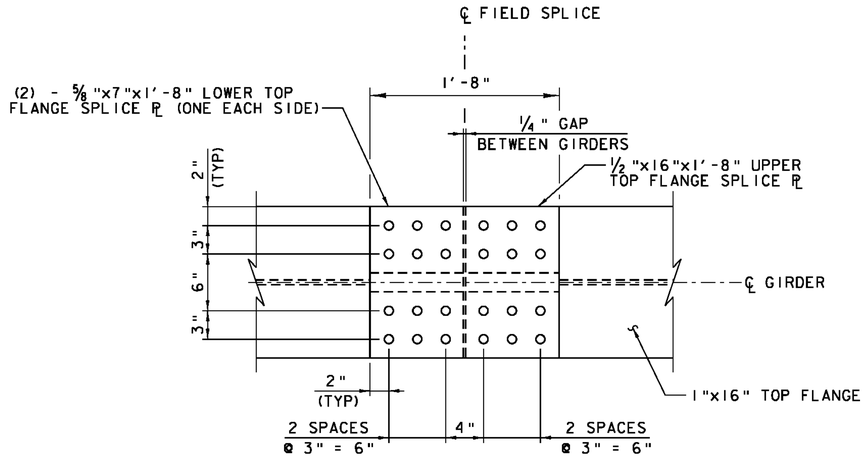
DEFLECTION DIAGRAM

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

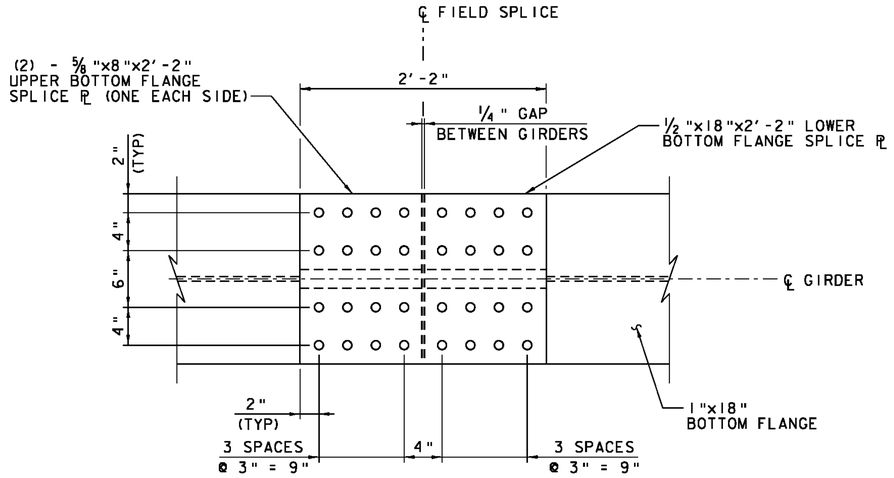
FILE NAME: z08l174sup03.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: G.S. GOODRICH
DEAD LOAD & CAMBER DIAGRAMS

PLOT DATE: 2/15/2012
DRAWN BY: B.J. MASSE
CHECKED BY: S.E. BURBANK
SHEET 40 OF 78



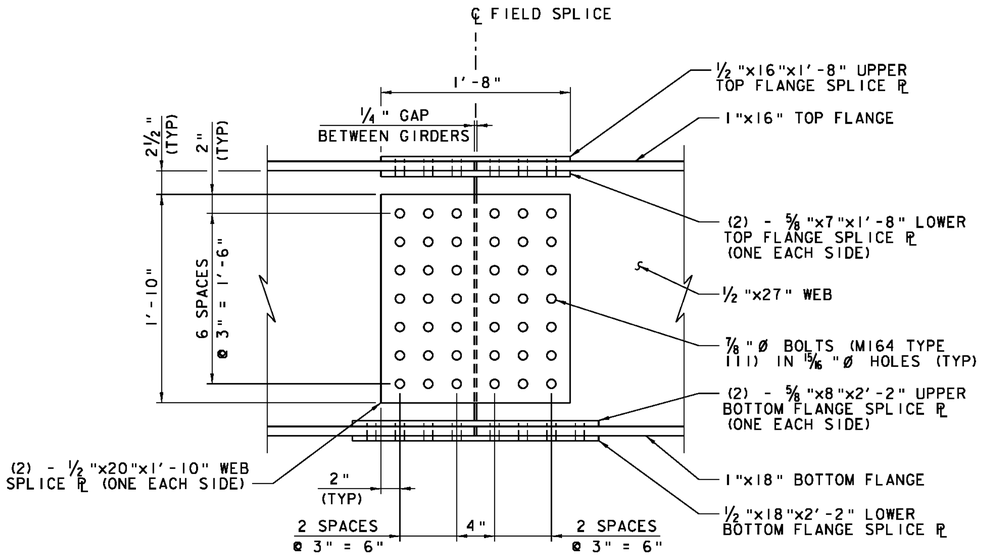
TOP FLANGE PLAN

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



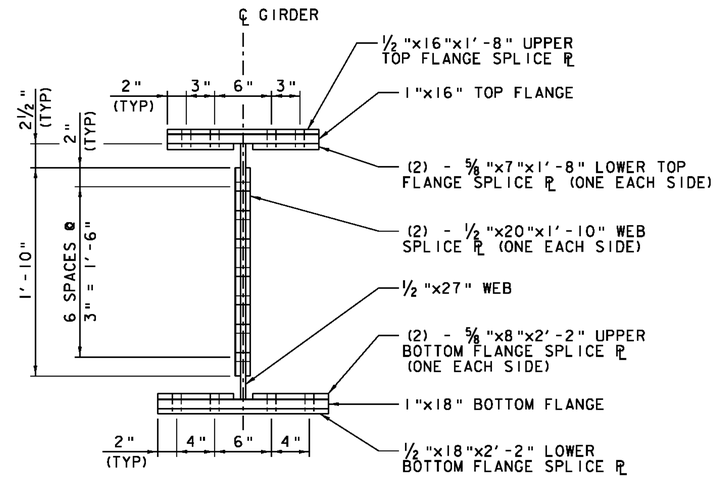
BOTTOM FLANGE PLAN

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



SPLICE ELEVATION

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



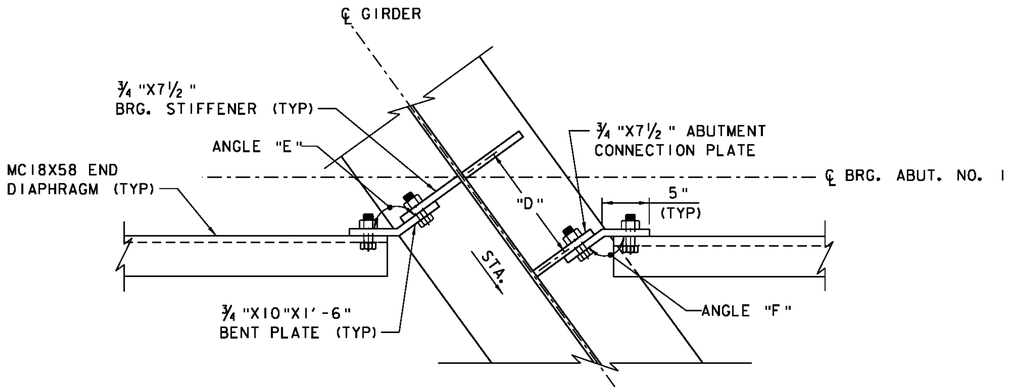
SPLICE SECTION

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

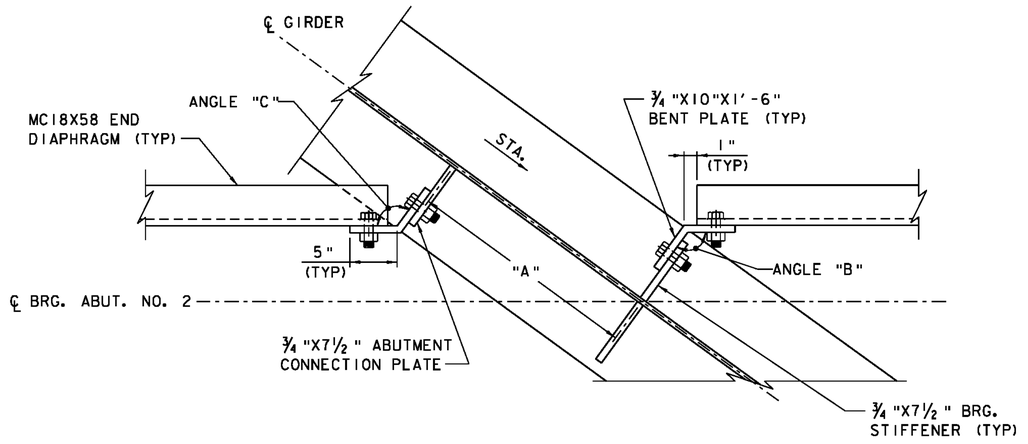
NOTE: ALL SECTIONS OF SPLICE SHALL BE CVN (CHARPY V-NOTCH) TESTED.

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08jl74sup04.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: K.D. WENTWORTH
DESIGNED BY: G.S. GOODRICH	CHECKED BY: M.J. MOZER
FIELD SPLICE DETAILS	SHEET 41 OF 78



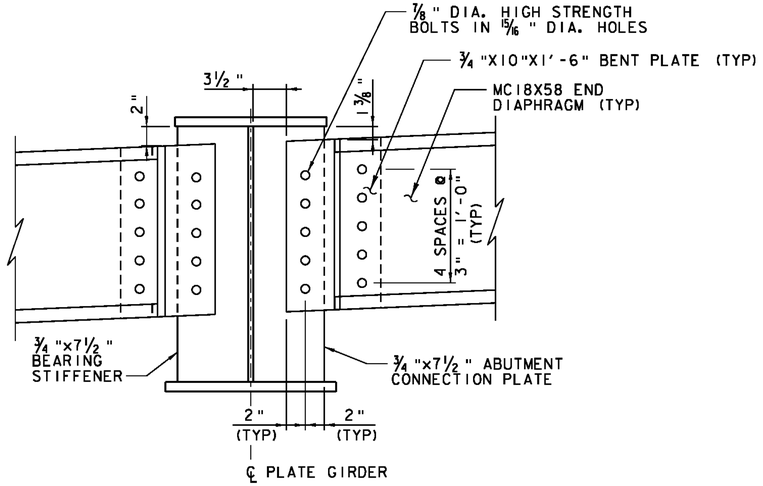
ABUTMENT NO. 1 PARTIAL PLAN
SCALE 1½ " = 1'-0"



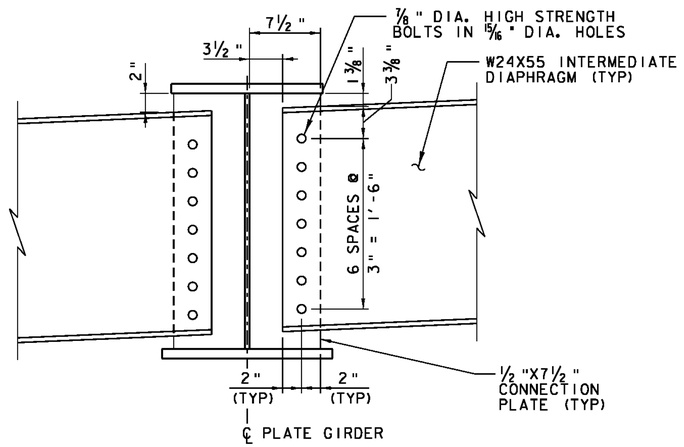
ABUTMENT NO. 2 PARTIAL PLAN
SCALE 1½ " = 1'-0"

ABUTMENT DIMENSIONS

	A	B	C	D	E	F
GIRDER 1	2'-1 11/16 "	-	124°51'04"	-	143°18'10"	-
GIRDER 2	2'-1 1/16 "	125°20'02"	125°27'30"	1'-0 15/16 "	143°39'17"	143°34'11"
GIRDER 3	2'-0 7/16 "	126°00'11"	126°03'34"	1'-0 11/16 "	143°59'49"	143°56'20"
GIRDER 4	1'-11 5/16 "	126°38'05"	126°47'24"	1'-0 5/8 "	144°19'56"	144°14'16"
GIRDER 5	-	127°14'50"	-	1'-0½ "	-	144°34'53"



END DIAPHRAGM CONNECTION
SCALE 1½ " = 1'-0"



INTERMEDIATE DIAPHRAGM CONNECTION
SCALE 1½ " = 1'-0"

NOTE:
1. SEE VAOT STRUCTURES DETAIL SHEET SD-602.00 FOR CONNECTION AND WELDING DETAILS.

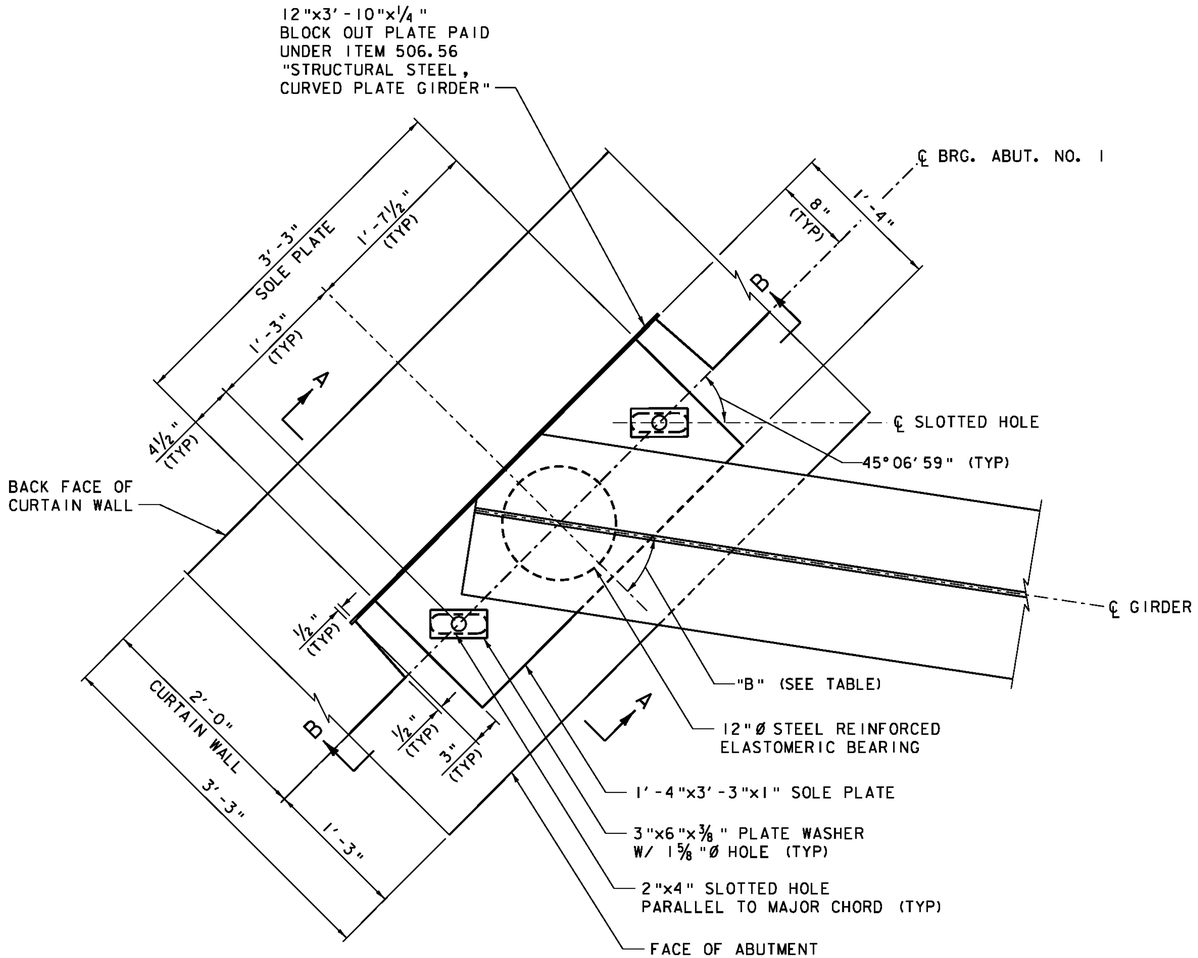
VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08l174sup05.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: G.S. GOODRICH
CONNECTION DETAILS

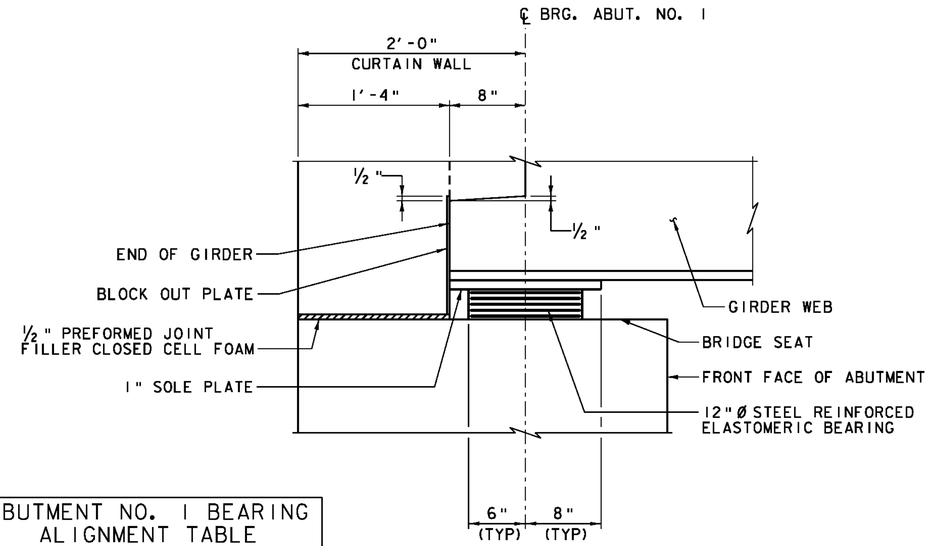
PLOT DATE: 2/15/2012
DRAWN BY: E.A. FIALA
CHECKED BY: S.E. BURBANK
SHEET 42 OF 78

VHB 57325



ABUTMENT NO. 1 EXPANSION BEARING PLAN

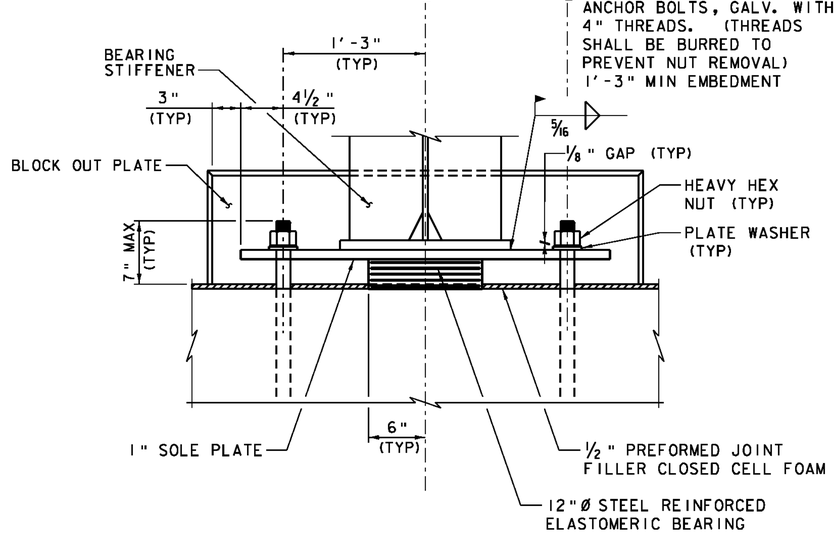
SCALE 1½" = 1'-0"



SECTION A-A

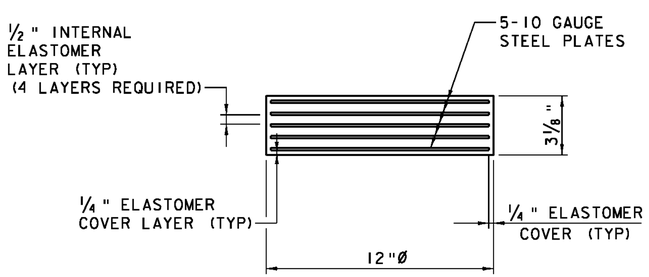
SCALE 1½" = 1'-0"

ABUTMENT NO. 1 BEARING ALIGNMENT TABLE	
GIRDER NO.	ANGLE "B"
1	36°41'41"
2	36°20'43"
3	36°00'11"
4	35°40'04"
5	35°20'21"



SECTION B-B

SCALE 1½" = 1'-0"



ELASTOMERIC BEARING PAD DETAIL

NOT TO SCALE

ALL MATERIALS AND FABRICATION SHALL BE PER SECTION 531 AND SECTION 731.

ALL BEARING DESIGNS SHALL BE PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 5TH EDITION AND IT'S LATEST REVISIONS.

ELASTOMER SHALL BE NEOPRENE OR NATURAL VIRGIN RUBBER.

DESIGN CRITERIA: (AASHTO METHOD "B")

A) TEMPERATURE RANGE: 150°F

B) 60 DUROMETER ELASTOMER, TEMPERATURE GRADE 4
Gmax. = 200 PSI
Gmin. = 130 PSI

C) MAXIMUM BEARING STRESS: 796 PSI

D) DESIGN ROTATION FOR LIVE LOAD: 0.0031 RAD. AT ABUTMENTS

E) MAX REACTION/BEAM:
DEAD LOAD: 32.6 K
LIVE LOAD: 57.5 K

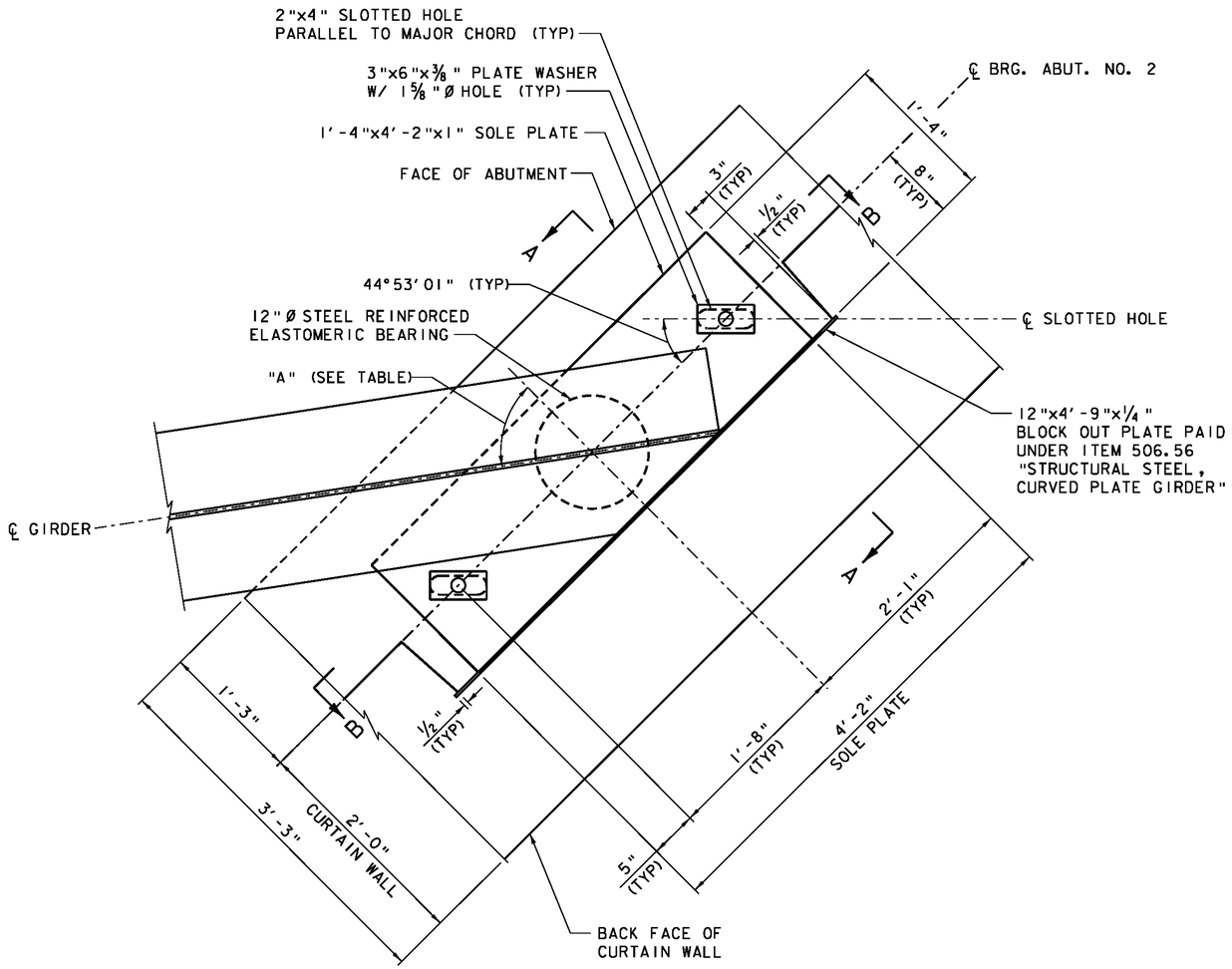
VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD

PROJECT NUMBER: BHF 0177(9)

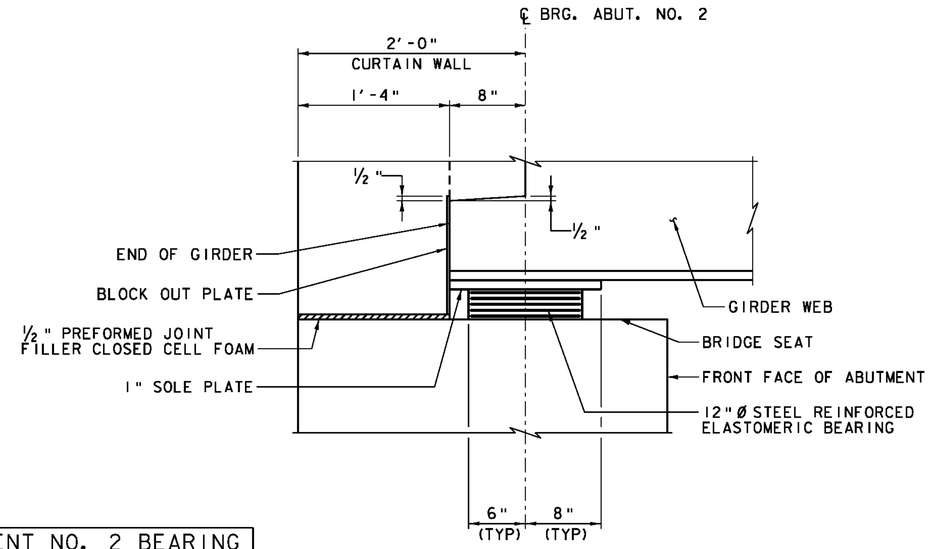
FILE NAME: z08j174brg01.dgn | PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN | DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: G.S. GOODRICH | CHECKED BY: M.J. MOZER
ABUTMENT NO. 1 BEARING DETAILS | SHEET 43 OF 78

VHB 57325



ABUTMENT NO. 2 EXPANSION BEARING PLAN

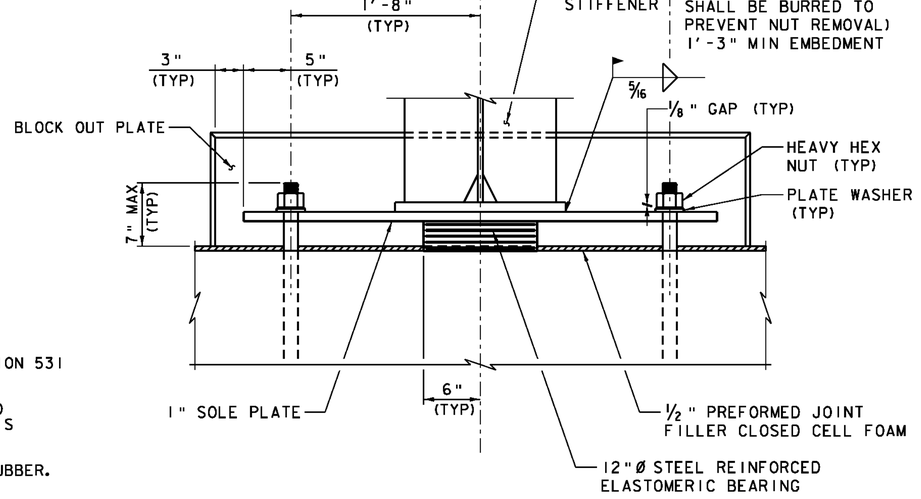
SCALE 1½" = 1'-0"



SECTION A-A

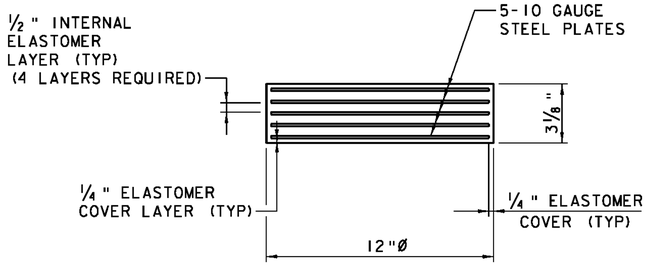
SCALE 1½" = 1'-0"

ABUTMENT NO. 2 BEARING ALIGNMENT TABLE	
GIRDER NO.	ANGLE "A"
1	55°19'22"
2	54°38'56"
3	53°59'49"
4	53°21'55"
5	52°45'10"



SECTION B-B

SCALE 1½" = 1'-0"



ELASTOMERIC
BEARING PAD DETAIL

NOT TO SCALE

ALL MATERIALS AND FABRICATION SHALL BE PER SECTION 531 AND SECTION 731.

ALL BEARING DESIGNS SHALL BE PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 5TH EDITION AND IT'S LATEST REVISIONS.

ELASTOMER SHALL BE NEOPRENE OR NATURAL VIRGIN RUBBER.

DESIGN CRITERIA: (AASHTO METHOD "B")

A) TEMPERATURE RANGE: 150°F

B) 60 DUROMETER ELASTOMER, TEMPERATURE GRADE 4
Gmax. = 200 PSI
Gmin. = 130 PSI

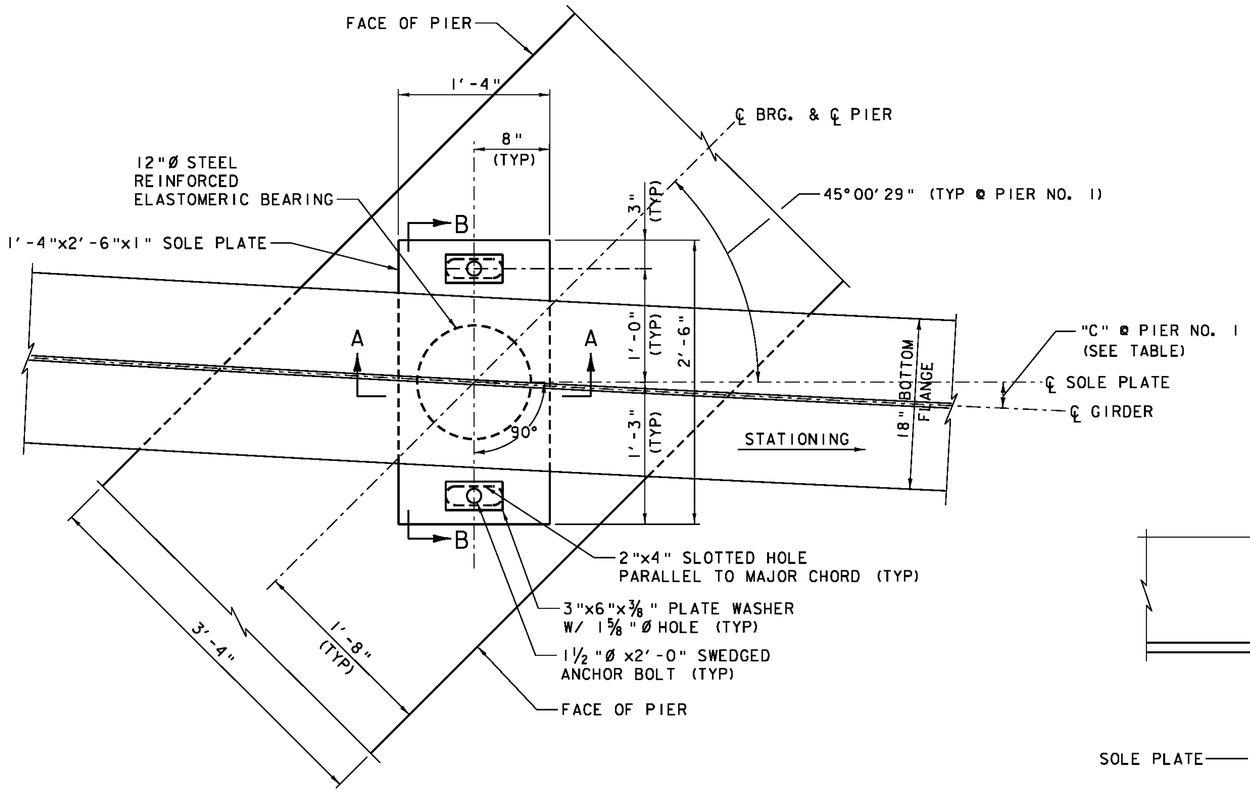
C) MAXIMUM BEARING STRESS: 796 PSI

D) DESIGN ROTATION FOR LIVE LOAD: 0.0031 RAD. AT ABUTMENTS

E) MAX REACTION/BEAM:
DEAD LOAD: 32.6 K
LIVE LOAD: 57.5 K

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHF 0177(9)
FILE NAME: z08j174brg02.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: G.S. GOODRICH	CHECKED BY: M.J. MOZER
ABUTMENT NO. 2 BEARING DETAILS	SHEET 44 OF 78



PIER EXPANSION BEARING PLAN

(PIER NO. 1 SHOWN, PIER NO. 2 SIMILAR EXCEPT AS SHOWN IN SUPPLEMENTAL PIER BEARING PLAN BELOW)

SCALE 1½" = 1'-0"

ALL MATERIALS AND FABRICATION SHALL BE PER SECTION 531 AND SECTION 731.

ALL BEARING DESIGNS SHALL BE PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 5TH EDITION AND IT'S LATEST REVISIONS.

ELASTOMER SHALL BE NEOPRENE OR NATURAL VIRGIN RUBBER.

DESIGN CRITERIA: (AASHTO METHOD "B")

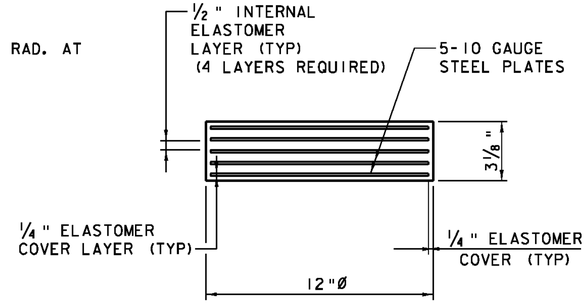
A) TEMPERATURE RANGE: 150°F

B) 60 DUROMETER ELASTOMER, TEMPERATURE GRADE 4
Gmax. = 200 PSI
Gmin. = 130 PSI

C) MAXIMUM BEARING STRESS: 796 PSI

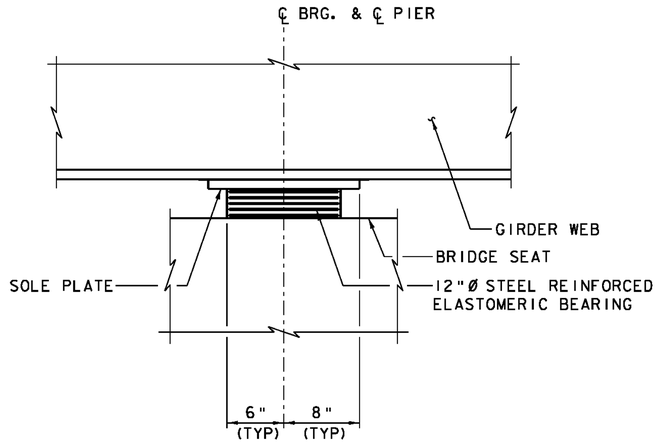
D) DESIGN ROTATION FOR LIVE LOAD: 0.0031 RAD. AT ABUTMENTS

E) MAX REACTION/BEAM:
DEAD LOAD: 32.6 K
LIVE LOAD: 57.5 K



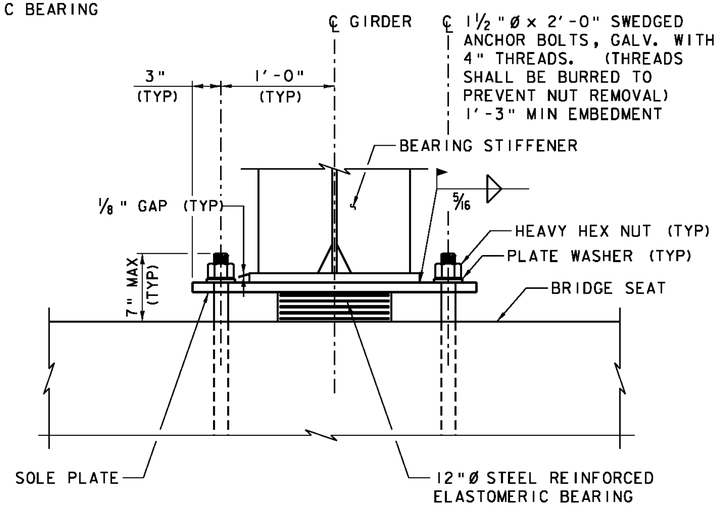
ELASTOMERIC BEARING PAD DETAIL

NOT TO SCALE



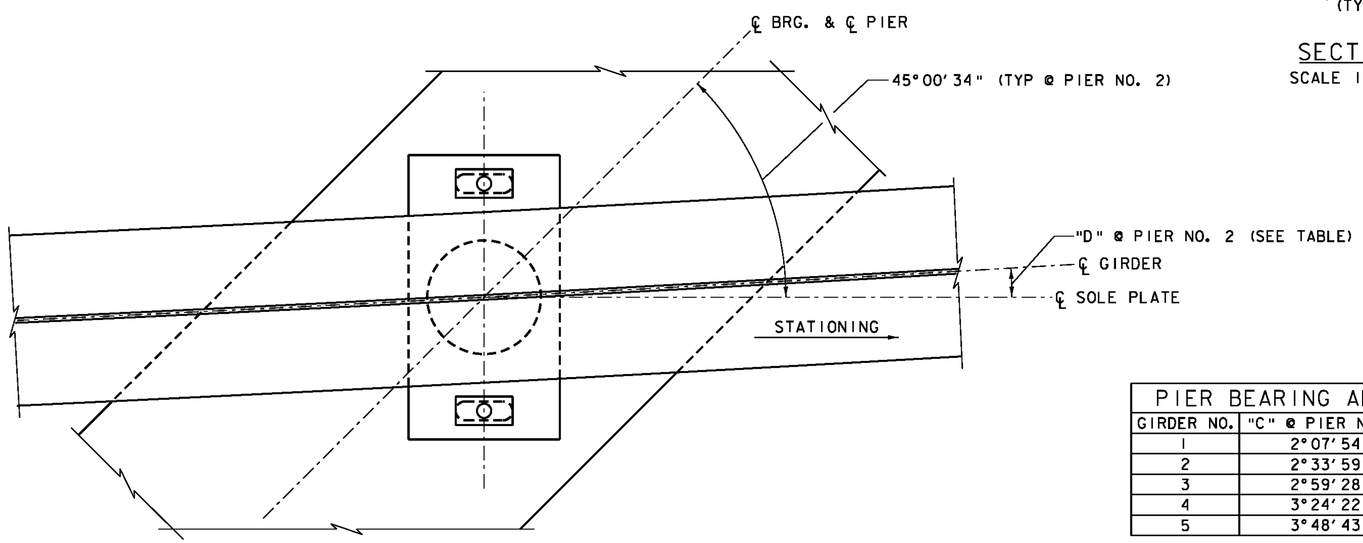
SECTION A-A

SCALE 1½" = 1'-0"



SECTION B-B

SCALE 1½" = 1'-0"



SUPPLEMENTAL PIER EXPANSION BEARING PLAN

(PIER NO. 2 SHOWN)

SCALE 1½" = 1'-0"

PIER BEARING ALIGNMENT TABLE		
GIRDER NO.	"C" @ PIER NO. 1	"D" @ PIER NO. 2
1	2°07'54"	4°04'20"
2	2°33'59"	3°32'00"
3	2°59'28"	3°00'31"
4	3°24'22"	2°29'51"
5	3°48'43"	1°59'58"

VHB Vanasse Hangen Brustlin, Inc.

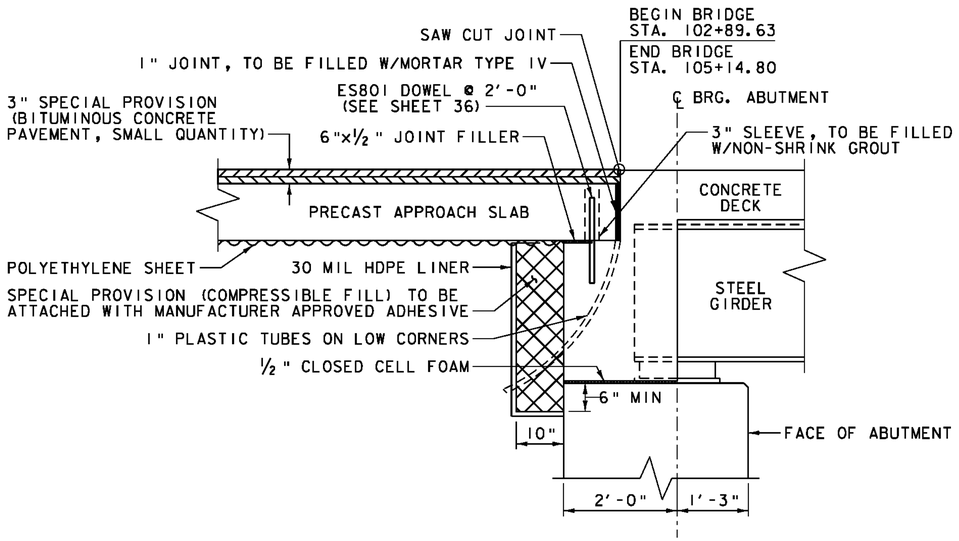
PROJECT NAME: THETFORD

PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174brg03.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: G.S. GOODRICH
PIER BEARING DETAILS

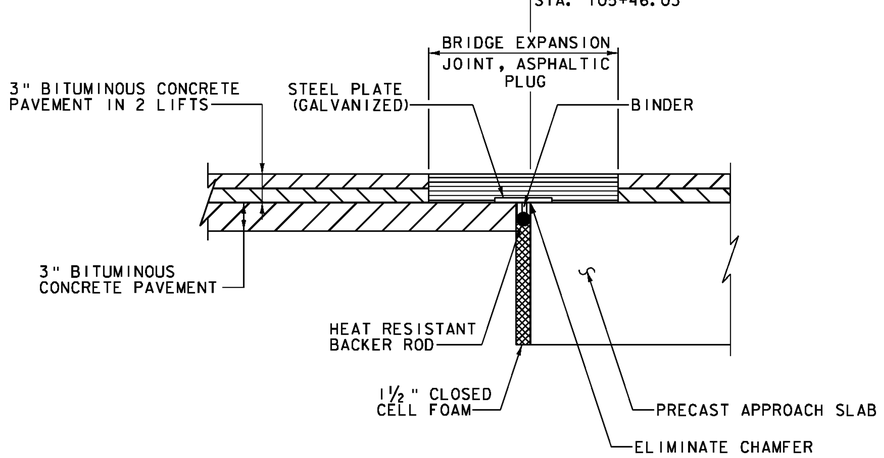
PLOT DATE: 2/15/2012
DRAWN BY: B.M. KLINEFELTER
CHECKED BY: M.J. MOZER
SHEET 45 OF 78

VHB 57325



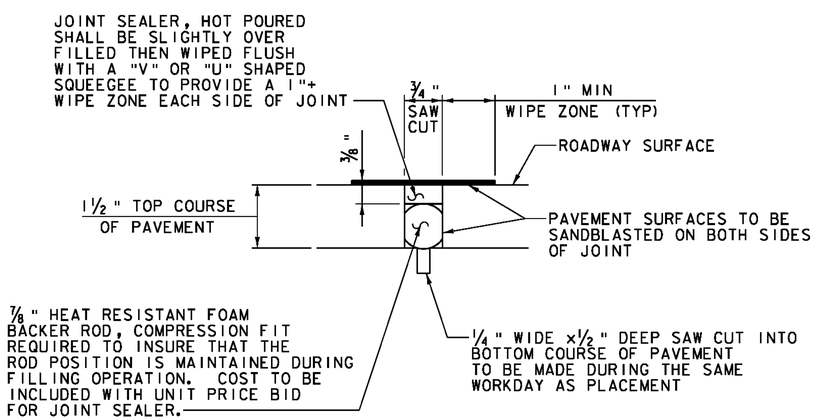
TYPICAL END SECTION

SCALE ¾" = 1'-0"



ASPHALTIC PLUG TYPE JOINT DETAIL

NOT TO SCALE



SAW CUT JOINT DETAIL

NOT TO SCALE

ASPHALTIC PLUG JOINT NOTES

INSTALLATION:

1. PLACE 1½" CLOSED CELL FOAM AGAINST BACK OF PRECAST APPROACH SLAB PRIOR TO BACKFILLING SUBBASE OF GRAVEL.
2. LOCATE THE JOINT CENTRALLY OVER THE END OF APPROACH SLAB EXPANSION GAP, MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.
3. REMOVE THE BITUMINOUS CONCRETE PAVEMENT FULL DEPTH AS SHOWN ON THE PLANS. THE PAVEMENT SHALL BE DRY AND SAW CUT TO THE LIMITS REQUIRED TO PLACE THE JOINT. A PNEUMATIC HAMMER AND CHISEL MAY BE USED ADJACENT TO THE CURB ONLY WHEN SAW CUTTING IS NOT POSSIBLE.
4. BLAST CLEAN THE JOINT AREA OF DEBRIS AND ASPHALT. THOROUGHLY DRY THE JOINT AREA WITH COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.
5. REPAIR MATERIAL GREATER THAN 4 INCHES FROM FINISHED GRADE WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.
6. PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 1" +/- OF BINDER ABOVE THE ROD.
7. HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.
8. PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER. THE STEEL PLATES MAY BE OMITTED WHERE THE ENGINEER DETERMINES THAT THE APPROACH SLAB OR BRIDGE DECK WILL PROVIDE INADEQUATE SUPPORT AND WHERE VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.
9. HEAT AND MIX THE BINDER MATERIAL AND AGGREGATE AS RECOMMENDED BY THE MANUFACTURER.
10. INSTALLATION OF MATERIAL, COMPACTION, AND TOP COATING SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
11. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.
12. ONCE THE JOINT REACHES 82 DEG C (180 DEG F) +/-, WATER MAY BE USED TO EXPEDITE THE COOLING PROCESS.
13. PROTECT JOINT FROM TRAFFIC UNTIL THE MATERIAL HAS COOLED TO 51 DEG C (125 DEG F) +/-.

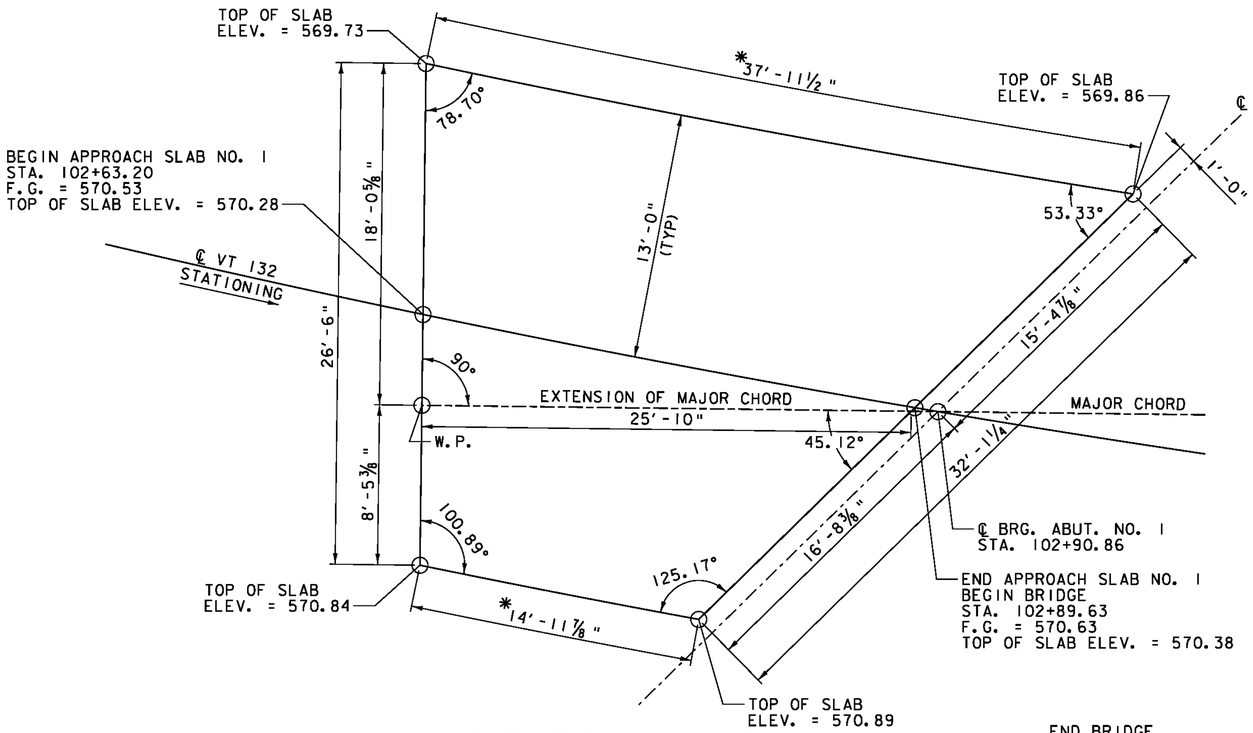
WEATHER LIMITATIONS

APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL OR AS RECOMMENDED BY THE MANUFACTURER:

1. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.
2. THE ROAD SURFACE IS DRY.
3. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174detail.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: G.S. GOODRICH	CHECKED BY: S.E. BURBANK
BRIDGE JOINT DETAILS	SHEET 46 OF 78

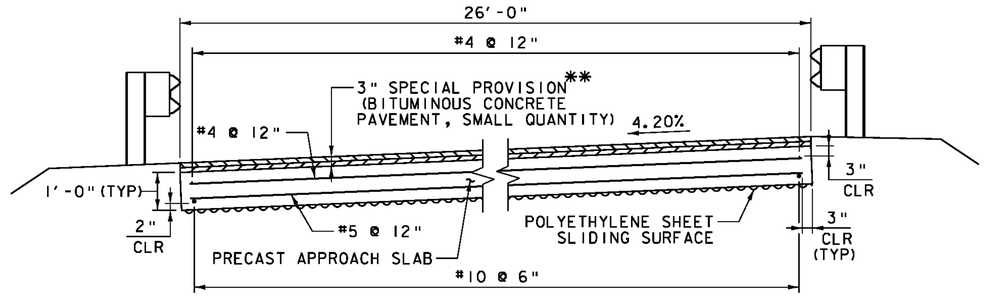
VHB Vanasse Hangen Brustlin, Inc.



* - RADIAL DIMENSION

APPROACH SLAB NO. 1 LAYOUT

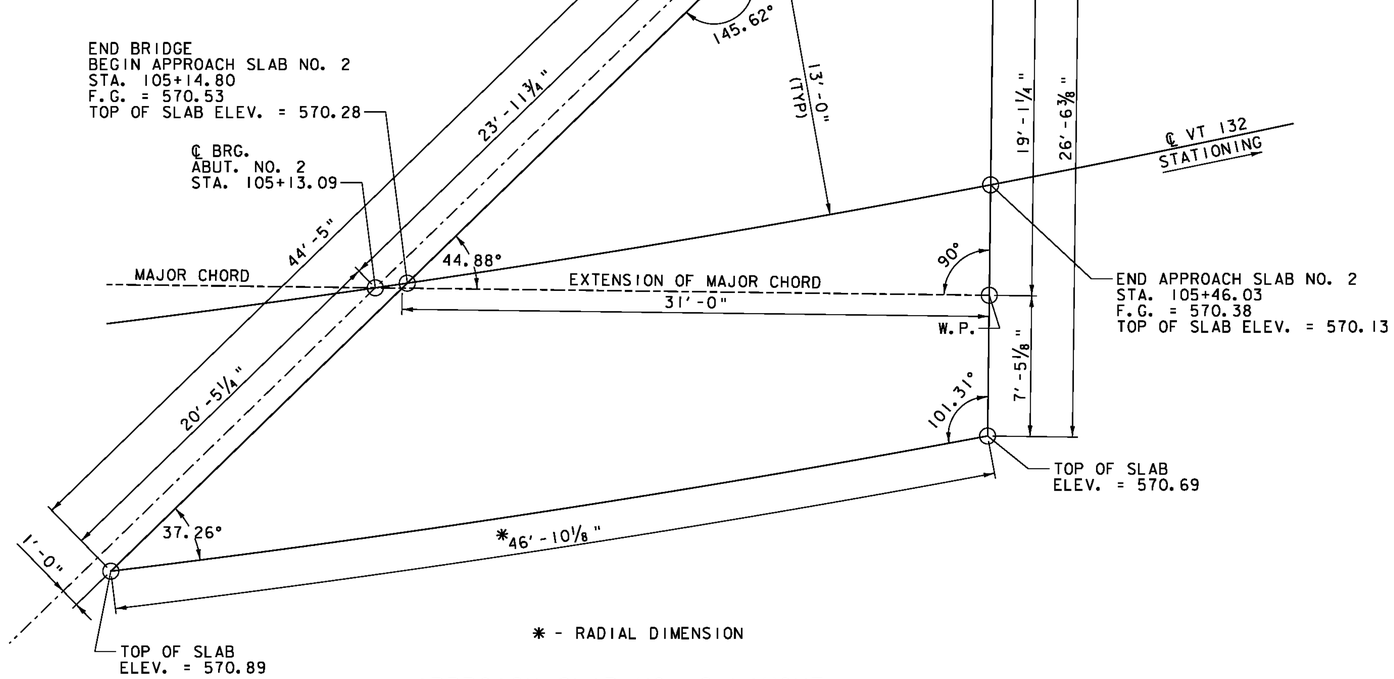
SCALE ¼" = 1'-0"



**- 2 - 1½" LIFTS OF TYPE IVS

APPROACH SLAB TYPICAL SECTION

NOT TO SCALE



* - RADIAL DIMENSION

APPROACH SLAB NO. 2 LAYOUT

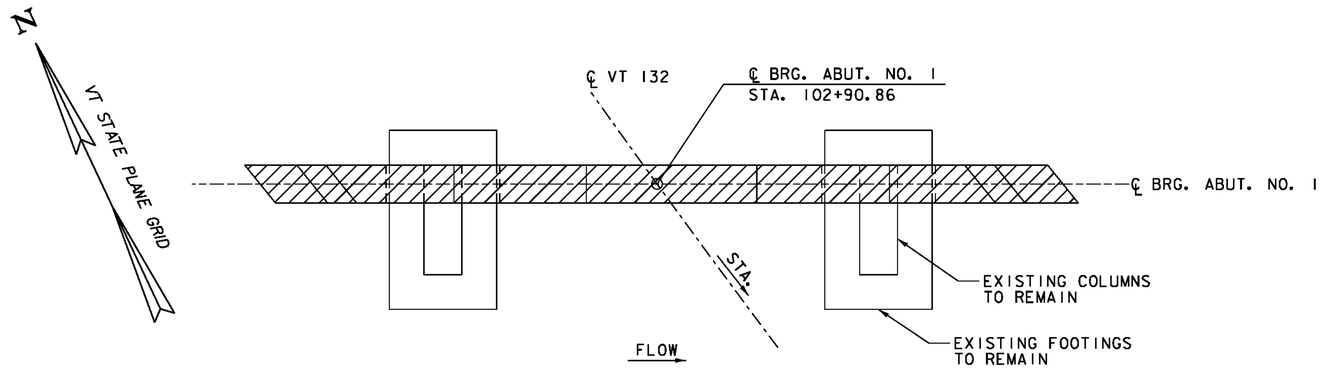
SCALE ¼" = 1'-0"

NOTES:

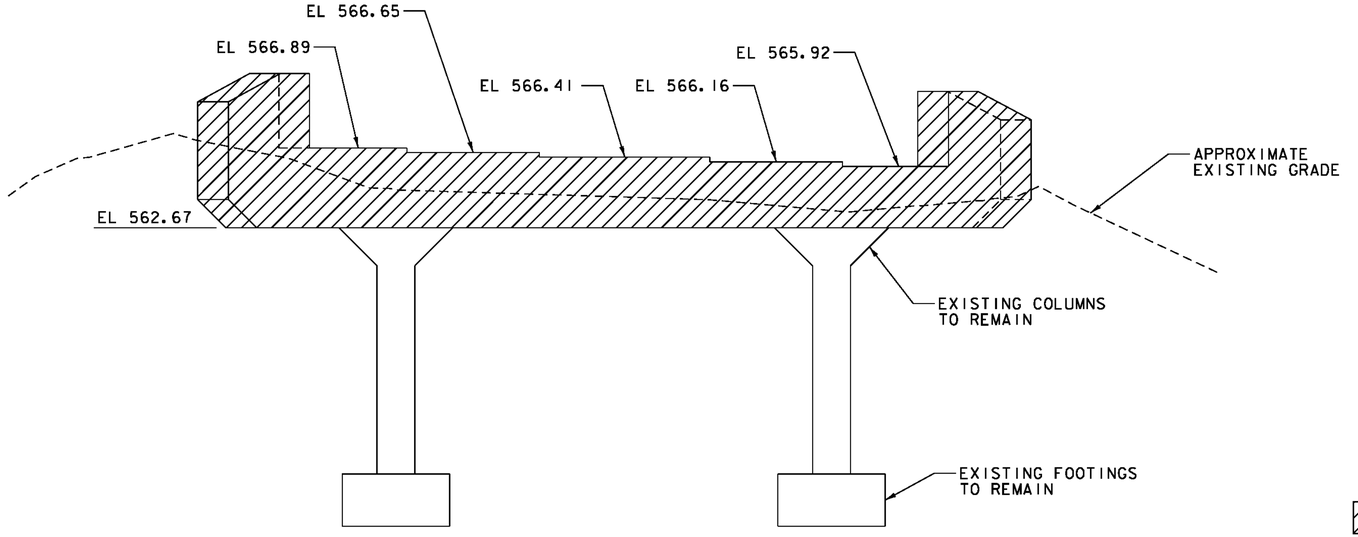
1. THE APPROACH SLABS SHALL BE PRECAST CONCRETE.
2. THE CONNECTION DETAIL TO THE CAST-IN-PLACE APPROACH SLAB BRACKET (SEE CURTAIN WALL SECTION A-A ON SHEET 37) SHALL BE COORDINATED BETWEEN THE FABRICATOR AND THE CONTRACTOR. THE DETAILS SHALL BE SHOWN ON THE FABRICATION DRAWINGS.
3. LOCATION OF THE CONSTRUCTION JOINTS NEEDED FOR SHIPMENT OF THE APPROACH SLABS SHALL BE DETERMINED BY THE FABRICATOR(S). A MAXIMUM OF THREE LONGITUDINAL JOINTS ARE ALLOWED AND SHALL BE DESIGNED TO PROVIDE ADEQUATE SHEAR RESISTANCE. THE CONNECTION DETAILS SHALL BE SHOWN ON THE FABRICATION DRAWINGS.
4. NO TRANSVERSE JOINTS ARE ALLOWED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING UNIFORM CONTACT BETWEEN THE APPROACH SLABS AND THE SUBBASE MATERIAL TO THE SATISFACTION OF THE ENGINEER. THE FABRICATION DRAWINGS SHALL INDICATE THE MEANS AND METHODS NECESSARY TO INSTALL THE APPROACH SLABS TO THE ELEVATIONS SPECIFIED.
6. A 10 MIL POLYETHYLENE SHEET SHALL BE PLACED UNDER THE SLAB TO ALLOW FOR SLIDING.
7. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING APPROACH SLABS TO RESIST LIFTING STRESSES. INSTALLATION SEQUENCE AND LIFTING PLAN SHALL BE SHOWN ON THE WORKING DRAWINGS.
8. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
9. PAYMENT FOR THE APPROACH SLABS, POLYETHYLENE SHEET, ALL LABOR, TOOLS, AND MATERIALS NEEDED FOR PLACEMENT SHALL BE INCLUDED UNDER ITEM 540.10 "PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 1)" AND "PRECAST CONCRETE STRUCTURE (APPROACH SLAB NO. 2)".

VHB *Vanasse Hangen Brustlin, Inc.*

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174slab.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: G.S. GOODRICH	CHECKED BY: S.E. BURBANK
PRECAST APPROACH SLAB LAYOUT	SHEET 47 OF 78



ABUTMENT NO. 1 PLAN
SCALE 1/4" = 1'-0"



ABUTMENT NO. 1 ELEVATION
SCALE 1/4" = 1'-0"

LEGEND

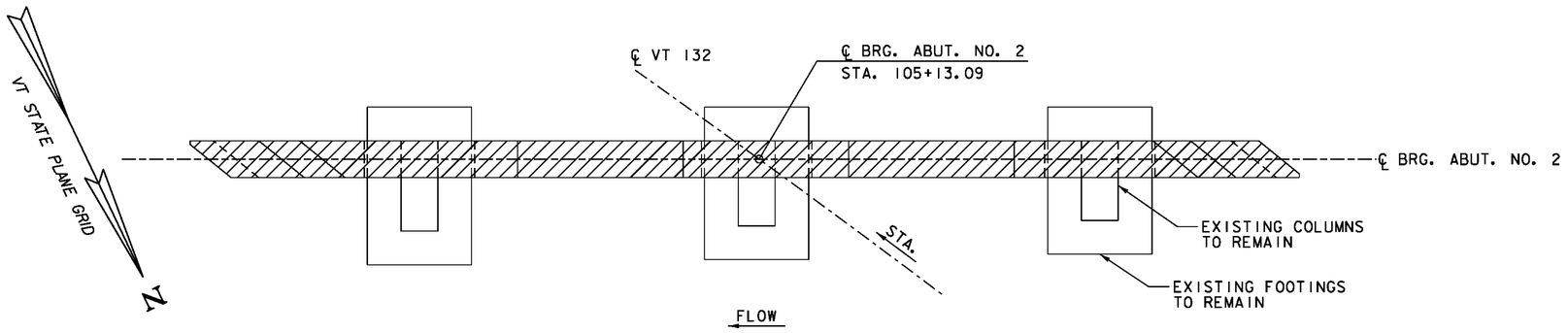
DENOTES LIMIT OF REMOVAL

NOTES:

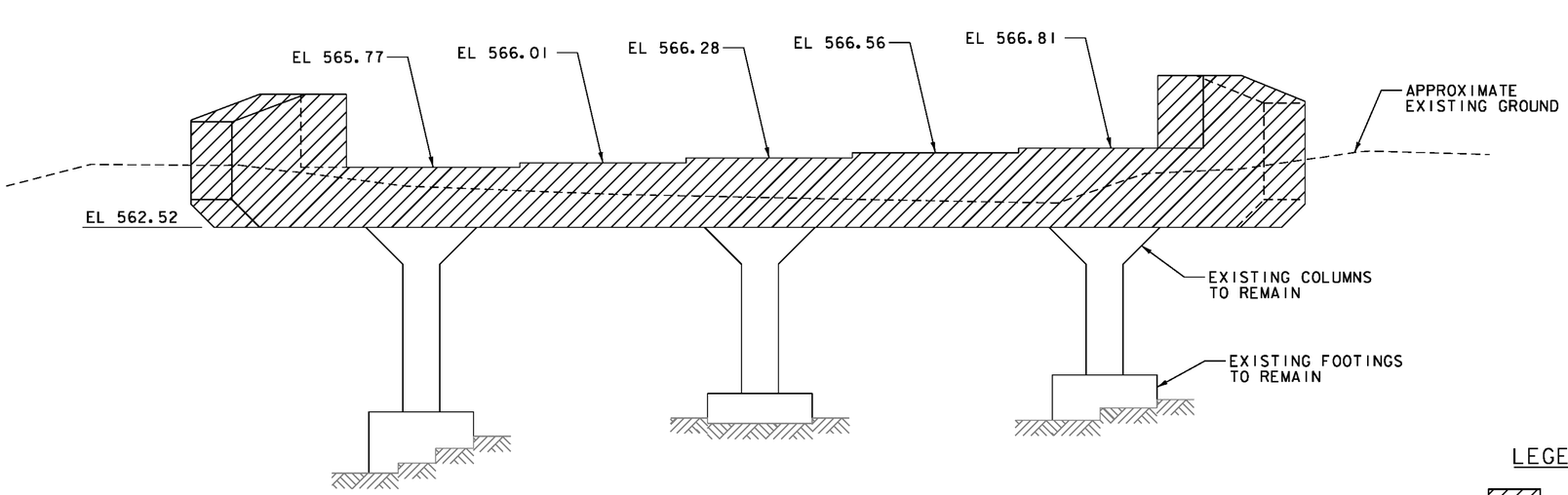
1. SEE SHEET 32 FOR REMOVAL AND REPAIR NOTES.
2. EXISTING STRUCTURE AND ELEVATIONS SHOWN.

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08l174sub_abut_1.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: G.S. GOODRICH
ABUTMENT NO.1 REMOVAL PLAN	SHEET 48 OF 78



ABUTMENT NO. 2 PLAN
SCALE 1/4" = 1'-0"



ABUTMENT NO. 2 ELEVATION
SCALE 1/4" = 1'-0"

LEGEND

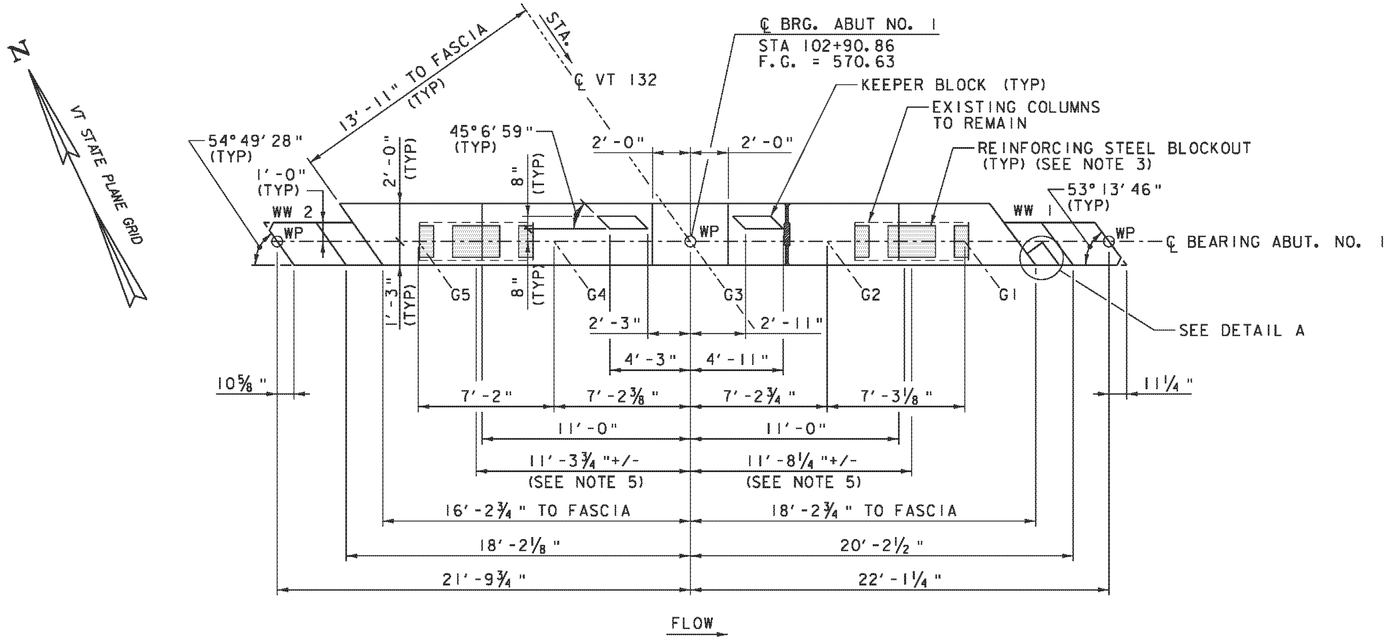
DENOTES LIMIT OF REMOVAL

NOTES:

1. SEE SHEET 32 FOR REMOVAL AND REPAIR NOTES.
2. EXISTING STRUCTURE AND ELEVATIONS SHOWN.

Vanasse Hangen Brustlin, Inc.

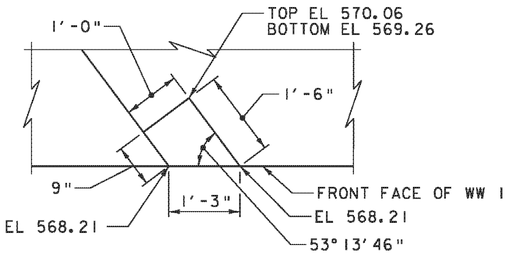
PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174sub_abut_2.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: G.S. GOODRICH
ABUTMENT NO. 2 REMOVAL PLAN	SHEET 49 OF 78



PRECAST ABUTMENT NO. 1 PLAN

SCALE ¼" = 1'-0"

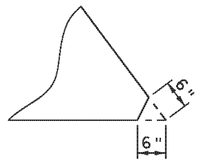
BLOCKOUT FOR GROUTED REINFORCING STEEL CONNECTION TO EXISTING ABUTMENT COLUMNS.



DETAIL A

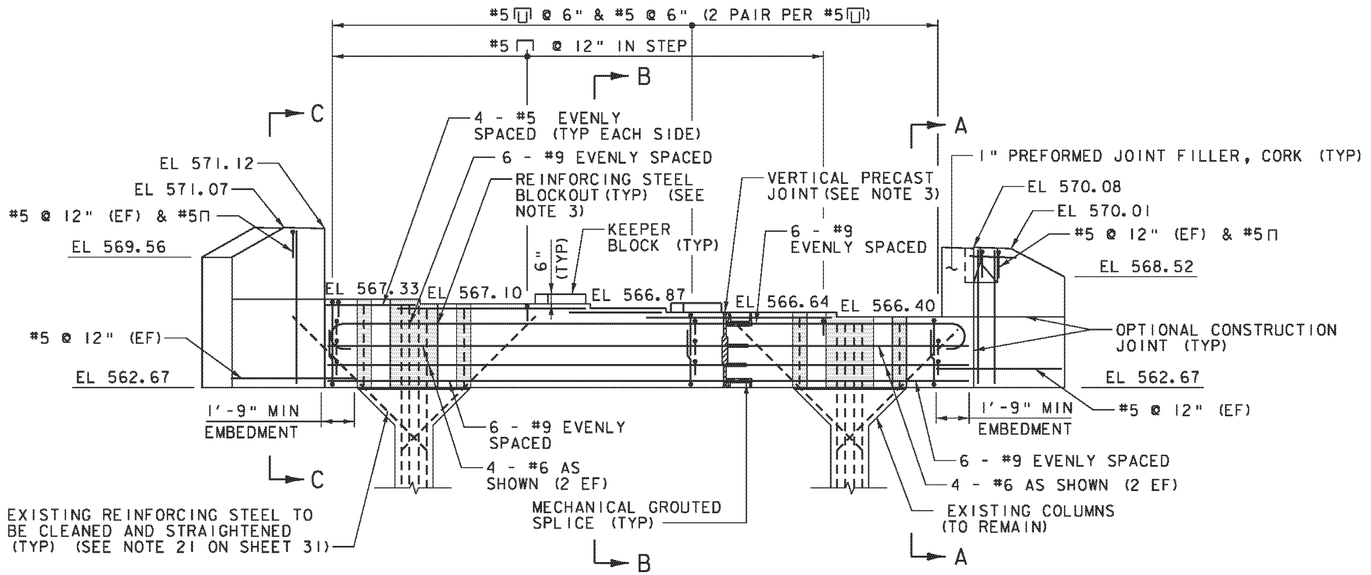
SCALE ¾" = 1'-0"

NOTE: ALL ANGLES FOR BIDGE RAIL POST BLOCKOUT ARE 90° UNLESS NOTED OTHERWISE.



ABUTMENT ACUTE ANGLE CLIP DETAIL

NOT TO SCALE



PRECAST ABUTMENT NO. 1 ELEVATION

SCALE ¼" = 1'-0"

NOTE:

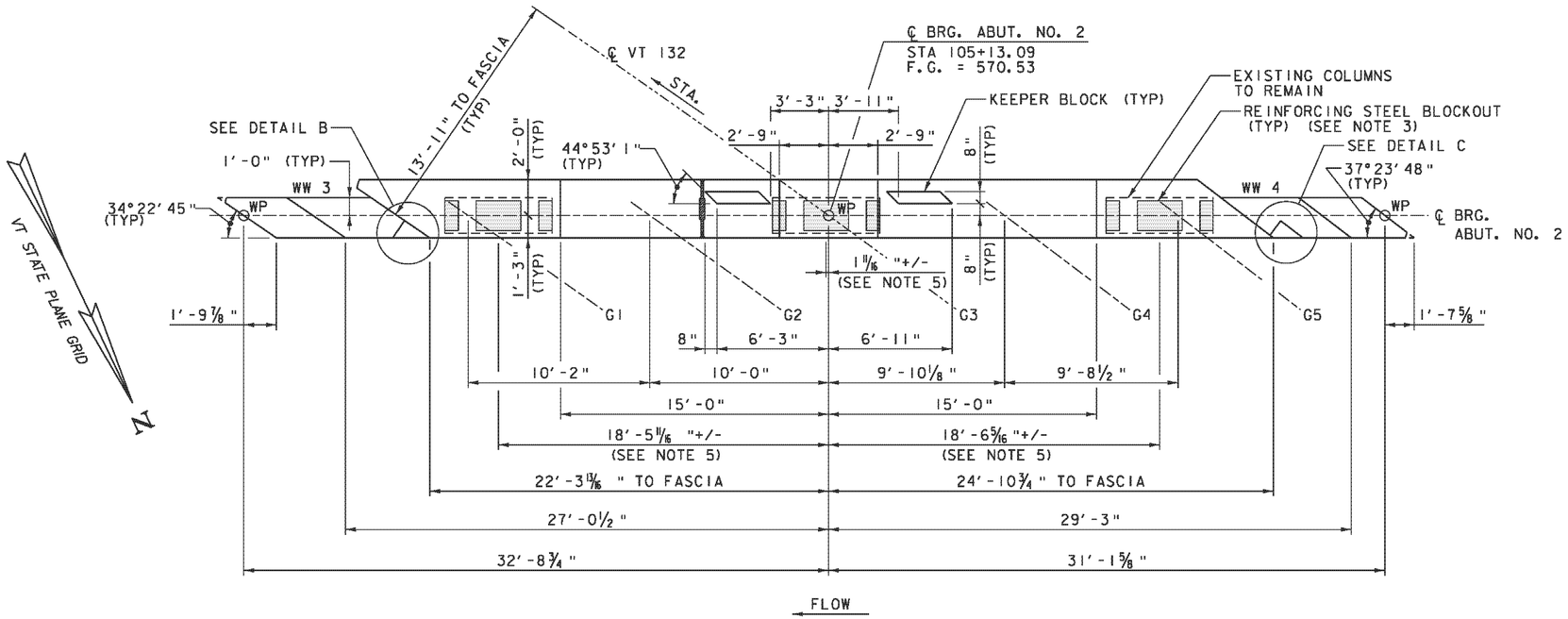
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

ABUTMENT NO. 1 NOTES:

1. ALL ELEVATIONS AND DIMENSIONS SHOWN ARE AT THE FRONT FACE OF THE ABUTMENT.
2. SEE SHEET 52 FOR SECTIONS A-A, B-B, AND C-C.
3. SEE SHEET 53 FOR ADDITIONAL PRECAST DETAILS.
4. SEE SHEET 31 FOR PRECAST ABUTMENT NOTES AND ABUTMENT REINFORCING NOTES.
5. DIMENSIONS TO EXISTING COLUMNS ARE BASED ON EXISTING PLAN DIMENSIONS, ACTUAL DIMENSIONS MAY VARY. PRIOR TO PRECAST CAP FABRICATION CONTRACTOR SHALL VERIFY ACTUAL DIMENSIONS IN THE FIELD TO ENSURE PROPER FIT-UP BETWEEN EXISTING COLUMNS AND NEW PRECAST ABUTMENT CAP.

VHB Vanasse Hangen Brustlin, Inc.

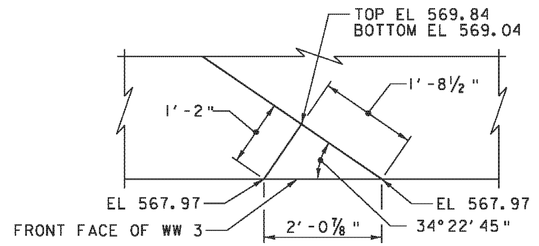
PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174sub_abut_1.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: G.S. GOODRICH	CHECKED BY: S.E. BURBANK
ABUTMENT NO. 1 DETAILS	SHEET 50 OF 78



PRECAST ABUTMENT NO. 2 PLAN

SCALE 1/4" = 1'-0"

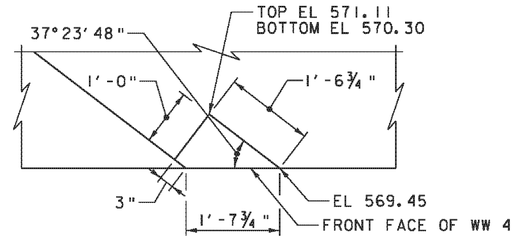
BLOCKOUT FOR GROUTED REINFORCING STEEL CONNECTION TO EXISTING ABUTMENT COLUMNS.



DETAIL B

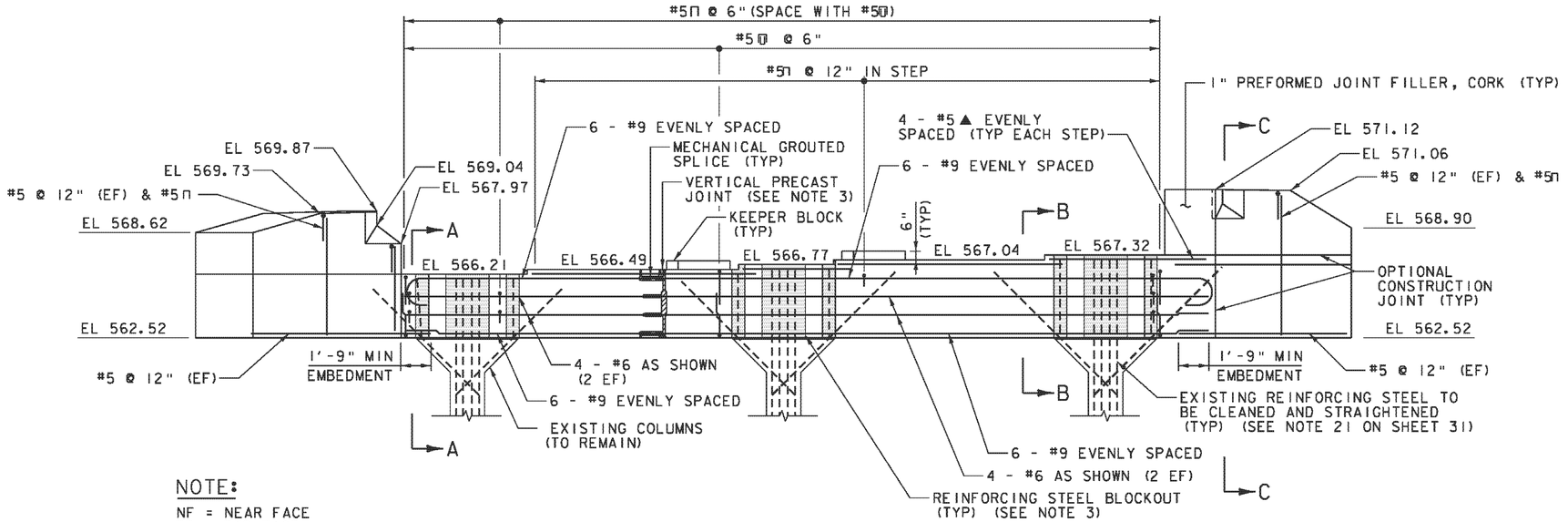
SCALE 3/4" = 1'-0"

NOTE: ALL ANGLES FOR BRIDGE RAIL POST BLOCKOUTS ARE 90° UNLESS NOTED OTHERWISE.



DETAIL C

SCALE 3/4" = 1'-0"

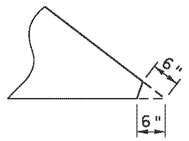


NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PRECAST ABUTMENT NO. 2 ELEVATION

SCALE 1/4" = 1'-0"



ABUTMENT ACUTE ANGLE CLIP DETAIL

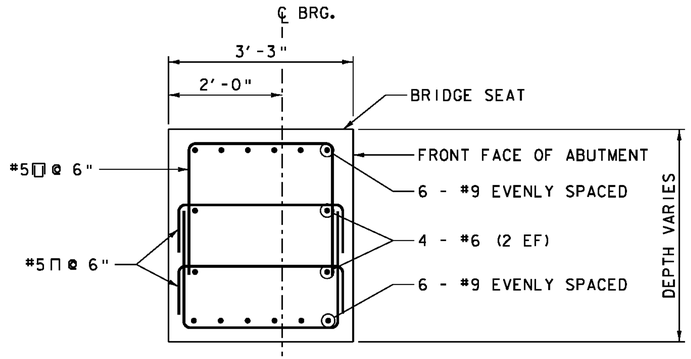
NOT TO SCALE

ABUTMENT NO. 2 NOTES:

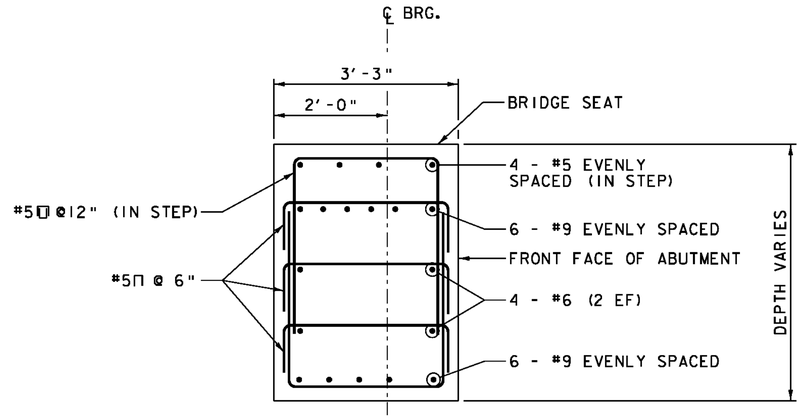
1. ALL ELEVATIONS AND DIMENSIONS SHOWN ARE AT THE FRONT FACE OF THE ABUTMENT.
2. SEE SHEET 52 FOR SECTIONS A-A, B-B, AND C-C.
3. SEE SHEET 53 FOR ADDITIONAL PRECAST DETAILS.
4. SEE SHEET 31 FOR PRECAST ABUTMENT NOTES AND ABUTMENT REINFORCING NOTES.
5. DIMENSIONS TO EXISTING COLUMNS ARE BASED ON EXISTING PLAN DIMENSIONS, ACTUAL DIMENSIONS MAY VARY. PRIOR TO PRECAST CAP FABRICATION CONTRACTOR SHALL VERIFY ACTUAL DIMENSIONS IN THE FIELD TO ENSURE PROPER FIT-UP BETWEEN EXISTING COLUMNS AND NEW PRECAST ABUTMENT CAP.

VHB Vanasse Hangen Brustlin, Inc.

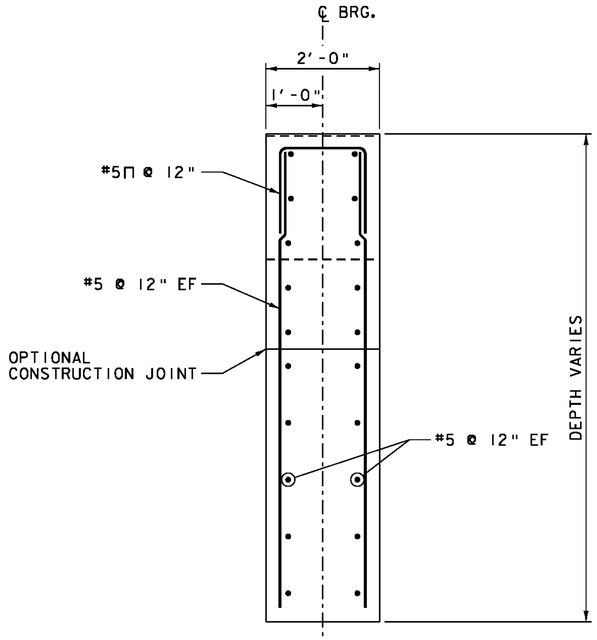
PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHF 0177(9)
FILE NAME: z08J174sub_abut_2.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: G.S. GOODRICH	CHECKED BY: S.E. BURBANK
ABUTMENT NO. 2 DETAILS	SHEET 51 OF 78



SECTION A-A



SECTION B-B



SECTION C-C

PRECAST ABUTMENT SECTIONS

SCALE 3/4" = 1'-0"

NOTE:

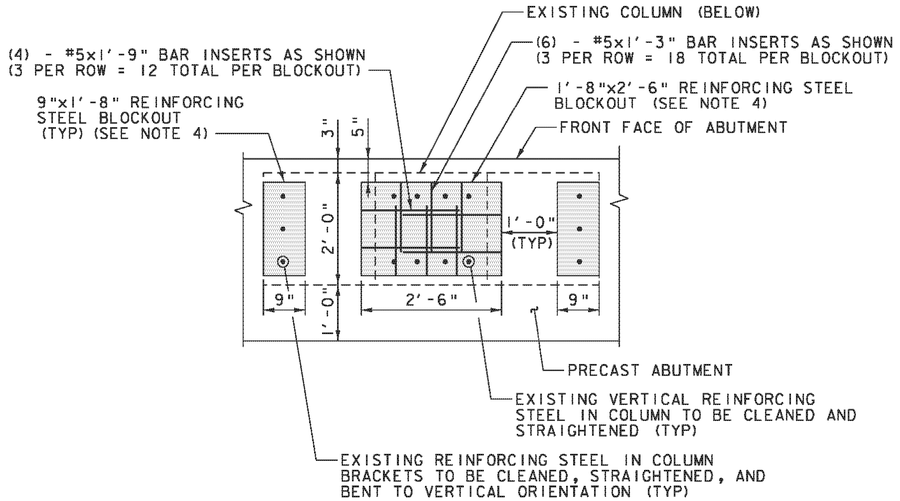
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

NOTES:

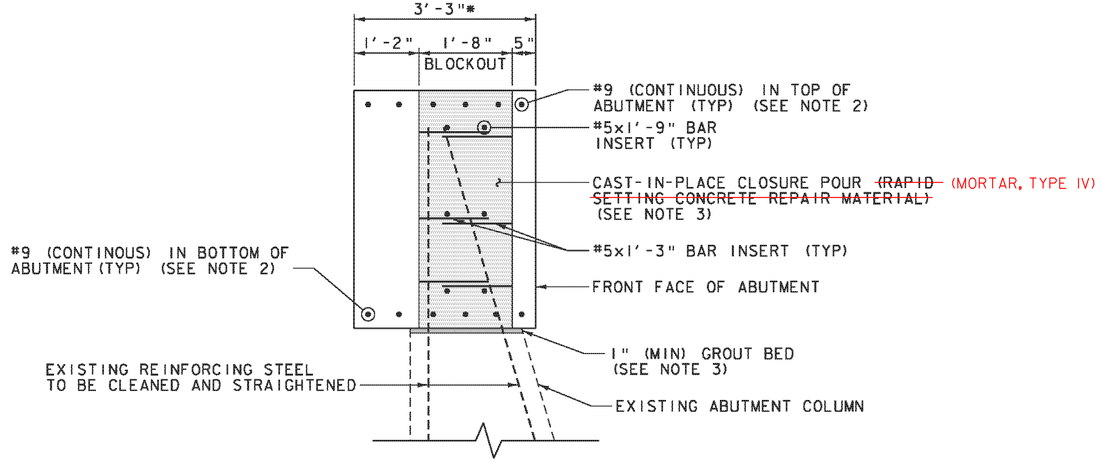
1. SEE SHEET 53 FOR ADDITIONAL PRECAST DETAILS.
2. SEE SHEET 31 FOR PRECAST ABUTMENT NOTES AND ABUTMENT REINFORCING NOTES.

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174sub_abut_2.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: G.S. GOODRICH	CHECKED BY: S.E. BURBANK
ABUTMENT SECTIONS	SHEET 52 OF 78



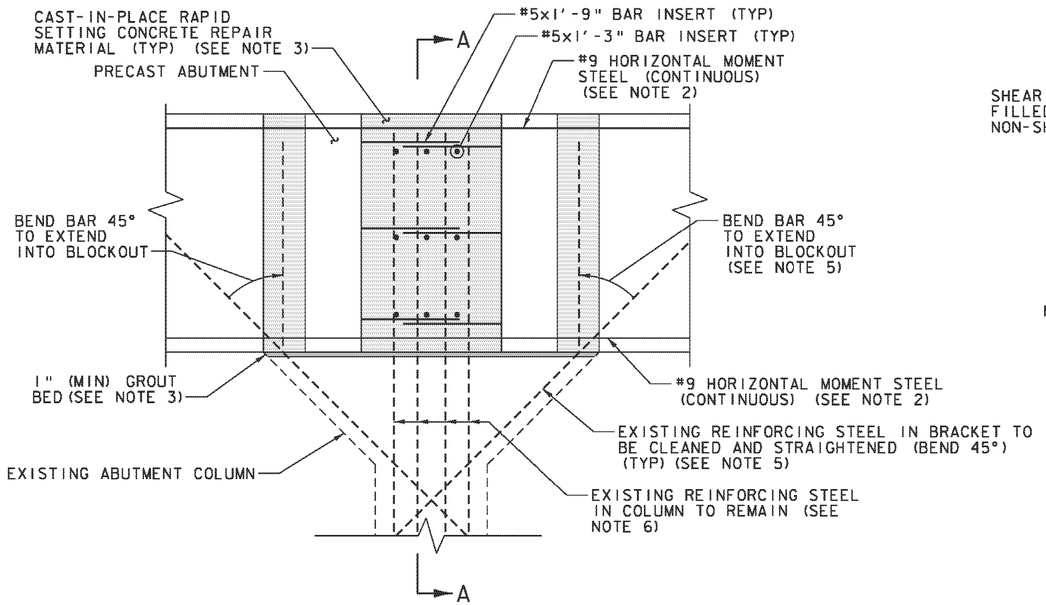
PLAN VIEW
SCALE 3/4" = 1'-0"



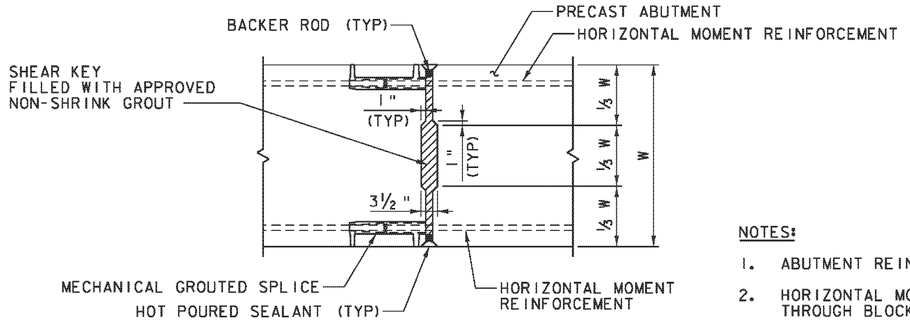
* = PRECAST ABUTMENT CAP IS 3" WIDER THAN CAST-IN-PLACE CAP TO ALLOW FOR ADDITIONAL CAP THICKNESS IN FRONT OF THE BLOCKOUT.

BLOCKOUT FOR GROUTED REINFORCING STEEL CONNECTION TO EXISTING ABUTMENT COLUMNS.

SECTION A-A
SCALE 3/4" = 1'-0"



ELEVATION VIEW
SCALE 3/4" = 1'-0"



NOTE: VERTICAL JOINT PLAN VIEW SIMILAR.

VERTICAL PRECAST JOINT
ELEVATION VIEW
SCALE 3/4" = 1'-0"

THIS DETAIL WAS NOT USED. THE PRECAST ABUTMENT WAS DELIVERED IN ONE PIECE.

ABUTMENT REINFORCING STEEL BLOCKOUT DETAILS

NOTES:

1. ABUTMENT REINFORCEMENT NOT SHOWN FOR CLARITY.
2. HORIZONTAL MOMENT REINFORCEMENT SHALL EXTEND THROUGH BLOCKOUTS.
3. SEE SHEET 31 FOR ADDITIONAL PRECAST ABUTMENT AND REINFORCING NOTES.
4. PRIOR TO PRECAST CAP FABRICATION CONTRACTOR SHALL VERIFY ACTUAL LOCATION OF EXISTING COLUMN BASED ON FIELD MEASUREMENTS TO ENSURE PROPER FIT-UP BETWEEN EXISTING COLUMNS AND NEW PRECAST ABUTMENT CAP.
5. SEE SHEET 32 FOR BENDING REQUIREMENTS OF EXISTING DIAGONAL REINFORCING STEEL.
6. THE EXISTING REINFORCING STEEL PROTRUDING FROM THE EXISTING ABUTMENT COLUMN SHALL BE CLEANED AND REMAIN IN ITS ORIGINAL POSITION, THE EXISTING REINFORCING STEEL SHALL NOT BE TIED AND/OR BUNDLED TOGETHER. IF THE EXISTING REINFORCING STEEL IS BENT DURING THE REMOVAL OF THE EXISTING ABUTMENT IT SHALL BE REALIGNED TO ITS ORIGINAL POSITION OR TO A POSTION AS DIRECTED BY THE ENGINEER.

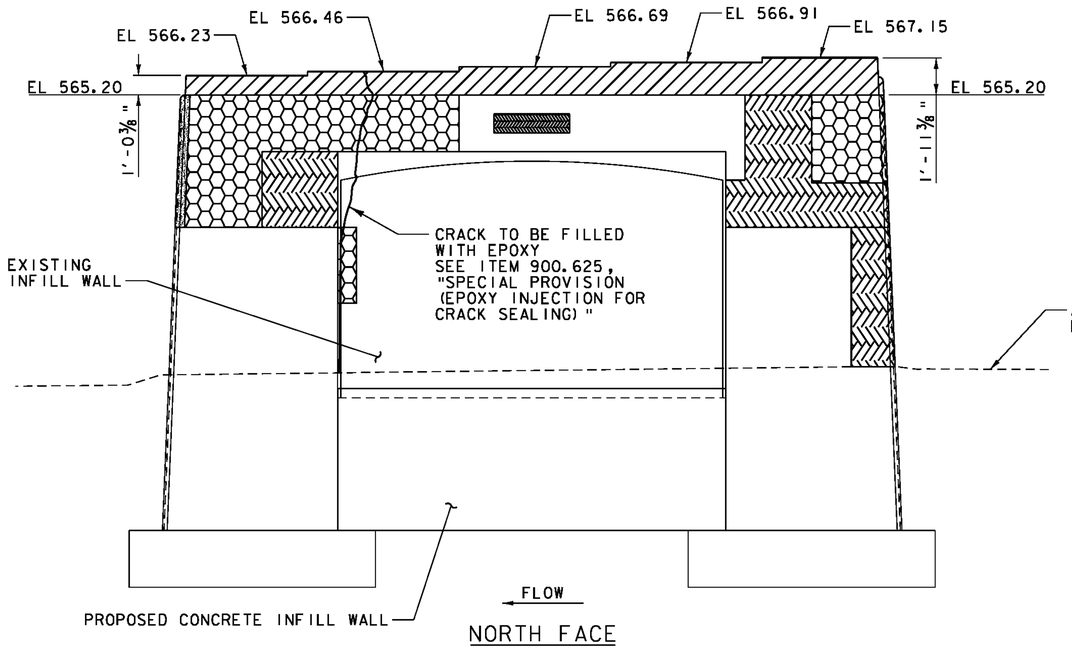
VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

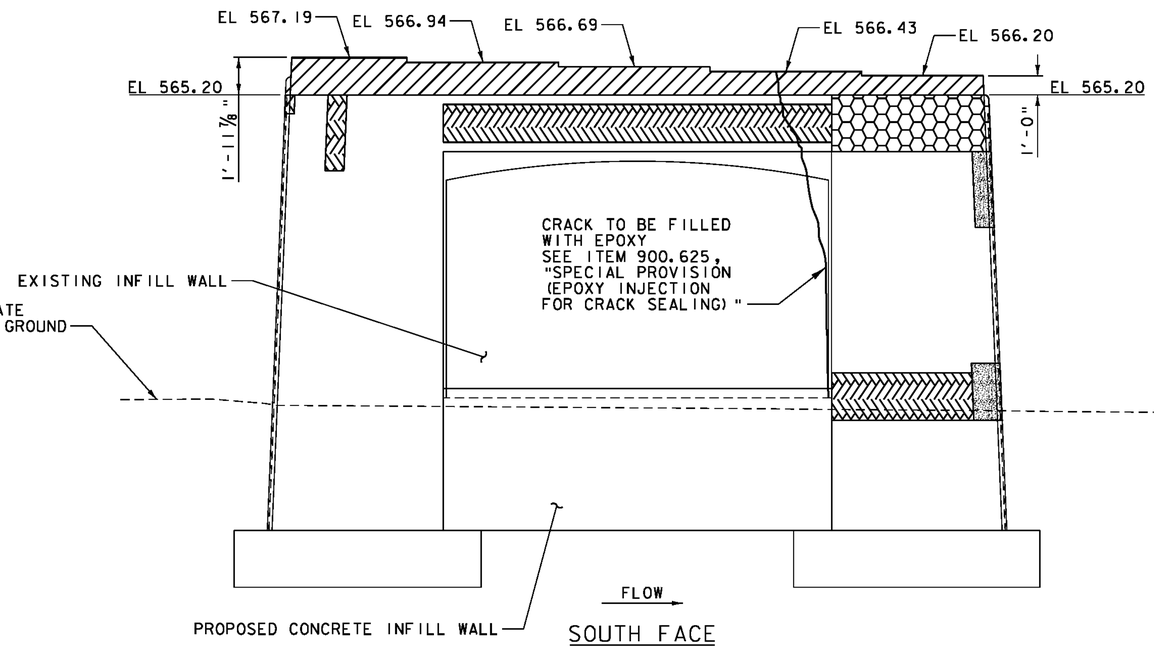
FILE NAME: z08jl74precast.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: G.S. GOODRICH
PRECAST ABUTMENT DETAILS

PLOT DATE: 3/1/2012
DRAWN BY: E.A. FIALA
CHECKED BY: S.E. BURBANK
SHEET 53 OF 78

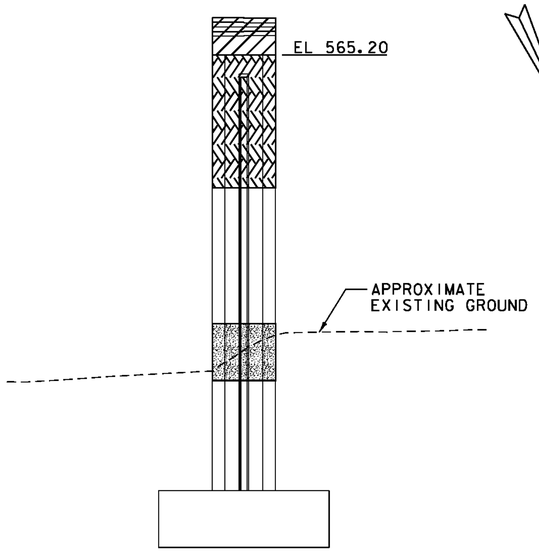
VHB 57325



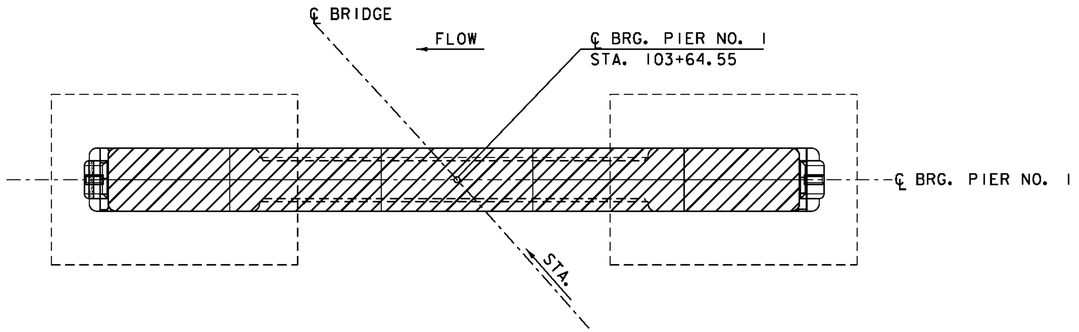
NORTH FACE



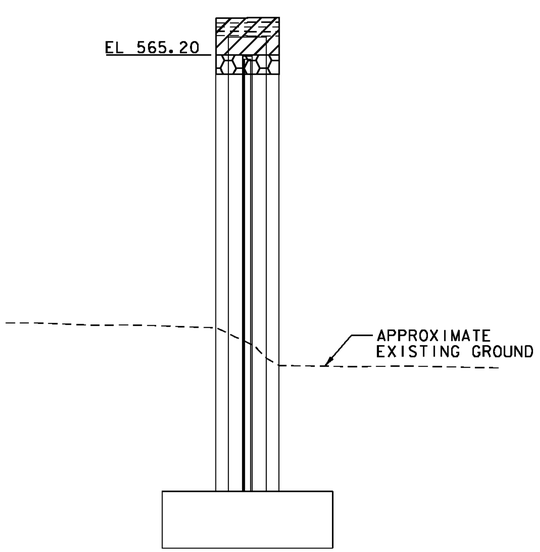
SOUTH FACE



DOWNSTREAM FACE



PLAN



UPSTREAM FACE

NOTES:

1. SEE SHEET 32 FOR REMOVAL AND REPAIR NOTES.
2. EXISTING STRUCTURE AND ELEVATIONS SHOWN.

LEGEND

- DENOTES LIMIT OF REMOVAL
- REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I (ITEM 580.13)
- REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II (ITEM 580.14)
- REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III (ITEM 580.15)

PIER NO. 1
SCALE ¼" = 1'-0"

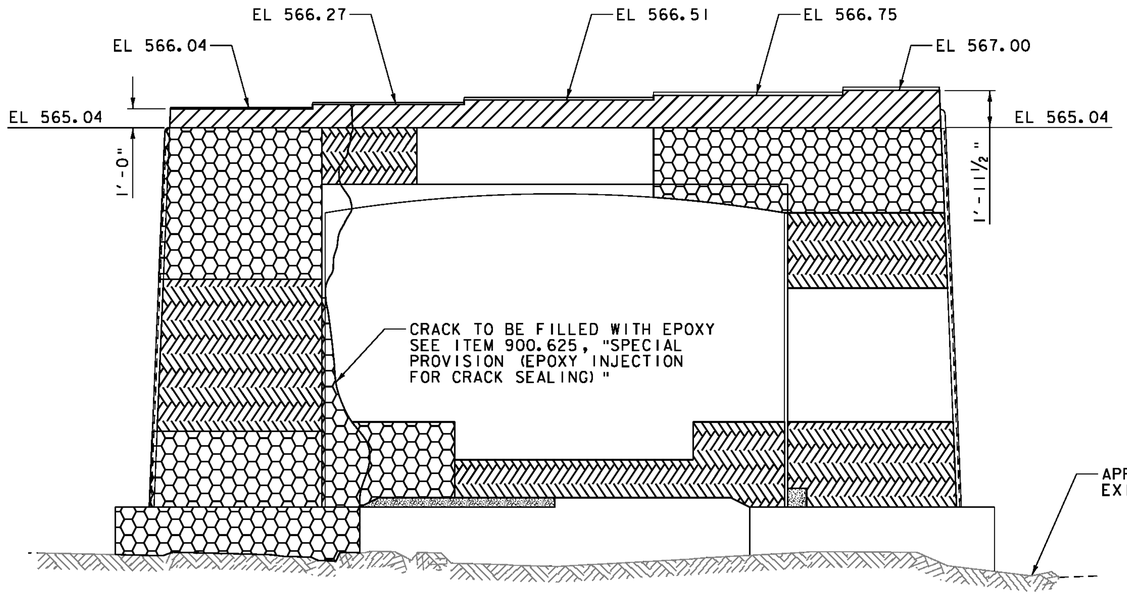
Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

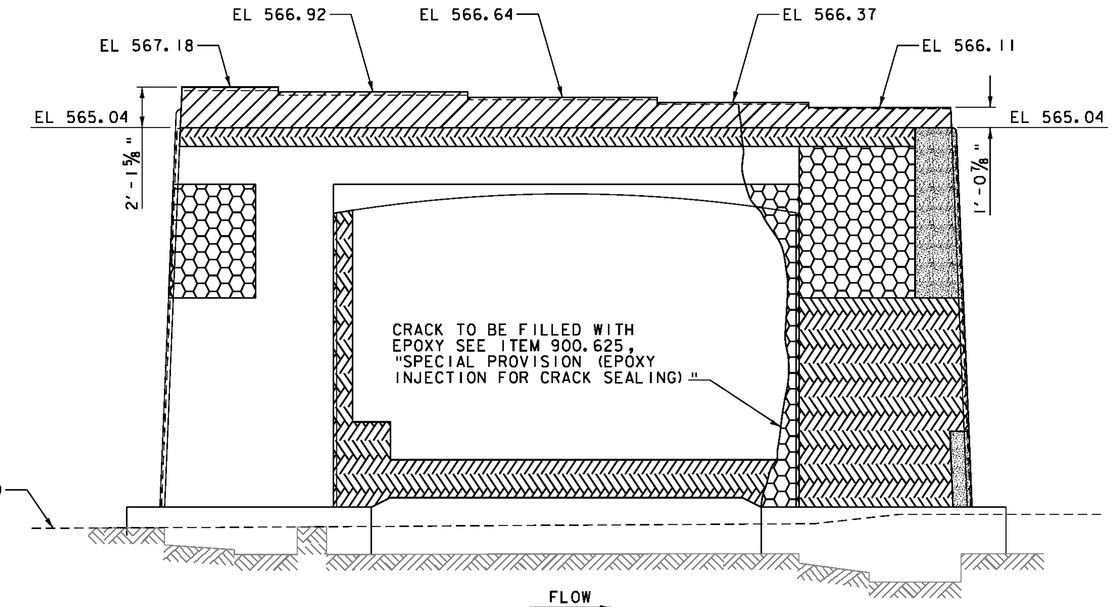
FILE NAME: z08j174sub_pier_1.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: S.E. BURBANK
PIER NO. 1 REMOVAL AND REPAIR PLAN

PLOT DATE: 2/15/2012
DRAWN BY: B.M. KLINEFELTER
CHECKED BY: S.E. BURBANK
SHEET 54 OF 78

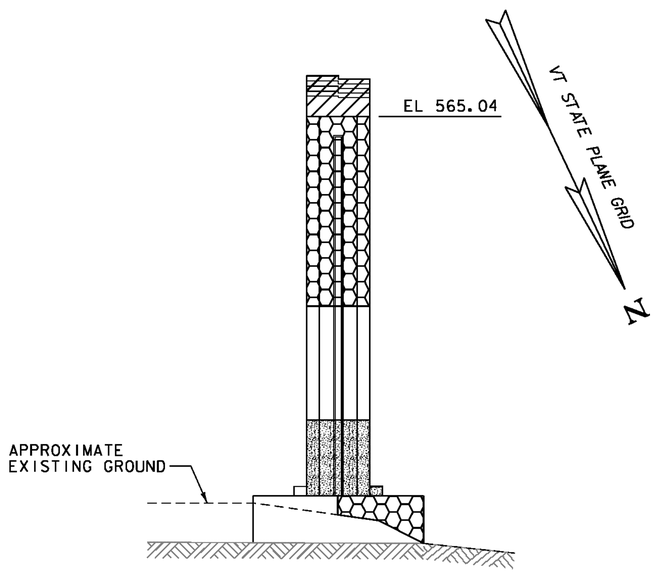
VHB 57325



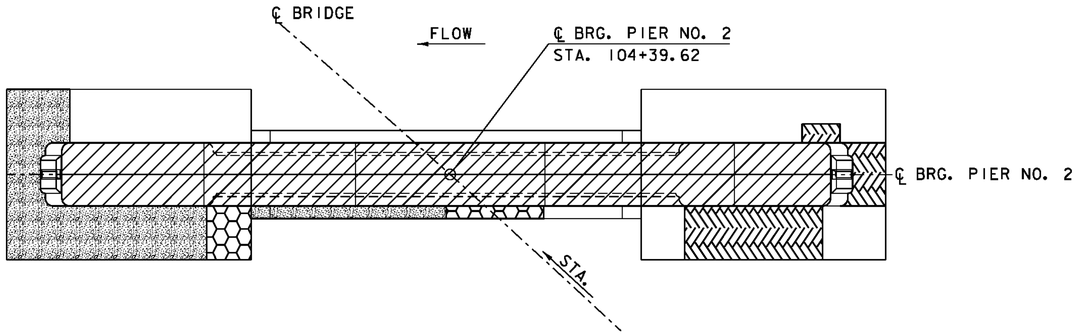
NORTH FACE



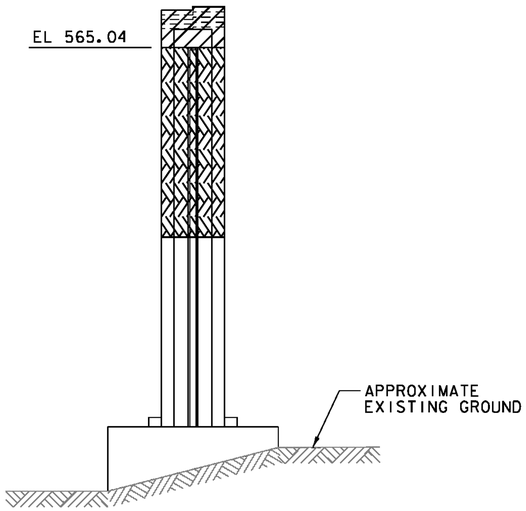
SOUTH FACE



DOWNSTREAM FACE



PLAN



UPSTREAM FACE

NOTES:

1. SEE SHEET 32 FOR REMOVAL AND REPAIR NOTES.
2. EXISTING STRUCTURE AND ELEVATIONS SHOWN.

LEGEND

- DENOTES LIMIT OF REMOVAL
- REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I (ITEM 580.13)
- REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II (ITEM 580.14)
- REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III (ITEM 580.15)

PIER NO. 2
SCALE ¼" = 1'-0"

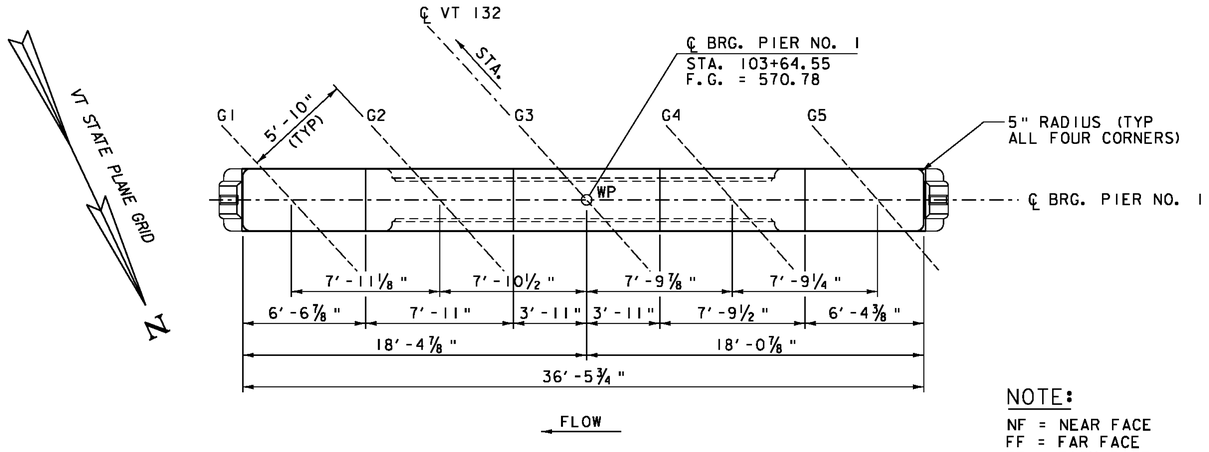
Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174sub_pier_2.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: S.E. BURBANK
PIER NO. 2 REMOVAL AND REPAIR PLAN

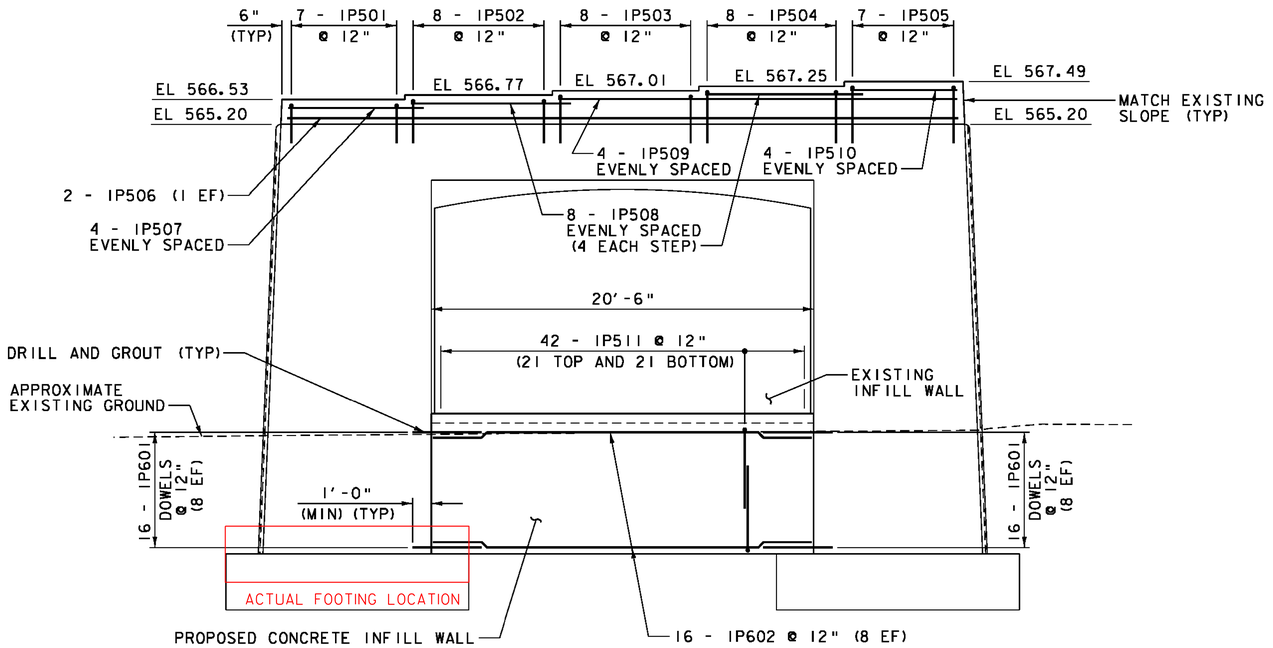
PLOT DATE: 2/15/2012
DRAWN BY: B.M. KLINEFELTER
CHECKED BY: G.S. GOODRICH
SHEET 55 OF 78

VHB 57325

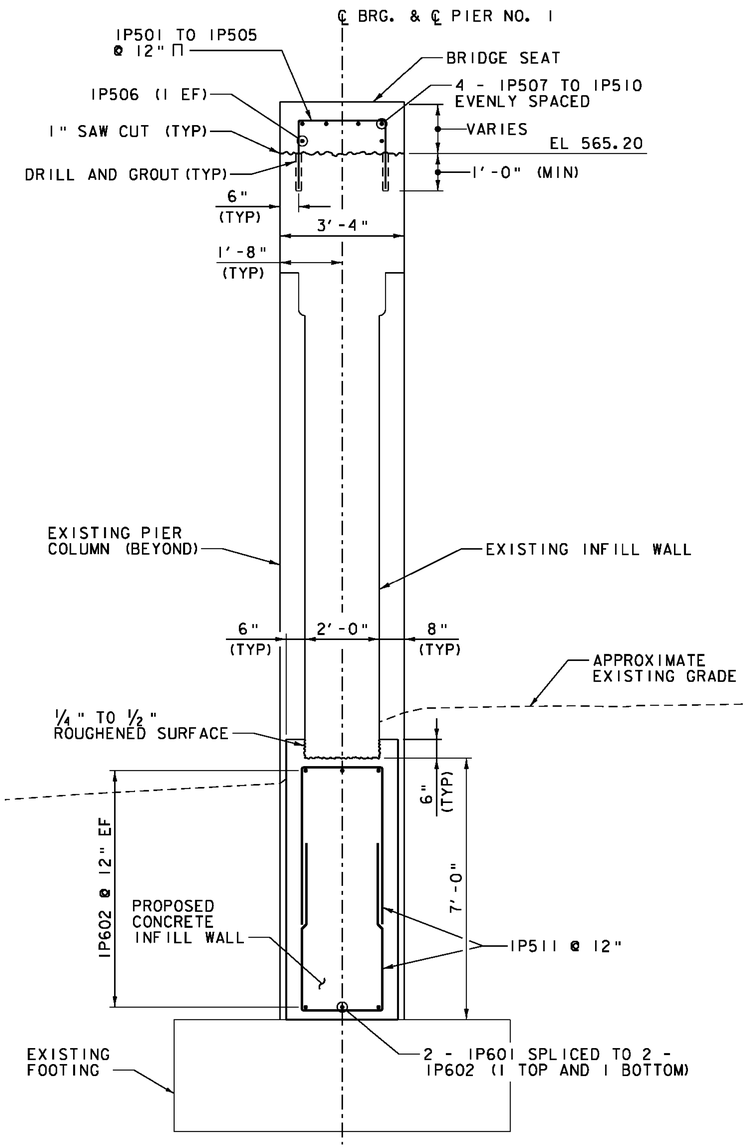


PIER NO. 1 PLAN
SCALE ¼" = 1'-0"

NOTE:
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
4" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.



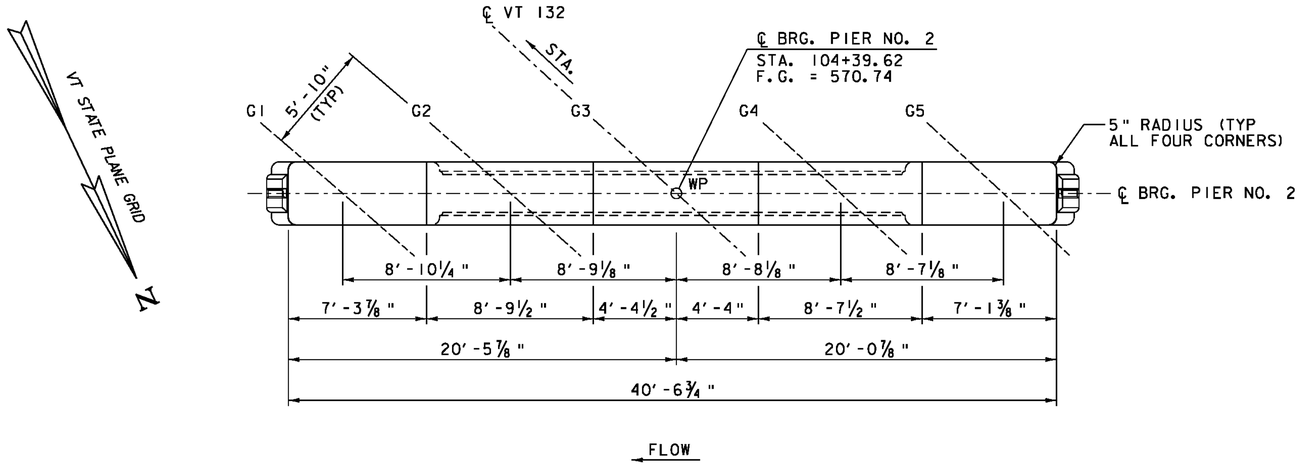
PIER NO. 1 ELEVATION
SCALE ¼" = 1'-0"



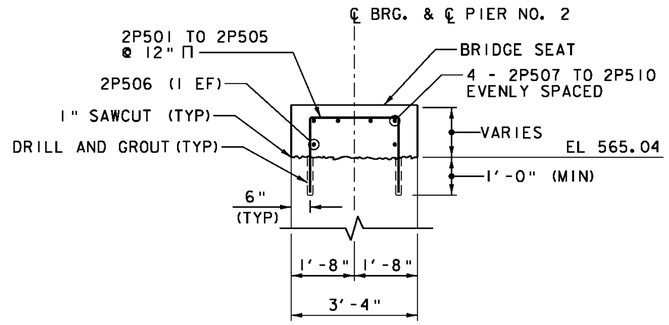
PIER NO. 1 SECTION
SCALE ½" = 1'-0"

Vanasse Hangen Brustlin, Inc.

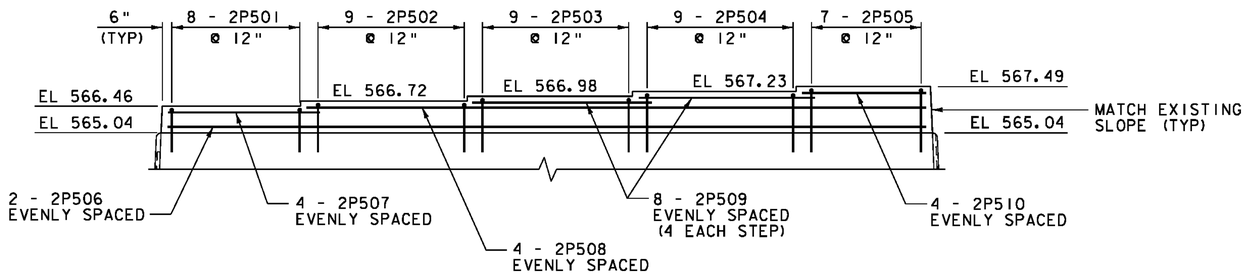
PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174sub_pier_1.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: G.S. GOODRICH	CHECKED BY: S.E. BURBANK
PIER NO. 1 DETAILS	SHEET 56 OF 78



PIER NO. 2 PLAN
SCALE ¼" = 1'-0"



PIER NO. 2 SECTION
SCALE ½" = 1'-0"

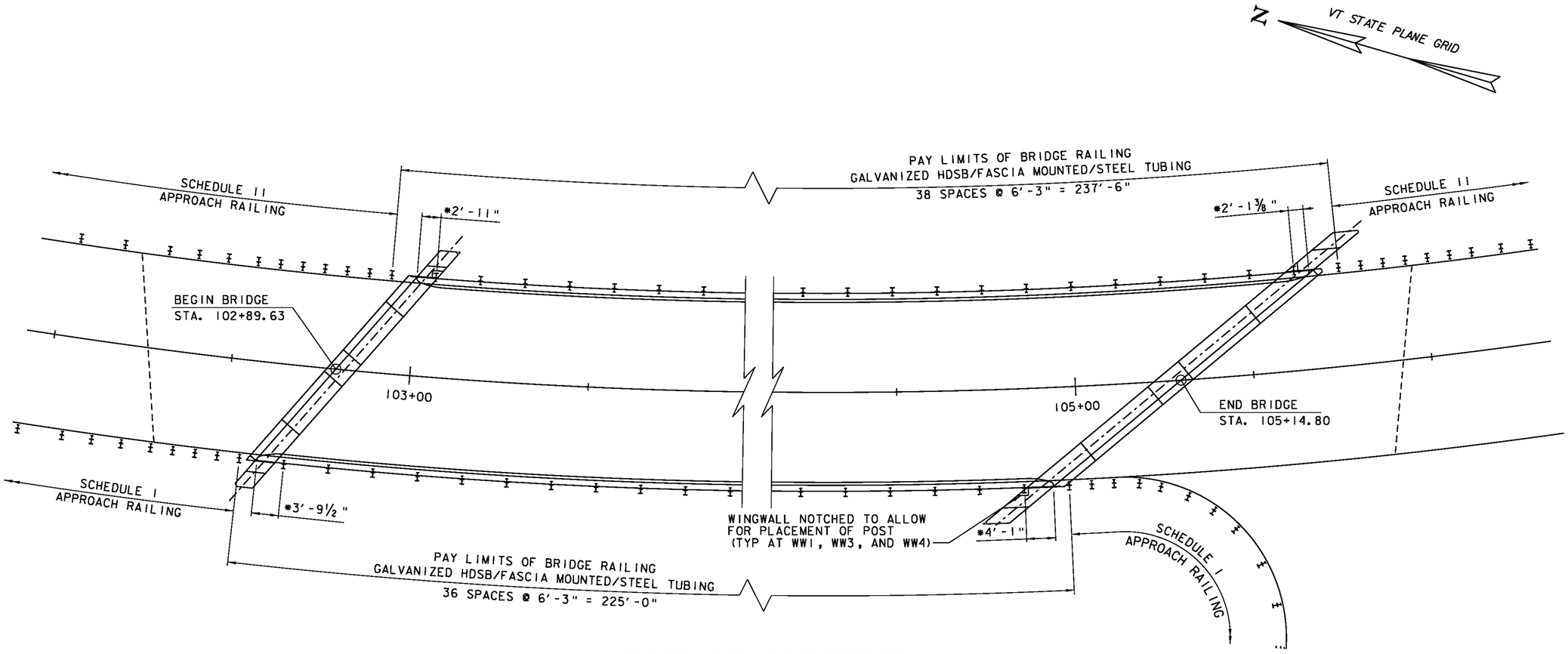


PIER NO. 2 ELEVATION
SCALE ¼" = 1'-0"

NOTE:
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
4" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174sub_pier_2.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: G.S. GOODRICH	CHECKED BY: S.E. BURBANK
PIER NO. 2 DETAILS	SHEET 57 OF 78



* DIMENSION IS FROM END OF BRIDGE DECK
TO CENTERLINE OF FIRST BRIDGE RAIL POST.

BRIDGE RAIL LAYOUT

SCALE 1/8" = 1'-0"

NOTE: SEE VTRANS STD SB-R6-82 FOR APPROACH RAILING SCHEDULES.

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08jl74brail.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
BRIDGE RAIL LAYOUT	SHEET 58 OF 78

N

VT STATE PLANE GRID

TRAFFIC SIGNS, TYPE A
STA. 99+62, RT
STA. 100+36, RT (2)
STA. 101+03, 43.25' LT
STA. 101+~~13.63~~09.04' LT (2)
STA. 101+15, RT (7)
STA 101+44, 75.47' LT ~~(2)~~(3)
STA. 101+46, 27.37' LT

~~ERECTING SALVAGED SIGNS~~
~~STA. 101+44, 75.47 LT~~
LOST OR STOLEN

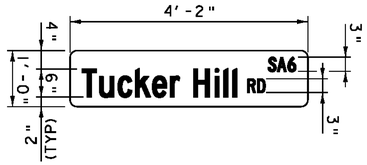
REMOVING SIGNS
STA. 101+03, 43.23' LT
STA. 101+04, RT (4)
STA. 101+44, 75.47' LT (2)
STA. 101+46, 27.37' LT

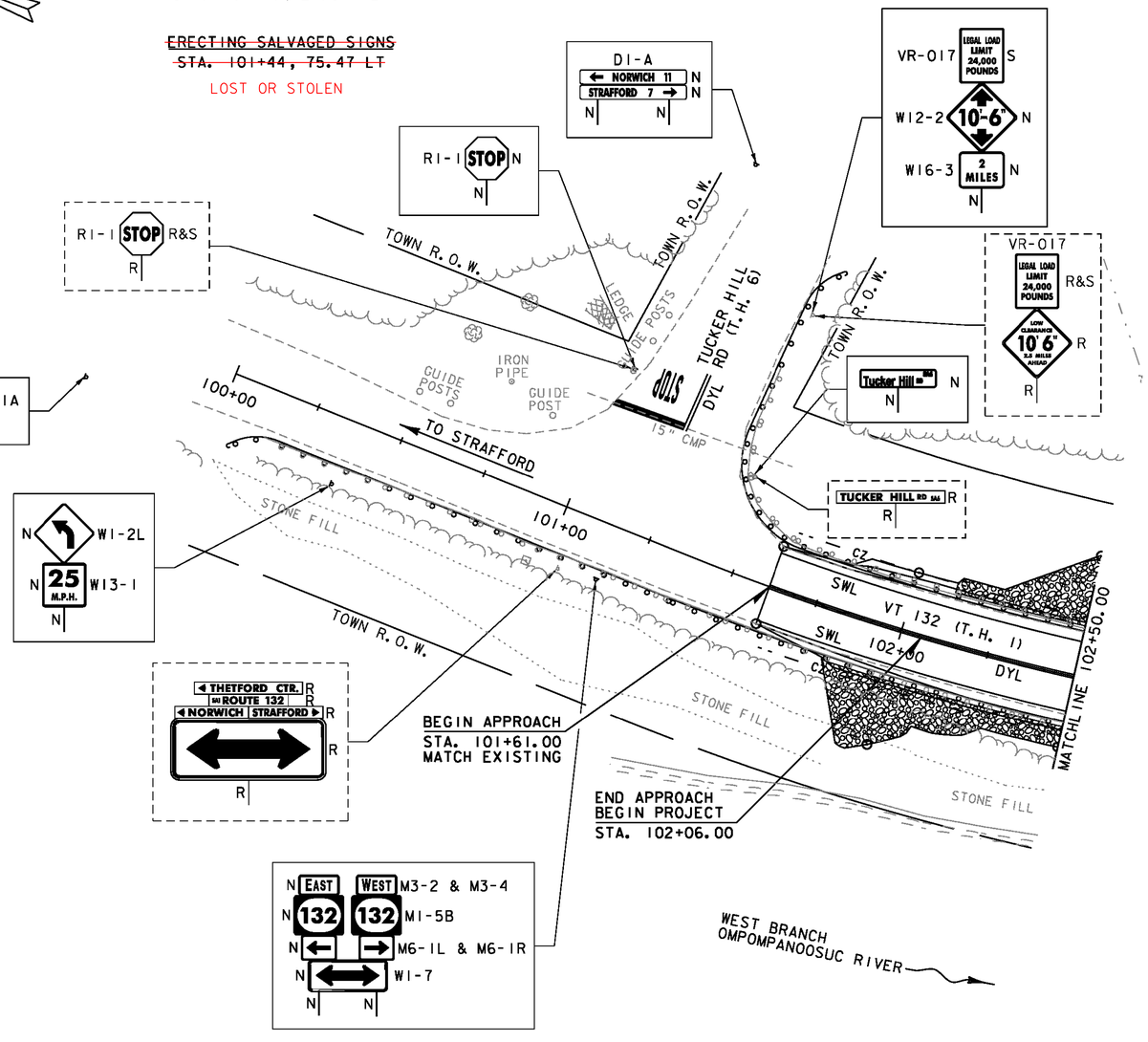
4 INCH YELLOW LINE
STA. 101+23 LT - 101+23, 49.20' LT
STA. 101+61 - 102+50, LT & RT

4 INCH WHITE LINE
STA. 101+61 - 102+50, LT & RT

LETTER OR SYMBOL
STA. 101+10 - 101+17, LT (STOP)

24 INCH STOP BAR
STA. 101+01 - 101+22, LT





STRIPING LEGEND
SWL = SINGLE WHITE LINE
SYL = SINGLE YELLOW LINE
DYL = DOUBLE YELLOW LINE
SDL = SINGLE DASHED LINE
SBL = SINGLE BROKEN LINE

SIGNING LEGEND
N = NEW
R = REMOVE
R&S = REMOVE AND SALVAGE
RET = RETAIN
S = SALVAGED SIGN
B-B = BACK TO BACK

SCALE 1" = 20'-0
20 0 20

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174tsl.dgn PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK CHECKED BY: S.E. BURBANK
TRAFFIC SIGNS & MARKINGS SHEET (1 OF 2) SHEET 59 OF 78

VHB 57325

N

VT STATE PLANE GRID

TRAFFIC SIGN, TYPE A
STA. 102+76, RT
STA. 104+86, 47.92' RT
STA. 105+10, RT
STA. 105+95, 36.78' RT
STA. 106+50, RT
STA. 108+83, LT (2)

REMOVING SIGNS
STA. 104+92, 31.43' RT (2)
STA. 105+54, 60.33' RT

4 INCH YELLOW LINE
STA. 102+50 - STA. 105+29, LT & RT
STA. 105+26, 60.17' RT - STA. 105+63, RT
STA. 105+89 - STA. 106+75, LT & RT

4 INCH WHITE LINE
STA. 102+50 - STA. 106+75, LT
STA. 102+50, RT - STA. 105+21, 51.83', RT
STA. 105+31, 68.50' RT - STA. 106+75, RT

24 INCH STOP BAR
STA. 105+63 - STA. 106+14, RT

LETTER OR SYMBOL
STA. 105+70 - STA. 105+79, RT (STOP)

NOTE:
INSTALL 200 FT (MIN) WEST OF EXISTING 35 MPH SIGN

N W1-10R
N 25 M.P.H. W13-1
N

4'-2"
4" 10" 6" 3"
Gove Hill RD TH8
2" (TYP) 3"

WEST BRANCH OMPOMPANOOSUC RIVER
STONE WALL
STONE WALL
AER E&T
GUY POLE
TOWN R.O.W.
GUY
AER E&T
AER E&T
AER E&T
AER E&T
AER E&T
STONE FILL
STONE FILL
STONE FILL
MATCHLINE 102+50.00
103+00
104+00
105+00
106+00
VT 132 (T.H. 1)
DYL
DYL
SWL
CZ
GOVE HILL RD TH8 NO DUMPING
GUIDE POST
GRAVEL
LEDGE
TOP
STOP
RCP
GOVE HILL ROAD (T.H. 8)
TOWN R.O.W.
SPEED LIMIT 35
GUIDE POSTS
15" CMP
IRON PIPE
TOWN R.O.W.
TOWN R.O.W.
TO NORWICH
107+00
108+00
108+25
LEDGE
IRON PIPE
STONE WALL
GUY
GUY

Gove Hill RD N
N

WI-6L
N
N N

NO DUMPING R&S
R

GOVE HILL RD TH8 R
R

VR-023b $500 THROWING THIS OR RUNNING AND STEALING N
N

WI-6R
N
N N

RI-1 STOP R&S
R

RI-1 STOP N
N

END PROJECT BEGIN APPROACH
STA. 106+30.00

END APPROACH
STA. 106+75.00
MATCH EXISTING

SIGNING LEGEND
N = NEW
R = REMOVE
R&S = REMOVE AND SALVAGE
RET = RETAIN
S = SALVAGED SIGN
B-B = BACK TO BACK

STRIPING LEGEND
SWL = SINGLE WHITE LINE
SYL = SINGLE YELLOW LINE
DYL = DOUBLE YELLOW LINE
SDL = SINGLE DASHED LINE
SBL = SINGLE BROKEN LINE

SCALE 1" = 20'-0
20 0 20

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174tsl.dgn PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK CHECKED BY: S.E. BURBANK
TRAFFIC SIGNS & MARKINGS SHEET(2 OF 2) SHEET 60 OF 78

VHB 57325

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

MILE MARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS EA	WIDTH (IN)	HEIGHT (IN)	NEW & SALVAGED SIGNS "A"	"B"	SALV SIGN	SALV TIS	EXIST POST RETAIN	SALVAGE	NEW SIGN POSTS NO. OF POSTS	FLANGED CHANNEL LB/FT 1.12	2.0	3.0	SQUARE STEEL (IN) 1.75 LB/FT 1.88	2.0 LB/FT 2.42	2.5 LB/FT 3.35	ANCHOR	SLEEVE	TUBULAR ALUMINUM Ø (IN) 3.0 LB/FT 1.3	4.0 1.7	4.0 MOD 1.7	FOUND-ATION	TUBULAR STEEL Ø (IN) 3.0 LB/FT 7.6	3.5 9.0	4.0 10.8	5.0 14.6	W-SHAPE STEEL FTG. SIZE 24"	30"	WEIGHT	POST SIZE	SIGN REFLECTED	REMARKS	SIGN DETAIL DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
											OPTION ITEMS																									
VT 132 (T.H. 1)																																			
99+03, RT	← THETFORD CTR 3	1	72	12	6.00						2					X																	D1-1a		SHS
100+36, RT	25 M.P.H.	1 1	36 18	36 18	9.00 2.25						1					X																	W1-2L W13-1		SHS SHS
101+03, LT 105+95, RT	STOP	2	30	30	12.50						2					X																	R1-1		SHS
101+13, LT	← NORWICH 11 STRAFFORD 7 →	1 1	72 72	12 12	6.00 6.00						2					X																	D1-1a D1-1a		E-123 E-123
101+15, RT	EAST 132 WEST 132	2 2 2 1	24 30 21 36	12 24 15 18	4.00 10.00 4.38 4.50						2					X																	M3-2 & M3-4 M1-5B M6-1L & M6-1R W1-7		SHS SHS SHS SHS
101+44, LT	LEGAL LOAD LIMIT 24,000 POUNDS 10'-6" 2 MILES	1 1 1	24 36 30	30 36 24	5.00 9.00 5.00		0 1				1					X																	SIGN LOST/STOLEN? VR-017 W12-2 W16-3		E-141 SHS SHS
101+46, LT	Tucker Hill RD SA6	1	50	12	4.17						1					X																	USE 6" HIGH TEXT FOR THE ROAD NAME AND 3" TEXT FOR "RD" AND "SA6"	58	--
102+76, RT	←	1	48	24	8.00						2					X																	W1-6L		SHS
104+86, RT	$500 FINE THROWING TRASH ON HIGHWAYS AND STREAMS	1	24	30	5.00						1					X																	VR-023b		E-144
105+10, RT	Gove Hill RD TH8	1	48	12	4.00						1					X																	USE 6" HIGH TEXT FOR THE ROAD NAME AND 3" TEXT FOR "RD" AND "TH8"	59	--
106+50, RT	→	1	48	24	8.00						2					X																	W1-6R		SHS
108+83, LT	25 M.P.H.	1 1	36 18	36 18	9.00 2.25						1					X																	W1-10R W13-1		SHS SHS
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE VTRANS "SIGN POST DESIGN GUIDELINE."												FT	FT	FT	FT	FT 270	FT		EA	LB	LB	LB		LB	LB	LB	LB							
	TOTALS				SF 124.05 ~~119.05~~	SF	EA. 1	SF				FT			FT 270					LB			EA.	LB				EA.	EA.	LB					

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

FILE NAME: z08j174tss.dgn
PROJECT LEADER: M.A. COLGAN
DESIGNED BY: B.M. KLINEFELTER
TRAFFIC SIGN SUMMARY SHEET

PLOT DATE: 2/15/2012
DRAWN BY: B.M. KLINEFELTER
CHECKED BY: S.E. BURBANK
SHEET 61 OF 78

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

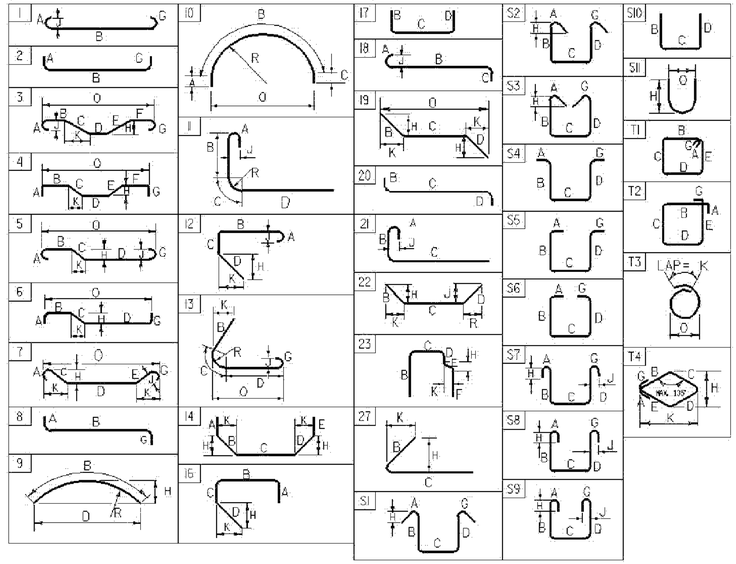
REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
DECK																	
	374	5	40'- 4"	ES501	STR												
	802	5	27'- 2"	ES502	STR												
	671	5	4'- 8"	ES503	S5	0'- 10"	1'- 2"	0'- 8"	1'- 2"			0'- 10"					
	915	5	5'- 5"	ES504	1	0'- 9"	4'- 8"					0'- 0"		0'- 4"			
	2	5	26'- 9"	ES505	STR												
	2	5	26'- 5"	ES506	STR												
	2	5	26'- 0"	ES507	STR												
	2	5	25'- 8"	ES508	STR												
	2	5	25'- 3"	ES509	STR												
	2	5	24'- 10"	ES510	STR												
	2	5	24'- 6"	ES511	STR												
	2	5	24'- 2"	ES512	STR												
	2	5	23'- 9"	ES513	STR												
	2	5	23'- 4"	ES514	STR												
	2	5	23'- 0"	ES515	STR												
	2	5	22'- 7"	ES516	STR												
	2	5	22'- 3"	ES517	STR												
	2	5	21'- 10"	ES518	STR												
	2	5	21'- 6"	ES519	STR												
	2	5	21'- 1"	ES520	STR												
	2	5	20'- 9"	ES521	STR												
	2	5	20'- 4"	ES522	STR												
	2	5	20'- 0"	ES523	STR												
	2	5	19'- 7"	ES524	STR												
	2	5	19'- 3"	ES525	STR												
	2	5	18'- 10"	ES526	STR												
	2	5	18'- 6"	ES527	STR												
	2	5	18'- 1"	ES528	STR												
	2	5	17'- 9"	ES529	STR												
	2	5	17'- 4"	ES530	STR												
	2	5	17'- 0"	ES531	STR												
	2	5	16'- 7"	ES532	STR												
	2	5	16'- 3"	ES533	STR												
	2	5	15'- 10"	ES534	STR												
	2	5	15'- 6"	ES535	STR												
	2	5	15'- 2"	ES536	STR												
	2	5	14'- 9"	ES537	STR												
	2	5	14'- 5"	ES538	STR												
	2	5	14'- 0"	ES539	STR												
	2	5	13'- 8"	ES540	STR												
	2	5	13'- 4"	ES541	STR												
	2	5	12'- 11"	ES542	STR												
	2	5	12'- 7"	ES543	STR												
	2	5	12'- 2"	ES544	STR												
	2	5	11'- 10"	ES545	STR												
	2	5	11'- 5"	ES546	STR												
	2	5	11'- 1"	ES547	STR												
	2	5	10'- 9"	ES548	STR												
	2	5	10'- 4"	ES549	STR												
	2	5	10'- 0"	ES550	STR												
	2	5	9'- 8"	ES551	STR												
	2	5	9'- 3"	ES552	STR												
	2	5	8'- 11"	ES553	STR												
	2	5	8'- 6"	ES554	STR												
	2	5	8'- 2"	ES555	STR												
	2	5	7'- 10"	ES556	STR												
	2	5	7'- 5"	ES557	STR												
	2	5	7'- 1"	ES558	STR												
	2	5	6'- 9"	ES559	STR												
	2	5	6'- 4"	ES560	STR												
	2	5	6'- 0"	ES561	STR												
	2	5	5'- 8"	ES562	STR												
	21	5	5'- 3"	ES563	STR												
	2	5	26'- 6"	ES564	STR												
	2	5	25'- 10"	ES565	STR												
	2	5	25'- 2"	ES566	STR												
	2	5	24'- 6"	ES567	STR												
	2	5	23'- 10"	ES568	STR												
	2	5	23'- 2"	ES569	STR												
	2	5	22'- 6"	ES570	STR												
	2	5	21'- 10"	ES571	STR												
	2	5	21'- 2"	ES572	STR												
	2	5	20'- 5"	ES573	STR												
	2	5	19'- 9"	ES574	STR												
	2	5	19'- 1"	ES575	STR												
	2	5	18'- 5"	ES576	STR												
	2	5	17'- 9"	ES577	STR												
	2	5	17'- 1"	ES578	STR												
	2	5	16'- 5"	ES579	STR												
	2	5	15'- 9"	ES580	STR												
	2	5	15'- 1"	ES581	STR												
	2	5	14'- 5"	ES582	STR												
	2	5	13'- 8"	ES583	STR												
	2	5	13'- 0"	ES584	STR												
	2	5	12'- 4"	ES585	STR												
	2	5	11'- 8"	ES586	STR												
	2	5	11'- 0"	ES587	STR												
	2	5	10'- 4"	ES588	STR												
	2	5	9'- 8"	ES589	STR												
	2	5	8'- 11"	ES590	STR												
	2	5	8'- 3"	ES591	STR												

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
DECK CONTINUED																	
	2	5	7'- 7"	ES592	STR												
	2	5	6'- 11"	ES593	STR												
	2	5	6'- 3"	ES594	STR												
	2	5	5'- 7"	ES595	STR												
	12	5	4'- 10"	ES596	STR												
	1	5	2'- 2"	ES597	STR												
	1	5	3'- 6"	ES598	STR												
	1	5	4'- 11"	ES599	STR												
	1	5	6'- 3"	ES5100	STR												
	1	5	7'- 6"	ES5101	STR												
	1	5	8'- 11"	ES5102	STR												
	1	5	10'- 0"	ES5103	STR												
	1	5	11'- 3"	ES5104	STR												
	1	5	12'- 5"	ES5105	STR												
	1	5	13'- 10"	ES5106	STR												
	1	5	15'- 2"	ES5107	STR												
	1	5	16'- 6"	ES5108	STR												
	1	5	17'- 10"	ES5109	STR												
	1	5	19'- 3"	ES5110	STR												
	1	5	20'- 7"	ES5111	STR												
	1	5	21'- 10"	ES5112	STR												
	1	5	23'- 2"	ES5113	STR												
	1	5	24'- 7"	ES5114	STR												
	1	5	26'- 0"	ES5115	STR												
	1	5	27'- 3"	ES5116	STR												
	1	5	28'- 8"	ES5117	STR												
	1	5	30'- 1"	ES5118	STR												
	1	5	31'- 4"	ES5119	STR												
	1	5	32'- 10"	ES5120	STR												
	1	5	34'- 3"	ES5121	STR												
	1	5	35'- 8"	ES5122	STR												
	1	5	37'- 0"	ES5123	STR												
	1	5	38'- 4"	ES5124	STR												
	1	5	2'- 1"	ES5125	STR												
	1	5	3'- 0"	ES5126	STR												
	1	5	3'- 10"	ES5127	STR												
	1	5	4'- 11"	ES5128	STR												
	1	5	5'- 9"	ES5129	STR												
	1	5	6'- 7"	ES5130	STR												
	1	5	7'- 5"	ES5131	STR												
	1	5	8'- 3"	ES5132	STR												
	1	5	9'- 1"	ES5133	STR												
	1	5	9'- 11"	ES5134	STR												
	1	5	10'- 9"	ES5135	STR												
	1	5	11'- 7"	ES5136	STR												
	1	5	12'- 8"	ES5137	STR												
	1	5	13'- 6"	ES5138	STR												
	1	5	14'- 4"	ES5139	STR												
	1	5	15'- 2"	ES5140	STR												
	1	5	16'- 0"	ES5141	STR												
	1	5	16'- 11"	ES5142	STR												
	1	5	17'- 9"	ES5143	STR												
	1	5	18'- 7"	ES5144	STR												
	1	5	19'- 5"	ES5145	STR												
	1	5	20'- 6"	ES5146	STR												
	1	5	21'- 5"	ES5147	STR												
	1	5	22'- 3"	ES5148	STR												
	1	5	23'- 1"	ES5149	STR												
	1	5	23'- 11"	ES5150	STR												
	1	5	24'- 10"	ES5151	STR												
	1	5	25'- 8"	ES5152	STR												
	1	5	26'- 6"	ES5153	STR												
	1	5	27'- 4"	ES5154	STR												
	1	5	28'- 6"	ES5155	STR												
	1	5	29'- 5"	ES5156	STR												
	1	5	30'- 3"	ES5157	STR												
	1	5	31'- 1"	ES5158	STR												
	1	5	32'- 0"	ES5159	STR												
	1	5	32'- 10"	ES5160	STR												
	1	5	33'- 9"	ES5161	STR												
	1	5	34'- 7"	ES5162	STR												
	1	5	35'- 6"	ES5163	STR												
	1	5	36'- 8"	ES5164	STR												
	1	5	37'- 7"	ES5165	STR												
	1	5	38'- 6"	ES5166	STR												
	1	5	1'- 8"	ES5167	STR												
	1	5	2'- 8"	ES5168	STR												
	1	5	3'- 8"	ES5169	STR												
	1	5	4'- 9"	ES5170	STR												
	1	5	5'- 9"	ES5171	STR												
	1	5	6'- 9"	ES5172	STR												
	1	5	7'- 9"	ES5173	STR												
	1	5	8'- 9"	ES5174	STR												
	1	5	9'- 9"	ES5175	STR												
	1	5	10'- 9"	ES5176	STR												
	1	5	11'- 9"	ES5177	STR												
	1	5	12'- 9"	ES5178	STR												
	1	5	13'- 10"	ES5179	STR												
	1	5	14'- 10"	ES5180	STR												
	1	5	15'- 10"	ES5181	STR												
	1	5	16'- 10"	ES5182	STR												

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). 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 BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	AREA INCHES ^{2}	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

VHB *Vanasse Hangen Brustlin, Inc.*

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHF 0177(9)

FILE NAME:	z08j174rss.dgn	PLOT DATE:	1/9/2012
PROJECT MANAGER:	M.A. COLGAN	DRAWN BY:	B.J. MASSE
DESIGNED BY:	G.S. GOODRICH	CHECKED BY:	S.E. BURBANK
REINFORCING STEEL SCHEDULE SHEET #1		SHEET	62 OF 78

STATE OF VERMONT
AGENCY OF TRANSPORTATION

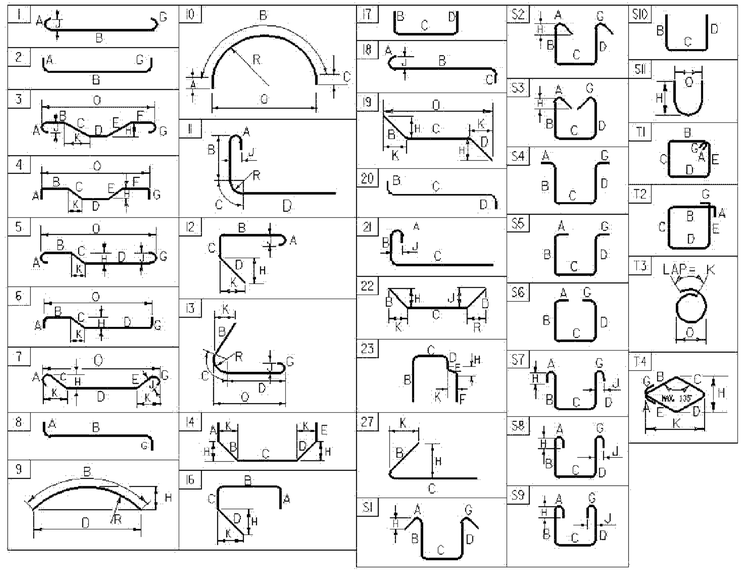
REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
DECK CONTINUED																	
	1	5	17'- 10"	ES5183	STR												
	1	5	18'- 10"	ES5184	STR												
	1	5	19'- 10"	ES5185	STR												
	1	5	20'- 10"	ES5186	STR												
	1	5	21'- 10"	ES5187	STR												
	1	5	22'- 10"	ES5188	STR												
	1	5	23'- 10"	ES5189	STR												
	1	5	24'- 10"	ES5190	STR												
	1	5	25'- 10"	ES5191	STR												
	1	5	26'- 10"	ES5192	STR												
	1	5	27'- 10"	ES5193	STR												
	1	5	28'- 10"	ES5194	STR												
	1	5	1'- 4"	ES5195	STR												
	1	5	2'- 2"	ES5196	STR												
	1	5	3'- 1"	ES5197	STR												
	1	5	3'- 11"	ES5198	STR												
	1	5	4'- 6"	ES5199	STR												
	1	5	5'- 1"	ES5200	STR												
	1	5	5'- 10"	ES5201	STR												
	1	5	6'- 5"	ES5202	STR												
	1	5	7'- 1"	ES5203	STR												
	1	5	7'- 9"	ES5204	STR												
	1	5	8'- 4"	ES5205	STR												
	1	5	9'- 0"	ES5206	STR												
	1	5	9'- 10"	ES5207	STR												
	1	5	10'- 6"	ES5208	STR												
	1	5	11'- 1"	ES5209	STR												
	1	5	11'- 9"	ES5210	STR												
	1	5	12'- 4"	ES5211	STR												
	1	5	13'- 0"	ES5212	STR												
	1	5	13'- 8"	ES5213	STR												
	1	5	14'- 3"	ES5214	STR												
	1	5	14'- 11"	ES5215	STR												
	1	5	15'- 9"	ES5216	STR												
	1	5	16'- 5"	ES5217	STR												
	1	5	17'- 0"	ES5218	STR												
	1	5	17'- 8"	ES5219	STR												
	1	5	18'- 3"	ES5220	STR												
	1	5	18'- 11"	ES5221	STR												
	1	5	19'- 6"	ES5222	STR												
	1	5	20'- 2"	ES5223	STR												
	1	5	20'- 10"	ES5224	STR												
	1	5	21'- 8"	ES5225	STR												
	1	5	22'- 3"	ES5226	STR												
	1	5	22'- 11"	ES5227	STR												
	1	5	23'- 6"	ES5228	STR												
	1	5	24'- 2"	ES5229	STR												
	1	5	24'- 10"	ES5230	STR												
	1	5	25'- 5"	ES5231	STR												
	1	5	26'- 1"	ES5232	STR												
	1	5	26'- 8"	ES5233	STR												
	1	5	27'- 6"	ES5234	STR												
	1	5	28'- 2"	ES5235	STR												
	1	5	28'- 10"	ES5236	STR												
▲	9	5	46'- 9"	ES5237	STR												
	96	5	3'- 9"	ES5238	2	0'- 6"	3'- 3"	0'- 0"									
	81	5	4'- 2"	ES5239	17		2'- 2"	1'- 6"	0'- 6"								
▲	9	5	33'- 8"	ES5240	STR												
	81	5	2'- 6"	ES5241	17		0'- 6"	1'- 6"	0'- 6"								
	4	5	5'- 4"	ES5242	STR												
	4	5	3'- 8"	ES5243	STR												
	81	6	46'- 6"	ES601	STR												
	38	8	1'- 6"	ES801	STR												
PIER NO. 1																	
	7	5	6'- 4"	1P501	17		2'- 0"	2'- 4"	2'- 0"								
	8	5	6'- 10"	1P502	17		2'- 3"	2'- 4"	2'- 3"								
	8	5	7'- 4"	1P503	17		2'- 6"	2'- 4"	2'- 6"								
	8	5	7'- 10"	1P504	17		2'- 9"	2'- 4"	2'- 9"								
	7	5	8'- 4"	1P505	17		3'- 0"	2'- 4"	3'- 0"								
	2	5	35'- 10"	1P506	STR												
	4	5	7'- 3"	1P507	STR												
	8	5	8'- 7"	1P508	STR												
	4	5	21'- 4"	1P509	STR												
	4	5	5'- 8"	1P510	STR												
	42	5	10'- 10"	1P511	17		4'- 3"	2'- 4"	4'- 3"								
	36	6	3'- 2"	1P601	STR												
	18	6	19'- 10"	1P602	STR												

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
PIER NO. 2																	
	8	5	6'- 6"	2P501	17		2'- 1"	2'- 4"	2'- 1"								
	9	5	7'- 2"	2P502	17		2'- 5"	2'- 4"	2'- 5"								
	9	5	7'- 8"	2P503	17		2'- 8"	2'- 4"	2'- 8"								
	9	5	8'- 2"	2P504	17		2'- 11"	2'- 4"	2'- 11"								
	7	5	8'- 8"	2P505	17		3'- 2"	2'- 4"	3'- 2"								
	2	5	39'- 11"	2P506	STR												
	4	5	8'- 0"	2P507	STR												
	4	5	32'- 7"	2P508	STR												
	8	5	9'- 2"	2P509	STR												
	4	5	6'- 5"	2P510	STR												

~ NOTES ~

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



ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION DIAMETER INCHES	AREA INCHES^2	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

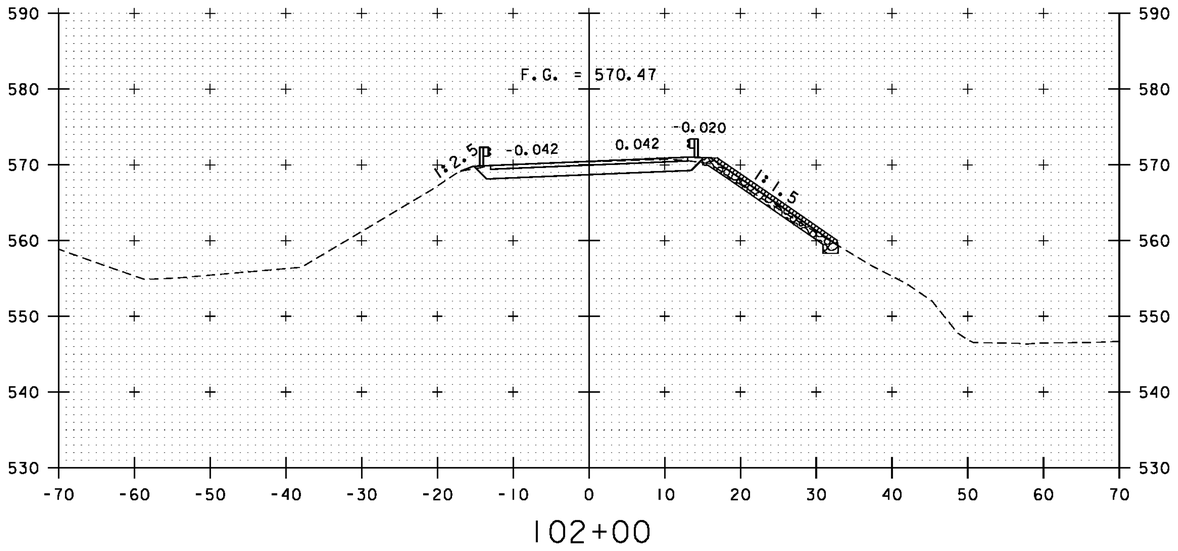
Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD
PROJECT NUMBER: BHF 0177(9)

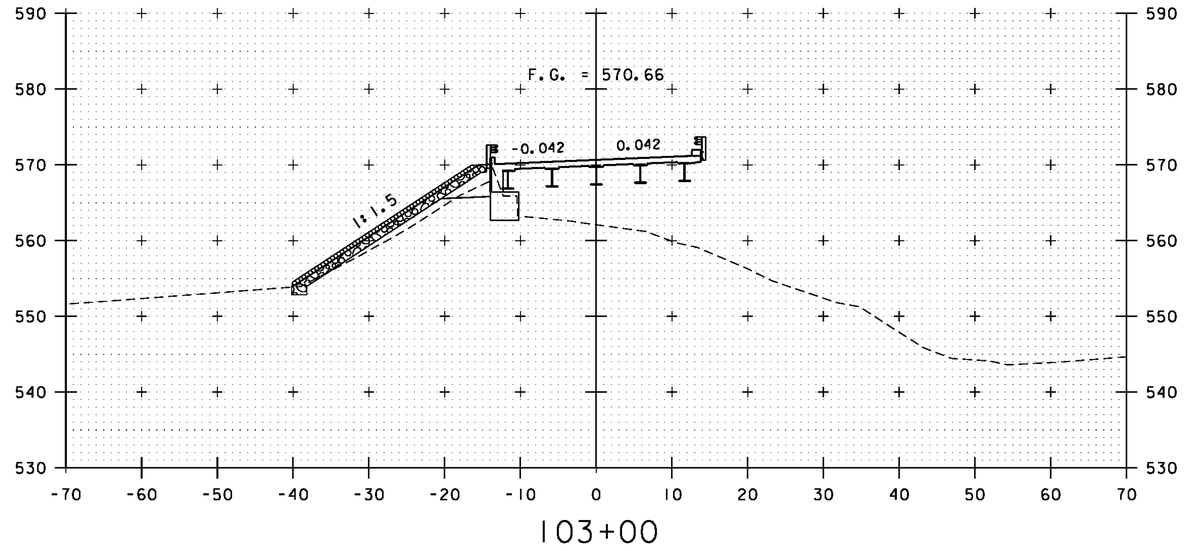
FILE NAME: z08j174rss.dgn
PROJECT MANAGER: M.A. COLGAN
DESIGNED BY: G.S. GOODRICH
REINFORCING STEEL SCHEDULE SHEET #2

PLOT DATE: 1/9/2012
DRAWN BY: B.J. MASSE
CHECKED BY: S.E. BURBANK
SHEET 63 OF 78

VHB 57325

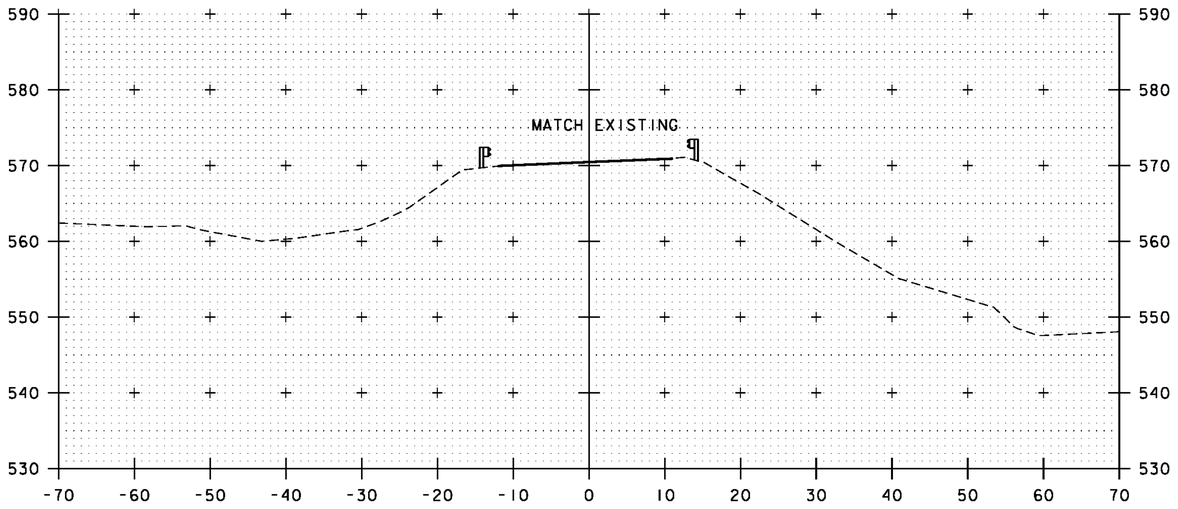


102+00



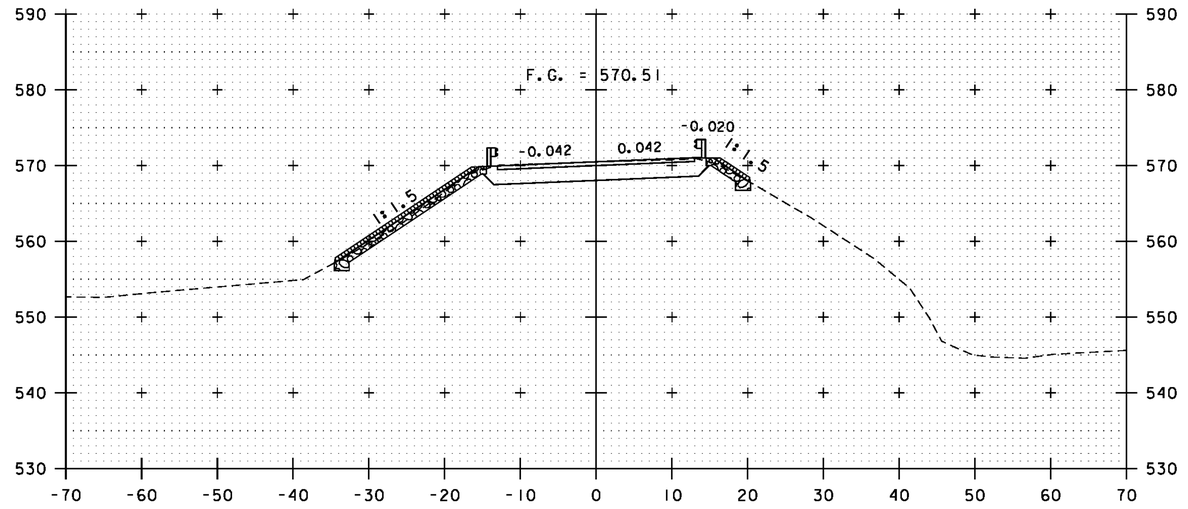
103+00

BEGIN BRIDGE
STA. 102+89.63



101+61

BEGIN APPROACH
STA. 101+61.00



102+50

END APPROACH/BEGIN PROJECT
STA. 102+06.00

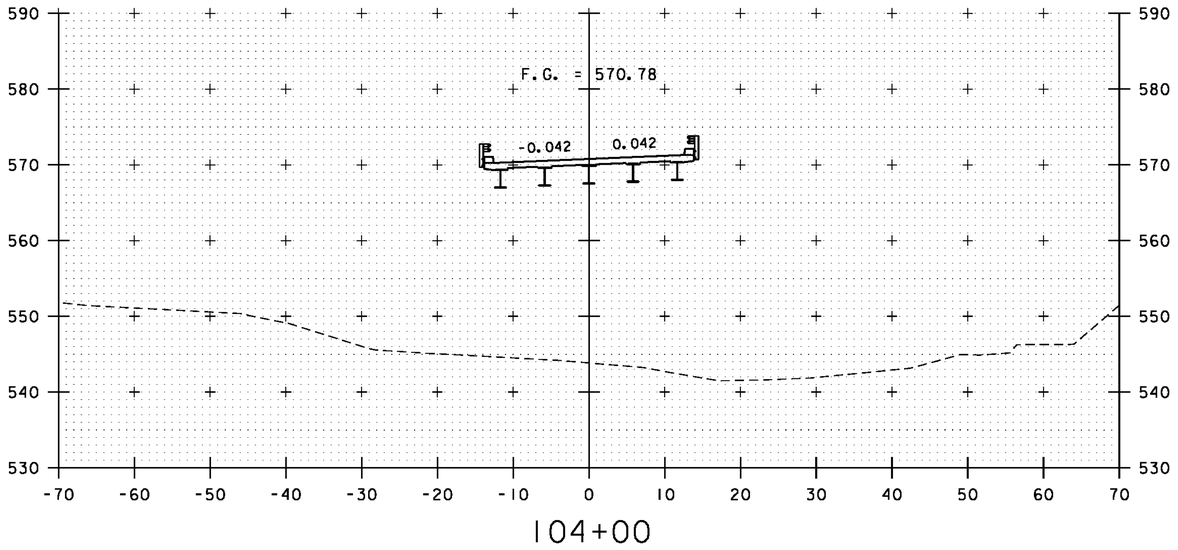
ROADWAY CROSS SECTIONS

SCALE 1" = 10'-0"

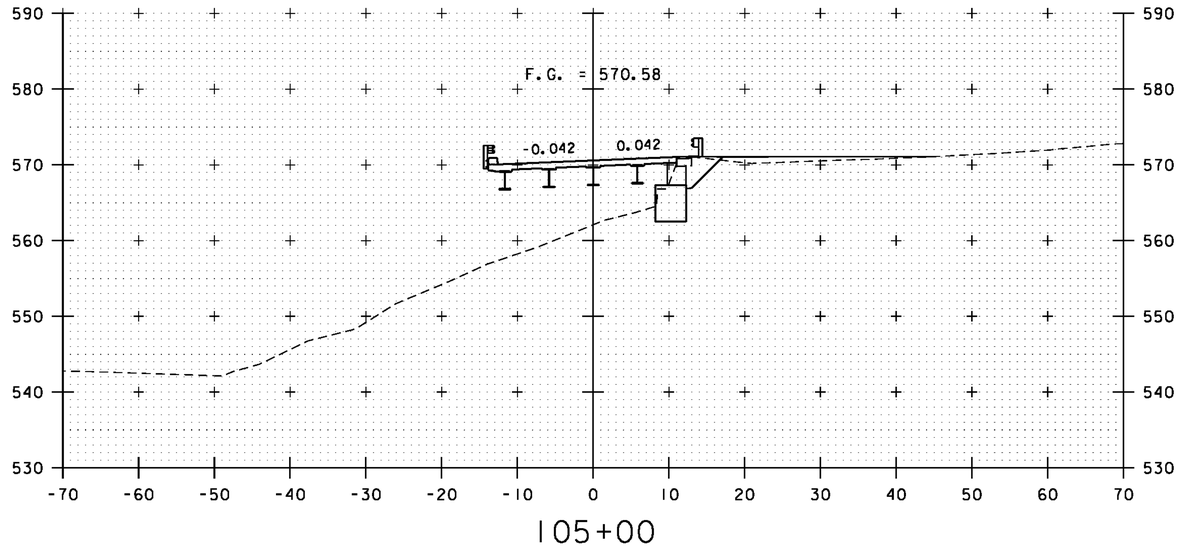
STA. 101+61 - STA. 103+00

Vanasse Hangen Brustlin, Inc.

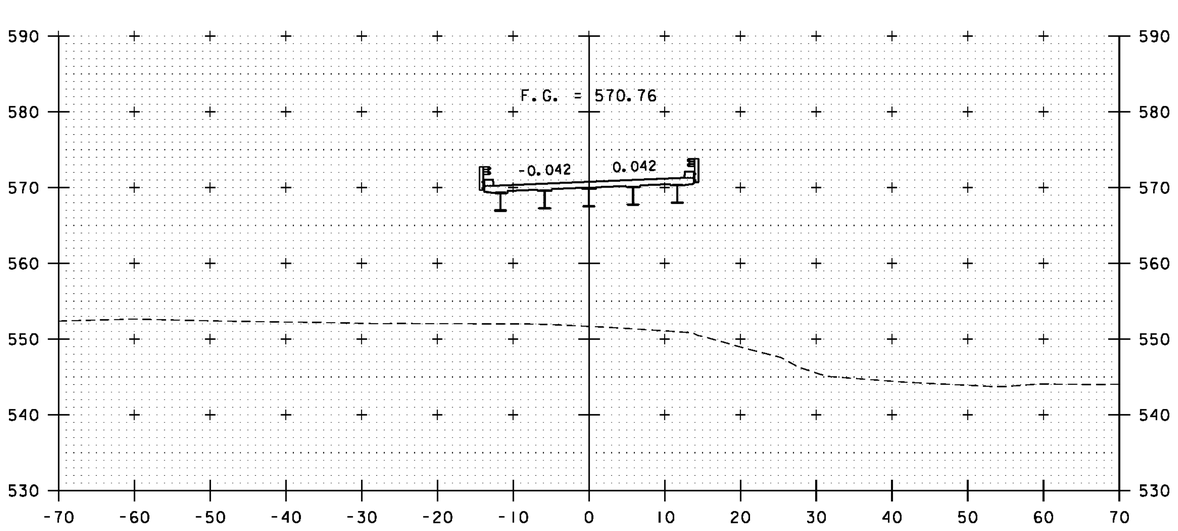
PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08l174xsl.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
ROADWAY CROSS SECTIONS (1 OF 3)	SHEET 64 OF 78



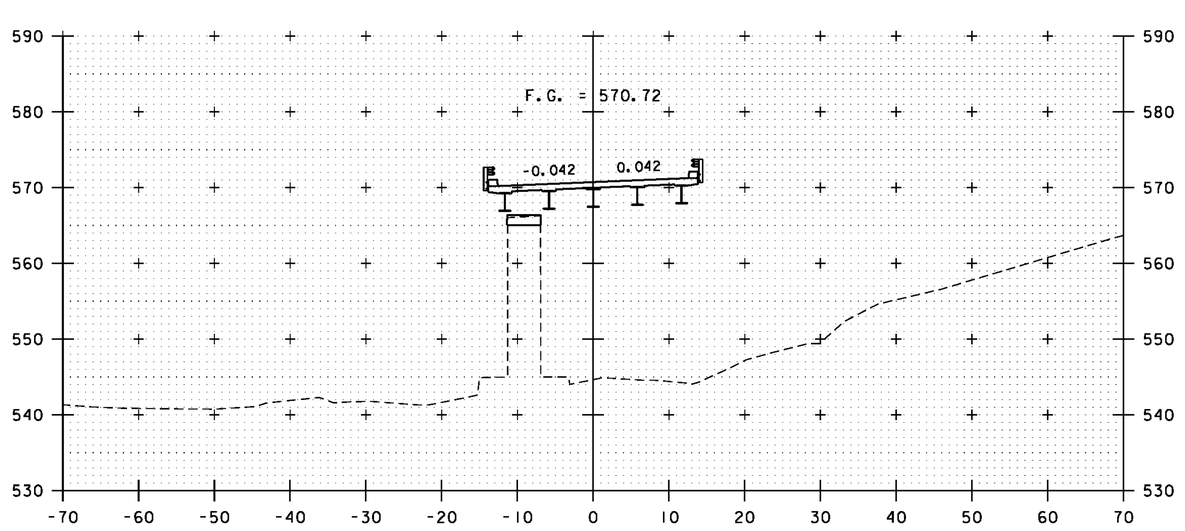
104+00



105+00



103+50



104+50

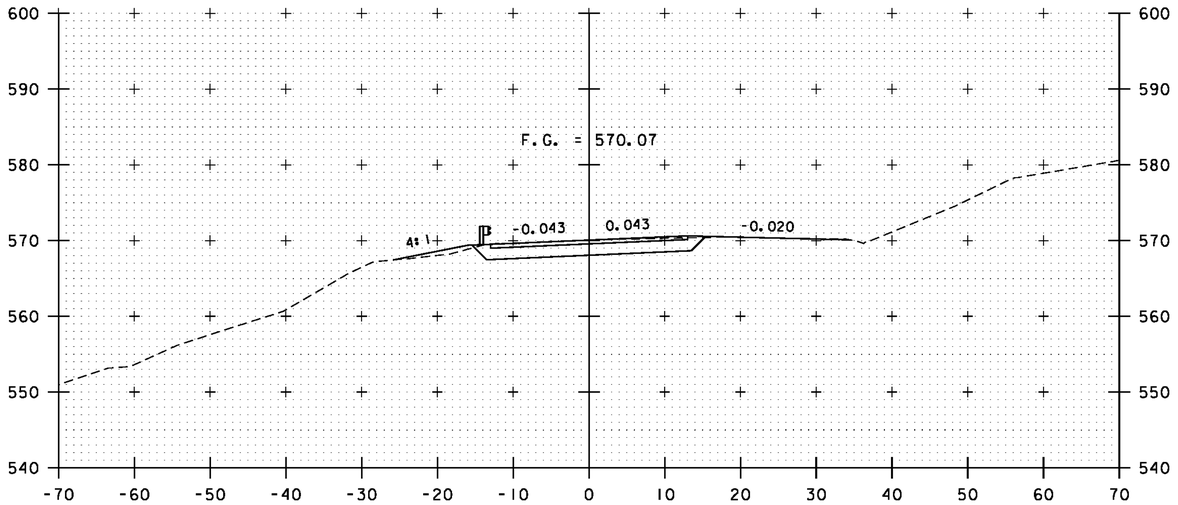
ROADWAY CROSS SECTIONS

SCALE 1" = 10'-0"

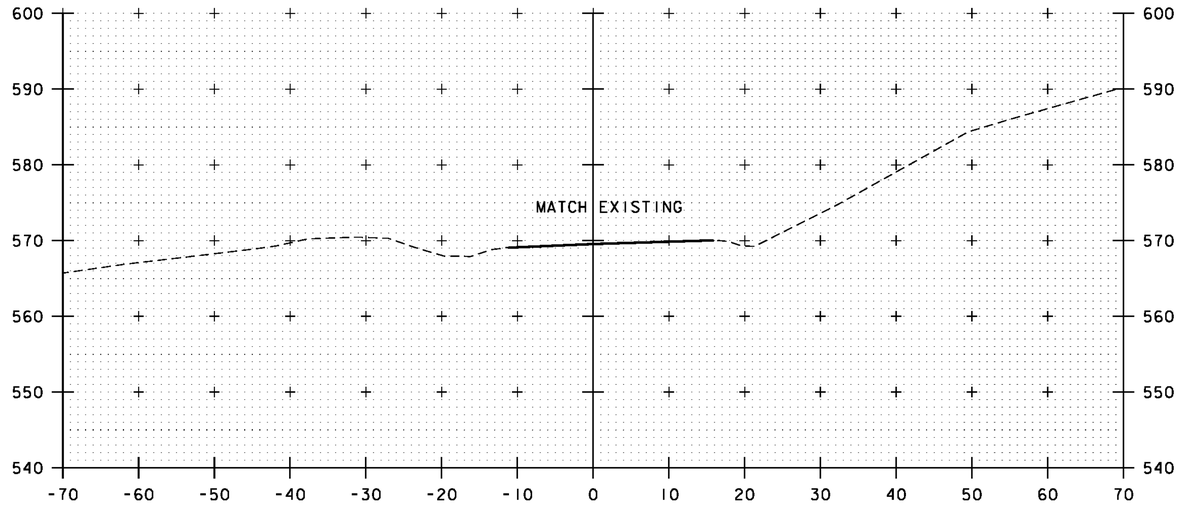
STA. 103+50 - STA. 105+00

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174xsl.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
ROADWAY CROSS SECTIONS (2 OF 3)	SHEET 65 OF 78

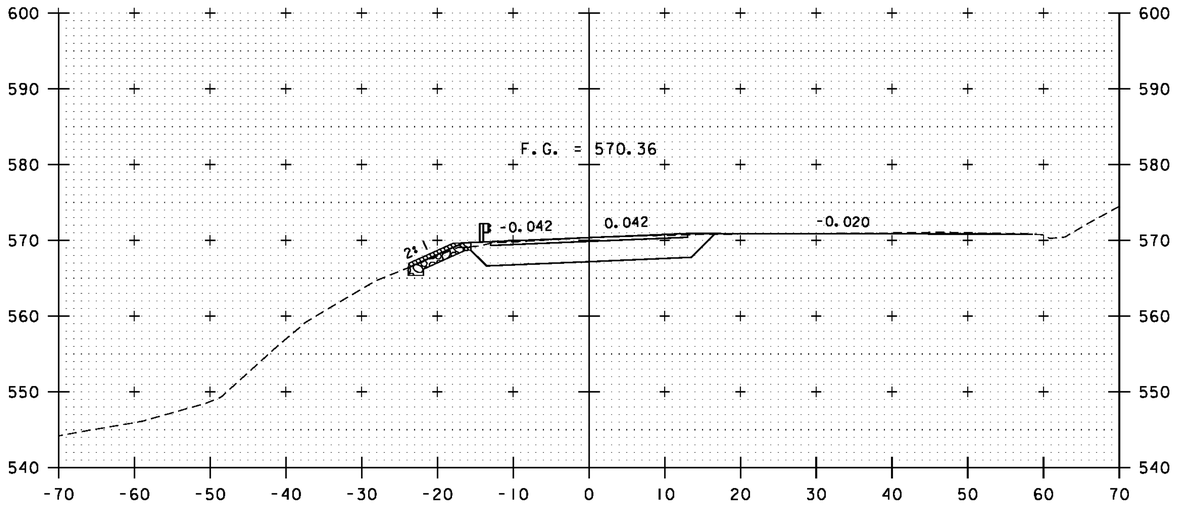


106+00

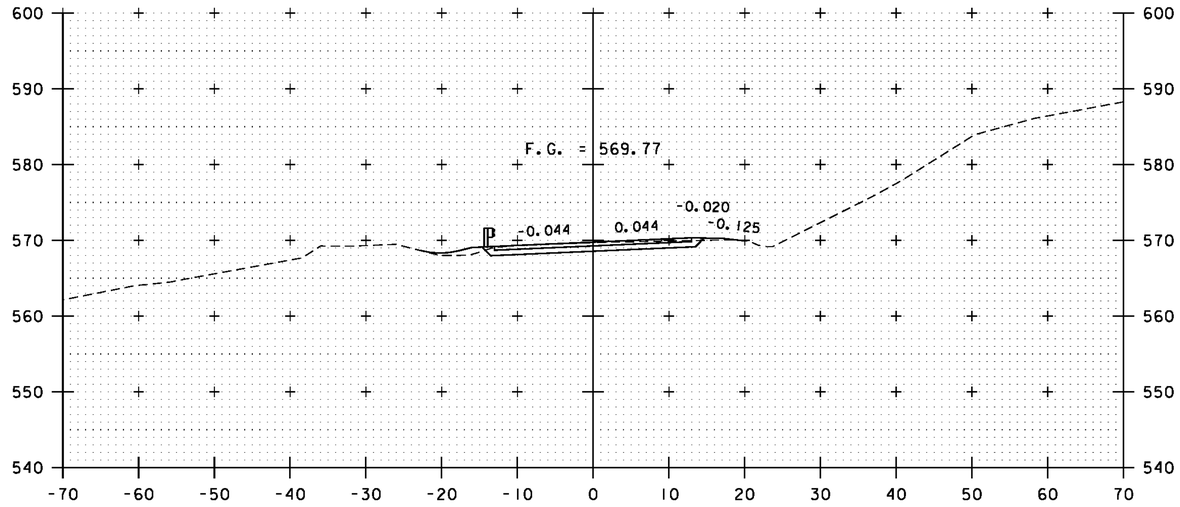


106+75

END APPROACH
STA. 106+75.00



105+50
TH 8 GOVE HILL RD RT
END BRIDGE
STA. 105+14.80



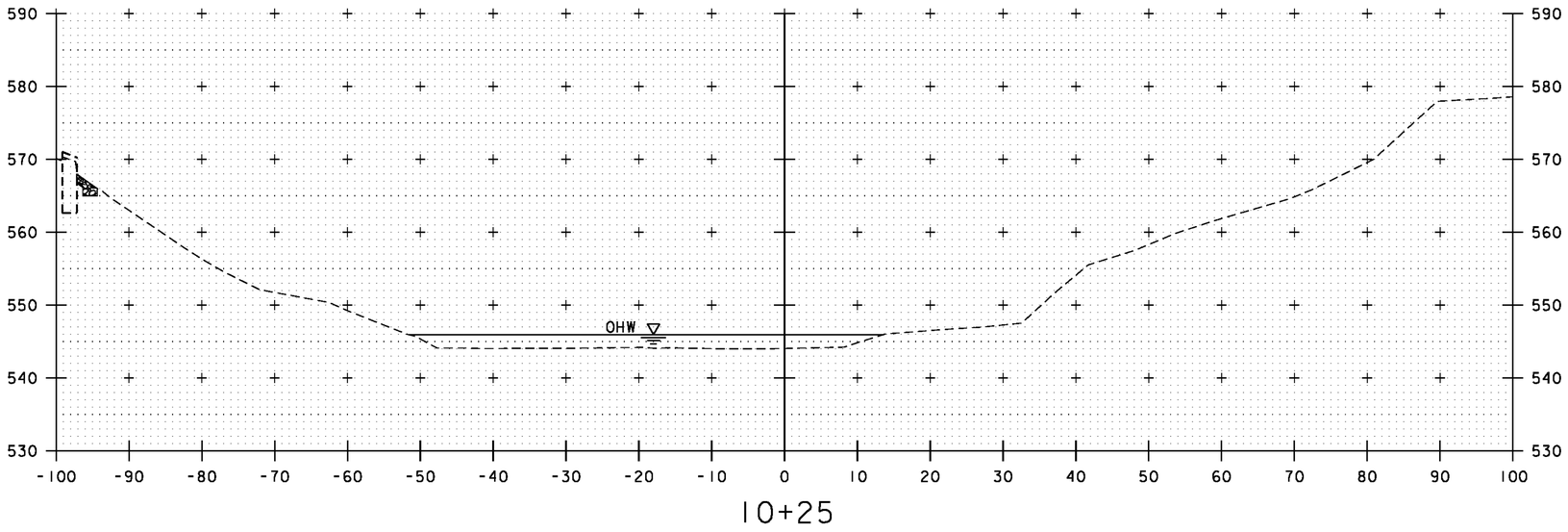
106+50

END PROJECT/BEGIN APPROACH
STA. 106+30.00

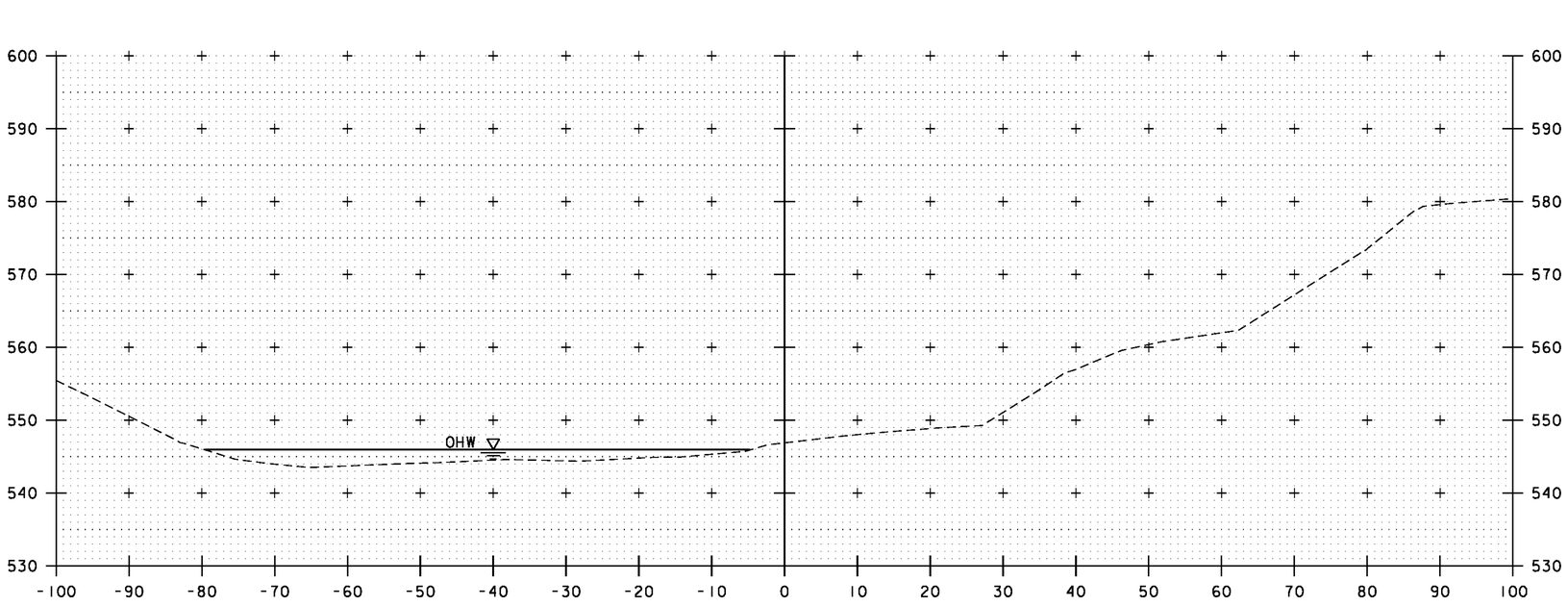
ROADWAY CROSS SECTIONS
SCALE 1" = 10'-0"
STA. 105+50 - STA. 106+75

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174xsl.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: E.A. FIALA
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
ROADWAY CROSS SECTIONS (3 OF 3)	SHEET 66 OF 78



10+25



10+00

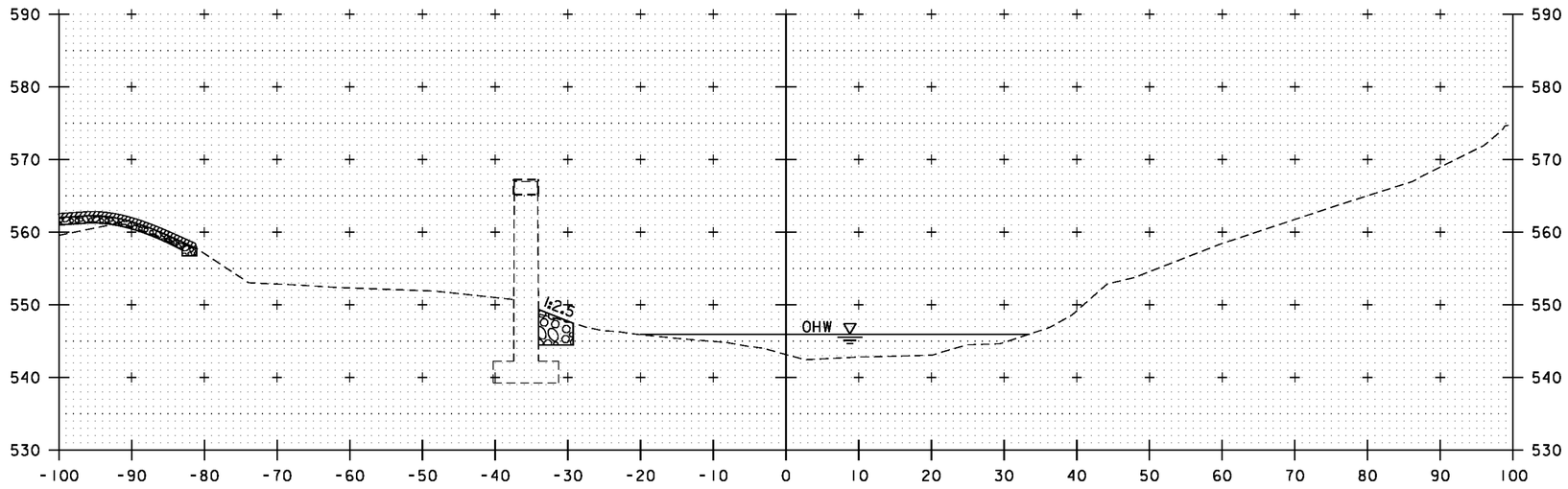
CHANNEL CROSS SECTIONS

SCALE 1" = 10'-0"

STA. 10+00 - STA. 10+25

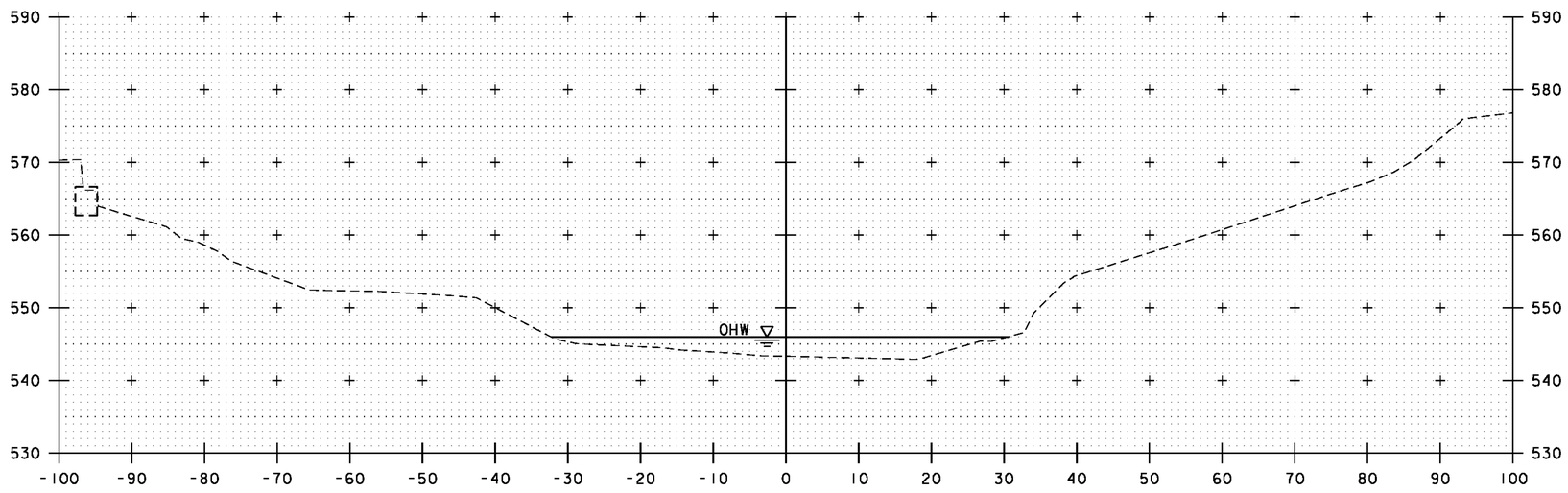
Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174xsl.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
CHANNEL CROSS SECTIONS (1 OF 5)	SHEET 67 OF 78



10+75

BEGIN UNCLASSIFIED CHANNEL EXCAVATION
STONE FILL, TYPE III
GEOTEXTILE UNDER STONE FILL
STA. 10+62.00, LT



10+50

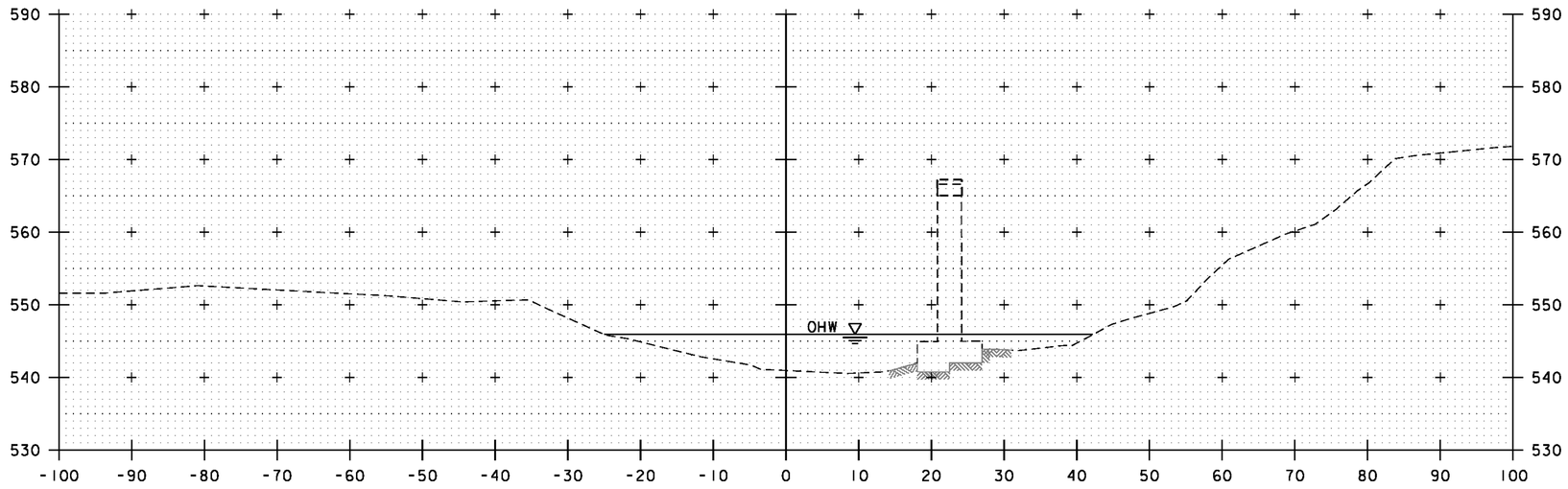
CHANNEL CROSS SECTIONS

SCALE 1" = 10'-0"

STA. 10+50 - STA. 10+75

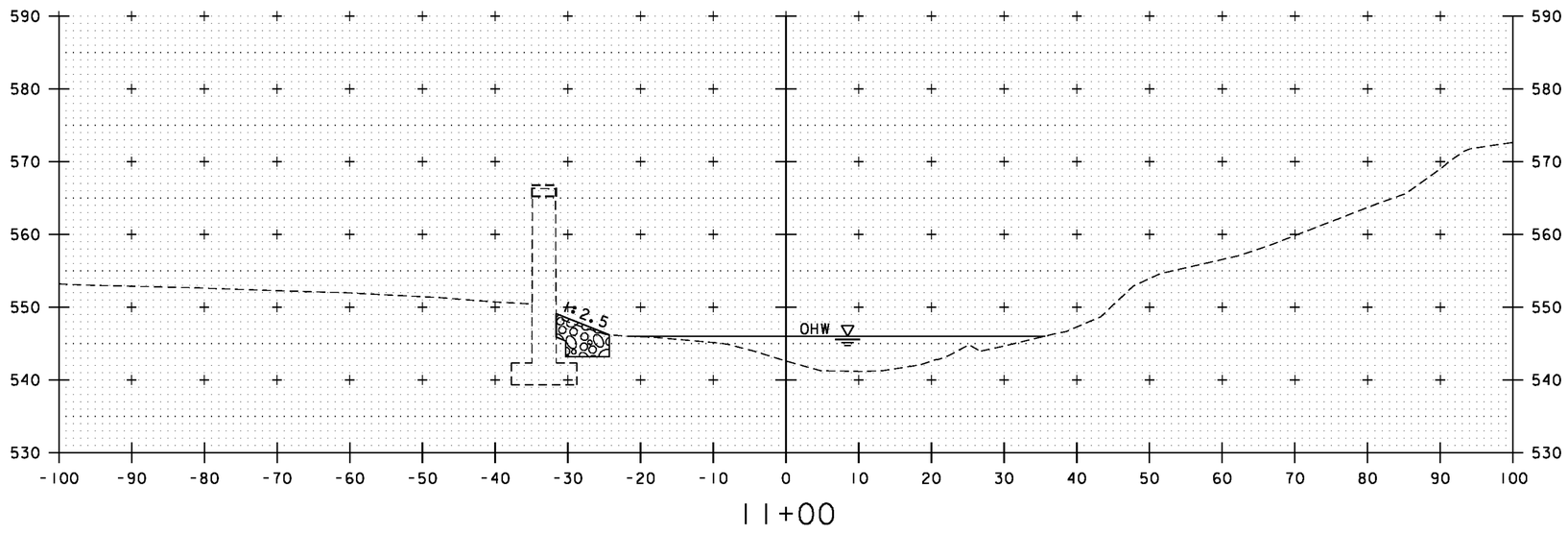
Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174xsl.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
CHANNEL CROSS SECTIONS (2 OF 5)	SHEET 68 OF 78



11+25

END UNCLASSIFIED CHANNEL EXCAVATION
STONE FILL, TYPE III
GEOTEXTILE UNDER STONE FILL
STA. 11+06.73, LT



11+00

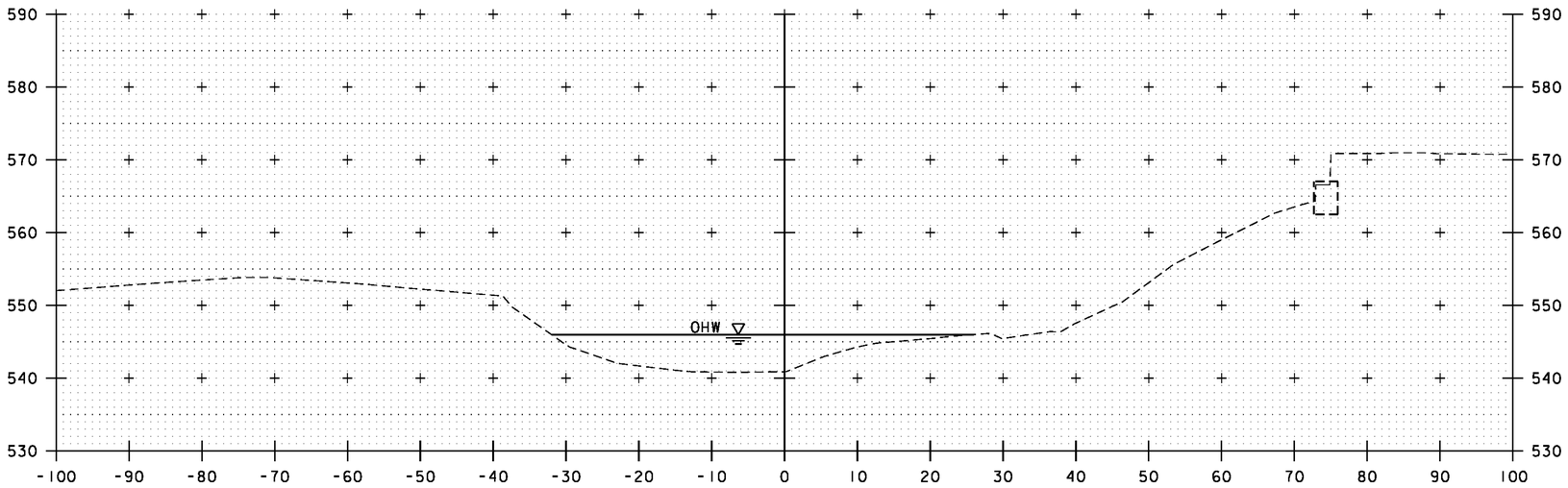
CHANNEL CROSS SECTIONS

SCALE 1" = 10'-0"

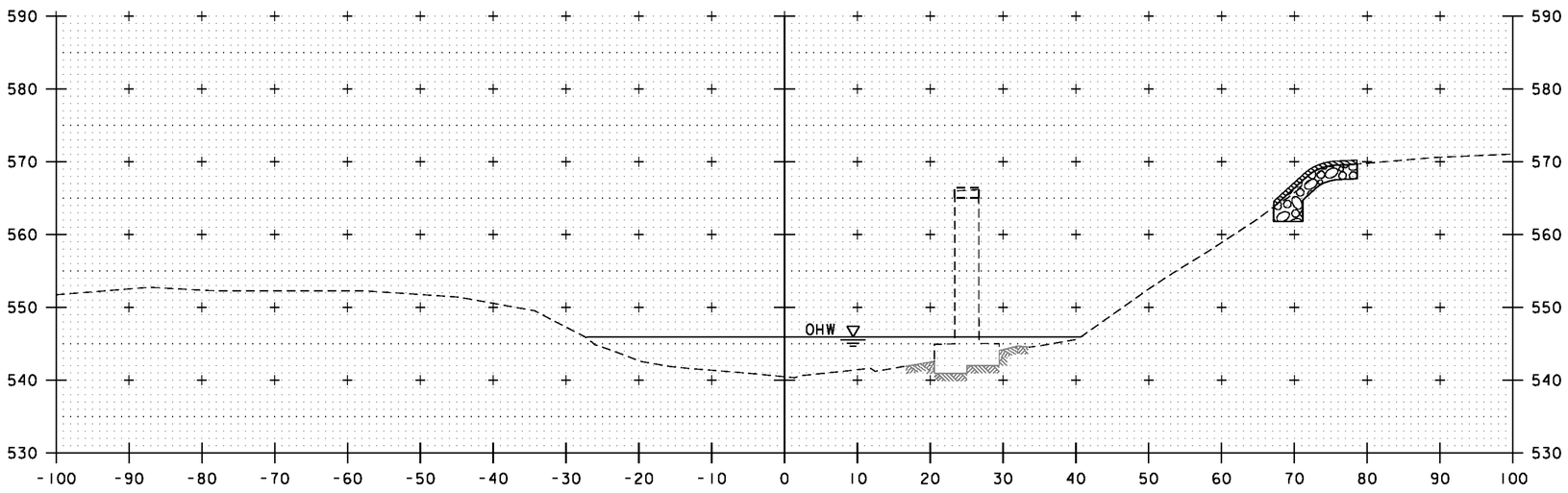
STA. 11+00 - STA. 11+25

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174xsl.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
CHANNEL CROSS SECTIONS (3 OF 5)	SHEET 69 OF 78



11+75



11+50

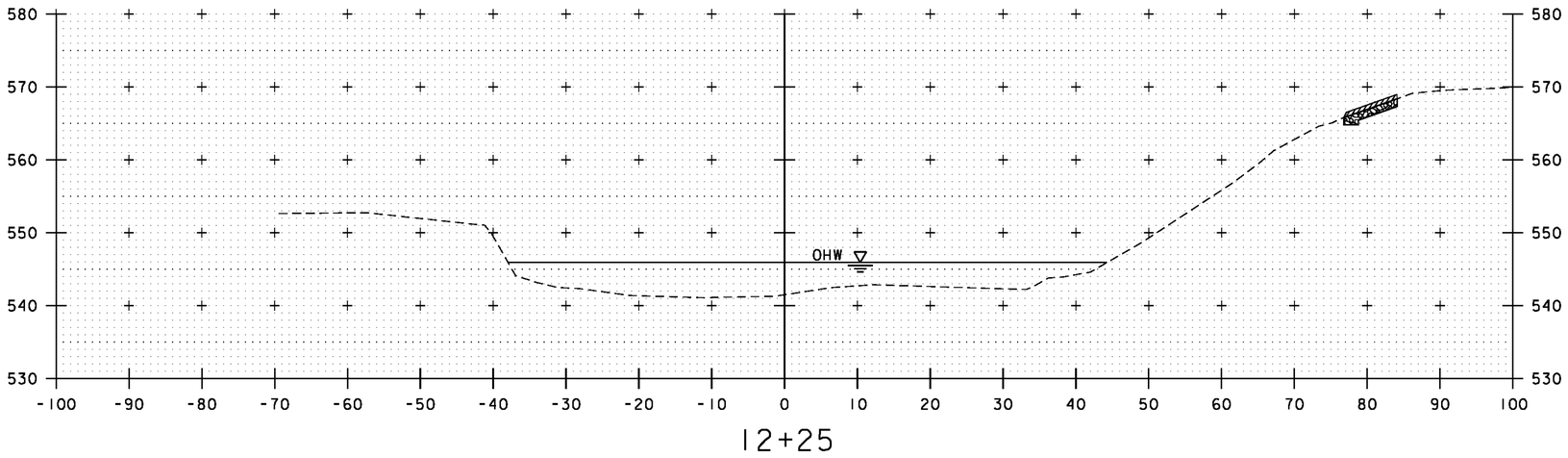
CHANNEL CROSS SECTIONS

SCALE 1" = 10'-0"

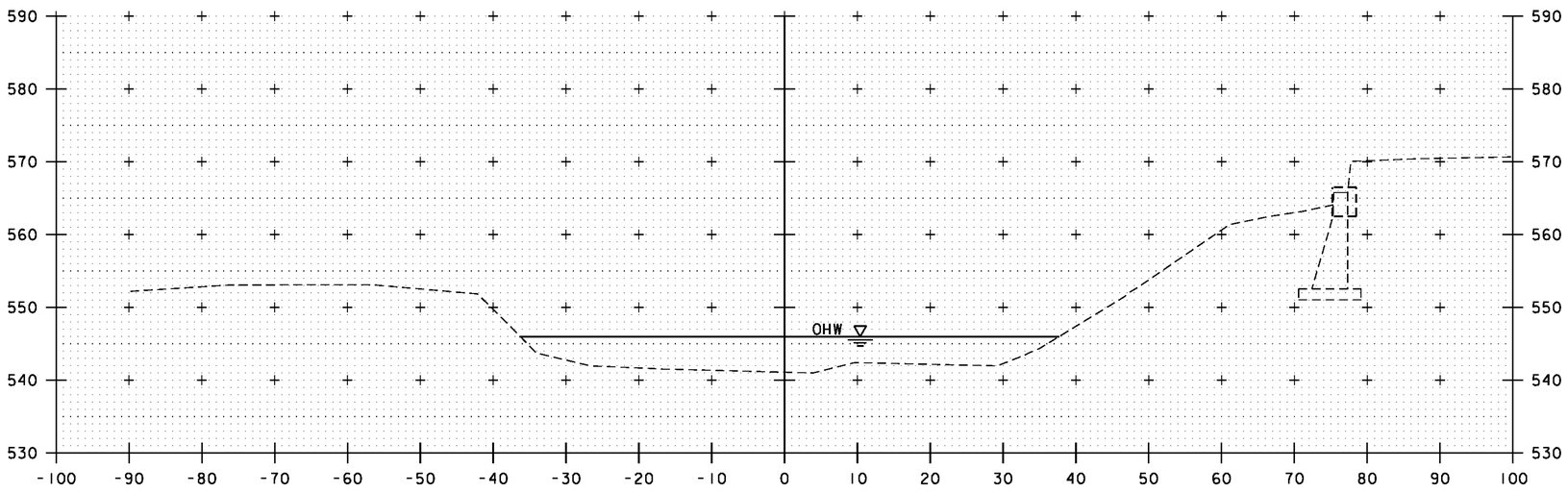
STA. 11+50 - STA. 11+75

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174xsl.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
CHANNEL CROSS SECTIONS (4 OF 5)	SHEET 70 OF 78



12+25



12+00

CHANNEL CROSS SECTIONS

SCALE 1" = 10'-0"

STA. 12+00 - STA. 12+25

Vanasse Hangen Brustlin, Inc.

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHF 0177(9)	
FILE NAME: z08j174xsl.dgn	PLOT DATE: 2/15/2012
PROJECT LEADER: M.A. COLGAN	DRAWN BY: B.M. KLINEFELTER
DESIGNED BY: S.E. BURBANK	CHECKED BY: S.E. BURBANK
CHANNEL CROSS SECTIONS (5 OF 5)	SHEET 71 OF 78

VHB 57325

STATE ROAD				FISCAL YEAR	SHEET NO.	TOTAL SHEETS
DIST. NO.	SHEET	PROJ. NO.				
3	1	ST.	S.A. #1	1946	23	150

HEAVY STONE FILL Item 33

All embankments on river side of bridge abutments is to be Heavy Stone Fill Item 33

BRIDGE DATA	
	PROPOSED
TYPE	WF Beam-Conc. Deck
Overall Lgth.	3@75'=225'-0"
Clear Span	150'-0"
Clear Hgt.	22'-0"
Roadway Width	24'-0"
Waterway	2500 Sq. Ft.
Elev. M.H.W.	564.00
Old Bridge	
None	

Δ - 59° 50' Lt
D - 8°
R - 716.8
T - 412.4
L - 747.9
E - 110.2
Bank ½ / 1 ft.

PC 23+0.56

Begin Bridge Sta. 23+37.54

Approaches 4' Embankment

Abut. No. 1

Sta. 25+29

Sta. 26+04.5

45°

℄ Pier No. 1

℄ Pier No. 2

End Bridge Sta. 26+62.21

Abut. No. 2

FLOW

24

25

26

27

28

75 Ft. Chord

224-2½" Chord

75 Ft. Chord

75 Ft. Chord

Heavy Stone Fill Item 33

well

"WOODS"

Brush & scattered trees

POST 29+05

POST 27+00

POST 25+91.1

B.M. #1A
12" Maple
Elev. 555.04

492' 24" Pipe

Conc. Mon. Set in Rock

Iron Pin Set in Rock

PI 27+18.0
26°41'

SUMMARY OF QUANTITIES
THIS BRIDGE ONLY

Concrete Class "A"	251 C.Y.
Concrete Class "B"	237 C.Y.
Steel Superstructure (220,000 lbs)	1 L.S.
Reinforcing Steel	67942 lbs
Bit. Concrete Pvt. for Bridges	54 Tons
Structure Excav.	215 C.Y.
Cable Guard Rail	451 L.F.

LIST OF SHEETS NEEDED FOR THIS PROJECT

PLAN (Sta. 23+00 - 29+00)
PROFILE (Sta. 23+00 - 29+00)
SUPERSTRUCTURE DETAILS
ABUTMENT No. 1 DETAILS
PIER No. 1 DETAILS
PIER No. 2 DETAILS
ABUTMENT No. 2 DETAILS
Std. Sheet SB-5C CABLE GUARD RAIL
Std. Sheet SB-20 CONSTR. DETAILS, Br. MARKER
Cross Sections (Sta. 23+00 - 28+50)

THETFORD-NORWICH

S.A. #1-1946

Surveyed by
Designed by
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Series S.A. No. 1-1946 Filed
Sheet 23 of 150 Sheets

OCT-1-1982

THETFORD
BHF 0177(9)
1946 STRUCTURAL PLAN
FOR REFERENCE ONLY
SHEET 72 OF 78

THETFORD
BHF 0177(9)
1946 STRUCTURAL PLAN
FOR REFERENCE ONLY
SHEET 73 OF 78

THETFORD-NORWICH
SERIES 50 NO. 1
Sheet 24 of 150 Sheets
CT-1-1983

THETFORD
BHF 0177(9)
1946 STRUCTURAL PLAN
FOR REFERENCE ONLY
SHEET 74 OF 78

RAIL SKEW DIMEN. See SB-SC

"W"	"X"	"Y"	"Z"
2'-5"	6'-4"	2'-11⅝"	3⅝"

Place a 15⅝" x 5½" x 1'-0" Support Block under and flush with curb over both Construction Joint and Expansion Joint. Construct Block and curb at both joints with 1" clear vertical opening. Reinforce Block Similar to Intermediate Supports.

No.1 Bars (Transverse Steel) will not be cut at Skew Ends over Pier #1, but will run thru Construction Joint.

Cut No.1 Bars to fit Skew End of Span 3 at Pier and use cut-off Ends to fit Skew End of Span 2 at Pier #2

Cut No.1 Bars to fit Skew End Here, and use cut-off Ends to fit Skew End of Span #1 at Abut #1

29 Posts (Not Shown) 28 Spaces @ 7'-8 1/2" = 1/8 Post = Approx 214'-10 3/8"±

Use Cut-off Ends of No.1 Bars Fitted for Span #3 at Abut #2 to furnish Transverse Steel Here

Span #1 Span #2 Span #3

Major Chord Lgth 224'-2 1/4"

Minor Chord Lgth

75'-0" Minor Chord of W.F. Beam
Roadway & Bridge - 8° Curve
True Lgth Skew Curve 225'-1 7/8"

No.1 Bars

No.2 Bars

No.3 Bars

No.4 Bars

DECK PLAN
Scale 1"=10'-0"

STRUCTURAL STEEL LAYOUT
(Not to Scale)
All longitudinal W.F. beams are parallel to 75'-0" chords

NOTES: BEARING PLATE ASSEMBLIES
Edge of Pls. B to be levelled 30° and to have a shoving fit in Pls. A and C.
A- 8"x1'-2 3/4"x1'-3" with slotted holes.
B- 8"x1'-0" Plate after beveling 3'-3 5/8" and 1" into Pls. A & C. Upper 2 with 8" 1¼" slotted holes. Lower 2 with 2"x1¼" slotted holes. Sliding surfaces finished.
C- Steel casting or rolled, 8" variable x 2" with 2"x1¼" slotted holes.
D- Steel casting or rolled, 12" variable x 10", 45° hole.
E- 8"x14½"x1'-4" Shoes to fit Pls A beam flanges.

BEARING PLATE ASSEMBLY FOR EXPANSION ENDS
Wgt. 135 lbs. ea.

BEARING PLATE ASSEMBLY FOR FIXED ENDS
Wgt. 100 lbs. ea.

Fill with Bituminous Joint Filler (Construction Joint only. Paint vertical face of joint w/ asphaltic paint. Transverse Deck Steel continuous thru this joint)

Expansion Joint

Exp. End

Fixed End

ELEVATION

LAYOUT of ℄ BEAM SEATS
OTHER BEAM SEATS IN PARALLEL POSITION
NOT TO SCALE

Cut beam flanges & bearing plate where necessary for skew clearance

DETAIL OF COPPER SUPPORT
FOR CORK EXPANSION MATERIAL PIER #2
Payment included in Unit Price bid for Conc. Cl. A

Radial dimensions

Floor slab shall be class A concrete 7" thick, dapped 6" at beams. Surface to be screeded, floated, & broomed. Roadway to be banked ½" per foot.

No.1 bars will be placed radially 44" measured at the ℄ of bridge. No.3 bars will be placed parallel with W.F. beams excepting the two outermost bars on each side they will be placed parallel to outside edge, & evenly dividing the overhang.

½" Bit. Conc. Pavement for Bridge Floors ITEM 32

See std. sht. SB-SC for Curb, rail and drain. Details as modified by this sheet.

Vertical dimensions to apply at face of curb. No drains on upstream side of Bridge.

Fin. Grade

Bit. Conc.

Bridge Roadway

No.6 Bars @ 12"℄

No.5 Bars @ 12"℄

No.3 Bars on concrete chairs

Fill conc. fillet outside of W.F. beams over Piers to match final coat of field paint of W.F. beams.

Dimensions normal to 75 chord

Spans 1&2 6'-0" Spans 3 5'-9"

6'-0"

Span #1 5'-9" Spans 2&3 5'-6"

HALF SECTION AT PIER
Scale ⅜" = 1'-0"

HALF SECTION AT ABUTMENTS

Bars "T" in Curtain Wall not shown.

Variable (See Structural Steel Layout)

ST. BWF 33.9#

16" I 42.7#

TYPICAL DETAILS OF DIAPHRAGM ASSEMBLY
See Structural Steel Layout for No. of Sets Req'd

REINFORCING STEEL

BAR	SIZE	QUAN.	T.L.	DETAILS
1	5/8"	834	28'-3"	
2	7/8"	30	38'-0"	Straight
3	1/4"	246	36'-0"	Straight
4	3/4"	14	8'-0"	Plain straight dowel
5	3/4"	69	6'-8"	
6	3/4"	136	5'-0"	
7A	1/2"	6	33'-0"	
7B	1/2"	12	36'-0"	
7C	1/2"	12	40'-0"	
7D	1/2"	6	45'-9"	

CURB & RAIL REINF. ST

CR-1	-	348	Per
CR-2	-	336	Left
CR-3	-	297	Gua
CR-4	-	96	38'-0" SB

NOTES

Steel superstructure is to include all plate assemblies & anchor bolts complete.

All steel beams shall be rolled to full length of the beam & the middle 2½ inches.

All structural steel shall be painted under item 16.

Engineer.

The final coat of field paint shall be green.

When bridge is built on skew, transverse rod bars shall be furnished as for square spans. Bars shall be cut in field to fit one skew and 4 cut-off ends shall be used as noted on Deck Plan.

All materials & construction, except as otherwise specified, shall conform to the A.A.S.H.O. specs. for 1941. Design for H-15 live loading, 25#/ft paving allowance, dead load uniformly distributed to all W. beams. Dead load includes weight of beams, Slab & cable rail.

See std. sheet SB-SC for Cable Guard Rail details not included on this sheet.

Quantities include entire superstructure.

Reinforcing Steel (Item 15) Shall meet the requirements of "Intermediate Steel Grade"

Expansion Joint gaps at ℄ of abut #1 & #2 and Pier #2 to be formed with rope before Bit. Conc. has been placed. After Bit. Conc. has been placed the rope shall be removed and joint filled with Bituminous Joint Filler. Payment for this work to be included in unit price bid for Bit. Conc. Pavement for Bridge Floors.

SUPERSTRUCTURE DETAILS
THETFORD-NORWICH
3 SPANS @ 75 FT. - 24 FT. ROADWAY
8° CURVE - 45° SKEW
H-15 LIVE LOADING

SUPERSTRUCTURE
ESTIMATED QUANTITIES

Concrete Class-A	181 CY.
Reinforcing Steel	42,770 Lbs.
Steel Superstructure (220,000)	1-L.S.
Cable Guard Rail	451 Lf.
Bit. Conc. Pavement for Bridge Floors	54 Tons

Scale as Noted

Surveyed by	
Designed by	W.A.S.
Drawn by	W.A.S. 6/46
Traced by	H.R.C.
Checked by	L.M.B. 7/9/46
Series	S.A. No. 1 - 1946 Filed
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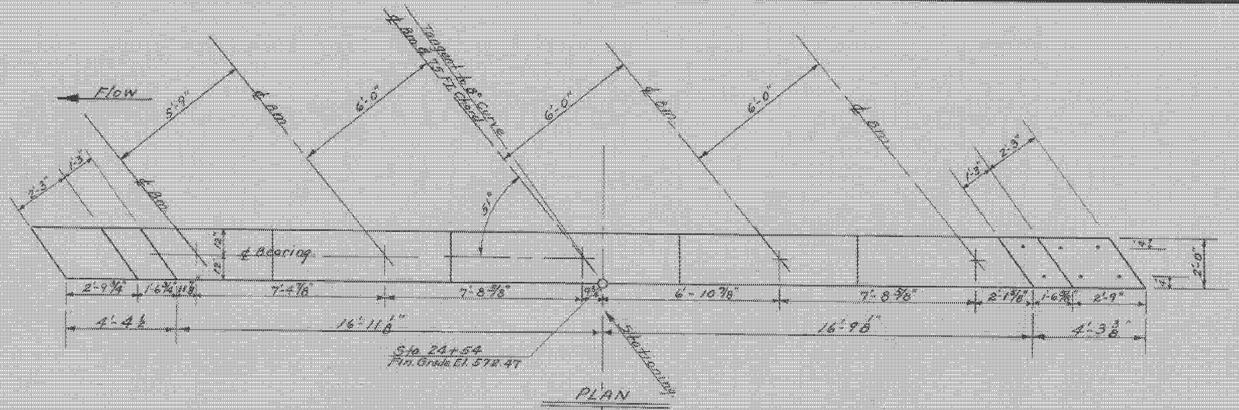
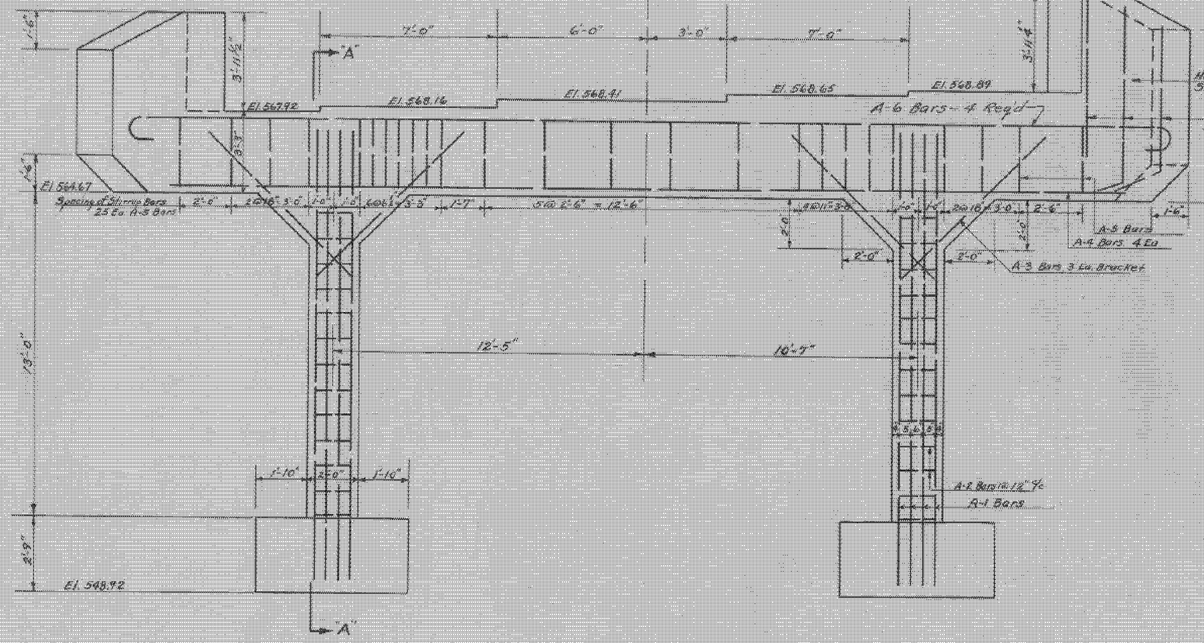
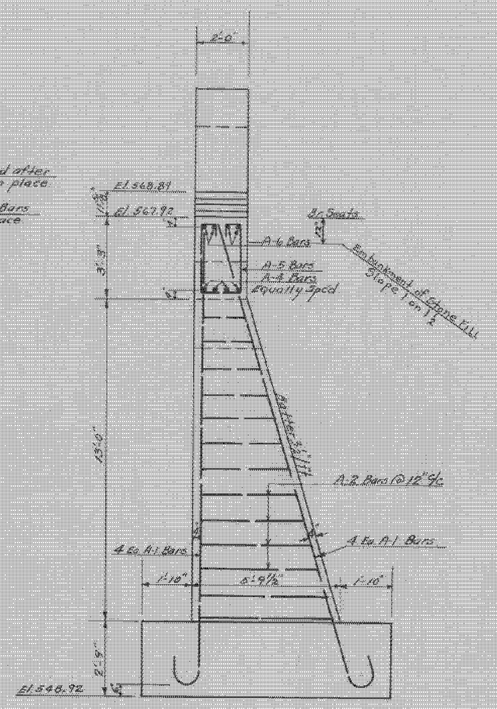
CT 1-1984

THETFORD
BHF 0177(9)
1946 STRUCTURAL PLAN
FOR REFERENCE ONLY
SHEET 75 OF 78





ELEVATION



SECTION "A-A"
(A-3 Bars Not Shown)

REINFORCING STEEL

No.	Size	Quantity	Type & Length
A-1	1¼" ℄	16	19'-0" Straight
A-2	¼" ℄	26	10'-6"
A-3	¾" ℄	24	8'-0"
A-4	1¼" ℄	4	37'-0" Straight
A-5	⅝" ℄	25	9'-1"
A-6	1⅛" ℄	4	44'-2"

Reinforcing Steel (Item 15) shall meet the requirements of Intermediate Steel Grade.

ABUTMENT No. 1 DETAILS

THETFORD - NORWICH

Scale ⅜" = 1'-0"

ESTIMATED QUANTITIES

Structure Excav.	45	C.Y.
Concrete Class "A"	33	C.Y.
Reinforcing Steel	3955	Lbs.

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Drawn by W.A.B.
Traced by H.R.C.
Checked by L.M.B. 3/10/46
Series S.A. No. 1-1946 Files
Sheet 26 of 150 Sheets

ET-1-1985

PLAN

SECTION 'X-X'

ELEVATION

SECTION-Y-Y

END

REINFORCING STEEL

BAR No.	SIZE	REQ'D	T.L.
A	1" ϕ	32	8'-6"
B	1" ϕ	22	12'-6"
C	1⅛" ϕ	48	7'-3"
D	1⅛" ϕ	48	23'-9"
E	⅝" ϕ	18	24'-0"
F	⅝" ϕ	11	34'-0"
H	¼" ϕ	48	21'-6"(Avg)

Straight

16'-6"

8'-2" max length
8'-2" min length
2 Bars each applicant, this dimension varying by 2"

Reinforcing Steel (Item 15) shall meet the requirements of Intermediate Steel Grade.

ESTIMATED QUANTITIES

Concrete Class 'B'	111 cy.
Reinforcing Steel	9272 lbs
Structure Excav.	125 cy.

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Sheet 27 of 150 Sheets

PIER NO. 1 DETAILS

THETFORD - NORWICH

Scale 3/8" = 1'-0"

CT-1-1986

THETFORD
BHF 0177(9)
1946 STRUCTURAL PLAN
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SHEET 76 OF 78

THETFORD
BHF 0177(9)
1946 STRUCTURAL PLAN
FOR REFERENCE ONLY
SHEET 77 OF 78

PLAN

SECTION 'X-X'

ELEVATION

END

PIER No 2 DETAILS
THETFORD-NORWICH

Not to Scale.

REINFORCING STEEL

Bar No	Size	Reqd	T.L.
LL	1"ϕ	36	6'-0"
CC	1⅛"ϕ	48	8'-9"
DD	1⅜"ϕ	48	21'-6"
EE	⅝"ϕ	22	24'-0"
FF	⅝"ϕ	13	42'-0"
HH	¼"ϕ	44	21'-0" (Avg)

Straight

2 Bars each length with HH dimension Varying by ½"

Reinforcing Steel (Item 15) shall meet the requirements of Intermediate Steel Grade.

Min. Distance from top of Footing to Ledge Foundation to be 1'-6"

ESTIMATED QUANTITIES

Concrete Class "B"	126 CY
Reinforcing Steel	8215 Lbs
Structure Excav.	15 CY

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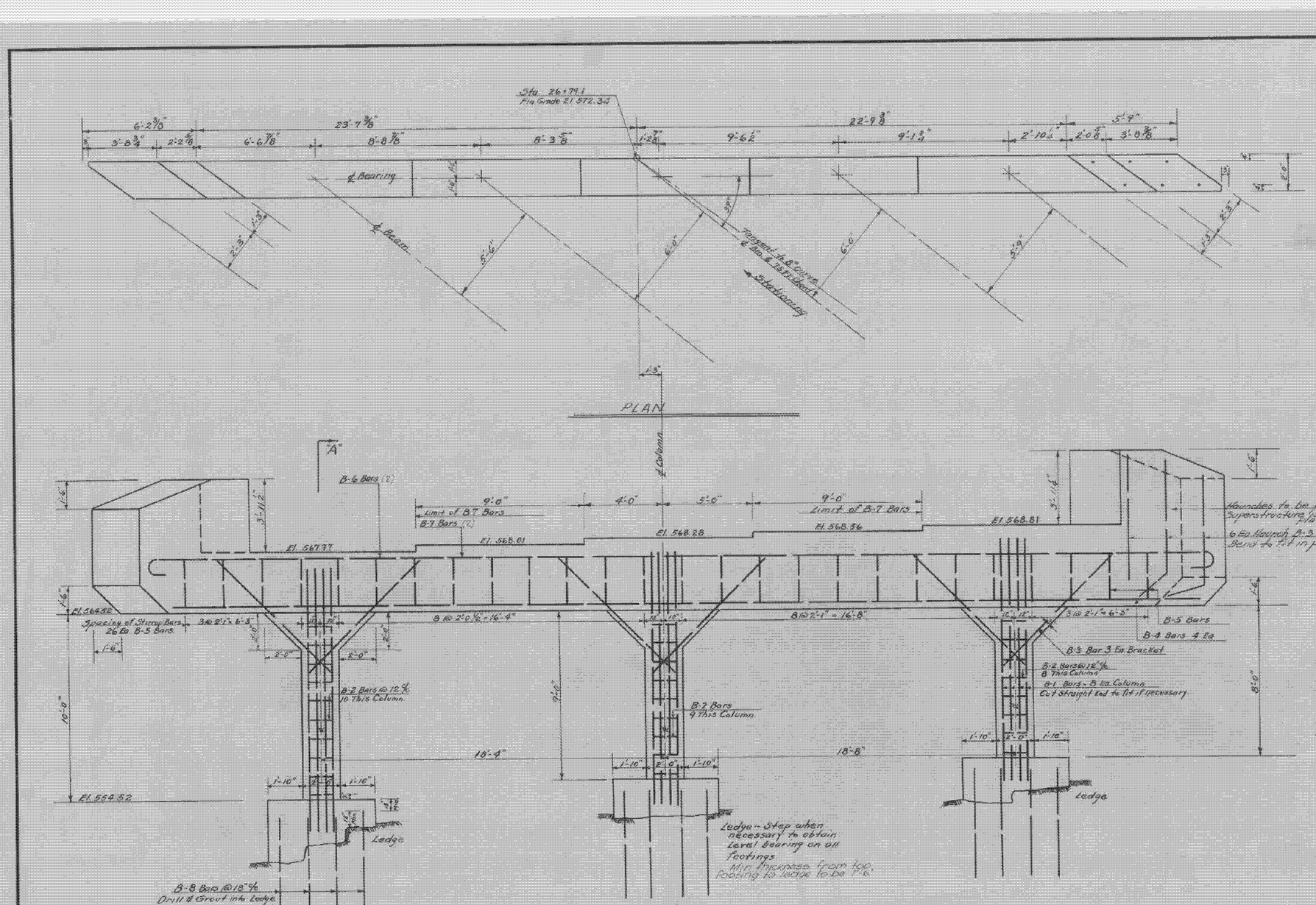
CT-1-1987



REINFORCING STEEL

No	Size	Quantity	Tot. Lgth.	Details
B-1	1⅛" ø	24	15'-9"	14'-0" + 2'-5"
B-2	¼" ø	27	9'-6" Avg.	1'-9" Min Lgth. Increment of Increase 3½" (See Elevation for No.)
B-3	¾" ø	30	8'-0"	Straight
B-4	1" ø	4	52'-0"	Straight
B-5	½" ø	26	9'-1"	
B-6	1⅛" ø	2	60'-6"	
B-7	¾" ø	2	27'-0"	
B-8	1" ø	24	6'-0"	

Reinforcing Steel (Item 15) shall meet requirements of Intermediate Grade

THETFORD
BHF 0177(9)
1946 STRUCTURAL PLAN
FOR REFERENCE ONLY
SHEET 78 OF 78

ABUTMENT No 2 DETAILS

THETFORD - NORWICH

Scale 3/8" = 1'-0"

ESTIMATED QUANTITIES

Structure Excav.	30 CY.
Concrete Class "A"	37 CY.
Reinforcing Steel	3730 Lbs.

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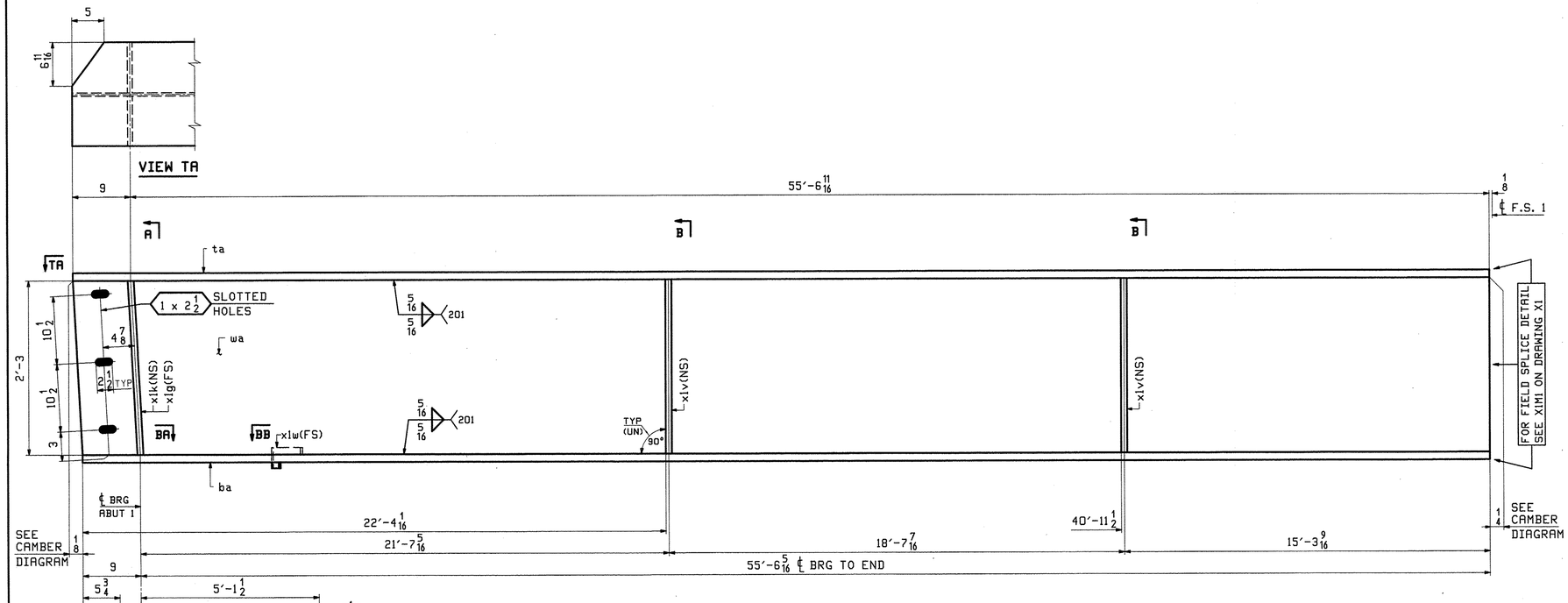
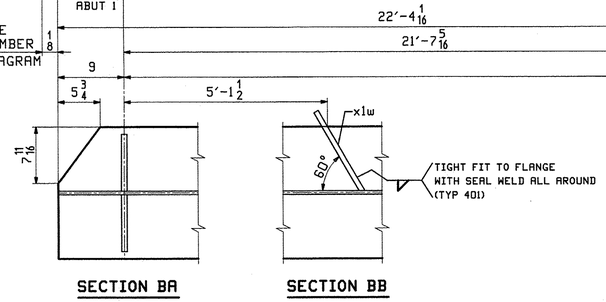
Drawn by W.A.S.
Traced by A.R.C.
Checked by L.M.B.
Series S.A. No. 1-1946 Filed
Sheet 29 of 150 Sheets

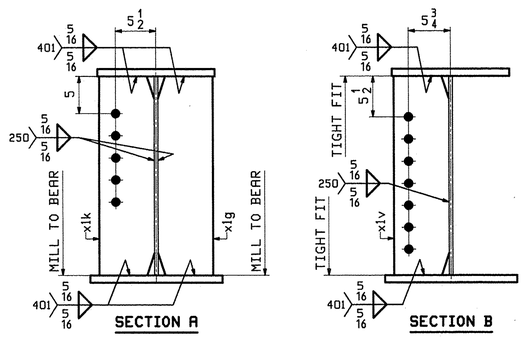
CT-1-1988

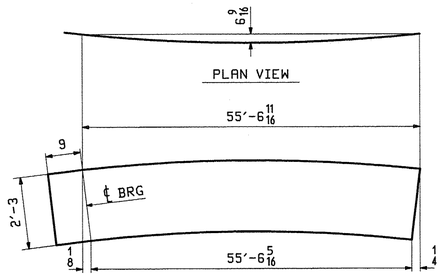




ONE - GIRDER - 1G1A (DEVELOPED)

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C1.
FOR FLANGE DIAGRAMS SEE DRAWING F1.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.





DEV. ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C1

ABM INFO PAGE	ABM INFO LINE	SHIP MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES
		1G1A	1		GIRDER				9245	
4	A		1	wa	PL 1/2x27	56	3 11/16	M270-50WT2	2587	
3	A		1	ta	PL 1x16	56	3 11/16	M270-50WT2	3066	
1	S		1	ba	PL 1x18	56	3 5/16	M270-50WT2	3447	
5	J		1	x1g	PL 3/4x7 1/2	2	3	M1E M270-50WT2	43	
5	J		1	x1k	PL 3/4x7 1/2	2	3	M1E M270-50WT2	43	
5	L		2	x1v	PL 1/2x7 1/2	2	3	M270-50WT2	57	
5	M		1	x1w	PL 1/4x3	1	0 1/4		3	

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16"Ø (UN)	NONE

DESCRIPTION: GIRDER - 1G1A

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE.
SOUTH PORTLAND, ME 04106
PHONE (207) 780-6722
FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: JTB	DATE: 05/16
	CHK'D: DBH	DATE: 05/21
LOCATION: THETFORD, VT	JOB NO. 518	DWG NO. 1
PROJ NO. BHF 0177(9)		REV.
CUSTOMER: A.L. ST. ONGE CONTRACTING		

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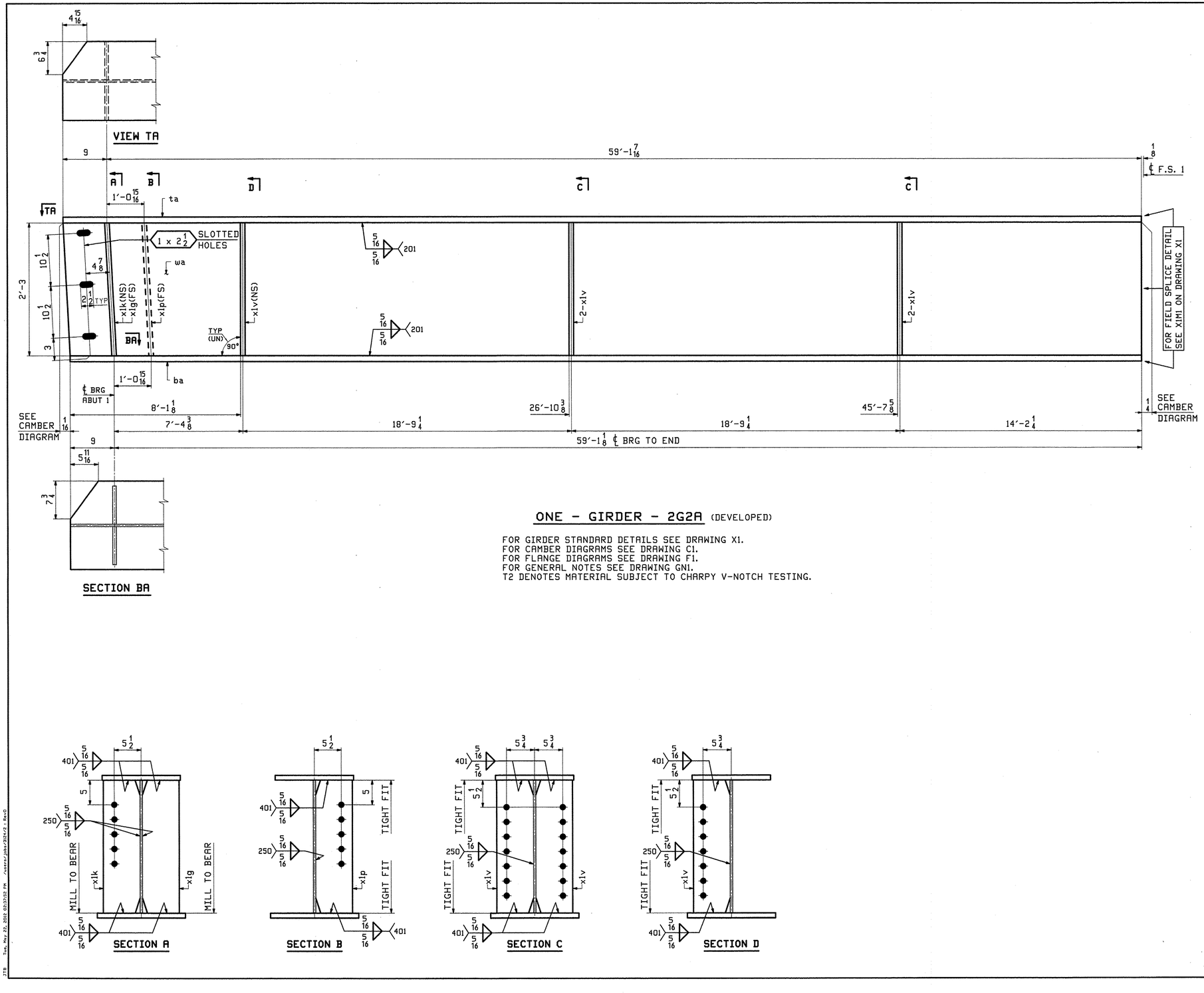

SECTION BA

ONE - GIRDER - 2G2A (DEVELOPED)

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C1.
FOR FLANGE DIAGRAMS SEE DRAWING F1.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

SECTION A

SECTION B

SECTION C

SECTION D

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								518	2	
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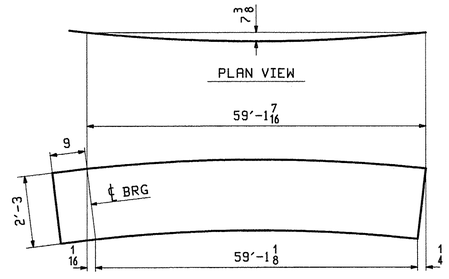
		2G2A	1		GIRDER				9948	
3	S		1	wa	PL 1/2x27	59	10 7/16	M270-50WT2	2750	
2	U		1	ta	PL 1x16	59	10 7/16	M270-50WT2	3260	
1	L		1	ba	PL 1x18	59	10 1/8	M270-50WT2	3665	
5	J		1	x1g	PL 3/4x7 1/2	2	3	MIE M270-50WT2	43	
5	J		1	x1k	PL 3/4x7 1/2	2	3	MIE M270-50WT2	43	
5	K		1	x1p	PL 3/4x7 1/2	2	3	M270-50WT2	43	
5	L		5	x1v	PL 1/2x7 1/2	2	3	M270-50WT2	144	



DEV. ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C1

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0	MAY 23 2012					

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16"Ø (UN)	NONE

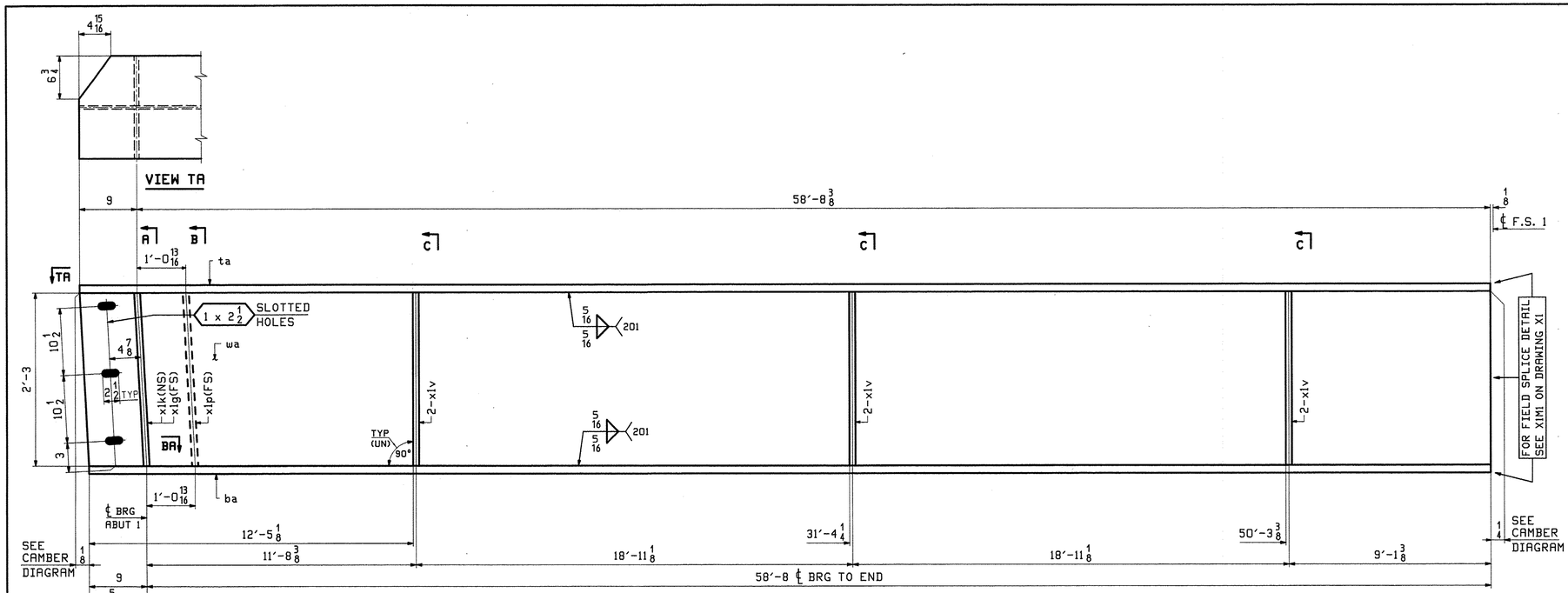
DESCRIPTION: GIRDER - 2G2A

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE.
SOUTH PORTLAND, ME 04106
PHONE (207) 780-6722
FAX. (207) 780-6726

TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: JTB	DATE: 05/16	
	CHKD: DBH	DATE: 05/21	
LOCATION: THETFORD, VT	JOB NO.	DWG NO.	
PROJ NO. BHF 0177(9)	518	2	
CUSTOMER: A.L. ST. ONGE CONTRACTING		REV. △	

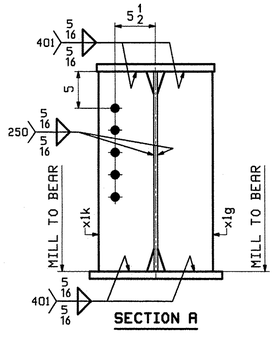
JTB Tue, May 22, 2012 03:07:53 PM /cases/jobs/2524/2 | Rev0



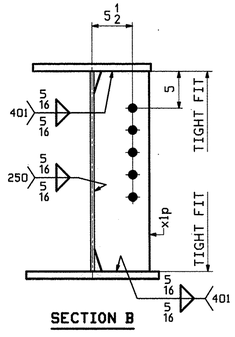
SECTION BA

ONE - GIRDER - 3G3A (DEVELOPED)

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C1.
FOR FLANGE DIAGRAMS SEE DRAWING F1.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.



SECTION A



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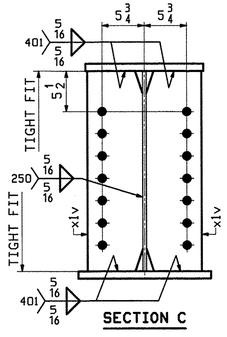

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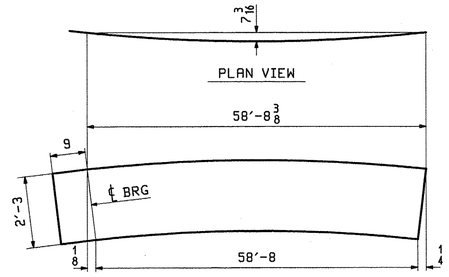

DEV. ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C1

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3	U		1	wa	PL 1/2x27	59	5 3/8	M270-50WT2	2731	
2	W		1	ta	PL 1x16	59	5 3/8	M270-50WT2	3237	
1	N		1	ba	PL 1x18	59	5	M270-50WT2	3639	
5	J		1	x1g	PL 3/4x7 1/2	2	3	MIE M270-50WT2	43	
5	J		1	x1k	PL 3/4x7 1/2	2	3	MIE M270-50WT2	43	
5	K		1	x1p	PL 3/4x7 1/2	2	3	M270-50WT2	43	
5	L		6	x1v	PL 1/2x7 1/2	2	3	M270-50WT2	172	

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16"ø (UN)	NONE

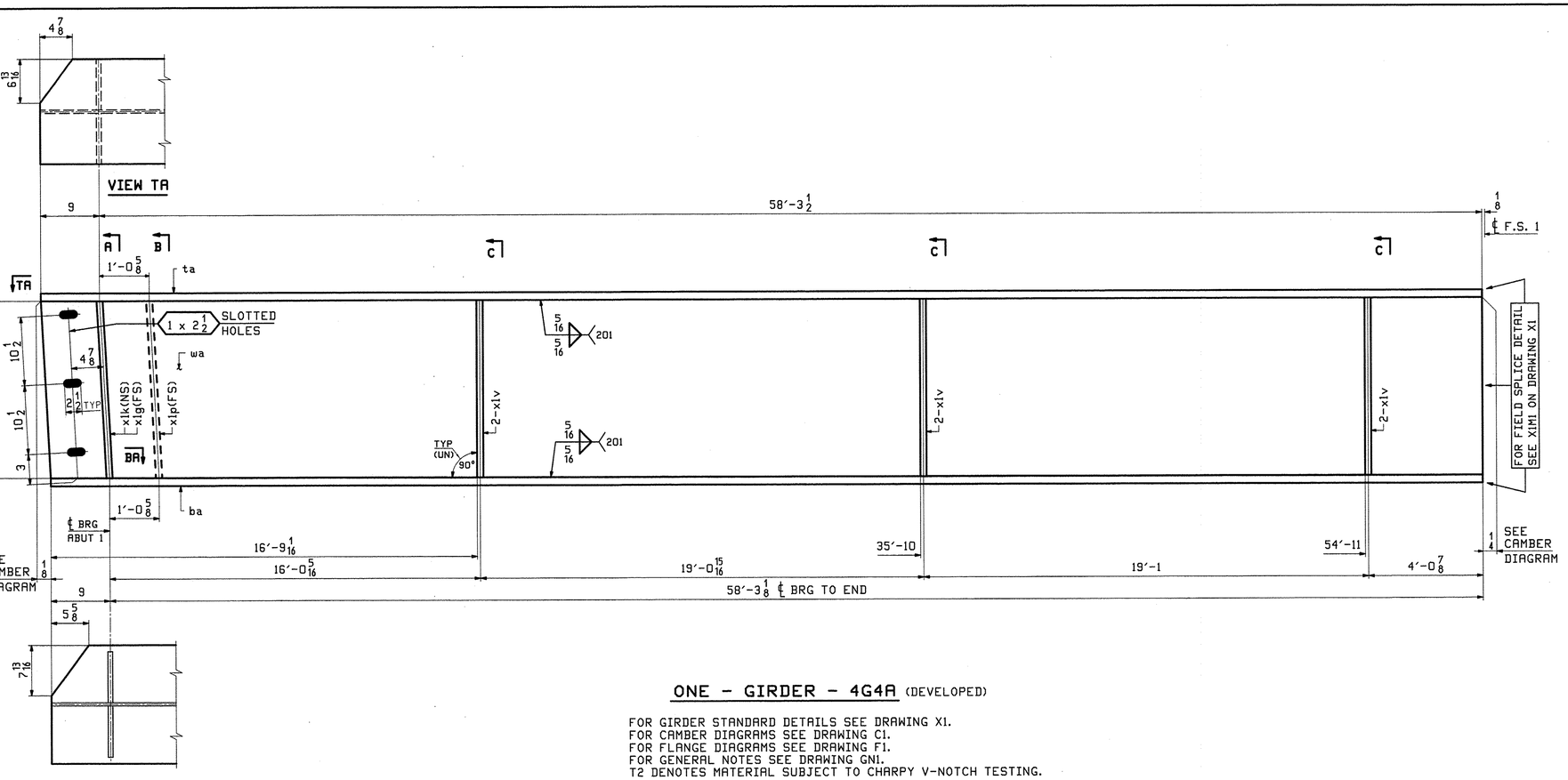
DESCRIPTION: GIRDER - 3G3A

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE.
SOUTH PORTLAND, ME 04106
PHONE (207) 780-6722
FAX. (207) 780-6726

TENSOR 3124

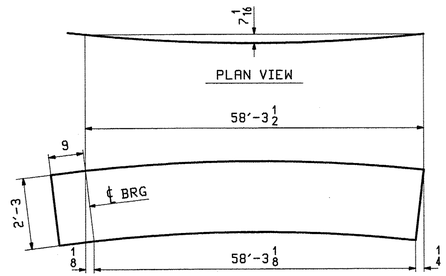
STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER		DRAWN: JTB	DATE: 05/16
		CHKD: DBH	DATE: 05/21
LOCATION: THETFORD, VT		JOB NO.	DWG NO.
PROJ NO.	BHF 0177(9)	518	3
CUSTOMER:	A.L. ST. ONGE CONTRACTING		REV. △

319 Tue, May 22, 2012 03:27:52 PM //casco_bay/2824/3 | 8x10

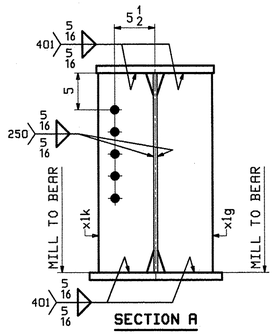


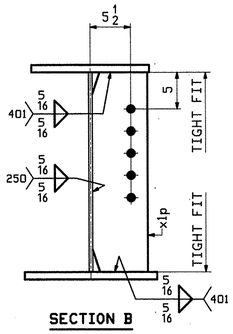
ONE - GIRDER - 4G4A (DEVELOPED)

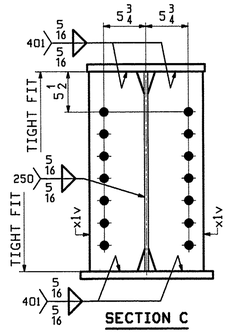
FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C1.
FOR FLANGE DIAGRAMS SEE DRAWING F1.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.



DEV. ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C1







ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
						LENGTH		518	4	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	FT	INCHES	REMARKS	WT	PROCUREMENT NOTES
		4G4A	1		GIRDER				9843	
3	W		1	wa	PL 1/2x27	59	0 1/2	M270-50WT2	2712	
2	Y		1	ta	PL 1x16	59	0 1/2	M270-50WT2	3215	
1	Q		1	ba	PL 1x18	59	0 1/8	M270-50WT2	3614	
5	J		1	x1g	PL 3/4x7 1/2	2	3	MIE M270-50WT2	43	
5	J		1	x1k	PL 3/4x7 1/2	2	3	MIE M270-50WT2	43	
5	K		1	x1p	PL 3/4x7 1/2	2	3	M270-50WT2	43	
5	L		6	x1v	PL 1/2x7 1/2	2	3	M270-50WT2	172	

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0	MAY 23 2012					

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16" ø (UN)	NONE

DESCRIPTION: GIRDER - 4G4A

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: JTB	DATE: 05/16
	CHKD: DBH	DATE: 05/21
LOCATION: THETFORD, VT	JOB NO. 518	DWG NO. 4
PROJ NO. BHF 0177(9)		REV. △
CUSTOMER: A.L. ST. ONGE CONTRACTING		

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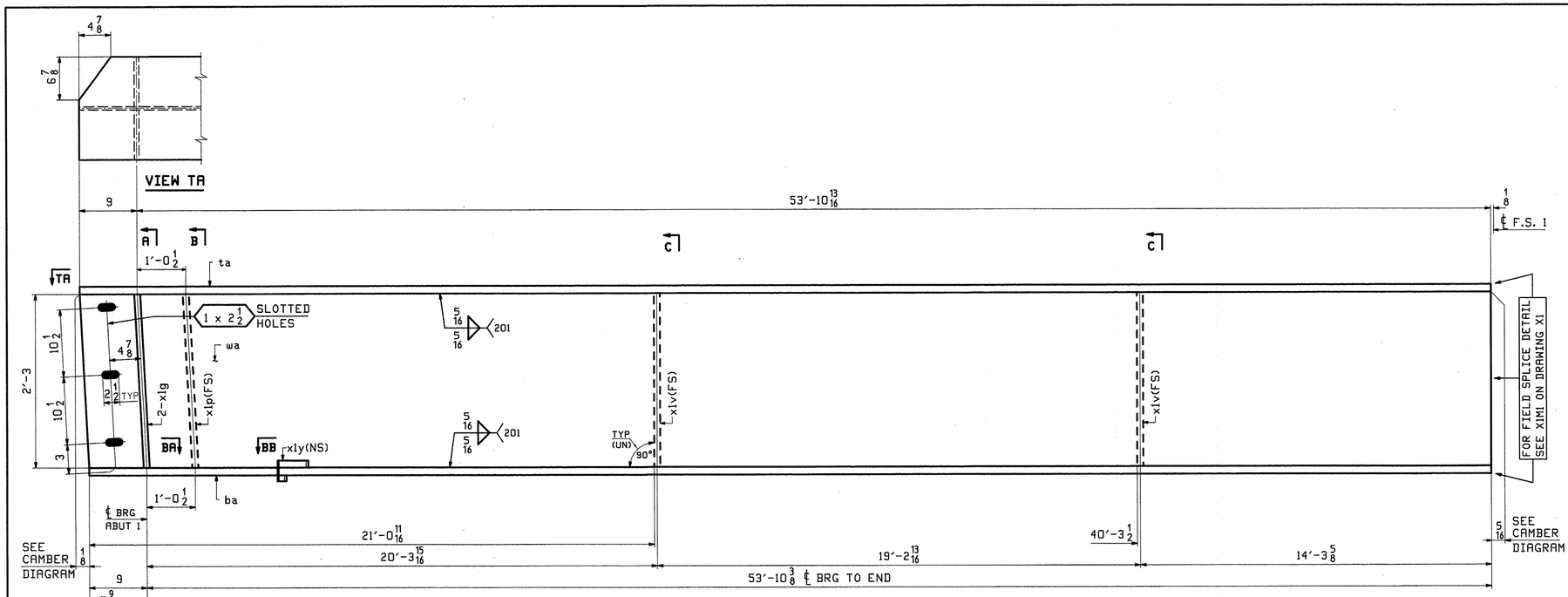
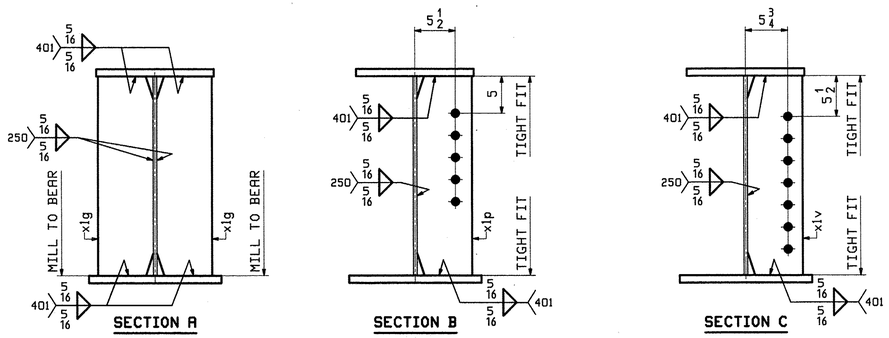
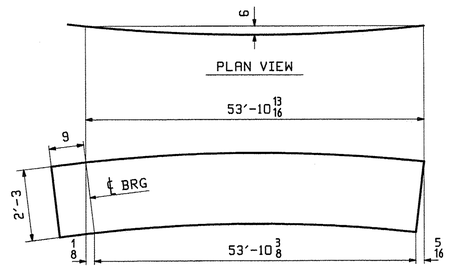


ONE - GIRDER - 5G5A (DEVELOPED)

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C1.
FOR FLANGE DIAGRAMS SEE DRAWING F1.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.





DEV. ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C1

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								518	5	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES
		5G5A	1		GIRDER				9020	
4	C		1	wa	PL 1/2x27	54	7 13/16	M270-50WT2	2511	
3	C		1	ta	PL 1x16	54	7 13/16	M270-50WT2	2975	
1	U		1	ba	PL 1x18	54	7 3/8	M270-50WT2	3345	
5	J		2	x1g	PL 3/4x7 1/2	2	3	MIE M270-50WT2	86	
5	K		1	x1p	PL 3/4x7 1/2	2	3	M270-50WT2	43	
5	L		2	x1v	PL 1/2x7 1/2	2	3	M270-50WT2	57	
5	M		1	x1y	PL 1/4x3	1	0 1/4		3	

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0	MAY 23 2012					

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16"Ø (UN)	NONE

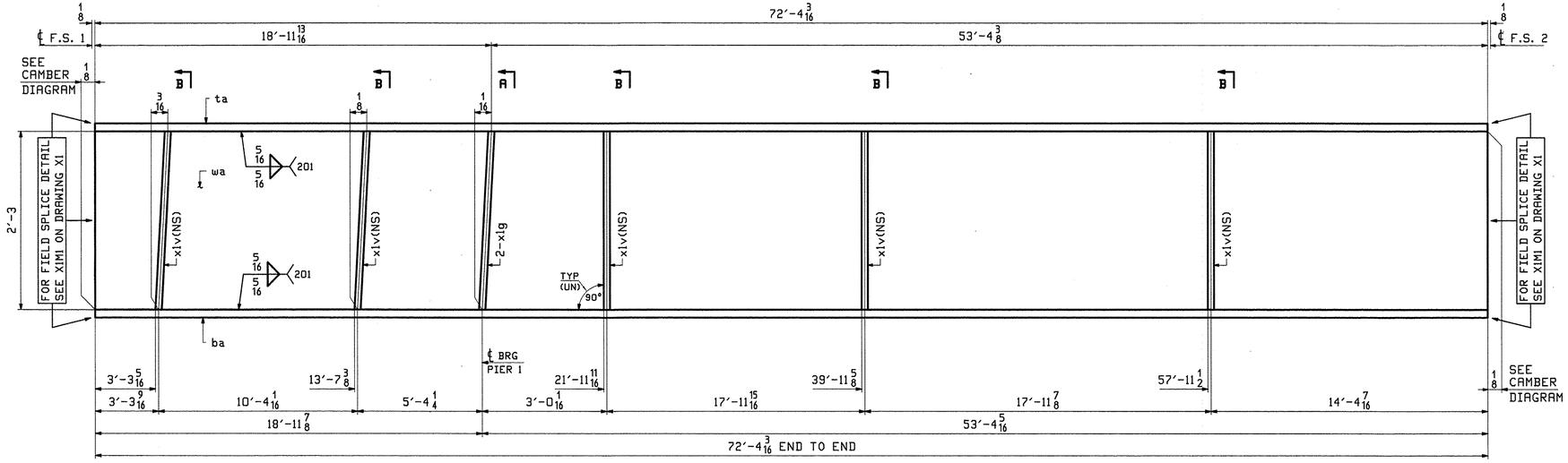
DESCRIPTION: GIRDER - 5G5A

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726

TENSOR 3124

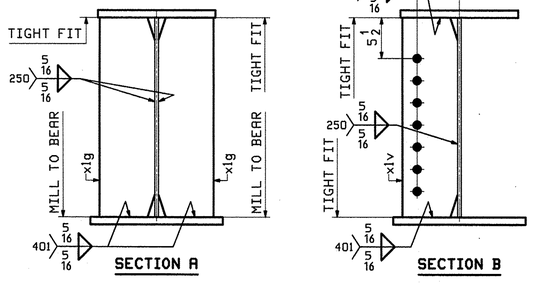
STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: JTB	DATE: 05/16
	CHKD: DBH	DATE: 05/21
LOCATION: THETFORD, VT	JOB NO. 518	DWG NO. 5
PROJ NO. BHF 0177(9)		
CUSTOMER: A.L. ST. ONGE CONTRACTING		REV. △

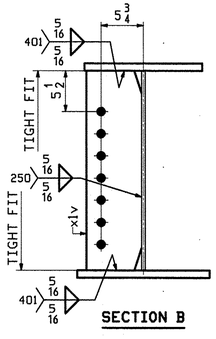
JTB Tue, May 22, 2012 02:37:54 PM /users/jobs/2124/5 : Rev0



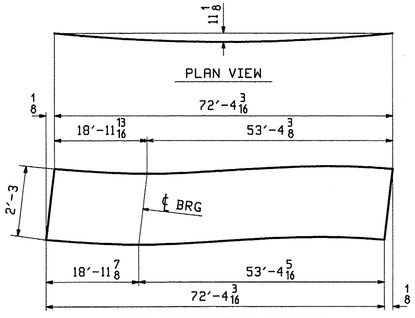
ONE - GIRDER - 6G1B (DEVELOPED)

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C1.
FOR FLANGE DIAGRAMS SEE DRAWING F2.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.





ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								518	6	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES
		6G1B	1		GIRDER				11924	
4	G		1	wa	PL 1/2x27	72	4 5/16	M270-50WT2	3324	
2	J		1	ta	PL 1x16	72	4 3/16	M270-50WT2	3939	
1	A		1	ba	PL 1x18	72	4 3/16	M270-50WT2	4431	
5	J		2	x1g	PL 3/4x7 1/2	2	3	M1E M270-50WT2	86	
5	L		5	x1v	PL 1/2x7 1/2	2	3	M270-50WT2	144	



DEV. ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C1

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0	MAY 23 2012					

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16"Ø	NONE

DESCRIPTION: GIRDER - 6G1B

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726
TENSOR 3124

STRUCTURE:	DRAWN:	DATE:
THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	JTB	05/16
	CHKD: DBH	DATE: 05/21
LOCATION: THETFORD, VT	JOB NO.	DWG NO.
PROJ NO. BHF 0177(9)	518	6
CUSTOMER: A.L. ST. ONGE CONTRACTING		REV. △

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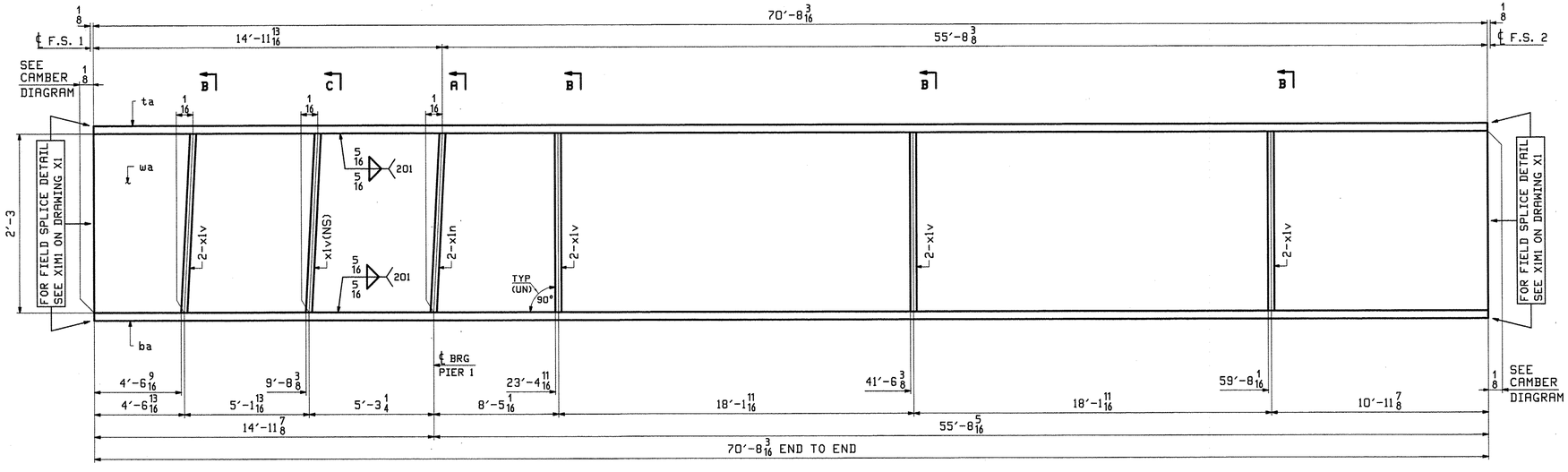
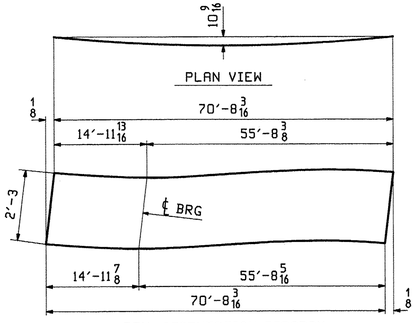


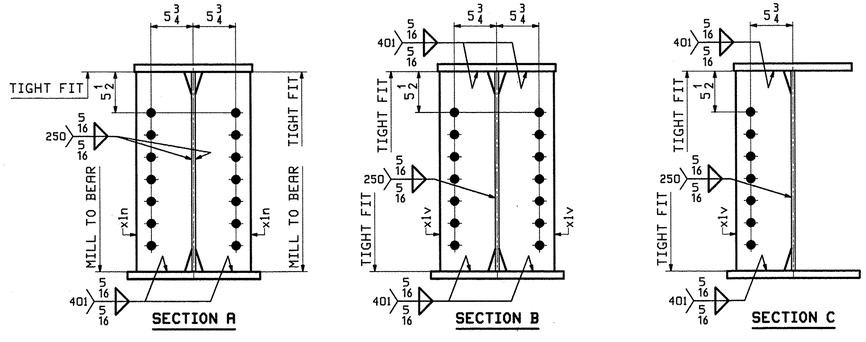
ONE - GIRDER - 7G2B (DEVELOPED)

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C1.
FOR FLANGE DIAGRAMS SEE DRAWING F2.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								518	7	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES
		7G2B	1		GIRDER				11770	
4	J		1	wa	PL 1/2x27	70	8 5/16	M270-50WT2	3247	
2	N		1	ta	PL 1x16	70	8 3/16	M270-50WT2	3848	
1	E		1	ba	PL 1x18	70	8 3/16	M270-50WT2	4329	
5	J		2	x1n	PL 3/4x7 1/2	2	3	M1E M270-50WT2	86	
5	L		9	x1v	PL 1/2x7 1/2	2	3	M270-50WT2	258	



DEV. ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C1



REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0	MAY 23 2012					

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16"ø	NONE

DESCRIPTION: GIRDER - 7G2B

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE.
SOUTH PORTLAND, ME 04106
PHONE (207) 780-6722
FAX. (207) 780-6726
TENSOR 3124

STRUCTURE:	DRAWN:	DATE:
THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	JTB	05/16
	CHKD: DBH	DATE: 05/21
LOCATION: THETFORD, VT	JOB NO.	DWG NO.
PROJ NO. BHF 0177(9)	518	7
CUSTOMER: A.L. ST. ONGE CONTRACTING		REV. △

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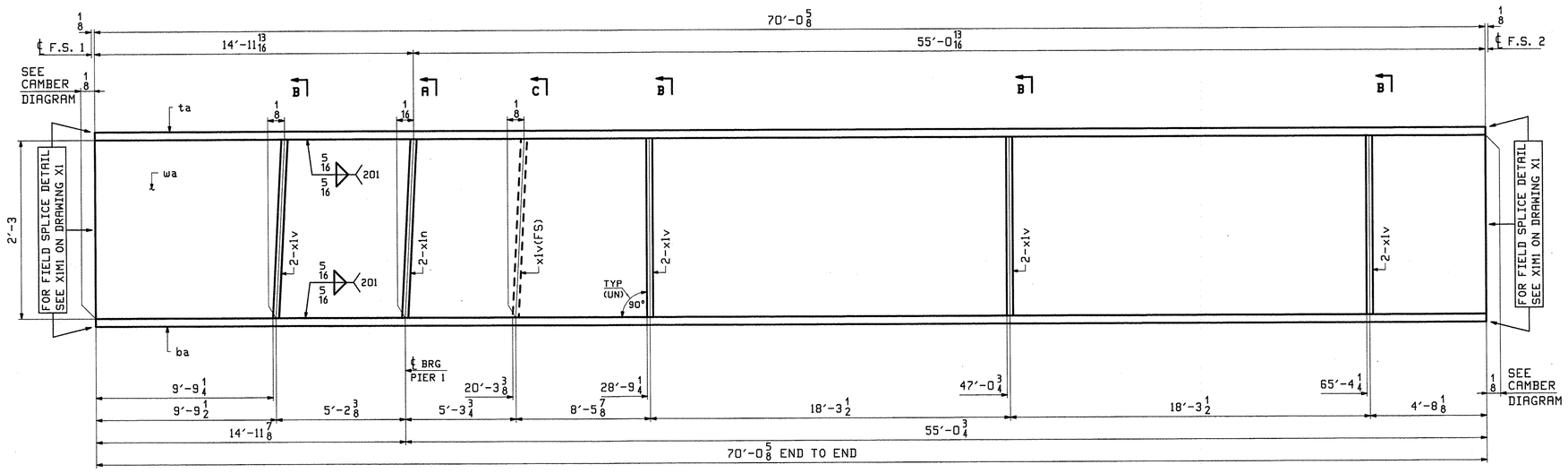
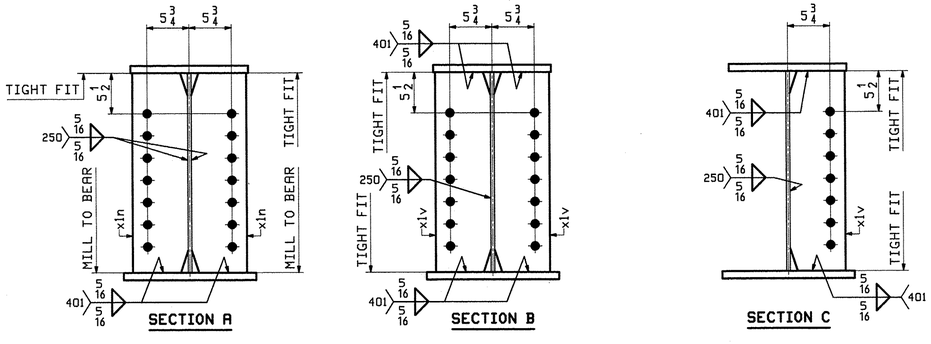
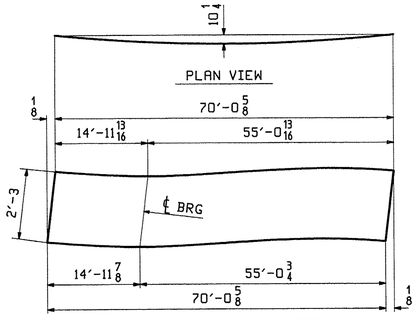


ONE - GIRDER - 8G3B (DEVELOPED)

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C1.
FOR FLANGE DIAGRAMS SEE DRAWING F2.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.



ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
						LENGTH		518	8	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	FT	INCHES	REMARKS	WT	PROCUREMENT NOTES
		8G3B	1		GIRDER				11668	
4	L		1	wa	PL 1/2x27	70	0 3/4	M270-50WT2	3219	
2	Q		1	ta	PL 1x16	70	0 5/8	M270-50WT2	3814	
1	G		1	ba	PL 1x18	70	0 5/8	M270-50WT2	4291	
5	J		2	x1n	PL 3/4x7 1/2	2	3	MIE M270-50WT2	86	
5	L		9	x1v	PL 1/2x7 1/2	2	3	M270-50WT2	258	



DEV. ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C1

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2017	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16"Ø	NONE

DESCRIPTION: GIRDER - 8G3B

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE.
SOUTH PORTLAND, ME 04106
PHONE (207) 780-6722
FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: JTB	DATE: 05/16	
	CHKD: DBH	DATE: 05/21	
LOCATION: THETFORD, VT	JOB NO.	DWG NO.	
PROJ NO. BHF 0177(9)	518	8	
CUSTOMER: A.L. ST. ONGE CONTRACTING		REV. △	

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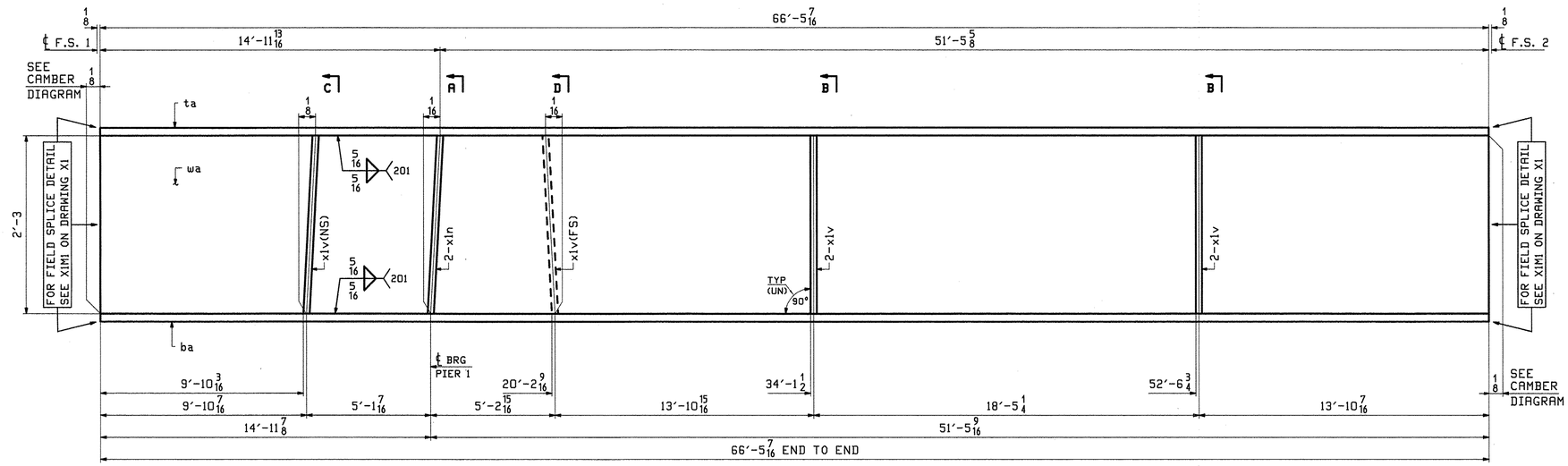
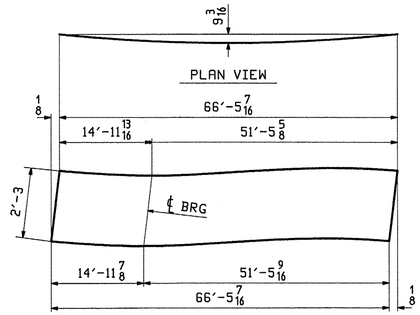


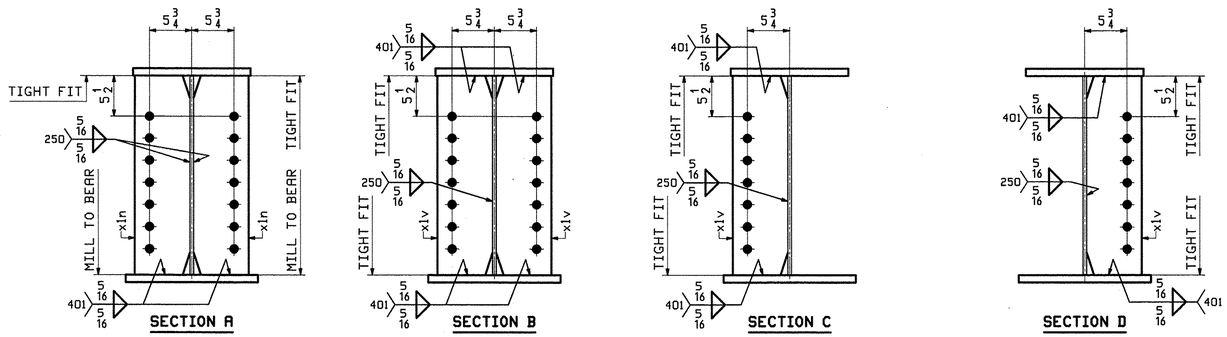
ONE - GIRDER - 9G4B (DEVELOPED)

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C1.
FOR FLANGE DIAGRAMS SEE DRAWING F2.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								518	9	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES
		9G4B	1		GIRDER				11000	
4	N		1	wa	PL 1/2x27	66	5 9/16	M270-50WT2	3053	
2	S		1	ta	PL 1x16	66	5 7/16	M270-50WT2	3618	
1	J		1	ba	PL 1x18	66	5 7/16	M270-50WT2	4070	
5	J		2	x1n	PL 3/4x7 1/2	2	3	M1E M270-50WT2	86	
5	L		6	x1v	PL 1/2x7 1/2	2	3	M270-50WT2	172	



DEV. ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C1



REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0	MAY 23 2012					

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16"ø	NONE

DESCRIPTION: GIRDER - 9G4B

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER		DRAWN: JTB	DATE: 05/16
		CHKD: DBH	DATE: 05/21
LOCATION: THETFORD, VT		JOB NO.	DWG NO.
PROJ NO.	BHF 0177(9)	518	9
CUSTOMER:	A.L. ST. ONGE CONTRACTING		REV. △

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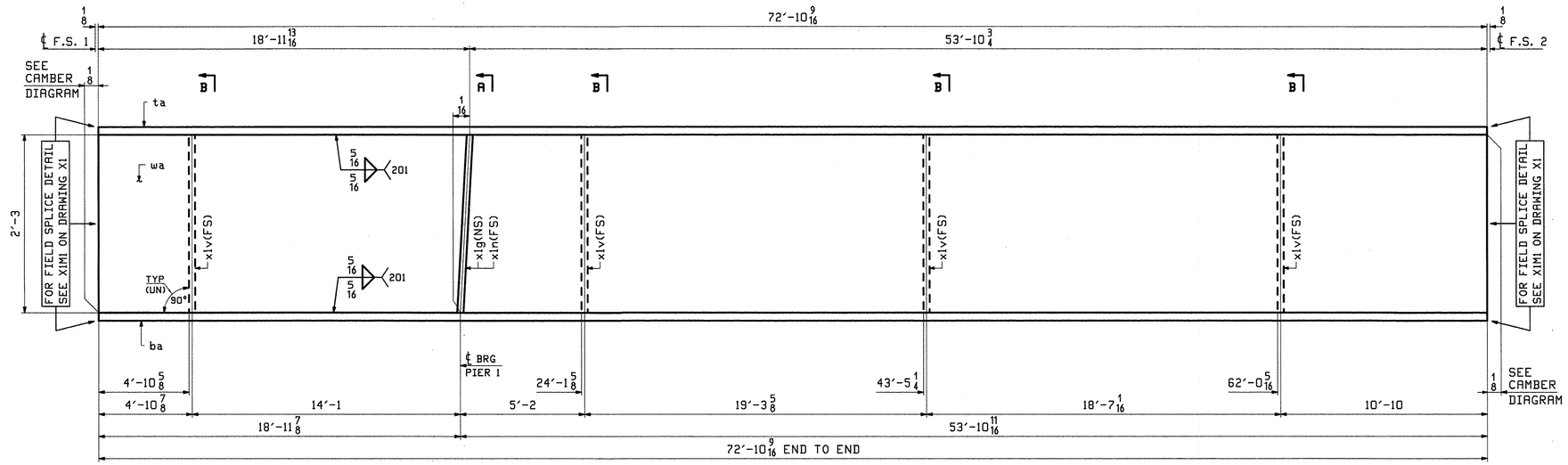
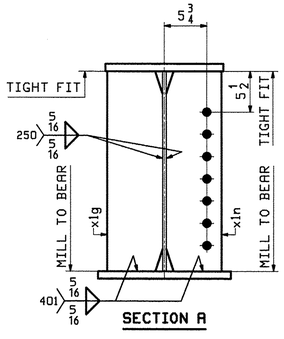
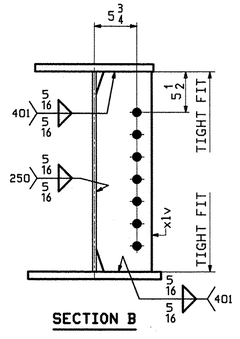
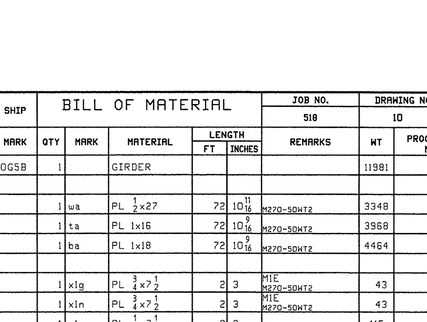


ONE - GIRDER - 10G5B (DEVELOPED)

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C1.
FOR FLANGE DIAGRAMS SEE DRAWING F2.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.







DEV. ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C1

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
						LENGTH		518	10	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	FT	INCHES	REMARKS	WT	PROCUREMENT NOTES
		10G5B	1		GIRDER				11981	
4	E		1	wa	PL 1/2x27	72	10 11/16	M270-50WT2	3348	
2	L		1	ta	PL 1x16	72	10 9/16	M270-50WT2	3968	
1	C		1	ba	PL 1x18	72	10 9/16	M270-50WT2	4464	
5	J		1	x1g	PL 3/4x7 1/2	2	3	M1E M270-50WT2	43	
5	J		1	x1n	PL 3/4x7 1/2	2	3	M1E M270-50WT2	43	
5	L		4	x1v	PL 1/2x7 1/2	2	3	M270-50WT2	115	

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

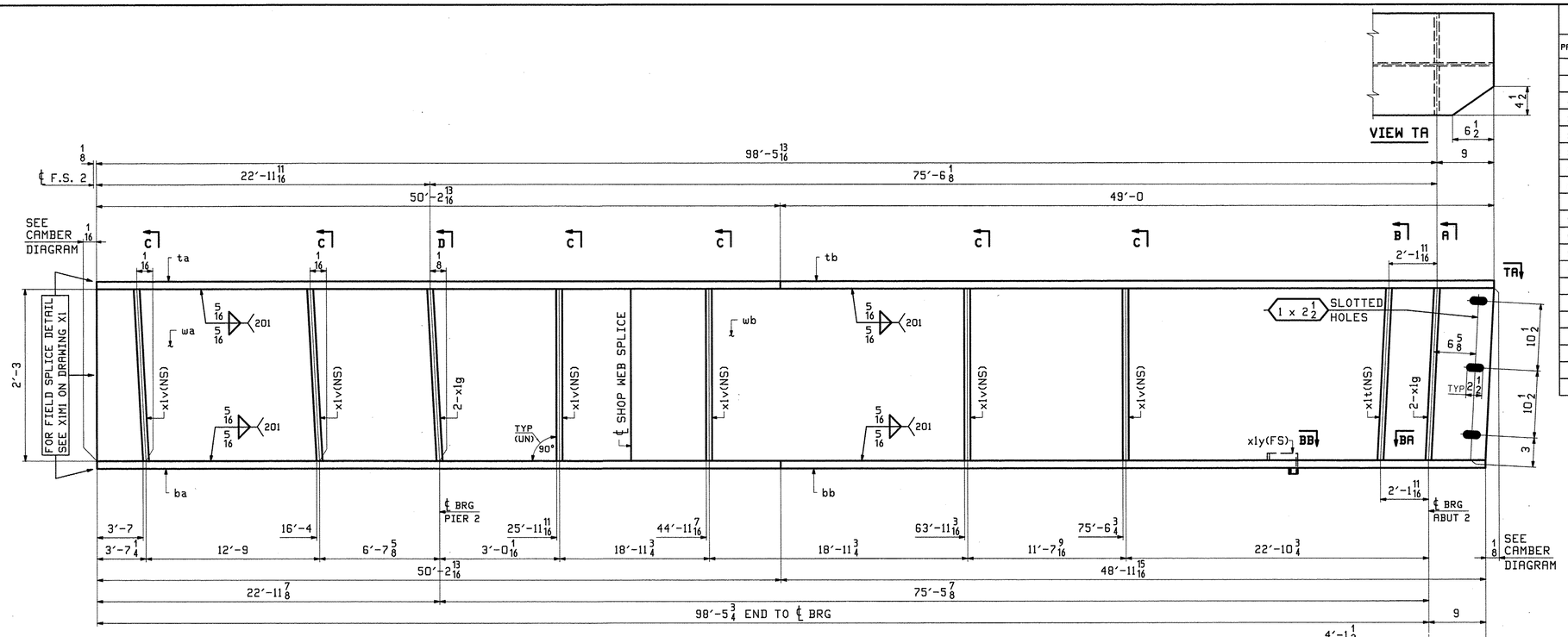
MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16"ø	NONE

DESCRIPTION: GIRDER - 10G5B

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726
TENSOR 3124

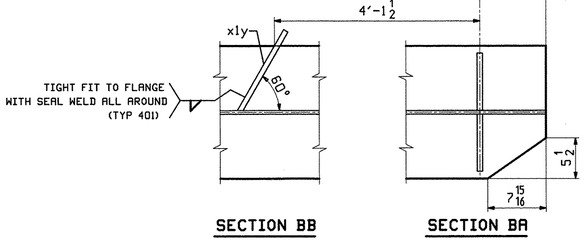
STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: JTB	DATE: 05/17
	CHKD: DBH	DATE: 05/21
LOCATION: THETFORD, VT	JOB NO. 518	DWG NO. 10
PROJ NO. BHF 0177(9)		REV. △
CUSTOMER: A.L. ST. ONGE CONTRACTING		

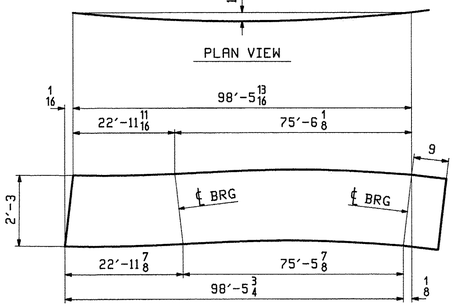
JTB Tue, May 29, 2012 02:37:57 PM J:\work\jobs\2824\10\10.dwg



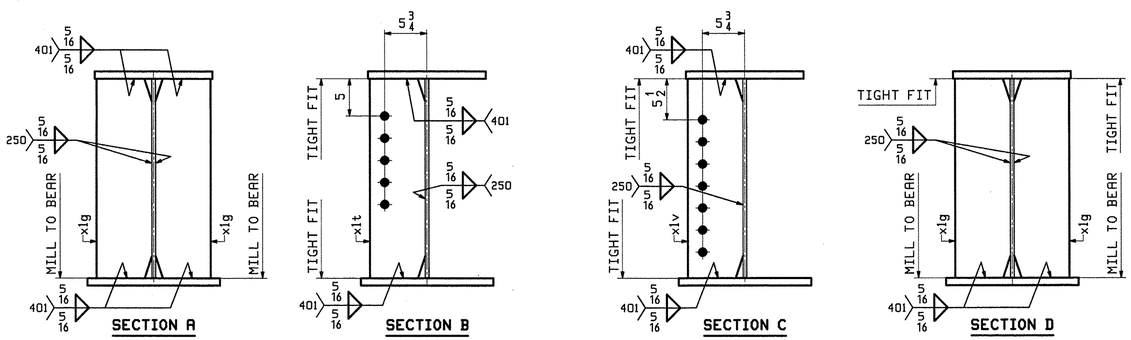
ONE - GIRDER - 11G1C (DEVELOPED)

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C2.
FOR FLANGE DIAGRAMS SEE DRAWING F3.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.





DEV. ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C2



ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								518	11	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES
		11G1C	1		GIRDER				16430	
4	Q		1	wa	PL 1/2 x 27	39	2 13/16	M270-50WT2	1802	
3	S		1	wb	PL 1/2 x 27	60	0 1/8	M270-50WT2	2757	
3	E		1	ta	PL 1x16	50	2 13/16	M270-50WT2	2735	
3	G		1	tb	PL 1x16	49	0	M270-50WT2	2668	
1	W		1	ba	PL 1x18	50	2 13/16	M270-50WT2	3077	
1	Y		1	bb	PL 1x18	48	11 15/16	M270-50WT2	3001	
5	J		4	x1g	PL 3/4 x 7 1/2	2	3	M1E M270-50WT2	172	
5	K		1	x1t	PL 3/4 x 7 1/2	2	3	M270-50WT2	43	
5	L		6	x1v	PL 3/4 x 7 1/2	2	3	M270-50WT2	172	
5	M		1	x1y	PL 1/4 x 3	1	0 1/4		3	

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

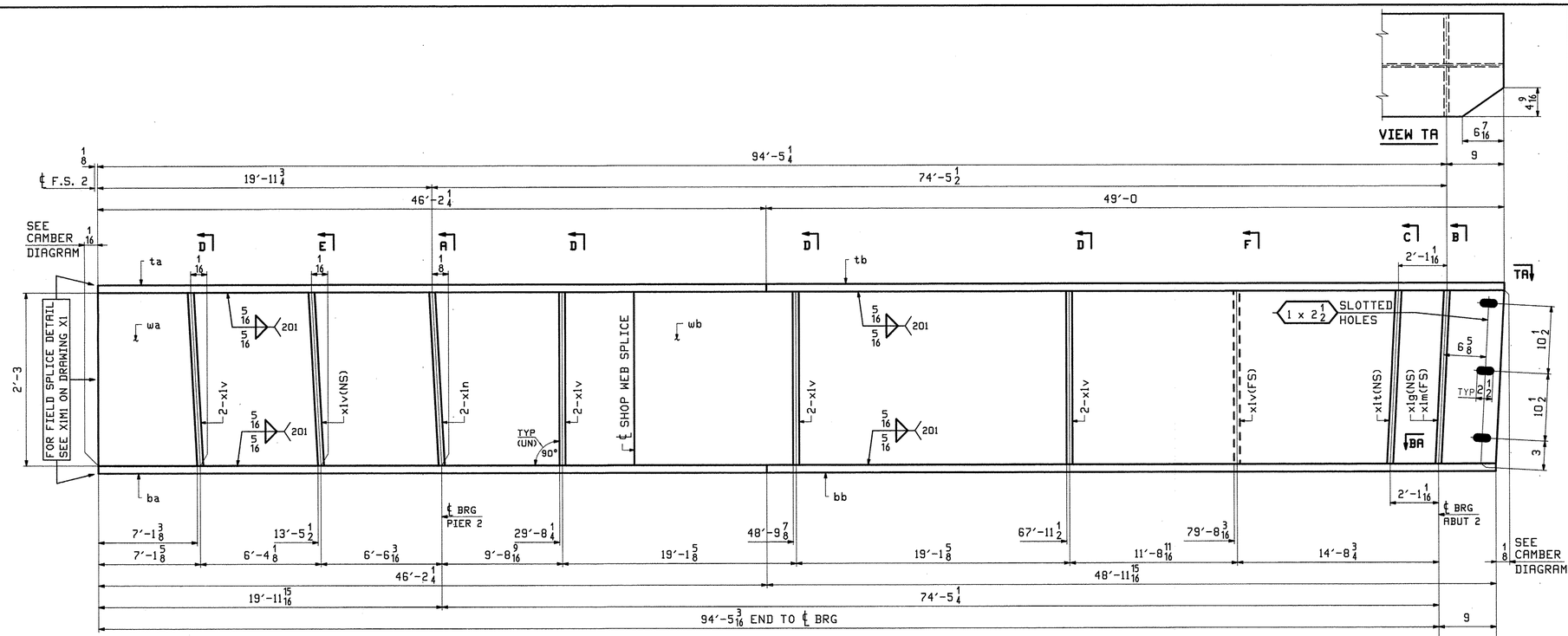
MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16"Ø (UN)	NONE

DESCRIPTION: GIRDER - 11G1C

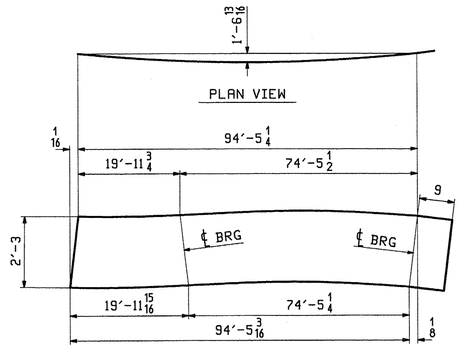
CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. SOUTH PORTLAND, ME 04106
PHONE (207) 780-6722 FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: JTB	DATE: 05/17	
	CHKD: DBH	DATE: 05/21	
LOCATION: THETFORD, VT	JOB NO. 518	DWG NO. 11	
PROJ NO. BHF 0177(9)		REV. △	
CUSTOMER: A.L. ST. ONGE CONTRACTING			

JTB Tue, May 22, 2012 03:08:28 PM c:\users\jtb\2124\11 Rev0



SECTION BA

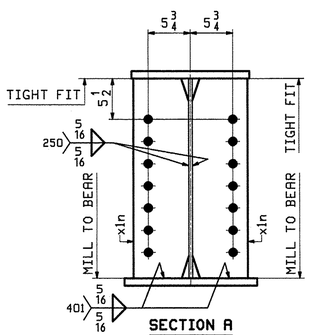


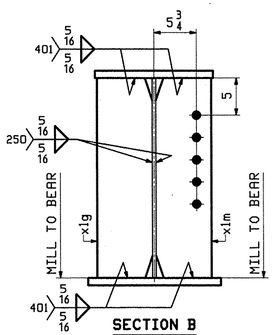
DEV. ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C2

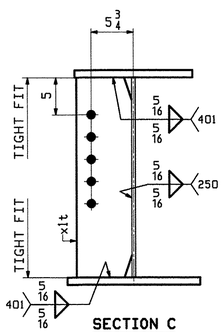
ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								518	12	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES
		12G2C	1		GIRDER				15888	
4	U		1	wa	PL 1/2x27	35	2 5/16	M270-50WT2	1617	
3	Y		1	wb	PL 1/2x27	60	0 1/16	M270-50WT2	2756	
3	L		1	ta	PL 1x16	46	2 1/4	M270-50WT2	2515	
3	G		1	tb	PL 1x16	49	0	M270-50WT2	2668	
2	C		1	ba	PL 1x18	46	2 1/4	M270-50WT2	2829	
1	Y		1	bb	PL 1x18	48	11 15/16	M270-50WT2	3001	
5	J		1	x1g	PL 3/4x7 1/2	2	3	M1E M270-50WT2	43	
5	J		1	x1m	PL 3/4x7 1/2	2	3	M1E M270-50WT2	43	
5	J		2	x1n	PL 3/4x7 1/2	2	3	M1E M270-50WT2	86	
5	K		1	x1t	PL 3/4x7 1/2	2	3	M270-50WT2	43	
5	L		10	x1v	PL 1/2x7 1/2	2	3	M270-50WT2	287	

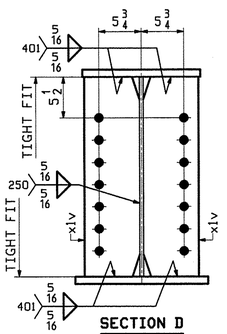
ONE - GIRDER - 12G2C (DEVELOPED)

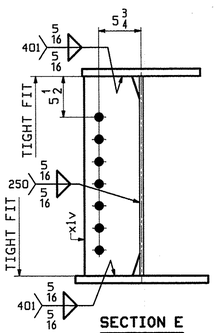
FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C2.
FOR FLANGE DIAGRAMS SEE DRAWING F3.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

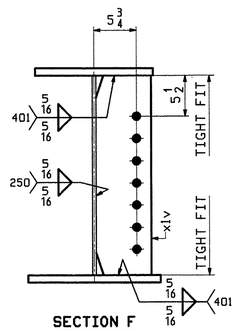












REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

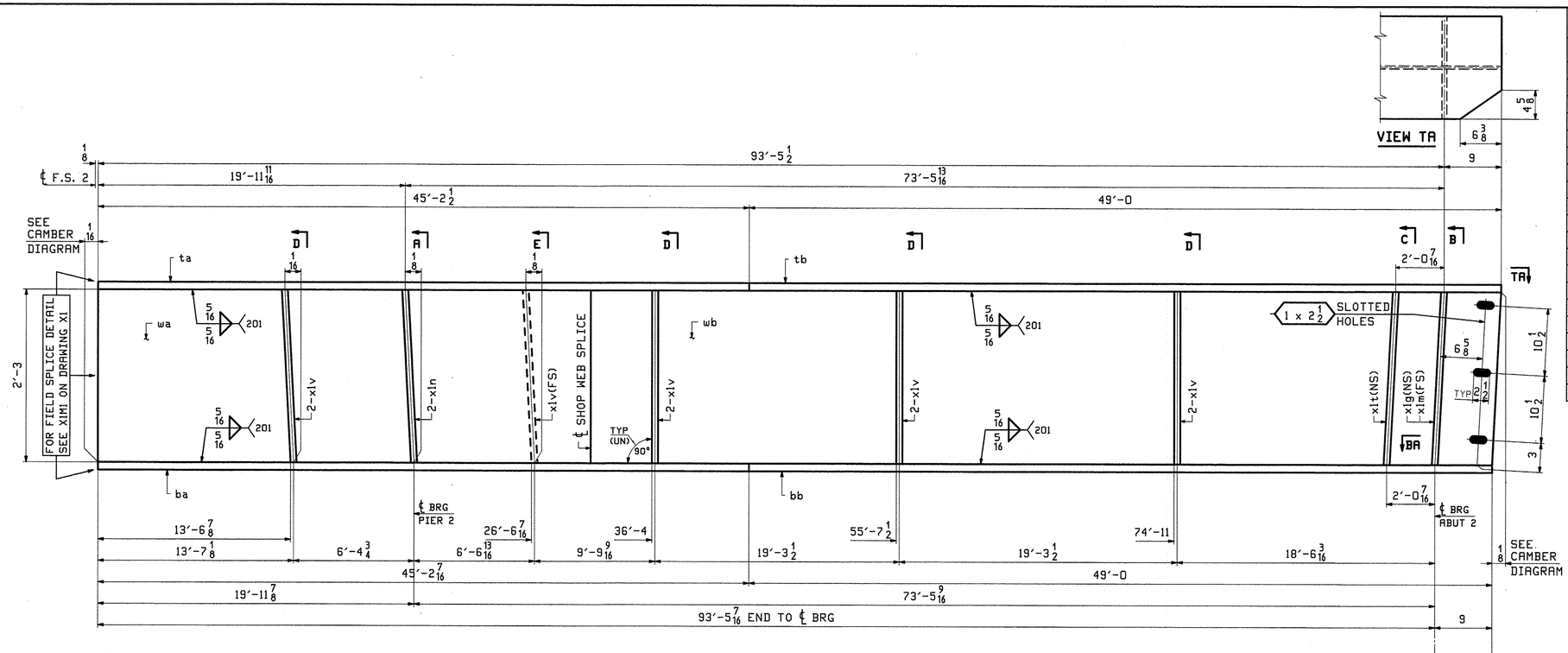
MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16"Ø (UN)	NONE

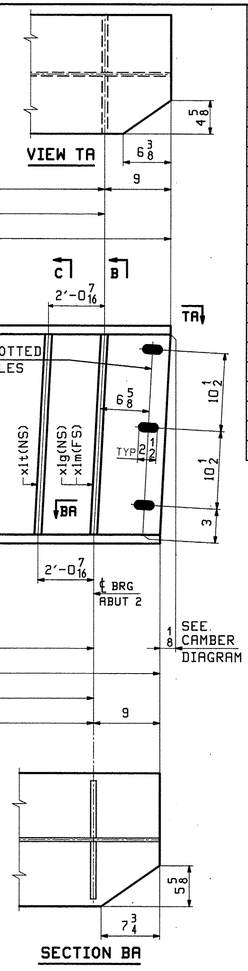
DESCRIPTION: GIRDER - 12G2C

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER		DRAWN: JTB	DATE: 05/17
		CHKD: DBH	DATE: 05/21
LOCATION:	THETFORD, VT	JOB NO.	DWG NO.
PROJ NO.	BHF 0177(9)	518	12
CUSTOMER:	A.L. ST. ONGE CONTRACTING		REV. △

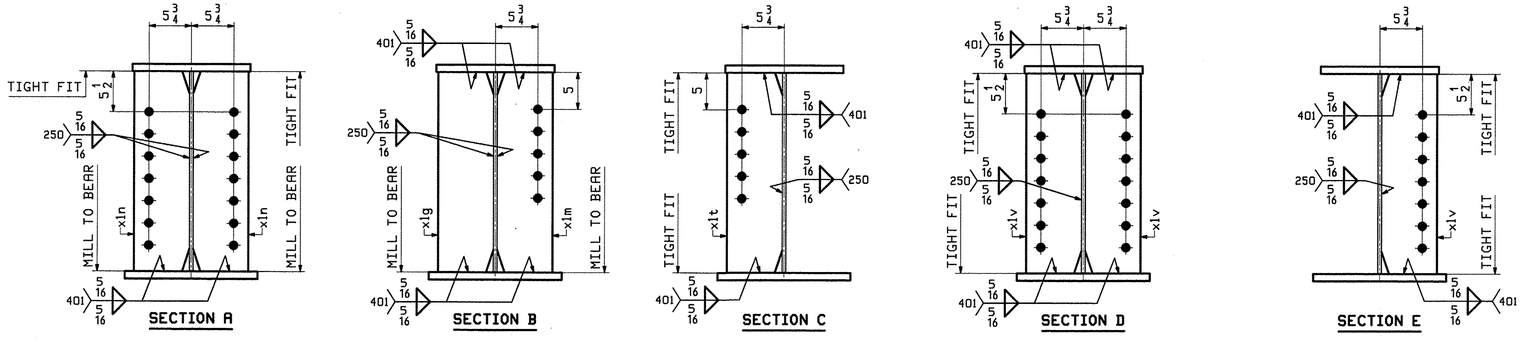
JTB Tue, May 22, 2012 03:03:53 PM /users/jobs/3124/12.dgn Rev:0





ONE - GIRDER - 13G3C (DEVELOPED)

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C2.
FOR FLANGE DIAGRAMS SEE DRAWING F3.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.



ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								518	13	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES
		13G3C	1		GIRDER				15701	
4	W		1	wa	PL 1/2x27	34	2 1/2	M270-50WT2	1571	
3	Y		1	wb	PL 1/2x27	60	0 1/8	M270-50WT2	2757	
3	N		1	ta	PL 1x16	45	2 1/2	M270-50WT2	2461	
3	G		1	tb	PL 1x16	49	0	M270-50WT2	2668	
2	E		1	ba	PL 1x18	45	2 7/16	M270-50WT2	2769	
1	Y		1	bb	PL 1x18	49	0	M270-50WT2	3001	
5	J		1	x1g	PL 3/4x7 1/2	2	3	M1E M270-50WT2	43	
5	J		1	x1m	PL 3/4x7 1/2	2	3	M1E M270-50WT2	43	
5	J		2	x1n	PL 3/4x7 1/2	2	3	M1E M270-50WT2	86	
5	K		1	x1t	PL 3/4x7 1/2	2	3	M270-50WT2	43	
5	L		9	x1v	PL 1/2x7 1/2	2	3	M270-50WT2	258	

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

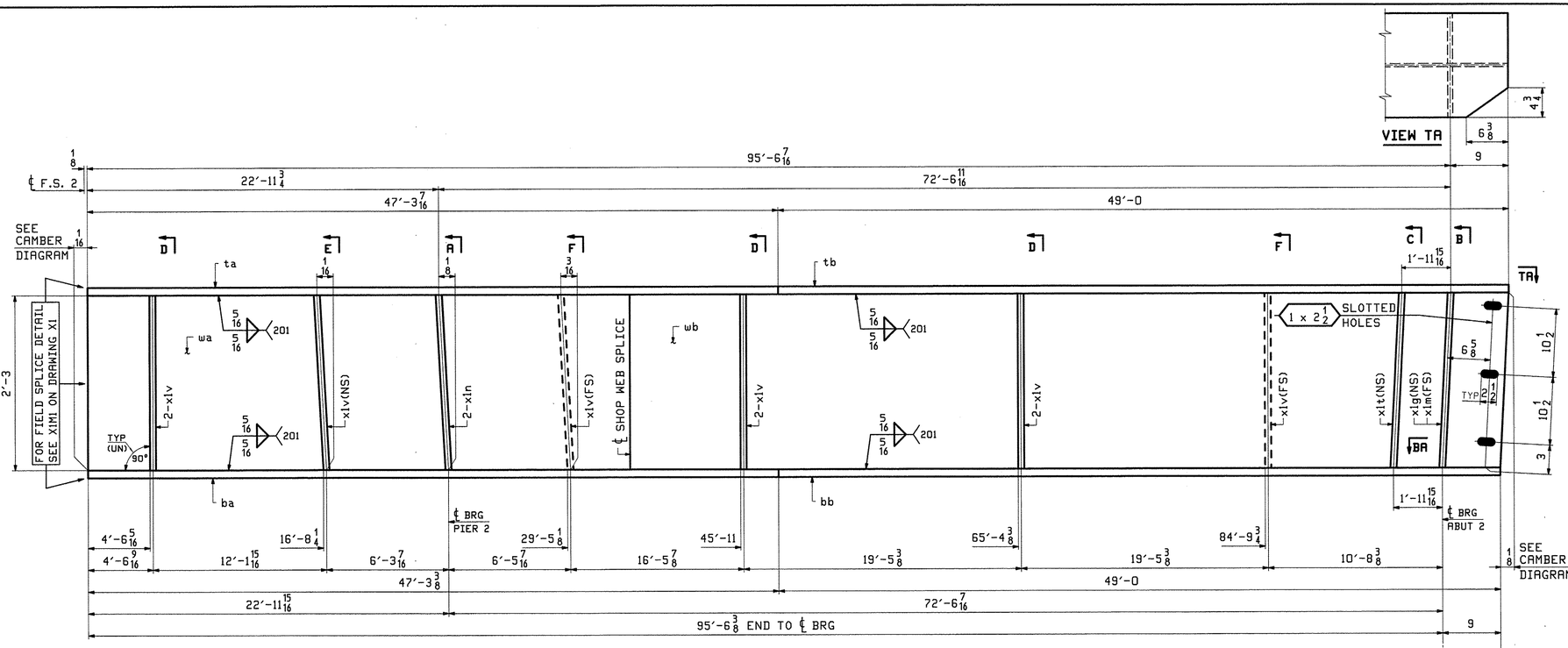
MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16"Ø (UN)	NONE

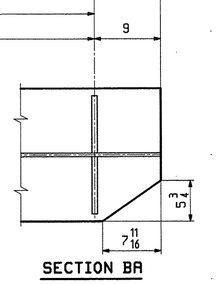
DESCRIPTION: GIRDER - 13G3C

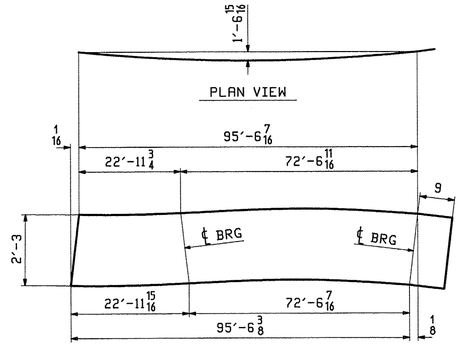
CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: JTB	DATE: 05/17	
	CHKD: DBH	DATE: 05/21	
LOCATION: THETFORD, VT	JOB NO.	DWG NO.	
PROJ NO. BHF 0177(9)	518	13	
CUSTOMER: A.L. ST. ONGE CONTRACTING		REV. △	

JTB Tue, May 22, 2012 03:07:59 PM J:\users\jtb\3124\13 a Rev0



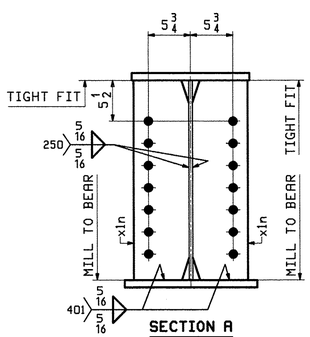


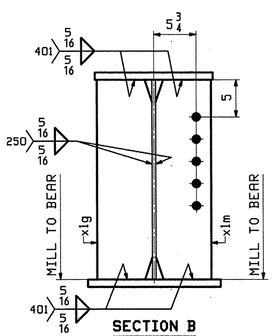


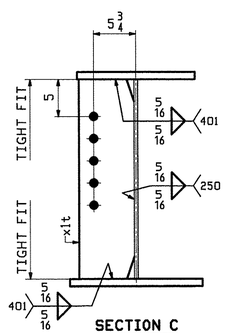
DEV. ORIENTATION DIAGRAM
FOR CAMBER SEE DWG C2

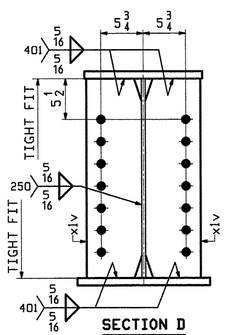
ONE - GIRDER - 14G4C (DEVELOPED)

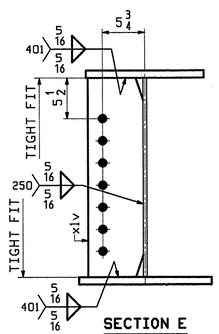
FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C2.
FOR FLANGE DIAGRAMS SEE DRAWING F3.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.

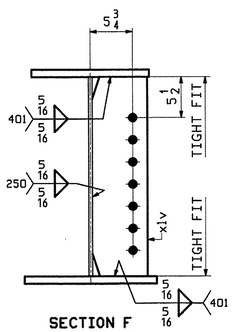












ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
								518	14	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES
		14G4C	1		GIRDER				16037	
4	S		1	wa	PL 1/2x27	36	3 7/16	M270-50WT2	1667	
3	Y		1	wb	PL 1/2x27	60	0 1/8	M270-50WT2	2757	
3	J		1	ta	PL 1x16	47	3 7/16	M270-50WT2	2574	
3	G		1	tb	PL 1x16	49	0	M270-50WT2	2668	
2	A		1	ba	PL 1x18	47	3 3/8	M270-50WT2	2896	
1	Y		1	bb	PL 1x18	49	0	M270-50WT2	3001	
5	J		1	x1g	PL 3/4x7 1/2	2	3	M1E M270-50WT2	43	
5	J		1	x1m	PL 3/4x7 1/2	2	3	M1E M270-50WT2	43	
5	J		2	x1n	PL 3/4x7 1/2	2	3	M1E M270-50WT2	86	
5	K		1	x1t	PL 3/4x7 1/2	2	3	M270-50WT2	43	
5	L		9	x1v	PL 1/2x7 1/2	2	3	M270-50WT2	258	

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16 ø (UN)	NONE

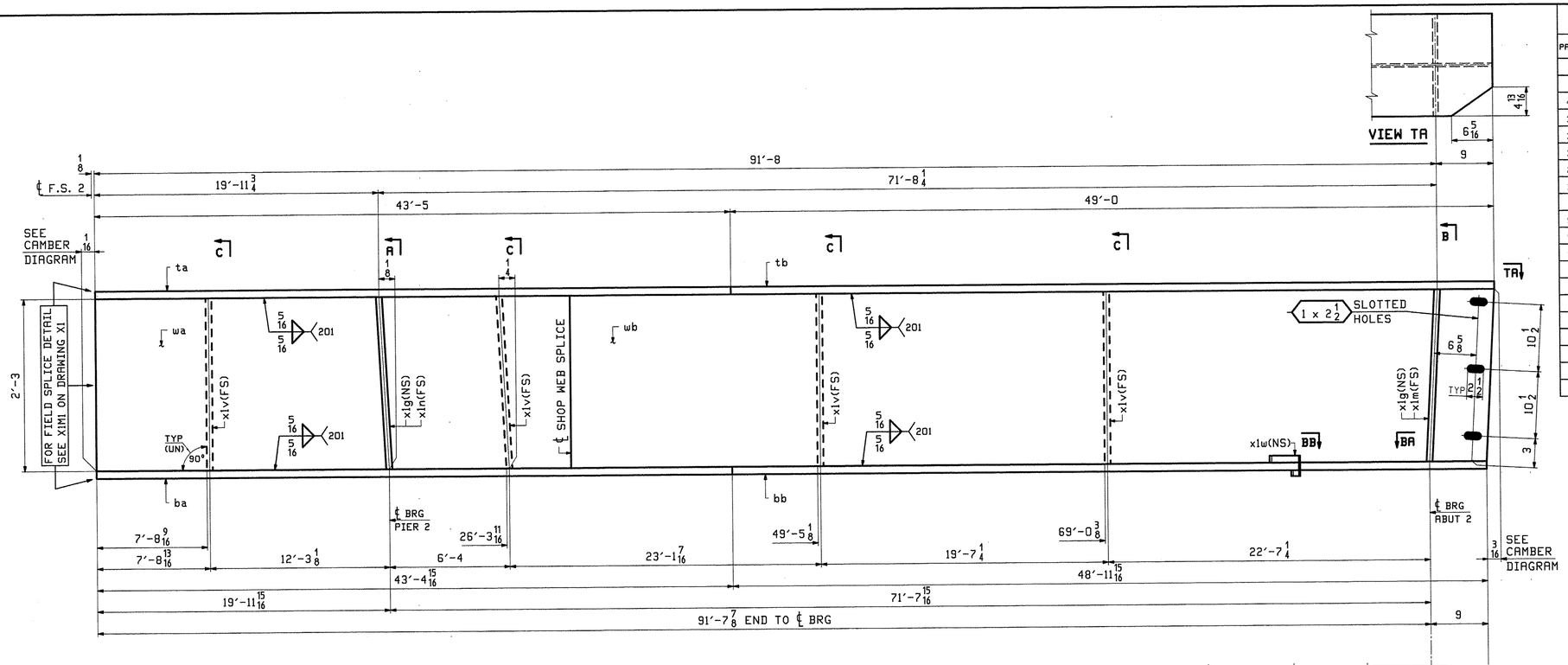
DESCRIPTION: GIRDER - 14G4C

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726

TENSOR 3124

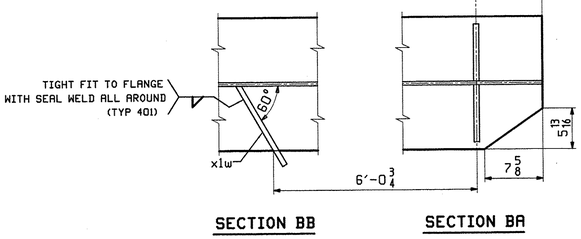
STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER		DRAWN: JTB	DATE: 05/17
		CHKD: DBH	DATE: 05/21
LOCATION: THETFORD, VT		JOB NO. 518	DWG NO. 14
PROJ NO. BHF 0177(9)			REV. △
CUSTOMER: A.L. ST. ONGE CONTRACTING			

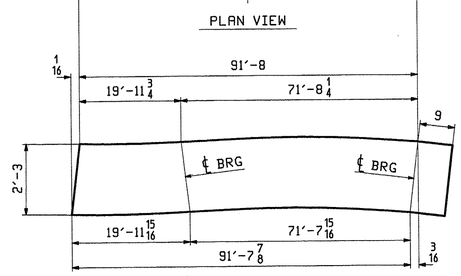
JTB Tue, May 22, 2012 03:38:00 PM J:users\jobs\2014\14.1 Rev0

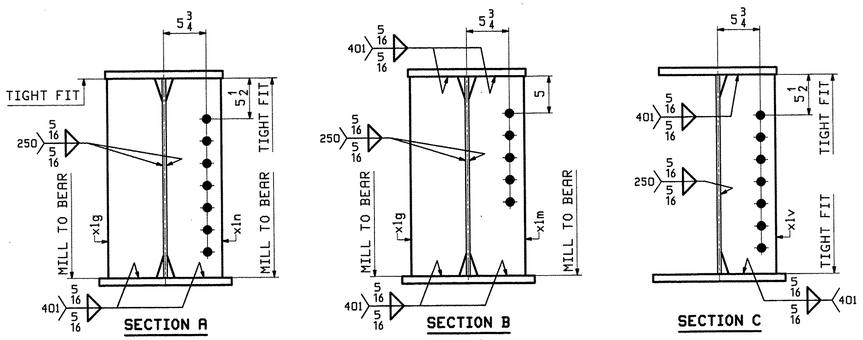


ONE - GIRDER - 15G5C (DEVELOPED)

FOR GIRDER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAMS SEE DRAWING C2.
FOR FLANGE DIAGRAMS SEE DRAWING F3.
FOR GENERAL NOTES SEE DRAWING GN1.
T2 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.







ABM INFO		SHIP	BILL OF MATERIAL						JOB NO.	DRAWING NO.	REV.
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES	
		15G5C	1		GIRDER				15227		
4	Y		1	wa	PL 1/2x27	32	4 15/16	M270-50WT2	1489		
3	S		1	wb	PL 1/2x27	60	0 3/16	M270-50WT2	2757		
3	Q		1	ta	PL 1x16	43	5	M270-50WT2	2364		
3	G		1	tb	PL 1x16	49	0	M270-50WT2	2668		
2	G		1	ba	PL 1x18	43	4 15/16	M270-50WT2	2659		
1	Y		1	bb	PL 1x18	48	11 15/16	M270-50WT2	3001		
5	J		2	x1g	PL 3/4x7 1/2	2	3	MIE M270-50WT2	86		
5	J		1	x1m	PL 3/4x7 1/2	2	3	MIE M270-50WT2	43		
5	J		1	x1n	PL 3/4x7 1/2	2	3	MIE M270-50WT2	43		
5	L		4	x1v	PL 1/2x7 1/2	2	3	M270-50WT2	115		
5	M		1	x1w	PL 1/4x3	1	0 1/4		3		

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

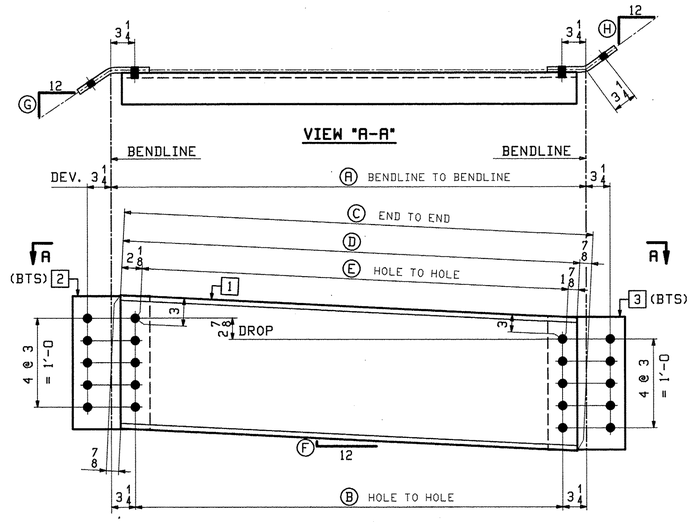
MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16 Ø (UN)	NONE

DESCRIPTION: GIRDER - 15G5C

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE.
SOUTH PORTLAND, ME 04106
PHONE (207) 780-6722
FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: JTB	DATE: 05/16
	CHKD: DBH	DATE: 05/21
LOCATION: THETFORD, VT	JOB NO. 518	DWG NO. 15
PROJ NO. BHF 0177(9)		REV. △
CUSTOMER: A.L. ST. ONGE CONTRACTING		

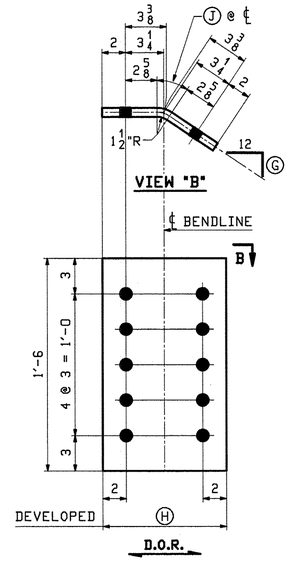
JTB Tue, May 22, 2012 03:38:01 PM J:\users\jtb\3124\15 1 Rev0



END DIAPHRAGMS - MARK "A"

ABUTMENT 1 - LOOKING TOWARD BACKWALL

MARK "A"	QTY	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ	1	2	3
16D1	1	5'-4 9/16	4'-10 1/16	5'-3	5'-2 1/8	4'-10 1/8	5/8	8 1/2	8 5/8	a16	pa16	pb16
16D2	1	5'-4 13/16	4'-10 5/16	5'-3 1/4	5'-2 3/8	4'-10 3/8	9/16	8 5/8	8 3/4	b16	pb16	pc16
16D3	1	5'-5 1/8	4'-10 5/8	5'-3 9/16	5'-2 11/16	4'-10 11/16	9/16	8 3/4	8 13/16	c16	pc16	pd16
16D4	1	5'-5 7/16	4'-10 15/16	5'-3 7/8	5'-3	4'-11	9/16	8 13/16	8 15/16	d16	pd16	pf16



BENT GUSSETS - MARK "B"

MARK "B"	QTY	Ⓖ	Ⓗ	Ⓙ
pa16	1	8 1/2	10 3/8	1 1/8
pb16	2	8 5/8	10 7/16	1 3/16
pc16	2	8 3/4	10 7/16	1 3/16
pd16	2	8 13/16	10 7/16	1 3/16
pf16	1	8 15/16	10 7/16	1 3/16

ABM INFO PAGE	ABM INFO LINE	SHIP MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES
		16D1	1		END DIAPHRAGM				384	
5	T		1	a16	MC 18x58	5	3	M270-50WT2	305	
5	U		1	pa16	PL 3/4x18	0	10 3/8	(BENT) M270-50WT2	40	
5	U		1	pb16	PL 3/4x18	0	10 7/16	(BENT) M270-50WT2	40	
		16D2	1		END DIAPHRAGM				386	
5	T		1	b16	MC 18x58	5	3 1/4	M270-50WT2	306	
5	U		1	pb16	PL 3/4x18	0	10 7/16	(BENT) M270-50WT2	40	
5	U		1	pc16	PL 3/4x18	0	10 7/16	(BENT) M270-50WT2	40	
		16D3	1		END DIAPHRAGM				387	
5	T		1	c16	MC 18x58	5	3 9/16	M270-50WT2	307	
5	U		1	pc16	PL 3/4x18	0	10 7/16	(BENT) M270-50WT2	40	
5	U		1	pd16	PL 3/4x18	0	10 7/16	(BENT) M270-50WT2	40	
		16D4	1		END DIAPHRAGM				389	
5	T		1	d16	MC 18x58	5	3 7/8	M270-50WT2	309	
5	U		1	pd16	PL 3/4x18	0	10 7/16	(BENT) M270-50WT2	40	
5	U		1	pf16	PL 3/4x18	0	10 7/16	(BENT) M270-50WT2	40	

BILL OF MATERIAL

JOB NO. 518 | DRAWING NO. 16 | REV.

NOTES:
1. FOR GENERAL NOTES SEE DRAWING GN1.
2. BTS - BOLT FOR SHIPMENT.
3. T2 DENOTES CHARPY V-NOTCH TESTING REQUIRED.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W	SEE DWG GN1	15/16"Ø	NONE

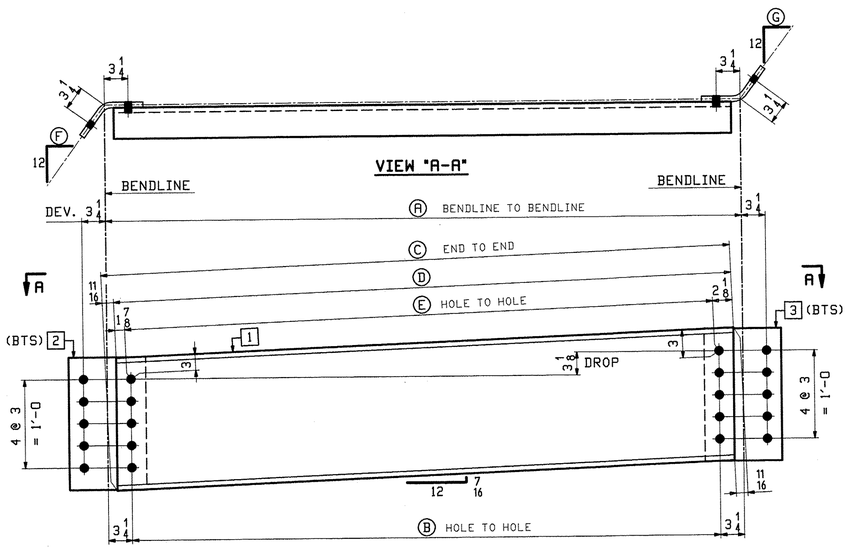
DESCRIPTION: ABUT 1 DIAPHRAGMS

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726

TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: JTB	DATE: 05/15
	CHKD: DBH	DATE: 05/21
LOCATION: THETFORD, VT	JOB NO. 518	DWG NO. 16
PROJ NO. BHF 0177(9)		REV. △
CUSTOMER: A.L. ST. ONGE CONTRACTING		

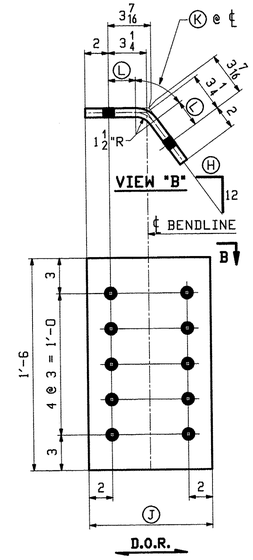
JTB Tue, May 22, 2012 05:39:02 PM J:\work\jobs\3124.15 | Rev.0



END DIAPHRAGMS - MARK "A"

ABUTMENT 2 - LOOKING TOWARD BACKWALL

MARK "A"	QTY	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	1	2	3
17D1	1	7'-6 13/16	7'-0 5/16	7'-5 1/16	7'-4 3/8	7'-0 3/8	8 5/16	8 1/2	a17	pa17	pb17
17D2	1	7'-5 5/16	6'-10 13/16	7'-3 9/16	7'-2 7/8	6'-10 7/8	8 1/2	8 3/4	b17	pb17	pc17
17D3	1	7'-3 15/16	6'-9 7/16	7'-2 3/16	7'-1 1/2	6'-9 1/2	8 3/4	8 15/16	c17	pc17	pd17
17D4	1	7'-2 11/16	6'-8 3/16	7'-0 15/16	7'-0 1/4	6'-8 1/4	8 15/16	9 1/8	d17	pd17	pf17



BENT GUSSETS - MARK "B"

MARK "B"	QTY	Ⓗ	Ⓙ	Ⓚ	Ⓛ
pa17	1	8 5/16	10 5/16	1 13/16	2 1/4
pb17	2	8 1/2	10 5/16	1 13/16	2 1/4
pc17	2	8 3/4	10 3/8	1 3/4	2 5/16
pd17	2	8 15/16	10 3/8	1 3/4	2 5/16
pf17	1	9 1/8	10 3/8	1 3/4	2 5/16

BILL OF MATERIAL

JOB NO. 518 | DRAWING NO. 17 | REV.

ABM INFO PAGE	ABM INFO LINE	SHIP MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES
		17D1	1		END DIAPHRAGM				509	
5	R		1	a17	MC 18x58	7	5 1/16	M270-50WT2	430	
5	U		1	pa17	PL 3/4x18	0	10 5/16	(BENT) M270-50WT2	39	
5	U		1	pb17	PL 3/4x18	0	10 5/16	(BENT) M270-50WT2	39	
		17D2	1		END DIAPHRAGM				502	
5	R		1	b17	MC 18x58	7	3 9/16	M270-50WT2	423	
5	U		1	pb17	PL 3/4x18	0	10 5/16	(BENT) M270-50WT2	39	
5	U		1	pc17	PL 3/4x18	0	10 3/8	(BENT) M270-50WT2	40	
		17D3	1		END DIAPHRAGM				496	
5	S		1	c17	MC 18x58	7	2 3/16	M270-50WT2	417	
5	U		1	pc17	PL 3/4x18	0	10 3/8	(BENT) M270-50WT2	40	
5	U		1	pd17	PL 3/4x18	0	10 3/8	(BENT) M270-50WT2	40	
		17D4	1		END DIAPHRAGM				490	
5	S		1	d17	MC 18x58	7	0 15/16	M270-50WT2	411	
5	U		1	pd17	PL 3/4x18	0	10 3/8	(BENT) M270-50WT2	40	
5	U		1	pf17	PL 3/4x18	0	10 3/8	(BENT) M270-50WT2	40	

NOTES:
1. FOR GENERAL NOTES SEE DRAWING GN1.
2. BTS - BOLT FOR SHIPMENT.
3. T2 DENOTES CHARPY V-NOTCH TESTING REQUIRED.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W	SEE DWG GN1	15/16"Ø	NONE

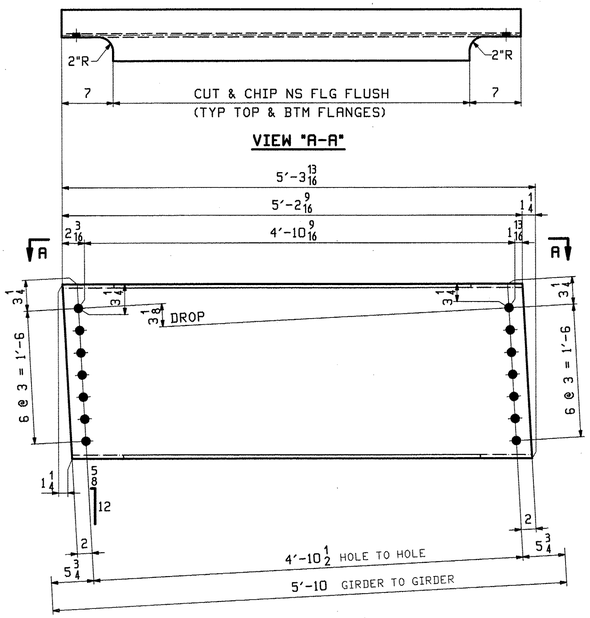
DESCRIPTION: ABUT 2 DIAPHRAGMS

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. SOUTH PORTLAND, ME 04106
PHONE (207) 780-6722 FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: JTB	DATE: 05/15	
	CHKD: DBH	DATE: 05/21	
LOCATION: THETFORD, VT	JOB NO. 518	DWG NO. 17	
PROJ NO. BHF 0177(9)		REV. △	
CUSTOMER: A.L. ST. ONGE CONTRACTING			

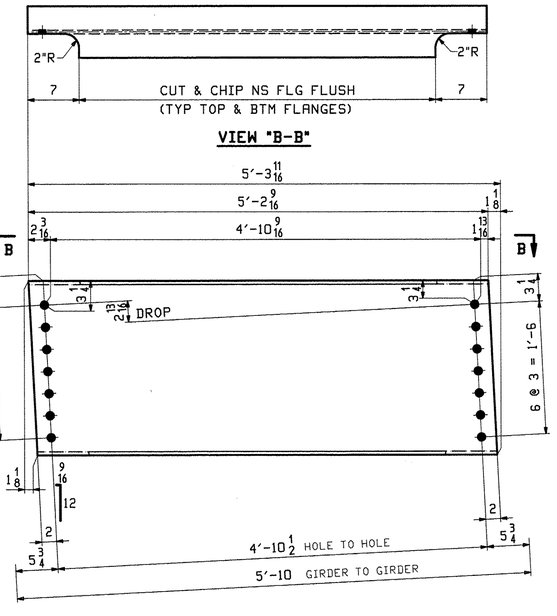
JTB Tue, May 22, 2012 02:38:03 PM /users/jobs/3124/17 | Rev0

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.		REV.
								518	18		
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES	
					INT. DIAPHRAGMS						
5	Q	18D1	20		W 24x55	5	$3\frac{13}{16}$	M270-50W T2	5849		
5	Q	18D2	33		W 24x55	5	$3\frac{11}{16}$	M270-50W T2	9633		



20 ~ INT DIAPHRAGMS - 18D1

DROPS 3 TO $3\frac{3}{16}$



33 ~ INT DIAPHRAGMS - 18D2

DROPS $2\frac{11}{16}$ TO $2\frac{15}{16}$

NOTES:
1. FOR GENERAL NOTES SEE DRAWING GN1.
2. T2 DENOTES CHARPY V-NOTCH TESTING REQUIRED.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W	SEE DWG GN1	$\frac{15}{16}$"Ø	NONE

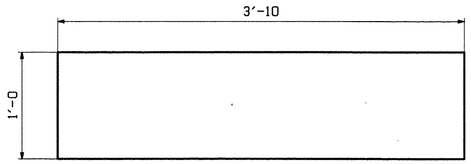
DESCRIPTION: INT. DIAPHRAGMS

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726

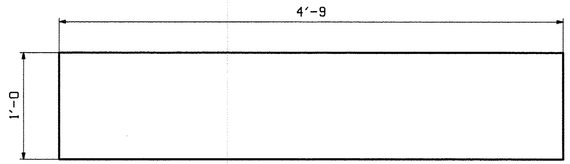
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER		DRAWN: JTB	DATE: 05/15
		CHKD: DBH	DATE: 05/21
LOCATION: THETFORD, VT		JOB NO.	DWG NO.
PROJ NO. BHF 0177(9)		518	18
CUSTOMER: A.L. ST. ONGE CONTRACTING			REV. △

JTB Tue, May 22, 2012 03:39:03 PM J:\steel\jobs\3124\18 | Rev0



5 ~ BLOCK OUT PLATES - 19M1
AT ABUTMENT 1



5 ~ BLOCK OUT PLATES - 19M2
AT ABUTMENT 2

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.		REV.
								518	19		
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES	
					BLOCK OUT PLATES						
5	X	19M1	5		PL 1/4 x12	3	10		196		
5	Y	19M2	5		PL 1/4 x12	4	9		242		

NOTE:
FOR GENERAL NOTES SEE DRAWING GN1.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

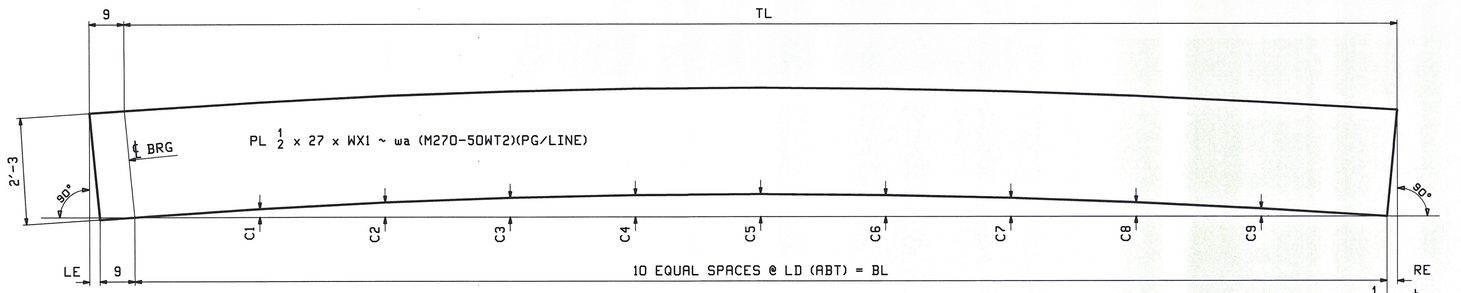
MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W	SEE DWG GN1	NONE	NONE

DESCRIPTION: BLOCK OUT PLATES

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE.
SOUTH PORTLAND, ME 04106
PHONE (207) 780-6722
FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: JTB	DATE: 05/22
	CHKD: DBH	DATE: 05/22
LOCATION: THETFORD, VT	JOB NO. 518	DWG NO. 19
PROJ NO. BHF 0177(9)		
CUSTOMER: A.L. ST. ONGE CONTRACTING		REV. △

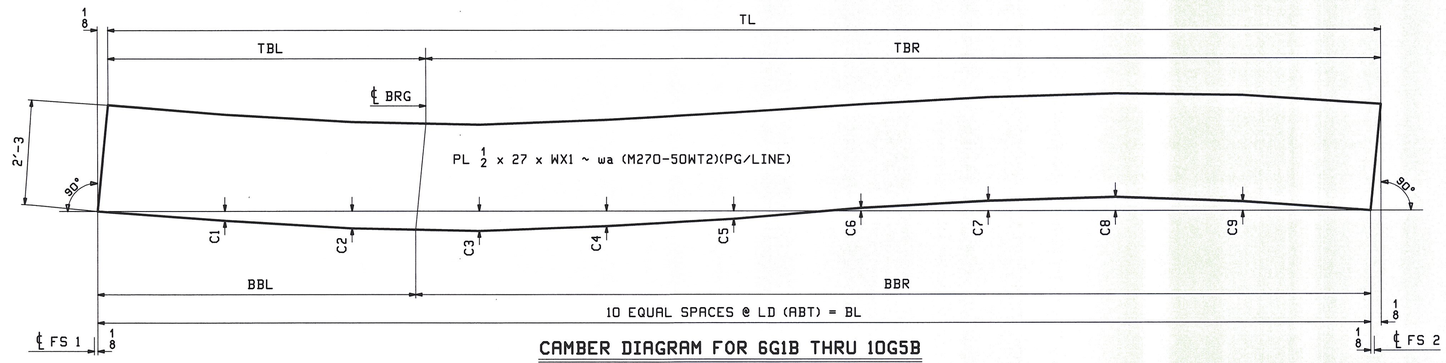
JTB Tue, May 22, 2012 03:38:04 PM /users/jobs/3124/19 1 Rev0



CAMBER DIAGRAM FOR 1G1A THRU 5G5A

MARK	TL	BL	LE	RE	WX1	LD	C1	C2	C3	C4	C5	C6	C7	C8	C9	PG/LINE
1G1A	55'-6 11/16	55'-6 5/16	1/8	1/4	56'-3 11/16	5'-6 5/8	11/16	1 3/16	1 9/16	1 3/4	1 13/16	1 3/4	1 1/2	1 1/8	5/8	4/ A
2G2A	59'-1 7/16	59'-1 1/8	1/16	1/4	59'-10 7/16	5'-10 15/16	11/16	1 1/4	1 11/16	1 15/16	2 1/16	1 7/8	1 5/8	1 3/16	5/8	3/ S
3G3A	58'-8 3/8	58'-8	1/8	1/4	59'-5 3/8	5'-10 7/16	11/16	1 5/16	1 11/16	2	2 1/16	1 15/16	1 5/8	1 3/16	5/8	3/ U
4G4A	58'-3 1/2	58'-3 1/8	1/8	1/4	59'-0 1/2	5'-9 15/16	3/4	1 3/8	1 3/4	2	2 1/8	2	1 11/16	1 3/16	5/8	3/ W
5G5A	53'-10 13/16	53'-10 3/8	1/8	5/16	54'-7 13/16	5'-4 5/8	11/16	1 1/4	1 11/16	1 7/8	2	1 7/8	1 5/8	1 1/4	11/16	4/ C

NOTE: PLEASE VERIFY THAT RESIDUAL CAMBER IS INCLUDED.



CAMBER DIAGRAM FOR 6G1B THRU 10G5B

MARK	TL	BL	WX1	TBL	TBR	BBL	BBR	LD	C1	C2	C3	C4	C5	C6	C7	C8	C9	PG/LINE
6G1B	72'-4 3/16	72'-4 3/16	72'-4 5/16	18'-11 13/16	53'-4 3/8	18'-11 7/8	53'-4 5/16	7'-2 13/16	7/16	3/4	7/8	11/16	3/8	0	5/16	1/2	7/16	4/ G
7G2B	70'-8 3/16	70'-8 3/16	70'-8 5/16	14'-11 13/16	55'-8 3/8	14'-11 7/8	55'-8 5/16	7'-0 13/16	7/16	3/4	11/16	7/16	0	3/8	9/16	5/8	7/16	4/ J
8G3B	70'-0 5/8	70'-0 5/8	70'-0 3/4	14'-11 13/16	55'-0 13/16	14'-11 7/8	55'-0 3/4	7'-0 1/16	7/16	13/16	3/4	9/16	3/16	1/4	9/16	9/16	3/8	4/ L
9G4B	66'-5 7/16	66'-5 7/16	66'-5 9/16	14'-11 13/16	51'-5 5/8	14'-11 7/8	51'-5 9/16	6'-7 3/4	3/8	13/16	13/16	5/8	3/8	0	1/4	7/16	3/8	4/ N
10G5B	72'-10 9/16	72'-10 9/16	72'-10 11/16	18'-11 13/16	53'-10 3/4	18'-11 7/8	53'-10 11/16	7'-3 7/16	9/16	1	1 1/8	15/16	1/2	0	1/4	7/16	3/8	4/ E

NOTES:
1. FOR GENERAL SHOP NOTES SEE DRAWING GN1.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0						MAY 23 2012

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

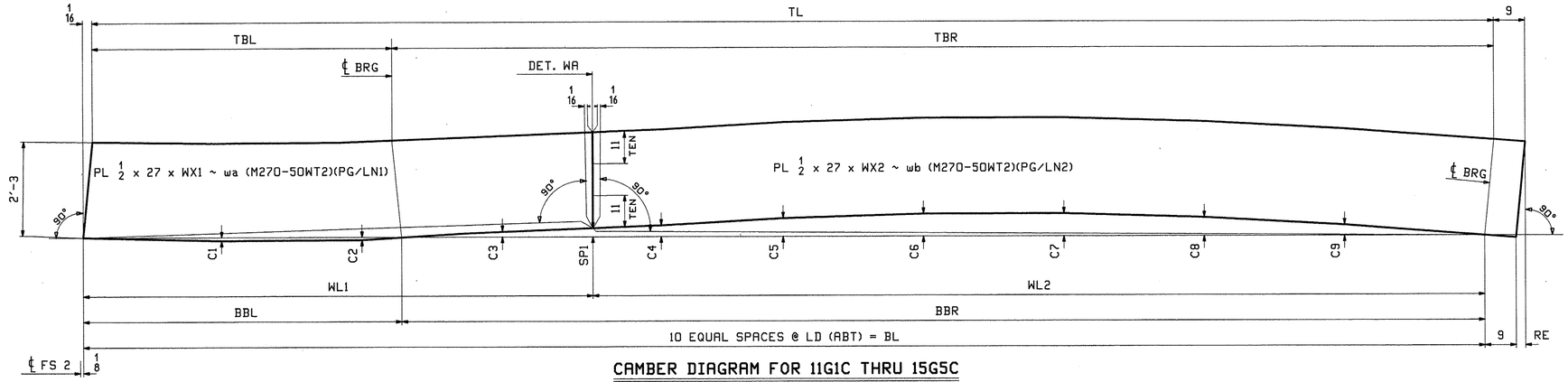
DESCRIPTION: WEB CUTTING DIAGRAMS

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726

TENSOR 3124

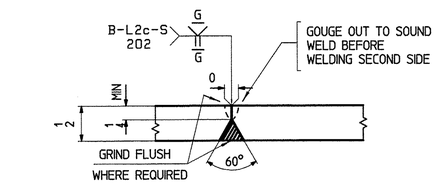
STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: WL	DATE: 04/21
	CHKD: RLA	DATE: 04/23
LOCATION: THETFORD, VT	JOB NO. 518	DWG NO. C1
PROJ NO. BHF 0177(9)		
CUSTOMER: A.L. ST. ONGE CONTRACTING		REV. △

ML Wed, Apr 25, 2012 12:30:41 PM /users/jobs/2324/C1 Rev0



CAMBER DIAGRAM FOR 11G1C THRU 15G5C

MARK	TL	BL	RE	WL1	WL2	WX1	WX2	SP1	TBL	TBR	BBL	BBR	LD	C1	C2	C3	C4	C5	C6	C7	C8	C9	PG/LN1	PG/LN2
11G1C	98'-5 13/16	98'-5 3/4	1/8	39'-2 3/4	59'-3	39'-2 13/16	60'-0 1/8	1 7/16	22'-11 11/16	75'-6 1/8	22'-11 7/8	75'-5 7/8	9'-10 3/16	3/16	1/8	1/2	1 7/16	2 5/16	2 7/8	2 7/8	2 3/8	1 3/8	4/ Q	3/ S
12G2C	94'-5 1/4	94'-5 3/16	1/8	35'-2 1/4	59'-2 15/16	35'-2 5/16	60'-0 1/16	1 1/4	19'-11 3/4	74'-5 1/2	19'-11 15/16	74'-5 1/4	9'-5 5/16	3/16	1/16	5/8	1 7/16	2 3/16	2 5/8	2 5/8	2 1/8	1 1/4	4/ U	3/ Y
13G3C	93'-5 1/2	93'-5 7/16	1/8	34'-2 7/16	59'-3	34'-2 1/2	60'-0 1/8	1 1/8	19'-11 11/16	73'-5 13/16	19'-11 7/8	73'-5 9/16	9'-4 1/8	1/8	1/16	9/16	1 3/8	2 1/16	2 1/2	2 7/16	2	1 3/16	4/ W	3/ Y
14G4C	95'-6 7/16	95'-6 3/8	1/8	36'-3 3/8	59'-3	36'-3 7/16	60'-0 1/8	1	22'-11 3/4	72'-6 11/16	22'-11 15/16	72'-6 7/16	9'-6 5/8	1/4	3/16	5/16	1 3/16	1 7/8	2 3/8	2 1/2	2 1/16	1 3/16	4/ S	3/ Y
15G5C	91'-8	91'-7 7/8	3/16	32'-4 7/8	59'-3	32'-4 15/16	60'-0 3/16	13/16	19'-11 3/4	71'-8 1/4	19'-11 15/16	71'-7 15/16	9'-2	1/4	1/8	7/16	1 1/4	2 1/16	2 9/16	2 5/8	2 1/4	1 3/8	4/ Y	3/ S



WEB PLATE SPLICE DETAIL "WA"

NOTES:
1. FOR GENERAL SHOP NOTES SEE DRAWING GN1.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

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

DESCRIPTION: WEB CUTTING DIAGRAMS

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726

TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: WL	DATE: 04/21
	CHKD: RLA	DATE: 04/23
LOCATION: THETFORD, VT	JOB NO.	DWG NO.
PROJ NO. BHF 0177(9)	518	C2
CUSTOMER: A.L. ST. ONGE CONTRACTING		REV. △

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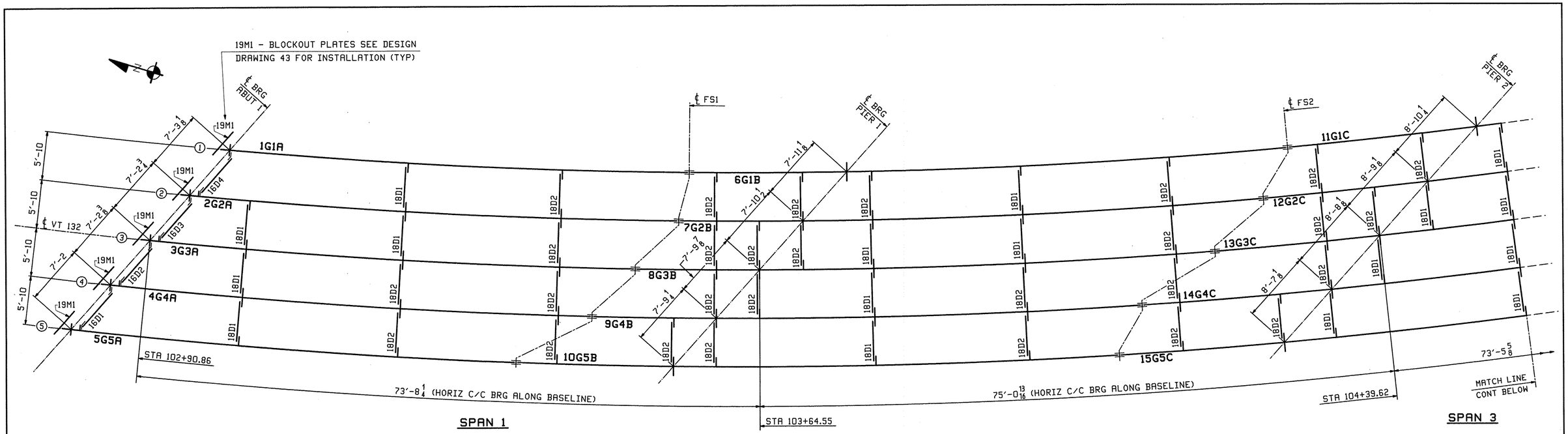


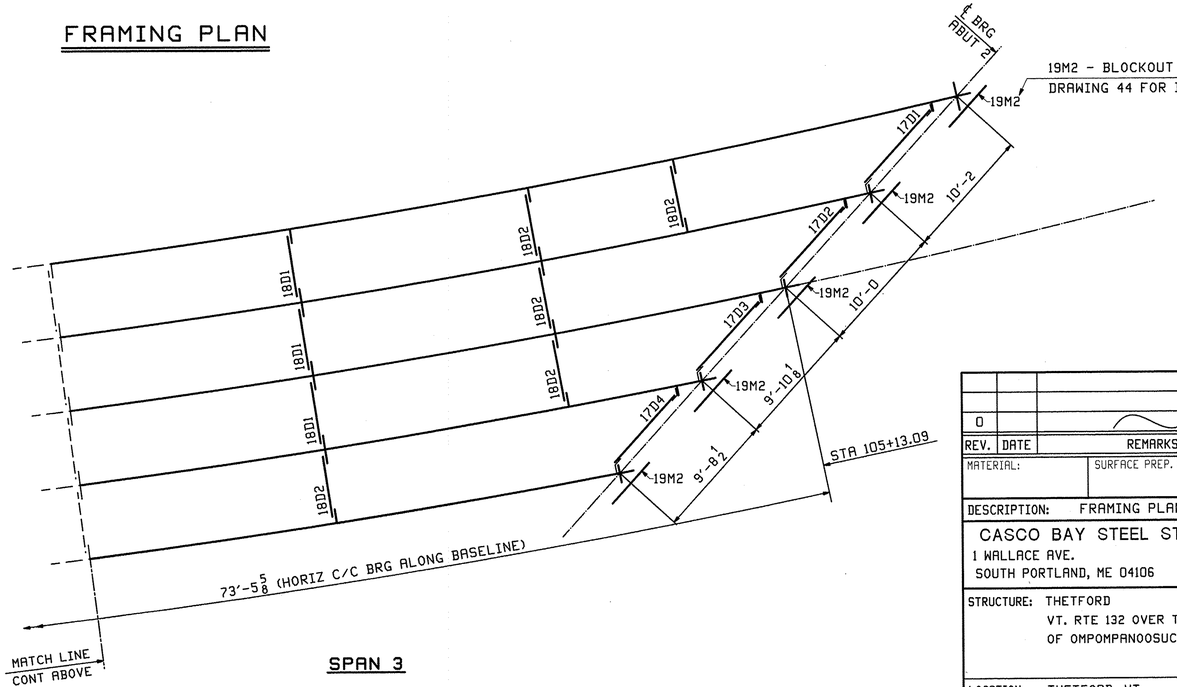
FIELD BOLT LIST							A325 Type 3 BOLTS							
LINE	NO REQ'D.	BOLT DIAM.	BOLT LEN.	BOLTS /CONN.	# OF CONN.	GRIP	THICKNESS OF PCS. CONNECTED						WASH CODE	PIECES CONNECTED AND REMARKS
1														**FIELD SPLICES**
2	240	7/8	3 1/2	24	10	2 1/8	1/2	1	5/8				1	TOP FLANGE SPLICE
3	420	7/8	3	42	10	1 1/2	1/2	1/2	1/2				1	WEB SPLICE
4	320	7/8	3 1/2	32	10	2 1/8	5/8	1	1/2				1	BOTTOM FLANGE SPLICE
5														
6														**ABUTMENT DIAPHRAGMS**
7	80	7/8	2 3/4	5	16	1 7/16	3/4	11/16					1	BENT GUSSET TO MC18 DIAPHRAGM WEB
8	80	7/8	3	5	16	1 1/2	3/4	3/4					1	BENT GUSSET TO STIFFENER
9														
10														**INT. DIAPHRAGMS**
11	98	7/8	2 1/2	7	14	1 1/8	3/8	3/4					1	DIAPHRAGM WEB TO PIER BRG STIFFENER
12	644	7/8	2 1/4	7	92	7/8	3/8	1/2					1	DIAPHRAGM WEB TO INT. CONNECTION PLATE

WASHER CODES

1: 1 Hard Flat Washer

FIELD BOLT SUMMARY	EXACT COUNT - NONE EXTRA					
LINE	NO. OF BOLTS	BOLT DIAM.	TYPE	BOLT LEN	ACTUAL COUNT	REMARKS
1	644	7/8	A325 Type 3	2 1/4	644	
2	98	7/8	↑	2 1/2	98	
3	80	7/8	|	2 3/4	80	
4	500	7/8	↓	3	500	
5	560	7/8	A325 Type 3	3 1/2	560	
6						
7	1882	Hard Flat Washers for 7/8"Ø BOLT			F436-3	
8						
9						
10						

FRAMING PLAN



REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

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

DESCRIPTION: FRAMING PLAN & FIELD BOLTS

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726

TENSOR 3124

STRUCTURE: THETFORD
VT. RTE 132 OVER THE WEST BRANCH
OF OMPOMPANOOSUC RIVER

DRAWN: JTB | DATE: 05/15
CHKD: DBH | DATE: 05/21

LOCATION: THETFORD, VT | JOB NO. 518 | DWG NO. E1
PROJ NO. BHF 0177(9) | REV. △
CUSTOMER: A.L. ST. ONGE CONTRACTING

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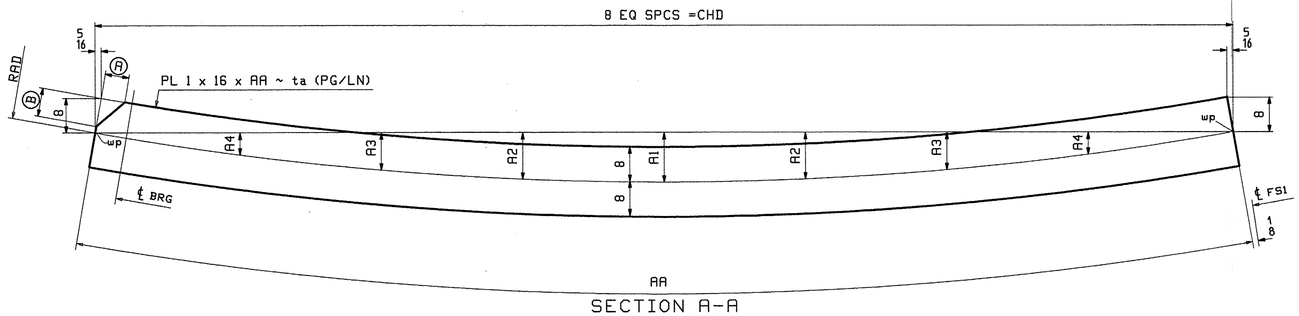
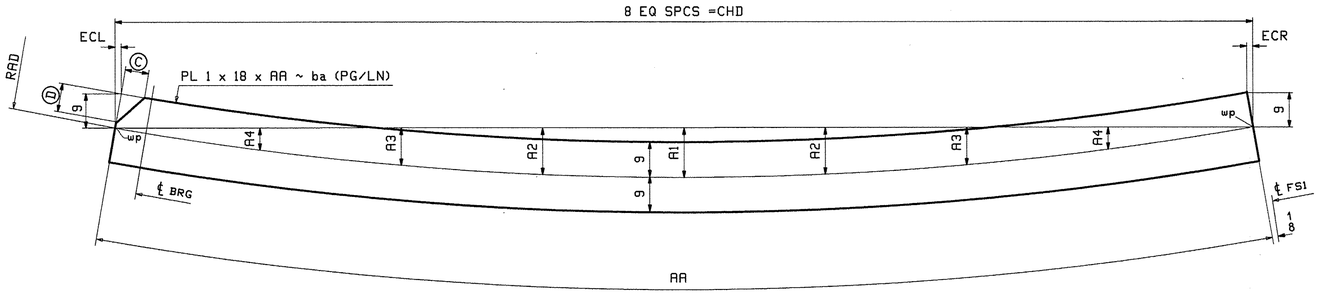


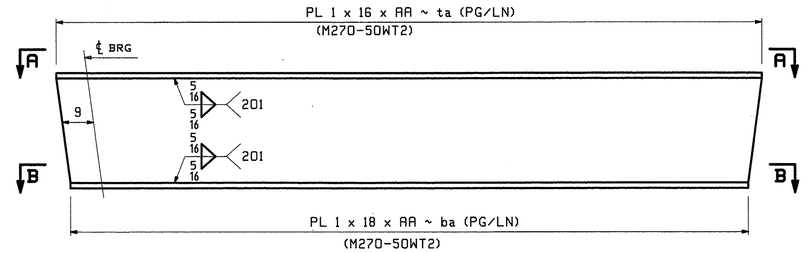
SECTION A-A

LOCATION	RAD	CHD	AA	A1	A2	A3	A4	PG/LN	A	B
1G1A TOP FLG	705.22	56'-3 1/2	56'-3 11/16	6 3/4	6 5/16	5 1/16	2 15/16	(3/A)	5	6 11/16
2G2A TOP FLG	711.05	59'-10 1/4	59'-10 7/16	7 9/16	7 1/16	5 11/16	3 5/16	(2/U)	4 15/16	6 3/4
3G3A TOP FLG	716.88	59'-5 3/16	59'-5 3/8	7 3/8	6 15/16	5 9/16	3 1/4	(2/W)	4 15/16	6 3/4
4G4A TOP FLG	722.72	59'-0 5/16	59'-0 1/2	7 1/4	6 13/16	5 7/16	3 3/16	(2/Y)	4 7/8	6 13/16
5G5A TOP FLG	728.55	54'-7 11/16	54'-7 13/16	6 1/8	5 3/4	4 5/8	2 11/16	(3/C)	4 7/8	6 7/8



SECTION B-B

LOCATION	RAD	CHD	AA	A1	A2	A3	A4	ECL	ECR	PG/LN	C	D
1G1A BTM FLG	705.22	56'-3 1/8	56'-3 5/16	6 3/4	6 5/16	5 1/16	2 15/16	3/8	3/8	(1/S)	5 3/4	7 11/16
2G2A BTM FLG	711.05	59'-9 15/16	59'-10 1/8	7 9/16	7 1/16	5 11/16	3 5/16	3/8	3/8	(1/L)	5 11/16	7 3/4
3G3A BTM FLG	716.88	59'-4 13/16	59'-5	7 3/8	6 15/16	5 9/16	3 1/4	3/8	3/8	(1/N)	5 5/8	7 3/4
4G4A BTM FLG	722.72	58'-11 15/16	59'-0 1/8	7 1/4	6 3/4	5 7/16	3 3/16	3/8	3/8	(1/Q)	5 5/8	7 13/16
5G5A BTM FLG	728.55	54'-7 1/4	54'-7 3/8	6 1/8	5 3/4	4 5/8	2 11/16	5/16	5/16	(1/U)	5 9/16	7 7/8



FLANGE DIAGRAM FOR 1G1A THRU 5G5A

NOTES:
1. FOR GENERAL SHOP NOTES SEE DRAWING GN1.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

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

DESCRIPTION: FLANGE CUTTING DIAGRAMS

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: WL	DATE: 04/23
	CHKD: RLA	DATE: 04/23
LOCATION: THETFORD, VT	JOB NO.	DWG NO.
PROJ NO. BHF 0177(9)	518	F1
CUSTOMER: A.L. ST. ONGE CONTRACTING		REV. △

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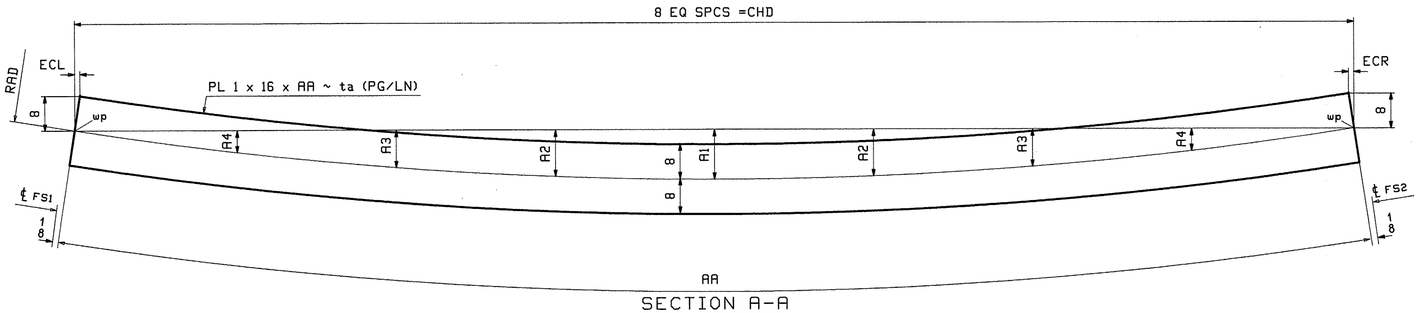
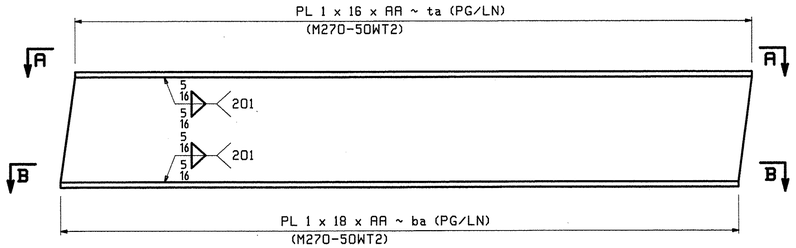
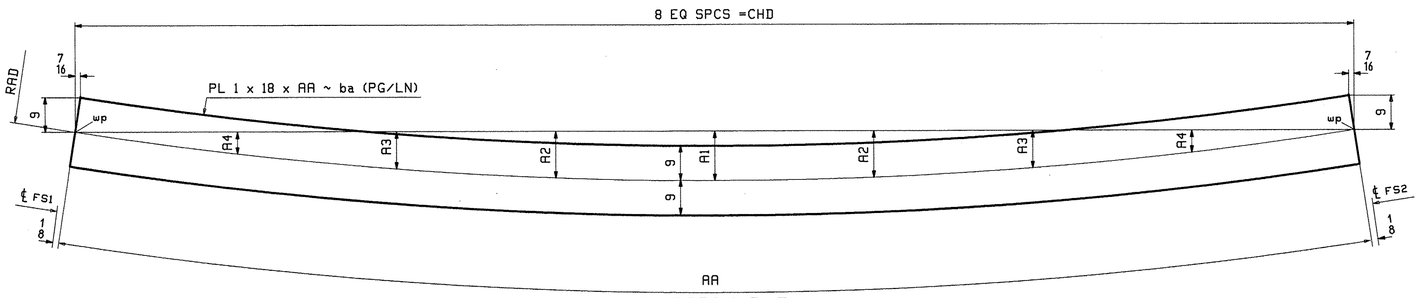


SECTION A-A

LOCATION	RAD	CHD	AA	A1	A2	A3	A4	ECL	ECR	PG/LN
6G1B TOP FLG	705.22	72'-3 13/16	72'-4 3/16	11 1/8	10 7/16	8 3/8	4 7/8	7/16	7/16	(2/J)
7G2B TOP FLG	711.05	70'-7 13/16	70'-8 3/16	10 9/16	9 7/8	7 7/8	4 5/8	3/8	3/8	(2/N)
8G3B TOP FLG	716.88	70'-0 5/16	70'-0 5/8	10 1/4	9 5/8	7 11/16	4 1/2	3/8	3/8	(2/Q)
9G4B TOP FLG	722.72	66'-5 3/16	66'-5 7/16	9 3/16	8 9/16	6 7/8	4	3/8	3/8	(2/S)
10G5B TOP FLG	728.55	72'-10 3/16	72'-10 9/16	10 15/16	10 1/4	8 3/16	4 13/16	3/8	3/8	(2/L)



FLANGE DIAGRAM FOR 6G1B THRU 10G5B



SECTION B-B

LOCATION	RAD	CHD	AA	A1	A2	A3	A4	PG/LN
6G1B BTM FLG	705.22	72'-3 13/16	72'-4 3/16	11 1/8	10 7/16	8 3/8	4 7/8	(1/A)
7G2B BTM FLG	711.05	70'-7 13/16	70'-8 3/16	10 9/16	9 7/8	7 7/8	4 5/8	(1/E)
8G3B BTM FLG	716.88	70'-0 5/16	70'-0 5/8	10 1/4	9 5/8	7 11/16	4 1/2	(1/G)
9G4B BTM FLG	722.72	66'-5 3/16	66'-5 7/16	9 3/16	8 9/16	6 7/8	4	(1/J)
10G5B BTM FLG	728.55	72'-10 3/16	72'-10 9/16	10 15/16	10 1/4	8 3/16	4 13/16	(1/C)

NOTES:
1. FOR GENERAL SHOP NOTES SEE DRAWING GN1.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

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

DESCRIPTION: FLANGE CUTTING DIAGRAMS

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: WL	DATE: 04/23
	CHKD: RLA	DATE: 04/23
LOCATION: THETFORD, VT	JOB NO. 518	DWG NO. F2
PROJ NO. BHF 0177(9)		
CUSTOMER: A.L. ST. ONGE CONTRACTING		REV. △

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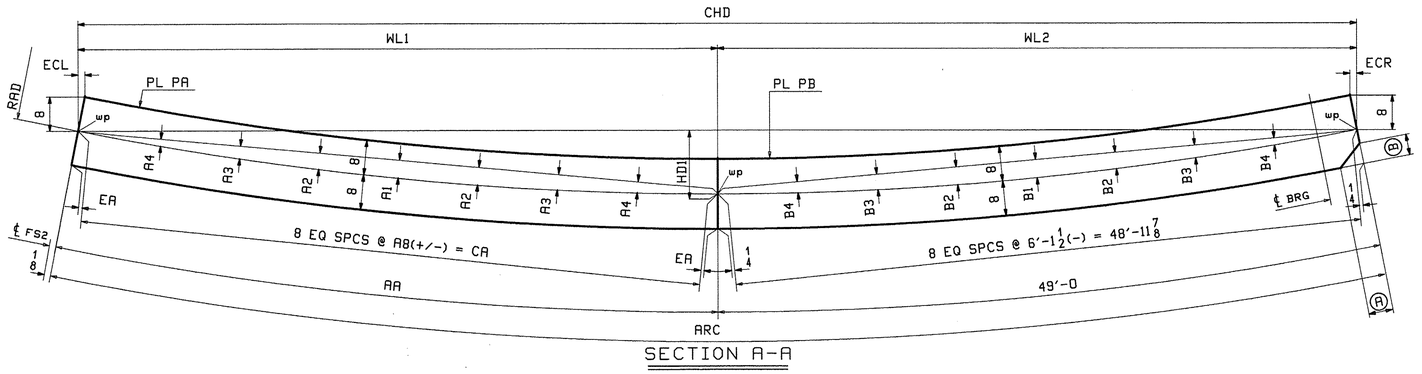
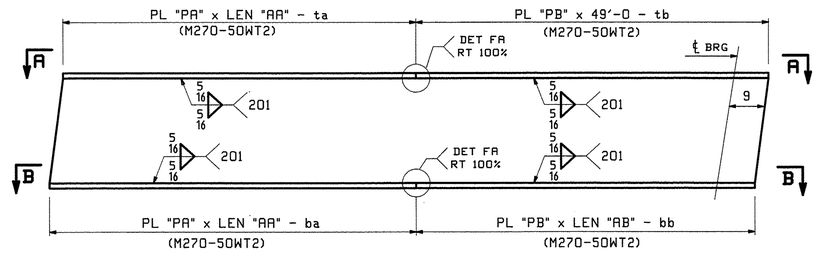
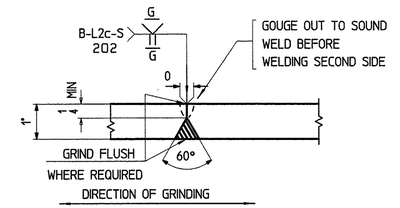


SECTION A-A

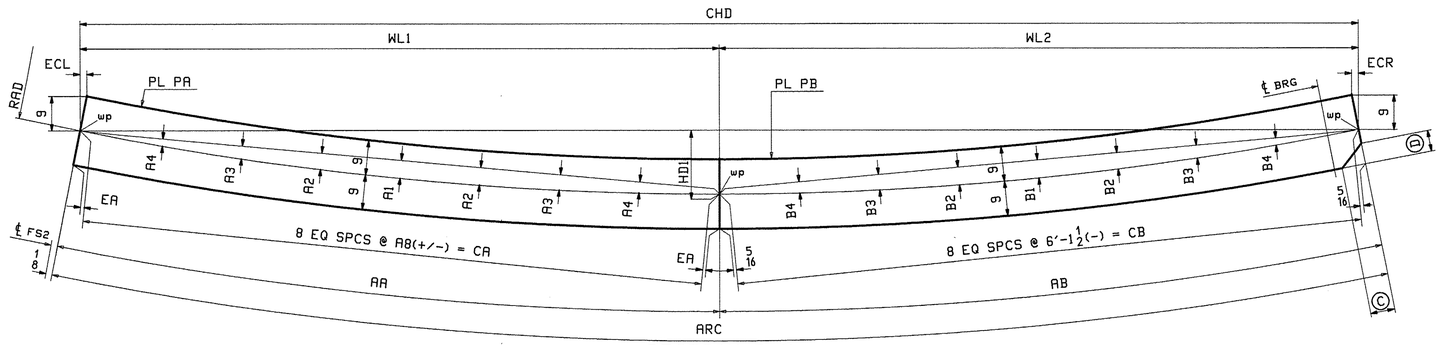


FLANGE DIAGRAM FOR 11G1C THRU 15G5C

LOCATION	RAD	ARC	CHD	AA	EA	A1	A2	A3	A4	A8	CA	B1	B2	B3	B4	ECL	ECR	WL1	WL2	HD1	PL PA (M270-50WT2)	PL PB (M270-50WT2)	Ⓐ	Ⓑ
11G1C TOP FLG	705.22	99'-2 13/16	99'-1 13/16	50'-2 13/16	5/16	5 3/8	5 1/16	4	2 3/8	6'-3 5/16	50'-2 11/16	5 1/8	4 13/16	3 13/16	2 1/4	9/16	9/16	50'-2 5/16	48'-11 1/2	1'-8 15/16	PL 1 x 16-ta (3/E)	PL 1 x 16-tb (3/G)	6 1/2	4 1/2
12G2C TOP FLG	711.05	95'-2 1/4	95'-1 3/8	46'-2 1/4	1/4	4 1/2	4 1/4	3 3/8	2	5'-9 1/4	46'-2 3/16	5 1/16	4 3/4	3 13/16	2 3/16	9/16	9/16	46'-1 13/16	48'-11 9/16	1'-7 1/16	PL 1 x 16-ta (3/L)	PL 1 x 16-tb (3/G)	6 7/16	4 9/16
13G3C TOP FLG	716.88	94'-2 1/2	94'-1 11/16	45'-2 1/2	1/4	4 1/4	4	3 3/16	1 7/8	5'-7 13/16	45'-2 3/8	5	4 11/16	3 3/4	2 3/16	1/2	1/2	45'-2 1/16	48'-11 5/8	1'-6 9/16	PL 1 x 16-ta (3/N)	PL 1 x 16-tb (3/G)	6 3/8	4 5/8
14G4C TOP FLG	722.72	96'-3 7/16	96'-2 9/16	47'-3 7/16	1/4	4 5/8	4 3/8	3 1/2	2	5'-10 15/16	47'-3 5/16	5	4 11/16	3 3/4	2 3/16	9/16	9/16	47'-3	48'-11 9/16	1'-7 1/4	PL 1 x 16-ta (3/J)	PL 1 x 16-tb (3/G)	6 3/8	4 3/4
15G5C TOP FLG	728.55	92'-5	92'-4 1/4	43'-5	1/4	3 7/8	3 5/8	2 15/16	1 11/16	5'-5 1/8	43'-4 15/16	4 15/16	4 5/8	3 11/16	2 3/16	1/2	1/2	43'-4 5/8	48'-11 5/8	1'-5 1/2	PL 1 x 16-ta (3/Q)	PL 1 x 16-tb (3/G)	6 5/16	4 13/16



FLANGE PLATE SPLICE DETAIL "FA"



SECTION B-B

LOCATION	RAD	ARC	CHD	AA	AB	EA	A1	A2	A3	A4	A8	CA	B1	B2	B3	B4	CB	ECL	ECR	WL1	WL2	HD1	PL PA (M270-50WT2)	PL PB (M270-50WT2)	Ⓒ	Ⓓ
11G1C BTM FLG	705.22	99'-2 3/4	99'-1 3/4	50'-2 13/16	48'-11 15/16	5/16	5 3/8	5	4	2 3/8	6'-3 5/16	50'-2 11/16	5 1/8	4 13/16	3 13/16	2 1/4	48'-11 13/16	5/8	5/8	50'-2 5/16	48'-11 7/16	1'-8 15/16	PL 1 x 18-ba (1/W)	PL 1 x 18-bb (1/Y)	7 15/16	5 1/2
12G2C BTM FLG	711.05	95'-2 3/16	95'-1 5/16	46'-2 1/4	48'-11 15/16	5/16	4 1/2	4 1/4	3 3/8	2	5'-9 1/4	46'-2 1/8	5 1/16	4 3/4	3 13/16	2 3/16	48'-11 13/16	5/8	5/8	46'-1 13/16	48'-11 1/2	1'-7 1/16	PL 1 x 18-ba (2/C)	PL 1 x 18-bb (1/Y)	7 7/8	5 9/16
13G3C BTM FLG	716.88	94'-2 7/16	94'-1 5/8	45'-2 7/16	49'-0	5/16	4 1/4	4	3 3/16	1 7/8	5'-7 13/16	45'-2 3/8	5	4 11/16	3 3/4	2 3/16	48'-11 7/8	9/16	9/16	45'-2 1/16	48'-11 9/16	1'-6 9/16	PL 1 x 18-ba (2/E)	PL 1 x 18-bb (1/Y)	7 3/4	5 5/8
14G4C BTM FLG	722.72	96'-3 3/8	96'-2 1/2	47'-3 3/8	49'-0	5/16	4 5/8	4 3/8	3 1/2	2	5'-10 15/16	47'-3 1/4	5	4 11/16	3 3/4	2 3/16	48'-11 7/8	5/8	5/8	47'-2 15/16	48'-11 9/16	1'-7 1/4	PL 1 x 18-ba (2/A)	PL 1 x 18-bb (1/Y)	7 11/16	5 3/4
15G5C BTM FLG	728.55	92'-4 7/8	92'-4 1/8	43'-4 15/16	48'-11 15/16	1/4	3 7/8	3 5/8	2 15/16	1 11/16	5'-5 1/8	43'-4 13/16	4 15/16	4 5/8	3 11/16	2 3/16	48'-11 7/8	9/16	9/16	43'-4 9/16	48'-11 9/16	1'-5 1/2	PL 1 x 18-ba (2/G)	PL 1 x 18-bb (1/Y)	7 5/8	5 13/16

NOTES:
1. FOR GENERAL SHOP NOTES SEE DRAWING GN1.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

MATERIAL: | SURFACE PREP. & PAINT: | HOLES: AS NOTED | SHOP BOLTS: AS NOTED

DESCRIPTION: FLANGE CUTTING DIAGRAMS

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. SOUTH PORTLAND, ME 04106
PHONE (207) 780-6722 FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER		DRAWN: WL	DATE: 04/23
		CHKD: RLA	DATE: 04/23
LOCATION: THETFORD, VT		JOB NO.	DWG NO.
PROJ NO.	BHF 0177(9)	518	F3
CUSTOMER:	A.L. ST. ONGE CONTRACTING		REV. △

RLA Wed, Apr 25, 2012 03:46:49 PM /users/jobs/2124/f3 - Rev0

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS

1) ALL MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006 WITH LATEST REVISIONS AND THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS FOR HIGHWAY BRIDGES, 4TH EDITION AND ITS LATEST REVISIONS.

MATERIAL SPECIFICATIONS

1) UNLESS OTHERWISE NOTED, ALL STEEL TO BE UNPAINTED AASHTO M270 (ASTM A709) GRADE 50W.

2) MATERIAL NOTED "CVN" OR "T2" ON DETAIL DRAWINGS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF VERMONT STANDARD SPECIFICATIONS SECTION 714.01.

3) HIGH STRENGTH BOLTS: ASTM A325 (AASHTO M164) 7/8" DIAMETER, TYPE 3, IN 15/16" DIAMETER HOLES, UNLESS NOTED OTHERWISE. NUTS SHALL BE A563 (TYPE 3) GRADE C3.

   BOLTS & NUTS SHALL BE ROTATIONAL CAPACITY TESTED. DO NOT MIX NUTS & BOLTS FROM DIFFERENT CONTAINERS UNLESS ALL BOLTS & NUTS HAVE THE SAME LOT NUMBER.

FABRICATION

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

WELDING

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

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

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

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

FIELD CONNECTIONS

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

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

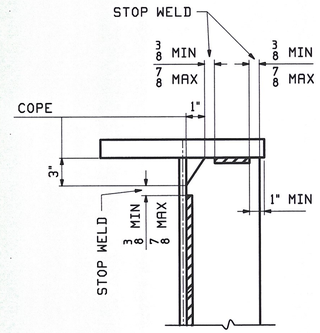
3) PIECE MARKS WILL BE LOCATED AS SHOWN ON ERECTION DRAWINGS.

CLEANING

1) ALL STEEL SHALL BE BLAST CLEANED IN ACCORDANCE WITH SSPC SP-10.

PAINTING

1) ALL STRUCTURAL STEEL IS UNPAINTED.



DETAIL "WS1"

STIFFENER WELD TERMINATION

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

SHOP DRAWING REVIEW

☐ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☒ FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB *Vanasse Hangen Brustlin, Inc.*
7056 US Route 7
North Ferrisburgh, VT 05473
802.425.7788

Job Number: 57325.00
Reviewed By: E.A. Fiala
Date: 06-11-2012

SEE COMMENTS ON PAGES C1 AND X1.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0	MAY 23 2012					

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

DESCRIPTION: GENERAL NOTES

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD
VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER

DRAWN:	DATE:
WL	04/23
CHKD:	DATE:
RLA	04/23

LOCATION: THETFORD, VT
PROJ NO. BHF 0177(9)
CUSTOMER: A.L. ST. ONGE CONTRACTING

JOB NO. 518

DWG NO. GN1

REV. △

Approved Shop

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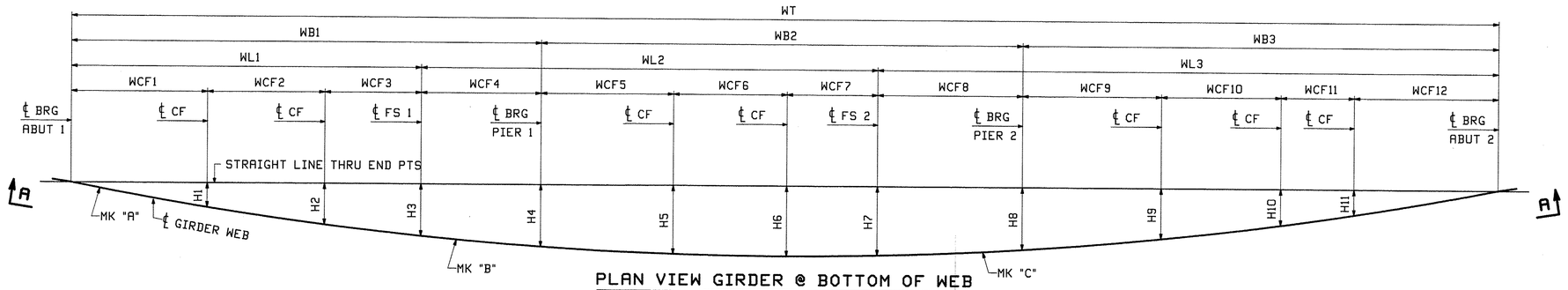
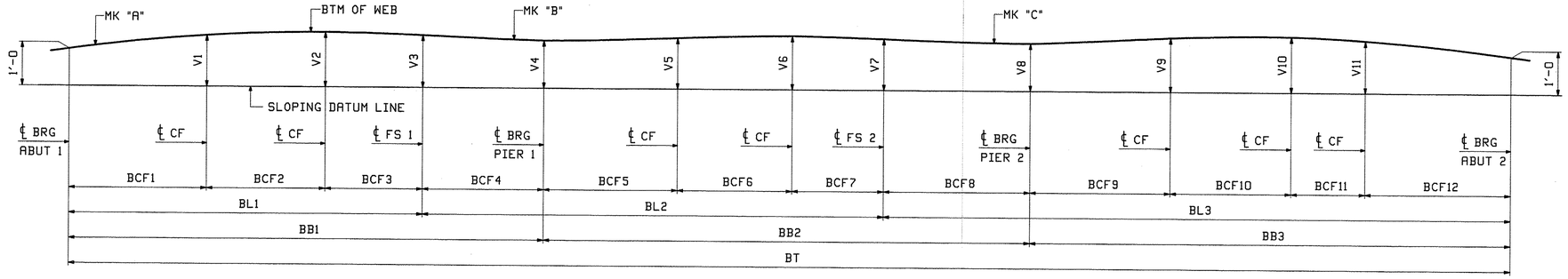


PLAN VIEW GIRDER @ BOTTOM OF WEB

LINE	WT	WL1	WL2	WL3	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	WB1	WB2	WB3	WCF1	WCF2	WCF3	WCF4	WCF5	WCF6	WCF7	WCF8	WCF9	WCF10	WCF11	WCF12	"A"	"B"	"C"
1	225′-5 1/8	55′-1 3/8	72′-3 11/16	98′-0 1/16	3′-1 1/2	5′-3 1/2	6′-8 1/2	8′-0 1/16	8′-10 1/8	9′-0 13/16	8′-10 15/16	8′-0 11/16	6′-6 1/2	4′-8 3/16	3′-3 1/2	74′-0 7/8	76′-4	75′-0 1/4	21′-4 5/8	18′-5 7/8	15′-2 7/8	18′-11 1/2	20′-11 3/4	17′-11 7/8	14′-4 9/16	22′-11 13/16	21′-11 3/16	18′-10 5/8	11′-6 9/16	22′-7 7/8	1G1A	6G1B	11G1C
2	223′-3 7/8	58′-8 3/16	70′-7 7/8	93′-11 13/16	3′-7 9/16	5′-7 3/4	6′-10 1/8	7′-9 11/16	8′-8 3/4	8′-9 1/2	8′-7 1/4	7′-9 7/8	5′-8 9/16	3′-8	2′-1 15/16	73′-7 7/8	75′-8 1/16	73′-11 15/16	25′-10 1/2	18′-8	14′-1 11/16	14′-11 11/16	26′-6 9/16	18′-1 11/16	10′-11 15/16	19′-11 7/8	28′-9 1/4	19′-0 5/16	11′-7 9/16	14′-6 13/16	2G2A	7G2B	12G2C
3	221′-3 7/8	58′-3 3/8	70′-0 1/4	93′-0 1/4	1′-8 9/16	4′-0 15/16	6′-8 1/8	7′-7 3/8	8′-2 7/16	8′-6 7/8	8′-4 1/2	7′-7 1/4	6′-6 11/16	4′-10 3/16	2′-7 7/16	73′-3	75′-0 1/2	73′-0 3/8	11′-6 7/8	18′-9 5/16	27′-11 3/16	14′-11 5/8	13′-9 1/2	18′-3 7/16	22′-11 11/16	19′-11 7/8	16′-3 15/16	19′-2 5/8	19′-1 7/8	18′-3 15/16	3G3A	8G3B	13G3C
4	219′-5 3/16	57′-10 11/16	66′-5 1/8	95′-1 3/8	2′-3 1/16	4′-5 13/16	6′-6 3/16	7′-5 1/4	8′-1 15/16	8′-4 1/2	8′-2 3/4	7′-4 3/4	5′-10 1/8	3′-11 7/16	1′-6 9/16	72′-10 5/16	74′-5 5/16	72′-1 9/16	15′-10 3/8	18′-11 3/8	23′-0 15/16	14′-11 5/8	19′-1 11/16	18′-5 1/4	13′-10 9/16	22′-11 13/16	22′-10 11/16	19′-4 1/4	19′-3 9/16	10′-7 1/16	4G4A	9G4B	14G4C
5	217′-7 9/16	53′-6 1/4	72′-10 3/16	91′-3 1/8	2′-9 1/16	4′-10 1/8	6′-0 7/8	7′-3 3/16	8′-0 7/8	8′-1 11/16	7′-11 1/2	7′-2 7/16	6′-10 3/16	5′-1 1/8	3′-0 5/16	72′-5 13/16	73′-10 7/16	71′-3 5/16	20′-1 11/16	19′-1 7/16	14′-3 1/8	18′-11 9/16	24′-5 7/16	18′-7 1/16	10′-10 1/8	19′-11 13/16	6′-3 15/16	23′-0 11/16	19′-5 15/16	22′-4 3/4	5G5A	10G5B	15G5C



DEVELOPED SECTION A-A

DIMENSIONS GIVEN ALONG ℄ WEB

LINE	BT	BL1	BL2	BL3	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	BB1	BB2	BB3	BCF1	BCF2	BCF3	BCF4	BCF5	BCF6	BCF7	BCF8	BCF9	BCF10	BCF11	BCF12
1	226′-4 3/4	55′-6 7/16	72′-4 7/16	98′-5 7/8	1′-3	1′-3 13/16	1′-3 1/4	1′-2 1/4	1′-3	1′-3 9/16	1′-3 1/16	1′-2 5/16	1′-3 5/8	1′-4	1′-3 5/16	74′-6 1/2	76′-4 7/16	75′-5 13/16	21′-7 3/8	18′-7 7/16	15′-3 5/8	19′-0 1/16	20′-11 15/16	17′-11 7/8	14′-4 9/16	23′-0 1/16	21′-11 13/16	18′-11 11/16	11′-7 9/16	22′-10 3/4
2	224′-3	59′-1 3/16	70′-8 7/16	94′-5 3/8	1′-3 3/8	1′-3 5/8	1′-3	1′-2 3/16	1′-3 3/16	1′-3 3/8	1′-2 13/16	1′-2 3/16	1′-3 11/16	1′-3 3/8	1′-2 3/16	74′-1 1/4	75′-8 7/16	74′-5 5/16	26′-1 9/16	18′-9 1/4	14′-2 3/8	15′-0 1/16	26′-6 3/4	18′-1 11/16	10′-11 15/16	20′-0 1/16	28′-10 1/4	19′-1 5/8	11′-8 11/16	14′-8 3/4
3	222′-2 9/16	58′-8 1/8	70′-0 7/8	93′-5 9/16	1′-1 7/8	1′-3 5/8	1′-3	1′-2 1/8	1′-2 3/8	1′-3 5/16	1′-2 3/4	1′-2 1/8	1′-3	1′-3 5/8	1′-2 9/16	73′-8 1/8	75′-0 15/16	73′-5 1/2	11′-8 3/8	18′-11 1/8	28′-0 5/8	15′-0	13′-9 11/16	18′-3 7/16	22′-11 3/4	20′-0 1/16	16′-4 5/16	19′-3 1/2	19′-3 1/2	18′-6 3/16
4	220′-3 3/8	58′-3 1/4	66′-5 11/16	95′-6 7/16	1′-2 1/2	1′-3 13/16	1′-3	1′-2 1/16	1′-2 9/16	1′-3 5/16	1′-2 7/8	1′-2 1/16	1′-3 1/4	1′-3 7/16	1′-1 5/8	73′-3 1/4	74′-5 11/16	72′-6 7/16	16′-0 1/4	19′-1	23′-2	15′-0	19′-1 13/16	18′-5 1/4	13′-10 5/8	23′-0	22′-11 5/16	19′-5 3/8	19′-5 3/8	10′-8 3/8
5	218′-5 3/8	53′-10 1/2	72′-10 7/8	91′-8	1′-3 1/8	1′-4	1′-3 5/16	1′-2	1′-2 13/16	1′-3 3/16	1′-2 5/8	1′-2	1′-2 3/16	1′-3 9/16	1′-3 1/8	72′-10 9/16	73′-10 13/16	71′-8	20′-3 15/16	19′-2 13/16	14′-3 3/4	19′-0 1/16	24′-5 5/8	18′-7	10′-10 3/16	20′-0	6′-4 1/16	23′-1 7/16	19′-7 1/4	22′-7 1/4

NOTES
FOR GENERAL NOTES SEE DWG GN1
ALL DIMENSIONS GIVEN AT BOTTOM OF WEB.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

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

DESCRIPTION: SHOP ASSEMBLY DIAGRAM

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726

TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: JTB	DATE: 05/15
	CHKD: DBH	DATE: 05/21
LOCATION: THETFORD, VT	JOB NO.	DWG NO.
PROJ NO. BHF 0177(9)	518	SA1
CUSTOMER: A.L. ST. ONGE CONTRACTING		REV. △

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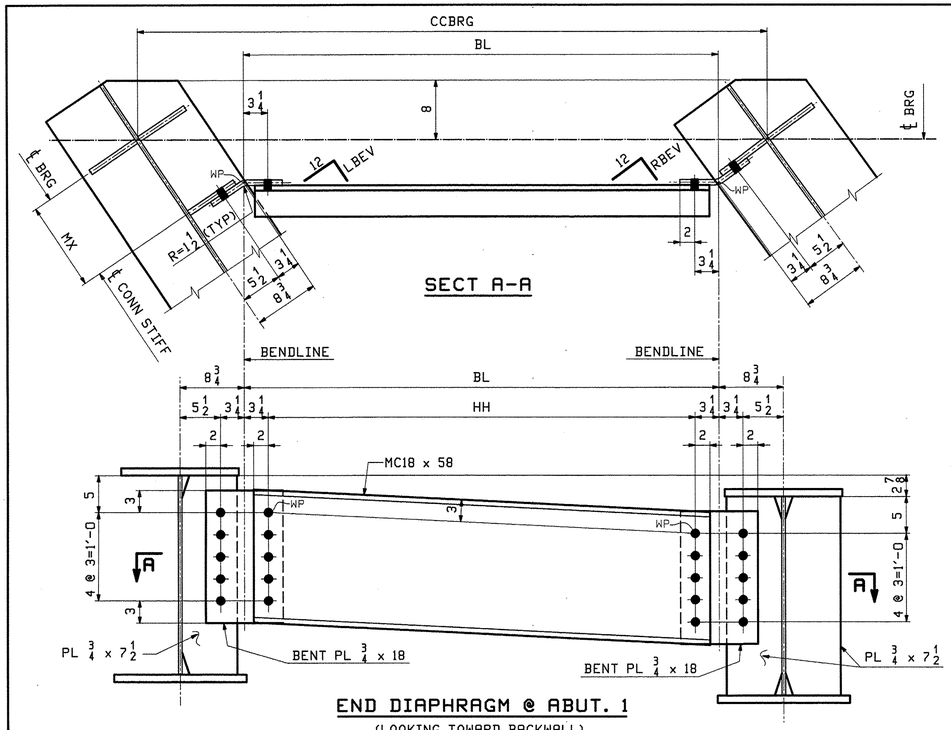
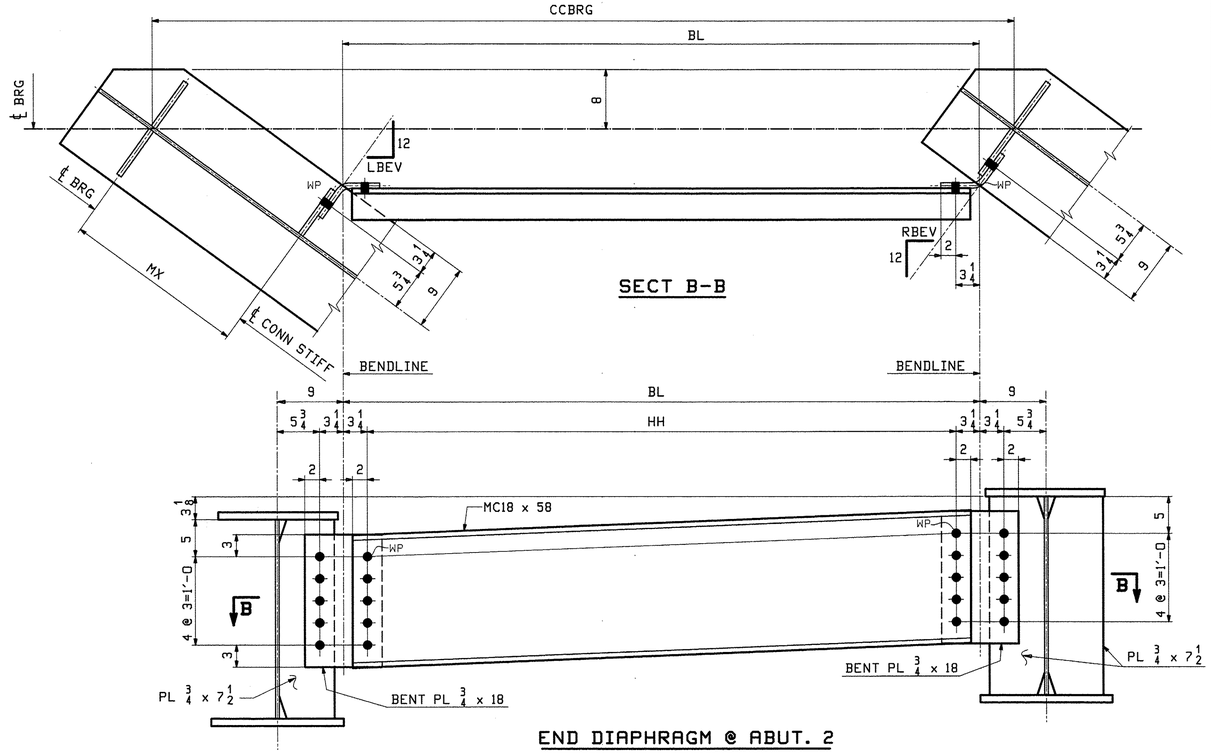


END DIAPHRAGM @ ABUT. 1

(LOOKING TOWARD BACKWALL)
(RE: DES 42 OF 78)

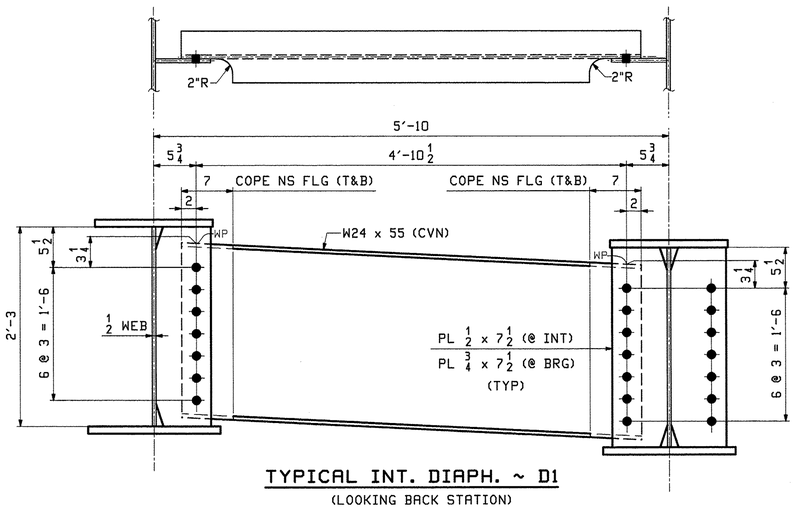
DIAPH	CCBRG	BL	HH	MX	LBEV	RBEV
ED1	7'-2	5'-4 9/16	4'-10 1/16	1'-0 1/2	8 1/2	8 5/8
ED2	7'-2 3/8	5'-4 13/16	4'-10 5/16	1'-0 5/8	8 5/8	8 3/4
ED3	7'-2 3/4	5'-5 1/8	4'-10 5/8	1'-0 13/16	8 3/4	8 13/16
ED4	7'-3 1/8	5'-5 7/16	4'-10 15/16	1'-0 15/16	8 13/16	8 15/16



END DIAPHRAGM @ ABUT. 2

(LOOKING TOWARD BACKWALL)
(RE: DES 42 OF 78)

DIAPH	CCBRG	BL	HH	MX	LBEV	RBEV
ED5	10'-2	7'-6 13/16	7'-0 5/16	2'-1 11/16	8 5/16	8 1/2
ED6	10'-0	7'-5 5/16	6'-10 13/16	2'-1 1/16	8 1/2	8 3/4
ED7	9'-10 1/8	7'-3 15/16	6'-9 7/16	2'-0 7/16	8 3/4	8 15/16
ED8	9'-8 1/2	7'-2 11/16	6'-8 3/16	1'-11 15/16	8 15/16	9 1/8



TYPICAL INT. DIAPH. ~ D1

(LOOKING BACK STATION)
(RE: DES 42 OF 78)

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0	MAY 23 2012					

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

DESCRIPTION: DIAPHRAGM LAYOUTS

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726

TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: WL	DATE: 04/23
	CHKD: RLA	DATE: 04/23
LOCATION: THETFORD, VT	JOB NO. 518	DWG NO. TD1
PROJ NO. BHF 0177(9)		REV. △
CUSTOMER: A.L. ST. ONGE CONTRACTING		

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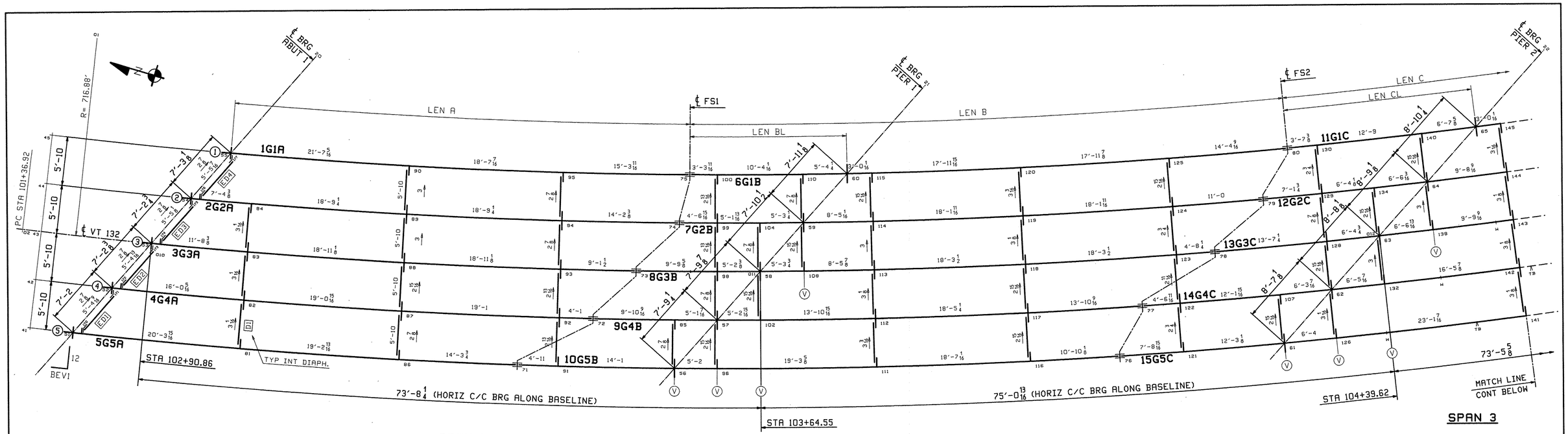
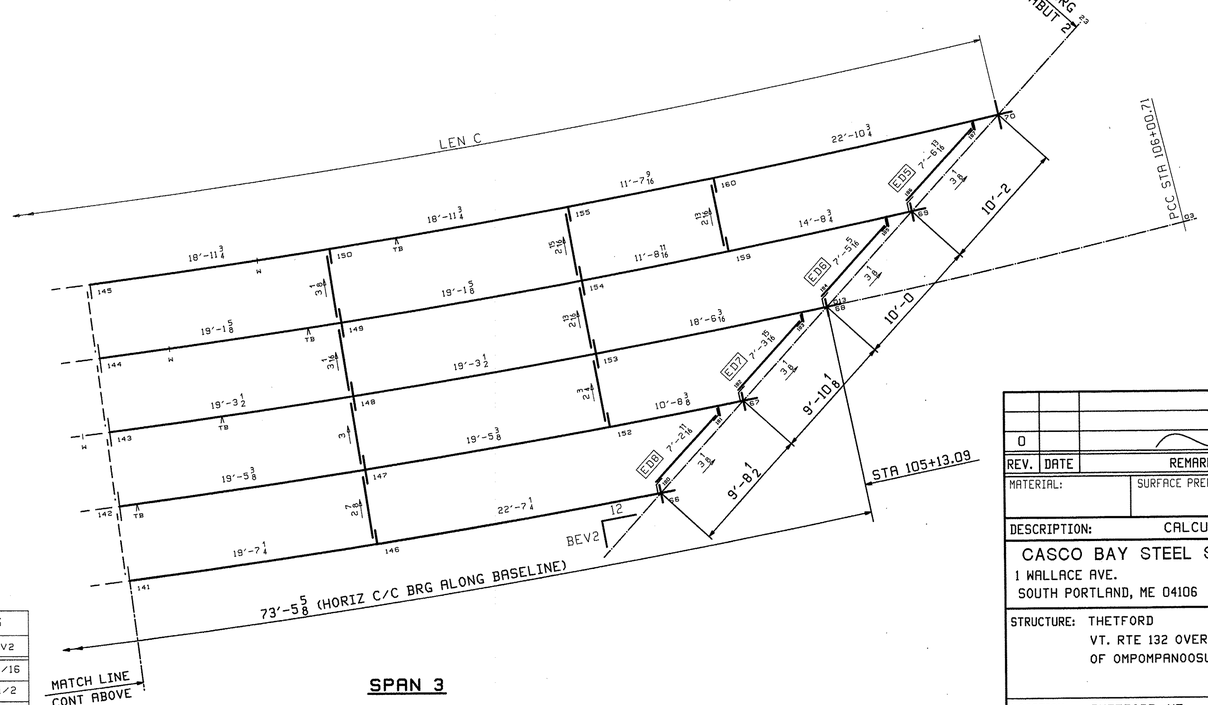


CALCULATION PLAN



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

NOTES
1. LONGITUDINAL DIMENSIONS ARE SLOPING ALONG BOTT OF WEB WITH CORRECTIONS MADE FOR VERTICAL CURVE, GRADE & DL CAMBER (UN).
2. TRANSVERSE DIMENSIONS ARE IN A HORIZ. PLANE (UN).
3. DROP ARROW POINTS TOWARDS LOW END OF MEMBER.
4. ENDS OF GIRDERS AND BRG. STIFF'S ARE VERTICAL AFTER DL ROTATION.
5. DIAPH. STIFF & FIELD SPLICES ARE NORMAL TO GRADE (UN Ⓥ).
6. BOTT PT NUMBERS =TOP PT NUMBERS + 200.
7. FOR LAYOUTS SEE "TD" SHEETS.
8. DIAPHRAGM DROPS ARE CALCULATED TO MATCH FINAL GEOMETRY.
9. INT. DIAPHRAGMS MAY BE COMBINED FOR DIFFERENCE IN DROPS OF +/- 1/8.

	DEVELOPED LENGTHS ALONG BOTTOM OF WEB					SLOPE @ ℄ BRG				BEVELS	
Line	LEN A	LEN BL	LEN B	LEN CL	LEN C	ABUT 1	PIER 1	PIER 2	ABUT 2	BEV1	BEV2
1	55'-6 7/16	19'-0	72'-4 7/16	23'-0	98'-5 7/8	.0066	.0002	-.0019	-.0079	8 15/16	8 5/16
2	59'-1 1/4	15'-0	70'-8 7/16	20'-0 1/16	94'-5 5/16	.0063	.0000	-.0015	-.0076	8 13/16	8 1/2
3	58'-8 1/8	15'-0	70'-0 7/8	20'-0	93'-5 9/16	.0065	.0004	-.0012	-.0076	8 3/4	8 3/4
4	58'-3 1/4	15'-0	66'-5 11/16	23'-0 1/16	95'-6 1/2	.0069	.0005	-.0010	-.0071	8 5/8	8 15/16
5	53'-10 1/2	19'-0	72'-10 13/16	20'-0 1/16	91'-8	.0072	.0008	-.0005	-.0074	8 1/2	9 1/8

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0					MAY 23 2012	

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

DESCRIPTION: CALCULATION PLAN

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726
TENSOR 3124

STRUCTURE:	THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: WL	DATE: 04/23
		CHKD: RLA	DATE: 04/23
LOCATION:	THETFORD, VT	JOB NO.	DWG NO.
PROJ NO.	BHF 0177(9)	518	WS1
CUSTOMER:	A.L. ST. ONGE CONTRACTING		REV. △

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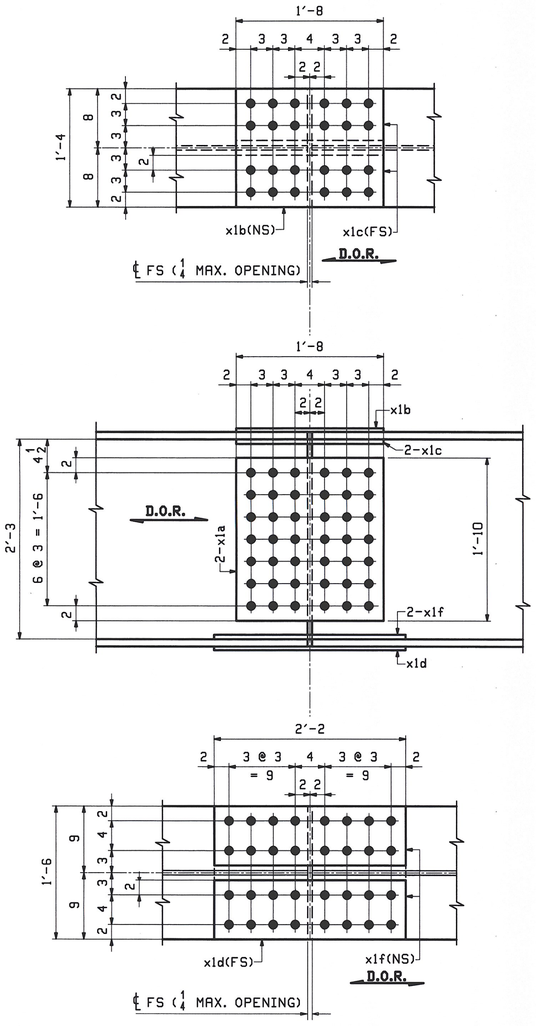
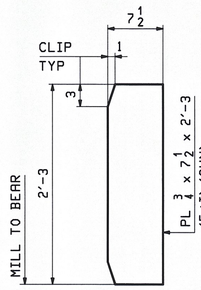


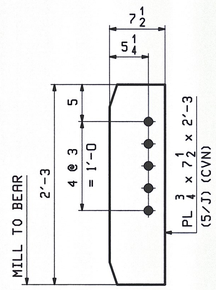
FIELD SPLICE DETAIL ~ X1M1

TYPICAL - FIELD SPLICES 1 & 2



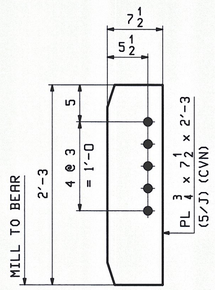
18 ~ x1g

ABUT/PIER BRG STIFFENER (FASCIA/BLANK SIDE)



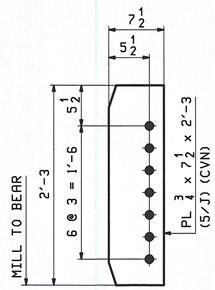
4 ~ x1k

ABUT 1 BRG STIFFENER DIAPH. CONN.



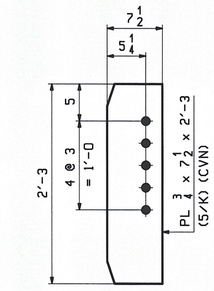
4 ~ x1m

ABUT 2 BRG STIFFENER DIAPH. CONN.



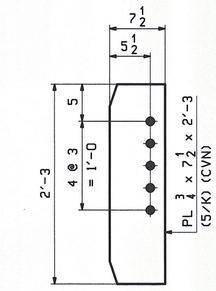
14 ~ x1n

PIER BRG STIFFENER DIAPH. CONN.



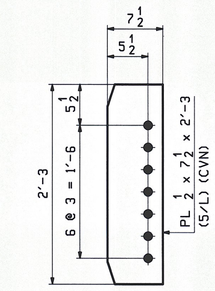
4 ~ x1p

ABUT 1 END DIAPH CONN PL



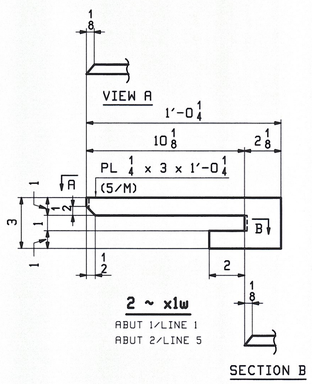
4 ~ x1t

ABUT 2 END DIAPH CONN PL



92 ~ x1v

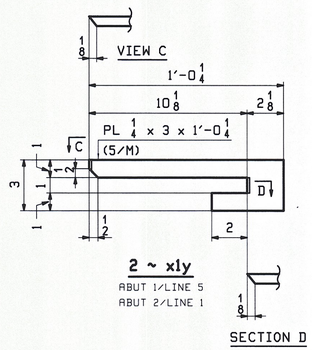
INT. DIAPH. CONN PL



2 ~ x1w

ABUT 1/LINE 1
ABUT 2/LINE 5

SECTION B



2 ~ x1y

ABUT 1/LINE 5
ABUT 2/LINE 1

SECTION D

NOTES:
1. FOR GENERAL NOTES SEE DRAWING GN1.
2. HOLES IN SPLICE PLATES ARE PRE-DRILLED. ENDS OF GIRDERS ARE DRILLED FROM SOLID USING SPLICE PLATES AS A TEMPLATE.
3. D.O.R. DENOTES DIRECTION OF MILL ROLLING
4. T2 & CVN DENOTE CHARPY V-NOTCH TESTING REQUIRED.

BILL OF MATERIAL

ABM INFO PAGE	ABM INFO LINE	SHIP MARK	QTY	MARK	MATERIAL	LENGTH FT	LENGTH INCHES	REMARKS	WT	PROCUREMENT NOTES
		X1M1	10		FIELD SPLICE PLATES				3598	
5	B		20	x1a	PL 1/2 x 22	1	8	M270-50WT2	1248	
5	C		10	x1b	PL 1/2 x 16	1	8	M270-50WT2	454	
5	D		20	x1c	PL 5/8 x 7	1	8	M270-50WT2	496	
5	E		10	x1d	PL 1/2 x 18	2	2	M270-50WT2	664	
5	F		20	x1f	PL 5/8 x 8	2	2	M270-50WT2	737	

PL 1/2 x 20"

NOTE:
MATERIAL FOR FIELD SPLICE BILLED HERE ONLY.
ALL OTHER MATERIAL BILLED ON DETAIL DRAWINGS.

REV.	DATE	REMARKS	DWN	CHK	APVL	SHOP
0	MAY 23 2012					

MATERIAL:	SURFACE PREP. & PAINT:	HOLES:	SHOP BOLTS:
M270-50W (UN)	SEE DWG GN1	15/16"ø	NONE

DESCRIPTION: GIRDER STANDARD DETAILS

CASCO BAY STEEL STRUCTURES, INC.
1 WALLACE AVE. PHONE (207) 780-6722
SOUTH PORTLAND, ME 04106 FAX. (207) 780-6726
TENSOR 3124

STRUCTURE: THETFORD VT. RTE 132 OVER THE WEST BRANCH OF OMPOMPANOOSUC RIVER	DRAWN: JTB	DATE: 05/10	
	CHKD: DBH	DATE: 05/21	
LOCATION: THETFORD, VT	JOB NO. 518	DWG NO. X1	
PROJ NO. BHF 0177(9)		REV. △	
CUSTOMER: A.L. ST. ONGE CONTRACTING			

JTB Tue, May 22, 2012 03:38:05 PM J:\Users\jbaker\3124\X1 | RevD