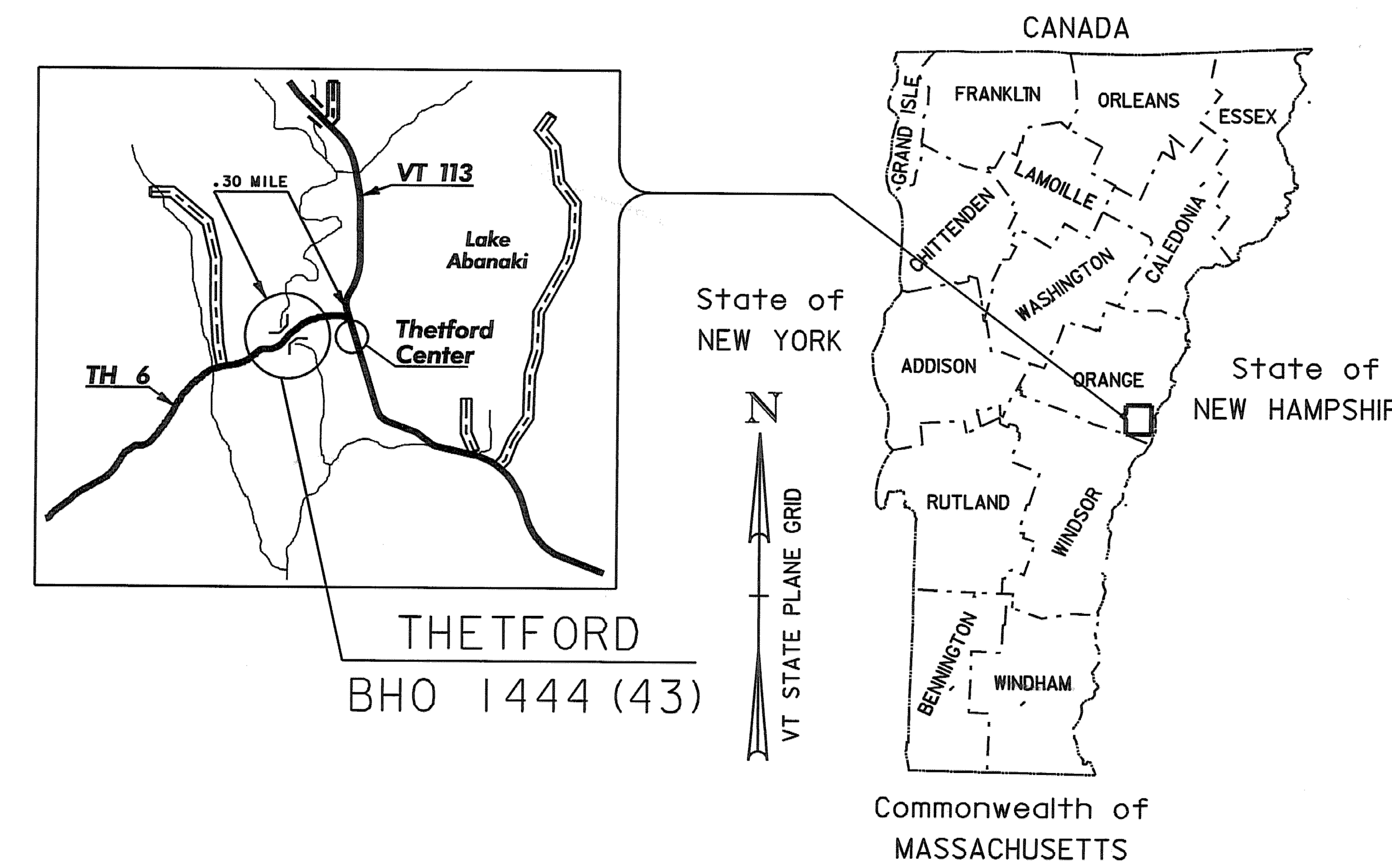
STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT

BRIDGE REHABILITATION PROJECT
TOWN OF THETFORD CENTER
COUNTY OF ORANGE

THETFORD BHO 1444 (43)
BRIDGE NO. 27 TOWN HIGHWAY 6 (CLASS 2)



RECORD PLANS	
CONTRACTOR:	ALPINE CONSTRUCTION, LLC – SCHUYLERVILLE, NY
RESIDENT ENGINEER:	DAN BREER
CONSTRUCTION BEGAN:	APRIL 2, 2007
CONSTRUCTION COMPLETE:	SEPTEMBER 14, ~~2008~~ 2007
RECORD PLANS BY:	DAN BREER & NICK GARBACIK

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

BY DW Breer RESIDENT ENGINEER

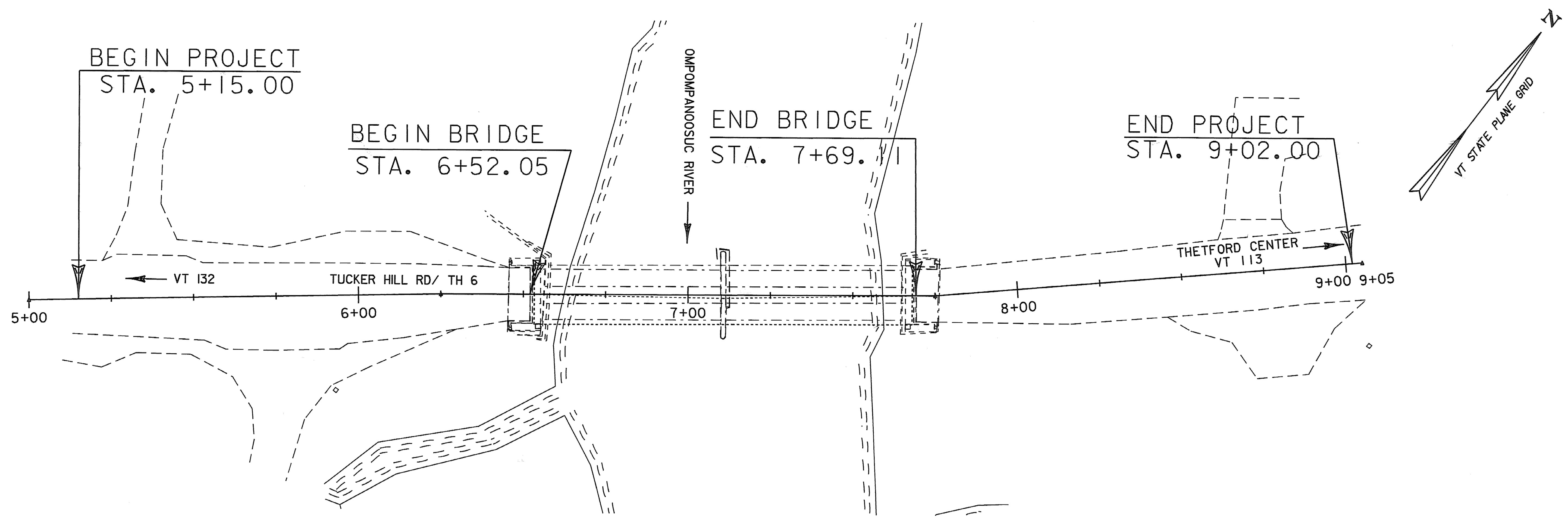
DATE 10/30/09

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

PROJECT LOCATION: BEGINNING APPROXIMATELY 0.30 MILES SOUTH WEST ON TOWN HIGHWAY NO. 6 MEASURED FROM THE INTERSECTION OF TH. 6 AND VT 113 AND EXTENDING NORTH EAST 0.07 MILES.

PROJECT DISCRIPTION: REHABILITATION OF SAYERS COVERED BRIDGE

LENGTH OF ROADWAY = 269.94 FT.
LENGTH OF BRIDGE = 117.06 FT.
LENGTH OF PROJECT = 387.0 FT.



CONVENTIONAL SYMBOLS

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

SURVEYED BY : GILMAN
SURVEYED DATE : 2003

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 83 (1996)

0 25 50
SCALE IN FEET
1" =25'

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 1995, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON MARCH 15, 1990 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATOR
APPROVED Mark D Richter DATE 10-10-06

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED [signature] DATE 9-27-06

PROJECT MANAGER : M. EVANS-MONGEON

PROJECT NAME : THETFORD
PROJECT NUMBER : BHO 1444 (43)

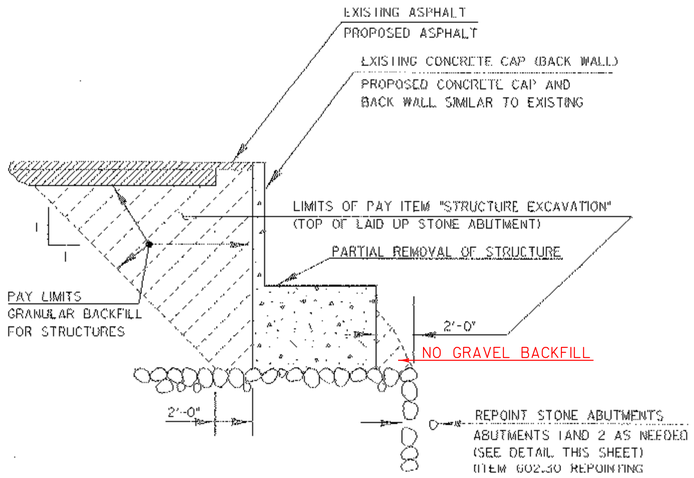
SHEET 1 OF 60 SHEETS

PRELIMINARY INFORMATION SHEET

INDEX OF SHEETS

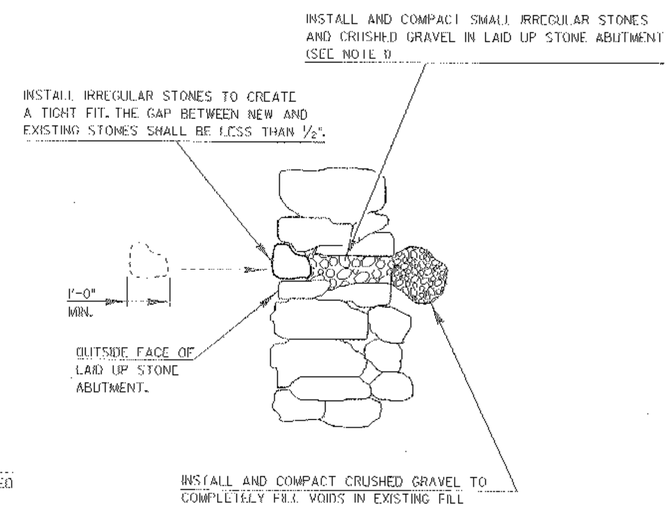
LIST OF STANDARDS

E-100	CONSTRUCTION APPROACH	JAN. 2, 2004
E-100A	SIDE ROAD CONSTRUCTION APPROACH SIGNS	JAN. 2, 2004
E-101	CONSTRUCTION SIGN DETAILS	MAY 30, 2003
E-102	CONSTRUCTION SIGN DETAILS	JUNE 30, 2003
E-102A	CONSTRUCTION SIGN DETAILS	MAY 1, 2004
E-107	DELINEATION, BARRACADES AND DETOURS FOR CONSTRUCTION AREAS	JUNE 30, 2003
E-121	STANDARD SIGN PLACEMENT	AUG. 8, 1995
E-136A	U.S. ROUTE MARKER SIGN DETAILS	AUG. 8, 1995
E-155	WARNING SIGN DETAILS	MAY 1, 2004
E-160	FLANGED CHANNEL SIGN POST	MAY 20, 1999



ABUTMENT NO. 1 TYPICAL AND WINGWALL SECTION

NOT TO SCALE



REPOINTING STONE ABUTMENTS DETAIL

NOT TO SCALE

NOTE 1: COMPACT MATERIAL BEHIND AND INTO VOIDS OF STONE ABUTMENTS BY USING TAMPING RODS OR OTHER METHODS ACCEPTABLE TO THE RESIDENT ENGINEER.

HYDROLOGIC DATA

DRAINAGE AREA: 61.3 SQUARE MILES
CHARACTER OF TERRAIN: HILLY, MOSTLY WOODED, RURAL
STREAM CHARACTERISTICS: PROBABLY INCISED, LITTLE TO NO FLOODPLAIN, SINUOUS
NATURE OF STREAMBED: SILT, LEDGE DOWNSTREAM OF BRIDGE

PEAK FLOW DATA

Q 2.33	= 1500 cfs	Q 50	= 5000 cfs
Q 10	= 2900 cfs	Q 100	= 6300 cfs
Q 25	= 4000 cfs	Q 500	= 8900 cfs

DATE OF FLOOD OF RECORD: 1973
ESTIMATED DISCHARGE: UNKNOWN
WATER SURFACE ELEV.: UNKNOWN
NATURAL STREAM VELOCITY @ Q25 = 5.5 FPS
ICE CONDITIONS: MODERATE
DEBRIS: MODERATE
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? NO
IS ORDINARY RISE RAPID? NO
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? YES
IF YES, DESCRIBE: IF DOWNSTREAM FLOOD DAM IS FULL, BACKWATER COULD REACH AN ELEVATION OF 564.0'.

WATERSHED STORAGE: 2.0%
HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE

STRUCTURE TYPE: COVERED BRIDGE ON ROLLED BEAMS YEAR BUILT: 1839
CLEAR SPAN (NORMAL TO STREAM): 104' MODIFIED IN 1963
VERTICAL CLEARANCE ABOVE STREAMBED: 17'
WATERWAY OF FULL OPENING: 1600 SQ. FT.
DISPOSITION OF STRUCTURE: REHABILITATION

TYPE OF MATERIAL UNDER SUBSTRUCTURE: N/A

WATER SURFACE ELEV. @ Q2.33 =	553.3'	VELOCITY =	3.7 FPS
Q10 =	555.5'	" =	4.8 FPS
Q25 =	556.7'	" =	5.4 FPS
Q50 =	557.8'	" =	6.0 FPS
Q100 =	558.8'	" =	6.8 FPS

LONG TERM STREAM BED CHANGES: DOWNSTREAM LEDGE AND FALLS WILL LIMIT ANY STREAM GRADE CHANGES.
IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: ABOVE Q100
RELIEF ELEVATION: 568.2' DISCHARGE OVER ROAD @ Q100: NONE

UPSTREAM STRUCTURE: TOWN: THETFORD DISTANCE: 11,020'
HIGHWAY NO.: TH 20 STRUCTURE NO.: BR 26
STRUCTURE TYPE: SIMPLE SPAN PLATE GIRDER
CLEAR SPAN: 91.5' CLEAR HEIGHT: 17'
YEAR BUILT: 1985 FULL WATERWAY: 1556 SQ. FT.

DOWNSTREAM STRUCTURE: TOWN: THETFORD DISTANCE: 18,800'
HIGHWAY NO.: STRUCTURE NO.:
STRUCTURE TYPE: FLOOD DAM WITH SPILLWAY ELEVATION = 564.0'
CLEAR SPAN: CLEAR HEIGHT:
YEAR BUILT: FULL WATERWAY:

PROPOSED STRUCTURE

STRUCTURE TYPE: EXISTING BRIDGE TO BE REHABILITATED, NO CHANGES

CLEAR SPAN (NORMAL TO STREAM): 104'
VERTICAL CLEARANCE ABOVE STREAMBED: 17'
WATERWAY OF FULL OPENING: 1600 SQ. FT.

WATER SURFACE ELEV. @ Q2.33 =	553.3'	VELOCITY =	3.7 FPS
Q10 =	555.5'	" =	4.8 FPS
Q25 =	556.7'	" =	5.4 FPS
Q50 =	557.8'	" =	6.0 FPS
Q100 =	558.8	" =	6.8 FPS

IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: ABOVE Q100
RELIEF ELEVATION: 568.2' DISCHARGE OVER ROAD @ Q100: NONE

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 564.8'
VERTICAL CLEARANCE @ Q25 = 8.1'

SCOUR: MAXIMUM CONTRACTION SCOUR UP TO Q500 = 1'. MAXIMUM PIER SCOUR UP TO Q500 = 5'. TOTAL MAXIMUM SCOUR AT PIER = 6', UNLESS LEDGE IS HIGHER.
REQUIRED CHANNEL PROTECTION: STONE FILL, TYPE II *

* NO WORK IN THE CHANNEL IS ANTICIPATED, AND THEREFORE NO STONE FOR CHANNEL PROTECTION IS REQUIRED.

BESIGN CRITERIA:
1. DESIGN LIVE LOAD AASHTO H 20
2. DESIGN SPAN 2 SPANS AT 52'-0" EACH
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 4 KSF ON LEDGE 10 KSF
4. ALLOWABLE LOAD FOR PILING N/A TYPE N/A ESTIMATED LENGTH N/A
5. STRUCTURAL STEEL AASHTO GRADE 50
6. REINFORCING STEEL GRADE 60
7. CONCRETE HIGH PERFORMANCE CLASS A f'c = 4000 PSI
   CONCRETE HIGH PERFORMANCE CLASS B f'c = 3500 PSI

TRAFFIC MAINTENANCE:
1. IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE NO OR ON TEMPORARY BRIDGE NO OR TEMPORARY DETOUR ROUTE YES
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY NO TRAFFIC CONTROL SIGNALS REQUIRED NO

ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE?

LOAD FACTOR LOAD RATING (TONS)

LOADING LEVELS (LOAD FACTOR)	TRUCK						
	H20	HS20	3S2	6 AXLE	3A STR.	4A STR.	5A SEMI
INVENTORY A=2.17 B=1.00	26	47					
POSTED A=1.55 B=1.00	31	56	105		60	86	105
OPERATING A=1.30 B=1.67		52	118	149	67	96	

STRENGTH RF = $\frac{\phi M_n - 1.3\,M_{DL}}{A \times M_{LL+I}}$ SERVICEABILITY RF = $\frac{.95\,F_y S_{LL+I} - M_{DL}\frac{S_{LL+I}}{S_{DL}} - M_{SDL}\frac{S_{LL+I}}{S_{SDL}}}{1.67\,M_{LL+I}}$

TRAFFIC DATA

YEAR	ADT	DHV	%D	%T	ADTT
2006	1000	170	71	4	30
2026	1300	190	71	5	60

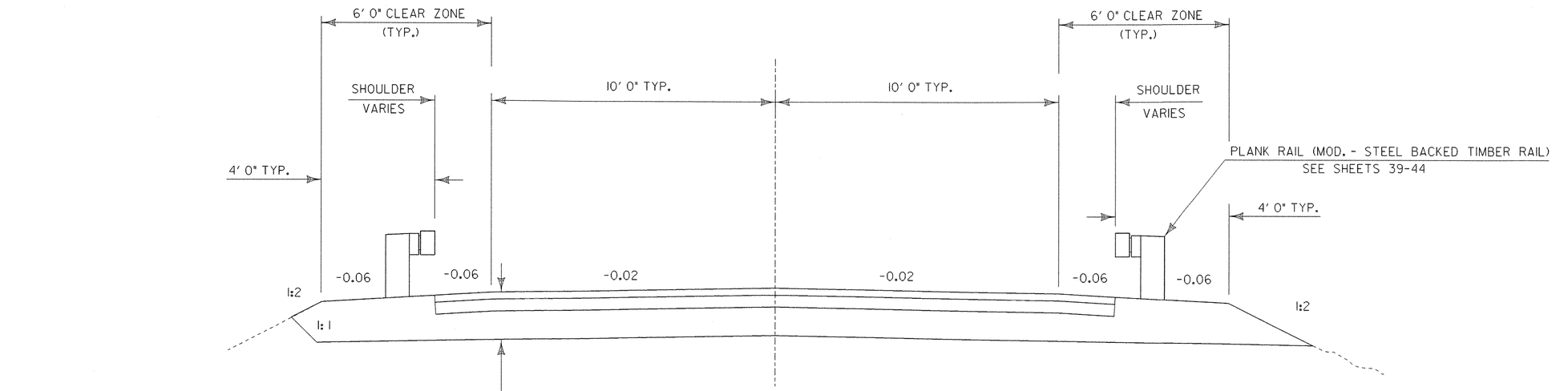
18 kip ESAL for flexible pavement from 2006 to 2026: 137,000
Design speed 10 mph.

PRELIMINARY INFORMATION SHEET

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

FILE NAME: Structures/s031036pi.dgn PLOT DATE: 27-SEP-2006
PROJECT LEADER: M. EVANS-MONGEON DRAWN BY: G. ROKES
DESIGNED BY: M. EVANS-MONGEON CHECKED BY: S. SCRIBNER
IPARM: s031036pi.i SHEET 2 OF 60

MATERIAL ITEM	TOLERANCE
PAVEMENT	± 1/4 " TOTAL THICKNESS
BASE COURSE	± 1/2 "
SUBBASE	± 1 "



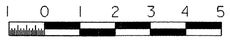
SIDE SLOPES VARY AND WILL STAY WITHIN THE R.O.W.

SIDE SLOPES VARY AND WILL STAY WITHIN THE R.O.W.

3" B.C.P., TYPE III OR TYPE IV (2 - 1 1/2" LIFTS)
5" B.C.P., TYPE I OR TYPE II (2- 2 1/2" LIFTS)
12" SUBBASE OF GRAVEL

NOTE: THIS TYPICAL IS FOR SUBBASE REPLACEMENT,
SEE MATERIAL TRANSITION AND CROSS SECTIONS
FOR AREA NOT REQUIRING SUBBASE REPLACEMENT.

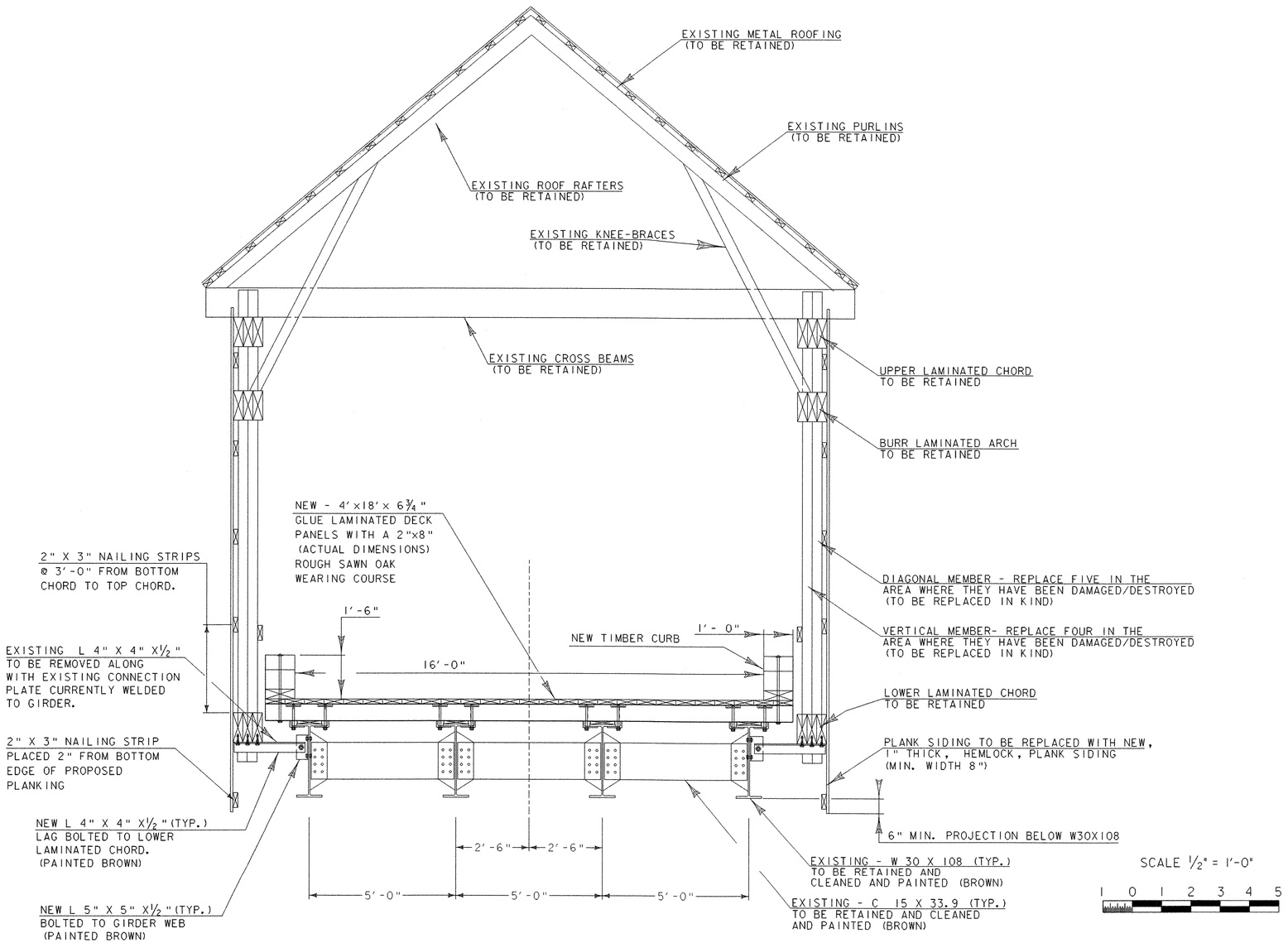
SCALE 1/2" = 1'-0"



ROAD TYPICAL

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

FILE NAME: Structures\s03j036typ.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M. EVANS-MONGEON	DRAWN BY: G. ROKES
DESIGNED BY: G. ROKES	CHECKED BY: S. SCRIBNER
IPARM: s03j36tyl.i	SHEET 3 OF 60



NOTES:

1. NEW SIDING SHALL CONSIST OF SINGLE VERTICAL PIECES IN ALL LOCATIONS. HORIZONTAL JOINTS IN THE SIDING WILL NOT BE ALLOWED.

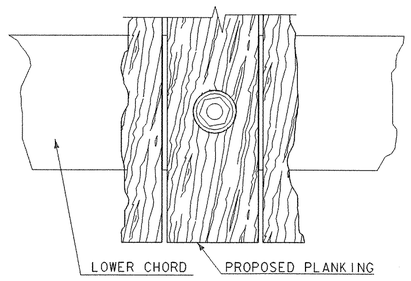
2. THE TIMBER PORTION OF THE STRUCTURE WILL BE RAISED IN RELATION TO THE STEEL SUPPORTS, TO MAINTAIN A MINIMUM VERTICAL CLEARANCE OF 12'-6" OVER THE HIGHWAY. CLEARANCE MEASURED AS SHOWN ON "FINISHED PORTAL OPENING" SHEET 7.

3. AT ABUTMENT #1. THE LAID UP STONE PART OF THE ABUTMENT WILL BE REPAIRED AS SHOWN ON SHEET 2 USING ITEM 602.30 REPOINTING MASONRY (MOD.). THE CONCRETE PORTION OF THIS ABUTMENT, BELOW THE LAID UP STONE PORTION WILL BE REPAIRED USING ITEM 580.13, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I, ITEM 580.14, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II, AND ITEM 580.15, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III. THE STEEL BEAMS WILL BE JACKED UP USING ITEM 502.10 SHORING SUPERSTRUCTURE, THE EXISTING CONCRETE CAP WILL BE REMOVED AND A NEW CONCRETE CAP WILL BE CONSTRUCTED AS SHOWN ON SHEETS 36 AND 37.

4. THE BEAMS AT ABUTMENT #2 WILL NOT BE JACKED, THE BEARINGS WILL REMAIN IN PLACE AND BE CLEANED INCIDENTAL TO ITEM 513.41, "SURFACE PREPARATION, FIELD".

5. THE PIER WILL NOT BE JACKED, THE BEARINGS WILL REMAIN IN PLACE AND BE CLEANED INCIDENTAL TO ITEM 513.41, "SURFACE PREPARATION, FIELD".

STEEL BOLTS RUN THROUGH THE LOWER CHORD, THESE BOLTS ARE NOT TO BE REMOVED. PLACE HOLES IN THE NEW PLANKING TO ALLOW THE PLANKING TO BE FIRMLY NAILED TO THE LOWER CHORD.



NTS

BRIDGE TYPICAL **Revised Oct. 24, 2006**

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHO 1444 (43)	
FILE NAME: Structures•j036typ.dgn	PLOT DATE: 24-OCT-2006
PROJECT LEADER: M. EVANS-MONGEON	DRAWN BY: G. ROKES
DESIGNED BY: G. ROKES	CHECKED BY: S. SCRIBNER
IPARM: s03j036ty2.i	SHEET 4 OF 60

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES															TOTALS				DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
	FULL E&C ITEMS		ROADWAY		ABUT. 1		ABUT.2		PIER		DECK		TRUSS		EROSION CONTROL	BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS
			1															1		LS	CLEARING AND GRUBBING (INCL. INDV. TREES AND STUMPS)	201.10			
			130															130		CY	COMMON EXCAVATION	203.15			
			225															225		CY	EXCAVATION OF SURFACES AND PAVEMENTS	203.28			
															10			10		CY	TRENCH EXCAVATION OF EARTH	204.20			
					150		30									180		180		CY	STRUCTURE EXCAVATION	204.25			
					120											120		120		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30			
			190												10			200		CY	SUBBASE OF GRAVEL	301.15			
			3															3		CWT	EMULSIFIED ASPHALT	404.65			
			325															325		TON	BITUMINOUS CONCRETE PAVEMENT (PG 58-28)	406.25			
					16											16		16		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34			
													1			1		1		LS	SHORING SUPERSTRUCTURE (COVERED BRIDGE)	502.10			
											4540					4540		4540		LB	STRUCTURAL STEEL	506.60			
					1100											1100		1100		LB	EPOXY COATED REINFORCING STEEL	507.17			
											1					1		1		LS	STRUCTURAL PAINTING, SHOP APPLIED (2 TONS)	513.25			
													1			1		1		LS	STRUCTURAL PAINTING,FIELD APPLIED (MOD. – INSECTICIDE AND FIRE RETARDANT)	513.30			
											1					1		1		LS	STRUCTURAL PAINTING,FIELD APPLIED (35 TONS)	513.30			
											1					1		1		LS	CONTAINMENT & ENVIRONMENTAL PROTECTION,FIELD	513.36			
													1			1		1		LS	CONTAINMENT & ENVIRONMENTAL PROTECTION, FIELD(MOD. – INSECTICIDE AND FIRE RETARDANT)	513.36			
											1					1		1		LS	SURFACE PREPARATION, SHOP (2 TONS)	513.40			
											1					1		1		LS	SURFACE PREPARATION, FIELD (35 TONS)	513.41			
					1		1		4							6		6		GAL	WATER REPELLENT (MOD. - SILANE)	514.10			
											4.8					4.8		4.8		MFBM	STRUCTURAL LUMBER AND TIMBER - UNTREATED	522.20			
													7.1			7.1		7.1		MFBM	STRUCTURAL LUMBER AND TIMBER - TREATED	522.25			
													6			6		6		MFBM	NON - STRUCTURAL LUMBER-UNTREATED	522.30			
											1					1		1		LS	STRUCTURAL GLUED LAMINATED TIMBER (DECK)	522.40			
											7					7		7		GAL	JOINT SEALER, COLD POURED	524.12			
					1											1		1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20			
					4											4		4		EACH	BEARING DEVICE ASSEMBLY (FABRIC)	531.10			
					2											2		2		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS I	580.13			
					2											2		2		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS II	580.14			
					2											2		2		CY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS III	580.15			
					32											32		32		SY	REPOINTING MASONRY (MOD.)	602.30			
															1			1		HR	BULLDOZER RENTAL, TYPE I	608.10			
			2															2		HR	POWER GRADER RENTAL	608.15			
															1			1		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25			
															10			10		CY	STONE FILL, TYPE I (MOD. - CONSTRUCTION ENTRANCE)	613.10			
															2			2		CY	STONE FILL, TYPE I	613.10			
															1			1		TON	BITUMINOUS CONCRETE SIDEWALK (MOD.)	618.15			
															170			170		LF	SNOW FENCE (MOD. - PDF)	620.70			

PROJECT NAME: **THETFORD**
PROJECT NUMBER: **BHO 1444 (43)**

FILE NAME: **s03j036qty.dgn**
PROJECT MANAGER: **M. EVANS-MONGEON**
DESIGNED BY: **G. ROKES**
QUANTITY SHEET #1

PLOT DATE: **2/1/2006**
DRAWN BY: **G.ROKES**
CHECKED BY: **S. SCRIBNER**
SHEET **5** OF **60**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES

FULL E&C ITEMS	ROADWAY	ABUT. 1	ABUT.2	PIER	DECK	TRUSS	EROSION CONTROL	BRIDGE QUANTITY
							80	
	220							
	150							
	40							
1								
1								
1								
1								
	1							
	1							
	440							
							10	
							80	
							6	
							10	
							50	
							1	
							1	
							10	
							1	
							40	
							1	
							10	
	29.5							
	35							
	15							
	3							
	2							

TOTALS

ROUND	GRAND TOTAL	FINAL
	80	
	220	
	150	
	40	
	1	
	1	
	1	
	1	
	1	
	440	
	10	
	80	
	6	
	10	
	50	
	1	
	1	
	10	
	1	
	40	
	1	
	10	
	29.5	
	35	
	15	
	3	
	2	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER
LF	SNOW FENCE (MOD. - ARCH)	620.70
LF	PLANK RAIL (MOD. - STEEL BACKED TIMBER RAIL)	621.15
LF	REMOVAL AND DISPOSAL OF GUARD RAIL	621.80
LF	TEMPORARY TRAFFIC BARRIER	621.90
LS	FIELD OFFICE-ENGINEERS	631.10
LS	TESTING EQUIPMENT - CONCRETE	631.16
LS	TESTING EQUIPMENT - BITUMINOUS	631.17
LU	FIELD OFFICE - TELEPHONE (N.A.B.I.)	631.25
LS	MOBILIZATION / DEMOBILIZATION	635.11
LS	TRAFFIC CONTROL	641.10
LF	4" YELLOW LINE	646.21
SY	GEOTEXTILE UNDER STONE FILL	649.31
SY	GEOTEXTILE FOR SILT FENCE	649.51
LB	SEED	651.15
LB	SEED-WINTER RYE	651.17
LB	FERTILIZER	651.18
TON	AGRICULTURAL LIMESTONE	651.20
TON	HAYMULCH	651.25
CY	TOPSOIL	651.35
LS	EROSION PREVENTION & SEDIMENT CONTROL PLAN	652.10
HR	MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN	652.20
LU	MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN (N.A.B.I.)	652.30
SY	EROSION MATTING	654.10
SF	TRAFFIC SIGNS, TYPE A	675.20
LF	FLANGED CHANNEL SIGN POST	675.30
EACH	REMOVING SIGNS	675.50
EACH	ERECTING SALVAGED SIGNS	675.60
EACH	SETTING SALVAGED POSTS	675.61

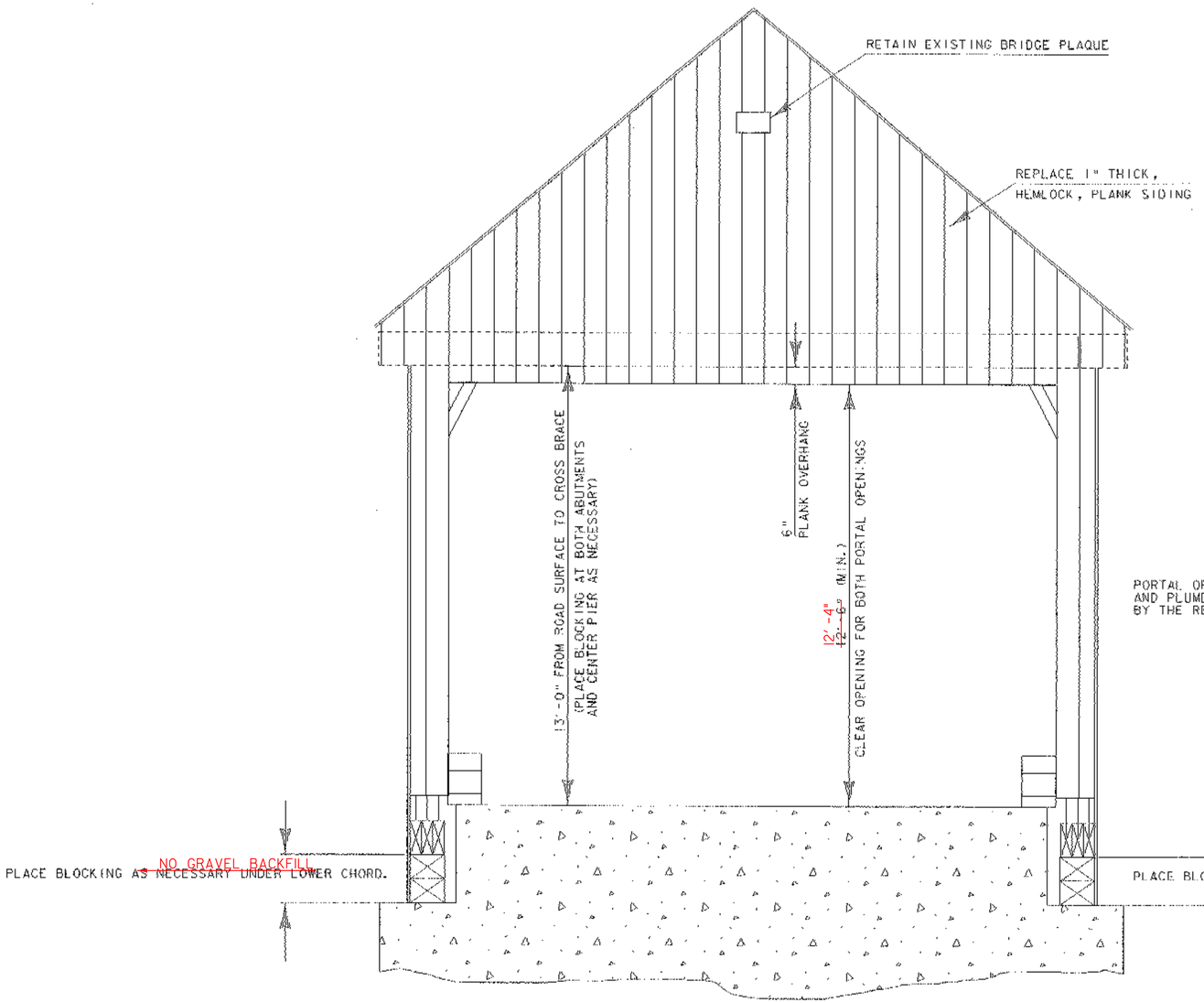
DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

PROJECT NAME: **THETFORD**
PROJECT NUMBER: **BHO 1444 (43)**

FILE NAME: **s03j036qty.dgn**
PROJECT MANAGER: **M. EVANS-MONGEON**
DESIGNED BY: **G. ROKES**
QUANTITY SHEET #2

PLOT DATE: **12/9/98**
DRAWN BY: **G.ROKES**
CHECKED BY: **S. SCRIBNER**
SHEET **6** OF **60**



PORTAL OPENINGS ON BOTH SIDES ARE TO BE STRAIGHTENED AND PLUMBED TO AN ACCEPTABLE LEVEL AS DEEMED NECESSARY BY THE RESIDENT ENGINEER.

SCALE ½" = 1'-0"

1 0 1 2 3 4 5

FINISHED PORTAL OPENING

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

FILE NAME: Structures*1036typ.dgn
PROJECT LEADER: M. EVANS-MONGEON
DESIGNED BY: G. ROKES
IPARM: s03|1036beo.i

PLOT DATE: 27-SEP-2006
DRAWN BY: G. ROKES
CHECKED BY: S. SCRIBNER
SHEET 7 OF 60

GPS CONTROL POINTS

HVCTRL #1

STANDARD DISK STAMPED

Thetford Az Mk

N = 487988.90
E = 1707352.54
ELEV. = 600.98

To reach from the VT Route 113 bridge over I-91 at exit 14 go northwest along route 113 for 2.3 MI to the intersection of Tucker Hill Road left in Thetford Center. Continue straight ahead and go north along route 113 for 0.4 MI to the intersection of a gravel drive right leading to the Hale Funeral Home of Thetford. Turn right and go southeast up the drive for about 50 m to the funeral home and the site of the mark in a lawn southeast of the funeral home. The mark is set 5 cm below ground surface in the top of a 30 cm diameter concrete monument poured 1.5 m deep. It is 58.6 m east of and about 10.0 m higher than the centerline of route 113, 40.6 m southeast of the southeast corner of the funeral home, 45.2 m east of pole no. 106/10, and 18.1 m west northwest of a 15 cm apple.

HVCTRL #2

STANDARD DISK STAMPED

Thetford

N = 485974.59
E = 1706229.39
ELEV. = 610.89

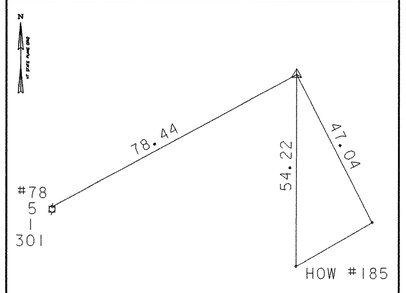
To reach from the VT Route 113 bridge over I-91 at exit 14 go northwest along route 113 for 2.3 MI to the intersection of Tucker Hill Road left in Thetford Center. Turn left and go west along Tucker Hill Road for 0.15 MI to the intersection of a gravel drive left leading to house no. 139 and the site of the mark on the left in a lawn in the front of a cemetery. The mark is set 7 cm below ground surface in the top of a 30 cm diameter concrete monument poured 1.5 m deep. It is 5.3 m south of and about 0.1 m lower than the centerline of Tucker Hill Road, 4.8 m west of the centerline of a gravel drive, 9.6 m north of the northwest corner of the attached barn on house #139, and 10.2 m northwest of the most easterly gatepost of the gate for the cemetery.

- DESCRIPTION PROVIDED BY VERMONT AGENCY OF TRANSPORTATION GEODETIC SURVEY UNIT
- TO ALLOW THE STATE PLANE COORDINATES TO FIT THE AGENCY DESIGN PLANE, SUBTRACT 400,00 FROM THE NORTHING AND SUBTRACT 1,700,000 FROM THE EASTING

TRAVERSE TIES

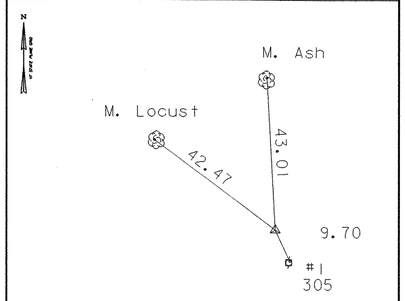
HVCTRL #3

NORTH = 85905.60
EAST = 6002.93
ELEV. = 593.67



HVCTRL #4

NORTH = 85422.72
EAST = 5422.41
ELEV. = 584.49



NORTH =	
EAST =	
ELEV. =	

NORTH =	
EAST =	
ELEV. =	

NORTH =	
EAST =	
ELEV. =	

- MAIN TRAVERSE COMPLETED 08/13/03 by R. Gilman P.C. & Anthony Somaini

ALIGNMENT TIES

NORTH =	
EAST =	

NORTH =	
EAST =	

NORTH =	
EAST =	

NORTH =	
EAST =	

- ALIGNMENT STAKED

DATUM

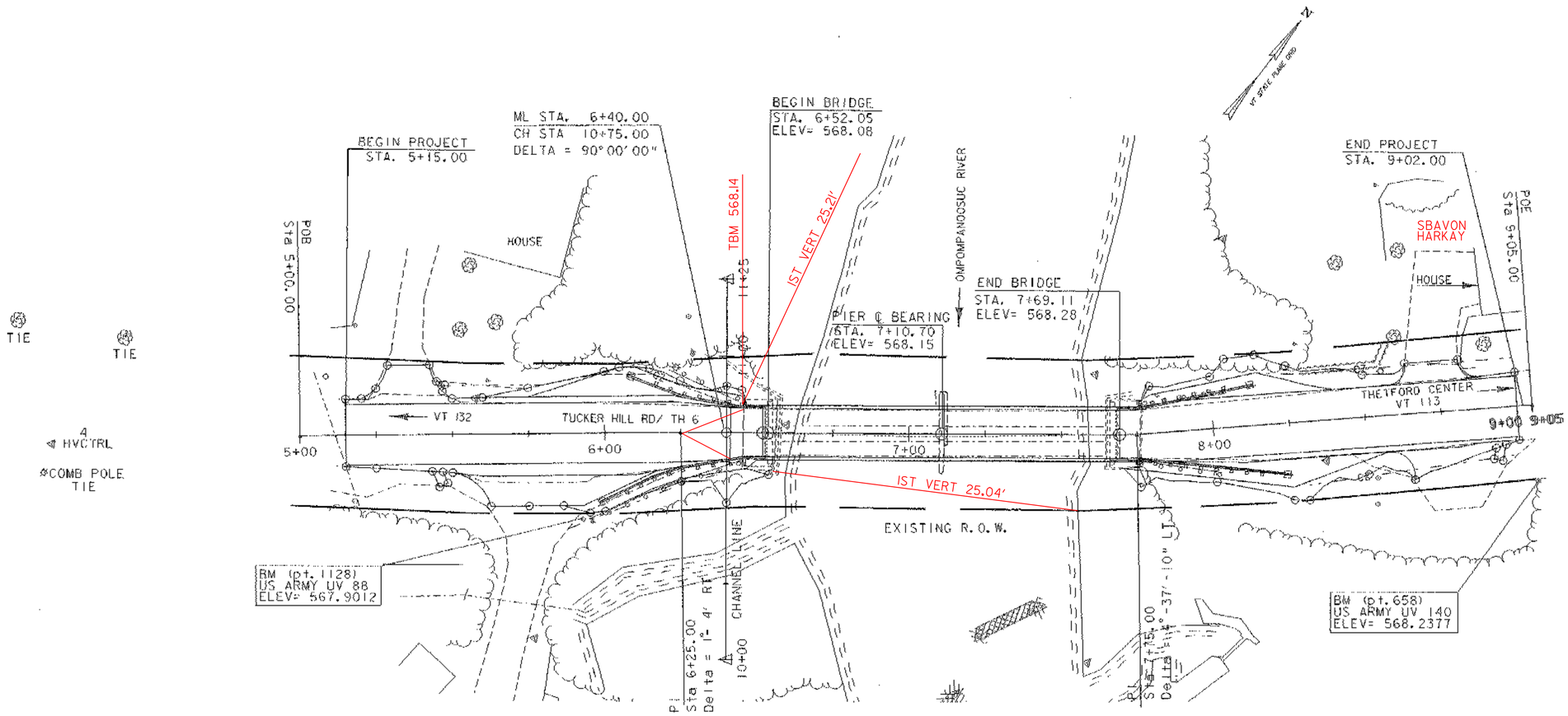
VERTICAL	NAVD **
HORIZONTAL	NAD 83 (96)
ADJUSTMENT	Compass

TIE SHEET

PROJECT NAME: Thetford
PROJECT NUMBER: BHO 1444(43)

FILE NAME: Structures\s03j036tl.dgn
PROJECT LEADER: M. EVANS-MONGEON
DESIGNED BY: M. EVANS-MONGEON
IPARM: s03j036tl.i

PLOT DATE: 27-SEP-2006
DRAWN BY: R. Bullock
CHECKED BY: S. SCRIBNER
SHEET 8 OF 60



CONSTRUCT DRIVE

STA.
5+30.00 LT
5+75.00 RT
8+75.00 LT

STEEL BACKED TIMBER RAIL

STA.	TO	STA.
5+98.00 RT	-	6+55.91 RT
6+07.86 LT	-	6+55.91 LT
7+65.50 LT	-	8+14.00 LT
7+65.50 RT	-	8+24.50 RT

ITEM 646.21 4" YELLOW LINE

STA.	TO STA.	LENGTH	
5+15.00	6+25.00	110 ft.	(DOUBLE YELLOW LINE = 220ft.)
7+90.00	9+00.00	110 ft.	(DOUBLE YELLOW LINE = 220ft.)

STEEL BACKED TIMBER RAIL ANCHORS

STA.
5+99.20 RT
6+08.90 LT
8+12.98 LT
8+23.28 RT

BRIDGE DECK TIMBER RAIL

STA.	TO	STA.
6+53.41 RT	-	7+68.00 RT
6+53.41 LT	-	7+68.00 LT

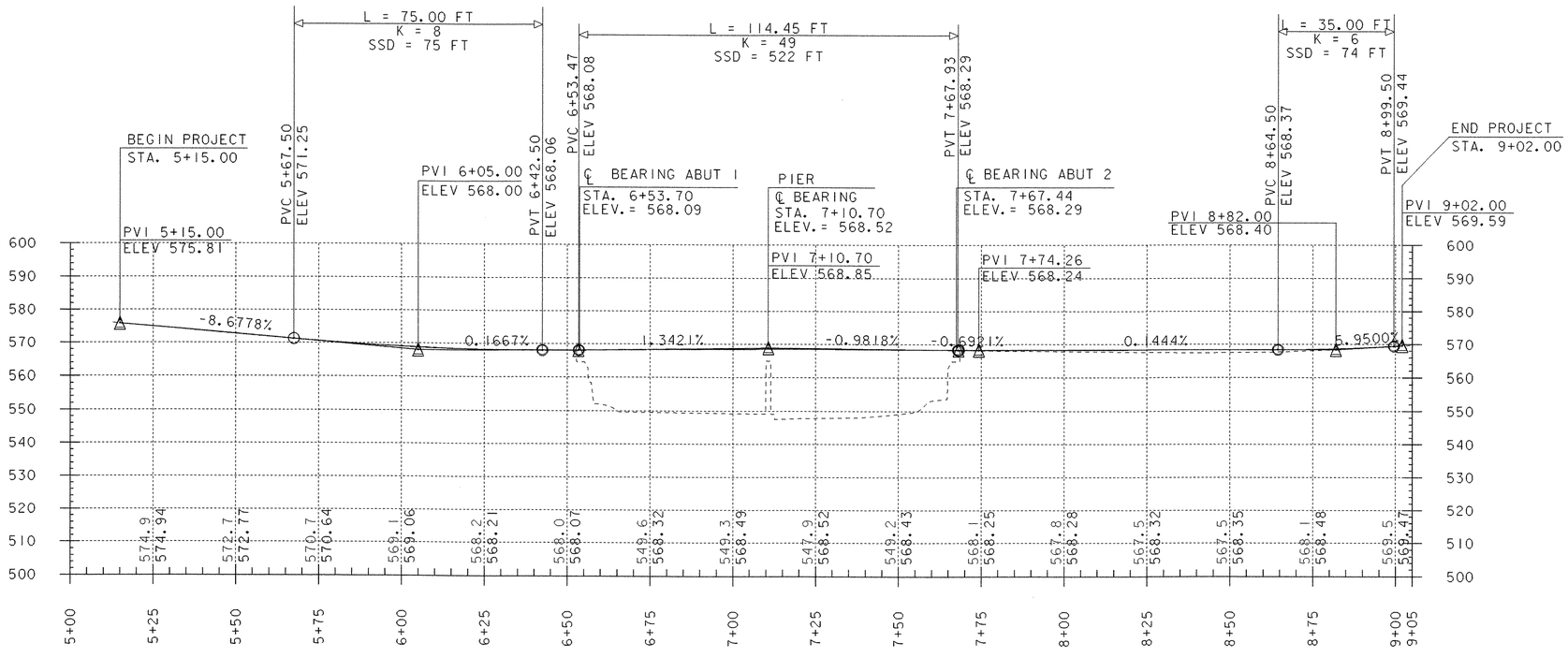
0 20 40
SCALE IN FEET
1"=20'

LAYOUT SHEET

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

FILE NAME: Structures\s03j036bdr.dgn
PROJECT LEADER: M.EVANS-MONGEON
DESIGNED BY: G. ROKES
IPARM: s03j036lo.1

PLOT DATE: 27-SEP-2006
DRAWN BY: G.ROKES
CHECKED BY: S. SCRIBNER
SHEET 9 OF 60



SCALE 1" = 20'-0

20 0 20

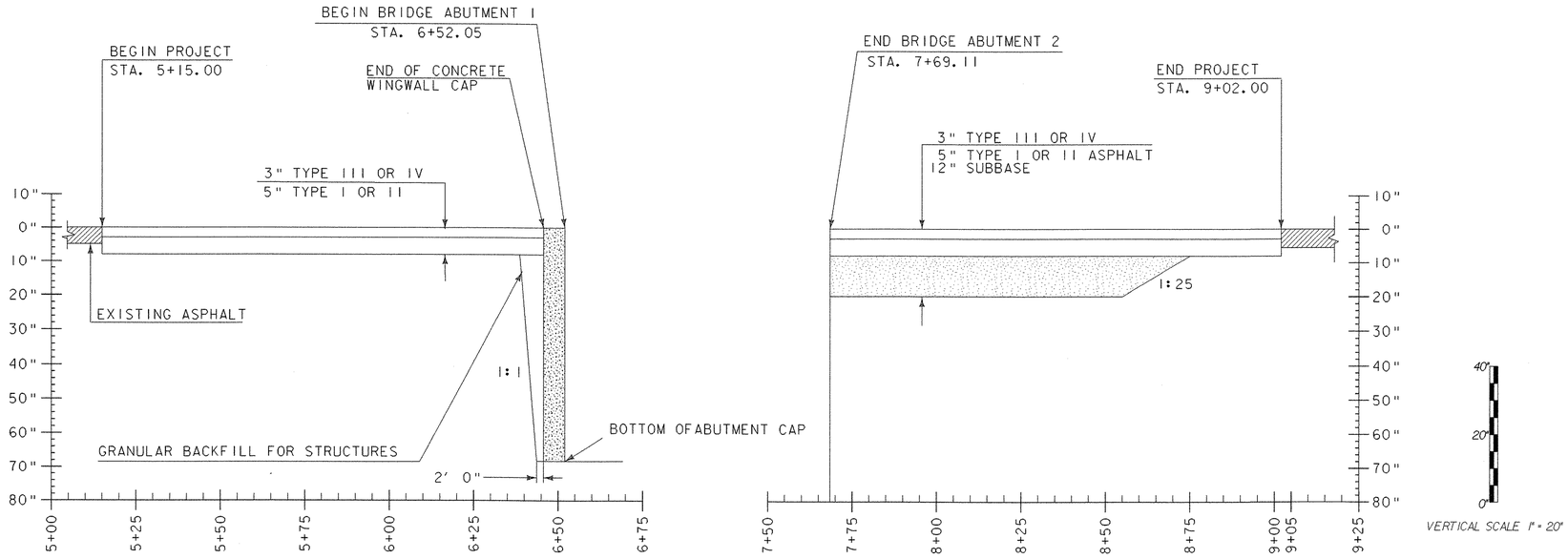
NOTE: ELEVATIONS TO THE "TENTH'S" REPRESENT EXISTING GROUND ELEVATIONS.
ELEVATIONS TO THE "HUNDREDTH'S" REPRESENT PROPOSED GROUND ELEVATIONS.

PROFILE

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

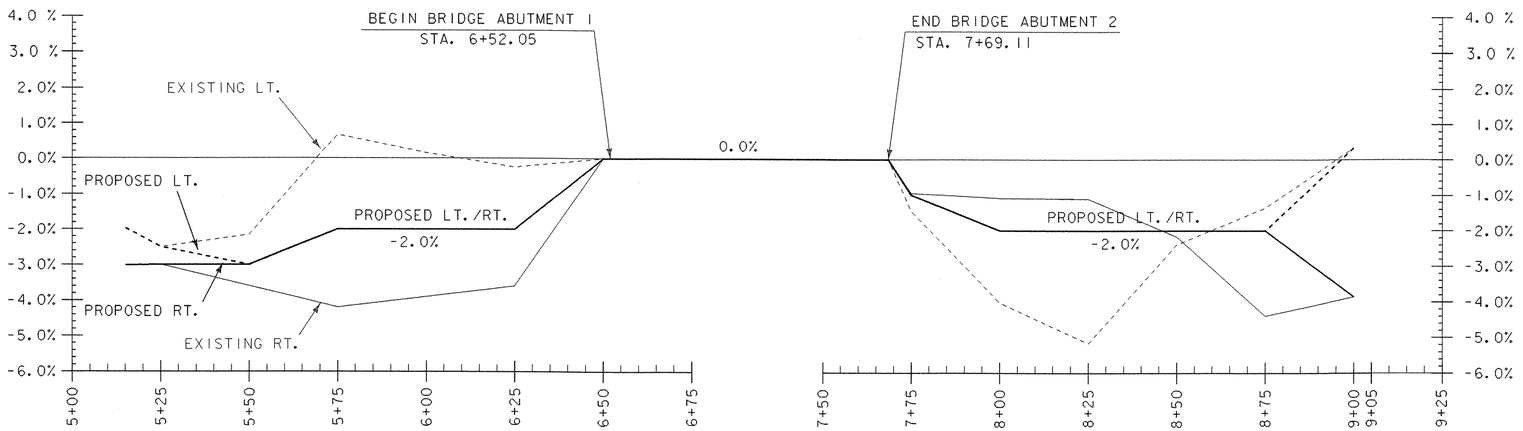
FILE NAME: Structures\s03j036wk.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G.ROKES	CHECKED BY: S. SCRIBNER
IPARM: s03j036prf.i	SHEET 10 OF 60

MATERIAL TRANSITION



BANKING DIAGRAM

HORIZONTAL SCALE 1" = 20'
0 20 40



HORIZONTAL SCALE 1" = 20'
0 20 40

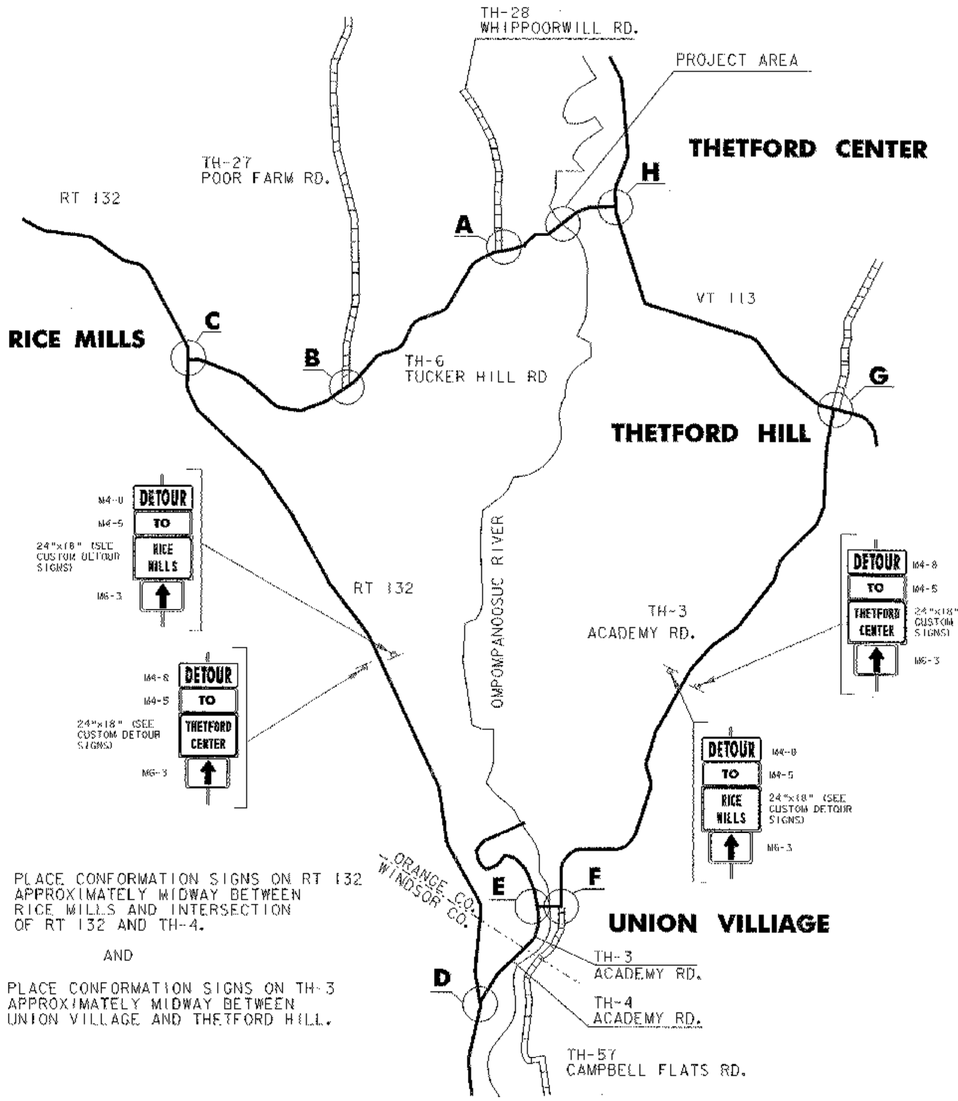
VERTICAL SCALE 1" = 2.0%

MATERIAL TRANSITION / BANKING DIAGRAM

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

FILE NAME: Structures\s03j036typ.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G. ROKES
DESIGNED BY: G. ROKES	CHECKED BY: S. SCRIBNER
IPARM: s03j036mat.i	SHEET 11 OF 60

THETFORD TEMPORARY DETOUR SIGNAGE AND ROUTING



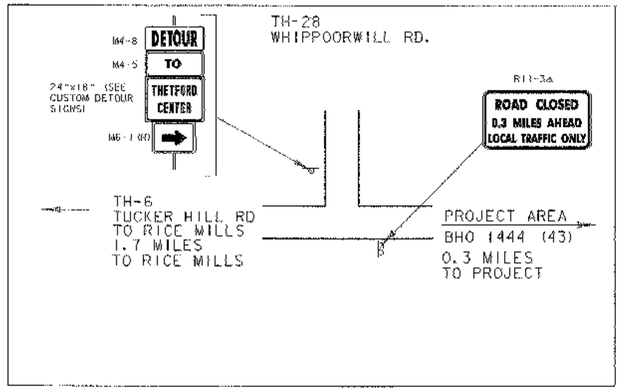
PLACE CONFORMATION SIGNS ON RT 132 APPROXIMATELY MIDWAY BETWEEN RICE MILLS AND INTERSECTION OF RT 132 AND TH-4.

AND

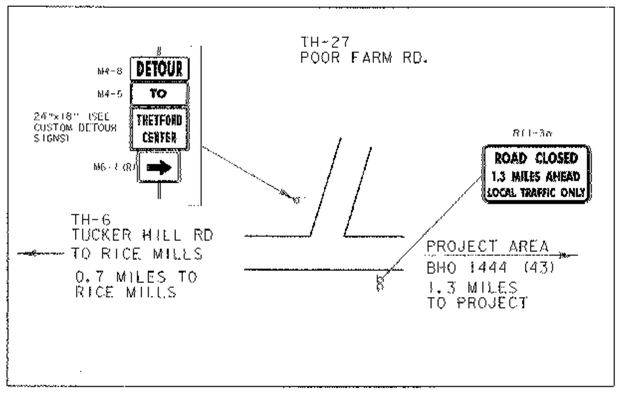
PLACE CONFORMATION SIGNS ON TH-3 APPROXIMATELY MIDWAY BETWEEN UNION VILLAGE AND THETFORD HILL.

FROM PROJECT BEGINING AND TAKING THE DETOUR THRU UNION VILLAGE TO PROJECT END IS APPROXIMATLY 9 MILES

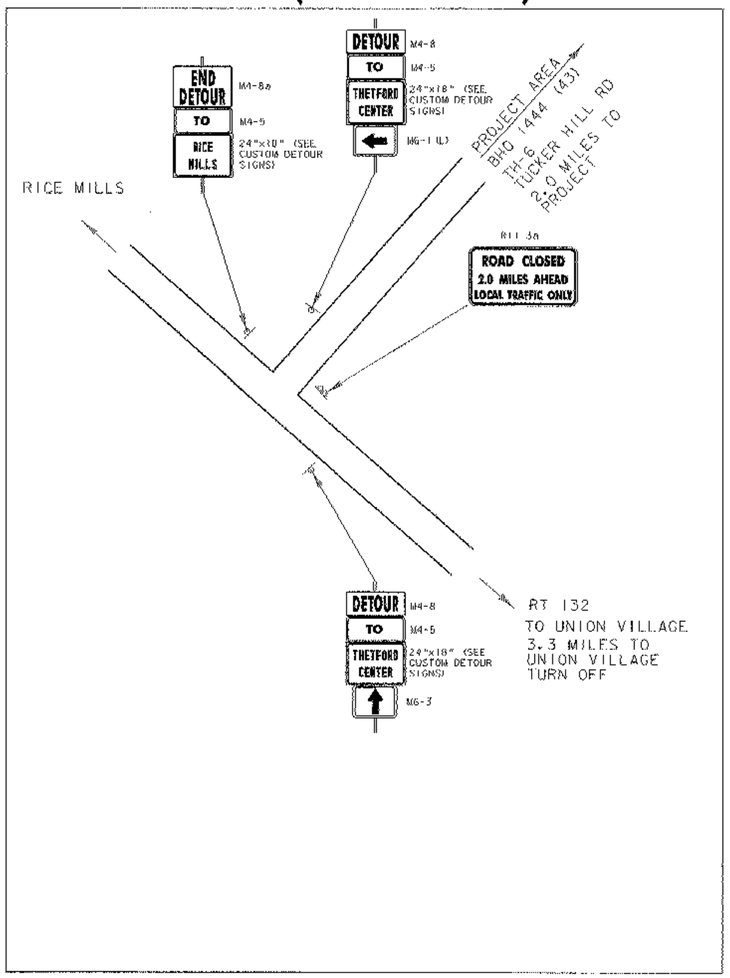
A
INTERSECTION TH-28 (WIPPORWILL RD.) AND TH-6 (TUCKER HILL RD.)



B
INTERSECTION TH-27 (POOR ~~FRAM~~ FARM RD.) AND TH-6 (TUCKER HILL RD.)



C
INTERSECTION RT. 132 AND TH-6 (TUCKER HILL RD.)



NOTE: INSTALL ALL TEMPORARY DETOUR SIGNS SO AS NOT TO OBSCURE OR CONFLICT WITH EXISTING TRAFFIC CONTROL DEVICES.

DRAWINGS ON THIS SHEET ARE NOT TO SCALE

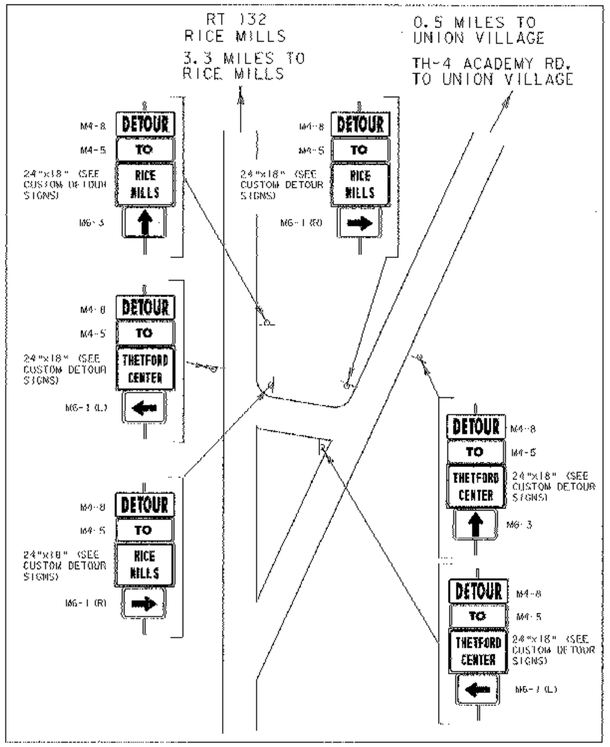
TEMPORARY DETOUR SIGNAGE AND ROUTING (1)

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

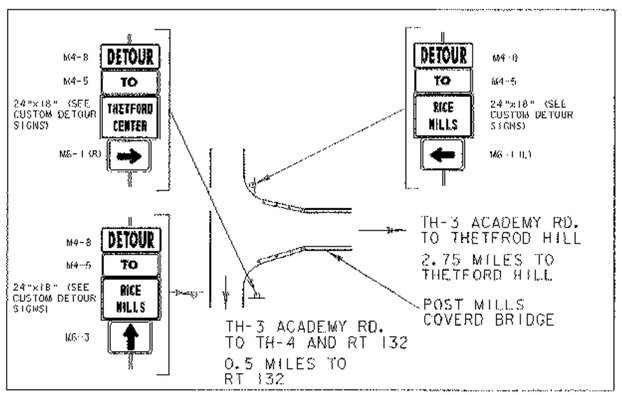
FILE NAME: Structures\s031036det.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G. ROKES	CHECKED BY: S. SCRIBNER
IPARM: s031036dt1.1	SHEET 12 OF 60

THETFORD TEMPORARY DETOUR SIGNAGE AND ROUTING

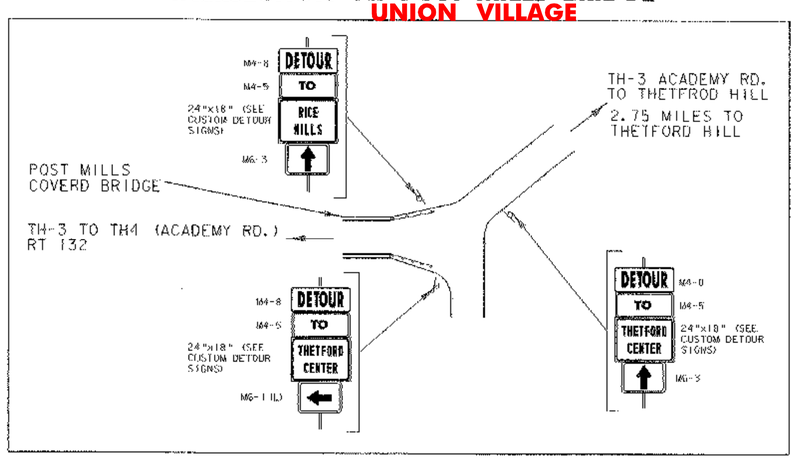
D
INTERSECTION RT. 132 AND TH-3 (ACADEMY RD.)



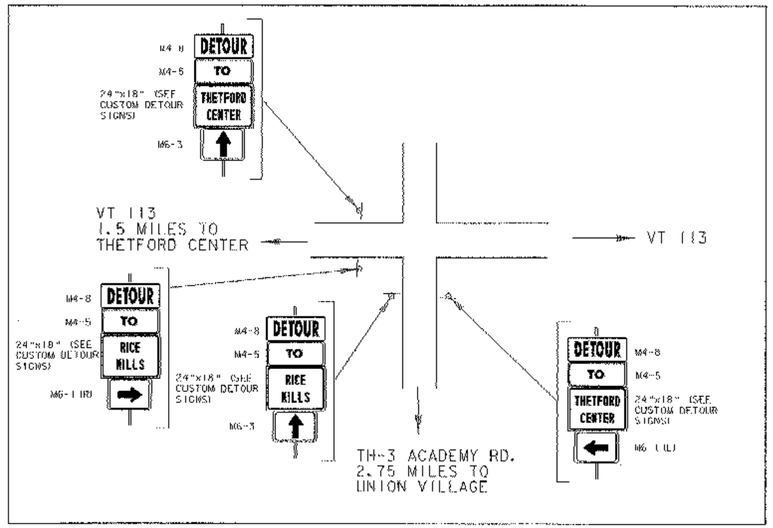
E
INTERSECTION TH-4 (ACADEMY RD.) AND TH-3 AT POST MILLS BRIDGE



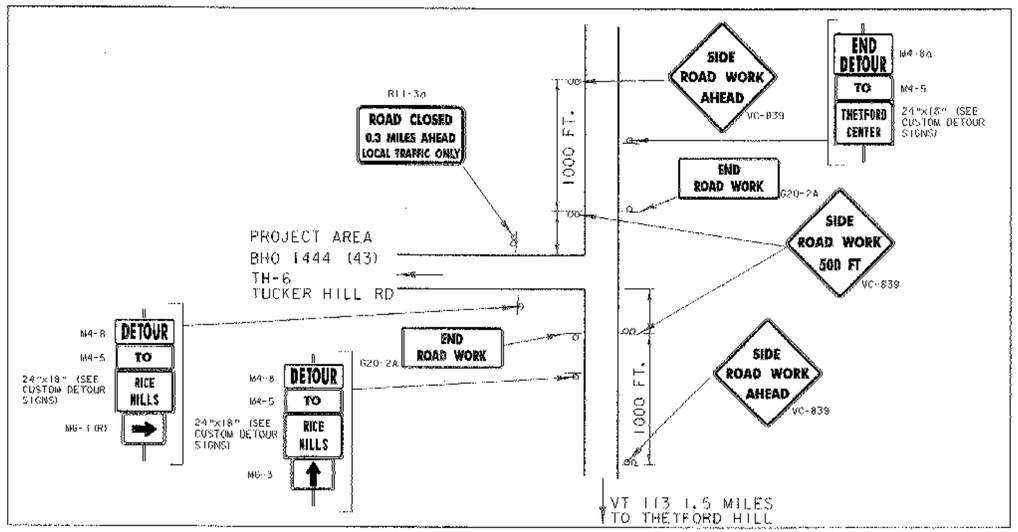
F
TH-3 TO TH-4 (ACADEMY RD) AND CAMPBELL FLATS RD INERSECTION AT ~~POST MILLS BRIDGE~~ UNION VILLAGE



G
INTERSECTION VT. 113 AND TH-3 (ACADEMY RD.) AT THETFORD HILL



H
INTERSECTION VT. 113 AND TH-6 (TUCKER HILL RD.)



THE "DETOUR" AND "END DETOUR" SIGNS WILL BE BLACK LETTERS ON ORANGE BACK GROUND, ASTM TYPE VIII OR IX RETRO-REFLECTIVE SHEETING.

THE LEAD SIGNS "SIDE ROAD WORK AHEAD, END ROAD WORK, SIDE ROAD WORK 500 FT." AND "BRIDGE CLOSED AHEAD" WILL BE BLACK LETTERS ON ORANGE BACK GROUND, ASTM TYPE VIII OR IX RETRO-REFLECTIVE SHEETING.

THE " TO" AND " ARROWS " SIGNS WILL BE BLACK LETTERS ON WHITE BACK GROUND, ASTM TYPE III SHEETING.

THE " ROAD CLOSED LOCAL TRAFFIC ONLY " AND " BRIDGE CLOSED" SIGNS WILL BE BLACK LETTERS ON WHITE BACK GROUND, ASTM TYPE III SHEETING.

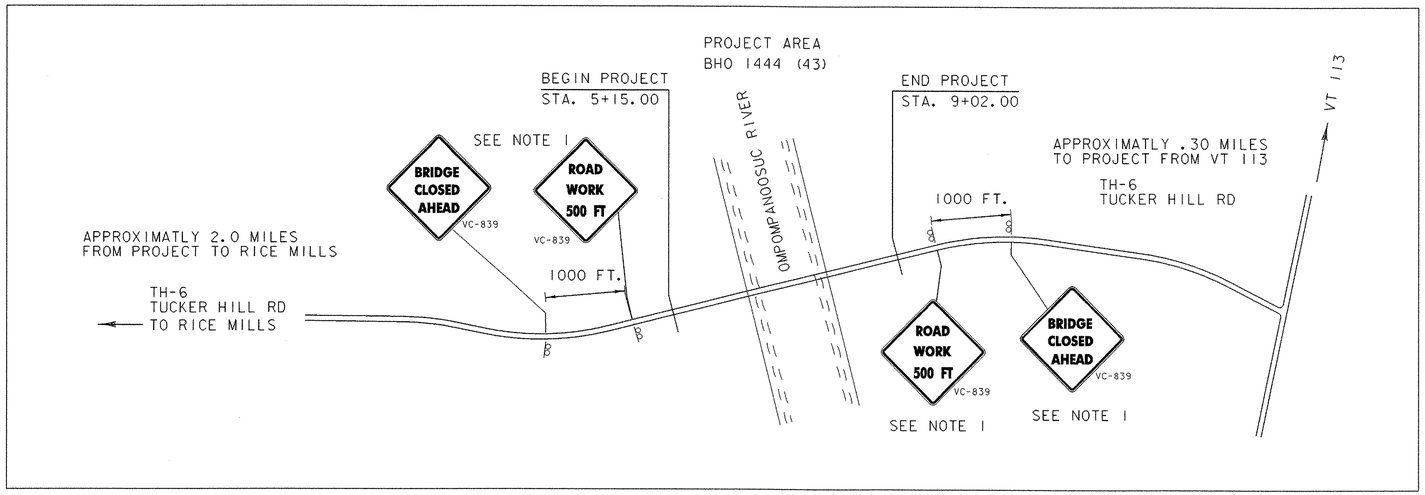
DRAWINGS ON THIS SHEET ARE NOT TO SCALE

TEMPORARY DETOUR SIGNAGE AND ROUTING (2)

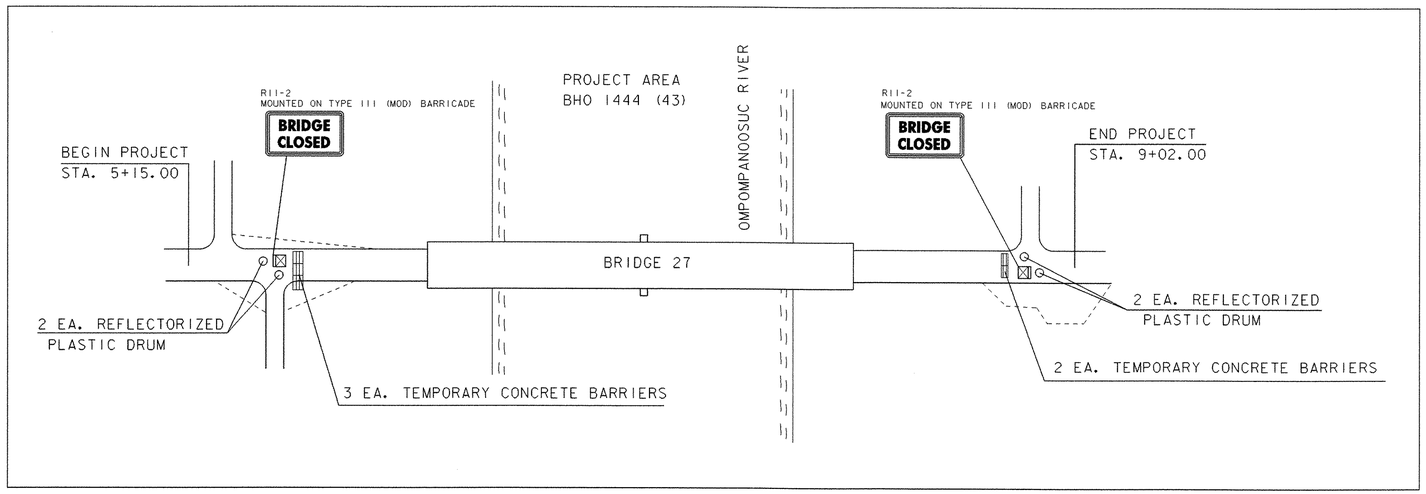
PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

FILE NAME: Structures\s03j036det.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G.ROKES	CHECKED BY: S. SCRIBNER
IPARM: s03j036dt2.i	SHEET 13 OF 60

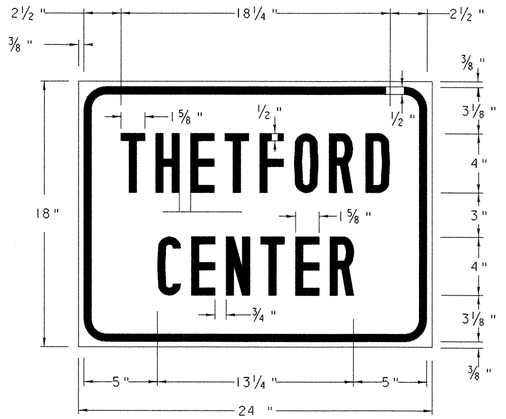
THETFORD TEMPORARY DETOUR
SIGNAGE AND ROUTING

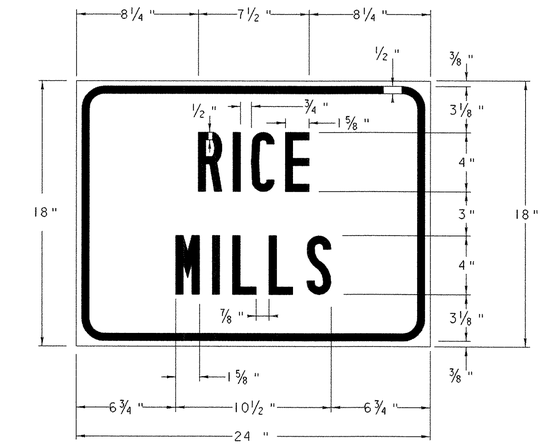


SIGNAGE LEADING TO PROJECT BEGIN STA. AND PROJECT END STA.



SIGNAGE AT PROJECT





CUSTOM DETOUR SIGNS

CUSTOM DETOUR SIGNS "THETFORD CENTER" AND "RICE MILLS" WILL BE BLACK LETTERS ON WHITE BACK GROUND, ASTM TYPE III SHEETING.

DRAWINGS ON THIS SHEET ARE NOT TO SCALE

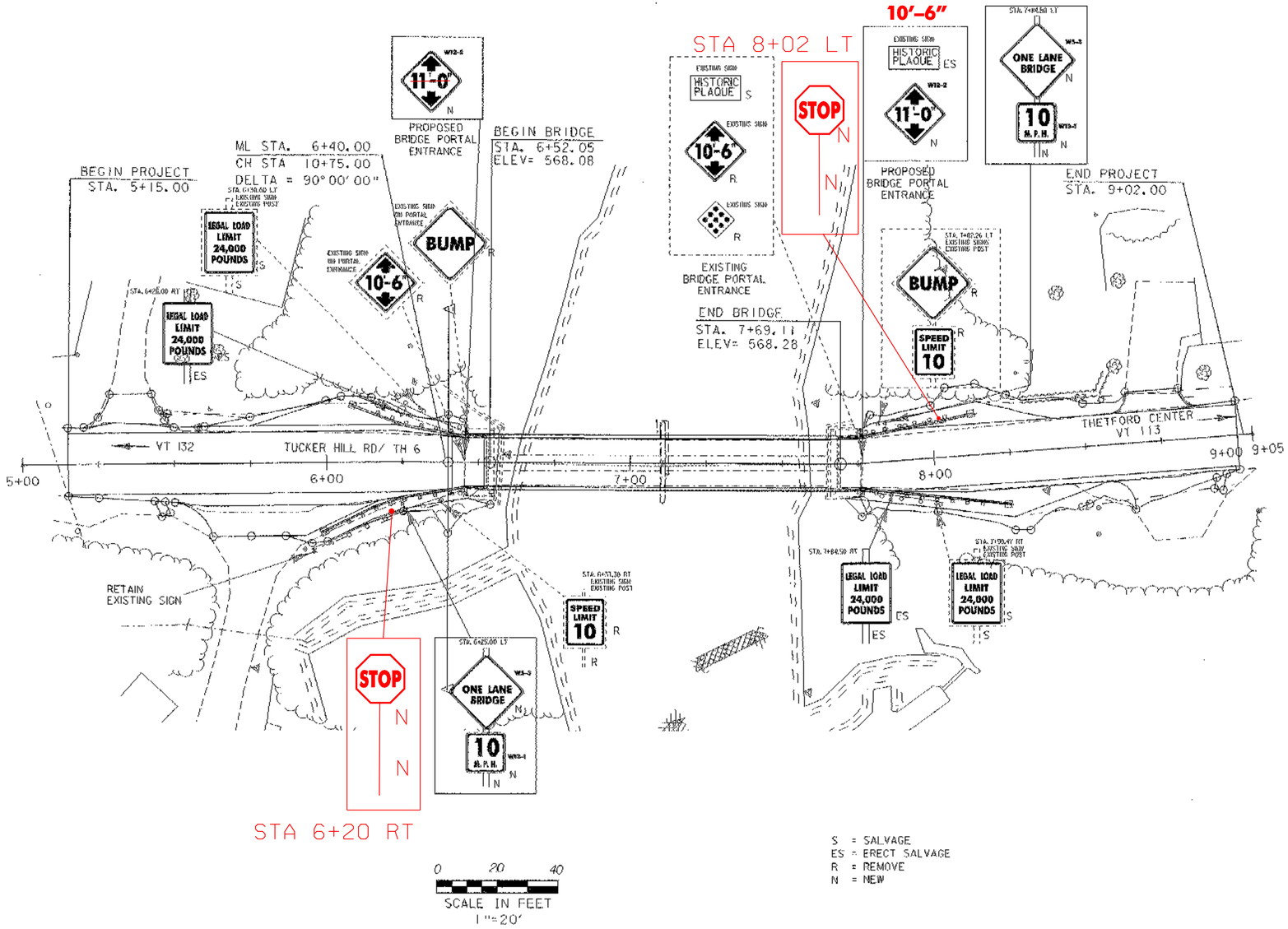
NOTE 1:

PLACEMENT OF CONSTRUCTION SIGNS IN THE INDICATED LOCATIONS ARE APPROXIMATE AND MAY NEED TO BE REPOSITIONED TO ENSURE MOTORIST WILL HAVE ADEQUATE TIME TO OBSERVE THE INDICATED POSTED SIGNAGE.

TEMPORARY DETOUR
SIGNAGE AND ROUTING (3)

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

FILE NAME: Structures\s03j036det.dgn
PROJECT LEADER: M.EVANS-MONGEON
DESIGNED BY: G. ROKES
IPARM: s03j036dt3.1
PLOT DATE: 27-SEP-2006
DRAWN BY: G.ROKES
CHECKED BY: S.SCRIBNER
SHEET 14 OF 60



S = SALVAGE
ES = ERECT SALVAGE
R = REMOVE
N = NEW

SIGN LAYOUT SHEET (PERM.)

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

FILE NAME: Structures\s03j036bdr.dgn
PROJECT LEADER: M.EVANS-MONGEON
DESIGNED BY: G. ROKES
IPARM: s03j036sls.i

PLOT DATE: 27-SEP-2006
DRAWN BY: G.ROKES
CHECKED BY: S. SCRIBNER
SHEET 15 OF 60

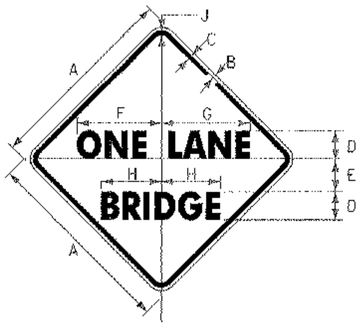
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS EA	WIDTH (in)	HEIGHT (in)	NEW & SALVAGED SIGNS "A"	"B"	SALV SIGN	SALV TIS	EXIST POST RETAIN	EXIST POST SALVAGE	NO. OF POSTS	NEW SIGN POSTS: FLANGED CHANNEL (linear ft) 1.12 lb/ft	2.0 lb/ft	3.0 lb/ft	SQUARE STEEL (in) 1.75 lb/ft 1.88	2.0 lb/ft 2.16	2.5 lb/ft 3.35	ANCHOR	SLEEVE	TUBULAR ALUMINUM Ø (in) 3.0 lb/ft 1.3	4.0 lb/ft 1.7	4.0 MOD lb/ft 1.7	TUBULAR STEEL Ø (in) FOUNDATION	3.0 lb/ft 7.6	3.5 lb/ft 9.0	4.0 lb/ft 10.8	5.0 lb/ft 14.6	W-SHAPE STEEL FTG. SIZE 24"	FTG. SIZE 30"	WEIGHT	POST SIZE	SIGN REQUIRED	REMARKS	SIGN DETAIL: DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
														OPTION ITEMS																							
6+25.00 RT	ONE LANE BRIDGE	1	30"	30"	6.25						1			17.5																				W5-3	THIS SHEET	
6+25.00 RT	10 M.P.H.	1	18"	18"	2.25																												W13-1		E-102
6+25.00 LT	LEGAL LOAD LIMIT 24,000 POUNDS	1					X			X																									
6+45.50 ABOVE PORTAL OPENING	11'-0"	1	30"	30"	6.25																												W12-2		E-155
7+76.30 ABOVE PORTAL OPENING	HISTORIC PLAQUE	1					X																												
7+76.30 ABOVE PORTAL OPENING	11'-0"	1	30"	30"	6.25																												W12-2		E-155
7+84.50 RT	LEGAL LOAD LIMIT 24,000 POUNDS	1					X			X																									
7+84.50 LT	ONE LANE BRIDGE	1	30"	30"	6.25						1			17.5																				W5-3	THIS SHEET	
7+84.50 LT	10 M.P.H.	1	18"	18"	2.25																												W13-1		E-102

6+37 RT
7+82 LT

STOP — 1 18" 18"
1 18" 18"



W5-3

COLORS

BORDER AND TEXT - BLACK (NON-REFL)
BACKGROUND - YELLOW (REFL)

SIGN	DIMENSIONS (INCHES) A	B	C	D	E	F	G	H	J
MIN.	30	1/2	3/4	5C	3 1/4	13 5/16	12 11/16	9 1/8	1 1/8
STD.	36	5/8	7/8	6C	4	16	15 1/4	11 1/2	2 1/4
SPECIAL	48	3/4	1 1/4	8C	5	21 1/4	20 1/4	1 1/2	3

W5-3

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

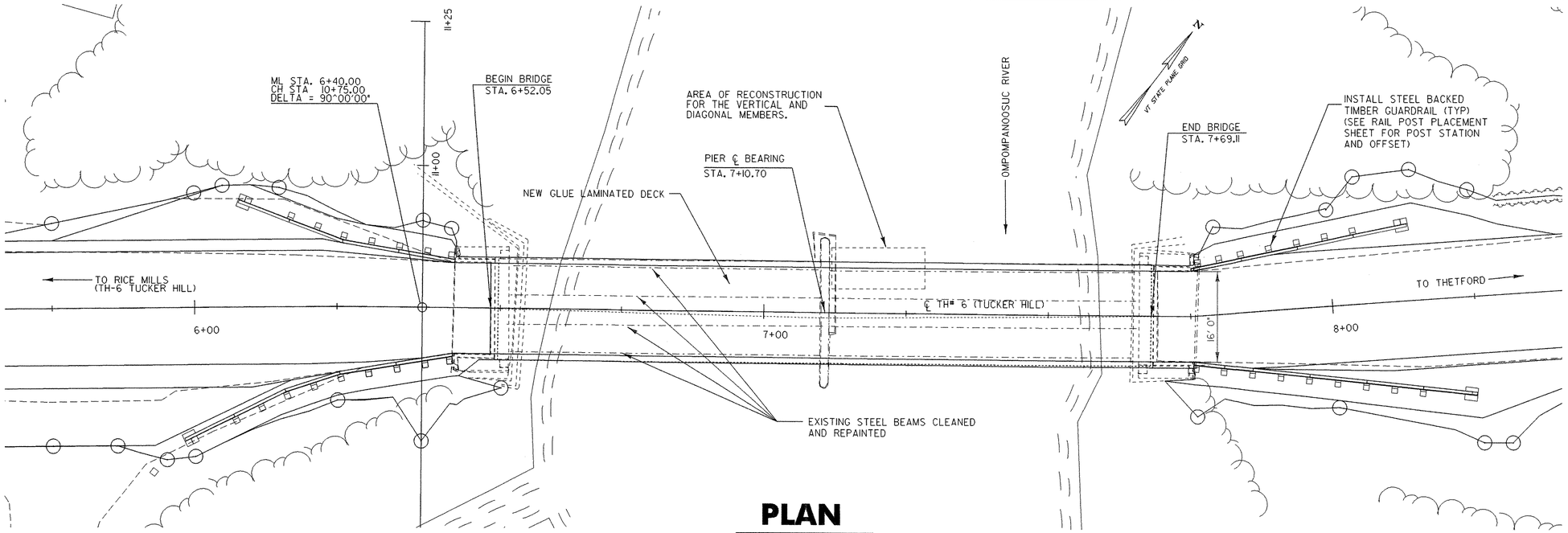
TOTALS	SF 29.5	SF	EA. 3	SF		FT 35	FT	LB	EA.	LB	EA.	EA.	LB
						FT FT FT 35	FT FT FT	EA LB LB LB		LB LB LB LB			

TRAFFIC SIGN SUMMARY SHEET

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

FILE NAME: Structures\s03j036tss.dgn
PROJECT LEADER: M.EVANS-MONGEON
DESIGNED BY:
IPARM: s03j036tss.i

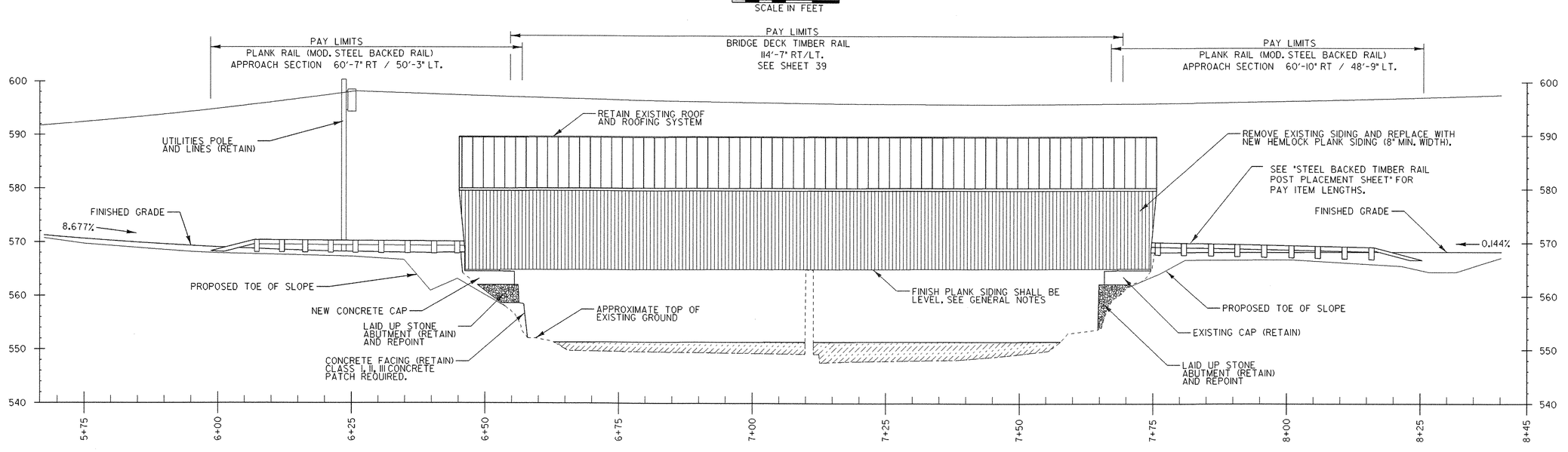
PLOT DATE: 27-SEP-2006
DRAWN BY: G.ROKES
CHECKED BY:
SHEET 16 OF 60



PLAN

SCALE 1" = 10'-0"

0 10 20
SCALE IN FEET



ELEVATION

SCALE 1" = 10'-0"

0 10 20
SCALE IN FEET

PLAN AND ELEVATION

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

FILE NAME: Structures\s03j036pe.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G. ROKES	CHECKED BY: S. SCRIBNER
IPARM: s03j036pe.i	SHEET 17 OF 60

STATE OF VERMONT
AGENCY OF TRANSPORTATION

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SEVENTEENTH EDITION, DATED 2002, AND ITS LATEST REVISIONS. ALL WOOD CONSTRUCTION SHALL COMPLY WITH THE LATEST AASHTO SPECIFICATIONS, THE NATIONAL DESIGN SPECIFICATION (NDS), SUPPLEMENT FOR WOOD CONSTRUCTION, AND THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC) SPECIFICATION.

2. BRIDGE IS DESIGNED FOR H20-44 LIVE LOAD WITH NO ALLOWANCE FOR FUTURE PAVEMENT.

3. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A SUITABLE STAGING AREA, INCLUDING NECESSARY PERMITS AND CLEARANCES.

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

5. THE COST OF ANY ON OR OFF PROJECT SIGNING AND BARRICADES, EXCLUDING TEMPORARY TRAFFIC BARRIER, SHALL BE CONSIDERED INCIDENTAL TO CONTRACT ITEM 641.10. TEMPORARY TRAFFIC BARRIERS SHALL BE PAID FOR UNDER CONTRACT ITEM 621.90.

6. ALL WORK SHALL PROCEED IN A CAREFUL, ORDERLY MANNER SO THAT AFFECTED HISTORIC STRUCTURES ARE NOT DAMAGED IN ANY WAY. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL DAMAGE TO THE STRUCTURE AS A RESULT OF ITS OPERATIONS AT NO COST TO THE STATE. ALL DAMAGE WILL BE REPORTED TO THE PROJECT MANAGER IMMEDIATELY AND NO REPAIRS WILL BE MADE UNTIL APPROVED BY THE AGENCY.

7. THE FOLLOWING TABLE OF ALLOWABLE STRESSES AND WEIGHTS APPLY TO THESE PLANS FOR DESIGN PURPOSES:

   STRUCTURAL STEEL, AASHTO M270/M270M GRADE 50
   Fy = 50,000 PSI

   CONCRETE, HIGH PERFORMANCE CLASS B: f'c = 3500 PSI fc = 1600 PSI

   REINFORCING STEEL: Ft 24,000 PSI GRADE 60
   SOIL: UNIT WEIGHT 140 PCF

   CONCRETE

8. **ALL CONCRETE SHALL BE CONCRETE, HIGH PERFORMANCE CLASS B AND SHALL BE PAID** FOR UNDER ITEM 501.34, CONCRETE HIGH PERFORMANCE CLASS B.

9. ALL REINFORCING STEEL SHALL BE EPOXY COATED AND PAID FOR UNDER ITEM 507.17, EPOXY COATED REINFORCING STEEL. WHEN EPOXY COATED REINFORCING IS TO BE CUT, THE UNCOATED ENDS SHALL BE REPAIRED WITH MATERIALS AND PROCEDURES APPROVED BY THE COATING MANUFACTURER. FLAME CUTTING OF EPOXY COATED REINFORCING STEEL WILL NOT BE PERMITTED.

10. 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.

11. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" BY 1".

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

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

14. REINFORCING PLACEMENT TOLERANCES SHALL BE:
    SPACING + - 1"
    CLEARANCE + - 1/4"

15. MINIMUM COVER FOR REINFORCING STEEL SHALL BE TWO (2) INCHES ALONG THE BACK FACES OF WALLS AGAINST EARTH, AND THREE INCHES (3") ELSEWHERE UNLESS OTHERWISE NOTED.

16. 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 MAGNESIUM FLOAT FINISHED.

17. WATER REPELLENT (MOD.- SILANE) SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, PROPOSED AND EXISTING.

18. ABUTMENT #1 WILL HAVE A CONCRETE PATCH APPLIED TO THE CONCRETE BELOW THE LAID-UP-STONE, THE LIMITS OF THE PATCH WILL BE DETERMINED BY THE RESIDENT ENGINEER AND PAID UNDER ITEM 580.13, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I, ITEM 580.14, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II, AND ITEM 580.15, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III.

STRUCTURAL STEEL

19. **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 CONTRACTORS USE OR DISPOSITION OF THE REMOVED EXISTING STRUCTURAL STEEL.

20. PAINTING OF NEW STEEL SHALL BE PAID FOR UNDER ITEM 513.25 "STRUCTURAL PAINTING, SHOP APPLIED". ALL EXISTING STEEL RETAINED IN THE REHABILITATED STRUCTURE SHALL BE BLAST CLEANED AND REPAINTED. PAINTING OF EXISTING STEEL SHALL BE PAID FOR UNDER ITEM 513.30 "STRUCTURAL PAINTING, FIELD APPLIED". ALL STRUCTURAL STEEL, EXCEPT THAT WHICH IS SPECIFIED TO BE EITHER GALVANIZED OR METALIZED, SHALL BE PAINTED AS DESCRIBED UNDER ITEM 513.30 STRUCTURAL PAINTING FIELD APPLIED. THE FINAL COAT OF PAINT SHALL BE BROWN AND SHALL CONFORM WITH FEDERAL STANDARD NO. 595, COLOR CHIP NO. 20059. THE CONTRACTOR SHALL ENSURE COMPATIBILITY BETWEEN THE SHOP AND FIELD PAINT SYSTEMS. SEE SECTION 513 OF THE SUPPLEMENTAL SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

21. ALL NEW STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50 PAINTED UNLESS OTHERWISE NOTED. DIAPHRAMS(IF NEEDED), CONNECTING ANGLES, CHANNELS AT THE ENDS OF THE DECK PLATES SHALL BE PAID FOR UNDER ITEM 506.60 STRUCTURAL STEEL.

22. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES F UNLESS OTHERWISE NOTED.

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

24. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF VERMONT SPECIFICATION 506.10.

25. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER ASTM DESIGNATION A-325 TYPE I BOLTS IN 15/16" DIAMETER HOLES, UNLESS OTHERWISE NOTED.

26. ALL NEW BOLTS, LAG SCREWS, SCREWS, NUTS AND WASHERS, OR OTHER METAL ELEMENTS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO SPECIFICATION M 232. PAYMENT WILL BE CONSIDERED INCIDENTAL TO 522.20 STRUCTURAL LUMBER AND TIMBER - UNTREATED.

27. ABUTMENT #2 AND PIER BEARINGS TO BE CLEANED IN PLACE, WITH NO REMOVAL OF THE BEARINGS REQUIRED, THIS WILL BE PAID FOR UNDER ITEM 513.41, SURFACE PREPARATION, FIELD.

TEMPORARY DETOUR

28. **TOWN HIGHWAY #6 IS TO BE CLOSED TO THRU TRAFFIC DURING CONSTRUCTION.**

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

30. BRIDGE NO.27 WILL BE CLOSED TO ALL PEDESTRIAN AND VEHICULAR TRAFFIC DURING CONSTRUCTION. TRAFFIC SHALL BE TEMPORARILY REROUTED AROUND THE SITE. FOR TEMPORARY DETOUR SIGNING AND TRAFFIC CONTROL NOTES SEE TEMPORARY DETOUR SIGNAGE AND ROUTING SHEETS.

31. THE REMOVAL AND/OR RESETTING OF TRAFFIC SIGNS, AS DEEMED NECESSARY BY THE RESIDENT ENGINEER, WILL BE PAID FOR UNDER ITEM 675.60 ERECTING SALVAGED SIGNS.

32. ALL EXISTING SIGNS NOT RE-USED SHALL REMAIN THE PROPERTY OF THE TOWN OF THETFORD. THE CONTRACTOR SHALL STOCKPILE THESE ITEMS AT THE PROJECT SITE FOR REMOVAL BY TOWN FORCES. THE CONTRACTOR SHALL CONTACT THE THETFORD TOWN OFFICE WHEN THESE ITEMS ARE READY FOR REMOVAL FROM THE PROJECT SITE.

TIMBER

33. **DIMENSIONS, ANGLES, AND BEARINGS OF THE EXISTING BRIDGE SHOWN ON THESE PLANS** WERE OBTAINED FROM LIMITED FIELD INVESTIGATION AND RECORD PLANS AND MAY NOT ACCURATELY REFLECT ACTUAL FIELD CONDITIONS. THE CONTRACTOR SHALL 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.

34. THE CONTRACTOR SHALL DEVELOP A METHOD TO SUPPORT BOTH TIMBER AND STEEL AT ITS CURRENT LOCATION THAT WILL ALLOW ALL SUPERSTRUCTURE AND SUBSTRUCTURE WORK TO BE COMPLETED AS REQUIRED IN THE CONTRACT OR AS ORDERED BY THE RESIDENT ENGINEER. THE CONTRACTOR SHALL SUBMIT TO THE STRUCTURES DIVISION FOR APPROVAL CONSTRUCTION DRAWINGS PER SUBSECTION 105.03 OF THE VAOT STANDARD SPECIFICATIONS FOR ALL NECESSARY JACKING, SHORING, AND LIFTING OF THE BRIDGE FOR ALL PHASES OF THE PROJECT. THE CONSTRUCTION DRAWINGS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER AND NO WORK SHALL COMMENCE UNTIL THE DRAWINGS HAVE BEEN APPROVED. THIS WORK SHALL BE PAID AS ITEM 502.10 SHORING SUPERSTRUCTURE.

THIS WORK SHALL BE PAID AS ITEM 502.10 SHORING SUPERSTRUCTURE.

35. THE CONTRACTOR SHALL AVOID UNNECESSARY DISASSEMBLY OF THE TRUSS AND FLOOR SYSTEM. ONLY THE JOINTS THAT MUST BE DISASSEMBLED TO AFFECT THE REPAIRS TO THE TRUSSES SHALL BE DISASSEMBLED.

36. ALL TIMBER MEMBERS AND CONNECTIONS SHALL BE JOINTLY INSPECTED BY THE CONTRACTOR AND RESIDENT ENGINEER TO DETERMINE IF ADDITIONAL REPAIRS ARE NECESSARY. THE FINAL DETERMINATION SHALL BE MADE BY THE RESIDENT ENGINEER.

37. IF THE CONTRACTOR FINDS THAT A SPECIFIC TIMBER ELEMENT IS NOT AVAILABLE, HE MAY SUBMIT AN ALTERNATIVE SPECIES WITH COMPARABLE PROPERTIES FOR CONSIDERATION AND APPROVAL BY THE RESIDENT ENGINEER AT NO ADDITIONAL COST.

38. EXTREME CARE SHALL BE TAKEN TO ENSURE THAT ANY EXISTING HOLES IN MEMBERS TO BE RETAINED SHALL NOT BE ELONGATED OR ENLARGED. THIS INCLUDES, BUT IS NOT LIMITED TO, BOLT HOLES AND TRUNNEL HOLES. THE CONTRACTOR SHALL DEMONSTRATE THEIR METHOD OF INSTALLING NEW MEMBERS WHILE MAINTAINING THE EXISTING HOLE PATTERN IN ADJACENT RETAINED MEMBERS TO THE RESIDENT ENGINEER FOR APPROVAL.

39. ALL EXISTING WOOD TRUNNELS THAT ARE FOUND TO BE DEFICIENT, OR FOUND MISSING, SHALL BE REPLACED WITH NEW WOOD TRUNNELS, AS DEEMED NECESSARY BY THE RESIDENT ENGINEER. NEW TRUNNELS SHALL BE UNTREATED, DRIED (MAXIMUM MOISTURE CONTENT OF 19%), CLEAR, DRY WHITE OAK AND SHALL BE DRIVEN IN A MANNER WHICH AVOIDS SPLITTING OF THE TRUNNELS OR THE ELEMENTS CONNECTED BY THESE TRUNNELS. THE TRUNNELS MAY BE DIPPED IN BOILED LINSEED OIL PRIOR TO DRIVING. PAYMENT FOR TRUNNELS, ALONG WITH REMOVAL AND INSTALLATION COSTS, SHALL BE INCIDENTAL TO ITEM 522.20.

40. AFTER THE BRIDGE SUPERSTRUCTURE IS COMPLETE AND ALL TIMBER HAS BEEN INSTALLED, THE BRIDGE SHALL BE COATED WITH A FIRE RETARDANT COATING AND AN INSECTICIDE/ FUNGICIDE COATING. ALL NEW WOOD AND WOOD TO BE RETAINED WILL BE COATED. THE FIRE RETARDANT COATING AND INSECTICIDE/FUNGICIDE COATING SHALL BE PAID UNDER ITEM 513.30, "STRUCTURAL PAINTING, FIELD APPLIED (MOD.).

41. TREATED LUMBER AND DECK SHALL BE PRESSURE TREATED WITH TYPE II (PENTACHLOROPHENAL) PER SECTION 726 OF THE SUPPLEMENTAL SPECIFICATIONS, UNLESS OTHERWISE NOTED. ALL EXPOSED ENDS AND HOLES DRILLED IN TREATED MEMBERS SHALL BE TREATED BY APPROVED METHODS, PRIOR TO ASSEMBLY.

42. ALL NEW TIMBER CONNECTIONS, INCLUDING NOTCHES, SCARF JOINTS, MORTISE-AND-TENDON JOINTS, AND OTHER CONNECTIONS, SHALL MATCH THE EXISTING JOINTING CONFIGURATION AND SHALL BE CUT TO PROVIDE A TIGHT JOINT. THE RESIDENT ENGINEER SHALL APPROVE ANY DEVIATION FROM THE EXISTING JOINTING TECHNIQUES.

43. ANY EXISTING TRUSS MEMBER (UPPER CHORD, LOWER CHORD, ARCH, DIAGONALS AND VERTICALS) DEEMED TO REMAIN IN PLACE, WHICH IN THE OPINION OF THE RESIDENT ENGINEER NEEDS INSTEAD TO BE REPLACED, WILL BE REPLACED WITH EASTERN SPRUCE, STRUCTURAL GRADE. PAYMENT FOR THIS WORK WILL BE MADE UNDER ITEM 522.20, STRUCTURAL LUMBER AND TIMBER - UNTREATED.

44. ALL NEW STRUCTURAL TIMBER SHALL CONFORM TO SECTION 709.01. NEW ELEMENTS SHALL HAVE A ROUGH FINISH AND MATCH THE EXISTING ELEMENT DIMENSIONS.

45. ALL SIDING BOARDS AND SIDING NAILERS SHALL BE FASTENED WITH 2 1/2" LONG GALVANIZED STEEL SCREWS. COST SHALL BE INCIDENTAL TO ITEM 522.30.

46. ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE, SHALL INCLUDE REMOVING AND DISPOSING OF THE FOLLOWING ITEMS.

    - EXISTING TIMBER DECK AND PAVEMENT
    - EXISTING SIDING
    - STRUCTURAL STEEL CONNECTING TIMBER TRUSS TO FASCIA BEAMS
    - STRUCTURAL STEEL PLATES AT EACH END OF THE DECK AND CHANNELS WHICH SUPPORT THEM.
    - DETERIORATED TIMBER, AS DETERMINED BY THE ENGINEER, (SEE NOTE 37)
    - STEEL RODS AND PLATES AND TIMBER USED TO REPAIR DAMAGED BRIDGE, AREA SHOWN ON SHEET 28.
    - CONCRETE ABUTMENT CAP AT ABUTMENT #1
    - BEARINGS AT ABUTMENT #1
    - HARDWOOD BLOCKS AT ABUTMENTS AND PIERS (IF NECESSARY)

47. THE BRIDGE SHALL BE STRAIGHT ALONG A HORIZONTAL LINE BETWEEN THE ABUTMENTS AND NOT BE RACKED WHEN COMPLETED.

Revised Oct. 24, 2006

PROJECT NAME:	**THETFORD BHO 1444 (43)**
PROJECT NUMBER:	**03J036**

FILE NAME:	03J036/STR/S03J036	PLOT DATE:	10/24/2006
PROJECT LEADER:	M. EVANS-MONGEON	DRAWN BY:	G. ROKES
DESIGNED BY:	M. EVANS-MONGEON	CHECKED BY:	S. SCRIBNER
GENERAL NOTES SHEET #1		SHEET	18 OF 60

STATE OF VERMONT
AGENCY OF TRANSPORTATION

GENERAL NOTES

48. FULL SAWN STRUCTURAL LUMBER AND TIMBER SHALL INCLUDE THE FOLLOWING MEMBERS:

A. STRUCTURAL UNTREATED, ITEM 522.20
- REPLACEMENT AND ADDITIONAL DIAGONALS (EASTERN SPRUCE, STRUCTURAL GRADE)
- REPLACEMENT CHORD AND ARCH MEMBERS (EASTERN SPRUCE, STRUCTURAL GRADE)
- REPLACEMENT AND ADDITIONAL VERTICALS (EASTERN SPRUCE, STRUCTURAL GRADE)
- NEW WEARING PLANKS (WHITE OAK, NO. 1 GRADE)
- REPLACEMENT TRUNNELS, AS REQUIRED (WHITE OAK, NO. 2 GRADE)

B. STRUCTURAL TREATED, ITEM 522.25.
- NEW BLOCKING, BEARING BLOCKS (SOUTHERN YELLOW PINE, STRUCTURAL GRADE)
- NEW CURBS (SOUTHERN YELLOW PINE, NO. 1 GRADE)
- NEW SPACER STRIP (SOUTHERN YELLOW PINE, NO. 1 GRADE)
- GLUED LAMINATED TIMBER DECK (20F-V5)

49. FULL SAWN NON-STRUCTURAL LUMBER SHALL INCLUDE THE FOLLOWING MEMBERS:

NON-STRUCTURAL LUMBER UNTREATED, ITEM 522.30
- NEW SIDING (HEMLOCK, NO. 1 GRADE)
- NEW NAILING STRIPS 2" X 3"(HEMLOCK, NO. 1 GRADE)

50. THE BOLTS CONNECTING THE DECK TO THE BEAMS SHALL BE RECESSED INTO THE DECK AND AND PLUGGED AND SEALED USING ITEM 524.12.

51. THE EXISTING COVERED BRIDGE TRUSSES ARE NOT PERFECTLY SYMMETRICAL AND THE BEAM SPACING MAY VARY SLIGHTLY. TO HELP FACILITATE CONNECTING THE GLUED LAMINATED DECK PANELS TO THE BEAMS, THE LEAD HOLES FOR THE BOLTS WILL BE DRILLED IN THE FIELD.

52. LEAD HOLES FOR THE LAG SCREWS WILL BE DOUBLE DRILLED. THE DIAMETER OF THE LEAD HOLE FOR THE THREADED PORTION OF THE LAG SCREW WILL BE 1/4 INCHES FOR THE 1/2 INCH DIAMETER LAG SCREW AND 7/16 INCHES FOR THE 3/4 INCH LAG SCREW. THE LEAD HOLE FOR THE UNTHREADED SHANK MUST BE THE SAME DIAMETER AND EXTEND TO THE SAME DEPTH AS THE UNTHREADED PORTION.

53. TRUNNELS IN EXISTING MEMBERS SHALL BE RETAINED EXCEPT WHERE THE RESIDENT ENGINEER DEEMS IT NECESSARY TO REPLACE THEM. NEW TRUNNELS WILL BE THE SAME SIZE AS THE ONE BEING REPLACED.

Revised Oct. 24, 2006

PROJECT NAME:	THETFORD BHO 1444 (43)		
PROJECT NUMBER:	03J036		
FILE NAME:	03J036/STR/S03J036	PLOT DATE:	10/24/2006
PROJECT LEADER:	M. EVANS-MONGEON	DRAWN BY:	G. ROKES
DESIGNED BY:	M. EVANS-MONGEON	CHECKED BY:	S. SCRIBNER
GENERAL NOTES SHEET #2		SHEET 19	OF 60

STATE OF VERMONT
AGENCY OF TRANSPORTATION

EROSION CONTROL NARRATIVE

DESCRIPTION OF PROJECT

This project involves the rehabilitation of the covered bridge (No. 27) over the Ompompanoosuc River. The project is on TH-6 (Tucker Hill Rd.), a paved town road that is narrow at the project site. The bridge is also situated at the bottom of a vertical sag.

Traffic will be detoured around the project and the bridge will be closed for rehabilitation. The rehabilitation will consist of: removal and relacement of the concrete abutment cap at abutment #1, Removal and replacement of bridge bearings (at abutment #1), Cleaning and repainting of the steel girders. Replace nail laminated deck with a glue laminated deck. Place timber wearing surface on the deck. Placement of a wooden guard rail through the structure.The timber truss will have all broken/damaged members replaced in a manner consistent with the original construction methods. The approaches will have new pavement, wooden rail, and side slopes. All of this work will take place within the existing R.O.W.

There is no channel work needed with this project.
Existing Side slopes are steep and all new slopes will be steep(especially near R.O.W. lines).

It is anticipated that this project will last one construction season.

SITE INVENTORY & ANALYSIS

OFF SITE DRAINAGE CHARACTERISTICS:
The property surrounding the project site consists of well established vegetation with moderate to steeply sloping banks. The surrounding area consist's of mixed softwood and hardwood forest with defined drainage ways. Due to the nature of the surrounding terrain, runoff water entering the project site will be primarily limited to that which is conveyed along roadway ditches.Because the bridge is in a vertical sag, temporary asphalt diversionary berms should be placed in roadway to control offsite water from entering the project site.

DRAINAGE, WATERWAYS, BODIES OF WATER:
The Ompompanoosuc River is located in the project area. There are no other water bodies or wetlands within the project area. The Ompompanoosuc River, at normal water levels, is a slow velocity river. The river bed is shallow to deep with a sandy silt bottom. Around the bridge abutments there are sandy silt beaches. At ordinary high water these beaches are submerged.

TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES:
The topography of the project site is mountainous with various sized wooded growth around toe of project slopes. The Ompompanoosuc River runs perpendicular to the structure and has medium to steep banks with dense, varied growth overhanging the river. There are three driveways with two all season residences near the project. There are overhead utilities that will be maintained and the need for relocation of the utility poles is unlikely.

VEGETATION:
A mix of hardwood and softwood trees of all sizes exist along Tucker Hill Rd. (TH-6). The two residences near the bridge site have small areas of lawn and landscape plantings. The one land owner at Stations 8+25 thru 8+64 has hedges within the existing R.O.W. and these hedges will be retained. During the bridge rehabilitation, the original concrete cap at abutment #1 is to be replaced. This will require a small amount of soil excavation around the old cap. During this time, the entire project may not have all the erosion controls in place. Placement of proper erosion controls around the abutment cap will be needed at this time. The rest of the erosion controls may be placed once the project proceeds to the approach work and guard rail slopes phase.
During the approach work, slopes grater that 3:1 will require erosion control matting. Slopes will be vegetated/reestablished with standard seed & mulching practices.

SOILS:
The Soil Conservation Service has mapped the soils throughout Orange County. The soil type identified for this project site is as follows:

(NnB) Ninigret-fine sandy loam, 0 to 8% slopes.
This soil type is described as '...Level to gently sloping soil is depressional areas on stream terraces and are irregular in shape. This soil is considered to be potentially highly erodible. The soil is somewhat poorly drained to moderately well drained.

The erodibility coefficient for this soil is rated (k value) is 0.32.

The other soil found at this site is: (HdD) Hartland silt loam 15 to 25%

(HdD) Hartland silt loam 15 to 25% slopes.
This type of soil is described as ".. Moderately steep soil on strongly dissected terraces. also included are areas of soil that have a surface layer of very fine sandy loam, steep spots, out crop of bedrock, and small eroded spots. This soil is considered to be highly erodible in areas of no vegetative cover. This soil is somewhat poorly drained to moderately well drained.

The erodibility coefficient for this soil is rated (k value) of 0.49.

Generally, K-values indicate the following: 0.0 - 0.23 = low erodibility; 0.24 - 0.36 = moderate erodibility; 0.37 and higher = higher erodibility.

SENSITIVE RESOURCE AREAS:
No 'Threatened & Endangered Species' have been identified within the project limits. There is a Historic site and archealogically sensitive areas in the vicinity of the project, but not within the project limits.
There are wetlands in the vicinity of the project, these also are not within the project limits. The only resource within the project limits is the Ompompanoosuc river.

PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES:
Disturbance of soils near natural or man-made waterways consists of that which is necessary to construct two new concrete abutment caps and applicable roadway approaches as well as guard rail flares with slopes. No stabilization of stream banks will be included with this project since this project does not have any channel work associated with it.

TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL

Temporary erosion prevention measures to be utilized include:

"Project Demarcation Fencing," denoted -PDF- on the plans, to delineate the limits the contractor can access. This measure limits the area that the contractor may, but not necessarily will, disturb and expose soils to erosion.

Seeding, mulching and biodegradable erosion control matting, or an equivalent product, will be utilized on all slopes steeper than 3:1.

These slopes shall be stabilized within 48 hours of reaching final grade or during intermittent phases of construction activity.

Temporary mulching and or matting ,will be utilized on a regular basis. Any slopes to be exposed for several days prior to final grading shall be mulched and or matted. The forecast of rainfall events shall also trigger protection of exposed slopes and matting of slopes greater than 3:1.

Temporary asphalt diversionary berms will be placed on the existing asphalt surfaces to channel off site roadway water flow from entering the project and thus reduce the potential for erosion. Placed at the end of the asphalt diversionary berms will be flow decelerators and silt fencing to slow the water flow and trap any sediment, See 'Erosion Controls Details' sheet. The diversionary berms may be removed once the all slopes (including slopes greater that 3:1) and surrounding areas are stabilized.

Temporary measures to control sediment transport include:

Silt fence will be installed and maintained as indicated in "erosion & sediment control plan". The contractor may need to adjust locations as indicated on the plans to better suit their construction needs. Proposed and or alternate silt fence locations will prevent sediment transport to down gradient areas. Each line of silt fence will be placed along the contour with ends turned slightly uphill to create a ponding effect should water try to run along the fencing and around the ends. Because of narrow width of the project, short effective runs of silt fencing should be. installed. Silt fence shall be installed prior to any upslope earthwork.

Measures such as temporary asphalt diversionary berms, silt fence, and diversionary flow decelerators shall be checked regularly for accumulation of sediment. Sediment build-up shall be removed when the level of sediment reaches one-half the height of the control measure or if sediment renders the erosion control device ineffective for it's intended purpose. Sediments shall be disposed of in an approved area such that they will not be subject to erosion.

Temporary sediment settling basins may not be utilized on this project.

PERMANENT EROSION CONTROL MEASURES

Grass, or other suitable ground cover will be established outside of the roadway limits. Specifically, 3:1 and greater slopes shall be matted and seeded promptly upon achieving final grade.

GENERAL EROSION & SEDIMENT CONTROL GUIDELINES

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

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

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

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

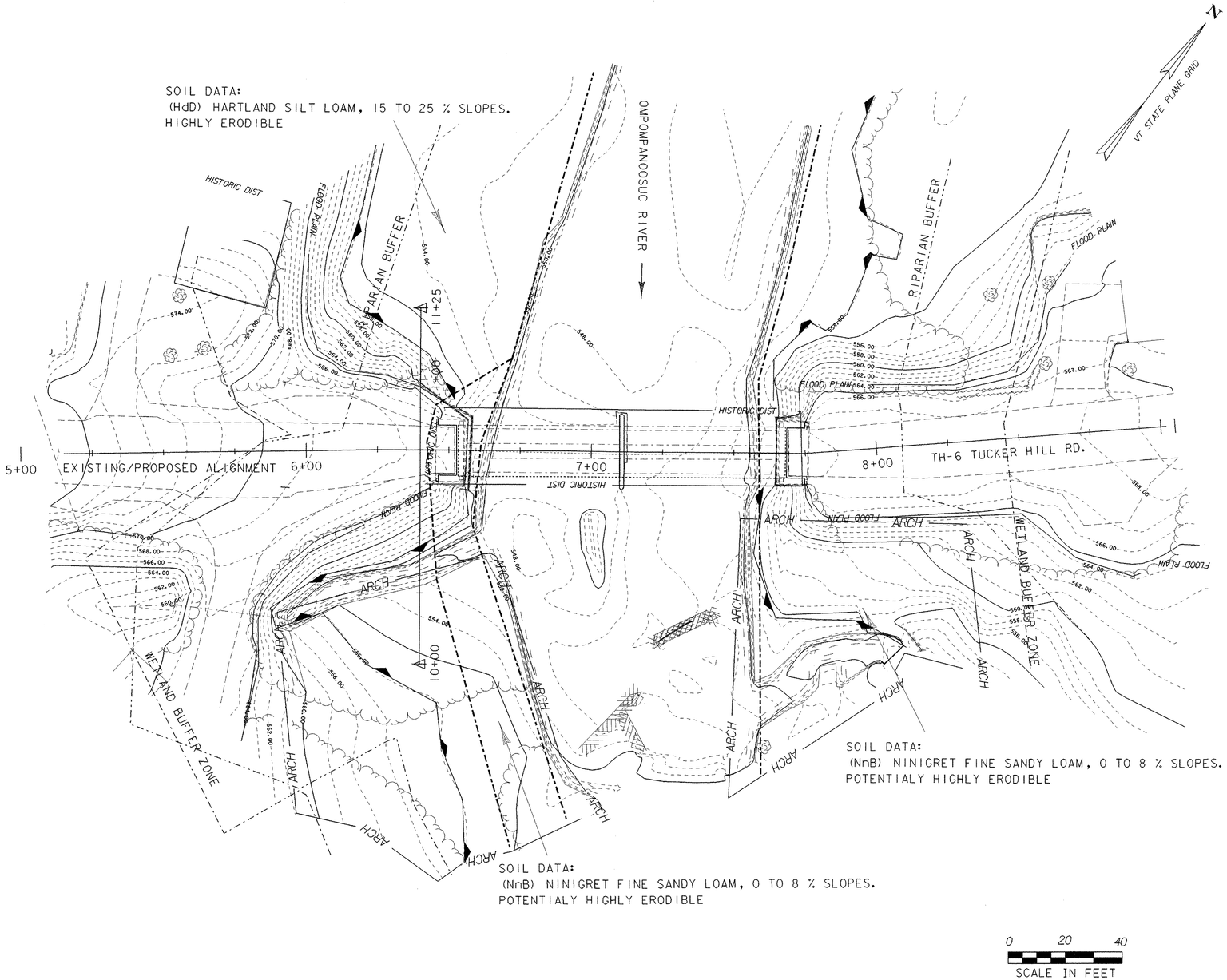
Maintaining vegetated buffers along stream banks, wetlands or other sensitive areas is a crucial erosion and sediment control measure that should be utilized wherever possible.

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

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

EROSION CONTROL NARRATIVE

PROJECT NAME:	THETFORD		
PROJECT NUMBER:	BHO 1444 (43)		
FILE NAME:	structures/sj036ero.dgn	PLOT DATE:	1/31/2006
PROJECT LEADER:	M. EVANS-MONGEON	DRAWN BY:	G.ROKES
DESIGNED BY:	G.ROKES	CHECKED BY:	M. E-MONGEON
IPARM	s03j036ena.i	SHEET	20 OF 60



LEGEND

	WETLAND BUFFER ZONE
	RIPARIAN BUFFER
	LEDGE
ARCH	ARCHEOLOGICAL LIMITS
FLOOD PLAIN	ESTIMATED FLOOD PLAIN
HISTORIC DIST	HISTORIC DISTRICT
	WETLAND BOUNDRY
	SOIL TYPE BOUNDRY

SOIL DATA: (NnB) GROUP

NINIGRET FINE SANDY LOAM, 0 TO 8 % SLOPES.

THE SOIL CONSERVATION SERVICE HAS DESCRIBED THIS SOIL AS FOLLOWS:

THIS LEVEL TO GENTLY SLOPING SOIL IS IN DEPRESSIONAL AREAS ON STREAM TERRACES AND AREAS ARE IRREGGULAR IN SHAPE.

THIS SOIL IS CONSIDERD TO BE POTENTIALLY HIGHLY ERODABLE. THIS SOIL IS CLASSIFIED AS A TYPE B HYDROGROUP. THIS INDICATES THAT THE SOIL IS SOMEWHAT POORLY DRAINED TO MODERATELY WELL DRAINED.

THE SOIL ERODIABILITY COEFFICIENT (Kw-VALUE) FOR THIS SOIL TYPE IS 0.32.

SOIL DATA: (HdD) GROUP

HARTLAND SILT LOAM, 15 TO 25 % SLOPES.

THE SOIL CONSERVATION SERVICE HAS DESCRIBED THIS SOIL AS FOLLOWS:

THIS MODERATELY STEEP SOIL IS ON STRONGLY DISSECTED TERRACES. ALSO INCLUDED ARE AREAS OF SOILS THAT HAVE A SURFACE LAYER OF VERY FINE SANDY LOAM, STEEP SPOTS, OUTCROPS OF BEDROCK, AND SMALL ERODED SPOTS.

THIS SOIL IS CONSIDERED TO BE HIGHLY ERODABLE IN AREAS OF NO VEGITATIVE COVER.
THIS SOIL IS CLASSIFIED AS A TYPE B HYDROGOUP
THIS INDICATES THAT THE SOIL IS SOMEWHAT POORLY DRAINED TO MODERATELY WELL DRAINED.

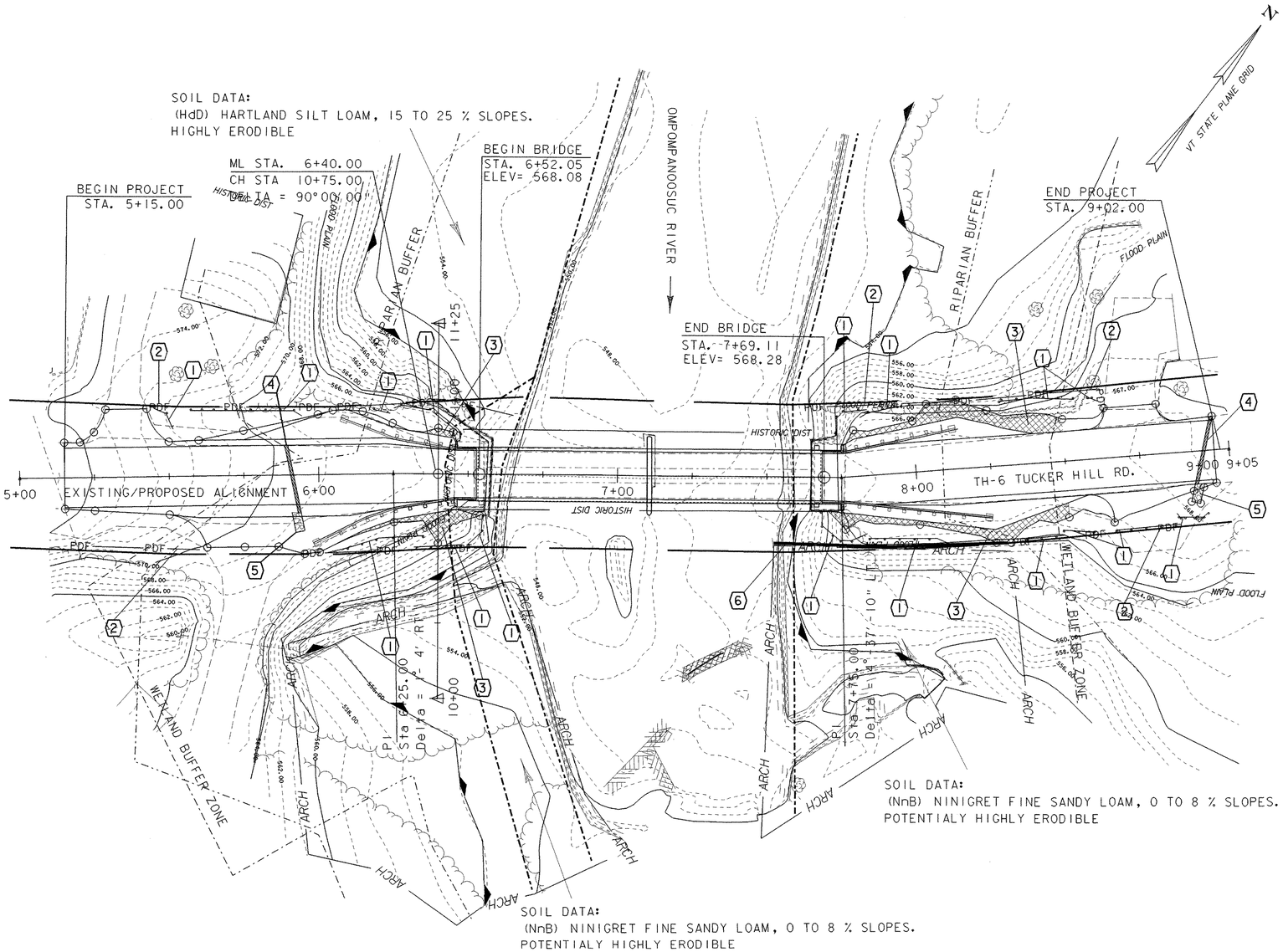
THE SOIL ERODAILITY COEFFICIENT (Kw-VALUE) FOR THIS SOIL TYPE IS 0.49

EROSION AND SEDIMENT CONTROL PLAN EXISTING CONDITIONS

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

FILE NAME: Structures\s03j036ero.dgn
PROJECT LEADER: M.EVANS-MONGEON
DESIGNED BY: G.ROKES
IPARM: s03j036erl.i

PLOT DATE: 27-SEP-2006
DRAWN BY: G.ROKES
CHECKED BY: S.SCRIBNER
SHEET 21 OF 60



NOTE: ALL DISTURBED AREAS WITH SLOPES GREATER THAN 1:3 WILL REQUIRE TEMPORARY EROSION MATTING (SEE EROSION CONTROL DETAILS SHEET)

0 20 40
SCALE IN FEET

	EROSION AND SEDIMENT CONTROL INDEX
NO.	DISCRIPTION
(1)	INSTALL SILT FENCE TO CONTAIN SEDIMENT AS INDICATED (ENDS OF FENCE TURNED UPHILL TO CREATE PONDING)
(2)	PROJECT LIMITS DEMARCATION FENCE (SNOW FENCE (MOD. -PDF))
(3)	EROSION CONTROL MATTING
(4)	ASPHALT DIVERSIONARY BERM (TEMP.)
(5)	FLOW DISSIPATOR (TEMP.)
(6)	SNOW FENCE (MOD. ARCH.)

LEGEND

- SILT FENCE
- PDF — PROJECT LIMITS DEMARCATION FENCE
- EROSION CONTROL MATTING
- ASPHALT DIVERSIONARY BERM (TEMP.)
- FLOW DISSIPATOR (TEMP.)
- WETLAND BUFFER ZONE
- RIPARIAN BUFFER
- LEDGE
- *ARCH* — ARCHEOLOGICAL LIMITS
- SNOW FENCE (MOD. ARCH.)
- *FLOOD PLAIN* — ESTIMATED FLOOD PLAIN
- *HISTORIC DIST* — HISTORIC DISTRICT
- WETLAND BOUNDRY
- SOIL TYPE BOUNDRY

NOTES:

SINCE THIS PROJECT IS A REHABILITATION OF AN EXISTING BRIDGE WITH SOME ROAD APPROACH WORK; THE REHABILITATION PHASE OF THIS PROJECT MAY NOT REQUIRE SILT FENCE TO BE ERECTED PRIOR TO PROJECT COMMENCEMENT, IF THE REHABILITATION WORK DOES NOT INCLUDE DISTURBANCE OF EARTH.

SOME SILT FENCE WILL NEED TO BE PLACED NEAR ABUTMENT #1, DUE TO SOIL DISRUPTION DURING THE REMOVAL/REPLACMENT OF THE CONCRETE CAP.

PLACE ASPHALT DIVERSIONARY BERM IN ROADWAY PRIOR TO ANY SOIL DISTURBANCES. PLACE BERM FLOW DISSIPATORS AT THE BOTTOM OF THE BERM OUTLETS . PAYMENT FOR ASPHALT DIVERSIONARY BERM UNDER CONTRACT ITEM 618.15 (MOD.). PAYMENT FOR BERM FLOW DISSIPATOR UNDER CONTRACT ITEM 610.10.

THE PDF (PROJECT LIMITS DEMARCATION FENCE) WILL BE PLACED PRIOR TO THE START OF THE PROJECT.

INSTALL AND/OR MOVE SILT FENCE TO OBTAIN THE GREATEST PREVENTION OF SEDIMENT TRANSPORT. ALL SILT FENCE INSTALLATION SHALL BE PROPERLY KEYED INTO THE GROUND AND SUPPORTED AS DETAILED ON THE " EROSION CONTROL DETAILS " SHEET.

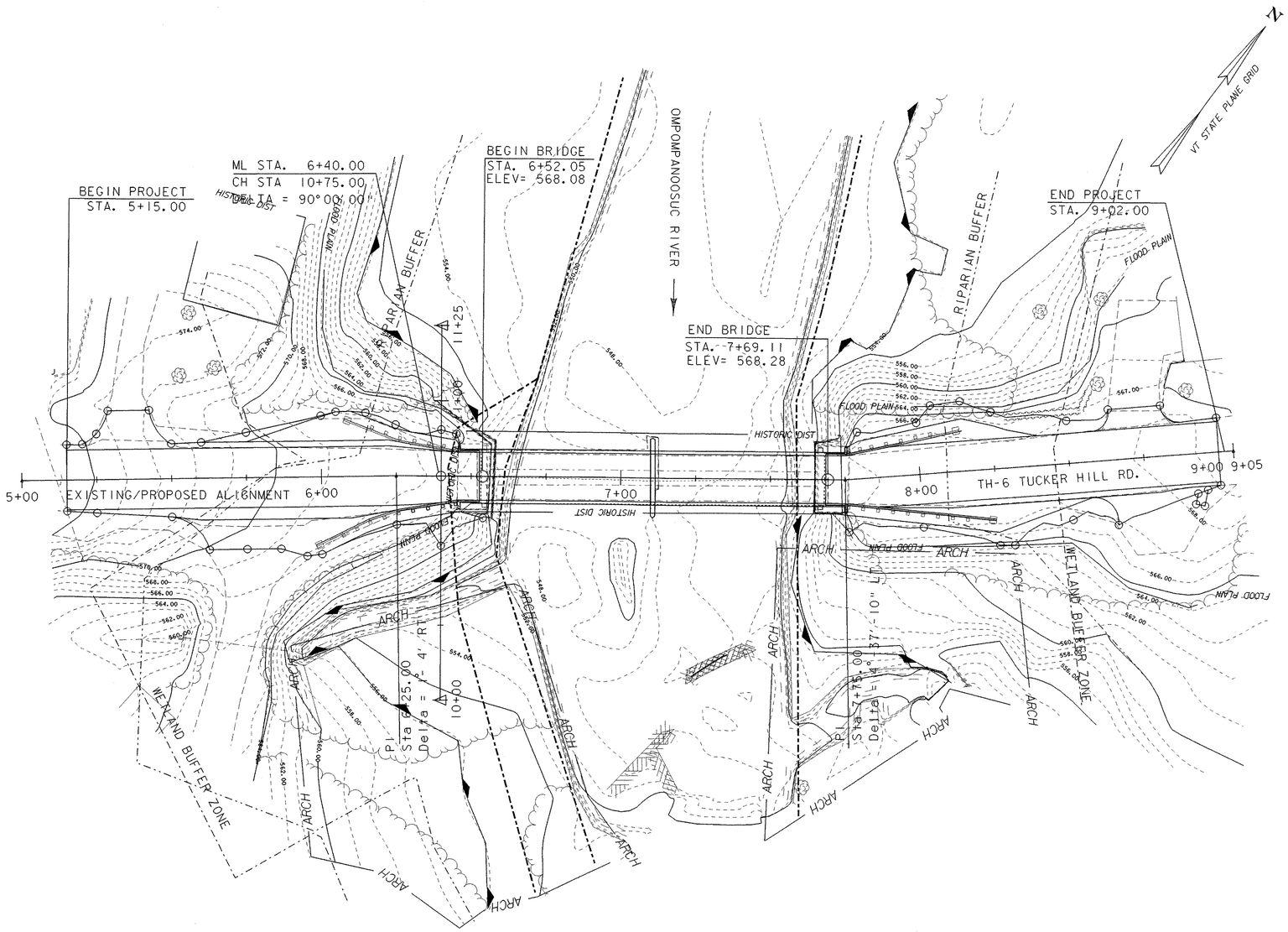
SILT FENCE SHOULD BE INSTALLED ALONG THE CONTOURS TO PREVENT CONCENTRATION OF RUNOFF. THE ENDS OF EACH RUN OF SILT FENCE SHOULD BE TURNED UPHILL TO PROVIDE A SMALL POND FOR SILT RETENTION SHOULD WATER TRY TO RUN AROUND THE ENDS OF THE SILT FENCE.

IN AREAS WHERE TOE OF SLOPES ARE NEAR R.O.W. PLACE PDF AND SILT FENCE WITHIN EXISTING R.O.W.

EROSION & SEDIMENT CONTROL PLAN CONSTRUCTION CONDITIONS

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

FILE NAME: Structures\s03j036ero.dgn
PROJECT LEADER: M.EVANS-MONGEON
DESIGNED BY: G.ROKES
IPARM: s03j036er2.i
PLOT DATE: 27-SEP-2006
DRAWN BY: G.ROKES
CHECKED BY: S. SCRIBNER
SHEET 22 OF 60



LEGEND

- WETLAND BUFFER ZONE
- RIPARIAN BUFFER
- LEDGE
- ARCH — ARCHEOLOGICAL LIMITS
- FLOOD PLAIN — ESTIMATED FLOOD PLAIN
- HISTORIC DIST — HISTORIC DISTRICT
- WETLAND BOUNDRY
- SOIL TYPE BOUNDRY

NOTE:

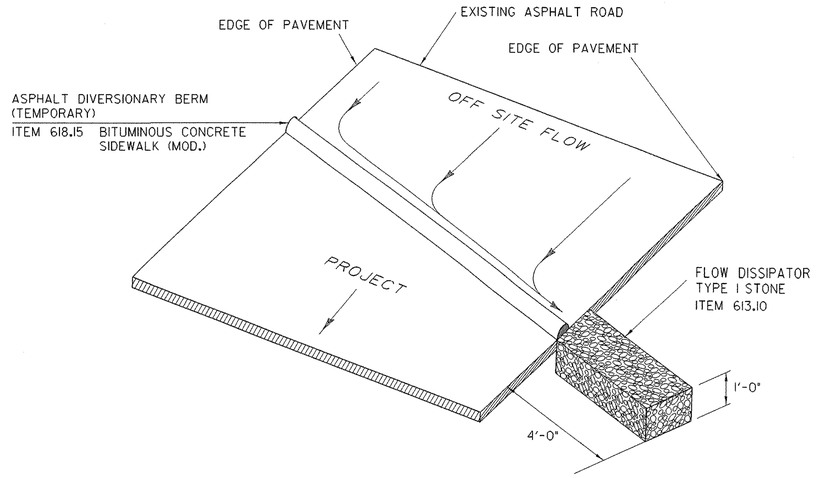
CONTOURS SHOWN ARE THE EXISTING SITE CONTOURS.
SEE CROSS SECTIONS AND PLAN VIEW FOR GRADE CHANGES.

EROSION AND SEDIMENT CONTROL PLAN
FINAL SITE CONDITIONS

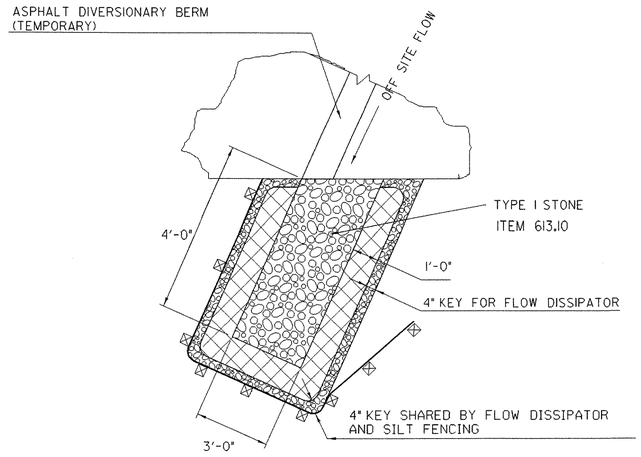
PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

FILE NAME: Structures\s03j036ero.dgn
PROJECT LEADER: M.EVANS-MONGEON
DESIGNED BY: G. ROKES
IPARM: s03j036er3.i

PLOT DATE: 27-SEP-2006
DRAWN BY: G.ROKES
CHECKED BY: S. SCRIBNER
SHEET 23 OF 60



DIVERSIONARY BERM AND FLOW DISSIPATOR SETUP



PLAN VIEW OF FLOW DISSIPATOR

SEEDING FORMULA
RURAL AREAS

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

GENERAL NOTES

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

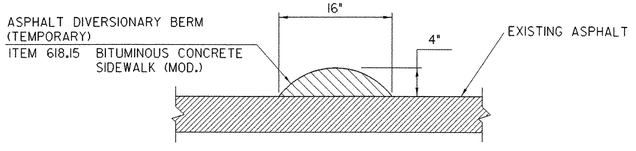
SEED: TO BE APPLIED PER SEEDING FORMULAS OR AS DIRECTED BY THE ENGINEER.

FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED, APPLIED AT THE RATE OF 560 kg/ha. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).

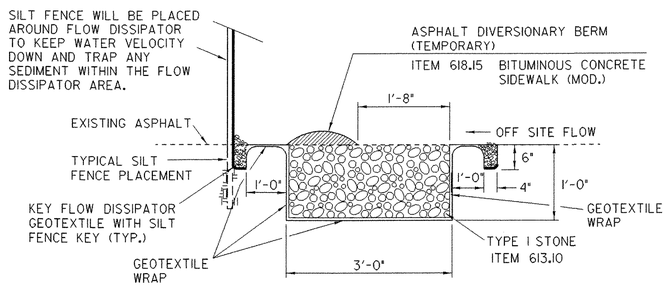
AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 4500 kg/ha, OR AS DIRECTED BY THE ENGINEER.

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

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



ASPHALT DIVERSIONARY BERM



CROSS SECTION OF FLOW DISSIPATOR

NOTES:

1. PAYMENT FOR ASHPALT DIVERSIONARY BERM SHALL BE MADE UNDER ITEM 618.15, BITUMINOUS CONCRETE SIDEWALK (MOD.)

2. PAYMENT FOR FLOW DISSIPATOR SHALL BE MADE UNDER ITEMS 613.10, STONE FILL, TYPE I, 649.31, GEOTEXTILE UNDER STONE FILL, AND 649.51, GEOTEXTILE FOR SILT FENCE.

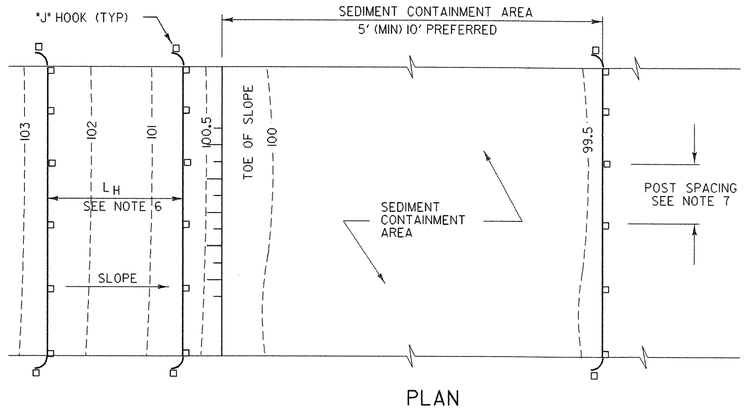
NOTE: ALL EROSION DETAILS NOT TO SCALE

EROSION PREVENTION & SEDIMENT CONTROL DETAILS
DIVERSIONARY BERM AND FLOW DISSIPATOR

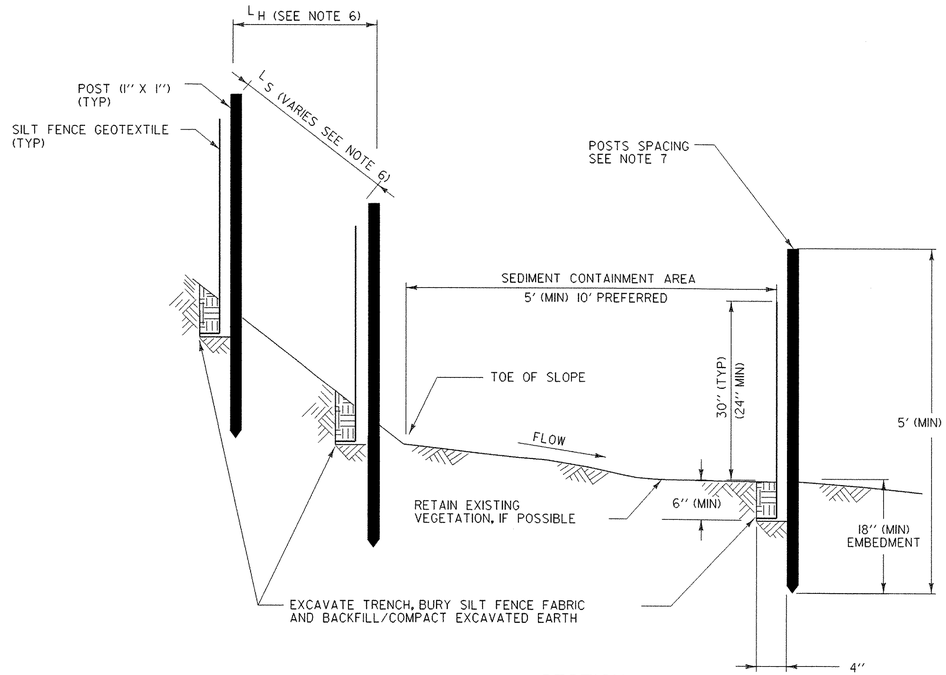
EROSION & SEDIMENT CONTROL DETAILS 1

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

FILE NAME: Structures\s03j036ero.dgn
PROJECT LEADER: M.EVANS-MONGEON
DESIGNED BY: M. EVANS-MONGEON
IPARM: s03j036ecd.i
PLOT DATE: 27-SEP-2006
DRAWN BY: G.ROKES
CHECKED BY: S. SCRIBNER
SHEET 24 OF 60



PLAN



SECTION

SILT FENCE - TEMPORARY

NOT TO SCALE

SILT FENCE

APPLICATION NOTES:

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

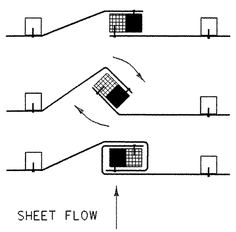
B. SILT FENCE SHALL NOT BE USED ACROSS CONCENTRATED FLOW.

GENERAL NOTES:

1. SILT FENCE SHALL GENERALLY BE PLACED A MINIMUM OF 5 FEET BEYOND TOE OF SLOPE. 10 FEET PREFERRED, TO PROVIDE ADEQUATE AREA FOR SEDIMENT STORAGE AND FACILITATE MAINTENANCE OF SEDIMENT CONTAINMENT AREA.
2. SILT FENCE SHALL BE INSTALLED ON A LINE OF EQUAL ELEVATION (CONTOUR). IT MAY BE INSTALLED AT INTERMEDIATE POINTS UP SLOPES AS WELL AS AT THE BOTTOM, AS SHOWN IN THE DETAIL.
3. ALL ENDS SHALL BE "J" HOOKED TO TRAP SEDIMENT.
4. IN AREAS WITH TWO SLOPES, SILT FENCE SHALL BE USED TO ERECT A DAM AND TRAP SEDIMENT AT THE BASE OF THE STEEPER SLOPE.
5. THE BOTTOM EDGE OF SILT FENCE SHALL BE BURIED A MINIMUM OF 6 INCHES BELOW GROUND, AND KEYED IN 4 INCHES. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC.
6. MAXIMUM DRAINAGE AREA TRIBUTARY TO 100 FEET OF SILT FENCE SHALL BE 0.25 ACRES.
7. THE FOLLOWING ARE MAXIMUM LENGTHS FOR SILT FENCE INSTALATIONS:

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

8. WHERE ELONGATION IS >50%, POST SPACING SHALL NOT EXCERED 4 FEET. WHERE ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6 FEET.
9. SILT FENCE SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
10. SILT FENCE SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED WASTE SITE.
11. SILT FENCE SHALL BE REMOVED WHEN THE AREA HAS BEEN STABILIZED. AT TIME OF REMOVAL OF THE SILT FENCE, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.



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

SPLICING DETAIL

NOT TO SCALE

EROSION PREVENTION &

SEDIMENT CONTROL DETAILS

SILT FENCE

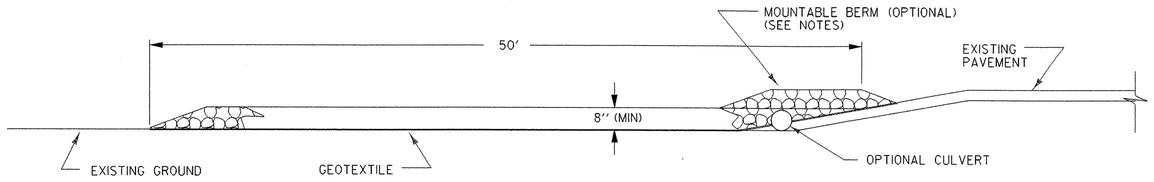
EROSION & SEDIMENT CONTROL DETAILS 2

PROJECT NAME: THETFORD

PROJECT NUMBER: BHO 1444 (43)

FILE NAME: Structures\s03j036ero.dgn
PROJECT LEADER: M.EVANS-MONGEON
DESIGNED BY: M. EVANS-MONGEON
IPARM: s03j036ecdl.i

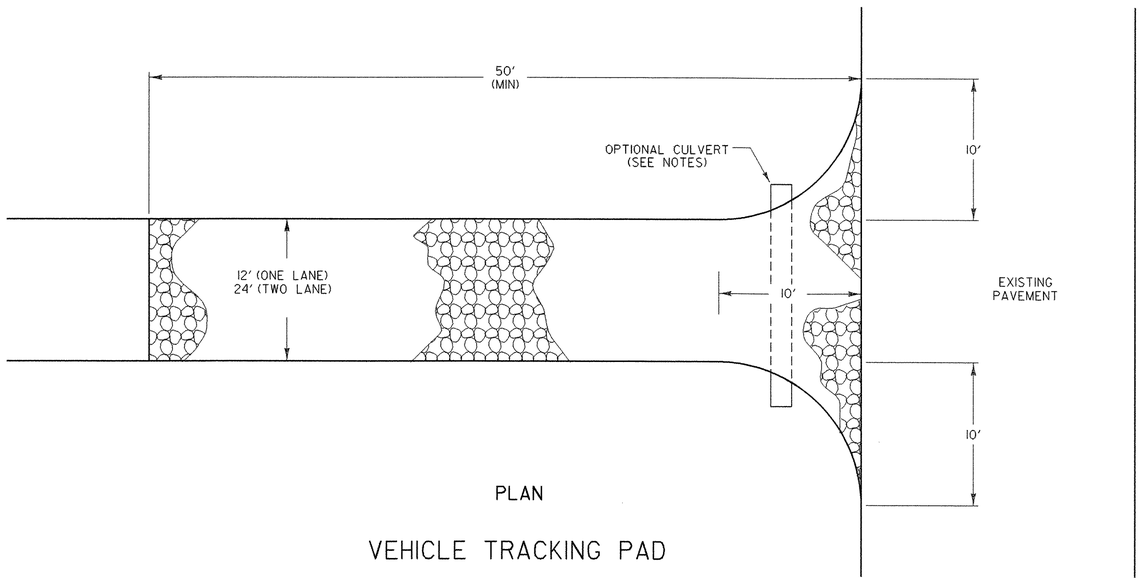
PLOT DATE: 27-SEP-2006
DRAWN BY: G.ROKES
CHECKED BY: S. SCRIBNER
SHEET 25 OF 60



PROFILE

VEHICLE TRACKING PAD

NOT TO SCALE



PLAN

VEHICLE TRACKING PAD

NOT TO SCALE

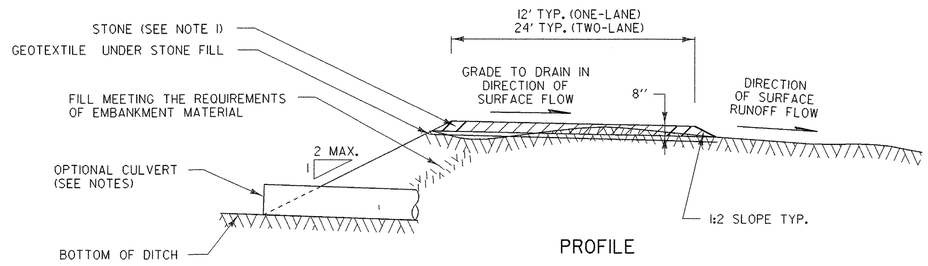
VEHICLE TRACKING PAD

APPLICATION NOTES:

A. THE PURPOSE OF A VEHICLE TRACKING PAD IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY OR STREETS.

GENERAL NOTES:

1. STONE SIZE - USE CLEAN STONE THAT MEETS THE GRADATION REQUIREMENTS SPECIFIED IN THE CONTRACT DOCUMENTS.
2. LENGTH - 50 FEET (MIN.)
3. THICKNESS - 8 INCHES (MIN)
4. WIDTH - 12 FEET (MIN)
5. GEOTEXTILE UNDER STONE SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE AS DIRECTED BY THE ENGINEER. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. PROPOSED DRAINAGE PIPES SHALL BE SIZED WITH SUFFICIENT CAPACITY TO CARRY DITCH FLOWS. ALTERNATIVE WAYS OF TRANSPORTING DITCH DRAINAGE ACROSS CONSTRUCTION ENTRANCES MAY BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER.
8. WHEN A VEHICLE TRACKING PAD ALONE IS NOT CAPABLE OF PREVENTING TRACKING OF SEDIMENT ONTO THE ROAD SURFACE THE CONTRACTOR SHALL TAKE ADDITIONAL STEPS BEFORE VEHICLES LEAVE THE CONSTRUCTION AREA.
9. VEHICLE TRACKING PAD SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
10. VEHICLE TRACKING PAD SHALL BE MAINTAINED WHEN THE AGGREGATE BECOMES CLOGGED AND NO LONGER PREVENTS TRACKING OF SEDIMENT ONTO THE PUBLIC RIGHT-OF-WAY. ADDITIONAL AGGREGATE MAY BE ADDED ON TOP OF EXISTING AGGREGATE ONLY TO A POINT WHICH ALLOWS A SMOOTH TRANSITION BETWEEN THE ROAD SURFACE AND CONSTRUCTION AREA.
11. AT THE TIME OF REMOVAL OF THE VEHICLE TRACKING PAD, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.



PROFILE

VEHICLE TRACKING PAD

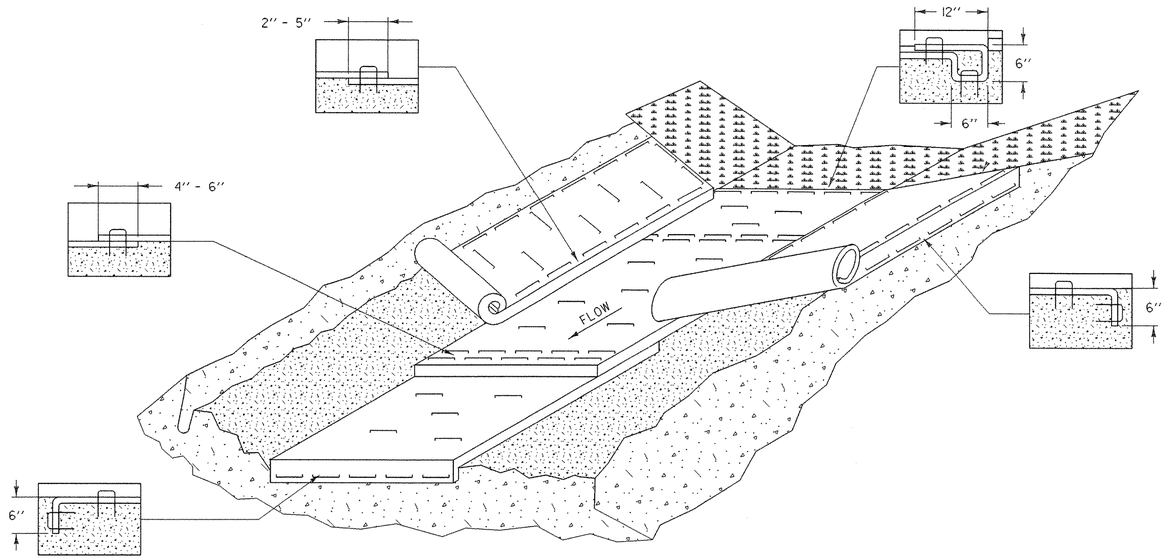
NOT TO SCALE

EROSION PREVENTION & SEDIMENT CONTROL DETAILS CONSTRUCTION ENTRANCE

EROSION & SEDIMENT CONTROL DETAILS 3

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

FILE NAME: Structures\s03j036ero.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: S. SCRIBNER
IPARM: s03j036ecd2.i	SHEET 26 OF 60



EROSION MATTING FOR DITCHES

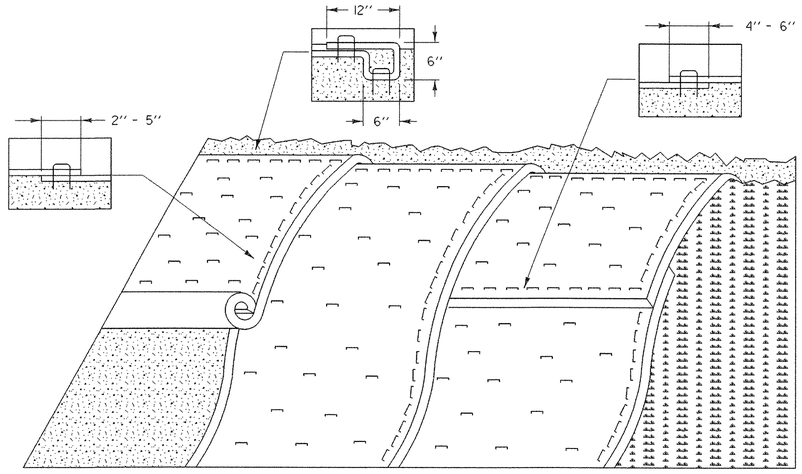
APPLICATION NOTES:

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

B. TYPE OF EROSION MATTING TO BE USED SHOULD BE BASED ON FACTORS SPECIFIC TO EACH APPLICATION. SEE SPECIFICATIONS AND PRODUCT RECOMMENDATIONS FOR SUITABILITY.

GENERAL NOTES:

1. WATER MAY NEED TO BE DIVERTED TO ALLOW PROPER MATTING INSTALLATION.
2. GRADE AND SMOOTH CHANNEL TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
3. APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
4. INSTALL MATTING IN THE CENTER OF THE CHANNEL, IN THE DIRECTION OF THE WATER FLOW.
5. INSTALL MATTING ON THE SIDE SLOPES OF THE CHANNEL, OVERLAPPING THE CENTER MAT.
6. ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INTALLATION INSTRUCTIONS.
7. EROSION MATTING SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
8. EROSION MATTING SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.



EROSION MATTING FOR SLOPES

APPLICATION NOTES:

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

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

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

GENERAL NOTES:

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

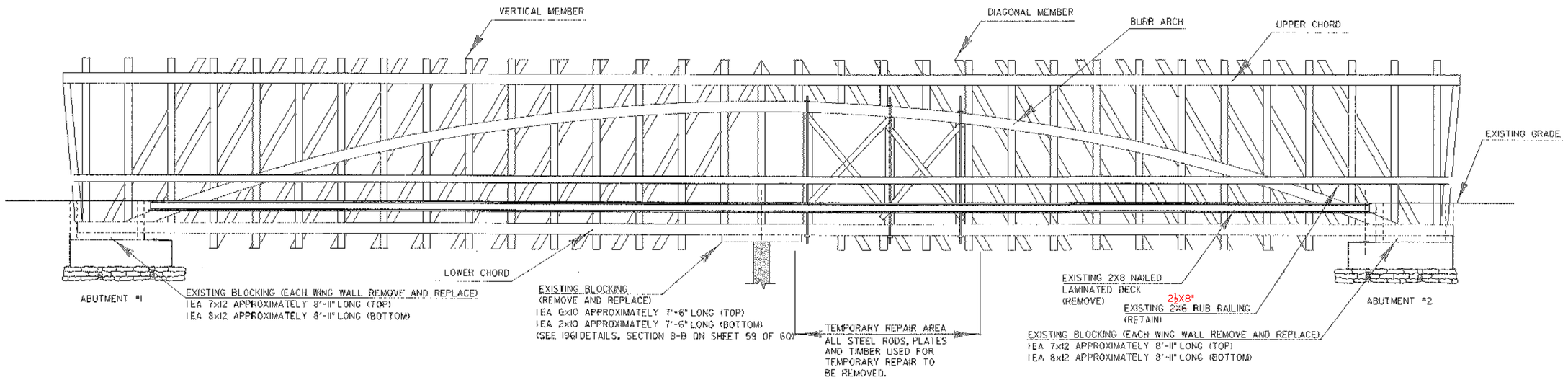
EROSION PREVENTION & SEDIMENT CONTROL DETAILS DITCH & SLOPE PROTECTION

EROSION & SEDIMENT CONTROL DETAILS 4

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

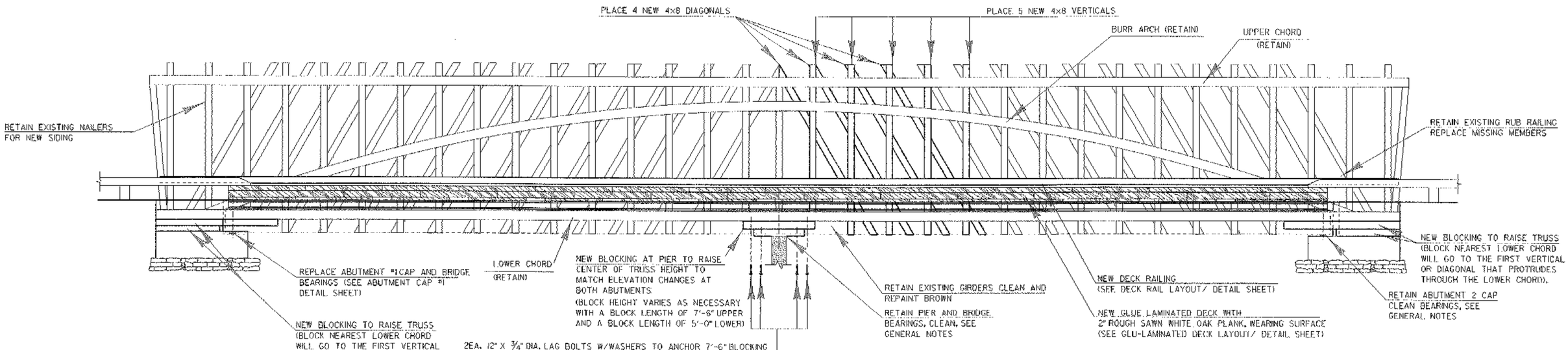
FILE NAME: Structures\s03j036ero.dgn
PROJECT LEADER: M.EVANS-MONGEON
DESIGNED BY: M. EVANS-MONGEON
IPARM: s03j036ecd3.i

PLOT DATE: 27-SEP-2006
DRAWN BY: G.ROKES
CHECKED BY: S. SCRIBNER
SHEET 27 OF 60



EXISTING BRIDGE TRUSSING

NTS



2EA. 12" X ¾" DIA. LAG BOLTS W/WASHERS TO ANCHOR 7'-6" BLOCKING TO LOWER TRUSS.
2EA. 12" X ¾" DIA. LAG BOLTS W/WASHERS TO ANCHOR 5'-0" BLOCKING TO THE 7'-6" BLOCKING.
BOLTS HOLES ARE TO BE LOCATED 1'-0" MINIMUM FROM EACH END OF THE BLOCKS. RECESS THE BOLT HOLES IN EACH BLOCK TO ACHIEVE A 4" MINIMUM LAG BOLT THREAD LENGTH INTO THE LOWER CHORD AND INTO THE 7'-6" BLOCK. (SEE "LOWER CHORD ATTACHMENT NEAR PIER BLOCKING DETAIL" SHEET 34 OF 60)

TRUSSING TIMBERS

5 EA 4x8 AVERAGE LENGTH 18'-0 (VERTICAL MEMBERS)
4 EA 4x8 AVERAGE LENGTH 21'-0 (DIAGONAL MEMBERS)

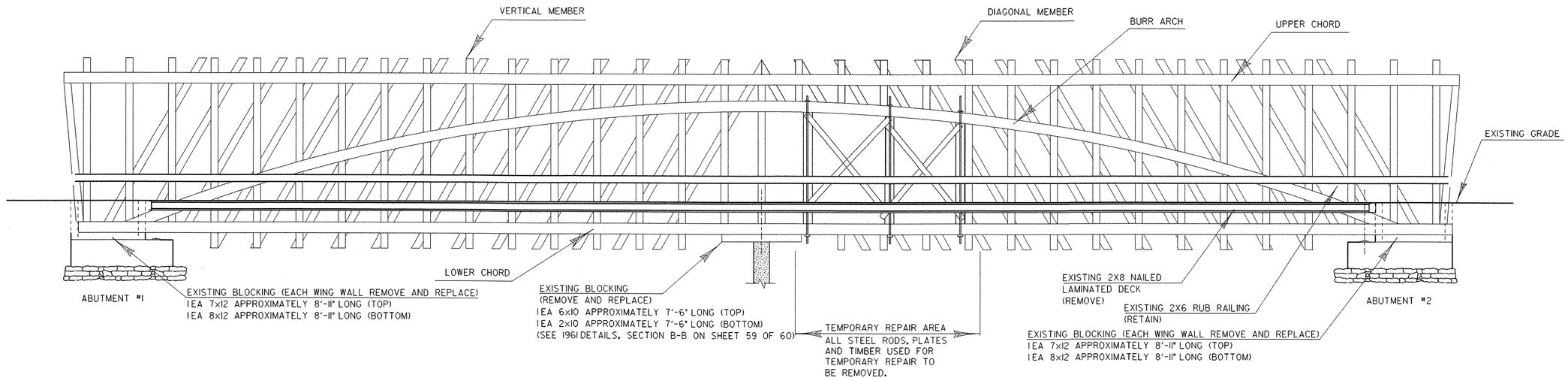
PROPOSED REPAIRS AND MODIFICATIONS

NTS

REVISED OCT. 24, 2006

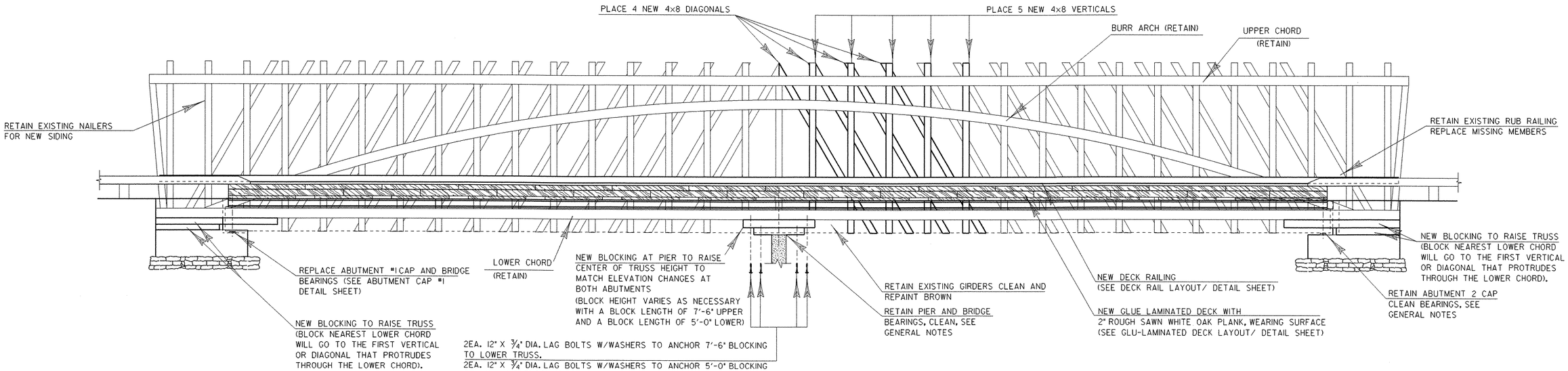
NORTH TRUSS REPLACEMENT OF EXISTING / PROPOSED

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)
FILE NAME: Structures\s03J036abh.dgn	PLOT DATE: 24-OCT-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G. ROKES	CHECKED BY: S. SCRIBNER
IPARM: s03J036brd.I	SHEET 28 OF 60



EXISTING BRIDGE TRUSSING

NTS



TRUSSING TIMBERS

5 EA 4x8 AVERAGE LENGTH 18'-0 (VERTICAL MEMBERS)
4 EA 4x8 AVERAGE LENGTH 21'-0 (DIAGONAL MEMBERS)

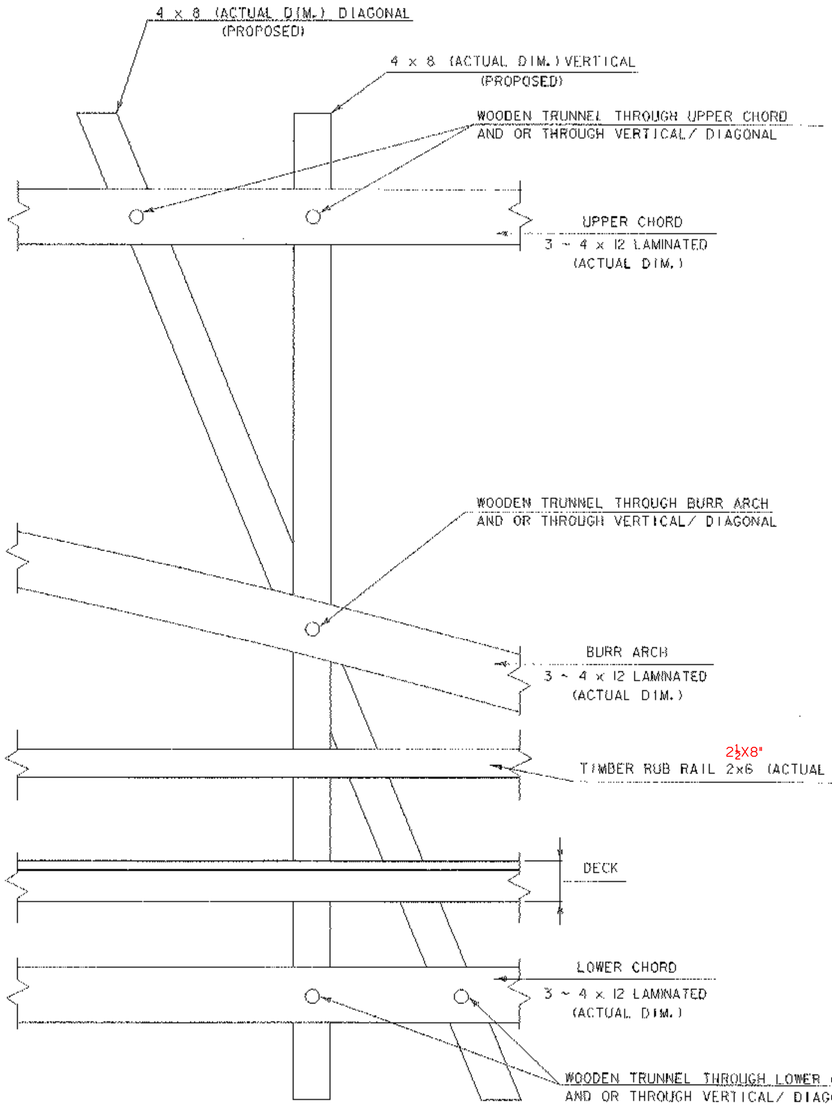
PROPOSED REPAIRS AND MODIFICATIONS

NTS

REVISED OCT. 24, 2006

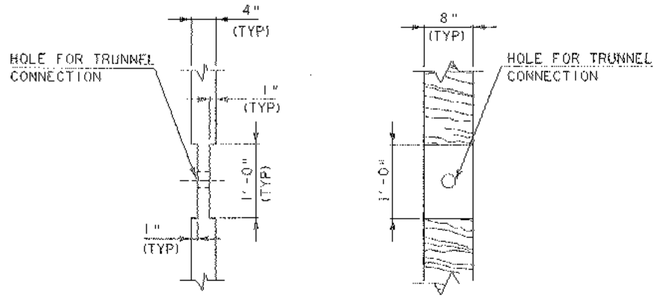
NORTH TRUSS REPLACEMENT OF EXISTING / PROPOSED

PROJECT NAME: THETFORD	
PROJECT NUMBER: BHO 1444 (43)	
FILE NAME: Structures\s03j036abt.dgn	PLOT DATE: 24-OCT-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G. ROKES	CHECKED BY: S. SCRIBNER
IPARM: s03j036brd.i	SHEET 28 OF 60



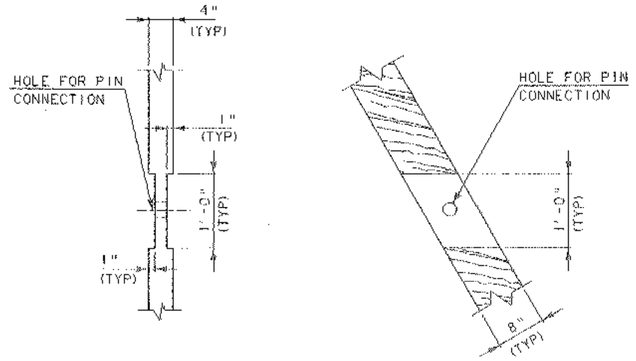
N. T. S

TYPICAL BRIDGE TRUSS CONFIGURATION ELEVATION VIEW



CROSS SECTION ELEVATION N. T. S

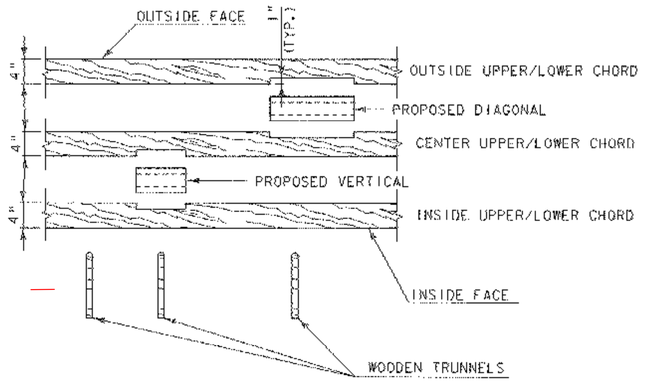
TYPICAL NOTCHING FOR PROPOSED VERTICAL MEMBERS



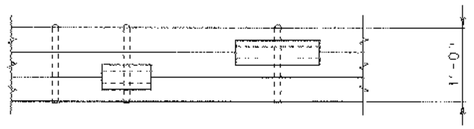
CROSS SECTION ELEVATION N. T. S

TYPICAL NOTCHING FOR PROPOSED DIAGONAL MEMBERS

UPPER/LOWER CHORD
EXPANDED
PLAN VIEW



UPPER/LOWER CHORD
ASSEMBLED AND PINNED
PLAN VIEW



N. T. S

UPPER/LOWER CHORD ASSEMBLY

NOTE:

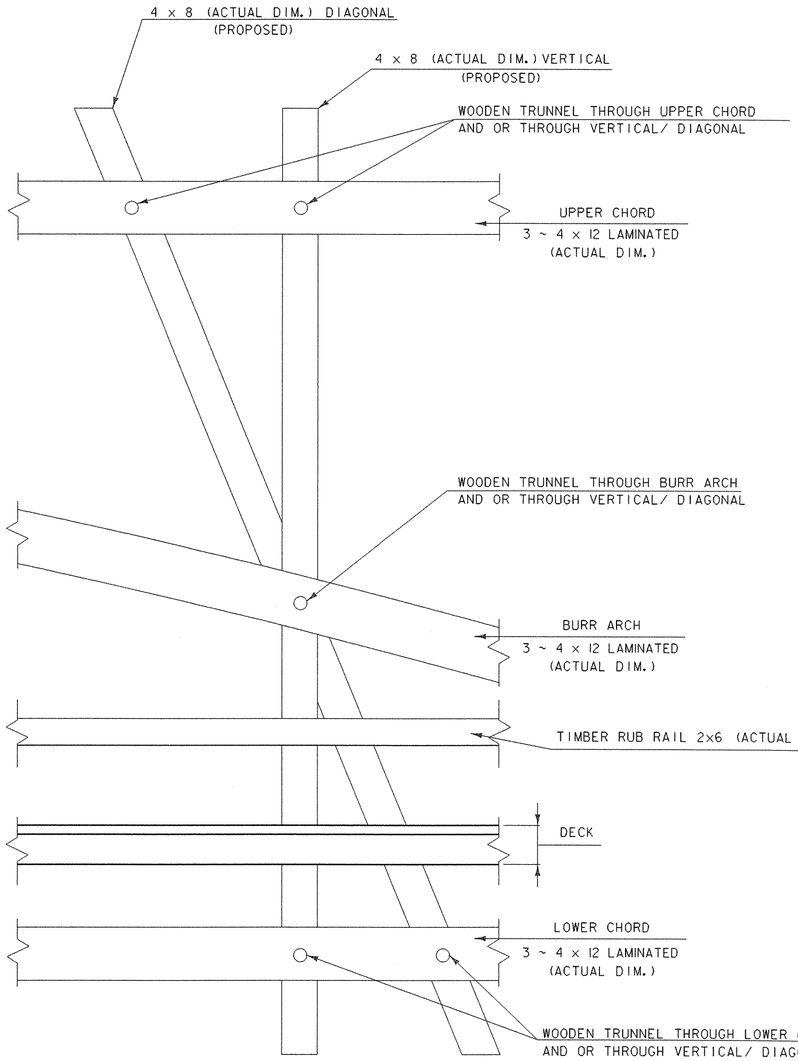
THE BURR ARCH ASSEMBLY IS SIMILAR TO THE UPPER AND LOWER CHORD. THE ASSEMBLY THROUGH THE ARCH VARIES IN MEASUREMENTS. TYPICAL NOTCHING FOR VERTICAL AND DIAGONAL THROUGH THE ARCH WAS NOT DETAILED. THESE SECTIONS WILL NEED TO BE FIT IN FIELD.

TIMBER TRUSS ASSEMBLY AND CONFIGURATION SHEET

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

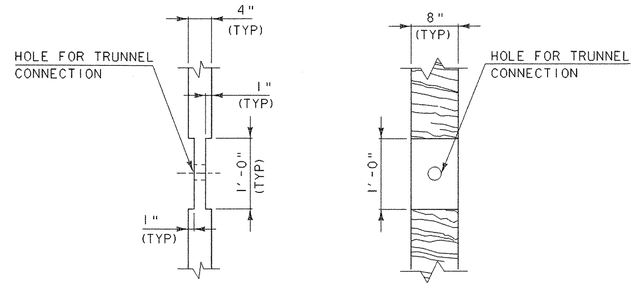
FILE NAME: Structures\s03j036abt.dgn
PROJECT LEADER: M.EVANS-MONGEON
DESIGNED BY: G. ROKES
IPARM: s03J036bt.d.i

PLOT DATE: 27-SEP-2006
DRAWN BY: G.ROKES
CHECKED BY: S. SCRIBNER
SHEET 29 OF 60



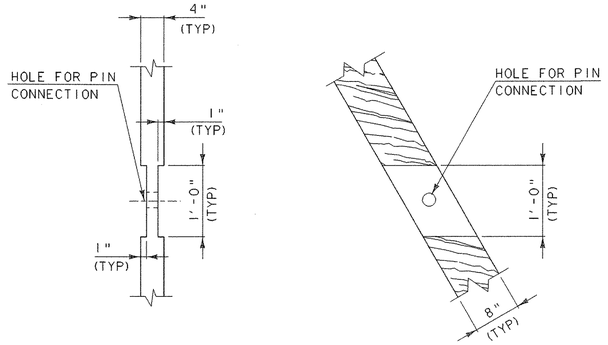
N. T. S

TYPICAL BRIDGE TRUSS CONFIGURATION ELEVATION VIEW



CROSS SECTION ELEVATION N. T. S

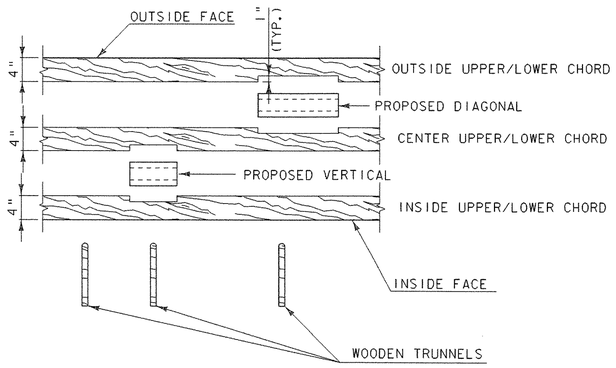
TYPICAL NOTCHING FOR PROPOSED VERTICAL MEMBERS



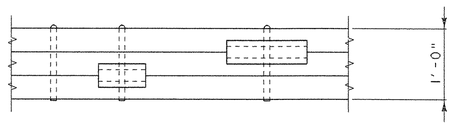
CROSS SECTION ELEVATION N. T. S

TYPICAL NOTCHING FOR PROPOSED DIAGONAL MEMBERS

UPPER/LOWER CHORD
EXPANDED
PLAN VIEW



UPPER/LOWER CHORD
ASSEMBLED AND PINNED
PLAN VIEW



N. T. S

UPPER/LOWER CHORD ASSEMBLY

NOTE:

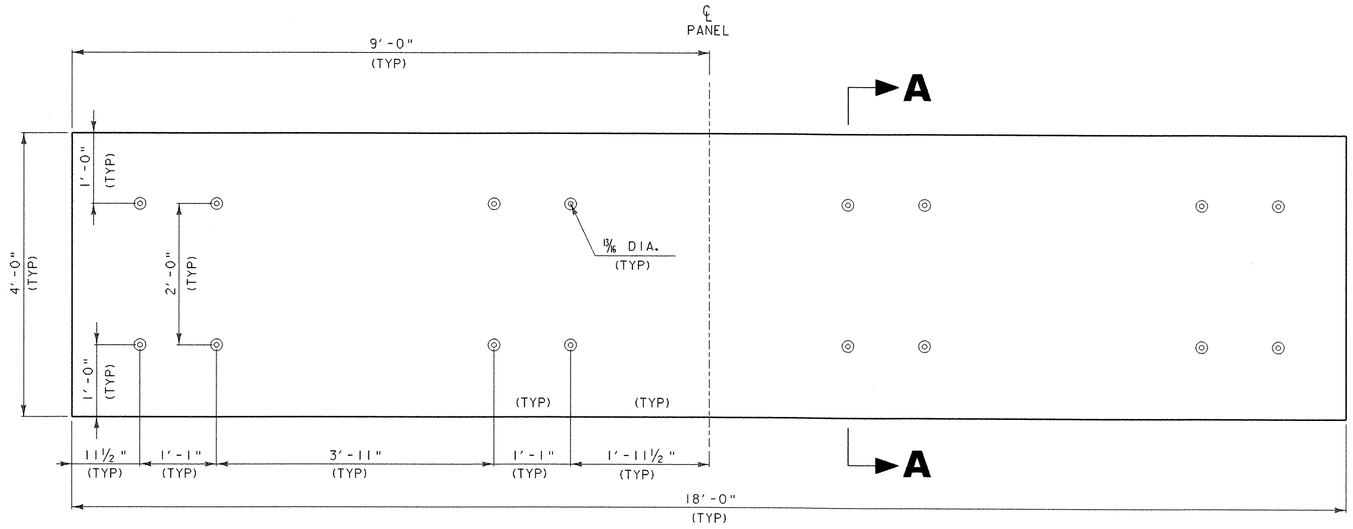
THE BURR ARCH ASSEMBLY IS SIMILAR TO THE UPPER AND LOWER CHORD. THE ASSEMBLY THROUGH THE ARCH VARIES IN MEASUREMENTS. TYPICAL NOTCHING FOR VERTICAL AND DIAGONAL THROUGH THE ARCH WAS NOT DETAILED. THESE SECTIONS WILL NEED TO BE FIT IN FIELD.

TIMBER TRUSS ASSEMBLY AND CONFIGURATION SHEET

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

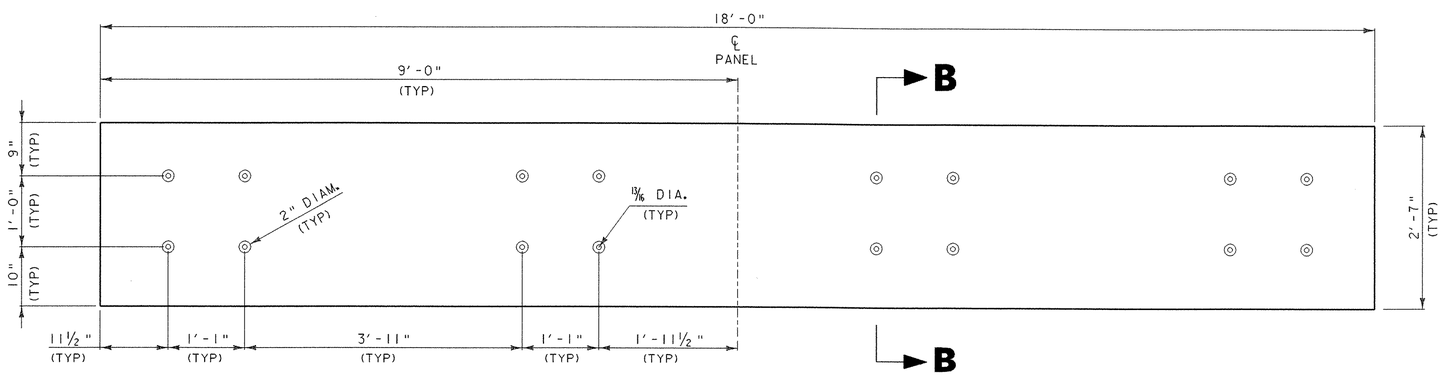
FILE NAME: Structures\s03J036abt.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G. ROKES	CHECKED BY: S. SCRIBNER
IPARM: s03J036btd.I	SHEET 29 OF 60

HOLE LOCATIONS INDICATED BELOW WILL BE VERIFIED AND ADJUSTED AS NECESSARY FOR A PROPER/ SECURE FIT TO EXISTING GIRDERS.
ALL HOLE LOCATIONS ARE TO BE DRILLED IN THE FIELD.
ONCE ALL DECK PANELS ARE SECURED TO GIRDERS RECESSED HOLES WILL BE FILLED WITH JOINT SEALER COLD POURED (ITEM 524.12) FLUSH TO TOP OF GLUE LAMINATED PANEL



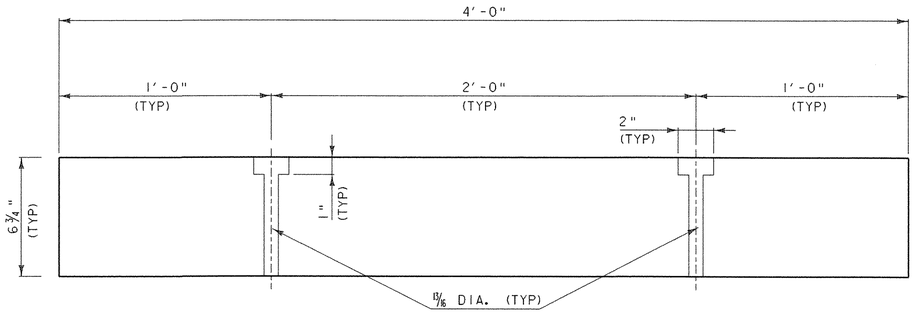
4' x 18' GLUE LAMINATED DECK DETAIL PLAN VIEW

SCALE 1"=1'



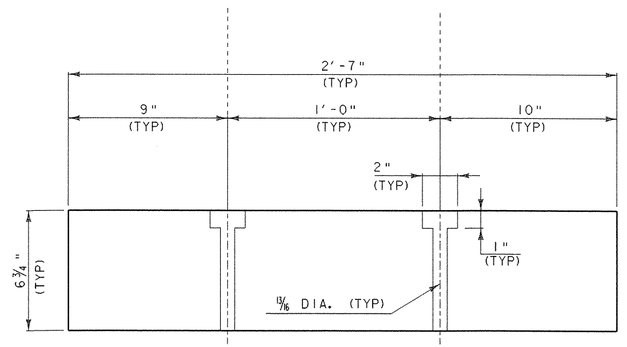
2'-7" x 18' GLUE LAMINATED DECK DETAIL PLAN VIEW

SCALE 1"=1'



SECTION A–A

SCALE ¼" = 1"

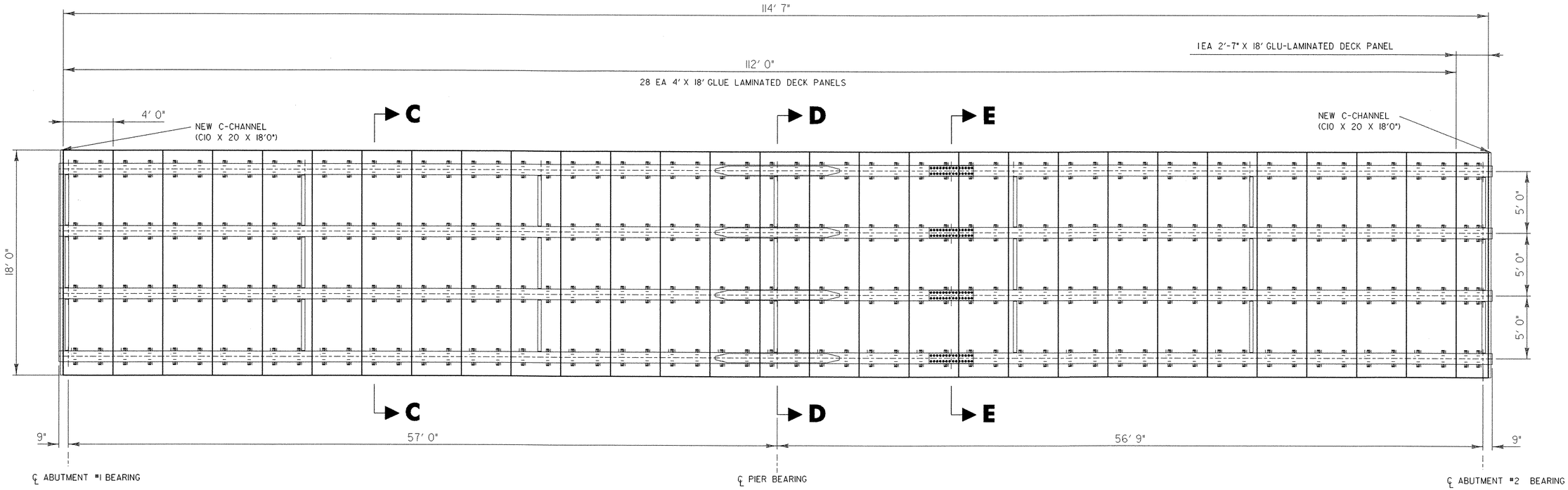


SECTION B–B

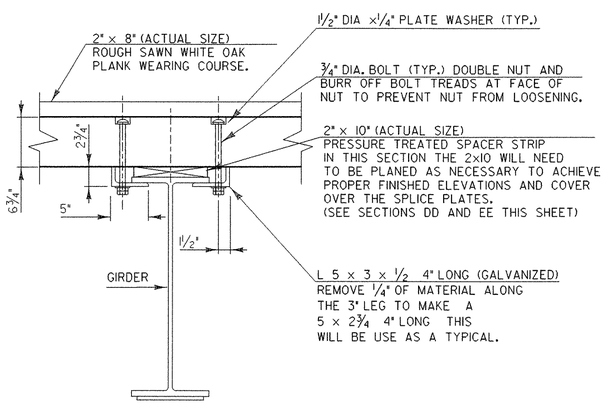
SCALE ¼" = 1"

GLUE LAMINATED DECK SECTION DETAILS

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)
FILE NAME: Structures\s03j036abt.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G. ROKES	CHECKED BY: S. SCRIBNER
IPARM: s03j036bld.i	SHEET 30 OF 60

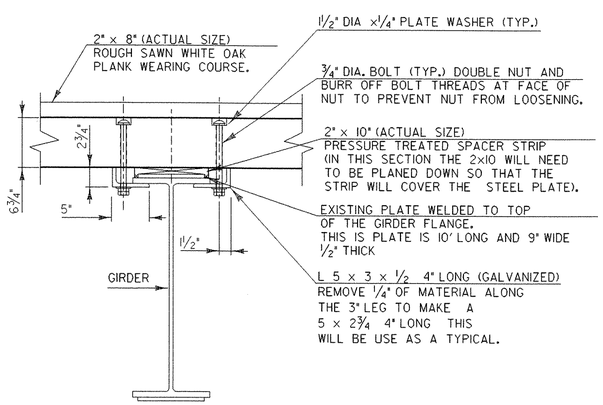


ALL HOLE LOCATIONS ARE TO BE DRILLED IN FIELD SCALE 1/4"=1'



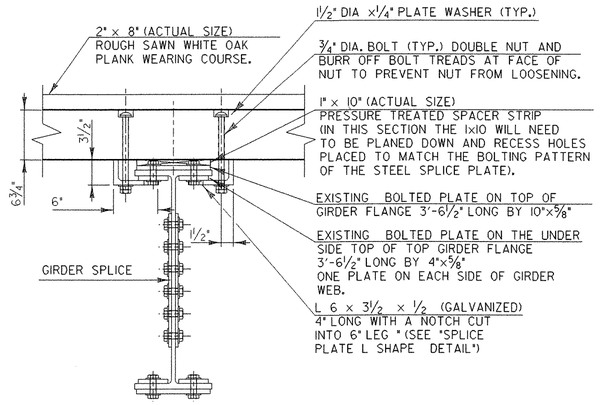
SECTION C–C

NTS



SECTION D–D

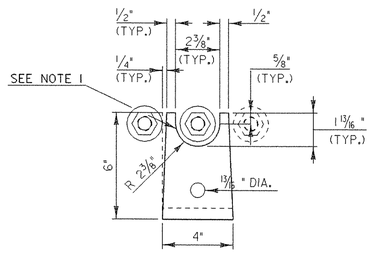
NTS



SECTION E–E

NTS

REVISED OCT. 24, 2006



NOTE 1: THE BOLT NOTCH LOCATIONS ARE ESTIMATED. THE ACTUAL BOLT NOTCHES WILL NEED TO BE FIT IN FIELD.

SPLICE PLATE L SHAPE DETAIL

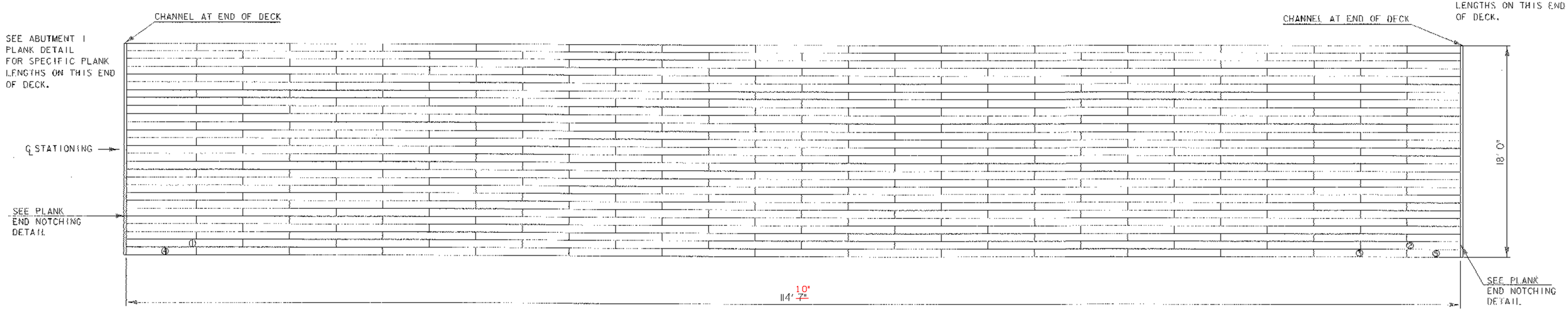
NTS

GLUE LAMINATED DECK LAYOUT SHEET

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

FILE NAME: Structures\s03j036abt.dgn
PROJECT LEADER: M.EVANS-MONGEON
DESIGNED BY: G. ROKES
IPARM: s03j036bdl.i

PLOT DATE: 24-OCT-2006
DRAWN BY: G.ROKES
CHECKED BY: S. SCRIBNER
SHEET 31 OF 60

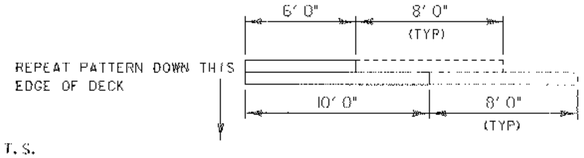


PLANK LAYOUT

SCALE 1/4"=1'

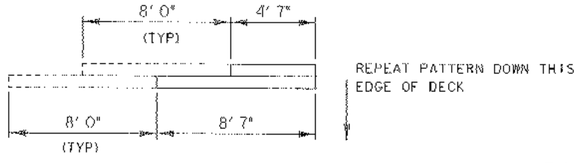
PLANK DESCRIPTION	
PLANK LOCATION	PLANK LENGTH
1	10'-0"
2	8'-7"
3	8'-0"
4	6'-0"
5	4'-7"

* PLANK LOCATIONS SHOWN ON PLANK LAYOUT DETAIL



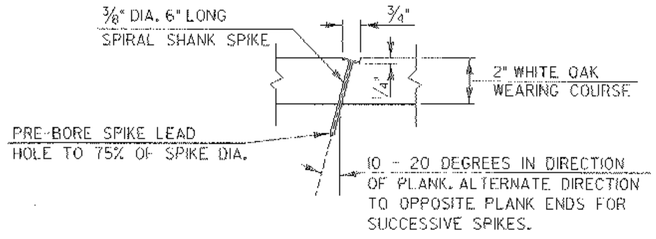
N. T. S.

ABUTMENT 1 PLANK DETAIL



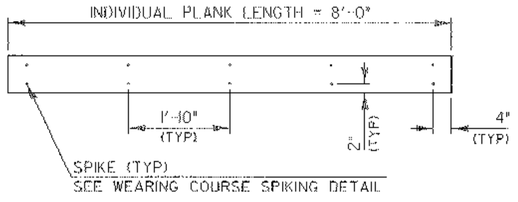
N. T. S.

ABUTMENT 2 PLANK DETAIL



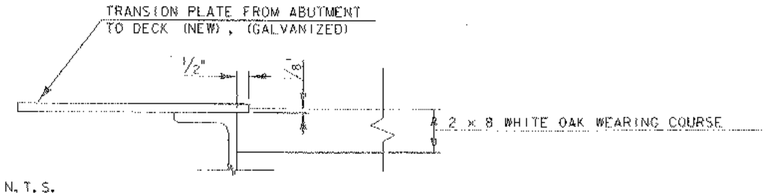
N. T. S.

WEARING COURSE SPIKING DETAIL



N. T. S.

DECK WEARING SURFACE SPIKE LAYOUT



N. T. S.

PLANK END NOTCHING DETAIL

GENERAL NOTE:

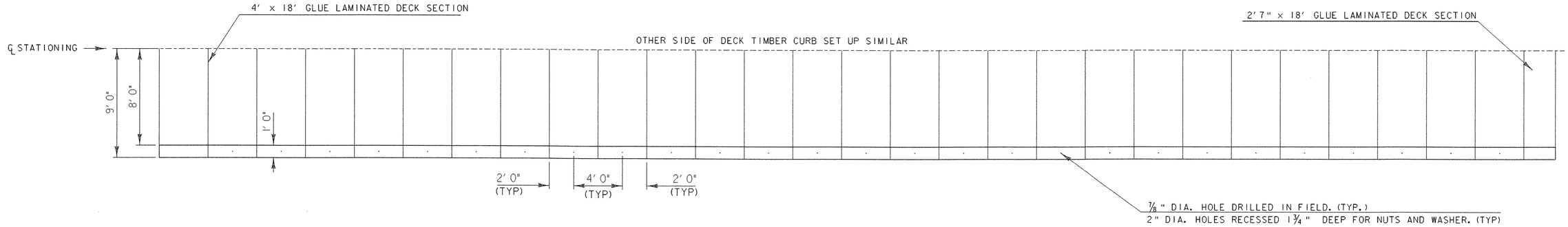
THE TERM PLANKING AND OR WEARING COURSE INDICATES THE USE OF 2 x 8 (ACTUAL DIMENSIONS) ROUGH SAWN WHITE OAK PLANKS.

PLANK WEARING COURSE LAYOUT

REVISED OCT. 24, 2006

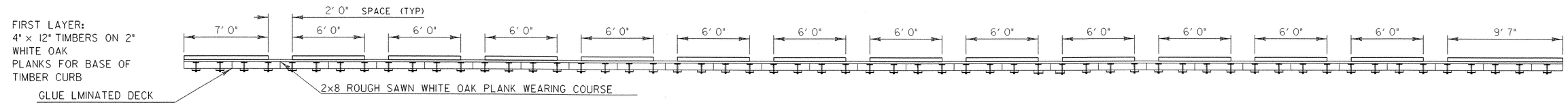
PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

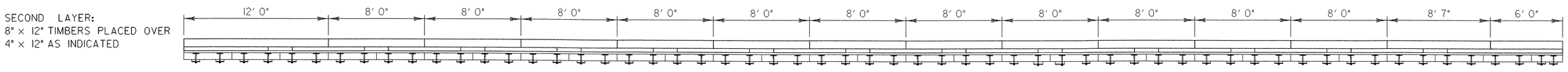
FILE NAME: Structures\s03J036abt.dgn
PROJECT LEADER: M.EVANS-MONGEON
DESIGNED BY: G. ROKES
IPARM: s03J036bpl.I
PLOT DATE: 24-OCT-2006
DRAWN BY: G.ROKES
CHECKED BY: S. SCRIBNER
SHEET 32 OF 60

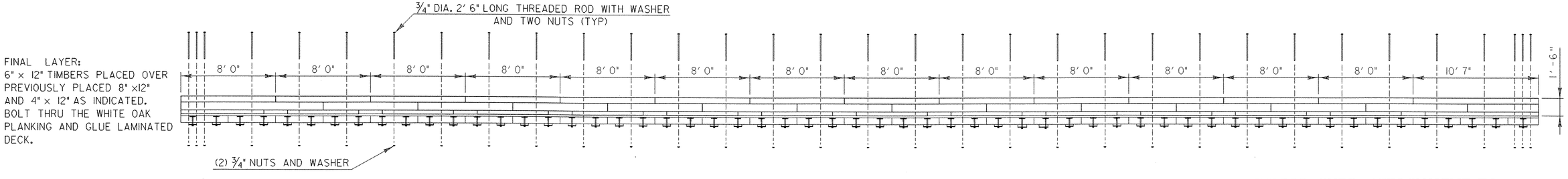


TIMBER CURB TO DECK PLACMENT PLAN VIEW

SCALE 1/4"=1'







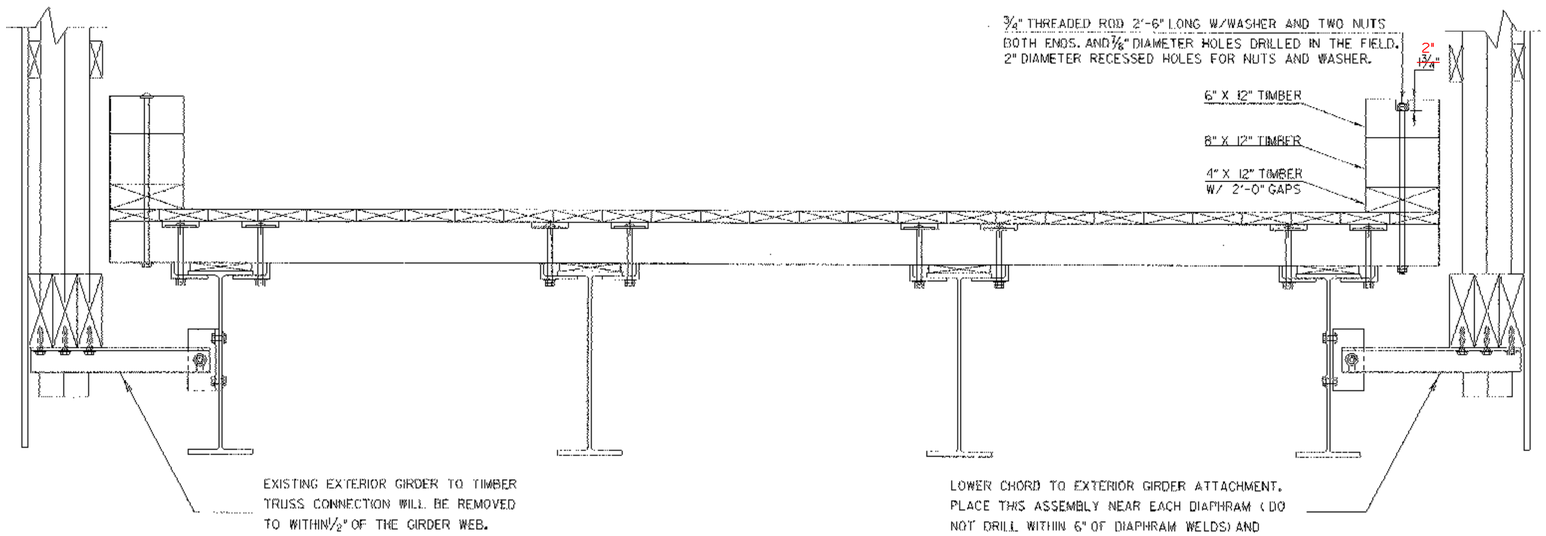
TIMBER CURB ASSEMBLY ELEVATION VIEW

SCALE 1/4"=1'

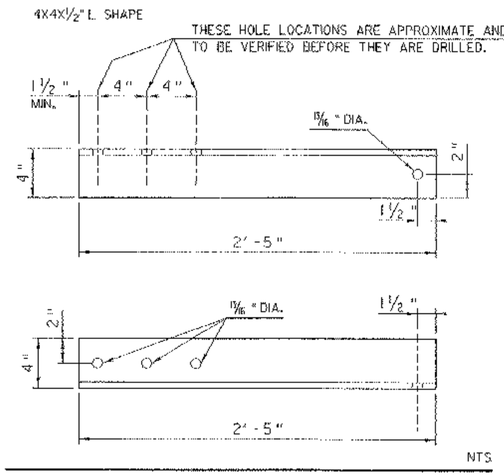
REVISED OCT. 24, 2006

TIMBER CURB ATTACHMENT TO DECK LAYOUT SHEET

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)
FILE NAME: Structures\s03j036abt.dgn	PLOT DATE: 24-OCT-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: S. SCRIBNER
IPARM: s03j036tra.i	SHEET 33 OF 60

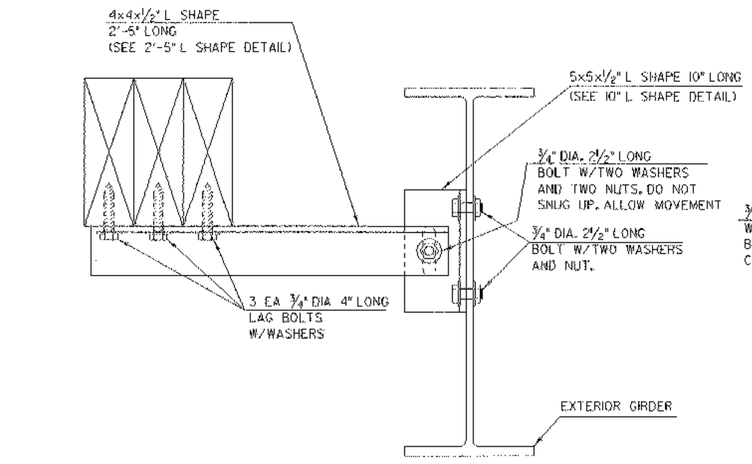


LOWER CHORD TO EXTERIOR GIRDER ATTACHMENT



NTS

2'–5" L SHAPE DETAIL

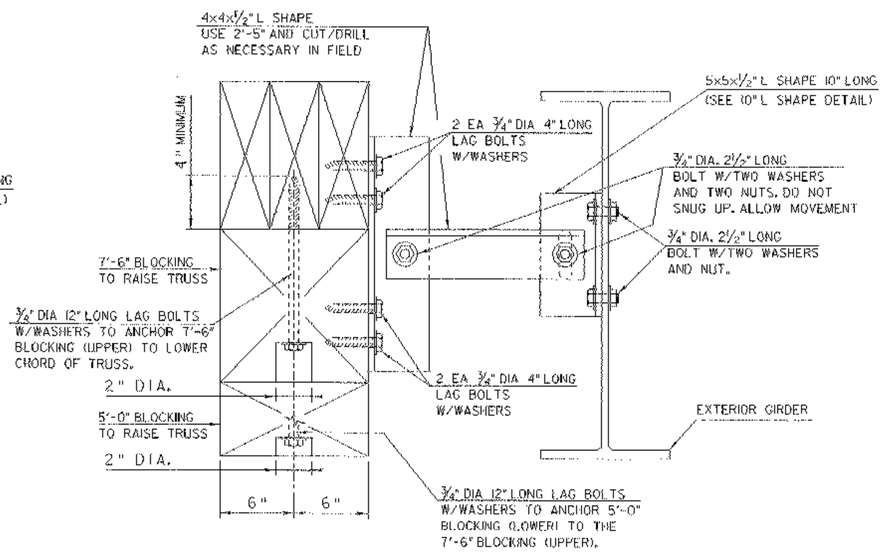


NOTE:
THREE PILOT HOLES ARE TO BE DRILLED INTO THE LOWER CHORD FOR LAG BOLT PLACMENT. THESE HOLES WILL BE 1/2" DIAMETER.

PAYMENT FOR THIS DETAIL IS INCIDENTAL TO PAY ITEM 506.60 STRUCTURAL STEEL.

NTS

LOWER CHORD ATTACHMENT DETAIL

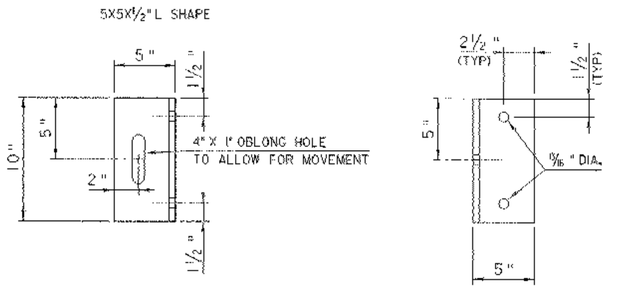


NOTE:
FOUR PILOT HOLES ARE TO BE DRILLED INTO THE LOWER CHORD FOR LAG BOLT PLACMENT. THESE HOLES WILL BE 1/2" DIAMETER.

PAYMENT FOR THIS DETAIL IS INCIDENTAL TO PAY ITEM 506.60 STRUCTURAL STEEL.

NTS

LOWER CHORD ATTACHMENT NEAR PIER BLOCKING DETAIL

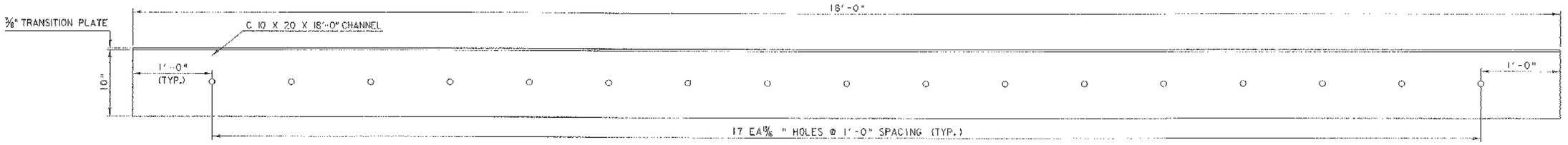


NTS

10" L SHAPE DETAIL

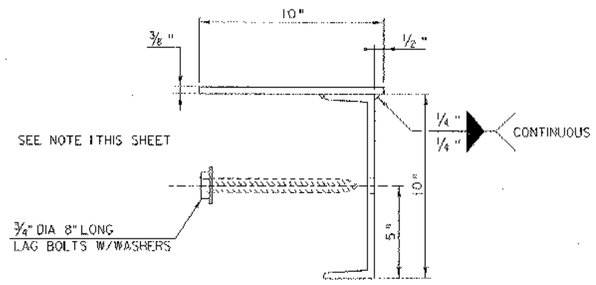
LOWER CHORD TO EXTERIOR GIRDER ATTACHMENT DETAILS

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)
FILE NAME: Structures\s031036abt.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: S. SCRIBNER
IPARM: s031036btg.i	SHEET 34 OF 60

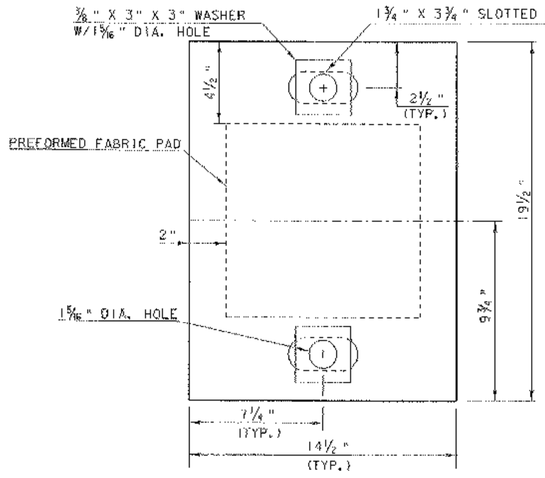


TRANSITION PLATE /CHANNEL HOLE LOCATIONS
SCALE 1/8" = 1"

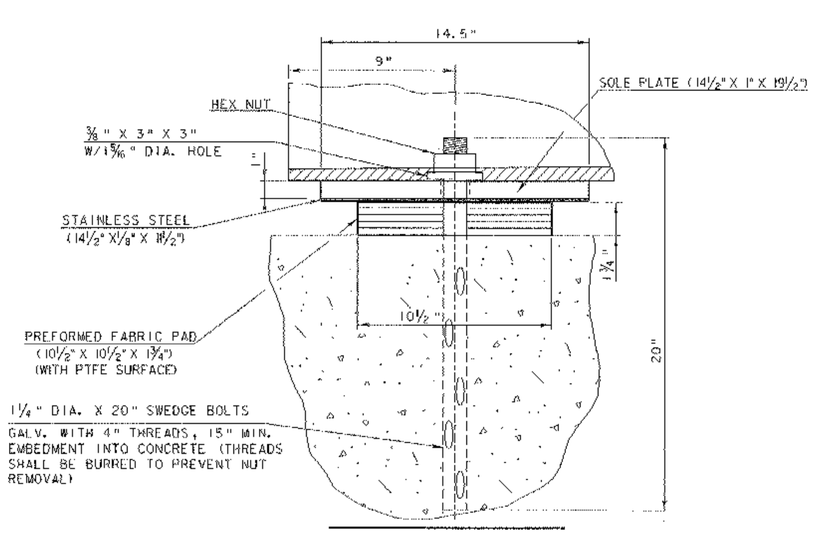
NOTE 1: TRANSITION PLATE WILL BE WELDED TO CHANNEL AS INDICATED IN DETAIL. 17 EA. 7/8" DIA. HOLES WILL BE DRILLED IN TO CHANNEL AS INDICATED. THIS WELDED AND DRILLED UNIT WILL BE GALVANIZED. 1/2" DIA. PILOT HOLES WILL BE DRILLED IN TO LAMINATED DECK FOR PROPER TRANSITION PLATE/CHANNEL CONNECTION. THE TRANSITION PLATE / CHANNEL WILL BE BOLTED TO THE DECK PANEL PRIOR TO ATTACHING THE DECK PANEL TO THE BEAMS. A GAP OF 1/4" BETWEEN THE LIP OF THE CONCRETE IN THE BACK WALL AND THE TRANSITION PLATE / CHANNEL IS EXPECTED AT 75 DEGREES FAHRENHEIT.



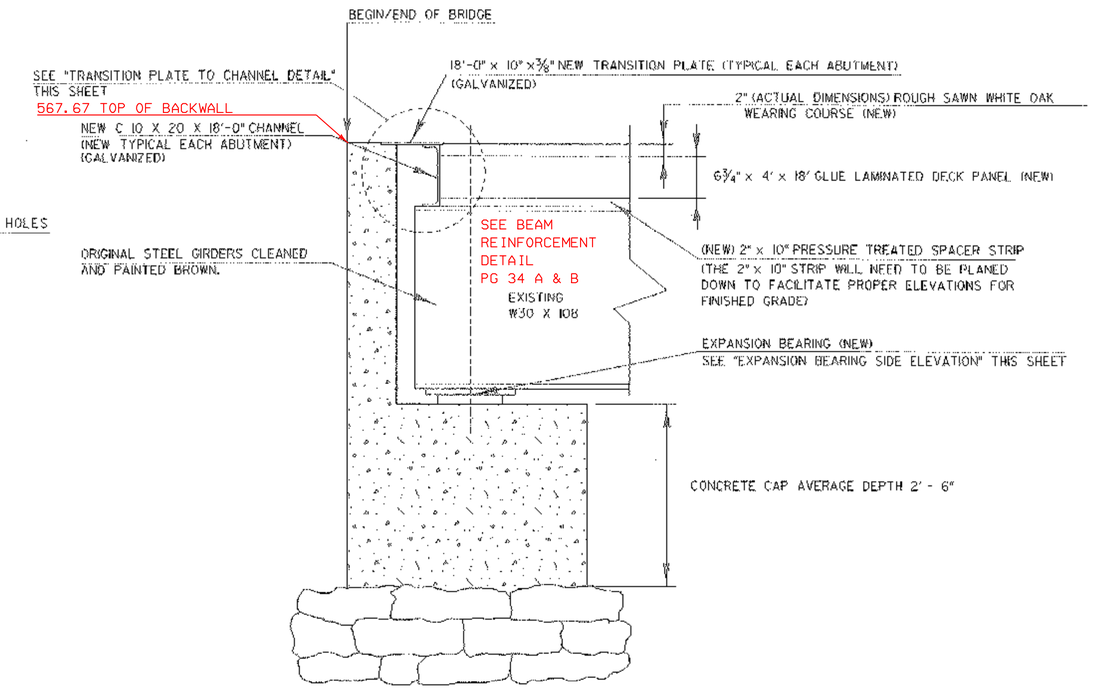
TRANSITION PLATE TO CHANNEL DETAIL
SCALE 1/4" = 1"



SOLE PLATE DETAIL
SCALE 1/4" = 1"



EXPANSION BEARING SIDE ELEVATION
SCALE 1/4" = 1"

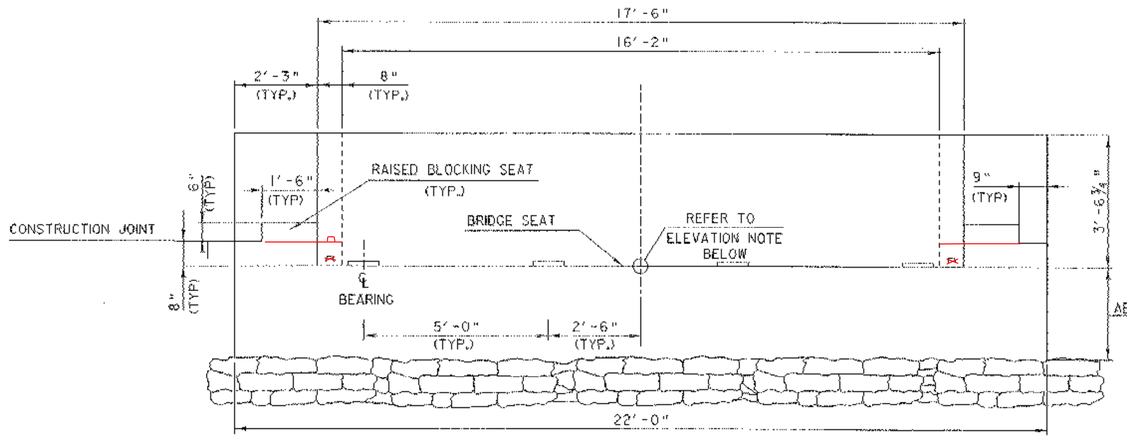


ABUTMENT 1 TYPICAL
SCALE 1" = 1'

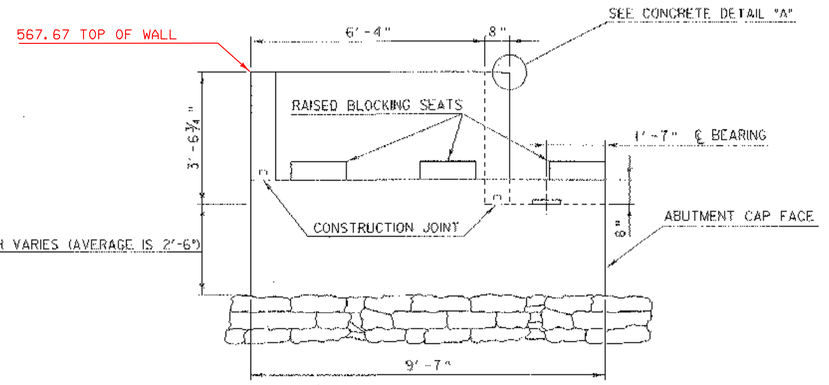
REVISED OCT. 24, 2006

ABUTMENT 1 TYPICAL

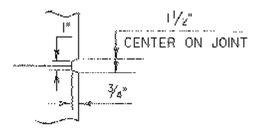
PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)
FILE NAME: Structures\s03J036abt.dgn	PLOT DATE: 24-OCT-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G.ROKES	CHECKED BY: S.SCRIBNER
IPARM: s03J036brg.i	SHEET 35 OF 60



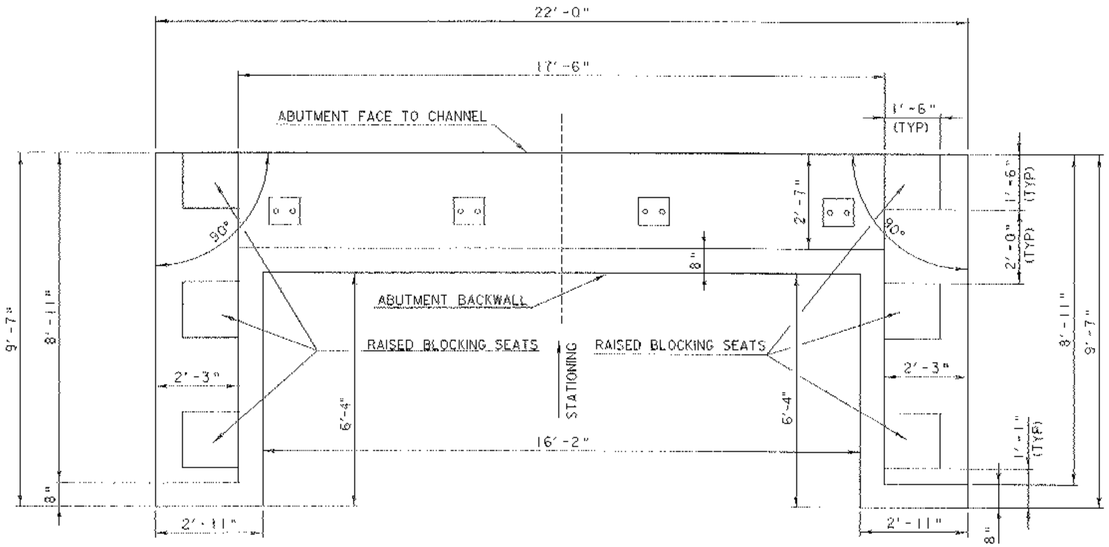
ABUTMENT#1 FRONT ELEVATION VIEW



ABUTMENT #1 SIDE ELEVATION VIEW



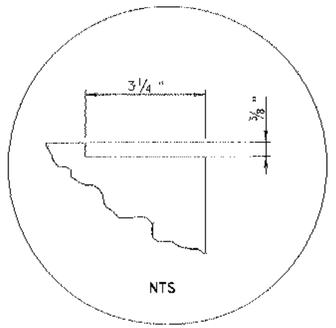
SCORE MARK DETAIL



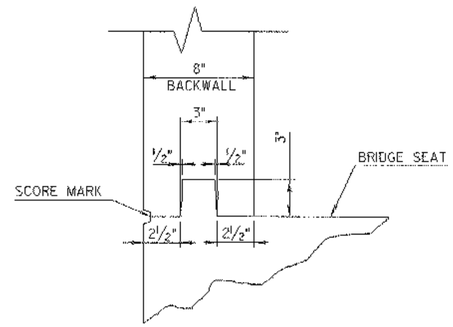
ABUTMENT #1 PLAN VIEW

SCALE ½" = 1'-0

ELEVATION NOTE: PROPOSED BRIDGE SEAT ELEVATION WILL BE SET 7/16" BELOW THE EXISTING BRIDGE SEAT ELEVATION. EXISTING BRIDGE SEAT ELEVATION TO BE MEASURED IN THE FIELD.



CONCRETE DETAIL "A"



CONCRETE CONSTRUCTION JOINT

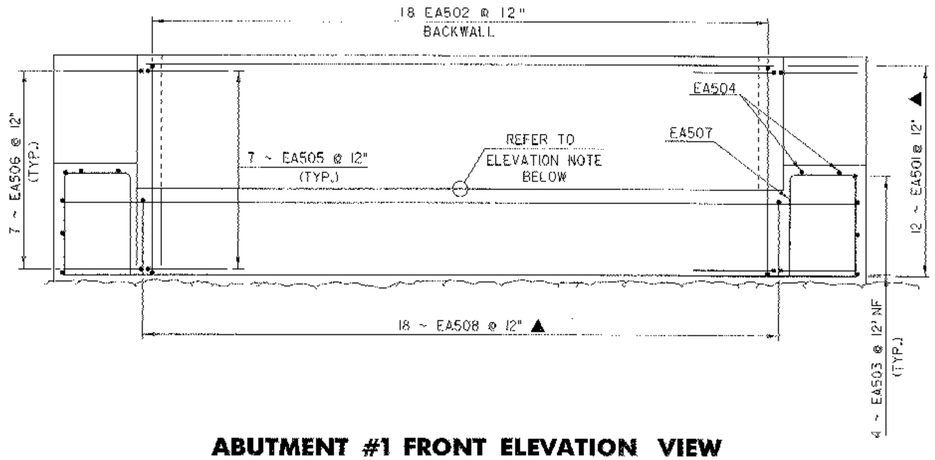
NTS

* NOTE: ALL DIMENSIONS TO BE VERIFIED BY THE CONTRACTOR

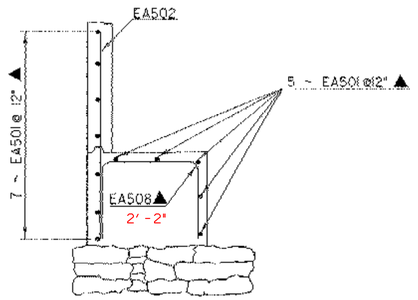
ABUTMENT CAP #1 DETAIL SHEET

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

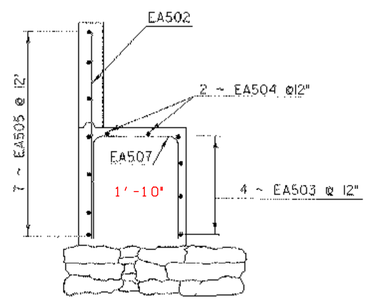
FILE NAME: Structures\s031036abt.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G.ROKES	CHECKED BY: S.SCRIBNER
PARM: s031036db.I	SHEET 36 OF 60



ABUTMENT #1 FRONT ELEVATION VIEW

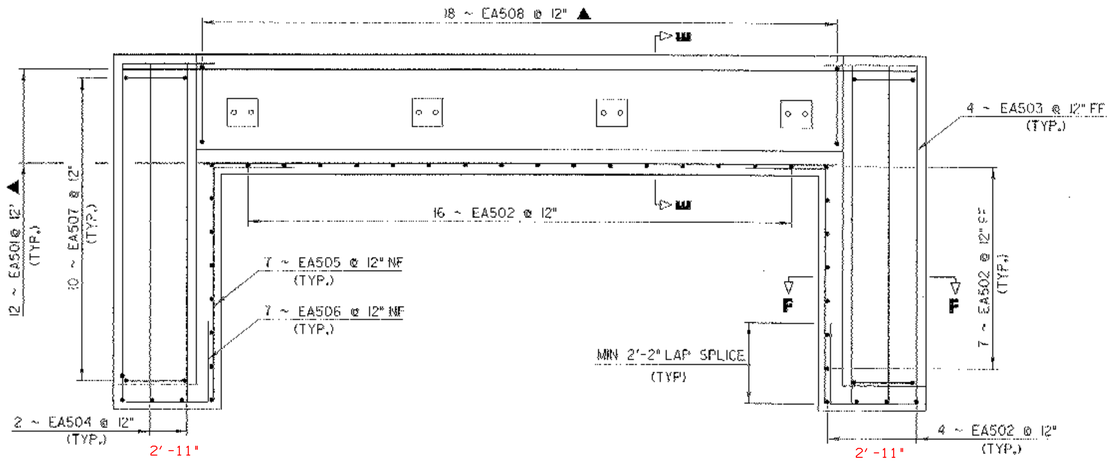


E-E SECTION



F-F SECTION

ELEVATION NOTE: PROPOSED BRIDGE SEAT ELEVATION WILL BE SET 1/16" BELOW THE EXISTING BRIDGE SEAT ELEVATION. EXISTING BRIDGE SEAT ELEVATION TO BE MEASURED IN THE FIELD.



ABUTMENT #1 PLAN VIEW

SCALE 1/2" = 1'-0

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = A CUT TO FIT IN THE FIELD. EPOXY COATED STEEL MUST BE PROPERLY SEALED AFTER THE CUT. REFER TO SPEC. 507.04
3 INCHES CLEAR UNLESS OTHERWISE SPECIFIED ON THE PLANS

ABUTMENT CAP #1 REBAR LAYOUT SHEET

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

FILE NAME: Structures\s03J036abt.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: S. SCRIBNER
IPARM: s03J036or1.i	SHEET 37 OF 60

STATE OF VERMONT
AGENCY OF TRANSPORTATION

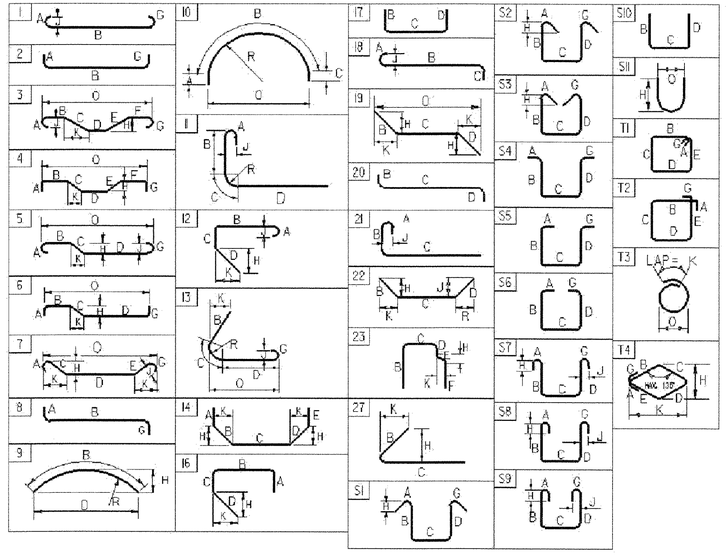
REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
ABUTMENT #1																	
▲	12	5	21'- 6"	EA501	STR												
*	39	5	5'- 9"	EA502	STR												
	4	5	9'- 10"	EA504	STR												
	8	5	11'- 4"	EA503	20		2'- 2"	9'- 2"	---								
	14	5	8'- 11"	EA505	20		2'- 2"	6'- 9"	---								
	8	5	4'- 8"	EA506	20		2'- 2"	2'- 6"	---								
	20	5	7'- 8"	EA507	S10		2'- 11"	1'- 10"	2'- 11"								
▲	18	5	6'- 8"	EA508	S10		2'- 3"	2'- 2"	2'- 3"								

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O

~ 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 M31 (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

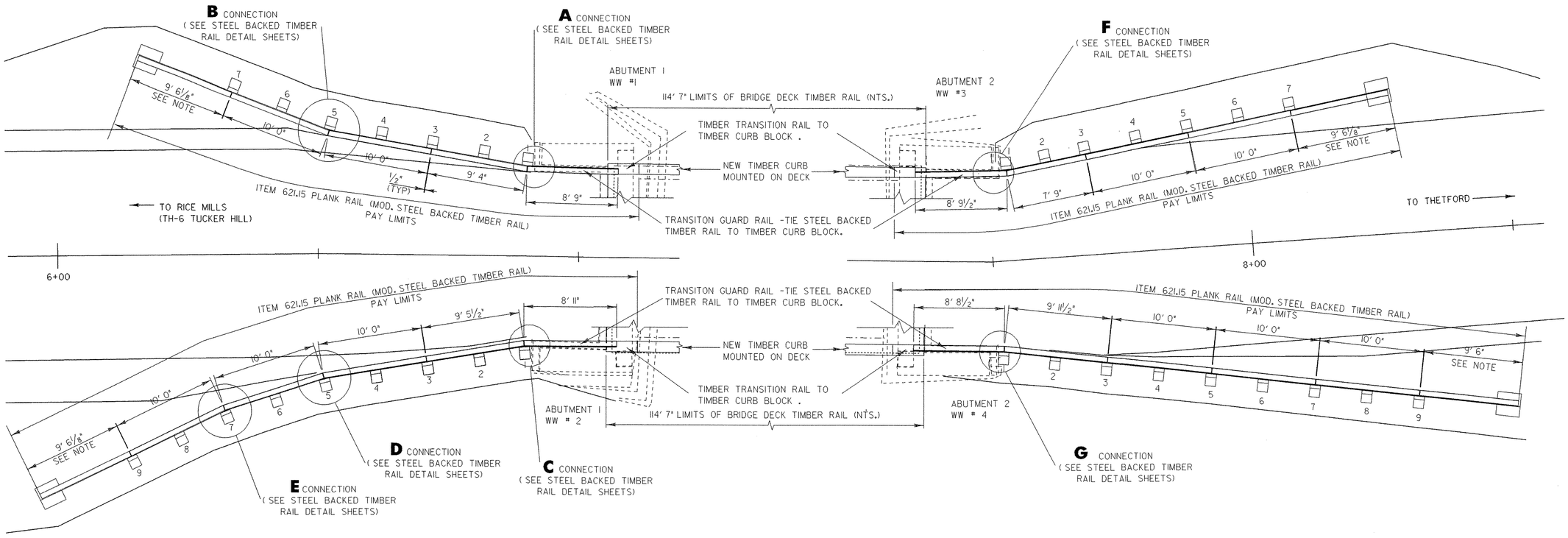
ALL STEEL DETAILED ON THIS SHEET TO BE EPOXY COATED

REINFORCING STEEL SCHEDULE

PROJECT NAME: THETFORD BHO 1444 (43)
PROJECT NUMBER: 03J036

FILE NAME: **REBAR.XLS**
PROJECT MANAGER: **M. EVANS-MONGEON**
DESIGNED BY: **S. SCRIBNER**
REINFORCING STEEL SCHEDULE SHEET #1

PLOT DATE: **10/12/2005**
DRAWN BY: **G. ROKES**
CHECKED BY: **S. SCRIBNER**
SHEET 38 OF 60



STEEL BACKED TIMBER RAIL POST SPACING (MEASURMENTS ARE TO CENTER OF POST)

		ABUTMENT 1		ABUTMENT 2	
	POST	WW# 1	WW#2	WW#3	WW#4
	1	STA. 6+45.07 LT 9.41	STA. 6+44.91 RT 9.48	STA. 7+76.88 LT 9.45	STA. 7+75.33 RT 9.39
	2	STA. 6+40.89 LT 10.12	STA. 6+40.62 RT 10.14	STA. 7+80.60 LT 9.98	STA. 7+80.17 RT 10.17
	3	STA. 6+35.94 LT 10.95	STA. 6+35.68 RT 10.98	STA. 7+84.47 LT 10.45	STA. 7+85.13 RT 11.15
	4	STA. 6+31.05 LT 11.75	STA. 6+30.73 RT 11.81	STA. 7+89.45 LT 11.11	STA. 7+90.07 RT 12.04
	5	STA. 6+26.17 LT 12.62	STA. 6+25.91 RT 12.67	STA. 7+94.42 LT 11.77	STA. 7+95.02 RT 12.90
	6	STA. 6+21.84 LT 14.35	STA. 6+20.95 RT 41.13	STA. 7+99.39 LT 12.47	STA. 7+99.97 RT 13.78
	7	STA. 6+17.17 LT 16.20	STA. 6+16.22 RT 15.65	STA. 8+04.36 LT 13.17	STA. 8+04.91 RT 14.65
	8		STA. 6+11.81 RT 17.72		STA. 8+09.85 RT 15.54
	9		STA. 6+07.28 RT 19.87		STA. 8+14.80 RT 16.41
	10				
	11				
GUARD RAIL END ANCHOR		STA. 6+08.90 LT 18.66	STA. 5+99.20 RT 22.89	STA. 8+12.98 LT 13.62	STA. 8+23.28 RT 17.16

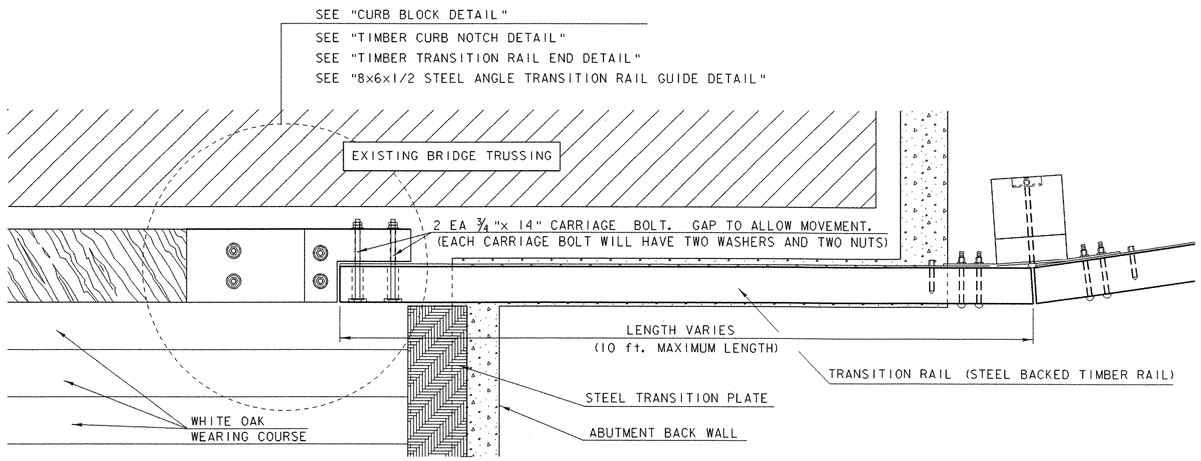
NOTE: THIS IS A TERMINAL END THAT TRANSITIONS INTO THE GROUND. THE LENGTH SHOWN IS A PLAN VIEW MEASUREMENT. FOR THE ACTUAL TIMBER LENGTH SEE THE "ELEVATION VIEW ON SHEET 44.

SCALE 1" = 5'-0"

STEEL BACKED TIMBER RAIL POST PLACEMENT SHEET

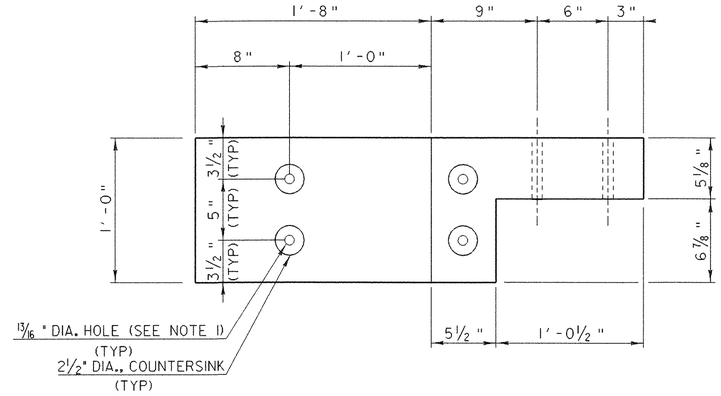
PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

FILE NAME: Structures\s03j036abt.dgn
PROJECT LEADER: M.EVANS-MONGEON
DESIGNED BY: G.ROKES
IPARM: s03j036apr.i
PLOT DATE: 27-SEP-2006
DRAWN BY: G.ROKES
CHECKED BY: S.SCRIBNER
SHEET 39 OF 60



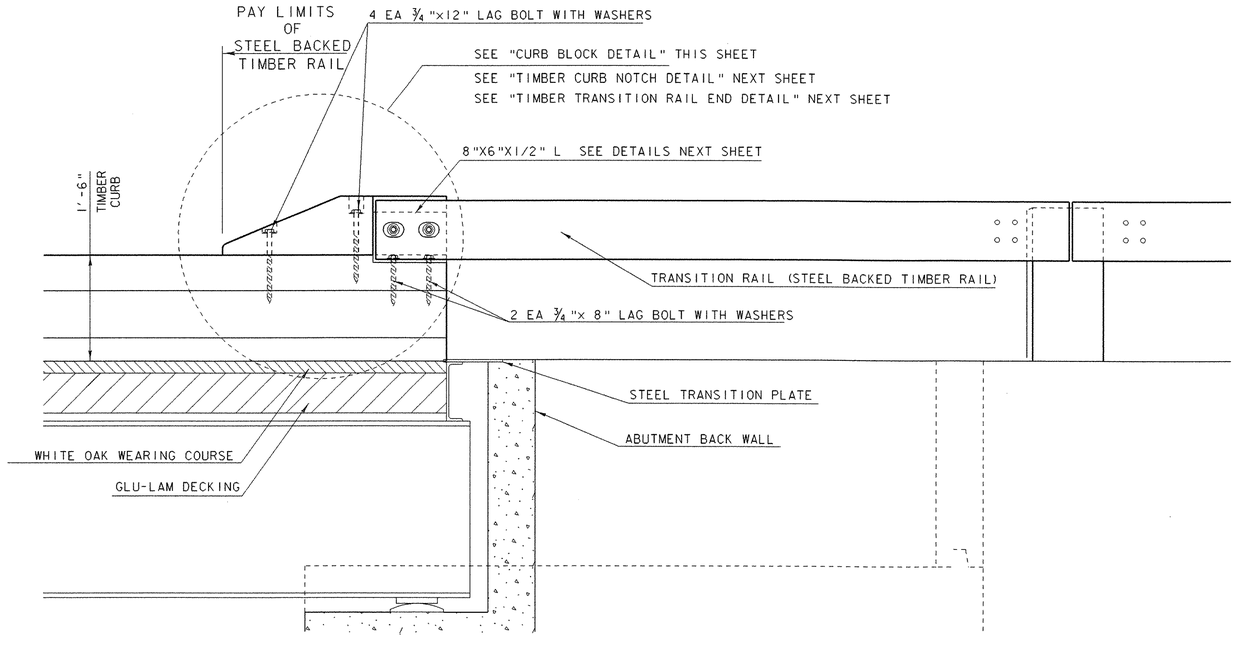
TRANSITION RAIL TO DECK CURB PLAN VIEW

SCALE 1"=1'



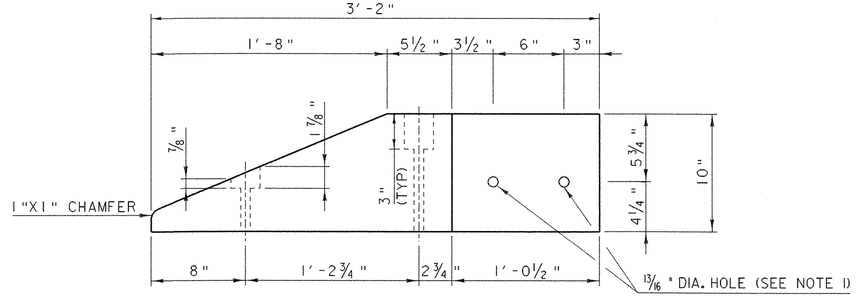
CURB BLOCK PLAN DETAIL

SCALE 2"= 1'-0"



TRANSITION RAIL TO DECK CURB ELEVATION VIEW

SCALE 1"=1'



CURB BLOCK ELEVATION DETAIL

SCALE 2" =1'-0"

CURB BLOCK DETAILS

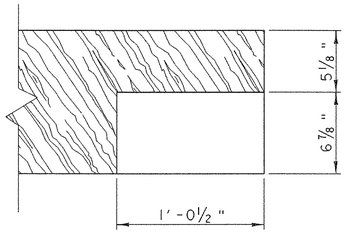
NOTE:
PILOT HOLES ARE TO BE DRILLED INTO THE TIMBER CURB FOR ATTACHMENT OF THE CURB BLOCK AND 8"X6"X1/2" L SHAPE. THESE PILOT HOLES WILL BE 1/2" DIAMETER HOLES.

NOTE 1:
ALL INDICATED DRILLED HOLE DIAMETERS OF 3/4" WILL BE 13/16", UNLESS OTHERWISE NOTED.

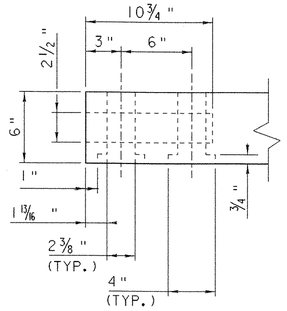
REVISED OCT. 24, 2006

STEEL BACKED TIMBER TRANSITION RAIL TO TIMBER BRIDGE CURB

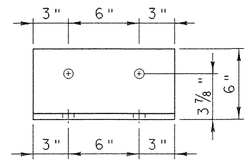
PROJECT NAME: THETFORD	
PROJECT NUMBER: BHO 1444 (43)	
FILE NAME: Structures\s03J036abt.dgn	PLOT DATE: 24-OCT-2006
PROJECT LEADER: M. EVANS-MONGEON	DRAWN BY: G. ROKES
DESIGNED BY: G. ROKES	CHECKED BY: S. SCRIBNER
IPARM: s03J036gblk1.1	SHEET 40 OF 60



TIMBER CURB NOTCH PLAN VIEW



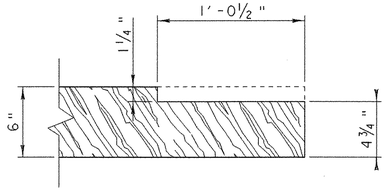
TIMBER TRANSITION RAIL END PLAN VIEW



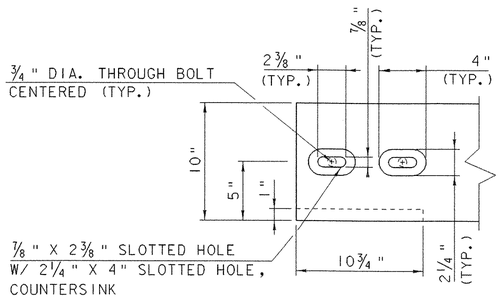
8x6x1/2 STEEL ANGLE TRANSITION RAIL GUIDE PLAN VIEW

NOTE:
PILOT HOLES ARE TO BE DRILLED INTO THE TIMBER CURB FOR ATTACHMENT OF THE CURB BLOCK AND 8"X6"X1/2" L SHAPE. THESE PILOT HOLES WILL BE 1/2 " DIAMETER.

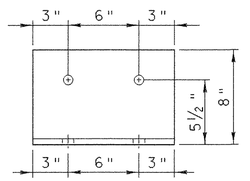
NOTE 1:
ALL INDICATED DRILLED HOLE DIAMETERS WILL BE 13/16 ", UNLESS OTHERWISE NOTED.



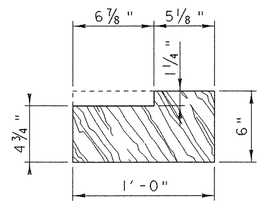
TIMBER CURB NOTCH ELEVATION VIEW



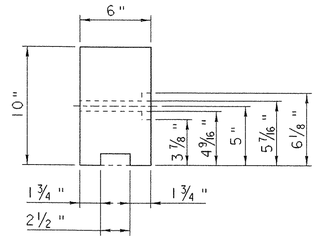
TIMBER TRANSITION RAIL END ELEVATION VIEW



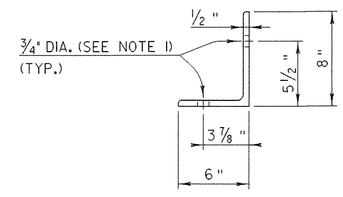
8x6x1/2 STEEL ANGLE TRANSITION RAIL GUIDE ELEVATION VIEW



TIMBER CURB NOTCH END VIEW



TIMBER TRANSITION RAIL END END VIEW



8x6x1/2 STEEL ANGLE TRANSITION RAIL GUIDE END VIEW

TIMBER CURB NOTCH DETAILS

TIMBER TRANSITION RAIL END DETAILS

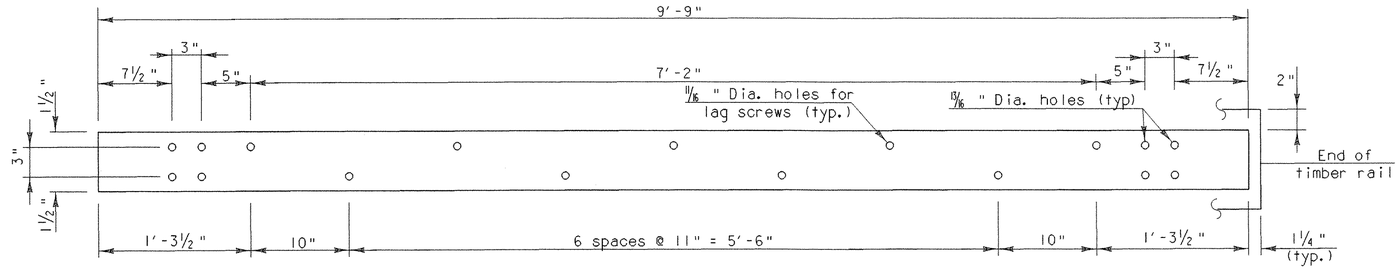
8x6x1/2 STEEL ANGLE TRANSITION RAIL GUIDE DETAILS

ALL DETAILS ON THIS SHEET ARE NOT TO SCALE

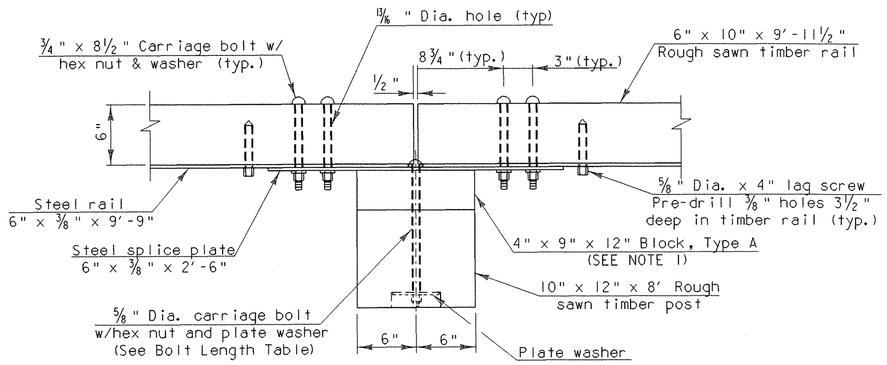
STEEL BACKED TIMBER TRANSITION RAIL TO TIMBER BRIDGE CURB DETAILS

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

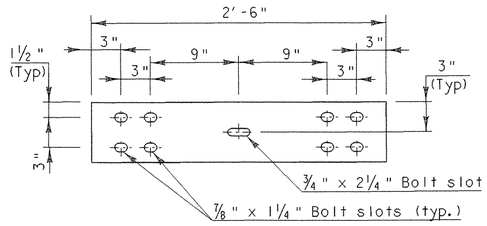
FILE NAME: Structures\s03j036abt.dgn
PROJECT LEADER: M. EVANS-MONGEON
DESIGNED BY: G. ROKES
IPARM: s03j036gblk2.i
PLOT DATE: 27-SEP-2006
DRAWN BY: G. ROKES
CHECKED BY: S. SCRIBNER
SHEET 41 OF 60



STEEL RAIL DETAIL
6" x ⅜" x 9'-9"



POST CONNECTION PLAN 180°



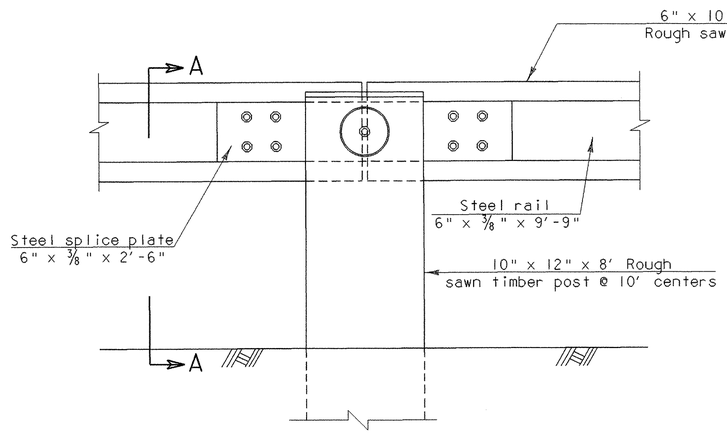
STEEL SPLICE PLATE DETAIL
6" x ⅜" x 2'-6"

STEEL BACKED TIMBER GUARDRAIL NOTES:

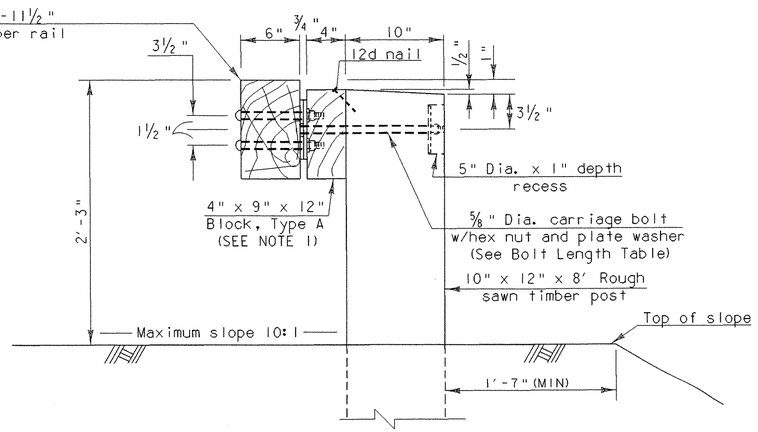
1. RAILING SHALL BE THE TYPE A BLOCK-OUT SYSTEM
2. THE STEEL BACKED TIMBER GUARDRAIL SHALL BE PAID FOR UNDER THE ITEM 621.15 "PLANK RAIL" (MOD.- STEEL BACKED TIMBER RAIL). THE QUANTITY MEASURED FOR PAYMENT SHALL BE ALONG THE FACE OF THE RAIL INCLUDING TERMINAL SECTIONS. THE POST SPACING SHALL BE AS SHOWN ON SHEET 39.
3. THE POSTS AND THE TIMBER RAIL ELEMENTS SHALL CONFORM TO VAOT STANDARD SPECIFICATIONS SECTION 728.01 AND 728.02. IN ADDITION ALL TIMBER USED IN THE RAIL SHALL HAVE A MINIMUM ALLOWABLE BENDING STRESS OF 1450 PSI.
4. THE STEEL RAILS AND SPLICE PLATES SHALL CONFORM TO AASHTO M 222M/M 222 (WEATHERING STEEL).
5. ALL BOLTS AND LAG SCREWS SHALL CONFORM TO ASTM A 307 GR. A. ALL WASHERS SHALL CONFORM TO ASTM F 844. ALL NUTS SHALL CONFORM TO ASTM A 563. ALL FASTENER HARDWARE SHALL BE GALVANIZED ACCORDING TO AASHTO M232.
6. IF AN IMPENETRABLE HOLE IS ENCOUNTERED WHILE PLACING POSTS, ENLARGE THE HOLE TO PROVIDE NOT LESS THAN 6 INCHES CLEARANCE ON ALL SIDES, AND TO A MINIMUM DEPTH OF 2'-6". SET THE POST IN CONCRETE TO WITHIN 6 INCHES OF THE TOP OF THE HOLE. BACKFILL AND COMPACT THE REMAINING 6 INCHES WITH AN ACCEPTABLE MATERIAL.
7. DRIVE POSTS INTO PILOT HOLES THAT ARE PUNCHED OR DRILLED. THE DIMENSIONS OF THE PILOT HOLE SHALL NOT EXCEED THE DIMENSIONS OF THE POST BY MORE THAN 1 INCH. SET THE POSTS PLUMB, BACKFILL AND COMPACT.
8. FIELD CUT TIMBER RAILS TO PRODUCE A CLOSE FIT AT ALL JOINTS. TREAT FIELD CUTS WITH 2 COATS OF CHROMATED COPPER ARSENATE.
9. WHERE CONCRETE ANCHORS ARE INSTALLED IN THE TERMINAL SECTIONS, DO NOT CONNECT THE GUARDRAIL TO THE CAST IN PLACE ANCHORS UNTIL THE CONCRETE HAS CURED 7 DAYS.

Type A (Block-out)	Type B (No Block-out)
1'-3"	11"

BOLT LENGTHS
FOR RAIL/POST CONNECTION



POST CONNECTION ELEVATION



SECTION A-A

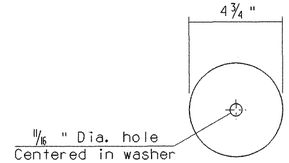


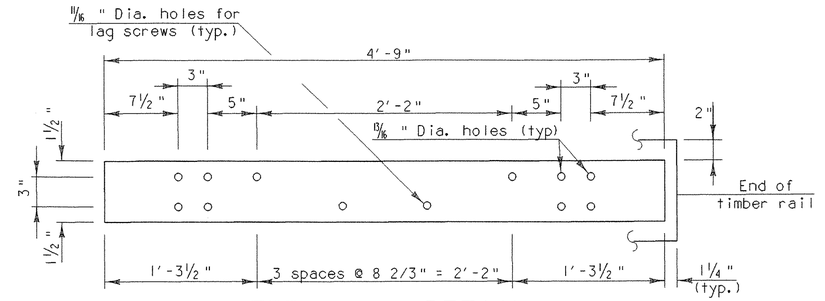
PLATE WASHER DETAIL
4¾" Dia. x ¼"

ALL DETAILS ON THIS SHEET ARE NTS

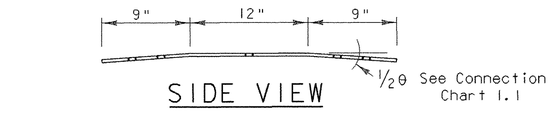
STEEL BACKED TIMBER RAIL STRAIGHT SPLICE PLATE DETAILS

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

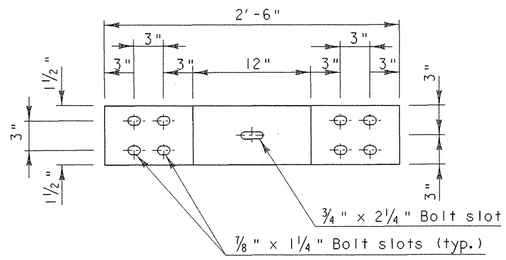
FILE NAME: Structures\s03j036abt.dgn
PROJECT LEADER: M. EVANS-MONGEON
DESIGNED BY: M. EVANS-MONGEON
IPARM: s03j036tr.i
PLOT DATE: 27-SEP-2006
DRAWN BY: G. ROKES
CHECKED BY: S. SCRIBNER
SHEET 42 OF 60



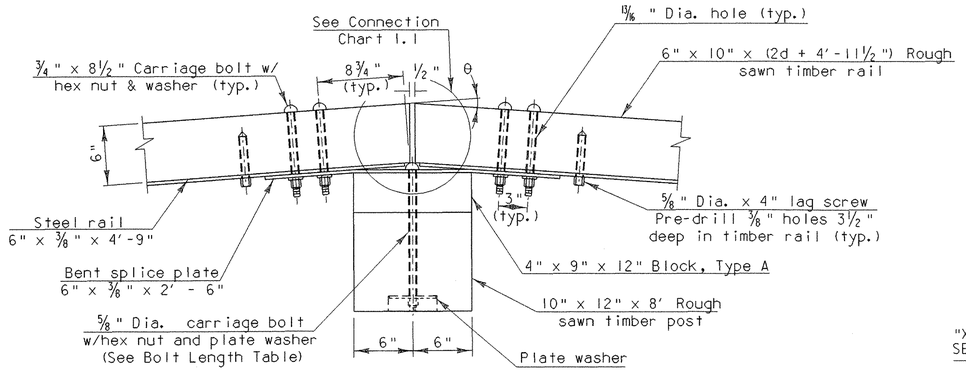
STEEL RAIL DETAIL
6" x ⅜" x 4'-9"



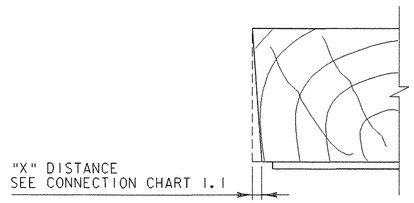
SIDE VIEW



BENT SPLICE PLATE DETAIL
6" x ⅜" x 2'-6"



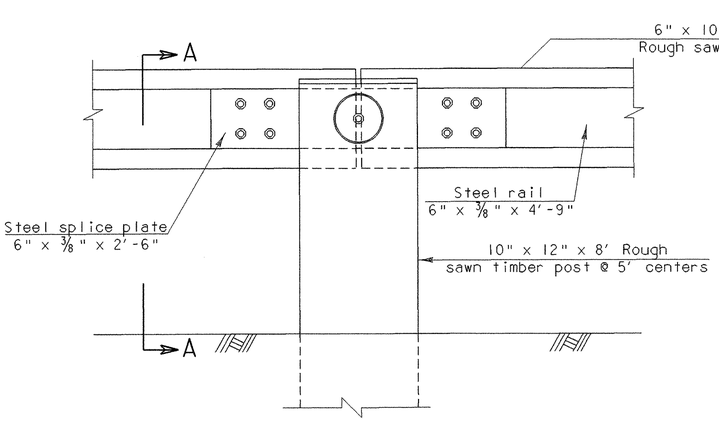
POST CONNECTION PLAN A-G



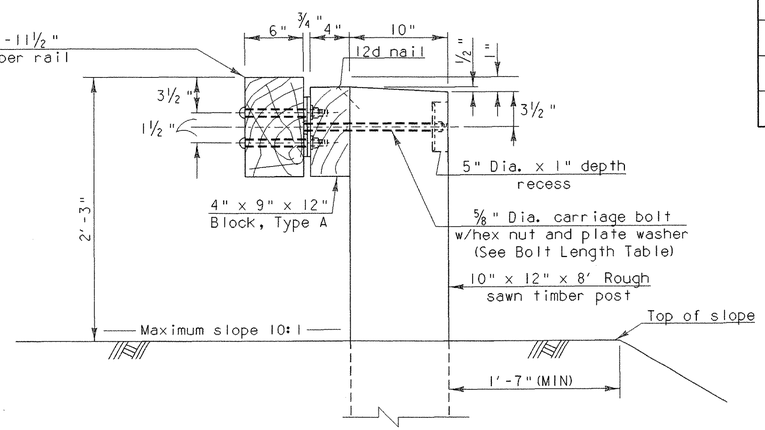
CUTS ON TIMBER RAIL ENDS AT ANGLED CONNECTIONS

CONNECTION LOCATION / TYPE	ø	½ø	"X" DISTANCE
A	8.7°	4.35°	½"
B	11.0°	5.5°	⅝"
C	9.0°	4.50°	½"
D	9.0°	4.5°	½"
E	8.0°	4.0°	⅜"
F	10.6°	5.3°	⅝"
G	5.0°	2.5°	¼"

CONNECTION CHART 1.1



POST CONNECTION ELEVATION



SECTION A-A

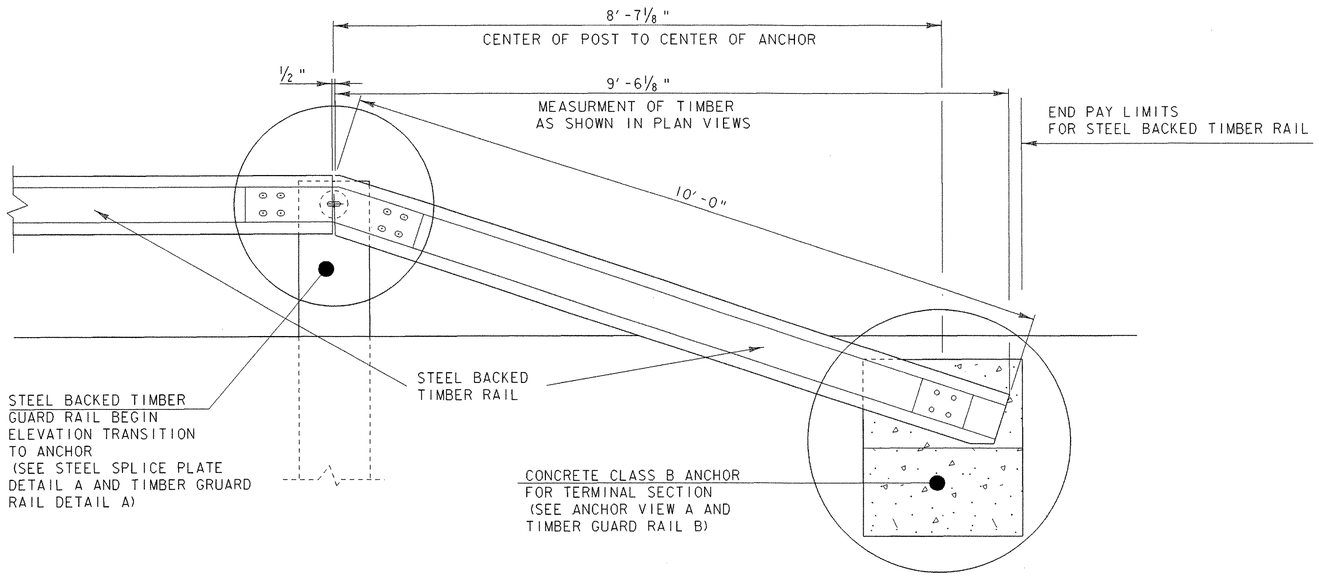
ALL DETAILS ON THIS SHEET ARE NTS

STEEL BACKED TIMBER RAIL ANGLED SPLICE PLATE DETAILS

PROJECT NAME: THETFORD
PROJECT NUMBER: BHO 1444 (43)

FILE NAME: Structures\s03j036abt.dgn
PROJECT LEADER: M. EVANS-MONGEON
DESIGNED BY: M. EVANS-MONGEON
IPARM: s03j036tr1.1

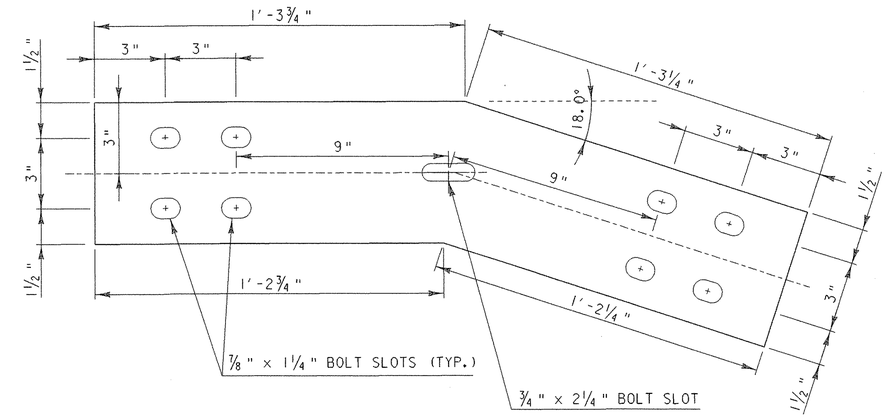
PLOT DATE: 27-SEP-2006
DRAWN BY: G. ROKES
CHECKED BY: S. SCRIBNER
SHEET 43 OF 60



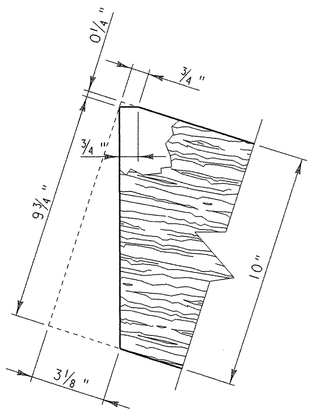
ELEVATION

Notes:

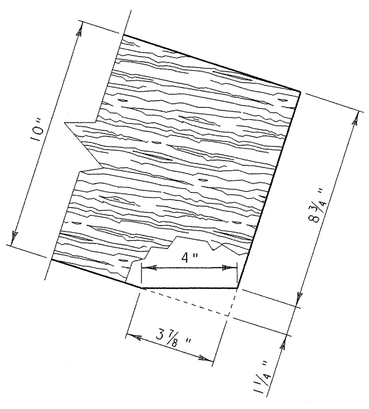
1. See sheet 39, Steel-Backed Timber Guardrail Details For 10′ Post Spacing, for timber, structural steel, and hardware details.
2. On the Type A, blocked-out guardrail, include the blocks in the terminal section, except on the concrete anchor. For the Type B, non-blocked-out guardrail, no blocks are included.
3. Begin the cut flares at the nearest post to a transition point between fill and cut as directed by the Resident Engineer.
4. Extend the flare into the cut until a minimum 1-foot cover is obtained over the guardrail end.



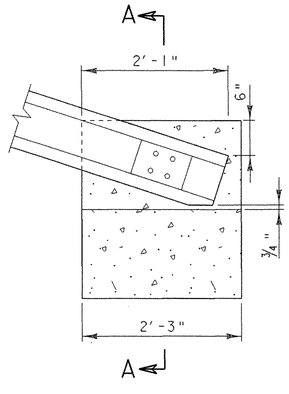
STEEL SPLICE PLATE DETAIL A



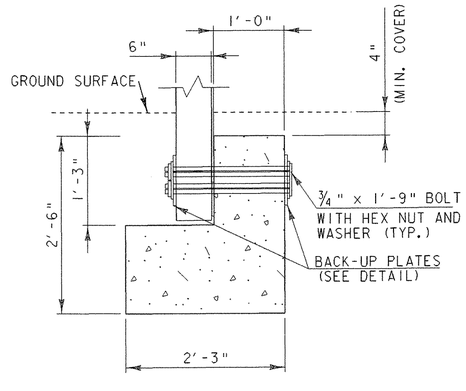
TIMBER GUARD RAIL DETAIL A



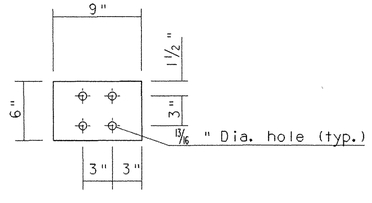
TIMBER GUARD RAIL DETAIL B



ANCHOR VIEW A



ANCHOR SECTION A-A

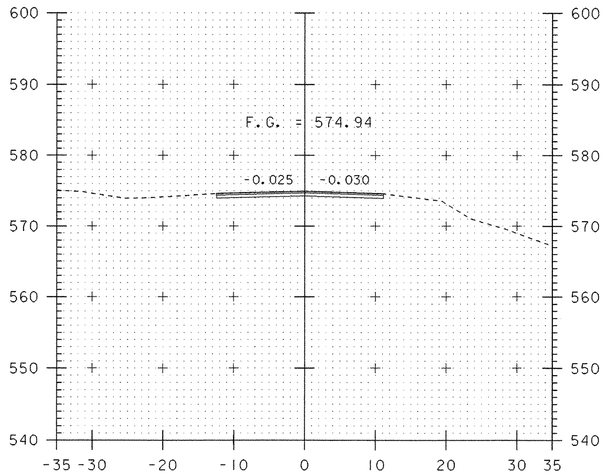


BACK-UP PLATE DETAIL
6" × ½" × 9"

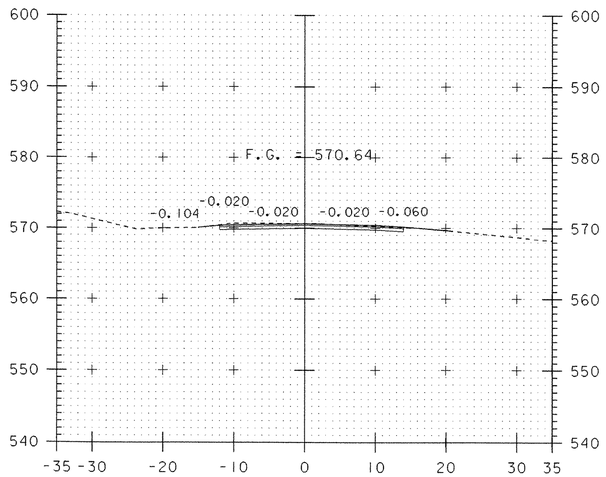
ALL DETAILS ON THIS SHEET ARE NTS

STEEL BACKED TIMBER RAIL ANCHOR DETAILS

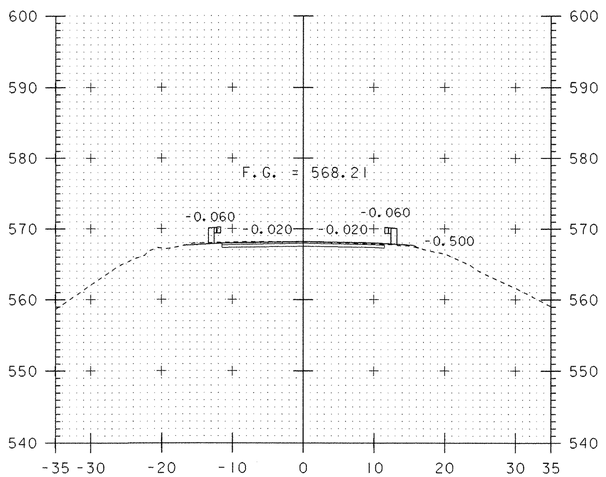
PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)
FILE NAME: Structures\s03j036abt.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M. EVANS-MONGEON	DRAWN BY: G. ROKES
DESIGNED BY: M. EVANS-MONGEON	CHECKED BY: S. SCRIBNER
IPARM: s03j036tr2.I	SHEET 44 OF 60



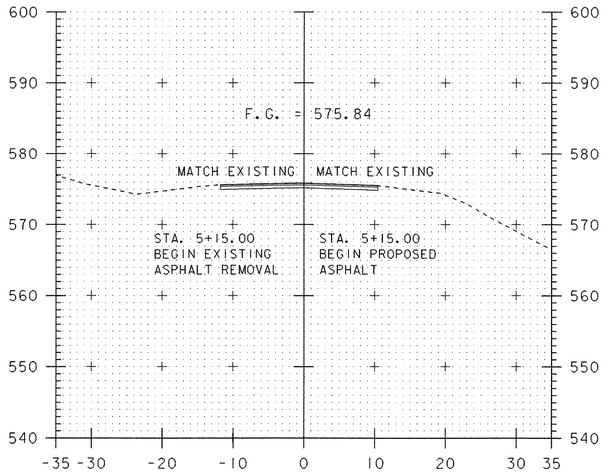
5+25



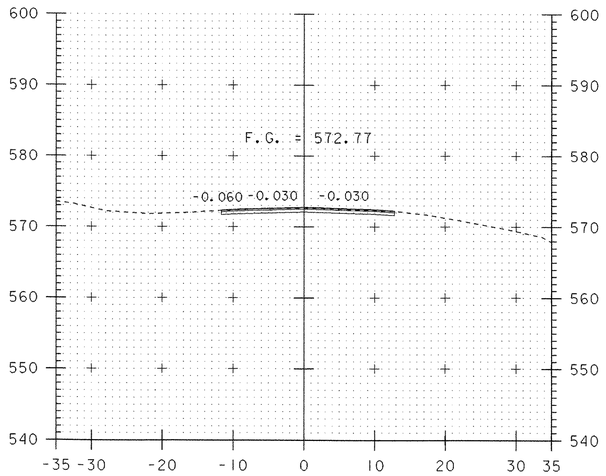
5+75



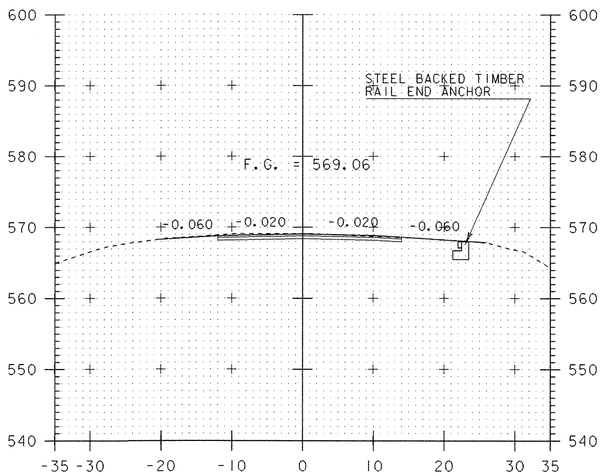
6+25



5+15



5+50



6+00

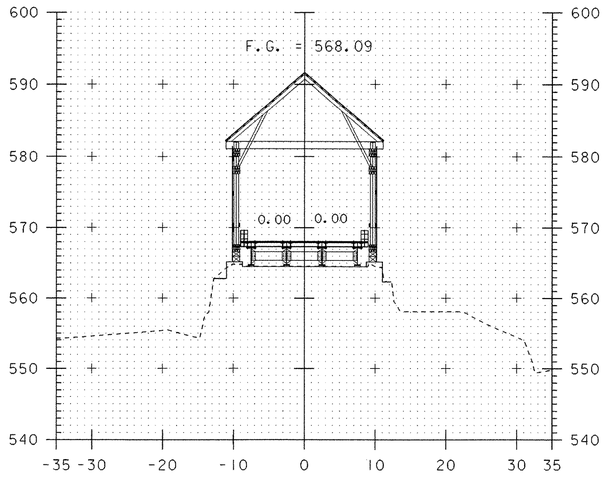
SCALE 1" = 10'-0

0 10 20

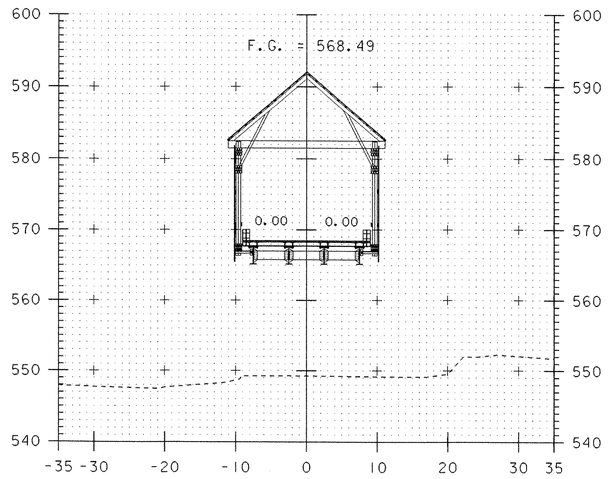
TH 6 MAIN LINE CROSS SECTIONS (1)

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

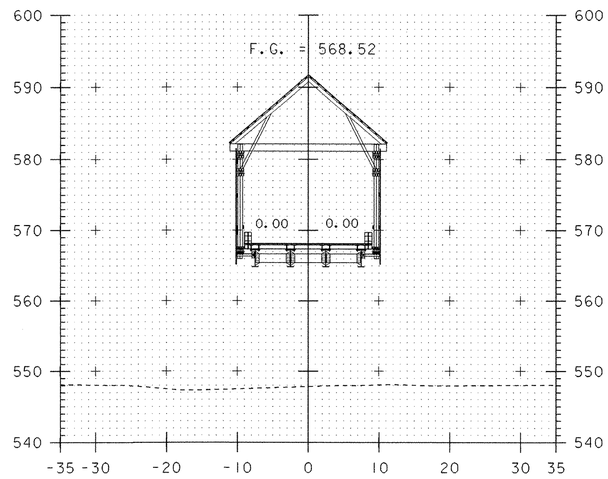
FILE NAME: Structures\s03J036wk.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G.ROKES	CHECKED BY: S.SCRIBNER
IPARM: s03J036rxl.i	SHEET 45 OF 60



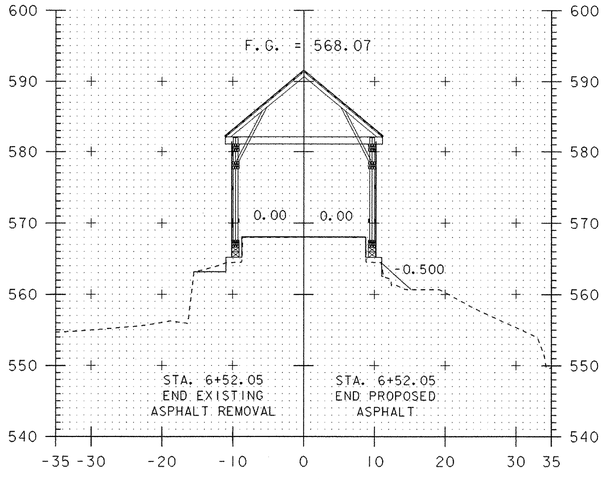
6+53.7
℄ ABUTMENT #1



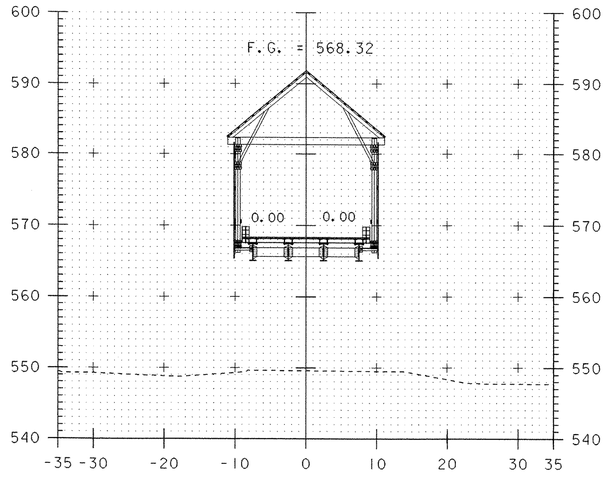
7+00



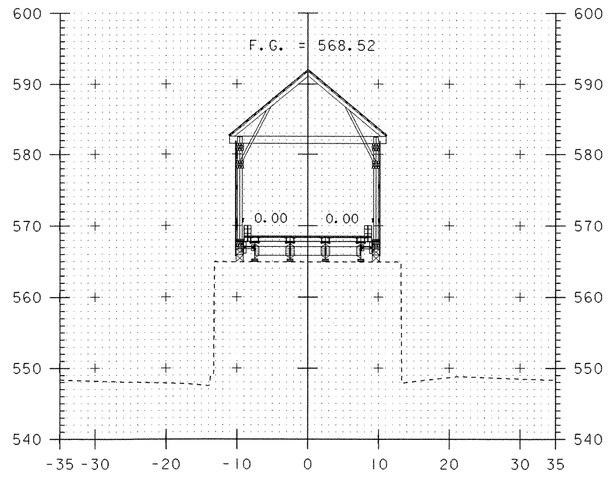
7+25



6+50



6+75



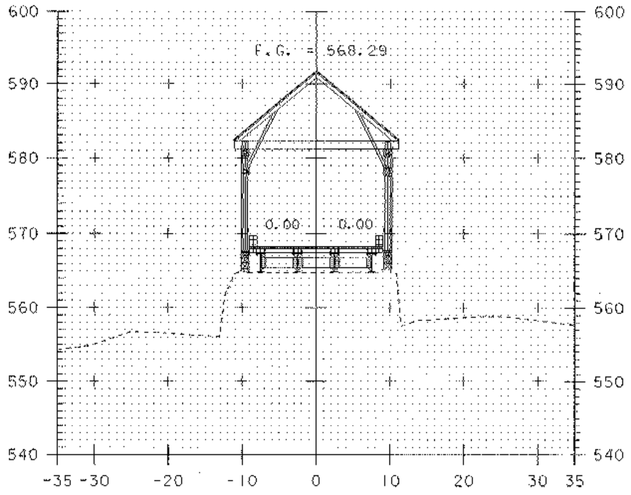
7+10.7

SCALE 1" = 10'-0
0 10 20

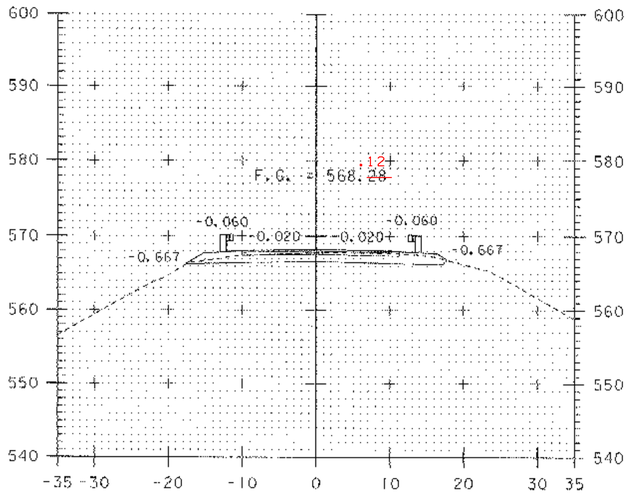
TH 6 MAIN LINE CROSS SECTIONS (2)

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

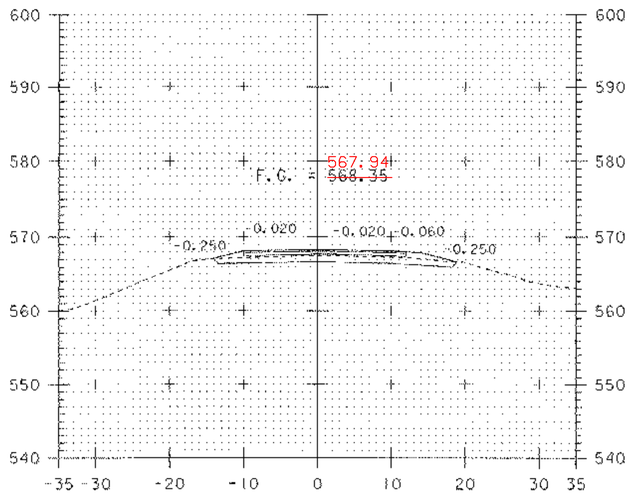
FILE NAME: Structures\s03j036wrk.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G.ROKES	CHECKED BY: S.SCRIBNER
IPARM: s03j036rx2.I	SHEET 46 OF 60



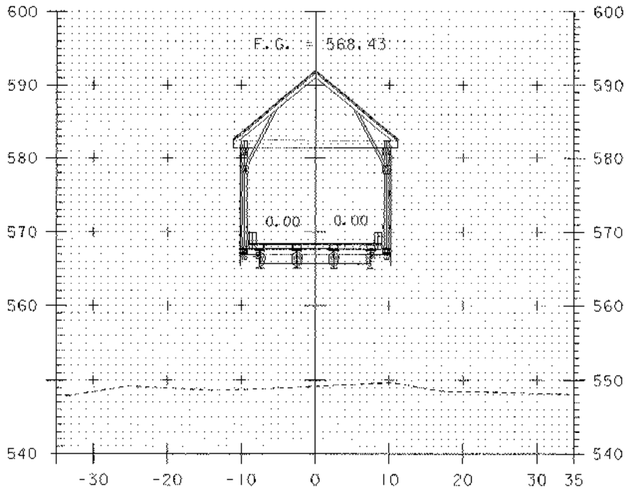
7+67.7
℄ ABUTMENT #2



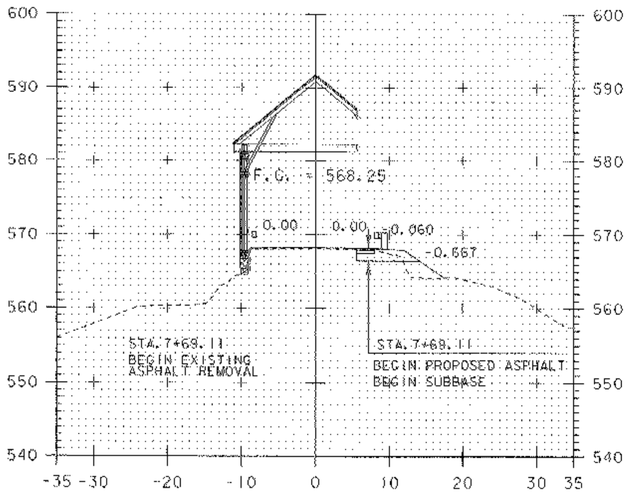
8+00



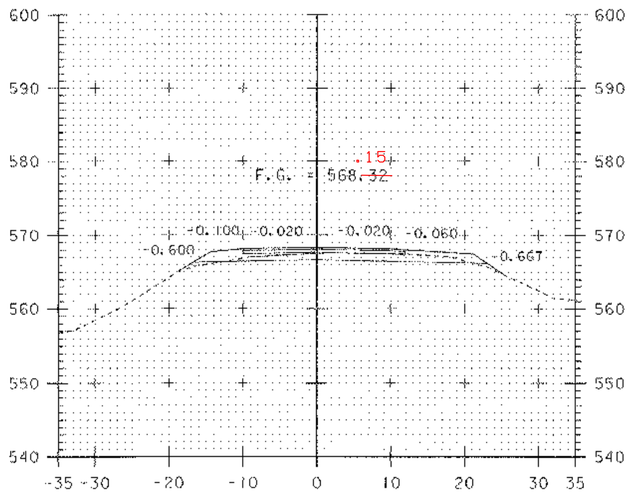
8+50



7+50



7+75



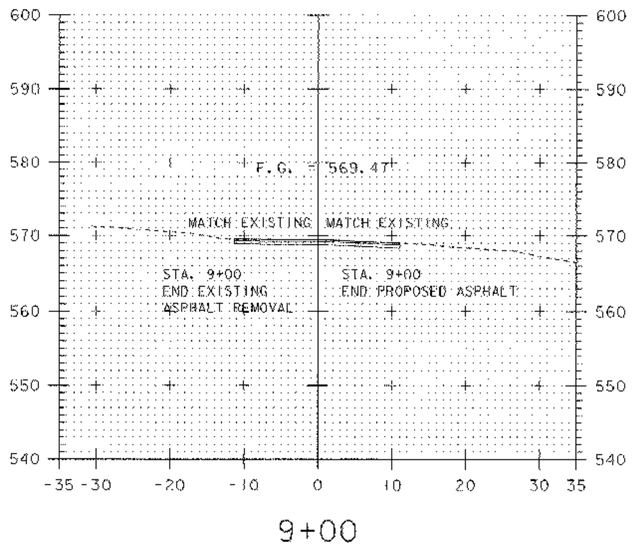
8+25

SCALE 1" = 10'-0
0 10 20

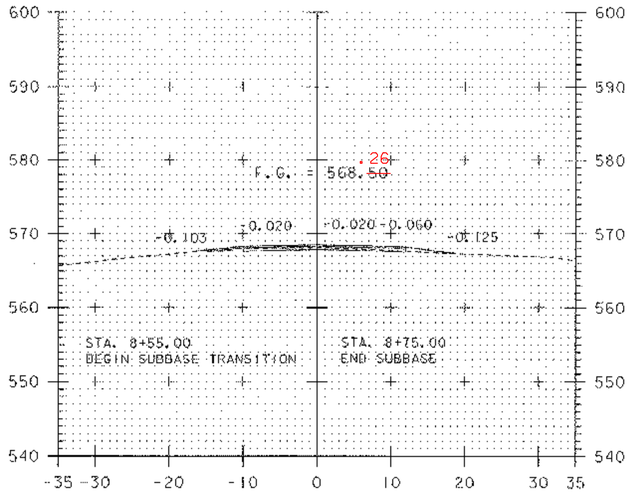
TH 6 MAIN LINE CROSS SECTIONS (3)

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

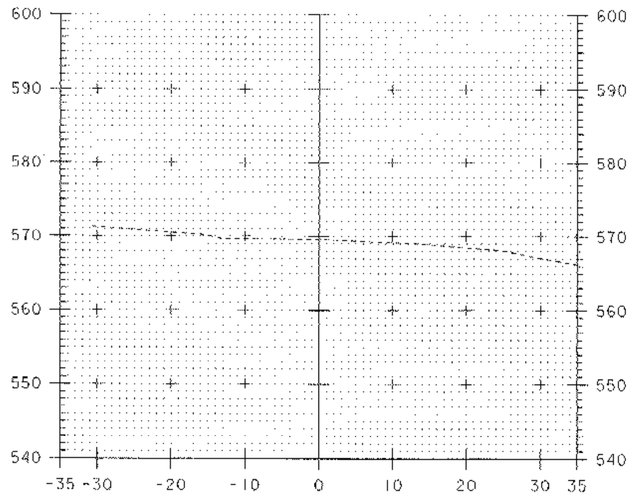
FILE NAME: Structures\s03J036wrk.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G.ROKES	CHECKED BY: S.SCRIBNER
IPARM: s03J036rx3	SHEET 47 OF 60



9+00



8+75



9+02

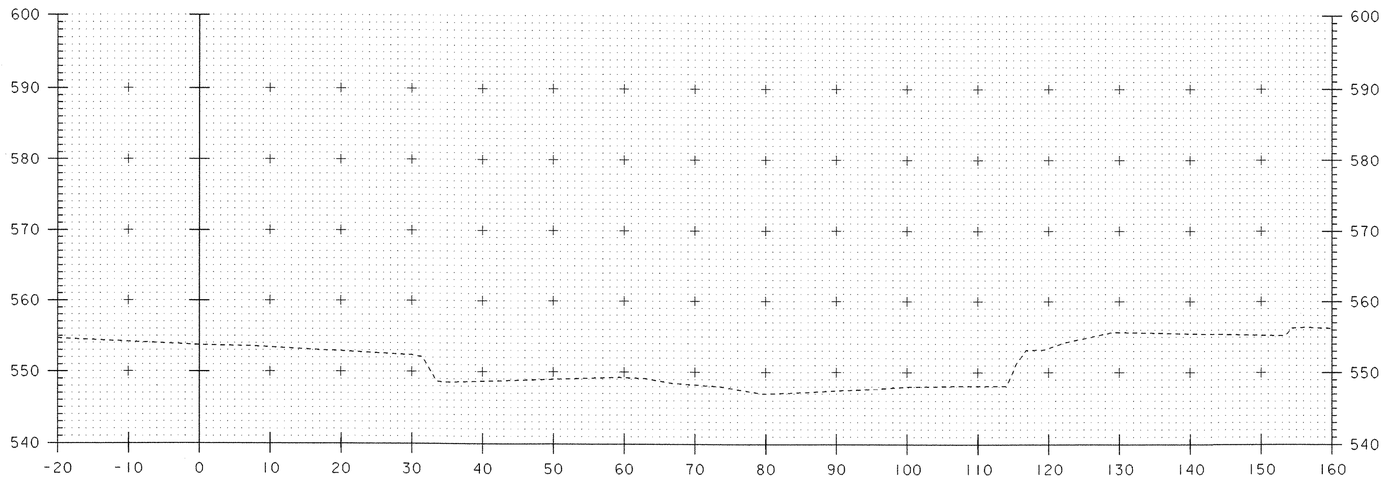
SCALE 1" = 10'-0

0 10 20

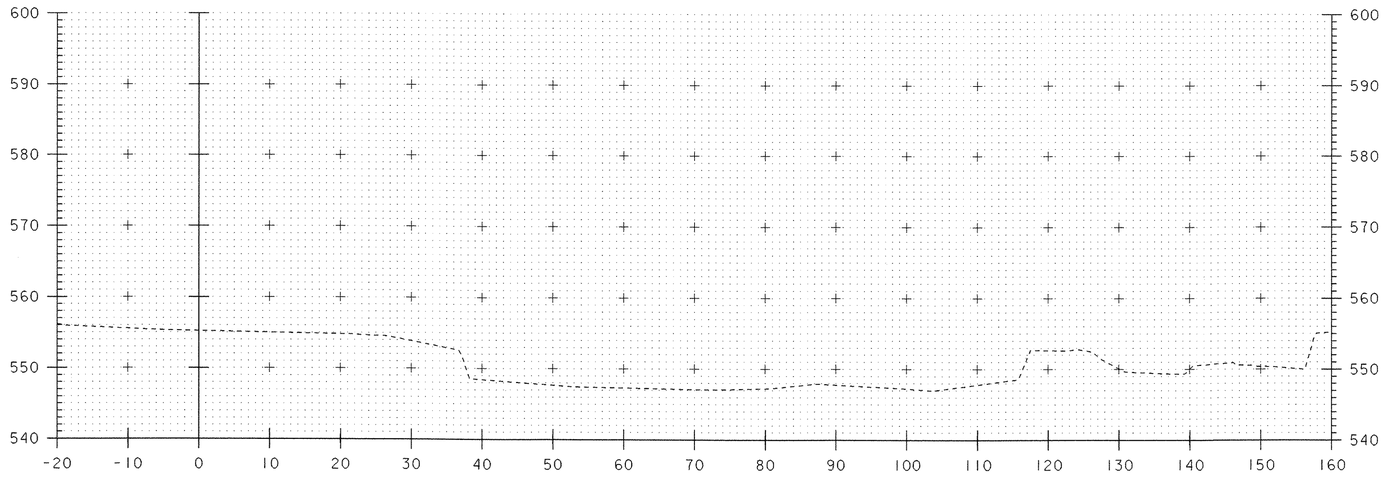
TH 6 MAIN LINE CROSS SECTIONS (4)

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BRO 1444 (43)

FILE NAME: Structures\s03j036wrk.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G.ROKES	CHECKED BY: S.SCRIBNER
IPARM: s03j036rx4.1	SHEET 48 OF 60



10+20



10+00

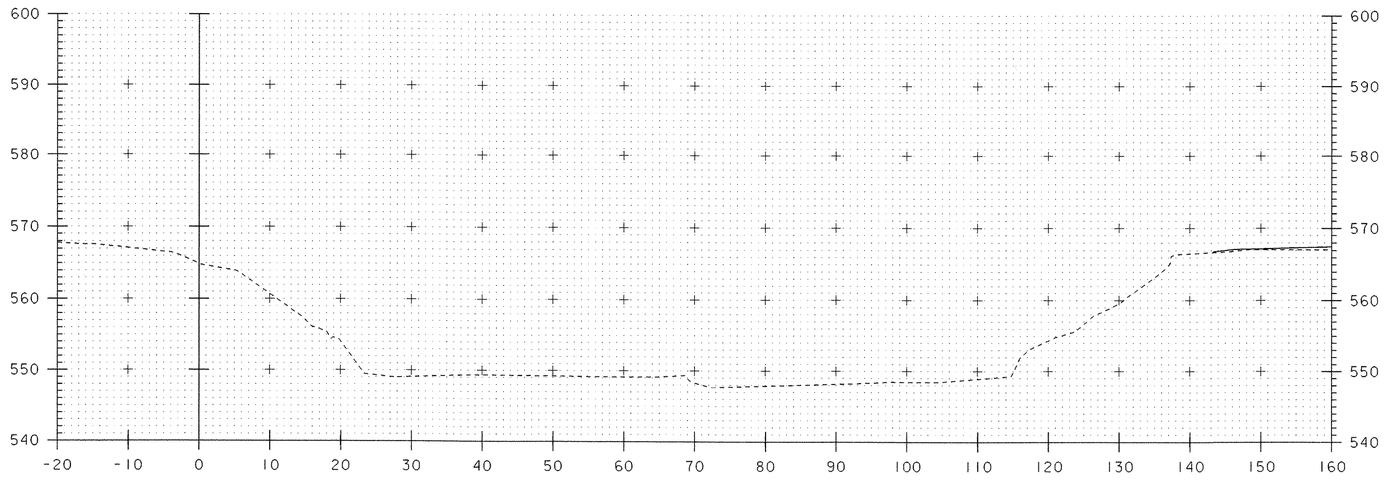
SCALE 1" = 10'-0

0 10 20

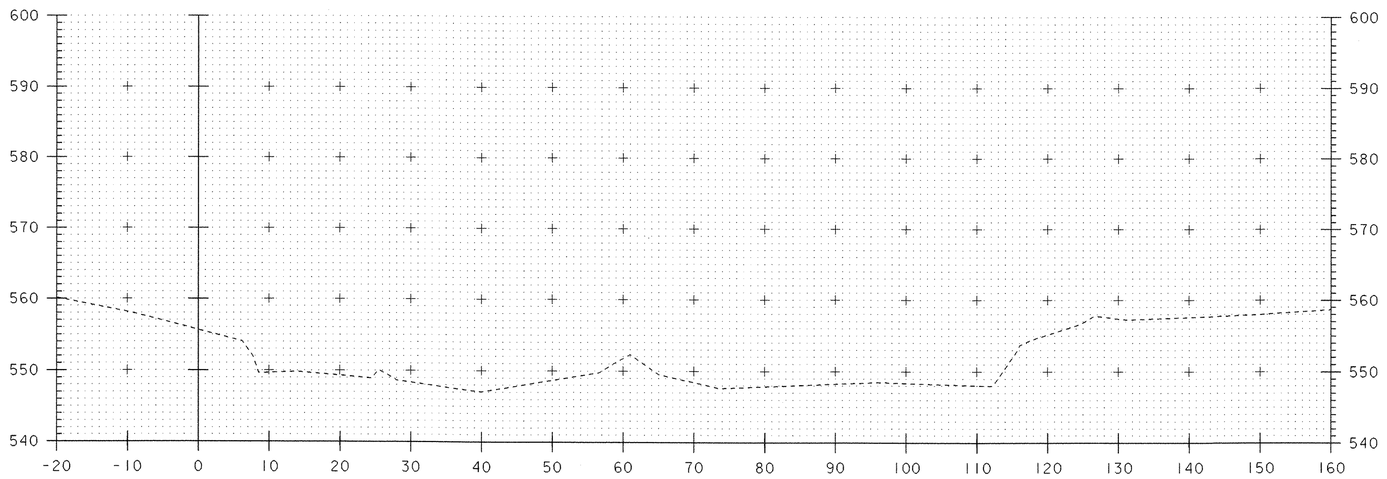
OMPOMPANOOSUC CHANNEL SECTIONS (1)

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

FILE NAME: Structures\s03J036wk.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G.ROKES	CHECKED BY: S.SCRIBNER
IPARM: s03J036cxl.i	SHEET 49 OF 60



10+60



10+40

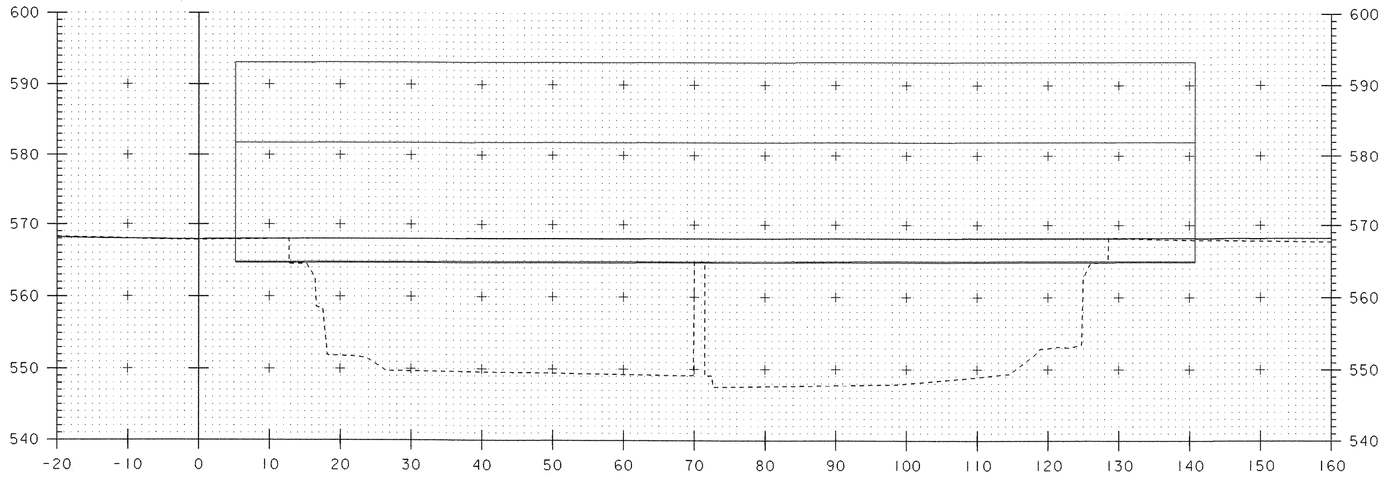
SCALE 1" = 10'-0

0 10 20

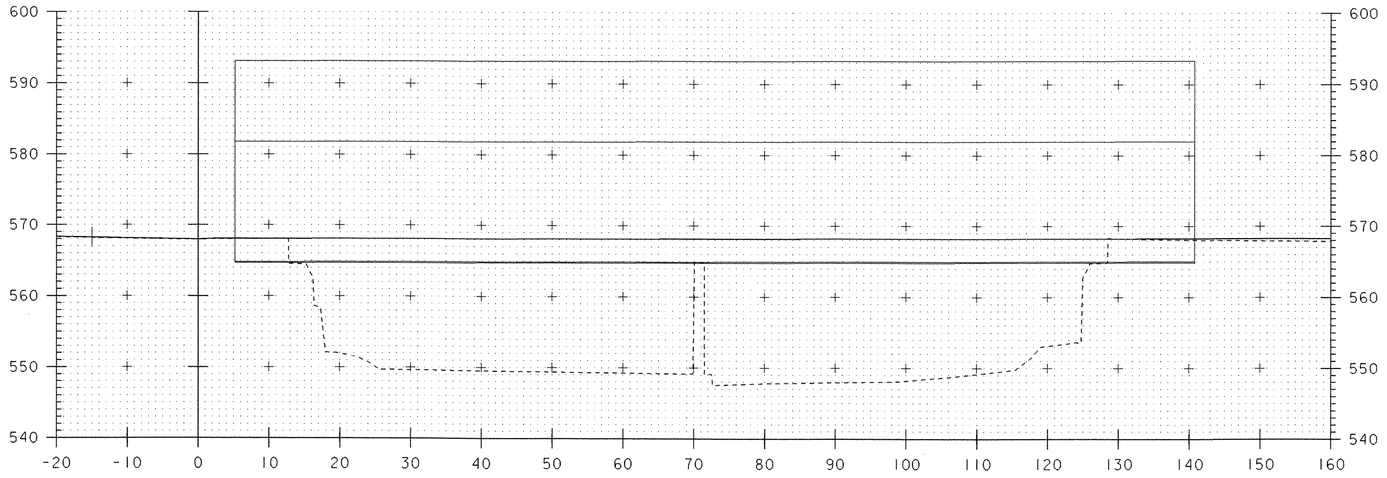
OMPOMPANOOSUC CHANNEL SECTIONS (2)

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

FILE NAME: Structures\s03j036wk.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G.ROKES	CHECKED BY: S.SCRIBNER
IPAM: s03j036cx2.1	SHEET 50 OF 60



10+80



10+75

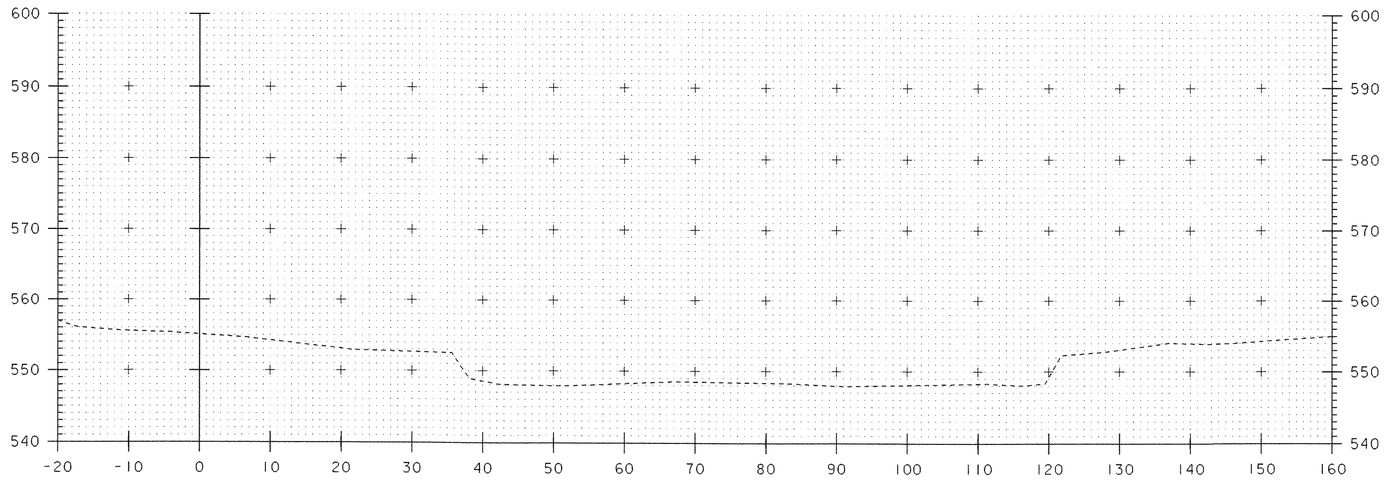
SCALE 1" = 10'-0

0 10 20

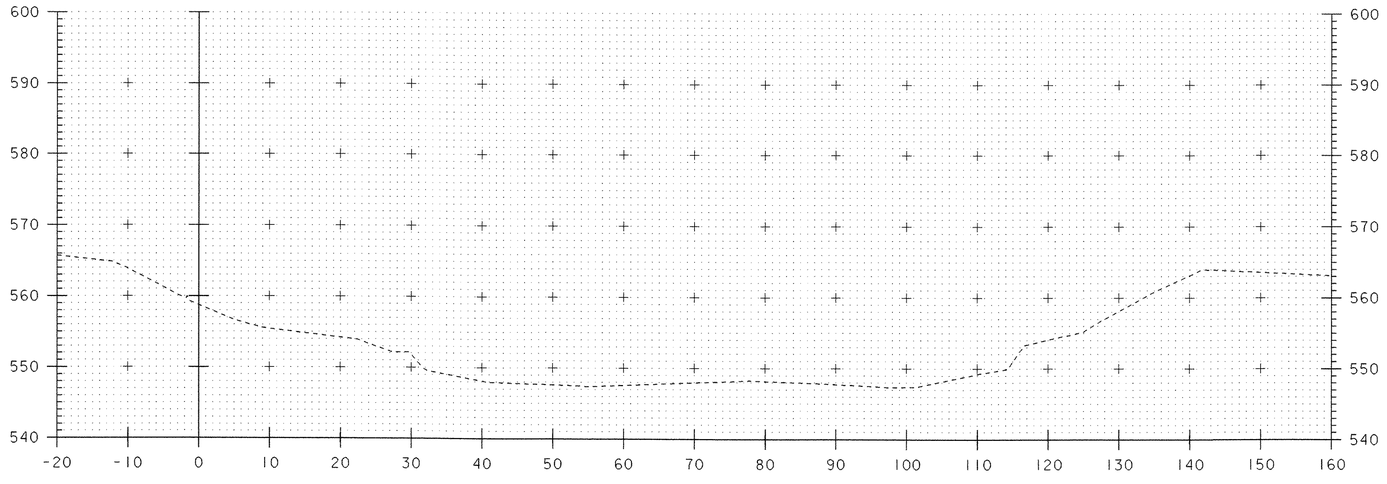
OMPOMPANOOSUC CHANNEL SECTIONS (3)

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

FILE NAME: Structures\s03J036wk.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G.ROKES	CHECKED BY: S.SCRIBNER
IPARM: s03J036cx3.I	SHEET 51 OF 60



11+20



11+00

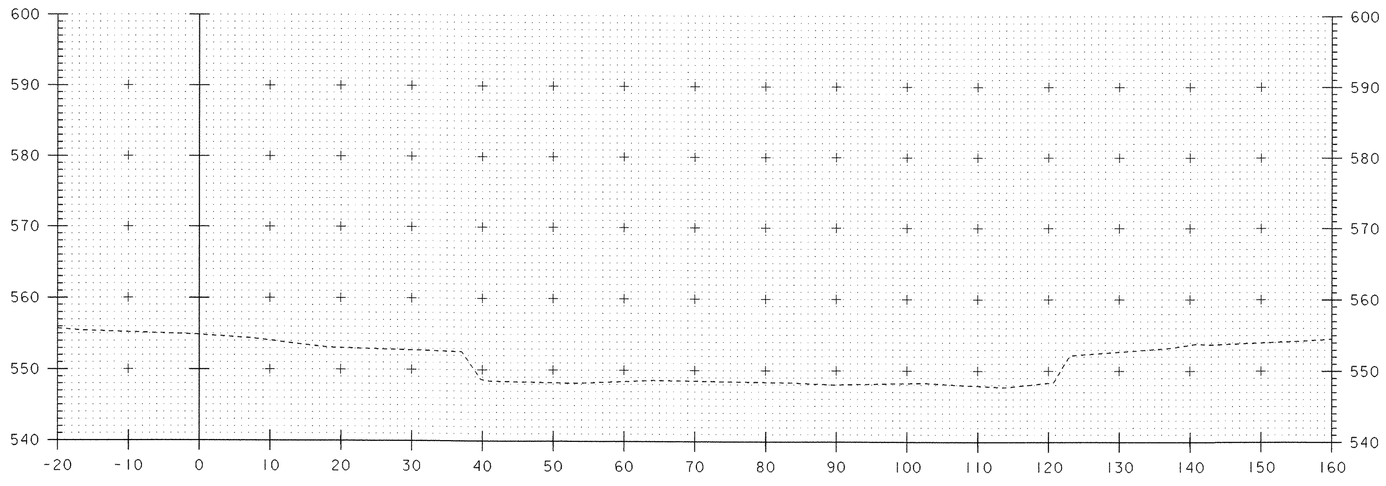
SCALE 1" = 10'-0

0 10 20

OMPOMPANOOSUC CHANNEL SECTIONS (4)

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

FILE NAME: Structures\s03J036wk.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G.ROKES	CHECKED BY: S.SCRIBNER
IPARM: s03J036cx4.1	SHEET 52 OF 60



11+25

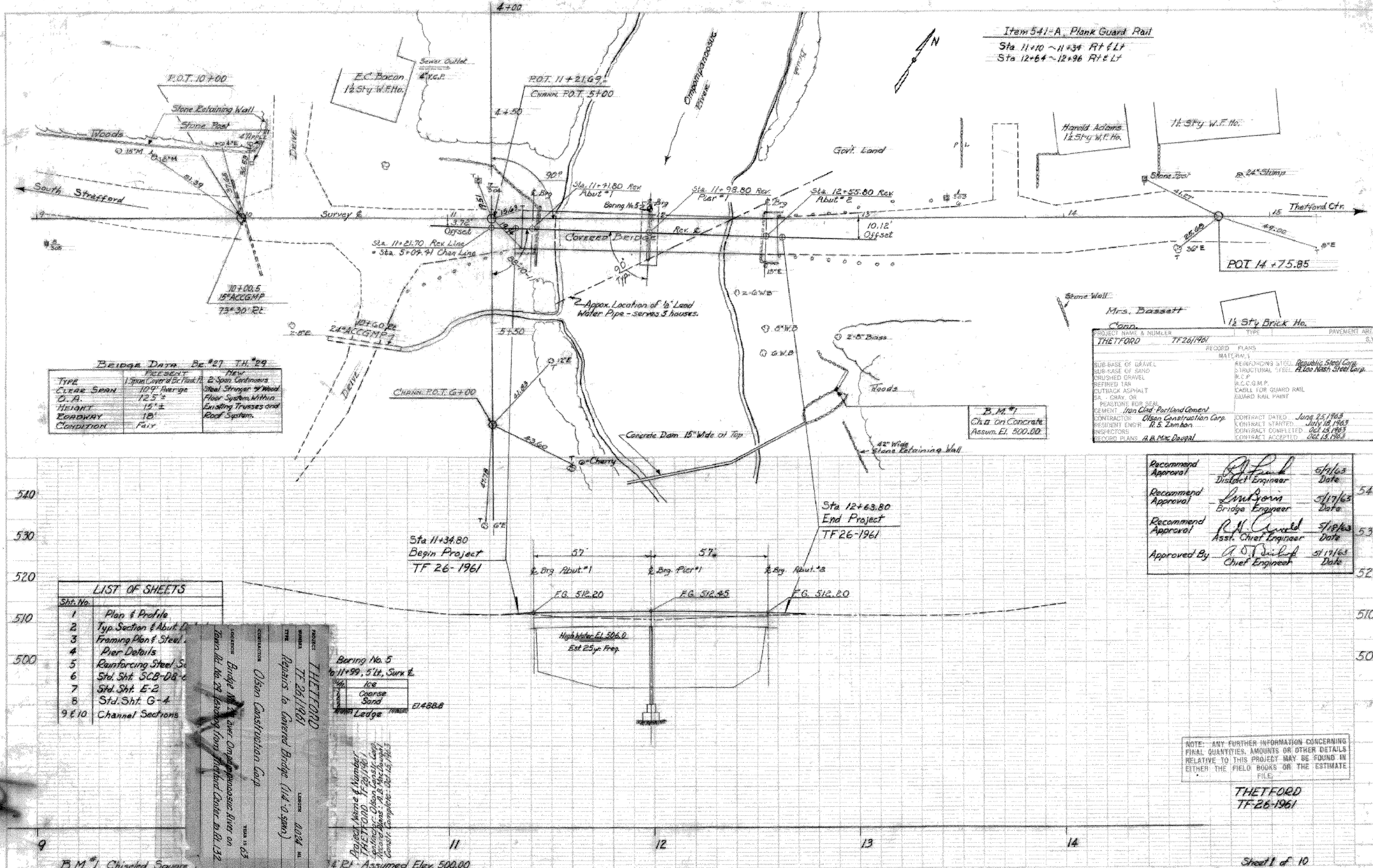
SCALE 1" = 10'-0

0 10 20

OMPOMPANOOSUC CHANNEL SECTIONS (5)

PROJECT NAME:	THETFORD
PROJECT NUMBER:	BHO 1444 (43)

FILE NAME: Structures\s03j036wk.dgn	PLOT DATE: 27-SEP-2006
PROJECT LEADER: M.EVANS-MONGEON	DRAWN BY: G.ROKES
DESIGNED BY: G.ROKES	CHECKED BY: S.SCRIBNER
IPARM: s03j036cx5.i	SHEET 53 OF 60



Bridge Data Br. #27 T.H. #29

	Present	New
Type	1 Span Cover'd Br. Howe Tr.	2 Span Continuous Steel Stringer & Wood Floor System, Within Existing Trusses and Roof System.
Clear Span	109' Average	
O.A.	125' ±	
Height	15' ±	
Roadway	18'	
Condition	Fair	

List of Sheets

Sht. No.	
1	Plan & Profile
2	Typ. Section & Abut. D...
3	Framing Plan & Steel ...
4	Pier Details
5	Reinforcing Steel Sc...
6	Std. Sht. SCB-D8-...
7	Std. Sht. E-2
8	Std. Sht. G-4
9 & 10	Channel Sections

Project Name & Number: THETFORD TF 26(1961)		Type	Payment Area S.Y.
Record Plans			
Materials			
Sub-base of Gravel		Reinforcing Steel	Republic Steel Corp.
Sub-base of Sand		Structural Steel	A. Loo Nash Steel Corp.
Crushed Gravel		R.C.P.	
Refined Tar		A.C.C.G.M.P.	
Cutback Asphalt		Cable for Guard Rail	
Sa. - Gray. or Peastone for Seal		Guard Rail Paint	
Cement	Iron Clad Portland Cement		
Contractor	Olson Construction Corp.	Contract Dated	June 25, 1963
Resident Eng'r	R.S. Zambon	Contract Started	July 18, 1963
Inspectors		Contract Completed	Oct. 15, 1963
Record Plans	A.B. MacDougal	Contract Accepted	Oct. 15, 1963

Recommend Approval	[signature]	District Engineer	5/1/63 Date
Recommend Approval	[signature]	Bridge Engineer	5/17/63 Date
Recommend Approval	[signature]	Asst. Chief Engineer	5/18/63 Date
Approved By	[signature]	Chief Engineer	5/17/63 Date

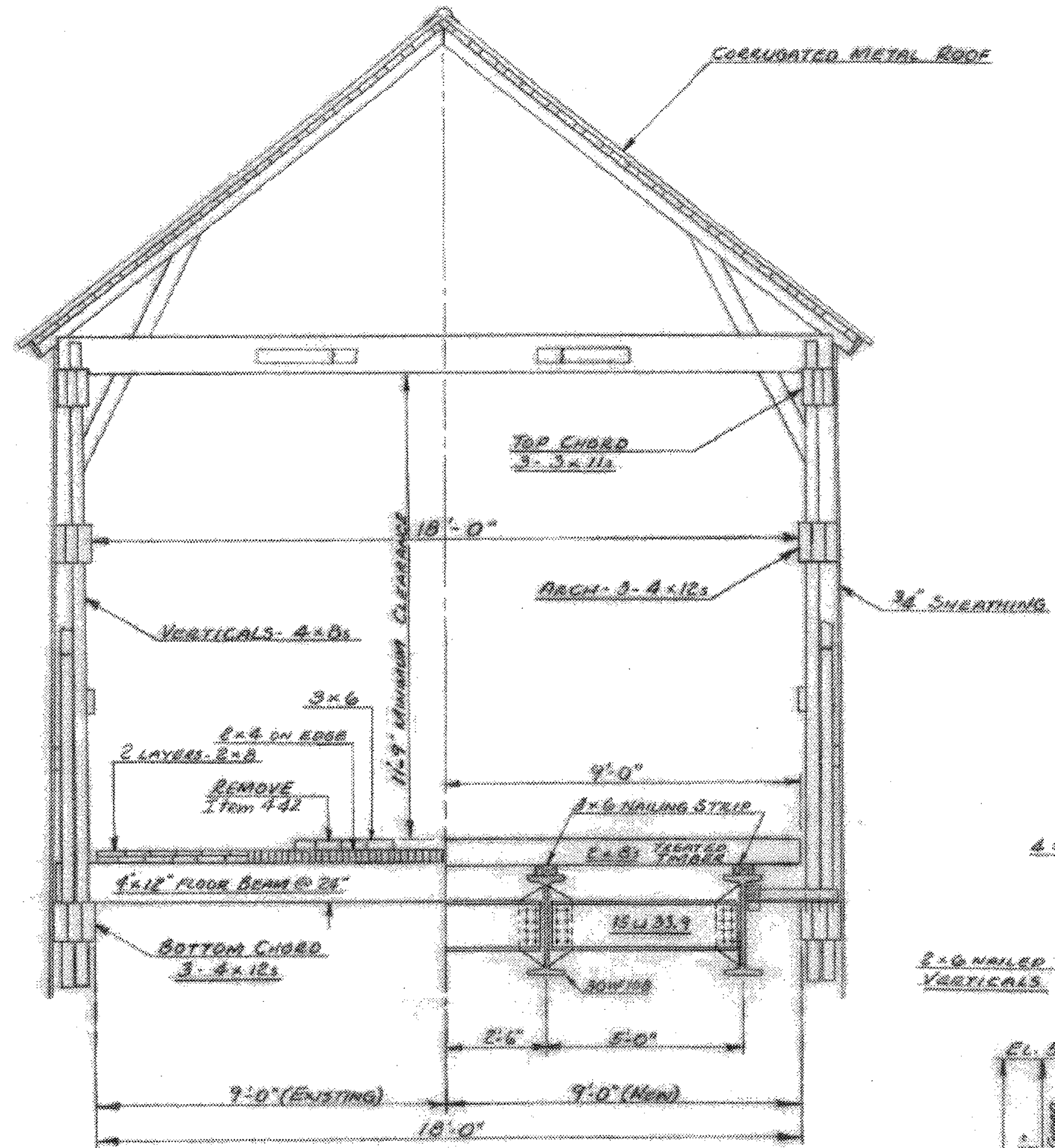
Project	THETFORD
Number	TF 26(1961)
Type	Repairs to Covered Bridge (1 @ 0' span)
Contractor	Olson Construction Corp.
Location	Bridge ... over Ompompanoosuc River on Town Hi. No. 29 leading from Thetford Center to Rt. 132

Project Name & Number: THETFORD TF 26(1961)
Contractor: Olson Constr. Corp.
Record Plans: A.B. MacDougal
Const. Complete: Oct. 15, 1963

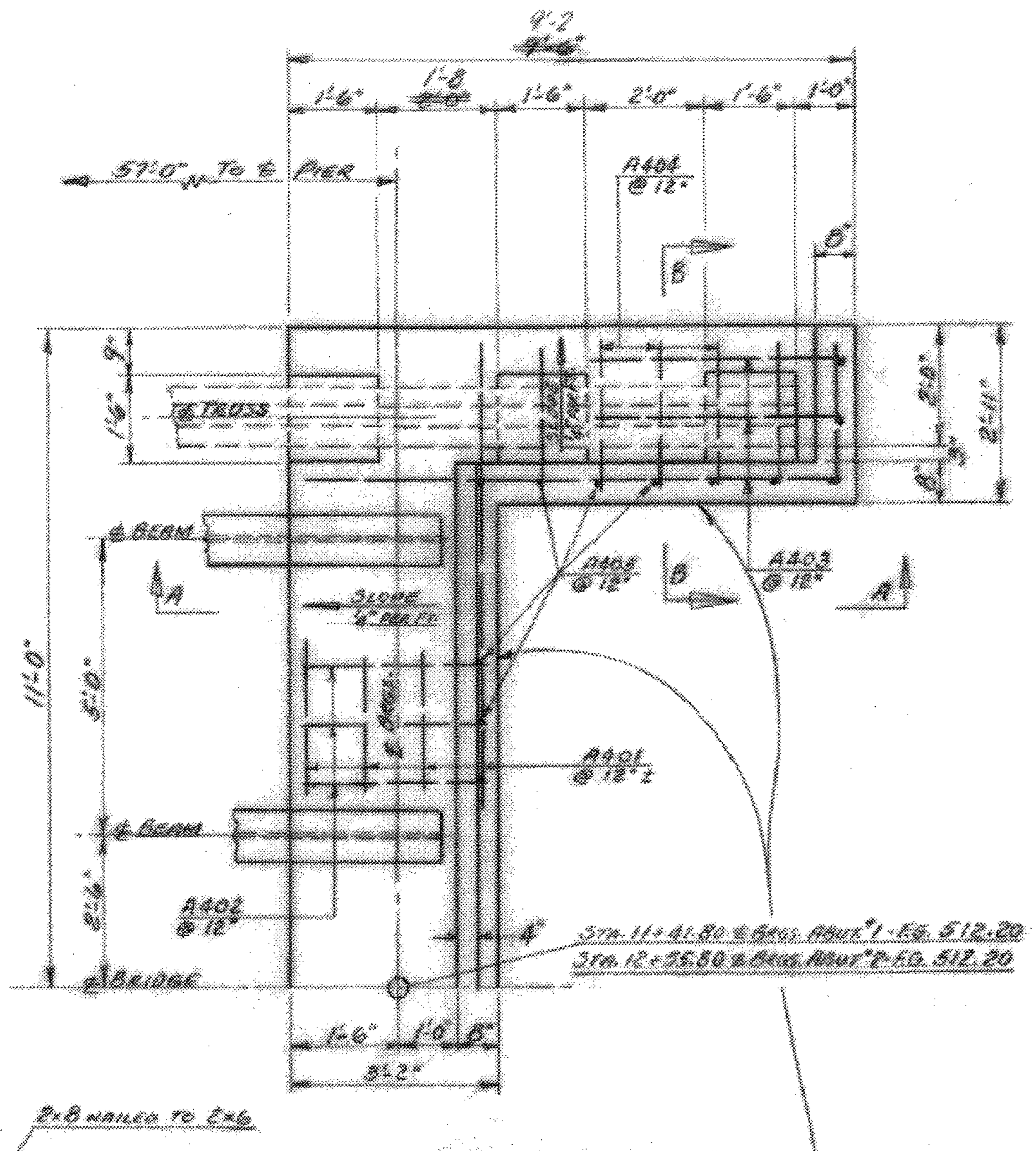
NOTE: ANY FURTHER INFORMATION CONCERNING FINAL QUANTITIES, AMOUNTS OR OTHER DETAILS RELATIVE TO THIS PROJECT MAY BE FOUND IN EITHER THE FIELD BOOKS OR THE ESTIMATE FILE.

THETFORD
TF-26-1961

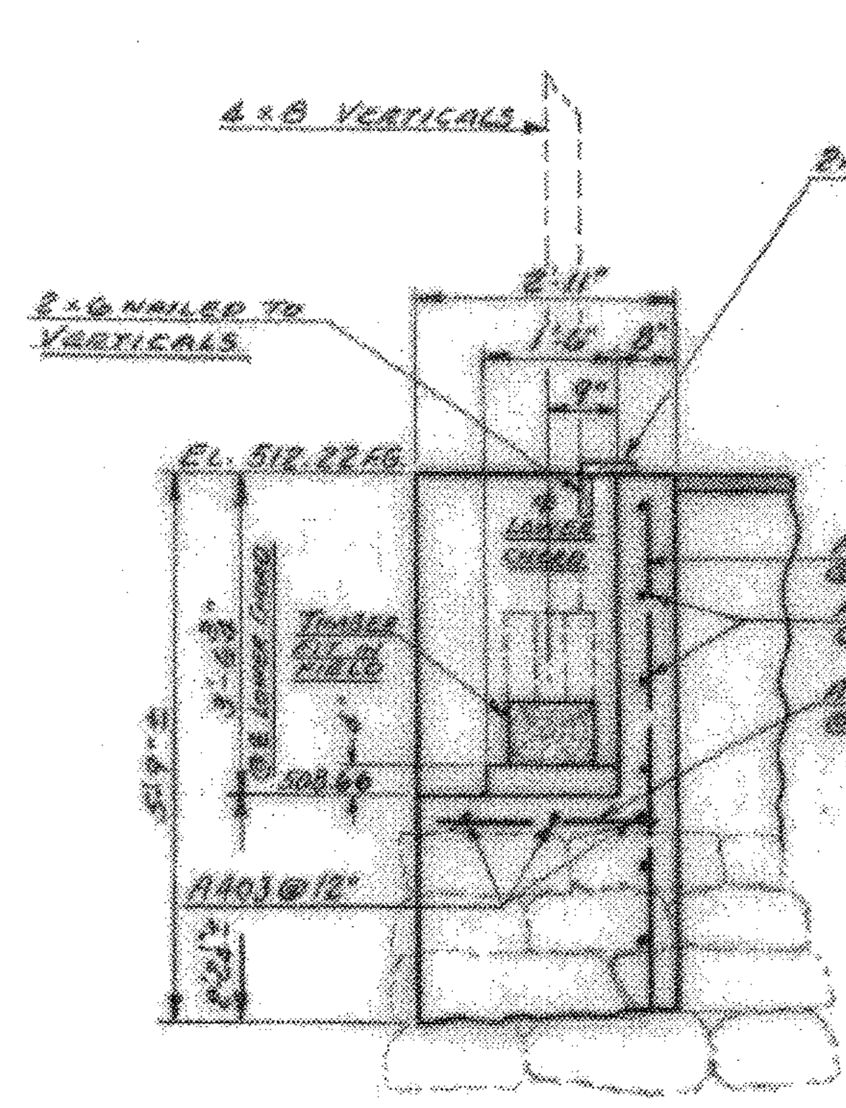
Sheet 1 of 10



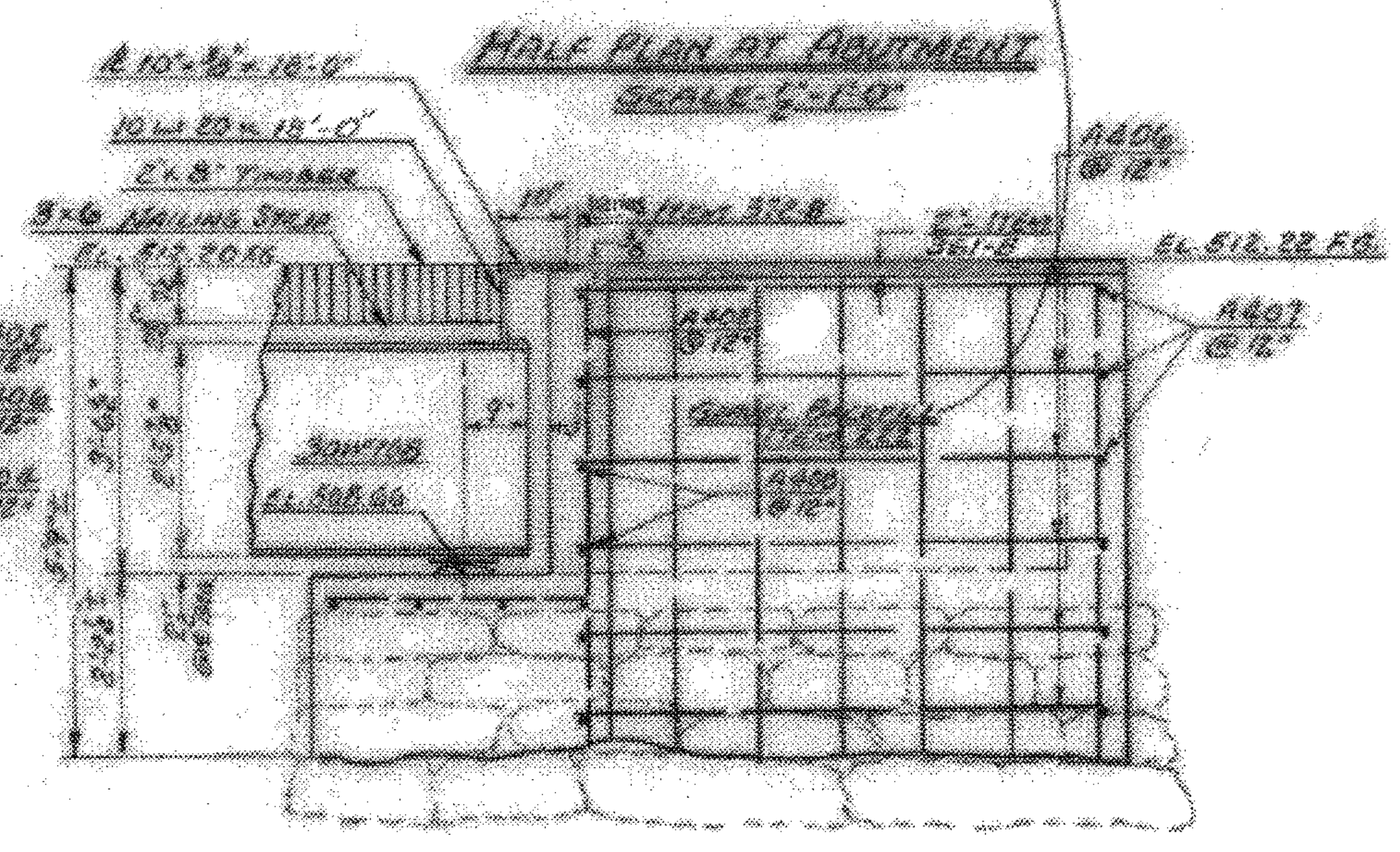
TYPICAL SECTION
SCALE - 3/8" = 1'-0"



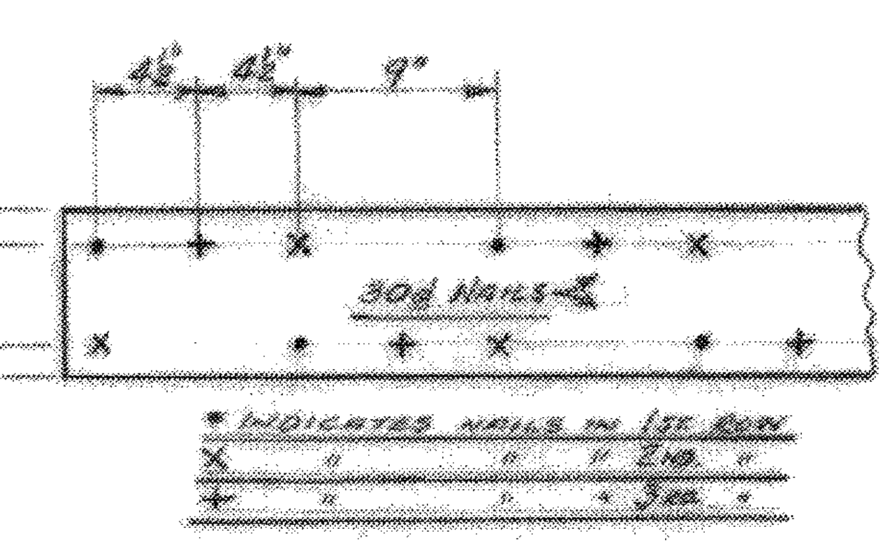
HALF PLAN AT ABUTMENT
SCALE - 1/4" = 1'-0"



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



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



LAMINATED FLOOR NAILING DIAGRAM
SCALE - 1 1/2" = 1'-0"

- GENERAL NOTES -

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DATED JAN. 1956 AND THE AASHO STANDARD SPECS. DATED 1961.

2. ANY STRUCTURAL TIMBER USED IN THE REPAIR OF THE EXISTING SUPERSTRUCTURE, (CHORDS, ARCHES, VERTICALS, DIAGONALS, OR SHEATHING) SHALL BE OF A COLOR COMPATIBLE TO THE ADJACENT MEMBERS.

3. IF THE CAMBER OF THE 30WF108s VARIES, THE THICKNESS OF THE 3×6 NAILING STRIPS SHALL VARY SO AS TO INSURE AN EVEN BEARING FOR THE 2×8 LAMINATED FLOORING.

4. EACH 2×8 STRUCTURAL TIMBER OF THE LAMINATED FLOORING SHALL BE TOE-NAILED AT EACH CROSSING OF A 3×6 NAILING STRIP.

5. THE COST OF NAILS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 512, STRUCTURAL TIMBER.

6. THE COST OF ANY HARDWARE USED FOR TRUSS REPAIR SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 404-A, STRUCTURAL STEEL.

7. THE THICKNESS OF STRUCTURAL TIMBER BLOCKING, UNDER THE BOTTOM CHORDS AT THE ABUTMENTS, MAY VARY, AND SHALL BE FITTED IN THE FIELD.

8. ALL EXPOSED EDGES OF CONCRETE WORK TO BE CHAMFERED ONE INCH BY ONE INCH. CONCRETE IN ABUTMENTS TO BE ITEM 401-B, CONCRETE CLASS B (MOD.)

9. THE TEMPORARY BRIDGE PROVIDED FOR BY ITEM 441 SHALL BE CONSTRUCTED FOR FOOT TRAFFIC ONLY.

10. THE GRADING OF APPROACHES AND THE USE OF ITEM 361-B, BITUMINOUS CONCRETE PAVEMENT, SHALL BE DIRECTED BY THE RESIDENT ENGINEER.

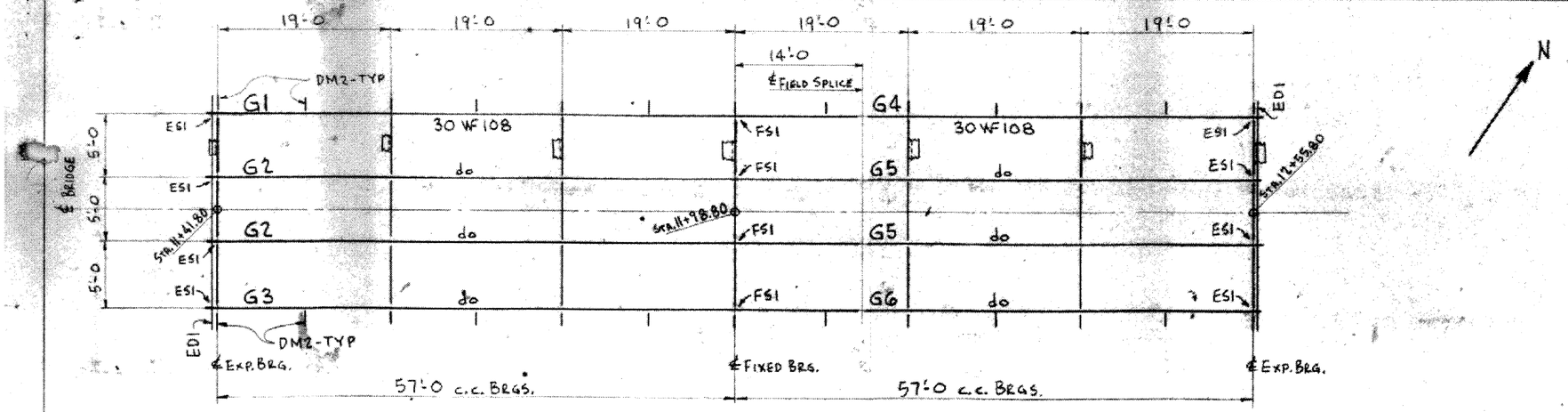
11. 2×8 STRUCTURAL TIMBERS FOR THE LAMINATED BRIDGE FLOOR SHALL CONFORM TO THESE REQUIREMENTS: ALL JOINTS SHOULD BE STAGGERED AS DIRECTED BY THE RESIDENT ENGINEER. MINIMUM LENGTH OF A 2×8 STRUCTURAL TIMBER SHALL BE 6 FEET. EVERY OTHER 2×8 STRUCTURAL TIMBER SHALL BE FULL LENGTH.

- QUANTITY SUMMARY -

ITEM NO.	ITEM	UNIT	NET	OVERRUN	TOTAL	FINAL
106-A	CHAN. EXCAV. OF EARTH	C.Y.				
106-B	CHAN. EXCAV. OF ROCK	C.Y.				
106-C	UNCLASS. CHAN. EXCAV.	C.Y.				
107	STRUCT. EXCAV.	C.Y.			~~110~~	104
401-B	CONC. CLASS B (MOD.) (EST.)	C.Y.			~~79~~	84
402	REINF. STEEL	LBS.			~~6755~~	6,752
407	ASPHALTIC-ASB. COATING	S.Y.				
502-B	TREATED TIMBER PILING	L.F.				
541-A	PLANK GUARD RAIL WITH PRES. TREAT.	L.F.			112	112
507	SHORING SUPERSTRUCTURE (MOD.)	L.S.			1	1
512	STRUCTURAL TIMBER (MOD.)	M.B.F.			22	22
222	GRAVEL BACKFILL (EST.)	C.Y.			~~40~~	39
361-B	BIT. CONCRETE PAVEMENT (MOD.)(EST.)	TON			8	8
372-B	JOINT SEALER COLD APPLIED	L.F.			35	35
404-A	STRUCTURAL STEEL	LB.			~~62,900~~	61,570
441-A	Temp. One-way Bridge (Modified for Foot Bridge)	L.S.			1	1
442	REMOVAL OF PRESENT SUPERST. (MOD.)	L.S.			1	1

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

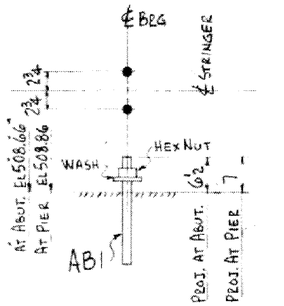
TOWN OF THETFORD
ROAD NO. 29 BRIDGE NO. 27
ABUTMENT DETAILS & TYPICAL SECTION
SCALE AS NOTED
SURVEYED BY FALL & MERCHANT
DRAWN BY CTB 9/63 CHECKED BY R.P.G.
PROJECT NO. TF-26-1961
SHEET 2 OF 10



FRAMING PLAN

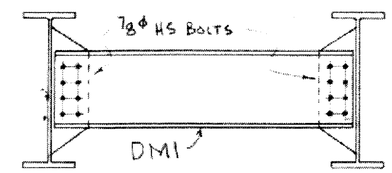
ALL DIAPHRAGMS ARE 15[33.9 - MARK-DM1

FIELD CONN - 7/8ϕ HS BOLTS FOR STRINGER SPLICE & DIAPHRAGH CONN.
3/4ϕ HS BOLTS FOR END DAM CONN.
• FIELD WELD LATERAL BRACE AS SHOWN.

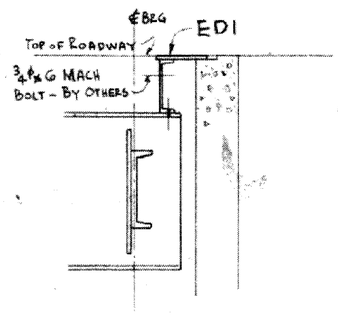


TYPICAL BEARING

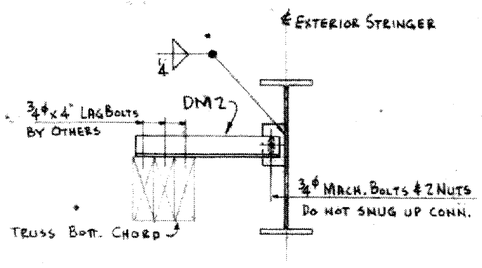
SEE PLAN FOR SHOE MARKS



TYPICAL DIAPHRAGM DETAIL



END DAM DETAIL

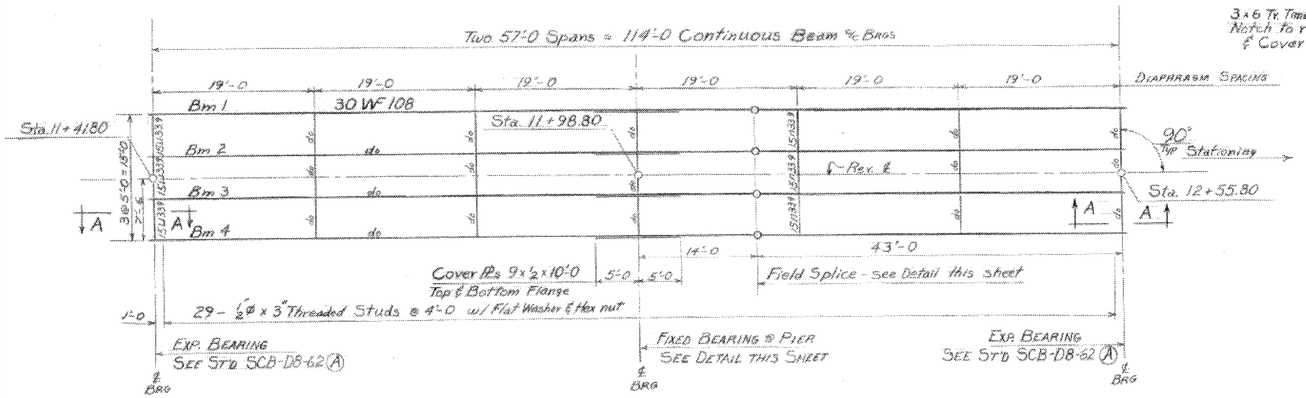


LATERAL BRACE DETAIL

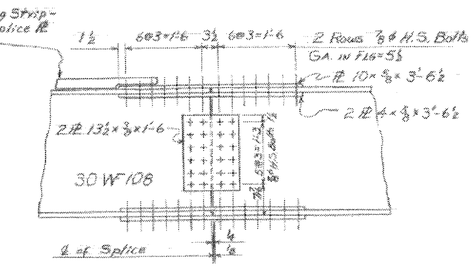
UNLESS OTHERWISE NOTED
RIVETS
BOLTS
HOLES
WELDS
PAINT

A · LEO NASH STEEL CORP. ALNASCO
Fabricating · Warehousing
PHONE HILLCREST 9-4257
CENTRAL BERKSHIRE BLVD
PITTSFIELD MASS

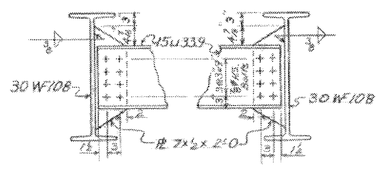
OWNER	STATE OF VERMONT		
STRUCTURE	COVERED BRIDGE OVER OMPOMPANOOSUC RIVER		
LOCATION	TOWN OF THETFORD, VERMONT		
ARCHITECT	VT. DEPT. OF HIGHWAYS	CONTRACTOR	OLSON CONST.
DWN BY LB	CHK'D BY	DATE 8/2	JO 63-371
DWG NO 371-E1			



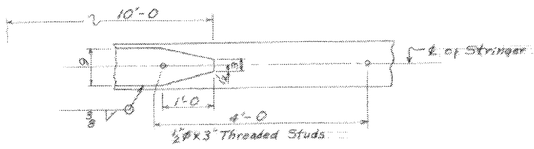
FRAMING PLAN
Scale 1/8"=1'-0



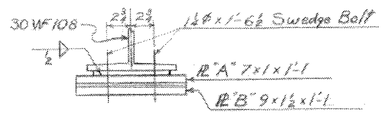
FIELD SPLICE
Scale 3/4"=1'-0



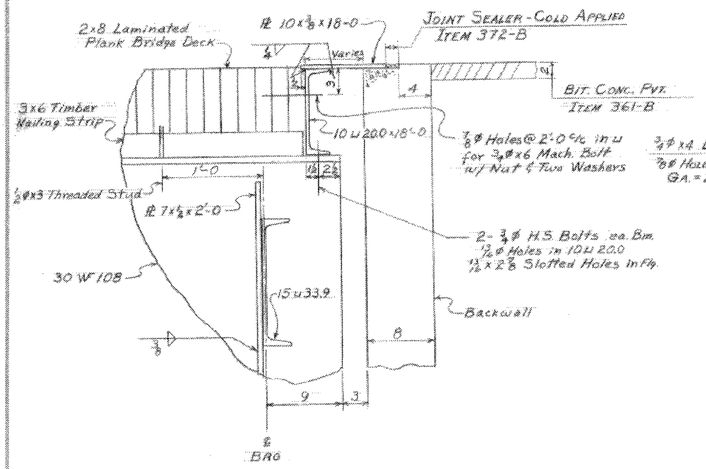
TYPICAL
DIAPHRAGM DETAILS
Scale 3/4"=1'-0



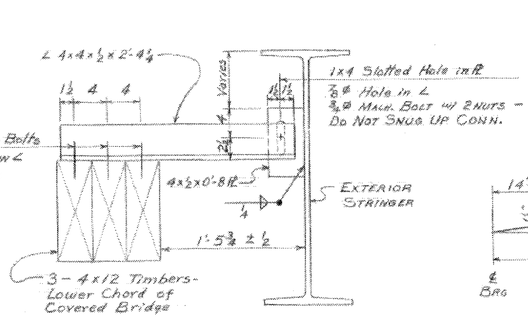
COVER PLATE DETAIL
Scale 3/4"=1'-0



BEARING @ PIER
Scale 1 1/2"=1'-0
For Details Not Shown See SCB-D8-62 (A)

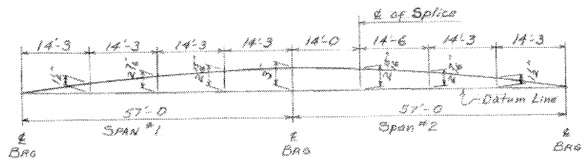


SECTION A-A
Scale 1 1/2"=1'-0



LATERAL BRACE
Scale 1 1/2"=1'-0

BRACE MID-WAY BETWEEN AND AT EACH DIAPHRAGM LOCATION (26 Reqd)



CAMBER DIAGRAM
NO SCALE

NOTES

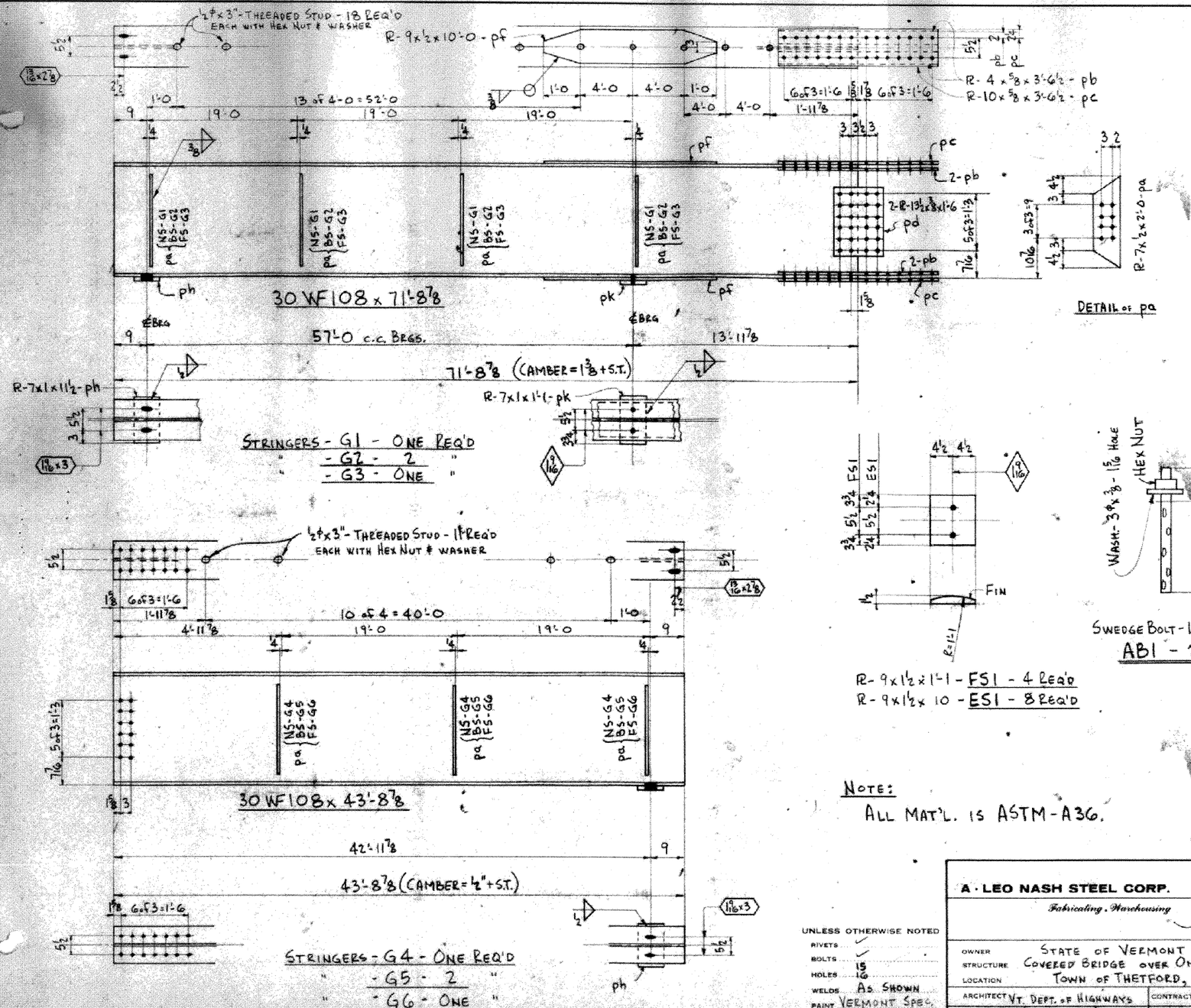
1. All structural steel shall conform to A.S.T.M. Designation A36-62T. Shop drawings of the steel details shall be submitted to the State of Vermont, Department of Highways for approval.
2. Unless otherwise noted all bolts shall be High-Strength conforming to A.S.T.M. Designation A325.
3. Final Field Coat of paint shall be Dark Gray. Spraying of Shop Coat will be permitted.
4. Distances are measured horizontally or vertically.
5. Stringers are designed for H20-44 loading with 7 1/2" concrete deck. Laminated wood floor is designed for H15-44 loading.

ITEM NO.	ITEM	UNIT	NET	OVERRUN	TOTAL	FINAL
106-A	CHAN. EXCAV. OF EARTH	C.Y.				
106-B	CHAN. EXCAV. OF ROCK	C.Y.				
106-C	UNCLASS. CHAN. EXCAV.	C.Y.				
107	STRUCT. EXCAV.	C.Y.				
401-B	CONC. CLASS B (MOD.)	C.Y.				
402	REINF. STEEL	LBS.				
407	ASPHALTIC ASH. COATING	S.Y.				
502-B	TREATED TIMBER PILING	L.F.				
503	SPLICES FOR STEEL PILING	EA.				
504	STEEL PILING	L.F.				
502-A	UNTREATED TIMBER PILING	L.F.				
404-A	STRUCTURAL STEEL	LBS.			~~62,700~~	61,576

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF THETFORD
ROAD NO. 27 BRIDGE NO. 29
FRAMING PLAN & STEEL DETAILS

SCALE AS NOTED
SURVEYED BY FALL
DRAWN BY RLM 6-25-63 CHECKED BY RND
PROJECT NO. TF 26-1961
SHEET 3 OF 10



NOTE:
ALL MAT'L. IS ASTM-A36.

Approved 8/16/63

UNLESS OTHERWISE NOTED

RIVETS	
BOLTS	
HOLES	15/16
WELDS	AS SHOWN
PAINT	VERMONT SPEC. RED LEAD

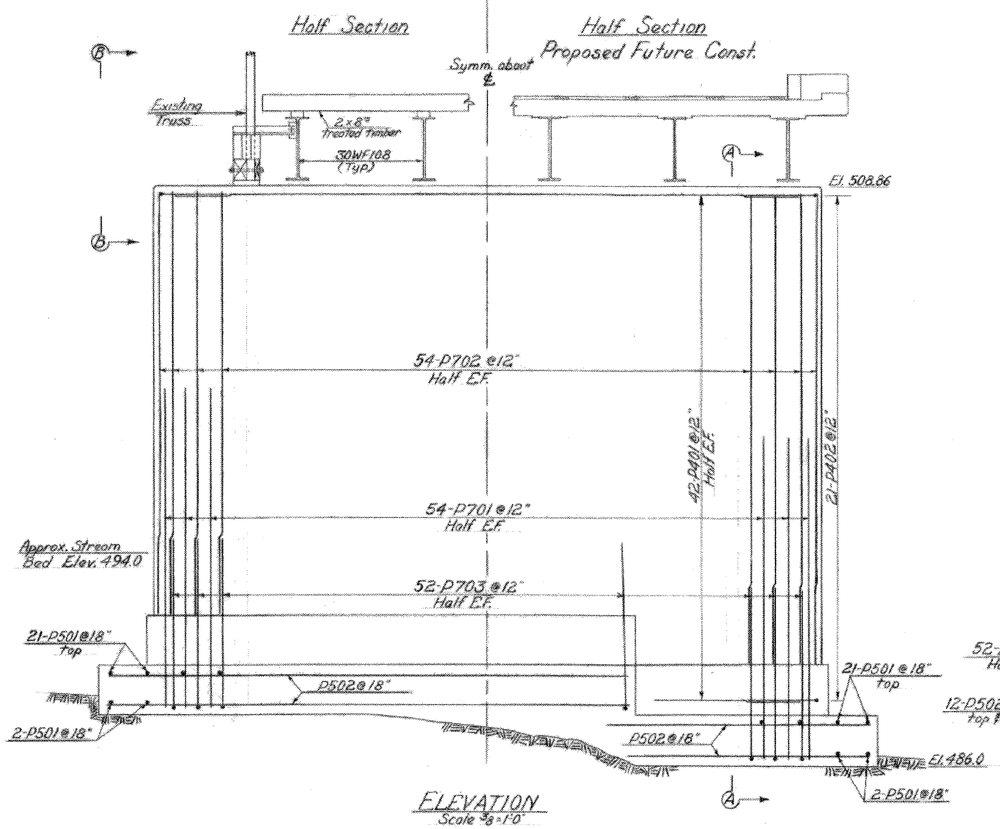
A·LEO NASH STEEL CORP. — ALNASCO
Fabricating · Warehousing
PHONE: HILLCREST 4-8251
CENTRAL BERKSHIRE BLVD
PITTSFIELD, MASS.

OWNER	STATE OF VERMONT
STRUCTURE	COVERED BRIDGE OVER OMPOMPANOOSUC RIVER
LOCATION	TOWN OF THETFORD, VERMONT
ARCHITECT	VT. DEPT. OF HIGHWAYS
CONTRACTOR	OLSON CONST.
DWN BY JB	CHK'D BY
DATE 8/1	J.O. 63-371
DWG NO. 371-1	

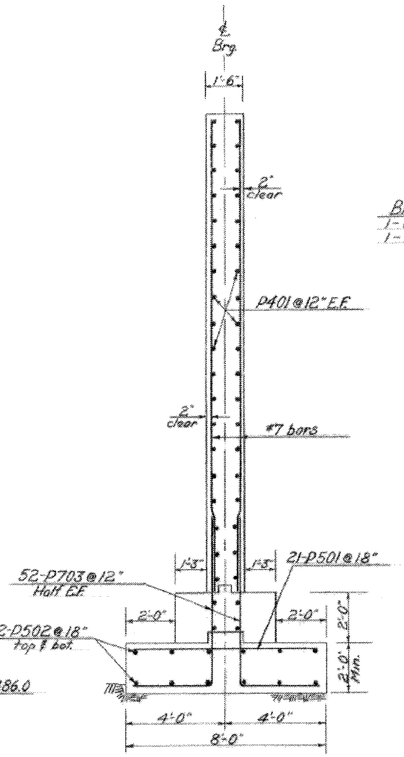
REQUIRED ASTM A-36

LINE	ASSBLY MARK	NO.	SHAPE	SECTION	LENGTH FT	LENGTH IN	REMARKS	WEIGHT	MILL ORDER NO.	MILL ORDER SHAPE & SECTION	MILL ORDER LENGTH FT	MILL ORDER LENGTH IN	MILL ORDER ITEM
2		ONE STRINGER G1											
3		2 STRINGERS G2											
4		ONE STRINGER G3											
6		4		30WF108	71	8⅞	CAMBER 1⅜						
7	pf	8	R	9x½	10	0							
8	pc	8	R	10x⅝	3	6⅜							
9	pb	16	R	4x⅝	3	6½							
10	pd	8	R	13½x⅜	1	6							
11	ph	4	R	7x1		11½							
12	pk	4	R	7x1	1	1							
13	pa	24	R	7x½	2	0	{4-G1,G3 8-G2}						
14		72	STUD-½ϕx3"-THREADED										
15		72	HEX NUTS-½ϕ TAP										
16		72	WASH-9/16ϕ HOLE										
17		40	SHIPPING BOLTS-⅞ϕ										
24		ONE STRINGER G4											
25		2 STRINGERS G5											
26		ONE STRINGER G6											
28		4		30WF108	43	8⅞	CAMBER ½						
29	ph	4	R										
30	pa	18	R				{3-G4,G6 6-G5}						
31		44	STUD-½ϕx3"-THREADED										
32		44	HEX NUTS-½ϕ TAP										
33		44	WASH-9/16ϕ HOLE										
37	FS1	4	R	9x1½	1	1	MACH						
40	ES1	8	R	9x1½		10	MACH						
44		24	SWEDGE BOLTS-AB1										
45		24	ROD 1¼ϕ		1	6½							
46		24	WASH 3ϕx⅜-1 5/16ϕ HOLE										
47		24	HEX NUTS-1¼ϕ TAP										

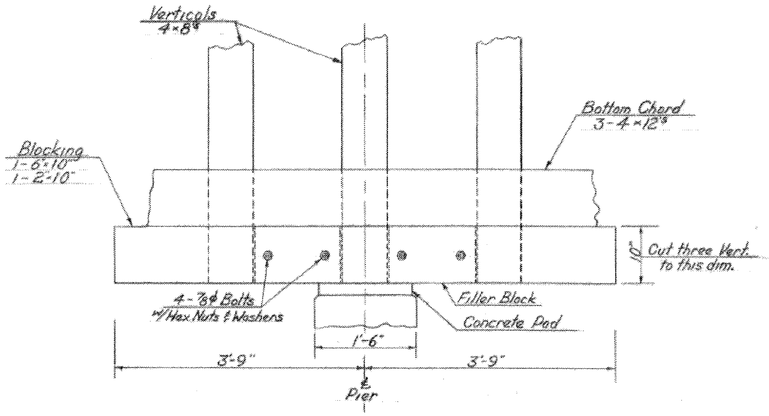
63-371-1BM



ELEVATION
Scale 3/8"=1'-0"

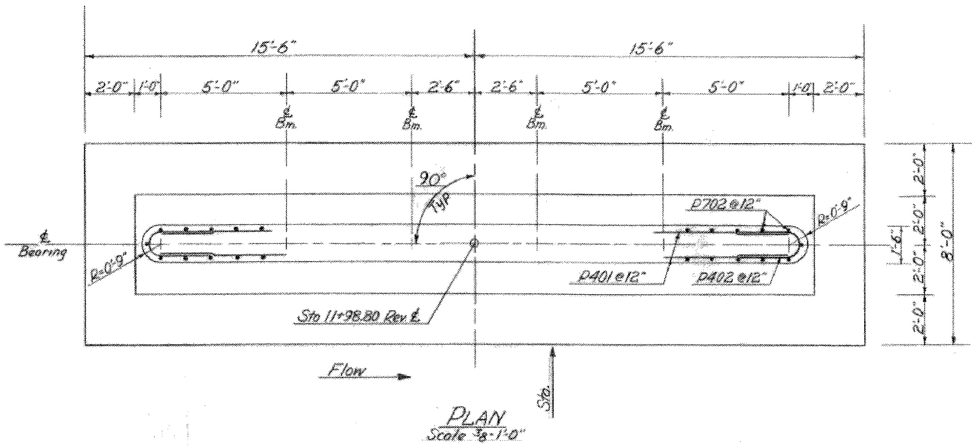


SECTION A-A
Scale 3/8"=1'-0"



SECTION B-B
Scale 1"=1'-0"

Note: All wood blocking shall be of Treated Timber.



PLAN
Scale 3/8"=1'-0"

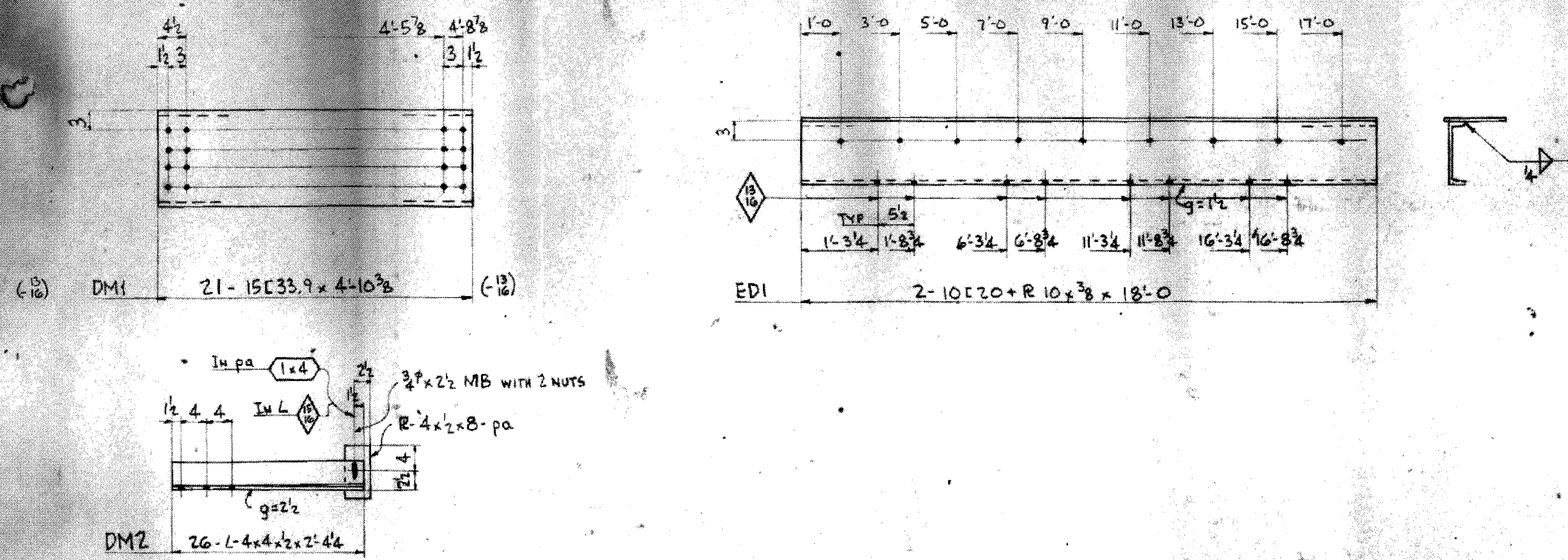
Note: All reinforcing steel to have clear cover of 3" unless otherwise noted.

ITEM NO.	ITEM	UNIT	NET	OVERRUN	TOTAL	FINAL
106-A	CHAN. EXCAV. OF EARTH	C.Y.				
106-B	CHAN. EXCAV. OF ROCK	C.Y.				
106-C	UNCLASS. CHAN. EXCAV.	C.Y.				
107	STRUCT. EXCAV.	C.Y.			~~90~~	80
401-B	CONC. CLASS B (MOD.)	C.Y.			~~54~~	60
402	REINF. STEEL	LBS.			5930	5920
407	ASPHALTIC-ASB. COATING	S.Y.				
502-B	TREATED TIMBER PILING	L.F.				
503	SPLICES FOR STEEL PILING	EA.				
504	STEEL PILING	L.F.				
502-A	UNTREATED TIMBER PILING	L.F.				

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF THETFORD
ROAD NO. TH-29 BRIDGE NO. 27
PIER

SCALE as noted
SURVEYED BY
DRAWN BY RND CHECKED BY RPG
PROJECT NO. TF-26-1961
SHEET 4 OF 10



REQUIRED ASTM A-36

LINE	SHOP BILL: ASS'BLY MARK	NO.	SHAPE	SECTION	LENGTH FT	LENGTH IN.	REMARKS	WEIGHT	MILL ORDER: NO.	SHAPE & SECTION	LENGTH FT	LENGTH IN.	ITEM
1													
2													
3	DM1	21		15[33.9	4	10⅜							
4													
5													
6	DM2	26	L	4x4x½	2	4¼							
7	pa	26	R	4x½		8							
8		26	MB	¾φ x 2½ - WITH			2 NUTS EACH						
9													
10													
11													
12													
13													
14			2	END DAMS - ED1									
15		2	.	10[20	18	0							
16		2	R	10 x ⅜	18	0							
17													
18													
19													
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40													
41													
42													
43													
44													
45													
46													
47													
48				FIELD BOLTS									
49													
50		353	HS	BOLT - ⅞φ x 2½									
51		100	HS	BOLT - ⅞φ x 3									
52		235	HS	BOLT - ⅞φ x 3¾									
53		453	HARD. WASH - 15/16φ HOLE										
54		235	HARD. BEV WASH - 15/16φ HOLE										
55		20	HS	BOLT - ¾φ x 2¾									
56		40	HARD BEV WASH - 13/16φ HOLE										
57													
58													
59													
60													
61										63-371-2	BM		
62													

approved 8/6/63

UNLESS OTHERWISE NOTED
RIVETS ✓
BOLTS ✓
HOLES 15/16
WELDS AS SHOWN
PAINT VERMONT SPEC. RED LEAD

A · LEO NASH STEEL CORP.
Fabricating, Warehousing
ALNASCO
CENTRAL BERKSHIRE BLVD. PITTSFIELD, MASS.

OWNER STATE OF VERMONT
STRUCTURE COVERED BRIDGE OVER OMPOMPANOOSUC RIVER
LOCATION TOWN OF THETFORD, VERMONT
ARCHITECT VT. DEPT OF HIGHWAYS CONTRACTOR OLSON CONST.
DWN BY JB CHK'D BY DATE 8/2 J.O. 63-371 DWG NO. 371-2

VERMONT

State of Vermont
PDD/Structures Design Section
National Life Building – Drawer 33
Montpelier, VT 05633-5001
www.aot.state.vt.us

Agency of Transportation

[phone] 802-828-2621
[fax] 802-828-3566
[ttd] 800-253-0191

D. S. Brown
300 E. Cherry Street
North Baltimore, OH 45872

DATE: April 23, 2007

Project Name: Thetford **Project #:** BRO 1444 (43)

Structure Identification: Bridge # 27 on Town Highway 26, Sayres Covered Bridge

The following Bearing details [Item #531.10, Bearing Device Assembly (Fabric)] for the above project (Vendor's Job #19866)transmitted with your letter dated March 30, 2007, have been reviewed and are being returned herewith.

Sheets: 1 of 1
Is approved.

The welding and bonding procedures are also approved.

You must provide written notice to this office as to the date fabrication represented by these drawings will begin. That notice must be received at least seven days prior to that date, as per Specification 506.03. Any material fabricated prior to the notification date is subject to rejection without further cause.

Sincerely,

Martha Evans-Mongeon
Project Manager

Attachments
cc: [X] Resident Engineer, Danny Breer
[X] Shop Inspector, Jeff Clark
[X] Contractor w/prints, Alpine Construction
[ ] Subcontractor – letter only _____
[X] Construction Divison – letter only
[X] Materials & Research Section (C&IA Unit) – letter only
[X] Files (Structures & Central)

VTrans Working to Get You There!

061 BB

D.S. BROWN
The D.S. Brown Company • 300 East Cherry Street • North Baltimore, Ohio 45872-0158
Phone: (419) 257-3561 • General Fax: (419) 257-2200 • Engineering Fax: (419) 257-2332

The D.S. Brown Company
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Fax: 419.257.2200
e-mail: dsb@dsbrown.com
www.dsbrown.com

Lewis Engineering Company
4201 Norex Drive
Chaska, Minnesota 55318
952.368.3000
Fax: 952.448.7000

International Division
57 Pioneer Road
Singapore 628508
65.862.8266
Fax: +65.862.8255
e-mail:
dsbrown@mbox2.singnet.com.sg

Bonding Procedure

The bonding process for laminating PTFE to the fabric pad is as follows:

The fabric pad surface to be bonded is prepared for lamination. A two-part structural grade epoxy is then applied per the manufacture's instructions. The PTFE is cut slightly oversize to account for the possible drift. The PTFE is then applied to the fabric pad and put into a vacuum press at the appropriate pressure for the necessary time period.

Once the fabric pad PTFE is removed from the press, the PTFE is trimmed to plan size and the pads are submitted for quality control review.

VTRANS
RECEIVED
CK'D BY _____ CK'D BY JLC
APR 18 2007
RESUBMIT _____ APPROVED ✓
BY _____ DATE 4-22-07

BB 290

DSBROWN

Production Joint Welding Procedure Specification (D1.5-02)

Procedure No: A-GTF-01 Date Issued: 1-9-04 Revision No: 0 Rev. Date: _____

Contractor (Fabricator) D.S. Brown Company Prepared by: James R. Connor, Quality Assurance Manager

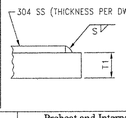
1. Non-Fracture Critical [X] Fracture Critical [ ] WPS Expiration Date: _____
2. Qualified in accordance with: AWS D1.5- 2002 , AWS D1.6-99
   Referenced PQR No(s). PQR-GTAW-01-(03) ___ , ___ , _____
   Referenced FWST No(s). PQR-GTAW-01(03) , _____ , ___ , _____
3. Material specification(s) ASTM A709 Gr. 36, 50, 50W, 304SS, 316SS
4. Material Thickness (es) Unlimited
5. Welding process GTAW
6. Manual [X] , machine [ ] , or semiautomatic [ ]
7. Position(s) of welding 1F, 2F
8. Filler metal specification AWS A5.9
9. Filler metal class and brand name ER309L (Murrex)
10. Flux class & brand N/A , Type N/A
11. Shielding gas 100% Argon Flow rate 20 CFH
12. Single pass [X] Or multiple pass [ ]
13. Single arc [X] Or multiple arc [ ]
14. Welding Current DCEN
15. Polarity Straight
16. Welding progression stringers
17. Root treatment Clean to bright sound metal or per AWS D1.5 (3.2.1 & 3.11)
18. Postheat treatment N/A
19. Calculated Heat Input (KJ/In) Min 10.9 KJ Max 20.4 KJ
20. Electrode extension (electrical stickout) N/A

For DOT Approval

VTRANS RECEIVED
APR 09 2007
OK'D BY _____ OK'D BY JWC
RESUBMIT _____ APPROVED ✓
BY _____ DATE 4/18/07

Weld size (In)	Pass No(s)	Electrode Size (In)	Welding Process Variables AMPS/WFS*	VOLTS	Travel Speed (IPM)
20 ga.	1	1/8"	170-200	15-17	10-14
16 ga.	1	1/8"	170-200	15-17	10-14
14 ga.	1	1/8"	170-200	15-17	10-14
12 ga.	1	1/8"	170-200	15-17	10-14
11 ga.	1	1/8"	170-200	15-17	10-14
10 ga.	1	1/8"	170-200	15-17	10-14
8 ga.	1	1/8"	170-200	15-17	10-14
3/16"	1	1/8"	170-200	15-17	10-14

Joint Detail (Flare Bevel)
Show all dimensions, weld sizes, passes, and AWS symbols



T_1 = Varies
S = Fillet Weld Size (Fillet weld must not exceed thickness of stainless steel)

* Wire feed speed may be used along with amperage (include chart)

Prepared By: James R. Connor DSB QA Manager

Project: _____

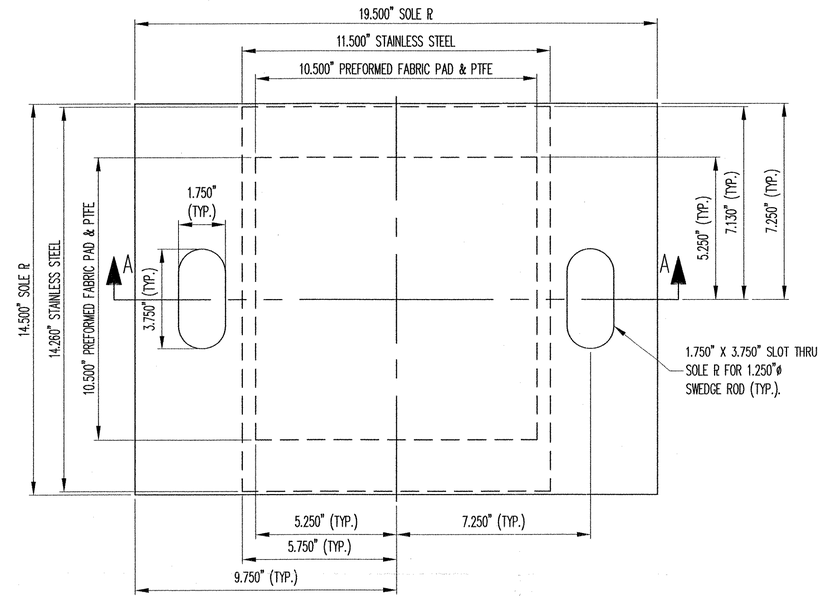
DSB Job: 19866-1106

Preheat and Interpass Temperature Chart

Base Metal Thickness range	Minimum Preheat (°F)	Max Preheat & Interpass (°F)
≤ 3/4"	50°F	450°F
>3/4" to ≤1.5"	70°F	450°F
>1.5" to ≤2.5"	150°F	450°F
>2.5"	225°F	450°F

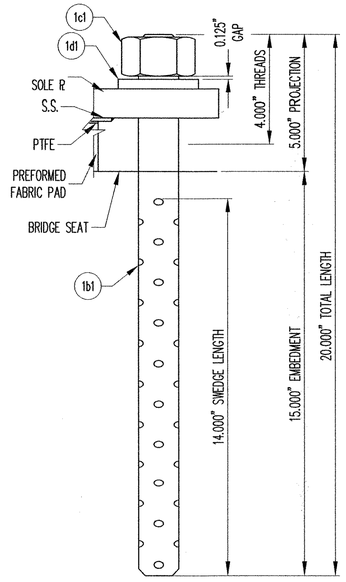
Note: When this procedure is used for A709Gr50W materials, it shall be limited to 5/16" single pass or material be coated.

063 BR

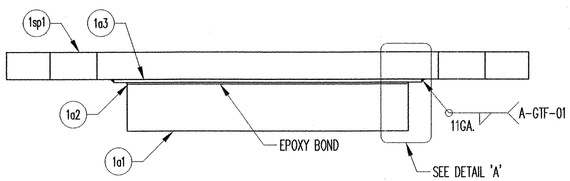


PLAN VIEW

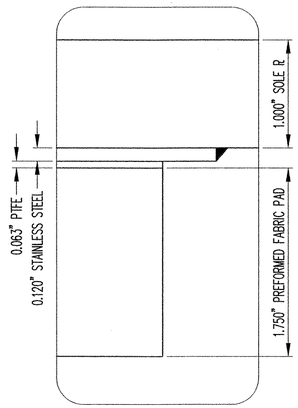
SLIDING PREFORMED FABRIC BEARING
(4) REQ'D @ ABUT. 1



SWEDGE ROD DETAIL



SECTION 'A-A'



DETAIL 'A'

LOAD TABLE

LOAD DATA	
DEAD LOAD REACTION (KIPS)	10 -kips
LIVE LOAD REACTION (KIPS)	16 -kips
TOTAL LOAD REACTION (KIPS)	26 -kips

PLEASE PROVIDE

MK	QTY.	DESCRIPTION	MATERIAL	LENGTH	REMARKS	PART NO.
1A	4	EXPANSION FABRIC BEARING				
1a1	4	1.750" X 10.500"	AASHTO 18.4.9.1	10.500"		
1a2	4	0.063" X 10.500"	PTFE	10.500"	PURE VIRGIN UNFILLED	
1a3	4	11 GA. X 11.500"	A240 T304, §8 & 2B	14.260"	PLAIN	
1sp1	4	1.000" X 19.500"	A709 GR 50 OR 50W	14.500"	A123-HDG	
1B	8	SWEDGE ROD				
1b1	8	1.250"ø X 20.000" SWEDGED ROD	A449		4" THREADS, 14" SWEDGE; A153-HDG	
1C	8	HEAVY HEX NUT				
1c1	8	1.250"ø HEX NUT	A563-DH OR A194-2H		A153-HDG	
1D	8	PLATE WASHER				
1d1	8	0.375" X 3.000"	A36	3.000"	1.313" DIA. HOLE @ CENTER; A123-HDG	

NOTE: ALL MATERIAL SPECIFICATION DESCRIPTIONS ARE ASTM, UNLESS OTHERWISE NOTED.

GENERAL NOTES:

1. PAD AND MATERIALS SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, DATED 2001 AND THE LATEST REVISIONS, INCLUDING SUPPLEMENTARY SPECIFICATIONS, CONTRACT PLANS, AND THE SPECIAL PROVISIONS. GENERAL SHOP PRACTICES, STRUCTURAL FABRICATION, WELDING AND ASSEMBLY SHALL BE GOVERNED BY ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

2. THIS SHOP DRAWING WAS PREPARED IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS. THE D.S. BROWN COMPANY DOES NOT ACCEPT LIABILITY FOR THE DESIGN OF THE PRODUCTS DETAILED IN THIS SHOP DRAWING.

3. THE D.S. BROWN COMPANY TO SUPPLY ONLY THE PARTS SHOWN ON THIS DRAWING.

4. ALL STEEL SHALL BE PRODUCED IN THE UNITED STATES OF AMERICA.

5. ALL CORNERS AND EDGES OF STEEL PLATES SHALL BE GROUND TO A 0.063" RADIUS FOR GALVANIZING.

6. PTFE SHALL BE PURE VIRGIN UNFILLED POLYTETRAFLUOROETHYLENE.

7. STAINLESS STEEL SHALL CONFORM TO ASTM A240-TYPE 304 AND SHALL BE 11 GA. (0.120"). STAINLESS STEEL SLIDING SURFACES IN CONTACT WITH PTFE SHALL HAVE A NO. 8 MIRROR FINISH AND ALL OTHERS SHALL HAVE A 2B FINISH.

8. ALL STRUCTURAL STEEL SURFACES TO BE GALVANIZED SHALL BE CLEANED IN ACCORDANCE WITH SSPC-SP10.

9. ALL EXTERNAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123. GALVANIZATION LIFTING DEVICES MAY BE WELDED TO PARTS IF NECESSARY. WHEN THEIR USE IS COMPLETE, REMOVE AND GRIND FLUSH ALL CONNECTION LOCATIONS. REPAIR ALL GALVANIZATION IN ACCORDANCE WITH ASTM A780. GALVANIZING REPAIR PAINTS CONTAINING ALUMINUM SHALL NOT BE USED ON SURFACES TO BE IN CONTACT WITH FRESH CONCRETE.

10. UNLESS OTHERWISE NOTED, DIMENSIONAL TOLERANCES & SURFACE FINISHES SHALL SATISFY THE REQUIREMENTS OF AASHTO DIVISION II, SECTION 18, TABLE 18.5.1.5-1.

11. THE TEMPERATURE OF THE STEEL ADJACENT TO THE PTFE & FABRIC PAD SHALL NOT EXCEED 300°F (149°C). TEMPERATURE SHALL BE CONTROLLED BY THE USE OF TEMPERATURE INDICATING CRAYON OR OTHER DEVICES APPROVED BY THE ENGINEERS.

12. DS BROWN MAY SUBSTITUTE A709 GR. 50W FOR A709 GR. 50 DUE TO AVAILABILITY AT NO ADDITIONAL COST TO THE OWNER OR CONTRACTOR.

REV.	DESCRIPTION	DATE	DET.	CK'D.

D.S. BROWN
THE D.S. BROWN COMPANY
300 E. CHERRY STREET
NORTH BALTIMORE, OHIO 45872
419.257.3561
FAX: 419.257.0332
WWW.DSBROWN.COM

LOCATION — TUCKER HILL RD/TH6 OVER OMPOMPANOOSUC BRIDGE REHABILITATION PROJECT
BRIDGE — 27
PROJECT — BHO 1444 (43)
F.A.P. NO. — THETFORD
P.O. NO. — 007-049-008
DESIGNER — VT DOT
CUSTOMER — ALPINE CONSTRUCTION, LLC

RECEIVED
CK'D BY _____ OK'D BY MRM
APR 09 2007
RESUBMIT _____ APPROVED X
BY _____ DATE 4/23/07

ITEM	QUANTITY
19866-1106-1	4 OF 4

DESCRIPTION:
EXPANSION FABRIC BEARING
ORANGE CO., VT

SCALE:	DRAWN BY:	CHECKED BY:	DATE:	
N.T.S.	DA	NRH	3/29/07	-
PROJECT NUMBER		PRODUCT CODE	RELEASE	SHEET
19866		1106	1	01

064 BB

VERMONT

State of Vermont
PDD/Structures Design Section
National Life Building – Drawer 33
Montpelier, VT 05633-5001
www.aot.state.vt.us

Agency of Transportation

[phone] 802-828-2621
[fax] 802-828-3566
[ttd] 800-253-0191

LCI, Laminate Concepts Inc.
P. O. Box 369
3310 State Rte. 352
Big Flats, NY 14814

DATE: March 09, 2007

Project Name: Thetford **Project #:** BRO 1444 (43)

Structure Identification: Bridge # 27 on Town Highway 26, Savres Covered Bridge

The following Glu-laminated Deck details [Item #522.40, Structural Glued Laminated Timber (Deck)] for the above project (Vendor's Job #0207-115-LT)transmitted with your letter dated Feb. 26, 2007, have been reviewed and are being returned herewith.

Sheets: 1 and 2 of 2
Are Approved.

You must provide written notice to this office as to the date fabrication represented by these drawings will begin. That notice must be received at least seven days prior to that date, as per Specification 506.03. Any material fabricated prior to the notification date is subject to rejection without further cause.

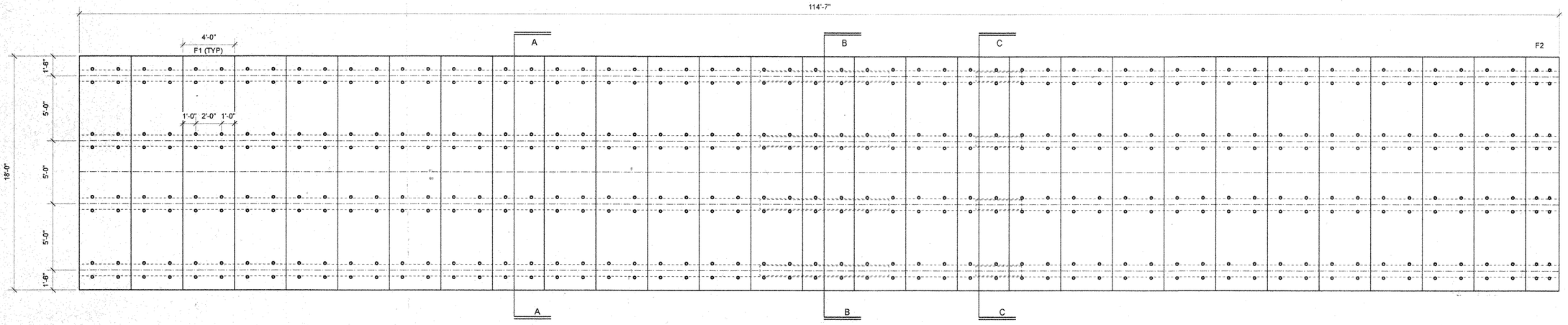
Sincerely,

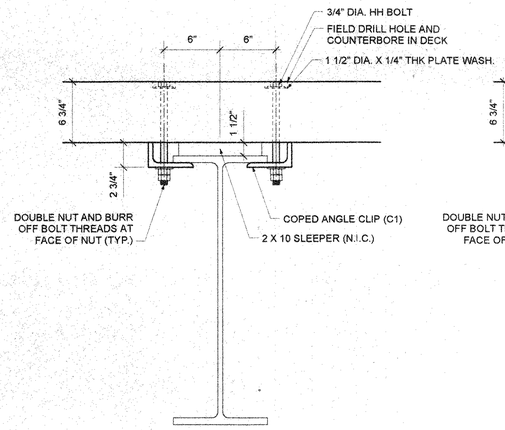
Martha Evans-Mongeon
Project Manager

Attachments
cc: [X] Resident Engineer w/prints, Danny Breer
[X] Shop Inspector w/prints, Jeff Clark
[X] Contractor w/prints, Alpine Construction
[ ] Subcontractor – letter only
[X] Construction Divison – letter only
[X] Materials & Research Section (C&IA Unit) – letter only
[X] Files (Structures & Central)

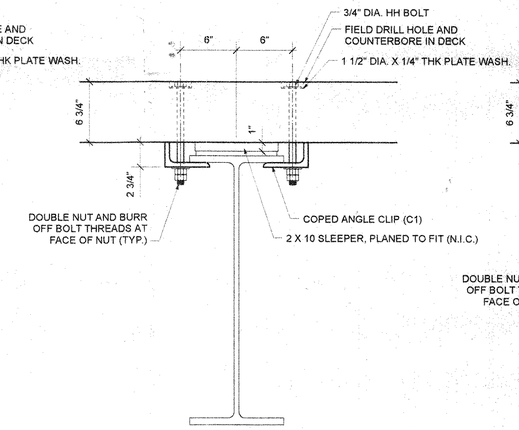
VTrans Working to Get You There! Vermont Agency of Transportation

065 GLD

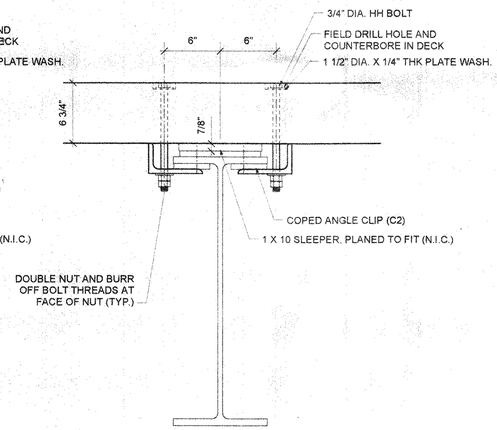




DECK TO STEEL DETAIL SECTION A-A



DECK TO STEEL DETAIL SECTION B-B



DECK TO STEEL DETAIL SECTION C-C

1. **SCOPE**
   This standard is intended to augment, or support, design requirements that may be issued by the owner.
2. **DEFINITIONS AND ABBREVIATIONS**
   AITC American Institute of Timber Construction; **APA/EWS** American Wood Systems members, a related Corp. of the American Plywood Association; **AWPA** American Wood Preservers Association, **NDS** National Design Specifications. **TTE** tag this end **UNO** unless noted otherwise **DAC** Dimensions are cumulative **NIC** not in contract
3. **CODES AND STANDARDS**
   In addition to complying with all pertinent codes and regulations, materials shall comply with the following:
   3.1 American Association of State Highway and Transportation Officials (AASHTO)
   3.2 American National Standard for Wood Products-Structural Glued Laminated Timber ANSI A190. 1-1992
   3.3 Proof-loading system for laminated finger joints to be in accordance with ANSI A190.1
4. **CERTIFICATIONS**
   4.1 Certifications required by the laminator:
   4.1.1 The AITC or APA/EWS Certificate of Conformance with ANSI A190.1-1992
   4.2 Preservative treatment certification required (if applicable)
   4.2.1 Certificate of treatment furnished by a certified AWPA treating facility
5. **STRUCTURAL DESIGN**
   The structure shall be designed to carry the following loads:
   5.1 Dead Load
   5.2 Live Load H-20
6. **MATERIALS**
   6.1 Lumber-intended for structural use with design stress shall be graded in conformance with accepted standards for allowable unit stresses (See AASHTO Section 13)
   6.2 Grade-Architectural Appearance Grade as per AITC 110.
   6.3 All lumber to be Incised Southern Yellow Pine. Glulam as per AITC 117-98.
   6.4 Adhesive: all members bonded with exterior "wet-use" conforming to ASTM D 2559
7. **PRESERVATIVE TREATMENT**
   7.1 All GLU-lam material to be treated with the preservative Pentachlorophenol in Type A oil conforming to AWPA Standard C-28,C-14, P-8 and P-9. Retention level shall be 0.60 PCF. Final steaming and vacuuming shall be performed.
8. **HARDWARE**
   8.1 All bolts and nuts shall galvanized (A-153) steel ASTM A307 , unless noted otherwise,
   8.2 Timber Washers to be galvanized cast iron or malleable iron.
   8.3 All steel plates and shapes to be galvanized (A-123) steel ASTM A36 unless noted otherwise.
9. **MISC**
   9.1 LCI is not responsible for materials or manufacturing not shown on these drawings.
   9.2 Contractor is responsible for verification of all sizes, quantities and dimensions shown on shop drawings
   9.3 For wearing surface information, refer to the USDA Forest Service manual "Timber bridges -Design, Construction, Inspection and Maintenance" Chapter 11, for types and applications.

RECEIVED
OK'D BY SSS OK'D BY MaM
MAR 08 2007
RESUBMIT ____ APPROVED ✓
BY ____ DATE 3/9/07

LAMINATED CONCEPTS INC.
P.O. BOX 369
3310 STATE RTE 352
BIG FLATS, NEW YORK 14814
PHONE: 607.562.8110
FAX: 607.562.8105

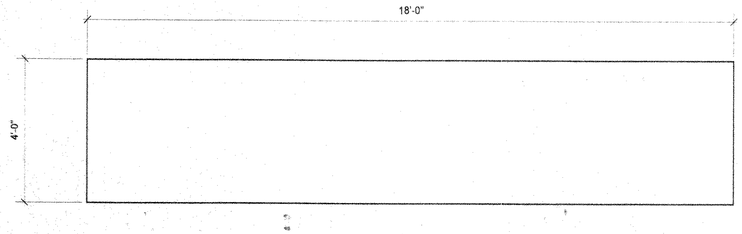
DRAWN	DATE
MSS	1/31/07
CHK'D	DATE
	-
APP'D	DATE
SCALE	

REVISIONS

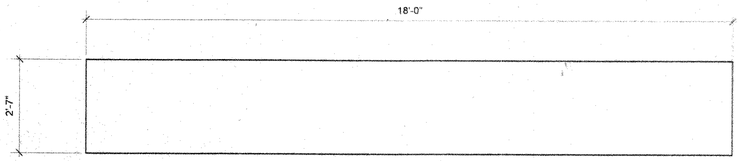
NO.	DATE	BY	REVISIONS
1	2/26/07	SS	ADD WASHERS

PROJECT NAME	PROJECT JOB NO.
THETFORD BHO 1444 (43) THETFORD BRIDGE NO. 27 TOWN HIGHWAY 6 TOWN OF THETFORD CENTER COUNTY OF ORANGE, VERMONT	0207-115-LT
PREPARED FOR ALPINE CONSTRUCTION, LLC SCHUYLERVILLE, NY	SHEET NO. 1 OF 2

066 GLD



MK-F1 6 3/4" X 48" X 18'-0 28 REQ'D COMB. 48 APPROX. WT. = 1800#



MK-F2 6 3/4" X 31" X 18'-0 1 REQ'D COMB. 48 APPROX. WT. = 1200#

LAMINATED CONCEPTS INC. LIST OF LAMINATED TIMBER MATERIALS

02 07 115 TD — **Thetford, VT Covered Bridge**

qty	mk#	width	depth	length ft	length in	grade	species	remarks	bf tot
28	F1	6.75	48	18	0	COMB. 48	SYP	-----	13608.00
1	F2	6.75	31	18	0	COMB. 48	SYP	----	313.87

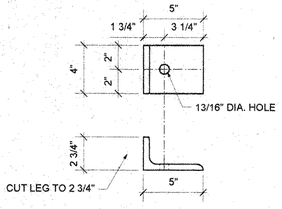
LAMINATED CONCEPTS INC. LIST OF HARDWARE MATERIALS

02 07 115 TD — **Thetford, VT Covered Bridge**

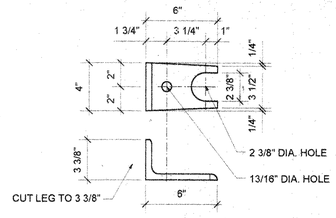
	description	qty	dia.	lgt	wh	wn	n	type
bolts	Deck to steel	448	3/4"	11"	P	F	1	Hex Head Bolts
		16	3/4"	12"	P	F	1	Hex Head Bolts
		470	3/4"					2" Dia. Flat Washers
		950	3/4"					Hex Nuts

NOTE:wh = washer type at bolt head, wn = washer type at nut, n = nuts :washer type (T =Timber / F =Flat / P=Plate / D=Dock)

	description	qty	thk	width	length	type
steel	Deck Clips C1 5" x 5"	448	1/2"		4"	Angle
	Deck Clips C2 6" x 3 1/2"	16	1/2"		4"	Angle
	Plate Washers	470	1/4"		1 1/2" dia.	Plate



DECK CLIP C1 5" X 5" X 1/2" ANGLE 4" LG. 448 REQ'D



DECK CLIP C2 6" X 3 1/2" X 1/2" ANGLE 4" LG. 16 REQ'D

PLATE WASH 1/4" X 1 1/2" DIA. 470 REQ'D

RECEIVED
CK'D BY SSS OK'D BY MEM
MAR 08 2007
RESUBMIT ____ APPROVED ✓
BY ____ DATE 3/9/07

LAMINATED CONCEPTS INC.

P.O. BOX 369
3310 STATE RTE 352
BIG FLATS, NEW YORK 14814
PHONE: 607.562.8110
FAX: 607.562.8105

DRAWN	DATE
MSS	1/31/07
CHK'D	DATE
APP'D	DATE
SCALE	

REVISIONS NO.	DATE	BY	REVISIONS
1	2/26/07	SS	ADD WASHERS

PROJECT NAME	PROJECT JOB NO.
THETFORD BHO 1444 (43) THETFORD BRIDGE NO. 27 TOWN HIGHWAY 6 TOWN OF THETFORD CENTER COUNTY OF ORANGE, VERMONT	0207-115-LT
PREPARED FOR ALPINE CONSTRUCTION, LLC SCHUYLERVILLE, NY	SHEET NO. 2 OF 2

067 GLD