STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF STOWE
COUNTY OF LAMOILLE

ROUTE NO.: TH 1 (CLASS 2), BRIDGE NO. 3

PROJECT LOCATION: BEGINNING AT A POINT APPROXIMATELY 1.89 MILES WEST OF THE JUNCTION OF VT ROUTE 100 AND TH NO. 1 AND EXTENDING NORTHEASTERLY ALONG TH NO. 1 FOR 0.038 MILES.

PROJECT DESCRIPTION: REMOVAL OF EXISTING CONCRETE DECK AND STEEL BEAMS. PARTIAL REMOVAL OF EXISTING ABUTMENT. CONSTRUCTION OF A NEW NORTHERN ABUTMENT. NEW PRESTRESSED CONCRETE BOX BEAM SUPERSTRUCTURE AND RELATED APPROACH WORK.

LENGTH OF STRUCTURE	= 77 FEET	= 0.015 MILES
LENGTH OF ROADWAY	= 123 FEET	= 0.023 MILES
LENGTH OF PROJECT	= 200 FEET	= 0.038 MILES

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G-1D	STEEL BEAM GUARDRAIL APPROACH END TERMINAL, STEEL BEAM GUARDRAIL TRAILING END TERMINAL, ANCHOR FOR STEEL BEAM GUARD RAIL, STEEL BEAM MEDIAN BARRIER	01-03-00
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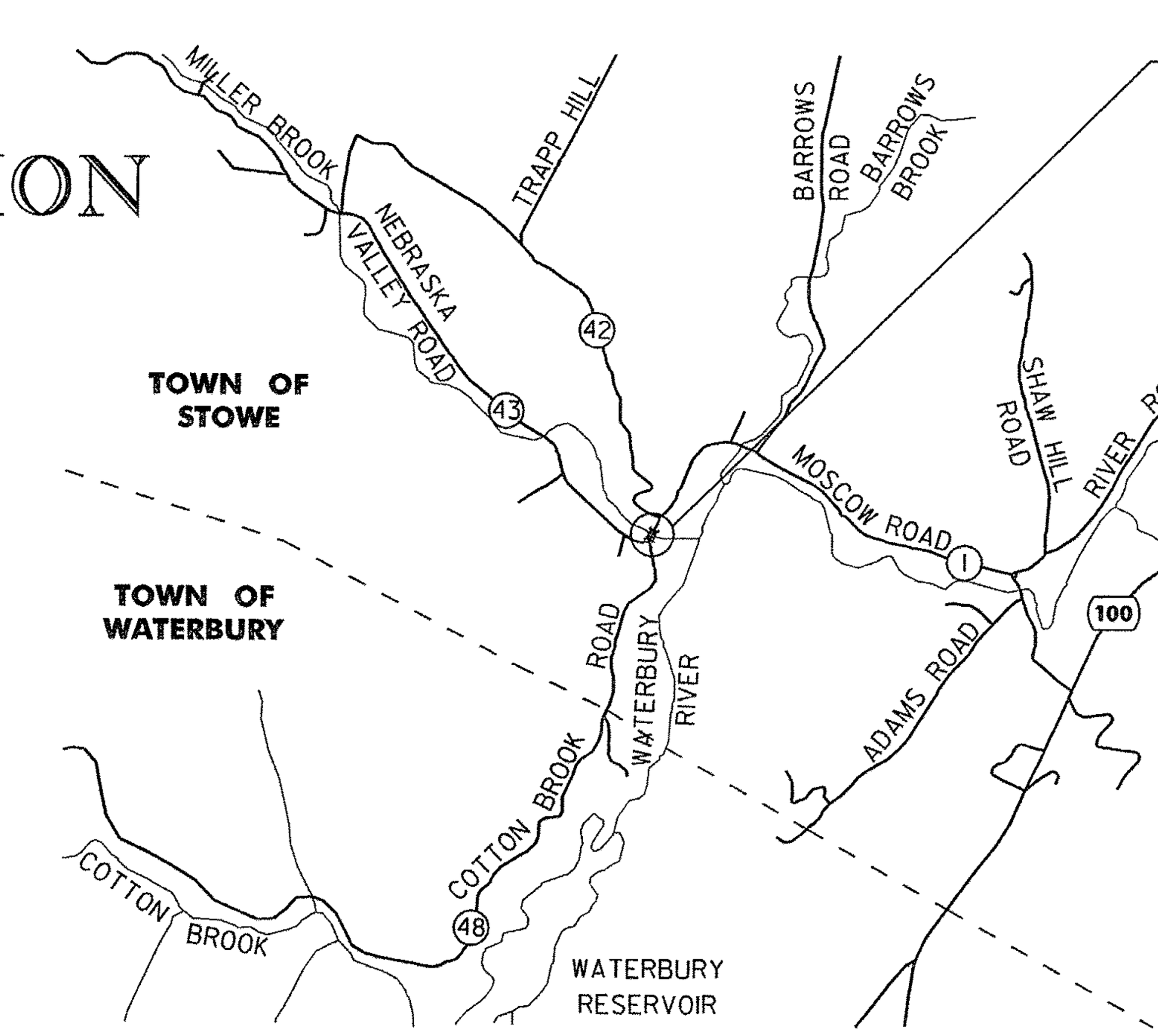
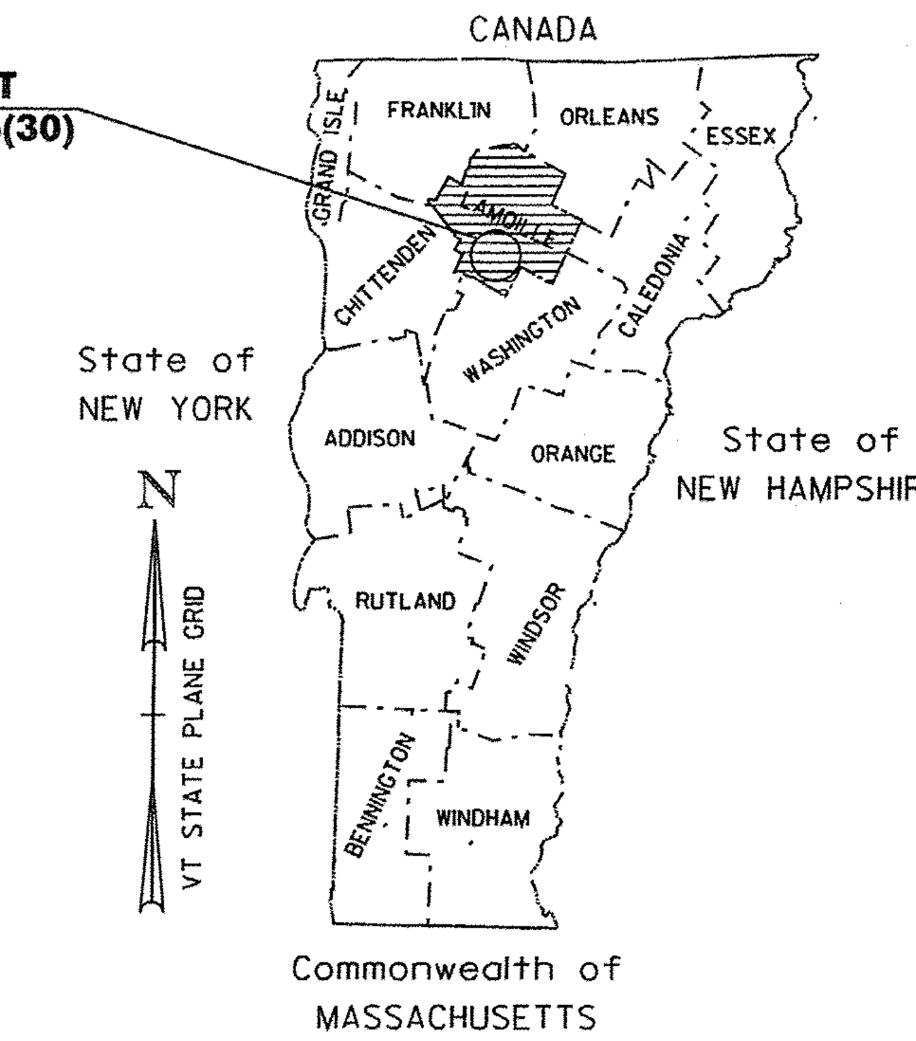
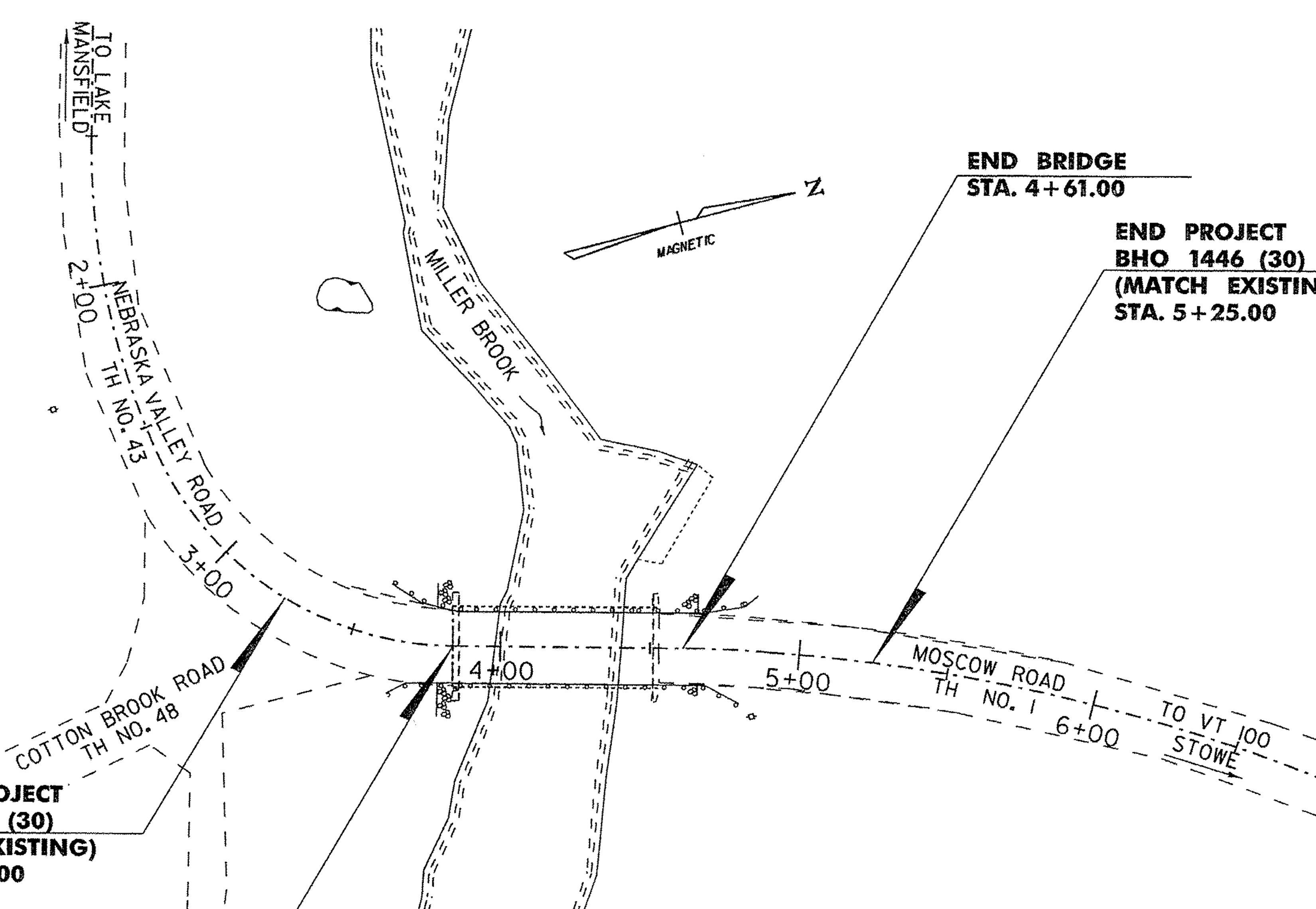
SB-R6-82	BRIDGE RAILING, HEAVY DUTY STEEL BEAM (TYPE A, TYPE B, TYPE C, AND TYPE D) BRIDGE RAILING HEAVY DUTY STEEL BEAM WITH BOX HAND RAIL (TYPE E)	01-06-95
SB-R7-90	BRIDGE RAILING, HEAVY DUTY STEEL BEAM /FASCIA MOUNTED/STEEL TUBING	01-11-95



LOCATION MAP
NOT TO SCALE





SCALE IN FEET
SCALE: 1 IN. = 40 FT.
(40 0 40 80)

RECORD PLANS

CONTRACTOR:	AUSTIN CONSTRUCTION, INC.- CONCORD, VT
RESIDENT ENGINEER:	VIC DWIRE
CONSTRUCTION BEGAN:	MAY 10, 2010
CONSTRUCTION COMPLETE:	OCTOBER 25, 2010
RECORD PLANS BY:	VIC DWIRE & C. PIERCE

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

BY *Victor R. Dwire* RESIDENT ENGINEER

DATE *May 15, 2013*

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

CONVENTIONAL SIGNS

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

DATUM

VERTICAL	ASSUMED
HORIZONTAL	ASSUMED

PLANS PREPARED BY:
DuBois & King inc.
engineering planning management development

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

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

STATE OF VERMONT — LICENSED PROFESSIONAL ENGINEER — NO. 6497 Civil

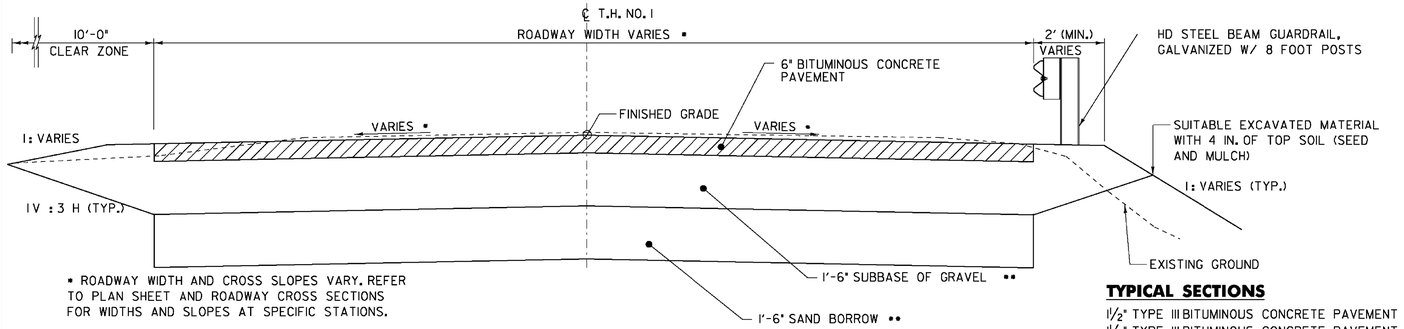
PLOTTED 12/21/2009

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED *Richard Tetreault* DATE *12-22-09*

PROJECT MANAGER:
CHRISTOPHER WILLIAMS, P.E.

PROJECT NAME : STOWE
PROJECT NUMBER : BHO 1446 (30)

SHEET 1 OF 37 SHEETS



• ROADWAY WIDTH AND CROSS SLOPES VARY. REFER TO PLAN SHEET AND ROADWAY CROSS SECTIONS FOR WIDTHS AND SLOPES AT SPECIFIC STATIONS.

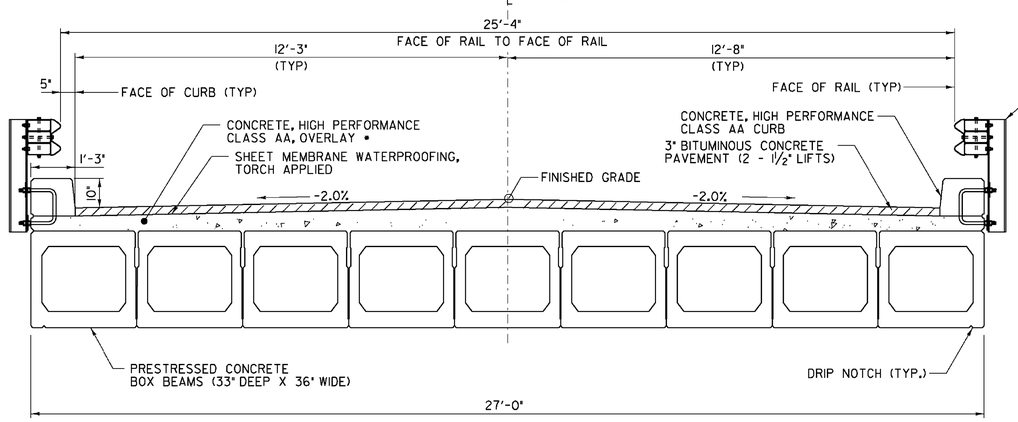
TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF 0.015 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT AS DIRECTED BY THE ENGINEER.

TYPICAL ROADWAY CROSS SECTION
SCALE: 1/2" = 1'-0"

•• SEE MATERIAL DEPTH TRANSITION DETAIL SHEET 36

TYPICAL SECTIONS

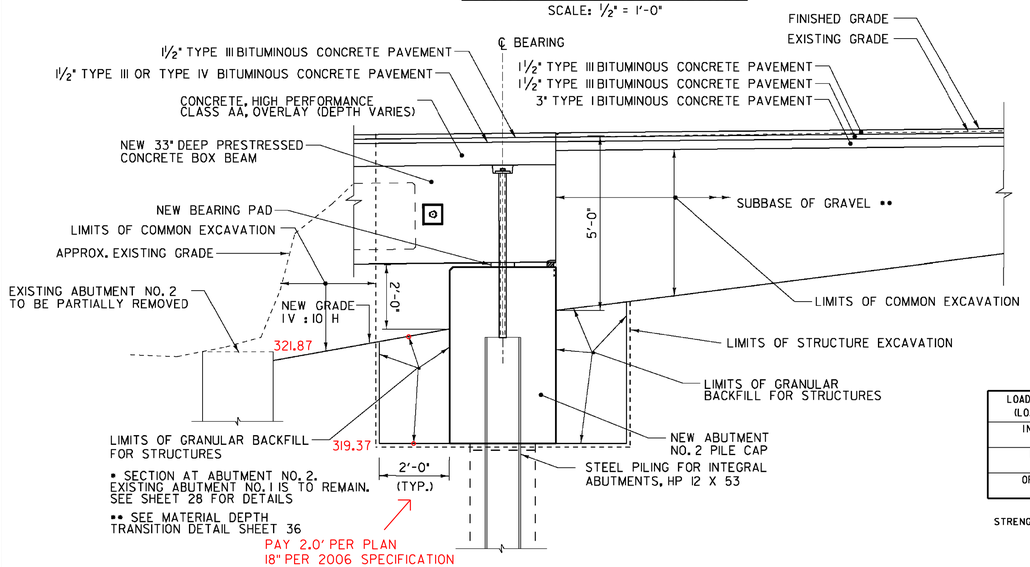
1 1/2" TYPE III BITUMINOUS CONCRETE PAVEMENT
1 1/2" TYPE III BITUMINOUS CONCRETE PAVEMENT
3" TYPE I BITUMINOUS CONCRETE PAVEMENT
1'-6" SUBBASE OF GRAVEL
1'-6" SAND BORROW
FOR PG BINDER SEE SECTION 406 OF THE GENERAL SPECIAL PROVISIONS



BRIDGE DECK PAVEMENT
TOP LIFT = 1-1/2" TYPE III
BOTTOM LIFT = 1-1/2" TYPE III OR TYPE IV

• MINIMUM CONCRETE OVERLAY THICKNESS
5 IN. AT FACE OF CURB
8 IN. AT CENTERLINE

TYPICAL BRIDGE CROSS SECTION
SCALE: 1/2" = 1'-0"



PLAN SUPERCEDES SPEC
CHRIS WILLIAMS PROJECT MANAGER
7-8-10

TYPICAL ABUTMENT NO. 2 SECTION*
SCALE: 1/2" = 1'-0"

TRAFFIC DATA

2000 ADT = 636
2000 DHV = 90
2000 ADTT = 13
2020 ADT = 865
2020 DHV = 122
2020 ADTT = 17
D = 60%
T = 2%
DESIGN SPEED = 35 mph
ESALS
(2000-2020) 269,254
(2000-2040) 859,221

MATERIALS TOLERANCE TABLE

MATERIAL ITEM	THICKNESS TOLERANCE
PAVEMENT	± 1/4" (TOTAL)
BASE COURSE	± 1/2"
SUBBASE	± 1"
SAND BORROW	± 1"

LOAD FACTOR LOAD RATING (TONS)

LOADING LEVELS (LOAD FACTOR)	TRUCK						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY	48	65					
POSTED	52	67	79		60	62	72
OPERATING		70	86	106	63	66	

STRENGTH RF = $\frac{F_{ALL} - F_{DL}}{F_{LL}}$

PLOTTED 11/4/2009

FINAL HYDRAULICS REPORT

HYDROLOGIC DATA

DRAINAGE AREA= 13.4 SQ. MI.
CHARACTER OF TERRAIN: HILLY TO MOUNTAINOUS, MOSTLY FORESTED, A FEW OPEN AREAS.
CHARACTER & TYPE OF STREAM: SINUOUS WITH ERODING BANKS AND GRAVEL BARS. LOCALLY BRAIDED.
NATURE OF STREAMBED: SAND, GRAVEL AND COBBLES.

Q2.33= 600 CFS Q50= 1950 CFS
Q10= 1200 CFS Q100= 2300 CFS
Q25= 1600 CFS Q500= 3200 CFS

DATE OF FLOOD OF RECORD: UNKNOWN
WATER SURFACE ELEV.: UNKNOWN ESTIMATED DISCHARGE: UNKNOWN
NATURAL STREAM VELOCITY @ Q =@ Q25 = 7.3 FPS
ICE CONDITIONS: MODERATE DEBRIS: MODERATE
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY YES
IS ORDINARY RISE RAPID? YES
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? MAYBE
IF YES, DESCRIBE. WATER MAY BACK UP THROUGH THIS SITE FROM THE LITTLE RIVER DURING LARGE FLOOD EVENTS. THAT COULD NOT BE DETERMINTED DUE TO THE USE OF LOCAL DATUMS.
WATERSHED STORAGE ____ HEADWATERS____ UNIFORM THROUGHOUT WATERSHED X
IMMEDIATELY ABOVE SITE ____

EXISTING STRUCTURE

STRUCTURE TYPE: SINGLE SPAN STEEL BEAM WITH CONCRETE DECK YEAR BUILT: 1968
CLEAR SPAN (NORMAL TO STREAM): 65 FT.
VERTICAL CLEARANCE ABOVE STREAMBED: 10'
WATERWAY OF FULL OPENING: 477 SQ. FT.
DISPOSITION OF STRUCTURE: EXISTING SUPERSTRUCTURE TO BE REMOVED AND DISPOSED OF BY CONTRACTOR. EXISTING SOUTHERN ABUTMENT TO REMAIN. EXISTING NORTHERN ABUTMENT TO BE PARTIALLY REMOVED.
TYPE OF MATERIAL UNDER SUBSTRUCTURE: SEE BORING LOGS.
WATER SURFACE ELEV. @ Q2.33= 317.9' VELOCITY= 5.0 FPS
Q10= 319.4' 6.8 FPS
Q25= 320.2' 8.0 FPS
Q50= 320.9' 9.0 FPS
Q100= 321.5' 10.0 FPS

LONG TERM STREAM BED CHANGES: CHANNEL WIDENING AND AGGRADATION UPSTREAM WITH LOCAL SCOUR THROUGH THE BRIDGE.
IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: ABOVE Q100
RELIEF ELEVATION: 326.4' DISCHARGE OVER ROAD @ Q100: NONE

UPSTREAM STRUCTURE: TOWN: STOWE DISTANCE: 3,400'
HIGHWAY NO.: T.H. 43 STRUCTURE NO.: 51
NOTE: STRUCTURE TYPE: SINGLE SPAN STEEL BEAM BRIDGE.
CLEAR HEIGHT: 8.5'

DOWNSTREAM STRUCTURE: TOWN: SEE NOTE DISTANCE: 900'
HIGHWAY NO.: ____ STRUCTURE NO.: ____
NOTE: N.A. - CONFLUENCE WITH LITTLE RIVER

PROPOSED STRUCTURE

STRUCTURE TYPE: SINGLE SPAN, NEW PRESTRESSED BOX BEAM SUPERSTRUCTURE. NEW NORTHERN ABUTMENT ON PILES. EXISTING SOUTHERN ABUTMENT IS TO REMAIN.
CLEAR SPAN (NORMAL TO STREAM): 73 FT.
VERTICAL CLEARANCE ABOVE STREAMBED: 10 FT.
WATERWAY OF FULL OPENING: 524 SQ. FT.

WATER SURFACE ELEV. @ Q2.33= 317.9' VELOCITY= 5.0 FPS
Q10= 319.4' 6.8 FPS
Q25= 320.2' 8.0 FPS
Q50= 320.9' 9.0 FPS
Q100= 321.5' 10.0 FPS

IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: ABOVE Q100
RELIEF ELEVATION: 326.4' DISCHARGE OVER ROAD @ Q100: NONE

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 324.2'
VERTICAL CLEARANCE @ Q100: 2.7'

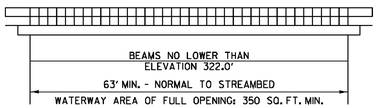
SCOUR: CONTRACTION SCOUR = 2.0' AT Q100 AND 5.0' AT Q500.
REQUIRED CHANNEL PROTECTION: STONE FILL, TYPE IV WHERE NEEDED

PERMIT INFORMATION

AVERAGE DAILY FLOW: 30 CFS
ORDINARY LOW WATER: 15 CFS DEPTH: ELEV. 315.0'
ORDINARY HIGH WATER: 260 CFS DEPTH: ELEV. 317.0'

ADDITIONAL COMMENTS

HYDRAULICS AT THIS SITE MAY BE AFFECTED BY TAILWATER FROM THE LITTLE RIVER DURING LARGE FLOOD EVENTS. THAT COULD NOT BE DETERMINED DUE TO THE USE OF LOCAL DATUMS. SO THE FINAL HYDRAULICS IS BASED ON NO TAILWATER FROM THE LITTLE RIVER. ACTUAL WATER SURFACE ELEVATIONS MAY BE HIGHER THAN SHOWN IF WATER BACKS UP FROM THE LITTLE RIVER.



TEMPORARY BRIDGE
NOT TO SCALE

DESIGN CRITERIA:
1. DESIGN LIVE LOAD AASHTO HS-25-44
2. DESIGN SPAN 74.5 FT. ℄ BEARING TO ℄ BEARING
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A ON LEDGE N/A
4. ALLOWABLE LOAD FOR PILING AXIAL = 130 KIPS TYPE HP 12 X 53 ESTIMATED LENGTH 92.37 FT. AVERAGE
2.25 TIMES ALLOWABLE LOAD FOR PILING AXIAL = 293 KIPS
5. STRUCTURAL STEEL ASTM A-572, GRADE 50 (PILING)
6. REINFORCING STEEL GRADE 60
7. CONCRETE, HIGH PERFORMANCE CLASS AA f'c 4000 psi
CONCRETE, HIGH PERFORMANCE CLASS B f'c 3500 psi
PRESTRESSED f'c 6000 psi

TRAFFIC MAINTENANCE:
1. IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE NO OR ON TEMPORARY BRIDGE YES
EXISTING BRIDGE TO BE CLOSED, TRAFFIC TO BE DETOURED ON A TEMPORARY BRIDGE.
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY ONE TRAFFIC CONTROL SIGNALS REQUIRED NO
MINIMUM CLEAR SPAN (NORMAL TO STREAM): 63 FT. VERTICAL CLEARANCE ABOVE STREAMBED: NO LOWER THAN EXISTING BRIDGE BEAMS.
WATERWAY OF FULL OPENING: ____
ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE? N/A
STRUCTURE TYPE: ____

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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta.
	Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK
PRELIMINARY INFORMATION SHEET

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244dti.dgn	
D & K DWG NO.	Sheet 2 of 37

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES

ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND
1				1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10	
275				275		CY	COMMON EXCAVATION	203.15	
35		5		40		CY	SAND BORROW	203.31	
		110		110		CY	STRUCTURE EXCAVATION	204.25	
		90		90		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	
120				120		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10	
210				210		CY	SUBBASE OF GRAVEL	301.15	
3				3		CWT	EMULSIFIED ASPHALT	404.65	
110		40		150		TON	BITUMINOUS CONCRETE PAVEMENT	406.25	
1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50	
		50		50		CY	CONCRETE, HIGH PERFORMANCE CLASS AA	501.32	
		26		26		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34	
		1		1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10	
		470		470	605.4	LF	STEEL PILING FOR INTEGRAL ABUTMENTS, HP 12 X 53	505.25	25
		1		1		EACH	DYNAMIC PILE LOADING TEST	505.45	
		1880		1880		LB	REINFORCING STEEL	507.15	
		75		75		LF	DRILLING AND GROUTING DOWELS	507.16	
		5260		5260		LB	EPOXY COATED REINFORCING STEEL	507.17	
		693		693		LF	PRESTRESSED CONCRETE BOX BEAMS (33" X 36")	510.21	
		616		616		LF	GROUTING SHEAR KEYS	510.24	
		9		9		GAL	WATER REPELLENT, SILANE	514.10	
		220		220		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20	
		165		165		LF	BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING	525.44	2.5
		1		1		LS	ONE-WAY TEMPORARY BRIDGE (788 SF - EST)	528.10	
		210		210		SY	REMOVAL OF BRIDGE PAVEMENT	529.10	
		1		1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20	
		36		36		EACH	BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD	531.11	
		1		1		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	580.13	
		1		1		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14	
		1		1		CY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	580.15	
10				10		MGAL	DUST CONTROL WITH WATER	609.10	
		10		10		CY	STONE FILL, TYPE I	613.10	
200				200		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED W/8 FEET POSTS	621.215	
4				4		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60	
105				105		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80	
90				90		LF	TEMPORARY TRAFFIC BARRIER	621.90	
60				60		HR	UNIFORMED TRAFFIC OFFICERS	630.10	
300				300		HR	FLAGGERS	630.15	
			1	1		LS	FIELD OFFICE, ENGINEERS	631.10	
			1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16	

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
		BITUMINOUS CONCRETE PAVEMENT
		WEARING COURSE
106.95	TON	TYPE III
		BASE COURSE
32.35	TON	TYPE I
0.70	TON	ROUNDING
140.00	TON	TOTAL

PROJECT NAME: STOWE
PROJECT NUMBER: BHO 1446 (30)

FILE NAME: z99j244qs.dgn
PROJECT LEADER: J.W. TUCKER
DESIGNED BY: R.H. BARNES
QUANTITY SHEET #1

PLOT DATE: 10/21/2009
DRAWN BY: R.H. BARNES
CHECKED BY: E.P. DETRICK
SHEET 3 OF 37

STATE OF VERMONT
AGENCY OF TRANSPORTATION

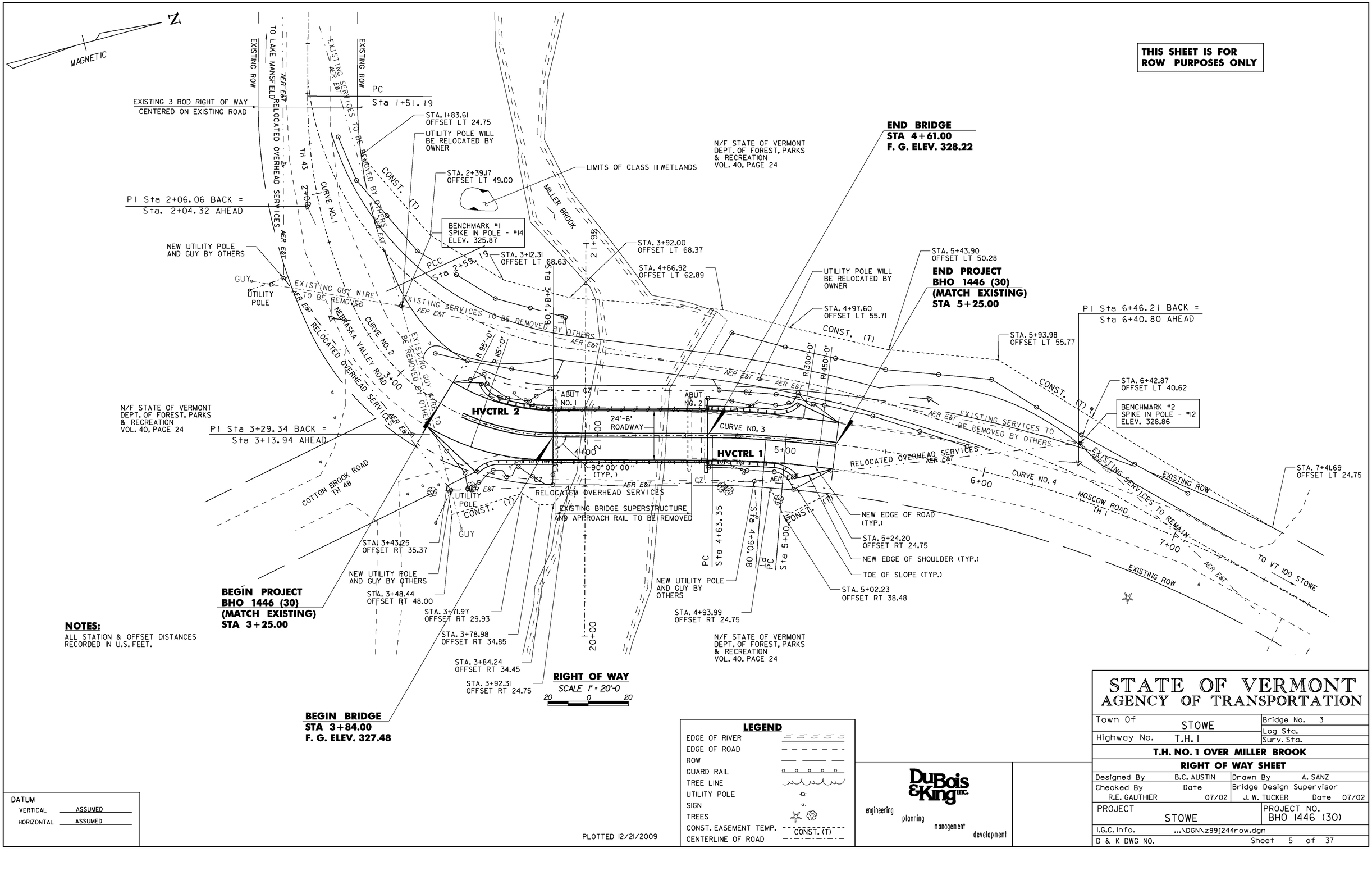
QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES				TOTALS		DESCRIPTIONS			
ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND
			1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17	
			1	1		LU	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.25	
1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11	
1				1		LS	TRAFFIC CONTROL	641.10	
380				380		LF	4 INCH YELLOW LINE	646.21	
930				930		LF	TEMPORARY 4 INCH WHITE LINE	646.600	
485				485		LF	TEMPORARY 4 INCH YELLOW LINE	646.610	
45				45		LF	TEMPORARY 24 INCH STOP BAR	646.680	
12				12		EACH	TEMPORARY LETTER OR SYMBOL	646.690	
	130			130		SY	GEOTEXTILE FOR SILT FENCE	649.51	
	25			25		LB	SEED	651.15	
	125			125		LB	FERTILIZER	651.18	
	1			1		TON	AGRICULTURAL LIMESTONE	651.20	
	1			1		TON	HAY MULCH	651.25	
	15			15		CY	TOPSOIL	651.35	
	1			1		LS	EPSC PLAN	652.10	
	80			80		HR	MONITORING EPSC PLAN	652.20	
	1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30	
	20			20		CY	TEMPORARY STONE CHECK DAM, TYPE I	653.25	
	25			25		CY	VEHICLE TRACKING PAD	653.35	
	650			650		LF	PROJECT DEMARCATION FENCE	653.55	
9				9		SF	TRAFFIC SIGNS, TYPE A	675.20	
15				15		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341	
1				1		EACH	REMOVING SIGNS	675.50	
		14		14		SY	SPECIAL PROVISION (REMOVAL AND DISPOSAL OF ASPHALTIC ASBESTOS)	900.675	

DETAILED SUMMARY OF QUANTITIES		
QUANTITIES	UNIT	ITEMS

PROJECT NAME: STOWE
PROJECT NUMBER: BHO 1446 (30)

FILE NAME: z99j244qs.dgn
PLOT DATE: 10/21/2009
PROJECT LEADER: J.W. TUCKER
DRAWN BY: R.H. BARNES
DESIGNED BY: R.H. BARNES
CHECKED BY: E.P. DETRICK
QUANTITY SHEET #2



NOTES:

ALL STATION & OFFSET DISTANCES RECORDED IN U.S. FEET.

LEGEND

EDGE OF RIVER	
EDGE OF ROAD	
ROW	
GUARD RAIL	
TREE LINE	
UTILITY POLE	
SIGN	
TREES	
CONST. EASEMENT TEMP.	CONST. (T)
CENTERLINE OF ROAD	

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

PLOTTED 12/21/2009

DuBois & King inc.
engineering planning management development

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta. / Surv. Sta.

T.H. NO. 1 OVER MILLER BROOK

RIGHT OF WAY SHEET

Designed By B.C. AUSTIN	Drawn By A. SANZ
Checked By R.E. GAUTHIER Date 07/02	Bridge Design Supervisor J. W. TUCKER Date 07/02
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244row.dgn	
D & K DWG NO.	Sheet 5 of 37

RIGHT OF WAY PLAN
DETAIL SHEET

TABLE OF PROJECT PROPERTY ACQUISITION

ALL STATIONS ARE FROM THE NEW MAINLINE ℄

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING (SF)	REM.	RIGHTS	TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
1	STATE OF VERMONT DEPT. OF FOREST, PARKS & RECREATION VOL. 40, PAGE 24	5	1+83.61 LT	7+41.69 LT	13,609	-	TEMPORARY CONSTRUCTION EASEMENT (LICENSE)						
1	STATE OF VERMONT DEPT. OF FOREST, PARKS & RECREATION VOL. 40, PAGE 24	5	3+43.25 RT	3+92.31 RT	643	-	TEMPORARY CONSTRUCTION EASEMENT (LICENSE)						
1	STATE OF VERMONT DEPT. OF FOREST, PARKS & RECREATION VOL. 40, PAGE 24	5	4+93.99 RT	5+24.20 RT	197	-	TEMPORARY CONSTRUCTION EASEMENT (LICENSE)						

REVISION NO.	SHEET	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY

LEGEND

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

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

- PRESENT R.O.W.
- TAKING WITHOUT ACCESS
- TAKING WITHOUT ACCESS ALONG PROPERTY LINE (P L)
- TAKING WITH ACCESS
- (P) PERMANENT EASEMENT
- (T) TEMPORARY EASEMENT

PLOTTED 10/22/2009

DuBois & King inc.
engineering planning management development

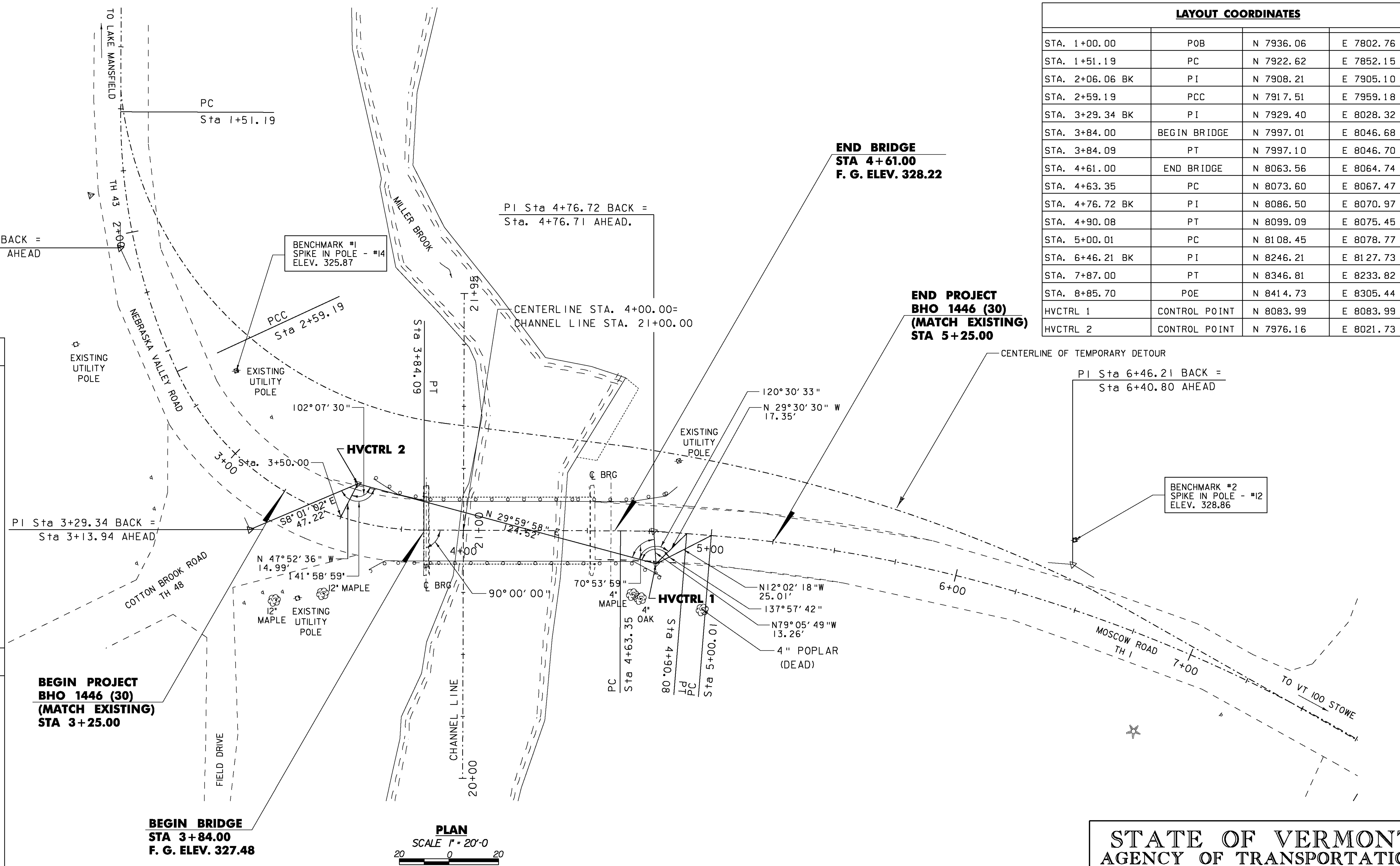
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta. / Surv. Sta.

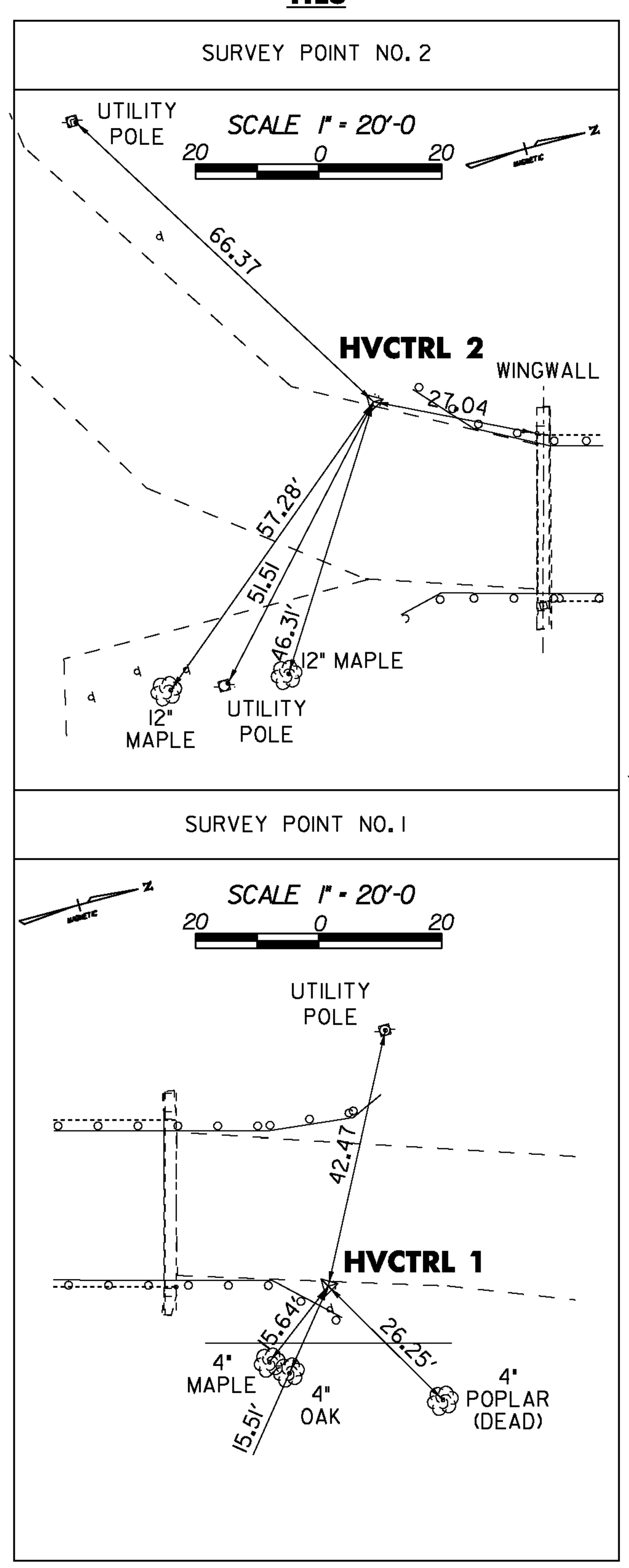
T.H. NO. 1 OVER MILLER BROOK

RIGHT OF WAY DETAIL SHEET

Designed By B.C. AUSTIN	Drawn By A. SANZ
Checked By R.E. GAUTHIER Date 07/02	Bridge Design Supervisor J. W. TUCKER Date 07/02
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99j244row.dgn	
D & K DWG NO.	Sheet 6 of 37



TIES



LAYOUT COORDINATES

STA. 1+00.00	POB	N 7936.06	E 7802.76
STA. 1+51.19	PC	N 7922.62	E 7852.15
STA. 2+06.06 BK	PI	N 7908.21	E 7905.10
STA. 2+59.19	PCC	N 7917.51	E 7959.18
STA. 3+29.34 BK	PI	N 7929.40	E 8028.32
STA. 3+84.00	BEGIN BRIDGE	N 7997.01	E 8046.68
STA. 3+84.09	PT	N 7997.10	E 8046.70
STA. 4+61.00	END BRIDGE	N 8063.56	E 8064.74
STA. 4+63.35	PC	N 8073.60	E 8067.47
STA. 4+76.72 BK	PI	N 8086.50	E 8070.97
STA. 4+90.08	PT	N 8099.09	E 8075.45
STA. 5+00.01	PC	N 8108.45	E 8078.77
STA. 6+46.21 BK	PI	N 8246.21	E 8127.73
STA. 7+87.00	PT	N 8346.81	E 8233.82
STA. 8+85.70	POE	N 8414.73	E 8305.44
HVCTRL 1	CONTROL POINT	N 8083.99	E 8083.99
HVCTRL 2	CONTROL POINT	N 7976.16	E 8021.73

DATUM

VERTICAL: ASSUMED
HORIZONTAL: ASSUMED

PLOTTED 10/22/2009

EXISTING LEGEND

- EDGE OF RIVER
- EDGE OF ROAD
- ROW
- GUARD RAIL
- TREE LINE
- UTILITY POLE
- SIGN
- TREES
- CENTERLINE OF ROAD

DuBois & King inc.
engineering planning management development

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	STOWE	Bridge No. 3	
		Log Sta.	
Highway No.	T.H. 1	Surv. Sta.	

T.H. NO. 1 OVER MILLER BROOK

TIE SHEET

Designed By	B.C. AUSTIN	Drawn By	E. B. SMALL
Checked By	Date	Bridge Design Supervisor	
J. W. TUCKER	07/02	J. W. TUCKER	Date 07/02
PROJECT	STOWE	PROJECT NO.	BHO 1446 (30)
I.G.C. Info.	...\DGN\z99j244bdr.dgn		
D & K DWG NO.		Sheet 7 of 37	

CURVE DATA

CURVE NO.1	CURVE NO. 2	CURVE NO. 3	CURVE NO. 4
Δ = 24°58′35″	Δ = 65°03′22″	Δ = 4°22′30″	Δ = 26°57′22″
D = 23°07′32″	D = 52°05′13″	D = 16°22′13″	D = 9°23′34″
R = 247.76′	R = 110.00′	R = 350.00′	R = 610.00′
T = 54.87′	T = 70.15′	T = 13.37′	T = 146.20′
L = 108.00′	L = 124.90′	L = 26.73′	L = 286.99′
E = 6.00	E = 20.47	E = 0.26	E = 17.28
2T-L = 1.74	2T-L = 15.40	2T-L = 0.02	2T-L = 5.41

EXISTING BRIDGE DATA
69 FOOT SINGLE SPAN STEEL STRINGER BRIDGE WITH CONCRETE DECK AND CONCRETE ABUTMENTS. RAIL TO RAIL WIDTH = 24 FEET.

BRIDGE RAIL, GALVANIZED HDSB / FASCIA MOUNTED / STEEL TUBING
STA. 3+81.87 - 4+63.12 LT
STA. 3+81.87 - 4+63.12 RT

HD STEEL BEAM GUARDRAIL, GALVANIZED W/8 FEET POSTS
STA. 3+40.06 - 3+81.87 LT; 4+63.12 - 5+04.69 LT
STA. 3+51.89 - 3+81.87 RT; 4+63.12 - 5+06.79 RT

ANCHOR FOR STEEL BEAM RAIL
STA. 3+40.06 LT, STA. 5+04.69 LT
STA. 3+51.89 RT, STA. 5+06.79 RT

REMOVAL AND DISPOSAL OF GUARDRAIL
STA. 3+59.00 - 3+84.00; STA. 4+53.00 - 4+85.00 LT
STA. 3+65.00 - 3+84.00; STA. 4+53.00 - 4+81.00 RT

4" YELLOW LINE
STA. 3+37.50 - 5+25.00 (DOUBLE CENTER)

STONE FILL, TYPE 1
STA. 3+79.00 - 3+84.00 LT & RT
STA. 4+61.00 - 4+66.00 LT & RT

BEGIN PROJECT
BHO 1446 (30)
(MATCH EXISTING)
STA 3+25.00

BEGIN BRIDGE
STA 3+84.00
F. G. ELEV. 327.48

CHANNEL STA. 21+00.00 =
BASELINE STA. 4+00.00

PLAN
SCALE 1" = 20′-0
20 0 20

REMOVING SIGNS
STA. 4+80.00 RT

TRAFFIC SIGNS, TYPE A
STA. 4+80.00 RT

SQUARE TUBE SIGN POST AND ANCHOR
STA. 4+80.00 RT

NOTES:
1. THE EXISTING R.O.W. ON MOSCOW ROAD AND COTTON BROOK ROAD ARE ASSUMED TO BE 3 ROD (49.5 FEET), CENTERED ON THE EXISTING ROADWAY, AS DIRECTED BY THE TOWN OF STOWE.
2. ALL EXISTING TREES OVER 3" DIA. SHALL REMAIN, UNLESS OTHERWISE DIRECTED BY THE TOWN OR ENGINEER.
3. SEE SHEET 14 FOR APPROACH RAIL AND BRIDGE RAIL LAYOUT.

DATUM	
VERTICAL	ASSUMED
HORIZONTAL	ASSUMED

EXISTING LEGEND
EDGE OF RIVER
EDGE OF ROAD
ROW
GUARD RAIL
TREE LINE
UTILITY POLE
SIGN
TREES
OVERHEAD UTILITIES — AER E&T —
CENTERLINE OF ROAD

PLOTTED 12/17/2009

DuBois & King inc.
engineering planning management development

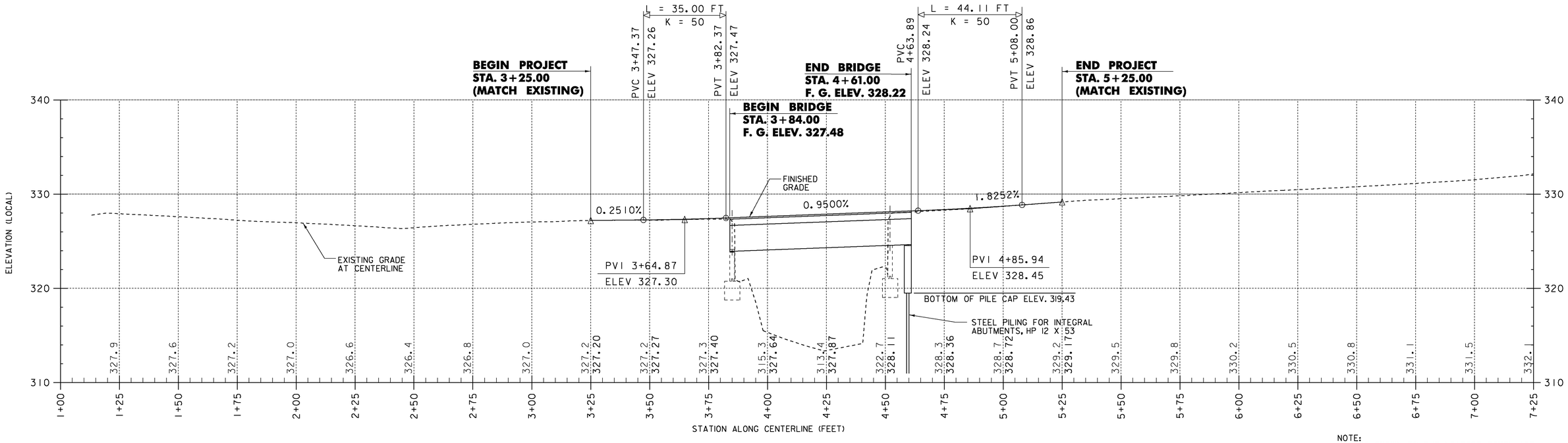
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	STOWE	Bridge No.	3
		Log Sta.	
Highway No.	T.H. 1	Surv. Sta.	

MOSCOW ROAD OVER MILLER BROOK

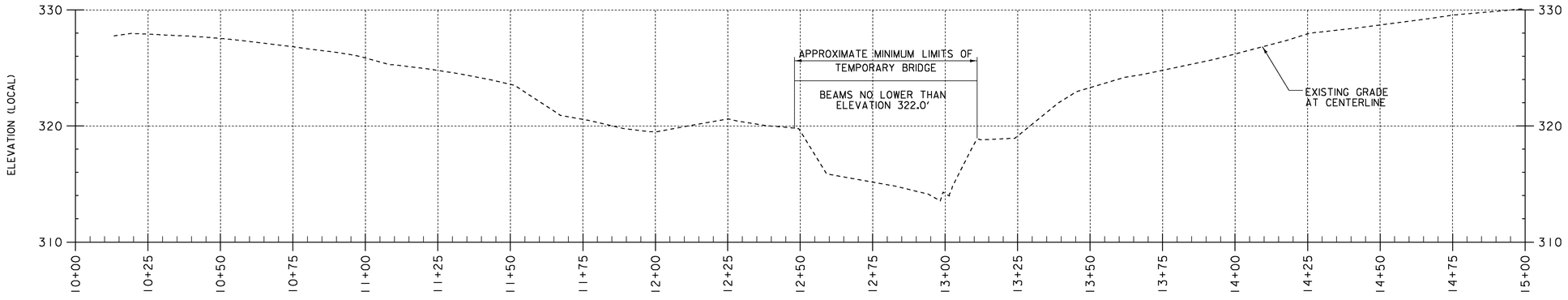
PLAN SHEET

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99j244bdr.dgn	
D & K DWG NO.	Sheet 8 of 37



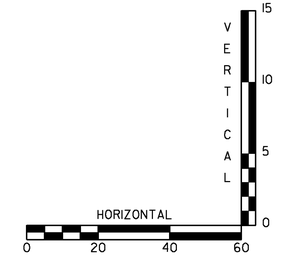
PROFILE – TH NO. 1

NOTE:
GRADES SHOWN TO THE NEAREST TENTH ARE THE EXISTING GROUND ALONG CENTERLINE.
GRADES SHOWN TO THE NEAREST HUNDREDTH ARE PROPOSED GROUND ALONG CENTERLINE.



STATION ALONG DETOUR CENTERLINE (FEET)

EXISTING PROFILE – TEMPORARY DETOUR



SCALE IN FEET
HORIZONTAL: 1INCH = 20 FEET
VERTICAL: 1INCH = 5 FEET

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

PLOTTED 10/22/2009

DuBois & King inc.
engineering planning management development

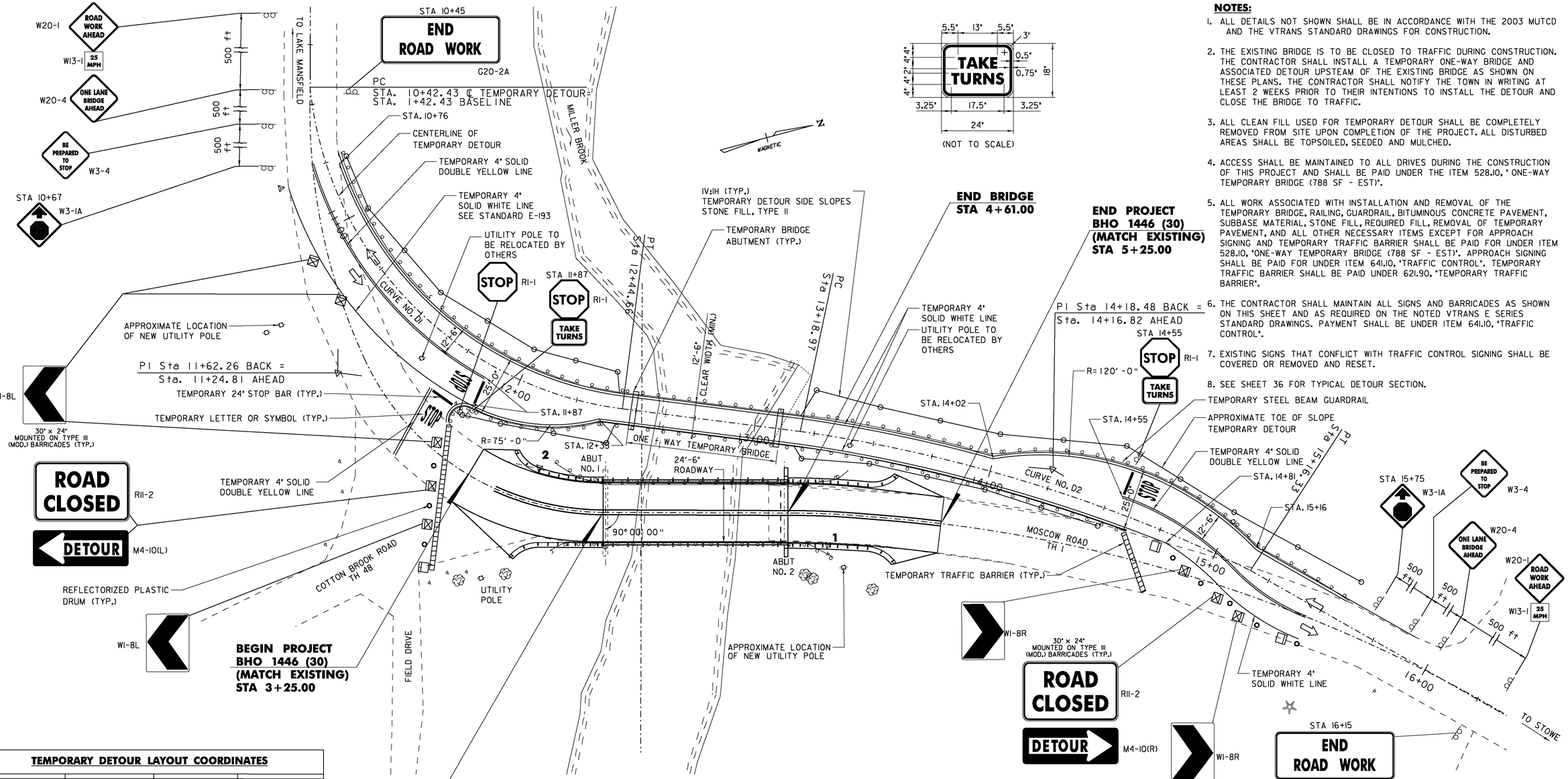
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta.
	Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK

PROFILE

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By Date E.P. DETRICK 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99]244xsl.dgn	
D & K DWG NO.	Sheet 9 of 37



NOTES:

1. ALL DETAILS NOT SHOWN SHALL BE IN ACCORDANCE WITH THE 2003 MUTCD AND THE VTRANS STANDARD DRAWINGS FOR CONSTRUCTION.
2. THE EXISTING BRIDGE IS TO BE CLOSED TO TRAFFIC DURING CONSTRUCTION. THE CONTRACTOR SHALL INSTALL A TEMPORARY ONE-WAY BRIDGE AND ASSOCIATED DETOUR UPSTEAM OF THE EXISTING BRIDGE AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL NOTIFY THE TOWN IN WRITING AT LEAST 2 WEEKS PRIOR TO THEIR INTENTIONS TO INSTALL THE DETOUR AND CLOSE THE BRIDGE TO TRAFFIC.
3. ALL CLEAN FILL USED FOR TEMPORARY DETOUR SHALL BE COMPLETELY REMOVED FROM SITE UPON COMPLETION OF THE PROJECT. ALL DISTURBED AREAS SHALL BE TOPSOILED, SEEDED AND MULCHED.
4. ACCESS SHALL BE MAINTAINED TO ALL DRIVES DURING THE CONSTRUCTION OF THIS PROJECT AND SHALL BE PAID UNDER THE ITEM 528.10, " ONE-WAY TEMPORARY BRIDGE (788 SF - EST)".
5. ALL WORK ASSOCIATED WITH INSTALLATION AND REMOVAL OF THE TEMPORARY BRIDGE, RAILING, GUARDRAIL, BITUMINOUS CONCRETE PAVEMENT, SUBBASE MATERIAL, STONE FILL, REQUIRED FILL, REMOVAL OF TEMPORARY PAVEMENT, AND ALL OTHER NECESSARY ITEMS EXCEPT FOR APPROACH SIGNING AND TEMPORARY TRAFFIC BARRIER SHALL BE PAID FOR UNDER ITEM 528.10, "ONE-WAY TEMPORARY BRIDGE (788 SF - EST)". APPROACH SIGNING SHALL BE PAID FOR UNDER ITEM 641.10, "TRAFFIC CONTROL". TEMPORARY TRAFFIC BARRIER SHALL BE PAID UNDER 621.90, "TEMPORARY TRAFFIC BARRIER".
6. THE CONTRACTOR SHALL MAINTAIN ALL SIGNS AND BARRICADES AS SHOWN ON THIS SHEET AND AS REQUIRED ON THE NOTED VTRANS E SERIES STANDARD DRAWINGS. PAYMENT SHALL BE UNDER ITEM 641.10, "TRAFFIC CONTROL".
7. EXISTING SIGNS THAT CONFLICT WITH TRAFFIC CONTROL SIGNING SHALL BE COVERED OR REMOVED AND RESET.
8. SEE SHEET 36 FOR TYPICAL DETOUR SECTION.

TRAFFIC CONTROL SHEET

SCALE 1" = 20'-0

20 0 20

TEMPORARY DETOUR LAYOUT COORDINATES

STA. 10+00.00	POB	N 7936.06	E 7802.76
STA. 10+42.43	PC	N 7924.92	E 7843.70
STA. 11+62.26 BK	PI	N 7905.25	E 7961.90
STA. 12+44.66	PT	N 8016.19	E 8007.20
STA. 13+18.97	PC	N 8084.99	E 8035.33
STA. 14+18.48 BK	PI	N 8176.52	E 8074.36
STA. 15+16.33	PT	N 8251.41	E 8139.88
STA. 16+50.00	POE	N 8346.81	E 8233.82

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

CURVE DATA

CURVE NO. D1	CURVE NO. D2
△ = 77° 14' 17.34"	△ = 18° 05' 19.45"
R = 150.00 FT	R = 625.22 FT
T = 119.83 FT	T = 99.51 FT
L = 202.21 FT	L = 197.36 FT
E = 41.98	E = 7.87
2T-L = 37.45	2T-L = 1.66

LEGEND

- SIGN AND POSTS
- TYPE III BARRICADES
- TYPE III BARRICADES (MOD.)
- TEMP. TRAFFIC BARRIER
- INDICATES TRAFFIC DIRECTION
- REFL. PLASTIC DRUM

EXISTING LEGEND

EDGE OF RIVER
EDGE OF ROAD
ROW
GUARD RAIL
TREE LINE
UTILITY POLE
SIGN
TREES

PLOTTED 12/21/2009

DuBois & King inc.
engineering planning management development

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta. / Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK

TRAFFIC CONTROL SHEET

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244tcl.dgn	
D & K DWG NO.	Sheet 10 of 37

SOIL CLASSIFICATION

AASHTO

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

ROCK QUALITY DESIGNATION

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

SHEAR STRENGTH

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

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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

DEFINITIONS (AASHTO)

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

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

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

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

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

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

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

VARVED - Alternate layers of silt and clay.

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

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

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

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

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

DIP - Inclination of bed with a horizontal plane.

COMMONLY USED SYMBOLS

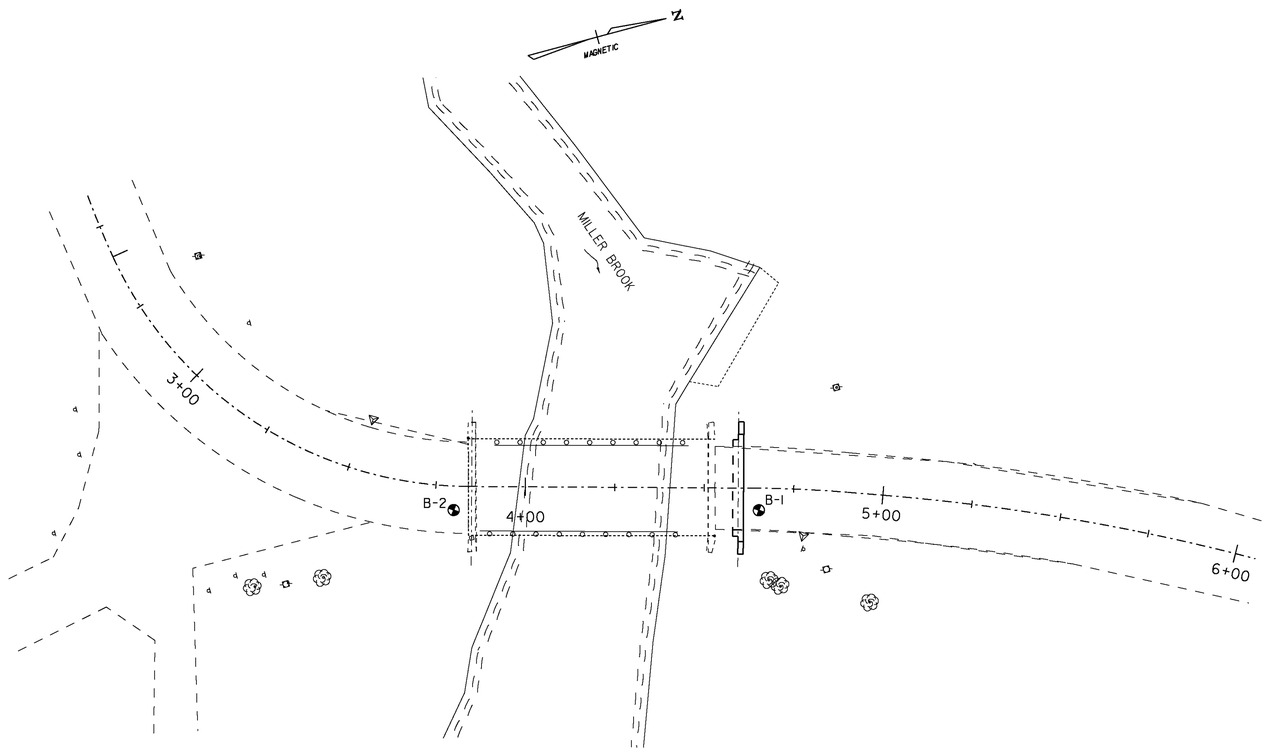
▼	Water Elevation
⊗	Standard Penetration Boring
⊕	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per Foot For: 2" O.D. Sampler 1 3/8" I.D. Sampler Hammer Weight Of 140 Lbs. Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud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

COLOR

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

BORING LOCATION

BORING	STATION	OFFSET	EG. ELEV.
B-1	4+64.35	6.25RT	328.07
B-2	3+82.09	6.25RT	327.21



PLAN

SCALE 1" = 20'-0

20 0 20

GENERAL NOTES

1. The subsurface explorations shown herein were made September 2000 by Con-Tec Inc.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgement was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgement by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.

PLOTTED 12/21/2009

DuBois & King inc.
engineering planning management development

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta.
	Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK

BORING INFORMATION SHEET

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99j244bor.dgn	
D & K DWG NO.	Sheet 11 of 37

CON-TEC, INC. TEST BORING LOG

PROJECT: BRIDGE OVER MILLER BROOK
LOCATION: STOWE, VT
EG. ELEV.: 328.07

	CASING	SAMPLE	CORE
TYPE	HW - NW	SS	
SIZE ID	4" - 3"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE
		12'		

JOB NO. 2005
HOLE NO. B-1
SHEET 1 OF 5
START DATE 9/21/00
FINISH DATE 9/28/00
DRILLER R. Bourassa
HELPER C. Dean
INSPECTOR

DEPTH IN FEET	CASING BLOWS PER FOOT	SAMP NO.	SAMPLE DEPTH	SAMPLE BLOWS PER 6 INCHES	RECOV.	SOIL DESCRIPTION
	HSA					ASPHALT 0.2'
		1	1' - 3'	16 - 16	17"	Brown, dry, dense m/c GRAVEL & m/c SAND
5.0'				18 - 11		
		2	5' - 7'	9 - 13	18"	Brown, dry, medium-dense, fine/c SAND, some fine/c gravel, trace silt
				8 - 7		TOP POLE 321.37
10.0'						BOTTOM OF NEW PILE CAP, ELEV. 319.37 FT.
		3	10' - 12'	12 - 16	8"	Brown, dry, very dense, fine/c SAND, some fine/c gravel, occasional cobble
				61 - 10		
15.0'						
		4A	15' - 16'	12 - 13	19"	Brown, wet, medium-dense, fine/c SAND, some fine/c gravel, occasional cobble 16.0'
		4B	16' - 17'	11 - 7		Brown-gray, wet, medium-dense SILT (Layered)
20.0'						
		5	20' - 22'	6 - 6	17"	Brown-gray, wet, medium-dense SILT, trace f sand (Layered)
				6 - 8		
25.0'						
		6	25' - 27'	4 - 4	21"	Brown, wet, loose Silt, trace f sand, trace f gravel
				5 - 5		
30.0'						
		7	30' - 32'	7 - 6	19"	Brown, wet, medium-dense SILT, little f sand
				7 - 9		
35.0'						

CON-TEC, INC. TEST BORING LOG

PROJECT: BRIDGE OVER MILLER BROOK
LOCATION: STOWE, VT

	CASING	SAMPLE	CORE
TYPE	HW - NW	SS	
SIZE ID	4" - 3"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE
		12'		

JOB NO. 2005
HOLE NO. B-1
SHEET 2 OF 5
START DATE 9/21/00
FINISH DATE 9/28/00
DRILLER R. Bourassa
HELPER C. Dean
INSPECTOR

DEPTH IN FEET	CASING BLOWS PER FOOT	SAMP NO.	SAMPLE DEPTH	SAMPLE BLOWS PER 6 INCHES	RECOV.	SOIL DESCRIPTION
	HSA	8A	35' - 36'	7 - 11	20"	Brown-gray, wet, medium-dense SILT, trace f sand (Layered)
		8B	36' - 37'	27 - 27		Brown, wet, very dense, fine/c GRAVEL & fine/c SAND, trace silt 35.0'
40.0'						
		9	40' - 42'	9 - 12	6"	Brown, wet, medium-dense fine/c SAND, little f gravel, trace of silt
				13 - 9		
45.0'						
		10	45' - 47'	13 - 11	16"	Brown, wet, medium-dense m/c SAND, little f gravel
				10 - 10		
50.0'						
	4" CASING	11	50' - 52'	17 - 21	12"	Brown-gray, wet, dense fine/c SAND, little f m/c gravel, little silt, trace clay in layers
				18 - 24		
55.0'						
		12	54' - 56'	69 - 4"	9"	Brown & gray, wet, very dense, f SAND & SILT, some f m/c gravel
				18 - 10		
60.0'						
		13	59' - 61'	25 - 18	4"	Medium-dense, f GRAVEL & c/m/f SAND (Possible Wash Sample)
				12 - 10		
65.0'						
		14	64' - 66'	41 - 40	7"	Lightbrown & gray, wet, very dense, fine/c SAND, some silt, some embedded f m/c gravel
				24 - 19		
70.0'						
		15	69' - 71'	70 - 44	10"	Lightbrown & gray, wet, very dense, fine/c SAND & f m/c GRAVEL, some silt

CON-TEC, INC. TEST BORING LOG

PROJECT: BRIDGE OVER MILLER BROOK
LOCATION: STOWE, VT

	CASING	SAMPLE	CORE
TYPE	HW - NW	SS	
SIZE ID	4" - 3"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE
		12'		

JOB NO. 2005
HOLE NO. B-1
SHEET 3 OF 5
START DATE 9/21/00
FINISH DATE 9/28/00
DRILLER R. Bourassa
HELPER C. Dean
INSPECTOR

DEPTH IN FEET	CASING BLOWS PER FOOT	SAMP NO.	SAMPLE DEPTH	SAMPLE BLOWS PER 6 INCHES	RECOV.	SOIL DESCRIPTION
	4" CASING			26 - 20		Lightbrown & gray, wet very dense, fine/c SAND & fine/c GRAVEL, some silt
75.0'		16	74' - 76'	15 - 18	7"	Lightbrown & gray, wet dense, fine/c SAND & fine/c GRAVEL, some silt
				15 - 15		
80.0'	3" CASING	17	79' - 81'	20 - 14	10"	Brown, wet medium-dense, fine/c SAND, little silt, trace f gravel
				12 - 16		
85.0'		18	84' - 86'	21 - 30	20"	Lightbrown, wet very dense, fine/c SAND, trace f gravel, trace silt Bottom 2" - layer of m/c SAND
				25 - 19		
90.0'						
						ESTIMATED PILE TIP, ELEV. 229.0 FT.
95.0'		19	94' - 96'	26 - 19	6"	No Recovery - Drilling fr the same from 84' - 94' and wash water was brown in color.
				15 - 22		
100.0'						
						Wash water turns gray ~101'
						Note: Unable to drive casing beyond 103'. Blows were 300/1 with 300 Lb. hammer.
105.0'		20	104' - 106'	66 - 62	18"	Brown-gray, wet very dense, f SAND, little silt

CON-TEC, INC. TEST BORING LOG

PROJECT: BRIDGE OVER MILLER BROOK
LOCATION: STOWE, VT

	CASING	SAMPLE	CORE
TYPE	HW - NW	SS	
SIZE ID	4" - 3"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE
		12'		

JOB NO. 2005
HOLE NO. B-1
SHEET 4 OF 5
START DATE 9/21/00
FINISH DATE 9/28/00
DRILLER R. Bourassa
HELPER C. Dean
INSPECTOR

DEPTH IN FEET	CASING BLOWS PER FOOT	SAMP NO.	SAMPLE DEPTH	SAMPLE BLOWS PER 6 INCHES	RECOV.	SOIL DESCRIPTION
	3" OPEN HOLE			66 - 74		Brown-gray, wet, very dense, f SAND, little silt NOTE: Mix drill mud at 104' and advance 3" open hole below 3" casing.
110.0'						
115.0'		21	114' - 116'	59 - 63	17"	Brown-gray, wet, very dense, f SAND, little silt
				69 - 76		
120.0'						
						Note: Attempt sample at 124'; hole caved to 120'. Continued drilling 3" open hole without sampling. Losing 50% of wash water while drilling.
125.0'						
						POLE 121'
130.0'						Drilling becomes harder 128.0' SILT, SAND & GRAVEL
		22	130' - 135'	WASH SAMPLE		
135.0'						
						Drilling becomes hard 137.0' Assume Bedrock - Drilling with 3" button bit approximately 3 m hubs per L.F.
140.0'						

PLOTTED 10/22/2009

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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta.
	Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK

BORING LOG SHEET 1

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244bor.dgn	
D & K DWG NO.	Sheet 12 of 37

CON-TEC, INC. TEST BORING LOG

PROJECT: BRIDGE OVER MILLER BROOK
LOCATION: STOWE, VT

	CASING	SAMPLE	CORE
TYPE	HW - NW	SS	
SIZE ID	4" - 3"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE
		12'		

JOB NO. 20105
HOLE NO. B-1
SHEET 5 OF 5
START DATE 9/21.00
FINISH DATE 9/28.00
DRILLER R. Bourassa
HELPER C.Dean
INSPECTOR

DEPTH IN FEET	CASING BLOWS PER FOOT	SAMP NO.	SAMPLE DEPTH	SAMPLE BLOWS PER 6INCHES	RECOV.	SOIL DESCRIPTION
						Assume BEDROCK 141.5'
145.0'						BOTTOM OF BORING 141.5'

CON-TEC, INC. TEST BORING LOG

PROJECT: BRIDGE OVER MILLER BROOK
LOCATION: STOWE, VT
EG. ELEV.: 327.21

	CASING	SAMPLE	CORE
TYPE	HSA	SS	
SIZE ID	4 1/4"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE
		12.5		

JOB NO. 20105
HOLE NO. B-2
SHEET 1 OF 2
START DATE 9/28.00
FINISH DATE 9/28.00
DRILLER R. Bourassa
HELPER C.Fournier
INSPECTOR

DEPTH IN FEET	CASING BLOWS PER FOOT	SAMP NO.	SAMPLE DEPTH	SAMPLE BLOWS PER 6INCHES	RECOV.	SOIL DESCRIPTION
						ASPHALT 0.3'
		1	1' - 3'	18 - 20	14"	Lightbrown, dry, dense fm /c SAND & fm /c GRAVEL
5.0'				15 46		
		2	5' - 7'	5 - 7	4"	Lightbrown, dry, medium -dense, fm /c SAND & fm /c GRAVEL
10.0'				7 - 8		BOTTOM OF EXIST. FOOTING, ELEV. 317.7 FT.
		3	10' - 12'	9 - 8	8"	Lightbrown, dry, medium -dense, fm /c SAND & fm /c GRAVEL, little silt, occasional cobbles
15.0'				14 - 19		
		4	15' - 15.5'	75 + 00/.4	8"	Lightbrown, wet, very dense, fm /c SAND & fm /c GRAVEL, little silt, occasional cobbles
20.0'						
		5	20' - 22'	14 - 13	16"	Lightbrown & gray, wet, medium -dense, f SAND & SILT (Layered)
25.0'				16 - 18		
		6	25' - 27'	8 - 8	20"	Brown-gray, wet, medium -dense SILT, trace f sand
30.0'				9 - 10		
		7	30' - 32'	13 - 9	22"	Brown-gray, wet, medium -dense SILT, trace f sand
35.0'				11 - 14		

CON-TEC, INC. TEST BORING LOG

PROJECT: BRIDGE OVER MILLER BROOK
LOCATION: STOWE, VT

	CASING	SAMPLE	CORE
TYPE	HSA	SS	
SIZE ID	4 1/4"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE
		12.5'		

JOB NO. 20105
HOLE NO. B-2
SHEET 2 OF 2
START DATE 9/28.00
FINISH DATE 9/28.00
DRILLER R. Bourassa
HELPER C.Fournier
INSPECTOR

DEPTH IN FEET	CASING BLOWS PER FOOT	SAMP NO.	SAMPLE DEPTH	SAMPLE BLOWS PER 6INCHES	RECOV.	SOIL DESCRIPTION
		8	35' - 37'	12 - 14	20"	Gray, wet, medium -dense SILT, occasional rust brown lenses
40.0'				11 - 14		
		9	40' - 42'	7 - 9	21"	Gray, wet, medium -dense SILT, occasional rust brown lenses 42.0'
45.0'				8 - 11		BOTTOM OF BORING 42.0'

PLOTTED 10/22/2009

DuBois & King inc.
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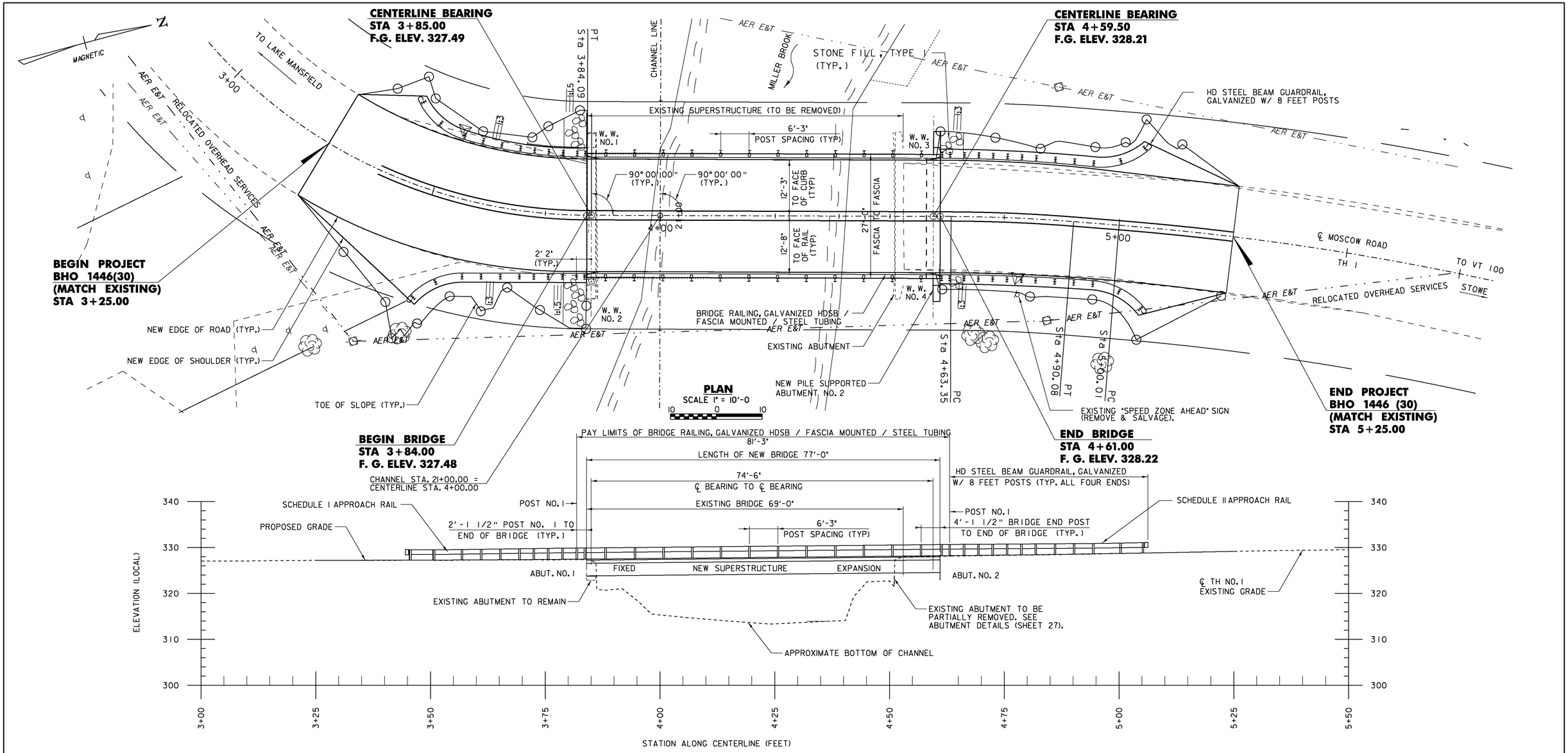
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta. / Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK

BORING LOG SHEET 2

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244bor.dgn	
D & K DWG NO.	Sheet 13 of 37



ELEVATION
SCALE 1" = 10'-0
10 0 10

EXISTING LEGEND

EDGE OF RIVER
EDGE OF ROAD
ROW
GUARD RAIL
TREE LINE
UTILITY POLE
SIGN
TREES
OVERHEAD UTILITIES — AER E&T —
CENTERLINE ROAD

PLOTTED 12/21/2009

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

DuBois & King inc.
engineering planning management development

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta. / Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK

PLAN AND ELEVATION

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244bdr.dgn	
D & K DWG NO.	Sheet 14 of 37

1.1 PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF REPLACEMENT OF THE EXISTING SUPERSTRUCTURE WITH A NEW PRESTRESSED CONCRETE BOX BEAM SUPERSTRUCTURE AND APPROXIMATELY 123 FEET OF ASSOCIATED ROADWAY APPROACH WORK. ADDITIONAL CONSTRUCTION SPECIFIED FOR THIS PROJECT INCLUDES THE REMOVAL AND REPLACEMENT OF EXISTING GUARDRAIL ADJACENT TO THE ROADWAY, CONSTRUCTION OF A NEW NORTHERN ABUTMENT, REHABILITATION OF THE SOUTHERN ABUTMENT AND THE RECONSTRUCTION OF SIDE SLOPES ALONG THE IMPACTED ROADWAY.

THE PROJECT IS LOCATED ON MOSCOW ROAD (TH NO. 1), APPROXIMATELY 1.89 MILES WEST OF THE JUNCTION OF VT ROUTE 100 AND TH NO. 1 AND EXTENDING NORTHEASTERLY ALONG TH NO. 1 FOR 0.038 MILES CROSSING MILLER BROOK. MOSCOW ROAD IS A PAVED CLASS 2 TOWN HIGHWAY IN THE TOWN OF STOWE. PRIOR TO CONSTRUCTION, A TEMPORARY DETOUR AND BRIDGE WILL BE INSTALLED UPSTREAM OF THE EXISTING BRIDGE AND USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION. THE TEMPORARY DETOUR WILL BE A TOTAL LENGTH OF 560 FEET AND WILL BE REMOVED UPON COMPLETION OF CONSTRUCTION. THIS PROJECT IS EXPECTED TO LAST ONE CONSTRUCTION SEASON.

THE MATERIAL TO BE EXCAVATED FROM THE SITE WILL INCLUDE THE EXISTING BITUMINOUS CONCRETE SURFACE AND SUBBASE WITHIN THE EXISTING ROADWAY AS WELL AS EXCAVATION FOR THE PLACEMENT OF THE NEW ABUTMENT. ADDITIONAL EXCAVATION WILL BE NEEDED FOR THE TEMPORARY ABUTMENTS USED TO SUPPORT THE TEMPORARY BRIDGE. STOCKPILING OF ANY EXCAVATED MATERIAL TO BE REUSED IS EXPECTED TO TAKE PLACE WITHIN THE PROJECT LIMITS. LIKEWISE, STOCKPILING OF ANY NEW MATERIAL TO BE USED IS EXPECTED TO TAKE PLACE WITHIN THE PROJECT LIMITS. THE LIMIT OF CONSTRUCTION AND ASSOCIATED MAXIMUM SOIL DISTURBANCE AREA FOR THE ROADWAY AND BRIDGE CONSTRUCTION IS APPROXIMATELY 0.13 ACRES. ADDITIONALLY THERE WILL BE APPROXIMATELY 0.26 ACRES OF DISTURBED SOIL ASSOCIATED WITH THE CONSTRUCTION, USE AND REMOVAL OF THE TEMPORARY DETOUR. THE TOTAL FOOTPRINT AREA OF DISTURBED SOILS IS CALCULATED TO BE 0.39 ACRES.

THE EXISTING ENVIRONMENTAL RESOURCE ELEMENTS IN THE VICINITY OF THE PROJECT ARE MILLER BROOK AND A SMALL CLASS III WETLAND, WHICH IS OUTSIDE THE LIMITS OF CONSTRUCTION. THERE ARE NO OTHER KNOWN SENSITIVE ENVIRONMENTAL AREAS IN CLOSE PROXIMITY TO THIS PROJECT. THERE ARE NO CRITICAL HABITATS, OTHER THAN MILLER BROOK AND THE WETLAND. THE BANKS OF THIS RIVER WITHIN THE PROJECT LIMITS ARE NATURAL SOIL AND ROCK SLOPES EXTENDING FROM THE EXISTING GRADES OR ABUTMENTS TO THE ELEVATION OF THE WATER WITHIN THE BROOK. THE BANKS OF THE BROOK ARE NOT INTENDED TO BE DISTURBED WITH THE EXCEPTION OF PLACING A NEW ABUTMENT AND DURING CONSTRUCTION OF THE TEMPORARY BRIDGE. ALL PROPOSED CONSTRUCTION IS TO TAKE PLACE IN THE DRY.

1.2 SITE INVENTORY

1.2.1 OFFSITE DRAINAGE CHARACTERISTICS

THIS PROJECT SITE IS LOCATED IN A RURAL AREA OF THE TOWN OF STOWE. THE PROPERTY SURROUNDING THE PROJECT SITE IS MODERATELY SLOPED WITH WELL-ESTABLISHED VEGETATION INCLUDING GRASS LAWNS, FIELDS, AND FOREST AREA. MUCH OF THE RUNOFF FROM THE SURROUNDING TERRAIN DRAINS DIRECTLY INTO MILLER BROOK. THERE ARE NO DEFINED DRAINAGE DITCHES OR OTHER DRAINAGE FEATURES IN THE PROJECT AREA.

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

MILLER BROOK IS THE ONLY WATERWAY WITHIN THE PROJECT LIMITS. THERE IS A SMALL CLASS III WETLAND AREA OUTSIDE OF THE PROJECT LIMITS.

1.2.3 TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES

THE TOPOGRAPHY OF THE PROJECT CONSISTS OF MODERATE SLOPES. THE ROADWAY IS BORDERED ON BOTH SIDES BY THE STATE OF VERMONT DEPARTMENT OF FOREST AND PARKS. OVERHEAD UTILITIES ARE LOCATED ALONG THE WEST SIDE OF MOSCOW ROAD WITH TWO POLES THAT WILL BE RELOCATED BY THE OWNER, PRIOR TO THE START OF CONSTRUCTION.

1.2.4 VEGETATION

THE PROJECT AREA CONSISTS OF GRASSY LAWNS AND FIELDS WITH SCATTERED GROUPS OF SMALL TO MEDIUM TREES. IMPACTS TO VEGETATED AREAS WILL BE LIMITED TO THE SIDE SLOPES OF THE ROAD, AREAS ADJACENT TO THE BRIDGE AND THE AREA OF THE TEMPORARY DETOUR. FOLLOWING THE COMPLETION OF CONSTRUCTION, THE TEMPORARY DETOUR AND ASSOCIATED FILL WILL BE REMOVED AND THE VEGETATION WILL BE REESTABLISHED USING STANDARD SEED AND MULCH PRACTICES.

1.2.5 SOILS

THE SOIL CONSERVATION SERVICE HAS MAPPED THE SOILS THROUGHOUT LAMOILLE COUNTY. THE SOIL TYPE IDENTIFIED FOR THIS PROJECT SITE IS UDIFLUVENTS, FREQUENTLY FLOODED, WITH A PARENT GROUP COMPRISED OF MISCELLANEOUS SOIL UNITS. THIS SITE IS LISTED AS NOT HIGHLY ERODIBLE. SUBSURFACE INVESTIGATIONS WERE CONDUCTED AS PART OF THIS PROJECT. THE SOILS WERE NOTED TO BE DENSE, FINE TO COURSE SAND AND GRAVEL.

1.2.6 SENSITIVE RESOURCE AREAS

THE ONLY SENSITIVE AREAS IN THE PROJECT AREA ARE MILLER BROOK AND A SMALL TYPE III WETLAND. THE WETLAND IS OUTSIDE OF THE LIMITS OF CONSTRUCTION. NO THREATENED OR ENDANGERED SPECIES, PRIME AGRICULTURAL SOILS, HISTORICAL OR ARCHEOLOGICAL SITES, OR OTHER CRITICAL HABITATS EXISTING WITHIN THE PROJECT AREA.

1.3 RISK EVALUATION

SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT THEN THE SELECTED CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL PERMITTING WITH VANR VIA FILING OF THE APPROPRIATE NOTICE OF INTENT UNDER THE CONSTRUCTION GENERAL PERMIT PROCESS.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

TO MINIMIZE THE POTENTIAL FOR STORM WATER RUNOFF TO TRANSPORT SEDIMENT INTO THE BROOK, SEVERAL KEY EROSION CONTROL DEVICES AND GENERAL PRACTICES WILL BE USED. DETAILS OF THE DEVICES AND THE LOCATION OF THEIR PLACEMENT CAN BE FOUND IN THE EPSC PLANS AND DETAILS. ALL EROSION CONTROL MEASURES SHALL BE PLACED IN ACCORDANCE WITH THE EPSC DETAILS IN THESE PLANS.

1.4.1 MARK SITE BOUNDARIES

MARKING THE SITE BOUNDARIES WILL HELP TO LIMIT THE AREA OF SOIL DISTURBANCE. THE SITE BOUNDARY SHALL BE MARKED WITH PROJECT DEMARCATION FENCE.

1.4.2 LIMIT DISTURBANCE AREA

LIMITING THE DISTURBANCE AREA WILL HELP TO REDUCE THE POTENTIAL FOR SEDIMENT TRANSPORT FROM THE SITE. THE AREA OF DISTURBANCE SHALL BE LIMITED BY PHASING THE CONSTRUCTION WHEN APPROPRIATE, BY ESTABLISHING VEGETATION IN AREAS IMMEDIATELY FOLLOWING GRADING AND BY MULCHING STOCKPILED EARTHEN MATERIALS. THE EXISTING MAINLINE WILL BE CLOSED DURING CONSTRUCTION; THEREFORE IT CAN BE USED AS A STAGING AND STOCKPILE AREA. THESE AREAS WILL BE COMPLETELY WITHIN THE PROJECT LIMITS AND WILL UTILIZE THE TEMPORARY EROSION CONTROL MEASURES CALLED FOR.

1.4.3 STABILIZE CONSTRUCTION EXIT

A STABILIZED CONSTRUCTION EXIT WILL HELP TO REMOVE EARTHEN MATERIALS FROM CONSTRUCTION EQUIPMENT EXITING THE SITE. A VEHICLE TRACKING PAD SHALL BE CONSTRUCTED AT THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

1.4.4 INSTALL SILT FENCE

SILT FENCE WILL REDUCE THE AMOUNT OF SEDIMENT TRANSFERRED FROM THE SITE THROUGH STORMWATER RUNOFF. SILT FENCE SHALL BE LOCATED NEAR THE EDGE OF THE BROOK AND 5 FEET TO 10 FEET DOWN GRADIENT FROM THE TOES OF SLOPE, AS SHOWN ON THE EPSC CONSTRUCTION SITE PLAN. THE SILT FENCE SHALL BE PLACED PARALLEL TO, OR ALONG, THE CONTOUR, SO THE STORM WATER WILL RUN PERPENDICULAR TO THE SILT FENCE. THE ENDS SHALL BE 'J' HOOKED UP GRADIENT TO CREATE A PONDING EFFECT FOR WATER TRYING TO RUN ALONG THE FENCE AND AROUND THE ENDS.

1.4.5 DIVERT UPLAND RUNOFF

NOT APPLICABLE

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

SLOWING DOWN CHANNELIZED RUNOFF WILL HELP TO ALLOW SEDIMENT TO FALL OUT OF STORMWATER THEREFORE REDUCING THE AMOUNT OF SEDIMENT TRANSPORTED FROM THE SITE. TEMPORARY STONE CHECK DAMS SHALL BE USED BETWEEN THE PERMANENT ABUTMENTS AND TEMPORARY BRIDGE ABUTMENTS, AS SHOWN ON THE EPSC CONSTRUCTION SITE PLAN. THESE TEMPORARY MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS IN THESE PLANS.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT CONTROLS TO MINIMIZE SEDIMENT RUNOFF INCLUDE SEEDING AND MULCHING DISTURBED AREAS FOLLOWING FINAL GRADING AND INSTALLING TYPE I STONE FILL ON SLOPES GREATER THAN 1:2.

1.4.8 STABILIZE EXPOSED SOILS

STABILIZING THE EXPOSED SOILS WILL HELP TO REDUCE THE POTENTIAL FOR STORMWATER TRANSPORTING SEDIMENT FROM THE SITE. ALL TEMPORARY STOCKPILES SHALL BE MULCHED AND SEEDED AND SHALL HAVE SILT FENCE INSTALLED AT THE TOE OF SLOPE.

1.4.9 WINTER STABILIZATION

SHOULD CONSTRUCTION PROCEED INTO THE WINTER, SPECIALIZED WINTER EPSC PROCEDURES SHALL BE FOLLOWED DURING WINTER CONSTRUCTION AND DURING ANY WINTER SHUT DOWN.

1.4.10 STABILIZE SOIL AT FINAL GRADE

STABILIZING SOIL AT FINAL GRADE WILL HELP TO REDUCE THE AREA OF DISTURBANCE AND WILL THEREFORE REDUCE THE POTENTIAL FOR SEDIMENT TRANSPORT FROM THE SITE. FOLLOWING FINAL GRADING ALL DISTURBED AREAS OUTSIDE OF THE ROADWAY SHALL RECEIVE TOPSOIL, SEED AND MULCH TO REESTABLISH GRASS AND VEGETATION. TOPSOILING, SEEDING AND MULCHING SHALL BE IN ACCORDANCE WITH THE SEEDING FORMULA FOR RURAL AREAS AND ASSOCIATED NOTES AS SHOWN ON THIS SHEET.

1.4.11 DEWATERING ACTIVITIES

NOT APPLICABLE

1.4.12 INSPECT YOUR SITE

THE EROSION CONTROL MEASURES SHALL BE PERIODICALLY INSPECTED AND MAINTAINED ON A REGULAR BASIS. INSPECTION OF THE EROSION CONTROL MEASURES SHALL TAKE PLACE BEFORE AND AFTER MAJOR STORM EVENTS TO INSURE THEY ARE IN GOOD CONDITION AND TO REMOVE EXCESSIVE BUILDUP OF SILT AND DEBRIS AFTER THE STORM EVENTS. A REPORT ON THE EFFECTIVENESS OF THE EROSION CONTROL MEASURES SHALL BE PRESENTED TO THE RESIDENT ENGINEER AND ONSITE COORDINATOR UPON THE COMPLETION OF EACH INSPECTION. MODIFICATIONS OR IMPROVEMENTS TO THE EROSION CONTROL PLAN SHOULD BE COORDINATED WITH THE RESIDENT ENGINEER AND ONSITE COORDINATOR.

SEEDING FORMULA
RURAL AREAS

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

GENERAL NOTES

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

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

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

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

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

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

PLOTTED 10/22/2009

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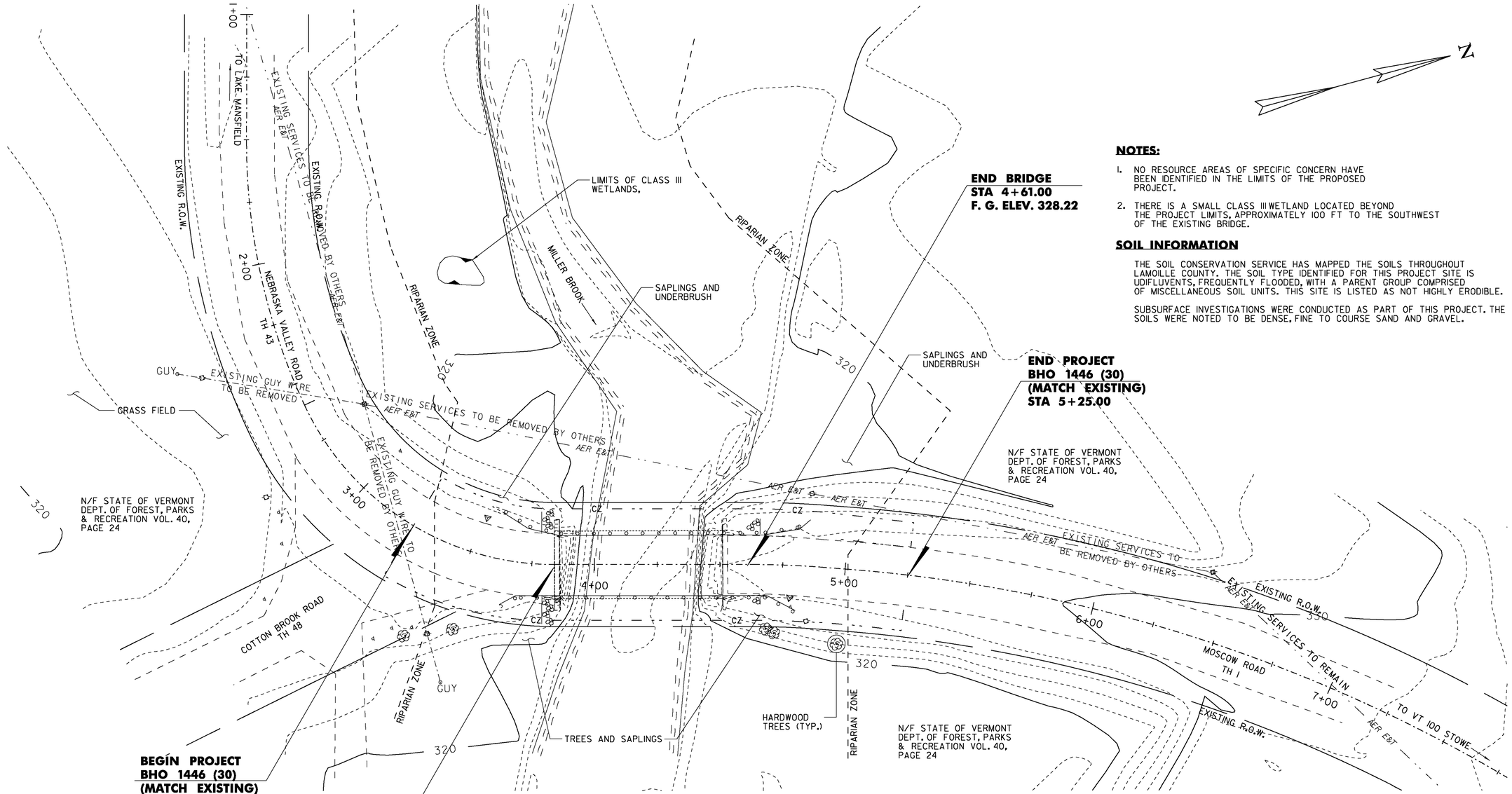
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta.
	Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK

EPSC NARRATIVE

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244ecp-tlt.dgn	
D & K DWG NO.	Sheet 15 of 37



EPSC EXISTING CONDITIONS SITE PLAN

SCALE 1" = 20'-0

20 0 20

EXISTING LEGEND

EDGE OF RIVER	
EDGE OF ROAD	
ROW	
GUARD RAIL	
TREE LINE	
UTILITY POLE	
SIGN	
TREES	
OVERHEAD UTILITIES	AER E&T
CENTERLINE OF ROAD	

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

PLOTTED 10/22/2009

DuBois & King inc.
engineering planning management development

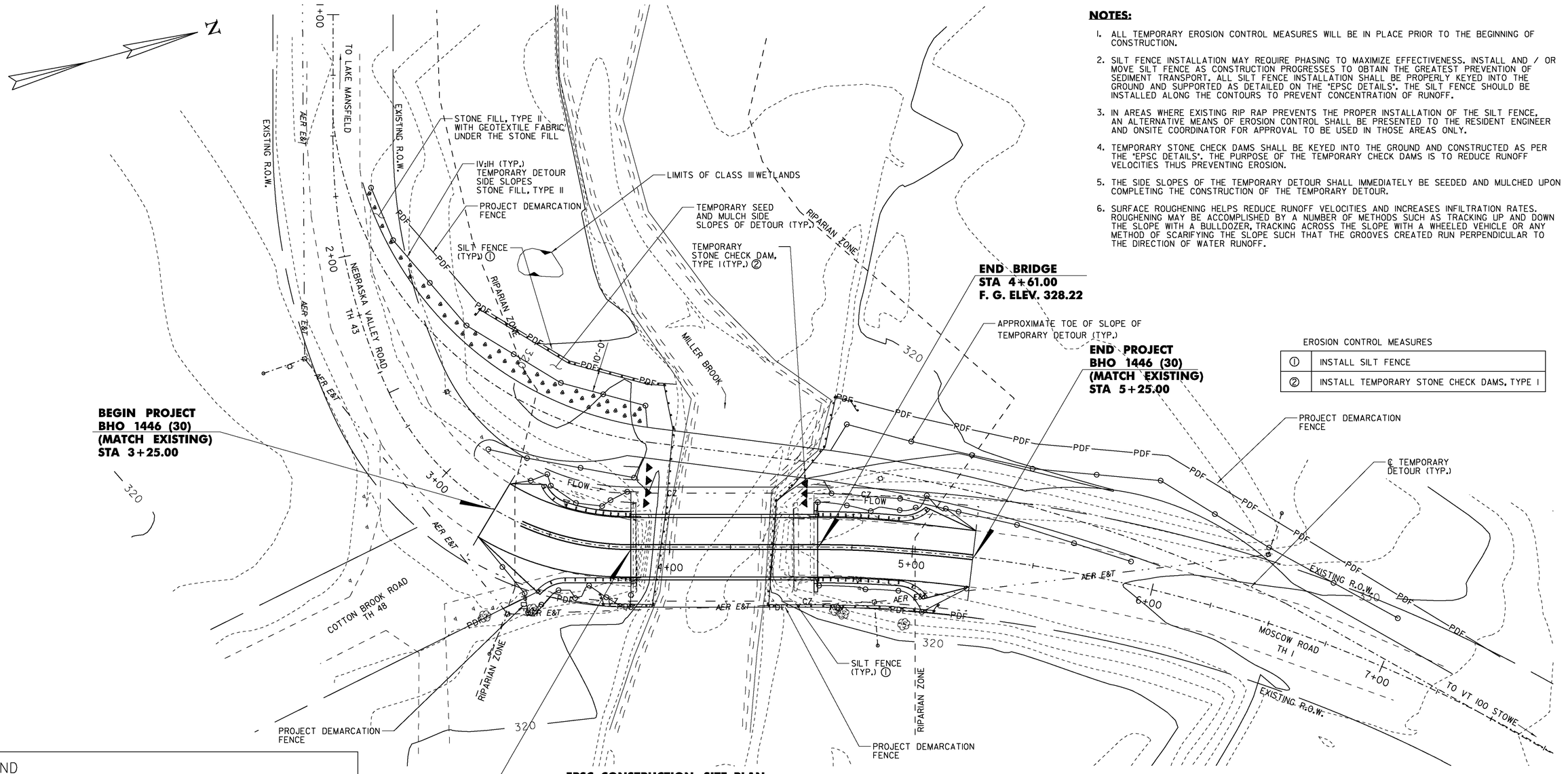
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta. / Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK

EPSC EXISTING CONDITIONS SITE PLAN

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244ecp-exist.dgn	
D & K DWG NO.	Sheet 16 of 37



EPSC CONSTRUCTION SITE PLAN

SCALE 1" = 20'-0

20 0 20

NOTES:

1. ALL TEMPORARY EROSION CONTROL MEASURES WILL BE IN PLACE PRIOR TO THE BEGINNING OF CONSTRUCTION.
2. SILT FENCE INSTALLATION MAY REQUIRE PHASING TO MAXIMIZE EFFECTIVENESS. INSTALL AND / OR MOVE SILT FENCE AS CONSTRUCTION PROGRESSES TO OBTAIN THE GREATEST PREVENTION OF SEDIMENT TRANSPORT. ALL SILT FENCE INSTALLATION SHALL BE PROPERLY KEYED INTO THE GROUND AND SUPPORTED AS DETAILED ON THE "EPSC DETAILS". THE SILT FENCE SHOULD BE INSTALLED ALONG THE CONTOURS TO PREVENT CONCENTRATION OF RUNOFF.
3. IN AREAS WHERE EXISTING RIP RAP PREVENTS THE PROPER INSTALLATION OF THE SILT FENCE, AN ALTERNATIVE MEANS OF EROSION CONTROL SHALL BE PRESENTED TO THE RESIDENT ENGINEER AND ONSITE COORDINATOR FOR APPROVAL TO BE USED IN THOSE AREAS ONLY.
4. TEMPORARY STONE CHECK DAMS SHALL BE KEYED INTO THE GROUND AND CONSTRUCTED AS PER THE "EPSC DETAILS". THE PURPOSE OF THE TEMPORARY CHECK DAMS IS TO REDUCE RUNOFF VELOCITIES THUS PREVENTING EROSION.
5. THE SIDE SLOPES OF THE TEMPORARY DETOUR SHALL IMMEDIATELY BE SEEDED AND MULCHED UPON COMPLETING THE CONSTRUCTION OF THE TEMPORARY DETOUR.
6. SURFACE ROUGHENING HELPS REDUCE RUNOFF VELOCITIES AND INCREASES INFILTRATION RATES. ROUGHENING MAY BE ACCOMPLISHED BY A NUMBER OF METHODS SUCH AS TRACKING UP AND DOWN THE SLOPE WITH A BULLDOZER, TRACKING ACROSS THE SLOPE WITH A WHEELED VEHICLE OR ANY METHOD OF SCARIFYING THE SLOPE SUCH THAT THE GROOVES CREATED RUN PERPENDICULAR TO THE DIRECTION OF WATER RUNOFF.

EROSION CONTROL MEASURES

①	INSTALL SILT FENCE
②	INSTALL TEMPORARY STONE CHECK DAMS, TYPE I

LEGEND

- STONE FILL
- SILT FENCE
- LIMITS OF SOIL DISTURBANCE
- TEMPORARY STONE CHECK DAM, TYPE I
- PDF——PDF PROJECT DEMARCATION FENCE
- RIPARIAN BUFFER ZONE

DATUM

VERTICAL ASSUMED

HORIZONTAL ASSUMED

PLOTTED 12/21/2009

EXISTING LEGEND

- EDGE OF RIVER
- EDGE OF ROAD
- ROW
- GUARD RAIL
- TREE LINE
- UTILITY POLE
- SIGN
- TREES

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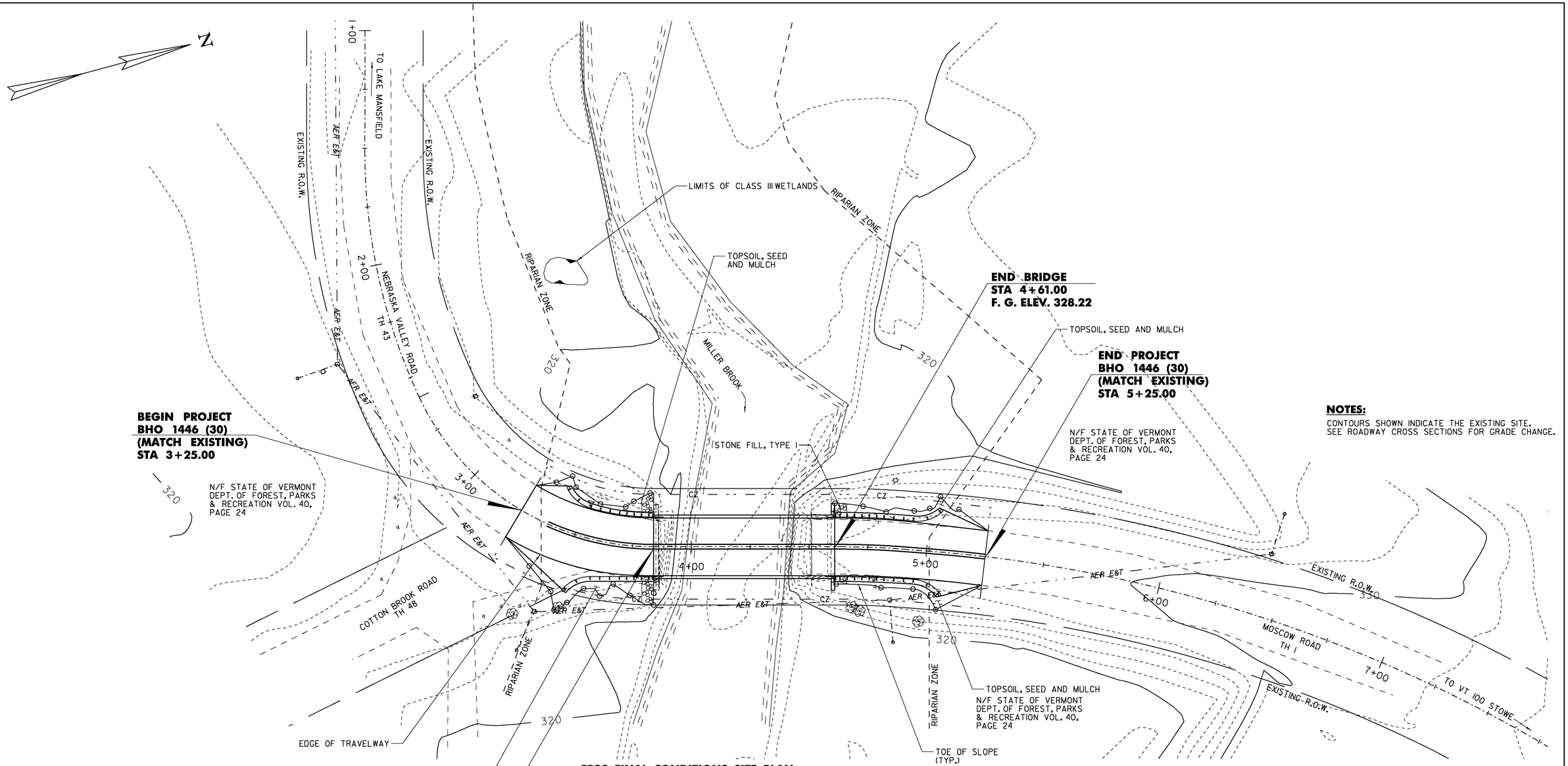
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta. / Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK

EPSC CONSTRUCTION SITE PLAN

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info...\DGN\z99J244ecp-propos.dgn	
D & K DWG NO.	Sheet 17 of 37



NOTES:

CONTOURS SHOWN INDICATE THE EXISTING SITE.
SEE ROADWAY CROSS SECTIONS FOR GRADE CHANGE.

EPSC FINAL CONDITIONS SITE PLAN

SCALE 1" = 20'-0
20 0 20

EXISTING LEGEND

EDGE OF RIVER	
EDGE OF ROAD	
ROW	
GUARD RAIL	
TREE LINE	
UTILITY POLE	
SIGN	
TREES	

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

PLOTTED 12/21/2009

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Town Of STOWE	Bridge No. 3
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MOSCOW ROAD OVER MILLER BROOK

EPSC FINAL CONDITIONS SITE PLAN

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
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PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244ecp-final.dgn	
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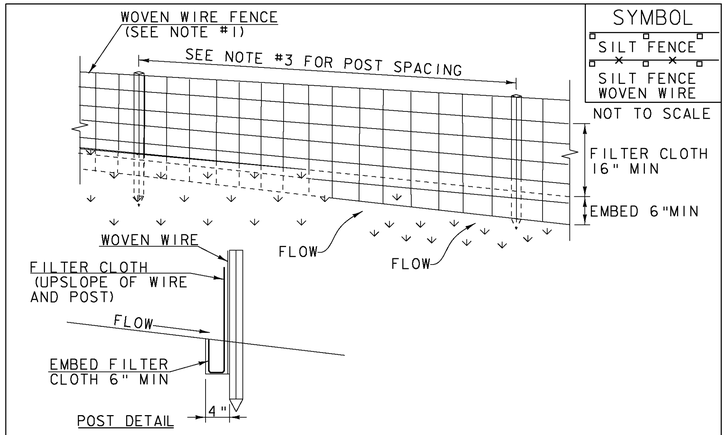


CONSTRUCTION SPECIFICATIONS

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

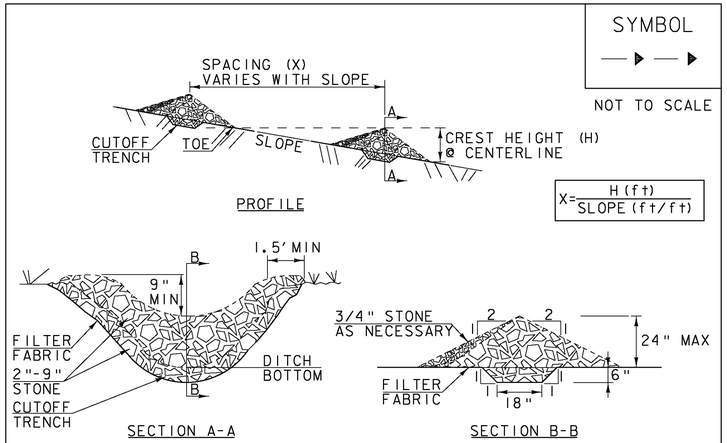
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

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

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

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



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION.
2. CHECK DAMS SHALL BE SPACED SO THAT THE ELEVATION OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM DAM.
3. 3/4" FILTERING STONE MAY BE ADDED TO THE FACE OF THE CHECK DAM AS NECESSARY.
4. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
5. PROTECT CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
6. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
7. MAXIMUM DRAINAGE AREA 2 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
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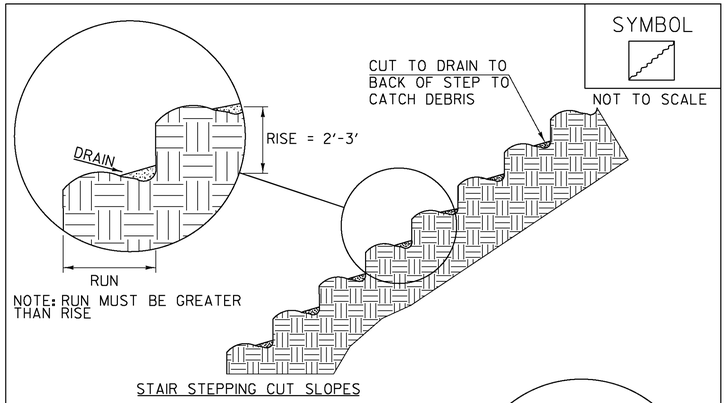
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

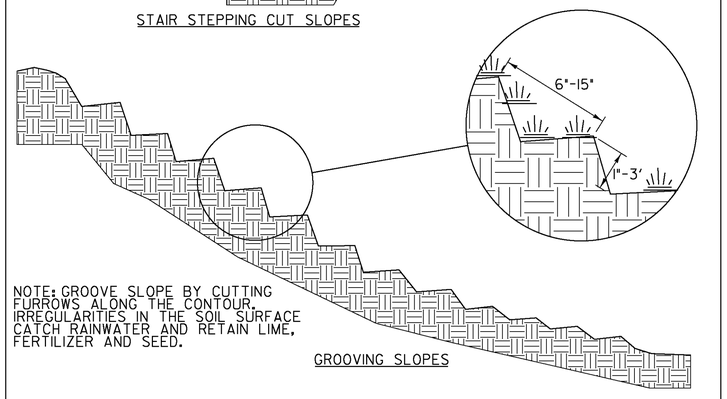
CHECK DAM

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR TEMPORARY STONE CHECK DAM, TYPE I (PAY ITEM 653.25)

REVISIONS	
MARCH 21, 2008	WHF
JANUARY 8, 2009	WHF





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VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SURFACE ROUGHENING

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

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF

PLOTTED 10/22/2009

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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta.
	Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK

EPSC DETAILS 1

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99j244ecp-det.dgn	
D & K DWG NO.	Sheet 19 of 37

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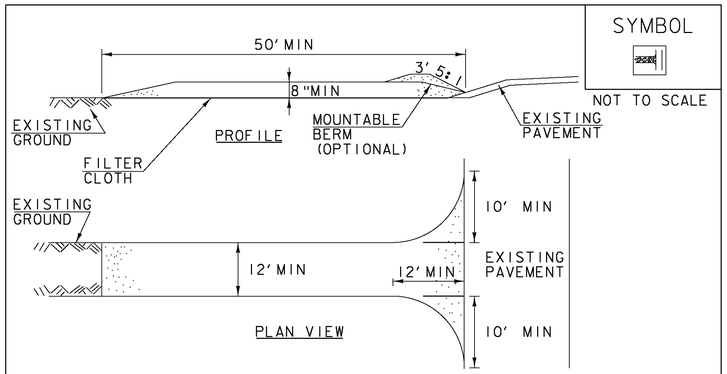

SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

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

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

STABILIZED CONSTRUCTION ENTRANCE

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

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

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

PLOTTED 10/22/2009

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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta.
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MOSCOW ROAD OVER MILLER BROOK

EPSC DETAILS 2

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By Date	Bridge Design Supervisor
E.P. DETRICK 5/09	J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99j244ecp-det.dgn	
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GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2006 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17 TH EDITION, DATED 2002 AND ITS LATEST REVISIONS.

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

3. DIMENSIONS, ANGLES, BEARING, AND ELEVATIONS SHOWN ON THE PLANS HAVE BEEN OBTAINED FROM FIELD SURVEY, FIELD INVESTIGATIONS AND REVIEW OF THE EXISTING BRIDGE PLANS. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING CONDITIONS AFFECTING THE WORK. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER, OR EXTENT OF EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER BEFORE ADVANCING THE WORK. WORKING DRAWINGS REQUIRED FOR VARIOUS ITEMS OF THE WORK SHALL INDICATE THE ACTUAL FIELD MEASUREMENTS BY THE CONTRACTOR PRIOR TO SUBMITTAL FOR THE RESIDENT ENGINEER'S REVIEW AND SHALL BE SO NOTED.

4. REMOVAL OF THE EXISTING BRIDGE SHALL BE UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE". THIS WORK SHALL INCLUDE REMOVAL AND DISPOSAL OF THE BRIDGE DECK, STEEL BEAMS, BRIDGE RAILINGS, BEARINGS, AND A PORTION OF EXISTING ABUTMENT NO. 2. THE EXISTING STEEL BEAMS SHALL BE DELIVERED TO THE TOWN OF STOWE FOR SALVAGE. ALL OTHER MATERIALS WILL BECOME THE PROPERTY OF THE CONTRACTOR FOR DISPOSAL.

5. THE CONTRACTOR SHALL TOPSOIL, SEED, FERTILIZE AND MULCH ALL DISTURBED AREAS, EXCEPT ROADWAY, SHOULDERS AND STONE FILL AREAS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO PRIVATE OR PUBLIC PROPERTY OUTSIDE THE LIMITS OF CONSTRUCTION CAUSED BY THE CONTRACTOR, AT THE SOLE COST TO THE CONTRACTOR.

7. THE CONTRACTOR SHALL REVIEW AND UNDERSTAND ALL APPLICABLE ENVIRONMENTAL PERMITS AND ENSURE THAT ALL CONSTRUCTION CONDITIONS ARE MET.

8. ALLOWABLE LOAD FOR PILES FOR THE NEW ABUTMENT NO. 2 SHALL BE 130 KIPS. 2.25 TIMES THE ALLOWABLE LOAD FOR PILES IS 293 KIPS.

9. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1INCH BY 1INCH, EXCECT AS OTHERWISE INDICATED.

10. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS.

11. 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.

SEE PAGE 29 / TYPICAL HORIZONTAL CONSTRUCTION JOINT

12. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".

13. MINIMUM COVER FOR REINFORCING STEEL SHALL BE 3 INCHES UNLESS OTHERWISE NOTED ON THE PLANS.

14. REINFORCEMENT STEEL PLACEMENT TOLERANCE SHALL BE: SPACING = +/- 1INCH, CLEARANCE = +/- 1/4 INCH.

15. REINFORCING STEEL SHALL CONFORM TO SECTION 507. REINFORCING STEEL IN CURBS AND DECK OVERLAY SHALL BE EPOXY COATED. ALL EPOXY REINFORCING STEEL TO BE CUT IN THE FIELD SHALL BE SAW CUT AND THE EXPOSED ENDS TREATED AS PER SUBSECTION 507.04.

16. AFTER THE SUPERSTRUCTURE HAS BEEN ERECTED, ELEVATIONS SHALL BE TAKEN ALONG THE TOP OF THE PRESTRESSED CONCRETE BOX BEAMS, AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING THE FINISHED GRADE.

17. THE EXISTING STRUCTURAL STEEL ON THIS PROJECT WAS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. THE BEAMS SHALL BE RELOCATED TO A LOCATION SPECIFIED BY THE TOWN. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY FOR CONTAINMENT DURING THE REMOVAL AND RELOCATION OF THE EXISTING BEAMS. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE TOWN AND ITS EMPLOYEES, AND THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS DURING THE REMOVAL AND RELOCATION OF THE BEAMS.

18. NO CONCRETE IN THE ABUTMENTS OR WINGWALLS SHALL BE PLACED ABOVE THE BRIDGE SEAT ELEVATIONS UNTIL THE PRESTRESSED CONCRETE BOX BEAMS HAVE BEEN PROFILED AND THE FINISHED GRADE OF THE DECK HAS BEEN DETERMINED.

19. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTH MAGNESIUM FLOAT FINISHED.

20. THE PRESTRESSED CONCRETE BOX BEAMS SHALL BE OVERLAYED WITH CONCRETE, HIGH PERFORMANCE CLASS AA. THE OVERLAY IS DESIGNED TO BE A MINIMUM OF 5 INCHES THICK AT ANY POINT. THE PRESTRESSED CONCRETE BOX BEAMS SHALL BE PROFILED IN PLACE AND THE FINAL GRADE ADJUSTED AS NECESSARY BY THE ENGINEER TO PROVIDE THE 5 INCH MINIMUM DEPTH AT THE FACE OF THE CURBS.

21. THE CONCRETE DECK OVERLAY SHALL BE PLACED IN ONE CONTINUOUS POUR, NOT TO EXCEED 8 HOURS. NO COLD JOINTS WILL BE ALLOWED. IF CIRCUMSTANCES PREVENT THIS FROM BEING ACCOMPLISHED, A CONSTRUCTION JOINT SHALL BE USED. A 96 HOUR DELAY BETWEEN THE COMPLETION OF ONE DAY'S POUR AND THE BEGINNING OF ANY OTHER DECK OVERLAY POUR SHALL ALSO BE OBSERVED.

22. THE BRIDGE CURBS SHALL BE ITEM 501.32, "CONCRETE, HIGH PERFORMANCE CLASS AA". ALL SUBSTRUCTURE CONCRETE SHALL BE ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B", UNLESS OTHERWISE NOTED ON THESE PLANS.

23. THE CONTRACTOR, AT THE EXPENSE OF THE CONTRACTOR SHALL REPAIR DAMAGE TO CONCRETE WALLS RESULTING FROM IMPROPER BACK FILLING.

24. NO BACKFILL SHALL BE PLACED AGAINST ANY STRUCTURAL ELEMENTS UNTIL THE RESIDENT ENGINEER HAS APPROVED THE STRUCTURAL ELEMENTS. THE HEIGHT OF BACKFILL BEHIND THE ABUTMENTS SHALL BE LIMITED TO THE BRIDGE SEAT ELEVATION UNTIL THE NEW PRESTRESSED CONCRETE BOX BEAMS HAVE BEEN SET.

25. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED BRIDGE CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE PRESTRESSED CONCRETE BOX BEAMS BETWEEN THE DRIP NOTCHES. NO WATER REPELLENT, SILANE SHALL BE APPLIED TO THE PRESTRESSED BOX BEAMS PRIOR TO THE PLACEMENT OF THE OVERLAY AND CURB.

26. A THOROUGH INSPECTION BY THE RESIDENT ENGINEER WILL BE MADE OF ALL EXISTING SUBSTRUCTURE AREAS PRIOR TO CONSTRUCTION. AREAS OF CONCRETE FOUND TO BE SPALLED, DELAMINATED OR OTHERWISE UNSOUND WILL BE REPAIRED. THE CONTRACTOR SHALL SUPPLY ANY MATERIALS REQUIRED FOR THE INSPECTION. THE COST OF INSPECTION WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT. THE COST OF MATERIALS AND LABOR FOR REPAIRS SHALL BE PAID FOR UNDER ITEMS 580.13, 580.14, AND 580.15.

27. ASPHALTIC ASBESTOS BELIEVED TO BE PRESENT ON THE BRIDGE SEAT OF EACH EXISTING ABUTMENT SHALL BE REMOVED. PAYMENT WILL BE MADE UNDER ITEM 900.675, "SPECIAL PROVISION (REMOVAL AND DISPOSAL OF ASPHALTIC ASBESTOS)".

PRESTRESSED CONCRETE BOX BEAM NOTES:

1. THE FABRICATION DRAWINGS SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR REVIEW. COMPOSITE ACTION BETWEEN THE OVERLAY AND THE PRESTRESSED CONCRETE BOX BEAMS WILL BE ALLOWED.

2. ALL EXPOSED CORNERS OF THE PRESTRESSED CONCRETE BOX BEAMS SHALL BE CHAMFERED 3/4 INCH.

3. THE TOPS OF THE PRESTRESSED CONCRETE BOX BEAMS SHALL RECEIVE A RAKED FINISH OF 0.25 INCH AMPLITUDE.

4. PRESTRESSED CONCRETE BOX BEAMS SHALL BE HANDLED USING LIFTING LOOPS ONLY. THE MINIMUM SLING ANGLE FROM THE HORIZONTAL SHALL BE 60 DEGREES. PRESTRESSED CONCRETE BOX BEAMS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 6 FEET OF THE ENDS OF THE BEAMS.

5. THE PRESTRESSED CONCRETE BOX BEAMS WILL BE DESIGNED TO MATCH THE OVERALL GEOMETRY AS SHOWN IN THESE PLANS. THE ENDS OF THE STRANDS SHALL BE RECESSED AND GROUTED.

6. VOID DRAINS ARE REQUIRED AT EACH END OF EACH PRESTRESSED CONCRETE BOX BEAM. THE VOID DRAINS SHALL BE 3/4 INCH DIAMETER AND NON-FERROUS, AND SHALL BE CLEANED AFTER ERECTION.

7. MATERIAL SPECIFICATIONS AND CONCRETE MIX DESIGN SHALL BE IN ACCORDANCE WITH SUBSECTION 510.02.

8. THE PRESTRESSED CONCRETE BOX BEAMS SHALL BE FABRICATED AT A PCI CERTIFIED AND VTRANS APPROVED PLANT.

9. THE VOIDS MUST BE VENTED DURING THE CURING PERIOD. CURING PROCEDURES SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR REVIEW.

10. THE CONCRETE DESIGN MIX SHALL HAVE A 28-DAY STRENGTH (F'c) 6,000 PSI. THE MINIMUM CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 4,800 PSI. REINFORCING STEEL SHALL BE GRADE 60, AASHTO M31M/M31 AND SHALL BE EPOXY COATED STEEL. CONCRETE SHALL CONTAIN AN APPROVED CORROSION INHIBITOR ADMIXTURE AT A DOSAGE RATE OF 4 GALLONS PER CUBIC YARD.

11. THE PRESTRESSED CONCRETE BOX BEAMS SHALL BE FABRICATED TO CONTAIN PRESTRESSING STRANDS. PRESTRESSING STRANDS SHALL CONFORM TO AASHTO M203M/M203, SUPPLEMENT 1, AND SHALL AS A MINIMUM CONSIST OF 270 ksi, 0.60 INCH DIA., 7 WIRE LOW RELAXATION STEEL STRANDS CONFORMING TO SUBSECTION 713.06, PULLED TO 75% OF THEIR YIELD. THE CONFIGURATION OF THE STRAND, DIAMETER AND OTHER APPROPRIATE DESIGN INFORMATION SHALL BE DETERMINED BY THE FABRICATOR'S ENGINEER.

12. THE TRANSVERSE TENDONS SHALL BE MIN. 1/2 INCH DIAMETER AND THE PLATE SHALL CONFORM TO AASHTO M270M/M270 GRADE 50. THE PLATE AND CHUCKS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M232M/M232. ALL WORK COVERED IN THIS NOTE SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 510.21 "PRESTRESSED CONCRETE BOX BEAMS (33" X 36")".

13. THE JOINTS BETWEEN THE PRESTRESSED CONCRETE BOX BEAMS SHALL BE FILLED WITH MORTAR, TYPE IV IN ACCORDANCE WITH SUBSECTION 510.13(b). MATERIALS, LABOR AND EQUIPMENT FOR ALL GROUTING AND FOR THE COLD POURED JOINT FILLER SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 510.24, "GROUTING SHEAR KEYS".

14. ALL COSTS ASSOCIATED WITH FABRICATION, HANDLING AND DELIVERY TO THE PROJECT SITE AND ERECTION OF EACH BOX BEAM SHALL BE PAID FOR UNDER ITEM 510.21, "PRESTRESSED CONCRETE BOX BEAMS (33" X 36")".

15. ALL COMPONENTS OF EACH BOX BEAM, INCLUDING (BUT NOT LIMITED TO) THE TRANSVERSE TENDONS, GALVANIZED CHUCKS AND PLATE, ALL ANCHOR BOLTS AND THE HOT POURED JOINT SEALER AND ANY OTHER HARDWARE OR FIELD CONNECTION REQUIREMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 510.21, "PRESTRESSED CONCRETE BOX BEAMS (33" X 36")".

16. THE ELASTOMERIC BEARING PADS SHALL CONFORM TO SUBSECTION 731.03 AND SHALL BE PAID FOR UNDER ITEM 531.11, "BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD".

17. THE TRANSVERSE STRANDS SHALL BE INSTALLED PRIOR TO THE PLACEMENT OF THE MORTAR AND CASTING OF THE CONCRETE DECK OVERLAY.

18. THE FABRICATOR MAY SUBMIT A DESIGN TO THE ENGINEER FOR REVIEW WHICH IS DIFFERENT THAN THE INFORMATION SHOWN IN THESE PLANS TO MEET THE FABRICATOR'S SPECIFIC PLANT OPERATIONS, PROVIDED THAT THE ALTERNATE DESIGN MEETS ALL APPLICABLE DESIGN AND MATERIAL REQUIREMENTS AND DOES NOT AFFECT THE GEOMETRY OF THE REMAINING COMPONENTS OF THE PROJECT.

19. THE COST FOR PERFORMING ALL DESIGN WORK WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE CONSIDERED INCIDENTAL TO ITEM NO. 510.21, "PRESTRESSED CONCRETE BOX BEAMS (33" X 36")".

20. THE PRESTRESSED CONCRETE BOX BEAMS SHALL BE DESIGNED FOR AASHTO HS-25-44 LIVE LOADS. THE PRESTRESSED CONCRETE BOX BEAMS SHALL ALSO BE DESIGNED FOR APPROPRIATE DEAD LOADS.

PLOTTED 10/22/2009

SUGGESTED SEQUENCE OF INSTALLATION FOR PRESTRESSED CONCRETE BOX BEAMS:

(A) LAYOUT WORKING LINES

LAY OUT WORKING LINES FOR THE BRIDGE'S ENTIRE WIDTH ON THE BEAM SEAT. MEASURE ALL WORKING LINES FROM A COMMON WORKING POINT.

THE WORKING LINES ARE TO BE BASED ON THE NOMINAL BEAM WIDTHS.

(B) VERIFY BEAM SEAT ELEVATIONS

TAKE ELEVATIONS AT BEAM SEATS.
IF SEATS ARE HIGH, GRIND TO CORRECT ELEVATIONS.
IF SEATS ARE LOW, ADD SHIMS.
THE COSTS TO GRIND AND/OR ADD SHIMS WILL BE CONSIDERED INCIDENTALTO ITEM NO. 510.21, "PRESTRESSED CONCRETE BOX BEAMS".
INSTALL BEARINGS, DRILL AND INSTALL ANCHOR BOLTS.

(C) ERECT BEAMS

BEAMS SHALL BE PLACED TO FIT WITHIN WORKING LINES. AS WORK PROGRESSES, INSTALL HARDWOOD WEDGES BETWEEN ADJACENT BEAMS TO MAINTAIN PROPER JOINT OPENING (A MINIMUM OF ONE WEDGE AT EACH LATERAL TIE).

(D) INSTALL OAKUM OR EQUIVALENT JOINT FILLER (BACKER ROD)

FILLER SHALL BE PLACE BELOW THE KEY'S BOTTOM AS SHOWN ON THE PLANS. THE FILLER SHALL BE PLACED AFTER THE BEAMS HAVE BEEN SET.

(E) GROUT DOWEL ENDS AT THE FIXED ENDS AT BRIDGE SEATS AND PLACE COLD POURED JOINT SEALER AT EXPANSION END.

(F) INSTALL TRANSVERSE TIES

A SEAMLESS POLYPROPYLENE SHEATH SHALL COVER TIES (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND). FEED TIES THROUGH DUCTS. VERIFY THAT HARDWOOD WEDGES ARE IN PLACE AS REQUIRED TO PREVENT SLIPPAGE OF BEAMS. USING CALIBRATED JACK, POST TENSION TIES TO APPROXIMATELY 5,000 LBS. TO REMOVE SAG IN THE TIE AND TO SEAT THE CHUCK.

(G) GROUT SHEAR KEYS

CLEAN JOINT WITH AN OIL FREE AIR-BLAST IMMEDIATELY BEFORE GROUT PLACEMENT. THEN VERIFY THAT THE BACKER ROD IS STILL IN PLACE. ADDITIONAL JOINT PREPARATION AND GROUT PLACEMENT SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. CAREFULLY ROD JOINTS TO ELIMINATE ANY POSSIBILITY OF VOIDS.

(H) POST-TENSION TRANSVERSE TIES

GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1,500 PSI, BASED ON THE MANUFACTURER'S RECOMMENDATIONS, PRIOR TO STRESSING. USING A CALIBRATED JACK OPERATED BY QUALIFIED PERSONNEL, POST TENSION TIES TO 30,000 LBS.

(I) FINISH WORK

REMOVE WEDGES, AND PATCH DECK AND FASCIA BEAMS AT TRANSVERSE TIES. PLACE AN OVERLAY.

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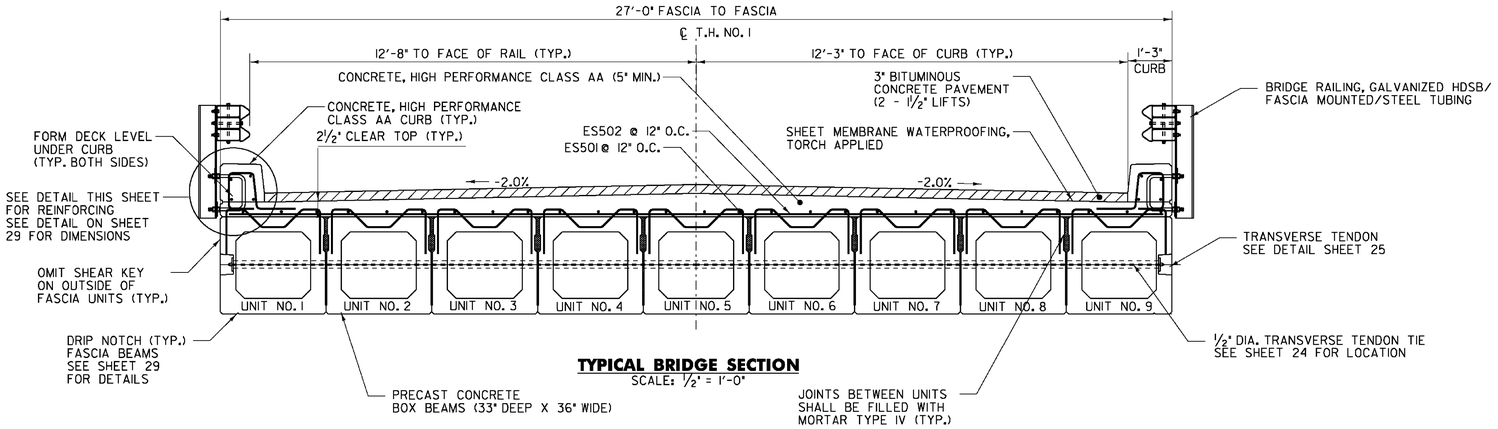
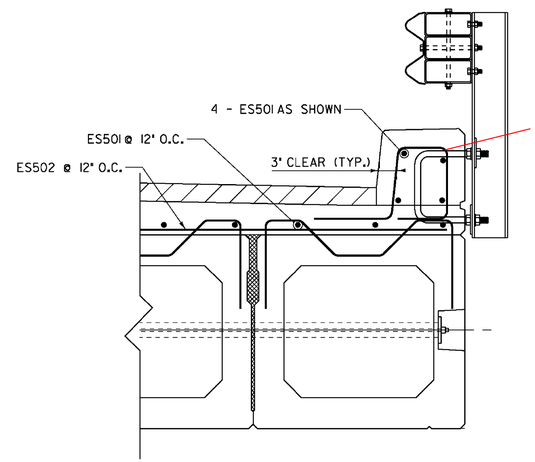
MOSCOW ROAD OVER MILLER BROOK

GENERAL NOTES

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244gn.dgn	
D & K DWG NO.	Sheet 21 of 37

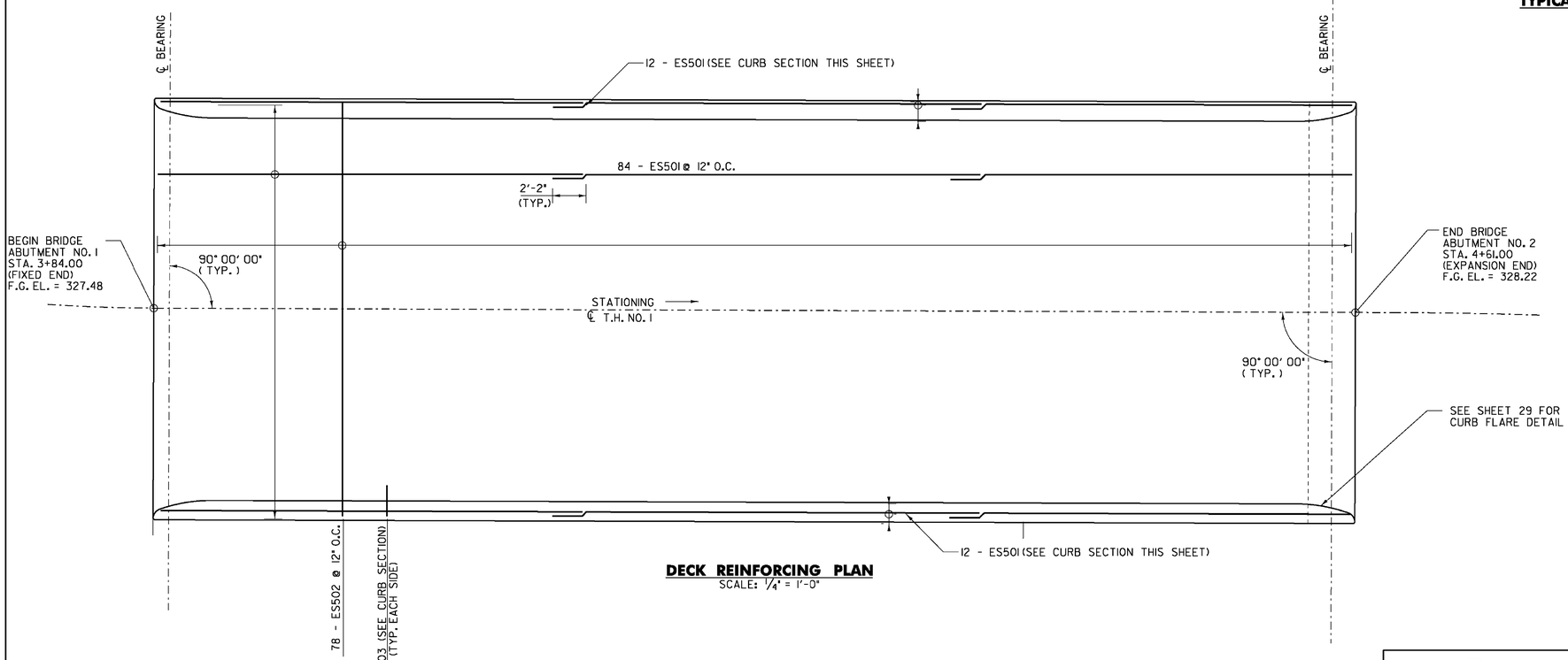


TYPICAL BRIDGE SECTION
SCALE: ½" = 1'-0"



ES 503 12 C-C
BAR NOT ON SCHEDULE
E-MAIL CHRIS WILLIAMS
FOR BEND DIMENSIONS
6-30-10

TYPICAL CURB AND EDGE OF DECK REINFORCING
SCALE: 1" = 1'-0"



DECK REINFORCING PLAN
SCALE: ¼" = 1'-0"

NOTES:

1. UNLESS OTHERWISE NOTED, ALL REINFORCING STEEL SHALL HAVE A CLEAR COVER OF 3".
2. "E" DENOTES EPOXY COATED BARS. ALL NON-PRESTRESSING REINFORCING STEEL USED FOR THE SUPERSTRUCTURE SHALL BE EPOXY COATED.
3. TRANSVERSE REINFORCING SHALL BE ONE CONTINUOUS BAR, NO SPLICING.

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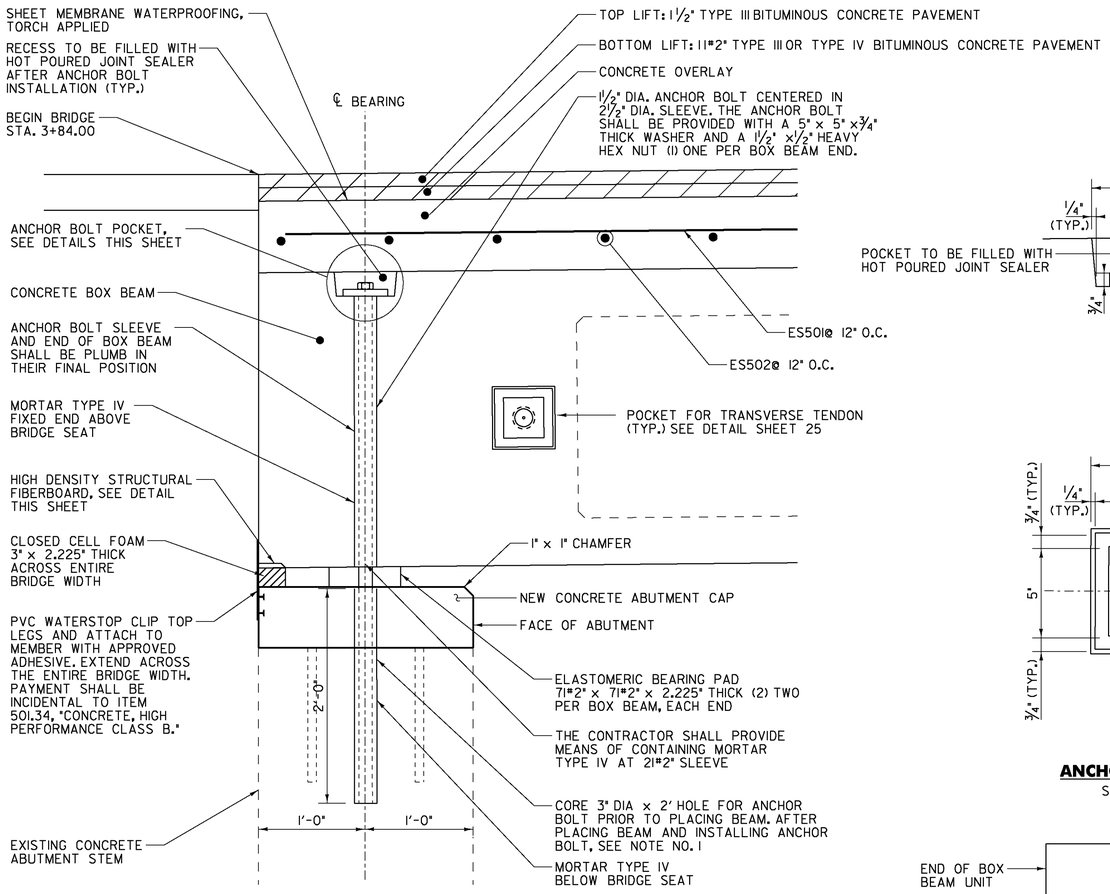
MOSCOW ROAD OVER MILLER BROOK

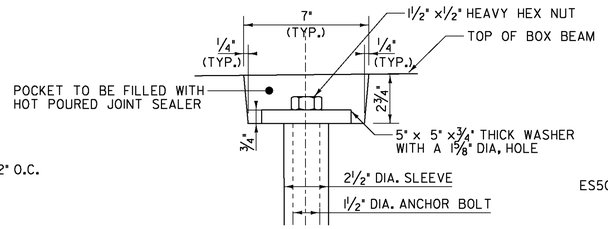
DECK REINFORCING PLAN AND DETAILS

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By Date	Bridge Design Supervisor
E.P. DETRICK 5/09	J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244dt3.dgn	
D & K DWG NO.	Sheet 22 of 37

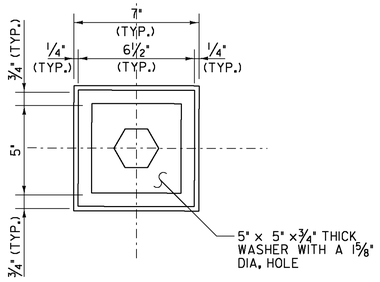


ABUTMENT NO. 1 END DETAIL (FIXED)

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



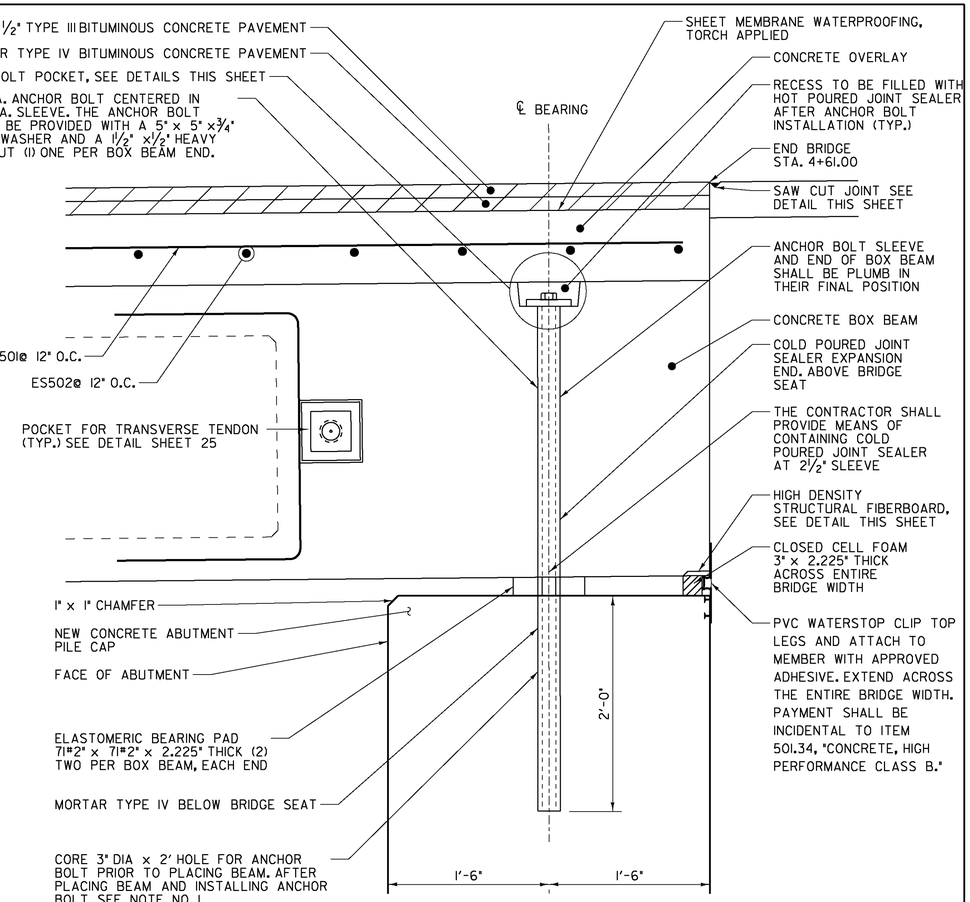
SECTION



PLAN

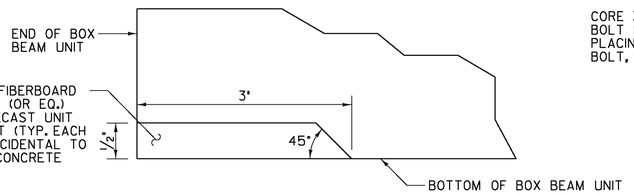
ANCHOR BOLT POCKET

SCALE 3" = 1'-0"

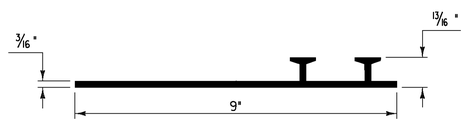


ABUTMENT NO. 2 END DETAIL (EXPANSION)

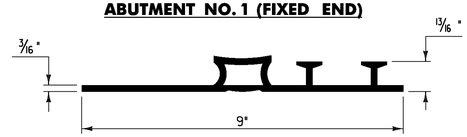
SCALE 1 1/2" = 1'-0"



HIGH DENSITY STRUCTURAL FIBERBOARD DETAIL



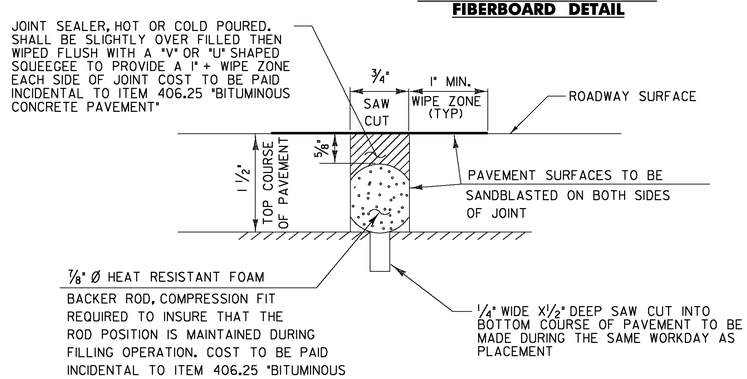
ABUTMENT NO. 1 (FIXED END)



ABUTMENT NO. 2 (EXPANSION END)

P.V.C. WATERSTOP FOR JOINT AT BEAM ENDS

THE COSTS FOR P.V.C. WATERSTOP SHALL BE INCIDENTAL TO ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B". OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER



SAW CUT JOINT DETAIL

NOT TO SCALE

NOTES:

1. UPON APPROVAL THE CONTRACTOR SHALL DRILL AND THOROUGHLY CLEAN ALL HOLES. THE ANCHOR RODS SHALL BE SET USING VTRANS MATERIALS AND RESEARCH APPROVED MORTAR TYPE IV. INSTALLATION OF THE ANCHOR RODS SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS APPROVED BY THE ENGINEER.
2. ANCHOR BOLT, NUT AND WASHERS SHALL BE GALVANIZED AND CONFORM TO SUBSECTION 714.08.
3. ALL COSTS TO SUPPLY AND INSTALL THE ANCHOR BOLTS, INCLUDING ALL ASSOCIATED DRILLING AND HARDWARE AND MATERIALS SHALL BE INCLUDED IN THE COST OF ITEM 510.21, "PRESTRESSED CONCRETE BOX BEAMS (33" X 36")".

PLOTTED 10/22/2009

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MOSCOW ROAD OVER MILLER BROOK

BRIDGE END DETAILS

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.C.C. Info. ...\DGN\z99J244dt10.dgn	
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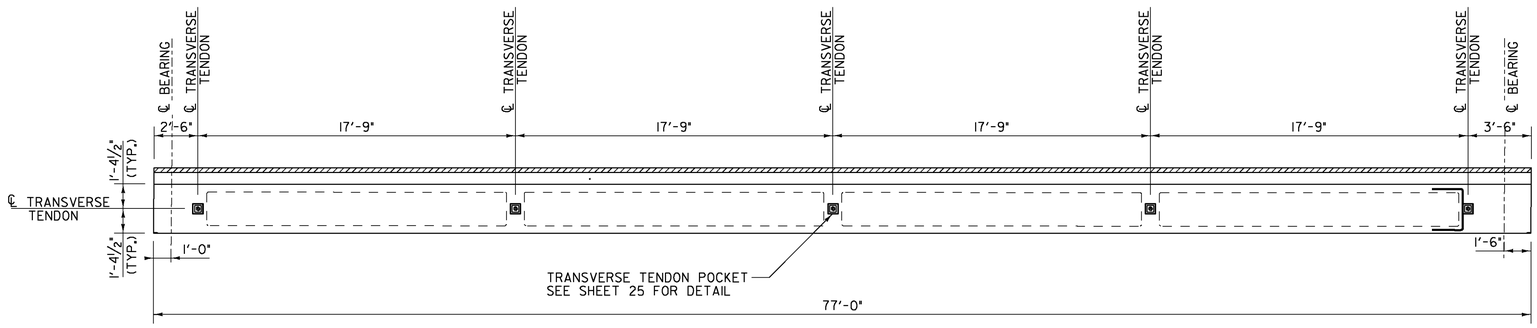
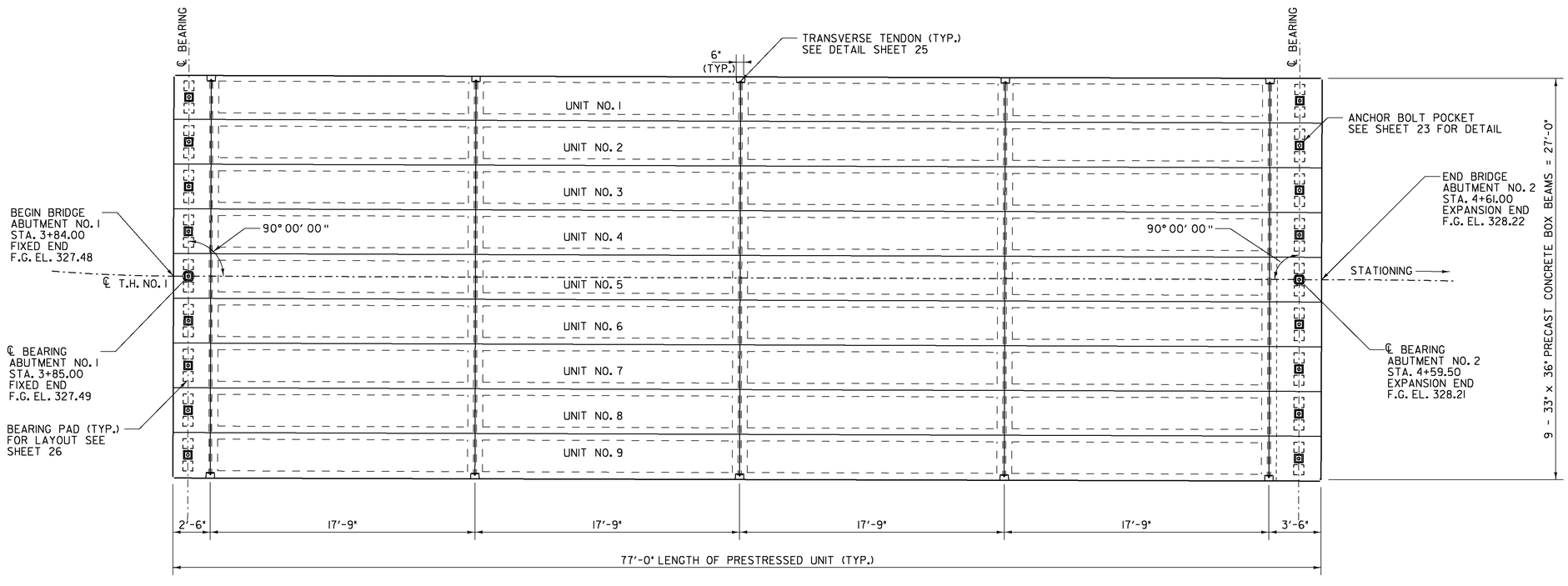


PRESTRESSED BOX BEAM UNIT ELEVATION

SCALE 1/4" = 1'-0"



PRESTRESSED BOX BEAM UNIT PLAN

SCALE 1/4" = 1'-0"

NOTES:

1. ALL UNITS ARE 3' WIDE AND 33" DEEP.
2. SEE SHEET 23 FOR MORE DETAIL AT ABUTMENTS.
3. PROVIDE A 3/4" DIA. DRAIN HOLE AT BOTH ENDS OF ALL VOIDS. THE DRAIN WILL BE NON FERROUS AND WILL BE CLEANED AFTER ERECTION.

SERVICE LOADS PER UNIT		
MEMBER MOMENT, KIP FT (NON- COMPOSITE)	462	AT MIDSPAN
DECK MOMENT, KIP FT NON- COMPOSITE	169	AT MIDSPAN
SUPERIMPOSED DEAD LOAD MOMENT (COMPOSITE)	108	AT MIDSPAN
LIVE LOAD + IMPACT MOMENT, KIP FT	416	AT MIDSPAN
DEAD LOAD REACTION, KIPS	40	AT ABUTMENTS
LIVE LOAD REACTION, KIPS	25	AT ABUTMENTS
TOTAL REACTION, KIPS	65	AT ABUTMENTS

PLOTTED 10/22/2009

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MOSCOW ROAD OVER MILLER BROOK

PRESTRESSED UNIT DETAILS 1

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99j244dt7.dgn	
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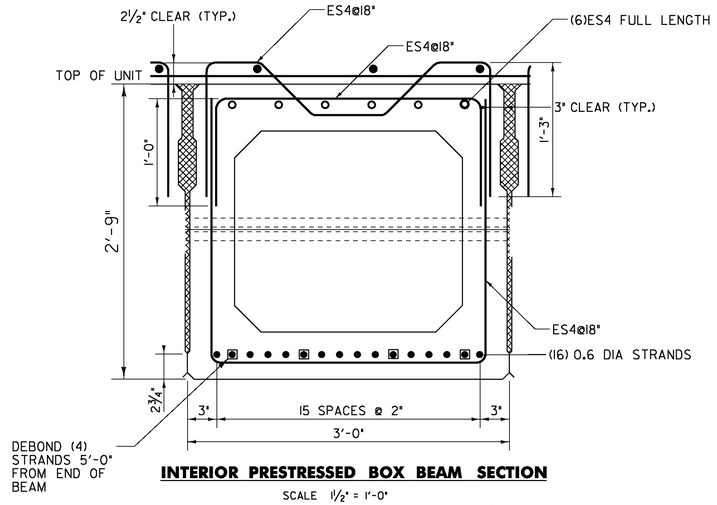
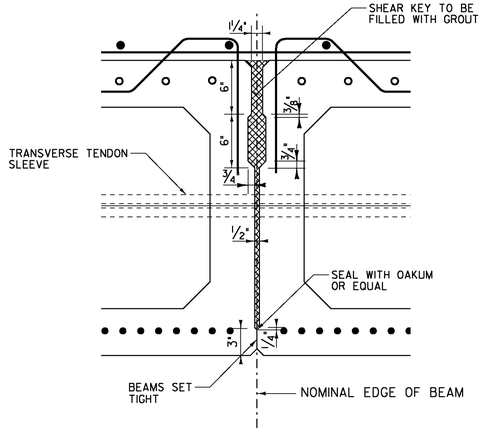
NOTES:

1. TRANSVERSE TIES SHALL BE COVERED BY SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF THE STRAND, EXCEPT AT ANCHORAGE LOCATIONS, TIES SHALL BE TENSIONED TO 30000 LBS.



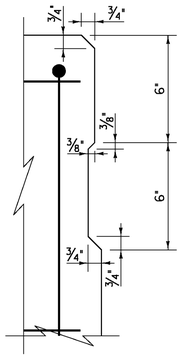
INTERIOR PRESTRESSED BOX BEAM SECTION

SCALE 1½" = 1'-0"



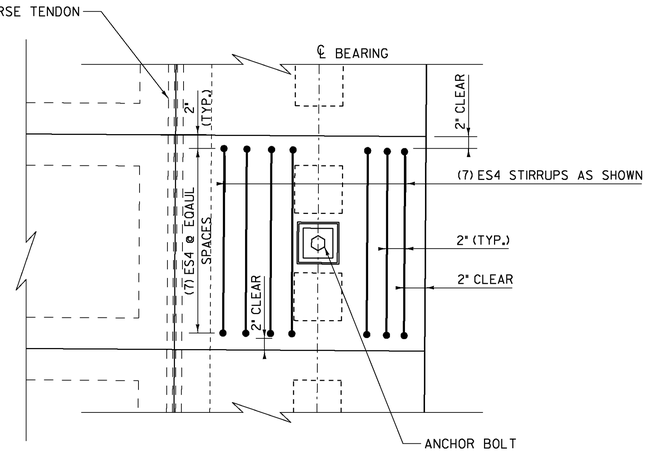
TYPICAL SHEAR KEY SECTION

SCALE 1½" = 1'-0"



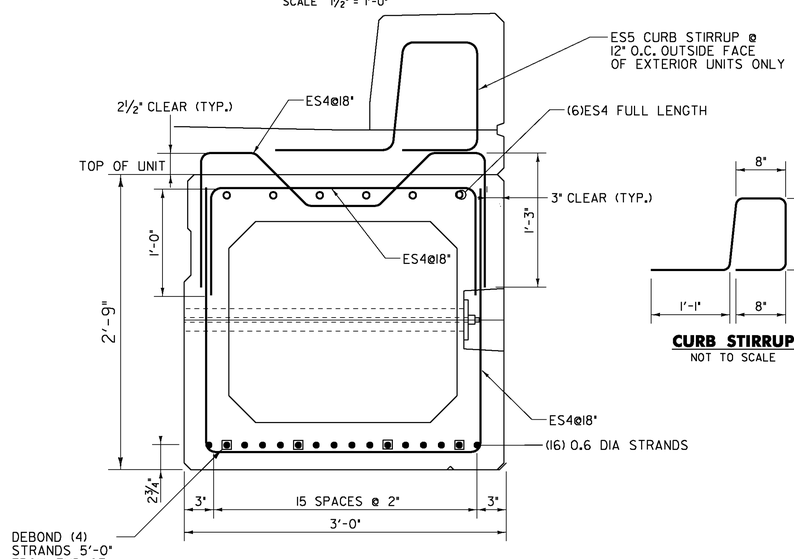
SHEAR KEY DETAIL

SCALE 3" = 1'-0"



PRESTRESSED BOX BEAM UNIT END DETAIL PLAN

SCALE 1" = 1'-0"

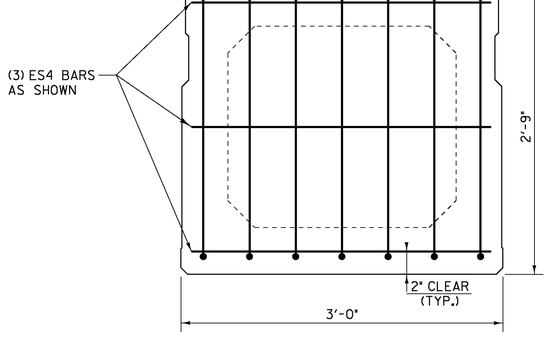


EXTERIOR PRESTRESSED BOX BEAM SECTION

SCALE 1½" = 1'-0"

CURB STIRRUP

NOT TO SCALE

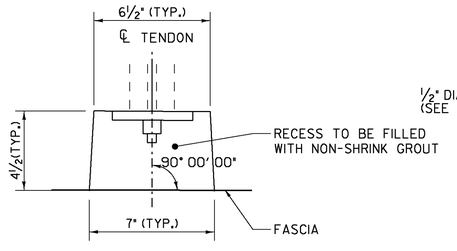


SECTION A–A

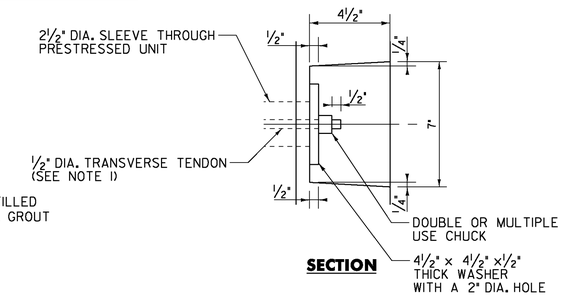
SCALE 1½" = 1'-0"

PRESTRESSED BOX BEAM UNIT END DETAIL ELEVATION

SCALE 1" = 1'-0"



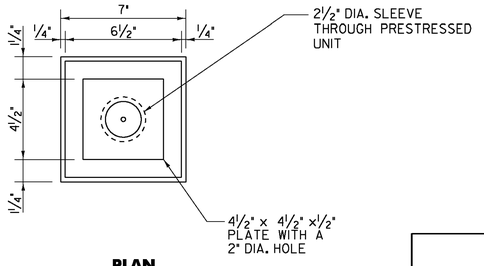
PLAN OF POCKET



SECTION

TRANSVERSE TENDON DETAIL

SCALE 3" = 1'-0"



PLAN

PLOTTED 10/22/2009

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MOSCOW ROAD OVER MILLER BROOK

PRESTRESSED UNIT DETAILS 2

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99j244dt8.dgn	
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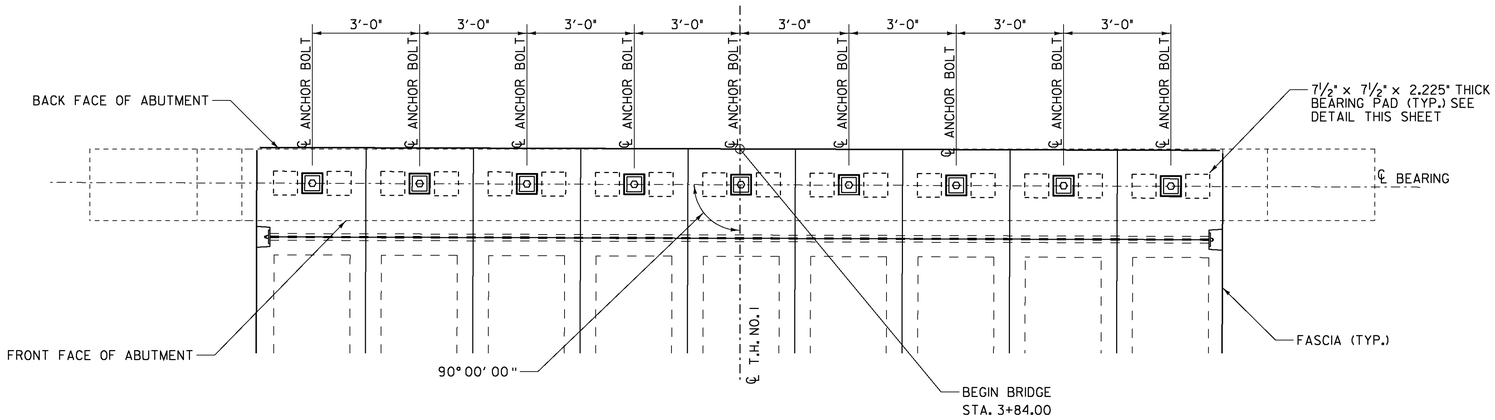
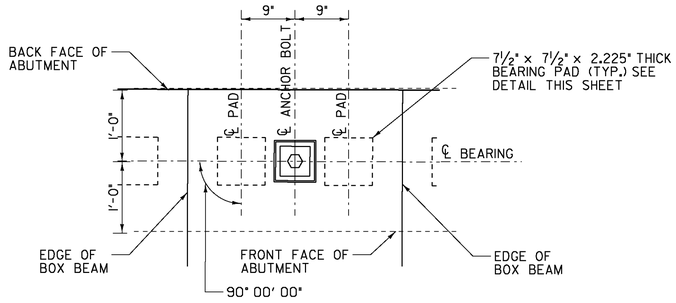


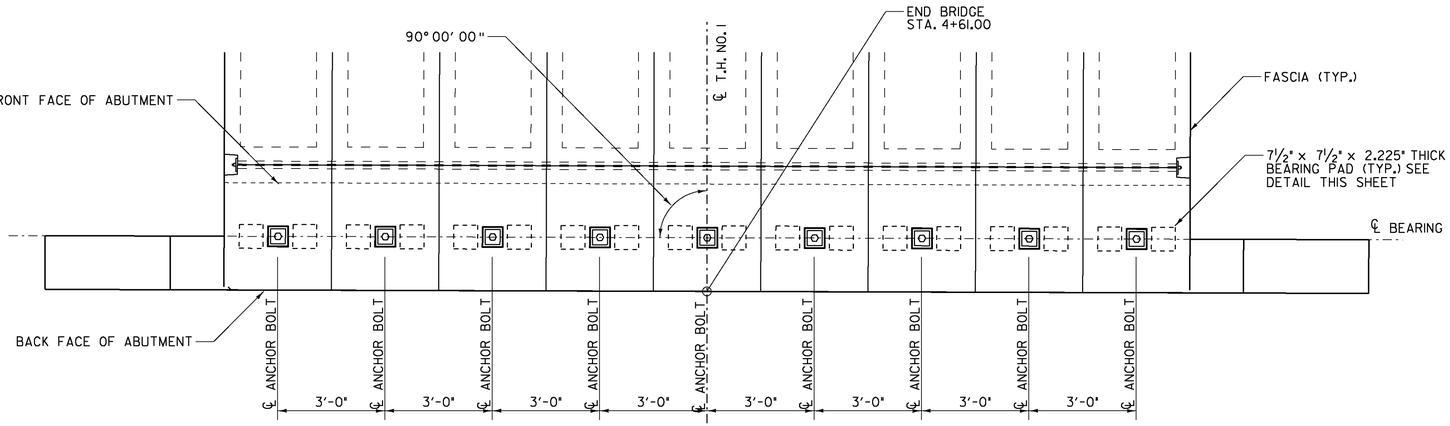
TYPICAL BEARING PAD PLACEMENT PLAN ABUTMENT NO. 1

SCALE ½" = 1'-0"



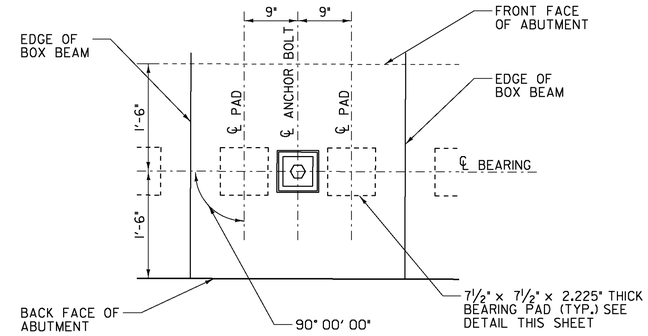
TYPICAL BEARING PAD PLACEMENT ABUTMENT NO. 1

SCALE 1" = 1'-0"



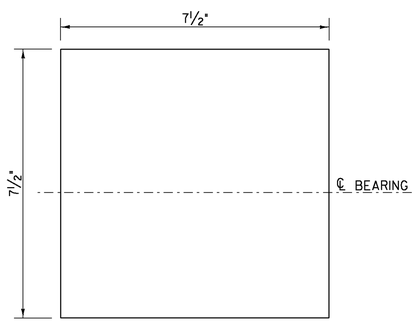
TYPICAL BEARING PAD PLACEMENT PLAN ABUTMENT NO. 2

SCALE ½" = 1'-0"



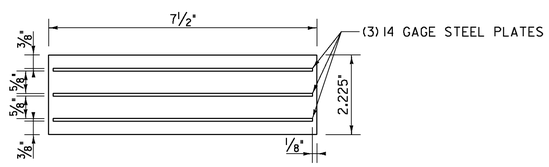
TYPICAL BEARING PAD PLACEMENT ABUTMENT NO. 2

SCALE 1" = 1'-0"



BEARING PAD DETAIL (PLAN)

SCALE ½" = 1"



BEARING PAD DETAIL (CROSS SECTION)

SCALE ½" = 1"

NOTES:

1. BEARING PADS ARE TO BE SET PARALLEL TO THE EDGE OF THE PRESTRESSED UNITS.
2. THERE WILL BE 36 BEARING PADS REQUIRED.
3. A TOTAL OF 18 ANCHOR BOLT ASSEMBLIES WILL BE REQUIRED.
4. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMERIC SHALL BE STEEL GRADE 36 NO FABRIC REINFORCEMENT WILL BE PERMITTED.
5. ELASTOMERIC BEARING REINFORCEMENT WITH STEEL SHALL HAVE A 1/8" EDGE SEAL OF ELASTOMERIC INTEGRAL WITH THE BEARING OVER ALL PLATES.
6. ELASTOMERIC MATERIAL SHALL CONFORM TO SUBSECTION 731.03.
7. ALL WORK AND MATERIALS REQUIRED FOR BEARING SHALL BE PAID UNDER ITEM NO. 531.11, "BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD".
8. DESIGN CRITERIA:
   A) TEMPERATURE RANGE: 150 DEGREES F
   B) 60 DUROMETER ELASTOMERIC
   C) MAXIMUM BEARING STRESSES: 0.578 ksi
   D) DESIGN ROTATION 0.0107 RADIANS
   E) BEARING SHAPE FACTOR: 3.0
9. WITH APPROVAL, ALTERNATE CONFIGURATIONS ARE ALLOWED.

PLOTTED 10/22/2009

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MOSCOW ROAD OVER MILLER BROOK

BEARING DETAILS

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99j244dt9.dgn	
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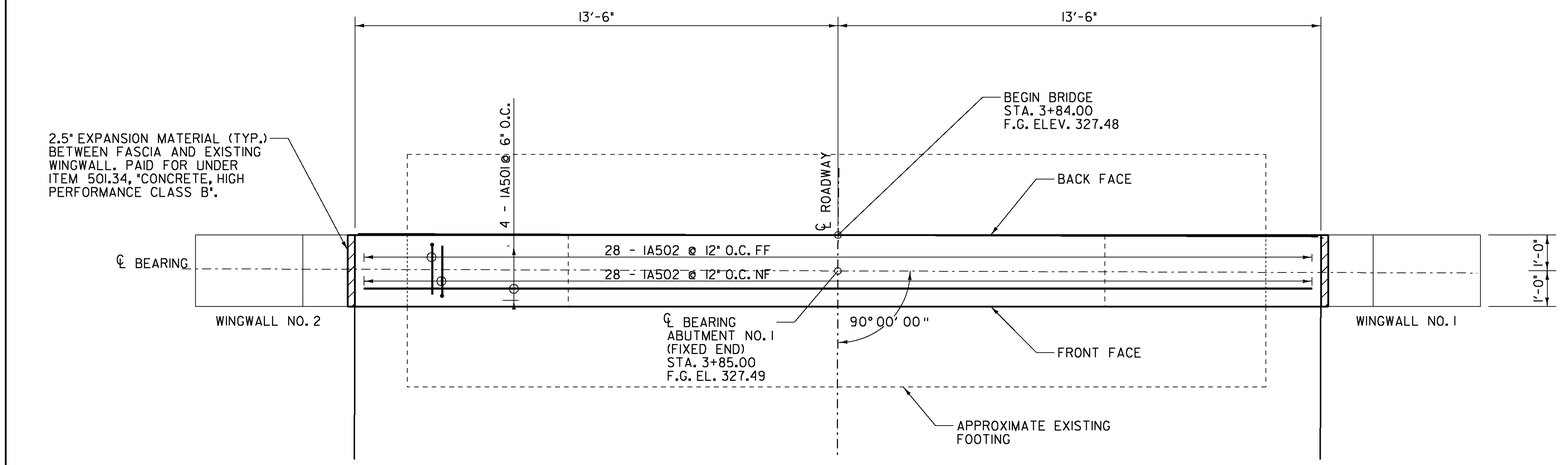
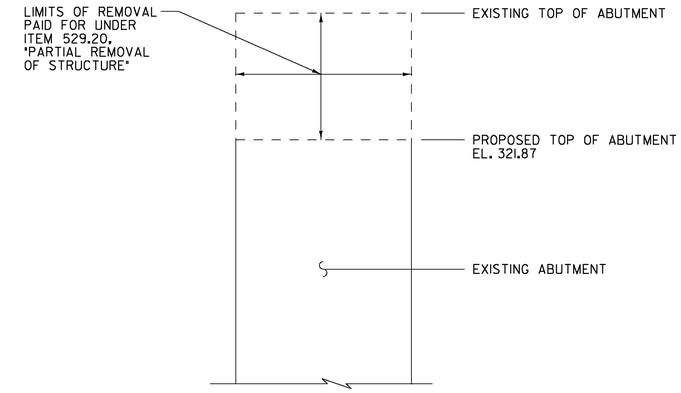


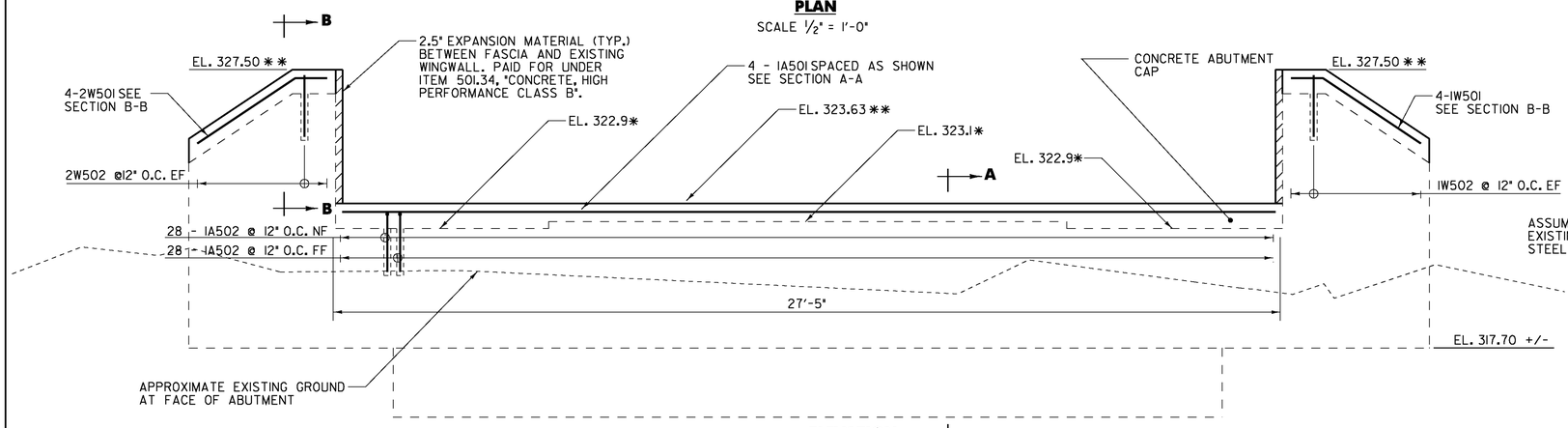
PLAN

SCALE ½" = 1'-0"



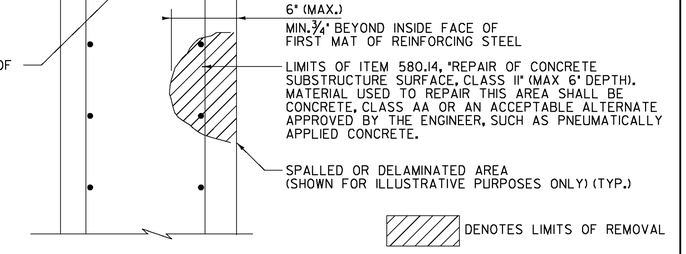
PARTIAL REMOVAL OF EXISTING ABUTMENT NO. 2

NOT TO SCALE



ELEVATION

SCALE ½" = 1'-0" A

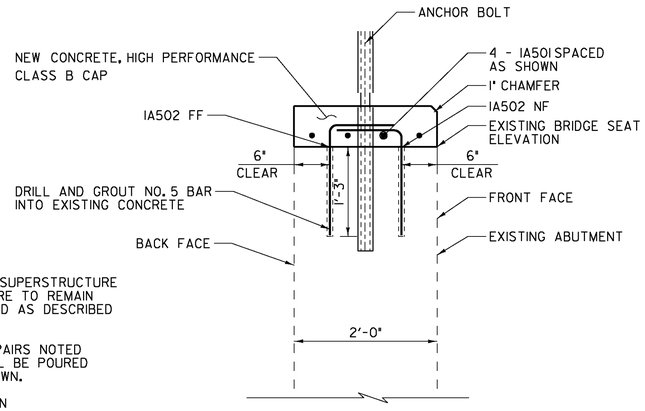


REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS I OR CLASS II

NOT TO SCALE

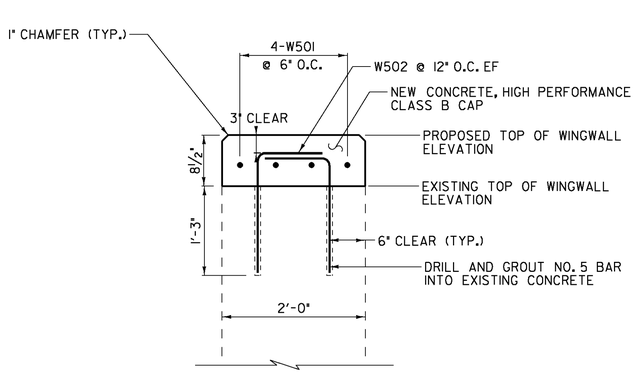
NOTE:

REMOVAL OF EXISTING CONCRETE TO A DEPTH GREATER THEN SPECIFIED FOR ITEM 580.14 SHALL BE PAID UNDER THE ITEM 580.15, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III".



SECTION A–A

SCALE 1" = 1'-0"



SECTION B–B

SCALE 1" = 1'-0"

NOTES:

1. FOLLOWING THE REMOVAL OF THE SUPERSTRUCTURE ALL CONCRETE SURFACES THAT ARE TO REMAIN SHALL BE INSPECTED AND REPAIRED AS DESCRIBED IN NOTE 26 ON SHEET 21.
2. FOLLOWING THE CLEANING AND REPAIRS NOTED ABOVE, THE NEW BRIDGE SEAT WILL BE POURED TO THE PROPOSED ELEVATION SHOWN.
3. *APPROXIMATE EXISTING ELEVATION
   **PROPOSED ELEVATIONS
4. OC = ON CENTER
   NF = NEAR FACE
   FF = FAR FACE
   EF = EACH FACE
   ▲ = CUT TO FIT IN FIELD

PLOTTED 10/22/2009

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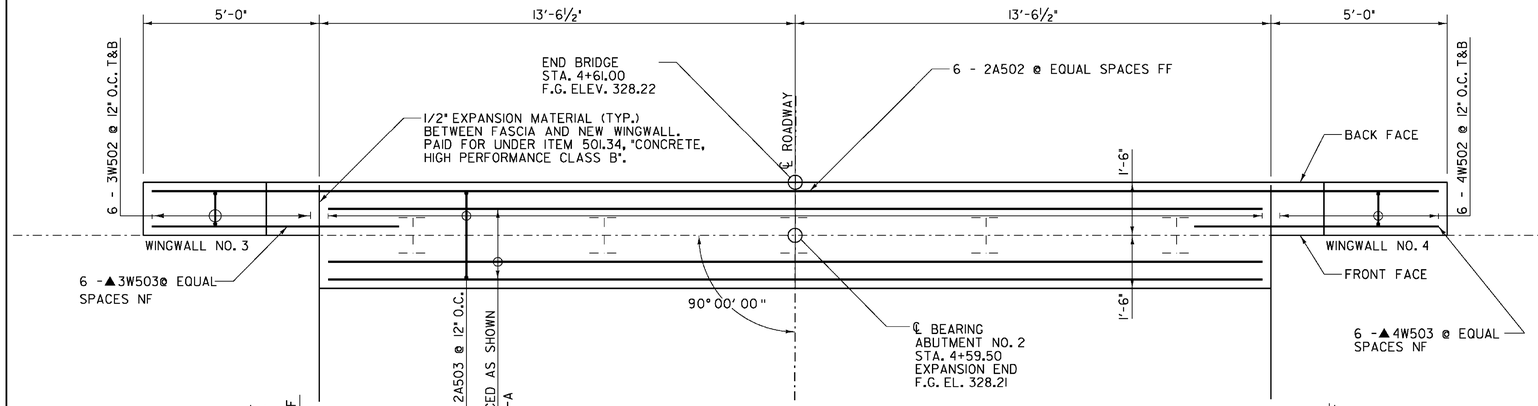
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta.
	Surv. Sta.

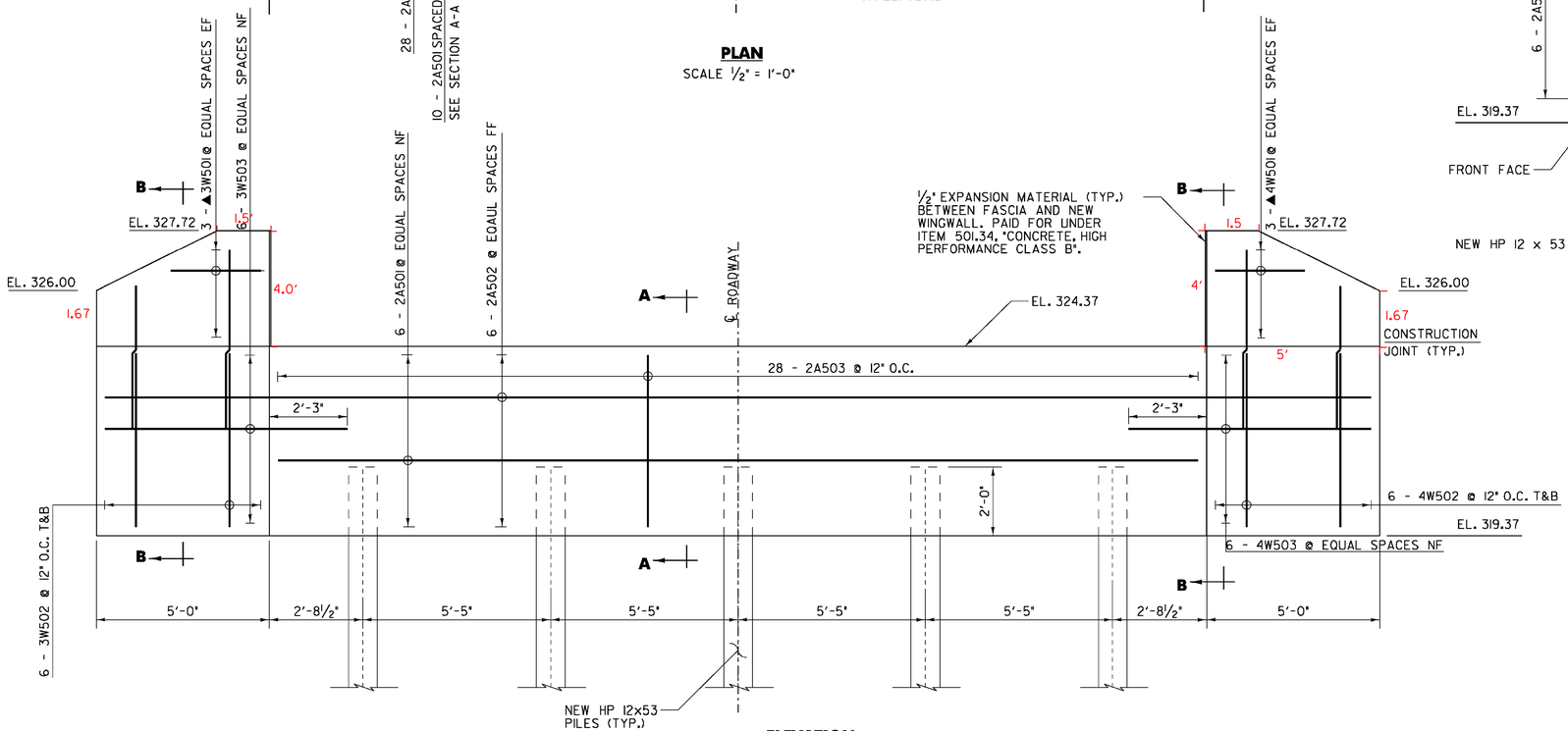
MOSCOW ROAD OVER MILLER BROOK

ABUTMENT NO. 1 DETAILS

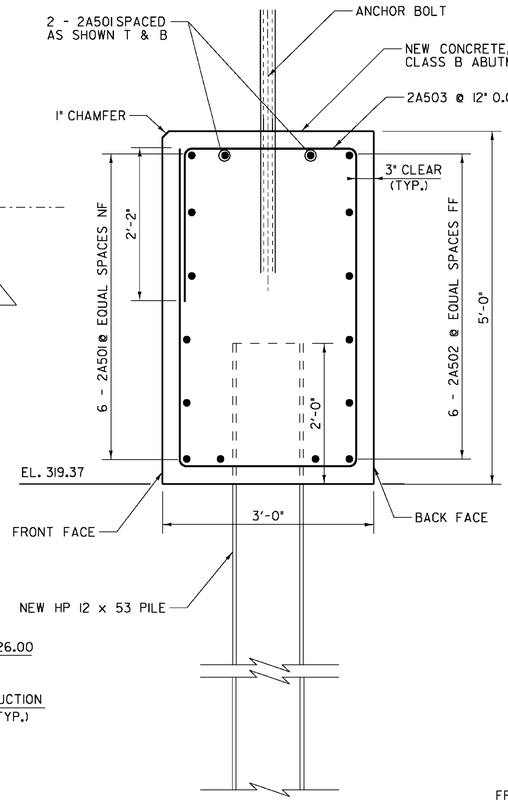
Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By Date	Bridge Design Supervisor
E.P. DETRICK 5/09	J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244dt11.dgn	
D & K DWG NO.	Sheet 27 of 37



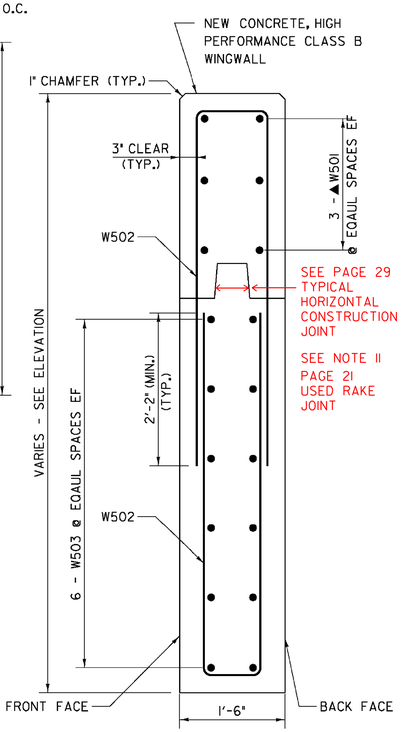
PLAN
SCALE ½" = 1'-0"



ELEVATION
SCALE ½" = 1'-0"



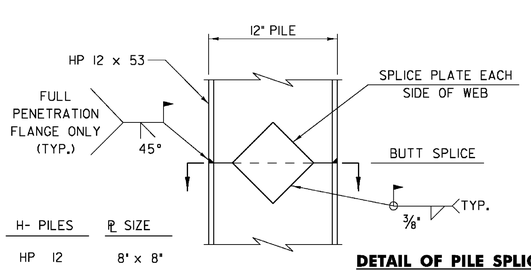
SECTION A–A
SCALE 1" = 1'-0"



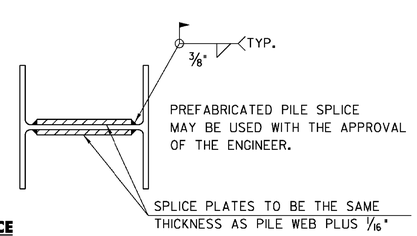
SECTION B–B
SCALE 1" = 1'-0"

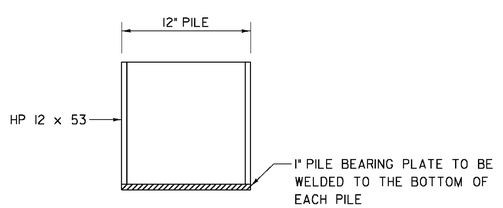
NOTES:

1. I INDICATES LOCATION OF A VERTICAL PILE
2. PREFABRICATED PILE SPLICE MAY BE USED WITH THE APPROVAL OF THE ENGINEER
3. WELD PROCEDURES SHALL BE APPROVED BEFORE WELDING
4. EACH PILE SHALL HAVE A 1" THICK STEEL PLATE USING MATERIAL IN ACCORDANCE WITH GRADE 50 AASHTO M270M/M270, WELDED TO THE BOTTOM.
5. APPROXIMATE LENGTH OF PILE UNDER ABUTMENT NO. 2 IS 93.37' (EL. 322.37 -229.00.)
6. SEE SHEET 27 FOR DETAILS ON PARTIAL REMOVAL OF EXISTING ABUTMENT NO. 2.
7. OC = ON CENTER
   NF = NEAR FACE
   FF = FAR FACE
   EF = EACH FACE
   ▲ = CUT TO FIT IN FIELD



DETAIL OF PILE SPLICE
NOT TO SCALE





PILE BEARING PLATE
NOT TO SCALE

PLOTTED 10/22/2009

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AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
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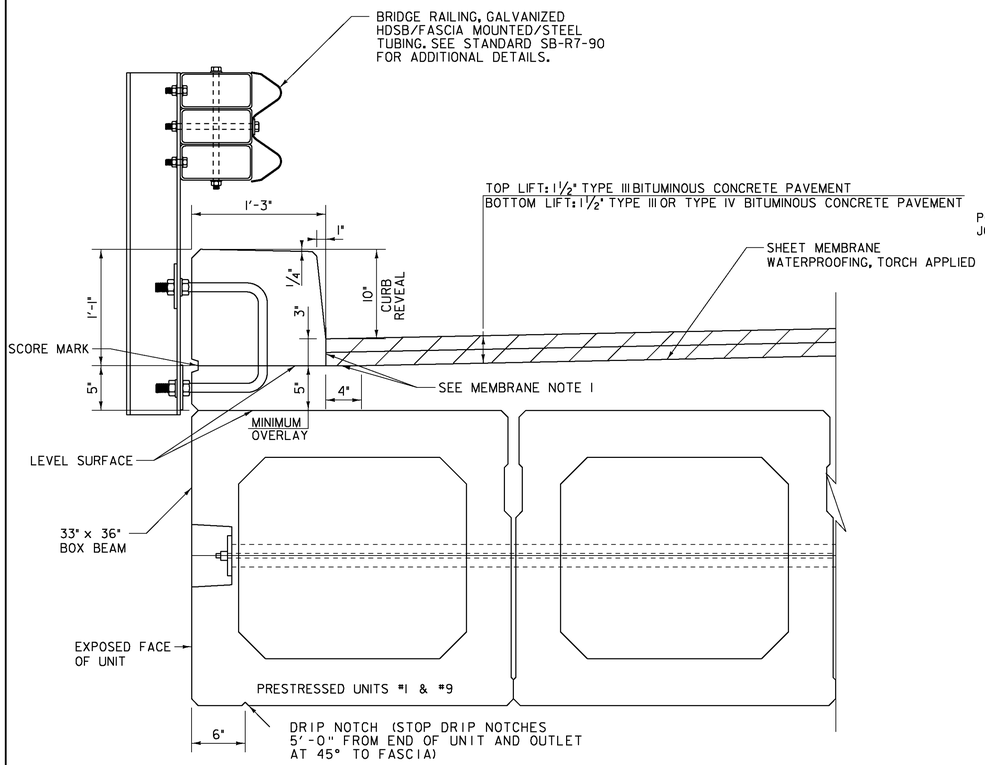
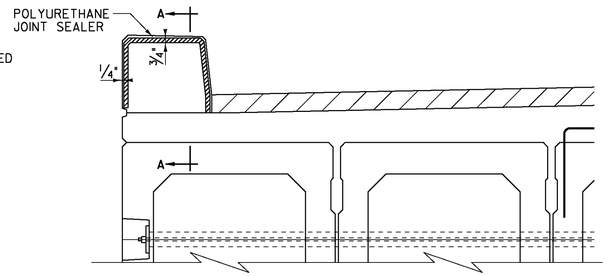
	Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK
ABUTMENT NO. 2 DETAILS

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244dt12.dgn	
D & K DWG NO.	Sheet 28 of 37



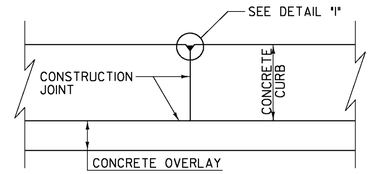
TYPICAL CURB SECTION
SCALE 1½" = 1'-0"



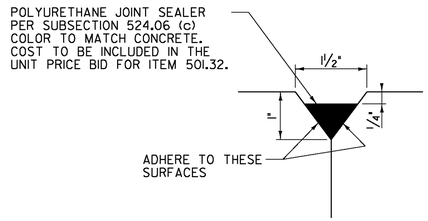
TYPICAL SECTION THROUGH CONCRETE CONSTRUCTION JOINT
SCALE 1" = 1'-0"

MEMBRANE NOTES:

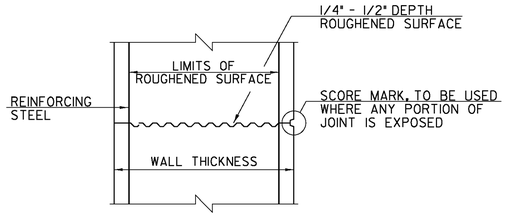
1. DIMENSIONS INDICATE AREA ALONG DECK AND UP FACE OF CURB FOR PLACEMENT OF 2 COATS OF POLYURETHANE MEMBRANE.
2. POLYURETHANE MEMBRANE AND BLAST CLEANING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SHEET MEMBRANE WATERPROOFING.
3. SHEET MEMBRANE WATERPROOFING, TORCH APPLIED SHALL EXTEND TO FACE OF CURB.



SECTION A-A
NOT TO SCALE

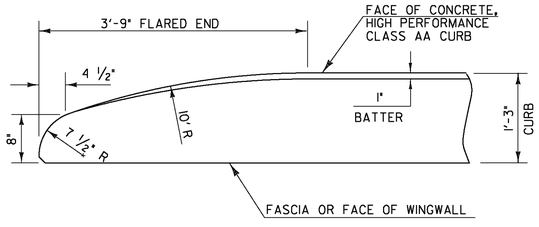


DETAIL "1"
NOT TO SCALE

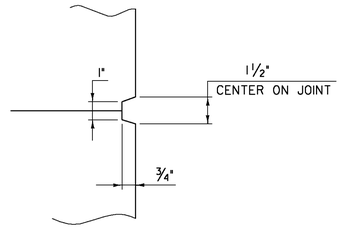


TYPICAL HORIZONTAL CONSTRUCTION JOINT
(NOT TO SCALE)

1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



FLARED END DETAIL FOR 1'-3" CURB
CURB REINFORCING STIRRUP BARS SHALL BE TURNED AS REQUIRED TO FIT FLARED ENDS.



SCORE MARK DETAIL
NOT TO SCALE

CURB NOTES:

1. CONSTRUCTION JOINTS IN THE CURBS SHALL BE PROVIDED AS SHOWN ABOVE. JOINTS SHALL BE SPACED MAXIMUM OF 15' CENTER TO CENTER AND SHALL BE 18" MINIMUM FROM THE CENTER OF THE NEAREST BRIDGE RAIL POST. CONCRETE SHALL BE PLACED IN ALTERNATING SECTIONS WITH A MINIMUM OF 48 HOURS DELAY BETWEEN ADJACENT POURS.
2. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CONSTRUCTION JOINTS.

PLOTTED 10/22/2009

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Town Of STOWE	Bridge No. 3
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MOSCOW ROAD OVER MILLER BROOK
CURB AND BRIDGE RAIL DETAILS

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244dt13.dgn	
D & K DWG NO.	Sheet 29 of 37

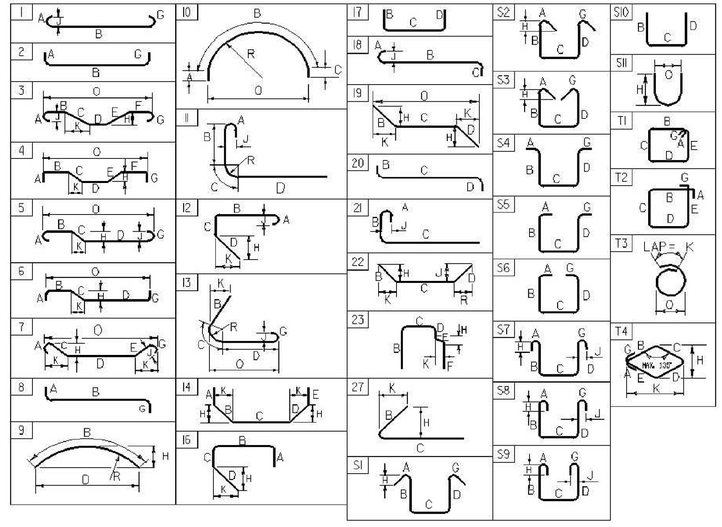
STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	DECK																
✳	110	5	27'- 0"	ES501	STR												
	78	5	26'- 6"	ES502	STR												
	156	5	4'-4"	ES503	S5	0-10"	1'-0	0-8"	1'-0			0-10"					
	ABUTMENT NO. 1																
	6	5	26'- 11"	1A501	STR												
	56	5	2'- 6"	1A502	2	1'- 0"	1'- 6"										
	ABUTMENT NO. 2																
✳	12	5	26'- 6"	2A501	STR												
	6	5	36'- 6"	2A502	STR												
	28	5	16'- 2"	2A503	T2	2'- 2"	2'- 6"	4'- 6"	2'- 6"	4'- 6"							
	WINGWALL NO. 1																
✳	7	5	4'- 4"	1W501	22		3'- 5"	0'- 11"					1'- 11"		2'- 10"		
	4	5	2'- 11"	1W502	2	1'- 0"	1'- 11"										
	WINGWALL NO. 2																
✳	7	5	4'- 4"	2W501	22		3'- 5"	0'- 11"					1'- 11"		2'- 10"		
	4	5	2'- 11"	2W502	2	1'- 0"	1'- 11"										
	WINGWALL NO. 3																
✳ ▲	8	5	4'- 6"	3W501	STR												
	12	5	10'- 9"	3W502	2	5'- 0"	1'- 0"					4'- 9"					
	6	5	7'- 0"	3W503	STR												
	WINGWALL NO. 4																
✳ ▲	8	5	4'- 6"	4W501	STR												
	12	5	10'- 9"	4W502	2	5'- 0"	1'- 0"					4'- 9"					
	6	5	7'- 0"	4W503	STR												

~ NOTES ~

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

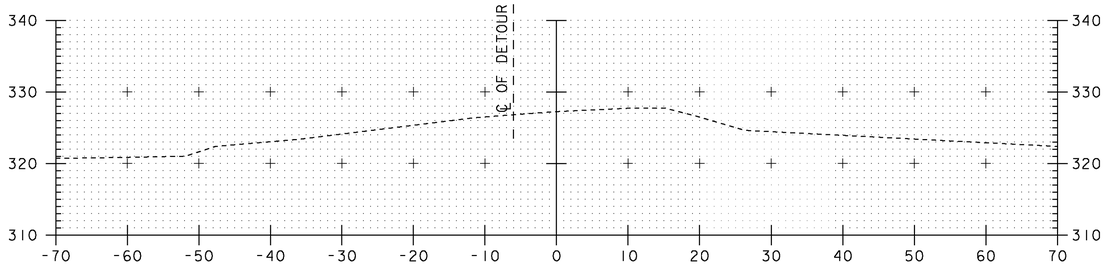


ASTM STANDARD REINFORCING BARS

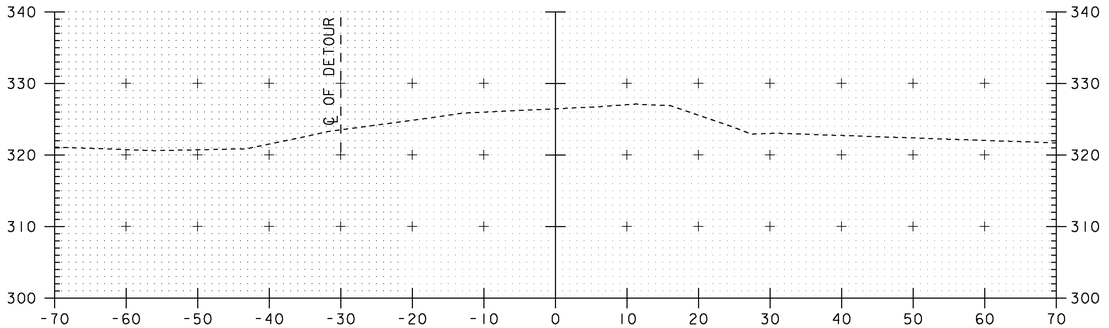
BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	AREA INCHES ^{2}	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128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

PROJECT NAME: **MOSCOW ROAD OVER MILLER BROOK**
PROJECT NUMBER: **BHO 1446 (30)**

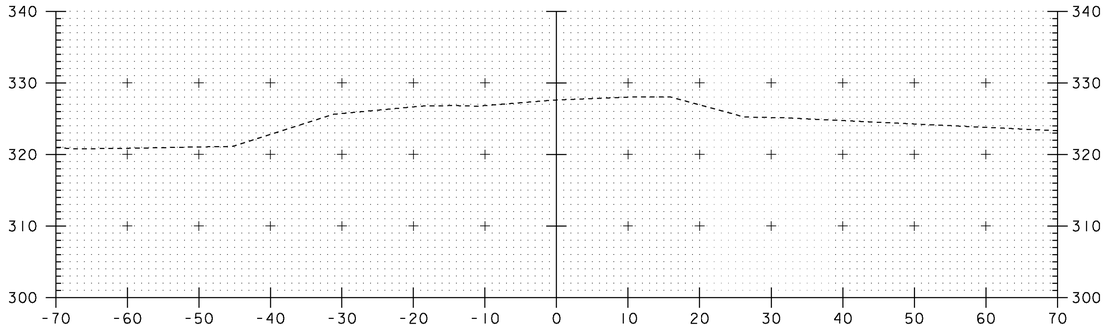
FILE NAME: **z99j244.xls** PLOT DATE: **10/22/2009**
PROJECT MANAGER: **J.W. TUCKER** DRAWN BY: **B.C. AUSTIN**
DESIGNED BY: **B.C. AUSTIN** CHECKED BY: **J.W. TUCKER**
REINFORCING STEEL SCHEDULE SHEET **30** OF **37**



1+75



2+50



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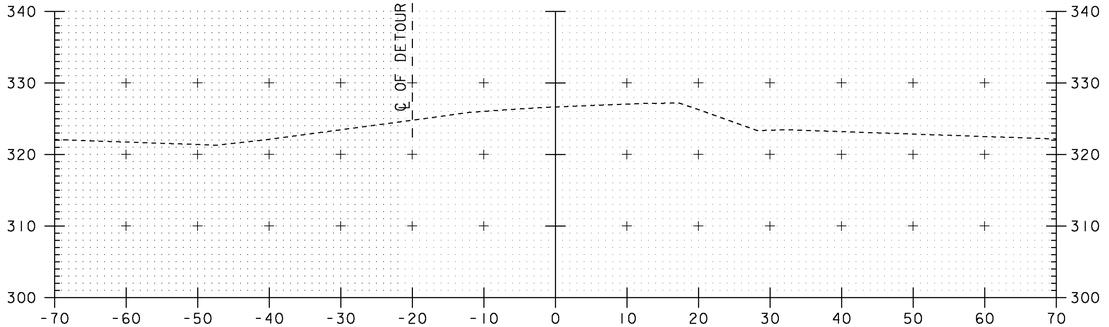

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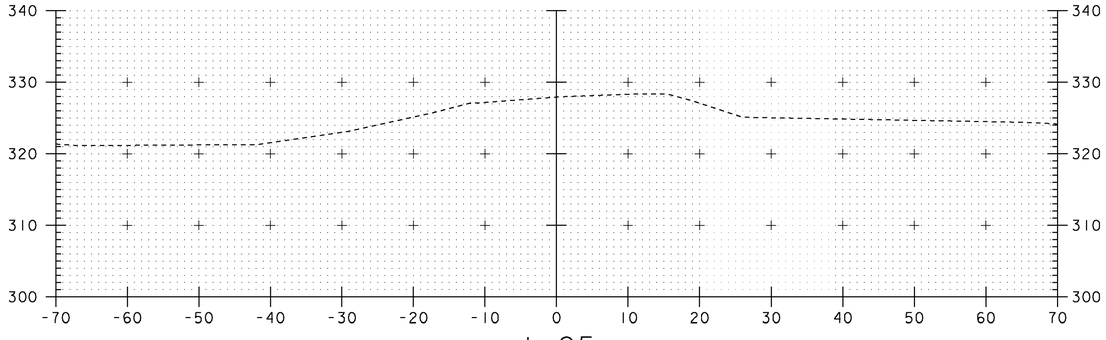

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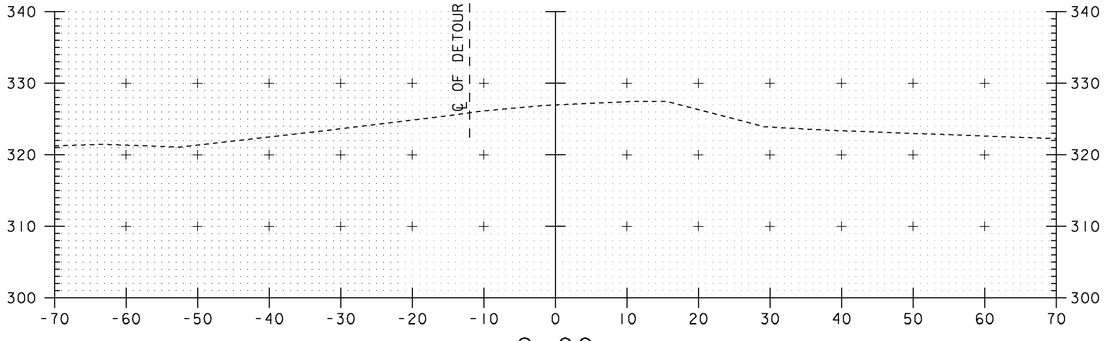

2+00

SCALE 1" = 10'-0
10 0 10

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

STA. 1+25 TO STA. 2+50
PLOTTED 10/22/2009

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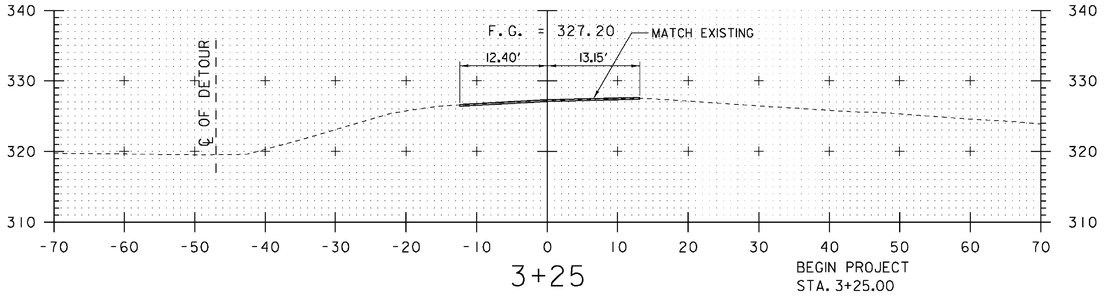
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta.
	Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK

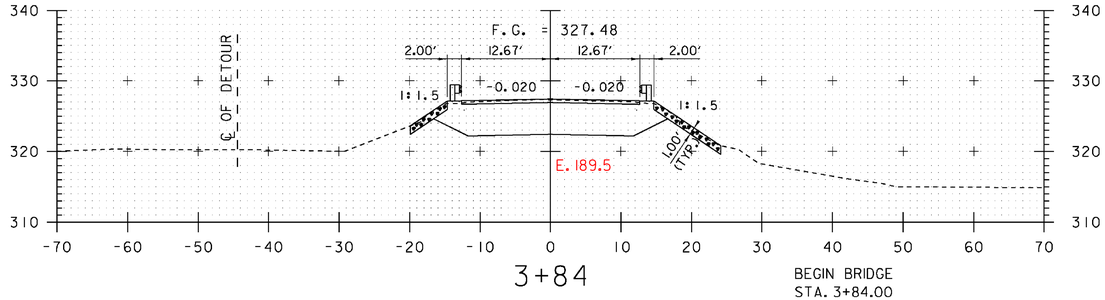
ROADWAY CROSS SECTIONS 1

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z9912 44xsl.dgn	
D & K DWG NO.	Sheet 31 of 37



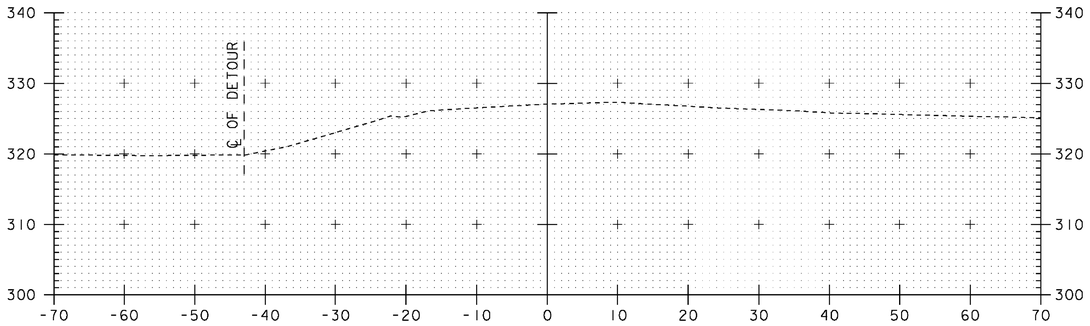
3+25

BEGIN PROJECT
STA. 3+25.00



3+84

BEGIN BRIDGE
STA. 3+84.00



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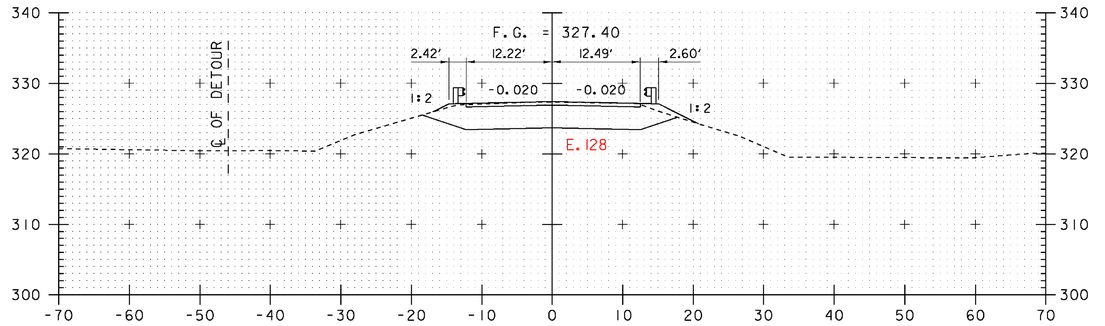
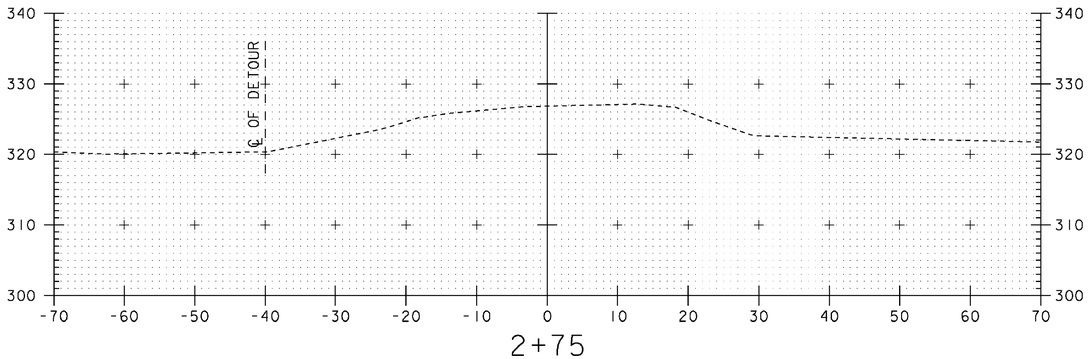


3+75

3 + 54 E. 68



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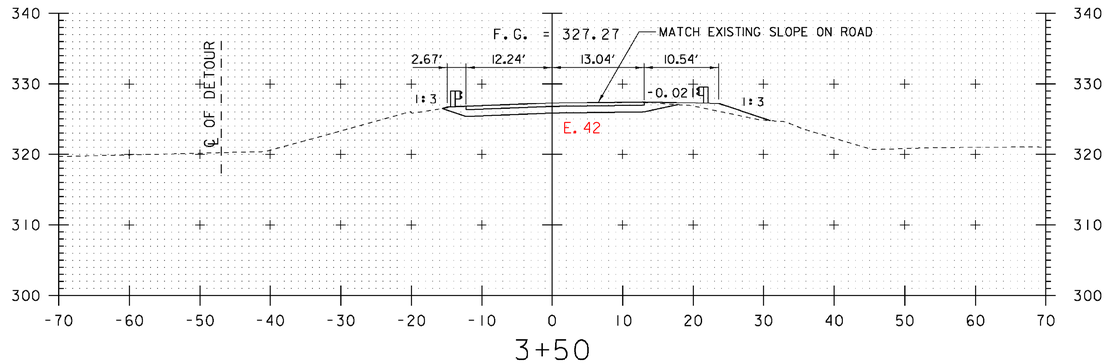

3+50

SCALE 1" = 10'-0
10 0 10

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

STA. 2+75 TO STA. 3+84
PLOTTED 10/22/2009

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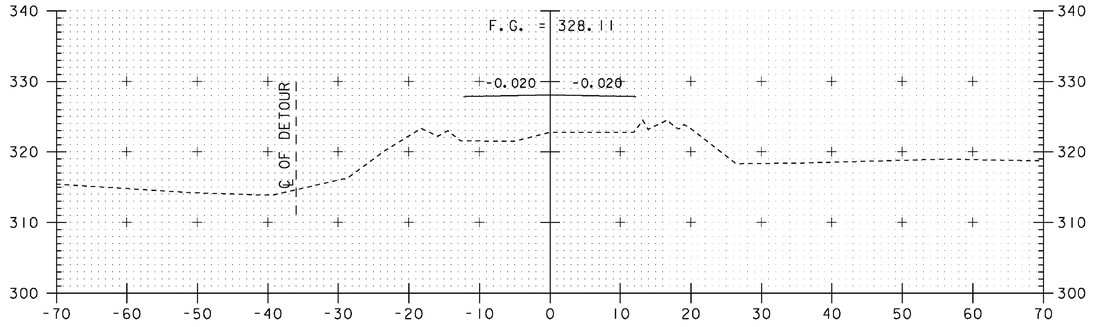
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta. / Surv. Sta.

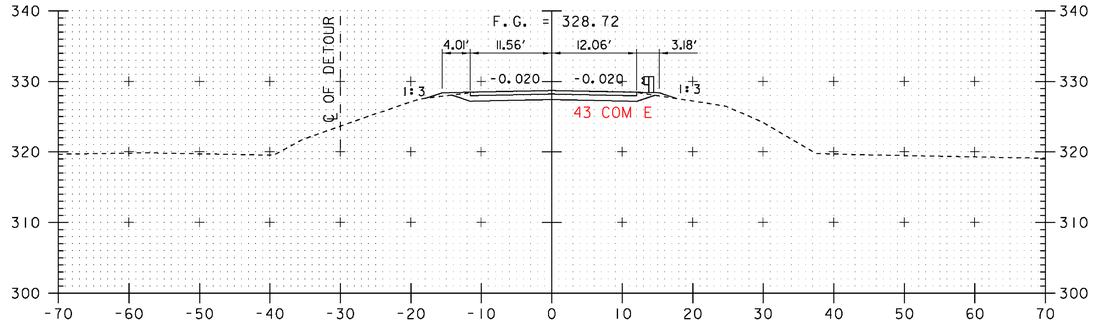
MOSCOW ROAD OVER MILLER BROOK

ROADWAY CROSS SECTIONS 2

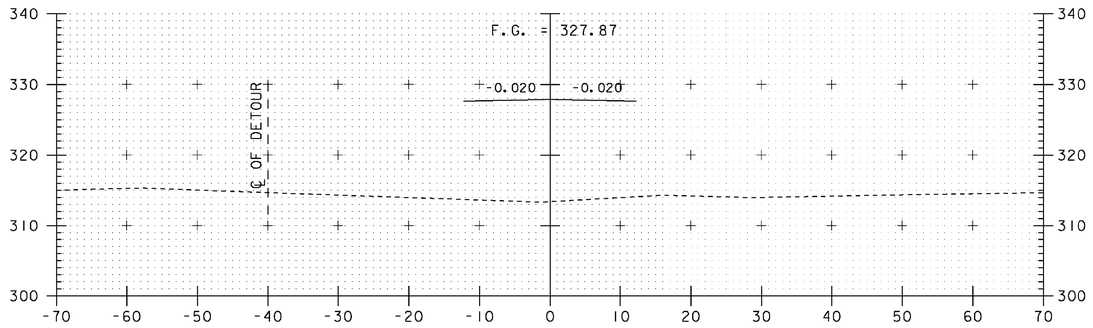
Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244xsl.dgn	
D & K DWG NO.	Sheet 32 of 37



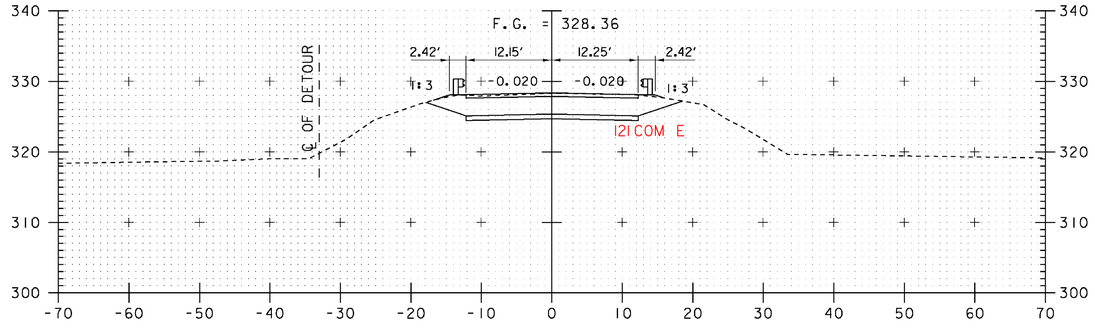
4+50



5+00

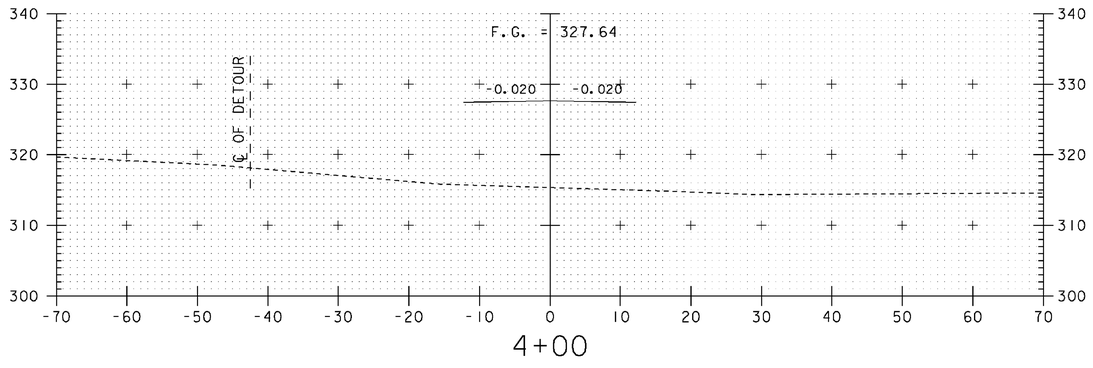


4+25



4+75

4 + 69 SB 113



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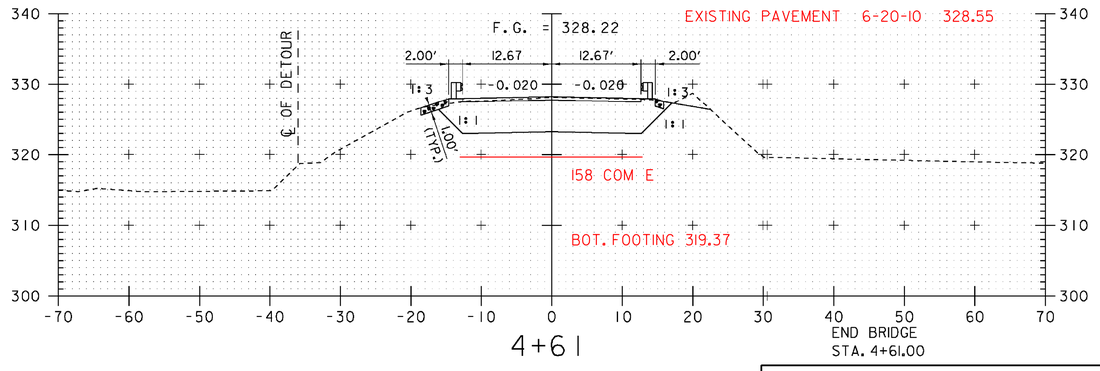


END BRIDGE
STA. 4+61.00

4+61

SCALE 1" = 10'-0
10 0 10

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

STA. 4+00 TO STA. 5+00
PLOTTED 10/22/2009

DuBois & King inc.
engineering planning management development

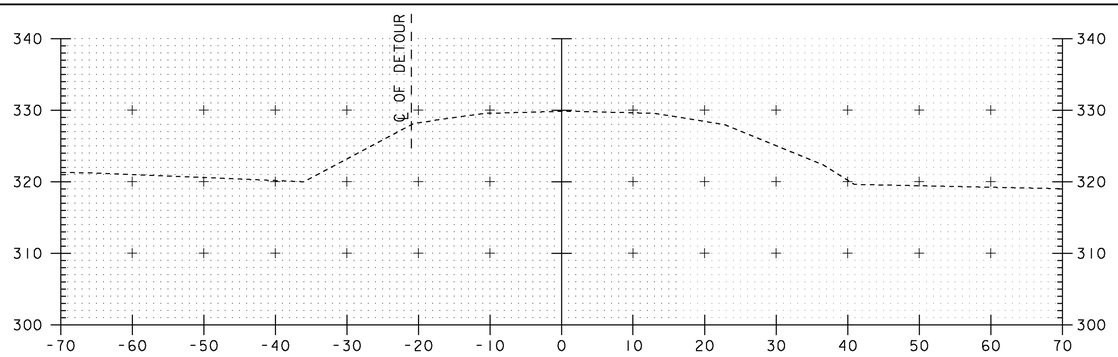
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta.
	Surv. Sta.

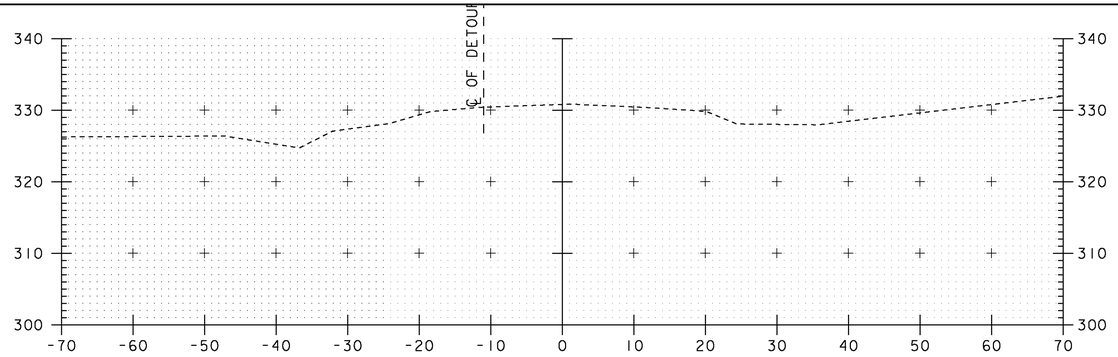
MOSCOW ROAD OVER MILLER BROOK

ROADWAY CROSS SECTIONS 3

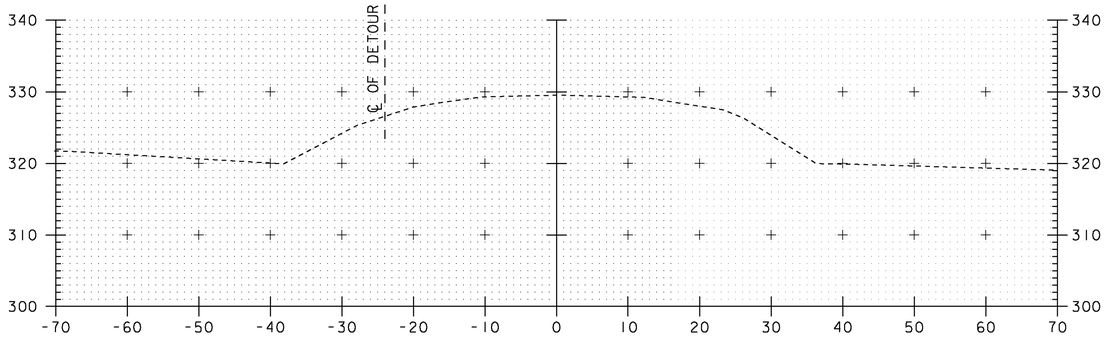
Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244xsl.dgn	
D & K DWG NO.	Sheet 33 of 37



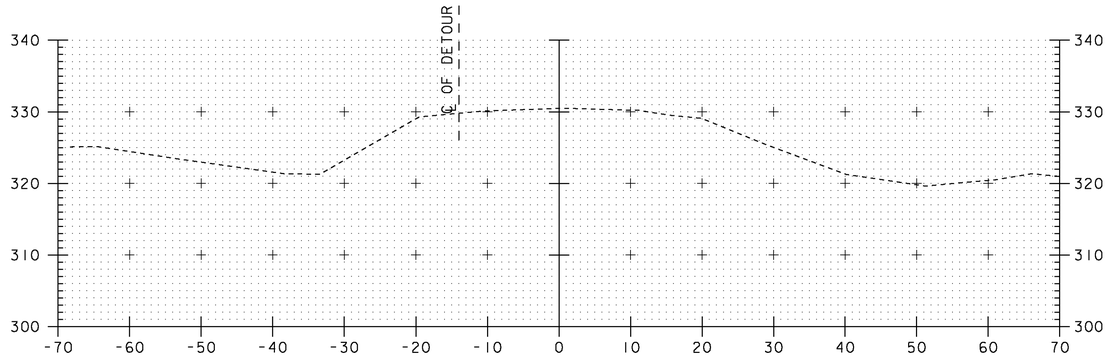
5+75



6+50



5+50



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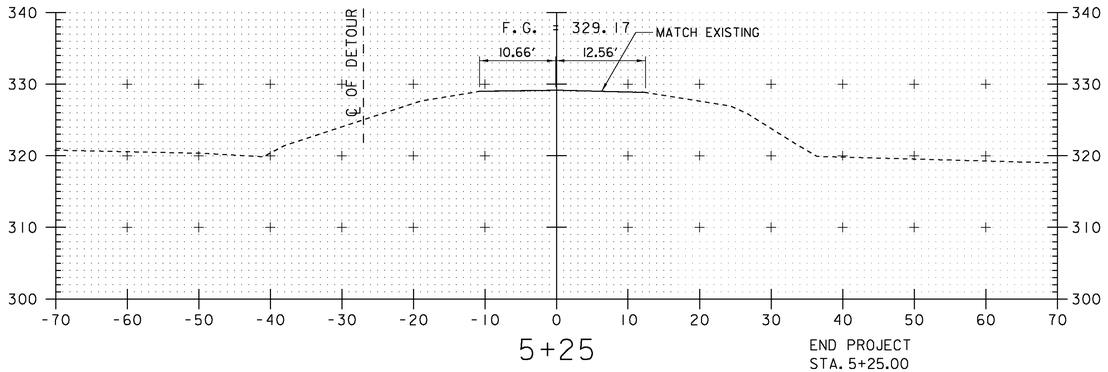
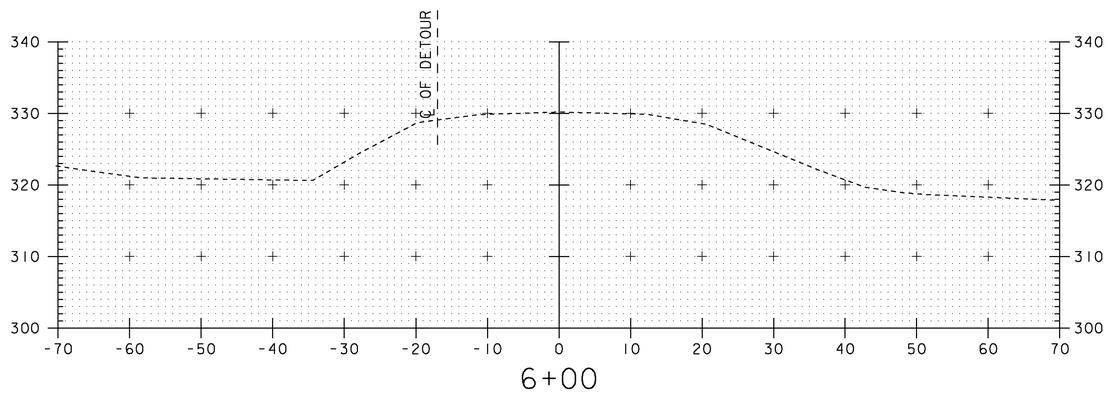


5+25

END PROJECT
STA. 5+25.00



6+00

SCALE 1" = 10'-0
10 0 10

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

STA. 5+25 TO STA. 6+50
PLOTTED 10/22/2009

DuBois & King inc.
engineering planning management development

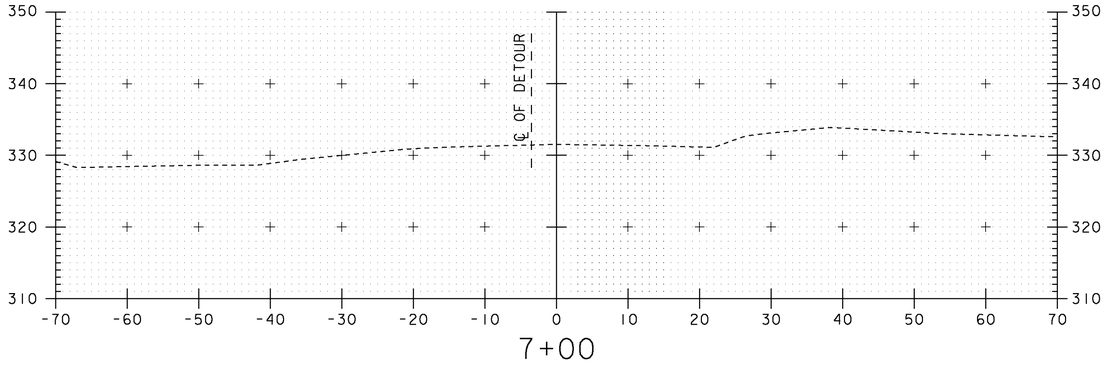
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta.
	Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK

ROADWAY CROSS SECTIONS 4

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By Date	Bridge Design Supervisor
E.P. DETRICK 5/09	J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244xsl.dgn	
D & K DWG NO.	Sheet 34 of 37



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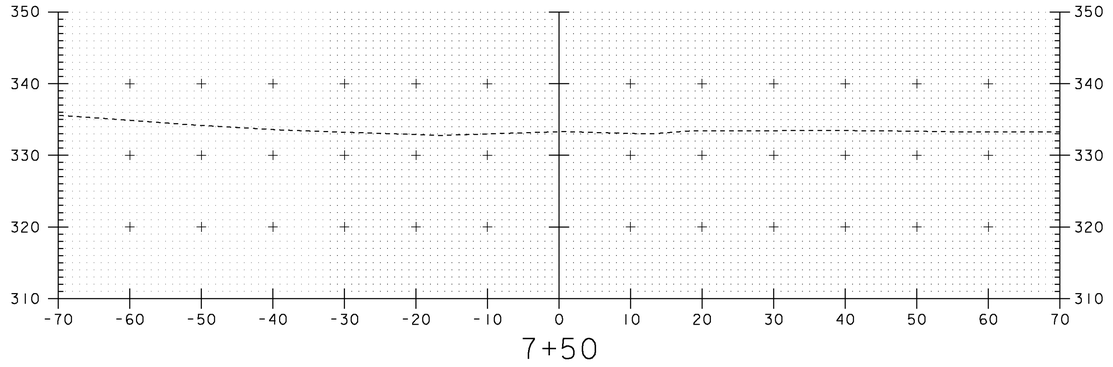

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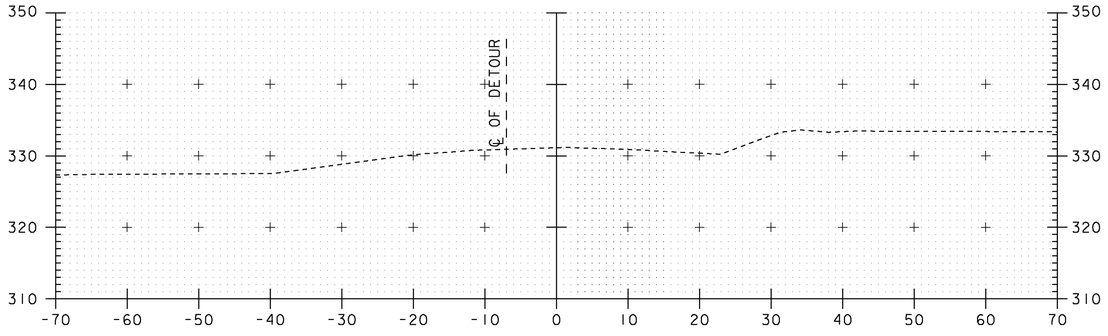

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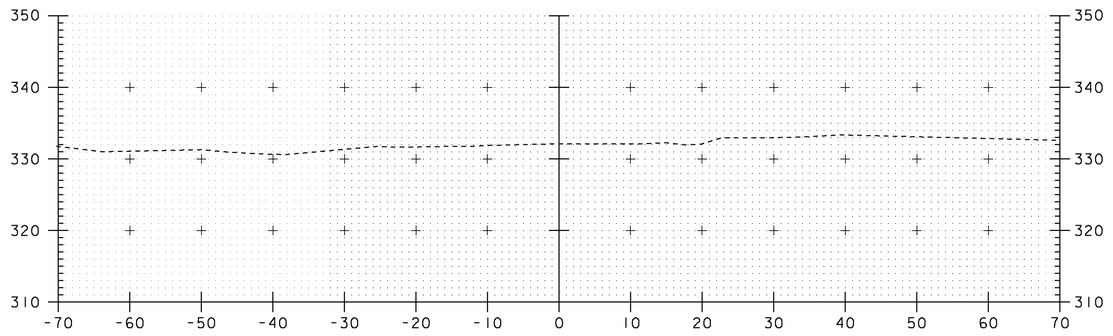


7+25

SCALE 1" = 10'-0
10 0 10

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

STA. 6+75 TO STA. 7+50
PLOTTED 10/22/2009

DuBois & King inc.
engineering planning management development

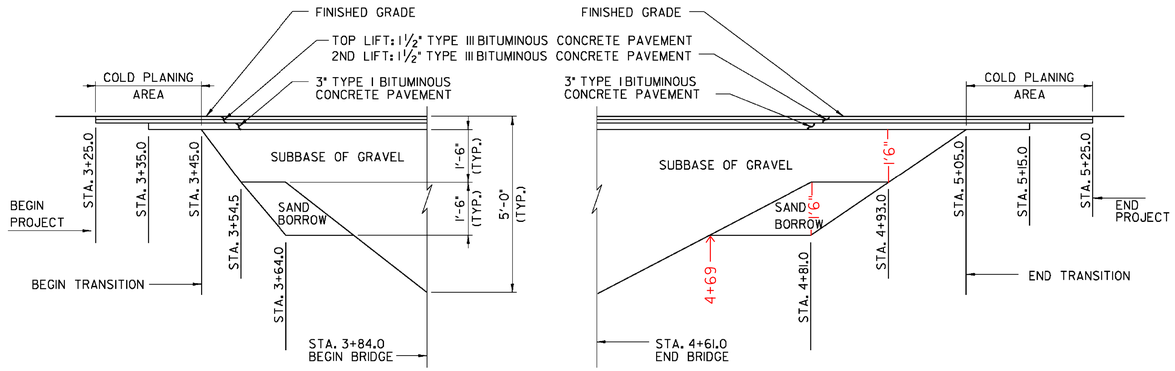
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta. / Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK

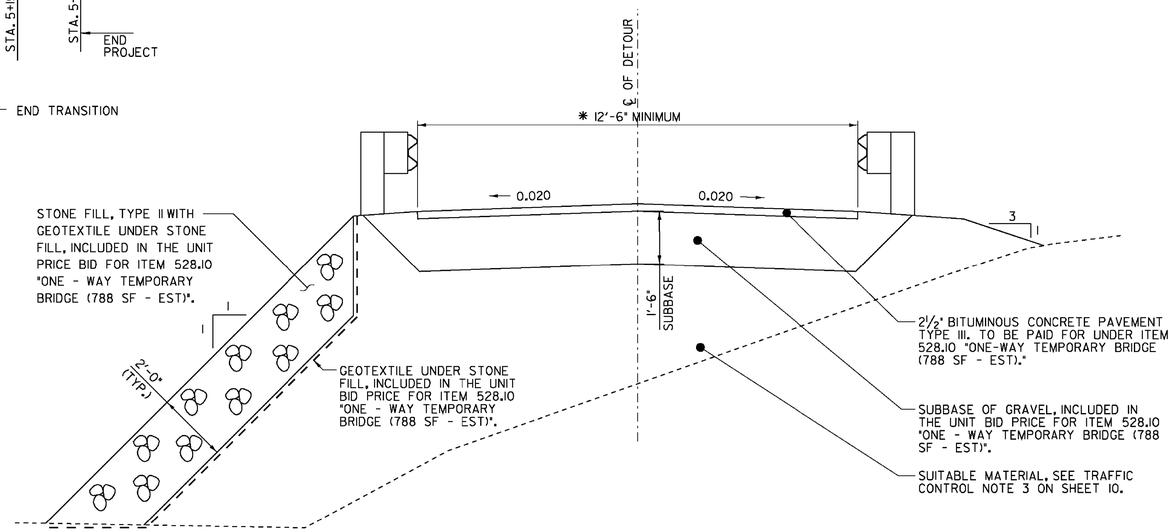
ROADWAY CROSS SECTIONS 5

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By Date	Bridge Design Supervisor
E.P. DETRICK 5/09	J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.C.C. Info. ...\DGN\z99]244xsl.dgn	
D & K DWG NO.	Sheet 35 of 37



MATERIAL DEPTH TRANSITION DETAIL

N.T.S.



TEMPORARY DETOUR TYPICAL SECTION

SCALE: ½" = 1'-0"

* SEE SHEET 10 FOR WIDTH OF DETOUR AT SPECIFIC STATIONS

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

PLOTTED 10/22/2009

DuBois & King inc.
engineering planning management development

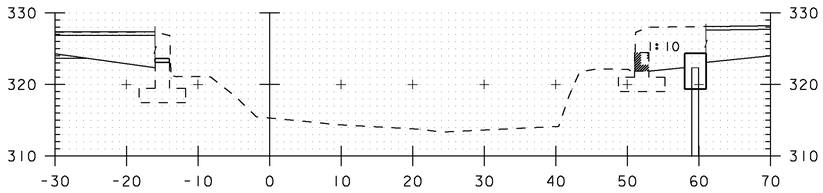
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta.
	Surv. Sta.

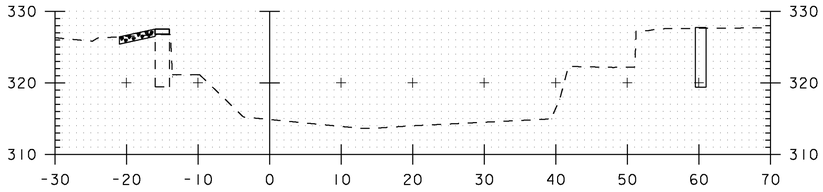
MOSCOW ROAD OVER MILLER BROOK

ROADWAY AND DETOUR DETAILS

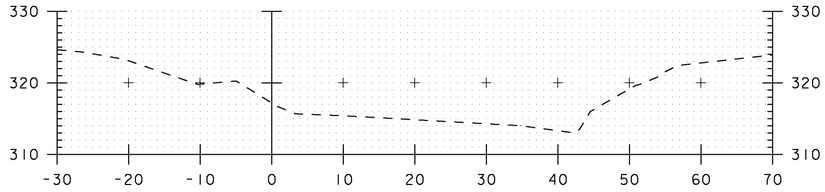
Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By J.W. TUCKER Date 3/05	Bridge Design Supervisor J.W. TUCKER Date 3/05
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.G.C. Info. ...\DGN\z99J244xsl.dgn	
D & K DWG NO.	Sheet 36 of 37



21+00



20+85



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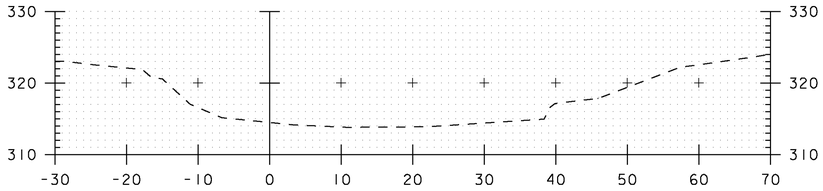
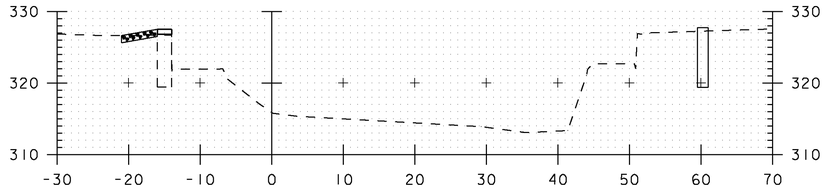


20+75



21+15

SCALE 1" = 10'-0
10 0 10

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

STA. 20+75 TO STA. 21+25
PLOTTED 10/22/2009

DuBois & King inc.
engineering planning management development

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of STOWE	Bridge No. 3
Highway No. T.H. 1	Log Sta. / Surv. Sta.

MOSCOW ROAD OVER MILLER BROOK

CHANNEL CROSS SECTIONS

Designed By R.H. BARNES	Drawn By S.J. BIJOLLE
Checked By E.P. DETRICK Date 5/09	Bridge Design Supervisor J.W. TUCKER Date 5/09
PROJECT STOWE	PROJECT NO. BHO 1446 (30)
I.C.C. Info. ...\DGN\z9912 44xsl.dgn	
D & K DWG NO.	Sheet 37 of 37

VERMONT

State of Vermont
PDD/Structures Design Section
One National Life Drive
Montpelier, VT 05633-5001
www.aot.state.vt.us

Agency of Transportation

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

June 2, 2010

Amscot Structural Products Corp.
241 E. Blackwell St.
Dover, NJ 07801

Re: Stowe BHO 1446(30) TH 1, Bridge 3

The following bearing details [Item #531.11, Bearing Device Assembly, Elastomeric Pad] for the above project (Job No. 3433) that were received in this office via email on 5/10/10, have been reviewed and are being returned herewith.

All drawings are Approved As Noted. Please see comments in red on the attached plans.

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.

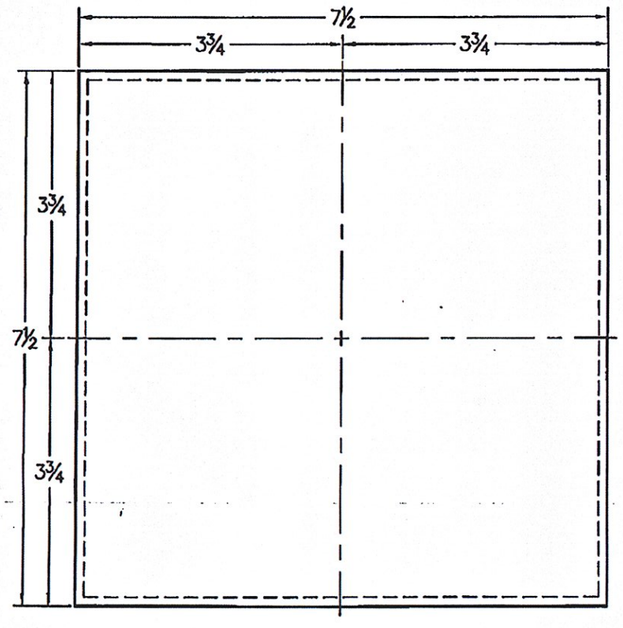
Sincerely,

Christopher P. Williams, P.E.
Structures Project Manager

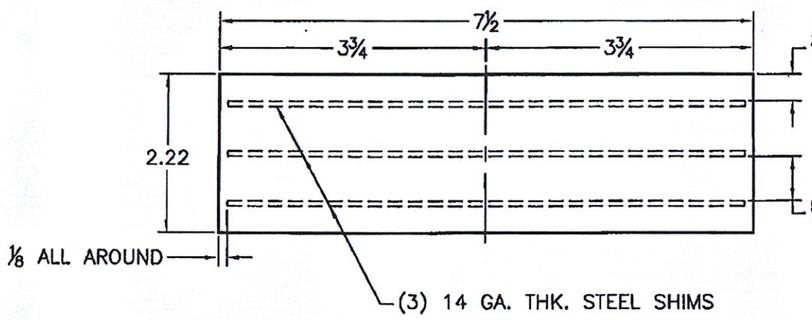
Attachments
cc: [X] Resident Engineer – Vic Dwire
[X] Shop Inspector – Jeff Clark
[X] Contractor – Austin Construction
[X] Materials & Research (C&IA Unit) - letter only
[X] Construction Division - letter only
[X] Files (CPW)

VTrans Working to Get You There
Vermont Agency of Transportation

038



PLAN VIEW
QTY REQ'D = 36 ASSY.
ITEM NO. 531.11



ELEVATION VIEW

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

MATERIALS AND CONSTRUCTION SHALL CONFORM TO VTRANS, 2006 STANDARD SPECIFICATIONS FOR CONSTRUCTION AS WELL, PER SHEET 21 OF THE DESIGN PLANS.

NOTES:

1. BEARINGS TO BE MANUFACTURED ACCORDING TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17th. EDITION, 2002.
2. THE BEARINGS ARE DESIGNED SO THAT THE SUPERSTRUCTURE MAY BE ERECTED WHEN THE AMBIENT AIR TEMPERATURE IS WITHIN THE RANGE OF 20°F. TO 70°F.
3. THE ELASTOMER AASHTO GR. (NATURAL RUBBER), TEMPERATURE GR. 3, SHALL HAVE A DUROMETER HARDNESS SHORE A 60 ± 5 POINTS. SHEAR MODULUS TO BE 152 PSI ±15%.

THE ELASTOMERIC COMPOUND SHALL BE NEOPRENE PER SECTION 731.03 OF THE VTRANS SPECIFICATIONS.

4. STEEL SHIM PLATES FOR INTERNAL LAMINATES SHALL BE ROLLED MILD STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A-1011, GRADE 36. SHIMS SHALL BE SMOOTH CUT, DEBURRED, GRIT BLASTED, AND DEGREASED PRIOR TO VULCANIZATION.
5. ALL STEEL PRODUCED IN THE U.S.A.
6. CONTACT PETER SOMOGYI , COORDINATOR.
7. TOLERANCES: THICKNESS -0+1/16"
   PLAN -0+1/16"
8. MANUFACTURING FACILITY LOCATION:
   AMSCOT STRUCTURAL PRODUCTS INC.
   241 EAST BLACKWELL STREET
   DOVER, NJ 07801
9. ALL DIMENSIONS ARE IN INCHES.

Accepted
Accepted as Noted ✓
Accepted Noted Resubmit
Rejected, Revise Resubmit
Rejected - Unacceptable

Checking is only for conformance to the concept of the Project and compliance with the information given in the Contract Documents. The Engineer assumes no liability for errors or omissions that may be contained herein. The Contractor, by approving and submitting these documents, verifies their accuracy as stipulated on the Contractor's Shop Drawing Stamp.

Date 5/18/10 DuBOIS AND KING By

VERMONT AGENCY OF TRANSPORTATION
PROPOSED IMPROVEMENT BRIDGE PROJECT
TOWN OF STOWE, COUNTY OF LAMOILLE
ROUTE NO.: TH 1 (CLASS 2), BRIDGE NO. 3

ELASTOMERIC BEARING DETAIL

AMSCOT
STRUCTURAL PRODUCTS CORP.
DOVER, NJ
JOB # 3433

SCALE: N.T.S.	CHECKED: B.F.	DRAWN BY: C.A.M.	
DATE: 5/6/10		REVISION: 0	
FOR: AUSTIN CONSTRUCTION			
DWG NO: AC10A1RO		SHEET NO. 1 OF 1	

039

VERMONT

State of Vermont
PDD/Structures Design Section
One National Life Drive
Montpelier, VT 05633-5001
www.aot.state.vt.us

Agency of Transportation

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

July 2, 2010

Hoyle, Tanner & Associates
125 College Street, 4th floor
Burlington, VT 05401

Re: Stowe BHO 1446(30) TH 1, Bridge 3

The following concrete box details [Item #510.21, Prestressed Concrete Box Beams] for the above project (Job No. 122420.75) that were received in this office via email on 7/1/10, have been reviewed and are being returned herewith.

All drawings are Approved or Approved As Noted. Please see comments on the attached plans.

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 510.06. Any material fabricated prior to the notification date is subject to rejection without further cause.

Sincerely,

Christopher P. Williams, P.E.
Structures Project Manager

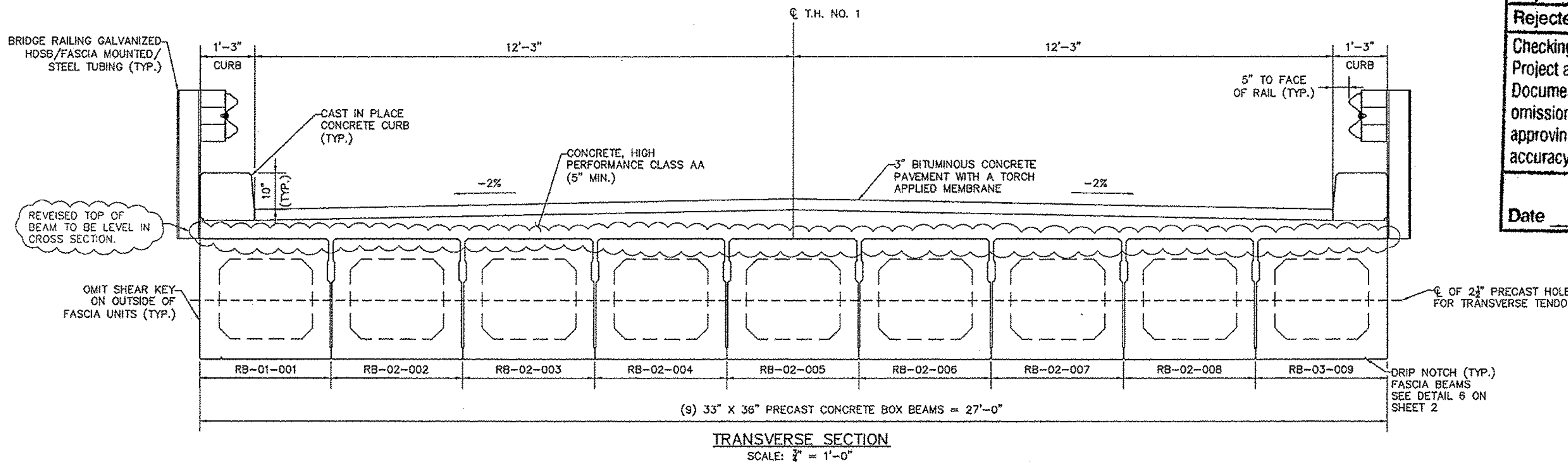
Attachments
cc: [X] Resident Engineer – Vic Dwire
[X] Fabricator – Wm. E. Dailey
[X] Concrete Inspector – Jim Wild
[X] Contractor – Austin Construction
[X] Materials & Research (C&IA Unit) - letter only
[X] Construction Division - letter only
[X] Files (CPW)

VTrans Working to Get You There
Vermont Agency of Transportation

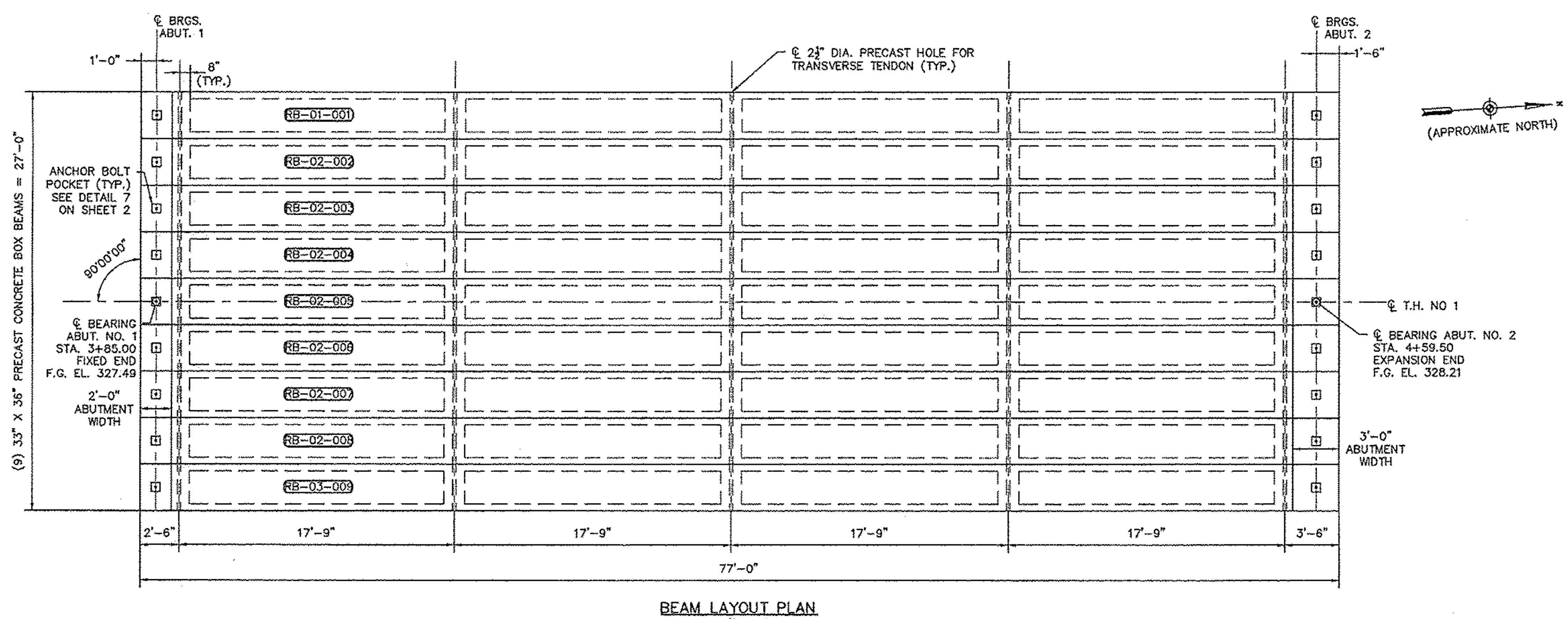
Accepted ✓
Accepted as Noted
Accepted Noted Resubmit
Rejected, Revise Resubmit
Rejected - Unacceptable

Checking is only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. The Engineer assumes no liability for errors or omissions that may be contained herein. The Contractor, by approving and submitting these documents, verifies their accuracy as stipulated on the Contractor's Shop Drawing Stamp.

DuBOIS AND KING
Date 7/2/10 By [signature]



TRANSVERSE SECTION
SCALE: ⅜" = 1'-0"



BEAM LAYOUT PLAN
SCALE ¼" = 1'-0"

Hoyle, Tanner & Associates, Inc.
125 College Street, 4th Floor Burlington, VT 05401
Tel (802)860-1331 Fax (802)860-6499 www.hoyletanner.com

DRAWN BY: NAR | DATE: JUNE 2010
CHECKED BY: CHS | PROJECT NO: 122420.75

WM. E. DAILEY INC.
PRECAST CONCRETE PRODUCTS

STATE OF VERMONT AGENCY OF TRANSPORTAION

STOWE, VT

MOSCOW ROAD (T.H. NO. 1) OVER MILLER BROOK BRIDGE #3
PROJECT NO. BHO 1446(30)

SHEET 1 OF 5

NOTES:

1. (+) INDICATES 0.6" ø LOW RELAXATION STRAIGHT STRAND, AASHTO M203. BOTTOM ROW OF STRANDS INITIAL TENSION 44 KIPS. TOP ROW OF STRANDS 10 KIPS. 270 KSI MINIMUM ULTIMATE TENSILE STRENGTH.
2. (⊞) INDICATES 0.6" ø LOW RELAXATION DEBONDED STRAND AASHTO M203. DEBOND 5'-0" FROM END OF BEAM. INITIAL TENSION 44 KIPS. 270 KSI MINIMUM ULTIMATE TENSILE STRENGTH.
3. CONCRETE COMPRESSIVE STRENGTH TESTED BY CYLINDER BREAK TEST.
4. EACH STRAND SHALL BE FINALLY BURNED OR CUT OFF AT A DEPTH OF ½" INTO THE END OF THE BEAM AND THE RECESSED AREA AROUND THE STRAND SHALL BE FILLED WITH NON-SHRINK GROUT.
5. OMIT SHEAR KEY ON EXPOSED EDGES.
6. PRESTRESSED CONCRETE BOX BEAMS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 6 FEET OF THE ENDS OF THE BEAMS.
7. THE VOIDS MUST BE VENTED DURING THE CURING PERIOD
8. CONCRETE SHALL CONTAIN AN APPROVED CORROSION INHIBITOR ADMIXTURE AT A DOSAGE RATE OF 4 GALLONS PER CUBIC YARD.

THE TOP 2 STRANDS ARE NECESSARY TO SERVE AS SUPPORTS TO FACILITATE THE PLACEMENT OF THE SHEAR STIRRUPS.

THE TOP, LONGITUDINAL, MILD STEEL SHOULD BE INSIDE THE SHEAR STIRRUPS AS SHOWN ON SHEET 25 OF THE DESIGN PLANS. THIS STEEL CAN ALSO SERVE AS SUPPORT FOR THE SHEAR STIRRUPS INSTEAD OF THE ADDITIONAL PRESTRESSING STRANDS.

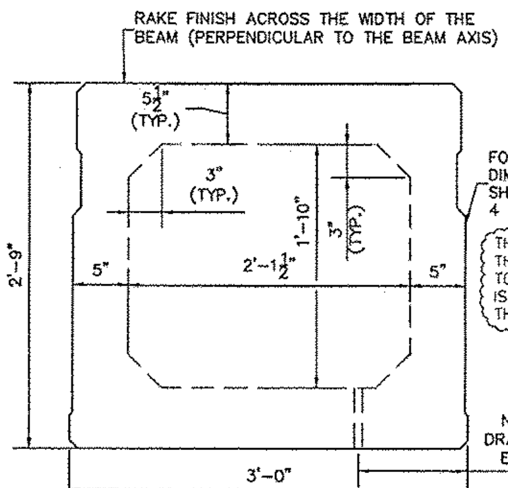
Accepted
Accepted as Noted ✓
Accepted Noted Resubmit
Rejected, Revise Resubmit
Rejected - Unacceptable

Checking is only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. The Engineer assumes no liability for errors or omissions that may be contained herein. The Contractor, by approving and submitting these documents, verifies their accuracy as stipulated on the Contractor's Shop Drawing Stamp.

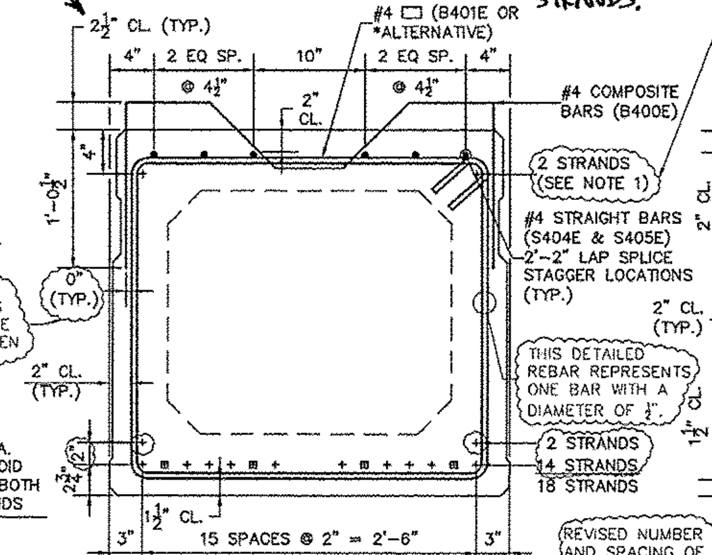
Date 7/2/10 DuBOIS AND KING By [signature]

MATERIAL SPECIFICATION

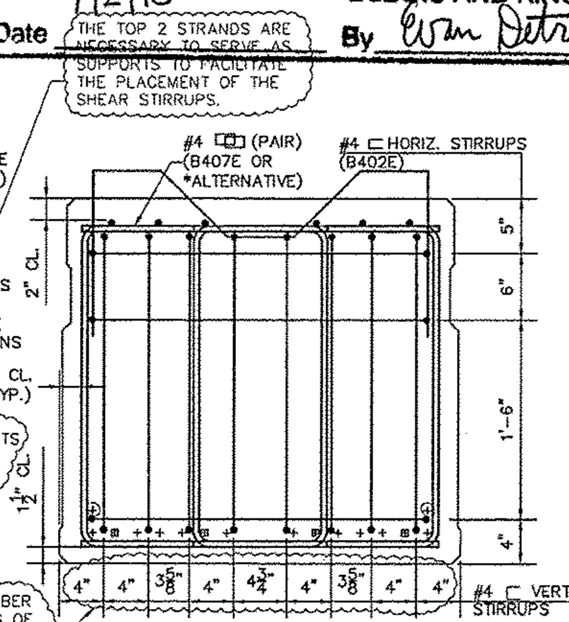
CONCRETE MIX:	
28 DAY STRENGTH:	6000 PSI
RELEASE STRENGTH:	4800 PSI
STRAND:	AASHTO M203
MILD REINFORCING:	AASHTO M31M/M3 EPOXY COATED
FINISHES	
TOP:	RAKE FINISH ¼" AMPLITUDE
SIDES:	STEEL FORM
BOTTOM:	STEEL FORM
ENDS:	FORM (SEE NOTE 4)
DUNNAGE	
STORAGE:	BELOW LIFTING LOOPS
SHIPPING:	BELOW LIFTING LOOPS
BEAM	
TOTAL WEIGHT:	58,154 LBS
CONC. YARDAGE:	14.36 CY



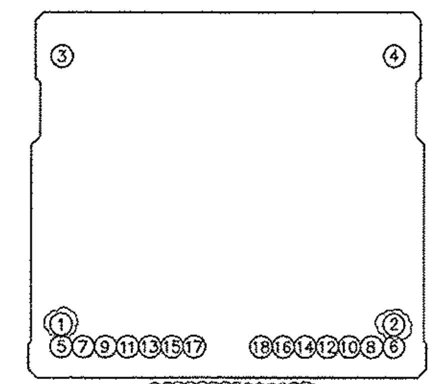
① TYPICAL 33" X 36" BOX BEAM
SCALE: 1½" = 1'-0"



② TYPICAL BEAM MIDSPAN SECTION
SCALE: 1½" = 1'-0"

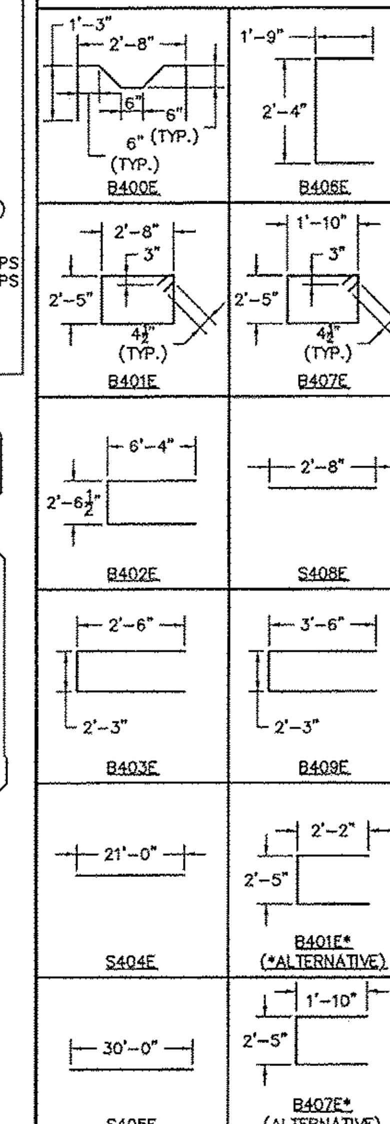


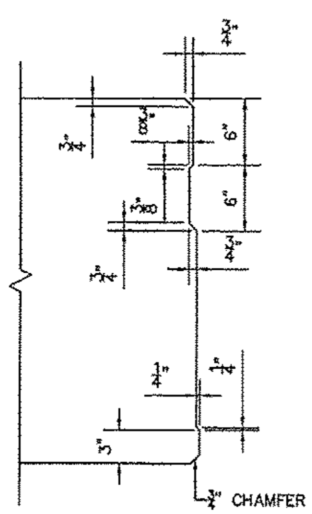
③ TYPICAL END OF BEAM SECTION
SCALE: 1½" = 1'-0"



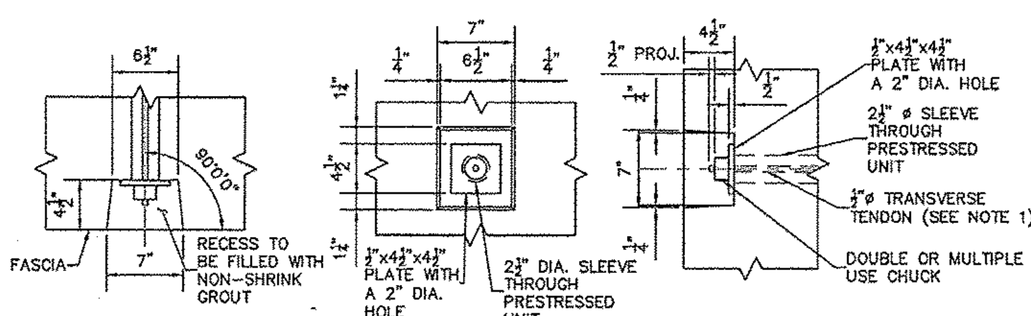
DETENSION SCHEDULE

PARTS & PART NUMBERS





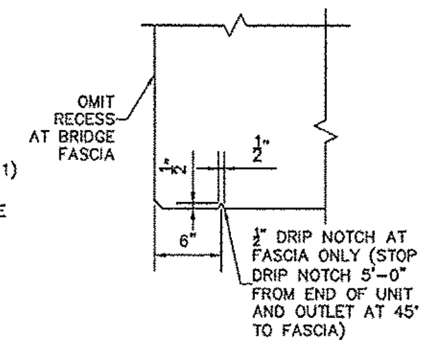
④ SHEAR KEY DETAIL
SCALE 1½" =1'-0"



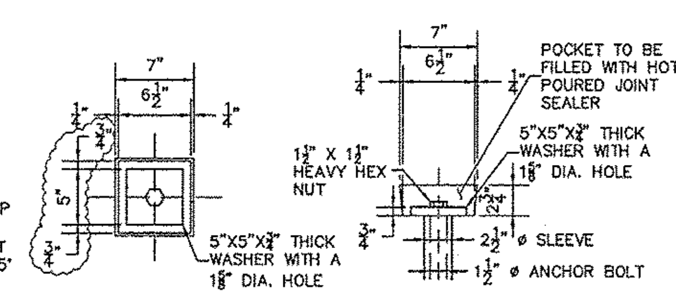
TRANSVERSE TENDON NOTE:

1. TRANSVERSE TIES SHALL BE COVERED BY SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF THE STRAND, EXCEPT AT ANCHORAGE LOCATIONS. TIES SHALL BE TENSIONED TO 30,000 LBS.

⑤ TRANSVERSE TENDON DETAILS
SCALE: 1½" = 1'-0"



⑥ RB-01 & RB-03 DRIP NOTCH DETAIL
SCALE: 1½" = 1'-0"



⑦ ANCHOR BOLT POCKET DETAILS
SCALE: 1½" = 1'-0"

Hoyle, Tanner & Associates, Inc.
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DRAWN BY: NAN	DATE: JUNE 2010
CHECKED BY: CHS	PROJECT NO: 122420.75

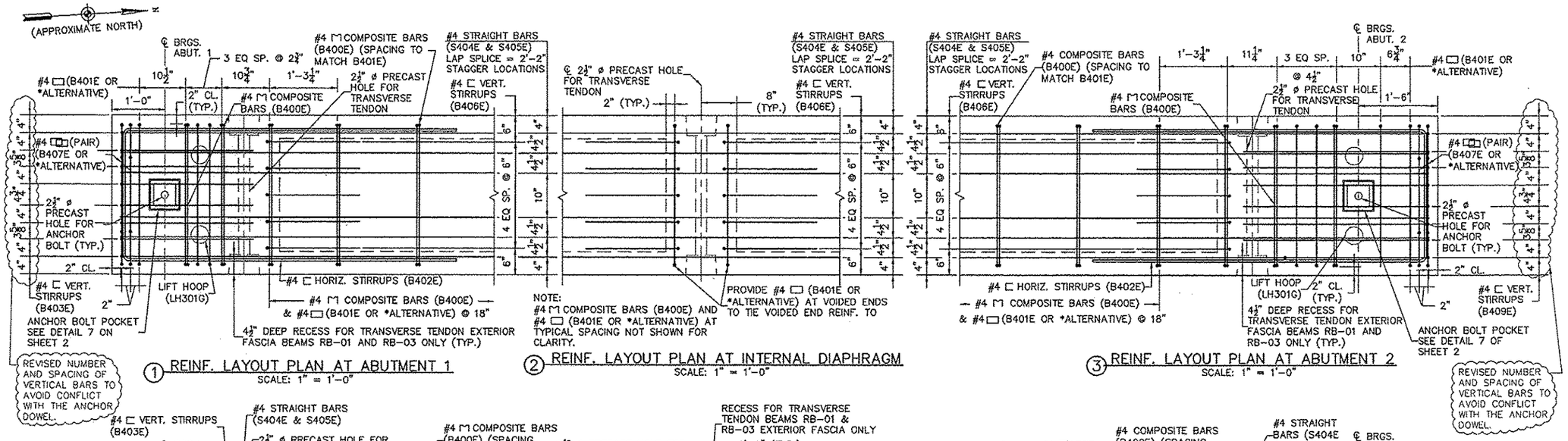
Wm.E. DAILEY INC.
PRECAST CONCRETE PRODUCTS

STATE OF VERMONT AGENCY OF TRANSPORTAION

STOWE, VT

MOSCOW ROAD (T.H. NO. 1) OVER MILLER BROOK BRIDGE #3
PROJECT NO. BHO 1446(30)

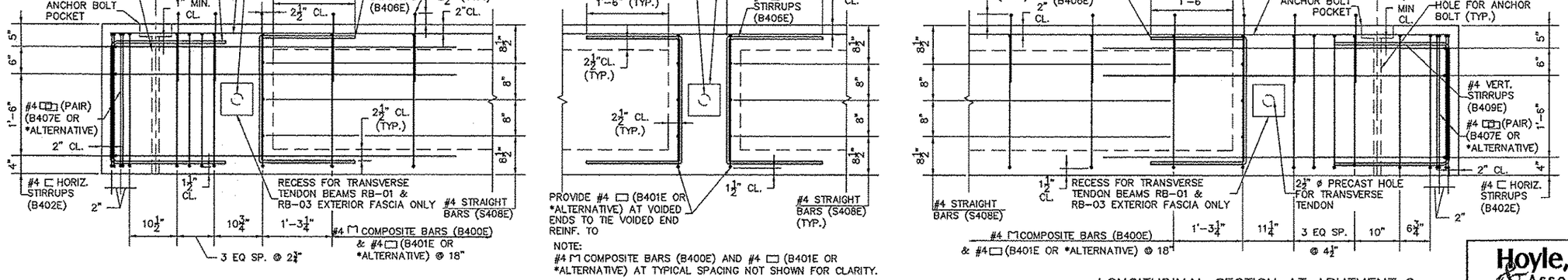
SHEET 2 OF 5



① REINF. LAYOUT PLAN AT ABUTMENT 1
SCALE: 1" = 1'-0"

② REINF. LAYOUT PLAN AT INTERNAL DIAPHRAGM
SCALE: 1" = 1'-0"

③ REINF. LAYOUT PLAN AT ABUTMENT 2
SCALE: 1" = 1'-0"



④ LONGITUDINAL SECTION AT ABUTMENT 1
SCALE: 1" = 1'-0"

⑤ LONGITUDINAL SECTION AT INTERNAL DIAPHRAGM
SCALE: 1" = 1'-0"

⑥ LONGITUDINAL SECTION AT ABUTMENT 2
SCALE: 1" = 1'-0"

Accepted ✓
Accepted as Noted
Accepted Noted Resubmit
Rejected, Revise Resubmit
Rejected - Unacceptable
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DuBOIS AND KING
Date 7/2/10 By

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STATE OF VERMONT AGENCY OF TRANSPORTAION
STOWE, VT
MOSCOW ROAD (T.H. NO. 1) OVER MILLER BROOK BRIDGE #3
PROJECT NO. BHO 1446(30)

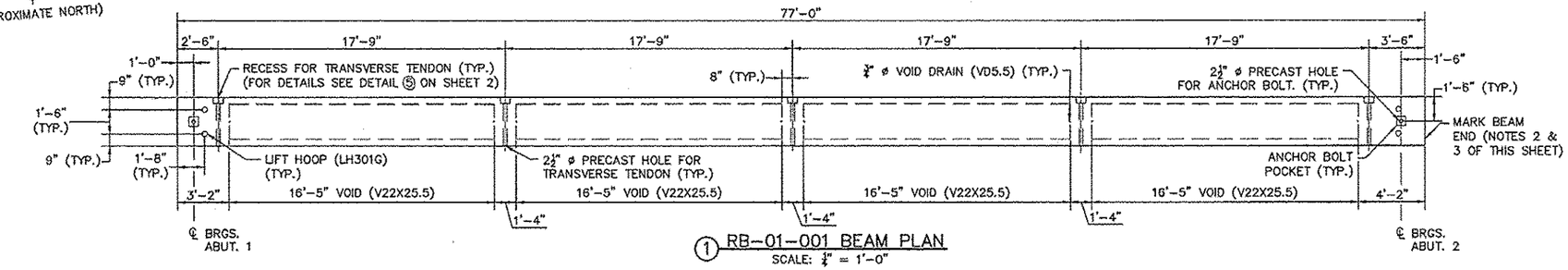
SHEET 3 OF 5

043

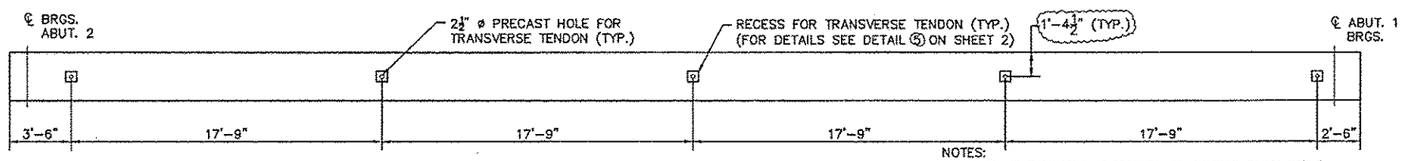
GENERAL NOTES:

1. SEE SHEETS 1, 2, & 3 FOR PLANS AND DETAILS.
2. ALL BEAMS ARE LABELED AS FOLLOWS:
   PRODUCT TYPE – IDENTIFICATION NUMBER – SEQUENCE NUMBER
3. MARK ALL BEAM ENDS "NORTH END" FOLLOWED BY THE CORRESPONDING BEAM LABEL

(APPROXIMATE NORTH)

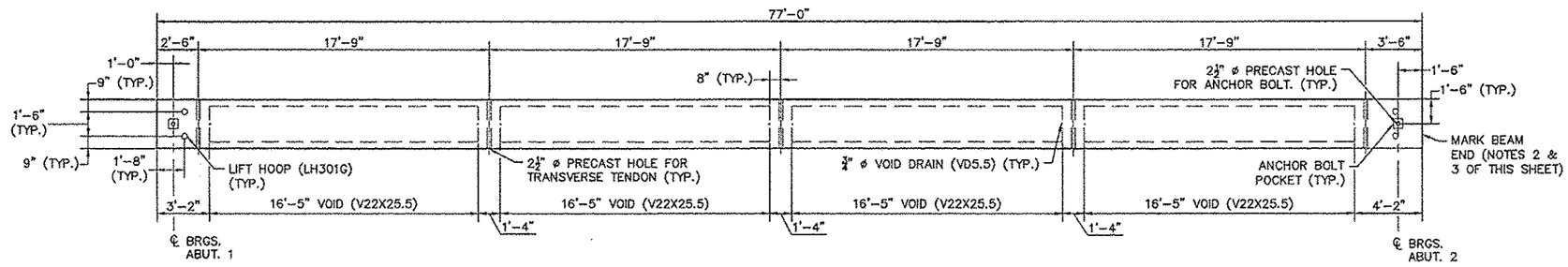


① RB-01-001 BEAM PLAN
SCALE: ¼" = 1'-0"

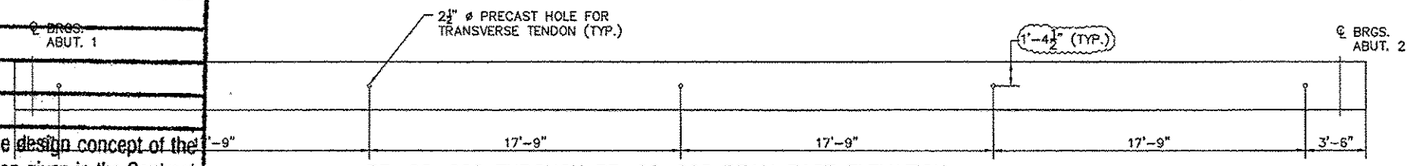


② RB-01-001 BEAM WEST ELEVATION
SCALE: ¼" = 1'-0"

NOTES:
1. BEAM ELEVATION IS DEPICTED AS VIEWED FROM WEST.
2. COMPOSITE BARS ARE NOT SHOWN FOR CLARITY. SEE BEAM PLAN FOR LOCATION AND SPACING.



③ RB-02-002 THROUGH RB-02-008 BEAM PLAN
SCALE: ¼" = 1'-0"



④ RB-02-002 THROUGH RB-02-008 BEAM EAST ELEVATION
SCALE: ¼" = 1'-0"

NOTE:
1. COMPOSITE BARS ARE NOT SHOWN FOR CLARITY. SEE BEAM PLAN FOR LOCATION AND SPACING.

	PART NO	DESCRIPTION	QTY.
RB-01 BEAM	VD5.5	¾" ø VOID DRAIN 5½" LONG	8
	LH301G	LIFT HOOP (3) ½" STRANDS	4
	V22X25.5	22"X25.5" VOID, 16'-5" LONG	4
		VERMONT STATE MIX DESIGN	
	B400E	#4 BENT	52
	B401E	#4 BENT	(63)
	B402E	#4 BENT	6
	B403E	#4 BENT	(8)
	S404E	#4 STRAIGHT	6
	S405E	#4 STRAIGHT	12
	B406E	#4 BENT	40
	B407E	#4 BENT	(8)
	S408E	#4 STRAIGHT	24
	B409E	#4 BENT	(8)
RB-02 BEAM	VD5.5	¾" ø VOID DRAIN 5½" LONG	8
	LH301G	LIFT HOOP (3) ½" STRANDS	4
	V22X25.5	22"X25.5" VOID, 16'-5" LONG	4
		VERMONT STATE MIX DESIGN	
	B400E	#4 BENT	52
	B401E	#4 BENT	(63)
	B402E	#4 BENT	6
	B403E	#4 BENT	(8)
	S404E	#4 STRAIGHT	6
	S405E	#4 STRAIGHT	12
	B406E	#4 BENT	40
	B407E	#4 BENT	(8)
	S408E	#4 STRAIGHT	24
	B409E	#4 BENT	(8)

NOTE:
ALL ITEMS LISTED ABOVE ARE SUGGESTED PRODUCTS. FABRICATOR MAY SUBSTITUTE APPROVED EQUALS AS NECESSARY.

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DRAWN BY: NAR | DATE: JUNE 2010
CHECKED BY: CAS | PROJECT NO: 122420.75

W.E. DAILEY INC.
AIRPORT ROAD - SHAFTSBURY, VT 05262
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STOWE, VT
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PROJECT NO. BHO 1446(30)

SHEET 4 OF 5

Accepted ✓
Accepted as Noted
Accepted Noted Resubmit
Rejected, Revise Resubmit
Rejected - Unacceptable
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DuBOIS AND KING Date 7/2/10 By

044

GENERAL NOTES:

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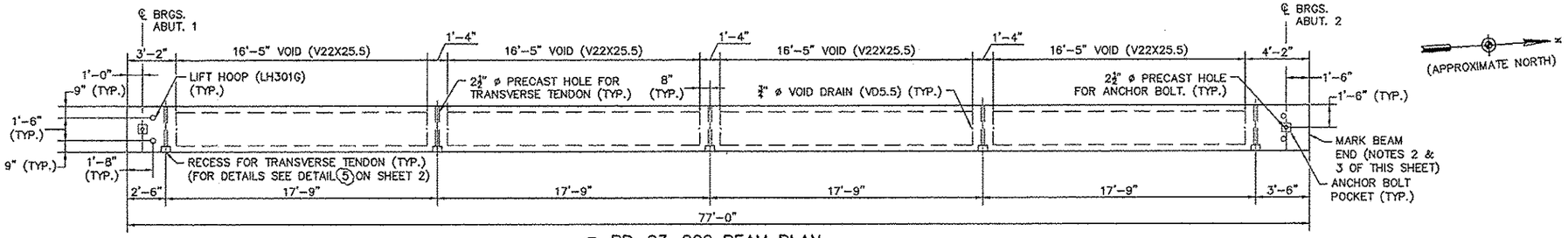
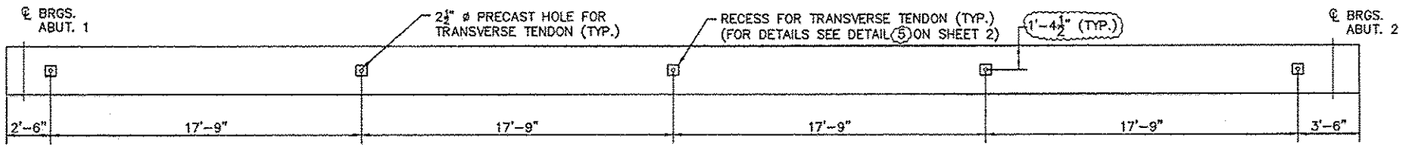


(1) RB-03-009 BEAM PLAN
SCALE: ¼" = 1'-0"



(1) RB-03-009 BEAM EAST ELEVATION
SCALE: ¼" = 1'-0"

NOTES:
1. COMPOSITE BARS ARE NOT SHOWN FOR CLARITY. SEE BEAM PLAN FOR LOCATION AND SPACING.

PART NO.	DESCRIPTION	QTY.
VD5.5	¾" ø VOID DRAIN 5½" LONG	8
LH301G	LIFT HOOP (3) ½" STRANDS	4
V22X25.5	22"X25.5" VOID, 16'-5" LONG	4
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B400E	#4 BENT	52
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SHEET 5 OF 5

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