STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF LYNDON
COUNTY OF CALEDONIA

ROUTE NO. VT 114 (MAJOR COLLECTOR), BRIDGE NO. 2

PROJECT LOCATION: BEGINNING AT A POINT 0.940 km EASTERLY OF THE INTERSECTION OF VT 114 AND U.S. 5 AND EXTENDING EASTERLY 0.105 km.

PROJECT DESCRIPTION: REMOVAL OF EXISTING SUPERSTRUCTURE, PARTIAL REMOVAL OF EXISTING SUBSTRUCTURE, CONSTRUCTION OF A NEW STEEL BEAM, CONCRETE DECK SUPERSTRUCTURE ON NEW PILE-SUPPORTED INTEGRAL ABUTMENTS AND RELATED ROADWAY APPROACH, INTERSECTION, AND CHANNEL WORK.

LENGTH OF STRUCTURE: 30.570 m
LENGTH OF ROADWAY: 149.430 m
LENGTH OF PROJECT: 180.000 m

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STANDARDS

* A-76	03-03-03	* E-108	08-18-95	* E-170	11-04-99
B-5M	01-03-00	* E-110	08-08-95	* E-171A	08-09-95
* B-71	07-08-05	* E-121	08-08-95	* E-171B	08-09-95
D-2M	06-13-97	* E-140	08-30-96	* E-171C	08-09-95
D-4M	06-13-97	* E-141	09-20-95	* E-172	08-09-95
D-16M	06-13-97	* E-142	09-20-95	* E-175	11-17-93
* E-100	01-02-04	* E-143	06-15-04	* E-190	06-30-03
* E-101	05-30-03	* E-146	09-20-95	* E-191	02-01-99
* E-102	06-30-03	* E-160	05-20-99	* E-193	08-18-95
* E-102A	05-01-04	* E-161	08-18-95	G-1M	01-03-00
* E-106	03-01-04	* E-162	05-20-99	G-1dM	01-03-00
* E-107	06-30-03	* E-163	05-20-99	G-4M	06-13-97
* E-107A	08-08-95	* E-164	05-20-99	G-18AM	07-10-97

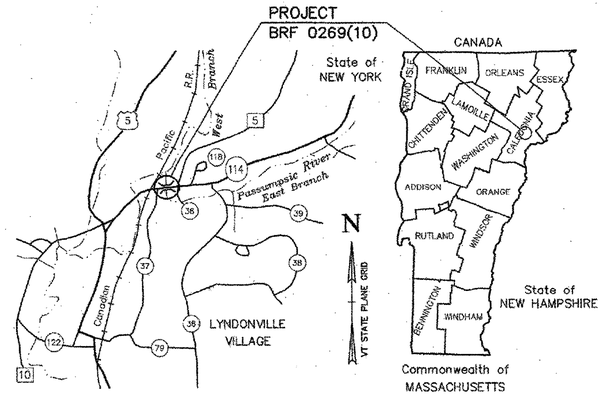
* INDICATES ENGLISH STANDARD USED

CONVENTIONAL SIGNS

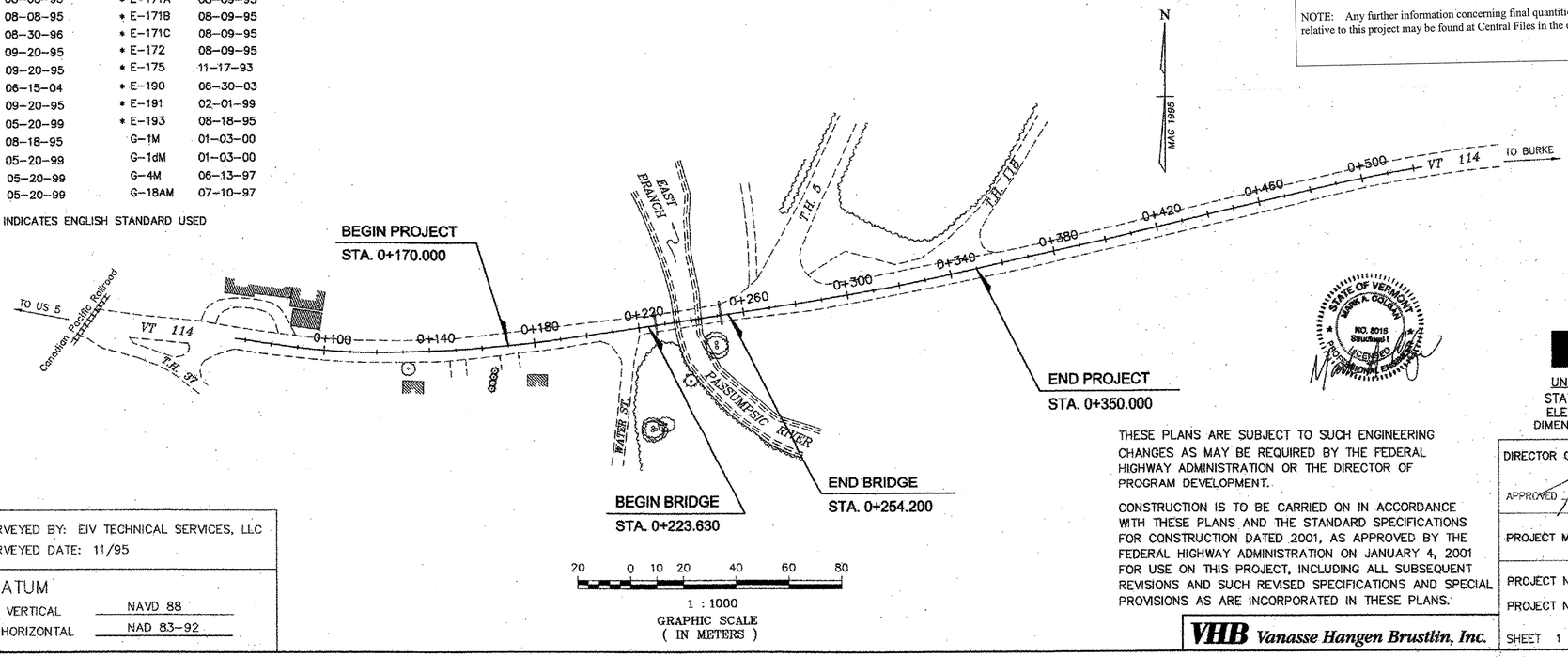
- COUNTY LINE
- TOWN LINE
- LIMITS OF ACCESS
- POINT OF ACCESS
- FENCE LINE
- STONE WALL
- TRAVELED WAY
- GUARD RAIL
- RAILROAD
- SURVEY LINE
- CULVERT
- UTILITY POLE
- TREES
- CONTROL OF ACCESS
- PROPERTY LINE
- R.O.W.
- SLOPE RIGHTS
- TOP OF CUT
- TOE OF CONST. SLOPE

SURVEYED BY: EIV TECHNICAL SERVICES, LLC
SURVEYED DATE: 11/95

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83-92



LOCATION MAP



RECORD PLANS

CONTRACTOR: WINTERSET, INC. – LYNDONVILLE, VT
RESIDENT ENGINEER: KEVIN MCCLURE
CONSTRUCTION BEGAN: JULY 28, 2006
CONSTRUCTION COMPLETE: AUGUST 7, 2007
RECORD PLANS BY: KEVIN McCLURE & N. GARBACIK

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

BY Kevin McClure RESIDENT ENGINEER
DATE 3-9-09

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

STATE OF VERMONT MARK A. GOLDEN NO. 8515 Structural LICENSED PROFESSIONAL ENGINEER

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

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2001 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

VHB Vanasse Hangen Brustlin, Inc.

Metric

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

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED Scott Stetson DATE 3/16/06

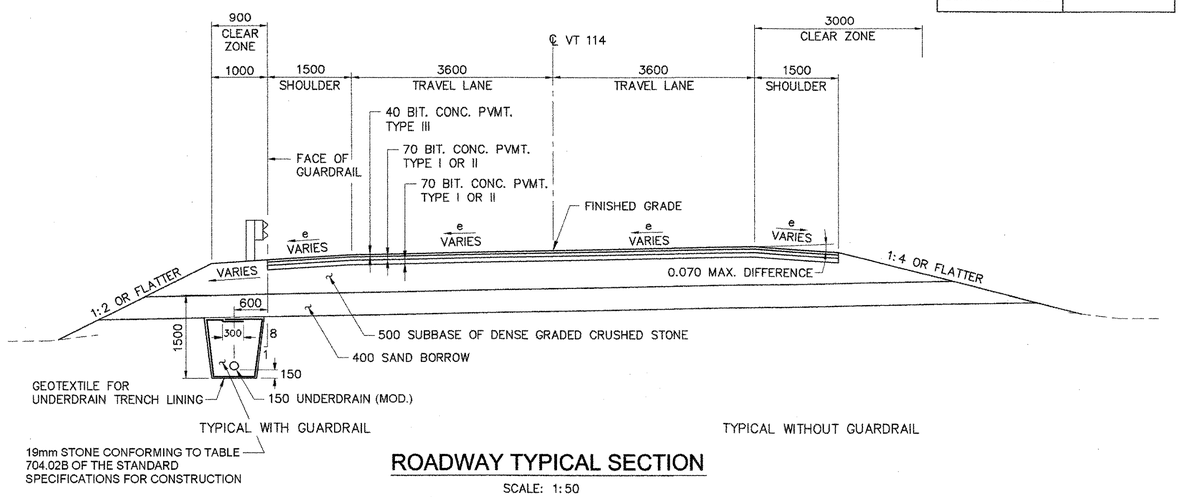
PROJECT MANAGER: ROGER R. WHITCOMB

PROJECT NAME: LYNDON
PROJECT NUMBER: BRF 0269(10)

SHEET 1 OF 72 SHEETS

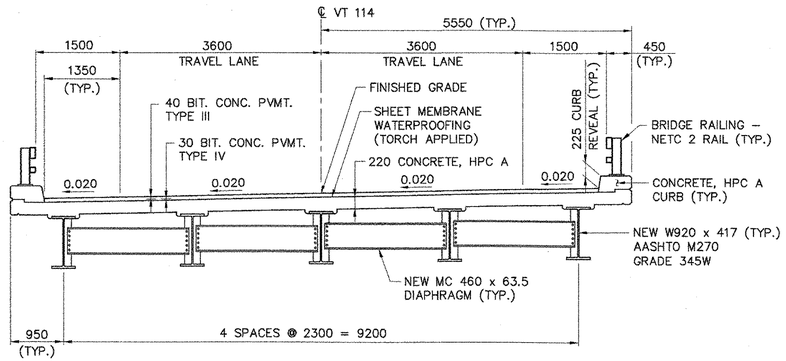
PLOTTED 3-14-2006

MATERIAL ITEM	THICKNESS TOLERANCE
PAVEMENT	±5 (TOTAL)
DENSE GRADED CRUSHED STONE	±30
SAND BORROW	±30
AGGREGATE SURFACE COURSE	±15



ROADWAY TYPICAL SECTION

SCALE: 1:50



BRIDGE TYPICAL SECTION

SCALE: 1:50

0 1000 2000 3000 4000

SCALE IN MILLIMETERS

MATERIAL THICKNESSES *	
T.H. 5, T.H. 118, WATER ST.	40 mm BIT. CONC. PVMT. TYPE III 60 mm BIT CONC. PVMT. TYPE I OR II 500 mm DENSE GRADED CRUSHED STONE
T.H. 118	100 mm AGGREGATE SURFACE COURSE 500 mm DENSE GRADED CRUSHED STONE
RESIDENTIAL DRIVES	50 mm BIT. CONC. PVMT. TYPE III 300 mm DENSE GRADED CRUSHED STONE
3 m FIELD DRIVE APPROACH AREA	40 mm BIT. CONC. PVMT. TYPE III 60 mm BIT CONC. PVMT. TYPE I OR II 500 mm DENSE GRADED CRUSHED STONE
3 m FIELD DRIVE	75 mm AGGREGATE SURFACE COURSE 425 mm DENSE GRADED CRUSHED STONE

* UNLESS OTHERWISE SHOWN ON CROSS SECTIONS.

FINAL HYDRAULICS REPORT

AMT Metric

HYDROLOGIC DATA

DRAINAGE AREA= 208 km^2
CHARACTER OF TERRAIN: HILLY, MODERATE TO WIDE FLOOD PLAIN
CHARACTER & TYPE OF STREAM: PERENNIAL

NATURE OF STREAMBED: SAND, SMALL COBBLES
(SEE NOTE 1)

Q2.33= 51 m^3/s Q50= 139 m^3/s
Q10= 93 m^3/s Q100= 161 m^3/s
Q25= 119 m^3/s Q500= 221 m^3/s

DATE OF FLOOD OF RECORD: 1927
WATER SURFACE ELEV.: SEE NOTE 2 ESTIMATED DISCHARGE: APPROX. Q100
NATURAL STREAM VELOCITY @ Q50: 2.4 m/s
ICE CONDITIONS: POTENTIALLY HEAVY DEBRIS: POTENTIALLY HEAVY
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? YES
IS ORDINARY RISE RAPID? YES
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO
IF YES, DESCRIBE.

WATERSHED STORAGE ____ HEADWATERS____ UNIFORM THROUGHOUT WATERSHED X
IMMEDIATELY ABOVE SITE ____

EXISTING STRUCTURE

STRUCTURE TYPE: SIMPLE SPAN STEEL BEAM, CONCRETE DECK YEAR BUILT: 1938
CLEAR SPAN (NORMAL TO STREAM): 24.4 m
VERTICAL CLEARANCE ABOVE STREAMBED: 5.6 m
WATERWAY OF FULL OPENING: 83 m^2
DISPOSITION OF STRUCTURE: REPLACE

TYPE OF MATERIAL UNDER SUBSTRUCTURE: UNKNOWN

WATER SURFACE ELEV. @ Q2.33= 214.7 m VELOCITY= 2.3 m/s
Q10= 215.8 m " 2.3 m/s
Q25= 216.3 m " 2.4 m/s
Q50= 216.6 m " 2.4 m/s
Q100= 217.3 m " 2.2 m/s

LONG TERM STREAM BED CHANGES: UNKNOWN (SEE NOTE 5)

IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: Q500
RELIEF ELEVATION: ____ DISCHARGE OVER ROAD @ Q100: NONE

UPSTREAM STRUCTURE: TOWN: LYNDON DISTANCE: 0.46 km
HIGHWAY NO.: TH 36 STRUCTURE NO.: 47
STRUCTURE TYPE: SINGLE SPAN STEEL BEAM BRIDGE
CLEAR SPAN: 15.2 m CLEAR HEIGHT: 4.6 m
YEAR BUILT: 1973 FULL WATERWAY: 70 m^2

DOWNSTREAM STRUCTURE: TOWN: LYNDON DISTANCE: 0.21 km
HIGHWAY NO.: RAILROAD STRUCTURE NO.: UNKNOWN
STRUCTURE TYPE: UNKNOWN
CLEAR SPAN: UNKNOWN CLEAR HEIGHT: UNKNOWN
YEAR BUILT: UNKNOWN FULL WATERWAY: UNKNOWN

PROPOSED STRUCTURE

(BRIDGE REPLACEMENT)

STRUCTURE TYPE: SIMPLE SPAN STEEL BEAM, CONCRETE DECK
CLEAR SPAN (NORMAL TO STREAM): 24.4 m
VERTICAL CLEARANCE ABOVE STREAMBED: 5.6 m
WATERWAY OF FULL OPENING: 96 m^2

WATER SURFACE ELEV. @ Q2.33= 214.7 m VELOCITY= 2.3 m/s
Q10= 215.8 m " = 2.3 m/s
Q25= 216.3 m " = 2.4 m/s
Q50= 216.6 m " = 2.4 m/s
Q100= 217.3 m " = 2.2 m/s

IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: Q500
RELIEF ELEVATION: ____ DISCHARGE OVER ROAD @ Q100: NONE

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 217.8 m
VERTICAL CLEARANCE @ Q50: 1.2 m
SCOUR:

REQUIRED CHANNEL PROTECTION: STONE FILL, TYPE IV

PERMIT INFORMATION

AVERAGE DAILY FLOW: 5 cms
ORDINARY LOW WATER: 2 cms DEPTH: 0.6 m
ORDINARY HIGH WATER: 22 cms DEPTH: 1.6 m

ADDITIONAL COMMENTS

1. PEAK DISCHARGES FOR 10 YEAR, 50 YEAR, 100 YEAR AND 500 YEAR EVENTS WERE OBTAINED FROM THE LYNDON FIS (MAY 1988) AND THE 2.33 YEAR AND 25 YEAR EVENTS WERE APPROXIMATED USING GRAPHICAL METHODS.
2. THE EXISTING 1937 PLANS INDICATE MAXIMUM HIGH WATER APPROXIMATELY 0.3 m BELOW THE EXISTING STEEL BEAMS.
3. HYDRAULIC CONDITIONS FOR THE PROPOSED STRUCTURE ARE COMPARABLE TO THE EXISTING STRUCTURE.
4. WATER SURFACE ELEVATIONS ARE PROVIDED AT A SECTION APPROXIMATELY 12 m UPSTREAM OF THE EXISTING/PROPOSED BRIDGE. VELOCITIES ARE PROVIDED AT THE BRIDGE.
5. THE RIVER WAS RELOCATED THROUGH THE PROJECT AREA AS PART OF THE 1938 BRIDGE CONSTRUCTION. THE CHANNEL AND BANKS ARE ARMORED UPSTREAM, DOWNSTREAM AND THROUGH THE BRIDGE.

DESIGN CRITERIA:
1. DESIGN LIVE LOAD AASHTO MS 22.5
2. DESIGN SPAN 29.57 m ℄ BRG TO ℄ BRG
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL – ON LEDGE –
4. DESIGN LOAD FOR PILING 880 kN TYPE HP 310x125 ESTIMATED LENGTH 21.0 m (INCLUDING 1.0 m CONCRETE EMBEDMENT)
5. STRUCTURAL STEEL AASHTO GRADE 345W
6. REINFORCING STEEL GRADE 420
7. CONCRETE, HIGH PERFORMANCE CLASS A f'_c : 30 MPa
   CONCRETE, HIGH PERFORMANCE CLASS B f'_c : 25 MPa

TRAFFIC MAINTENANCE:
1. IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE NO OR ON TEMPORARY BRIDGE YES
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY ONE WAY TRAFFIC CONTROL SIGNALS REQUIRED YES
   MINIMUM CLEAR SPAN (NORMAL TO STREAM): 24.4 VERTICAL CLEARANCE ABOVE STREAMBED: MIN. BOTTOM OF SUPERSTRUCTURE = EL. 216.7
   WATERWAY OF FULL OPENING: 75 SM
   ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE? –
   STRUCTURE TYPE: UNKNOWN

LOAD FACTOR LOAD RATING (METRIC TONNES)							
LOADING LEVELS (LOAD FACTORS)	TRUCK						
	M	MS	3S2	6 AXLE	3A STR	4A STR	5A SEMI
INVENTORY A=2.17 B=1.00	25	46					
POSTED A=1.55 B=1.40	36	64	77		61	63	71
OPERATING A=1.30 B=1.67		77	91	104	73	75	

STRENGTH RF= $\frac{\phi M_N - 1.3 M_{DL}}{A \times M_{LL+I}}$ *SERVICEABILITY RF= B $\frac{.95 F_y S_{LL+I} - M_{DL}^{S.INC} - M_{DL+SW}^{S.INC}}{1.67\ M_{LL+I}}$

VT 114 TRAFFIC DATA
1997 ADT = 4200
1997 DHV = 505
1997 ADTT = 215
2017 ADT = 5740
2017 DHV = 690
2017 ADTT = 255
% D = 56
% T = 4.0

1997–2017 ESAL'S 2,454,000
1997–2037 ESAL'S 6,384,000
POSTED SPEED (EXISTING) = 35 mph
DESIGN SPEED = 60 km/h

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta.
	Surv. Sta.

VT 114 OVER PASSUMPSIC RIVER

PRELIMINARY INFORMATION SHEET

Designed By S.M. GUNN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544PI	Sheet 2 of 72

PLOTTED 3-14-2006

Metric

SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	CHANNEL	SUPER-STRUCTURE	APPROACH SLAB 1	ABUTMENT 1	ABUTMENT 2	APPROACH SLAB 2	BRIDGE SUBTOTAL	ROADWAY	EROSION CONTROL	FULL E & C	TRAINING	TOTAL	FINAL	REMARKS
201.10	CLEARING AND GRUBBING (INCL. INDV. TREES & STUMPS)	LS								1				1	1	
203.15	COMMON EXCAVATION	CM								2166				2166	2105.4	
203.27	UNCLASSIFIED CHANNEL EXCAVATION	CM	198			6	6		210					210	112.4	
203.31	SAND BORROW	CM								830				830	816.5	
204.20	TRENCH EXCAVATION OF EARTH	CM								122	14			136	223.9	
204.25	STRUCTURE EXCAVATION	CM				138	138		276					276	276	
204.30	GRANULAR BACKFILL FOR STRUCTURES	CM				42	42		84					84	129.3	
210.10	COLD PLANING - BITUMINOUS PAVEMENT	SM								318				318	390.7	
301.35	SUBBASE OF DENSE GRADED CRUSHED STONE	CM								1484	46			1530	1676	
401.10	AGGREGATE SURFACE COURSE	CM								1				1	1	
404.85	EMULSIFIED ASPHALT	KG		21	5			5	31	380				411	617	
406.25	BITUMINOUS CONCRETE PAVEMENT (PG 58-34)	T		51	11			11	73	1200				1273	1108.41	
501.31	CONCRETE, CLASS D (MOD. - FLOWABLE FILL)	CM								14				14	5.94	
501.33	CONCRETE, HIGH PERFORMANCE CLASS A	CM		123					123					123	126.82	
501.34	CONCRETE, HIGH PERFORMANCE CLASS B	CM			24	23	23	24	94					94	89.94	
503.20	PRE-EXCAVATION OF INTEGRAL ABUTMENT PILES	M				15	15		30					30	30	
504.10	FURNISHING EQUIPMENT FOR DRIVING PILING	LS				0.5	0.5		1					1	1	
505.28	STEEL PILING FOR INTEGRAL ABUTMENTS (HP 310x125)	M				105	105		210					210	445.41	
505.45	DYNAMIC PILE LOADING TEST	EA				1	1		2					2	2	
506.50	STRUCTURAL STEEL (ROLLED BEAM)	KG		66970					66970					66970	65687	
507.17	EPOXY COATED REINFORCING STEEL	KG		19060	1700	3750	3750	1700	29960					29960	29938	
508.15	SHEAR CONNECTORS (1490 - 22x180)	LS		1					1					1	1	
514.10	WATER REPELLENT (MOD. - SILANE)	L		44		2	2		48					48	48	
516.10	BRIDGE EXPANSION JOINT (ASPHALTIC PLUG)	M		21					21					21	20.27	
519.20	SHEET MEMBRANE WATERPROOFING (MOD. - TORCH APPLIED)	SM		310					310					310	298.6	
525.33	BRIDGE RAILING - NETC 2 RAIL	M		73					73					73	72.80	
900.545	SUPPLEMENTAL AGREEMENT 528.II TWO WAY TEMP. BRIDGE MOD.	LS													1	SEE C.O. #1 9/14/06
528.10	ONE-WAY TEMPORARY BRIDGE (110 SM-EST) (MOD.)	LS		1					1					X	0	SEE C.O. #1 9/14/06

N.A.B.I. = NOT A BID ITEM

EARTHWORK SUMMARY

DESCRIPTION	UNIT	TOTAL
FILL REQUIRED:		
PLANIMETERED FILL	CM	1144
FILL FACTOR (0.15)	CM	171
FACTORED FILL	CM	1315
MATERIAL AVAILABLE FOR FILL:		
COMMON EXCAVATION (x 1.0)	CM	2166
UNCLASSIFIED CHANNEL EXCAVATION (x 0.3)	CM	63
TOTAL MATERIAL AVAILABLE FOR FILL	CM	2229
LESS FACTORED FILL	CM	1315
BORROW	CM	0
EXCESS FILL	CM	914

TEMPORARY EROSION CONTROL
(INCLUDED UNDER EROSION CONTROL)

ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL
204.20	TRENCH EXCAVATION OF EARTH	CM	14
301.35	SUBBASE OF DENSE GRADED CRUSHED STONE	CM	46
613.10	STONE FILL, TYPE I	CM	10
849.51	GEOTEXTILE FOR SILT FENCE	SM	594
651.15	SEED	KG	5
651.25	HAY MULCH	T	2
651.26	HAY BALES FOR EROSION CONTROL	EA	10
654.10	EROSION MATTING	SM	1190

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.

VT 114 OVER PASSUMPSIC RIVER

QUANTITY SHEET (1 OF 3)

Designed By L.S. GARDNER	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50944QNT	Sheet 3 of 72

PLOTTED 3-14-2006

SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	CHANNEL	SUPER-STRUCTURE	APPROACH SLAB 1	ABUTMENT 1	ABUTMENT 2	APPROACH SLAB 2	BRIDGE SUBTOTAL	ROADWAY	EROSION CONTROL	FULL E & C	TRAINING	TOTAL	FINAL	REMARKS
529.10	REMOVAL OF BRIDGE PAVEMENT	SM		182					182					182	156.2	
529.20	PARTIAL REMOVAL OF STRUCTURE	EA		0.8		0.1	0.1		1					1	1	
531.10	BEARING DEVICE ASSEMBLY (INTEGRAL ABUTMENT)	EA				5	5		10					10	10	
	** BEGIN OPTION **															
~~601.0447~~	~~900 mm PCCSP 2.77 mm (68 mm x 12 mm)~~	~~M~~								23				23	0	
~~601.0845~~	~~900 mm RCP CLASS III~~	~~M~~								23				23	0	
601.0930	900 mm CPEP	M								23				23	0	COD 4 4/12/07
	** END OPTION **															
601.2630	SUPPLEMENTAL AGREEMENT) 900 CPEP (SL)	M													23 SEE	COD 4 4/12/07
605.10	150 mm UNDERDRAIN (MOD.)	M								72				72	48	
605.20	150 mm UNDERDRAIN CARRIER PIPE	M								18				18	11.3	
605.95	UNDERDRAIN FLUSHING BASINS	EA								2				2	0	
613.10	STONE FILL, TYPE I	CM				13	13		26	3	10			39	46.3	
613.10	STONE FILL, TYPE I (MOD. – CHECK DAMS)	CM									10			10	4.66	ESTIMATED
613.10	STONE FILL, TYPE I (MOD. – CONSTRUCTION ENTRANCE)	CM									24			24	18.4	
613.10	STONE FILL, TYPE I (MOD. – INLET PROTECTION)	CM									10			10	0	
613.13	STONE FILL, TYPE IV	CM	200						200					200	112.4	ESTIMATED
617.10	RELOCATE MAIL BOX, SINGLE SUPPORT	EA								2				2	0	
619.17	YIELDING MARKER POSTS	EA								2				2	2	
620.70	SNOW FENCE (MOD. – PDF)	M								650				650	109	
621.21	HEAVY DUTY STEEL BEAM GUARD RAIL (GALVANIZED)	M								90				90	86.3	
621.60	ANCHOR FOR STEEL BEAM RAIL	EA								3				3	4	
621.72	GUARDRAIL APPROACH SECTION, NETC 2 RAIL	EA								4				4	4	
621.80	REMOVAL AND DISPOSAL OF GUARD RAIL	M								117				117	118.1	
621.90	TEMPORARY TRAFFIC BARRIER	M								60				60	176.8	
630.15	FLAGGERS	HR								300				300	1367.5	
631.10	FIELD OFFICE – ENGINEERS	LS										X		X	0 SEE	CO 2 11/3/06
900.545	SUPPLEMENTAL AGREEMENT 631.10 FIELD OFFICE (MOD.)	LS													1 SEE	CO 2 11/3/06
631.16	TESTING EQUIPMENT – CONCRETE	LS										1		1	1	
631.17	TESTING EQUIPMENT – BITUMINOUS	LS										1		1	1	
631.25	FIELD OFFICE – TELEPHONE (N.A.B.I.)	LU										1		1	0.453	
634.10	EMPLOYEE TRAINEESHIP	HR											520	520	520	
635.11	MOBILIZATION / DEMOBILIZATION	LS							1					1	1	
641.10	TRAFFIC CONTROL	LS								1				1	1	
900.520	SUPPLEMENTAL AGREEMENT 641.16 PORTABLE ARROW BOARD	EA													2 SEE	CO 3 12/11/06
646.40	DURABLE 100 mm WHITE LINE (THERMOPLASTIC)	M								520				520	587	
646.41	DURABLE 100 mm YELLOW LINE (THERMOPLASTIC)	M								528				528	557	
646.46	DURABLE 600 mm STOP BAR (THERMOPLASTIC)	M								13				13	10	

N.A.B.I. = NOT A BID ITEM

Metric

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
QUANTITY SHEET (2 OF 3)	
Designed By L.S. GARDNER	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544QNT	Sheet 4 of 72

PLOTTED 3-14-2006

Metric

SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	CHANNEL	SUPER-STRUCTURE	APPROACH SLAB 1	ABUTMENT 1	ABUTMENT 2	APPROACH SLAB 2	BRIDGE SUBTOTAL	ROADWAY	EROSION CONTROL	FULL E & C	TRAINING	TOTAL	FINAL	REMARKS
646.50	DURABLE LETTER OR SYMBOL (THERMOPLASTIC)	EA								4				4	4	
646.52	DURABLE RAILROAD CROSSING SYMBOL (THERMOPLASTIC)	EA								1				1	1	
646.60	TEMPORARY 100 mm WHITE LINE (PAINT)	M								295				295	0	
646.65	TEMPORARY 600 mm STOP BAR (PAINT)	M								16				16	0	
646.76	LINE STRIPING TARGETS	EA								78				78	76	
646.85	REMOVAL OF EXISTING PAVEMENT MARKINGS	SM								30				30	35.4	
649.31	GEOTEXTILE UNDER STONE FILL	SM	165			36	34		235					235	353	
649.41	GEOTEXTILE FOR UNDERDRAIN TRENCH LINING	SM								320				320	310	
649.51	GEOTEXTILE FOR SILT FENCE	SM									594			594	187.9	
651.15	SEED	KG									35			35	22.9	
651.18	FERTILIZER	KG									250			250	182	
651.20	AGRICULTURAL LIMESTONE	T									2			2	1.46	
651.25	HAY MULCH	T									2			2	1.57	
651.26	HAY BALES FOR EROSION CONTROL	EA									10			10	1	
651.35	TOPSOIL	CM									202			202	143.2	
651.40	GRUBBING MATERIAL	SM	165			18	16		199					199	234.7	
652.10	EROSION PREVENTION & SEDIMENT CONTROL PLAN	LS									1			1	1	
652.20	MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN	HR									160			160	14.5	
652.30	MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN (N.A.B.I.)	LU									1			1	0.027	
654.10	EROSION MATTING	SM									1190			1190	442	
656.30	DECIDUOUS TREES (RED MAPLE – ACER RUBRUM, B&B, 50 CAL.)	EA								2				2	2	
656.30	DECIDUOUS TREES (SERVICEBERRY – AMELANCHIER CANADENSIS, B&B, 38 CAL.)	EA								4				4	4	
656.35	DECIDUOUS SHRUBS (RED STEM DOGWOOD – CORNUS SERICEA, CONTAINER, 450–600 HT.)	EA								16				16	16	
675.20	TRAFFIC SIGNS, TYPE A	SM								0.45				0.45	1.18	
	** BEGIN OPTION **															
675.301	FLANGED CHANNEL SIGN POST	M								40				40	46.3	
~~675.341~~	~~SQUARE TUBE SIGN POSTS AND ANCHOR~~	~~M~~								~~40~~				~~40~~		
	** END OPTION **															
675.50	REMOVING SIGNS	EA								12				12	13	
675.60	ERECTING SALVAGED SIGNS	EA								8				8	11	
678.40	TEMPORARY TRAFFIC SIGNAL SYSTEM	EA								1				1	0	SEE COD #1 9/14/06
678.42	TEMPORARY DETECTOR	EA								4				4	0	SEE COD #1 9/14/06

N.A.B.I. = NOT A BID ITEM

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
QUANTITY SHEET (3 OF 3)	
Designed By L.S. GARDNER	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0289(10)
I.G.C. Info.	
Bridge Sheet No. 50544QNT	Sheet 5 of 72

PLOTTED 3-14-2006

Metric

STATE OF VERMONT
AGENCY OF TRANSPORTATION
RIGHT OF WAY PLANS
DETAIL SHEET

TABLE OF PROJECT PROPERTY ACQUISITION

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS			TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
1A	MASURE, HARRIET H.	14	0+097.2 LT.	0+103.5 LT.	5 SM±							LYNDON			54 S.F.±
1B		14,15	0+103.5 LT.	0+225.0 LT.	395 SM±										4252 S.F.±
			0+097.2 LT.	0+225.0 LT.			CLEAR & TRIM	(P)	366 SM±						3940 S.F.±
			0+162.0 LT.	0+177.5 LT.			INSTALL	(T)	6 SM±						EROSION CONTROL, 65 S.F.±
			0+207.3 LT.	0+225.3 LT			CONST.	(T)	163 SM±						INCLUDES EROSION CONTROL
															1,755 S.F.±
1C		15	0+245.2 LT.	0+271.0 LT.	90 SM±										969 S.F.±
			0+243.3 LT.	0+272.8 LT.			CLEAR & TRIM	(P)	81 SM±						872 S.F.±
			0+262.0 LT.	0+265.2 LT.			INSTALL	(T)	3 SM±						EROSION CONTROL, 32 S.F.±
			TH5 2+007.5 LT.				DRIVE	(T)							3.1M GRAVEL (10')
			0+268.3 LT.	TH5 2+027.0 LT.			INSTALL	(T)	11 SM±						EROSION CONTROL, 118 S.F.±
			TH5 2+019.3 LT.				INSTALL & MAINT.	(P)							GUY WIRE
1D		14,15	0+097.2 CL.	0+283.3 LT.	0.29 HA±		ALL R.T. & I.								VT. RTE. 114 & TH #5
															(0.72A±)
2A	GOODWIN, JANET U.	14	0+159.0 RT.	0+165.0 RT.	6 SM±							LYNDON			65 S.F.±
	GOODWIN, LISA R.		0+150.0 RT.												6M GRAVEL DRIVE (20.0')
															MM 0054
			0+165.0 RT.				INSTALL & MAINT.	(P)							GUY WIRE
2B		14	0+097.2 CL.	0+165.0 CL.	0.05 HA±		ALL R.T. & I.								VT. RTE. 114 (0.12A±)
3A	DUNN, LYMAN & ANNABELLE R.	14,15	0+165.0 RT.	0+200.6 RT.	32 SM±							LYNDON			344 S.F.±
			0+165.0 RT.				INSTALL & MAINT.	(P)							GUY WIRE
			0+175.5 RT.	WS 3+027.5 RT.			INSTALL	(T)	65 SM±						EROSION CONTROL, 710 S.F.±
			0+184.2 RT.	0+208.2 RT.			SLOPE	(T)	28 SM±						301 S.F.±
			WS 3+024.0 LT.	WS 3+027.9 LT.			INSTALL	(T)	5 SM±						EROSION CONTROL, 54 S.F.±
			0+170.0 RT.												7M GRAVEL DRIVE (23')MM 0055
			0+217.0 RT.				DRIVE	(T)							4.3M PAVED (14')MM 0058
3B		14,15	0+165.0 LT.	0+291.6 RT.	0.18 HA±		ALL R.T. & I.								VT. RTE. 114 (0.44A±)

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

RIGHT-OF-WAY
JUL 29 2002
PRELIMINARY PLANS
COMPLETED PLANS
FINAL PLANS

ACCT.MRyan
\\vaot_cadd\fllngcabinet$\93c068\RightOfWay\ro068d.dgn
DATE PLOTTED 23-JUL-2002

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
TAKING WITH ACCESS
(P) PERMANENT EASEMENT
(T) TEMPORARY EASEMENT

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
UE (P) PERMANENT UTILITY EASEMENT

APPROVED: ROGER P. DUMAS DATE: 09-25-00
CHIEF, PLANS & TITLES

R. O. W. PLANS

LYNDON
BHF 0269(10)

SHEET 11 OF 15

Metric

STATE OF VERMONT
AGENCY OF TRANSPORTATION
RIGHT OF WAY PLANS
DETAIL SHEET

TABLE OF PROJECT PROPERTY ACQUISITION

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS			TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
4A	VERMONT ELECTRIC POWER COMPANY, INC.	14,15	0+243.8 LT.	0+329.0 RT.	0.31 HA±		ALL R.T. & I.					LYNDON			VT. RTE. 114 (0.77A±)
			0+255.5 RT.	0+330.0 RT.			SLOPE	(P)	258 SM±						2,777 S.F.±
			0+255.5 RT.	0+331.5 RT.			CONST.	(T)	298 SM±						INCLUDES EROSION CONTROL
															3,208 S.F.±
			0+330.0 RT.				CUL. DIT. & DR.	(P)							
4B		15	0+283.3 LT.	0+320.6 LT.											EXCEPT & RESERVE ROW OVER
															PARCEL #5A
			0+289.4 LT.	0+291.4 LT.			INSTALL & MAINT.	(P)							GUY WIRE
			0+288.1 LT.	0+320.0 LT.			CLEAR & TRIM	(P)	87 SM±						936 S.F.±
4C		15	0+245.2 LT.	0+271.0 LT.											EXCEPT & RESERVE ROW OVER
															PARCEL #1C
			0+243.3 LT.	0+272.8 LT.			CLEAR & TRIM	(P)	81 SM±						872 S.F.±
			0+262.0 LT.	0+265.2 LT.			INSTALL	(T)							EROSION CONTROL
			TH5 2+007.5 LT.				DRIVE	(T)							3.1M GRAVEL (10')
			0+268.3 LT.	TH5 2+027.0 LT.			INSTALL	(T)							EROSION CONTROL
			TH5 2+119.3 LT.				INSTALL & MAINT.	(P)							GUY WIRE
			0+225.0 LT.	0+265.0 CL.											EXCEPT & RESERVE ROW OVER
															PARCEL #1D
5A	WHEELER, DURWARD A. &	14,15	0+283.3 LT.	0+323.3 LT.	168 SM±							LYNDON			1808 S.F.±
	DEANNA B.		0+288.1 LT.	0+324.9 LT.			CLEAR & TRIM	(P)	100 SM±						1076 S.F.±
			0+289.4 LT.	0+291.4 LT.			INSTALL & MAINT.	(P)							GUY WIRE
5B		14,15	0+265.0 LT.	0+356.8 LT.	0.08 HA±		ALL R.T. & I.								VT. RTE. 114, TH #5 &
															TH #118 (0.20 A±)
6	SAMANTHA HOLDINGS, LLC	14	0+329.0 LT.	0+456.4 LT.	0.13 HA±		ALL R.T. & I.					LYNDON			VT. RTE. 114 (0.32A±)
			0+330.0 RT.				CULVERT	(P)							
			0+329.0 RT.	0+415.0 RT.			SLOPE	(P)	150 SM±						1,615 S.F.±
			0+330.0 RT.	0+456.4 RT.			CONST.	(T)	370 SM±						INCLUDES EROSION CONTROL
															3,983 S.F.±
			0+380.0 RT.				CUL., DIT. & DR.	(P)							
7	HIBSHMAN, JOHN G. & NANCY	14	0+336.5 LT.	0+456.4 LT.	0.12 HA±		ALL R.T. & I.					LYNDON			VT. RTE. 114 & TH #118
															(0.30A±)
			0+356.8 LT.	0+456.4 LT.			CONST.	(T)	286 SM±						INCLUDES EROSION CONTROL
															3,079 S.F.±
			0+368.0 LT.	0+395.3 LT.			SLOPE	(T)	87 SM±						936 S.F.±
			0+380.0 LT.				CULVERT	(P)							
8A	VILLAGE OF LYNDONVILLE	15	0+263.9 RT.	0+301.9 RT.			CONST.	(T)	158 SM±			LYNDON			EASEMENT OVER PARCEL #4
															(1,701 S.F.±)
															1,195 S.F.±
8B		14,15	0+228.0 RT.	0+456.4 LT.											EXCEPT & RESERVE ROW OVER
															PARCELS #4A, 5A,
															5B, 7 & 10B
			0+314.3 LT.	0+324.9 LT.			CLEAR & TRIM	(P)	25 SM±						269 S.F.±
			0+222.5 RT.	0+245.5 RT.											EXCEPT & RESERVE ROW OVER
															PARCEL 3B
8C	VILLAGE OF LYNDONVILLE	15	0+206.3 RT.	WS 3+027.5 RT.			INSTALL	(T)	25 SM±						EROSION CONTROL, 269 S.F.±
			0+206.7 RT.	0+208.2 RT.			SLOPE	(T)	0.4 SM±						4 S.F.±
			WS 3+024.0 LT.	WS 3+027.9 LT.			INSTALL	(T)	5 SM±						EROSION CONTROL, 54 S.F.±
			0+217.0 RT.				DRIVE	(T)							4.3M PAVED (14') MM 0058
															FOR ROW OVER PARCEL #3

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

RIGHT-OF-WAY
JUL 24 2002
PRELIMINARY PLANS ☒
COMPLETED PLANS ☒
FINAL PLANS ☒

ACCT. MRyan
\\vaot_cadd\filingcabinet$\93c068\RightOfWay\rc068d.dgn
DATE PLOTTED 23-JUL-2002

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
TAKING WITH ACCESS
(P) PERMANENT EASEMENT
(T) TEMPORARY EASEMENT

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

APPROVED: ROGER P. DUMAS DATE: 09-25-00
CHIEF, PLANS & TITLES

R. O. W. PLANS

LYNDON
BHF 0269(10)

SHEET 12 OF 15

STATE OF VERMONT
AGENCY OF TRANSPORTATION
RIGHT OF WAY PLANS
DETAIL SHEET

TABLE OF PROJECT PROPERTY ACQUISITION

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS	TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
9A	TOWN OF LYNDON	15	0+265.0 LT.	0+283.3 LT.	183 SM±		ALL R. T. & I.						VT. RTE. 114 (1,970 S.F.)
			0+274.2 LT.				APPROACH (T)						TH #5 DARLING HILL ROAD
													INCLUDES EROSION CONTROL
			TH5 2+013.7 LT.	TH5 2+025.0 LT.			INSTALL (T)						GUARDRAIL
9B		14	0+336.5 LT.	0+356.8 LT.	200 SM±		ALL R. T. & I.						VT. RTE. 114 (2,153 S.F.)
			0+347.4 LT.				APPROACH (T)						TH #118 COZY BEND LANE
													INCLUDES EROSION CONTROL
10	LYNDONVILLE ELECTRIC DEPARTMENT												UTILITY
11	VERIZON NEW ENGLAND, INC.												UTILITY
12	LYNDONVILLE WATER DEPARTMENT												UTILITY
13	VELCO												UTILITY
14	CHARTER COMMUNICATIONS, LLC												UTILITY
	MAINTENANCE AGREEMENT ZONE NO. 1	15	2+003.0 CL.	2+012.2 CL.									TH #5 LENGTH 9.2M (30.0')
	MAINTENANCE AGREEMENT ZONE NO. 2	14	4+003.6 CL.	4+013.8 CL.									TH #118 LENGTH 10.2M (34.0')

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

RIGHT-OF-WAY
JUL 24 2002
PRELIMINARY PLANS ☒
COMPLETED PLANS ☒
FINAL PLANS ☒

ACCT.MRyan
\\vaot_cadd\filingcabinet$\93c068\RightOfWay\rc068d.dgn
DATE PLOTTED 23-JUL-2002

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
TAKING WITH ACCESS
(P) PERMANENT EASEMENT
(T) TEMPORARY EASEMENT

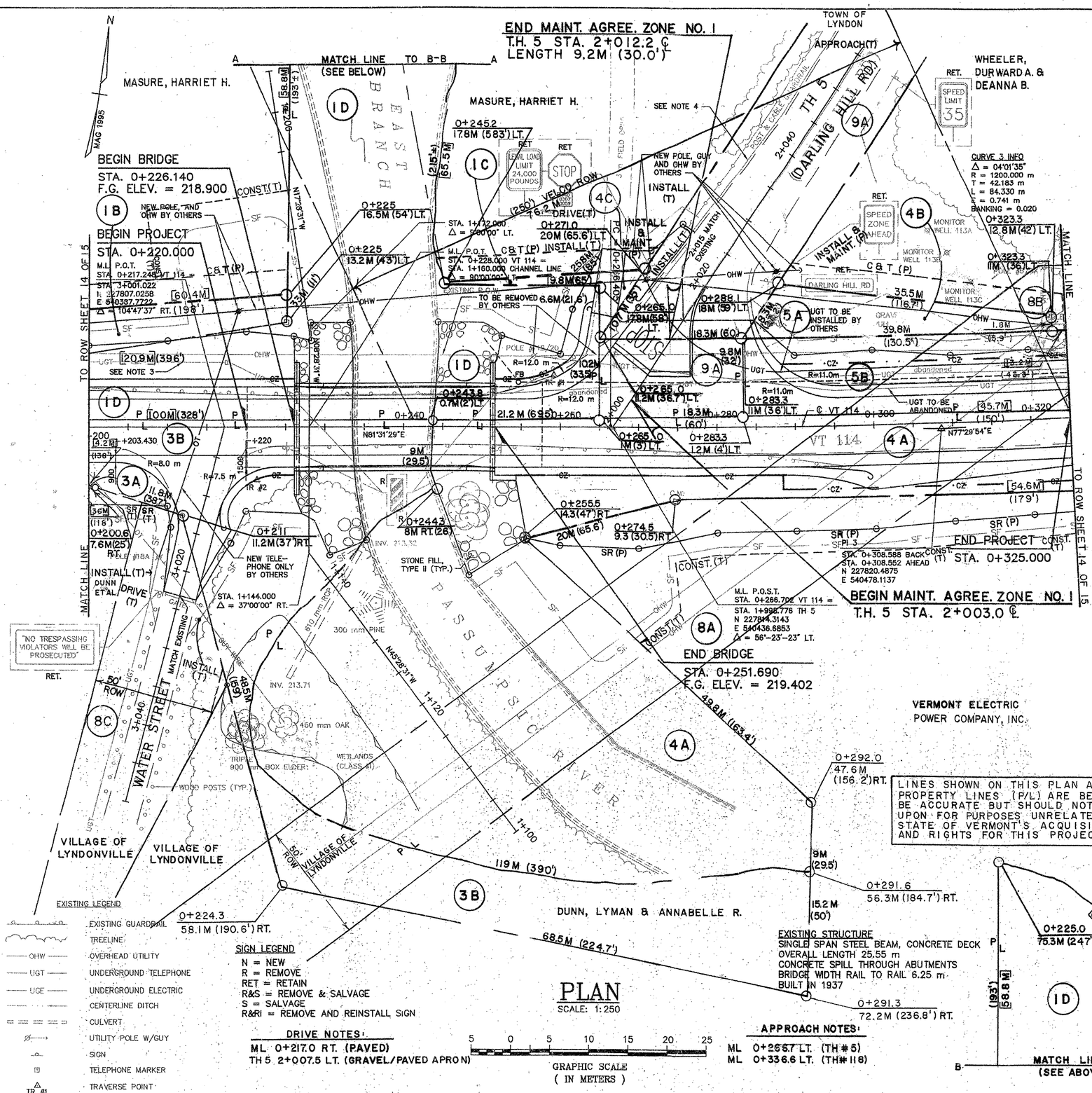
LEGEND
C&T (P) CLEARING & TRIMMING
CZ (P) CLEAR ZONE
CONST. (T) CONSTRUCTION EASEMENT
SR SR SLOPE RIGHTS
P L PROPERTY LINE
TOP OF CUT
TOE OF SLOPE
UE (P) PERMANENT UTILITY EASEMENT

APPROVED: ROGER P. DUMAS DATE: 09-25-00
CHIEF, PLANS & TITLES

R. O. W. PLANS

LYNDON
BHF 0269(10)

SHEET 13 OF 15



CONSTRUCTION NOTES

REMOVAL AND DISPOSAL OF GUARD RAIL
STA. 0+200.0 – 0+226.1 LT.
STA. 0+219.5 – 0+226.1 RT.
STA. 0+251.7 – 0+261.7 LT.
STA. 0+251.7 – 0+295.6 RT.
STA. 2+018.0 – 2+025.0 LT.

HEAVY DUTY STEEL BEAM GUARD RAIL
STA. 0+200.00 – 0+216.02 LT.
STA. 0+216.85 – 0+217.38 RT.
STA. 0+261.31 – 0+263.93 LT.
STA. 0+261.81 – 0+288.39 RT.
STA. 2+014.00 – 2+025.00 LT.

ROUNDED "W" BEAM END SECTION
STA. 0+216.85 RT.
STA. 0+263.93 LT.

GUARD RAIL APPROACH SECTION, NETC 2 RAIL
STA. 0+216.02 – 0+223.64 LT.
STA. 0+217.38 – 0+223.64 RT.
STA. 0+254.19 – 0+261.31 LT.
STA. 0+254.19 – 0+261.81 RT.

BRIDGE RAILING – 2 RAIL GALVANIZED BOX BEAM (MODIFIED)
STA. 0+223.64 – 0+254.19 LT. & RT.

MANUFACTURERED TERMINAL SECTION
STA. 0+288.39 – 0+299.69 RT.

ANCHOR FOR STEEL BEAM GUARDRAIL
STA. 0+263.93 LT.
STA. 2+012.00 LT.

DURABLE 100 mm WHITE LINE
STA. 0+200.0 – 2+020.0 LT.
STA. 2+020 RT. – 0+325.0 LT.
STA. 0+200.0 – 0+325.0 RT.

DURABLE 100 mm YELLOW LINE (DOUBLE CENTER LINE)
STA. 0+200.0 – 0+271.0
STA. 0+283.0 – 0+325.0
STA. 2+009.75 RT. – 2+020.0

DURABLE 600 mm STOP BAR
STA. 2+007.10 LT. – RT.

DURABLE LETTER OR SYMBOL = "STOP"
STA. 2+010.0 LT.

FLUSHING BASIN
STA. 0+254.7 LT.

150 UNDERDRAIN
STA. 0+250.3 – 0+254.7 LT.
STA. 0+254.7 – 0+325.0 LT.

SHOULDER TAPERS
0+140.0 LT. (900 mm) TO 0+200.0 LT. (1500 mm)
0+203.43 RT. (900 mm) TO 0+220.0 RT. (1500 mm)
0+330.41 LT. (1500 mm) TO 0+360.0 LT. (900 mm)
0+325.0 RT. (1500 mm) TO 0+380.0 RT. (900 mm)

NOTE
1. SEE SHEETS 11 AND 12 FOR TEMPORARY EROSION CONTROL.
2. SEE NOTE 3 ON TITLE SHEET.
3. UNDERGROUND TELEPHONE (UGT) WEST OF POLE #12/20 HAS BEEN ABANDONED.
4. LOCATION AND EXTENTS OF EXISTING STEEL BEAM RAIL ON TH 5 IS APPROXIMATE. CONNECTION OF THE NEW HEAVY DUTY STEEL BEAM GUARD RAIL AT STA 2+025±, LT SHALL BE AT THE DIRECTION OF THE RESIDENT ENGINEER.
5. EXISTING SIGN LOCATIONS MAY BE DIFFERENT THAN THOSE SHOWN ON THE PLANS.

RIGHT-OF-WAY
JUL 24 2002
PRELIMINARY PLANS COMPLETED PLANS FINAL PLANS

THIS SHEET FOR R.O.W. USE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
PLAN (1 OF 2)	
Designed By S.M. GUNN	Drawn By R.F. CLARK
Checked By / Date	Bridge Design Supervisor / Date
PROJECT LYNDON	PROJECT NO. BHF 0269(10)
I.G.C. Info.	
ROW SHEET 15 OF 15 SHEETS	

VANASSE HANGEN BRUSTLIN, INC.

BEGIN R.O.W. PROJECT
BHF 0269(10) STA. 0+097.2 ℄

DRIVE NOTES:
ML 0+150.0 RT. (GRAVEL/PAVED APRON)
ML 0+170.0 RT. (GRAVEL/PAVED APRON)

CONSTRUCTION NOTES

REMOVAL AND DISPOSAL OF GUARD RAIL
STA. 0+182.1 – 0+200.0 LT.

HEAVY DUTY STEEL BEAM GUARD RAIL
STA. 0+181.58 – 0+200.00 LT.

MANUFACTURED TERMINAL SECTION
STA. 0+170.43 – 0+181.58 LT.

ANCHOR FOR STEEL BEAM GUARDRAIL
STA. 0+216.85 RT.

DURABLE 100 mm WHITE LINE
STA. 0+125.0 – 0+200.0 LT. & RT.
STA. 0+325.0 – 0+335.0 LT.
STA. 0+359.0 – 0+400.0 LT.
STA. 0+325.0 – 0+400.0 RT.

DURABLE 100 mm YELLOW LINE (DOUBLE CENTER LINE)
STA. 0+125.0 – 0+200.0
STA. 0+325.0 – 0+339.0
STA. 0+351.0 – 0+400.0

YIELDING MARKER POSTS
STA. 0+380.0 LT. & RT.

DURABLE RAILROAD CROSSING SYMBOL
STA. 0+143.0 LT.

COLD PLANING BIT. CONCRETE PAVEMENT
STA. 0+125.0 – 0+140.0
STA. 0+385.0 – 0+400.0

FLUSHING BASINS
STA. 0+330.0 LT.

150 UNDERDRAIN
STA. 0+325.0 – 0+330.0 LT.
STA. 0+333.0 LT. – 0+330.0 RT. (CARRIER PIPE)

RELOCATE MAILBOX, SINGLE SUPPORT
STA. 0+146.0 RT.
STA. 0+410.0 LT.

CURVE 1 INFO
△ = 10°08'32"
R = 232.750 m
T = 20.654 m
L = 41.201 m
E = 0.915 m

CURVE 2 INFO
△ = 06°23'09"
R = 512.000 m
T = 28.562 m
L = 57.065 m
E = 0.795 m
BANKING = 0.039

MAG 1995

EXISTING LEGEND
- EXISTING GUARDRAIL
- TREELINE
- OHW — OVERHEAD UTILITY
- UGT — UNDERGROUND TELECTRIC
- CENTERLINE DITCH
- CULVERT
- UTILITY POLE W/GUY
- SIGN
- TELEPHONE MARKER
- TR #1 TRAVERSE POINT

BEGIN MAINT. AGREE. ZONE NO. 2
T.H. 118 STA. 4+005.6 ℄

BEGIN APPROACH
STA. 0+140.000
STA. 0+125.000 – 0+140.000
TO BE COLD PLANED AND PAVED

PI 1
STA. 0+107.346 AHEAD
STA. 0+107.453 BACK
N 227797.6097
E 540278.3833

PI 2
STA. 0+168.503 AHEAD
STA. 0+168.562 BACK
N 227799.8415
E 540339.5588

GOODWIN, JANET U.
GOODWIN, LISA R.

MASURE, HARRIET H.

DUNN, LYMAN S. & ANNABELLE R.

TOWN OF LYNDON

WHEELER, DURWARD A. & DEANNA B.

HIBSHAM, JOHN G. & NANCY

SAMANTHA HOLDINGS, LLC

VERMONT ELECTRIC POWER COMPANY, INC.

PLAN
SCALE: 1:250

APPROACH (T)

END MAINT. AGREE. ZONE NO.2
T.H. 118 STA. 4+013.8 ℄
LENGTH 10.2M (34.0')

END APPROACH
STA. 0+380.000
STA. 0+380.000 – 0+400.000
TO BE COLD PLANED AND PAVED

END PROJECT
STA. 0+325.000

PI
STA. 0+400.566 AHEAD, BACK
N227840.4056
E540567.9455

BENCHMARK NO. K38 1942
BRASS DISK IN WEST END OF CURB OF A VERTICAL CULVERT ON THE NORTH SIDE OF ROUTE 114 OPPOSITE TOWN HIGHWAY #40, APPROX. .64km FROM RAILROAD CROSSING
NAVD 1988 ELEVATION = 217.608

LINES SHOWN ON THIS PLAN AS EXISTING PROPERTY LINES (P/L) ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO THE STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

SHOULDER TAPERS
0+140.0 LT. (900 mm) TO 0+200.0 LT. (1500 mm)
0+203.43 RT. (900 mm) TO 0+220.0 RT. (1500 mm)
0+330.41 LT. (1500 mm) TO 0+360.0 LT. (900 mm)
0+325.0 RT. (1500 mm) TO 0+380.0 RT. (900 mm)

NOTE
1. SEE SHEETS 11 AND 12 FOR TEMPORARY EROSION CONTROL.
2. SEE NOTE 3 ON TITLE SHEET.
3. UNDERGROUND TELEPHONE (UGT) WEST OF POLE #12/20 HAS BEEN ABANDONED.

GRAPHIC SCALE
5 0 5 10 15 20 25
(IN METERS)

THIS SHEET FOR R.O.W. USE ONLY

RIGHT-OF-WAY
JUL 24 2002
PRELIMINARY PLANS COMPLETED
FINAL PLANS

END R.O.W. PROJECT
BHF 0269(10) STA. 0+456.4 04M (1.3') LT.

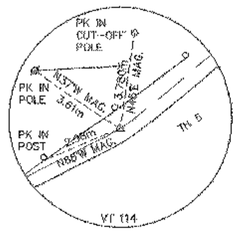
TO ROW SHEET 15 OF 15
MATCH LINE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
PLAN (2 OF 2)	
Designed By S.M. GUNN	Drawn By R.F. CLARK
Checked By / Date	Bridge Design Supervisor / Date
PROJECT LYNDON	PROJECT NO. BHF 0269(10)
I.G.C. Info.	
ROW SHEET 14 OF 15 SHEETS	

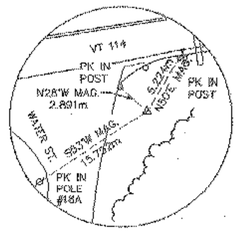
VANASSE HANGEN BRUSTLIN, INC.

Metric



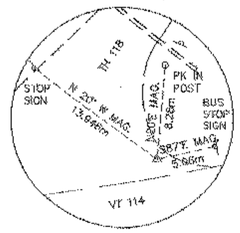
TR #1
REBAR & CAP
NORTHING = 227819.701
EASTING = 540428.280

TR #1
N.T.S.



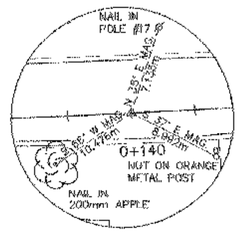
TR #2
REBAR & CAP
NORTHING = 227801.022
EASTING = 540382.865

TR #2
N.T.S.



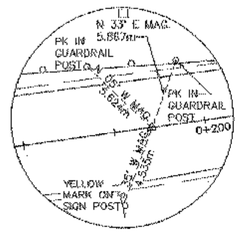
TR #3
REBAR & CAP
NORTHING = 227836.108
EASTING = 540521.046

TR #3
N.T.S.



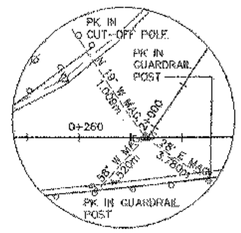
STA 0+140.000
PK SET
NORTHING = 227798.800
EASTING = 540311.016

PC STA. 0+140.000
N.T.S.



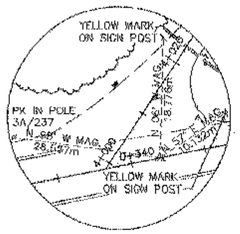
STA 0+197.065
PK SET
NORTHING = 227804.051
EASTING = 540367.809

PT STA. 0+197.065
N.T.S.



STA 0+266.405
PK SET
NORTHING = 227814.371
EASTING = 540436.392

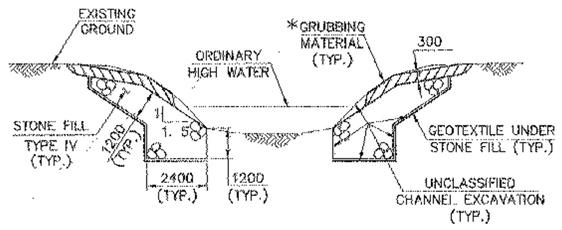
PC STA. 0+266.405
N.T.S.



STA 0+350.735
PK SET
NORTHING = 227829.619
EASTING = 540519.296

PT STA. 0+350.735
N.T.S.

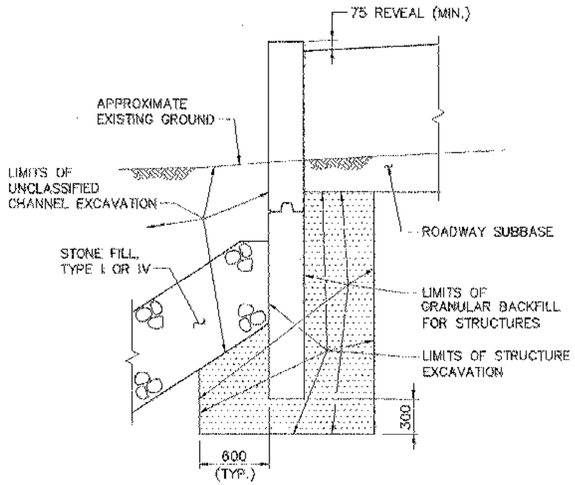
ALIGNMENT TIES



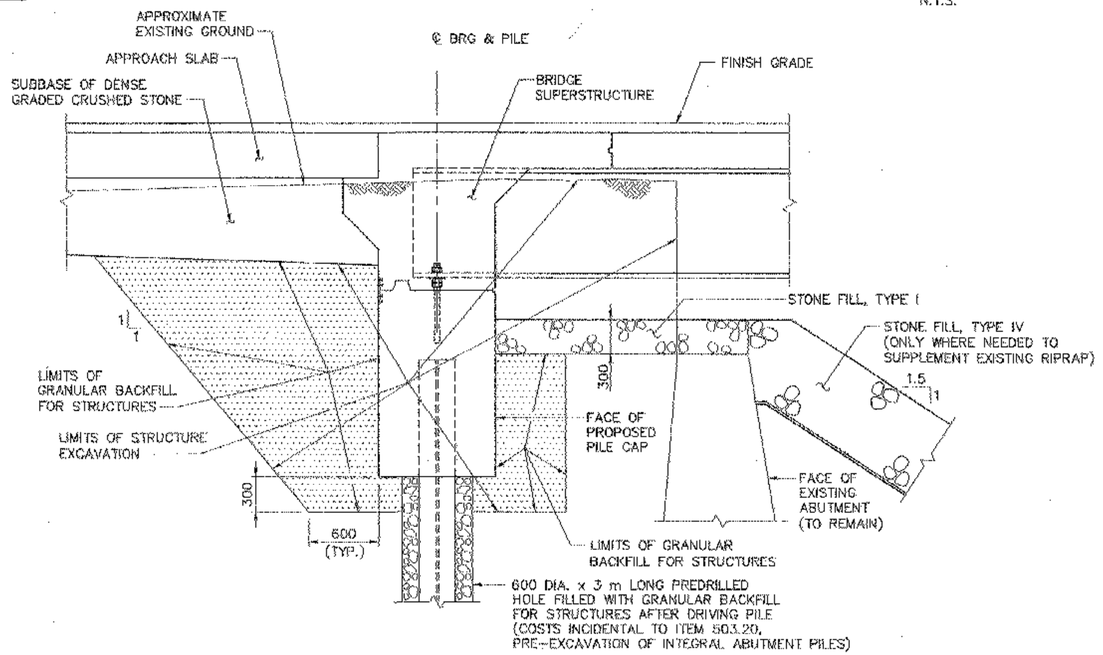
TYPICAL CHANNEL SECTION
NOT TO SCALE

* GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.

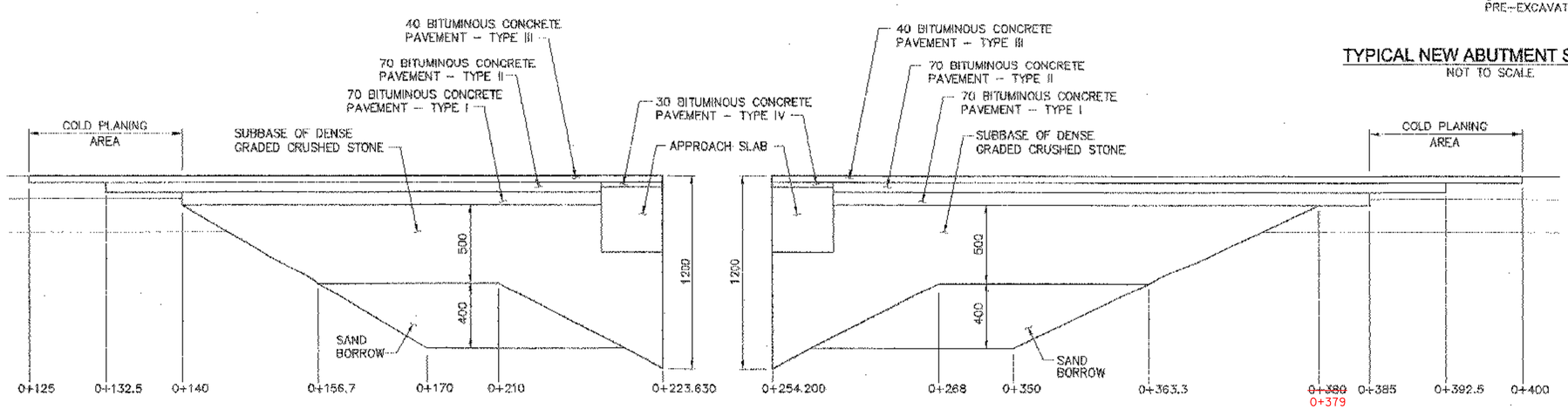
RETAIN EXISTING HEAVY RIPRAP. SUPPLEMENT WITH STONE FILL, TYPE IV OUTSIDE THE LIMITS OF RIPRAP TO Q100 ELEVATION AT WINGWALLS



TYPICAL WINGWALL SECTION
NOT TO SCALE



TYPICAL NEW ABUTMENT SECTION
NOT TO SCALE.



SUBBASE TRANSITION DETAIL
STATIONS ALONG ℄
(ELEVATION IN CUT AND FILL)
NOT TO SCALE

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83-92

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.

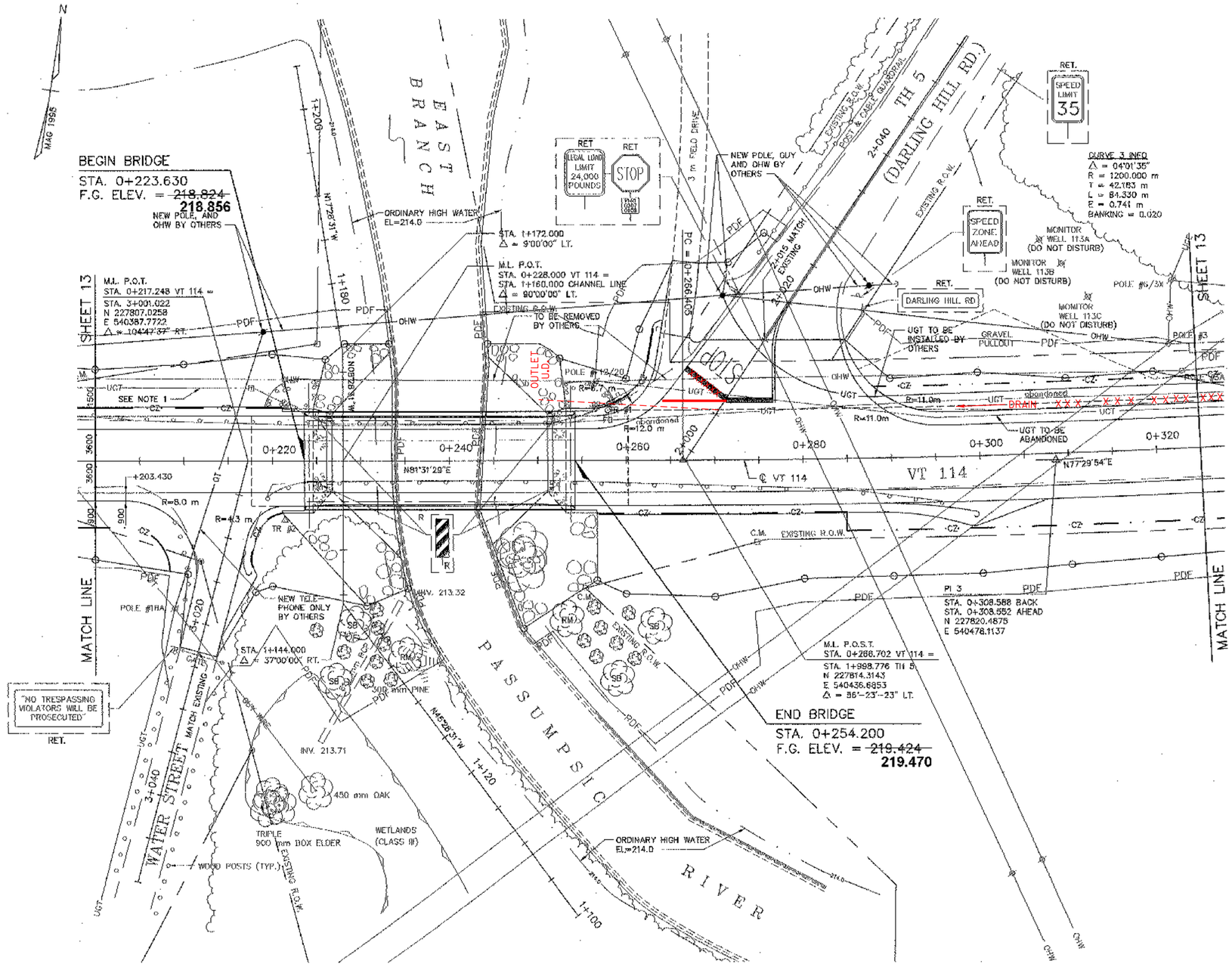
VT 114 OVER PASSUMPSIC RIVER

TIE SHEET AND TYPICAL DETAILS

Designed By EIV/S.M. GUNN	Drawn By B.J. MASSE
Checked By S.M.G./M.A.C. Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No: 505447E	Sheet 11 of 72

VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006



EXISTING LEGEND

- EXISTING GUARDRAIL
- TREELINE
- OHW — OVERHEAD UTILITY
- UGT — UNDERGROUND TELEPHONE
- UGE — UNDERGROUND ELECTRIC
- CENTERLINE DITCH
- CULVERT
- UTILITY POLE W/GUY
- SIGN
- TELEPHONE MARKER
- TR #1 — TRAVERSE POINT
- —PDF— PROJECT DEMARCATION FENCE DEFINING LIMITS OF DISTURBANCE

SIGN LEGEND

N = NEW
R = REMOVE
RET = RETAIN
R&S = REMOVE & SALVAGE
S = SALVAGE
R&RI = REMOVE AND REINSTALL SIGN

TREE LEGEND

RM = RED MAPLE
SB = SERVICEBERRY
= RED STEM DOGWOOD

PLAN

SCALE: 1:250

GRAPHIC SCALE
(IN METERS)
5 0 5 10 15 20 25

EXISTING STRUCTURE
SINGLE SPAN STEEL BEAM, CONCRETE DECK
OVERALL LENGTH 25.55 m
CONCRETE SPILL THROUGH ABUTMENTS
BRIDGE WIDTH RAIL TO RAIL 6.25 m
BUILT IN 1938

VAOT Metric

CONSTRUCTION NOTES

REMOVAL AND DISPOSAL OF GUARDRAIL
STA. 0+200.0 – 0+226.1 LT.
STA. 0+208.0 – 0+211.0 RT.
STA. 0+219.5 – 0+226.1 RT.
STA. 0+251.7 – 0+261.7 LT.
STA. 0+251.7 – 0+295.6 RT.

HEAVY DUTY STEEL BEAM GUARDRAIL
STA. 0+200.00 – 0+213.15 LT.
STA. 0+263.00 – 0+263.93 LT.
STA. 0+264.69 – 0+299.~~69~~ RT.
STA. 0+217 RT 59

GUARDRAIL APPROACH SECTION, NETC 2 RAIL
STA. 0+213.15 – 0+220.77 LT.
STA. 0+216.85 – 0+220.79 RT.
STA. 0+257.~~09~~17 – 0+263.00 LT.
STA. 0+257.~~07~~17 – 0+264.69 RT.

BRIDGE RAILING – NETC 2 RAIL
STA. 0+220.77 – 0+257.~~07~~17 LT. & RT.

ANCHOR FOR STEEL BEAM RAIL
~~STA. 0+216.85 RT. 0+295.00 RT~~ } 0+295.79 RT
~~STA. 0+263.93 LT. 0+176.00 LT~~ } REVISED 12/06
~~STA. 2+014.00 LT.~~ 0+263 LT 0+217 RT

DURABLE 100 mm WHITE LINE
STA. 0+200.0 – 2+020.0 LT.
STA. 2+020 RT. – 0+325.0 LT.
STA. 0+200.0 – 0+325.0 RT.

DURABLE 100 mm YELLOW LINE (DOUBLE CENTER LINE)
STA. 0+200.0 – 0+271.0
STA. 0+283.0 – 0+325.0
STA. 2+009.75 RT. – 2+020.0

DURABLE 600 mm STOP BAR
STA. 2+007.10 LT. – RT.

DURABLE LETTER OR SYMBOL (STOP)
STA. 2+010.0 LT.

UNDERDRAIN FLUSHING BASIN
~~STA. 0+258.0 LT.~~

150 mm UNDERDRAIN (MOD.) 150mm UNDERDRAIN CARRIER PIPE
STA. ~~0+258.0 – 0+325.0~~ LT.
0+260 – 0+308

SHOULDER TAPERS*
0+140.0 LT. (900 mm) TO 0+200.0 LT. (1500 mm)
0+203.43 RT. (900 mm) TO 0+220.0 RT. (1500 mm)
0+350.0 LT. (1500 mm) TO 0+400.0 LT. (900 mm)
0+350.0 RT. (1500 mm) TO 0+400.0 RT. (900 mm)

* SEE SHEET 25, GENERAL NOTE 5 FOR ADDITIONAL INFORMATION ON EXISTING LANE AND SHOULDER WIDTHS.

NOTES:

1. UNDERGROUND TELEPHONE (UGT) WEST OF POLE #12/20 HAS BEEN ABANDONED.
2. EXISTING SIGN LOCATIONS MAY BE DIFFERENT THAN THOSE SHOWN ON THE PLANS.
3. THE CONTRACTOR SHALL COORDINATE FINAL LOCATIONS OF TREES AND SHRUBS WITH THE RESIDENT ENGINEER.

VERTICAL CURVES REVISED 12/06 BY RRW

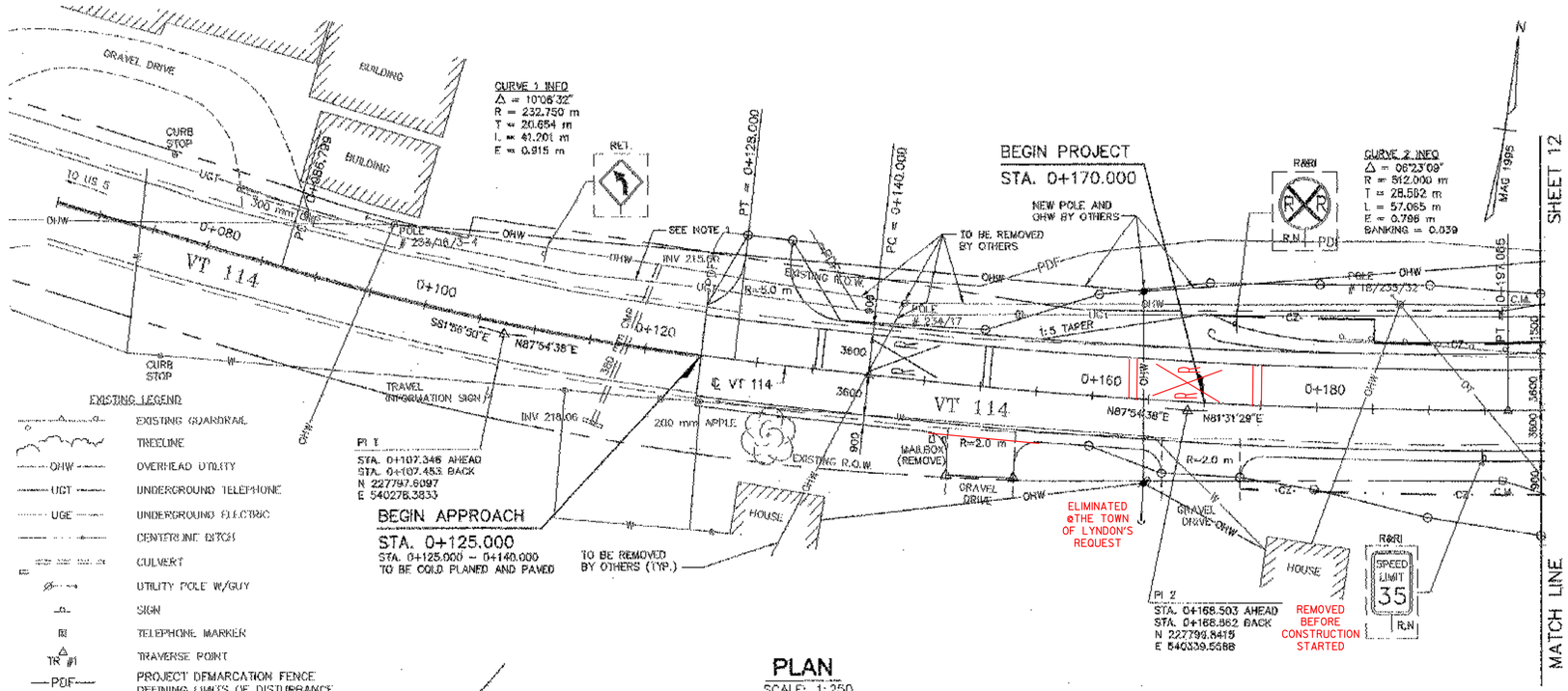
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
PLAN (1 OF 2)	
Designed By S.M. GUNN	Drawn By B.J. MASSE
Checked By S.M.G. / J.T.K. Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544PLN	Sheet 12 of 72 (REVISED)

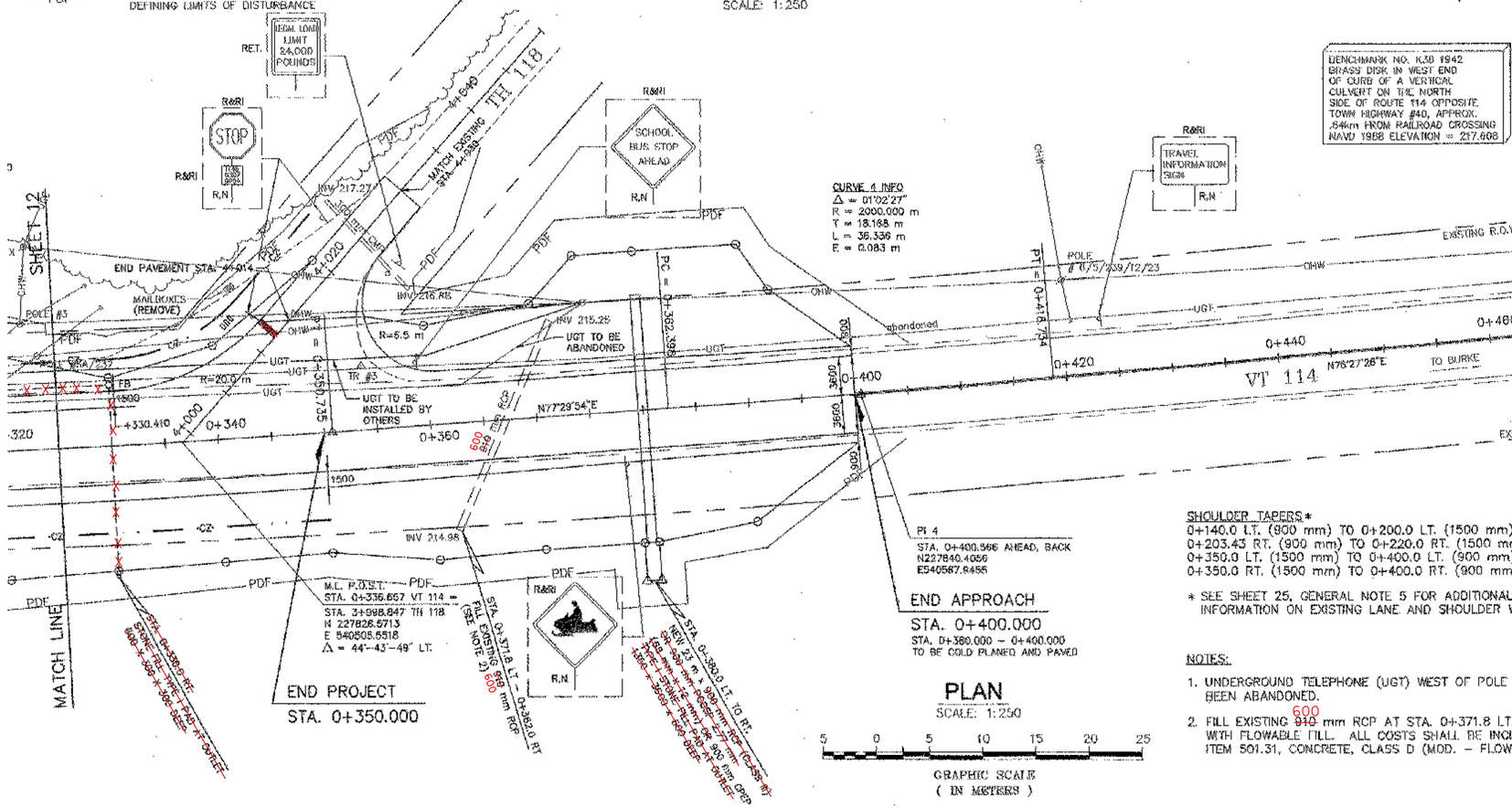
VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006

Metric



PLAN
SCALE: 1:250



PLAN
SCALE: 1:250

GRAPHIC SCALE (IN METERS)
5 0 5 10 15 20 25

BENCHMARK NO. K38 1942
BRASS DISK IN WEST END OF CURB OF A VERTICAL CULVERT ON THE NORTH SIDE OF ROUTE 114 OPPOSITE TOWN HIGHWAY #40, APPROX. .54km FROM RAILROAD CROSSING
NAVD 1988 ELEVATION = 217.608

CONSTRUCTION NOTES

REMOVAL AND DISPOSAL OF GUARDRAIL
STA. 0+182.1 – 0+200.0 LT.

HEAVY DUTY STEEL BEAM GUARDRAIL
STA. 0+170.43 ~~– 0+200.00~~ LT.
.63

DURABLE 100 mm WHITE LINE
0+120 STA. ~~0+125.0~~ – 0+200.0 LT. & RT.
STA. 0+325.0 – 0+335.0 LT.
STA. 0+359.0 – ~~0+400.0~~ LT. 0+401.3
STA. 0+325.0 – ~~0+400.0~~ RT. 0+401

ANCHOR FOR STEEL BEAM RAIL
STA 0+174.43 LT

DURABLE 100 mm YELLOW LINE (DOUBLE CENTER LINE)
STA. 0+125.0 – 0+200.0
STA. 0+325.0 – 0+339.0
STA. 0+351.0 – 0+400.0

YIELDING MARKER POSTS
STA. 0+380.0 LT. & RT.

DURABLE RAILROAD CROSSING SYMBOL
STA. ~~0+143.0~~ LT.
0+170

COLD PLANING – BITUMINOUS PAVEMENT
STA. 0+125.0 – ~~0+140.0~~ 0+148.5
STA. ~~0+380.0~~ – 0+400.0
0+381.54

CONCRETE, CLASS D (MOD. – FLOWABLE FILL)
STA. 0+371.8 LT. – STA. 0+382.0 RT.

UNDERDRAIN FLUSHING BASIN
STA. ~~0+330.0 LT.~~

150 mm UNDERDRAIN (MOD.)
~~STA. 0+325.0 – 0+330.0 LT.~~

150 mm UNDERDRAIN CARRIER PIPE
~~STA. 0+330.0 LT. – 0+330.0 RT.~~

RELOCATE MAILBOX, SINGLE SUPPORT
~~STA. 0+146.0 RT.~~
~~STA. 4+010.0 LT.~~

CONSTRUCT FIELD DRIVE (AGGREGATE SURFACE COURSE)
STA. 0+130.0 LT.

DURABLE 600 mm STOP BAR
~~STA. 4+012.00 LT.~~

SIGN LEGEND
N = NEW
R = REMOVE
RET = RETAIN
R&S = REMOVE & SALVAGE
S = SALVAGE
R&RI = REMOVE AND REINSTALL SIGN

SHOULDER TAPERS *
0+140.0 LT. (900 mm) TO 0+200.0 LT. (1500 mm)
0+203.43 RT. (900 mm) TO 0+220.0 RT. (1500 mm)
0+350.0 LT. (1500 mm) TO 0+400.0 LT. (900 mm)
0+350.0 RT. (1500 mm) TO 0+400.0 RT. (900 mm)

* SEE SHEET 25, GENERAL NOTE 5 FOR ADDITIONAL INFORMATION ON EXISTING LANE AND SHOULDER WIDTHS.

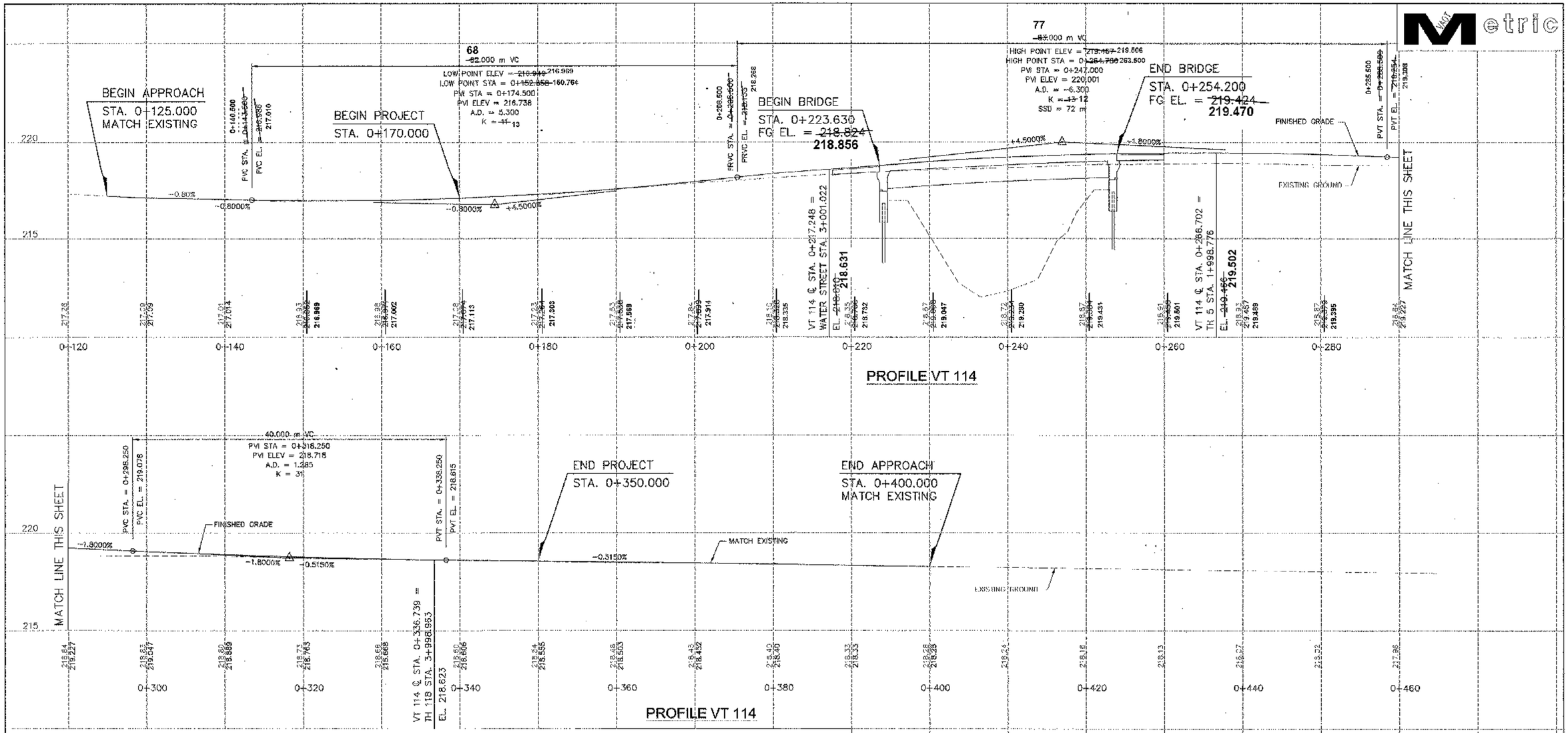
NOTES:
1. UNDERGROUND TELEPHONE (UGT) WEST OF POLE #12/20 HAS BEEN ABANDONED.
2. FILL EXISTING ~~910~~ 600 mm RCP AT STA. 0+371.8 LT. – STA. 0+382.0 RT. WITH FLOWABLE FILL. ALL COSTS SHALL BE INCLUDED IN ITEM 501.31, CONCRETE, CLASS D (MOD. – FLOWABLE FILL).

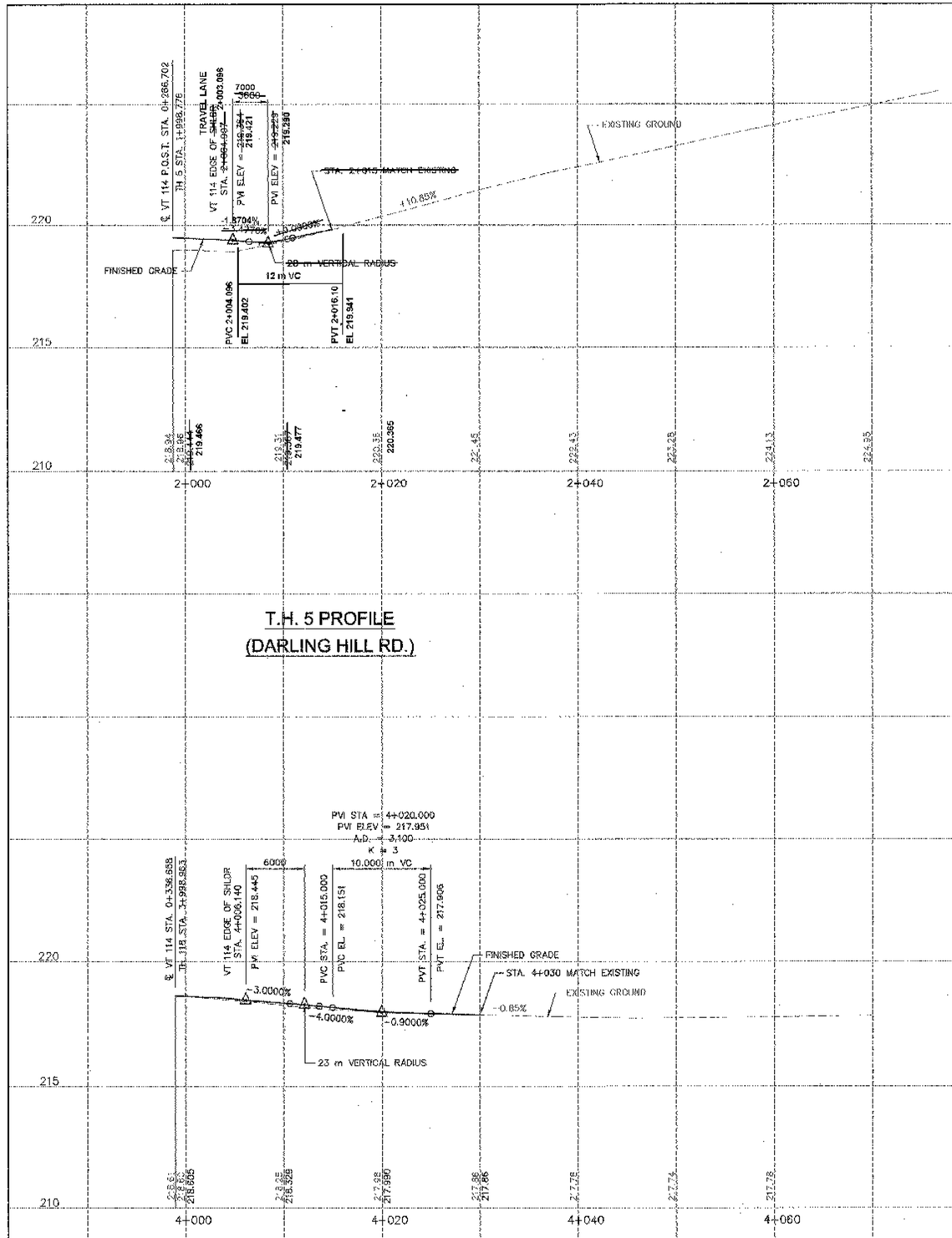
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
PLAN (2 OF 2)	
Designed By S.M. GUNN	Drawn By B.J. MASSE
Checked By S.M.G. / J.T.K. Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.C.C. Info.	
Bridge Sheet No. 50644PLN	Sheet 13 of 72

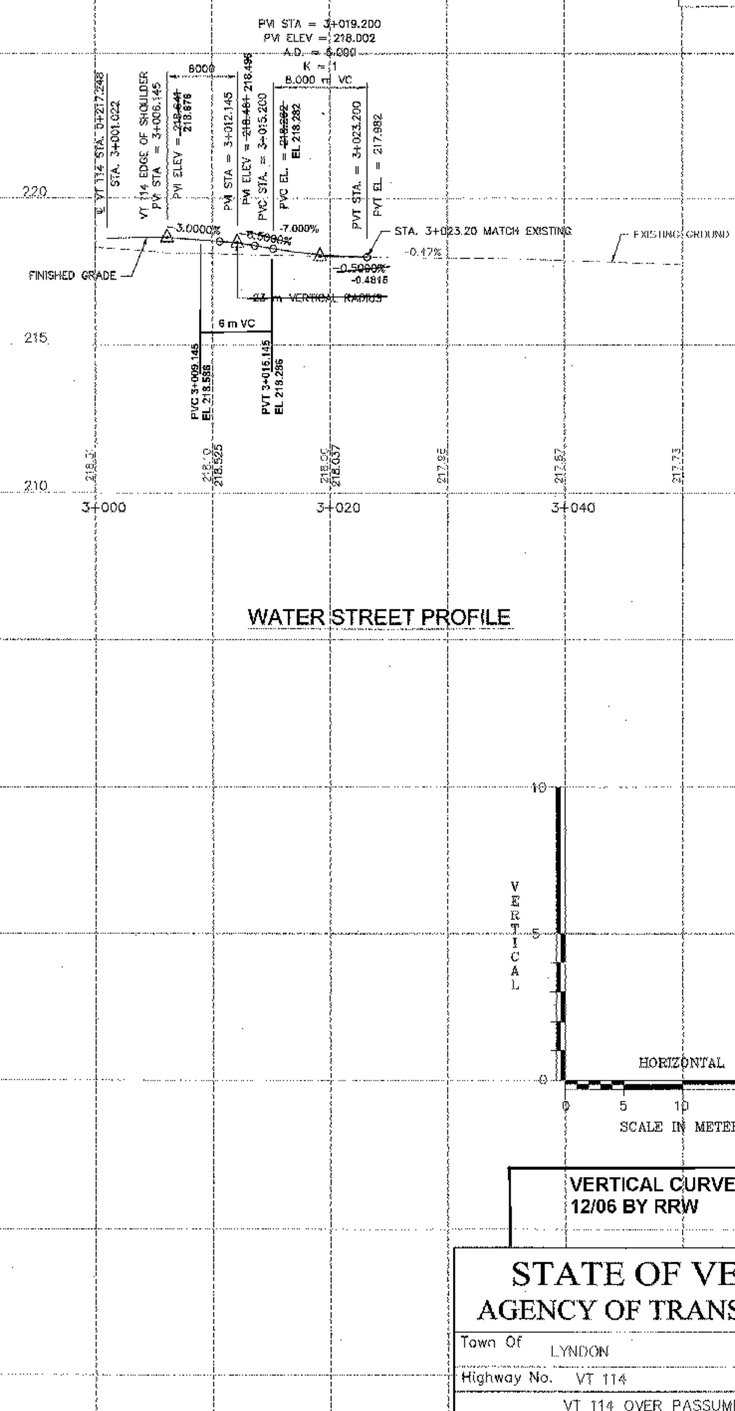
VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006


BEGIN APPROACH
STA. 0+125.000
MATCH EXISTING
BEGIN PROJECT
STA. 0+170.000
68
~~82~~.000 m VC
LOW POINT ELEV = ~~218.949~~ 216.969
LOW POINT STA = 0+~~152.858~~ 160.764
PVI STA = 0+174.500
PVI ELEV = 216.736
A.D. = 5.300
K = ~~11~~ 13
PVC STA. = 0+140.500
PVC EL. = 217.016
PRVC STA. = 0+208.500
PRVC EL. = 218.268
BEGIN BRIDGE
STA. 0+223.630
FG EL. = ~~218.824~~ 218.856
77
~~83~~.000 m VC
HIGH POINT ELEV = ~~219.457~~ 219.506
HIGH POINT STA = 0+~~264.768~~ 263.500
PVI STA = 0+247.000
PVI ELEV = 220.001
A.D. = ~~6.300~~
K = ~~13~~ 12
SSD = 72 m
END BRIDGE
STA. 0+254.200
FG EL. = ~~219.424~~ 219.470
PVT STA. = 0+285.500
PVT EL. = ~~219.254~~ 219.308
FINISHED GRADE
EXISTING GROUND
-0.80%
-0.8000%
-0.8000%
+4.5000%
+4.5000%
-1.8000%
VT 114 ℄ STA. 0+217.248 = WATER STREET STA. 3+001.022
EL. ~~218.010~~ 218.631
VT 114 ℄ STA. 0+266.702 = TH 5 STA. 1+998.776
EL. ~~219.466~~ 219.502
MATCH LINE THIS SHEET
0+120
0+140
0+160
0+180
0+200
0+220
0+240
0+260
0+280
PROFILE VT 114
40.000 m VC
PVI STA = 0+318.250
PVI ELEV = 218.718
A.D. = 1.285
K = 31
PVC STA. = 0+298.250
PVC EL. = 219.078
PVT STA. = 0+338.250
PVT EL. = 218.615
END PROJECT
STA. 0+350.000
END APPROACH
STA. 0+400.000
MATCH EXISTING
FINISHED GRADE
EXISTING GROUND
-1.8000%
-1.8000%
-0.5150%
-0.5150%
MATCH LINE THIS SHEET
VT 114 ℄ STA. 0+336.739 = TH 118 STA. 3+998.953
EL. 218.623
0+300
0+320
0+340
0+360
0+380
0+400
0+420
0+440
0+460
PROFILE VT 114
SUPERELEVATION (m/m)
+0.050
+0.040
+0.030
+0.020
+0.010
0.000
-0.010
-0.020
-0.030
-0.040
-0.050
-0.060
-0.100
PC 0+140.000
0+155
0+185
PT 0+197.065
BEGIN APPROACH SLAB at STA. 0+217.650
BEGIN BRIDGE 0+223.630
END BRIDGE 0+254.200
END APPROACH SLAB at STA. 0+280.200
PC 0+266.405
PT 0+350.735
+0.039
+0.020
RIGHT EDGE +0.020
LEFT EDGE −0.020
LEFT SHLDR −0.020
−0.031
RIGHT SHLDR −0.050
−0.020
−0.056
1:219
1:200
1:196
1:187
1:288
1:277
1:173
1:370
BEGIN PROJECT 0+170
END PROJECT 0+350
BEGIN APPROACH 0+125
END APPROACH 0+400
BANKING DIAGRAM
(emax. = 0.06, 60 km/h)
VERTICAL
HORIZONTAL
SCALE IN METERS
VERTICAL CURVES REVISED 12/06 BY RRW
STATE OF VERMONT
AGENCY OF TRANSPORTATION
Town Of LYNDON
Bridge No. 2
Highway No. VT 114
Log Sta.
Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER
VT 114 PROFILE AND BANKING DIAGRAM
Designed By S.M. GUNN
Drawn By B.J. MASSE
Checked By S.M. GUNN
Date 3/06
Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON
PROJECT NO. BRF 0269(10)
I.G.C. Info.
Bridge Sheet No. 50544PR0
Sheet 14 of 72 (REVISED)
VHB Vanasse Hangen Brustlin, Inc.
PLOTTED 3-14-2006

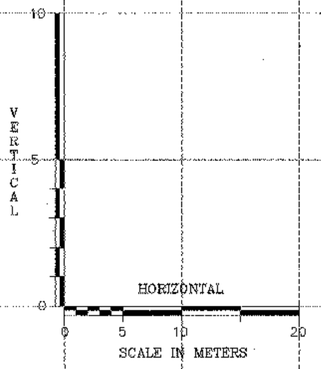


T.H. 5 PROFILE
(DARLING HILL RD.)



WATER STREET PROFILE

T.H. 118 PROFILE



VERTICAL CURVES REVISED 12/06 BY RRW

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
TOWN HIGHWAY PROFILES	
Designed By S.M. GUNN	Drawn By B.J. MASSE
Checked By S.M. GUNN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544PR2	Sheet 15 of 72 **(REVISED)**

VHB *Vanasse Hangen Brustlin, Inc.*

PLOTTED 3-14-2006

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

Metric

KILOMETER MARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS EA	WIDTH (mm)	HEIGHT (mm)	NEW & SALVAGED SIGNS "A"	"B"	SALV SIGN	SALV TIS	EXIST POST RETAIN	EXIST POST SALVAGE	NO. OF POSTS	FLANGED CHANNEL kg/m 1.7	3.0	4.5	SQUARE STEEL (mm) kg/m 44 3.4	50 3.9	63 5.0	ANCHOR	SLEEVE	NEW SIGN POSTS TUBULAR ALUMINUM Ø (mm) kg/m 75 1.9	100 2.5	100 MOD 2.5	TUBULAR STEEL Ø (mm) FOUNDATION	75 11.3	89 13.4	100 16.1	125 21.7	W-SHAPE STEEL FTG. SIZE 600 mm	750 mm	WEIGHT	POST SIZE	SIGN FRAME REQUIRED	REMARKS	SIGN DETAIL DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
												OPTION ITEMS																								
SIGN #1 (SEE NOTE 1)	DO NOT STOP ON TRACKS	1	600	750	0.45						1			X			X																		
0+173 LT	RR						1				1			X			X																		
0+195 RT	SPEED LIMIT 35						1				1			X			X																		
0+360 0+359 LT	SCHOOL BUS STOP AHEAD						1				1			X			X																		
NO SIGN ON PROJECT 0+378 RT							1				1			X			X																		
0+423 0+424 LT	TRAVEL INFORMATION SIGN						1				~~X~~2			X			X																		
0+469 LT	SPEED LIMIT 35						1				1			X			X																		
4+023 LT	STOP						2				1			X			X																		
2+018 LT	LEGAL LOAD LIMIT 24,000 POUNDS; STOP						2																												
DARLING HILL RD 2+018 LT (DETOUR)	STOP						~~1~~	~~1~~			~~1~~			X																					
	SUBTOTAL:											m	m	m 35.0	m	m	m 35.0		EA	kg	kg	kg		kg	kg	kg	kg								
	TOTALS		m² 0.45	m²	EA. ~~3~~ 11	m²						m ~~42~~ 46.3			m 40					kg			EA.	kg				EA.	EA.	kg					

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

AVERAGE POST LENGTH 5.0 m

NOTES:

1. SIGN #1 SHALL BE PLACED 25 FT WEST OF THE CENTERLINE OF RAILROAD TRACKS ON RIGHT SIDE OF VT 114.

VHB Vanasse Hangen Brustlin, Inc.

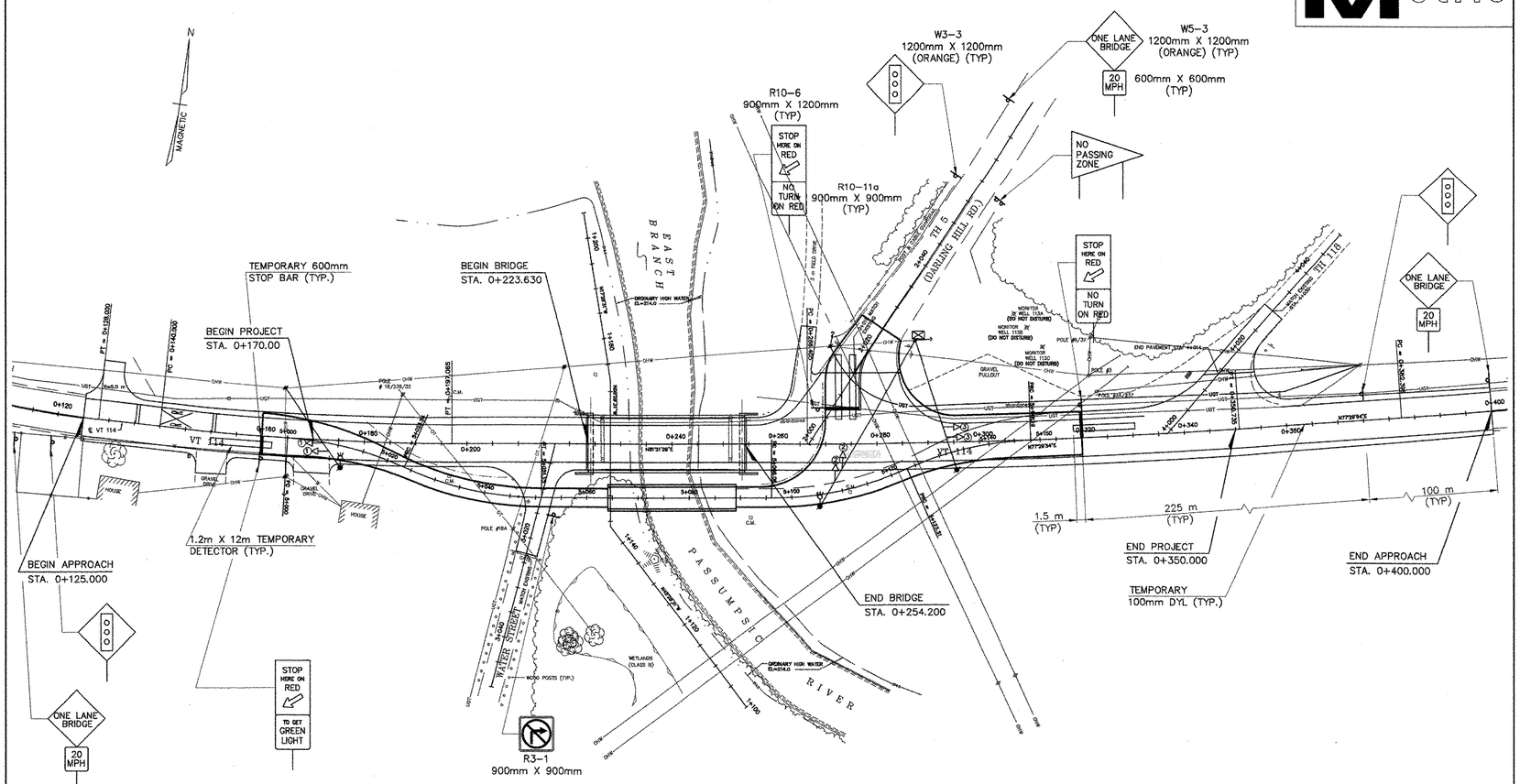
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta.
	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
TRAFFIC SIGN SUMMARY SHEET	
Designed By L.S. GARDNER	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544TS	Sheet 16 of 72

PLOTTED 3-14-2006

GENERAL
TEMPORARY TRAFFIC SIGNAL NOTES

1. DESIGN OF THE SIGNAL SUPPORT(S) AND ANY REQUIRED GUYING IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE APPROVED BY VAOT IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 105.03.
2. SIGNAL TIMING/TIMING ADJUSTMENTS REQUESTED BY THE RESIDENT ENGINEER SHALL BE ACCOMPLISHED WITHIN A 48 HOUR PERIOD AND PAYMENT SHALL BE INCIDENTAL TO THE TRAFFIC SIGNAL ITEM. THE ALL–RED CLEARANCE INTERVAL IS BASED ON AN ASSUMED SPEED OF 15–30km/h, THE RESIDENT ENGINEER SHALL MAKE SEVERAL TRIAL RUNS TO DETERMINE THE PROPER ALL–RED CLEARANCE INTERVAL.
3. SIGNAL FACES SHALL CONSIST OF 300 mm LENSES. (RED, YELLOW, AND GREEN)
4. THE BOTTOM OF THE HOUSING OF A SIGNAL FACE SUSPENDED OVER A ROADWAY SHALL NOT BE LESS THAN 5.0 m NOR MORE THAN 5.8 m ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY. THE BOTTOM OF A SIGNAL FACE NOT MOUNTED OVER A ROADWAY, SHALL NOT BE LESS THAN 2.4 m NOR MORE THAN 4.6 m ABOVE THE GROUND. CAUTION SHOULD BE USED TO ENSURE COMPLIANCE WITH THE HEIGHT REQUIREMENTS IN THE EVENT THE NEW APPROACH GRADES DIFFER SIGNIFICANTLY FROM THE OLD ROAD GRADE.
5. SIGNAL FACES FOR ANY ONE APPROACH SHALL NOT BE LESS THAN 2.4 m APART MEASURED HORIZONTALLY BETWEEN CENTER OF FACES.
6. SIGNAL HEADS MAY BE HUNG ON A SPAN WIRE OR ON A CANTILEVER MAST ARM. AT LEAST ONE SIGNAL HEAD SHALL BE UNMISTAKABLY IN LINE WITH THE CENTER OF APPROACHING TRAFFIC AT ALL TIMES. THE SECOND SIGNAL HEAD MAY BE POST MOUNTED, LOCATED AT A DISTANCE NO GREATER THAN 4.4 m FROM THE CENTER OF THE APPROACH LANE WHEN THE STOP BAR IS 12 m FROM THE SIGNAL HEAD. CONSULT THE M.U.T.C.D. FOR ADDITIONAL INFORMATION CONCERNING SIGNAL PLACEMENT.
7. SIGNAL HEAD PLACEMENT IS CRITICAL. HEADS SHALL BE ADJUSTED TO REFLECT LANE LOCATION CHANGES.
8. THE SIGNAL SYSTEM SHALL CONSIST OF POLES, SIGNS AND POSTS, WARNING SIGN, LUMINAIRES, FLASHING BEACONS, AND SIGNAL EQUIPMENT TO PROVIDE FOR AN ADEQUATE DESIGN AND SHALL BE APPROVED BY VAOT IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 105.03. IT ALSO INCLUDES PERMITS AND COST ASSOCIATED WITH PROVIDING ELECTRICAL POWER.
9. THE CONTRACTOR SHALL PROVIDE AN ACTUATED CONTROLLER. THE APPROACHES NOTED SHALL HAVE A TEMPORARY VEHICLE DETECTOR. THE TYPE OF DETECTION SHALL BE AT THE OPTION OF THE CONTRACTOR. LOOPS ARE SHOWN FOR PLACEMENT PURPOSES ONLY. THE CONTROLLER, DETECTOR AND ALL OTHER SIGNAL EQUIPMENT SHALL MEET OR EXCEED ALL NEMA STANDARDS.
10. WHEN USED, VEHICLE DETECTOR LOOPS SHALL BE 1.2 m X 12 m FOR PRESENCE DETECTION AT THE STOP BAR WITH THE NEAR PORTION LOCATED 1.5 m BEYOND THE STOP BAR.
11. ON A SEMI–ACTUATED SIGNAL, PARTICULARLY WITH LONG BRIDGES, THE CONTROLLER SHOULD BE LOCATED ON THE SAME SIDE OF THE BRIDGE AS THE DETECTOR.
12. INTERVAL TIMING SHOWN IN SECONDS.
13. INTERCONNECT BETWEEN SIGNAL POLES BY WHATEVER MEANS POSSIBLE OR CONVENIENT TO PROVIDE FOR A SAFE INSTALLATION.
14. PLACE TEMPORARY POLES BEHIND GUARDRAIL WHERE PRACTICAL.
15. POLES SUPPORTING SPAN WIRES AND/OR MAST ARMS SHALL BE ADEQUATELY BRACED OR GUYED AND SHALL NOT BE PLACED SO AS TO CREATE A HAZARD TO THE TRAVELLING PUBLIC.
16. ALL TEMPORARY SIGNAL EQUIPMENT, SIGNS, ETC., SHALL BELONG TO THE CONTRACTOR AT THE END OF THE PROJECT AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL, INCLUDING ANY TEMPORARY PAVEMENT MARKINGS, UTILITY POLES, WIRES, ETC.
17. A 250 WATT MER/150 WATT HPS LUMINAIRE AND MAST ARM SHALL BE PROVIDED ON A POLE ON EACH APPROACH AT A MOUNTING HEIGHT OF 9 m ABOVE ROADWAY CENTERLINE. THE INTENT IS TO LIGHT UP THE AREA AROUND THE SIGNAL HEADS AND STOP BAR FOR INCREASED VISIBILITY. THE RESIDENT ENGINEER SHALL DETERMINE THE ADEQUACY OF THE LIGHTING AND DIRECT CHANGES IF THE LIGHTING IS INSUFFICIENT.
18. STOP BARS SHALL BE LOCATED A MINIMUM OF 12 m AND A MAXIMUM OF 36 m FROM THE NEAREST SIGNAL HEAD.
19. PAYMENT FOR THE VEHICLE DETECTORS SHALL BE FOR EACH UNIT INSTALLED.
20. SIGNS AND POSTS AS SHOWN ON THIS SHEET AND NOTED BELOW ARE INCIDENTAL TO THE TRAFFIC CONTROL SIGNAL ITEMS ("STOP HERE ON RED", "SIGNAL AHEAD", "NO PASSING ZONE", AND "TO GET GREEN LIGHT" ETC.) THE TEMPORARY STOP BARS SHOULD BE PAID UNDER THE TEMPORARY 600 mm STOP BAR ITEM.
21. SEE STD. E–140 FOR "STOP HERE ON RED" SIGN DETAIL AND E–101 FOR "SIGNAL AHEAD" SYMBOL SIGN. SEE STANDARD E–121 FOR SIGN PLACEMENT. SEE STANDARD E–171A AND E–172 FOR ADDITIONAL INFORMATION ON SIGNALS AND DETECTORS.
22. A "SIGNAL AHEAD" SIGN SHALL BE PLACED AT LEAST 225 m FROM THE SIGNAL OR AT A POSITION TO BE DETERMINED BY THE ENGINEER.
23. THE "NO PASSING" SIGN SHALL BE USED TO PREVENT PASSING FOR 225 m IN ADVANCE OF THE STOP BAR. THE SIGN SHALL BE PER STANDARD E–102.
24. ALL ELECTRICAL WORK SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND STATE INSPECTOR.
25. APPROACH WIDTHS SHALL BE AS DETAILED IN SECTION 528.04 TO MINIMIZE VEHICLE DELAY.
26. TRAFFIC CONTROL WARNING SIGNS SHALL BE PROVIDED ON EACH APPROACH PER STANDARD E–107. ADDITIONAL PROJECT CONSTRUCTION SIGNS SHALL BE INSTALLED AS REQUIRED BY THE RESIDENT ENGINEER PER STANDARD E–100, E–101, E–102 & E–102A. PAYMENT FOR THESE SIGNS, THE REFLECTORIZED PLASTIC DRUMS, ETC, SHALL BE PAID AS A PART OF THE "TRAFFIC CONTROL" ITEM.
27. IN SITUATIONS WHERE EXISTING PASSING ZONES EXTEND THROUGH THE AREA BETWEEN THE STOP BAR AND THE "NO PASSING ZONE" SIGN, THEN TEMPORARY DOUBLE YELLOW LINES SHALL BE INSTALLED FROM THE STOP BAR TO THE "NO PASSING ZONE" SIGN. THESE MARKINGS SHALL BE PAID UNDER ITEM 641.10.
28. TEMPORARY TRAFFIC BARRIER SHOULD BE SUBSTITUTED FOR THE CHANNELIZING DEVICES SHOWN WHEN ANY OF THE FOLLOWING ARE MET:
    A.) THE BRIDGE DECK IS REMOVED
    B.) THE BRIDGE RAIL IS REMOVED, OR
    C.) IN THE JUDGEMENT OF THE RESIDENT ENGINEER TEMPORARY BARRIER IS NEEDED.
29. WHEN TEMPORARY BARRIER IS USED, BARRIER ENDS FACING ONCOMING TRAFFIC SHALL BE TAPERED BEYOND THE CLEAR ZONE, OR PROTECTED WITH AN APPROVED END TREATMENT DESIGNED FOR THE 85TH PERCENTILE SPEED OR THE POSTED SPEED LIMIT OF THE ROADWAY.
30. PAYMENT FOR TEMPORARY BARRIER USED SHALL BE MADE UNDER THE APPROPRIATE ITEM.
31. CONTROLLER SHALL BE PROGRAMMED FOR 3 PHASE SEQUENTIAL OPERATION.
32. PHASE 3 SHALL BE PROGRAMMED FOR MINIMUM RECALL 24 HOURS A DAY AND 7 DAYS A WEEK TO MAXIMIZE GREEN TIME ALLOCATION. IF PHASE 3 IS NOT SET FOR MINIMUM RECALL. PHASE 2 ALL RED CLEARANCE MUST BE CHANGED FROM 5 SECONDS TO 16 SECONDS.



PLAN
1:500

NOTES:

1. ALL SIGNAL RELATED SIGNS SHALL BE REMOVED OR COVERED WHEN THE SIGNAL IS NOT OPERATING.
2. ITEM LOCATIONS ARE APPROXIMATE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONFIRM ANY MEASUREMENTS IN THE FIELD.
4. SEE SHEETS 18 AND 19 FOR DETOUR PLAN AND PROFILE.
5. SIGNAL PHASING TO BE ADJUSTED AS NECESSARY IN THE FIELD. SEE TEMPORARY TRAFFIC SIGNAL NOTE 2.
6. THE "ONE LANE BRIDGE" AND "ROAD WORK AHEAD" SIGNS SHALL BE EQUIPPED WITH FLASHING WARNING LIGHTS. ALL COSTS FOR FLASHING WARNING LIGHTS SHALL BE INCIDENTAL TO ITEM 678.40, TEMPORARY TRAFFIC SIGNAL SYSTEM.
7. THE CONTRACTOR SHALL MODIFY THE TRAFFIC CONTROL PLAN AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION.
8. THE NEED FOR ENERGY ABSORPTION ATTENUATORS IS NOT ANTICIPATED. IF THE CONTRACTOR PROPOSES AN ALTERNATE DETOUR PLAN REQUIRING THEIR USE, THE COSTS WILL BE CONSIDERED INCIDENTAL TO ALL OTHER CONTRACT ITEMS.

SEE TEMPORARY TRAFFIC SIGNAL NOTE 10, 31 AND 32

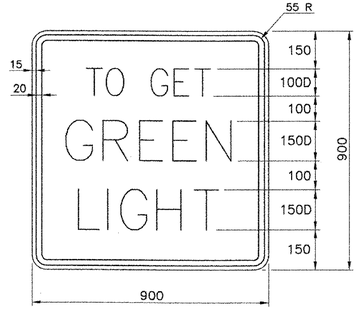
PHASING DIAGRAM AND SPECIAL NOTES FOR EACH LOCATION

PHASE	1			2			3		
MINIMUM	5			5			5		
EXTENSION	2			2			2		
MAXIMUM	20	3	16	15	3	5	20	3	16
HEAD 1	G	Y	R	R	R	R	R	R	R
HEAD 2	R	R	R	G	Y	R	R	R	R
HEAD 3	R	R	R	R	R	R	G	Y	R
	①→			②↙			③←		
	RECALL OFF			RECALL OFF			MINIMUM RECALL ON		

SPECIAL REQUIREMENTS

APPROACH	TEMPORARY VEHICLE DETECTOR	SIGNS MOUNTED AT STOP BAR		
		STOP HERE ON RED	TO GET GREEN LIGHT	NO TURN ON RED
1	✓	✓	✓	
2	✓✓	✓		✓
3	✓	✓		✓

ENTER CHECK MARK IN APPROPRIATE BOX WHEN REQUIRED ON THIS PROJECT



COLORS: BLACK TEXT & BORDER
WHITE REFL. BACKGROUND
MATERIALS: PER STD. E–142

STANDARDS REQUIRED:

E–100, E–101, E–102, E–102A, E–106, E–107, E–107A, E–110, E–121, E–140, E–142, E–170, E–171A, E–171B, E–171C, E–172, E–175

LEGEND

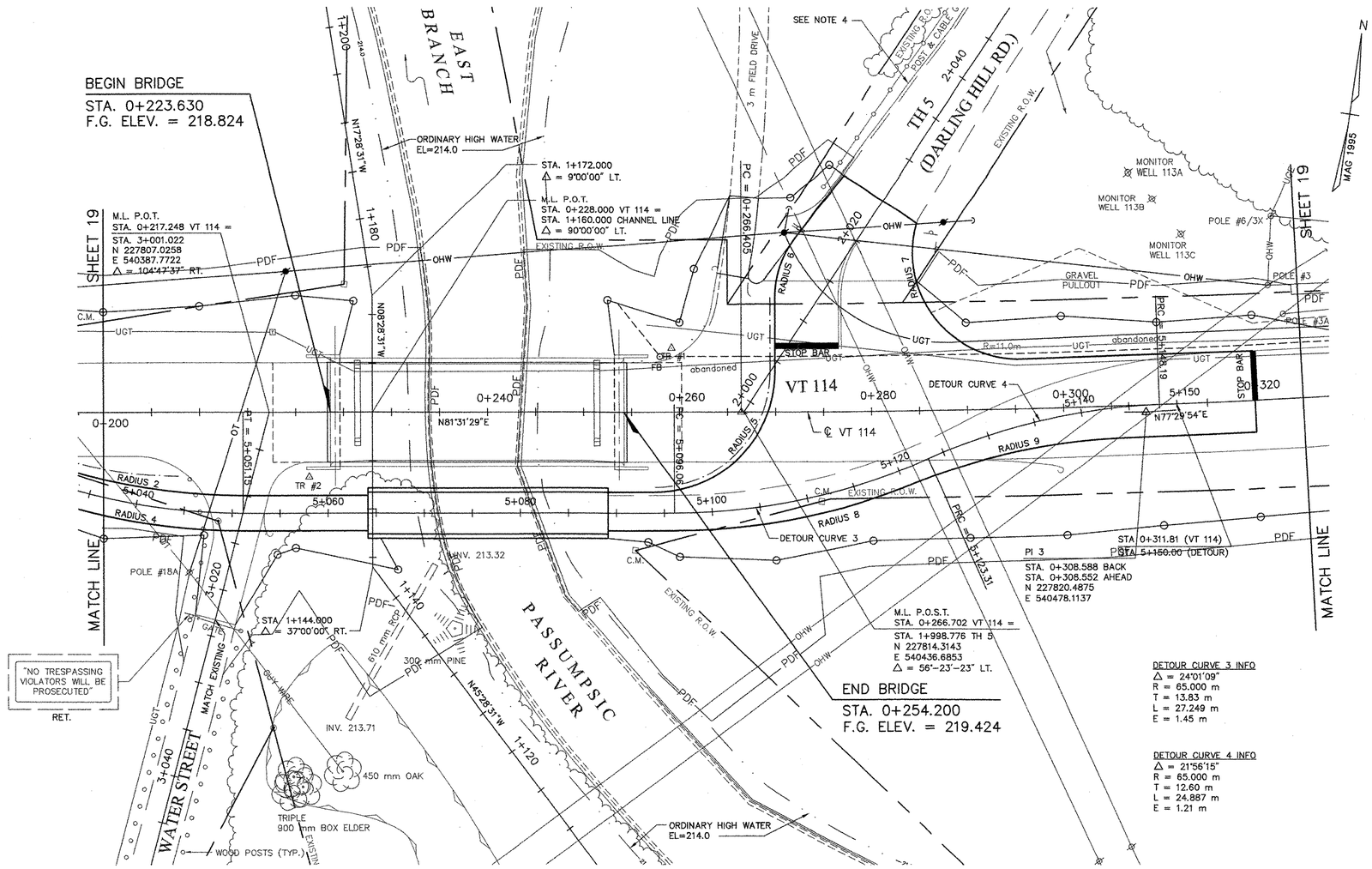
- TEMPORARY TRAFFIC SIGNAL CONTROLLER CABINET
- TRAFFIC SIGNAL POLE WITH LUMINAIRE
- SIGNAL HEAD AND PHASE
- REFLECTORIZED PLASTIC DRUM (SEE STD. E–106) DRUM SPACING (IN METERS) IS EQUAL TO DETOUR SPEED DIVIDED BY 5.33 (IN km/h)
- TYPE III BARRICADES (SEE STD. E–107A)
- TYPE III BARRICADES (MOD.) (SEE STD. E–107A)
- PAVEMENT MARKING REMOVAL
- FLASHING BEACON
- TEMPORARY CONCRETE TRAFFIC BARRIER

VHB Vanasse Hangen Brustlin, Inc.

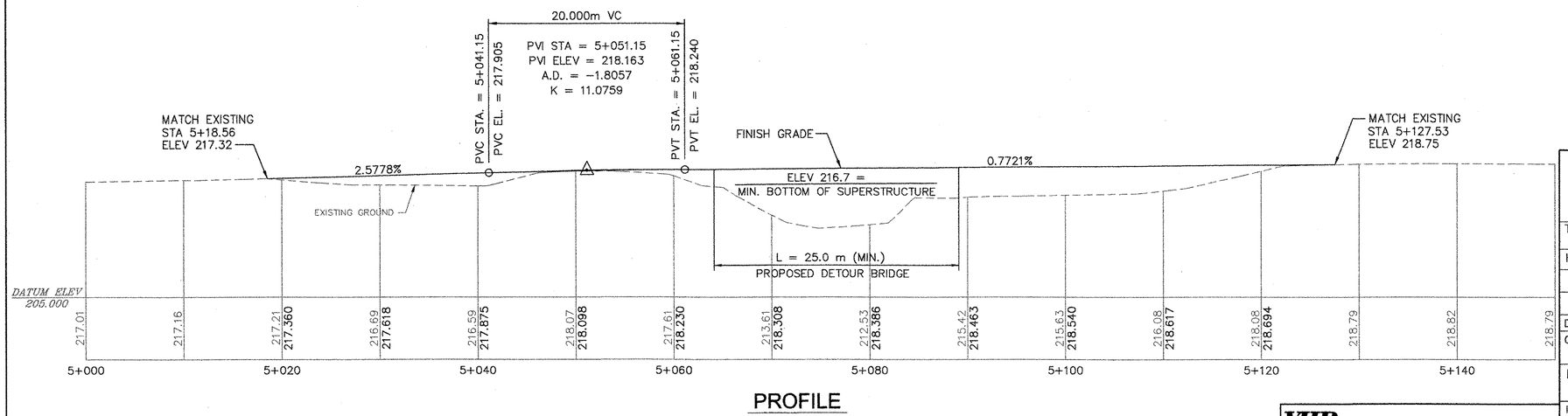
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
TRAFFIC CONTROL PLAN	
Designed By C.M. BOBAY	Drawn By J.A. ROBERT
Checked By C.M. BOBAY Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544TCP	Sheet 17 of 72

PLOTTED 3–14–2006



PLAN
SCALE: 1:250



PROFILE
SCALE: 1:250

DETOUR RADIUS INFO					
RADIUS NO.	RADIUS	BEGIN STA	OFFSET	END STA	OFFSET
RADIUS 1	67.00 m	0+160.00	4.5 m LT	5+020.12	2.0 m LT
RADIUS 2	63.25 m	5+020.00	2.0 m LT	5+051.15	1.8 m RT
RADIUS 3	63.00 m	5+001.44	3.3 m RT	5+025.78	1.8 m RT
RADIUS 4	66.80 m	5+025.78	1.8 m RT	5+051.15	1.8 m RT
RADIUS 5	12.50 m	5+109.05	2.1 m LT	5+109.40	13.5 m LT
RADIUS 6	10.00 m	5+111.69	20.9 m LT	5+117.50	26.2 m LT
RADIUS 7	10.94 m	5+125.82	23.1 m LT	5+134.75	6.7 m LT
RADIUS 8	66.80 m	5+096.06	1.8 m RT	5+121.24	1.8 m RT
RADIUS 9	63.00 m	5+121.24	1.8 m RT	5+143.65	3.1 m RT

DETOUR CURVE 3 INFO
△ = 24°01'09"
R = 65.000 m
T = 13.83 m
L = 27.249 m
E = 1.45 m

DETOUR CURVE 4 INFO
△ = 21°56'15"
R = 65.000 m
T = 12.60 m
L = 24.887 m
E = 1.21 m

GENERAL NOTES

1. TRAFFIC SHALL BE MAINTAINED DURING CONSTRUCTION WITH A DETOUR AND TEMPORARY BRIDGE. THE DETOUR AND BRIDGE SHALL BE IN ACCORDANCE WITH AND PAID AS ITEM 528.10, ONE-WAY TEMPORARY BRIDGE (MOD.). THE CONTRACTOR SHALL SUBMIT THE DETOUR SIGNAGE AND ALIGNMENT PACKAGE TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK.
2. THE PURPOSE OF THE DETOUR PLAN AND PROFILE IS TO DEFINE APPROXIMATE SLOPE LIMITS. APPROXIMATE SLOPE LIMITS ARE BASED ON A 4.4 M WIDE TRAVELED WAY, SIDESLOPES STEEPER THAN 2:1. THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE ALIGNMENT FOR THE ENGINEER'S APPROVAL. ADDITIONAL PERMITS OR RIGHT-OF-WAY REQUIRED FOR AN ALTERNATIVE DETOUR SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. DETOUR DESIGN SPEED IS 40 KM/H.
4. THE TEMPORARY DETOUR SHALL BE PAVED TO A DEPTH OF 50 MM, AND A WIDTH OF 4.4 M (MIN.).
5. TEMPORARY TRAFFIC BARRIER OUTSIDE THE LIMITS REQUIRED UNDER SECTION 528 SHALL BE PAID FOR UNDER ITEM 621.90.
6. THE TEMPORARY BRIDGE AND FILLS FOR THE DETOUR WILL BE REMOVED DOWN TO THE ORIGINAL GRADE. ALL AREAS OF DISTURBANCE WILL BE IMMEDIATELY SEEDED AND MULCHED UPON COMPLETION OF THE FINAL GRADE TO PREVENT SOIL EROSION AND TO DISCOURAGE INVASION BY NUISANCE PLANTS.
7. TEMPORARY ABUTMENTS SHALL BE NO CLOSER TO THE STREAM THAN THE FACE OF THE EXISTING ABUTMENTS. NO FILL WILL BE ALLOWED BELOW ORDINARY HIGH WATER.
8. SEE SHEET 17 FOR TRAFFIC CONTROL PLAN.

LEGEND

—— · —— TEMPORARY CONCRETE TRAFFIC BARRIER

5 0 5 10 15 20 25

GRAPHIC SCALE
(IN METERS)

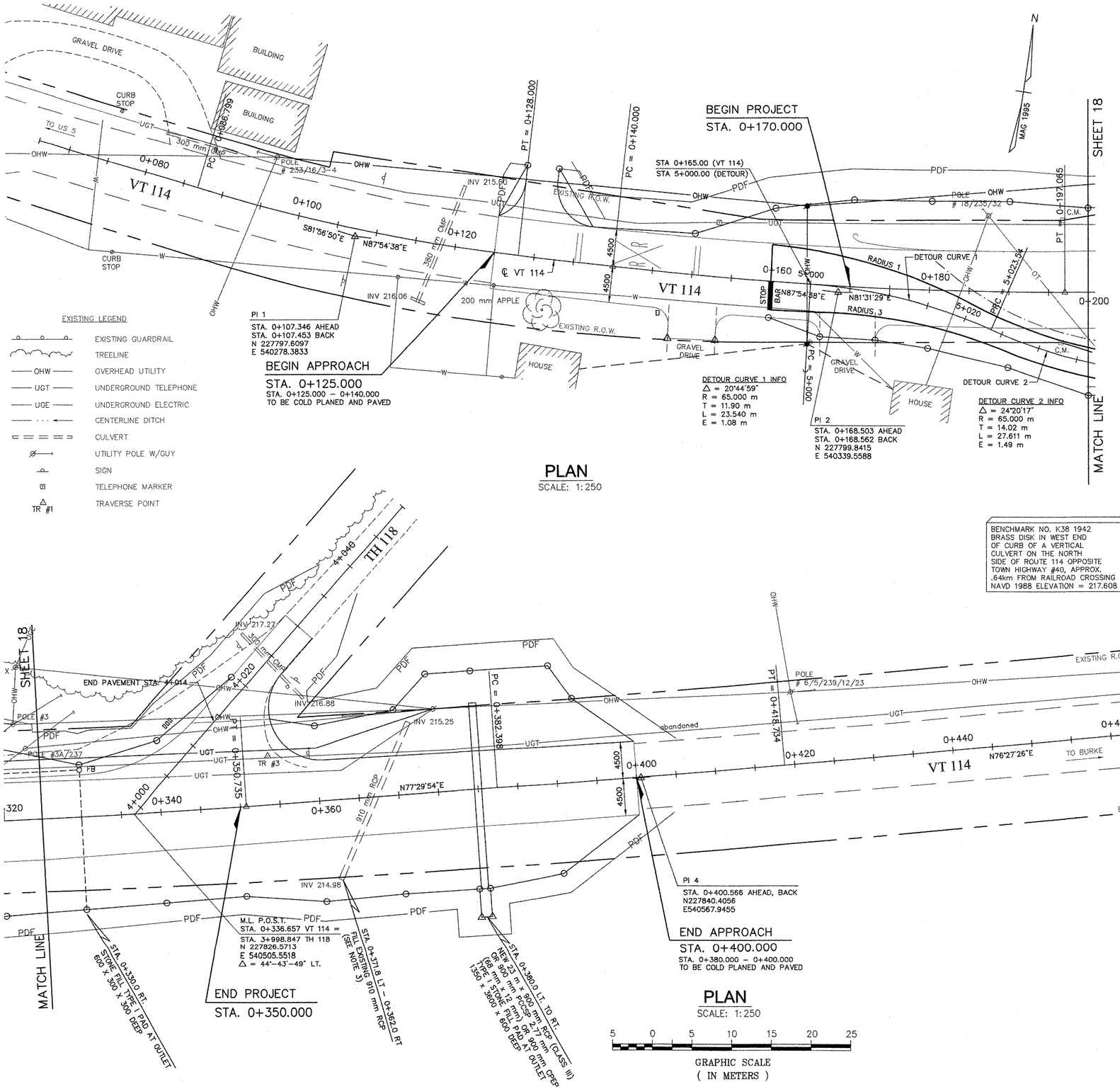
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
DETOUR PLAN (1 OF 2)	
Designed By C.L. CILLEY	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544DETOUR	Sheet 18 of 72

VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006

VAOT Metric



EXISTING LEGEND

- EXISTING GUARDRAIL
- TREELINE
- OHW — OVERHEAD UTILITY
- UGT — UNDERGROUND TELEPHONE
- UGE — UNDERGROUND ELECTRIC
- CENTERLINE DITCH
- CULVERT
- UTILITY POLE W/GUY
- SIGN
- TELEPHONE MARKER
- TR #1 — TRAVERSE POINT

PLAN
SCALE: 1:250

BENCHMARK NO. K38 1942
BRASS DISK IN WEST END
OF CURB OF A VERTICAL
CULVERT ON THE NORTH
SIDE OF ROUTE 114 OPPOSITE
TOWN HIGHWAY #40, APPROX.
.64km FROM RAILROAD CROSSING
NAVD 1988 ELEVATION = 217.608

PLAN
SCALE: 1:250

5 0 5 10 15 20 25
GRAPHIC SCALE
(IN METERS)

VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta.
	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
DETOUR PLAN (2 OF 2)	
Designed By C.L. CILLEY	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544DETOUR	Sheet 19 of 72

PLOTTED 3-14-2006

VAOT Metric

BORING LOG

GEODESIGN INCORPORATED

P.O. Box 699, Windsor, VT 05089, Tel: (802) 674-2033
1233 Shelburne Road, Suite E-1, South Burlington, VT 05403, Tel: (802) 652-5140

Project Name: Lyndon BHF 0269 (10), Lyndon, VT

Boring No.: GB-1 | Page No.: 1 of 3 | File No.: 837-05 | Checked By: RSA

Boring Company: M+W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: July 11, 2002 | Date Finished: July 12, 2002
N. Coordinate: | E. Coordinate:
Ground Surface Elevation (meters): 218.08
Station: 222 | Offset: 9.00 m Right

Casing: Type	Casing: I.D./O.D.	Sampler: Type	Sampler: I.D./O.D.	Hammer Wt.	Hammer Fall
H.S.A.	11 cm	SS	5 cm	NA	NA
H.S.A.		SS		63.5 kg	76 cm

Groundwater Observations

Date and Time	Depth (m)	Elevation (m)	Notes
7/11/02 9:50 AM	6.10	211.99	wet soils
7/12/02 10:00 AM	5.09	212.99	Rmrk. 5.1m

Rig Type: Acker Truck Mounted
Other:

Depth (m)	Casing Blows/0.3m	Sample No.	Type	Penetration (cm)	Recovery (cm)	Depth (m)	Blows / 0.15 m Interval 0-0.15	0.15-0.30	0.30-0.45	0.45-0.60	Casing Time (min./0.3m)	PID Result	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (meters))
0															Granular Fill
1		S1	SS	61	38	1.52	23	12	11	9	-	-	(S1): Medium dense, brown, fine to coarse SAND, trace Silt, trace fine Gravel, moist.		
2															
3		S2	SS	61	51	3.05	2	2	2	3	-	-	(S2): Loose, brown, fine to medium SAND, trace Silt, moist.		
4															
5		S3	SS	61	8	4.57	50	13	4	3	-	-	(S3): Medium dense, grayish brown, fine to coarse SAND, little fine Gravel, trace Silt, moist, wetter than above.		212.90
6															5.18 Silty Gravelly SAND
7		S4	SS	33	33	6.10	17	37	50/0.025	-	-	-	(S4): Very dense, brown, fine to coarse SAND, little Silt, trace fine to coarse Gravel, wet.		
8		S5	SS	61	33	7.62	19	10	14	9	-	-	(S5): Medium dense, brown, fine to coarse SAND, little Silt, little fine to coarse Gravel, wet.		209.85
9															8.23 Gravelly SAND

Remarks:
(0 m): Ground surface elevation is estimated from preliminary plan submission cross-sections based on locations taped from existing features and plotted by GeoDesign. Elevations should be considered accurate only to the degree implied by the method used.
(5.1 m): Groundwater depth based on water inside HSA during drilling.
(5.2 & 8.2 m): Observed change in drilling resistance through possible strata change.
(6.4 m): Observed split spoon sampler bouncing on probable coarse gravel.
(6.6 m): Observed higher drilling resistance through possible cobble/ boulder.

837-05M.GPJ GEODESIGN.GDT 1/17/03

BORING LOG

GEODESIGN INCORPORATED

P.O. Box 699, Windsor, VT 05089, Tel: (802) 674-2033
1233 Shelburne Road, Suite E-1, South Burlington, VT 05403, Tel: (802) 652-5140

Project Name: Lyndon BHF 0269 (10), Lyndon, VT

Boring No.: GB-1 | Page No.: 2 of 3 | File No.: 837-05 | Checked By: RSA

Boring Company: M+W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: July 11, 2002 | Date Finished: July 12, 2002
N. Coordinate: | E. Coordinate:
Ground Surface Elevation (meters): 218.08
Station: 222 | Offset: 9.00 m Right

Casing: Type	Casing: I.D./O.D.	Sampler: Type	Sampler: I.D./O.D.	Hammer Wt.	Hammer Fall
H.S.A.	11 cm	SS	5 cm	NA	NA
H.S.A.		SS		63.5 kg	76 cm

Groundwater Observations

Date and Time	Depth (m)	Elevation (m)	Notes
7/11/02 9:50 AM	6.10	211.99	wet soils
7/12/02 10:00 AM	5.09	212.99	Rmrk. 5.1m

Rig Type: Acker Truck Mounted
Other:

Depth (m)	Casing Blows/0.3m	Sample No.	Type	Penetration (cm)	Recovery (cm)	Depth (m)	Blows / 0.15 m Interval 0-0.15	0.15-0.30	0.30-0.45	0.45-0.60	Casing Time (min./0.3m)	PID Result	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (meters))
9		S6	SS	61	46	9.14	9	13	13	12	-	-	(S6): Medium dense, reddish brown, fine to coarse SAND, some fine Gravel, trace Silt, some oxidation, wet.		Gravelly SAND *(Continued)*
10															
11		S7	SS	61	15	10.67	9	13	41	14	-	-	(S7): Very dense, brown, fine to coarse SAND, trace Silt, trace fine Gravel, wet.		
12															
13		S8	SS	61	20	12.19	13	18	16	19	-	-	(S8): Dense, brown fine to coarse SAND, trace Silt, trace fine Gravel, wet.		
14		S9	SS	61	33	13.72	7	11	9	9	-	-	(S9): Similar to S8. Probable disturbed sample. See rmrk. (13.7 m).		
15															
16		S10	SS	41	35	15.24	25	18	50/0.102		-	-	(S10): Very dense, brown fine to coarse SAND, trace Silt, trace fine Gravel, wet.		
17		S11	SS	61	33	16.76	7	9	11	17	-	-	(S11): Similar to S10, except medium dense. Possibly disturbed sample. See rmrk (18.2 m).		200.71
18															17.37

Remarks:
(13.7 m): Before advancing SS sampler, observed that approximately 0.2 m of soil has flowed up inside the HSA. Drillers pumped a mixture of water and bentonite powder (drilling mud) down HSA to raise the fluid level inside the HSA to approximately GSE.
(13.1-13.7 m): SS sampled to remove soils from inside HSA. Blow counts not recorded.
(13.7-14.3 m): SS sampled in probable disturbed soil conditions. Blow counts should not be considered accurate

837-05M.GPJ GEODESIGN.GDT 1/17/03

BORING LOG

GEODESIGN INCORPORATED

P.O. Box 699, Windsor, VT 05089, Tel: (802) 674-2033
1233 Shelburne Road, Suite E-1, South Burlington, VT 05403, Tel: (802) 652-5140

Project Name: Lyndon BHF 0269 (10), Lyndon, VT

Boring No.: GB-1 | Page No.: 3 of 3 | File No.: 837-05 | Checked By: RSA

Boring Company: M+W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: July 11, 2002 | Date Finished: July 12, 2002
N. Coordinate: | E. Coordinate:
Ground Surface Elevation (meters): 218.08
Station: 222 | Offset: 9.00 m Right

Casing: Type	Casing: I.D./O.D.	Sampler: Type	Sampler: I.D./O.D.	Hammer Wt.	Hammer Fall
H.S.A.	11 cm	SS	5 cm	NA	NA
H.S.A.		SS		63.5 kg	76 cm

Groundwater Observations

Date and Time	Depth (m)	Elevation (m)	Notes
7/11/02 9:50 AM	6.10	211.99	wet soils
7/12/02 10:00 AM	5.09	212.99	Rmrk. 5.1m

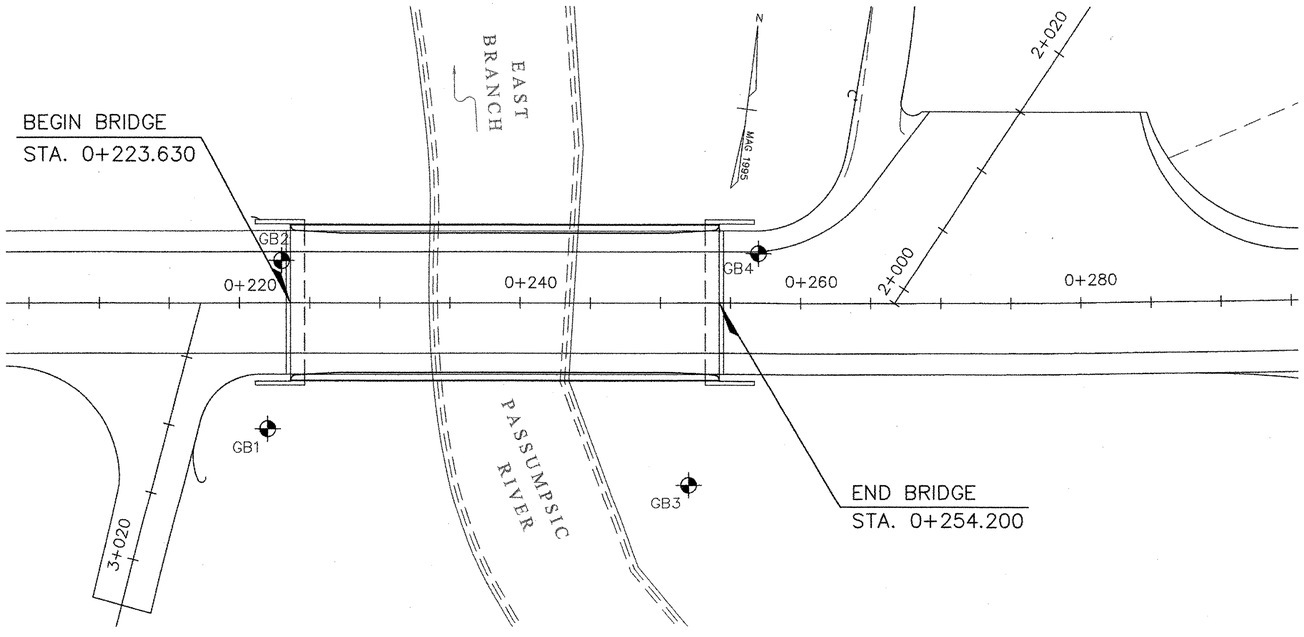
Rig Type: Acker Truck Mounted
Other:

Depth (m)	Casing Blows/0.3m	Sample No.	Type	Penetration (cm)	Recovery (cm)	Depth (m)	Blows / 0.15 m Interval 0-0.15	0.15-0.30	0.30-0.45	0.45-0.60	Casing Time (min./0.3m)	PID Result	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (meters))
18						18.29							Steel Drive Cone - No sampling (no strata could be identified). Recorded number of blows/ft to advance steel drive cone continuously to 23 meters.		
19													Steel Drive Cone - blows/ft		
20													18.3 m: 25 blows		
21													18.6 m: 12 blows		
22													18.9 m: 12 blows		
23													19.2 m: 18 blows		
24													19.5 m: 30 blows		
25													19.8 m: 32 blows		
26													20.1 m: 32 blows		
27													20.4 m: 26 blows		
													20.7 m: 22 blows		
													21.0 m: 22 blows		
													21.3 m: 41 blows		
													21.6 m: 38 blows		
													22.0 m: 36 blows		
													22.3 m: 53 blows		
													22.6 m: 46 blows		195.22
															22.86 Bottom of Borehole at 22.86 m

Remarks:
(18.2 m): Drillers are unable to keep soils from flowing up past basket in lead auger (approx. 0.3-0.6 m of soil flowed up inside augers).
(18.2 m): Boring advanced using steel drive cone.

837-05M.GPJ GEODESIGN.GDT 1/17/03

ESTIMATED PILE TIP ELEVATION AT ABUTMENT 1 = 195.68



BORING PLAN

0 2500 5000 7500
SCALE IN MILLIMETERS
SCALE: 1:200

BORING NOTES:

1. SOIL AND ROCK CLASSIFICATIONS, PROPERTIES, AND DESCRIPTIONS ARE BASED ON ENGINEERING INTERPRETATION FROM AVAILABLE SUBSURFACE INFORMATION AND MAY NOT NECESSARILY REFLECT ACTUAL VARIATIONS IN SUBSURFACE CONDITIONS THAT MAY BE ENCOUNTERED BETWEEN INDIVIDUAL BORING OR SAMPLE LOCATIONS.
2. 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.
3. ENGINEERING JUDGEMENT WAS EXERCISED IN PREPARING THE SUBSURFACE INFORMATION PRESENTED HEREIN. ANALYSIS AND INTERPRETATION OF SUBSURFACE DATA WAS PERFORMED AND INTERPRETED BY GEODESIGN, INC. FOR DESIGN AND ESTIMATING PURPOSES. PRESENTATION OF THE INFORMATION IN THE CONTRACT IS INTENDED TO PROVIDE THE CONTRACTOR ACCESS TO THE SAME DATA. 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.
4. PICTORIAL STRUCTURE DETAILS SHOWN ON THE BORING PLAN LAYOUT OR SOIL PROFILES ARE FOR ILLUSTRATIVE PURPOSES ONLY AND MAY NOT ACCURATELY PORTRAY FINAL CONTRACT DETAILS.
5. TERMINOLOGY USED ON BORING LOGS TO DESCRIBE THE HARDNESS, DEGREE OF WEATHERING, AND SPACING OF FRACTURES, JOINTS AND OTHER DISCONTINUITIES IN THE BEDROCK IS DEFINED IN THE AASHTO MANUAL ON SUBSURFACE INVESTIGATIONS, 1988.

BORING CHART

BORING HOLE #	STATION	OFFSET (M)
GB-1	0+222	9.00 RT.
GB-2	0+223	3.00 LT.
GB-3	0+252	13.00 RT.
GB-4	0+257	3.50 LT.

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
BORING LOGS & INFORMATION (1 OF 4)	
Designed By GEODESIGN, INC.	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544BOR	Sheet 20 of 72

PLOTTED 3-14-2006

Metric

GEODESIGN INCORPORATED

P.O. Box 699
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Tel: (802) 674-2033

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South Burlington, VT 05403
Tel: (802) 652-5140

BORING LOG

Project Name

Lyndon BHF 0269 (10)
Lyndon, VT

Boring No.: GB-2
Page No.: 1 of 3
File No.: 837-05
Checked By: RSA

Boring Company: M+W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: July 16, 2002 Date Finished: July 16, 2002
N. Coordinate: E. Coordinate:
Ground Surface Elevation (meters): 218.30
Station: 223 Offset: 3.00 m Left

Casing:	Sampler:	Groundwater Observations			
Type: H.S.A.	SS	Date and Time	Depth (m)	Elevation (m)	Notes
I.D./O.D.: 11 cm	5 cm				
Hammer Wt.: NA	63.5 kg	7/16/02 10:20 AM	6.10	212.20	wet soils
Hammer Fall: NA	76 cm				
Rig Type: Acker Truck Mounted					
Other:					

Depth (m)	Casing Blows/0.3m	Sample Information: Number	Type	Penetration (cm)	Recovery (cm)	Depth (m)	Blows / 0.15 m Interval: 0-0.15	0.15-0.30	0.30-0.45	0.45-0.60	Casing Time (cm/0.3 min)	PID Result	Sample Description	Symbol	Strata Description (Elevation & Depth (meters))
													Classification System: Burmister		Granular Fill
1															
		S1	SS	61	33	1.52	11	9	12	10		-	(S1): Medium dense, brown, fine to coarse SAND, some fine Gravel, trace Silt, moist.		
2															
3															
		S2	SS	61	28	3.05	14	7	5	7		-	(S2): Medium dense, brown, fine to coarse SAND, little fine Gravel, trace Silt, moist.		
4															
		S3	SS	61	28	4.57	7	8	7	4		-	(S3): Medium dense, brown, fine to coarse SAND, trace Silt, trace fine Gravel, moist.		
5															
6															212.20 6.10 Silty Gravelly SAND
		S4	SS	61	0	6.10	17	9	3	4		-	(S4): Loose, no recovery.		
7															
		S5	SS	61	20	7.62	14	16	19	15		-	(S5): Dense, brown, fine to coarse SAND, little Silt, little fine Gravel, wet.		
8															
9															

Remarks
(0 m): Ground surface elevation is estimated from preliminary plan submission cross-sections based on locations taped from existing features and plotted by GeoDesign. Elevations should be considered accurate only to the degree implied by the method used.
(0-0.1 m): Bituminous concrete
(6.1 m): Observed change in drilling resistance through possible strata change.
(7.9-8.2 m): Observed higher drilling resistance through possible cobble/ boulder.

837-05M.GPJ GEODESIGN.GDT 1/7/03

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BORING LOG

Project Name

Lyndon BHF 0269 (10)
Lyndon, VT

Boring No.: GB-2
Page No.: 2 of 3
File No.: 837-05
Checked By: RSA

Boring Company: M+W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: July 16, 2002 Date Finished: July 16, 2002
N. Coordinate: E. Coordinate:
Ground Surface Elevation (meters): 218.30
Station: 223 Offset: 3.00 m Left

Casing:	Sampler:	Groundwater Observations			
Type: H.S.A.	SS	Date and Time	Depth (m)	Elevation (m)	Notes
I.D./O.D.: 11 cm	5 cm				
Hammer Wt.: NA	63.5 kg	7/16/02 10:20 AM	6.10	212.20	wet soils
Hammer Fall: NA	76 cm				
Rig Type: Acker Truck Mounted					
Other:					

Depth (m)	Casing Blows/0.3m	Sample Information: Number	Type	Penetration (cm)	Recovery (cm)	Depth (m)	Blows / 0.15 m Interval: 0-0.15	0.15-0.30	0.30-0.45	0.45-0.60	Casing Time (cm/0.3 min)	PID Result	Sample Description	Symbol	Strata Description (Elevation & Depth (meters))
													Classification System: Burmister		209.16 9.14 Gravelly SAND
		S6	SS	61	18	9.14	7	5	10	11		-	(S6): Medium dense, brown, fine to coarse SAND, trace Silt, trace fine to coarse Gravel, wet.		
10															
11		S7	SS	61	18	10.67	67	20	15	12		-	(S7): Dense, brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt, slight oxidation, wet.		
12															
		S8	SS	61	9	12.19	34	17	12	11		-	(S8): Medium dense, similar to S7, except with no oxidation.		
13															
14		S9	SS	61	18	13.72	28	9	10	10		-	(S9): Medium dense, brown fine to coarse SAND, trace Silt, trace fine Gravel, wet.		
15															
		S10	SS	61	38	14.94	13	17	14	16		-	(S10): Dense, gray, fine to coarse SAND, trace Silt, trace fine Gravel, wet.		
16															
		S11	SS	61	18	16.46	27	21	25	28		-	(S11): Dense, gray, fine to coarse SAND, some fine to coarse Gravel, little Silt, wet.		
17															
18															

Remarks
(10.7-10.8 m): Observed SS sampler bouncing on probable cobble.
(15.7): 78.2 mm I.D. F.J. casing lowered inside HSA to 13.7 meters. HSA augers removed from the borehole. Borehole was advanced below 13.7 meters' using roller bit and casing and with a mixture of water and bentonite powder (drilling mud).

837-05M.GPJ GEODESIGN.GDT 1/7/03

GEODESIGN INCORPORATED

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BORING LOG

Project Name

Lyndon BHF 0269 (10)
Lyndon, VT

Boring No.: GB-2
Page No.: 3 of 3
File No.: 837-05
Checked By: RSA

Boring Company: M+W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: July 16, 2002 Date Finished: July 16, 2002
N. Coordinate: E. Coordinate:
Ground Surface Elevation (meters): 218.30
Station: 223 Offset: 3.00 m Left

Casing:	Sampler:	Groundwater Observations			
Type: H.S.A.	SS	Date and Time	Depth (m)	Elevation (m)	Notes
I.D./O.D.: 11 cm	5 cm				
Hammer Wt.: NA	63.5 kg	7/16/02 10:20 AM	6.10	212.20	wet soils
Hammer Fall: NA	76 cm				
Rig Type: Acker Truck Mounted					
Other:					

Depth (m)	Casing Blows/0.3m	Sample Information: Number	Type	Penetration (cm)	Recovery (cm)	Depth (m)	Blows / 0.15 m Interval: 0-0.15	0.15-0.30	0.30-0.45	0.45-0.60	Casing Time (cm/0.3 min)	PID Result	Sample Description	Symbol	Strata Description (Elevation & Depth (meters))
		S12	SS	61	18	17.98	28	31	25	36		-	Classification System: Burmister (S12): Very dense, similar to S11.		Gravelly SAND *(Continued)*
19															
		S13	SS	61	18	19.51	24	24	16	11		-	(S13): Dense, gray, fine to coarse SAND, little Silt, trace fine Gravel, wet.		
20															
21															
		S14	SS	61	13	21.03	28	44	50	39		-	(S14): Very dense, fine to coarse SAND, little to some Silt, little fine to coarse Gravel, wet.		
22															196.66 21.64 Bottom of Borehole at 21.64 m
23															
24															
25															
26															
27															

Remarks

837-05M.GPJ GEODESIGN.GDT 1/7/03

ESTIMATED PILE TIP ELEVATION AT ABUTMENT 1 = 195.68

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
BORING LOGS & INFORMATION (2 OF 4)	
Designed By GEODESIGN, INC.	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544BOR	Sheet 21 of 72

VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006

GEODESIGN INCORPORATED

P.O. Box 699, Windsor, VT 05089, Tel: (802) 674-2033
1233 Shelburne Road, Suite E-1, South Burlington, VT 05403, Tel: (802) 652-5140

BORING LOG

Project Name: Lyndon BHF 0269 (10), Lyndon, VT

Boring No.: GB-3
Page No.: 1 of 3
File No.: 837-05
Checked By: RSA

Boring Company: M+W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: July 12, 2002 Date Finished: July 12, 2002
N. Coordinate: E. Coordinate:
Ground Surface Elevation (meters): 215.49
Station: +252 Offset: 13.00 m Right

Casing:	Sampler:	Groundwater Observations			
Type: H.S.A.	SS	Date and Time	Depth (m)	Elevation (m)	Notes
I.D./O.D.: 11 cm	5 cm				
Hammer Wt.: NA	63.5 kg	7/12/02 10:55 AM	2.74	212.75	wet soils
Hammer Fall: NA	76 cm				
Rig Type: Acker Truck Mounted					
Other:					

Depth (m)	Casing Blows/0.3m	Sample Information: Number	Type	Penetration (cm)	Recovery (cm)	Depth (m)	Blows / 0.15 m Interval: 0-0.15	0.15-0.30	0.30-0.45	0.45-0.60	Coring Time (min./0.3m)	PID Result	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (meters))
															Granular Fill
1															213.97
		S1	SS	61	30	1.52	4	4	3	3		-	(S1): Loose, brown, fine to medium SAND, trace SILT, dry.		1.52 Silty Gravelly SANDS
2															212.45
3		S2	SS	61	30	3.05	2	1	2	2		-	(S2): Very loose, dark brown, fine to coarse SAND, trace to little SILT, trace fine Gravel, wet.		3.05 Gravelly SANDS
4															
		S3	SS	61	30	4.57	4	8	4	4		-	(S3): Similar to S2, except medium dense.		
5															
6		S4	SS	61	46	6.10	4	3	2	3		-	(S4): Similar to S2, except loose.		
7															
		S5	SS	61	25	7.62	23	34	8	7		-	(S5): Dense, brown, fine to coarse SAND, little fine Gravel, trace Silt, wet.		
8															
9															

Remarks:
(0 m): Ground surface elevation is estimated from preliminary plan submission cross-sections based on locations taped from existing features and plotted by GeoDesign. Elevations should be considered accurate only to the degree implied by the method used.
(2.4-2.7 m): Observed higher drilling resistance through possible cobble/ boulder.
(7.6-7.9 m): Possible pushing cobble or piece of gravel during SS sampling.

837-GSM.GPJ GEODESIGN.GDT 11/7/03

GEODESIGN INCORPORATED

P.O. Box 699, Windsor, VT 05089, Tel: (802) 674-2033
1233 Shelburne Road, Suite E-1, South Burlington, VT 05403, Tel: (802) 652-5140

BORING LOG

Project Name: Lyndon BHF 0269 (10), Lyndon, VT

Boring No.: GB-3
Page No.: 2 of 3
File No.: 837-05
Checked By: RSA

Boring Company: M+W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: July 12, 2002 Date Finished: July 12, 2002
N. Coordinate: E. Coordinate:
Ground Surface Elevation (meters): 215.49
Station: +252 Offset: 13.00 m Right

Casing:	Sampler:	Groundwater Observations			
Type: H.S.A.	SS	Date and Time	Depth (m)	Elevation (m)	Notes
I.D./O.D.: 11 cm	5 cm				
Hammer Wt.: NA	63.5 kg	7/12/02 10:55 AM	2.74	212.75	wet soils
Hammer Fall: NA	76 cm				
Rig Type: Acker Truck Mounted					
Other:					

Depth (m)	Casing Blows/0.3m	Sample Information: Number	Type	Penetration (cm)	Recovery (cm)	Depth (m)	Blows / 0.15 m Interval: 0-0.15	0.15-0.30	0.30-0.45	0.45-0.60	Coring Time (min./0.3m)	PID Result	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (meters))
		S6	SS	61	36	9.14	14	7	8	11		-	(S6): Medium dense, brown, fine to coarse SAND, little Silt, trace fine Gravel, wet.		Gravelly SANDS *(Continued)*
10															
		S7	SS	61	41	10.67	13	10	10	11		-	(S7): Medium dense, brown, fine SAND, some Silt, wet.		
11															
12		S8	SS	61	30	12.19	54	20	20	31		-	(S8): Dense, brown, fine to coarse SAND, little fine Gravel, trace silt, wet.		
13															
		S9	SS	61	23	13.72	11	20	14	13		-	(S9): Dense, gray, fine to coarse SAND, some fine to coarse Gravel, little Silt, wet.		
14															
15															
		S10	SS	61	15	15.24	6	24	43	45		-	(S10): Very dense, gray, fine to coars SAND, little Silt, little fine Gravel, wet.		
16															
17		S11	SS	10	10	16.76	50/0.102	-	-	-		-	(S11): Very dense, gray, fine to coarse SAND and fine to coarse GRAVEL, trace Silt, wet.		
18															

Remarks:

837-GSM.GPJ GEODESIGN.GDT 11/7/03

GEODESIGN INCORPORATED

P.O. Box 699, Windsor, VT 05089, Tel: (802) 674-2033
1233 Shelburne Road, Suite E-1, South Burlington, VT 05403, Tel: (802) 652-5140

BORING LOG

Project Name: Lyndon BHF 0269 (10), Lyndon, VT

Boring No.: GB-3
Page No.: 3 of 3
File No.: 837-05
Checked By: RSA

Boring Company: M+W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: July 12, 2002 Date Finished: July 12, 2002
N. Coordinate: E. Coordinate:
Ground Surface Elevation (meters): 215.49
Station: +252 Offset: 13.00 m Right

Casing:	Sampler:	Groundwater Observations			
Type: H.S.A.	SS	Date and Time	Depth (m)	Elevation (m)	Notes
I.D./O.D.: 11 cm	5 cm				
Hammer Wt.: NA	63.5 kg	7/12/02 10:55 AM	2.74	212.75	wet soils
Hammer Fall: NA	76 cm				
Rig Type: Acker Truck Mounted					
Other:					

Depth (m)	Casing Blows/0.3m	Sample Information: Number	Type	Penetration (cm)	Recovery (cm)	Depth (m)	Blows / 0.15 m Interval: 0-0.15	0.15-0.30	0.30-0.45	0.45-0.60	Coring Time (min./0.3m)	PID Result	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (meters))
															Gravelly SANDS *(Continued)*
19															
20		S12	SS	30	15	19.81	150	74	-	-		-	(S12): Very dense, gray, fine to coarse SAND, some fine Gravel, trace Silt, dry.		195.07
21															20.42 Bottom of Borehole at 20.42 m
22															
23															
24															
25															
26															
27															

Remarks:
(18.3-20.4 m): Observed higher HSA drilling resistance.

837-GSM.GPJ GEODESIGN.GDT 11/7/03

ESTIMATED PILE TIP ELEVATION AT ABUTMENT 2 = 196.26

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
BORING LOGS & INFORMATION (3 OF 4)	
Designed By GEODESIGN, INC.	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544BOR	Sheet 22 of 72

VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006

GEODESIGN INCORPORATED

P.O. Box 699
Windsor, VT 05089
Tel: (802) 674-2333

1233 Shelburne Road, Suite E-1
South Burlington, VT 05403
Tel: (802) 652-5140

BORING LOG

Project Name

Lyndon BHF 0269 (10)
Lyndon, VT

Boring No.: GB-4
Page No.: 1 of 2
File No.: 837-05
Checked By: RSA

Boring Company: M+W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: July 15, 2002 Date Finished: July 15, 2002
N. Coordinate: E. Coordinate:
Ground Surface Elevation (meters): 218.60
Station: +267 Offset: 3.50 m Left

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D./O.D.:	11 cm	5 cm
Hammer Wt.:	NA	63.5 kg
Hammer Fall:	NA	76 cm
Rig Type:	Acker Truck Mounted	
Other:		

Groundwater Observations			
Date and Time	Depth (m)	Elevation (m)	Notes
7/15/02 10:35 AM	7.62	210.98	wet soils

Depth (m)	Casing Blows/0.3m	Sample Number	Type	Penetration (cm)	Recovery (cm)	Depth (m)	Blows / 0.15 m Interval 0-0.15	0.15-0.30	0.30-0.45	0.45-0.60	Coring Time (min./0.3m)	PID Result	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (meters))
															Granular Fill
1															
		S1	SS	61	23	1.52	6	5	4	4		-	(S1): Loose, brown, fine to coarse SAND, trace Silt, trace fine gravel, moist.		
2															
3															
		S2	SS	61	15	3.05	4	7	7	2			(S2): Similar to S1, except medium dense and with little Silt.		
4															
		S3	SS	61	23	4.57	12	9	9	5		-	(S3): Medium dense, similar to S1, except with little Silt.		
5															
6															212.51 6.10 Silty Gravelly SANDS
		S4	SS	61	33	6.10	10	19	16	17		-	(S4): Dense, brown, fine to coarse SAND, little Silt, trace fine Gravel, moist.		
7															
		S5	SS	23	20	7.62	26	50/0.076	-	-		-	(S5): Very dense, brown, fine to coarse SAND, little fine Gravel, trace Silt, wet.		210.98 7.62 Gravelly SANDS
8															
9															

Classification System: Burmister

(0 m): Ground surface elevation is estimated from preliminary plan submission cross-sections based on locations taped from existing features and plotted by GeoDesign. Elevations should be considered accurate only to the degree implied by the method used
(0-0.1 m): Bituminous concrete.
(8.0 m): Possible pushing cobble or piece of gravel during SS sampling.
(8.5-8.7 m): Observed higher drilling resistance through possible cobble/ boulder.

Remarks

837-05M.GPJ GEODESIGN.GDT 11/7/03

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South Burlington, VT 05403
Tel: (802) 652-5140

BORING LOG

Project Name

Lyndon BHF 0269 (10)
Lyndon, VT

Boring No.: GB-4
Page No.: 2 of 2
File No.: 837-05
Checked By: RSA

Boring Company: M+W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: July 15, 2002 Date Finished: July 15, 2002
N. Coordinate: E. Coordinate:
Ground Surface Elevation (meters): 218.60
Station: +267 Offset: 3.50 m Left

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D./O.D.:	11 cm	5 cm
Hammer Wt.:	NA	63.5 kg
Hammer Fall:	NA	76 cm
Rig Type:	Acker Truck Mounted	
Other:		

Groundwater Observations			
Date and Time	Depth (m)	Elevation (m)	Notes
7/15/02 10:35 AM	7.62	210.98	wet soils

Depth (m)	Casing Blows/0.3m	Sample Number	Type	Penetration (cm)	Recovery (cm)	Depth (m)	Blows / 0.15 m Interval 0-0.15	0.15-0.30	0.30-0.45	0.45-0.60	Coring Time (min./0.3m)	PID Result	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (meters))
		S6	SS	20	13	9.14	48	50/0.051	-	-		-	(S6): Very dense, brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt, wet.		Gravelly SANDS *(Continued)*
10															
		S7	SS	61	38	10.67	31	28	33	29		-	(S7): Very dense, brown, fine to coarse SAND, some fine to coarse Gravel, little Silt, moist.		
11															
12															
		S8	SS	61	30	12.19	18	27	11	12		-	(S8): Dense, brown, fine to coarse SAND, little fine Gravel, little Silt, wet. (Bottom 25 mm): fine to medium SAND seam.		
13															
14		S9	SS	61	35	13.72	18	23	21	18		-	(S9): Dense, similar to S7.		
15															
		S10	SS	61	35	15.24	37	10	9	16			(S10): Medium dense, gray to brown, fine to coarse SAND and fine to coarse GRAVEL, trace Silt, wet.		202.42 16.18 Bottom of Borehole at 16.18 m
16															
		S11	SS	3	3	16.15	100/0.025	-	-	-		-	(S11): Refusal, gray to brown, fine to coarse SAND, little Silt, dry.		
17															
18															

Classification System: Burmister

(8.8-11.3 m): Observed hard resistance to HSA advancement.
(16.2): Observed HSA and SS sampler refusal on possible cobble/ boulder.
16.2): 76.2 mm I.D. F.J. casing lowered inside HSA to 16.2 m. Attempted HSA auger removal from borehole. Lead 7.62 meters of augers remain in the borehole. Borehole abandoned.

Remarks

837-05M.GPJ GEODESIGN.GDT 11/7/03

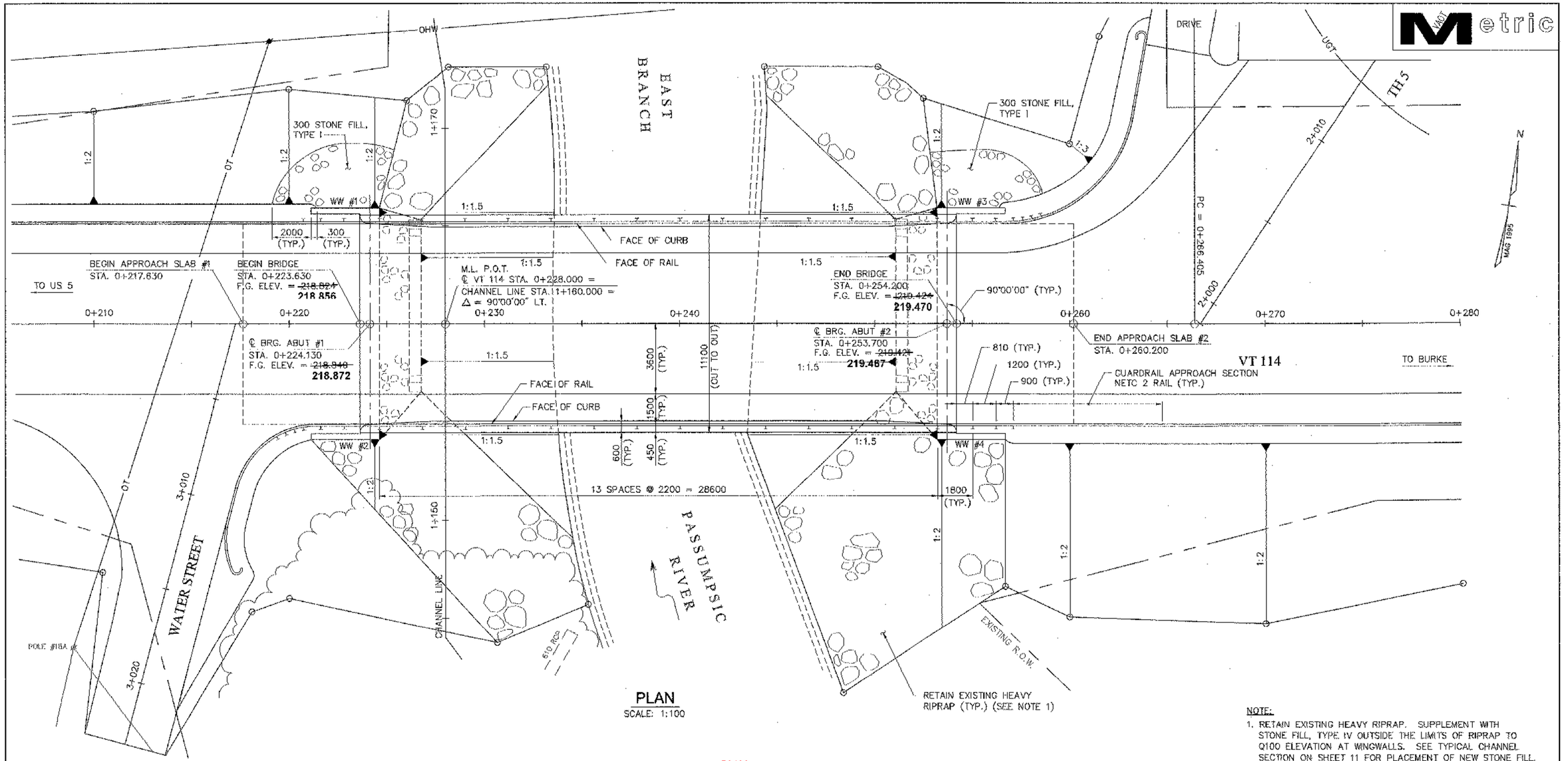
ESTIMATED PILE TIP ELEVATION AT ABUTMENT 2 = 196.26

VHB Vanasse Hangen Brustlin, Inc.

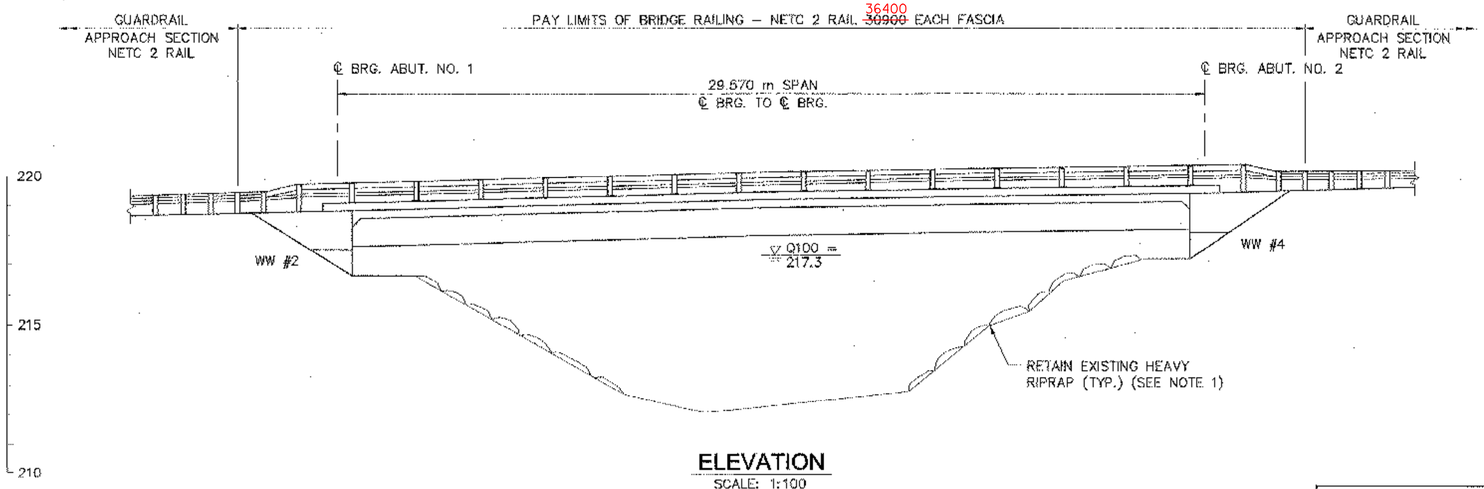
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
BORING LOGS & INFORMATION (4 OF 4)	
Designed By GEODESIGN, INC.	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544BOR	Sheet 23 of 72

PLOTTED 3-14-2006



PLAN
SCALE: 1:100



ELEVATION
SCALE: 1:100

NOTE:
1. RETAIN EXISTING HEAVY RIPRAP. SUPPLEMENT WITH STONE FILL, TYPE IV OUTSIDE THE LIMITS OF RIPRAP TO Q100 ELEVATION AT WINGWALLS. SEE TYPICAL CHANNEL SECTION ON SHEET 11 FOR PLACEMENT OF NEW STONE FILL.

2 0 2 4 6 8 10
GRAPHIC SCALE
(IN METERS)

VERTICAL CURVES REVISED 12/06 BY RRW

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
PLAN AND ELEVATION	
Designed By J.T. KLEIN	Drawn By B.J. MASSE
Checked By L.S. GARDNER Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. info.	
Bridge Sheet No. 50544ELV	Sheet 24 of 72 (REVISED)

VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006

Metric

GENERAL NOTES:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, DATED 2002, AND ITS LATEST REVISIONS.

2. THE FOLLOWING MATERIAL CRITERIA, DESIGNATIONS AND UNIT WEIGHTS APPLY TO THESE PLANS FOR DESIGN PURPOSES:
   CONCRETE: HIGH PERFORMANCE CLASS "A" f'c = 30 MPa
   HIGH PERFORMANCE CLASS "B" f'c = 25 MPa
   STRUCTURAL STEEL: AASHTO M 270M GRADE 345W
   REINFORCING STEEL: AASHTO M 31M GRADE 420
   UNIT WEIGHT OF SOIL: 2243 kg/m3

3. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 20 DEGREES CELSIUS, UNLESS NOTED OTHERWISE.

4. SEE SHEET 32 FOR REMOVAL NOTES.

5. A ROADWAY PAVING AND GUARDRAIL PROJECT WAS CONSTRUCTED IN THIS AREA IN NOVEMBER 1997. THE ROADWAY TYPICAL WAS WIDENED TO 900-3600-3600-900. ADDITIONAL SURVEY WAS NOT TAKEN TO INCORPORATE THESE CHANGES. THIS PROJECT ACCOMMODATES THIS CHANGE IN EXISTING CONDITIONS HORIZONTALLY BY INDICATING MATCHING TO AN EXISTING 900 SHOULDER. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND ANY CHANGES REQUIRED AS A RESULT SHALL BE APPROVED BY THE ENGINEER.

CONCRETE NOTES:

1. CONCRETE PAYMENT AND CLASSIFICATION SHALL BE AS FOLLOWS:
   ITEM 501.31, CONCRETE, CLASS D (MOD. – FLOWABLE FILL)
   ITEM 501.33, CONCRETE, HIGH PERFORMANCE CLASS A: DECK, CURBS, INTEGRAL BACKWALL, AND WINGWALLS ABOVE THE CONSTRUCTION JOINT
   ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B: APPROACH SLABS, PILE CAPS, PORTIONS OF THE WINGWALLS BELOW THE CONSTRUCTION JOINT, AND ALL OTHER COMPONENTS

2. ITEM 514.10, WATER REPELLENT (MOD. – SILANE), SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON BRIDGE SUPERSTRUCTURE EXCEPT THE BOTTOM OF THE DECK BETWEEN THE DRIP NOTCHES. WATER REPELLENT SHALL ALSO BE APPLIED TO THE EXPOSED CONCRETE ON THE NEW SUBSTRUCTURES.

3. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 25 MILLIMETERS BY 25 MILLIMETERS, UNLESS OTHERWISE NOTED. A 15 MILLIMETER RADIUS SHALL BE USED ON THE TOP INSIDE CORNER OF CURBS.

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

5. THE KEY ON CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT UNLESS OTHERWISE INDICATED. ANY UPWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT. KEYS SHALL TERMINATE 150 FROM ENDS OF JOINTS.

6. FOR EACH POUR SEQUENCE PHASE, THE CONCRETE DECK SHALL BE PLACED CONTINUOUSLY WITHIN ONE EIGHT HOUR WORKING DAY. IF CIRCUMSTANCES BEYOND THE CONTRACTOR'S CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A CONSTRUCTION JOINT SHALL BE USED AS SHOWN ON SHEET 26. THERE SHALL BE A MINIMUM DELAY PERIOD OF 96 HOURS BETWEEN POURS.

STRUCTURAL STEEL AND PILE NOTES:

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

2. ITEM 506.50, STRUCTURAL STEEL (ROLLED BEAM), SHALL INCLUDE ROLLED BEAMS, BEARING STIFFENERS, CONNECTION PLATES, DIAPHRAGMS, AND ALL REQUIRED FASTENERS.

3. ALL BOLTED FIELD CONNECTIONS SHALL BE MADE WITH 22 MILLIMETER DIAMETER HIGH STRENGTH BOLTS IN 24 MILLIMETER DIAMETER HOLES UNLESS OTHERWISE NOTED.

4. CONNECTIONS NOT DESIGNATED SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE RESIDENT ENGINEER FOR APPROVAL.

5. SHEAR CONNECTORS SHALL BE FIELD WELDED USING AUTOMATICALLY TIMED STUD WELDING EQUIPMENT AND SHALL BE PAID AS ITEM 508.15, SHEAR CONNECTORS.

6. PILES SHALL BE HP 310x125 AASHTO M223/M223M GRADE 345. THE ESTIMATED LENGTH OF EACH PILE AT BOTH ABUTMENTS IS 21.0 METERS, INCLUDING THE 1000 MILLIMETER EMBEDMENT IN THE CONCRETE PILE CAP. NO SUBSTITUTIONS FOR THE NUMBER, SIZE AND GRADE OF THE PILES WILL BE ALLOWED.

7. THE DRIVING POINT OF ALL PILES SHALL BE REINFORCED. POINT REINFORCEMENT SHALL BE CAST STEEL AND SHALL CONFORM TO SUBSECTIONS 505.04(E) AND 730.01 OF THE STANDARD SPECIFICATIONS.

8. TO ENSURE THAT THE ULTIMATE AXIAL CAPACITY HAS BEEN ATTAINED AND TO PREVENT THE OVERSTRESSING OF THE PILES DURING DRIVING OPERATIONS, DYNAMIC MONITORING SHALL BE PERFORMED FOR THE FIRST PILE DRIVEN AT EACH ABUTMENT. THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 505.04(C)-2 OF THE STANDARD SPECIFICATIONS. PAYMENT FOR PILE TESTING SHALL BE MADE UNDER ITEM 505.45, "DYNAMIC PILE LOADING TEST".

9. PILE HEAD CUT-OFF ELEVATION SHALL BE WITHIN 25 MILLIMETERS OF THE ELEVATION DETAILED IN THE PLANS. AT THE CUT-OFF ELEVATION, THE PILE SHALL BE FREE FROM DRIVING DAMAGE AS DETERMINED BY THE RESIDENT ENGINEER. IN ITS FINAL POSITION, THE PILE TOP SHALL BE WITHIN 75 MILLIMETERS OF PLAN LOCATION. THE RESIDENT ENGINEER MAY REQUIRE THAT THE DRIVING BE STOPPED TO CHECK THE PILE ALIGNMENT. PULLING LATERALLY ON THE PILE SECTION TO CORRECT MISALIGNMENT OR SPLICING A PROPERLY ALIGNED SECTION TO A MISALIGNED SECTION SHALL NOT BE PERMITTED. ONLY CORRECTIVE ACTION NO. 1 AS DESCRIBED IN THE LAST PARAGRAPH OF SUBSECTION 505.04(A) OF THE STANDARD SPECIFICATIONS WILL BE ALLOWED. ALL COSTS, INCLUDING DELAYS, ASSOCIATED WITH NECESSARY CORRECTIVE ACTION TO PLACE PILES WITHIN THE INDICATED TOLERANCES SHALL BE AT THE CONTRACTOR'S EXPENSE.

10. TO AID IN PROPER PILE PLACEMENT/ALIGNMENT, EACH PILE SHALL BE PLACED IN PRE-EXCAVATED HOLE. THE BOTTOM OF THE HOLE SHALL BE AT ELEVATION **212.600** AT ABUTMENT 1 AND **213.200** AT ABUTMENT 2. THE HOLE SHALL BE OF SUFFICIENT WIDTH TO INSTALL A 600 MILLIMETER DIAMETER RIGID PIPE SLEEVE CENTERED AT EACH PILE LOCATION. AFTER THE PILE IS PLACED, THE SLEEVE SHALL BE BACKFILLED WITH MATERIAL MEETING THE REQUIREMENTS FOR GRANULAR BACKFILL FOR STRUCTURES AS INDICATED IN SUBSECTION 704.08 OF THE STANDARD SPECIFICATIONS. THE HOLE AREA AROUND THE SLEEVE SHALL BE BACKFILLED WITH GRANULAR BACKFILL FOR STRUCTURES. BACKFILLING OF BOTH THE SLEEVE AND THE HOLE AROUND THE SLEEVE SHALL OCCUR SIMULTANEOUSLY AND SHALL PROCEED TO THE BOTTOM OF THE PILE CAP ELEVATION. UPON COMPLETION OF DRIVING OPERATIONS AS DETERMINED BY THE RESIDENT ENGINEER, THE PILE HEAD SHALL BE CUT-OFF TO THE ELEVATION INDICATED IN THE PLANS AND THE SLEEVE REMOVED. THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE METHOD OF DRIVING FOR APPROVAL BY THE RESIDENT ENGINEER.

11. AFTER SUPERSTRUCTURE STEEL HAS BEEN SET ON THE ANCHOR BOLTS, ELEVATIONS ALONG THE TOP OF THE GIRDERS SHALL BE TAKEN AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING HAUNCH DEPTHS.

12. FLEMING BRACKETS OR SIMILAR FALSEWORK SHALL BE SPACED AS REQUIRED BY DESIGN, BUT SHALL BE LIMITED TO A MAXIMUM SPACING OF 1220 MILLIMETERS. THE DESIGN OF FALSEWORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

13. ANY BOLT HOLES IN THE WEBS OF FASCIA GIRDERS NOT OTHERWISE FILLED SHALL BE FILLED WITH BUTTON HEAD OR HEX HEAD BOLTS MEETING AASHTO M164M TYPE 3. THE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19 OF THE STANDARD SPECIFICATIONS.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION, POLLUTION, AND DISCHARGE OF RAW CONCRETE INTO THE PASSUMPSIC RIVER AS DIRECTED BY THE RESIDENT ENGINEER.

2. IN-STREAM CONSTRUCTION SHALL BE CONDUCTED DURING THE PERIOD DESIGNATED IN THE PERMITS. THE AGENCY OF NATURAL RESOURCES MUST APPROVE ANY DEVIATION FROM THIS PERIOD IN WRITING.

3. TRAFFIC WILL BE MAINTAINED DURING CONSTRUCTION BY UTILIZING A SINGLE TRAFFIC LANE TEMPORARY BRIDGE WITH ALTERNATING EASTBOUND AND WESTBOUND TRAFFIC CONTROLLED BY A TEMPORARY TRAFFIC SIGNAL. ALL WORK REQUIRED TO MAINTAIN TRAFFIC DURING CONSTRUCTION SHALL BE PAID AS ITEM 641.10, TRAFFIC CONTROL UNLESS OTHERWISE NOTED.

4. TEMPORARY TRAFFIC SIGNAL SHALL BE PAID AS ITEM 678.40, TEMPORARY TRAFFIC SIGNAL SYSTEM.

5. THE METHOD OF SEPARATING THE TRAVELING PUBLIC FROM THE NEW BRIDGE CONSTRUCTION SHALL BE DESIGNED AND DETAILED AS PART OF THE TEMPORARY BRIDGE SUBMITTAL. ALL COSTS ASSOCIATED WITH THE DESIGN, DETAILING, INSTALLATION, AND REMOVAL OF THE SYSTEM SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 528.10.

6. THE BRIDGE PLAQUE SHALL BE FURNISHED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AS SHOWN ON THE PLANS. ALL COSTS SHALL BE INCLUDED IN ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B.

7. THE CONTRACTOR SHALL ERECT, MAINTAIN, REMOVE, AND/OR RESET AS REQUIRED ALL ON-PROJECT SIGNS AND BARRICADES. THE COST OF ALL CONSTRUCTION SIGNS AND BARRICADES SHALL BE INCLUDED IN ITEM 641.10, TRAFFIC CONTROL.

8. ANY EXISTING SIGNS NOT REUSED SHALL REMAIN THE PROPERTY OF THE STATE. THESE SIGNS SHALL BE REMOVED BY THE CONTRACTOR AND STOCKPILED AS DIRECTED BY THE RESIDENT ENGINEER FOR REMOVAL BY THE STATE AND SHALL BE PAID AS ITEM 675.50, REMOVING SIGNS.

9. AN ESTIMATED QUANTITY FOR ITEM 613.10, STONE FILL, TYPE I (CHECK DAMS) HAS BEEN ADDED TO THE QUANTITY SUMMARY IN THE EVENT IT IS REQUIRED DURING CONSTRUCTION. THIS ITEM IS NOT CURRENTLY SHOWN ANYWHERE ON THE PLANS.

REINFORCING STEEL NOTES:

1. ALL REINFORCING STEEL SHALL BE EPOXY COATED AND PAID AS ITEM 507.17, EPOXY COATED REINFORCING STEEL.

2. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
   ALONG BACK FACES OF WALLS AGAINST EARTH: FIFTY (50) MILLIMETERS
   ALONG TOP SURFACE OF DECK SLAB: SIXTY-FIVE (65) MILLIMETERS
   ALONG BOTTOM SURFACE OF DECK SLAB: FORTY (40) MILLIMETERS
   ELSEWHERE UNLESS OTHERWISE INDICATED: EIGHTY (80) MILLIMETERS

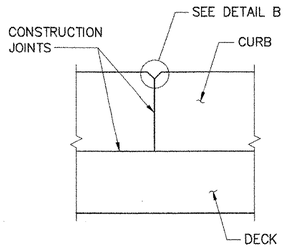
3. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:
   SPACING: ± 25 MILLIMETERS
   CLEARANCE: ± 5 MILLIMETERS

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
CONSTRUCTION NOTES	
Designed By J.T. KLEIN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544NOT	Sheet 25 of 72

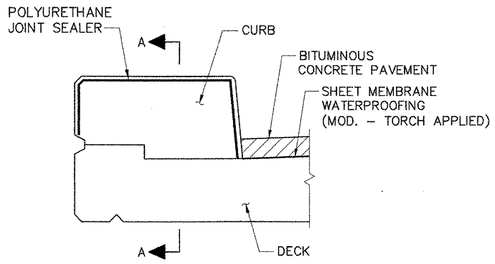
PLOTTED 3-14-2006



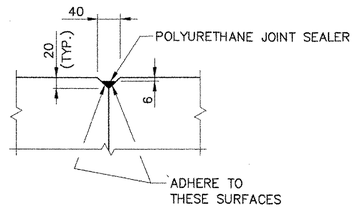
SECTION A-A

CURB CONSTRUCTION JOINT NOTES:

1. CONCRETE CURB CONSTRUCTION JOINTS SHALL BE SPACED A MAXIMUM OF 4500 mm CENTER TO CENTER AND SHALL BE 550 mm MINIMUM FROM THE CENTER OF THE NEAREST BRIDGE RAIL POST. CONCRETE SHALL BE PLACED IN ALTERNATING SECTIONS WITH A MINIMUM OF 48 HOURS BETWEEN ADJACENT POURS.
2. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CURB CONSTRUCTION JOINTS UNLESS OTHERWISE SHOWN.
3. POLYURETHANE JOINT SEALER, PER SUBSECTION 524.06 **(d)**, SHALL MATCH THE CONCRETE COLOR. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR ADJACENT CONCRETE

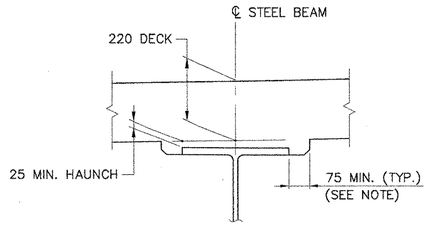


TYPICAL SECTION



DETAIL B

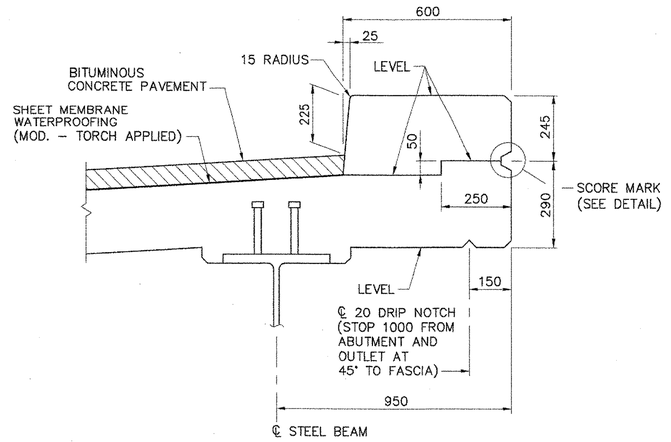
CONCRETE CURB CONSTRUCTION JOINT
NOT TO SCALE



NOTE:

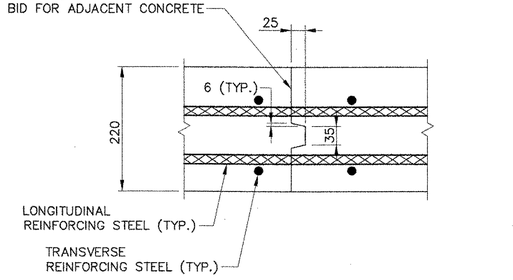
THE 75 HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES. SYSTEMS SHALL BE SUBMITTED FOR APPROVAL TO THE STRUCTURES ENGINEER. ALL VOIDS SHALL BE FILLED WITH MORTAR, TYPE IV OR AN EQUIVALENT PRODUCT FROM THE APPROVED PRODUCTS LIST. ALL COST SHALL BE INCLUDED UNDER ITEM 501.33, CONCRETE HIGH PERFORMANCE CLASS A.

TYPICAL HAUNCH DETAIL
NOT TO SCALE

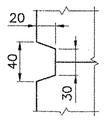


TYPICAL CURB DETAIL
(BRIDGE RAIL NOT SHOWN)

0 200 400 600
SCALE IN MILLIMETERS
1:10



TRANSVERSE DECK CONSTRUCTION JOINT DETAIL
NOT TO SCALE



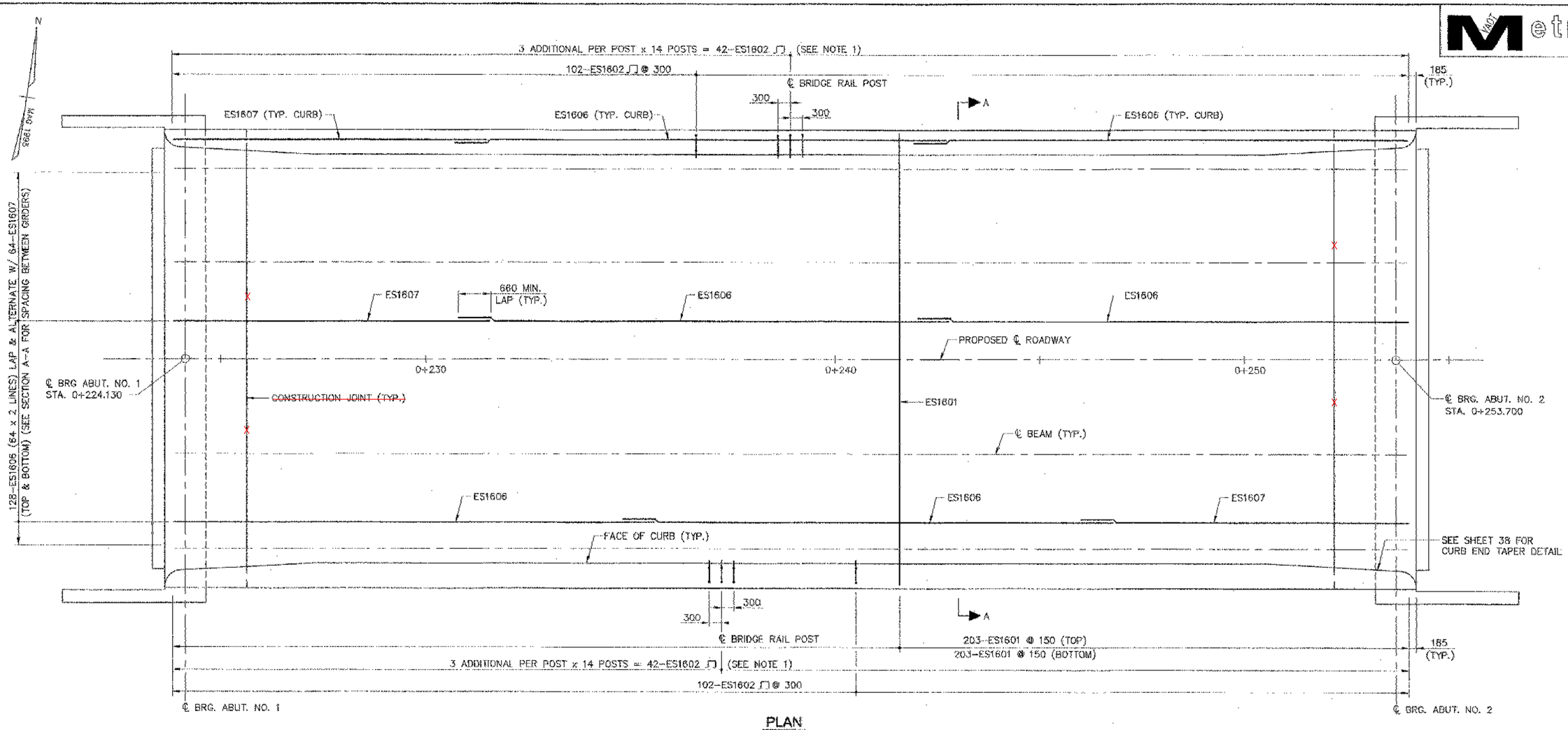
SCORE MARK DETAIL
NOT TO SCALE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
DECK DETAILS	
Designed By J.T. KLEIN	Drawn By B.J. MASSE
Checked By L.S. GARDNER Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544DDT	Sheet 26 of 72

VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006

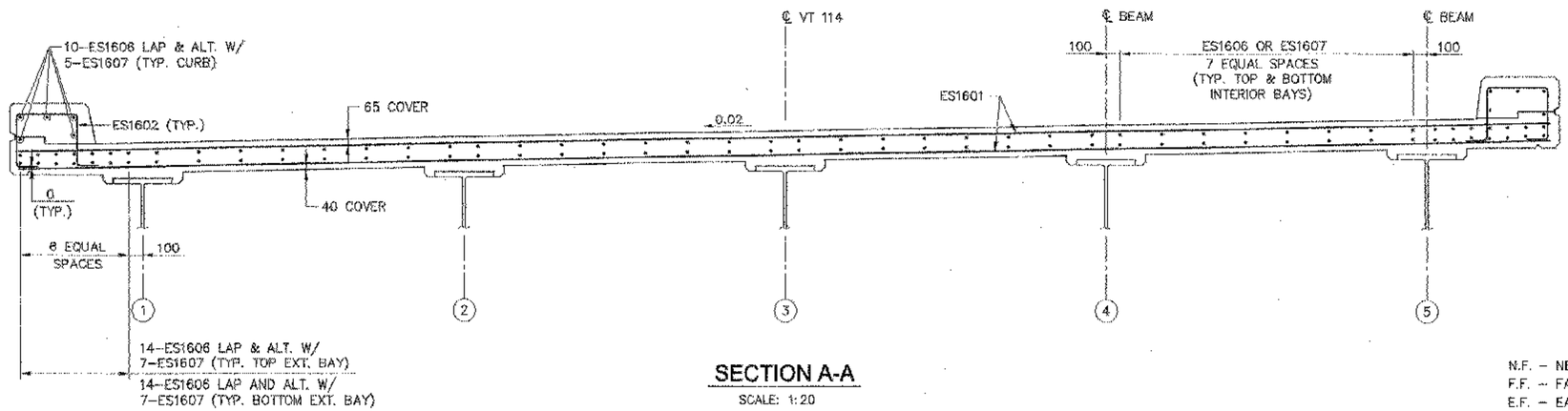


PLAN

SCALE: 1:50

0 1000 2000 3000

SCALE IN MILLIMETERS



SECTION A-A

SCALE: 1:20

0 400 800 1200

SCALE IN MILLIMETERS

N.F. – NEAR FACE
F.F. – FAR FACE
E.F. – EACH FACE

NOTES:

1. SEE SHEET 37 FOR REINFORCING STEEL DETAIL AT BRIDGE RAIL POSTS. SEE SHEET 24 FOR BRIDGE RAIL POST SPACING.
2. SEE SHEET 30 FOR ADDITIONAL REINFORCING AT INTEGRAL ABUTMENT BACKWALLS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta.
	Surv. Sta.

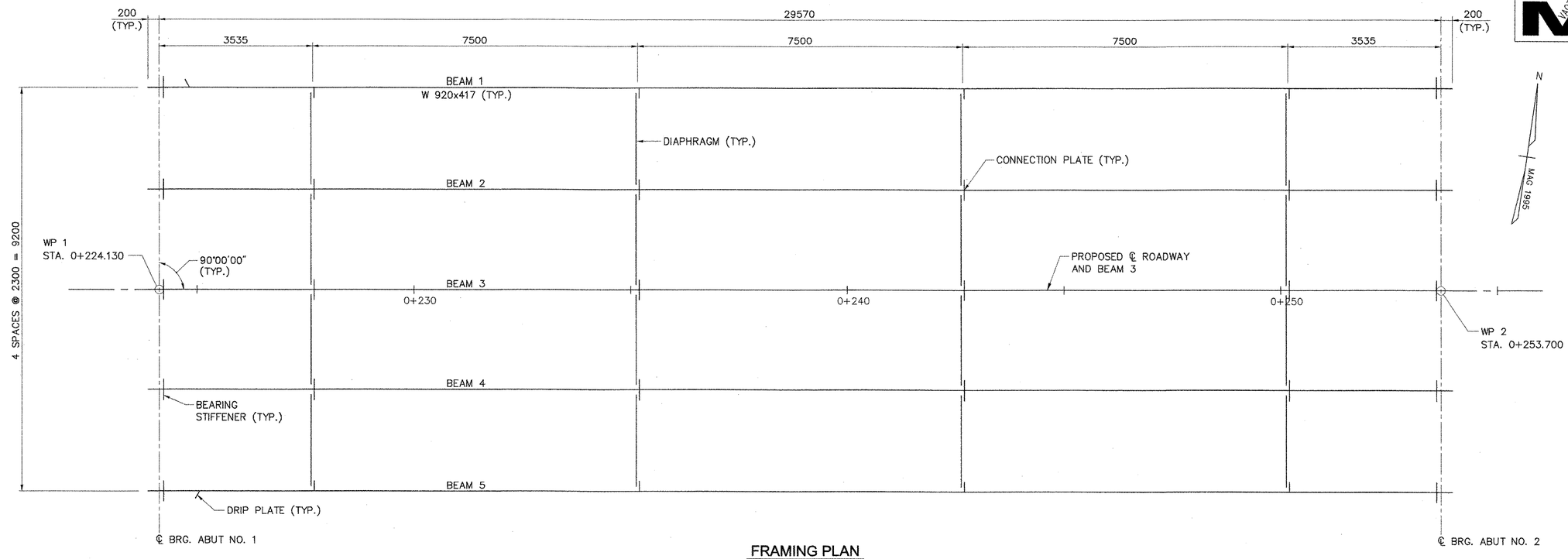
VT 114 OVER PASSUMPSIC RIVER

DECK REINFORCING

Designed By L.S. GARDNER	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 505440R	Sheet 27 of 72

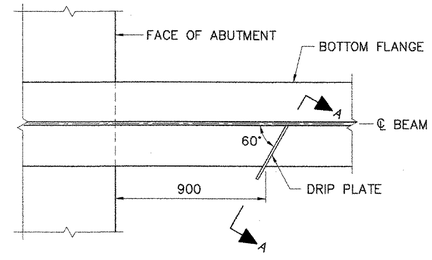
VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006

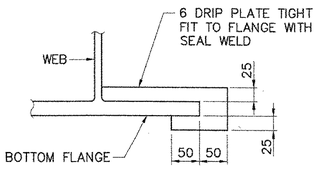


FRAMING PLAN
SCALE: 1:50

0 1000 2000 3000
SCALE IN MILLIMETERS
1:50

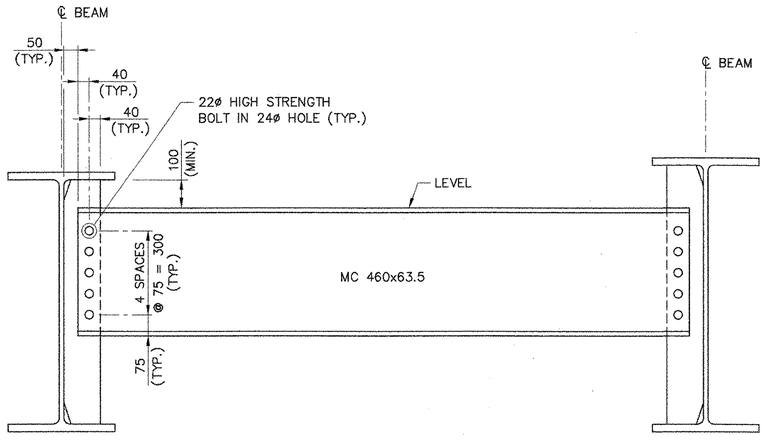


PLAN



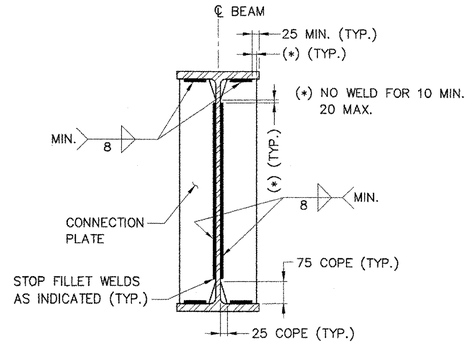
SECTION A-A

DRIP PLATE DETAIL
NOT TO SCALE

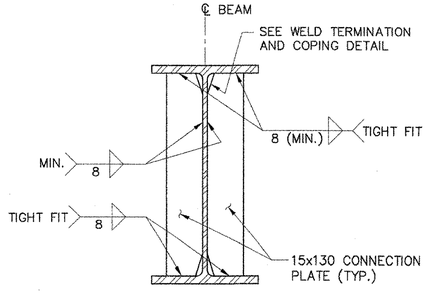


DIAPHRAGM
SCALE: 1:10

0 200 400 600
SCALE IN MILLIMETERS
1:10



WELD TERMINATION AND COPING DETAIL
NOT TO SCALE



CONNECTION PLATE DETAIL
NOT TO SCALE

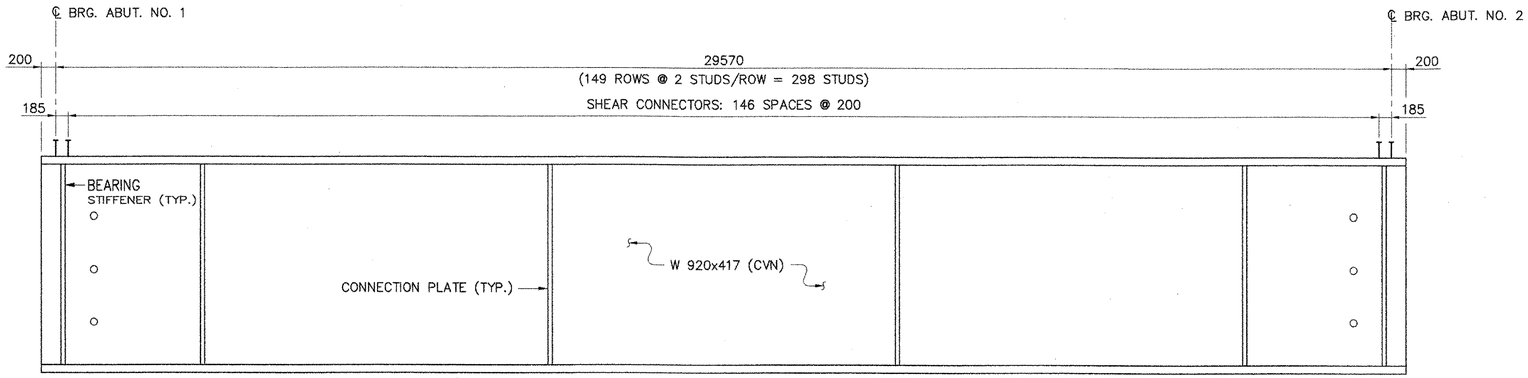
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
FRAMING PLAN	
Designed By J.T. KLEIN	Drawn By B.J. MASSE
Checked By L.S. GARDNER Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544FRM	Sheet 28 of 72

VHB Vanasse Hangen Brustlin, Inc.

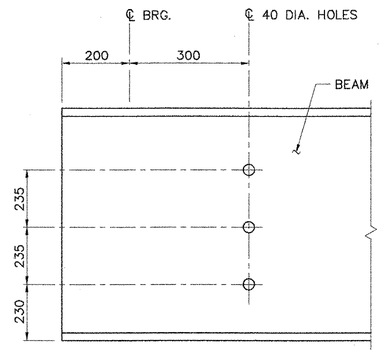
PLOTTED 3-14-2006

Metric

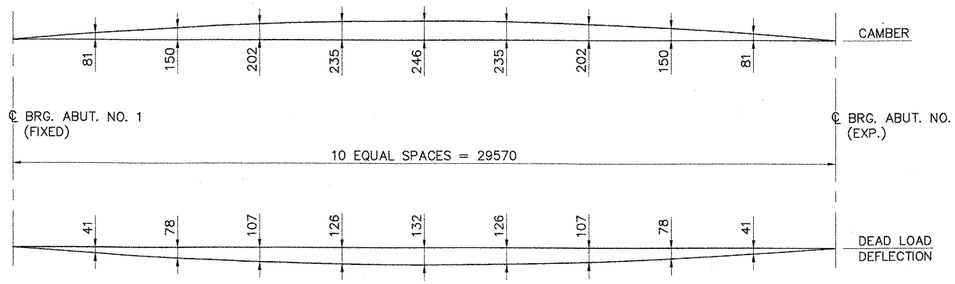


CVN = CHARPY V NOTCH TESTING REQUIRED PER SPECIFICATION

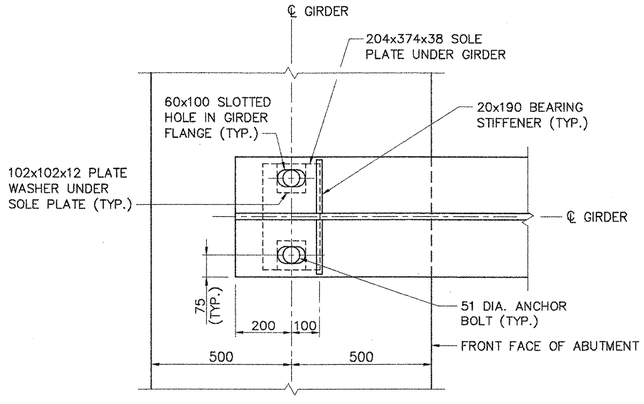
BEAM ELEVATION
NOT TO SCALE



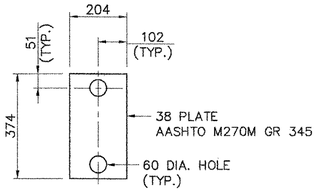
GIRDER END DETAIL
NOT TO SCALE



DEAD LOAD DEFLECTION AND CAMBER DIAGRAM
NOT TO SCALE



PLAN OF GIRDER END



SOLE PLATE DETAIL

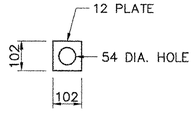
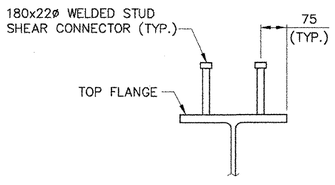


PLATE WASHER DETAIL



SHEAR CONNECTOR DETAIL
NOT TO SCALE

BEARING DEVICE ASSEMBLY DETAILS
(SEE SHEET 30 FOR TYPICAL SECTION)
NOT TO SCALE

NOTES:

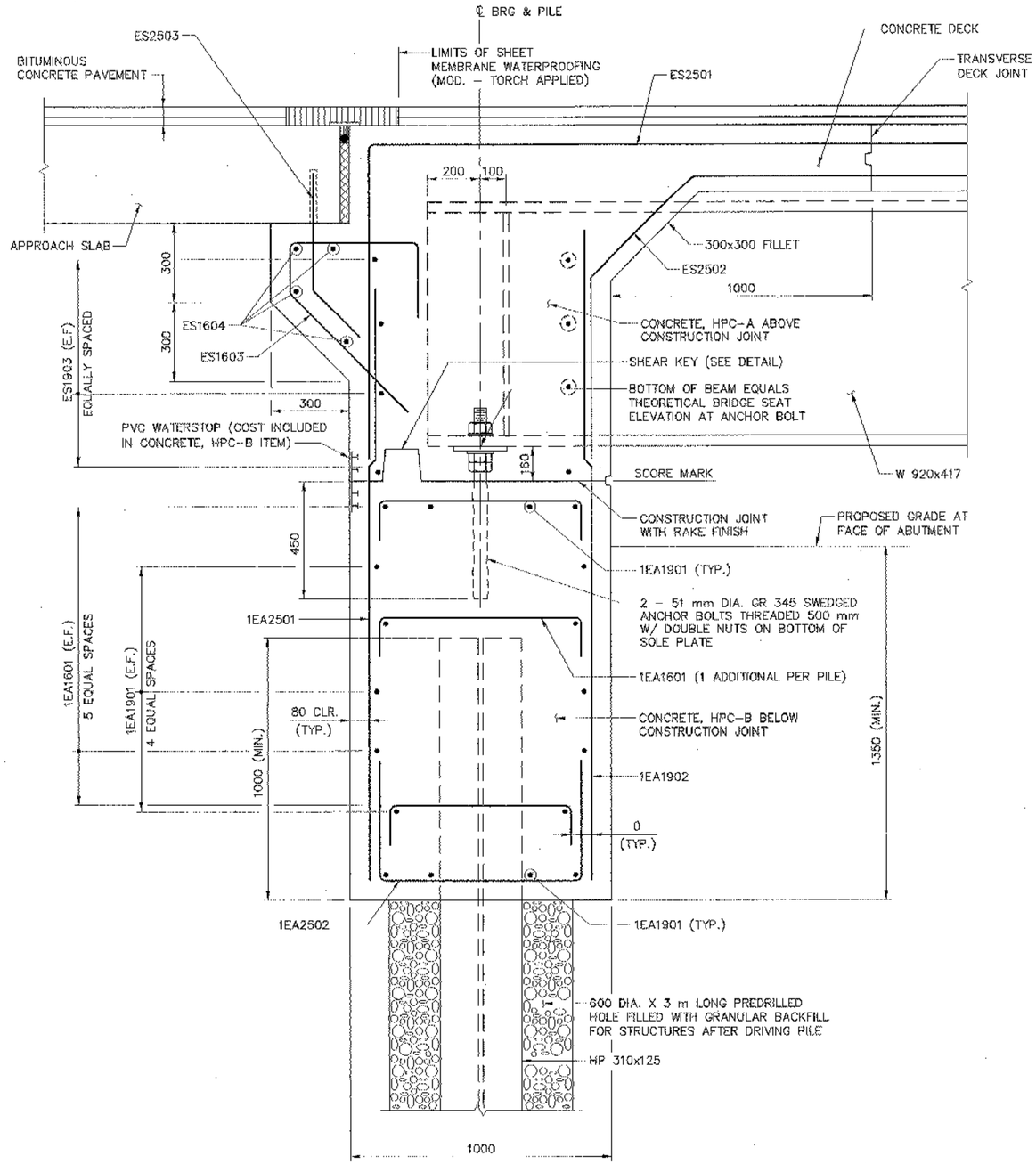
1. BEARINGS SHALL BE PAID AS ITEM 531:10, BEARING DEVICE ASSEMBLY (INTEGRAL ABUTMENT).
2. ALL STEEL IN BEARING DEVICE SHALL BE AASHTO M270, GRADE 250.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
BEAM ELEVATION & DETAILS	
Designed By J.T. KLEIN	Drawn By B.J. MASSE
Checked By L.S. GARDNER Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544SD1	Sheet 29 of 72

VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006



BRIDGE END DETAIL AND ABUTMENT TYPICAL SECTION

(ABUT. 1 SHOWN, ABUT. 2 SIMILAR)

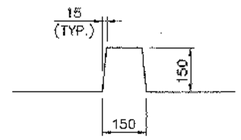
(ALL DECK AND APPROACH SLAB REINFORCING NOT SHOWN FOR CLARITY)

0 200 400 600

SCALE IN MILLIMETERS

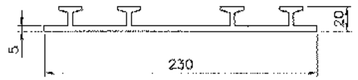
1:10

THEORETICAL BRIDGE SEAT ELEVATIONS		
GIRDER	ABUT. NO. 1	ABUT. NO. 2
1	217.440	218.020
2	217.486	218.066
3	217.532	218.112
4	217.578	218.158
5	217.624	218.204



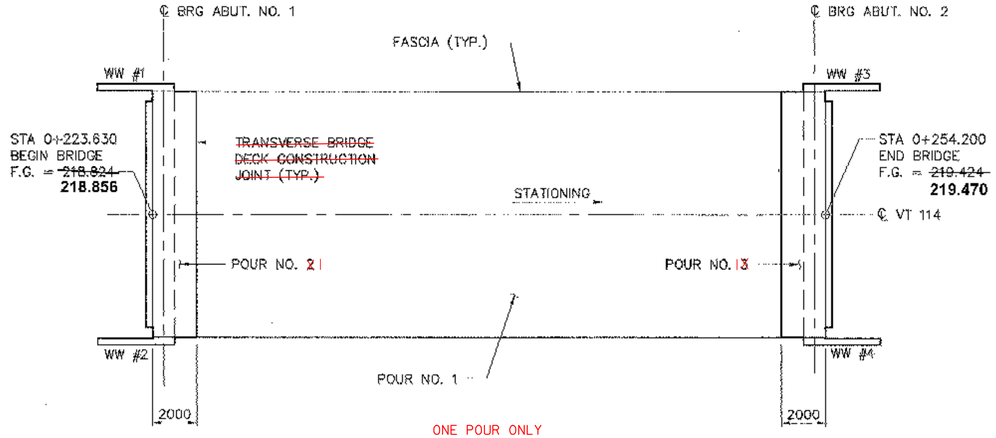
SHEAR KEY DETAIL

NOT TO SCALE



P.V.C. WATERSTOP

NOT TO SCALE



ONE POUR ONLY

POUR SEQUENCE

NOT TO SCALE

NOTE:

1. SEE SHEETS 33 AND 34 FOR ABUTMENT ELEVATION VIEWS AND ADDITIONAL REINFORCING LAYOUT.

KEY

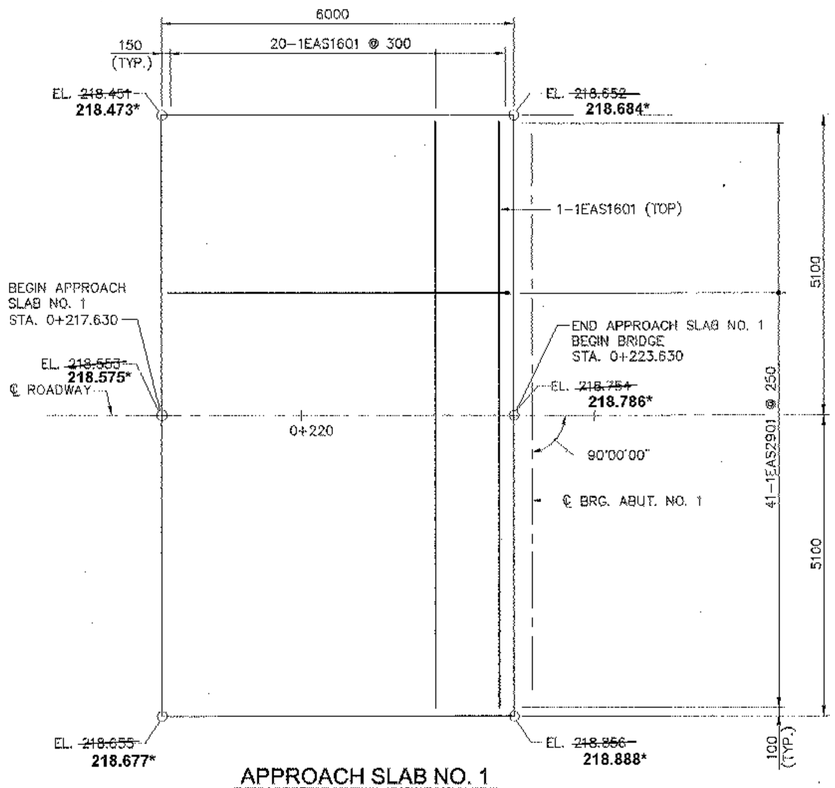
N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
INTEGRAL ABUTMENTS DETAILS	
Designed By R.J. XU	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544DTL	Sheet 30 of 72 (REVISED)

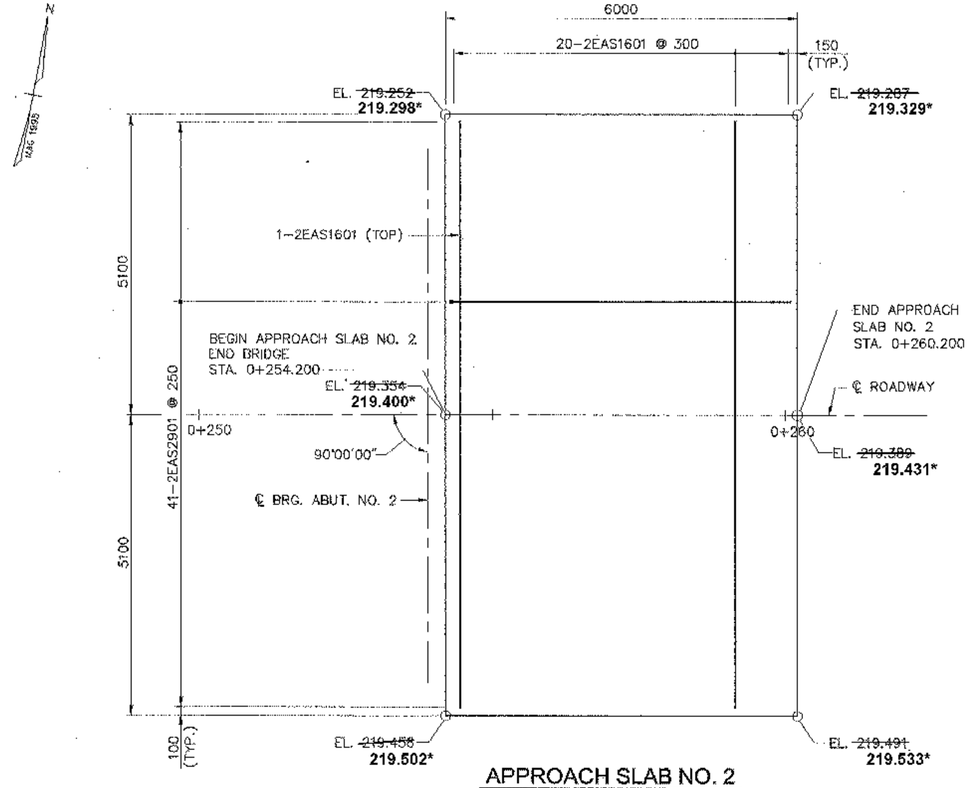
VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006



APPROACH SLAB NO. 1

SCALE: 1:50



* APPROACH SLAB ELEVATIONS ARE TOP OF CONCRETE

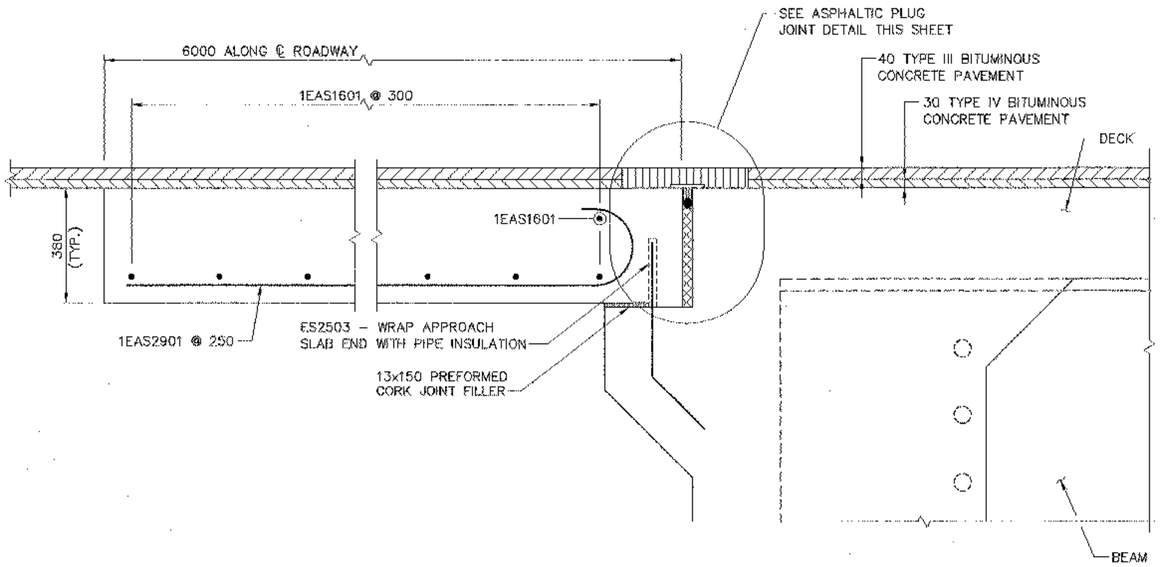
APPROACH SLAB NO. 2

SCALE: 1:50

0 1000 2000 3000

SCALE IN MILLIMETERS

SCALE: 1:50



APPROACH SLAB NO. 1 DETAIL

(APPROACH SLAB NO. 2 SIMILAR)

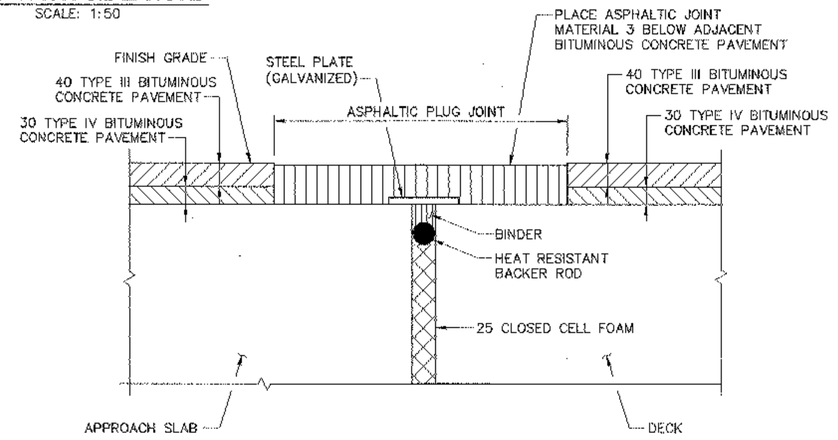
0 200 400 600

SCALE IN MILLIMETERS

SCALE: 1:10

KEY

N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE



ASPHALTIC PLUG JOINT DETAIL

(TYPICAL EACH END)
NOT TO SCALE

VERTICAL CURVES REVISED 12/06 BY RRW

NOTES:

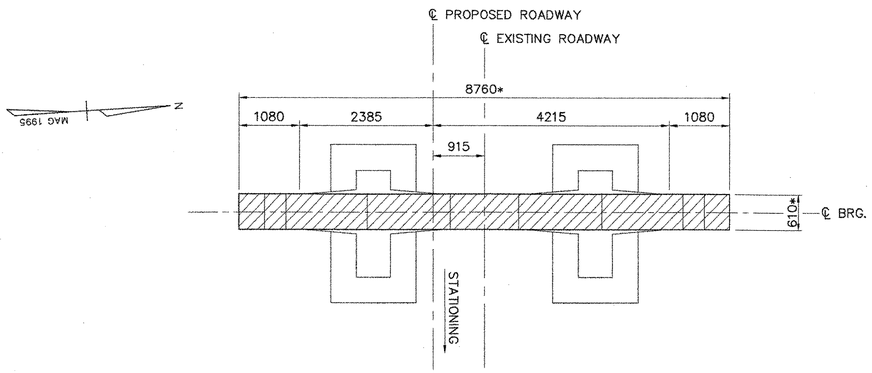
1. ALL COSTS OF PREFORMED CORK JOINT FILLER AND PIPE INSULATION SHALL BE INCLUDED IN ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

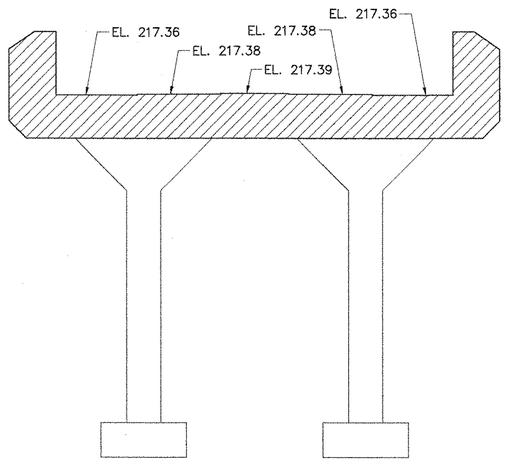
Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
APPROACH SLABS	
Designed By J.T. KLEIN	Drawn By B.J. MASSE
Checked By L.S. GARDNER Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544AS	Sheet 31 of 72 (REVISED)

VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3 14 2006



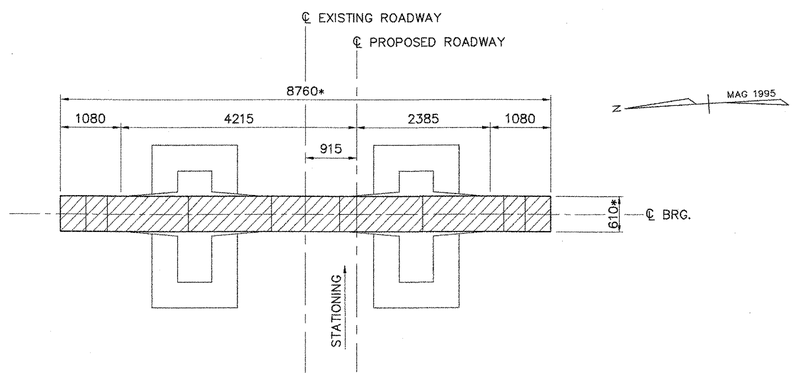
PLAN



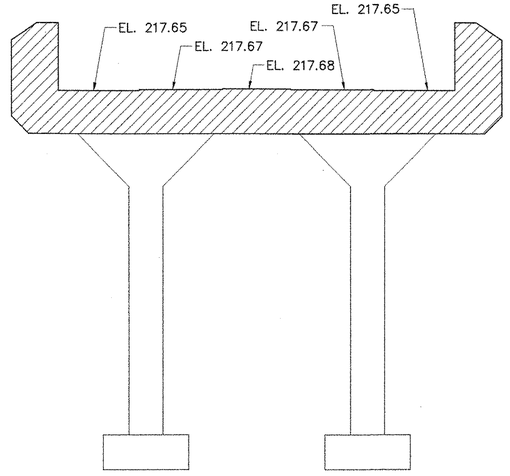
ELEVATION

ABUTMENT NO. 1

SCALE: 1:50



PLAN



ELEVATION

ABUTMENT NO. 2

SCALE: 1:50

DENOTES LIMIT OF REMOVAL

* APPROXIMATE EXISTING ELEVATION OR DIMENSION

REMOVAL NOTES:

1. REMOVAL OF EXISTING BRIDGE PAVEMENT SHALL BE PAID AS ITEM 529.10, REMOVAL OF BRIDGE PAVEMENT.
2. ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE SHALL INCLUDE:
   a. REMOVAL OF THE EXISTING BRIDGE RAILING, CONCRETE CURBS, CONCRETE BRIDGE DECK, AND CURTAIN WALLS.
   b. REMOVAL OF THE EXISTING STRUCTURAL STEEL BEAMS AND DIAPHRAGMS. THE STRUCTURAL STEEL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD PAINT. THE STRUCTURAL STEEL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND THE CONTRACTOR MAY DISPOSE OF IT OR RETAIN IT FOR FUTURE USE. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND ITS EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THESE COMPONENTS.
   c. REMOVAL OF ALL THE BEARING DEVICES.
   d. REMOVAL OF PORTIONS OF THE EXISTING ABUTMENTS AND WINGWALLS AS SHOWN ON THE PLANS AND DIRECTED BY THE RESIDENT ENGINEER.
   e. ERECTION, MAINTENANCE, AND REMOVAL OF TEMPORARY STRUCTURES TO PREVENT DEBRIS FROM FALLING INTO THE RIVER.
3. THE CONTRACTOR'S METHODS FOR PARTIAL REMOVAL OF THE EXISTING STRUCTURES SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY REMOVAL WORK.
4. LIMITS OF REMOVAL ARE APPROXIMATE. THE ENGINEER SHALL ESTABLISH ACTUAL LIMITS AFTER A COOPERATIVE INSPECTION BY THE CONTRACTOR AND THE RESIDENT ENGINEER. EXISTING ELEVATIONS SHALL BE FIELD VERIFIED TO ENSURE THE REMOVAL LIMITS ARE ADEQUATE TO OBTAIN THE REQUIRED DIMENSIONS AND ELEVATIONS OF THE NEW CONSTRUCTION.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.

VT 114 OVER PASSUMPSIC RIVER

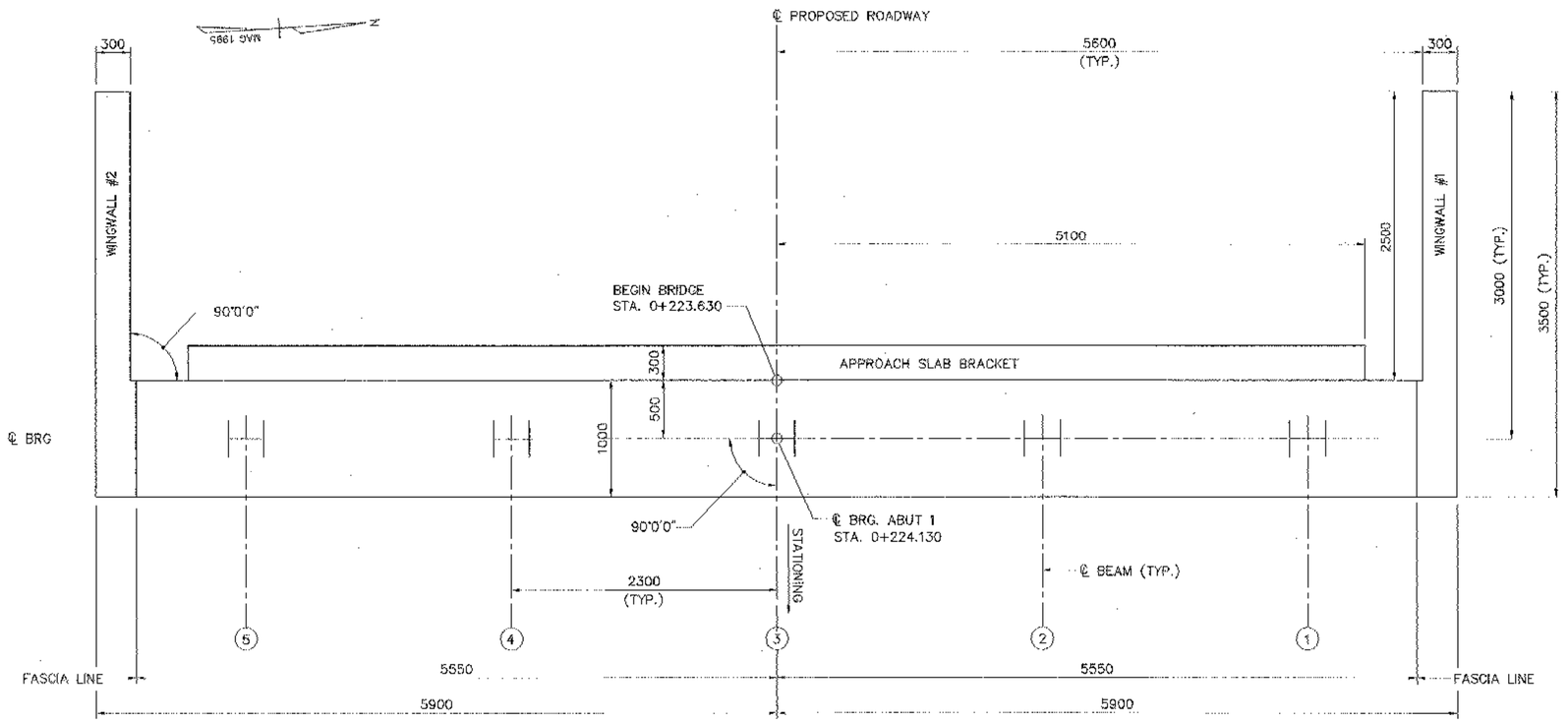
ABUTMENT REMOVAL

Designed By J.T. KLEIN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544EAB	Sheet 32 of 72

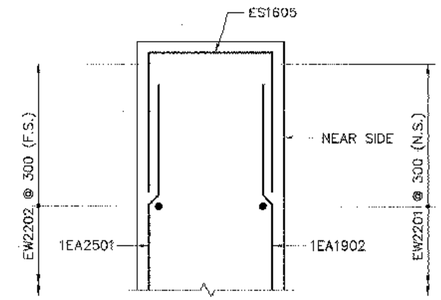
VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006

Metric



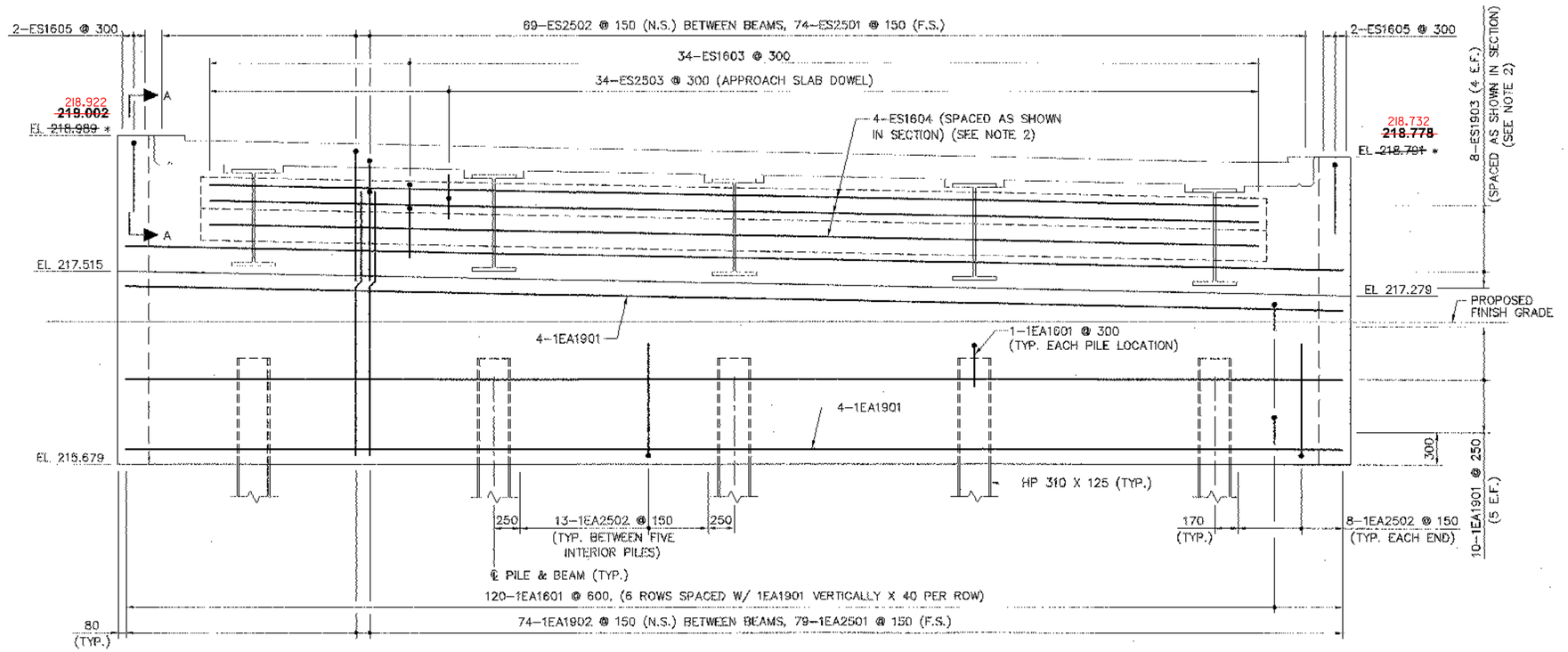
PLAN



SECTION A-A

0 400 800 1200

SCALE IN MILLIMETERS
SCALE: 1:20



ELEVATION

* SEE SHEET 35 FOR ADDITIONAL ELEVATIONS.

0 1000 2000 3000

SCALE IN MILLIMETERS
SCALE: 1:25

KEY:
N.S. – NEAR SIDE
F.S. – FAR SIDE
E.F. – EACH FACE

ELEVATION CHANGES DUE TO REVISION IN VERTICAL CURVES BY RRW 12/06

NOTES:

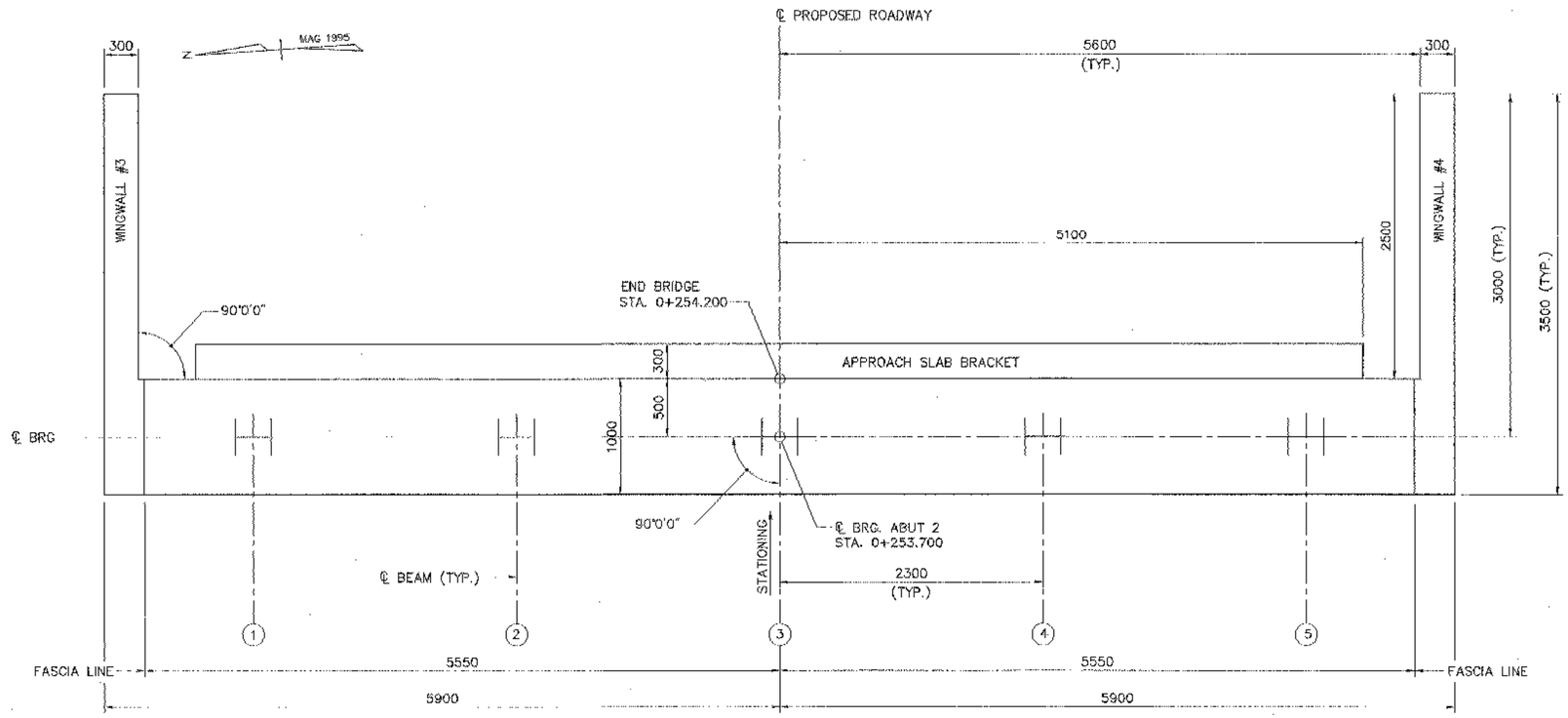
1. SEE SHEET 35 FOR WINGWALL DETAILS.
2. SEE SHEET 30 FOR ABUTMENT TYPICAL SECTION.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

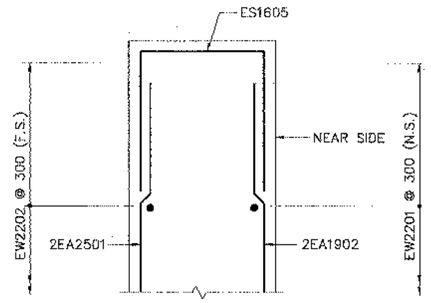
Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta.
	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
ABUTMENT NO. 1	
Designed By R.J. XU	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544AB1	Sheet 33 of 72 (REVISED)

VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006



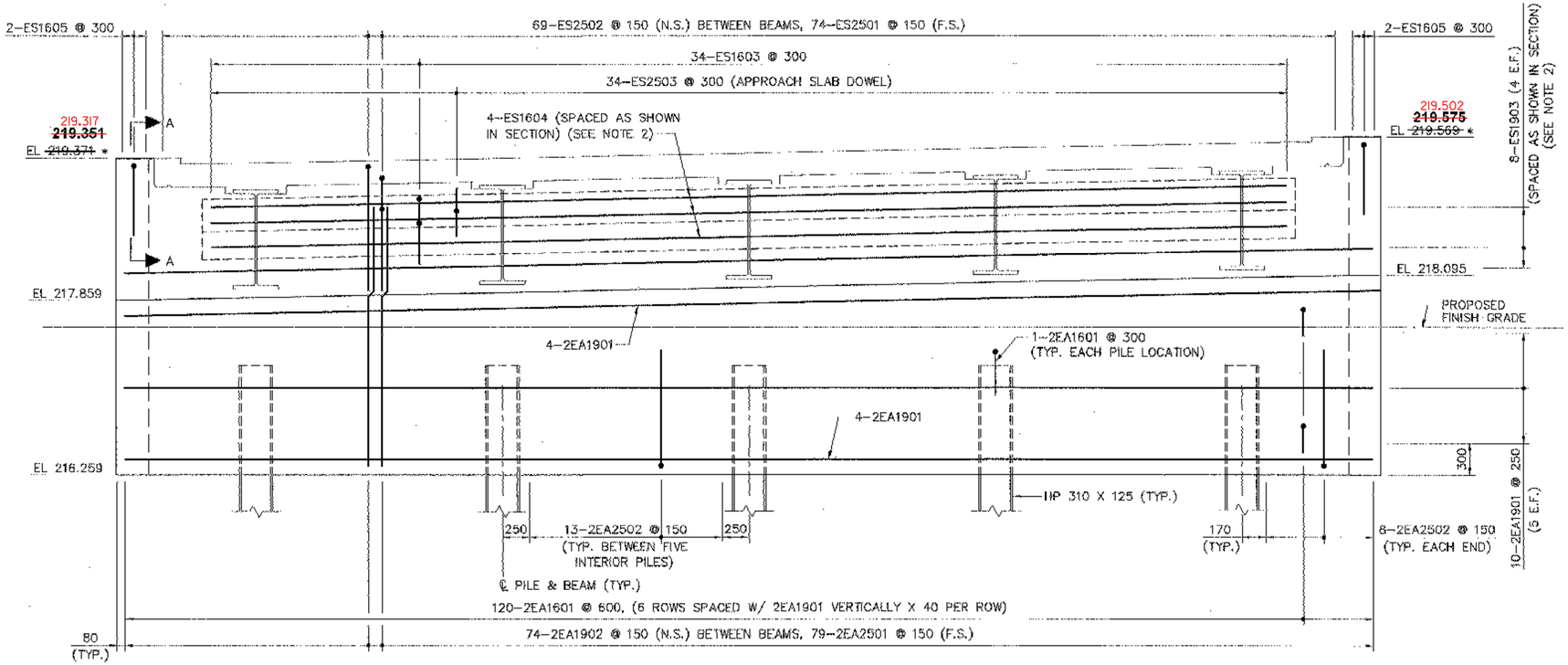
PLAN



SECTION A-A

0 400 800 1200

SCALE IN MILLIMETERS
SCALE: 1:20



ELEVATION

* SEE SHEET 35 FOR ADDITIONAL ELEVATIONS.

0 1000 2000 3000

SCALE IN MILLIMETERS
SCALE: 1:25

KEY:
N.S. – NEAR SIDE
F.S. – FAR SIDE
E.F. – EACH FACE

ELEVATION CHANGES DUE TO REVISION IN VERTICAL CURVES BY RRW 12/06

NOTES:

1. SEE SHEET 35 FOR WINGWALL DETAILS.
2. SEE SHEET 30 FOR ABUTMENT TYPICAL SECTION.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta.
	Surv. Sta.

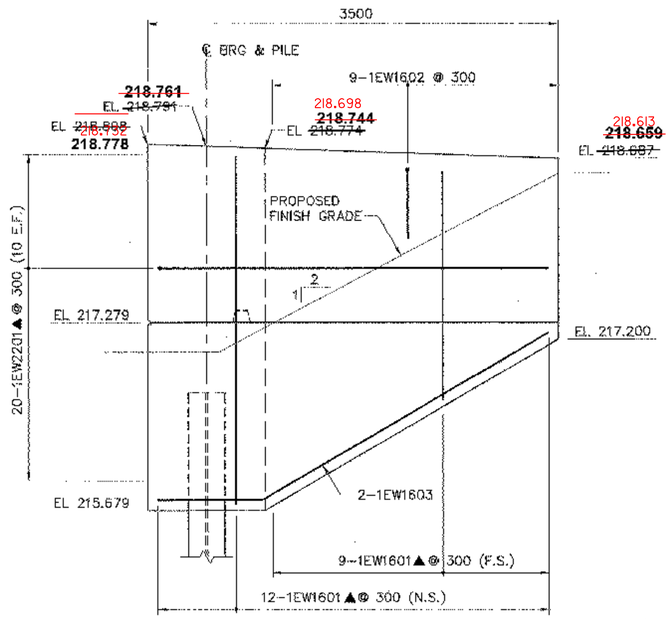
VT 114 OVER PASSUMPSIC RIVER

ABUTMENT NO. 2

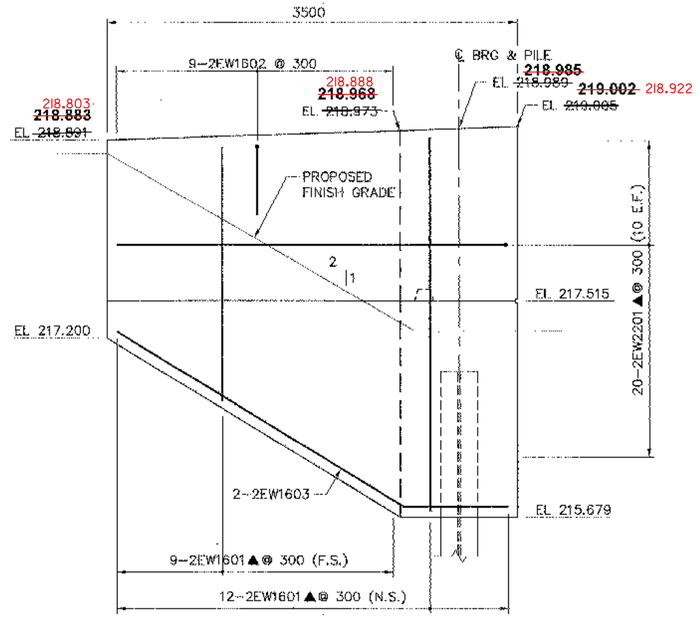
Designed By R.J. XU	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544AB2	Sheet 34 of 72 **(REVISED)**

VHB Vanasse Hangen Brustlin, Inc.

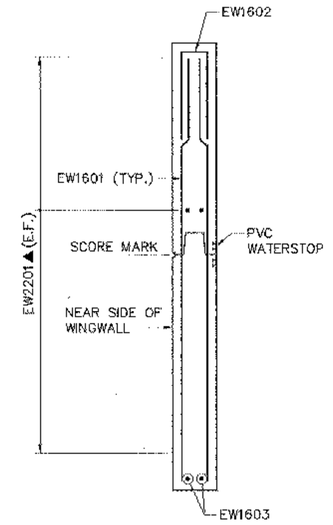
PLOTTED 3-14-2006



WINGWALL NO. 1



WINGWALL NO. 2



WINGWALL TYPICAL SECTION

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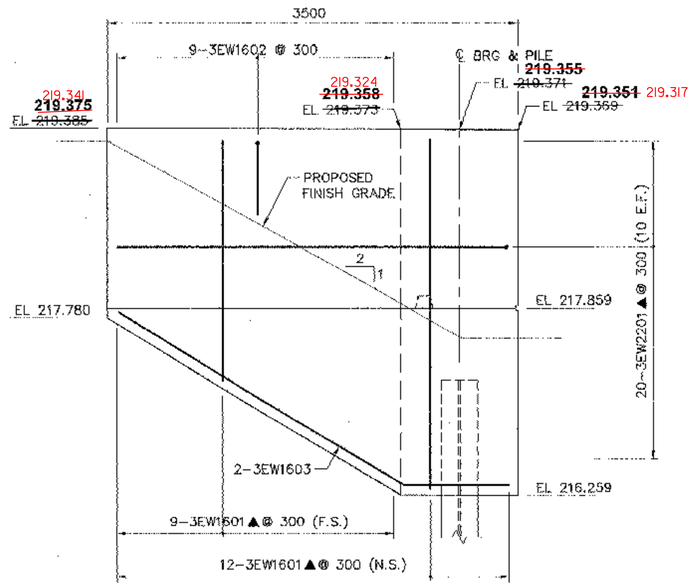
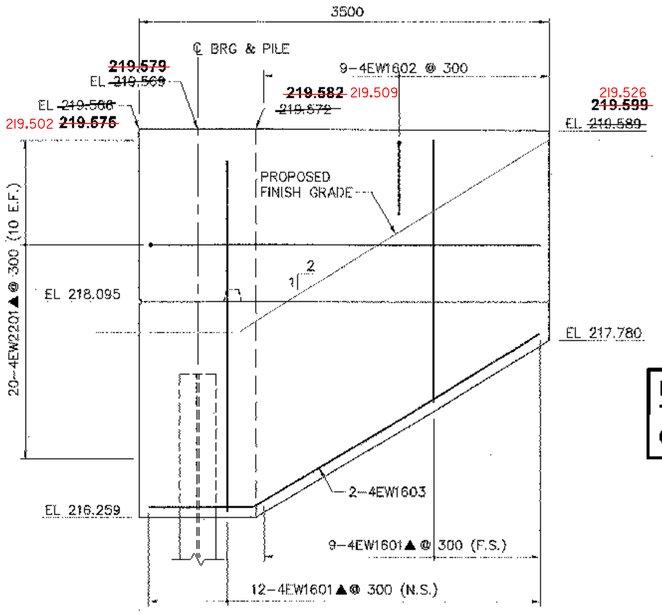
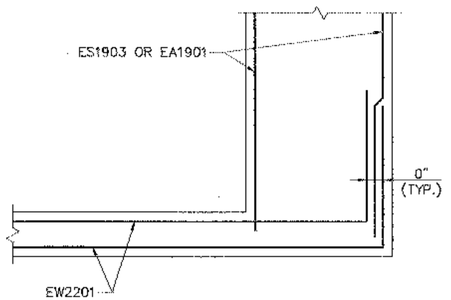
SCALE IN MILLIMETERS
SCALE: 1:20



WINGWALL NO. 3



WINGWALL NO. 4



TYPICAL CORNER DETAIL

0 400 800 1200

SCALE IN MILLIMETERS
SCALE: 1:20

ELEVATION CHANGES DUE TO REVISION OF VERTICAL CURVES BY RRW 12/06

WINGWALL DETAILS

0 1000 2000 3000

SCALE IN MILLIMETERS
SCALE: 1:25

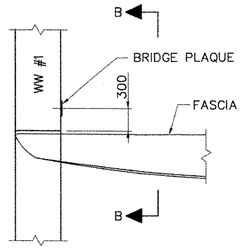
KEY:
N.S. – NEAR SIDE
F.S. – FAR SIDE
E.F. – EACH FACE
▲ – CUT TO FIT IN FIELD

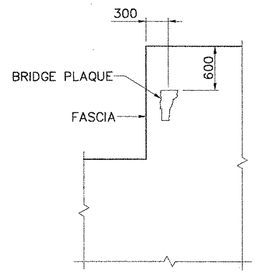
VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
WINGWALL DETAILS	
Designed By J.T. KLEIN	Drawn By B.J. MASSE
Checked By L.S. GARDNER Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544WWF	Sheet 35 of 72 (REVISED)

PLOTTED 3-14-2006

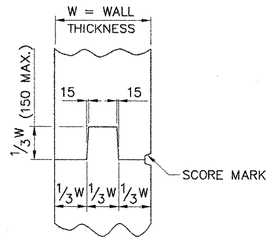




THE BRIDGE PLAQUE SHALL BE INSTALLED BY THE CONTRACTOR AT WINGWALL #1 AS SHOWN OR AS DIRECTED BY THE RESIDENT ENGINEER.

PLAN VIEW B-B

BENCH MARK AND BRIDGE PLAQUE LOCATION
NOT TO SCALE



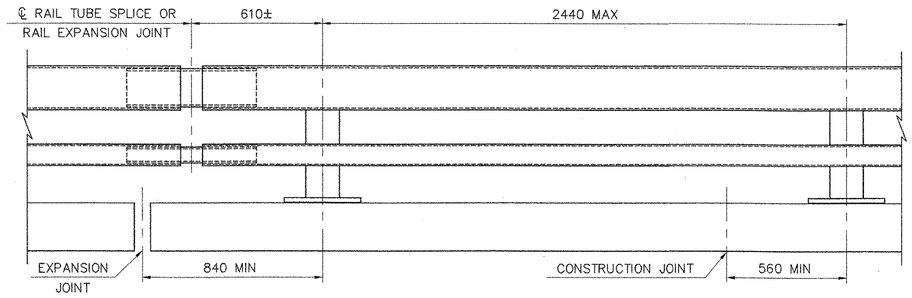
TYPICAL CONCRETE CONSTRUCTION JOINT
NOT TO SCALE

VHB Vanasse Hangen Brustlin, Inc.

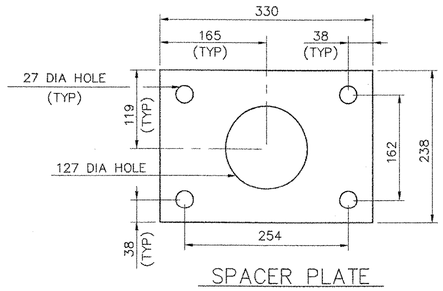
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
MISCELLANEOUS DETAILS	
Designed By J.T. KLEIN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544SD2	Sheet 36 of 72

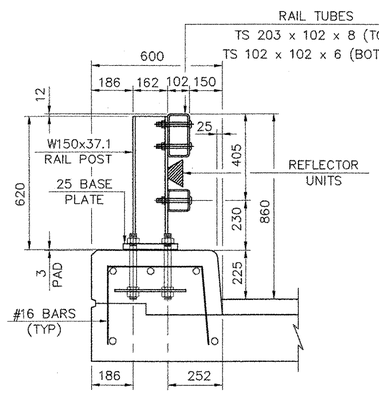
PLOTTED 3-14-2006



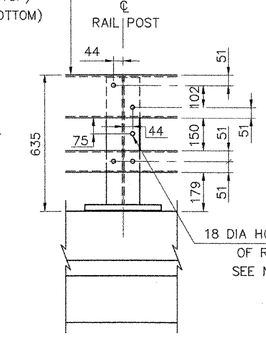
BRIDGE RAILING ELEVATION



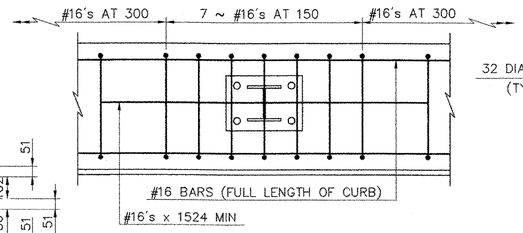
SPACER PLATE



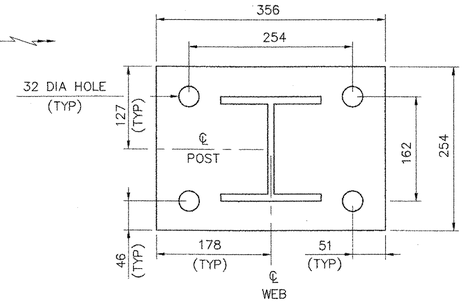
TYPICAL SECTION



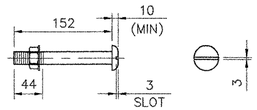
ELEVATION



CURB REINFORCING PLAN

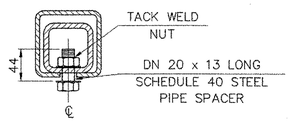


POST AND BASE PLATE



M20 DIA M164 (TYPE I)
ROUND HEAD BOLT

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



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

EXPANSION JOINT SECTION

FOR DETAILS NOT SHOWN
SEE "RAIL TUBE SPLICE SECTION"

NOTES:

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

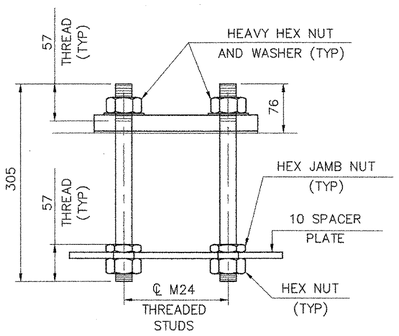
MATERIALS:

RAIL TUBES.....ASTM A500, GRADE B OR ASTM A501
RAIL POSTS AND BASE PLATE.....ASTM A709/A709M, GRADE 50
ALL OTHER SHAPES AND PLATES.....ASTM A709/A709M, GRADE 36
ANCHOR STUDS.....ASTM A449
ALL OTHER BOLTS (UNLESS NOTED).....AASHTO M164M, TYPE I

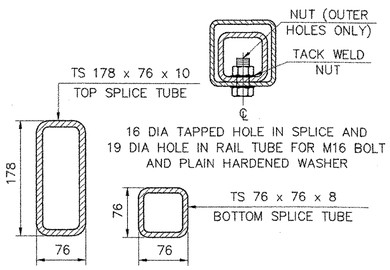
NUTS FOR AASHTO M164 BOLTS AND ANCHOR STUDS SHALL COMPLY WITH AASHTO M291M (ASTM A563M).

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

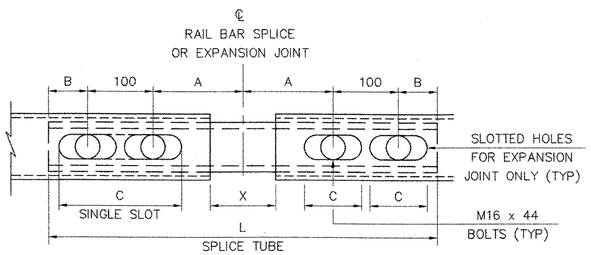
3mm PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.01 OR 731.02.



RAIL POST ANCHORAGE

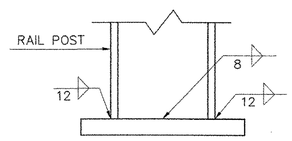


RAIL TUBE SPLICE SECTION



RAIL TUBE SPLICE AND RAIL
EXPANSION JOINT DETAIL

(BOTTOM VIEW)



BASE WELD DETAIL

SPLICE TABLE					
T	A	B	C	L	X
NA	100	50	--	510	20
EXPANSION JOINT TABLE					
<100	100	50	65	510	65
~~>100 <165~~	~~140~~	~~60~~	~~90~~	~~605~~	~~105~~
~~>165 <230~~	~~165~~	~~85~~	~~230*~~	~~705~~	~~130~~
~~>230 <330~~	~~215~~	~~110~~	~~280*~~	~~860~~	~~180~~

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

* = SINGLE SLOT

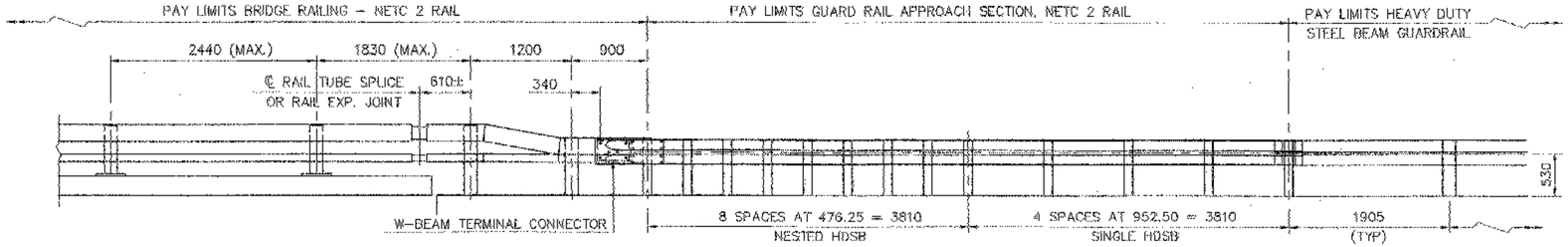
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
BRIDGE RAILING (1 OF 2)	
Designed By VTRANS	Drawn By VTRANS
Checked By VTRANS / J.T.K. Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. BR1-97M	Sheet 37 of 72

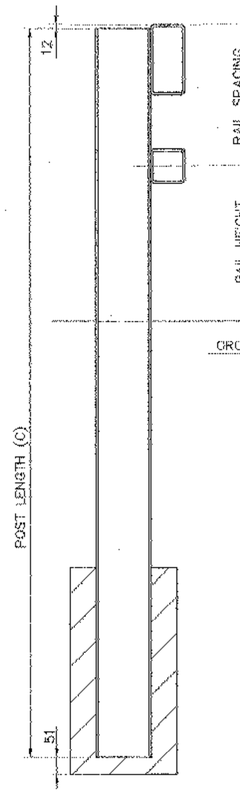
VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006

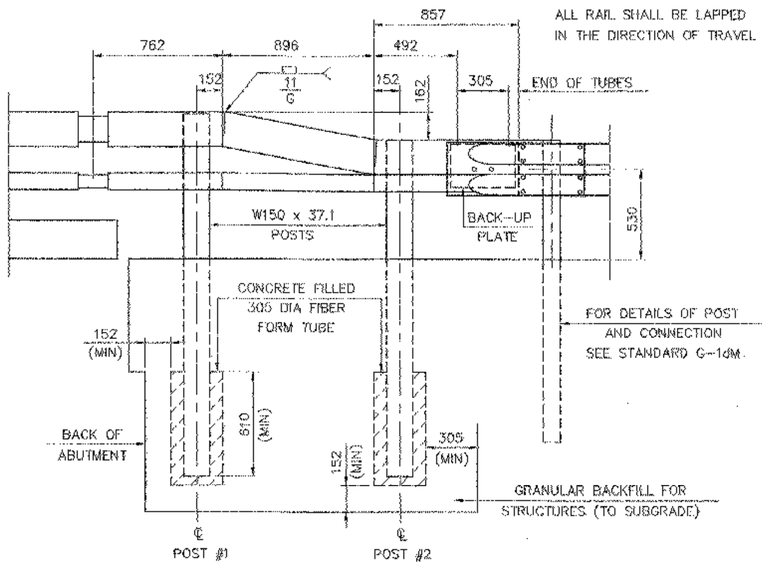
Metric



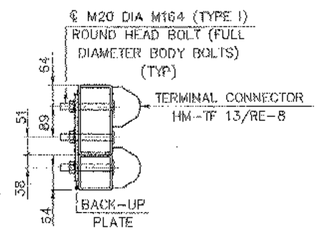
RAILING TRANSITION ELEVATION



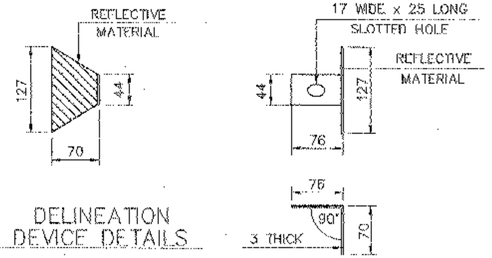
TYPICAL SECTION



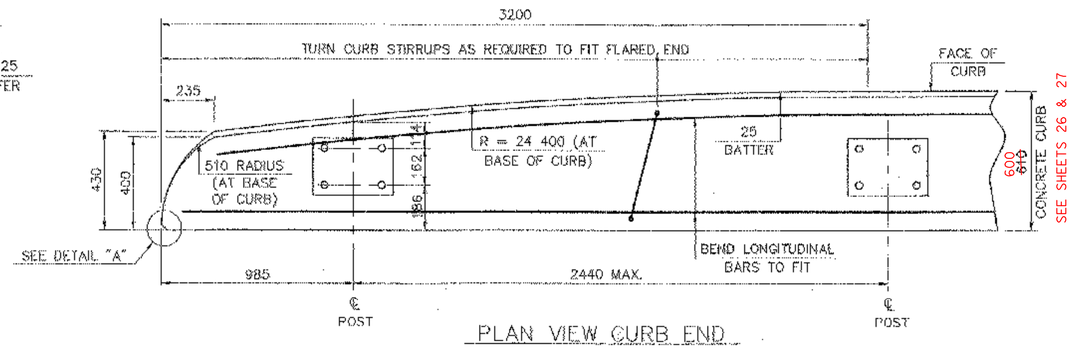
ELEVATION



SECTION THROUGH GUARD RAIL CONNECTION AT TERMINAL CONNECTOR

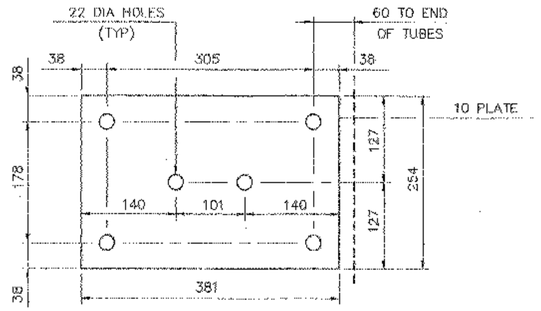


DELINEATION DEVICE DETAILS



PLAN VIEW CURB END

DETAIL "A"



BACK-UP PLATE

POST NUMBER	RAIL HEIGHT (A)	RAIL SPACING (B)	POST LENGTH (C)	RAIL HEIGHT (D)
1	860	405	2134	455
2	702	254	1956	448

NOTES:

1. REFER TO BRIDGE RAILING (1 OF 2) FOR ADDITIONAL DETAILS, NOTES AND MATERIAL SPECIFICATIONS.
2. TO FACILITATE FIELD FIT – UP OF THE TRANSITION RAILING, POSTS SHALL BE SET LOOSELY INTO FIBER FORM TUBES WHILE TRANSITION PARTS ARE BEING ASSEMBLED. POST HOLES SHALL BE BACKFILLED WITH A CONCRETE MIX APPROVED BY THE ENGINEER. PAYMENT FOR COMPONENTS, INCLUDING BACKUP PLATE AND END TERMINAL CONNECTOR FOR GUARD RAIL, AUGERING, FIBER FORM TUBES AND CONCRETE, AND INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO BRIDGE RAILING, N.E.TC. 2 RAIL.
3. THE REFLECTORIZED ALUMINUM DELINEATION IS TO BE ERECTED EVERY 9m (OR CLOSEST POST) WITH A M16 BOLT. DELINEATORS SHALL MEET SPECIFICATION REQUIREMENTS FOR ASTM B209 ALLOY 5052-H32.
4. REFLECTIVE MATERIAL SHALL MEET REQUIREMENTS OF SUBSECTION 750.08 AND SHALL BE OF ENCAPSULATED LENS SILVER OR AMBER. AMBER IS TO BE INSTALLED ON THE DRIVER'S LEFT AND SILVER ON THEIR RIGHT.
5. ALL APPROACH RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW.
6. SEE STANDARD G-1M AND G-1dM FOR ADDITIONAL INFORMATION.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
BRIDGE RAILING (2 OF 2)	
Designed By VTRANS	Drawn By VTRANS
Checked By VTRANS / J.T.K. Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. BR2-97M	Sheet 38 of 72

VHB Vanasse Hangen Brustlin, Inc.

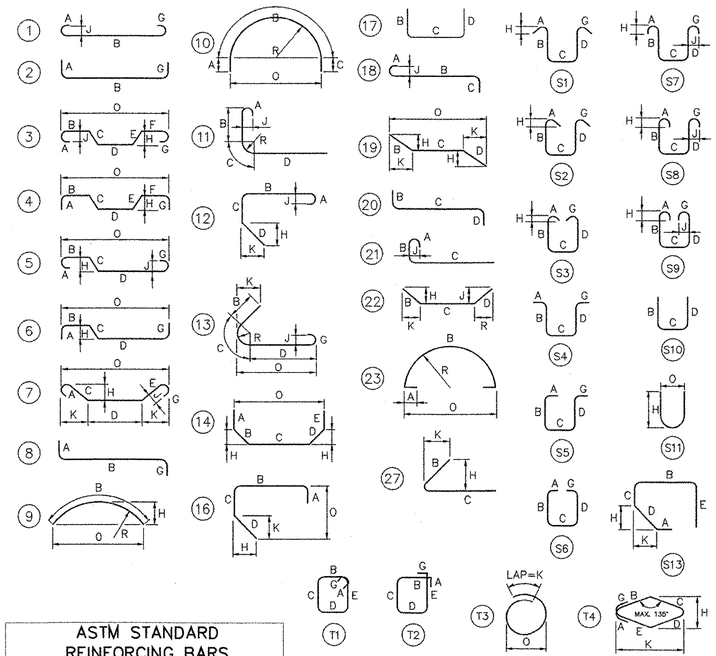
PLOTTED 3-14-2006

	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
					DECK												
*	407	16	10940	ES1601	STR												
*	9	16	10040	ES1604	STR												
*	205	16	12000	ES1606	STR												
*	103	16	7730	ES1607	STR												
	16	19	12840	ES1903	STR												
	288	16	1710	ES1602	S5	250	410	390	410			250					
	68	16	1530	ES1603	16	250	440	220	620				438		438		
	8	16	2960	ES1605	17		1060	840	1060								
*	149	25	6170	ES2501	17		5020	1150	0								
*	139	25	2810	ES2502	22		1540	540	730				1089	516	1089	516	
	68	25	1200	ES2503	19		600	600	0				424		424		1024
					APPROACH SLAB NO. 1												
△	23	16	10040	1EAS1601	STR												
△	43	29	6140	1EAS2901	1	300	5840					0		220			
					APPROACH SLAB NO. 2												
△	23	16	10040	2EAS1601	STR												
△	43	29	6140	2EAS2901	1	300	5840					0		220			
					ABUTMENT NO. 1 PILE CAP												
*	19	19	11640	1EA1901	STR												
*	75	19	2780	1EA1902	STR												
*	80	25	2780	1EA2501	STR												
△	127	16	1340	1EA1601	2	250	840					250					
*	69	25	2960	1EA2502	17		1060	840	1060								
					ABUTMENT NO. 2 PILE CAP												
*	19	19	11640	2EA1901	STR												
*	75	19	2780	2EA1902	STR												
*	80	25	2780	2EA2501	STR												
△	127	16	1340	2EA1601	2	250	840					250					
*	69	25	2960	2EA2502	17		1060	840	1060								
					WINGWALL NO. 1												
▲	21	16	2890	1EW1601	STR												
	9	16	1340	1EW1602	17		600	140	600								
	2	16	3650	1EW1603	19		2730	920	0				1377		2358		
▲△	22	22	4290	1EW2201	17		3340	950	0								
					WINGWALL NO. 2												
▲	21	16	3080	2EW1601	STR												
	9	16	1340	2EW1602	17		600	140	600								
	2	16	3650	2EW1603	19		2730	920	0				1377		2358		
▲△	22	22	4290	2EW2201	17		3340	950	0								
					WINGWALL NO. 3												
▲	21	16	2890	3EW1601	STR												
	9	16	1340	3EW1602	17		600	140	600								
	2	16	3650	3EW1603	19		2730	920	0				1377		2358		
▲△	22	22	4290	3EW2201	17		3340	950	0								
					WINGWALL NO. 4												
▲	21	16	3080	4EW1601	STR												
	9	16	1340	4EW1602	17		600	140	600								
	2	16	3650	4EW1603	19		2730	920	0				1377		2358		
▲△	22	22	4290	4EW2201	17		3340	950	0								

NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O

NOTES

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING 55M SHALL CONFROM TO THE REQUIREMENT OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31M (ASTM A 615M-S1). ALL BARS SHALL BE GRADE 400, 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 ARE TO BE SHOWN ONLY WHEN NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS ARE TO BE SHOWN ONLY WHEN NECCESSARY 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 MECHANICAL CONNECTORS.
10. * DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
11. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
12. "E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

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

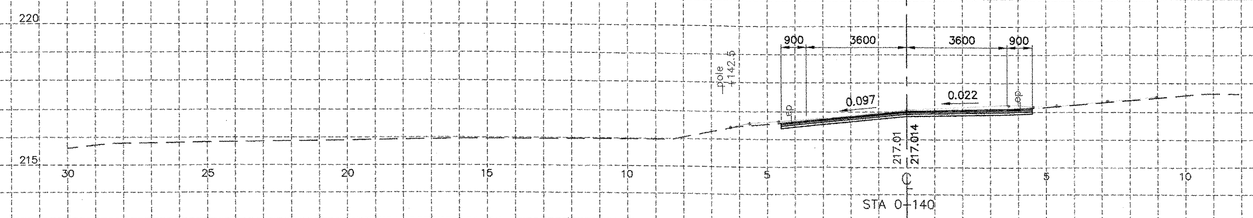
VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

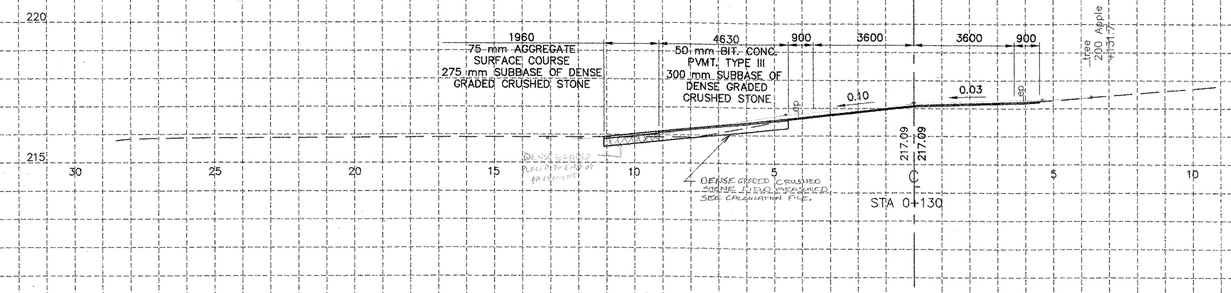
Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta.
	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
REINFORCING STEEL SCHEDULE	
Designed By L.S. GARDNER	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544REF	Sheet 39 of 72

PLOTTED 3-14-2006

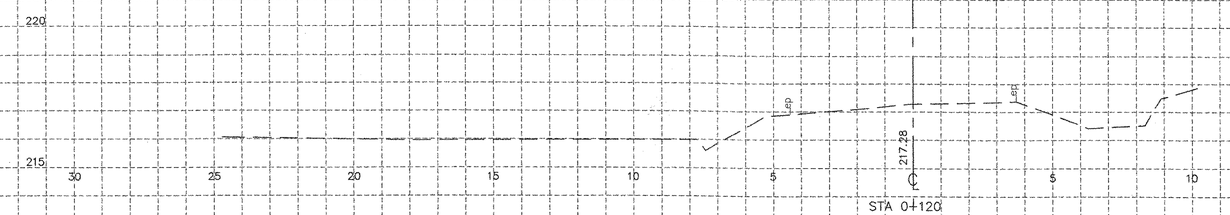
VAOT Metric

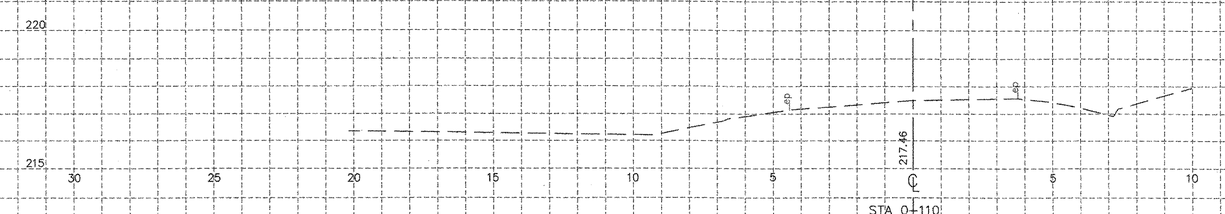


SEE SHEET 25, GENERAL NOTE 5 FOR ADDITIONAL INFORMATION ON EXISTING LANE AND SHOULDER WIDTHS.



BEGIN APPROACH
STA 0+125.000





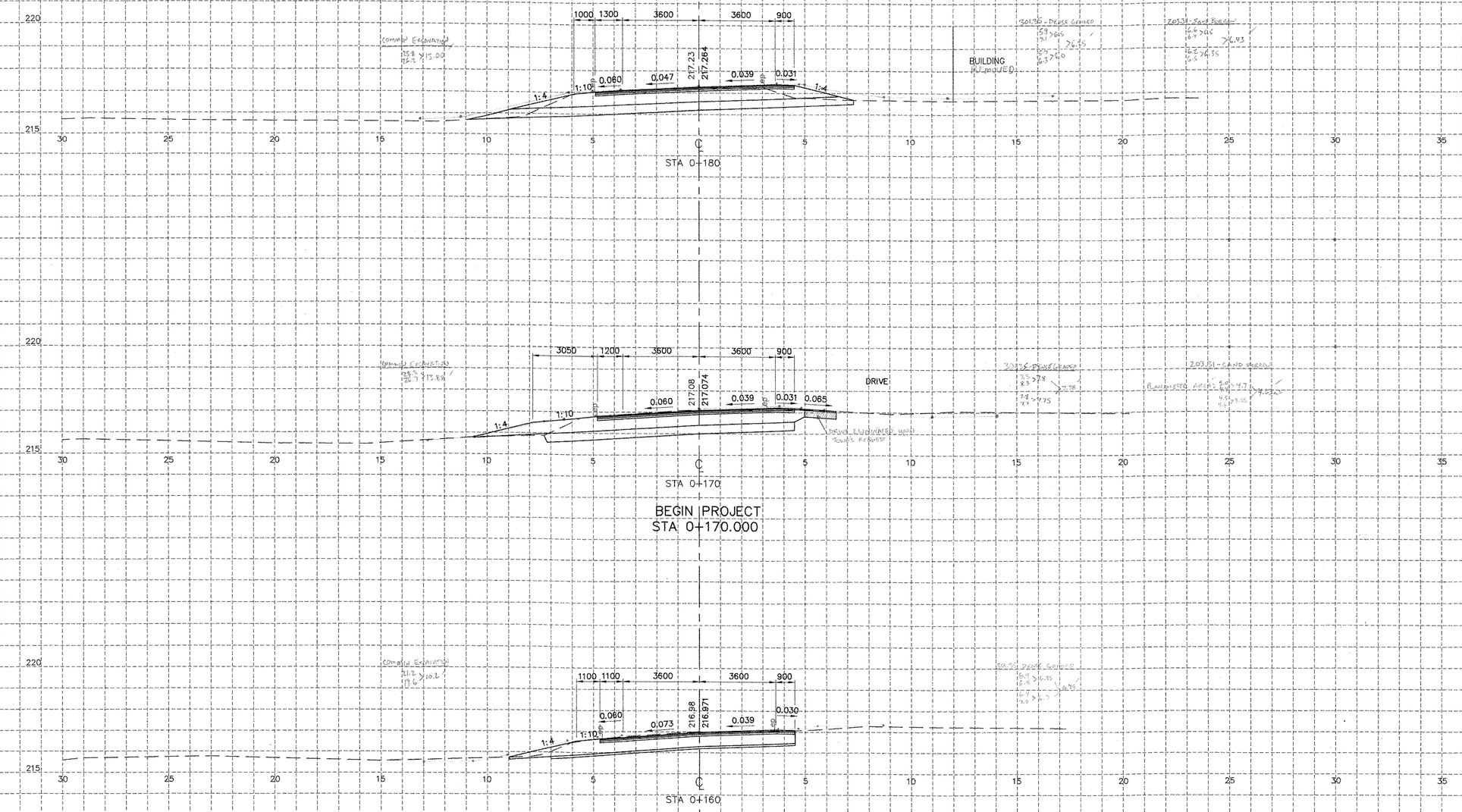
SCALE 5 METERS HORZ. & VERT.

VHB Vanasse Hangen Brustlin, Inc.

FROM STA. 0+110 TO STA. 0+140 VT 114
PROJECT NAME LYNDON
NO. BRF 0269(10)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 11/95
SHEET 40 OF 72 SHEETS

50544XS PLOTTED 3-14-2006

VAOT Metric



BEGIN PROJECT
STA 0+170.000

SCALE 5 METERS
HORZ. & VERT.

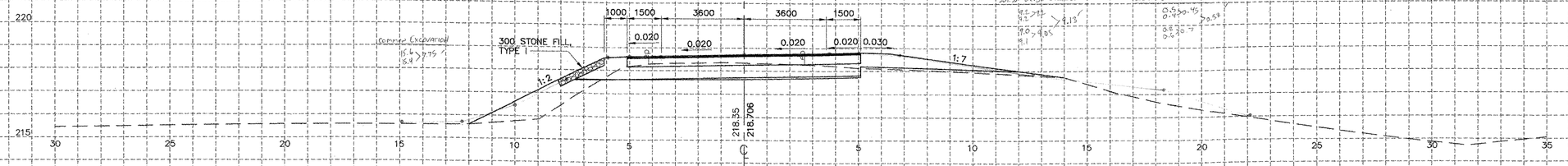
FROM STA. 0+150	TO STA. 0+180 VT 114
PROJECT NAME	LYNDON
NO.	BRF 0269(10)
SURVEYED BY	EIV TECHNICAL SERVICES, LLC 11/95
SHEET 41 OF 72 SHEETS	

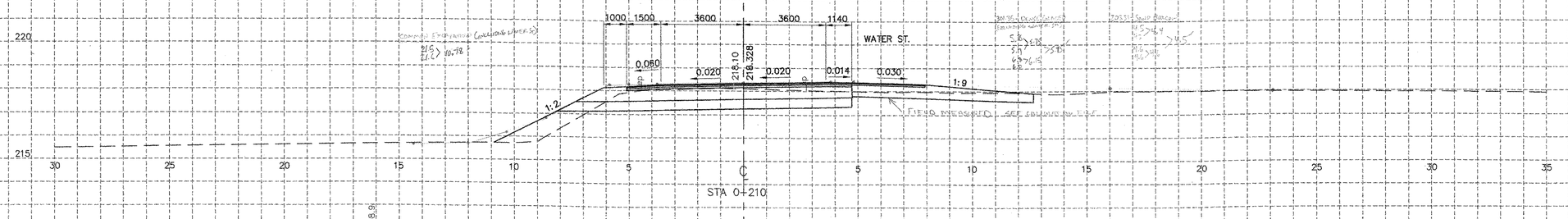
VHB Vanasse Hangen Brustlin, Inc.

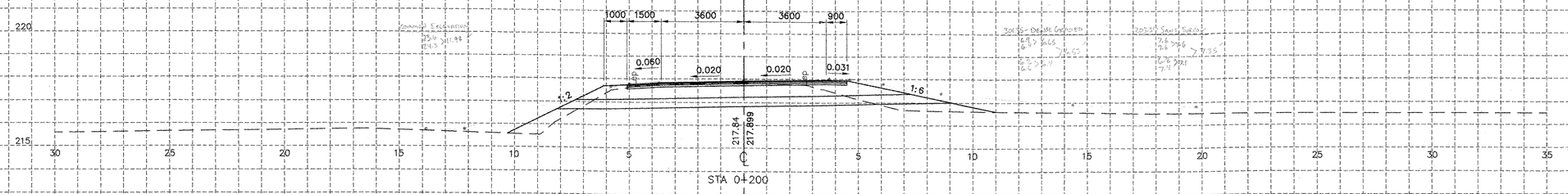
50544XS PLOTTED 3-14-2006

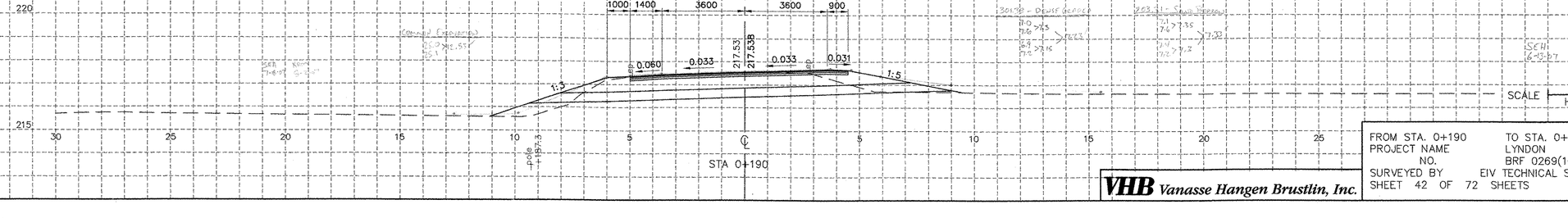
VAOT Metric

BEGIN BRIDGE
STA 0+223.630







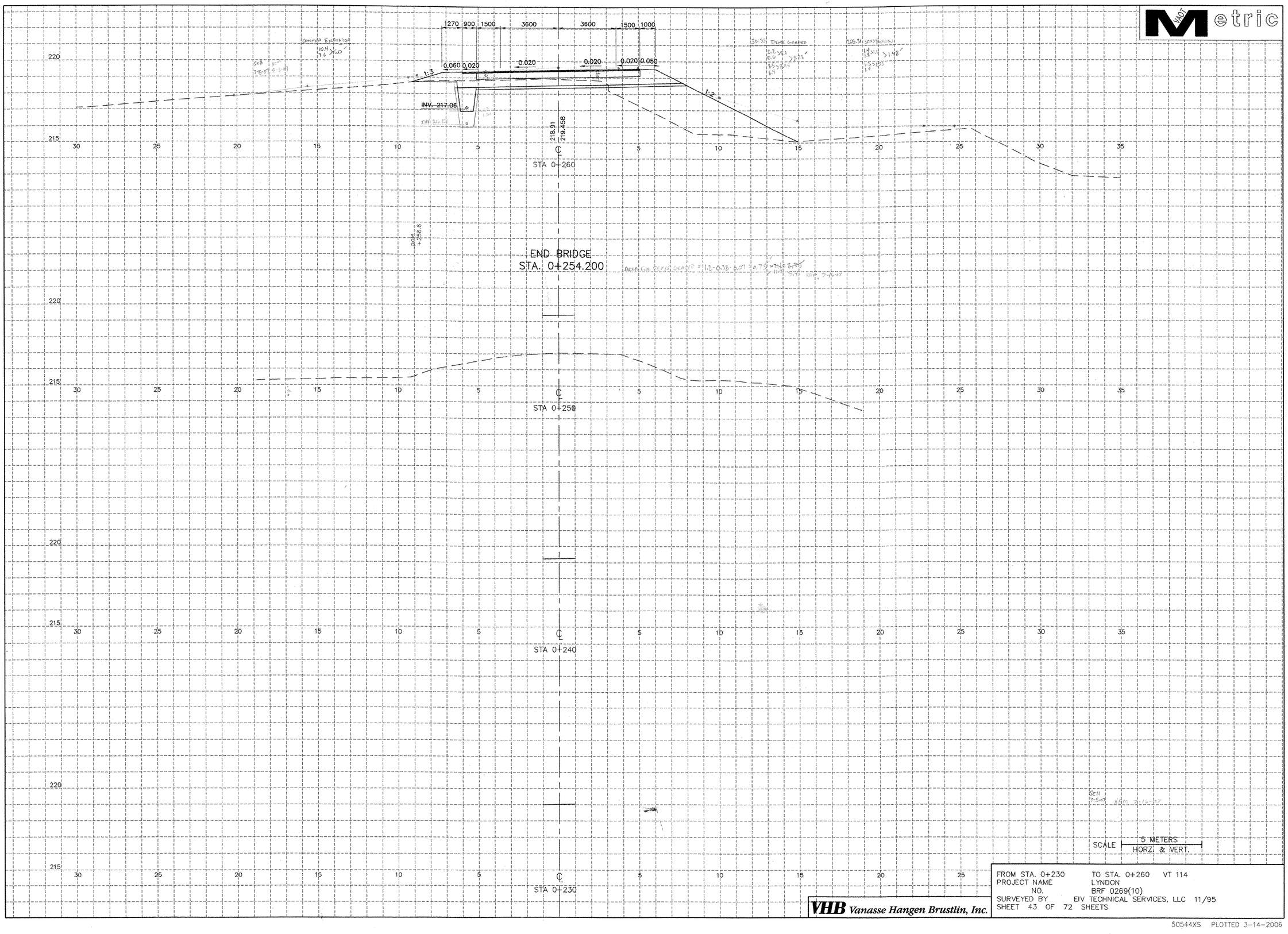


FROM STA. 0+190	TO STA. 0+220 VT 114
PROJECT NAME	LYNDON
NO.	BRF 0269(10)
SURVEYED BY	EIV TECHNICAL SERVICES, LLC 11/95
SHEET 42 OF 72 SHEETS	

VHB Vanasse Hangen Brustlin, Inc.

50544XS PLOTTED 3-14-2006

VAOT Metric



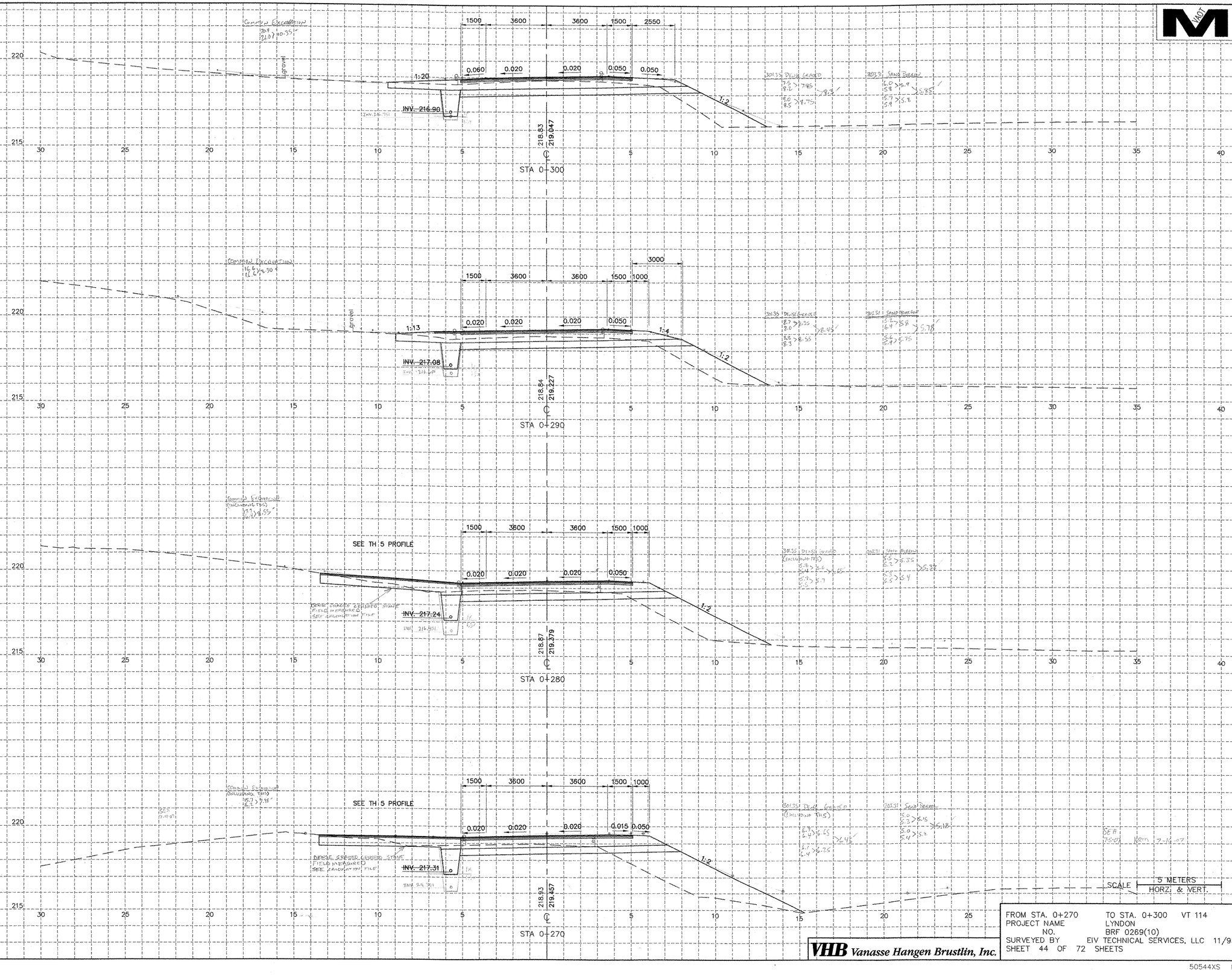
SCALE 5 METERS HORZ. & VERT.

FROM STA. 0+230	TO STA. 0+260 VT 114
PROJECT NAME	LYNDON
NO.	BRF 0269(10)
SURVEYED BY	EIV TECHNICAL SERVICES, LLC 11/95
SHEET 43 OF 72 SHEETS	

VHB Vanasse Hangen Brustlin, Inc.

50544XS PLOTTED 3-14-2006

VAOT Metric



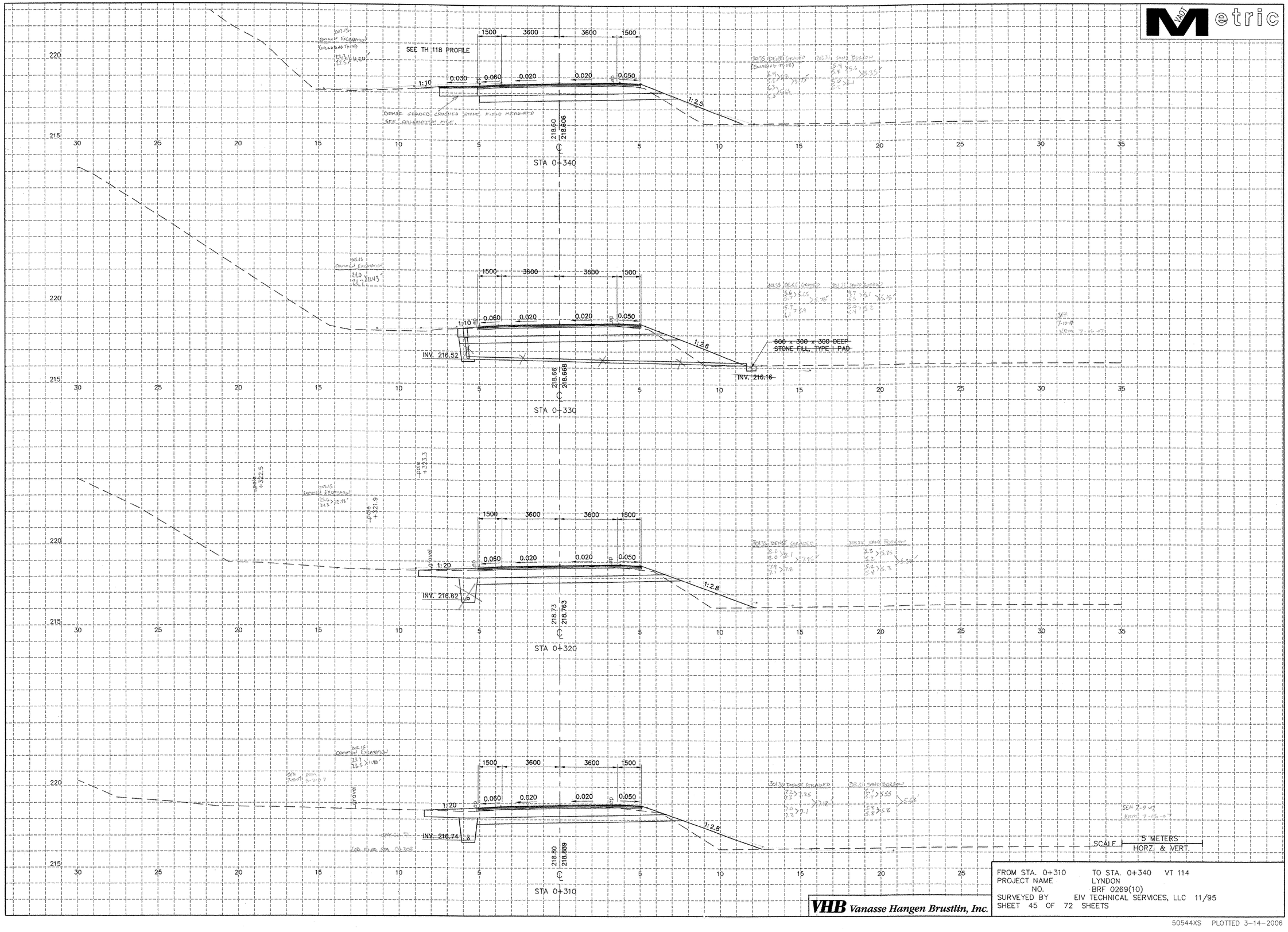
SCALE 5 METERS HORZ. & VERT.

FROM STA. 0+270	TO STA. 0+300 VT 114
PROJECT NAME	LYNDON
NO.	BRF 0269(10)
SURVEYED BY	EIV TECHNICAL SERVICES, LLC 11/95
SHEET 44 OF 72 SHEETS	

VHB Vanasse Hangen Brustlin, Inc.

50544XS PLOTTED 3-14-2006

VAOT Metric



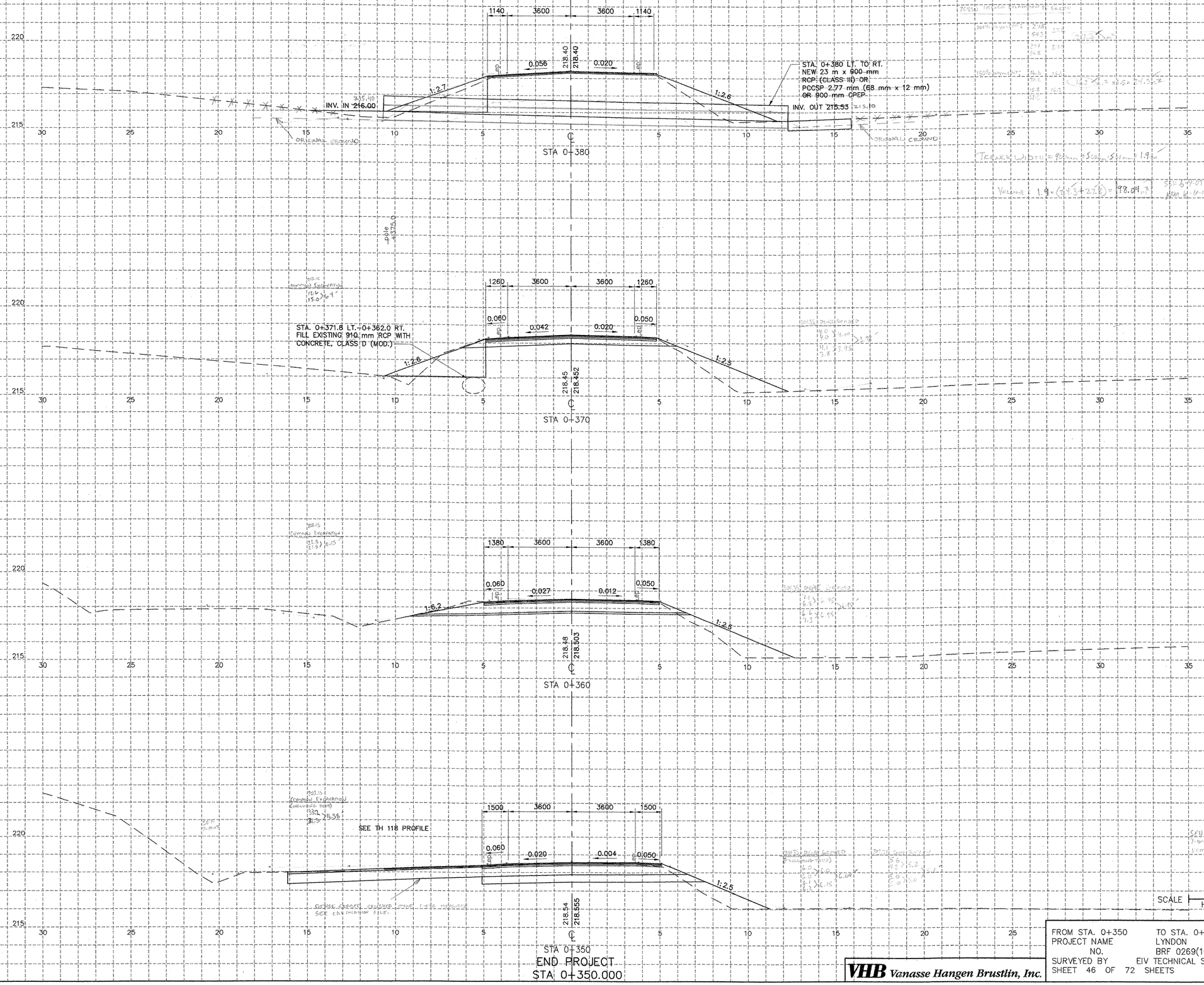
FROM STA. 0+310 TO STA. 0+340 VT 114
PROJECT NAME LYNDON
NO. BRF 0269(10)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 11/95
SHEET 45 OF 72 SHEETS

SCALE 5 METERS HORZ. & VERT.

VHB Vanasse Hangen Brustlin, Inc.

50544XS PLOTTED 3-14-2006

VAOT Metric

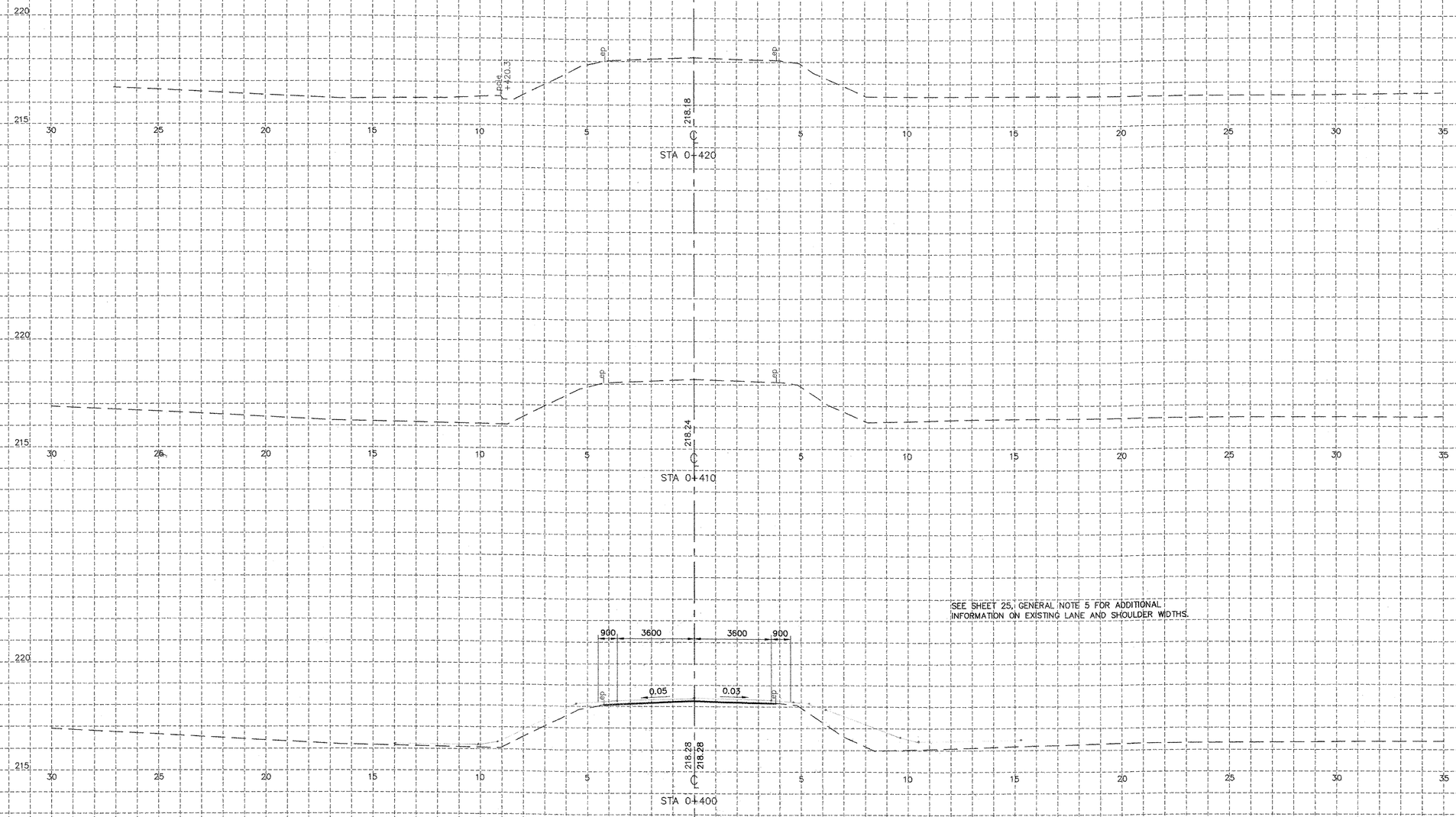


VHB Vanasse Hangen Brustlin, Inc.

FROM STA. 0+350	TO STA. 0+380 VT 114
PROJECT NAME	LYNDON
NO.	BRF 0269(10)
SURVEYED BY	EIV TECHNICAL SERVICES, LLC 11/95
SHEET 46 OF 72 SHEETS	

50544XS PLOTTED 3-14-2006

VAOT Metric



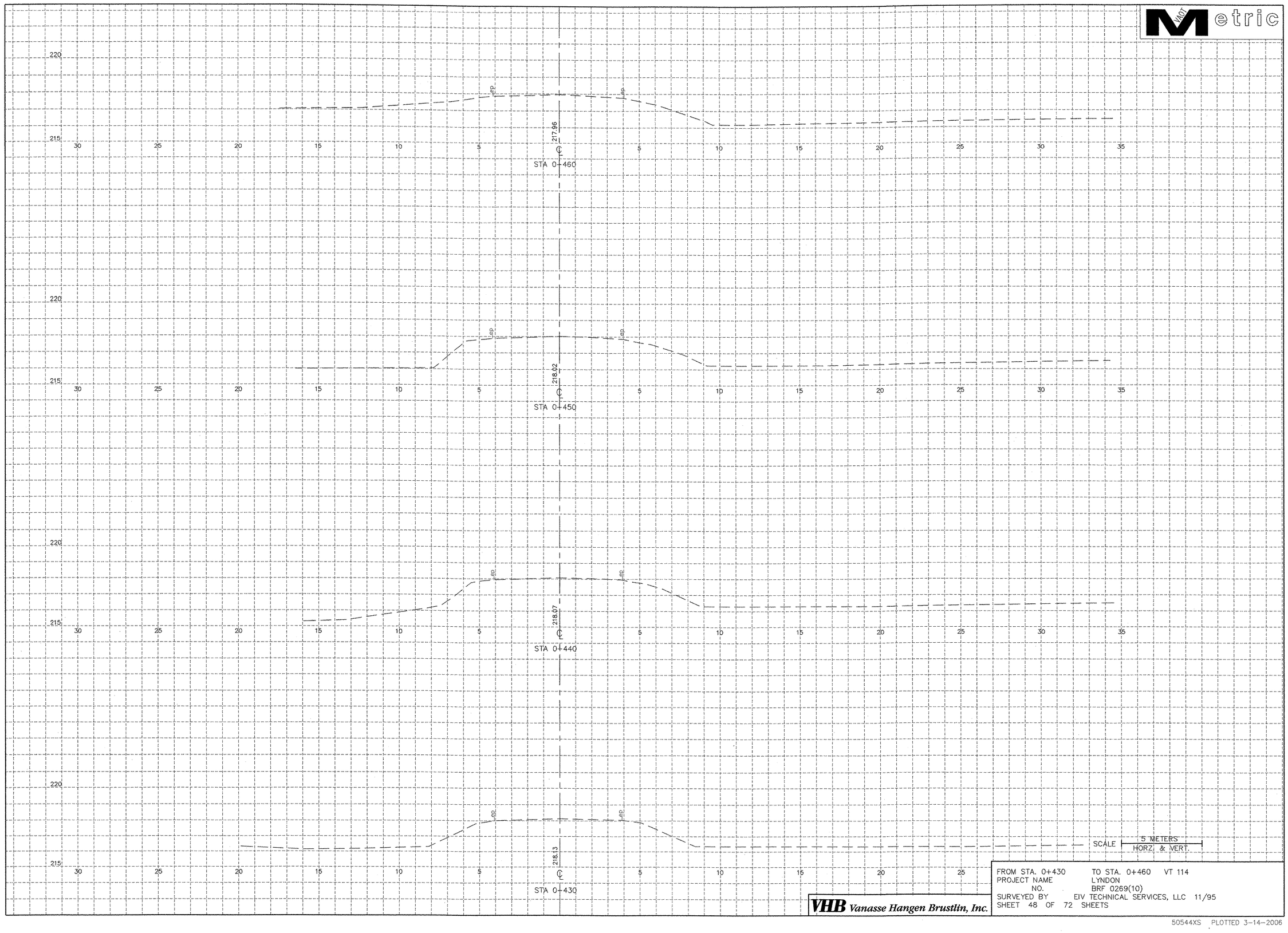
END APPROACH
STA. 0+400.000

SCALE 5 METERS HORZ. & VERT.

FROM STA. 0+390 TO STA. 0+420 VT 114
PROJECT NAME LYNDON
NO. BRF 0269(10)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 11/95
SHEET 47 OF 72 SHEETS

VHB Vanasse Hangen Brustlin, Inc.

50544XS PLOTTED 3-14-2006

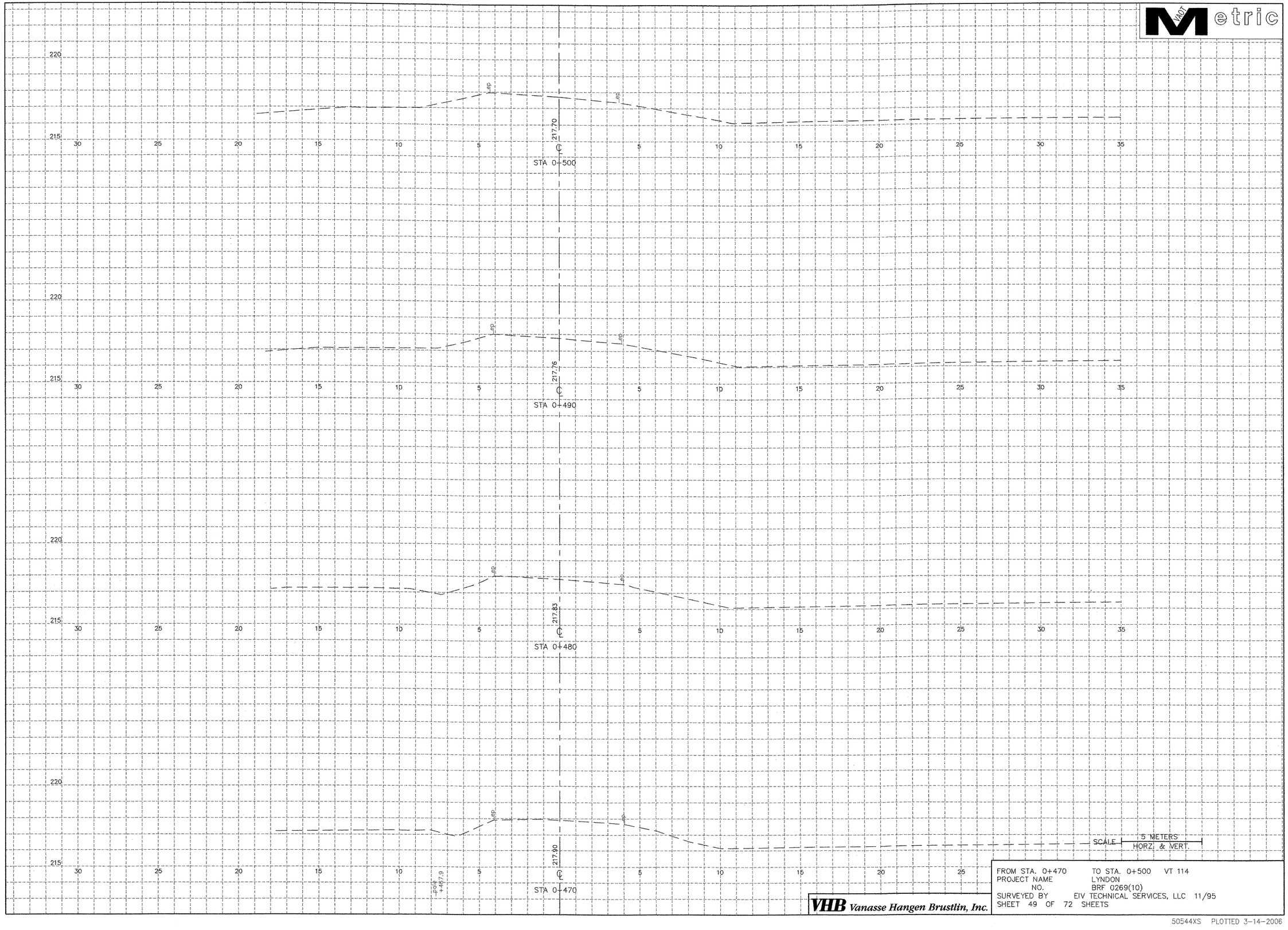


FROM STA. 0+430 TO STA. 0+460 VT 114
PROJECT NAME LYNDON
NO. BRF 0269(10)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 11/95
SHEET 48 OF 72 SHEETS

VHB Vanasse Hangen Brustlin, Inc.

50544XS PLOTTED 3-14-2006

VAOT Metric

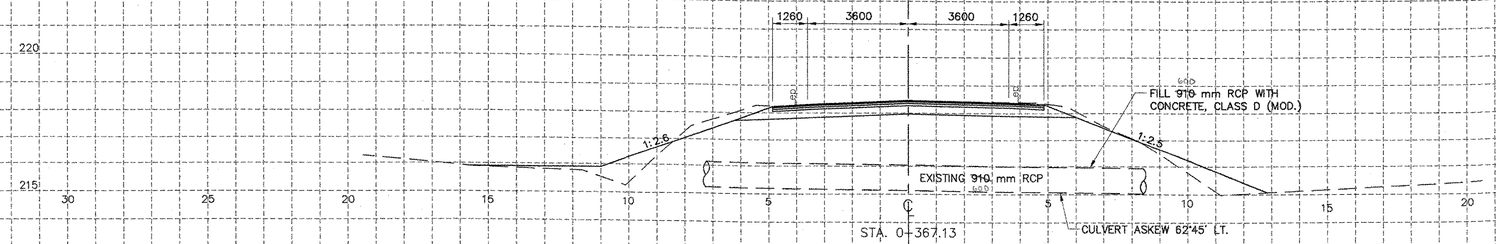


FROM STA. 0+470 TO STA. 0+500 VT 114
PROJECT NAME LYNDON
NO. BRF 0269(10)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 11/95
SHEET 49 OF 72 SHEETS

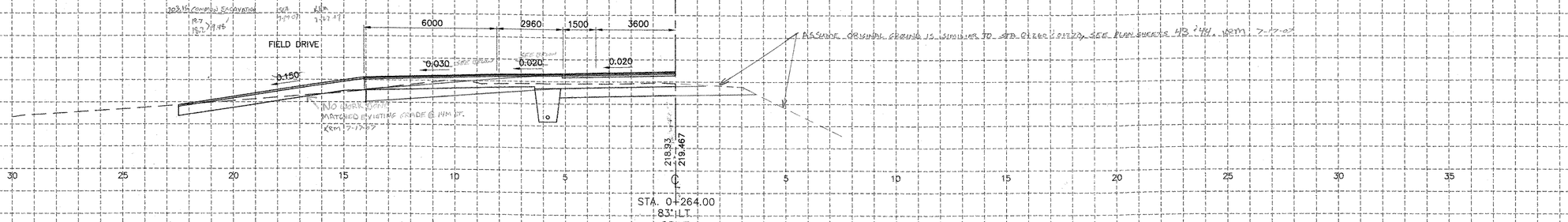
VHB Vanasse Hangen Brustlin, Inc.

50544XS PLOTTED 3-14-2006

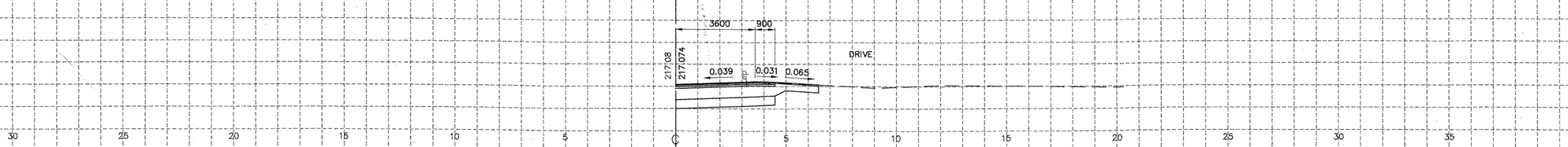
VAOT Metric



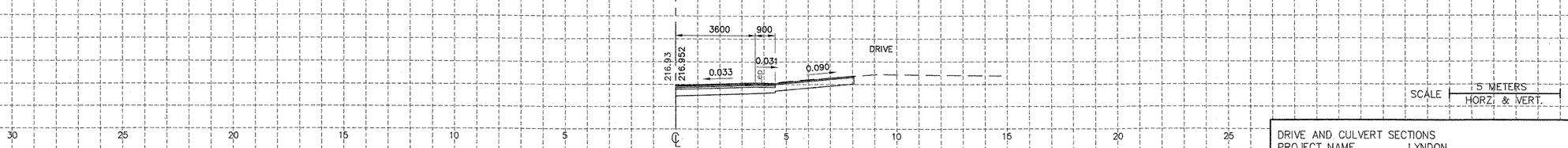
STA. 0+367.13
CULVERT ASKEW 62°45' LT.



STA. 0+264.00
83' LT.
DRIVE



STA. 0+170.0
90° RT.
DRIVE



STA 0+150.30
86° 35' RT.
DRIVE

SCALE 5 METERS
HORZ. & VERT.

DRIVE AND CULVERT SECTIONS
PROJECT NAME LYNDON
NO. BRF 0269(10)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 11/95
SHEET 50 OF 72 SHEETS

VHB Vanasse Hangen Brustlin, Inc.

50544XS PLOTTED 3-14-2006

VAOT Metric

220
215
30 25 20 15 10 5 ℄ 5 10 15 20 25 30 35

220
215
30 25 20 15 10 5 221.85 ℄ 5 10 15 20 25 30 35

STA. 2+030, LT

220
215
30 25 20 15 10 5 220.56 ℄ 5 10 15 20 25 30 35

STA. 2+020, LT

220
215
30 25 20 15 10 5 219.70 ℄ 5 10 15 20 25

STA. 2+015, LT

SCALE 5 METERS
HORZ. & VERT.

VHB Vanasse Hangen Brustlin, Inc.

FROM STA. 2+015 TO STA. 2+030 TH 5
PROJECT NAME LYNDON
NO. BRF 0269(10)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 11/95
SHEET 51 OF 72 SHEETS

50544XS PLOTTED 3-14-2006

VAOT Metric

SCALE 5 METERS / HORZ. & VERT.

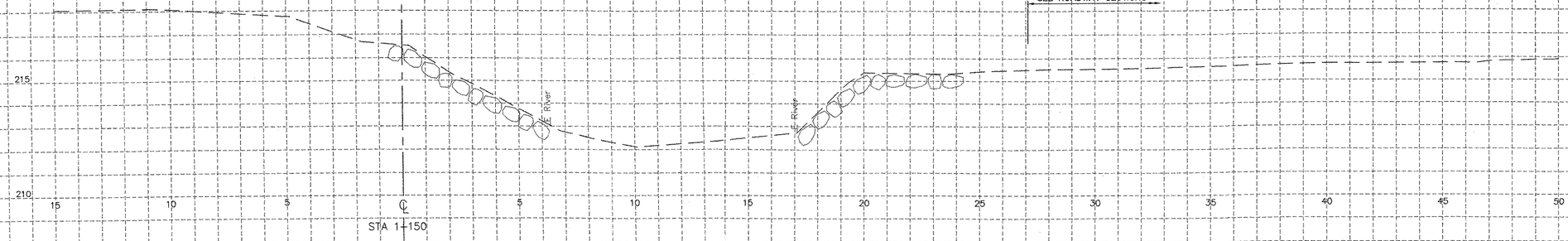
FROM STA. 1+100 TO STA. 1+120 CHANNEL SECTIONS
PROJECT NAME LYNDON
NO. BRF 0269(10)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 11/95
SHEET 52 OF 72 SHEETS

VHB Vanasse Hangen Brustlin, Inc.

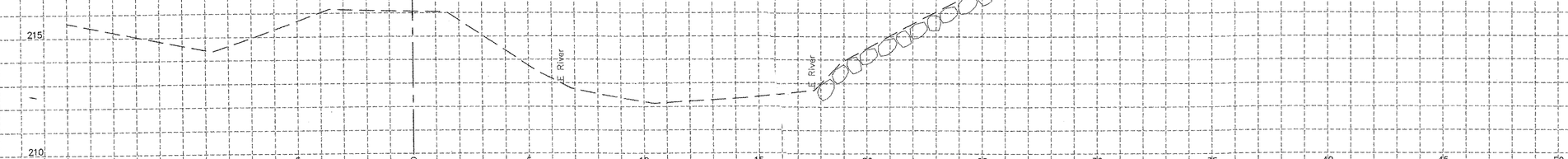
50544CHA PLOTTED 3-14-2006

VAOT Metric

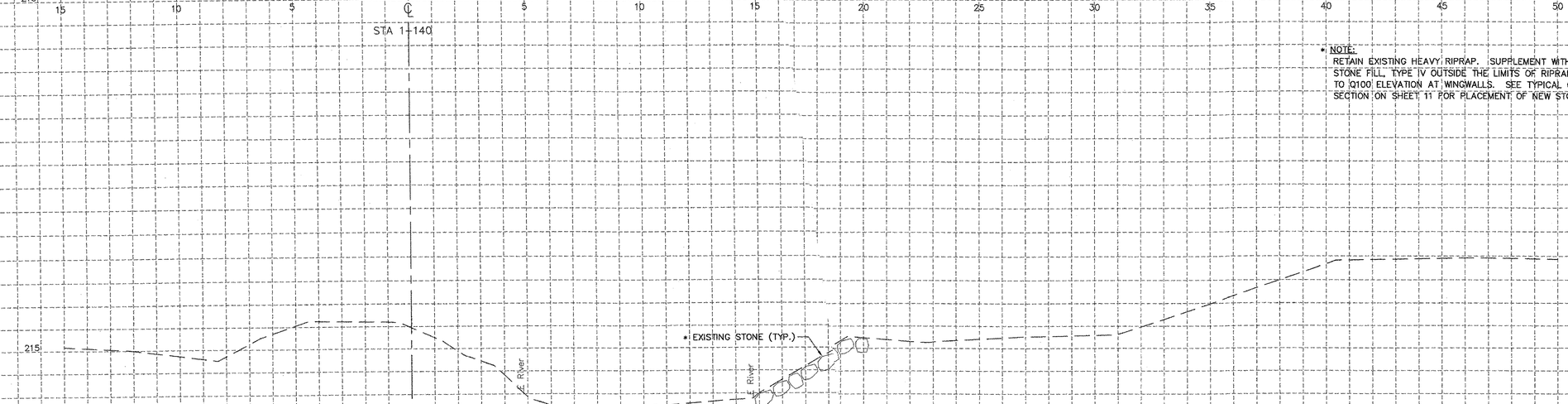
SEE ROADWAY SECTIONS



STA 1+150



STA 1+140



STA 1+130

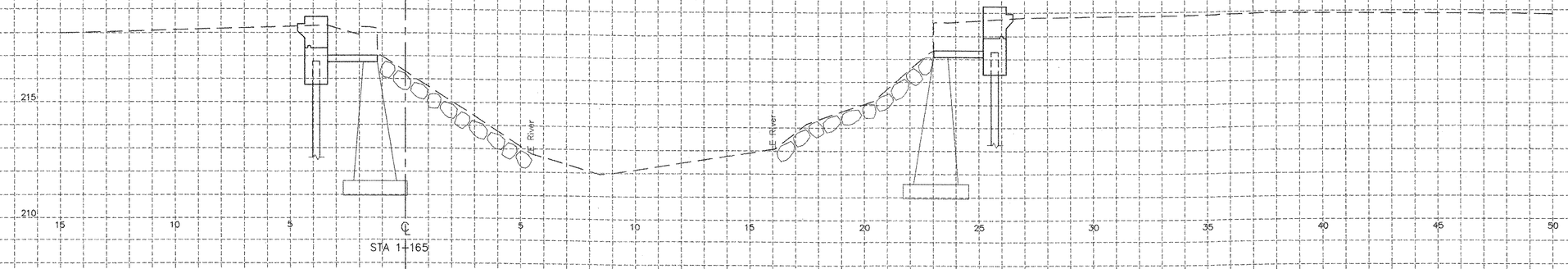
* NOTE:
RETAIN EXISTING HEAVY RIPRAP. SUPPLEMENT WITH STONE FILL, TYPE IV OUTSIDE THE LIMITS OF RIPRAP TO Q100 ELEVATION AT WINGWALLS. SEE TYPICAL CHANNEL SECTION ON SHEET 11 FOR PLACEMENT OF NEW STONE FILL.

SCALE 5 METERS HORZ. & VERT.

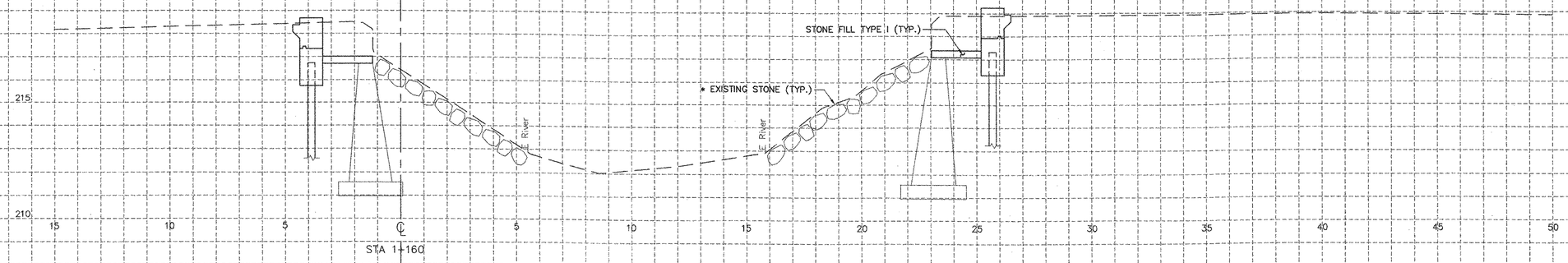
FROM STA. 1+130 TO STA. 1+150 CHANNEL SECTIONS
PROJECT NAME LYNDON
NO. BRF 0269(10)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 11/95
SHEET 53 OF 72 SHEETS

VHB Vanasse Hangen Brustlin, Inc.

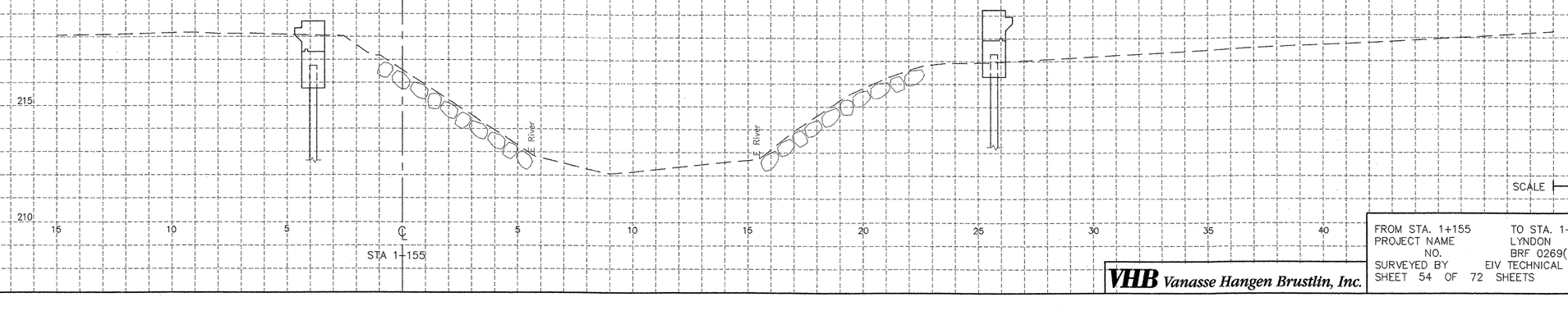
50544CHA PLOTTED 3-14-2006



STA 1+165



STA 1+160



STA 1+155

* NOTE:
RETAIN EXISTING HEAVY RIPRAP. SUPPLEMENT WITH STONE FILL, TYPE IV OUTSIDE THE LIMITS OF RIPRAP TO Q100 ELEVATION AT WINGWALLS. SEE TYPICAL CHANNEL SECTION ON SHEET 11 FOR PLACEMENT OF NEW STONE FILL.

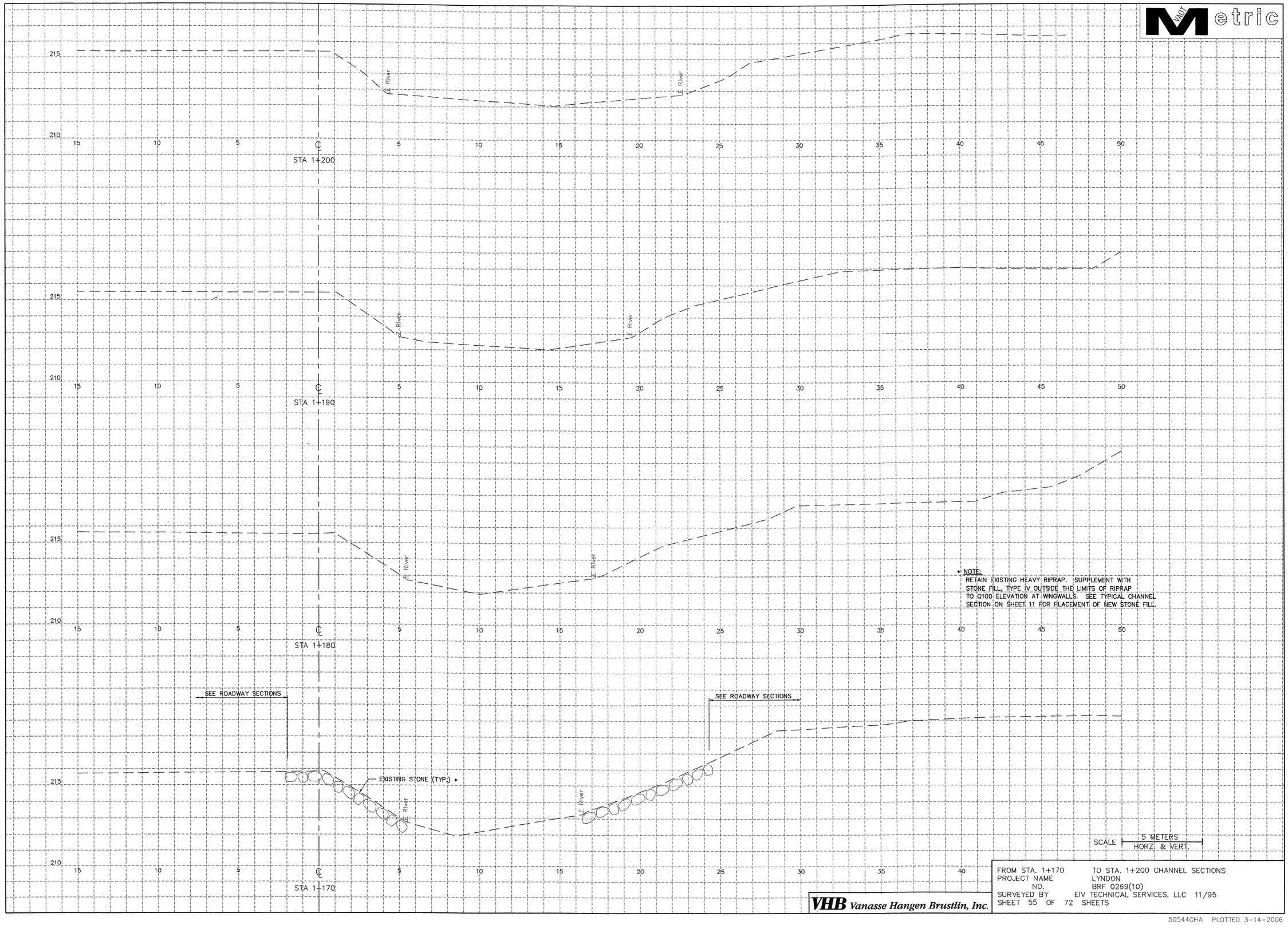
SCALE 5 METERS HORZ. & VERT.

FROM STA. 1+155 TO STA. 1+165 CHANNEL SECTIONS
PROJECT NAME LYNDON
NO. BRF 0269(10)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 11/95
SHEET 54 OF 72 SHEETS

VHB Vanasse Hangen Brustlin, Inc.

50544CHA PLOTTED 3-14-2006

VAOT Metric



FROM STA. 1+170 TO STA. 1+200 CHANNEL SECTIONS
PROJECT NAME LYNDON
NO. BRF 0269(10)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 11/95
SHEET 55 OF 72 SHEETS

VHB Vanasse Hangen Brustlin, Inc.

50544CHA PLOTTED 3-14-2006

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	VT.				

W. DAY BUCKLEY

B.M. #1
Spot on Br. Fdn.
El. 200.00

AMOS BORIS

C.P.R.

R.R. SIDING

LAYOIE

P.I. 3+11.4
= 3+08.9

Curve #1
Δ - 21°-04' Rt.
D - 10°
R - 573.0
T - 106.9
L - 211.3
E - 9.7

P.C. 2+04.5

S65°-15'E

P.T. 4+15.8

JESSE SMITH

House 1-S-F

Barn

Garage

LE BOEUF

Curve #2
Δ - 7°-10' Lt.
D - 7°
R - 818.6
T - 123.6
L - 245.2
E - 9.3

CURVE No. 2 TO BE BANKED & WIDENED AS NOTED ON SHEET 2

Begin Project 1+00

RS 64173
= 6418.3

TYPICAL CROSS SECTION OF ROADWAY

HALF SECTION OF ROADWAY WITH CABLE GUARD RAIL

LANDSCAPING.
ALL FILL SLOPES SHALL BE TAKEN CARE OF UNDER ITEM 101 - FINISH GRADING, FERTILIZING AND SEEDING.

LIST OF SHEETS
1&2 Plan and Profile
3 Layout of Channel Relocation & R/R Xing
4 Details of Abutments 1 & 2
5 S18 No. 20 Sq - Superstructure
6 S85c - Cable Rail
7 S811 - Barricades, Signs, Lights
8 S820 - Typical Details (Details C, E, K, L, & General Notes)
9 S30 Cable Guard Rail
10-14 Cross Sections

12" SUB-BASE OF GRAVEL

-2.50%

APPROVED: June 5" '37
DIST. HIGHWAY COMMISSIONER

CORRECT: May 29/37
A.D. Bishop
BRIDGE ENGINEER

APPROVED: JUNE 24, 1939
H.E. Laugaa
COMMISSIONER OF HIGHWAYS

PROJECT NO. S.T. 188 L
TYPE
CONTRACTOR
YEAR 19
LOCATION Log Sts. 21 + 59 - 31 + 33
Br. 2 - Passumpsic R.R.
1938 LENGTH 0.2
1000 346

U. STA. ELEV. 200.00

Lyndon Bridge
ST-188-L
ON ROUTE 1 & 4
Sheet 1 of 14 Sheets

W. DAY
BOCKLEY

FED. AID PROJ. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	VT.				

Cable Guard Rail
8+340 - 10+84 Lt. - 250 Lin ft
8+340 - 11+00 Rt. - 266 "
Total 516 "
Anchors. - 4

Curve #2
A- 17°-10' Lt.
D- 7°
R- 818.6
T- 123.6
L- 245.2
E- 9.3

At 7+38.9

JESSIE SMITH

FRANK CARR

JOHN LANG

MRS. SWITZER

MARTIN GOODWIN

Bridge Begins Sta 9+45.0

Top edge of Channel Slope 1on1½

Bottom edge Channel Slope 1on1½

Top Bank

Edge River

Flow

Bridge Ends Sta 10+29.0

Top edge of Rip Rap

Log Wing

To W. Burke Rd

W.G.R.

WOR

Boring No. 1

Boring No. 2

Boring No. 3

Possible Ledge

24" RCP Pipe 60' Long

Old Channel

Provide drive to field in this general location as directed by the Engineer in the field.

#1

23.51

35.77

S 82°-25'-E

20°E

18°E

P.I. 6+17.3
= 6+15.3

PARCEL INSTRUMENT DATE GRANTOR GRANTEE RECORDED REMARKS
LYNDON

CUL. #1 Q.C.D. 12-15-39 JESSIE & MINNIE SMITH STATE OF VT. BOOK 39 PAGE 92 DATE 12-22-39 STA. 6+10

Curve #2 to be banked ¾" per foot
4 widened 2'-0" Begin banking + widening at Sta. 9+10. Full banking + widening Sta. 9+50 to Sta. 7+25. End banking and widening Sta. 8+75

1½-S-F

2-S-F

Overall Span 84.60'

Sta. 10+00
200' V.C.
Elev. 206.00

Sta. 9+77.5
Frm. Grade Elev. 203.84

Sta. 10+29.0
Frm. Grade Elev. 203.04

Bridge Ends Elev. 203.04

Bridge Data

Present		Proposed	
Steel Trusses		Type	I Beam
55.9'	Lgth.	%	84
53.2'	Clear	Span	80'
15'	Rd.	Width	20'
19'	Clear	Hgth.	16'
888 sq.	Waterway		904 sq.

Estimate of Quantities

10	COMMON EXCAVATION	CU.YD.	122
15	CHANNEL EXCAVATION	CU.YD	3380
16	STRUCTURE EXCAVATION	CU.YD	156
.18	MAINTENANCE OF TRAFFIC	L.S.	1
19C	SUB-BASE OF GRAVEL	CU.YD	441
22	GRAVEL SURFACE COURSE	CU.YD	310
41A	CONCRETE CLASS 'A"	CU.YD	108
42	REINFORCING STEEL	LBS.	22,111
43B	STEEL SUPER (107.375")	L.S.	1
490	24" REINF. CONC. PIPE	LIN FT	60
56	TEMPORARY BRIDGE	L.S.	1
57	REMOVAL OF PRES. SUPER	L.S.	1
68	RIP RAP FOR BANK PROT. (HEAVY)	CU.YD	495
80A	CABLE GUARD RAIL	LIN FT	516
80B	ANCHORS FOR C.G.R.	EACH	4

For Details and Location of New Channel see Sheet 3 of 14

Raw slope of embankment to be taken care of under Item No. 101 - Finish Grading, Fertilizing & Seeding.

10' Elev. 197. Rip Rap (Heavy Type) 1½ on 1 Slope 2 on 1 Channel Excavation to be used across embankment & remainder to be used as fill in old river bed back of rip rap. To be paid for as channel excav. Item 15. 32' Elev. 185 Slope 1½ on 1

TYPICAL SECTION OF CHANNEL EXCAVATION A-A

Sta. 7+00
200' V.C.
Elev. 195.50

12" SUB-BASE OF GRAVEL

+3.50%

-1.25%

Bottom Edge Slope 1on1½ Elev. 185

Top Edge Rip Rap (Heavy) 197

12" SUB-BASE OF GRAVEL

Top Bank

Edge River

Top Edge of Channel Excav.

Bottom Edge Slope 1on1½ Elev. 185

R.R.W. 200.00

L.W.L. 187.6

St. Bed 185.0

Rip Rap toed into original ground 2ft.

Elev. 179.00

Elev. 179.00

BORING NO. 1
21' Rt. Sta. 9+66
198.60
190.60
Gravel & Boulders

BORING NO. 2
14' Rt. Sta. 9+53
194.60
190.60
185.60
Coarse Sand & Boulders

BORING NO. 3
23' Rt. Sta. 10+53
194.60
190.60
Fine Sand & Loam
Coarse Gravel & Boulders
173.60

200
190

1976 198.00
1969 197.13
1965 197.00
1963 197.63
1962 199.00
1966 202.50
2007 203.35
2016 201.6
2016 201.5
2048 201.5
2036 203.6
2036 203.6
2037 203.7
2037 203.08
2046 204.5
2035 203.5
2021

6 +50 7 +50 8 +50 9 +50 +77 +86 +79 10 +86 +42 +49 +50 +325 11 +50 12

B.M. #2 Spike in root 44" Elm Rt. of Sta. 12+50 Elev. 200.27

Lyndon Bridge
ST 188-2
ON ROUTE 114
Sheet 2 of 14 Sheets

PARCEL	INSTRUMENT	DATE	GRANTOR	GRANTEE	RECORDED LYNDON BOOK	PAGE	DATE	REMARKS
A	Q.C.D.	7-26-37	JESSIE & MINNIE SMITH	ST. OF VT.	39	83	7-31-37	
A'	Q.C.D.	7-26-37	M.S. & K. GOODWIN	"	39	83	7-31-37	
A''	Q.C.D.	7-26-37	JOHN LANG	"	39	82	7-31-37	CONST. OF DIKE
-	PART. REL.	2-17-38	MARTIN L. GOODWIN	"				CONST. OF DIKE
-	" "	5-20-38	R.S. LANG LIVESTOCK INC.					

RIVERS EDGE

LIMIT OF CHANNEL EXCAVATION

AREA = 0.306 ACRES ±

PROPOSED R.O.W. LIMITS

JESSE SMITH

MARTIN GOODWIN

AREA = 0.315 ACRES ±

MRS. SWITZER

1½-S-F

2-S-F

P.I. 6+17.3 = 6+15.3

382.25' E

233.4'

RIP RAP TO EXTEND 4' BEYOND BRIDGE

RIP RAP TO EXTEND 4' BEYOND BRIDGE

AREA = 0.032 ACRES ±

PROPOSED R.O.W. LIMITS

TO W. BURKE

FRANK CARR

JOHN LANG

AREA = 0.61 ACRES ±

PROPOSED R.O.W. LIMITS

CONNECTICUT RIVER

PASSUMPSIC RIVER

REPRESENTS TOE OF DIKE

LEVEL @ ELEV. 1910

RIP RAP TO EXTEND 4' BEYOND BRIDGE

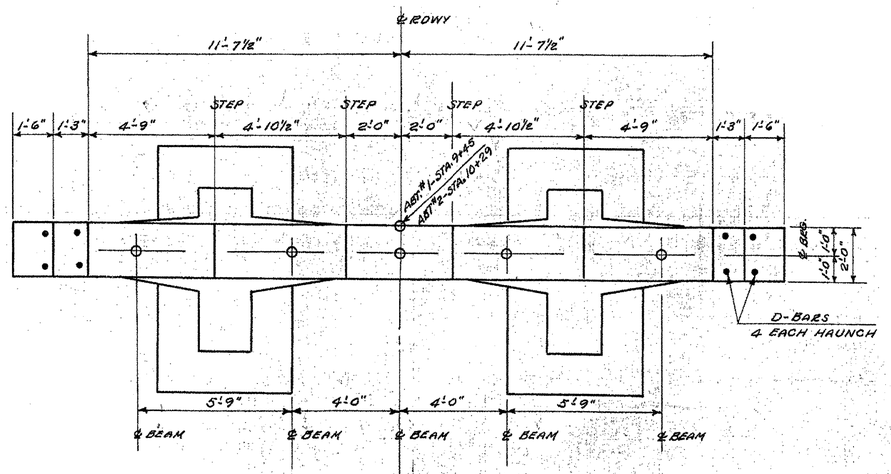
TO BE CARRIED TO ORIGINAL GROUND IN A MANNER SATISFACTORY TO ENGINEER.

CHANNEL RELOCATION AND RIP-RAP

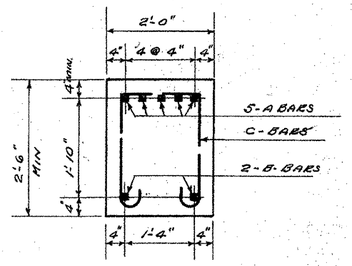
LYNDON BRIDGE ST. 188-L

48" Elm DM # 2

Surveyed by
Designed by
Drawn by
Traced by
Checked by
Series No. Filed
Sheet 3 of 14 Sheets



PLAN
Coping Not Shown



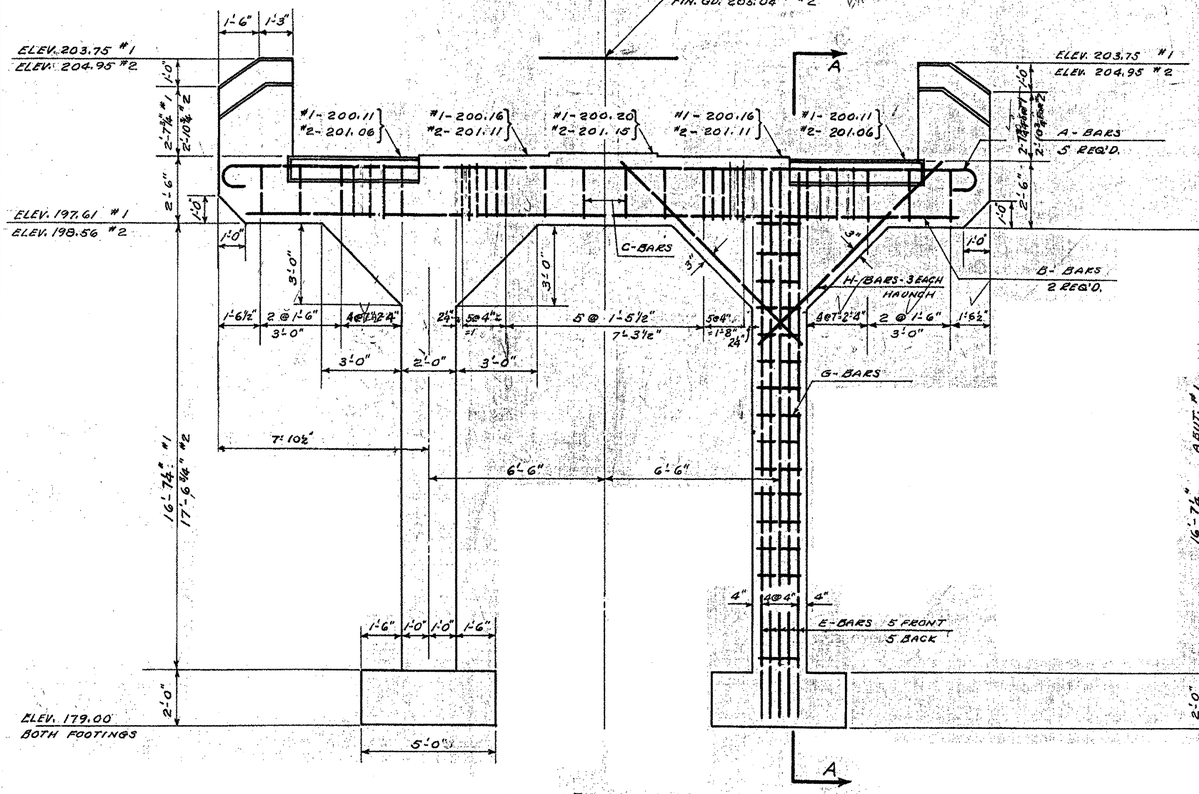
TYPICAL SECTION OF BEAM

FED. ROADS DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	VT.				

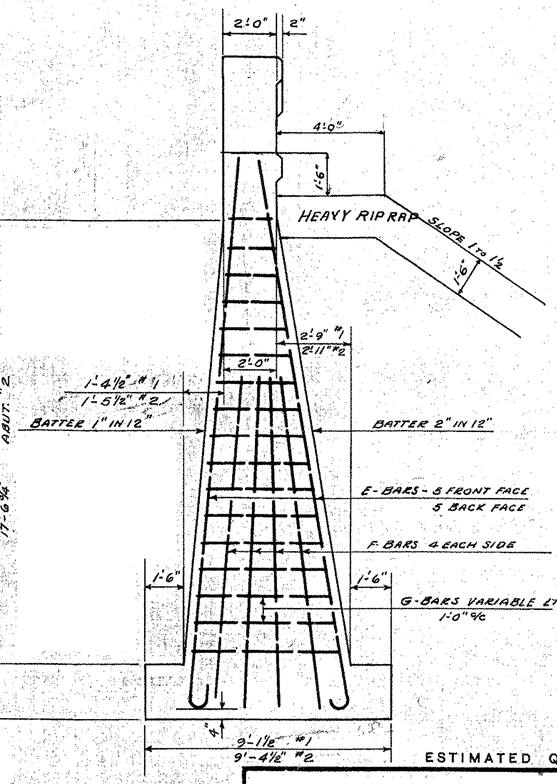
REINFORCING STEEL

BAR NO	SIZE	LTH.	REQ'D.	DETAIL
A	1⅛"ϕ	30'-11"	5	5" 5" 27'-5" 5" 5"
B	1⅛"ϕ	26'-6"	2	STRAIGHT
C	⅝"ϕ	7'-1"	30	1'-6" 1'-9" 8" 3" R=3" R=3"
D	¾"ϕ	5'-0"	8	STRAIGHT
E	1"ϕ	22'-0"	20	5" 5" 20'-3"
F	1"ϕ	15'-0"	16	5" 5" 13'-3"
G	¼"ϕ	383' FOR 34 BARS	34	LENGTH VARIES FROM 7'-0" TO 15'-6" AV. LTH. 11'-3" BEND IN FIELD
H	1"ϕ	9'-6"	12	STRAIGHT

THE ABOVE SCHEDULE IS FOR ONE ABUTMENT. 2-REQ'D.



ELEVATION



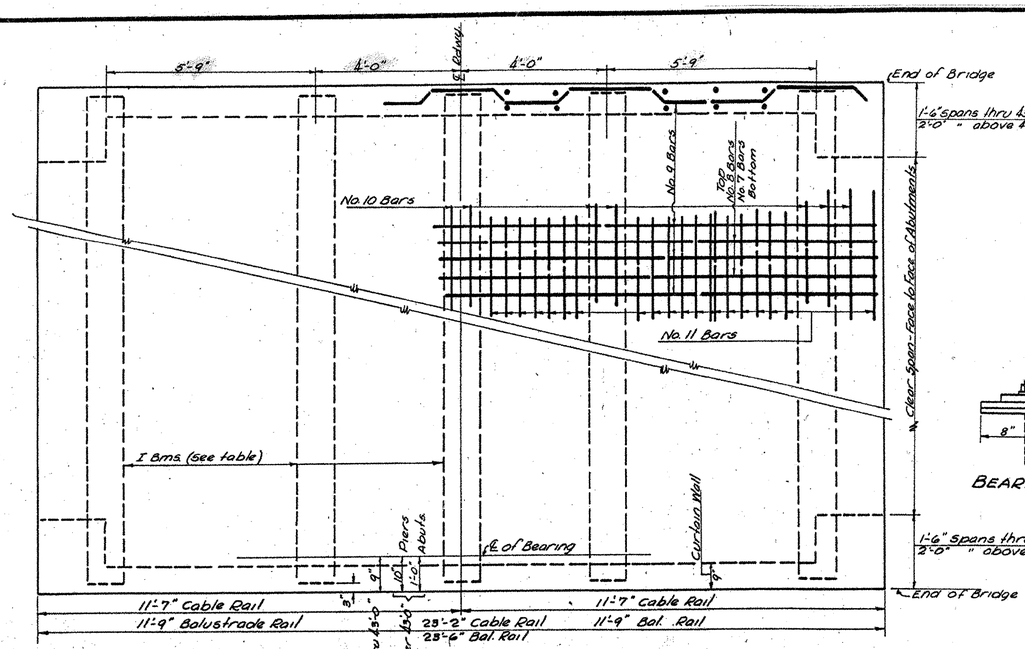
SECTION A-A
SHOWING COLUMN STEEL

DETAILS OF ABUTMENTS #1 & #2
LYNDON, VT.
VT. 188-L

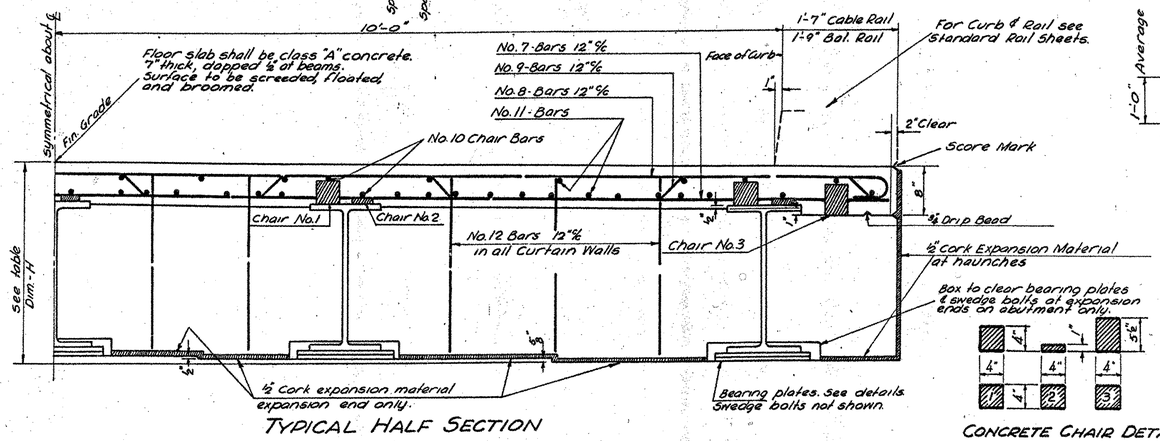
ESTIMATED QUANTITIES

	ABUT. #1	ABUT. #2
STRUCT. EXCAV.	124 C.Y.	32 C.Y.
CONC. CLASS "A"	25 C.Y.	26 C.Y.
REINF. STEEL	3855 LBS.	3855 LBS.
CHANNEL EXCAV.	3350 C.Y.	C.Y.
HEAVY RIP RAP	428 C.Y.	67 C.Y.

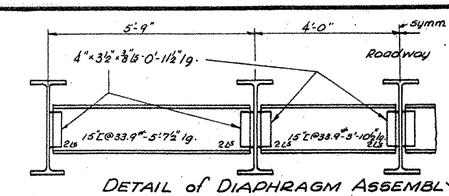
Surveyed by
Designed by W. H. DAY 5/12/37
Drawn by W. H. DAY 5/12/37
Traced by O. W. P. 5/13/37
Checked by C.H.K. QUANTITIES BY W.H.D.
Series VT. No. 188-L Filed
Sheet 4 of 17 Sheets



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

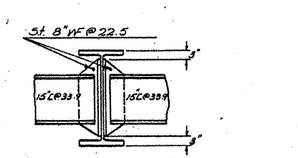


TYPICAL HALF SECTION

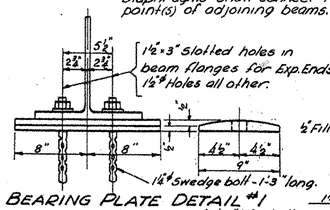


DETAIL of DIAPHRAGM ASSEMBLY

Shop connections may be riveted or 100% electric welded. Field connections to be 100% electric welded. If desired 4-⅞" bolts may be used at ends and thru beams for erection purposes.
Spans 28'-0" thru 43'-0" require 1 set of diaphragms
" 49'-0" " 69'-0" " 2 " (s) " "
" 74'-0" " 84'-0" " 3 " (s) " "
Diaphragms shall connect reference points at ½, ⅓ or ¼ point(s) of adjoining beams.

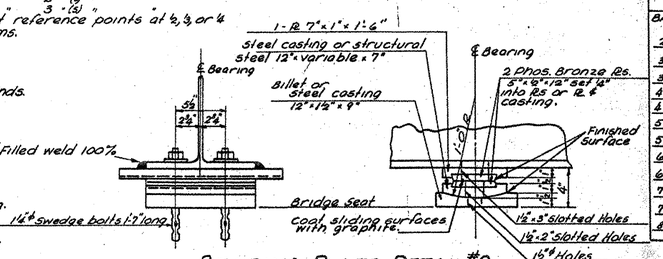


Modification to be applied to bridges let after Mar. 10 1939. Welds shall be designed to develop full strength of channel.



BEARING PLATE DETAIL #1

Use bearing plate #1 for both ends of spans 28'-0" to 69'-0" incl. and for fixed end only of spans 74'-0" and up. Approx. wt. one assembly 46#.

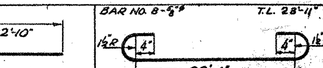


BEARING PLATE DETAIL #2

Use for expansion end of spans 74'-0" and up. Approximate weight one assembly #130.

BAR NO. 7 - ⅝" ℄	BAR NO. 8 - ⅝" ℄ T.L. 28'-1"
Tot. Lgth. 22'-10"	1½R, 4", 4", 1½R, 22'-6"

BAR NO. 9 - ⅝" ℄ T.L. 24'-0"

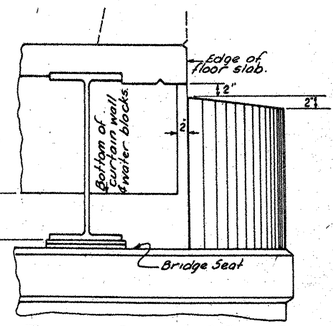


BAR NO. 10 - ⅝" ℄	BAR NO. 11 - ⅝" ℄
28' Span	27'-6"
33' "	32'-6"
38' "	19'-6"
43' "	22'-0"
49' "	25'-3"
54' "	27'-9"
59' "	30'-0"
64' "	32'-6"
69' "	35'-0"
74' "	38'-0"
79' "	40'-6"
84' "	29'-0"

SPAN	"A"	T.L.
25'	2'-1	5'-2"
30'	2'-1	5'-2"
35'	2'-1	5'-2"
40'	2'-7	6'-2"
45'	2'-10	6'-2"
50'	2'-10	6'-8"
55'	3'-1"	7'-2"
60'	3'-1"	7'-10"
65'	3'-1"	7'-2"
70'	2'-10	6'-8"
75'	3'-1"	7'-2"
80'	3'-1"	7'-2"

BAR NO. 12 - ⅝" ℄

NOTE - Dimension "A" decreases 1'-0" over Piers.



TYPICAL SECTION B-B AT PIERS
Scale ½"-1'-0"

NOTES

Steel superstructure to include 5 WF beams, 10 bearing plate assemblies and indicated diaphragms per span.

All steel beams shall be rolled to a true circular camber, full length of the beam and the middle ordinate to be as noted for various spans in the table.

All structural steel shall be painted as specified under item 43 A-B of Pamphlet "E" Standard Road & Bridge Specifications, State of Vermont, 1936 unless otherwise directed by the Engineer.

The final coat of field paint shall be aluminum, unless otherwise directed by the Engineer.

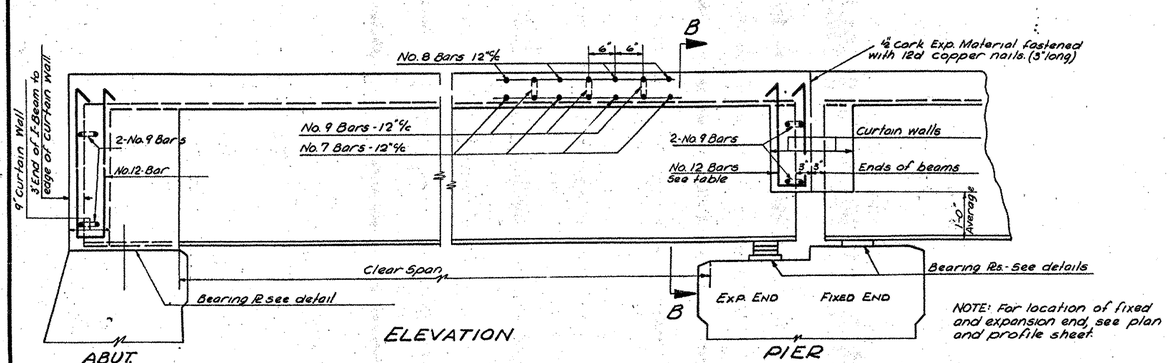
This sheet does not include quantities for railing, curbs, and posts.

QUANTITY TABLES FOR 1-SPAN

OVERALL SPAN	REINFORCING STEEL - BARS REQ'D. BAR 7	BAR 8	BAR 9	BAR 10	BAR 11	BAR 12	Tot. WEIGHT	CONCRETE CLASS "A" BALUSTER RAIL CU. YDS.	CABLE RAIL CU. YDS.	STEEL SUPERSTRUC.
28'-0"	28	28	32	12	48	40	3677	17.5	17.2	11,409
33'-0"	33	33	37	12	48	40	4306	20.1	19.7	15,372
38'-0"	38	38	42	24	96	40	5011	22.7	22.3	19,984
43'-0"	43	43	47	24	96	40	5652	25.9	25.5	24,194
49'-0"	49	49	53	24	96	40	6435	29.5	28.0	32,076
54'-0"	54	54	58	24	96	40	7073	32.5	31.9	37853
59'-0"	59	59	63	24	96	40	7683	35.4	34.8	45,889
64'-0"	64	64	68	24	96	40	8313	38.1	37.4	52,808
69'-0"	69	69	73	24	96	40	8942	40.7	40.0	64,348
74'-0"	74	74	78	24	96	40	9615	42.9	42.2	84,054
79'-0"	79	79	83	24	96	40	10252	46.0	45.2	93,479
84'-0"	84	84	88	36	144	40	10932	48.5	47.7	114,754

CARNEGIE BEAMS OR EQUIVALENT H-15 LANE LOADING

OVERALL SPAN	MID. ORD. FOR CAMBER	BEAM REQUIRED	LENGTH	SEC. MOD. REQUIRED	DIM. 74'-0" FIXED	DIM. 74'-0" EXP.
28'-0"	¾"	23⅜"@ 74#	27'-6"	153.5	2.76	2.71
33'-0"	⅞"	24⅛"@ 87#	32'-6"	196.5	2.78	2.73
38'-0"	1"	24" @ 100#	37'-6"	241.5	2.82	2.72
43'-0"	1⅛"	29⅜"@ 108#	42'-6"	288.5	3.21	3.21
49'-0"	1¼"	30⅜"@ 124#	48'-6"	350.5	3.23	3.21
54'-0"	1⅜"	33⅜"@ 132#	53'-6"	407.0	3.48	3.48
59'-0"	1½"	35⅜"@ 150#	58'-6"	471.0	3.71	3.71
64'-0"	1⅝"	36" @ 160#	63'-6"	537.5	3.72	3.72
69'-0"	1⅞"	36⅜"@ 182#	68'-6"	614.0	3.75	3.75
74'-0"	2"	33¼"@ 220#	73'-6"	688.5	3.49	3.71
79'-0"	2¼"	35⅜"@ 230#	78'-6"	779.0	3.71	3.96
84'-0"	2½"	36¼"@ 260#	83'-6"	881.0	3.74	3.97



ELEVATION

NOTE: For location of fixed and expansion end, see plan and profile sheet.

CORRECT July 15 1943
A.D. Bishop
BRIDGE ENGINEER

STANDARD I BEAM BRIDGE
REINFORCED CONCRETE DECK
20' ROADWAY
28'-0" TO 84'-0" SPANS

ESTIMATED QUANTITIES

REVISED: 6/24/37 RAD. OF No. 8 BAR
REVISED: 12/2/41 BEAM SIZE & WEIGHTS FOR SPANS 74'-0" & 84'-0" W.H.D.

Surveyed by
Designed by H.E.S.
Drawn by D.W.R.
Traced by A.W.R. PETRACED MW 8 VT
Checked by W.H.D.
Series S.I.B. No. 2059 Files
Sheet of Sheets

STATE OF VERMONT
AGENCY OF TRANSPORTATION

EROSION CONTROL NARRATIVE

Metric

PROJECT DESCRIPTION

This project involves the replacement of a single span bridge carrying VT Route 114 over the Passumpsic River in the Town of Lyndon. The existing bridge is approximately 24.9 meters long and 6.4 meters wide. The alignment for Route 114 will shift approximately 0.9 meters to the south and the new bridge will be 1.37 meters wider to the north and 3.32 meters wider to the south. One lane of alternating two–way traffic will be maintained on a temporary bridge at all times. It is anticipated that this project will last one construction season. The total length of roadway approach work is approximately 149.43 meters. The site is located at 227810.379 N, 540410.275 E based upon NAD 83/92. Total disturbed area (excluding waste, borrow and staging areas): 0.9 ha (2.3 ac.).

No "Threatened & Endangered Species" or Historic Resources have been identified in the project area.

SITE INVENTORY & ANALYSIS

OFF SITE DRAINAGE CHARACTERISTICS:
The roadway is generally a built up section through the project area with well established farm fields on each side that are gently sloping towards the Passumpsic River. Runoff water entering the project site will be primarily limited to that which is conveyed along the toe of the roadway embankments. The roadway is on a vertical curve through the project area with the highest point being on the bridge. The roadway is also on a horizontal curve throughout the project limits and is superelevated with the high side at the southern shoulder. Roadway surface drainage will generally be towards the north shoulder.

DRAINAGE, WATERWAYS, BODIES OF WATER:
The East Branch of the Passumpsic River is located in the project area. There are no other water bodies or wetlands that are located in the impact area of the project. There is class III wetlands located south of the bridge along Water Street. The East Branch of the Passumpsic River is characterized by a moderately wide river valley surrounded by mountainous topography. This character causes the river to flow relatively slowly as evidenced by the sandy streambed and very little bank erosion. The contributing drainage area at the bridge crossing is 208 sq. km.

TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES:
The topography of the project site is generally flat along each side of VT Route 114, gently sloping towards the Passumpsic River with open fields on each side. Development along this portion of VT 114 consists of two permanent residences with lawns and open fields abutting the project in the southwest quadrant. Overhead utility service follows VT 114 and will need to be relocated to cross the Passumpsic River just north of the bridge location.

VEGETATION:
There are very few trees along VT Route 114 with several small hardwoods located along the river banks. The two residences near the bridge site have small areas of lawn adjacent to the roadway. Fields and agricultural crops exist in the northwest, northeast, and southeast quadrants of the project. Impacts to vegetation will be limited to that which is affected by the widening of the bridge and roadway approaches. Some immature 50 – 150 diameter trees will be removed. Following the construction of the bridge superstructure and substructures, the existing slopes will be stabilized with stone fill and/or vegetation will be reestablished with standard seed & mulch practices.

SOILS:
The Soil Conservation Service has mapped the soils throughout Caledonia County. The soil type identified for the entire project area is Podunk fine sandy loam. This soil type is described as "formed in loamy over sandy alluvial deposits on flood plains that are occasionally flooded for brief duration. They are very deep to bedrock and moderately well drained." These soils have a seasonal high water table at depths of 450 to 900 mm below the surface. Permeability is moderate or moderately rapid in the solum and rapid or very rapid in the substratum. Flooding is a hazard, but is of short duration and usually occurs in the spring. The hazard of erosion is low.

The listed soil erodability coefficient (K–value) for this type is 0.24. Generally, K–value indicate the following: 0.0 – 0.23 = low erodability; 0.24 – 0.36 = moderate erodability; 0.37 and higher = higher erodability.

The majority of the roadway is "in a fill typical", meaning the roadway is higher than the surrounding mean ground elevation. Due to engineering requirements for selective fill material for the widening of the roadway, much of this fill material will need to be brought in from an outside source. Since we do not know where this source pit will be, we can not provide erodability properties for the fill. See the roadway cross sections for fill areas.

SENSITIVE RESOURCE AREAS:
No 'Threatened & Endangered Species' have been identified within the project limits and there will be no adverse effect to Historic or Archaeological features.

PROXIMITY TO NATURAL OR MAN–MADE WATER FEATURES:
Disturbance of soils near natural or man–made waterways consists of that which is necessary to construct new abutments and wingwalls, stabilize slopes around wingwalls with stone fill and supplement existing heavy riprap above ordinary high water.

TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL

Temporary erosion prevention measures to be utilized include:

"Project Demarcation Fencing," denoted –PDF– on the plans, to delineate the limits the contractor can access with construction equipment. This measure limits the area that can be disturbed and exposed to erosion.

Seeding, mulching and biodegradable erosion control matting, or an equivalent product, will be utilized on all slopes steeper than 3:1 that are not lined with stone fill. These slopes shall be stabilized within 48 hours of reaching final grade or during intermittent phases of construction activity.

Tracking of all exposed slopes, combined with temporary mulching, will also be utilized on a regular basis. Any slopes to be exposed for several days prior to final grading shall be tracked and mulched. The forecast of rainfall events shall also trigger protection of exposed slopes.

Temporary measures to control sediment transport include:

Silt fence will be installed a distance of 1800 (5.9') from the toe of slopes to prevent sediment transport to down gradient areas. Each line of silt fence shall be placed along the contour with ends turned slightly uphill to create a ponding effect should water try to run along the fencing and around the ends. Silt fence shall be installed prior to any upslope earthwork.

Sand bags filled with clean, small diameter stone, or an equivalent barrier, will be utilized around the proposed pipe inlet to create a temporary ponding area for particles to settle out as water drains through the barrier. Inlet protection shall be installed as soon as there is the possibility of water flowing to the structure. The height of the barrier shall be limited such that the ponding area does not present a hazard to the traveling public. Alternative inlet control measures shall be approved by the Engineer prior to implementation.

Measures such as silt fence and sand bags shall be checked regularly for accumulation of sediment. Sediment build–up shall be removed when the level of sediment reaches one–half the height of the control measure. Sediments shall be disposed of in an approved area such that they will not be subject to erosion.

Stabilized construction entrances to the project site, staging areas, as well as entrances to waste and borrow areas shall be established. The minimum size of a stabilized construction entrance is 3700 x 15 000 (12' x 50'). All surface water flowing to or diverted towards a construction entrance shall be piped under the stone. Pipes shall be appropriately sized for the contributing area, however, no pipes smaller than 150mm diameter shall be used. See typical erosion control detail sheets for materials and construction methods to be utilized when constructing a stabilized entrance.

PERMANENT EROSION CONTROL MEASURES

Several permanent erosion control measures will be utilized:

Stone lining with Stone Fill, Type IV will be used above the existing heavy riprap to protect fill slopes around wingwalls up to Q100 elevation.

Stone Fill, Type I will be utilized at culvert outlets to dissipate water velocities and reduce erosion potential.

Grass or other suitable ground cover will be established outside of the roadway limits where stone lining has not been specified. These areas shall be seeded and mulched promptly upon achieving final grade. In areas disturbed by installation of the temporary bridge and its approaches, trees and shrubs will be planted.

GENERAL EROSION & SEDIMENT CONTROL GUIDELINES

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

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

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

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

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

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

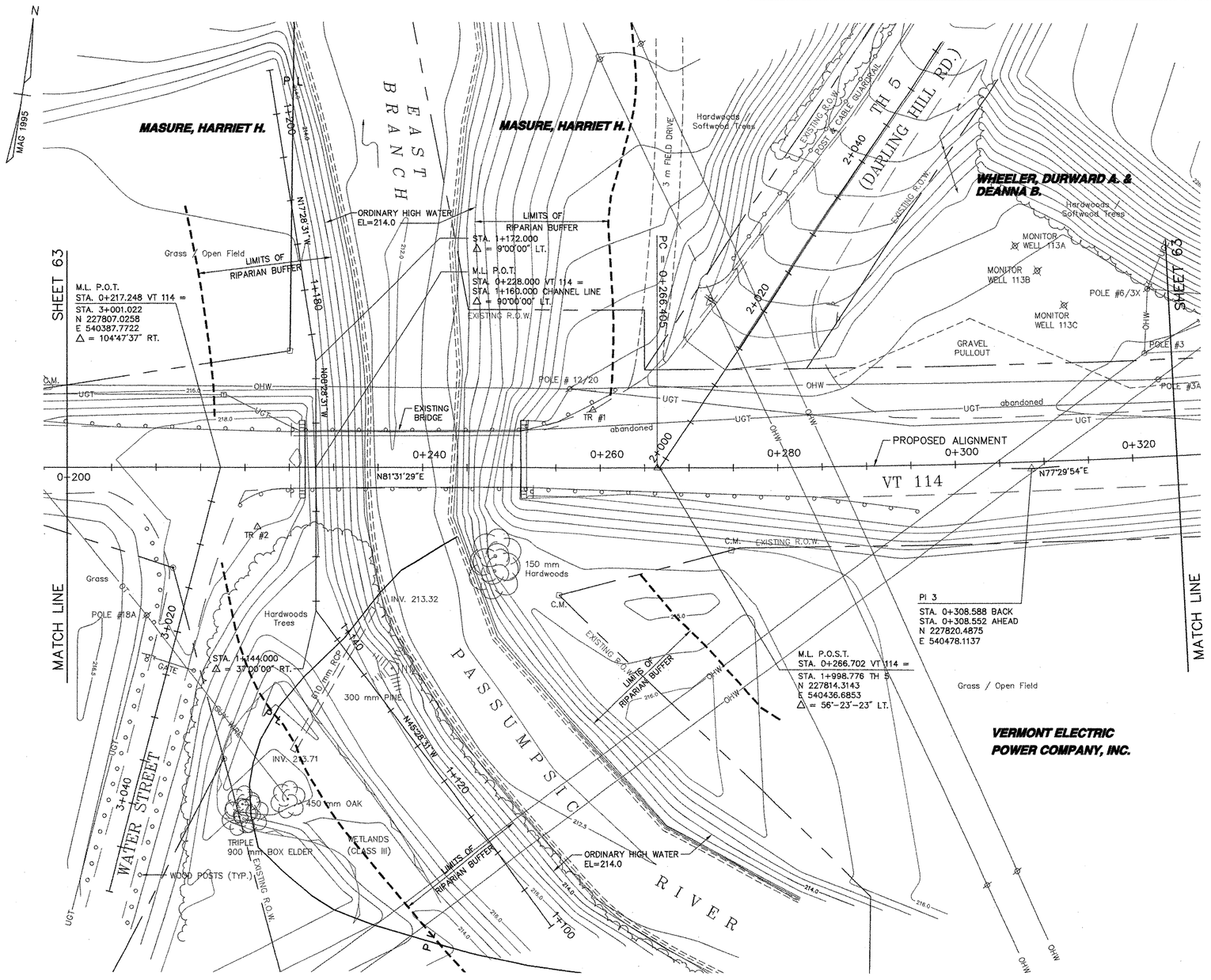
Do not allow construction equipment to operate on the down slope side of perimeter control measures.

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
EROSION CONTROL NARRATIVE	
Designed By VTRANS/M.A.C.	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544ECN	Sheet 61 of 72

PLOTTED 3–14–2006



PLAN

SCALE: 1:250

5 0 5 10 15 20 25

GRAPHIC SCALE
(IN METERS)

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83-92

EXISTING LEGEND

- EXISTING GUARDRAIL
- TREELINE
- OHW — OVERHEAD UTILITY
- UGT — UNDERGROUND TELEPHONE
- UGE — UNDERGROUND ELECTRIC
- CENTERLINE DITCH
- CULVERT
- UTILITY POLE W/GUY
- SIGN
- TELEPHONE MARKER
- TR #1 — TRAVERSE POINT

NOTES:

1. NO "THREATENED & ENDANGERED SPECIES" OR HISTORIC RESOURCES HAVE BEEN IDENTIFIED FOR THIS PROJECT.
2. EXISTING PASSUMPSIC RIVER CHANNEL BANKS ARE ARMORED WITH HEAVY STONE FILL UPSTREAM, DOWNSTREAM, AND UNDER THE BRIDGE.

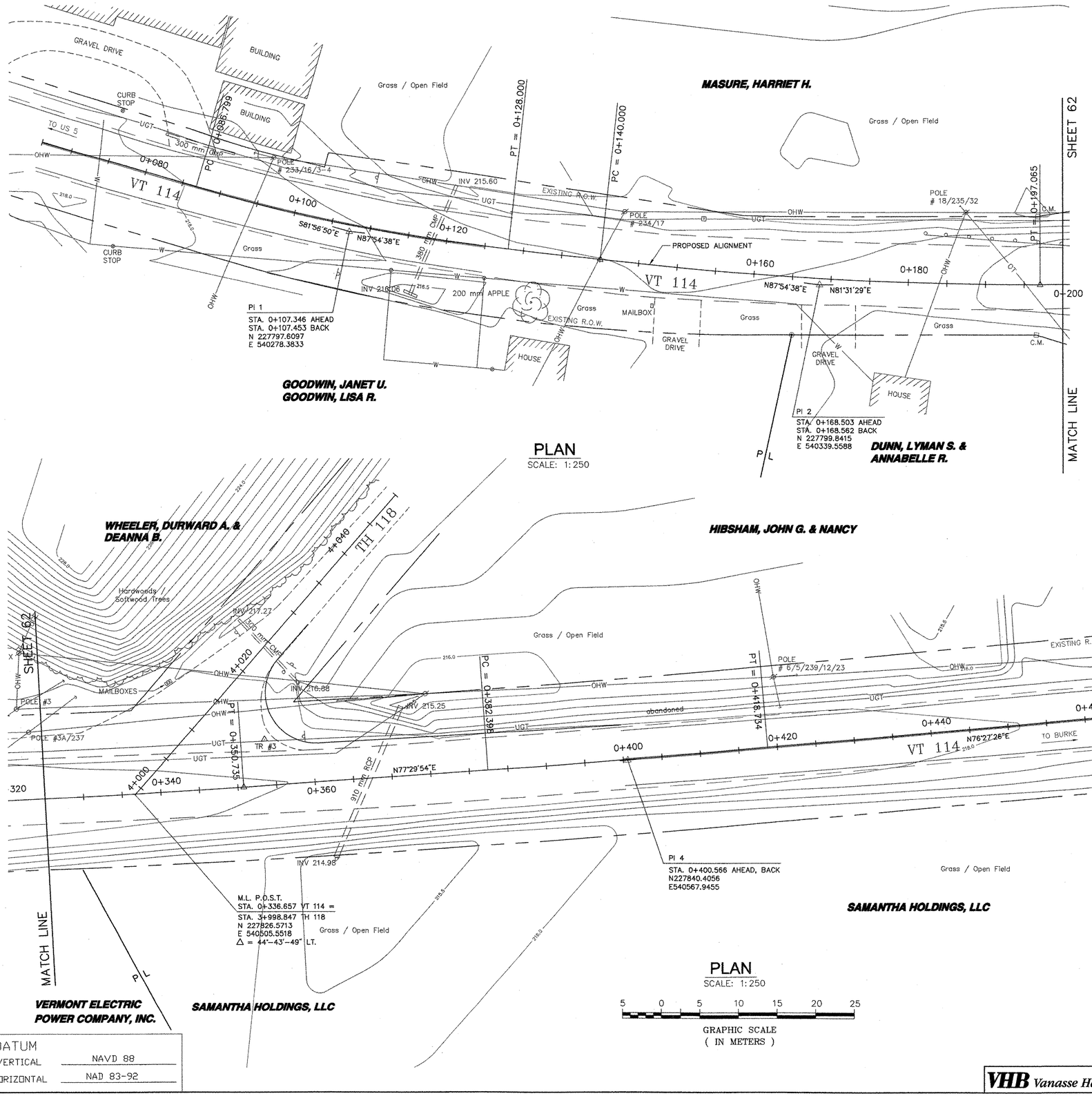
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
EXISTING CONDITIONS SITE PLAN (1 OF 2)	
Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544ER1	Sheet 62 of 72

VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006

VAOT Metric



PLAN
SCALE: 1:250

EXISTING LEGEND

- EXISTING GUARDRAIL
- TREELINE
- OHW — OVERHEAD UTILITY
- UGT — UNDERGROUND TELEPHONE
- UGE — UNDERGROUND ELECTRIC
- CENTERLINE DITCH
- CULVERT
- UTILITY POLE W/GUY
- SIGN
- TELEPHONE MARKER
- TR #1 — TRAVERSE POINT

NOTES:

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2. EXISTING PASSUMPSIC RIVER CHANNEL BANKS ARE ARMORED WITH HEAVY STONE FILL UPSTREAM, DOWNSTREAM, AND UNDER THE BRIDGE.

PLAN
SCALE: 1:250

5 0 5 10 15 20 25
GRAPHIC SCALE
(IN METERS)

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83-92

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.

VT 114 OVER PASSUMPSIC RIVER

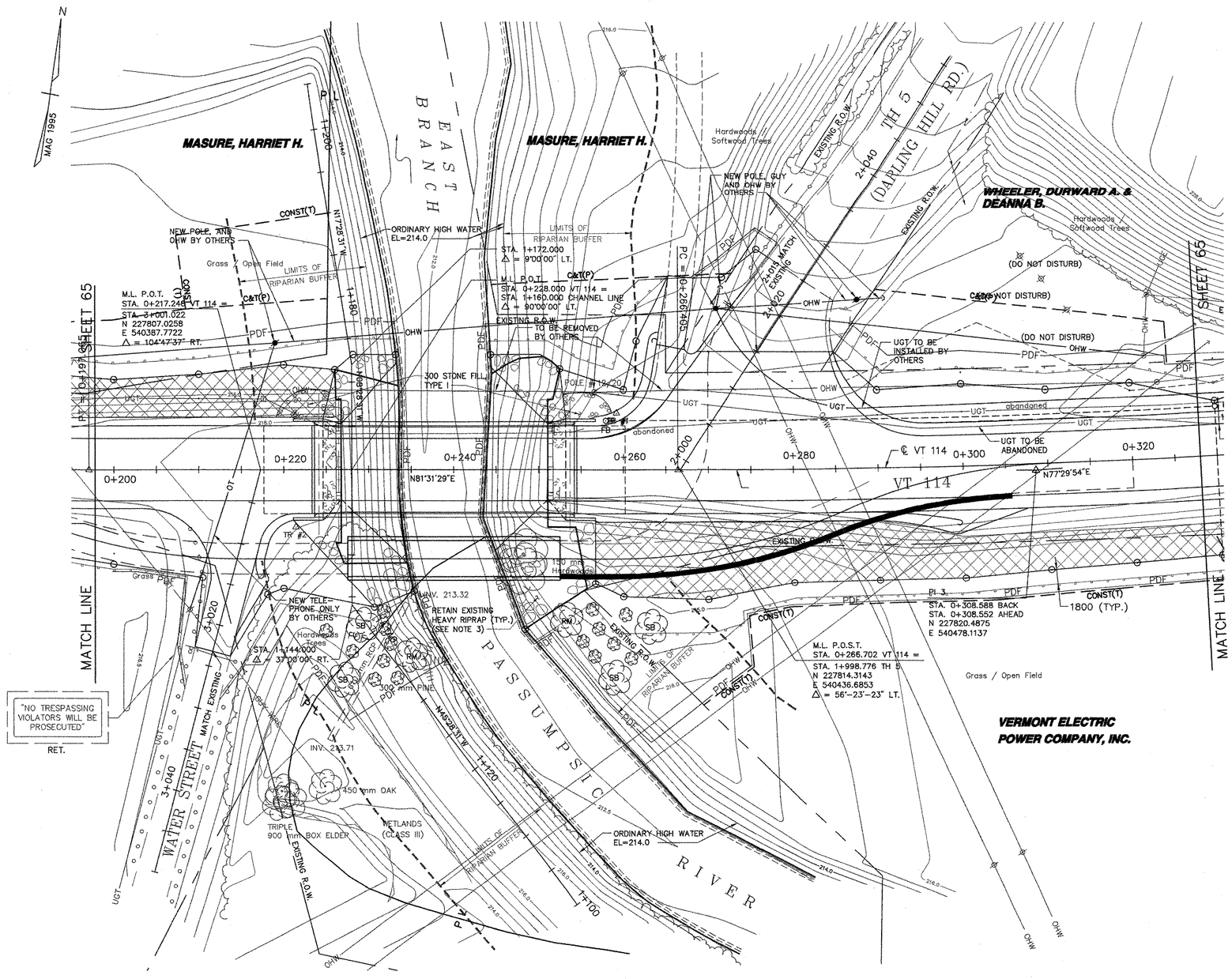
EXISTING CONDITIONS SITE PLAN (2 OF 2)

Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544ER1	Sheet 63 of 72

VHB Vanasse Hangen Brustlin, Inc.

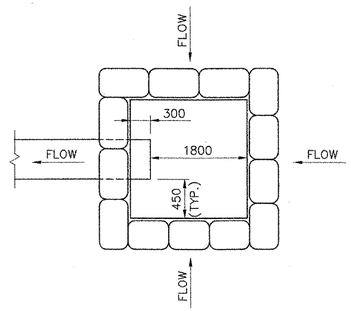
PLOTTED 3-14-2006

VAOT Metric

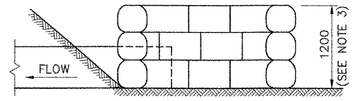


LEGEND

- EXISTING GUARDRAIL
- TREELINE
- OHW — OVERHEAD UTILITY
- UGT — UNDERGROUND TELEPHONE
- UGE — UNDERGROUND ELECTRIC
- CENTERLINE DITCH
- CULVERT
- UTILITY POLE W/GUY
- SIGN
- TELEPHONE MARKER
- TR #1 — TRAVERSE POINT
- TOP OF CUT TO MATCH EXISTING
- TOE OF SLOPE TO MATCH EXISTING
- EXISTING SOIL TYPE BOUNDARY (APPROX.)



PLAN



SECTION

1. THE PURPOSE OF DRAINAGE STRUCTURE INLET PROTECTION IS TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM. CREATING AND MAINTAINING A SMALL PONDING AREA ALLOWS SEDIMENT TO FALL OUT OF SUSPENSION PRIOR TO ENTERING THE STRUCTURE. ALL COSTS SHALL BE INCLUDED IN ITEM 613.10, STONE FILL, TYPE I (MOD. – INLET PROTECTION).
2. GRAVEL BAGS ARE FILLED WITH CLEAN, SMALL DIAMETER STONE ALLOWING WATER TO SLOWLY PERCOLATE THROUGH RATHER THAN SAND WHICH WOULD CREATE A DAM EFFECT.
3. THE TOP OF THE INLET PROTECTION SHALL BE SET AT THE MAXIMUM DESIRED WATER LEVEL BASED ON FIELD LOCATION AND CONDITIONS.

PROPOSED PIPE INLET CONTROL

NOT TO SCALE

LEGEND

- SILT FENCE
- —PDF— PROJECT DEMARCATION FENCE DEFINING LIMITS OF DISTURBANCE (SNOW FENCE (MOD. – PDF))
- EROSION MATTING

TREE LEGEND

- RM = RED MAPLE
- SB = SERVICEBERRY
- = RED STEM DOGWOOD

PLAN

SCALE: 1:250

5 0 5 10 15 20 25

GRAPHIC SCALE (IN METERS)

NOTES:

1. NO "THREATENED & ENDANGERED SPECIES" OR HISTORIC RESOURCES HAVE BEEN IDENTIFIED FOR THIS PROJECT.
2. EXISTING PASSUMPSIC RIVER CHANNEL BANKS ARE ARMORED WITH HEAVY STONE FILL UPSTREAM, DOWNSTREAM, AND UNDER THE BRIDGE.
3. RETAIN EXISTING HEAVY RIPRAP. SUPPLEMENT WITH STONE FILL, TYPE IV OUTSIDE THE LIMITS OF RIPRAP TO Q100 ELEVATION AT WINGWALLS. SEE TYPICAL CHANNEL SECTION ON SHEET 11 FOR PLACEMENT OF NEW STONE FILL.

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83-92

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
EPSC PLAN (1 OF 2)	
Designed By S.M.G. / M.A.C.	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544ER2	Sheet 64 of 72

PLOTTED 3-14-2006

VAOT Metric

BEGIN APPROACH
STA. 0+125.000
STA. 0+125.000 – 0+140.000
TO BE COLD PLANED AND PAVED

BEGIN PROJECT
STA. 0+170.000

PI = 0+128.000
PC = 0+140.000
PC = 0+086.799

MASURE, HARRIET H.

Grass / Open Field

TO US 5

UGT

300 mm DMF

OHW

0+080

VT 114

0+100

S81°56'50"E

N87°54'38"E

0+120

INV 215.60

UGT

EXISTING R.O.W.

PDF

POLE # 234/17

NEW POLE AND OHW BY OTHERS

TO BE REMOVED BY OTHERS

C&T(P)

PDF

OHW

UGT

PT = 0+197.085

SHEET 64

MATCH LINE

0+160

0+180

0+200

N81°31'29"E

℄ VT 114

380

INV 216.06

200 mm ARPLE

Grass

MAILBOX (REMOVE)

EXISTING R.O.W.

PI 1
STA. 0+107.346 AHEAD
STA. 0+107.453 BACK
N 227797.6097
E 540278.3833

GOODWIN, JANET U.
GOODWIN, LISA R.

TO BE REMOVED BY OTHERS (TYP.)

PI 2
STA. 0+168.503 AHEAD
STA. 0+168.562 BACK
N 227799.8415
E 540339.5588

DUNN, LYMAN S. & ANNABELLE R.

PL

PLAN
SCALE: 1:250

N

MAG 1995

LEGEND

- EXISTING GUARDRAIL
- TREELINE
- OHW — OVERHEAD UTILITY
- UGT — UNDERGROUND TELEPHONE
- UGE — UNDERGROUND ELECTRIC
- CENTERLINE DITCH
- CULVERT
- UTILITY POLE W/GUY
- SIGN
- TELEPHONE MARKER
- TR #1 — TRAVERSE POINT
- TOP OF CUT TO MATCH EXISTING
- TOE OF SLOPE TO MATCH EXISTING
- EXISTING SOIL TYPE BOUNDARY (APPROX.)

NOTES:

1. NO "THREATENED & ENDANGERED SPECIES" OR HISTORIC RESOURCES HAVE BEEN IDENTIFIED FOR THIS PROJECT.
2. EXISTING PASSUMPSIC RIVER CHANNEL BANKS ARE ARMORED WITH HEAVY STONE FILL UPSTREAM, DOWNSTREAM, AND UNDER THE BRIDGE.
3. SEE SHEET 64 FOR PROPOSED PIPE INLET CONTROL DETAIL.

WHEELER, DURWARD A. & DEANNA B.

HIBSHAM, JOHN G. & NANCY

TH 118

4+649

MATCH EXISTING STA. 4+030

Hardwoods / Softwood Trees

INV 217.27

PROPOSED PIPE INLET CONTROL (SEE NOTE 3)

1800 (TYP.)

CONST(T)

PDF

Grass / Open Field

END PAVEMENT STA. 4+014

MAILBOXES (REMOVE)

4+020

OHW

UGT

FB 1500

+330.410

4+000

0+340

0+350.735

TR #3

UGT TO BE INSTALLED BY OTHERS

0+360

N77°29'54"E

910 mm RCP

INV 214.88

PC = 0+358.398

PT = 0+416.734

UGT TO BE ABANDONED

abandoned

0+400

0+420

0+440

0+460

0+480

VT 114

N76°27'26"E

TO BURKE

PC = 0+481.832

EXISTING R.O.W.

3600

900

PI 4
STA. 0+400.566 AHEAD, BACK
N227840.4056
E540567.9455

END APPROACH
STA. 0+400.000
STA. 0+380.000 – 0+400.000
TO BE COLD PLANED AND PAVED

SAMANTHA HOLDINGS, LLC

M.L. P.O.S.T.
STA. 0+336.657 VT 114 =
STA. 3+998.847 TH 118
N 227826.5713
E 540505.5518
Δ = 44°-43'-49" LT.

END PROJECT
STA. 0+350.000

STA. 0+336.657 RT
STONE FILL TYPE I PAD AT OUTLET
600 x 300 x 300 DEEP

STA. 0+371.8 LT – 0+352.0 RT
FILL EXISTING 910 mm RCP (SEE NOTE 2)

STA. 0+380.0 LT TO RT.
NEW 22 m x 900 mm RCP (CLASS III)
(68 mm x 12 mm) CORRUGATIONS
0.96 900 mm x 17 mm CMCP
TYPE I STONE FILL PAD AT OUTLET
1550 x 3600 x 600 DEEP

VERMONT ELECTRIC POWER COMPANY, INC.

SAMANTHA HOLDINGS, LLC

PLAN
SCALE: 1:250

5 0 5 10 15 20 25
GRAPHIC SCALE
(IN METERS)

BENCHMARK NO. K38 1942
BRASS DISK IN WEST END
OF CURB OF A VERTICAL
CULVERT ON THE NORTH
SIDE OF ROUTE 114 OPPOSITE
TOWN HIGHWAY #40, APPROX.
.64km FROM RAILROAD CROSSING
NAVD 1988 ELEVATION = 217.608

N

MAG 1995

LEGEND

- SILT FENCE
- PDF — PROJECT DEMARCATION FENCE DEFINING LIMITS OF DISTURBANCE (SNOW FENCE (MOD. – PDF))
- EROSION MATTING

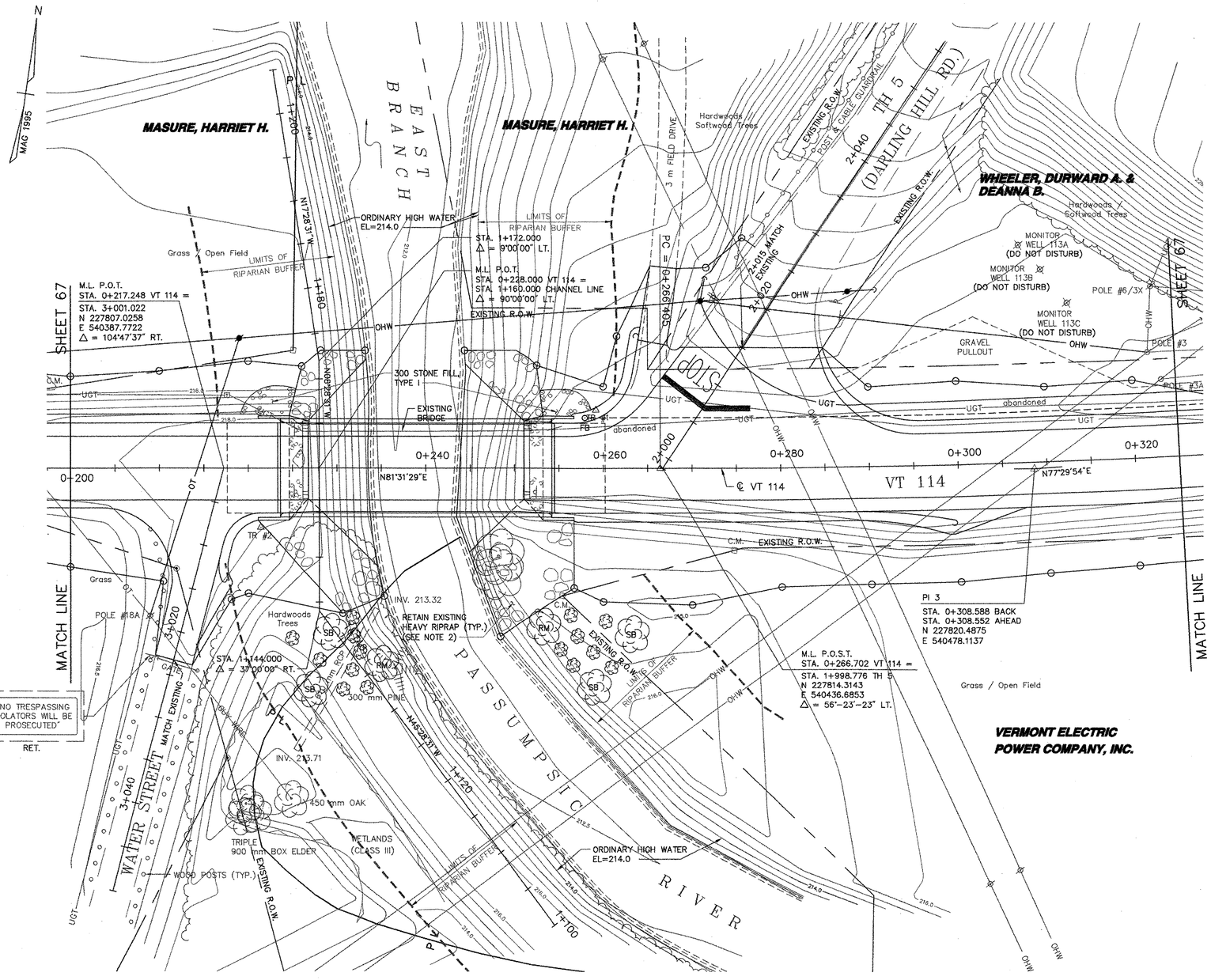
DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83-92

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
EPSC PLAN (2 OF 2)	
Designed By S.M.G. / M.A.C.	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544ER2	Sheet 65 of 72

PLOTTED 3-14-2006



PLAN

SCALE: 1:250

5 0 5 10 15 20 25

GRAPHIC SCALE
(IN METERS)

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83-92

VHB Vanasse Hangen Brustlin, Inc.

VAOT Metric

TREE LEGEND

RM = RED MAPLE

SB = SERVICEBERRY

= RED STEM DOGWOOD

LEGEND

TR #1 TRAVERSE POINT

TOP OF CUT TO MATCH EXISTING

TOE OF SLOPE TO MATCH EXISTING

EXISTING SOIL TYPE BOUNDARY (APPROX.)

SEEDING FORMULA
RURAL AREAS

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

GENERAL NOTES

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

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

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

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

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

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

NOTE:

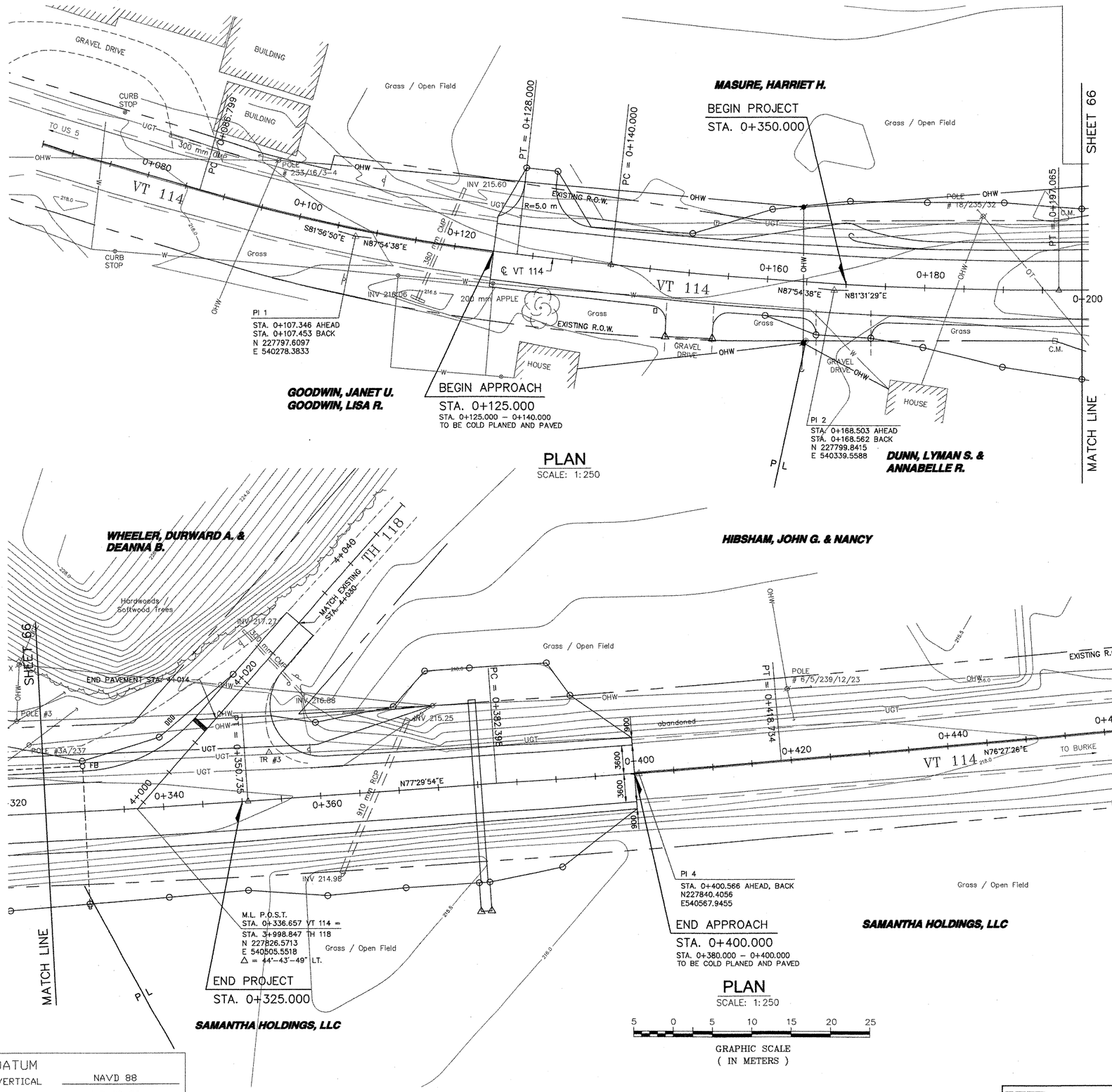
1. CONTOURS SHOWN ARE EXISTING CONDITIONS. SEE CROSS SECTIONS FOR PROPOSED GRADING.
2. RETAIN EXISTING HEAVY RIPRAP. SUPPLEMENT WITH STONE FILL, TYPE IV OUTSIDE THE LIMITS OF RIPRAP TO Q100 ELEVATION AT WINGWALLS. SEE TYPICAL CHANNEL SECTION ON SHEET 11 FOR PLACEMENT OF NEW STONE FILL.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
FINAL CONDITIONS SITE PLAN (1 OF 2)	
Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544ER3	Sheet 66 of 72

PLOTTED 3-14-2006

VAOT Metric



NOTE:

1. CONTOURS SHOWN ARE EXISTING CONDITIONS. SEE CROSS SECTIONS FOR PROPOSED GRADING.

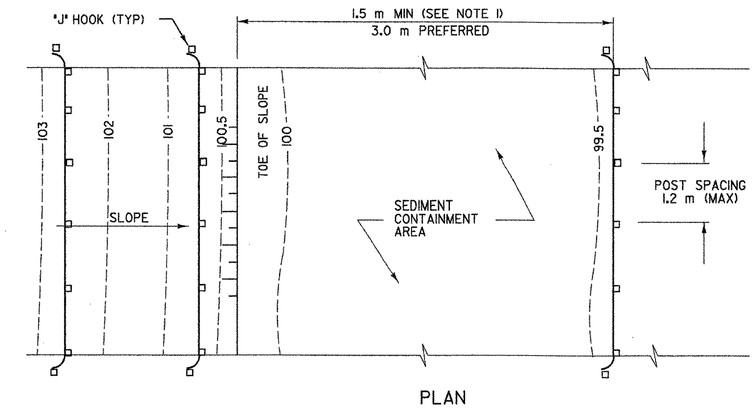
DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83-92

STATE OF VERMONT
AGENCY OF TRANSPORTATION

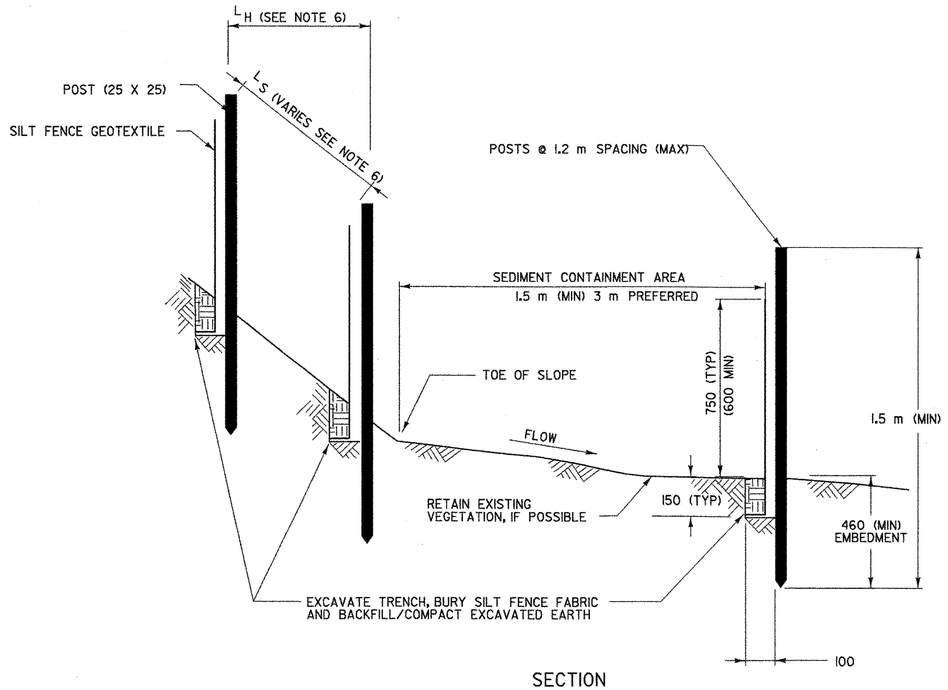
Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
FINAL CONDITIONS SITE PLAN (2 OF 2)	
Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 3/06	Bridge Design Supervisor M.A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269(10)
I.G.C. Info.	
Bridge Sheet No. 50544ER3	Sheet 67 of 72

VHB Vanasse Hangen Brustlin, Inc.

PLOTTED 3-14-2006



PLAN



SECTION

SILT FENCE - TEMPORARY

SILT FENCE

APPLICATION NOTES:

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

B. SILT FENCE SHALL BE INSTALLED ON A LINE OF EQUAL ELEVATION (CONTOUR). IT MAY BE INSTALLED AT INTERMEDIATE POINTS UP SLOPES AS WELL AS AT THE BOTTOM, AS SHOWN IN THE DETAIL.

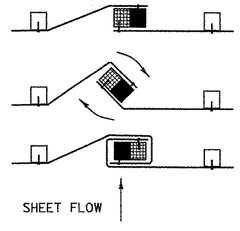
C. SILT FENCE SHALL NOT BE USED ACROSS CONCENTRATED FLOW.

GENERAL NOTES:

1. SILT FENCE SHALL GENERALLY BE PLACED A MINIMUM OF 1.5 m BEYOND TOE OF SLOPE, 3 m PREFERRED, TO PROVIDE ADEQUATE AREA FOR SEDIMENT STORAGE AND FACILITATE MAINTENANCE OF SEDIMENT CONTAINMENT AREA.
2. ALL ENDS SHALL BE "J" HOOKED TO TRAP SEDIMENT.
3. IN AREAS WITH TWO SLOPES, SILT FENCE SHALL BE USED TO ERECT A DAM AND TRAP SEDIMENT AT THE BASE OF THE STEEPER SLOPE.
4. THE BOTTOM EDGE OF SILT FENCE SHALL BE BURIED A MINIMUM OF 150 mm BELOW GROUND, AND KEYED IN 100 mm. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC.
5. MAXIMUM DRAINAGE AREA TRIBUTARY TO 30 m OF SILT FENCE SHALL BE 0.1 Ha.
6. THE FOLLOWING ARE MAXIMUM SLOPE LENGTHS FOR THESE MEASURES:

CONSTRUCTED SLOPE	SLOPE LENGTH (LS) m	HORIZONTAL LENGTH (LH) m
3 : 1	25	24
4 : 1	40	39
5 : 1	60	60
> 5 : 1	80	80

7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
8. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
9. SILT FENCE SHALL BE REMOVED WHEN THE AREA HAS BEEN STABILIZED. AT TIME OF REMOVAL OF THE SILT FENCE, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
10. PAYMENT FOR INSTALLATION AND REMOVAL OF SILT FENCE SHALL BE MADE UNDER THE GEOTEXTILE FOR SILT FENCE ITEM.
11. PAYMENT FOR MONITORING SILT FENCE SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
12. PAYMENT FOR MAINTAINING SILT FENCE SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



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

SPLICING DETAIL

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

VAOT Metric DETAIL EPSC-1M

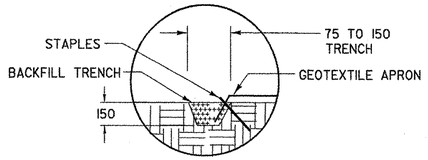
EROSION PREVENTION & SEDIMENT CONTROL DETAILS SILT FENCE

VERMONT AGENCY OF TRANSPORTATION

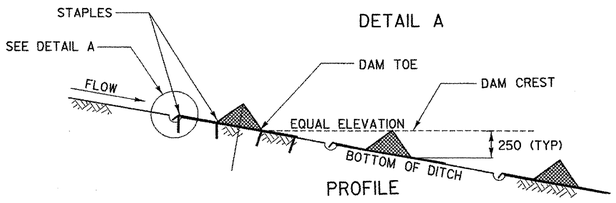
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
EPSC-1M	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date	Bridge Design Supervisor M. A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269 (10)
I.G.C. Info.	
Bridge Sheet No.	Sheet 68 of 72

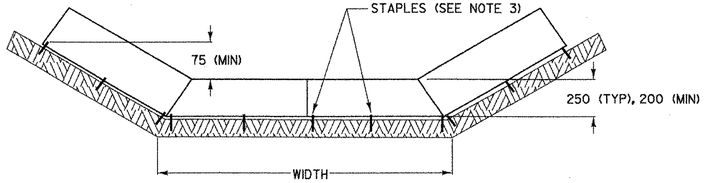
VHB NO. 50544



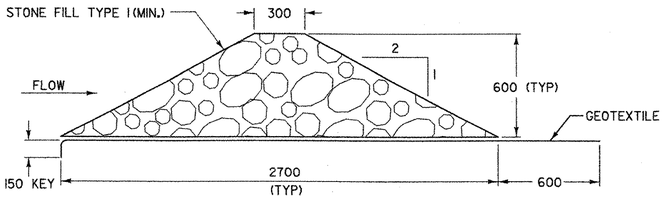
DETAIL A



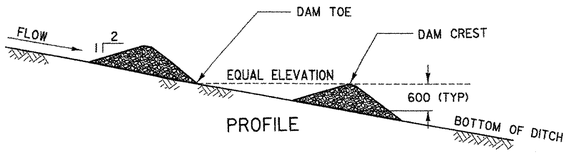
PROFILE



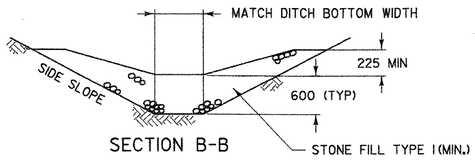
SECTION A-A



CROSS SECTION



PROFILE



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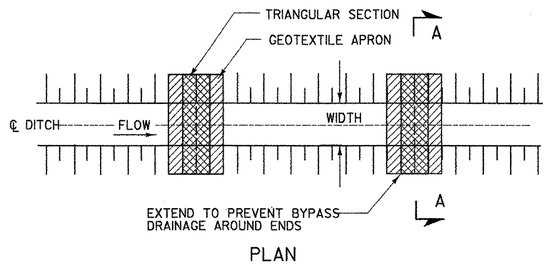
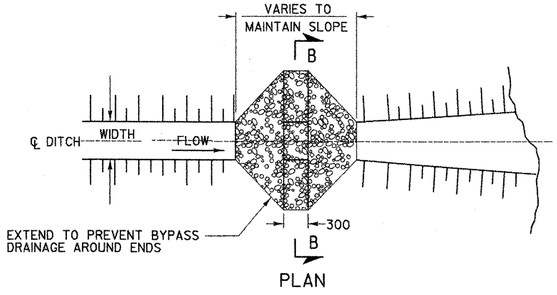


PLAN

CHECK DAM - TEMPORARY
(PREFABRICATED)



PLAN

CHECK DAM - TEMPORARY
(STONE)

PREFABRICATED CHECK DAM PLACEMENT INTERVAL	
DITCH SLOPE	PLACEMENT INTERVAL **
1%	15 m
2 %	12 m
3 %	8 m
4 %	6 m
5 %	5 m

** BASED ON 0.25 m TYPICAL HEIGHT

STONE CHECK DAM PLACEMENT INTERVAL	
DITCH SLOPE	PLACEMENT INTERVAL **
1%	60 m
2 %	30 m
3 %	20 m
4 %	15 m
5 %	12 m
6 %	10 m
8 %	7.5 m
10 %	6 m

** BASED ON 0.6 m TYPICAL HEIGHT

CHECK DAMS

APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF A CHECK DAM IS TO REDUCE EROSION IN A CHANNEL BY REDUCING FLOW VELOCITY.

B. CHECK DAMS WILL CAPTURE SEDIMENT THAT FALLS OUT OF SUSPENSION BEHIND THE CHECK DAM DUE TO DECREASED VELOCITY.

C. CHECK DAMS ARE NOT INTENDED TO FILTER SEDIMENT FROM TURBID WATER.

D. DETAILS SHOWN SHALL BE USED FOR TEMPORARY INSTALLATION ONLY.

E. PREFABRICATED DAMS ARE NOT TO BE USED ON SLOPES GREATER THAN 5% OR PER MANUFACTURER'S SPECIFICATIONS.

F. PREFABRICATED DAM SPECIFICATIONS SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

GENERAL NOTES:

1. GEOTEXTILE SHALL BE INSTALLED UNDER STONE FILL. IT SHALL BE KEYED IN ON THE UP HILL END AND SHALL EXTEND 0.6 m BEYOND THE STONE ON THE DOWN HILL END.

2. CORE MATERIAL FOR THE STONE CHECK DAM SHALL MEET THE GRADATION REQUIREMENTS OF STONE FILL TYPE I (MIN.). STONE SIZE SHOULD BE INCREASED WITH INCREASED SLOPE AND VELOCITY.

3. THE UPHILL END OF THE APRON FOR THE PREFABRICATED CHECK DAM SHALL BE STAPLED AND BURIED AS SHOWN IN DETAIL "A" OR AS RECOMMENDED BY THE MANUFACTURERS LITERATURE.

4. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.

5. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.

6. AT TIME OF REMOVAL OF THE CHECK DAMS, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.

7. PAYMENT FOR INSTALLATION AND REMOVAL OF CHECK DAMS SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.

8. PAYMENT FOR MONITORING CHECK DAMS SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.

9. PAYMENT FOR MAINTAINING CHECK DAMS SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

MAY 15, 2004 N. GARBACIK

VAOT Metric DETAIL EPSC-2M

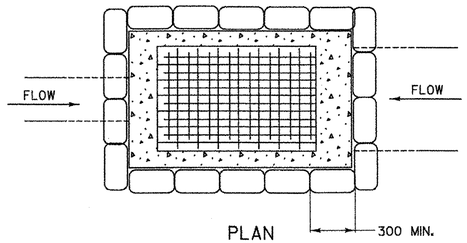
EROSION PREVENTION & SEDIMENT CONTROL DETAILS CHECK DAMS

VERMONT AGENCY OF TRANSPORTATION

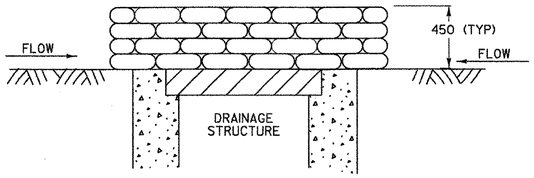
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
EPSC-2M	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date	Bridge Design Supervisor M. A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269 (10)
L.G.C. Info.	
Bridge Sheet No.	Sheet 69 of 72

VHB NO. 50544

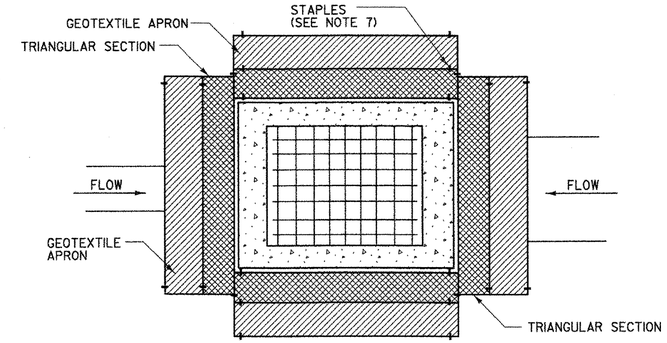


PLAN



SECTION

GRAVEL BAG DROP INLET PROTECTION



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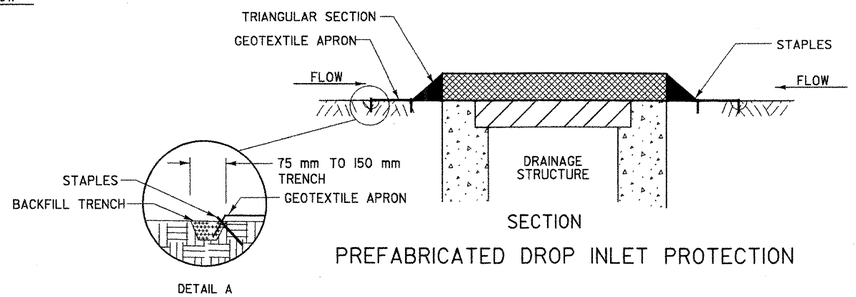
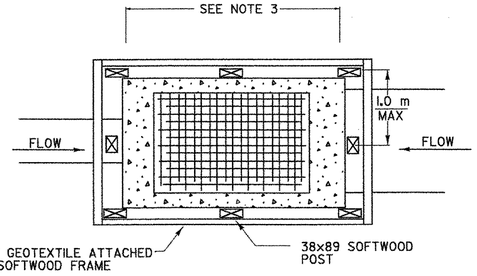


SECTION

DETAIL A

PREFABRICATED DROP INLET PROTECTION



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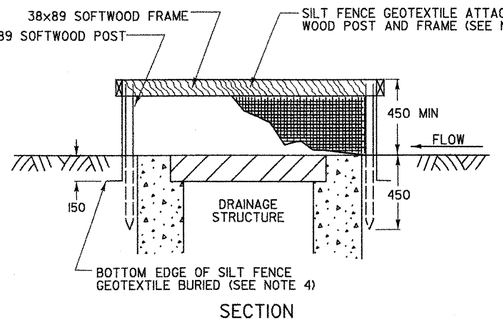
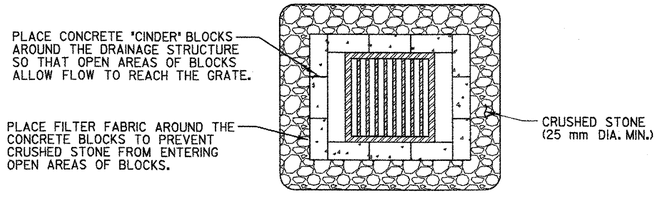
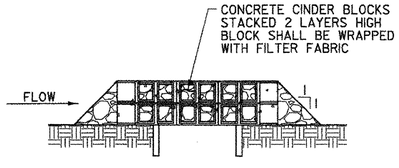


SECTION

SILT FENCE DROP INLET PROTECTION

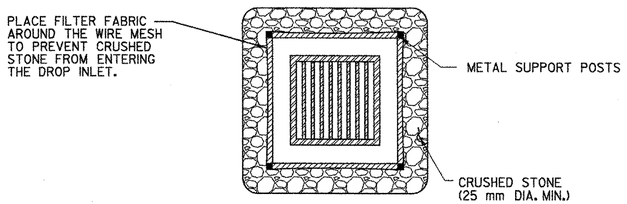


PLAN

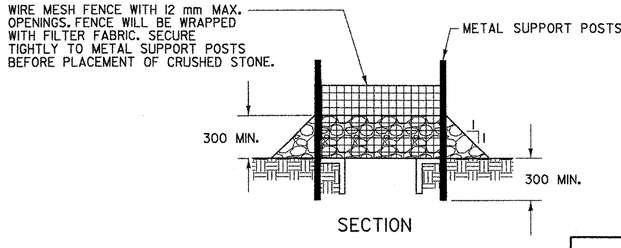


SECTION

ROCK BARRIER DROP INLET PROTECTION TEMPORARY PAVED AREAS



PLAN



SECTION

ROCK BARRIER INLET PROTECTION TEMPORARY UNPAVED AREAS

DROP INLET PROTECTION

APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF DRAINAGE STRUCTURE INLET PROTECTION IS TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM BY PONDING WATER WHICH ALLOWS SEDIMENT TO FALL OUT OF SUSPENSION.

B. THESE EXAMPLES OF DROP INLET PROTECTION ARE NOT INTENDED FOR USE ON GRADES. ON GRADE THEY MAY CAUSE WATER TO BYPASS THE STRUCTURE, CREATING ADDITIONAL EROSION OR FLOODING.

C. POSSIBLE MODIFICATIONS FOR USE ON GRADE INCLUDE ADDING A BERM DOWNSTREAM OF THE INLET TO CREATE PONDING. CHECK DAMS MAY ALSO BE USED UPSTREAM OF THE INLET TO SLOW VELOCITIES.

D. PREFABRICATED DROP INLET PROTECTION SPECIFICATIONS SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

GENERAL NOTES:

1. THE TOP OF THE INLET PROTECTION SHALL BE SET AT THE MAXIMUM DESIRED WATER LEVEL, BASED ON FIELD LOCATION AND CONDITIONS.
2. SILT FENCE GEOTEXTILE SHALL BE A SINGLE CONTINUOUS PIECE TO ELIMINATE JOINTS.
3. SPACE SILT FENCE POSTS EVENLY AROUND INLET WITH A MAXIMUM SPACING OF 1.0 m. DRIVE POSTS A MINIMUM OF 450 mm INTO GROUND. WIRE MESH MAY BE REQUIRED BEHIND GEOTEXTILE TO PROVIDE SUPPORT.
4. SILT FENCE GEOTEXTILE SHALL BE EMBEDDED A MINIMUM OF 150 mm AND BACKFILLED. GEOTEXTILE SHALL BE SECURELY FASTENED TO POSTS AND FRAME.
5. GRAVEL BAGS SHALL BE FILLED WITH CLEAN STONE, RATHER THAN SAND, TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM IF BAGS ARE DAMAGED DURING USE.
6. GRAVEL BAGS SHALL BE INDIVIDUALLY TIED, DOUBLE BAGGED AND INVERSELY INSERTED. GRAVEL BAGS SHALL LAP THE JOINTS BETWEEN THE BAGS IN THE LAYER BELOW.
7. SECURE THE ENDS OF THE APRON FOR THE PREFABRICATED DRAINAGE STRUCTURE INLET PROTECTION WITH STAPLES AS DETAILED IN THE PLAN VIEW OR AS RECOMMENDED BY THE MANUFACTURERS LITERATURE.
8. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
9. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED, SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
10. PAYMENT OF INLET PROTECTION SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.
11. PAYMENT FOR MONITORING INLET PROTECTION SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
12. PAYMENT FOR MAINTAINING INLET PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

VAOT Metric DETAIL EPSC-3M

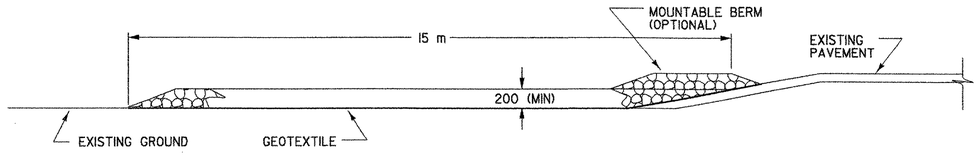
EROSION PREVENTION & SEDIMENT CONTROL DETAILS DROP INLET PROTECTION

VERMONT AGENCY OF TRANSPORTATION

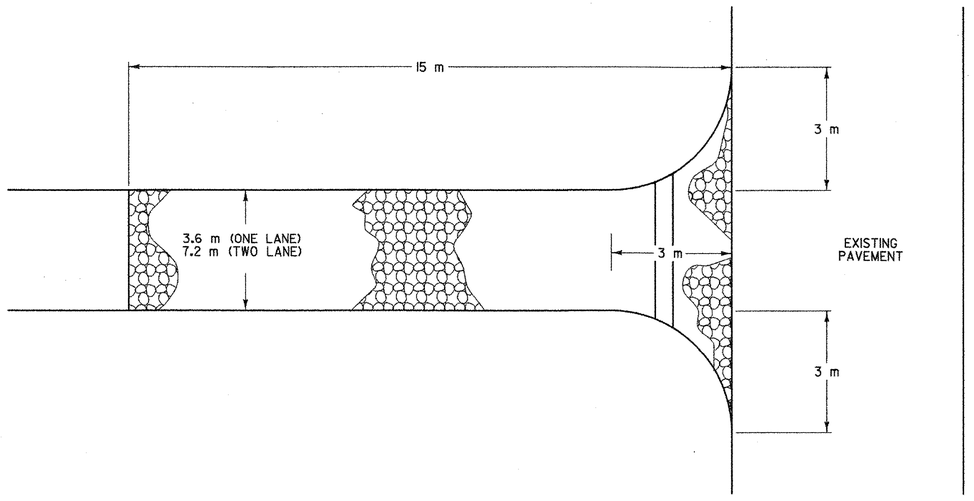
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
	Log Sta.
Highway No. VT 114	Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
EPSC-3M	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date	Bridge Design Supervisor M. A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269 (10)
I.G.C. Info.	
Bridge Sheet No.	Sheet 70 of 72

VHB NO. 50544



TYPICAL CONSTRUCTION ENTRANCE PROFILE
(CUT AND DITCH SECTIONS)



TYPICAL CONSTRUCTION ENTRANCE PLAN
(CUT/DITCH AND FILL SECTIONS)

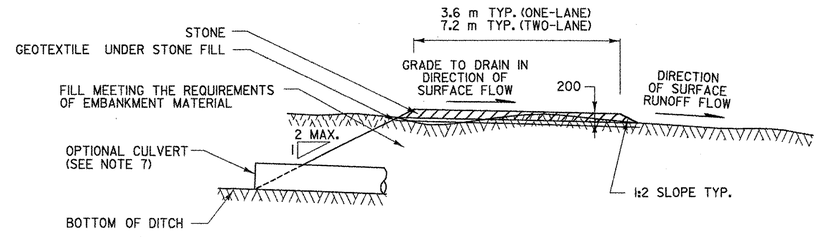
STABILIZED CONSTRUCTION ENTRANCE

APPLICATION NOTES:

A. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY OR STREETS.

GENERAL NOTES:

1. STONE SIZE - USE CLEAN STONE WITH GRADATION BETWEEN 50 mm AND 100 mm.
2. LENGTH - 15 m (MIN)
3. THICKNESS - 200 mm (MIN)
4. WIDTH - 3.6 m (MIN)
5. GEOTEXTILE UNDER STONE WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE AS DIRECTED BY THE ENGINEER. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. PROPOSED DRAINAGE PIPES SHALL BE SIZED WITH SUFFICIENT CAPACITY TO CARRY DITCH FLOWS. ALTERNATIVE WAYS OF TRANSPORTING DITCH DRAINAGE ACROSS CONSTRUCTION ENTRANCES MAY BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER.
8. WHEN WASHING OF VEHICLE IS NECESSARY, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
10. 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.
11. AT THE TIME OF REMOVAL OF THE STABILIZED CONSTRUCTION ENTRANCE THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
12. PAYMENT OF THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.
13. PAYMENT FOR MONITORING STABILIZED CONSTRUCTION ENTRANCES SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
14. PAYMENT FOR MAINTAINING STABILIZED CONSTRUCTION ENTRANCES SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



TYPICAL CONSTRUCTION ENTRANCE SECTION

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

VAOT Metric DETAIL EPSC-4M

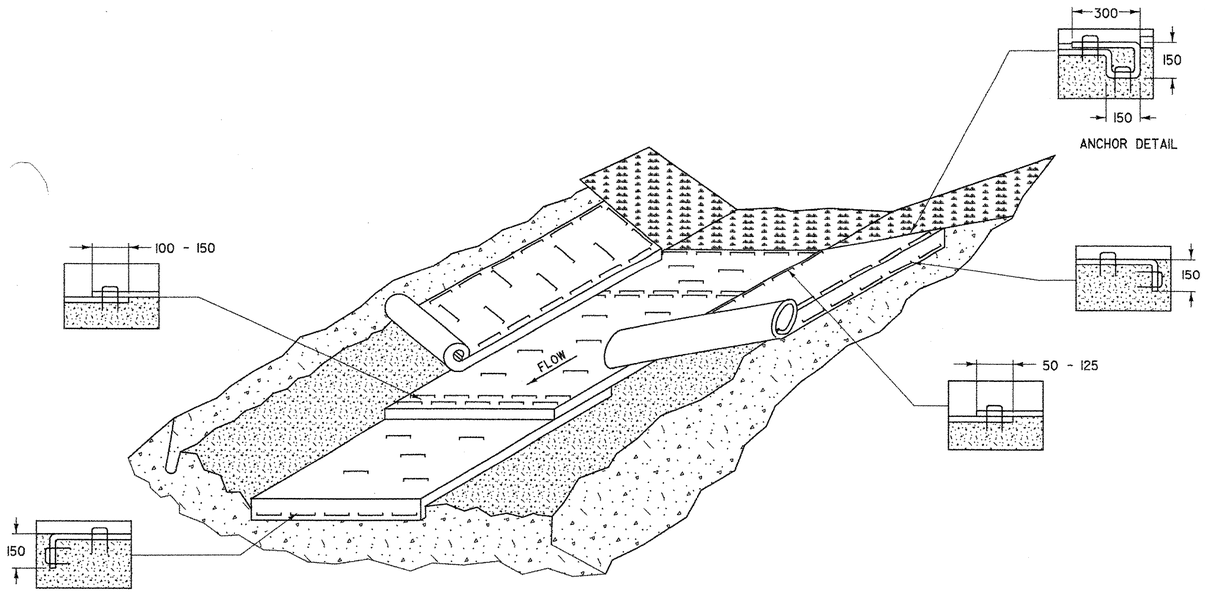
EROSION PREVENTION & SEDIMENT CONTROL DETAILS CONSTRUCTION ENTRANCE

VERMONT AGENCY OF TRANSPORTATION

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
EPSC-4M	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date	Bridge Design Supervisor M. A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269 (10)
I.G.C. Info.	
Bridge Sheet No.	Sheet 71 of 72

VHB NO. 50544



EROSION PROTECTION FOR DITCHES

APPLICATION NOTES:

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

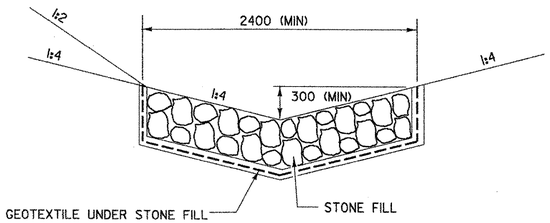
B. THE FOLLOWING CHARTS SHALL BE USED TO DETERMINE THE APPROPRIATE EROSION CONTROL MEASURE:

DITCH AND CHANNEL PROTECTION	
SLOPE	LINING
< 1%	GRASS
1% TO 4 %	EROSION MATTING
4 % TO 10 %	STONE FILL, TYPE I
> 10 %	STONE FILL, TYPE II

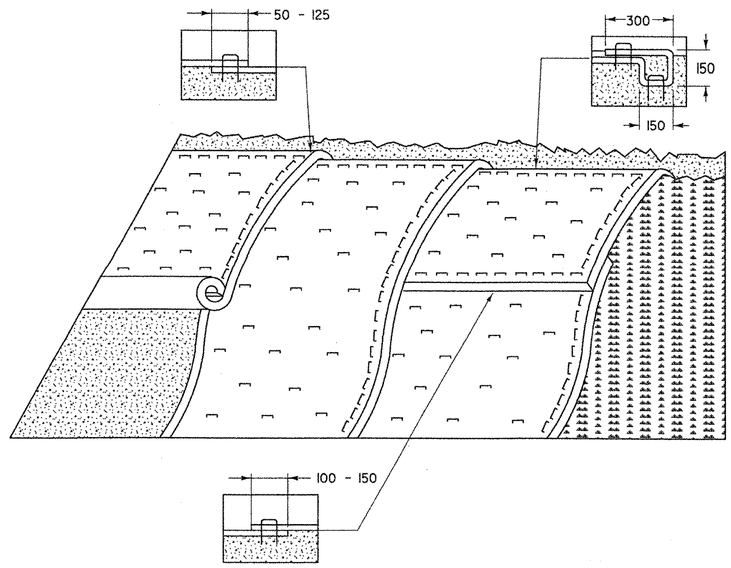
STONE FILL THICKNESS	
STONE FILL TYPE	THICKNESS
TYPE I	0.3 m
TYPE II	0.6 m

GENERAL NOTES:

1. WATER MAY NEED TO BE DIVERTED TO ALLOW PROPER MATTING INSTALLATION.
2. GRADE AND SMOOTH CHANNEL TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
3. APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
4. INSTALL MATTING IN THE CENTER OF THE CHANNEL, IN THE DIRECTION OF THE WATER FLOW.
5. INSTALL MATTING ON THE SIDE SLOPES OF THE CHANNEL, OVERLAPPING THE CENTER MAT.
6. ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INTALLATION INSTRUCTIONS.
7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
8. MEASURES SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
9. PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
10. PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
11. PAYMENT FOR MAINTAINING EROSION CONTROL MATTING SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



TEMPORARY STONE LINED DITCH



EROSION PREVENTION FOR SIDE SLOPES

APPLICATION NOTES:

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

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

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

GENERAL NOTES:

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

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

METRIC DETAIL EPSC-5M

EROSION PREVENTION & SEDIMENT CONTROL DETAILS DITCH & SIDE SLOPE PROTECTION

VERMONT AGENCY OF TRANSPORTATION

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of LYNDON	Bridge No. 2
Highway No. VT 114	Log Sta. / Surv. Sta.
VT 114 OVER PASSUMPSIC RIVER	
EPSC-5M	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date	Bridge Design Supervisor M. A. COLGAN Date 3/06
PROJECT LYNDON	PROJECT NO. BRF 0269 (10)
LG.C. Info.	
Bridge Sheet No.	Sheet 72 of 72

VHB NO. 50544

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS

1). ALL MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001 WITH LATEST REVISIONS AND THE SPECIAL PROVISIONS.

2). AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (A.A.S.H.T.O) STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 2002 EDITION WITH LATEST REVISIONS.

MATERIAL SPECIFICATIONS

1). ALL STRUCTURAL STEEL TO BE AASHTO M270M GRADE 345W (ASTM A709M-345W) (UN) (UNPAINTED).

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

3). HIGH STRENGTH BOLTS: AASHTO M164 TYPE 3 (ASTM A325).

FABRICATION

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

2). STUDS ARE FURNISHED AND FIELD APPLIED BY OTHERS.

WELDING

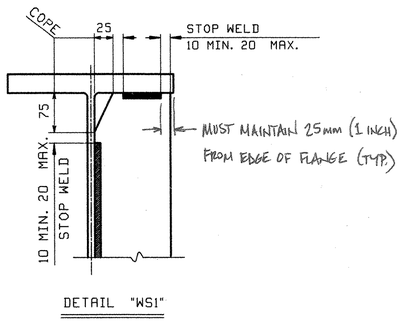
1). THE CONFIGURATION OF THE WELD JOINTS AND ALL WELDING PROCEEDURES SHALL BE IN ACCORDANCE WITH AASHTO/AWS D1.5-02 BRIDGE WELDING CODE AND IN ADDITION TO SPECIFICATIONS SHOWN ABOVE. ALL WELDING WILL BE DETAILED TO PRE-QUALIFIED JOINTS, UNLESS PROHIBITED BY THE DESIGNER.

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

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

CLEANING

1). ALL STEEL SHALL BE BLAST CLEANED AS PER SSPC SP-10 PER SPEC. 506.14(a)



DETAIL "WS1"

FIELD CONNECTIONS

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

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

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

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

VTRANS
RECEIVED
CK'D BY JMP OK'D BY GBoy
AUG 15 2006
RESUBMIT____ APPROVED AS NOTED
BY [illegible] DATE 8/21/06

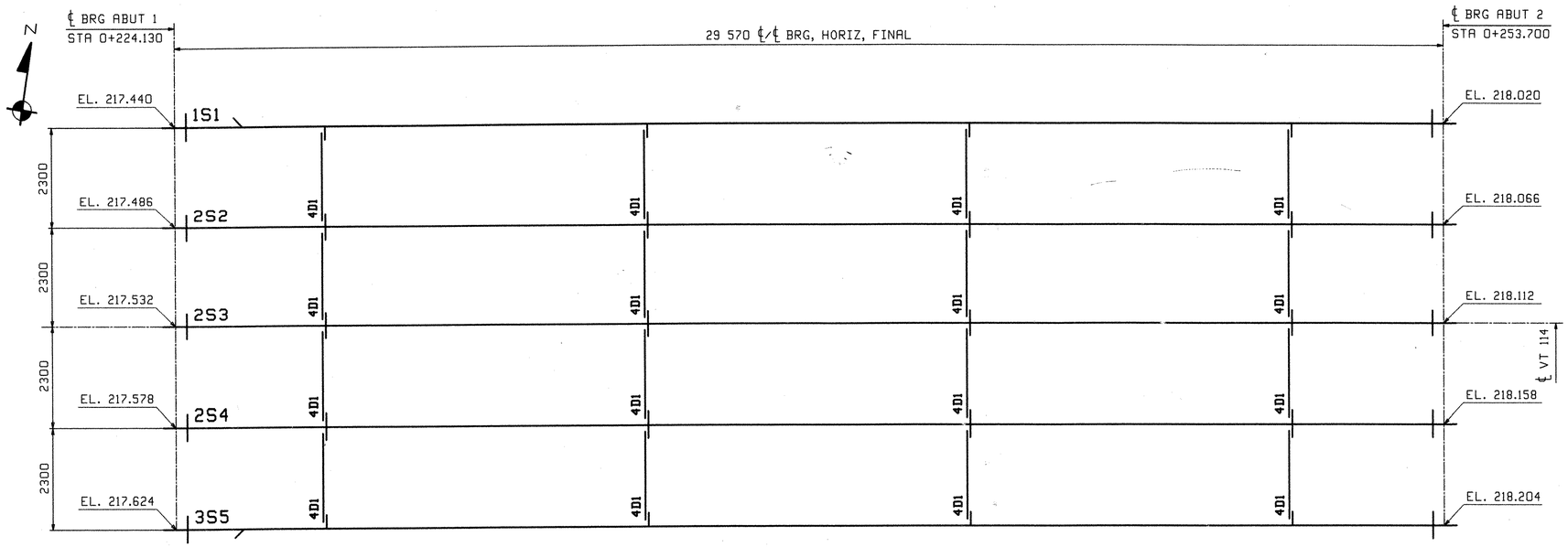
REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	8/8/06									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

MATERIAL:	ELECTRODES:	HOLES:	SHOP BOLTS:

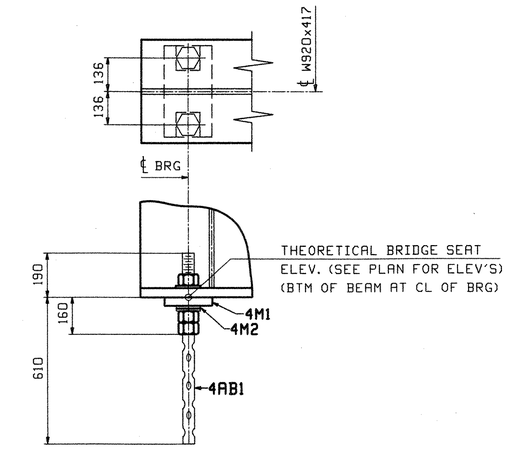
SURFACE PREP. & PAINT:

DESCRIPTION: GENERAL NOTES		DRAWN BY	DATE
JOB: VT 114 OVER PASSUMPSIC RIVER, BRIDGE 2 TOWN OF LYNDON, COUNTY OF CALEDONIA, VT STATE OF VERMONT AGENCY OF TRANS. ENGR: VANASSE HANGEN BRUSTLIN, INC.		SOB	06/13
		CHKD BY	
		RLA	06/15/06
		APPROV BY	
TENSOR 2641		SUPERVISOR	W. J. GATTI
PROJ NO. BRF 0269(10)		Q.A.	
CUSTOMER: WINTERSET, INC.			
CASCO BAY STEEL STRUCTURES, INC.		JOB NO.	DRG. NO.
75 SPRING HILL ROAD SACO, MAINE 04072		297	GN1
PHONE (207) 282-7360 FAX. (207) 282-1179		075 SS	REV. △

RLR Fri Jun 23 07:11:34 EDT 2006 /users/jobs/2641/GN1.dwg



FRAMING PLAN



BEARING ASSEMBLY - ABUT'S 1 & 2

TYP LINES 1 THRU 5

FIELD BOLT LIST							A325 Type 3 BOLTS							
LINE	NO REQ'D.	BOLT DIAM.	BOLT LEN.	BOLTS /CONN.	# OF CONN.	GRIP	THICKNESS OF PCS. CONNECTED						WASH CODE	PIECES CONNECTED AND REMARKS
1														**INT DIAPHRAGMS - 4D1**
2	160	7/8	2 1/2	5	32	26	11	15					1	DIAPHRAGM WEB TO CONNECTION PLATE

WASHER CODES

1: 1 Hard Flat Washer

FIELD BOLT SUMMARY				2% ADDED, MIN. 2 EXTRA		
LINE	NO. OF BOLTS	BOLT DIAM.	TYPE	BOLT LEN	ACTUAL COUNT	REMARKS
1	164	7/8	A325 Type 3	2 1/2	160	
2						
3	164	Hard Flat Washers for 7/8 ø BOLT			TYPE 436W	
4						
5						
6						

1. All bolt diameters and lengths are shown in inches (english unit of measurement).
2. All grip values are shown in metric units.

VTRANS
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BY ____ DATE 8/21/06

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	8/8/06									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

MATERIAL:	ELECTRODES:	HOLES:	SHOP BOLTS:

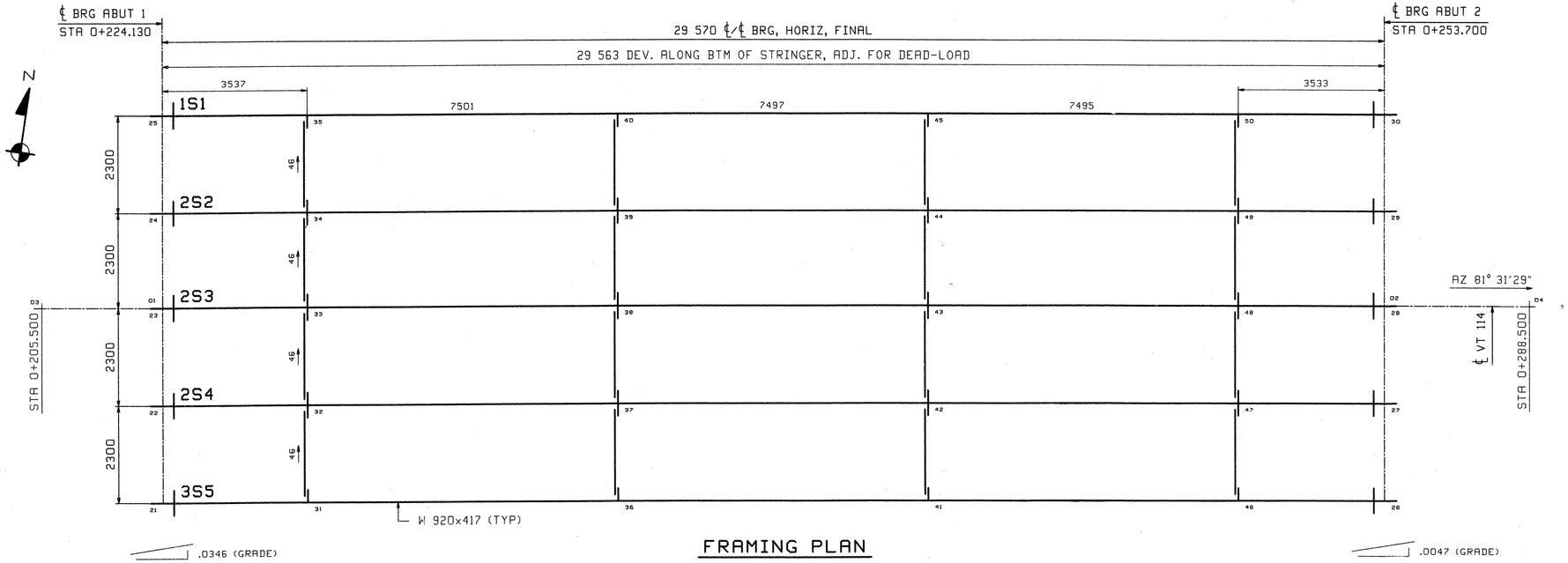
SURFACE PREP. & PAINT:

DESCRIPTION: FRAMING PLAN & FIELD BOLTS	DRAWN BY	DATE
JOB: VT 114 OVER PASSUMPSIC RIVER, BRIDGE 2 TOWN OF LYNDON, COUNTY OF CALEDONIA, VT STATE OF VERMONT AGENCY OF TRANS. ENGR: VANASSE HANGEN BRUSTLIN, INC.	JTB	07/08
	CHKD BY	
TENSOR 2641	ELC	08/03
	APPROV BY	
	SUPERVISOR	W. J. GATTI
PROJ NO. BRF 0269(10)	Q.A.	
CUSTOMER: WINTERSET, INC.		

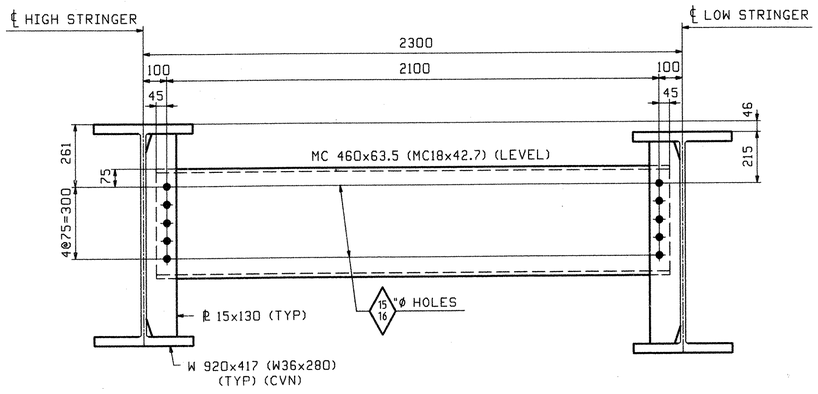
CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

JOB NO.	DRG. NO.
297	E1
074 SS	REV. △

ELC Thu Aug 3 14:28:54 EDT 2006 /users/jobs/2641/E1.dgn

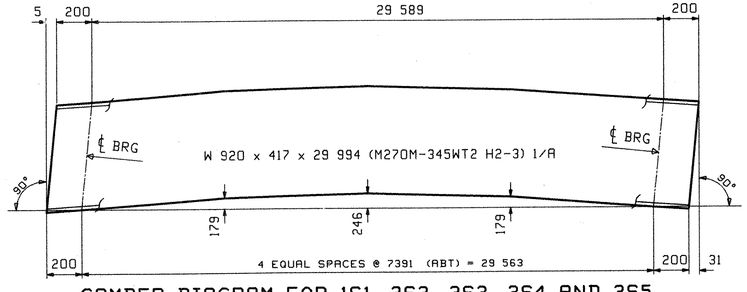


FRAMING PLAN

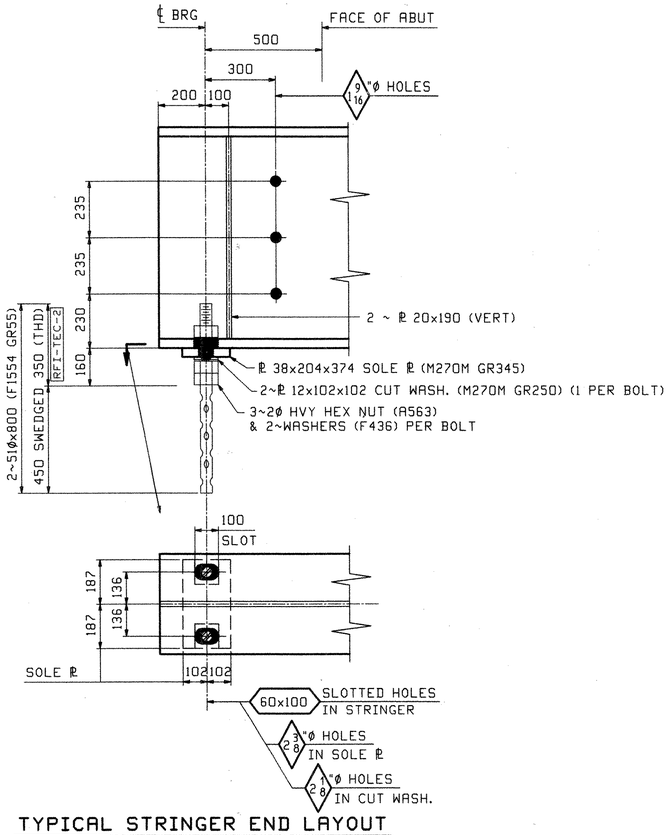


TYPICAL DIAPHRAGM LAYOUT

(LOOKING DOWNSTATION)



CAMBER DIAGRAM FOR 1S1, 2S2, 2S3, 2S4 AND 3S5



TYPICAL STRINGER END LAYOUT

NOTES
1. LONGITUDINAL DIMENSIONS ARE SLOPING ALONG BOTT OF STRINGER WITH CORRECTIONS MADE FOR VERTICAL CURVE, GRADE & DL CAMBER (UN).
2. TRANSVERSE DIMENSIONS ARE IN A HORIZ. PLANE (UN).
3. DROP ARROW POINTS TOWARDS LOW END OF MEMBER.
4. ENDS OF GIRDERS AND BRG. STIFF'S ARE VERTICAL AFTER DL ROTATION.
5. DIAPH. CONN. STIFF ARE NORMAL TO GRADE.
6. BOTT PT NUMBERS =TOP PT NUMBERS + 100.
7. DIAPH DROPS ARE CALCULATED IN THEIR FINAL POSITION.

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	8/8/06									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

MATERIAL:	ELECTRODES:	HOLES:	SHOP BOLTS:

SURFACE PREP. & PAINT:

VTRANS RECEIVED
CK'D BY JMP OK'D BY G.Roy
AUG 15 2006
RESUBMIT ____ APPROVED X
BY [illegible] DATE 8/21/06

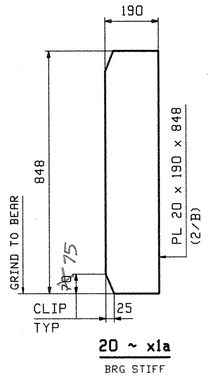
DESCRIPTION: CALCULATION PLAN	DRAWN BY	DATE
JOB: VT 114 OVER PASSUMPSIC RIVER, BRIDGE 2 TOWN OF LYNDON, COUNTY OF CALEDONIA, VT STATE OF VERMONT AGENCY OF TRANS. ENGR: VANASSE HANGEN BRUSTLIN, INC.	SOB	06/12
	CHKD BY	
	RLA	06/15/06
	APPROV BY	
	SUPERVISOR	W. J. GATTI
PROJ NO. BRF 0269(10)	Q.A.	
CUSTOMER: WINTERSET, INC.		

TENSOR 2641

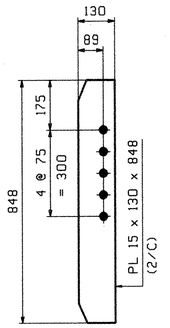
CASCO BAY STEEL STRUCTURES, INC.

75 SPRING HILL ROAD SACO, MAINE 04072	JOB NO.	DRG. NO.
PHONE (207) 282-7360 FAX. (207) 282-1179	297	WS1
	075 S3	REV. △

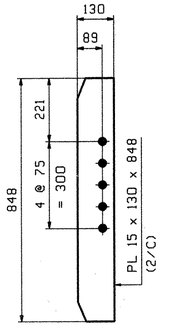
RLA Fri Jun 23 07:11:38 EDT 2006 /users/jobs/2641/MS1 | Rev:0



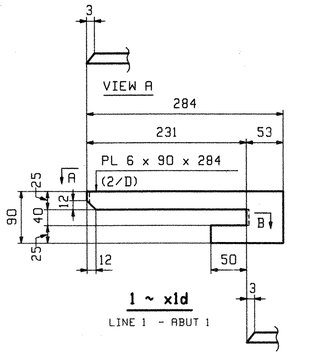
20 ~ x1a
BRG STIFF



16 ~ x1b
CONN PL - LOW END

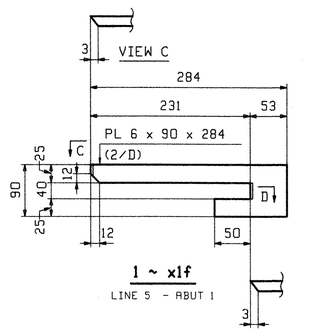


16 ~ x1c
CONN PL - HIGH END



1 ~ x1d
LINE 1 - ABUT 1

SECTION B



1 ~ x1f
LINE 5 - ABUT 1

SECTION D

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

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	8/8/06									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

MATERIAL:	ELECTRODES:	HOLES:	SHOP BOLTS:
M270M-345W		$\frac{15}{16}$"Ø	NONE

SURFACE PREP. & PAINT:
SEE DRAWING GN1

DESCRIPTION:	STRINGER STANDARDS	DRAWN BY	DATE
JOB:	VT 114 OVER PASSUMPSIC RIVER, BRIDGE 2 TOWN OF LYNDON, COUNTY OF CALEDONIA, VT STATE OF VERMONT AGENCY OF TRANS. ENGR: VANASSE HANGEN BRUSTLIN, INC.	JTB	07/08
		CHKD BY	
		ELC	08/03
		APPROV BY	
		SUPERVISOR	W. J. GATTI
PROJ NO.	BRF 0269(10)	Q.A.	
CUSTOMER:	WINTERSET, INC.		

TENSOR 2641

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

JOB NO.	DRG. NO.
297	X1
07655	REV. △

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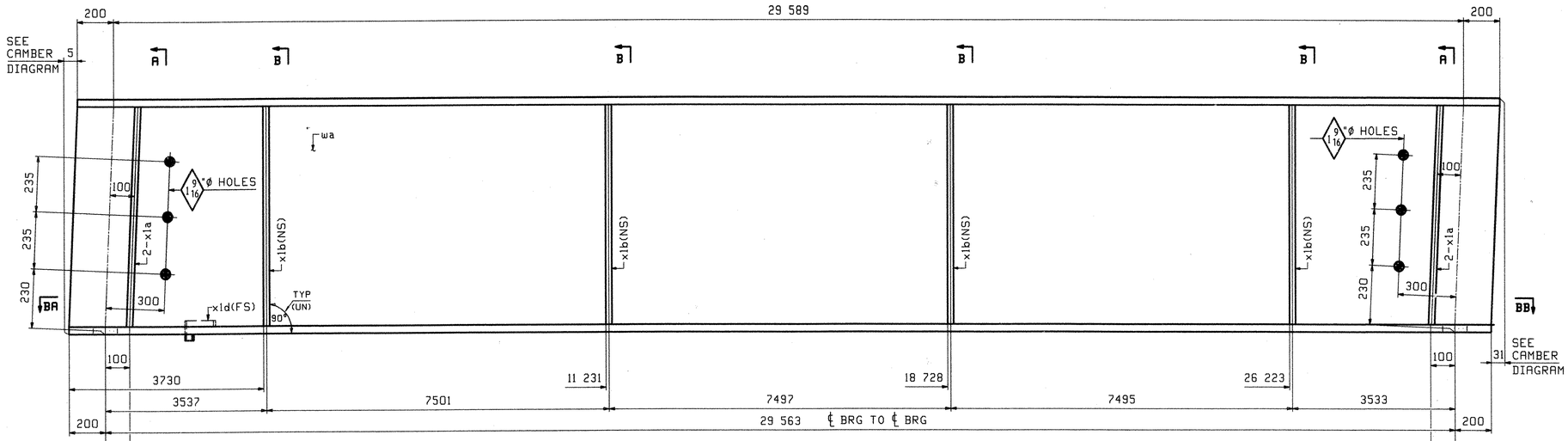
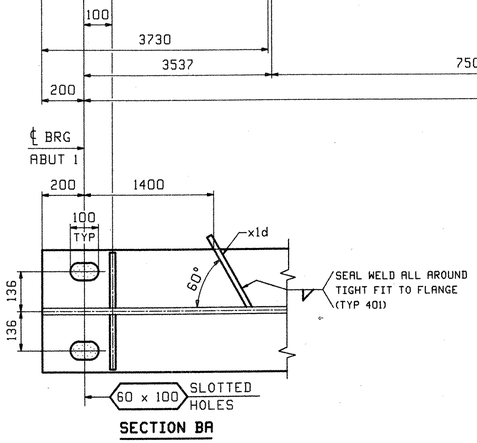
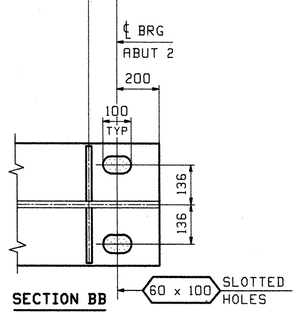
CK'D BY JMP OK'D BY
AUG 15 2006
RESUBMIT APPROVED AS NOTED
BY DATE 8/21/06

ELC Thu Aug 3 16:44:51 EDT 2006 /users/jobs/2641/x1.dwg

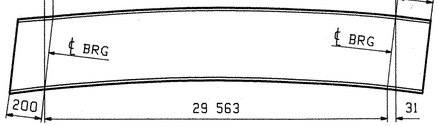




SECTION BA



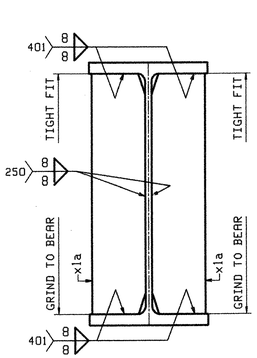
SECTION BB



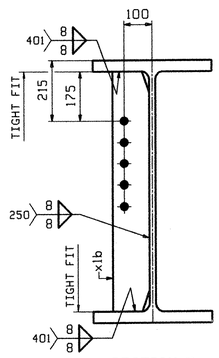
ORIENTATION DIAGRAM
FOR CAMBER SEE DWG WS1

ONE - STRINGER - 1S1

FOR STRINGER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAM SEE DRAWING WS1.
FOR GENERAL NOTES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.



SECTION A



SECTION B

ABM INFO		SHIP	QTY	MARK	MATERIAL	LENGTH m	LENGTH mm	REMARKS	WT	PROCUREMENT NOTES
PAGE	LINE	MARK								
		1S1	1		STRINGER			12662 kg 27914 lbs		
1	A		1	wa	W 920x417	29	994	(M270M-345WT2)	(H2-3)	
2	B		4	x1a	PL 20x190	0	848	MIE		
2	C		4	x1b	PL 15x130	0	848			
2	D		1	x1d	PL 6x90	0	284			

BILL OF MATERIAL — JOB NO. — DRAWING NO. 1 — REV.

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.
	OUT FOR APPROVAL	8/8/06				
	OUT FOR APPROVAL					
	ISSUED TO SHOP					
	FIELD & OFFICE					

NO.	DIA.	LGT	TYPE	WASHER

MATERIAL: M270M-345W
ELECTRODES:
HOLES: 15/16"Ø (UN)
SHOP BOLTS: NONE

SURFACE PREP. & PAINT:
SEE DRAWING GN1

VTRANS RECEIVED
CK'D BY JMP OK'D BY G.Ray
AUG 15 2006
RESUBMIT ____ APPROVED X
BY ____ DATE 8/21/06

DESCRIPTION: STRINGER - 1S1

JOB: VT 114 OVER PASSUMPSIC RIVER, BRIDGE 2
TOWN OF LYNDON, COUNTY OF CALEDONIA, VT
STATE OF VERMONT AGENCY OF TRANS.
ENGR: VANASSE HANGEN BRUSTLIN, INC.

TENSOR 2641

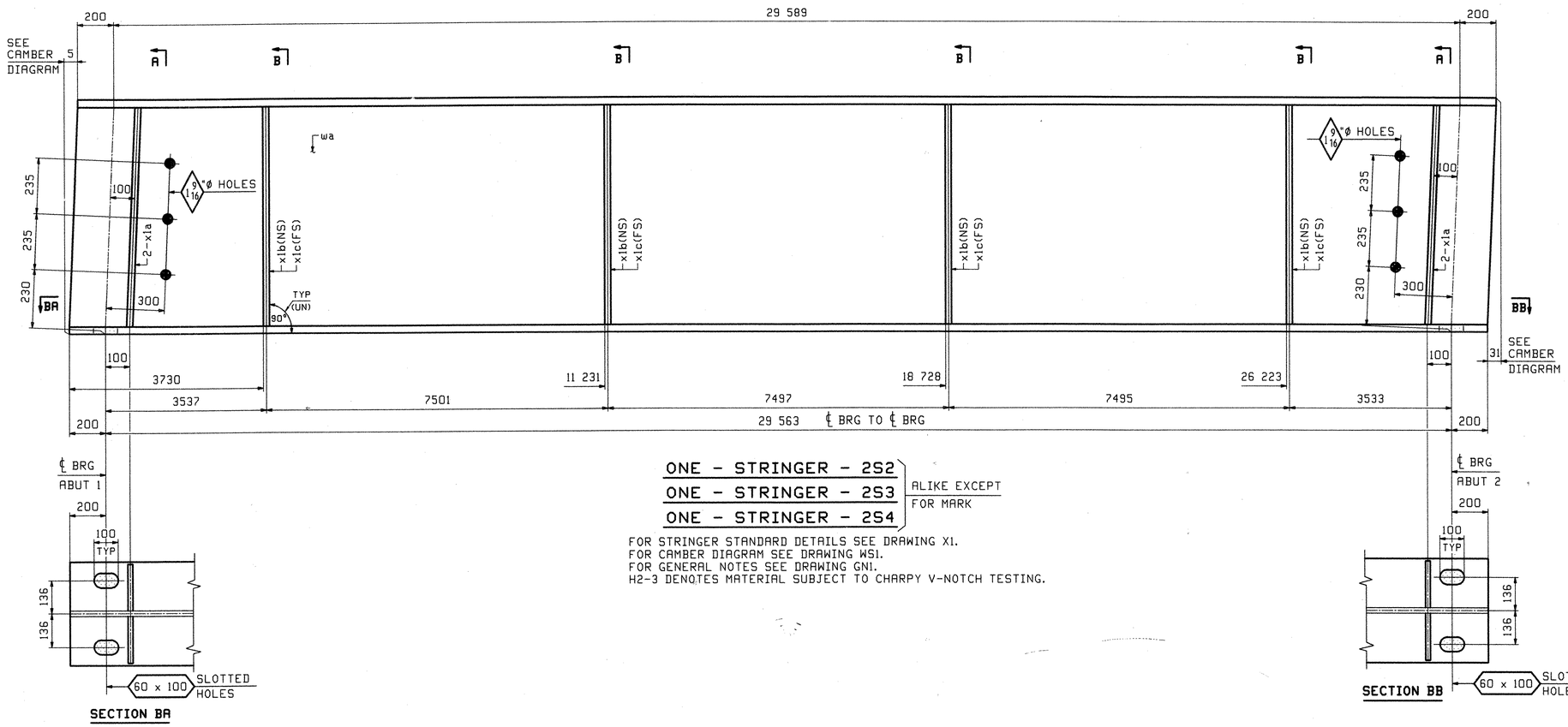
PROJ NO. BRF 0269(10)
CUSTOMER: WINTERSET, INC.

DRAWN BY	DATE
JTB	07/08
CHKD BY	
ELC	08/03
APPROV BY	
SUPERVISOR	W. J. GATTI
Q.A.	

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

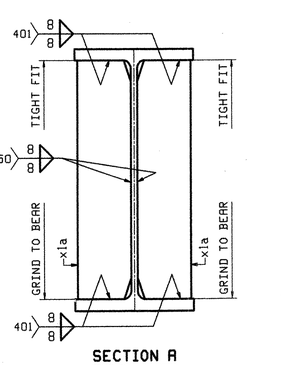
JOB NO.	DRG. NO.
297	1
07755	REV. △

Thu Aug 3 14:17:47 EDT 2006 /users/jobs/2641/1 Rev0
ELC

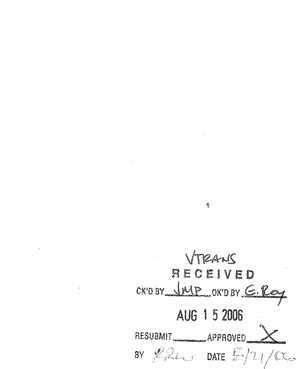


ONE - STRINGER - 2S2
ONE - STRINGER - 2S3
ONE - STRINGER - 2S4
} ALIKE EXCEPT FOR MARK

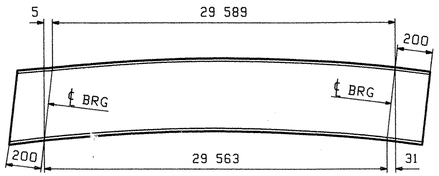
FOR STRINGER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAM SEE DRAWING WS1.
FOR GENERAL NOTES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.



SECTION BA

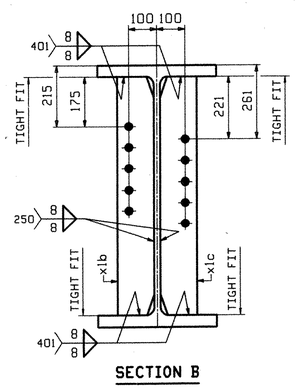


SECTION BB



ORIENTATION DIAGRAM
FOR CAMBER SEE DWG WS1

SECTION A



SECTION B

ABM INFO		SHIP	QTY	BILL OF MATERIAL MARK	MATERIAL	LENGTH m	LENGTH mm	REMARKS	WT	PROCUREMENT NOTES
		2S2	1		STRINGER				12713 kg 28027 lbs	
		2S3	1		STRINGER				12713 kg 28027 lbs	
		2S4	1		STRINGER				12713 kg 28027 lbs	
1	A		3	wa	W 920x417	29	994	(M270M-345WT2)	(H2-3)	
2	B		12	x1a	PL 20x190	0	848	MIE		
2	C		12	x1b	PL 15x130	0	848			
2	C		12	x1c	PL 15x130	0	848			

JOB NO.
DRAWING NO. 2
REV.

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.
	OUT FOR APPROVAL	8/8/06				
	OUT FOR APPROVAL					
	ISSUED TO SHOP					
	FIELD & OFFICE					

NO.	DIA.	LGT	TYPE	WASHER

MATERIAL: M270M-345W
ELECTRODES:
HOLES: 15/16"ϕ (UN)
SHOP BOLTS: NONE

SURFACE PREP. & PAINT:
SEE DRAWING GN1

DESCRIPTION: STRINGERS - 2S2, 2S3, 2S4

JOB:
VT 114 OVER PASSUMPSIC RIVER, BRIDGE 2
TOWN OF LYNDON, COUNTY OF CALEDONIA, VT
STATE OF VERMONT AGENCY OF TRANS.
ENGR: VANASSE HANGEN BRUSTLIN, INC.

TENSOR 2641

PROJ NO. BRF 0269(10)

CUSTOMER: WINTERSET, INC.

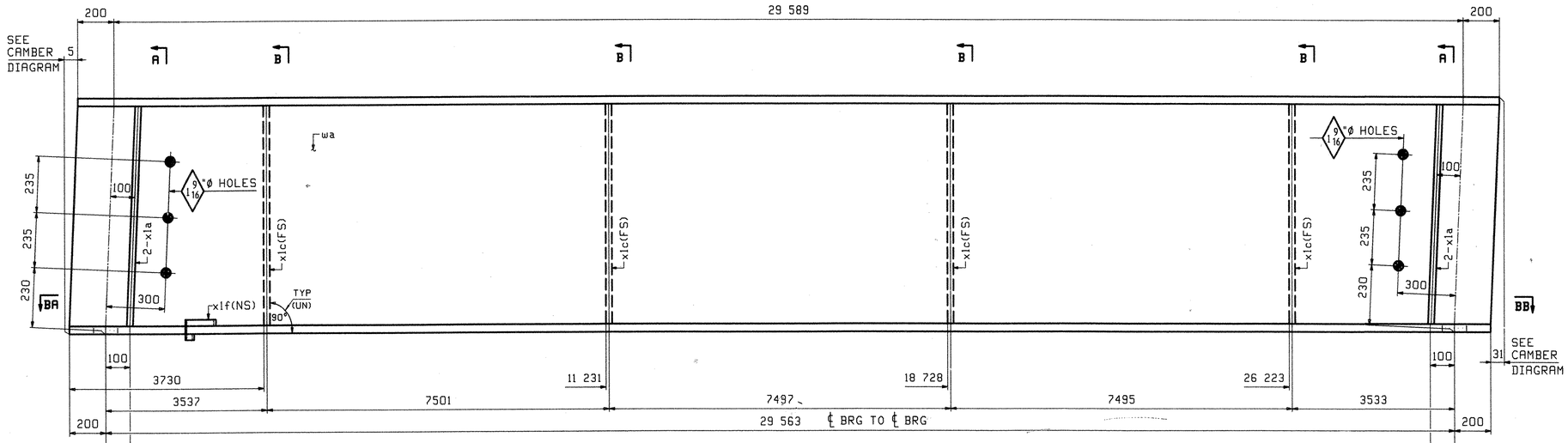
	DRAWN BY	DATE
	JTB	07/08
CHKD BY		
ELC		08/03
APPROV BY		
SUPERVISOR	W. J. GATTI	
Q.A.		

VTRANS RECEIVED
CK'D BY JMP OK'D BY C.Ray
AUG 15 2006
RESUBMIT ____ APPROVED X
BY ____ DATE 8/21/06

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

JOB NO.	DRG. NO.
297	2
07255	REV. △

ELC Thu Aug 3 14:27:00 EDT 2006 /users/jake/2541/2 | Rev0

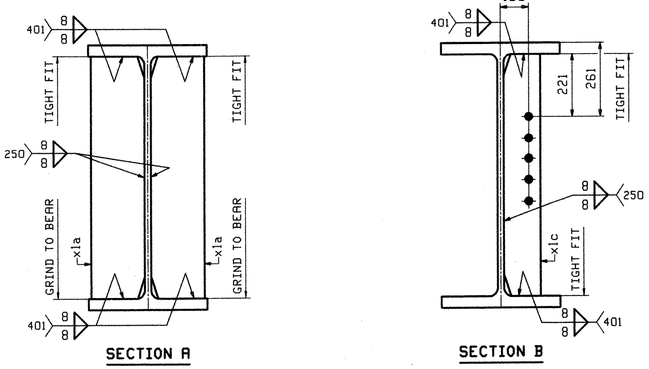


SECTION BA

SECTION BB

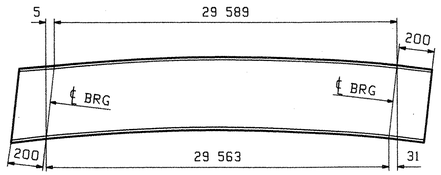
ONE - STRINGER - 3S5

FOR STRINGER STANDARD DETAILS SEE DRAWING X1.
FOR CAMBER DIAGRAM SEE DRAWING WS1.
FOR GENERAL NOTES SEE DRAWING GN1.
H2-3 DENOTES MATERIAL SUBJECT TO CHARPY V-NOTCH TESTING.



SECTION A

SECTION B



ORIENTATION DIAGRAM
FOR CAMBER SEE DWG WS1

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.		REV.
									3		
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH m	LENGTH mm	REMARKS	WT	PROCUREMENT NOTES	
		3S5	1		STRINGER				12662 kg 27914 lbs		
1	A		1	wa	W 920x417	29	994	(M270M-345WT2)	(H2-3)		
2	B		4	x1a	PL 20x190	0	848	MIE			
2	C		4	x1c	PL 15x130	0	848				
2	D		1	x1f	PL 6x90	0	284				

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.
	OUT FOR APPROVAL	8/8/06				
	OUT FOR APPROVAL					
	ISSUED TO SHOP					
	FIELD & OFFICE					

NO.	DIA.	LGT	TYPE	WASHER

MATERIAL:	ELECTRODES:	HOLES:	SHOP BOLTS:
M270M-345W		15/16"ø (UN)	NONE

SURFACE PREP. & PAINT:
SEE DRAWING GN1

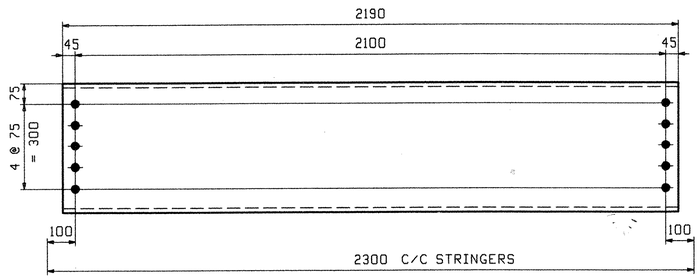
VTRANS RECEIVED
CK'D BY JMP OK'D BY G.Bay
AUG 15 2006
RESUBMIT ____ APPROVED X
BY ____ DATE 8/21/06

DESCRIPTION: STRINGER - 3S5	DRAWN BY	DATE
JOB: VT 114 OVER PASSUMPSIC RIVER, BRIDGE 2 TOWN OF LYNDON, COUNTY OF CALEDONIA, VT STATE OF VERMONT AGENCY OF TRANS. ENGR: VANASSE HANGEN BRUSTLIN, INC.	JTB	07/08
	CHKD BY	
TENSOR 2641	ELC	08/03
	APPROV BY	
	SUPERVISOR	W. J. GATTI
PROJ NO. BRF 0269(10)	Q.A.	
CUSTOMER: WINTERSET, INC.		

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

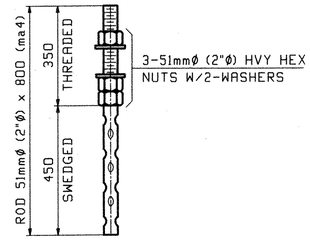
JOB NO.	DRG. NO.
297	3
079 SS	REV. △

ELC Thu Aug 3 14:08:31 EDT 2006 /users/jake/2541/3 - Rev2



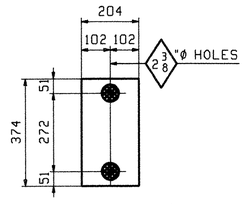
16 ~ INT. DIAPHRAGMS - 4D1

LOOKING DOWN-STATION



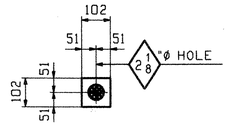
20 - ANCHOR BOLTS - 4AB1

TYP @ BRGS



10 - SOLE PLATES - 4M1

TYP @ BRGS



20 - PLATE WASHERS- 4M2

TYP @ BRGS

ABM INFO		SHIP	BILL OF MATERIAL					JOB NO.	DRAWING NO.	REV.
									4	
PAGE	LINE	MARK	QTY	MARK	MATERIAL	LENGTH m	LENGTH mm	REMARKS	WT	PROCUREMENT NOTES
					INT DIAPHRAGMS					
2	G	4D1	16		MC 460x63.5	2	190		139 kg 306 lbs	
		4AB1	20		ANCHOR BOLTS				4 kg 8 lbs	
2	U		20	ma4	ROD 2 Ø	0	800	(F1554 Grade 55)		
2	V		60		2 Ø HHN			(A563)		
2	W		40		2 Ø HSW			(F436)		
					SOLE PLATES					
2	Q	4M1	10		PL 38x204	0	374	(M270M-345)	23 kg 50 lbs	
					PLATE WASHERS					
2	R	4M2	20		PL 12x102	0	102	(M270M-250)	1 kg 2 lbs	

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	8/9/06									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

MATERIAL:	ELECTRODES:	HOLES:	SHOP BOLTS:
M270M-345W (UN)		15/16Ø (UN)	NONE

SURFACE PREP. & PAINT:

SEE DRAWING GN1

DESCRIPTION: DIAPHRAGMS & BEARINGS	DRAWN BY	DATE
JOB: VT 114 OVER PASSUMPSIC RIVER, BRIDGE 2 TOWN OF LYNDON, COUNTY OF CALEDONIA, VT STATE OF VERMONT AGENCY OF TRANS. ENGR: VANASSE HANGEN BRUSTLIN, INC.	JTB	07/08
	CHKD BY	
	ELC	08/03
	APPROV BY	
TENSOR 2641	SUPERVISOR	W. J. GATTI
PROJ NO. BRF 0269(10)	Q.A.	
CUSTOMER: WINTERSET, INC.		

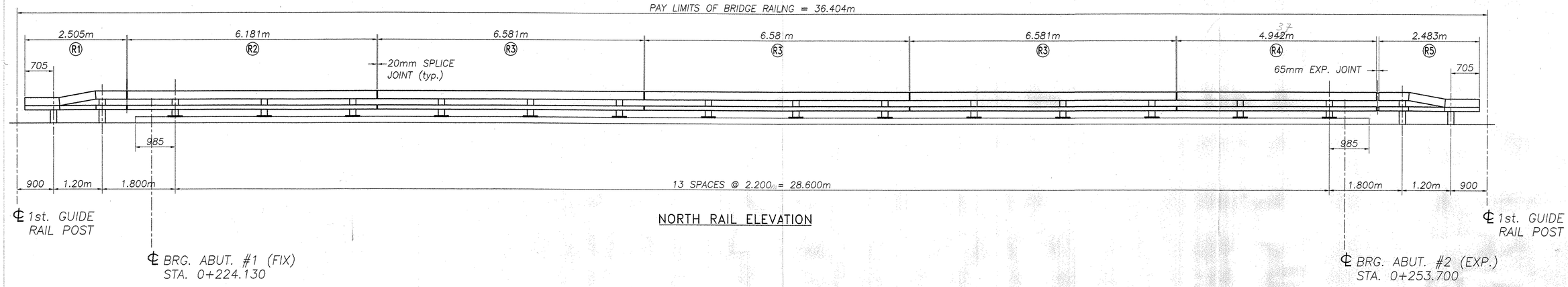
CASCO BAY STEEL STRUCTURES, INC.

75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

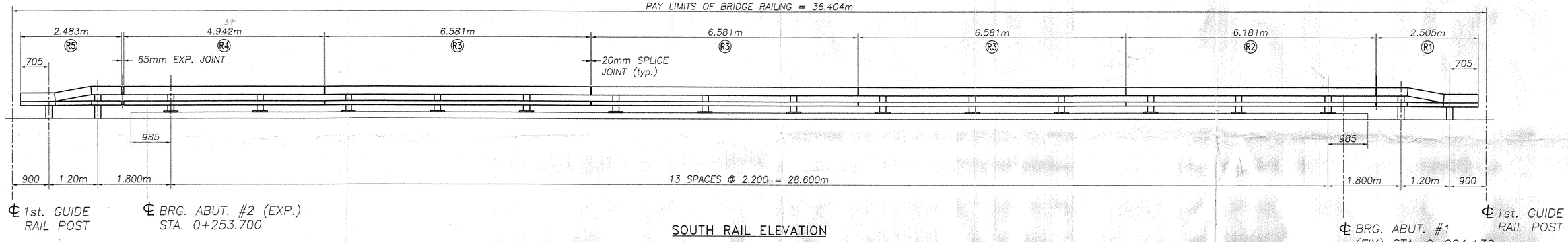
JOB NO.	DRG. NO.
297	4
02255	REV. △

VTRANS RECEIVED
CK'D BY JMP OK'D BY G.Ray
AUG 15 2006
RESUBMIT ____ APPROVED X
BY [illegible] DATE 8/11/06

ELC Thu Aug 3 14:30:26 EDT 2006 /users/jobs/264/4.1 Rev0



NORTH RAIL ELEVATION



SOUTH RAIL ELEVATION

BILL OF MATERIAL (BOTH SIDES OF BRIDGE)			
Mk#	Qty.	Description	Material
	28	W150x37.1 POST W/BASEPLATE (620mm) OAL	A709M Gr. 50
	4	W150x37.1 DRIVEN POST (2.134m) OAL	A709M Gr. 50
	4	W150x37.1 DRIVEN POST (1.956m) OAL	A709M Gr. 50
R1	2	TS 203 x 102 x 8 (2.505) UPPER DROP END TUBE	A500 Gr. B
	2	TS 102 x 102 x 6 (2.505) LOWER DROP END TUBE	A500 Gr. B
R5	2	TS 203 x 102 x 8 (2.483) UPPER DROP END TUBE	A500 Gr. B
	2	TS 102 x 102 x 6 (2.483) LOWER DROP END TUBE	A500 Gr. B
R2	2	TS 203 x 102 x 8 (6.181m) OAL	A500 Gr. B
	2	TS 102 x 102 x 6 (6.181m) OAL	A500 Gr. B
R3	6	TS 203 x 102 x 8 (6.581m) OAL	A500 Gr. B
	6	TS 102 x 102 x 6 (6.581m) OAL	A500 Gr. B
R4	2	TS 203 x 102 x 8 (4.942m) OAL	A500 Gr. B
	2	TS 102 x 102 x 6 (4.942m) OAL	A500 Gr. B
	12	TS 178 x 76 x 10 SPLICE TUBE 510 LONG	A500 Gr. B
	12	TS 76 x 76 x 6 SPLICE TUBE 510 LONG	A500 Gr. B
	28	3mm BEARING PAD	NEOPRENE
	4	BACK UP PLATE	A709M Gr. 250 36
	4	TERMINAL CONNECTOR	M180 B2
	168	M20 ROUND HEAD BOLT, 152 LONG	A325M
	168	M20 HEX NUT	A563 DH
	168	M20 WASHER	F436M
	96	M16 SPLICE BOLT, 44 LONG	A307
	96	M16 PLAIN HARDENED WASHER	F436M
	48	M16 NUT WELDED TO SPLICE TUBE	A307
	16	M20 x 13 SCH. 40 PIPE SPACER	A53 Gr. B
	112	M24 ANCHOR STUD, 305 LONG	A449 *
	112	M24 WASHER	F436M *
	112	M24 JAMB NUT	A563 DH *
	224	M24 HEX NUT	A563 DH *
	28	SPACER PLATE	A709M Gr. 36 *

NOTES:
1. ITEMS MARKED "*" ARE NOT SUPPLIED BY HIGHWAY SAFETY CORPORATION, AND THEY ARE SHOWN ONLY FOR REFERENCE.

REVISIONS		
No.	Remarks	Date
0	Initial submittal	8-25-06

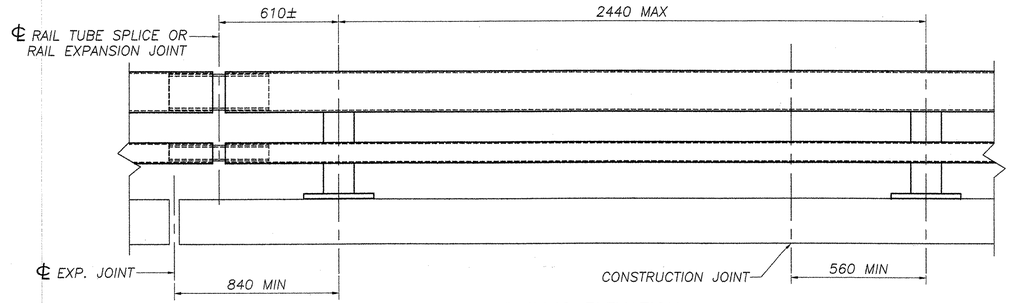
RECEIVED
CK'D BY WJL CK'D BY DRP
SEP 07 2006
RESUBMIT ____ APPROVED AS NOTED
BY RKW DATE 9-14-06

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

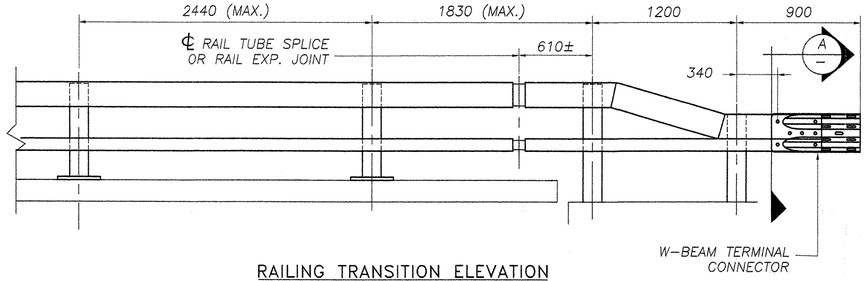
ITEM 525.33 – BRIDGE RAILING–NETC 2 RAIL
PROJECT No. brf 0269(10)
TOWN OF LYNDON Br. No. 2
CALEDONIA COUNTY, ROUTE NO. VT 114

GENERAL CONTRACTOR 021 BR
SUB CONTRACTOR F.R. LAFAYETTE, INC.

DRAWN MHM
CHECKED
DATE 8/21/06
SCALE NONE
HSC REFERENCE NO. 1571
SIZE D REVISION 0
SHEET NO. 1 of 2



BRIDGE RAILING ELEVATION



RAILING TRANSITION ELEVATION
(BOTH ENDS OF BRIDGE)

NOTES:

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

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

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

4. RAIL POSTS SHALL BE SET NORMAL TO GRADE.

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

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

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

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

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

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

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

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

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

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

15. TO FACILITATE FIELD FIT – UP OF THE TRANSITION RAILING, POSTS SHALL BE SET LOOSELY INTO FIBER FORM TUBES WHILE TRANSITION PARTS ARE BEING ASSEMBLED. POST HOLES SHALL BE BACKED FILLED WITH A CONCRETE MIX APPROVED BY THE ENGINEER. PAYMENT FOR COMPONENTS, INCLUDING BACKUP PLATE AND END TERMINAL CONNECTOR FOR GUARD RAIL AUGERING, FIBER FORM TUBES AND CONCRETE , AND INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 525.33, "BRIDGE RAILING – NETC 2 RAILING".

16. ALL APPROACH RAIL SPLICES SHALL BE LAPPED ON THE DIRECTION OF TRAFFIC FLOW.

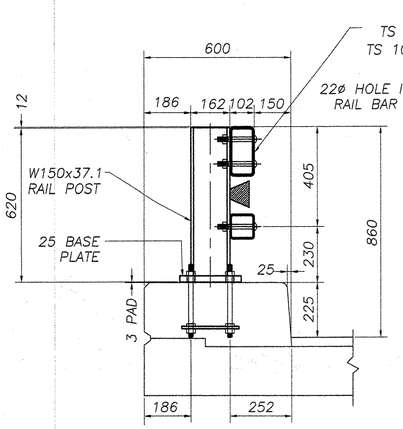
MATERIALS

RAIL TUBES	ASTM A500, GRADE B OR ASTM A501
RAIL POSTS AND BASE PLATES	ASTM A709/A709M, GRADE 50
ALL OTHER SHAPES AND PLATES	ASTM A709/A709M, GRADE 36
ANCHOR STUDS	ASTM A449
ALL OTHER BOLTS (UNLESS NOTED)	AASHTO M164M, TYPE1

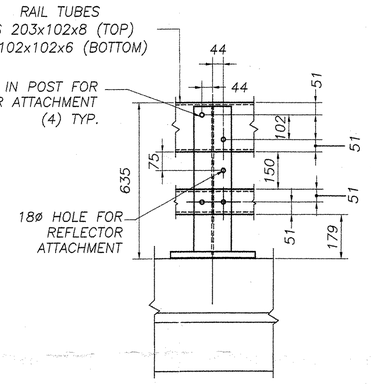
NUTS FOR AASHTO M164M (ASTM A325M) BOLTS AND ANCHOR STUDS SHALL COMPLY WITH AASTHO M291M (ASTM A563M).

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

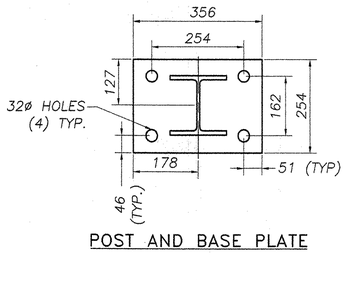
3mm PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.01 OR 731.02.



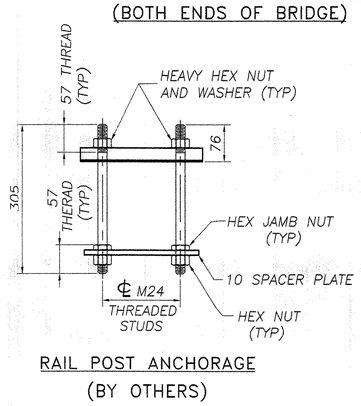
TYPICAL SECTION



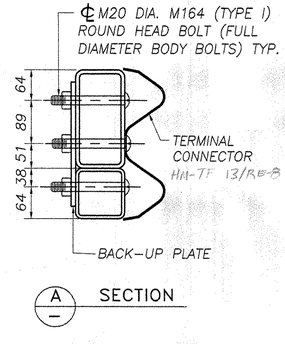
ELEVATION



POST AND BASE PLATE



RAIL POST ANCHORAGE
(BY OTHERS)



A
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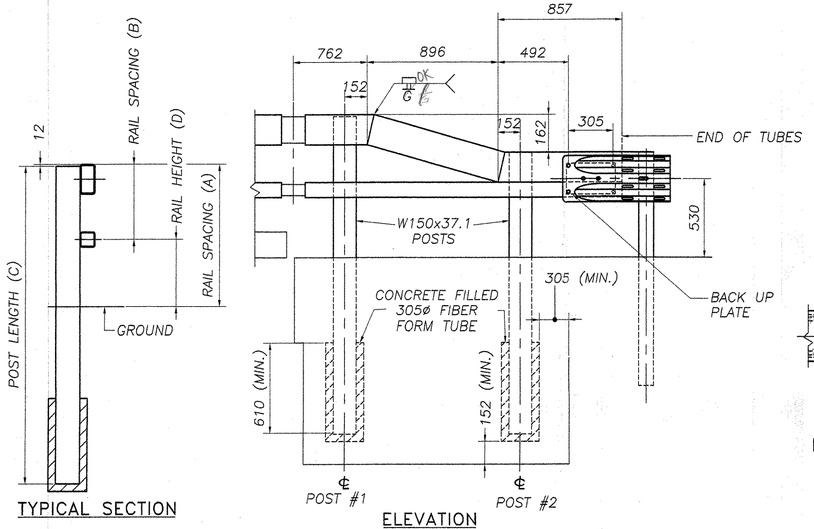
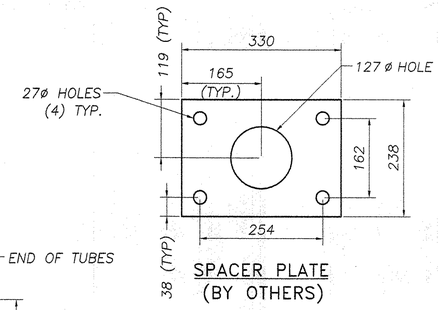
SECTION

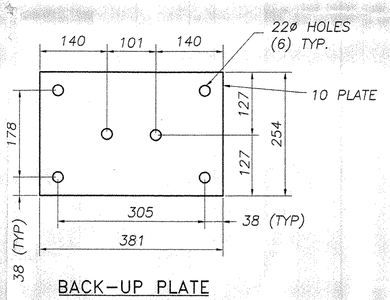


TYPICAL SECTION

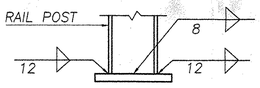
ELEVATION



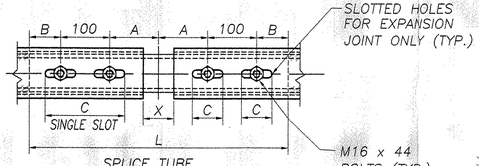
SPACER PLATE
(BY OTHERS)



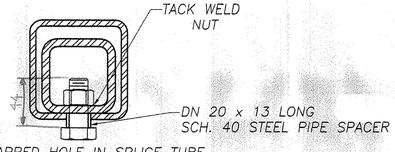
BACK-UP PLATE



BASE WELD DETAIL



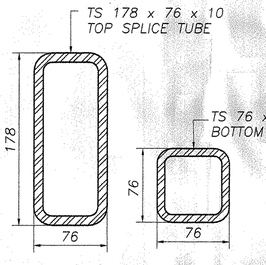
RAIL TUBE SPLICE AND RAIL
EXPANSION JOINT DETAIL



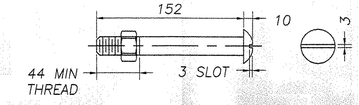
16ø TAPPED HOLE IN SPLICE TUBE AND 29 x 'C' SLOT IN RAIL TUBE FOR M16 BOLT AND PLAIN HARDENED WASHER

EXPANSION JOINT SECTION

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

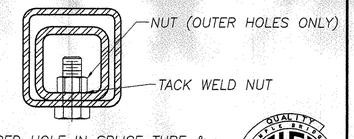


RAIL TUBE SPLICE SECTION



M20 DIA. M164M (TYPE 1)
ROUND HEAD BOLT

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



16ø TAPPED HOLE IN SPLICE TUBE &
19ø HOLE IN RAIL TUBE FOR M16
BOLT & PLAIN HARDENED WASHER

POST NUMBER	RAIL HEIGHT (A)	RAIL SPACING (B)	POST LENGTH (C)	RAIL HEIGHT (D)
1	860	405	2134	455
2	702	254	1956	448

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

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

* = SINGLE SLOT

REVISIONS		
No.	Remarks	Date
0	Initial submittal	8-25-06

RECEIVED
CK'D BY WO / CK'D BY DRP
SEP 07 2006 AS
RESUBMIT ____ APPROVED NO EXC'D
BY RSW DATE 9-14-06

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.33 – BRIDGE RAILING–NETC 2 RAIL
PROJECT No. brf 0269(10)
TOWN OF LYNDON Br. No. 2
CALEDONIA COUNTY, ROUTE NO. VT 114

GENERAL CONTRACTOR
SUB CONTRACTOR F.R. LAFAYETTE, INC.

DRAWN MHM
CHECKED
DATE 8/21/06
SCALE NONE
HSC REFERENCE NO. 1571
SIZE D REVISION 0
SHEET NO. 2 of 2