INDEX OF SHEETS

STANDARDS

B-5	SLOPE GRADING, EMBANKMENTS, MUCK	06-01-94
B-71	RESIDENTIAL AND COMMERCIAL DRIVES	11-16-00
E-100	CONSTRUCTION APPROACH SIGNS	01-02-04
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	01-02-04
E-101	CONSTRUCTION SIGN DETAILS	05-30-03
E-102	CONSTRUCTION SIGN DETAILS	06-30-03
E-102A	CONSTRUCTION SIGN DETAILS	08-08-95
E-106	TRAFFIC CONTROL - MISCELLANEOUS DETAILS	08-08-95
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	06-30-03
E-107A	BREAKAWAY BARRICADE DETAILS	08-08-95
E-108	CONSTRUCTION ZONE - LONGITUDINAL DROP OFFS	08-18-95
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-95
E-143	REGULATORY SIGN DETAILS	09-20-95
E-160	FLANGED CHANNEL STEEL SIGN POST	05-20-99
E-191	PAVEMENT MARKING DETAILS	02-01-99
E-193	PAVEMENT MARKING DETAILS	08-18-95
G-1	STEEL BEAM GUARDRAIL (50MPH & OVER) HEAVY DUTY STEEL BEAM GUARDRAIL TWISTED END TERMINAL ANCHOR FOR STEEL BEAM RAI	01-03-00
G-1D	STEEL BEAM GUARDRAIL (40MPH & LESS) HEAVY DUTY STEEL BEAM GUARDRAIL STEEL BEAM MEDIAN BARRIER ANCHOR FOR STEEL BEAM RAIL	01-03-00
G-18	PRECAST CONCRETE TEMPORARY TRAFFIC BARRIER	06-01-94
T-1	TEMPORARY EROSION CONTROL DETAILS	06-01-94
T-2	TEMPORARY EROSION CONTROL DETAILS	06-01-94
SB-R4A-82	BRIDGE RAILING - GALVANIZED BOX BEAM	09-18-89
SB-R6-82	BRIDGE RAILING - HEAVY DUTY STEEL BEAM	01-06-95
SB-R7-90	BRIDGE RAILING - HEAVY DUTY STEEL BEAM	01-11-95

STATE OF VERMONT
AGENCY OF TRANSPORTATION

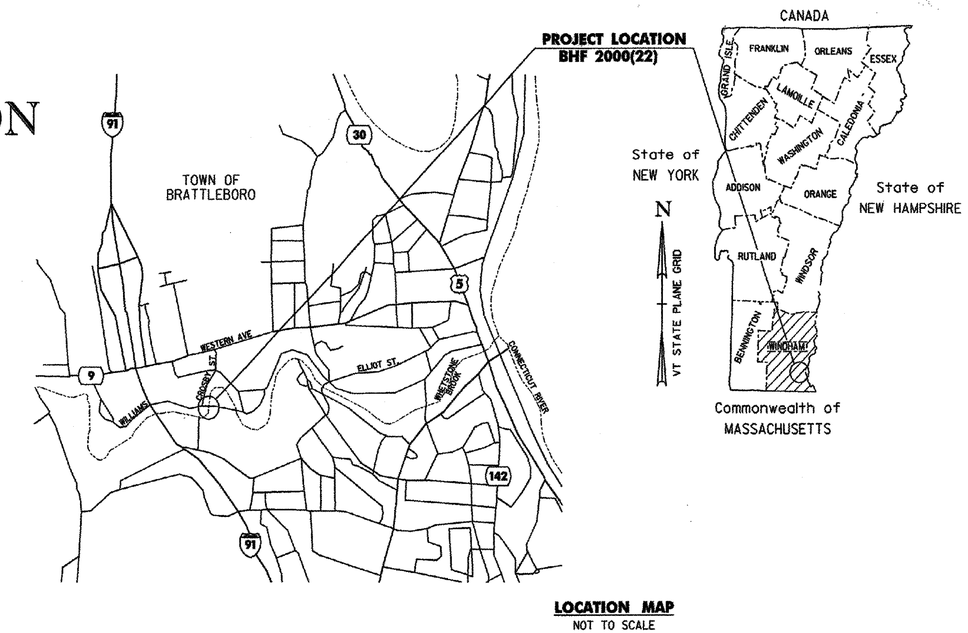
PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF BRATTLEBORO
COUNTY OF WINDHAM

WILLIAMS ST. (TH 378), CLASS 2, BRIDGE NO. 34

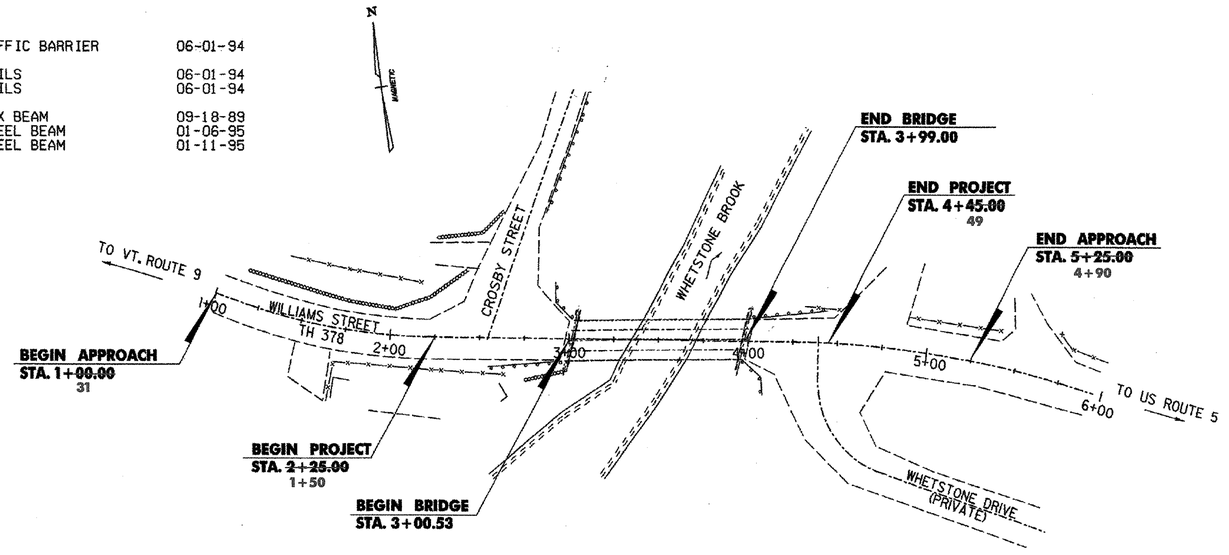
PROJECT LOCATION: BEGINNING AT A POINT ON WILLIAMS ST. (TH 378), APPROXIMATELY 0.96 MILES SOUTH EAST OF THE JUNCTION OF VT 9 AND WILLIAMS STREET AND EXTENDING EASTERLY ALONG WILLIAMS ST. (TH 378) FOR 0.042 MILES.

PROJECT DESCRIPTION: REMOVAL OF EXISTING CONCRETE DECK AND BRIDGE RAIL, CONSTRUCTION OF NEW CAST IN PLACE CONCRETE DECK ON EXISTING STEEL BEAMS, AND RELATED APPROACH WORK.

LENGTH OF STRUCTURE	= 98.47 FEET	= 0.019 MILES
LENGTH OF ROADWAY	= 121.53 FEET	= 0.023 MILES
LENGTH OF PROJECT	= 220.00 FEET	= 0.042 MILES



LOCATION MAP
NOT TO SCALE



CONVENTIONAL SIGNS

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

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

DuBois & King engineering planning management development

40 0 40 80 120 160
SCALE IN FEET

RECORD PLANS

CONTRACTOR: FW WHITCOMB CONSTRUCTION CORP. – WALPOLE, NH
RESIDENT ENGINEER: FRED W. ROSS III
CONSTRUCTION BEGAN: JULY 26, 2004
CONSTRUCTION COMPLETE: NOVEMBER 12, 2004
RECORD PLANS BY: FRED ROSS & N. GARBACIK

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

BY _____ RESIDENT ENGINEER
DATE 3-21-07

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 FRED W. ROSS III NO. 5803 REGISTERED PROFESSIONAL ENGINEER

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

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

PLOTTED 02/03/2004

APPROVED _____ DATE 2-5-04
STEPHEN BARRETT
MUNICIPAL PROJECT MANAGER

APPROVED _____ DATE 2/19/04
DIRECTOR OF PROGRAM DEVELOPMENT

PROJECT BRATTLEBORO BHF 2000(22)

D & K DWG NO. 11366 Sheet 1 of 20

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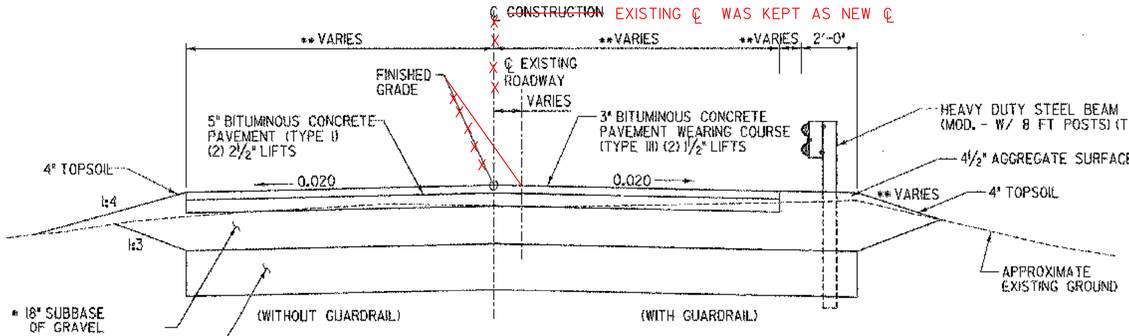


TYPICAL ROADWAY SECTION

SCALE: ⅜" = 1'-0"

* FOR SUBBASE TRANSITION, SEE MATERIAL DEPTH TRANSITION DETAIL SHEET 6

** ROADWAY WIDTH AND SIDE SLOPES VARY. SEE ROADWAY CROSS SECTIONS.

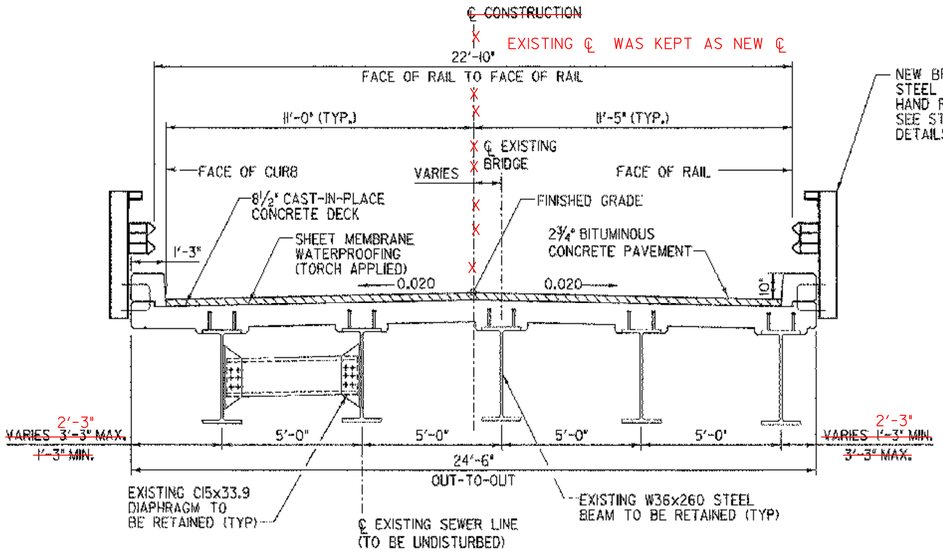
TRAFFIC DATA

2000 ADT = 1340
2000 DHV = 185
2000 ADTT = 55
2020 ADT = 1820
2020 DHV = 270
2020 ADTT = 75
D = 62%
T = 4%

DESIGN SPEED = 30 mph
ESALS
(2000-2020) 638,000
(2000-2040) 2,036,000

MATERIALS TOLERANCE TABLE

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



BRIDGE DECK PAVEMENT

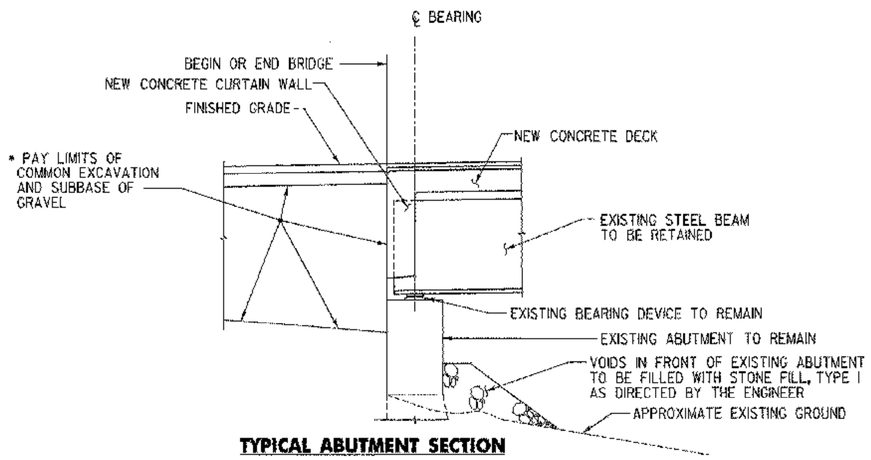
TOP LIFT = 1-1/2" TYPE III
BOTTOM LIFT = 1-1/4" TYPE IV

EMULSIFIED ASPHALT BETWEEN LIFTS TO BE APPLIED AT A RATE OF 0.015 gal/sy PAID SUBSIDIARY TO ITEM NO. 406.27

SEEDING FORMULA URBAN AREAS

% MASS	lbs/a	NAME	PUR%	GERM%
42.5	34.0	CREEPING RED FESCUE	98	85
10.0	8.0	PERENNIAL RYE GRASS	95	90
42.5	34.0	KENTUCKY BLUE GRASS	85	85
5.0	4.0	ANNUAL RYE GRASS	95	85
100.0	80.0			

SEED MIXTURE:
SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY MASS AND SHALL BE FREE OF ALL NOXIOUS WEED SEED.
SEED:
TO BE APPLIED PER SEEDING FORMULA DIRECTED BY THE RESIDENT ENGINEER.
FERTILIZER:
FORMULA 10-20-10 TO BE USED WITH SEED, APPLIED AT THE RATE OF 500 lbs/acre (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).
AGRICULTURAL LIMESTONE:
TO BE APPLIED AT THE RATE OF 2 tons/acre OR AS DIRECTED BY THE RESIDENT ENGINEER.
HAY MULCH:
TO BE APPLIED ON EARTH SLOPES AT THE RATE OF 2 tons/acre OR AS DIRECTED BY THE RESIDENT ENGINEER.
TOPSOIL:
TO BE USED WITH SEED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.



TYPICAL ABUTMENT SECTION

SCALE: ⅜" = 1'-0"

* FOR SUBBASE TRANSITION, SEE MATERIAL DEPTH TRANSITION DETAIL SHEET 6

STRENGTH RF = $\dfrac{\phi M_N - 1.3M_{DL}}{A \times M_{LL+I}}$

* SERVICEABILITY RF = 8 $\left[\dfrac{.95F_y S_{LL+I} - M_{DL}\frac{S_{LL+I}}{S_{DL}} - M_{SDL}\frac{S_{LL+I}}{S_{DL}}}{1.67\ M_{LL+I}}\right]$

LOAD FACTOR LOAD RATING (TONS)

LOADING LEVELS (LOAD FACTOR)	TRUCK						
	H	HS	3S2	6 AXLE	3A STR	4A STR	5A SEMI
INVENTORY A=2.17 B=1.00	*30	*44					
POSTED A=1.55 B=1.40	*42	*52	*41		*57	*58	*65
OPERATING A=1.30 B=1.67		*73	*49	*95	*68	*69	

PLOTTED 02/03/2004

FINAL HYDRAULICS REPORT

HYDROLOGIC DATA

DRAINAGE AREA:
CHARACTER OF TERRAIN:
CHARACTER & TYPE OF STREAM:
NATURE OF STREAMBED:

Q2.33= Q50=
Q10= Q100=
Q25= Q500=

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

WATERSHED STORAGE ____ HEADWATERS____ UNIFORM THROUGHOUT WATERSHED____
IMMEDIATELY ABOVE SITE

EXISTING STRUCTURE

STRUCTURE TYPE: SINGLE SPAN STEEL BEAM WITH CONCRETE DECK YEAR BUILT: 1939
CLEAR SPAN (NORMAL TO STREAM): 92 ft
VERTICAL CLEARANCE ABOVE STREAMBED: 19 ft
WATERWAY OF FULL OPENING: 1450 sq ft
DISPOSITION OF STRUCTURE: REMOVE EXISTING BRIDGE DECK AND RETAIN EXISTING STEEL BEAMS
TYPE OF MATERIAL UNDER SUBSTRUCTURE:

WATER SURFACE ELEV. @ Q2.33= VELOCITY=
Q10= Q25= Q50= Q100=

LONG TERM STREAM BED CHANGES:

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

UPSTREAM STRUCTURE: TOWN: DISTANCE:
HIGHWAY NO.: STRUCTURE NO.:
NOTE:

DOWNSTREAM STRUCTURE: TOWN: DISTANCE:
HIGHWAY NO.: STRUCTURE NO.:
NOTE:

PROPOSED STRUCTURE

STRUCTURE TYPE: SINGLE SPAN STEEL BEAM WITH COMPOSITE CONCRETE DECK

CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY OF FULL OPENING:

WATER SURFACE ELEV. @ Q2.33= VELOCITY=
Q10= Q25= Q50= Q100=

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

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE:
VERTICAL CLEARANCE @ Q25

SCOUR:
REQUIRED CHANNEL PROTECTION:

PERMIT INFORMATION

AVERAGE DAILY FLOW:
ORDINARY LOW WATER: DEPTH:
ORDINARY HIGH WATER: DEPTH:

ADDITIONAL COMMENTS

HYDRAULIC CONDITIONS FOR PROPOSED STRUCTURE SAME AS EXISTING STRUCTURE

DESIGN CRITERIA:
1. DESIGN LIVE LOAD AASHTO HS20-40
2. DESIGN SPAN 96.93 FEET
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A ON LEDGE N/A
4. ALLOWABLE LOAD FOR PILING N/A TYPE N/A ESTIMATED LENGTH N/A
5. STRUCTURAL STEEL (EXISTING) F_y= 33 KSI (ASSUMED)
6. REINFORCING STEEL GRADE 60
7. CONCRETE HIGH PERFORMANCE CLASS A f'_c 4000 psi
HIGH PERFORMANCE CLASS B f'_c 3500 psi

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

REVISIONS		
NO.	DESCRIPTION	BY & DATE

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engineering planning management development

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO — Bridge No. 34
Highway No. 378 — Log Sta. / Surv. Sta.

TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

PRELIMINARY INFORMATION SHEET

Designed By J. W. KAMB — Drawn By E. B. SMALL
Checked By J. W. TUCKER — Date 04/01 — Bridge Design Supervisor J. W. TUCKER — Date 04/01

PROJECT BRATTLEBORO — PROJECT NO. BHF 2000(22)

I.G.C. Info. ...\zj228dtl.dgn

D & K DWG NO. 11367 — Sheet 2 of 20

BRIDGE QUANTITY SHEET

NO.	ITEM	UNIT	SUPER STRUCT.	ABUTMENT NO. 1	ABUTMENT NO. 2	EROSION CONTROL	ROADWAY	FULL E & C			TOTAL	GRAND TOTAL
203.15	COMMON EXCAVATION	CY		5			620					625
203.31	SAND BORROW	CY					125					125
204.25	STRUCTURE EXCAVATION	CY		12								12
204.30	GRANULAR BACKFILL FOR STRUCTURES	CY		4								4
210.10	COLD PLANING - BITUMINOUS CONCRETE	SY					350					350
301.15	SUBBASE OF GRAVEL	CY					450					450
401.10	AGGREGATE SURFACE COURSE	CY					12					12
406.27	MED DUTY BIT. CONCRETE PAVEMENT (PG 58-28)	TON	36				405					441
501.33	CONCRETE, HIGH PERFORMANCE CLASS A	CY	94									94
501.34	CONCRETE, HIGH PERFORMANCE CLASS B	CY		1.5	1.5							3
506.60	STRUCTURAL STEEL (STEEL PLATES)	LB	200									200
507.15	REINFORCING STEEL	LB		200	200							400
507.16	DRILLING AND GROUTING DOWELS	LF		20	20							40
507.17	EPOXY COATED REINFORCING STEEL	LB	19600									19600
508.15	SHEAR CONNECTORS (1300 - 7/8" X 7")	LS	1									1
514.10	WATER REPELLENT	GAL	7	2	3							12
516.10	BRIDGE EXPANSION JOINT (ASPHALTIC PLUG TYPE)	LF	25									25
519.20	SHEET MEMBRANE WATERPROOFING (TORCH APPLIED)	SY	275									275
525.43	BRIDGE RAILING-HDSB/FASCIA MNTD/HAND RAIL	LF	212.5									212.5
	(MOD. - STEEL TUBE)											
529.10	REMOVAL OF BRIDGE PAVEMENT	SY	220									220
529.20	PARTIAL REMOVAL OF STRUCTURE	EA	0.8	0.1	0.1							1
580.13	REPAIR CONCRETE SUBSTRUCTURE SURFACE CLASS I	SY		2	2							4
580.14	REPAIR CONCRETE SUBSTRUCTURE SURFACE CLASS II	SY		2	2							4
580.15	REPAIR CONCRETE SUBSTRUCTURE SURFACE CLASS III	CY		0.5	0.5							1
604.40	CHANGING ELEVATIONS OF DI, CB OR MH	EA					1					1
612.10	GABION RETAINING WALL	CY		8								8
613.10	STONE FILL, TYPE I	CY		20								20
621.21	HDSB GUARDRAIL (MOD. - W/ 8FT POSTS)	LF					150					150
621.60	ANCHOR FOR STEEL BEAM RAIL	EA					4					4
621.80	REMOVAL AND DISPOSAL OF GUARD RAIL	LF					101					101
621.90	TEMPORARY TRAFFIC BARRIER	LF					60					60
630.10	UNIFORMED TRAFFIC OFFICERS	HR					40					40
630.15	FLAGGERS	HR					150					150
631.10	FIELD OFFICE - ENGINEERS	LS						1				1
631.16	TESTING EQUIPMENT - CONCRETE	LS						1				1
631.17	TESTING EQUIPMENT - BITUMINOUS	LS						1				1
631.25	FIELD OFFICE - TELEPHONE (N.A.B.I.)	LU						1				1
635.10	MOBILIZATION	LS	1									1
641.10	TRAFFIC CONTROL	LS					1					1
646.20	4 INCH WHITE LINE	LF					825					825
646.21	4 INCH YELLOW LINE	LF					750					750
646.26	24 INCH STOP BAR	LF					65					65
646.30	LETTER OR SYMBOL	EA					4					4
649.31	GEOTEXTILE UNDER STONE FILL	SY		16								16
649.51	GEOTEXTILE FOR SILT FENCE	SY				200						200
651.15	SEED	LB				20						20
651.18	FERTILIZER	LB				100						100
651.20	AGRICULTURAL LIMESTONE	TON				0.5						0.5
651.25	HAY MULCH	TON				0.5						0.5
651.26	HAY BALES FOR EROSION CONTROL	EA				20						20
651.35	TOPSOIL	CY				25						25
652.10	EROSION & SEDIMENT CONTROL PLAN	LS				1						1
652.20	MONITORING EROSION & SEDIMENT CONTROL PLAN	HR				40						40
652.30	FIELD MAINTENANCE OF EROSION & SEDIMENT	LU				1						1
	CONTROL PLAN (N.A.B.I.)											
675.20	TRAFFIC SIGNS, TYPE A	SF					13					13
675.301	FLANGED CHANNEL SIGN POSTS	LF					26					26

PLOTTED 02/03/2004

REVISIONS		
NO.	DESCRIPTION	BY & DATE

DuBois & King inc.
engineering planning management development

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO	Bridge No. 34
Highway No. 378	Log Sta.
	Surv. Sta.

TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

QUANTITY SHEET

Designed By R. L. JOY	Drawn By E. B. SMALL
Checked By J. W. TUCKER Date 01/01	Bridge Design Supervisor J. W. TUCKER Date 01/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
I.C.C. Info. ...\zj228frm.dgn	
D & K DWG NO. 11368	Sheet 3 of 20

LAYOUT COORDINATES			
STA. 0+00.00	POB	N 10119.51	E 9620.88
STA. 1+20.32	PC	N 10068.75	E 9729.97
STA. 1+71.~~92~~38	PI	N 10047.22	E 9776.26
STA. 2+21.72	PT	N 10039.80	E 9826.78
STA. 4+24.85	PC	N 10010.29	E 10027.75
STA. 5+~~07.59~~08.12	PI	N 9998.19	E 10110.14
STA. 5+90.33	PT	N 9964.12	E 10186.12
STA. 5+95.37	POE	N 9962.06	E 10190.71
SURVEY POINT 1	CONTROL POINT	N 10000.000	E 10000.000
SURVEY POINT 2	CONTROL POINT	N 10069.879	E 9910.5590
SURVEY POINT 3	CONTROL POINT	N 10068.541	E 9702.4670

N

MAGNETIC

EXISTING ℄ WAS KEPT AS NEW ℄

BENCHMARK #1
FLANGE BOLT ON HYDRANT
ELEV. 99.77

BEGIN APPROACH
STA 1+~~00~~.00
31

BEGIN PROJECT
STA ~~2+25.00~~
1+ 50

WILLIAMS STREET ℄ STA 2+54.62 =
CROSBY STREET ℄ STA 10+00.00

BEGIN BRIDGE
STA 3+00.53

END BRIDGE
STA 3+99.00

WILLIAMS STREET ℄ STA 4+39.29 =
WHETSTONE DRIVE ℄ STA 100+00.00

END PROJECT
STA. 4+~~45.00~~
49

END APPROACH
STA ~~5+25.00~~
4+90

BENCHMARK #2
SPIKE IN POLE
ELEV. 102.73

PLAN
SCALE: 1" = 20'
20 0 20

PC Sta 1+20.32
PT Sta 2+21.72
PI STA. 1+70.66 (AHEAD)
PI STA. 1+71.38 (BACK)
PC Sta 4+24.85
PI STA. 100+44.27 (AHEAD)
PI STA. 100+54.54 (BACK)
PI STA. 5+07.06 (AHEAD)
PI STA. 5+08.12 (BACK)
PT Sta 100+81.23
PT Sta 5+90.33
POE Sta 5+95.37
PC Sta 100+17.58

CROSBY STREET
WHETSTONE BROOK
WHETSTONE DRIVE
TO VT. ROUTE 9
TO US ROUTE 5

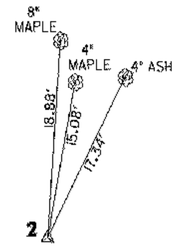
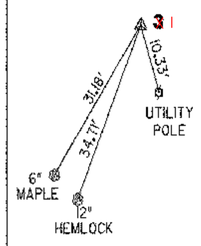
CURVE #1
CURVE #2
CURVE #3

208.10'
113.50'
141° 37' 52.14"
69° 34' 14.1"
76° 11' 19"
121° 39' 16.93"
16° 29' 15.49"
16.81'
29.60'
90° 00' 00"
TO THE TANGENT

℄ BRG
℄ BRG

1+00
2+00
10+00
11+00
11+74
100+00
101+00
101+79
5+00

TIES

SURVEY POINT NO. ~~X~~3	SURVEY POINT NO. 2	SURVEY POINT NO. ~~X~~1
		

CURVE DATA

CURVE #1	CURVE #2	CURVE #3
Δ = 16°35'57"	Δ = 15°48'10"	Δ = 72°56'19"
D = 16°22'13"	D = 09°32'57"	D = 114°35'30"
R = 350.00'	R = 600.00'	R = 50.00'
T = 51.06'	T = 83.27	T = 36.96
L = 101.40'	L = 165.49	L = 63.65'
E = 3.70	E = 5.75	E = 12.18

DATUM
VERTICAL ..... ASSUMED
HORIZONTAL ..... ASSUMED

PLOTTED 02/03/2004

REVISIONS		
NO.	DESCRIPTION	BY & DATE

DuBois & King inc.
engineering planning management development

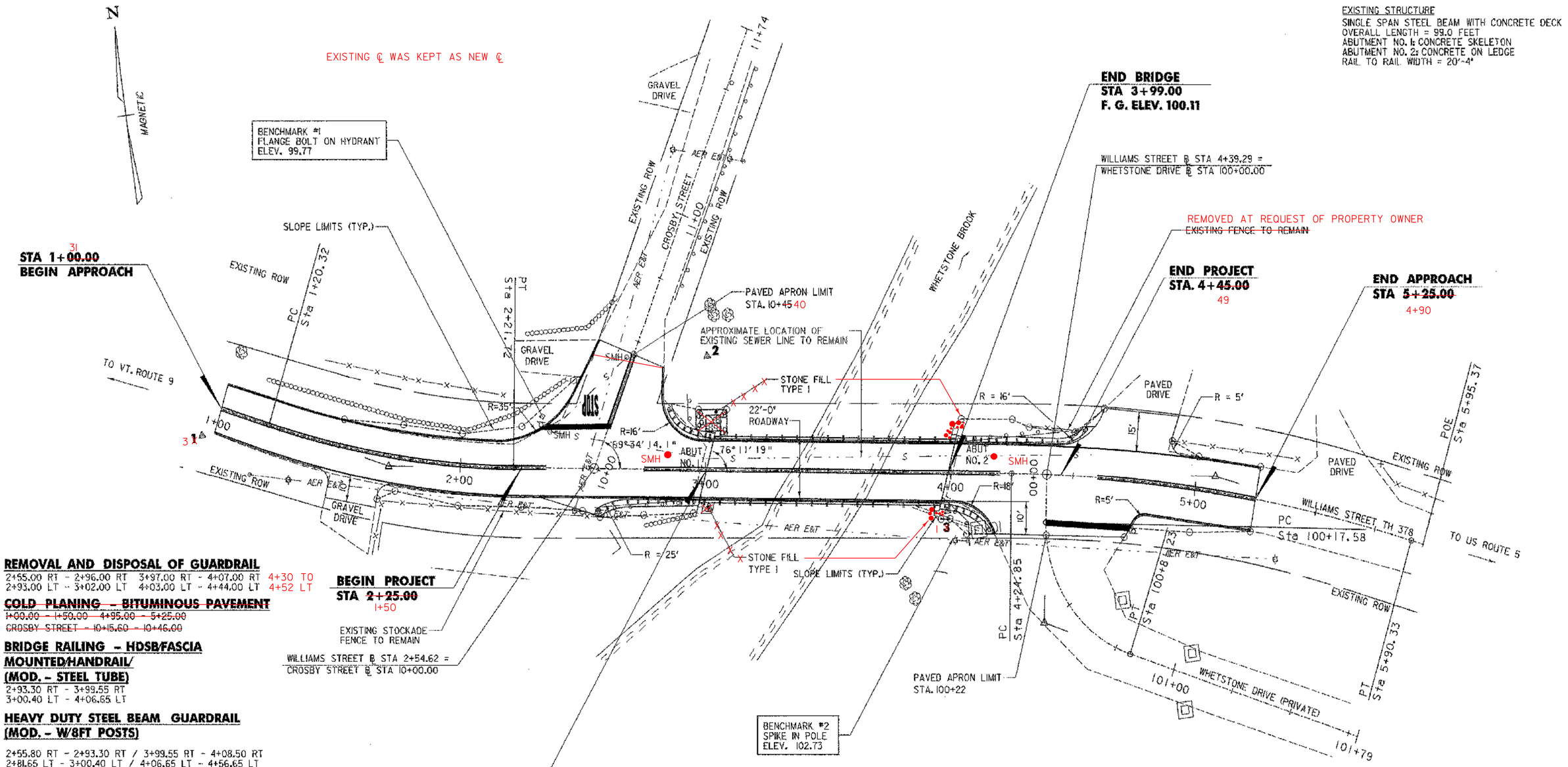
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO	Bridge No. 34
Highway No. 378	Log Sta. / Surv. Sta.

TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

TIE SHEET

Designed By E. B. SMALL	Drawn By E. B. SMALL
Checked By R. W. BELL Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
I.G.C. Info. ...\zj228bdr.dgn	
D & K DWG NO. 11369	Sheet 4 of 20



REMOVAL AND DISPOSAL OF GUARDRAIL
2+55.00 RT - 2+96.00 RT 3+97.00 RT - 4+07.00 RT 4+30 TO
2+93.00 LT - 3+02.00 LT 4+03.00 LT - 4+44.00 LT 4+52 LT

COLD PLANING - BITUMINOUS PAVEMENT
~~1+00.00 - 1+50.00 4+95.00 - 5+25.00~~
~~CROSBY STREET - 10+15.60 - 10+46.00~~

BRIDGE RAILING - HDSB/FASCIA MOUNTED/HANDRAIL/ (MOD. - STEEL TUBE)
2+93.30 RT - 3+99.55 RT
3+00.40 LT - 4+06.65 LT

HEAVY DUTY STEEL BEAM GUARDRAIL (MOD. - W/8FT POSTS)
2+55.80 RT - 2+93.30 RT / 3+99.55 RT - 4+08.50 RT
2+81.65 LT - 3+00.40 LT / 4+06.65 LT - 4+56.65 LT

ANCHOR FOR STEEL BEAM GUARD RAIL
2+55.80 RT / ~~4+15.18 RT~~
~~2+81.65 LT / 4+56.65 LT~~

4" YELLOW LINE 0+51 - 2+35 5+90
~~1+00.00 - 2+35.00~~ / 2+75.00 - 4+20.00 / 4+60.00 - 5+~~25.00~~
CROSBY STREET - 10+15.60 - 10+46.00
(DOUBLE CENTERLINE)

4" WHITE LINE
~~1+00.00 RT - 4+18.00 RT 4+75.00 RT - 5+25.00 RT~~
~~1+00.00 LT - 2+32.00 LT 2+87.00 RT - 5+25.00 LT~~
~~CROSBY STREET - 10+15.60 - 10+46.00 LT & RT~~

24" STOP BAR
2+47.00 LT 4+58.00 RT

LETTER OR SYMBOL
2+54.00 LT STOP

DATUM
VERTICAL — ASSUMED
HORIZONTAL — ASSUMED

CHANGE ELEVATION OF SEWER MANHOLE (TO BE PERFORMED BY THE TOWN ONLY)
~~CROSBY STREET - 10+43.06 LT~~ 2+85 LT
~~CROSBY STREET - 10+06.05 LT~~ 4+17 LT

CHANGE ELEVATION OF DI, CB OR MH
4+11.79 RT

CONSTRUCT GABION RETAINING WALL
~~3+00.65 - 3+06.65 LT~~

CONSTRUCT PAVED APRON
1+58.00 RT
4+40.00 RT
4+75.00 LT

TRAFFIC SIGN, TYPE A
2+32.50 LT (STOP)
4+76.70 RT (STOP)

PLAN
SCALE: 1" = 20'
20 0 20

NOTES:
1. ALL CONSTRUCTION ACTIVITY SHALL REMAIN WITHIN THE EXISTING RIGHT-OF-WAY OR ON PROPERTY OWNED BY THE TOWN OF BRATTLEBORO.
2. THE EXISTING R.O.W. ON WILLIAMS STREET IS ASSUMED TO BE A 3 ROD (49.5 FEET), CENTERED ON THE EXISTING ROADWAY (UNLESS OTHERWISE SHOWN), AS OBTAINED FROM THE TOWN OF BRATTLEBORO.
3. THE EXISTING R.O.W. ON CROSBY STREET IS ASSUMED TO BE A 2 ROD (33.0 FEET), CENTERED ON THE EXISTING ROADWAY, AS OBTAINED FROM THE TOWN OF BRATTLEBORO.
4. THE CONTRACTOR SHALL GRADE THE SHOULDERS AND FINAL PAVEMENT TO ENSURE POSITIVE DRAINAGE TO THE DROP INLETS.

PLOTTED 02/03/2004

REVISIONS		
NO.	DESCRIPTION	BY & DATE

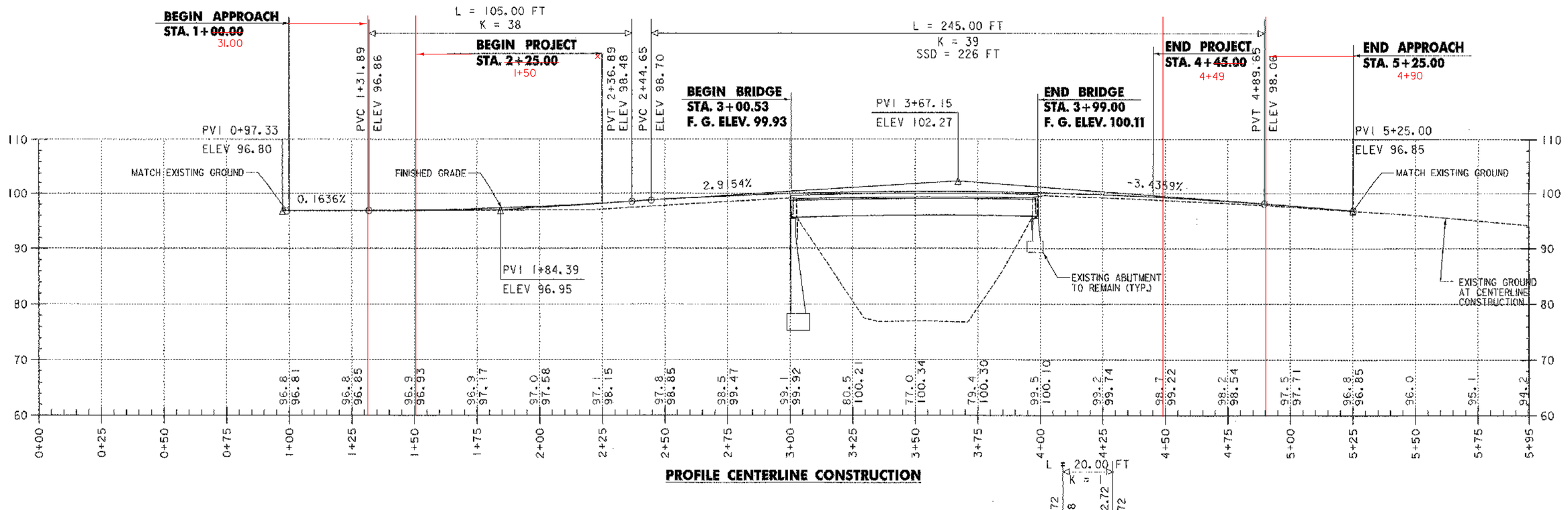
DuBois & King inc.
engineering planning management development

STATE OF VERMONT
AGENCY OF TRANSPORTATION

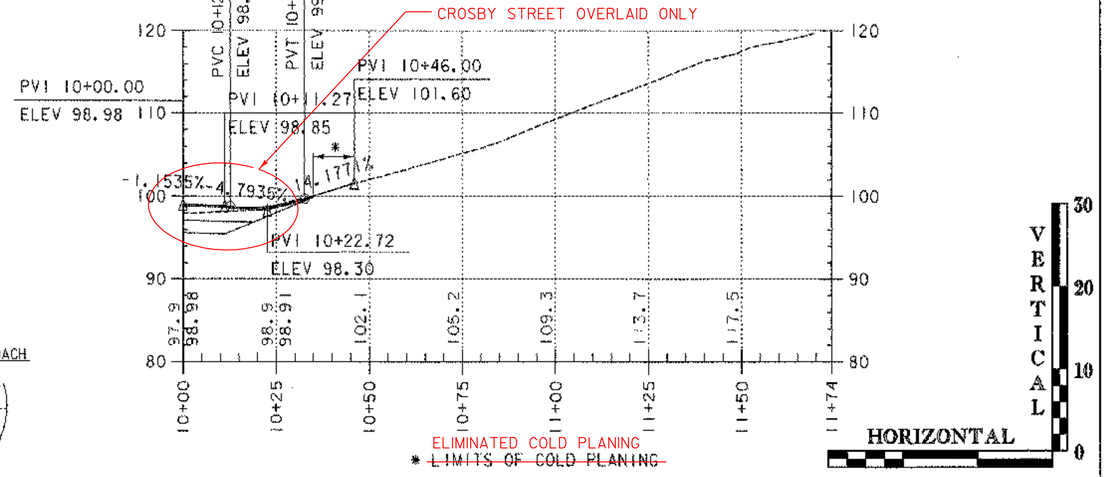
Town Of BRATTLEBORO	Bridge No. 34
Highway No. 378	Log Sta.
	Surv. Sta.

TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK
PLAN

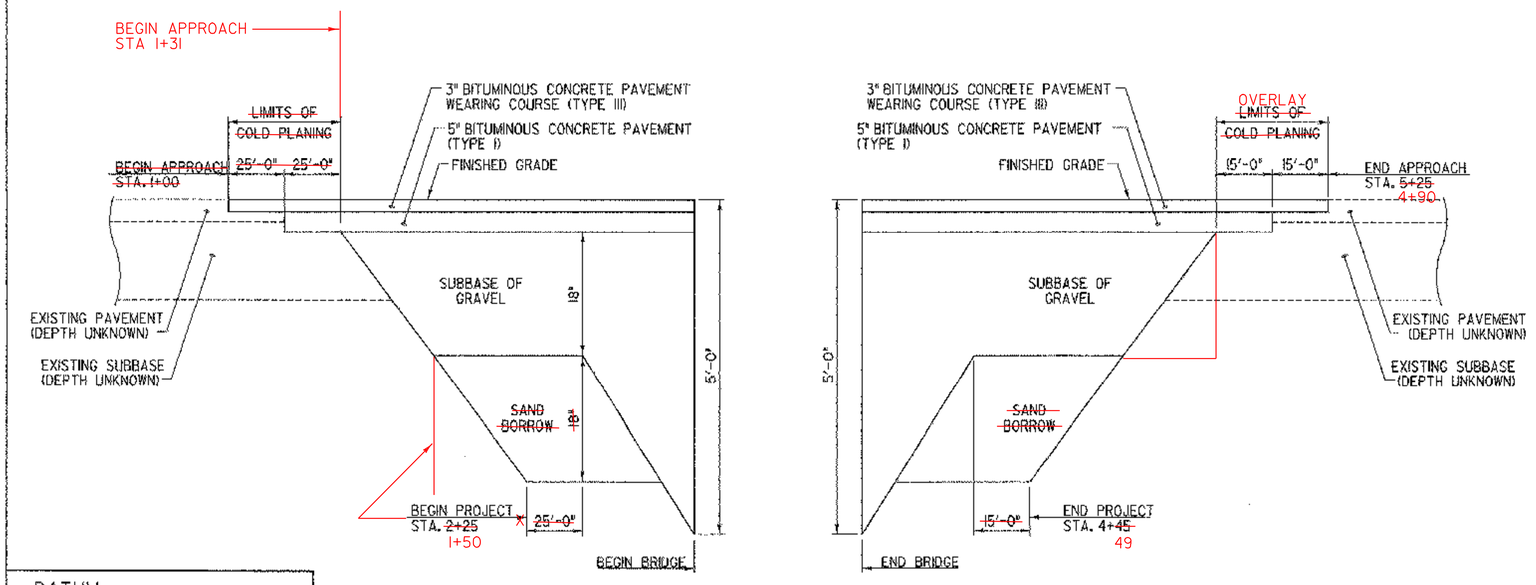
Designed By E. B. SMALL	Drawn By E. B. SMALL
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
I.G.C. Info. ...\zj228bdr.dgn	
D & K DWG NO. 11370	Sheet 5 of 20



PROFILE CENTERLINE CONSTRUCTION



PROFILE CENTERLINE CROSBY STREET



MATERIAL DEPTH TRANSITION DETAIL

NOT TO SCALE

* SEE CONSTRUCTION NOTE 10 ON SHEET 9 REGARDING EXISTING SANITARY SEWER LINE

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

PLOTTED 02/03/2004

REVISIONS		
NO.	DESCRIPTION	BY & DATE

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engineering planning management development

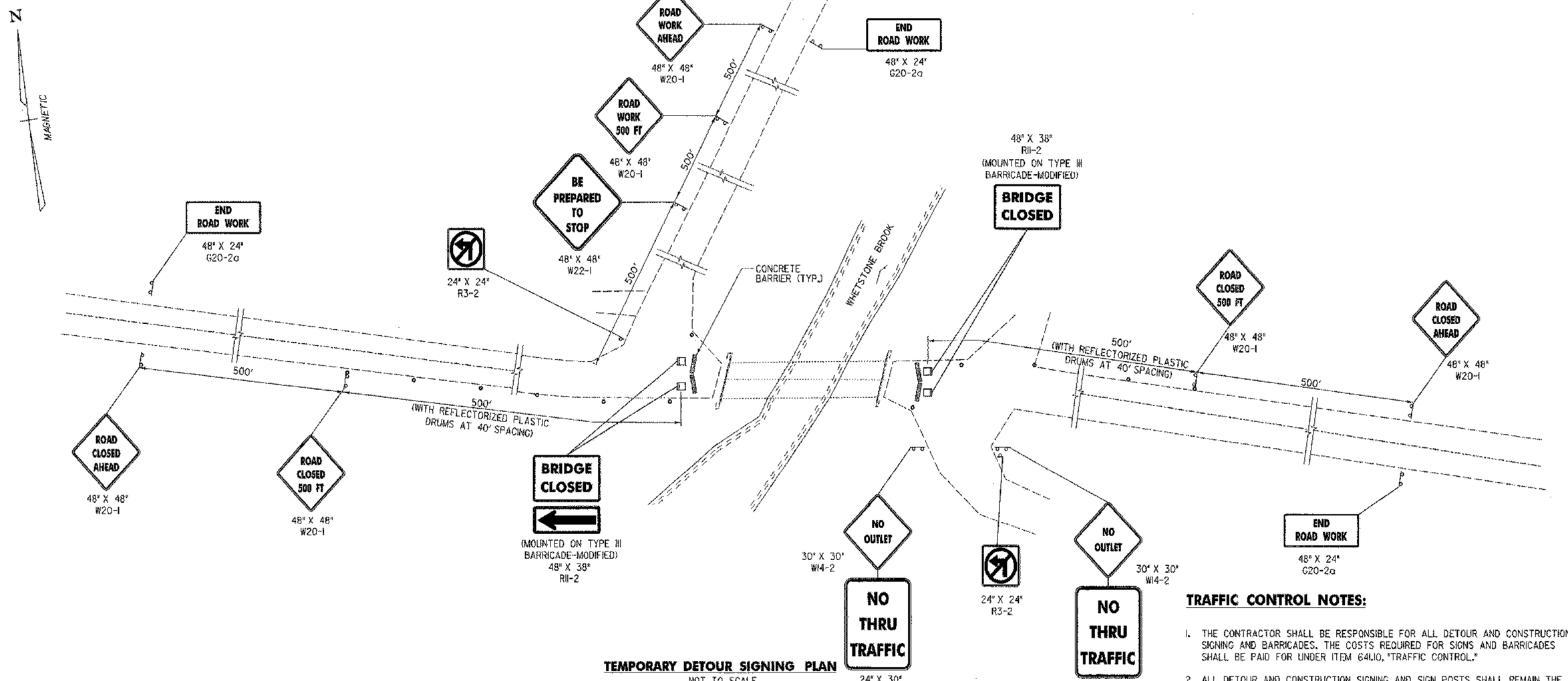
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO	Bridge No. 34
Highway No. 378	Log Sta. / Surv. Sta.

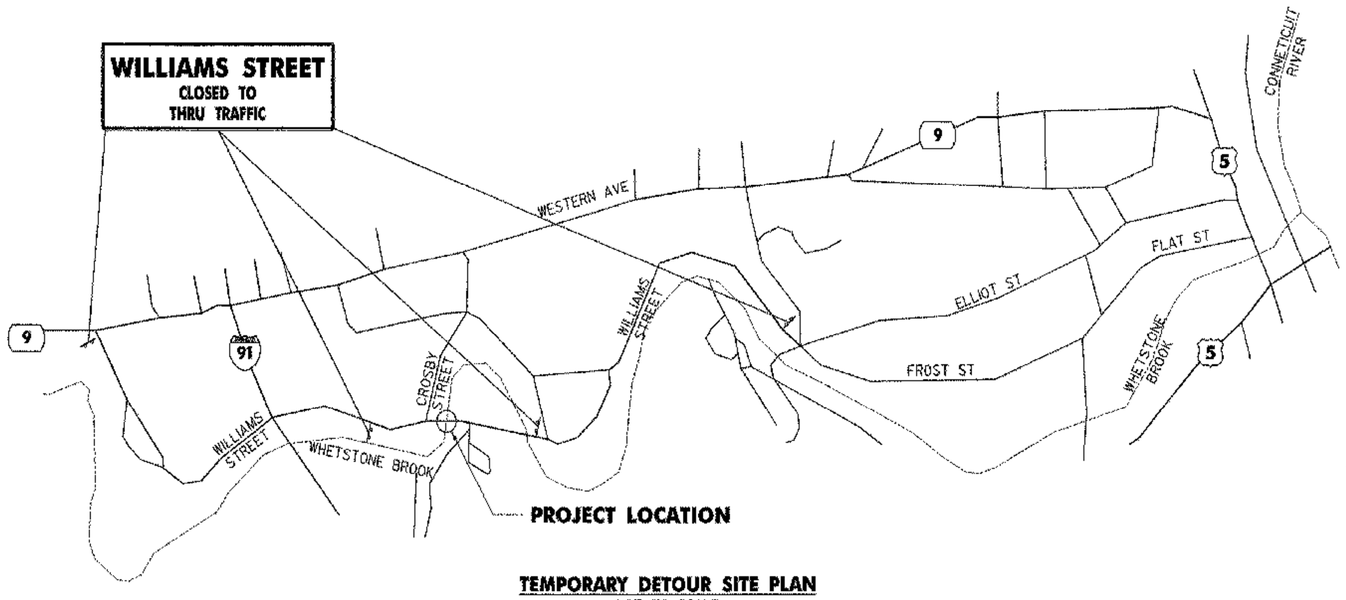
TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

PROFILE

Designed By E. B. SMALL	Drawn By E. B. SMALL
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
I.G.C. Info. ...zj228xsl.dgn	
D & K DWG NO. 11371	Sheet 6 of 20



TEMPORARY DETOUR SIGNING PLAN
NOT TO SCALE



TEMPORARY DETOUR SITE PLAN
NOT TO SCALE

PLOTTED 02/03/2004

TRAFFIC CONTROL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DETOUR AND CONSTRUCTION SIGNING AND BARRICADES. THE COSTS REQUIRED FOR SIGNS AND BARRICADES SHALL BE PAID FOR UNDER ITEM 641.10, "TRAFFIC CONTROL."
2. ALL DETOUR AND CONSTRUCTION SIGNING AND SIGN POSTS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY CONCRETE TRAFFIC BARRIERS DURING THE CONSTRUCTION PERIOD TO PREVENT VEHICLES FROM DRIVING OFF THE BRIDGE OR APPROACHES. ALL COSTS SHALL BE INCLUDED IN ITEM 621.90, "TEMPORARY TRAFFIC BARRIER."
4. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVES AND SIDE ROADS DURING CONSTRUCTION. COSTS SHALL BE INCLUDED IN ITEM 641.10, "TRAFFIC CONTROL."
5. ALL SIGNS SHALL BE ORANGE WITH BLACK LETTERING AND BLACK BORDERS.
6. ALL DETAILS NOT SPECIFIED SHALL BE IN ACCORDANCE WITH THE MUTCD AND VAOT E SERIES STANDARDS.

REVISIONS		
NO.	DESCRIPTION	BY & DATE

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STATE OF VERMONT
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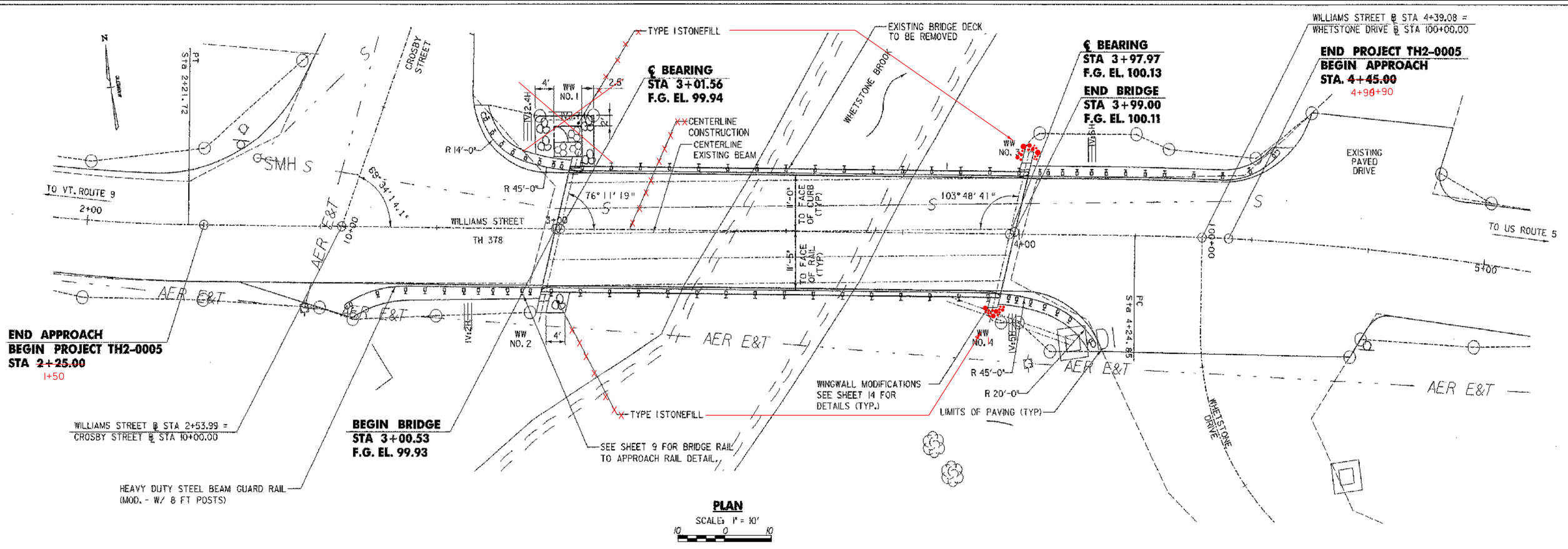
Town Of BRATTLEBORO	Bridge No. 34
Highway No. 378	Log Sta. / Surv. Sta.

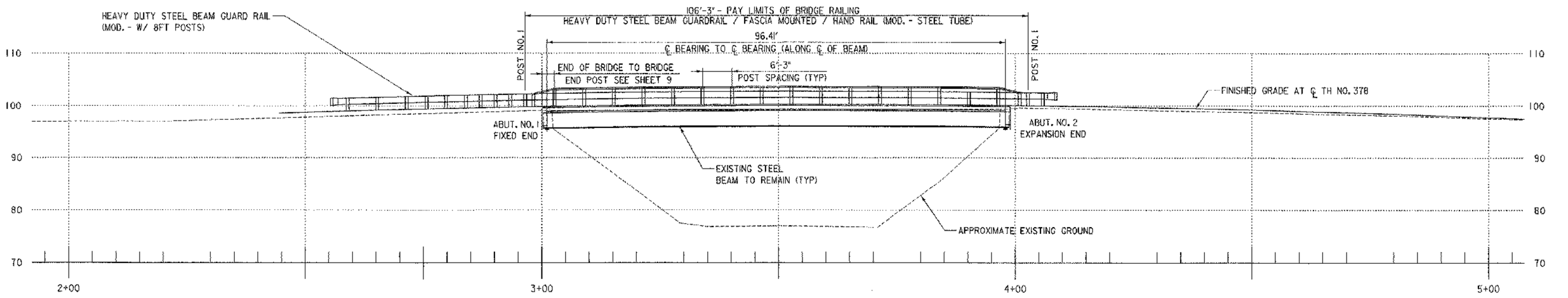
TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

TRAFFIC CONTROL SHEET

Designed By K. S. MARSHIA	Drawn By E. B. SMALL
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
I.G.C. Info. ...\zj228bdr.dgn	
D & K DWG NO. 11372	Sheet 7 of 20



PLAN
SCALE: 1" = 10'



ELEVATION
SCALE: 1" = 10'

DATUM	
VERTICAL	ASSUMED
HORIZONTAL	ASSUMED

PLOTTED 02/03/2004

REVISIONS		
NO.	DESCRIPTION	BY & DATE

DuBois & King inc.
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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO	Bridge No. 34
Highway No. 378	Log Sta.
	Surv. Sta.

TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

PLAN AND ELEVATION

Designed By E. B. SMALL	Drawn By E. B. SMALL
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
I.G.C. Info. ...\zJ228bdr.dgn	
D & K DWG NO. 11373	Sheet 8 of 20

GENERAL NOTES:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, DATED 2001, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, DATED 2002, AND ITS LATEST REVISIONS.
2. DIMENSIONS, ANGLES, BEARINGS, AND ELEVATIONS OF THE EXISTING BRIDGE SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND LIMITED FIELD INVESTIGATION AND MAY NOT ACCURATELY REFLECT ACTUAL FIELD CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING STRUCTURE COMPONENTS IMPACTED BY THE NEW WORK TO ASSURE CONSISTENCY WITH THE PROPOSED MODIFICATIONS. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER BEFORE ADVANCING THE WORK.
3. WORKING DRAWINGS REQUIRED FOR VARIOUS ITEMS OF WORK SHALL INDICATE THE ACTUAL FIELD MEASUREMENTS AND SHALL BE SO NOTED.
4. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
5. FOR TRAFFIC CONTROL NOTES, SEE SHEET 7.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL USE CAUTION WHEN WORKING AROUND UNDERGROUND AND OVERHEAD UTILITIES.
2. THE CONTRACTOR SHALL REVIEW AND UNDERSTAND ALL APPLICABLE ENVIRONMENTAL PERMITS AND ENSURE THAT ALL CONSTRUCTION CONDITIONS ARE MET.
3. A THOROUGH INSPECTION BY THE RESIDENT ENGINEER WILL BE MADE OF ALL SUBSTRUCTURE AREAS AT THE TIME OF CONSTRUCTION. AREAS OF CONCRETE FOUND TO BE SPALLED, DELAMINATED OR OTHERWISE UNSOUND WILL BE REPAIRED. THE CONTRACTOR SHALL SUPPLY ANY LABOR, MATERIALS AND EQUIPMENT NECESSARY TO ASSIST THE ENGINEER IN PERFORMING THE INSPECTION. THE COST OF PROVIDING THESE ITEMS AS NEEDED SHALL BE INCLUDED IN THE PAY ITEMS OF SECTION 580 IN THE CONTRACT.
4. NO BACKFILL WILL BE PLACED AGAINST ANY STRUCTURAL ELEMENTS UNTIL THE RESIDENT ENGINEER HAS APPROVED THIS WORK.
5. THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC EROSION/SEDIMENT CONTROL PLAN WITH A SCHEDULE OF EVENTS. THIS WORK SHALL BE PAID FOR UNDER ITEM 652.10, "EROSION AND SEDIMENT CONTROL PLAN."
6. THE CONTRACTOR SHALL LOAM, SEED, FERTILIZE AND MULCH ALL DISTURBED AREAS, EXCEPT ROADWAY AND SHOULDERS PRIOR TO THE COMPLETION OF THE PROJECT.
7. BLANK
8. THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING TO PREVENT BEAM ROTATION DURING THE DECK PLACEMENT. POURED BACKWALL PRIOR, TO ACCOMPLISH THIS
9. AT STATIONS 2+75.00 TO 2+78.00 RT AND 4+07.00 TO 4+10.00 LT THE CONTRACTOR SHALL GRADE FROM THE BOTTOM OF THE SUBBASE STRAIGHT TO THE SLOPE AND BACKFILL WITH A SUBBASE OF GRAVEL TO ENSURE PROPER DRAINAGE OF EXCAVATED AREAS. THE PAYMENT FOR THESE AREAS SHALL BE UNDER ITEM 203.15, COMMON EXCAVATION AND ITEM 301.15, SUBBASE OF GRAVEL.
10. THE CONTRACTOR SHALL BE AWARE OF ALL SANITARY SEWER LINES THAT ARE KNOWN TO EXIST IN THE APPROACHES. ALL SANITARY SEWER LINES SHALL REMAIN UNDISTURBED. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS OF REPAIR DUE TO DAMAGE DURING CONSTRUCTION
11. THE TOWN OF BRATTLEBORO WILL BE RESPONSIBLE FOR CHANGING THE ELEVATION OF ALL EXISTING SANITARY MANHOLES WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE MUNICIPAL PROJECT MANAGER EARLY IN THE PROJECT AND DISCUSSING THE SCHEDULING OF THIS WORK AND SHOULD BE RESPONSIBLE FOR PROVIDING ACCESS TO THE SITE FOR THE TOWN.
12. ~~EXCAVATION NECESSARY FOR PLACING THE GABION WALL SHALL BE PAID FOR AS ITEM 204.25, STRUCTURE EXCAVATION. EXCAVATION NECESSARY FOR PLACING THE STONE FILL NEAR THE GABION WALL SHALL BE PAID FOR AS ITEM 203.15, COMMON EXCAVATION.~~

THIS WASN'T DONE OR USED

REMOVAL NOTES:

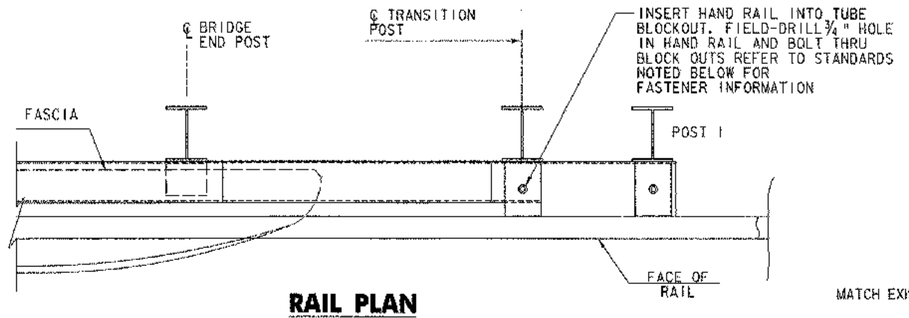
1. ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE SHALL INCLUDE REMOVAL OF THE EXISTING BRIDGE RAILING, CONCRETE CURBS AND POSTS, CONCRETE BRIDGE DECK AND CURTAIN WALLS. REMOVAL OF PORTIONS OF THE EXISTING WINGWALLS AS SHOWN ON THE PLANS AND AS DIRECTED BY THE RESIDENT ENGINEER. ERECTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURES TO PREVENT DEBRIS FROM FALLING INTO THE WHETSTONE BROOK. THE REMOVAL OF THE BRIDGE PAVEMENT SHALL BE UNDER ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT".
2. LIMITS OF WINGWALL REMOVAL ARE APPROXIMATE. THE RESIDENT ENGINEER SHALL ESTABLISH ACTUAL LIMITS AFTER A COOPERATIVE INSPECTION BY THE CONTRACTOR AND THE RESIDENT ENGINEER. EXISTING ELEVATIONS SHALL BE FIELD VERIFIED TO ENSURE THAT THE REMOVAL LIMITS ARE ADEQUATE TO OBTAIN THE REQUIRED DIMENSIONS AND ELEVATIONS OF THE NEW CONSTRUCTION.
3. SAWCUTS SHALL BE ONE INCH DEEP ALONG ALL EXPOSED REMOVAL LINES WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE.
4. EXISTING REINFORCING STEEL EXPOSED DURING REMOVAL OPERATIONS, WITHIN THE LIMITS OF THE NEW MASONRY, SHALL BE RETAINED AND INCORPORATED INTO THE NEW MASONRY. EXISTING REINFORCING STEEL TO BE RETAINED SHALL BE CLEANED OF ALL CONCRETE, DIRT, DETRIMENTAL SCALE, PAINT, OIL, AND OTHER FOREIGN SUBSTANCES. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE.

CONCRETE NOTES:

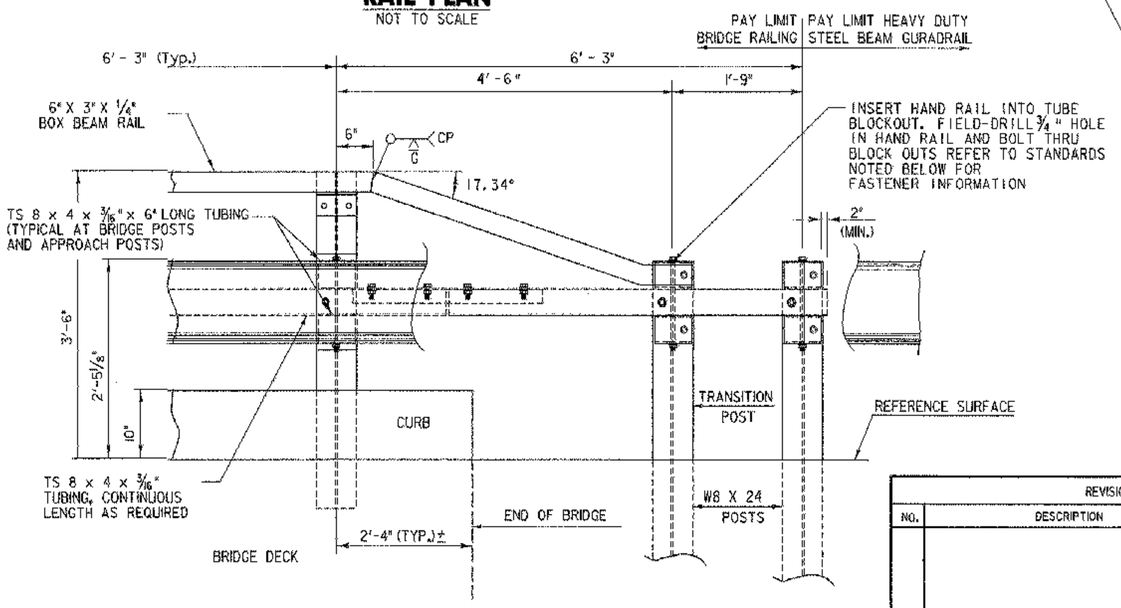
1. CONCRETE PAYMENT AND CLASSIFICATION SHALL BE AS FOLLOWS:
   ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A": DECK, CURTAIN WALLS AND BRUSH CURBS
   ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B": WINGWALLS
2. ITEM 514.10, WATER REPELLENT, SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON THE BRIDGE SUPERSTRUCTURE, EXCEPT THE BOTTOM OF THE DECK BETWEEN THE DRIP NOTCHES. WATER REPELLENT SHALL ALSO BE APPLIED TO THE EXPOSED CONCRETE ON THE EXISTING ABUTMENTS AND NEW WINGWALL CAPS.
3. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1INCH BY 1INCH, UNLESS OTHERWISE NOTED. A ONE-HALF INCH RADIUS SHALL BE USED ON THE TOP INSIDE CORNER OF THE 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 IN 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.
6. THE CONCRETE DECK SHALL BE PLACED CONTINUOUSLY WITHIN ONE EIGHT-HOUR WORKING DAY. NO COLD JOINTS WILL BE ALLOWED. IF CIRCUMSTANCES BEYOND THE CONTRACTOR'S CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A CONSTRUCTION JOINT MAY BE USED. THERE SHALL BE A MINIMUM DELAY PERIOD OF 96 HOURS BETWEEN POURS. CONCRETE DECK PLACEMENT SHALL START FROM THE LOW END.

REINFORCING STEEL NOTES:

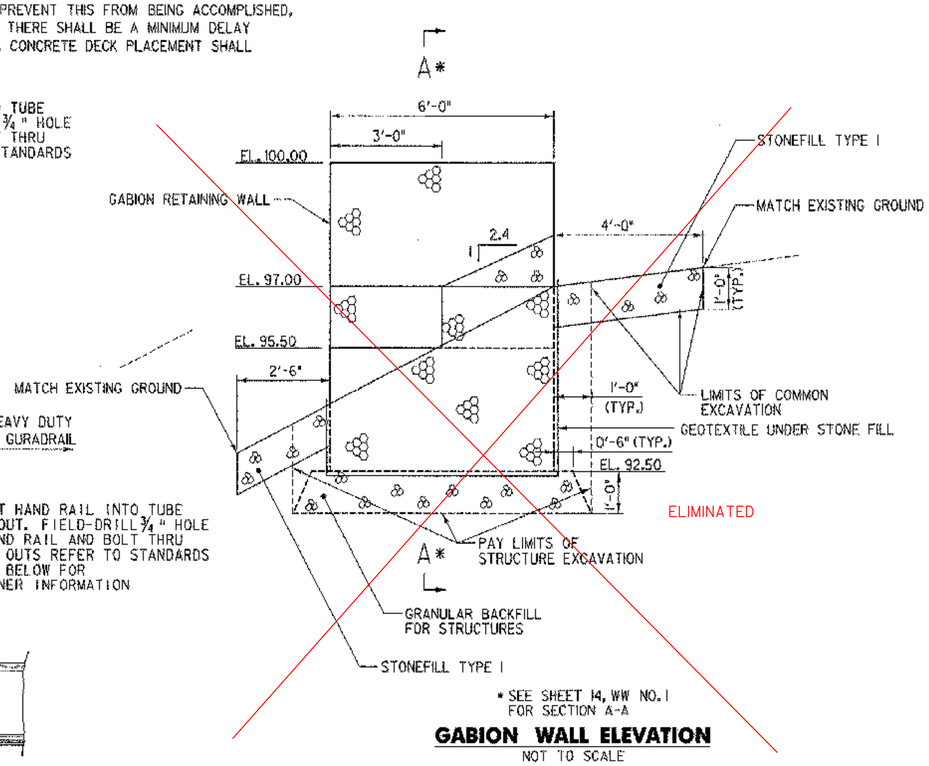
1. REINFORCING STEEL IN THE DECK, CURTAIN WALL, AND BRUSH CURBS SHALL BE EPOXY COATED.
2. DRILLING AND GROUTING DOWELS SHALL BE PAID AS ITEM 507.16, DRILLING AND GROUTING DOWELS. ALL DRILLED HOLES SHALL HAVE A MINIMUM OF 6-INCH CLEAR COVER.
3. FLAME CUTTING OF EPOXY COATED REINFORCING STEEL SHALL NOT BE PERMITTED.
4. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
   ALONG BACK FACES OF WALLS AGAINST EARTH: 2.0 INCHES
   ALONG TOP SURFACE OF DECK SLAB: 2.5 INCHES
   ALONG BOTTOM SURFACE OF DECK SLAB: 1.5 INCHES
   ELSEWHERE UNLESS OTHERWISE INDICATED: 3.0 INCHES
5. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:
   SPACING = +/- 1"
   CLEARANCE = +/-1/4".



RAIL PLAN
NOT TO SCALE



RAIL ELEVATION
NOT TO SCALE



* SEE SHEET 14, WW NO. 1 FOR SECTION A-A

GABION WALL ELEVATION
NOT TO SCALE

NOTES:

1. SEE VAOT STANDARD SHEET SB-R6-86 AND SB-R7-90 FOR ADDITIONAL DETAILS.
2. FIELD DRILLED HOLES IN HAND RAIL SHALL BE GALVANIZED PER ASTM A 760

PLOTTED 02/03/2004

REVISIONS		
NO.	DESCRIPTION	BY & DATE

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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO	Bridge No. 34
Highway No. 378	Log Sta.
	Surv. Sta.

TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

CONSTRUCTION NOTES AND DETAILS

Designed By R. L. JOY	Drawn By S. E. SCHMITT
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
I.G.C. Info. ...\zJ228bdr.dgn	
D & K DWG NO. 11374	Sheet 9 of 20

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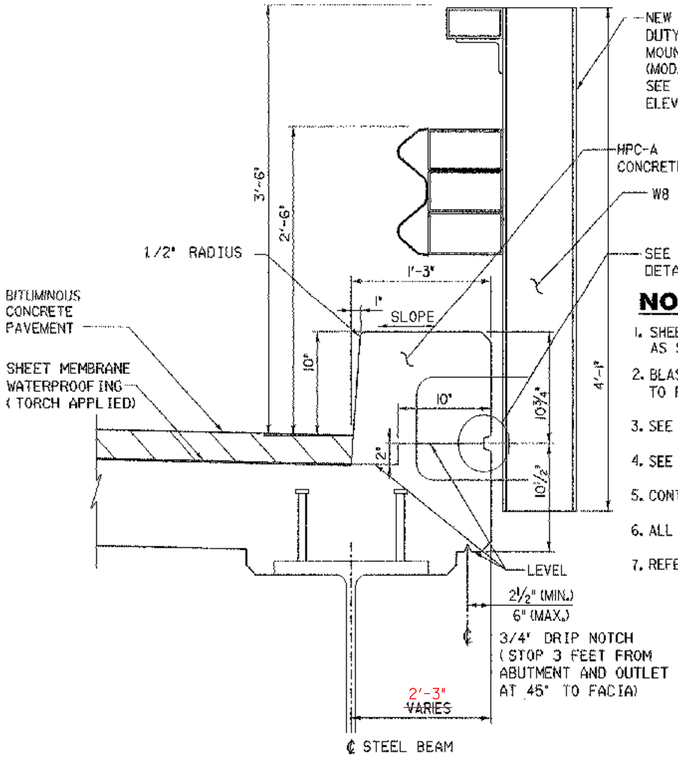
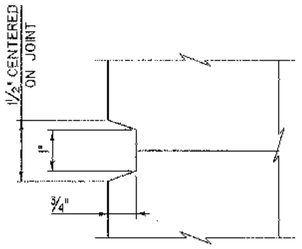


TYPICAL CURB DETAIL

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

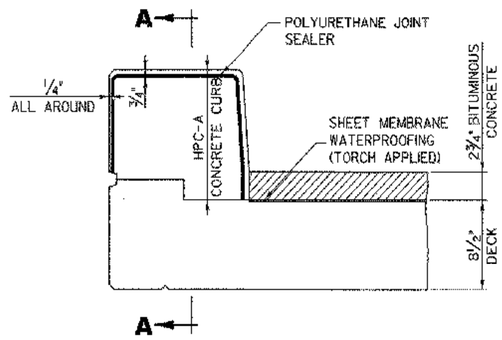


SCORE MARK DETAIL

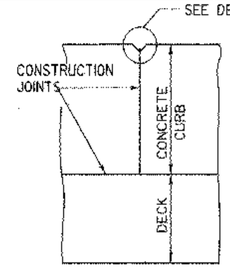
NOT TO SCALE

NOTES

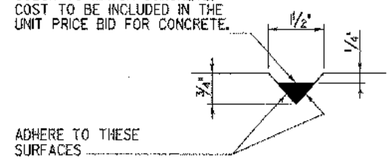
1. SHEET MEMBRANE WATERPROOFING SHALL EXTEND TO FACE OF CURB AS SHOWN.
2. BLAST CLEAN ~~3'-0" FROM FACE OF CURB AND 3" UP CURB FACE~~ WHOLE DECK PRIOR TO PLACING MEMBRANE.
3. SEE VAOT STD. SB-R6-82 "ANCHORAGE DETAIL" FOR ADDITIONAL DETAILS
4. SEE VAOT STD. SB-R6-82 "PLATE WASHER DETAIL" FOR ADDITIONAL DETAILS
5. CONTRACTOR SHALL VERIFY LOCATION OF ANCHOR "U" BOLTS PRIOR TO POURING CONCRETE
6. ALL HARDWARE SHALL BE GAVANIZED AND CONFORM TO ASTM SPECIFICATION F568M, CLASS 8.8.
7. REFER TO VAOT STANDARD SB-R6-82 AND SB-R7-90 FOR ADDITIONAL DETAILS.



TYPICAL SECTION THROUGH CONCRETE CURB CONSTRUCTION JOINT



SECTION A-A

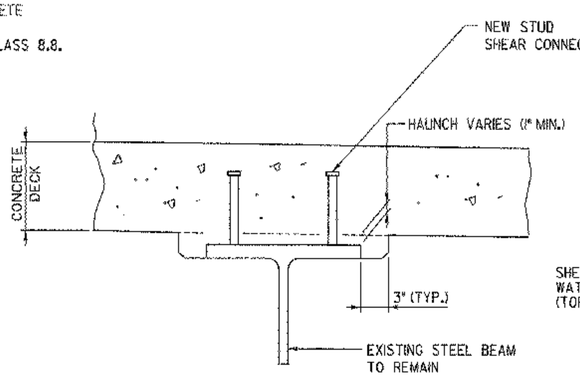


DETAIL 1

NOT TO SCALE

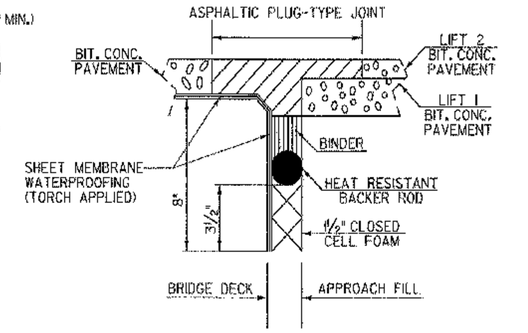
NOTES:

1. POLYURETHANE MEMBRANE AND BLAST CLEANING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SHEET MEMBRANE WATERPROOFING (TORCH APPLIED).
2. CONSTRUCTION JOINTS THROUGH CONCRETE CURBS SHALL BE SPACED MAXIMUM 15'-0" CENTER TO CENTER AND SHALL BE 1'-6" MINIMUM FROM THE CENTER OF THE NEAREST BRIDGE RAIL POST. CONCRETE SHALL BE PLACED IN ALTERNATING SECTIONS WITH A MINIMUM OF 48 HOURS DELAY BETWEEN ADJACENT POURS.
3. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CURB CONSTRUCTION JOINTS.
4. ALL EPOXY COATED STEEL THAT NEEDS TO BE CUT IN THE FIELD IS TO BE SAW CUT AND THE EXPOSED END IS TO BE TREATED AS PER SECTION 507.04.



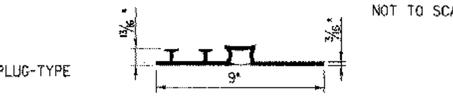
HAUNCH DETAIL

NOT TO SCALE



ASPHALTIC PLUG - TYPE JOINT DETAIL

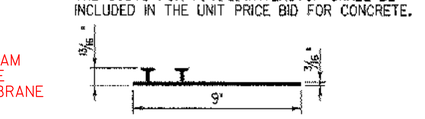
NOT TO SCALE



P. V. C. WATERSTOP FOR EXPANSION END

NOT TO SCALE

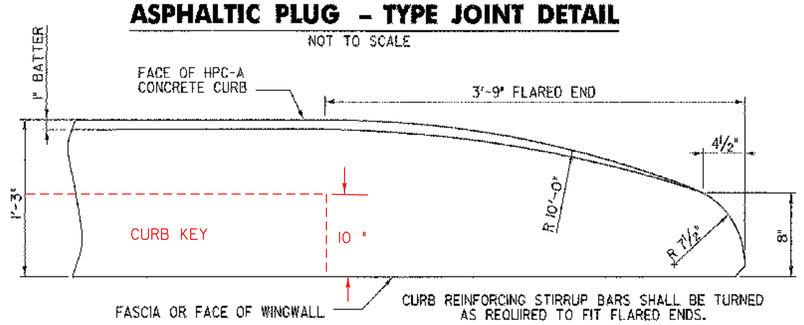
NOTE: FOR INSTALLATION, REMOVE BOTTOM HOOKS. THE COSTS FOR P. V. C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE.



P. V. C. WATERSTOP FOR FIXED END

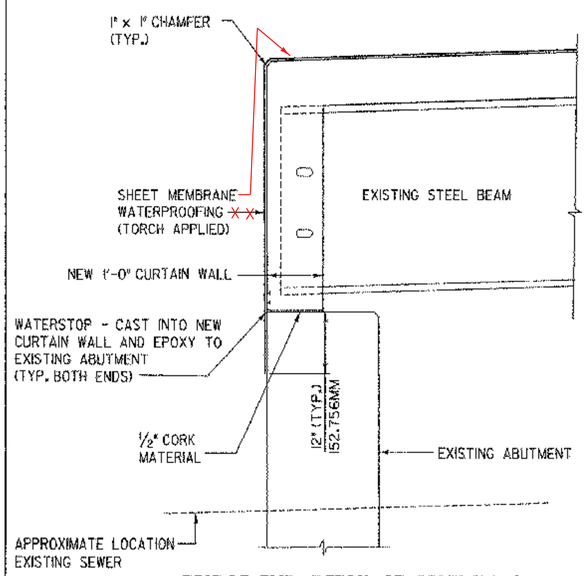
NOT TO SCALE

NOTE: FOR INSTALLATION, REMOVE BOTTOM HOOKS. THE COSTS FOR P. V. C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE.



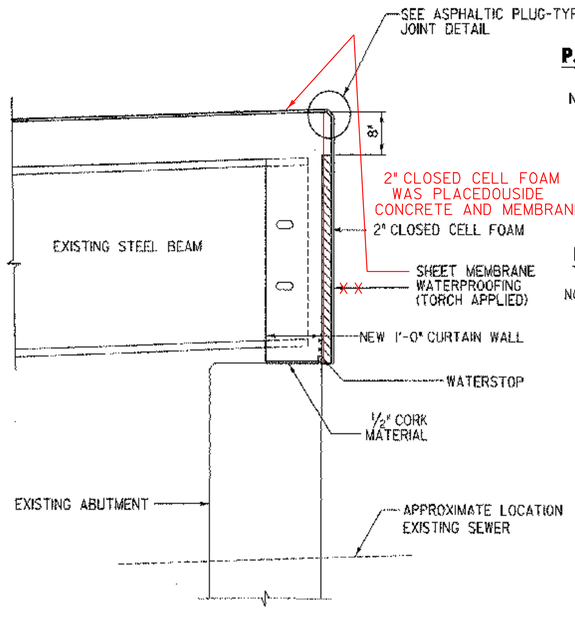
FLARED END DETAIL FOR 1'-3" CURB

NOT TO SCALE



BRIDGE END DETAIL AT ABUT NO. 1 (FIXED END)

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



BRIDGE END DETAIL AT ABUT NO. 2 (EXPANSION END)

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

PLOTTED 02/03/2004

REVISIONS		
NO.	DESCRIPTION	BY & DATE

DuBois & King inc.
engineering planning management development

STATE OF VERMONT
AGENCY OF TRANSPORTATION

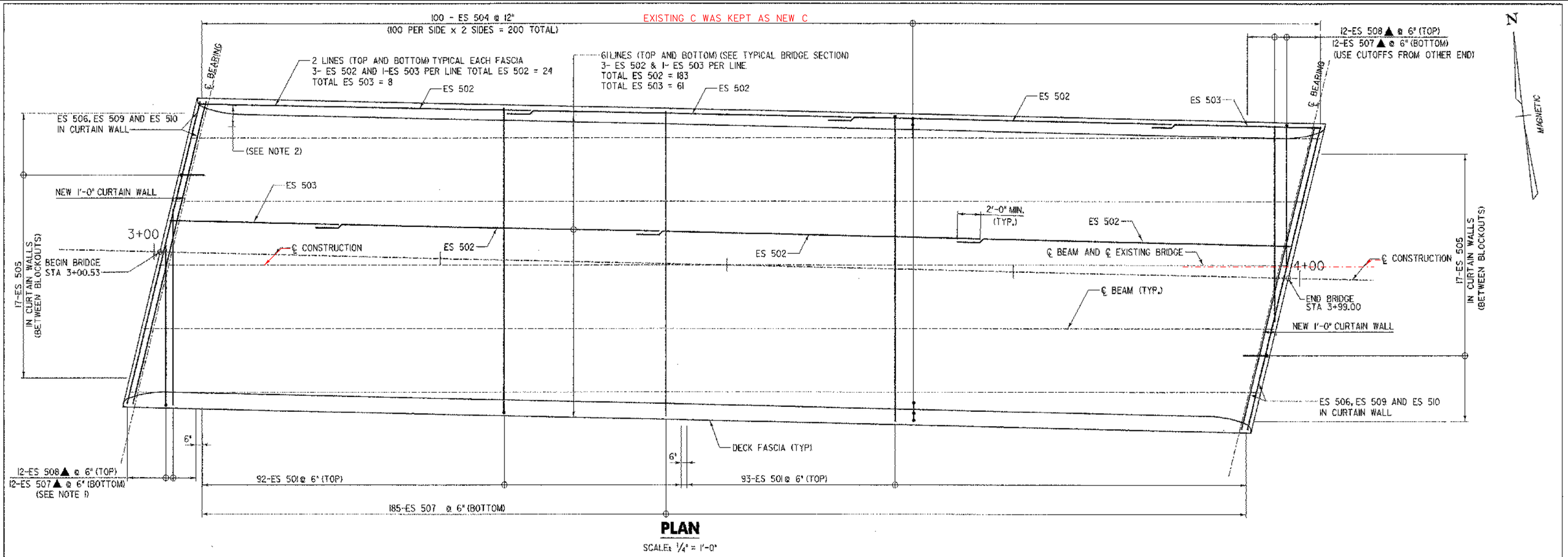
Town Of BRATTLEBORO	Bridge No. 34
Highway No. 378	Log Sta. / Surv. Sta.

TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

DECK DETAILS

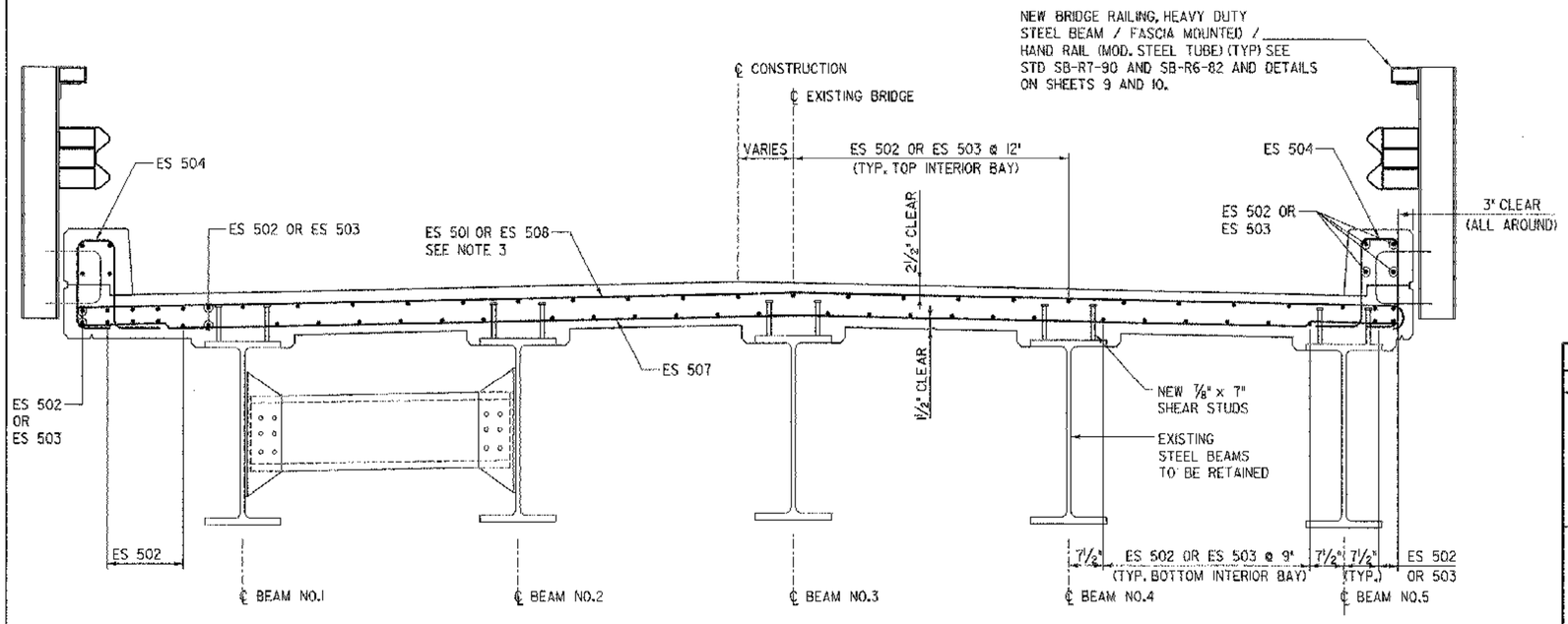
Designed By R. L. JOY	Drawn By E. B. SMALL
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
I.G.C. Info. ...\zJ228df9.dgn	
D & K DWG NO. 11375	Sheet 10 of 20

EXISTING C WAS KEPT AS NEW C



PLAN

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



TYPICAL BRIDGE SECTION

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

PLOTTED 02/03/2004

NOTES:

1. USE CUTOFFS FROM THIS END OF BRIDGE FOR THE OTHER END OF BRIDGE.
2. PLACE ES 502 BARS AT 6 INCH MAXIMUM SPACING.
3. THE LOCATION OF HOOKED END OF THE ES501 BARS ARE TO ALTERNATE LEFT & RIGHT SIDES OF THE DECK.

KEY
N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE
▲ = CUT TO FIT IN FIELD

REVISIONS		
NO.	DESCRIPTION	BY & DATE

DuBois & King inc.
engineering planning management development

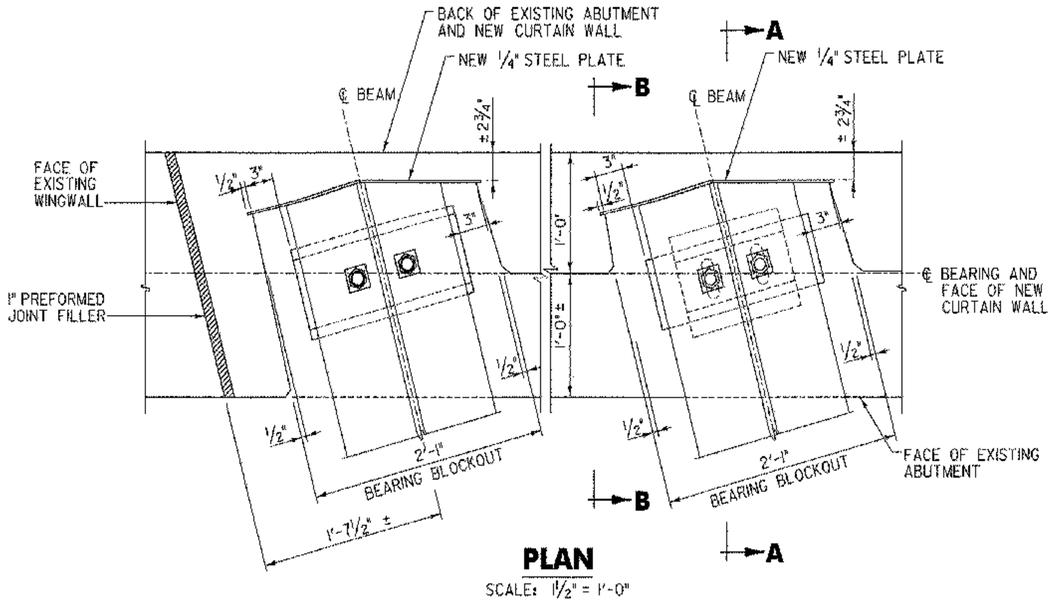
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO	Bridge No. 34
Highway No. 378	Log Sta. / Surv. Sta.

TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

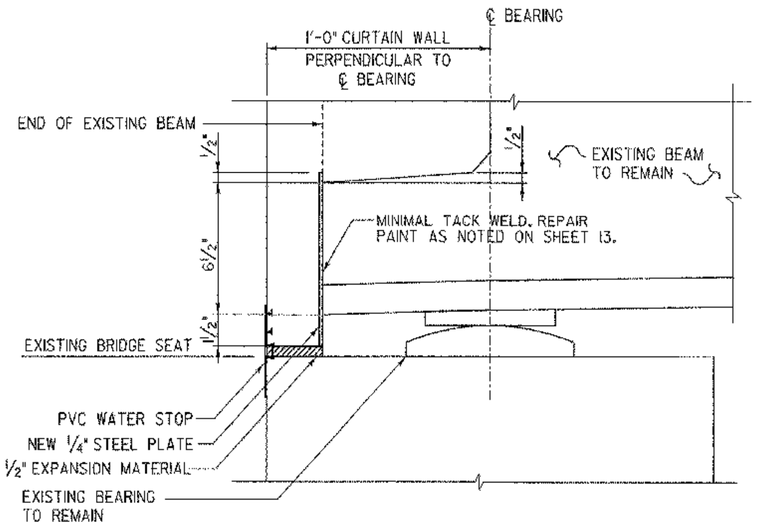
DECK REINFORCEMENT

Designed By G. J. WOJCIECHOWSKI	Drawn By E. B. SMALL
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
I.G.C. Info. ...\zj228dt2.dgn	
D & K DWG NO. 11376	Sheet # of 20



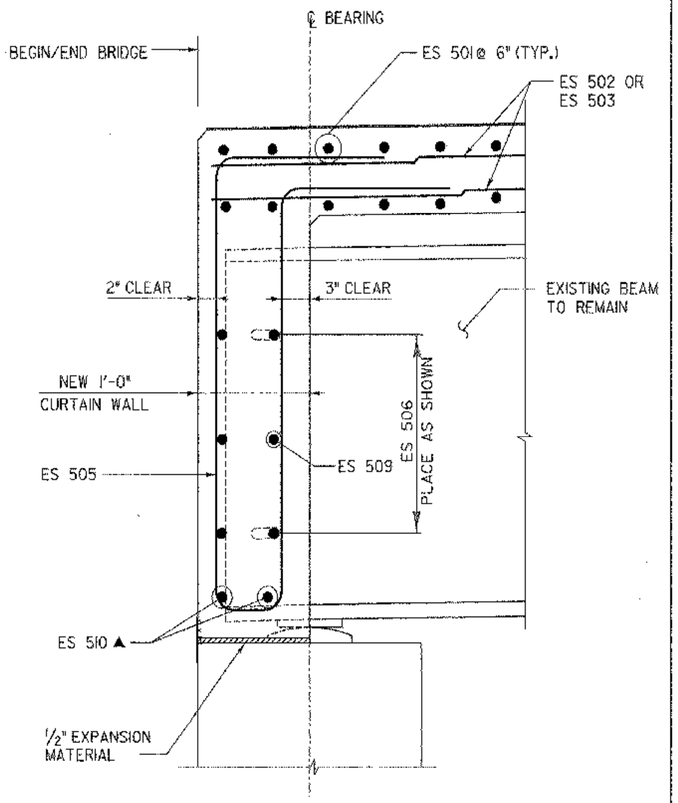
PLAN

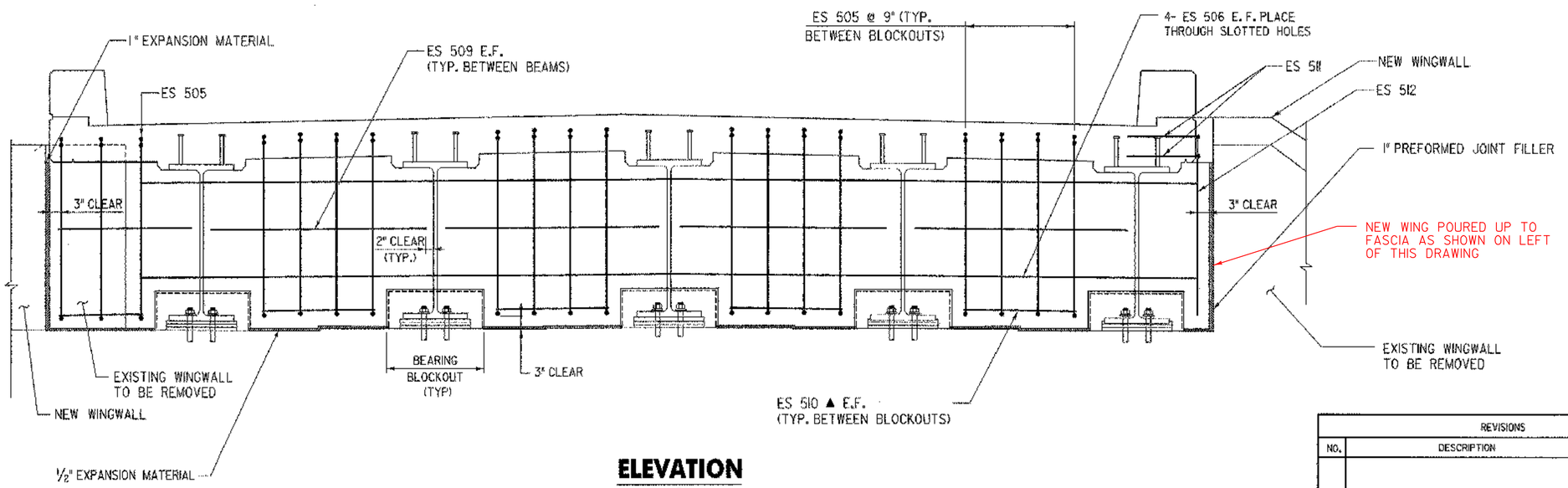
SCALE: 1 1/2" = 1'-0"



SECTION A-A

SCALE: 3 " = 1'-0"





ELEVATION

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

SECTION B-B

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

FIXED END SHOWN, EXPANSION END SIMILAR, EXCEPT AS DETAILED ON SHEET 10.

NOTES:

1. STEEL PLATE USED BETWEEN THE CURTAIN WALL AND THE ENDS OF THE BEAM SHALL BE PAID FOR UNDER ITEM 506.60, STRUCTURAL STEEL.

KEY
N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE
▲ = CUT TO FIT IN FIELD

REVISIONS		
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PLOTTED 02/03/2004

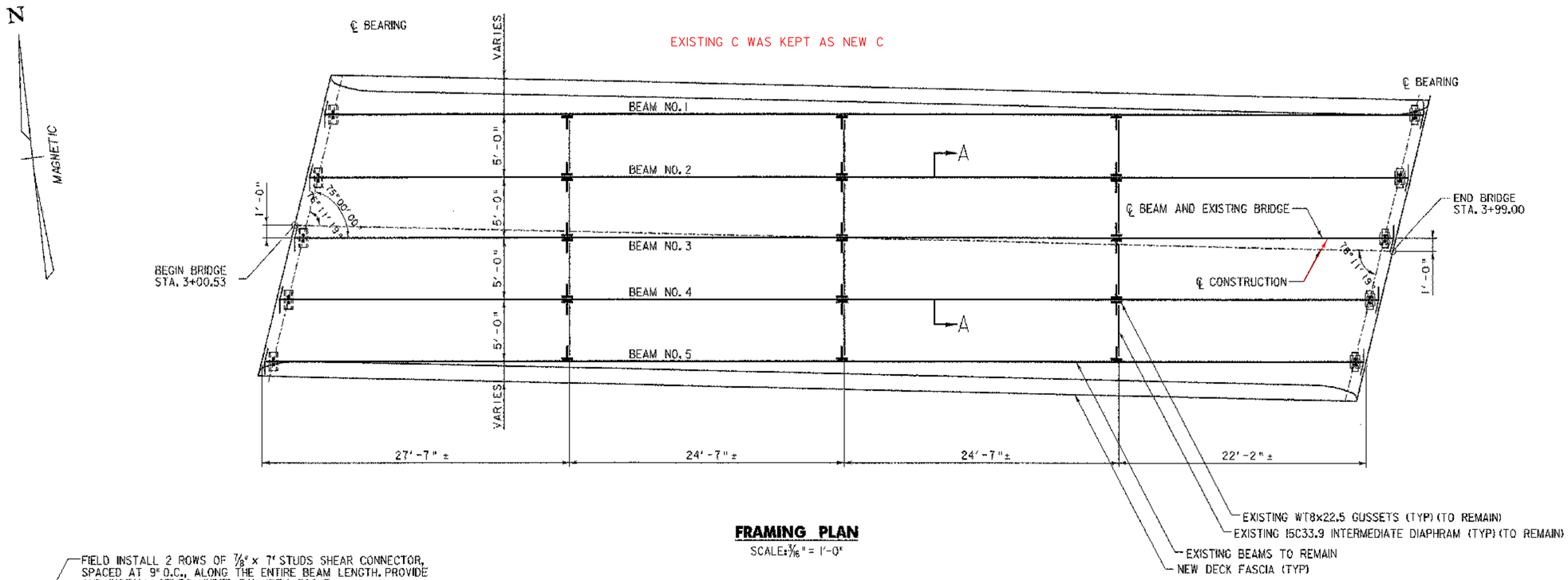
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO	Bridge No. 34
	Log Sta.
Highway No. 378	Surv. Sta.

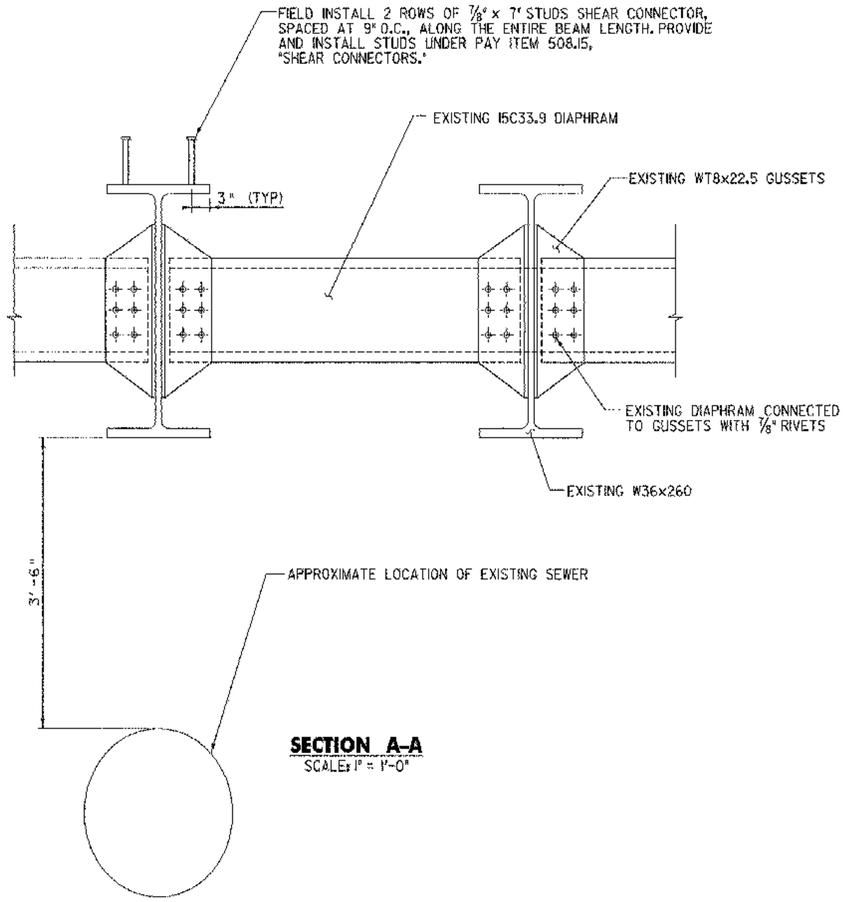
TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

CURTAIN WALL

Designed By G. J. WOJCIECHOWSKI	Drawn By G. J. WOJCIECHOWSKI
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
I.G.C. Info. ...\z1228dt3/dgn	
D & K DWG NO. 11377	Sheet 12 of 20



FRAMING PLAN
SCALE: 1/16" = 1'-0"



SECTION A-A
SCALE: 1" = 1'-0"

NOTES:

1. IF EXISTING PAINT ON STEEL BEAMS IS SCRATCHED OR DAMAGED IN ANY WAY DURING CONSTRUCTION THE CONTRACTOR SHALL REPAINT THE DAMAGED AREAS IN ACCORDANCE WITH VTRANS SPECIFICATION 513 AND MUST BE A COMPATIBLE SYSTEM WITH THAT USED FOR THE LAST PAINTING. THE COST FOR PAINTING SHALL BE SUBSIDIARY TO ALL OTHER CONTRACT ITEMS.
2. ANY DAMAGE TO THE STEEL BEAMS DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT THE EXPENSE OF THE CONTRACTOR.

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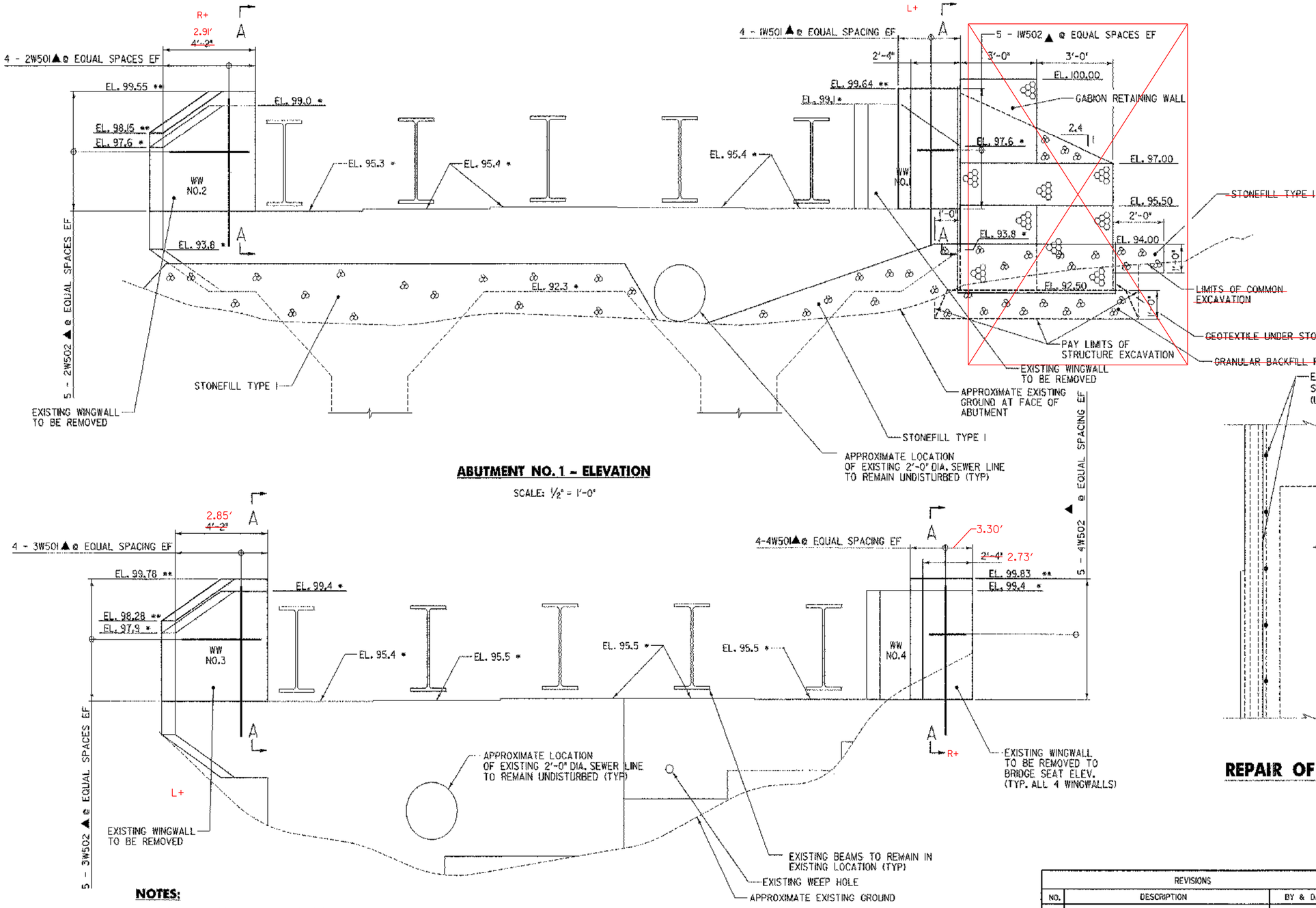
PLOTTED 02/03/2004

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO	Bridge No. 34
Highway No. 378	Log Sta. / Surv. Sta.

TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK
FRAMING PLAN AND STEEL DETAILS

Designed By R. L. JOY	Drawn By E. B. SMALL
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000 (22)
I.G.C. Info. ...zj228dt4.dgn	
D & K DWG NO. 8378	Sheet 13 of 20



ABUTMENT NO. 1 - ELEVATION

SCALE: ½" = 1'-0"

ABUTMENT NO. 2 - ELEVATION

SCALE: ½" = 1'-0"

NOTES:

1. THE CONCRETE FOR THE WINGWALLS SHALL NOT BE PLACED UNTIL THE BEAMS HAVE BEEN PROFILED AND THE FINISHED GRADE HAS BEEN ESTABLISHED.
2. A GEOTEXTILE FABRIC FOR FILTER SHALL BE PLACED ON ALL AREAS OF THE GABION WALL WHICH IS IN CONTACT WITH BACKFILL (BACK, SIDES, BOTTOM). PAYMENT SHALL BE MADE UNDER ITEM 649.31, "GEOTEXTILE UNDER STONE FILL".
3. CONCRETE SURFACES SHALL BE REPAIRED AS DESCRIBED IN CONSTRUCTION NOTE 3 ON SHEET 9.
4. PLAN VIEW OF WINGWALLS IS UNCHANGED FROM EXISTING WINGWALLS. SEE PLAN VIEW ON SHEET 8.

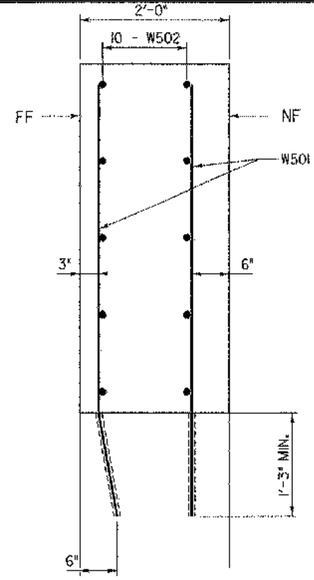
* APPROXIMATE EXISTING ELEVATION

** PROPOSED ELEVATION TO BE AT DECK JOINT (SCORE MARK) AND VERIFIED IN THE FIELD

NOTE:

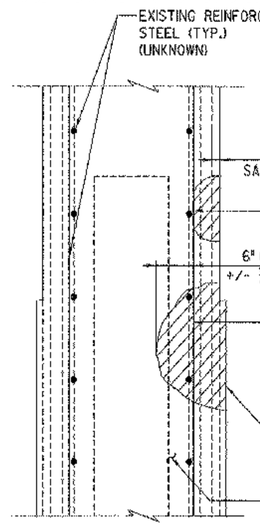
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

PLOTTED 02/03/2004



SECTION A-A

SCALE: 1" = 1'-0"



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

REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS I OR CLASS II

N.T.S.

DENOTES LIMITS OF REMOVAL

* APPROXIMATE EXISTING ELEVATION

REVISIONS		
NO.	DESCRIPTION	BY & DATE

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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO	Bridge No. 34
Highway No. 378	Log Sta. / Surv. Sta.

TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

ABUTMENT MODIFICATIONS

Designed By R. L. JOY	Drawn By E. B. SMALL
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000 (22)
I.G.C. Info. ...zJ228dt5.dgn	
D & K DWG NO. 8379	Sheet 14 of 20

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
1																	
2				**SUPERSTRUCTURE**													
3																	
4	185	5	24'-7"	ES 501	I	0'-7"	24'-0"					0'-0"		0'-5"			
5	183	5	30'-0"	ES 502	STR												
6	61	5	14'-9"	ES 503	STR												
7	200	5	4'-11"	ES 504	S5	0'-7"	1'-5"	0'-8"	1'-5"			0'-10"					
8	34	5	10'-8"	ES 505	S5	1'-6"	3'-5"	0'-7"	3'-8"			1'-6"					
9	8	5	23'-4"	ES 506	STR												
10	197	5	24'-0"	ES 507▲	STR												
11	24	5	22'-11"	ES 508▲	I	0'-7"	22'-4"					0'-0"		0'-5"			
12	16	5	4'-9"	ES 509	STR												
13	16	5	2'-8"	ES 510 ▲	STR												
14	4	5	4'-8"	ES 511	S10		1'-6"	1'-8"	1'-6"								
15	6	5	4'-3"	ES 512	STR												
16	2	5	5'-0"	ES 513 △	STR												
17																	
18																	
19																	
20				**WINGWALL NO. 1**													
21																	
22	8	5	5'-4"	1W501 ▲	STR												
23	10	5	1'-8"	1W502 ▲	STR												
24	2	5	5'-0"	1W503 △	STR												
25																	
26																	
27																	
28																	
29				**WINGWALL NO. 2**													
30																	
31	8	5	5'-4"	2W501	STR												
32	10	5	3'-9"	2W502	STR												
33	2	5	5'-0"	1W503 △	STR												
34																	
35																	
36																	
37				**WINGWALL NO. 3**													
38																	
39	8	5	5'-4"	3W501	STR												
40	10	5	3'-9"	3W502	STR												
41	2	5	5'-0"	1W503 △	STR												
42																	
43																	
44																	
45				**WINGWALL NO. 4**													
46																	
47	8	5	5'-4"	4W501	STR												
48	10	5	1'-8"	4W502	STR												
49	2	5	5'-0"	1W503 △	STR												
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ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
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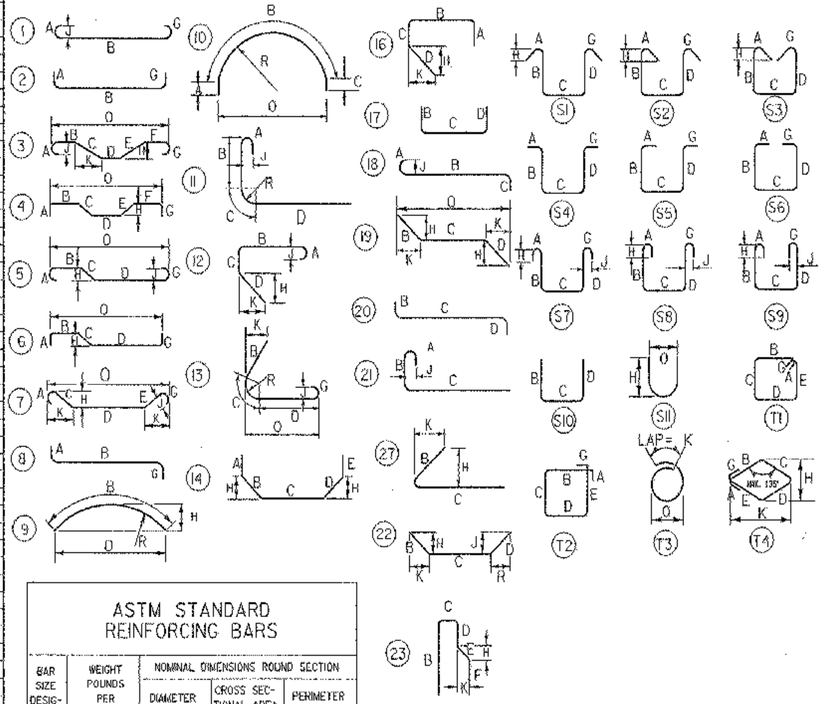
~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-58). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. "E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

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

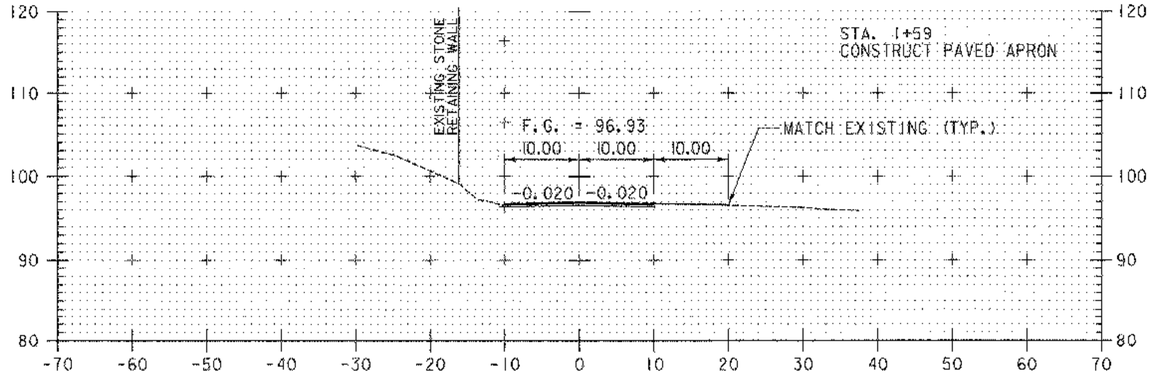
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO	Bridge No. 34
	Leg Sta.
Highway No. 378	Surv. Sta.

TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

REINFORCING STEEL SCHEDULE

Designed By J. W. KAMB	Drawn By E. B. SMALL
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
I.C.C. Info. ...\zJ228RSS.dgn	
D & K DWG NO. 11380	Sheet 15 of 20



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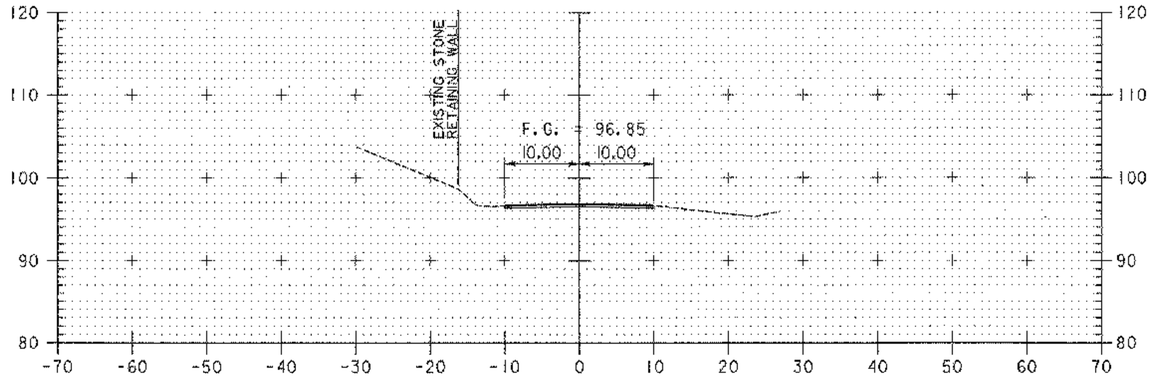

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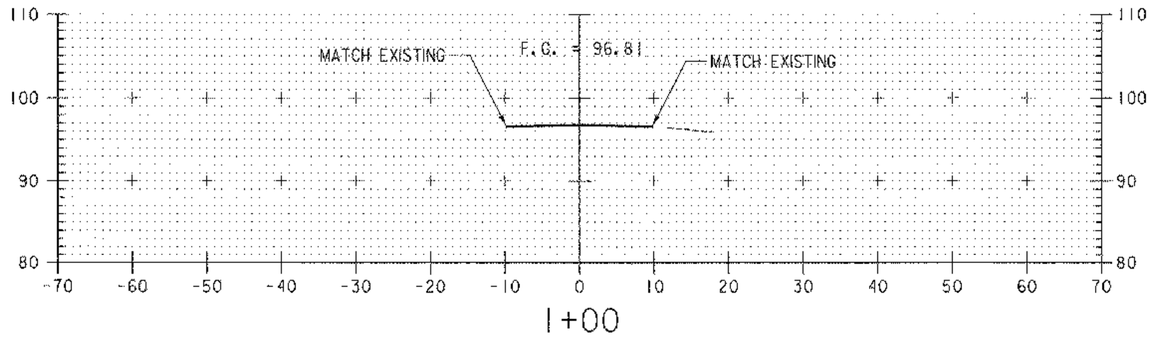
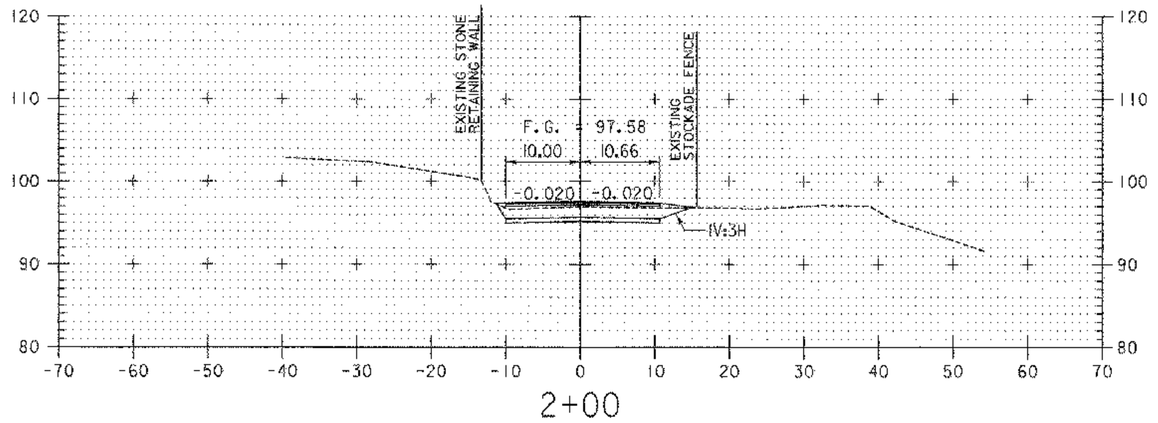
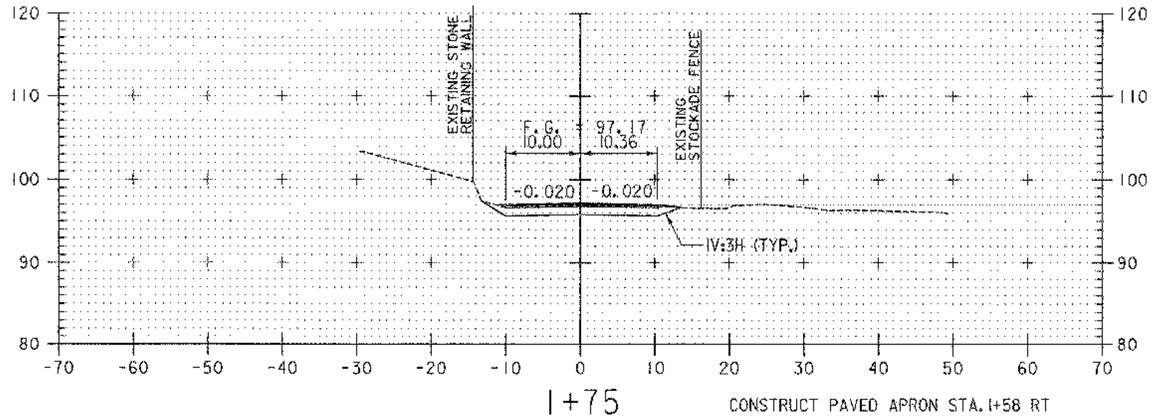


1+00

BEGIN APPROACH STA. 1+00.00



2+00



1+75

CONSTRUCT PAVED APRON STA. 1+58 RT

ROADWAY CROSS SECTIONS

SCALE 1" = 10'-0

10 0 10

DATUM

VERTICAL ASSUMED

HORIZONTAL ASSUMED

PLOTTED 02/03/2004

REVISIONS		
NO.	DESCRIPTION	BY & DATE

DuBois & King inc.

engineering planning management development

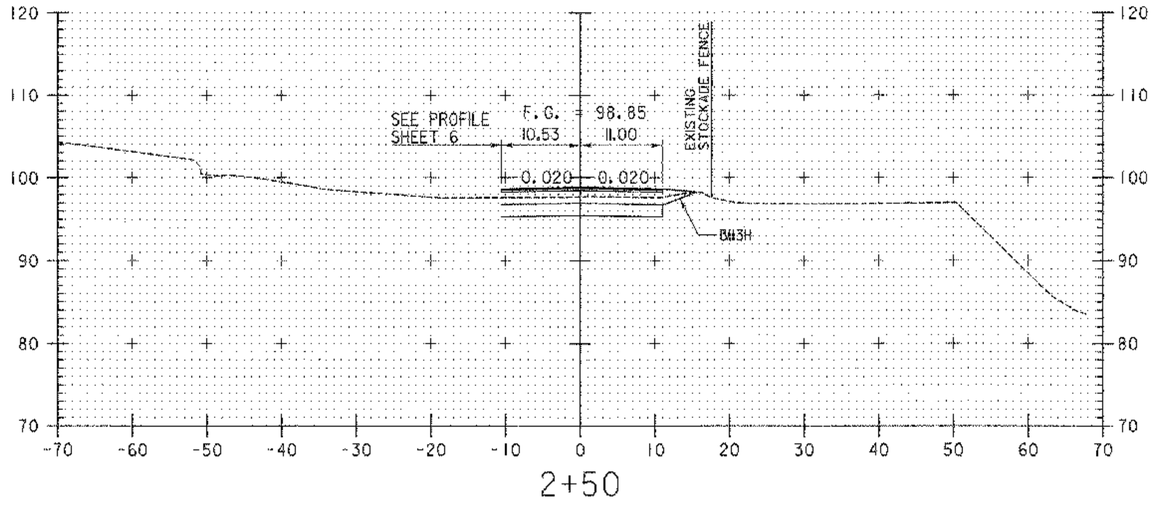
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO	Bridge No. 34
Highway No. 378	Log Sta. / Surv. Sta.

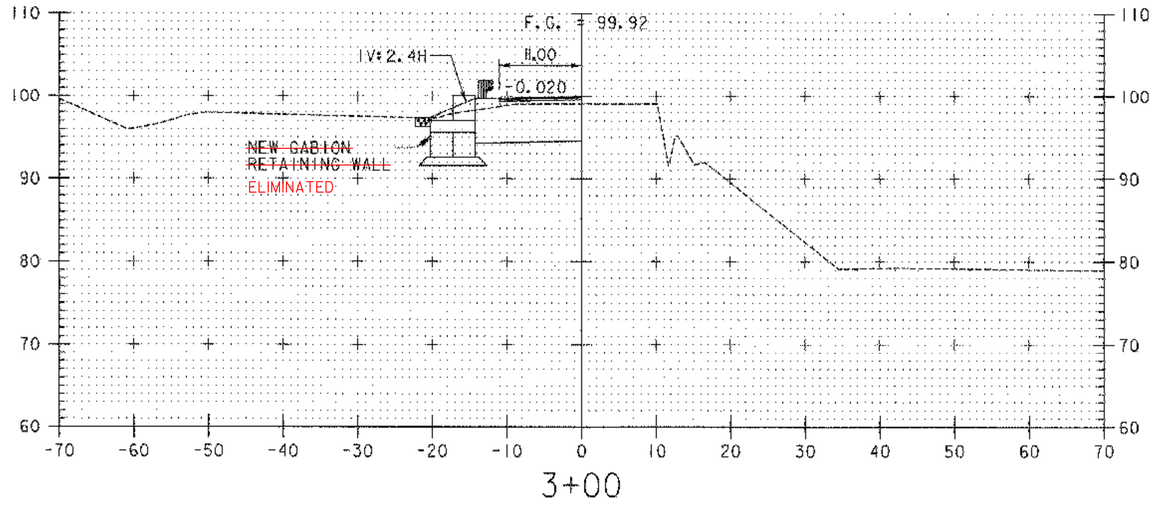
TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

ROADWAY CROSS SECTION

Designed By E. B. SMALL	Drawn By E. B. SMALL
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
I.G.C. Info. ...zj228xsl.dgn	
D & K DWG NO. 1138f	Sheet 16 of 20

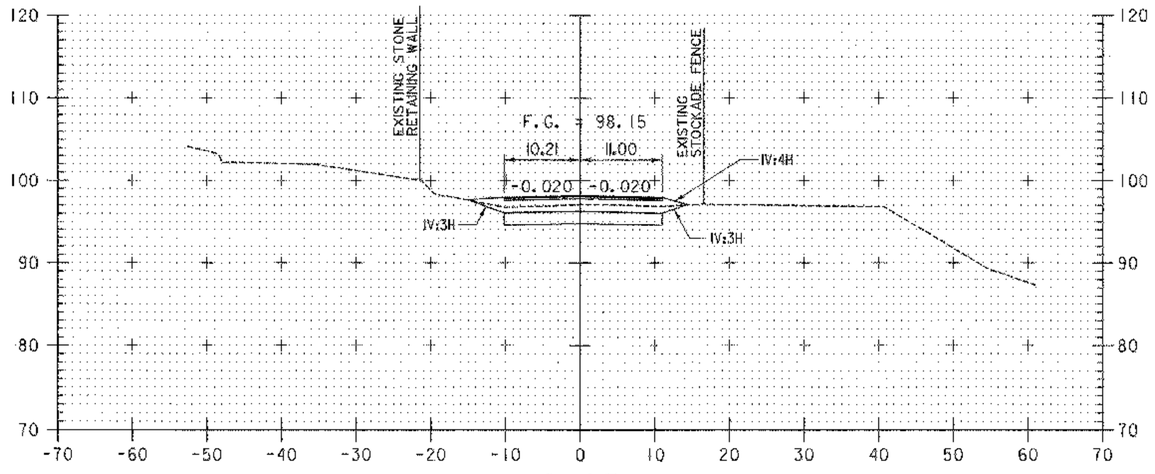


2+50



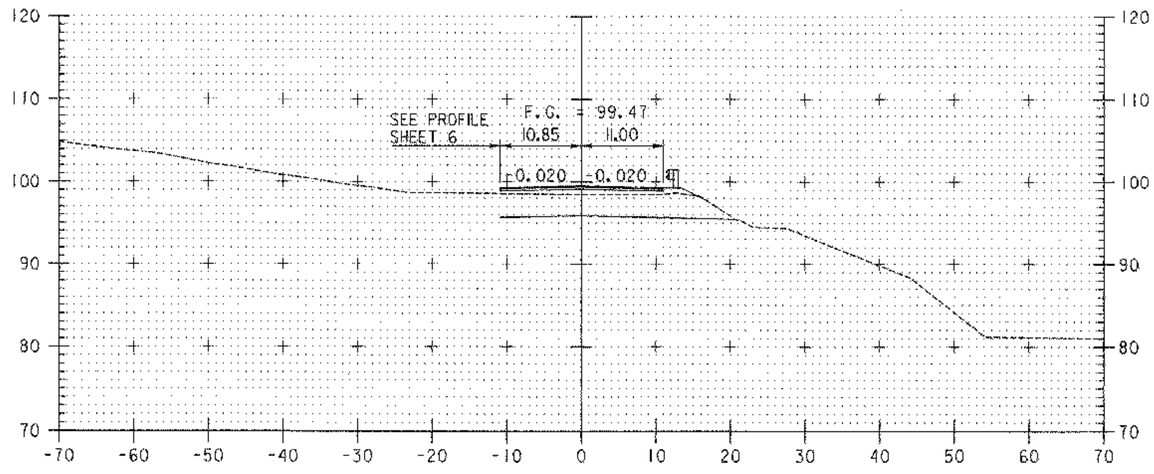
3+00

STA. 2+75.00 TO STA. 2+78.00 CONSTRUCT TRENCH
SEE CONSTRUCTION NOTE 9 ON SHEET 9



2+25

BEGIN PROJECT STA. ~~2+25.00~~ 1+50.00



2+75

INTERSECTION WITH
CROSBY ST. STA. 2+54.62 LT

ROADWAY CROSS SECTIONS
SCALE 1" = 10'-0
10 0 10

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

PLOTTED 02/13/2004

REVISIONS		
NO.	DESCRIPTION	BY & DATE

DuBois & King inc.
engineering planning management development

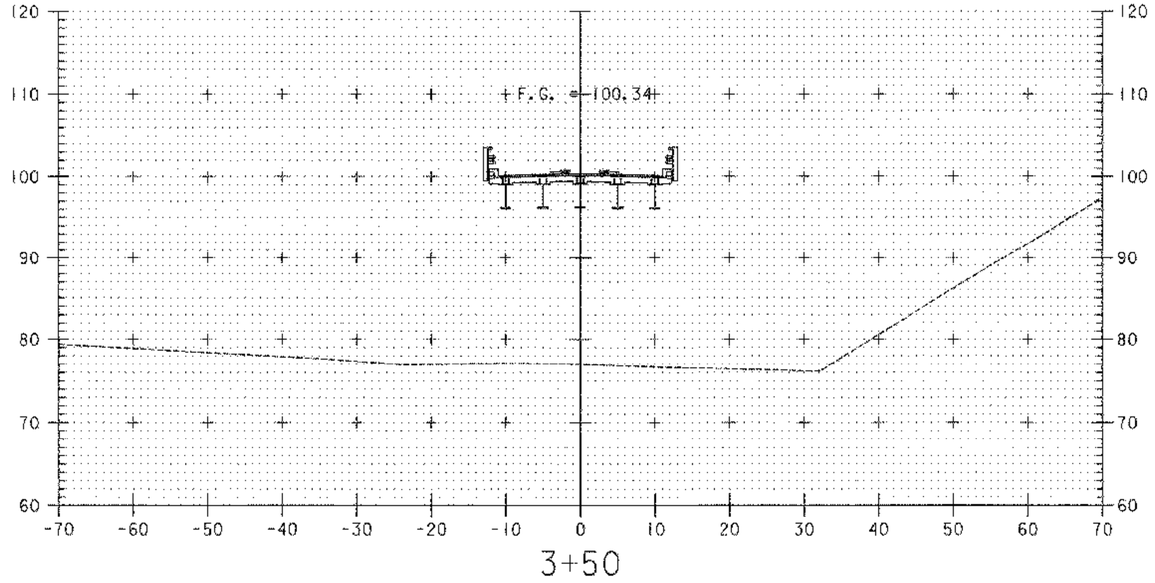
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO	Bridge No. 34
Highway No. 378	Log Sta. / Surv. Sta.

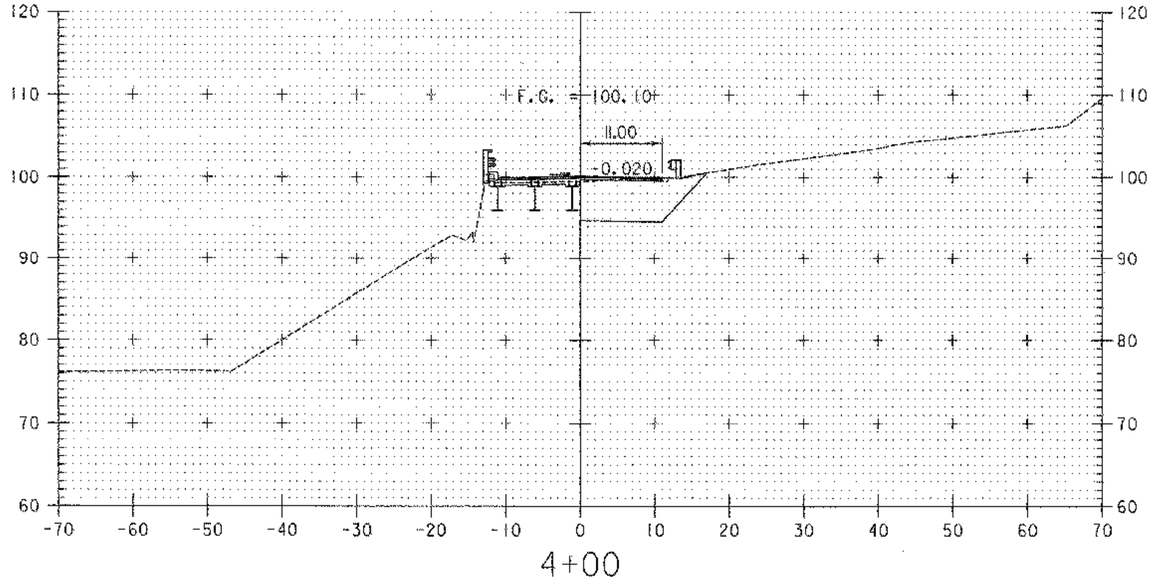
TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

ROADWAY CROSS SECTION

Designed By E. B. SMALL	Drawn By E. B. SMALL
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
I.G.C. Info. ...zJ228xsl.dgn	
D & K DWG NO. 1382	Sheet 17 of 20

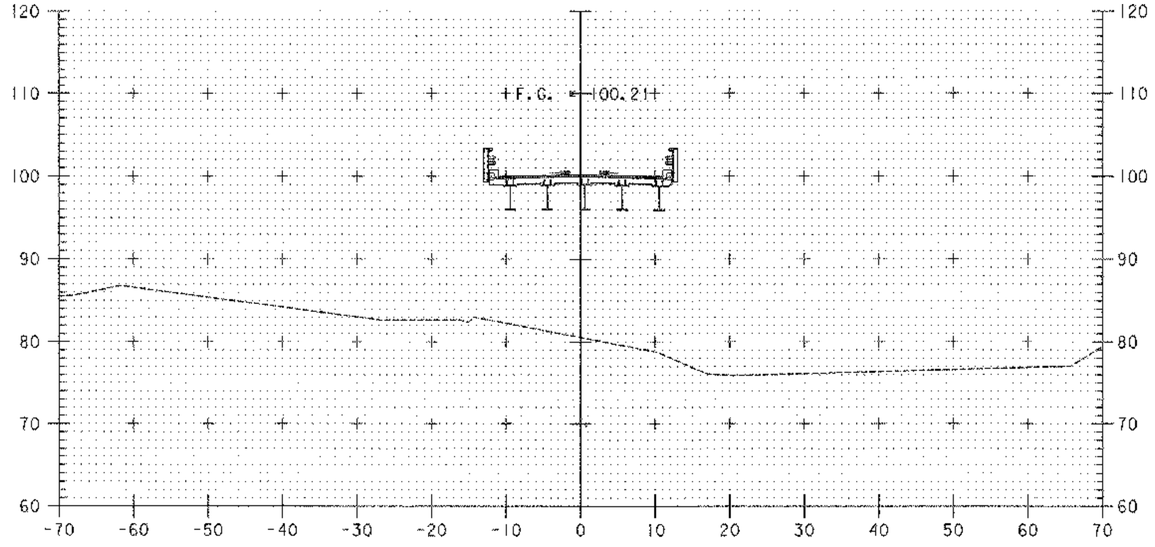


3+50



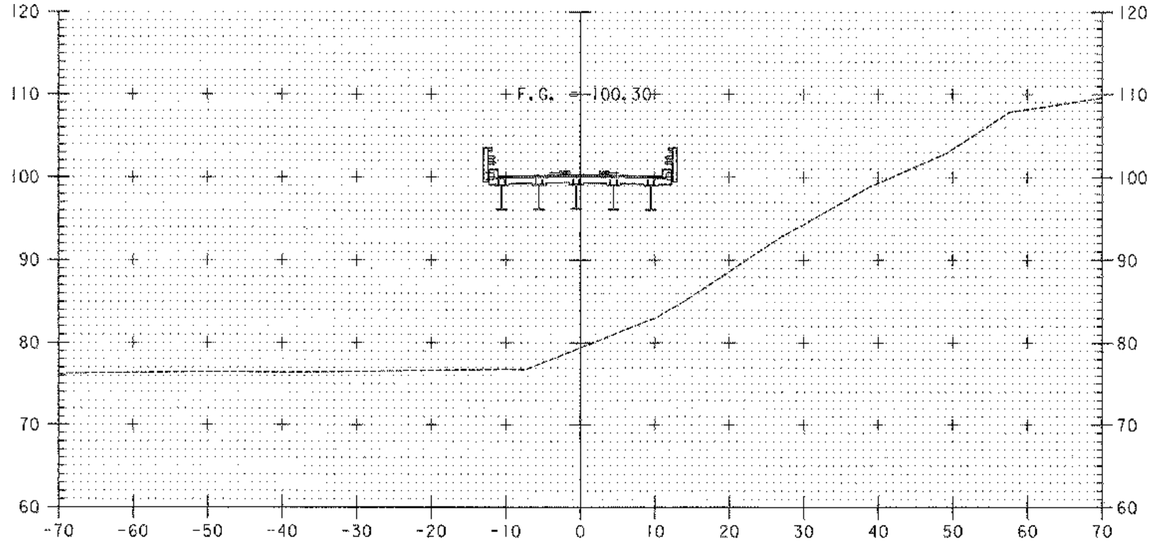
4+00

END BRIDGE STA. 3+99.00



3+25

BEGIN BRIDGE STA. 3+00.53



3+75

ROADWAY CROSS SECTIONS

SCALE 1" = 10'-0

10 0 10

DATUM

VERTICAL ASSUMED

HORIZONTAL ASSUMED

PLOTTED 02/03/2004

REVISIONS		
NO.	DESCRIPTION	BY & DATE

DuBois & King inc.

engineering planning management development

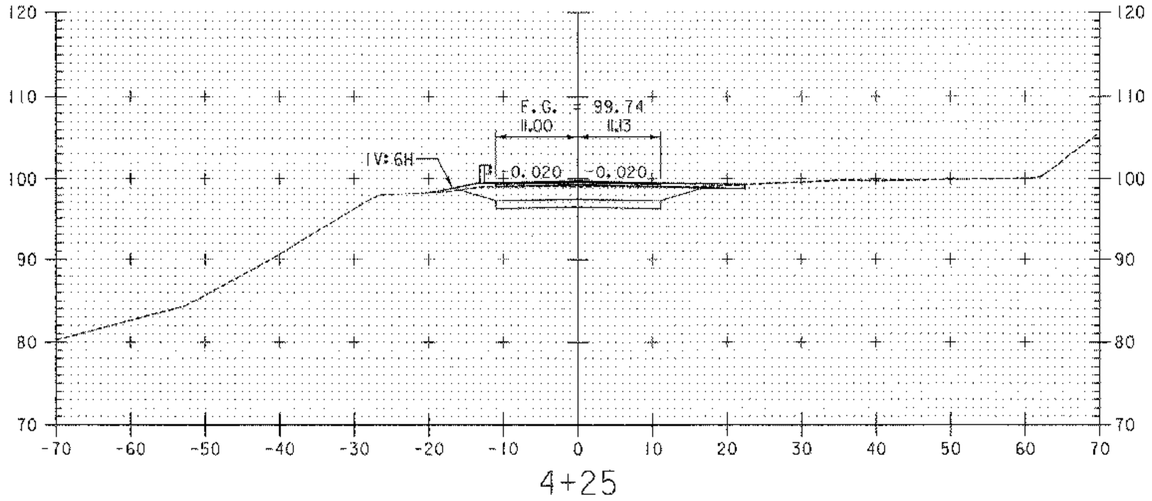
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO	Bridge No. 34
	Log Sta.
Highway No. 378	Surv. Sta.

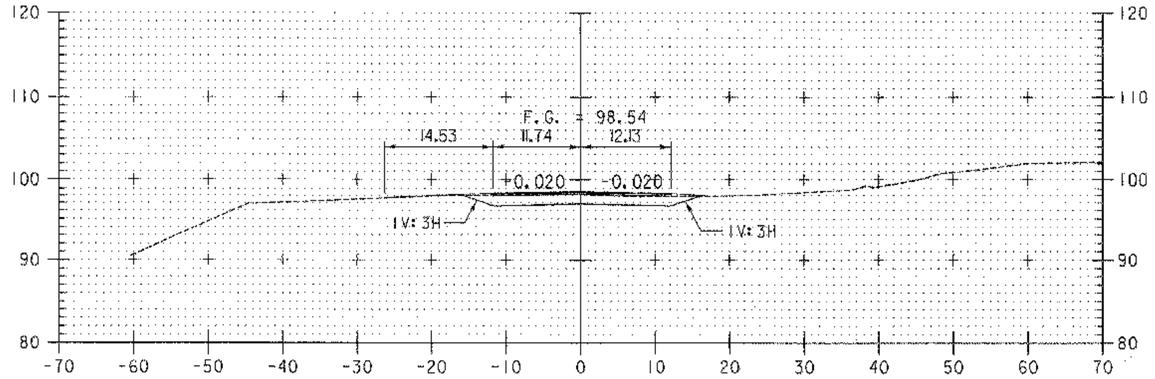
TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

ROADWAY CROSS SECTION

Designed By E. B. SMALL	Drawn By E. B. SMALL
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
I.G.C. Info. ...zj228xsi.dgn	
D & K DWG NO. 11383	Sheet 18 of 20

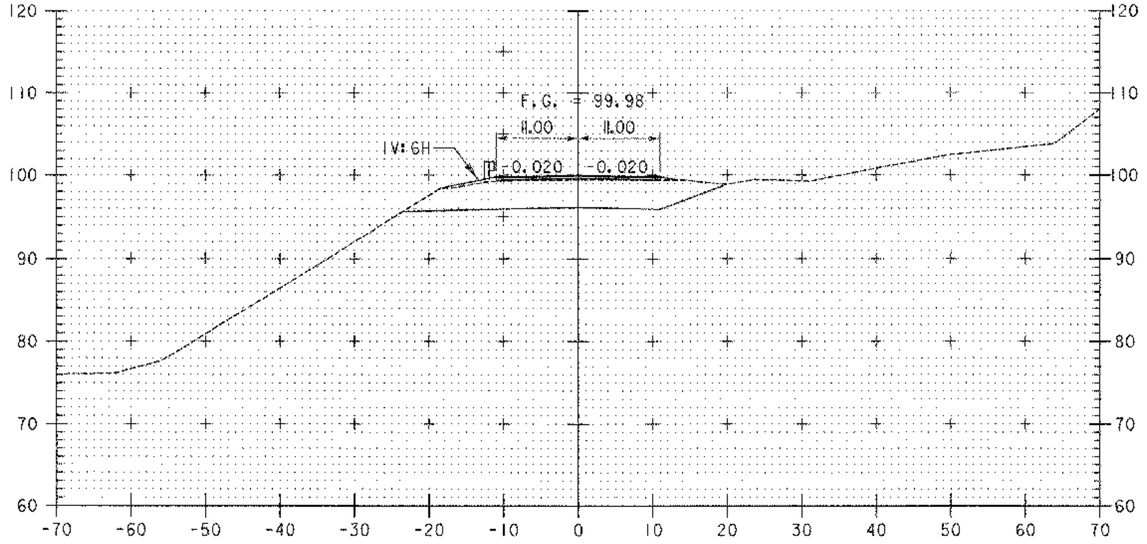


4+25



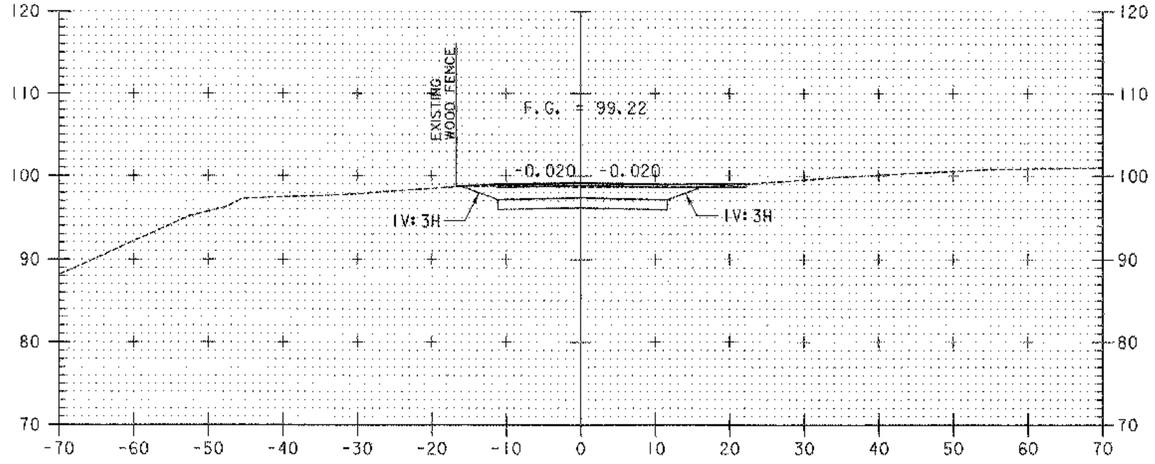
CONSTRUCT PAVED APRON STA. 4+75 LT

4+75



4+10

STA. 4+07.00 TO STA. 4+10.00 CONSTRUCT TRENCH
SEE CONSTRUCTION NOTE 9 ON SHEET 9



4+50

END PROJECT STA. ~~4+45.00~~ 4+49.00

INTERSECTION OF WHETSTONE DRIVE STA. 4+39.29 RT

ROADWAY CROSS SECTIONS
SCALE 1" = 10'-0
10 0 10

DATUM
VERTICAL ASSUMED
HORIZONTAL ASSUMED

PLOTTED 02/03/2004

REVISIONS		
NO.	DESCRIPTION	BY & DATE

DuBois & King inc.
engineering planning management development

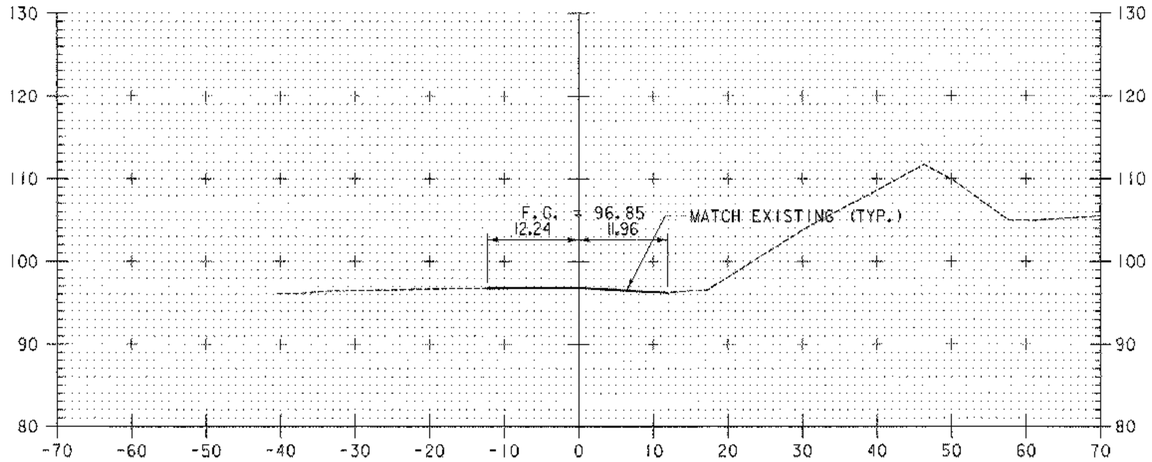
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO — Bridge No. 34
Highway No. 378 — Log Sta. / Surv. Sta.

TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

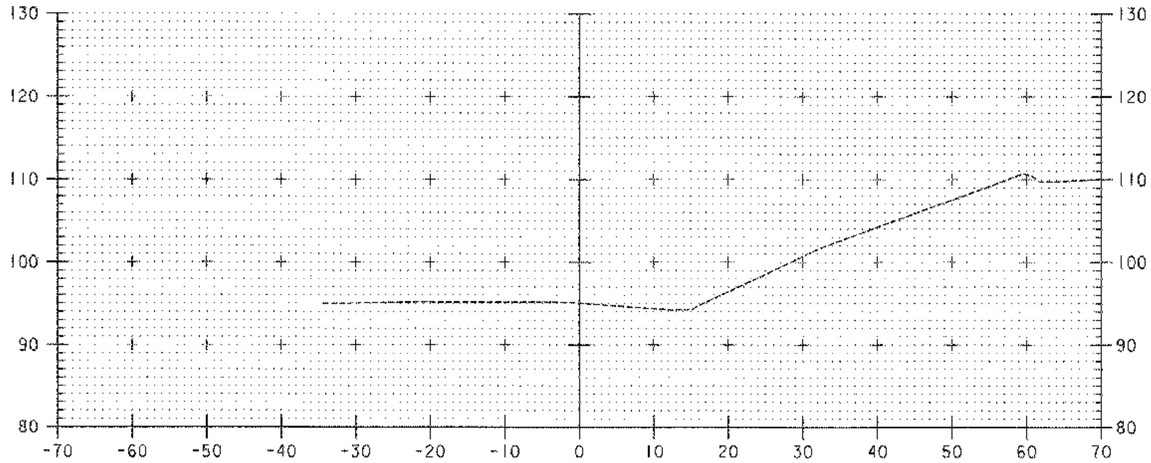
ROADWAY CROSS SECTION

Designed By E. B. SMALL — Drawn By E. B. SMALL
Checked By J. W. TUCKER — Date 04/01 — Bridge Design Supervisor J. W. TUCKER — Date 04/01
PROJECT BRATTLEBORO — PROJECT NO. BHF 2000(22)
I.G.C. Info. ...zj228xsl.dgn
D & K DWG NO. #384 — Sheet 19 of 20

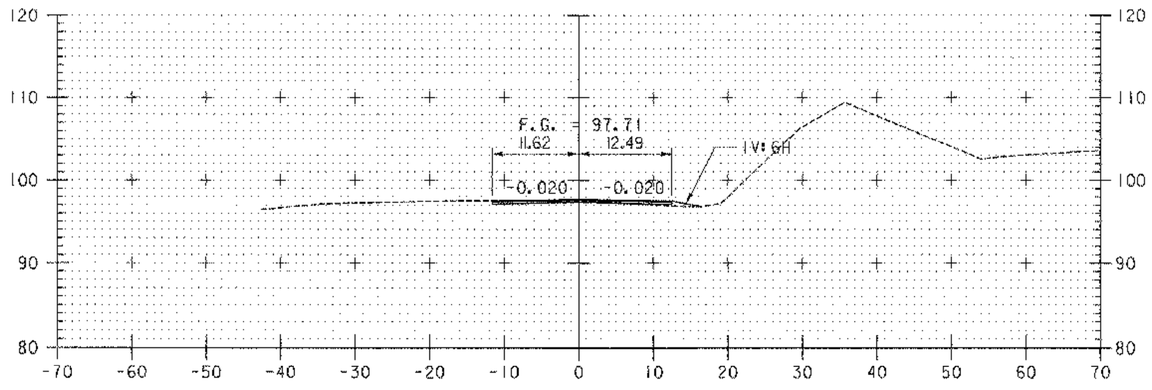


5+25

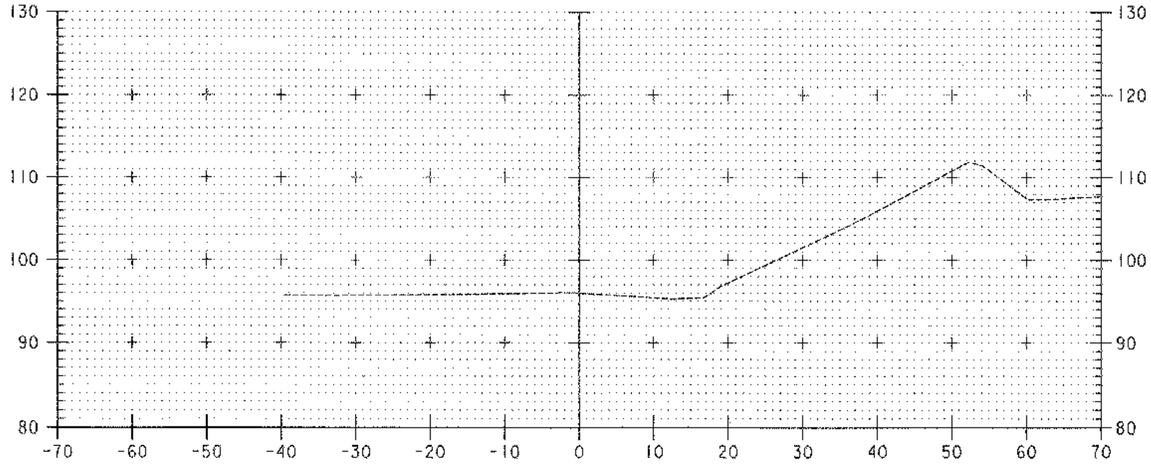
END APPROACH STA. 4+90.00 ~~5+25.00~~



5+75



5+00



5+50

ROADWAY CROSS SECTIONS

SCALE 1" = 10'-0

10 0 10

DATUM	
VERTICAL	ASSUMED
HORIZONTAL	ASSUMED

PLOTTED 02/03/2004

REVISIONS		
NO.	DESCRIPTION	BY & DATE

DuBois & King inc.

engineering planning management development

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRATTLEBORO	Bridge No. 34
Highway No. 378	Log Sta. / Surv. Sta.

TH 378 (WILLIAMS STREET) OVER WHETSTONE BROOK

ROADWAY CROSS SECTION

Designed By E. B. SMALL	Drawn By E. B. SMALL
Checked By J. W. TUCKER Date 04/01	Bridge Design Supervisor J. W. TUCKER Date 04/01
PROJECT BRATTLEBORO	PROJECT NO. BHF 2000(22)
L.G.C. Info. ...zj228xsl.dgn	
D & K DWG NO. 11385	Sheet 20 of 20

203.15 - Common Excavation (2+88 to 1+31)

Station	end area	ave. end area	distance	volumn
1+31	0	8	19	152
1+50	16	20	50	1000
2+00	24	19.5	50	975
2+50	15	15.5	38	589
2+88 (bk)	16			
2+85				

total = 2716 FT³ 2669
for 2-9-05
2,716 ÷ 27 = 100.6 CY
2669 98.9 ved 4-19-05

BK#1 P.14

301.15 - Subbase of Gravel (2+88 - 1+31)

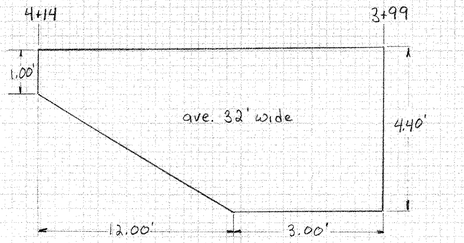
Station	end area	ave. end area	distance	volumn
1+31	0	1.5	19	28.5
1+50	3	13.5	50	675
2+00	24	21.5	50	1075
2+50	19	17.5	38	665 612.5
2+88 (bk)	16			
2+85				

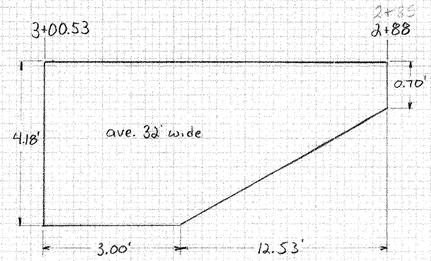
total = 2,443.5 FT³ 2391
for 2-9-05
2391 2,443.5 ÷ 27 = 90.5 CY
88.6 ved 4-19-05

BK#1 P.20

203.15 - Common Excavation (Roadway Side of Curtain Walls)

some dimensions MIF (averaged) for





Brattleboro BHF 2008(22)
Sheet # 1

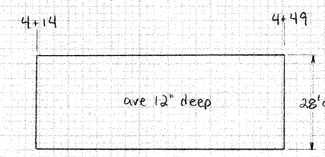
(1.00+4.40)/2 x 12.00 x 32	1,036.8
4.40 x 3.00 x 32	422.4
4.18 x 3.00 x 32	401.3
(4.18+0.70)/2 x 12.53 x 32	978.3

total = 2,838.8 FT³
for 2-9-05
2,838.8 ÷ 27 = 105.1 CY

BK#1 P.14
ved 4-19-05

203.15 - Common Excavation (4+14 to 4+49)

MIF for

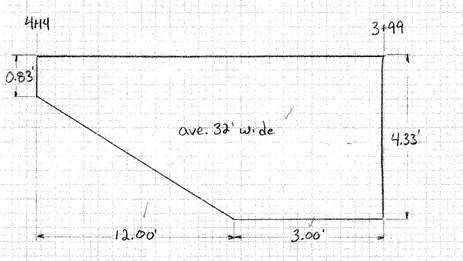


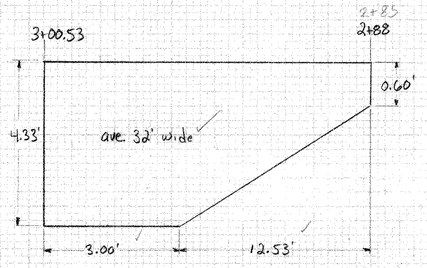
1.00 x 35 x 28 = 980 ÷ 27 = 36.3 CY for 2-9-05

BK#1 P.14 ved 4-18-05

301.15 - Subbase of Gravel (Roadway Side of Curtain Walls)

same dimensions MIF (averaged) for





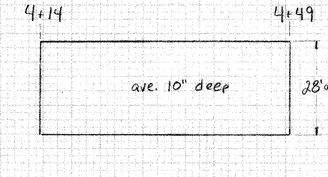
(0.83+4.33)/2 x 12.00 x 32	990.7
4.33 x 3.00 x 32	415.7
4.33 x 3.00 x 32	415.7
(4.33+0.60)/2 x 12.53 x 32	988.4

2,810.5 FT³
for 2-23-05
2,810.5 ÷ 27 = 104.1 CY
ved 4-18-05

BK#1 P.20

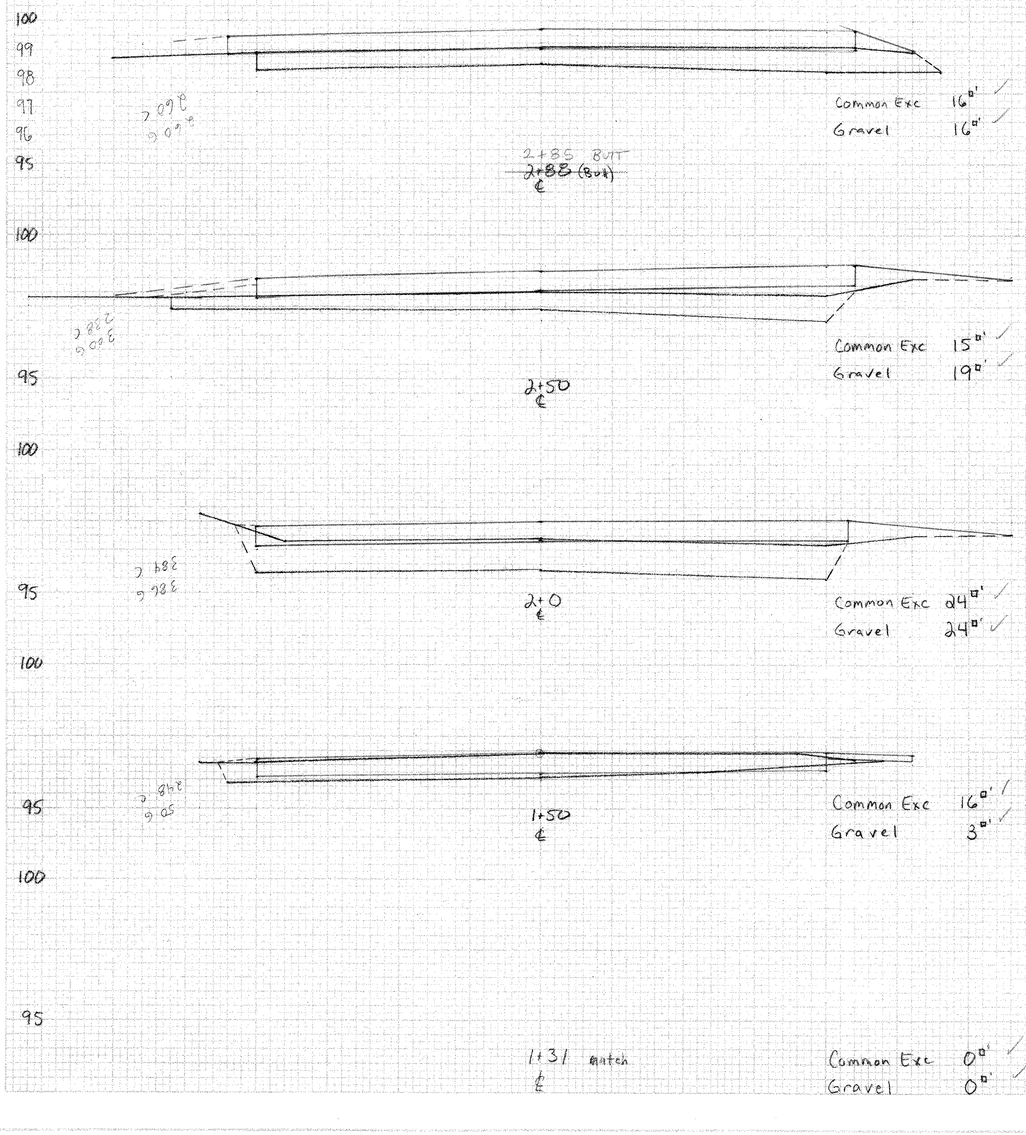
301.15 - Subbase of Gravel (4+14 to 4+49)

MIF for



0.83 x 35 x 28 = 813.4 ÷ 27 = 30.1 CY for 2-23-05
ved 4-18-05

BK#1 P.20

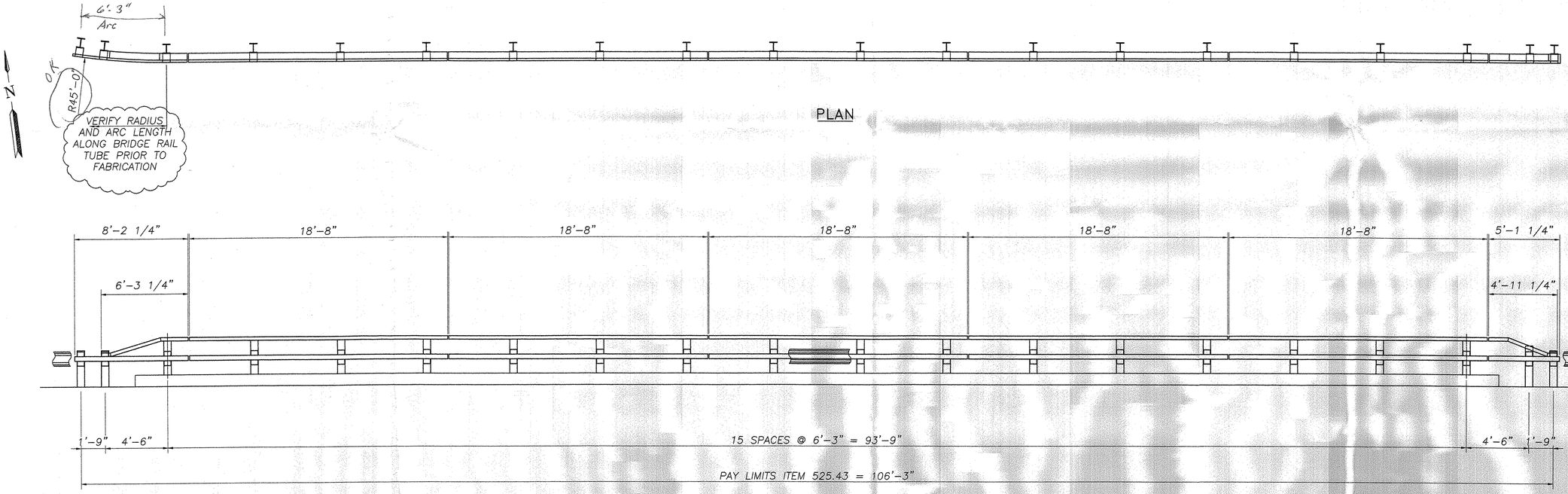


THE BILL OF MATERIALS WAS NOT CHECKED BY THE REVIEWER.

BILL OF MATERIAL (NORTH SIDE)				
Qty.	Description	Size/Shape	Length	Material
16	FASCIA MTD. POST	W8 x 24	4'-1"	A572 GR 50
3	DRIVEN POST	W8 x 24	6'-0"	A572 GR 50
1	DRIVEN POST	W8 x 24	6'-4"	A572 GR 50
8	10 GA.HDSB RAIL 12'-6" / 6'-3"	W-BEAM	12'-6"	AASHTO M180 B2
1	10 GA.HDSB RAIL 12'-6" / 6'-3" CURVED 45° RADIUS	W-BEAM	12'-6"	AASHTO M180 B2
5	HAND RAIL TUBE	TS 6 x 3 x 1/4"	18'-8"	A500 GR B
1	HAND RAIL DROP END	TS 6 x 3 x 1/4"	4'-11.25"	A500 GR B
1	HAND RAIL DROP END (PART. 45° CURVE)	TS 6 x 3 x 1/4"	6'-3.25"	A500 GR B
5	BRIDGE TUBING	TS 8 x 4 x 3/16"	18'-8"	A500 GR B
1	BRIDGE TUBING (PART. 45° CURVE)	TS 8 x 4 x 3/16"	8'-2.25"	A500 GR B
1	BRIDGE TUBING	TS 8 x 4 x 3/16"	5'-1.250"	A500 GR B
12	SPLICE PLATE	.750" x 5"	2'-7"	A572 GR 50
16	SHELF BRACKET	L5 x 3 1/2 x 3/8"	6.500"	A36
40	TUBE BLOCK TS 8x4x3/16"	TS 8 x 4 x 3/16"	6"	A500 GR B
20	SPECIAL PLATE WASHER	.250" x 1.750"	3"	A572 GR 50
6	SPLICE CHANNEL	C7 x 12.25	2'-7"	A572 GR 50
24	HEX BOLT W/HEAVY HEX NUT & FLAT WASHER	3/4"ø	4"	A307
20	HEX BOLT W/NUT & STD. WASHER	5/8"ø	10"	A307
16	HEX BOLT W/NUT & (2) STD. WASHERS	5/8"ø	4.500"	A307
41	HEX BOLT W/NUT & (2) STD. WASHER	5/8"ø	2"	A325
32	HEX BOLT W/NUT & STD. WASHER	5/8"ø	2"	A563
24	HEX BOLT W/STD. WASHER	5/8"ø	2"	A325
72	RD HEAD SPLICE BOLT W/NUT	5/8"ø	1.250"	A307
20	HEX BOLT W/NUT & (2) STD. WASHERS	5/8"ø	1.3"	A325
* 16	U-BOLT ANCH. W/(4)NUTS&(2)STD. WASHERS	1"ø	- - -	A449
* 64	PLATE WASHER	.250" x 2"	5"	A36

* - PROVIDED BY OTHERS - NOT SUPPLIED BY HIGHWAY SAFETY CORP.

TOTAL ITEM 525.43 (BOTH SIDES OF BRIDGE) = 212.5'



PLAN

ELEVATION - NORTH BRIDGE RAIL
FACING NORTH FROM ℄ OF ROADWAY

REVISIONS		
No.	Remarks	Date
0	Initial submittal	5/21/04

ACCEPTED
ACCEPTED AS CORRECTED ✓
REJECTED, REVISE AND RESUBMIT
REJECTED, UNACCEPTABLE
Checking is only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. The Engineer assumes no liability for errors or omissions that may be contained herein. The Contractor, by approving and submitting these documents, verifies their accuracy as indicated on the Contractor's Shop Drawing Stamp.
Date 6/16/04 By DUSC LAND KING

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.43 STEEL BRIDGE RAIL - HDSB W/HANDRAIL
TOWN OF BRATTLEBORO, WINDHAM COUNTY
TH 378 (WILLIAMS ST.) OVER WHESTONE BROOK
BRIDGE No. 34
PROJECT No. BHF 2000(22)

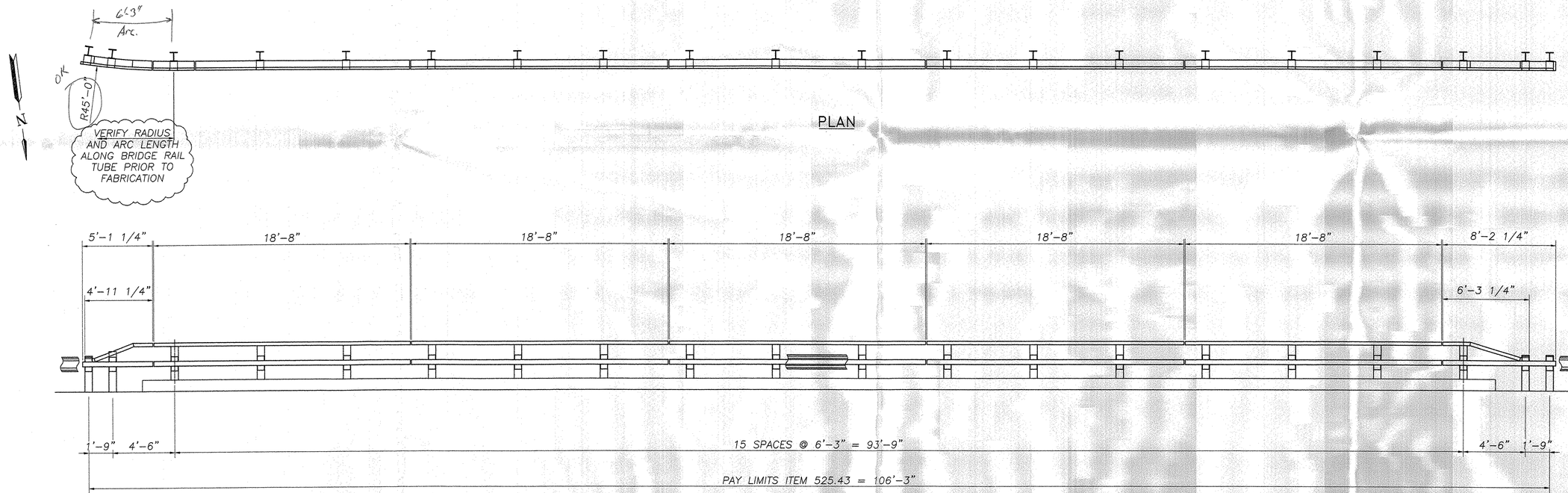
GENERAL CONTRACTOR
SUB CONTRACTOR F.R. LAFAYETTE, INC.

DRAWN	MHM
CHECKED	
DATE	5/21/04
SCALE	NONE
HSC REFERENCE NO.	1448
SIZE	D
REVISION	0
SHEET NO.	1 of 3

022

BILL OF MATERIAL (NORTH SIDE)				
Qty.	Description	Size/Shape	Length	Material
16	FASCIA MTD. POST	WB x 24	4'-1"	A572 GR 50
3	DRIVEN POST	WB x 24	6'-0"	A572 GR 50
1	DRIVEN POST	WB x 24	6'-4"	A572 GR 50
8	10 GA.HDSB RAIL 12'-6" / 6'-3"	W-BEAM	12'-6"	AASHTO M180 B2
1	10 GA.HDSB RAIL 12'-6" / 6'-3" CURVED 45° RADIUS	W-BEAM	12'-6"	AASHTO M180 B2
5	HAND RAIL TUBE	TS 6 x 3 x 1/4"	18'-8"	A500 GR B
1	HAND RAIL DROP END (PART. 45° CURVE)	TS 6 x 3 x 1/4"	4'-11.25"	A500 GR B
1	HAND RAIL DROP END	TS 6 x 3 x 1/4"	6'-3.25"	A500 GR B
5	BRIDGE TUBING	TS 8 x 4 x 3/16"	18'-8"	A500 GR B
1	BRIDGE TUBING	TS 8 x 4 x 3/16"	8'-2.25"	A500 GR B
1	BRIDGE TUBING (PART. 45° CURVE)	TS 8 x 4 x 3/16"	5'-1.250"	A500 GR B
12	SPLICE PLATE	.750" x 5"	2'-7"	A572 GR 50
16	SHELF BRACKET	L5 x 3 1/2 x 3/8"	6.500"	A36
40	TUBE BLOCK TS 8x4x3/16"	TS 8 x 4 x 3/16"	6"	A500 GR B
20	SPECIAL PLATE WASHER	.250" x 1.750"	3"	A572 GR 50
6	SPLICE CHANNEL	C7 x 12.25	2'-7"	A572 GR 50
24	HEX BOLT W/HEAVY HEX NUT & FLAT WASHER	3/4"ø	4"	A307
20	HEX BOLT W/NUT & STD. WASHER	5/8"ø	10"	A307
16	HEX BOLT W/NUT & (2) STD. WASHERS	5/8"ø	4.500"	A307
41	HEX BOLT W/NUT & (2) STD. WASHER	5/8"ø	2"	A325
32	HEX BOLT W/NUT & STD. WASHER	5/8"ø	2"	A563
24	HEX BOLT W/STD. WASHER	5/8"ø	2"	A325
72	RD HEAD SPLICE BOLT W/NUT	5/8"ø	1.250"	A307
20	HEX BOLT W/NUT & (2) STD. WASHERS	5/8"ø	13"	A325
* 16	U-BOLT ANCH. W/(4)NUTS&(2)STD. WASHERS	1"ø	- - -	A449
* 64	PLATE WASHER	.250" x 2"	5"	A36

* - PROVIDED BY OTHERS - NOT SUPPLIED BY HIGHWAY SAFETY CORP.



PLAN

ELEVATION - SOUTH BRIDGE RAIL
FACING SOUTH FROM ℄ OF ROADWAY

REVISIONS		
No.	Remarks	Date
0	Initial submittal	5/28/04

ACCEPTED
ACCEPTED AS CORRECTED ✓
REJECTED, REVISE AND RESUBMIT
REJECTED, UNACCEPTABLE
Checking is only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. The Engineer assumes no liability for errors or omissions that may be contained herein. The Contractor, by approving and submitting these documents, verifies their accuracy as stipulated on the Contractor's Shop Drawing Stamp.
Date 6/16/04 By

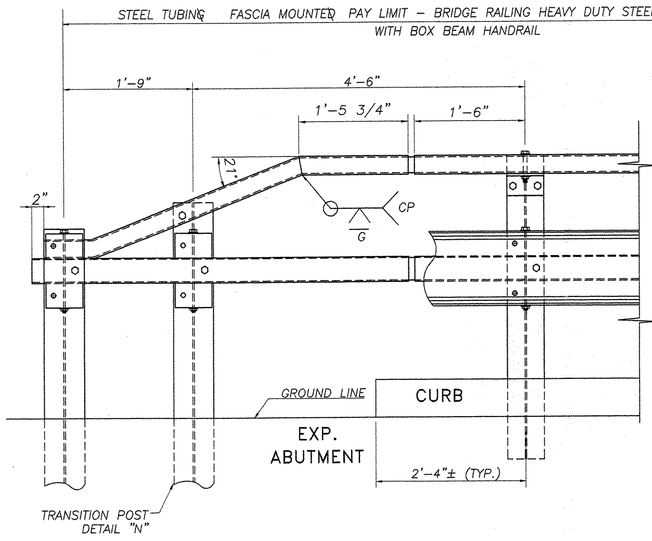
HIGHWAY SAFETY CORP.
GLASTONBURY, CT

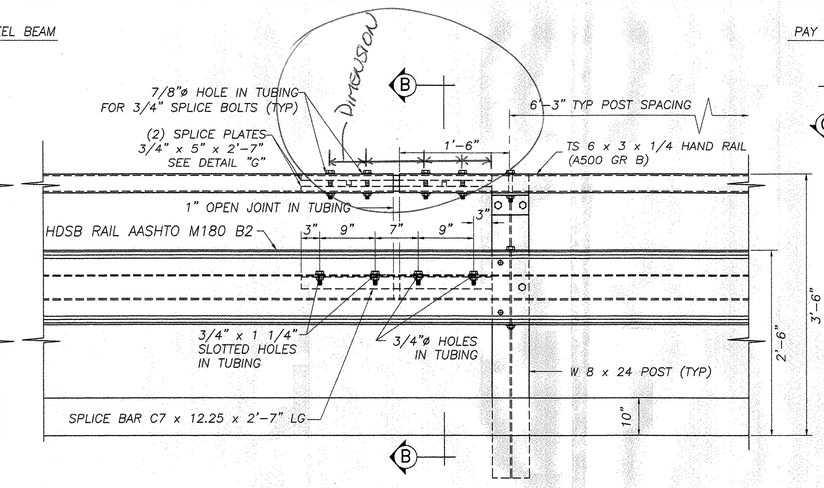
ITEM 525.43 STEEL BRIDGE RAIL - HDSB W/HANDRAIL
TOWN OF BRATTLEBORO, WINDHAM COUNTY
TH 378 (WILLIAMS ST.) OVER WHESTONE BROOK
BRIDGE No. 34
PROJECT No. BHF 2000(22)

DRAWN	MHM
CHECKED	
DATE	5/21/04
SCALE	NONE
HSC REFERENCE NO.	1448
SIZE	D
REVISION	0
SHEET NO.	2 of 3

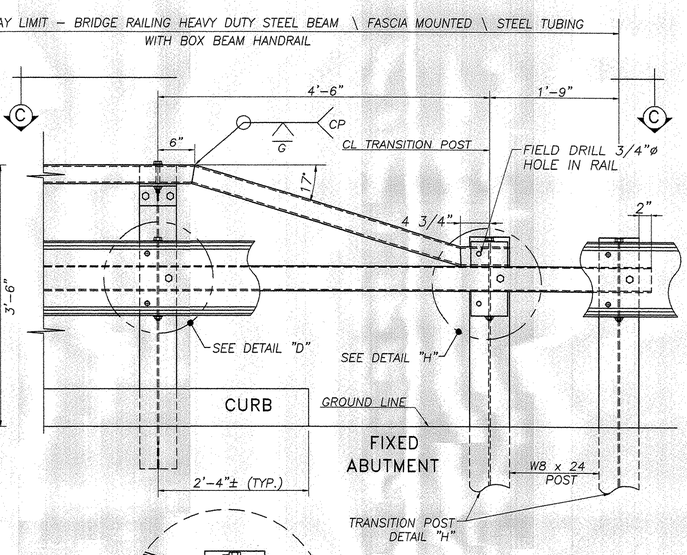
GENERAL CONTRACTOR
SUB CONTRACTOR F.R. LAFAYETTE, INC.

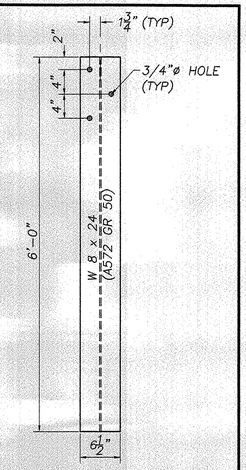
023



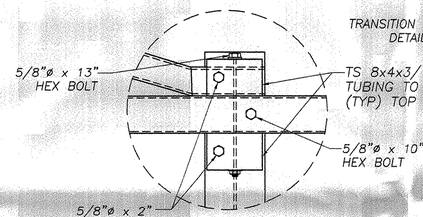


RAILING ELEVATION VIEW
(SHOWN LOOKING (N) FROM ℄ OF ROADWAY)

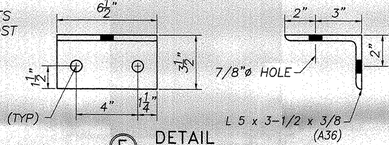




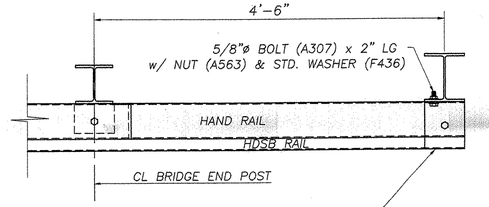
DETAIL "H"
TRANSITION POST
W8x24 (A572 GR 50)



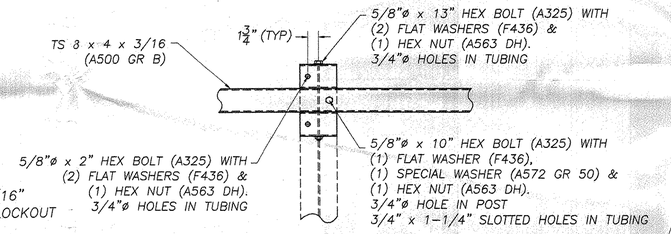
DETAIL "H"



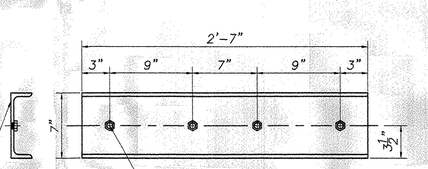
E DETAIL
SHELF BRACKET

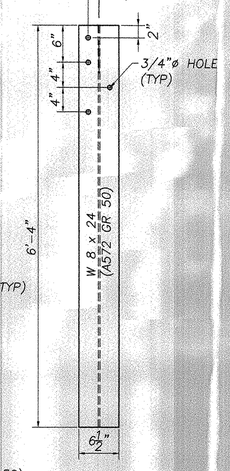


C SECTION

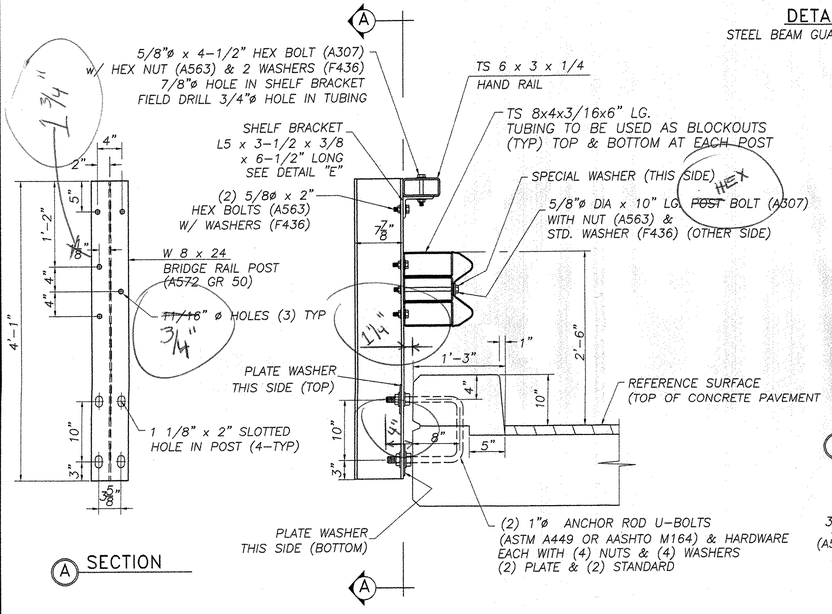


DETAIL "D"
STEEL BEAM GUARD RAIL NOT SHOWN



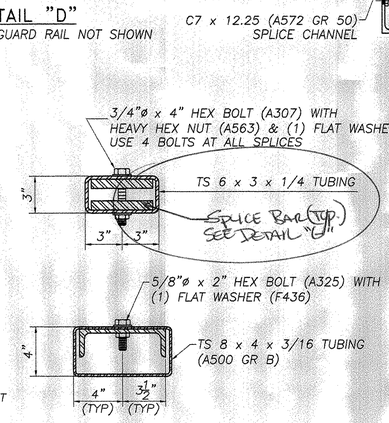


DETAIL "N"
TRANSITION POST
W8x24 (A572 GR 50)

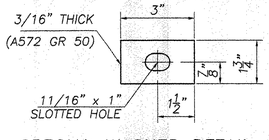


A SECTION

FASCIA MOUNTED POST WITH CURB
W 8 x 24 (A572 GR 50)

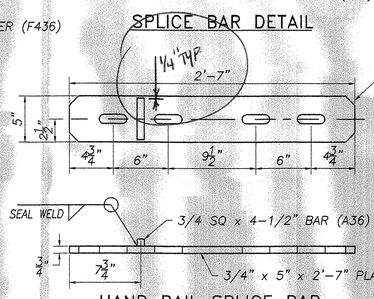


B PARTIAL SECTION
SHOWING HAND RAIL TUBE, BRIDGE RAIL TUBE & SPLICE BARS



SPECIAL WASHER DETAIL

SPLICE BAR DETAIL



HAND RAIL SPLICE BAR
DETAIL "G"

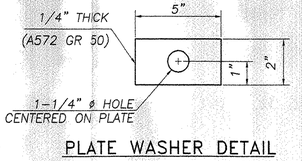


PLATE WASHER DETAIL

REVISIONS		
No.	Remarks	Date
0	Initial submittal	5/21/04

ACCEPTED
ACCEPTED AS CORRECTED
REJECTED, REVISE AND RESUBMIT
REJECTED, UNACCEPTABLE
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DuBOIS AND KING
Date 6/16/04 By

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.43 STEEL BRIDGE RAIL – HDSB W/HANDRAIL
TOWN OF BRATTLEBORO, WINDHAM COUNTY
TH 378 (WILLIAMS ST.) OVER WHESTONE BROOK
BRIDGE No. 34
PROJECT No. BHF 2000(22)

DRAWN	MHM
CHECKED	
DATE	5/21/04
SCALE	NONE
HSC REFERENCE NO.	1448
SIZE	D
REVISION	0
SHEET NO.	3 of 3

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

GENERAL ERECTION NOTES

1. Heavy duty steel beam guard rail shall conform to VT. specification 732. AASHTO M180 B2
2. Structural steel tubing shall conform to VT. specification 732. ASTM A500 gr B
3. Anchor bolts, nuts and washers shall be galvanized in accordance with AASHTO M 232 and shall conform to VT. specification 714 unless otherwise noted.
4. Bridge rail posts, special washers, splice bars and plate washers shall conform to AASHTO M 223 / M 223M and shall be galvanized after fabrication in accordance with AASHTO M 111. Prior to galvanizing all corners and edges of steel plates, shapes, etc., shall be ground to a 1/16" radius.
5. See standard drawing G–1 and G–1d for additional details concerning guard rail.
6. See standard drawing SB–R6–82 for approach rail details and for information relative to schedule I and schedule II. All approach rail shall be heavy duty steel beam guard rail. Also see Std. Dwg. SB–R6–82 for handrail details (except end details) if hand rail is required.
7. All posts shall be set normal to grade.
8. Splices for the steel beam guard rail shall lap in the direction of traffic.
9. See Standard drawing G–1 for details of delineators. A delineator shall be located at every fifth post. Payment shall be subsidiary to other items.
10. A railing joint splice shall be provided at each superstructure expansion joint.
11. All field cut or drilled areas shall be coated with zinc rich paint.
12. For radii less than 950 feet, the steel tubing shall be shop bent to fit the applicable curve.
13. The drop–weight tear test in section 732 shall not apply to the structural tubing on this standard.
14. All bolts and related hardware shall conform to AASHTO M164 type 1 bolts, hot dipped or mechanically galvanized per specification.

024