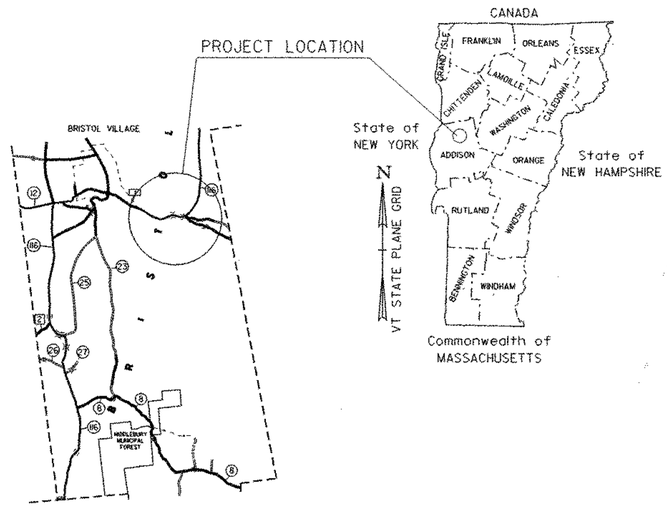
STATE OF VERMONT
AGENCY OF TRANSPORTATION



TOWN OF BRISTOL
COUNTY OF ADDISON
VT ROUTE 116 (MINOR ARTERIAL)

PROJECT LOCATION:
BEGINNING AT A POINT ON VT. 116 APPROXIMATELY 12.6 KILOMETERS NORTHERLY OF THE MIDDLEBURY-BRISTOL TOWN LINE AND EXTENDING NORTHERLY 235 METERS.

LENGTH OF ROADWAY	191.0 M
LENGTH OF BRIDGE	44.0 M
LENGTH OF PROJECT	235 M

PROJECT DESCRIPTION:
WORK TO BE PERFORMED UNDER THIS CONTRACT INCLUDES THE RECONSTRUCTION OF A PORTION OF VT. 116, REPLACEMENT OF BRIDGE 10, GRADING, DRAINAGE, SUBBASE, LIGHTING, PAVING, STRIPING, AND NECESSARY APPROACH WORK.

RECORD PLANS

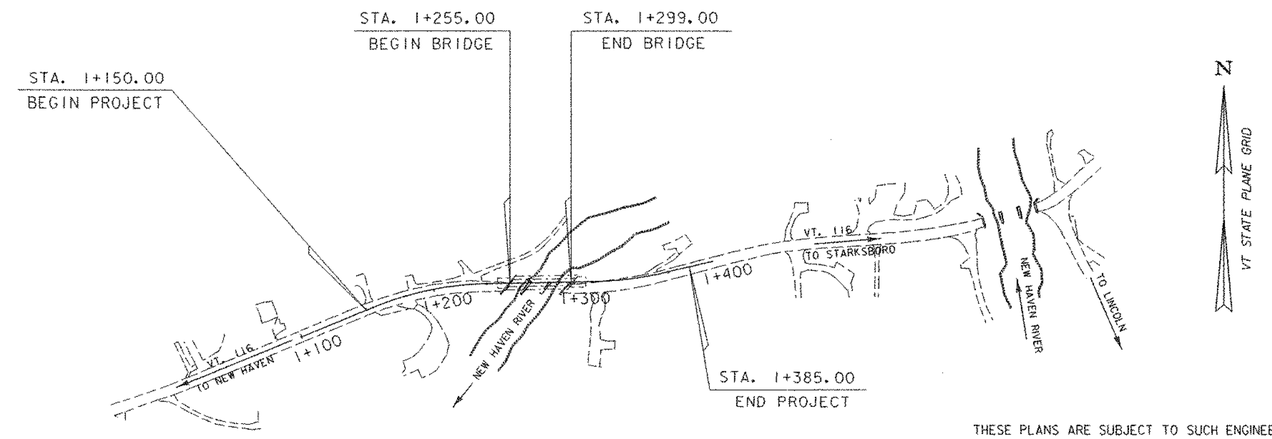
CONTRACTOR: BECK & BELLUCCI
RESIDENT ENGINEER: DALE NORTON
CONSTRUCTION BEGAN: NOV. 2, 1999
CONSTRUCTION COMPLETE: OCT. 2, 2000
RECORD PLANS BY: D. NORTON & N. GARBACIK

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

BY Dale R. Norton RESIDENT ENGINEER

DATE 21 Feb, 2006

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.



0 100 200
SCALE IN METERS

CONVENTIONAL SIGNS

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

DATUM

VERTICAL NAVD 88
HORIZONTAL NAD83(92)

Metric

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

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 1995, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON AUGUST 21, 1995 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

/str2/78f188/df188ti.dgn/df188tit.1

APPROVED _____ DATE 7/6/07
DIRECTOR OF PROJECT DEVELOPMENT

PROJECT MANAGER: ALEC PORTALUPI

PROJECT
BRISTOL
ER 021-1(13)

SHEET 1 OF 67 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

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51	Reinforcing Steel Schedule
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Standards List

B-5M	SLOPE GRADING, EMBANKMENTS	6/13/97
B-17M	TURNOUTS	6/13/97
B-71M	RESIDENTIAL & COMMERCIAL DRIVES	6/13/97
C-1M	CAST IN PLACE CONCRETE CURB	6/13/97
D-2M	UNDERDRAIN & CARRIER PIPE DETAILS	6/13/97
D-3M	TREATED GUTTERS	6/13/97
D-4M	FLUSHING BASINS, PIPE ELBOWS	6/13/97
D-6M	RCDI W/GRATE (DITCHES)	6/13/97
D-8M	RCDI W/ PRECAST COVER & GRATE	6/13/97
D-9M	RCDI TOPS	6/13/97
D-15M	CAST IRON GRATE W/FRAME, TYPE E	6/13/97
D-20M	HIGHWAY CROSSING FOR GROUND UTILITY	6/13/97
E-100M	CONSTRUCTION APPROACH SIGNS	6/13/97
E-101M	CONSTRUCTION SIGN DETAILS	6/13/97
E-102M	CONSTRUCTION SIGN DETAILS	6/13/97
E-102AM	CONSTRUCTION SIGN DETAILS	6/13/97
E-103M	TRAFFIC CONTROL DETAILS	9/24/98
E-106M	TRAFFIC CONTROL DETAILS	6/13/97
E-107M	DELINEATION & BARRICADES	6/13/97
E-107AM	BREAKAWAY BARRICADE DETAILS	6/13/97
E-108M	WORK ZONE LONGITUDINAL DROP OFFS	6/13/97
E-121M	STANDARD SIGN PLACEMENT	6/13/97
E-134M	BRIDGE NUMBER PLAQUE	6/13/97
E-160M	FLANGED CHANNEL STEEL SIGN POST	6/13/97
E-163M	TUBULAR STEEL SIGN POST	6/13/97
E-173M	PULL BOXES & JUNCTION BOXES	6/13/97
E-175M	POWER DROP STANCHIONS	6/13/97
E-180AM	STREET LIGHTING DETAILS	6/13/97
E-180BM	STREET LIGHTING DETAILS	6/13/97
E-181M	BRIDGE MOUNTING DETAILS	6/13/97
E-192M	PAVEMENT MARKING DETAILS	12/28/98
E-193M	PAVEMENT MARKING DETAILS	6/13/97
G-4M	MARKER POSTS	6/13/97
G-19M	GRADING PLANS FOR END OF GUARD RAIL	10/21/98
J-1M	BOUNDARY MARKERS	6/13/97
J-3M	MAILBOX SUPPORT DETAILS	6/13/97
T-1M	TEMPORARY EROSION CONTROL DETAILS	6/13/97
T-2M	TEMPORARY EROSION CONTROL DETAILS	6/13/97

FINAL HYDRAULICS REPORT

NOT Metric

HYDROLOGIC DATA

DRAINAGE AREA= 175 SQUARE KM.
CHARACTER OF TERRAIN: ROLLING HILLS TO MOUNTAINOUS
CHARACTER & TYPE OF STREAM: STRAIGHT, SEMI-ALLUVIAL AND PROBABLY INCISED

NATURE OF STREAMBED: GRAVEL, COBBLES AND BOULDERS

Q2.33= 85 CMS Q50= 240 CMS
Q10= 140 CMS Q100= 280 CMS
Q25= 200 CMS Q500= 480 CMS

DATE OF FLOOD OF RECORD: UNKNOWN
WATER SURFACE ELEV: UNKNOWN ESTIMATED DISCHARGE: UNKNOWN
NATURAL STREAM VELOCITY @ Q50= 4.2 MPS
ICE CONDITIONS: SLIGHT DEBRIS: SLIGHT
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 1% HEADWATERS UNIFORM THROUGHOUT WATERSHED X
IMMEDIATELY ABOVE SITE

EXISTING STRUCTURE

STRUCTURE TYPE: 3 SPAN CONCRETE T-BEAM BRIDGE* YEAR BUILT: 1927
CLEAR SPAN (NORMAL TO STREAM): 29.9 m
VERTICAL CLEARANCE ABOVE STREAMBED: 5.0 m
WATERWAY OF FULL OPENING: 112 SQ m
DISPOSITION OF STRUCTURE: COLLAPSED IN FLOOD OF JUNE 1998, AND HAS BEEN PARTIALLY REMOVED. REMOVE REMAINING PORTIONS AS SHOWN ON PLANS.
TYPE OF MATERIAL UNDER SUBSTRUCTURE: UNKNOWN

WATER SURFACE ELEV. @ Q2.33= 174.2 VELOCITY= 2.8 MPS
Q10= 174.7 VELOCITY= 3.5 MPS
Q25= 175.1 VELOCITY= 4.0 MPS
Q50= 175.3 VELOCITY= 4.2 MPS
Q100= 175.6 VELOCITY= 4.3 MPS

LONG TERM STREAM BED CHANGES: CHANNEL SCOURED OR DEGRADED 1 m TO 2 m AVERAGE DURING THE FLOOD OF JUNE, 1998.
IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: ABOVE Q100
RELIEF ELEVATION: 177.0 DISCHARGE OVER ROAD @ Q100: 0

UPSTREAM STRUCTURE: TOWN: BRISTOL DISTANCE: 0.8 km
HIGHWAY NO: VT. 116 STRUCTURE NO: 11
STRUCTURE TYPE: 3 SPAN CONCRETE T-BEAM BRIDGE
CLEAR SPAN: 36.6 m CLEAR HEIGHT: 6.7 m
YEAR BUILT: 1926 FULL WATERWAY: 223 sq m

DOWNSTREAM STRUCTURE: TOWN: BRISTOL DISTANCE: 2.4 km
HIGHWAY NO: TH 3 STRUCTURE NO: 31
STRUCTURE TYPE: STEEL PONY TRUSS BRIDGE
CLEAR SPAN: 30.8 m CLEAR HEIGHT: 4.0 m
YEAR BUILT: 1928 FULL WATERWAY: 120 sq m

PROPOSED STRUCTURE

STRUCTURE TYPE: SINGLE SPAN BRIDGE

CLEAR SPAN (NORMAL TO STREAM): 34 m
VERTICAL CLEARANCE ABOVE STREAMBED: 4.3 m
WATERWAY OF FULL OPENING: 120 sq m

WATER SURFACE ELEV. @ Q2.33= 174.1 VELOCITY= 3.2 MPS
Q10= 174.4 VELOCITY= 3.7 MPS
Q25= 174.7 VELOCITY= 4.0 MPS
Q50= 174.8 VELOCITY= 4.2 MPS
Q100= 174.9 VELOCITY= 4.3 MPS

IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: ABOVE Q100
RELIEF ELEVATION: 177.0 DISCHARGE OVER ROAD @ Q100: 0

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 176.1
VERTICAL CLEARANCE @ Q100= 1.2 m

SCOUR: TOTAL PREDICTED SCOUR= 2.0 m AT Q100 & 2.5 m AT Q500
REQUIRED CHANNEL PROTECTION: STONE FILL, TYPE IV

PERMIT INFORMATION

AVERAGE DAILY FLOW: 4 CMS
ORDINARY LOW WATER: 2 CMS DEPTH: 0.5 m
ORDINARY HIGH WATER: 37 CMS DEPTH: 2.0 m

ADDITIONAL COMMENTS

A TEMPORARY BRIDGE HAS ALREADY BEEN INSTALLED.

* THE EXISTING BRIDGE PARTIALLY COLLAPSED IN JUNE, 1998. IT HAS BEEN REPLACED WITH A TEMPORARY BRIDGE. INFORMATION LISTED FOR THE EXISTING STRUCTURE IS FOR THE BRIDGE IN PLACE PRIOR TO JUNE, 1998.

DESIGN CRITERIA:
1. DESIGN LIVE LOAD AASHTO MS 22.5
2. DESIGN SPAN 44 m
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 27.6 MPa ON LEDGE N/A
4. ULTIMATE CAPACITY OF PILE 1400 KN TYPE HP360x152 ESTIMATED LENGTH 28 m
5. STRUCTURAL STEEL AASHTO GRADE 345W
6. REINFORCING STEEL GRADE 420
7. CONCRETE CLASS A f'_C : 30 MPa
   CONCRETE CLASS B f'_C : 25 MPa
   SILICA-FUME CONCRETE f'_C : 35 MPa
8. SOIL MASS 2243 kg/m^3

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

* TEMPORARY IS IN PLACE. CONTRACTOR IS NOT RESPONCIBLE FOR INSTALLING A TEMPORARY.

LOAD FACTOR LOAD RATING (TONS)

LOADING LEVELS (LOAD FACTOR)	TRUCK						
	M	MS	3S2	6 AXLE	3A.STR.	4A.STR.	5A.SEMI
INVENTORY A=2.17; B=1.00	56	91					
POSTED A=1.55; B=1.40	79	127	142		120	122	134
OPERATING A=1.30; B=1.67		152	169	188	143	146	

STRENGTH RF= $\frac{\emptyset M_N - 1.3\,M_{DL}}{A \times M_{LL+I}}$

SERVICEABILITY RF= $B\left[\frac{.95\,F_Y S_{LL+I} - M_{DL}\frac{S_{LL+I}}{S_{DL}} - M_{SDL}\frac{S_{LL+I}}{S_{SDL}}}{1.67\,M_{LL+I}}\right]$

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
1997	4410	600		3	270
2037	5950	780	59	3	380

20 year ESAL for flexible pavement from 1997 to 2017: 3,582,000
40 year ESAL for flexible pavement from 1997 to 2037: 12,510,000
Design speed: 65 km/h

STATE OF VERMONT
AGENCY OF TRANSPORTATION

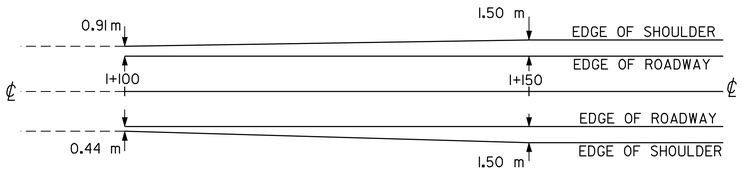
Town Of Bristol	Bridge No. Br.10
Highway No. VT 116	Log Sta. / Surv. Sta.
Preliminary Information Sheet	
Vt 116 Br.10 Over New Haven River	
Designed By	Drawn By C Weeber
Checked By G.Colgrove Date 5/99	Bridge Design Supervisor A.Portalupi Date 5/99
PROJECT Bristol	PROJECT NO. ER 021-1(13)
I.G.C. Info. /str2/78fl88/sfl88pi.dgn	sfl88pi1.i
Bridge Sheet No.	Sheet 2 of 67

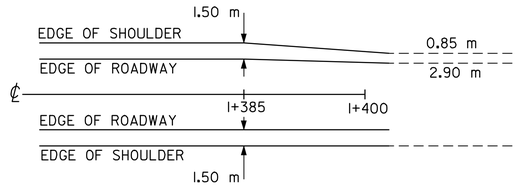
STATE OF VERMONT
AGENCY OF TRANSPORTATION

MISCELLANEOUS TYPICALS AND DETAILS

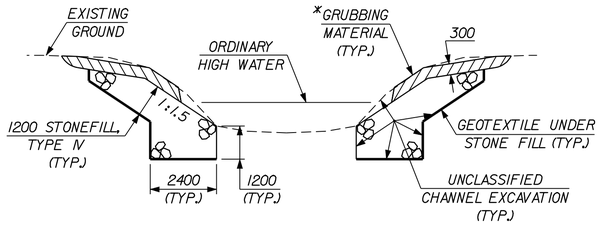
VAOT Metric

SHOULDER WIDTH TRANSITIONS





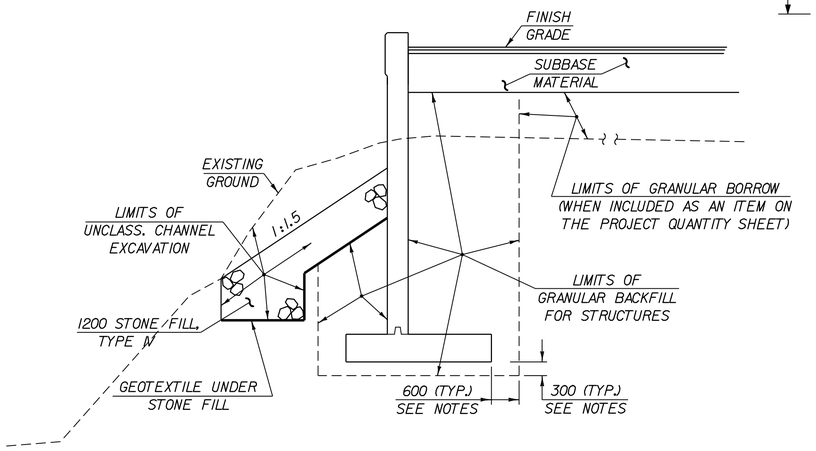
SCALE = 1:400 HORIZONTAL
1:300 VERTICAL



TYPICAL CHANNEL SECTION

(NOT TO SCALE)

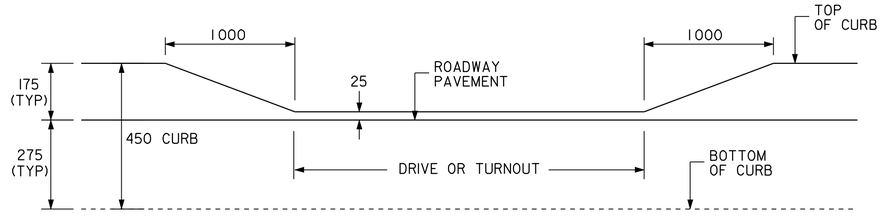
*GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.



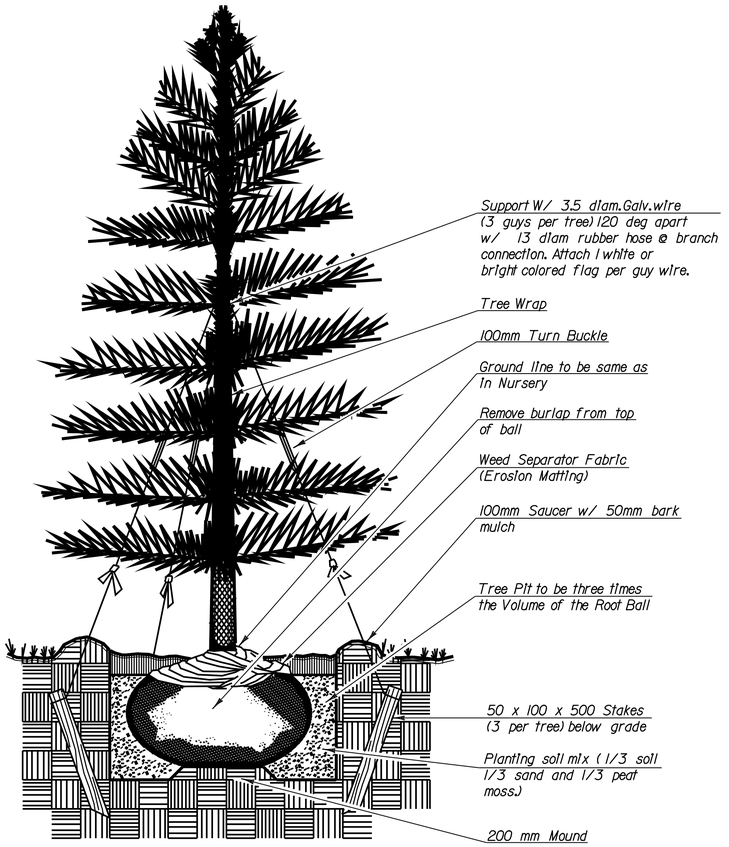
TYPICAL RETAINING WALL SECTION

(NOT TO SCALE)

CURB TRANSITION AT DRIVES & MAILBOX TURNOUTS

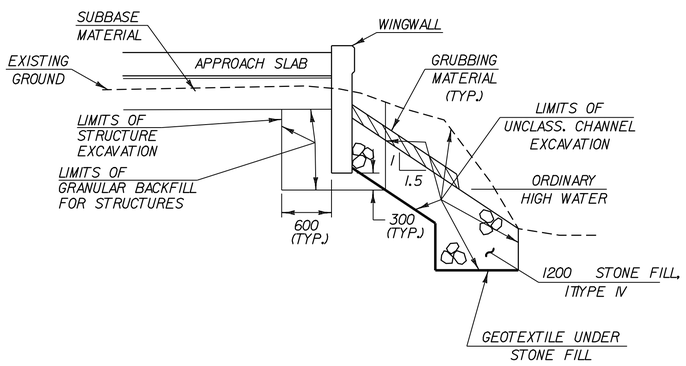


SCALE = 1 : 250 HORIZONTAL
1 : 100 VERTICAL



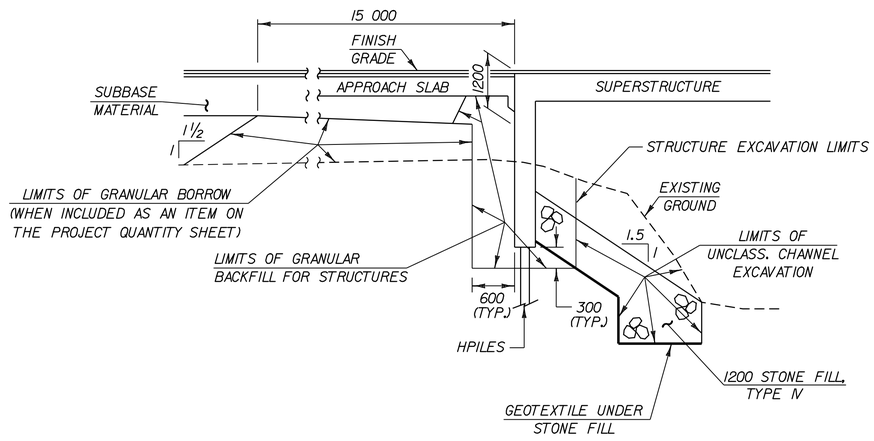
Conifer Planting

(NOT TO SCALE)
Use: Picea Glauca, B&B, 3.5m Ht.



TYPICAL WINGWALL SECTION

(NOT TO SCALE)



TYPICAL ABUTMENT SECTION

(NOT TO SCALE)

NOTE: 300 UNDERCUT AS DETERMINED NECESSARY BY THE RESIDENT ENGINEER.

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	ER 021-1(13)
FILE NAME: /str2/78f188/sf188pl.dgn	PLOT DATE: 05-JAN-2007
PROJECT LEADER: PORTALUPI	DRAWN BY: L. Bullock
DESIGNED BY:	CHECKED BY: G. Colgrove
sf188det.1	SHEET 3 OF 67

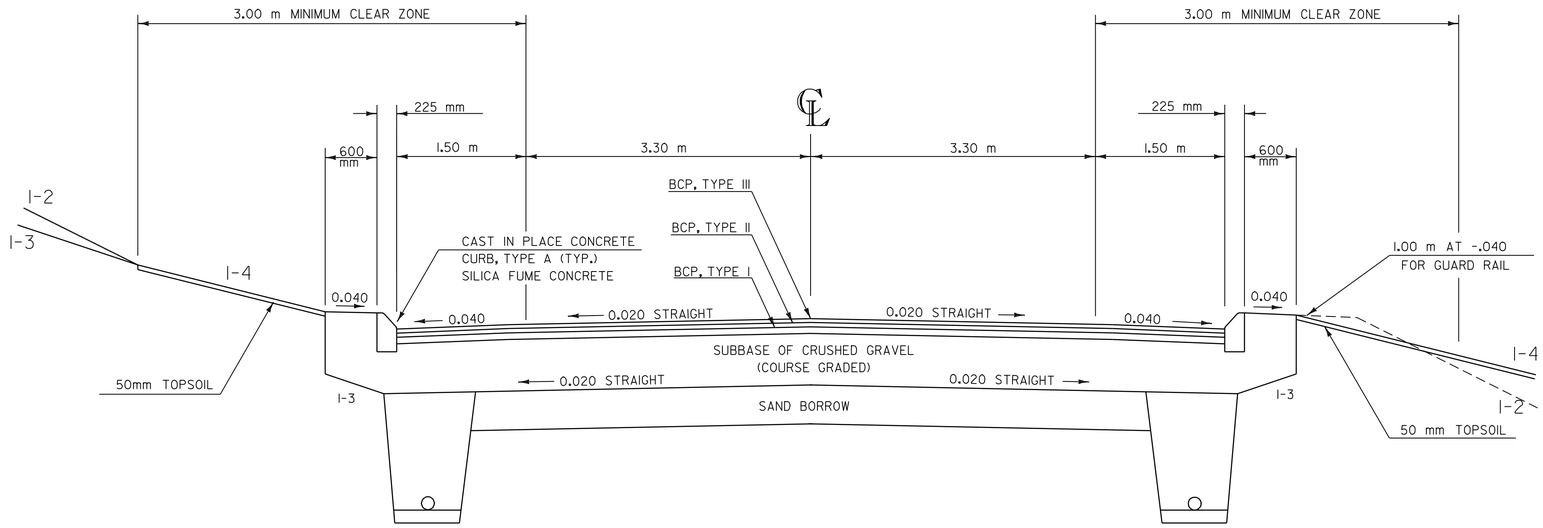
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TYPICAL ROADWAY SECTIONS

VAOT Metric

MATERIAL ITEM	THICKNESS TOLERANCE
PAVEMENT (TOTAL DEPTH)	5 mm
SUBBASE	30 mm
SAND	30 mm

40 mm BITUMINOUS CONCRETE PAVEMENT, TYPE III
45 mm BITUMINOUS CONCRETE PAVEMENT, TYPE II
100 mm BITUMINOUS CONCRETE PAVEMENT, TYPE I
650 mm SUBBASE OF CRUSHED GRAVEL (COARSE GRADED)
350 mm SAND BORROW



NORMAL SECTION
(NOT TO SCALE)

SEEDING FORMULA
(VILLAGE MIX)

% WT.	Kg/ha	NAME	PUR %	GERM %
37.5	10.18	CREEPING RED FESCUE	98	85
5.0	1.36	PERENNIAL RYE GRASS	95	90
37.5	10.18	HARD FESCUE	96	85
5.0	1.36	ANNUAL RYE GRASS	95	85
15.0	4.07	SHEEPS FESCUE	96	85
100.0	27.15			

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.

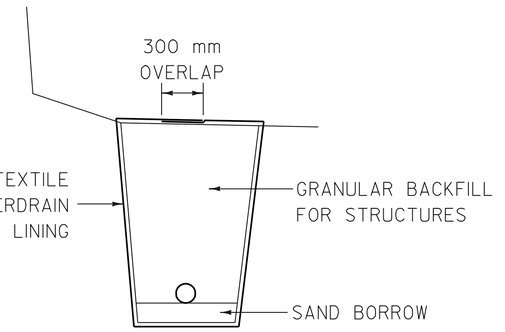
TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

MARKER POSTS: TO BE PLACED AS INDICATED OR AS DIRECTED BY THE ENGINEER.

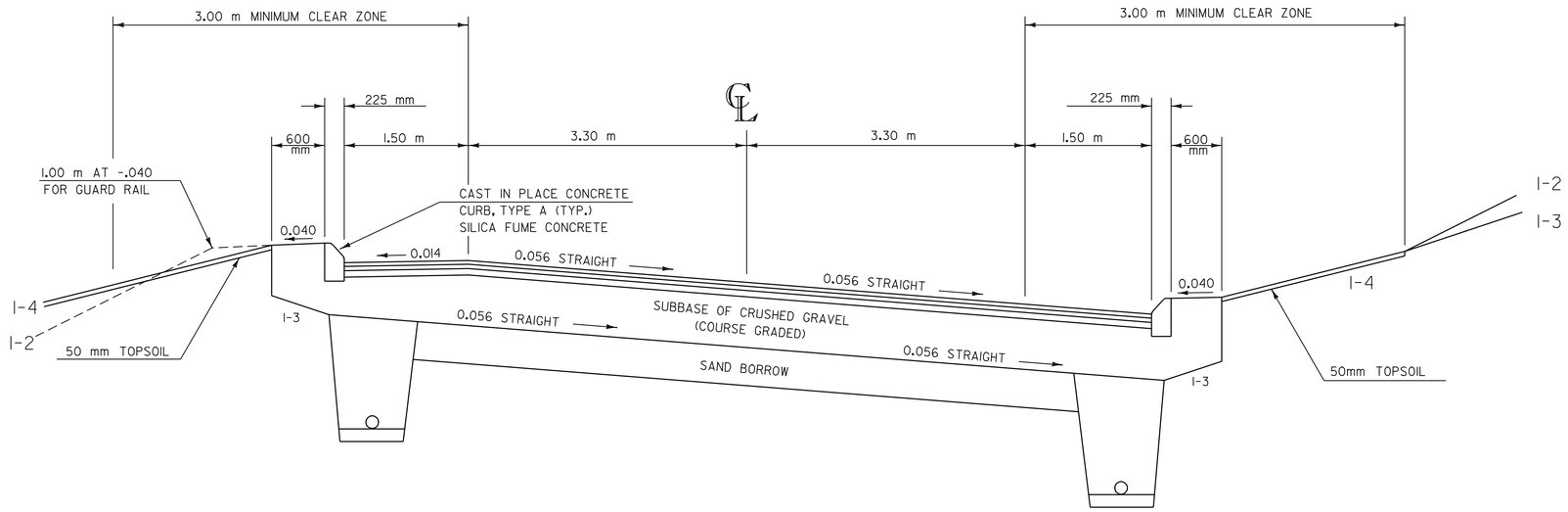
SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD SHEET B-5M.

PAY LIMITS OF SAND BORROW: WHEN USED IN CONJUCTION WITH UNDERDRAIN - SEE STANDARD SHEET D-2M.

TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF 0.0679 L/m2 BETWEEN SUCCESSIVE COURSES OF PAVEMENT AS DIRECTED BY THE ENGINEER.



UNDERDRAIN DETAIL



MAXIMUM BANKED SECTION 0.056
(NOT TO SCALE)

PROJECT:	PROJECT NO.:
BRISTOL	ER 021-1(13)
DESIGN FILE NAME: M:\Projects\78f188\Structures\df188frm.dgn	
IPARM FILE NAME: df188typ.i	PLOT DATE: 05-JAN-2007
SURVEYED BY: GILMAN	SURVEY DATE: 9/97
SQUAD LEADER: PORTALUPI	DRAWN BY: STR2
	SHEET: 4 OF 67

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

Metric

SUMMARY OF ESTIMATED QUANTITIES

Deck	Abutment 1	Abutment 2	Approach Slab 1	Approach Slab 2	Channel	Roadway	Erosion	Temp Erosion	E & C Items
						1			
						1			
						2131			
						50			
					1440				
						70			
						603			
						2832			
						386			
	300	170							
	60	60				192			
						160			
						1860			
						193			
108						1081			
101	49	49	33	33					
		29	7	7		16			
17	2	3							
1									
	140	140							
	1	1							
128590									
						888			
21860	6910	8250	4900	4900					
1									
67	8	17							
430			74	74					
			10	10					
113									
						1			
						1			
130									
1									
						10			
						10			
						10			
						9			
						9			
						9			
						9			
						219			
						219			
						42			
						42			
						1			

TOTALS

ROUND	GRAND TOTAL	FINAL
	1	
	1	
19	2150	
EST	50	
	1440	
	70	
22	625	
18	2850	
14	400	
	470	
13	325	
	160	
40	1900	
7	200	
11	1200	
5	270	
1	60	
3	25	
	1	
	280	
	2	
5	128595	
12	900	
	46820	
	1	
3	95	
12	590	
	20	
2	115	
	1	
	1	
5	135	
	1	
	10	
	10	
	10	
	9	
	9	
	9	
	9	
	219	
	219	
	42	
	42	
	1	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER
LS	CLEARING AND GRUBBING (PLUS INDIVIDUAL TREES & STUMPS)	201.10
EACH	DEMOLITION AND DISPOSAL OF BUILDING	202.10
CM	COMMON EXCAVATION	203.15
CM	SOLID ROCK EXCAVATION	203.16
CM	UNCLASSIFIED CHANNEL EXCAVATION	203.27
CM	EARTH BORROW	203.30
CM	SAND BORROW	203.31
SM	FINE GRADING-SUBGRADE	203.40
CM	TRENCH EXCAVATION OF EARTH	204.2
CM	STRUCTURE EXCAVATION	204.25
CM	GRANULAR BACKFILL FOR STRUCTURES	204.30
SM	COLD PLANING-BIT.PAVEMENT	210.10
CM	SUBBASE OF CRUSHED GRAVEL (COURSE GRADED)	301.25
KG	EMULSIFIED ASPHALT	404.65
T	BITUMINOUS CONCRETE PAVEMENT (PG - 58-28)	406.25
CM	CONCRETE, CLASS A	501.22
CM	CONCRETE, CLASS B	501.25
CM	SILICA-FUME CONCRETE	501.60
LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10
M	STEEL PILING (HP 360 X 152) GR 345	505.19
EACH	DYNAMIC PILE LOADING TEST	505.45
KG	STRUCTURAL STEEL (PLATE GIRDER)	506.55
KG	REINFORCING STEEL	507.15
KG	EPOXY COATED REINFORCING STEEL	507.17
LS	SHEAR CONNECTORS (2210 - 22 Ø X 175)	508.15
L	WATER REPELLENT	514.10
SM	SHEET MEMBRANE WATERPROOFING	519.20
M	JOINT SEALER HOT POURED	524.11
M	BRIDGE RAILING-ALUMINUM/PEDESTRIAN (MOD.)	525.23
LS	TWO-WAY TEMPORARY BRIDGE (MOD. 1) (REMOVE TEMPORARY BRIDGE)	528.11
LS	TWO-WAY TEMPORARY BRIDGE (MOD. 2) (TRANSPORT TEMPORARY BRIDGE)	528.11
SM	REMOVAL OF BRIDGE PAVEMENT	529.10
EACH	REMOVAL OF STRUCTURE	529.15
	BEGIN PIPE OPTIONS	
M	450 mm CSP (1.63 mm)	601.0015
M	450 mm RCP CLASS III	601.0815
M	450 mm CPEP (SL)	601.2615
M	450 mm CAAP (1.52mm)	601.0215
M	450 mm PCCSP (1.63mm)	601.0415
M	450 mm RCP CLASS III	601.0815
M	450 mm CPEP(SL)	601.2615
M	450 mm RCP CLASS III	601.0815
M	450 mm CPEP (SL)	601.2615
M	600 mm RCP CLASS III	601.0825
M	600 mm CPEP(SL)	601.2620
	END PIPE OPTIONS	
EACH	450 mm CPEP ELBOW (SL)	601.5816

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
COMMON EXCAVATION		
ITEM 203.15		
2098	CM	MAINLINE
33	CM	DRIVES
19	CM	ROUNDING
2150	CM	TOTAL
TRENCH EXCAVATION OF EARTH		
ITEM 204.20		
155	CM	DRAINAGE SHEET
225	CM	UNDERDRAIN
6	CM	UNDERDRAIN CARRIER PIPE
14	CM	ROUNDING
400	CM	TOTAL
SUBBASE OF CRUSHED GRAVEL (COURSE GRADED)		
ITEM 301.25		
1722	CM	MAINLINE
138	CM	DRIVES
40	CM	ROUNDING
1900	CM	TOTAL
BITUMINOUS CONCRETE PAVEMENT		
ITEM 406.25		
		I II III IV
108	T	BRIDGE 62 46
1055	T	ROADWAY 555 260 240
26	T	DRIVES & TURNOUTS 26
11	T	ROUNDING
1200	T	TOTAL
REINFORCING STEEL		
ITEM 507.15		
837	KG	DRAINAGE SHEET
51	KG	POWER STANCHION
12	KG	ROUNDING
900	KG	TOTAL

PROJECT NAME: **BRISTOL**
PROJECT NUMBER: **ER 021-1(13)**

FILE NAME: **str2/78f188/df188q.xls**
PROJECT LEADER: **A PORTALUPI**
DESIGNED BY: **STR2**
QUANTITY SHEET #1

PLOT DATE: **7/24/99**
DRAWN BY: **T LACKEY**
CHECKED BY: **L BULLOCK**
SHEET **5** OF **67**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

Metric

SUMMARY OF ESTIMATED QUANTITIES

						Deck	Abutment 1	Abutment 2	Approach Slab 1	Approach Slab 2	Channel	Roadway	Erosion	Temp Erosion	E & C Items	
												7				
												300				
												12				
												8				
												80				
												20				
												8				
												20				
												8				
												20				
												20				
												185				
												1				
												11				
											1456					
												250				
												2				
												1				
												1				
												16				
												2				
												108				
												100				
												200				
															1	
															1	
															1	
															1	
												520				
												1				
												600				
												600				
												600				
												600				
												50				
											1282					
												1063				
															210	
											121					
													55			
															25	
													1120			
													2			

TOTALS

ROUND	GRAND TOTAL	FINAL
	7	
	300	
3	15	
	8	
EST	80	
EST	20	
EST	8	
EST	20	
EST	8	
EST	20	
EST	20	
EST	185	
EST	1	
4	15	
4	1460	
	250	
	2	
	1	
EST	1	
	16	
EST	2	
7	115	
EST	100	
EST	200	
	1	
	1	
	1	
	1	
	520	
	1	
	600	
	600	
	600	
	600	
	50	
18	1300	
12	1075	
EST	210	
4	125	
EST	55	
EST	25	
EST	1120	
EST	2	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER
EACH	CAST IRON GRATE WITH FRAME, TYPE E	604.48
M	150 mm UNDERDRAIN	605.10
M	150 mm UNDERDRAIN CARRIER PIPE	605.20
EACH	UNDERDRAIN FLUSHING BASINS	605.95
HR	ROADWAY PATROL MAINTENANCE	607.10
HR	BULLDOZER RENTAL, TYPE I	608.10
HR	POWER GRADER RENTAL	608.15
HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25
HR	POWER BROOM RENTAL,TYPE II	608.31
HR	TRUCK RENTAL	608.37
HR	LOADER RENTAL, TYPE I	608.40
CM	DUST CONTROL WITH WATER	609.10
T	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15
CM	STONE FILL, TYPE I	613.10
CM	STONE FILL, TYPE IV	613.13
M	CAST-IN-PLACE CEMENT CONCRETE CURB, TYPE A	616.27
EACH	RELOCATE MAILBOX, SINGLE SUPPORT	617.10
EACH	RELOCATE MAILBOX, MULTIPLE SUPPORT	617.12
EACH	BOUNDARY MARKERS	619.10
EACH	STEEL MARKER POSTS	619.16
EACH	REMOVING AND RESETTING PROPERTY MARKERS	619.20
M	ALUMINUM APPROACH RAILING (MOD)	621.74
HR	UNIFORMED TRAFFIC OFFICERS	630.10
HR	FLAGGERS	630.15
LS	FIELD OFFICE-ENGINEERS	631.10
LS	TESTING EQUIPMENT - CONCRETE	631.16
LS	TESTING EQUIPMENT - BITUMINOUS	631.17
LU	FIELD OFFICE - TELEPHONE (NABI)	631.25
HR	EMPLOYEE TRAINEESHIP	634.10
LS	MOBILIZATION	635.10
M	DURABLE 100 mm WHITE LINE	646.40
M	DURABLE 100 mm YELLOW LINE	646.41
M	TEMPORARY 100 mm WHITE LINE	646.60
M	TEMPORARY 100 mm YELLOW LINE	646.61
EACH	LINE STRIPING TARGETS	646.76
SM	GEOTEXTILE UNDER STONE FILL	649.31
SM	GEOTEXTILE FOR UNDERDRAIN TRENCH LINING	649.41
SM	GEOTEXTILE FOR SILT FENCE	649.51
SM	GEOTEXTILE FOR FILTER CURTAINS	649.61
KG	SEED (MOD)	651.15
KG	SEED-WINTER RYE	651.17
KG	FERTILIZER	651.18
T	AGRICULTURAL LIMESTONE	651.20

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

PROJECT NAME: **BRISTOL**
PROJECT NUMBER: **ER 021-1(13)**

FILE NAME: **str2/78f188/df188q.xls**
PROJECT LEADER: **A PORTALUPI**
DESIGNED BY: **STR2**
QUANTITY SHEET #2

PLOT DATE: **7/23/99**
DRAWN BY: **T LACKEY**
CHECKED BY: **L BULLOCK**
SHEET **6** OF **67**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SHOT Metric

SUMMARY OF ESTIMATED QUANTITIES

						Deck	Abutment 1	Abutment 2	Approach Slab 1	Approach Slab 2	Channel	Roadway	Erosion	Temp Erosion	E & C Items	
														2		
														25		
													990			
											650					
												2				
												2				
												7				
												7				
												13				
						4	2	1								
						4	1	1								
												1				
						4	1	1								
						4	1	1								

TOTALS

ROUND	GRAND TOTAL	FINAL
EST	2	
EST	25	
EST	990	
	650	
	2	
	2	
	7	
	7	
	13	
	7	
	6	
	1	
	6	
	6	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER
T	HAY MULCH	651.25
EACH	HAY BALES FOR EROSION CONTROL	651.26
CM	TOPSOIL	651.35
SM	GRUBBING MATERIAL	651.40
EACH	EVERGREEN TREES (PICEA GLAUCA, B&B, 3.5 m HT.)	656.20
SM	TRAFFIC SIGNS, TYPE A	675.20
	BEGIN OPTION POSTS	
M	FLANGED CHANNEL SIGN POST	675.301
M	SQUARE TUBE SIGN POSTS AND ANCHOR	675.341
	END OPTION POSTS	
EACH	REMOVING SIGNS	675.50
EACH	JUNCTION BOX	678.26
EACH	LIGHT POLE BASE	679.21
EACH	POWER STANCHION (MOD)	679.28
EACH	LIGHT POLE	679.45
EACH	LUMINAIRE	679.50

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

PROJECT NAME: **BRISTOL**
PROJECT NUMBER: **ER 021-1(13)**

FILE NAME: **str2/78f188/df188q.xls**
PROJECT LEADER: **A PORTALUPI**
DESIGNED BY: **STR2**
QUANTITY SHEET #3

PLOT DATE: **7/23/99**
DRAWN BY: **T LACKEY**
CHECKED BY: **L BULLOCK**
SHEET **7** OF **67**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

ITEM DETAIL SHEET

Metric

CURB

BEGIN STATION	END STATION	POSITION		REMARKS
		LEFT	RIGHT	
km + m	km + m	m	m	
1+159.3	1+173.6	14.3		
1+191.0	1+219.2	28.2		
1+193.8	1+246.9		53.1	
1+244.0	1+252.1	8.1		
1+301.1	1+310.8		9.7	
1+315.3	1+384.0	68.7		
1+330.9	1+399.0		68.1	
		---------	---------	
	TOTAL	119.3 +	130.9 =	250.2 m

SIDEWALK

BEGIN STATION	END STATION	POSITION		REMARKS
		LEFT	RIGHT	
km + m	km + m	m^2	m^2	

APPROACH RAILING

BEGIN STATION	END STATION	POSITION		END TREATMENT	
		LEFT	RIGHT	BEGIN	END
km + m	km + m	m	m	ea	ea
1+192.2	1+246.9		55.5		
1+247.2	1+252.1	11.4			
1+301.1	1+312.4		13.6		
1+315.3	1+342.7	27.6			
		---------	---------		
	TOTAL	39.0 +	69.1 =	108.1 m	

UNDERDRAIN

BEGIN STATION	END STATION	TYPE	POSITION	DIA.	LENGTH	TRENCH		GRAN BKFILL	FB	MKR PST
						EARTH	ROCK			
km + m	km + m			mm	m	m^3	m^3	m^3	ea	ea
1+191.9	1+250.0	U	LEFT	150	60	67.5			1	1
1+200.0	1+240.0	U	RIGHT	150	40	55.0			1	1
1+254.3		U	CL	150	20	0			1	1
1+299.7		U	CL	150	28	0			1	1
1+316.3	1+379.0	U	LEFT	150	63	20.8			1	1
1+331.8	1+359.0	U	RIGHT	150	29	28.6			1	1
1+360.3	1+400.0	U	RIGHT	150	40	37.2			1	1
1+380.3	1+400.0	U	LEFT	150	20	15.9			1	1
TOTAL	UNDERDRAIN			150	300	225.0			8	8
1+240.0	1+251.5	C	RIGHT	150	12	6.3				1
TOTAL	CARRIER PIPE			150	12	6.3				1

PROJECT NAME: **BRISTOL**
PROJECT NUMBER: **ER 021-1(13)**

FILE NAME: **/str2/78f188/df188de.xls**
PROJECT LEADER: **PORTALUPI**
DESIGNED BY: **STR2**
ITEM DETAIL SHEET #1

PLOT DATE: **6/28/99**
DRAWN BY: **WEEBER**
CHECKED BY: **0**
SHEET **8** OF **67**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAINAGE DETAIL SHEET

Metric

STATION km + m	STATION km + m	POS.	ASKEW no. deg.	INLET/OUTLET TYPE INLET	INLET/OUTLET TYPE OUTLET	DITCH IN	DITCH OUT	PIPE ARCH SPAN mm	PIPE ARCH RISE mm	PIPE ARCH L m	PIPE D mm	PIPE L m	ALLOWABLE OPTIONS PCCSP mm	CAAP mm	RCP CL	CSP mm	CPEP SL mm	PCCSP PI mm	PIPE ELBOW no. deg.	ES ea	CB ea	PRCCDI	DEPTH DI mm	CONC CLASS B m^3	REINF STEEL kg	DI GRATE type	CHAN ELEV ea	CRM m^3	TRENCH EXCAVATION EARTH m^3	TRENCH EXCAVATION ROCK m^3	COMM EXC m^3	UNC CHAN EXC m^3	STRUCT EXCAV m^3	GRAN BKFILL STRUCT m^3	GRAN BORR m^3	EROS MATT m^2	STONE FILL m^3	STONE FILL type	MARKER POSTS LT ea	MARKER POSTS RT ea	REMARKS
CULVERTS																																									
1+192.9		CL	70.5 RT	DI	DI						450	9	X	X	X		X						2054	2.52	138	E			9.55												
1+194.7	1+251.8	RT		DI	CHANNEL						450	57			X		X		1-20				2209	2.68	141	E			60.83										1	
1+290.8	1+331.2	RT		DI	CHANNEL						600	42			X		X						1953	2.36	124	E			58.84										1	
1+316.0		LT		DI	CHANNEL						450	5			X		X						1800	2.20	120	E			1.00										1	
1+316.3	1+379.7	LT		DI	DI						450	64			X		X						1791	2.20	120	E			3.40										1	
1+331.8	1+359.7	RT		DI	DI						450	30			X		X						1937	2.36	124	E			4.30											
1+338.7	1+351.6	LT/RT																											8.55											EXISTING 450mm RCP - REMOVE
1+360.0		RT		DI	DI						450	3			X		X						950	1.39	70	E			4.47										1	
1+360.3	1+400.0	RT		CAPPED	DI						450	40			X		X																							NO T.E.-PIPE PLACED ABOVE UNDERDRAIN
1+380.3	1+400.0	LT		CAPPED	DI						450	20			X		X																							NO T.E.-PIPE PLACED ABOVE UNDERDRAIN
1+390.0	1+400.0	RT		DITCH	DITCH						450	10			X	X	X																						2	NO T.E.-PIPE PLACED IN DITCH
LINED DITCH																																								
1+360.0	1+390.0	RT				X	X																						4.40								10.8	I	1	6	TYPE I STONE LINED DITCH
COLUMN TOTALS											450	9	X	X	X		X						15.71	837	7 E			155.34								10.8	I	1	6	
											450	10			X	X	X		1-20																					
											450	219			X		X																							
											600	42			X		X																							

PROJECT NAME: **BRISTOL**
PROJECT NUMBER: **ER 021-1(13)**

FILE NAME: **str2/78f188/df188dr.xls**
PROJECT LEADER: **Portalupi**
DESIGNED BY: **STR2**
DRAINAGE DETAIL SHEET

PLOT DATE: **6/28/99**
DRAWN BY: **Weeber**
CHECKED BY: **L. Bullock**
SHEET **9** OF **67**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

EARTHWORKS

Metric

STATION km + m	DIST m	TOTAL EXCAVATION EARTH AND ROCK AREA m^2	TOTAL EXCAVATION EARTH AND ROCK VOLUME m^3	ROCK EXCAVATION AREA m^2	ROCK EXCAVATION VOLUME m^3	EMBANKMENT AREA m^2	EMBANKMENT VOLUME m^3		
1+100		0				0			
	10								
1+110		0				0			
	10		10				5		
1+120		2				1			
	20		110				20		
1+140		9				1			
	10		95				5		
1+150		10				0			
	10		105						
1+160		11				0		CUT	1194
	20		210					ROCK	0
1+180		10				0		R.FAC	.495
	20		180				10	FILL	126
1+200		8				1		F.FAC	1.15
	20		160				20	EX. C	1049
1+220		8				1			
	20		180				20		
1+240		10				1			
	7		84				11		
1+247		14				2			
	7		60				35		
1+254		3				8			
1+300		9				0			
	7		60				4		
1+307		8				1			
	13		59				65		
1+320		1				9			
	20		10				220		
1+340		0				13		CUT	377
	20		10				270	ROCK	0
1+360		1				14		R.FAC	.495
	20		70				340	FILL	1040
1+380		6				20		F.FAC	1.15
	5		33				73	EX. F	819
1+385		7				9			
	15		135				68		
1+400		11				0			

STATION km + m	DIST m	TOTAL EXCAVATION EARTH AND ROCK AREA m^2	TOTAL EXCAVATION EARTH AND ROCK VOLUME m^3	ROCK EXCAVATION AREA m^2	ROCK EXCAVATION VOLUME m^3	EMBANKMENT AREA m^2	EMBANKMENT VOLUME m^3	AREA m^2	VOLUME m^3

STATION km + m	DIST m	TOTAL EXCAVATION EARTH AND ROCK AREA m^2	TOTAL EXCAVATION EARTH AND ROCK VOLUME m^3	ROCK EXCAVATION AREA m^2	ROCK EXCAVATION VOLUME m^3	EMBANKMENT AREA m^2	EMBANKMENT VOLUME m^3	AREA m^2	VOLUME m^3

STATION km + m	DIST m	TOTAL EXCAVATION EARTH AND ROCK AREA m^2	TOTAL EXCAVATION EARTH AND ROCK VOLUME m^3	ROCK EXCAVATION AREA m^2	ROCK EXCAVATION VOLUME m^3	EMBANKMENT AREA m^2	EMBANKMENT VOLUME m^3	AREA m^2	VOLUME m^3

SUMMARY AND BALANCES

STATION TO STATION km + m		TOT EXC. EARTH & ROCK m^3	ROCK EXCAV m^3	EMBANK m^3	EXCESSES CUT	EXCESSES FILL	ACUMULATIVE EXCESSES CUT	ACUMULATIVE EXCESSES FILL
1+100	1+254	1194	0	126	1049		1049	
1+300	1+400	377	0	1040		819	230	
	DRIVES	33	0	66		43	187	
	TOTALS	1604	0	1232	1049	862	187	

REMARKS

EARTH AND ROCK EXCAVATION	1604	
SOLID ROCK EXCAVATION	0	
EARTH EXCAVATION	1604	
PLANIMETERED FILL	1232	
LESS FACTORED SOLID ROCK	0	
LESS DISPLACEMENT OF ANY LARGE STRUCTURES	0	
NET PLANIMETERED FILL	1232	
FACTOR	185	
PLANIMETERED FILL INCLUDING FACTOR	1417	
MATERIALS AVAILABLE FOR FILLS		
EARTH EXCAVATION	1604	
CHANNEL EXCAVATION		
UNDERDRAIN EXCAVATION		
STRUCTURE EXCAVATION		
TOTAL MATERIAL AVAILABLE FOR FILL	1604	
TOTAL FILL INCLUDING FACTOR	1417	
TOTAL MATERIAL FOR FILL	1604	
BORROW		
EXCESS EXCAVATION	187	

PROJECT NAME: **Bristol**
PROJECT NUMBER: **ER 021-1 (13)**

FILE NAME: **/str/78f188/df188ew.xls**
PROJECT LEADER: **A. Portalupi**
DESIGNED BY: **STR2**
EARTHWORK SHEET

PLOT DATE: **6/11/99**
DRAWN BY: **C. Weeber**
CHECKED BY: **L. Bullock**
SHEET **10** OF **67**

BEGIN R.O.W PROJECT

BRF 021-1(13) STA. 1+091.7

0.45M LT. (1.48')

N

VT STATE PLANE GRID

FEFEE, DART H. & JACQUELINE L.

4

BRASURE, MARK C. &
FREDETTE, CARIN L.

PI
1+196.837 BK=
1+195.860 AHD

1+165.0
0.18M RT. (0.6')

1+164.5
0.28M RT. (0.92')

1+214.0
6.3M LT. (20.7')

5B

N/F COLLINS

R.O.T. 1+100.00

1+091.8
8.1M LT. (26.6')

S.APPLE
COMB W/METER
GARAGE
PAVED DRIVE
SHED
WOODS
WOOD FRAME HOUSE
S.WALNUT
S.SPR.
L. MAPLE
GARDEN
DRIVE (T)
GR DRIVE
ROSE
SHRUB
LIGHT
LILACS
TRAILER
FLAG POLE
M.WALNUTS
M. MAPLE
TRAV.9 REBAR SET
I.P.
50.45M (165.5')
SR (T)
HVCTRL
[85.6'] [26.1M]
[56.87M] [186.6']
N88°52'20.
[242.1] 73.80M
[310.5'] [94.63M]
5A
N67°32'17.7"E
59.23M (194.3')
1+180
1+200
1+220
MATCH LINE STA. 1+220
1+160
1+140
1+120
1+090
1+00
TO BRISTOL VILLAGE
(26.1') 7.95M
(45.3') 13.80M
SIGN
AERIAL EASEMENT
[489.8']
[489.3M]
PAVED DRIVE
COMB.
SR (P)
DETOUR (T)
REMOVE & RESET (T)
GUY
HEDGE
S. WALL
S.MAPLE
BUTTER NUT
1
SARGENT, RANDY G.
GRAVEL DRIVE
FOUNDATION
PC Sta 1+154.645
CHAIN LINK FENCE
S.APPLE
S. SPR
RAIL FENCE
M. WHITE BIRCH
METER BOX
SHED
WELL
HOUSE
HVCTRL 1+105.4
0.17M LT. (0.55')
1+105.4
7.37M RT. (24.2')
SR (P)
INSTALL & MAINTAIN (P)
*GUY WIRE ANCHOR HAS BEEN RELOCATED

ROW LAYOUT SHEET 1

FOR ROW REFERENCE ONLY

ROW PLANS MAY BE OBTAINED FROM THE TOWN CLERK'S OFFICE

0 10 20 30

SCALE IN METERS

DATUM

VERTICAL _____

HORIZONTAL _____

PROJECT:	PROJECT NO.:
BRISTOL	ER 021-1(13)

DESIGN FILE NAME: /str2/78fl88/dfl88bdr.dgn
IPARM FILE NAME: dfl88llr.i
SURVEYED BY: L. ORVIS — PLOT DATE: 21-DEC-2006
SQUAD LEADER: A. PORTALUPI — SURVEY DATE:
ROW LAYOUT SHEET 1 — DRAWN BY: STR2
SHEET: 11 OF 67

ROW LAYOUT SHEET 2

VAOT Metric

DURAND, EARL A. & CATHERINE A.

1+241.8
6.3M LT. (20.7')

1+269.23
17.21M LT. (56.5')

1+273.0
6.8M LT. (22.3')

WOOD FENCE

GARDEN

5B

BRASURE, MARK C. &
FREDETTE, CARIN L.

INSTALL & MAINTAIN ( )

BM #3
CH SQ ON NW
BRIDGE ABUT
ELEV. 177.933m

S.WALNUT

GARDEN

S.SPR.

INSTALL
(P)

GRAVEL DRIVE

DRIVE
(T)

LILACS

DRIVE (T)

ROW TO DURAND

ACCESS (T)

ACCESS (T)

HVCTRL

SR (P)

CHANNEL
(P)

29.2M
95.8'

11.23M
(36.8')

GRAVEL DRIVE

SR (T)

[26.1M] [85.6']

[56.87M] [186.6']

S.OAK

WOODS

5B

4.3M
(14.1')

DO NOT
DISTURB

1+291.57
3.15M LT. (10.3')

5A

[310.5']
[94.63M]

1+240

BM

1+270.0
4.1M LT. (13.5')

[409.8']
(149.3M)

SR (P)

HVCTRL

39.4'
12.0M

1+260

N88°52'20.6"E

1+280

STATE
OF
VERMONT

PC
Sta 1+312.843

STATE
OF
VERMONT
(FORMERLY RENECLE)

3A

S.SPR

PROPANE
TANK

S.BOXELD

WOOD
FRAME
HOUSE

SHRUB

MATCH LINE STA. 1+220.00

COMB.

8.2M
(26.9')

1+286.9
4.1M RT. (13.45')

1+260.9
3.0M RT. (9.8')

SR (P) PT
Sta 1+238.05

1+257.7
10.4M RT. (34.1")

CH. (P)

CH. (P)

1+282.3
11.5 RT. (37.7')

CH. (P)

CH. (P)

SIGNS

1+300

28.5'
8.7M

28.9'
8.8DM

3B

[404.3']
[123.22M]

N88°52'20.6"E

1+320

[72.4M] [237.5']

1+340

360 PCP

MATCH LINE STA. 1+350.00

DETOUR (T)

(76.1M) [249.7']

SIGN

46
48

TRAV.S
REBAR
SET

M.B.

3 GUYS

GRAVEL
DRIVE

SHRUB

M.SPR

DETOUR (T)

1

CH.
(P)

SARGENT,
RANDY G.

P
L

NEW HAVEN RIVER

CH. (P)

DETOUR (T)

LIMITS--TEMP. DETOUR

COUSINO, RODRIQUE P. & MICHELLE B.

2

INSTALL
(T)

S

S

DRIVE
(T)

DRIVE
(T)

2

M.MAP

WELL

WOOD
FRAME
HOUSE

LILAC

N/F
COUSINO,
RODRIQUE P.
& MICHELLE B.

BARBED

BM #4
CH SQ ON
GARAGE FLOOR
ELEV. 176.054m

BM

GARAGE

WOODS

PI
1+340.122 BK=
1+339.914 AHD

N

VT STATE PLANE GRID

FOR ROW REFERENCE ONLY

ROW PLANS MAY BE OBTAINED
FROM THE TOWN CLERK'S OFFICE

0 10 20 30

SCALE IN METERS

DATUM

VERTICAL _____

HORIZONTAL _____

PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: /str2/78fl88/dfl88bdr.dgn	
IPARM FILE NAME: dfl8812r.i	PLOT DATE: 05-JAN-2007
SURVEYED BY: L. ORVIS	SURVEY DATE:
SQUAD LEADER: A. PORTALUPI	DRAWN BY: STR2
ROW LAYOUT SHEET 2	SHEET: 12 OF 67

END R.O.W PROJECT (BRIDGE 10)

BRF 021-1(13) STA. 1+414..79
6.76M LT. (22.2')

VAOT Metric

N
VT STATE PLANE GRID

P
L

PI
1+448.985 BK =
1+448.799 AHD

BM #5
RR SPIKE
IN ROOT OF
LARGE MAPLE
ELEV. 185.896m

BURKE, MICHEAL E.
& DONNA H.

WIRE FENCE

STATE
OF
VERMONT
(FORMERLY RENECLE)

PT
STA 1+367.193

SHED
HVCTRL
GUY
AERIAL E&T
S.APPLES
S.BOXELD
S.ELM
GRAVEL DRIVE
[404.3']
[123.22M]
S.WALL
3A
3B
(174.0')
COMB.
17/49
1+411.91
0.63M RT.(2.1')
7.93M
(26.0')
SIGN
2/2/50
M.B.
STEPS
TRAV.T
REBAR
SET
3/51
N76°36'44.8"E
[237.5']
[72.4M]
53.02M
1+360
1+380
1+400
1+420
1+440
1+460
1+480
N86°29'28.6"E
MATCH LINES STA. 1+350.00
25.3'
7.7M
[249.7']
[76.1M]
2-M.ASH
1+358.8
2.5M RT. (8.2')
MM
WOODS
SIGN
S.SPR
M.HEM
#2A
L.MAPLE
S.APP
NURSERY
SIGN
S.ASH
S.LOC
RUSS
OLIVE
1+356.6
9.8M RT. (32.15')
N/F
COUSINO,
RODRIQUE P.
& MICHELLE B.
COUSINO, RODRIQUE P. & MICHELLE B. I.P.
BARBED WIRE FN.
M.APPLE
GRAVEL
DRIVE
M.MAP
M.APP
L.APP
S.WALL
M.ASH
M. SPRUCE
WOOD
FRAME
HOUSE
POLLARD, WILLIAM G.
& WEIR, HOLLY D.
PC
Sta 1+417.238
PT
Sta 1+480.515
WOOD
FRAME
HOUSE
S.MAPLE
LILAC
SHRUBS
M.CED
S.MAP
HEDGE
BARN
SHED
ARTESION
WELL
HEDGE
APPLE
BM
SIGN
S.ELM
SHRUB
S.MAPLES
SHRUB
LILAC

ROW LAYOUT SHEET 3

FOR ROW REFERENCE ONLY

ROW PLANS MAY BE OBTAINED
FROM THE TOWN CLERK'S OFFICE

0 10 20 30
SCALE IN METERS

DATUM
VERTICAL _____
HORIZONTAL _____

PROJECT:	PROJECT NO.:
BRISTOL	ER 021-1(13)
DESIGN FILE NAME: /str2/78fl88/dfl88bdr.dgn	
IPARM FILE NAME: dfl8813r.i	PLOT DATE: 02-JAN-2007
SURVEYED BY: L. ORVIS	SURVEY DATE: 9-97
SQUAD LEADER: A. PORTALUPI	DRAWN BY: STR2
ROW LAYOUT SHEET 3	SHEET: 13 OF 67

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

TABLE OF PROJECT PROPERTY ACQUISITION

FOR ROW REFERENCE ONLY

ROW PLANS MAY BE OBTAINED FROM THE TOWN CLERK'S OFFICE

ALL STATIONS ARE FROM THE REVISED ℄

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS	TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
1	SARGENT, RANDY G.	11,12	1+105.4 LT. 1+116.6 RT. 1+114.0 RT. 1+174.1 RT. 1+193.5 RT. 1+195.0 RT. 1+196.5 RT. 1+231.7 RT.	1+260.9 RT. 1+180.0 RT. 1+250.6 RT. 1+228.1 RT. 1+257.7 RT.	0.114HA±		ALL R.T.& I. SLOPE (P) 50.8 SM± INSTALL & MAINTAIN (P) DRIVE (T) DETOUR (T) 608 SM± REMOVE & RESET (T) SLOPE (P) 23.8 SM± CHANNEL (P) 160 SM±			BRISTOL			VT. RTE. 116 ROW 0.28A± 547 S.F.± GUY WIRE MM 0787 6545 S.F.± PRIVATE PROPERTY (SIGN) 256 S.F.± 1722 S.F.±
2	COUSINO, RODRIQUE P. & MICHELLE B.	12,13	1+282.3 RT. 1+269.5 RT. 1+276.6 RT. 1+308.0 RT. 1+318.0 RT. 1+333.7 RT.	1+358.8 RT. 1+287.0 RT. 1+331.6 RT. 1+352.3 RT.	0.056HA±		ALL R.T. & I. CHANNEL (P) 107SM± DETOUR (T) 0.05HA± INSTALL (T) DRIVE (T) SLOPE (T) 21 SM±			BRISTOL			VT. RTE. 116 ROW 0.14A± 1152 S.F.± 0.12A± POLE & GUY WIRE MM 0796 226 S.F.±
3A	STATE OF VERMONT	12,13	1+291.57 LT.	1+414.79 LT.	0.364HA±					BRISTOL			(0.9A±) FORMERLY RENECLE
3B			1+286.9 RT.	1+414.79 LT.	0.094HA±		ALL R. T. & I.						VT. RTE. 116 ROW 0.23A±
4	FEFEE, DART H. & JACQUELINE L.	11	1+091.7 LT. 1+155.0 LT.	1+165.0 LT.	0.057HA±		ALL R. T. & I. DRIVE (T)			BRISTOL			VT. RTE. 116 ROW 0.14A± MM 0786
5A	BRASURE, MARK C. & FREDETTE, CARIN L.	11,12	1+164.5 RT.	1+270.0 LT.	0.075HA±		ALL R. T. & I.			BRISTOL			VT. RTE. 116 ROW 0.19A±
5B			1+214.0 LT. 1+186.0 LT. 1+203.0 LT. 1+226.0 LT. 1+233.0 LT. 1+236.0 LT 1+242.5 LT. 1+245.3 LT. 1+251.5 LT.	1+273.0 LT. 1+221.7 LT. 1+269.3 LT. 1+256.6 LT. 1+247.3 LT.	0.024HA±		DRIVE (T) SLOPE (T) 9 SM± DRIVE (T) DRIVE (T) ACCESS (T) 99 SM± SLOPE (T) 31 SM± INSTALL & MAINTAIN (P) INSTALL (P)			BRISTOL			0.06A± MM 0788 97 S.F.± MM 0790 MM 0790 FOR CHANNEL CONSTRUCTION 1066 S.F.± 334 S.F.± GUARDRAIL GUY WIRE
6	DURAND, EARL A. & CATHERINE M.	12	1+233.0 LT. 1+267.2 LT. 1+269.6 LT. 1+270.4 LT.	 1+290.6 LT. 1+277.7 LT. 1+288.8 LT.			DRIVE (T) ACCESS (T) 90 SM± SLOPE (P) 28 SM± CHANNEL (P) 0.011HA±			BRISTOL			MM 0790 FOR CHANNEL CONSTRUCTION 969 S.F.± 302 S.F.± 0.03A±

REVISION NO.	SHEET	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY
1	5, 6, 7	PARCEL NO. 1 SARGENT. CHANGE SLOPE (T) AT STA. 1+105.4 RT. ~ 1+165.0 RT., 171 SM± TO SLOPE (P) STA. 1+116.6 RT. ~ 1+180.0 RT., 50.8 SM±; (547 S.F.±). CHANGE SLOPE (P) AT STA. 1+193.4 RT. ~ 1+234.2 RT., 88 SM± TO 1+193.5 RT. ~ 1+228.1 RT., 23.8 SM±, (256 S.F.±) CHANGE DETOUR (T) AT STA. 1+120.0 RT., 400 SM± TO 1+193.5 RT. ~ 1+250.6 RT., 608 SM±, 6,545 S.F.± PER C.O. 9000. SHEETS 5, 6, & 7 ARE PART OF EMERGENCY RELIEF PROJECT.	09-28-98	M. J. R.	L. W. B.
2	8, 11	PARCEL NO. 4 PHILLIPS. CHANGE NAME TO FEFEE, DART H. & JACQUELINE L. PER C.O. 9017	12-24-98	R. M. W.	L. W. B.

ACCT.str2
/str2/78f188/df188bdr.dgn
DATE PLOTTED 2-JUN-1999
/prop/78f188/rf188cdl.i

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
PERMANENT EASEMENT
TEMPORARY EASEMENT

LEGEND
CLEAR ZONE
CONSTRUCTION EASEMENT
SLOPE RIGHTS
PROPERTY LINE
TOP OF CUT
TOE OF SLOPE

R. O. W. PLANS
BRISTOL
ER 021-1 (13)
SHEET 14 OF 67

GPS CONTROL POINTS

TRAV. 1

VTGS SURVEY DISK STAMPED

" WELLS "

N = 183662.5720
E = 456383.3520
Z = 0.0

TO REACH, FROM THE INTERSECTION OF RTE. 116, SA 2 (NORTH ST.) , AND SA 3 (RIVER RD.) AT THE TRAFFIC LIGHT IN BRISTOL VILLAGE GO EAST AND NORTH ALONG RTE 116 FOR 3.1 MI (5.0 KM) TO SITE OF MARK ON EAST SIDE OF ROAD.

STATION MARK IS A STATE OF VERMONT SURVEY MARK SET IN THE TOP OF A 30-CM DIAMETER CONCRETE MONUMENT FLUSH WITH GROUND SURFACE.

IT IS ABOUT 300 FT (91.4 M) SOUTH OF INTERSECTION OF RTE 116 AND RTE 17 EAST, 19 FT (5.8 M) EAST OF THE CENTERLINE OF RTE. 116 , 7 FT (2.1 M) EAST OF THE EAST EDGE OF THE ROAD, 104 FT (31.7 M) SOUTH OF UTILITY POLE NO. 47, 1 FT (0.3 M) WEST OF A CARSONITE WITNESS POST

TRAV. 2

VTGS SURVEY DISK STAMPED

" WELLS AZ MK "

N = 182642.7880
E = 456343.1370
Z = 0.0

TO REACH, FROM THE INTERSECTION OF RTE. 116, SA 2 (NORTH ST.) , AND SA 3 (RIVER RD.) AT THE TRAFFIC LIGHT IN BRISTOL VILLAGE GO EAST AND NORTH ALONG RTE 116 FOR 2.5 MI (4.0 KM) TO SITE OF MARK ON WEST SIDE OF ROAD 0.6 MI (1.0 KM) SOUTH OF THE INTERSECTION OF RTE 17 EAST AND RTE 116 NORTH NEAR STARKSBORO.

STATION MARK IS A STATE OF VERMONT SURVEY MARK SET IN THE TOP OF A 30-CM DIAMETER CONCRETE MONUMENT FLUSH WITH GROUND SURFACE.

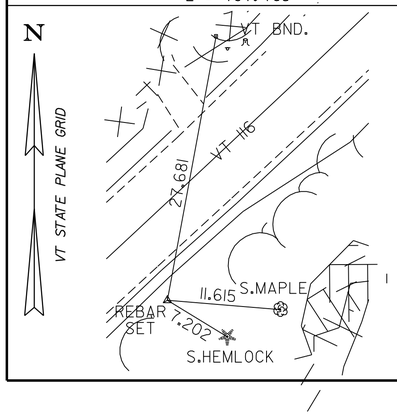
IT IS 18 FT (5.5 M) WEST OF THE CENTERLINE OF RTE 116, 7 FT (2.1 M) WEST OF THE WEST EDGE OF RTE 116, 65 FT (19.8 M) SOUTHWEST OF ELECTRIC POLE NO. 32, 144 FT (43.9 M) NORTHWEST OF ELECTRIC POLE NO. 31.

* DESCRIPTION PROVIDED BY AGENCY OF TRANSPORTATION GEODETIC SURVEY UNIT.

TRAVERSE TIES

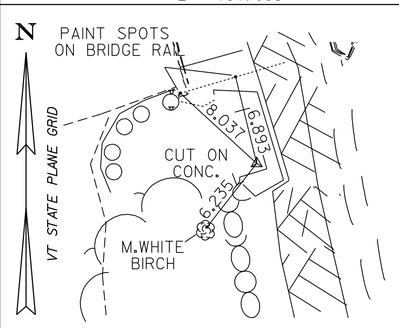
TRAV. 5

N = 181201.9191
E = 456055.7073
Z = 191.165



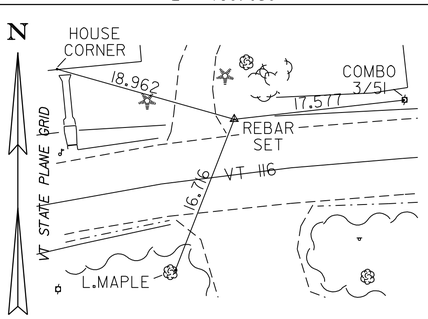
TRAV. 6

N = 181125.5829
E = 455943.7510
Z = 191.095



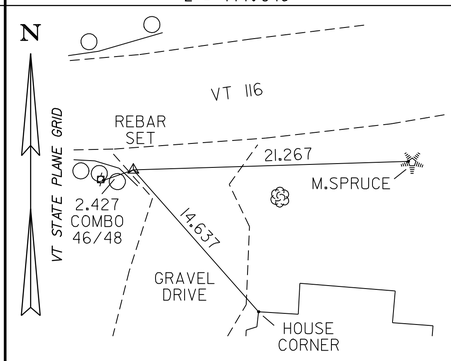
TRAV. 7

N = 181123.5495
E = 455802.3252
Z = 186.056



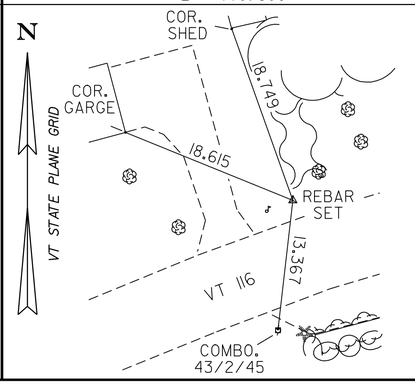
TRAV. 8

N = 181082.6060
E = 455659.2977
Z = 177.846



TRAV. 9

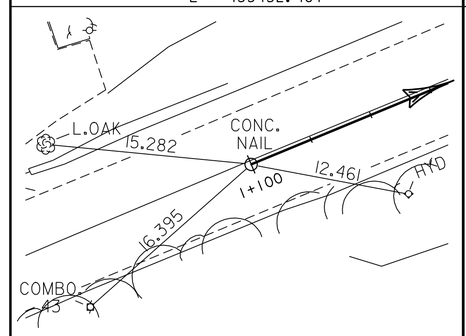
N = 181081.8953
E = 455507.3123
Z = 176.960



ALIGNMENT TIES

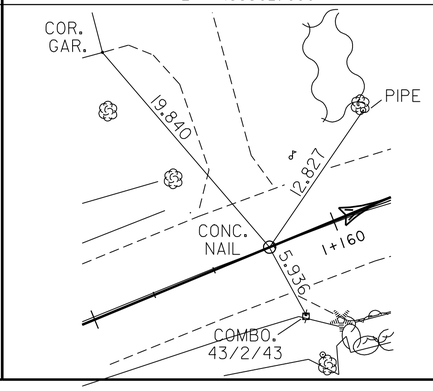
POB 1+100.000

N = 181052.957
E = 455452.481



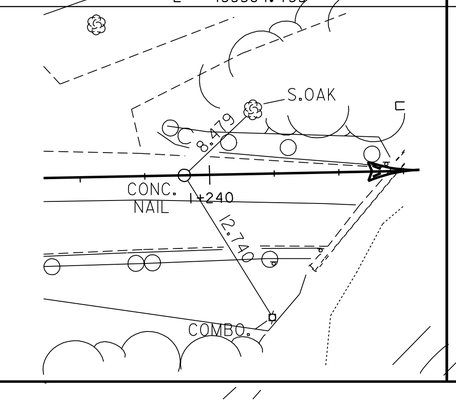
PC 1+154.645

N = 181073.835
E = 455502.980



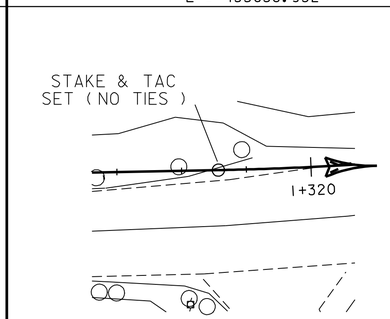
PT 1+238.051

N = 181090.785
E = 455584.155



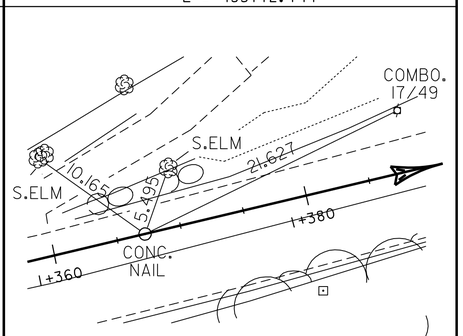
PC 1+312.843

N = 181092.257
E = 455658.932



PT 1+367.193

N = 181099.110
E = 455712.744



* ALIGNMENT STAKED ON 7-02-98

DATUM

VERTICAL NAVD 88
HORIZONTAL NAD 83/92

PROJECT:	PROJECT NO.:
BRISTOL	ER 021-1(13)

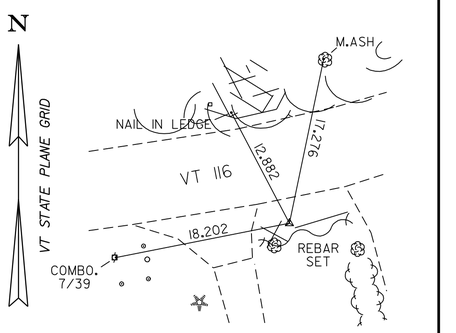
DESIGN FILE NAME: str2/78fl88/dfl88tie.dgn
IPARM FILE NAME: dfl88tyl.i
SURVEYED BY: L.ORVIS
SQUAD LEADER: Portalupi
TIE SHEET 1OF 2

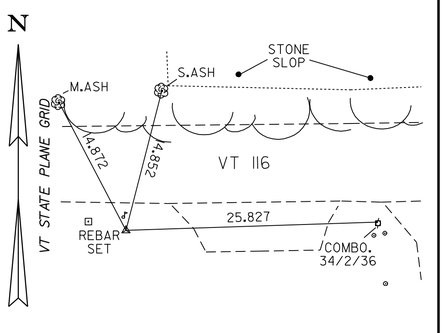
PLOT DATE: 05-JAN-2007
SURVEY DATE: 9-97
DRAWN BY: G.HITCHCOCK
SHEET: 15 OF 67

GPS CONTROL POINTS

TRAVERSE TIES

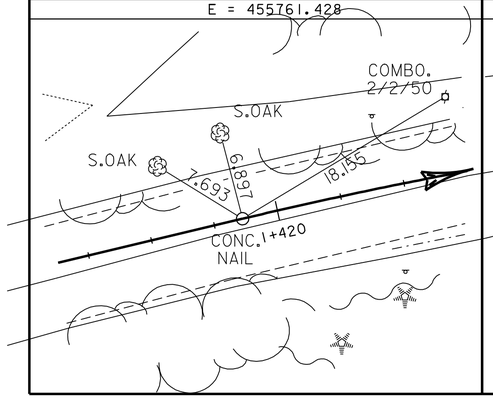
TRAV. 10	TRAV. 11
N = 180987.450	N = 180977.1251
E = 455299.8298	E = 455111.2216
Z = 174.099	Z = 170.727

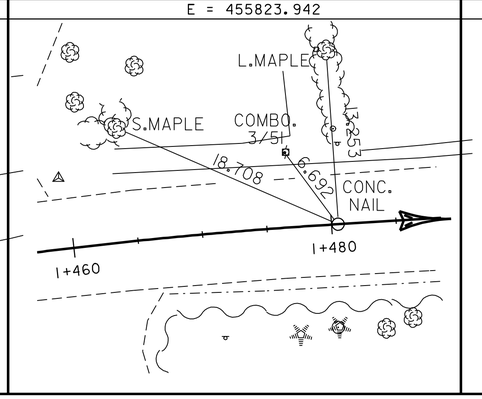


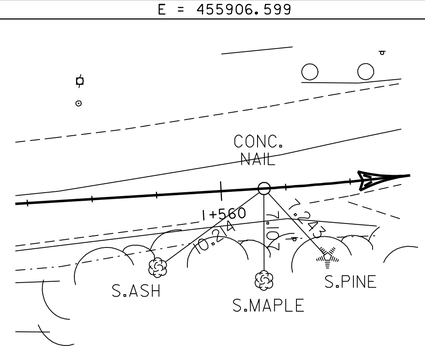


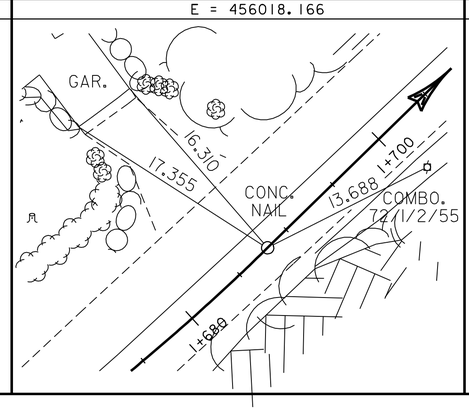
ALIGNMENT TIES

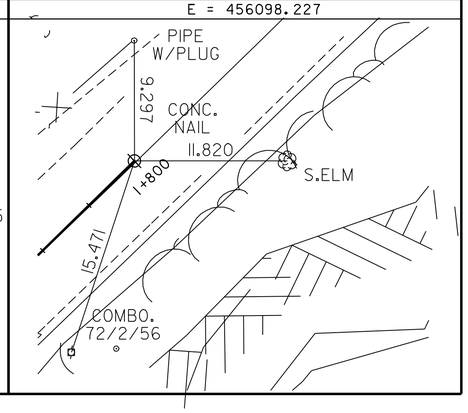
PC 1+417.238	PT 1+480.515	PC 1+563.327	PT 1+687.994	POE 1+799.908
N = 181110.697	N = 181119.982	N = 181125.050	N = 181174.530	N = 181252.729
E = 455761.428	E = 455823.942	E = 455906.599	E = 456018.166	E = 456098.227











* ALIGNMENT STAKED ON 7-02-98

DATUM

VERTICAL NAVD 88
HORIZONTAL NAD 83/92

PROJECT: BRISTOL
PROJECT NO.: ER 021-1(13)

DESIGN FILE NAME: str2/78fl88/dfl88tie.dgn
IPARM FILE NAME: dfl88ty2.i
SURVEYED BY: L.ORVIS
SQUAD LEADER: Portalupi
TIE SHEET 2 OF 2

PLOT DATE: 05-JAN-2007
SURVEY DATE: 9-97
DRAWN BY: G.HITCHCOCK
SHEET: 16 OF 67

ROADWAY LAYOUT SHEET 1

CONSTRUCT DRIVES
1+155 LT - 3.7m WIDE GRAVEL
1+180 RT ASKEW 58° - 4.5m WIDE PAVED
1+186 LT - 5.4m WIDE GRAVEL

CONSTRUCT MAILBOX TURNOUT
1+144.9 LT- 1+151.7 LT
1+174.6 LT- 1+181.9 LT

CAST-IN-PLACE CEMENT CONCRETE CURB, TYPE A
1+159.3 LT- 1+173.6 LT
1+191.0 LT- 1+219.2 LT
1+193.8 RT- 1+220.0 RT

ALUMINUM APPROACH RAILING (MOD)
1+192.2 RT- 1+220.0 RT

COLD PLANING - BCP
1+100.00 - 1+120.00

RELOCATE MAILBOX-SINGLE SUPPORT
1+150.0 LT
1+180.5 LT

1+100.00
BEGIN APPROACH

1+150.00
END APPROACH
BEGIN PROJECT

P.O.T. 1+100.00

CURVE #1 DATA
Δ = 21°20' 03" RT
R = 224.00 m
T = 42.192 m
L = 83.407 m
E = 3.939 m
BANK = 0.056 m/m

PC Sta 1+154.645

PI
1+196.837 BK=
1+195.860 AHD

1+196.794

1+192.9 CL ASKEW 70.5° RT
NEW 450mmx9m PCCSP/CAAP/
RCP OR CPEP(SL) w/ NEW
1.2mx1.2m RCDI @ 1+191.6 LT

1+191.9 LT ~ 1+250.0 LT
150mm UD w/ FB @ 1+250.0

1+194.7 RT ~ 1+251.8 RT
NEW 450mmx57m RCP/CPEP(SL)
w/ ELBOW @ 1+240.0 & NEW
1.2mx1.2m RCDI @ 1+194.4 RT

1+200.0 RT ~ 1+240.0 RT
150mm UD w/ FB @ 1+200.0

N67° 32' 17.7"E

N88° 52' 20.6"E

MATCH LINE STA. 1+220

VT STATE PLANE GRID

N

P.O.T. 1+100.00
S.APPLE
COMB W/METER
LIGHT
GARDEN
S.APPLE
FLAG POLE
TRAILER
S.APPLE
LILACS
S.SPR
S.APPLE
M. MAPLE
HVCTRL
HOUSE
WOODS
BUTTER NUT
S.MAPLE
HYD
SIGN
1+100
1+120
1+140
1+160
1+180
1+200
GUY
SIGN
GARAGE
PAVED DRIVE
S.APPLE
M.WALNUTS
S.SPR.
6m
TRAV.& REBAR SET
I.P.
SHED
WOODS
S.WALNUT
GARDEN
S.WALNUT
ROSE
GARDEN
GR DRIVE
S.SPR
M. WALNUT
SHRUB
6m
WOOD FRAME HOUSE
S.WALNUT
S.SPR.
L. MAPLE
GARDEN
GARDEN
6m
HVCTRL
PAVED DRIVE
COMB.
6m
HEDGE
S. WALL
GRAVEL DRIVE
WOODS
WOODS
FOUNDATION
SHED
CHAIN LINK FENCE
S.APPLE
S. SPR
RAIL FENCE
M. WHITE BIRCH
METER BOX
TRAILER

0 10 20 30
SCALE IN METERS

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD83 (92)

PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: /str2/78fl88/dfl88bdr.dgn	
IPARM FILE NAME: dfl88ll.i	PLOT DATE: 05-JAN-2007
SURVEYED BY: L. ORVIS	SURVEY DATE:
SQUAD LEADER: A. PORTALUPI	DRAWN BY: STR2
LAYOUT SHEET 1	SHEET: 17 OF 67

ROADWAY LAYOUT SHEET 2

VAOT Metric

N

VT STATE PLANE GRID

CURVE #2 DATA
△ = 12°15' 36" LT
R = 254.00 m
T = 27.279 m
L = 54.350 m
E = 1.461 m
BANK = 0.053 m/m

CAST-IN-PLACE CEMENT CONCRETE CURB, TYPE A
1+244.0 LT- 1+252.1 LT
1+315.3 LT- 1+350.0 LT
1+220.0 RT- 1+246.9 RT
1+301.1 RT- 1+310.8 RT
1+330.9 RT- 1+350.0 RT

M.L. POT 1+250.00=
CHAN. 10+035.00
△= 104°-31'-31" RT

Begin Bridge
℄ Bearing
Sta 1+255.000

BM #3
CH SQ ON NW
BRIDGE ABUT
ELEV. 177.933m

End Bridge
℄ Bearing
Sta 1+299.000

Begin Approach Slab
Sta 1+246.740

End Approach Slab
Sta 1+307.260

EXISTING BRIDGE DATA
42 m Concrete T-Beam
Portion Destroyed by flood.

BM #4
CH SQ ON
GARAGE FLOOR
ELEV. 176.054m

CONSTRUCT MAILBOX TURNOUT
1+322.6 RT- 1+329.9 RT

RELOCATE MAILBOX MULTIPLE SUPPORT
1+323.5 RT

PLANT 2 WHITE SPRUCE TREES (PICEA GLAUCA, B&B, 3.5m HT.)
1+325 - 18m RT
1+333 - 14.5m RT

CONSTRUCT DRIVES
1+226 LT ASKEW 100° - 3.5m WIDE GRAVEL
1+233 LT ASKEW 53° - 8.8m WIDE GRAVEL
1+318 RT - 7.8m WIDE PAVED

ALUMINUM APPROACH RAILING (MOD)
1+220.0 RT- 1+246.9 RT
1+301.1 RT- 1+312.4 RT
1+247.2 LT- 1+252.1 LT
1+315.3 LT- 1+342.7 LT

DEMOLITION & DISPOSAL OF BUILDING
1+345.0 LT

PI
1+340.122 BK=
1+339.914 AHD

0 10 20 30
SCALE IN METERS

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD83 (92)

PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: /str2/78fl88/dfl88bdr.dgn	
IPARM FILE NAME: dfl88l2.i	PLOT DATE: 05-JAN-2007
SURVEYED BY: L. ORVIS	SURVEY DATE:
SQUAD LEADER: A. PORTALUPI	DRAWN BY: STR2
LAYOUT SHEET 2	SHEET: 18 OF 67

ROADWAY LAYOUT SHEET 3

VAOT Metric

CURVE #2 DATA
Δ = 12°15' 36" LT
R = 254.00 m
T = 27.279 m
L = 54.350 m
E = 1.461m
BANK = 0.053 m/m

1+385.00
END PROJECT
BEGIN APPROACH

1+400.00
END APPROACH

PI
1+448.955 BK =
1+448.799 AHD

BM #5
RR SPIKE
IN ROOT OF
LARGE MAPLE
ELEV. 185.896m

N
VT STATE PLANE GRID

1+316.3 LT ~ 1+379.0 LT
150mm DD w/ FB @ 1+379.0

1+316.3 LT ~ 1+379.7 LT
NEW 450mmx6.4m RCP/CPEP(SL)
W/NEW 124.2 RCD @ 1+380.0 LT

1+380.3 LT ~ 1+400.0 LT
NEW 450mmx2.0m RCP/CPEP(SL)
*TO BE CAPPED @ 1+400.0 LT

1+380.3 LT ~ 1+400.0 LT
150mm DD w/ FB @ 1+400.0 LT
*TO BE CAPPED @ 1+400.0 LT

PT
STA 1+367.193

WIRE FENCE
SHED
HYDRANT
GUY
S.APPLES
S.ELM
GRAVEL DRIVE
S.BOXELD
COMB. CURB
MATCH LINES STA. 1+350.00
N76° 36' 44.8"E
1+360
1+380
1+400
1+420
1+440
1+460
1+480
N86° 29' 28.6"E
SIGN
2 M.ASH
MM
WOODS
S.APP
I.P.
BARBED WIRE FN.
S.ELM
S.ELM
WOOD FRAME HOUSE
M.B.
STEPS
SIGN @ 2/2/50'
S.MAPLE
S.ELM
LILAC
SHRUBS
M.CED.
S.MAP
HEDGE
GRAVEL DRIVE
TRAV.T REBAR SET
3/5I ø
SIGN
ARTESION WELL
HEDGE
APPLE
SHED
BARN
SHRUB
S.MAPLES
SHRUB
LILAC
P SIGN
S.SPR
M.HEM
#2A
L.MAPLE
M.APPLE
4 HYDRANT
M.ASH
M. SPRUCE
WOOD FRAME HOUSE
PC
Sta 1+417.238
NURSERY SIGN
S.SPR
S.ASH
S.LOC
S.APP
RUSS OLIVE
RUSS OLIVE
GRAVEL DRIVE
M.MAP
M.APP
L.APP
S.SPR
S.SPR
M.ASH
M.ASH
PT
Sta 1+480.515

1+331.8 RT ~ 1+359.7 RT
NEW 450mmx30m RCP/CPEP(SL)
W/ NEW 1.2mx1.2m RCD @ 1+360.0 RT

1+360.0 RT
NEW 450mmx3m RCP/CPEP(SL)
W/ NEW 1.2mx1.2m RCD @ 1+360.0 RT

1+360.5 RT ~ 1+400.0 RT
150mm DD w/ FB @ 1+400.0
*TO BE CAPPED @ 1+400.0

1+360.3 RT ~ 1+400.0 RT
NEW 450mmx40m RCP/CPEP(SL)
*TO BE CAPPED @ 1+400.0

1+396.0 RT ~ 1+400.0 RT
NEW 450mmx6m RCP/CPEP(SL)
90° CPEP(SL)
NOT INSTALLED
EXTENDED STONE LINED DITCH

CAST-IN-PLACE CEMENT
CONCRETE CURB, TYPE A
1+350.00 RT~1+399.00 RT
1+350.00 LT~1+384.00 LT

TYPE I STONE LINED DITCH
1+360 RT ~ 1+390 RT

CURVE #3 DATA
Δ = 09°52' 44" RT
R = 367.00 m
T = 31.717 m
L = 63.278 m
E = 1.368 m
BANK = 0.046 m/m

0 10 20 30
SCALE IN METERS

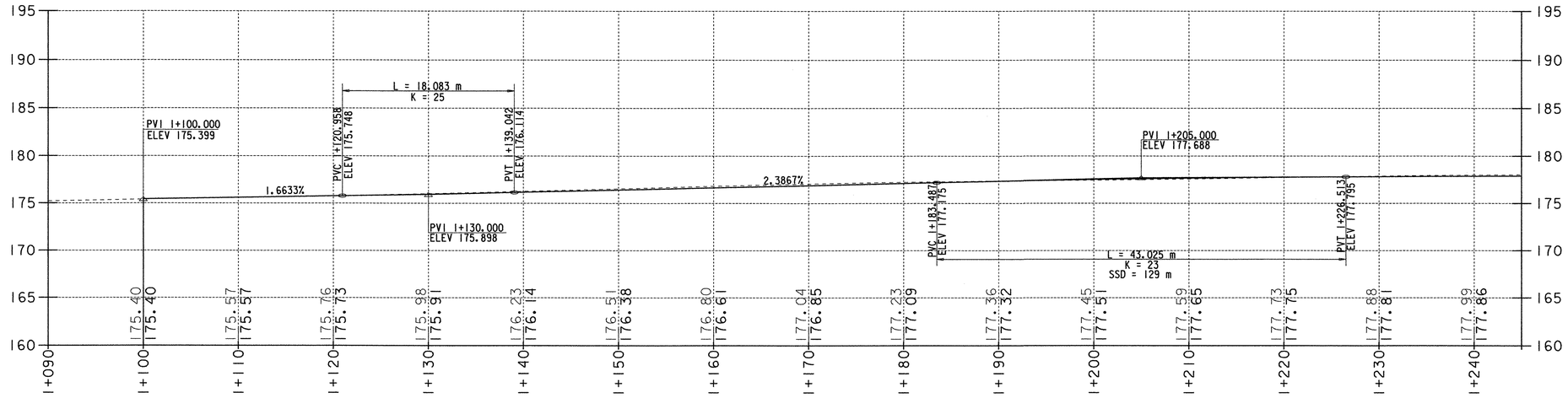
DATUM
VERTICAL NAVD 88
HORIZONTAL NAD83 (92)

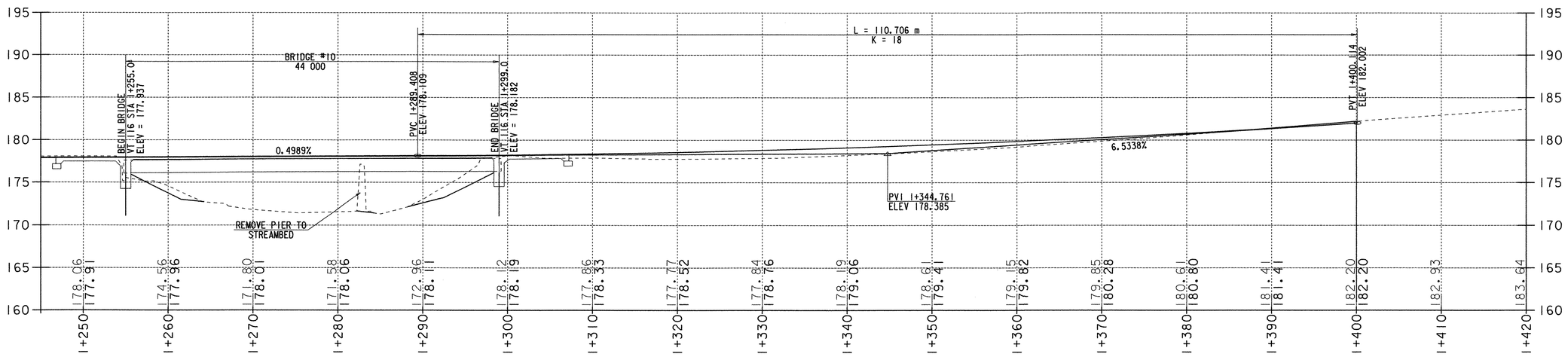
PROJECT: BRISTOL	PROJECT NO.: BRF 021-1(13)
DESIGN FILE NAME: /str2/78f188/df188bdr.dgn	
IPARM FILE NAME: df18813.i	PLOT DATE: 28-NOV-2006
SURVEYED BY: L. ORVIS	SURVEY DATE: 9-97
SQUAD LEADER: A. PORTALUPI	DRAWN BY: STR2
LAYOUT SHEET 3	SHEET: 19 OF 67

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROFILE – BRIDGE 10

VAOT Metric





0 10 20 30

SCALE IN METERS

DATUM

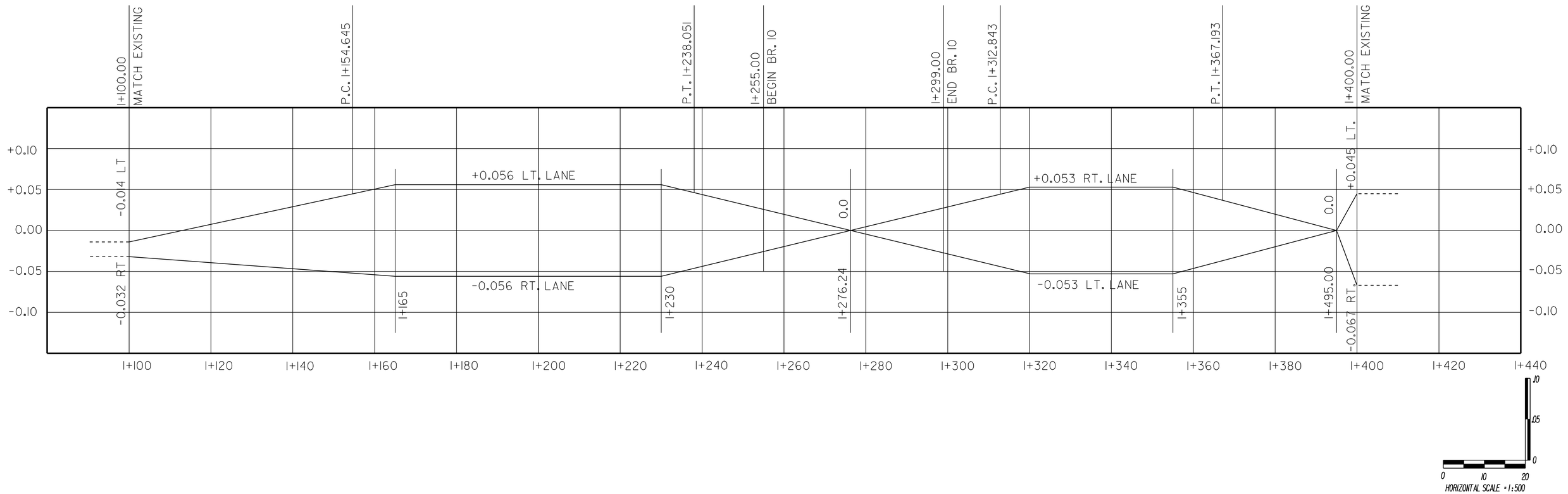
VERTICAL	NAVD 88
HORIZONTAL	NAD83 (92)

PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: str2/78f188/df188wk.dgn	
IPARM FILE NAME: df188prl.i	PLOT DATE: 03-JAN-2007
SURVEYED BY:	SURVEY DATE:
SQUAD LEADER: Portalupi	DRAWN BY: Weeber
	SHEET: 20 OF 67

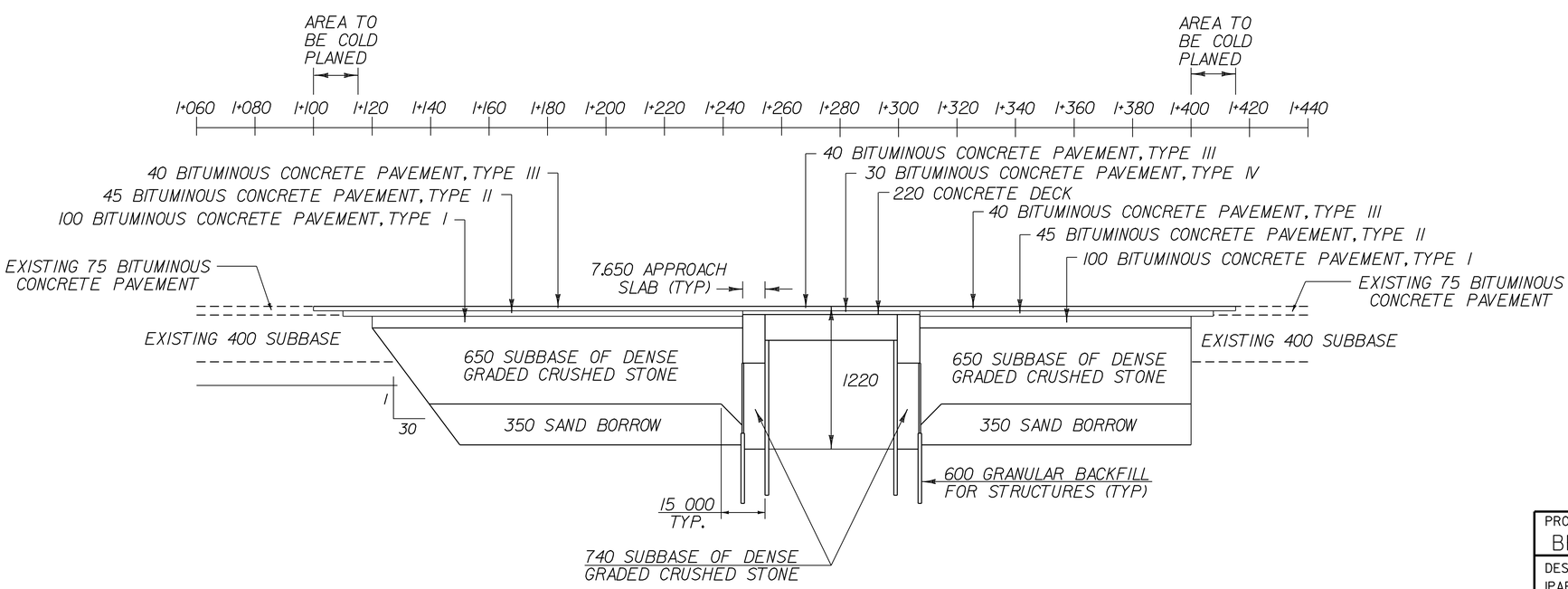
STATE OF VERMONT
AGENCY OF TRANSPORTATION

BANKING DIAGRAM

VAOT Metric



MATERIAL TRANSITION DETAIL



DATUM

VERTICAL _____

HORIZONTAL _____

PROJECT:	PROJECT NO.:
BRISTOL	ER 021-1(13)
DESIGN FILE NAME: /str2/78fl88/dfl88xsl.dgn	
IPARM FILE NAME: dfl88bdl.i	PLOT DATE: 05-JAN-2007
SURVEYED BY:	SURVEY DATE:
SQUAD LEADER: A. PORTALUPI	DRAWN BY: JLR
	SHEET: 21 OF 67

PVMT MARKINGS, SIGNS, UTILITIES & EROSION CONTROL LAYOUT SHEET 1

N

VT STATE PLANE GRID

TEMPORARY 4" WHITE LINE
1+100 LT ~ 1+400 LT; EDGE LINE (3.3m LT)
1+100 RT ~ 1+400 RT; EDGE LINE (3.3m RT)

DURABLE 4" WHITE LINE
1+100 LT ~ 1+400 LT; EDGE LINE (3.3m LT)
1+100 RT ~ 1+400 RT; EDGE LINE (3.3m RT)

TEMPORARY 4" YELLOW LINE
1+100 CL ~ 1+400 CL; SOLID DOUBLE LINE

DURABLE 4" YELLOW LINE
1+100 CL ~ 1+400 CL; SOLID DOUBLE LINE

1+100.00
BEGIN APPROACH

1+150.00
END APPROACH
BEGIN PROJECT

N67°32'17.7"E

N88°52'20.6

1+100 1+120 1+140 1+160 1+180 1+200

W

AER E&T

42
45
3

43A
40
4

PRES. A4A

1+196.704

1+115 RT
EXISTING SIGN

R

NARROW BRIDGE

1+143 RT
EXISTING
COSTRUCTION SIGN

R

1 TRUCK AT A TIME ON BRIDGE

AERIAL RELOCATION ROUTE BY C.V.P.S., ADELPHIA, & CHAMPLAIN VALLEY TELECOM

UE

1+195 RT
EXISTING SIGN

RET

SARGENT'S
453-5096
WELDING

SIGN LEGEND	
R	- REMOVE
N	- NEW
RET	- RETAIN

0 10 20 30

SCALE IN METERS

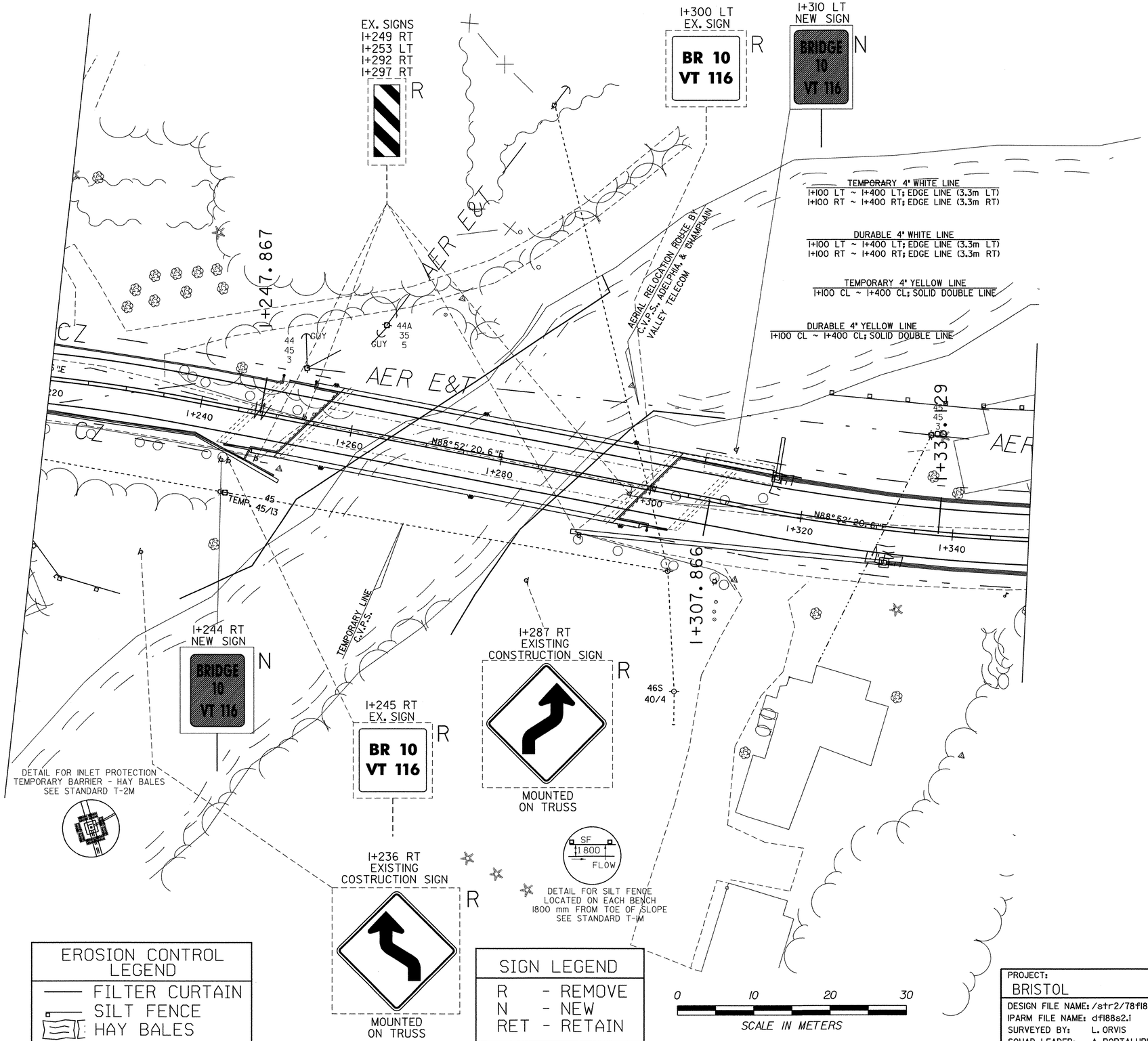
DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD83 (92)

PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: /str2/78fl88/dfl88bdr.dgn	
IPARM FILE NAME: dfl88sl.i	PLOT DATE: 05-JAN-2007
SURVEYED BY: L. ORVIS	SURVEY DATE:
SQUAD LEADER: A. PORTALUPI	DRAWN BY: STR2
PVMT MARKINGS, SIGNS, UTILITIES & E.C.	SHEET: 22 OF 67

VAOT Metric

PVMT MARKINGS, SIGNS, UTILITIES & EROSION CONTROL
LAYOUT SHEET 2



EROSION CONTROL LEGEND
FILTER CURTAIN
SILT FENCE
HAY BALES

SIGN LEGEND	
R	- REMOVE
N	- NEW
RET	- RETAIN

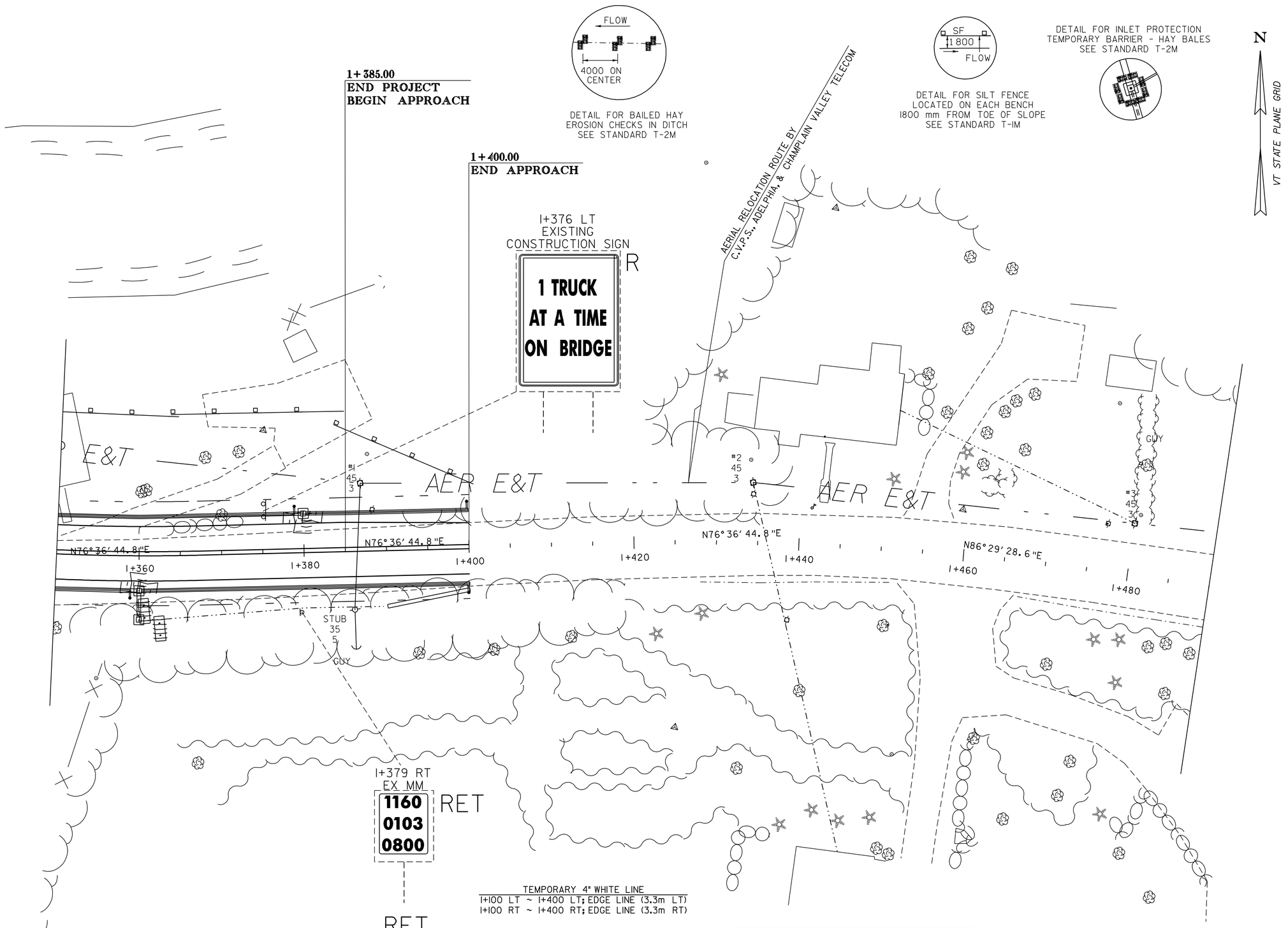
DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD83 (92)

PROJECT:	PROJECT NO.:
BRISTOL	ER 021-1(13)
DESIGN FILE NAME: /str2/78fi88/dfi88bdr.dgn	
IPARM FILE NAME: dfi88s2.i	PLOT DATE: 28-DEC-2006
SURVEYED BY: L. ORVIS	SURVEY DATE:
SQUAD LEADER: A. PORTALUPI	DRAWN BY: STR2
PVMT MARKINGS, SIGNS, UTILITIES & E.C.	SHEET: 23 OF 67

VAOT Metric

PVMT MARKINGS, SIGNS, UTILITIES & EROSION CONTROL LAYOUT SHEET 3



TEMPORARY 4" WHITE LINE
1+100 LT ~ 1+400 LT; EDGE LINE (3.3m LT)
1+100 RT ~ 1+400 RT; EDGE LINE (3.3m RT)

DURABLE 4" WHITE LINE
1+100 LT ~ 1+400 LT; EDGE LINE (3.3m LT)
1+100 RT ~ 1+400 RT; EDGE LINE (3.3m RT)

TEMPORARY 4" YELLOW LINE
1+100 CL ~ 1+400 CL; SOLID DOUBLE LINE

DURABLE 4" YELLOW LINE
1+100 CL ~ 1+400 CL; SOLID DOUBLE LINE

EROSION CONTROL LEGEND
FILTER CURTAIN
SILT FENCE
HAY BALES

SIGN LEGEND	
R	- REMOVE
N	- NEW
RET	- RETAIN

0 10 20 30

SCALE IN METERS

DATUM

VERTICAL NAVD 88
HORIZONTAL NAD83 (92)

PROJECT:	PROJECT NO.:
BRISTOL	ER 021-1(13)
DESIGN FILE NAME: /str2/78fl88/dfl88bdr.dgn	
IPARM FILE NAME: dfl88s3.i	PLOT DATE: 05-JAN-2007
SURVEYED BY: L. ORVIS	SURVEY DATE:
SQUAD LEADER: A. PORTALUPI	DRAWN BY: STR2
PVMT MARKINGS, SIGNS, UTILITIES & E.C.	SHEET: 24 OF 67

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

VAOT 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	NEW SIGN 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	TUBULAR ALUMINUM Ø (mm) kg/m 75 1.9	100 2.5	100 MOD 2.5	TUBULAR STEEL Ø (mm) FOUND-ATION	kg/m 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																									
I+240 RT	BRIDGE ID VT 16	I	150	200	0.03						I		X			X																		SIGN ID CODE VD-701		E-134M
I+310 LT	BRIDGE ID VT 16	I	150	200	0.03						I		X			X																		SIGN ID CODE VD-701		E-134M

STATE OF VERMONT
AGENCY OF TRANSPORTATION

STREET LIGHTING DETAILS

VAOT Metric

A. CONDUIT

1. 50 MM (INSIDE DIAMETER) CONDUIT SHALL BE USED THROUGHOUT THE PROJECT. ALL CONDUIT SHALL BE P.V.C. SCHEDULE 40 ELECTRICAL CONDUIT (UNDERGROUND) AND P.V.C. SCHEDULE 80 CONDUIT (ABOVE GROUND AND IN CONCRETE) AS DETAILED IN THESE PLANS.
2. THE FINAL CONDUIT DEPTH SHALL BE 600 MM MINIMUM BELOW GRADE FOR CONDUIT RUNS PARALLEL WITH EDGE OF SIDEWALK. FINAL DEPTHS TO BE APPROVED BY THE RESIDENT ENGINEERS.
3. A 150 MM WIDE RED MARKING TAPE (PLASTIC) SHALL BE INSTALLED 150 MM TO 300 MM BELOW FINISH GRADE OVER CONDUIT RUNS.
4. A MAXIMUM OF 270 DEGREES IN TOTAL BENDS WILL BE PERMITTED IN A SINGLE RUN OF CONDUIT.

B. GROUNDING

1. A CONTINUOUS GROUNDING CIRCUIT (MINIMUM 13.3 MM COPPER CONDUCTOR) SHALL BE RUN BACK TO THE POWER SOURCE.
2. ALUMINUM WIRE SHALL NOT BE USED FOR GROUND WIRE.

C. POLES AND ANCHOR BASES

1. THE 6 HISTORIC SIDEWALK LIGHT POLES SHALL BE A "WELSBACH, ESSEX" ROUND 112 MM ALUMINUM POLE WITH DECORATIVE BASE ASSEMBLY. THE POLE SHALL HAVE A 112 MM TOP DIAMETER AND A STRAIGHT SHAFT. THE POLE SHALL HAVE ONE SINGLE WEATHERPROOF RECEPTACLE MOUNTED 150 MM BELOW THE TOP OF THE POLE. THE ANCHOR BASE SHALL HAVE FOUR ANCHOR BOLT HOLES AND A ONE PIECE ANCHOR BOLT COVER.
2. EACH POLE SHALL BE MOUNTED TO THE CONCRETE BASE WITH FOUR STAINLESS STEEL ANCHOR BOLTS, NUTS AND WASHERS. SEE "DECK REINFORCING DETAILS" SHEET 42 OF 67 FOR ANCHORAGE TO BRIDGE. WIRING ACCESS SHALL BE A 80 MM X 130 MM HANDHOLE IN THE POLE BASE.
3. FINISH SHALL BE A FLAT BLACK LACQUER WHICH IS APPLIED IN A THREE STAGE PROCESS.

D. WIRE

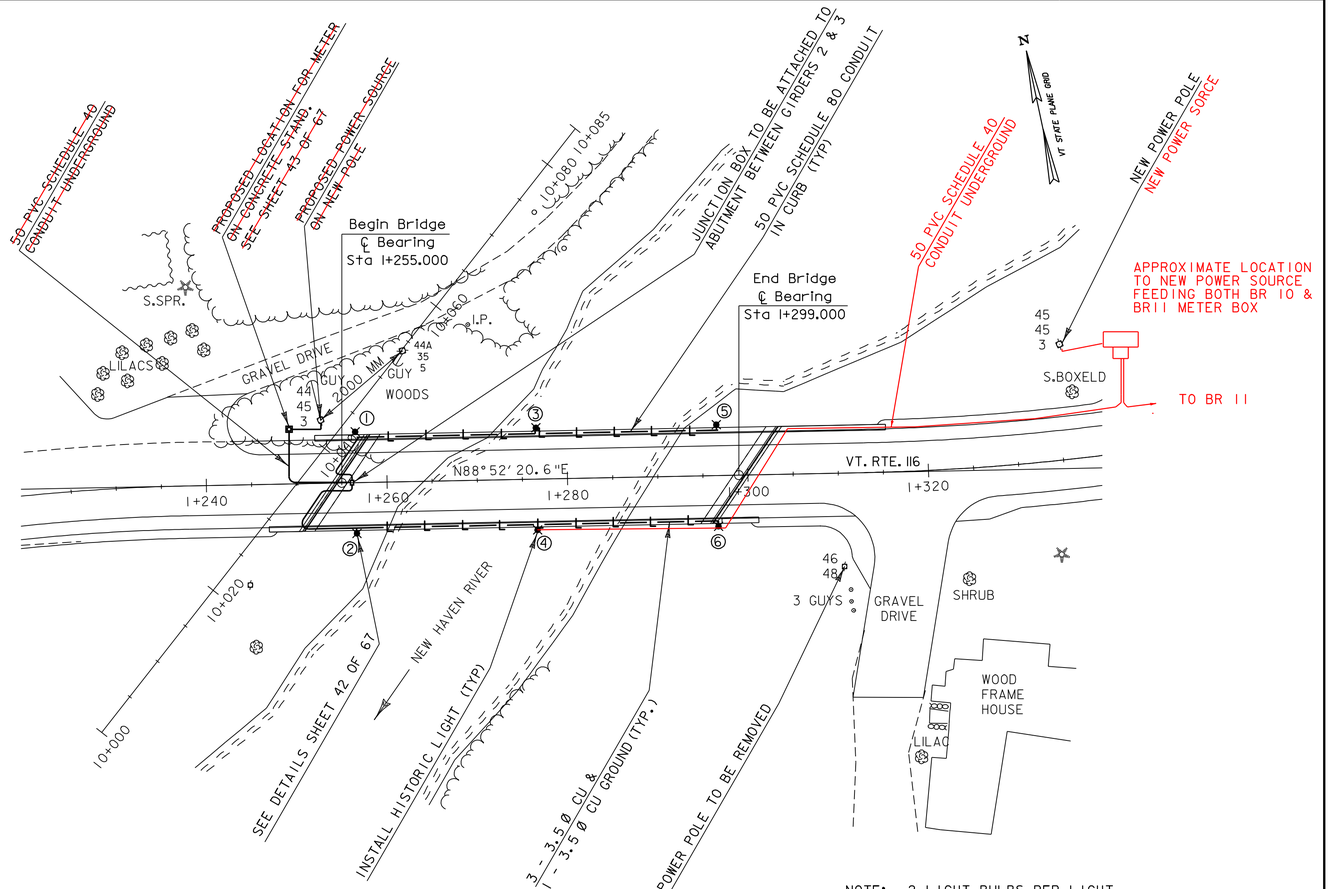
1. ALL WIRING BETWEEN THE METER AND/OR POWER SOURCE AND THE FIRST POLE OR PULLBOX AND BETWEEN POLES AND/OR PULLBOXES SHALL BE COPPER, SIZE AS INDICATED ON THE PLANS. ALL WIRE SHALL HAVE TYPE XHHW INSULATION OR EQUIVALENT.
2. USE 5.86 MM² STRANDED COPPER WIRES IN EACH POLE BETWEEN THE POLE BASE AND THE LUMINAIRE.
3. USE 13.3 MM² COPPER (MINIMUM) WIRES FOR THE CONTINUOUS GROUND CIRCUIT.
4. ALL CONDUIT SHALL INCLUDE A GROUNDING CONDUCTOR.
5. ALL WIRE CONNECTIONS IN THE LIGHT POLE BASES SHALL BE MADE WITH THE PROPER, IN LINE OR WYE TYPE WATERPROOF DISCONNECT KIT. THE LOAD SIDE TO THE LUMINAIRE SHALL BE FUSED AT 3 TIMES THE LOAD.
6. VOLTAGE LOSSES GREATER THAN 3% IN THE SECONDARY CIRCUIT SHALL REQUIRE LARGER WIRE.

E. LUMINAIRES

1. THE 6 HISTORIC SIDEWALK LIGHTS SHALL BE A "WELSBACH, QUAKER" MODEL 50, WITH THE FOLLOWING: AN ALUMINUM HOUSING PRIMED AND PAINTED WITH A FLAT BLACK FINISH. LENS TO BE STABILIZED POLYCARBONATE - UPPER LENS FROSTED - LOWER LENS CLEAR. OPTICS TO INCLUDE ASYMMETRIC SPECULAR ALZAK ALUMINUM REFLECTOR SYSTEM FOR A 100 WATT METAL HALIDE LAMP HORIZONTALLY MOUNTED WITH SEMI-CUTOFF, TYPE V DISTRIBUTION AND HAVE A DECORATIVE CAST ACRYLIC FIBER OPTIC COLUMN ASSEMBLY MOUNTED IN THE BASE FOR SIMULATING A BASE MOUNTED LIGHT SOURCE. BALLAST TO BE A HIGH POWER FACTOR, CONSTANT WATTAGE, AUTO-TRANSFORMER. LAMPHOLDER SHALL BE PORCELAIN. THE LIGHT FIXTURE SHALL MOUNT TO A 80 MM O.D. BY 105 MM TALL TENON, SECURED WITH STAINLESS STEEL HARDWARE AND HAVE A PRIMED AND PAINTED FLAT BLACK FINISH.

F. GENERAL

1. THE LOAD ON EACH BRANCH OF A THREE WIRE CIRCUIT SHALL BE AS BALANCED AS POSSIBLE, LOAD TO NEUTRAL.
2. CONDUIT LOCATIONS SHOWN ON THIS DRAWING ARE APPROXIMATE, ACTUAL LOCATIONS, SHALL BE DETERMINED IN THE FIELD, DUE TO DRAINAGE AND UNDERGROUND UTILITIES.
3. THE CONTRACTOR SHALL CONTACT UTILITY COMPANIES WITH UNDERGROUND FACILITIES WHEN EXCAVATING IN THE AREA OF THESE UTILITIES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR CONTACTING AND SCHEDULING WORK WITH LOCAL UTILITIES WITH FACILITIES IN THE PROJECT AREA FOR LOCATION OF POWER SOURCES.
4. THE LAST POLE BASE AT THE END OF EACH BRANCH CIRCUIT OF THE TWO CIRCUITS SHALL HAVE A CONDUIT SWEEP WITH CAP INSTALLED FOR FUTURE USE.
5. FOR ADDITIONAL DETAILS, SEE STANDARD SHEETS E-180M AND E-181M.
6. STANCHION TYPE #3 MOD. SHALL BE USED FOR THIS PROJECT. SEE "DETAIL SHEET FOR POWER DROP STANCHION" SHEET 43 OF 67.
7. ONE (1) PHOTO-CELL FOR EACH OF THE TWO (2) LIGHT CIRCUITS SHALL BE LOCATED AT THE POWER SOURCE OR SOME COMMON POINT, AS DIRECTED BY THE ENGINEER.



NOTE: 2 LIGHT BULBS PER LIGHT.
DELIVER 1 BULB TO DISTRICT OFFICE.

LEGEND

- ✠ EXISTING UTILITY POLE
- ② LIGHT POLE NUMBER
- —L— PROPOSED LIGHTING CONDUIT
- ✱ PROPOSED HISTORIC LIGHT
- ▫ JUNCTION BOX
- ◘ METER BOX

PLAN

0 10 20 30
SCALE IN METERS

G. WORK TO BE PERFORMED BY THE CONTRACTOR

THE CONTRACTOR SHALL:

1. COORDINATE ALL ITEMS REGARDING PROJECT POWER WITH TOWN OF BRISTOL BEFORE COMMENCING WORK.
2. INSTALL ALL LIGHT POLES, LUMINAIRES, WIRING, AND DISCONNECT PLUG KITS.
3. INSTALL ALL THE CONDUIT AND WIRING AS DETAILED ON THIS DRAWING.
4. INSTALL POLE RISER, WEATHERHEAD, RAINTIGHT ENCLOSURE WITH METER SOCKET ON A STANCHION, WITH OVERLOAD DISCONNECTS FOR EACH CIRCUIT, AND OTHER RELATED MATERIALS. PADLOCK(S) FOR ENCLOSURE, KEYS TO BE GIVEN TO TOWN OF BRISTOL.
5. INSTALL REMOTE TWO POLE RELAY WITH CIRCUIT BREAKERS FOR AUTOMATIC SWITCHING OF THE TWO LIGHTING CIRCUITS.
6. THE CONTRACTOR IS DIRECTED TO SPECIFICATION 679.09 IN THE VAOT 1995 SPECIFICATIONS REGARDING POWER COSTS FOR THE STREET LIGHTING.
7. THE CONTRACTOR MAY OPEN THE BRIDGE TO TRAFFIC WITHOUT THE STREET LIGHTING IN OPERATION. HOWEVER, THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN SAFE PASSAGE OF VEHICLES WHILE WORKERS ARE COMPLETING ALL STREET LIGHTING WORK.

H. WORK TO BE PERFORMED BY CENTRAL VERMONT PUBLIC SERVICE

1. PROVIDE A METERED POWER SOURCE FOR THE PROJECT LIGHTS.

STREET LIGHTING LOCATIONS TABLE

POLE NO.	LOCATION	OFFSET*	LUMINAIRE WATTS TYPE	MOUNT HEIGHT	REMARKS
①	1+257 LT.	5.5 M	100W Me Ha	4.3 M	MOUNT ON WW
②	1+257 RT.	5.5 M	100W Me Ha	4.3 M	MOUNT ON BRIDGE
③	1+277 LT.	5.5 M	100W Me Ha	4.3 M	MOUNT ON BRIDGE
④	1+277 RT.	5.5 M	100W Me Ha	4.3 M	MOUNT ON BRIDGE
⑤	1+297 LT.	5.5 M	100W Me Ha	4.3 M	MOUNT ON BRIDGE
⑥	1+297 RT.	5.5 M	100W Me Ha	4.3 M	MOUNT ON WW

NOTE: Me Ha = METAL HALIDE
* = OFFSET TO CENTERLINE POLE & FOUNDATION

DATUM

VERTICAL NAVD 88
HORIZONTAL NAD83(92)

PROJECT:	PROJECT NO.:
BRISTOL	ER 021-1(13)

DESIGN FILE NAME: M:\Projects\78f188\Construction\026.dgn
IPARM FILE NAME: sf188sllJ
SURVEYED BY: ORVIS
SQUAD LEADER: PORTALUPI
PLOT DATE: 05-JAN-2007 08:24
SURVEY DATE: 9/97
DRAWN BY: L.BULLOCK
SHEET: 26 OF 67

SOIL CLASSIFICATION

AASHTO

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

ROCK QUALITY DESIGNATION

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

SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN kPa	CONSISTENCY
<12	Very Soft
12-24	Soft
24-48	Med. Stiff
48-96	Stiff
96-192	Very Stiff
>192	Hard

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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

COMMONLY USED SYMBOLS

▼	Water Elevation
⊕	Standard Penetration Boring
⊕	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per 300 mm For: 50.8 mm O.D. Sampler 35.0 mm I.D. Sampler Hammer Weight Of 63.5 kg. Hammer Fall Of 762 mm
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 30.1mm
BX	Core Size 42.0 mm
NX	Core Size 54.7 mm
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
Si	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	To Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
RQD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)

COLOR

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

DEFINITIONS (AASHTO)

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

BOULDER - A rock fragment with an average dimension > 304.8 mm.

COBBLE - Rock fragments with an average dimension between 76.2 and 304.8 mm.

GRAVEL - Rounded particles of rock < 76.2 mm and > 2 mm (#10 sieve).

SAND - Particles of rock < 2 mm (#10 sieve) and > 75 μm (#200 sieve).

SILT - Soil < 75 μm (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

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

VARVED - Alternate layers of silt and clay.

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

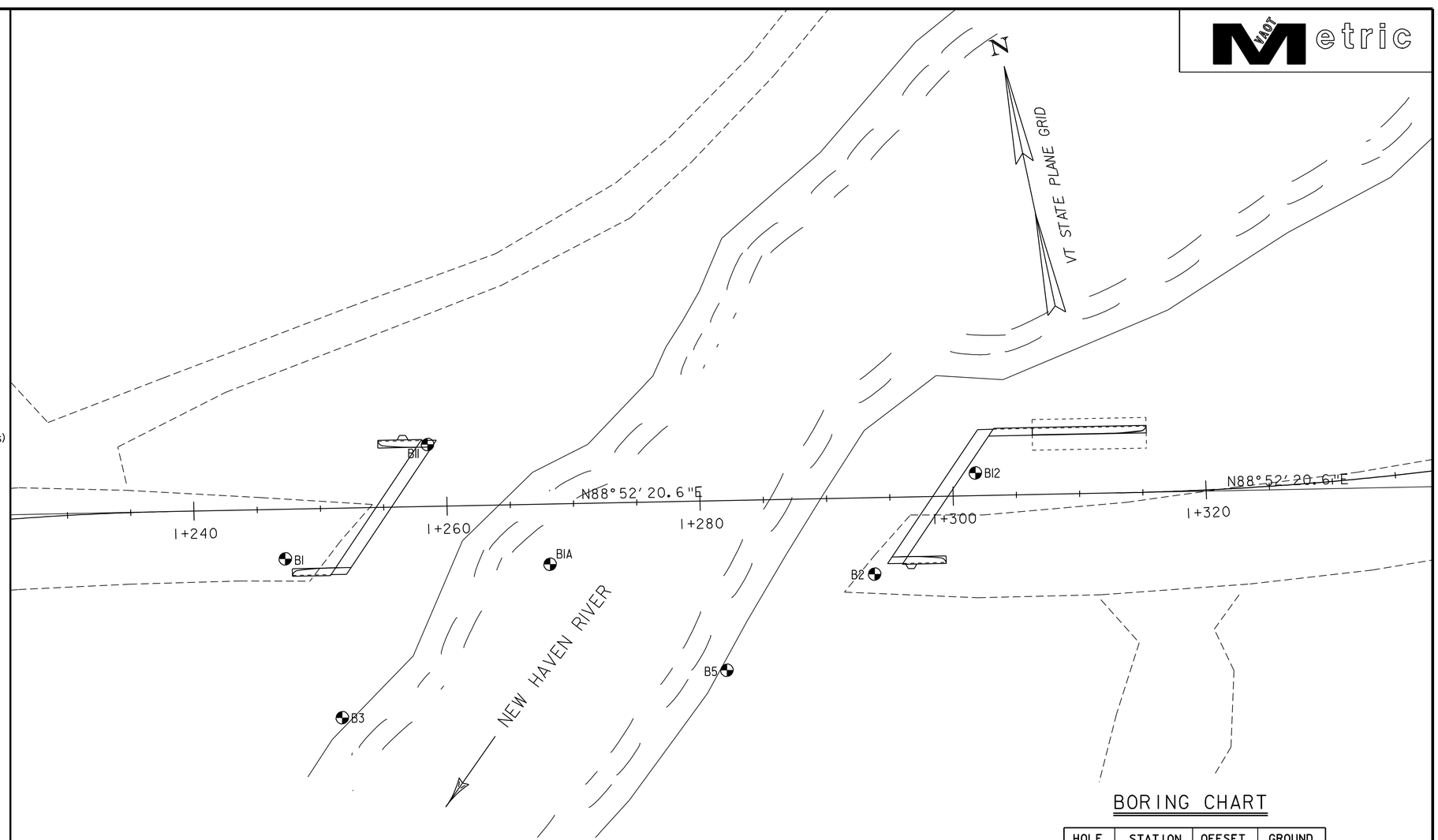
MUCK - Soft organic soil (containing > 10% organic material.

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

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

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

DIP - Inclination of bed with a horizontal plane.



BORING LAYOUT

0 10 20

SCALE 1:250

BORING CHART

HOLE NO.	STATION	OFFSET (m)	GROUND ELEV.
B1	1+247.15	3.91	178.09
B1A	1+268.06	4.75	172.12
B2	1+293.69	6.03	177.91
B3	1+251.42	16.55	175.00
B5	1+281.88	13.40	175.00
B11	1+258.56	-4.90	176.13
B12	1+301.80	-1.80	177.92

GENERAL NOTES

1. The subsurface explorations shown herein were made between 6/18/86 and 9/10/98 by the Agency.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgement was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgement by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.

PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: str2/78f188/df188bor.dgn IPARM FILE NAME: sf188br.i	PLOT DATE: 05-JAN-2007
BRIDGE 10 BORING LOCATIONS	SHEET: 27 OF 67

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: BI
SHEET 1 OF 1
DATE STARTED: 6/18/86
DATE COMPLETED: 6/18/86

PROJECT NAME: BRISTOL
SITE NAME: RT 116
STATION: 1+247.15
GROUND EL.: 178.09

PROJECT NUMBER: ER 021-1(13)
SITE NO.: BR #10
OFFSET: 3.91
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER:
LOGGER:
ADDITIONAL CREW:

BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		No sample, 1.2m-1.8m, BXDC, Boulders							
		No Rec., Boulder							
		No Sample, 3.35m-4.88m, BXDC, Boulders							
5		No Sample, 4.88m-6.71m, BXDC, Boulders							
		Hole stopped @ 6.71m							
10									
15									
20									
25									

174.0

150.0 +/-

GEOLOGISTS REPORT:

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: BIA
SHEET 1 OF 1
DATE STARTED: 6/18/86
DATE COMPLETED: 6/18/86

PROJECT NAME: BRISTOL
SITE NAME: RT 116
STATION: 1+268.06
GROUND EL.: 172.12

PROJECT NUMBER: ER 021-1(13)
SITE NO.: BR #10
OFFSET: 4.75
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER:
LOGGER:
ADDITIONAL CREW:

BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		Top of Bridge Deck @ 0.0m							
5		River Bed @ 6.10m							
		No Sample, 6.10m-8.69m, BXDC, Boulders							
		No Rec.	17						
10		No Rec.	18						
		A-2-4, SiSa, gry, Moist	32	17.9					
		No Rec.	27						
		A-1-b, Sa, MTW	18	27.1					
		A-1-b, SiSa, Moist	20	14.2					
		A-2-4, Sa, gry, Moist	15	18.1					
15		A-2-4, SiSa, brn, MTW	17	24.7					
		A-2-4, SiSa, MTW	31	34.2					
		A-4, Si, MTW	17	20.8					
		A-4, SaSi, MTW	30	25.5					
20		A-4, Si, MTW	24	32.1					
		A-4, SaSi, MTW	40	24.8					
		A-4, Si, MTW	28	31.6					
25		A-4, Si, MTW	34	32					
		A-4, Si, MTW	R	41.1					
		No Rec., Possible Gravel	56						
30		No Rec., 28.96m-30.63m,	54						
		Hole stopped @ 30.63m In Boulders							

150.0 +/-

GEOLOGISTS REPORT:

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B2
SHEET 1 OF 1
DATE STARTED: 6/25/86
DATE COMPLETED: 6/25/86

PROJECT NAME: BRISTOL
SITE NAME: RT 116
STATION: 1+293.69
GROUND EL.: 177.91

PROJECT NUMBER: ER 021-1(13)
SITE NO.: BR #10
OFFSET: 6.03
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER:
LOGGER:
ADDITIONAL CREW:

BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		No Rec., Boulders							
		No Sample, 3.20m-4.27m, BXDC, Boulders	R						
5		No Rec., 5.03m-5.94m, BXDC, Boulders	48						
		No Rec., 5.94m-7.32m, BXDC, Boulders							
		No Rec., Stone in Sampler	R						
		No Rec.	25						
10		No Rec.	10						
		A-2-4, SiSa, brn, Moist	30	19.9					
		No Rec.	39						
15		A-2-4, SiSa, Moist	28	18.4					
		A-4, Si, MTW	32	28.4					
		A-4, SiSa, MTW	36	23.9					
20		A-4, Si, Moist	25	19.8					
		A-2-4, SiSa, MTW	28	24.7					
		A-4, Si, brn, MTW	39	27.6					
25		No Sample, 24.08m-27.43m, BXDC, Boulders	R						
		Hole stopped @ 27.43m In Boulders							

174.2

150.0 +/-

GEOLOGISTS REPORT:

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B3
SHEET 1 OF 1
DATE STARTED: 1/7/91
DATE COMPLETED: 1/7/91

PROJECT NAME: BRISTOL
SITE NAME: RT 116
STATION: 1+251.42
GROUND EL.: 175.00

PROJECT NUMBER: ER 021-1(13)
SITE NO.: BR #10
OFFSET: 16.55
G.W. DEPTH: 3.41

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER:
LOGGER:
ADDITIONAL CREW:

BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		No Sample, BXDC, 0.0m-3.66m, Boulders							
5		No Rec.	13						
		No Rec.	27						
		No Rec.	35						
		No Rec.	40						
10		A-2-4, SiSa, brn, MTW, Rec. = 0.09m	33	27.8					
		A-2-4, SiSa, brn, MTW, Rec. = 0.18m	36	24.5					
		A-2-4, SiSa, brn, MTW, Rec. = 0.34m	38	25.4					
15		A-3, Sa, brn, MTW, Rec. = 0.36m	55	23.4					
		A-4, SiSa, brn, MTW, Rec. = 0.46m	46	27					
		A-4, SaSi, brn, MTW, Rec. = 0.61m	19	30.1					
20		A-2-4, SiSa, brn, Moist, Rec. = 0.36m	50	19.4					
		A-4, SiSa, brn, MTW, Rec. = 0.61m	56	24					
		No Rec.	41						
25		No Rec., Boulders	R						
		No Rec., Boulders	R						
		No Rec., Boulders	R						
		Hole stopped @ 28.96m In Boulders							

GEOLOGISTS REPORT:

KEY

BOTTOM OF FOOTING

EST. PILE PENETRATION

VAOT Metric

PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: str2/78fl88/dfl88bor.dgn	
IPARM FILE NAME: sfl88brl.i	PLOT DATE: 05-JAN-2007
DRAWN BY: J. TOUCHETTE	SQUAD LEADER: C.C. BENDA
DATE: 07/98	SHEET: 28 OF 67

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B5
SHEET 1 OF 1
DATE STARTED: 1/25/91
DATE COMPLETED: 1/25/91

PROJECT NAME: BRISTOL
SITE NAME: RT 116
STATION: 1+281.88
GROUND EL.: 175.00

PROJECT NUMBER: ER 021-1(13)
SITE NO.: BR #10
OFFSET: 13.40
G.W. DEPTH: 3.779

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER:
LOGGER:
ADDITIONAL CREW:

BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		Boulders							
5		A-1-a, SaGr, brn, Moist, Rec. = 0.15m	12	10.3					
		A-1-b, GrSa, brn, Moist, Rec. = 0.12m	11	13					
		No Rec.	10						
		No Rec.	15						
		No Rec.	20						
		A-1-b, GrSa, brn, Moist, Rec. = 0.12m	8	15.8					
		No Rec.	31						
		A-2-4, SiSa, brn, MTW, Rec. = 0.06m	36	21.2					
10		A-2-4, Sa, brn, MTW, Rec. = 0.24m	35	24.3					
		A-2-4, SiSa, brn, MTW, Rec. = 0.27m	33	29.3					
		No Rec.	32						
		A-2-4, Sa, brn, MTW, Rec. = 0.58m	32	20.8					
		A-4, SaSi, brn, MTW, Rec. = 0.55m	29	32.9					
15		A-2-4, SiSa, brn, MTW, Rec. = 0.61m	46	25.1					
		A-2-4, SiSa, brn, MTW, Rec. = 0.61m	58	23					
		A-4, SiSa, brn, MTW, Rec. = 0.34m	67	26.6					
20		A-4, SaSi, brn, MTW, Rec. = 0.40m	51	27.7					
		No Rec., Boulders							
25		Hole stopped @ 24.38m In Boulders							

174.0

150.0 +/-

GEOLOGISTS REPORT:

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B11
SHEET 1 OF 1
DATE STARTED: 8/25/98
DATE COMPLETED: 9/1/98

PROJECT NAME: BRISTOL
SITE NAME: RT 116
STATION: 1+258.56
GROUND EL.: 176.13

PROJECT NUMBER: ER 021-1(13)
SITE NO.: BR #10
OFFSET: -4.90
G.W. DEPTH:

BORING CREW
CREW CHIEF: WILLIS
DRILLER: GAMMELL W
LOGGER: MERRILL B
ADDITIONAL CREW:

BORING RIG: SKID RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		No sample, Boulders	R						
		No sample, Boulders							
5		A-1-b, GrSa, brn, Moist, Rec. = 0.13m	12	14.3	36	40.4	5.6		
		A-1-b, GrSa, brn, Moist, Rec. = 0.19m	14	13.6	41.9	50.3	7.8		
		A-1-b, GrSa, brn, Moist, Rec. = 0.40m	20	15.1	23.4	66.4	10.2		
		A-3, Sa, brn, MTW, Rec. = 0.40m	18	23.6	2	88.4	9.6		
10		A-2-4, Sa, brn, MTW, Rec. = 0.37m	21	21.2	11.8	75.5	12.7		
		A-2-4, Sa, brn, Moist, Rec. = 0.27m	24	17.4	11.2	70.1	18.7		
		A-2-4, SiSa, brn, MTW, Rec. = 0.31m	23	23.5	3.7	61.3	35		
15		A-4, SiSa, brn, MTW, Rec. = 0.40m	16	24.3	0.2	51.5	48.3		
		A-4, SiSa, brn, MTW, Rec. = 0.35m	28	26.9	0.6	51.7	47.7		
		A-4, SiSa, brn, Moist, Rec. = 0.30m	55	19.9	0.2	58.2	41.6		
20		A-4, SiSa, brn, MTW, Rec. = 0.30m	46	24.8		54.3	45.7		
		A-4, SiSa, brn, MTW, Rec. = 0.30m	52	21.5		56.6	43.4		
		A-4, SaSi, brn, MTW, Rec. = 0.43m	18	36.4		22.9	77.1		
		A-4, SaSi, brn, MTW, Rec. = 0.41m	18	31		20	80		
25		No Rec., Boulders	R						
		BXDC, 25.58m-26.10m, Boulders							
		Hole stopped @ 26.1m in boulders							

Note:
Casing broke off,
Unable to penetrate further.

150.0 +/-

GEOLOGISTS REPORT:

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B12
SHEET 1 OF 1
DATE STARTED: 9/2/98
DATE COMPLETED: 9/10/98

PROJECT NAME: BRISTOL
SITE NAME: RT 116
STATION: 1+301.80
GROUND EL.: 177.92

PROJECT NUMBER: ER 021-1(13)
SITE NO.: BR #10
OFFSET: -1.80
G.W. DEPTH:

BORING CREW
CREW CHIEF: WILLIS
DRILLER: GAMMELL W
LOGGER: MERRILL B
ADDITIONAL CREW:

BORING RIG: SKID RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		No sample, Boulders							
		A-1-a, SaGr, brn, Moist, Rec. = 2.3m	18	7.9	70.2	23.9	5.9		
5		No sample, Boulders							
		BXDC, 5.5m-6.5m, Boulders							
		No sample, Boulders							
		A-1-a SaGr, brn, Moist, Rec. = 0.03m	8	9.6	76.4	23	0.6		
		No Rec.	8						
10		A-1-b, GrSa, brn, Moist, Rec. = 0.17m	13	13.1	38.5	54.3	7.2		
		No Rec.	23						
		A-1-b, SaGr, brn, Moist, Rec. = 0.18m	16	14.2	47.3	46.2	6.5		
15		A-3, Sa, brn, Moist, Rec. = 0.21m	16	18.4	1.6	91.4	7		
		A-2-4, SiSa, brn, MTW, Rec. = 0.30m	20	29.7	0.2	70.8	29		
		A-2-4, Sa, brn, MTW, Rec. = 0.27m	23	25.9	0.2	81.1	18.7		
20		A-2-4, SiSa, brn, MTW, Rec. = 0.33m	17	27.4		72.8	27.2		
		A-2-4, SiSa, brn, MTW, Rec. = 0.40m	28	27.3		65.9	34.1		
		A-4, SaSi, brn, MTW, Rec. = 0.60m	16	32.4		26.8	73.2		
		No Rec., Boulders	R						
25		BXDC, 24.3m-25.8m, Boulders							
		BXDC, 25.8m-27.3m, Boulders							
		Hole stopped @ 27.30m in boulders							

174.2

150.0 +/-

GEOLOGISTS REPORT:

KEY

BOTTOM OF FOOTING

EST. PILE PENETRATION

VAOT Metric

PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: str2/78fl88/dfl88bor.dgn IPARM FILE NAME: sfl88br2.i	PLOT DATE: 05-JAN-2007
DRAWN BY: J. TOUCHETTE	SQUAD LEADER: C.C. BENDA
DATE: 09/98	SHEET: 29 OF 67

VAOT Metric

Begin Approach Slab
Sta 1+246.740

R=2500

1:2

1:1.5

WW 1

10+040

BEGIN BRIDGE
℄ Bearing
Sta. 1+255.000
Fin. Gr. 177.937

To Bristol

55°

3300 Travel Lane

4750 To Face of Curb

N88°52'20.6"E

VT 116

STA. 1+306.328 LT
EXPANSION JNT.
IN BRIDGE RAIL*

WW 3

Retaining Wall

END BRIDGE
℄ Bearing
Sta 1+299.000
Fin. Gr.: 178.182

End Approach Slab
Sta. 1+307.260

To Rocky Dale

1+240

Edge of Pavement

1+260

4800 To Face of Rail

1+280

5375 To Fascia

55°

1+300

50.8°

WW 2

"A" 1355

SEE DETAILS
APPROACH RAIL

1270 (TYP)

WW4

SHEET 53 OF 67

1:2

Stone Fill
Type I (Typ)

M.L. POT 1+250.00=
CHAN. 10+035.00
△ = 104-31'-31'' RT

To Edge of Shoulder
(Typ)

1:2

Stone Fill
Type IV
(Typ)

New Haven River

1:1.5

1:1.5

R= 4500

10+020

*The Bridge and Approach Rail Fabricator will determine all other locations for expansion joints

N

VT STATE PLANE GRID

PLAN
Scale: 1:100

Location	"A"	"B"	"C"	"D"
Upstream	2029	23	55 200	60 728
Downsream	2306	19	45 600	51 682

"D" Bridge Railing - Aluminum/Pedestrian (Mod.)

"A"

"B" Spaces @ 2400 = "C"

"A"

735 (Typ)

Bridge Length ℄ To ℄ Bearing 44000

Aluminum Approach Railing (Mod)

185

180

175

170

2000

Q 100 = 175.6

Existing Ground along ℄

1220 Stone, Fill Type IV (Typ.)

ELEVATION
Scale: 1:100

DATUM
VERTICAL _____
HORIZONTAL _____

PROJECT:	PROJECT NO.:
Bristol	ER 021-1(13)

DESIGN FILE NAME: /str2/78f188/sfl88pe.dgn
IPARM FILE NAME: sfl88pe.1
SURVEYED BY:
SQUAD LEADER: Alec Portalupi
VT 116 Over The New Haven River
PLOT DATE: 05-JAN-2007
SURVEY DATE:
DRAWN BY: G.Colgrove
SHEET: 30 OF 67

STATE OF VERMONT
AGENCY OF TRANSPORTATION

GENERAL NOTES

Metric

General Items

1. All materials and construction shall conform to the State of Vermont Agency of Transportation's Standard Specifications for Construction, dated 1995, and its latest revisions, and the AASHTO Standard Specifications for Highway Bridges, Sixteenth Edition, and its latest revisions.

2. Bridge #10 is designed for the MS 22.5 live load with no allowance for future pavement.

3. In-stream construction shall be restricted to June 1 to October 1, unless the Contractor obtains written permission from the Agency of Natural Resources to do work outside of that time frame.

4. The Contractor shall take all precautions necessary to prevent siltation or pollution, especially the discharge of raw concrete, into any brook, stream or river.

5. The cost of on-project signs and barricades required shall be subsidiary to the item "Mobilization".

6. All dimensions are horizontal or vertical and are given at 20° C unless otherwise noted.

7. All deliveries to the New Haven District Office shall be announced 24 hours prior to the delivery. The telephone number to the office is 655-1580.

Demolition

8. The house at station 1+350.000 Left was tested for lead content, using the TCLP test. The result was negative.

9. The Contractor must receive all necessary permits for the demolition of the house at Station 1+350.000 Left. The contractor may contact the State Hazardous Materials and Waste Coordinator for assistance with the permits.

10. Prior removing the remains of Bridge 10, the Contractor shall remove the signs, the chain link fence and the poles from the existing Bridge 10 and return them to the New Haven District Office.

11. Existing pier shall be removed to streambed.

12. Removal of both abutments, the remaining pier, the remains of the deck and the removal and transportation of the items in note 10, shall be paid for under item 529.15 "Removal of Structure."

Stone fill

13. The Stone Fill; Type IV shall be placed in front of the abutments before the girders are erected.

Concrete

14. No traffic shall be allowed on the new deck until the cure period is up and the 28-day design strength is attained, as evidenced by test cylinders cured under field conditions.

15. The key in concrete construction joints shall be monolithic and continuous for the full length of the joint; any upward key shall be placed integrally with the concrete below the joint.

16. All exposed edges of concrete shall be chamfered 25 mm by 25 mm or as otherwise indicated on the plans.

17. Joints and score marks in concrete shall be constructed as indicated on the plans or as directed by the engineer.

18. All reinforcing steel shall be detailed and fabricated using procedures and tolerances in accordance with applicable publications of the Concrete Reinforcing Steel Institute (CRSI).

19. Reinforcing placement tolerances shall be:

Spacing	±20 mm
Clearance	±5 mm

20. Minimum cover for reinforcing steel shall be 50 mm along the back faces of walls against earth, 65 mm along the top surface of the deck, 40 mm along the bottom surface of the deck and 75 mm elsewhere, unless otherwise noted.

21. Water repellent shall be applied to all exposed concrete surfaces except the underside of the deck between the drip beads.

22. The entire retaining wall and the sleeper slabs shall be constructed with Concrete, Class B, unless otherwise noted.

23. The deck, abutments and wingwalls shall be constructed with Concrete, Class A.

24. All roadway and bridge curbs shall be constructed with Silica Fume Concrete.

Structural Steel

25. All structural steel shall be detailed and fabricated using procedures and tolerances in accordance with applicable publications of the American Institute of Steel Construction (AISC).

26. Any connections that are not detailed on the plans shall be detailed by the Fabricator and submitted to the Structures Engineer for approval.

27. All welding shall conform to the provisions of Vermont Specification 506.10.

28. Any holes in the webs of the fascia beams/girders that are not otherwise filled, shall be filled with either button head or hex head bolts. These bolts shall be tightened in accordance with Vermont Specification 506.19.

29. All field connections shall be made with 22 mm diameter AASHTO designation M 164M Type III bolts in 24 mm diameter holes.

30. The Contractor is required to determine the necessary Fleming brackets or similar false work. Fleming brackets shall not be placed at a spacing greater then 1.2 m.

31. After the superstructure has been erected, elevations shall be taken along the top of the beams/girders, as directed by the Resident Engineer, for use in determining the finished grade.

Temporary Bridge and Detour

32. Traffic will be maintained on the existing two-way temporary bridge and approaches

33. The removal and/or resetting of existing temporary or permanent traffic signs, as deemed necessary by the Resident Engineer, will be considered subsidiary to Mobilization.

34. Removal of Temporary Detour:

    34.1. Remove all Detour signs that relate to the existing temporary and deliver them to the New Haven District Office. These signs include those located within the project limits as well as outside the limits.

    34.2. The Contractor shall comply with the Specifications when removing, handling and transporting the temporary bridge components.

    34.3. Remove the temporary detour approaches and return the ground to its original condition as deemed reasonable by the Engineer.

    34.4. Return all Concrete Traffic Barriers, Barricades, flashing beacons and steel beam guard rail to the New Haven District Office.

Bearing Notes

35. The bearings shall be paid for under the item 506.55 "Structural Steel." There will be a total of 10 bearing assemblies for this project. A bearing device assembly consists of 2 anchor bolts, a single steel leveling bearing plate, 2 sets of 2 steel plate washers and all corresponding nuts as shown in these plans.

36. The Contractor shall set the elevation of each leveling plate and ensure the plate is level, prior to tightening the supporting nuts and prior to placement of girders.

Project Construction Sequence

37. The Contractor shall follow the project sequence provided below or develop one that must be approved by the Engineer. If the Contractor wishes to develop a construction sequence, an approved copy must be sent to the Structures Section for reference only.

    37.1. Remove the existing remains of Bridge 10.

    37.2. Excavate the ground for the abutments and wingwalls 300 mm below the respective elevation as shown in these plans.

    SEE NOTE BELOW

    37.3. Pre-bore 500 mm (min) diameter holes to a depth of 2400 mm for each pile location as shown in these plans. Payment for the drilling activity shall be made part of item 505.19 "Steel Piling." Payment for the required equipment shall be made part of item 504.10 "Furnishing Equipment For Driving Piles."

    SEE NOTE BELOW

    37.4. Insert, then drive the piling as shown in these plans. Place Sand Borrow in each of the pre-bore holes after the piles are driven to proper depth and compact to specifications. Place 300 mm of Granular Backfill for Structures as shown in these plans, then compact to specifications.

    37.5. Form and place the concrete for the retaining wall footing and stem up to the construction joint as shown in these plans.

    37.6. Form and place the concrete for the abutments, and wingwalls to the construction joint as shown in these plans. Install the anchoring bolts as indicated in these plans.

    37.7. Excavate where the granular backfill for structures shall be placed under the sleeper slabs. Place the backfill in 150 mm layers and compact to proper specifications until 600 mm has been achieved.

    37.8. Form and place the concrete for the sleeper slabs on the compacted backfill.

    37.9. The work sequence to this point should be completed prior to winter. The anchor bolts shall be protected from the effects of winter weather.

    37.10. Upon receiving the girders, place two nuts on each of the anchor bolts. Using the nuts set the leveling plate to the correct elevation as shown on these plans. Make sure the leveling plates are level.

    37.11. Set the girders on the leveling plates and attach to the abutments with the anchor bolts. The bolts shall be tightened.

    37.12. Prior to placing the concrete, the anchor bolts shall be loosened by 4 mm to allow for free play while the concrete cures.

    37.13. Place the center of the bridge deck concrete. The dead load rotations will occur prior to lock-up without transferring dead load moments to the supporting piles.

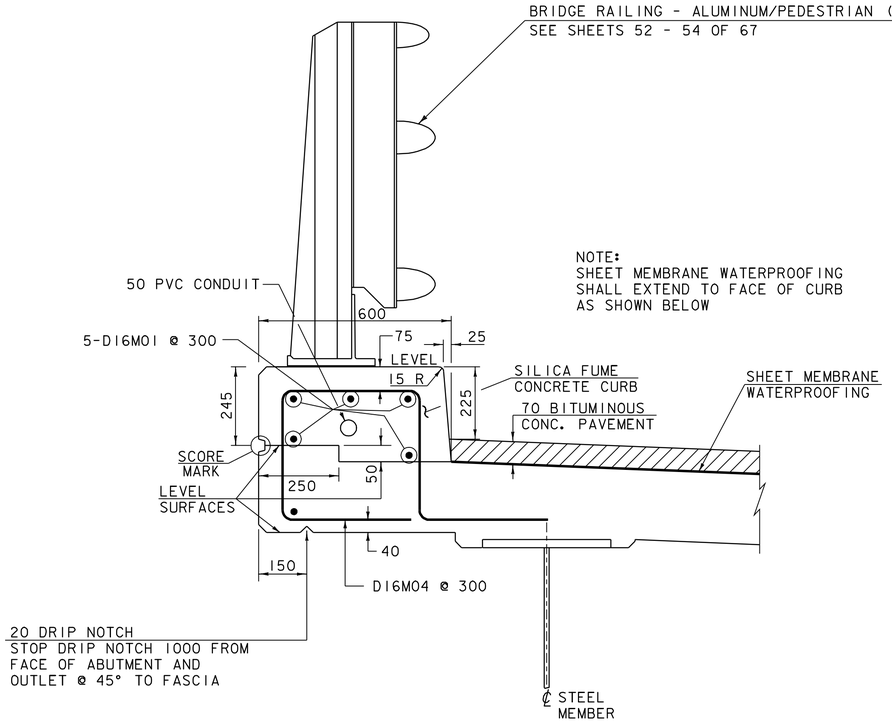
    37.14. Form the abutments. Backfill with Granular Backfill for Structures in 150 mm lifts to the subgrade elevation of the approach slab. Prior to placing any reinforcing steel, grade the surface of the backfill as specified on these plans.

    37.15. Place the abutment concrete along with the remainder of the wingwalls, the remaining bridge deck and the approach slab to the construction joint shown in these plans. The abutments will move without having to overcome passive earth pressure in the backfill.

    37.16. Form and place the concrete for the approach slabs. Begin at the roadway end of the approach slab and work towards the abutments. This placement shall take place in the morning while the superstructure is expanding, thus putting the approach slab in compression as it cures.

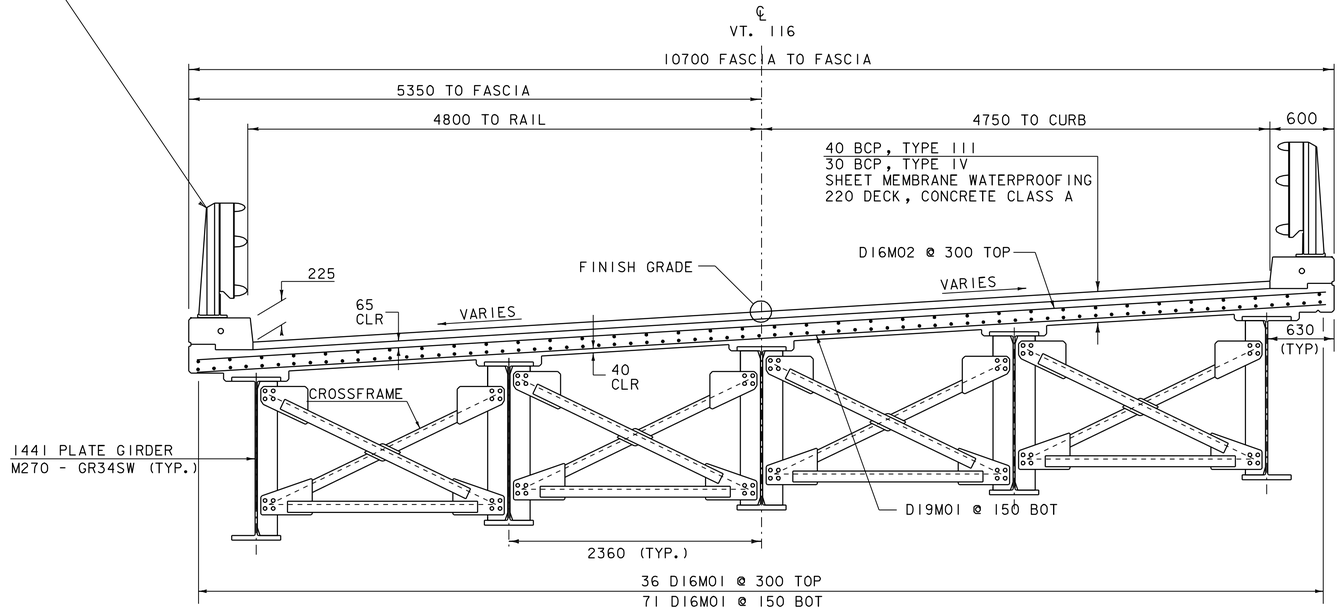
37.3 & 37.4 36" CPEP Were installed vertically for locating the vertical piling. The pipe was then filled with sand and piles driven. The Sand/CPEP vertical envelope was +/- 3M deep, and intended to ensure accurate pile location, which was difficult due to very rocky streambed condition.

PROJECT NAME:	Bristol
PROJECT NUMBER:	BRF 021-1 (13)
FILE NAME: sf188gen	LOT DATE: 5/21/99
PROJECT LEADER: A. Portalupi	DRAWN BY: G. Colgrove
DESIGNED BY: G. Colgrove	CHECKED BY:
GENERAL NOTES SHEET	SHEET 31 OF 67



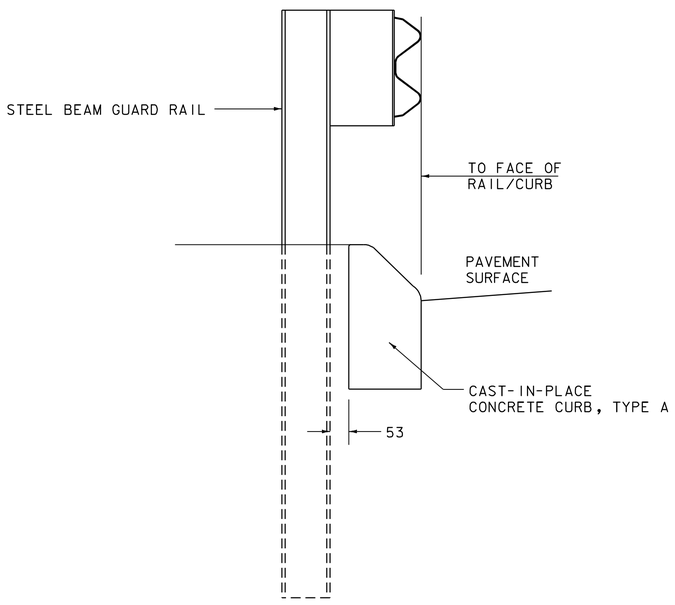
FASCIA & RAILING DETAIL

SCALE = 1:10



BRIDGE TYPICAL SECTION

SCALE = 1:30



APPROACH RAILING & CURB DETAIL

SCALE = 1:10

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRISTOL	Bridge No. 10
Highway No. VT.116	Log Sta. / Surv. Sta.

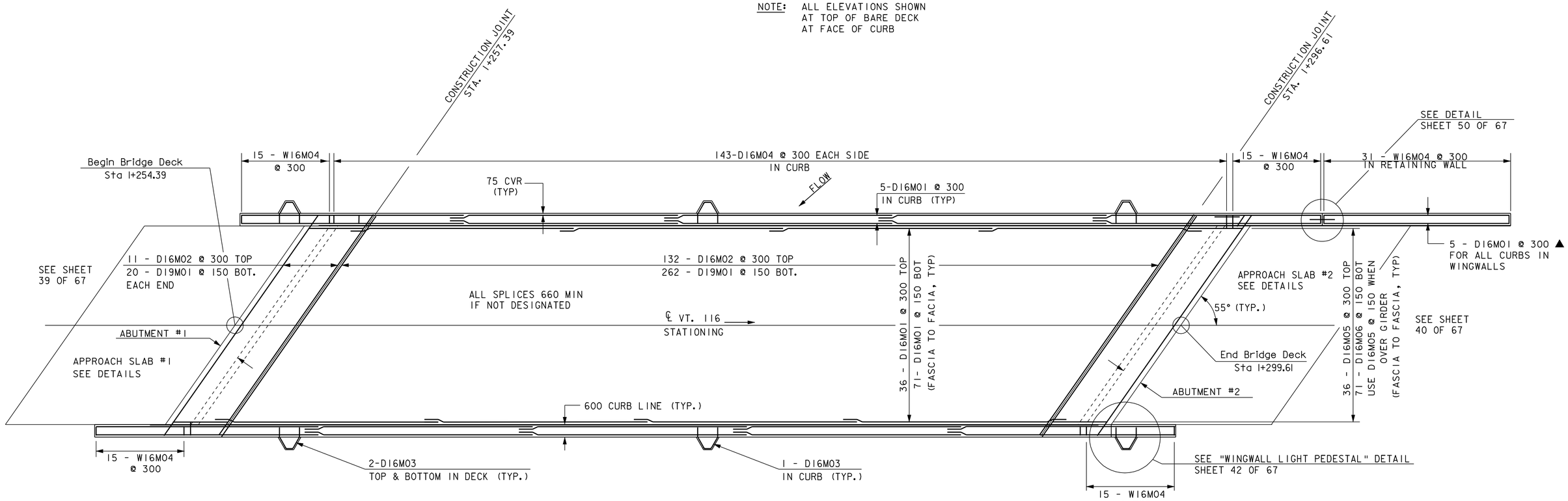
VT.116 BR.10 OVER NEW HAVEN RIVER

Designed By T.LACKEY	Drawn By L.BULLOCK
Checked By G.COLGROVE Date 5/99	Bridge Design Supervisor A.PORTALUPI Date 5/99
PROJECT BRISTOL	PROJECT NO. ER 021-1(13)
I.G.C. Info. M:\Projects\78f188\Structures\sf188as.dgn sf188slbJ	
Bridge Sheet No.	Sheet 34 of 67

PLOT DATE: 05-JAN-2007

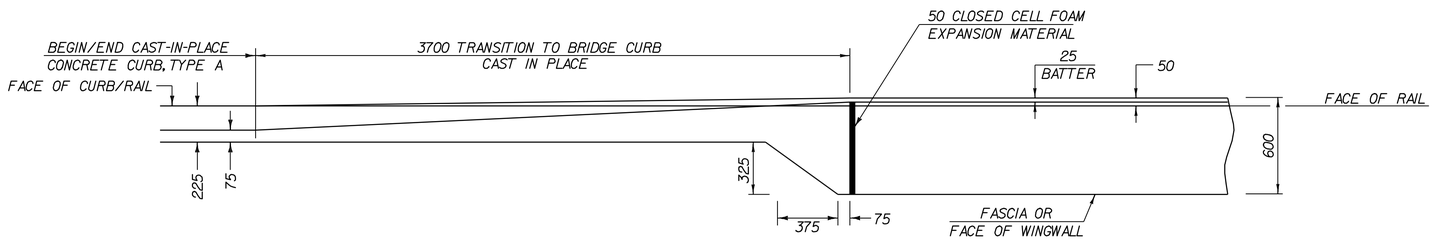
VAOT Metric

NOTE: ALL ELEVATIONS SHOWN AT TOP OF BARE DECK AT FACE OF CURB



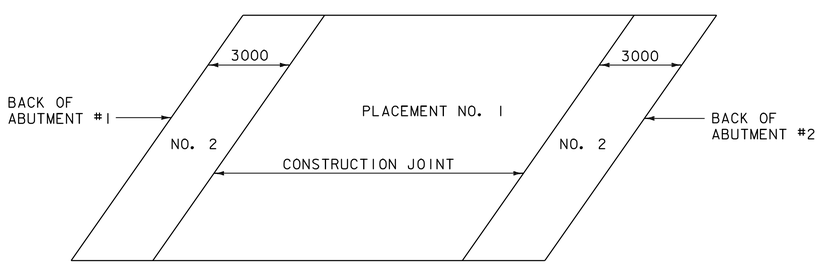
DECK REINFORCING PLAN

SCALE = 1:100



ROADWAY/BRIDGE CURB TRANSITION

SCALE = 1:20

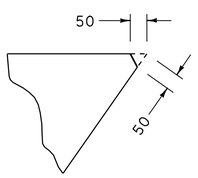


DECK PLACEMENT SEQUENCE

NTS

NOTES

1. PLACEMENT #2 MAY BE COMPLETED ON THE SAME DAY OR ON TWO SEPARATE DAYS, (ONE FOR EACH ABUTMENT) PROVIDED THAT THE MAXIMUM TIME SPAN OF THE POUR IS EIGHT HOURS.
2. THE ENTIRE DECK PLACEMENT (#1) MAY BE COMPLETED IN ONE DAY PROVIDED THE INDICATED POURING SEQUENCE SHALL BE FOLLOWED AND A RETARDING ADMIXTURE USED SO THAT THE DECK CONCRETE WILL NOT SET UP UNTIL ALL THE POUR HAS BEEN MADE. THE RETARDING ADMIXTURE SHALL BE SUBSIDIARY TO ITEM "CONCRETE, CLASS A".
3. TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINTS, AS SHOWN ON SHEET 44 OF 67, SHALL BE USED BETWEEN ADJACENT DECK POURS.
4. ALL INDIVIDUAL DECK POURS SHALL START FROM THE LOW END (RELATIVE TO GRADE).
5. THERE SHALL BE A MINIMUM DELAY PERIOD OF 96 HOURS BETWEEN CONCRETE PLACEMENTS #1 AND #2.
6. ANY POURING SEQUENCE OTHER THAN INDICATED WILL NOT BE ACCEPTED.
7. BULK HEAD ARE REQUIRED BETWEEN PLACEMENTS #1 AND #2.
8. DECK CONCRETE MUST BE APPLIED ON THE SKEW AND SCREED 90° TO CENTERLINE OF BRIDGE.



ACUTE ANGLE CLIP DETAIL

(TYPICAL FOR ACUTE ANGLES)
SCALE = 1:100

PLOT DATE: 05-JAN-2007

NOTES:

1. ▲ = A CUT TO FIT IN THE FIELD. EPOXY COATED STEEL MUST BE PROPERLY SEALED AFTER CUT. REFER TO SPEC. 507.04.
2. COST OF TARPAPER AND PIPE INSULATION AND ITS APPLICATION SHALL BE SUBSIDIARY TO "CONCRETE, CLASS B".
3. ACUTE ANGLES IN SLAB SHALL BE CLIPPED ACCORDING TO DETAIL ON THIS SHEET.

REINFORCING STEEL REQUIRED

PLACEMENT #1		PLACEMENT #2	
		(SEE ALSO ABUTMENT DETAILS)	
428	D16M01	22	D16M02
132	D16M02	4	D16M03 (IN WING WALLS)
8	D16M03	102	D16M05
286	D16M04	122	D16M06
262	D19M01	40	D19M01

CURBS

55	D16M01
6	D16M03

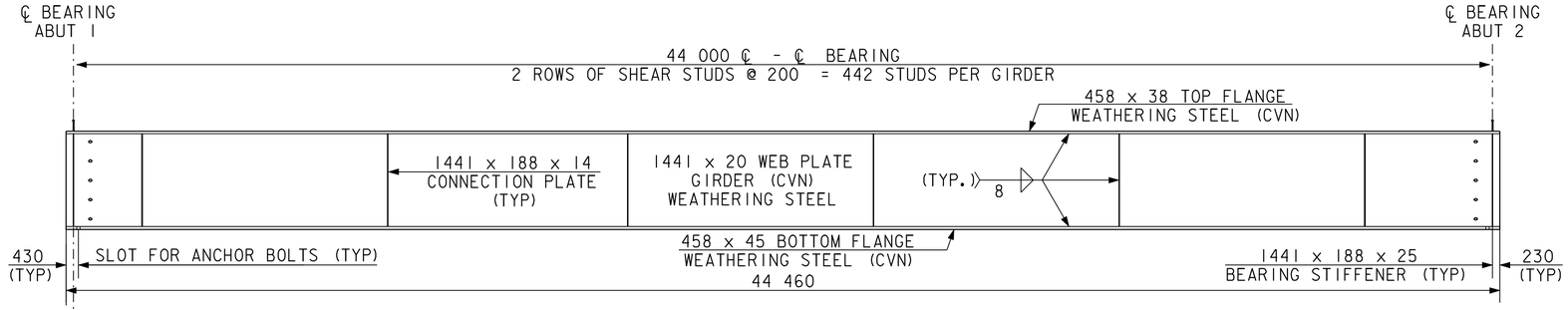
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	BRISTOL	Bridge No.	10
		Log Sta.	
Highway No.	VT 116	Surv. Sta.	1+277.00

SUPERSTRUCTURE DETAILS

VT.116 BR.10 OVER NEW HAVEN RIVER

Designed By T.LACKEY	Drawn By L.BULLOCK
Checked By G.COLGROVE Date 5/99	Bridge Design Supervisor A.PORTALUPI Date 5/99
PROJECT BRISTOL	PROJECT NO. ER 021-1(13)
I.G.C. Info. /str2/78f188/sf188as.dgn	sf188dckJ
Bridge Sheet No.	Sheet 35 of 67

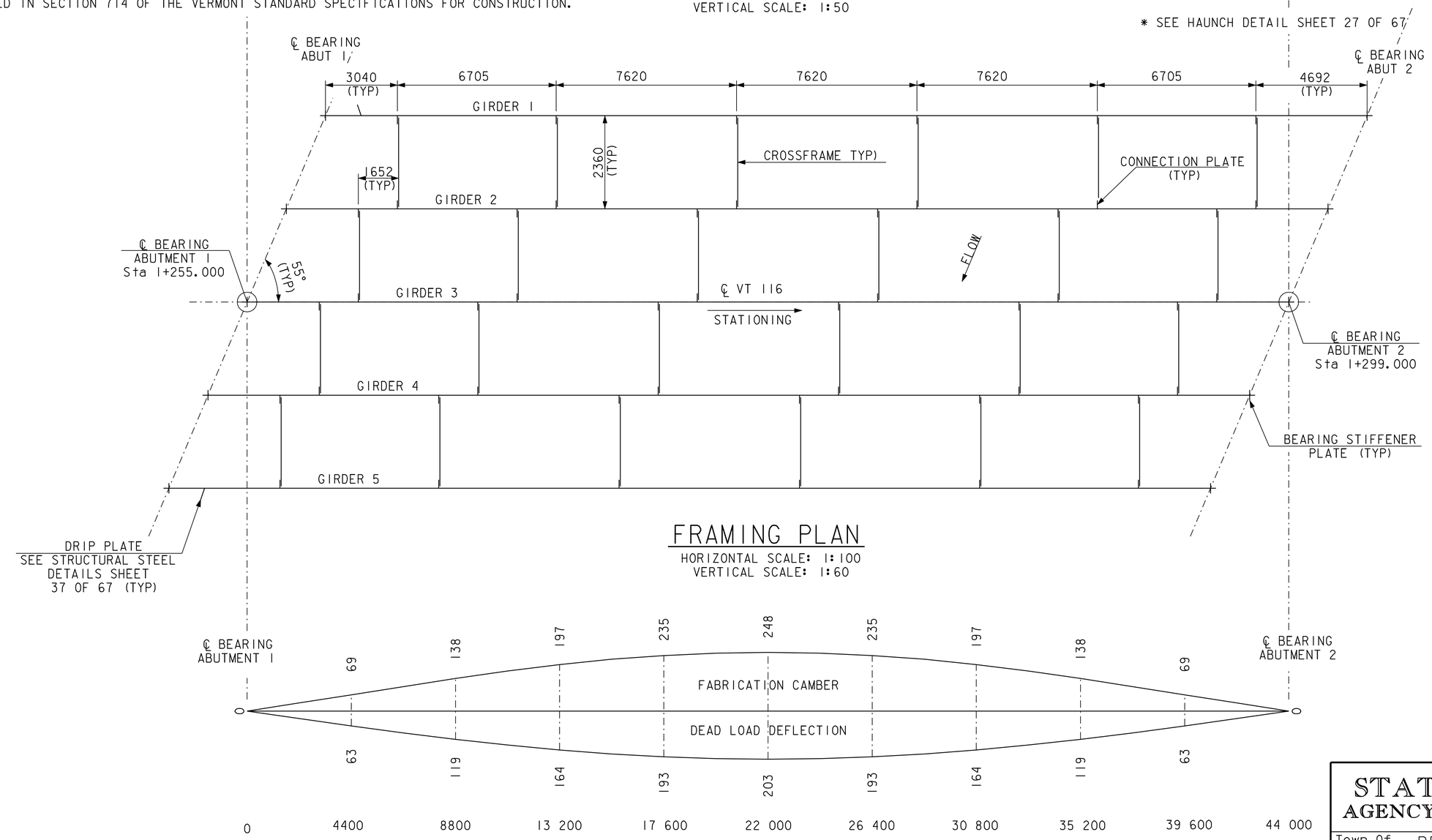


NOTE: TOP FLANGE MUST MEET (CVN) REQUIREMENT ONLY FOR 5000 FROM ENDS OF GIRDER.

GIRDER ELEVATION

HORIZONTAL SCALE: 1:100
VERTICAL SCALE: 1:50

NOTE: ALL MEMBERS OR PLATES MARKED (CVN) AND ONLY THOSE MEMBERS MUST MEET THE CHARPY V-NOTCH REQUIREMENTS FOR MAIN MEMBERS AS INDICATED IN SECTION 714 OF THE VERMONT STANDARD SPECIFICATIONS FOR CONSTRUCTION.



FRAMING PLAN

HORIZONTAL SCALE: 1:100
VERTICAL SCALE: 1:60

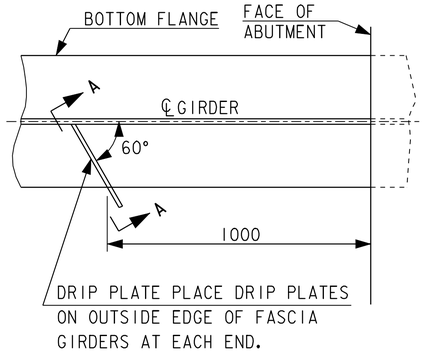
CAMBER & DEAD LOAD DEFLECTION DIAGRAM

HORIZONTAL SCALE: 1:100
VERTICAL SCALE: 1:1

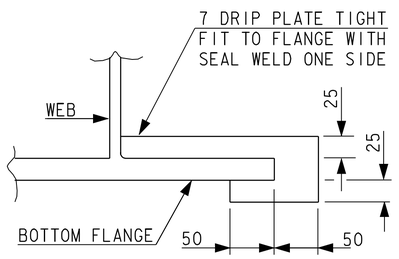
DEAD LOAD DEFLECTIONS INCLUDES GIRDER, DECK, AND ALL SUPER IMPOSED DEAD LOADS.
FINAL RESIDUAL CAMBER = 45

STATE OF VERMONT
AGENCY OF TRANSPORTATION

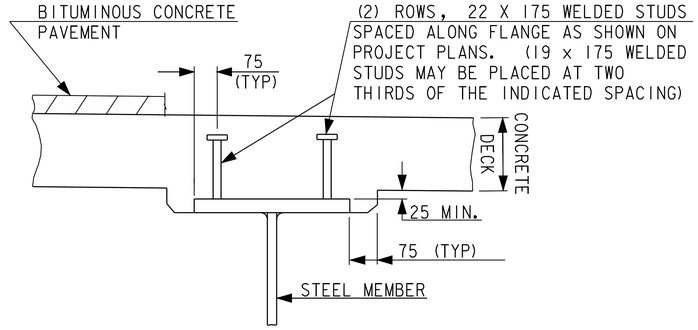
Town Of BRISTOL	Bridge No. 10
Highway No. VT 116	Log Sta. / Surv. Sta.
VT 116 OVER NEW HAVEN RIVER	
FRAMING PLAN & GIRDER ELEVATION	
Designed By LACKEY	Drawn By LACKEY
Checked By COLGROVE Date 12/98	Bridge Design Supervisor PORTALUPI Date 12/98
PROJECT BRISTOL	PROJECT NO. ER 021-1 (13)
I.G.C. Info. /str2/78f188/sf188sp.dgn	sf188sp3.i
Bridge Sheet No.	Sheet 36 of 67



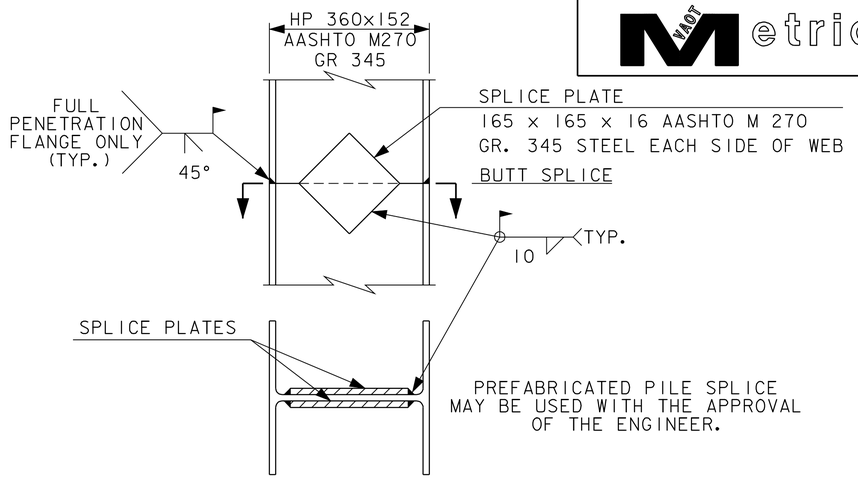
DRIP PLATE PLAN



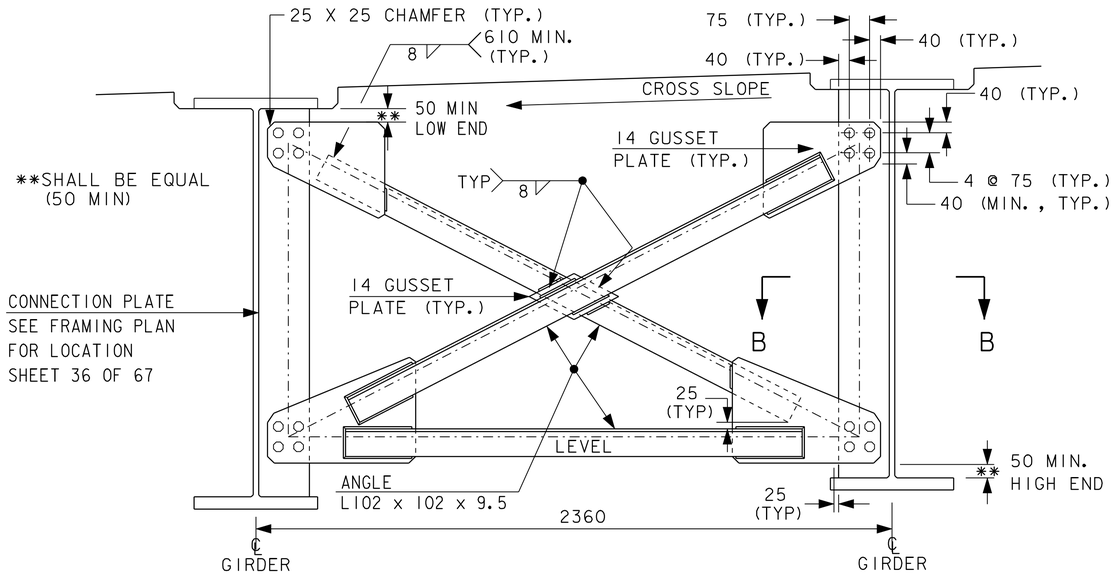
SECTION A - A



HAUNCH AND SHEAR CONNECTOR DETAILS



PILE SPLICE DETAIL

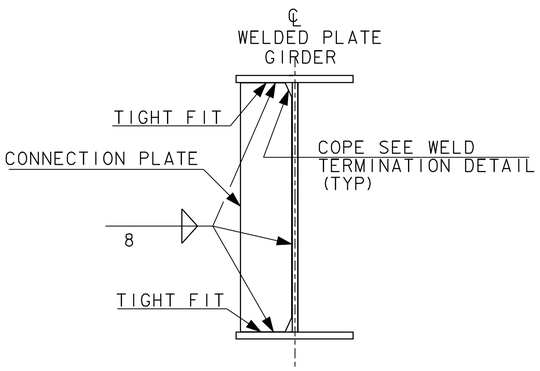


INTERMEDIATE & END CROSSFRAME

GUSSET PLATES SHOWN REPRESENT THE ABSOLUTE MINIMUM AMOUNT OF STEEL REQUIRED. THE FABRICATOR MAY ALTER THE SHAPE OF THE GUSSET PLATES AS SEEN FIT WHILE MAINTAINING THE BOLT HOLE LOCATIONS.

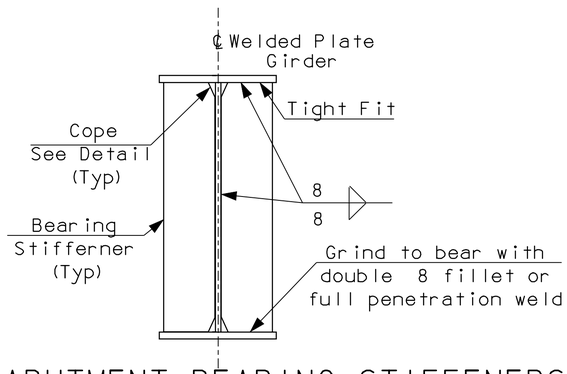
NORMAL TO DIAPHRAGM

USE A SINGLE TEMPLATE FOR ALL CROSS FRAMES. ADJUST FOR CROSS SLOPE IN THE CONNECTION PLATES. EACH CROSSFRAME SHALL BE LEVEL.



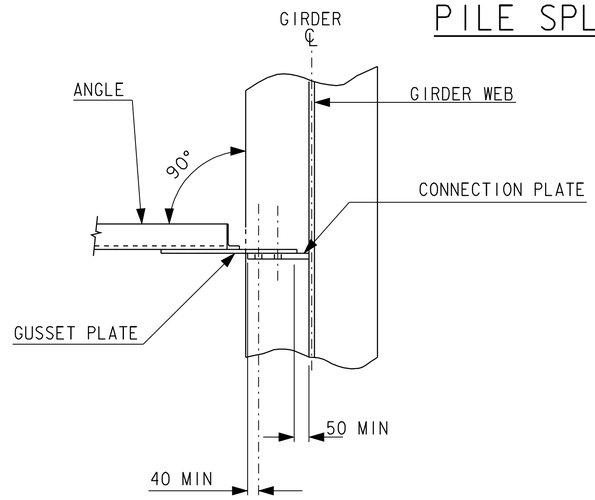
INTERMEDIATE CONNECTION PLATES FOR PLATE GIRDERS

INTERMEDIATE CONNECTION PLATES SHALL BE INSTALLED PARALLEL TO ℄ BEARING.



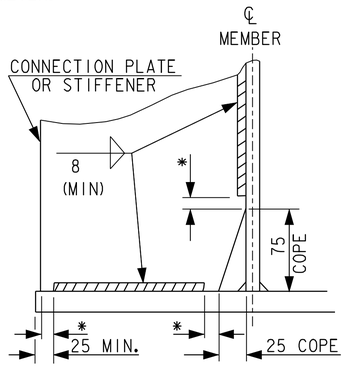
ABUTMENT BEARING STIFFENERS FOR WELDED PLATE GIRDERS

BEARING STIFFENERS SHALL BE INSTALLED PERPENDICULAR TO GIRDER WEB.



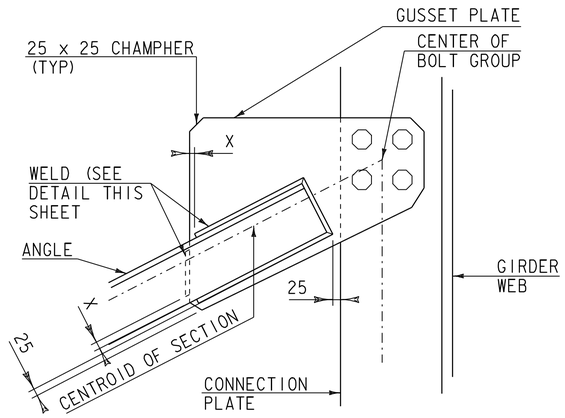
SECTION B-B

ALL CONNECTIONS SHALL BE MADE USING 22 DIAMETER, AASHTO M164 BOLTS. ALL HOLES IN THE DIAPHRAGMS SHALL BE 24 DIAMETER. ALL HOLES IN THE CONNECTION PLATES SHALL BE 25 DIAMETER.



* NO WELD FOR 7 MIN. 14 MAX.
(EXCEPT MUST MAINTAIN 25 MINIMUM FROM EDGE OF FLANGE)

WELD TERMINATION AND COPING DETAILS FOR STEEL MEMBERS



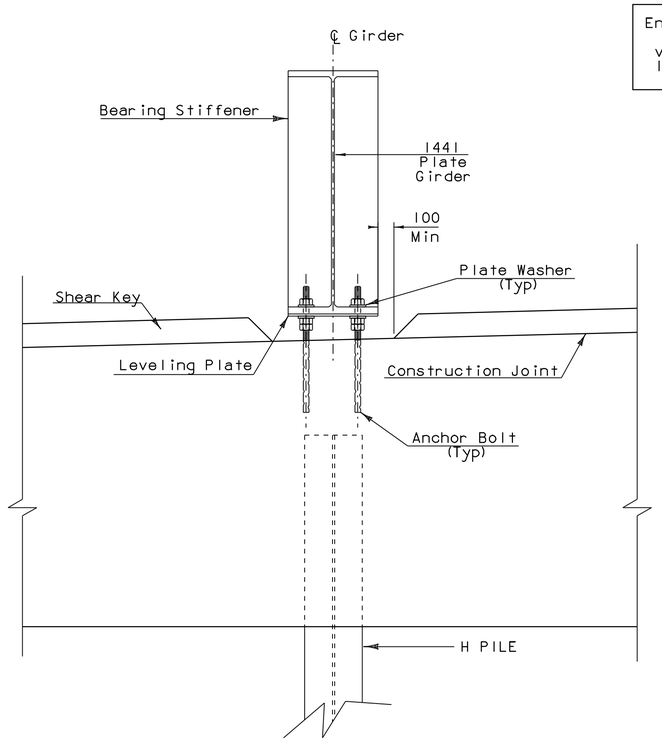
X = NO WELD FOR 7 MIN., 14 MAX.

GUSSET PLATE AND WELD DETAIL FOR CROSSFRAME

ALL DETAILS ON THIS SHEET ARE DRAWN NOT TO SCALE UNLESS NOTED OTHERWISE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

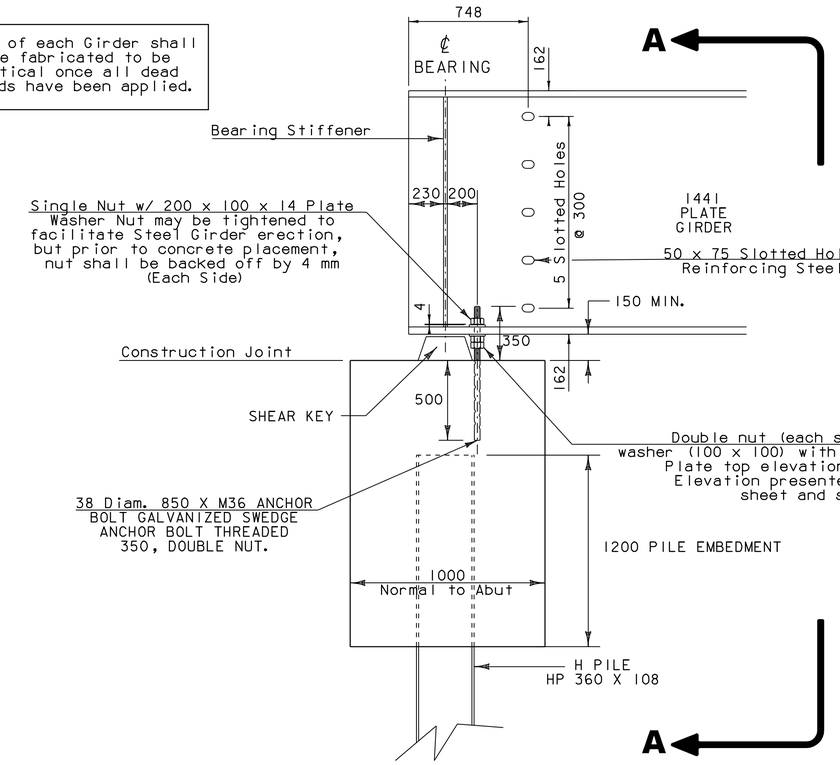
Town Of BRISTOL	Bridge No. 10
Highway No. VT 116	Log Sta.
	Surv. Sta.
VT 116 OVER NEW HAVEN RIVER	
STRUCTURAL STEEL DETAILS	
Designed By LACKEY	Drawn By LACKEY
Checked By COLGROVE Date 12/98	Bridge Design Supervisor PORTALUPI Date 12/98
PROJECT BRISTOL	PROJECT NO. ER 021-1 (13)
I.G.C. Info. /str2/78f188/sf188sp.dgn	sf188sp4.i
Bridge Sheet No.	Sheet 37 of 67



Section A–A

Scale 1:20

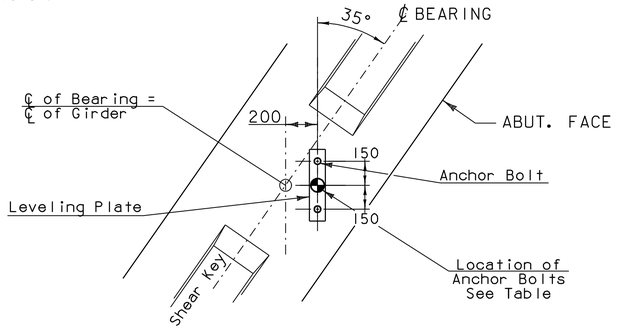
Ends of each Girder shall be fabricated to be vertical once all dead loads have been applied.

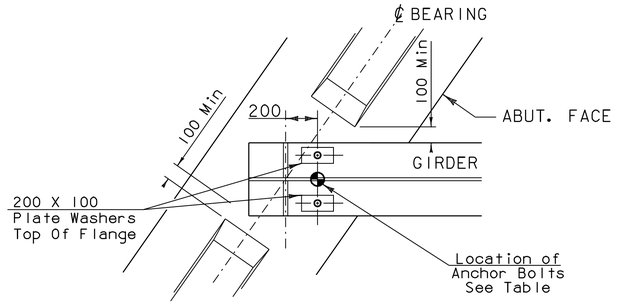


During Construction

Scale 1:20

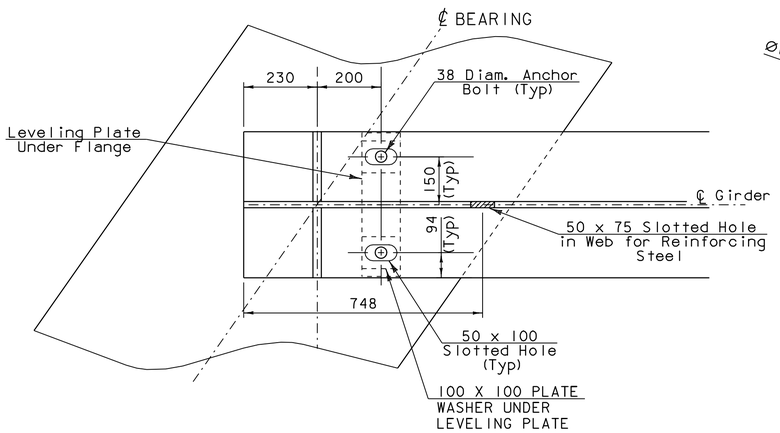
Costs for the Anchor Bolts, Nuts, Plate Washers and the Leveling Plates shall be subsidiary to the item 506.55 "Structural Steel".





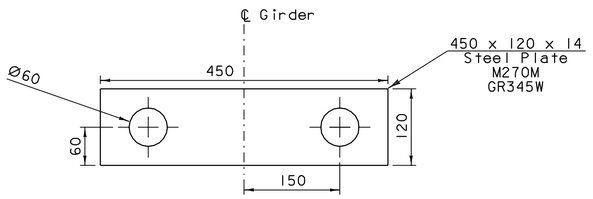
Bearing Layout Diagram

Scale 1:20



End of Girder Bottom Flange at Abutment

Scale 1:10



Leveling Plate Detail

2 PER GIRDER

Scale 1:5

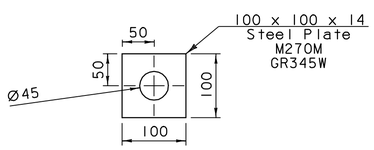


Plate Washer Detail (100 X 100)

4 PER GIRDER

Scale 1:5

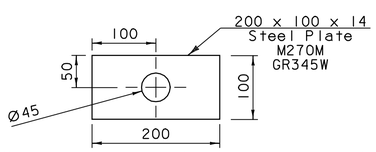


Plate Washer Detail (200 X 100)

4 PER GIRDER

Scale 1:5

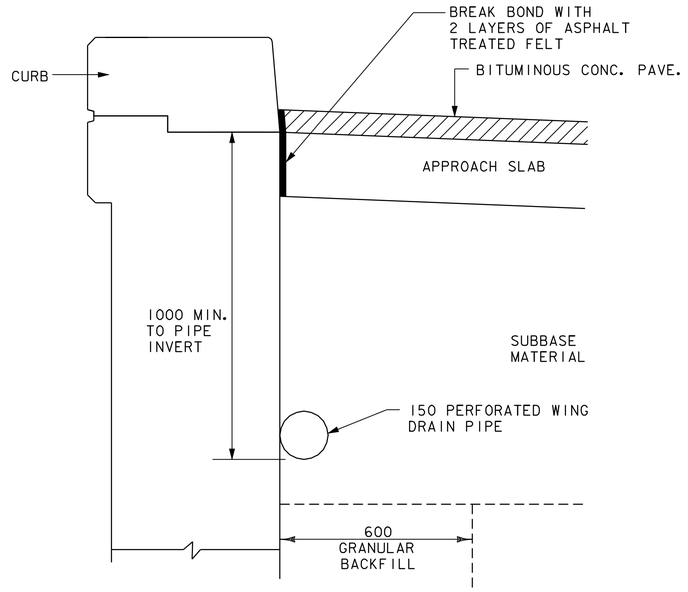
TABLE SHOWING OFFSET, STATION AND ELEVATION FOR CENTER OF ANCHOR BOLTS, FOR EACH ABUTMENT.

		ABUTMENT #1		ABUTMENT #2	
	OFFSET	STATION	ELEVATION	STATION	ELEVATION
GIRDER #1	4720 L	1+258.548	176.157	1+302.060	176.160
GIRDER #2	2360 L	1+256.896	176.102	1+300.408	176.220
GIRDER #3	0	1+255.244	176.037	1+298.756	176.272
GIRDER #4	2360 R	1+253.592	175.963	1+297.104	176.316
GIRDER #5	4720 R	1+251.940	175.880	1+295.452	176.352

PROJECT NAME: BRISTOL
PROJECT NUMBER: ER 021-1(13)

FILE NAME: /str2/78fl88/sfl88ww.dgn
PROJECT LEADER: A. PORTALUPI
DESIGNED BY: G. COLGROVE
sfl88brg.i

PLOT DATE: 05-JAN-2007
DRAWN BY: G. COLGROVE
CHECKED BY:
SHEET 38 OF 67

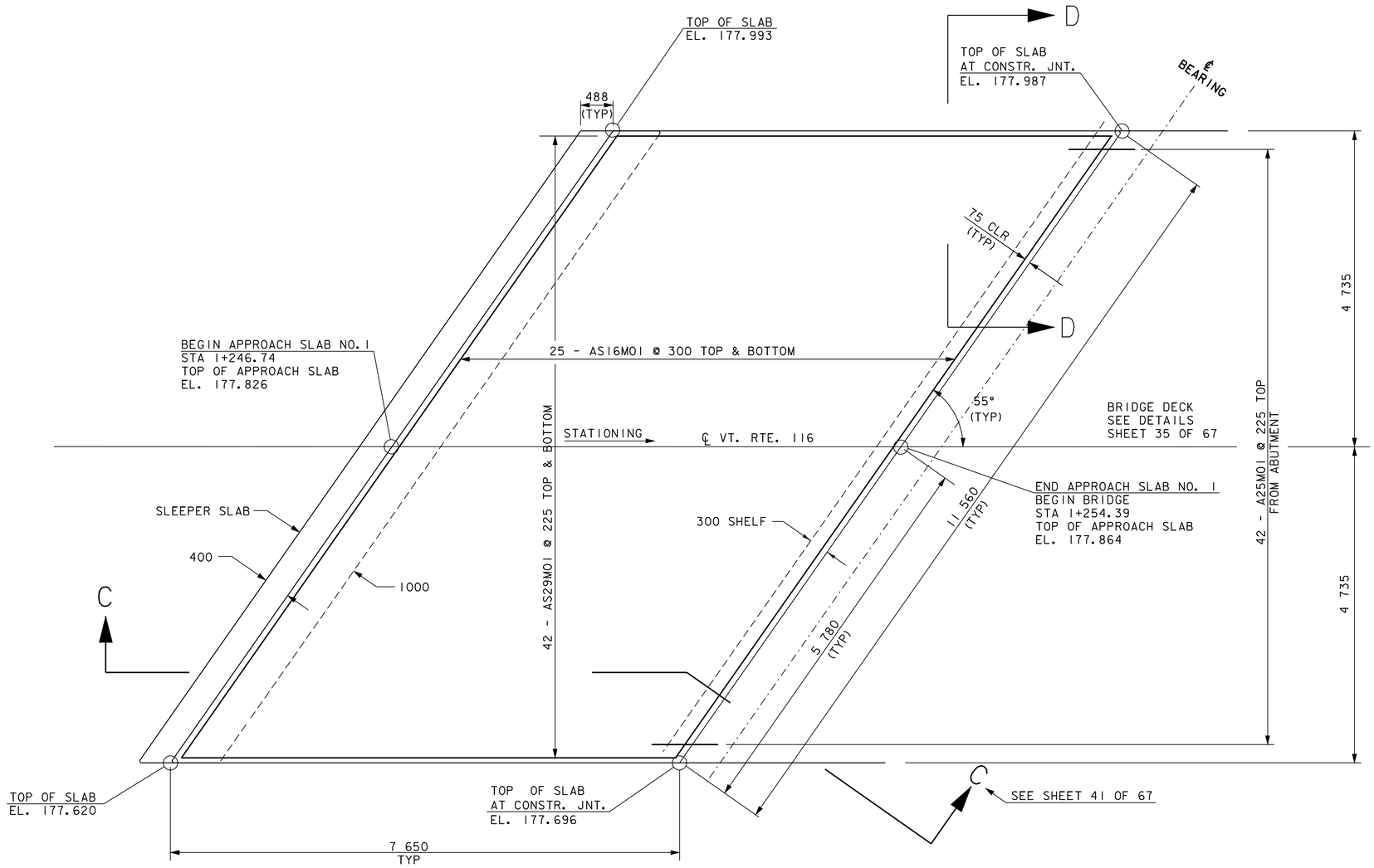


SECTION D-D

LOCATION OF DRAIN PIPE

NOTE: SLAB TO BE PLACED DIRECTLY ON GRANULAR BACKFILL/SUBBASE MATERIAL

SCALE = 1:10



APPROACH SLAB NO. 1 PLAN

SCALE = 1:40

REINFORCING STEEL REQUIRED

IN SLEEPER SLAB:
30 AS16M02
8 AS22M01
8 AS29M02

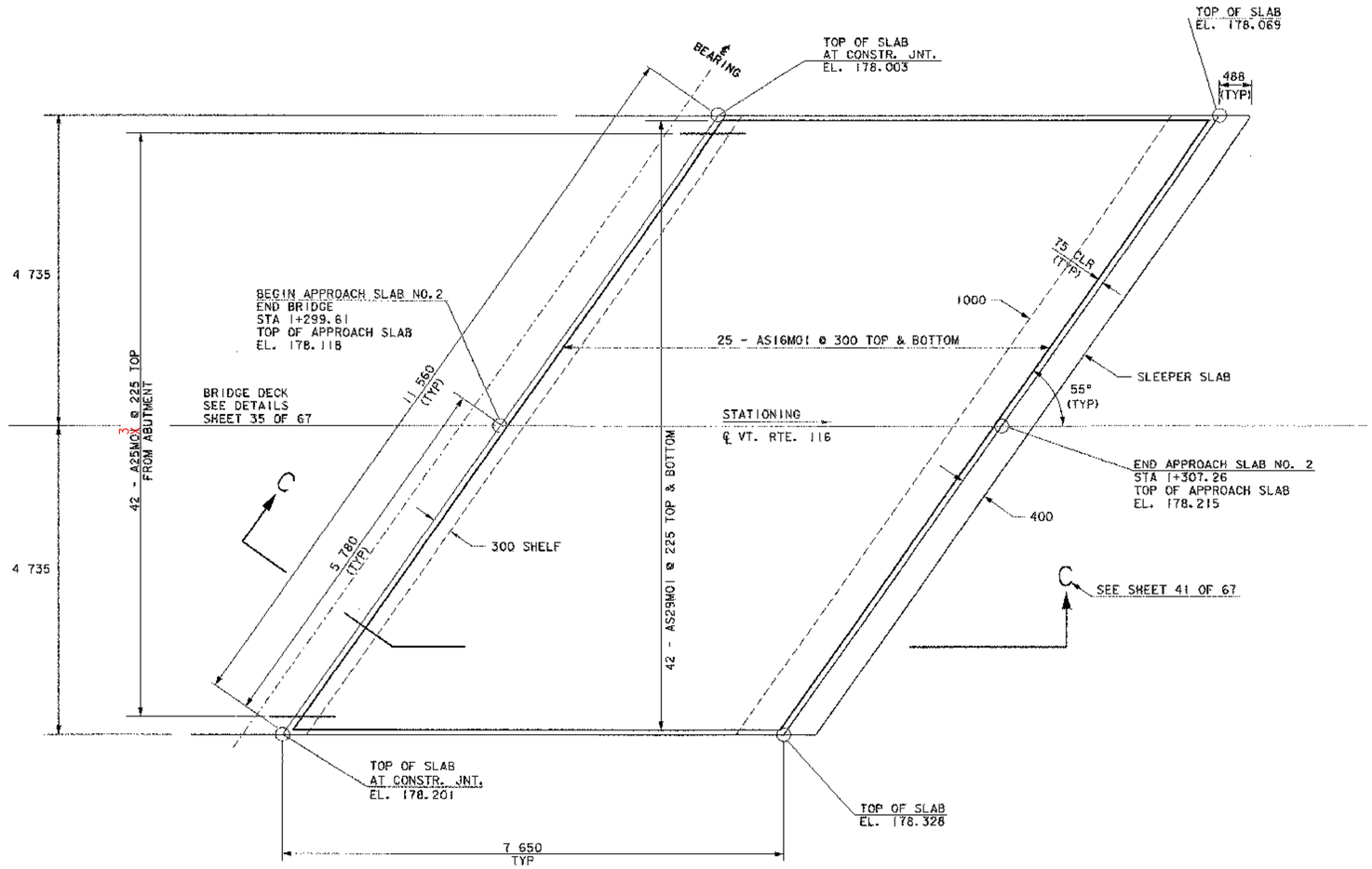
IN SLAB
50 AS16M01
84 AS29M01

PREVIOUSLY SET UP FROM ABUTMENT
42 A25M01

PLOT DATE: 05-JAN-2007

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRISTOL	Bridge No. 10
Highway No. VT.116	Log Sta. / Surv. Sta.
APPROACH SLAB DETAILS	
VT.116 BR.10 Over New Haven River	
Designed By G.COLGROVE	Drawn By L.BULLOCK
Checked By G.Colgrove Date 5/99	Bridge Design Supervisor A.Portalupi Date 5/99
PROJECT BRISTOL	PROJECT NO. ER 021-1(13)
I.G.C. Info. /str2/T8f188/sf188as.dgn	sf188asl1
Bridge Sheet No.	Sheet 39 of 67



APPROACH SLAB NO. 2 PLAN

SCALE = 1:40

REINFORCING STEEL REQUIRED

IN SLEEPER SLAB:
30 AS16M02
8 AS22M01
8 AS29M02

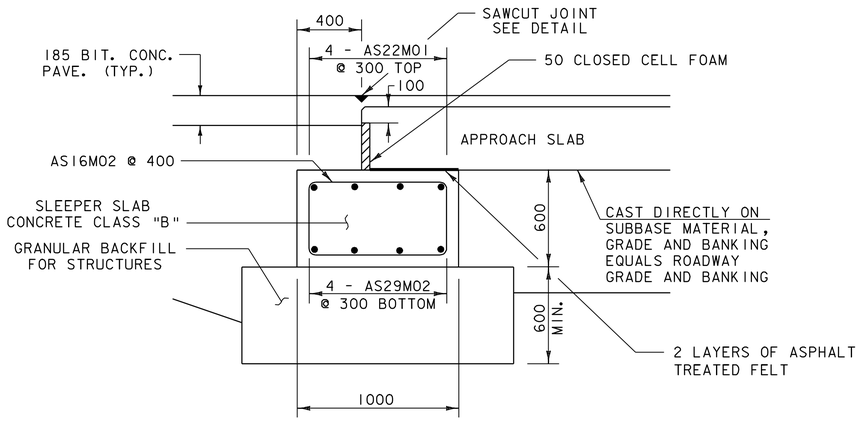
IN SLAB
50 AS16M01
84 AS29M01

PREVIOUSLY SET UP FROM ABUTMENT
42 A25M01

PLOT DATE: 03-FEB-2006

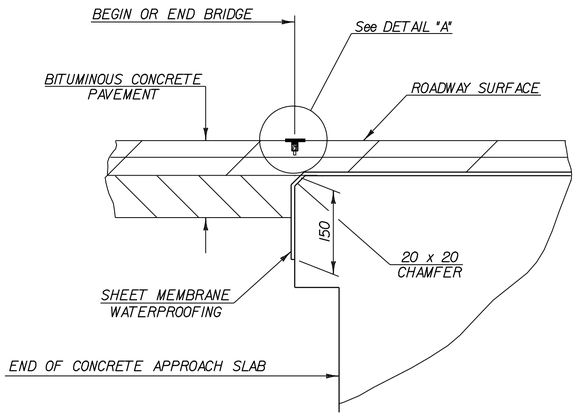
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRISTOL	Bridge No. 10
Highway No. VT.116	Log Sta. / Surv. Sta.
APPROACH SLAB #2	
VT.116 BR.10 OVER NEW HAVEN RIVER	
Designed By G.COLGROVE	Drawn By L.BULLOCK
Checked By G.Colgrove Date 5/99	Bridge Design Supervisor A.Portalupi Date 5/99
PROJECT BRISTOL	PROJECT NO. ER 02H(13)
I.G.C. Info. /str2/78f188/sf188as.dgn	sf188as2.1
Bridge Sheet No.	Sheet 40 of 67



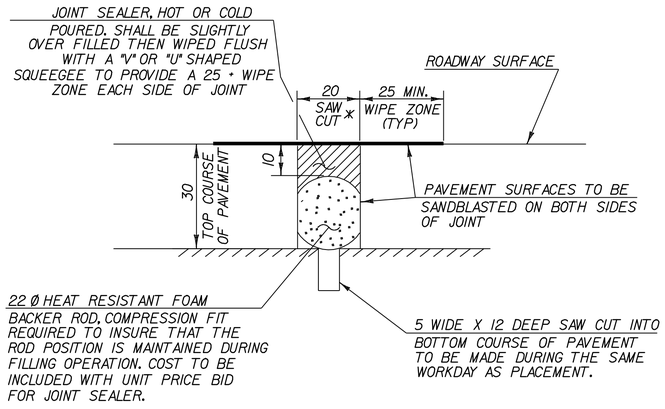
SLEEPER SLAB DETAIL

SCALE = 1:20



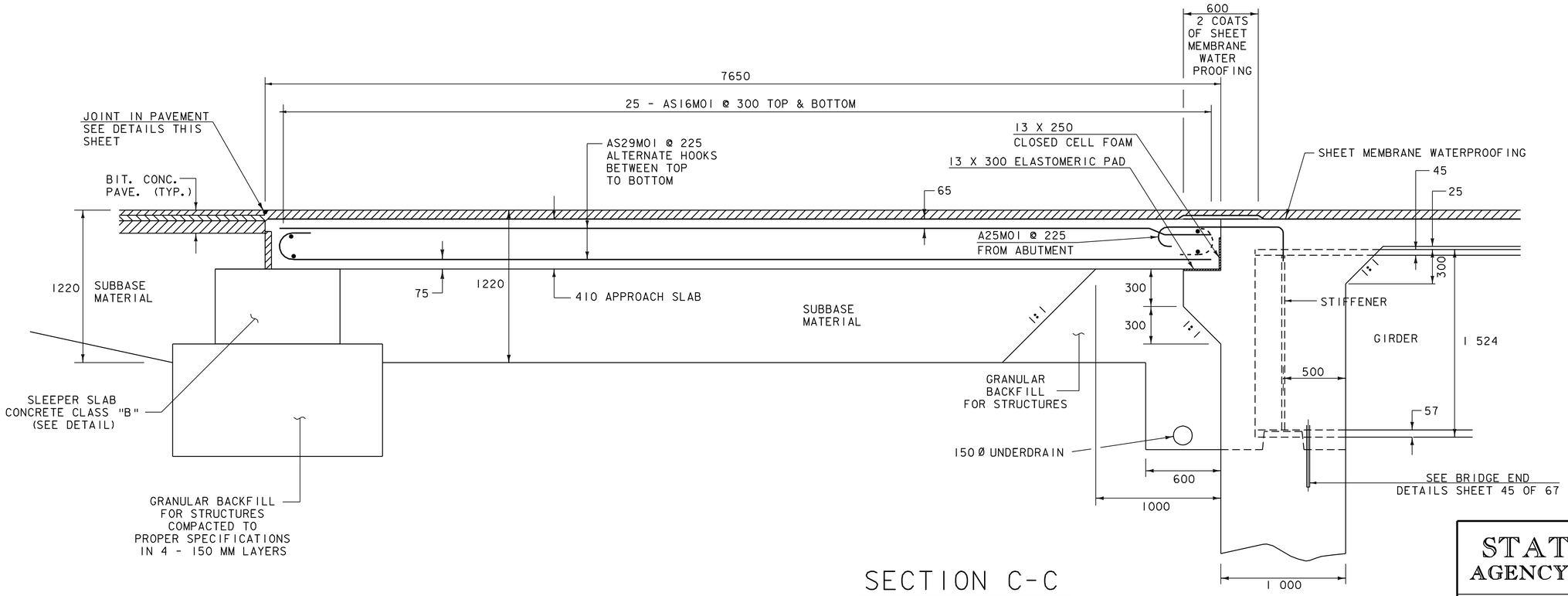
DETAIL FOR JOINT IN PAVEMENT AND SHEET MEMBRANE AT END OF APPROACH SLAB

NTS



DETAIL "A"

* JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUTS WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER. SEE VT. SPECIFICATION 524 AND SPECIAL PROVISIONS.



SECTION C-C

SCALE = 1:20

PLOT DATE: 05-JAN-2007

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRISTOL	Bridge No. 10
	Log Sta.
Highway No. VT.116	Surv. Sta.

APPROACH SLAB DETAILS

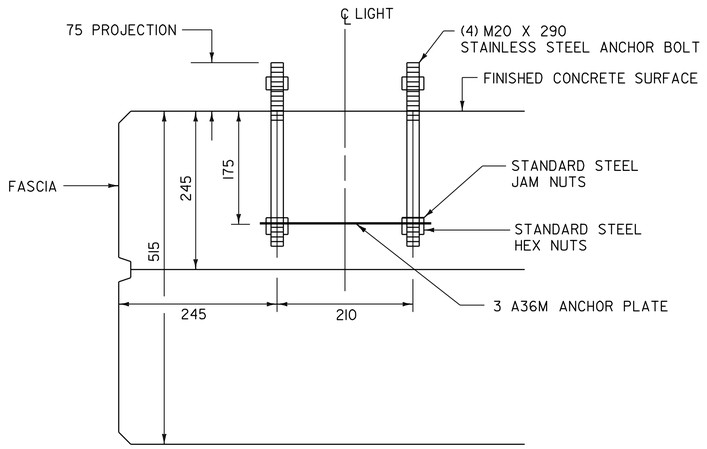
VT.116 BR.10 Over New Haven River

Designed By G.COLGROVE	Drawn By L.BULLOCK
Checked By G.Colgrove Date 5/99	Bridge Design Supervisor A.Portalupi Date 5/99
PROJECT BRISTOL	PROJECT NO. ER 021-1(13)
I.G.C. Info. /str2/78f188/sf188as.dgn	sf188as3.1
Bridge Sheet No.	Sheet 41 of 67

STATE OF VERMONT
AGENCY OF TRANSPORTATION

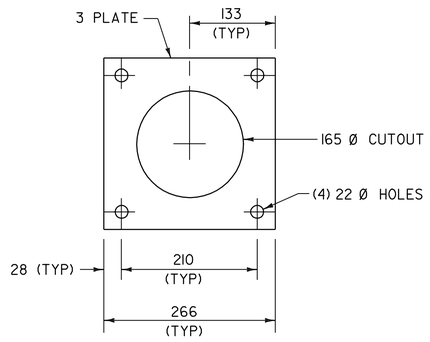
STREET LIGHTING DETAILS

VAOT Metric



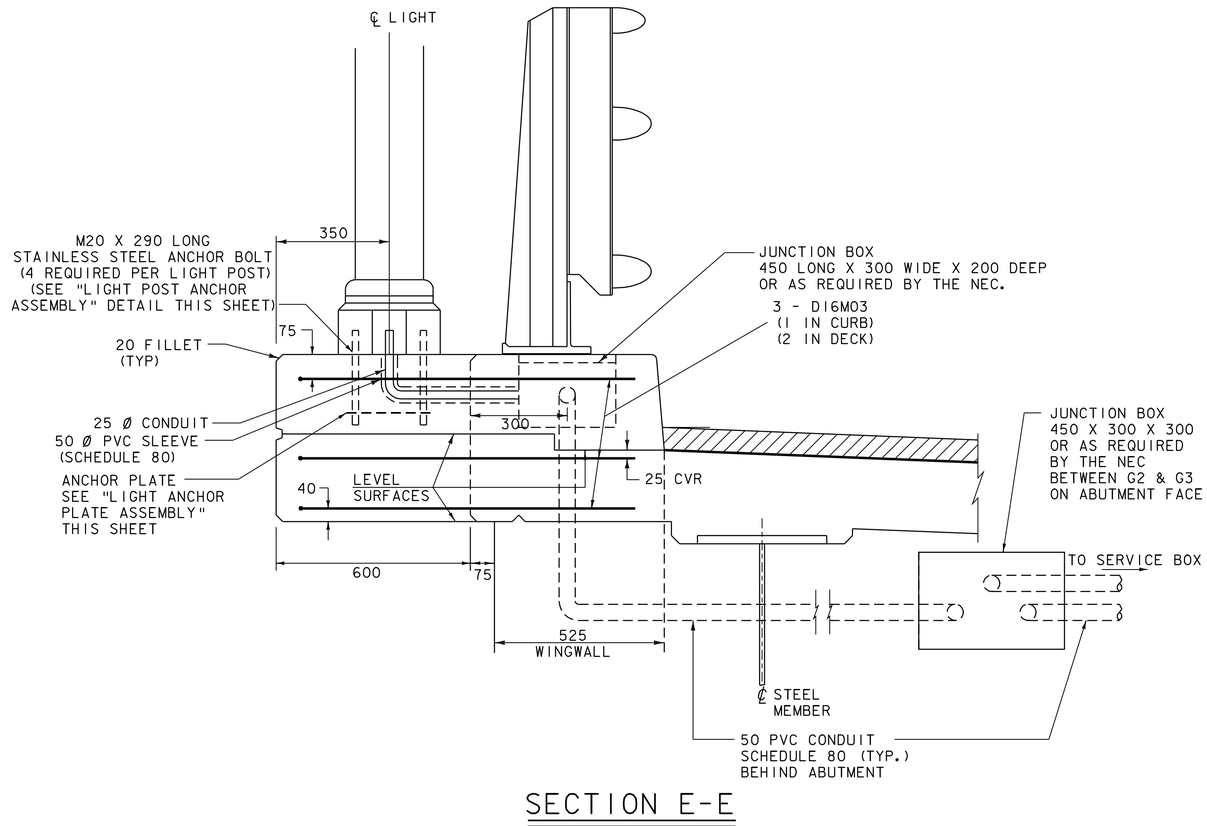
LIGHT POST ANCHOR ASSEMBLY

SCALE= 1:5



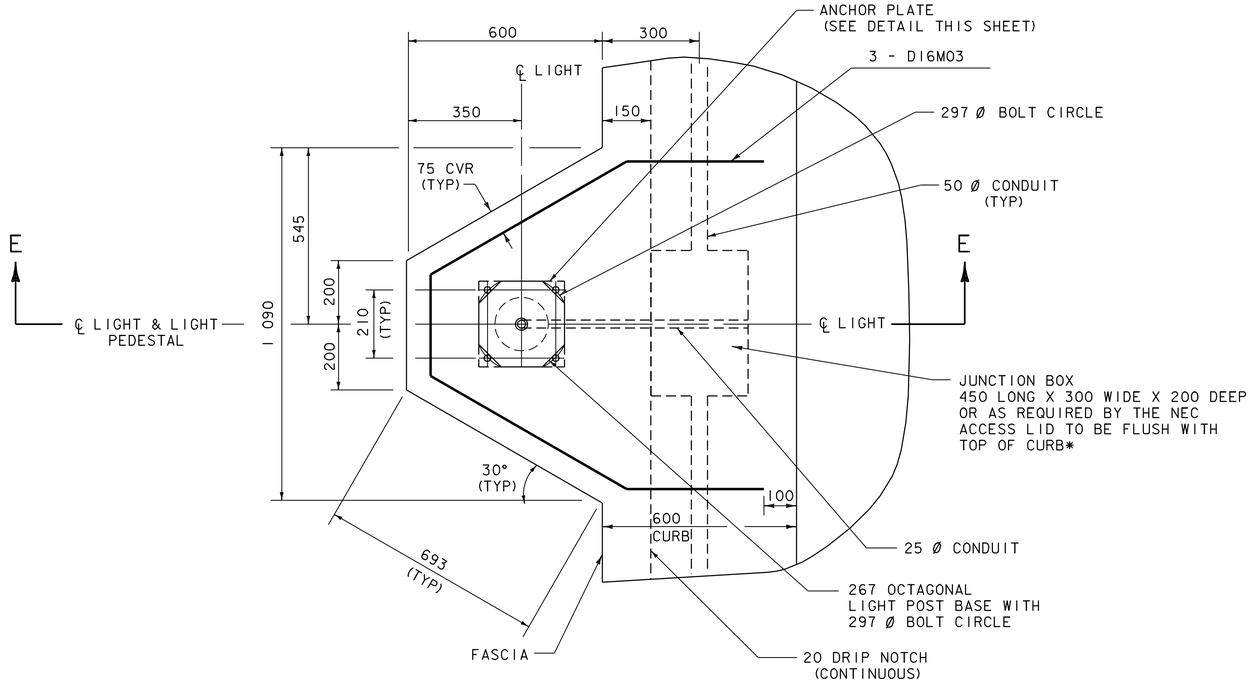
LIGHT POST ANCHOR PLATE

SCALE= 1:5



SECTION E-E

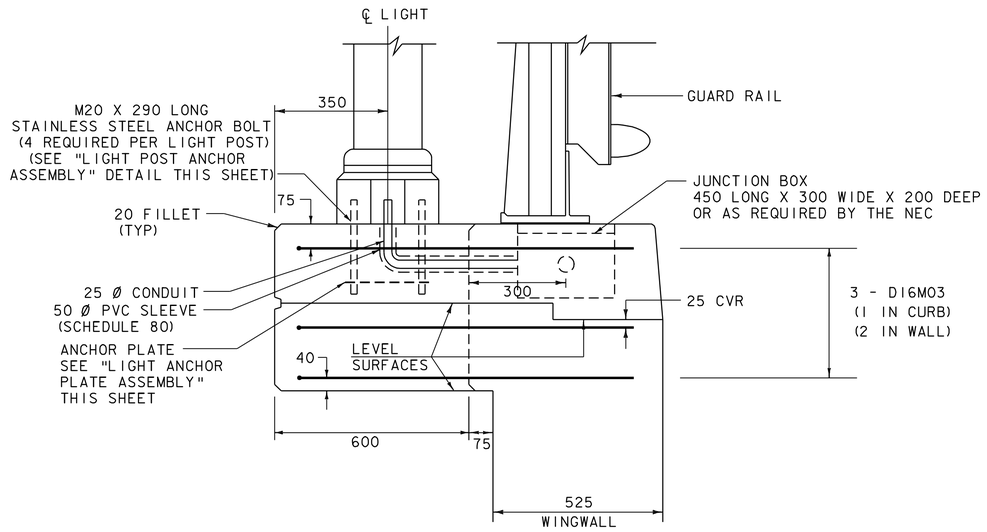
SCALE= 1:10



* CONTRACTOR MAY NEED TO ADJUST LOCATION OF JUNCTION BOX TO AVOID GUARD RAIL ANCHORS.

LIGHT PEDESTAL REINFORCING DETAIL

SCALE= 1:10



WINGWALL LIGHT PEDESTAL

SCALE= 1:10

*NEC: NATIONAL ELECTRIC CODE
ALL CONDUIT SLEEVES SHALL HAVE 75 MM COVER

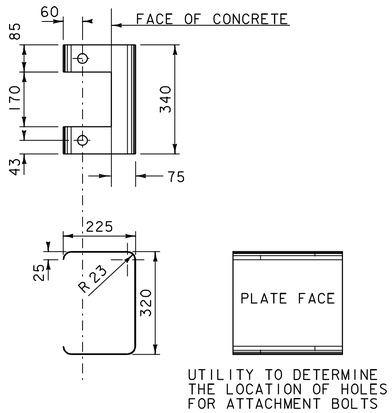
DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD83(92)

PROJECT:		PROJECT NO.:
BRISTOL		ER 021-1(13)
DESIGN FILE NAME:	M:\Projects\78f188\Structures\sf188sl.dgn	
IPARM FILE NAME:	sf188sl2J	PLOT DATE: 05-JAN-2007
SURVEYED BY:		SURVEY DATE:
SQUAD LEADER:	PORTALUPI	DRAWN BY: L.BULLOCK
Street Lighting Details		SHEET: 42 OF 67

STATE OF VERMONT
AGENCY OF TRANSPORTATION

STREET LIGHTING DETAILS

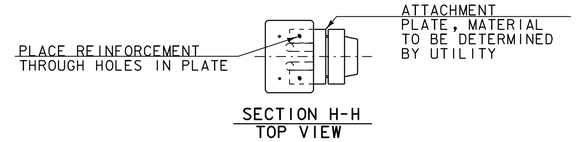
VAOT Metric



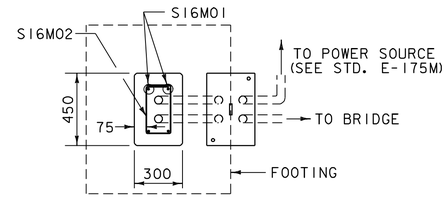
UTILITY TO DETERMINE
THE LOCATION OF HOLES
FOR ATTACHMENT BOLTS

ATTACHMENT PLATE
DETAIL

SCALE 1:10

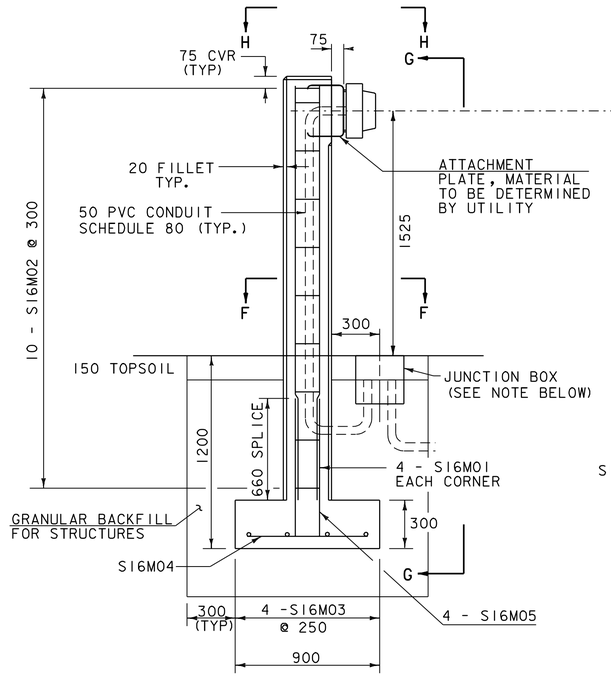


SECTION H-H
TOP VIEW

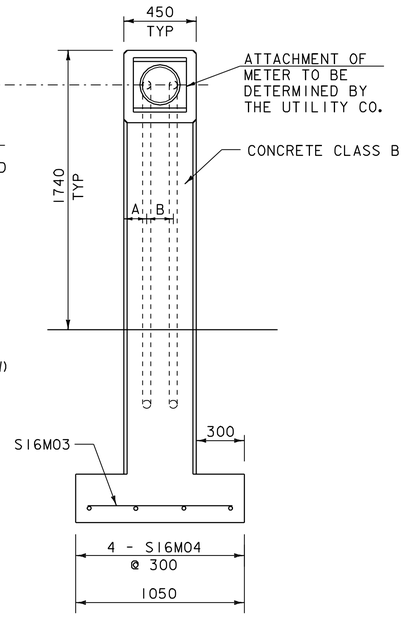


SECTION F-F
TOP VIEW

NOTE:
METER FACE IS TO POINT
AWAY FROM ROADWAY.



SIDE VIEW



NOTE: LENGTHS A AND B TO BE
DETERMINED BY THE UTILITY CO.

SECTION G-G
FRONT VIEW

REQUIRED REINFORCING STEEL
4 - S16M01
10 - S16M02
4 - S16M03
4 - S16M04
4 - S16M05

POWER DROP STANCHION #3 MOD.

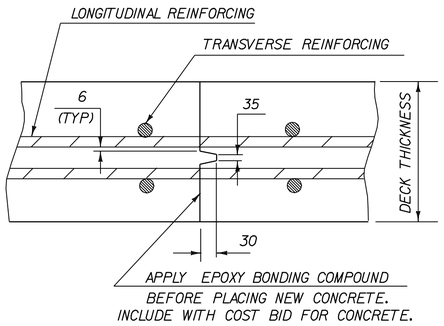
SCALE = 1:20

NOTE: JUNCTION BOX NOT NECESSARY
UNLESS REQUIRED BY UTILITY CO.
CONTRACTOR INSTALLED IF REQUIRED,
UNLESS AGREEMENT WITH UTILITY CO.

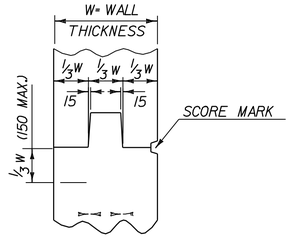
DATUM

VERTICAL NAVD 88
HORIZONTAL NAD83(92)

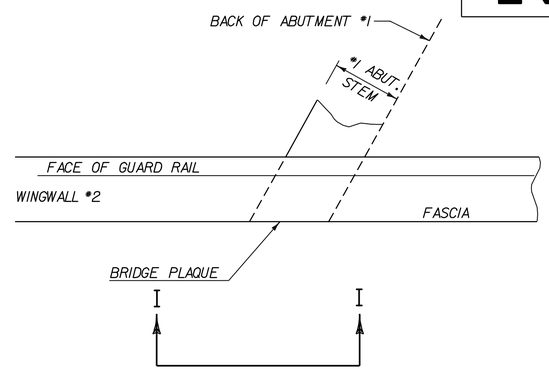
PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: M:\Projects\78f188\Structures\sf188sl.dgn	
IPARM FILE NAME: sf188sl3J	PLOT DATE: 05-JAN-2007
SURVEYED BY:	SURVEY DATE:
SQUAD LEADER: PORTALUPI	DRAWN BY: L.BULLOCK
Power Stanchion Details	SHEET: 43 OF 67



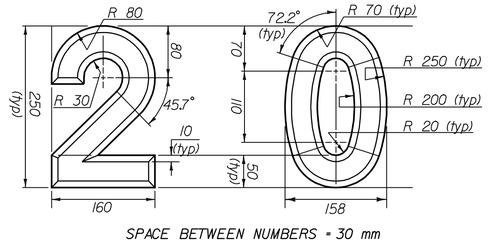
TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS



TYPICAL CONCRETE CONSTRUCTION JOINT

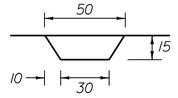


PLAN

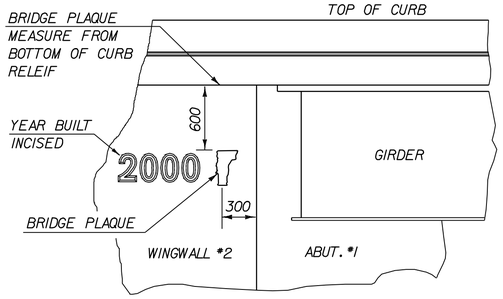


SPACE BETWEEN NUMBERS = 30 mm

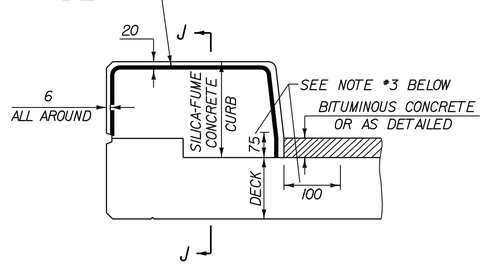
NUMBER DIMENSIONS



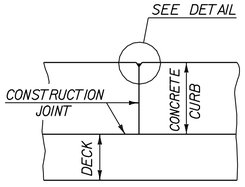
TYPICAL CROSS SECTION OF NUMBER



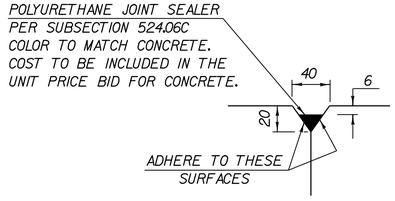
SECTION I-I



TYPICAL SECTION THROUGH CONCRETE CURB CONSTRUCTION JOINT



SECTION J - J



CONSTRUCTION JOINT SEAL

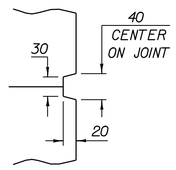
LOCATE BRIDGE PLAQUE

THE BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AT ABUTMENT #1 ON THE RIGHT SIDE AS SHOWN OR AS DIRECTED BY THE ENGINEER.

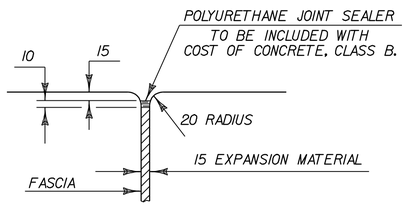
THE YEAR BUILT SHALL BE INCISED TO LOOK LIKE CHISLED ENGRAVED NUMBERS.

EACH OF THE NUMBERS FOR THE YEAR BUILT SHALL BE 250 mm HIGH AS SHOWN. EACH NUMBER SHALL BE INSET INTO THE CONCRETE BY 15 mm WITH THE SIDES BEING SLOPED BY 10 mm.

THE NUMBERS SHALL BE HORIZONTALLY CENTERED WITH THE BRIDGE PLAQUE



SCORE MARK DETAIL



JOINT BETWEEN FASCIA AND WINGWALL

NOTES:

1. CONSTRUCTION JOINTS THROUGH CONCRETE CURBS SHALL BE SPACED MAXIMUM 4.5 M CENTER TO CENTER AND SHALL BE 0.5 M MINIMUM FROM THE CENTER OF THE NEAREST BRIDGE RAIL POST. CONCRETE SHALL BE PLACED IN ALTERNATING SECTIONS WITH A MINIMUM OF 48 HOURS DELAY BETWEEN ADJACENT POURS.
2. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CURB CONSTRUCTION JOINTS. CURB REINFORCING STIRRUP BARS SHALL BE TURNED AS REQUIRED TO FIT FLARED ENDS.
3. INDICATES AREA ALONG DECK AND UP FACE OF CURB FOR PLACEMENT OF 2 COATS OF POLYURETHANE MEMBRANE.
4. POLYURETHANE MEMBRANE AND BLAST CLEANING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SHEET MEMBRANE WATERPROOFING.
5. SHEET MEMBRANE WATERPROOFING SHALL EXTEND TO FACE OF CURB AS SHOWN.
6. BLAST CLEAN 1 M FROM FACE OF CURB AND 0.075 M UP CURB FACE PRIOR TO PLACING MEMBRANE.

NOT TO SCALE

PLOT DATE: 05-JAN-2007

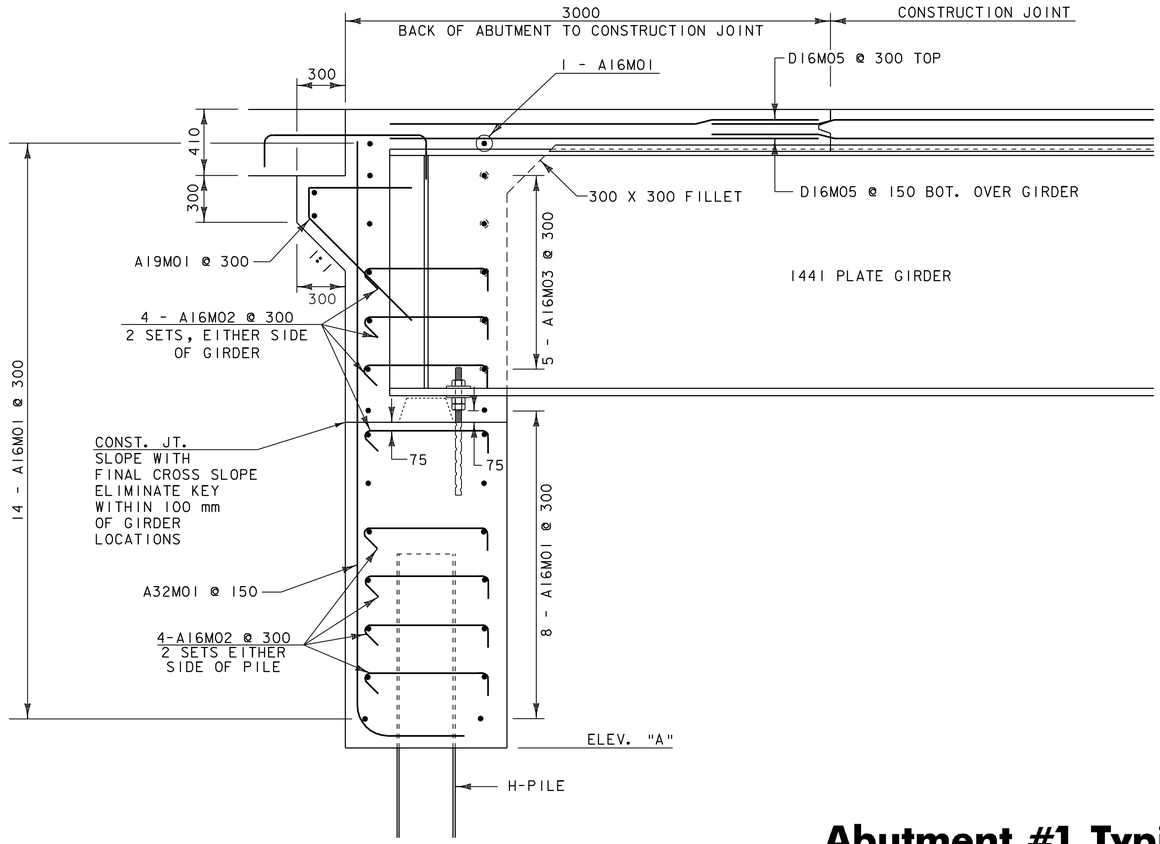
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of BRISTOL	Bridge No. 10
	Log Sta.
Highway No. VT.116	Surv. Sta.

MISCELLANEOUS DETAILS

VT.116 BR.10 OVER NEW HAVEN RIVER

Designed By G.COLGROVE	Drawn By L.BULLOCK
Checked By G.Colgrove Date 5/99	Bridge Design Supervisor A.Portalupi Date 5/99
PROJECT BRISTOL	PROJECT NO. ER 021-1(13)
I.G.C. Info. M:\Projects\78f188\Structures\sf188as.dgn	sf188msc1
Bridge Sheet No.	Sheet 44 of 67



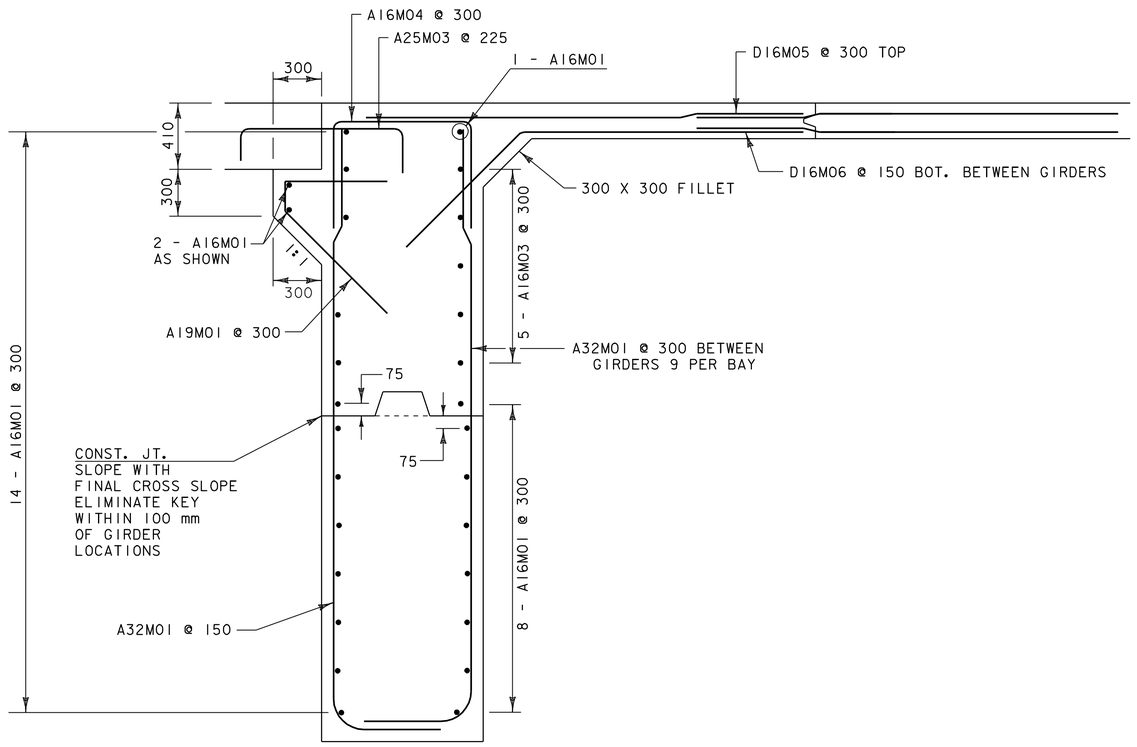
	"A"
ABUTMENT #1	174.000
ABUTMENT #2	174.200

At Girder

Between Girders

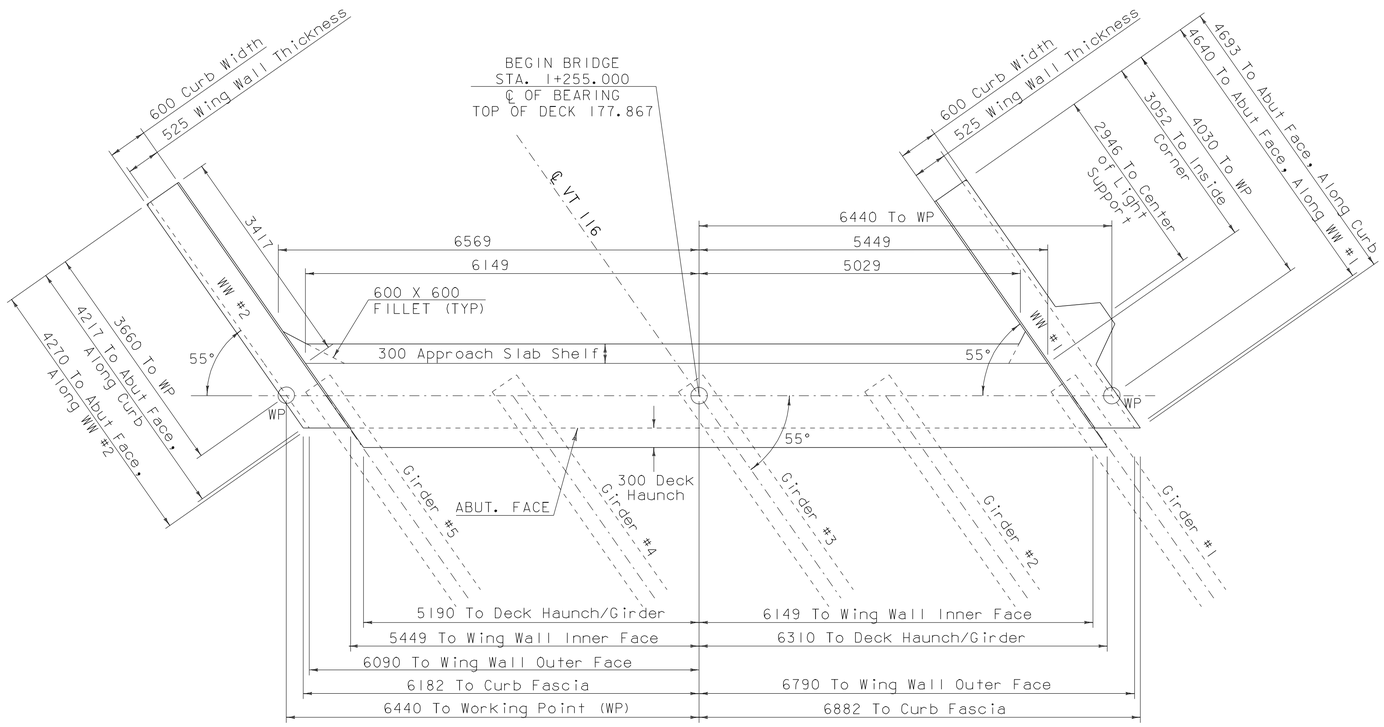
Abutment #1 Typicals

Abutment #2 Similar
Scale 1:20

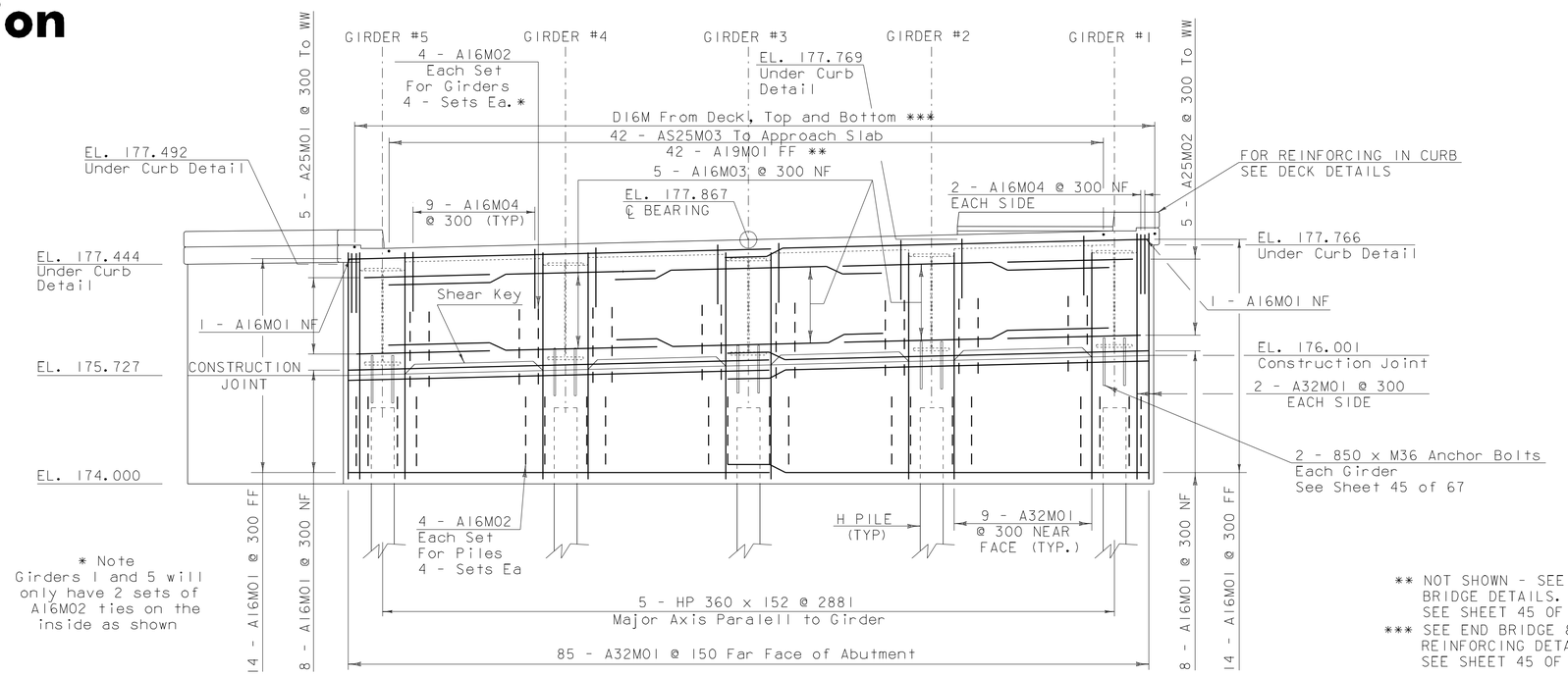


PROJECT NAME:	BRISTOL
PROJECT NUMBER:	ER 021-1(13)
FILE NAME: /str2/78f188/sf188ww.dgn	PLOT DATE: 05-JAN-2007
PROJECT LEADER: A. PORTALUPI	DRAWN BY: LBB/GWC
DESIGNED BY: G. COLGROVE	CHECKED BY:
sf188ww2.1	SHEET 45 OF 67

Plan



Elevation



* Note
Girders 1 and 5 will only have 2 sets of A16M02 ties on the inside as shown

** NOT SHOWN - SEE END BRIDGE DETAILS. SEE SHEET 45 OF 67

*** SEE END BRIDGE & DECK REINFORCING DETAILS. SEE SHEET 45 OF 67

Abutment #1

Scale 1:50

REQUIRED REINFORCING STEEL TO CONSTRUCTION JOINT

28	A16M01
96	A16M02
125	A32M01

FINAL PLACEMENT ABOVE CONSTRUCTION JOINT

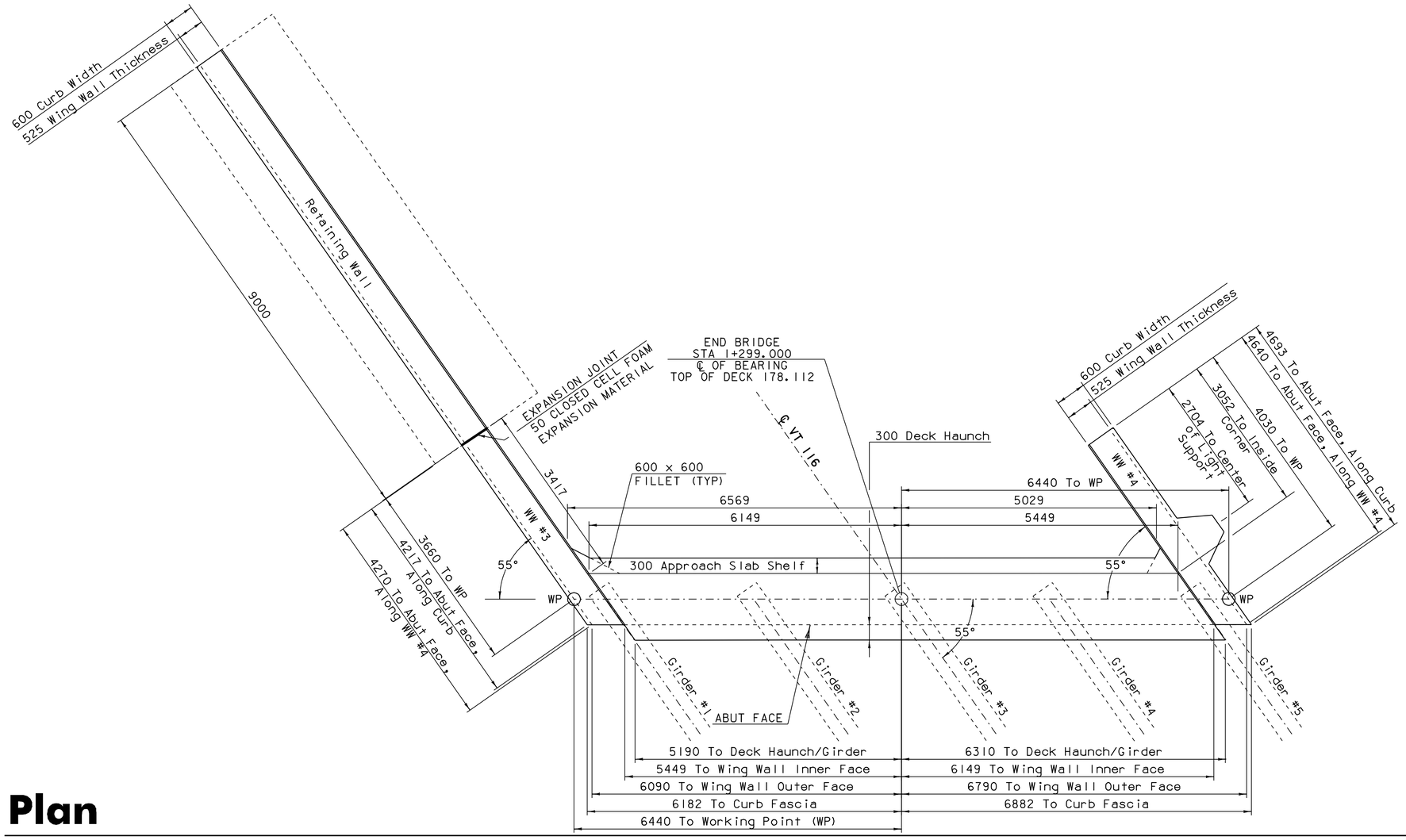
22	A16M01
48	A16M02
15	A16M03
40	A16M04
42	A19M01
5	A25M01
5	A25M02
42	A25M03

PROJECT NAME: BRISTOL
PROJECT NUMBER: ER 021-1(13)

FILE NAME: /str2/78fl88/sfl88ww.dgn
PROJECT LEADER: A. PORTALUPI
DESIGNED BY: G. COLGROVE
sfl88abl.i

PLOT DATE: $$$$DATE$$$
DRAWN BY: G. COLGROVE
CHECKED BY:
SHEET 46 OF 67

Plan



REQUIRED REINFORCING STEEL
TO CONSTRUCTION JOINT

28	A16M01
96	A16M02
125	A32M01

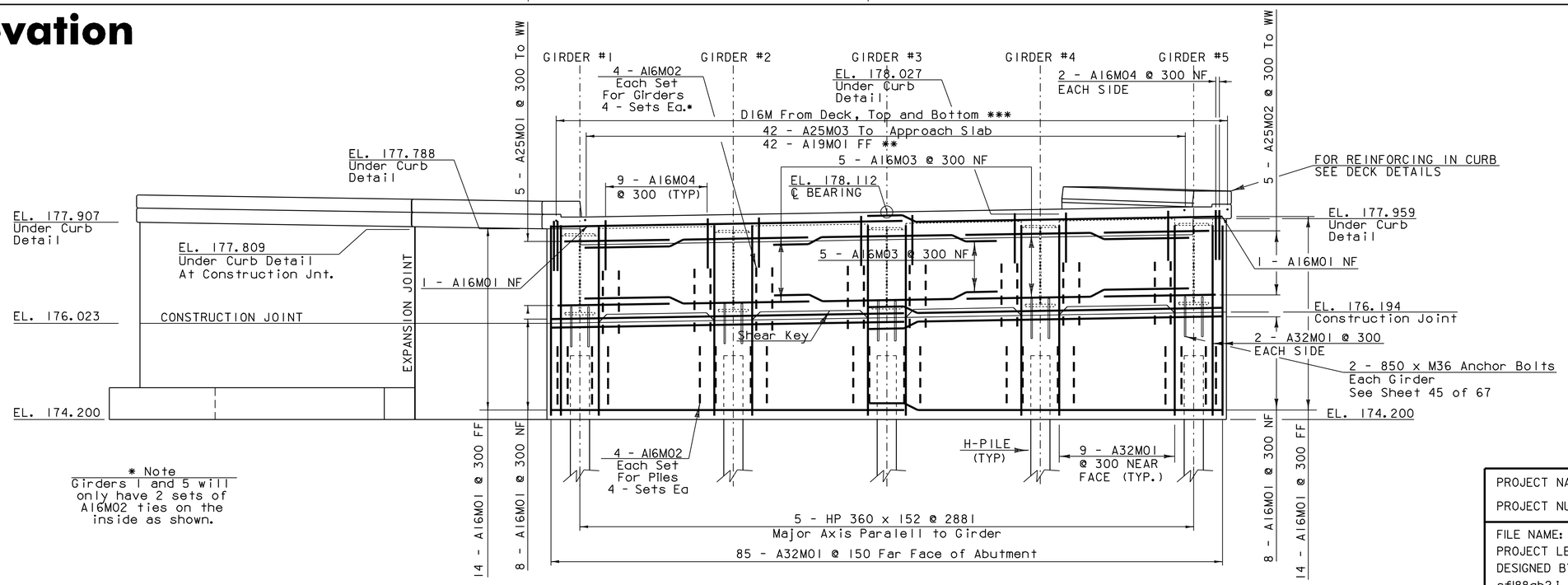
FINAL PLACEMENT ABOVE
CONSTRUCTION JOINT

22	A16M01
48	A16M02
15	A16M03
40	A16M04
42	A19M01
5	A25M01
5	A25M02
42	A25M03

Abutment #2

Scale 1:50

Elevation

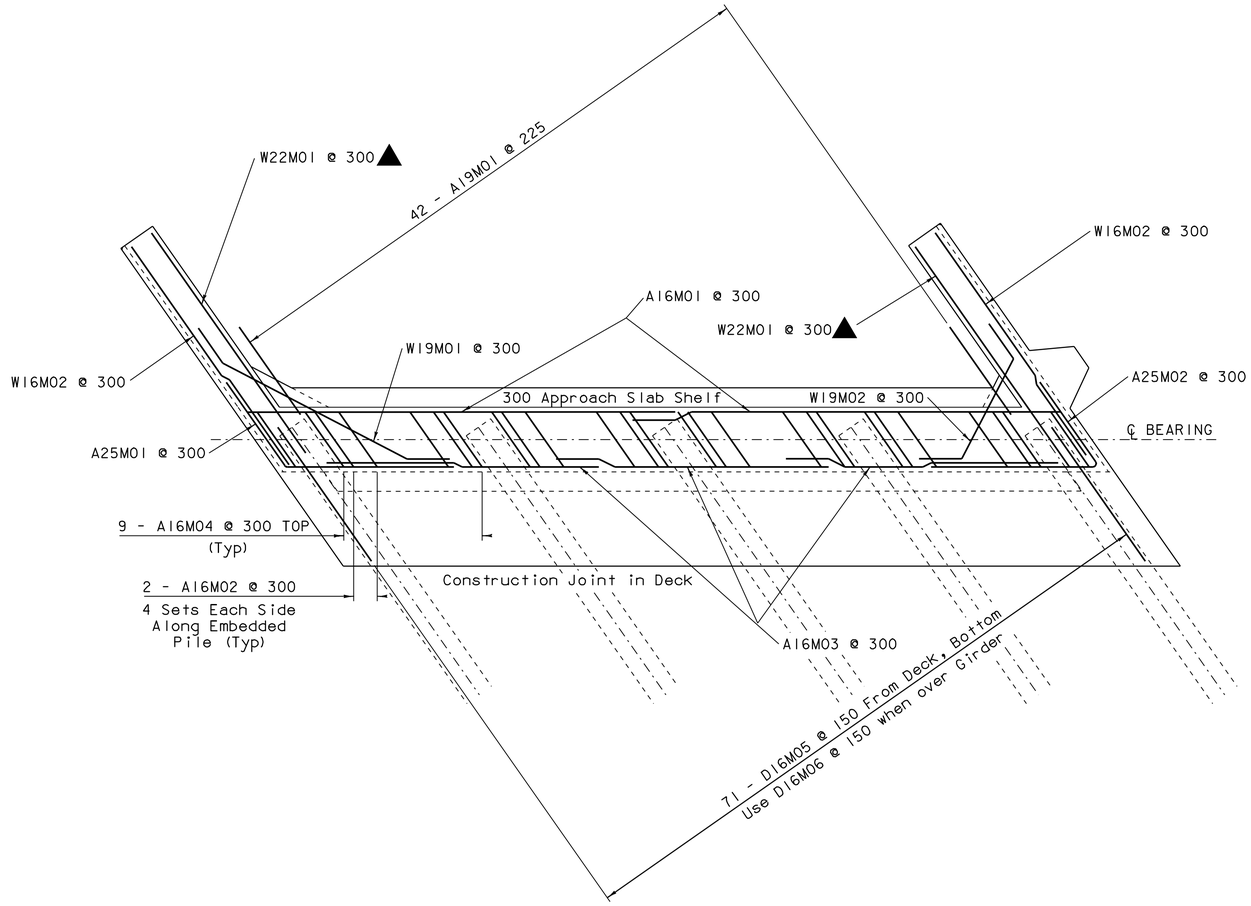


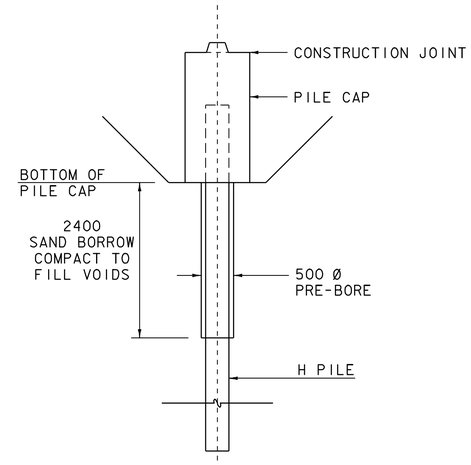
* Note
Girders 1 and 5 will only have 2 sets of A16M02 ties on the inside as shown.

** NOT SHOWN - SEE END BRIDGE DETAILS SHEET 45 OF 67

*** SEE END BRIDGE & DECK REINFORCING DETAILS SHEET 45 OF 67

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	ER 021-1(13)
FILE NAME: /str2/78f188/sf188ww.dgn	PLOT DATE: 05-JAN-2007
PROJECT LEADER: A. PORTALUPI	DRAWN BY: G. COLGROVE
DESIGNED BY: G. COLGROVE	CHECKED BY:
sf188ab2.1	SHEET 47 OF 67





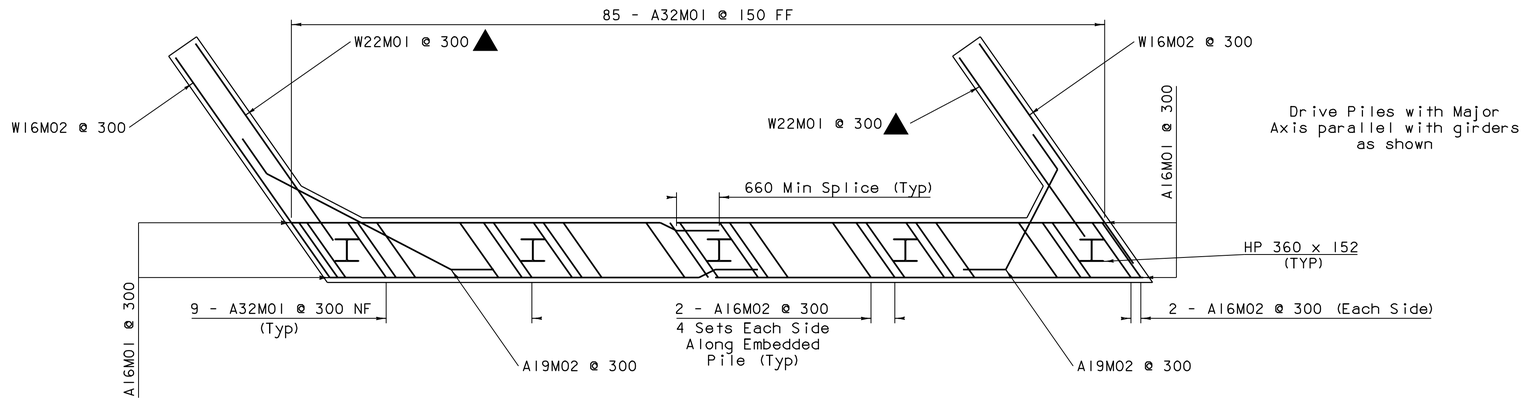
Pile Pre-bore Detail

Scale = 1:10

Above Construction Joint
Below Construction Joint

Abutment #1 Reinforcing Plan

Abutment # 2 Similar
Scale 1:50



Drive Piles with Major Axis parallel with girders as shown

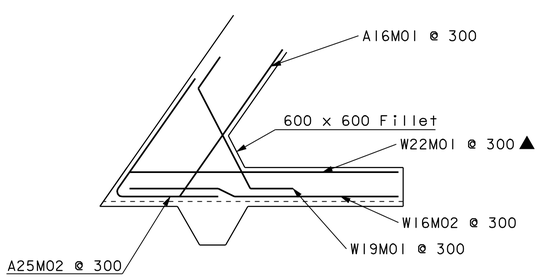
Location of Piles		
Abutment #1	Station	Offset
Pile 1	1+258.318	4.740 L
Pile 2	1+256.659	2.370 L
Pile 3	1+255.000	0.000
Pile 4	1+253.341	2.370 R
Pile 5	1+251.682	4.740 R
Abutment #2		
Pile 1	1+302.318	4.740 L
Pile 2	1+300.659	2.370 L
Pile 3	1+299.000	0.000
Pile 4	1+297.341	2.370 R
Pile 5	1+295.682	4.740 R

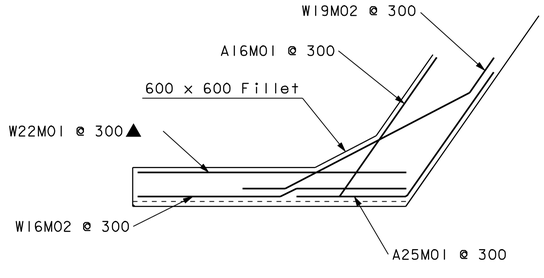
Layout for Abut #1	Pile 5	Pile 4	Pile 3	Pile 2	Pile 1
Layout for Abut #2	Pile 1	Pile 2	Pile 3	Pile 4	Pile 5

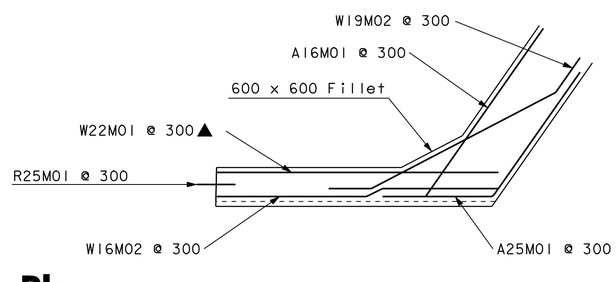
PROJECT NAME: BRISTOL
PROJECT NUMBER: ER 021-1(13)

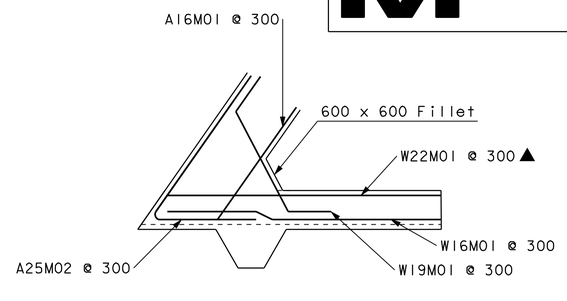
FILE NAME: /str2/78f188/sf188ww.dgn
PROJECT LEADER: A. PORTALUPI
DESIGNED BY: G. COLGROVE
sf188ab3.1

PLOT DATE: 05-JAN-2007
DRAWN BY: G. COLGROVE
CHECKED BY:
SHEET 48 OF 67



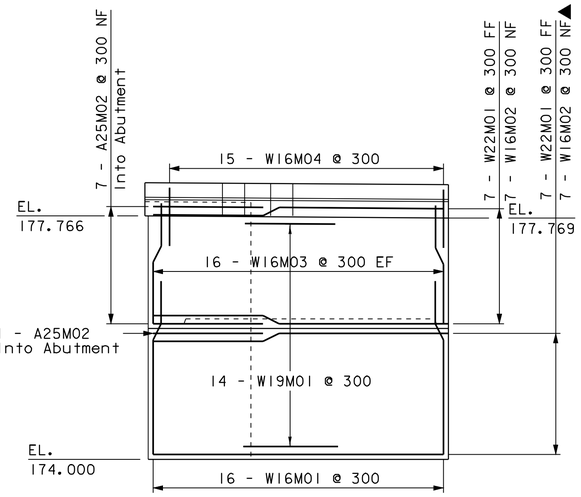


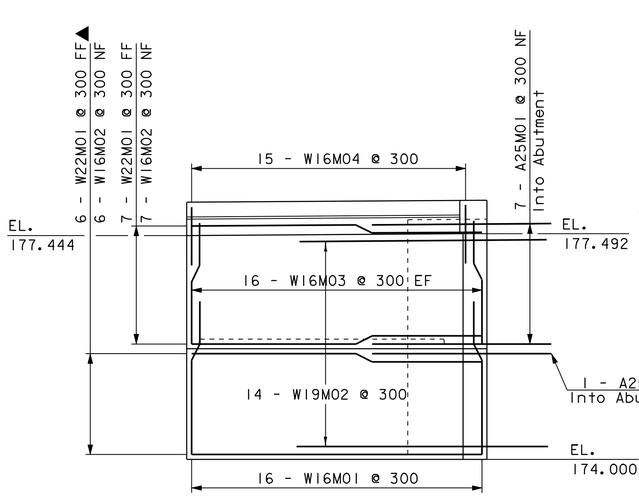


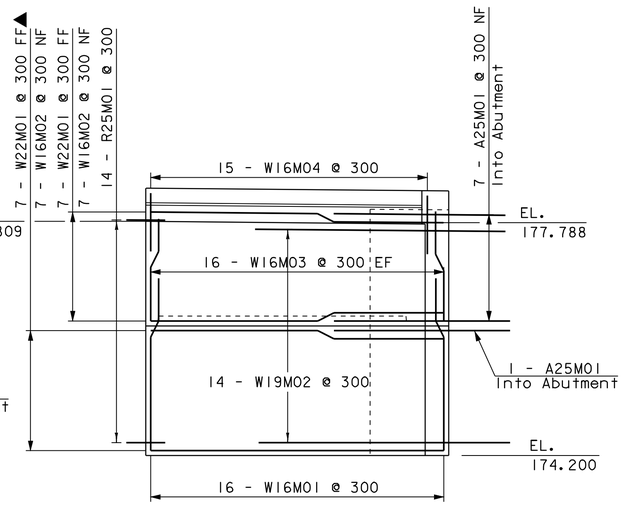


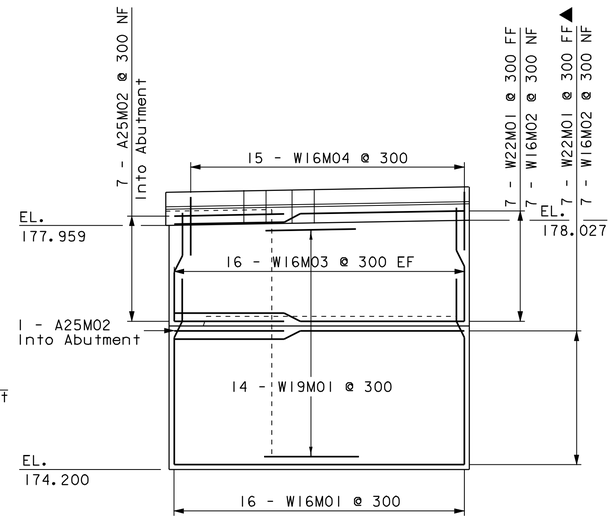
Plan

Scale 1:50





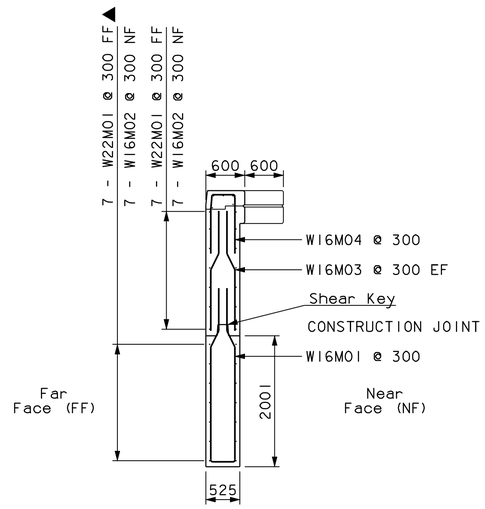




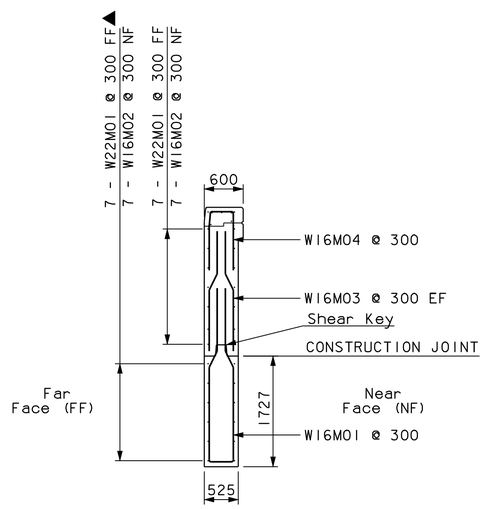
Elevation

All Elevations are shown with Outer Face (OF)

Scale 1:50

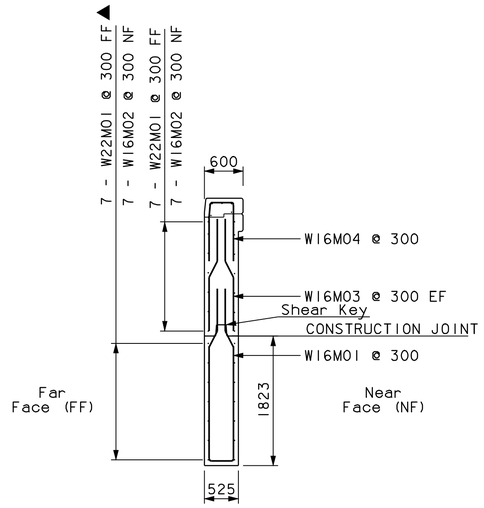


Wing Wall #1

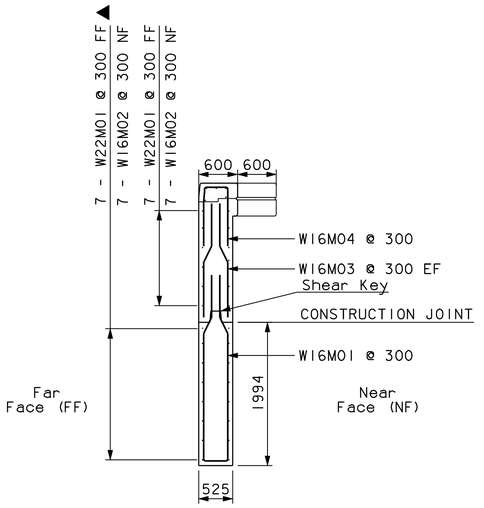


Wing Wall #2

Typical



Wing Wall #3



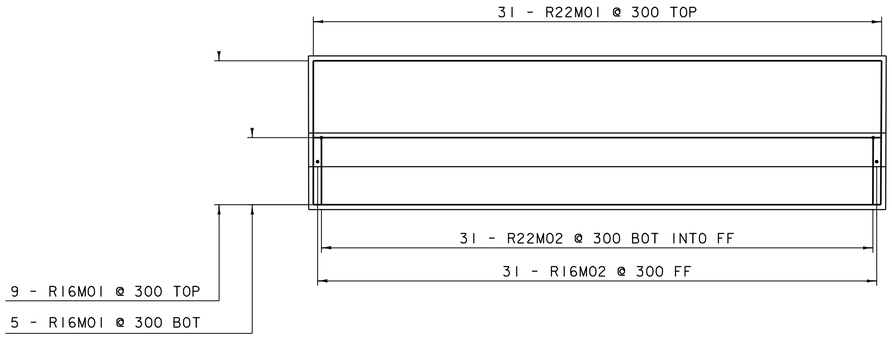
Wing Wall #4

Scale 1:50

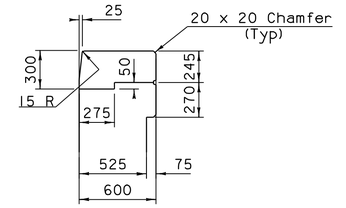
Required Reinforcing Steel
Each Wall

16 W16M01	14 W19M01 or W19M02
14 W16M02	14 W22M01
32 W16M03	8 A25M01
15 W16M04	

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	ER 021-1(13)
FILE NAME: /str2/78fl88/sfl88ww.dgn	PLOT DATE: 05-JAN-2007
PROJECT LEADER: A. PORTALUPI	DRAWN BY: G. COLGROVE
DESIGNED BY: G. COLGROVE	CHECKED BY:
sfl88ww.i	SHEET 49 OF 67

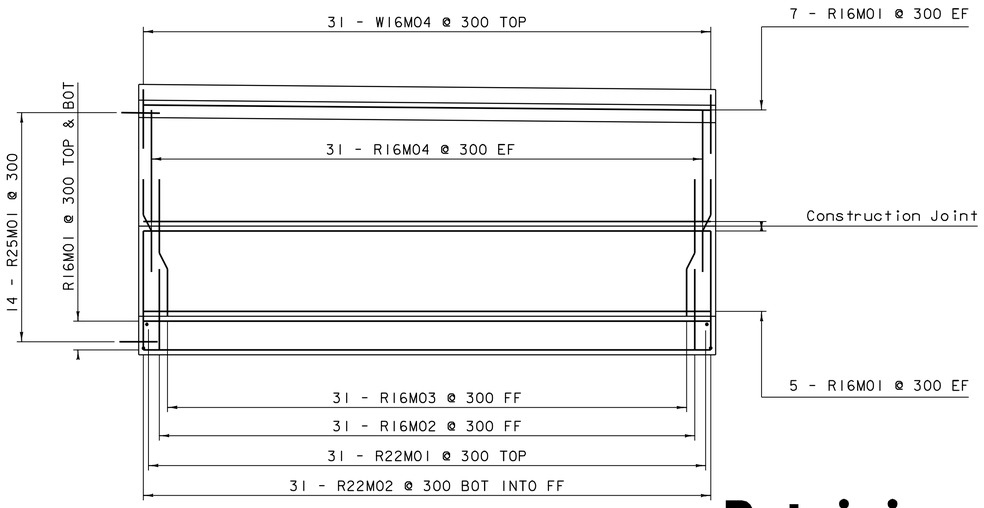


Footing Plan



Wing Wall/Retaining Wall Curb Detail

NTS

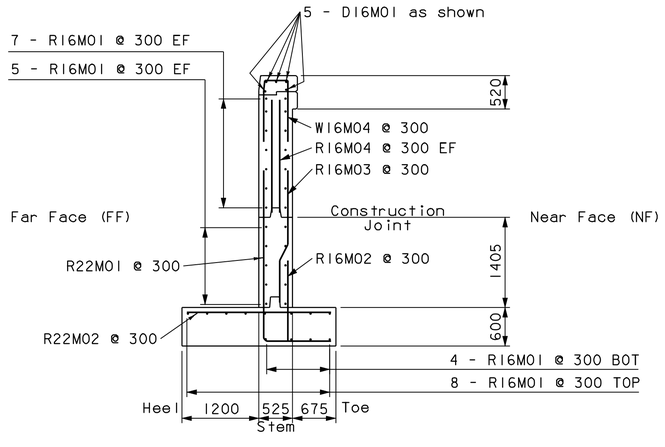


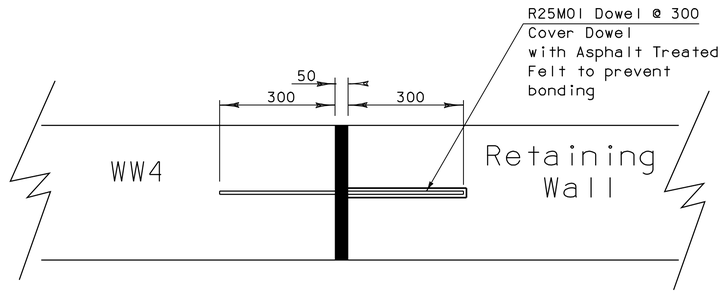
Elevation

Section Typical

Retaining Wall

Scale 1:50





Expansion Joint between Wing Wall and Retaining Wall

NTS

REINFORCING STEEL REQUIRED

36 - R16M01
31 - R16M02
31 - R16M0
62 - R16M04
31 - W16M04
31 - R22M01
31 - R22M02
14 - R25M01

PROJECT NAME:	Bristol
PROJECT NUMBER:	ER 021-1(13)
FILE NAME: /str2/78fl88/sfl88ww.dgn	PLOT DATE: 05-JAN-2007
PROJECT LEADER: A. Portalupi	DRAWN BY: G. Colgrove
DESIGNED BY: G. Colgrove	CHECKED BY:
sfl88ret.i	SHEET 50 OF 67

STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

Metric

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	Abutments																
✳	101	16	6770	A16M01	STR												
	288	16	1315	A16M02	16	155	1030	---	130				92		92		
	30	16	4220	A16M03	STR												
	80	16	2920	A16M04	17		940	1040	940								
	84	19	2300	A19M01	16	300	600	300	1100				778		778		
✳	11	25	3800	A25M01	22		2200	1600					1802		1262		
	10	25	3800	A25M02	27		2200	1600					1802		1262		
	84	25	1500	A25M03	12	275	800	425	---				---		---		
✳	251	32	4575	A32M01	17		3575	1000	---								
	Approach Slabs																
✳	101	16	11380	AS16M01	STR												
	60	16	3920	AS16M02	T2	660	850	450	850	450		660					
✳	17	22	6500	AS22M01	STR												
✳	169	29	7875	AS29M01	1	375	7500					---		300			
	16	29	7022	AS29M02	STR												
	Super Structure Deck																
	483	16	10900	D16M01	STR												
	154	16	12890	D16M02	STR												
	18	16	2550	D16M03	14	420	700	310	700	420			525		300		
	286	16	2030	D16M04	S5	400	400	430	400		---	400					
✳	103	16	2850	D16M05	STR												
	122	16	2530	D16M06	22	---	1000	1530					710	---	710	---	
✳	303	19	12890	D19M01	STR												
	Wingwalls																
	64	16	5695	W16M01	17		2660	375	2660								
	56	16	4145	W16M02	STR												
✳	129	16	1765	W16M03	STR												
	91	16	2768	W16M04	23		1170	425	---	155	1018		152		25		
✳	29	19	3810	W19M01	22		895	2020	895				794	794	413	413	
	28	19	5837	W19M02	22		895	4047	895				413	413	794	794	
✳	57	22	4145	W22M01	STR												
	Retaining Wall																
	36	16	8850	R16M01	STR												
✳	32	16	1185	R16M02	STR												
	31	16	2065	R16M03	STR												
	62	16	2710	R16M04	STR												
✳	32	22	2210	R22M01	17		1185	1025	---								
	31	22	2220	R22M02	STR												
	14	25	650	R25M01	STR												
	Power Drop Stanchion																
	4	16	2350	S16M01	STR												
✳	11	16	1210	S16M02	T2	155	150	300	150	300		155					
	4	16	900	S16M03	STR												
	4	16	750	S16M04	STR												
	4	16	885	S16M05	STR												

Abutments

	#1	#2
A16M01	50	50
A16M02	144	144
A16M03	15	15
A16M04	40	40
A19M01	42	42
A25M01	5	5
A25M02	5	5
A25M03	42	42
A32M01	125	125

Approach Slabs

	#1	#2
AS16M01	50	50
AS16M02	30	30
AS22M01	8	8
AS29M01	84	84
AS29M02	8	8

Super Structure Deck

D16M01	483
D16M02	154
D16M03	18
D16M04	286
D16M05	102
D16M06	122
D19M01	302

Wingwalls

	#1	#2	#3	#4
W16M01	16	16	16	16
W16M02	14	14	14	14
W16M03	32	32	32	32
W16M04	15	15	15	15
W19M01	14	0	0	14
W19M02	0	14	14	0
W22M01	14	14	14	14

Retaining Wall

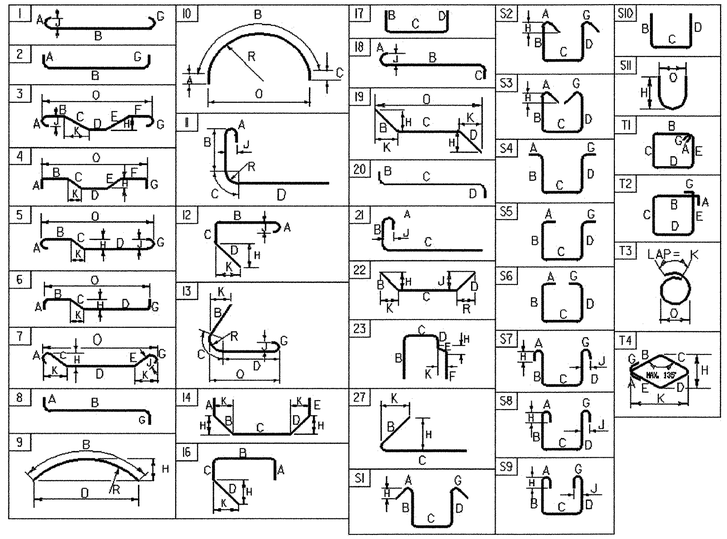
R16M01	36
R16M02	31
R16M03	31
R16M04	62
R22M01	31
R22M02	31
R25M01	14
W16M04	31

Power Drop Stanchion

S16M01	4
S16M02	10
S16M03	4
S16M04	4
S16M05	4

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING 55M SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31M (ASTM A 615M-SI). ALL BARS SHALL BE GRADE 420, 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. Δ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. "E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



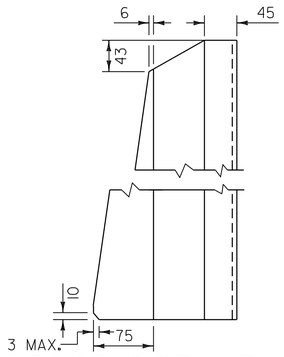
ASTM STANDARD REINFORCING BARS

BAR SIZE	NOMINAL MASS (Kg/m)	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER (mm)	CROSS SECTIONAL AREA (mm^2)	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

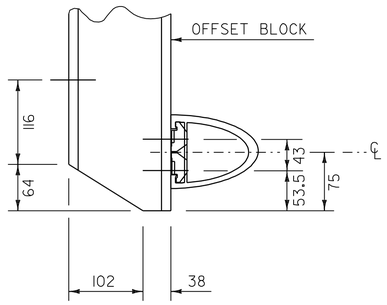
PROJECT NAME: **Bristol**
PROJECT NUMBER: **ER 021-1 (13)**

FILE NAME: **sf188rss.xls**
PROJECT LEADER: **A. Portalupi**
DESIGNED BY: **G. Colgrove**
REINFORCING STEEL SCHEDULE SHEET #1

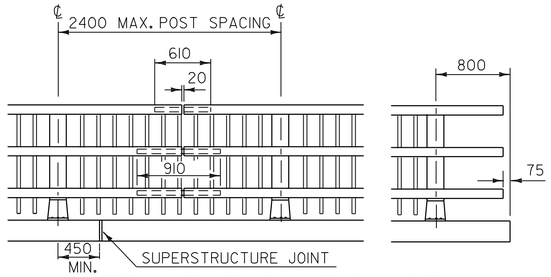
PLOT DATE: **7/23/99**
DRAWN BY: **G. Colgrove**
CHECKED BY: **0**
SHEET **51** OF **67**



POST SIDE VIEW



COPING DETAIL



FRONT ELEVATION OF THREE RAIL WITH SPINDLES

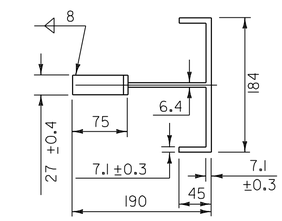
NOTE : RAIL POSTS ARE TO BE SET NORMAL TO GRADE UNLESS OTHERWISE DESIGNATED ON BRIDGE PLANS. ALL DIMENSIONS ARE TYPICAL UNLESS OTHERWISE DESIGNATED ON BRIDGE PLANS.

THIS REFLECTORIZED ALUMINUM DELINEATOR IS TO BE ERECTED EVERY 9 m (OR CLOSEST POST) WITH 2 M4 X 0.7 X 20 SET SCREWS.

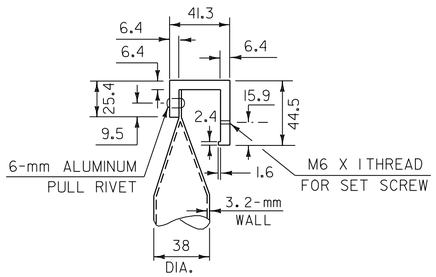
DELINEATORS SHALL MEET SPECIFICATION REQUIREMENTS FOR ASTM B 209M ALLOY 5052-H32.

REFLECTIVE MATERIAL SHALL MEET THE 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.

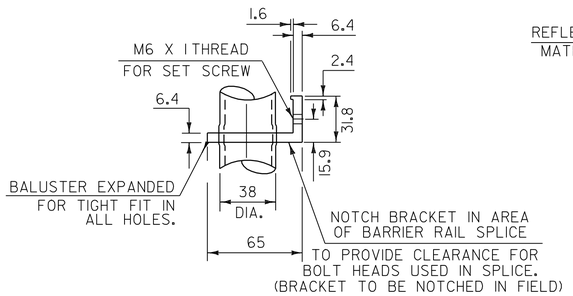
PAYMENT SHALL BE SUBSIDIARY TO ALL OTHER ITEMS.



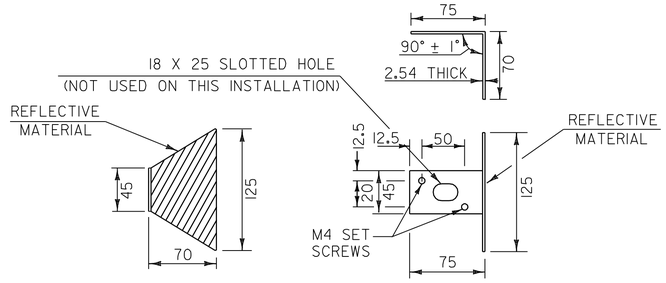
POST PLAN VIEW



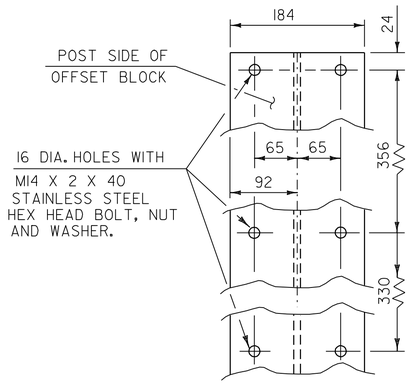
DETAIL A



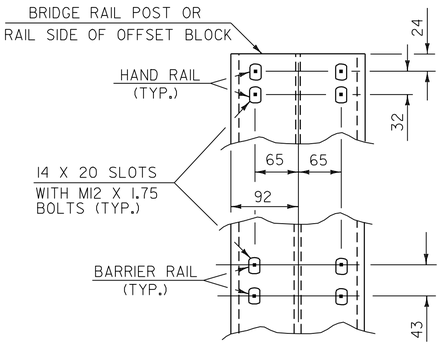
DETAIL B



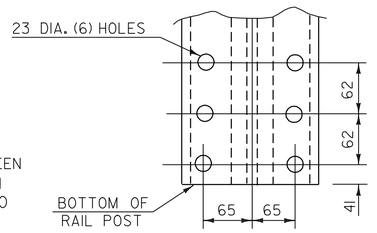
REFLECTOR DETAILS



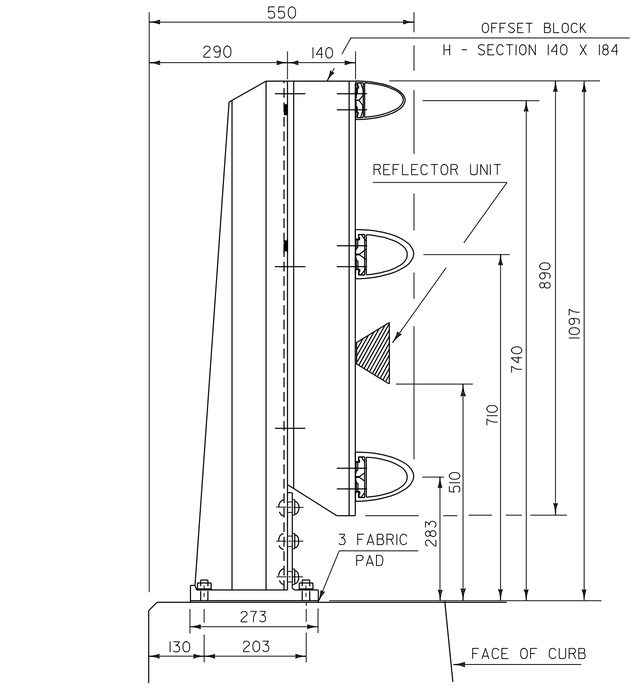
OFFSET BLOCK CONNECTION



RAIL CONNECTION

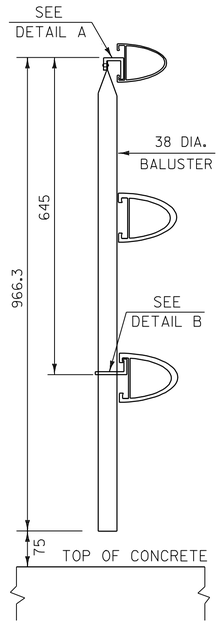


POST BASE
BOLT HOLE DETAILS



SIDE ELEVATION OF THREE RAIL TO BE USED ON CURB SIDE

RAIL POST DETAILS ON SUPERSTRUCTURE



SECTION KK

OUTSIDE ELEVATION OF THREE RAIL POST & SPINDLES

DETAILS OF SPINDLES FOR ALUMINUM RAILING

REVISIONS AND CORRECTIONS

DECEMBER 18, 1997 - ORIGINAL APPROVAL DATE

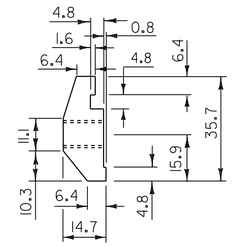
REVISION: COPING DETAIL MOFIDIFED. JHW 06/16/98

STATE OF VERMONT
AGENCY OF TRANSPORTATION

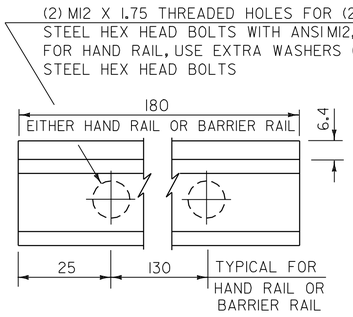
Town Of BRISTOL	Bridge No. 10
	Log Sta.
Highway No. VT.116	Surv. Sta.

ALUMINUM BRIDGE RAILING DETAILS 1 OF 3

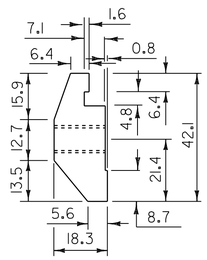
Designed By A.PORTALUPI	Drawn By L.BULLOCK
Checked By T.LACKEY Date 5/99	Bridge Design Supervisor A. PORTALUPI Date 5/99
PROJECT BRISTOL	PROJECT NO. ER 021-1(13)
I.G.C. Info. M:\Projects\78f188\Structures\sf188abr.dgn	sf188all
Bridge Sheet No.	Sheet 52 of 67



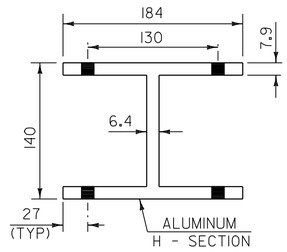
POST CONNECTION HAND RAIL SECTION



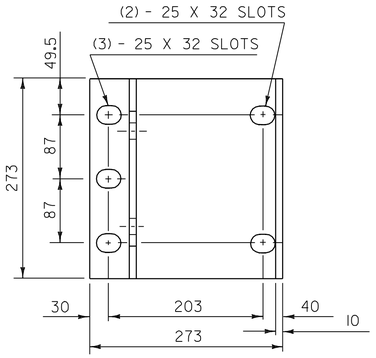
POST CONNECTION ELEVATION



POST CONNECTION BARRIER RAIL SECTION



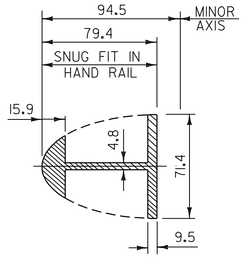
PLAN VIEW OF OFFSET BLOCK (TO BE USED ON SUPERSTRUCTURE ON CURB SIDE)



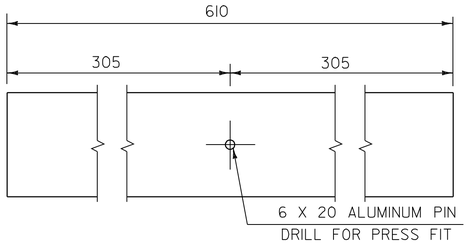
POST BASE PLAN

NOTES

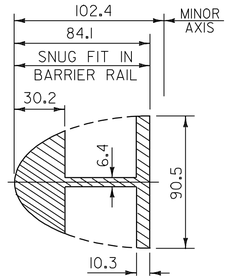
1. ANCHOR BOLTS, WASHERS & HEAVY HEXAGONAL NUTS MAY BE ANY OF THE FOLLOWING:
   A. ASTM F 568M, CLASS 8.8 GALVANIZED.
   B. ASTM M 164M GALVANIZED, OR
   C. BOLTS AND WASHERS OF STAINLESS STEEL ASTM F 738M, CLASS A1-70, CONDITION CW, ALLOY TYPE 304 WITH STAINLESS STEEL NUTS OF ASTM F 836M, CLASS A1-70, CONDITION CW, ALLOY TYPE 304.
2. ALUMINUM POSTS, POST BASES, SPLICE BARS, CONNECTION BARS, RAILS AND BALUSTER FRAMES SHALL CONFORM TO ASTM B 221M ALLOY 6061-T6 OR ALLOY 6351-T5. MINIMUM YIELD STRNGTH F_y = 240 MPa.
3. ALUMINUM BALUSTER TUBES SHALL CONFORM TO ASTM B 210M ALLOY 6061-T5 OR 6063-T5.
4. ALUMINUM RAIL AND CAPS SHALL CONFORM TO ASTM B 26/B 26M ALLOY 356-T6.
5. THE POST, RAIL AND OFFSET CONNECTION BOLTS AND WASHERS SHALL CONFORM TO ASTM F 738M, CLASS A1-50, CONDITION AF, ALLOY TYPE 304. NUTS FOR THESE BOLTS SHALL CONFORM TO ASTM 836M, CLASS A1-50, CONDITION AF, ALLOY TYPE 304.
6. SET SCREWS FOR ATTACHING BALUSTERS TO RAILING SHALL CONFORM TO ASTM F 880M, CLASS A1-70, CONDITION CW, ALLOY TYPE 304.
7. RIVETS SHALL BE COLD DRIVEN HIGH BUTTON HEAD "CONE POINT", CONFORMING TO ASTM B 316/B 316M ALLOY 6061-T6.
8. THE ANCHOR PLATE FOR THE POST ANCHOR ASSEMBLY SHALL BE AASHTO M 183M/M 183 STRUCTURAL STEEL.
9. WELDING SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 506.10 USING THE GMAW-INERT GAS PROCESS AND AWS ER 5356 ELECTRODE WIRE.
10. UNLESS OTHERWISE SPECIFIED, ANCHOR BOLTS SHALL BE CAST INTO THE CONCRETE AS DETAILED.
11. WHENEVER FEASIBLE, BARRIER RAIL AND HAND RAIL SECTIONS SHALL BE FULL LENGTH SECTIONS (12 m ±) AND WHEN PRACTICAL SHALL BE ATTACHED TO THREE POSTS. RAILS SHALL BE SPLICED AT EACH DECK JOINT AND INTERMITTENTLY AS REQUIRED. SPLICES SHALL OCCUR WITHIN THE SAME PANEL.
12. ENDS OF RAILS SHALL BE CUT SQUARE AND GROUND FREE OF BURRS OR RAGGED EDGES. EXPOSED ENDS SHALL BE CAPPED.
13. THE CONCRETE CONTACT SURFACE AT THE POST BASE SHALL BE BUSH HAMMERED AND/OR SHIMMED AS REQUIRED FOR PROPER POST ALIGNMENT. POST HEIGHT ADJUSTMENTS LESS THAN 6 mm SHALL BE WITH 2-mm AND 3-mm SHIMS. CORRECTIONS EXCEEDING 6 mm SHALL BE WITH EPOXY MORTAR CONFORMING WITH SECTION 530. FABRIC BEARING PADS AND ANY REQUIRED SHIMS OR EPOXY MORTAR ARE SUBSIDIARY TO THE UNIT PRICE BID FOR THE RAILING.
14. SHIMS AND 3-mm FABRIC BEARING PADS SHALL BE 273 mm SQUARE WITH SLOTTED HOLES SIZED AND LOCATED THE SAME AS THE POST BASE DETAIL. FABRIC BEARING PADS SHALL CONFORM TO SUBSECTION 731.01 OR 731.02, SHIM MATERIAL SHALL BE ASTM B 209M ALLOY 1100-0.
15. EXTRUDED SECTIONS ARE DETAILED TO COMPLY WITH CURRENT AASHTO-AGC-ARTBA STANDARDS. MINOR VARIATIONS OF THE DETAILS SHOWN MAY BE CONSIDERED PROVIDING THEY DO NOT REDUCE THE STRENGTH CAPACITY OF THE RAIL SYSTEM.
16. ALUMINUM WASHERS SHALL BE ASTM B209M ALLOY ACLAD 2024-T4.
17. OFFSET BLOCKS AND ALUMINUM APPROACH RAIL POSTS SHALL CONFORM TO ASTM SPECIFICATION B 308/ B 308M.



HAND RAIL SPLICE SECTION

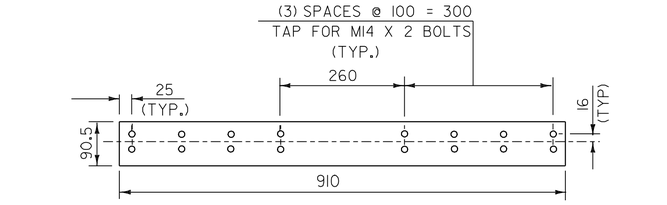


ELEVATION OF HAND RAIL SPLICE BAR

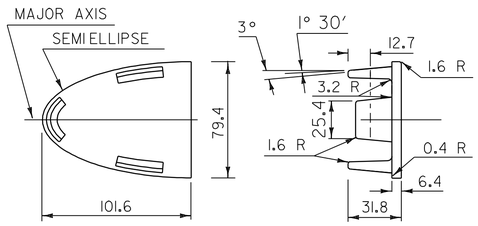


BARRIER RAIL SPLICE SECTION

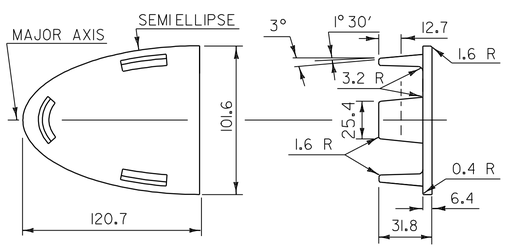
(SEE SHEET 1 OF 2 FOR ELEVATION OF BARRIER RAIL SPLICE BAR)



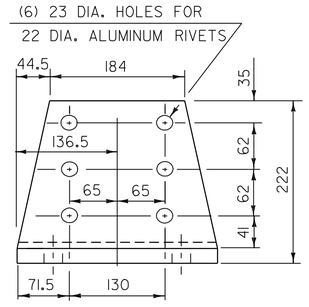
ELEVATION OF STD. BARRIER RAIL SPLICE BAR (FROM BACK)



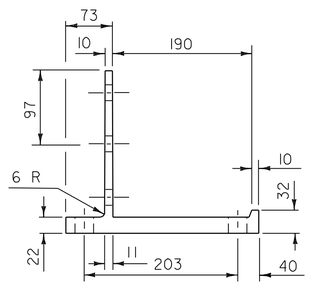
HAND RAIL END CAP



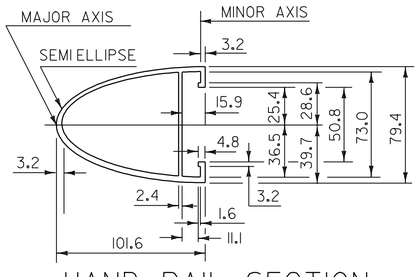
BARRIER RAIL END CAP



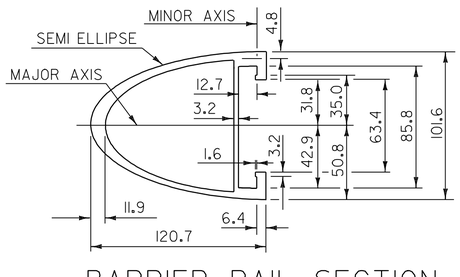
POST BASE FRONT ELEVATION



POST BASE SECTION

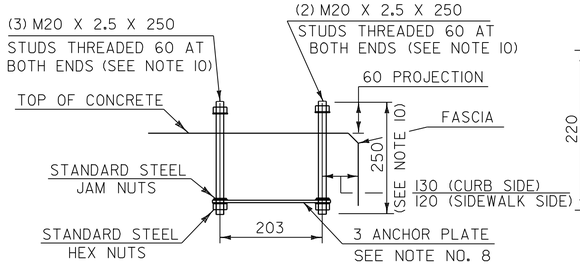


HAND RAIL SECTION

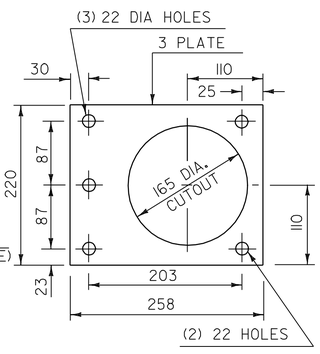


BARRIER RAIL SECTION

(SEE SHEET 1 OF 2 FOR ELEVATION OF BARRIER RAIL)



POST ANCHOR ASSEMBLY



ANCHOR PLATE

REVISIONS AND CORRECTIONS
DECEMBER 18, 1997 - ORIGINAL APPROVAL DATE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	BRISTOL	Bridge No.	10
		Log Sta.	
Highway No.	VT. 116	Surv. Sta.	

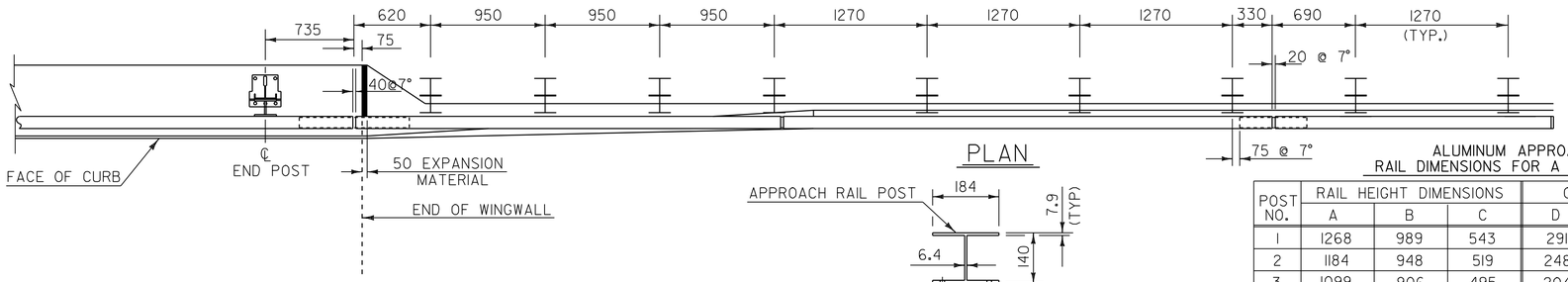
ALUMINUM BRIDGE RAILING DETAILS 2 OF 3

Designed By	A.PORTALUPI	Drawn By	L.BULLOCK
Checked By	Date	Bridge Design Supervisor	
T.LACKEY	5/99	A.PORTALUPI	Date 5/99

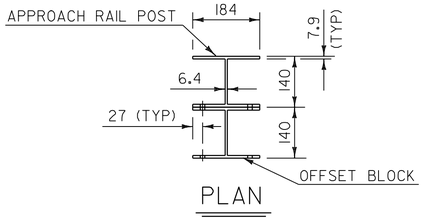
PROJECT BRISTOL	PROJECT NO. ER 021-1(13)

I.G.C. Info. M:\Projects\78f188\Structures\sf188abr.dgn sf188al21

Bridge Sheet No. Sheet 53 of 67



PLAN

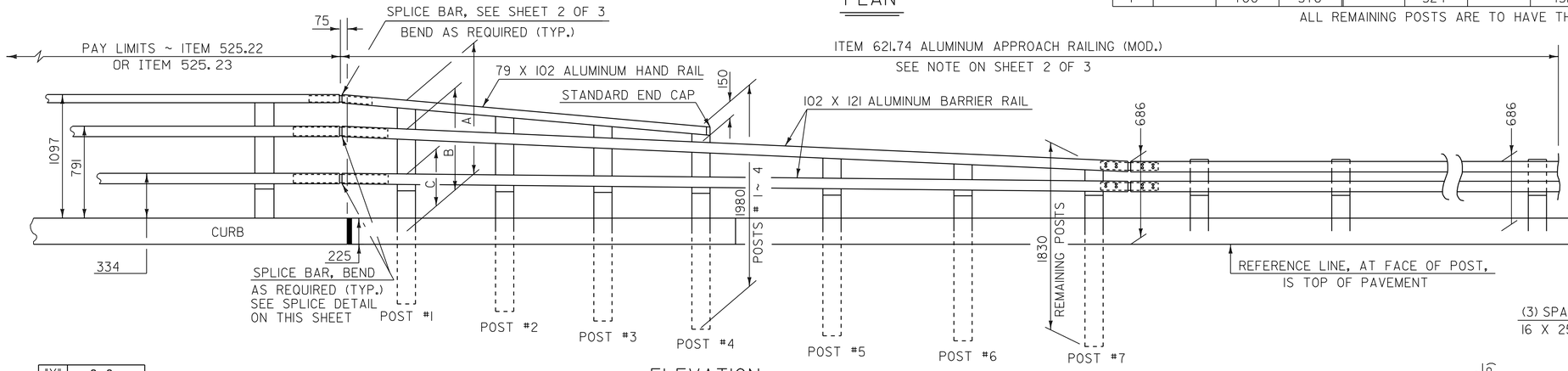


PLAN

ALUMINUM APPROACH RAIL
RAIL DIMENSIONS FOR A CURB CONDITION

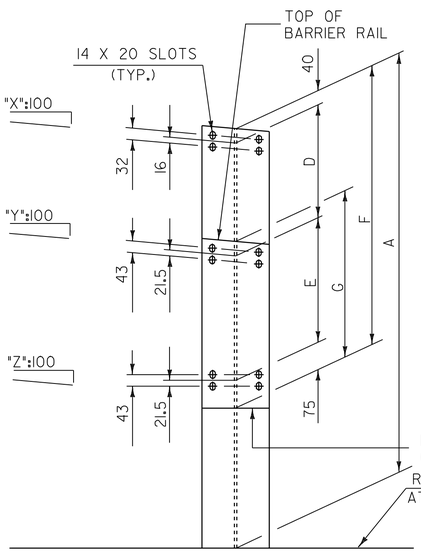
POST NO.	RAIL HEIGHT DIMENSIONS			OFFSET BLOCK DIMENSIONS			
	A	B	C	D	E	F	G
1	1268	989	543	291	446	851	
2	1184	948	519	248	429	792	
3	1099	906	495	204	411	732	
4	1016	865	471	162	394	671	
5		810	440		370		497
6		756	408		348		475
7		700	376		324		451

ALL REMAINING POSTS ARE TO HAVE THE SAME DIMENSIONS AS POST NO. 7



ELEVATION

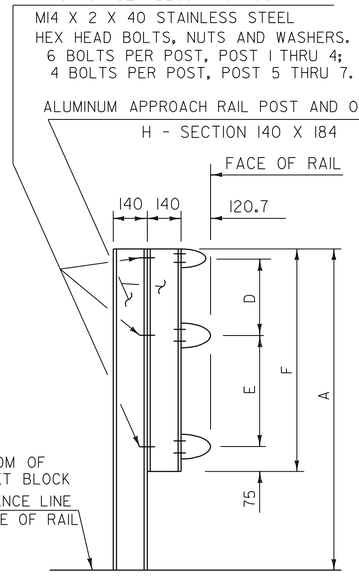
"X"	8.8
"Y"	4.3
"Z"	2.5



FRONT ELEVATION

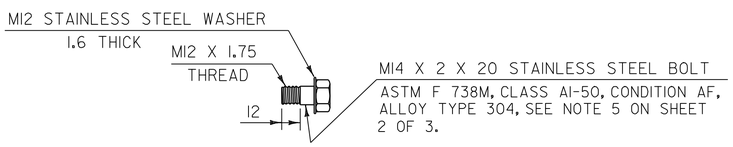
ATTACH OFFSET BLOCK TO POST WITH
M14 X 2 X 40 STAINLESS STEEL
HEX HEAD BOLTS, NUTS AND WASHERS.
6 BOLTS PER POST, POST 1 THRU 4;
4 BOLTS PER POST, POST 5 THRU 7.

ALUMINUM APPROACH RAIL POST AND OFFSET BLOCK
H - SECTION 140 X 184

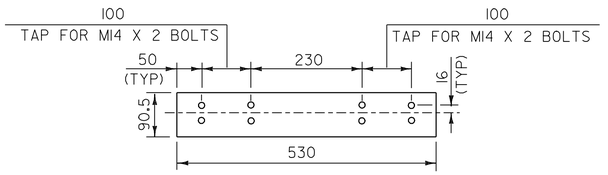


SIDE ELEVATION

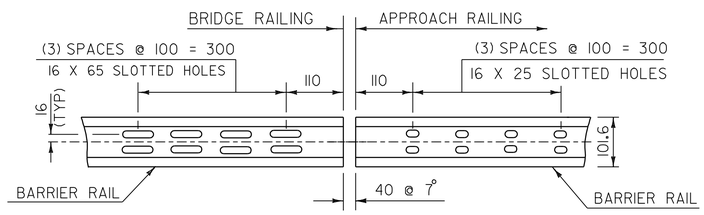
APPROACH RAIL DETAILS



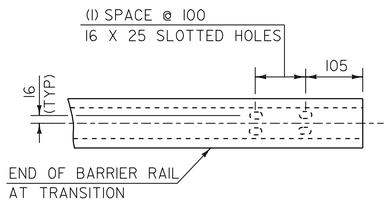
STAINLESS STEEL BOLT DETAILS
(FOR SPLICE BARS)



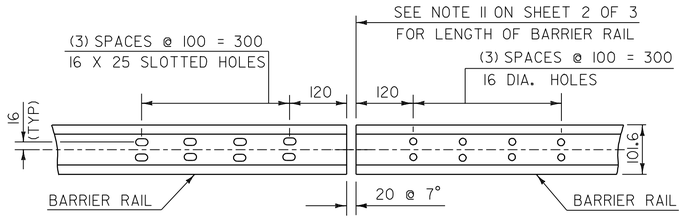
ELEVATION OF BARRIER RAIL SPLICE BAR
TO BE USED AT TRANSITION BETWEEN
APPROACH RAIL & GUARD RAIL (FROM BACK)



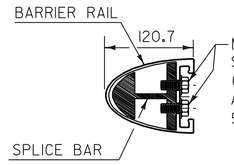
ELEVATION OF BARRIER RAIL (FROM BACK)



ELEVATION OF BARRIER RAIL
(FROM FRONT) AT TRANSITION



ELEVATION OF BARRIER RAIL (FROM BACK)
AT ALL INTERMEDIATE RAIL SPLICES



TYPICAL SECTION THROUGH
BARRIER RAIL SPLICE

NOTES

1. POST 1 THROUGH 7 SHALL BE EXTRUDED ALUMINUM.
2. ALL STRUCTURAL STEEL SHALL BE AASHTO M 270/M 270M GRADE 250 GALVANIZED AFTER FABRICATION.
3. ALL ITEMS NOT OTHERWISE INDICATED SHALL MEET THE SPECIFICATION REQUIREMENTS OF THE STANDARD SHEETS ON WHICH THEY ARE DETAILED.
4. SEE SHEETS 1 OF 3 AND 2 OF 3 FOR ALUMINUM BRIDGE RAILING DETAILS.
5. DETAILS ARE SHOWN FOR TRANSITION TO A 3 RAIL ALUMINUM BRIDGE RAILING.
6. DIMENSIONS SHOWN ARE FROM A REFERENCE LINE AT THE FACE OF POST FOR A NORMAL CROWNED SECTION. APPROPRIATE CORRECTIONS SHALL BE MADE FOR CROSS SLOPES OTHER THAN A NORMAL SECTION.

REVISIONS AND CORRECTIONS
DECEMBER 18, 1997 - ORIGINAL APPROVAL DATE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

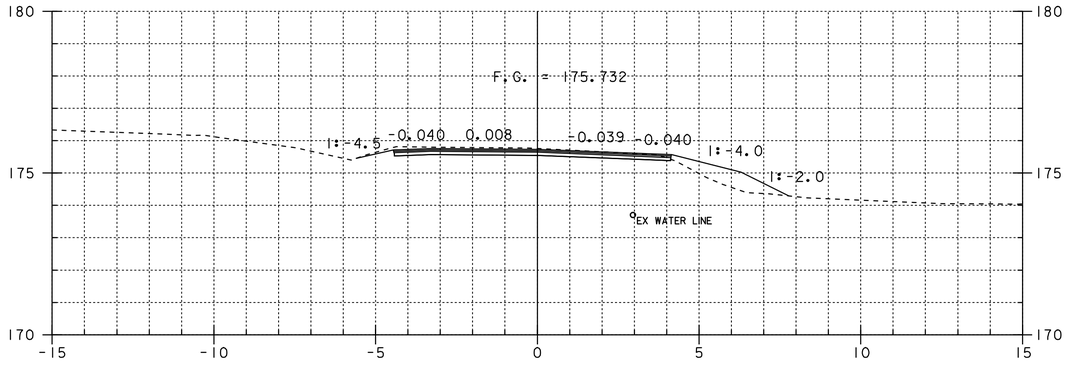
Town Of	BRISTOL	Bridge No.	10
		Log Sta.	
Highway No.	VT. 116	Surv. Sta.	

ALUMINUM BRIDGE RAILING DETAILS 3 OF 3

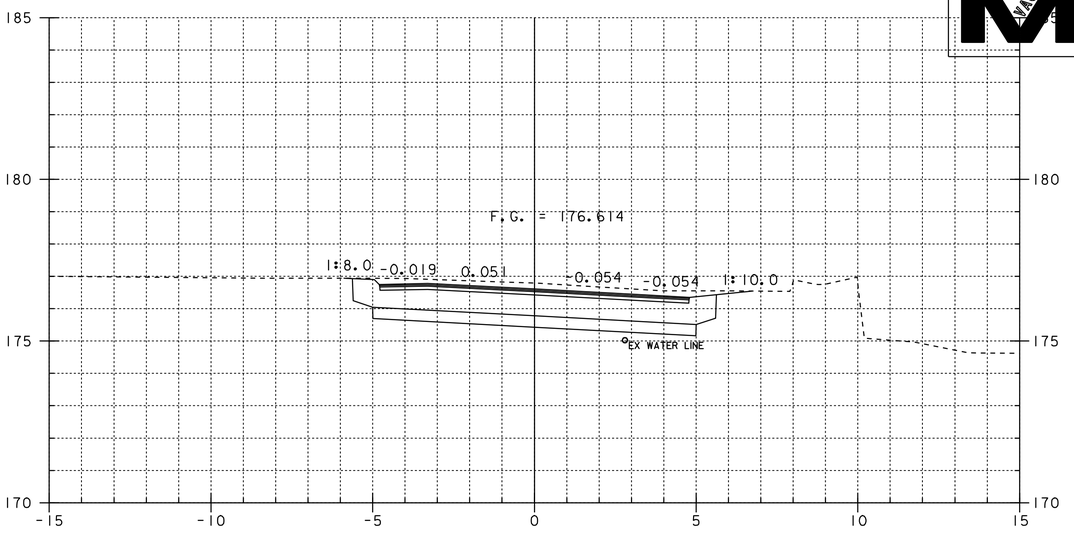
Designed By	A. PORTALUPI	Drawn By	L. BULLOCK
Checked By	Date	Bridge Design Supervisor	
T. LACKEY	5/99	A. PORTALUPI	Date 5/99
PROJECT	BRISTOL	PROJECT NO.	ER 021-1(13)

I.G.C. Info. M:\Projects\78f188\Structures\sf188abr.dgn sf188al31

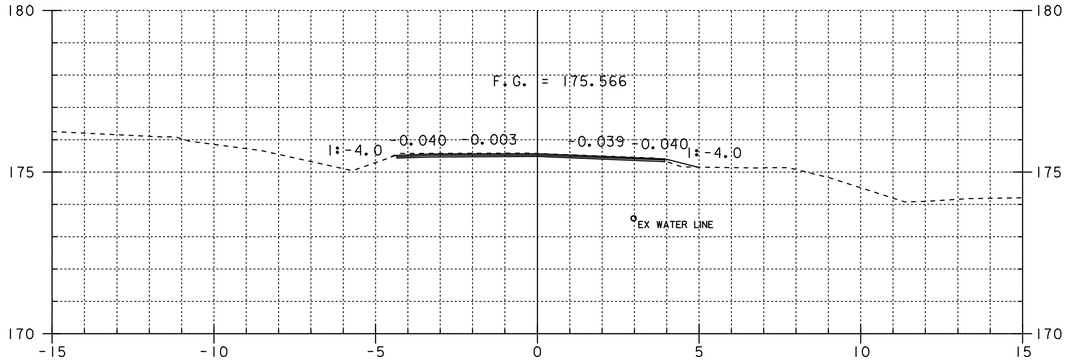
Bridge Sheet No. Sheet 54 of 67



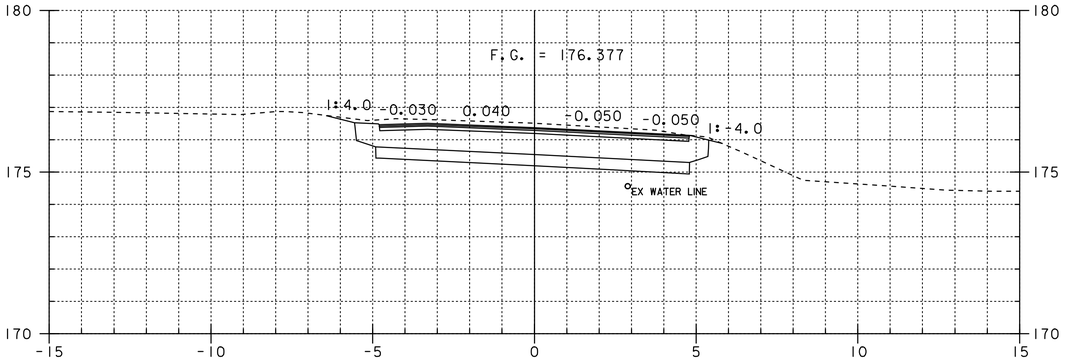
1+120
BEGIN BCP, TYPE 1
BEGIN SUBBASE TAPER



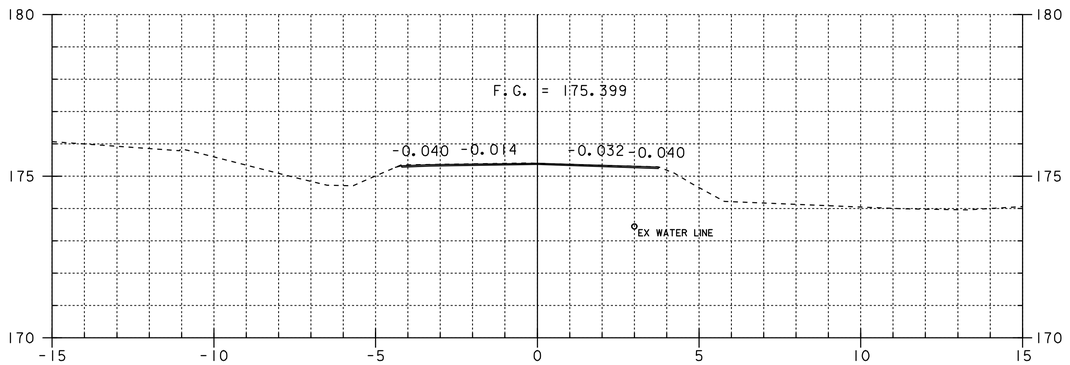
1+160



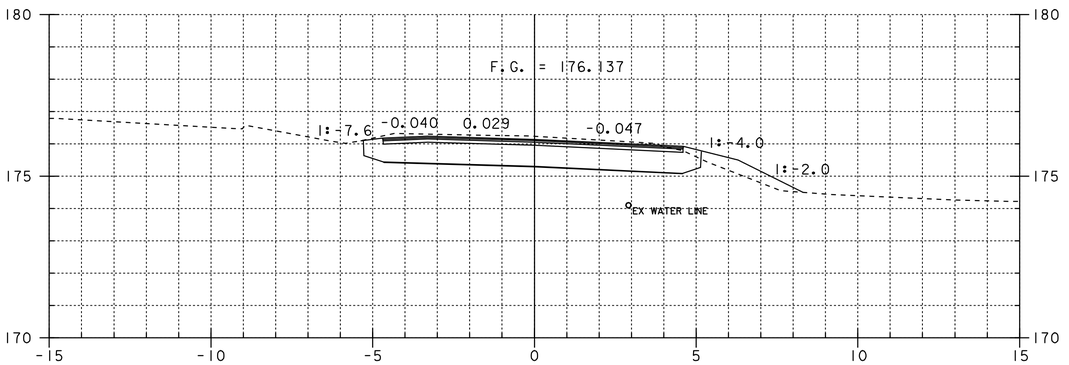
1+110
BEGIN BCP, TYPE 2



1+150
END APPROACH
BEGIN PROJECT



1+100
BEGIN APPROACH
MATCH EXISTING BCP

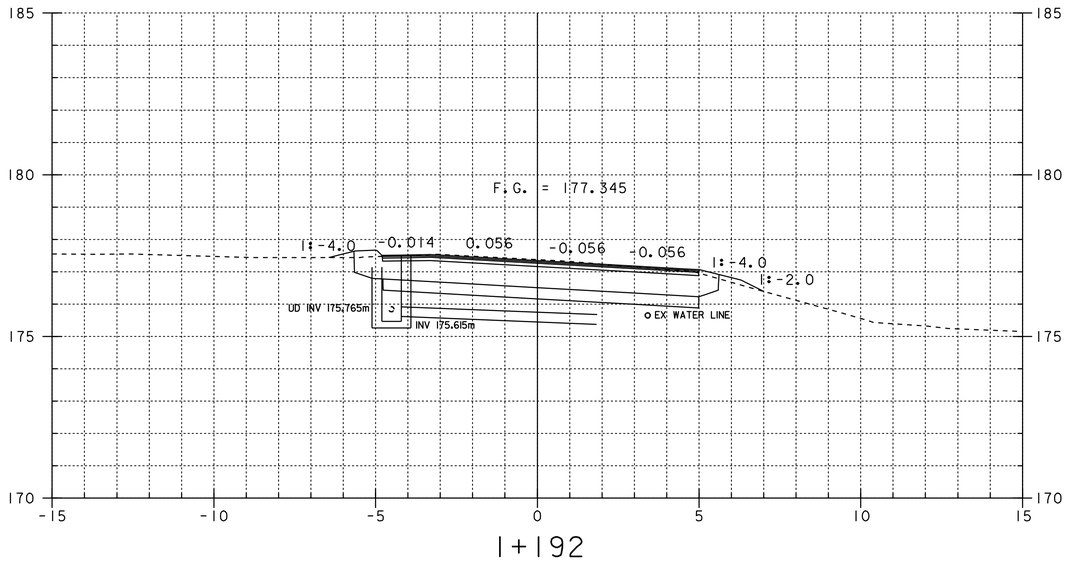


1+140

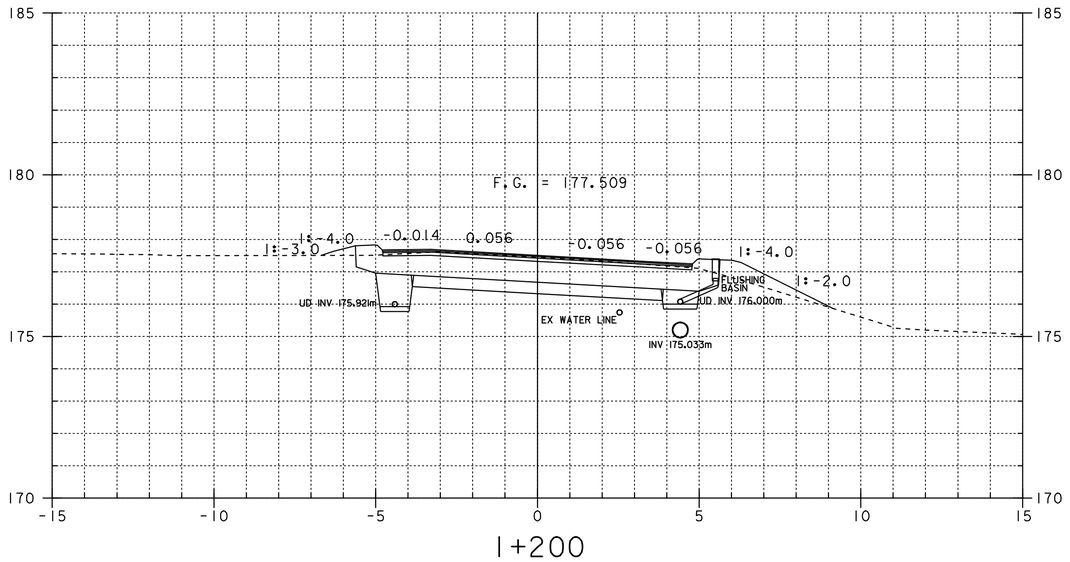
DATUM

VERTICAL NAVD 88
HORIZONTAL NAD83 (92)

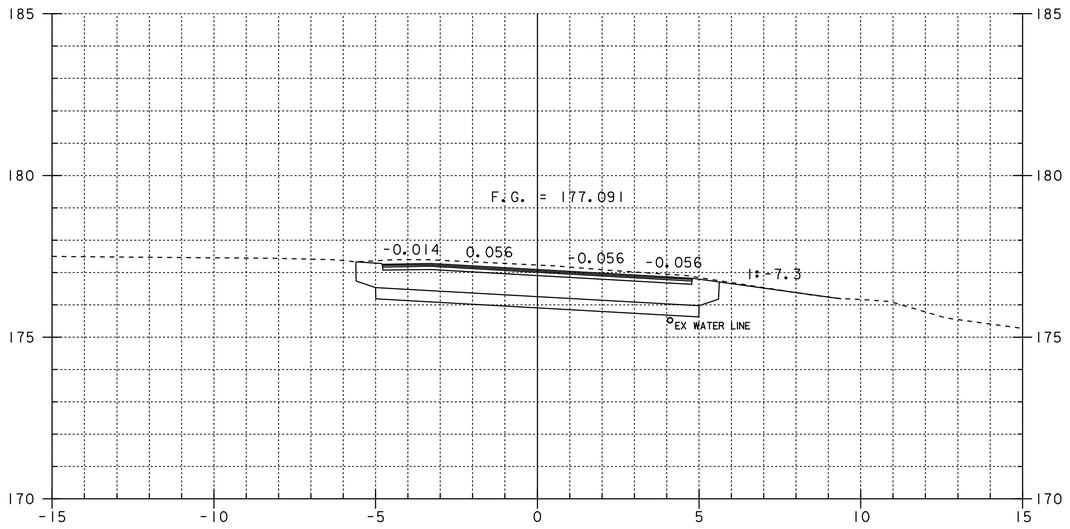
PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: str2/78f188/df188wk.dgn	
IPARM FILE NAME: df188x01.i	PLOT DATE: 05-JAN-2007
SURVEYED BY: Orvis	SURVEY DATE: 9/97
SQUAD LEADER: Portalupi	DRAWN BY: Weeber
	SHEET: 55 OF 67



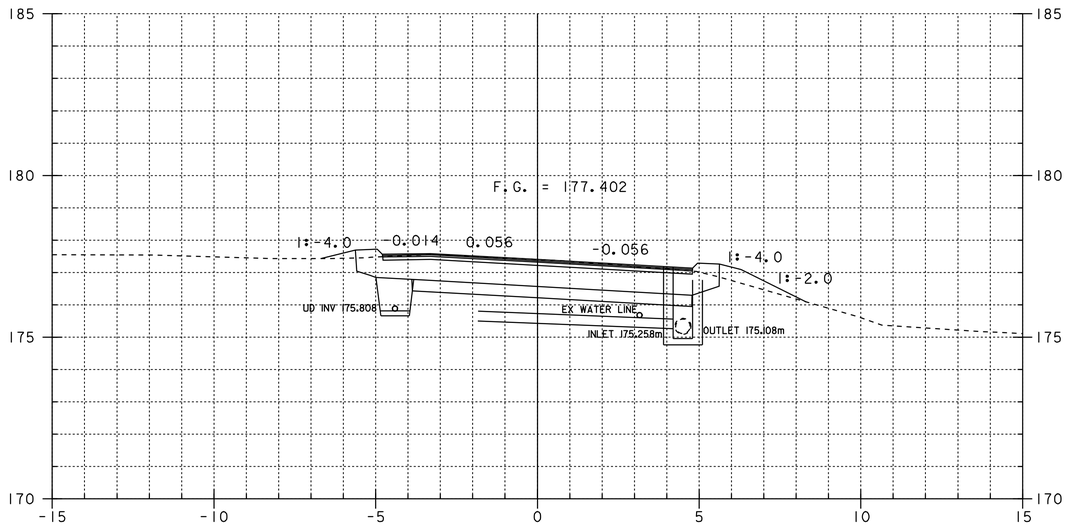
1+192



1+200



1+180



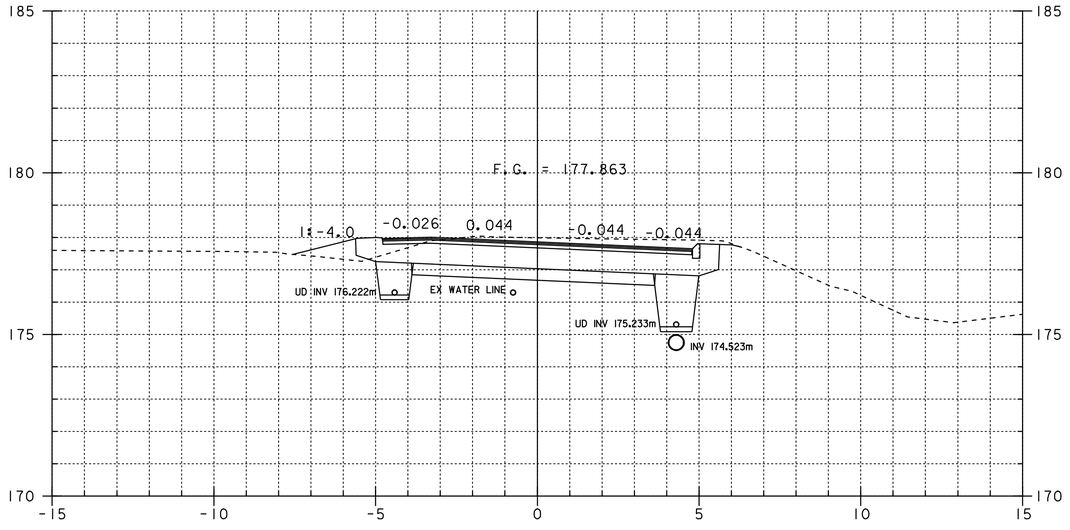
1+194

DATUM

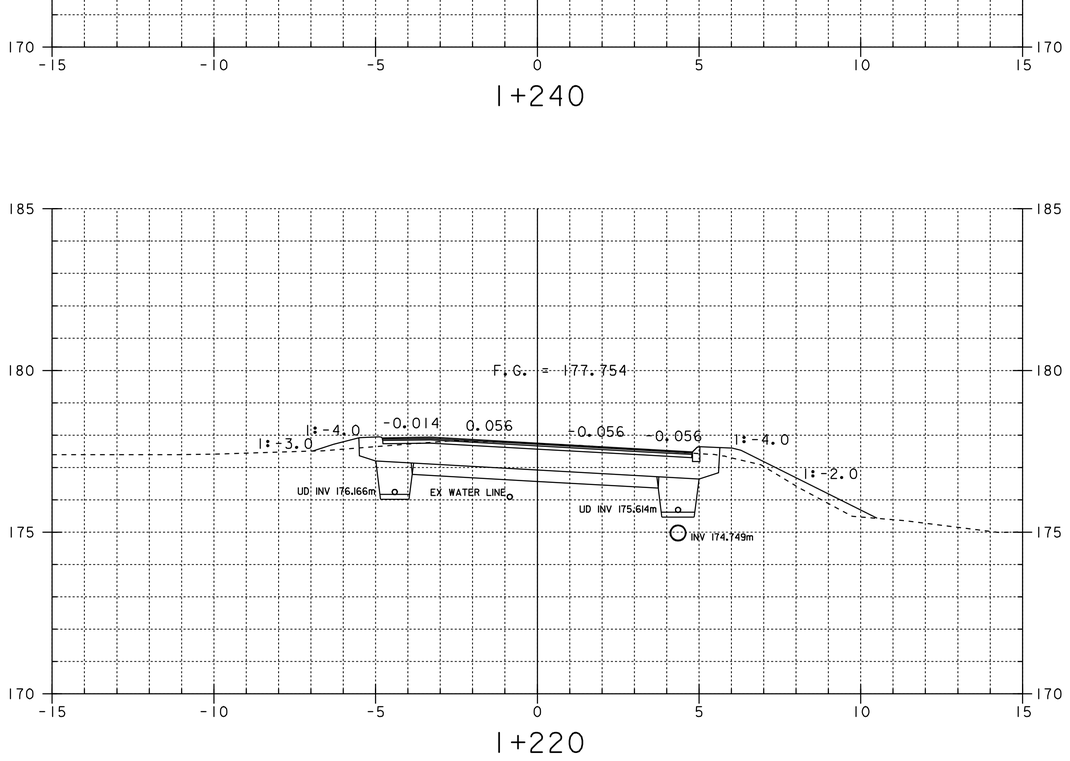
VERTICAL NAVD 88

HORIZONTAL NAD83 (92)

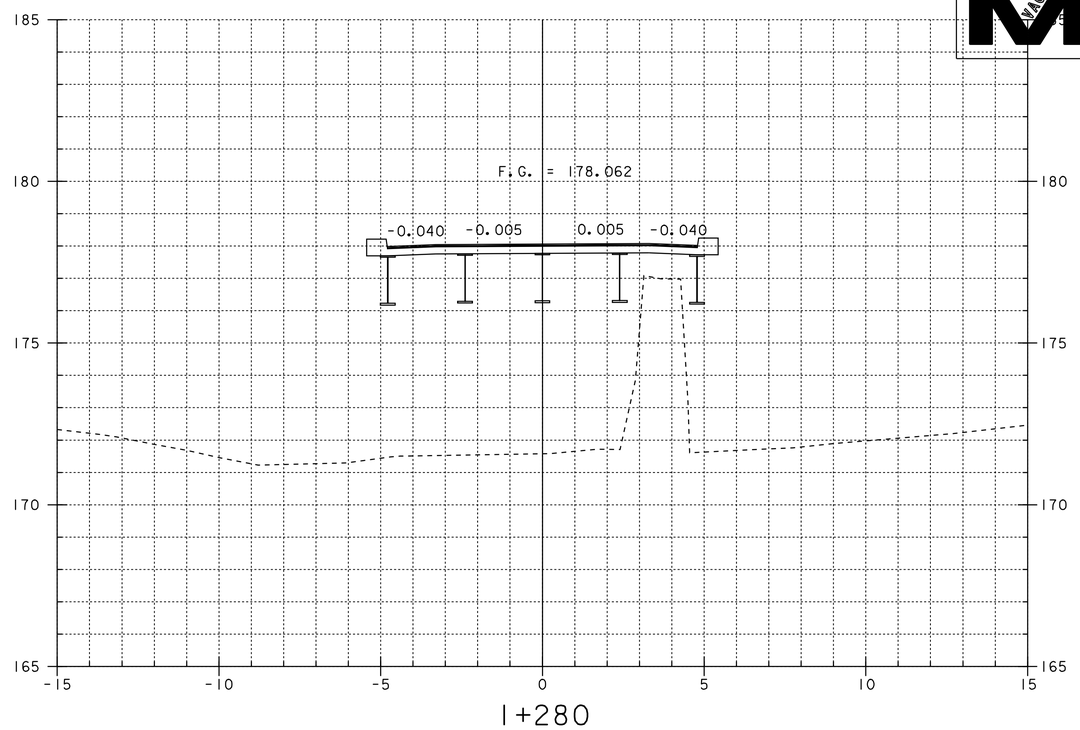
PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: str2/78fl88/dfl88wk.dgn	
IPARM FILE NAME: dfl88x02.i	PLOT DATE: 05-JAN-2007
SURVEYED BY: Orvis	SURVEY DATE: 9/97
SQUAD LEADER: Portalupi	DRAWN BY: Weeber
	SHEET: 56 OF 67



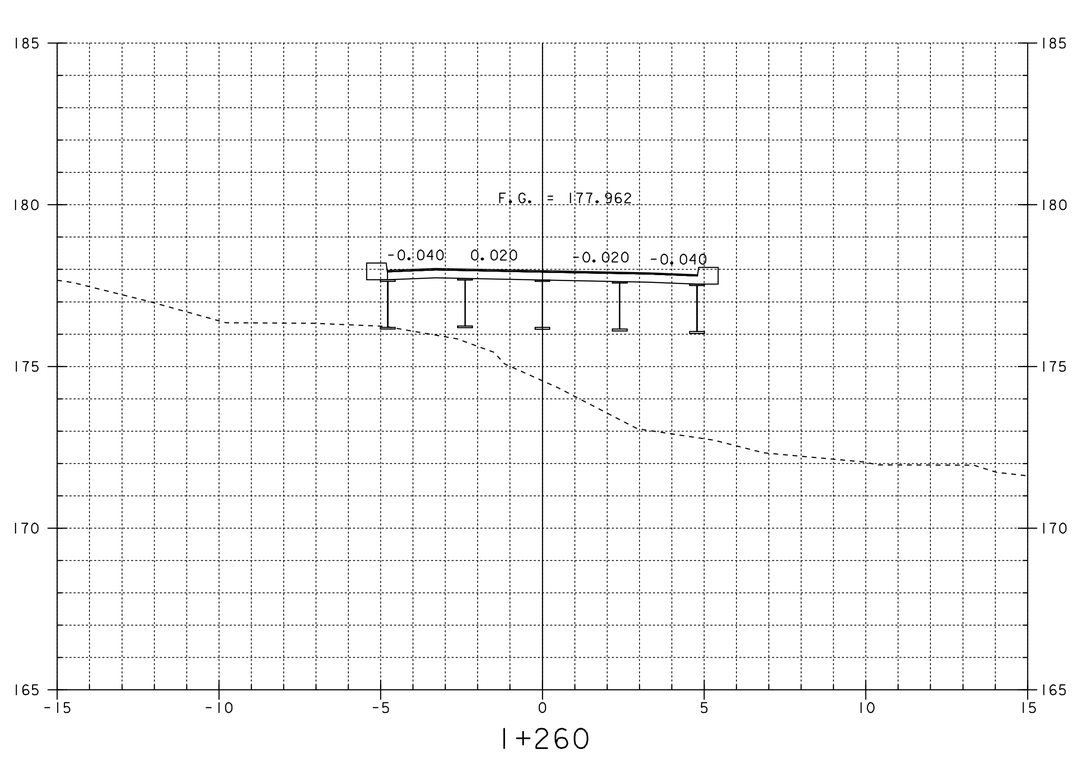
1+240



1+220



1+280

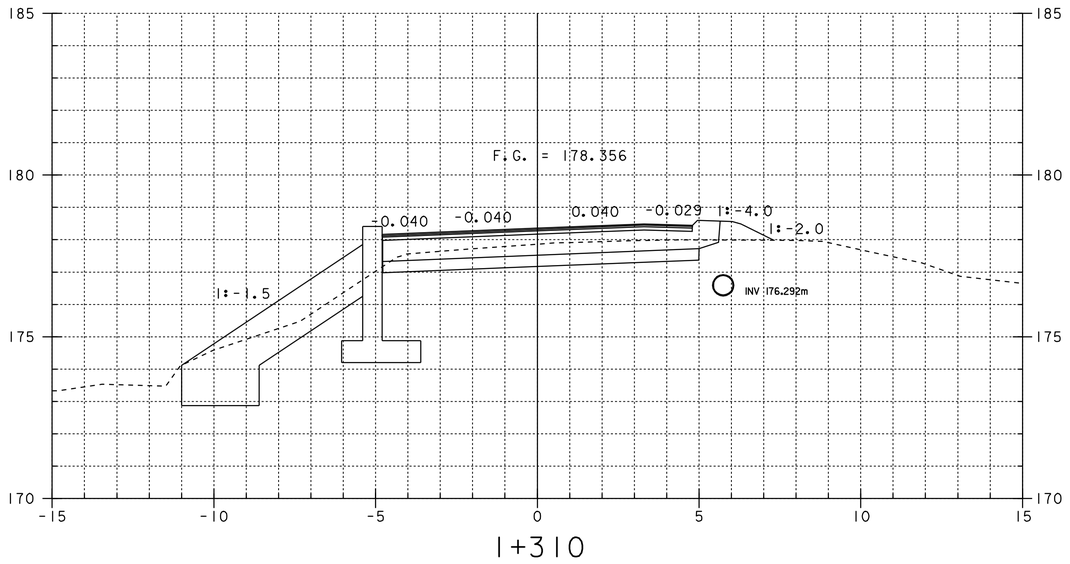


1+260

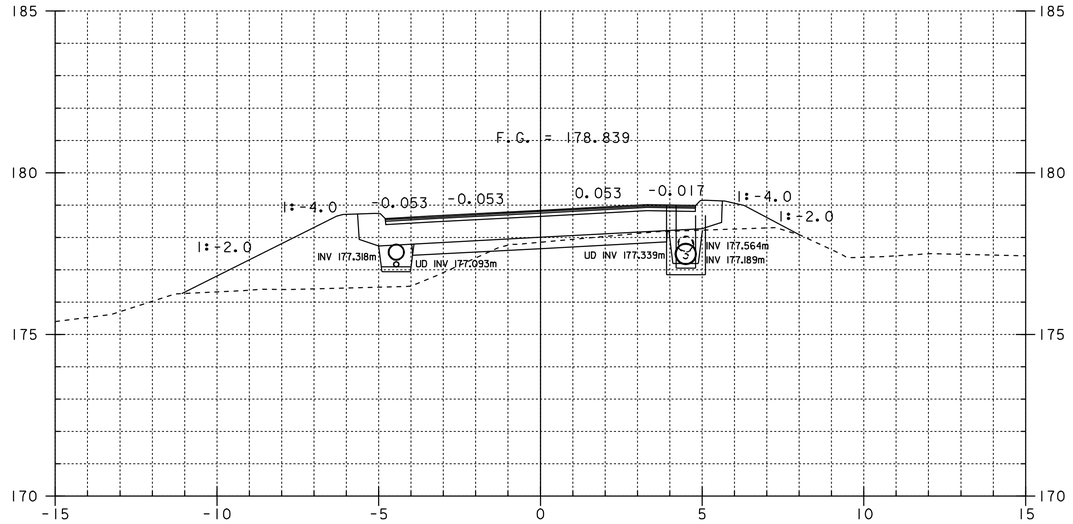
DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD83 (92)

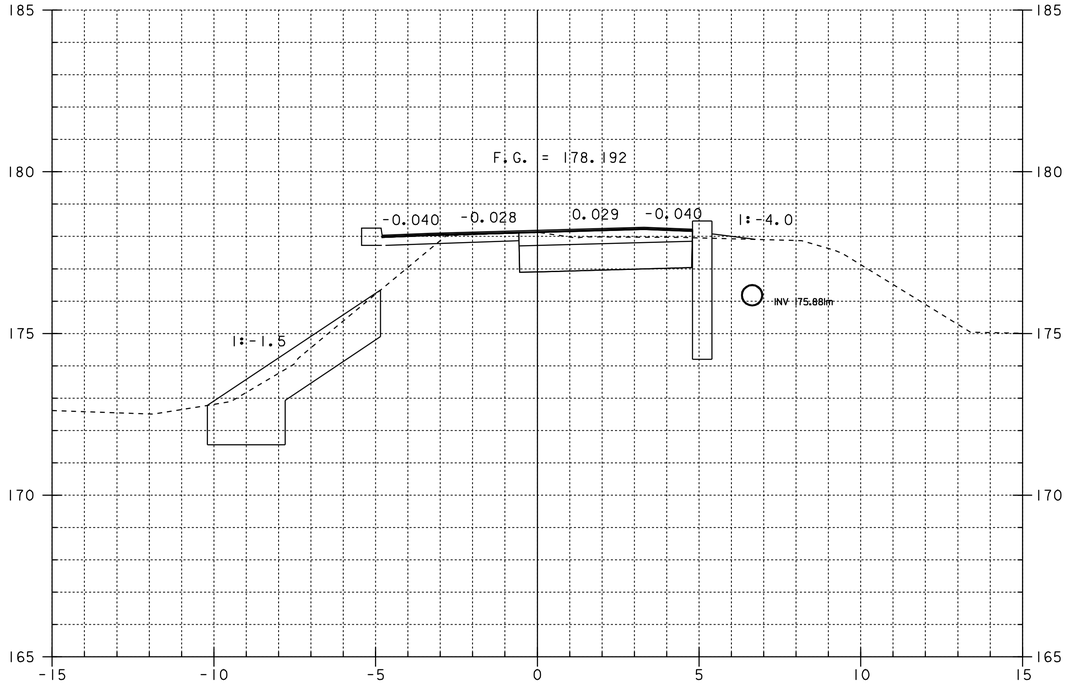
PROJECT:	BRISTOL
PROJECT NO.:	ER 021-1(13)
DESIGN FILE NAME:	str2/78fl88/dfl88wk.dgn
IPARM FILE NAME:	dfl88x03.i
SURVEYED BY:	Orvis
SQUAD LEADER:	Portalupi
PLOT DATE:	05-JAN-2007
SURVEY DATE:	9/97
DRAWN BY:	Weeber
SHEET:	57 OF 67



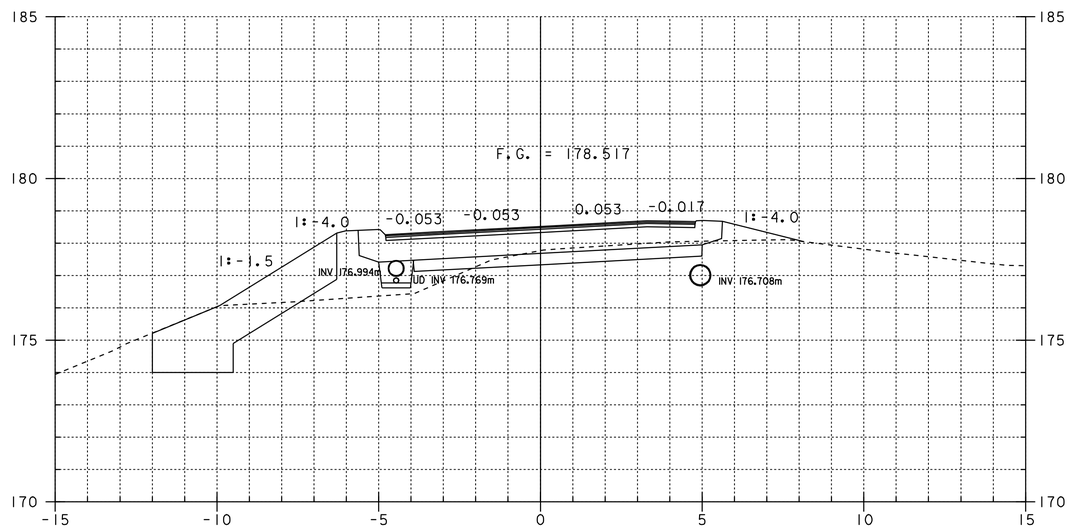
1+310



1+332



1+300

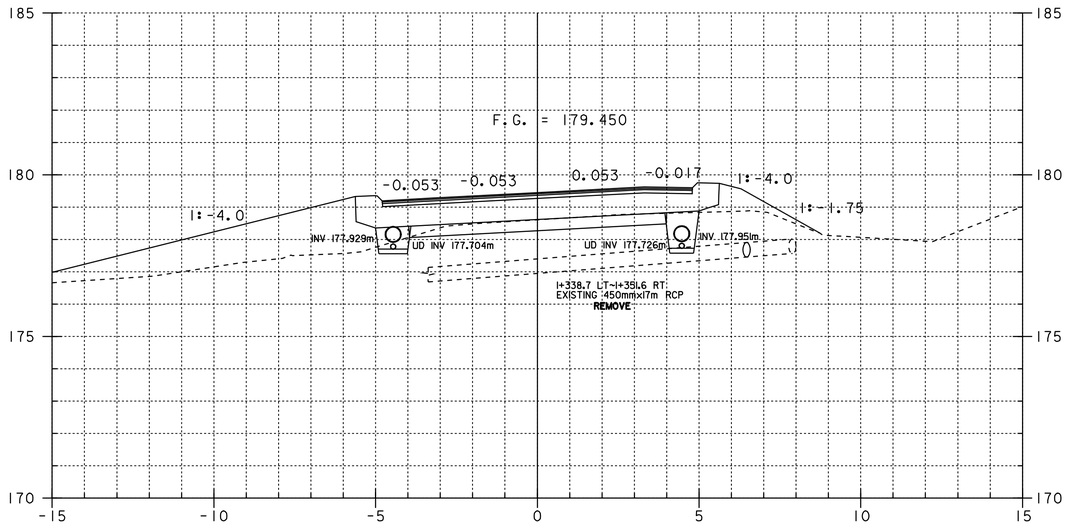


1+320

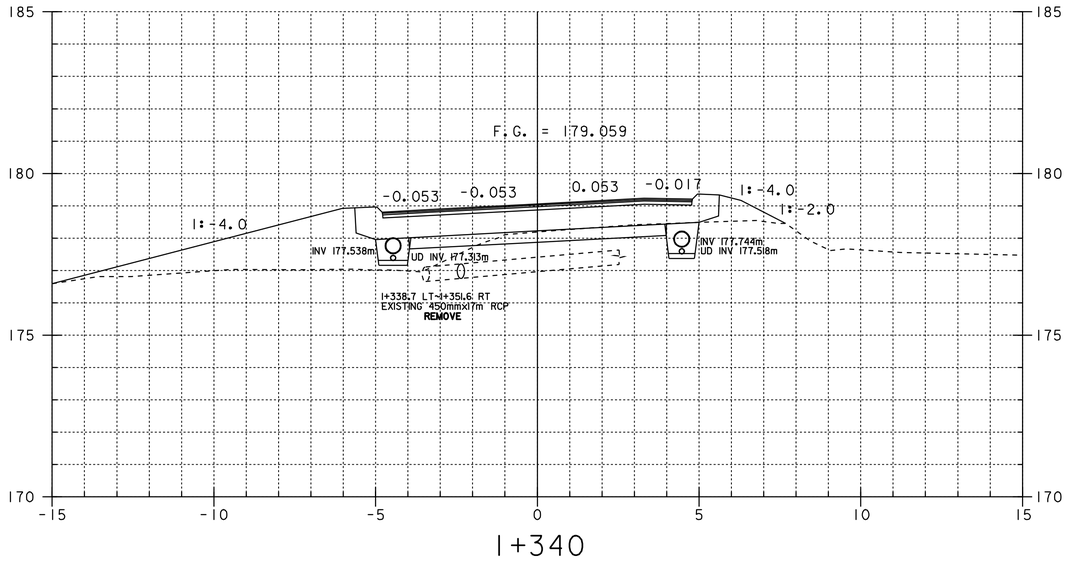
DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD83 (92)

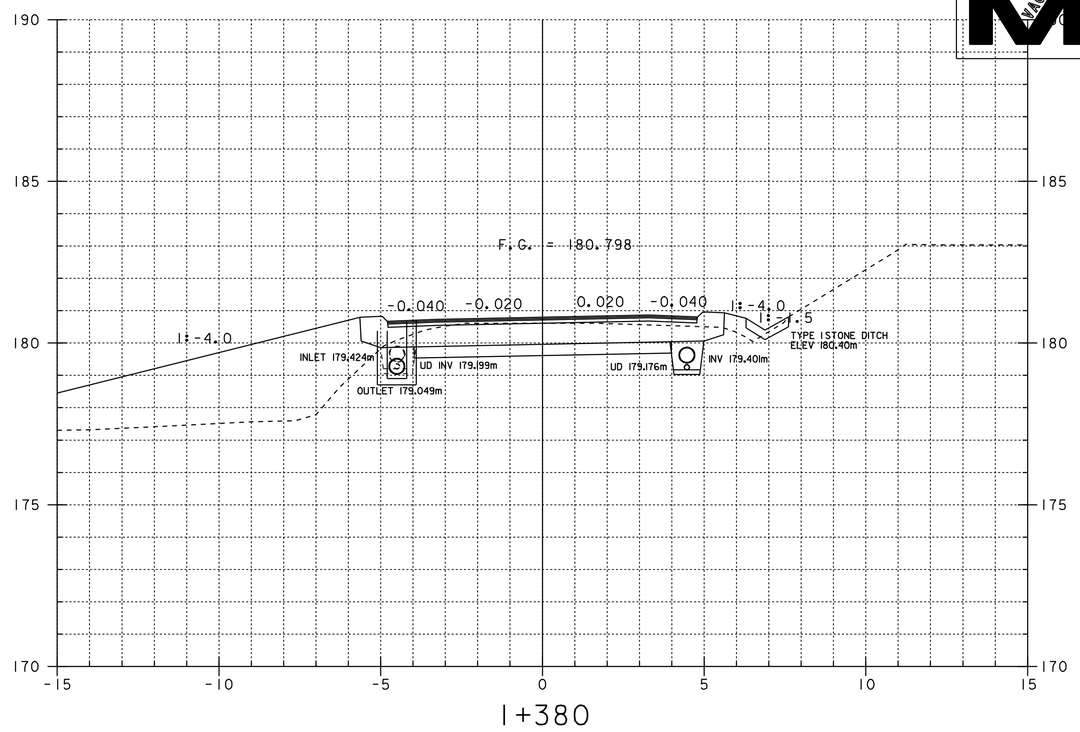
PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: str2/78f88/df188wk.dgn	
IPARM FILE NAME: df188x04.i	PLOT DATE: 05-JAN-2007
SURVEYED BY: Orvis	SURVEY DATE: 9/97
SQUAD LEADER: Portalupi	DRAWN BY: Weeber
	SHEET: 58 OF 67



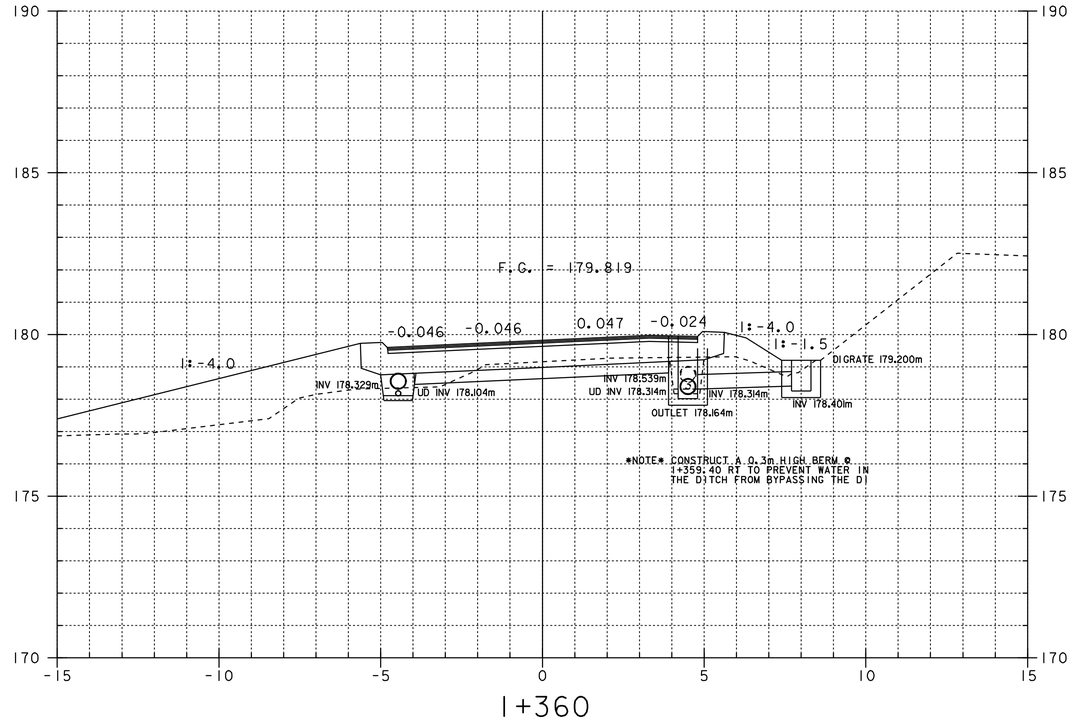
I+350



I+340



I+380

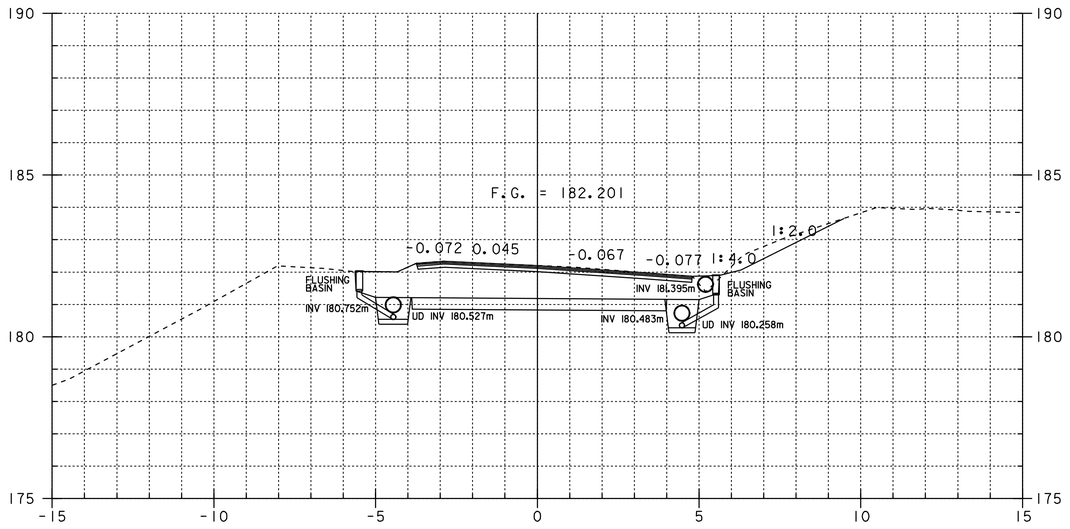


I+360

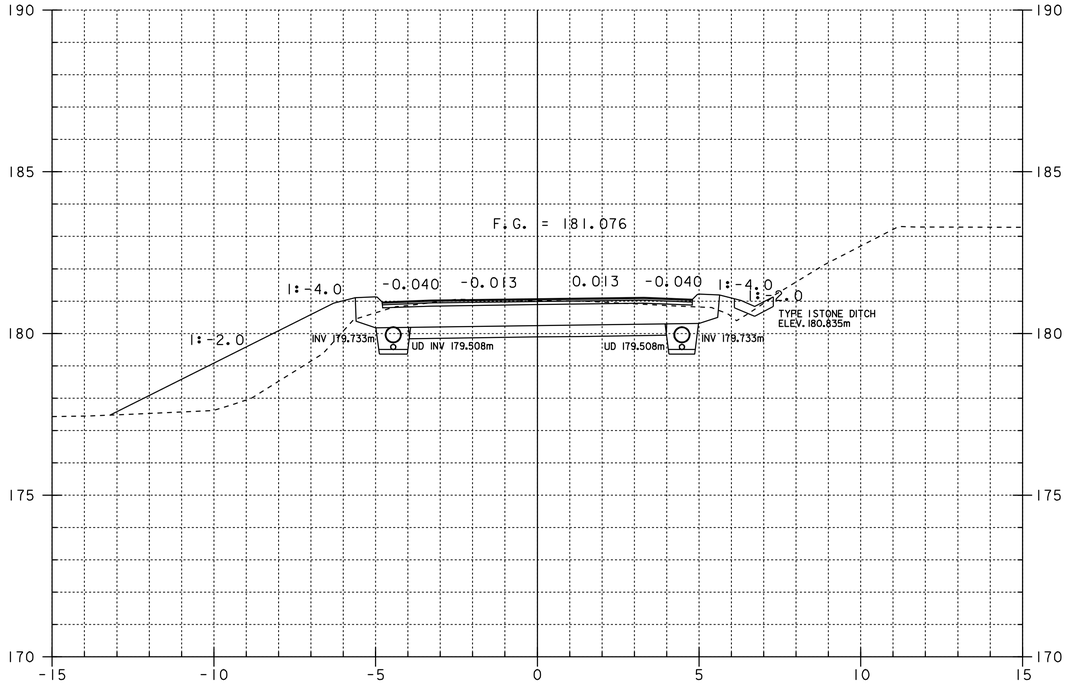
DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD83 (92)

PROJECT:	PROJECT NO.:
BRISTOL	ER 021-1(13)

DESIGN FILE NAME: str2/78fl88/dfl88wk.dgn
IPARM FILE NAME: dfl88x05.i
SURVEYED BY: Orvis
SQUAD LEADER: Portalupi
PLOT DATE: 05-JAN-2007
SURVEY DATE: 9/97
DRAWN BY: Weeber
SHEET: 59 OF 67



1+400
END APPROACH
MATCH EXISTING BCP



1+385
BEGIN APPROACH
END PROJECT

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD83 (92)

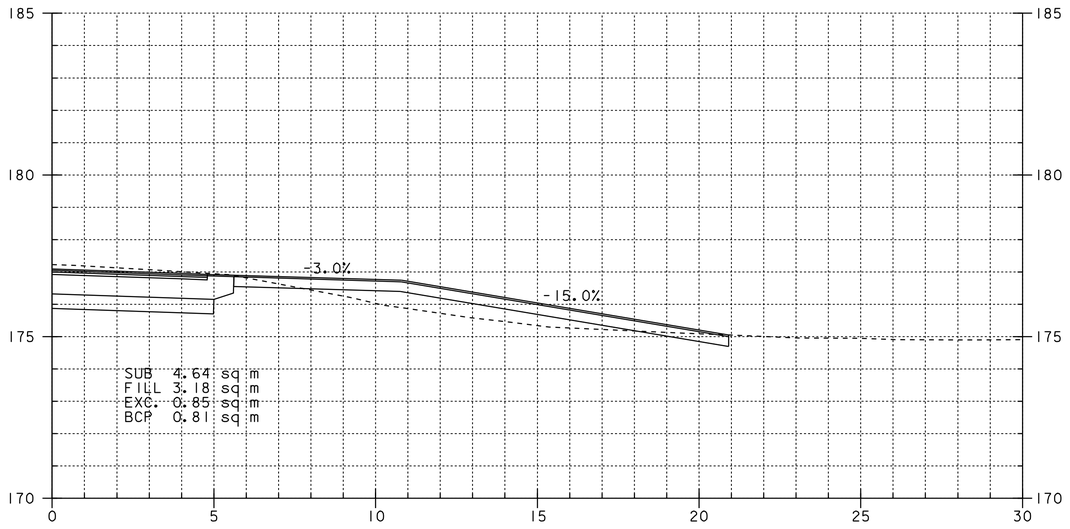
PROJECT:	PROJECT NO.:
BRISTOL	ER 021-1(13)

DESIGN FILE NAME: str2/78f188/df188wk.dgn
IPARM FILE NAME: df188x06.i
SURVEYED BY: Orvis
SQUAD LEADER: Portalupi
PLOT DATE: 05-JAN-2007
SURVEY DATE: 9/97
DRAWN BY: Weeber
SHEET: 60 OF 67

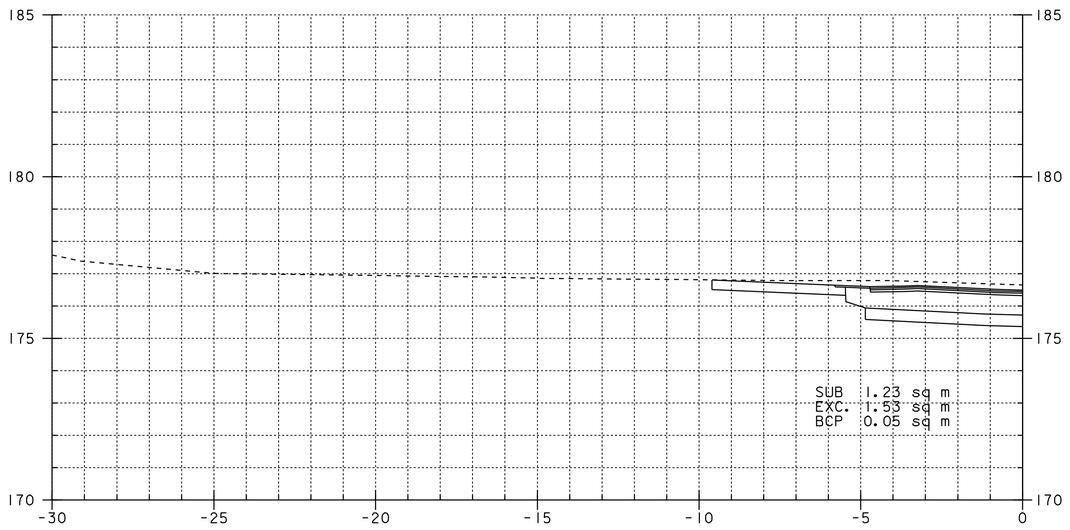
STATE OF VERMONT
AGENCY OF TRANSPORTATION

VAOT Metric

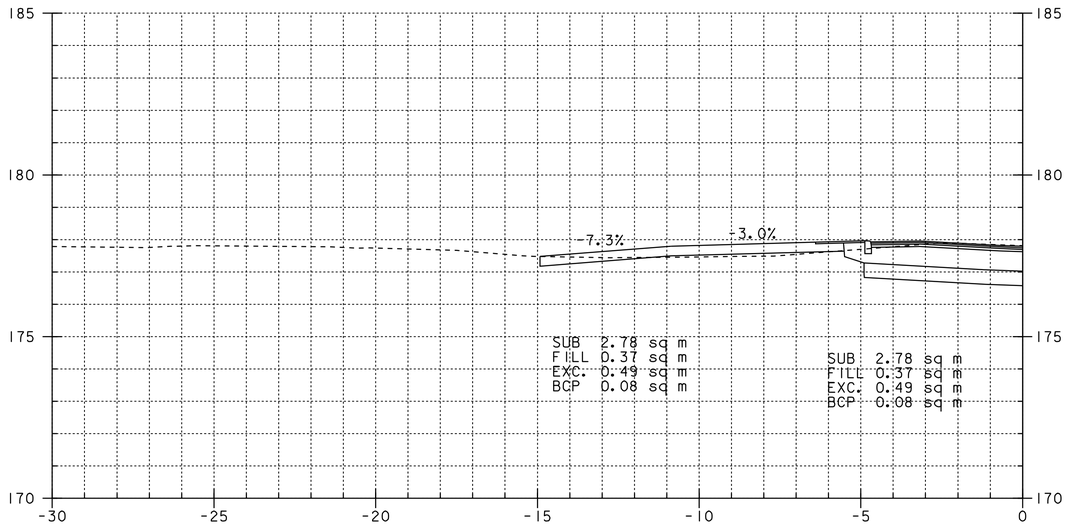
DRIVEWAY CROSS SECTIONS



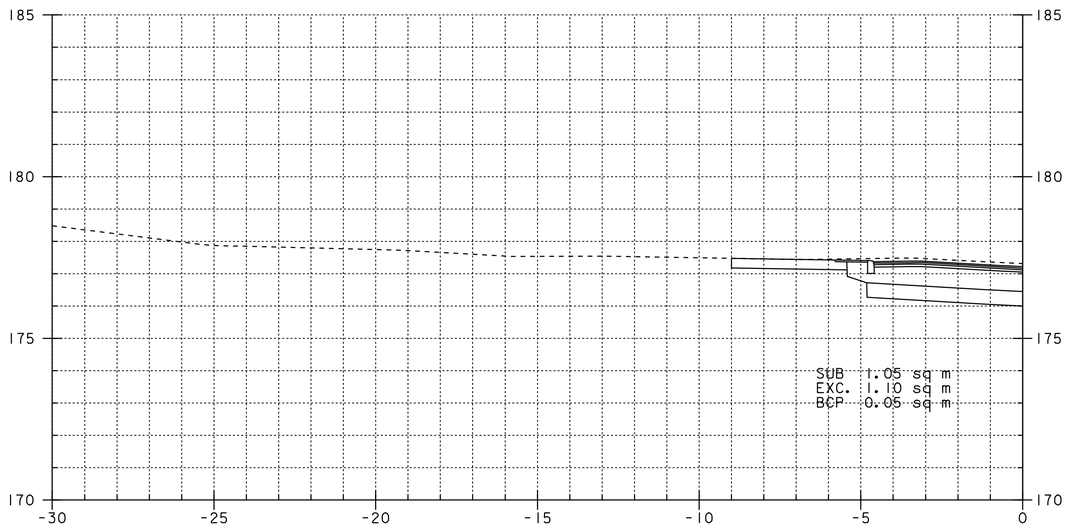
1+180
ASKEW 58° RT
(SARGENT, RANDY)



1+154.7 LT
(FEFEE, DART & JACQUELINE)



1+225.5
ASKEW 100° LT
(BRASURE, MARK & FREDETTE, CARIN)



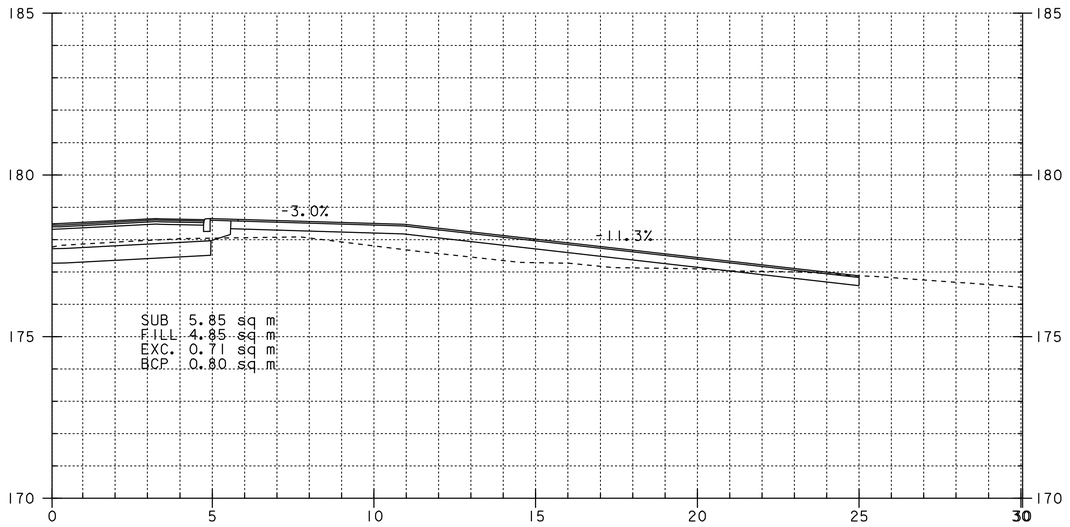
1+185.5 LT
(BRASURE, MARK & FREDETTE, CARIN)

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	ER 021-1(13)
FILE NAME: str2/78fl88/dfl88wk.dgn	PLOT DATE: 05-JAN-2007
PROJECT LEADER: Portalupi	DRAWN BY: Weeber
DESIGNED BY: STR2	CHECKED BY:
Drive cross sections (dfl88x07.1)	SHEET 61 OF 67

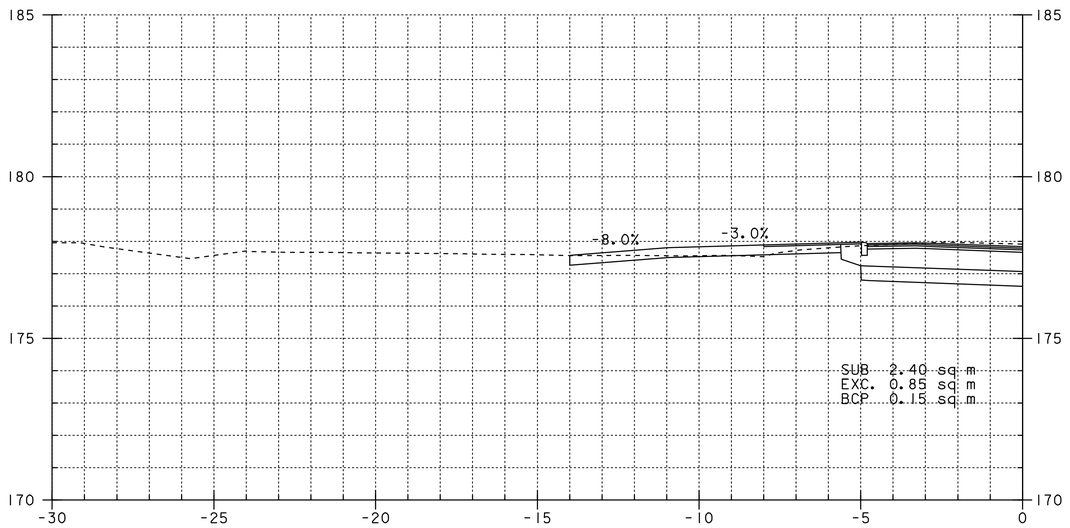
STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRIVEWAY CROSS SECTIONS

VAOT Metric

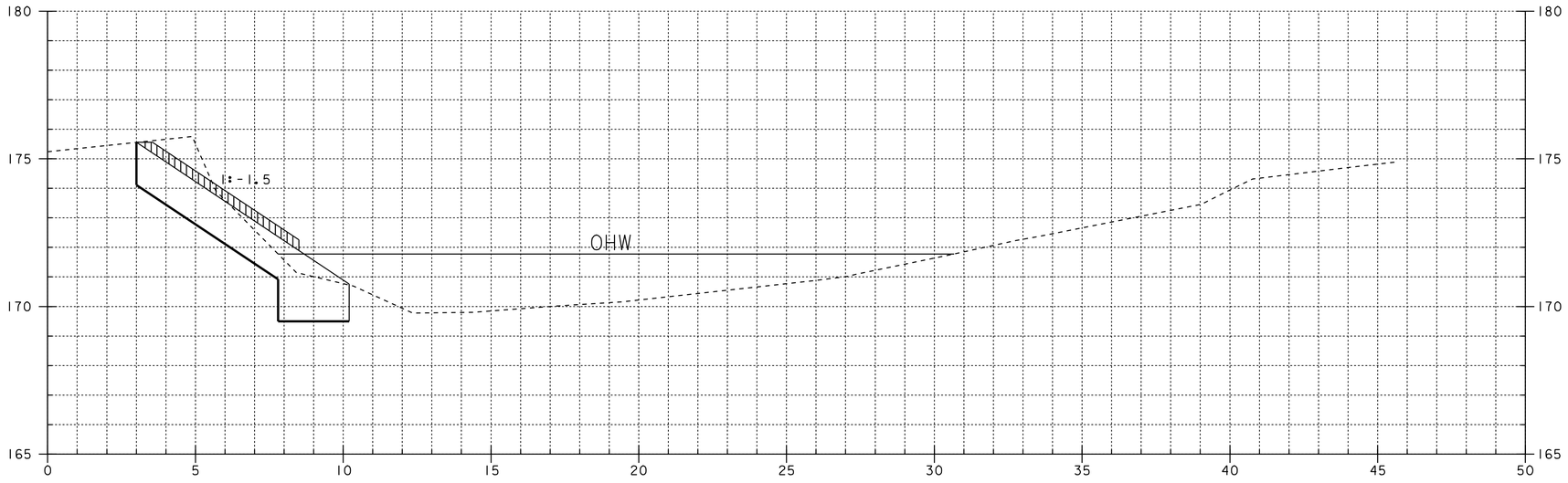


1+318 RT
(COUSINO, RODRIQUE & MICHELLE)



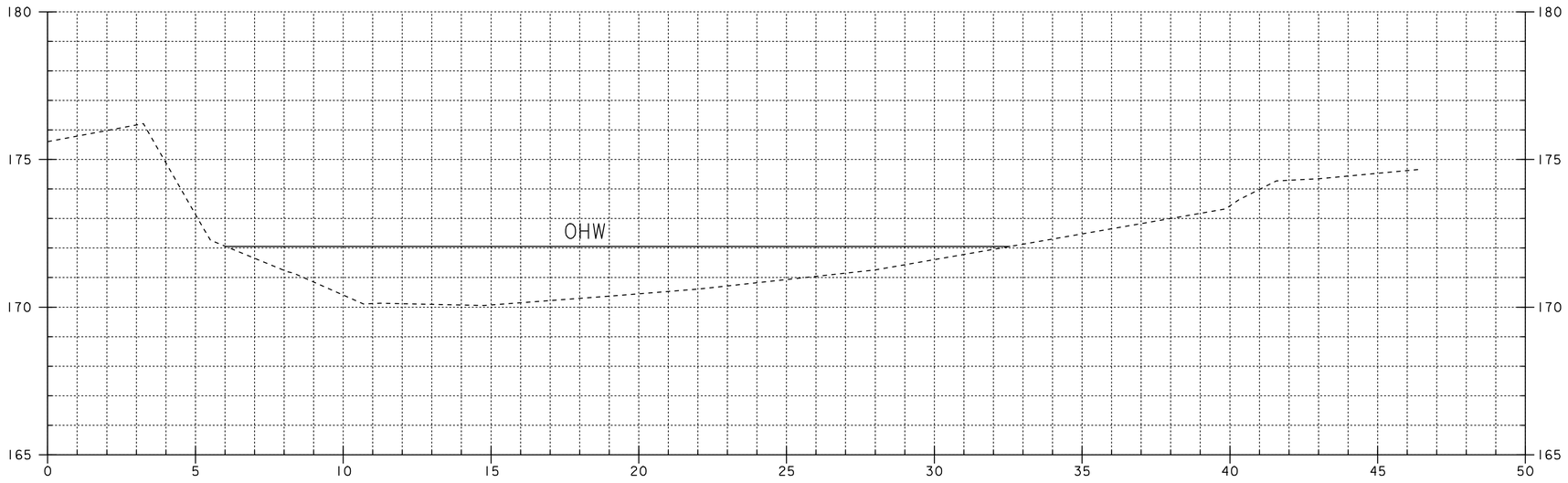
1+232.5
ASKEW 53° LT
(DURAND, EARL & CATHERINE)

PROJECT NAME:	BRISTOL
PROJECT NUMBER:	ER 021-1(13)
FILE NAME: str2/78fl88/dfl88wk.dgn	PLOT DATE: 05-JAN-2007
PROJECT LEADER: Portalupi	DRAWN BY: Weeber
DESIGNED BY: STR2	CHECKED BY:
Drive cross sections (dfl88x08.1)	SHEET 62 OF 67



10+010

STA. 10+006.40 LT.
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL TYPE IV
BEGIN GRUBBING MATERIAL

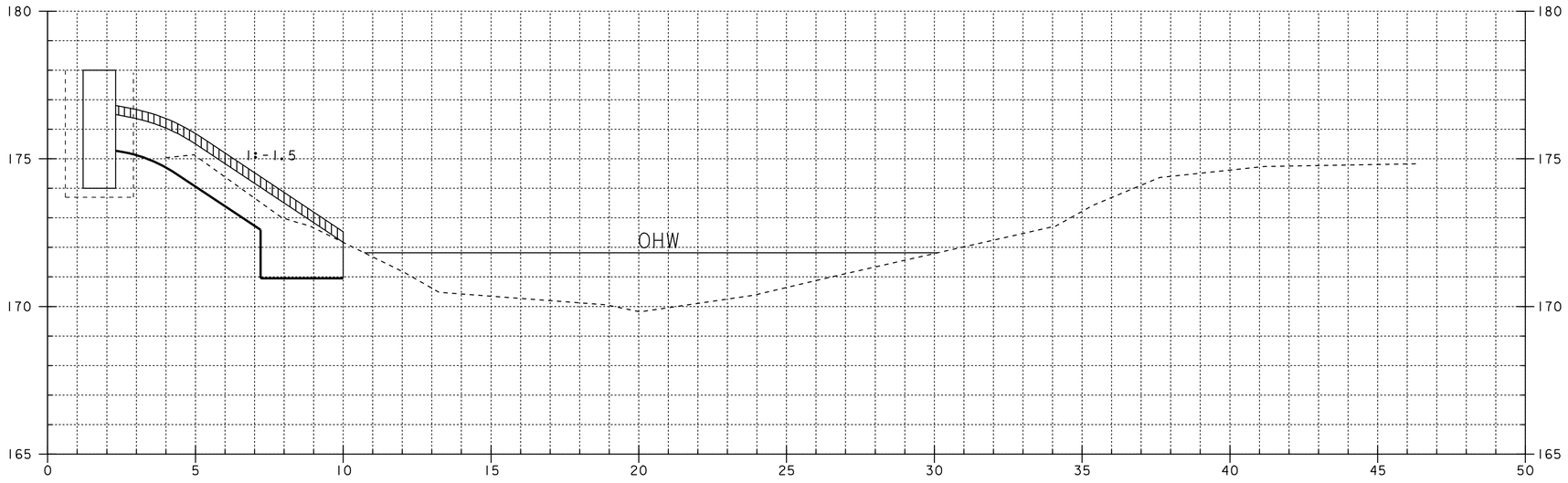


10+000

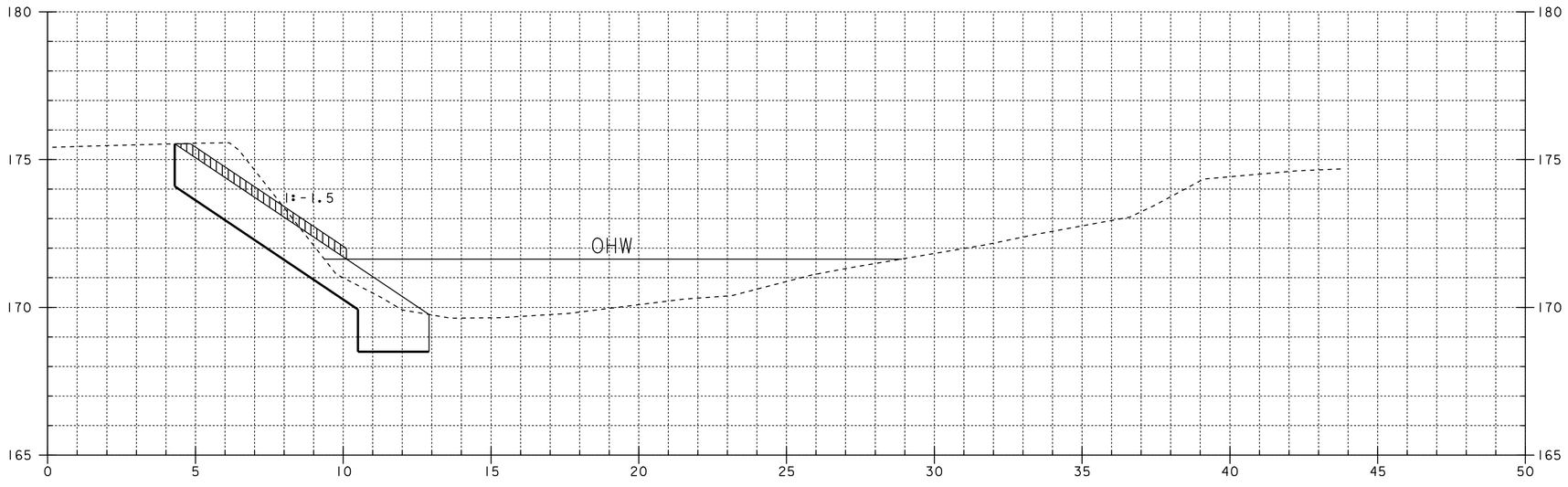
DATUM

VERTICAL NAVD 88
HORIZONTAL NAD83 (92)

PROJECT:	PROJECT NO.:
BRISTOL	ER 021-1(13)
DESIGN FILE NAME: str2/78f188/df188wk.dgn	
IPARM FILE NAME: sf188chl.i	PLOT DATE: 05-JAN-2007
SURVEYED BY:	SURVEY DATE:
SQUAD LEADER: Portalupi	DRAWN BY: str2
channel section 1	SHEET: 63 OF 67



10+030

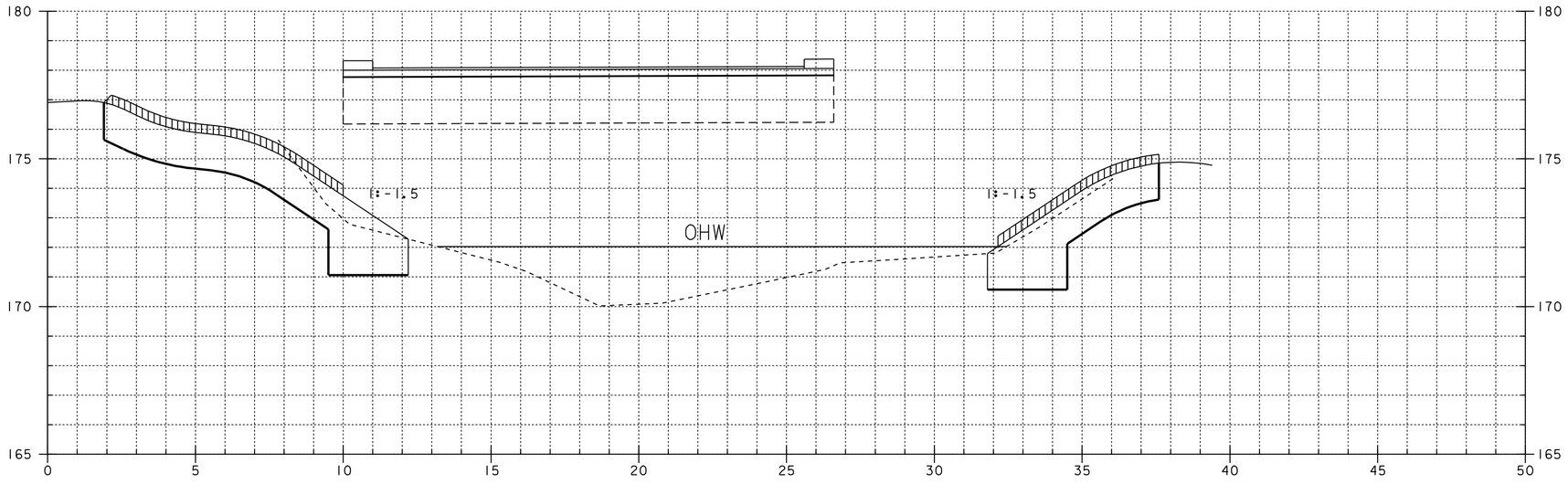


10+020

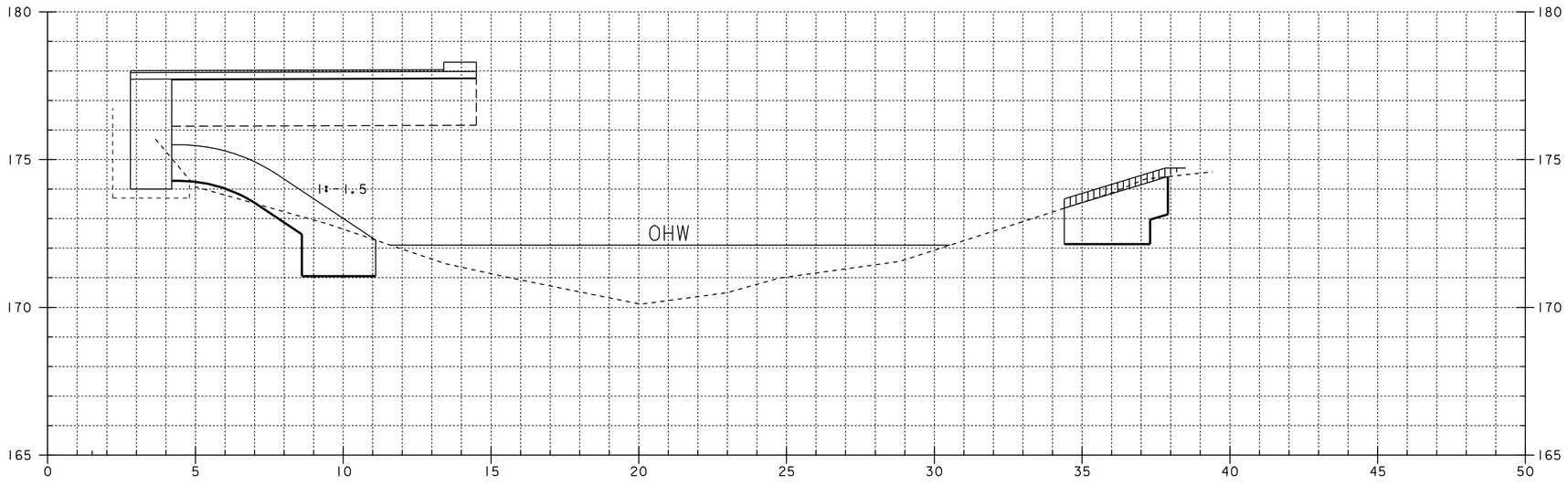
DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD83 (92)

PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: str2/78fl88/dfl88wk.dgn	
IPARM FILE NAME: sfl88ch2.I	PLOT DATE: 05-JAN-2007
SURVEYED BY:	SURVEY DATE:
SQUAD LEADER: Portalupi	DRAWN BY: str2
channel section 2	SHEET: 64 OF 67



10+050



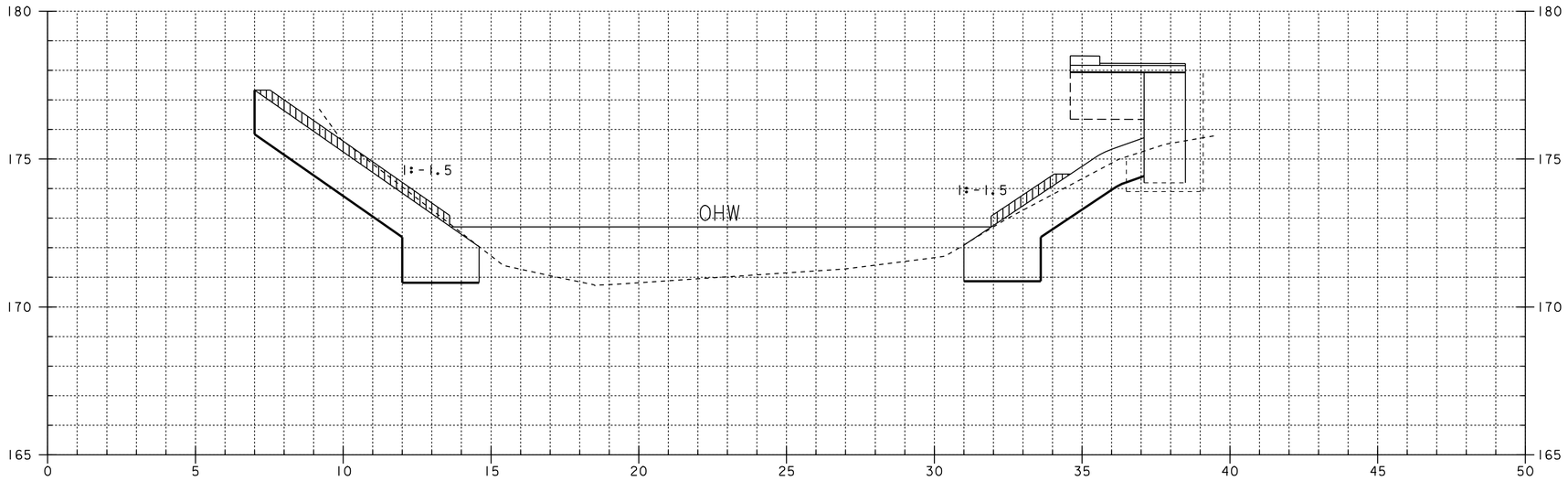
10+040

STA. 10+034.20 RT.
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL TYPE IV
BEGIN GRUBBING MATERIAL

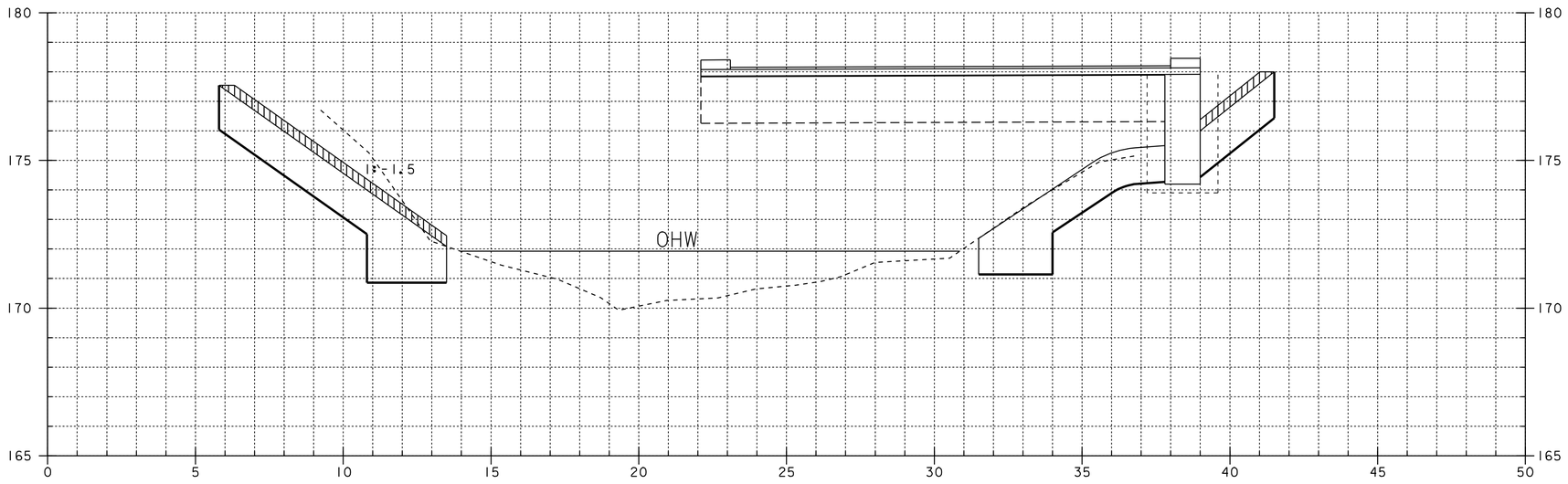
DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD83 (92)

PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: str2/78f188/df188wk.dgn	
IPARM FILE NAME: sf188ch3.i	PLOT DATE: 05-JAN-2007
SURVEYED BY:	SURVEY DATE:
SQUAD LEADER: Portalupi	DRAWN BY: str2
channel section 3	SHEET: 65 OF 67



10+070

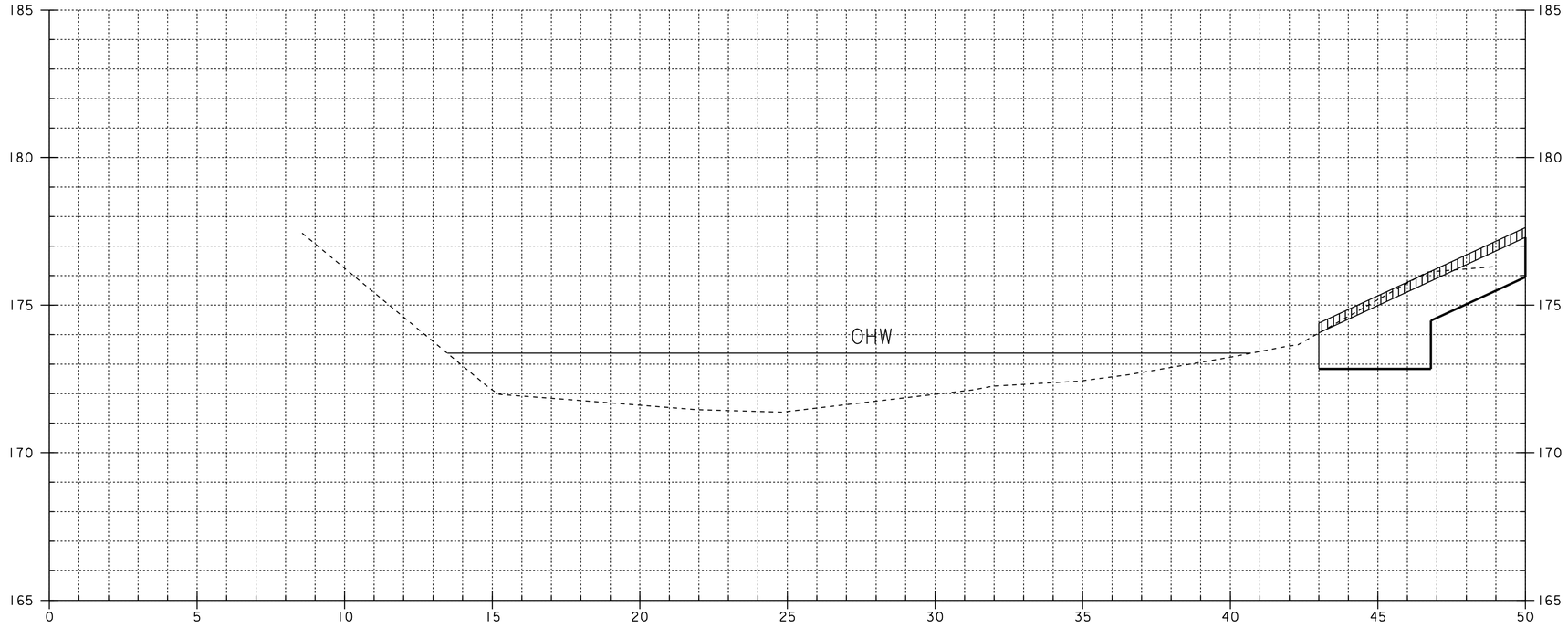


10+060

DATUM

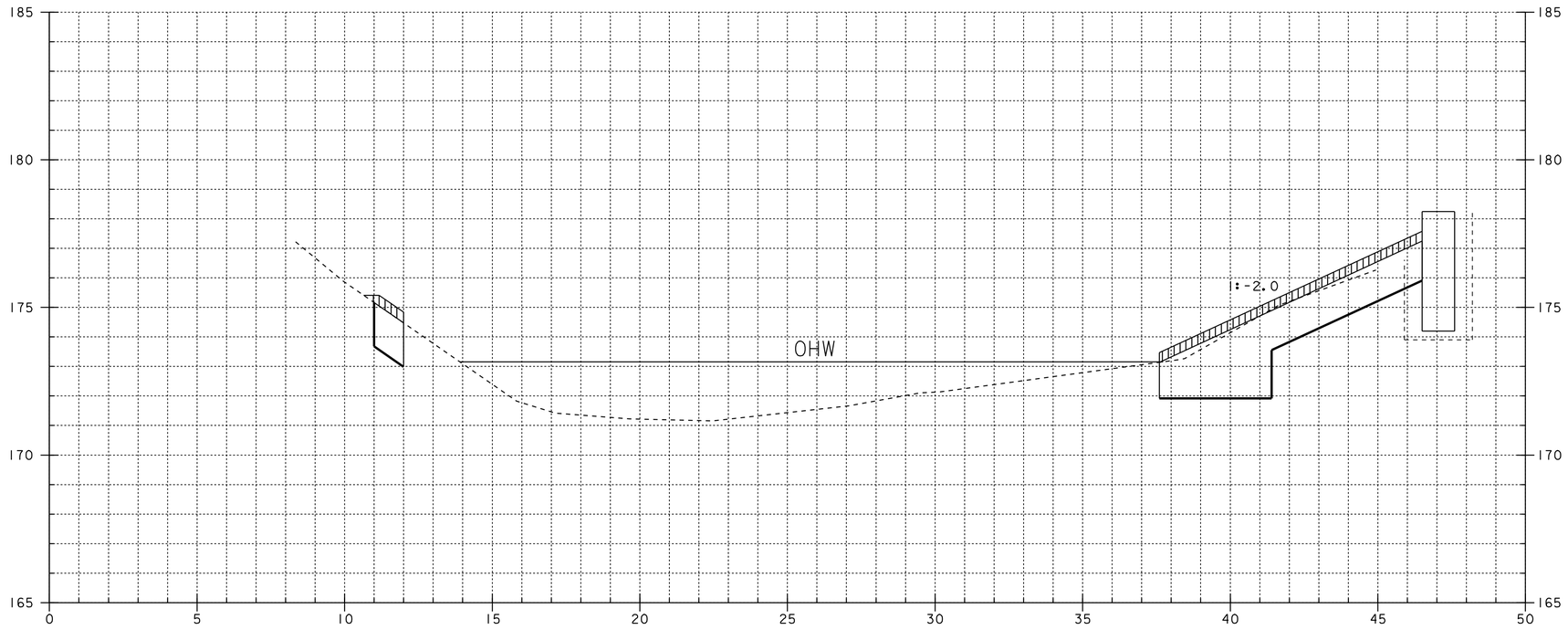
VERTICAL	NAVD 88
HORIZONTAL	NAD83 (92)

PROJECT: BRISTOL	PROJECT NO.: ER 021-1(13)
DESIGN FILE NAME: str2/78fl88/dfl88wk.dgn	
IPARM FILE NAME: sfl88ch4.I	PLOT DATE: 05-JAN-2007
SURVEYED BY:	SURVEY DATE:
SQUAD LEADER: Portalupi	DRAWN BY: str2
channel section 4	SHEET: 66 OF 67



10+085

STA. 10+085.00 RT.
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END STONE FILL TYPE IV
END GRUBBING MATERIAL



10+080

STA. 10+080.00 LT.
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END STONE FILL TYPE IV
END GRUBBING MATERIAL

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD83 (92)

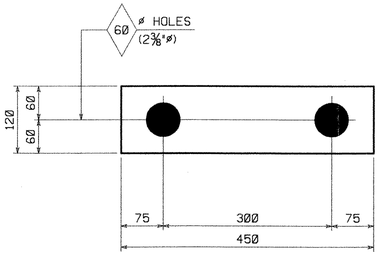
PROJECT:	PROJECT NO.:
BRISTOL	ER 021-1(13)
DESIGN FILE NAME: str2/78fl88/dfl88wk.dgn	
IPARM FILE NAME: sfl88ch5.I	PLOT DATE: 05-JAN-2007
SURVEYED BY:	SURVEY DATE:
SQUAD LEADER: Portalupi	DRAWN BY: str2
channel section 5	SHEET: 67 OF 67

METRIC

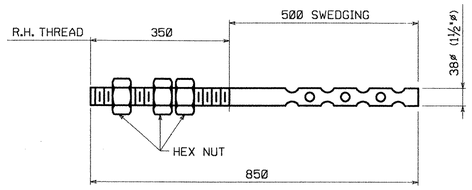
METRIC

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	

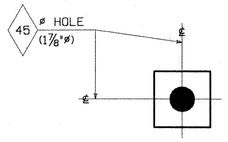


LEVELING ℄'s MK. ~ LP1



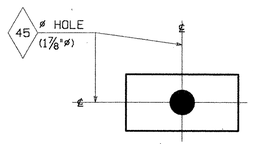
ANCHOR BOLTS MK. ~ AB1

CODE: P



℄ WASHERS MK. ~ W1

CODE: P



℄ WASHERS MK. ~ W2

CODE: P

BILL OF MATERIAL

NO.	MARK	DESCRIPTION	LENGTH	REMARKS	ITEM	SHIP. WEIGHT EA.
		LEVELING ℄'s				
10	LP1	℄ 120 x 14	450		A1 7	6 kg
		℄ WASHERS				
20	W1	℄ 100 x 14	100	GALV. TO A153	A1 4	1 kg
20	W2	℄ 100 x 14	200	GALV. TO A153	A1 5	2 kg
		ANCHOR BOLTS				
20	AB1	38ø (1½"ø) SWEDGE BOLT	850	w/3 M291 GR. A HEX NUTS GALV. TO A153	A1 2	18 kg

RECEIVED
CK'D BY GK OK'D BY AP
NOV 16 1999
RESUBMIT ____ APPROVED X
Y DATE 12/6/99

SHOP NOTE

HOLES: AS NOTED
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

CODE:60 (U.N.)

NO.	REVISION	BY	DATE
1			
2			
3			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

BEARINGS
VT. 116 OVER NEW HAVEN RIVER
VT. 116 STA. 1+255.00 TO STA. 1+299.00
TOWN OF BRISTOL, BRIDGE NO. 10
STATE OF VERMONT
AGENCY OF TRANSPORTATION

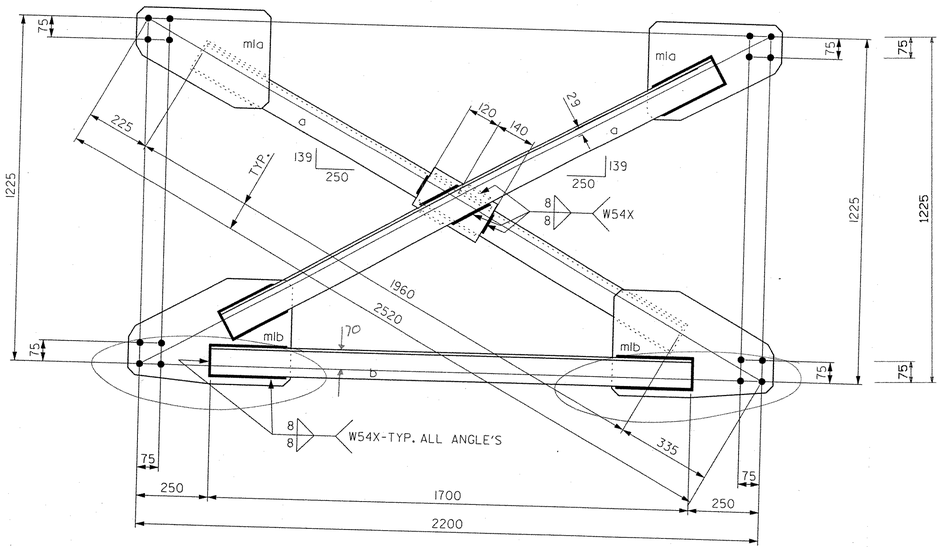
STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13)
CONTRACTOR BECK & BELLUCCI, INC. 068
IN CHARGE: ALLEN (IH) MADE BY: AGS CHK'D. BY: PFH DATE: 11-8-99
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: 1 OF 7

PLOTTED: 18 NOV 1999 14:28:30 BY: ashue
99109 X1 11/11/99 11/11/99Approval TO:Vermont Agency Of Transportation Set:4

METRIC

METRIC 1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	



INTERMEDIATE CROSSFRAMES MK.~ CF1

c:\end\beam.dgn Dec. 07, 1999 11:55:57

8m
(8m)

BILL OF MATERIAL

NO.	MARK	DESCRIPTION	LENGTH	REMARKS	ITEM	SHIP. WEIGHT EA.
24	CF1	CROSSFRAMES				174 kg
48	a	L102 x 102 x 9.5	1960	(L4 x 4 x 3/8)	377	
24	b	L102 x 102 x 9.5	1700	(L4 x 4 x 3/8)	377	
48	m1a	PL 350 x 14	470		378	
48	m1b	PL 350 x 14	570		378	
24	m1c	PL 155 x 14	260		378	

RECEIVED
CK'D BY RGW OK'D BY AP
NOV 16 1999
RESUBMIT____ APPROVED AS NOTED
Y DATE 12/6/99

SHOP NOTE

HOLES: 24ø
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1170 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

CROSSFRAME CF1
VT. 116 OVER NEW HAVEN RIVER
VT. 116 STA. 1+255.00 TO STA. 1+299.00
TOWN OF BRISTOL, BRIDGE NO. 10
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13) 069
CONTRACTOR BECK & BELLUCCI, INC.
IN CHARGE: ALLEN (IH) MADE BY: AGG CHK'D BY: PFH DATE: 11-8-99
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: 2 OF 7

CODE: 63

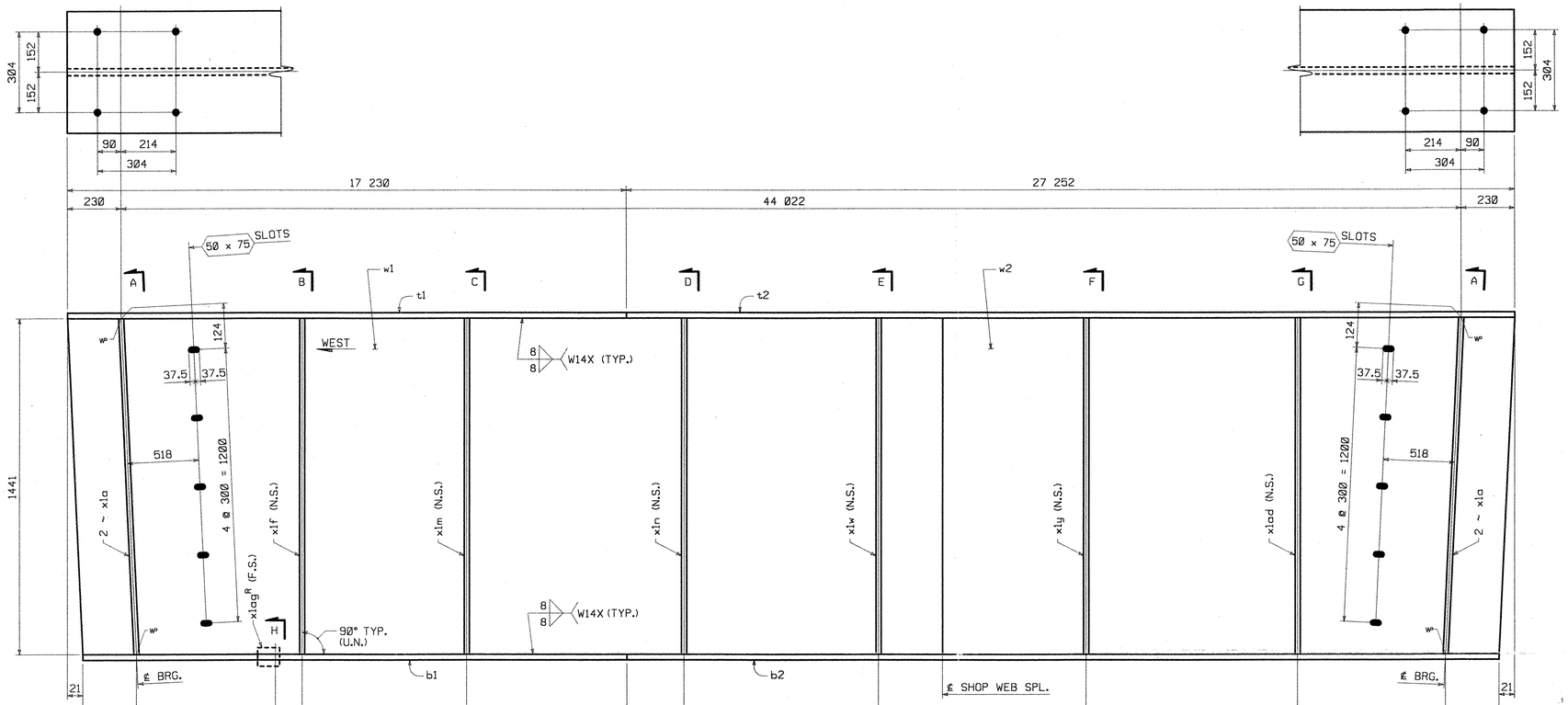
PLOTTED: 18 NOV 1999 14:28:31 BY: ashue

METRIC

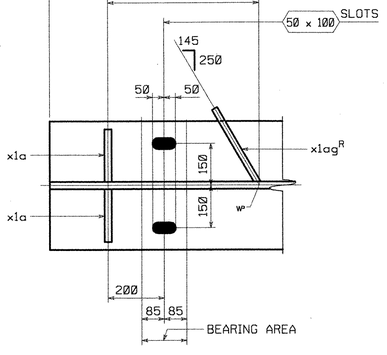
METRIC

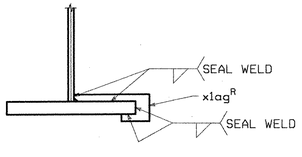
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	

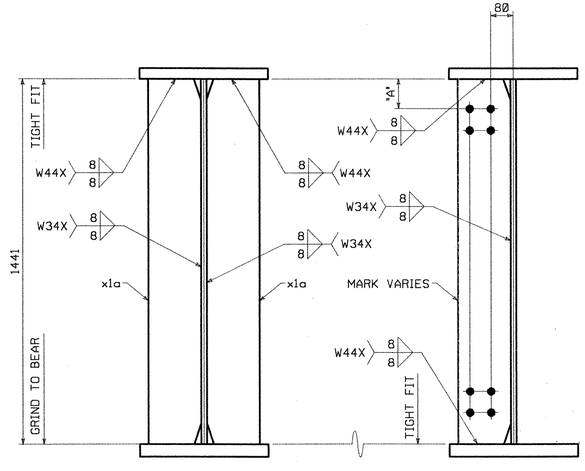


GIRDER MK. ~ G1A





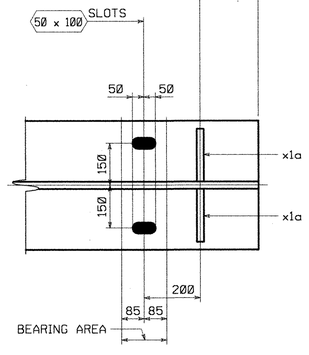
SECTION H



SECTION A

SECTIONS B THRU G

SECT.	"A"
B	120
C	112
D	110
E	102
F	100
G	92



SHOP NOTE

HOLES: 24ø (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.
FOR WEB CAMBER DIAGRAM, SEE DWG. WC1.

BILL OF MATERIAL

NO.	MARK	DESCRIPTION	LENGTH	REMARKS	ITEM	SHIP. WEIGHT EA.
ONE	G1A	GIRDER				23 725kg
1	w1	PL 1441 x 20	27 252	(T)	1/2	
1	w2	PL 1441 x 20	17 233	(T)	1/3	
1	t1	PL 458 x 38	17 230	(T)	2/5	
1	t2	PL 458 x 38	27 252	(T)	2/4	
1	b1	PL 458 x 45	17 230	(T)	2/3	
1	b2	PL 458 x 45	27 210	(T)	2/2	
4	x1a	PL 188 x 25	1441		3/2	
1	x1f	PL 188 x 14	1441		3/3	
1	x1m	PL 188 x 14	1441		3/3	
1	x1n	PL 188 x 14	1441		3/3	
1	x1w	PL 188 x 14	1441		3/3	
1	x1y	PL 188 x 14	1441		3/3	
1	x1ad	PL 188 x 14	1441		3/3	
1	x1ag^R	PL 95 x 7	303		3/4	

RECEIVED
CK'D BY GWC OK'D BY AP
NOV 16 1999
RESUBMIT ____ APPROVED X
Y DATE 12/6/99

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

GIRDER	G1A
VT. 116 OVER NEW HAVEN RIVER	
VT. 116 STA. 1+255.00 TO STA. 1+299.00	
TOWN OF BRISTOL, BRIDGE NO. 10	
STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13)	070
CONTRACTOR BECK & BELLUCCI, INC.	
IN CHARGE: ALLEN (IH) MADE BY: A66 CHK'D. BY: PFH DATE: 11-8-99	
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: 3 OF 7	

CODE:30

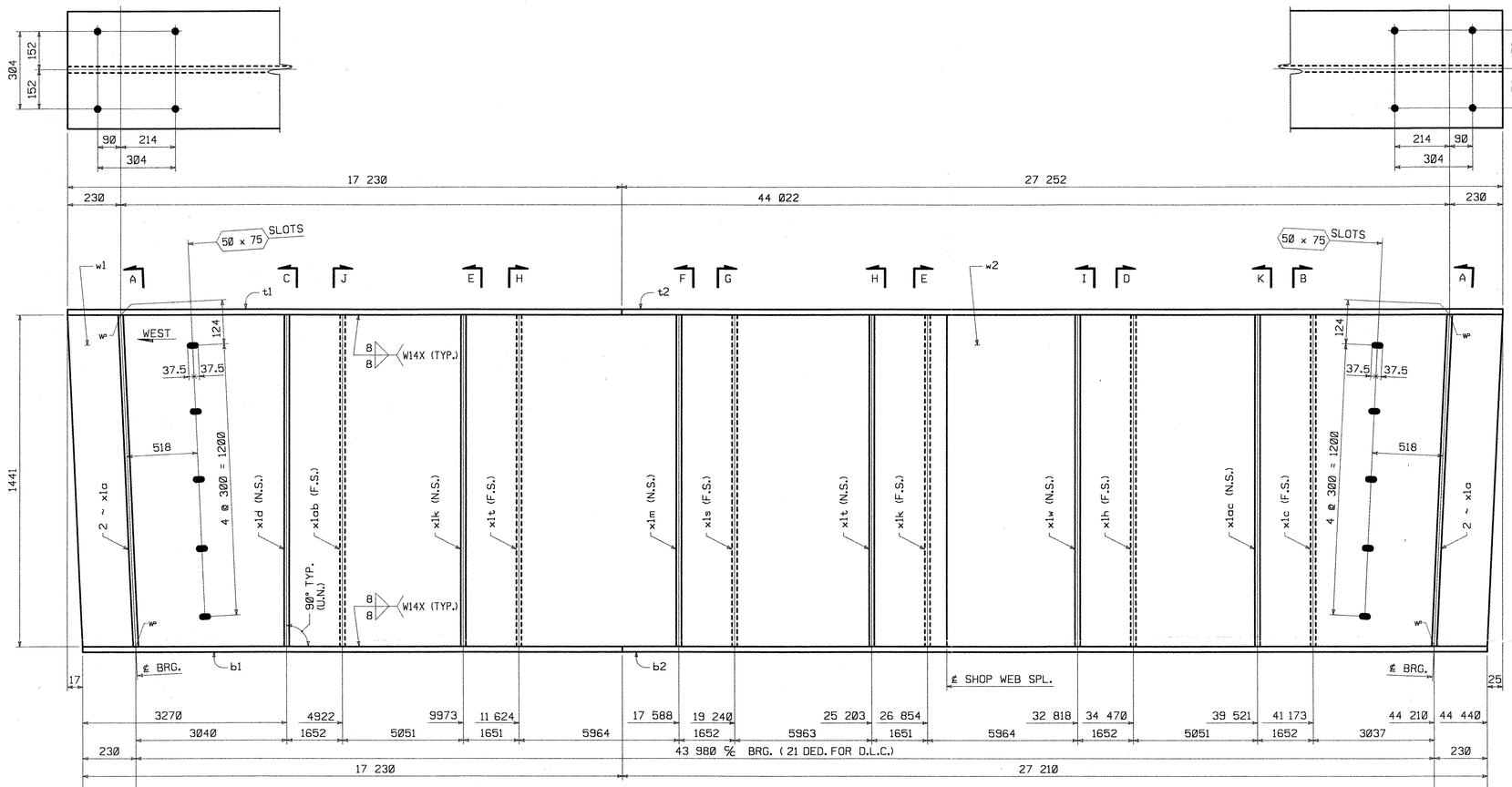
PLOTTED: 10 NOV 1999
14:28:32
BY: ashue

METRIC

METRIC

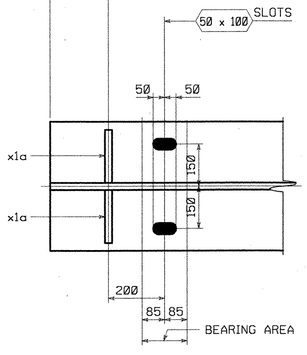
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	

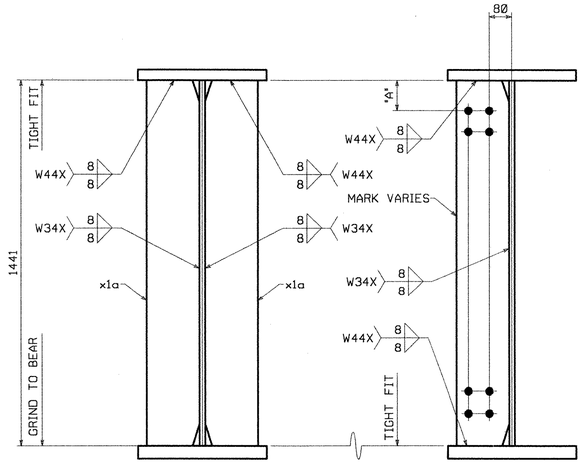


BILL OF MATERIAL

NO.	MARK	DESCRIPTION	LENGTH	REMARKS	ITEM	SHIP. WEIGHT EA.
ONE	G2A	GIRDER				23 900kg
1	w1	℄ 1441 x 20	27 248	(T)	1/2	
1	w2	℄ 1441 x 20	17 237	(T)	1/3	
1	t1	℄ 458 x 38	17 230	(T)	2/5	
1	t2	℄ 458 x 38	27 252	(T)	2/4	
1	b1	℄ 458 x 45	17 230	(T)	2/3	
1	b2	℄ 458 x 45	27 210	(T)	2/2	
4	x1a	℄ 188 x 25	1441		3/2	
1	x1c	℄ 188 x 14	1441		3/3	
1	x1d	℄ 188 x 14	1441		3/3	
1	x1h	℄ 188 x 14	1441		3/3	
2	x1k	℄ 188 x 14	1441		3/3	
1	x1m	℄ 188 x 14	1441		3/3	
1	x1s	℄ 188 x 14	1441		3/3	
2	x1t	℄ 188 x 14	1441		3/3	
1	x1w	℄ 188 x 14	1441		3/3	
1	x1ab	℄ 188 x 14	1441		3/3	
1	x1ac	℄ 188 x 14	1441		3/3	



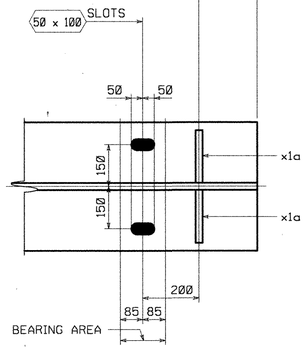
GIRDER MK. ~ G2A



SECT.	"A"
B	124
C	122
D	116
E	114
F	112
G	106
H	104
I	102
J	96
K	94

SECTION A

SECTIONS B THRU K



SHOP NOTE

HOLES: 24ø (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.
FOR WEB CAMBER DIAGRAM, SEE DWG. WC1.

RECEIVED
CK'D BY ex OK'D BY AP
NOV 16 1999
RESUBMIT Y APPROVED X
DATE 12/6/99

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

GIRDER	G2A
VT. 116 OVER NEW HAVEN RIVER	
VT. 116 STA. 1+255.00 TO STA. 1+299.00	
TOWN OF BRISTOL, BRIDGE NO. 10	
STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13)	071
CONTRACTOR BECK & BELLUCCI, INC.	
IN CHARGE: ALLEN (IH) MADE BY: AGG CHK'D BY: PFH DATE: 11-8-99	
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: 4 OF 7	

CODE:30

PLOTTED: 12 NOV 1999 14:26:33 BY: ashue

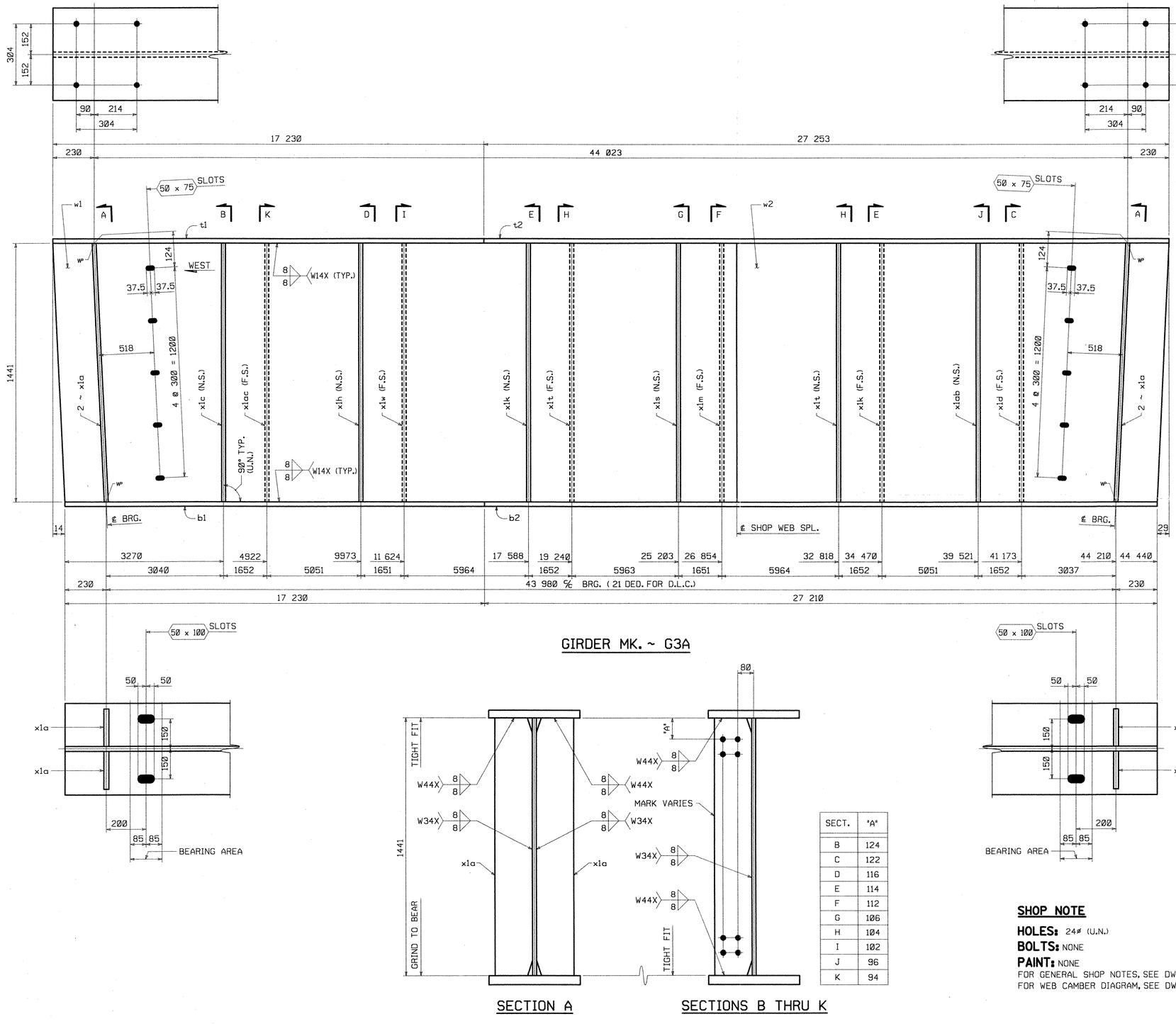
99109 X1 11/11/99 11/11/99Approval TO:Vermont Agency Of Transportation Set:4

METRIC

METRIC

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	



GIRDER MK. ~ G3A

SECTION A

SECTIONS B THRU K

SECT.	"A"
B	124
C	122
D	116
E	114
F	112
G	106
H	104
I	102
J	96
K	94

BILL OF MATERIAL

NO.	MARK	DESCRIPTION	LENGTH	REMARKS	ITEM	SHIP. WEIGHT EA.
ONE	G3A	GIRDER				23 900kg
1	w1	℄ 1441 x 20	27 245	(T)	1/2	
1	w2	℄ 1441 x 20	17 241	(T)	1/3	
1	t1	℄ 458 x 38	17 230	(T)	2/5	
1	t2	℄ 458 x 38	27 253	(T)	2/4	
1	b1	℄ 458 x 45	17 230	(T)	2/3	
1	b2	℄ 458 x 45	27 210	(T)	2/2	
4	x1a	℄ 188 x 25	1441		3/2	
1	x1c	℄ 188 x 14	1441		3/3	
1	x1d	℄ 188 x 14	1441		3/3	
1	x1h	℄ 188 x 14	1441		3/3	
2	x1k	℄ 188 x 14	1441		3/3	
1	x1m	℄ 188 x 14	1441		3/3	
1	x1s	℄ 188 x 14	1441		3/3	
2	x1t	℄ 188 x 14	1441		3/3	
1	x1w	℄ 188 x 14	1441		3/3	
1	x1ab	℄ 188 x 14	1441		3/3	
1	x1ac	℄ 188 x 14	1441		3/3	

RECEIVED
CK'D BY GNC OK'D BY AP
NOV 16 1999
RESUBMIT ____ APPROVED X
'Y DATE 12/6/99

SHOP NOTE

HOLES: 24ø (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.
FOR WEB CAMBER DIAGRAM, SEE DWG. WC1.

CODE:30

NO.	REVISION	BY	DATE

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

GIRDER G3A
VT. 116 OVER NEW HAVEN RIVER
VT. 116 STA. 1+255.00 TO STA. 1+299.00
TOWN OF BRISTOL, BRIDGE NO. 10
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13) 072
CONTRACTOR BECK & BELLUCCI, INC.
IN CHARGE: ALLEN (IH) MADE BY: AGS CHK'D. BY: PFH DATE: 11-8-99
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBERS: 5 OF 7

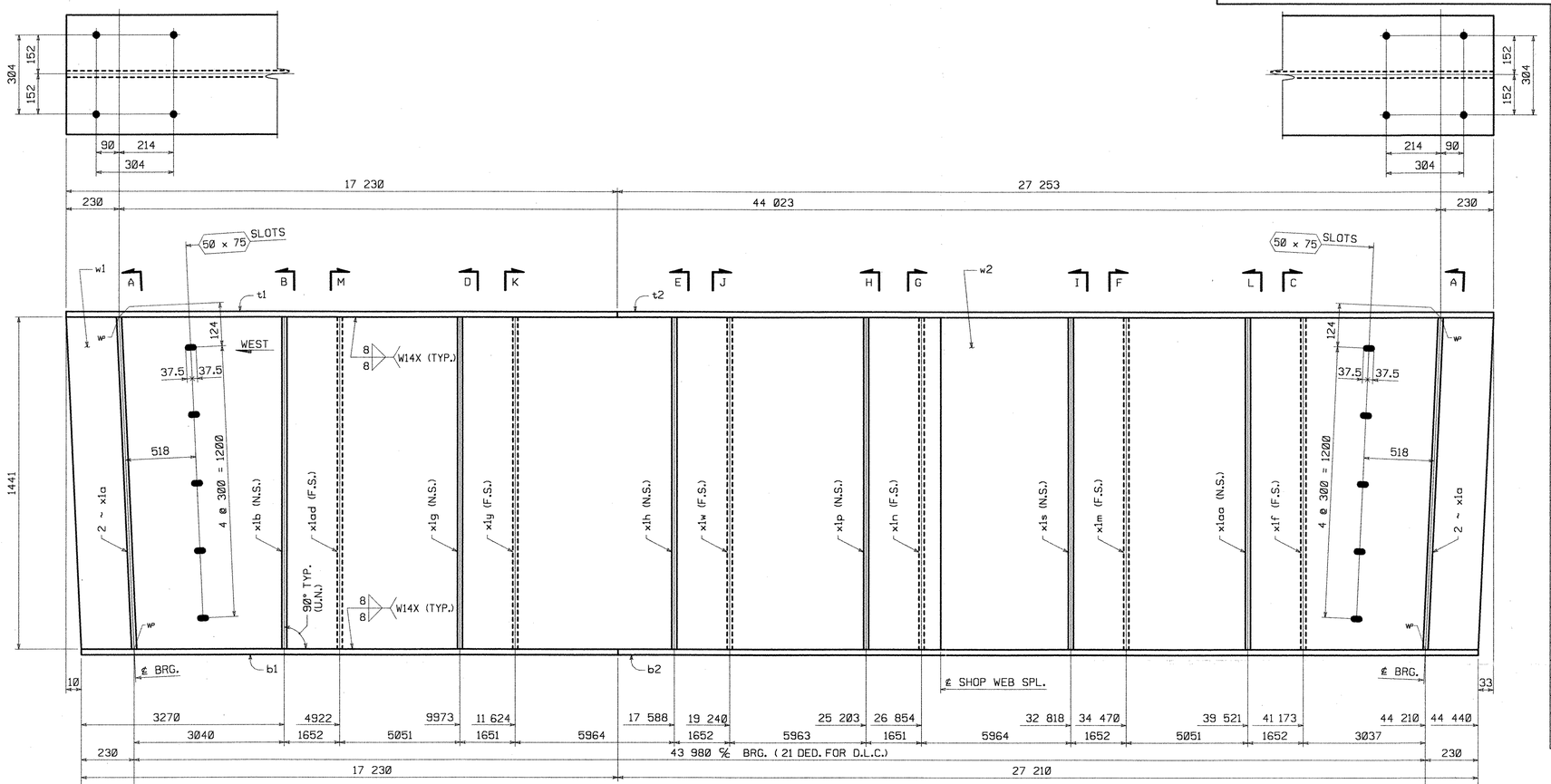
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BY: ashue

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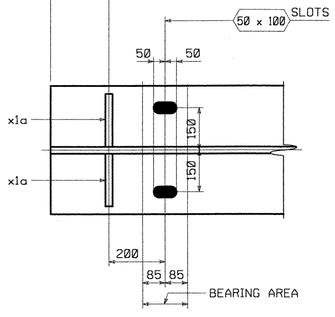
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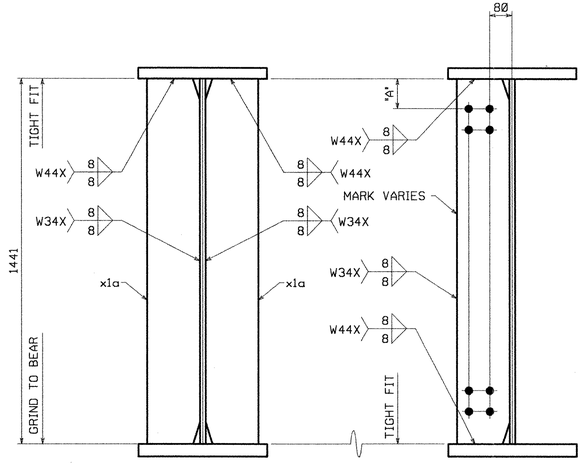
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	



GIRDER MK. ~ G4A

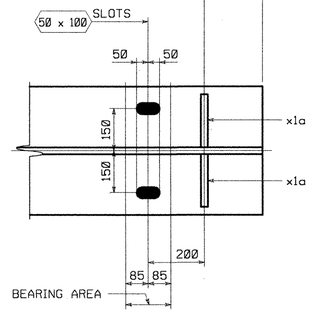




SECT.	"A"
B	126
C	120
D	118
E	116
F	112
G	110
H	108
I	106
J	102
K	100
L	98
M	92

SECTION A

SECTIONS B THRU M



BILL OF MATERIAL

NO.	MARK	DESCRIPTION	LENGTH	REMARKS	ITEM	SHIP. WEIGHT EA.
ONE	G4A	GIRDER				23 900kg
1	w1	PL 1441 x 20	27 243	(T)	1/2	
1	w2	PL 1441 x 20	17 245	(T)	1/3	
1	t1	PL 458 x 38	17 230	(T)	2/5	
1	t2	PL 458 x 38	27 253	(T)	2/4	
1	b1	PL 458 x 45	17 230	(T)	2/3	
1	b2	PL 458 x 45	27 210	(T)	2/2	
4	x1a	PL 188 x 25	1441		3/2	
1	x1b	PL 188 x 14	1441		3/3	
1	x1f	PL 188 x 14	1441		3/3	
1	x1g	PL 188 x 14	1441		3/3	
1	x1h	PL 188 x 14	1441		3/3	
1	x1m	PL 188 x 14	1441		3/3	
1	x1n	PL 188 x 14	1441		3/3	
1	x1p	PL 188 x 14	1441		3/3	
1	x1s	PL 188 x 14	1441		3/3	
1	x1w	PL 188 x 14	1441		3/3	
1	x1y	PL 188 x 14	1441		3/3	
1	x1aa	PL 188 x 14	1441		3/3	
1	x1ad	PL 188 x 14	1441		3/3	

SHOP NOTE

HOLES: 24ø (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.
FOR WEB CAMBER DIAGRAM, SEE DWG. WC1.

CODE:30

RECEIVED
CK'D BY GJC OK'D BY DP
NOV 16 1999
RESUBMIT ____ APPROVED X
"Y" DATE 12/6/99

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

GIRDER G4A
VT. 116 OVER NEW HAVEN RIVER
VT. 116 STA. 1+255.00 TO STA. 1+299.00
TOWN OF BRISTOL, BRIDGE NO. 10
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13) 073
CONTRACTOR BECK & BELLUCCI, INC.
IN CHARGE: ALLEN (IH) MADE BY: AGG CHK'D. BY: PFH DATE: 11-8-99
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: 6 OF 7

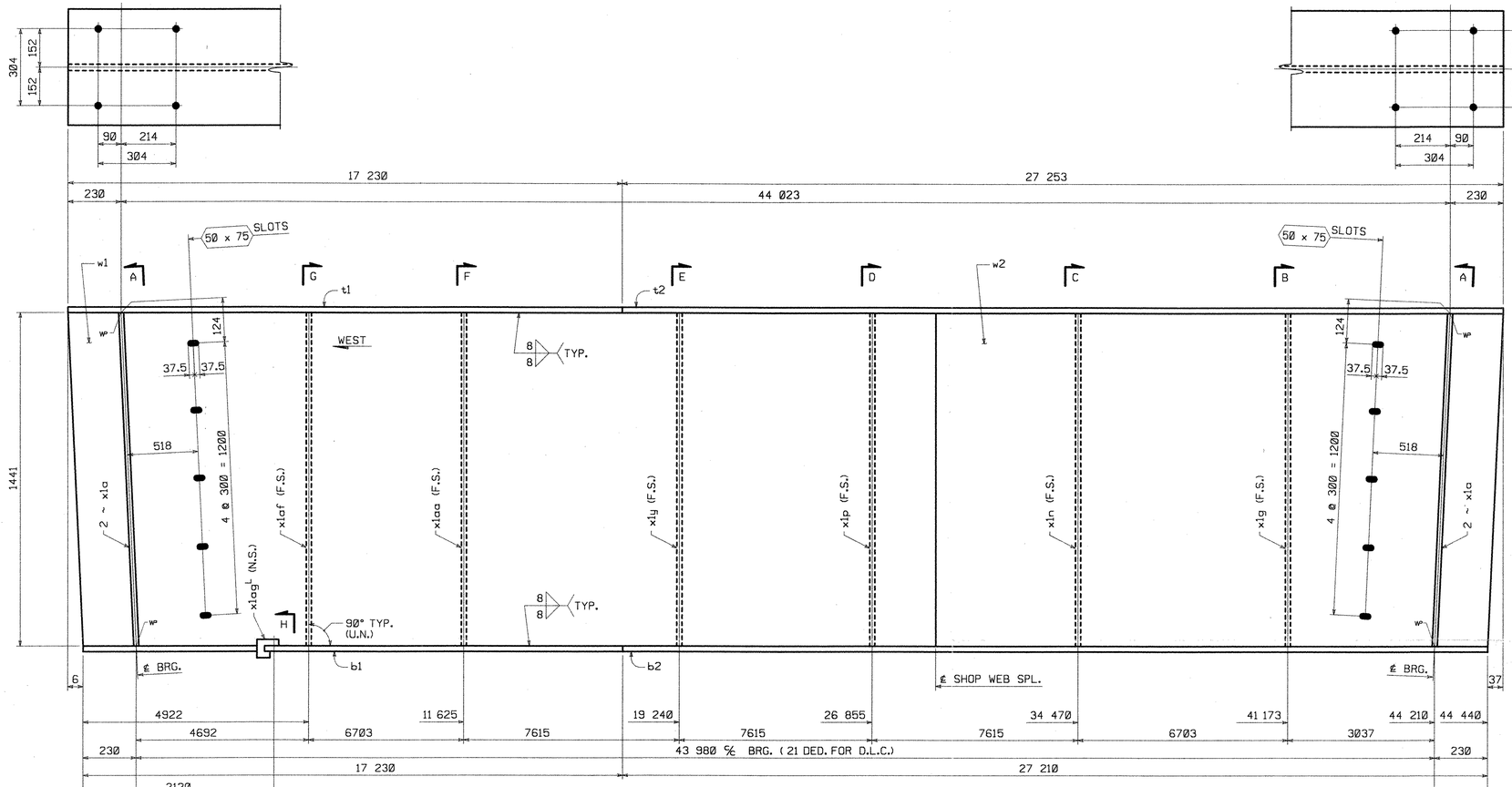
PLOTTED: 10 NOV 1999 14:28:35 BY: cshue

METRIC

METRIC

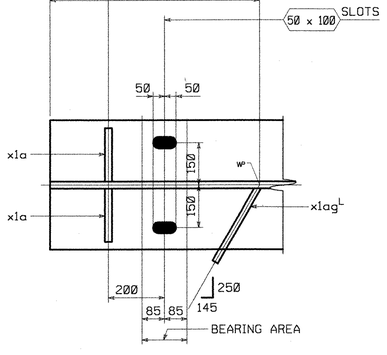
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

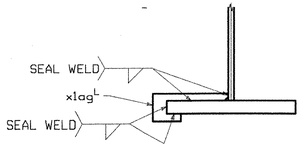
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	



BILL OF MATERIAL

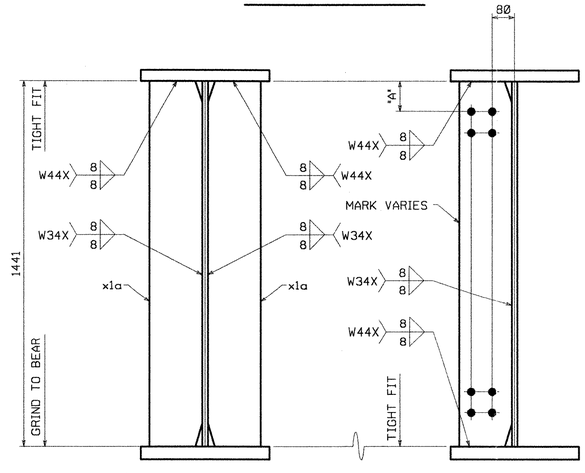
NO.	MARK	DESCRIPTION	LENGTH	REMARKS	ITEM	SHIP. WEIGHT EA.
ONE	G5A	GIRDER				23 725kg
1	w1	ℙ 1441 x 20	27 243	(T)	1/2	
1	w2	ℙ 1441 x 20	17 249	(T)	1/3	
1	t1	ℙ 458 x 38	17 230	(T)	2/5	
1	t2	ℙ 458 x 38	27 253	(T)	2/4	
1	b1	ℙ 458 x 45	17 230	(T)	2/3	
1	b2	ℙ 458 x 45	27 210	(T)	2/2	
4	x1a	ℙ 188 x 25	1441		3/2	
1	x1g	ℙ 188 x 14	1441		3/3	
1	x1n	ℙ 188 x 14	1441		3/3	
1	x1p	ℙ 188 x 14	1441		3/3	
1	x1y	ℙ 188 x 14	1441		3/3	
1	x1aa	ℙ 188 x 14	1441		3/3	
1	x1af	ℙ 188 x 14	1441		3/3	
1	x1agL	ℙ 95 x 7	303		3/4	





SECTION H

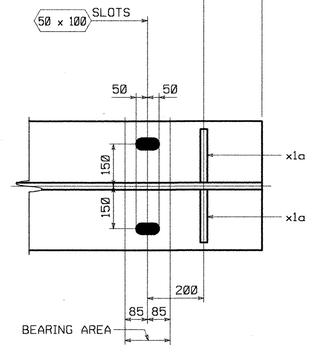
GIRDER MK. ~ G5A



SECT.	"A"
B	118
C	110
D	108
E	100
F	98
G	90

SECTION A

SECTIONS B THRU G



SHOP NOTE

HOLES: 24ø (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.
FOR WEB CAMBER DIAGRAM, SEE DWG. WC1.

RECEIVED
CK'D BY DAL OK'D BY BP
NOV 16 1999
RESUBMIT ____ APPROVED X
BY DATE 12/8/99

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

GIRDER G5A
VT. 116 OVER NEW HAVEN RIVER
VT. 116 STA. 1+255.00 TO STA. 1+299.00
TOWN OF BRISTOL, BRIDGE NO. 10
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13) 074
CONTRACTOR BECK & BELLUCCI, INC.
IN CHARGE: ALLEN (IH) MADE BY: AGG CHK'D BY: PFH DATE: 11-8-99
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: 7 OF 7

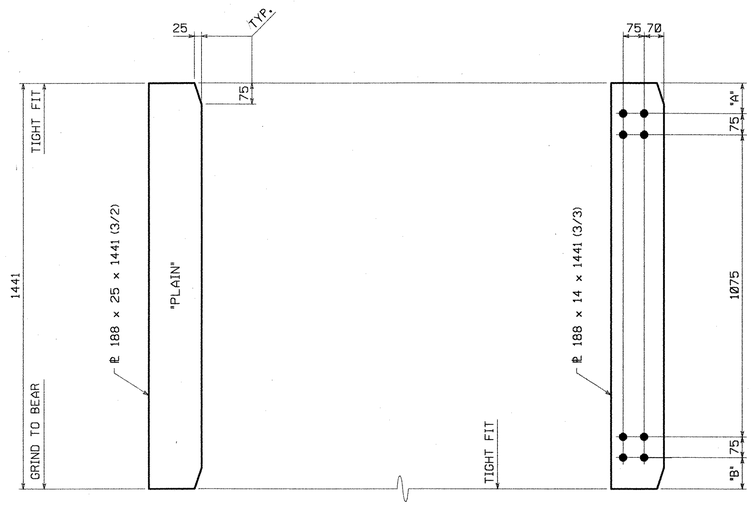
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PLOTTED: 18 NOV 1999 14:28:36 BY: dshue

99109 X1 11/11/99 11/11/99Approval TO:Vermont Agency Of Transportation Set:4

METRIC

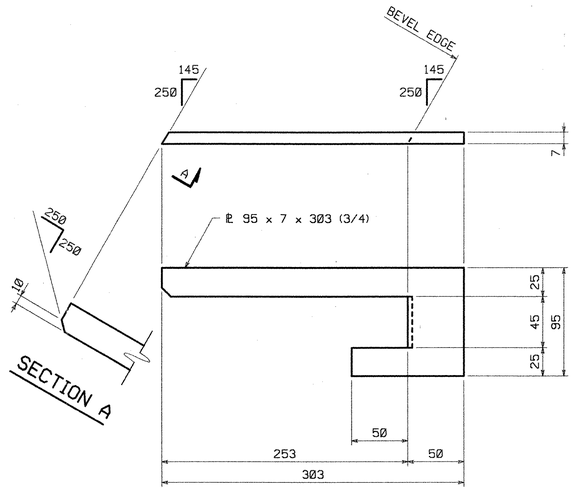
METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	



20 ~ BRG. STIFF. MK. ~ x1a

CONN. ℄'s

MARK	REQ'D	"A"	"B"
x1b	1	126	90
x1c	2	124	92
x1d	2	122	94
x1f	2	120	96
x1g	2	118	98
x1h	3	116	100
x1k	4	114	102
x1m	4	112	104
x1n	3	110	106
x1p	2	108	108
x1s	3	106	110
x1t	4	104	112
x1w	4	102	114
x1y	3	100	116
x1aa	2	98	118
x1ab	2	96	120
x1ac	2	94	122
x1ad	2	92	124
x1af	1	90	126



2 ~ DRIP BARS MK. ~ x1ag$^{R}_{L}$

RECEIVED
CK'D BY GDC OK'D BY AP
NOV 16 1999
RESUBMIT____ APPROVED X
DATE 12/6/99

SHOP NOTE

HOLES: 24ø
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

CODE:30

NO.	REVISION	BY	DATE
1			
2			
3			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

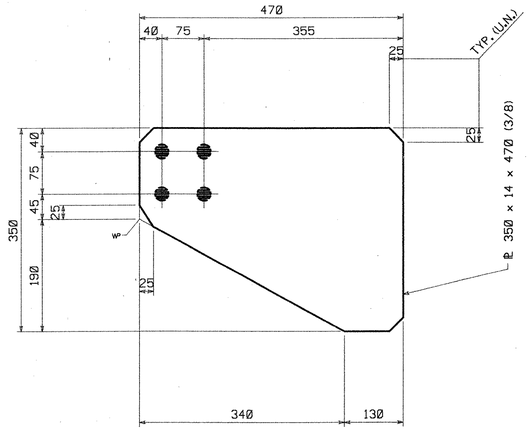
GIRDER JOB STANDARDS
VT. 116 OVER NEW HAVEN RIVER
VT. 116 STA. 1+255.00 TO STA. 1+299.00
TOWN OF BRISTOL, BRIDGE NO. 10
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13) 075
CONTRACTOR BECK & BELLUCCI, INC.
IN CHARGE: ALLEN (IH) MADE BY: AGS CHK'D. BY: PFH DATE: 11-8-99
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: X1 OF X1

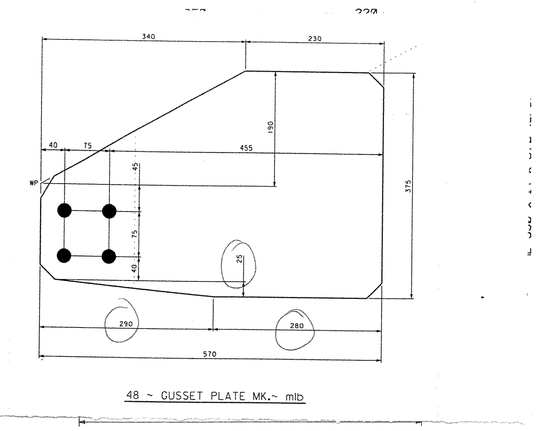
PLOTTED: 12 NOV 1999 14:28:29 BY: ashue

METRIC

METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	

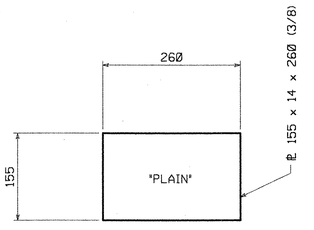


48 ~ GUSSET ℄'s MK.~ m1a



48 ~ GUSSET PLATE MK.~ m1b

48 ~ GUSSET ℄'s MK.~ m1b



24 ~ GUSSET ℄'s MK.~ m1c

RECEIVED
BY YWL OK'D BY AP
NOV 16 1999
RESUBMIT____ APPROVED AS NOTED
DATE 12/6/99

SHOP NOTE

HOLES: 24#
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

CODE: 63

NO.	REVISION	BY	DATE
1			
2			
3			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

CROSSFRAME JOB STANDARDS
VT. 116 OVER NEW HAVEN RIVER
VT. 116 STA. 1+255.00 TO STA. 1+299.00
TOWN OF BRISTOL, BRIDGE NO. 10
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13) 016
CONTRACTOR BECK & BELLUCCI, INC.
IN CHARGE: ALLEN (IH) MADE BY: AGG CHK'D. BY: PFH DATE: 11-8-99
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: M1 OF M1

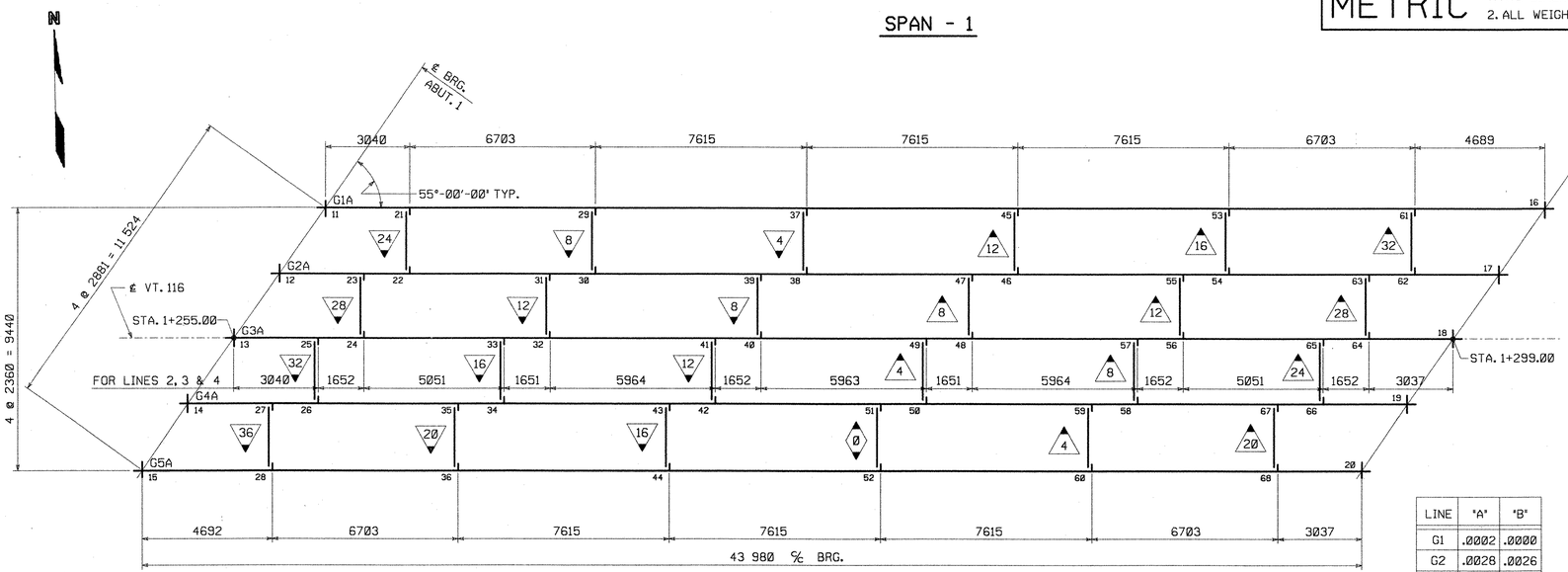
PLOTTED: 10 NOV 1999 14:28:28 BY: cshue

99109 X1 11/11/99 11/11/99Approval TO:Vermont Agency Of Transportation Set:4

METRIC

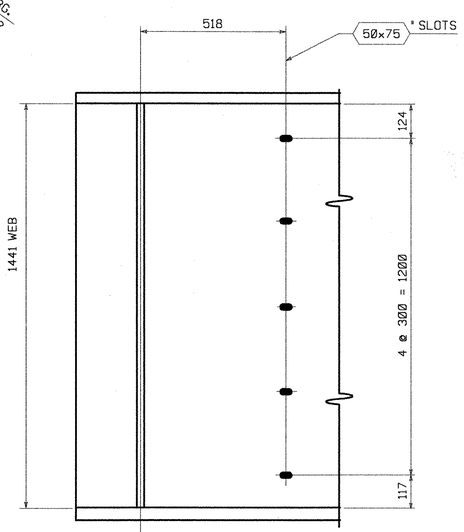
METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	

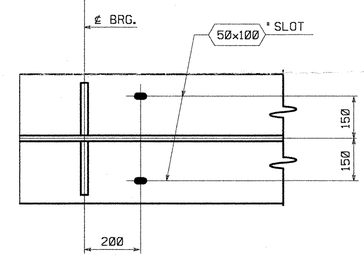
SPAN - 1



FIGURING PLAN

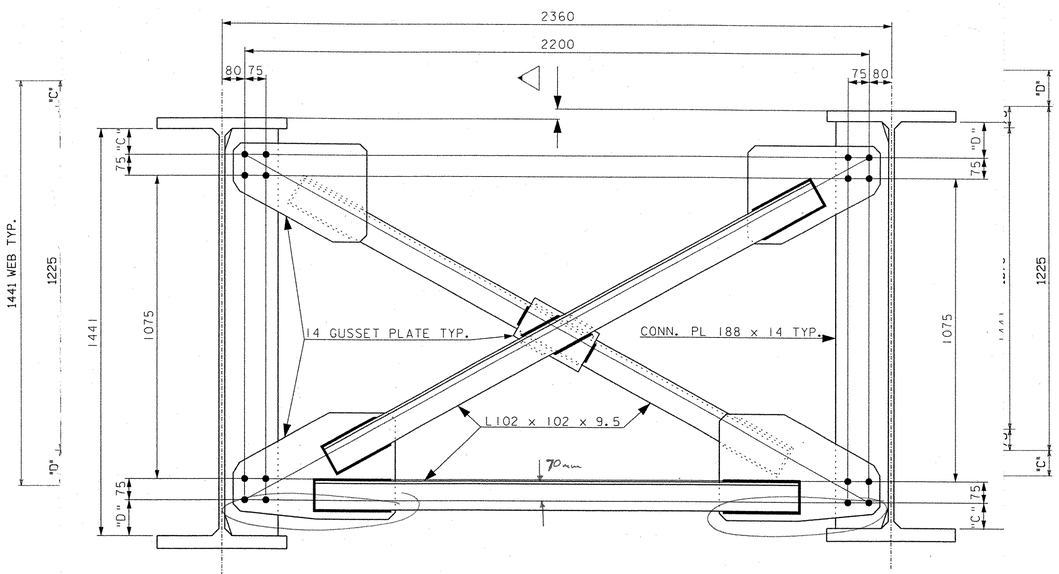
LINE	"A"	"B"
G1	.0002	.0000
G2	.0028	.0026
G3	.0055	.0052
G4	.0081	.0079
G5	.0108	.0106





GIRDER LAYOUT AT ABUT. 1

(SIMILAR AT ABUT. 2)



INTERMEDIATE CROSSFRAMES

(LOOKING STATIONS AHEAD)

DROP	"C"	"D"
32	92	124
28	94	122
24	96	120
20	98	118
16	100	116
12	102	114
8	104	112
4	106	110
0	108	108
-4	110	106
-8	112	104
-12	114	102
-16	116	100
-20	118	98
-24	120	96
-28	122	94
-32	124	92
-36	126	90

NOTES:

DIMENSIONS ON PLAN ALONG GIRDERS ARE GIVEN TO THE CHORD AT THE BOTTOM OF WEB IN FULLY CAMBERED POSITION. ALL OTHER DIMENSIONS ARE GIVEN HORIZONTALLY.
FIGURES GIVEN THUS: .0002 ARE THE GRADES OF THE GIRDERS AT THE BEARINGS IN FINAL POSITION; ARROW POINTS DOWNGRADE.
ALL STIFFENER AND CONNECTION PLATE SPACINGS ARE GIVEN TO ℄ PLATE.
ENDS OF GIRDERS AND ALL BEARING STIFFENERS TO BE VERTICAL IN FINAL POSITION.
ALL STEEL TO BE AASHTO M270 GR. 345W (U.N.).
ALL FIELD CONNECTIONS TO BE MADE WITH ⅞"ø H.S. (A325 TYPE 3) BOLTS (U.N.).
FIGURES GIVEN THUS: △1 ARE THE DIFFERENCES IN ELEVATIONS OF GIRDERS (IN THE PLANE OF THE CROSSFRAME) AT CROSSFRAMES; ARROW POINTS TOWARD LOW GIRDER.
ALL HOLES TO BE 15/16 "ø (U.N.)

RECEIVED
CKD BY EWC OK'D BY AP
NOV 16 1999
RESUBMIT ____ APPROVED AS NOTED
DATE 12/16/99

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1170 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

WORKSHEET - FIGURING PLAN AND LAYOUTS
VT. 116 OVER NEW HAVEN RIVER
VT. 116 STA. 1+255.00 TO STA. 1+299.00
TOWN OF BRISTOL, BRIDGE NO. 10
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13) 077
CONTRACTOR BECK & BELLUCCI, INC.
IN CHARGE: ALLEN (IH) MADE BY: kma CHK'D BY: SLK DATE: 10/07/99
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: WS1 OF WS1

SCALE = 0.010000 OF FULL SIZE
PLOTTED: 18 NOV 1999
14:28:24
BY: cshue
newdrawn.dgn Dec. 07, 1999 10:52:43

METRIC

METRIC

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	

MINIMUM PREHEAT AND INTERPASS TEMPERATURE

SHIELDED METAL-ARC WELDING WITH LOW HYDROGEN ELECTRODES, OR SUBMERGED ARC WELDING, OR FLUX CORED ARC WELDING

THICKNESS OF THICKEST PART AT POINT OF WELDING - (mm)	ASTM A-36, A-572, AND A-588 M183, M223, AND M222 ASTM A709, GRADE 36 ASTM A709, GRADE 50 ASTM A709, GRADE 50W
TO 19.1, INCL.	10°C
OVER 19.1 TO 38.1, INCL.	20°C
OVER 38.1 TO 63.5, INCL.	65°C
OVER 63.5	110°C

V.A.O.T. RECEIVED CK'D BY _____ OK'D BY JWC
NOV 23 1999
RESUBMIT _____ APPROVED √
BY DATE

REVISED:
ORIGINAL ISSUE: 3/4/96

WELDING PROCEDURE FOR AWS PREQUALIFIED JOINTS

W2

PROCEDURE SPECIFICATIONS

MATERIAL SPECIFICATION	ASTM A-36, A-572, A-588
WELDING PROCESS	SHIELDED METAL ARC WELDING
MANUAL OR MACHINE	MANUAL
POSITION OF WELDING	ALL (EXCEPT AS NOTED BELOW)
FILLER METAL SPECIFICATION	AWS A5.1 AND A5.5
WELD METAL CLASSIFICATION	E7018/E7028 (TACKING ONLY) AND E8018-C3
WIRE/FLUX	D.N.A.
POLARITY	DC+ OR AC
ROOT TREATMENT	MANUAL CLEANING
PREHEAT AND INTERPASS TEMPERATURE	SEE PREHEAT CHART
ELECTRICAL STICK-OUT	D.N.A.
SHIELDING GAS	D.N.A.

V.A.O.T. RECEIVED CK'D BY _____ OK'D BY JWC
NOV 23 1999
RESUBMIT _____ APPROVED √
BY DATE 12-13-99

REVISED: 7/27/98
ORIGINAL ISSUE: 4/9/96

WELDING PROCEDURE

PASS NO.	WIRE SIZE (mm)	CURRENT RANGE E7018 DC+	CURRENT RANGE E7018 AC	TRAVEL SPEED (mm/min)	JOINT DETAIL
1	3.2	90-150	110-170	152-228	TACK WELDS
1	4.0	120-190	135-225	203-330	GROOVE ROOT PASSES AND TACK WELDS

PASS NO.	WIRE SIZE (mm)	CURRENT RANGE E7028 DC+	CURRENT RANGE E7028 AC	TRAVEL SPEED (mm/min)	JOINT DETAIL (LIMITED TO FLAT AND HORIZONTAL TACK WELDS AND FLAT POSITION GROOVE ROOT PASSES)
1	4.0	170-240	180-270	203-330	GROOVE ROOT PASSES AND TACK WELDS

PASS NO.	WIRE SIZE (mm)	CURRENT RANGE E8018-C3 DC+	CURRENT RANGE E8018-C3 AC	TRAVEL SPEED (mm/min)	JOINT DETAIL
1	4.0	130-190	140-225	203-330	GROOVE ROOT PASSES, REPAIR WELDS AND TACKS
ALL	4.0	130-190	140-225	203-330	FILLET WELDS
ALL	4.8	180-270	210-290	228-381	FILLET WELDS (FLAT AND HORIZONTAL WELDS ONLY)
ALL	4.8	250-330	270-370	228-406	FILLET WELDS (FLAT AND HORIZONTAL WELDS ONLY)

• WELD SIZE DETERMINED BY TRAVEL SPEED

WELDING PROCEDURE FOR AWS PREQUALIFIED JOINTS

W71X

PROCEDURE SPECIFICATIONS

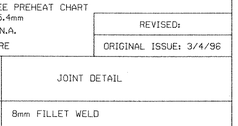
MATERIAL SPECIFICATION	ASTM A709 GRADES: 250, 345, 345W
WELDING PROCESS	SUBMERGED ARC WELDING
MANUAL OR MACHINE	SEMIAUTOMATIC OR MACHINE
POSITION OF WELDING	1G
FILLER METAL SPECIFICATION	AWS A5.23
WELD METAL CLASSIFICATION	F7A4-EM12K-N11
WIRE/FLUX	LINCOLN L61/AXXX10
WIRE DIAMETER	2.0 mm
SINGLE OR MULTIPLE ARC	SINGLE ARC
POLARITY	DC+
ROOT TREATMENT	MANUAL CLEANING
PREHEAT AND INTERPASS TEMPERATURE	SEE PREHEAT CHART
ELECTRICAL STICK-OUT	25.4 mm
SHIELDING GAS	D.N.A.

V.A.O.T. RECEIVED CK'D BY _____ OK'D BY JWC
NOV 23 1999
RESUBMIT _____ APPROVED √
BY DATE 12-13-99

REVISED:
ORIGINAL ISSUE: 7/1/96

WELDING PROCEDURE

PASS NO.	AMPS	WIRE FEED SPEED (m/MIN.)	VOLTS	TRAVEL SPEED (mm/MIN.)	JOINT DETAIL
1	405-495	3.2-4.5	32.7-38.0	432-635	B-L2c-S
2+	450-550	3.9-5.5	32.7-38.0	343-533	



PARAMETERS FOR PASS 1 MAY BE USED FOR CAP PASSES.

PROCEDURE QUALIFICATION RECORD MA-FCM-97-1 (EXPIRES 10/27/02)
PROCEDURE QUALIFICATION RECORD MA-FCM-97-3 (EXPIRES 11/11/02)

WELDING PROCEDURE FOR AWS PREQUALIFIED JOINTS

W14X

PROCEDURE SPECIFICATIONS

MATERIAL SPECIFICATION	ASTM A-36, A-572, A-588
WELDING PROCESS	SUBMERGED ARC WELDING
MANUAL OR MACHINE	SEMIAUTOMATIC OR MACHINE
POSITION OF WELDING	2F
FILLER METAL SPECIFICATION	AWS A5.17
WELD METAL CLASSIFICATION	F7A2-EM12K
WIRE/FLUX	LINCOLN L61/960
WIRE DIAMETER	2.4mm
SINGLE OR MULTIPLE ARC	SINGLE ARC
POLARITY	DC-
ROOT TREATMENT	MANUAL CLEANING
PREHEAT AND INTERPASS TEMPERATURE	SEE PREHEAT CHART
ELECTRICAL STICK-OUT	25.4mm
SHIELDING GAS	D.N.A.

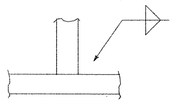
V.A.O.T. RECEIVED CK'D BY _____ OK'D BY JWC
NOV 23 1999
RESUBMIT _____ APPROVED √
BY DATE 12-13-99

REVISED:
ORIGINAL ISSUE: 3/4/96

WELDING PROCEDURE

PASS NO.	WELDING CURRENT AMPS	WELDING CURRENT WIRE FEED SPEED	WELDING CURRENT VOLTS	TRAVEL SPEED (mm/m)	JOINT DETAIL
1	405-550	3.3-5.0	29.0-39.5	394-635	8mm FILLET WELD

PRIMARY USE:
WEB TO FLANGE
(AND OTHER APPLICATIONS AS NEEDED)



PROCEDURE QUALIFICATION RECORD 95-3 (EXPIRES 2/6/00)
PROCEDURE QUALIFICATION RECORD 95-4 (EXPIRES 2/17/00)

WELDING PROCEDURE FOR AWS PREQUALIFIED JOINTS

W6

PROCEDURE SPECIFICATIONS

MATERIAL SPECIFICATION	ASTM A-36, A-572, A-588
WELDING PROCESS	FLUX CORED ARC WELDING
MANUAL OR MACHINE	SEMIAUTOMATIC
POSITION OF WELDING	ALL POSITION TACK WELDS
FILLER METAL SPECIFICATION	AWS A5.20
WELD METAL CLASSIFICATION	E71T-1
WIRE/FLUX	ESAB DUAL SHIELD II
WIRE DIAMETER	1.1mm
SINGLE OR MULTIPLE ARC	SINGLE ARC
POLARITY	DC+
ROOT TREATMENT	MANUAL CLEANING
PREHEAT AND INTERPASS TEMPERATURE	SEE PREHEAT CHART
ELECTRICAL STICK-OUT	19.1mm
SHIELDING GAS	100% CO2

V.A.O.T. RECEIVED CK'D BY _____ OK'D BY JWC
NOV 23 1999
RESUBMIT _____ APPROVED √ AS NOTED
BY DATE 12-13-99

REVISED:
ORIGINAL ISSUE: 6/17/99

WELDING PROCEDURE

PASS NO.	WELDING CURRENT AMPS	WELDING CURRENT WIRE FEED SPEED	WELDING CURRENT VOLTS	TRAVEL SPEED (mm/m)	GAS FLOW (l/m)	JOINT DETAIL
1	245-290	10.0-12.7	26.7-30.0	508-635	18.3-23.6	TACK WELDS

FCAW MAY BE USED ONLY WHEN PRIOR AUTHORIZATION HAS BEEN GRANTED

PROCEDURE QUALIFICATION RECORD DS-2 (EXPIRES 9/17/03)

WELDING PROCEDURE FOR AWS PREQUALIFIED JOINTS

W34X

PROCEDURE SPECIFICATIONS

MATERIAL SPECIFICATION	ASTM A-36, A-572, A-588
WELDING PROCESS	SUBMERGED ARC WELDING
MANUAL OR MACHINE	SEMIAUTOMATIC OR MACHINE
POSITION OF WELDING	2F
FILLER METAL SPECIFICATION	AWS A5.17
WELD METAL CLASSIFICATION	F7A2-EM12K
WIRE/FLUX	LINCOLN L61/960
WIRE DIAMETER	2.4mm
SINGLE OR MULTIPLE ARC	SINGLE ARC
POLARITY	DC-
ROOT TREATMENT	MANUAL CLEANING
PREHEAT AND INTERPASS TEMPERATURE	SEE PREHEAT CHART
ELECTRICAL STICK-OUT	25.4mm
SHIELDING GAS	D.N.A.

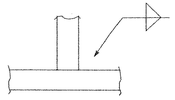
V.A.O.T. RECEIVED CK'D BY _____ OK'D BY JWC
NOV 23 1999
RESUBMIT _____ APPROVED √
BY DATE 12-13-99

REVISED:
ORIGINAL ISSUE: 3/4/96

WELDING PROCEDURE

PASS NO.	WELDING CURRENT AMPS	WELDING CURRENT WIRE FEED SPEED	WELDING CURRENT VOLTS	TRAVEL SPEED (mm/m)	JOINT DETAIL
1	360-440	2.9-3.7	29.0-36.0	279-686	8mm FILLET WELD

PRIMARY USE:
STIFFENER TO WEB
(AND OTHER APPLICATIONS AS NEEDED)



PROCEDURE QUALIFICATION RECORD 95-3 (EXPIRES 2/6/00)
PROCEDURE QUALIFICATION RECORD 95-4 (EXPIRES 2/17/00)

WELDING PROCEDURE FOR AWS PREQUALIFIED JOINTS

W44X

PROCEDURE SPECIFICATIONS

MATERIAL SPECIFICATION	ASTM A-36, A-572, A-588
WELDING PROCESS	SUBMERGED ARC WELDING
MANUAL OR MACHINE	SEMIAUTOMATIC OR MACHINE
POSITION OF WELDING	2F
FILLER METAL SPECIFICATION	AWS A5.17
WELD METAL CLASSIFICATION	F7A2-EM12K
WIRE/FLUX	LINCOLN L61/761
WIRE DIAMETER	2.381mm
SINGLE OR MULTIPLE ARC	SINGLE ARC
POLARITY	DC-
ROOT TREATMENT	MANUAL CLEANING
PREHEAT AND INTERPASS TEMPERATURE	SEE PREHEAT CHART
ELECTRICAL STICK-OUT	25.4mm
SHIELDING GAS	D.N.A.

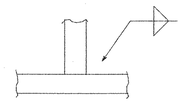
V.A.O.T. RECEIVED CK'D BY _____ OK'D BY JWC
NOV 23 1999
RESUBMIT _____ APPROVED √
BY DATE 12-13-99

REVISED:
ORIGINAL ISSUE: 3/4/96

WELDING PROCEDURE

PASS NO.	WELDING CURRENT AMPS	WELDING CURRENT WIRE FEED SPEED	WELDING CURRENT VOLTS	TRAVEL SPEED (mm/m)	JOINT DETAIL
1	360-440	2,896 - 3,708	29.0-36.0	279.4 - 685.4	8mm FILLET WELD

PRIMARY USE:
STIFFENER TO FLANGE
(AND OTHER APPLICATIONS AS NEEDED)



PROCEDURE QUALIFICATION RECORD FCM-96-2 (EXPIRES 1/10/01)
PROCEDURE QUALIFICATION RECORD FCM-96-5 (EXPIRES 4/15/01)

WELDING PROCEDURE FOR AWS PREQUALIFIED JOINTS

W54X

PROCEDURE SPECIFICATIONS

MATERIAL SPECIFICATION	ASTM A709 GRADES: 250, 345, 345W
WELDING PROCESS	SUBMERGED ARC WELDING
MANUAL OR MACHINE	SEMIAUTOMATIC
POSITION OF WELDING	2F
FILLER METAL SPECIFICATION	AWS A5.17
WELD METAL CLASSIFICATION	F7A2-EM12K
WIRE/FLUX	LINCOLN L61/960
WIRE DIAMETER	2.0 mm
SINGLE OR MULTIPLE ARC	SINGLE ARC
POLARITY	DC+
ROOT TREATMENT	MANUAL CLEANING
PREHEAT AND INTERPASS TEMPERATURE	SEE PREHEAT CHART
ELECTRICAL STICK-OUT	25.4 mm
SHIELDING GAS	D.N.A.

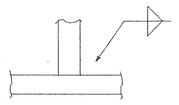
V.A.O.T. RECEIVED CK'D BY _____ OK'D BY JWC
NOV 23 1999
RESUBMIT _____ APPROVED √
BY DATE 12-13-99

REVISED:
ORIGINAL ISSUE: 7/1/96

WELDING PROCEDURE

PASS NO.	AMPS	WIRE FEED SPEED (m/MIN.)	VOLTS	TRAVEL SPEED (mm/MIN.)	JOINT DETAIL
1	400-550	3.1-5.5	32.5-39.5	368-495	8 mm FILLET WELDS

PRIMARY USE:
CROSS FRAMES AND DIAPHRAGMS
(AND OTHER APPLICATIONS AS NEEDED)



PROCEDURE QUALIFICATION RECORD 95-1 (EXPIRES 2/3/00)
PROCEDURE QUALIFICATION RECORD 95-2 (EXPIRES 3/3/00)

PROCESSED
CK'D BY GWC OK'D BY AP
NOV 15 1999
DATE X AS NOTED 12/14/99

DIRECT ALL QUESTIONS TO:
SCOTT W. KOPP, WELDING TECHNICIAN
HIGH STEEL STRUCTURES, INC.
PHONE: (717)390-4232

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

WELDING PROCEDURES
VT. 116 OVER NEW HAVEN RIVER
VT. 116 STA. 1+255.00 TO STA. 1+299.00
TOWN OF BRISTOL, BRIDGE NO. 10
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13) 078
CONTRACTOR BECK & BELLUCCI, INC.
IN CHARGE: ALLEN (IH) MADE BY: DWL CHK'D BY: _____ DATE: _____
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: WP1

99109 X1 11/11/99 11/11/99Approval TO:Vermont Agency Of Transportation Set:3

PLOTTED: 11 NOV 1999 11:41:24 BY: dlee

METRIC

METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	

GENERAL SHOP NOTES

SPECIFICATIONS:
ALL MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH THE STATE OF VERMONT, AGENCY OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1995, AND ITS LATEST REVISIONS.

MATERIAL:
UNLESS NOTED OTHERWISE, ALL STEEL TO BE AASHTO M270M GRADE 345W.
(T) INDICATES CHARPY V-NOTCH TESTING REQUIRED.

SHOP PROCEDURE:
ALL FLANGE AND WEB PLATE SPLICES TO BE MADE BEFORE FINAL FITTING AND WELDING INTO GIRDER.
CAMBER TOLERANCE: -0 mm TO +19 mm
ALL RE-ENTRANT CUTS TO HAVE 25 MIN. RADIUS.
BEARING AREA, AS NOTED ON GIRDER DETAILS, INDICATES AREA THAT MUST BE FLAT AND TRUE TO RECEIVE LEVELING PLATE.
ONLY LOW STRESS DIE STAMPS MAY BE USED FOR MARKING IN AREAS NOT EXPOSED ON THE FINISHED STRUCTURE.

INSPECTION:
SHOP INSPECTION BY TO BE DETERMINED

WELDING:
ALL WELDING IS TO CONFORM TO AWS D1.5-96.
WELDING METHODS, PROCEDURES, AND MATERIALS SHALL COMPLY WITH THE SPECIFIC PROCEDURE DESIGNATED IN THE WELD SYMBOL TAIL.
FOR WELDING STIFFENERS AND CONNECTION PLATES TO GIRDERS, SEE STIFFENER WELDING DETAIL.

NON-DESTRUCTIVE TESTING:
FLANGE AND WEB PLATE SPLICES TO BE RADIOGRAPHICALLY TESTED, AS CALLED FOR ON DRAWINGS PREFIXED 'FS' AND 'WC', BY H.S.S.I.

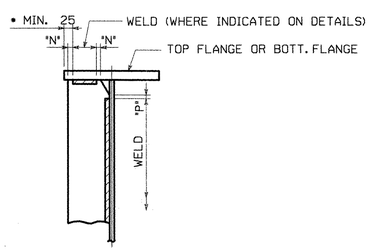
MAGNETIC PARTICLE INSPECTION IS REQUIRED ON AT LEAST 300 mm OF EVERY 3000 mm LENGTH OF FILLET WELD AND 300 mm OF SUCH WELDS LESS THAN 3000 mm IN LENGTH ON GIRDER WEB TO FLANGE AND CONNECTION PLATES TO WEB AND FLANGE WELDS.

CLEANING:
ALL STEEL TO BE BLAST CLEANED TO SSPC-SP10 (NEAR WHITE).

PAINTING:
NO PAINT

DRAWING REFERENCE:

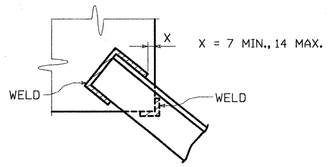
FLANGE SPLICES	-PREFIXED 'FS'
WEB CAMBERS	-PREFIXED 'WC'
GIRDER JOB STANDARDS	-PREFIXED 'X'
CROSSFRAME JOB STDS.	-PREFIXED 'M'



'N' = 7 MIN., 14 MAX. (U.N.) •
'P' = 14, ±7

STIFFENER WELDING DETAIL
• WELDS MUST STOP 25 MINIMUM FROM EDGE OF FLANGE

ALL CROSSFRAME WELDS ARE TO BE TERMINATED FROM EDGE OF GUSSET PLATES, FILL PLATES OR ANGLES AS INDICATED.



SECONDARY MEMBER WELDING DETAIL

RECEIVED
CK'D BY: awc OK'D BY: AP
NOV 16 1999
RESUBMIT_____ APPROVED △
DATE: 12/14/99

NO.	REVISION	BY	DATE
△			
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HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

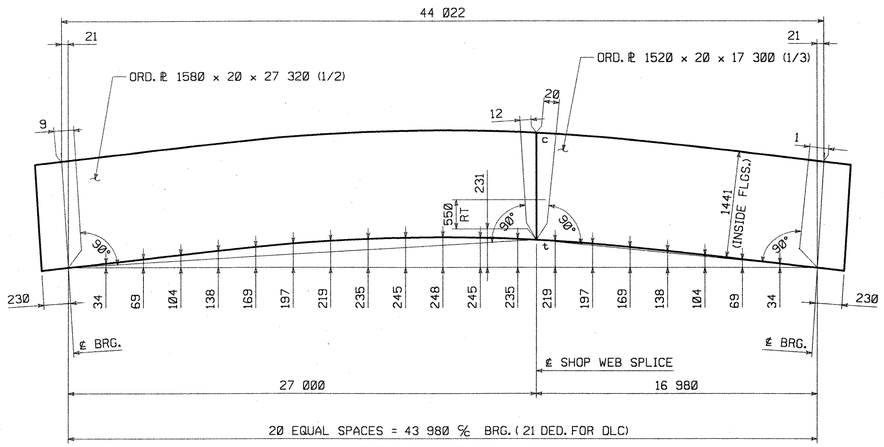
GENERAL SHOP NOTES
VT. 116 OVER NEW HAVEN RIVER
VT. 116 STA. 1+255.00 TO STA. 1+299.00
TOWN OF BRISTOL, BRIDGE NO. 10
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13) 079
CONTRACTOR BECK & BELLUCCI, INC.
IN CHARGE: ALLEN (IH) MADE BY: kma CHK'D BY: SLK DATE: 10-11-99
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: GN1 OF GN1

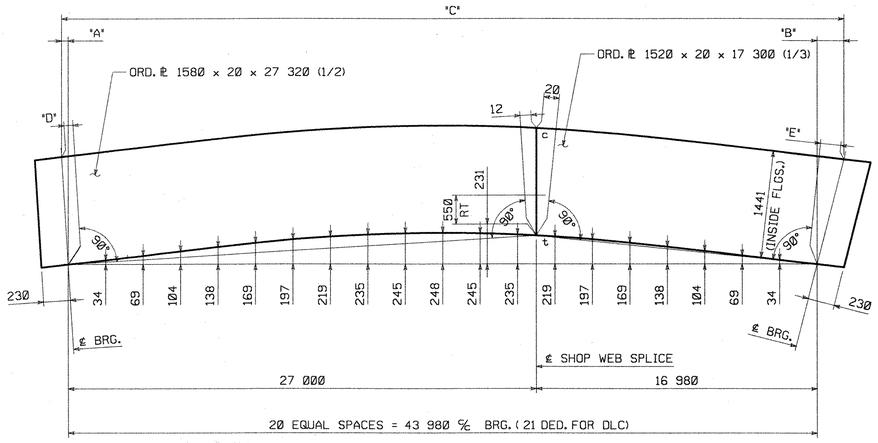
PLOTTED: 12 NOV 1999 14:28:29 BY: ashue

METRIC

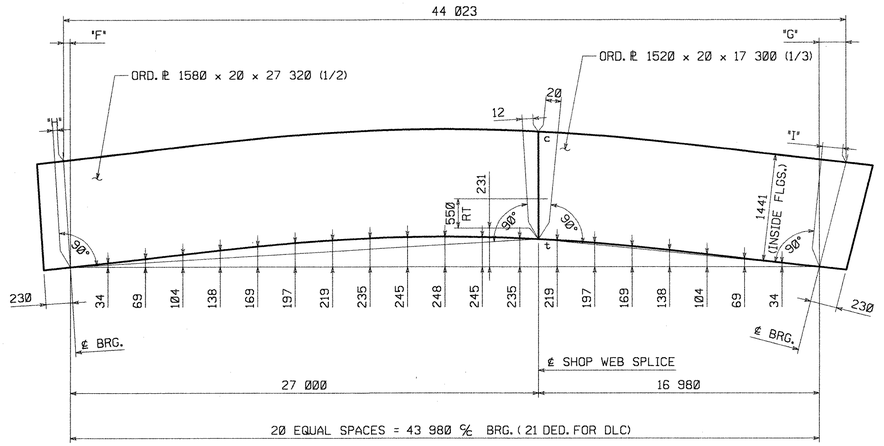
METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	



CAMBER DIAGRAM - G1A



MARK	'A'	'B'	'C'	'D'	'E'
G2A	17	25	44 022	5	5
G3A	14	29	44 023	2	9

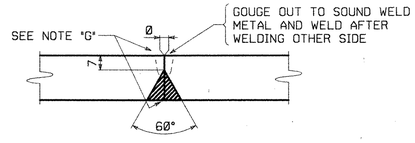


MARK	'F'	'G'	'H'	'I'
G4A	10	33	2	13
G5A	6	37	6	17

RECEIVED
BY GVC OK'D BY AP
NOV 16 1999
RESUBMIT ____ APPROVED X
DATE 12/14/99

NOTES:

FOR GENERAL SHOP NOTES, SEE DRAWING GN1.
ALL WEB PLATES REQUIRE CHARPY V-NOTCH TEST.
THE LETTERS 't' & 'c' AT WEB SPLICES INDICATE TENSION AND COMPRESSION EDGES AT SPLICES.
RT INDICATES RADIOGRAPHIC TESTING FOR 1/6 OF THE WEB DEPTH AT TENSION EDGE PLUS 25% OF THE REMAINDER.



TYPICAL WEB PLATE SPLICE

FOR WEB PLATES 14.3 mm TO 50.8 mm THICK (B-L2c-S)
(W71X)

NOTE 'G'

ALL WELDS MAY HAVE A MAXIMUM REINFORCEMENT OF 3 mm. GRIND THE WELDS SMOOTH IN THE AREAS TO BE TESTED AND FOR THE FULL DEPTH OF WEB ON G1A (F.S.) AND G5A (N.S.).

CODE: 30

NO.	REVISION	BY	DATE
1			
2			
3			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

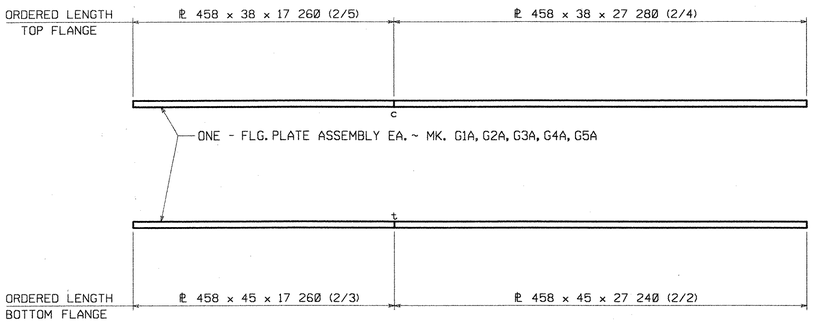
WEB CAMBER DIAGRAMS
VT. 116 OVER NEW HAVEN RIVER
VT. 116 STA. 1+255.00 TO STA. 1+299.00
TOWN OF BRISTOL, BRIDGE NO. 10
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13) 030
CONTRACTOR BECK & BELLUCCI, INC.
IN CHARGE: ALLEN (IH) MADE BY: kma CHK'D. BY: SLK DATE: 10-11-99
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: WC1 OF WC1

PLOTTED: 12 NOV 1999 BY: cshue
14:26:27

METRIC

METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	



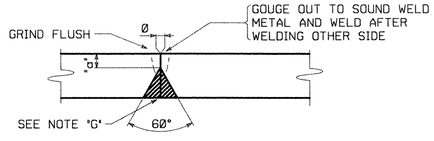
NOTE 'G'

ALL SPLICES MAY HAVE A MAXIMUM REINFORCEMENT OF 3 mm. GRIND SMOOTH AT SPLICES THAT ARE TO BE TESTED AND ALL BOTTOM FLANGE SPLICES.

RECEIVED
BY GMK OK'D BY AP
NOV 16 1999
RESUBMIT ____ APPROVED X
DATE 12/14/99

NOTES:

FOR GENERAL SHOP NOTES, SEE DRAWING GN1.
ALL FLANGE PLATES REQUIRE CHARPY V-NOTCH TEST.
THE LETTERS 't' & 'c' AT FLANGE SPLICES INDICATE TENSION AND COMPRESSION SPLICES RESPECTIVELY.
ALL SPLICES MARKED 't' TO BE RADIOGRAPHICALLY TESTED 100%.
ALL SPLICES MARKED 'c' TO BE RADIOGRAPHICALLY TESTED 25%.



FLG. THK.	'a'
38	10
45	13

TYPICAL FLANGE PLATE SPLICE

FOR FLANGE PLATES 50.8 mm THICK AND UNDER (B-L2c-S) (W71X)

NO.	REVISION	BY	DATE
1			
2			
3			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

FLANGE SPLICE DETAILS
VT. 116 OVER NEW HAVEN RIVER
VT. 116 STA. 1+255.00 TO STA. 1+299.00
TOWN OF BRISTOL, BRIDGE NO. 10
STATE OF VERMONT
AGENCY OF TRANSPORTATION

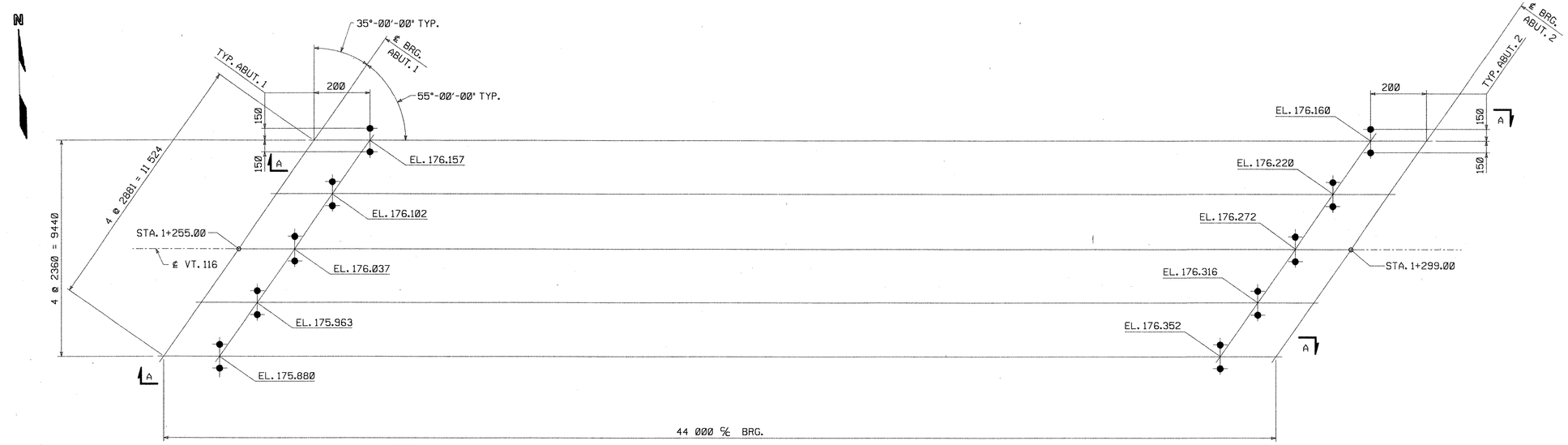
STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13) 081
CONTRACTOR BECK & BELLUCCI, INC.
IN CHARGE: ALLEN (IH) MADE BY: Kma CHK'D BY: SLK DATE: 10-11-99
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: FS1 OF FS1

CODE:30

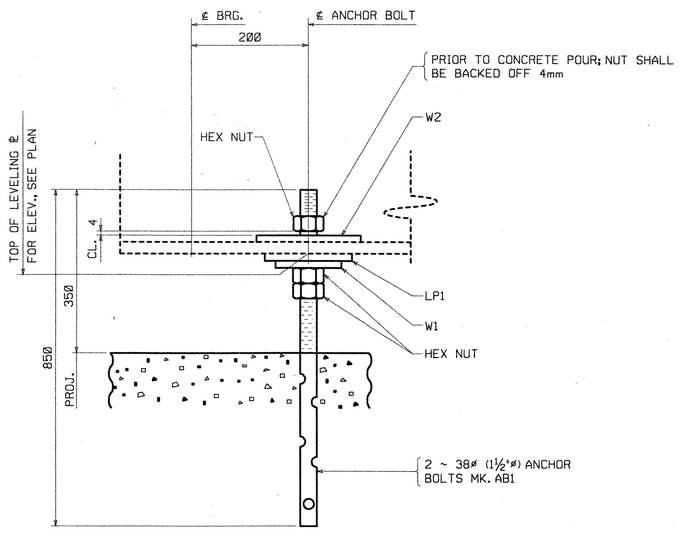
PLOTTED: 10 NOV 1999
14:28:27
BY: ashue

METRIC

METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	



ANCHOR BOLT PLAN



SECTION A

NOTES:

ALL DIMENSIONS ARE GIVEN HORIZONTALLY.
ALL STATIONS & ELEVATIONS ARE GIVEN IN METERS.
ELEVATIONS ARE GIVEN TO TOP OF LEVELING ℄.
ANCHOR BOLT SETTINGS MUST BE EXACT IN EVERY DETAIL IN ACCORDANCE WITH THIS DRAWING.
ANCHOR BOLTS ARE FURNISHED BY HIGH STEEL STRUCTURES, INC. AND SET BY OTHERS.
WORK THIS DWG. WITH DWG. E2

RECEIVED
VTRANS OK'D BY AP
NOV 16 1999
RESUBMIT ____ APPROVED X
DATE 12/6/99

NO.	REVISION	BY	DATE
△			
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HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

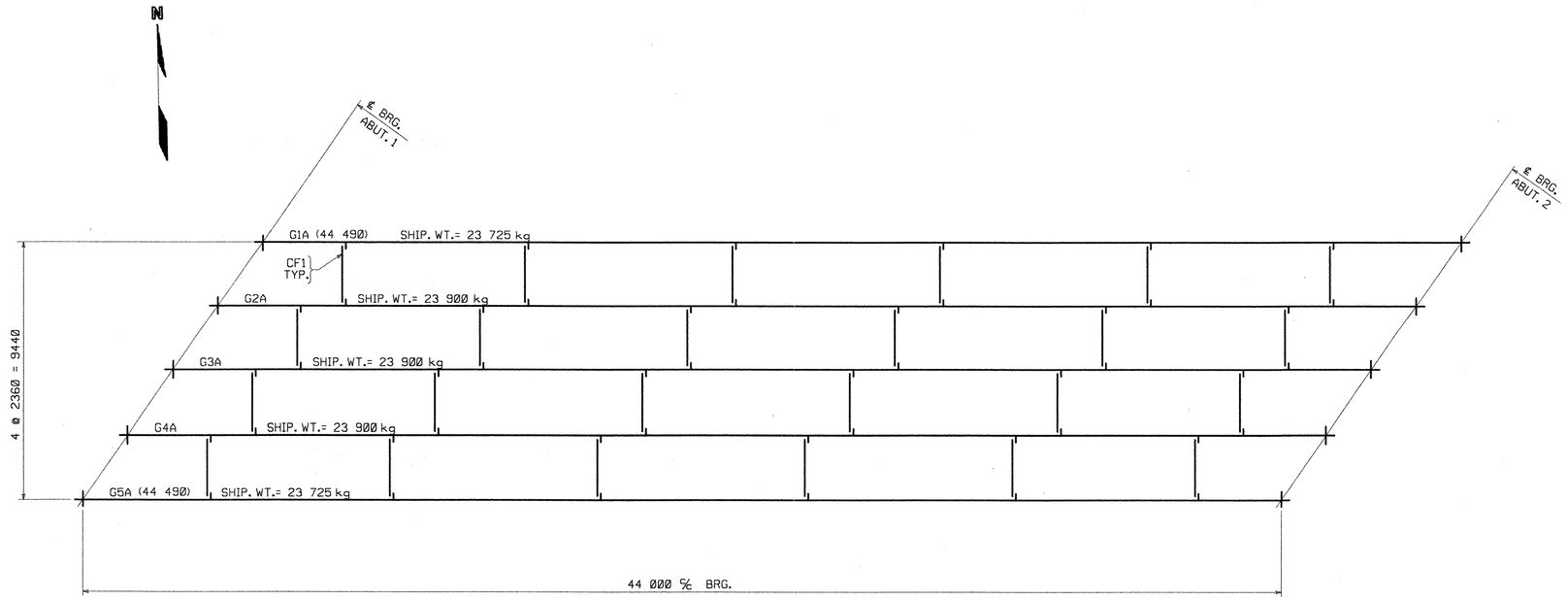
ANCHOR BOLT PLAN
VT. 116 OVER NEW HAVEN RIVER
VT. 116 STA. 1+255.00 TO STA. 1+299.00
TOWN OF BRISTOL, BRIDGE NO. 10
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13) 082
CONTRACTOR BECK & BELLUCCI, INC.
IN CHARGE: ALLEN (IH) MADE BY: AGG CHK'D. BY: PFH DATE: 11-8-99
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: E1 OF E2

99109 X1 11/11/99 11/11/99Approval TO:Vermont Agency Of Transportation Set:4
PLOTTED: 10 NOV 1999 14:29:37 BY: cshue

METRIC

METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	



ERECTION PLAN

FIELD BOLT SUMMARY

(4% ADDITIONAL BOLTS ADDED)

ASTM A325 TYPE 3 BOLTS WITH HVY. HEX HEAD AND ASTM A563 GRADE DH3 HVY. HEX NUT

399 - 22.2ø - (⅞"ø) HIGH STRENGTH BOLTS x 63.5 (Ø'-2½) } (RCT)

399 HARD. FLAT F436 WEATHERING WASHERS FOR 22.2ø (⅞"ø) H. S. BOLTS } (RCT)

(RCT) INDICATES ROTATIONAL CAPACITY TESTED BOLTS. DO NOT MIX NUTS, BOLTS AND WASHERS FROM DIFFERENT CONTAINERS UNLESS ALL NUTS, BOLTS AND WASHERS HAVE THE SAME LOT NUMBER.

ERECTOR NOTE: ALL BOLTS MUST BE LOCATED IN ACCORDANCE WITH THIS LIST OF FIELD CONNECTIONS. HIGH STEEL STRUCTURES WILL NOT BE RESPONSIBLE FOR FURNISHING ADDITIONAL BOLTS OR FOR ANY OTHER RELATED COSTS OR DAMAGES RESULTING FROM IMPROPER LOCATION OF BOLTS.

LIST OF FIELD CONNECTIONS — ONE WASHER PER BOLT UNLESS NOTED OTHERWISE

LINE	ACTUAL NO. REQ'D.	BOLT DIAM.	BOLT LENGTH	BOLTS /CONN.	# OF CONNS.	GRIP	THICKNESS OF PCS. CONNECTED					PIECES CONNECTED AND REMARKS	ENGLISH BOLT SIZE
1	384	22.2	63.5	8	48	28	14	14				CROSSFRAME TO CONN. ℄	(⅞ x 2½)
2													
3													

NOTES:

NO CREDIT WILL BE ALLOWED FOR WORK PERFORMED BY OTHERS IN REPLACING OR CORRECTING MATERIALS OR WORKMANSHIP COVERED BY THIS DRAWING UNLESS EXPRESSLY AUTHORIZED BY HIGH STEEL STRUCTURES, INC.

ALL DIMENSIONS ARE GIVEN HORIZONTALLY (U.N.).

DIMENSIONS GIVEN THUS: (44 490) ARE THE SHIPPING LENGTHS OUT TO OUT OF FASCIA GIRDERS.

HIGH STEEL STRUCTURES, INC. DOES NOT SUPPLY SHEAR STUDS & EXPANSION DAM MATERIALS.

FOR BEARING ASSEMBLIES, SEE DRAWING E1.

WORK THIS DRAWING WITH DRAWING E1.

NOTICE: WEIGHTS OF MEMBERS LISTED ON THESE DRAWINGS ARE ESTIMATED WEIGHTS AND ACTUAL WEIGHTS WILL VARY. HIGH STEEL STRUCTURES, INC. WILL NOT BE RESPONSIBLE FOR ANY ERECTION PROCEDURES, SHIPPING PROCEDURES, ETC. DEVELOPED USING ESTIMATED WEIGHTS AS SHOWN.

RECEIVED BY GWC OK'D BY AP
NOV 16 1999
RESUBMIT ____ APPROVED X
DATE 12/6/99

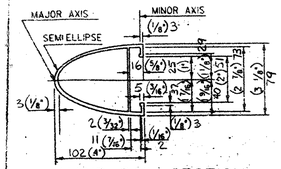
NO.	REVISION	BY	DATE
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HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

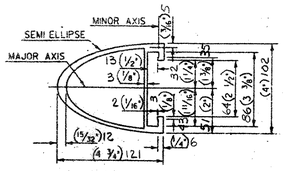
ERECTON PLAN
VT. 116 OVER NEW HAVEN RIVER
VT. 116 STA. 1+255.00 TO STA. 1+299.00
TOWN OF BRISTOL, BRIDGE NO. 10
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. PROJECT NO. ER 021-1(13) 083
CONTRACTOR BECK & BELLUCCI, INC.
IN CHARGE: ALLEN (IH) MADE BY: AGS CHK'D. BY: PFH DATE: 11-8-99
CONTRACT NUMBER: VT-99109-1 DRAWING NUMBER: E2 OF E2

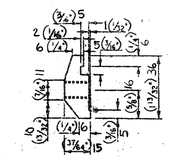
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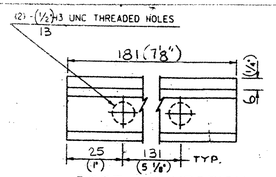
HAND RAIL SECTION



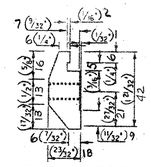
BARRIER RAIL SECTION



POST CONNECTION
HAND RAIL SECTION



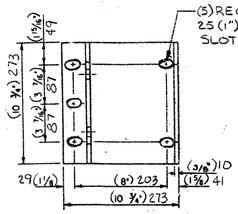
POST CONNECTION
ELEVATION



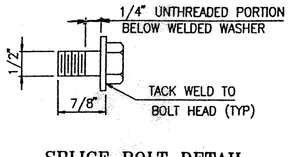
POST CONNECTION
BARRIER RAIL SECTION

96 — HAND RAIL CLAMP BARS - CB-01-H

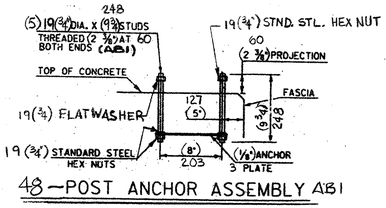
192 — BARRIER RAIL CLAMP BARS - CB-03-A



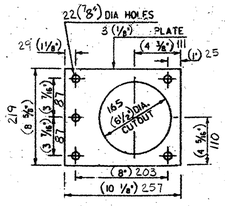
POST BASE
PLAN



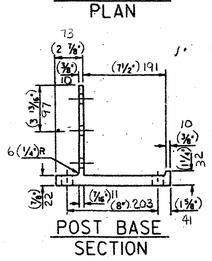
SPLICE BOLT DETAIL



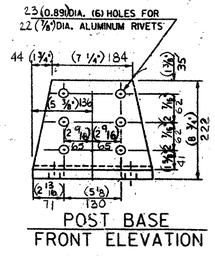
48 — POST ANCHOR ASSEMBLY AB1



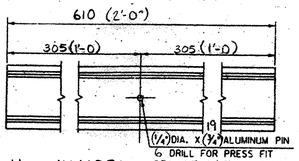
48 — ANCHOR PLATE - AP-1



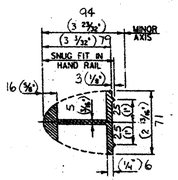
POST BASE
SECTION



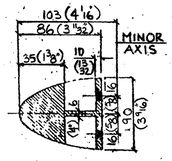
POST BASE
FRONT ELEVATION



11 — HANDRAIL SPLICE BAR - SS-12-A
REAR ELEVATION



HAND RAIL
SPLICE BAR SECTION



BARRIER RAIL SPLICE SECTION

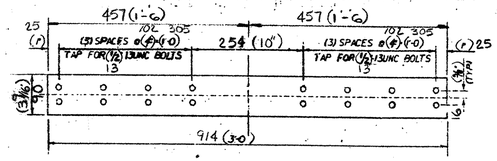
GENERAL NOTES

- MATERIAL FOR POSTS, BASES, & BALUSTER FRAMES SHALL BE ALUM. PER ASTM B221, ALLOY 6061-T6 OR ALLOY 6351-T5.
- RAILS, SLEEVES, CLAMP BARS, & PINS TO BE ALLOY 6061-T6 OR ALLOY 6351-T5, PER ASTM B221.
- WELD WIRE SHALL BE AWS ER5356 ELECTRODE WIRE.
- MATERIAL FOR ALUMINUM WASHERS SHALL BE ASTM B209, ALLOY ALCLAD 2024-T4.
- MATERIAL FOR RIVETS SHALL BE ASTM B316, ALLOY 6061-T6, RIVETS TO BE BUTTON HEAD AND CONE POINT, COLD DRIVEN.
- ENDS OF RAIL SHALL BE CUT SQUARE AND GROUND FREE OF BURRS AND ROUGH EDGES.
- POSTS SHALL BE NORMAL TO GRADE AND RAILING PARALLEL TO GRADE.
- ANCHOR BOLTS, WASHERS, & HEX NUTS SHALL BE STEEL IN ACCORDANCE WITH ASTM A449 OR ASTM A325, GALV. PER ASTM A153.
- ANCHOR PLATES SHALL BE COMMERCIAL QUALITY CARBON STEEL PER ASTM A569 (PLAIN). AASHTO M 183M
- CLAMP BAR BOLTS SHALL BE STNL. STL. PER ASTM A193, GRADE B8.
- PREFORMED FABRIC BEARING PADS SHALL BE COMPOSED OF ONE OR MORE LAYERS (8 OZ.) 226.8g COTTON DUCK IMPREGNATED AND BOUND WITH HIGH QUALITY NATURAL RUBBER OR OF EQUIVALENT AND EQUALLY SUITABLE MATERIALS COMPRESSED INTO RESILIENT PADS OF UNIFORM THICKNESS. THE FINISHED PADS SHALL WITHSTAND COMPRESSION LOADS PERPENDICULAR TO THE TOP OF PAD OF NOT LESS THAN (10,000 p.s.i.) WITHOUT DETRIMENTAL REDUCTION IN THICKNESS OR EXTRUSION. 68.9 MPa.
- RAILING SHALL BE ATTACHED TO A MIN. OF 3 POSTS WHEN POSSIBLE.
- ALL THREADS TO BE UNC CLASS 2A/2B.
- ALL EXTRUSION TOLERANCES NOT SHOWN SHALL BE IN ACCORDANCE w/ ASTM B221.

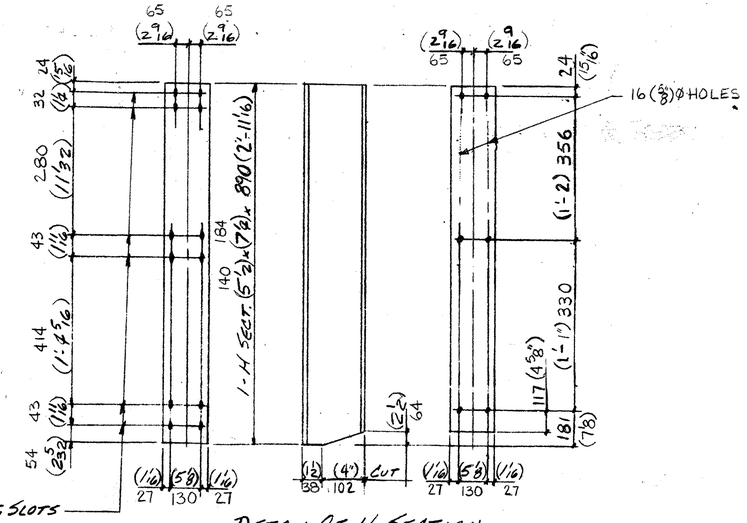
ALL ALUMINUM COMPONENTS SHALL BE ANODIZED. COLOR: DARK BLACK.

ALL EXPOSED SURFACES OF HARDWARE SHALL BE PAINTED TO MATCH COLOR OF ANODIZED RAIL, EXCEPT EXPOSED PORTION OF ANCHOR BOLTS WHICH SHALL BE TOUCHED UP IN THE FIELD.

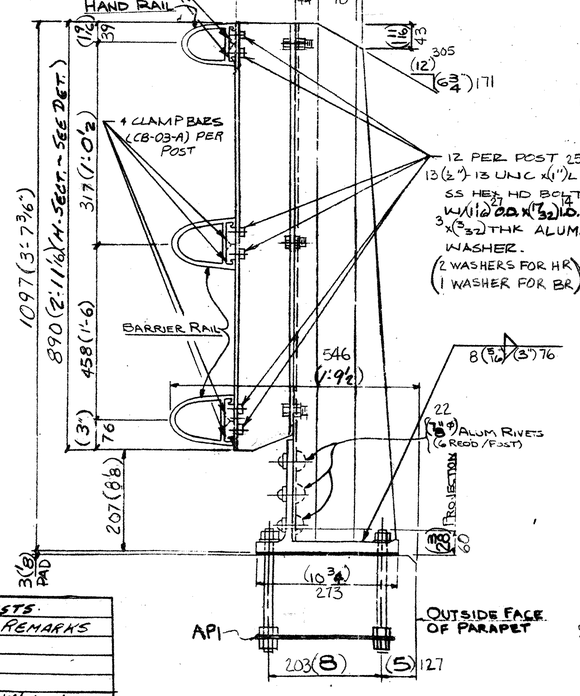
TOUCH UP PAINT TO BE FURNISHED AS REQUIRED.

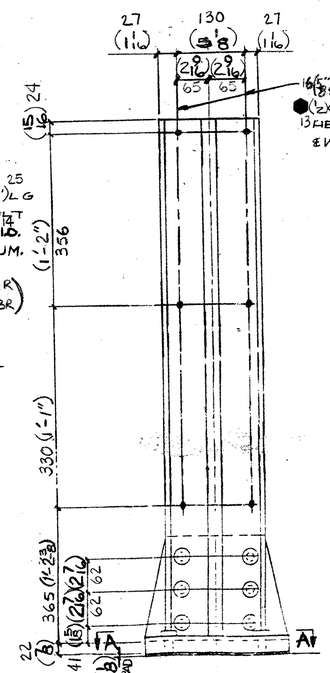


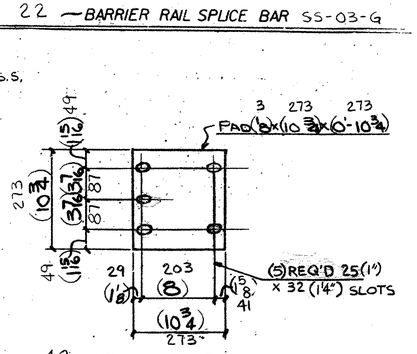
22 — BARRIER RAIL SPLICE BAR SS-03-G



DETAIL OF H-SECTION







48 - FABRIC PADS

● BOLTS FOR ATTACHING OFFSET BLOCK (H-SECTION) TO POST

48 - FABRICATED 3-LINE RAILING POSTS

QTY.	DESCRIPTION	POST MK	LENGTH	REMARKS
48	POST		1075 (3'-6 9/16")	
48	H-SECTION		890 (2'-11 1/16")	
48	BASE		273 (10 3/4")	
288	(13/32") Ø S.S. HX. HD BOLT		40 (1 1/2")	W/NUT & WASH.
288	(22) (7/8") Ø ALUM. RIVETS			

RECEIVED
CK'D BY GWC OK'D BY MAP
DEC 23 1999
RESUBMIT ____ APPROVED AS NOTED
BY ____ DATE DEC 30 1999

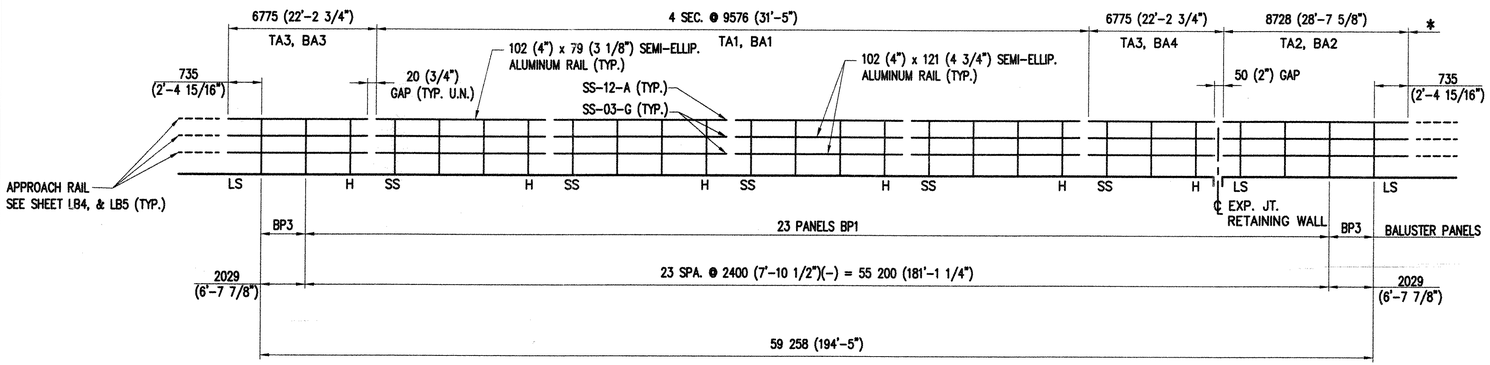
APPROVED: ____ REC'D APPROVAL ____ DRAWING ____

L. B. FOSTER CO.
1016 GREENTREE RD.
PITTSBURGH, PENNSYLVANIA 15220

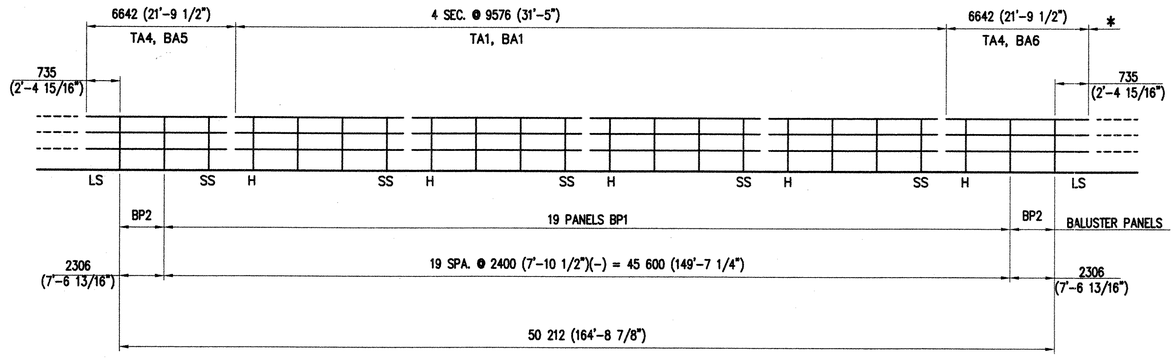
FOR: BECK AND BELLUCCI, INCORPORATED
VERMONT AGENCY OF TRANSPORTATION
TOWN OF BRISTOL, ADDISON COUNTY - PROJ NO. ERQ21-1(13)
3-LINE ALUM BRIDGE RAIL 089
GENERAL NOTES AND TYPICAL DETAILS

MADE BAB DATE 11/10/99 JOB NO A19199 CUST NO ____
CHECK KAD DATE 11/12/99 DRAWING LB1 REV NO ____

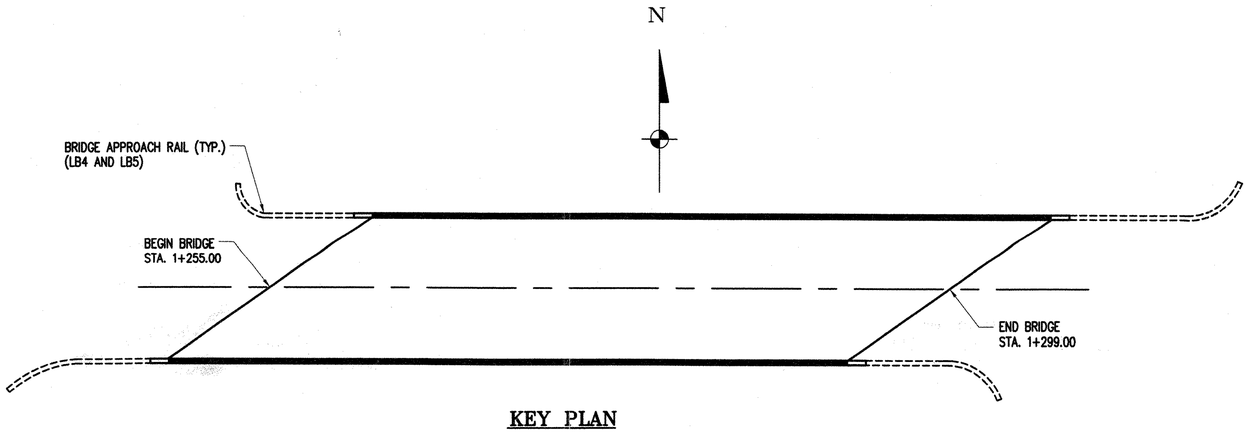
REV.	DESCRIPTION	BY	DATE	APP'D



INSIDE ELEV. ~ NORTH RAIL



OUTSIDE ELEV. ~ SOUTH RAIL



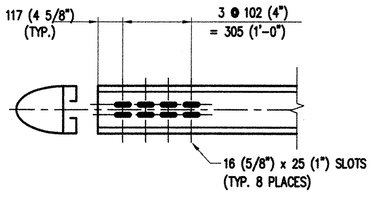
KEY PLAN

RAIL END LEGEND

H – HOLE SIDE

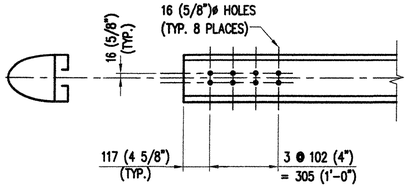
SS – SHORT SLOT SIDE

LS – LONG SLOT SIDE



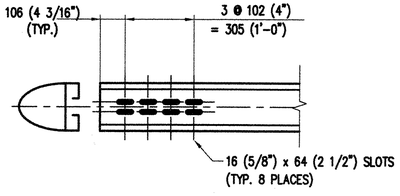
SLOT DETAIL A

(BACK ELEVATION VIEW)



SLOT DETAIL B

(BACK ELEVATION VIEW)



SLOT DETAIL C

(BACK ELEVATION VIEW)

BILL OF MATERIAL

PIECE MARK	NO. REQ'D.	DESCRIPTION	LENGTH M.M.	LENGTH FT.	LENGTH IN.	REMARKS
	48	FABRICATED ALUM. POSTS				
CB-01-H	96	ALUMINUM CLAMP BARS	181	0	7 1/8	HAND RAIL
CB-03-A	192	ALUMINUM CLAMP BARS	181	0	7 1/8	BARRIER RAIL
	576	13 (1/2")ø STNL. STL. HEX HD. BOLT	25	0	1	
	768	27 (1 1/16") O.D. x 14 (17/32") I.D. x 3 (3/32") THK. ALUM. FLATWASHER				
AB-1	48	ANCHOR ASSEMBLY consisting of:				
	240	19 (3/4")ø STEEL STUD	248	0	9 3/4	
	720	19 (3/4") STEEL HEX NUT				
	240	19 (3/4") STEEL FLATWASHER				
AP-1	48	STEEL PLATE 3 (1/8") x 219 (8 5/8")	257	0	10 1/8	
	48	FABRIC PAD 3 (1/8") x 273 (10 3/4")	273	0	10 3/4	
SS-12-A	11	ALUMINUM SPLICE SLEEVE	610	2	0	
	11	6 (1/4")ø ALUMINUM PIN	19	0	0 3/4	
SS-03-G	22	ALUMINUM SPLICE SLEEVE	914	3	0	
	352	13 (1/2")ø – 13 UNC S.S. HEX HD. BOLT	22	0	0 7/8	PARTIALLY THREADED
	352	13 (1/2")ø STNL. STL. WASHER				TACK WELD TO BOLT HEAD
TA1	8	102 (4") x 79 (3 1/8") SEMI-ELLIP. ALUM. RAIL	9576	31	5	
TA2	1	"	8728	28	7 5/8	
TA3	2	"	6775	22	2 3/4	
TA4	2	"	6642	21	9 1/2	
BA1	16	121 (4 3/4") x 102 (4") SEMI-ELLIP. ALUM. RAIL	9576	31	5	NOTE 1
BA2	2	"	8728	28	7 5/8	NOTE 4
BA3	2	"	6775	22	2 3/4	NOTE 2
BA4	2	"	6775	22	2 3/4	NOTE 1
BA5	2	"	6642	21	9 1/2	NOTE 3
BA6	2	"	6642	21	9 1/2	NOTE 2

NOTE 1: SEE SLOT DETAIL A 1~END, DETAIL B 1~END.
NOTE 2: SEE SLOT DETAIL C 1~END, DETAIL B 1~END.
NOTE 3: SEE SLOT DETAIL C 1~END, DETAIL A 1~END.
NOTE 4: SEE SLOT DETAIL C BOTH ENDS.

NOTE:
- THIS CONTRACT IS BASED UPON THE CONTRACTOR SETTING AND SPACING THE ANCHOR BOLTS TO THE MEASUREMENTS SHOWN ON THE APPROVED SHOP DRAWINGS. THE L.B. FOSTER CO. WILL NOT BE RESPONSIBLE FOR WORK NECESSITATED BY ANY OTHER SETTING AND SPACING.
- THIS DRAWING IS NOT TO SCALE.
- FOR GENERAL NOTES AND TYPICAL DETAILS SEE DRAWING LB1.
- LENGTH OF RAILING ON THIS SHEET IS 112.4 M (369 LF) PAY LENGTH.
- POST SPACING IS MEASURED HORIZONTALLY.
- SPLICE GAP AT SLEEVE = 20 (3/4") TYP. U.N.
- * RAIL LENGTHS DO NOT INCLUDE END CAPS AND/OR GAPS.
- COMPENSATION FOR VERTICAL CURVE IS NOT NECESSARY.
- METRIC DIMENSIONS IN MILLIMETERS (mm) UNLESS NOTED OTHERWISE.

RECEIVED
CK'D BY GWC OK'D BY MAP
DEC 23 1999
RESUBMIT ____ APPROVED X
BY DATE DEC 30 1999

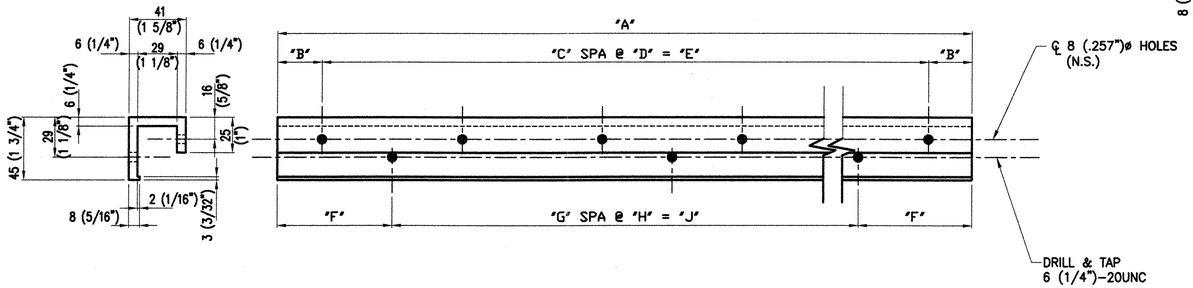
APPROVED: ____ REC'D APPL ____ DRAWING ____

L. B. FOSTER CO.
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

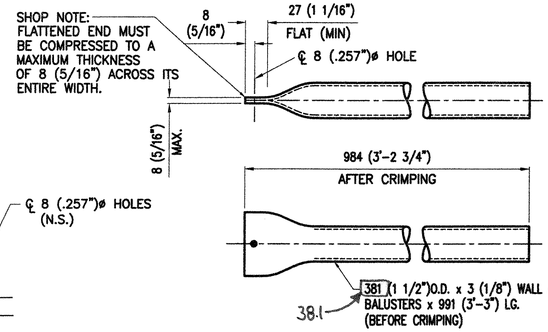
FOR: BECK AND BELLUCCI, INCORPORATED
STATE OF VERMONT AGENCY OF TRANSPORTATION
TOWN OF BRISTOL, ADDISON COUNTY – PROJ. No. ER 021-1(13)
3-LINE ALUM. BRIDGE RAIL – FOR VT. ROUTE 116 (MINOR ARTERIAL)
ELEVATION, KEY PLAN, AND BILL OF MATERIAL 085

MADE BAB DATE 11/9/99 JOB NO. A19199 CUST. NO.
CHECK KAD DATE 11/12/99 DRAWING LB2 REV. NO.

REV	DESCRIPTION	BY	DATE	APP'D.

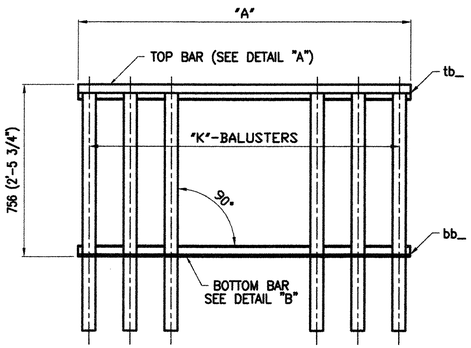


TOP BALUSTER BARS (tb_)
(SEE BELOW FOR DIMS)



BALUSTERS WITH 3 (1/8") WALL AND T4 TEMPER USED IN LIEU OF 2 (1/16") WALL AND T6 TEMPER DUE TO SUPERIOR EXPANDING QUALITIES

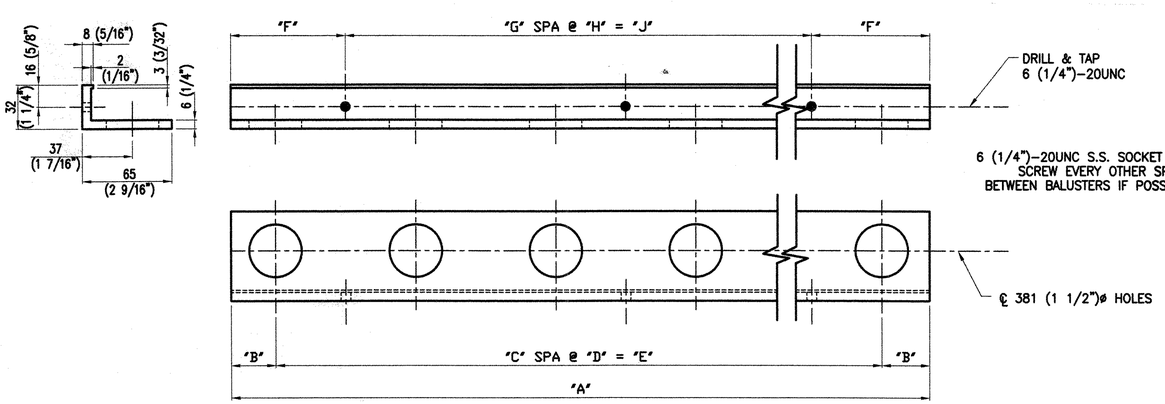
548 – REQ'D BALUSTERS



BILL OF MATERIAL

MARK NO.	NO. REQ'D.	DESCRIPTION	LENGTH M.M.	LENGTH FT.	LENGTH IN.	REMARKS
BP1	42	BALUSTER PANELS CONSISTING OF:				
tb	42	TOP PANEL BARS	2184	7	2	ALUM
bb	42	BOTTOM PANEL BARS	2184	7	2	
38.1	504	381 (1 1/2")O.D. x 3 (1/8") WALL BALUSTERS	991	3	3	
	504	6 (1/4")ø PULL MANDREL BLIND RIVET				
	252	6 (1/4") – 20UNC SET SCREWS	13	0	0 1/2	STNL STL
BP2	2	BALUSTER PANELS CONSISTING OF:				
tb	2	TOP PANEL BARS	2089	6	10 1/4	ALUM
bb	2	BOTTOM PANEL BARS	2089	6	10 1/4	
38.1	24	381 (1 1/2")O.D. x 3 (1/8") WALL BALUSTERS	991	3	3	
	24	6 (1/4")ø PULL MANDREL BLIND RIVET				
	12	6 (1/4") – 20UNC SET SCREWS	13	0	0 1/2	STNL STL
BP3	2	BALUSTER PANELS CONSISTING OF:				
tb	2	TOP PANEL BARS	1813	5	11 3/8	ALUM
bb	2	BOTTOM PANEL BARS	1813	5	11 3/8	
20	24	381 (1 1/2")O.D. x 3 (1/8") WALL BALUSTERS	991	3	3	
20	24	6 (1/4")ø PULL MANDREL BLIND RIVET				
10	12	6 (1/4") – 20UNC SET SCREWS	13	0	0 1/2	STNL STL

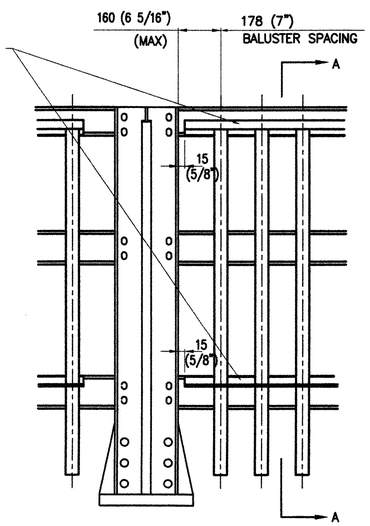
38.1



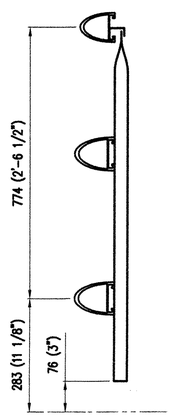
BOTTOM BALUSTER BARS (bb_)
(SEE BELOW FOR DIMS.)

PANEL MK.	PC. MARK	QTY	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"
BP1	tb1 / bb1	42 / 42	2184 (7'-2")	115 (4 1/2")	11	178 (7")	1956 (6'-5")	203 (8")	5	356 (1'-2")	1778 (5'-10")	12
BP2	tb2 / bb2	2 / 2	2089 (6'-10 1/4")	67 (2 5/8")	11	178 (7")	1956 (6'-5")	156 (6 1/8")	5	356 (1'-2")	1778 (5'-10")	12
BP3	tb3 / bb3	2 / 2	1813 (5'-11 3/8")	106 (4 3/16")	9	178 (7")	1600 (5'-3")	195 (7 11/16")	4	356 (1'-2")	1422 (4'-8")	10

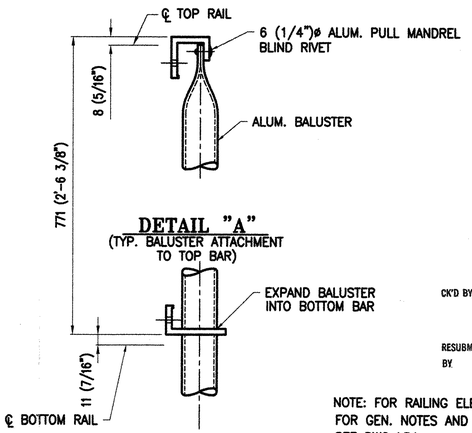
BALUSTER PANEL ASSEMBLY



TYP. ELEVATION



SECTION A–A



DETAIL "A"
(TYP. BALUSTER ATTACHMENT TO TOP BAR)

DETAIL "B"
(TYP. BALUSTER ATTACHMENT TO BOTTOM BAR)

RECEIVED
CK'D BY GWC OK'D BY MAP
DEC 23 1999
RESUBMIT ____ APPROVED AS NOTED
BY ____ DATE DEC 30 1999

NOTE: FOR RAILING ELEV. SEE DWG. LB2.
FOR GEN. NOTES AND TYPICAL DETAILS SEE DWG LB1.

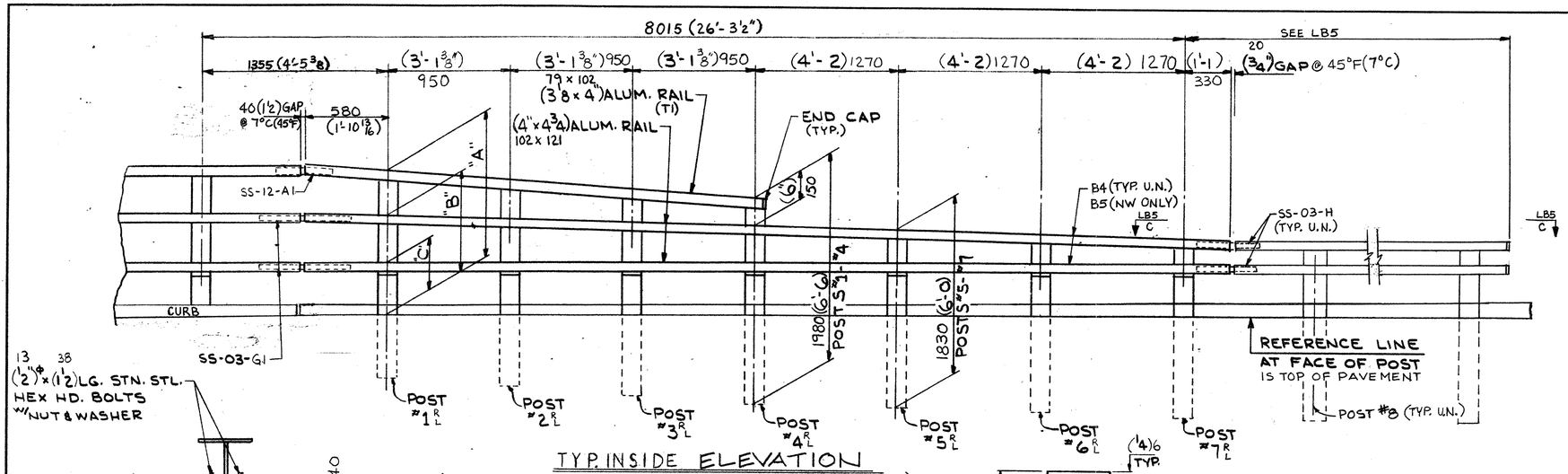
APPROVED: ____ REC'D APPR. ____ DRAWING ____

L. B. FOSTER CO.
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: BECK AND BELLUCCI, INCORPORATED
STATE OF VERMONT AGENCY OF TRANSPORTATION
TOWN OF BRISTOL, ADDISON COUNTY – PROJ. No. ER 021-1(13)
3-LINE ALUM. BRIDGE RAIL
BALUSTER PANEL DETAILS AND BILL OF MAT'L 086

MADE BAB DATE 11/9/99 JOB NO. A19199 CUST. NO. ____
CHECK KAD DATE 11/10/99 DRAWING LB3 REV. NO. ____

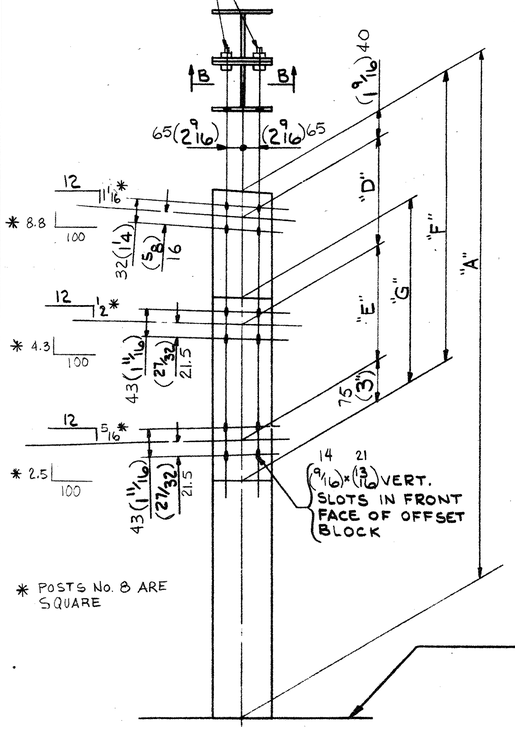
REV	DESCRIPTION	BY	DATE	APP'D.



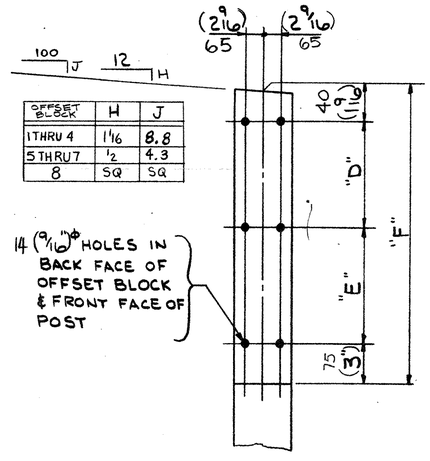
TYP. INSIDE ELEVATION

2 ~REQ'D AS SHOWN (NE & SW)

2 ~REQ'D OPP. HAND (NW & SE)

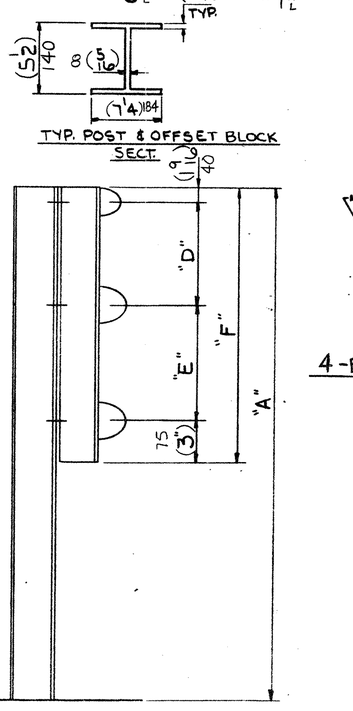


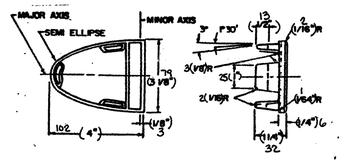
* POSTS No. 8 ARE SQUARE



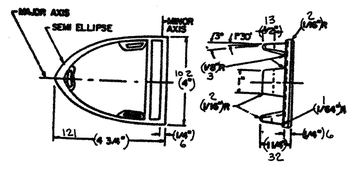
OFFSET BLOCK	H	J
1 THRU 4	1 1/16	8.8
5 THRU 7	1/2	4.3
8	SQ	SQ

SECTION B-B



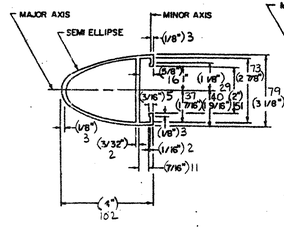


4 -END CAPS FOR HAND RAIL

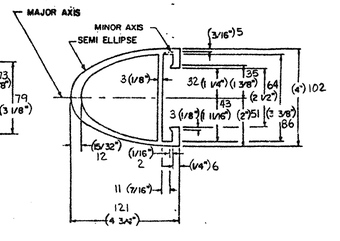


8 -END CAPS FOR BARRIER RAIL

RAIL HEIGHT DIMENSIONS					OFFSET BLOCK DIMENSIONS			
POST No.	QTY.	A	B	C	D	E	F	G
1 RL	2 / 2	1268 (4'-1 15/16")	989 (3'-2 15/16")	543 (1'-9 3/8")	291 (11 7/16")	446 (1'-5 1/2")	851 (2'-9 1/2")	—
2 RL	2 / 2	1184 (3'-10 5/8")	948 (3'-1 5/16")	519 (1'-8 7/16")	248 (9 3/4")	429 (1'-4 7/8")	792 (2'-7 3/16")	—
3 RL	2 / 2	1099 (3'-7 1/4")	906 (2'-11 11/16")	495 (1'-7 1/2")	204 (8 1/16")	411 (1'-4 3/16")	732 (2'-4 13/16")	—
4 RL	2 / 2	1016 (3'-4")	865 (2'-10 1/16")	471 (1'-6 9/16")	162 (6 3/8")	394 (1'-3 1/2")	671 (2'-2 7/16")	—
5 RL	2 / 2	—	810 (2'-7 7/8")	440 (1'-5 5/16")	—	370 (1'-2 9/16")	—	497 (1'-7 9/16")
6 RL	2 / 2	—	756 (2'-5 3/4")	408 (1'-4 1/16")	—	348 (1'-1 11/16")	—	475 (1'-6 11/16")
7 RL	2 / 2	—	700 (2'-3 9/16")	376 (1'-2 13/16")	—	324 (1'-0 3/4")	—	451 (1'-5 3/4")
8	65	—	700 (2'-3 9/16")	376 (1'-2 13/16")	—	324 (1'-0 3/4")	—	451 (1'-5 3/4")



HAND RAIL SECTION



BARRIER RAIL SECTION

BILL OF MATERIAL

PIECE MARK	NO. REQ'D.	DESCRIPTION	LENGTH mm	LENGTH FT.	LENGTH IN.	REMARKS
	16	ALUMINUM POSTS #1RL THRU #4RL	1980	6	6	ON ℄
	77	~do~ #5RL #6RL #7RL & 8	1830	6	0	
	4	ALUMINUM OFFSET BLOCKS	851	2	9 1/2	
	4		792	2	7 3/16	
	4		732	2	4 13/16	
	4		671	2	2 7/16	
	4		497	1	7 9/16	
	4		475	1	6 11/16	
	69	ALUMINUM OFFSET BLOCKS	451	1	5 3/4	ON ℄
CB-01-H	32	ALUMINUM CLAMP BARS	181	0	7 1/8	SEE LB5
CB-03-A	372	~do~	181	0	7 1/8	
	808	13 (1/2")ø STNL. STL. HEX HD. BOLTS	25	0	1	
	872	27 (1 1/16") O.D. x 14 (17/32") I.D. x 3 (3/32") WASHER				
SS-03-G1	8	ALUMINUM SPLICE SLEEVE	914	3	0	
⚠ SS-03-H	18	~do~	533	1	9	
SS-12-A1	4	~do~	610	2	0	
	256	13 (1/2")ø STNL. STL. HEX HD. BOLTS	22	0	0 7/8	PARTIALLY THD'D (SEE LB5)
	256	13 (1/2")ø STNL. STL. WASHER				TACK WELD TO PARTIALLY THD'D BOLT (SEE LB5)
	4	6 (1/4")ø ALUMINUM PINS	19	0	0 3/4	SEE LB5
SS-03-H1	2	ALUMINUM SPLICE SLEEVE	533	1	9	ROADWAY BEND
⚠						
SS-03-H3	2		533	1	9	ROADWAY BEND
SS-03-H4	2		533	1	9	~do~
	4	ALUMINUM END CAP (HANDRAIL)				DRIVE TYPE
	8	ALUMINUM END CAP (BARRIER RAIL)				DRIVE TYPE
T1	4	102 (4") x 79 (3 1/8") SEMI-ELLIP. ALUM. RAIL	3530	11	7	
B1	2	121 (4 3/4") x 102 (4") SEMI-ELLIP. ALUM. RAIL	9220	30	3	SEE NOTE 7
B2	6		8865	29	1	SEE NOTE 7
B3	2		8865	29	1	BENT (NE) SEE NOTE 7
B4	6		7575	24	10 1/4	SEE NOTE 8
B5	2		7575	24	10 1/4	BENT (NW) SEE NOTE 8
⚠ B6	2		6045	19	10	RB – SEE NOTE 6 (NW)
B7	4		6096	20	0	SEE NOTE 7
B8	2		5950	19	6 1/4	BENT-SEE NOTE 6 (SW)
⚠ B9	2		5017	16	5 1/2	RB – SEE NOTE 6 (NE)
B10	2		3750	12	3 3/8	RB – SEE NOTE 6 (SE)
B11	2		3549	11	7 3/4	BENT – SEE NOTE 7 (SE)

RB = ROADWAY BEND

ANODIZE BLACK (SEE LB1 FOR SPEC.)

NOTE 6: SLOT DETAIL D 1~END

NOTE7: SLOT DETAIL D BOTH ENDS

NOTE 8: SLOT DETAIL A 1~END, DET. D 1~END

(SEE LB5 FOR SLOT DETAILS)

RECEIVED
CK'D BY GXC CK'D BY AP
FEB 03 2000
RESUBMIT ____ APPROVED X
BY ____ DATE ____
FEB 4 0 2000

PROJ. No. ER021-1(13)

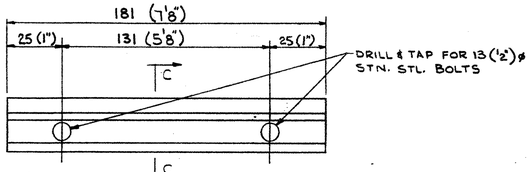
APPROVED: ____ REC'D APPROVAL ____ DRAWING ____

L. B. FOSTER CO.
GENERAL OFFICES
PITTSBURGH, PENNSYLVANIA 15220

FOR: BECK & BELLUCCI, INCORPORATED
VERMONT AGENCY OF TRANSPORTATION
TOWN OF BRISTOL, ADDISON COUNTY
FOR VT. RTE. 116 (MINOR ARTERIAL)
APPROACH RAIL DETAILS 087

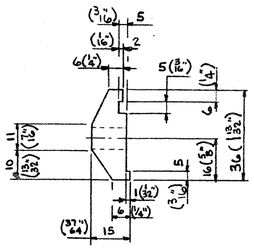
REV.	DESCRIPTION	BY	DATE	APP'D
⚠	REV'D. PER CHGS. ON ARC LENGTHS PER APPVL. PRINTS	DD	1 26 00	

MADE BAB DATE 12/16/99 JOB NO. A19199 CUST NO. ____
CHECK DD DATE 12/16/99 DRAWING LB4 REV. NO. ONE

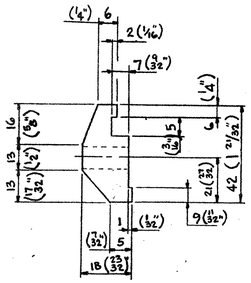


32 REQ'D CLAMP BARS ~ CB-01-H (HANDRAIL)

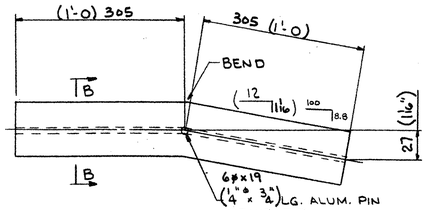
372 REQ'D CLAMP BARS ~ CB-03-A (BARRIER RAIL)



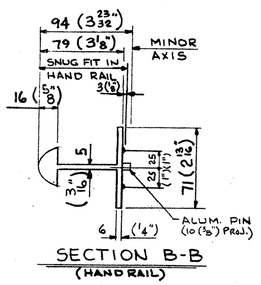
SECTION C-C
(HANDRAIL)
CB-01-H



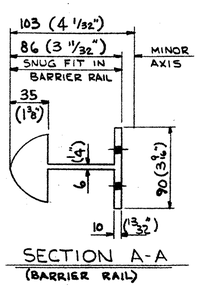
SECTION C-C
(BARRIER RAIL)
CB-03-A



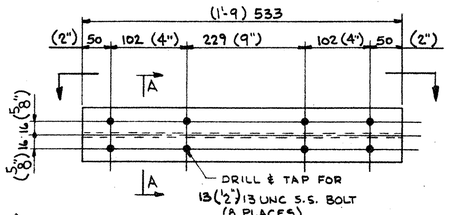
4 REQ'D SPLICE SLEEVES ~ SS-12-A1



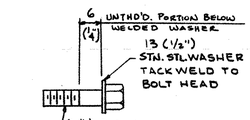
SECTION B-B
(HAND RAIL)



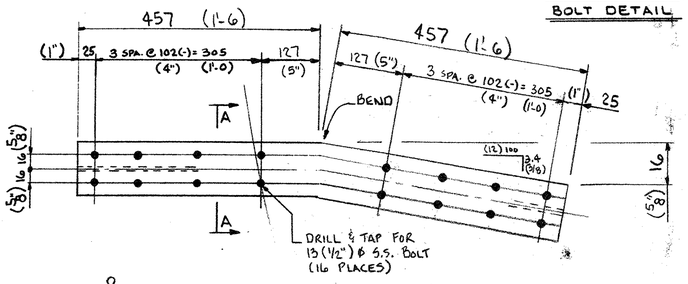
SECTION A-A
(BARRIER RAIL)



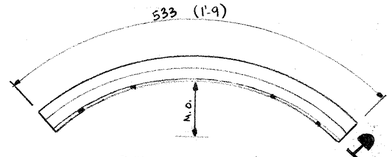
⚠ 18 REQ'D SPLICE SLEEVES ~ SS-03-H



SPLICE SLEEVE
BOLT DETAIL



8 REQ'D SPLICE SLEEVES ~ SS-03-G1



- H1 M.O. = 8 (5/16")
- H3 M.O. = 7 (1/4")
- H4 M.O. = 14 (9/16") ⚠

2 REQ'D ~ SPLICE SLEEVES ~ SS-03-H1 (SE)

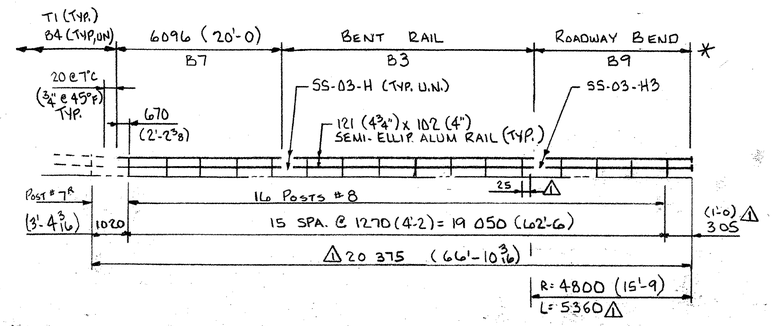
⚠ 2 REQ'D ~ SPLICE SLEEVES ~ SS-03-H3 (NE)

⚠ 2 REQ'D ~ SPLICE SLEEVES ~ SS-03-H4 (NW)

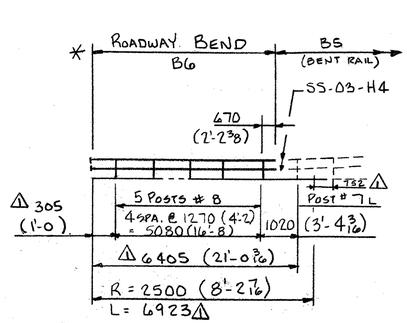
⚠ ⬢ LENGTH OF CURVE WAS EDITED PER APPROVAL PRINT DATED 12/30/99.

THE FOLLOWING INFO WAS PROVIDED BY THE ENGINEER FOR BRISTOL, VT. VIA GLENN LAVOIE (BECK & BELLUCCI, INC.): ⬢

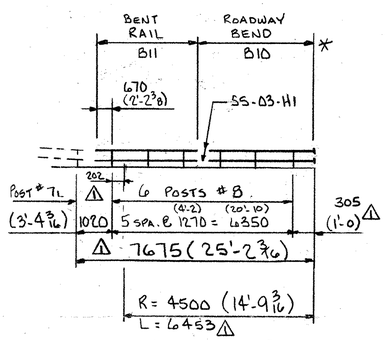
APPR.	POINT OF CURVATURE	RADIUS @ FACE OF RAIL	LENGTH OF CURVE
NW	1+247.867 LT	2500	6923
NE	1+338.129 LT	4800	5360
SW	1+196.794 RT	4500	5593
SE	1+309.866 RT	4500	6453



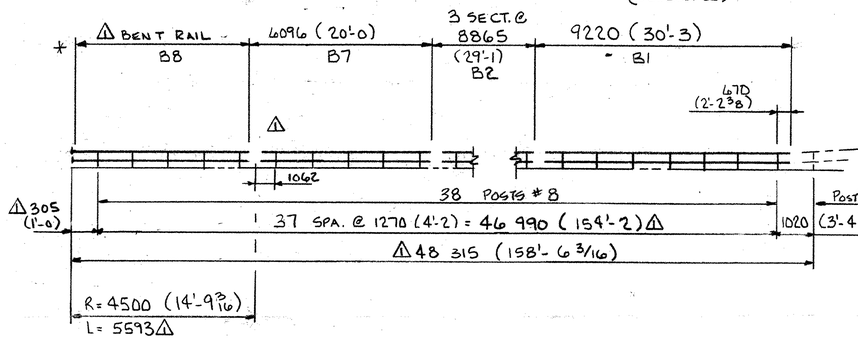
INSIDE ELEVATION NE APPROACH
(VIEW C ~ ONE REQ'D.)
(DEVELOPED)



INSIDE ELEV. NW APPR.
(VIEW C ~ ONE REQ'D)
(DEVELOPED)



OUTSIDE ELEV. SE APPR.
(VIEW C ~ ONE REQ'D)
(DEVELOPED)

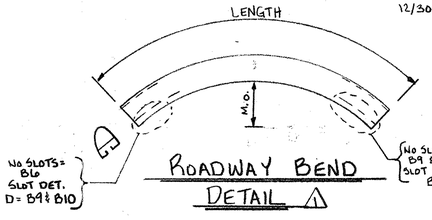


OUTSIDE ELEVATION SW APPROACH
(VIEW C ~ ONE REQ'D.)
(DEVELOPED)

⚠* RAIL LENGTHS DO NOT INCLUDE END CAPS AND/OR GAPS, AND IS MEASURED ALONG FACE OF RAIL & INCL'S SLOPE.

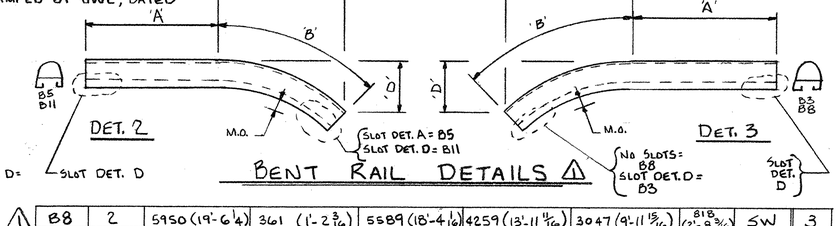
- POST SPACING IS MEASURED ALONG FACE OF RAIL.

⚠ • POST SPACING SUPPLIED PER APPROVAL PRINT STAMPED BY 'GWC', DATED 12/30/99.



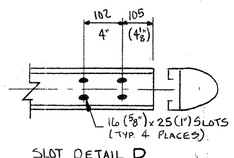
ROADWAY BEND DETAIL ⚠

MARK	QTY.	LENGTH *⚠	M.O.	LOC.
B6	2	6045 (19'-10)	1537 (5'-0½)	NW
B9	2	5017 (16'-5 1/2)	628 (2'-0 5/8)	NE
B10	2	3750 (12'-3 5/8)	375 (1'-2 3/4)	SE

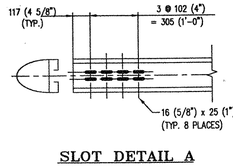


BENT RAIL DETAILS ⚠

MARK	QTY.	LENGTH *⚠	'A'	'B'	'C'	'D'	M.O.	LOC.	DET. No.
B3	2	8865 (29'-1)	8549 (28'-0 9/16)	316 (1'-0 7/16)	316 (1'-0 7/16)	10 (3/8)	2 (1/8)	NE	3
B5	2	7575 (24'-10¼)	6726 (22'-0 13/16)	849 (2'-9 7/16)	833 (2'-8 13/16)	143 (5 5/8)	34 (1 5/16)	NW	2
B11	2	3549 (11'-7 3/4)	872 (2'-10 3/8)	2677 (8'-9 3/8)	2522 (8'-3 5/16)	773 (2'-6 7/16)	192 (7 9/16)	SE	2
B8	2	5950 (19'-6¼)	361 (1'-2 3/16)	5589 (18'-4 1/16)	4259 (13'-11 7/16)	3047 (9'-11 15/16)	818 (2'-8 3/16)	SW	3



SLOT DETAIL D
(BACK ELEVATION VIEW)



SLOT DETAIL A
(BACK ELEVATION VIEW)

- FOR GEN. NOTES AND TYP. DETAILS SEE DWGS. LB1 & LB4.
- LENGTH OF RAILING FOR LB4 & LB5 IS: 111.73m (366.6 LF). ⚠
  PAY LENGTH.

RECEIVED
CK'D BY GWC CK'D BY AP

⚠ FEB 03 2000
RESUBMIT ____ APPROVED X
BY DATE

FEB 04 2000

REV.	DESCRIPTION	BY	DATE	APP'D.
⚠	REV'D. PER CHGS. TO ARC LENGTHS PER APP'VL. PRINT	Dd	1 26 00	

APPROVED: ____ REC'D APPROVAL ____ DRAWING ____

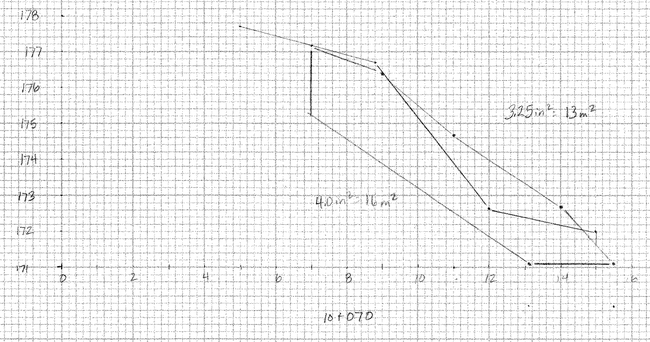
L. B. FOSTER CO.
GENERAL OFFICES
PITTSBURGH, PENNSYLVANIA 15220

FOR: BECK AND BELLUCCI, INCORPORATED
VERMONT AGENCY OF TRANSPORTATION
TOWN OF BRISTOL, ADDISON COUNTY
FOR VT. RTE. 116 (MINOR ARTERIAL)
APPROACH RAIL DETAILS ~ ANODIZED BLACK

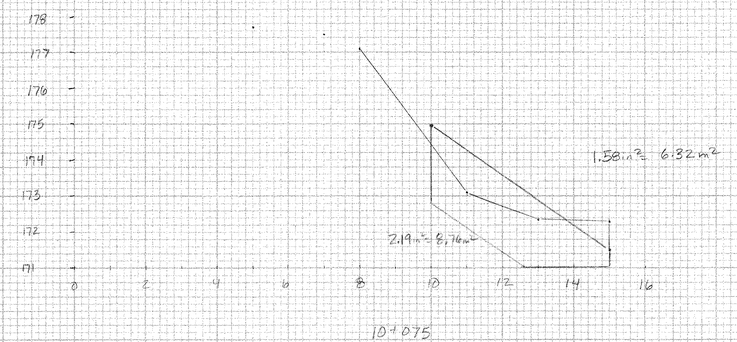
MADE Dd DATE 12/12/99 JOB NO. A19199 CUST. NO. 088
CHECK WDS DATE 12/16/99 DRAWING LB5 (LAST) REV. NO. ONE

PROJ. Nº ER 021-1 (13)

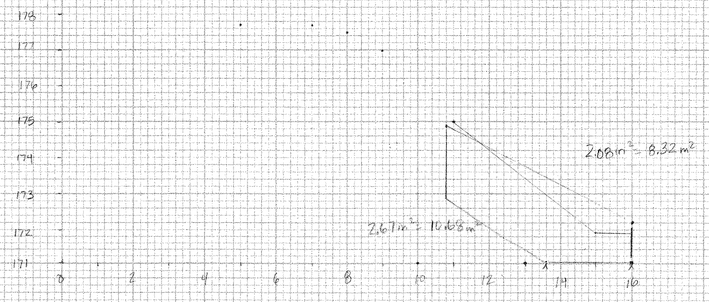
DRAFTING 40X27 FORM # 5001



10+070



10+075



10+080

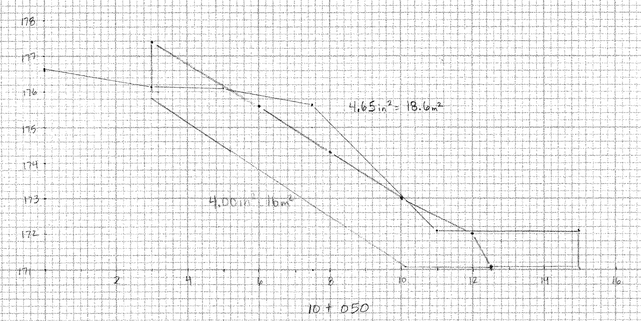
BRISTOL ER 021-1(13)
BRIDGE #10

089

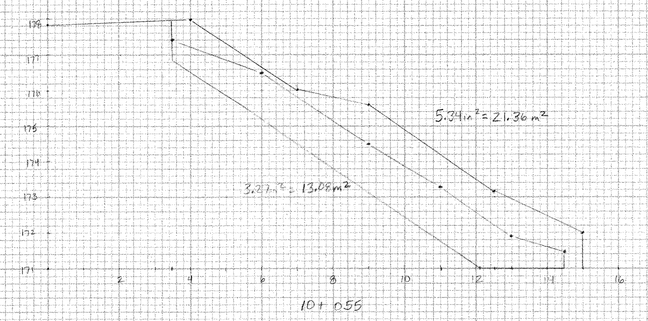
ORIGINAL SURVEY
SURVEYED BY
PLOTTED DATE
NOTE BOOK TEMPLATE
AREAS
NO. AREAS CHECKED

FINAL SURVEY
SURVEYED BY
PLOTTED DATE
NOTE BOOK TEMPLATE
AREAS
NO. AREAS CHECKED

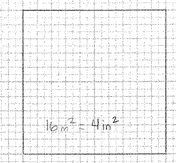
FINAL SURVEY
SURVEYED
PLOTTED
NOTE BOOK
NO.
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE



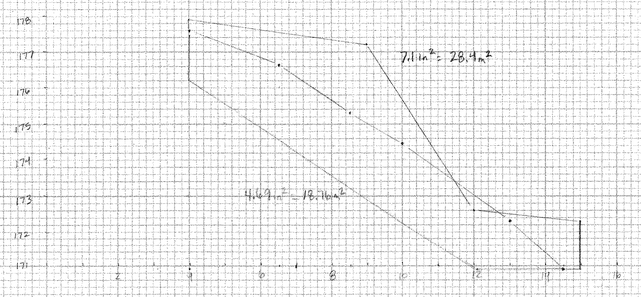
10 + 050



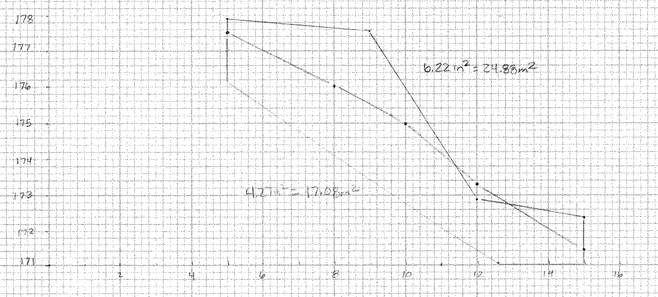
10 + 055



ORIGINAL SURVEY
SURVEYED
PLOTTED
NOTE BOOK
NO.
AREAS
AREAS CHECKED
BY
DATE



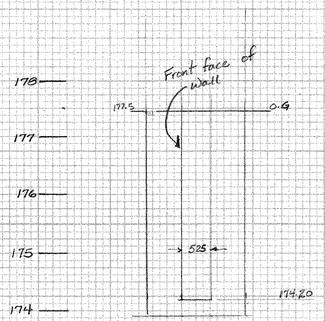
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10 + 065

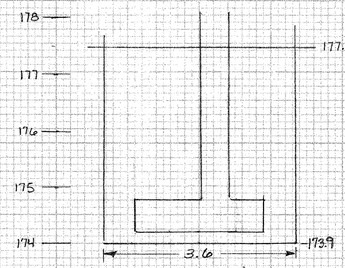
BRISTOL ER021-1(13
BRIDGE #10

090



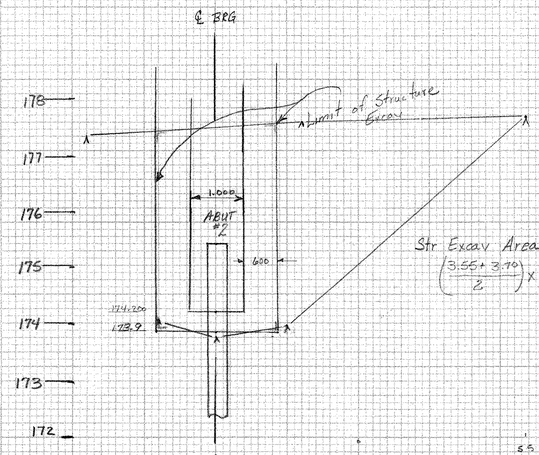
Str Ex: $1.725\,w \times (177.5 - 173.9) \times \left(\frac{1.30 + 2.50}{2}\right)$ (L from sht 47) $= 11.8\ m^3$

WW #3



Str Ex: $3.6\,w \times \frac{177.5 - 173.9}{3.6}\,H \times 10.2\,m\,L$ (sht 47) $= 132.2\ m^3$

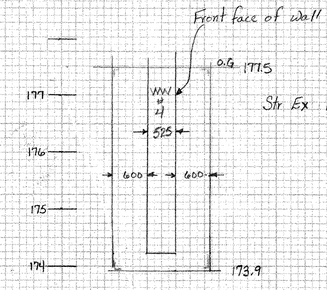
Retaining Wall
(Looking Back Station)



Str Excav Area:
$\left(\frac{3.55 + 3.70}{2}\right) \times 2.2\,(w) \times 14.4\,m\,(L) = 144.8\ m^3$
from Sht #47

℄ BRG
Abut #2
Looking Upstream

SCALE 1:50



Str Ex: $1.725\,w \times \frac{177.5 - 173.9}{3.6}\,H \times \left(\frac{3.8 + 2.5}{2}\right)\,L$ (sht 47, 3.15) $= 19.6\ m^3$

WW #4

BRISTOL ER 021-1(13)
BRIDGE #10

09/

PLATE 3-FULL CROSS SECTION-FULL LINE
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