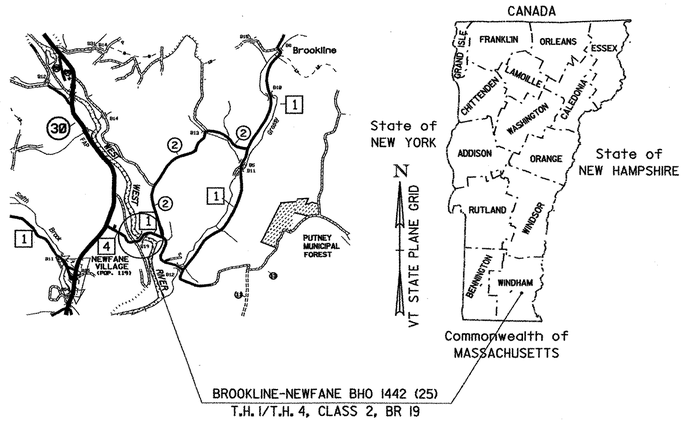
SEE SHEET 2 FOR INDEX OF SHEETS
AND LIST OF STANDARDS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION



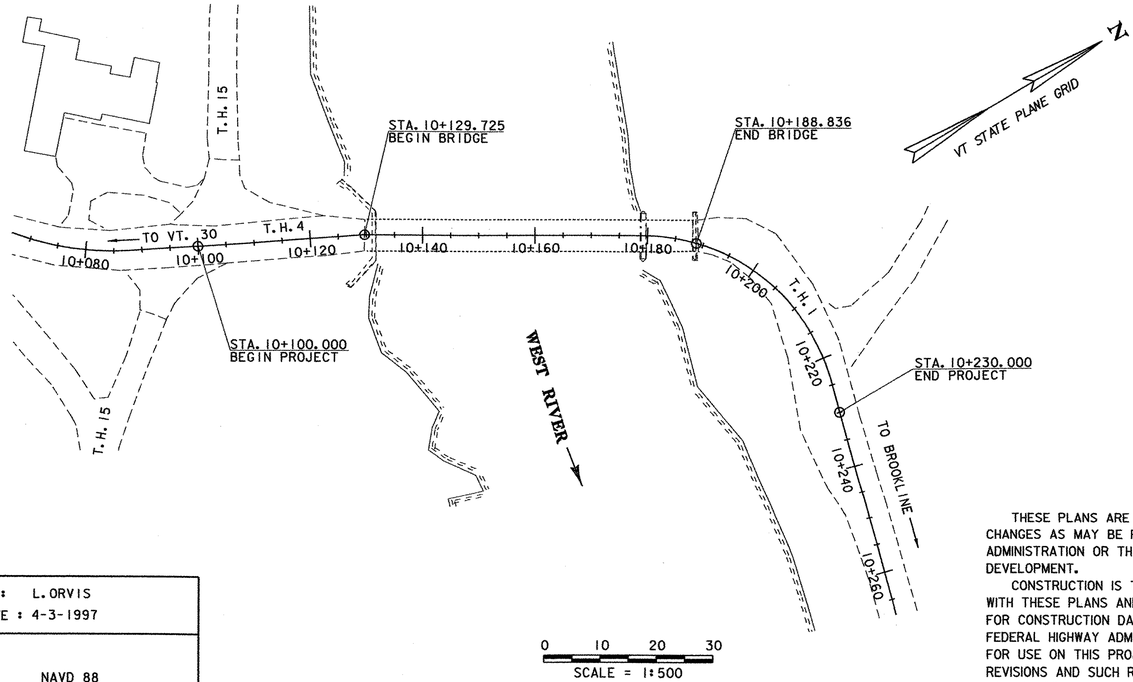
PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWNS OF BROOKLINE AND NEWFANE
COUNTY OF WINDHAM

ROUTE NO : T.H. 1 / T.H. 4, CLASS 2 BRIDGE NO : 19 (BROOKLINE)

PROJECT LOCATION : BEGINNING AT A POINT ON T.H. 4 APPROXIMATELY 0.823 KILOMETERS EASTERLY FROM THE EXISTING INTERSECTION OF T.H. 4 AND VT. 30 AND PROCEEDING EASTERLY 0.13 KILOMETERS ALONG T.H. 4/T.H. 1.

PROJECT DESCRIPTION : REHABILITATION OF THE EXISTING BRIDGE INCLUDING RELATED APPROACH ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE :	59.111 METERS.
LENGTH OF ROADWAY :	70.889 METERS.
LENGTH OF PROJECT :	130.000 METERS.



CONVENTIONAL SYMBOLS

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

SURVEYED BY : L. ORVIS
SURVEYED DATE : 4-3-1997

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

RECORD PLANS

CONTRACTOR: RENAUD BROS., INC. - VERNON, VT
RESIDENT ENGINEER: PAUL PERRY
CONSTRUCTION BEGAN: SEPTEMBER 15, 2003
CONSTRUCTION COMPLETE: DECEMBER 6, 2005
RECORD PLANS BY: P. PERRY & E. FOSTER

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

BY Paul R. Perry RESIDENT ENGINEER
DATE 4/3/06

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.

VAOT 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 PROGRAM DEVELOPMENT.

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

95j278\Structures\aj278bdr.dgn aj278111.1

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED Samuel B. Lee DATE 6/25/03

PROJECT MANAGER : ROGER R. WHITCOMB

PROJECT NAME : BROOKLINE-NEWFANE
PROJECT NUMBER : BHO 1442 (25)

SHEET 1 OF 78 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET

Metric

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7-9. R.O.W. SHEETS
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11-13. LAYOUT SHEETS
14. PROFILE SHEET
15. SIDE ROAD AND DRIVES PROFILE SHEET
16. TEMPORARY DETOUR LAYOUT SHEET
17. PERMANENT TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT SHEET
18-19. PERMANENT TRAFFIC SIGNS SUMMARY SHEETS
20-21. BORING INFORMATION SHEETS
22. PLAN AND ELEVATION
23. EROSION CONTROL SHEET
24. RESOURCES SHEET
25. PROJECT NOTES
26. BRIDGE TYPICAL SECTIONS
27. DECK REINFORCING PLAN
28. MISCELLANEOUS PROJECT DETAILS
29. TRUSS REPAIRS
30. FLOOR FRAMING PLAN & TRUSS SPAN STRINGER DETAILS
31. APPROACH SPAN STRINGER DETAILS
32. FLOORBEAM DETAILS
33. STRINGER TO FLOORBEAM CONNECTION DETAILS
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38. EXPANSION JOINT DETAILS
39. DOWNSPOUT DETAILS
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41. BRIDGE RAILING DETAILS
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43. ABUTMENT NO.1 REPAIR DETAILS
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LIST OF STANDARDS

A-76M	STANDARD FOR DEVELOPMENT ROADS	06/13/1997
B-71M	RESIDENTIAL AND COMMERCIAL DRIVES	06/13/1997
D-2M	C.R.M. HEADWALLS, UNDERDRAIN C.R.M. HEADWALLS & RETAINING WALLS RIPRAP LIGHT TYPE SLOPE HEADWALL REINFORCED CONCRETE HEADWALL, UNDERDRAIN & CARRIER PIPE CONSTRUCTION DETAILS	06/13/1997
D-4M	FLUSHING BASINS, END SECTION, ELBOWS TYPICAL WATERFALL FOR CULVERTS UP TO AND INCLUDING 48" DIA EXTENSION SERVICE BOX AND CURB STOP CORRUGATED PIPE ELBOW GRANULAR BORROW AT CULVERT LOCATIONS UNDERDRAIN FLUSHING BASIN CORRUGATED STEEL PIPE END SECTION CORRUGATED STEEL PIPE ARCH END SECTION	08/13/1997
D-16M	PRECAST CURB DI, GRATE, RCP END SECTION, ETC. CAST IRON GRATE,TYPE B CAST IRON GRATE,TYPE C UNDERDRAIN RISER REINFORCED CONCRETE PIPE END SECTION ENERGY DISSIPATOR FOR CULVERT	06/13/1997
E-100M	CONSTRUCTION APPROACH SIGNS	06/13/1997
E-101M	CONSTRUCTION SIGN DETAILS	06/13/1997
E-102M	CONSTRUCTION SIGN DETAILS	06/13/1997
E-102AM	CONSTRUCTION SIGN DETAILS	06/13/1997
E-106M	TRAFFIC CONTROL - MISCELLANEOUS DETAILS	06/13/1997
E-107M	DELINEATION, BARRICADES AND DETOURS FOR U-TURNS ON DIVIDED HIGHWAY	06/13/1997
E-107AM	BREAKAWAY BARRICADE DETAILS	06/13/1997
E-108M	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS	06/13/1997
E-110M	MAJOR MAINTENANCE OPERATION LANE CLOSURE	06/13/1997
E-120M	STANDARD SIGN PLACEMENT - EXPRESSWAY & FREEWAY	06/13/1997
E-121M	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	06/13/1997
E-129M	RUNAWAY TRUCK RAMP-SIGN DETAILS	06/13/1997
E-142M	REGULATORY SIGN DETAILS	06/13/1997
E-143M	REGULATORY SIGN DETAILS	06/13/1997
E-146M	REGULATORY SIGN DETAILS	06/13/1997
E-150M	WARNING SIGN DETAILS	06/13/1997
E-151M	WARNING SIGN DETAILS	06/13/1997
E-152M	WARNING SIGN DETAILS	06/13/1997
E-154M	WARNING SIGN DETAILS	06/13/1997
E-155M	WARNING SIGN DETAILS	06/13/1997
E-160M	FLANGED CHANNEL STEEL SIGN POST	06/13/1997
E-175M	POWER DROP STANCHIONS	06/13/1997
G-1M	STEEL BEAM GUARDRAIL (50MPH & OVER) HEAVY DUTY STEEL BEAM GUARDRAIL TWISTED END TERMINAL ANCHOR FOR STEEL BEAM RAIL	01/03/2000
G-1DM	STEEL BEAM GUARDRAIL (40MPH & LESS) HEAVY DUTY STEEL BEAM GUARDRAIL STEEL BEAM MEDIAN BARRIER ANCHOR FOR STEEL BEAM RAIL	01/03/2000
G-18M	PRECAST CONCRETE TEMPORARY TRAFFIC BARRIER	06/13/1997
J-3M	MAILBOX SUPPORT DETAILS	06/13/1997
SB-R6-82M	BRIDGE RAILING - HEAVY DUTY STEEL BEAM	07/10/1997
T-1M	TEMPORARY EROSION CONTROL DETAILS	06/13/1997
T-2M	TEMPORARY EROSION CONTROL DETAILS	06/13/1997

SCOPE OF WORK

1. INSTALLATION OF TEMPORARY BRIDGE TO BE REMOVED UPON COMPLETION OF REHABILITATION OF EXISTING STRUCTURE.
2. REHABILITATION OF EXISTING ABUTMENT NO. 1.
3. COMPLETE REPLACEMENT OF EXISTING ABUTMENT NO. 2.
4. COMPLETE REPLACEMENT OF EXISTING BEARINGS AT ABUTMENT NO. 1, ABUTMENT NO.2 AND THE PIER, AND REPAIRS TO TRUSS BEARINGS AT THE PIER.
5. COMPLETE REPLACEMENT OF EXISTING TRUSS FLOOR SYSTEM, INCLUDING NEW STRINGERS, FLOORBEAMS AND CONNECTIONS.
6. COMPLETE REPLACEMENT OF EXISTING APPROACH SPAN STRUCTURAL STEEL WITH NEW STRINGERS AND DIAPHRAGMS.
7. PARTIAL REPLACEMENT OF EXISTING TRUSS MEMBERS.
8. BLAST CLEANING AND PAINTING OF ALL REMAINING EXISTING STEEL.
9. COMPLETE REPLACEMENT OF EXISTING DECKING ON THE TRUSS AND APPROACH SPAN WITH A NEW BARE CONCRETE DECK.
10. RELATED CHANNEL AND APPROACH ROADWAY WORK.

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: January 2001

DRAINAGE AREA : 798 sq. km
CHARACTER OF TERRAIN : Hilly to mountainous, mixture of forested and open area
STREAM CHARACTERISTICS : Semi-alluvial, sinuous, not braided or anabranched
NATURE OF STREAMBED : Gravel, cobbles and some exposed ledge

PEAK FLOW DATA

Q 2.33 =	198 cms	Q 50 =	331 cms
Q 10 =	269 cms	Q 100 =	360 cms
Q 25 =	306 cms	Q 500 =	612 cms

DATE OF FLOOD OF RECORD : 1938, 2nd largest = 1927. Based on USGS gage 120 m dnstr.
ESTIMATED DISCHARGE: 1481 cms, 1274 cms. Both before upstr flood control dams.
WATER SURFACE ELEV.: Unknown, 124.0 m based on record plans
NATURAL STREAM VELOCITY : @ Q25 = 3.3 mps
ICE CONDITIONS : Moderate to high
DEBRIS: Light
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
IS ORDINARY RISE RAPID? No
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? See below.
IF YES, DESCRIBE: There are two flood control dams upstream which affect peak flows. There is nothing downstream that affects the stage at this site.

WATERSHED STORAGE: at dams
HEADWATERS: UNIFORM: at flood dams
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Steel thru-truss with steel beam approach span.
YEAR BUILT: 1928
CLEAR SPAN(NORMAL TO STREAM): 46.9 m + 8.5 m = 55.4 m total
VERTICAL CLEARANCE ABOVE STREAMBED: 6.8 m (Low beam elev. 123.6 m)
WATERWAY OF FULL OPENING: 299 sq. m
DISPOSITION OF STRUCTURE: Rehabilitate
TYPE OF MATERIAL UNDER SUBSTRUCTURE: Abut. 1-ledge, others-timber piles

WATER SURFACE ELEVATIONS AT:

Q2.33 =	119.8 m	VELOCITY =	3.0 mps
Q10 =	120.2 m	"	3.5 mps
Q25 =	120.3 m	"	3.7 mps
Q50 =	120.5 m	"	3.8 mps
Q100 =	120.6 m	"	4.0 mps

LONG TERM STREAMBED CHANGES: None noted.

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Above Q100
RELIEF ELEVATION: 123.5 m
DISCHARGE OVER ROAD @Q100: None at Q100

UPSTREAM STRUCTURE

TOWN:	Townshend	DISTANCE:	4.2 km
HIGHWAY # :	VT Rte. 30	STRUCTURE #:	15
CLEAR SPAN:	130.5 m	CLEAR HEIGHT:	5.2 m
YEAR BUILT:	1952	FULL WATERWAY:	497 sq. m
STRUCTURE TYPE:	4-span steel beam bridge		

DOWNSTREAM STRUCTURE

TOWN:	Dummerston	DISTANCE:	10.0 km
HIGHWAY # :	T.H. 1	STRUCTURE #:	35
CLEAR SPAN:	81.4 m	CLEAR HEIGHT:	9.0 m
YEAR BUILT:	Not available	FULL WATERWAY:	N.A.
STRUCTURE TYPE:	2-span covered bridge		

LOAD FACTOR LOAD RATING (TONS)

LOADING LEVELS	TRUCK						
	M	MS	3S2	6 AXLE	3A. STR.	4A. STR.	SA. SEMI
INVENTORY	14	27					
POSTED	20	38	47		26	28	47
OPERATING		45	56	50	30	33	

COMMENTS: NEW TRUSS FLOOR STRINGERS (NON-COMPOSITE) CONTROL RATING FOR ALL ENTRIES.*

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2002	1450	200	50	5	121
2022	1970	275	50	5	165

20 year ESAL for flexible pavement 2002 to 2022 : 865,000
40 year ESAL for flexible pavement 2002 to 2042 : 1,991,000
Design Speed : 30 km/h

PROPOSED STRUCTURE

STRUCTURE TYPE: Rehabilitated steel through truss

CLEAR SPAN(NORMAL TO STREAM): 46.7 m + 8.5 m = 55.2 m total
VERTICAL CLEARANCE ABOVE STREAMBED: 6.8 m
WATERWAY OF FULL OPENING: 298 sq. m

WATER SURFACE ELEVATIONS AT:

Q2.33 =	119.8 m	VELOCITY=	3.0 mps
Q10 =	120.2 m	"	3.5 mps
Q25 =	120.3 m	"	3.7 mps
Q50 =	120.5 m	"	3.9 mps
Q100 =	120.6 m	"	4.0 mps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Above Q100
RELIEF ELEVATION: 123.5 m
DISCHARGE OVER ROAD @Q100: None at Q100

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 123.6 m
VERTICAL CLEARANCE: @ Q100 = 3.0 m

SCOUR: Q100 contraction scour=0.1 m, pier scour=1.0 m, total Q100 scour at pier=1.1 m
Q500 contraction scour = 0.2 m, Q500 pier scour = 1.3 m, total Q500 scour at pier = 1.5 m
REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW:	18 cms	DEPTH OR ELEVATION:
ORDINARY LOW WATER:	8 cms	Elev. = 118.0 m in bridge area
ORDINARY HIGH WATER:	85 cms	Elev. = 119.6 m in bridge area

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Bridge
CLEAR SPAN (NORMAL TO STREAM): 47 m minimum
VERTICAL CLEARANCE ABOVE STREAMBED: Bottom of steel elev. 120.6 m min.
WATERWAY AREA OF FULL OPENING: 130 sq. m minimum

ADDITIONAL INFORMATION

DESIGN CRITERIA

1. DESIGN LIVE LOAD AASHTO MS 18.0
2. DESIGN SPAN TRUSS SPAN: 48.77m; APPROACH SPAN: 9.23m
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A
   ON LEDGE N/A
4. ALLOWABLE LOAD FOR PILING 860 kN
   TYPE HP310 X 79 ASTM A572/A572M GR 345
   ESTIMATED LENGTH 15.9m (INCLUDING 0.6m EMBEDMENT IN CONCRETE)
5. STRUCTURAL STEEL AASHTO M270M/M270 GRADE 345 (PAINTED)
6. REINFORCING STEEL GRADE 420
7. CONCRETE, HIGH PERFROMANCE CLASS A f'c: 30 Mpa
   CONCRETE, HIGH PERFROMANCE CLASS B f'c: 25 Mpa
8. DESIGN SOIL UNIT WEIGHT 22.00 kN/m³
9. DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL N/A

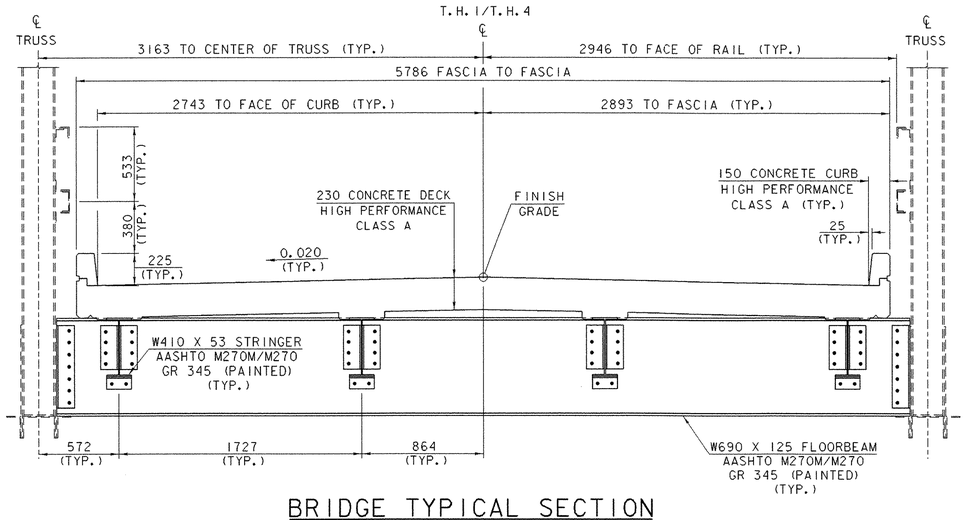
TRAFFIC MAINTENANCE

1. IS TRAFFIC TO BE MAINTAINED? YES
   IF YES, ON EXISTING STRUCTURE? NO
   OR ON TEMPORARY BRIDGE? YES
   ONE OR TWO-WAY TRAVEL? ONE-WAY
2. TRAFFIC CONTROL SIGNALS REQUIRED? NO
3. ARE SIDEWALKS REQUIRED? NO
   IF SO, ON WHAT SIDE? N/A

*** NOTE:**
FOR LOAD RATING PURPOSES, THE NEW FLOOR SYSTEM STRINGERS AND FLOORBEAMS WERE ASSUMED TO BE NON-COMPOSITE. THE SHEAR STUDS PROVIDED ARE NOT SPACED SUFFICIENTLY TO PROVIDE FOR FULL COMPOSITE ACTION BETWEEN THE DECK AND FLOOR SYSTEM STEEL. THEY ARE PROVIDED AS A MEANS OF DEFLECTION CONTROL.

PROJECT NAME: **BROOKLINE-NEWFANE**
PROJECT NUMBER: **BHO 1442 (25)**

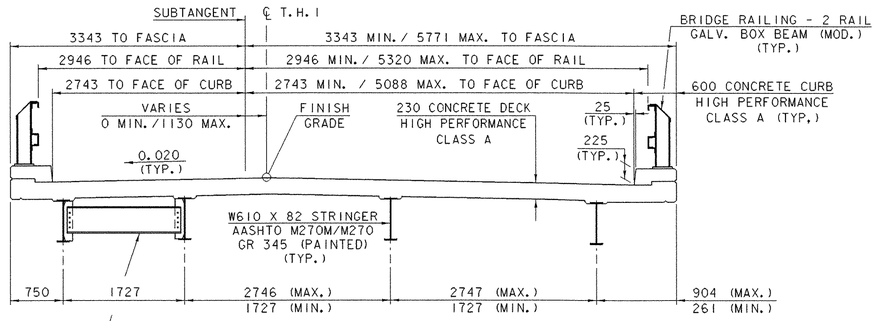
FILE NAME: **\95j278\Structures\sj278pi.xls** PLOT DATE: **05/06/2003**
PROJECT MANAGER: **R. WHITCOMB** DRAWN BY: **G. ROY**
DESIGNED BY: **M. LOZIER** CHECKED BY: **M. LOZIER**
PRELIMINARY INFORMATION SHEET SHEET **2** OF **78**



BRIDGE TYPICAL SECTION

0 1 2

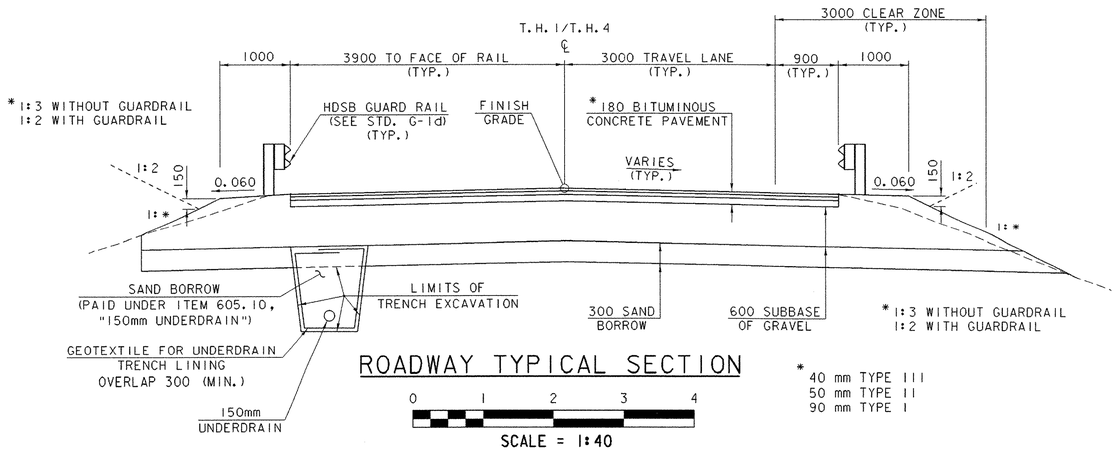
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APPROACH SPAN TYPICAL SECTION

0 1 2 3 4

SCALE = 1:40

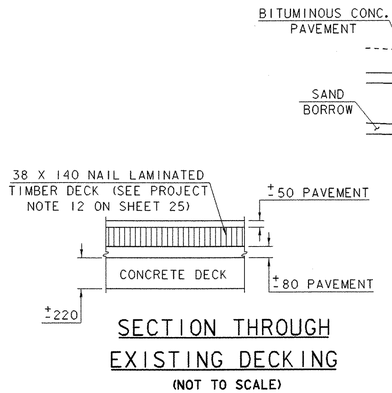


ROADWAY TYPICAL SECTION

0 1 2 3 4

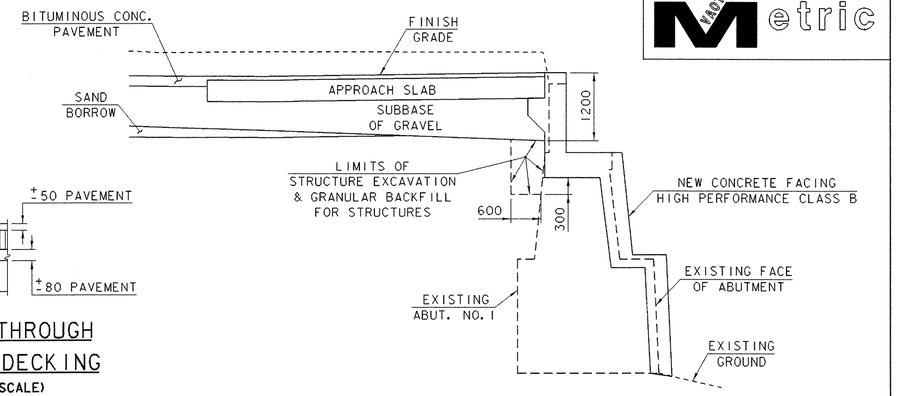
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* 40 mm TYPE III
50 mm TYPE II
90 mm TYPE I



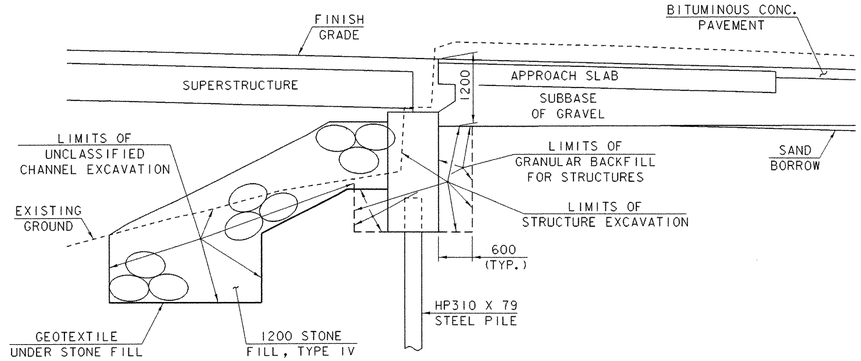
SECTION THROUGH EXISTING DECKING

(NOT TO SCALE)



ABUTMENT NO. 1 EARTHWORK TYPICAL SECTION

(NOT TO SCALE)



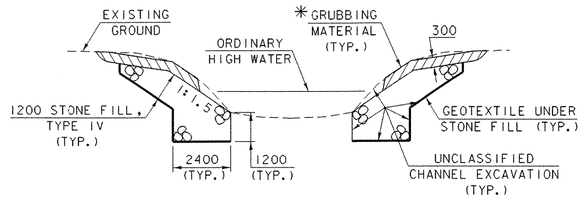
ABUTMENT NO. 2 EARTHWORK TYPICAL SECTION

(NOT TO SCALE)

NOTES:

1. FOR THE PURPOSES OF ESTIMATING EARTHWORK QUANTITIES, THE LIMITS OF STRUCTURE EXCAVATION HAVE BEEN ASSUMED TO BE AS SHOWN ABOVE. ONLY THE EXCAVATION INCLUDED BETWEEN THESE LIMITS SHALL BE PAID FOR UNDER ITEM 204.25, "STRUCTURE EXCAVATION".

2. EXCAVATION LIMITS FOR THE REMOVAL OF THE EXISTING ABUTMENT NO. 2 FOUNDATION, INCLUDING TIMBER PILES, ARE NOT SHOWN. THESE LIMITS ARE TO BE DETERMINED BY THE CONTRACTOR. SEE PROJECT NOTE 15 ON SHEET 25 FOR ADDITIONAL INFORMATION.



CHANNEL TYPICAL SECTION

(NOT TO SCALE)

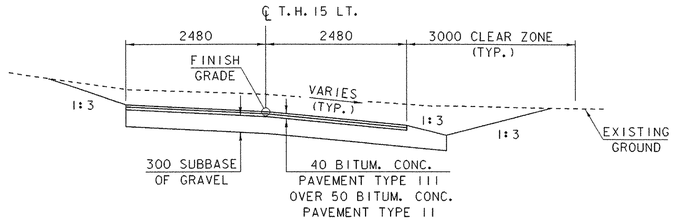
* GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.

MATERIAL ITEM	TOLERANCE
PAVEMENT	±5 mm TOTAL THICKNESS
BASE COURSE	±15 mm
SUBBASE	±30 mm
SAND BORROW	±30 mm
GRANULAR BORROW	±30 mm

PROJECT TYPICAL SECTIONS (1)

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

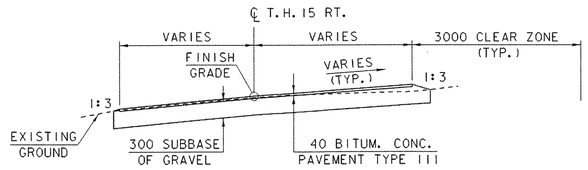
FILE NAME: 95j278\Structures\sj278typ.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: M. LOZIER
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 3 OF 78



T.H. 15 LT. TYPICAL SECTION

0 2.5 5

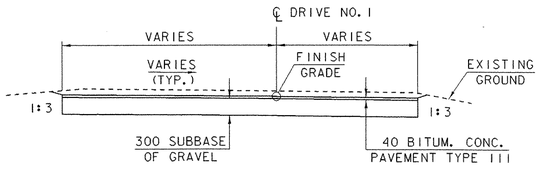
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T.H. 15 RT. TYPICAL SECTION

0 2.5 5

SCALE = 1:50

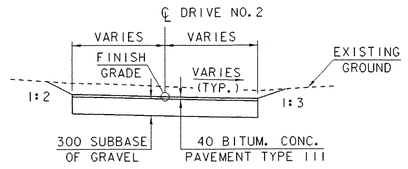


DRIVE NO. 1 TYPICAL SECTION

(STA. 10+221.700 LT.)

0 2.5 5

SCALE = 1:50



DRIVE NO. 2 TYPICAL SECTION

(STA. 30+006.848 LT.)

0 2.5 5

SCALE = 1:50

MATERIAL ITEM	TOLERANCE
PAVEMENT	±5 mm TOTAL THICKNESS
BASE COURSE	±15 mm
SUBBASE	±30 mm
SAND BORROW	±30 mm
GRANULAR BORROW	±30 mm

PROJECT TYPICAL SECTIONS (2)

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95J278\Structures\sj266drt.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 4 OF 78

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

AASHTO Metric

SUMMARY OF ESTIMATED QUANTITIES

FULL E & C	ROADWAY	EROSION CONTROL		CHANNEL		PIER		ABUTMENT NO. 1	ABUTMENT NO. 2		APPROACH SLAB NO. 1	APPROACH SLAB NO.2		APPROACH SPAN	TRUSS	BRIDGE QUANTITY
	1															
	1400															
				240												240
	170															
	40	10														
								20	60							80
								20	30							50
	220															
	730	10														
	190										10	10				20
	455										7	10				17
								1						23	69	93
						1		42	32		14	23				112
															1	1
									1							1
									128							128
														3050	17090	20140
														800	12440	13240
						40		3120	1550							4710
						2		50								52
								220			1040	2150			*12710	16120
														0.4	0.6	1
														0.2	0.8	1
															1	1
															1	1
														0.2	0.8	1
															1	1
								20	20					9	28	77
															6	6
											38	61				99
														18		18
	1															
															*670	670
									0.2					0.4	0.4	1
						1		31								32
								2								2
						1			4							5
	25															
	9															
	1															
		10														
		10						30	10							40
									260							260

TOTALS

ROUND	GRAND TOTAL	FINAL
	1	
	1400	
	240	
	170	
	50	
	80	
	50	
	220	
	740	
	210	
	472	
	93	
	112	
	1	
	1	
	128	
	20140	
	13240	
	4710	
	52	
	16120	
	1	
	1	
	1	
	1	
	1	
	77	
	6	
	99	
	18	
	1	
	670	
	1	
	32	
	2	
	5	
	25	
	9	
	1	
	10	
	50	
	260	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER
LS	CLEARING AND GRUBBING (INCLUDING INDIVIDUAL TREES AND STUMPS)	201.10
CM	COMMON EXCAVATION	203.15
CM	UNCLASSIFIED CHANNEL EXCAVATION	203.27
CM	SAND BORROW	203.31
CM	TRENCH EXCAVATION OF EARTH	204.20
CM	STRUCTURE EXCAVATION	204.25
CM	GRANULAR BACKFILL FOR STRUCTURES	204.30
SM	COLD PLANING-BITUMINOUS PAVEMENT	210.10
CM	SUBBASE OF GRAVEL	301.15
KG	EMULSIFIED ASPHALT	404.65
T	BITUMINOUS CONCRETE PAVEMENT (PG 58-28)	406.25
CM	CONCRETE, HIGH PERFORMANCE CLASS A	501.33
CM	CONCRETE, HIGH PERFORMANCE CLASS B	501.34
LS	SHORING SUPERSTRUCTURE	502.10
LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10
M	STEEL PILING (HP 310 X 79)	505.15
KG	STRUCTURAL STEEL (ROLLED BEAM)	506.50
KG	STRUCTURAL STEEL	506.60
KG	REINFORCING STEEL	507.15
M	DRILLING AND GROUTING DOWELS	507.16
KG	EPOXY COATED REINFORCING STEEL	507.17
LS	SHEAR CONNECTORS (1294 - 22 DIA. X 150 STUDS)	508.15
LS	STRUCTURAL PAINTING,SHOP APPLIED (23 TONS)	513.25
LS	STRUCTURAL PAINTING,FIELD APPLIED (61 TONS)	513.30
LS	CONTAINMENT & ENVIRONMENTAL PROTECTION,FIELD	513.36
LS	SURFACE PREPARATION,SHOP (23 TONS)	513.40
LS	SURFACE PREPARATION, FIELD (61 TONS)	513.41
L	WATER REPELLENT	514.10
M	BRIDGE EXPANSION JOINT	516.10
SM	SHEET MEMBRANE WATERPROOFING	519.20
M	BRIDGE RAILING - 2 RAIL GALV. BOX BEAM (MOD.)(PAINTED)	525.31
LS	ONE-WAY TEMPORARY BRIDGE	528.10
SM	REMOVAL OF BRIDGE PAVEMENT	529.10
EACH	PARTIAL REMOVAL OF STRUCTURE	529.20
CM	REMOVAL OF CONCRETE OR MASONRY	529.25
EACH	BEARING DEVICE ASSEMBLY (TRUSS)	531.10
EACH	BEARING DEVICE ASSEMBLY (PAD)	531.10
M	150 mm UNDERDRAIN	605.10
M	150 mm UNDERDRAIN CARRIER PIPE	605.20
EACH	UNDERDRAIN FLUSHING BASINS	605.95
HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25
CM	STONE FILL, TYPE I	613.10
CM	STONE FILL, TYPE IV	613.13

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
		BITUMINOUS CONCRETE PAVEMENT
		ROADWAY:
164	CM	TYPE I
103	CM	TYPE II
128	CM	TYPE III
395	CM	TOTAL
		APPROACH SLAB NO.1
4	CM	TYPE III
3	CM	TYPE IV
7	CM	TOTAL
		APPROACH SLAB NO.2
6	CM	TYPE III
4	CM	TYPE IV
10	CM	TOTAL
		TEMPORARY DETOUR (INCLUDED IN ROADWAY QUANTITY)
60	CM	TYPE II
		REMOVAL OF BRIDGE PAVEMENT
		(SEE SECTION THROUGH EXISTING DECKING ON SHEET 3)
		TRUSS (INCLUDES APPROACH SPAN)
332	SM	50mm ABOVE TIMBER DECKING
332	SM	80mm BELOW TIMBER DECKING
664	CM	SUBTOTAL
6	CM	ROUNDING
670	CM	TOTAL
		TEMPORARY EROSION CONTROL ITEMS
		(INCLUDED IN EROSION CONTROL ITEMS)
10	CM	TRENCH EXCAVATION OF EARTH
10	CM	SUBBASE OF GRAVEL
10	HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I
10	CM	STONE FILL, TYPE I
150	SM	GEOTEXTILE FOR SILT FENCE
100	SM	GEOTEXTILE FOR FILTER CURTAIN
5	KG	SEED-WINTER RYE **
30	EACH	HAY BALES FOR EROSION CONTROL
1120	SM	EROSION MATTING
		** 50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTIFLORUM) AND CEREAL (WINTER) RYE
		EARTHWORKS SUMMARY
20	CM	FILL REQUIRED
		FILL AVAILABLE:
1400	CM	COMMON EXCAVATION: 1400 X 1.0
144	CM	UNCLASSIFIED CHANNEL EXCAVATION : 240 X 0.6
30	CM	TRENCH EXCAVATION OF EARTH: 50 X 0.6
48	CM	STRUCTURE EXCAVATION: 80 X 0.6
1622	CM	SUBTOTAL
8	CM	ROUNDING
1630	CM	TOTAL
1630	CM	FILL AVAILABLE
20	CM	FILL REQUIRED
1610	**CM**	**WASTE**
		* INCLUDES APPROACH SPAN

PROJECT NAME: **BROOKLINE-NEWFANE**
PROJECT NUMBER: **BHO 1442 (25)**

FILE NAME: **\95j278\Structures\sj278qnt.xls**
PROJECT MANAGER: **R. WHITCOMB**
DESIGNED BY: **M. LOZIER**
QUANTITY SHEET #1

PLOT DATE: **06/26/2003**
DRAWN BY: **G. ROY**
CHECKED BY: **M. LOZIER**
SHEET **5** OF **78**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

Metric

SUMMARY OF ESTIMATED QUANTITIES																TOTALS			DESCRIPTIONS			
FULL E & C	ROADWAY	EROSION CONTROL		CHANNEL		PIER		ABUTMENT NO. 1	ABUTMENT NO. 2		APPROACH SLAB NO. 1	APPROACH SLAB NO.2		APPROACH SPAN	TRUSS	BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER
	1																	1		EACH	RELOCATE MAILBOX, SINGLE SUPPORT	617.10
	114																	114		M	HEAVY DUTY STEEL BEAM GUARDRAIL	621.21
	4																	4		EACH	TERMINAL CONNECTOR FOR STEEL BEAM GUARDRAIL	621.53
	4																	4		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60
	100																	100		M	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80
	138																	138		M	TEMPORARY TRAFFIC BARRIER	621.90
	50																	50		HR	FLAGGERS	630.15
1																		1		LS	FIELD OFFICE-ENGINEERS	631.10
1																		1		LS	TESTING EQUIPMENT - CONCRETE	631.16
1																		1		LS	TESTING EQUIPMENT - BITUMINOUS	631.17
1																		1		LS	TESTING EQUIPMENT - PROTECTIVE COATINGS	631.18
1																		1		LU	FIELD OFFICE - TELEPHONE (N.A.B.I.)	631.25
	1																	1		LS	MOBILIZATION	635.10
	1																	1		LS	TRAFFIC CONTROL	641.10
	356																	356		M	DURABLE 100 mm YELLOW LINE	646.41
	14																	14		SM	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85
				310												310		310		SM	GEOTEXTILE UNDER STONE FILL	649.31
	160																	160		SM	GEOTEXTILE FOR UNDERDRAIN TRENCH LINING	649.41
		150																150		SM	GEOTEXTILE FOR SILT FENCE	649.51
		100																100		SM	GEOTEXTILE FOR FILTER CURTAIN	649.61
		10																10		KG	SEED	651.15
		5																5		KG	SEED-WINTER RYE	651.17
		60																60		KG	FERTILIZER	651.18
		1																1		T	AGRICULTURAL LIMESTONE	651.20
		1																1		T	HAY MULCH	651.25
		30																30		EACH	HAY BALES FOR EROSION CONTROL	651.26
		70																70		CM	TOPSOIL	651.35
				200												200		200		SM	GRUBBING MATERIAL	651.40
		1																1		LS	EROSION AND SEDIMENT CONTROL PLAN	652.10
		50																50		HR	MONITORING EROSION AND SEDIMENT CONTROL PLAN	652.20
		1																1		LU	FIELD MAINTENANCE OF EROSION AND SEDIMENT CONTROL PLAN	652.30
		1120																1120		SM	EROSION MATTING	654.10
	7.1																	7.1		SM	TRAFFIC SIGNS, TYPE A	675.20
	212																	212		M	FLANGED CHANNEL SIGN POST	675.301
	2																	2		EACH	REMOVING SIGNS	675.50

DETAILED SUMMARY OF QUANTITIES		
QUANTITIES	UNIT	ITEMS

PROJECT NAME: **BROOKLINE-NEWFANE**
PROJECT NUMBER: **BHO 1442 (25)**

FILE NAME: **\95j278\Structures\sj278qnt.xls**
PROJECT MANAGER: **R. WHITCOMB**
DESIGNED BY: **M. LOZIER**
QUANTITY SHEET #2

PLOT DATE: **06/26/2003**
DRAWN BY: **G. ROY**
CHECKED BY: **M. LOZIER**
SHEET **6** OF **78**

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

TABLE OF PROJECT PROPERTY ACQUISITION

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS	TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
1A	HERSH, THOMAS R. & ADELLE B.	13	10+100.600 LT.				DRIVE (T)			NEWFANE			3.2M (10') PAVED
1B		13	10+112.073 LT.	10+115.303 LT.			DIT. & DR. (P)			NEWFANE			
			10+112.970 LT.	10+116.202 LT.			REMOVE (T)						GUARDRAIL
			10+113.101 LT.	10+117.156 LT.			SLOPE (T) 1.5SM±						16 S.F.±
			10+113.281 LT.	10+127.035 LT.			CONST. (T) 56.8SM±						611 S.F.±
			10+121.859 LT.	10+125.625 LT.			CHANNEL (P) 6.3SM±						68 S.F.±
			10+124.201 LT.	10+129.720 LT.			INSTALL & MAINTAIN (P) 5.5SM±						WINGWALL & FOOTING, 59 S.F.±
2A	N.J.M. REALTY LIMITED PARTNERSHIP	13	10+097.833 RT.	10+138.090 RT.			DETOUR (T) 0.05HA±			NEWFANE			INCLUDES EROSION CONTROL
													0.12A±
			10+122.810 RT.	10+126.692 RT.			CHANNEL (P) 2.9SM±						31 S.F.±
			10+124.800 RT.				CULVERT & DRAINAGE (P)						
			10+125.992 RT.	10+129.139 RT.			INSTALL & MAINTAIN (P) 3.7SM±						WINGWALL & FOOTING, 40 S.F.±
2B		13,14	10+185.000 RT.	10+210.496 RT.	29.7SM±					BROOKLINE			320 S.F.±
			10+185.000 RT.	10+192.192 RT.			CHANNEL (P) 7.9SM±						85 S.F.±
			10+185.000 RT.	10+231.737 RT.			DETOUR (T) 234.6SM±						INCLUDES EROSION CONTROL
													2,525 S.F.±
			10+230.000 RT.				CULVERT & DRAINAGE (P)						
			10+254.203 RT.	10+281.138 RT.			UTILITY EASE. (P) 29.7 SM±						320 S.F.±, INCL. GUY WIRES
3	MORRISON, JOHN W. & MARTHA R.	13	10+182.546 LT.	10+187.206 LT.			REMOVE (T)			BROOKLINE			TWO GUY WIRES
			10+183.025 LT.	10+187.000 LT.			UTILITY EASE. (P) 25.5SM±						274 S.F.±, INCL. GUY WIRES
			10+203.058 LT.	10+214.385 LT.			CONST. (T) 32.1SM±						INCLUDES EROSION CONTROL
													346 S.F.±
			10+204.427 LT.	10+212.812 LT.			SLOPE (T) 13.4SM±						144 S.F.±
			10+208.323 LT.	10+214.219 LT.			UTILITY EASE. (P) 11.7SM±						126 S.F.±
			10+220.9 LT.	10+222.1 LT.			INSTALL (T)						EROSION CONTROL
			10+221.700 LT.				DRIVE (T)						5.5M (18') PAVED
			10+212.5 LT.				REMOVE (T)						GUARDRAIL
4	VERIZON NEW ENGLAND, INC.												UTILITY
5	CENTRAL VERMONT PUBLIC SERVICE CORPORATION												UTILITY
6	ADELPHIA CABLE COMMUNICATIONS												UTILITY

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

RIGHT-OF-WAY
JUN 14 2002
PRELIMINARY PLANS ☒
COMPLETED PLANS ☒
FINAL PLANS ☒

ACCT.CFunk
\\vaot_cadd\filingcabinet$\95J278\RightOfWay\rj278d.dgn
DATE PLOTTED 04-JUN-2002

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

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

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

APPROVED: ROGER P. DUMAS DATE: 04-09-02
CHIEF, PLANS & TITLES

R.O.W. PLANS
BROOKLINE-NEWFANE
BHO 1442(25)
SHEET 7 OF 78

VAOT Metric

THIS SHEET IS FOR R.O.W. PURPOSES ONLY.

CURVE DATA NO. 2
Δ = 22°51' 12"
R = 50.000
T = 10.106
L = 58.391
E = 1.011
2T-L = 0.269
BANKING = VARIES

PC NO. 2
STA. 10+068.361

PT NO. 2
STA. 10+088.304

PI NO. 2
STA. 10+078.466 BK=
STA. 10+078.197 AH
Δ = 22°51' 12" LT.

PT NO. 1
STA. 10+062.375

STA. 10+070.000
BEGIN APPROACH
MATCH EXISTING

STA. 10+100.000
END APPROACH
BEGIN PROJECT

TO R.O.W. SHEET 12 OF 14

MATCHLINE

T.H. 15 (GRAVEL)

UPPER RIVER RD. (GRAVEL)

RIVER RD.

T.H. 4

N26°31' 29"E

N/F MERCEDE

HERSH, THOMAS R. & ADELLE B.

N. J. M. REALTY LIMITED PARTNERSHIP

BM NO. 2
CHS. SQ. IN ABUT.
EL. 124.961

BM NO. 3
USGS DISK IN LEDGE
STAMPED "GAGING STATION 408"
EL. 124.397

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

STA. 10+100.0 LT. - STA. 10+124.6 LT.
NEW 150mm X 27.0m UNDERDRAIN

CHANNEL LINE POE
STA. 5+085.000

INSTALL & MAINTAIN (P)

PI NO. 3
STA. 10+129.689
Δ = 4°13' 18" RT.
NO CURVE RUN

STA. 10+129.724
BEGIN BRIDGE
F.G. = 124.755

ML POT STA. 10+160.000=
CHANNEL POT STA. 5+050.000
Δ = 90° LT.

STA. 10+130.485
℄ BRG. ABUT. NO. 1
F.G. = 124.773
(EXP.)

CONSTRUCTION LIMITS (TYP.)

DIT. & CUL. (P)

DR. (P)

CONST. (T)

REMOVE (T)

CHANNEL (P)

300mm STONE FILL, TYPE I (TYP.)

TEMPORARY CONSTRUCTION LIMITS

DETOUR (T)

INSTALL & MAINTAIN (P)

TEMPORARY ℄ DETOUR

1200mm STONE FILL, TYPE IV

300mm STONE FILL, TYPE I (TYP.)

CHANNEL LINE N59° 15' 13"W

CHANNEL LINE POB
STA. 5+000.000

NEWFANE

BROOKLINE

WEST RIVER

STA. 10+188.367
℄ BRG. ABUT. NO. 2
F.G. = 124.554
(EXP.)

STA. 10+188.678
END BRIDGE
F.G. = 124.547

MORRISON, JOHN W. & MARTHA R.

VT STATE PLANE GRID

STA. 10+179.255
℄ BRG. PIER
F.G. = 124.773
(FIXED)

REMOVE (T) (2 GUYS)

NEW PUSH BRACE

NEW GUY

PC NO. 4
STA. 10+178.983

10+185.000
9.69M (31.8') RT.

10+185.364 PT 105
10.05M (33') RT.

10+210.496
10.058M (33') RT.

CURVE DATA NO. 4
Δ = 7°38' 20"
R = 35.000
T = 23.682
L = 45.594
E = 9.010
2T-L = 7.770
BANKING = VARIES

APPROXIMATE AERIAL RELOCATION
ROUTE BY VERIZON & CVPS

FOR EROSION CONTROL DETAIL SEE R.O.W. SHEET 10 OF 14

STA. 10+248.2 LT. - STA. 10+250.4 RT.
EXISTING 460mm ACCGMP (GOOD)
(RETAIN)

STA. 10+199.3 LT. - STA. 10+230.0 RT.
NEW 150mm X 49.6m UNDERDRAIN
W/ FLUSHING BASIN @ 10+199.3 LT.

CONSTRUCTION LIMITS (TYP.)

PI NO. 4
STA. 10+205.665 BK=
STA. 10+197.896 AH
Δ = 7°38' 20" RT.

CONST. (T)

RELOCATED MAILBOX

NEW POLE

NEW GUYS

UE (P)

DR. (T)

GUARDRAIL REMOVE (T)

INSTALL (T)

WIRE FENCE

PT NO. 4
STA. 10+224.578

STA. 10+230.000
END PROJECT
BEGIN APPROACH

STA. 10+260.000
END APPROACH
MATCH EXISTING

S74°36'54"E

N30°44' 47"E

TO R.O.W. SHEET 14 OF 14

MATCHLINE

EXISTING BRIDGE DATA

STEEL TRUSS BRIDGE W/ ONE APPROACH SPAN
CONCRETE ABUTMENTS AND PIERS
OVERALL LENGTH = 59.131
TRUSS SPAN = 48.768
APPROACH SPAN LENGTH = 9.144
℄ TO ℄ TRUSS WIDTH = 6.325
RAIL TO RAIL WIDTH = 5.892
VERTICAL CLEARANCE = 4.521
YEAR BUILT = 1928

RIGHT-OF-WAY
JUN 14 2002
PRELIMINARY PLANS COMPLETED PLANS FINAL PLANS

BEGIN R. O. W. PROJECT

BROOKLINE-NEWFANE BHO 1442(25)
STA. 10+097.833 6.2M (53') RT.

0 10 20 30
SCALE = 1:250

LAYOUT SHEET (2)

PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)
FILE NAME: 95J278\Structures\sj278102.i	PLOT DATE: 21-MAY-2002
PROJECT MANAGER:	DRAWN BY:
DESIGNED BY:	CHECKED BY:

MDOT Metric

RECONSTRUCT T.H. 15 APPROACH
10+096.5 RT.
10+104.3 LT.

CONSTRUCT PAVED DRIVE
10+100.6 LT.
10+221.7 LT.

CONSTRUCT PAVED APRON
10+077.9 LT.

CONSTRUCT PAVED SIDEWALK
10+108.0 LT. - 10+129.7 LT.
10+187.3 LT. - 10+213.9 LT.

ANCHOR FOR STEEL BEAM RAIL
10+107.5 RT.
10+109.8 LT.
10+209.8 LT.
10+211.1 RT.

HD STEEL BEAM GUARD RAIL
10+105.7 RT. - 10+130.5 RT.
10+109.5 LT. - 10+130.5 LT.
10+187.1 LT. - 10+211.3 LT.
10+189.2 RT. - 10+213.5 RT.

BRIDGE RAILING-2 RAIL GALV. BOX BEAM (MOD.)
10+179.2 LT. - 10+187.1 LT.
10+179.3 RT. - 10+189.2 RT.

PEDESTRIAN RAIL/GALV. BOX BEAM (MOD.)
10+120.0 LT. - 10+193.2 LT.

REMOVAL AND DISPOSAL OF GUARD RAIL
10+107.3 RT. - 10+129.7 RT.
10+109.0 LT. - 10+129.7 LT.
10+188.0 LT. - 10+212.5 LT.
10+189.7 RT. - 10+213.6 RT.

RELOCATE MAIL BOX SINGLE SUPPORT
FROM 10+211.6 LT. TO 10+207.8 LT.

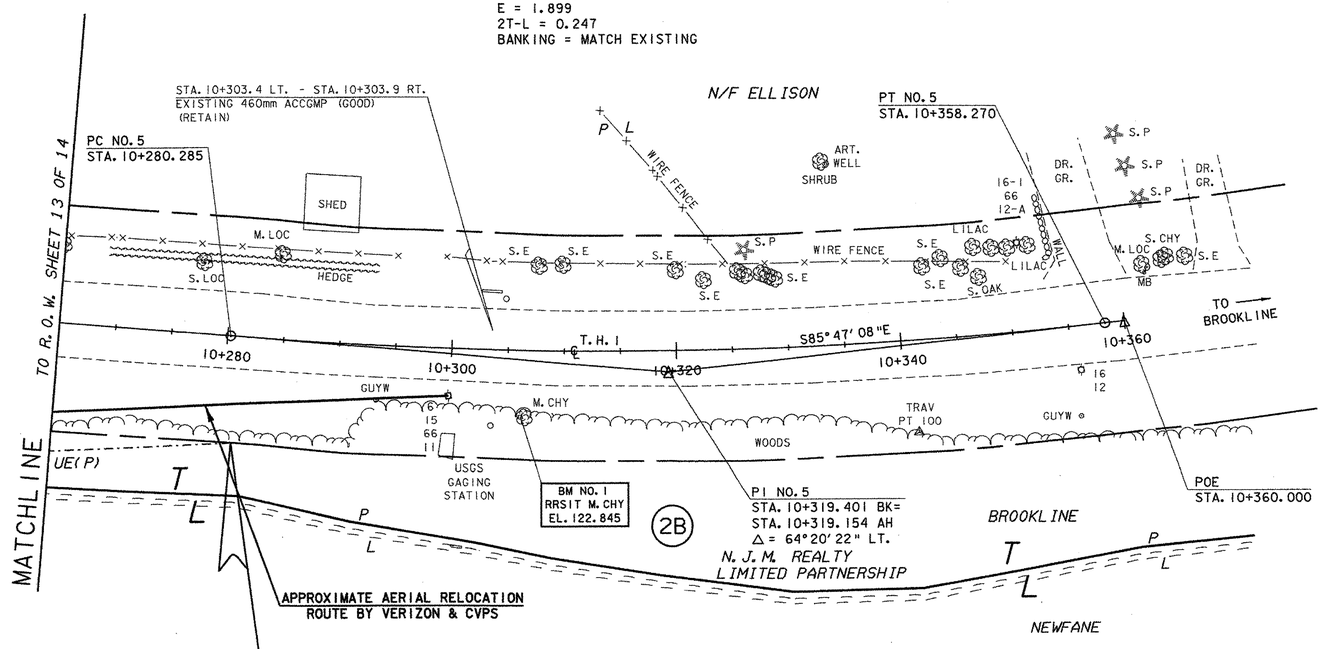
N

VT STATE PLANE GRID

(3)

MORRISON, JOHN W. & MARTHA R.

CURVE DATA NO. 5
Δ = 64°20'22"
R = 400.000
T = 39.116
L = 77.985
E = 1.899
2T-L = 0.247
BANKING = MATCH EXISTING



THIS SHEET IS FOR R.O.W. PURPOSES ONLY.

FOR EROSION CONTROL DETAIL SEE R.O.W. SHEET 10 OF 14

END R.O.W. PROJECT

BROOKLINE-NEWFANE BHO 1442(25)
STA. 10+281.030 9.5M (31') RT.

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

RIGHT-OF-WAY
JUN 14 2002
PRELIMINARY PLANS COMPLETED
FINAL PLANS

0 10 20 30
SCALE = 1:250

LAYOUT SHEET (3)

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95J278\Structures\sJ278103.i
PROJECT MANAGER:
DESIGNED BY:
PLOT DATE: 02-APR-2002
DRAWN BY:
CHECKED BY:

GPS CONTROL POINTS

HVCTRL # 1

STANDARD DISK STAMPED

NEWLINE AZ MK

NORTHING: 54721.998
EASTING: 487663.805
ELEVATION: 178.75

STATION MARK IS A SURVEY DISK SET INTO THE TOP OF AN IRREGULAR MASS OF CONCRETE. THE MARK IS STAMPED NEWLINE AZ MK 1996.

THE MARK IS 19.3 KM NORTH OF BRATTLEBORO, 14.5 KM WEST OF THE CONNECTICUT RIVER, AND 37.0 KM SOUTH OF SPRINGFIELD. TO REACH FROM THE POST OFFICE IN NEWFANE, PROCEED NORTH ON VT 30 FOR 1.0 KM TO THE MARK ON THE LEFT. THE MARK IS 23.5 M NORTH NORTHEAST OF THE NORTHEAST CORNER OF THE COUNTY SEAT STORE, 9.1 M SOUTH OF A COMBINATION POLE NUMBER 162/333/145, 7.3 M EAST OF THE CENTERLINE OF VT 30 AND 3.0 M SOUTH OF A FIBERGLASS WITNESS POST.

HVCTRL # 2

STANDARD DISK STAMPED

NEWLINE

NORTHING: 55029.772
EASTING: 487912.390
ELEVATION: 176.59

STATION MARK IS A SURVEY DISK SET INTO THE TOP OF AN IRREGULAR MASS OF CONCRETE. THE MARK IS STAMPED NEWLINE 1996.

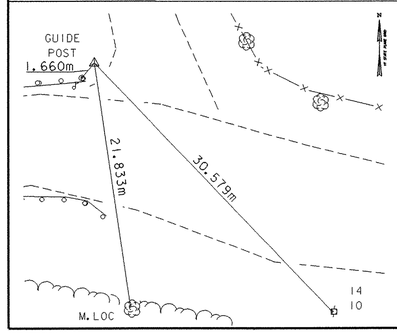
THE MARK IS 19.3 KM NORTH OF BRATTLEBORO, 14.5 KM WEST OF THE CONNECTICUT RIVER, AND 37.0 KM SOUTH OF SPRINGFIELD. TO REACH FROM THE POST OFFICE IN NEWFANE, PROCEED NORTH ON VT 30 FOR 1.37 KM TO THE MARK ON THE LEFT. THE MARK IS 28.3 M SOUTH OF A COMBINATION POLE NUMBER 153/342, 18.9 M SOUTHWEST OF A COMBINATION POLE NUMBER 341/6/152X, 7.0 M WEST OF THE CENTERLINE OF VT 30 AND 0.9 M EAST OF A FIBERGLASS WITNESS POST.

* DESCRIPTION PROVIDED BY VERMONT AGENCY OF TRANSPORTATION GEODETIC SURVEY UNIT

TRAVERSE TIES

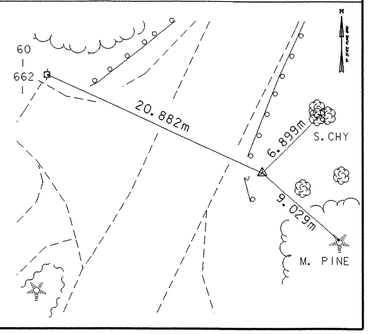
TRAV. PT. 8

N = 55113.2335
E = 488802.3902
Z = 124.191



TRAV. PT. 9

N = 55026.0584
E = 488746.2763
Z = 125.550

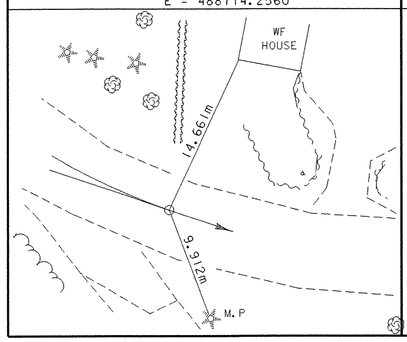


* MAIN TRAVERSE COMPLETED April 30,1997 by L. Orvis & R. Bullock

ALIGNMENT TIES

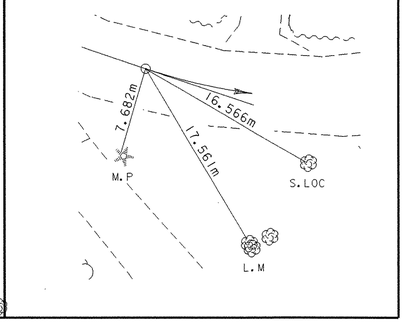
PT STA. 10+062.375

N = 54989.8420
E = 488714.2560



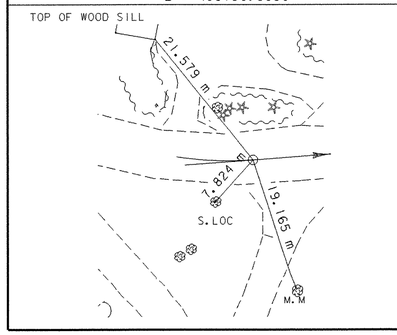
PC STA. 10+068.361

N = 54993.7380
E = 488718.7990



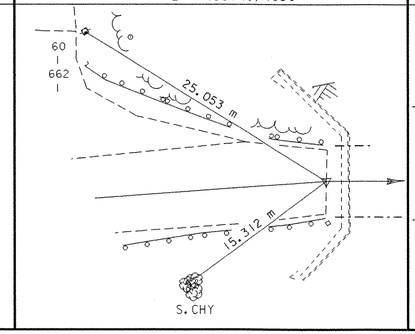
PT STA. 10+088.304

N = 55009.3600
E = 488730.9830



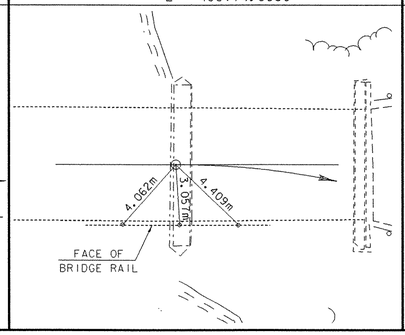
PI 10+129.689

N = 55046.3890
E = 488749.4650



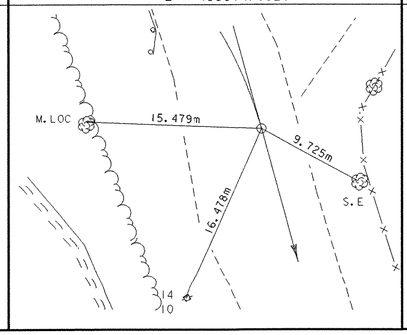
PC STA. 10+178.983

N = 55088.7550
E = 488774.6660



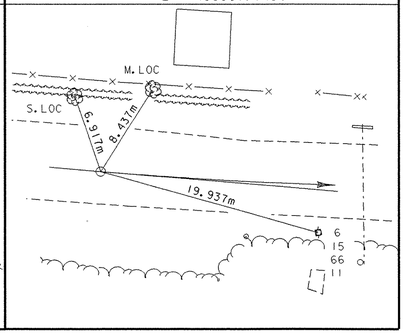
PT STA. 10+224.578

N = 55104.6070
E = 488814.0320



PC STA. 10+280.285

N = 55089.8280
E = 488867.7430



* ALIGNMENT STAKED 01/16/01 by L. Orvis (P.C.) & J. Hulett

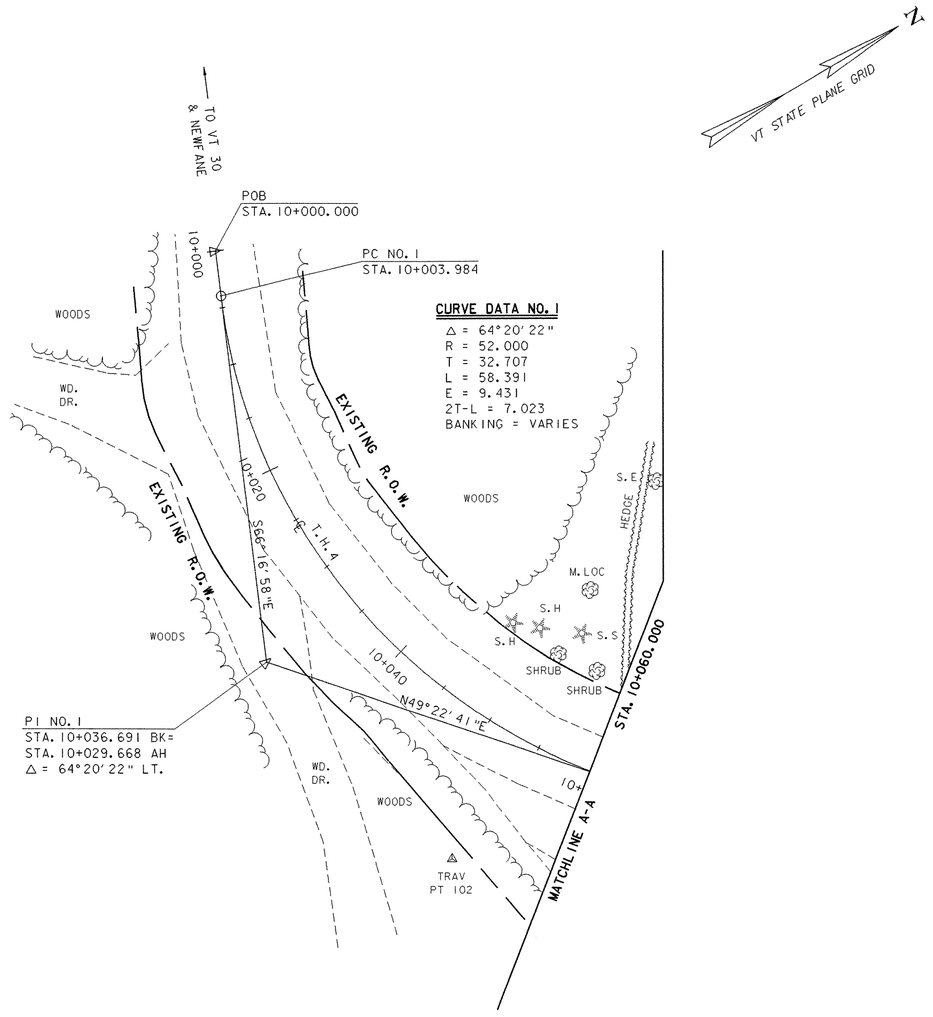
TIE SHEET

DATUM

VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)
ADJUSTMENT Least Squares

PROJECT NAME: BROOKLINE-NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278/Structures/sj278tie.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: R. BULLOCK
CHECKED BY: M. LOZIER
SHEET 10 OF 78



0 10 20 30

SCALE = 1:250

LAYOUT SHEET (1)

PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)

FILE NAME: 95j278\Structures\sj27810l.i		PLOT DATE:	26-JUN-2003
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	M. LOZIER
		SHEET	11 OF 78

Metric

NOTE:
SEE SHEET 13 OF THE PLANS
FOR CONSTRUCTION NOTES.

VT STATE PLANE GRID

CURVE DATA NO. 2
Δ = 22°51'12"
R = 50.000
T = 10.106
L = 19.943
E = 1.011
2T-L = 0.269
BANKING = VARIES

POE T.H. 15 LT.
STA. 30+030.000
END PAVEMENT/MATCH EXISTING

T.H. 15 LT. POT STA. 30+006.848 =
DRIVE NO. 2 POB STA. 50+000.0000
Δ = 76°22'33" LT.

ML POT STA. 10+104.333 =
T.H. 15 LT. POB STA. 30+000.0000
Δ = 85°41'15" LT.

STA. 10+095.0 LT. - STA. 10+124.6 LT.
NEW 150mm X 33.2m UNDERDRAIN
W/ FLUSHING BASIN @ 10+095.0 LT.

PC NO. 2
STA. 10+068.361

POE DRIVE NO. 2
STA. 50+015.000

PT NO. 2
STA. 10+088.304

PI NO. 3
STA. 10+129.689
Δ = 4°13'18" RT.
NO CURVE RUN

STA. 10+129.725
BEGIN BRIDGE
F.G. = 124.790

CONSTRUCTION LIMITS (TYP.)

WEST RIVER

ML POT STA. 10+160.000=
CHANNEL POT STA. 5+050.000
Δ = 90° LT.

CHANNEL LINE POE
STA. 5+085.000

STA. 10+188.367
℄ BRG. ABUT. NO. 2
F.G. = 124.589
(EXP.)

STA. 10+188.836
END BRIDGE
F.G. = 124.578

STA. 10+179.255
℄ BRG. PIER
F.G. = 124.808
(FIXED)

NEW PUSH BRACE
NEW GUY
TRAV PT 101

PI NO. 4
STA. 10+205.665 BK=
STA. 10+197.895 AH
Δ = 74°38'20" RT.

POE DRIVE NO. 1
STA. 40+020.000

NEW POLE
NEW GUYS
RELOCATED MAILBOX

STA. 10+130.485
℄ BRG. ABUT. NO. 1
F.G. = 124.808
(EXP.)

PC NO. 4
STA. 10+178.983

TRAV PT 105

TEMPORARY ℄ DETOUR

PT NO. 1
STA. 10+062.375

ML POT STA. 10+096.508 =
T.H. 15 RT. POB STA. 20+000.0000
Δ = 114°35'11" RT.

300mm STONE FILL, TYPE 1 (TYP.)

TEMPORARY CONSTRUCTION LIMITS

1200mm STONE FILL, TYPE IV

300mm STONE FILL, TYPE 1 (TYP.)

ML POST STA. 10+221.700 =
DRIVE NO. 1 POB STA. 40+000.0000
Δ = 124°39'14" LT.

PT NO. 4
STA. 10+224.578

STA. 10+230.000
END PROJECT
BEGIN APPROACH

STA. 10+260.000
END APPROACH
MATCH EXISTING

STA. 10+265.000

MATCHLINE A-A

MATCHLINE B-B

STA. 10+070.000
BEGIN APPROACH
MATCH EXISTING

PI NO. 2
STA. 10+078.467 BK=
STA. 10+078.198 AH
Δ = 22°51'12" LT.

POE T.H. 15 RT.
STA. 20+030.000

POT T.H. 15 RT.
STA. 20+013.000
END PAVEMENT/MATCH EXISTING

STA. 10+100.000
END APPROACH
BEGIN PROJECT

BM NO. 2
CHS. SQ. IN ABUT.
EL. 124.961

BM NO. 3
USGS DISK IN LEDGE
STAMPED "GAGING STATION 408"
EL. 124.397

CHANNEL LINE POB
STA. 5+000.000

CHANNEL LINE
N59°15'13"W

CURVE DATA NO. 4
Δ = 74°38'20"
R = 35.000
T = 26.682
L = 45.594
E = 9.010
2T-L = 7.770
BANKING = VARIES

TEMPORARY CONSTRUCTION LIMITS

EXISTING PAVEMENT (RETAIN)

APPROXIMATE AERIAL RELOCATION
ROUTE BY VERIZON & CVPS

STA. 10+248.2 LT. - STA. 10+250.4 RT.
EXISTING 460mm ACCOMP (RETAIN)

EXISTING BRIDGE DATA

STEEL THROUGH TRUSS BRIDGE W/ APPROACH SPAN
CONCRETE ABUTMENTS AND PIERS
OVERALL LENGTH = 59.131m
TRUSS SPAN ℄ BRG - ℄ BRG = 48.768m
APPROACH SPAN LENGTH = 9.144m
℄ TO ℄ TRUSS WIDTH = 6.325m
RAIL TO RAIL WIDTH = 5.892m
VERTICAL CLEARANCE = 4.302m
YEAR BUILT = 1928

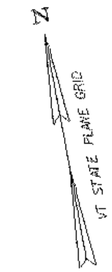
0 10 20 30
SCALE = 1:250

LAYOUT SHEET (2)

PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)

FILE NAME:	951278\Structures\s1278102.1	PLOT DATE:	26-JUN-2003
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	M. LOZIER
		SHEET	12 OF 78

Metric



CONSTRUCT PAVED APRON
10+077.9 LT.

RECONSTRUCT T.H. 15 APPROACH
10+096.5 RT.
10+104.3 LT.

CONSTRUCT PAVED DRIVE
10+100.6 LT.
10+221.7 LT.

BRIDGE RAILING-2 RAIL GALV. BOX BEAM (MOD.)
10+179.2 LT. - 10+187.1 LT.
10+179.3 RT. - 10+189.4 RT.

150mm UNDERDRAIN
10+095.0 LT. - 10+118.8 LT.

150mm UNDERDRAIN CARRIER PIPE
10+118.8 LT. - 10+124.6 LT.
0.6m VERT. @ 10+095.0 LT.

UNDERDRAIN FLUSHING BASIN (FB)
10+095.0 LT.

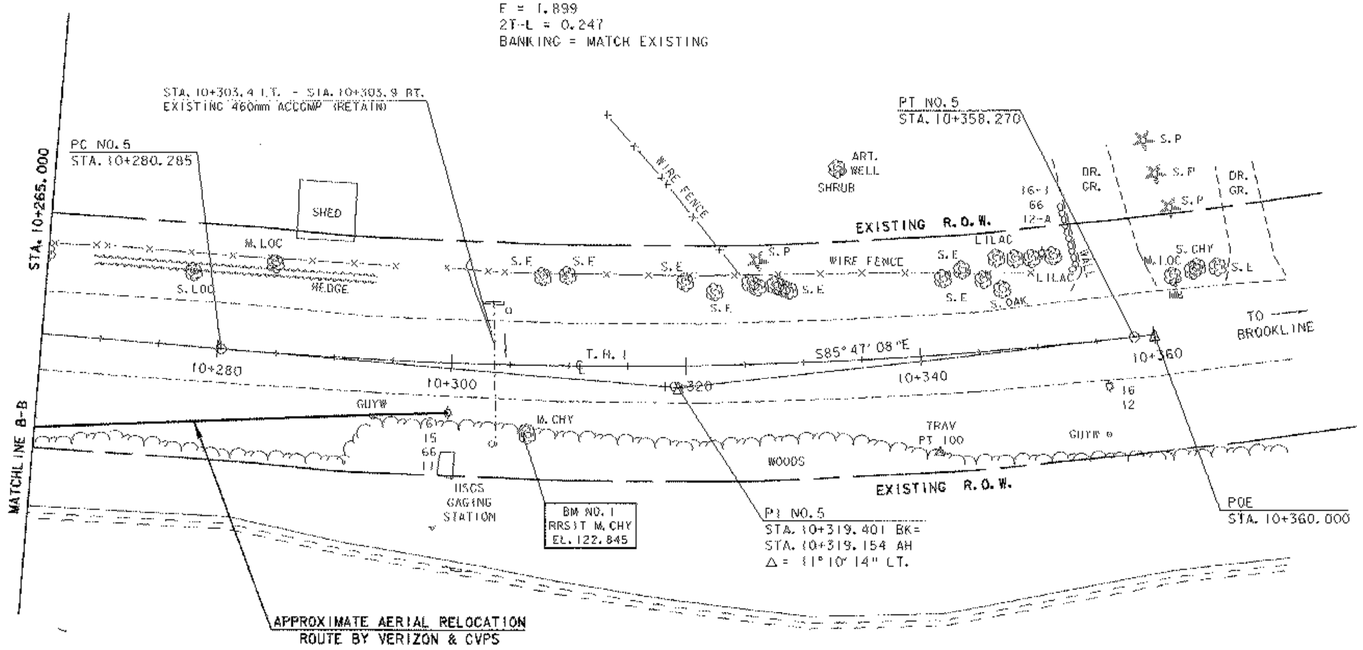
RELOCATE MAILBOX, SINGLE SUPPORT
FROM 10+211.6 LT. TO 10+~~225.0~~ 210.0 LT.

HEAVY DUTY STEEL BEAM GUARDRAIL
10+105.7 RT. - 10+130.5 RT.
10+109.5 LT. - 10+130.5 LT.
10+187.1 LT. - 10+211.3 LT.
10+189.4 RT. - 10+213.7 RT.

ANCHOR FOR STEEL BEAM RAIL
10+107.5 RT.
10+109.8 LT.
10+209.8 LT.
10+211.1 RT.

REMOVAL AND DISPOSAL OF GUARDRAIL
10+107.3 RT. - 10+129.7 RT.
10+109.0 LT. - 10+129.7 LT.
10+188.0 LT. - 10+212.5 LT.
10+189.7 RT. - 10+213.6 RT.

CURVE DATA NO. 5
Δ = 11° 10' 14"
R = 400.000
T = 39.116
L = 77.985
E = 1.899
2T-L = 0.247
BANKING = MATCH EXISTING

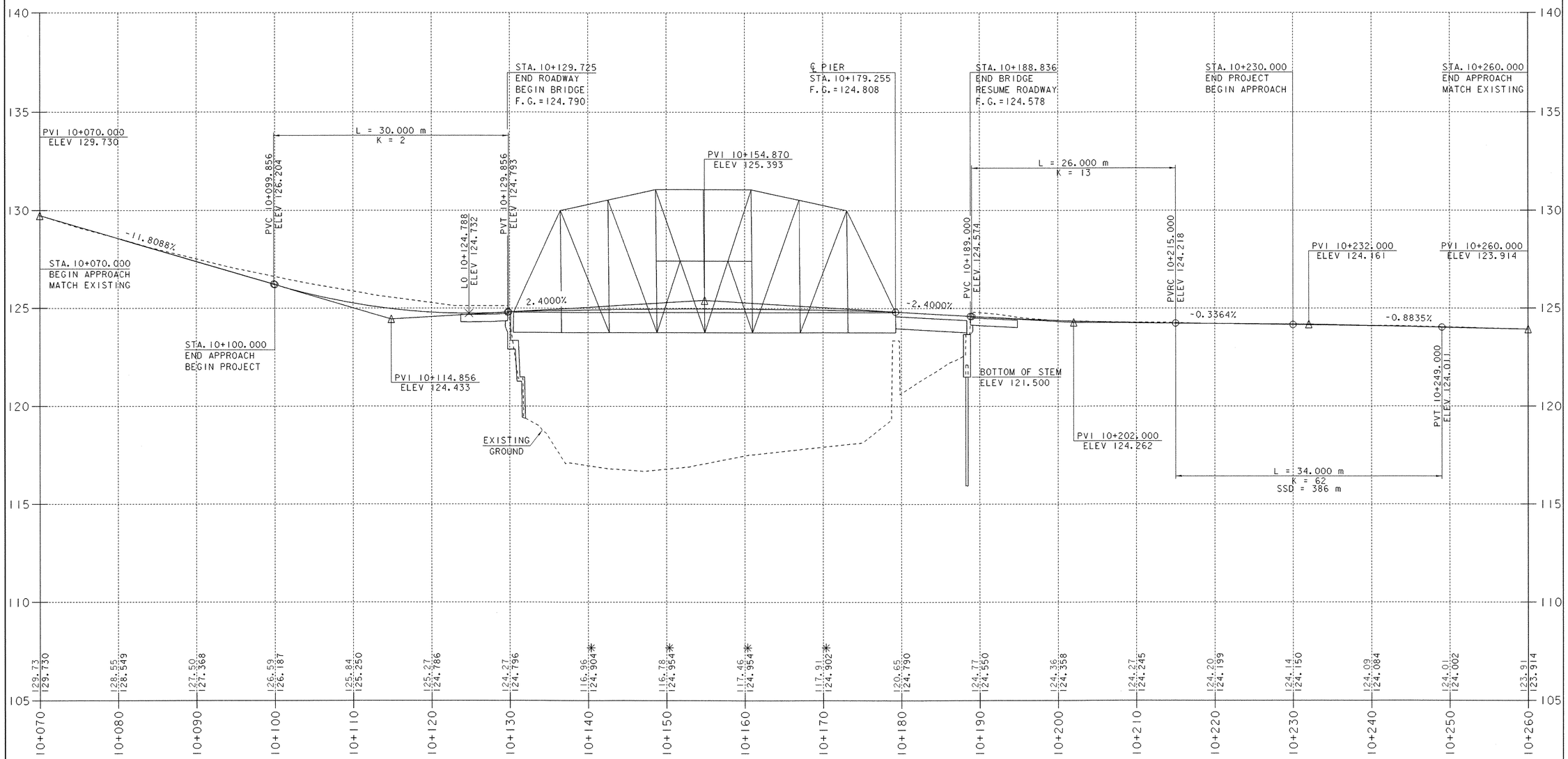


0 10 20 30
SCALE = 1:250

LAYOUT SHEET (3)

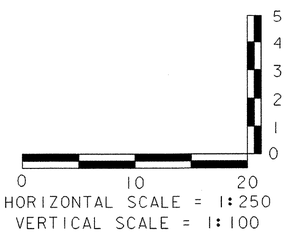
PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)
FILE NAME: 95J278\Structures\sj27803.i	PLOT DATE: 26-JUN-2003
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: M. LOZIER
	SHEET 13 OF 78

Profile Along T.H. 4 / T.H. 1



*GRADES SHOWN ARE BASED ON A 150mm RESIDUAL CAMBER AFTER ALL DEAD LOADS ARE APPLIED. SEE PROJECT NOTE 32 ON SHEET 25.

NOTE:
ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE EXISTING GROUND.
ELEVATIONS SHOWN TO THE NEAREST THOUSANDTH ARE FINISH GRADE.



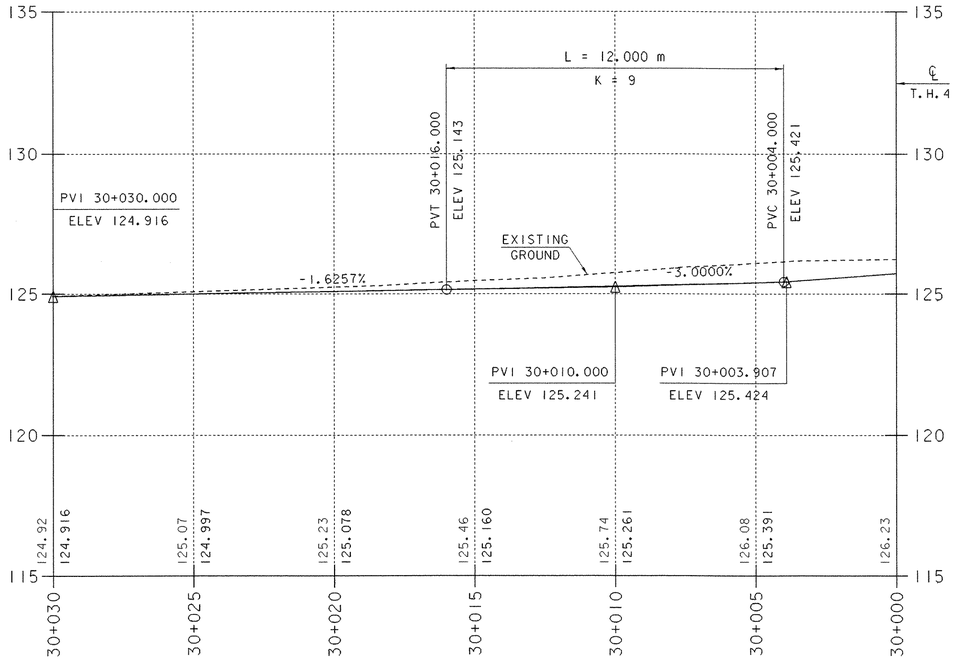
HORIZONTAL SCALE = 1:250
VERTICAL SCALE = 1:100

PROFILE SHEET

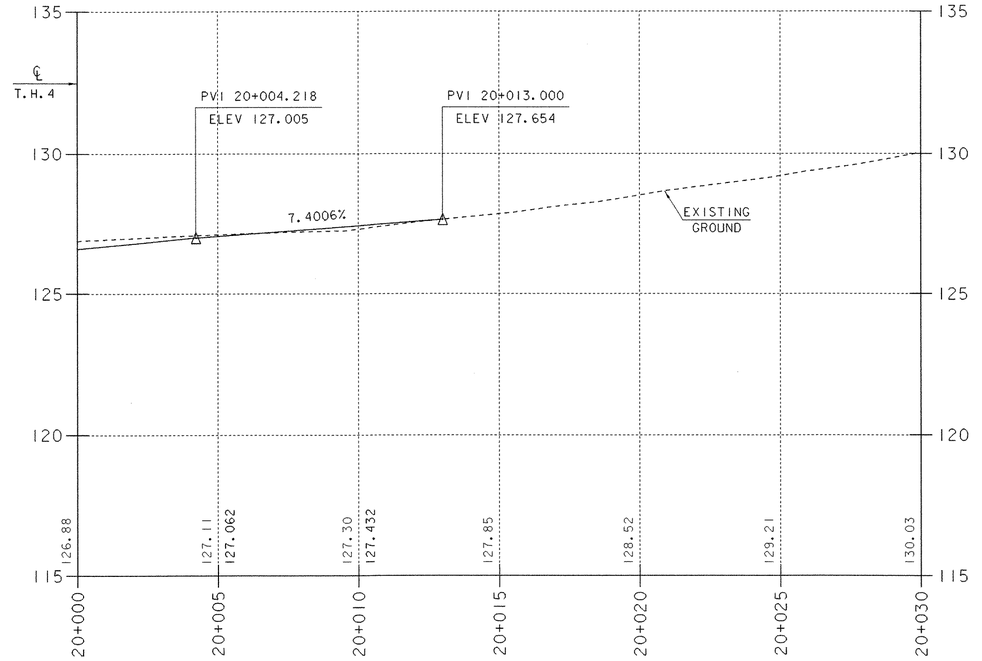
PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95J278\Structures\sj266pfl.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 14 OF 78

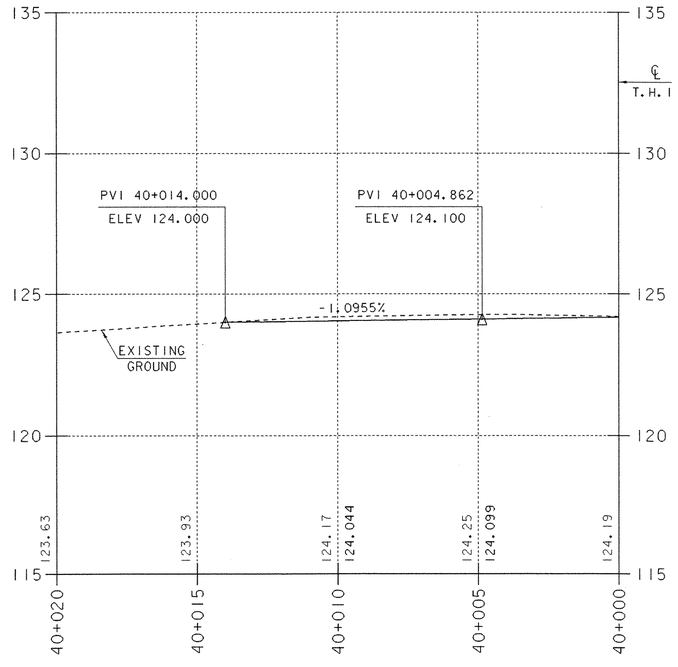
T.H. 15 Profile Sta. 10+104.333 Lt.



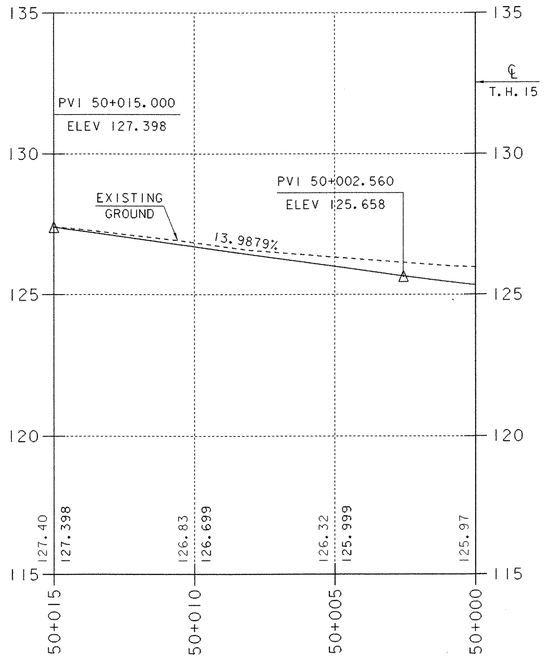
T.H. 15 Profile Sta. 10+096.508 Rt.

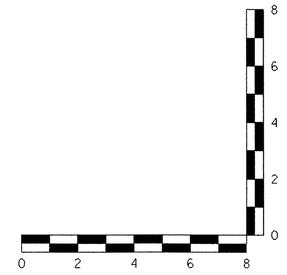


Drive No. 1 Profile Sta. 10+221.700 Lt.



Drive No. 2 Profile Sta. 30+006.848 Lt.



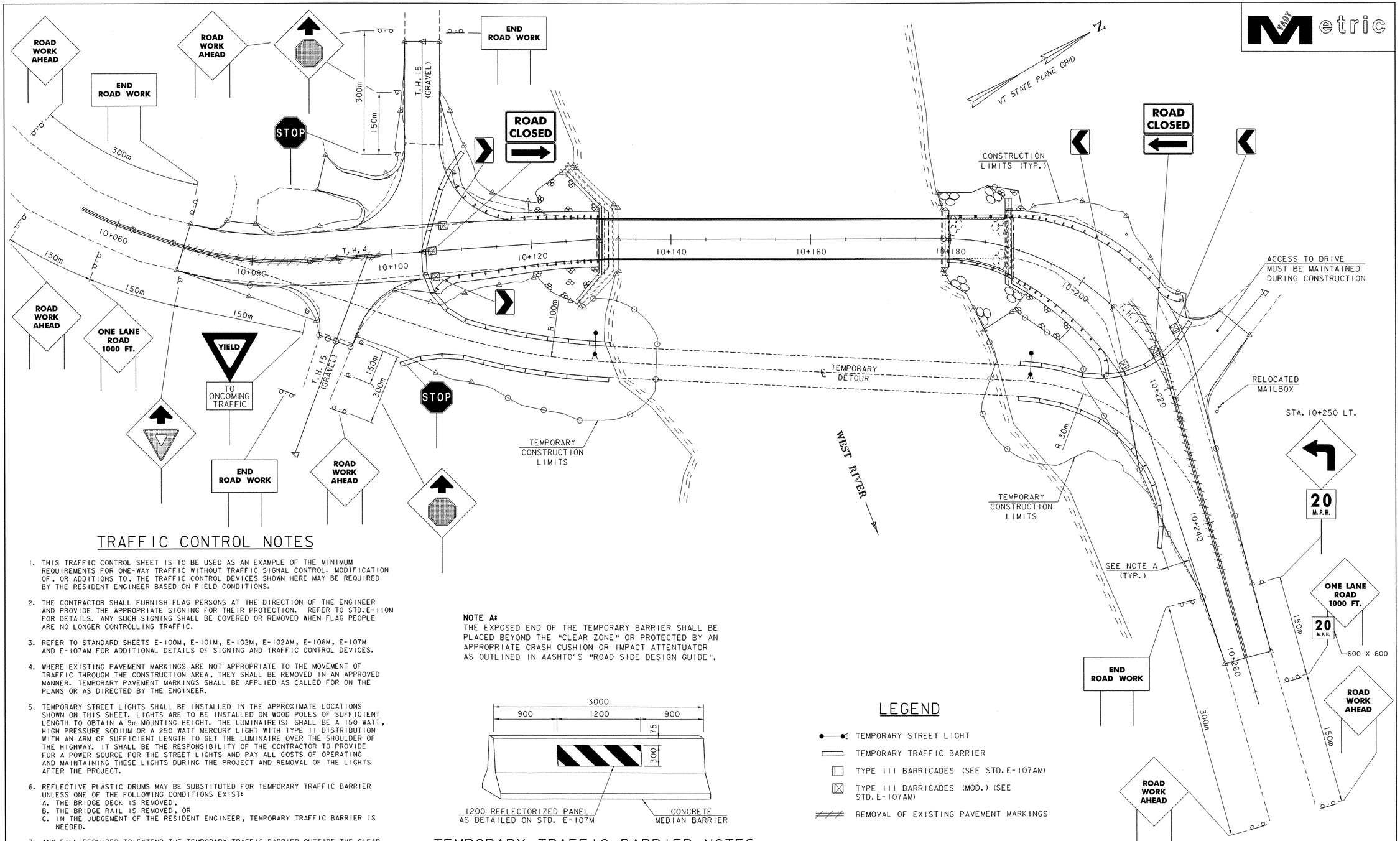


HORIZONTAL SCALE = 1:100
VERTICAL SCALE = 1:100

NOTE:
ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE EXISTING GROUND.
ELEVATIONS SHOWN TO THE NEAREST THOUSANDTH ARE FINISH GRADE.

SIDE ROAD AND DRIVES PROFILE SHEET

PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)
FILE NAME: 95j278\Structures\sj266dpf.i	PLOT DATE: 26-JUN-2003
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: C. ROY
DESIGNED BY: C. ROY	CHECKED BY: M. LOZIER
	SHEET 15 OF 78



TRAFFIC CONTROL NOTES

1. THIS TRAFFIC CONTROL SHEET IS TO BE USED AS AN EXAMPLE OF THE MINIMUM REQUIREMENTS FOR ONE-WAY TRAFFIC WITHOUT TRAFFIC SIGNAL CONTROL. MODIFICATION OF, OR ADDITIONS TO, THE TRAFFIC CONTROL DEVICES SHOWN HERE MAY BE REQUIRED BY THE RESIDENT ENGINEER BASED ON FIELD CONDITIONS.
2. THE CONTRACTOR SHALL FURNISH FLAG PERSONS AT THE DIRECTION OF THE ENGINEER AND PROVIDE THE APPROPRIATE SIGNING FOR THEIR PROTECTION. REFER TO STD.E-110M FOR DETAILS. ANY SUCH SIGNING SHALL BE COVERED OR REMOVED WHEN FLAG PEOPLE ARE NO LONGER CONTROLLING TRAFFIC.
3. REFER TO STANDARD SHEETS E-100M, E-101M, E-102M, E-102AM, E-106M, E-107M AND E-107AM FOR ADDITIONAL DETAILS OF SIGNING AND TRAFFIC CONTROL DEVICES.
4. WHERE EXISTING PAVEMENT MARKINGS ARE NOT APPROPRIATE TO THE MOVEMENT OF TRAFFIC THROUGH THE CONSTRUCTION AREA, THEY SHALL BE REMOVED IN AN APPROVED MANNER. TEMPORARY PAVEMENT MARKINGS SHALL BE APPLIED AS CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
5. TEMPORARY STREET LIGHTS SHALL BE INSTALLED IN THE APPROXIMATE LOCATIONS SHOWN ON THIS SHEET. LIGHTS ARE TO BE INSTALLED ON WOOD POLES OF SUFFICIENT LENGTH TO OBTAIN A 9m MOUNTING HEIGHT. THE LUMINAIRE(S) SHALL BE A 150 WATT, HIGH PRESSURE SODIUM OR A 250 WATT MERCURY LIGHT WITH TYPE II DISTRIBUTION WITH AN ARM OF SUFFICIENT LENGTH TO GET THE LUMINAIRE OVER THE SHOULDER OF THE HIGHWAY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE FOR A POWER SOURCE FOR THE STREET LIGHTS AND PAY ALL COSTS OF OPERATING AND MAINTAINING THESE LIGHTS DURING THE PROJECT AND REMOVAL OF THE LIGHTS AFTER THE PROJECT.
6. REFLECTIVE PLASTIC DRUMS MAY BE SUBSTITUTED FOR TEMPORARY TRAFFIC BARRIER UNLESS ONE OF THE FOLLOWING CONDITIONS EXIST:
   A. THE BRIDGE DECK IS REMOVED,
   B. THE BRIDGE RAIL IS REMOVED, OR
   C. IN THE JUDGEMENT OF THE RESIDENT ENGINEER, TEMPORARY TRAFFIC BARRIER IS NEEDED.
7. ANY FILL REQUIRED TO EXTEND THE TEMPORARY TRAFFIC BARRIER OUTSIDE THE CLEAR ZONE SHALL BE NEATLY PLACED AND COMPACTED FOR THE SUPPORT OF THE BARRIER AND SHALL BE PROVIDED WITH ADEQUATE COVER TO PREVENT EROSION. THE RESIDENT ENGINEER SHALL APPROVE THE FILL MATERIAL PRIOR TO PLACEMENT. SIDE SLOPES OF THE FILL SHALL BE NO STEEPER THAN 1:4.
8. ANY EXCAVATION REQUIRED TO EXTEND THE TEMPORARY TRAFFIC BARRIER SHALL BE LIMITED TO THE POINT AT WHICH THE END OF BARRIER IS FULLY BURIED OR THE CLEAR ZONE LIMIT, WHICHEVER IS SHORTER. ONCE THE BARRIER HAS BEEN PLACED, IT SHALL BE PROPERLY BACKFILLED TO PROVIDE A SMOOTH CONTINUOUS TRANSITION FROM THE EMBANKMENT TO THE BARRIER.
9. ALL TEMPORARY FILL OR EXCAVATION REQUIRED TO INSTALL TEMPORARY BARRIER SHALL BE REMOVED OR REPLACED TO THE PRE-CONSTRUCTION CONDITION AFTER THE BARRIER IS NO LONGER REQUIRED FOR A PARTICULAR PHASE OF CONSTRUCTION.
10. THE COST OF FURNISHING, PLACING, REMOVING OR REPLACING OF MATERIAL SHALL BE SUBSIDIARY TO ITEM 621.90, "TEMPORARY TRAFFIC BARRIER".

NOTE A:
THE EXPOSED END OF THE TEMPORARY BARRIER SHALL BE PLACED BEYOND THE "CLEAR ZONE" OR PROTECTED BY AN APPROPRIATE CRASH CUSHION OR IMPACT ATTENTUATOR AS OUTLINED IN AASHTO'S "ROAD SIDE DESIGN GUIDE".

TEMPORARY TRAFFIC BARRIER NOTES

1. THE PANEL SHOWN IS ORIENTATED FOR TRAFFIC PASSING TO THE RIGHT.
2. THE PANEL SHALL BE ATTACHED TO THE CONCRETE MEDIAN BARRIER IN A SECURE FASHION.
3. ALL BARRIER PLACED IN TAPERS SHALL BE PROVIDED WITH A REFLECTORIZED PANEL AS SHOWN. THE PANEL SHALL BE ORIENTATED IN THE PROPER DIRECTION (RIGHT OR LEFT) BASED ON THE APPROACHING TRAFFIC.
4. BARRIER SECTIONS MAY BE MOVED DURING WORKING HOURS TO PROVIDE ACCESS TO THE WORKSITE. HOWEVER, THEY MUST BE REPLACED FOR NON-WORK PERIODS.

LEGEND

- TEMPORARY STREET LIGHT
- TEMPORARY TRAFFIC BARRIER
- TYPE III BARRICADES (SEE STD. E-107AM)
- TYPE III BARRICADES (MOD.) (SEE STD. E-107AM)
- REMOVAL OF EXISTING PAVEMENT MARKINGS

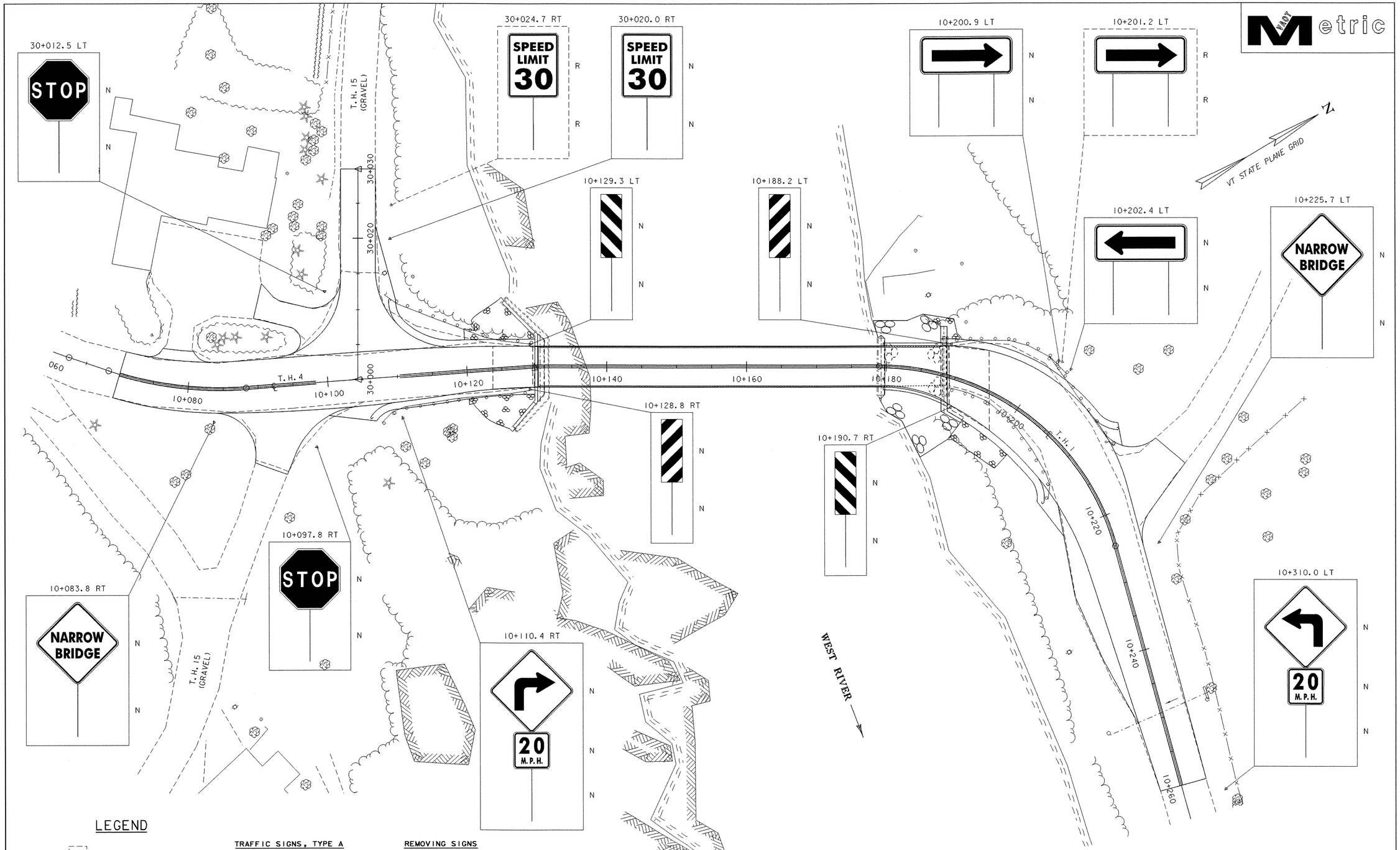
STANDARDS REQUIRED:
E-100M, E-101M, E-102M, E-102AM, E-106M, E-107M, E-107AM, E-110M, E-121M, E-129M, E-146M, E-175M

0 10 20 30
SCALE = 1:250

TEMPORARY DETOUR LAYOUT SHEET

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj278det.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 16 OF 78



LEGEND

	EXISTING SIGN
	NEW SIGN
R	REMOVE
N	NEW

TRAFFIC SIGNS, TYPE A

10+083.8 RT (1)
10+097.8 RT (1)
10+110.4 RT (2)
10+128.8 RT (1)
10+129.3 LT (1)
10+188.2 LT (1)
10+190.7 RT (1)
10+200.9 LT (1)
10+202.4 LT (1)
10+225.7 LT (1)
10+310.0 LT (2)
30+012.5 LT (1)
30+020.0 RT (1)

REMOVING SIGNS

10+201.2 LT (1)
30+024.7 RT (1)

DURABLE 100mm YELLOW LINE

10+070.0 - 10+098.3 C.L. (DOUBLE)
10+110.3 - 10+260.0 C.L. (DOUBLE)

0 10 20 30

SCALE = 1:250

PERMANENT TRAFFIC SIGNS & PAVEMENT MARKINGS LAYOUT SHEET

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95J278\Structures\sj278trf.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 17 OF 78

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	NEW SIGN POSTS NO. OF POSTS	FLANGED CHANNEL kg/m 1.7	FLANGED CHANNEL kg/m 3.0	FLANGED CHANNEL kg/m 4.5	SQUARE STEEL (mm) kg/m 44 3.4	SQUARE STEEL (mm) kg/m 50 3.9	SQUARE STEEL (mm) kg/m 63 5.0	ANCHOR	SLEEVE	TUBULAR ALUMINUM Ø (mm) kg/m 75 1.9	TUBULAR ALUMINUM Ø (mm) kg/m 100 2.5	TUBULAR ALUMINUM Ø (mm) kg/m 100 MOD 2.5	TUBULAR STEEL Ø (mm) FOUNDATION	TUBULAR STEEL Ø (mm) kg/m 75 11.3	TUBULAR STEEL Ø (mm) kg/m 89 13.4	TUBULAR STEEL Ø (mm) kg/m 100 16.1	TUBULAR STEEL Ø (mm) kg/m 125 21.7	W-SHAPE STEEL FTG. SIZE 600 mm	W-SHAPE STEEL FTG. SIZE 750 mm	W-SHAPE STEEL WEIGHT	W-SHAPE STEEL POST SIZE	SIGN FRAME REQUIRED	REMARKS	SIGN DETAIL DETAIL ON SHEET NUMBER	SIGN DETAIL STD. SHEET NUMBER
												OPTION ITEMS																								
10+083.8 RT	NARROW BRIDGE	1	750	750	0.563						1			X																			W5-2		E-154M
10+097.8 RT	STOP	1	750	750	0.563						1			X																			R1-1		E-143M
10+110.4 RT		1	750	750	0.563						1			X																			W1-1R		E-151M
	20 M.P.H.	1	600	600	0.360																											W13-1		E-155M
10+128.8 RT		1	300	900	0.270						1		X																			OBJECT MARKER		E-120M
10+129.3 LT		1	300	900	0.270						1		X																			OBJECT MARKER		E-120M
10+188.2 LT		1	300	900	0.270						1		X																			OBJECT MARKER		E-120M
10+190.7 RT		1	300	900	0.270						1		X																			OBJECT MARKER		E-120M
10+200.9 LT		1	1200	600	0.720						2		X																			W1-6		E-152M
												m	m 64.8	m 56.0	m	m	m	EA		kg	kg	kg		kg	kg	kg	kg								
	TOTALS				m^2 3.849	m^2	EA.	m^2				m 120.8			m					kg			EA.	kg				EA.	EA.	kg					

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

PROJECT NAME: BROOKLINE-NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj278tsl.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PERMANENT TRAFFIC SIGNS SUMMARY SHEET (1)

PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

FAST 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) FOUNDATION	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																								
10+202.4 LT		1	1200	600	0.720						2		X																					W1-6		E-152M
10+225.7 LT		1	750	750	0.563						1			X																					W5-2		E-154M
10+310.0 LT		1	750	750	0.563						1			X																					W1-1L		E-151M
		1	600	600	0.360																													W13-1		E-155M
30+012.5 LT		1	750	750	0.563						1			X																					R1-1		E-143M
30+020.0 RT		1	600	750	0.450						1			X																					R2-1		E-142M

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

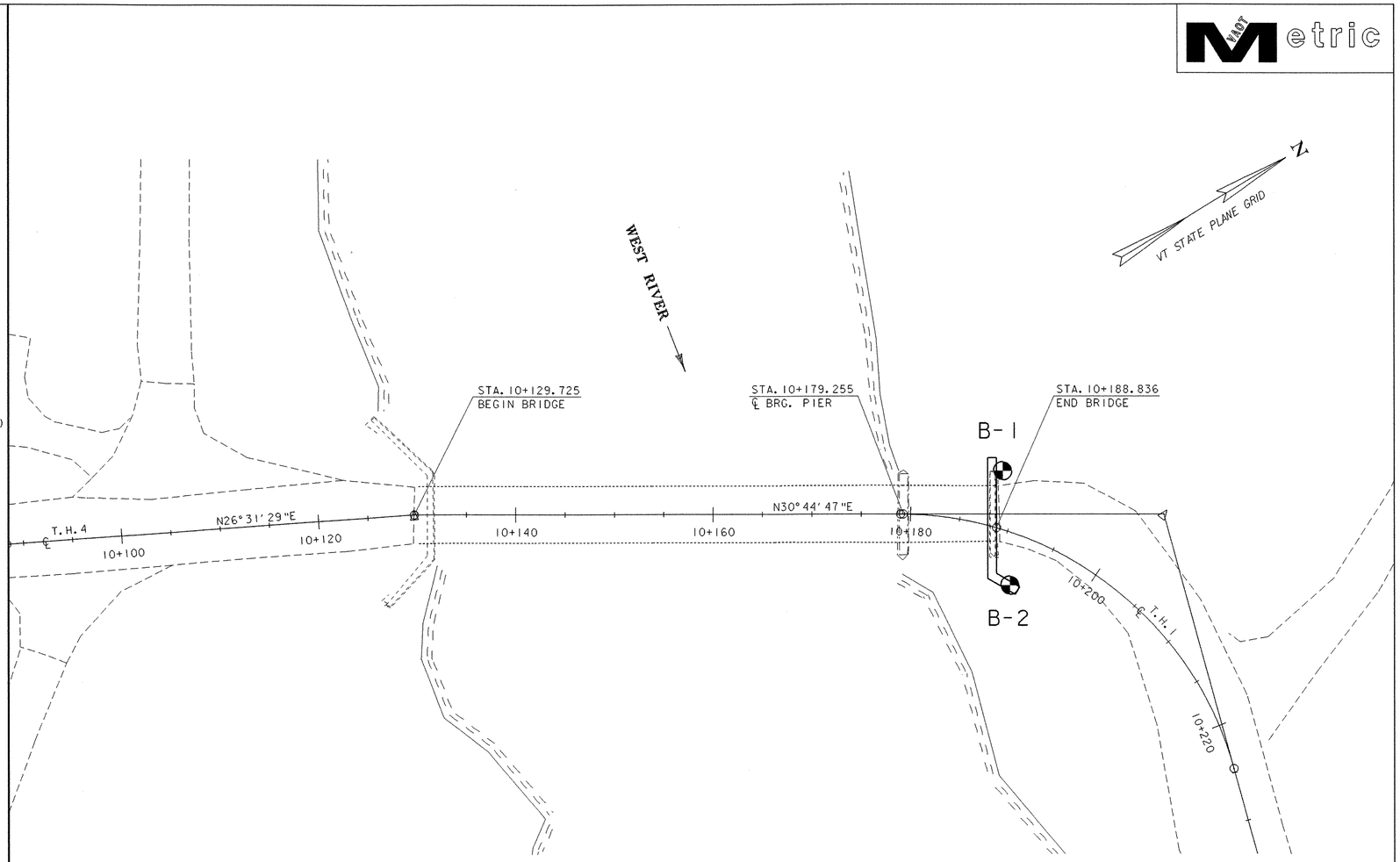
DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

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
ROD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)

COLOR

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



BORING PLAN

0 10 20 30

SCALE = 1:250

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.

GENERAL NOTES

1. The subsurface explorations shown herein were made between 05/07/01 and 05/11/01 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.

BORING CHART

HOLE NO.	STATION	OFFSET (m)	GROUND ELEV.	TLOB ELEV.
B-1	10+188.00	5.70 LT.	122.792	104.792
B-2	10+192.25	5.00 RT.	123.261	105.621

BORING INFORMATION SHEET (1)

PROJECT NAME: BROOKLINE NEWFANE

PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95J278\Structures\sj278bor.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 20 OF 78

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

HOLE NO.: B-1
SHEET 1 OF 1
DATE STARTED: 5/10/01
DATE COMPLETED: 5/11/01

PROJECT NAME: BROOKLINE-NEWFANE
SITE NAME: BR 19
STATION: 10+188.00
GROUND EL.: 122.792

PROJECT NUMBER: BHO 1442(25)
SITE NO.: TH1/TH4
OFFSET: -5.70
G.W. DEPTH: 4.30

BORING CREW
CREW CHIEF: HOLT
DRILLER: YOUNG
LOGGER: SOMERS
ADDITIONAL CREW:

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

BOTTOM OF STEM
ABUT. NO. 2
EL. 121.500

15.9m ESTIMATED PILE LENGTH
(INCLUDING 0.6m EMBEDMENT IN CONCRETE)

BOTTOM OF PILING
APPROXIMATE
EL. 106.200

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		No Rec.	3						
		A-1-b, GrSa, brn, Moist, Rec. = 0.29m	15	12.4	31	61.3	7.7		
5		A-1-a, SaGr, brn, Dry, Rec. = 0.22m	R	7	66.7	24.3	9		
		A-2-4, Sa, brn, Moist, Rec. = 0.15m	12	19.7	7	76.3	16.7		
		No Sample	17						
		A-3, Sa, brn, MTW, Rec. = 0.38m	15	22		92.1	7.9		
10		A-2-4, Sa, brn, MTW, Rec. = 0.37m	19	22.3	0.1	87	12.9		
		A-2-4, SiSa, gry, MTW, Rec. = 0.28m	10	24	4.4	74.9	20.7		
		A-2-4, Sa, gry, MTW, Rec. = 0.37m	26	23.4	3.2	80.2	16.6		
15		Visual Classification: Broken Rock, Rec. = 0.09m	34						
		BXDC, 15.75m-16.35m, Boulder							
		BXDC, 16.61m-18.00m, Boulder							

Top of bedrock @ 18.00 m

	RUN	REC%	RQD%	Dip°
Run#1: BXDC, 18.00m-18.13m, See Geologist's Report	1	100	100	45
Run#2: BXDC, 18.13m-19.65m, Rec. = 1.45m, See Geologist's Report.	2	95	95	45

20

Hole stopped @ 19.65m

25

DRILLER'S NOTES:

Ground water evevation at 4.30m.

GEOLOGISTS REPORT:

Run#1: Gray mica schist, Moderately hard, Unweathered, Competent.

Run#2: Same as Run#1, Competent.

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

HOLE NO.: B-2
SHEET 1 OF 1
DATE STARTED: 5/7/01
DATE COMPLETED: 5/9/01

PROJECT NAME: BROOKLINE-NEWFANE
SITE NAME: BR 19
STATION: 10+192.25
GROUND EL.: 123.261

PROJECT NUMBER: BHO 1442(25)
SITE NO.: TH1/TH4
OFFSET: 5.00
G.W. DEPTH: See DRILLER'S NOTES

BORING CREW
CREW CHIEF: HOLT
DRILLER: YOUNG
LOGGER: SOMERS
ADDITIONAL CREW:

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

BOTTOM OF STEM
ABUT. NO. 2
EL. 121.500

15.9m ESTIMATED PILE LENGTH
(INCLUDING 0.6m EMBEDMENT IN CONCRETE)

BOTTOM OF PILING
APPROXIMATE
EL. 106.200

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		No Rec.	14						
		No Sample	9						
		A-1-a, SaGr, brn, Dry, Rec. = 0.15m	36	5.3	73	21.3	5.7		
5		BXDC, 4.7m-5.9m, Boulders							
		A-3, Sa, brn, MTW, Rec. = 0.16m	8	24.2	4.1	88.9	7		
		A-3, Sa, brn, MTW, Rec. = 0.65m	14	25	5.2	84.8	10		
		No Sample	18						
		A-3, Sa, brn, MTW, Rec. = 0.03m	21	23.7	3.2	91	5.8		
10		A-3, Sa, brn, MTW, Rec. = 0.35m	20	20.9		91.9	8.1		
		A-3, Sa, brn, Moist, Rec. = 0.35m	15	19.2		90	10		
		A-2-4, Sa, brn, MTW, Rec. = 0.28m	19	23.9		83.3	16.7		
15		A-2-4, SiSa, gry, MTW, Rec. = 0.27m	30	22.7	2.8	64.3	32.9		
		A-1-b, SaGr, gry, Moist, Rec. = 0.03m, See Geologist's Report	12	12.1	47.7	42.9	9.4		
		BXDC, 17.35m-17.64m, Rec. = 0.22m, Broken Rock							
		BXDC, 17.64m-17.80m, Rec. = 0.16m							
		BXDC, 17.80m-18.30m, Rec. = 0.50m							
		BXDC, 18.30m-18.72m, Rec. = 0.41m							
		BXDC, 18.72m-19.69m, Rec. = 0.95m							
		BXDC, 19.69m-20.59m, Rec. = 0.69m							

Top of bedrock @ 17.64 m

RUN	REC%	RQD%	Dip°
1	100	0	40
2	100	100	40
3	98	98	45
4	98	90	45
5	77	50	45

20

Hole stopped @ 20.59m

25

DRILLER'S NOTES:

1. No ground water elevation was taken. Hole caved in @ 2.7m.

GEOLOGISTS REPORT:

Run#1: Light gray quartz mica schist, Moderately hard, Unweathered, Poor competency.

Run#2: Same as Run#1, Competent.

Run#3: Same as Run#1, Competent.

Run#4: Same as Run#1, but quartz vein from 18.72m to 18.92m, Competent.

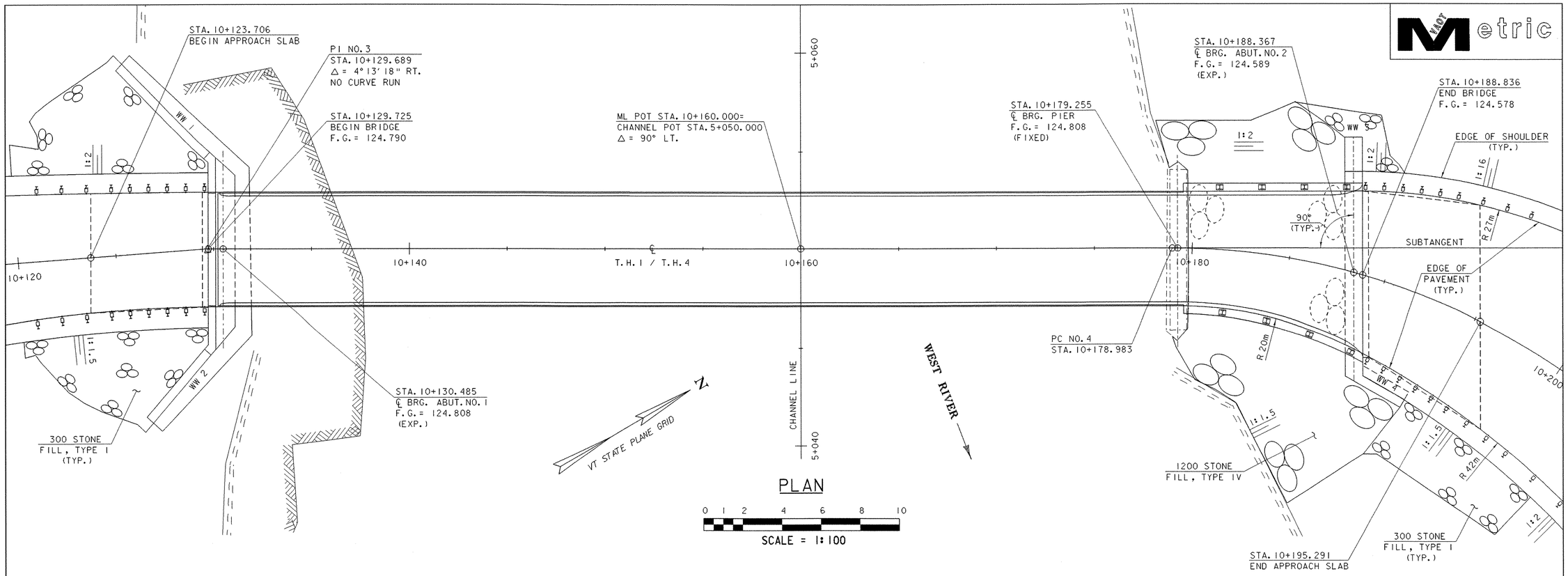
Run#5: Same as Run#1, Fair Competency.

BORING INFORMATION SHEET (2)

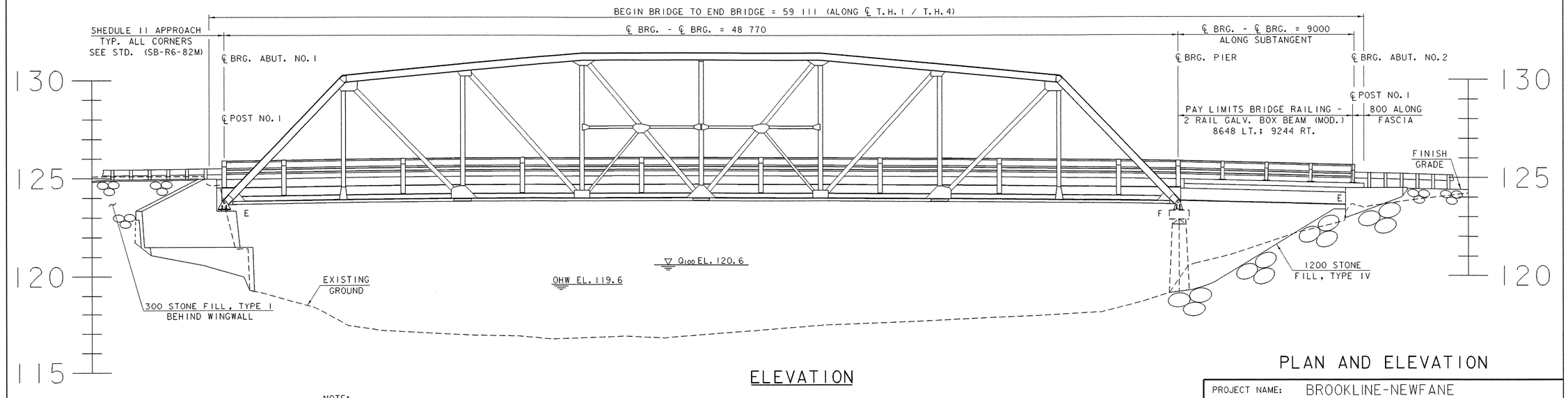
PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj278b02.1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY

PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 21 OF 78



PLAN



ELEVATION

NOTE:
SEE SHEET 41 FOR ADDITIONAL BRIDGE RAILING DETAILS.

PLAN AND ELEVATION

PROJECT NAME:	BROOKLINE-NEWFANE
PROJECT NUMBER:	BHO 1442 (25)

FILE NAME: 95j278\Structures\sj278pe.i		PLOT DATE:	26-JUN-2003
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	M. LOZIER
		SHEET	22 OF 78

Metric

LEGEND

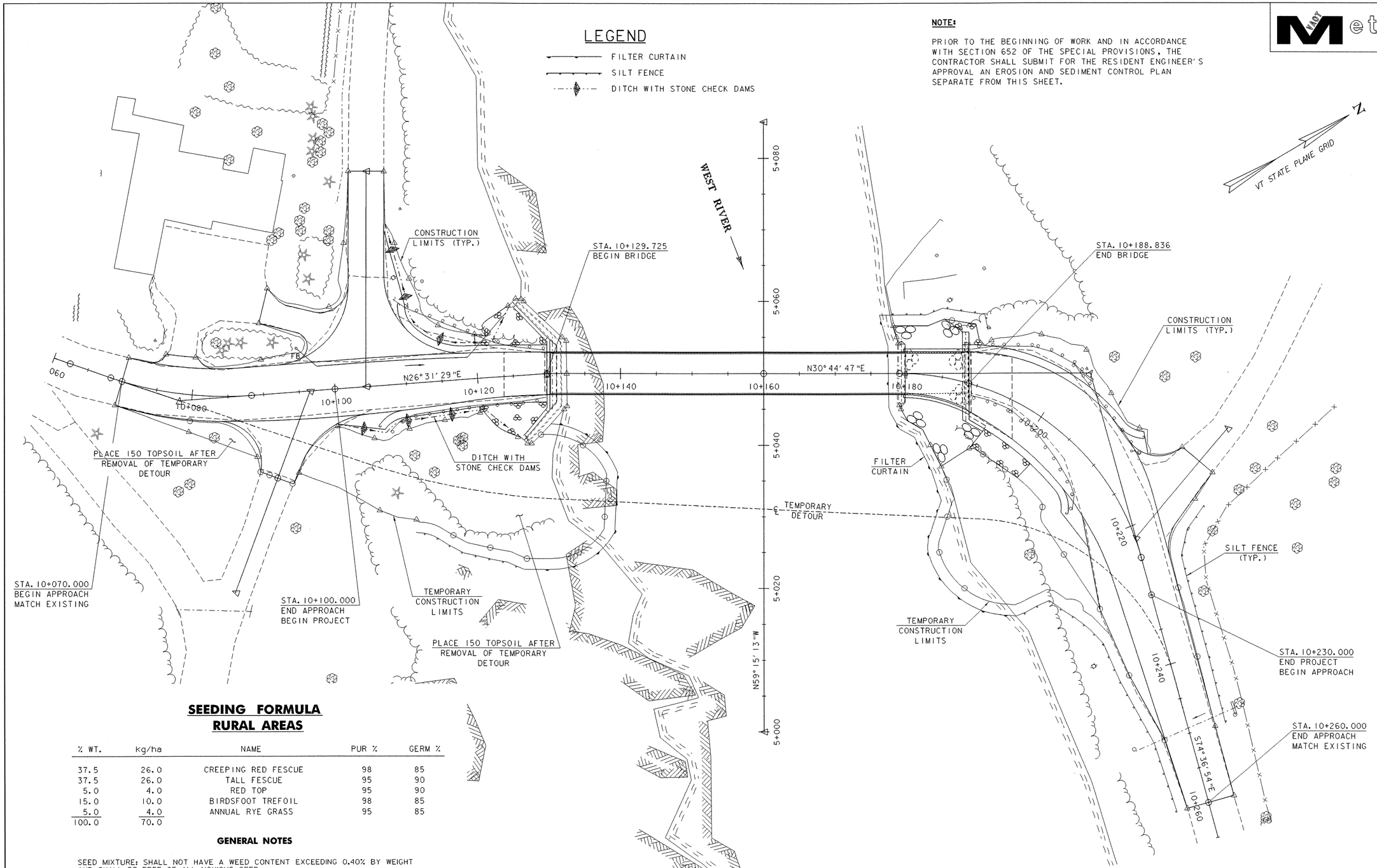
FILTER CURTAIN

SILT FENCE

DITCH WITH STONE CHECK DAMS

NOTE:

PRIOR TO THE BEGINNING OF WORK AND IN ACCORDANCE WITH SECTION 652 OF THE SPECIAL PROVISIONS, THE CONTRACTOR SHALL SUBMIT FOR THE RESIDENT ENGINEER'S APPROVAL AN EROSION AND SEDIMENT CONTROL PLAN SEPARATE FROM THIS SHEET.



SEEDING FORMULA
RURAL AREAS

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

GENERAL NOTES

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

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

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

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

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

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

0 10 20 30

SCALE = 1:250

EROSION CONTROL SHEET

PROJECT NAME: BROOKLINE NEWFANE

PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95J278\Structures\sj278ero.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 23 OF 78

Metric

N

VT STATE PLANE GRID

WEST RIVER

STA. 10+129.725
BEGIN BRIDGE

STA. 10+188.836
END BRIDGE

CONSTRUCTION
LIMITS (TYP.)

N30° 44' 47"E

N26° 31' 29"E

10+060

10+080

10+120

10+130

10+140

10+160

10+180

10+200

10+220

10+240

10+260

5+080

5+060

5+040

5+020

5+000

N59° 15' 13"W

S74° 36' 54"E

T.H. 4

℄ TEMPORARY
DETOUR

STA. 10+070.000
BEGIN APPROACH
MATCH EXISTING

STA. 10+100.000
END APPROACH
BEGIN PROJECT

TEMPORARY
CONSTRUCTION
LIMITS (TYP.)

STA. 10+230.000
END PROJECT
BEGIN APPROACH

STA. 10+260.000
END APPROACH
MATCH EXISTING

ARCHEOLOGY

FLOOD PLAIN

LEGEND

—— ARCHEOLOGY —— ARCHEOLOGICAL RESOURCE
—— FLOOD PLAIN —— FLOOD PLAIN LIMIT
- - - - - - - ORDINARY HIGH WATER LINE

APPROXIMATE AREA
OF INVOLVEMENT

0 10 20 30
SCALE = 1:250

RESOURCES SHEET

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj278rsc.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 24 OF 78

Metric

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 1996, AND ITS LATEST REVISIONS.

2. DURING CONSTRUCTION, TRAFFIC SHALL BE MAINTAINED ON A TWO-WAY, ONE-LANE TEMPORARY BRIDGE. THE CONTRACTOR SHALL NOTIFY THE TOWNS OF BROOKLINE AND NEWFANE A MINIMUM OF TWO (2) WEEKS IN ADVANCE OF DIVERTING TRAFFIC TO THE TEMPORARY BRIDGE. THE BROOKLINE AND NEWFANE TOWN OFFICES MAY BE REACHED BY TELEPHONE AT (802) 365-4648 AND (802) 365-7772, RESPECTIVELY.

3. THE CONTRACTOR SHALL ERECT AND MAINTAIN ALL TEMPORARY ON AND OFF-PROJECT SIGNS, BARRICADES AND STREET LIGHTING AS SHOWN IN THE PLANS AND AS DIRECTED BY THE RESIDENT ENGINEER. PAYMENT FOR THIS WORK, EXCLUDING CONCRETE BARRIER, SHALL BE MADE SUBSIDIARY TO ITEM 641.10, "TRAFFIC CONTROL". CONCRETE BARRIER SHALL BE PAID FOR UNDER ITEM 621.90, TEMPORARY TRAFFIC BARRIER".

4. ALL EXISTING SIGNS NOT RE-USED SHALL REMAIN THE PROPERTY OF EITHER THE TOWN OF BROOKLINE OR NEWFANE. THE CONTRACTOR SHALL STOCKPILE THESE ITEMS AT THE PROJECT SITE FOR REMOVAL BY TOWN FORCES. THE CONTRACTOR SHALL CONTACT THE APPROPRIATE TOWN OFFICE WHEN THESE ITEMS ARE READY FOR REMOVAL FROM THE PROJECT SITE.

5. REFERENCE SHEETS FROM THE RECORD PLANS AND FABRICATION DRAWINGS FOR THE EXISTING BRIDGE ARE INCLUDED IN THE PLANS FOR THE CONTRACTOR'S USE (SHEETS 68 - 78). WHERE NEEDED, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING IN THE FIELD ANY DIMENSIONS OF EXISTING MATERIAL INCLUDED IN THESE REFERENCE SHEETS.

6. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION, IN PARTICULAR THE DISCHARGE OF RAW CONCRETE INTO THE WEST RIVER, AS DIRECTED BY THE RESIDENT ENGINEER AND STANDARD SPECIFICATION SECTION 105.

7. THE CONTRACTOR IS DIRECTED TO PAY PARTICULAR ATTENTION TO SECTION SIX OF THE "ENDANGERED AND THREATENED SPECIES PERMIT" ISSUED FEBRUARY 28, 2003. COSTS OF ANY WORK NECESSARY TO ADHERE TO THE CONDITIONS AND AUTHORIZATIONS OUTLINED IN THAT SECTION OF THE PERMIT OR FUTURE AMENDMENT TO THE PERMIT AND NOT COVERED BY ITEMS ALREADY INCLUDED IN THE CONTRACT SHALL BE PAID FOR AS EXTRA WORK AS SPECIFIED IN SUBSECTION 109.06 OF THE STANDARD SPECIFICATIONS.

8. FOR INFORMATION REGARDING UTILITIES, SEE THE SPECIAL PROVISIONS.

9. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 20 DEGREES CELSIUS.

EARTHWORK AND RELATED ITEMS

10. THE TEMPORARY BRIDGE AND ITS APPROACHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 528 OF THE STANDARD SPECIFICATIONS. THE APPROACHES TO THE TEMPORARY BRIDGE SHALL BE PAVED WITH 50 MILLIMETERS OF PAVEMENT. ALL TEMPORARY PAVEMENT SHALL BE PAID FOR UNDER ITEM 406.25, "BITUMINOUS CONCRETE PAVEMENT (PG 58-28)".

11. TEMPORARY CONSTRUCTION FILLS WITHIN THE WATERCOURSE FOR ANY PURPOSE SHALL CONSIST OF CLEAN STONE FILL ONLY. NO OTHER FILLING IN THE STREAM SHALL OCCUR WITHOUT THE APPROVAL OF THE STREAM ALTERATION ENGINEER.

12. THE FOLLOWING SHALL BE PAID FOR UNDER ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT": THE COMPLETE REMOVAL AND DISPOSAL OF ALL EXISTING PAVEMENT ON THE TRUSS AND APPROACH SPANS, BOTH ABOVE AND BELOW THE EXISTING TIMBER DECKING.

13. THE FOLLOWING SHALL BE PAID FOR UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE":

    COMPLETE REMOVAL AND DISPOSAL OF THE FOLLOWING:
    - EXISTING TRUSS AND APPROACH SPAN TIMBER DECKING;
    - EXISTING TRUSS AND APPROACH SPAN CONCRETE DECKING;
    - EXISTING TRUSS SPAN STRINGERS AND FLOORBEAMS, INCLUDING ALL STEEL AND RIVETS FOR CONNECTIONS;
    - EXISTING APPROACH SPAN STRINGERS AND DIAPHRAGMS, INCLUDING ALL STEEL AND RIVETS FOR CONNECTIONS AND
    - EXISTING TRUSS MEMBERS DESIGNATED FOR REPLACEMENT IN THE PLANS.
    - ALSO INCLUDED SHALL BE WORK AT EXISTING ABUTMENT NO. 2 AS DESCRIBED IN NOTES 15-16 BELOW.

14. THE EXISTING TIMBER DECKING ON THE TRUSS SHALL REMAIN THE PROPERTY OF THE TOWN OF BROOKLINE. THE DECKING WAS INSTALLED IN PANELS. THE CONTRACTOR SHALL CAREFULLY REMOVE THE PANELS INTACT. THE PANELS SHALL BE DELIVERED TO AND UNLOADED AT THE TOWN STORAGE AREA. THE CONTRACTOR SHALL NOTIFY THE TOWN WHEN THE DECKING IS READY FOR REMOVAL FROM THE PROJECT SITE. THIS WORK SHALL BE PAID FOR UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE".

15. ABUTMENT NO.2 SHALL BE REMOVED IN ITS ENTIRETY, INCLUDING THE REMOVAL AND DISPOSAL OF ALL EXISTING FOUNDATION CONCRETE AND TIMBER PILES. THIS WORK SHALL BE PAID FOR UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE". IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY IN THE FIELD THE LOCATION, MEASUREMENTS AND ELEVATIONS OF EXISTING BRIDGE COMPONENTS OR MATERIALS PRIOR TO THE BEGINNING OF WORK.

16. PRIOR TO BEGINNING WORK FOR THE NEW ABUTMENT NO.2 FOUNDATION, THE HOLE CREATED BY THE REMOVAL OF THE EXISTING ABUTMENT NO.2 FOUNDATION SHALL BE BACKFILLED TO ELEVATION 121.500 WITH MATERIAL EXCAVATED ON SITE AS DIRECTED BY THE RESIDENT ENGINEER. THIS WORK SHALL BE PAID FOR UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE".

17. ANY DAMAGE DONE TO EXISTING SUBSTRUCTURE CONCRETE TO BE RETAINED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE STATE OF VERMONT.

18. IN THE CONSTRUCTION OF ABUTMENT NO. 2, NO NEW CONCRETE SHALL BE PLACED ABOVE BRIDGE SEAT ELEVATION PRIOR TO SETTING OF THE NEW STRUCTURAL STEEL. PRIOR TO SETTING THE BEARINGS AND STRUCTURAL STEEL, THE CONCRETE ABUTMENT CAP SHALL BE BACKFILLED TO BRIDGE SEAT ELEVATION.

19. "STONE FILL, TYPE I" SHALL BE USED AS SHOWN IN THE PLANS AND AT THE DISCRETION OF THE RESIDENT ENGINEER TO PREVENT EROSION BEHIND THE WINGWALLS. PAYMENT SHALL BE MADE UNDER ITEM 613.10, "STONE FILL, TYPE I".

PILING AND STRUCTURAL STEEL

20. THE EXISTING STRUCTURAL STEEL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE REMOVED EXISTING STRUCTURAL STEEL.

21. ABUTMENT NO.2 SHALL BE CONSTRUCTED ON A PILE FOUNDATION. PILES SHALL BE HP310X79 MEETING ASTM A572/A572M GRADE 345. THE ESTIMATED PILE LENGTH IS 15.9 METERS, INCLUDING 600 MILLIMETER EMBEDMENT IN THE ABUTMENT PILE CAP.

22. NO SUBSTITUTIONS FOR THE TYPE, NUMBER, SIZE AND GRADE OF THE PILES WILL BE ALLOWED.

23. THE DRIVING POINT OF ALL PILES SHALL BE REINFORCED. POINT REINFORCEMENT SHALL BE CAST STEEL AND SHALL MEET THE REQUIREMENTS OF SUBSECTIONS 505.04 (E) AND 730.01 OF THE STANDARD SPECIFICATIONS, AS MODIFIED BY THE SPECIAL PROVISIONS.

24. ALL PILES SHALL BE DRIVEN TO A MINIMUM ULTIMATE AXIAL CAPACITY OF 690 KILONEWTONS AND THE PILE TIP ELEVATION SHOWN IN THE PLANS AS DETERMINED BY THE RESIDENT ENGINEER. NO PILE TESTS ARE SPECIFIED FOR THIS PROJECT. CAPACITY SHALL BE DETERMINED IN ACCORDANCE WITH SUBSECTION 505.04(C)-(3) OF THE STANDARD SPECIFICATIONS.

25. ANY NECESSARY SHORING OF THE TRUSS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 502 OF THE STANDARD SPECIFICATIONS AND SHALL BE PAID FOR UNDER ITEM 502.10, "SHORING SUPERSTRUCTURE". THE CONTRACTOR SHALL TAKE CARE SUCH THAT THE TRUSS REMAINS STABLE DURING DISMANTLING OF THE EXISTING FLOOR SYSTEM AND DURING REPAIR WORK TO TRUSS MEMBERS, SUBSTRUCTURES AND BEARINGS. THE CONTRACTOR SHALL SUBMIT A PLAN FOR DISMANTLING AND SHORING, INCLUDING ASSOCIATED DESIGN CALCULATIONS, TO THE RESIDENT ENGINEER FOR REVIEW PRIOR TO BEGINNING WORK.

26. ALL NEW STRUCTURAL STEEL SHALL BE AASHTO M270M/M270 GRADE 345 PAINTED. NEW STEEL BEAMS FOR TRUSS FLOOR AND APPROACH SPAN REPLACEMENT SHALL BE PAID FOR UNDER ITEM 506.50, "STRUCTURAL STEEL (ROLLED BEAM)". ALL OTHER NEW STEEL SHALL BE PAID FOR UNDER ITEM 506.60, "STRUCTURAL STEEL".

27. PAINTING OF NEW STEEL SHALL BE PAID FOR UNDER ITEM 513.25, "STRUCTURAL PAINTING, SHOP APPLIED". ALL EXISTING STEEL RETAINED IN THE REHABILITATED STRUCTURE SHALL BE BLAST CLEANED AND REPAINTED. PAINTING OF EXISTING STEEL SHALL BE PAID FOR UNDER ITEM 513.30, "STRUCTURAL PAINTING, FIELD APPLIED". THE COLOR OF THE FINAL COAT OF PAINT SHALL BE GREEN AND SHALL CONFORM WITH FEDERAL STANDARD NO. 595, COLOR CHIP NO. 14062. THE CONTRACTOR SHALL ENSURE COMPATIBILITY BETWEEN THE SHOP AND FIELD PAINT SYSTEMS. SEE SECTION 513 OF THE SUPPLEMENTAL SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

28. THE REPAIRS TO TRUSS MEMBERS INDICATED ON SHEET 29 OF THE PLANS ARE A MINIMUM REQUIREMENT. THESE MEMBERS SHALL BE REPLACED IN-KIND TO THE EXTENT FEASIBLE WITH MEMBERS HAVING GEOMETRIES AND STRUCTURAL SECTION PROPERTIES SIMILAR TO THOSE DETAILED ON SHEET 29 OF THE PLANS AND ON THE REFERENCE SHEETS INCLUDED AT THE END OF THE PLANS. FOR THOSE MEMBERS NOT DESIGNATED FOR REPAIR AND IN THE OPINION OF THE RESIDENT ENGINEER HAVE INCURRED GREATER THAN 15 PERCENT SECTION LOSS, THE RESIDENT ENGINEER SHALL CONTACT THE PROJECT MANAGER FOR FURTHER REPAIR RECOMMENDATIONS. ANY ADDITIONAL WORK REQUIRED SHALL BE PAID FOR AT THE BID PRICE FOR THE APPROPRIATE BID ITEMS.

29. THE CONTRACTOR AND CONTRACTOR'S FABRICATOR SHALL BE RESPONSIBLE FOR DETAILING AND FIT-UP OF ALL NEW STRUCTURAL STEEL FOR FLOORING AND TRUSS MEMBER REPLACEMENT. SHOP PLANS FOR ALL NEW STRUCTURAL STEEL SHALL BE SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL AS PER SECTION 506 OF THE STANDARD SPECIFICATIONS.

30. ALL FIELD CONNECTIONS SHALL BE MADE USING HIGH-STRENGTH BOLTS MEETING AASHTO M164M, TYPE I GALVANIZED. THE BOLTS SHALL RECEIVE AN INTERMEDIATE COAT OF PAINT, AS WELL AS A FINAL COAT AFTER INSTALLATION. BOLT AND HOLE DIAMETERS SHALL BE AS SHOWN ON THE PLANS. ANY CONNECTIONS NOT DESIGNATED SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.

31. FOR ALL BOLTED CONNECTIONS, SURFACE CONDITIONS OF BOLTED PARTS SHALL MEET AASHTO CLASS B CONDITIONS.

32. ANY BOLT HOLES IN THE WEBS OF FASCIA GIRDERS NOT OTHERWISE FILLED SHALL BE FILLED WITH HIGH-STRENGTH BOLTS MEETING AASHTO M164M, TYPE I GALVANIZED. THE BOLTS SHALL RECEIVE AN INTERMEDIATE COAT OF PAINT, AS WELL AS A FINAL COAT AFTER INSTALLATION. THE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19 OF THE STANDARD SPECIFICATIONS.

33. FINISHED GRADES FOR THE TRUSS SPAN PROVIDED IN THE PLANS ARE THEORETICAL AND ARE BASED ON ASSUMPTIONS REGARDING TRUSS DEFLECTION AND CAMBER. THE CONTRACTOR SHALL CONSTRUCT THE TRUSS CONFIGURATION AS SHOWN IN THE PLANS, INCLUDING CONCRETE HAUNCHES FOR STRINGERS AS SHOWN ON SHEET 26 OF THE PLANS. BEAM PROFILES ARE NOT REQUIRED FOR DETERMINING FINISHED GRADES FOR THE TRUSS SPAN.

34. FOR THE APPROACH SPAN, AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF THE BEAMS SHALL BE TAKEN AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING FINISHED GRADES.

35. FOR BOTH ABUTMENT NOS.1 AND 2, CONCRETE PORTIONS OF THE ABUTMENTS AND WINGWALLS ABOVE ADJACENT BRIDGE SEAT ELEVATIONS SHALL NOT BE PLACED UNTIL THE STRUCTURAL STEEL HAS BEEN SET AND FINISHED GRADES HAVE BEEN DETERMINED BY THE RESIDENT ENGINEER.

36. FLEMING BRACKETS OR SIMILAR FALSEWORK SHALL BE SPACED AS REQUIRED BY DESIGN, BUT SHALL BE LIMITED TO A MAXIMUM SPACING OF 1200 MILLIMETERS. THE DESIGN OF FALSEWORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

CONCRETE AND REINFORCING STEEL

37. SUBSTRUCTURE CONCRETE SHALL BE HIGH PERFORMANCE CLASS B AND SHALL BE PAID FOR UNDER ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B". DECK AND CURB CONCRETE, AND PORTIONS OF SUBSTRUCTURE BACKWALL AND CURTAIN WALL CONCRETE AS SHOWN IN THE PLANS, SHALL BE HIGH PERFORMANCE CLASS A AND SHALL BE PAID FOR UNDER ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".

38. WHEN CONSTRUCTING THE DECK, THE CONCRETE SHALL BE POURED PARALLEL TO THE CENTERLINE OF BEARING SO AS TO LOAD THE SUPERSTRUCTURE STEEL EQUALLY.

39. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE TOP SURFACE OF THE DECK AND THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.

40. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 25 MILLIMETERS X 25 MILLIMETERS.

41. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS SHOWN IN THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.

42. THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT. UPWARD KEYS SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.

43. ALL SUPERSTRUCTURE REINFORCING STEEL, AND ANY SUBSTRUCTURE REINFORCING STEEL SO DESIGNATED ON THE PLANS, SHALL BE EPOXY COATED AND PAID FOR UNDER ITEM 507.17, "EPOXY COATED REINFORCING STEEL". WHEN EPOXY COATED REINFORCING STEEL IS TO BE CUT, THE UNCOATED ENDS SHALL BE REPAIRED WITH MATERIALS AND PROCEDURES APPROVED BY THE COATING MANUFACTURER. FLAME CUTTING OF EPOXY COATED REINFORCING STEEL WILL NOT BE PERMITTED.

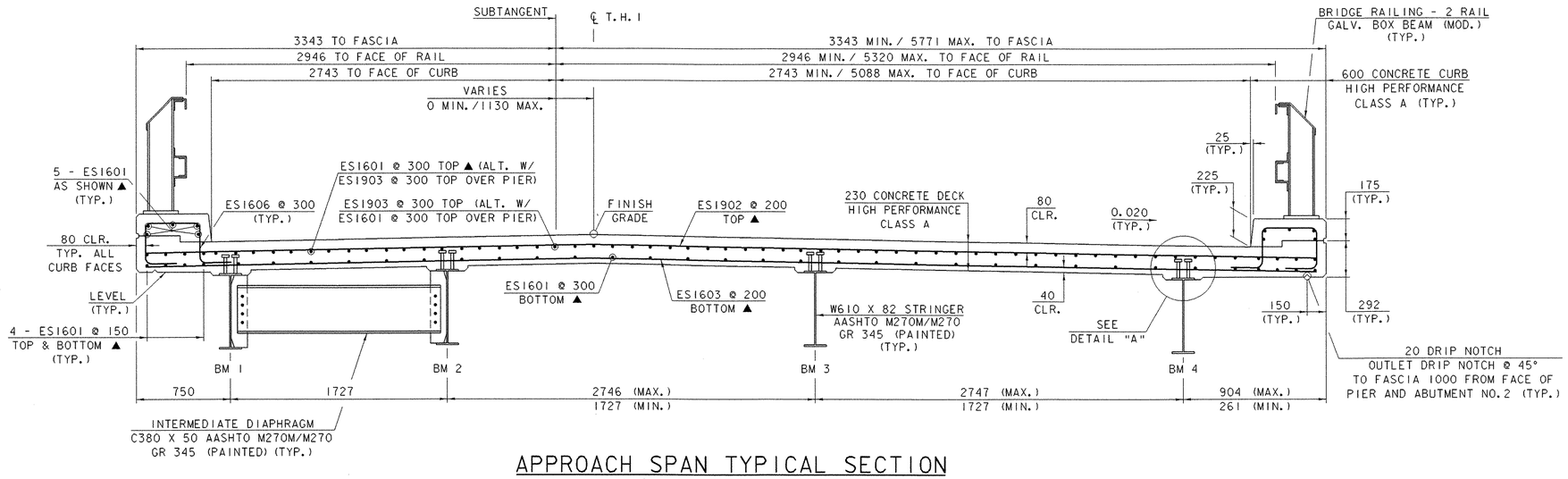
44. MINIMUM COVER FOR REINFORCING STEEL SHALL BE AS INDICATED IN THE PLANS.

45. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:
    SPACING: +/- 25 MILLIMETERS
    CLEARANCE: +/- 6 MILLIMETERS

PROJECT NOTES

PROJECT NAME: BROOKLINE NEWFANE
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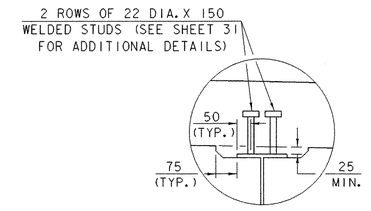
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PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: M. LOZIER
PLOT DATE: 26-JUN-2003
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CHECKED BY: M. LOZIER



APPROACH SPAN TYPICAL SECTION

0 1 2

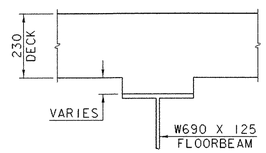
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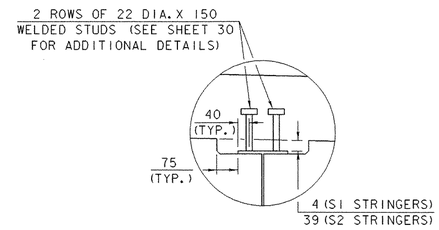
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SECTION A-A

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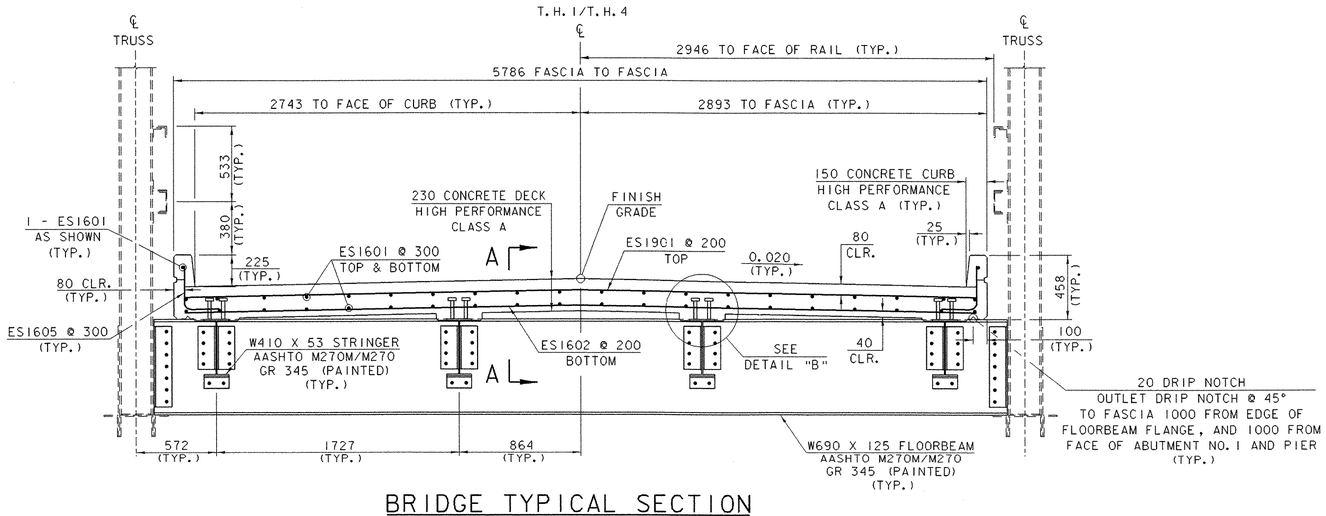
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BRIDGE TYPICAL SECTION

0 1 2

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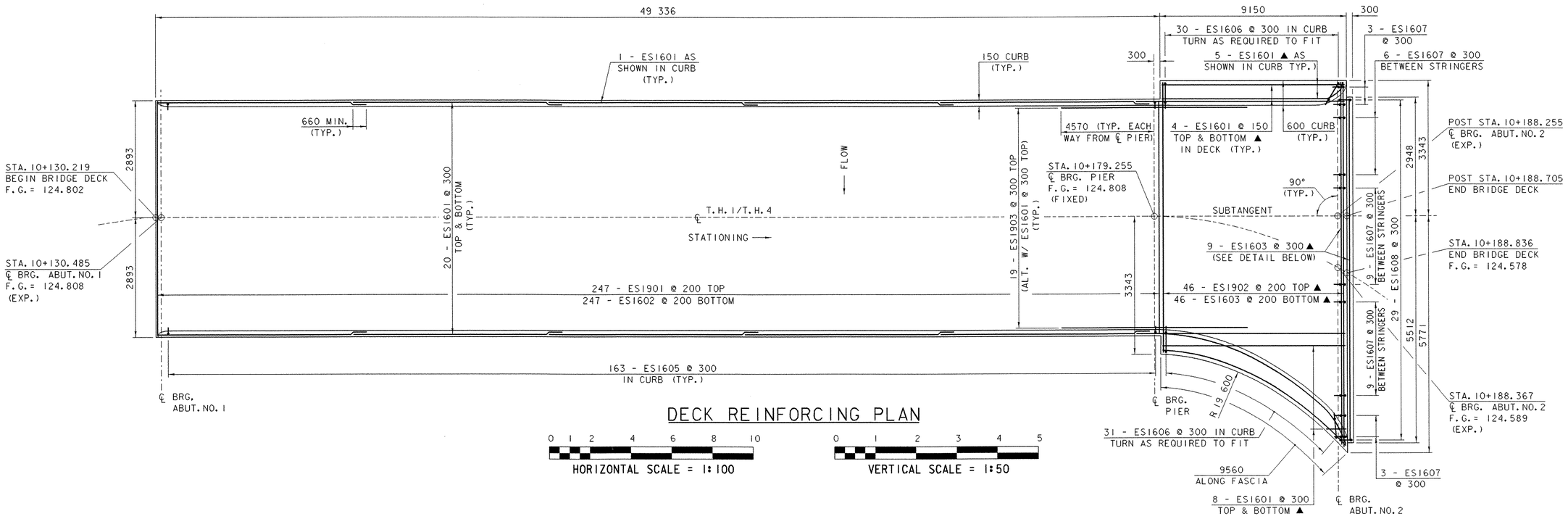
NOTES:

1. IT IS ANTICIPATED THAT THE CONTRACTOR WILL POUR THE ENTIRE DECK IN ONE EIGHT HOUR POUR. IF THIS IS THE CASE, THE POUR SHALL BEGIN AT THE ABUTMENT NO. 1 END AND A RETARDING ADMIXTURE SHALL BE USED IN ORDER THAT THE DECK CONCRETE WILL NOT SET UP UNTIL THE ENTIRE POUR HAS BEEN COMPLETED. THE RETARDING ADMIXTURE SHALL BE SUBSIDIARY TO ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A". IF THIS IS NOT THE CASE, A POUR SEQUENCE SHALL BE SUBMITTED IN WRITING TO THE STRUCTURES ENGINEER FOR APPROVAL.
2. IF REQUIRED, TRANSVERSE BRIDGE DECK CONSTRUCTION JOINTS AS SHOWN ON SHEET 28 OF THE PLANS SHALL BE USED BETWEEN ADJACENT DECK POURS. THE MINIMUM DELAY PERIOD BETWEEN POURS SHALL BE NINETY-SIX HOURS.
3. ▲ = CUT TO FIT IN FIELD
4. 80 CLR. UNLESS OTHERWISE NOTED

BRIDGE TYPICAL SECTIONS

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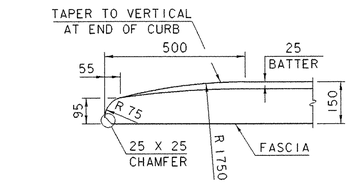
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PROJECT MANAGER: R. WHITCOMB
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DECK REINFORCING PLAN

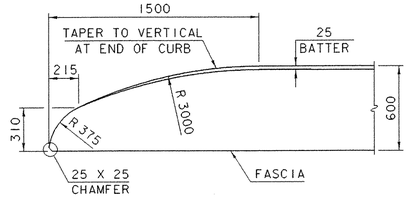
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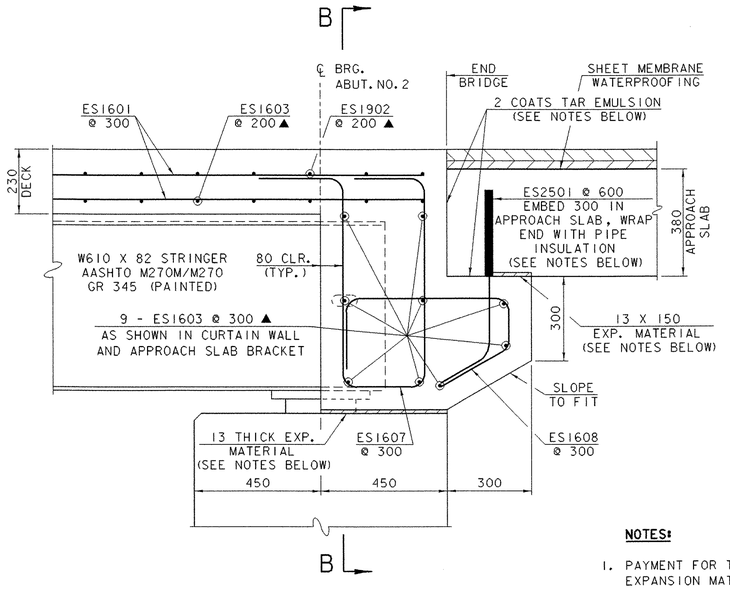
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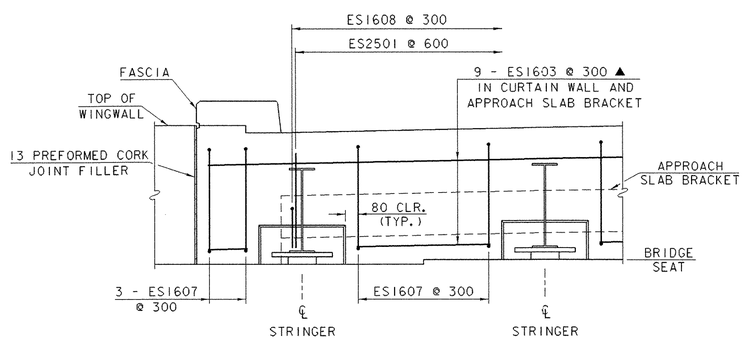
APPROACH SPAN CURB END DETAIL

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ABUTMENT NO. 2 END DETAIL

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SECTION B-B

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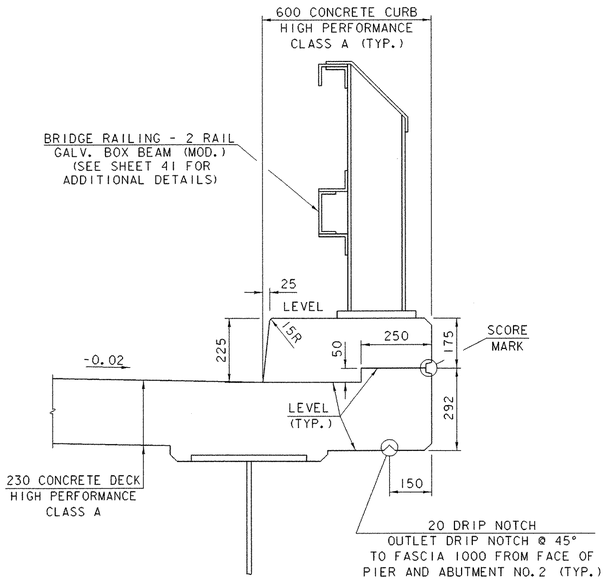
NOTES:

1. PAYMENT FOR TAR EMULSION, PIPE INSULATION, EXPANSION MATERIAL AND THEIR APPLICATION AND INSTALLATION SHALL BE MADE SUBSIDIARY TO ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".
2. ▲ = CUT TO FIT IN FIELD
3. 80 CLR. UNLESS OTHERWISE NOTED

DECK REINFORCING PLAN

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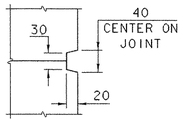
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SHEET 27 OF 78



APPROACH SPAN BRIDGE CURB AND RAIL DETAIL

0 0.5 1

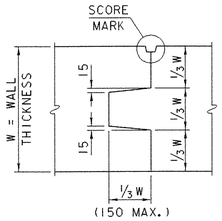
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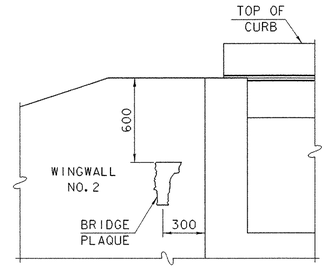
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TYPICAL CONCRETE CONSTRUCTION JOINT

NOT TO SCALE

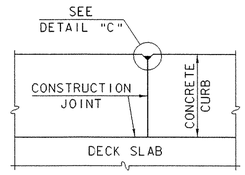


BRIDGE PLAQUE DETAIL

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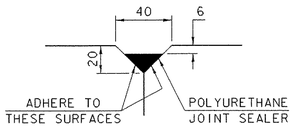
NOTE:

THE BENCH MARK AND BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AS SHOWN OR AS DIRECTED BY THE ENGINEER.



SECTION C-C

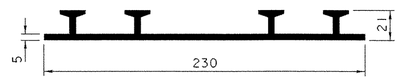
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DETAIL "C"

NOT TO SCALE

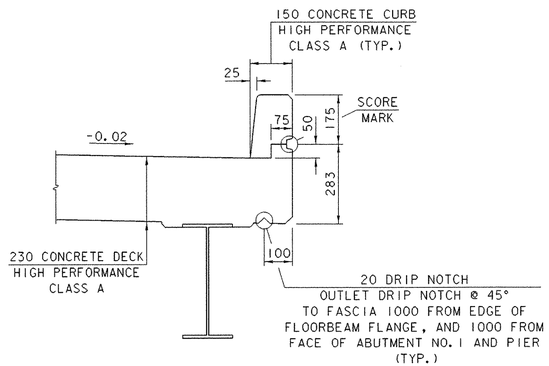
POLYURETHANE JOINT SEALER PER SUBSECTION 524.06(d). COLOR TO MATCH CONCRETE. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".



P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS

NOT TO SCALE

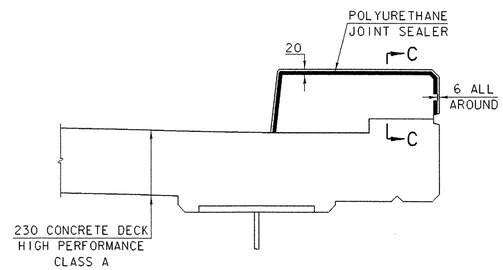
THE COST FOR P.V.C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A". OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.



TRUSS SPAN BRIDGE CURB

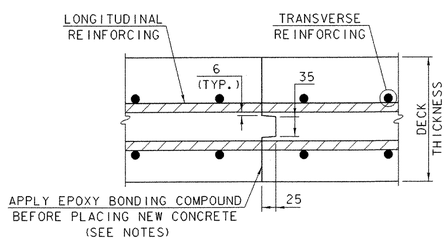
0 0.5 1

SCALE = 1:10



TYPICAL SECTION THROUGH CONCRETE CURB CONSTRUCTION JOINT

NOT TO SCALE



TRANSVERSE BRIDGE DECK CONSTRUCTION JOINT DETAILS

0 0.25 0.5

SCALE = 1:5

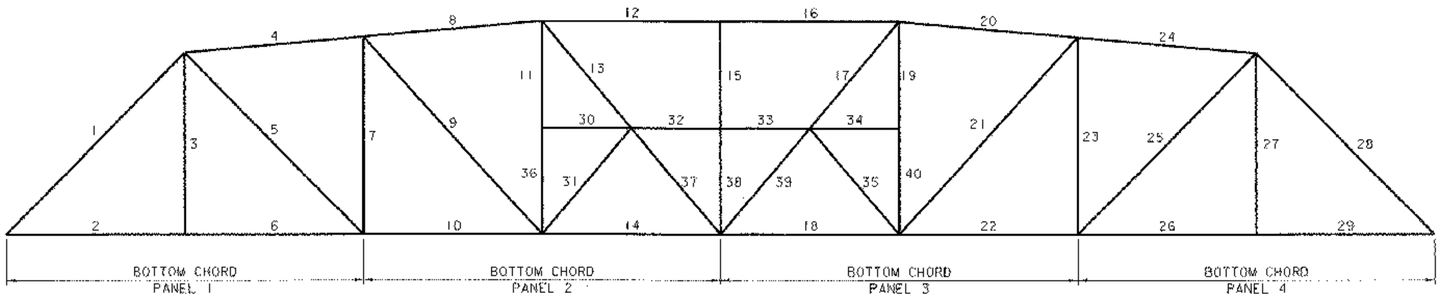
NOTES:

1. CONSTRUCTION JOINTS THROUGH CONCRETE CURBS SHALL BE SPACED A MAXIMUM OF 4500 CENTER TO CENTER AND SHALL BE 550 MINIMUM FROM THE CENTER OF THE NEAREST BRIDGE RAIL POST. CONCRETE SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOURS DELAY BETWEEN ADJACENT POURS.
2. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CONSTRUCTION JOINTS. CURB REINFORCING STIRRUP BARS SHALL BE TURNED AS REQUIRED TO FIT FLARED ENDS.
3. EPOXY BONDING COMPOUND SHALL BE MADE SUBSIDIARY TO ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".

MISCELLANEOUS PROJECT DETAILS

PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)

FILE NAME: 95J278\Structures\sj278mpd.i		PLOT DATE:	26-JUN-2003
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	C. ROY
DESIGNED BY:	M. LOZIER	CHECKED BY:	M. LOZIER
		SHEET	28 OF 78



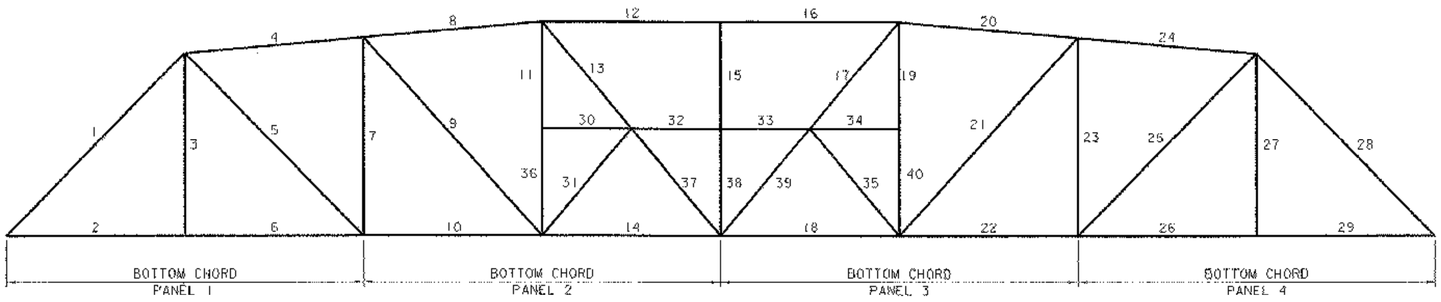
UPSTREAM ELEVATION

(LOOKING UPSTREAM FROM ℄ ROADWAY)
NOT TO SCALE

REPAIR REQUIREMENTS

BOTTOM CHORD PANEL 1: REPLACE 2 (OF 4) 152 X 102 X 9.5 ANGLES
BOTTOM CHORD PANEL 2: REPLACE 2 (OF 4) 152 X 102 X 12.7 ANGLES
BOTTOM CHORD PANEL 3: REPLACE 2 (OF 4) 152 X 102 X 12.7 ANGLES
BOTTOM CHORD PANEL 4: REPLACE 3 (OF 4) 152 X 102 X 9.5 ANGLES

MEMBER 7: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 9: REPLACE 228.6 CB - 47.6 KG/M
MEMBER 11-36: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 13-37: REPLACE 228.6 CB - 47.6 KG/M
MEMBER 15-38: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 17-39: REPLACE 228.6 CB - 47.6 KG/M
~~MEMBER 19-40: REPLACE 228.6 CB - 56.6 KG/M~~
MEMBER 23: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 25: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 27: REPLACE BOTH 89 X 89 X 7.9 ANGLES



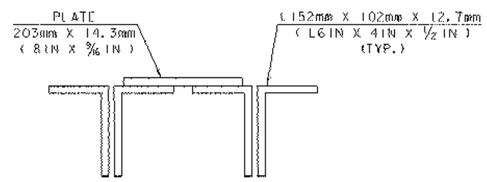
DOWNSTREAM ELEVATION

(LOOKING DOWNSTREAM FROM ℄ ROADWAY)
NOT TO SCALE

REPAIR REQUIREMENTS

BOTTOM CHORD PANEL 1: REPLACE 4 (OF 4) 152 X 102 X 9.5 ANGLES
BOTTOM CHORD PANEL 2: REPLACE 3 (OF 4) 152 X 102 X 12.7 ANGLES
BOTTOM CHORD PANEL 3: REPLACE 3 (OF 4) 152 X 102 X 12.7 ANGLES
BOTTOM CHORD PANEL 4: REPLACE 4 (OF 4) 152 X 102 X 9.5 ANGLES

MEMBER ~~5~~: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 7: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 11-36: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 13-37: REPLACE 228.6 CB - 47.6 KG/M
MEMBER 15-38: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 17-39: REPLACE 228.6 CB - 47.6 KG/M
MEMBER 23: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 19-40: REPLACE 228.6 CB - 56.6 KG/M



SECTION OF BOTTOM CHORD

NOT TO SCALE

EXISTING TRUSS MEMBER PROPERTIES

228.6 CB - 56.6 KG/M (9 IN CB - 38 LB/FT)

AREA = 7206.4mm^2 (11.17 IN^2)
DEPTH = 228.6mm (9 IN)
FLANGE WIDTH = 228.6mm (9 IN)
WEB THICKNESS = 8.03mm (0.316 IN)
I_x = 7.093 X 10^{7}mm^4 (170.4 IN^4)
S_x = 6.211 X 10^{5}mm^3 (37.9 IN^3)
r_x = 99.3mm (3.91 IN)
I_y = 2.377 X 10^{7}mm^4 (57.1 IN^4)
S_y = 2.081 X 10^{5}mm^3 (12.7 IN^3)
r_y = 57.4mm (2.26 IN)

228.6 CB - 47.6 KG/M (9 IN CB - 32 LB/FT)

AREA = 6064.5mm^2 (9.40 IN^2)
DEPTH = 231.0mm (9.096 IN)
FLANGE WIDTH = 165.8mm (6.528 IN)
WEB THICKNESS = 7.80mm (0.307 IN)
I_x = 5.848 X 10^{7}mm^3 (140.5 IN^4)
S_x = 5.064 X 10^{5}mm^3 (30.9 IN^3)
r_x = 98.3mm (3.87 IN)
I_y = 9.990 X 10^{6}mm^4 (24.0 IN^4)
S_y = 1.213 X 10^{5}mm^3 (7.4 IN^3)
r_y = 40.6mm (1.60 IN)

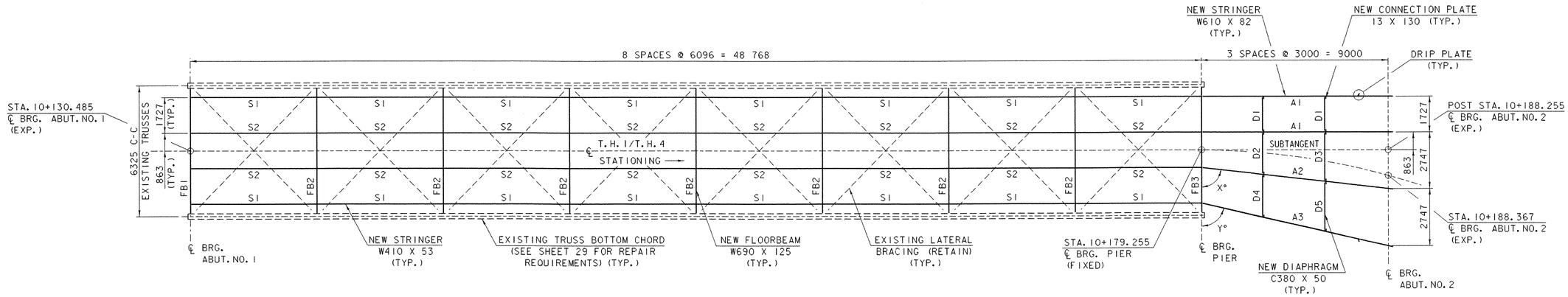
NOTE:

ALL MEMBERS LISTED ARE TO BE REPLACED FULL LENGTH.

TRUSS REPAIRS

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95J278\Structures\bJ278tr1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: M. LOZIER
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 29 OF 78

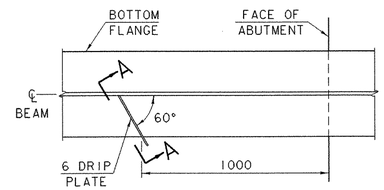


FLOOR FRAMING PLAN

0 1 2 4 6 8 10

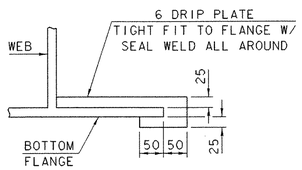
SCALE = 1:100

X° = 83°32'03"
Y° = 77°13'44"



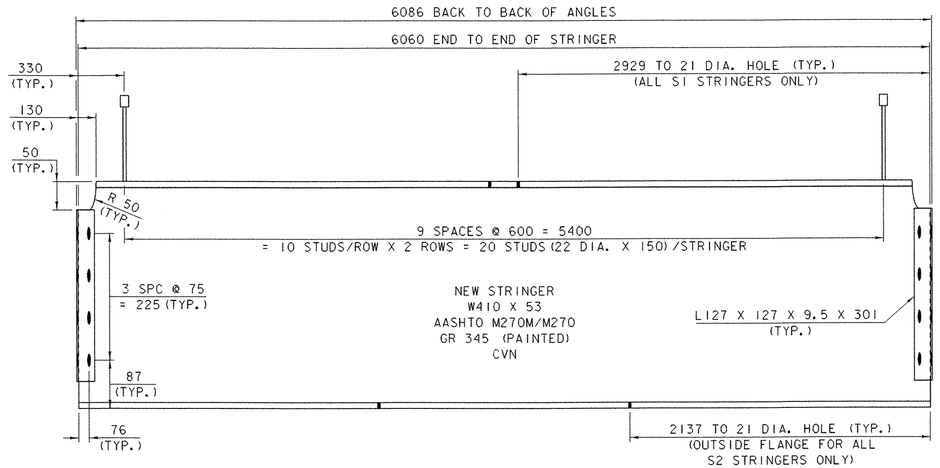
DRIP PLATE PLAN

NOT TO SCALE



SECTION A-A

NOT TO SCALE



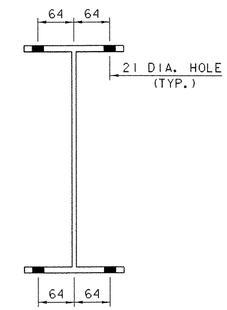
TRUSS STRINGER ELEVATION

0 1 2

HORIZONTAL SCALE = 1:20

0 0.25 0.5

VERTICAL SCALE = 1:5



TRUSS STRINGER SECTION

0 0.25 0.5

SCALE = 1:5

NOTES:

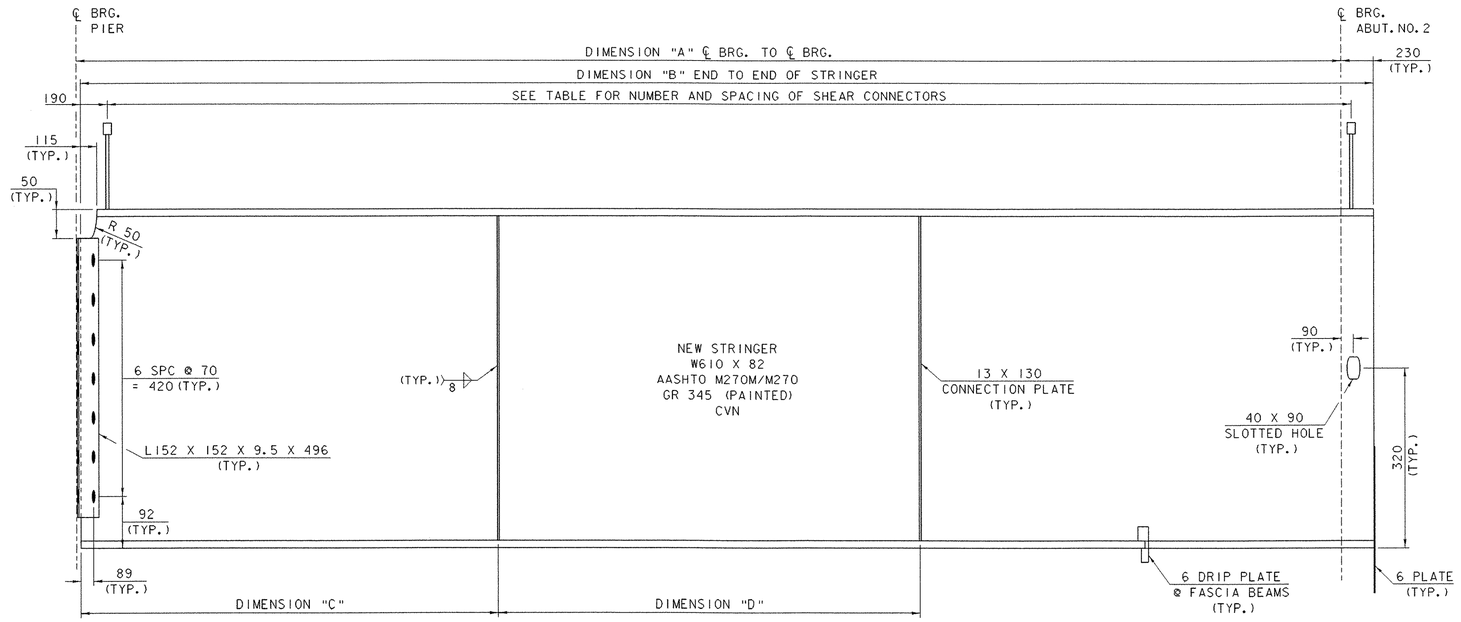
1. STRINGER TOP FLANGE HOLES ARE FOR TRUSS RAIL POST CONNECTION AS DETAILED ON REFERENCE SHEET 10, SHEET 77 OF THE PLANS.
2. STRINGER BOTTOM FLANGE HOLES ARE FOR EXISTING THREADED RODS SUPPORTING EXISTING LATERAL BRACING. THE EXISTING THREADED RODS ARE TO BE RETAINED AND REUSED. SHOULD THEY NEED TO BE REPLACED, NEW THREADED RODS SHALL BE PAINTED AND PAID FOR UNDER THE APPLICABLE CONTRACT ITEMS.
3. UNLESS OTHERWISE NOTED, HOLES ARE 24 DIA. FOR AASHTO M164M M22 DIA. HIGH-STRENGTH BOLTS.
4. CVN - SHALL MEET CHARPY V-NOTCH REQUIREMENTS FOR MAIN MEMBERS AS INDICATED IN SECTION 714 OF STANDARD SPECIFICATIONS.
5. DRIP PLATES SHALL BE PLACED ON OUTSIDE EDGE OF FASCIA BEAMS AT ABUTMENT NO. 2 AS SHOWN IN FLOOR FRAMING PLAN.

FLOOR FRAMING PLAN & TRUSS SPAN STRINGER DETAILS

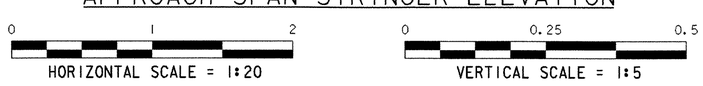
PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95J278\Structures\sj278ffp.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: M. LOZIER/S. SCRIBNER
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER

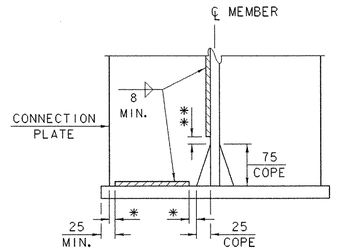
Metric



APPROACH SPAN STRINGER ELEVATION



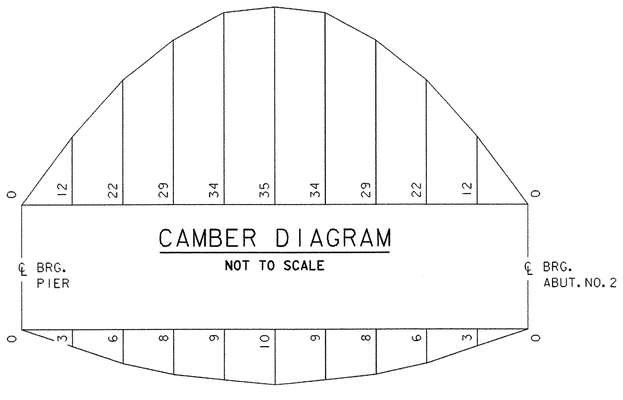
APPROACH SPAN STRINGER DIMENSIONS					22 DIA. X 150 STUDS		
STR. NO.	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"	SPACING	NUMBER OF STUDS/ROW	NUMBER OF STUDS/STR.
A1	9000	9199	2970	3000	59 @ 150	60	120
A2	9058	9257	2989	3019	59 @ 150	60	120
A3	9228	9427	3045	3076	60 @ 150	61	122



WELD TERMINATION AND COPING DETAIL FOR STEEL MEMBERS

* NO WELD FOR 6 MIN., 12 MAX. (EXCEPT MUST MAINTAIN 25 MIN. FROM EDGE OF FLANGE)

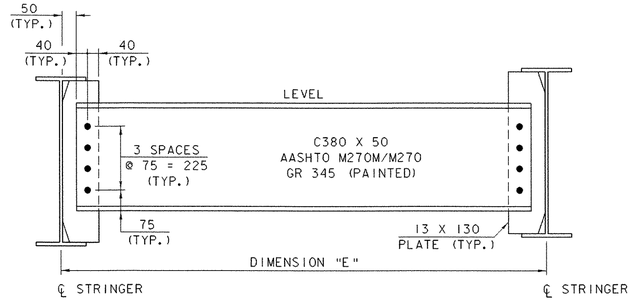
** 12 ± 6 FOR CONNECTION PLATE TO WEB WELD ONLY.



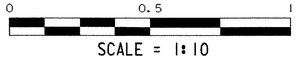
DEAD LOAD DEFLECTION DIAGRAM

NOTE TO SCALE

NOTE: CAMBER AND DEFLECTION MEASUREMENTS ARE GIVEN IN MILLIMETERS AT TENTH POINTS. MEASUREMENTS INCLUDE BEAM SELF-WEIGHT.



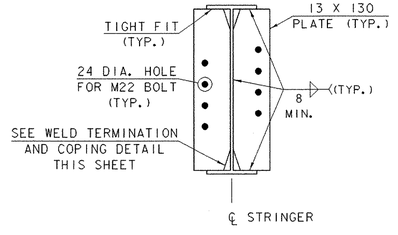
INTERMEDIATE DIAPHRAGM



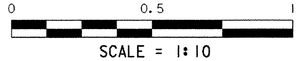
DIAPHRAGM NO.	DIM. "E"
D1	1727
D2	2067
D3	2407
D4	2067
D5	2407

NOTES:

1. UNLESS OTHERWISE NOTED, HOLES ARE 24 DIA. FOR AASHTO M164M M22 DIA. HIGH-STRENGTH BOLTS.
2. CVN - SHALL MEET CHARPY V-NOTCH REQUIREMENTS FOR MAIN MEMBERS AS INDICATED IN SECTION 714 OF STANDARD SPECIFICATIONS.



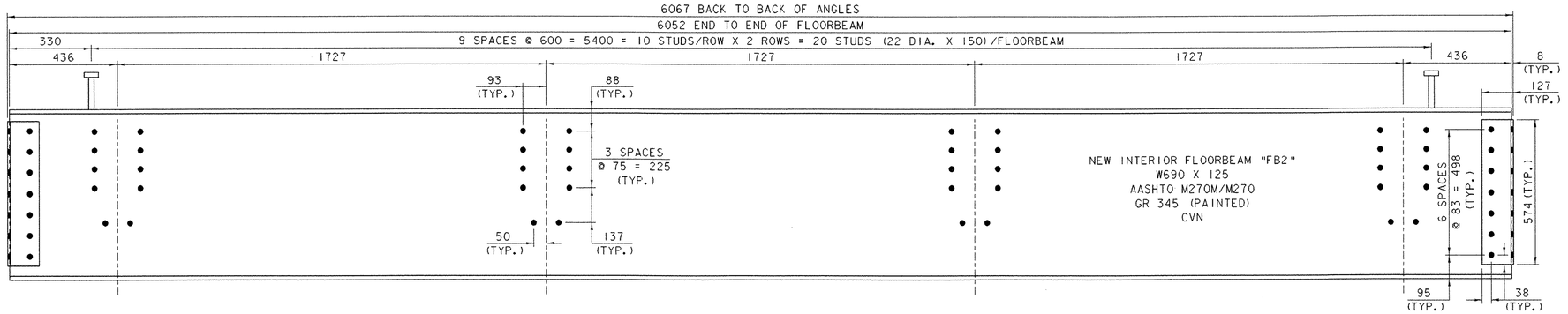
INTERMEDIATE DIAPHRAGM CONNECTION PLATE

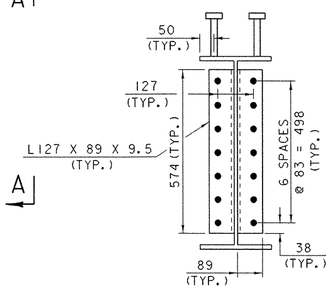


APPROACH SPAN STRINGER DETAILS

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj278assd.i PLOT DATE: 26-JUN-2003
PROJECT MANAGER: R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: S. SCRIBNER CHECKED BY: M. LOZIER
SHEET 31 OF 78

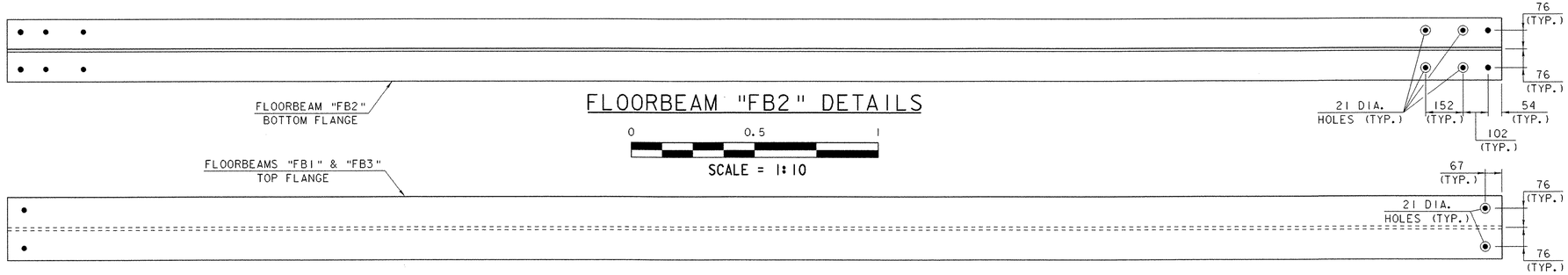




VIEW "A-A"

0 0.5 1

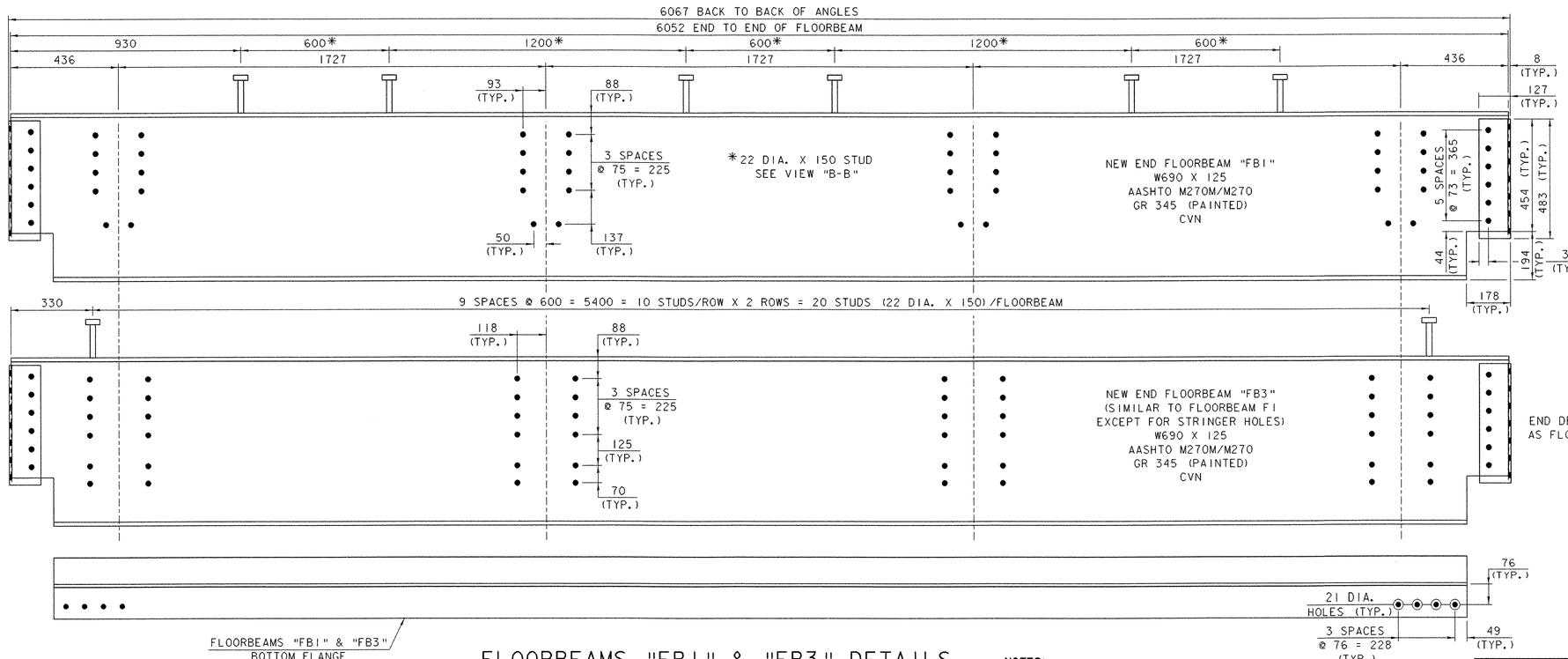
SCALE = 1:10

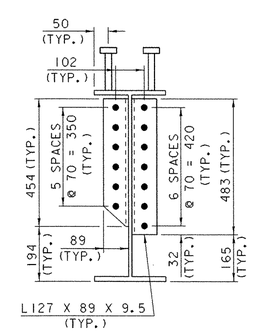


FLOORBEAM "FB2" DETAILS

0 0.5 1

SCALE = 1:10





VIEW "B-B"

0 0.5 1

SCALE = 1:10

FLOORBEAMS "FB1" & "FB3" DETAILS

0 0.5 1

SCALE = 1:10

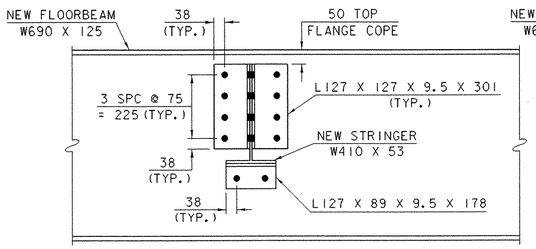
NOTES:

1. UNLESS OTHERWISE NOTED, HOLES ARE 24 DIA. FOR AASHTO M164M M22 DIA. HIGH-STRENGTH BOLTS.
2. CVN - SHALL MEET CHARPY V-NOTCH REQUIREMENTS FOR MAIN MEMBERS AS INDICATED IN SECTION 714 OF STANDARD SPECIFICATIONS.

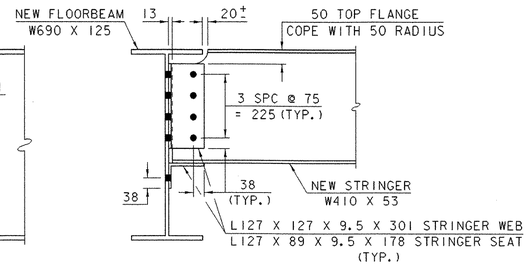
FLOORBEAM DETAILS

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj278fd.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: M. LOZIER
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 32 OF 78

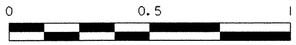


FLOORBEAM ELEVATION

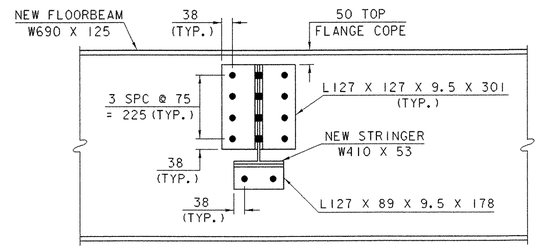


STRINGER ELEVATION

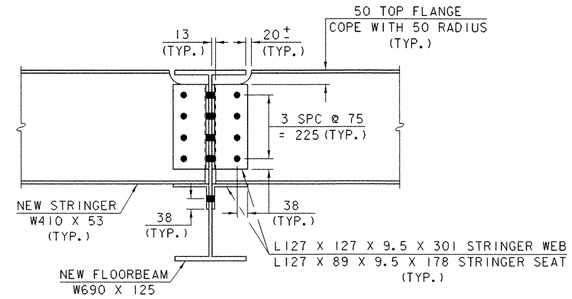
STRINGER TO FLOORBEAM "FB1" CONNECTION



SCALE = 1:10

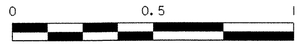


FLOORBEAM ELEVATION

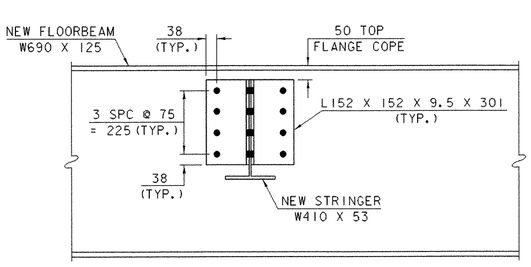


STRINGER ELEVATION

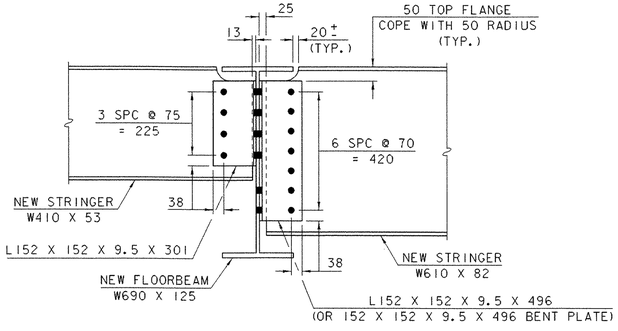
STRINGER TO FLOORBEAM "FB2" CONNECTION



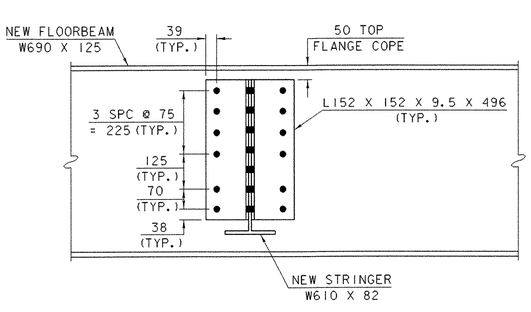
SCALE = 1:10



FLOORBEAM ELEVATION

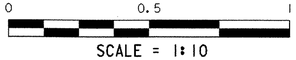


STRINGER ELEVATION



FLOORBEAM ELEVATION

STRINGER TO FLOORBEAM "FB3" CONNECTION



SCALE = 1:10

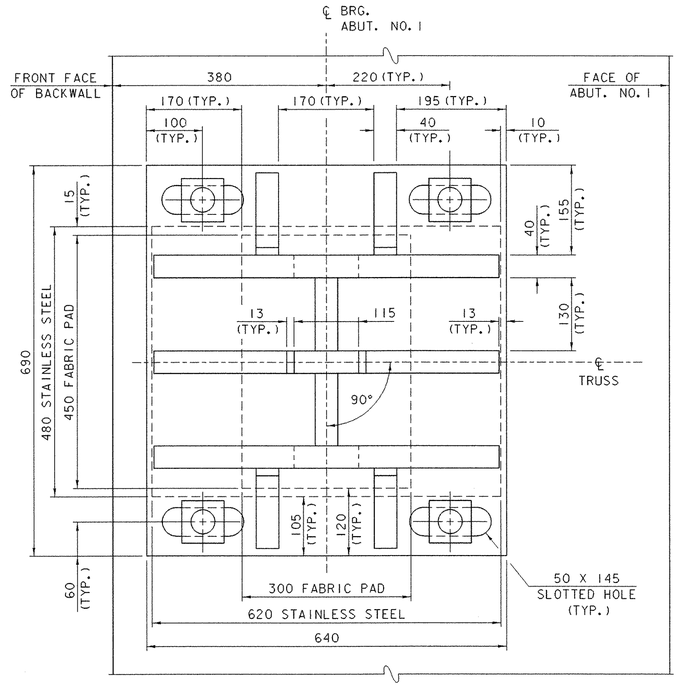
NOTES:

1. UNLESS OTHERWISE NOTED, HOLES ARE 24 DIA. FOR AASHTO M164M M22 DIA. HIGH-STRENGTH BOLTS.
2. CVN - SHALL MEET CHARPY V-NOTCH REQUIREMENTS FOR MAIN MEMBERS AS INDICATED IN SECTION 714 OF STANDARD SPECIFICATIONS.

STRINGER TO FLOORBEAM CONNECTION DETAILS

PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)

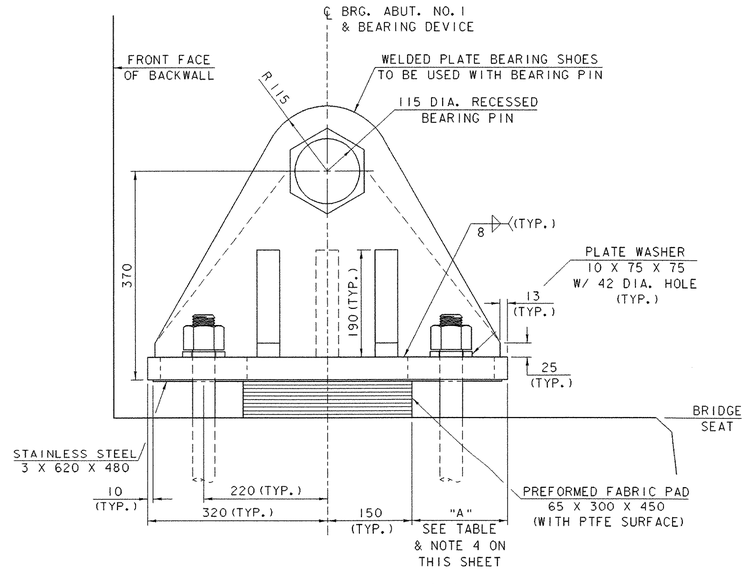
FILE NAME: 95j278\Structures\sj278sfcd.i		PLOT DATE:	26-JUN-2003
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	M. LOZIER	CHECKED BY:	M. LOZIER
		SHEET	33 OF 78



PLAN

0 0.25 0.5

SCALE = 1:5



SIDE ELEVATION

0 0.25 0.5

SCALE = 1:5

BEARING NOTES

1. BEARINGS SHALL CONFORM TO VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 531, "BEARING DEVICES".

2. NEW BEARINGS AT ABUTMENT NO. 1 SHALL BE PAID FOR UNDER ITEM 531.10, "BEARING DEVICE ASSEMBLY (TRUSS)". NEW BEARINGS AT THE PIER AND ABUTMENT NO. 2 SHALL BE PAID FOR UNDER ITEM 531.10, "BEARING DEVICE ASSEMBLY (PAD)".

3. DESIGN CRITERIA:
   - A. MAXIMUM ALLOWABLE BEARING ON CONCRETE OR MASONRY: 7 MPa
   - B. MINIMUM ALLOWABLE DESIGN ROTATION: 0.015 radians
   - C. DESIGN VERTICAL LOAD (DEAD + LIVE + IMPACT):
     - ABUTMENT NO. 1: 890 KN
     - PIER (PAD): 470 KN
     - ABUTMENT NO. 2: 330 KN
   - D. DESIGN HORIZONTAL LOAD: MINIMUM 10% OF VERTICAL LOAD

4. AT ABUTMENT NO. 1, THE "A" DISTANCE IS THE FINAL SETTING FOR THE BEARING PAD WHEN THE DEAD LOAD OF THE NEW CONCRETE DECK IS IN PLACE.

5. AT ABUTMENT NO. 2, THE "B" DISTANCE IS THE FINAL SETTING FOR THE BEARING PAD AFTER THE CONCRETE DECK, CURB, AND BRIDGE RAIL HAVE BEEN PLACED. THE "A" DISTANCE IS FOR SETTING THE BEARING AFTER THE STRUCTURAL STEEL IS ERECTED AND BEFORE THE CONCRETE DECK IS POURED. THE DIFFERENCE IS THE THEORETICAL ELONGATION OF THE BOTTOM FLANGE DUE TO DEAD LOAD DEFLECTION. THE FINAL "B' DISTANCE SHOWN IN THE TABLE MUST BE ATTAINED WITHIN 3 mm.

6. THE CONCRETE SURFACE UNDER NEW BEARING DEVICES SHALL BE LEVEL.

7. ALL NEW STEEL IN BEARING DEVICES, EXCEPT PINS AND STAINLESS STEEL, SHALL CONFORM TO AASHTO M270/M 270M, GRADE 345. STEEL FOR NEW PINS SHALL CONFORM TO AASHTO M102/M 102M, GRADE 345 CLASS F. STAINLESS STEEL SHALL CONFORM TO SUBSECTION 731.05 OF THE STANDARD SPECIFICATIONS.

8. THE SURFACE FINISH FOR NEW PINS AND PIN CONTACT SURFACES ON NEW BEARING SHOES SHALL CONFORM TO TABLE 18.5.1.5-1 OF THE AASHTO STANDARD SPECIFICATIONS, DIVISION II.

9. NEW BEARING SHOES AND PINS AT ABUTMENT NO. 1 SHALL BE PAINTED AND GREASED. THIS WORK SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 513, AND SHALL BE PAID FOR UNDER THE APPLICABLE CONTRACT ITEMS.

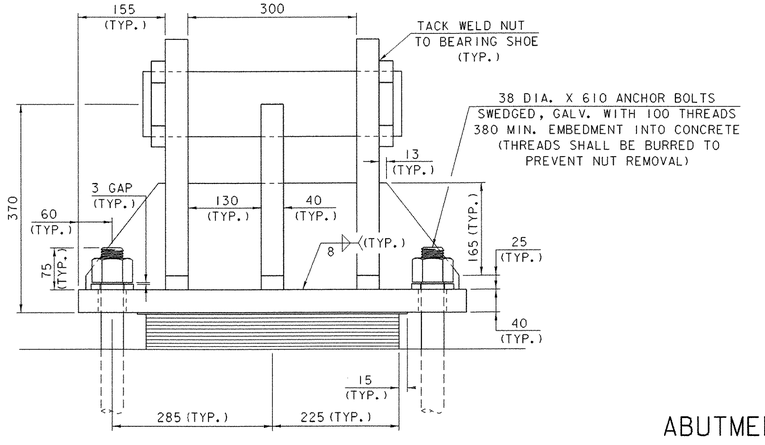
10. THE EXISTING CONCRETE PEDESTAL FOR THE CENTER PIER BEARING SHALL BE REMOVED. THIS WORK SHALL BE PAID FOR UNDER ITEM 529.25, "REMOVAL OF CONCRETE OR MASONRY".

11. THE EXISTING BEARING PINS AT THE PIER SHALL BE FREED AND GREASED PRIOR TO RE-SETTING OF THE TRUSS. ALL REMAINING PORTIONS OF EXISTING BEARINGS AT THE PIER SHALL BE CLEANED AND GREASED. THE GREASE COMPOUND SHALL CONFORM TO SUPPLEMENTAL SPECIFIACTION 513. THIS WORK SHALL BE PAID SUBSIDIARY TO ITEM 531.10, "BEARING DEVICE ASSEMBLY (TRUSS)".

12. NEW BEARING DEVICES AT THE PIER AND ABUTMENT NO. 2 SHALL BE GALVANIZED OR METALIZED IN CONFORMANCE WITH SUBSECTION 531.04 OF THE STANDARD SPECIFICATIONS. AREAS OF GALVANIZING OR METALIZING DAMAGED BY FIELD WELDING OR HANDLING SHALL BE REPAIRED IN CONFORMANCE WITH SUPPLEMENTAL SPECIFICATION 513.

13. ALL NEW ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED. ALL WASHERS SHALL BE 10 mm PLATE MIMIMUM. ANCHOR BOLTS, NUTS, WASHERS, AND THEIR INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THEIR RESPECTIVE "BEARING DEVICE ASSEMBLY" ITEM.

14. ADDITIONAL BEARING REPAIRS MAY BE ORDERED AT THE DISCRETION OF THE RESIDENT ENGINEER. ANY REPAIRS NOT SPECIFIED IN THE PLANS SHALL BE PAID FOR AS EXTRA WORK.



FRONT ELEVATION

0 0.25 0.5

SCALE = 1:5

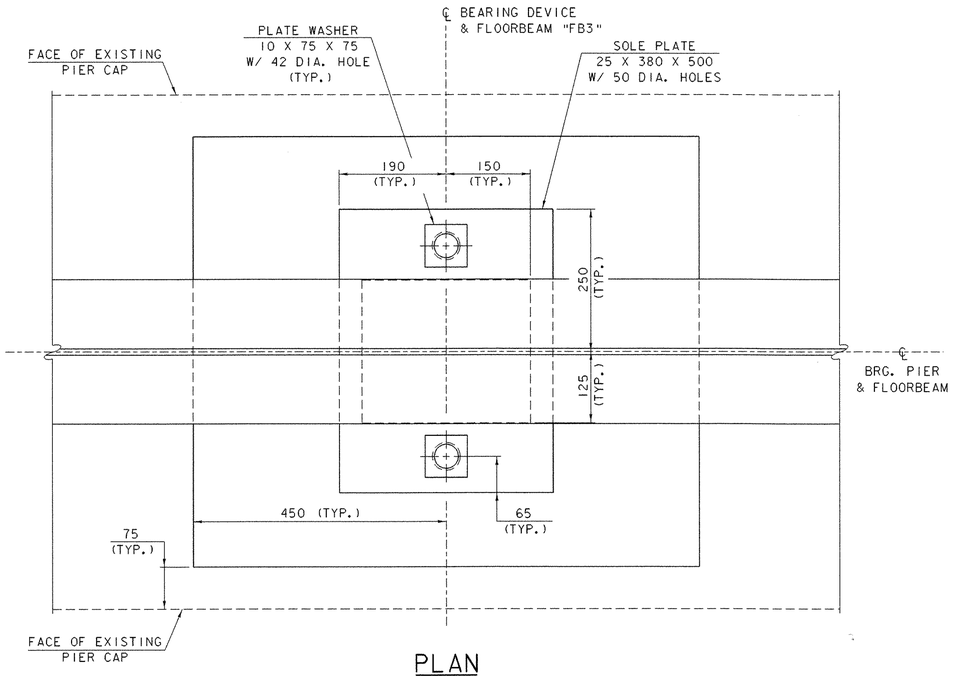
ABUTMENT NO. 1
TEMPERATURE SETTING TABLE

TEMP	"A" DIST.
-25°C	188
-15°C	182
-5°C	176
5°C	170
15°C	164
25°C	158
35°C	152
45°C	146

ABUTMENT NO. 1 BEARING DETAILS

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

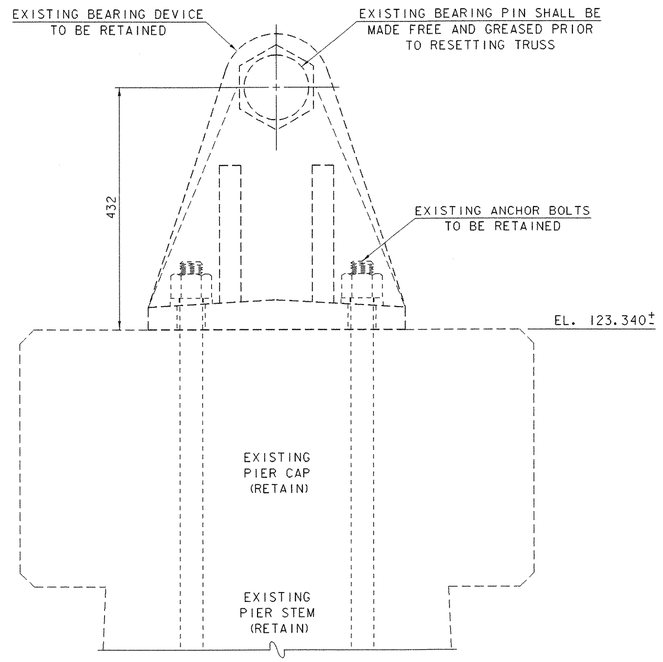
FILE NAME: 95j278\Structures\sj278albd.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: M. LOZIER
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 34 OF 78



PLAN

0 0.25 0.5

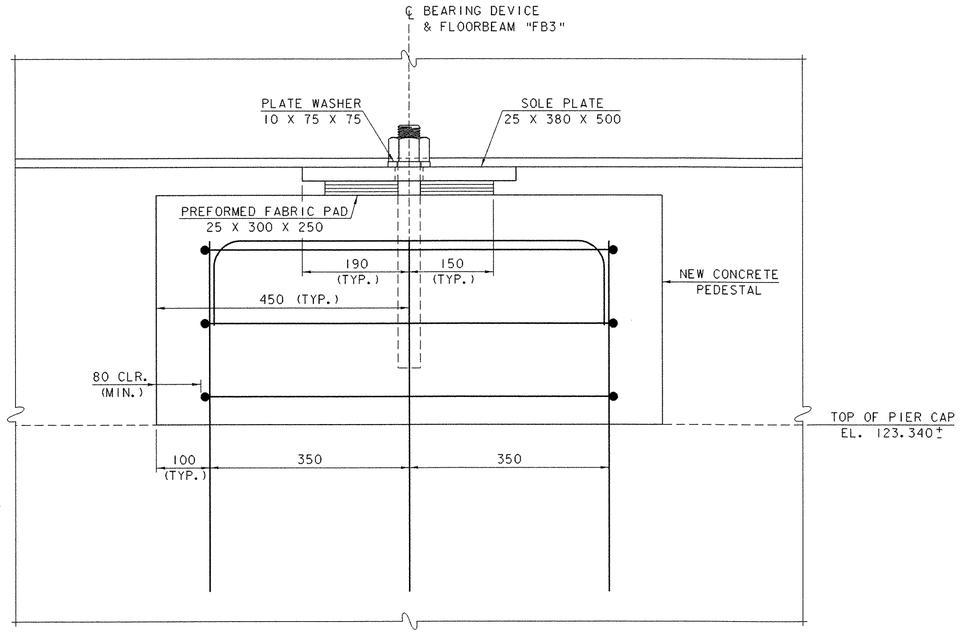
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TRUSS BEARING AT PIER

0 0.25 0.5

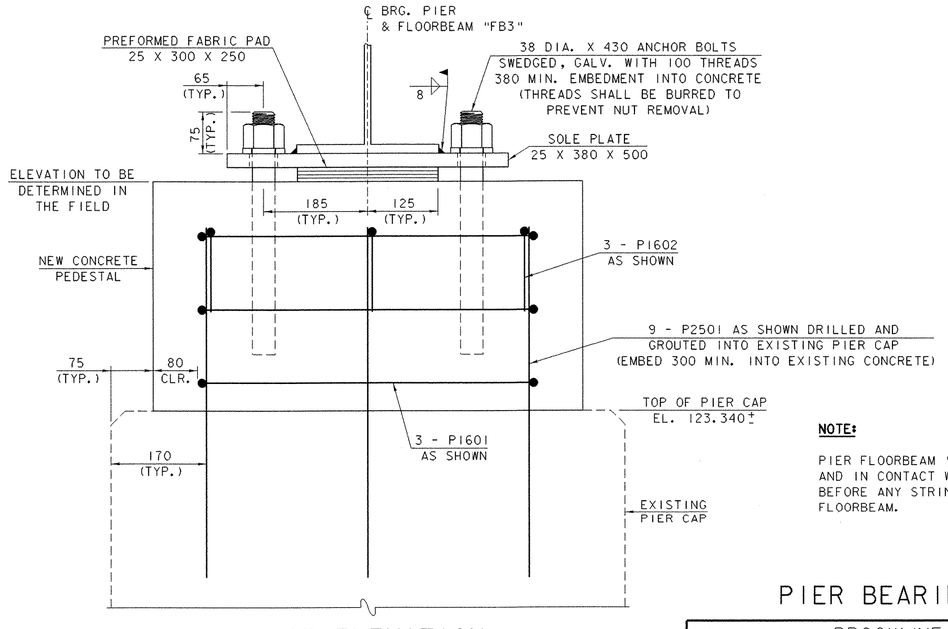
SCALE = 1:5



FRONT ELEVATION

0 0.25 0.5

SCALE = 1:5



SIDE ELEVATION

0 0.25 0.5

SCALE = 1:5

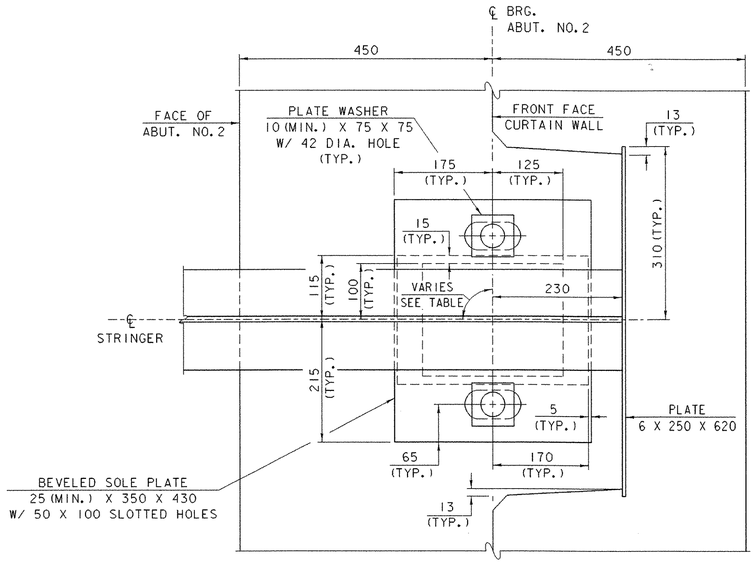
NOTE:

PIER FLOORBEAM "FB3" SHALL BE INSTALLED AND IN CONTACT WITH THE BEARING SOLE PLATE BEFORE ANY STRINGERS ARE ATTACHED TO THE FLOORBEAM.

PIER BEARING DETAILS

PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)

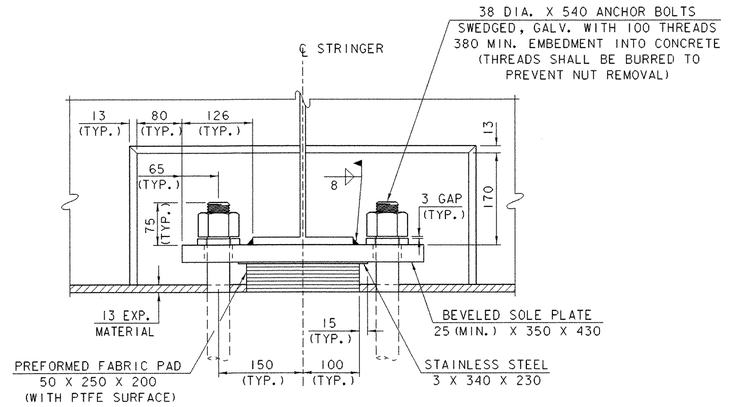
FILE NAME: 95j278\Structures\sj278pbd.i		PLOT DATE:	26-JUN-2003
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	M. LOZIER	CHECKED BY:	M. LOZIER
		SHEET	35 OF 78



PLAN

0 0.25 0.5

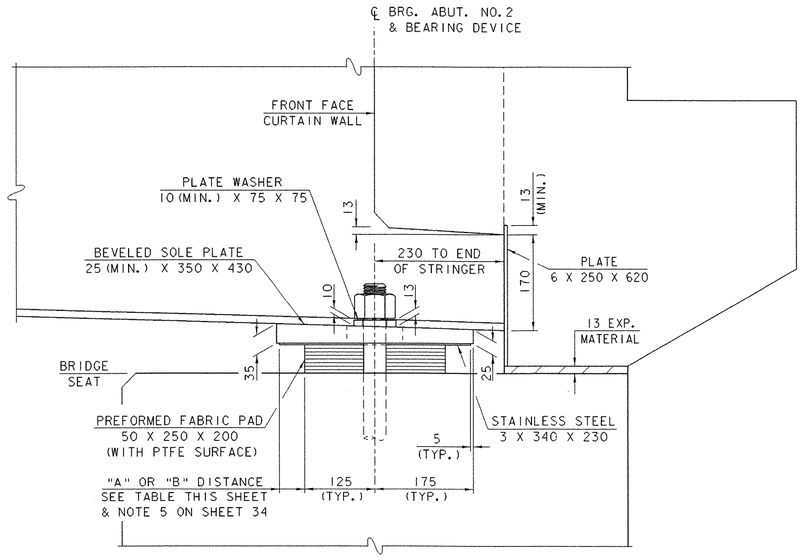
SCALE = 1:5



FRONT ELEVATION

0 0.25 0.5

SCALE = 1:5



SIDE ELEVATION

0 0.25 0.5

SCALE = 1:5

ABUTMENT NO. 2
TEMPERATURE SETTING TABLE

TEMP	"B" DIST.	"A" DIST.
-25°C	53	56
-15°C	52	55
-5°C	51	54
5°C	50	53
15°C	49	52
25°C	48	51
35°C	47	50
45°C	46	49

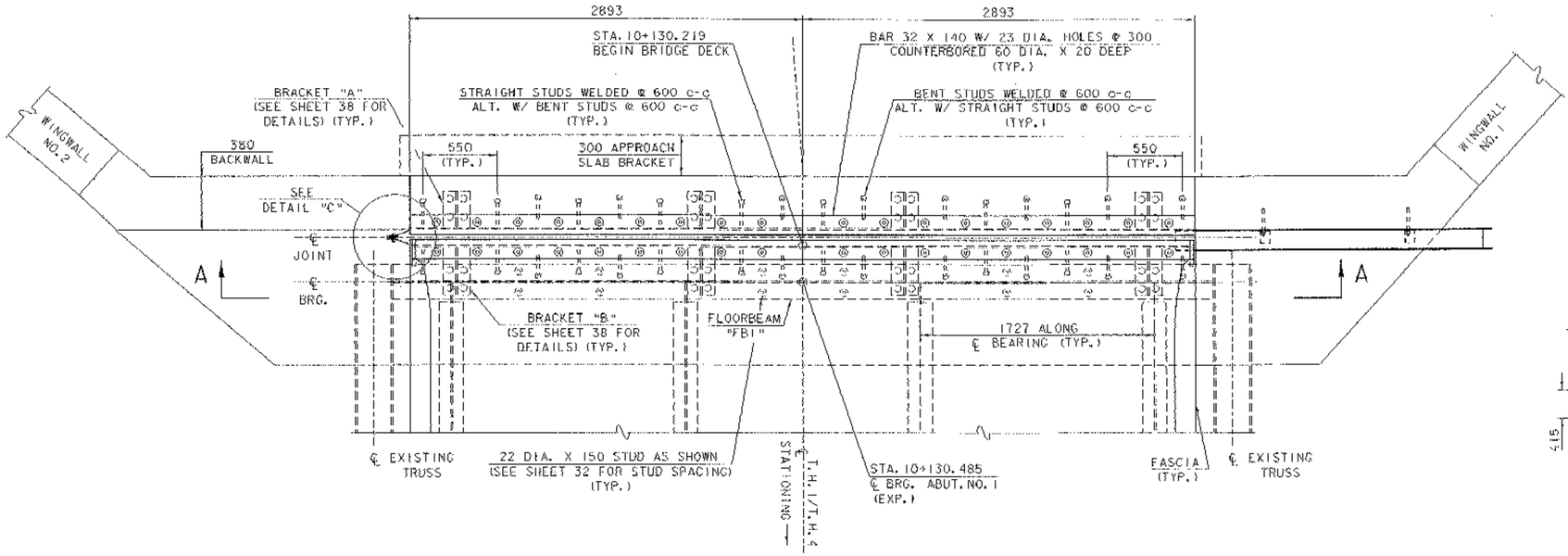
ABUTMENT NO. 2 BEARING ANGLE TABLE

STRINGER NO.	ANGLE
A1	90°
A2	83°32'03"
A3	77°13'44"

ABUTMENT NO. 2 BEARING DETAILS

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

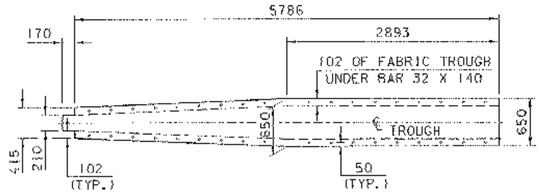
FILE NAME: 95J278\Structures\sj278a2bd.i PLOT DATE: 26-JUN-2003
PROJECT MANAGER: R. WHITCOMB DRAWN BY: G. ROY
DESIGNED BY: S. SCRIBNER CHECKED BY: M. LOZIER
SHEET 36 OF 78



EXPANSION JOINT PLAN AT ABUTMENT NO. 1

0 1 2

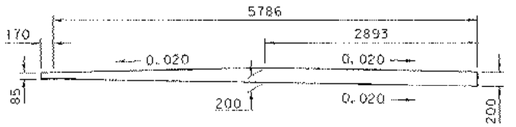
SCALE = 1:20



FABRIC TROUGH PLAN VIEW

0 1 2 3 4

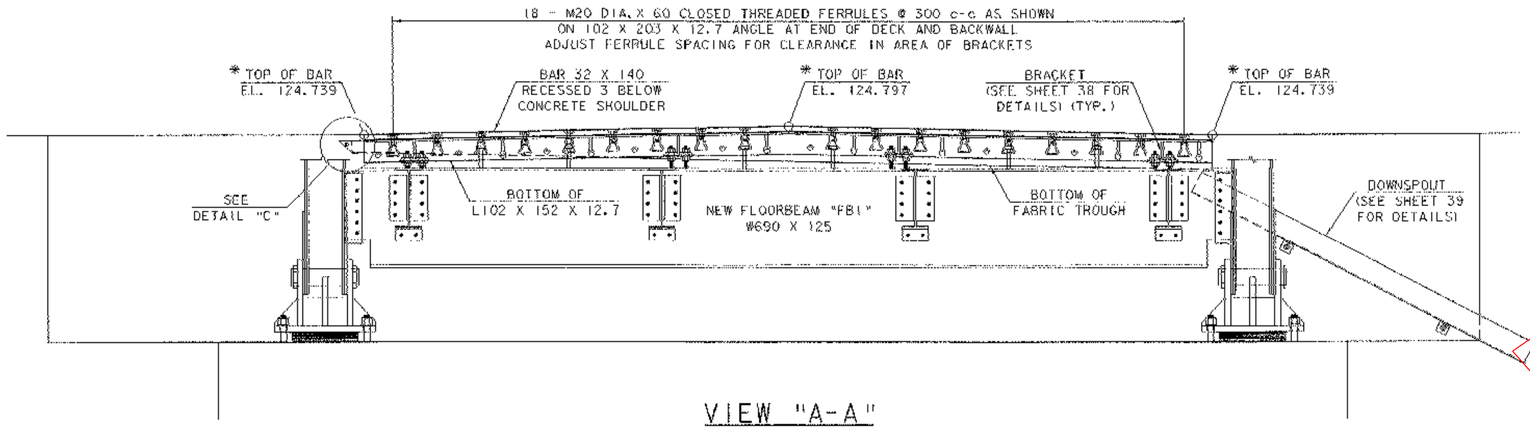
SCALE = 1:40



FABRIC TROUGH ELEVATION VIEW

0 1 2 3 4

SCALE = 1:40



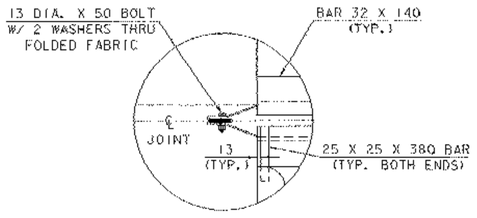
VIEW "A-A"

0 1 2

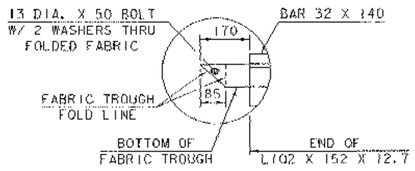
SCALE = 1:20

* THEORETICAL ELEVATION AT CENTER OF JOINT TO BE VERIFIED IN THE FIELD AFTER STRUCTURAL STEEL HAS BEEN SET.

2.4 M DOWNSPOUT EXTENSION
TO EXTEND BEYOND FOOTING



PLAN



ELEVATION

DETAIL "C"

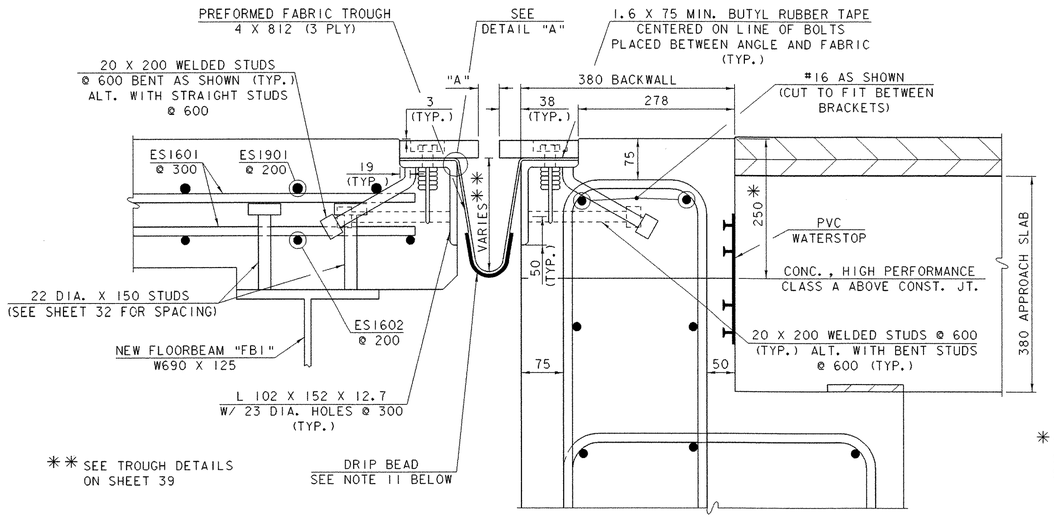
0 0.5 1

SCALE = 1:10

EXPANSION JOINT PLAN

PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)

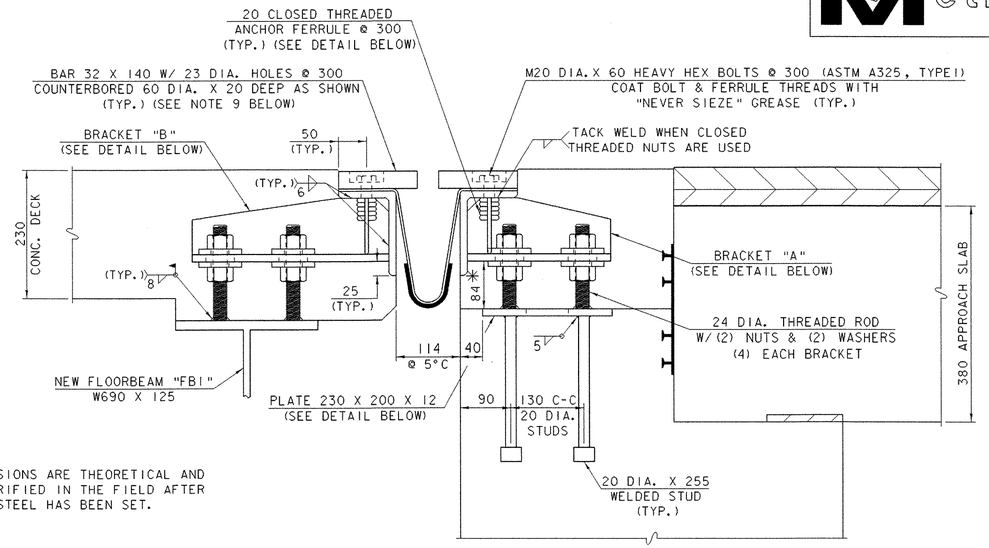
FILE NAME: 95J278\Structures\sj278ejp.i		PLOT DATE:	26-JUN-2003
PROJECT MANAGER:	R. WIRTCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	M. LOZIER
		SHEET	37 OF 78



TYPICAL SECTION BETWEEN BRACKETS

0 0.25 0.5

SCALE = 1:5



* THESE DIMENSIONS ARE THEORETICAL AND SHALL BE VERIFIED IN THE FIELD AFTER STRUCTURAL STEEL HAS BEEN SET.

TYPICAL SECTION AT BRACKETS

0 0.25 0.5

SCALE = 1:5

EXPANSION JOINT NOTES

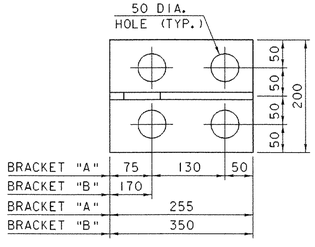
1. DETAILS ON THIS SHEET ARE FOR ITEM 516.10, "BRIDGE EXPANSION JOINT".
2. PREFORMED FABRIC MATERIAL SHALL BE CONTINUOUS AND SHALL CONFORM TO SUBSECTION 707.07 OF THE STANDARD SPECIFICATIONS.
3. BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO SPECIFICATION M198, TYPE B.
4. THE FINAL FINISH OF THE EXPANSION DEVICE SHALL BE COVERED DURING THE PLACING OF BRIDGE DECK CONCRETE.
5. ALL STEEL COMPONENTS SHALL BE AASHTO M270M/M270 GRADE 250 GALVANIZED OR METALIZED AS PER SUBSECTION 506.15 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE SPECIFIED.
6. THE ITEM 516.10, "BRIDGE EXPANSION JOINT" SHALL INCLUDE THE FABRICATION AND ERECTION OF THE COMPLETE JOINT ASSEMBLY INCLUDING ALL STEEL PLATES, BRACKETS, ANGLES, WELDED STUDS OR RODS, PREFORMED FABRIC DRAIN TROUGH MATERIAL, BUTYL RUBBER TAPE AND ANY OTHER MISCELLANEOUS MATERIAL, LABOR AND INCIDENTALS NECESSARY TO INSTALL JOINT.
7. THE 102 X 152 X 12.7 ANGLES SHALL BE FURNISHED AS ONE CONTINUOUS PIECE. THE 32 X 140 BARS EACH SIDE OF THE JOINT SHALL BE PROVIDED IN TWO EQUAL LENGTHS.
8. CONCRETE CONTACT SURFACES SHALL BE COATED WITH AN EPOXY BONDING COMPOUND MEETING THE REQUIREMENTS OF SUBSECTION 719.02 OF THE STANDARD SPECIFICATIONS. PAYMENT SHALL BE MADE SUBSIDIARY TO ITEM 516.10, "BRIDGE EXPANSION JOINT".
9. COUNTERBORED HOLES SHALL BE FILLED WITH HOT POURED JOINT SEALER AFTER BOLT INSTALLATION. THE SEALER SHALL MEET THE REQUIREMENTS OF SUBSECTION 707.04(a) OF THE STANDARD SPECIFICATIONS. PAYMENT FOR THE SEALER SHALL BE MADE SUBSIDIARY TO ITEM 516.10, "BRIDGE EXPANSION JOINT".
10. PAYMENT FOR WATERSTOP AND ITS INSTALLATION SHALL BE MADE SUBSIDIARY TO ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".
11. A DRIP BEAD OF 6 X 180 STRIP OF PREFORMED MATERIAL SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH USING AN ADHESIVE APPROVED BY THE MANUFACTURER. THE DRIP BEAD SHALL BE APPLIED 25 FROM THE DOWNSPOUT END OF THE TROUGH.
12. THE FABRIC TROUGH SHALL BE THOROUGHLY CLEANED AND FLUSHED AFTER PAVING OPERATIONS.
13. THE EXPANSION JOINT SHALL BE SHOP ASSEMBLED AND SHIPPED AS ONE UNIT.

ANCHOR FERRULE DETAIL

0 0.25 0.5

SCALE = 1:5

NOTE:
CLOSED THREADED FERRULE NUTS
WITHOUT ANCHOR LOOPS MAY BE USED.



BRACKET PLAN

SCALE = 1 : 5

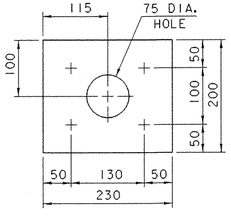
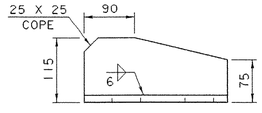


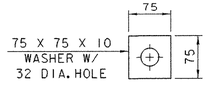
PLATE PLAN

SCALE = 1 : 5
(NO GALVANIZING REQUIRED)



BRACKET ELEVATION

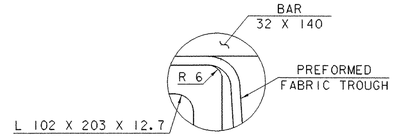
SCALE = 1 : 5



WASHER FOR BRACKET

SCALE = 1 : 5

ALL PLATES 12 THICK



DETAIL "A"

NOT TO SCALE

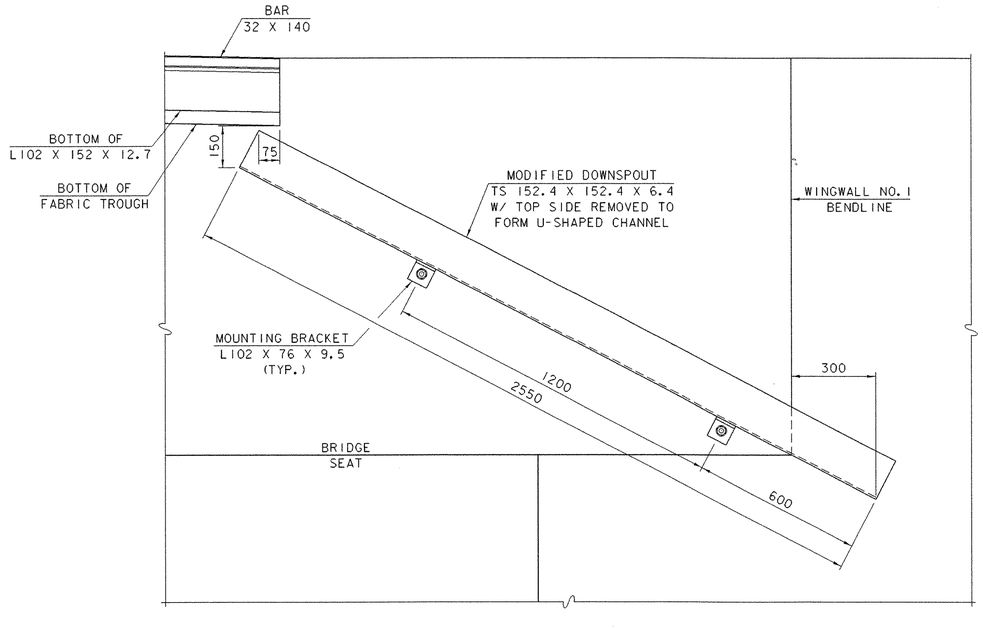
TEMP	"A" DIST.
-25°C	56
-15°C	50
-5°C	44
5°C	38
15°C	32
25°C	26
35°C	20
45°C	14

"A" IS THE FINAL SETTING AFTER
ALL DEAD LOADS ARE IN PLACE.

EXPANSION JOINT DETAILS

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

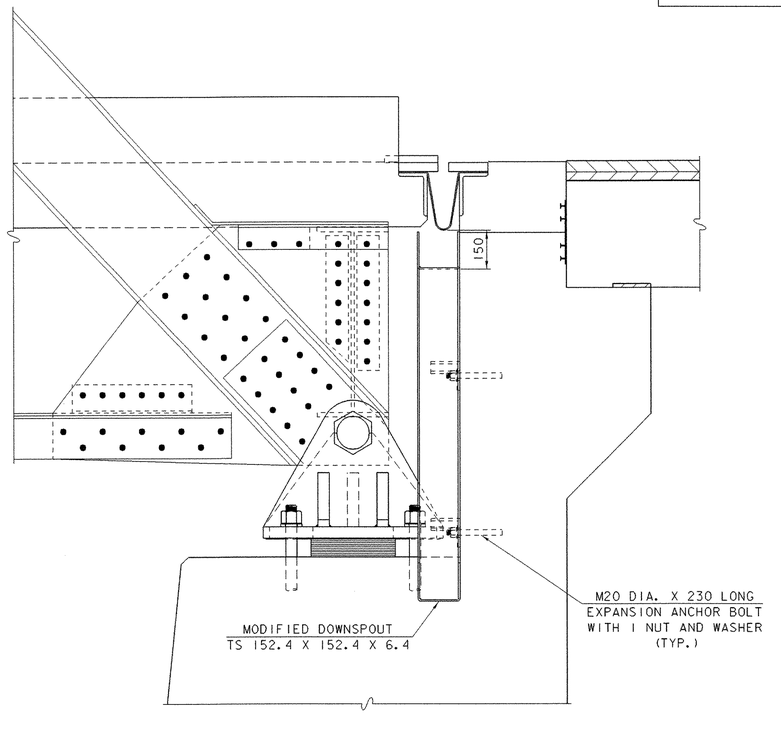
FILE NAME: 95j278\Structures\sj278ejd.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 38 OF 78



DOWNSPOUT FRONT ELEVATION

0 0.5 1

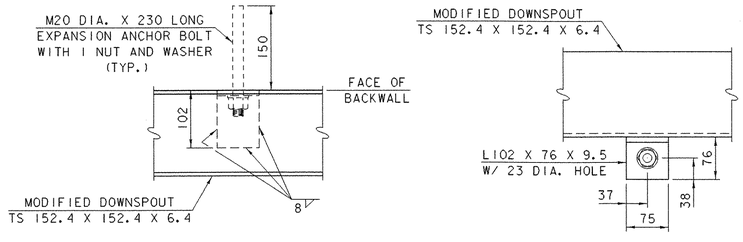
SCALE = 1:10



DOWNSPOUT SIDE ELEVATION

0 0.5 1

SCALE = 1:10



PLAN ELEVATION

DOWNSPOUT MOUNTING BRACKET DETAILS

0 0.25 0.5

SCALE = 1:5

DOWNSPOUT NOTES

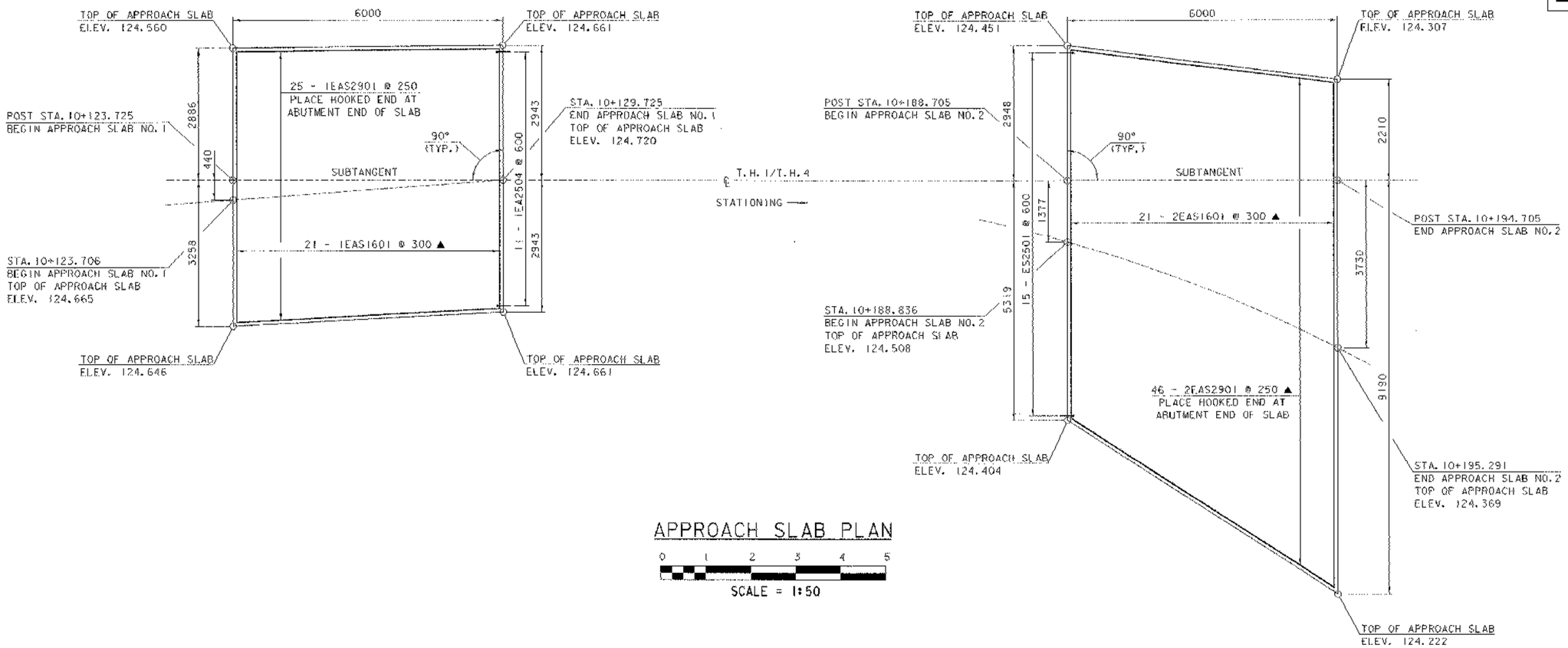
1. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A500 OR A501.
2. ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO AASHTO M270M/M270 GRADE 250.
3. THE DOWNSPOUT SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111M/M111 AFTER FABRICATION.
4. ALL BOLTS AND RELATED HARDWARE SHALL BE ASTM F568M, CLASS 4.6 AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232M/M232.
5. ANY PLACE WHERE GALVANIZING HAS BEEN REMOVED FROM THE DOWNSPOUT EITHER BY CUTTING, BURNING, WELDING, PLACING, OR ANY OTHER MEANS, REPAIRS SHALL BE MADE IN ACCORDANCE WITH AASHTO M36.
6. THE DOWNSPOUT, MOUNTING BRACKETS, ALL ANCHOR BOLTS WITH RELATED HARDWARE, AND INSTALLATION SHALL BE PAID FOR UNDER ITEM 506.60, "STRUCTURAL STEEL".

DOWNSPOUT DETAILS

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj278dsd.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 39 OF 78

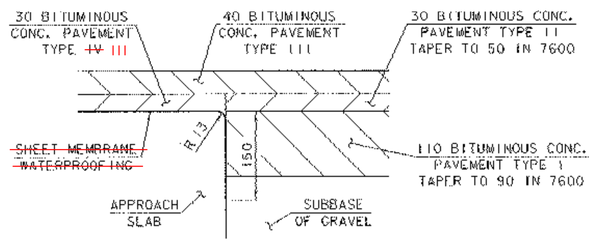
Metric



APPROACH SLAB PLAN

0 1 2 3 4 5

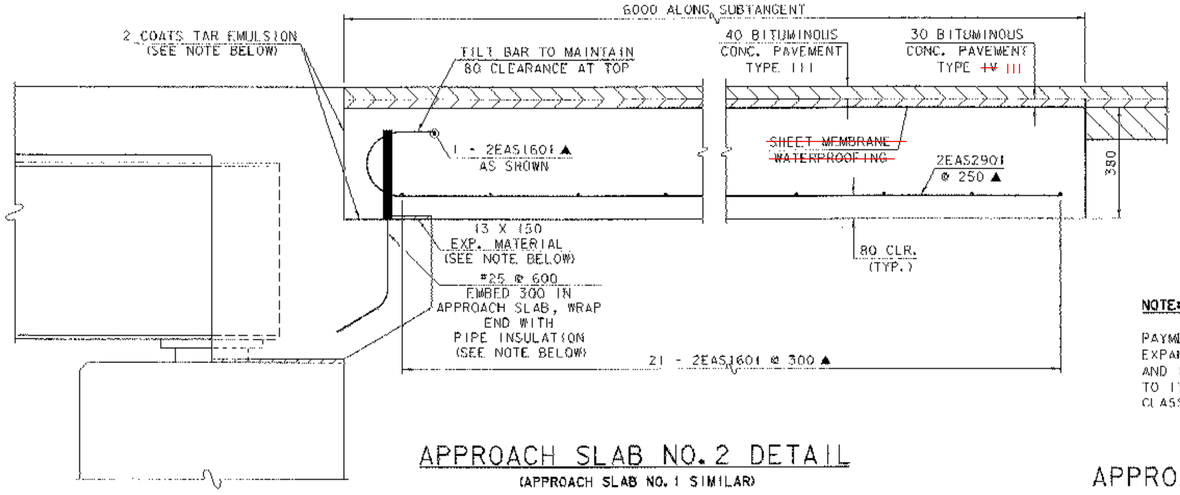
SCALE = 1:50



DETAIL FOR SHEET MEMBRANE AT APPROACH SLAB END

0 0.25 0.5

SCALE = 1:5



APPROACH SLAB NO. 2 DETAIL

(APPROACH SLAB NO. 1 SIMILAR)

0 0.5 1

SCALE = 1:10

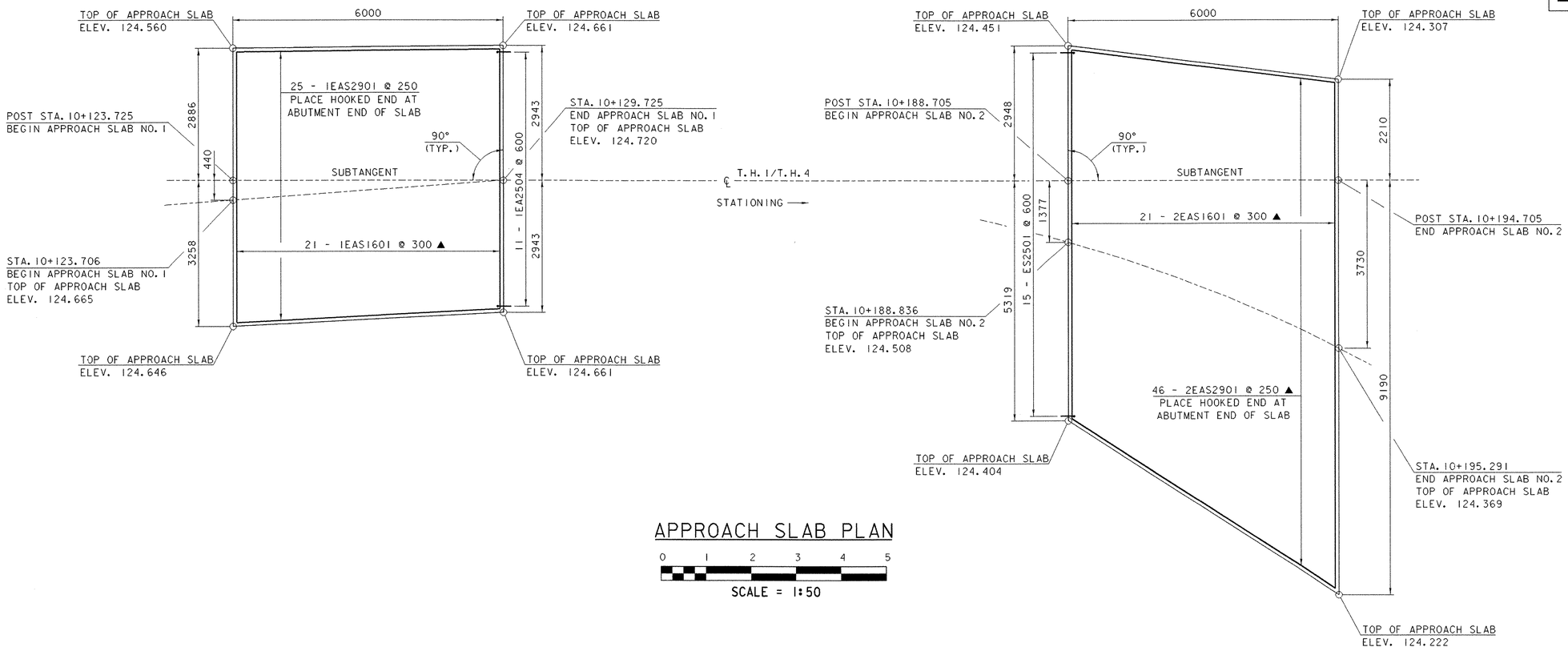
NOTE:

PAYMENT FOR TAR EMULSION, PIPE INSULATION, EXPANSION MATERIAL AND THEIR APPLICATION AND INSTALLATION SHALL BE MADE SUBSIDIARY TO ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".

APPROACH SLAB DETAILS

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

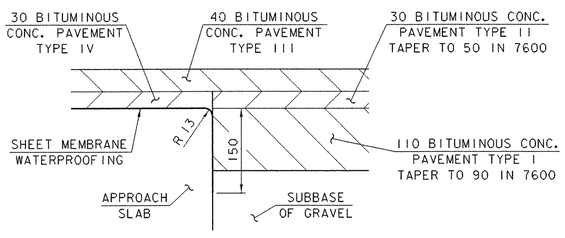
FILE NAME: 951278\Structures\sj278asd1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: M. LOZIER
PLOT DATE: 26-JUN-2003
DRAWN BY: C. ROY
CHECKED BY: M. LOZIER
SHEET 40 OF 78



APPROACH SLAB PLAN

0 1 2 3 4 5

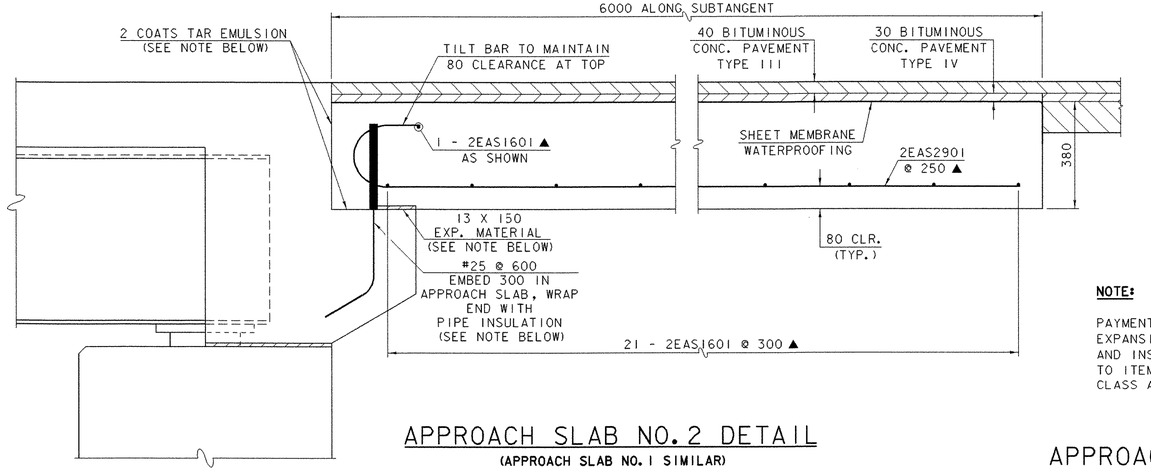
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DETAIL FOR SHEET MEMBRANE AT APPROACH SLAB END

0 0.25 0.5

SCALE = 1:5



APPROACH SLAB NO. 2 DETAIL

(APPROACH SLAB NO. 1 SIMILAR)

0 0.5 1

SCALE = 1:10

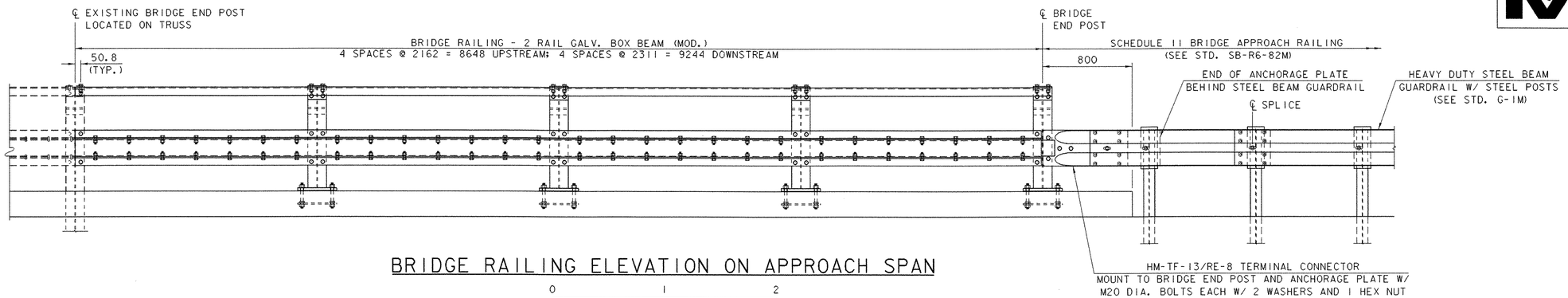
NOTE:

PAYMENT FOR TAR EMULSION, PIPE INSULATION, EXPANSION MATERIAL AND THIER APPLICATION AND INSTALLATION SHALL BE MADE SUBSIDIARY TO ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".

APPROACH SLAB DETAILS

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj278asd.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: M. LOZIER
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 40 OF 78

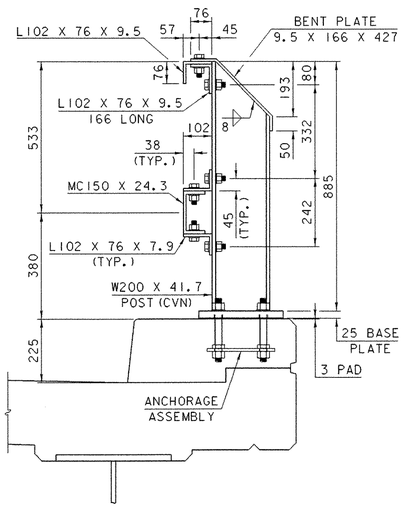


BRIDGE RAILING ELEVATION ON APPROACH SPAN

0 1 2

SCALE = 1:20

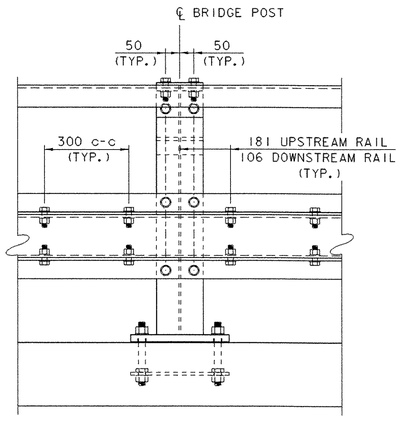
ALL CONNECTIONS FOR BRIDGE RAILING SHALL BE M20 DIA. BOLTS W/ 2 WASHERS AND 1 HEX NUT THROUGH 22 DIA. HOLES.



BRIDGE POST SECTION

0 0.5 1

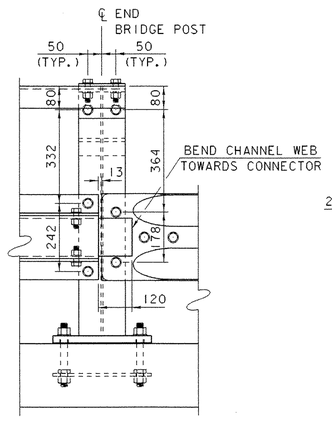
SCALE = 1:10



BRIDGE POST ELEVATION

0 0.5 1

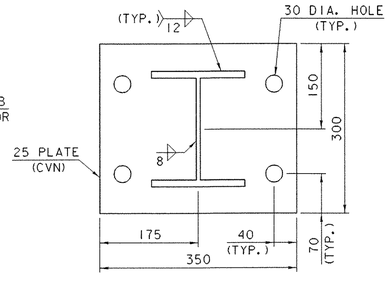
SCALE = 1:10



BRIDGE END POST ELEVATION

0 0.5 1

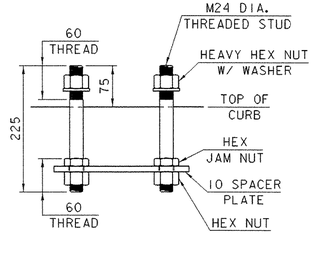
SCALE = 1:10



BASE PLATE

0 0.25 0.5

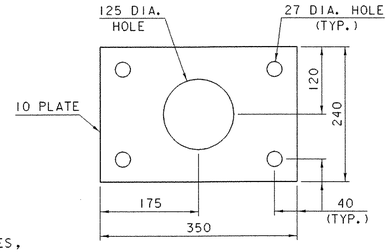
SCALE = 1:5



ANCHORAGE ASSEMBLY

0 0.25 0.5

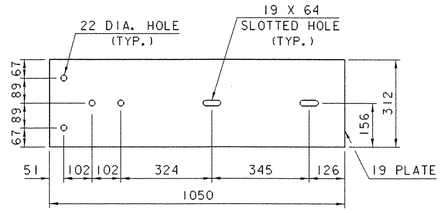
SCALE = 1:5



SPACER PLATE

0 0.25 0.5

SCALE = 1:5



ANCHORAGE PLATE

0 0.5 1

SCALE = 1:10

RAILING NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525 OF THE STANDARD SPECIFICATIONS.
2. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 1.6 MM RADIUS AND BE FREE OF BURRS.
3. SECTIONS OF BRIDGE RAILING SHALL BE ATTACHED TO MINIMUM OF TWO POSTS AND PREFERABLY TO AT LEAST FOUR POSTS.
4. RAIL POSTS SHALL BE SET NORMAL TO GRADE.
5. EXCEPT FOR ANCHORAGE ASSEMBLY, ALL BRIDGE RAIL COMPONENTS SHALL BE PAINTED GREEN, COLOR CHIP NO. 14062 AFTER FABRICATION IN ACCORDANCE WITH SECTION 513 OF THE SUPPLEMENTAL SPECIFICATIONS.
6. THE COST FOR ANCHORAGE PLATE AND ASSOCIATED HARDWARE SHALL BE SUBSIDIARY TO ITEM 525.31, "BRIDGE RAILING - 2 RAIL GALVANIZED BOX BEAM (MOD.)".
7. THE ANCHORAGE ASSEMBLY AND ANCHORAGE PLATE, EXCEPT FOR HARDWARE, SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111M/M111. HARDWARE SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M232M/M232.
8. RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND THEN GIVEN AN ADDITIONAL 45 DEGREE TURN.
9. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY. ALL CURVED LONGITUDINAL RAIL ELEMENTS SHALL BE FABRICATED AS A SINGLE CURVE WITH NO CHORD SEGMENTS.
10. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS, INCLUDING WELDING PROCEDURES, TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH SUBSECTION 506.04 OF THE STANDARD SPECIFICATIONS. ALL WELDING SHALL CONFORM TO SUBSECTION 506.10 OF THE STANDARD SPECIFICATIONS.
11. RAIL POST AND BASE PLATES SHALL BE TESTED FOR IMPACT PROPERTIES IN ACCORDANCE WITH ASTM A370 CHARPY IMPACT TESTING USING TYPE A SPECIMENS.

MATERIALS

RAIL POSTS: ASTM A709/A709M, GRADE 345
ALL OTHER SHAPES AND PLATES: ASTM A709/A709M, GRADE 250
ANCHOR STUDS: ASTM F568M, CLASS 8.8
ALL OTHER BOLTS (UNLESS NOTED): AASHTO M164M, TYPE 1

NUTS FOR AASHTO M164M BOLTS AND ANCHOR STUDS SHALL COMPLY WITH AASHTO M291M.

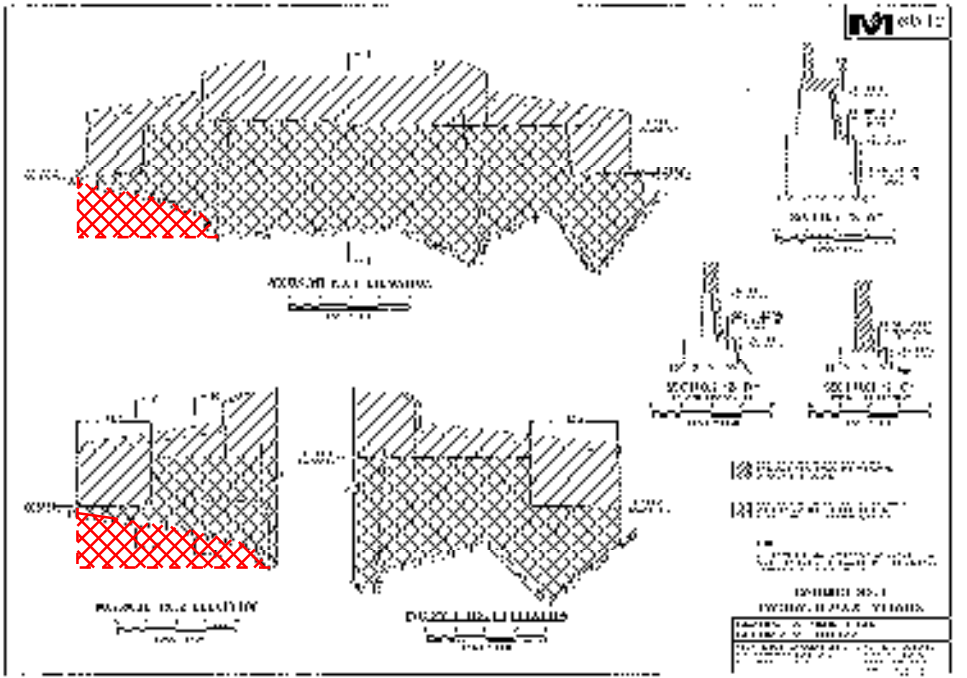
WASHERS SHALL COMPLY WITH AASHTO M293M.

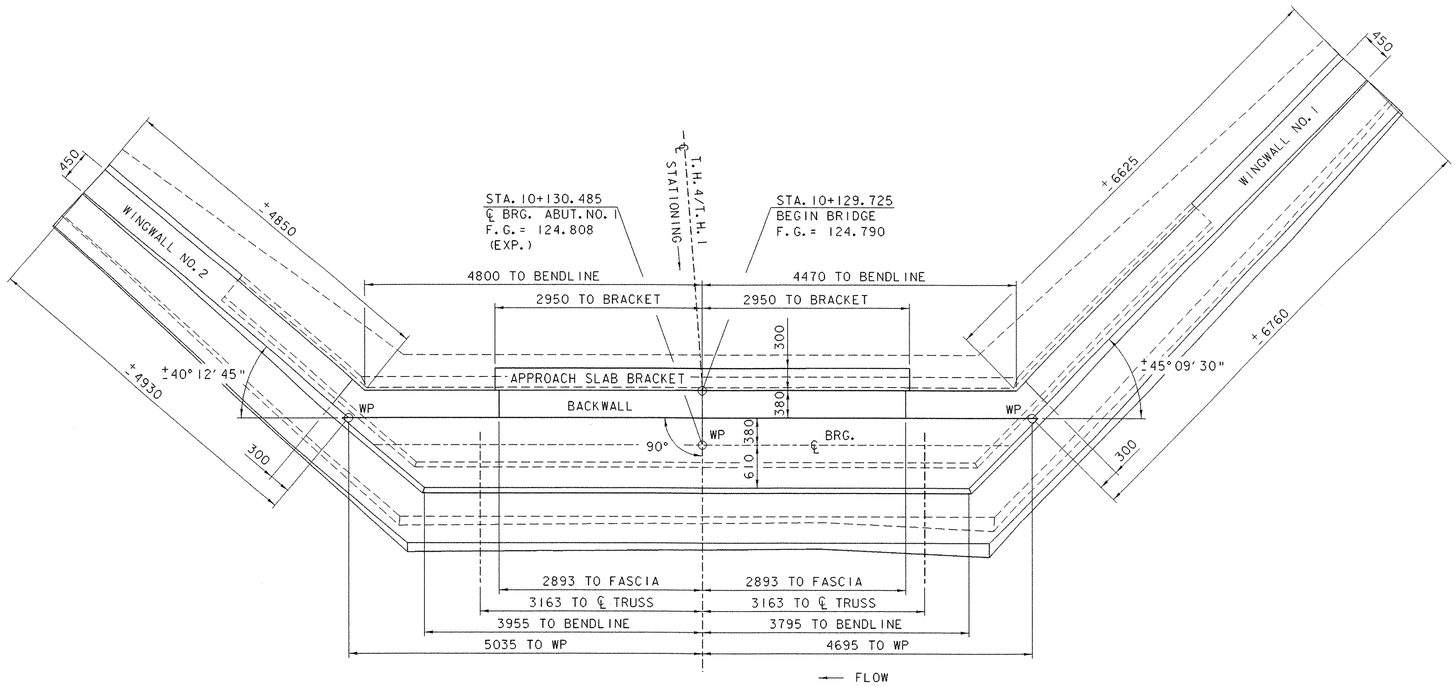
THE 3 MM PAD SHALL COMPLY WITH SUBSECTION 731.01 OR 731.02 OF THE STANDARD SPECIFICATIONS.

BRIDGE RAILING DETAILS

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj278brd.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 41 OF 78

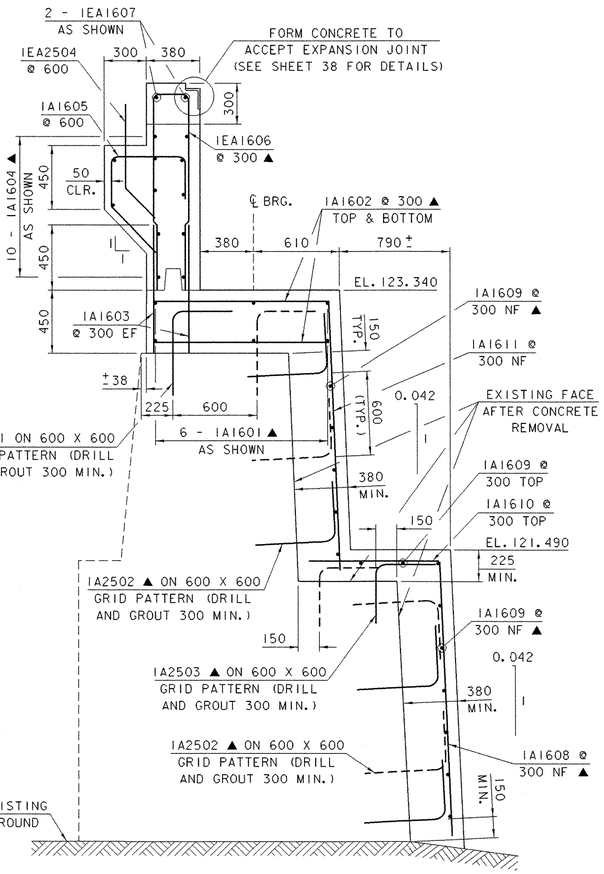




ABUTMENT NO. 1 PLAN

0 1 2 3 4

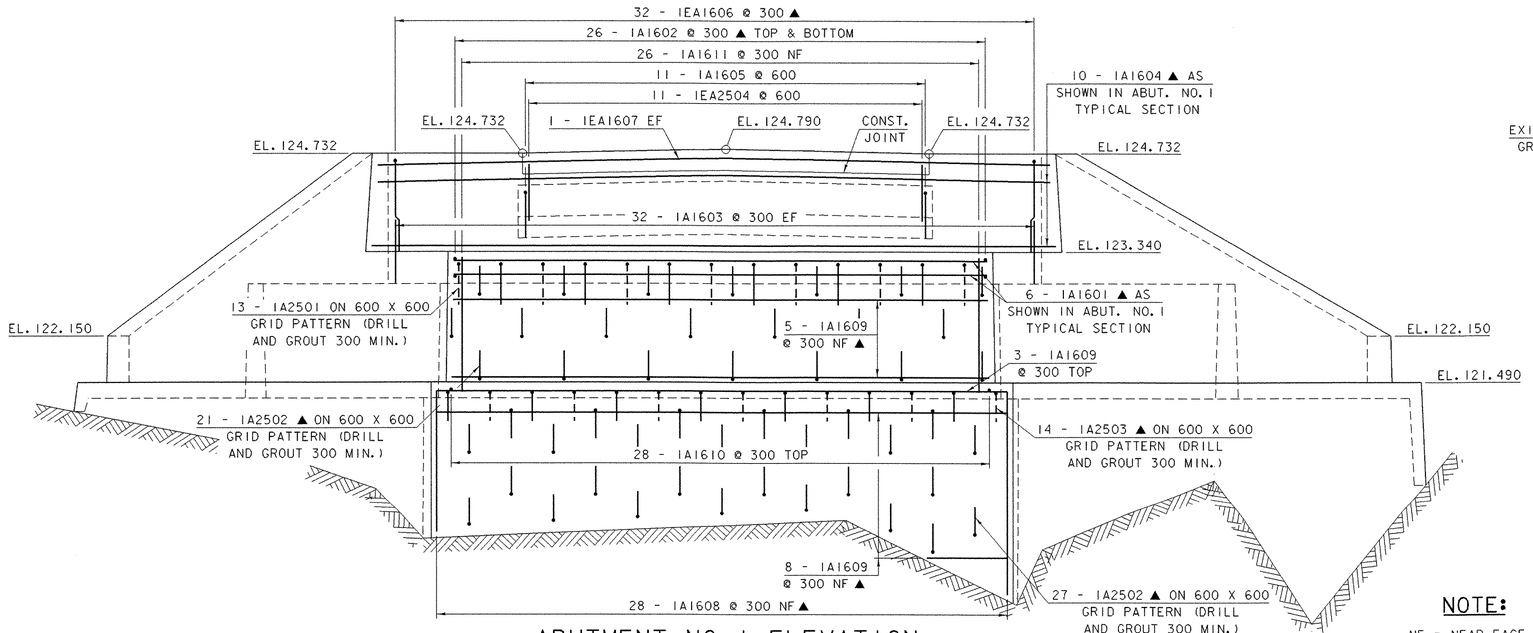
SCALE = 1:40



ABUTMENT NO. 1 TYPICAL SECTION

0 1 2

SCALE = 1:20



ABUTMENT NO. 1 ELEVATION

0 1 2 3 4

SCALE = 1:40

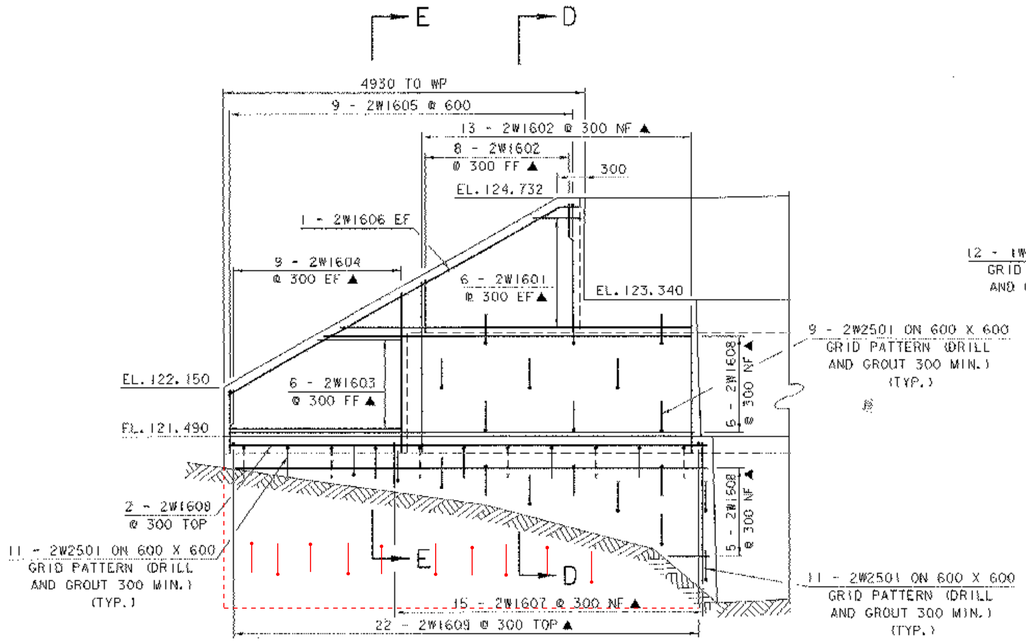
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
80 CLR. UNLESS OTHERWISE
SPECIFIED ON THE PLANS.

ABUTMENT NO. 1 REPAIR DETAILS

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

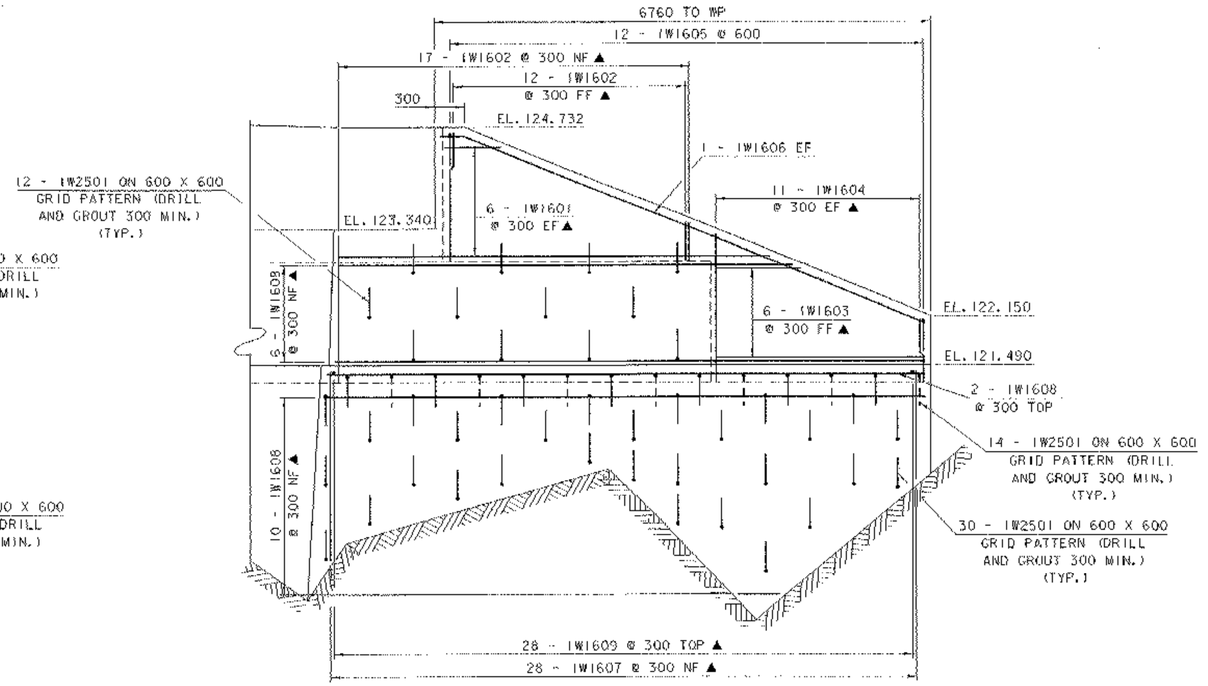
FILE NAME: 95j278\Structures\sj278ab1.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: M. LOZIER
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 43 OF 78



WINGWALL NO. 2 ELEVATION

0 1 2 3 4

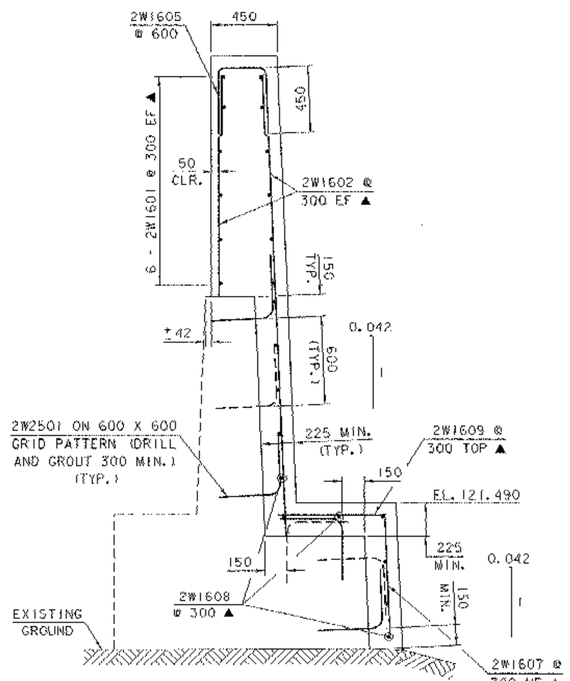
SCALE = 1:40



WINGWALL NO. 1 ELEVATION

0 1 2 3 4

SCALE = 1:40

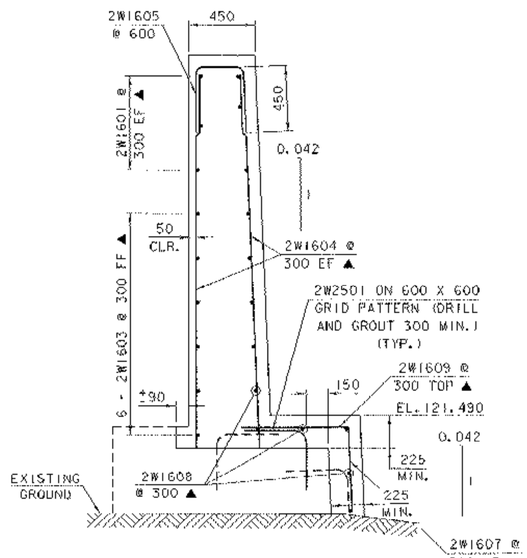


SECTION "D-D"

0 1 2

SCALE = 1:20

(WINGWALL NO. 1 SIMILAR)



SECTION "E-E"

0 1 2

SCALE = 1:20

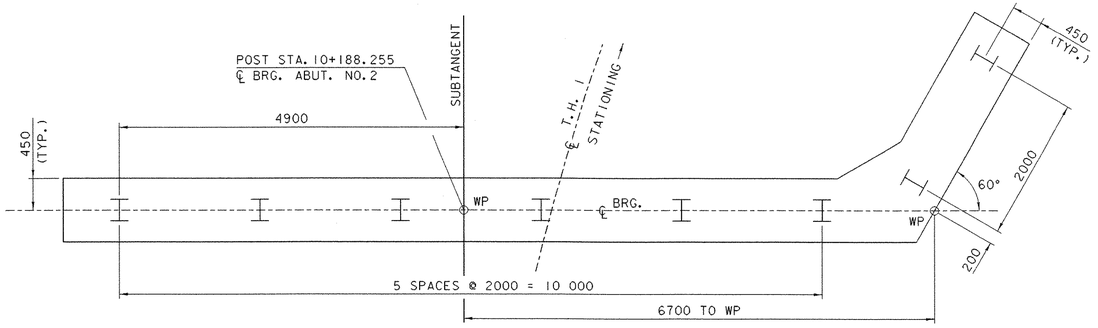
(WINGWALL NO. 1 SIMILAR)

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
80 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

WINGWALLS NO. 1 & 2 DETAILS

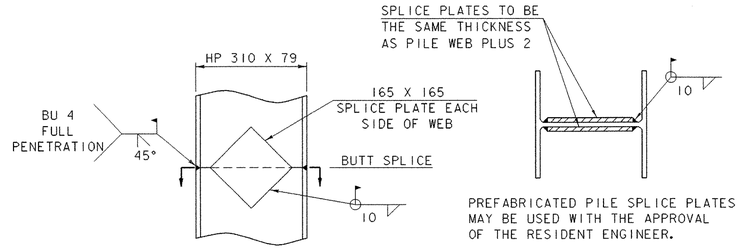
PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)
FILE NAME: 95j278\Structures\sj278ww01	PLOT DATE: 26-JUN-2003
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: M. LOZIER	CHECKED BY: M. LOZIER
	SHEET 44 OF 78



ABUTMENT NO. 2 PILE LAYOUT

0 1 2 3 4

SCALE = 1:40

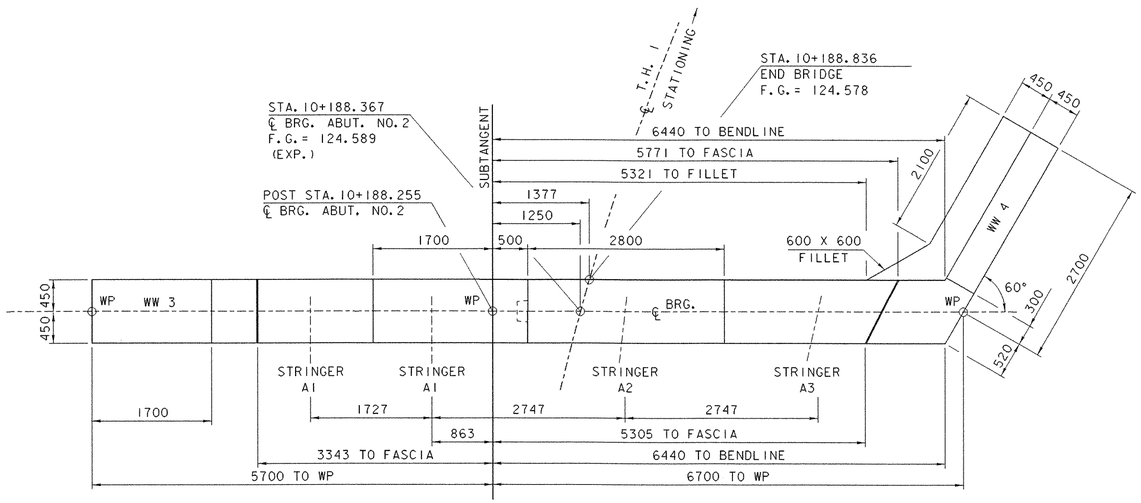


PILE SPLICE DETAIL

NOT TO SCALE

PILE NOTES

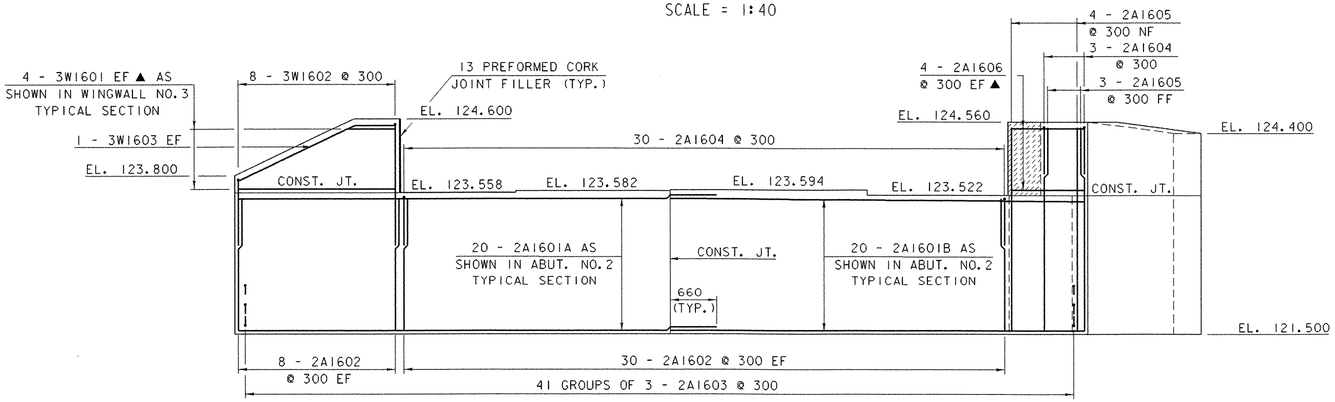
1. ⊢⊣ - INDICATES LOCATION OF A VERTICAL H-PILE.
2. PILE SIZE: HP 310 X 79
3. PILE STEEL: AASHTO M223M/M223 GR 345
4. WELDING PROCEDURES TO BE APPROVED BY THE STRUCTURES ENGINEER PRIOR TO WELDING.



ABUTMENT NO. 2 PLAN

0 1 2 3 4

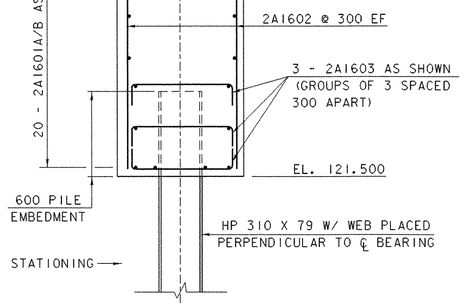
SCALE = 1:40



ABUTMENT NO. 2 ELEVATION

0 1 2 3 4

SCALE = 1:40



ABUTMENT NO. 2 TYPICAL SECTION

0 1 2

SCALE = 1:20

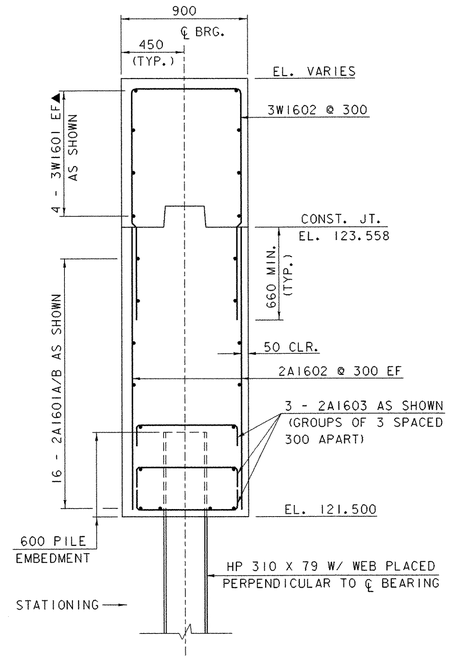
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
80 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

ABUTMENT NO. 2 DETAILS (1)

PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)

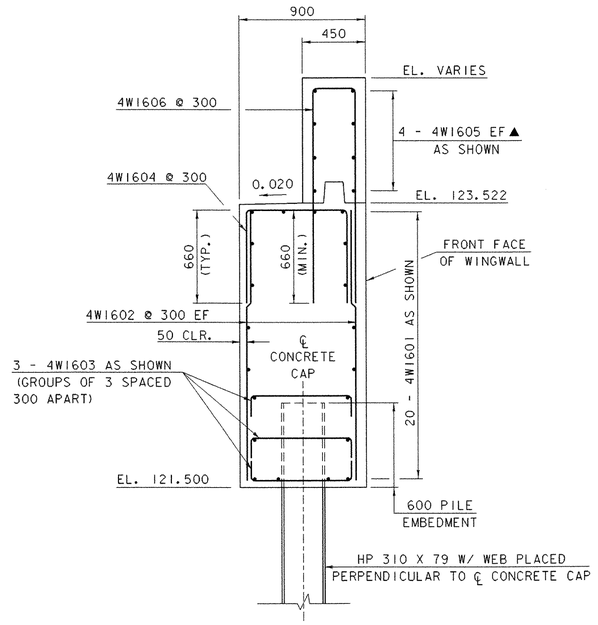
FILE NAME: 95j278\Structures\sj278ab2.i		PLOT DATE:	26-JUN-2003
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	L. BULLOCK
DESIGNED BY:	M. LOZIER	CHECKED BY:	M. LOZIER
		SHEET	45 OF 78



WINGWALL NO. 3 TYPICAL SECTION

0 1 2

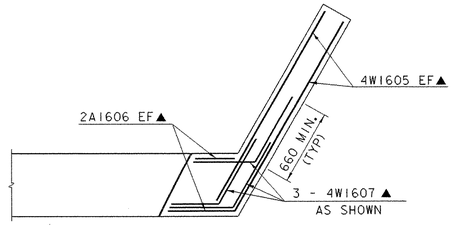
SCALE = 1:20



WINGWALL NO. 4 TYPICAL SECTION

0 1 2

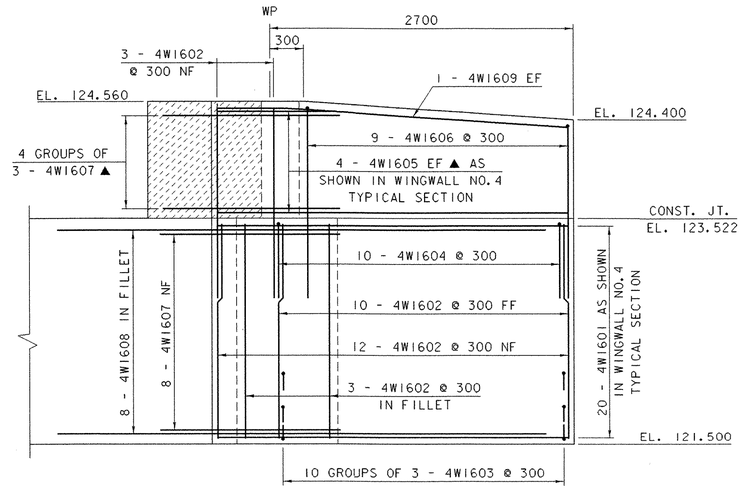
SCALE = 1:20



WINGWALL NO. 4
CORNER REINFORCING DETAIL
ABOVE BRIDGE SEAT

0 1 2 3 4

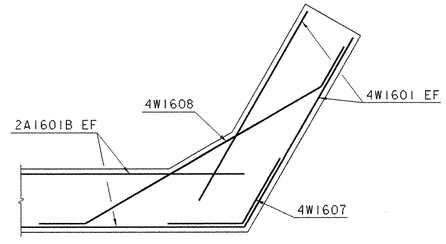
SCALE = 1:40



WINGWALL NO. 4 ELEVATION

0 1 2 3

SCALE = 1:25



WINGWALL NO. 4
CORNER REINFORCING DETAIL
BELOW BRIDGE SEAT

0 1 2 3 4

SCALE = 1:40

NOTE:

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FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
80 CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

ABUTMENT NO. 2 DETAILS (2)

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj278ww2.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: M. LOZIER
PLOT DATE: 26-JUN-2003
DRAWN BY: L. BULLOCK
CHECKED BY: M. LOZIER
SHEET 46 OF 78

STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

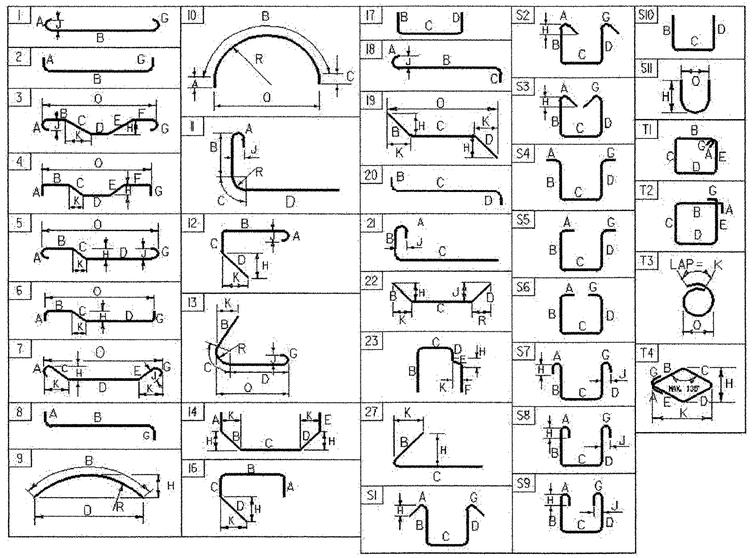
Metric

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
DECK																	
▲	292	16	10280	ES1601	STR												
✳	248	16	5640	ES1602	STR												
✳ ▲	56	16	8960	ES1603	STR												
				ES1604		NOT USED											
	326	16	550	ES1605	S10		300	250	---								
	61	16	1550	ES1606	S5	250	310	430	310			250					
	30	16	2390	ES1607	S5	300	750	290	750			300					
	29	16	1290	ES1608	16	250	590	170	280				140		240		
✳	248	19	5640	ES1901	STR												
✳ ▲	47	19	8960	ES1902	STR												
	19	19	9140	ES1903	STR												
	15	25	790	ES2501	19		200	590	---				170		100		---
APPROACH SLAB NO.1																	
✳ ▲	23	16	5980	1EAS1601	STR												
✳	26	29	6215	1EAS2901	1	375	5840					---		300			
APPROACH SLAB NO. 2																	
✳ ▲	23	16	11180	2EAS1601	STR												
✳ ▲	47	29	7325	2EAS2901	1	375	6950					---		300			
ABUTMENT NO. 1																	
▲	6	16	9270	1A1601	STR												
▲	52	16	1240	1A1602	STR												
	64	16	900	1A1603	STR												
▲	10	16	9730	1A1604	STR												
	2	16	9570	1EA1607	STR												
▲	28	16	2900	1A1608	STR												
▲	16	16	8100	1A1609	STR												
	28	16	930	1A1610	STR												
	26	16	1900	1A1611	STR												
	11	16	1650	1A1605	16	300	550	350	450				320		320		
▲	32	16	2990	1EA1606	17		1370	250	1370								
	13	25	1030	1A2501	17		600	430	---								
▲	48	25	1330	1A2502	17		900	430	---								
	14	25	1180	1A2503	17		750	430	---								
▲	11	25	900	1EA2504	19		300	600	---				210		210		---
WINGWALL NO. 1																	
▲	12	16	5880	1W1601	STR												
✳ ▲	30	16	3400	1W1602	STR												
▲	12	16	2850	1W1603	STR												
▲	22	16	2000	1W1604	STR												
▲	28	16	3300	1W1607	STR												
▲	18	16	8200	1W1608	STR												
▲	28	16	730	1W1609	STR												
	12	16	1220	1W1605	17		450	320	450								
	2	16	7120	1W1606	19		330	6790	---				120		300		---
	56	25	1330	1W2501	17		900	430	---								
WINGWALL NO. 2																	
▲	12	16	4790	2W1601	STR												
✳ ▲	22	16	3400	2W1602	STR												
▲	12	16	2360	2W1603	STR												
▲	18	16	2180	2W1604	STR												
▲	15	16	1900	2W1607	STR												
▲	13	16	6500	2W1608	STR												
▲	22	16	730	2W1609	STR												
	9	16	1220	2W1605	17		450	320	450								
	2	16	5470	2W1606	19		260	5210	---				130		230		---
	31	25	1330	2W2501	17		900	430	---								

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
ABUTMENT NO. 2																	
	20	16	6780	2A1601A	STR												
	20	16	5860	2A1601B	STR												
✳	77	16	1870	2A1602	STR												
	7	16	2900	2A1605	STR												
▲	8	16	980	2A1606	STR												
	123	16	1070	2A1603	17		150	770	150								
	33	16	2090	2A1604	17		660	770	660								
WINGWALL NO. 3																	
▲	8	16	2200	3W1601	STR												
	8	16	4030	3W1602	17		1630	770	1630								
	2	16	2410	3W1603	19		570	1840	---					240		510	---
WINGWALL NO. 4																	
	20	16	3060	4W1601	STR												
✳	29	16	1870	4W1602	STR												
▲	8	16	3060	4W1605	STR												
	30	16	1070	4W1603	17		150	770	150								
	10	16	2090	4W1604	17		660	770	660								
	9	16	3530	4W1606	17		1620	280	1620								
▲	20	16	2140	4W1607	19		1070	1070	---					930		540	---
	8	16	5200	4W1608	22		660	3880	660					330	330	570	570
	2	16	3120	4W1609	19		610	2510	---					40		610	---
PIER																	
	3	16	2980	P1601	T1	140	740	600	740	600		140					
	3	16	1000	P1602	S10		150	700	150								
	9	25	650	P2501	STR												

~ 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. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E DENOTES EPOXY COATED REINFORCING STEEL.



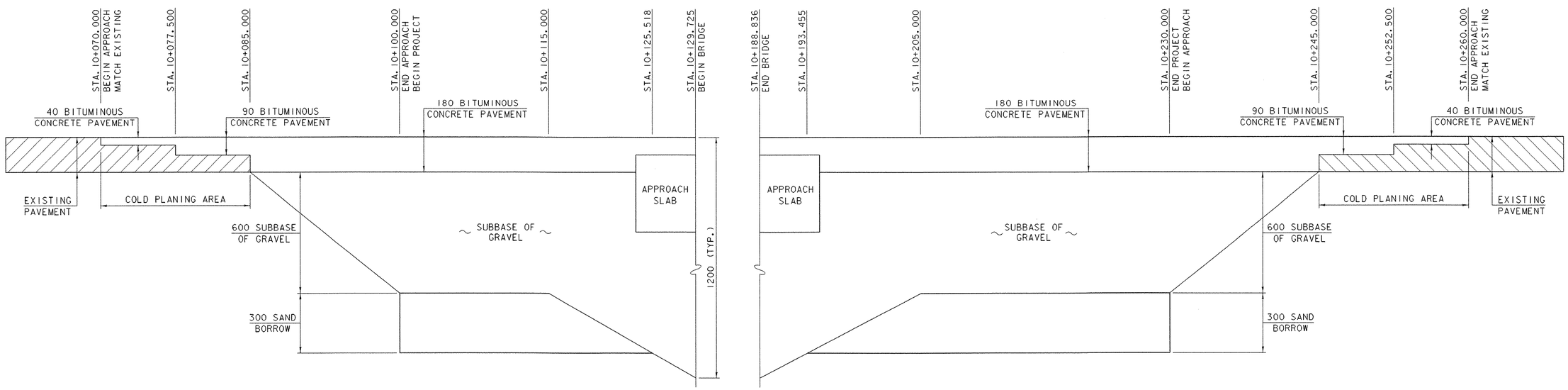
ASTM STANDARD REINFORCING BARS

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: **BROOKLINE-NEWFANE**
PROJECT NUMBER: **BHO 1442 (25)**

FILE NAME: **95j278\Structures\sj278rss.xls**
PROJECT MANAGER: **R. WHITCOMB**
DESIGNED BY: **M. LOZIER**
REINFORCING STEEL SCHEDULE SHEET #1

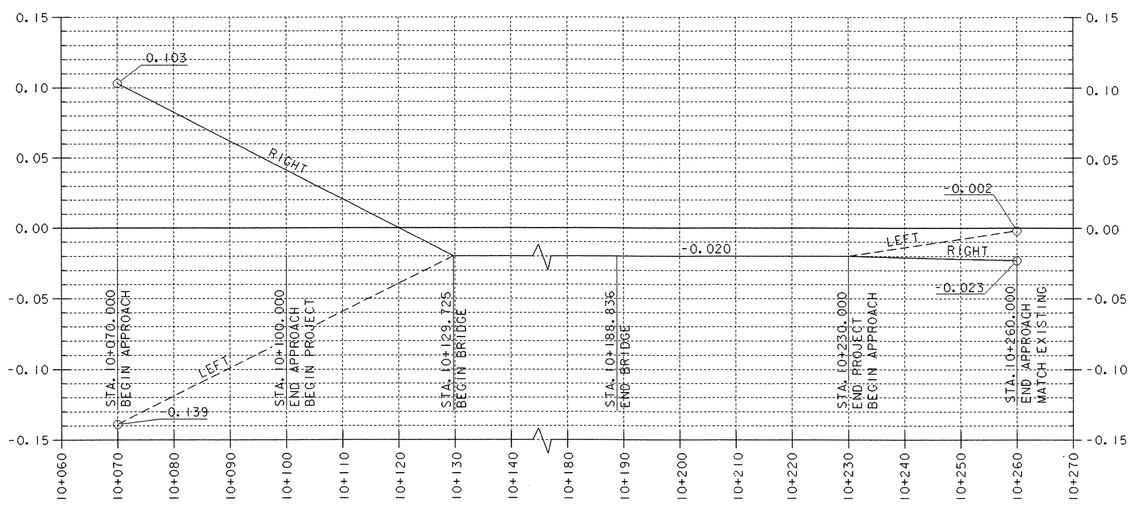
PLOT DATE: **06/25/2003**
DRAWN BY: **G. ROY**
CHECKED BY: **M. LOZIER**
SHEET **47** OF **78**



MATERIAL TRANSITION DETAIL

HORIZ.: 0 10 20
SCALE = 1:200

VERT.: 0 0.5 1
SCALE = 1:10



BANKING DIAGRAM

HORIZ.: 0 10 20 30 40 50
SCALE = 1:500

VERT.: 0 0.1 0.2
SCALE = 1:2

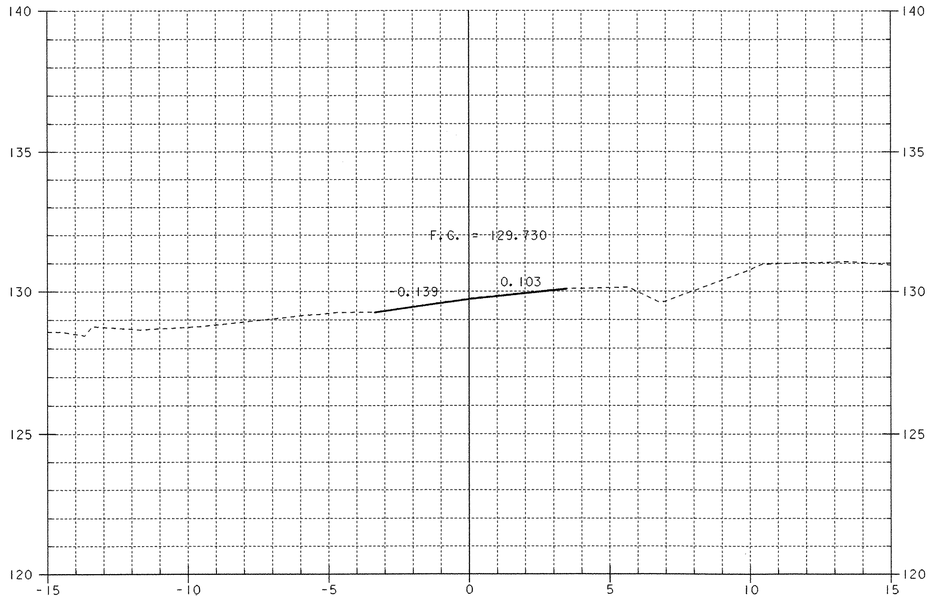
NOTES:

1. SEE ROADWAY CROSS SECTIONS TO DETERMINE CUT OR FILL.
2. SEE SHEET 3 OF THE PLANS FOR ADDITIONAL ABUTMENT EARTHWORK DETAILS.
3. SEE APPROACH SLAB END DETAIL ON SHEET 40 OF THE PLANS FOR PAVEMENT TRANSITION DETAILS AT THE END OF APPROACH SLABS.

ADDITIONAL MAINLINE ROADWAY DETAILS

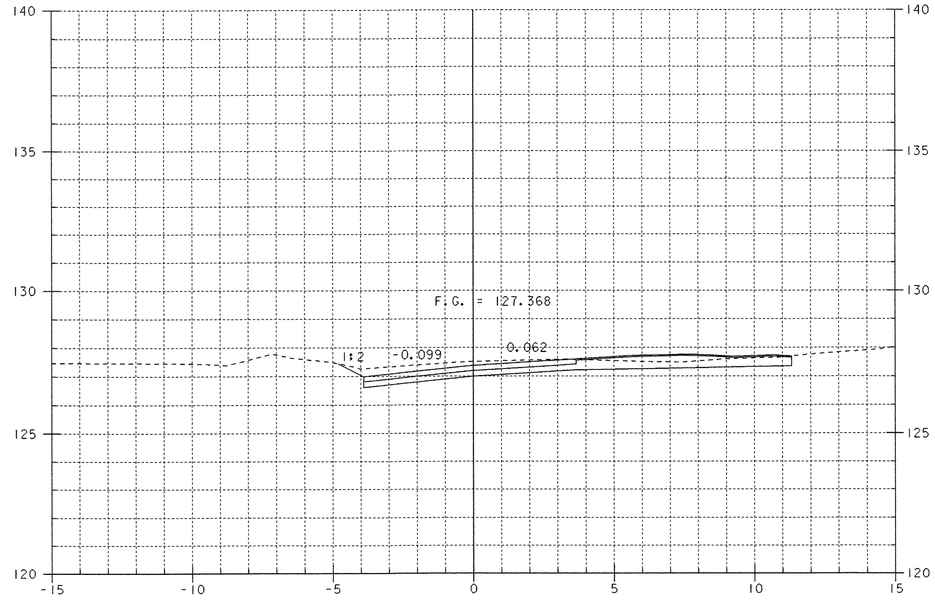
PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj266mat.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER

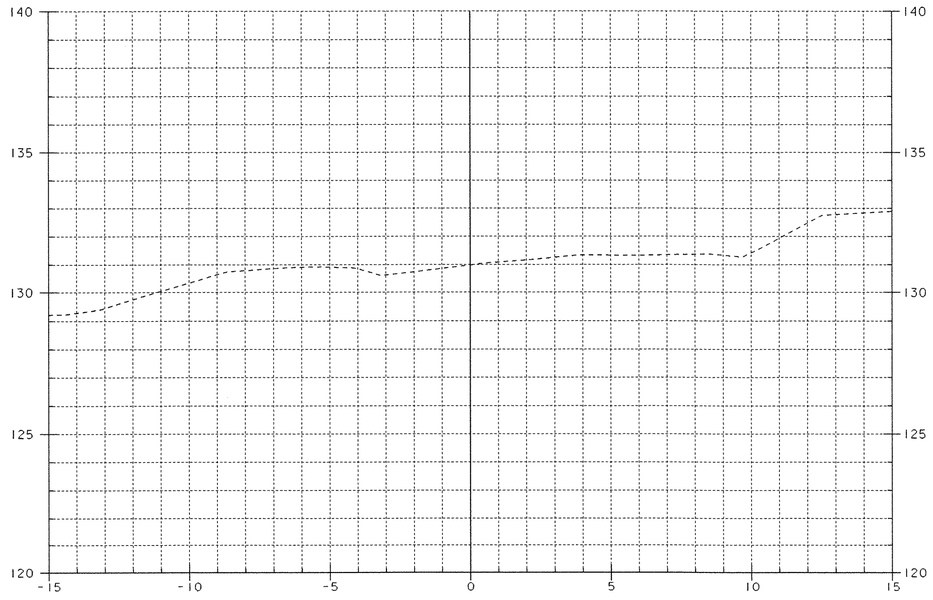


10+070

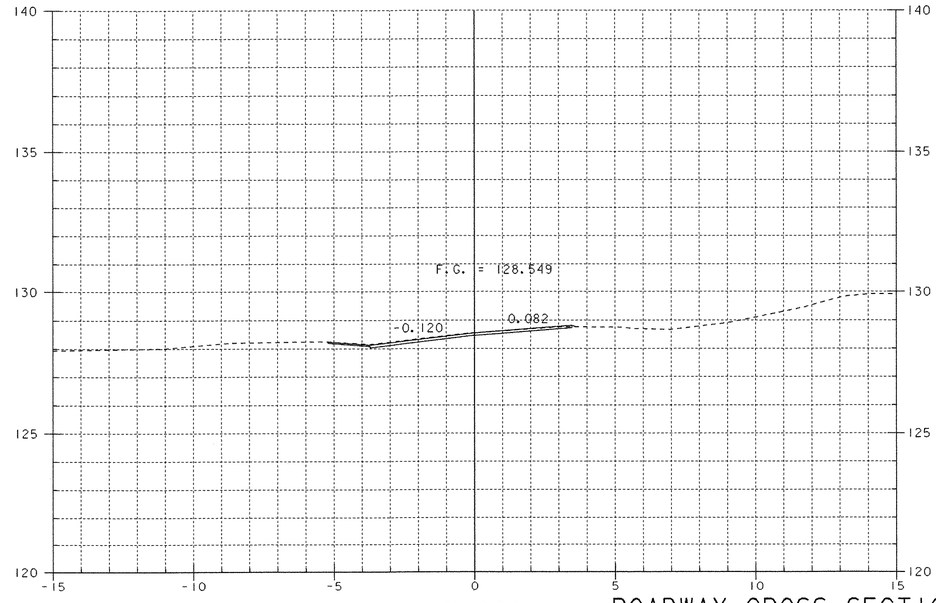
STA. 10+070.000
BEGIN APPROACH
MATCH EXISTING



10+090



10+060



10+080

0 1 2 4 6 8 10

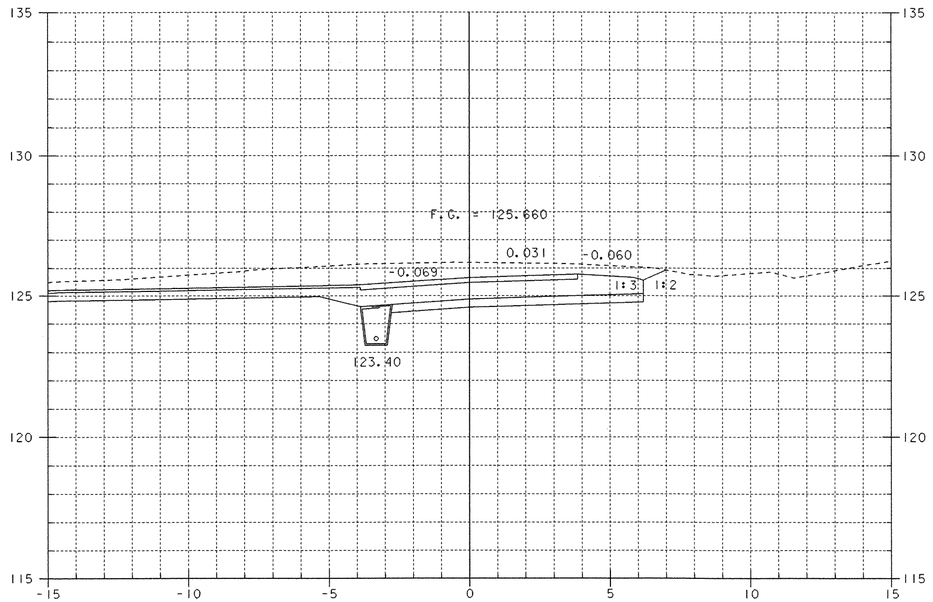
SCALE = 1:100

ROADWAY CROSS SECTIONS (1)

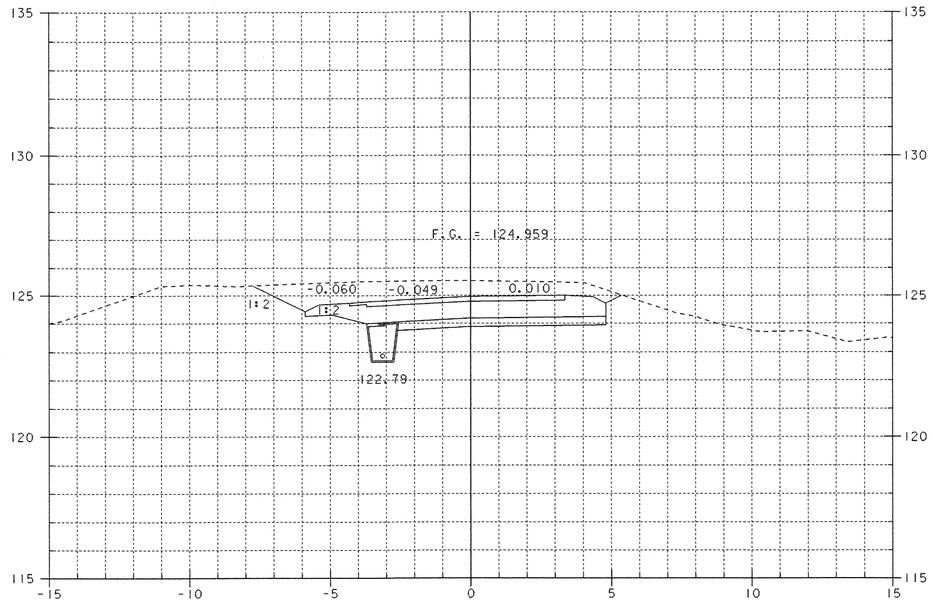
PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95J278\Structures\sj266m01.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY

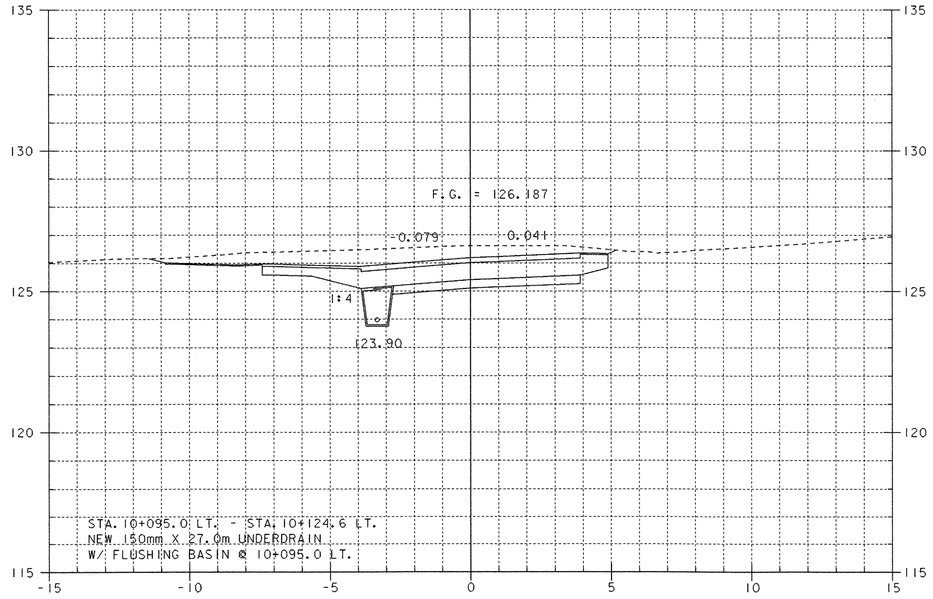
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 49 OF 78



10+105

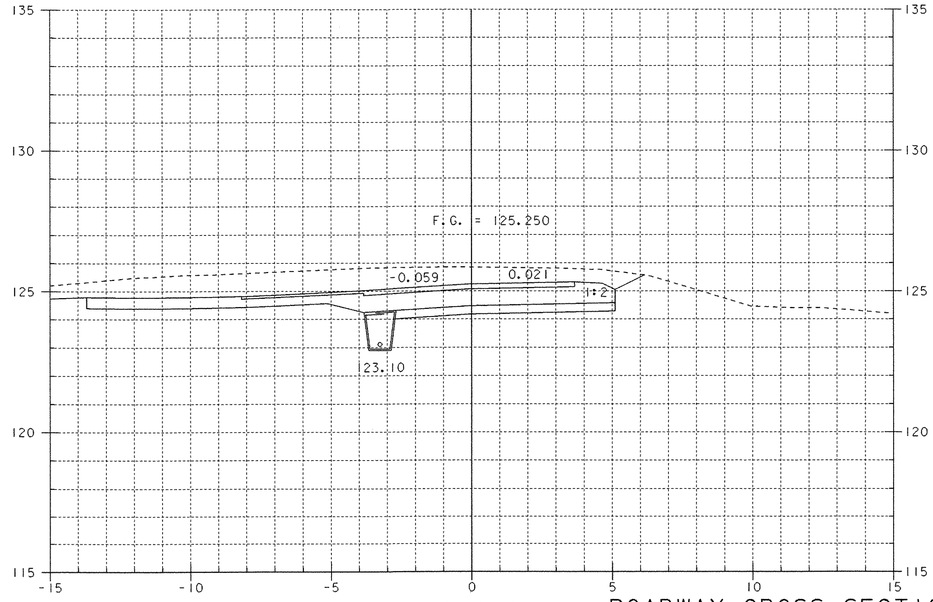


10+115



10+100

STA. 10+100.000
END APPROACH
BEGIN PROJECT



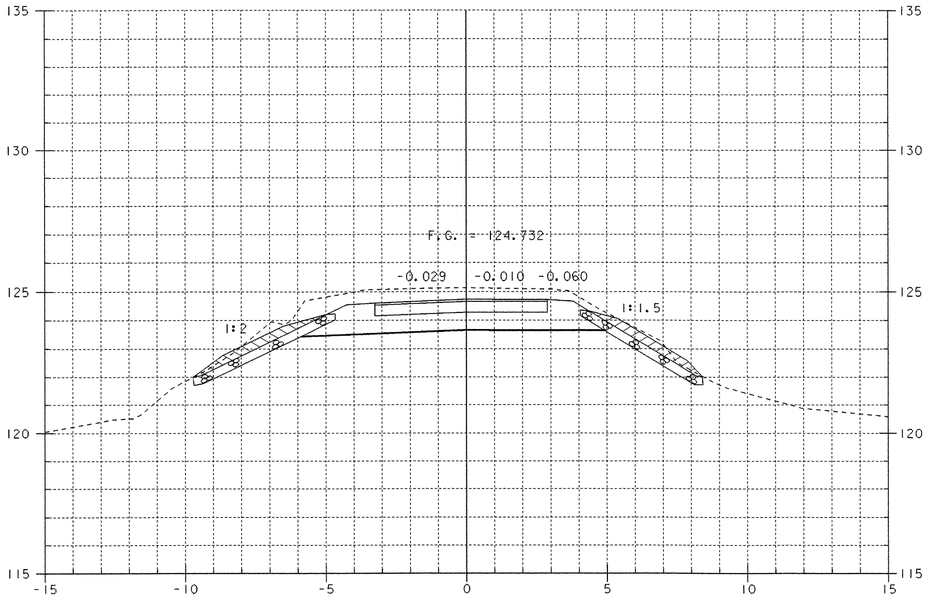
10+110

0 1 2 4 6 8 10

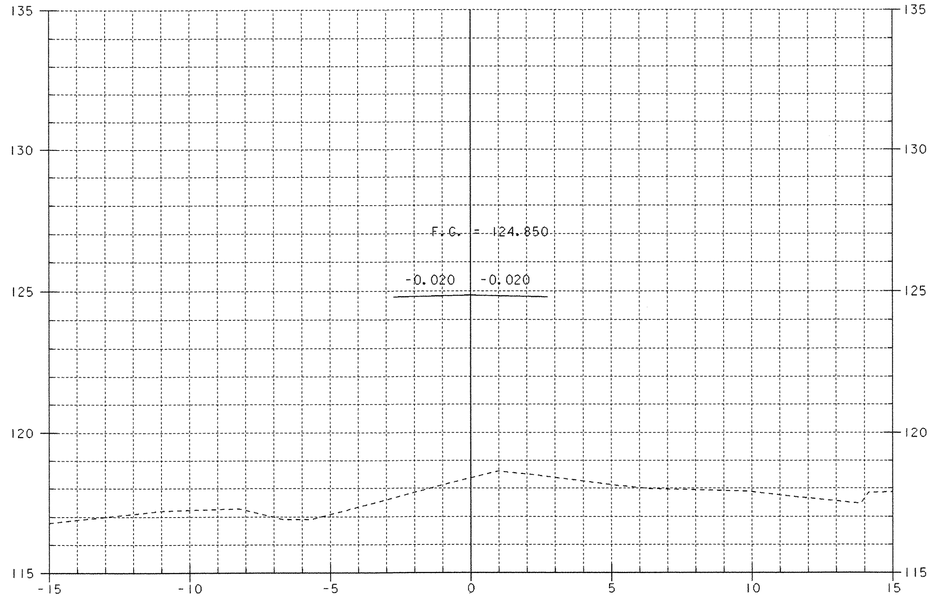
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ROADWAY CROSS SECTIONS (2)

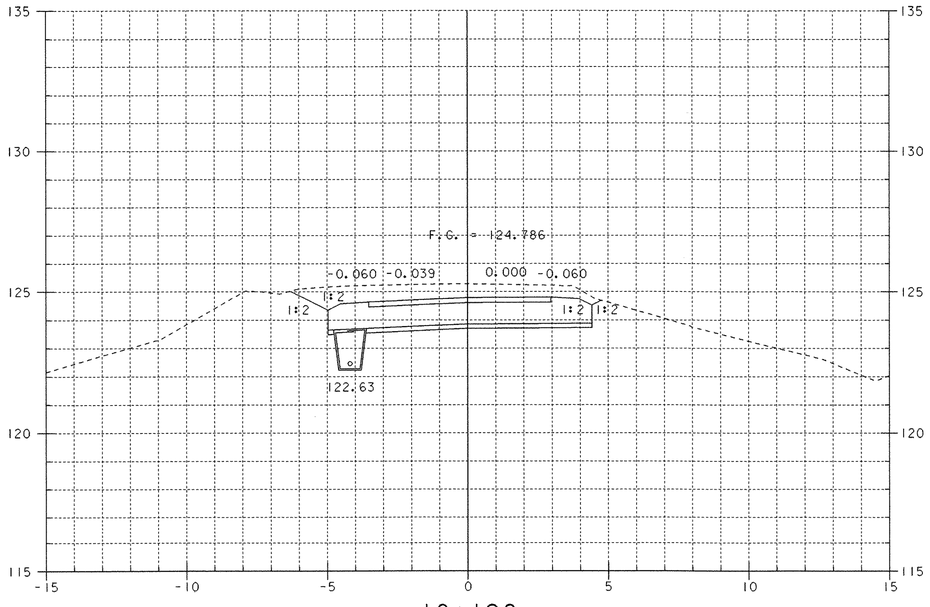
PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)
FILE NAME: 95j278\Structures\sj266m02.i	PLOT DATE: 26-JUN-2003
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: M. LOZIER
	SHEET 50 OF 78



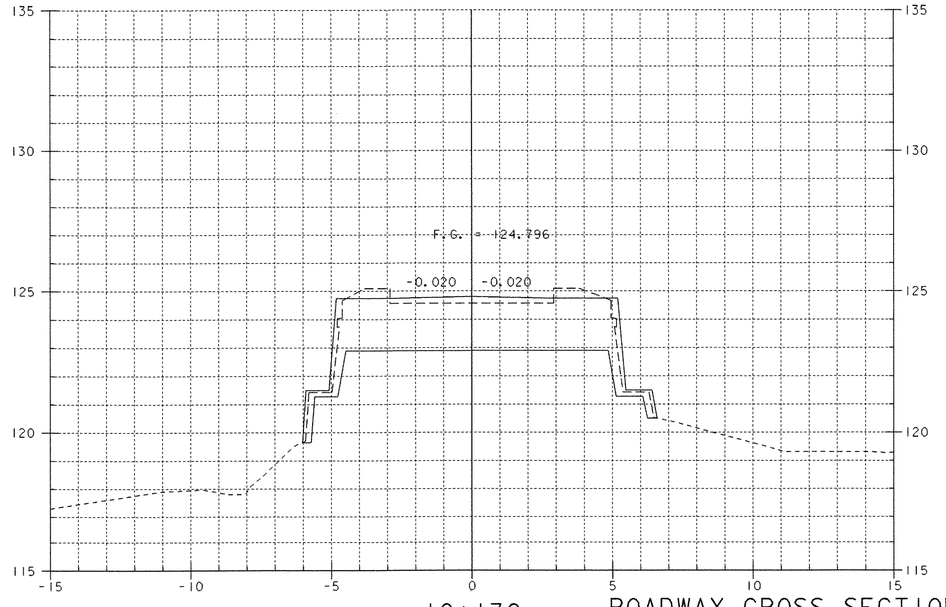
10+125



10+135



10+120



10+130

STA. 10+129.725
END ROADWAY
BEGIN BRIDGE

0 1 2 4 6 8 10

SCALE = 1:100

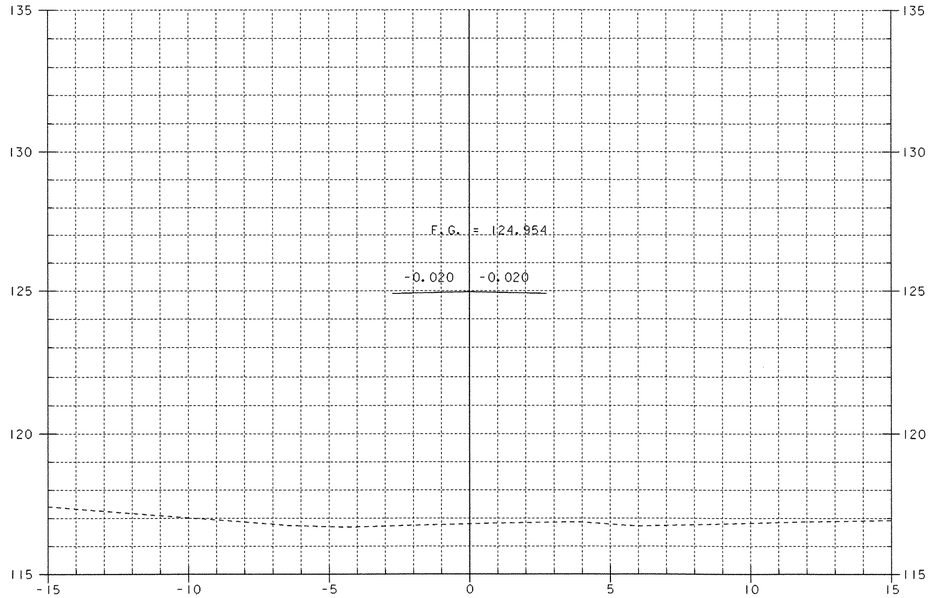
ROADWAY CROSS SECTIONS (3)

PROJECT NAME: BROOKLINE NEWFANE

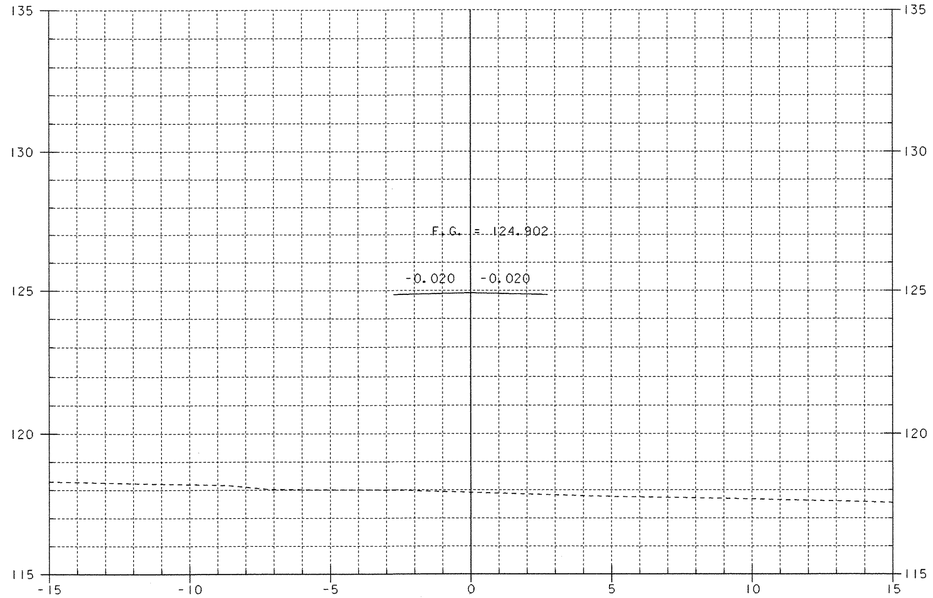
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj266m03.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY

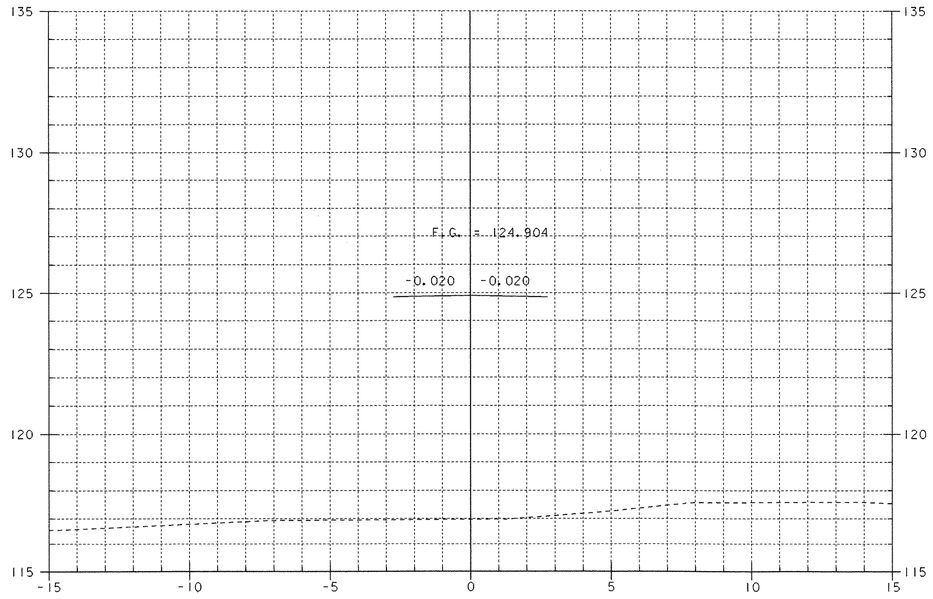
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER



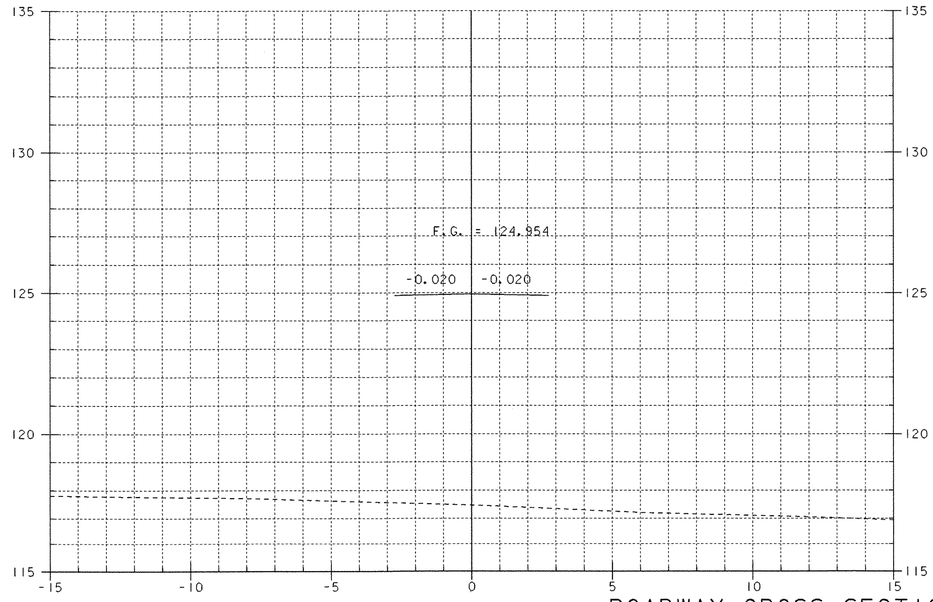
10+150



10+170



10+140



10+160

ROADWAY CROSS SECTIONS (4)

0 1 2 4 6 8 10

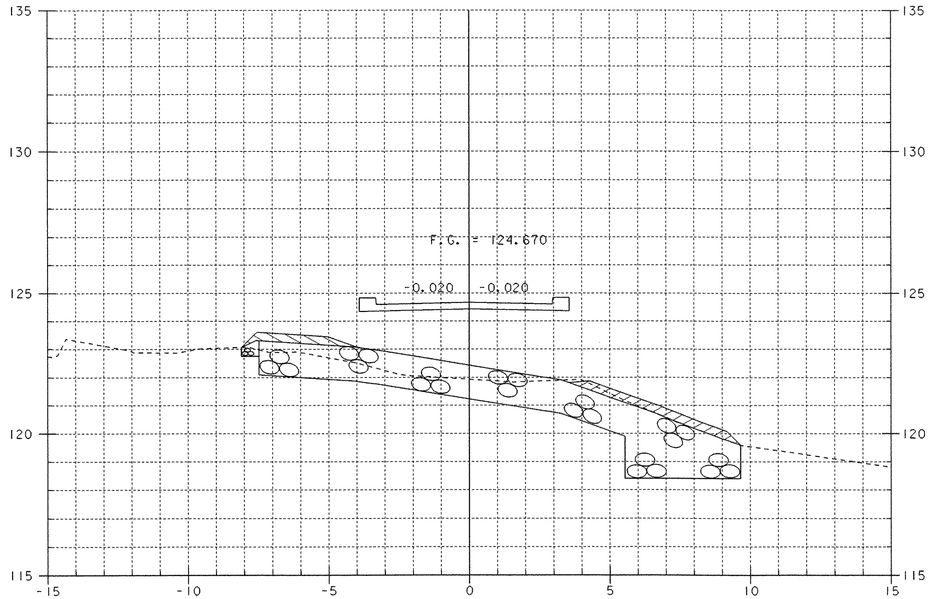
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PROJECT NAME: BROOKLINE NEWFANE

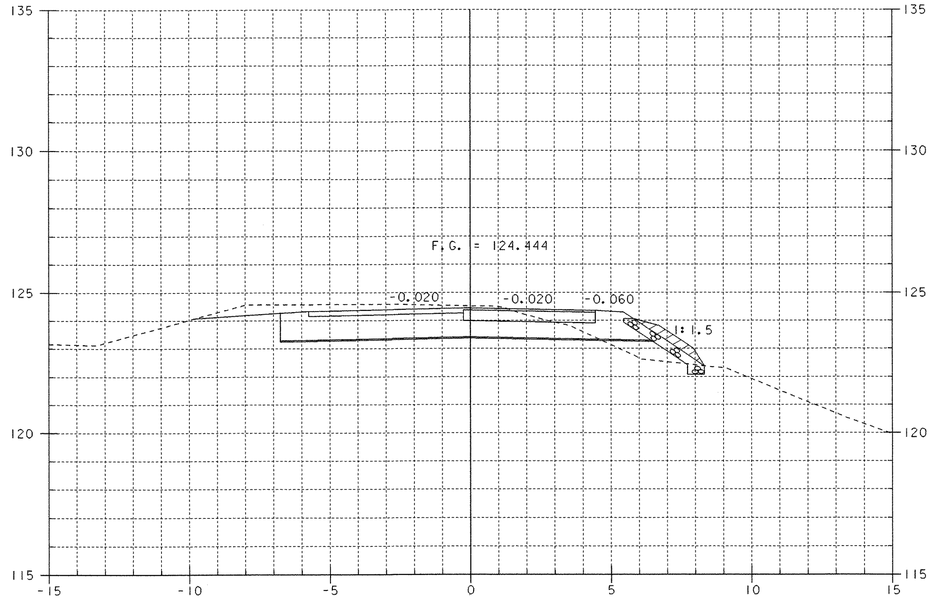
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj266m04.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY

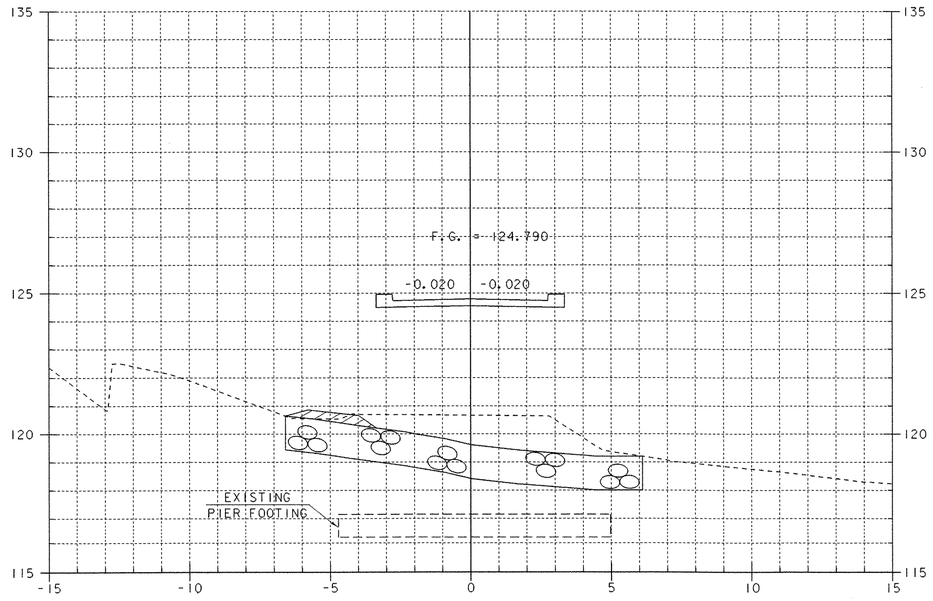
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 52 OF 78



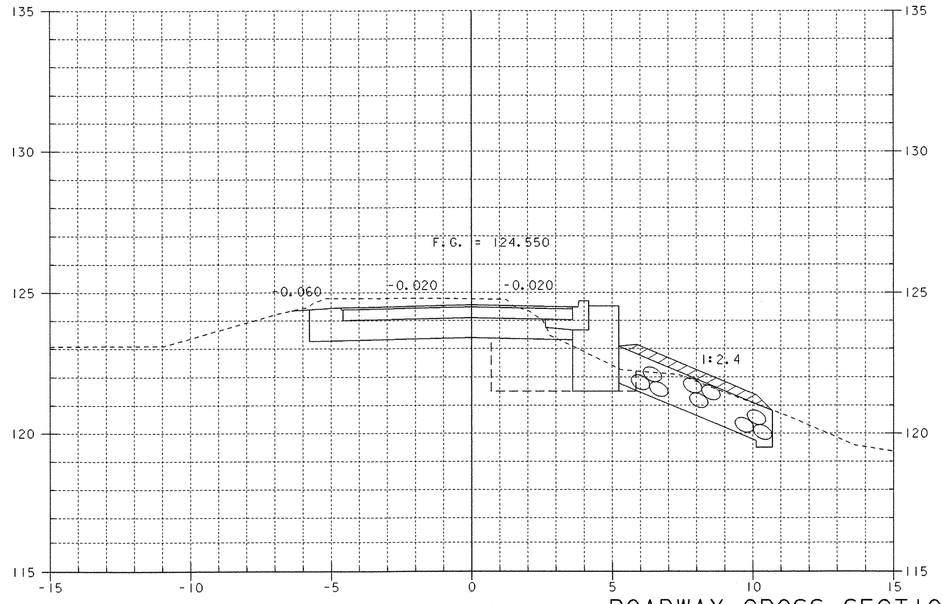
10+185



10+195

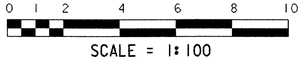


10+180



STA. 10+188.836
END BRIDGE
RESUME ROADWAY

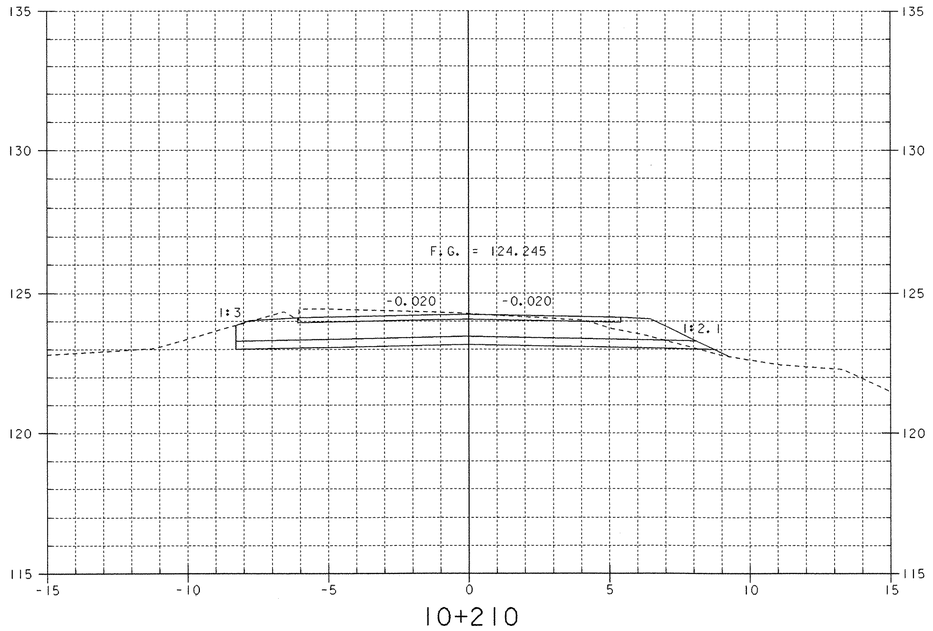
10+190



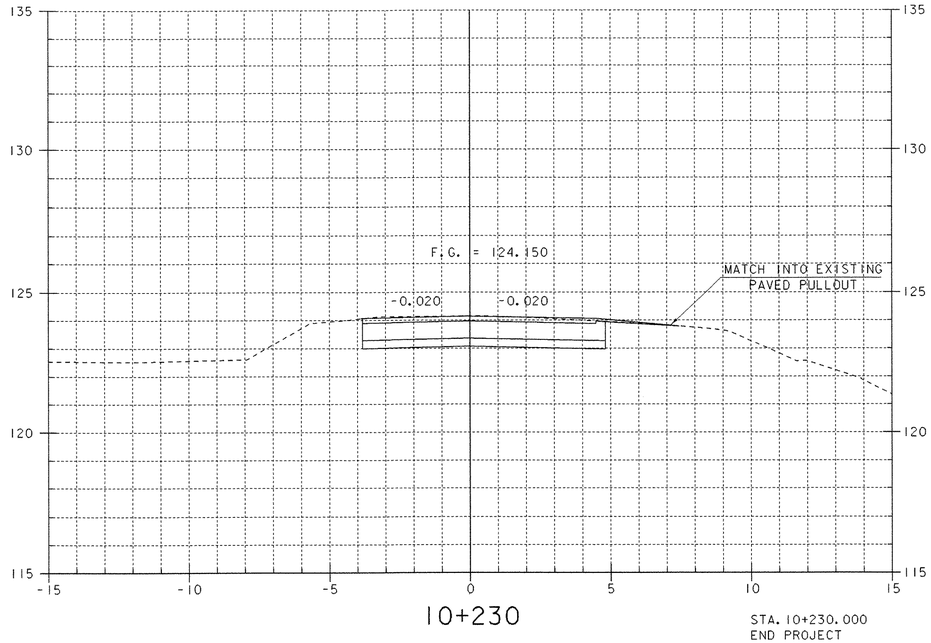
ROADWAY CROSS SECTIONS (5)

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj266m05.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 53 OF 78

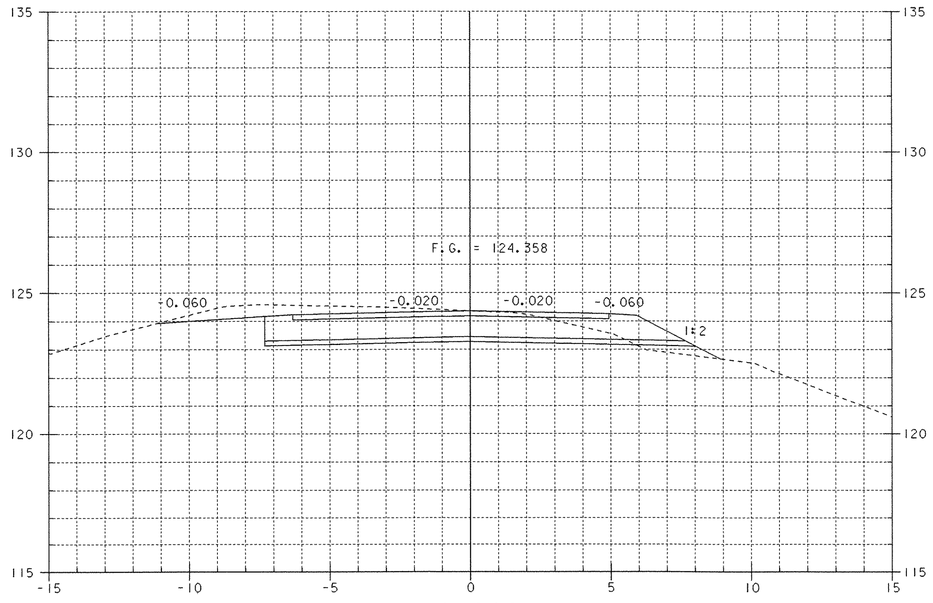


10+210

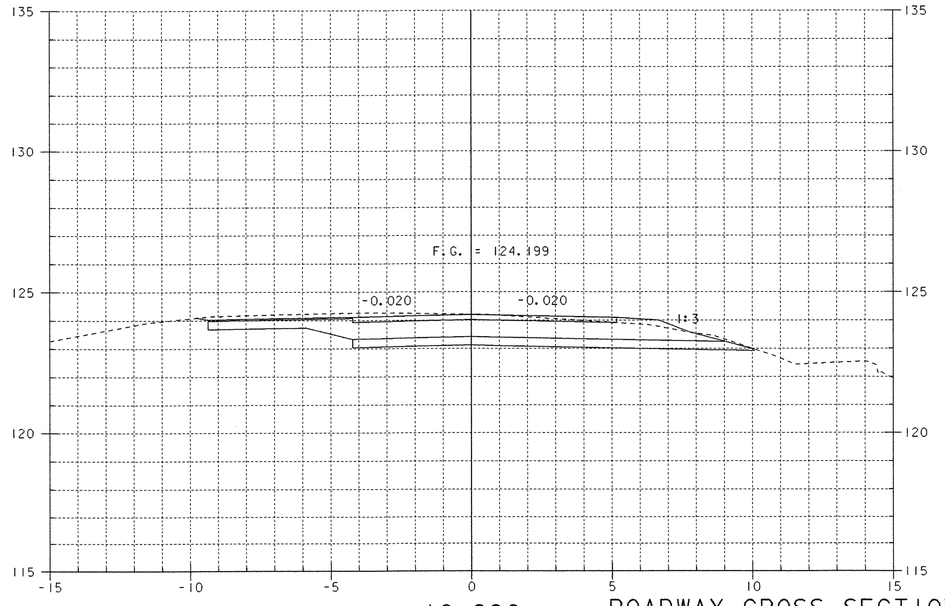


10+230

STA. 10+230.000
END PROJECT
BEGIN APPROACH



10+200



10+220

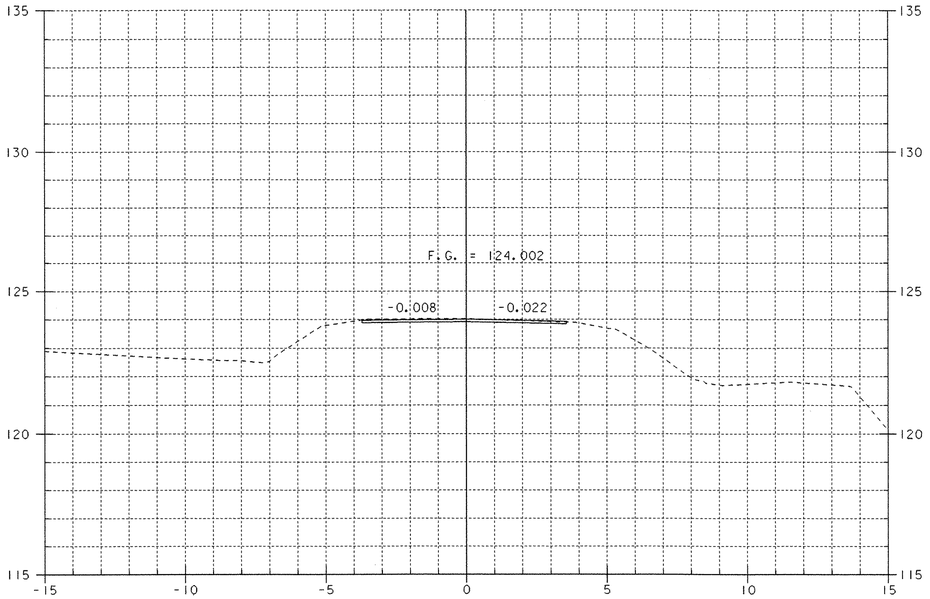
0 1 2 4 6 8 10

SCALE = 1:100

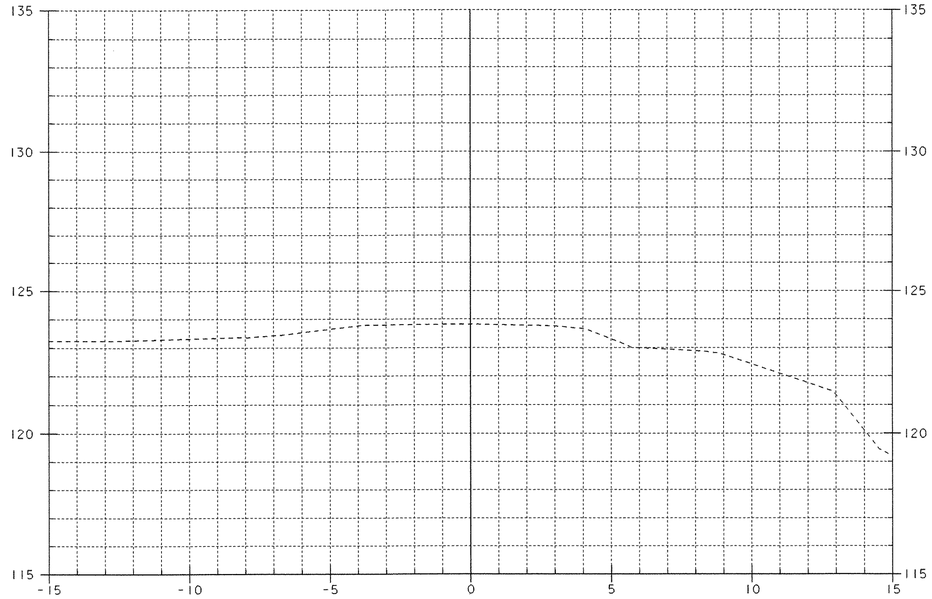
ROADWAY CROSS SECTIONS (6)

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

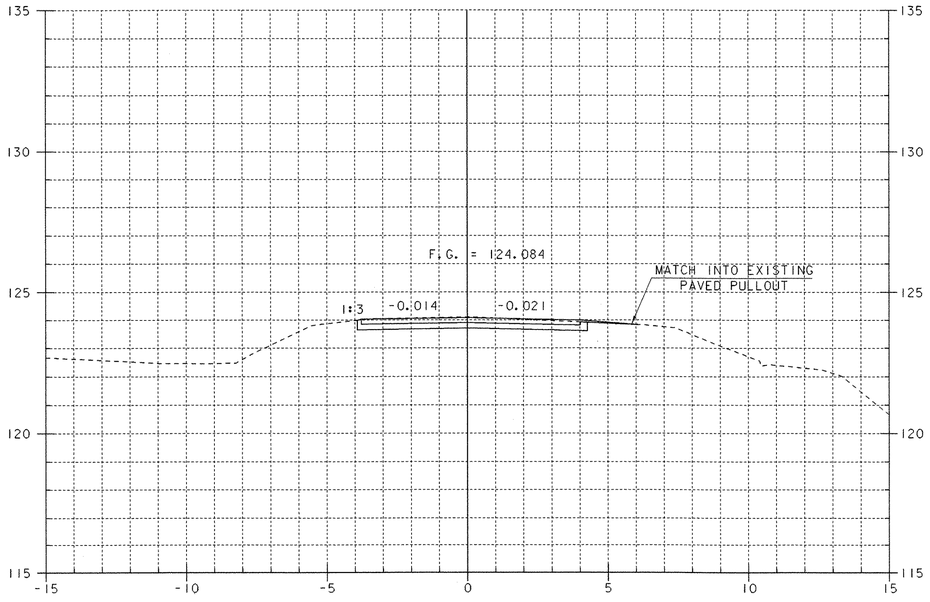
FILE NAME: 95j278\Structures\sj266m06.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 54 OF 78



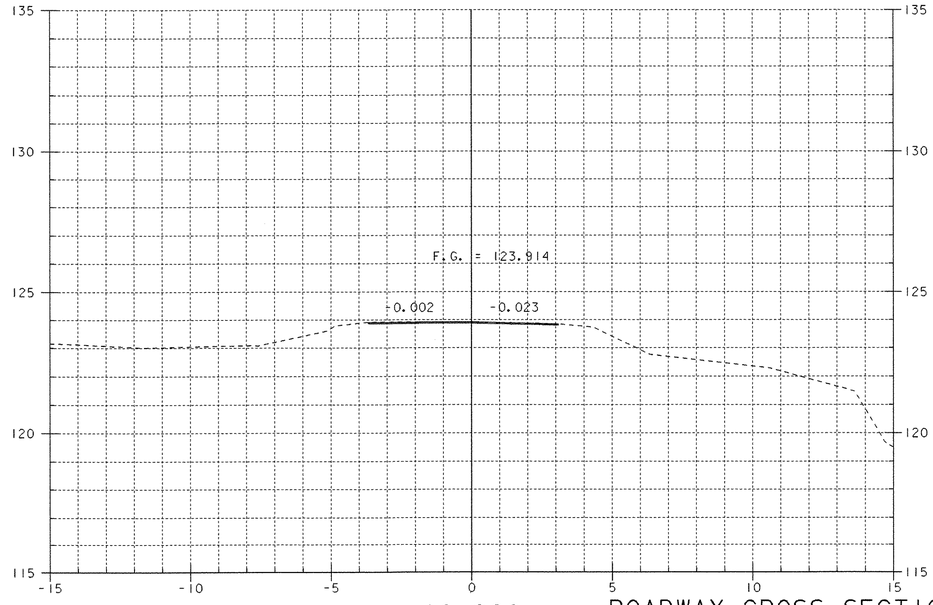
10+250



10+270



10+240



10+260

STA. 10+260.000
END APPROACH
MATCH EXISTING

0 1 2 4 6 8 10

SCALE = 1:100

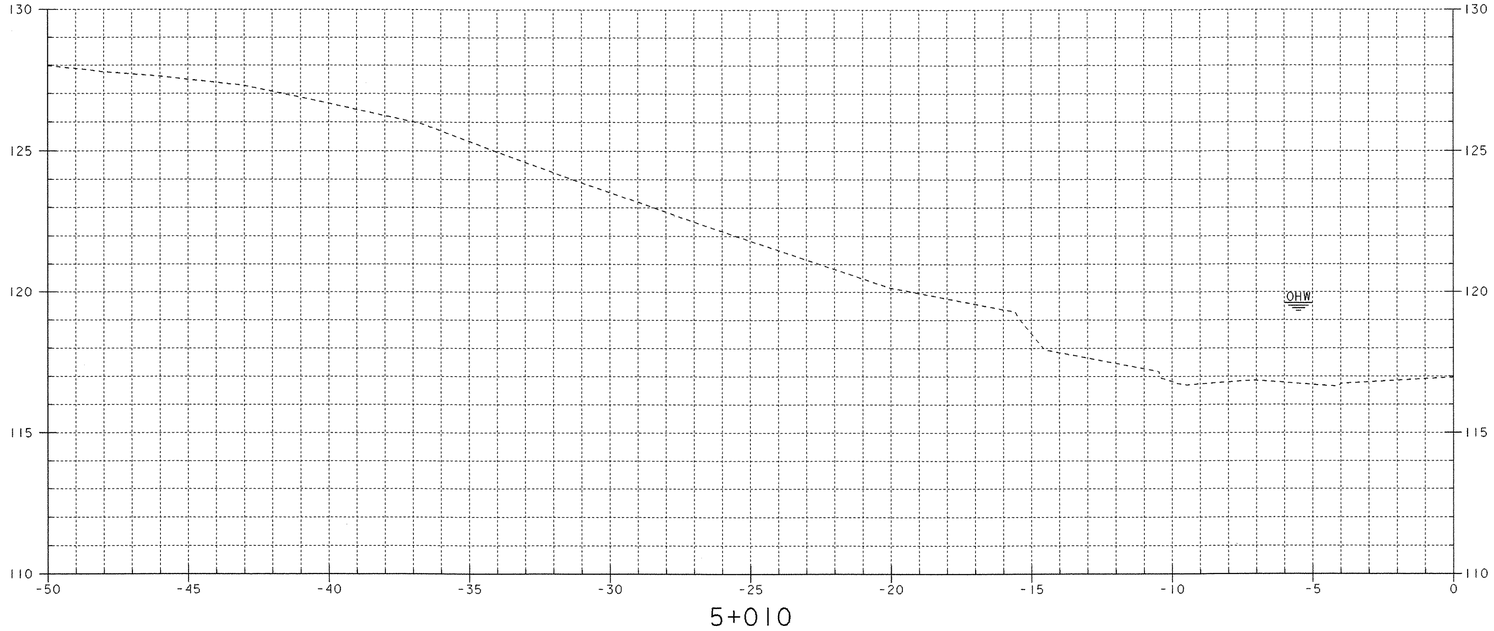
ROADWAY CROSS SECTIONS (7)

PROJECT NAME: BROOKLINE NEWFANE

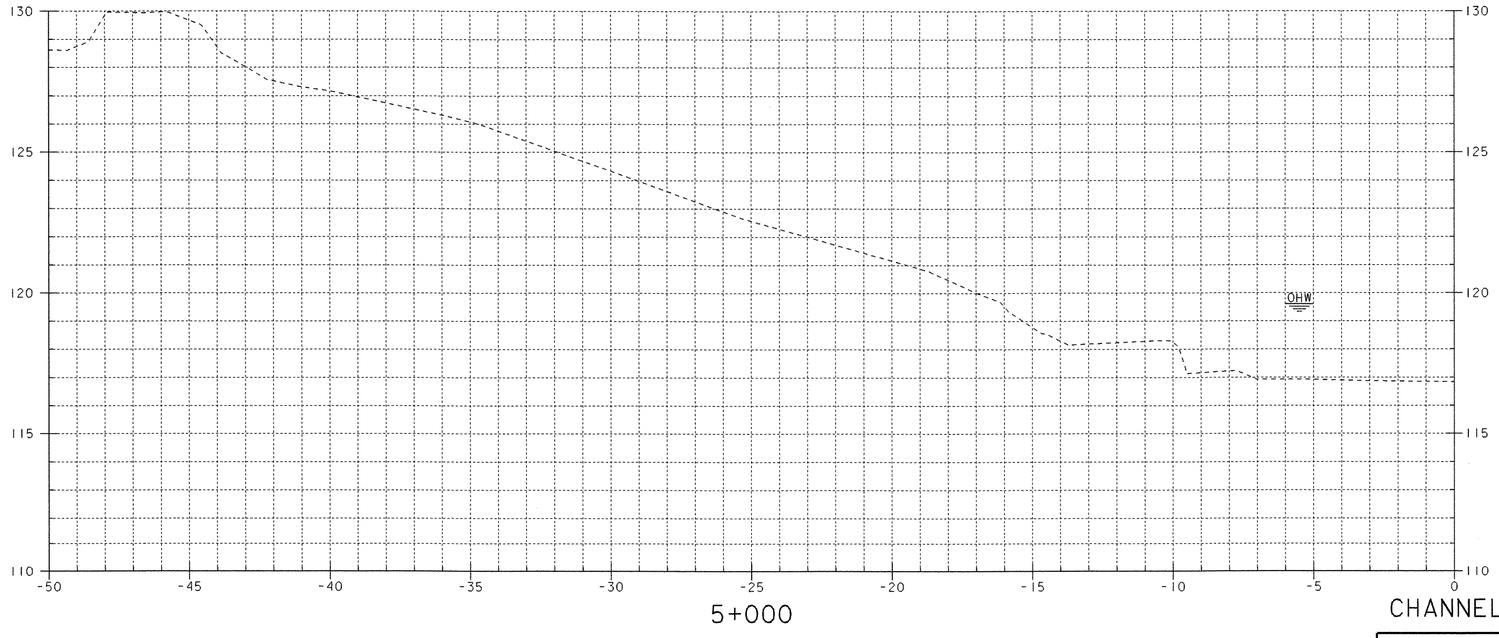
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj266m07.1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY

PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 55 OF 78



5+010



5+000

0 1 2 4 6 8 10

SCALE = 1:100

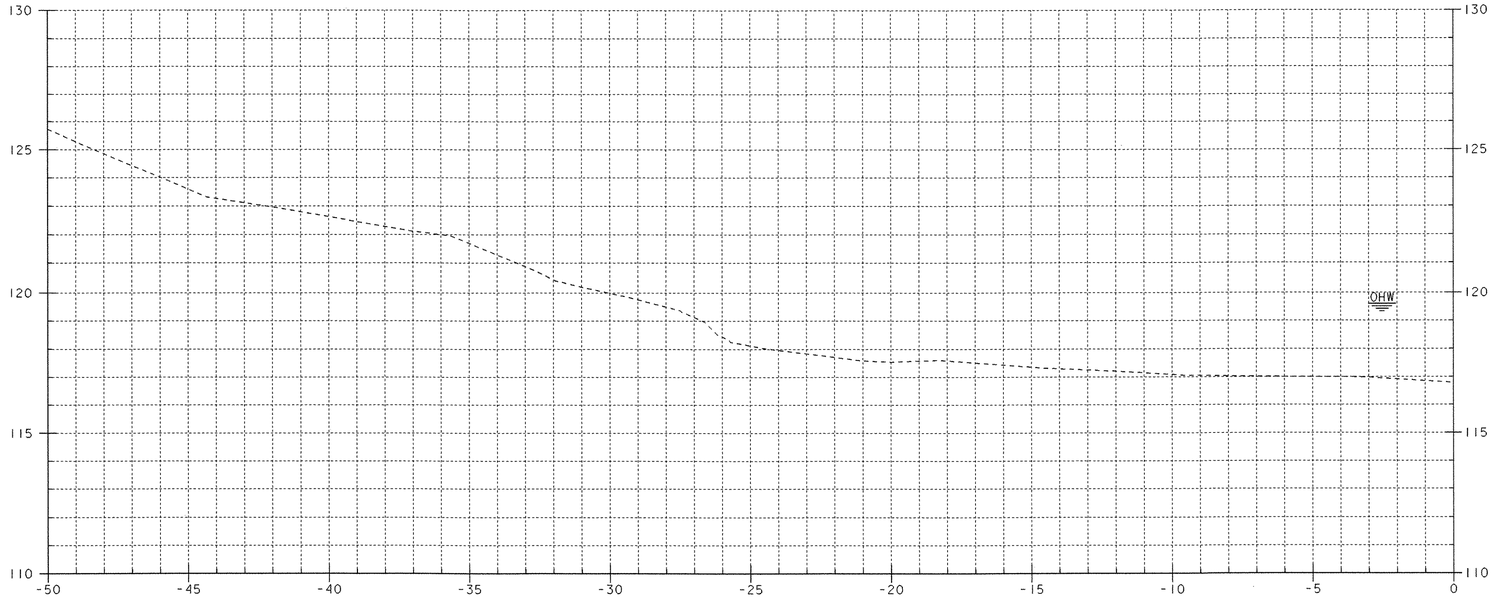
CHANNEL CROSS SECTIONS LEFT (1)

PROJECT NAME: BROOKLINE NEWFANE

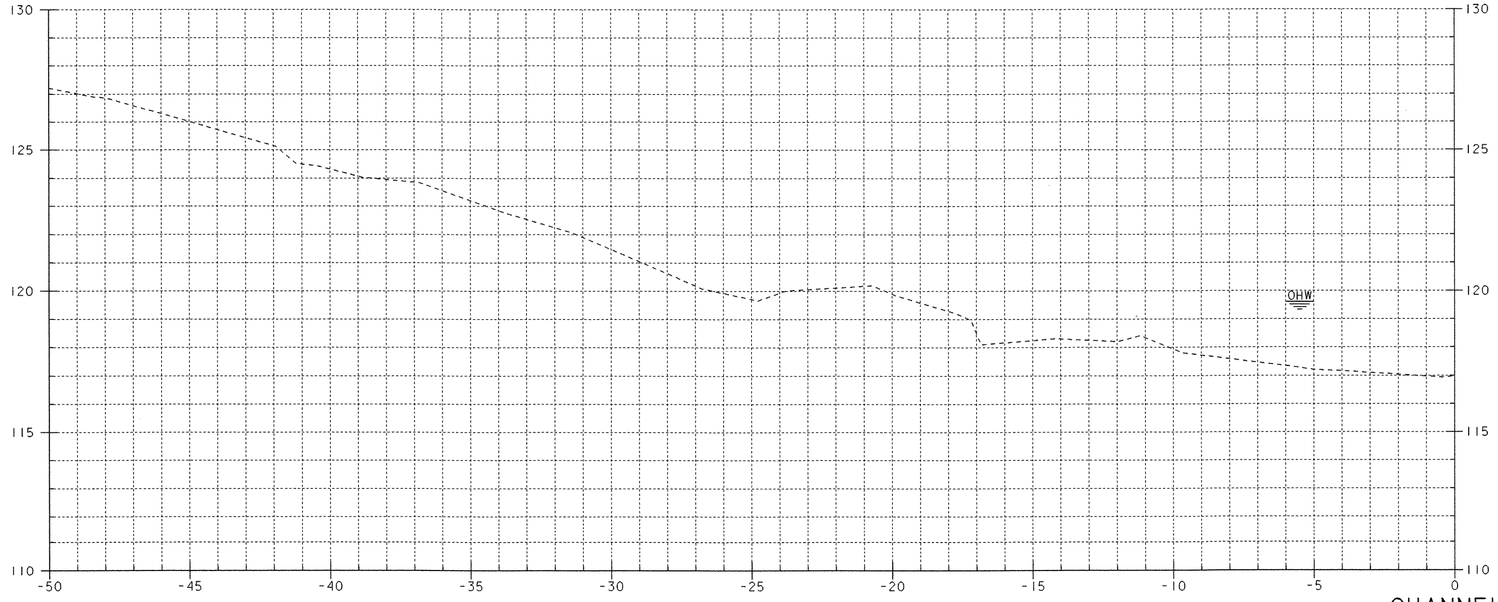
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj266c01.1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY

PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 56 OF 78



5+030



5+020

0 1 2 4 6 8 10

SCALE = 1:100

CHANNEL CROSS SECTIONS LEFT (2)

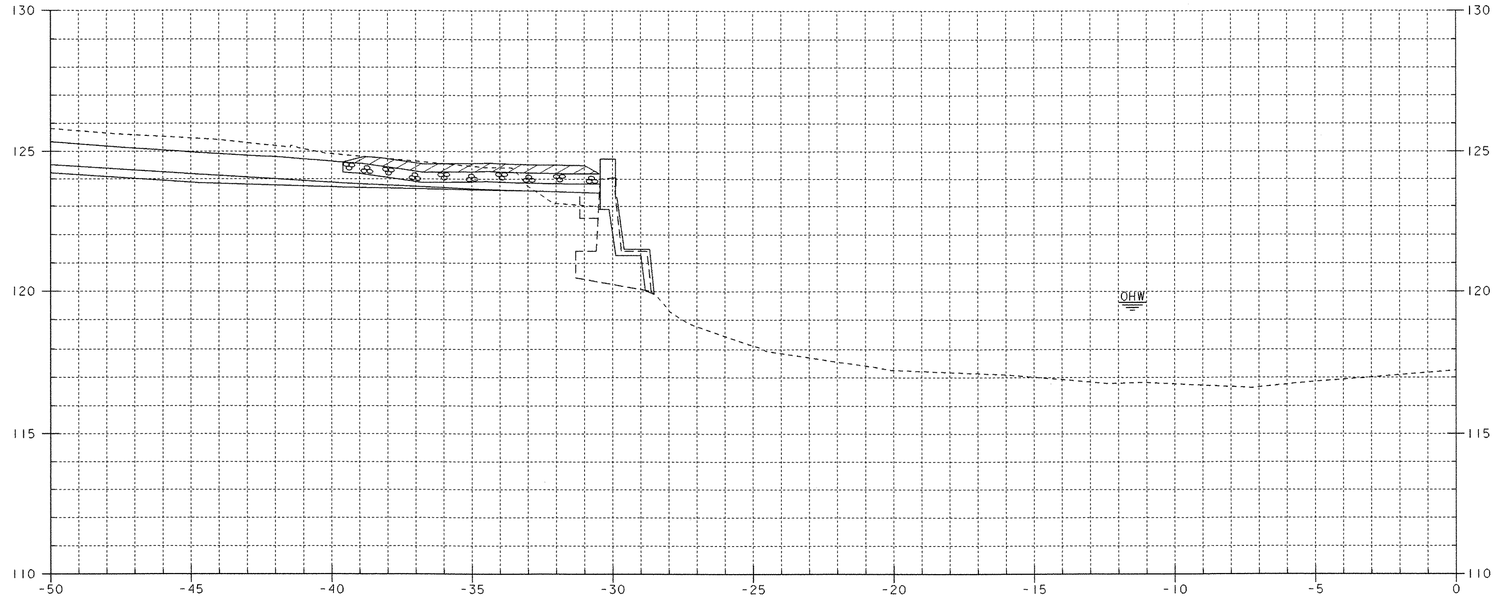
PROJECT NAME: BROOKLINE NEWFANE

PROJECT NUMBER: BHO 1442 (25)

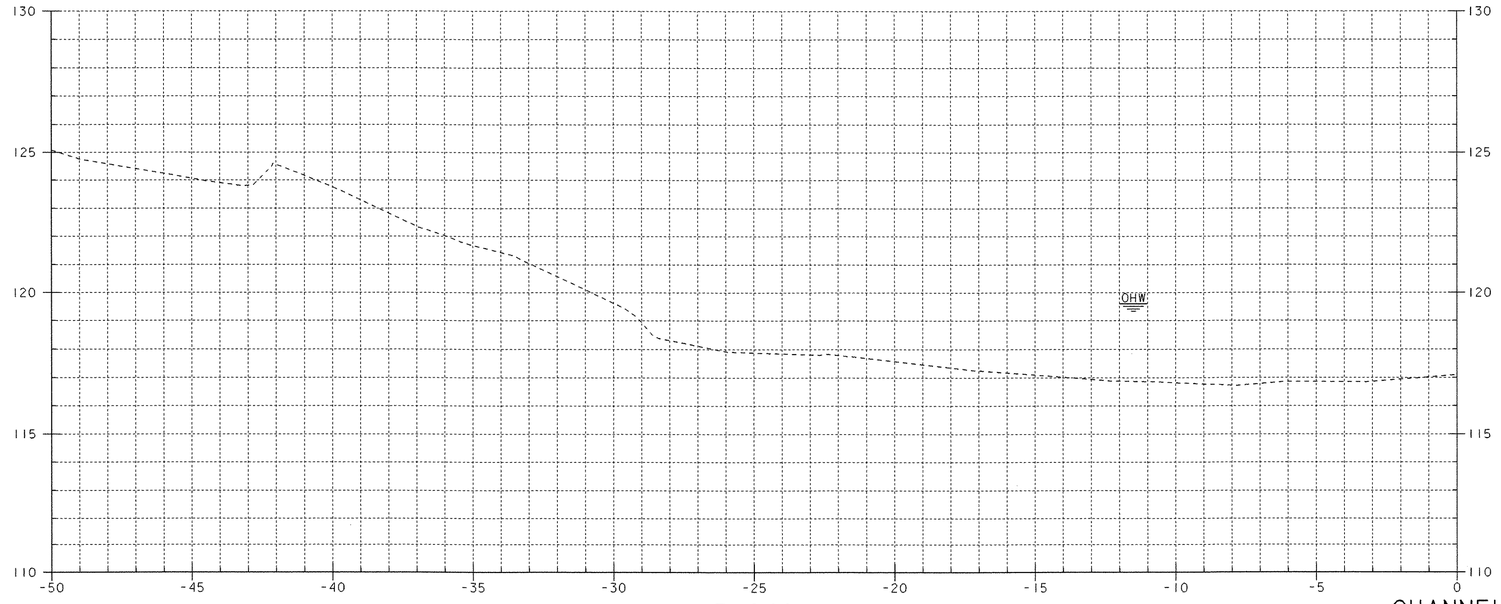
FILE NAME: 95J278\Structures\sj266c02.1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY

PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 57 OF 78

Metric



5+045



5+040

0 1 2 4 6 8 10

SCALE = 1:100

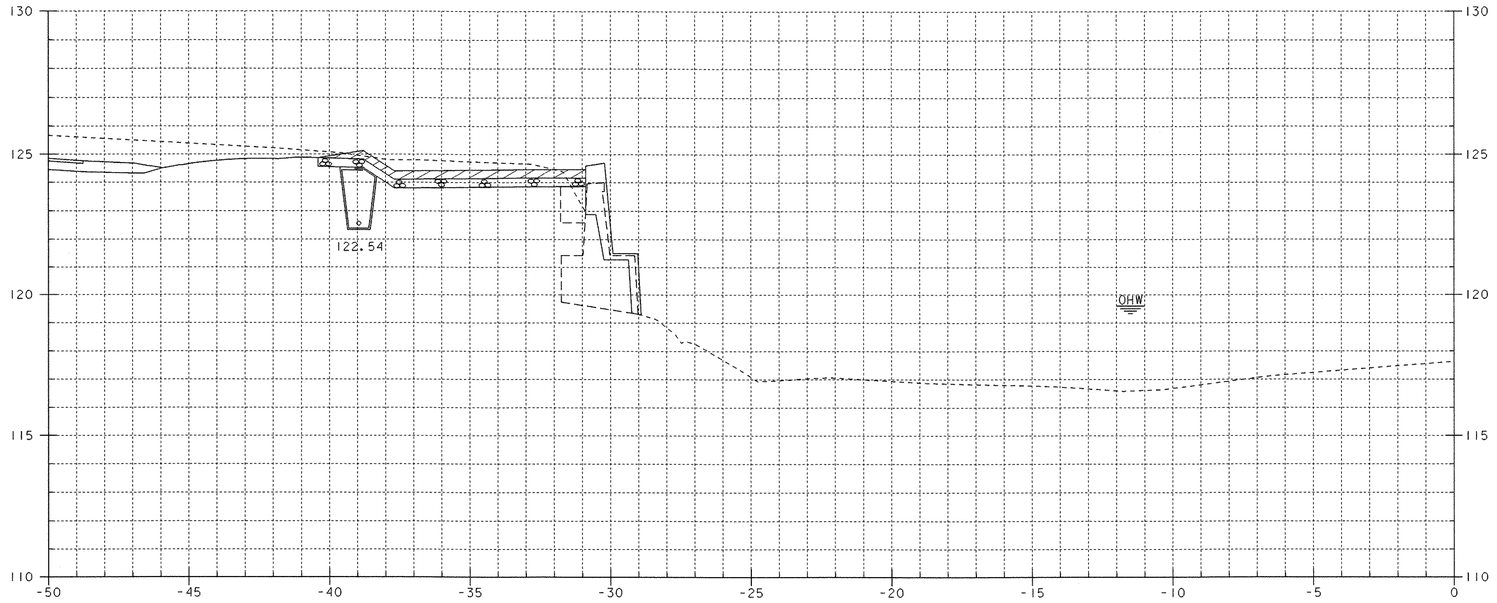
CHANNEL CROSS SECTIONS LEFT (3)

PROJECT NAME: BROOKLINE NEWFANE

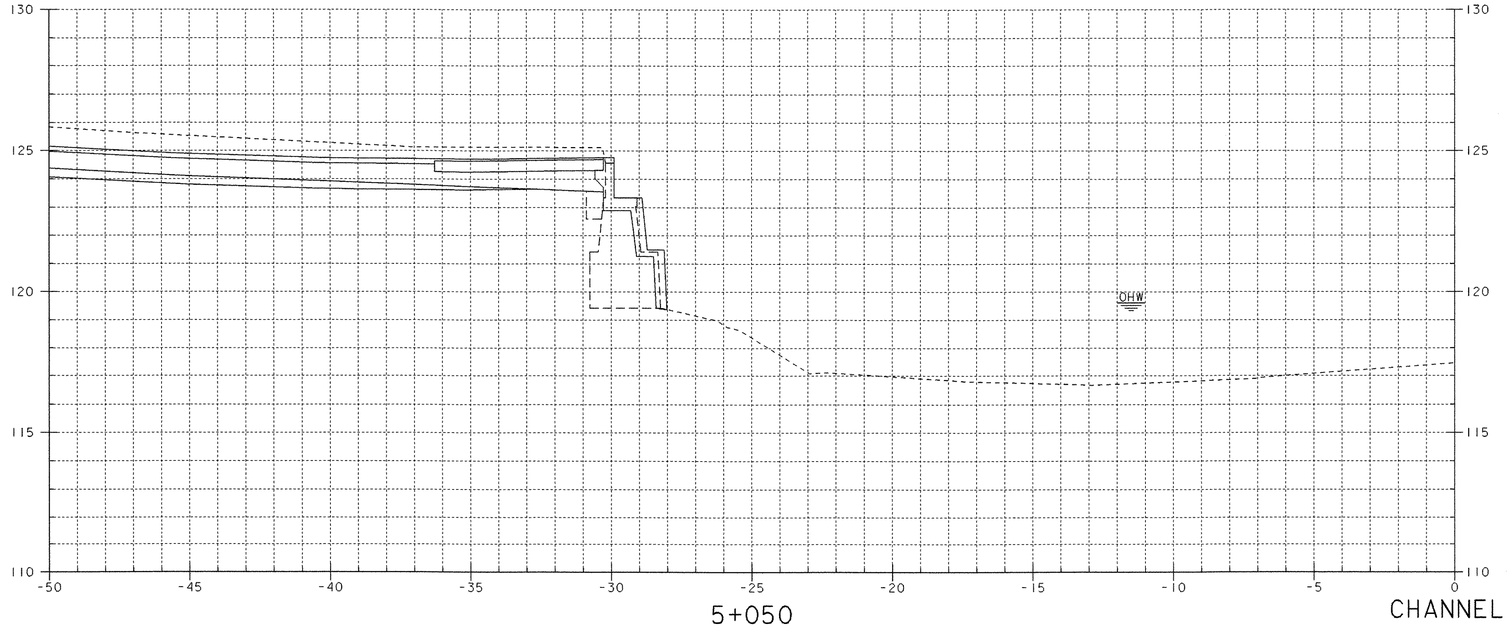
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95J278\Structures\sj266c03.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY

PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER



5+055



5+050

0 1 2 4 6 8 10

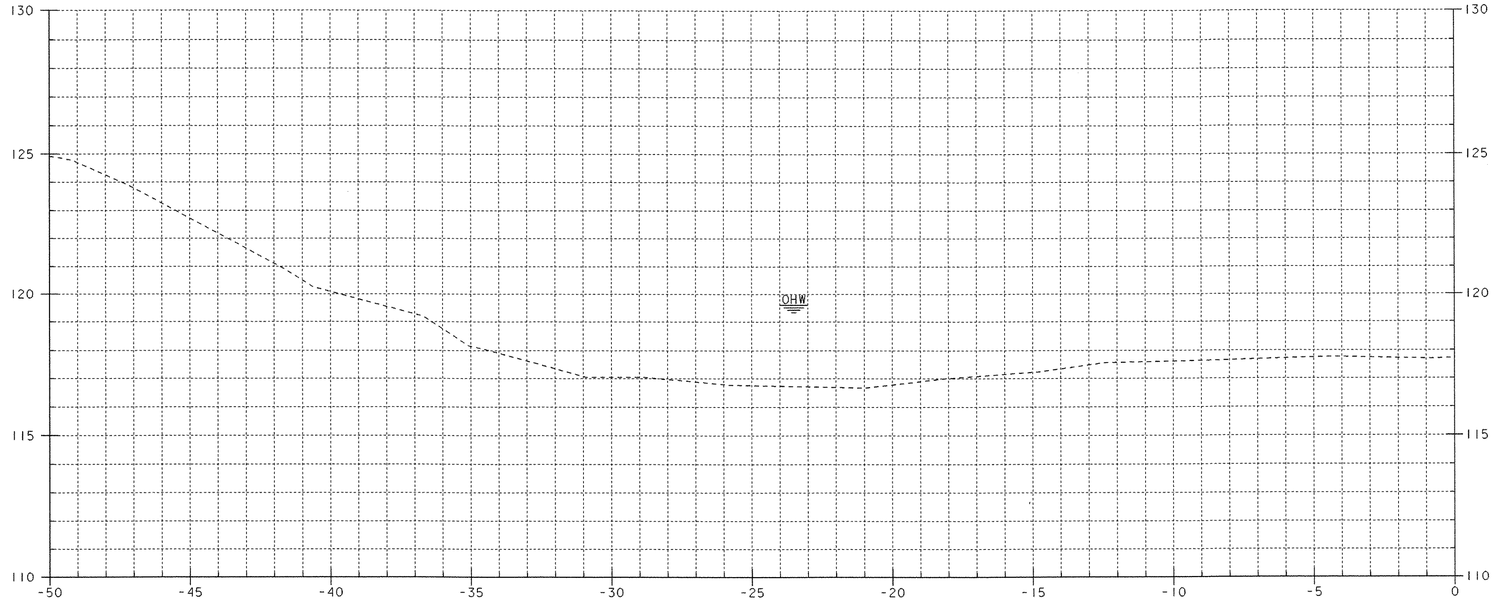
SCALE = 1:100

CHANNEL CROSS SECTIONS LEFT (4)

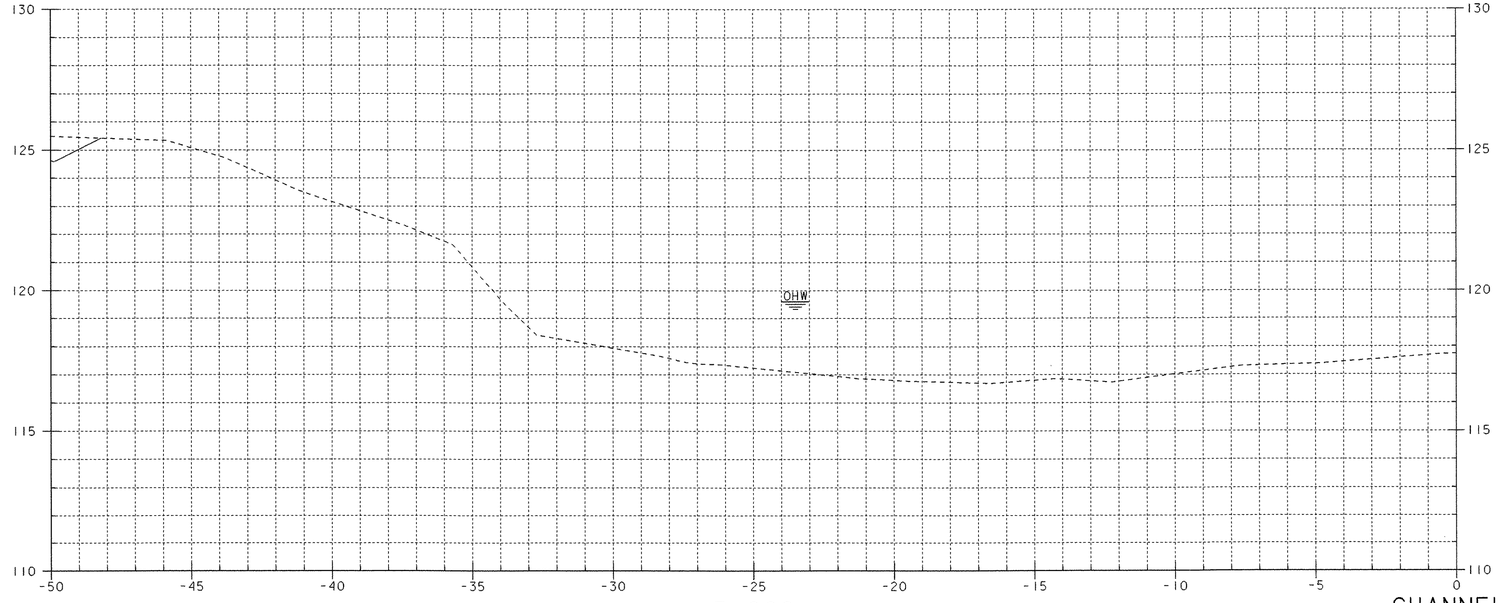
PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95j278\Structures\sj266c04.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY

PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 59 OF 78



5+070



5+060

0 1 2 4 6 8 10

SCALE = 1:100

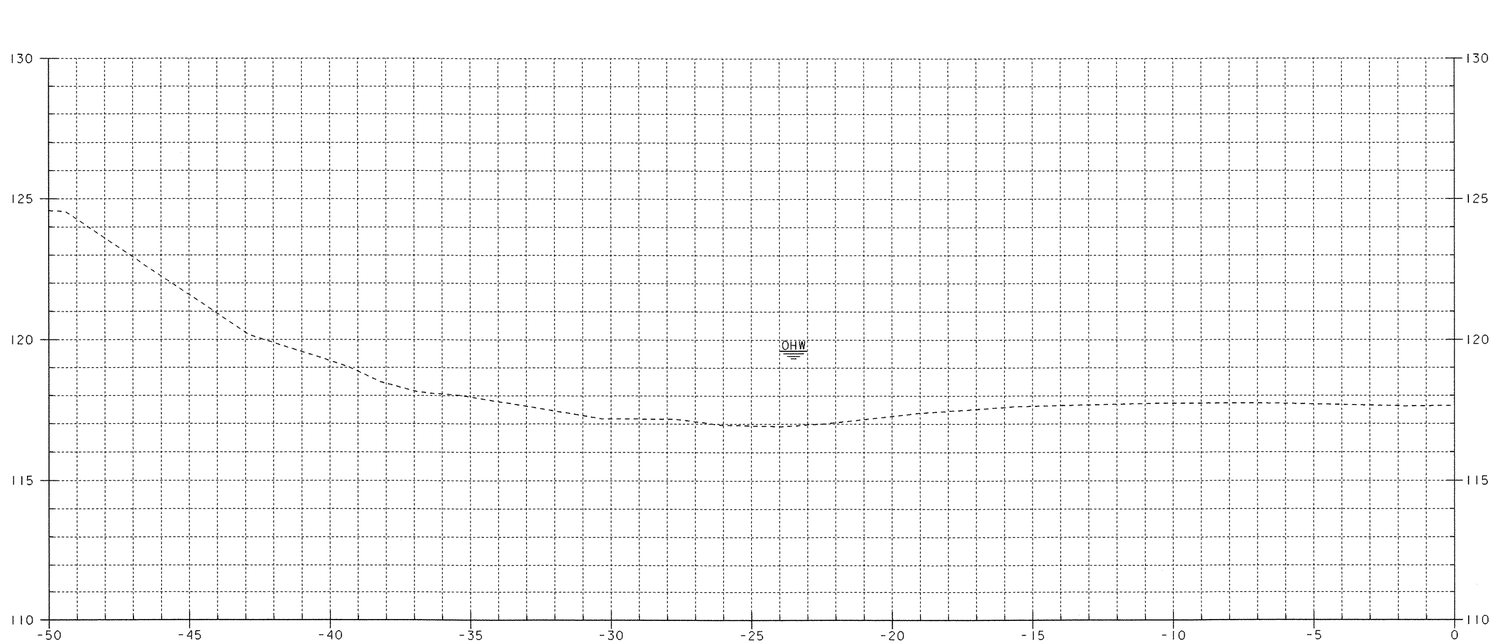
CHANNEL CROSS SECTIONS LEFT (5)

PROJECT NAME: BROOKLINE NEWFANE

PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95J278\Structures\sj266c05.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY

PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 60 OF 78



5+080

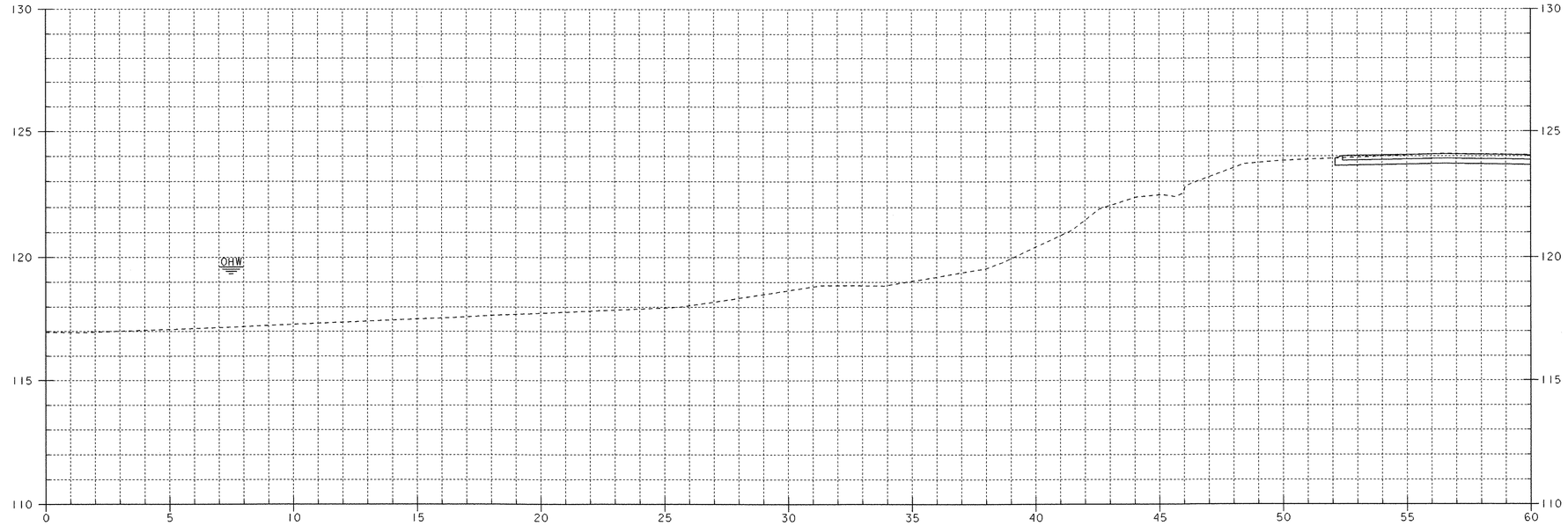
0 1 2 4 6 8 10

SCALE = 1:100

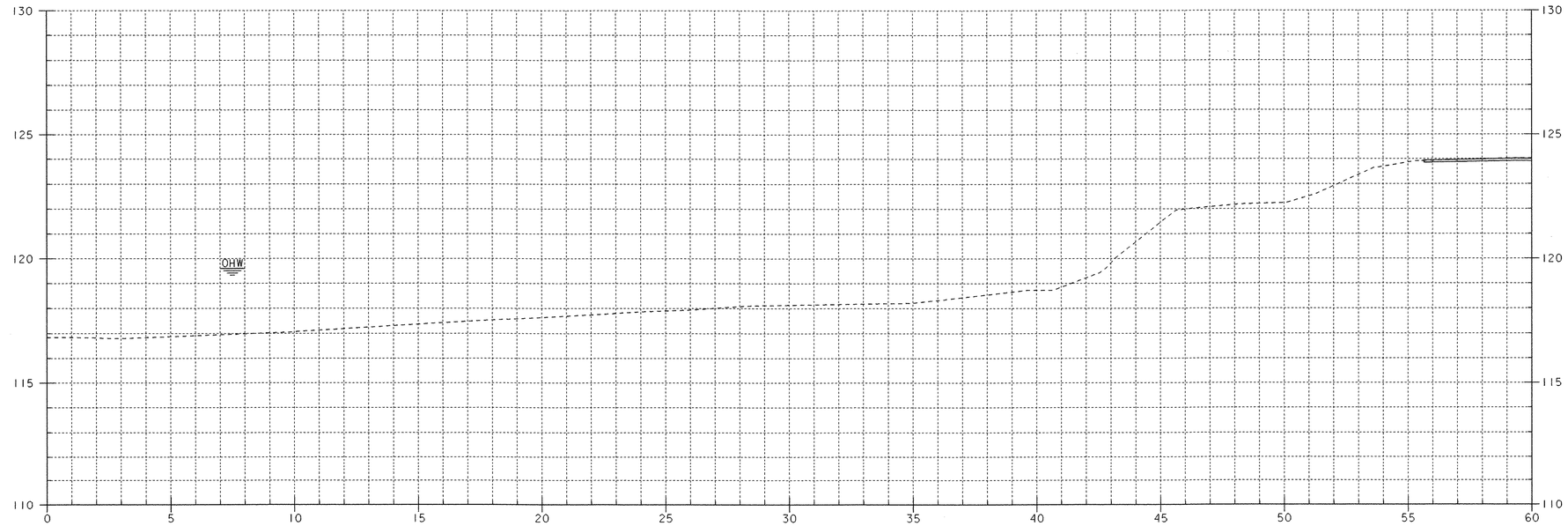
CHANNEL CROSS SECTIONS LEFT (6)

PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)

FILE NAME: 95j278\Structures\sj266c06.i		PLOT DATE:	26-JUN-2003
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	M. LOZIER
		SHEET	61 OF 78



5+010



5+000

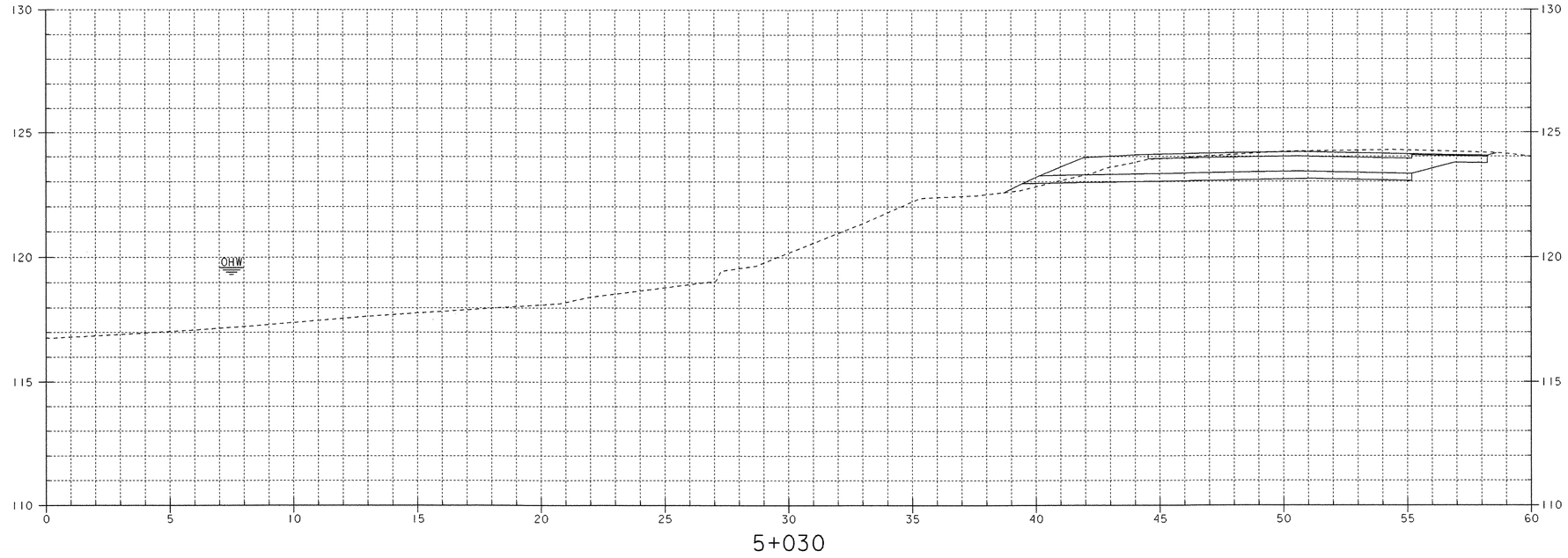
0 1 2 4 6 8 10

SCALE = 1:100

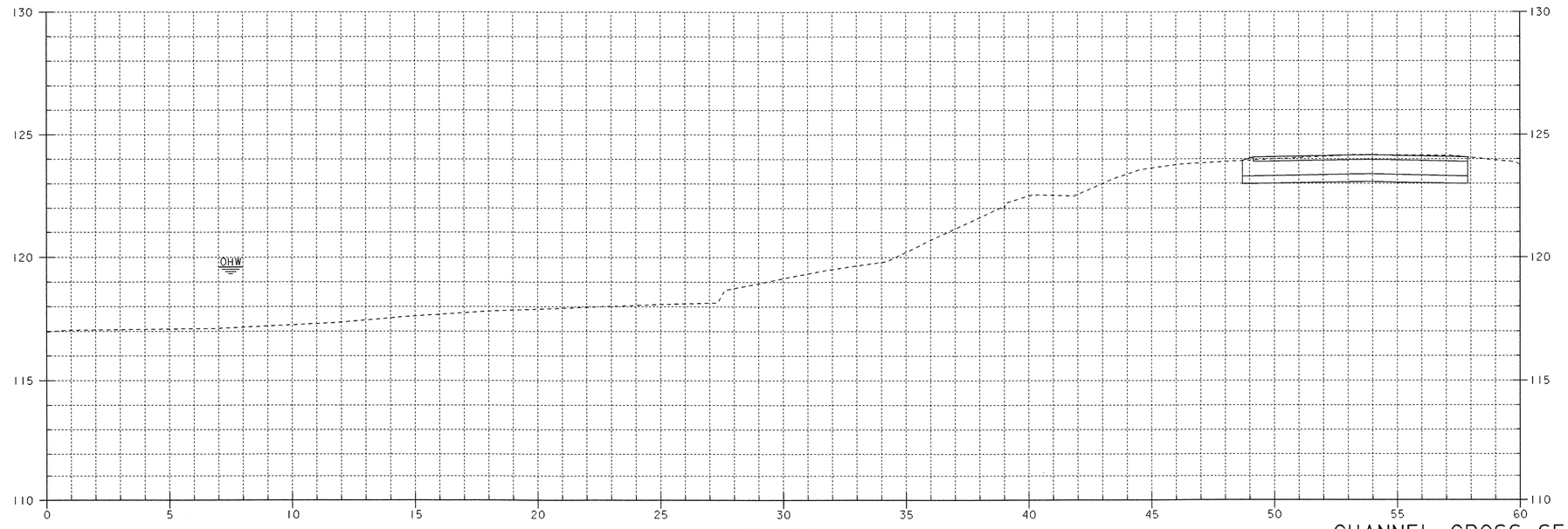
CHANNEL CROSS SECTIONS RIGHT (1)

PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)

FILE NAME: 95J278\Structures\sj266c07.i		PLOT DATE:	26-JUN-2003
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	M. LOZIER
		SHEET	62 OF 78



5+030



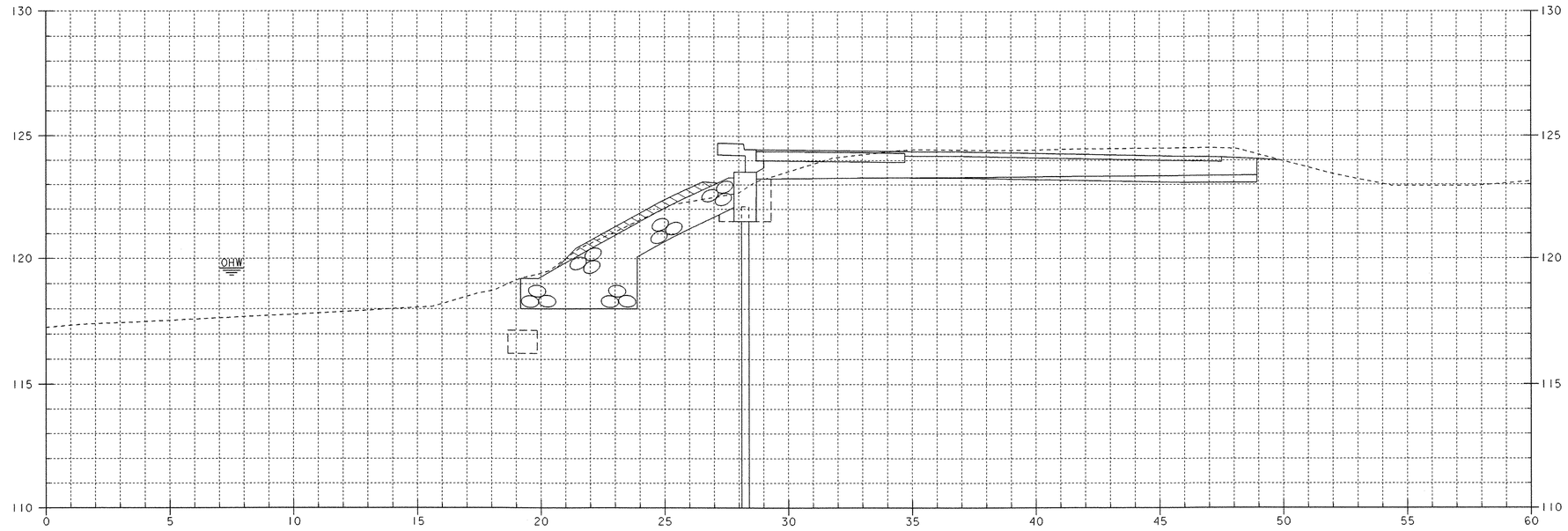
5+020

0 1 2 4 6 8 10

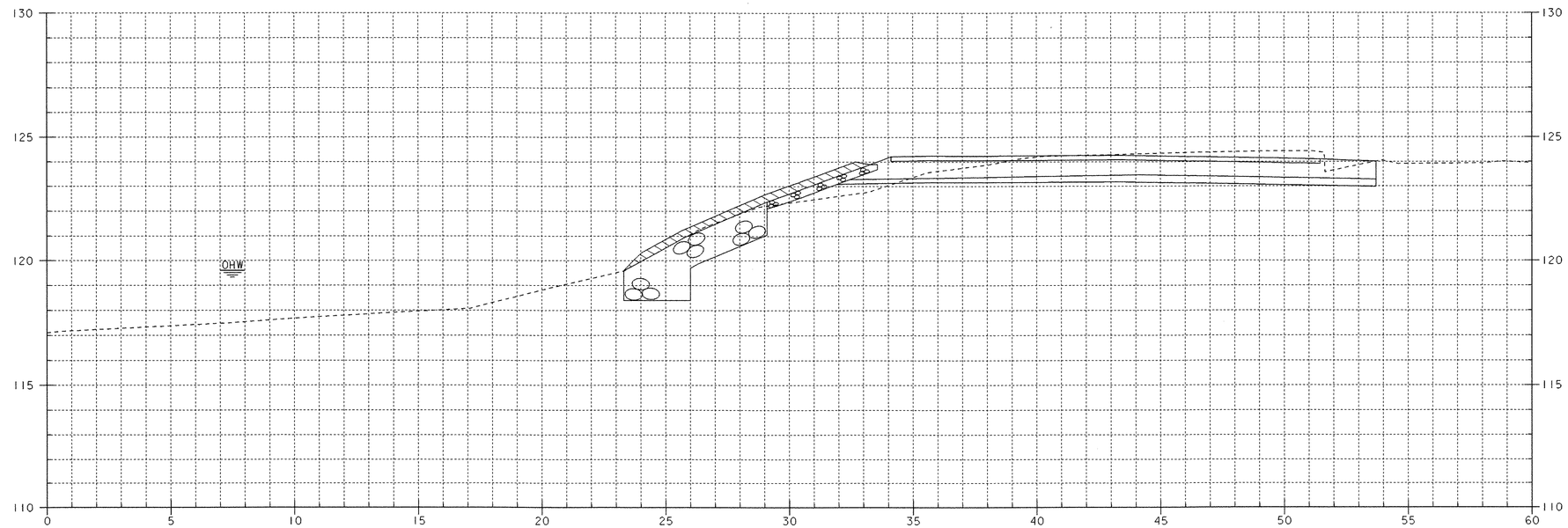
SCALE = 1: 100

CHANNEL CROSS SECTIONS RIGHT (2)

PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)
FILE NAME: 95j278\Structures\sj266c08.i	PLOT DATE: 26-JUN-2003
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: M. LOZIER
	SHEET 63 OF 78



5+045



5+040

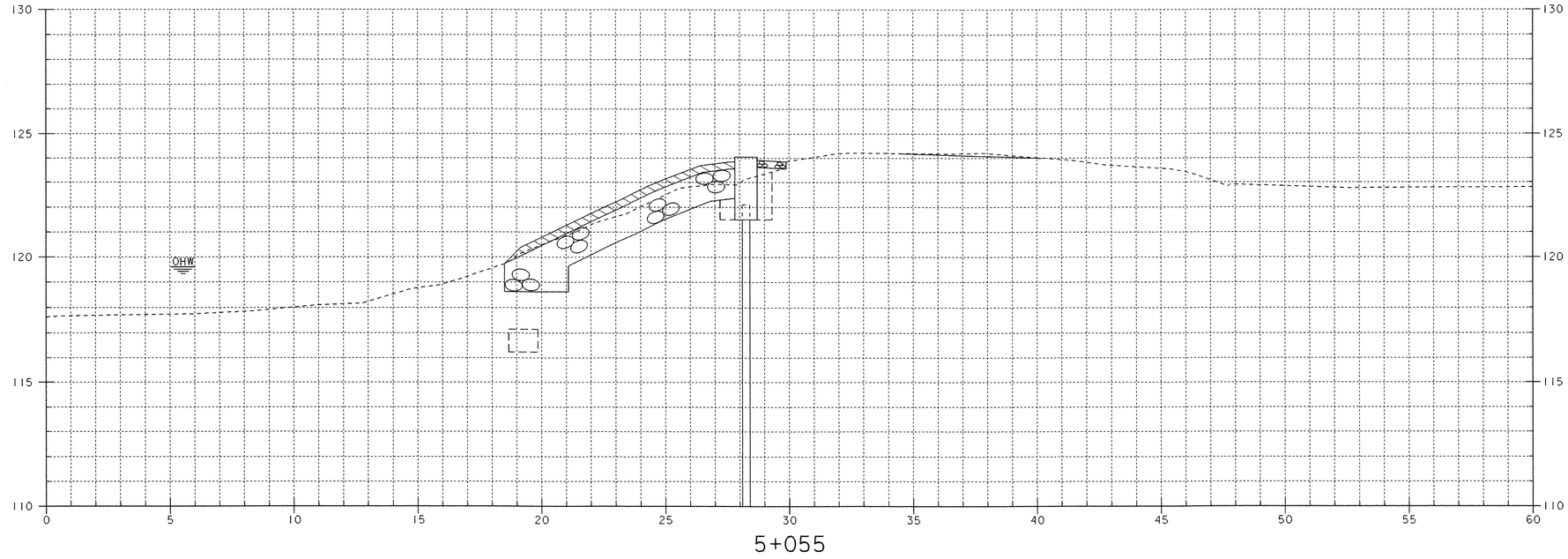
STA. 5+037.0 RT.
BEGIN UNCLASS. CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
STONE FILL, TYPE IV
GRUBBING MATERIAL

0 1 2 4 6 8 10
SCALE = 1:100

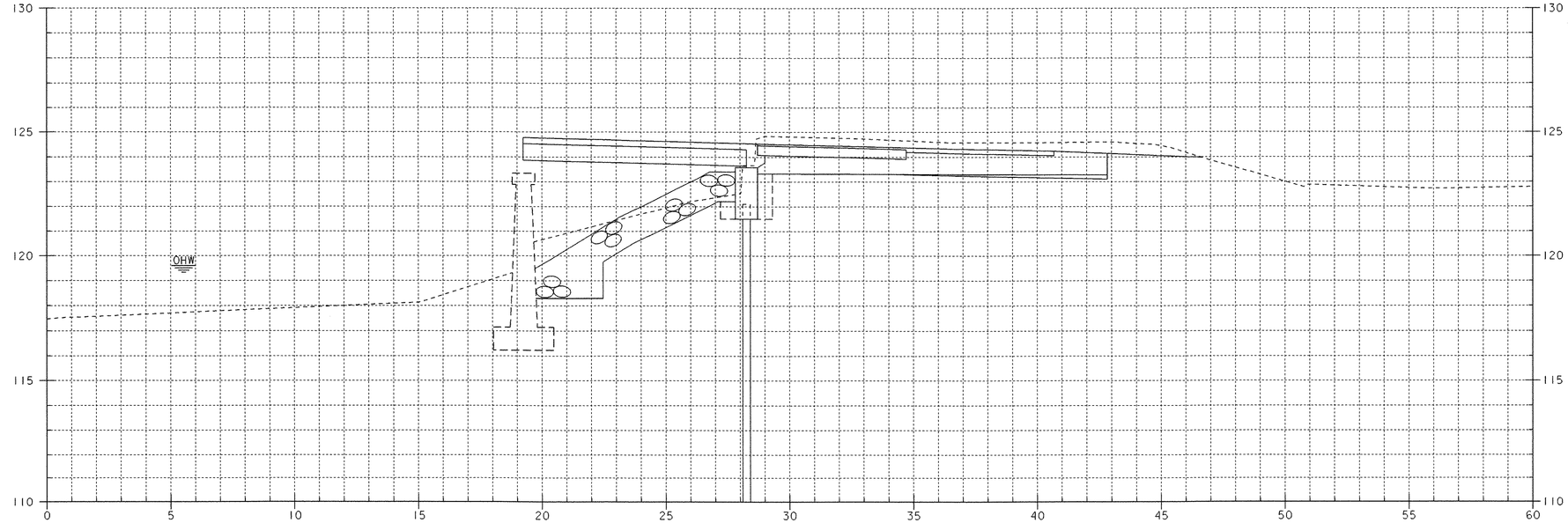
CHANNEL CROSS SECTIONS RIGHT (3)

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95J278\Structures\sj266c09.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 64 OF 78



5+055



5+050

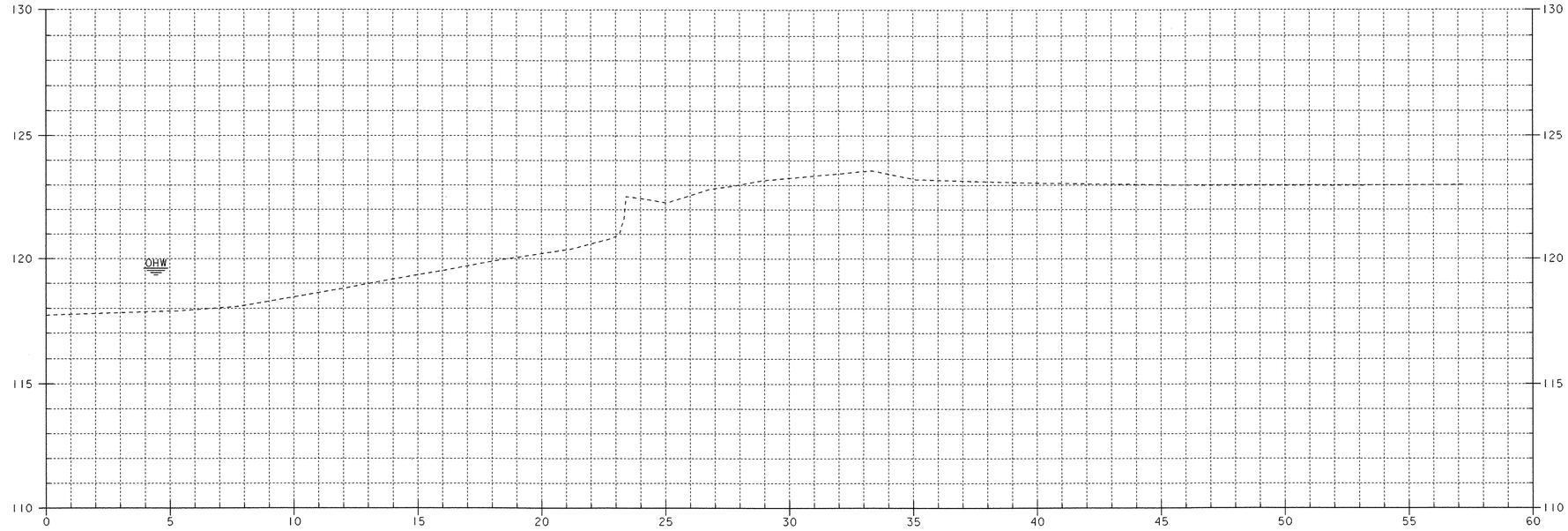
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SCALE = 1:100

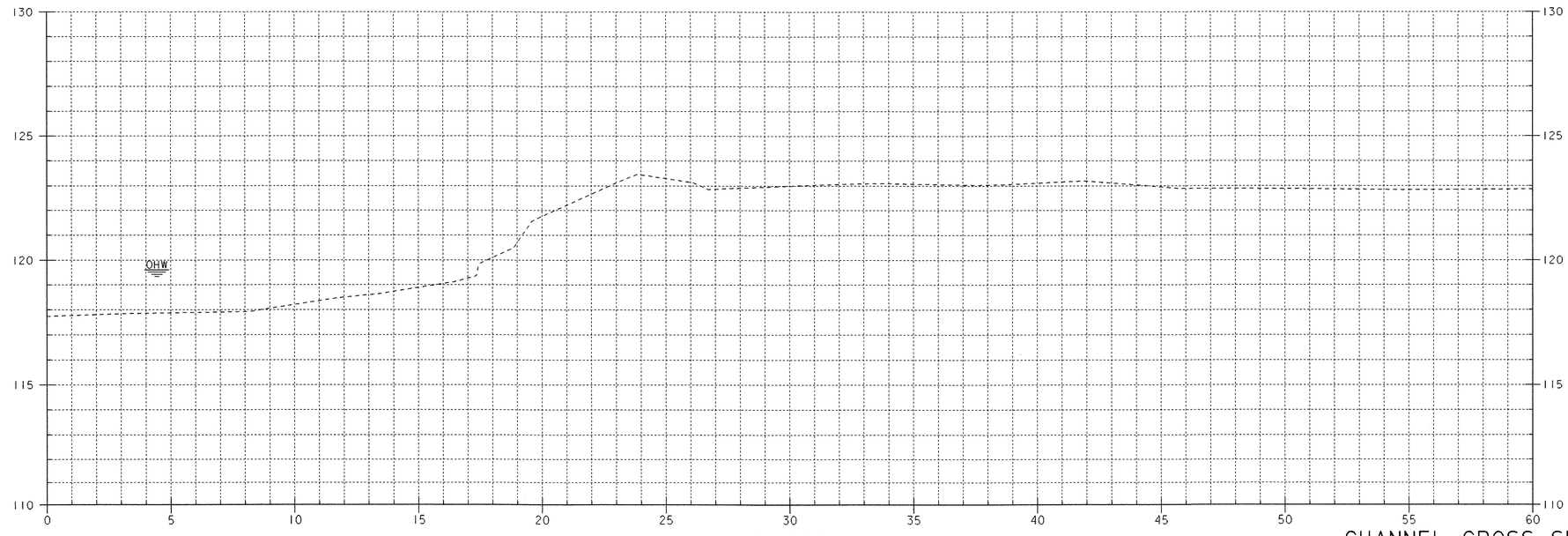
CHANNEL CROSS SECTIONS RIGHT (4)

PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)

FILE NAME: 95j278\Structures\sj266c10.i		PLOT DATE:	26-JUN-2003
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	M. LOZIER
		SHEET	65 OF 78



5+070



5+060

STA. 5+057.5 RT.
END UNCLASS. CHANNEL EXCAVATION
GEOTEXTILE UNDER STONE FILL
STONE FILL, TYPE IV
GRUBBING MATERIAL

0 1 2 4 6 8 10

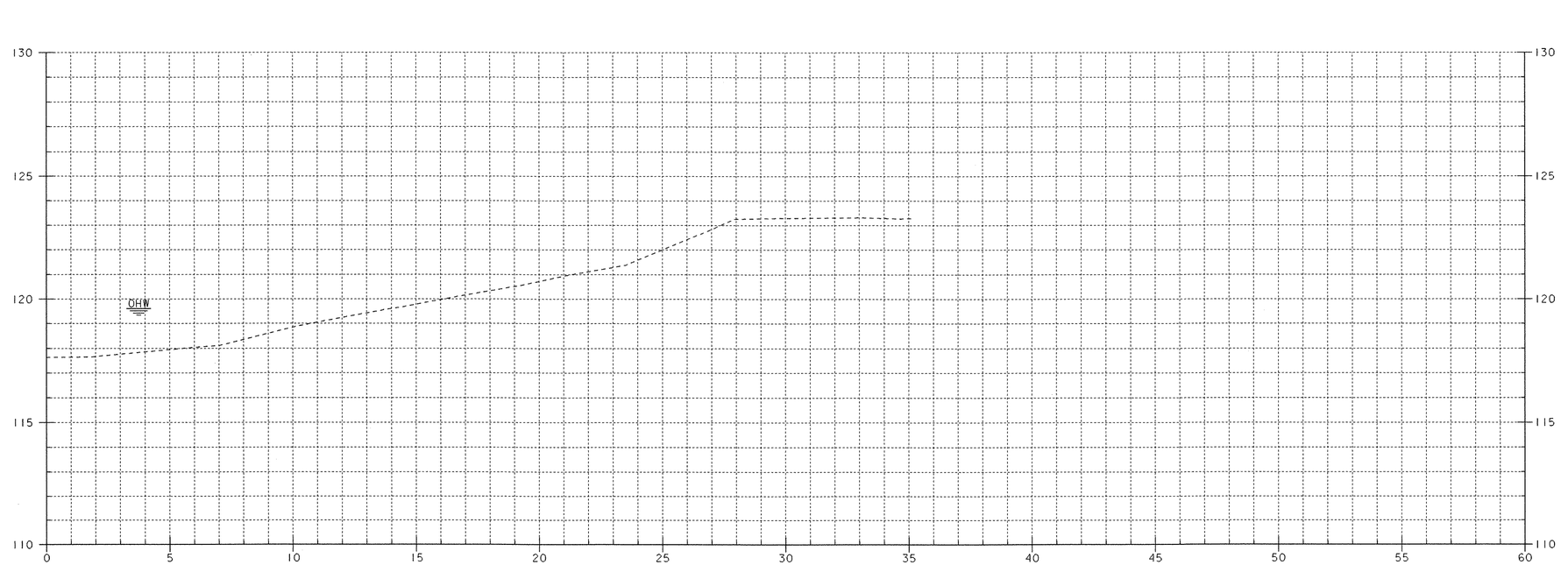
SCALE = 1:100

CHANNEL CROSS SECTIONS RIGHT (5)

PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

FILE NAME: 95J278\Structures\sj266cll.i
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: G. ROY

PLOT DATE: 26-JUN-2003
DRAWN BY: G. ROY
CHECKED BY: M. LOZIER
SHEET 66 OF 78



5+080

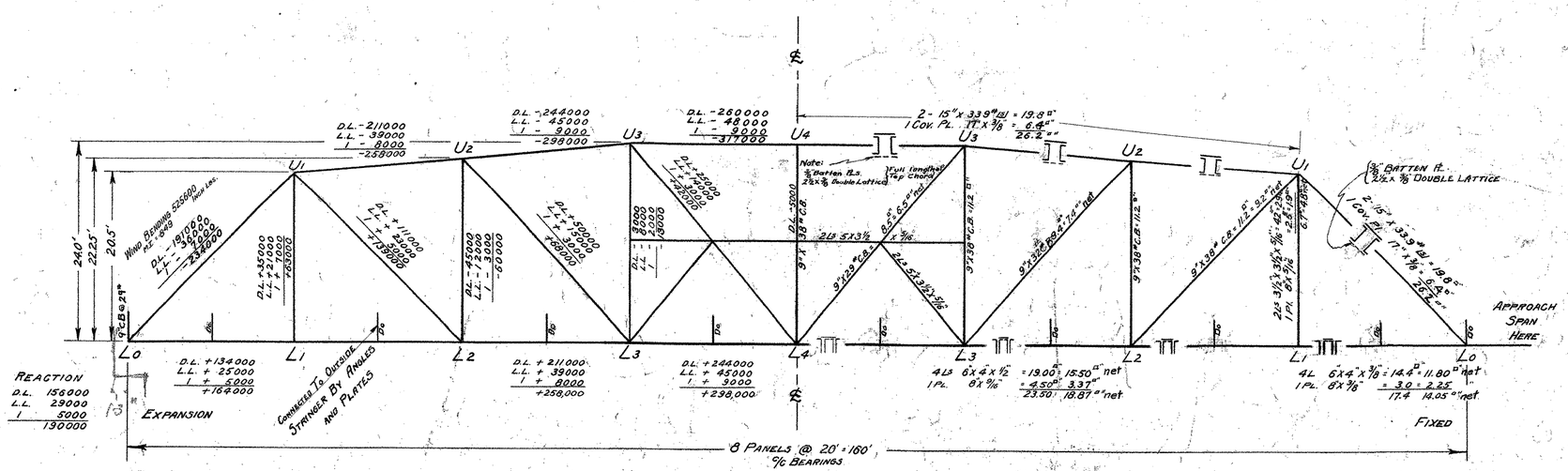
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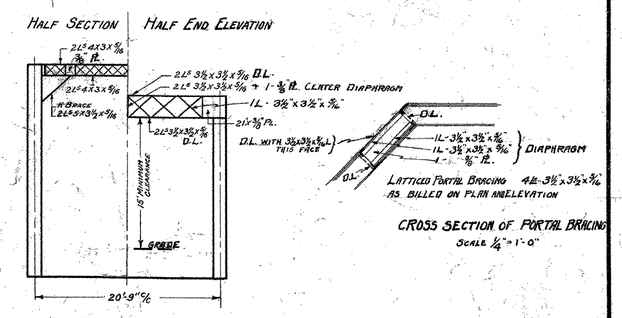
SCALE = 1:100

CHANNEL CROSS SECTIONS RIGHT (6)

PROJECT NAME:	BROOKLINE NEWFANE
PROJECT NUMBER:	BHO 1442 (25)

FILE NAME: 95j278\Structures\sj266cl2.i		PLOT DATE:	26-JUN-2003
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	M. LOZIER
		SHEET	67 OF 78





FLOOR DESIGNED FOR

DEAD LOAD: 3½" CONCRETE SLAB + 25# PAVING ALLOWANCE + WEIGHT OF STEEL

LIVE LOAD: ROADWAY (1) 15 TON TRUCK, 13'-0" ℄ AXLES, 6'-0" ℄ WHEELS, 85% OF LOAD ON REAR AXLES.

IMPACT: STRINGERS 38.5% - FLOOR BEAMS 32.2%.

TRUSS DESIGNED FOR

DEAD LOAD: CONCRETE FLOOR AND PAVING 1300 # + STEEL 650 # = 1950 # PER LIN. FT.

LIVE LOAD: ONE LANE - H15.

IMPACT: $I = \frac{L+250}{10L+500}$ RIVETS: ⅞"

LUMP SUM BID TO INCLUDE ALL WORK AND MATERIAL SHOWN ON SHEETS 3 + 4 EXCEPT CONCRETE AND REINFORCING STEEL IN BRIDGE FLOOR.

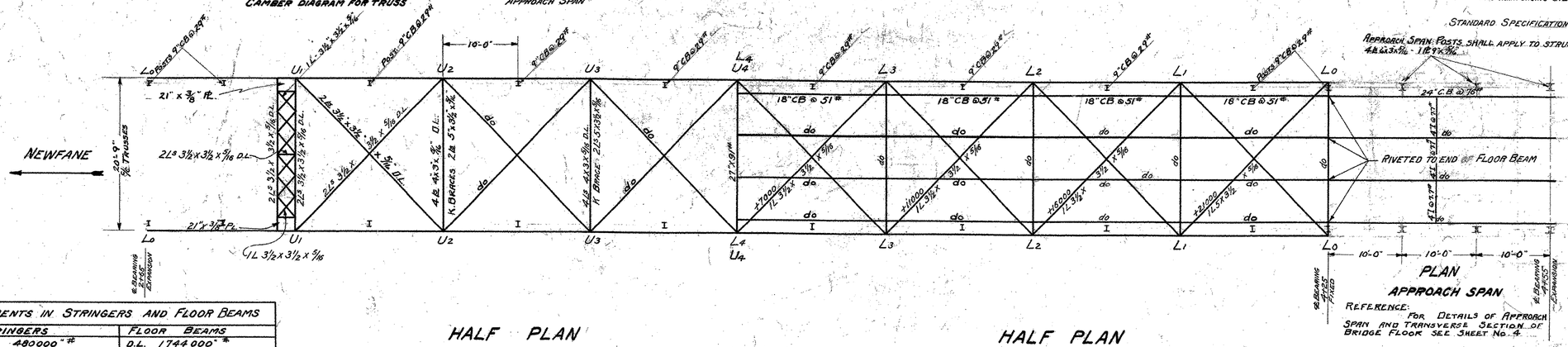
STANDARD SPECIFICATIONS FOR STEEL HIGHWAY BRIDGES - U.S.D.A. - DEPT. BULLETIN No. 1259

APPROACH SPAN POSTS SHALL APPLY TO STRUCTURAL STEEL - ALL SPANS.

PAINT

SHOP PAINT - ONE COAT OF APPROVED RED LEAD AND OIL.
FIELD PAINT - TWO COATS ONE COAT OF APPROVED RED LEAD AND OIL
ONE COAT OF APPROVED GRAPHITE PAINT
NO PAINT TO BE USED UNTIL APPROVED BY THE ENGINEER

ALTERNATE SECTIONS OF EQUAL STRENGTH TO THOSE BILLED ON THIS SHEET MAY BE USED AT THE OPTION OF THE CONTRACTOR, IF APPROVED IN WRITING BY THE ENGINEER.



HALF PLAN
UPPER LATERAL SYSTEM

HALF PLAN
FLOOR AND LOWER LATERAL SYSTEM

PLAN
APPROACH SPAN

REFERENCE: FOR DETAILS OF APPROACH SPAN AND TRANSVERSE SECTION OF BRIDGE FLOOR SEE SHEET No. 4

SCALE 1/8" = 1'

MOMENTS IN STRINGERS AND FLOOR BEAMS			
STRINGERS		FLOOR BEAMS	
D.L.	480000 "#	D.L.	1744000 "#
L.L.	658000 "#	L.L.	1230000 "#
I 38.5%	253000 "#	I 32.2%	396000 "#
TOTAL	1,391,000 "#	TOTAL	3370000 "#

END SHEAR			
STRINGERS		FLOOR BEAMS	
D.L.	8000 #	D.L.	30000 #
L.L.	12000 #	L.L.	21000 #
I	4000 #	I	7000 #
TOTAL	24000 #	TOTAL	58000 #

IF DESIRED BEFORE DETAILING STEEL, ABUTMENT PLANS WILL BE FURNISHED.
SHEETS No. 1, 3, and 4 of 8 GO WITH SUPERSTRUCTURE

CORRECT -
A.R. Bishop
BRIDGE ENGINEER

APPROVED JAN. 27, 1928
H. Hazlett
CHIEF ENGINEER

PLAN OF
NEWFANE BROOKLINE BRIDGE
OVER
WEST RIVER
BROOKLINE, VT.

Brookline Side, Bridge FR 49A

BRIDGE NO. 7 - DISTRICT NO. 2

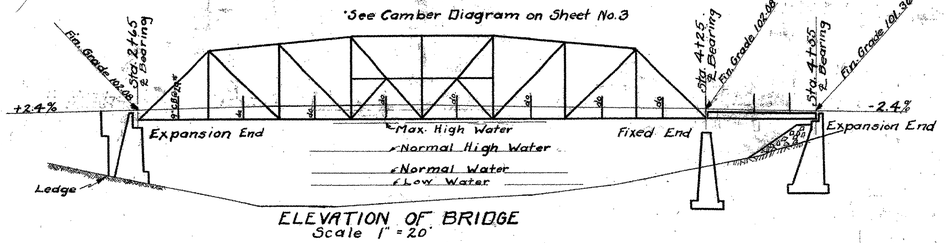
160

160'

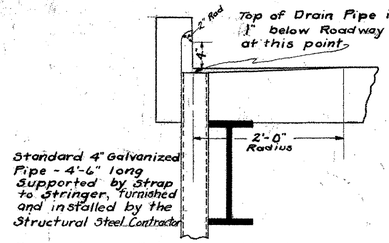
Surveyed by Helvin
Designed by Shoemaker
Drawn by Perkins & Larsen
Traced by Perkins & Larsen
Checked by M.K. Wardwell
Series 2 No. 7 - 21 Filed
Sheet 3 of 8 Sheets

REFERENCE SHEET 1 OF 11
SHEET 68 OF 78

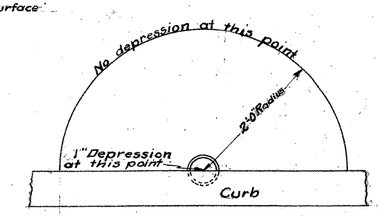
PRINTED ON "VANDYKE" TRACING CLOTH K & E CO., N.Y.



ELEVATION OF BRIDGE
Scale 1" = 20'



Required: One Drain at each Side of Bridge in each Panel. Drains located at mid-length of Panels

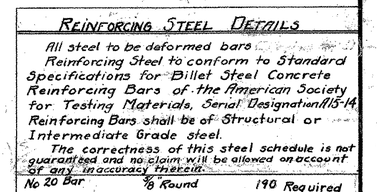


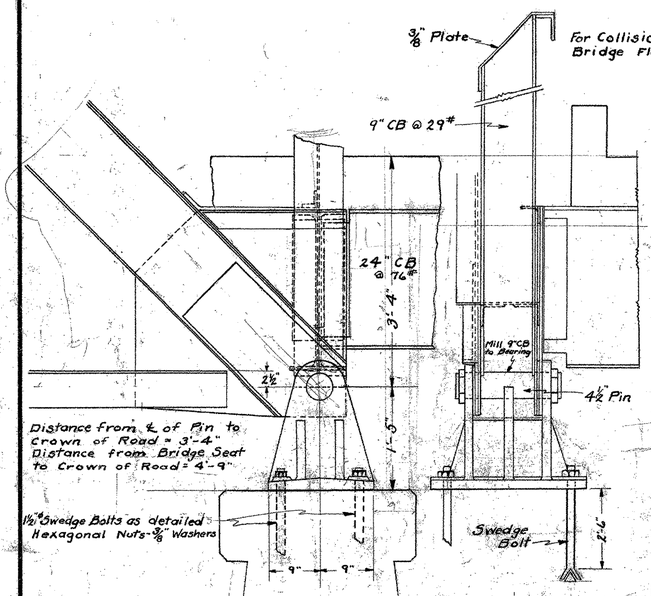
DRAINAGE DETAIL

REINFORCING STEEL DETAILS

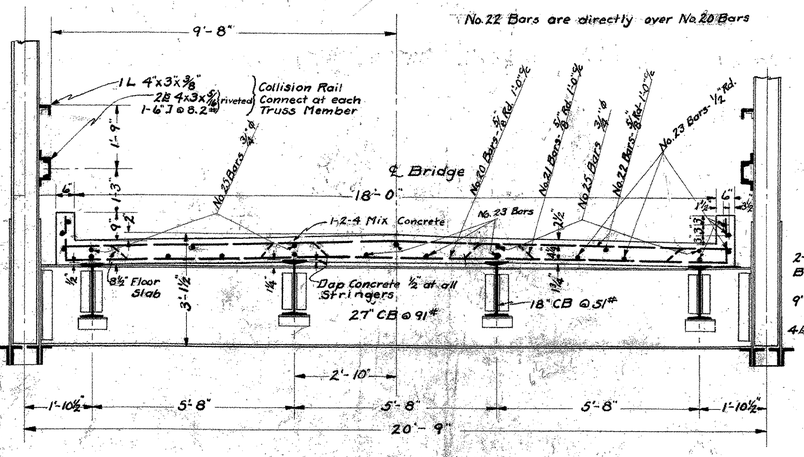
All steel to be deformed bars.
Reinforcing Steel to conform to Standard Specifications for Billet Steel Concrete Reinforcing Bars of the American Society for Testing Materials, Serial Designation#15-14.
Reinforcing Bars shall be of Structural or Intermediate Grade steel.
The correctness of this steel schedule is not guaranteed and no claim will be allowed on account of any inaccuracy therein.

No 20 Bar	⅝ Round	190 Required	
No.21 Bars	⅝" Round	189 Required	
No.22 Bars	⅝" Round	190 Required	
½" Round No.23 Bars	21'-3" Long	152 Required	
No.24 Bars	16'-3" Long	38 Required	
¾" Round No.25 Bars	21'-3" Long	32 Reqd.	
No.26 Bars	16'-3" Long	8 Reqd.	

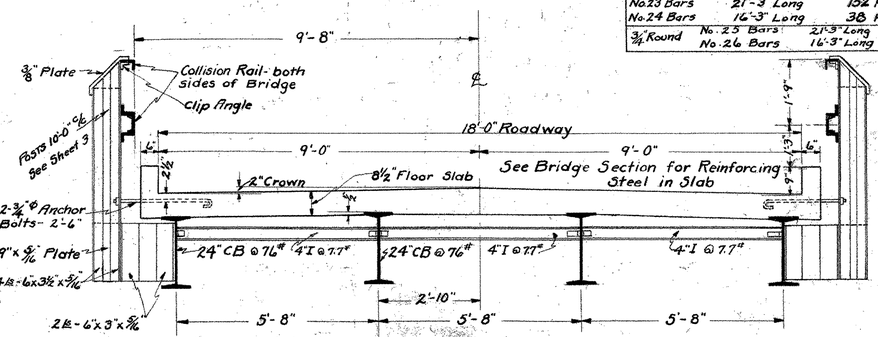




DETAIL OF FIXED END



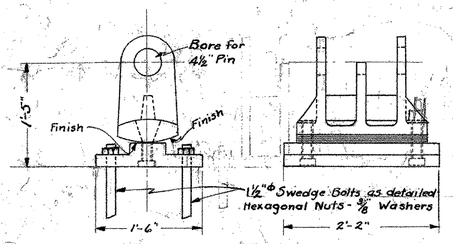
BRIDGE FLOOR SECTION
Scale ½" = 1'-0"



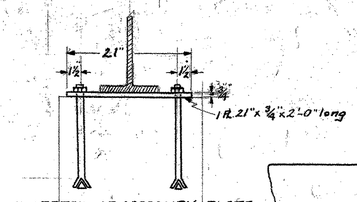
No.20, 21 and 22 Bars as per Bridge Floor Section at Left
In Approach Span use No 24 Bars, ½" Round, 16'-3" long, in place of No.23 Bars in Bridge Floor Section at Left
" " 26 " ¾" " 16'-3" " " " 25 " " " "
Reinforcing Steel Dimensions as given in Bridge Floor Section apply also to Approach Span Section

APPROACH SPAN SECTION
Scale ½" = 1'-0"

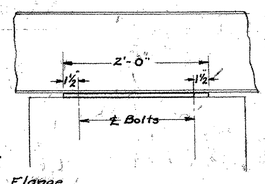
Floor concrete shall be 1:2:4 mix. All concrete poured in cold weather shall conform to special provisions in the Proposal, entitled "Concreting in Cold Weather."



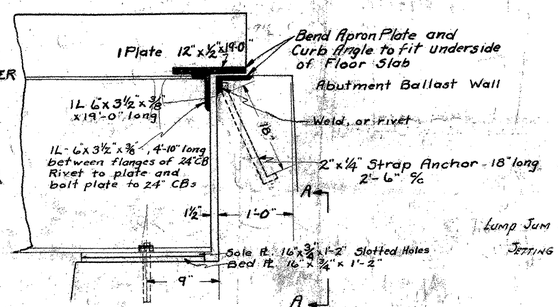
PEDESTAL DETAIL AT EXPANSION END



DETAIL OF MASONRY PLATE UNDER END FLOOR BEAM AT PIER

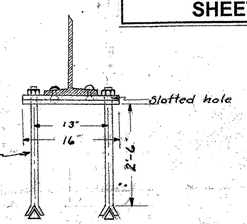


At Expansion End use a ¾" x 18" x 19'-0" Apron Plate bolted to End Floor Beam Flange
Use a 6" x 3½" x ⅜" x 19'-0" long guard angle with anchors at Abutment Ballast Wall, similar to that shown at Expansion End of Approach Span.



ROADWAY EXPANSION JOINT
APPROACH SPAN

Lump Sum Bid To Include Setting Anchor Bolts.



VIEW "A-A"

REFERENCE SHEET 2 OF 11
SHEET 69 OF 78

PLAN OF NEWFANE - BROOKLINE BRIDGE OVER WEST RIVER BROOKLINE, VT.

BRIDGE NO.7 - DISTRICT NO.2

Eastline-ER 1019
FRA9A
160'
(7+39)

1-2:4 Concrete	111 Cu. Yds.
Reinforcing Steel	15,500 Lbs.
Structural Steel	200,000 Lbs.

Surveyed by Helyar
Designed by Shoemaker
Drawn by Woodruff + Taylor
Traced by R.F.T.
Checked by M.K. Woodruff
Series 2 No. 7-21 Filed
Sheet 4 of 8 Sheets

PRINTED ON "HAMMERMILL TRACING CLOTH" 4 MIL THICKNESS

ANY SUITABLE STRUCTURE EXCAVATION USED BY THE CONTRACTOR FOR ANY OTHER PURPOSE OTHER THAN FOR BACK FILL OR APPROACH FILL SHALL BE REPLACED BY AN EQUIVALENT QUANTITY OF BORROW BY THE CONTRACTOR AT HIS OWN EXPENSE UNLESS SAME IS ORDERED WASTED BY THE ENGINEER.

ALL WORK AND MATERIAL SHALL CONFORM TO THE STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE VERMONT DEPARTMENT OF HIGHWAYS, 1926.

THE ELEVATION OF THE FOOTINGS MAY BE CHANGED BY THE ENGINEER TO MEET THE FOUNDATION REQUIREMENTS IN THE FIELD.

FOUNDATIONS ON LEDGE SHOULD PREFERABLY BE SLOPED TOWARD THE BACK OF THE FOOTINGS ON A BATTER OF ABOUT 1" PER FOOT.

COST OF LABOR AND MATERIALS REQUIRED FOR INSTALLATION OF 4" WEEP HOLES TO BE INCLUDED IN UNIT PRICE BID FOR 1-2½-5 CONCRETE.

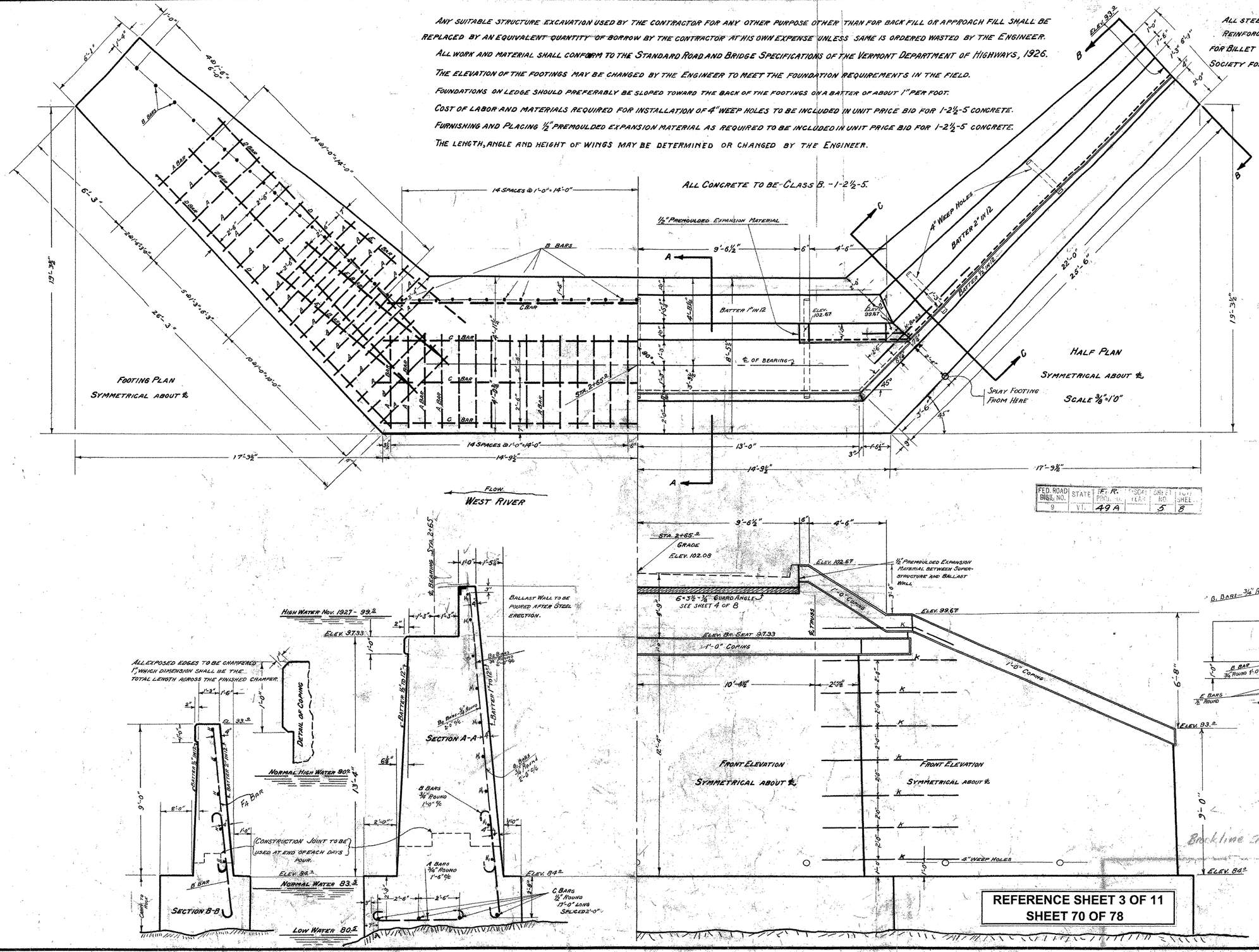
FURNISHING AND PLACING ½" PREMOULDED EXPANSION MATERIAL AS REQUIRED TO BE INCLUDED IN UNIT PRICE BID FOR 1-2½-5 CONCRETE.

THE LENGTH, ANGLE AND HEIGHT OF WINGS MAY BE DETERMINED OR CHANGED BY THE ENGINEER.

ALL CONCRETE TO BE CLASS B. - 1-2½-5.

ALL STEEL TO BE DEFORMED BARS (EXCEPT AS NOTED).

REINFORCING STEEL TO CONFORM TO STANDARD SPECIFICATIONS FOR BILLET STEEL CONCRETE REINFORCING BARS OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, SERIAL DESIGNATION A15-14.



REINFORCING STEEL DETAILS

¾" ROUNDS

4" RADIUS, 3" hooks, X

A BARS	X = 5'-0"	80 REQUIRED. TOTAL LENGTH	7'-7"
B "	X = 5'-0"	" " "	7'-7"
		67 REQUIRED	

½" ROUNDS

LENGTH

C BAR	-	LENGTH	17'-0" – 8 REQUIRED
D "	-	"	20'-0" – 6 "
E "	-	"	10'-0" – 6 "

¾" ROUNDS

4" RADIUS, 3" hooks, X

B1 BAR	X = 7'-0"	TOTAL LENGTH 8'-4"	REQUIRED 28
B2 BAR	X = 16'-0"	" " 17'-4"	REQUIRED 15

SEE SHEET No6 OF 8 FOR REMAINDER OF STEEL SCHEDULE.

THE CORRECTNESS OF THIS STEEL SCHEDULE IS NOT GUARANTEED AND NO CLAIM WILL BE ALLOWED ON ACCOUNT OF ANY INACCURACY THEREIN.

REINFORCING BARS SHALL BE OF STRUCTURAL OR INTERMEDIATE GRADE STEEL.

FED. ROAD DIST. NO.	STATE	F. A. R. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	VT.	49 A		5	8

REFERENCE SHEET 3 OF 11
SHEET 70 OF 78

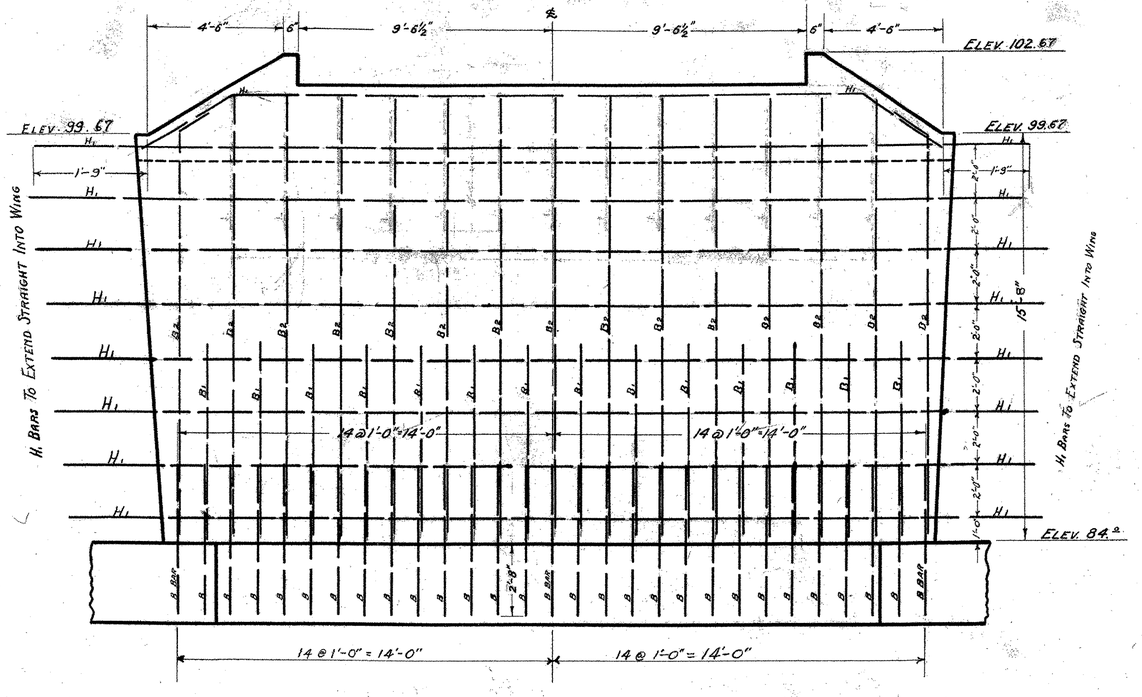
ABUTMENT No.1-DETAILS
NEWFANE-BROOKLINE BRIDGE
OVER
WEST RIVER
SCALE 3/8" = 1'

Brookline Sec 1, B13 over WEST RIVER FR 49A

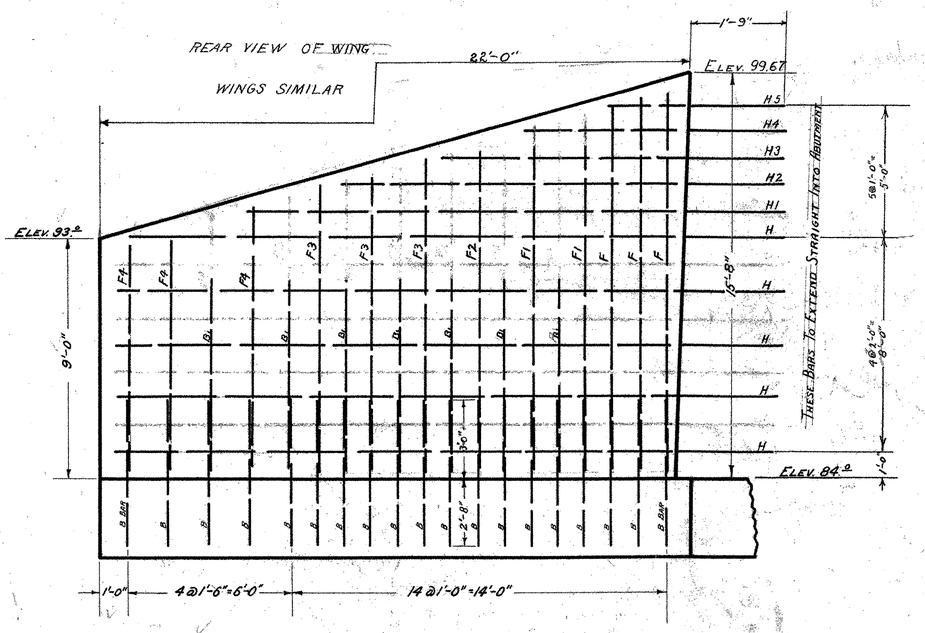
Surveyed by	J. HELYAR
Designed by	PADIGAN
Drawn by	PADIGAN
Traced by	LARSEN
Checked by	M. P. Woodruff
Series 21	No. 2-7-21 Filed
Sheet 5	of 8 Sheets

PRINTED ON "KIMBERLY" TRACING CLOTH H. & B. CO., N. Y.

FED. ROAD DIST. NO.	STATE	F. A. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	VT.	49A		6	8



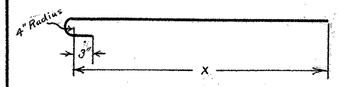
REAR VIEW ABUTMENT



UNCHECKED DRAWING

REINFORCING STEEL DETAILS

¾" ROUNDS



F	X = 13'-6"	Total Length 14'-9"	Required 6
F1	X = 13'-0"	" " 14'-3"	" 4
F2	X = 12'-6"	" " 13'-9"	" 2
F3	X = 11'-6"	" " 12'-9"	" 6
F4	X = 9'-0"	" " 10'-3"	" 6

½" ROUNDS — STRAIGHT

H	Length 23'-3"	Required	10
H1	" 19'-3"	"	20
H2	" 16'-0"	"	2
H3	" 13'-0"	"	2
H4	" 8'-0"	"	2
H-5	" 7'-0"	"	2

¾" ROUNDS

K (STRAIGHT)	Length 8'-0"	Required	16

FOR REMAINDER OF BAR SCHEDULE SEE SHEET No 5 OF 8.

ABUTMENT NO. 1 - DETAILS

NEWFANE - BROOKLINE BRIDGE FR 49 A
OVER
WEST RIVER
Route No. 349, 819 over
SCALE ¾"=1'-0"

Structure excavation	30	cu.yds.
1-2½-5 Concrete	185	cu.yds.
Reinforcing steel	3420	lbs.

Surveyed by J. Helyar
Designed by H.P. Radigan
Drawn by H.P. Radigan
Traced by F.C. Larsen & W.G. Barrett
Checked by M. P. Woodruff
Series 21 No. 2-7-21 Filed
Sheet 6 of 8 Sheets

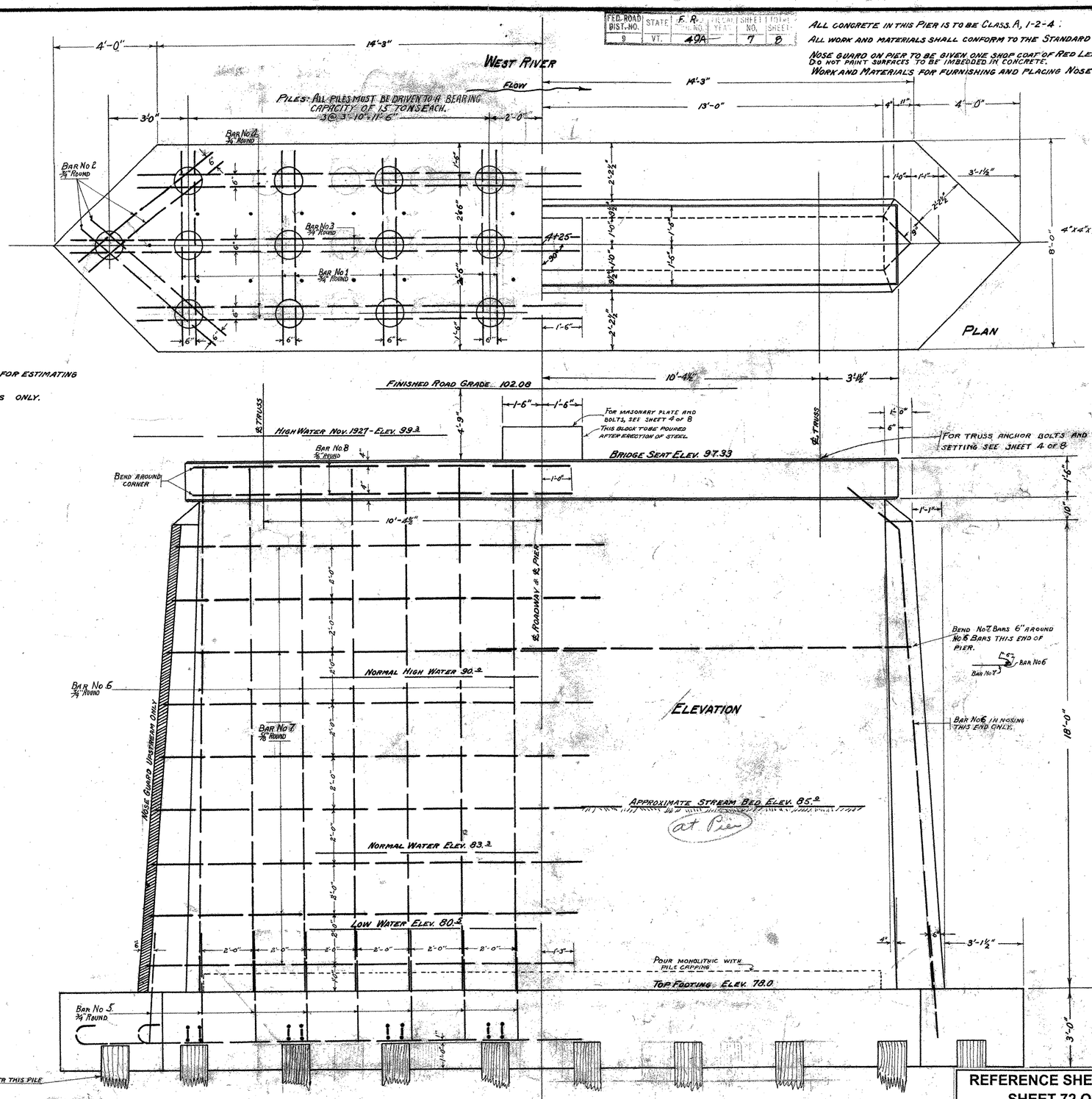
REFERENCE SHEET 4 OF 11
SHEET 71 OF 78

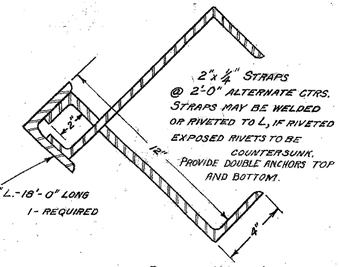
PRINTED ON "KEUFFEL" LINEN CLOTH
K & E CO., N.Y.

FED. ROAD DIST. NO.	STATE	F. R. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
9	VT.	49A		7	8

ALL CONCRETE IN THIS PIER IS TO BE CLASS. A, 1-2-4 :
ALL WORK AND MATERIALS SHALL CONFORM TO THE STANDARD SPECIFICATIONS (ROAD AND BRIDGE) OF THE VERMONT DEPT OF HIGHWAYS 1926.

NOSE GUARD ON PIER TO BE GIVEN ONE SHOP COAT OF RED LEAD AND OIL, ONE FIELD COAT OF RED LEAD AND OIL AND ONE FIELD COAT OF GRAPHITE PAINT.
DO NOT PAINT SURFACES TO BE IMBEDDED IN CONCRETE.
WORK AND MATERIALS FOR FURNISHING AND PLACING NOSE GUARD TO BE PAID FOR UNDER UNIT PRICE BID FOR REINFORCING STEEL.





DETAIL NOSE ANGLE

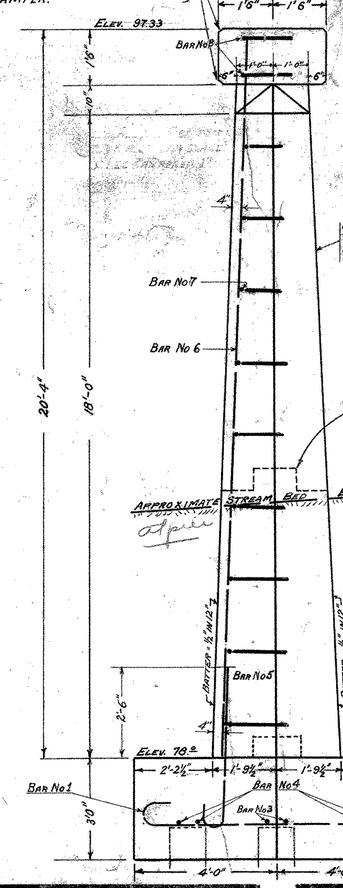
ALL EXPOSED EDGES OF PIER CAP SHALL BE CHAMFERED 1" WHICH DIMENSION SHALL BE THE TOTAL LENGTH ACROSS THE FINISHED CHAMFER.

REINFORCING STEEL DETAILS

BAR NO.	No. REQD.	SIZE	L'GTH	DETAIL
1	16	⅜" Rd.	3'-6"	4" Max. 4" 6'-8"
2	8	¾" Rd.	8'-9"	4" Max. 4½" 6'0"
3	4	¾" Rd.	20'-6"	4" Max. 4½" 19'-0"
4	8	¾" Rd.	17'-9"	4" Max. 4" 16'-8"
5	30	⅜" Rd.	5'-6"	4" Max. 4½" 4'-2"
6	29	⅜" Rd.	19'-0"	STRAIGHT
7	36	⅝" Rd.	17'-0"	STRAIGHT *
8	8	⅝" Rd.	15'-3"	1'-0" 14'-3"

* BEND IN FIELD

ALL STEEL TO BE DEFORMED BARS (EXCEPT AS NOTED). REINFORCING STEEL TO CONFORM TO STANDARD SPECIFICATIONS FOR BILLET STEEL CONCRETE REINFORCEMENT BARS OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, SERIAL DESIGNATION A15-14. STRUCTURAL OR INTERMEDIATE GRADE.



SIDE ELEVATION

PLAN OF PIER

NEWFANE BROOKLINE BRIDGE OVER WEST RIVER

SCALE ~ ½" = 1'-0"

FR 49 A

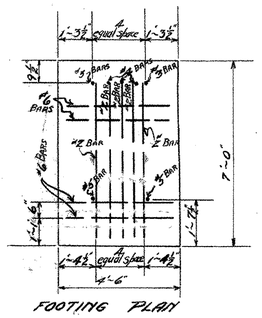
STRUCTURE EXCAVATION	150	CU. YDS.
WOODEN PILES	650	LIN. FT.
1-2-4 CONCRETE =	87	CU. YDS.
NOSE ANGLE =	210	LBS.
REINFORCING BARS =	2500	LBS.

Surveyed by J. HELYAR
Designed by RADIGAN
Drawn by RADIGAN AND LARSEN
Traced by LARSEN
Checked by M. L. Woodruff 3/4/25
Series 21 No. 2-7-21 Filed
Sheet 7 of 8 Sheets

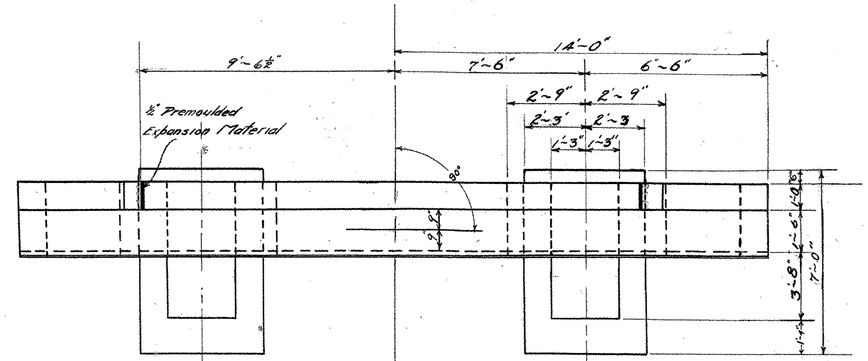
REFERENCE SHEET 5 OF 11
SHEET 72 OF 78

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K. & E. CO., N. Y.

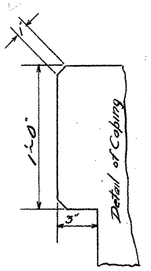
CO. ROAD DIST. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	VT.	49A	8	8



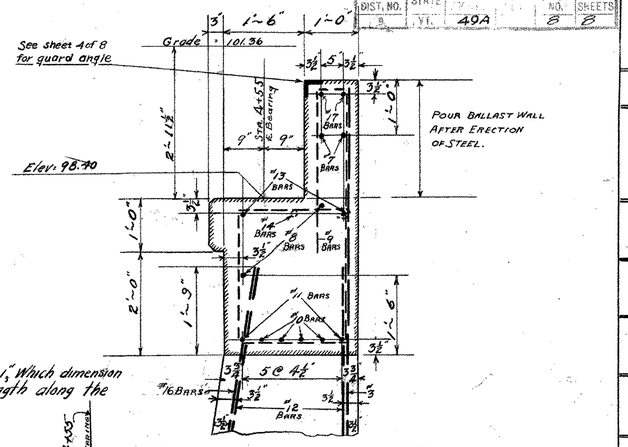
FOOTING PLAN
SHOWING STEEL

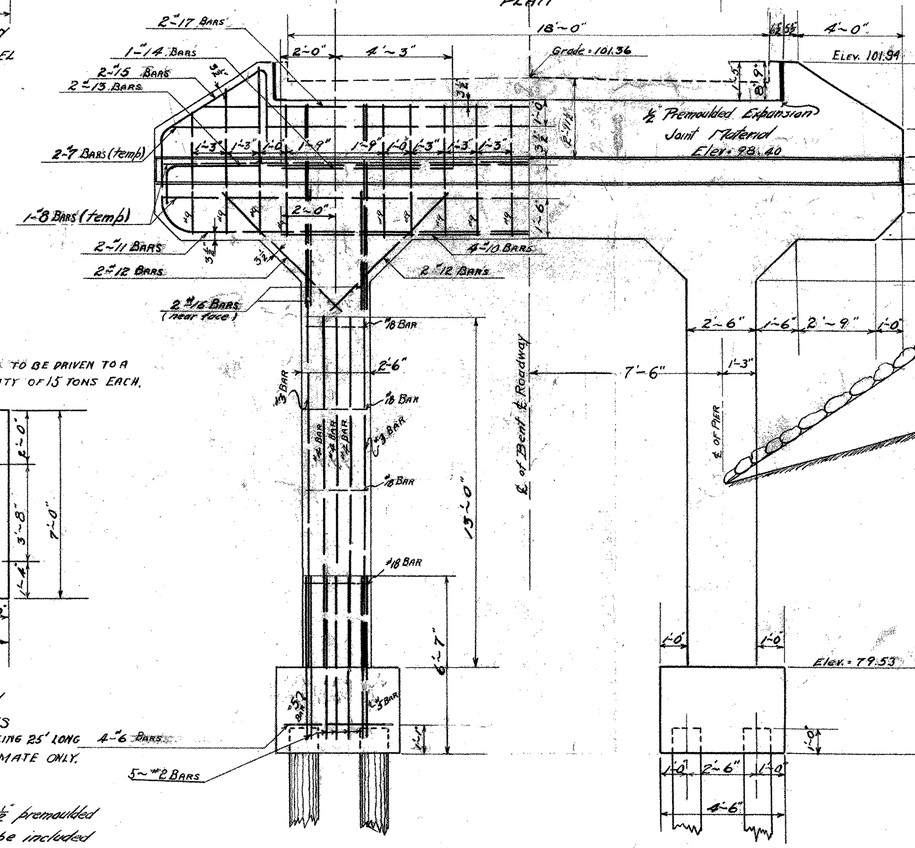


PLAN

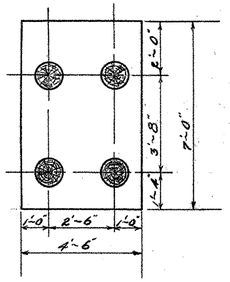


Coping shall be chamfered 1" Which dimension shall be the total length along the finished Chamfer





PILES: ALL PILES TO BE DRIVEN TO A BEARING CAPACITY OF 15 TONS EACH.

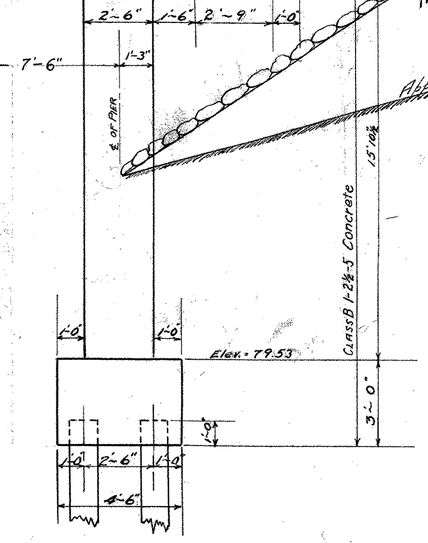


FOOTING PLAN
SHOWING PILES
PILES CONSIDERED AS BEING 25' LONG FOR PURPOSES OF ESTIMATE ONLY.

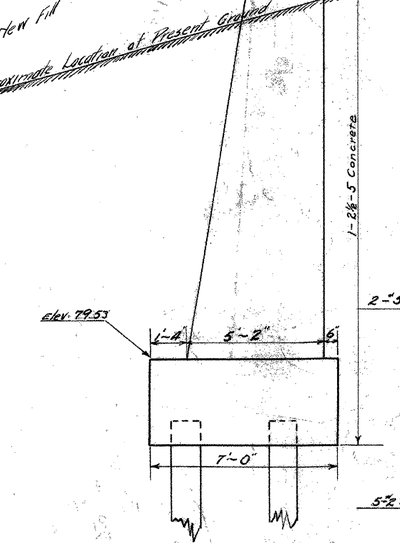
Furnishing and placing ½" premoulded expansion material to be included in unit price bid for 1-2½-5 Concrete

HALF ELEVATION
SHOWING REINFORCEMENT

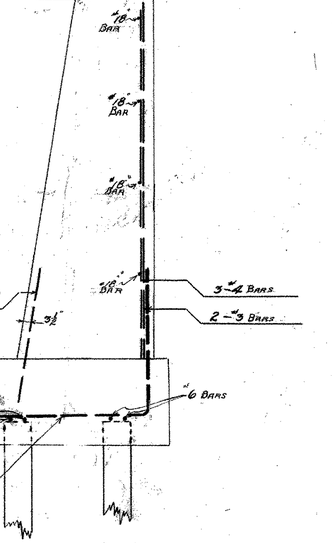
Concrete Bent Symetrical about ℄



HALF ELEVATION
SHOWING GENERAL DIMENSIONS



CROSS-SECTION OF BEAM



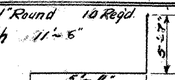
SIDE ELEVATIONS

OUTLINE REINFORCEMENT

REINFORCING BAR SCHEDULE

No.1 Bar (Omitted)

No.2 Bar – 1" Round — 10 Req'd.
Total length 11'-8"



No. 3 Bar – 1" Round — 4 Req'd
Total length 20'-9"

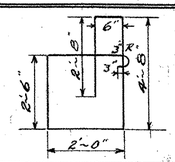
No. 4 Bar 1" Round 6 Req'd
Total length 13'-0"

No. 5 Dowel 1" Round 4 Req'd
Total length 5'-0"

No. 6 Bar 1" Round 8 Req'd
Total length 4'-0"

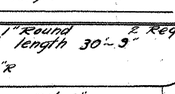
Nos. 7 + 8 ⅝" Round 4 Req'd
Total length 27'-6" (2 of Each)

No. 9 Stirrup ⅜" Round
Total length 14'-0"
18 Req'd.



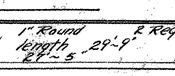
No 10 Bar 1" Round 4 Req'd.
Total length 19'-0"

No 11 Bar 1" Round 2 Req'd
Total length 30'-9"



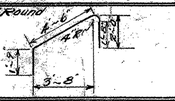
No 12 Bar 1" Round 8 Req'd
Total length 5'-6"

No 13 Bar 1" Round 2 Req'd
Total length 29'-9"



No 14 Bar 1" Round 2 Req'd
Total length 6'-3"

No 15 Bar ⅜ Round 4 Req'd
Total length 8'-0"



No 16 Dowel 1" Round 4 Req'd
Total length 4'-3"

No 17 Bar ⅜ Round 2 Req'd
Total length 24'-8"

No 18 ⅝ Construction Rods 8 Req'd
Total length 2'-0"

SEE SHEET No 6 OF 8 FOR SPECIFICATIONS FOR REINFORCING BARS.

FR 49A

ABUTMENT NO. 2 ~ DETAILS

NEWFANE BROOKLINE BRIDGE
OVER
WEST RIVER

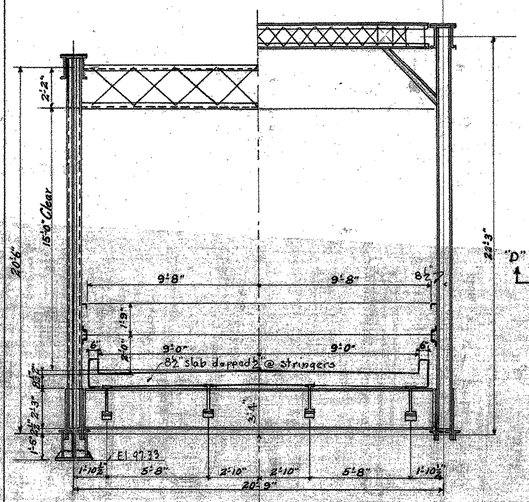
SCALE ~ ⅜" = 1'-0"

REFERENCE SHEET 6 OF 11
SHEET 73 OF 78

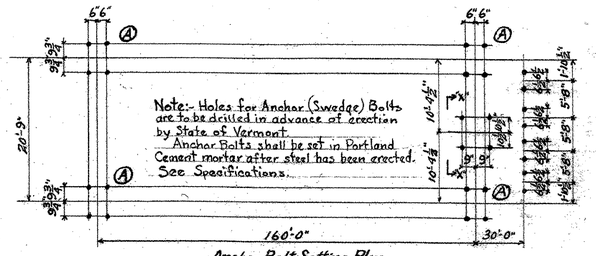
Piling	200	Lin. Ft.
Structure Excavation	40	Cu. Yds
1-2-4 Concrete	11	Cu. Yds
1-2½-5 Concrete	18	Cu. Yds
Reinforcement Steel	2000	Lbs
Rip Rap	76	Cu. Yds

Surveyed by J.E. Helyar
Designed by M.L. Woodruff
Drawn by Whitcomb
Traced by Whitcomb
Checked by M.L. Woodruff 2/16/21
Series 21 No. 2-7-21 Filed
Sheet 8 of 8 Sheets

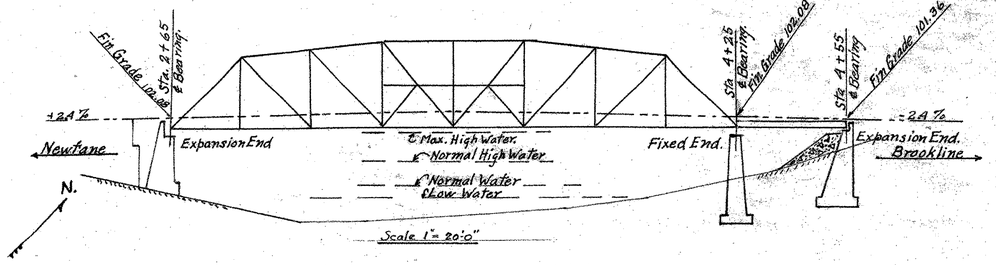
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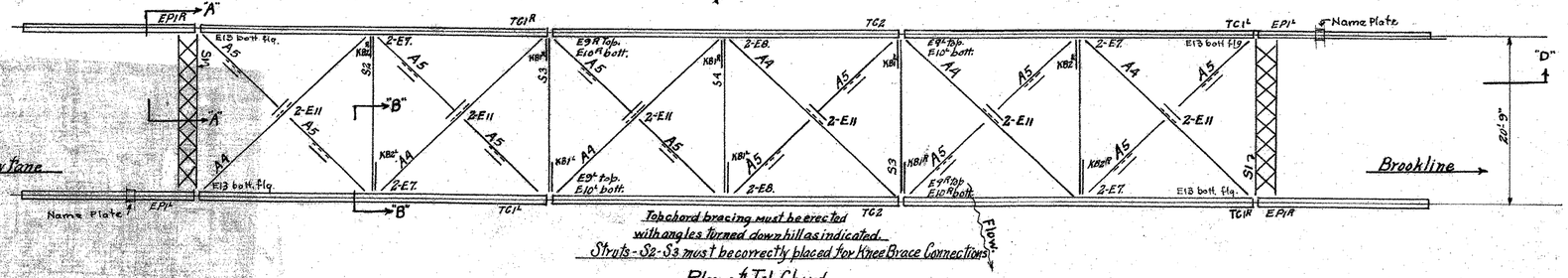
Half Section at "A-A" + "B-B"



Anchor Bolt Setting Plan.

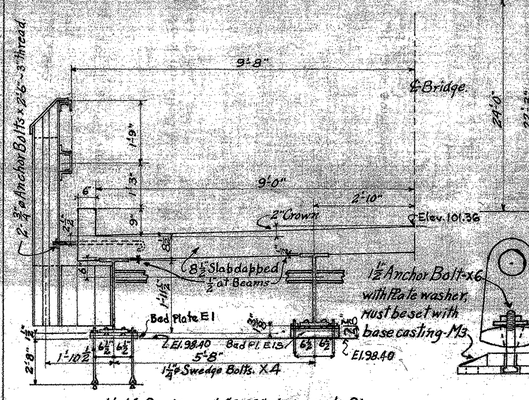


Scale 1" = 20'-0"

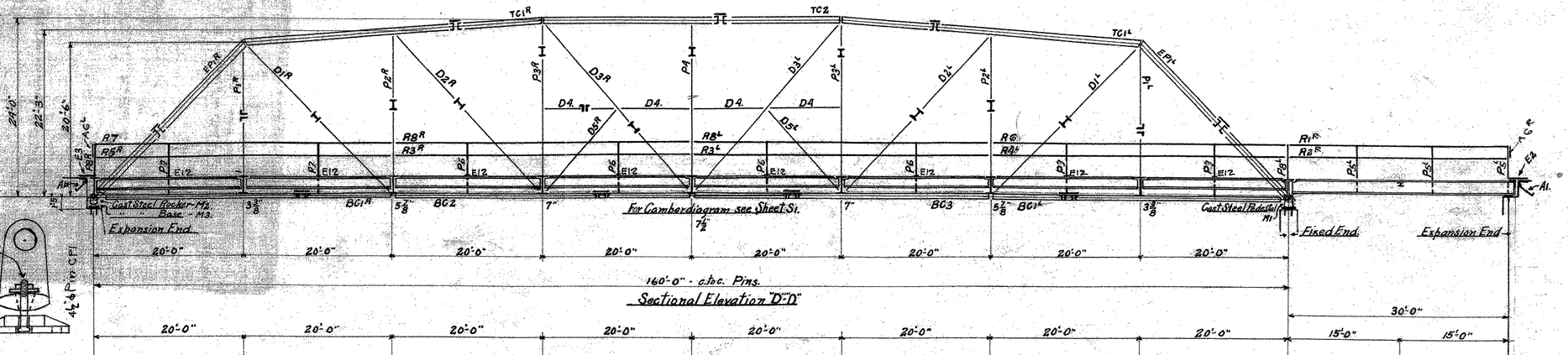


Top chord bracing must be erected with angles turned down hill as indicated.
Struts - S2 - S3 must be correctly placed for Knee Brace Connections

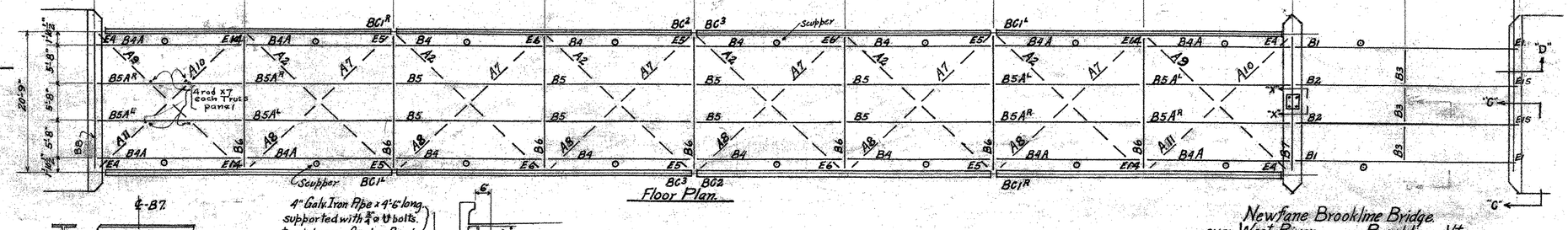
Plan of Top Chord.



Half Section at "C" "C" Approach Span.

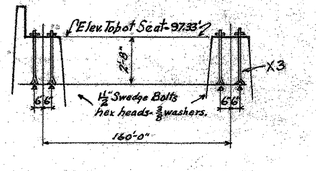


Sectional Elevation "D-D"

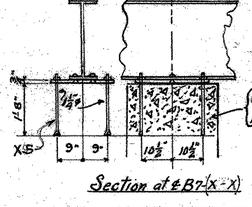


Floor Plan.

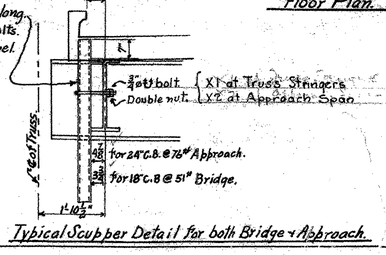
Newfane Brookline Bridge over West River ------ Brookline, Vt.



Detail of Swedge Bolts for Bridge Seat. (A)



Section at ℄ B7 (X - X)



Typical Scupper Detail for both Bridge & Approach.

4" Galv. Iron Pipe x 4'-6" long supported with ¾" ø U bolts to stringer. One per Panel. 18 required.

REFERENCE SHEET 7 OF 11
SHEET 74 OF 78

Erector to apply field paint in accordance with Specification. See copy with papers

Rivets:
Holes:
Field Connections: Riveted.
Shop Paint: One Coat - B.M. Suydam Red Lead.
Field Paint: 1st coat - B.M. Suydam Red Lead 60 Gallons ordered "ship direct"
2nd coats B.M. Suydam Black Graphite 60 Gallons ordered "ship direct"
Revised 8-26-28

THE BERLIN CONSTRUCTION COMPANY, INC.
DRAWN BY E.W.S. DATE 3/14/28
CHECKED BY DATE 3/16/28
SCALE
CONTRACT No. 7839
SHEET NO. 1 OF 5 SHEETS

FACE

HALF Bottom

HALF Top

Open holes Top + Bott N.S. Riv. Top only F.S.

Taper Bott N.S. Top only F.S.

Z 204⅜" {2-15"JC-33.9# x 40cl 28cl. / 1-17"x⅜ Cov.Pl x 40cl ½"} T.C.1.

Z 204" {2-15"JC-33.9# x 40cl 16cl. / 1-17"x⅜ Cov.Pl x 40cl ½"} T.C.Z.

SYM. ABT ℄

Bolt to ship to E.P.1.

Develop'd View

Cut back

Bend Line

℄ Plate

Show to attach B.C.Co. Name Plate to E.P.1 with top edge at about this line

Mother side

150 Lo Pin.

SECTION A-A

Not More

SECT-B-B

SECTION Z-Z

SECTION X-X

SECTION Y-Y

Floor Beam.

Gravity Line

Not less between Gussets.

Not less between Gussets

Stitch rivets abt 1-3" c to c both Sides

4 Fills 5⅛x⅜x15½ Bolt to ship.

4 Splice Ls 5"x3½x⅜x24½" K58 Grind Corners to fit. Bolt to ship on B.C.1.

4 splice Ls K58 Bolt to ship to B.C.3

open holes in B.C.3

Bore 4 17/32" Hole Pin & Casting ship position See AN-Dwg 1.

Not More than ⅛" less than C.L.

Not less than ⅛" more than C.L.

CAMBER = 3⅜

CAMBER = 5⅛

CAMBER = 7"

CAMBER = 7½

8040 half span.

1600 C to C Bearings.

Fit Bolt to ship.

1 Fill 7⅛x⅜x15½ Fig Bolt to ship.

Bolt to Ship to B.C.1. (1 Splice bar 4"x⅜x24½" G24; 1 Fill 8-7⅛ Rsk Fig; 1 Splice R-8"x⅜x24½" G25)

Fit Bolt to ship.

Z-END Posts - E.P.1R.
2- " " - E.P.1L
2- Top Chords - T.C.1R
2- " " - T.C.1L
2- " " - T.C.Z

2 Bottom Chords B.C.1R.
2 " " B.C.1L
2 " " B.C.Z-As Shown.
2 " " B.C.3-Opp "

2 Posts P1R
2 " P1L
2 " P2R
2 " P2L
2 " P3R
2 " P3L
2 " P4

2-Diagonals-D1R
2 " D1L
2 " D2R
2 " D2L
2 " D3R
2 " D3L
8 " D4
2 " D5R
2 " D5L

NEWFANE BROOKLINE BRIDGE over WEST RIVER BROOKLINE VERMO

Rivets: ⅞ Unless Noted.
Holes: 13/16 Drill " "
Field Connections:
Shop Paint: 1 Coat B.M. Suydam Red Lead.
Revised. 3/28/28.
Revised 5-24-28

THE BERLIN CONSTRUCTION COMPANY
DRAWN BY WERD. DATE 3/13/28
CHECKED BY DATE 3/24/28
SCALE 3/4" = 1'0
CONTRACT No. 7839
SHEET NO. 2.

REFERENCE SHEET 8 OF 11
SHEET 75 OF 78

1 Pl. 18×5/16×2'-3 3/4" E4

1 Pl. 13×5/16×2'-11 1/2" E5

1 Pl. 14×5/16×3'-3" E7

E7 Sym. abt this line

1 Pl. 14×5/16×3'-2" E8

E8 Sym. abt this line

1 Pl. 28×3/8×3'-2 5/8" E9 (bent.)

2 PLATES E9R
2 " E9L

6 DIAGONALS A7 as shown
6 " A8 opp. hand
4 PLATES E14
6 DIAGONALS A7
4 PLATES E4
6 " E5
4 " E6

6 DIAGONALS A4
12 " A5

8 PLATES E7
4 " E8

2 STRUTS S2
2 " S3
1 " S4

3 KNEE BRACES KB1R
3 " " KB1L

2 KNEE BRACES KB2R
2 " " KB2L

1 Pl. 14×5/16×1'-2 1/2" G33

38 Lacing Bars 2 1/4×5/16×1'-3 3/16" c. to c. Y3

1 Fill 3×5/16×0'-11 1/2" F12

9 @ 10 5/8" = 7'-11 5/8"

ELEVATION TOP

1 Bt. Pl. 31"×3/8×4'-6" G32

Cut E13 along dotted line

1 Pl. 17×5/16×1'-6 1/2" E13

L 3 1/2×3 1/2×5/16×2'-2 1/2" W1

Bend line

1 PL G34

1 PL G35

1 Pl. 2×5/16×1'-8 G34

1 Pl. 10 1/2×5/16×1'-8 G35

4 @ 2'-4" = 9'-4"

10'-4 1/2"

20'-9" c. to c. of Trusses

ELEVATION NEAR SIDE

Sym. abt ℄

1 Pl. 17×3/8×1'-10 3/8 G37 bolt to ship

SECTIONAL ELEV. FAR SIDE

1 PL G33

38 Lacing bars Y3

9 @ 10 5/8" = 7'-11 5/8"

BOTTOM VIEW

2 END PORTALS S1 - 4 Ls 3 1/2×3 1/2×5/16×19'-3 1/2"

4 PLATES E18

12 PLATES 9×5/16×2'-0" E11

Shop to provide holes in this angle

DIAPHRAGM

1 Fill 3 1/2×5/16 F18

1 Pl. 13 3/8×5/16×1'-10 1/2" K47

1 Pl. 13×5/16×1'-10 1/2" K48

1 Pl. 13×5/16×1'-10 1/2" K49

1 Pl. 14×5/16×1'-10 1/2" K50

1 Pl. 13×5/16×1'-3" G30

1 Pl. 15×5/16×1'-4 1/2" G31

1 Pl. 13×5/16×1'-3" G41

1 Pl. 12×3/8×1'-3" G41

1 Pl. 15×3/8×1'-9 G40

1 Pl. 15×3/8×1'-9 G38

1 Pl. 15×3/8×1'-9 G39

1 Pl. 16×5/16×3'-2 1/2" E14

1 Pl. 13×5/16×2'-11" E6

1 Fill F14

1 Fill F13

1 Fill F14 ℄ Lacing bars 2 1/2×5×1'-8" (c. to c. Y4)

1 Fill F14 THIS END For S2

1 Bt. Pl. 15"×3/8×1'-9 G40

2 L 4×3×5/16×19'-3 1/2" S2

2 L 4×3×5/16×19'-3 1/2" K51 for S4
K52 n.s. for S3

do K52 "near side" } for S3
do K51 far side }

K52 to K53 close span

K52-90°
K53-90°

2 L 5×3 1/2×5/16 KB1
5'-2 7/16 KB1
6'-5 1/16 KB1

2'-9 1/2 KB2
4'-6 1/2 KB1

2'-9 1/2 KB2
4'-6 1/2 KB1

S2-S3 S4 Sym abt ℄

K50 n.s.
K49 f.s.

4 Lacing

18 Lacing Bars Y4

24 Lacing bars Y2

26 Lacing bars Y2

26 Lacing bars Y4

weep holes

Clearance line ⊥ to crown of rdwy.

Floor Beam ⊥

℄ Floor Beam

℄ Truss

℄ of Truss

℄ of E8

Holes in E14 only

Holes in E7 only

Holes in A7 only

Holes in A8

Holes in A7

Holes in A8 opp. hand

Cut E6 along dotted line

Cut E14 along dotted line

Bend Line

W.P. center of pl.

W.P. back of Pl. G40

W.P.

15/16" ϕ holes

15/16" ϕ hole in E14 only

18'-10" betw. W.P.s.

18'-2" betw. W.P.s.

18'-0 1/4" betw. W.P.s.

18'-7" betw. W.P.s.

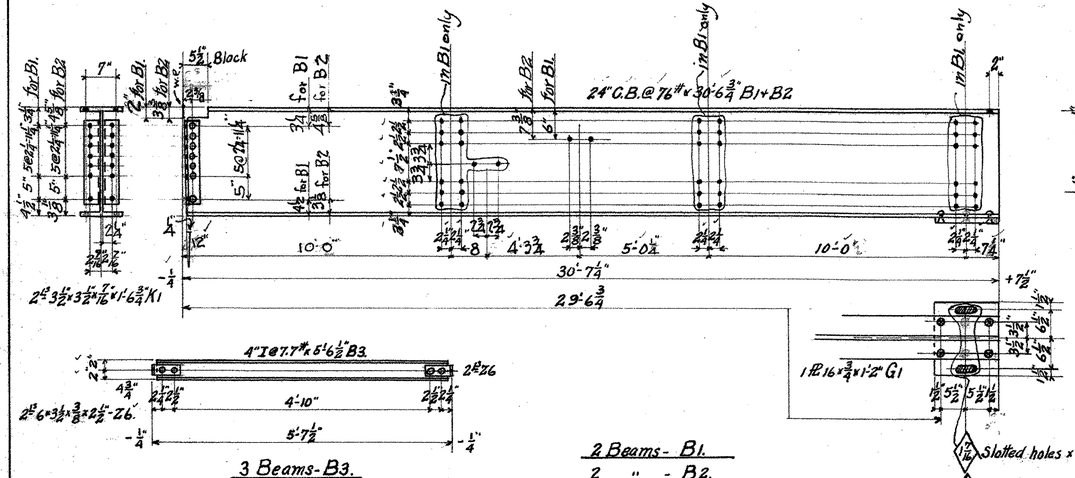
REFERENCE SHEET 9 OF 11
SHEET 76 OF 78

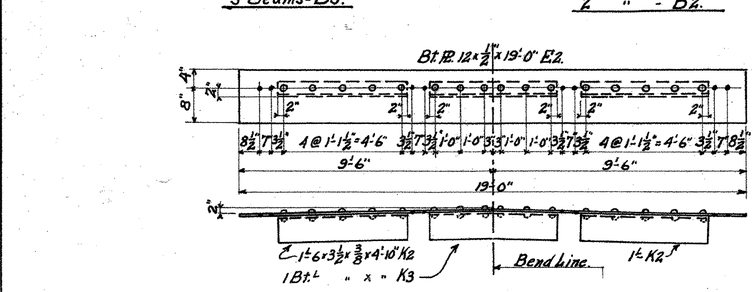
NEW FANE BROOKLINE BRIDGE
OVER WEST RIVER — BRIDGE No. 7
BROOKLINE, VT. — DISTRICT No. 2

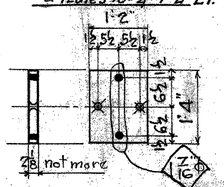
Rivets: 3/4" ϕ
Holes: 13/16" ϕ unless noted
Field Connections:
Shop Paint: 1 Coat B.M Suydam
Red Lead.

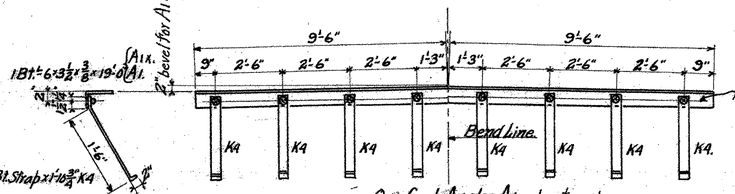
Revised 3-23-28
Revised 3-29-28

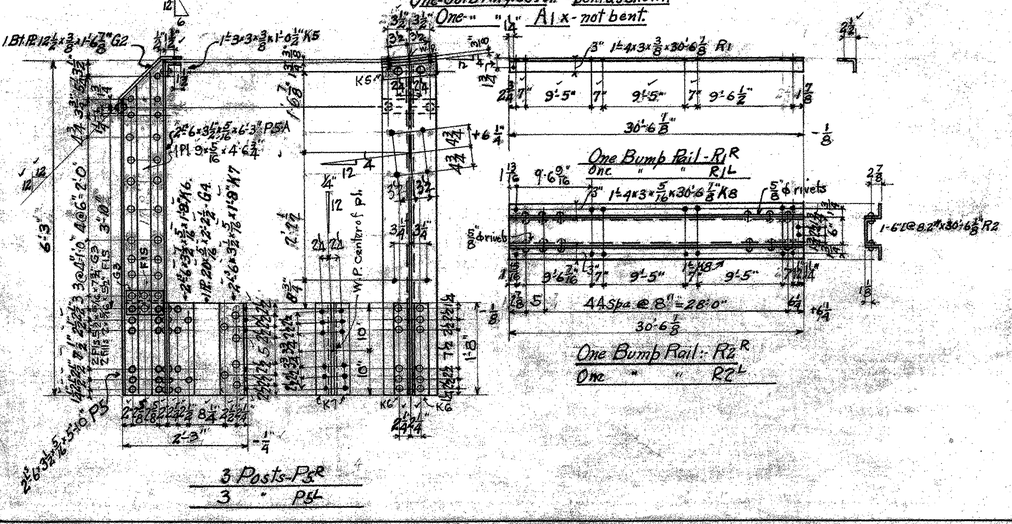
THE BERLIN CONSTRUCTION COMPANY, INC.
DRAWN BY Haaser DATE 3-14-28
TRACED BY Word. DATE 3/17/28
SCALE 3/8"=1'-0"
CONTRACT No. 7839
SHEET No. 3 OF 5 SHEETS

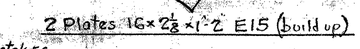


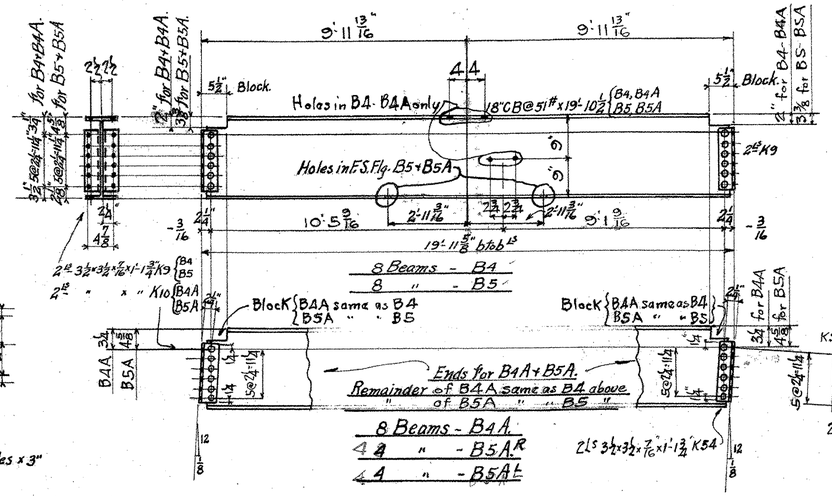


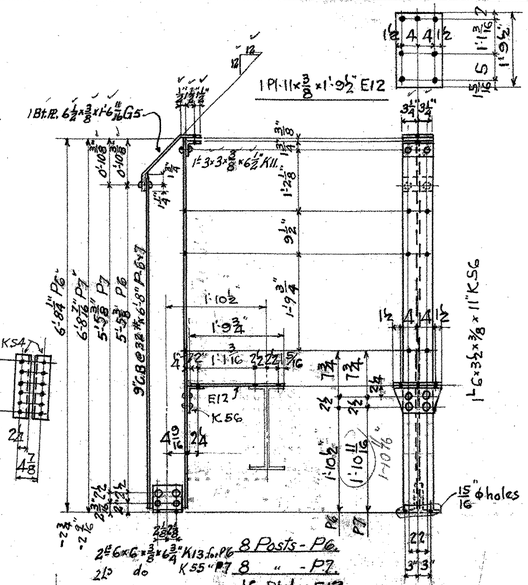


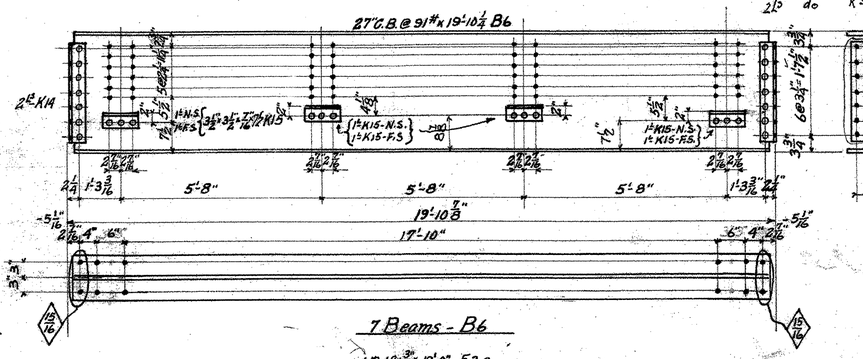


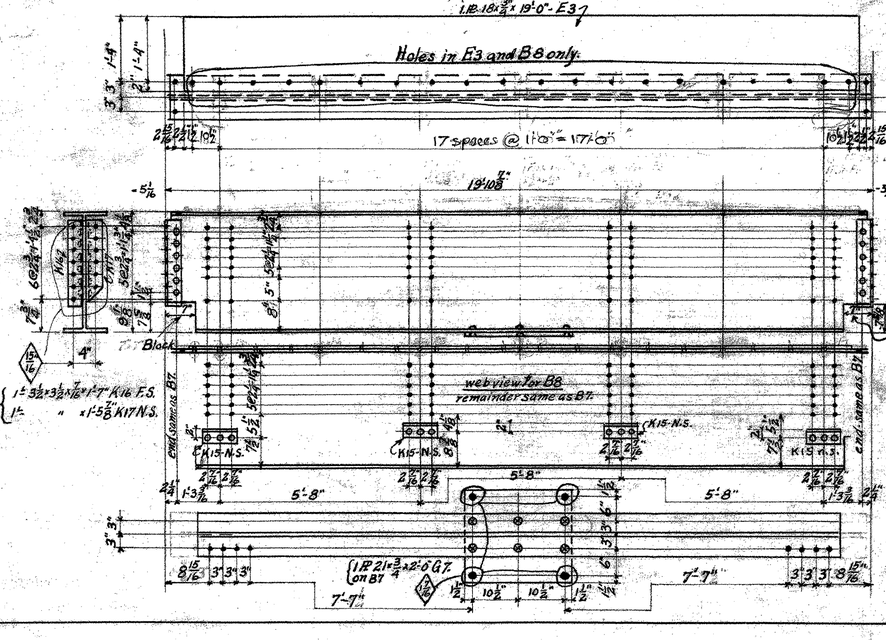








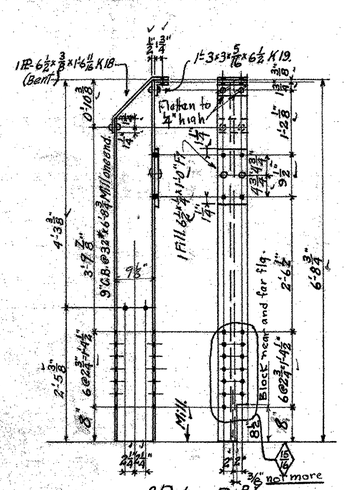




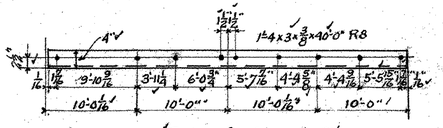
REFERENCE SHEET 10 OF 11
SHEET 77 OF 78

New Fane Brookline Bridge
over West River — Brookline, Vt.

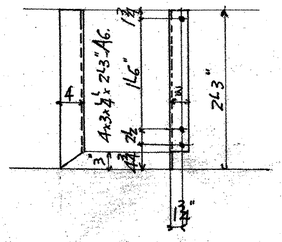
Rivets:- 3/4" ø unless noted.	Drawn:- E.W.S. 3/7/28
Holes:- 13/16 ø " "	Checked:- Hauser 3-16-28
Field Conn.	Contract:- 78.39
Shop Paint:- One Coat B.M. Suydam Red Lead	Sheet:- #4
Revised 3-26-28	Berlin Const. Co., Inc. Berlin, Conn.



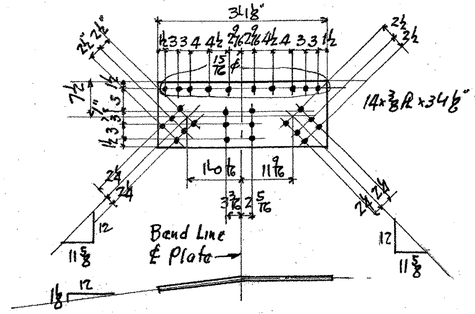
2 Posts :- P8R
2 " :- P8L



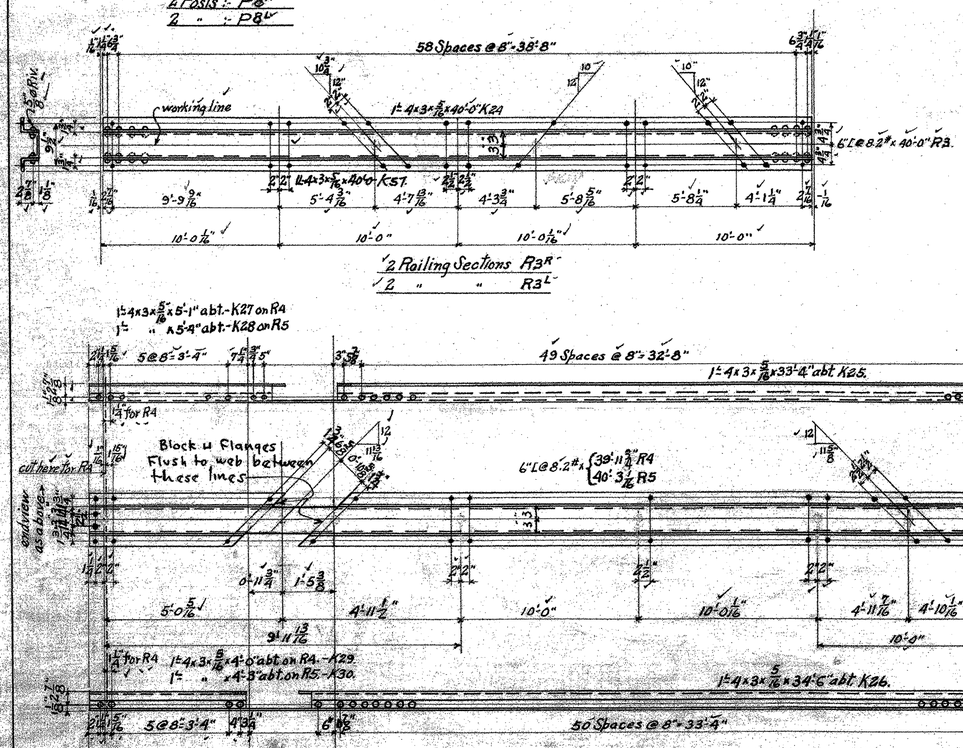
2 Railing Sections R8R
2 " " R8L



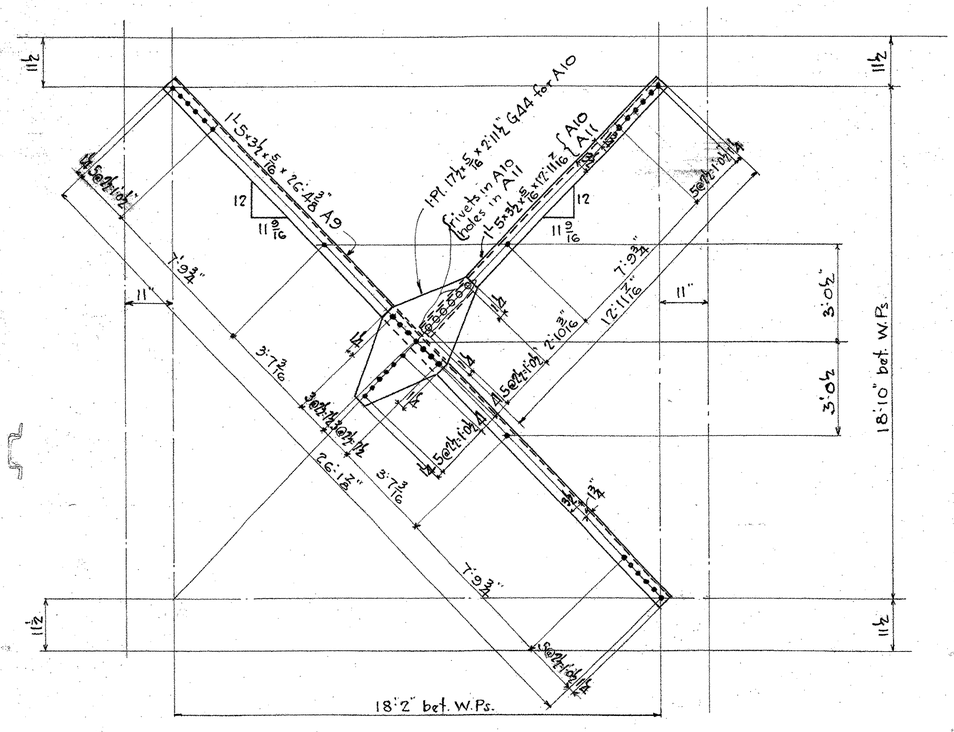
2- Railing Ends- AGR
2 " " AGL



2- Bent Plates- E10R
2- " " - E10L



2 Railing Sections R3R
2 " " R3L



2 Angles A9 as shown
2 " A10 " "
2 " A11 opp. hand

1 L 4x3x⅝"x5'-1" abt.- K27 on R4
1 L " x5'-4" abt.- K28 on R5
5 @ 8"= 3'-4"
49 Spaces @ 8"= 32'-8"
1 L 4x3x⅝"x33'-4" abt. K25.
Block U Flanges Flush to web between these lines
cut here for R4
6"LG 8.2#x 39'-11½" R4
40'-3 7/16" R5
working line
5'-0 5/16"
4'-11½"
10'-0"
10'-0 1/16"
4'-11 7/16"
4'-10 1/16"
9'-11 13/16"
10'-9"
1 L 4x3x⅝"x4'-0" abt. on R4.- K29
1 L " x4'-3" abt. on R5.- K30.
1 L 4x3x⅝"x34'-6" abt. K26.
5 @ 8"= 3'-4"
4 @ 8"= 2'-8"
6"
50 Spaces @ 8"= 33'-4"

One Railing Section R4R
One " " R4L
One " " R5R
One " " R5L

1 Bt. R 3⅜x⅜x1'-1" abt. K31
1 Bt. R " x1'-1" abt. K32
6'-4 11/16"
3'-5"
10'-0"
10'-0 1/16"
3'-5"
6'-5½"
1 L 4x3x⅜ 39'-11½" R6
40'-3 7/16" R7
working line
cut here for R6
1'-1 15/16"
11 13/16"
8½"
14.5"
Block O.S legs Flush to Web.

One Railing Section R6R
One " " R6L

One Railing Section R7R
" " " R7L

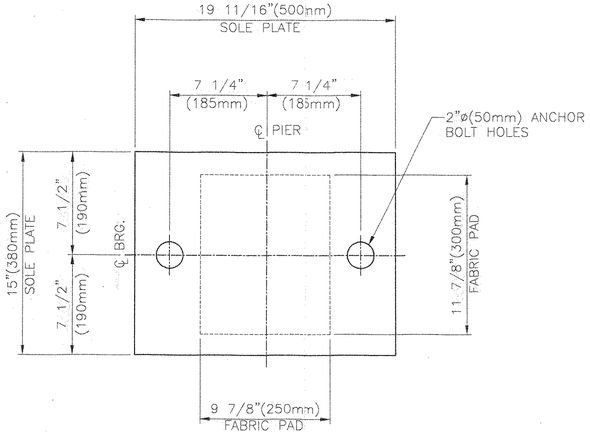
NEWFANE BROOKLINE BRIDGE
WEST RIVER over at BROOKLINE VERMONT

Rivets: ¾" Unless Noted.
Holes: 13/16" Diam. Do.
Field Connections:
Shop Paint: 1 Coat B.M. Suydam Red Lead.

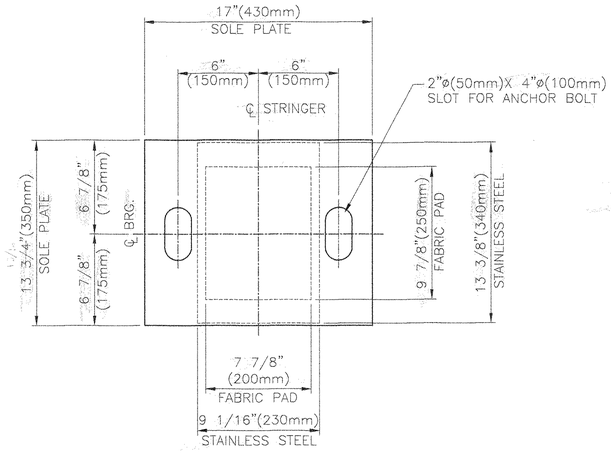
Revised 3-24-28.
Revised 3-19-28.

THE BERLIN CONSTRUCTION COMPANY, INC.
DRAWN BY E.W.S. DATE 3/15/28
CHECKED BY Ward. DATE 3/17/28.
SCALE ¾"=1'-0"
CONTRACT No. 7839
SHEET NO. 5 OF 5 SHEETS

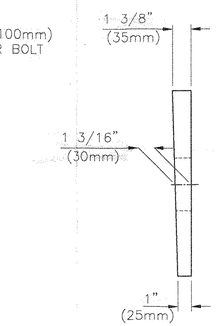
REFERENCE SHEET 11 OF 11
SHEET 78 OF 78



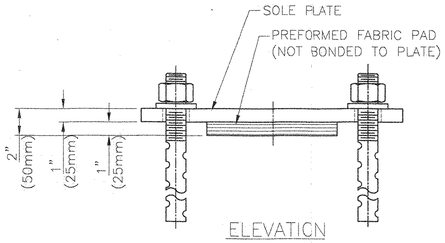
PLAN
FIXED FABRIC PAD BEARING
LOCATION: PIER
QUANTITY: 1
ITEM #531.10 (PAD)
DESIGN VERTICAL LOAD–106 KIPS(470kN)
DESIGN HORIZONTAL LOAD–10.6 KIPS(47kN)



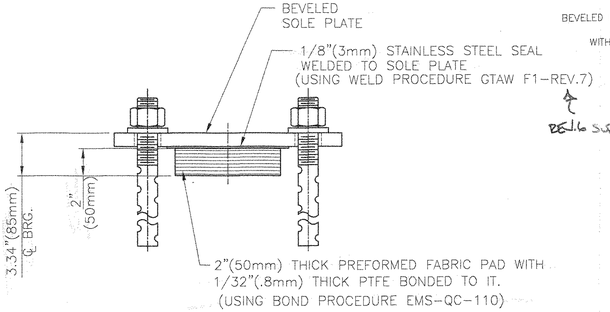
PLAN
EXPANSION FABRIC PAD BEARING
LOCATION: ABUTMENT 2
QUANTITY: 4
ITEM #531.10 (PAD)
DESIGN VERTICAL LOAD–74 KIPS(330kN)
DESIGN HORIZONTAL LOAD–7.4 KIPS(33kN)



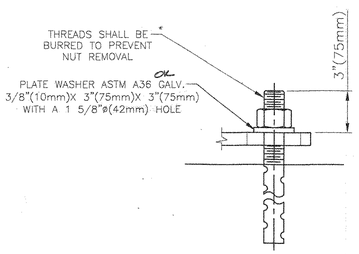
SIDE ELEVATION
SOLE PLATE ONLY



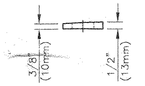
ELEVATION



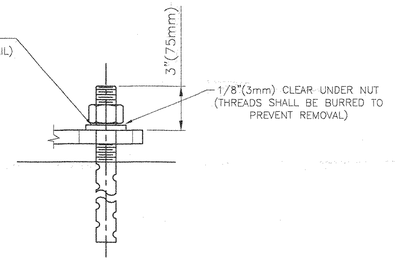
ELEVATION



ANCHOR BOLT DETAIL AT FIXED BEARING
1 1/2"ø(38mm) X ~~27"(686mm)~~ 22"(560mm) LONG ASTM A449 TYPE I
ANCHOR BOLT W/ 4"(100mm) OF THREAD AND REMAINDER
SWEDGED ONE HEAVY HEX NUT AND PLATE WASHER.
(ALL GALVANIZED)



BEVELED PLATE WASHER ASTM A36 GALV.
3"(75mm) X 3"(75mm)
WITH A 1 5/8"ø(42mm) HOLE



ANCHOR BOLT DETAIL
1 1/2"ø(38mm) X 21 1/4"(540mm) LONG ASTM A449 TYPE I
ANCHOR BOLT W/ 4"(100mm) OF THREAD AND REMAINDER
SWEDGED ONE HEAVY HEX NUT AND PLATE WASHER.
(ALL GALVANIZED)

BEARING NOTES

1. ALL MATERIALS USED IN THE FABRICATION OF THESE BEARINGS SHALL BE MADE IN THE U.S.A.
2. BEARINGS ARE TO BE SHIPPED AS COMPLETE UNITS, STEEL BANDED, AND SHALL BE WRAPPED TO PROTECT FROM MOISTURE AND DIRT DURING TRANSIT AND STORAGE.
3. LOCATION OF FABRICATION PLANT – 70 SOUTH STREET WALPOLE, MA. 02081
4. COSMEC, INC. REPRESENTATIVE – MR. MATT McANDREWS (508) 668–6600
5. BEARINGS SHALL BE STORED IN A CLEAN, DRY, LEVEL UPRIGHT POSITION.
6. ⊗ MARKS THE THICK END OF SOLE PLATE AT FOR USE IN FIELD

MATERIALS

STEEL – ASTM A709 GR. 50 (AASHTO M270) ZINC METALIZED AND SEALED WITH AN APPROVED SEALANT.

STAINLESS STEEL – ASTM A240 TYPE 304, (20 RMS) FINISH

PREFORMED FABRIC PAD – AASHTO DIV. II SPEC. 18.4.10.1 AND STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 731

PTFE – ~~ASTM D1457~~ (UNFILLED) AS PER AASHTO 14.6.2 (DIVISION I) AND AASHTO 18.4.3 (DIVISION II)

ANCHOR BOLTS, NUTS & WASHERS – SEE DETAIL

ALL BEARINGS DEVICES SHALL BE METALIZED AS PER SUBSECTIONS 531.04(b) AND 506.15~~(c) & (b)~~. BEARINGS SHALL BE SEALED WITH AN APPROVED SEALER AS SPECIFIED IN STANDARD SPEC. SUBSECTION 506.15(b). AREAS OF METALIZING DAMAGED BY FIELD WELDING OR HANDLING SHALL BE PAINTED WITH AN APPROVED SEALANT IN ACCORDANCE WITH ~~STANDARD~~ SPEC. ~~SUBSECTION~~ SUPPLEMENTAL 513.

ALL CORNERS & EDGES OF STEEL PLATES, SHAPES SHALL BE GROUND TO 1/16"(1.6mm) RADIUS.

VAOT–STRUCTURES
RECEIVED
CK'D BY JWK DK'D BY
12-24-03
DEC 22 2003
RESUBMIT APPROVED APPROVED
BY 3/7/04 DATE 1.5.04

~ STRUCTURES COPY ~

NOTE: TO BE DISTRIBUTED UPON RECEIPT OF RESUBMITTED AND APPROVED DWG. NO. 3996 – SEE MEMO IN FILE DATED 1-5-04

REV.		BY	DATE	CK'D	DATE

STATE OF VERMONT
AGENCY OF TRANSPORTATION
PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

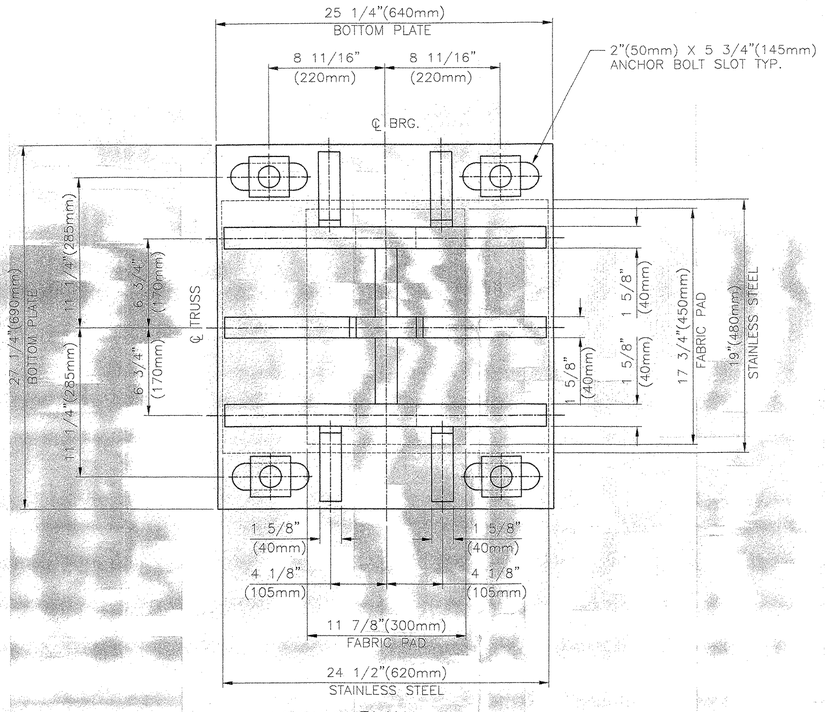
COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

SCALE:	DRAWN BY:	CHECK BY:
3/16"=1"	RFC	NH
	DATE: 11-20-03	DATE: 12-10-03

COSMEC PREFORMED FABRIC PAD BEARINGS

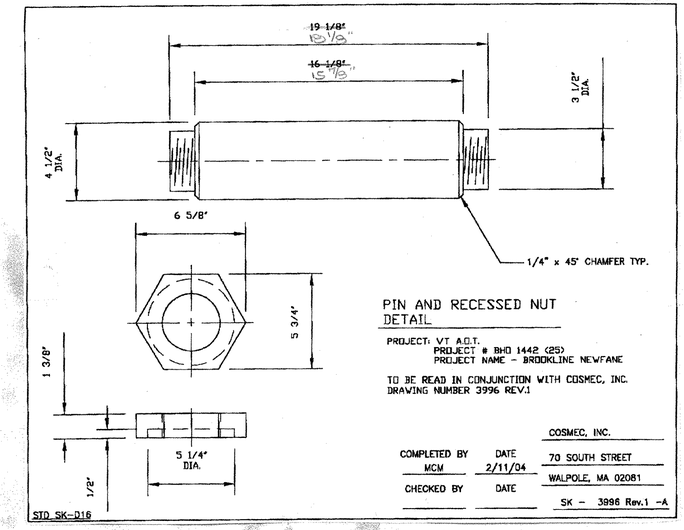
CUSTOMER	S.O. NUMBER	DRAWING NUMBER	REV.
RENAUD BROS. INC.	59931	3995	

100 BB



PLAN

EXPANSION FABRIC PAD BEARING
LOCATION: ABUTMENT 1
QUANTITY: 2
ITEM #531.10 (TRUSS) ⚠
DESIGN VERTICAL LOAD–200 KIPS(890kN)
DESIGN HORIZONTAL LOAD–20 KIPS(89kN)



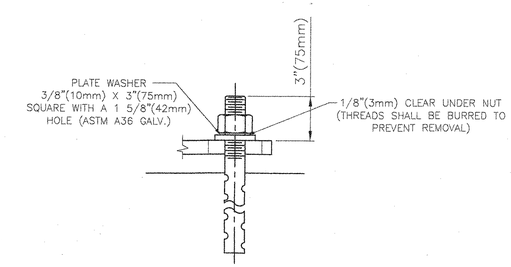
PIN AND RECESSED NUT DETAIL

PROJECT: VT A.O.T.
PROJECT # BHO 1442 (25)
PROJECT NAME – BROOKLINE NEWFANE

TO BE READ IN CONJUNCTION WITH COSMEC, INC.
DRAWING NUMBER 3996 REV.1

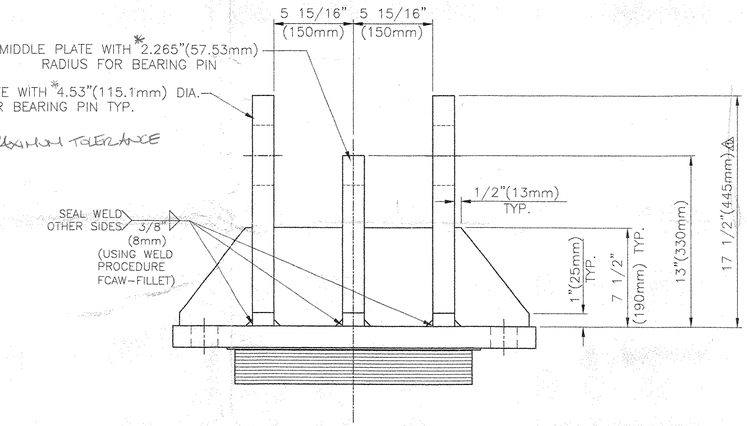
		COSMEC, INC.
COMPLETED BY MCM	DATE 2/11/04	70 SOUTH STREET
		WALPOLE, MA 02081
CHECKED BY	DATE	SK – 3996 Rev.1 –A

STD SK-D16

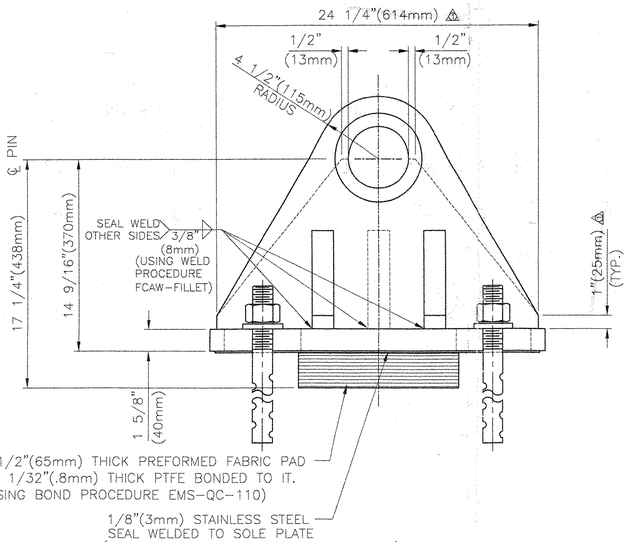


ANCHOR BOLT DETAIL

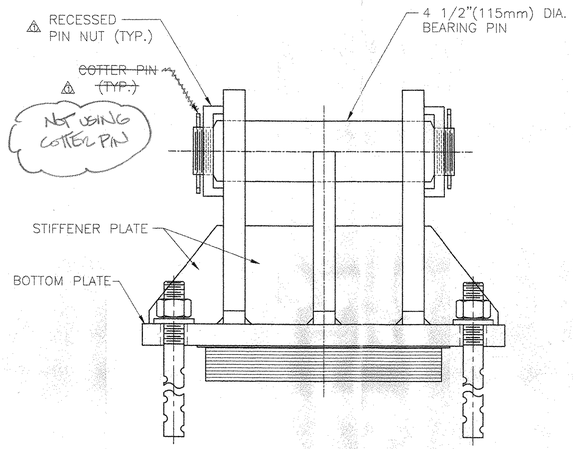
1 1/2"ø(38mm) X 24"(610mm) LONG ASTM A449 TYPE 1 ⚠
ANCHOR BOLT W/ 4"(100mm) OF THREAD AND REMAINDER
SWEDGED ONE HEAVY HEX NUT AND PLATE WASHER.
(ALL GALVANIZED)



FRONT ELEVATION
SHOWN WITHOUT PIN
FOR CLARITY



SIDE ELEVATION



FRONT ELEVATION

BEARING NOTES

1. ALL MATERIALS USED IN THE FABRICATION OF THESE BEARINGS SHALL BE MADE IN THE U.S.A.
2. BEARINGS ARE TO BE SHIPPED AS COMPLETE UNITS, STEEL BANDED, AND SHALL BE WRAPPED TO PROTECT FROM MOISTURE AND DIRT DURING TRANSIT AND STORAGE.
3. LOCATION OF FABRICATION PLANT – 70 SOUTH STREET WALPOLE, MA. 02081
4. COSMEC, INC. REPRESENTATIVE – MR. MATT McANDREWS (508) 668–6600
5. BEARINGS SHALL BE STORED IN A CLEAN, DRY, LEVEL UPRIGHT POSITION.

MATERIALS

STEEL – ASTM A709 GR. 50 (AASHTO M270) PAINTED WITH A 3 COAT PAINT SYSTEM (PAINT SUPPLIED BY CUSTOMER) or metalized
STAINLESS STEEL – ASTM A240 TYPE 304, (20 RMS) FINISH ⚠
PREFORMED FABRIC PAD – AASHTO DIV. II SPEC. 18.4.10.1 & STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 731 ⚠
PTFE – (UNFILLED) AASHTO 14.6.2 (DIVISION I) & AASHTO 18.4.3 (DIVISION II) ⚠
ANCHOR BOLTS, NUTS & WASHERS – SEE DETAIL
PIN– ASTM A668 CLASS F

STRUCTURES COPY

VAOT-STRUCTURES
RECEIVED
OK'D BY OK'D BY
2-12-04
JAN 26 2004
RESUBMIT APPROVED ✓ AS NOTED
BY RFW DATE 2/17/04

STATE OF VERMONT
AGENCY OF TRANSPORTATION
PROJECT NAME: BROOKLINE NEWFANE
PROJECT NUMBER: BHO 1442 (25)

REV.	MATERIALS, NOTES, & BEARING PIN	BY	DATE	CK'D	DATE
1		RFC	1/20/04		

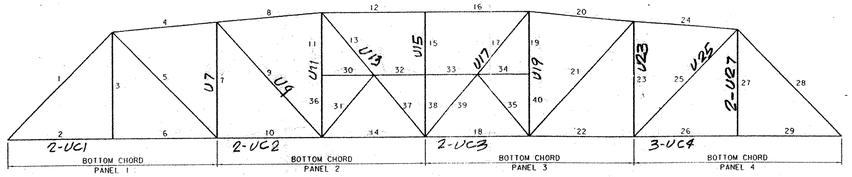
COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

SCALE:	DRAWN BY:	CHECK BY:
3/16"=1"	RFC	NH
	DATE: 11–20–03	DATE: 12–10–03

COSMEC PREFORMED FABRIC PAD BEARINGS

CUSTOMER	S.O. NUMBER	DRAWING NUMBER	REV.
RENAUD BROS. INC.	59931	3996	1

101 BB



UPSTREAM ELEVATION

(LOOKING UPSTREAM FROM ℄ ROADWAY)
NOT TO SCALE

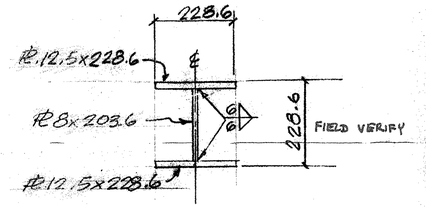
REPAIR REQUIREMENTS

BOTTOM CHORD PANEL 1: REPLACE 2 (OF 4) 152 X 102 X 9.5 ANGLES
BOTTOM CHORD PANEL 2: REPLACE 2 (OF 4) 152 X 102 X 12.7 ANGLES
BOTTOM CHORD PANEL 3: REPLACE 2 (OF 4) 152 X 102 X 12.7 ANGLES
BOTTOM CHORD PANEL 4: REPLACE 3 (OF 4) 152 X 102 X 9.5 ANGLES

MEMBER 7: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 9: REPLACE 228.6 CB - 47.6 KG/M
MEMBER 11-36: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 13-37: REPLACE 228.6 CB - 47.6 KG/M
MEMBER 15-38: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 17-39: REPLACE 228.6 CB - 47.6 KG/M
MEMBER 19-40: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 23: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 25: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 27: REPLACE ROTH 89 X 89 X 7.9 ANGLES

FIELD BOLTS

	NO.	DESCRIPTION	mm	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
@ TOP PANEL POINTS	186	M22 BOLTS	57		FIELD	W/N & W.	
	6		64				
	108		70				
@ BOT. PANEL POINTS	400		57				
	20		64				
@ BOT. CHORDS - PANELS 1 & 4	438		57				
	120		64				
@ BOT. CHORDS - PANELS 2 & 3	592		64				
	192		70				
@ BOT. CHORD SPLICES	120		70				
	120		83				
	120	M22 BOLTS	89		FIELD	W/N & W.	
@ EIST. RAILCLIPS TO NEW MEMBERS.	96	M19 BOLTS	51		FIELD	W/N & W.	
ALL BOLT AASHTO M164M-TYPE 1 - GALV.							



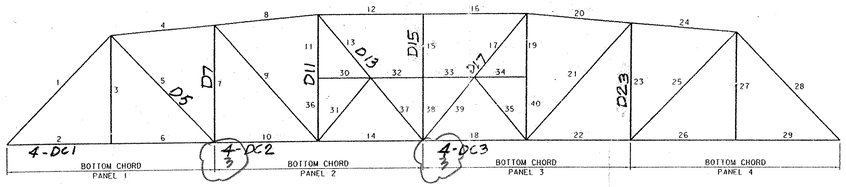
SHOP ASSEMBLY DETAIL (228.6 CB-56.6) REF.
U7-U23-U11-U19-U15-U25
D5-D7-D23-D11-D15

SHOP BILL

JOB NO. 208 DRG. NO. 51

AISM INFO PAGE	LINE	NO.	DESCRIPTION	mm	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		2	L152x102x9.5	11754		DC1		
		2	L152x102x12.7	12179		DC2		
		2	DO	12179		UC3		
		3	L152x102x9.5	11754		DC4		
		2	L89x89x7.9	5785		DC27		
		1	228.6CB-56.6	6820		D7		
		1	DO	6820		U23		
		2	ℝ 8x 203.6	6820	WEB			
		4	ℝ12.5x228.6	6820	FLG.			
		1	228.6CB-47.6	8446		U9		
		1	ℝ 8x 212 199	8446	WEB			
15 9		2	ℝ 9.5x165.8	8446	FLG			
		1	228.6CB-56.6	7353		U11		
		1	DO	7353		U19		
		2	ℝ 8x 203.6	7353	WEB			
		4	ℝ12.5x228.6	7353	FLG.			
		1	228.6CB-47.6	8839		U13		
		1	DO	8839		U17		
		2	ℝ 8 x 212 199	8839				
15 9		4	ℝ 9.5x165.8	8839				
		1	228.6 CB-56.6	7353		U15		
		1	ℝ 8 x203.6	7353	WEB			
		2	ℝ12.5x228.6	7353	FLG			
		1	228.6 CB 56.6	7995		U25		
		1	ℝ 8 x 203.6	7995	WEB			
		2	ℝ 8 x 212	7995				
		1	228.6 CB 56.6	6820		D7		
		1	DO.	6820		D23		
		2	ℝ 8 x 203.6	6820	WEB			
		4	ℝ12.5x228.6	6820	FLG			
		1	228.6CB56.6	7353		D11		
		1	ℝ8x203.6	7353	WEB			
		2	ℝ12.5x228.6	7353	FLG.			
		1	228.6 CB-47.6	8839		D13		
		1	DO	8839		U17		
		2	ℝ 8 x 212 199	8839	WEB			
15 9		4	ℝ9.5x165.8	8839	FLG			
		1	228.6CB56.6	7353		D15		
		1	ℝ 8 x203.6	7353	WEB			
		2	ℝ 12.5 x228.6	7353	FLG.			
						FIELD		

SEE ASSY DETAILS



DOWNSTREAM ELEVATION

(LOOKING DOWNSTREAM FROM ℄ ROADWAY)
NOT TO SCALE

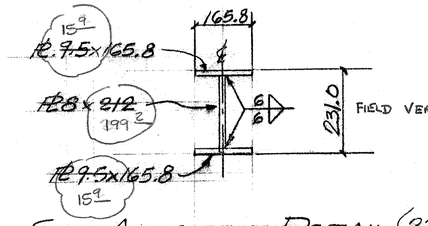
REPAIR REQUIREMENTS

BOTTOM CHORD PANEL 1: REPLACE 4 (OF 4) 152 X 102 X 9.5 ANGLES
BOTTOM CHORD PANEL 2: REPLACE 3 (OF 4) 152 X 102 X 12.7 ANGLES
BOTTOM CHORD PANEL 3: REPLACE 3 (OF 4) 152 X 102 X 12.7 ANGLES

MEMBER 5: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 7: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 11-36: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 13-37: REPLACE 228.6 CB - 47.6 KG/M
MEMBER 15-38: REPLACE 228.6 CB - 56.6 KG/M
MEMBER 17-39: REPLACE 228.6 CB - 47.6 KG/M
MEMBER 23: REPLACE 228.6 CB - 56.6 KG/M

NOTE:

THE 228.6 MM AND 231.0 MM DIMENSIONS MUST BE FIELD VERIFIED PRIOR TO FABRICATION.



SHOP ASSEMBLY DETAIL (228.6CB-47.6) REF.
U9-U13-U17
D13-D17

PAY ITEM 506.60

OUT FOR APPROVAL	11/19/03										
OUT FOR APPROVAL											
ISSUED TO SHOP											
FIELD & OFFICE											
REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER

PROJECT NO. BHD-1442 (25) STATE BRIDGE NO. 19 (3200 LINE)
MATERIAL: AASHTO M270 GR345 ELECTRODES: PER PROC. HOLES: — SHOP BOLTS: —
SURFACE PREP. & PAINT:
PRIME COAT PER SPECIAL PROVISIONS
(STRUCTURES COPY)

DESCRIPTION: TRUSS MEMBERS
JOB: BRIDGE REHAB. BROOKLINE-NEWFANE VT.
CUSTOMER: RENAUD BROTHERS

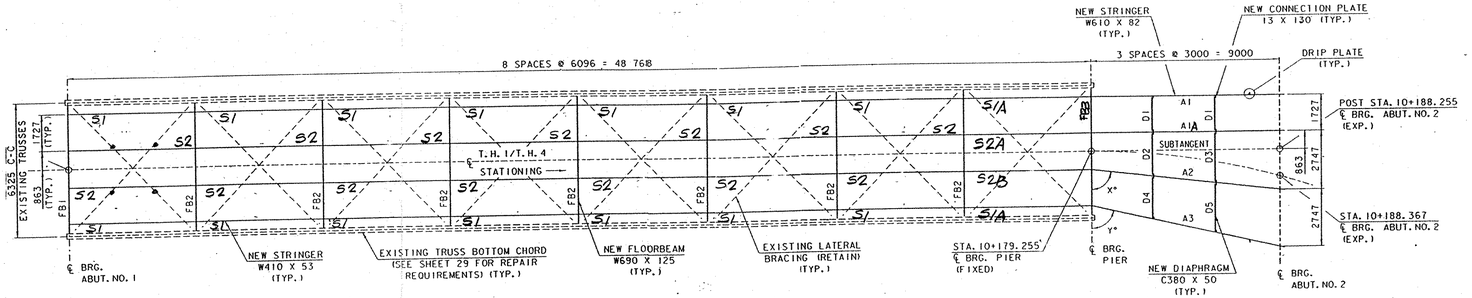
	DRAWN BY	DATE
	JPF	11-03
CHKD BY		
APPROV BY		
Q.A.		

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

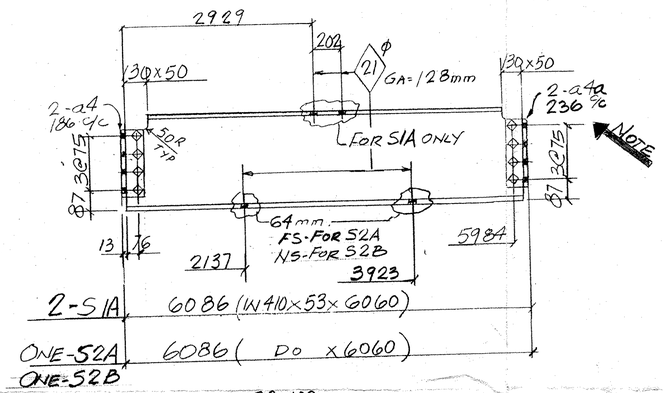
JOB NO. 208 DRG. NO. 51 REV. △

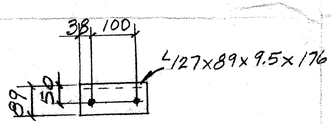
VAOT - STRUCTURES
RECEIVED
CK'D BY mjl 12-9-03 OK'D BY
DEC 0 2 2003
RESUBMIT APPROVED As Noted
BY RDW DATE 12-31-03

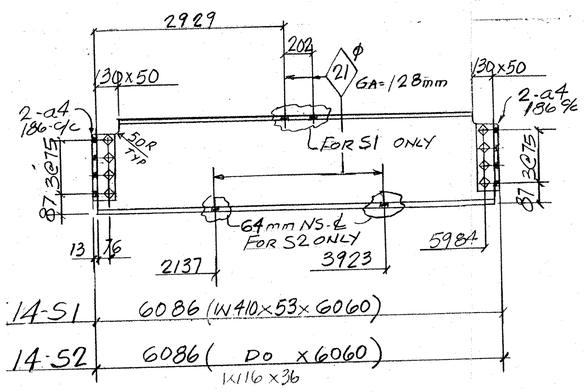
PLANS DRAWN USING METRIC DIMENSIONS

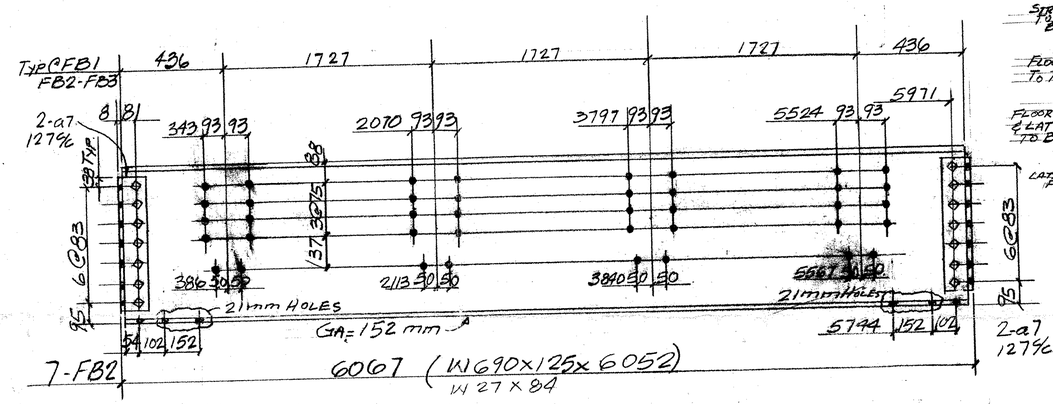


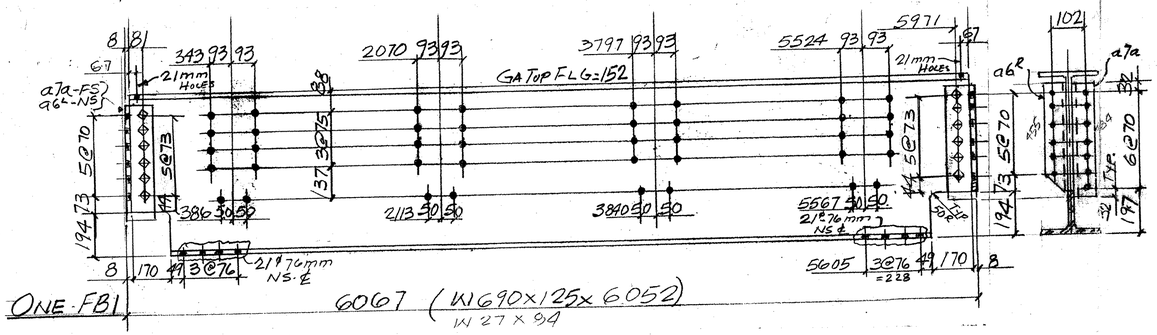
FLOOR FRAMING PLAN

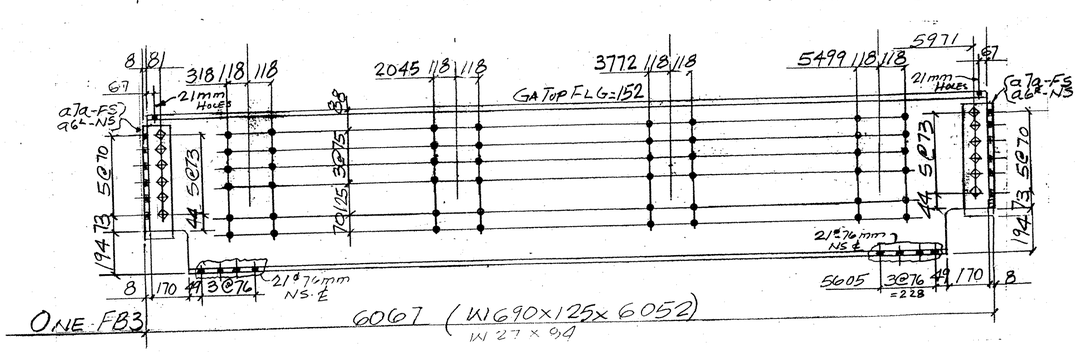












ABM INFO PAGE	LINE	NO.	DESCRIPTION	mm	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		14	W410x53	6060		S1	CVN	
		14	Do	6060		S2	↓	
		2	Do	6060		S1A		
		1	Do	6060		S2A		
		1	Do	6060		S2B	C.V.N.	
		120	L127x127x9.5	301	a4			
		8	L152x152x9.5	301	a9a			
		256	M22 BOLTS	64	SHOP		W/N&WASH-GALV.	
		7	W690x125	6052		FB2	CVN	
		28	L127x89x9.5	574	a7			
		1	W690x125	6052		FB1	CVN	
		2	L127x89x9.5	484	a7a			
		2	Do	455	a6f			
		1	W690x125	6052		FB3	CVN.	
		2	L127x89x9.5	484	a7a			
		2	Do	455	a6f			
		122	M22 BOLTS	64	SHOP		W/N&WASH GALV.	
		60	L127x89x9.5	176		SA1		
		320	M22 BOLTS	64		FIELD	W/N&W-GALV	
		56	Do	57		DO	DO DO	
		44	Do	57		DO	DO DO	
		64	DO	64		DO	DO DO	
		140	DO	70		DO	DO DO	
		52	DO	57		DO	DO DO	
		16	DO	64		DO	DO DO	
		48	DO	76		DO	DO DO	
		12	DO	90		DO	DO DO	
		72	M19 BOLTS	57		FIELD	W/N&W GALV.	
			PAY ITEM 506.50:				S1, S2, S1A, S2A, S2B, FB1, FB2, & FB3	
			PAY ITEM 506.60:				ALL OTHER STEEL	

STRINGER TO FLOOR BMS
FLOOR BMS TO TRUSSES
FLOOR BMS. & LAT. GUSS TO BOT. CHORD TRUSSES
LAT. GUSS TO FLOOR BMS

ALL BOLTS (SHOP & FIELD) TO BE AASHTO-M164-TYPE1 GALV.

PLANS DRAWN USING METRIC DIMENSIONS

VAOT RECEIVED
CK'D BY G.Roy 2.18.04 CK'D BY 2-19-04
FEB 12 2004
RESUBMIT ____ APPROVED AS NOTED
BY RRW DATE 2-24-04

~ STRUCTURES COPY ~

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.
	OUT FOR APPROVAL	1-2-04				
	OUT FOR APPROVAL Final	2-6-04				
	ISSUED TO SHOP					
	FIELD & OFFICE					

NO.	DIA.	LGT	TYPE	WASHER

PROJECT NO. BHO-1442 (25) STATE BRIDGE NO. 19 (BROOKLINE)
MATERIAL: AASHTO M270 GR 345 ELECTRODES: — HOLES: 24mm D.N. SHOP BOLTS: M22
SURFACE PREP. & PAINT: PREP: SSPC-SP.10 AASHTO-M164-GALV
3-COAT SYSTEM C
PRIMER - WASSER - MC ZINC
INTERMEDIATE - WASSER - MC FERROX B
TOP COAT - WASSER - MC LUSTER - GREEN FIELD CHIP #14082

DESCRIPTION: FLOOR BEAMS & STRINGERS

JOB: BRIDGE REHAB. BROOKLINE-NEWFANE VT.

CUSTOMER: RENAUD BROTHERS

	DRAWN BY	DATE
	JPF	12-03
	CHKD BY	
	EJ	
	APPROV BY	
	Q.A.	

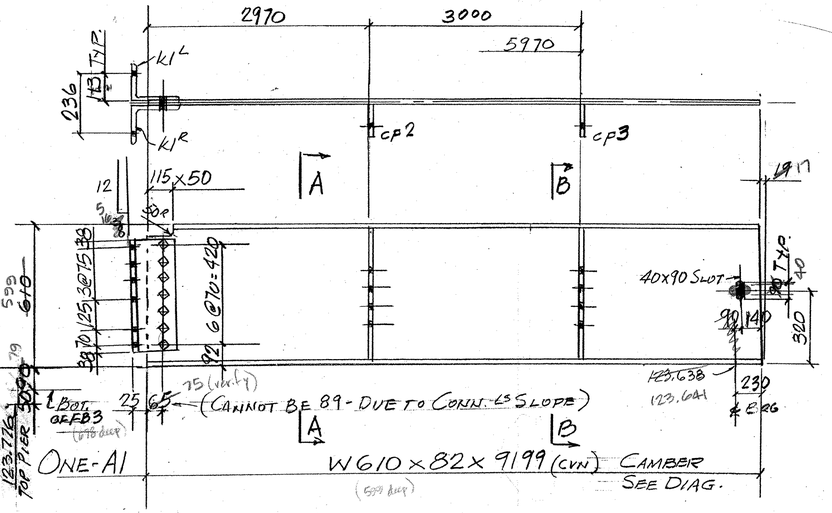
CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

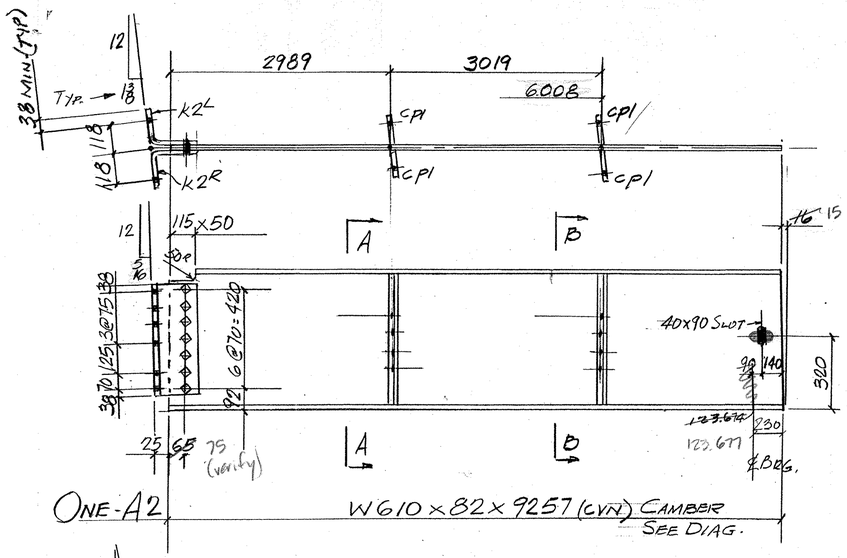
JOB NO. 208 DRG. NO. S2 REV. △

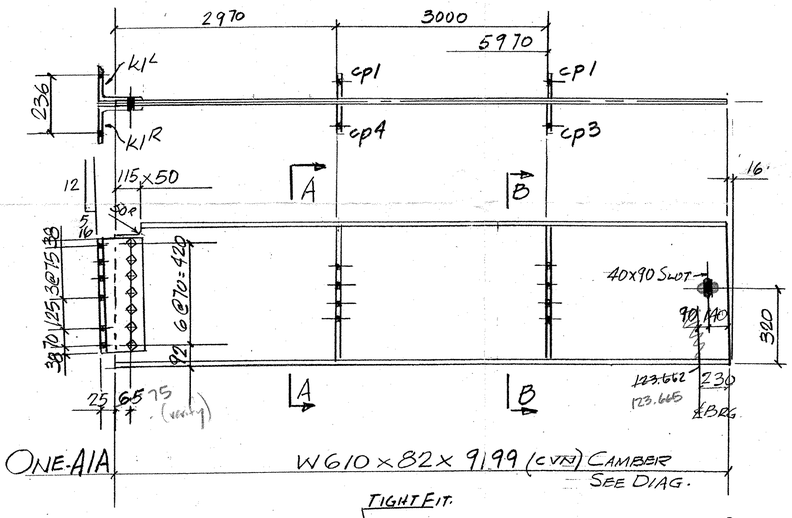
103 55

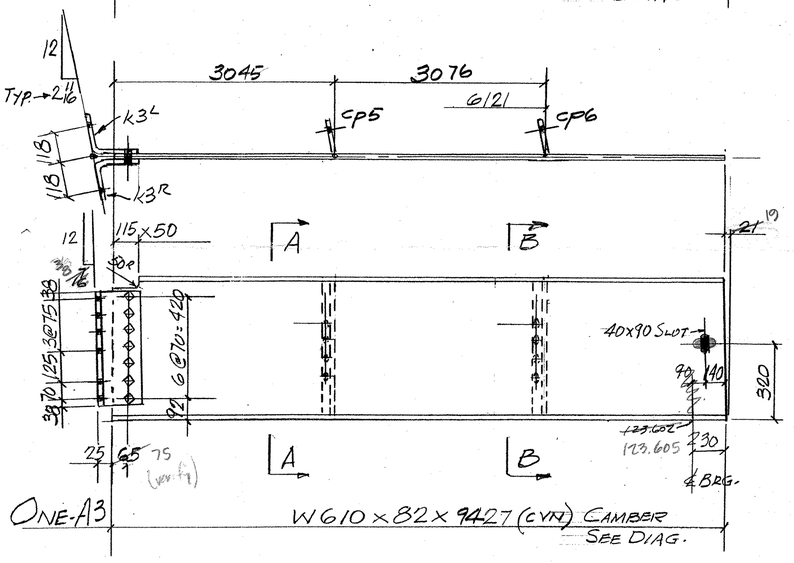
USED FOR ALL BMS.

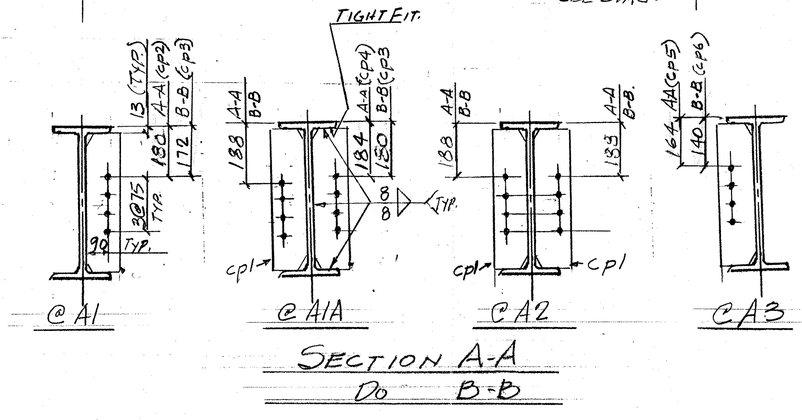
123.905
123.776 TOP PIER

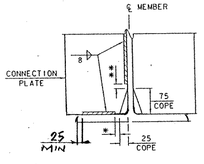








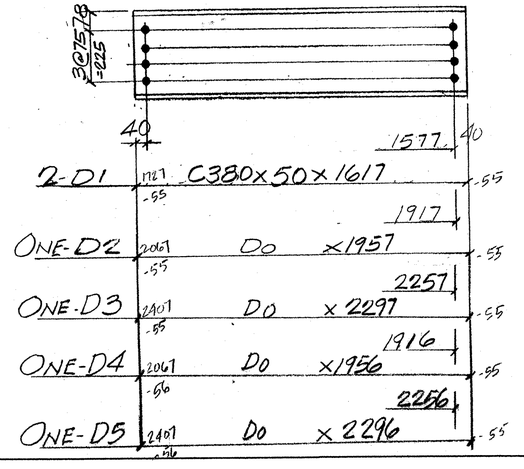




WELD TERMINATION AND COPING DETAIL FOR STEEL MEMBERS

* NO WELD FOR 6 MIN., 12 MAX. (EXCEPT MUST MAINTAIN 25 MIN. FROM EDGE OF FLANGE)

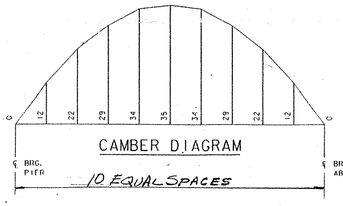
** 12 ± 6 FOR CONNECTION PLATE TO WEB WELD ONLY.



ABM INFO PAGE	ABM INFO LINE	NO.	DESCRIPTION	MM	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		1	W610 X82	9199		A1	C=35 (CVN)	
		2	L152x152x9.5	496	K1			
		1	W610 x 82	9199		A1A	C=35 (CVN)	
		2	L152x152x9.5	496	K1			
		1	W610 x 82	9257		A2	C=35 (CVN	
		2	PL 9.5 x 300	496	K2		BEND	
		1	W610 x 82	9427		A3	C=35 (CVN)	
		2	PL 9.5 x 300	496	K3		BEND	
		6	PL 13 x 130	574	CP1			
		1		574	CP2			
		2		574	CP3			
		1		574	CP4			
		1		574	CP5			
		1		574	CP6			
		28	M22 BOLTS	64	SHOP		W/NUT-GALV	
		48	M22 BOLTS	57		FIELD	W/NUT-GALV	
		4	PL 6 x 250	620		EPI	CABOT END OF STRINGERS	
			ALL BOLTS (SHOP & FIELD) TO BE AASHTO M164-TYPE 1 GALV					
		2	C380x50	1617		D1		
		1	Do	1957		D2		
		1	Do	2297		D3		
		1	Do	1956		D4		
		1	Do	2296		D5		
			PAY ITEM	506.50: A1, A1A, A2, & A3				
			PAY ITEM 506.60: ALL OTHER STEEL					

PLANS DRAWN USING METRIC DIMENSIONS

RECEIVED
FEB 12 2004
CK'D BY G.R.M. CK'D BY mgl 2-18-04 2-24-04
RESUBMIT ____ APPROVED AS NOTED
BY RDM DATE 2-24-04



REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	12-04									
	OUT FOR APPROVAL final	2-6-04									
	ISSUED TO SHOP										
	FIELD & OFFICE										

PROJECT NO. BHO-1442(25) STATE BRIDGE NO. 19 (BROOKLINE)
MATERIAL AASHTO M270-Gr 345 ELECTRODES: PER PROC. HOLES: 24mm U.N. SHOP BOLTS M22 AASHTO M164-GALV
SURFACE PREP. & PAINT: PREP: SSPC-SP.10
3-COAT SYSTEM C
PRIMER - WASSER - MC ZINC
INTERMEDIATE - WASSER - MC FERROX B
TOP COAT - WASSER - MC LUSTER-GARNET'ED CHIP PROOF

DESCRIPTION: STRINGERS-APPROACH SPAN
JOB: BRIDGE REHAB. BROOKLINE-NEWFANE, VT.
CUSTOMER: RENAUD BROTHERS

	DRAWN BY	DATE
	JPF	12-03
CHKD BY		
APPROV BY		
Q.A.		

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

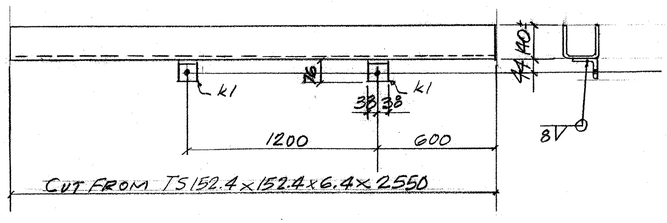
JOB NO. 208 DRG. NO. 53 REV. △

104 55

ABM INFO		SHOP BILL					JOB NO. 208	DRG. NO. 54
PAGE	LINE	NO.	DESCRIPTION	mm	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		1	TS152A×152.4×6A	2550		D1	ASTM A500 OR A501	
		2	L 102×76×9.5	76	K1			
		2	M20 EXP BOLTS GALV.	230		FIELD W/ NEW.		
		PAY ITEM 506.60						

VAOT- STRUCTURES
RECEIVED
OK'D BY G Ray 2.12.04 OK'D BY mgk 2-12-04
JAN 29 2004
RESUBMIT ____ APPROVED X
BY DATE

PLANS DRAWN USING
METRIC
DIMENSIONS



DOWNSPOUT - D1 - ONE REQ'D.

OUT FOR APPROVAL	1-26-04								
OUT FOR APPROVAL									
ISSUED TO SHOP									
FIELD & OFFICE									
REV. REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER

PROJECT NO. BHO-1442(25) STATE BRIDGE NO. 19 (BROOKLINE)
MATERIAL: AASHTO M270-GR50 ELECTRODES: PER PROC. HOLES: 23Ø SHOP BOLTS: —
SURFACE PREP. & PAINT:
GALVANIZED AFTER FAB (ASTM-A123)

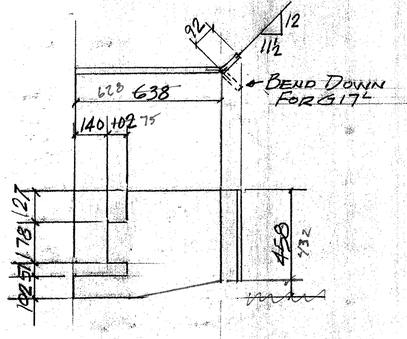
DESCRIPTION: DOWNSPOUT-ABUT. 1
JOB: BRIDGE REHAB. BROOKLINE-NEWFANE, VT.
CUSTOMER: RENAUD BROTHERS

DRAWN BY	DATE
JPF	1-04
CHKD BY	
EJ	
APPROV BY	
Q.A.	

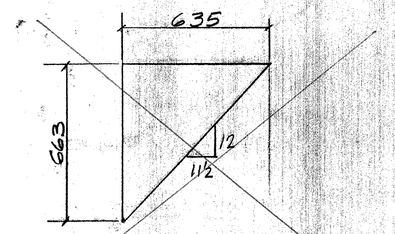
CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

JOB NO.	DRG. NO.
208	54
	REV. △

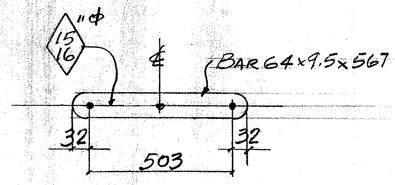
105 55



G17R - 2 REQ'D - AS SHOWN
G17L - 2 REQ'D - OPPHAND (BEND DOWN)

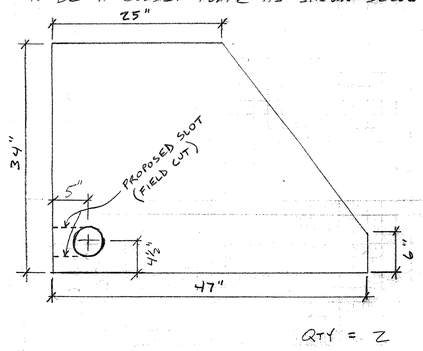


P1 - 4 REQ'D.



Y1 - 22 REQ'D.

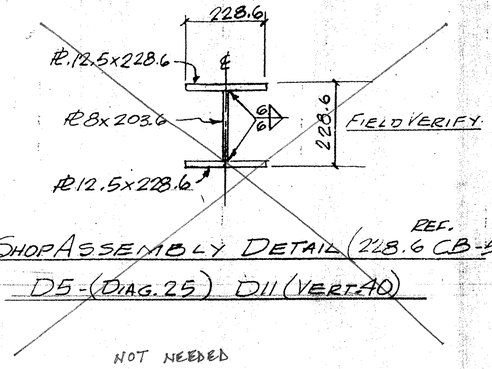
THIS PL WAS LABELED TRIANGLE IN PARTS LIST DATED 4-9-04. THIS WAS LATER DISCOVERED TO BE A GUSSET PLATE AS SHOWN BELOW



QTY = 2

G23 (20) - 2 - REQ'D

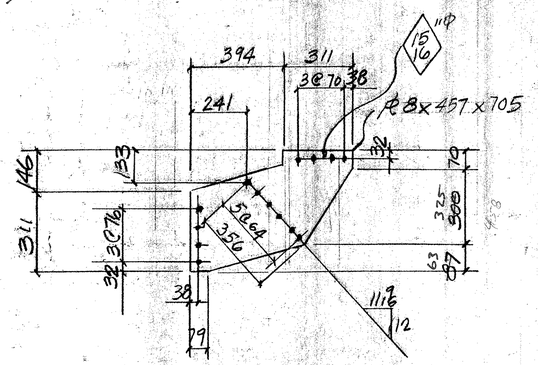
- SLOT FOR INSTALLATION AROUND PIN TO BE DETERMINED IN FIELD BY CONTRACTOR



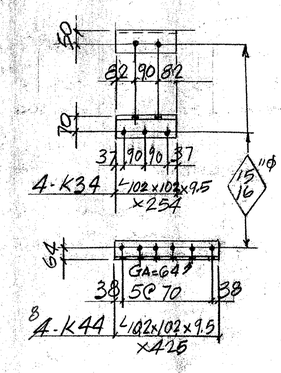
SHOP ASSEMBLY DETAIL (REF. 228.6 CB-56.6)

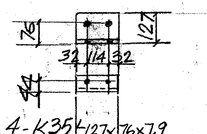
D5 - (DIAG. 25) D11 (VERT. 40)

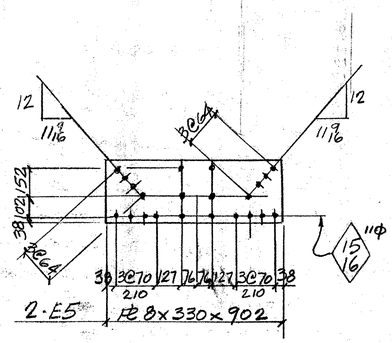
NOT NEEDED
USE MEMBERS MEANT FOR UPSTREAM SIDE

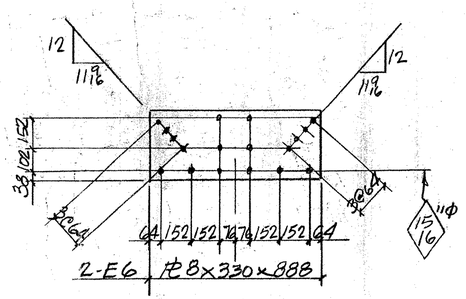


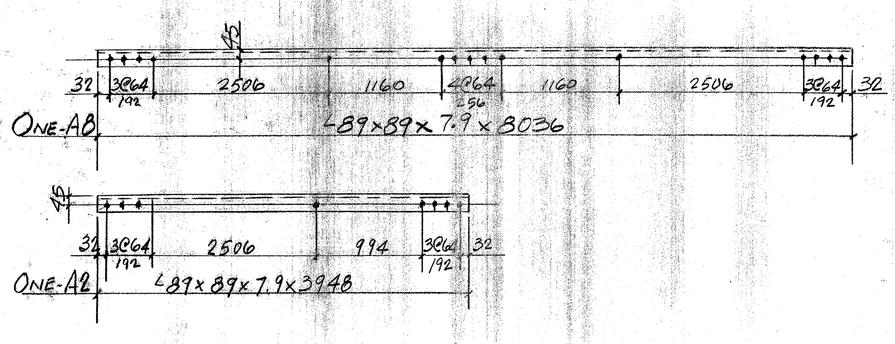
E4 - 4 REQ'D.











ABM INFO		SHOP BILL					JOB NO. 208	DRG. NO. 55
PAGE	LINE	NO.	DESCRIPTION	mm	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		2	L 152 x 102 x 9.5	11,784		VC1		
		2	L 152 x 102 x 12.7	12,179		VC2		
		2	DO	12,179		VC3		
		1	L 152 x 102 x 9.5	11,784		VC4		
		1	L 152 x 102 x 12.7	12,179		DC2		
		1	DO	12,179		DC3		
		4	L 152 x 102 x 9.5	11,754		DC4		
		1	228.6 CB 56.6	7995		D5	SEE DET	—
		1	PL 8 x 203.6	7995	WEB			
		2	PL 12.5 x 228.6	7995	FLG.			
		1	228.6 CB 56.6	7353		D11		—
		1	PL 8 x 203.6	7353				
		2	PL 12.5 x 228.6	7353				
		2	PL x 95 x 458	730		G17R	SEE DET.	
		2	" DO	730		G17L	SEE DET	
		4	L 102 x 102 x 9.5	254		K34	SEE DET.	
		4	L 127 x 76 x 7.9	178		K35	SEE DET.	
		4	PL 11 x 635	663		P1	TRIANGLE SEE DET.	
		22	BAR 64 x 9.5	567		Y1	LATTICE SEE DET.	
		~~48~~	L 102 x 102 x 9.5	426		K44	SEE DET.	
		4	PL 8 x 457	705		E4	SEE DET.	
		1	L 89 x 89 x 7.9	8036		A2	SEE DET	
		1	DO	3948		A8	SEE DET	
		2	PL 8 x 330	902		E5	SEE DET	
		2	PL 8 x 330	888		E6	SEE DET.	

PAY ITEM 506.60

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	4-26-04									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

PROJECT NO. BHO-1442(25) STATE PROJECT NO. 19 (BROOKLINE)
MATERIAL: AASHTO M270 GR 36 ELECTRODES: PER PROC HOLES: 13/16" ϕ V.N. SHOP BOLTS: —
SURFACE PREP. & PAINT:
PRIME COAT PER SPECIAL PROV.

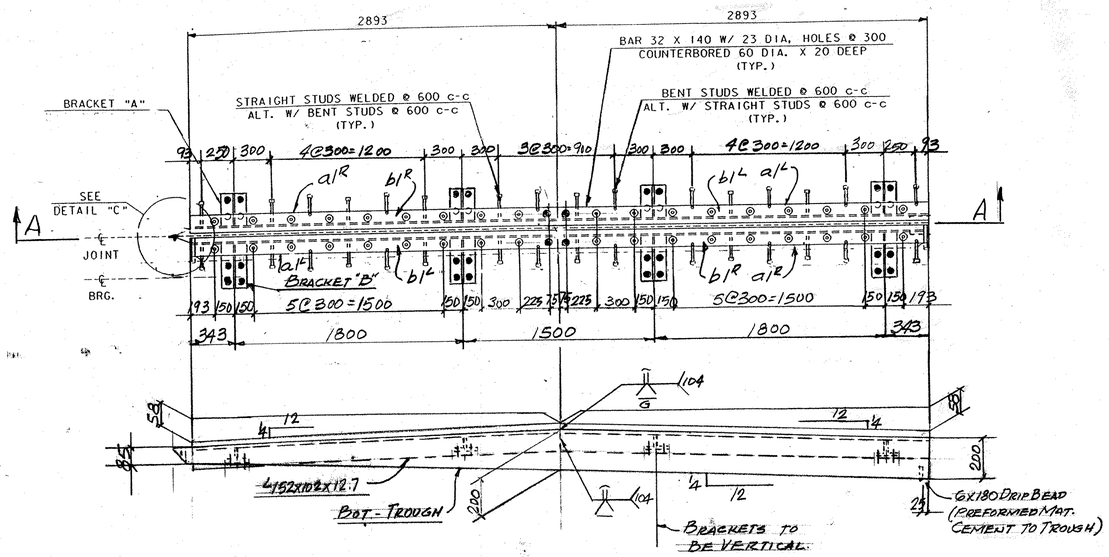
DESCRIPTION: TRUSS MEMBERS (EXTRA) DRAWN BY: JPF DATE: 4-04
JOB: BRIDGE REHAB. BROOKLINE - NEWFANE VT. CHKD BY:
APPROV BY:
Q.A.
CUSTOMER: RENAUD BROTHERS

PLANS DRAWN USING METRIC DIMENSIONS

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

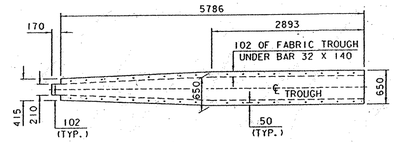
JOB NO. 208 DRG. NO. 55 REV. 1

10655

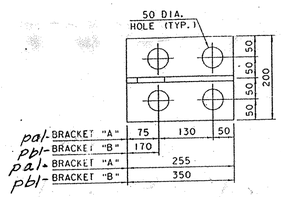


A-A

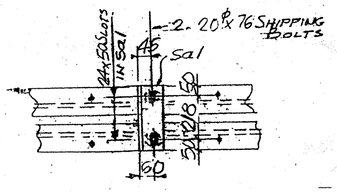
EJ1 - ONE REQ'D (@ ABUT. 1)



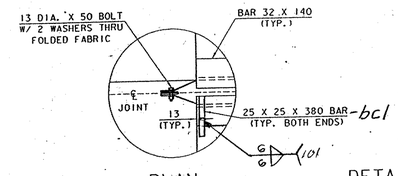
FABRIC TROUGH PLAN VIEW



BRACKET PLAN

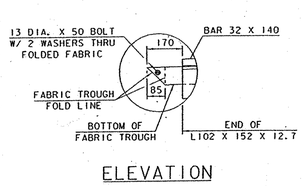


SHIPPING DEVICE SPACED 1500 o.c. MAX (4 REQ'D)

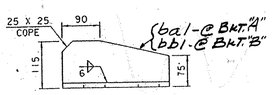


PLAN

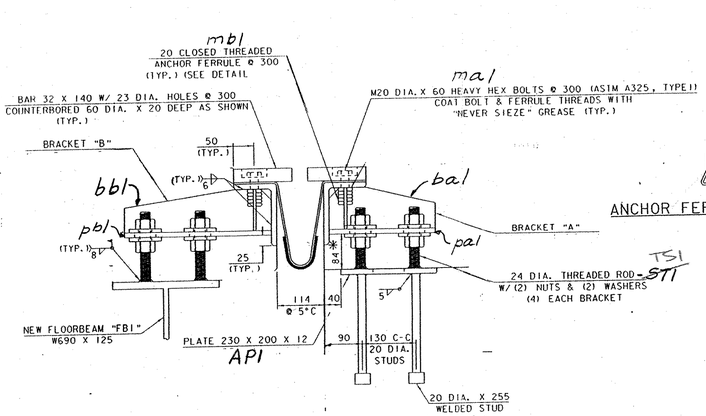
DETAIL "C"



ELEVATION

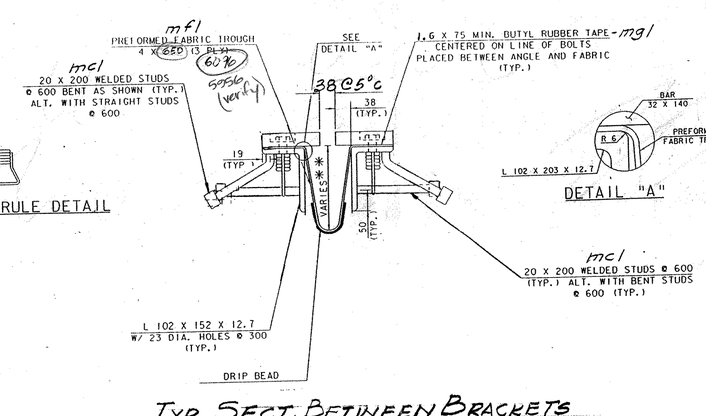


BRACKET ELEVATION

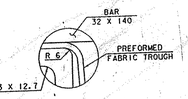


TYP. SECT. @ BRACKETS.

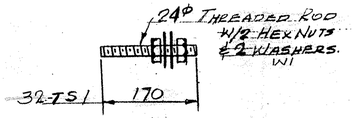
ANCHOR FERRULE DETAIL



TYP. SECT. BETWEEN BRACKETS



DETAIL "A"



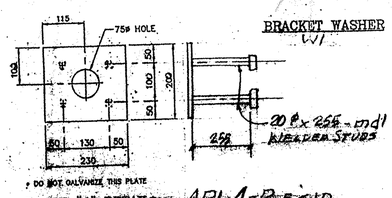
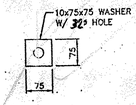


PLATE "A" DETAIL - API-4 REQ'D



BRACKET WASHER W1

ABM INFO PAGE	LINE	NO.	DESCRIPTION	mm	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		1	EXP. JNT. ASS'Y	5956		EJ1		—
		4	L152x102x12.7	2893	aa1			
		4	BAR 32x140	2893	bl1			
		4	R12x200	255	pa1			
		4	Do	350	pb1			
		4	R12x105	255	ba1			
		4	Do	350	bb1			
		2	BAR 25x25	380	bc1			
		40	M20 H.S. BOLTS	60	ma1			
		40	20ϕ CLOSED THREADED ANC. FERRULES		mb1			
		32	20" ANC STUDS	200	mc1			
		1	PREFORMED FABRIC 4 PLY x 220	6096	mf1	60% (verify)		37.4 PER SUBJECT 203.02
		2	BUTYL RUBBER TAPE 1.6x75	6096	mg1	5786		AASHTO M198-TYPE B
		1	M18 BOLT	50	SHOP			W1 & 2 WASH
	4		R12x200	230		API		
		16	20ϕ ANC. STUDS	255	md1			
	32		24ϕ THREADED ROD	170		TS1		
		32	24ϕ HEX NUTS	SHOP				
		32	R10x75	75	W1			
		4	L102x102x10	318	SA1			
		8	20ϕ BOLTS	76	SHOP			
			PAY ITEM 516.10					

SHOP BILL — JOB NO. 208 — DRG. NO. J1

VAST-STRUCTURES
RECEIVED
CK'D BY E. Roy 2-12-04 CK'D BY mgl 2-12-04
JAN 29 2004
RESUBMIT ____ APPROVED AS NOTED
BY DATE

PLANS DRAWN USING METRIC DIMENSIONS

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	1-26-04									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

PROJECT NO. BHO-1442(25) STATE BRIDGE NO. 19 (BROOKLINE)
MATERIAL AASHTO M270-Gr.350 ELECTRODES: PER PROC. - HOLES: AS NOTED. SHOP BOLTS: M20
SURFACE PREP. & PAINT: (COATING: AASHTO M298, CLASS 50, TYPE I) AASHTO M-160 GALV.
GALVANIZE AFTER FAB (ASTM-A123)

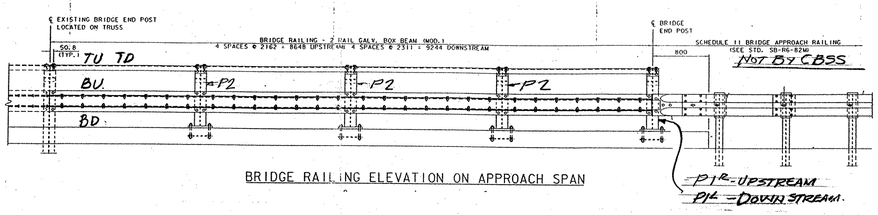
DESCRIPTION: EXP. JOINT - ABUT. 1
JOB: BRIDGE REHAB. BROOKLINE-NEWFANE, VT.
CUSTOMER: RENAUD BROTHERS

	DRAWN BY	DATE
	JPF	1-04
CHKD BY	EJ	
APPROV BY		
Q.A.		

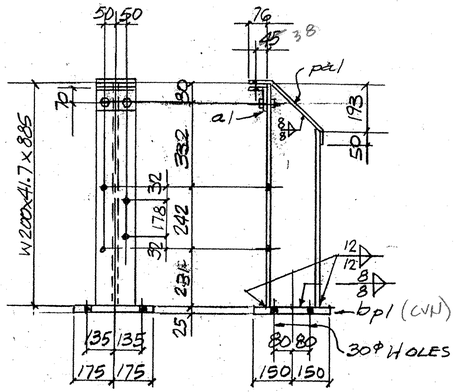
CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

JOB NO. 208 DRG. NO. J1 REV. △

107 BJ



BRIDGE RAILING ELEVATION ON APPROACH SPAN



P1R-ONE REQ'D - AS SHOWN
P1L-ONE REQ'D - OPP HAND.

NO PAINT

TU	2159	2162	2162	2245						
TD	2308	2311	2311	2398						

47 50 50 TYP. 100 33
108 57 64

ONE-TU 8648 L102x76x9.5 x 8728 -AS SHOWN
ONE-TD 9244 -3 / +3 Do x 9824 -OPP.HAND - ROLLED
ARC LENGTH

BU	2159	2162	2162	2149						
BD	2308	2311	2311	2898						

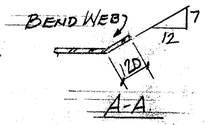
47 50 50 a1@BU a2@BD 50 50 50 50 57
3 29 27

BU	178	6@300=1800	362	6@300=1800	362	6@300=1800	362	6@300=1800	168	
BD	101	7@300=2100	212	7@300=2100	212	7@300=2100	212	7@300=2100	91	

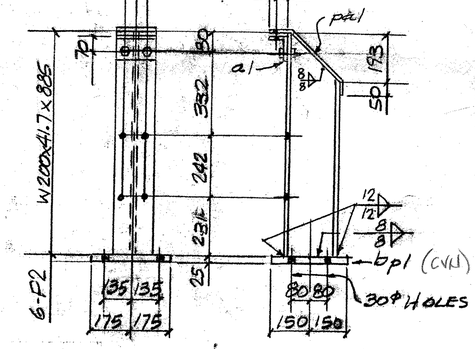
ONE-BU 8648 MC150x24.3x8682 +120 = 8752
ONE-BD 9244 Do x 9228 +120 = 9348 - ROLLED
ARC LENGTH

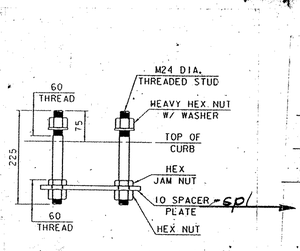
R=18797mm
545
BACK OF MC150 @BD
BACK OF 76mm LEG @TD

ROLLING DETAIL @ TD & BD ONLY.

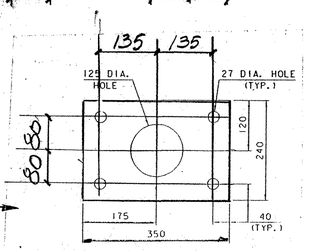


TYP SECT.

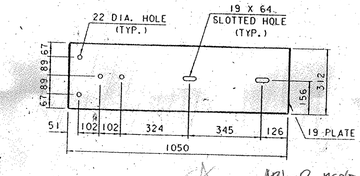




ANCHORAGE ASSEMBLY
AB1-8-REQ'D.



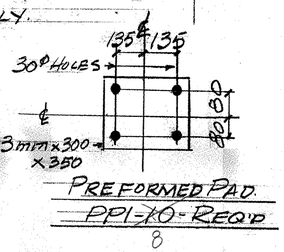
SPACER PLATE-spl



ANCHORAGE PLATE
API-2-REQ'D ℄ ABUT. NO. 1

API-2 REQ'D ℄ ABUT NO. 2

*ANCHORAGE ASSEMBLY, ANCHORAGE PLATE
** ALL BRIDGE RAIL COMPONENTS EXCEPT ANCHORAGE ASSEMBLY, ANCHORAGE PLATE



PREFORMED PAD.
API-10-REQ'D

PAINT SYSTEM

Coat	Product System		Dry Film Thickness (in MILS) MIN.	MAX.	Minimum Time Between Coats (Hours) @ 75° F	Minimum Application Temperatures °F (ambient)
P = Primer I = Intermediate T = Top						
9.) WASSER HIGH TECH COATINGS	*(moisture cure system)*					
	P	MC-Zinc zinc rich urethane (organic)	3.0	6.0	4	35
	I	MC-Ferrox B urethane	3.0	6.0	6	35
	T	MC-Ferrox A aliphatic urethane	3.0	10.0	-	35

PLANS DRAWN USING METRIC DIMENSIONS

ABM INFO

SHOP BILL

JOB NO. 208 DRG. NO. R1

PAGE	LINE	NO.	DESCRIPTION	MARK	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		1	L102x76x9.5	8728		TU		
		1	Do	9824		TD	ROLLED	
		1	MC150x24.3	8752		BU		
		1	Do	9348		BD	ROLLED	
		2	L102x76x7.9		aU			
		2	Do		aD		ROLLED	
		120	M20 BOLTS	G2	SHOP		W/1 ℄ 1 WASH. & 1 BEV WASH	
		1	W200x41.7	B85		P1R	A345-CVN	
		1	Do	885		P1L	Do	
		6	Do	885		P2	Do	
		8	PL25x300	350	spl		CVN	
		8	PL9.5x166	427	pal		BEND	
		8	L102x76x9.5	166	a1			
		16	M20 BOLTS	G4	SHOP		W/1 ℄ 2 WASH	
		36	M20 BOLTS	G4		FIELD	W/1 ℄ 2 W/WASH.	
		18	Do	70		DO	Do	
	4	2	PL19x812	1050		API		
		8	ANC A354 Y			AB1		—
		8	PL10x240	350	spl			
		32	M24 THREADED STUDS	225			ASTM F568M-4.6 S1 ASTM A563 M-N	
		64	M24 H. HEX NUTS					
		32	M24 JAM NUTS				Do	
		32	M24 H. WASH.				ASTM F436M	
		8	PREFORMED PAD 3mm x 300	350		PP1	3M 05PSE 7B1.0-7B1.0-02	

HARDWARE FOR ANCHORAGE ASSEMBLY AND ANCHORAGE PLATE TO BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M232N/M232

ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 1.6mm RADIUS AND BE FREE OF BURRS

VAOT - STRUCTURES
RECEIVED
CK'D BY G.K. CK'D BY mk
2.10.04
JAN 29 2004
RESUBMIT ____ APPROVED E. NOTED
BY ____ DATE ____

PAY ITEM 523.81

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	1-26-04									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

STRUCTURES COPY

PROJECT NO. BHO-1442(25) STATE BRIDGE NO. 19 (BROOKLINE)
MATERIAL ASTM A709-GR 250W ELECTRODES: PER PROC. HOLES: 22 ϕ SHOP BOLTS: M20
SURFACE PREP. & PAINT: AASHTO-M-164 COATINGS: AASHTO M232, CLASS 50, TYPE I
FOR ANCHORAGE ASSEMBLY
* GALVANIZED AFTER FAB (ASTM-A123)
** PAINTED GREEN - COLOR CHIP 14062 PER SECT. 513

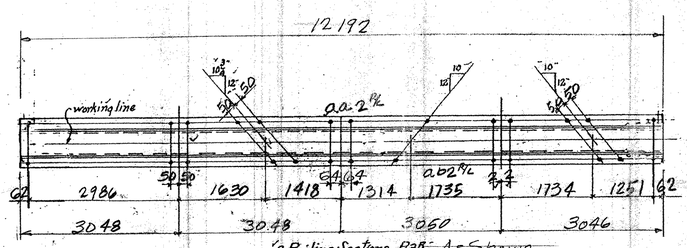
DESCRIPTION: RAILS @ APPROACH SLAB
JOB: BRIDGE REHAB. BROOKLINE NEWFANE, VT.
CUSTOMER: RENAUD BROTHERS

	DRAWN BY	DATE
	JPF	1-04
	CHK'D BY	
	EJ	
	APPROV BY	
	Q.A.	

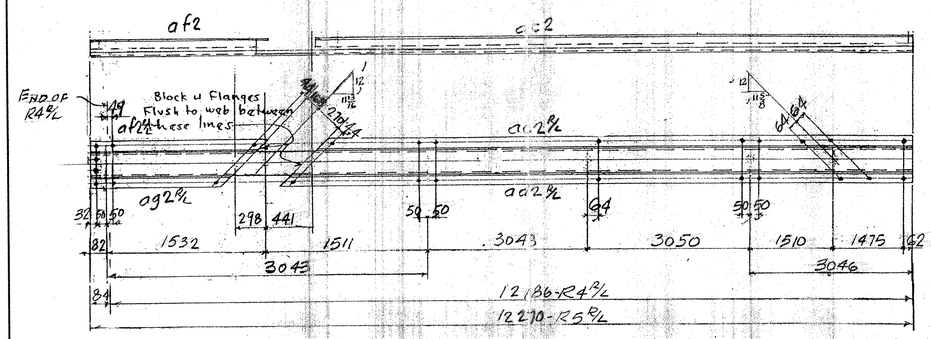
CASCO BAY STEEL STRUCTURES, INC.
75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179

JOB NO.	DRG. NO.
208	R1
	REV. △

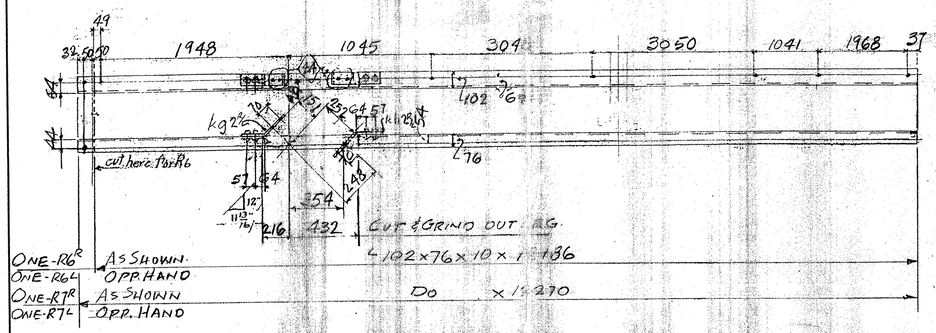
108 BR



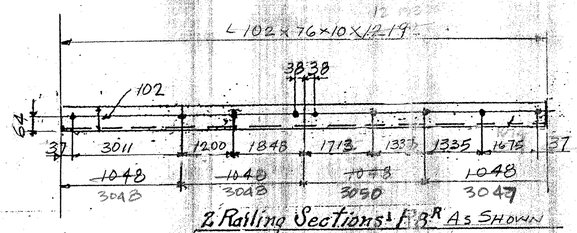
2 Railing Sections R3R - As Shown
2 " " R3L - Opp Hand



ONE - RAILING SECTION - R4R - AS SHOWN & NOTED			
ONE -	DO	DO	- R4L - OPP. HAND & NOTED.
ONE -	DO	DO	- R5R - AS SHOWN & NOTED.
ONE -	DO	DO	- R5L - OPP. HAND & NOTED.



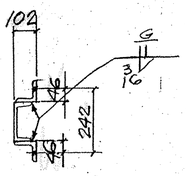
ONE - R6R - AS SHOWN
ONE - R6L - OPP. HAND
ONE - R7R - AS SHOWN
ONE - R7L - OPP. HAND

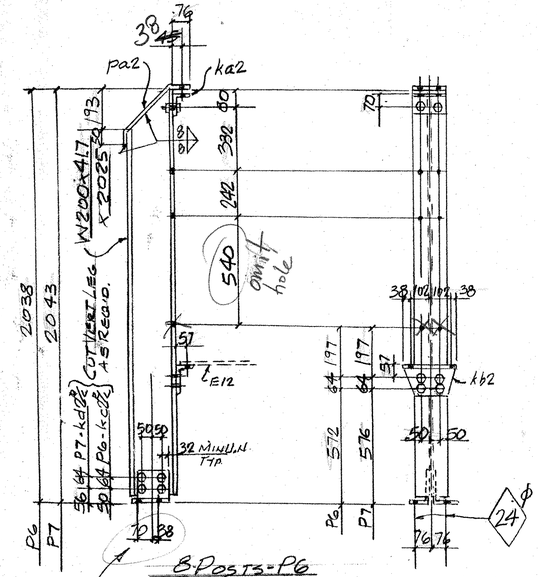


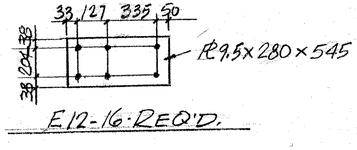
2 Railing Sections: R3R As Shown
2 " " R3L Opp. Hand

FOR LOCATING RAIL ITEMS SEE ELEVATION D-D ON
REFERENCE SHEET 7 OF 11
SHEET 74 OF 78

PLANS DRAWN USING METRIC DIMENSIONS

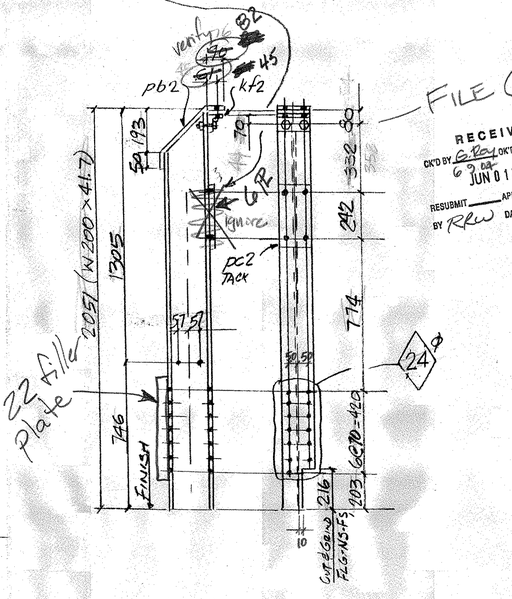






E12 - 16 - REQ'D.

ADJUSTMENTS MADE DUE TO DIFF. DEPTHS OF RAIL POSTS.



2 - POSTS - P8R - AS SHOWN
2 - DO - P8L - OPP. HAND

FILE COPY

RECEIVED
OK'D BY G Roy OK'D BY
6 2 04
JUN 01 2004
RESUBMIT APPROVED AS NOTED
BY RLW DATE 6-11-04

ABM INFO PAGE	LINE	NO.	DESCRIPTION	mm	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		8	W200x41.7	2025		P6		
		8	DO	2025		P7		
		16	R9.5x166	427	pa2			
		16	L102x76x9.5	166	ka2			
		16	L152x90x9.5	279	kb2			
		16	L152x152x9.5	184	kc2			
		16	DO	184	kd2			
		96	M19 BOLTS	64	SHOP		W/ NUT & WASH	
		64	DO	70			DO	
		2	W200x41.7	2051		P8R		
		2	DO	2051		P8L		
		4	R9.5x166	441	qb2			
		4	R9.5x166	300	pc2			
		4	L102x90x9.5	166	kf2			
		8	M19 BOLTS	64	SHOP		W/ NUT & WASH	
		16	R9.5x280	545		E12		
		2	C152x12.2	12192		R3R		
		2	DO	12192		R3L		
		4	L102x76x7.9	12192	aa2			
		4	DO	12192	ab2			
		1	C152x12.2	12186		R4R		
		1	DO	12186		R4L		
		1	DO	12270		R5R		
		1	DO	12270		R5L		
		4	L102x76x7.9	10160±	ac2½			
		4	DO	10516±	ad2½			
		4	DO	1625±	ap2½			
		4	DO	1295±	aq2½			
		1	L102x76x10	12186		R6R		
		1	DO	12186		R6L		
		1	DO	12270		R7R		
		1	DO	12270		R7L		
		4	R9.5x86	330±	kg2½		BEND	
		4	DO	330±	kh2½		DO	
		16	M19 BOLTS	57	SHOP		W/ NUT & WASH	
		2	L102x76x10	12192		R8R		
		2	DO	12192		R8L		
		160	M19 BOLTS	57		FIELD	W/ NUT & 2 WASH.	
		144	DO	70		DO		
		16	DO	83		DO		

506.60
PAY ITEM 525.31 (EXTRA)

REV.	REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER
	OUT FOR APPROVAL	5-21-04									
	OUT FOR APPROVAL										
	ISSUED TO SHOP										
	FIELD & OFFICE										

PROJECT NO. BHO-1442(25) STATE PROJECT NO. 19(BROOKLINE)
MATERIAL ASTM #709-GR250 ELECTRODES: PER PROC HOLES: 22ø SHOP BOLTS: M19
AASHTO-M-164-GALV.
SURFACE PREP. & PAINT:
3 COAT PAINT SYSTEM PER SECTION 513
FINAL COAT - GREEN - COLOR CHIP #14062

DESCRIPTION: ~~BRIDGE RAIL~~ Struc. Stl.
JOB: BRIDGE REHAB. BROOKLINE - NEWFANE, VT.
CUSTOMER: RENAUD BROTHERS.

DRAWN BY	DATE
JPF	5-04
CHK'D BY	
APPROV BY	
Q.A.	
JOB NO.	DRG. NO.
208	R2
REV.	△

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