State of New Jersey

NEW JERSEY DEPARTMENT OF TRANSPORTATION
1035 PARKWAY AVENUE
P.O. Box 600
TRENTON, NEW JERSEY 08625-0600

BRIDGE RE-EVALUATION SURVEY REPORT

STRUCTURE NO. 4XXX-XXX
I-78 WESTBOUND OVER
BLOOMSBURY ROAD (CO. RT. 632)
& MUSCONETCONG RIVER
FRANKLIN TOWNSHIP, WARREN COUNTY
BLOOMSBURY BOROUGH, HUNTERDON COUNTY

SAMPLE FORMAT B REPORT
(FOR GUIDANCE ONLY)

15TH CYCLE

OCTOBER 26, 2006

NOTE: This Bridge Re-evaluation Report shall be filed immediately after the 14TH Cycle Inspection.

Prepared By:

ABC Consultant
(Consultant Name & Address)

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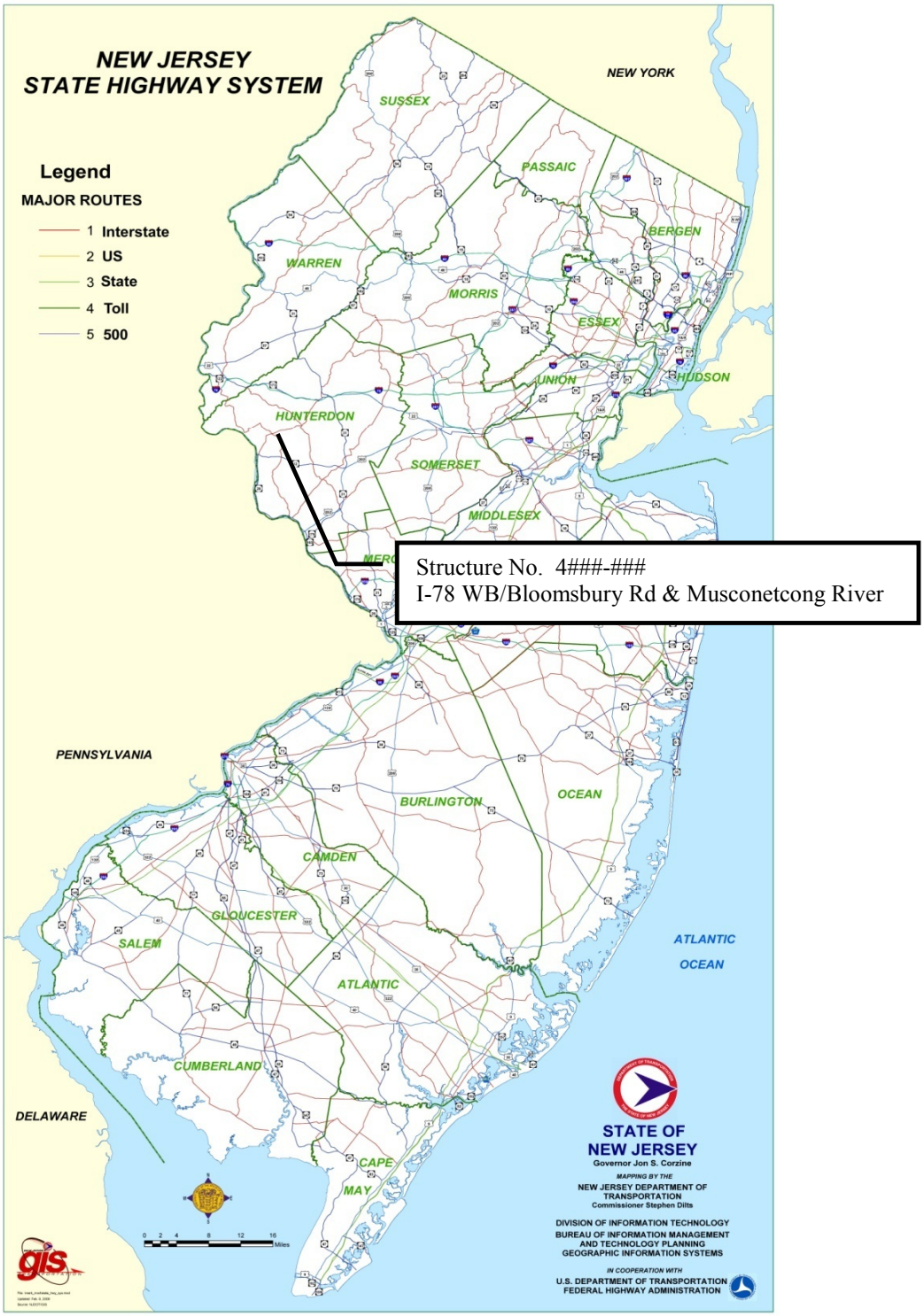
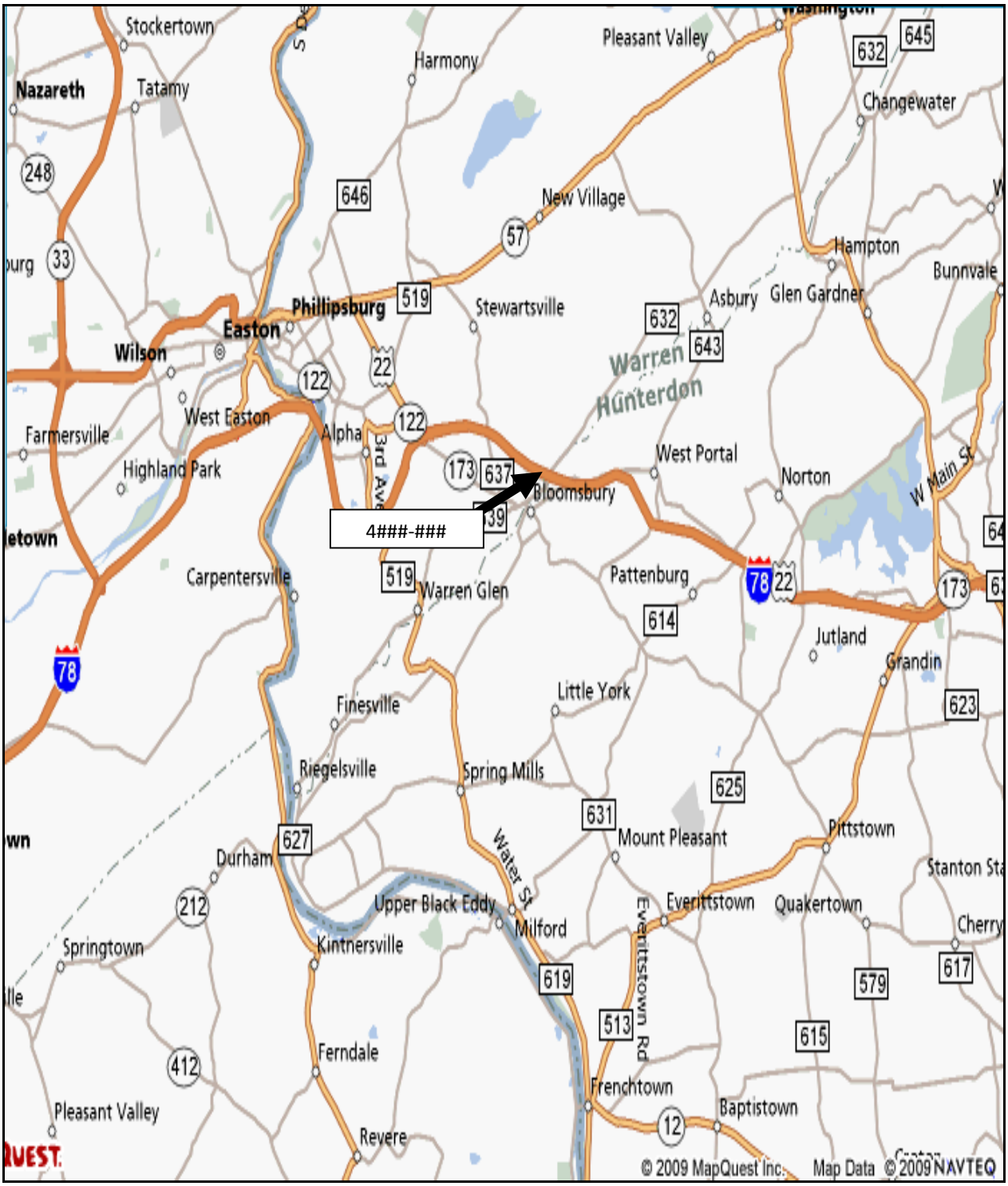
Structure No.:	4###-###	Route:	I-78	Cycle No.:	15
Name:	I-78 WB/Bloomsbury Rd & Musconetcong River			Insp. Date:	10/26/2006

GENERAL LOCATION MAP:



Structure No.:	4###-###	Route:	I-78	Cycle No.:	15
Name:	I-78 WB/Bloomsbury Rd & Musconetcong River			Insp. Date:	10/26/2006

BRIDGE LOCATION MAP:



N.J.D.O.T. - STRUCTURAL EVALUATION
RE-EVALUATION BRIDGE SURVEY REPORT
CYCLE NO. 15

STRUCTURAL DATA:

Bridge No.:	4XXX-XXX	Year Built:	1959	Widened/ Rehab:	2006
Route No.:	I-78	Length:	299’	Width:	72.0’
Mile Point:	7.030	Date of this Evaluation:		10/26/2006	
Name:	I-78 Westbound over Bloomsbury Road (Co. Rt. 632) & Musconetcong River	By: ABC Consultant			
Structure Type:	Four span, simply supported, composite, prestressed concrete I-beams	Date of Previous Evaluation:		10/07/2004	
		By: ABC Consultant			
		Special Equipment Used:		None	
		Underwater Inspection:		Not Required	
		Scour Critical:		Yes	

OVERALL CONDITION: Good

WORK DONE:

1. Superstructure and deck replaced (Photos 15-4 and 15-5).
2. Approaches reconstructed and widened (Photos 15-6).
3. Embankments re-graded and/or covered with rip-rap (Photo 15-7).
4. Abutments and slope protection widened at both ends (Photos 15-8).
5. Piers widened, reconstructed and repaired (Photos 15-9, 15-10, 15-11, 15-12 & 15-13).
6. New F-shaped bridge parapets (Photo 15-14).
7. New approach guiderail, drainage inlets and light pole at the NW approach (15-15).

Note: This work has been performed under NJDOT Job No. 2113-506 and appeared close to completion at the time of inspection.

Inspection Team Leader: Rajesh C. Patel **Initials:** RCP

Certifying Engineer: James Lane, P.E.

N.J.P.E. Number: GE02859100

I certify that this report is an accurate description of the Subject structure, to the extent determinable by visual Inspection and testing performed.

Signature:_____

Date: _____

Seal

Structure No.:	4###-###	Route:	I-78	Cycle No.:	15
Name:	I-78 WB/Bloomsbury Rd & Musconetcong River			Insp. Date:	10/26/2006

	CONDITION RATING	REMARKS
COMPONENT/MATERIAL		
DECK (Reinforced Concrete)	Excellent	No apparent defects
APPROACHES (Concrete)	Excellent	No apparent defects
SUPERSTRUCTURE (Pretension Prestressed Concrete)	Excellent	No apparent defects
SUBSTRUCTURE (Reinforced Concrete)	Good	No apparent defects
WATERWAY/CHANNEL	Good	No apparent defects
SAFETY FEATURES	1111	State the any deficiency
DECK GEOMETRY	7	Number of Lanes: 4 SI&A Table 2C - Interstate: 12N + 24 = 12(4) + 24 = 72' > 68.9'; 12N + 20 = 68' < 68.9' Therefore Item 68 = 7
UTILITIES	Excellent	No apparent defects

The minimum vertical underclearance (roadway) is 15’ 5” under North fascia beam at east (NB) lane
The lateral underclearances (roadway) are: Left: 0’ 0” Right: 17’ 4”
The minimum vertical underclearance (waterway) is 29’ 8” under North fascia beam at Pier 2B
The lateral underclearance (waterway) is: 79’ 10” measured from Pier 2 to Pier 3

CONTROLLING RATINGS: (From 15th Cycle Report)

Computer Program Used: Penn DOT PS 3 (Version 3.5.0.1)
Based on the Load Factor/Working Stress method of analysis, the following load ratings have been computed:

		Truck Type (Tons)			
Controlling Member	Rating Type	HS-20 (36)	3 (25)	3S2 (40)	3-3 (40)
Fascia P.C. I-Beam (Spans 2 & 3)	Inventory Rating	56	53	67	76
Interior P.C. I-Beam (Spans 2 & 3)	Operating Rating	131	127	160	181

CONCLUSIONS & RECOMMENDATIONS:

The structure is in overall good condition due to the condition of the substructure.

Due to the major rehabilitation work done since the previous inspection, the deck condition rating has been upgraded from satisfactory to excellent, the superstructure condition rating has been upgraded from fair to excellent, the substructure condition rating has been upgraded from fair to good, the channel condition rating has been upgraded from good to very good and the approach roadway condition rating has been upgraded from good to excellent.

Based on the Stage II in-depth scour evaluation, the bridge has been determined to be scour critical (Item 113 = 3). Construction activity in the channel was in progress but was not complete at the time of this inspection. We recommend that the following scour countermeasure be implemented in accordance with the Stage II evaluation:

Install stone riprap 2' thick by 133 S.Y. in the stream bed along the substructure:

1.	Mobilization & Site Costs: Lump Sum	=	$225,000
2.	Stone Riprap: 89 C.Y. @ $300/C.Y.	=	$ 27,000
	TOTAL	=	**$252,000**

In the interim, until the scour countermeasure is installed, we recommend the following emergency/priority repairs be made to retard the further deterioration, preserve the structural integrity of the bridge, improve safety and extend its useful life:

None.

Note: The structure should be inspected for scour damage after significant storm events.

BRIDGE DESCRIPTION:

Structure No. 4###-###, I-78 Westbound over Bloomsbury Road and the Musconetcong River, was constructed in 2006. The project was constructed according to construction plans prepared by CBA Design, Inc.

The bridge is designed in accordance with 1998 (2nd Edition) AASHTO LRFD Bridge Design Specifications as modified by Section 3 of the 2002 (4th Edition) NJDOT Design Manual for Bridges and Structures (BDCODMB-1) with the following design criteria:

Concrete (Deck) f 'c: 4000 psi (Class A).

Prestressed Concrete: f'c: 6,000 psi (41.37 MPa on plans = Class P-2**).

Concrete (Substructure) f 'c: 3000 psi (Class B).

Reinforcing Steel: ASTM A615M (Grade 60), fs = 60,000 psi

Prestressing Strands: 270,000 psi

**(Plans state prestressed concrete f'c = 41.37 MPa = 6,000 psi but mislabel the class as P-1).

Structure 4###-### is a four span, composite, prestressed concrete I-beam bridge. All spans are simply supported with center to center bearing lengths of 81.4' in spans 1, 2 & 3 from west and 45.0' in the east span. The total length of the structure is 299'.

The concrete deck slab is 9" (nominal) thick with galvanized steel reinforcement and was constructed using stay-in-place metal deck forms. The deck measures 72.0' out to out, and provides a clear roadway width of 68.9' between 3.5' high "F" shaped concrete parapets. The deck will be striped for four lanes of traffic upon completion of the project.

The original prestressed concrete I-beams and composite concrete deck have been replaced with new prestressed concrete I-beams and widened composite concrete deck slab. The new superstructure typical section consists of thirteen (13) pre-tensioned prestressed concrete I-beams, spaced at 5.8' center to center at the interior girders, 5.1' center to center at the three northernmost girders, and 5.9' at the two southernmost girders. The girders are all 54" deep sections except for the northernmost two girders in the west span and all girders in the east span, which are 45" deep. The girder sections generally conform to NJDOT Standard Drawing Plates 2.4-1 and 2.4-2 in the 2002 NJDOT Bridge Design Manual. Reinforced concrete diaphragms are located at the ends of each span and steel channel diaphragms at span third points. Bearings consist of elastomeric pads reinforced with steel sheets contained between steel sole and masonry plates.

Substructure work included widening of the abutments and piers, modifications to the bridge seats to raise the seat elevations, patching of spalls on existing substructure concrete, and associated slope protection and embankment improvements. The improvements also included widening and reconstruction of the approaches, new approach guide rails, and associated approach work.

SI&A AND PONTIS SHEET:

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Structure No.:	4###-###	Route:	I-78	Cycle No.:	15
Name:	I-78 WB/Bloomsbury Rd & Musconetcong River			Insp. Date:	10/26/2006

Rated By: KLH Dated: 3/5/2007 Checked By: MES Dated: 3/15/2007

SUMMARY OF RATINGS

The Load Factor ratings, computed in the 15th Cycle report in accordance with the FHWA directive dated November 1993 and AASHTO Manual for Condition Evaluation of Bridges, 1994, as modified by Section 1.42A.2 of the New Jersey Department of Transportation Design Manual, Bridges and Structures, are as follows:

Computer Program Used: PennDOT PS3 (Version 3.5.0.1)

PERCENT (%) SECTION LOSSES: None

		Allowable Stresses (psi)		
Material	Compressive Strength f'c'	Yield	Inventory	Operating
Concrete (Deck)	4,000		1,600	2,400
Reinforcing Steel		60,000	24,000	36,000
Concrete (Beams)	6,000		f_c = 2,400 f_t = 232	N/A
Prestressing Steel		270,000		

		Rating (Tons) Load Factor	
Member	Truck Type (Tons)	Inventory	Operating
Spans 2 and 3 (from the west), Interior Prestressed Concrete I-Beam (1350 mm)	Type HS-20 (36T)	62	**[131]**
	Type 3 (25T)	59	**[127]**
	Type 3S2 (40T)	74	**[160]**
	Type 3-3 (40T)	84	**[181]**
Spans 2 and 3 (from the west), Fascia Prestressed Concrete I-Beam (1350 mm)	Type HS-20 (36T)	**[56]**	170
	Type 3 (25T)	**[53]**	164
	Type 3S2 (40T)	**[67]**	208
	Type 3-3 (40T)	**[76]**	235

[Controlling Rating]

BY ABC DATE ##/##/## | **ABC Consultants** | SHEET NO. ## OF ##
CHKD. BY ABC DATE ##/##/## | JOB NO. NJ-X-XX-039
SUBJECT BR NO. 4###-### | 39 ON SYS STATE

ROADWAY WIDTH

$= (3.6m \times 5) + 3.0m = 21.0m \times \frac{1\,ft}{0.3048\,m} = 68.90\,ft$

SKEW CORRECTION FACTOR

FROM AASHTO TABLE 4.6.2.2.3C-1 (LRFD)

∴ Conc. Deck On Conc. Bm's.

$K = 1.0 + 2.0\left(\frac{12.0\,L\,t_s^3}{K_g}\right)\tan\theta$

$0° \le \theta \le 60°$
$3.5' \le S \le 16.0'$
$20 \le L \le 240$
$N_b \ge 4$

$L = 25.268\,m \times \frac{1\,ft}{0.3048\,m} = 82.90'$

$t_s = 229\,mm \times \frac{0.0394\,in}{1\,mm} = 9.02''$

$K_g = n(I + A e_g^2)$

$n = \frac{E_B}{E_D} = 1$

$I = 260.73 \times 10^3\,in^4$

$A = 789\,in^2$

$e_g = (D - y_b) + \frac{1}{2}t_s = (54.0'' - 24.73'') + \frac{1}{2}(9.0'') = 33.77''$

$K_g = 1\left[260.73 \times 10^3\,in^4 + 789\,in^2\,(33.77'')^2\right] = 1160516\,in^4$

$k = 1.0 + 2.0\left[\frac{12.0(82.90')(9.02'')^3}{1160516\,in^4}\right]\tan 12° = 1.267$

BEAM SPACING

$S_{max} = 1.761\,m \times \frac{ft}{0.3048\,m} = 5.77' \times \frac{12''}{ft} = 69.3''$

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DISTRIBUTION FACTORS

SHEAR DF COMPUTED BY PS 3

MOMENT DF

$DF_m = \frac{S}{5.5} = \frac{5.77'}{5.5} = 1.049$ WHEELS $= 0.525$ AXLES

DEFLECTION DF (No. LANES $= 68.9'/12 = 5$ LANES)

$DF_D = \frac{\text{No. LANES}}{\text{No. Bm's}} = \frac{5 \text{ LANES}}{13 \text{ Bm's}} = 0.385$

DEAD LOADS

DL1 = 0.000

DL2 = WEIGHT DUE TO PARAPET (SEE NEXT SHT. FOR PARAPET DETAILS)

$DL2 = \frac{2 \text{ SIDES} \times (150\ lb/ft^3 \times 3.25\ ft^2)}{13 \text{ Bm's}} = 75\ lb/ft = 0.075\ k/ft$

ECCENTRICITY @ MID-SPAN

$e_{m.s.} = y_b - \overline{y}_{m.s.} = 24.73" - \left(290\ mm \times \frac{0.0394\ in}{mm}\right) = 13.304"$

BEAM PROJECTION

$= 200\ mm \times \frac{0.0394\ in}{1\ mm} = 7.880\ in.$

STRAND DETAILS

$G1 = 57\ mm \times \frac{0.394\ in}{mm} = 2.25"$; $G2 = \overline{y} = 290\ mm \times \frac{0.394\ in}{mm} = 11.426"$

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DEAD LOAD 2 (WEIGHT DUE TO PARAPET)

PARAPET

$A_1 = 230\ mm \times 340\ mm = 78\,200\ mm^2$

$A_2 = (230 - 40)mm \times (1070 - 340)mm = 138\,700\ mm^2$

$A_3 = \frac{1}{2}(85\ mm)(815\ mm) = 34\,638\ mm^2$

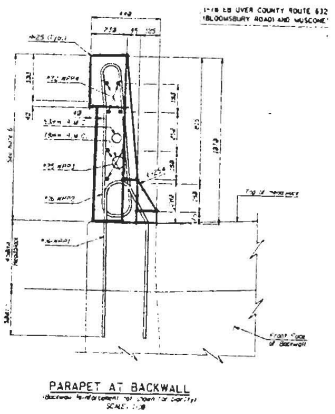
$A_4 = 85mm \times 280mm = 23\,800\ mm^2$

$A_5 = \frac{1}{2}(125mm)(280\ mm) = 17\,500\ mm^2$

$A_6 = 125mm \times 75\ mm = 9\,375\ mm^2$

$A_T = (78\,200 + 138\,700 + 34\,638 + 23\,800 + 17\,500 + 9\,375)\ mm^2$

$A_T = 302\,213\ mm^2 = 3.25\ ft^2$



PARAPET AT BACKWALL

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STRAND DETAILS (ACTUAL STRAND PATTERN UNKNOWN)

STRAND AREA = $0.153\ in^2$

$G1 = 57\ mm \times \frac{0.0394\ in}{mm} = 2.25''$

$G2 = \bar{y} = 290\ mm \times \frac{0.0394\ in}{mm} = 11.426\ in$

STIRRUP DETAILS

LOCATION TO 1ST STIRRUP = 150 mm + 75 mm − Bm PROJECTION

$= \left(225\ mm \times \frac{0.0394\ in}{1\ mm}\right) - 7.88\ in = 0.985\ in$

STIRRUP AREA

#16 BARS (METRIC) ⇒ #5 BARS (ENGLISH)

$Dia = 0.625'' \Rightarrow A = \pi\left(\frac{D}{2}\right)^2 = \pi\left(\frac{0.625''}{2}\right)^2 = 0.307\ in^2$

f_{sy}

GRADE 420 (METRIC) ⇒ GRADE 60 (ENGLISH)

STIRRUP LOCATION (ft)	SPACING	NO. SPACES	PRODUCT
0.00	0.985 in	1	$0.985\ in \times \frac{ft}{12\ in} = 0.08\ ft$
0.08	$150\ mm \times \frac{0.0394\ in}{mm} = 5.91\ in$	1	$5.91\ in \times \frac{ft}{12\ in} = 0.49\ ft$
0.57	$100\ mm \times \frac{0.0394\ in}{mm} = 3.94\ in$		
2.84	$300\ mm \times \frac{0.0394\ in}{mm} = 11.82\ in$		
13.82	$535\ mm \times \frac{0.0394\ in}{mm} = 21.08\ in$		

$\left(1065\ mm \times \frac{0.0394\ in}{mm}\right) - 7.88\ in = 34.08'' \times \frac{ft}{12\ in} = 2.84'$

$\frac{4/6 = 82.90'}{6} =$

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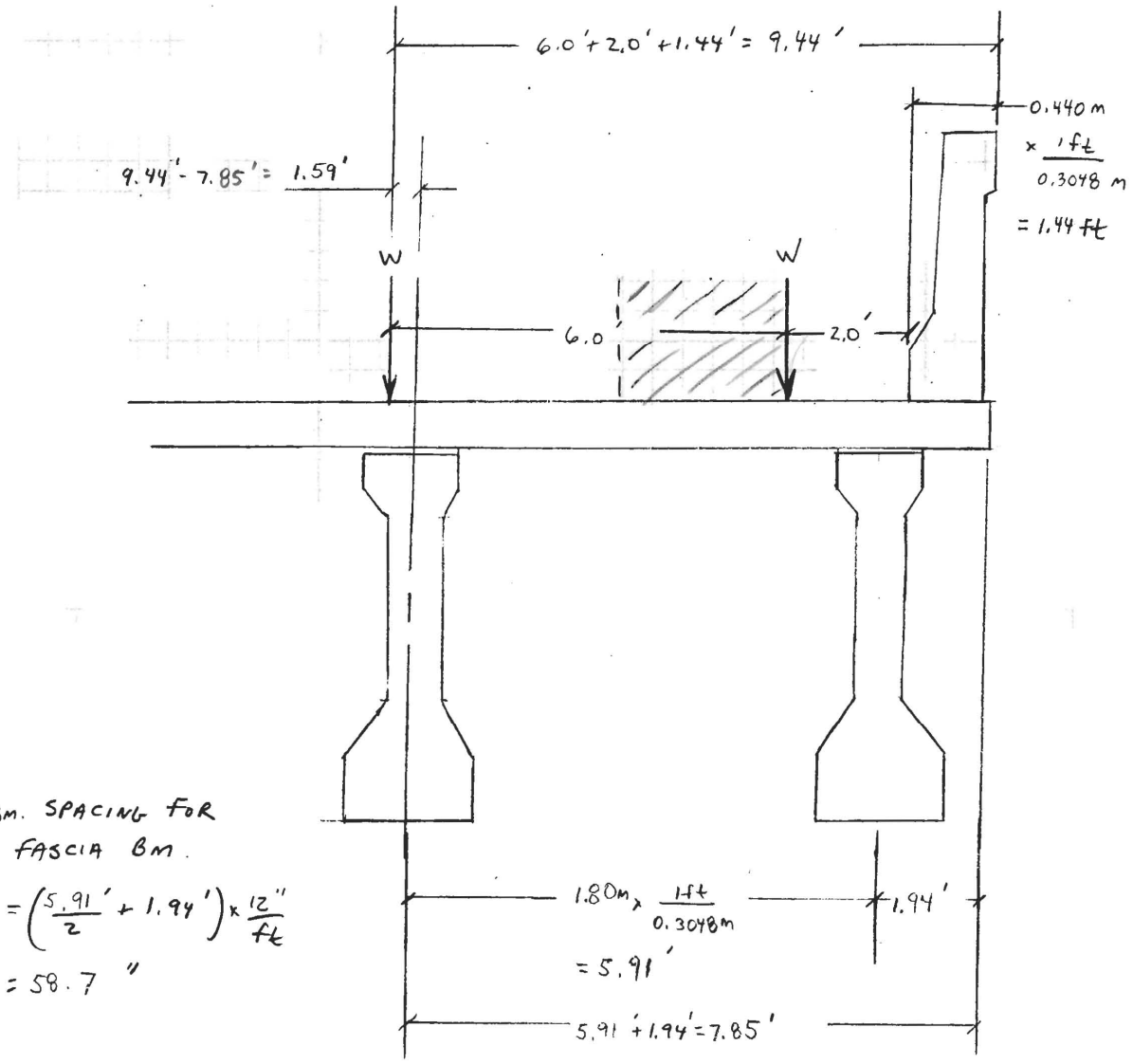
SPANS 2 & 3 - FASCIA Bm (1350 mm)

BR. WIDTH OUT-OUT = $21.95\ m \times \frac{1\ ft}{0.3048\ m} = 72.01'$

DWG. I-50 → DIST. ℄ FASCIA - ℄ FASCIA = $(3.12 + 15.85 + 1.80)\ m \times \frac{1\ ft}{0.3048\ m} = 68.14'$

DECK OVERHANG FROM ℄ FASCIA = $\frac{72.01' - 68.14'}{2\ SIDES} = 1.94'$



Bm. SPACING FOR FASCIA Bm.

$= \left(\frac{5.91'}{2} + 1.94'\right) \times \frac{12''}{ft}$

$= 58.7''$

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MOMENT DISTRIBUTION FACTOR

$$Df_m = \frac{1}{2}\left(\frac{9.44' - 2.0' - 1.44' - 1.59'}{5.91'}\right) = \frac{1}{2}\left(\frac{4.41'}{5.91'}\right) = 0.373 \text{ AXLES}$$

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

PRESTRESSED CONCRETE GIRDER DESIGN AND RATING 331189

PROGRAM P4353030 03/19/2007 09:19
VERSION 3.5.0.1 LAST UPDATED 12/29/2003 DOCUMENTATION 06/2003

INPUT: 4###-### _20061026cy15_rating input int bm 1350.DAT

STRUCTURE ID - **4###-### Spans 2 and 3, Interior Beam (1350 mm)**

SLC LEVEL	LOAD	JT-PUT	IMPACT FACTOR	GAGE DISTANCE	PASSING DISTANCE	ROADWAY WIDTH	LOAD FACTORS DLF	LLF	I OR F
	4	1	0.000	0.0	0.0	68.90	0.00	0.00	I

PRINCIPAL STRESSES	DESIGN	SKEW CORRECTION FACTOR	IR STRESS LEVEL	AASHTO FC
N	R	1.267	0.000	

BRIDGE CROSS SECTION AND LOADING

BEAM SPACING	DISTRIBUTION FACTORS SHEAR	MOMENT	DEFLECTION	UNIT WEIGHT OF DECK CONCRETE	DEAD LOADS UDLF	DL1	FWS	DL2	INITIAL P/S FORCE
69.3	0.000	0.525	0.385	0.0000	0.0000	0.000	0.000	0.075	0.000

ECCENTRICITY MIDSPAN	END	P/S LOSS %	XDRAPE	LEHIGH LOSS METHOD T0	TS	TD	IC	MFG	IST	STRAND L or S	RATINGS w/ & w/o FWS
13.304	0.000	0.00	0.0000	0	0	0	0	0	0	L	Y

SPAN LENGTHS (SIMPLE)

SPAN #	1	2	3	4	5	6	7	8	BEAM PROJ
LENGTH	82.90								7.880

EXTERIOR DIAPHRAGM DETAILS

ID	WEIGHT	THICK	#DIA	DIST	DIST	DIST	DIST	DIST	DIST	DIST	DIST
E	1.291	0.00	4	0.77	27.89	55.01	82.13	0.00	0.00	0.00	0.00

PRESTRESS CRITERIA

BEAM CONC F'CB	SLAB CONC F'CS	CONC INIT F'CI	STEEL INIT FSI	STEEL YIELD Fy	STEEL ULT F'S	INITIAL ALLOWABLE COMP FCI	TENS FTI	DRP/DBND FTFD
6.000	4.000	5.100	202.5	0.0	270.0	0.000	0.000	0.000

FINAL ALLOWABLE COMP FC	TENS FT	SLAB FCS	ALLOW SHEAR VHA	OR STRESS LEVEL	STEEL E	MODULAR RATIOS DES	ULT	CREEP FACTOR	EST. % LOSS	STRAND DIAMETER
0.000	0.000	0.000	0.000	0.000	0	0.000	0.000	0.0	0.0	0.5000

NUMBER OF ROWS	NUMBER OF Lx	STIRRUP DETAILS
0	0	Y

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PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

PRESTRESSED CONCRETE BEAM DIMENSIONS

TYPE	COMP	D	W1	W2	W3	T1	T2
I	Y	54.060	26.000	20.020	8.040	8.000	8.000

B1	B2	B3	B4	D1	D2	X1	X2	SLAB THICK	HAUNCH
8.98	8.98	6.00	6.00	0.00	0.00	0.000	0.000	9.00	2.00

STRAND DETAILS

AREA	G1	G2	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
0.153	2.25	11.426	40									

STIRRUP DETAILS

SPEC. FOR ANAL/RATE	STIRRUP AREA	FSY	LOCATION	SPACING	LOCATION	SPACING	LOCATION	SPACING
	0.307	0	0.00	0.985	0.08	5.910	0.57	3.940
			2.84	11.820	13.82	21.080	0.00	0.000

SPECIAL LIVE LOADING 1 **(HS20)**

LANE LOADING

NUMBER OF AXLES	3% INCR	UNIFORM LANE LOAD	CONC LOAD MOMENT	CONC LOAD SHEAR	GAGE DISTANCE	PASSING DISTANCE	VARY LAST	MAX AXLE DIST
3	N	0.000	0.000	0.000	0.0	0.0		0.0

TRUCK LOAD

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	8.00	14.00	2	32.00	14.00	3	32.00	0.00			

SPECIAL LIVE LOADING 2 **(Type 3)**

LANE LOADING

NUMBER OF AXLES	3% INCR	UNIFORM LANE LOAD	CONC LOAD MOMENT	CONC LOAD SHEAR	GAGE DISTANCE	PASSING DISTANCE	VARY LAST	MAX AXLE DIST
3	N	0.000	0.000	0.000	0.0	0.0		0.0

TRUCK LOAD

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	16.00	15.00	2	17.00	4.00	3	17.00	0.00			

SPECIAL LIVE LOADING 3 **(NJDOT Type 3S2)**

LANE LOADING

NUMBER OF AXLES	3% INCR	UNIFORM LANE LOAD	CONC LOAD MOMENT	CONC LOAD SHEAR	GAGE DISTANCE	PASSING DISTANCE	VARY LAST	MAX AXLE DIST
5	N	0.000	0.000	0.000	0.0	0.0		0.0

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

TRUCK LOAD

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	11.00	2	17.00	4.00	3	17.00	22.00	4	17.00	4.00
5	17.00	0.00									

SPECIAL LIVE LOADING 4 **(Type 3-3)**

LANE LOADING

NUMBER OF AXLES	3% INCR	UNIFORM LANE LOAD	CONC LOAD MOMENT	CONC LOAD SHEAR	GAGE DISTANCE	PASSING DISTANCE	VARY LAST	MAX AXLE DIST
6	N	0.000	0.000	0.000	0.0	0.0		0.0

TRUCK LOAD

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	15.00	2	12.00	4.00	3	12.00	15.00	4	16.00	16.00
5	14.00	4.00	6	14.00	0.00						

DEFAULT VALUES

GAGE DIST	PASS DIST	DLF	LLF	DISTR SHEAR	UDLF	P/S LOSS %	UNIT WT DK CONC
6.0	4.0	1.30	2.17	0.654	0.0150	0.04	0.150

ST YLD Fy	AASHTO FC	COMP FC	TENS FT	SLAB FCS	ALLOW SHR-VHA	OR STR LEVEL	IR STR LEVEL
229.5	N	2.400	0.232	1.600	0.300	0.900	0.800

STEEL E	N DES	N ULT	CREEP FACTOR	SPEC A/R	FSY
28000	1.225	1.500	1.6	1979	60

WARNING - THE MIDSPAN ECCENTRICITY ENTERED IN THE CROSS SECTION &
LOAD DATA LINE DOES NOT MATCH THE COMPUTED ECCENTRICITY
BASED ON THE INPUT CGS AND TOTAL NUMBER OF STRANDS.
INPUT ECC = 13.304 IN.
COMPUTED ECC = 13.351 IN.

THE PROGRAM WILL CONTINUE WITH ECC = 13.304 IN.
(BASED ON INPUT ECCENTRICITY)

****
* RATING OF AN INTERIOR BEAM *
****

BASIC BEAM SECTION PROPERTIES

DEPTH IN	AREA IN.2	WEIGHT LBS/FT	M OF I IN.4	N.A. TO TOP YT IN.	N.A. TO BOT YB IN	Z TOP IN.3	Z BOT IN.3
54.06	790.8	823.75	261764.9	29.28	24.78	8939.1	10564.9

COMPOSITE SECTION PROPERTIES

SLAB WIDTH	AREA IN.2	M OF I IN.4	N.A. TO SLAB TOP	N.A. TO BEAM TOP	N.A. TO BEAM BOT	Z TOP SLAB	Z TOP BEAM	Z BOT BEAM
69.30	1332.7	670292.1	25.87	14.87	39.19	25912.6	45084.6	17102.5

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

UNIFORM DEAD LOADS ACTING ON GIRDER (KIPS/FT)

GIRDER WEIGHT	SLAB WEIGHT	HAUNCH WEIGHT	FORMWORK WEIGHT	INPUT DL1	FUTURE WEARING SURFACE	INPUT DL2	TOTAL DL1	TOTAL DL2
0.8238	0.6858	0.0417	0.0866	0.0000	0.0000	0.0750	1.6379	0.0750

DEAD LOAD AND LIVE LOAD REACTIONS

DL1 REACTION	DL2 REACTION	IMPACT FACTOR	LL+I SP-1 REACTION	LL+I SP-2 REACTION	LL+I SP-3 REACTION	LL+I SP-4 REACTION
70.5	3.1	1.241	59.2 T	41.0 T	54.4 T	49.8 T

PRESTRESSING FORCE (STRAND PATTERN UNKNOWN)

INITIAL	LOSS %	EFFECTIVE	NO. OF STRANDS	ECCENTRICITY	C.G.S.
1239.300	22.80	956.740	40	13.304	11.473

****
* RATING DATA *
****

LIVE LOAD TYPE: **HS20** GROSS WEIGHT: 36.00 TONS

UNFACTORED MOMENTS AND SHEARS

X	LOCATION FROM CL BRG	DL1 MOMENT	DL2 MOMENT	LL+I MOMENT	DL1 SHEAR	DL2 SHEAR	LL+I SHEAR
H/2	2.711	181.6	8.2	108.6	64.7	2.9	50.9
0.05	4.145	272.8	12.2	162.8	62.4	2.8	49.9
0.10	8.290	517.4	23.2	306.1	55.6	2.5	47.2
0.15	12.435	733.9	32.9	430.0	48.8	2.2	44.4
0.20	16.500	922.3	41.2	534.4	42.0	1.9	41.5
0.25	20.725	1082.5	48.3	619.4	35.2	1.6	38.7
0.30	24.870	1214.6	54.1	685.0	28.4	1.2	35.8
0.35	29.015	1306.3	58.6	734.8	20.4	0.9	32.9
0.40	33.160	1380.3	61.9	772.5	13.6	0.6	30.0
0.45	37.305	1426.2	63.8	790.7	6.8	0.3	27.1
0.50	41.450	1444.0	64.4	789.5	0.0	0.0	24.1

STRENGTHS AND RATINGS

	MOMENT STRENGTHS				MOMENT RATINGS			SHEAR RATINGS	
X	phi*Mn	CRACKING Mcr	IR Mfy	OR Mfy	IR	OR	SHEAR STRENGTH	IR	OR
H/2	3875.2	4156.9	2571.3	2887.1	15.391U	24.827F			
0.05	4507.0	4100.5	2990.6	3357.8	11.712U	18.879F			
0.10	6096.9	3949.1	4045.6	4542.4	8.121U	13.074F			
0.15	6651.5	3815.2	4413.5	4955.6	5.934B	9.742F			
0.20	6651.5	3698.6	4413.5	4955.6	4.188B	7.470F			
0.25	6651.5	3599.5	4413.5	4955.6	3.183B	6.174F	231.7	2.191	3.657
0.30	6651.5	3517.7	4413.5	4955.6	2.558B	5.382F	231.7	2.485	4.148
0.35	6651.5	3461.0	4413.5	4955.6	2.176B	4.886F	231.7	2.855	4.766
0.40	6651.5	3415.2	4413.5	4955.6	1.911B	4.548F	231.7	3.274	5.465
0.45	6651.5	3386.8	4413.5	4955.6	1.771B	4.383F	231.7	3.785	6.319
0.50	6651.5	3375.8	4413.5	4955.6	1.736B	4.366F	231.7	4.428	7.391

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

```
CODES:  MOMENT STRENGTH CODE:
              # = MOMENT STRENGTH REDUCED BY phi*Mn/MIN(1.2Mcr or 4/3Mu)

        INVENTORY RATING CODES:
              IF SERVICEABILITY GOVERNS INVENTORY RATING:
                   B = BOTTOM STRESS GOVERNS
                   T = TOP STRESS GOVERNS
                   S = SLAB STRESS GOVERNS

              U = phi*Mn GOVERNS
              F = Mfy GOVERNS

        OPERATING RATING CODES:
              U = phi*Mn GOVERNS
              F = Mfy GOVERNS
```

GOVERNING RATINGS

STRESSES AT 41.450 FROM CL BRG (TENSION + COMPRESSION -)

	TOP FIBER SLAB	TOP FIBER BEAM	BOT FIBER BEAM
P/S	0.000	0.214	-2.415
DL1	0.000	-1.938	1.640
DL2	-0.024	-0.017	0.045
P/S + DL	-0.024	-1.742	-0.729
LL + I	-0.299	-0.210	0.554
TOTAL	-0.323	-1.952	-0.175
IR ALLOW	-1.600	-2.400	0.232

FLEXURAL RATINGS (BASED ON MOMENT)

	FACTOR	TONS	LOCATION FROM CL BRG
IR	1.736	62.50	41.450
OR	4.366	157.19	41.450

SHEAR RATINGS (1979 I)

	FACTOR	TONS	LOCATION FROM CL BRG
IR	2.191	78.88	20.725
OR	3.657	131.67	20.725

LIVE LOAD TYPE: 3 GROSS WEIGHT: 25.00 TONS

UNFACTORED MOMENTS AND SHEARS

X	LOCATION FROM CL BRG	DL1 MOMENT	DL2 MOMENT	LL+I MOMENT	DL1 SHEAR	DL2 SHEAR	LL+I SHEAR
H/2	2.711	181.6	8.2	77.5	64.7	2.9	36.3
0.05	4.145	272.8	12.2	116.1	62.4	2.8	35.6
0.10	8.290	517.4	23.2	218.7	55.6	2.5	33.7
0.15	12.435	733.9	32.9	307.8	48.8	2.2	31.8
0.20	16.580	922.3	41.2	383.5	42.0	1.9	29.8
0.25	20.725	1082.5	48.3	445.6	35.2	1.6	27.8
0.30	24.870	1214.6	54.1	494.2	28.4	1.2	25.8
0.35	29.015	1306.3	58.6	530.6	20.4	0.9	23.8
0.40	33.160	1380.3	61.9	558.8	13.6	0.6	21.8
0.45	37.305	1426.2	63.8	573.4	6.8	0.3	19.8
0.50	41.450	1444.0	64.4	574.6	0.0	0.0	17.7

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

STRENGTHS AND RATINGS

	MOMENT STRENGTHS			MOMENT RATINGS			SHEAR RATINGS	
		CRACKING	IR	OR				
X	phi*Mn	Mcr	Mfy	Mfy	IR	OR	SHEAR STRENGTH	IR	OR
H/2	3875.2	4156.9	2571.3	2887.1	21.586U	34.821F			
0.05	4507.0	4100.5	2990.6	3357.8	16.417U	26.464F			
0.10	6096.9	3949.1	4045.6	4542.4	11.365U	18.296F			
0.15	6651.5	3815.2	4413.5	4955.6	8.289B	13.607F			
0.20	6651.5	3698.6	4413.5	4955.6	5.837B	10.410F			
0.25	6651.5	3599.5	4413.5	4955.6	4.425B	8.584F	231.7	3.046	5.084
0.30	6651.5	3517.7	4413.5	4955.6	3.545B	7.460F	231.7	3.445	5.750
0.35	6651.5	3461.0	4413.5	4955.6	3.014B	6.767F	231.7	3.944	6.584
0.40	6651.5	3415.2	4413.5	4955.6	2.642B	6.288F	231.7	4.503	7.517
0.45	6651.5	3386.8	4413.5	4955.6	2.441B	6.044F	231.7	5.180	8.647
0.50	6651.5	3375.8	4413.5	4955.6	2.385B	5.999F	231.7	6.021	10.050

CODES: MOMENT STRENGTH CODE:
= MOMENT STRENGTH REDUCED BY phi*Mn/MIN(1.2Mcr or 4/3Mu)

INVENTORY RATING CODES:
IF SERVICEABILITY GOVERNS INVENTORY RATING:
B = BOTTOM STRESS GOVERNS
T = TOP STRESS GOVERNS
S = SLAB STRESS GOVERNS

U = phi*Mn GOVERNS
F = Mfy GOVERNS

OPERATING RATING CODES:
U = phi*Mn GOVERNS
F = Mfy GOVERNS

GOVERNING RATINGS

STRESSES AT 41.450 FROM CL BRG (TENSION + COMPRESSION -)

	TOP FIBER SLAB	TOP FIBER BEAM	BOT FIBER BEAM
P/S	0.000	0.214	-2.415
DL1	0.000	-1.938	1.640
DL2	-0.024	-0.017	0.045
P/S + DL	-0.024	-1.742	-0.729
LL + I	-0.217	-0.153	0.403
TOTAL	-0.242	-1.894	-0.326
IR ALLOW	-1.600	-2.400	0.232

FLEXURAL RATINGS (BASED ON MOMENT)

	FACTOR	TONS	LOCATION FROM CL BRG
IR	2.385	59.63	41.450
OR	5.999	149.99	41.450

SHEAR RATINGS (1979 I)

	FACTOR	TONS	LOCATION FROM CL BRG
IR	3.046	76.15	20.725
OR	5.084	127.11	20.725

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

LIVE LOAD TYPE: **NJDOT 3S2** GROSS WEIGHT: 40.00 TONS

UNFACTORED MOMENTS AND SHEARS

X	LOCATION FROM CL BRG	DL1 MOMENT	DL2 MOMENT	LL+I MOMENT	DL1 SHEAR	DL2 SHEAR	LL+I SHEAR
H/2	2.711	181.6	8.2	104.4	64.7	2.9	48.9
0.05	4.145	272.8	12.2	155.9	62.4	2.8	47.8
0.10	8.290	517.4	23.2	290.3	55.6	2.5	44.7
0.15	12.435	733.9	32.9	403.0	48.8	2.2	41.6
0.20	16.580	922.3	41.2	494.1	42.0	1.9	38.4
0.25	20.725	1082.5	48.3	579.3	35.2	1.6	35.2
0.30	24.870	1214.6	54.1	647.6	28.4	1.2	32.0
0.35	29.015	1306.3	58.6	694.2	20.4	0.9	28.7
0.40	33.160	1380.3	61.9	727.1	13.6	0.6	25.5
0.45	37.305	1426.2	63.8	741.0	6.8	0.3	22.2
0.50	41.450	1444.0	64.4	733.3	0.0	0.0	18.8

STRENGTHS AND RATINGS

	MOMENT STRENGTHS				MOMENT RATINGS			SHEAR RATINGS	
X	phi*Mn	CRACKING Mcr	IR Mfy	OR Mfy	IR	OR	SHEAR STRENGTH	IR	OR
H/2	3875.2	4156.9	2571.3	2887.1	16.014U	25.832F			
0.05	4507.0	4100.5	2990.6	3357.8	12.225U	19.707F			
0.10	6096.9	3949.1	4045.6	4542.4	8.564U	13.787F			
0.15	6651.5	3815.2	4413.5	4955.6	6.332B	10.394F			
0.20	6651.5	3698.6	4413.5	4955.6	4.530B	8.079F			
0.25	6651.5	3599.5	4413.5	4955.6	3.404B	6.602F	231.7	2.408	4.019
0.30	6651.5	3517.7	4413.5	4955.6	2.706B	5.693F	231.7	2.783	4.646
0.35	6651.5	3461.0	4413.5	4955.6	2.304B	5.172F	231.7	3.273	5.463
0.40	6651.5	3415.2	4413.5	4955.6	2.030B	4.832F	231.7	3.860	6.444
0.45	6651.5	3386.8	4413.5	4955.6	1.889B	4.677F	231.7	4.628	7.725
0.50	6651.5	3375.8	4413.5	4955.6	1.869B	4.701F	231.7	5.675	9.473

CODES: MOMENT STRENGTH CODE:
= MOMENT STRENGTH REDUCED BY phi*Mn/MIN(1.2Mcr or 4/3Mu)

INVENTORY RATING CODES:
IF SERVICEABILITY GOVERNS INVENTORY RATING:
B = BOTTOM STRESS GOVERNS
T = TOP STRESS GOVERNS
S = SLAB STRESS GOVERNS

U = phi*Mn GOVERNS
F = Mfy GOVERNS

OPERATING RATING CODES:
U = phi*Mn GOVERNS
F = Mfy GOVERNS

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

GOVERNING RATINGS

STRESSES AT 41.450 FROM CL BRG (TENSION + COMPRESSION -)

	TOP FIBER SLAB	TOP FIBER BEAM	BOT FIBER BEAM
P/S	0.000	0.214	-2.415
DL1	0.000	-1.938	1.640
DL2	-0.024	-0.017	0.045
P/S + DL	-0.024	-1.742	-0.729
LL + I	-0.277	-0.195	0.515
TOTAL	-0.302	-1.937	-0.215
IR ALLOW	-1.600	-2.400	0.232

FLEXURAL RATINGS (BASED ON MOMENT)

	FACTOR	TONS	LOCATION FROM CL BRG
IR	1.869	74.76	41.450
OR	4.677	187.07	37.305

SHEAR RATINGS (1979 I)

	FACTOR	TONS	LOCATION FROM CL BRG
IR	2.408	96.32	20.725
OR	4.019	160.77	20.725

LIVE LOAD TYPE: 3-3 GROSS WEIGHT: 40.00 TONS

UNFACTORED MOMENTS AND SHEARS

X	LOCATION FROM CL BRG	DL1 MOMENT	DL2 MOMENT	LL+I MOMENT	DL1 SHEAR	DL2 SHEAR	LL+I SHEAR
H/2	2.711	181.6	8.2	95.9	64.7	2.9	44.9
0.05	4.145	272.8	12.2	142.9	62.4	2.8	43.9
0.10	8.290	517.4	23.2	264.2	55.6	2.5	40.7
0.15	12.435	733.9	32.9	363.9	48.8	2.2	37.5
0.20	16.580	922.3	41.2	447.2	42.0	1.9	34.3
0.25	20.725	1082.5	48.3	514.2	35.2	1.6	31.1
0.30	24.870	1214.6	54.1	559.5	28.4	1.2	27.9
0.35	29.015	1306.3	58.6	600.5	20.4	0.9	24.6
0.40	33.160	1380.3	61.9	627.1	13.6	0.6	21.9
0.45	37.305	1426.2	63.8	649.3	6.8	0.3	19.1
0.50	41.450	1444.0	64.4	650.0	0.0	0.0	16.2

STRENGTHS AND RATINGS

	MOMENT STRENGTHS				MOMENT RATINGS		SHEAR	SHEAR RATINGS	
X	phi*Mn	CRACKING Mcr	IR Mfy	OR Mfy	IR	OR	STRENGTH	IR	OR
H/2	3875.2	4156.9	2571.3	2887.1	17.436U	28.127F			
0.05	4507.0	4100.5	2990.6	3357.8	13.339U	21.503F			
0.10	6096.9	3949.1	4045.6	4542.4	9.409U	15.146F			
0.15	6651.5	3815.2	4413.5	4955.6	7.012B	11.510F			
0.20	6651.5	3698.6	4413.5	4955.6	5.005B	8.926F			
0.25	6651.5	3599.5	4413.5	4955.6	3.835B	7.439F	231.7	2.722	4.544
0.30	6651.5	3517.7	4413.5	4955.6	3.132B	6.589F	231.7	3.191	5.327
0.35	6651.5	3461.0	4413.5	4955.6	2.663B	5.980F	231.7	3.816	6.370
0.40	6651.5	3415.2	4413.5	4955.6	2.354B	5.603F	231.7	4.496	7.505
0.45	6651.5	3386.8	4413.5	4955.6	2.156B	5.337F	231.7	5.382	8.983
0.50	6651.5	3375.8	4413.5	4955.6	2.109B	5.304F	231.7	6.586	10.993

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

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CODES:  MOMENT STRENGTH CODE:
              # = MOMENT STRENGTH REDUCED BY phi*Mn/MIN(1.2Mcr or 4/3Mu)

        INVENTORY RATING CODES:
              IF SERVICEABILITY GOVERNS INVENTORY RATING:
                   B = BOTTOM STRESS GOVERNS
                   T = TOP STRESS GOVERNS
                   S = SLAB STRESS GOVERNS

              U = phi*Mn GOVERNS
              F = Mfy GOVERNS

        OPERATING RATING CODES:
              U = phi*Mn GOVERNS
              F = Mfy GOVERNS


                              GOVERNING RATINGS

    STRESSES AT 41.450 FROM CL BRG  (TENSION + COMPRESSION -)
                         TOP FIBER  TOP FIBER  BOT FIBER
                            SLAB       BEAM       BEAM
                     P/S    0.000      0.214     -2.415
                     DL1    0.000     -1.938      1.640
                     DL2   -0.024     -0.017      0.045
                           -----      -----      -----
                P/S + DL   -0.024     -1.742     -0.729
                  LL + I   -0.246     -0.173      0.456
                           -----      -----      -----
           TOTAL           -0.270     -1.915     -0.273
           IR ALLOW        -1.600     -2.400      0.232


     FLEXURAL RATINGS (BASED ON MOMENT)             SHEAR RATINGS (1979 I)

           FACTOR   TONS   LOCATION                FACTOR   TONS   LOCATION
                          FROM CL BRG                                FROM CL BRG
      IR   2.109    84.35   41.450           IR   2.722   108.90   20.725
      OR   5.304   212.14   41.450           OR   4.544   181.78   20.725


NOTE: FOR A COMPOSITE BEAM, THE STRESSES PRINTED FOR P/S AND DL1 ARE BASED ON
      SECTION MODULI OF THE BASIC BEAM.  THE STRESSES PRINTED FOR DL2 AND
      LL+I ARE BASED ON SECTION MODULI OF THE COMPOSITE BEAM.

      SERVICABILTY IR RATINGS ARE BASED ON STRESSES DUE TO P/S+DL AND LL+I.

*******************************************************************************
*                            CONTROLLING RATINGS                              *
*******************************************************************************


     VEHICLE TYPE                IR          OR

     HS20           LOADING (TONS)    62.50 F    131.67 S
     Type 3         LOADING (TONS)    59.63 F    127.11 S
     NJDOT 3S2      LOADING (TONS)    74.76 F    160.77 S
     Type 3-3       LOADING (TONS)    84.35 F    181.78 S

     F = FLEXURAL RATING        S = SHEAR RATING
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RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

PRESTRESSED CONCRETE GIRDER DESIGN AND RATING 331189

PROGRAM P4353030 03/19/2007 11:42
VERSION 3.5.0.1 LAST UPDATED 12/29/2003 DOCUMENTATION 06/2003

INPUT: **2113160_20061026cy15_rating input fascia bm 1350.DAT**

STRUCTURE ID - **2113-160 Spans 2 and 3, Fascia Beam (1350 mm)**

SLC LEVEL	LIVE LOAD	OUT-PUT	IMPACT FACTOR	GAGE DISTANCE	PASSING DISTANCE	ROADWAY WIDTH	LOAD FACTORS DLF	LLF	I OR F
	4	1	0.000	0.0	0.0	68.90	0.00	0.00	F

PRINCIPAL STRESSES	DESIGN	SKEW CORRECTION FACTOR	IR STRESS LEVEL	AASHTO FC
N	R	1.266	0.000	

BRIDGE CROSS SECTION AND LOADING

BEAM SPACING	DISTRIBUTION FACTORS SHEAR	MOMENT	DEFLECTION	UNIT WEIGHT OF DECK CONCRETE	DEAD LOADS UDLF	DL1	FWS	DL2	INITIAL P/S FORCE
58.7	0.000	0.373	0.467	0.0000	0.0000	0.000	0.000	0.750	0.000

ECCENTRICITY MIDSPAN	END	P/S LOSS %	XDRAPE	LEHIGH LOSS METHOD T0	TS	TD	IC	MFG	IST	STRAND L or S	RATINGS w/ & w/o FWS
0.000	0.000	0.00	0.0000	0	0	0	0	0	0	L	Y

SPAN LENGTHS (SIMPLE)

SPAN #	1	2	3	4	5	6	7	8	BEAM PROJ
LENGTH	82.90								7.880

EXTERIOR DIAPHRAGM DETAILS

ID	WEIGHT	THICK	#DIA	DIST	DIST	DIST	DIST	DIST	DIST	DIST	DIST
E	1.291	0.00	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

PRESTRESS CRITERIA

BEAM CONC F'CB	SLAB CONC F'CS	CONC INIT F'CI	STEEL INIT FSI	STEEL YIELD Fy	STEEL ULT F'S	INITIAL ALLOWABLE COMP FCI	TENS FTI	DRP/DBND FTFD
6.000	4.000	5.100	202.5	0.0	270.0	0.000	0.000	0.000

FINAL ALLOWABLE COMP FC	TENS FT	SLAB FCS	ALLOW SHEAR VHA	OR STRESS LEVEL	STEEL E	MODULAR RATIOS DES	ULT	CREEP FACTOR	EST. % LOSS	STRAND DIAMETER
0.000	0.000	0.000	0.000	0.000	0	0.000	0.000	0.0	0.0	0.5000

NUMBER OF ROWS	NUMBER OF Lx	STIRRUP DETAILS
0	0	Y

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

PRESTRESSED CONCRETE BEAM DIMENSIONS

TYPE	COMP	D	W1	W2	W3	T1	T2
I	Y	54.060	26.000	20.020	8.040	8.000	8.000

B1	B2	B3	B4	D1	D2	X1	X2	SLAB THICK	HAUNCH
8.98	8.98	6.00	6.00	0.00	0.00	0.000	0.000	9.00	2.00

STRAND DETAILS

AREA	G1	G2	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
0.153	2.25	11.426	40									

STIRRUP DETAILS

SPEC. FOR ANAL/RATE	STIRRUP AREA	FSY	LOCATION	SPACING	LOCATION	SPACING	LOCATION	SPACING
	0.307	0	0.00	0.985	0.08	5.910	0.57	3.940
			2.84	11.820	13.82	21.080	0.00	0.000

SPECIAL LIVE LOADING **(HS20)**

LANE LOADING

NUMBER OF AXLES	3% INCR	UNIFORM LANE LOAD	CONC LOAD MOMENT	CONC LOAD SHEAR	GAGE DISTANCE	PASSING DISTANCE	VARY LAST	MAX AXLE DIST
3	N	0.000	0.000	0.000	0.0	0.0		0.0

TRUCK LOAD

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	8.00	14.00	2	32.00	14.00	3	32.00	0.00			

SPECIAL LIVE LOADING **(Type 3)**

LANE LOADING

NUMBER OF AXLES	3% INCR	UNIFORM LANE LOAD	CONC LOAD MOMENT	CONC LOAD SHEAR	GAGE DISTANCE	PASSING DISTANCE	VARY LAST	MAX AXLE DIST
3	N	0.000	0.000	0.000	0.0	0.0		0.0

TRUCK LOAD

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	16.00	15.00	2	17.00	4.00	3	17.00	0.00			

SPECIAL LIVE LOADING (**NJDOT 3S2**)

LANE LOADING

NUMBER OF AXLES	3% INCR	UNIFORM LANE LOAD	CONC LOAD MOMENT	CONC LOAD SHEAR	GAGE DISTANCE	PASSING DISTANCE	VARY LAST	MAX AXLE DIST
5	N	0.000	0.000	0.000	0.0	0.0		0.0

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

TRUCK LOAD

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	11.00	2	17.00	4.00	3	17.00	22.00	4	17.00	4.00
5	17.00	0.00									

SPECIAL LIVE LOADING **(Type 3-3)**

LANE LOADING

NUMBER OF AXLES	3% INCR	UNIFORM LANE LOAD	CONC LOAD MOMENT	CONC LOAD SHEAR	GAGE DISTANCE	PASSING DISTANCE	VARY LAST	MAX AXLE DIST
6	N	0.000	0.000	0.000	0.0	0.0		0.0

TRUCK LOAD

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	15.00	2	12.00	4.00	3	12.00	15.00	4	16.00	16.00
5	14.00	4.00	6	14.00	0.00						

DEFAULT VALUES

GAGE DIST	PASS DIST	DLF	LLF	DISTR SHEAR	UDLF	P/S LOSS %	UNIT WT DK CONC
6.0	4.0	1.30	2.17	0.591	0.0150	0.04	0.150

ST YLD Fy	AASHTO FC	COMP FC	TENS FT	SLAB FCS	ALLOW SHR-VHA	OR STR LEVEL	IR STR LEVEL
229.5	N	2.400	0.232	1.600	0.300	0.900	0.800

STEEL E	N DES	N ULT	CREEP FACTOR	SPEC A/R	FSY
28000	1.225	1.500	1.6	1979	60

****
* RATING OF A FASCIA BEAM *
****

BASIC BEAM SECTION PROPERTIES

DEPTH IN	AREA IN.2	WEIGHT LBS/FT	M OF I IN.4	N.A. TO TOP YT IN.	N.A. TO BOT YB IN	Z TOP IN.3	Z BOT IN.3
54.06	790.8	823.75	261764.9	29.28	24.78	8939.1	10564.9

COMPOSITE SECTION PROPERTIES

SLAB WIDTH	AREA IN.2	M OF I IN.4	N.A. TO SLAB TOP	N.A. TO BEAM TOP	N.A. TO BEAM BOT	Z TOP SLAB	Z TOP BEAM	Z BOT BEAM
58.70	1254.9	631995.0	27.19	16.19	37.87	23240.4	39027.0	16690.2

UNIFORM DEAD LOADS ACTING ON GIRDER (KIPS/FT)

GIRDER WEIGHT	SLAB WEIGHT	HAUNCH WEIGHT	FORMWORK WEIGHT	INPUT DL1	FUTURE WEARING SURFACE	INPUT DL2	TOTAL DL1	TOTAL DL2
0.8238	0.5809	0.0417	0.0734	0.0000	0.0000	0.7500	1.5197	0.7500

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

DEAD LOAD AND LIVE LOAD REACTIONS

DL1 REACTION	DL2 REACTION	IMPACT FACTOR	LL+I SP-1 REACTION	LL+I SP-2 REACTION	LL+I SP-3 REACTION	LL+I SP-4 REACTION
65.6	31.1	1.241	48.4 T	32.5 T	42.0 T	38.1 T

PRESTRESSING FORCE (STRAND PATTERN UNKNOWN)

INITIAL	LOSS %	EFFECTIVE	NO. OF STRANDS	ECCENTRICITY	C.G.S.
1239.300	22.80	956.740	40	13.351	11.426

****
* RATING DATA *
****

LIVE LOAD TYPE: **HS20** GROSS WEIGHT: 36.00 TONS

UNFACTORED MOMENTS AND SHEARS

X	LOCATION FROM CL BRG	DL1 MOMENT	DL2 MOMENT	LL+I MOMENT	DL1 SHEAR	DL2 SHEAR	LL+I SHEAR
H/2	2.711	172.2	81.5	77.2	61.5	29.1	36.1
0.05	4.145	258.8	122.4	115.6	59.3	28.0	35.5
0.10	8.290	491.4	231.9	217.5	53.0	24.9	33.5
0.15	12.435	697.9	328.6	305.5	46.7	21.8	31.5
0.20	16.580	865.5	412.3	379.7	40.4	18.7	29.5
0.25	20.725	1016.6	483.2	440.1	32.8	15.5	27.5
0.30	24.870	1141.6	541.2	486.7	26.5	12.4	25.4
0.35	29.015	1240.5	586.3	522.1	20.2	9.3	23.4
0.40	33.160	1304.7	618.5	548.8	13.9	6.2	21.3
0.45	37.305	1350.3	637.8	561.8	6.3	3.1	19.2
0.50	41.450	1369.7	644.3	560.9	0.0	0.0	17.1

STRENGTHS AND RATINGS

	MOMENT STRENGTHS				MOMENT RATINGS		SHEAR	SHEAR RATINGS	
		CRACKING	IR	OR					
X	phi*Mn	Mcr	Mfy	Mfy	IR	OR	STRENGTH	IR	OR
H/2	3832.8	4072.4	2562.7	2872.9	20.913U	33.932F			
0.05	4457.8	4022.3	2980.5	3341.3	15.790U	25.598F			
0.10	6030.3	3887.4	4031.9	4520.1	10.786U	17.459F			
0.15	6533.9	3767.6	4368.6	4897.5	7.386B	12.671F			
0.20	6533.9	3670.5	4368.6	4897.5	5.025B	9.533F			
0.25	6533.9	3582.9	4368.6	4897.5	3.632B	7.720F	231.9	2.838	4.737
0.30	6533.9	3510.4	4368.6	4897.5	2.759B	6.605F	231.9	3.287	5.486
0.35	6533.9	3453.1	4368.6	4897.5	2.186B	5.882F	231.9	3.816	6.369
0.40	6533.9	3415.9	4368.6	4897.5	1.836B	5.419F	231.9	4.450	7.428
0.45	6533.9	3389.4	4368.6	4897.5	1.632B	5.179F	231.9	5.265	8.789
0.50	6533.9	3378.1	4368.6	4897.5	1.568B	5.141F	231.9	6.242	10.420

CODES: MOMENT STRENGTH CODE:
= MOMENT STRENGTH REDUCED BY phi*Mn/MIN(1.2Mcr or 4/3Mu)

INVENTORY RATING CODES:
IF SERVICEABILITY GOVERNS INVENTORY RATING:
B = BOTTOM STRESS GOVERNS
T = TOP STRESS GOVERNS
S = SLAB STRESS GOVERNS

U = phi*Mn GOVERNS
F = Mfy GOVERNS

OPERATING RATING CODES:
U = phi*Mn GOVERNS

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

F = Mfy GOVERNS

GOVERNING RATINGS

STRESSES AT 41.450 FROM CL BRG (TENSION + COMPRESSION -)

	TOP FIBER SLAB	TOP FIBER BEAM	BOT FIBER BEAM
P/S	0.000	0.219	-2.419
DL1	0.000	-1.839	1.556
DL2	-0.272	-0.198	0.463
P/S + DL	-0.272	-1.818	-0.400
LL + I	-0.236	-0.172	0.403
TOTAL	-0.508	-1.990	0.003
IR ALLOW	-1.600	-2.400	0.232

FLEXURAL RATINGS (BASED ON MOMENT)

	FACTOR	TONS	LOCATION FROM CL BRG
IR	1.568	56.44	41.450
OR	5.141	185.07	41.450

SHEAR RATINGS (1979 I)

	FACTOR	TONS	LOCATION FROM CL BRG
IR	2.838	102.17	20.725
OR	4.737	170.54	20.725

LIVE LOAD TYPE: 3 GROSS WEIGHT: 25.00 TONS

UNFACTORED MOMENTS AND SHEARS

X	LOCATION FROM CL BRG	DL1 MOMENT	DL2 MOMENT	LL+I MOMENT	DL1 SHEAR	DL2 SHEAR	LL+I SHEAR
H/2	2.711	172.2	81.5	55.0	61.5	29.1	25.8
0.05	4.145	258.8	122.4	82.5	59.3	28.0	25.3
0.10	8.290	491.4	231.9	155.4	53.0	24.9	23.9
0.15	12.435	697.9	328.6	218.7	46.7	21.8	22.5
0.20	16.580	865.5	412.3	272.4	40.4	18.7	21.2
0.25	20.725	1016.6	483.2	316.6	32.8	15.5	19.8
0.30	24.870	1141.6	541.2	351.1	26.5	12.4	18.3
0.35	29.015	1240.5	586.3	377.0	20.2	9.3	16.9
0.40	33.160	1304.7	618.5	397.0	13.9	6.2	15.5
0.45	37.305	1350.3	637.8	407.4	6.3	3.1	14.1
0.50	41.450	1369.7	644.3	408.2	0.0	0.0	12.6

STRENGTHS AND RATINGS

	MOMENT STRENGTHS				MOMENT RATINGS		SHEAR	SHEAR RATINGS	
X	phi*Mn	CRACKING Mcr	IR Mfy	OR Mfy	IR	OR	STRENGTH	IR	OR
H/2	3832.8	4072.4	2562.7	2872.9	29.331U	47.590F			
0.05	4457.8	4022.3	2980.5	3341.3	22.134U	35.883F			
0.10	6030.3	3887.4	4031.9	4520.1	15.094U	24.432F			
0.15	6533.9	3767.6	4368.6	4897.5	10.316B	17.699F			
0.20	6533.9	3670.5	4368.6	4897.5	7.003B	13.286F			
0.25	6533.9	3582.9	4368.6	4897.5	5.049B	10.733F	231.9	3.945	6.586
0.30	6533.9	3510.4	4368.6	4897.5	3.824B	9.155F	231.9	4.556	7.604
0.35	6533.9	3453.1	4368.6	4897.5	3.028B	8.145F	231.9	5.271	8.798
0.40	6533.9	3415.9	4368.6	4897.5	2.539B	7.492F	231.9	6.121	10.217
0.45	6533.9	3389.4	4368.6	4897.5	2.250B	7.141F	231.9	7.206	12.028
0.50	6533.9	3378.1	4368.6	4897.5	2.154B	7.064F	231.9	8.488	14.169

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

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CODES:  MOMENT STRENGTH CODE:
              # = MOMENT STRENGTH REDUCED BY phi*Mn/MIN(1.2Mcr or 4/3Mu)

        INVENTORY RATING CODES:
              IF SERVICEABILITY GOVERNS INVENTORY RATING:
                   B = BOTTOM STRESS GOVERNS
                   T = TOP STRESS GOVERNS
                   S = SLAB STRESS GOVERNS

              U = phi*Mn GOVERNS
              F = Mfy GOVERNS

        OPERATING RATING CODES:
              U = phi*Mn GOVERNS
              F = Mfy GOVERNS
```

GOVERNING RATINGS

STRESSES AT 41.450 FROM CL BRG (TENSION + COMPRESSION -)

	TOP FIBER SLAB	TOP FIBER BEAM	BOT FIBER BEAM
P/S	0.000	0.219	-2.419
DL1	0.000	-1.839	1.556
DL2	-0.272	-0.198	0.463
P/S + DL	-0.272	-1.818	-0.400
LL + I	-0.172	-0.126	0.294
TOTAL	-0.444	-1.943	-0.106
IR ALLOW	-1.600	-2.400	0.232

FLEXURAL RATINGS (BASED ON MOMENT)

	FACTOR	TONS	LOCATION FROM CL BRG
IR	2.154	53.85	41.450
OR	7.064	176.59	41.450

SHEAR RATINGS (1979 I)

	FACTOR	TONS	LOCATION FROM CL BRG
IR	3.945	98.63	20.725
OR	6.586	164.64	20.725

LIVE LOAD TYPE: **NJDOT 3S2** GROSS WEIGHT: 40.00 TONS

UNFACTORED MOMENTS AND SHEARS

X	LOCATION FROM CL BRG	DL1 MOMENT	DL2 MOMENT	LL+I MOMENT	DL1 SHEAR	DL2 SHEAR	LL+I SHEAR
H/2	2.711	172.2	81.5	74.2	61.5	29.1	34.7
0.05	4.145	258.8	122.4	110.8	59.3	28.0	34.0
0.10	8.290	491.4	231.9	206.2	53.0	24.9	31.7
0.15	12.435	697.9	328.6	286.3	46.7	21.8	29.5
0.20	16.580	865.5	412.3	351.1	40.4	18.7	27.3
0.25	20.725	1016.6	483.2	411.6	32.8	15.5	25.0
0.30	24.870	1141.6	541.2	460.1	26.5	12.4	22.7
0.35	29.015	1240.5	586.3	493.2	20.2	9.3	20.4
0.40	33.160	1304.7	618.5	516.6	13.9	6.2	18.1
0.45	37.305	1350.3	637.8	526.5	6.3	3.1	15.7
0.50	41.450	1369.7	644.3	521.0	0.0	0.0	13.4

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

STRENGTHS AND RATINGS

	MOMENT STRENGTHS				MOMENT RATINGS			SHEAR RATINGS	
		CRACKING	IR	OR					
X	phi*Mn	Mcr	Mfy	Mfy	IR	OR	SHEAR STRENGTH	IR	OR
H/2	3832.8	4072.4	2562.7	2872.9	21.760U	35.305F			
0.05	4457.8	4022.3	2980.5	3341.3	16.482U	26.721F			
0.10	6030.3	3887.4	4031.9	4520.1	11.374U	18.411F			
0.15	6533.9	3767.6	4368.6	4897.5	7.881B	13.520F			
0.20	6533.9	3670.5	4368.6	4897.5	5.434B	10.311F			
0.25	6533.9	3582.9	4368.6	4897.5	3.883B	8.255F	231.9	3.119	5.206
0.30	6533.9	3510.4	4368.6	4897.5	2.919B	6.987F	231.9	3.681	6.145
0.35	6533.9	3453.1	4368.6	4897.5	2.314B	6.226F	231.9	4.373	7.300
0.40	6533.9	3415.9	4368.6	4897.5	1.951B	5.757F	231.9	5.247	8.759
0.45	6533.9	3389.4	4368.6	4897.5	1.741B	5.526F	231.9	6.437	10.744
0.50	6533.9	3378.1	4368.6	4897.5	1.688B	5.534F	231.9	8.001	13.356

CODES: MOMENT STRENGTH CODE:
= MOMENT STRENGTH REDUCED BY phi*Mn/MIN(1.2Mcr or 4/3Mu)

INVENTORY RATING CODES:
IF SERVICEABILITY GOVERNS INVENTORY RATING:
B = BOTTOM STRESS GOVERNS
T = TOP STRESS GOVERNS
S = SLAB STRESS GOVERNS

U = phi*Mn GOVERNS
F = Mfy GOVERNS

OPERATING RATING CODES:
U = phi*Mn GOVERNS
F = Mfy GOVERNS

GOVERNING RATINGS

STRESSES AT 41.450 FROM CL BRG (TENSION + COMPRESSION -)

	TOP FIBER SLAB	TOP FIBER BEAM	BOT FIBER BEAM
P/S	0.000	0.219	-2.419
DL1	0.000	-1.839	1.556
DL2	-0.272	-0.198	0.463
P/S + DL	-0.272	-1.818	-0.400
LL + I	-0.220	-0.160	0.375
TOTAL	-0.491	-1.978	-0.025
IR ALLOW	-1.600	-2.400	0.232

FLEXURAL RATINGS (BASED ON MOMENT)

	FACTOR	TONS	LOCATION FROM CL BRG
IR	1.688	67.51	41.450
OR	5.526	221.05	37.305

SHEAR RATINGS (1979 I)

	FACTOR	TONS	LOCATION FROM CL BRG
IR	3.119	124.75	20.725
OR	5.206	208.24	20.725

LIVE LOAD TYPE: **3-3** GROSS WEIGHT: 40.00 TONS

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

UNFACTORED MOMENTS AND SHEARS

X	LOCATION FROM CL BRG	DL1 MOMENT	DL2 MOMENT	LL+I MOMENT	DL1 SHEAR	DL2 SHEAR	LL+I SHEAR
H/2	2.711	172.2	81.5	68.1	61.5	29.1	31.9
0.05	4.145	258.8	122.4	101.5	59.3	28.0	31.1
0.10	8.290	491.4	231.9	187.7	53.0	24.9	28.9
0.15	12.435	697.9	328.6	258.6	46.7	21.8	26.6
0.20	16.580	865.5	412.3	317.7	40.4	18.7	24.4
0.25	20.725	1016.6	483.2	365.3	32.8	15.5	22.1
0.30	24.870	1141.6	541.2	397.5	26.5	12.4	19.8
0.35	29.015	1240.5	586.3	426.6	20.2	9.3	17.5
0.40	33.160	1304.7	618.5	445.5	13.9	6.2	15.5
0.45	37.305	1350.3	637.8	461.3	6.3	3.1	13.5
0.50	41.450	1369.7	644.3	461.8	0.0	0.0	11.5

STRENGTHS AND RATINGS

	MOMENT STRENGTHS				MOMENT RATINGS			SHEAR RATINGS	
X	phi*Mn	CRACKING Mcr	IR Mfy	OR Mfy	IR	OR	SHEAR STRENGTH	IR	OR
H/2	3832.8	4072.4	2562.7	2872.9	23.693U	38.442F			
0.05	4457.8	4022.3	2980.5	3341.3	17.985U	29.156F			
0.10	6030.3	3887.4	4031.9	4520.1	12.496U	20.226F			
0.15	6533.9	3767.6	4368.6	4897.5	8.727B	14.972F			
0.20	6533.9	3670.5	4368.6	4897.5	6.004B	11.392F			
0.25	6533.9	3582.9	4368.6	4897.5	4.375B	9.301F	231.9	3.526	5.886
0.30	6533.9	3510.4	4368.6	4897.5	3.378B	8.087F	231.9	4.220	7.045
0.35	6533.9	3453.1	4368.6	4897.5	2.676B	7.198F	231.9	5.099	8.512
0.40	6533.9	3415.9	4368.6	4897.5	2.262B	6.676F	231.9	6.111	10.201
0.45	6533.9	3389.4	4368.6	4897.5	1.987B	6.307F	231.9	7.485	12.495
0.50	6533.9	3378.1	4368.6	4897.5	1.904B	6.244F	231.9	9.285	15.499

CODES: MOMENT STRENGTH CODE:
= MOMENT STRENGTH REDUCED BY phi*Mn/MIN(1.2Mcr or 4/3Mu)

INVENTORY RATING CODES:
IF SERVICEABILITY GOVERNS INVENTORY RATING:
B = BOTTOM STRESS GOVERNS
T = TOP STRESS GOVERNS
S = SLAB STRESS GOVERNS

U = phi*Mn GOVERNS
F = Mfy GOVERNS

OPERATING RATING CODES:
U = phi*Mn GOVERNS
F = Mfy GOVERNS

GOVERNING RATINGS

STRESSES AT 41.450 FROM CL BRG (TENSION + COMPRESSION -)

	TOP FIBER SLAB	TOP FIBER BEAM	BOT FIBER BEAM
P/S	0.000	0.219	-2.419
DL1	0.000	-1.839	1.556
DL2	-0.272	-0.198	0.463
P/S + DL	-0.272	-1.818	-0.400
LL + I	-0.195	-0.142	0.332

RATINGS SHEET ## OF ##

PS3 (Version 3.5.0.1) COMPUTER PROGRAM OUTPUT FOR BRIDGE NO. 4###-###

TOTAL	-0.466	-1.960	-0.068
IR ALLOW	-1.600	-2.400	0.232

FLEXURAL RATINGS (BASED ON MOMENT)

	FACTOR	TONS	LOCATION FROM CL BRG
IR	1.904	76.17	41.450
OR	6.244	249.77	41.450

SHEAR RATINGS (1979 I)

	FACTOR	TONS	LOCATION FROM CL BRG
IR	3.526	141.05	20.725
OR	5.886	235.45	20.725

NOTE: FOR A COMPOSITE BEAM, THE STRESSES PRINTED FOR P/S AND DL1 ARE BASED ON SECTION MODULI OF THE BASIC BEAM. THE STRESSES PRINTED FOR DL2 AND LL+I ARE BASED ON SECTION MODULI OF THE COMPOSITE BEAM.

SERVICABILTY IR RATINGS ARE BASED ON STRESSES DUE TO P/S+DL AND LL+I.

****
* CONTROLLING RATINGS *
****

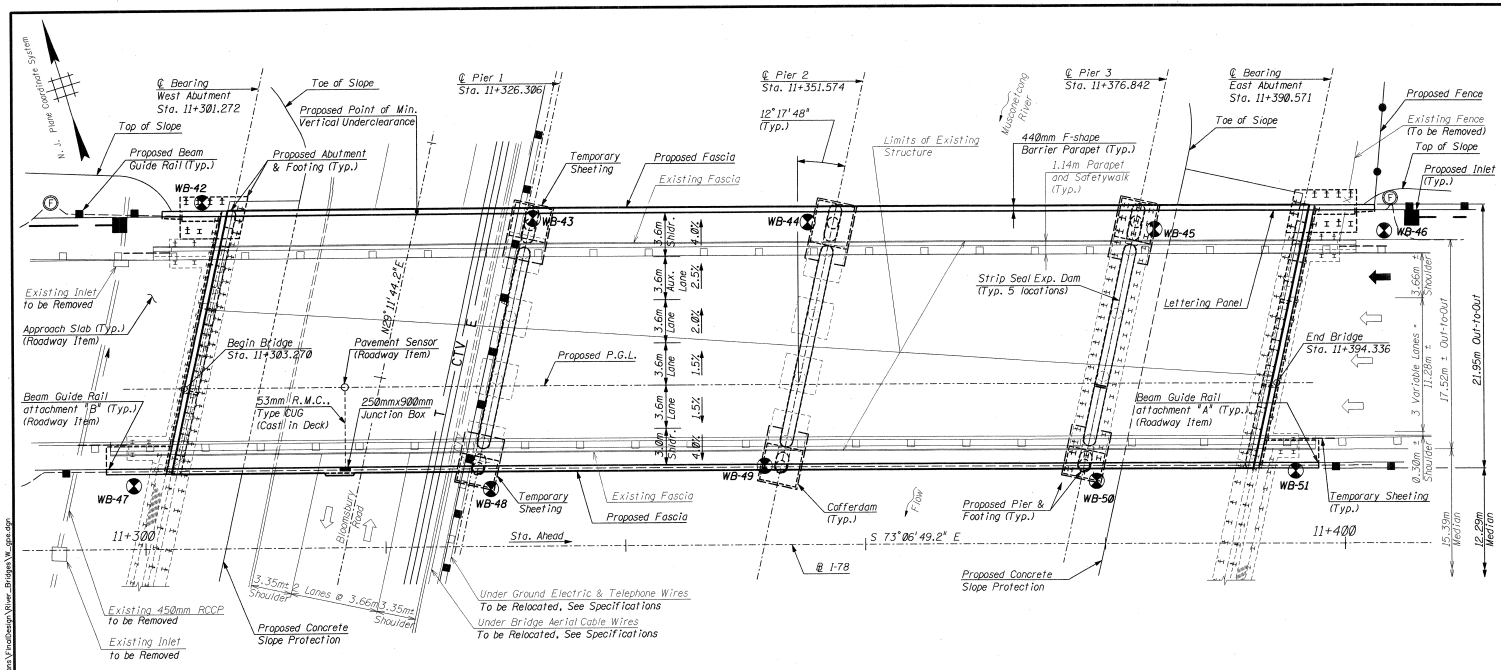
VEHICLE TYPE		IR	OR
HS20	LOADING (TONS)	56.44 F	170.54 S
Type 3	LOADING (TONS)	53.85 F	164.64 S
NJDOT 3S2	LOADING (TONS)	67.51 F	208.24 S
Type 3-3	LOADING (TONS)	76.17 F	235.45 S

F = FLEXURAL RATING S = SHEAR RATING

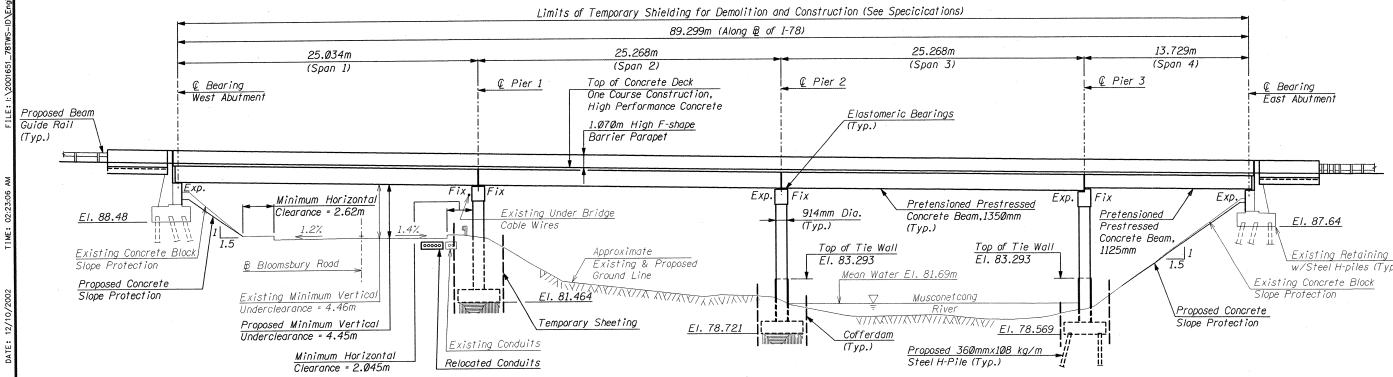
STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
N.J.	IM-78-1 (012)	924	1124

STRUCTURE NO. 2113-160 (I-78 WB)

STRUCTURE NAME
I-78 WB OVER COUNTY ROUTE 632
(BLOOMSBURY ROAD) AND MUSCONETCONG RIVER



PLAN
SCALE: 1:200



SOUTH ELEVATION
SCALE: 1:200

HYDRAULIC AND HYDROLOGIC DATA

DRAINAGE AREA (HECTARES)		2 814	2 814
DESIGN DISCHARGE (CMS)		199	246
DESIGN WATER SURFACE ELEVATION (M)	UP	84.58	85.07
	DOWN	84.42	84.91
ENERGY LINE ELEVATION (M)	UP	84.80	85.41
	DOWN	84.43	85.01
FREQUENCY		50 YR.	100 YR.

GENERAL NOTES:

1. DESIGN SPECIFICATIONS

(a) 1998 AASHTO LRFD Bridge Design Specifications for Highway Bridges (2nd Edition), with current interims, as modified by Section 3 of the NJDOT Design Manual for Bridges and Structures.

2. CONSTRUCTION SPECIFICATIONS

(a) 2001 NJDOT Standard Specifications for Road and Bridge Construction as modified by the Special Provisions.

3. LIVE LOAD

(a) AASHTO HL-93 or NJDOT Permit Vehicle at Strength II Limit State.

4. CONCRETE DESIGN STRESSES

(a) Specified Design Compressive Strength (f'c)
(In accordance with the Retest Limit for Pay-Adjustment Items as specified in Table 914-4 of the NJDOT Standard Specifications and as may be modified by the Special Provisions)
Class A.....28 MPa
Class B.....21 Mpa
Class P1.....38 Mpa
(The retest limit for non-pay-adjustment items shall be as specified on the last line of Table 914-4 of the NJDOT Standard Specifications and as may be modified by the Special Provisions).
(b) Class Design Strengths
(In accordance with Table 914-3 of the NJDOT Standard Specifications)
Class A.....32 MPa
Class B.....26 MPa
Class P1.....42 Mpa
(c) Allowable Stresses, Extreme Fiber in Compression (fc)
Class A.....11.2 MPa
Deck Slabs of Vehicular Bridges.....9.8 MPa
Class B.....8.4 MPa
Class P1.....15.2 MPa

5. REINFORCEMENT STEEL

(a) ASTM A615M (Grade 420)(fs)=165 MPa

6. SUPERSTRUCTURE

(a) The Pretensioning Strands shall be 13mm Dia., 7 wire uncoated steel strands conforming to current AASHTO M203, Grade 1860 and shall be low relaxation strands.
(b) Dead Load includes a 1.2 KPa provision for a future 50 millimeter thick concrete overlay protective system on the bridge deck.
(c) High Performance Concrete mix design to be used for deck slabs, parapets, and cast-in-place concrete diaphragms. See Special Provisions.

7. SEISMIC DESIGN NOTES

Seismic Performance Zone = 2
Acceleration Coefficient "A" = 0.18
Soil Profile = Type I

8. BORINGS

WB-42 Location of Borings under this Contract.

9. SUBSTRUCTURE

(a) 360mm x 108 Kg/m Steel H-Pile:
Design Capacity = 640kN
Ultimate Capacity = 1,440 kN

DWG: 2-1

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

GENERAL PLAN AND ELEVATION

ROUTE I-78 SECTION 6J & 6K

200 0 200 400 800
1:200

ALL DIMENSIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS

REVISION	BY	C'K'D	DATE

GREENMAN-PEDERSEN, INC.
GREGORY P. JOHNSON, P.E.
N.J.P.E. 35430

SCALE: 1:200

BRIDGE SHEET NO. B71 OF B217

924
1124

CONTROL SECTION	2113/1014	JOB NO. 2113505	
DES. BY	C. Cheung	CHK. BY	J. Coyle
DWN. BY	C. Cheung		

IN CHARGE OF G. P. Johnson

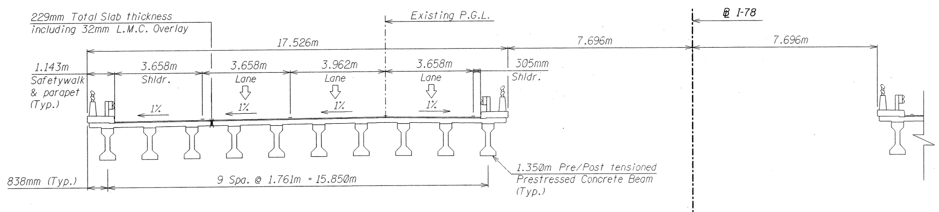
GREENMAN-PEDERSEN, INC.
DATE: 12/10/2002 TIME: 02:23:06 AM
FILE: I:\2001651_78TWS-1\Engineering\Structures\Phase1\Design\Wive_Bridge\W_gpa.dgn

15-36

STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
N.J.	IM-78-1 (012)	926	1124

STRUCTURE NO. 2113-160 (I-78 WB)

STRUCTURE NAME
I-78 WB OVER COUNTY ROUTE 632
(BLOOMSBURY ROAD) AND MUSCONETCONG RIVER

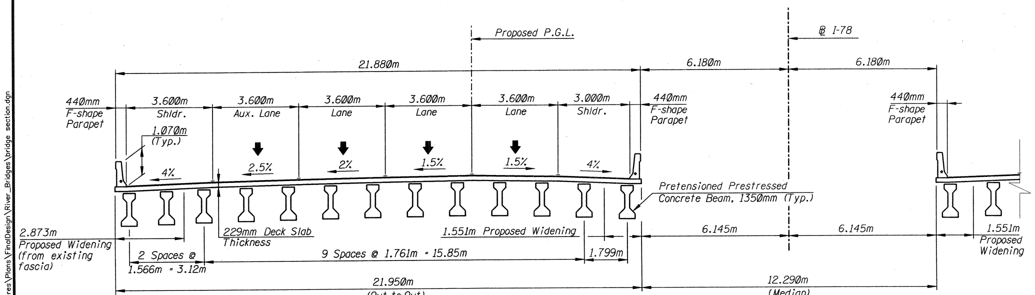


229mm Total Slab thickness
Including 32mm L.M.C. Overlay
Existing P.G.L.
℄ I-78
17.526m
7.696m
7.696m
1.143m
Safetywalk
& parapet
(Typ.)
3.658m
Shldr.
3.658m
Lane
3.962m
Lane
3.658m
Lane
305mm
Shldr.
1%
838mm (Typ.)
9 Spa. @ 1.761m = 15.850m
1.350m Pre/Post tensioned
Prestressed Concrete Beam
(Typ.)

WESTBOUND

EXISTING BRIDGE SECTION

(Spans 1 through 3 as shown, span 4 not shown for clarity)
SCALE: 1:100

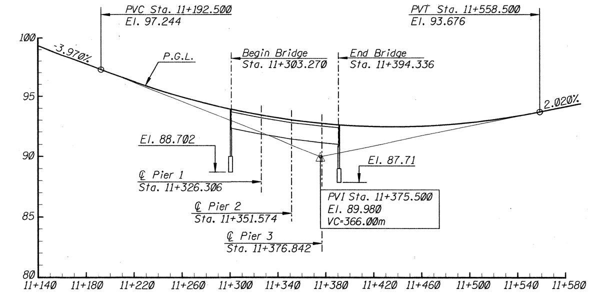


Proposed P.G.L.
℄ I-78
21.880m
6.180m
6.180m
440mm
F-shape
Parapet
3.600m
Shldr.
3.600m
Aux. Lane
3.600m
Lane
3.600m
Lane
3.600m
Lane
3.000m
Shldr.
1.070m
(Typ.)
4%
2.5%
2%
1.5%
1.5%
4%
Pretensioned Prestressed
Concrete Beam, 1350mm (Typ.)
2.873m
Proposed Widening
(from existing
fascia)
2 Spaces @
1.566m = 3.12m
229mm Deck Slab
Thickness
1.551m Proposed Widening
9 Spaces @ 1.761m = 15.85m
1.799m
6.145m
6.145m
1.551m
Proposed
Widening
21.950m
(Out-to-Out)
12.290m
(Median)

WESTBOUND

PROPOSED BRIDGE SECTION

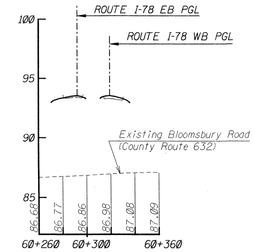
(Spans 2 through 3 as shown, spans 1 and 4 similar)
SCALE: 1:100



PVC Sta. 11+192.500
El. 97.244
PVT Sta. 11+558.500
El. 93.676
-3.970%
P.G.L.
Begin Bridge
Sta. 11+303.270
End Bridge
Sta. 11+394.336
2.020%
El. 88.702
El. 87.71
℄ Pier 1
Sta. 11+326.306
℄ Pier 2
Sta. 11+351.574
℄ Pier 3
Sta. 11+376.842
PVI Sta. 11+375.500
El. 89.980
VC=366.00m
100
95
90
85
80
11+140
11+180
11+220
11+260
11+300
11+340
11+380
11+420
11+460
11+500
11+540
11+580

WESTBOUND PROFILE

SCALE: Horz: 1:2000
Vert. 1:200



PROFILE BLOOMSBURY ROAD

SCALE: Horz.: 1:2000
Vert.: 1:200

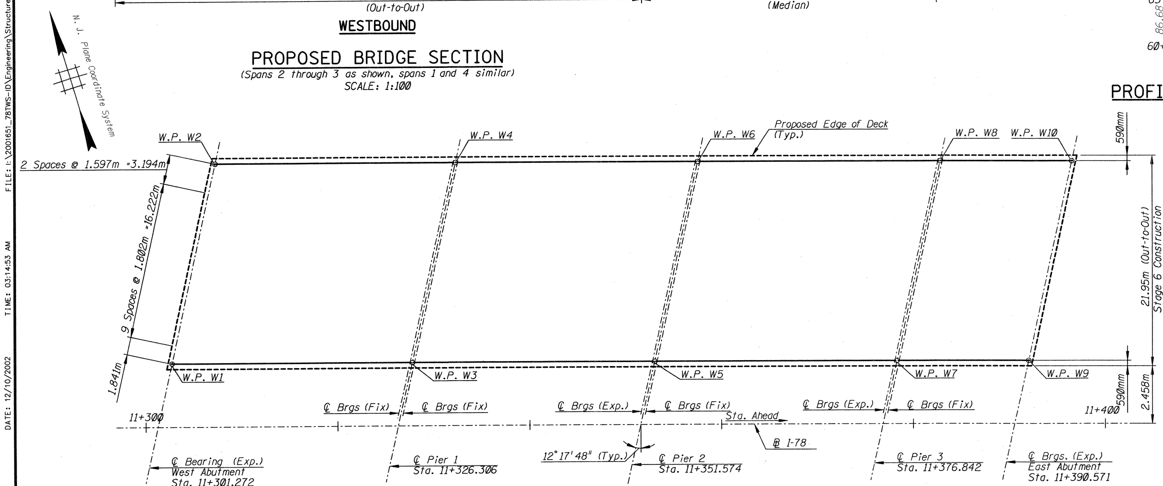
Legend:

Existing Girder

Proposed Girder

Notes:

1. All sections on this sheet are shown looking East.
2. Sections shown are for spans 1 through 3. Span 4 similar except for beam spacing on the existing section and beam type on the proposed section.



N. J. Plane Coordinate System
W.P. W2
W.P. W4
W.P. W6
Proposed Edge of Deck
(Typ.)
W.P. W8
W.P. W10
590mm
2 Spaces @ 1.597m = 3.194m
9 Spaces @ 1.802m = 16.222m
1.841m
21.95m (Out-to-Out)
Stage 6 Construction
W.P. W1
W.P. W3
W.P. W5
W.P. W7
W.P. W9
590mm
2.458m
11+300
11+400
℄ Brgs (Fix)
℄ Brgs (Fix)
℄ Brgs (Exp.)
℄ Brgs (Fix)
℄ Brgs (Exp.)
℄ Brgs (Fix)
Sta. Ahead
℄ I-78
℄ Bearing (Exp.)
West Abutment
Sta. 11+301.272
℄ Pier 1
Sta. 11+326.306
12° 17' 48" (Typ.)
℄ Pier 2
Sta. 11+351.574
℄ Pier 3
Sta. 11+376.842
℄ Brgs. (Exp.)
East Abutment
Sta. 11+390.571

WORKING POINT DIAGRAM

SCALE: N.T.S.

TABLE - WORK POINT DATA

No.	CONSTR. ℄ I-78 WB	OFFSET FROM ℄	NORTHERLY	EASTERLY
W.P. W1	11+302.740	6.735m LT	203160.918	101031.853
W.P. W2	11+307.267	27.505m LT	203179.477	101042.218
W.P. W3	11+327.774	6.735m LT	203153.646	101055.808
W.P. W4	11+332.302	27.505m LT	203172.205	101066.173
W.P. W5	11+353.043	6.735m LT	203146.306	101079.987
W.P. W6	11+357.570	27.505m LT	203164.866	101090.352
W.P. W7	11+378.311	6.735m LT	203138.967	101104.166
W.P. W8	11+382.839	27.505m LT	203157.526	101114.531
W.P. W9	11+392.038	6.735m LT	203134.980	101117.301
W.P. W10	11+396.565	27.505m LT	203153.539	101127.666

ALL DIMENSIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS

100 0 100 200 400 (1:100) · 200 0 200 400 800 (1:200) · 2000 0 2000 4000 8000 (1:2000)

DWG: 2-3

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

TYPICAL SECTIONS, PROFILES AND WORKING POINTS

ROUTE I-78 SECTION 6J & 6K

REVISION	BY	C'K'D	DATE

GREENMAN-PEDERSEN, INC.
GREGORY P. JOHNSON, P.E.
N.J.P.E. 35430

SCALE: As Noted

BRIDGE SHEET NO. B73 OF B217

926 / 1124

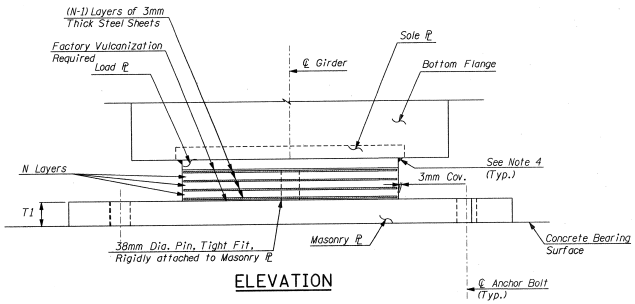
CONTROL SECTION	2113/1014	JOB NO. 2113505	
DES. BY	K. M. Healy	CHK. BY	J. Coyle
DWN. BY	C. Cheung		
IN CHARGE OF	G. P. Johnson		

GREENMAN-PEDERSEN, INC. DATE: 12/10/2002 TIME: 03:14:53 AM FILE: I:\200165I_78TWS-ID\Engineering\Structures\Plans\FinalDesign\River_Bridges\bridge section.dgn

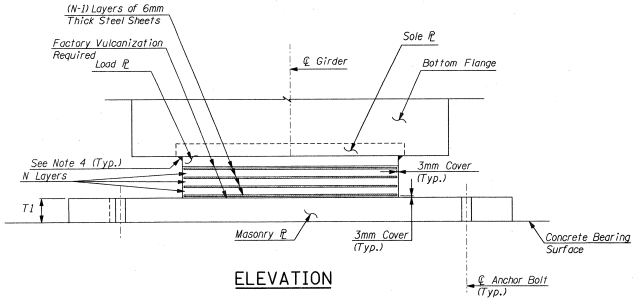
STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
N.J.	IM-78-1 (012)	965	1124

STRUCTURE NO. 2113-160 (I-78 WB)

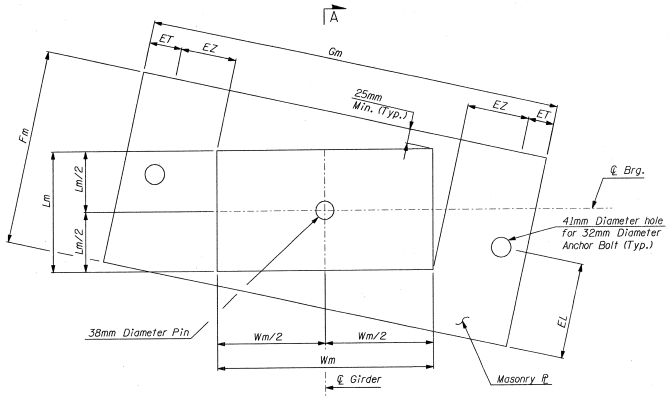
STRUCTURE NAME
I-78 WB OVER COUNTY ROUTE 632 (BLOOMSBURY ROAD) AND MUSCONETCONG RIVER



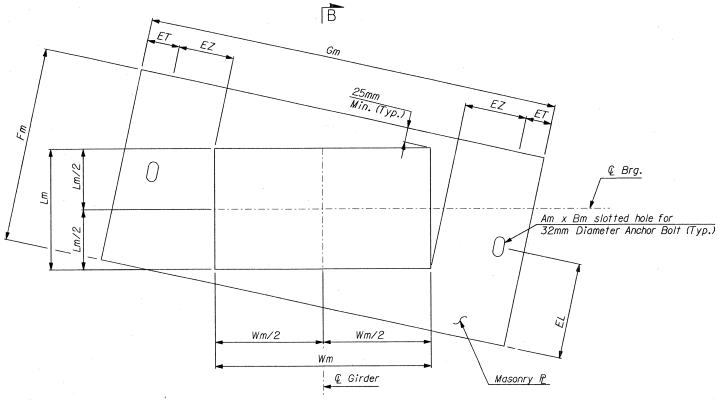
ELEVATION



ELEVATION



PLAN
FIXED BEARINGS
N.T.S.



PLAN
EXPANSION BEARINGS
N.T.S.

Notes:

1. For Bearing type locations, see Dwg. 2-44.
2. For Sections A-A & B-B, see Dwg. 2-43.
3. For Sole ℄ Dimensions and Details, see Dwgs. 2-45 & 2-46.
4. Manufacturer shall provide the size of weld required. Minimum size of weld shall be 8mm.
5. Concrete surfaces under the bearings shall conform to Section 501.12 "Placing Concrete" of the New Jersey State Standard Specifications, Construction and Materials.
6. The continuous weld connecting the sole plate to the bottom flange shall be allowed to cool after each pass. However, the temperature of the steel adjacent to the elastomer shall not exceed 93° C. Temperature shall be controlled by welding procedures and temperature indicating crayons or other devices approved by the Engineer.
7. The bearings are designed so that the superstructure may be erected when the ambient air temperature is within the range of 4° C to 32° C.
8. The hardness (Shore "A" durometer) of the elastomer material shall be 60 +/- 10.
9. The elastomeric bearing device, load plate, masonry plate, anchor bolts, nuts, washer plates and bearing pad shall be included in the unit price bid for Elastomeric Bearings.
10. Anchor bolt shall be threaded as shown in "anchor bolt Detail for all bearings". The nut shall be tightened to the satisfaction of the Engineer and the anchor bolt tip shall be removed one half inch above the top of the nut.
11. Anchor bolts, plates, washer plates and nuts shall conform to the requirements of 2001 NJDOT Standard Specifications for Road And Bridge Construction.
12. All sole, load, and masonry plates, as well as guidebars, shall be AASHTO M270, Grade 345 (ASTM A709M, Grade 345).
13. All steel sheets shall be AASHTO M270, Grade 345.
14. Load plate is to be factory vulcanized to elastomeric pad.

ELASTOMERIC BEARING TABLE (ALL DIMENSIONS ARE IN MILLIMETERS)

LOCATION	FIX / EXP.	ITEM NO.	QUANTITY REQUIRED	MAX. DESIGN REACTION KN	SHAPE FACTOR	LOAD ℄ T2	ELASTOMER LAYERS				MASONRY ℄									BRG.	ANCHOR BOLTS		WELD SIZE	WASHER ℄		LOAD PLATE				DL+SDL KN	LL W/O IMP KN	ϕ_s	ϕP (PIN DIA.)
							THICKNESS	N LAYERS	Lm	Wm	T1	Fm	Gm	Am	Bm	E_T	E_L	Ez	ϕm	H	ϕ	BOLTS PER BRG.	W	Awp	Bwp	Wm	D	T3	T4				
E1	EXP.	N5B01	37	695.3	5.357	25	12.7	3	300	450	50	400	890	70	41	60	200	47	-	160	32	2		132	67	250	450	20	26	334.3	361	34	-
E2	EXP.	N5B01	13	456.5	4.861	25	12.7	3	250	450	50	400	890	70	41	60	190	47	-	160	32	2		132	67	250	450	20	26	162.5	294	34	-
E3	EXP.	N5B01	2	568.9	6.327	25	12.7	3	250	450	50	400	890	70	41	60	200	47	-	160	32	2		132	67	250	450	20	26	257.9	311	34	-
F1	FIX	N5B01	37	695.3	5.357	25	12.7	3	300	450	50	400	890	-	-	60	200	47	41	160	32	2		-	-	250	450	20	26	334.3	361	34	38
F2	FIX	N5B01	13	456.5	4.861	25	12.7	3	250	450	50	400	890	-	-	60	190	47	41	160	32	2		-	-	250	450	20	26	162.5	294	34	38
F3	FIX	N5B01	2	568.9	5.771	25	12.7	3	250	450	50	400	890	-	-	60	200	47	41	160	32	2		-	-	250	450	20	26	257.9	311	34	38

DWG: 2-42

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

BEARING DETAILS I

ROUTE I-78 SECTION 6J & 6K

CONTROL SECTION	2113/1014	JOB NO. 2113525	
DES. BY	S. DiGenova	CHK. BY	K. M. Healy
DWN. BY	S. DiGenova		
IN CHARGE OF	G. P. Johnson		

ALL DIMENSIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS

REVISION	BY	C'K'D	DATE

GREENMAN-PEDERSEN, INC.
GREGORY P. JOHNSON, P.E.
N.J.P.E. 35430

SCALE: As Noted

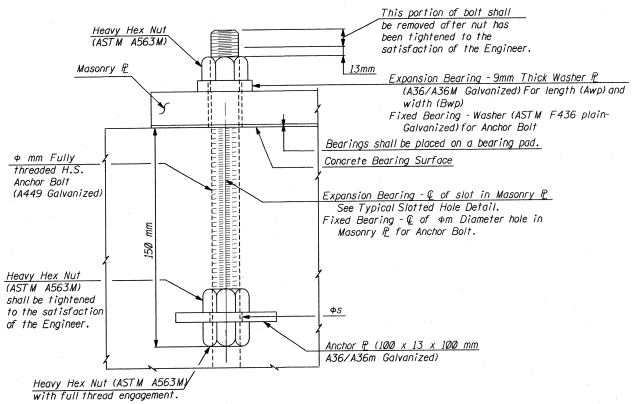
BRIDGE SHEET NO. B112 OF B217

965
1124

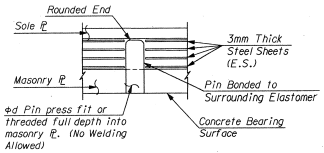
STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
N.J.	IM-78-1 (012)	966	1124

STRUCTURE NO. 2113-160 (I-78 WB)

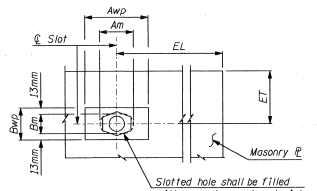
STRUCTURE NAME
I-78 WB OVER COUNTY ROUTE 632
(BLOOMSBURY ROAD) AND MUSCONETCONG RIVER



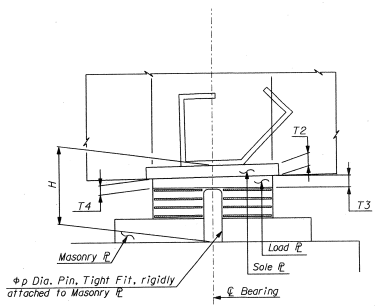
ANCHOR BOLT DETAIL
N.T.S.



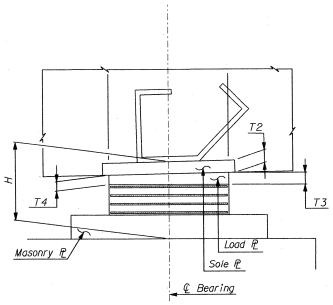
PIN DETAIL FOR FIXED BEARINGS
N.T.S.



SLOTTED HOLE DETAIL FOR EXPANSION BEARINGS
N.T.S.



SECTION A-A
N.T.S.



SECTION B-B
N.T.S.

Notes:

1. For Bearing Plan and Elevation, see Dwg.
2. For Elastomeric Bearing Table, see Dwg.
3. For Sole Plate Details, see Dwg.

ALL DIMENSIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS

DWG: 2-43

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

BEARING DETAILS II

ROUTE I-78 SECTION 6J & 6K

REVISION	BY	C'K'D	DATE

GREENMAN-PEDERSEN, INC.
GREGORY P. JOHNSON, P.E.
N.J.P.E. 35430

SCALE: As Noted

BRIDGE SHEET NO. B113 OF B217

966
1124

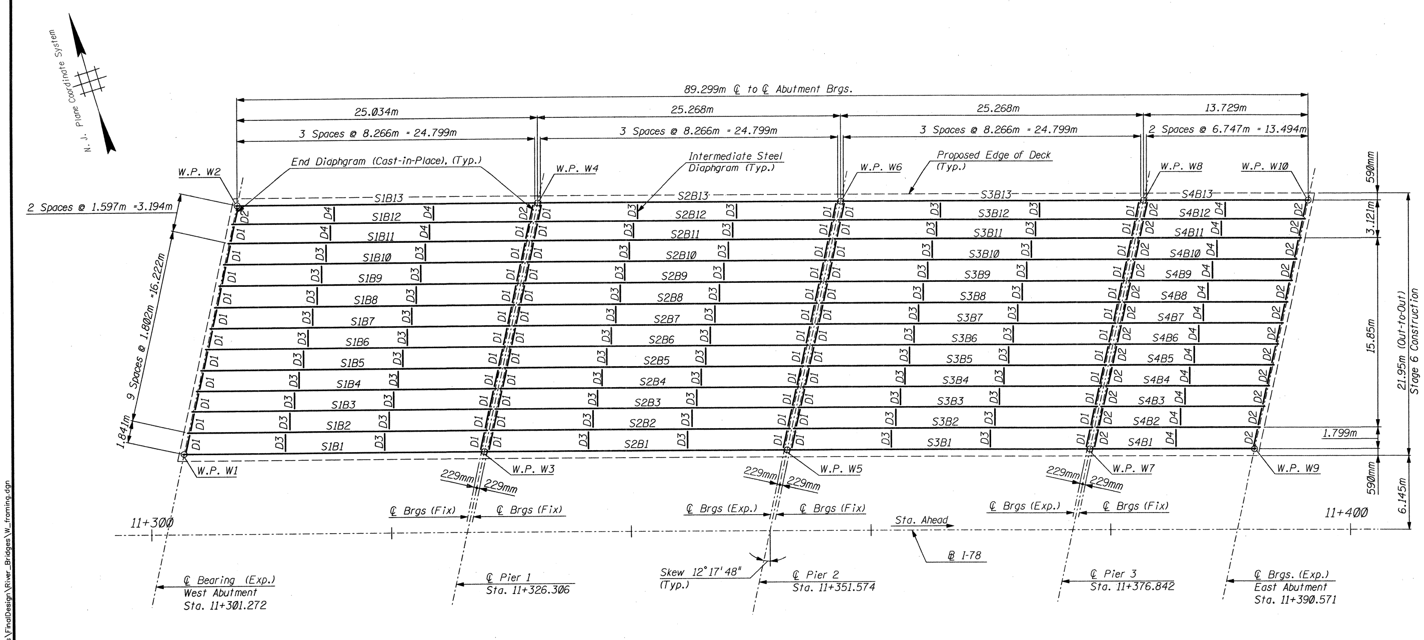
CONTROL SECTION	2113/1014	JOB NO. 2113509	
DES. BY	S. DiGenova	CHK. BY	K. M. Healy
DWN. BY	S. DiGenova		
IN CHARGE OF G. P. Johnson			

GREENMAN-PEDERSEN, INC.
DATE: 12/10/02 TIME: 03:56:35 AM FILE: L:\2001651 JNJWS-ID\Engineering\Structures\Piers\FinalDesign\River_Bridges\W-Brg.dgn

STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
N.J.	IM-78-1 (012)	967	1124

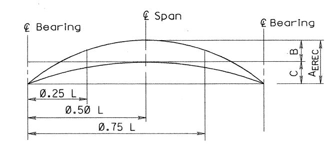
STRUCTURE NO. 2113-160 (I-78 WB)

STRUCTURE NAME
I-78 WB OVER COUNTY ROUTE 632 (BLOOMSBURY ROAD) AND MUSCONETCONG RIVER



FRAMING PLAN

SCALE: 1:200



CAMBER DIAGRAM

ESTIMATED BEAM CAMBER (MILLIMETERS)					
BEAM No.	LOCATION	A_{REL}	A_{EREC}	B	C
S1B1 - B11 S2B1 - B13 S3B1 - B13	0.25 L	14.10	22.48	12.77	9.71
S1B1 - B11 S2B1 - B13 S3B1 - B13	0.50 L	18.80	29.97	17.02	12.95
S1B1 - B11 S2B1 - B13 S3B1 - B13	0.75 L	14.10	22.48	22.77	9.71
BEAM No.	LOCATION	A_{REL}	A_{EREC}	B	C
S1B12 - B13	0.25 L	22.10	35.24	20.96	14.28
S1B12 - B13	0.50 L	29.46	46.99	27.94	19.05
S1B12 - B13	0.75 L	22.10	35.24	20.96	14.28
BEAM No.	LOCATION	A_{REL}	A_{EREC}	B	C
S4B1 - B13	0.25 L	4.00	6.29	2.48	3.81
S4B1 - B13	0.50 L	5.33	8.38	3.30	5.08
S4B1 - B13	0.75 L	4.00	6.29	2.48	3.81

CAMBER TABLE

TOP OF GIRDER ELEVATIONS

SPAN 1					SPAN 2					SPAN 3					SPAN 4				
GIRDER	WEST ABUTMENT		PIER 1		GIRDER	PIER 1		PIER 2		GIRDER	PIER 2		PIER 3		GIRDER	PIER 3		EAST ABUTMENT	
	℄ BRG. EL.	BRG. TYPE	℄ BRG. EL.	BRG. TYPE		℄ BRG. EL.	BRG. TYPE	℄ BRG. EL.	BRG. TYPE		℄ BRG. EL.	BRG. TYPE	℄ BRG. EL.	BRG. TYPE		℄ BRG. EL.	BRG. TYPE	℄ BRG. EL.	BRG. TYPE
S1B1	93.399	E1	92.912	F1	S2B1	92.905	F1	92.520	E1	S3B1	92.515	F1	92.233	E1	S4B1	92.239	F2	92.129	E2
S1B2	93.463	E1	92.977	F1	S2B2	92.970	F1	92.587	E1	S3B2	92.582	F1	92.301	E1	S4B2	92.308	F2	92.198	E2
S1B3	93.508	E1	93.024	F1	S2B3	93.017	F1	92.636	E1	S3B3	92.630	F1	92.351	E1	S4B3	92.358	F2	92.249	E2
S1B4	93.526	E1	93.044	F1	S2B4	93.037	F1	92.657	E1	S3B4	92.651	F1	92.374	E1	S4B4	92.381	F2	92.273	E2
S1B5	93.527	E1	93.038	F1	S2B5	93.038	F1	92.660	E1	S3B5	92.655	F1	92.379	E1	S4B5	92.386	F2	92.279	E2
S1B6	93.492	E1	93.013	F1	S2B6	93.005	F1	92.629	E1	S3B6	92.623	F1	92.349	E1	S4B6	92.356	F2	92.250	E2
S1B7	93.455	E1	92.977	F1	S2B7	92.970	F1	92.595	E1	S3B7	92.589	F1	92.317	E1	S4B7	92.323	F2	92.218	E2
S1B8	93.411	E1	92.935	F1	S2B8	92.928	F1	92.555	E1	S3B8	92.549	F1	92.278	E1	S4B8	92.285	F2	92.181	E2
S1B9	93.366	E1	92.891	F1	S2B9	92.884	F1	92.512	E1	S3B9	92.507	F1	92.238	E1	S4B9	92.244	F2	92.141	E2
S1B10	93.314	E1	92.841	F1	S2B10	92.834	F1	92.463	E1	S3B10	92.458	F1	92.190	E1	S4B10	92.197	F2	92.094	E2
S1B11	93.256	E1	92.785	F1	S2B11	92.778	F1	92.409	E1	S3B11	92.404	F1	92.137	E1	S4B11	92.144	F2	92.042	E2
S1B12	93.187	E3	92.717	F3	S2B12	92.709	F1	92.342	E1	S3B12	92.337	F1	92.072	E1	S4B12	92.078	F2	91.978	E2
S1B13	93.117	E3	92.648	F3	S2B13	92.641	F1	92.275	E1	S3B13	92.272	F1	92.007	E1	S4B13	92.013	F2	91.913	E2

ESTIMATE OF QUANTITIES

PAY ITEM NO.	STD. ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
449	5B45C	PRETENSIONED PRESTRESSED CONCRETE BEAMS, 1125MM	L.M.	229
450	5B54C	PRETENSIONED PRESTRESSED CONCRETE BEAMS, 1350MM	L.M.	920
451	N5B01	ELASTOMERIC BEARINGS	UNIT	104
452	5C19A	STRUCTURAL STEEL (10,200 KG)	LUMP SUM	L.S.

Notes:

1. For General Notes, see Dwg. 2-1.
2. For Details of 1350mm Pretensioned Prestressed Concrete Beam, see Dwg. 2-45.
3. For Details of 1125mm Pretensioned Prestressed Concrete Beams, see Dwgs. 2-46 and 2-47.
4. For End Diaphragm Details, see Dwgs. 2-51 and 2-52.
5. For Intermediate Steel Diaphragm Details, see Dwg. 2-52.
6. For Bearing Details, see Dwgs. 2-42 and 2-43.
7. For Working Point information, see Dwg. 2-3.

Legend:

S3B2 — Beam #2, Span #3

D2 — Diaphragm Type 2

200 0 200 400 800
1:200

ALL DIMENSIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS

DWG: 2-44

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

FRAMING PLAN

ROUTE I-78 SECTION 6J & 6K

REVISION	BY	C'K'D	DATE

GREENMAN-PEDERSEN, INC.
GREGORY P. JOHNSON, P.E.
N.J.P.E. 35430

SCALE: 1:200

BRIDGE SHEET NO. B114 OF B217

967 / 1124

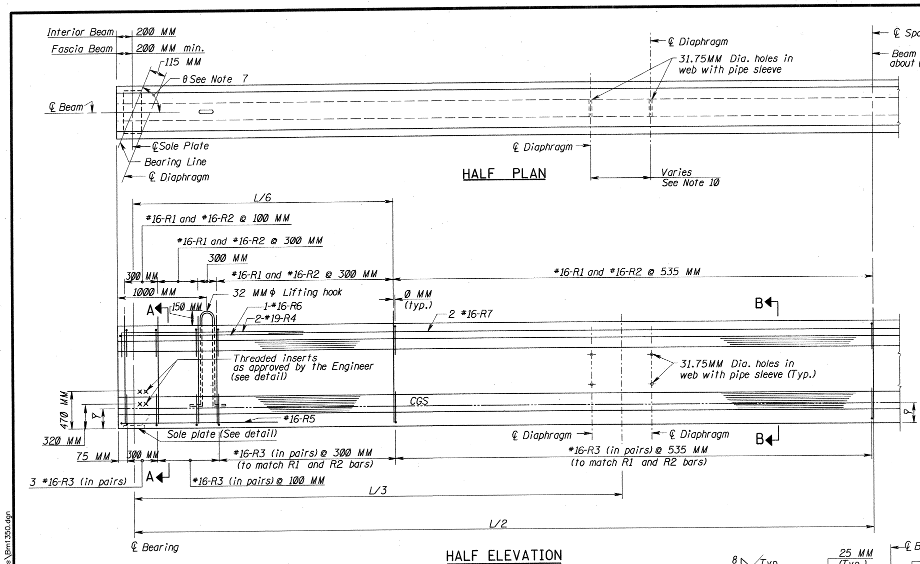
CONTROL SECTION	2113/1014	JOB NO. 2113505	
DES. BY	K. M. Healy	CHK. BY	J. Coyle
DWN. BY	C. Cheung		
IN CHARGE OF	G. P. Johnson		

GREENMAN-PEDERSEN, INC. DATE: 12/10/02 TIME: 03:35:47 AM FILE: I:\2001651_78TWS-ID\Engineering\Structures\Plans\FinalDesign\River_Bridges\W_framing.dgn

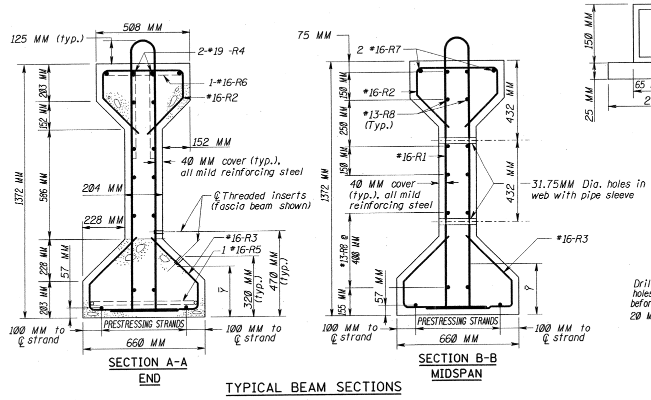
STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
N.J.	IM-78-1 (012)	968	1124

STRUCTURE NO. 2113-160 (I-78 WB)

STRUCTURE NAME
I-78 WB OVER COUNTY ROUTE 632
(BLOOMSBURY ROAD) AND MUSCONETCONG RIVER

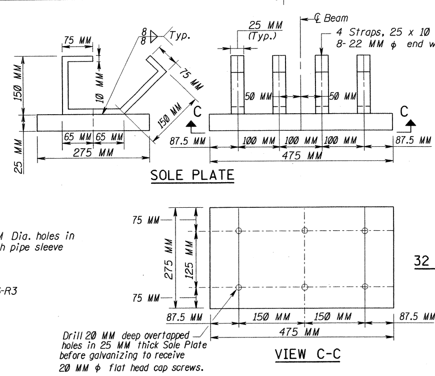


Interior Beam 200 MM
Fascia Beam 200 MM min.
115 MM
θ See Note 7
℄ Beam
℄ Sole Plate
Bearing Line
℄ Diaphragm
℄ Diaphragm
31.75MM Dia. holes in web with pipe sleeve
℄ Span
Beam Symmetrical about ℄ span
Varies
See Note 10
HALF PLAN
L/6
#16-R1 and #16-R2 @ 100 MM
#16-R1 and #16-R2 @ 300 MM
300 MM
#16-R1 and #16-R2 @ 300 MM
#16-R1 and #16-R2 @ 535 MM
32 MM φ Lifting hook
1-#16-R6
2-#19-R4
0 MM (typ.)
2 #16-R7
Threaded inserts as approved by the Engineer (see detail)
31.75MM Dia. holes in web with pipe sleeve (Typ.)
CGS
#16-R5
Sole plate (See detail)
#16-R3 (in pairs) @ 300 MM (to match R1 and R2 bars)
#16-R3 (in pairs) @ 535 MM (to match R1 and R2 bars)
#16-R3 (in pairs) @ 100 MM
3 #16-R3 (in pairs)
L/3
L/2
℄ Bearing
HALF ELEVATION



125 MM (typ.)
508 MM
2-#19 -R4
1-#16-R6
#16-R2
152 MM
40 MM cover (typ.), all mild reinforcing steel
℄ Threaded inserts (fascia beam shown)
204 MM
228 MM
#16-R3
1 #16-R5
PRESTRESSING STRANDS
100 MM to ℄ strand
660 MM
SECTION A-A
END
75 MM
2 #16-R7
#16-R2
#13-R8 (Typ.)
#16-R1
40 MM cover (typ.), all mild reinforcing steel
31.75MM Dia. holes in web with pipe sleeve
432 MM
#16-R3
SECTION B-B
MIDSPAN
TYPICAL BEAM SECTIONS

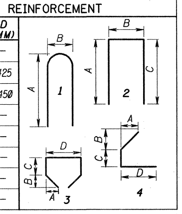
NOTE: ONE PIECE STIRRUPS MAY UTILIZED AS AN ALTERNATE TO TWO PIECE STIRRUPS

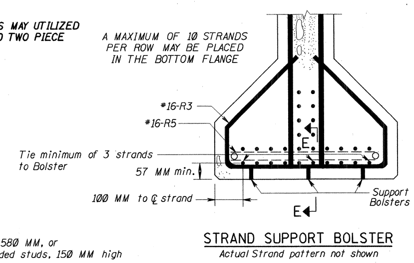


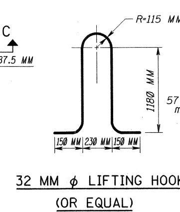
SOLE PLATE
25 MM (Typ.)
℄ Beam
4 Straps, 25 x 10 x 580 MM, or 8-22 MM φ end welded studs, 150 MM high
87.5 MM
100 MM
475 MM
275 MM
125 MM
150 MM
Drill 20 MM deep overtapped holes in 25 MM thick Sole Plate before galvanizing to receive 20 MM φ flat head cap screws.
VIEW C-C

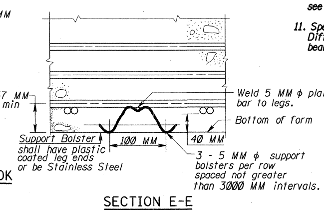
SCHEDULE OF MILD STEEL REINFORCEMENT									
No.	MARK	SIZE	LENGTH (MM)	TYPE	A (MM)	B (MM)	C (MM)	D (MM)
69	✻ R1	#16	3250	1	1460	130	—	—
69	R2	#16	1225	3	175	175	150	425
79	R3	#16	950	4	250	250	150	450
4	✻ R4	#19	2750	2	2290	450	—	—
2	✻ R5	#16	4225	2	1830	560	1830	—
2	✻ R6	#16	4975	2	2290	400	2290	—
4	R7	#16	11,530	STR	—	—	—	—
36	R8	#13	9000	STR	—	—	—	—

✻ EPOXY COATED BARS







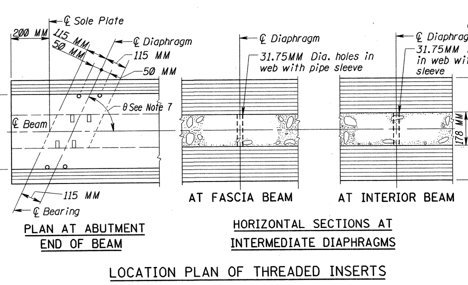


GENERAL NOTES

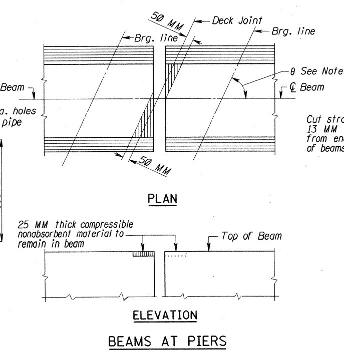
1. DESIGN SPECIFICATIONS
(1998 AASHTO LRFD Bridge Design Specifications for Highway Bridges, 2nd Edition (with Interims as issued) as modified by Section 3 of NJDOT Design Manual for Bridges and Structures.
2. LIVE LOAD
AASHTO HL-93 or NJDOT Permit Vehicle at Strength II Limit State, whichever governs.
3. PRESTRESSING STEEL
The pretensioning strands shall be 13 MMφ, 7 wire uncoated steel strands conforming to current AASHTO M 203M/M 203, Grade 1860 and shall be low relaxation strands. Each strand shall be given an initial tension of 0.75 f's A*s as specified in applicable sections of the PCI Design Handbook - Precast and Prestressed Concrete. Any change in the system of prestressing must be accompanied by complete calculations for approval by the Engineer.
4. CONCRETE DESIGN STRESSES
Design compressive strength (f'c) = 41.37 MEGAPASCALS, class P1 concrete, Compressive strength at prestress (f'ci) = 35.16 MEGAPASCALS.
5. CONCRETE
All exposed corners shall be chamfered 20 MM or rounded to 20 MM radius. Angles of intersection between webs and flanges shall be rounded to not less than 20 MM radius. Top surface of beams shall be roughened to the satisfaction of the Engineer. At approximate time of initial set all laitance shall be removed with a stiff wire brush.
6. SOLE PLATES
Cost of Sole Plates shall be included in price bid for Prestressed Concrete Beams. Sole Plates shall be galvanized as per Specifications.
7. DIAPHRAGMS
For the angle θ between the center line of beam and center line of diaphragms or bearings. See Dwg. 2-44
8. MILD STEEL REINFORCEMENT
Reinforcement bars shall conform to ASTM A615M-96a, Grade 420. Minimum clear cover shall be 40 MM unless otherwise noted. Cost of furnishing and placing reinforcement steel shall be included in the price bid for Prestressed Concrete Beams.
9. For camber diagram see Dwg. 2-44
10. Spacing between 31.75mm diameter holes with pipe sleeves varies due to beam spacing. For intermediate diaphragm locations and details, see Dwgs. 2-44 and 2-52.
11. Special attention is required sleeve installation for beam S1B11. Different sized intermediate diaphragms are required on either side of the beam due to change in beam type.

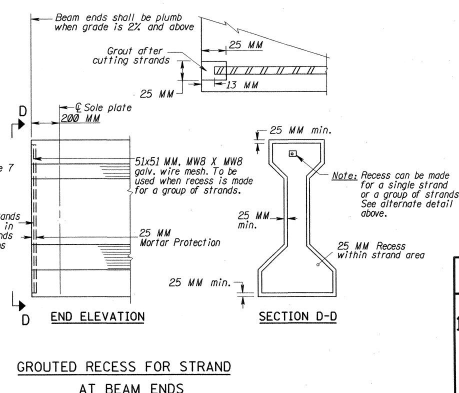
BEAM NO.	$\bar{Y}$ MIDSPAN	$\bar{Y}$ ENDS	NO. OF STRANDS
S1B1 - S1B11	290 MM	290 MM	40
S2B1 - S2B13	290 MM	290 MM	40
S3B1 - S3B13	290 MM	290 MM	40

NOTE: $\bar{Y}$ LOCATES CENTROID OF STEEL PRESTRESSING GROUP.
NOTE: OMIT THREADED INSERTS ON OUTSIDE FACE OF FASCIA BEAM



℄ Sole Plate
200 MM
115 MM
50 MM
℄ Diaphragm
θ See Note 7
℄ Beam
508 MM
℄ Bearing
PLAN AT ABUTMENT END OF BEAM
31.75MM Dia. holes in web with pipe sleeve
AT FASCIA BEAM
AT INTERIOR BEAM
178 MM
660 MM
HORIZONTAL SECTIONS AT INTERMEDIATE DIAPHRAGMS
LOCATION PLAN OF THREADED INSERTS





Beam ends shall be plumb when grade is 2% and above
Grout after cutting strands
25 MM
13 MM
℄ Sole plate
200 MM
51x51 MM, MW8 X MW8 galv. wire mesh. To be used when recess is made for a group of strands.
Cut strands 13 MM in from ends of beams
25 MM Mortar Protection
25 MM min.
END ELEVATION
Note: Recess can be made for a single strand or a group of strands. See alternate detail above.
25 MM Recess within strand area
SECTION D-D
GROUTED RECESS FOR STRAND
AT BEAM ENDS

1350 MM IS A NOMINAL DIMENSION TO BE USED FOR REFERENCE PURPOSES AND FOR DESCRIPTION OF PAY ITEM.
REFER TO DETAILS ON THIS SHEET FOR ACTUAL DIMENSIONS.

ALL DIMENSIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS

DWG: 2-45

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

1350 MM PRETENSIONED PRESTRESSED CONCRETE BEAMS

ROUTE I-78 — SECTION 6J & 6K

CONTROL SECTION	2113/1014	JOB NO. 2113505
DES. BY	K. M. Healy	CHK. BY: B. Idhaw
DWN. BY	C. Cheung	

IN CHARGE OF G. P. Johnson

REVISION	BY	C'K'D	DATE

GREENMAN-PEDERSEN, INC.
GREGORY P. JOHNSON, P.E.
N.J.P.E. 35430

SCALE: As Noted

BRIDGE SHEET NO. B115 OF B217

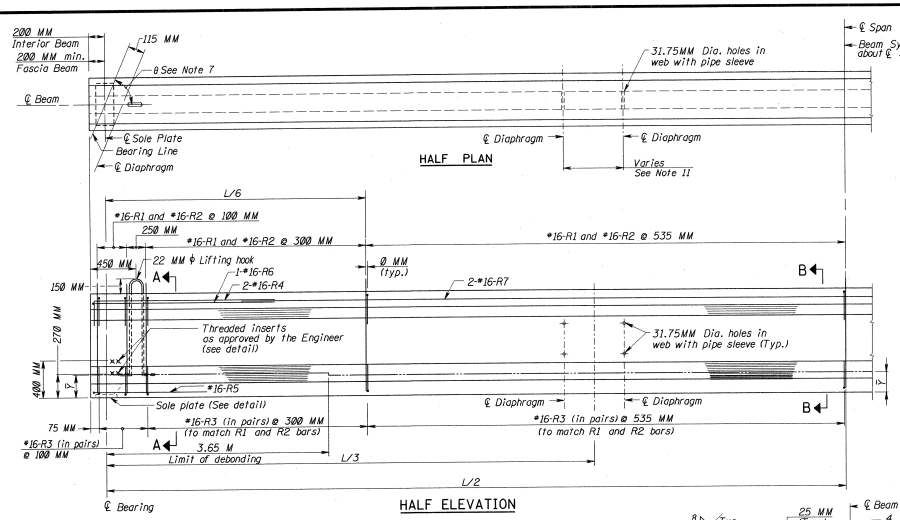
968 / 1124

GREENMAN-PEDERSEN, INC. DATE: 12/09/02 TIME: 04:01:58 PM FILE: E:\2001651_78TWS-ID\Engineering\Structures\Plans\FinalDesign\River_Bridges\Bm1350.dgn

STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
N.J.	IM-78-1 (012)	969	1124

STRUCTURE NO. 2113-160 (I-78 WB)

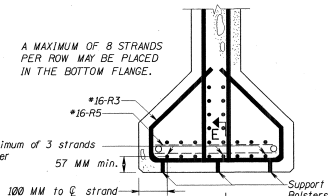
STRUCTURE NAME
I-78 WB OVER COUNTY ROUTE 632
(BLOOMSBURY ROAD) AND MUSCONETCONG RIVER



SCHEDULE OF MILD STEEL REINFORCEMENT								
NO.	MARK	SIZE	LENGTH (MM)	TYPE	A (MM)	B (MM)	C (MM)	D (MM)
65	✳ R1	#16	2520	1	1230	100	—	—
65	R2	#16	1000	3	150	150	125	325
65	R3	#16	825	4	200	200	125	400
4	✳ R4	#16	2425	2	1975	450	—	—
2	✳ R5	#16	3350	2	1450	450	1450	—
2	✳ R6	#16	4250	2	1975	300	1975	—
4	R7	#16	11,530	STR	—	—	—	—
30	R8	#13	9000	STR	—	—	—	—

✳ EPOXY COATED BARS

NOTE:
ONE PIECE STIRRUPS MAY UTILIZED AS AN ALTERNATE TO TWO PIECE STIRRUPS



STRAND SUPPORT BOLSTER

GENERAL NOTES

1. DESIGN SPECIFICATIONS
(1998 AASHTO LRFD Bridge Design Specifications for Highway Bridges, 2nd Edition (with Interims as issued) as modified by Section 3 of NJDOT Design Manual for Bridges and Structures.

2. LIVE LOAD
AASHTO HL-93 or NJDOT Permit Vehicle at Strength II Limit State, whichever governs.

3. PRESTRESSING STEEL
The pretensioning strands shall be 13 MM ϕ, 7 wire uncoated steel strands conforming to current AASHTO M 203M/M 203, Grade 1860 and shall be low relaxation strands. Each strand shall be given an initial tension of 0.75 f's As as specified in applicable sections of the PCI Design Handbook - Precast and Prestressed Concrete.
Any change in the system of prestressing must be accompanied by complete calculations for approval by the Engineer.

4. CONCRETE DESIGN STRESSES
Design compressive strength (f'c) = 41.37 MEGAPASCALS, class P1 concrete, Compressive strength at prestress (f'ci) = 35.16 MEGAPASCALS.

5. CONCRETE
All exposed corners shall be chamfered 20 MM or rounded to 20 MM radius. Angles of intersection between webs and flanges shall be rounded to not less than 20 MM radius. Top surface of beams shall be roughened to the satisfaction of the Engineer. At approximate time of initial set all laitance shall be removed with a stiff wire brush.

6. SOLE PLATES
Cost of Sole Plates shall be included in price bid for Prestressed Concrete Beams. Sole Plates shall be galvanized as per Specifications.

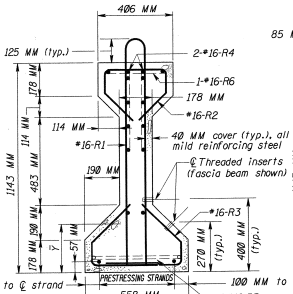
7. DIAPHRAGMS
For the angle θ between the center line of beam and center line of diaphragms, see Dwg. 2-44.

8. MILD STEEL REINFORCEMENT
Reinforcement bars shall conform to ASTM A615M-96a, Grade 420. Minimum clear cover shall be 40 MM unless otherwise noted.
Cost of furnishing and placing reinforcement steel shall be included in the price bid for Prestressed Concrete Beams.

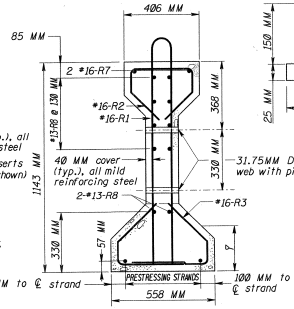
9. For camber diagram see Dwg. 2-44.

10. A maximum of 50% of the strands in any one row may be debonded. A maximum 25% of total number of the strands may be debonded.

11. Spacing between 31.75mm diameter holes with pipe sleeves varies due to beam spacing. For intermediate diaphragm locations and details, see Dwgs. 2-44 and 2-52.



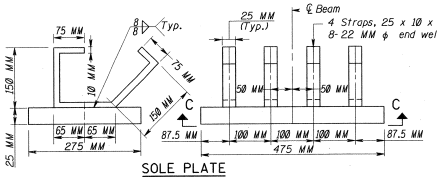
SECTION A-A
END



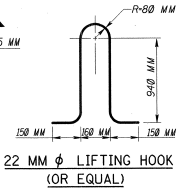
SECTION B-B
MIDSPAN

TYPICAL BEAM SECTIONS

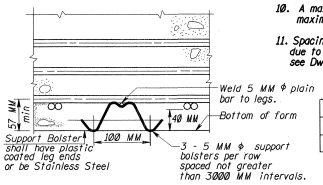
NOTE: $\bar{Y}$ LOCATES CENTROID OF STEEL PRESTRESSING GROUP.



SOLE PLATE

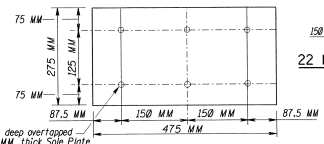


22 MM ϕ LIFTING HOOK
(OR EQUAL)

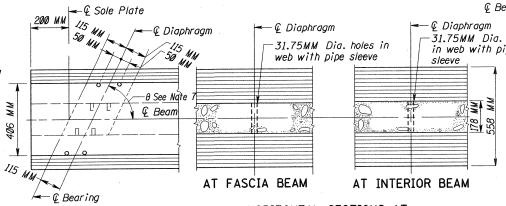


SECTION E-E

BEAM NO.	$\bar{Y}$ MIDSPAN	$\bar{Y}$ ENDS	NO. OF STRANDS
S1B12	240 MM	268 MM	37
S1B13	240 MM	268 MM	37



VIEW C-C

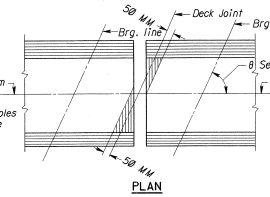


PLAN AT ABUTMENT END OF BEAM

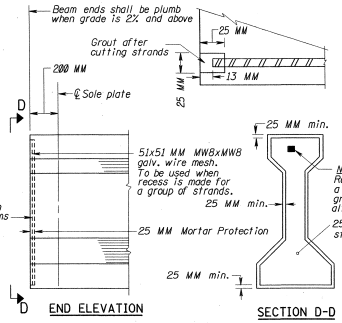
HORIZONTAL SECTIONS AT INTERMEDIATE DIAPHRAGMS

NOTE: OMIT THREADED INSERTS ON OUTSIDE FACE OF FASCIA BEAM

LOCATION PLAN OF THREADED INSERTS



BEAMS AT PIERS



GROUTED RECESS FOR STRAND AT BEAM ENDS

1125 MM IS A NOMINAL DIMENSION TO BE USED FOR REFERENCE PURPOSES AND FOR DESCRIPTION OF PAY ITEM. REFER TO DETAILS ON THIS SHEET FOR ACTUAL DIMENSIONS.

DWG: 2-46

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

1125 MM PRETENSIONED PRESTRESSED CONCRETE BEAMS I

ROUTE I-78 SECTION 6J & 6K

CONTROL SECTION	2113/1014	JOB NO. 2113505	
DES. BY	K. M. Healy	CHK. BY	B. Idhaw
DWN. BY	C. Cheung		
IN CHARGE OF	G. P. Johnson		

ALL DIMENSIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS

REVISION	BY	C'K'D	DATE

GREENMAN-PEDERSEN, INC.
GREGORY P. JOHNSON, P.E.
N.J.P.E. 35430

SCALE: As Noted

BRIDGE SHEET NO. B116 OF B217

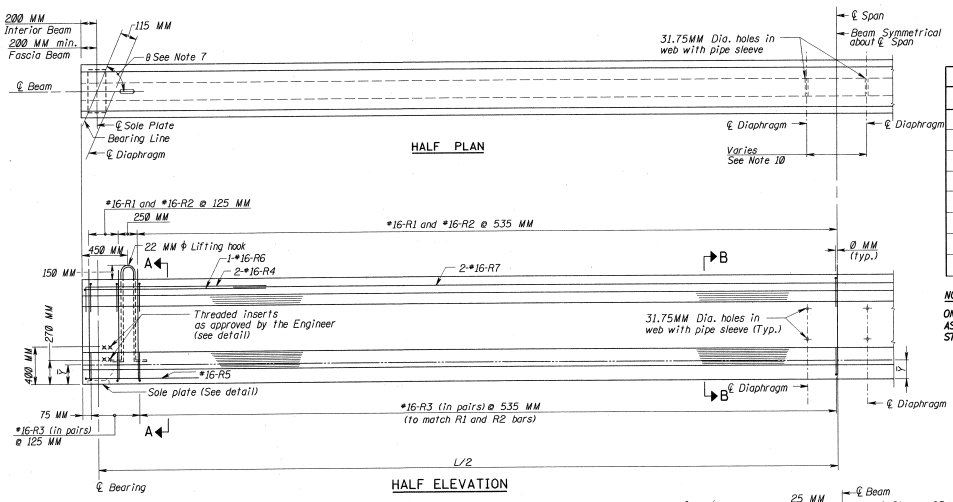
969
1124

GREENMAN-PEDERSEN, INC.
FILE: I:\2001651_78TWS-10\Engineering\Structures\Plans\FinalDesign\Rtwr_Bridges\Dim1125.dgn
TIME: 04:01:03 PM
DATE: 12/09/02

STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
N.J.	IM-78-1 (012)	970	1124

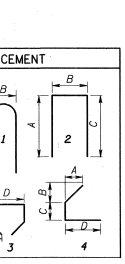
STRUCTURE NO. 2113-160 (I-78 WB)

STRUCTURE NAME
I-78 WB OVER COUNTY ROUTE 632 (BLOOMSBURY ROAD) AND MUSCONETCONG RIVER

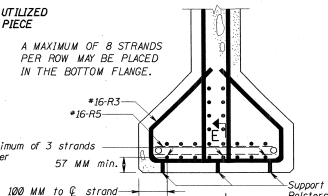


SCHEDULE OF MILD STEEL REINFORCEMENT								
NO.	MARK	SIZE	LENGTH (MM)	TYPE	A (MM)	B (MM)	C (MM)	D (MM)
31	✳ R1	#16	2520	1	1230	100	—	—
31	R2	#16	1000	3	150	150	125	325
31	R3	#16	825	4	200	200	125	400
4	✳ R4	#16	2425	2	1975	450	—	—
2	✳ R5	#16	3350	2	1450	450	1450	—
2	✳ R6	#16	4250	2	1975	300	1975	—
2	R7	#16	10,750	STR	—	—	—	—
10	R8	#13	13,800	STR	—	—	—	—

✳ EPOXY COATED BARS



NOTE:
ONE PIECE STIRRUPS MAY UTILIZED AS AN ALTERNATE TO TWO PIECE STIRRUPS

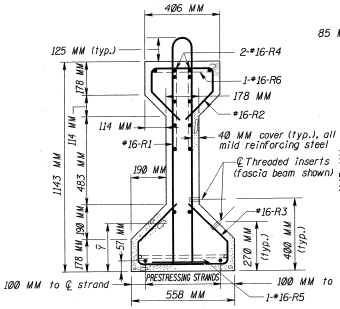


STRAND SUPPORT BOLSTER

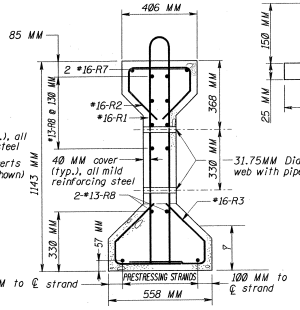
GENERAL NOTES

1. DESIGN SPECIFICATIONS
(1998 AASHTO LRFD Bridge Design Specifications for Highway Bridges, 2nd Edition (with Interims as issued) as modified by Section 3 of NJDOT Design Manual for Bridges and Structures.
2. LIVE LOAD
AASHTO HL-93 or NJDOT Permit Vehicle at Strength II Limit State, whichever governs.
3. PRESTRESSING STEEL
The pretensioning strands shall be 13 MM ϕ, 7 wire uncoated steel strands conforming to current AASHTO M 203M/M 203, Grade 1860 and shall be low relaxation strands. Each strand shall be given an initial tension of 0.75 f's As as specified in applicable sections of the PCI Design Handbook - Precast and Prestressed Concrete.
Any change in the system of prestressing must be accompanied by complete calculations for approval by the Engineer.
4. CONCRETE DESIGN STRESSES
Design compressive strength (f'c) = 41.37 MEGAPASCALS, class P1 concrete, Compressive strength at prestress (f'ci) = 31.56 MEGAPASCALS.
5. CONCRETE
All exposed corners shall be chamfered 20 MM or rounded to 20 MM radius. Angles of intersection between webs and flanges shall be rounded to not less than 20 MM radius. Top surface of beams shall be roughened to the satisfaction of the Engineer. At approximate time of initial set all laitance shall be removed with a stiff wire brush.
6. SOLE PLATES
Cost of Sole Plates shall be included in price bid for Prestressed Concrete Beams. Sole Plates shall be galvanized as per Specifications.
7. DIAPHRAGMS
For the angle θ between the center line of beam and center line of diaphragms, see Dwg. 2-44.
8. MILD STEEL REINFORCEMENT
Reinforcement bars shall conform to AST.M A615M-96a, Grade 420. Minimum clear cover shall be 40 MM unless otherwise noted. Cost of furnishing and placing reinforcement steel shall be included in the price bid for Prestressed Concrete Beams.
9. For camber diagram see Dwg. 2-44.
10. Spacing between 31.75mm diameter holes with pipe sleeves varies due to beam spacing. For intermediate diaphragm locations and details, see Dwgs. 2-44 and 2-52.

BEAM NO.	Ȳ MIDSPAN	Ȳ ENDS	NO. OF STRANDS
S4B1 - S4B13	200 MM	200 MM	13



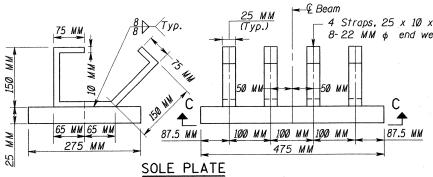
SECTION A-A
END



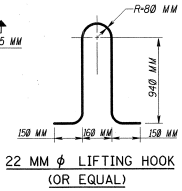
SECTION B-B
MIDSPAN

TYPICAL BEAM SECTIONS

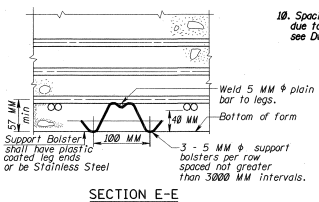
NOTE: Ȳ LOCATES CENTROID OF STEEL PRESTRESSING GROUP.



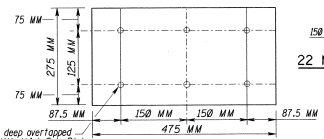
SOLE PLATE



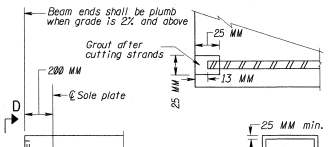
22 MM ϕ LIFTING HOOK
(OR EQUAL)



SECTION E-E

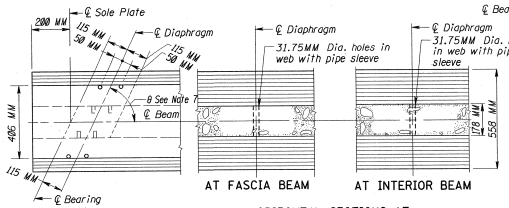


VIEW C-C



GROUTED RECESS FOR STRAND AT BEAM ENDS

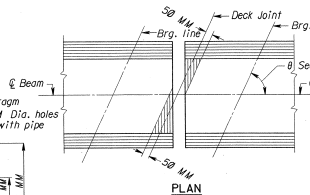
NOTE: OMIT THREADED INSERTS ON OUTSIDE FACE OF FASCIA BEAM



PLAN AT ABUTMENT END OF BEAM

HORIZONTAL SECTIONS AT INTERMEDIATE DIAPHRAGMS

LOCATION PLAN OF THREADED INSERTS



BEAMS AT PIERS

1125 MM IS A NOMINAL DIMENSION TO BE USED FOR REFERENCE PURPOSES AND FOR DESCRIPTION OF PAY ITEM. REFER TO DETAILS ON THIS SHEET FOR ACTUAL DIMENSIONS.

DWG: 2-47

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

1125 MM PRETENTIONED PRESTRESSED CONCRETE BEAMS II

ROUTE I-78 SECTION 6J & 6K

CONTROL SECTION	2113/1014	JOB NO. 2113505	
DES. BY	K. M. Healy	CHK. BY	J. Coyle
DWN. BY	C. Cheung		
IN CHARGE OF	G. P. Johnson		

GREENMAN-PEDERSEN, INC.

REVISION	BY	C'K'D	DATE

GREENMAN-PEDERSEN, INC.
GREGORY P. JOHNSON, P.E.
N.J.P.E. 35430

SCALE: As Noted

BRIDGE SHEET NO. B117 OF B217

970
1124

ALL DIMENSIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS

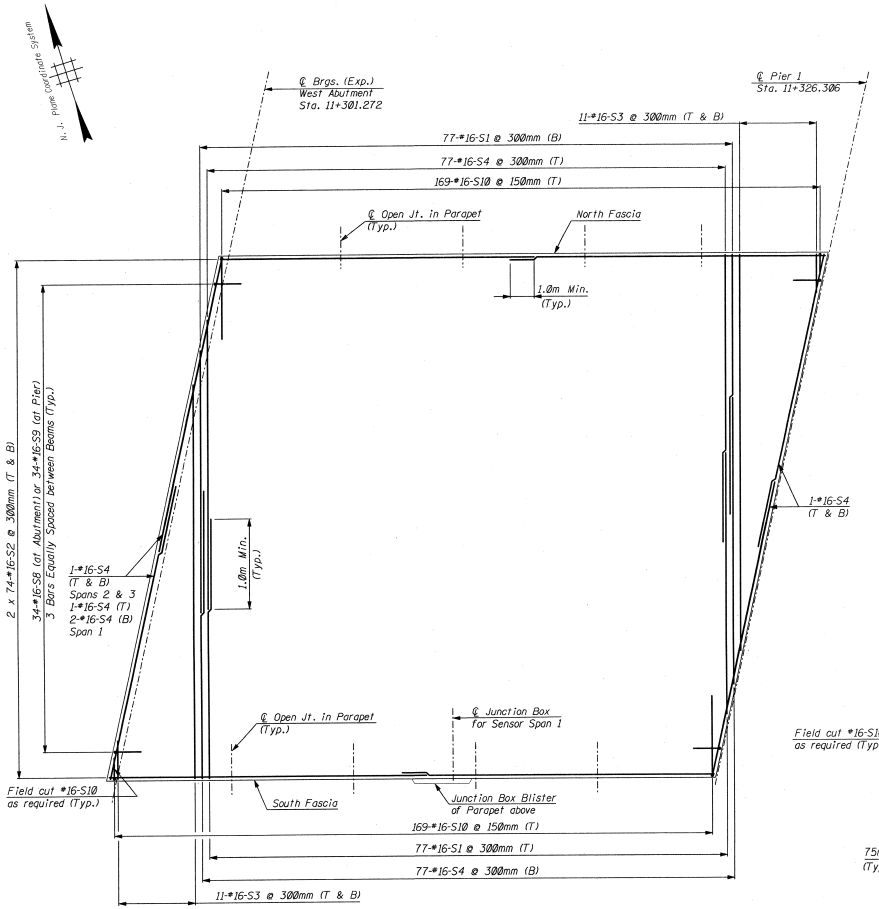
15-43

FILE: I:\2001653_78TWS-ID\Engineering\Structures\Plans\FinalDesign\Viber_Bridges\Bm1125.sgn
TIME: 04:00:37 PM
DATE: 12/19/02

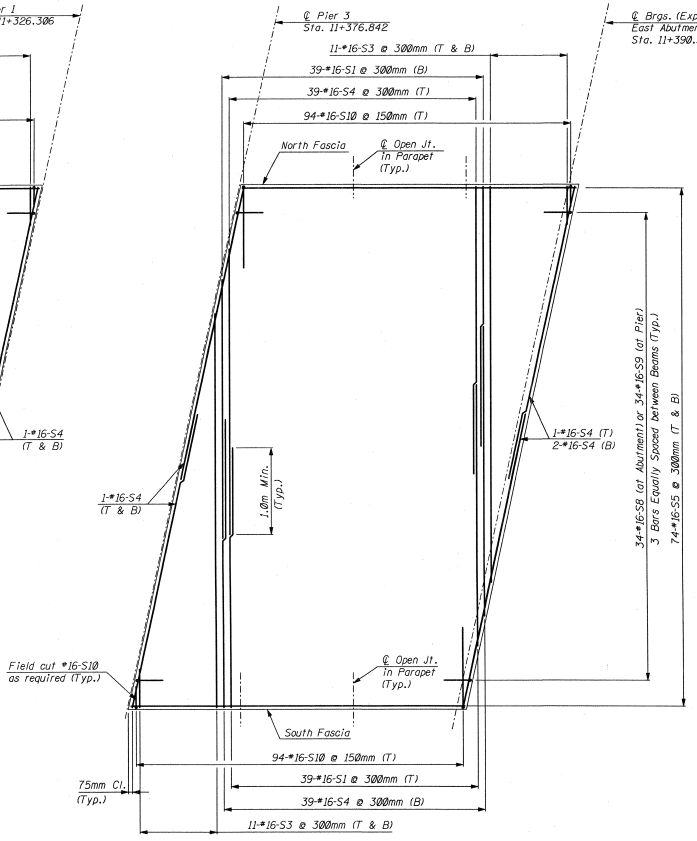
STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
N.J.	IM-78-1 (012)	972	1124

STRUCTURE NO. 2113-160 (I-78 WB)

STRUCTURE NAME
I-78 WB OVER COUNTY ROUTE 632
(BLOOMSBURY ROAD) AND MUSCONETCONG RIVER



SPAN 1



SPAN 4

Notes:

1. For General Notes, see Dwg. 2-1.
2. For Typical Section, see Dwg. 2-50.
3. For Typical Barrier Parapet Reinforcement and additional reinforcement in deck at the parapet open joint, see Dwg. 2-54.
4. For Strip Seal Expansion Joint Details, see Dwgs. 2-56 through 2-58.
5. For diaphragm reinforcement, see Dwg. 2-51.
6. All bar clearances are 50mm Unless Otherwise Noted.

DECK SLAB REINFORCEMENT PLAN

Notes: 1. Barrier Parapet Reinforcement and additional reinforcement in vicinity of parapet open joints not shown for clarity.
2. Reinforcement for Span 2 and Span 3, the same as Span 1 except as noted.
SCALE: 1:100

DWG: 2-49

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

DECK SLAB PLAN

ROUTE I-78 SECTION 6J & 6K

CONTROL SECTION	2113/1014	JOB NO. 2113505	
DES. BY	S. DiGenova	CHK. BY	J. Coyle
DWN. BY	C. Cheung		

IN CHARGE OF G. P. Johnson

100 0 100 200 400
1:100

ALL DIMENSIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS

REVISION	BY	C'K'D	DATE

GREENMAN-PEDERSEN, INC.
GREGORY P. JOHNSON, P.E.
N.J.P.E. 35430

SCALE: 1:100

BRIDGE SHEET NO. B119 OF B217

972
1124

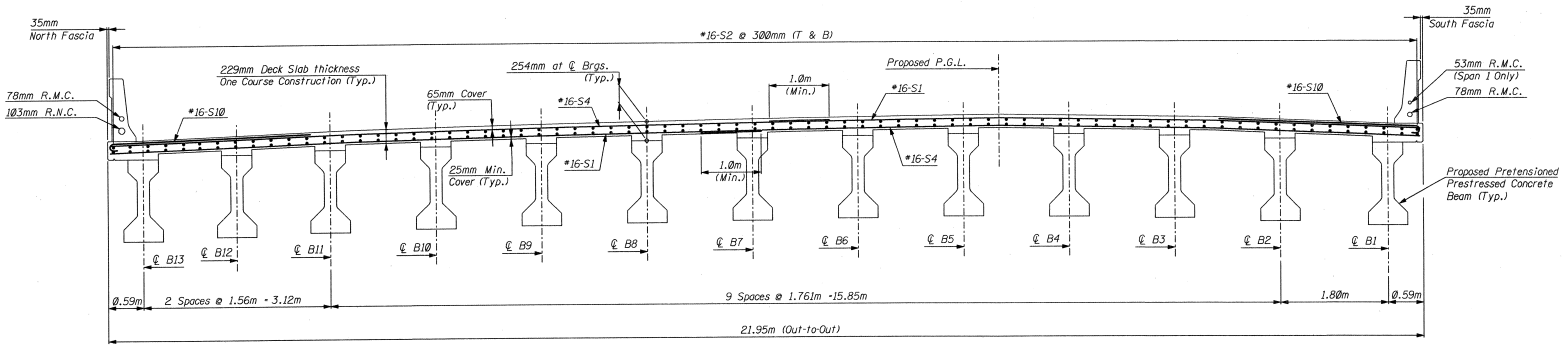
GREENMAN-PEDERSEN, INC. DATE: 12/10/2002 TIME: 01:25:42 AM FILE: I:\2001601_78TWS-ID\Engineering\Structures\Phase1\Mod\Design\River_Bridges\WB_deck_plansht.dgn

15-44

STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
N.J.	IM-78-1 (Ø12)	973	1124

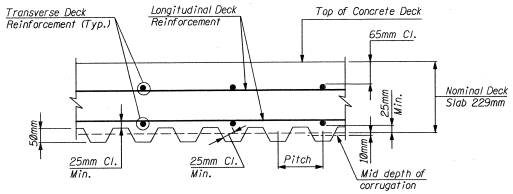
STRUCTURE NO. 2113-160 (I-78 WB)

STRUCTURE NAME
I-78 WB OVER COUNTY ROUTE 632
(BLOOMSBURY ROAD) AND MUSCONETCONG RIVER



TYPICAL DECK SLAB REINFORCEMENT SECTION

Note: Section at Spans 1, 2 & 3 as shown, Section at Span 4 similar)
SCALE: 1:40



STAY-IN PLACE FORM SCHEMATIC

N.T.S.

Notes:

1. For General Notes, see Dwg. 2-1.
2. Barrier Parapet Reinforcement and additional reinforcement in deck at the parapet open joint not shown for clarity. For Details, see Dwgs. 2-53 and 2-54.
3. For diaphragm reinforcement, see Dwg. 2-51
4. For dimensions and details not shown, see Typical Section, Dwg. 2-3.
5. For details of Stay-in-place form installation between Precast Concrete Stringer, see NJDOT Standard Bridge Construction Details, BCD-9.5.

DWG: 2-50

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

TYPICAL DECK REINFORCEMENT SECTION AND DETAILS

ROUTE I-78 SECTION 6J & 6K

CONTROL SECTION	2113/1014	JOB NO. 2113505	
DES. BY	S. DiGenova	CHK. BY	J. Coyle
DWN. BY	C. Cheung		

IN CHARGE OF G. P. Johnson

GREENMAN-PEDERSEN, INC.

40 0 40 80 160
1:40

ALL DIMENSIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS

REVISION	BY	C'K'D	DATE

GREENMAN-PEDERSEN, INC.
GREGORY P. JOHNSON, P.E.
N.J.P.E. 35430

SCALE: AS NOTED

BRIDGE SHEET NO. B120 OF B217

973
1124

15-45

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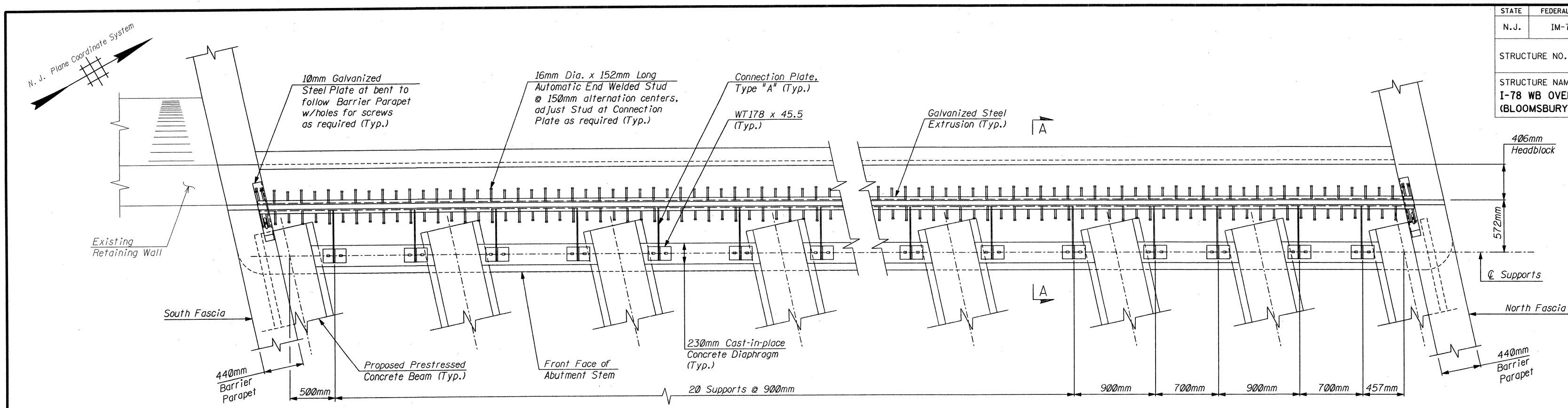
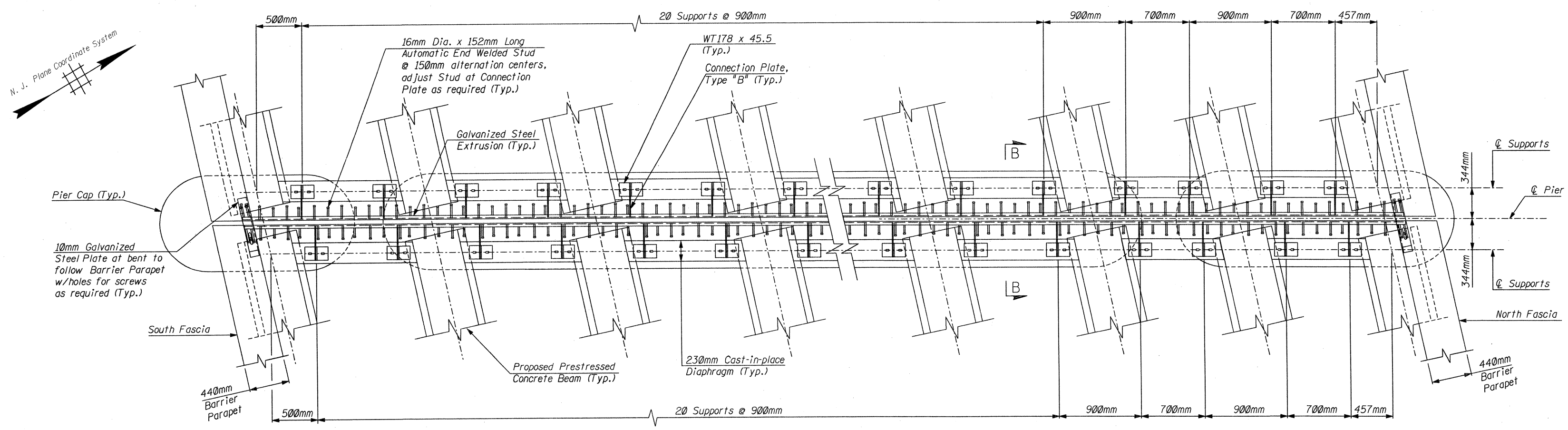
DATE: 12/10/02


N. J. Plane Coordinate System
10mm Galvanized Steel Plate at bent to follow Barrier Parapet w/holes for screws as required (Typ.)
16mm Dia. x 152mm Long Automatic End Welded Stud @ 150mm alternation centers, adjust Stud at Connection Plate as required (Typ.)
Connection Plate, Type "A" (Typ.)
WT178 x 45.5 (Typ.)
Galvanized Steel Extrusion (Typ.)
A
406mm Headblock
572mm
℄ Supports
North Fascia
440mm Barrier Parapet
Existing Retaining Wall
South Fascia
440mm Barrier Parapet
500mm
Proposed Prestressed Concrete Beam (Typ.)
Front Face of Abutment Stem
230mm Cast-in-place Concrete Diaphragm (Typ.)
20 Supports @ 900mm
900mm
700mm
900mm
700mm
457mm

DECK JOINT PARTIAL PLAN AT ABUTMENT

(West Abutment shown, East Abutment Similar)
(Looking Station Back)
SCALE: 1:25


500mm
20 Supports @ 900mm
900mm
700mm
900mm
700mm
457mm
N. J. Plane Coordinate System
16mm Dia. x 152mm Long Automatic End Welded Stud @ 150mm alternation centers, adjust Stud at Connection Plate as required (Typ.)
WT178 x 45.5 (Typ.)
Connection Plate, Type "B" (Typ.)
Galvanized Steel Extrusion (Typ.)
B
℄ Supports
℄ Pier
344mm
344mm
North Fascia
440mm Barrier Parapet
Pier Cap (Typ.)
10mm Galvanized Steel Plate at bent to follow Barrier Parapet w/holes for screws as required (Typ.)
South Fascia
440mm Barrier Parapet
Proposed Prestressed Concrete Beam (Typ.)
230mm Cast-in-place Diaphragm (Typ.)
500mm
20 Supports @ 900mm

DECK JOINT PARTIAL PLAN AT PIERS

(Piers 1 ~ 3 shown, Pier 4 similar)
(Looking Station Back)
SCALE: 1:25

Notes:

1. Neoprene strip seal shall be installed in a continuous length over the entire width of the superstructure with no splices permitted.
2. For location and type of diaphragm, see Framing Plan on Dwg. 2-44.
3. For additional Strip Seal Expansion Joint Details, see Dwgs. 2-57 and 2-58
4. Steel Rails & Barrier Parapet plates shall conform to AASHTO M270M, Grade 250 (ASTM A709M, Grade 250).
5. Plates, studs and all other structural steel material for the deck joints, except steel rails & barrier plates, shall conform to AASHTO M270M, Grade 345 (ASTM A709M, Grade 345), and shall be galvanized after fabrication in accordance with the Specifications.
6. Automatic End-Welded Studs shall be installed prior to galvanizing of assembly. Automatic end welded studs shall conform to AASHTO M169 (ASTM A108), Grades 1015, 1018 or 1020.
7. All extrusions shall be fabricated to match the proposed roadway grade.
8. No separate payment will be made for support plate assembly, connecting hardware, Automatic End Welded Studs and Neoprene Gland, the costs of which shall be included with the pay Item "Strip Seal Expansion Dam", for payment.
9. For additional information and details not shown, see NJDOT Standard Bridge Construction Details, Dwg. BCD-2 and the Specifications.
10. For Table of Joint Openings, see Dwg. 2-58.
11. For Section A-A & B-B, see Dwg. 2-57.

ESTIMATE OF QUANTITIES

PAY ITEM NO.	STD. ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
446	5A23J	STRIP SEAL EXPANSION DAM	L.M.	110

25 0 25 50 100
1:25

ALL DIMENSIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS

STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
N.J.	IM-78-1 (012)	979	1124

STRUCTURE NO. 2113-160 (I-78 WB)

STRUCTURE NAME
I-78 WB OVER COUNTY ROUTE 632 (BLOOMSBURY ROAD) AND MUSCONETCONG RIVER

DWG: 2-56

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

STRIP SEAL EXPANSION DAM

ROUTE I-78 SECTION 6J & 6K

REVISION	BY	C'K'D	DATE

GREENMAN-PEDERSEN, INC.
GREGORY P. JOHNSON, P.E.
N.J.P.E. 35430

SCALE: As Noted

BRIDGE SHEET NO. B126 OF B217

979
1124

CONTROL SECTION	2113/1014	JOB NO. 2113505	
DES. BY	K. M. Healy	CHK. BY	J. Coyle
DWN. BY	C. Cheung		

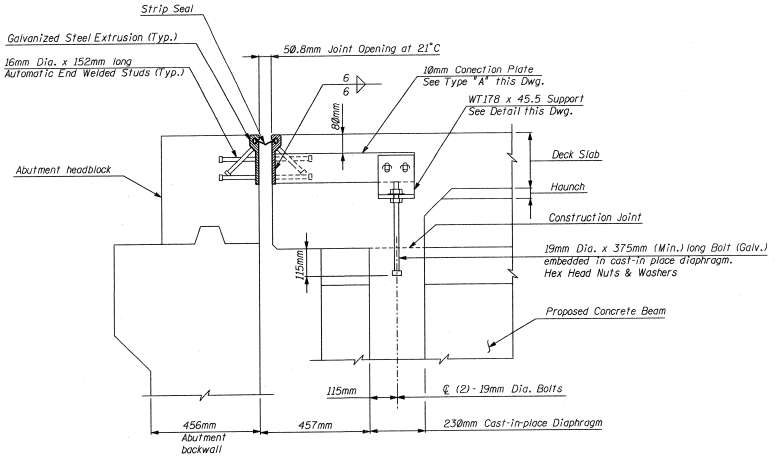
IN CHARGE OF G. P. Johnson

GREENMAN-PEDERSEN, INC. DATE: 12/10/2002 TIME: 01:51:07 AM FILE: I:\200165I_78WS-ID\Engineering\Structures\Plans\FinalDesign\River_Bridges\W_djt_plan.dgn

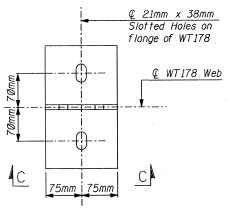
STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
N.J.	IM-78-1 (012)	980	1124

STRUCTURE NO. 2113-160 (I-78 WB)

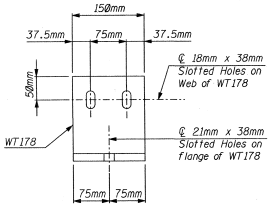
STRUCTURE NAME
I-78 WB OVER COUNTY ROUTE 632
(BLOOMSBURY ROAD) AND MUSCONETCONG RIVER



SECTION A - A
SCALE: 1:10

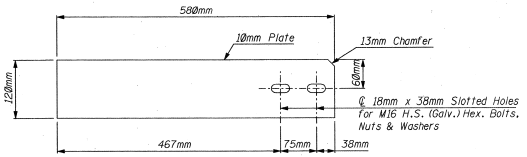


PLAN



VIEW C - C

WT178 x 45.5 SUPPORT DETAILS
SCALE: 1:5



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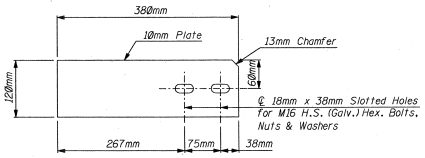
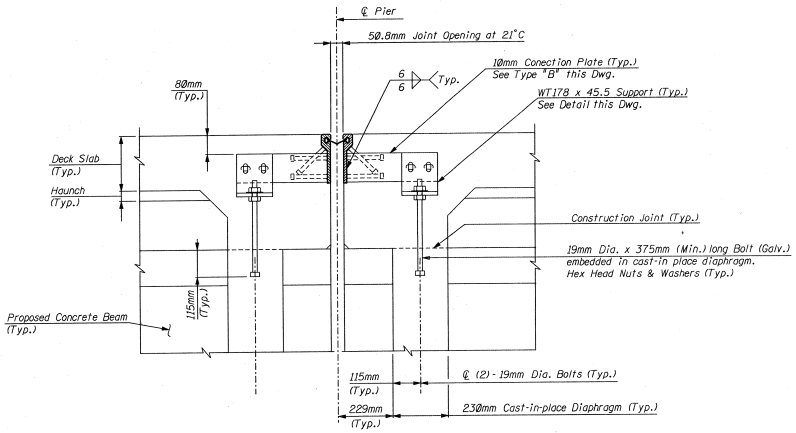


TYPE "B"

CONNECTION PLATE DETAILS
SCALE: 1:5



SECTION B - B
SCALE: 1:10

Notes:

1. For Table of Joint Opening, see Dwg. 2-58.
2. For Diaphragm Details, see Dwg. 2-52.
3. For additional notes, see Dwg. 2-56.

DWG: 2-57

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

STRIP SEAL EXPANSION DAM DETAILS I

ROUTE I-78 SECTION 6J & 6K

CONTROL SECTION	2113/1014	JOB NO. 2113505	
DES. BY	K. M. Healy	CHK. BY	J. Coyle
DWN. BY	C. Cheung		
IN CHARGE OF	G. P. Johnson		

5 0 5 10 20 — 1:5
10 0 10 20 40 — 1:10

ALL DIMENSIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS

REVISION	BY	C'K'D	DATE

GREENMAN-PEDERSEN, INC.
GREGORY P. JOHNSON, P.E.
N.J.P.E. 35430

SCALE:

BRIDGE SHEET NO. B127 OF B217

980
1124

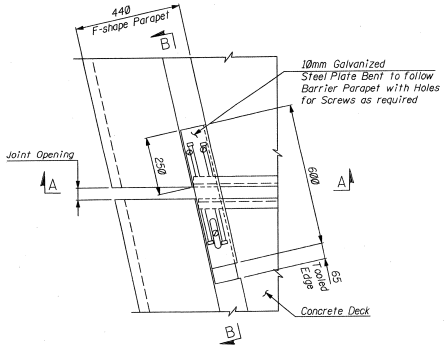
GREENMAN-PEDERSEN, INC. DATE: 12/09/02 TIME: 10:29:58 PM FILE: I:\2001651_78TWS-ID\Engineering\Structures\Plans\FinalDesign\River Bridges\W-sht_sect.dgn

15-47

STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
N.J.	IM-78-1 (012)	981	1124

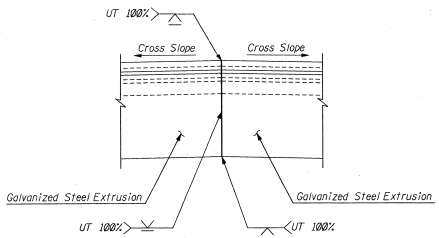
STRUCTURE NO. 2113-160 (I-78 WB)

STRUCTURE NAME
I-78 WB OVER COUNTY ROUTE 632 (BLOOMSBURY ROAD) AND MUSCONETCONG RIVER



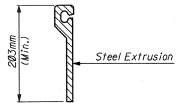
PARTIAL PLAN AT BARRIER PARAPET

Note: 16mm Dia. Automatic End Welded Studs not shown for clarity.
SCALE: 1:10



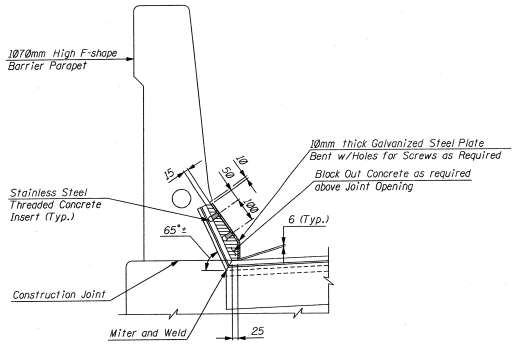
SPLICE DETAIL FOR STEEL EXTRUSION

SCALE: 1:5



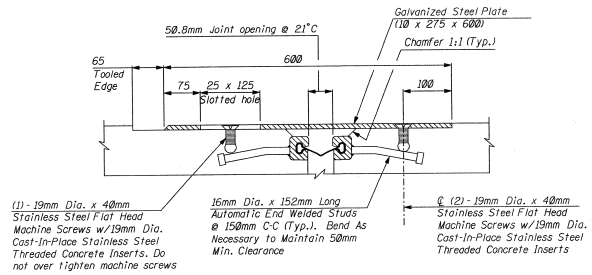
STRIP SEAL STEEL EXTRUSION

Note: Typical strip seal steel extrusion is for roadway region use only
SCALE: 1:5



SECTION A - A

Note: 16mm Dia. Automatic End Welded Studs not shown for clarity.
SCALE: 1:10



SECTION B - B

SCALE: 1:5

NOTES:

1. Dimension shown are in millimeters unless noted otherwise.
2. For 1070mm high F-shape Parapet Deatils, see Dwg. 2-54.
3. For additional notes, see Dwg. 2-56.

JOINT OPENING TABLE

LOCATION	JOINT OPENING (mm)					
	-1°C	4°C	10°C	16°C	21°C	27°C
West Abutment	56	56	54	51	50.8	49
Pier 1	62	59	56	54	50.8	48
Pier 2	62	59	56	54	50.8	48
Pier 3	59	57	56	51	50.8	49
East Abutment	54	52	52	51	50.8	50

DWG: 2-58

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

STRIP SEAL EXPANSION DAM DETAILS II

ROUTE I-78 SECTION 6J & 6K

CONTROL SECTION	2113/1014	JOB NO. 2113505	
DES. BY	K. M. Healy	CHK. BY	J. Coyle
DWN. BY	C. Cheung		
IN CHARGE OF	G. P. Johnson		

GREENMAN-PEDERSEN, INC.

5 0 5 10 20 — 1:5
10 0 10 20 40 — 1:10

ALL DIMENSIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS

REVISION	BY	C'K'D	DATE

GREENMAN-PEDERSEN, INC.
GREGORY P. JOHNSON, P.E.
N.J.P.E. 35430

SCALE: As Noted

BRIDGE SHEET NO. B128 OF B217

981
1124

15-48

FILE: I:\2000451_78TMS-IDA\Engineering\Structures\Plans\FinalDesign\Miscellaneous\Strip_Seal_Expansion_Dam_Details_II.dgn
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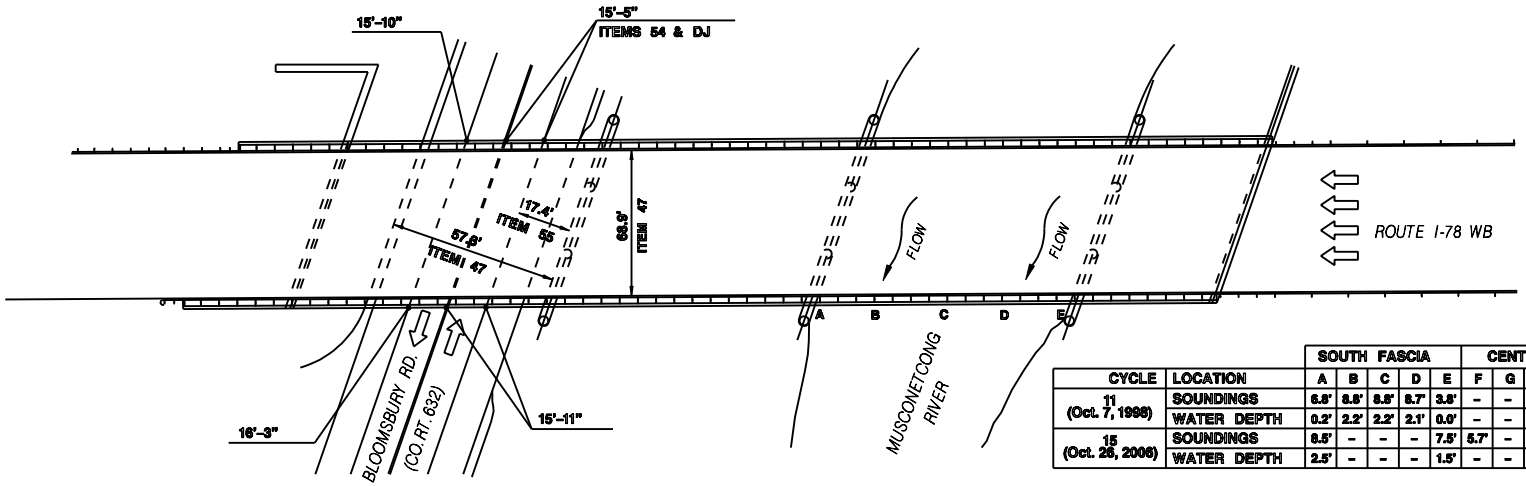
DATE: 12/10/2002

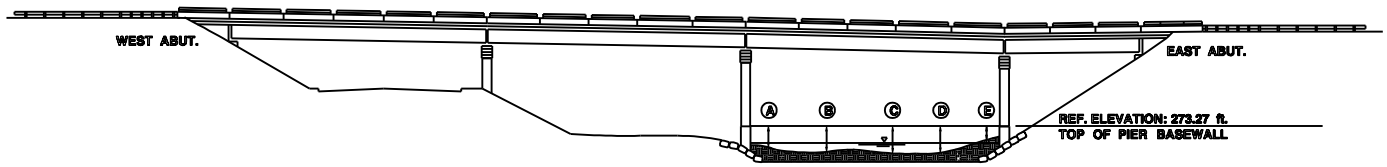


CYCLE	LOCATION	SOUTH FASCIA A	B	C	D	E	CENTERLINE F	G	H	I	J	NORTH FASCIA K	L	M	N	O
11 (Oct. 7, 1998)	SOUNDINGS	6.8'	8.6'	8.8'	8.7'	3.8'	–	–	–	–	–	6.8'	8.5'	8.6'	8.9'	3.5'
	WATER DEPTH	0.2'	2.2'	2.2'	2.1'	0.0'	–	–	–	–	–	0.2'	1.9'	2.0'	2.3'	0.0'
15 (Oct. 26, 2006)	SOUNDINGS	8.5'	–	–	–	7.5'	5.7'	–	–	–	8.5'	9.0'	–	–	–	6.0'
	WATER DEPTH	2.5'	–	–	–	1.5'	–	–	–	–	2.5'	3.0'	–	–	–	–

SOUNDING

⊙ DENOTES SOUNDING LOCATION. ALL SOUNDINGS ARE MEASURED FROM THE TOP OF THE PIER BASEWALL TO THE STREAM BED.

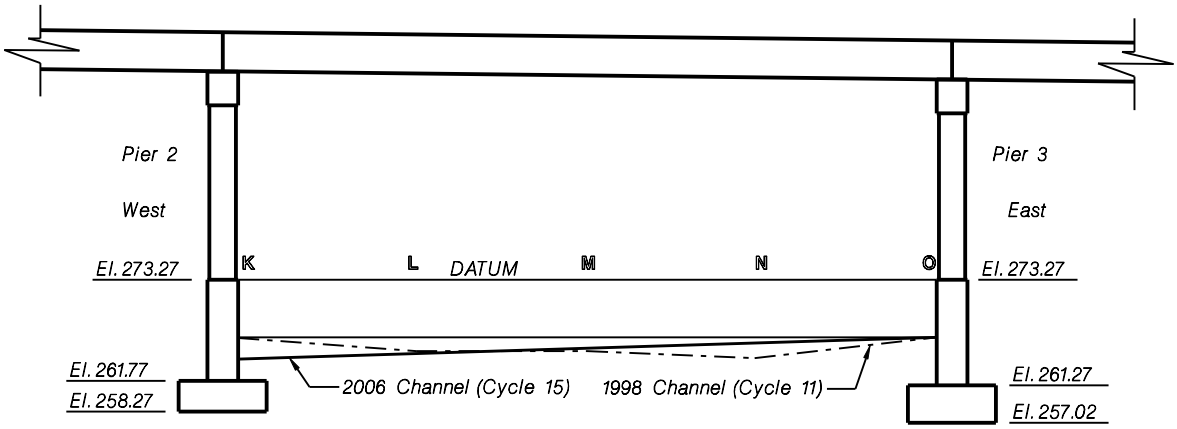
PLAN
N.T.S.



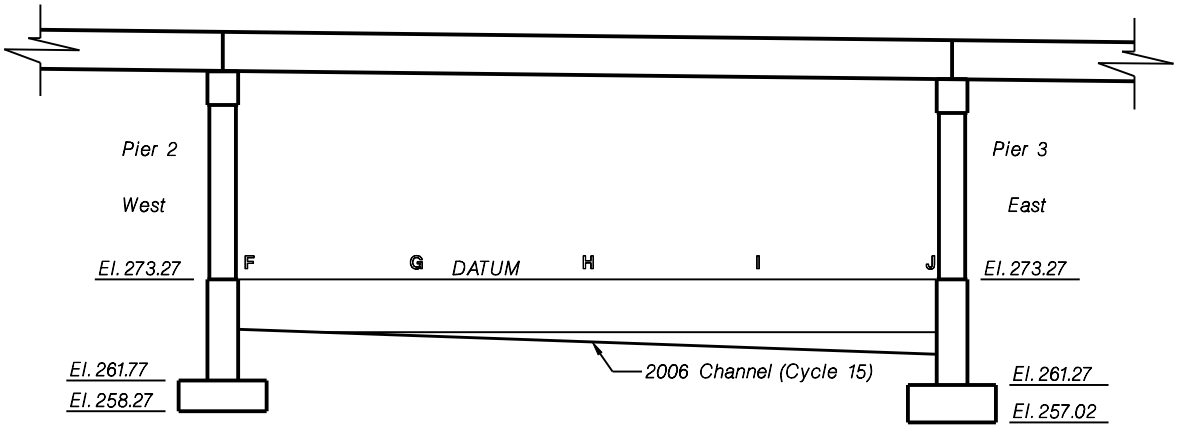
ELEVATION
N.T.S.

PLAN & ELEVATION
Structure No.: 2113-160
Route I-78 Westbound over
Bloomsbury Road(Co. Rt. 632)& Musconetcong River
Warren & Hunterdon Counties

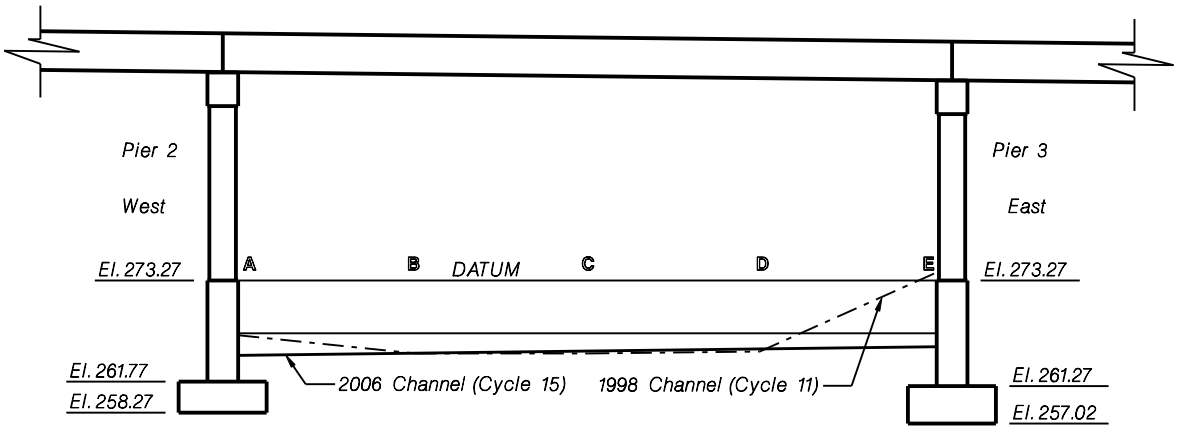
2113160_20061026cy15_01.dgn 2/3/2009 9:46:08 AM



NORTH ELEVATION



CENTERLINE



SOUTH ELEVATION

Baseline Soundings: October 1998
Updated Soundings: October 2006

SOUNDINGS

Structure No.: 2113-160
Route I-78 Westbound over
Bloomsbury Road(Co. Rt. 632)& Musconetcong River
Warren & Hunterdon Counties

2113160_20061026cy15_01.dgn 2/3/2009 9:47:00 AM

Structure No.:	4###-###	Route:	I-78	Cycle No.:	15
Name:	I-78 WB/Bloomsbury Rd & Musconetcong River			Insp. Date:	10/26/2006

Photo No: 15-01

Location:	North elevation at Span 1 (west), looking south.
Description:	General view.

Photo No: 15-02

Location:	North elevation at Spans 3 and 4 (from the west), looking south.
Description:	General view.

Photo No: 15-03

Location:	West approach roadway, looking east.
Description:	General view.

Photo No: 15-04

Location:	Span 2 (from the west), looking west.
Description:	General view of the underside of the new superstructure and deck (work done).

Photo No: 15-05

Location:	Top of deck, looking east.
Description:	Work done: New deck.

Photo No: 15-06

Location:	West approach roadway, south lanes, looking west.
Description:	Work done: New approach slabs and bituminous concrete approach pavement.

Photo No: 15-07

Location:	Northwest approach corner at embankment, looking west.
Description:	Work done: Re-grading of embankment (in progress).

Photo No: 15-08

Location:	West abutment at north end, looking west.
Description:	Work done: Widening of breastwall and concrete slope protection, reconstruction of bridge seat.

Photo No: 15-09

Location:	East Abutment and Pier 3 (from the west) at the north end, looking east.
Description:	Work done: Widened abutment, pier and slope protection, reconstructed bridge seats and re-graded northeast embankment (in progress).

Photo No: 15-10

Location:	Pier 1 (from the west), looking northwest.
Description:	Work done: Widened pier and reconstructed bridge seat.

Photo No: 15-11

Location:	Pier 3 (from the west), looking northwest.
Description:	Work done: Concrete repairs at the underside of the pier cap.

Photo No: 15-12

Location:	Pier 2 (from the west), looking southeast.
Description:	Work done: Concrete repairs at the underside of the pier cap (with map cracking and heavy efflorescence).

Structure No.:	4###-###	Route:	I-78	Cycle No.:	15
Name:	I-78 WB/Bloomsbury Rd & Musconetcong River			Insp. Date:	10/26/2006

Photo No: 15-13

Location:	Pier 2 (from the west), Column 5, looking west.
Description:	Work done: Concrete repairs in east face of column (with fine map cracking).

Photo No: 15-14

Location:	Top of deck at the northwest corner, looking east.
Description:	Work done: New F-shaped bridge parapet at the north end of the deck.

Photo No: 15-15

Location:	Northwest approach corner, looking west.
Description:	Work done: New approach guiderail.

Photo No: 15-16

Location:	Northwest approach corner, looking west.
Description:	Work done: New cantilever sign structure (in progress).

Structure No.:	4###-###	Route:	I-78	Cycle No.:	15
Name:	I-78 WB/Bloomsbury Rd & Musconetcong River			Insp. Date:	10/26/2006

NEW JERSEY DEPARTMENT OF TRANSPORTATION
STRUCTURAL EVALUATION
BRIDGE EVALUATION CHECK LIST

(FIELD NOTES)

Inspectors: Michael Jones & Joseph Smith
Crew Chief: Rajesh C. Patel
Temperature: 45ºF
Name: I-78 Westbound over Bloomsbury Road and Musconetcong River
Weather: Partly cloudy
Special Equipment Used: None

RATINGS:

N Not applicable
9 Excellent Condition
8 Very Good Condition – no problems noted.
7 Good Condition – some minor problems.
6 Satisfactory Condition – some minor deterioration of structural elements.
5 Fair Condition – minor section loss of primary structural elements.
4 Poor Condition – advance section loss of primary structural elements.
3 Serious Condition – seriously deteriorated primary structural elements.
2 Critical Condition – facility should be closed until repairs are made.
1 Imminent Failure Condition – facility closed. Study of repairs is feasible.
0 Failed Condition – facility is closed and beyond repair.

GPS COORDINATES	
AT SW CORNER	
40° 39' 43.20"	**N**
75° 04' 44.45"	**W**

GENERAL

Type of Bridge: Four span, simply supported, composite, prestressed concrete multi-girders

Year Built: 1959 Year of Widening / Major Repairs: 2006

No. of Lanes: On 4 (based on design drawings) Under 2

Vertical Clearances: Over Deck: 99'-99"

Minimum Under: 15'-5" below north fascia beam at east (NB) lane of Bloomsbury Road

Maximum Under (Item 10): 15'-8" below north fascia beam 10' east of west shoulder line of Bloomsbury Road

Horizontal Underclearance: Total Horizontal Underclearance: 57.3' toe of slope at west abutment to west pier

Right 17.4' from east edge of Bloomsbury Road to west pier

Left N/A

Overall Condition of Structure: Good due to Substructure

Work done: see next page.

Structure No.:	4###-###	Route:	I-78	Cycle No.:	15
Name:	I-78 WB/Bloomsbury Rd & Musconetcong River			Insp. Date:	10/26/2006

Work Done:

1. Superstructure and deck replaced (Photos 15-04 and 15-05).
2. Approaches reconstructed and widened (in-progress) (Photo 15-06).
3. Embankments re-graded, hydro-seeded and/or covered with rip-rap (Photo 15-07).
4. Abutments and slope protection widened at both ends (Photos 15-08 and 15-09).
5. Piers widened, reconstructed and repaired (Photos 15-09, 15-10, 15-11, 15-12 and 15-13).
6. New "F-shape" bridge parapets (Photo 15-14).
7. New approach guide rail, drainage inlets and light pole at southeast approach (15-15).
8. New overhead sign structure at northwest approach (Photo 15-16).

Note: This work has been performed under NJDOT Job No. 2113-506 and appeared close to completion at the time of inspection.

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

DECK

SI&A Item 58 Condition Rating: **9**

SPAN # 1 (West)

RATING	COMPONENT	REMARKS
9	~~Wearing Surface /~~ Top of Deck	
8	Underside of Deck *SIP Forms*	
N	Median	
N	Curbs	
N	Sidewalks / Safetywalks	
9	Parapets~~/ Balustrades~~	
N	Railings / Fencing	
7	Deck Joints ~~/ Filler Material~~ *Strip Seal*	
N	Drains and Scuppers	
N	Light Stands	
N	Utilities	
	Others	

Additional Remarks:

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

DECK

SI&A Item 58 Condition Rating: **9**

SPAN # 2 (from the west)

RATING	COMPONENT	REMARKS
9	~~Wearing Surface /~~ Top of Deck	
8	Underside of Deck *SIP Forms*	
N	Median	
N	Curbs	
N	Sidewalks / Safetywalks	
9	Parapets~~/ Balustrades~~	
N	Railings / Fencing	
7	Deck Joints ~~/ Filler Material~~ *Strip Seal*	
N	Drains and Scuppers	
N	Light Stands	
N	Utilities	
	Others	

Additional Remarks:

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

DECK

SI&A Item 58 Condition Rating: **9**

SPAN # 3 (from the west)

RATING	COMPONENT	REMARKS
9	~~Wearing Surface /~~ Top of Deck	
8	Underside of Deck *SIP Forms*	
N	Median	
N	Curbs	
N	Sidewalks / Safetywalks	
9	Parapets~~/ Balustrades~~	
N	Railings / Fencing	
7	Deck Joints ~~/ Filler Material~~ *Strip Seal*	
N	Drains and Scuppers	
N	Light Stands	
N	Utilities	
	Others	

Additional Remarks:

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

DECK

SI&A Item 58 Condition Rating: **9**

SPAN # 4 (East)

RATING	COMPONENT	REMARKS
9	~~Wearing Surface /~~ Top of Deck	
8	Underside of Deck *SIP Forms*	
N	Median	
N	Curbs	
N	Sidewalks / Safetywalks	
9	Parapets~~/ Balustrades~~	
N	Railings / Fencing	
7	Deck Joints ~~/ Filler Material~~ *Strip Seal*	
N	Drains and Scuppers	
N	Light Stands	
N	Utilities	
	Others	

Additional Remarks:

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

APPROACHES

SI&A Item BA Rating: **9**

SI&A Item 72 Rating: **8**

APPROACH West

RATING	COMPONENT	REMARKS
9	Approach Slabs (6)	(Work Done)
N	Approach Shoulder	
	Approach Roadway Vertical and Horizontal Alignment	
9	Guide Rail Condition	(Work Done)
N	Sidewalks	
9	Curbs	(Work Done)
N	Utilities	
7	Approach Roadway Embankment	
	Others	

Additional Remarks:

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

APPROACHES

SI&A Item BA Rating: **9**

SI&A Item 72 Rating: **8**

APPROACH East

RATING	COMPONENT	REMARKS
9	Approach Slabs (6)	(Work Done)
N	Approach Shoulder	
	Approach Roadway Vertical and Horizontal Alignment	
9	Guide Rail Condition	(Work Done)
N	Sidewalks	
N	Curbs	(Work Done)
N	Utilities	
7	Approach Roadway Embankment	
	Others	

Additional Remarks:

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: **9**

SPAN # 1 (West)

RATING	COMPONENT	REMARKS
9	P/S. I -Beams **(13 #'d South to North)**	
9	Diaphragms / Cross Frames *Concrete@ Ends* *Steel Interiors*	
9	Bearings *Elastomeric*	
	Deflection and Vibration	Vibration noticeable under heavy loads
	Others	

Additional Remarks:

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 14%

Category	Detail Description and Location
N/A	

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: **9**

SPAN # 2 (from the west)

RATING	COMPONENT	REMARKS
9	P/S. I -Beams **(13 #'d South to North)**	
9	Diaphragms / Cross Frames *Concrete@ Ends* *Steel Interiors*	
9	Bearings *Elastomeric*	
	Deflection and Vibration	Vibration noticeable under heavy loads
	Others	

Additional Remarks:

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 14%

Category	Detail Description and Location
N/A	

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: **9**

SPAN # 3 (from the west)

RATING	COMPONENT	REMARKS
9	P/S. I -Beams **(13 #'d South to North)**	
9	Diaphragms / Cross Frames *Concrete@ Ends* *Steel Interiors*	
9	Bearings *Elastomeric*	
	Deflection and Vibration	Vibration noticeable under heavy loads
	Others	

Additional Remarks:

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 14%

Category	Detail Description and Location
N/A	

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: **9**

SPAN # 4 (East)

RATING	COMPONENT	REMARKS
9	P/S. I -Beams **(13 #'d South to North)**	
9	Diaphragms / Cross Frames *Concrete@ Ends* *Steel Interiors*	
9	Bearings *Elastomeric*	
	Deflection and Vibration	Vibration noticeable under heavy loads
	Others	

Additional Remarks:

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 14%

Category	Detail Description and Location
N/A	

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

SUBSTRUCTURE

SI&A Item 60 Condition Rating: **7**

ABUTMENT West

RATING	COMPONENT	REMARKS
7	Breastwall *Concrete*	
8	Backwall *Concrete*	
8	Bridge Seat *Concrete Epoxy coated*	
7	Wingwalls / Retaining Walls	
8	Embankment / Slope Protection	
	Others / Footings / Waterway Probing	

Additional Remarks:

ABUTMENT East

RATING	COMPONENT	REMARKS
7	Breastwall	
8	Backwall	
8	Bridge Seat	
7	Wingwalls / Retaining Walls	
8	Embankment / Slope Protection	
	Others / Footings / Waterway Probing	

Additional Remarks:

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

SUBSTRUCTURE

SI&A Item 60 Condition Rating: **7**

PIER 1 (West)

RATING	COMPONENT	REMARKS
7	Columns/ ~~Stem~~ ~~Crashwall~~ *6 Column*	
7	Pier Cap *Concrete*	
8	Bridge Seat *Concrete-epoxy coated*	
	Others/Fender Comment on Probing	

Additional Remarks: (4) column pier bent original – (1) column widened at south and (1) column widened at north
All new components would be rated - 8

PIER 2 (from the west)

RATING	COMPONENT	REMARKS
7	Columns/ ~~Stem~~ ~~Crashwall~~ *6 Column*	
7	Pier Cap *Concrete*	
8	Bridge Seat *Concrete-epoxy coated*	
7	Others/Fender Comment on Probing	Pier Channel Wall

Additional Remarks: (4) column pier bent original – (1) column widened at south and (1) column widened at north
All new components would be rated - 8

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

SUBSTRUCTURE

SI&A Item 60 Condition Rating: **7**

PIER 3 (from the west)

RATING	COMPONENT	REMARKS
7	Columns/ ~~Stem~~ ~~Crashwall~~ *6 Column*	
7	Pier Cap *Concrete*	
8	Bridge Seat *Concrete-epoxy coated*	
7	Others/Fender Comment on Probing	Pier Channel Wall

Additional Remarks: (4) column pier bent original – (1) column widened at south and (1) column widened at north
All new components would be rated - 8

PIER ---

RATING	COMPONENT	REMARKS
	Columns/ Stem Crashwall	
	Pier Cap	
	Bridge Seat	
	Others/Fender Comment on Probing	

Additional Remarks:

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

SUBSTRUCTURE/SCOUR

SI&A Item 60 Condition Rating: **7**

PIER/~~ABUTMENT~~ 2 (from the west)

RATING	COMPONENT	REMARKS
		COUNTERMEASURES
	Description	Concrete Pier Wall along channel
7	Condition	
		PROBING/SCOUR
7	Findings	Localized minor scour along faces of pier wall, due to construction. Channel work appears to not be complete – temporary embankment stabilization along channel embankment No exposed footings
	Changes Since Prior Inspection	Flow is full width of pier walls/span 3, previously restricted for construction of piers
	Debris	Minor construction debris in channel

Repair Quantities:

PIER/~~ABUTMENT~~ 3 (from the west)

RATING	COMPONENT	REMARKS
		COUNTERMEASURES
	Description	Concrete Pier Wall along channel
7	Condition	
		PROBING/SCOUR
7	Findings	Localized minor scour along faces of pier wall, due to construction. Channel work appears to not be complete – temporary embankment stabilization along channel embankment No exposed footings
	Changes Since Prior Inspection	Flow is full width of pier walls/span 3, previously restricted for construction of piers
	Debris	Minor construction debris in channel

Repair Quantities:

Structure No.: 4###-### Route: I-78 Cycle No.: 15
Name: I-78 WB/Bloomsbury Rd & Musconetcong River Insp. Date: 10/26/2006

WATERWAY/CHANNEL

SI&A Item No. 61: 7
SI&A Item No. 71: 9
Prioritization Category: 3
Scour Sufficiency Rating: 47.5

RATING	COMPONENT	REMARKS
		FLOW CONDITIONS
	Direction	North to South
	Magnitude	Full width of span 3 (between pier walls)
	Velocity	Moderate
		EMBANKMENTS
6	Upstream	Steep dropoff at edge of water, moderate cutting along edge of water – generally well vegetated embankments
7	Downstream	Parallel structure to north, with pier walls defining channel – 20'± gap between structures is filled with large diameter rip rap on East side, temp. barriers on west
7	Channel Countermeasures	Pier walls along channel under bridge Large diameter rip rap on embankments downstream of east pier
		CHANNEL MOVEMENT AND CHANGES
	Horizontal Location	Center of span 3
	Cross Section	Appears deeper than upstream and downstream due to constriction of flow between pier walls.
	Alignment	Enters generally tangent Exits tangent due to pier walls of parallel structure
	Changes Since Previous Inspection	Previous inspection noted construction equipment/cofferdams in channel for pier construction – all removed, though channel does not appear to be restored to final condition
	Navigation Clearances	N/A
	Waterway Opening	Appears adequate for flows from normally occurring storms
	Other	

Repair Quantities:

HIGHWAY SAFETY

Coding of SI&A Item 36: **1111**
1: Good
0: Not Good
N: Not Applicable

RATING		COMPONENT	REMARKS
1		Bridge Railing	NJDOT Type "F" Parapet
1	1	Transition to Bridge Railing	
	1	Curb / Sidewalk Terminations	
1		Approach Guide Rails	
1		Approach Guide Rail End Terminals	

DECK GEOMETRY

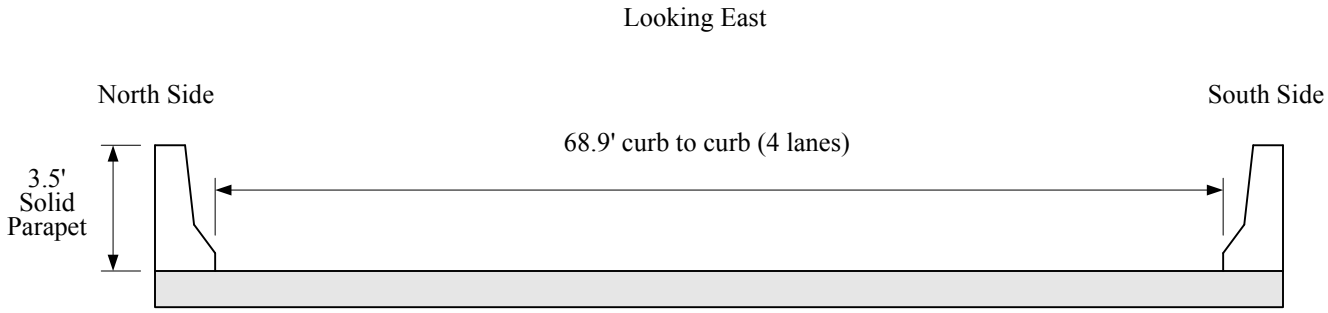
SI&A Item 68 Rating: **7**

COMPONENT	REMARKS
Bridge Cross Section	68.9' curb to curb; 4 lanes + 2 shoulders (based on design drawings). See next sheet for cross-section.
Adequacy of Lane / Shoulder Widths	Number of Lanes: 4 SI&A Table 2C - Interstate: 12N + 24 = 12(4) + 24 = 72' > 68.9'; 12N + 20 = 68' < 68.9' Therefore Item 68 = 7
Vertical Clearance over Deck	No restrictions

*Posting for Load / Speed / Clearance Restrictions (Include a photo)	None

Structure No.:	4###-###	Route:	I-78	Cycle No.:	15
Name:	I-78 WB/Bloomsbury Rd & Musconetcong River			Insp. Date:	10/26/2007

DECK CROSS SECTION



Note: Sketch and bridge roadway width taken from design drawings.

Structure No.:	4###-###	Route:	I-78	Cycle No.:	15
Name:	I-78 WB/Bloomsbury Rd & Musconetcong River			Insp. Date:	10/26/2006

CLEARANCES

FEATURE ON STRUCTURE: I-78 Westbound SI&A SHEET 1

Minimum Vertical Clearance (SI&A item 10)	99'-99"
Total Horizontal Clearances (SI&A item 47)	68.9' curb to curb on the bridge (based on design drawings).
Minimum Vertical Clearance (SI&A item 54)	15'-5" below north fascia beam at east (NB) lane of Bloomsbury Road.
Minimum Vertical Clearance (SI&A item DJ)	15'-5" below north fascia beam at east (NB) lane of Bloomsbury Road.
Lateral Right (SI&A item 55)	17.4' from east edge of Bloomsbury Road to west pier.
Lateral Left (SI&A Item 56)	N/A

FEATURE UNDER STRUCTURE: Bloomsbury Road (Co. Rt. 632) SI&A SHEET 2

*Minimum Vertical Clearance (SI&A Item 10)	15'-8" below north fascia beam 10' east of west shoulder line of Bloomsbury Road.
Total Horizontal Clearance (SI&A Item 47)	57.3' from toe of slope at west abutment to west pier.
Minimum Vertical Clearance (SI&A Item DJ)	15'-5" below north fascia beam at east (NB) lane of Bloomsbury Road.

* Minimum clearance for a 10 foot width of the pavement or traveled part of the roadway where the clearance is greatest shall be coded in feet and inches.

Structure No.:	4###-###	Route:	I-78	Cycle No.:	15
Name:	I-78 WB/Bloomsbury Rd & Musconetcong River			Insp. Date:	10/26/2006

CHAIN LINK FENCE

Coding of SI&A Item FN: **N**

Coding of SI&A Item FO: **N**

Coding of SI&A Item FP (in thousands): **$ 0**

Warranted (Per Design Manual Section 23):	~~Yes~~/No	
If Yes: (#) Description:		
Current Status of Fence & Sidewalk:	Left Side	Right Side
a. Fence:	~~Yes~~/No	~~Yes~~/No
b. Sidewalk Width:	None	None
c. Total Height of fence above Curb/Sidewalk	None	None
d. Type of Fence: (per Design Manual Section 23)	None	None

Action Recommended: None

Estimated Cost: $ 0