



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Inspection Report for B-37-360-0002 (NB 51 TUB GIRDER)

51NB TO29WB over USH51
Jun 06,2016



Type	Prior	Frequency (mos)	Performed
Routine	06-03-14	24	X
Fracture Critical	06-03-14	24	X
In-Depth	11-16-10	72	
SIA Review	06-11-12	48	X

Latitude 44°57'07.60"N
Longitude 89°40'01.90"W

Owner STATE HIGHWAY DEPT
Maintainer STATE HIGHWAY DEPT

Time Log

Hours	Minutes
6	0

Team members

EXTERIOR: T ANEN, C HAMPTON
INTERIOR: NEIMAN, OLGES, VOS ORTMAN

Inspector	Name	Number	Signature	Date
	Hardinger, Tom J	4001	Tom J Hardinger E-signed by Tom Hardinger(dottjh)	01-25-17

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Identification & Location

Feature On: 51NB TO29WB	Section Town Range: S34 T29N R07E	Structure Number: B-37-360-0002
Feature Under: USH51	County: MARATHON	
Location 1.8M N of Rib mountain Dr	Municipality: MARATHON	Structure Name: NB 51 TUB GIRDER

Geometry

measurements in feet, except where noted

Approach Roadway Width: 40	Bridge Roadway Width: 40.0	Total Length: 746.0
Approach Pavement Width: 24	Deck Width: 42.9	Deck Area (sq ft): 32003

Traffic

	Lanes	ADT	ADT year	Traffic Pattern
On	2	3500	2016	ONE WAY TRAFFIC
Under	4	56000	2016	TWO WAY TRAFFIC

Capacity

Load Rating

Inventory rating: HS26	Overburden depth (in): 0.5	Last rating date: 07-27-06	Controlling:
Operating rating: HS44	Deck surface material: EPOXY OVERLAY	Re-rate for capacity (Y/N):	Control location:
Posting:	Re-rate notes:		

Hydraulic

Classification

Scour Critical Code(113): (N) NO WATERWAY	Q100 (ft3/sec):	
High water elevation (ft):	Velocity (ft/sec):	Sufficiency #:

Span(s)

Span #	Material	Configuration	Depth (in)	Length (ft)	Main
1	CONT STEEL	BOX GIRDER	86	198.5	
2	CONT STEEL	BOX GIRDER	86	233.0	Y
3	CONT STEEL	BOX GIRDER	86	170.0	
4	CONT STEEL	BOX GIRDER	86	144.5	

Expansion joint(s)

Temperature:

File:	New:
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Clearance

Item	File Measurement (ft)	File Date	New Measurement (ft)
Highway Min Vertical Under Cardinal	18.0	28-Apr-2009	
Highway Min Vertical Under Non-Cardinal	18.0	24-Apr-2009	
Horizontal Under Cardinal	40.0		
Horizontal Under Non-Cardinal	40.0		
Highway Min Vertical On Cardinal			
Horizontal On Cardinal			
Railroad Min Vertical Under			

Special Components

Component	Year	Work Performed	Note
EPOXY OVERLAY - POLY-CARB MARK-163 FLEXOGRID	2008	OVERLAY - EPOXY	2008 EPOXY OVERLAY - 1 LAYER POLYCARB. HEAVY LOSS OF OVERLAY STONE OCCURRING.

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Construction History

Year	Work Performed	FOS id
9999	OVERLAY - POLYMER	
9999	NOT BUILT	1009-45-66
2008	OVERLAY - EPOXY	
2008	NEW STRUCTURE	1166-09-74

Maintenance Items History

Item	Recommended by	Status	Status change	Year completed
Superstructure - Other Work	Stakston, Anthony (4010)	COMPLETE	01/18/17	2016
CONSIDER WASHING EXTERIOR OF GIRDERS (POSSIBLE PBM WORK). OR DO WITH NEXT INSPECTION IN 2016. - DONE W/ INSPECTION				
Deck - Clean and Sweep Deck/Drains	Stakston, Anthony (4010)	COMPLETE	01/18/17	2016
SWEEP AND CLEAN JOINTS TWICE PER YEAR.				

Maintenance Items

Item	Priority	Recommended by	Status	Status change
Deck - Clean and Sweep Deck/Drains	MEDIUM	Hardinger, Tom J (4001)	IDENTIFIED	01/25/17
CLEAN SWEEP DECK AND DRAINS TWICE PER YEAR.				
Misc - Other Work	MEDIUM	Hardinger, Tom J (4001)	IDENTIFIED	01/25/17
REPAIR INTERIOR LITE IN TUB. USE STATE ELECTRIAN POSSIBLY. SPAN 8.				

Elements

Chk	Element	Defect	Description	UOM	Total	Quantity in Condition State			
						1	2	3	4
X	12		Reinforced Concrete Deck	SF	32,003	31,263	740	0	0
			ONLY 4' OF OVERHANGS AND 12' BETWEEN TUBS EXPOSED.						
		1080	Delamination - Spall - Patched Area	SF		0	0	0	0
		1130	Cracking (RC)	SF		0	740	0	0
			SEE SUPPLEMENTAL INSPECTION NOTES. SUMMARY CONDITION 2: SPAN 9: 270 SF; SPAN 8: 270 SF; SPAN 7: 130 SF; SPAN 6: 70 SF; TOTAL = 740 SF.						
		8513	Thin Polymer Overlay	SF	32,003	8,003	0	0	24,000
X	102		Steel Closed Web / Box Girder	LF	1,492	942	550	0	0
			TWIN 86 INCH BOX GIRDERS. BOTTOM FLGS @ MID SPAN HAVE "ZIPPER" SEAM IN TENSION ZONES. INSIDE PAINTED WHITE. SEE SUPPL. INSPECTION NOTES.						
		1000	Corrosion	LF		0	550	0	0
			SEE SUPPLEMENTAL INSPECTION NOTES. SUMMARY CONDITION 2: SPAN 9: 50 LF; SPAN 8: 150 LF; SPAN 7: 150 LF; SPAN 6: 200 LF; TOTAL = 550 LF.						
		8516	Painted Steel	SF	115,800	110,700	5,100	0	0
			TWIN 86 INCH BOX GIRDERS. BOTTOM FLGS @ MID WIDTH HAVE "ZIPPER" SEAM IN TENSION ZONES. INSIDE PAINTED WHITE. SEE SUPPL. INSPECTION NOTES.						
		3440	Effectiveness (Steel Protective Coatings)	SF		0	5,100	0	0
			SEE SUPPLEMENTAL INSPECTION NOTES. SUMMARY CONDITION 2: SPAN 9: 900 SF; SPAN 8: 1150 SF; SPAN 7: 1300 SF; SPAN 6: 1750 SF; TOTAL = 5100 SF.						

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X	210		Reinforced Concrete Pier Wall	LF	36	18	0	0
			PIERS 6, 7 & 8 (CODE PIERS 5 & 9 INSPECTED W/ OTHER UNITS); INTEGRAL W/ CAP.					
		1080	Delamination - Spall - Patched Area	LF		0	0	0
		1130	Cracking (RC)	LF		0	18	0
			SEE SUPPLEMENTAL INSPECTION NOTES. SUMMARY FOR C2: PIER 6 = 6'; PIER 7 = 6'; PIER 8 = 6'; TOTAL 18' IN C2.					
X	234		Reinforced Concrete Cap	LF	129	84	45	0
			PIERS 6, 7 & 8 (CODE PIERS 5 & 9 INSPECTED W/ OTHER UNITS); INTEGRAL W/ PIER WALL (USE TOP HORIZ. COPING TO DELINEATE BETW. ELEMENTS).					
		1130	Cracking (RC)	LF		0	45	0
			SEE SUPPLEMENTAL INSPECTION NOTES. SUMMARY FOR C2: PIER 6 = 15'; PIER 7 = 15'; PIER 8 = 15'; TOTAL 45' IN C2.					
X	303		Modular Joint	LF	80	80	0	0
			PIERS 5 AND 9. FILLED PARTIALLY W/ DIRT.					
		2310	Leakage, Seal Adhesion, Damage, Cracking	LF		0	0	0
		2350	Debris Impaction	LF		0	0	0
			JOINTS CLEANED WITH 2014 INSPECTION.					
X	314		Pot Bearing	EA	10	8	2	0
			GUIDED (EXPANSION) AT PIERS 5 & 9; FIXED AT PIERS 6-8.					
		1000	Corrosion	EA		0	0	0
			SEE SUPPLEMENTAL INSPECTION NOTES.					
		1020	Connection	EA		0	2	0
			SEE SUPPLEMENTAL INSPECTION NOTES. PIER 6 BEARINGS IN C2 - LOOSE BOLTS.					
X	331		Reinforced Concrete Bridge Rail	LF	1,500	1,200	300	0
		1080	Delamination - Spall - Patched Area	LF		0	0	0
		1130	Cracking (RC)	LF		0	300	0
			175 VCS EAST RAIL AND 125 VCS IN WEST - ALL C2.					

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Assessments

Chk	Element	Defect	Description	UOM	Total	Quantity in Condition State			
						1	2	3	4
X	9004		Drainage - Drainage Along Structure (Deck Drains)	EA	2	2	0	0	0
			DECK DRAINS W/ FIBERGLASS DOWNSPTS PIERS 7 & 9.						
X	9167		Steel Diaphragm	EA	108	108	0	0	0
			12 EXTERNAL; INTERIOR: 10 FULL WIDTH AT PIERS AND 86 "K" FRAMES.						
X	9169		Lateral Bracing	EA	90	90	0	0	0
			INTERNAL BRACING.						

NBI Ratings

	File	New
Deck	8	7
Superstructure	8	8
Substructure	8	7
Culvert	N	N
Channel	N	N
Waterway	N	N

Structure Specific Notes

NB EXIT RAMP UNDER SPAN 9; NB MAINLINE UNDER SPAN 7; SB MAINLINE UNDER SPAN 6.

Inspection Specific Notes

ROUTINE/FRACTURE CRITICAL INSPECTION STARTED 6/6/16 AND FINISHED ON 6/7/2016 (CODED AS 6/6/16 TJH). SEE INSPECTION BINDER FOR INSPECTION LAYOUT/SCHEDULE.

See attached pdf for interior inspection.

Inspector Site-Specific Safety Considerations

INSPECTION OF TUB GIRDERS ARE CONSIDERED CONFINED SPACE. REVIEW CONFINED SPACE ENTRY PROTOCOL PRIOR TO INSPECTION. PREVIOUS INSPECTIONS OPEN HATCHES THE DAY BEFORE ENTRY.

Structure Inspection Procedures

SEE SUPPLEMENTAL INSPECTION NOTES AND SEE INSPECTION BINDER AT OFFICE. INSPECTION PROCEDURE WELL DOCUMENTED FROM 2012-2016 INSPECTIONS.

Special Requirements

	Chk	Hours	Cost	Comments
Other Access Equipment	X			REACHALL

Routine

Document Comment/Description

TYPICAL: INTERIOR OF TUB GIRDER SHOWING K FRAMES AND "ZIPPER" SEAM.



Routine

Document Comment/Description

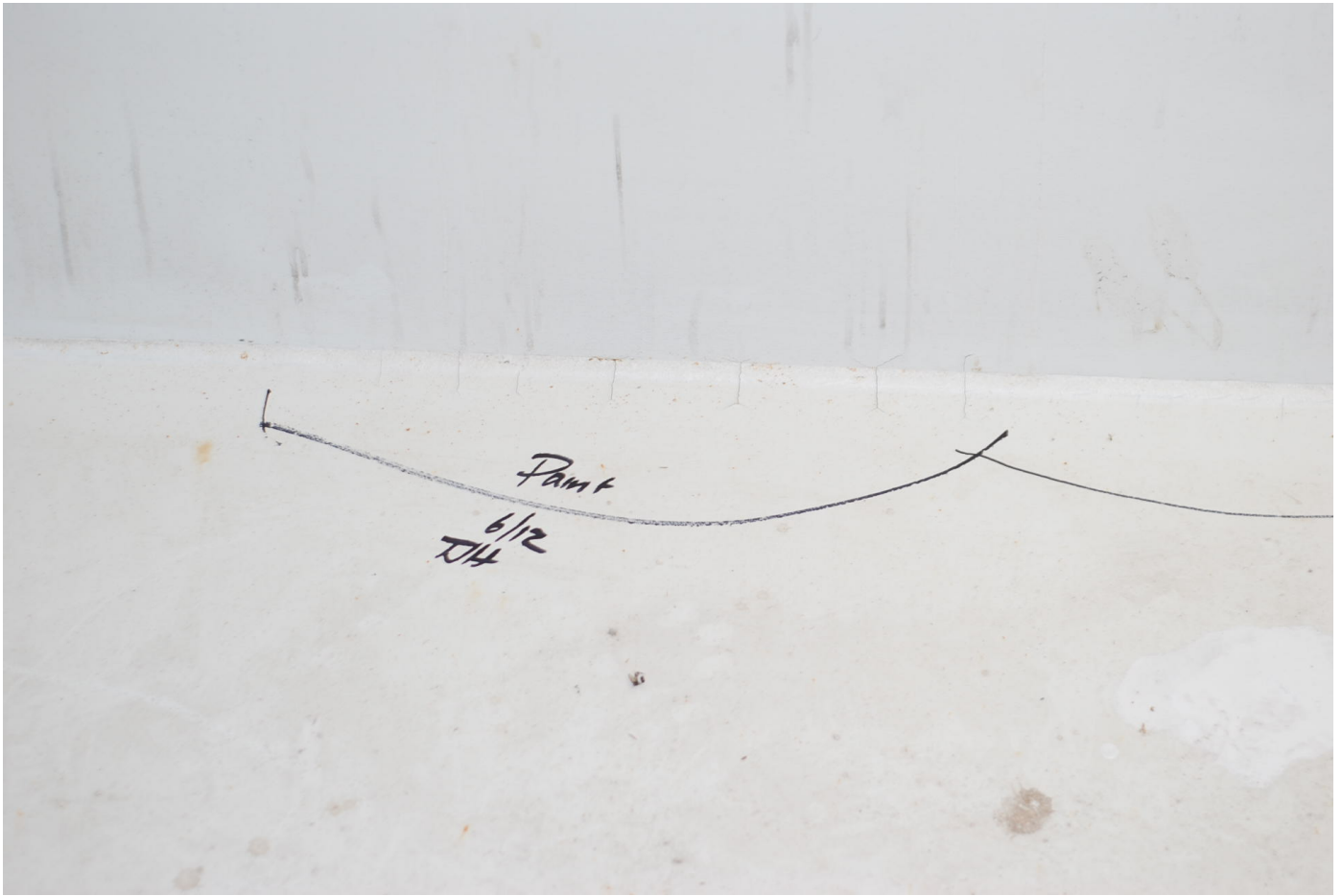
TYPICAL CORROSION OCCURRING ALONG TOP FLANGES BETWEEN GALVINIZED DECK PANELS AND GIRDER TOP FLANGE .



Routine

Document Comment/Description

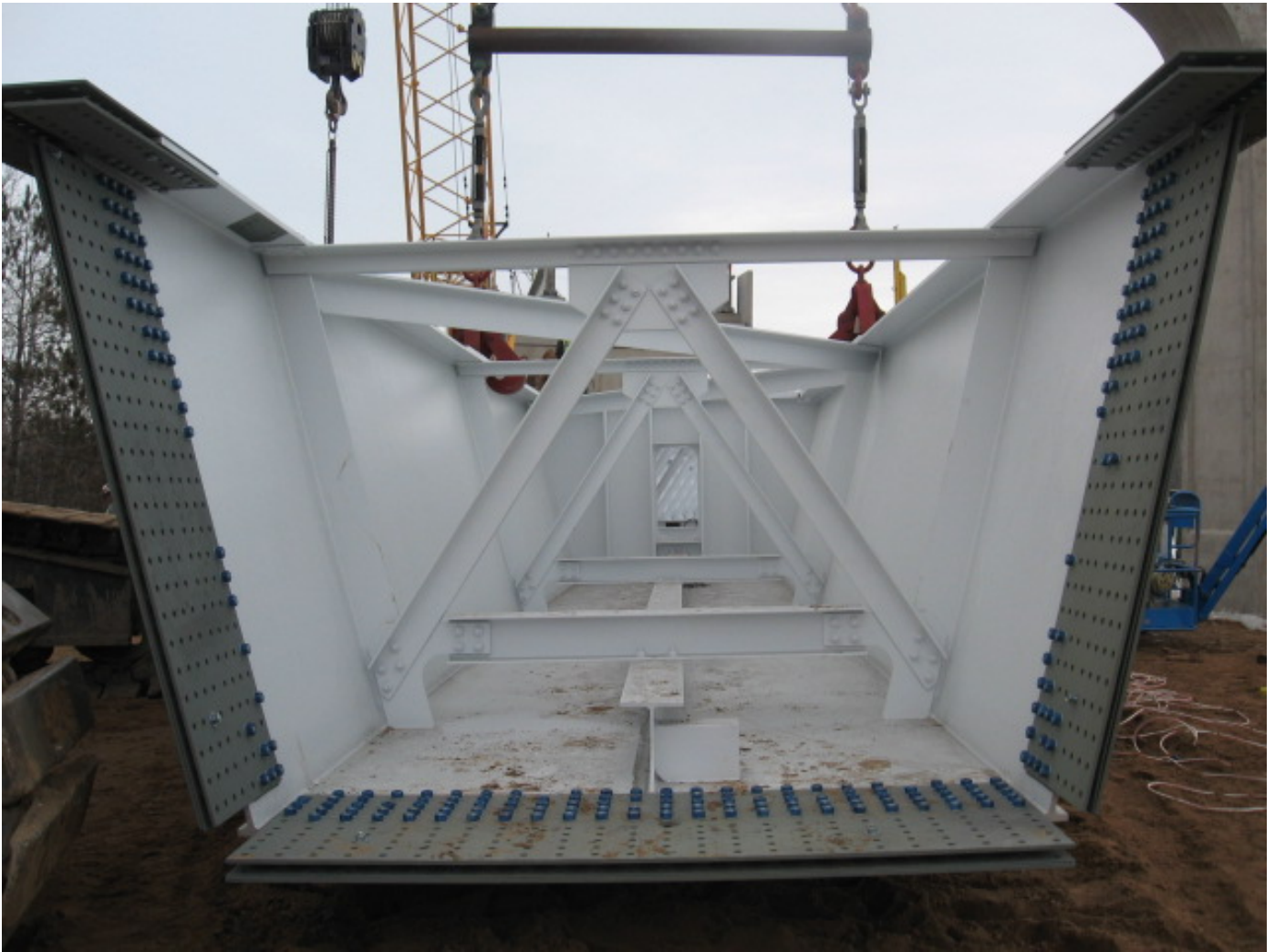
TYPICAL PAINT FAILURES INTERIOR OF TUBS.



Routine

Document Comment/Description

CONSTRUCTION PIC OF ONE SECTION OF TUB GIRDER.



Routine

Document Comment/Description

TYPICAL INTERIOR VIEW W SIPPER PLATE. 2016



Routine

Document Comment/Description

MODULAR JOINT. 2016



Routine

Document Comment/Description

POLYMER OVERLAY - TYPICAL. EST. 75% LOSS OF MATERIAL. 2016



Routine
Document Comment/Description

PIER 5 - CAP CRACKING. 2016



Routine
Document Comment/Description

PIER 9 - CAP CRACKING. 2016



Routine

Document Comment/Description

RUST LINE FORMING, SPAN 8 BOTTOM FLANGE. 2016



Routine
Document Comment/Description

TYPICAL BOTTOM FLANGE CORNER RUST, SPAN 8. 2016.



Routine

Document Comment/Description

TYPICAL INTERIOR CONDITION W ZIPPER PLATE. 2016



Routine

Document Comment/Description

TYPICAL TOP FLANGE-TO-DECK PANEL CORROSION. INTERIOR. 2016.



Routine

Document Comment/Description

TYPICAL BOTTOM FLANGE (FLOOR)CONDITION UNDER TOP FLANGE CORROSION LOCATIONS.



Routine

Document Comment/Description

INTERIOR: FIELD SPLICE IN SPAN 7. 2016.



Routine

Document Comment/Description

TYPICAL BOTTOM-FLANGE-TO-WEB PAINT PEEING THRUOUT. 2016



Routine
Document Comment/Description

TYPICAL INTERIOR CONDITION. 2016.



Routine
Document Comment/Description

TYPICAL EXTERIOR DIAPHRAM RUST CONDITION. 2016



Routine
Document Comment/Description

TYPICAL ZIPPER PLATE CONDITION - EXTERIOR. 2016



Routine
Document Comment/Description

TYPICAL PIER POT BEARING. 2016.



Routine
Document Comment/Description

TYPICAL PIER DIAPHRAM CONNECTION. 2016



Routine

Document Comment/Description

LITE IN SPAN 8 BROKE OFF MOUNTS. 2016.



STRUCTURE INVENTORY AND APPRAISAL FIELD REVIEW FORM

B-37-360-0002
51NB TO29WB over USH51

LOCATION

(3) Municipality:
(16) Latitude(° ' ") :
(17) Longitude(° ' ") :

MARATHON
44°57'07.60"N
89°40'01.90"W

TRAFFIC SERVICE

(28A) Lanes On:
(28B) Lanes Under:
(102) Traffic Pattern On:
(102) Traffic Pattern Under:
(19) Detour Length(mi):

2
4
-NO TRAFFIC ☒ ONE WAY TRAFFIC -TWO WAY TRAFFIC
-NO TRAFFIC -ONE WAY TRAFFIC ☒ TWO WAY TRAFFIC
3

GEOMETRY

(49) Structure Length(ft):
(50) Sidewalk Width(ft):
(50) Curb Width(ft):
(52) Culvert Barrel Length(ft):
(34) Skew:

(51) Bridge Roadway Width(ft):
(52) Deck Width(ft):
Right Wingwall Length(ft):
Left Wingwall Length(ft):
(32) Approach Roadway Width(ft):

(47) Minimum Horizontal(ft):
(55) Minimum Right Lateral(ft):
(56) Minimum Left Lateral(ft):

746.0	
Left:	Right:
Angle(°):	Direction: -RIGHT FORWARD -LEFT FORWARD
Cardinal	Non-Cardinal
40.0	40.0
42.9	42.9
40	0
Cardinal Under Clearance	Non-Cardinal Under Clearance
40.0	40.0
6.0	6.0
10.0	10.0

RAILING APPRAISAL

(36A) Bridge Rail Adequacy:
(36B) Transition Adequacy:
(36C) Approach Guardrail Adequacy:
(36D) Guardrail Termination Adequacy:
Outer Rail:

-SUB-STANDARD ☒ STANDARD -NOT APPLICABLE		
-SUB-STANDARD -STANDARD ☒ NOT APPLICABLE		
-SUB-STANDARD -STANDARD ☒ NOT APPLICABLE		
-SUB-STANDARD -STANDARD ☒ NOT APPLICABLE		
Left	Right	Type
		TYPE F (TWO SQUARE TUBES) - STEEL(8)
		TYPE F (3 SQUARE TUBES) - STEEL(65)
		TYPE F (4 SQUARE TUBES) - STEEL(72)
		TYPE M-STEEL 3 SQUARE TUBES(93)
X		SLOPED FACE PARAPET LF(91)
	X	SLOPED FACE PARAPET HF(92)
		VERTICAL FACE PARAPET TYPE A(74)
		TYPE W-THREE BEAM(79)
		TYPE H ON VERTICAL PARAPET(80)
		TIMBER(38)
		OTHER(99) (Please specify)
X		CONT GUARD RAIL
		NO APP GRDRL
		NO ATTACHMENT
		22 MM(7/8") BOLT (Please enter quantity)
		25 MM(1") BOLT (Please enter quantity)
		OTHER (Please specify)
UNIT 1 AND 3 ARE ON EACH END OF UNIT 2. NO GUARDRAIL NEEDED.		
		(01) ENERGY ABSORBING TERMINAL/EAT
		(02) TURN DOWN
		(99) OTHER (Please specify)

Transition Type:

Approach Attachment Rail Note:
Guardrail Termination Type:

Guardrail Termination Note:

ROADWAY ALIGNMENT APPRAISAL

(72) Approach Alignment Appraisal:

	3 Intolerable- Substantial speed reduction
	6 Fair- Minor speed reduction
X	8 Good- No speed reduction