STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Inspection Report for B-03-021 (USH 53 NB)

USH 53 NB over CHETEK RIVER

Jun 08,2017

Type	Prior	Frequency (mos)	Performed
Routine	06-05-15	24	X
SIA Review	06-19-13	48	X
Uw-Profile	06-05-15	24	X

Latitude	45°18'04.80"N	Owner	STATE HIGHWAY DEPT
Longitude	91°39'13.88"W	Maintainer	STATE HIGHWAY DEPT

Time Log

Hours	Minutes
0	45

Team members

wjk

	Name	Number	Signature	Date
Inspector	Kovaleski, William J	8007	William J Kovaleski E-signed by Bill(dotwjk)	09-08-17

BRIDGE INSPECTION REPORT
Wisconsin Department of Transportation
DT2007 2003 s.84.17 Wis. Stats.

Identification & Location

Feature On: USH 53 NB	Section Town Range: S31 T33N R10W	Structure Number: **B-03-021**
Feature Under: CHETEK RIVER	County: BARRON	
Location: 8.1M N JCT CTH M TO E	Municipality: CHETEK	Structure Name: USH 53 NB

Geometry

measurements in feet, except where noted

Approach Roadway Width: 40	Bridge Roadway Width: 48.8	Total Length: 222.8
Approach Pavement Width: 24	Deck Width: 52.6	Deck Area (sq ft): 11273

Traffic

	Lanes	ADT	ADT year	Traffic Pattern
On	2	5550	2014	ONE WAY TRAFFIC

Capacity

Load Rating

Inventory rating: HS16	Overburden depth (in): 2.0	Last rating date: 08-21-13	Controlling: INTERIOR DECK GIRDER Negative Moment
Operating rating: HS25	Deck surface material: LOW SLUMP CONCRETE	Re-rate for capacity (Y/N):	Control location: SPAN 1
Posting:	Re-rate notes:		

Hydraulic

Classification

Scour Critical Code(113): (8) STABLE-ABOVE TOP FOOTING	Q100 (ft3/sec): 5400	
High water elevation (ft): 1029.9	Velocity (ft/sec): 4.6	Sufficiency #: 93.4

Span(s)

Span #	Material	Configuration	Depth (in)	Length (ft)	Main
1	CONT PREST CONC	DECK GIRDER	45	74.0	
2	CONT PREST CONC	DECK GIRDER	45	74.2	Y
3	CONT PREST CONC	DECK GIRDER	45	74.0	

Expansion joint(s)

Temperature: File: New:

Clearance

Item	File Measurement (ft)	File Date	New Measurement (ft)
Highway Min Vertical On Cardinal			
Horizontal On Cardinal			

Special Components

Component	Year	Work Performed	Note
DECK - IOWA MIX	1992	OVERLAY - CONCRETE	

Construction History

Year	Work Performed	FOS id
1992	OVERLAY - CONCRETE	1190-17-71
1972	NEW STRUCTURE	1196-04-73

Maintenance Items History

Item	Recommended by	Status	Status change	Year completed
Deck - Patching	Bjorklund, Allan M (8003)	REJECTED	03/02/15	
Patch deck est 8SF. Patch parapet spalls, est 2sf. Seal vert jts at wings with NP1 or eqv. Seal joints over piers and ends of deck with SL1 or eqv.				
Deck - Patching	Harrington, Daniel J (8004)	COMPLETE	01/17/13	
patch deck south end of bridge 10 SF				
Approach - Seal Approach to Paving Block	Harrington, Daniel J (8004)	COMPLETE	01/17/13	
repour joints at ends of deck				

Deck - Patching	Harrington, Daniel J (8004)	COMPLETE	01/17/13	
approx 30 SF spalls				

Elements

Chk	Element	Defect	Description	UOM	Total	Quantity in Condition State 1	2	3	4
X	**12**		**Reinforced Concrete Deck**	SF	11,732	11,726	4	2	0
		1080	Delamination - Spall - Patched Area **See** 2015 notes	SF		0	4	2	0
		1130	Cracking (RC) General map CRKNG throughout.	SF		11,726	0	0	0
	8514		Concrete Overlay Joints are not sealed over piers. Damage to edge of deck end at South abut outside lane. Patched and has cracked. Broken 2009 broken again in 2011. Failed patch, 1ftx5ft and 1ftx3ft, 8SF total plow damage.2013.	SF	11,732	11,306	368	58	0
		3210	Debonding/Spall/Patched Area/Pothole 6/5/2015 Debonding approx. 2% (**See 2015** notes).	SF		0	121	49	0
		3220	Crack (Wearing Surface) Random map CRKNG throughout (**See 2015** notes).	SF		11,306	247	9	0
X	**109**		**Prestressed Concrete Open Girder**	LF	1,338	1,319	14	5	0
		1080	Delamination - Spall - Patched Area **See** 2015 notes	LF		0	7	1	0
		1110	Cracking (PSC) **See** 2015 notes	LF		0	7	4	0
X	**205**		**Reinforced Concrete Column**	EA	8	8	0	0	0
X	**215**		**Reinforced Concrete Abutment** Vertical cracks below girders 1 and 6 north abutment. S abut vert. cracks under G1,4,6	LF	98	70	14	14	0
		1080	Delamination - Spall - Patched Area **See** 2015 notes	LF		0	7	14	0
		1130	Cracking (RC) 6/5/2015 See notes.	LF		0	7	0	0
X	**234**		**Reinforced Concrete Cap**	LF	88	88	0	0	0
X	**331**		**Reinforced Concrete Bridge Rail** N. end west parapet spall at joint. Spall at FF span 1 top of west rail 1ftx1ft. Spall on BF span 2 top of West rail 1ftx1ft.	LF	445	407	35	3	0
		1080	Delamination - Spall - Patched Area S RAIL SPL CS3 3LF.	LF		0	0	3	0
		1130	Cracking (RC) N RAIL CRK CS2 18LF. S RAIL CRK CS2 17LF.	LF		0	35	0	0

X	**8400**		**Integral Wingwall**	EA	4	0	2	2	0
			Wings have tipped out SE 2 inches, SW 0.5 inches, NW 1 inch, and NE out 2 inches and down 1 inch. Same 2009. SE out 2 3/4in down 1in, NE out 2 3/4in down 1 1/4in, NW out 1in down 1/2in, SW out 1/2in down 1/4in.2013. **Spalling also evident w/ some rebar exposed.**						
		8902	Wall Movement	EA		0	2	2	0
			NE 3" out | 3/4" down. SE 5/8" out | 0 down. NW 3" out | 1 1/2" down. SW 1 1/2" out, 1/2" down.						

Assessments

Chk	Element	Defect	Description	UOM	Total	Quantity in Condition State 1	2	3	4
X	**9001**		**Drainage - Approach**	EA	4	4	0	0	0
X	**9030**		**Signs - Object Markers**	EA	2	2	0	0	0
X	**9045**		**Slope Protection- Riprap**	EA	2	2	0	0	0
X	**9168**		**Concrete Diaphragm**	EA	25	22	3	0	0
			Spalls on bays 1 and 5 over pier 2. P1 BAY5 CS2 | BAY1 CS3. P2 BAY5 CS2.						
X	**9322**		**Approach Roadway - Concrete (non-structural)**	EA	2	0	0	2	0
			1-1/2 inch settlement north approach E SPL AT JT SETTLEMENT <1" CS3. W SETTLED 1 3/4" CS4.						

NBI Ratings

	File	New
Deck	5	5
Superstructure	7	7
Substructure	6	6
Culvert	N	N
Channel	8	8
Waterway	8	8

Structure Specific Notes

OLD: Overall condition of structure is VG. .38% delam in 1996. Reinforced concrete deck, rails, abut, ps girders, cap columns and slope stabitliy all in very good cond. 2 vertical cracks at NW corner abut**. No maintenence request items at this time.**
(99) Wings are moving, settling behind abutment otherwise structure is in fine shape. NE & NW wingwall & parapet moved out 1' and down 1' spall at joint SE wingwall has moved 2' out & 1' down. Washout SE approach Bit. shoulder undermined.
(01) Structure is in overall very good condition. wings are stable approachs slabs very good. River in it's banks and no sign of scour at structure.

Inspection Specific Notes

Inspector Site-Specific Safety Considerations

Structure Inspection Procedures

Walk-thru all accessible

Special Requirements

Chk	Hours	Cost	Comments

Underwater Probe Form
B-03-021

General Site Conditions - Scour

No obvious indications of scour from stream flow.

General Site Conditions - Embankment Erosion/Conditions

No obvious indications of scour from stream flow.

Substructure Notes

Unit	Max Water Depth(ft)	Mode	Notes
Cardinal		Dry	No obvious indications of scour from stream flow.
Pier 1	0.5	Wade	No obvious indications of scour from stream flow.
Pier 2	1.0	Wade	No obvious indications of scour from stream flow.
Non Cardinal		Dry	No obvious indications of scour from stream flow.

Non-Image Documents

Type	Document	Document Comment/Description	Attached
UW Profile	b03-021_17_xpd1.pdf		X

STRUCTURE INVENTORY AND APPRAISAL FIELD REVIEW FORM

B-03-021
USH 53 NB over CHETEK RIVER

LOCATION

(3) Municipality:	CHETEK
(16) Latitiude(° ' "):	45°18'04.80"N
(17) Longitude(° ' "):	91°39'13.88"W

TRAFFIC SERVICE

(28A) Lanes On:	2
(28B) Lanes Under:	0
(102) Traffic Pattern On:	-NO TRAFFIC X-ONE WAY TRAFFIC -TWO WAY TRAFFIC
(102) Traffic Pattern Under:	X-NO TRAFFIC -ONE WAY TRAFFIC -TWO WAY TRAFFIC
(19) Detour Length(mi):	1

GEOMETRY

(49) Structure Length(ft):	222.8	
(50) Sidewalk Width(ft):	**Left:** 0.0	**Right:** 0.0
(50) Curb Width(ft):		
(52) Culvert Barrel Length(ft):		
(34) Skew:	**Angle(°):** 0	**Direction:** -RIGHT FORWARD -LEFT FORWARD
	Cardinal	**Non-Cardinal**
(51) Bridge Roadway Width(ft):	48.8	44.7
(52) Deck Width(ft):	52.6	48.6
Right Wingwall Length(ft):		
Left Wingwall Length(ft):		
(32) Approach Roadway Width(ft):	40	40
	Cardinal Under Clearance	**Non-Cardinal Under Clearance**
(47) Minimum Horizontal(ft):		
(55) Minimum Right Lateral(ft):		
(56) Minimum Left Lateral(ft):		

RAILING APPRAISAL

(36A) Bridge Rail Adequacy:	-SUB-STANDARD X-STANDARD -NOT APPLICABLE
(36B) Transition Adequacy:	-SUB-STANDARD X-STANDARD -NOT APPLICABLE
(36C) Approach Guardrail Adequacy:	-SUB-STANDARD X-STANDARD -NOT APPLICABLE
(36D) Guardrail Termination Adequacy:	-SUB-STANDARD X-STANDARD -NOT APPLICABLE

Outer Rail:

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	X	SLOPED FACE PARAPET LF(91)
		SLOPED FACE PARAPET HF(92)
		VERTICAL FACE PARAPET TYPE A(74)
		TYPE W-THRIE BEAM(79)
		TYPE H ON VERTICAL PARAPET(80)
		TIMBER(38)
		OTHER(99) (Please specify)

Transition Type:

	CONT GUARD RAIL
	NO APP GRDRL
	NO ATTACHMENT
5	22 MM(7/8") BOLT (Please enter quantity)
	25 MM(1") BOLT (Please enter quantity)
	OTHER (Please specify)

Approach Attachment Rail Note:

Guardrail Termination Type:

X	(01) ENERGY ABSORBING TERMINAL/EAT
	(02) TURN DOWN
	(99) OTHER (Please specify)

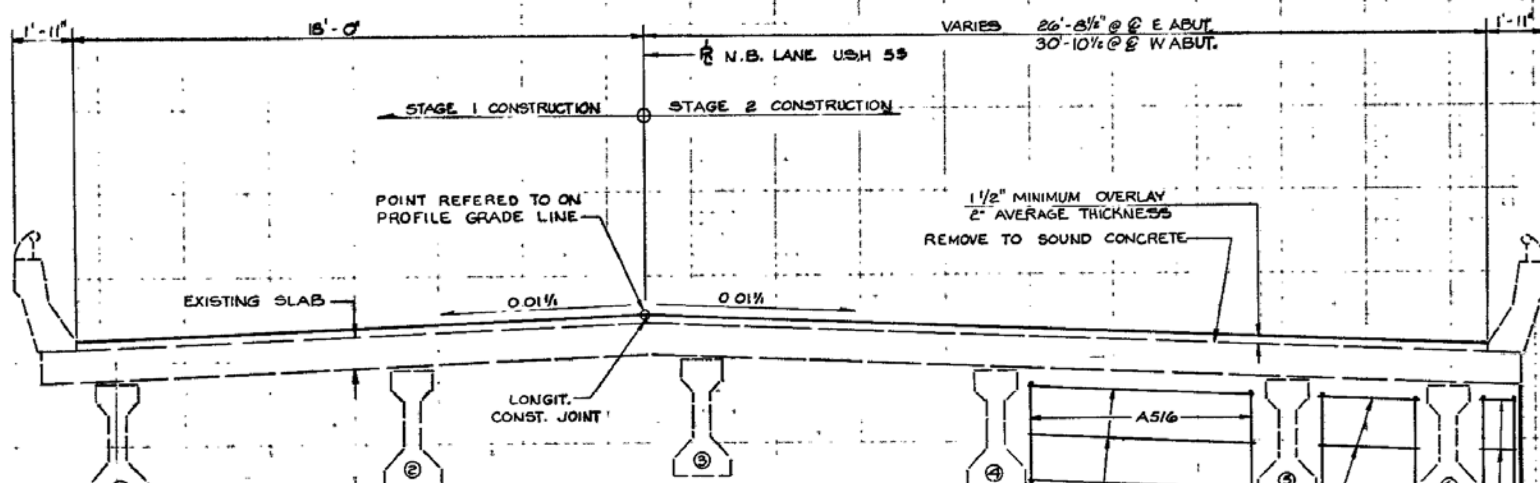
Guardrail Termination Note:

ROADWAY ALIGNMENT APPRAISAL

(72) Approach Alignment Appraisal:

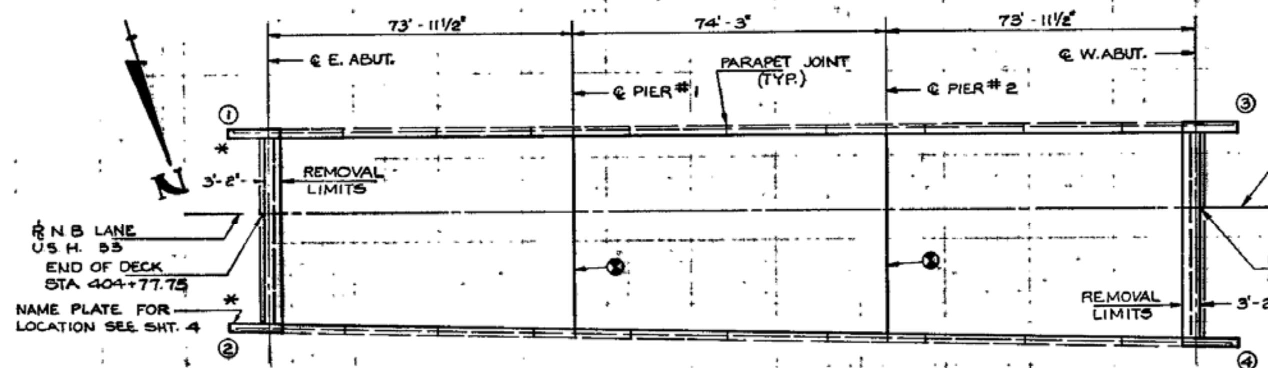
	3 Intolerable- Substantial speed reduction
	6 Fair- Minor speed reduction
X	8 Good- No speed reduction

STATE PROJECT NUMBER	SHEET NO
1190-17-71	8.22



CROSS SECTION THRU ROADWAY
(LOOKING WEST)

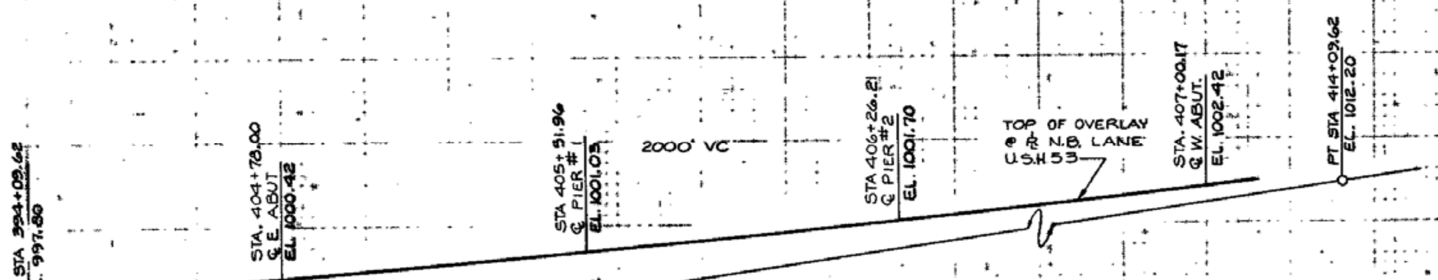
DIAPH. @ ABUT.



① ¼" SAW CUT OR FORMED JOINT × DEPTH OF OVERLAY. INSTALL NEOPRENE COMPRESSION SEAL, ACME M044 OR APPROVED EQUAL IN ONE CONTINUOUS PIECE, OR COLD APPLIED ELASTIC TYPE JOINT SEALER, SL-1 BY SONNEBORNE OR EQUIVALENT. HOLD ALL ⅛" BELOW SURFACE OF OVERLAY. CONSIDERED INCIDENTAL TO "CONCRETE MASONRY, OVERLAY"

* ATTACH BEAM TYPE GUARD RAIL TO WING PARAPET.

REMOVE EXISTING WINGS AT BACK FACE OF ABUTMENTS. REPLACE WITH RETAINING WALL WINGS.



PROFILE GRADE LINE

BENCH MARK: BRASS CAP NE. COR. OF EXISTING B-3-21, EL. 1000.00

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OTHERWISE.

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.

EXISTING NAMEPLATE TO BE SALVAGED AND ATTACHED AT LOCATION SHOWN.

DESIGN DATA

LIVE LOAD:
- INVENTORY RATING — HS-17
- OPERATING RATING — HS-27
- MAXIMUM ST'D. PERMIT VEHICLE LOAD — 250 KIPS

ULTIMATE DESIGN STRESS
- SLAB CONCRETE MASONRY — f'c = 4000 PSI
- ALL OTHER CONCRETE MASONRY — f'c = 3,500 PSI
- HIGH STRENGTH BAR STEEL REINFORCEMENT — fy = 60,000 PSI

TOTAL ESTIMATED QUANTITIES

BID ITEM	UNIT	TOTAL
REMOVING OLD BRIDGE, STA 405+89.08	LS	1
EXCAVATION FOR STRUCTURES, B-3-21	LS	1
CONCRETE MASONRY, BRIDGES	CY	68
PREFORMED ELASTOMERIC COMPRESSION JOINT SEALER "2"	LF	134
PROTECTIVE SURFACE TREATMENT	GAL.	71
CONCRETE MASONRY ANCHORS, TYPE L, NO.9 BARS	EA	24
CONCRETE MASONRY ANCHORS, TYPE S, 5/8-INCH	EA	46
HIGH STRENGTH BAR STEEL REINFORCEMENT, BRIDGES	LB	8200
STRUCTURAL CARBON STEEL	LB	670
PREPARATION, DECKS	SY	250
CLEANING, DECKS	SY	1168
FULL DEPTH DECK REPAIR	SY	37
CONCRETE MASONRY, OVERLAY, DECKS	CY	93
RUBBERIZED MEMBRANE WATERPROOFING	SF	19
ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EA	2
NON BID ITEM		
FILLER	SIZE	½" & ¾"

LIST OF DRAWINGS

1. CONCRETE OVERLAY
2. ABUTMENT DETAILS
3. DETAILS AND BILL OF BARS
4. SLOPED FACE PARAPET

No	Date	Revision	By

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE B-3-21

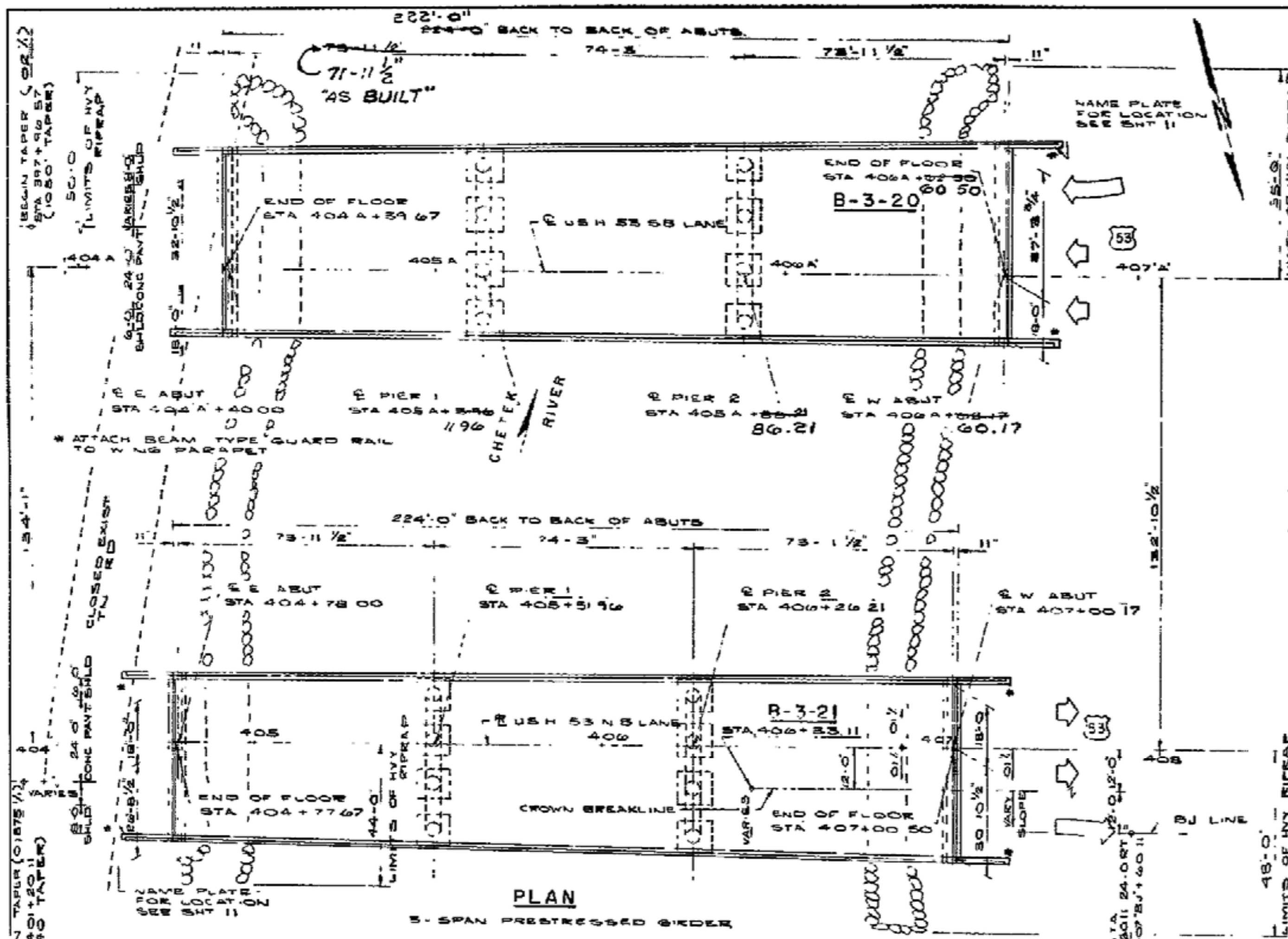
U.S.H. 53 NB OVER CHETEK RIVER

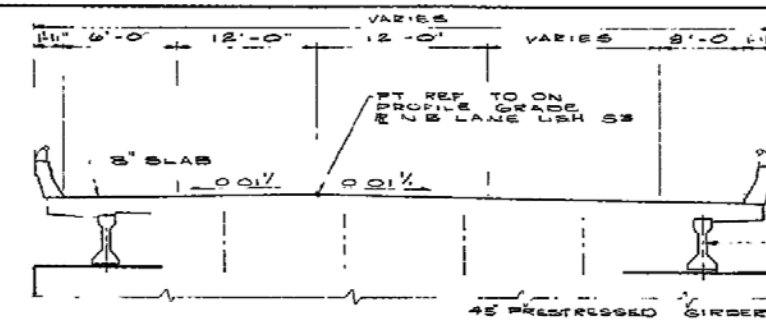
County: BARRON — Town: CHETEK
Design Spec: AASHTO 90 — Load — Const. Spec. 1989
Designed By: MGW — Design Checked: SMS — Drawn By: SJ — Plans Checked: MGW
Approved: Stanley W. Woods, Engineer — 8/16/91 Date

CONCRETE OVERLAY — SHEET 1 OF 4 — X83611

B-3-21

1196 + 73	83	413





CROSS SECTION THRU ROADWAY

LOOKING UP STATION

CURVE DATA

LIST OF DRAWINGS

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP TO THE EXTENT SHOWN ON THIS SHEET.

THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES SHALL BE THE TOP OF BERM AT THE ABUTMENTS AND THE STREAMBED AT THE PIERS. EXCAVATION QUANTITIES WERE COMPUTED FROM THESE LINES.

DESIGN DATA

LIVELOAD: HS20

ALLOWABLE DESIGN STRESSES:

N = 10

CONCRETE MASONRY-GRADE A-A SLAB — f'c = 1200 PSI

ALL OTHER — f'c = 1400 PSI

BAR STEEL REINFORCEMENT — fs = 20,000 PSI

PRESTRESSED GIRDERS

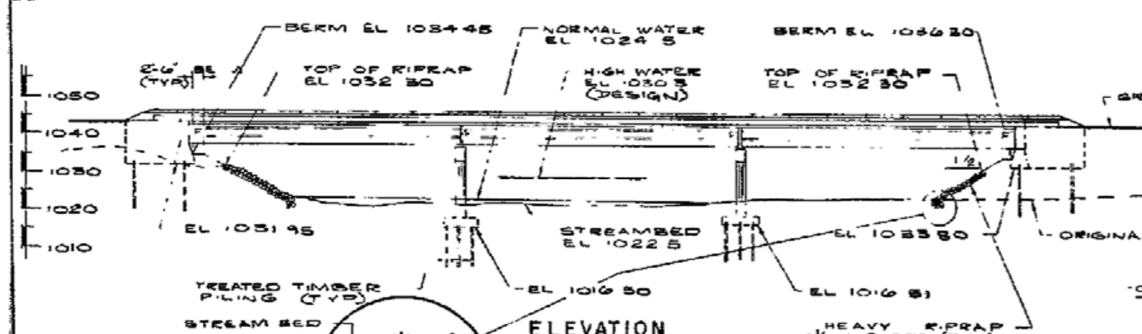
CONC MASONRY — f'c = 6000 PSI

STRANDS - 1/2" Φ WITH ULTIMATE TENSILE STRENGTH OF — 270,000 PSI

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON TREATED TIMBER PILES EST 40'-0" LONG & DRIVEN TO A MIN BRG VALUE OF 30 TONS PER PILE.

PIERS TO BE SUPPORTED ON TREATED TIMBER PILES EST 30'-0" LONG & DRIVEN TO A MIN BRG VALUE OF 30 TONS PER PILE.



ELEVATION

TRAFFIC VOLUME

USH 53

ADT = 5300 (1980)

DHV = 1260

RDS = 80 MPH

HYDRAULIC DATA

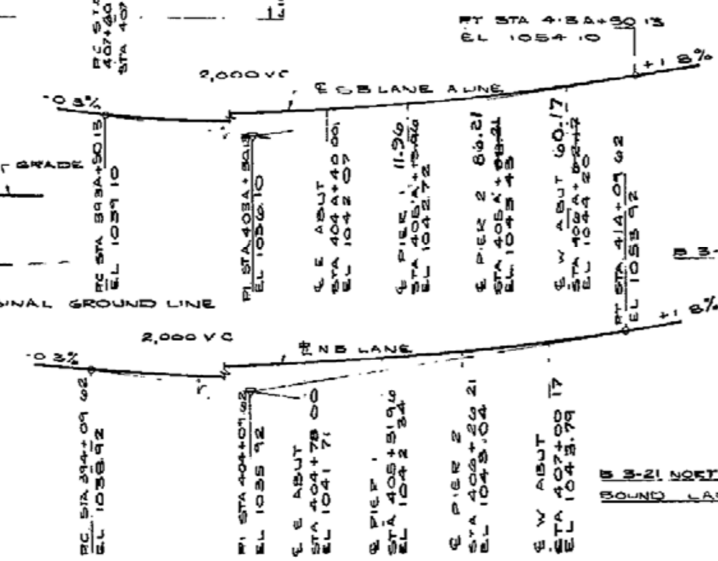
DRAINAGE AREA = 182 SQ MI

WATERWAY AREA = 1,165 S F

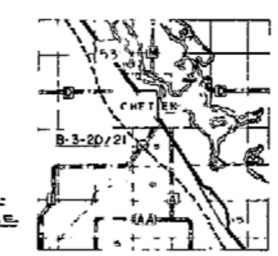
HIGHWATER EL 1029.9 + 0.4' BACKWATER = 1030.3

VELOCITY = 4.6 FPS

Q50 = 5400 CFS



PROFILE GRADE U.S.H. 53



LAYOUT

AS BUILT PLAN
DATE 1-78 BY W.J.K.

No	Date	Revision	By

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURE B-3-21

USH 53 OVER CHETEK RIVER

County BARRON — TN OF CHETEK

Design Spec A.A.S.H.O. "69" — Load HS 20 — Constr. Spec. 1969

Designed By GHA — Design Engineer CDW — Drawn By TLA — Plans Checked KOK

Approved W A Kline, Chief Bridge Engineer — Date 2 23 72

GENERAL PLAN

SHEET 1 OF 12

X45935