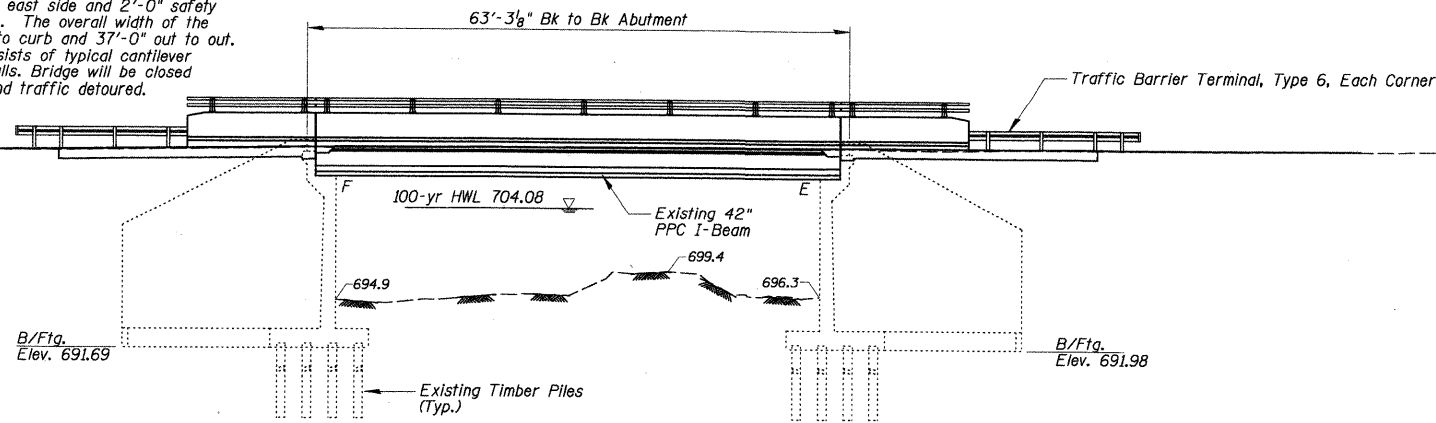


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

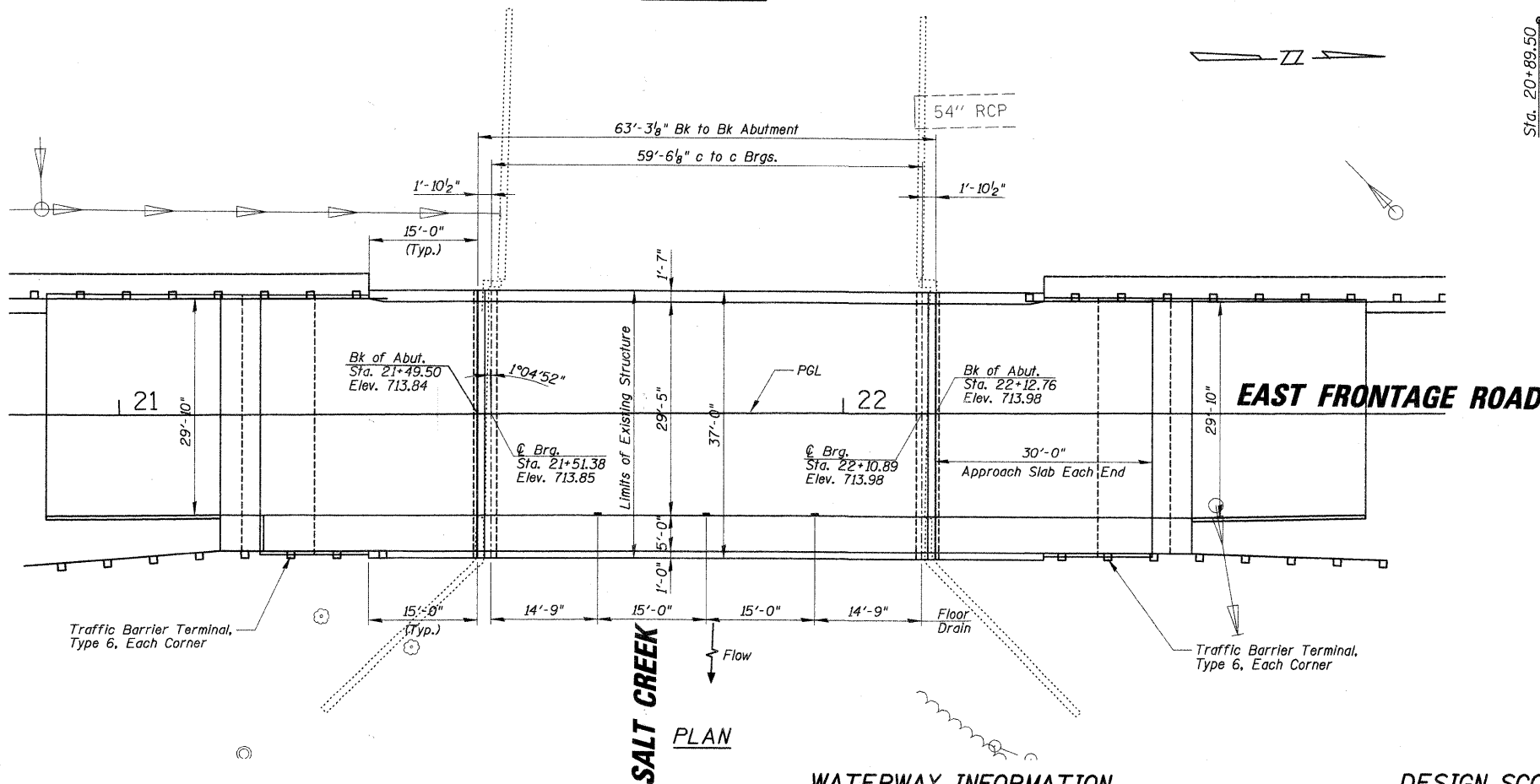
Bench Mark: RM-184-5 Square cut on top of southeast wingwall of east frontage road bridge over salt creek. Elevation = 714.29

Existing Structure: SN 016-1123 The bridge was constructed in 1962 under Relocation of S.B.I Route 53 (F.A. Route 61) Section 531-1-B-7. The bridge is a single span structure with a span length of 59'-6" center to center of bearings and 63'-3" bk. to bk. of abutments. The bridge has a 1°-04'-52" skew. The superstructure consists of a 7" concrete deck supported by six 42" PPC I-Beams at 6'-3" on center. The deck provides two 11'-0" lanes of traffic with 3'-0" shoulders on each side and a 5'-0" sidewalk on the east side and 2'-0" safety walk on the west side. The overall width of the deck is 28'-0" curb to curb and 37'-0" out to out. The substructure consists of typical cantilever abutments and wingwalls. Bridge will be closed during construction and traffic detoured.

Salvage: Existing bridge railing



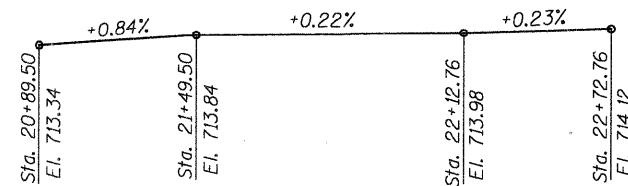
ELEVATION



PLAN

WATERWAY INFORMATION

Ex. Low Beam 709.35 @ 21+50.24		Ex. Low Grade 713.56 @ 11+21+50.24		Drainage Area = 17.0 mi <sup>2</sup>					
Prop. Low Beam Elv. 709.35 @ 21+50.24		Prop. Low Grade Elv. 713.56 @ 21+50.24							
Flood	Freq. Yr.	Q of s	Opening ft <sup>2</sup>		Nat. H.W.E.	Head - ft		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	30	837	364	364	703.22	0.04	0.04	703.26	703.26
Base	50	947	395	395	703.60	0.04	0.04	703.64	703.64
Base	100	1129	427	427	704.08	0.05	0.05	704.13	704.13
Max. Calc.	500	1547	476	476	704.91	0.07	0.07	704.98	704.98



PROFILE GRADE

SALT CREEK  
BUILT BY  
COOK COUNTY  
SEC. 04-00091-00-BR  
F.A.U. RT. 2594 STA. 21+81.13  
STR. NO. 016-1123 LOADING HS-20

NAME PLATE

I Certify That To The Best Of My Knowledge, Information And Belief, This Bridge Design Is Structurally Adequate For The Design Loading Shown On The Plans. The Design Is An Economical One For The Style Of Structure And Complies With Requirements Of The Current "AASHTO Standard Specification For Highway And Bridges".



5/11/2010  
*Majid Mobasseri*  
**MAJID MOBASSERI**  
ILLINOIS REGISTRATION No. 081-005058  
STRUCTURAL ENGINEER  
EXPIRATION DATE: 11/30/10

DESIGN SCOUR ELEVATION TABLE

Flood Frequency/ Scour Elevation	North Abut.	South Abut.
100 year Scour Elevation (ft.)	682.23	684.64
500 year Scour Elevation (ft.)	677.27	681.76

INDEX OF SHEETS

- S1 General Plan and Elevation
- S2 General Notes
- S3 Top Of Deck Elevations -1
- S4 Top Of Deck Elevations -2
- S5 Top Of Approach Slab Elevations
- S6 Deck Plan And Cross Section
- S7 Superstructure Details
- S8 Deck Details
- S9 Floor Drain Details
- S10 Aluminum Railing, Type L
- S11 Preformed Joint Strip Seal
- S12 PPC I-Beam Concrete Repair
- S13 Abutment Elevations Concrete Repair
- S14 Abutment Plans And Elevations
- S15 Abutment Details
- S16 Bridge Approach Slab Details -1
- S17 Bridge Approach Slab Details -2

LOADING HS20-44

Allow 25#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2002 AASHTO Bridge Design Specifications

DESIGN STRESSES

FIELD UNITS

Reinforced Concrete:  
f'c = 2,500 psi (Existing)  
f'c = 3,500 psi (New)

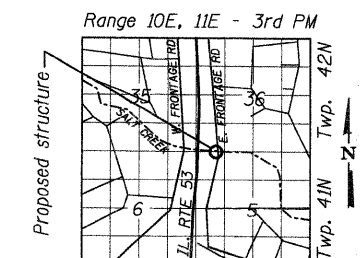
Reinforcement:  
fy = 40 ksi (Existing)  
fy = 60 ksi (New)

PRESTRESSED PRECAST UNITS

Existing:  
f'c = 5,000 psi  
f'cl = 4,000 psi  
f's = 248,000 psi  
f'sl = 173,000 psi  
fs = 2,000 psi

SEISMIC DATA

Seismic Performance Zone (SPZ) = A  
Horizontal Bedrock Acceleration Coefficient (A) = 0.036g  
Site Coefficient (S) = 1.2



LOCATION SKETCH

GENERAL PLAN & ELEVATION  
IL RTE 53 E. FRONTAGE ROAD  
OVER SALT CREEK  
F.A.U. ROUTE 2594  
SEC. 04-00091-00-BR  
COOK COUNTY  
STATION 21+81.13  
STRUCTURE NO. 016-1123

DESIGNED -	200
CHECKED -	EXAMINED
DRAWN -	PASSED
CHECKED -	ENGINEER OF BRIDGE DESIGN
	ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. S-1 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2594	04-00091-00-BR	COOK	50	8
CONTRACT NO. 63471					
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					