

Bench Mark: RM-184-4 Square cut on top of southwest headwall of west frontage road bridge over salt creek. Elevation = 714.49

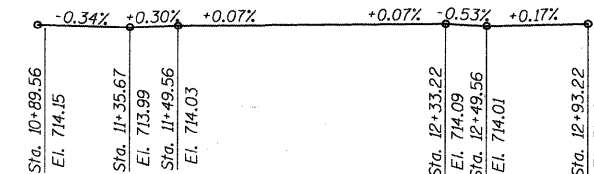
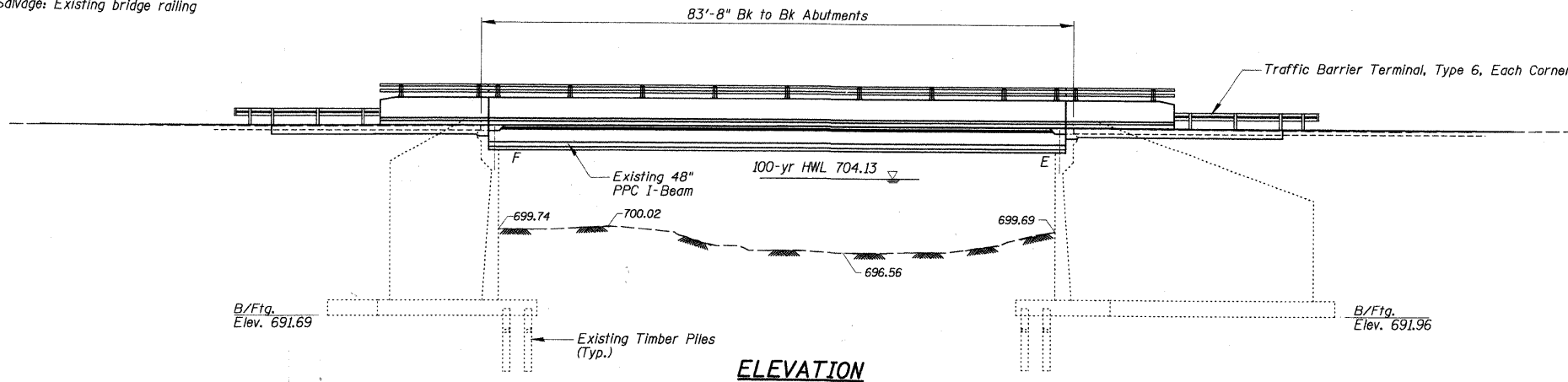
Existing Structure: SN 016-1122 The bridge was constructed in 1962 under Relocation of S.B.I Rte. 53 (F.A. Route 6) Section 531-1-B-7. The bridge is a single span structure with a span length of 77'-8" center to center of bearings and 83'-8" bk. to bk. of abutments. The bridge has a 39°-15' skew. The superstructure consists of a 7" concrete deck supported by seven 48" PPC I-Beams at 5'-1" 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 west side and 2'-0" safety walk on the east 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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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PROFILE GRADE

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

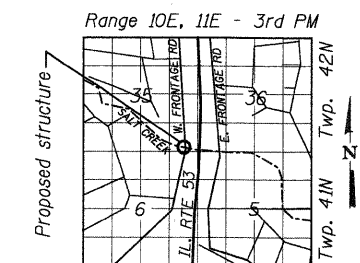
SALT CREEK
BUILT BY
COOK COUNTY
SEC. 04-00091-00-BR
F.A.U. RT. 2592 STA. 11+91.39
STR. NO. 016-1122 LOADING HS-20

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



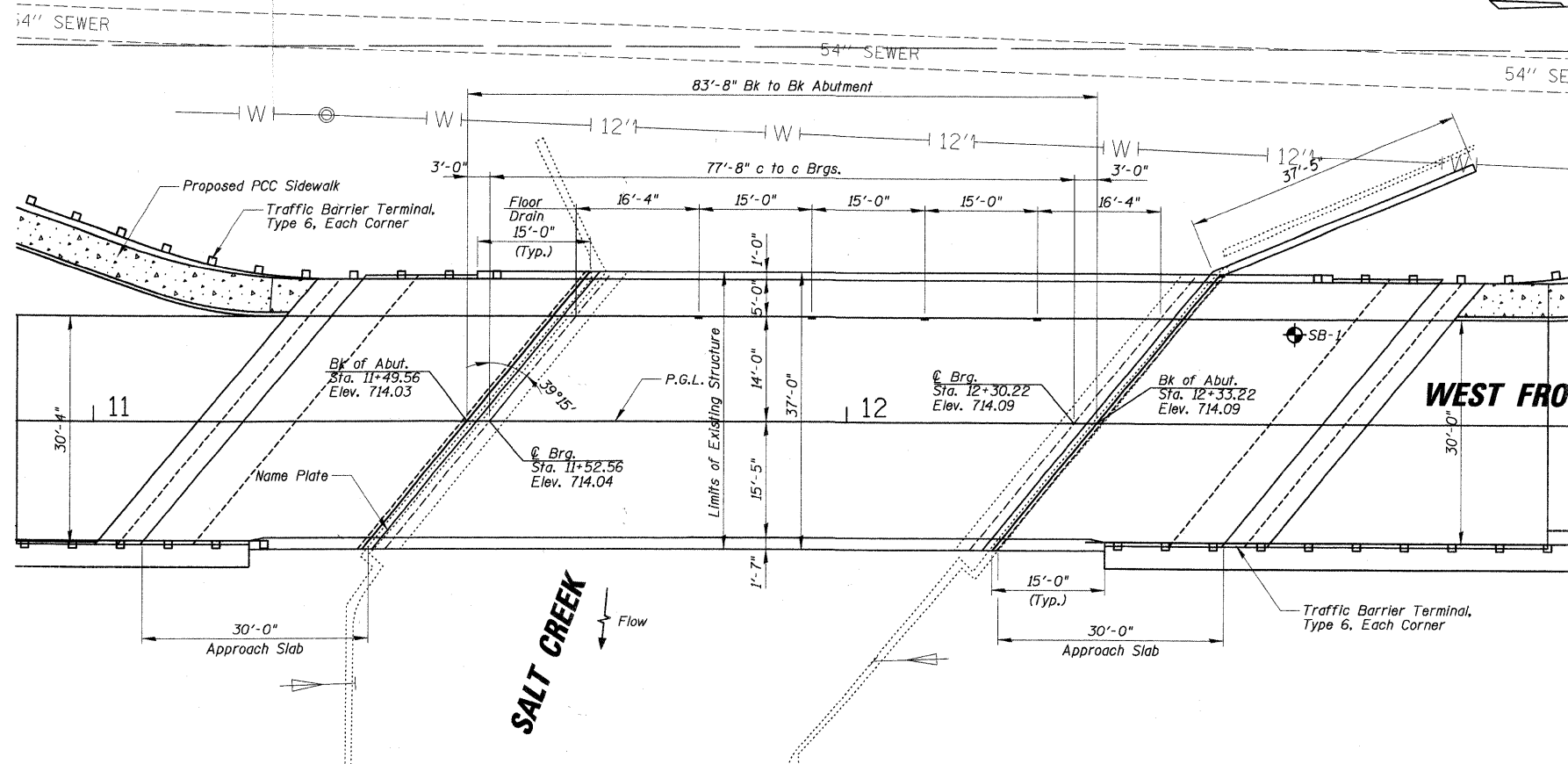
LOCATION SKETCH

GENERAL PLAN AND ELEVATION
IL RTE 53 W. FRONTAGE ROAD
OVER SALT CREEK
F.A.U. ROUTE 2592
SEC. 04-00091-00-BR
COOK COUNTY
STATION 11+91.39
STRUCTURE NO. 016-1122

DESIGN SCOUR ELEVATION TABLE

Flood Freq./ Scour Elevation	North Abut.	South Abut.
100 year Scour Elevation (ft.)	683.73	689.34
500 year Scour Elevation (ft.)	678.77	686.46

SHEET NO. S-1 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2592	04-00091-00-BR	COOK	50	25
CONTRACT NO. 63471			ILLINOIS FED. AID PROJECT		



WATERWAY INFORMATION

Flood	Freq. Yr.	Q cfs	Opening ft ²		Nat. H.W.E.	Head - ft		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	30	837	407	407	703.26	0.04	0.04	703.30	703.30
Base	50	947	447	447	703.64	0.03	0.03	703.67	703.67
Max. Calc.	100	1129	484	484	704.13	0.05	0.05	704.18	704.18
	500	1547	564	564	704.97	0.07	0.07	705.04	705.04

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