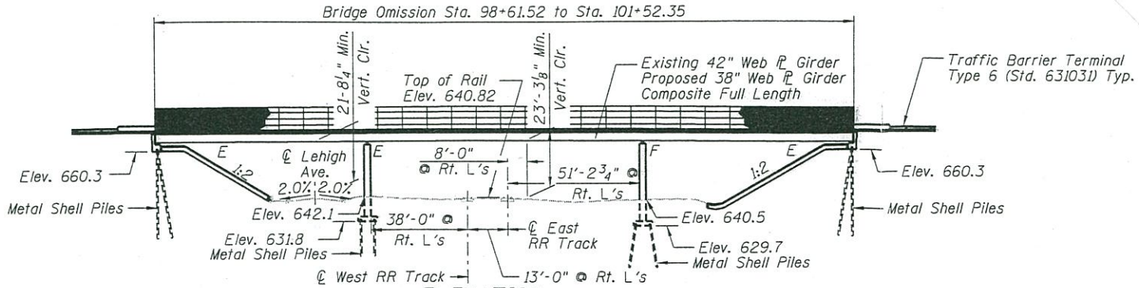
Bench Mark BM1: Located on southwest wingwall. Sta. 98+74.59. 40.03' Rt., Elev. 669.03

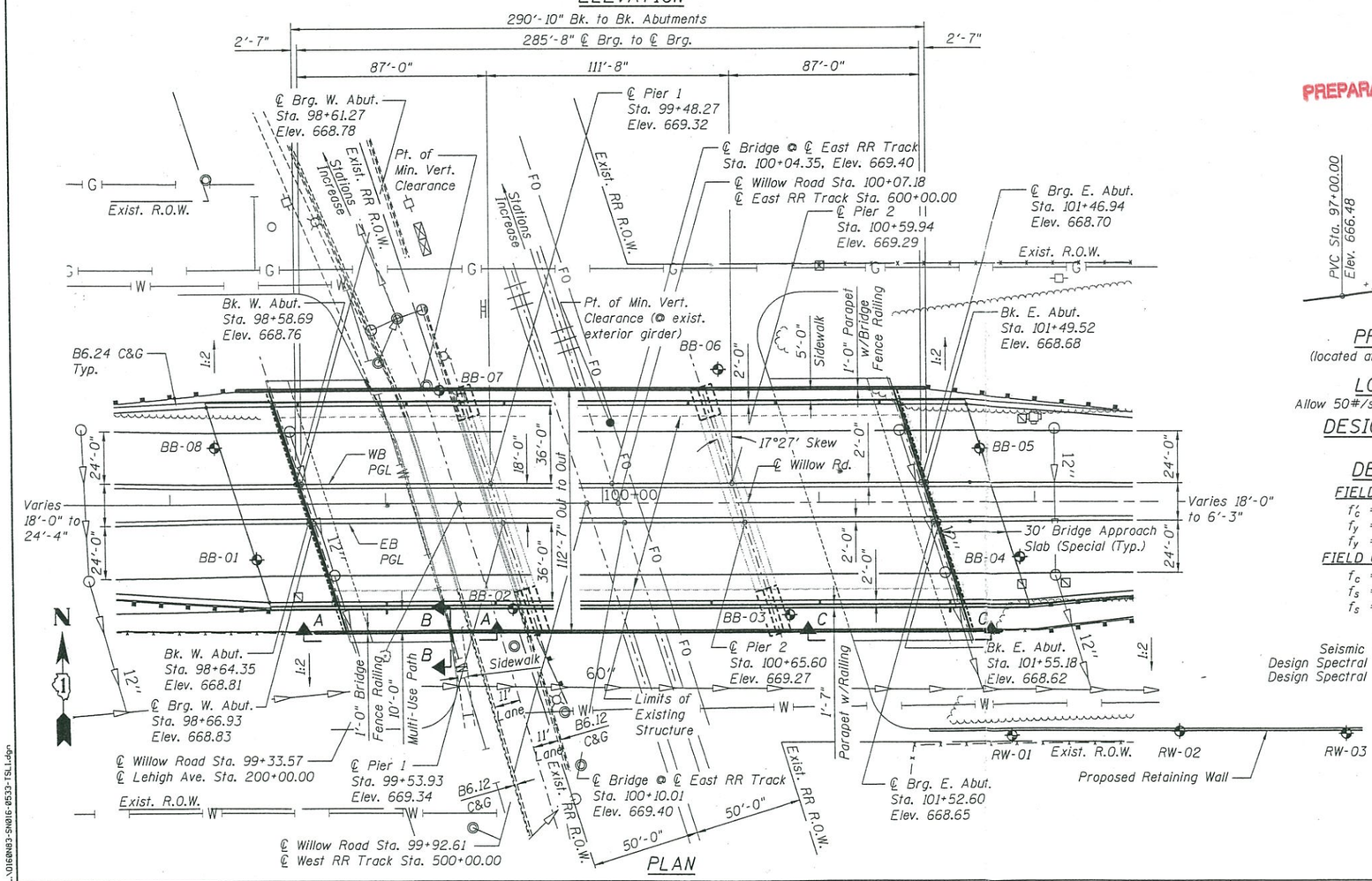
Existing Structure: S.N. 016-0533 originally constructed in 1942 as CH Route 110. The structure was reconstructed and widened in 1969 as County Highway 110 and there were deck repairs in 2006. The existing structure consists of a 3 span continuous steel beam bridge supported on the original closed concrete abutments, widened pile stub abutments, and the original and widened footing supported piers. The back to back of abutment length is 290'-10" and out to out of deck is 80'-0". The existing deck is to be removed and the structure widened on both sides.

Traffic to be maintained utilizing stage construction. Traffic to be maintained on Lehigh Ave. during pier widening.

No Salvage.

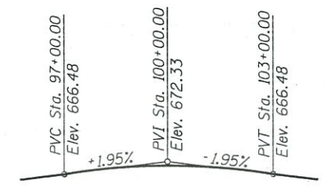


ELEVATION



PLAN

APPROVED
NOV 27 2013
AS A BASIS FOR
PREPARATION OF DETAILED PLANS



PROFILE GRADE
(located at 9.0' off of ℄ Willow Road)

LOADING HS20-44
Allow 50#/sq. ft. for future wearing surface

DESIGN SPECIFICATIONS
2002 AASHTO

DESIGN STRESSES
FIELD UNITS (New Construction)
f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)
f_y = 36,000 psi (M270 Grade 36)
FIELD UNITS (Existing Construction)
f_c = 1,400 psi
f_s = 20,000 psi (reinforcement)
f_s = 20,000 psi (structural steel)

SEISMIC DATA
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration @ 1.0 sec S_{D1} = 5.8g
Design Spectral Acceleration @ 0.2 sec S_{DS} = 10.3g
Soil Site Class = C

EXISTING PROFILE GRADE
T/RAIL EAST RR TRACK

Station	Elevation
599+01.02	640.67
599+61.61	640.76
600+01.58	640.79
600+38.61	640.82
601+02.43	640.86

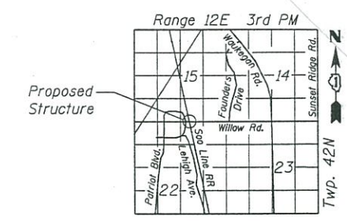
EXISTING PROFILE GRADE
T/RAIL WEST RR TRACK

Station	Elevation
498+97.84	640.63
499+62.04	640.68
499+98.07	640.70
500+39.05	640.70
500+98.30	640.75

EXISTING PROFILE GRADE
℄ LEHIGH AVE.

Station	Elevation
199+12.97	641.55
199+61.61	641.87
199+98.45	642.24
200+39.05	642.67
200+91.39	642.57

HIGHWAY CLASSIFICATION
Route: FAP 305 (Willow Road)
Functional Class: Other Principal Arterial
ADT: 35,400 (2006), 50,200 (2020)
DHV = 1475
ADTT = 9%
Design Speed: 45 mph
Posted Speed: 45 mph
Directional Distribution: 50/50
Two Way Traffic



LOCATION SKETCH

GENERAL PLAN
WILLOW ROAD OVER LEHIGH AVENUE
& SOO LINE RAILROAD
FAP 305 SEC. 1920.01-BR
COOK COUNTY
STA. 100+07.18
STRUCTURE NO. 016-0533

FILE NAME = ...\016BR03-SN016-0533-TSL1.dgn

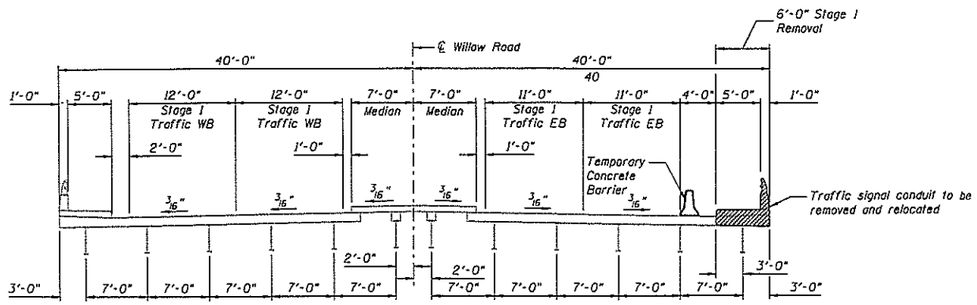
ZROKA engineering
Zroka Engineering, P.C.
4216 North Hermitage
Chicago, IL 60613

USER NAME = SAW	DESIGNED - LAS	REVISED -	
	CHECKED - DAZ	REVISED -	
PLOT SCALE = 60.0012 ' / IN.	DRAWN - SAW	REVISED -	
PLOT DATE = 7/17/2012	CHECKED - LAS	REVISED -	

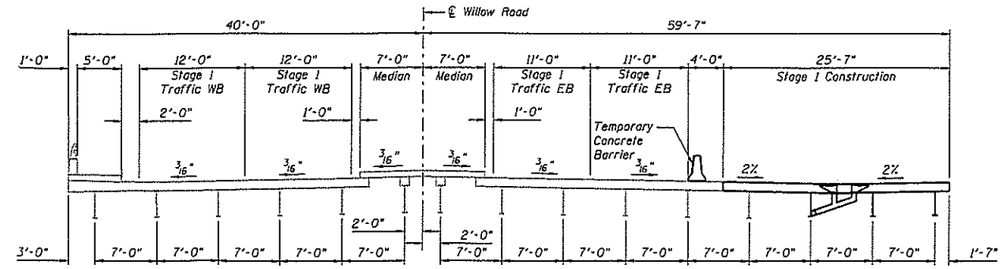
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
S.N. 016-0533
SHEET NO. 1 OF 3 SHEETS

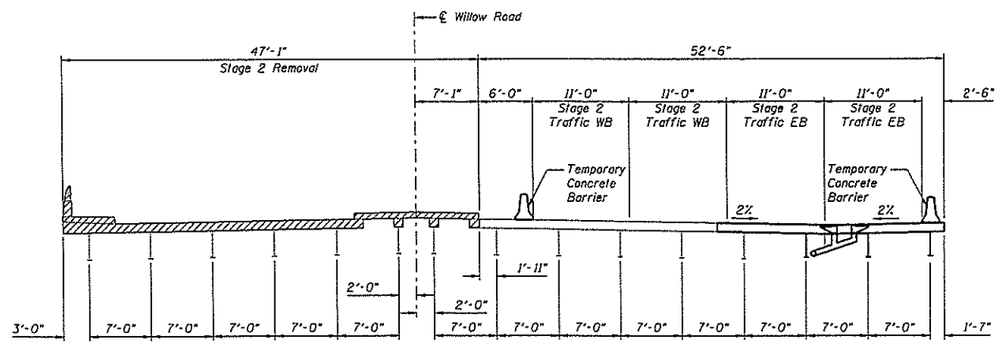
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
305	1920.01-BR	COOK	3	1
		CONTRACT NO.		
		ILLINOIS FED. AID PROJECT		



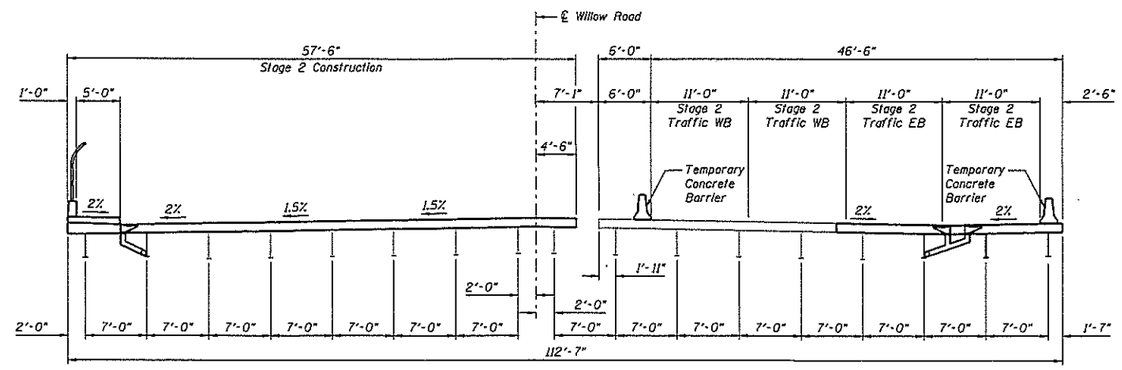
STAGE 1 REMOVAL
(Looking East)



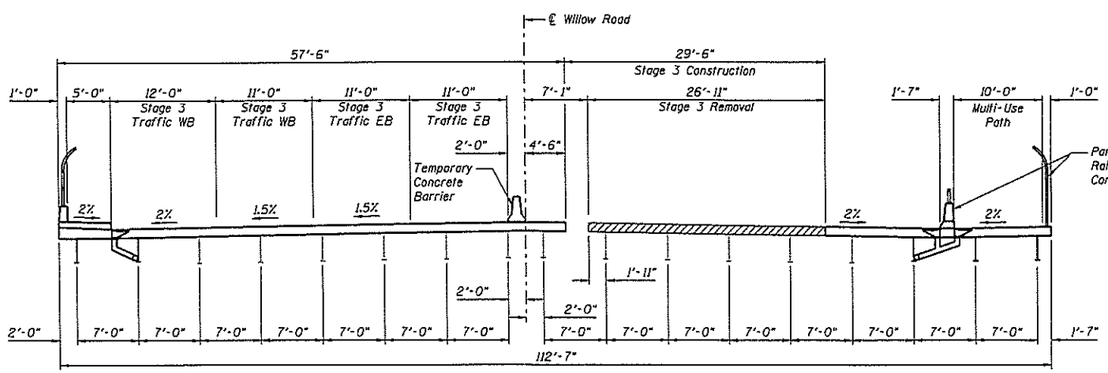
STAGE 1 CONSTRUCTION
(Looking East)



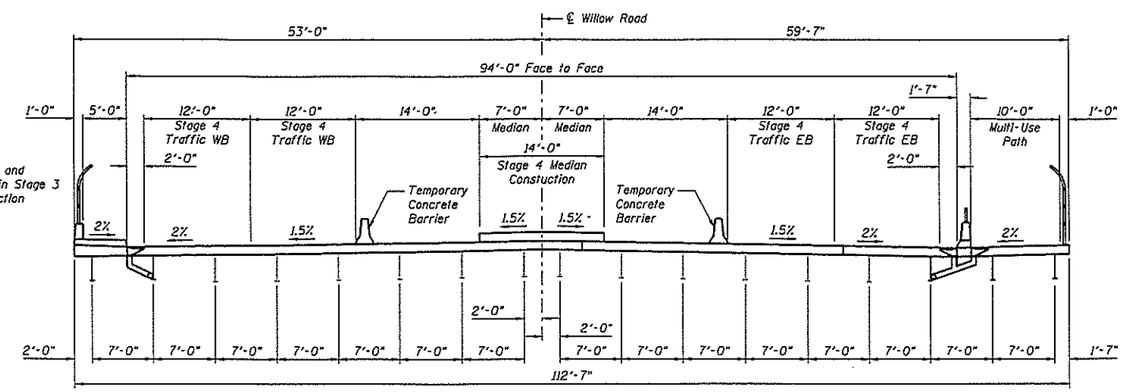
STAGE 2 REMOVAL
(Looking East)



STAGE 2 CONSTRUCTION
(Looking East)



STAGE 3 REMOVAL & CONSTRUCTION
(Looking East)



STAGE 4 CONSTRUCTION
(Looking East)

LEGEND

Concrete Removal

STAGE CONSTRUCTION
STRUCTURE NO. 016-0533

ZROKA engineering — Zroka Engineering, P.C. 4216 North Hermitage Chicago, IL 60613	USER NAME = SAW	DESIGNED - LAS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE CONSTRUCTION S.N. 016-0533	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
		CHECKED - DAZ	REVISED -			305	1920.01-BR	COOK	3 / 2
	PLOT SCALE = 16.6667 ' / IN.	DRAWN - SAW	REVISED -			CONTRACT NO.			
	PLOT DATE = 7/17/2012	CHECKED - LAS	REVISED -		SHEET NO. 2 OF 3 SHEETS	ILLINOIS FED. AID PROJECT			

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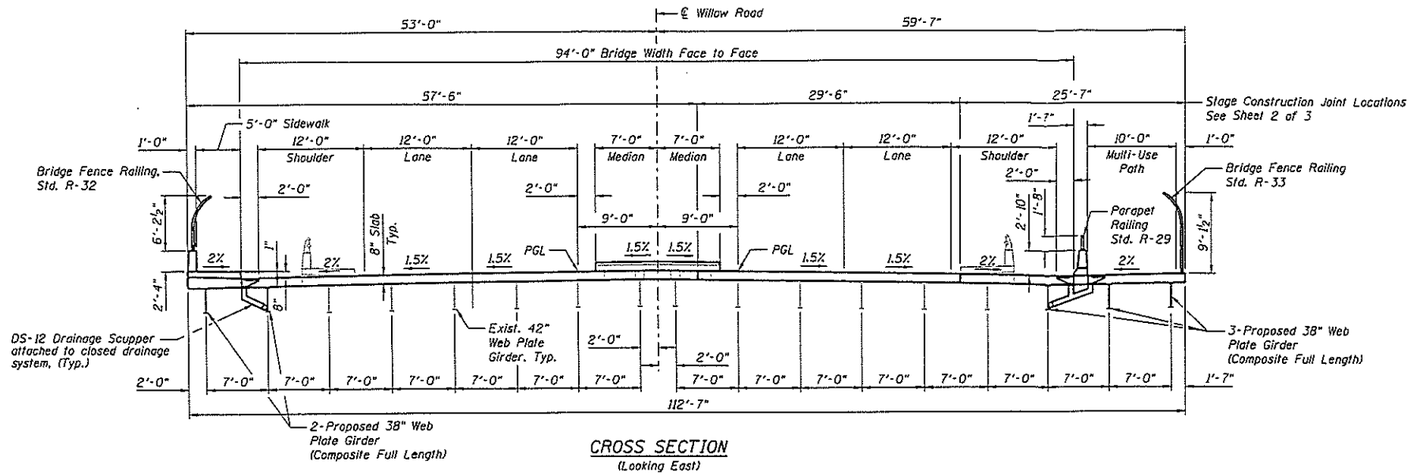
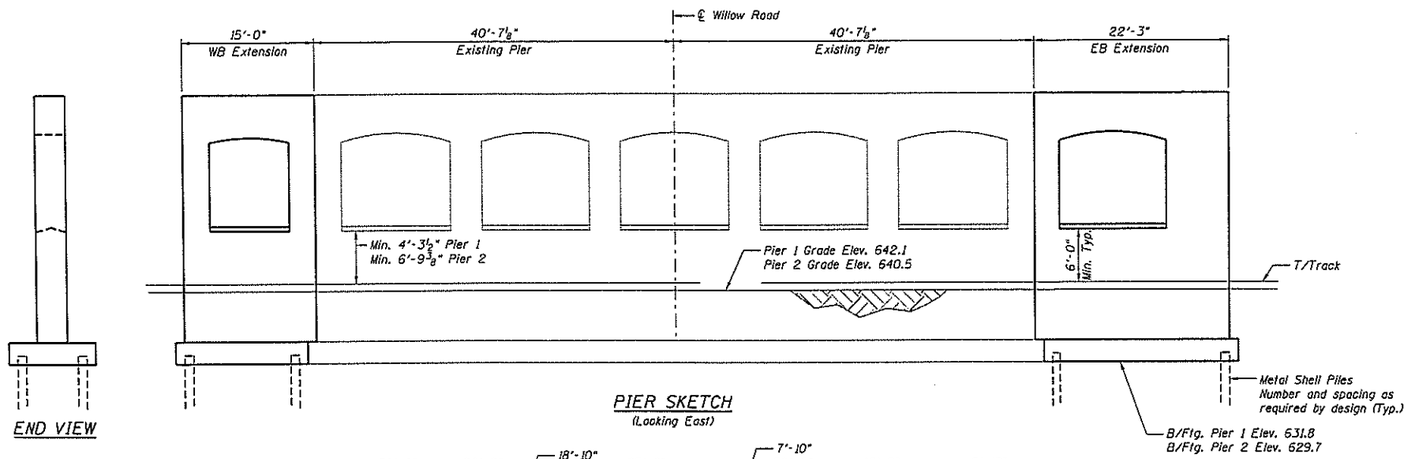
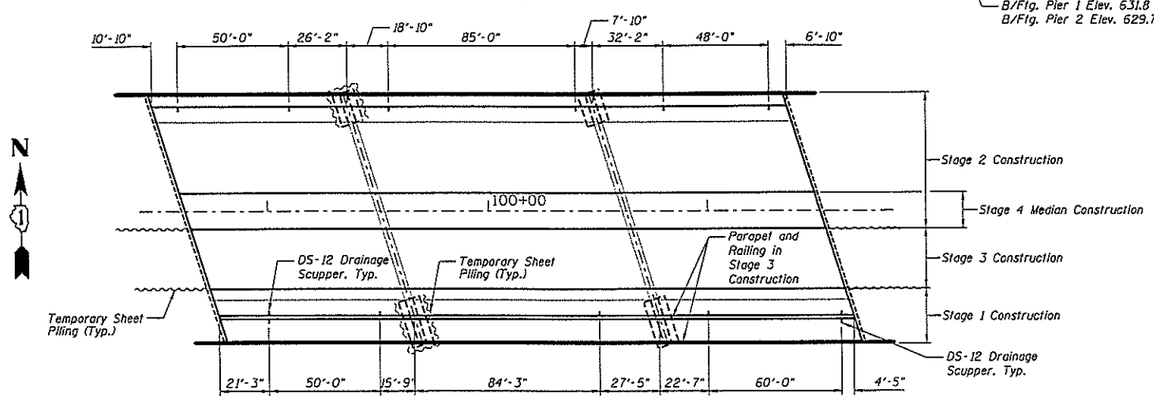


CROSS SECTION
(Looking East)

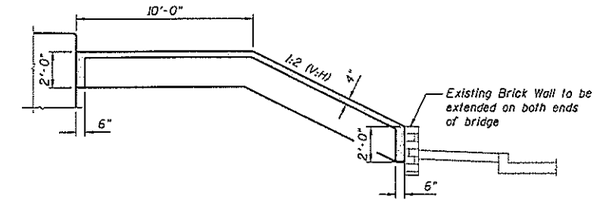


END VIEW

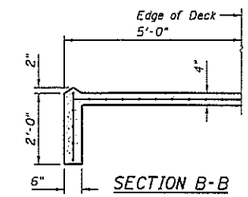
PIER SKETCH
(Looking East)



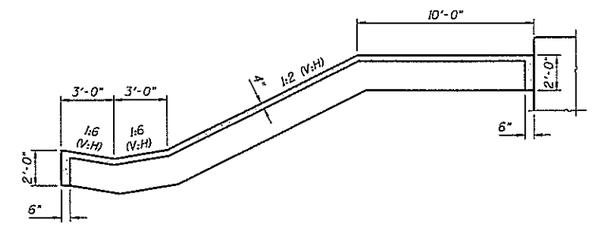
STAGING & SCUPPER LOCATION PLAN



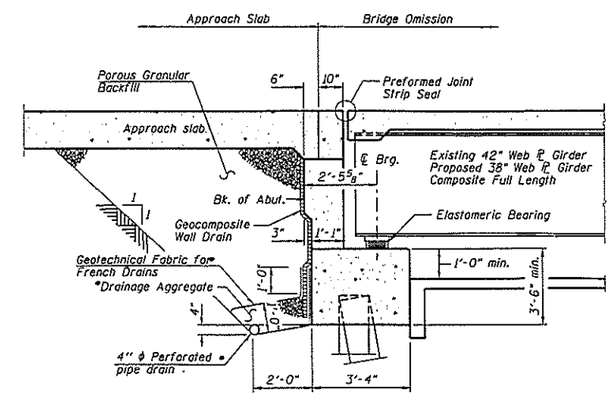
SLOPEWALL SECTION A-A



SECTION B-B



SLOPEWALL SECTION C-C



SECTION THRU ABUTMENTS
(Horiz. dim. @ Rt. L's)
*Included in the cost of Pipe Underdrains for Structures.

EXISTING STRUCTURE REPAIRS

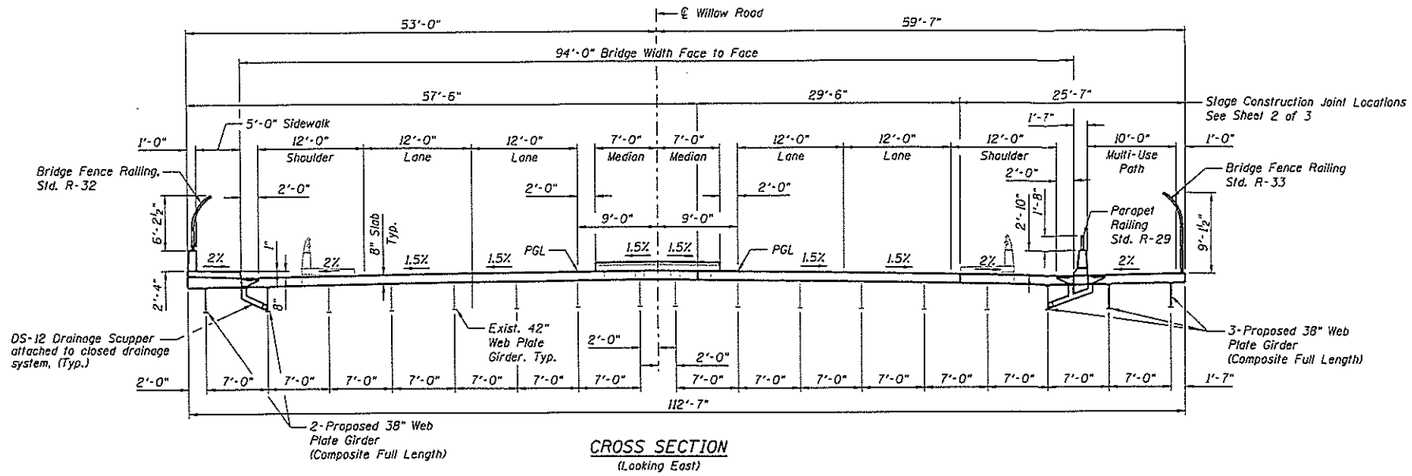
1. Replace existing slopewalls with concrete slopewalls.
2. Clean and paint girder ends, fascia girders, and bearings at piers.
3. Replace steel rocker bearings at the abutments with elastomeric bearings and pedestals.
4. Perform concrete repairs to the abutments and piers.

DETAILS
STRUCTURE NO. 016-0533

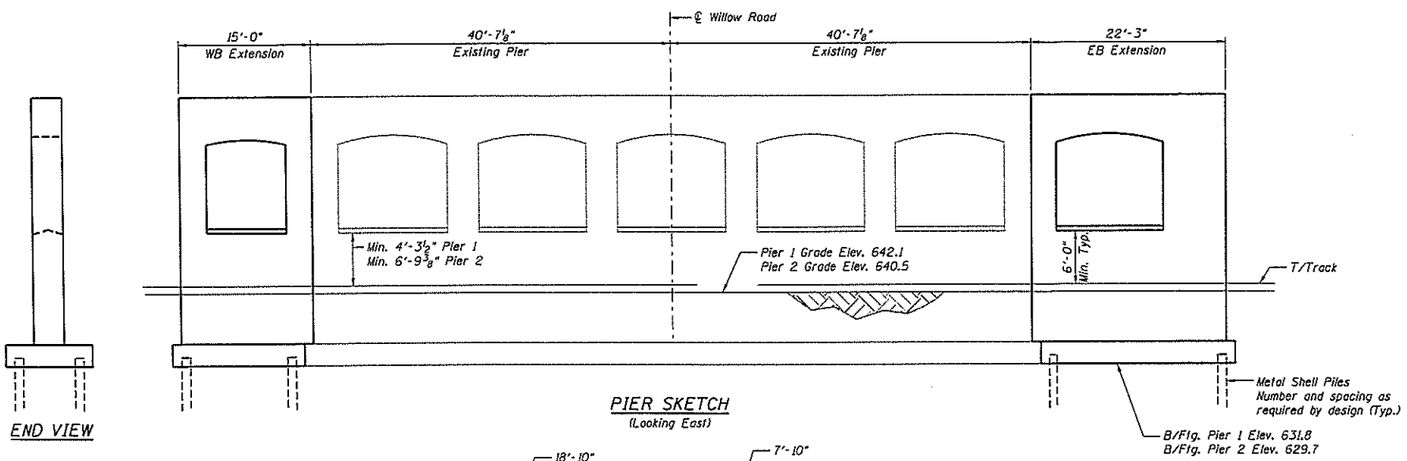
FILE NAME = ...\016BR03-SN016-0533-TSL3.dgn

ZROKA engineering — Zroka Engineering, P.C. 4216 North Hermitage Chicago, IL 60613	USER NAME = SAW	DESIGNED - LAS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAILS S.N. 016-0533
		CHECKED - DAZ	REVISED -		
	PLOT SCALE = 16.6667 ' / IN.	DRAWN - SAW	REVISED -		
	PLOT DATE = 7/17/2012	CHECKED - LAS	REVISED -		SHEET NO. 3 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
305	1920.01-BR	COOK	3	3
		CONTRACT NO.		
		ILLINOIS FED. AID PROJECT		

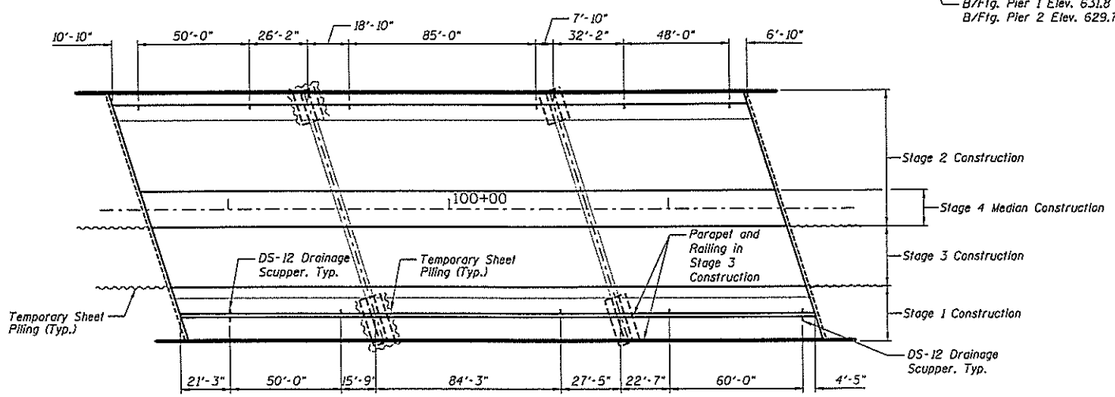


CROSS SECTION
(Looking East)

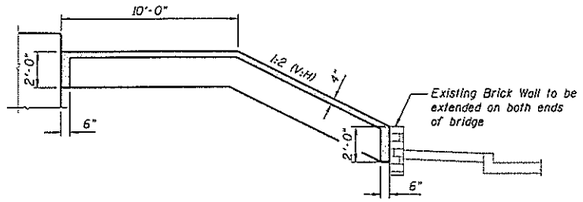


END VIEW

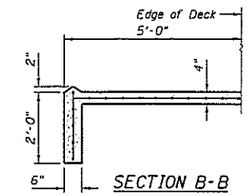
PIER SKETCH
(Looking East)



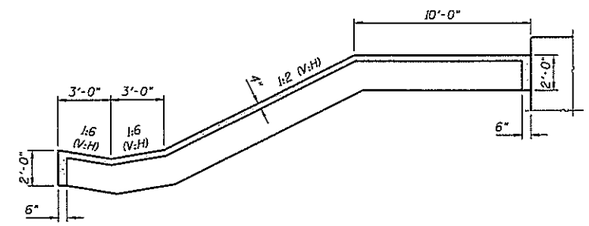
STAGING & SCUPPER LOCATION PLAN



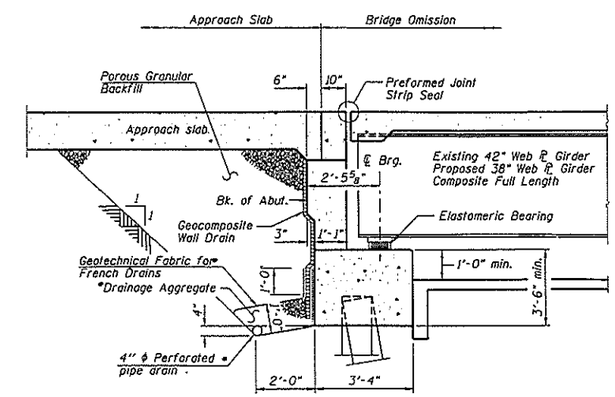
SLOPEWALL SECTION A-A



SECTION B-B



SLOPEWALL SECTION C-C



SECTION THRU ABUTMENTS
(Horiz. dim. @ Rt. L's)
*Included in the cost of Pipe Underdrains for Structures.

EXISTING STRUCTURE REPAIRS

1. Replace existing slopewalls with concrete slopewalls.
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4. Perform concrete repairs to the abutments and piers.

DETAILS
STRUCTURE NO. 016-0533

FILE NAME = ...\016BN83-SN016-0533-TSL3.dgn

ZROKA engineering — Zroka Engineering, P.C. 4216 North Hermitage Chicago, IL 60613	USER NAME = SAW	DESIGNED - LAS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAILS S.N. 016-0533
		CHECKED - DAZ	REVISED -		
	PLOT SCALE = 16.6667 ' / IN.	DRAWN - SAW	REVISED -		
	PLOT DATE = 7/17/2012	CHECKED - LAS	REVISED -		SHEET NO. 3 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
305	1920.01-BR	COOK	3	3
		CONTRACT NO.		
		ILLINOIS FED. AID PROJECT		