

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

APPROVED  
FOR STRUCTURAL ADEQUACY ONLY

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ENGINEER OF BRIDGES AND STRUCTURES

LIST OF SHEETS

- OVERALL GENERAL PLAN
- OVERALL TOTAL BILL OF MATERIALS
- OVERALL STAGE CONSTRUCTION

DESIGN SPECIFICATION

2002 AASHTO Standard Specifications for Highway Bridges

SEISMIC DATA

Seismic performance category (SPC) = A  
Bedrock Acceleration Coefficient = 0.04  
Site Coefficient = 1.50

LOADING HS20-44

Allow 50 psf for future wearing surface

DESIGN STRESSES

FIELD UNITS

Concrete:  $f'_c = 3,500$  psi  
Struct. Steel:  $f_y = 50,000$  psi  
(M 270, GR 50)  
Reinforcement:  $f_y = 60,000$  psi

ALLOWABLE STRESSES FOR EXISTING STEEL AND CONCRETE

Concrete:  $f'_c = 3,500$  psi  
Struct. Steel:  $f_y = 36,000$  psi  
Reinforcement:  $f_y = 40,000$  psi

Existing Structure: Structure No. 016-0724 built in 1964. Sec. 207-1011.1-C.F. Mainline: Structure, which carries Central Avenue over I-55. Four spans, consisting of a two span continuous flanked by two single spans with framing to ramps. Total length 325'-11 3/8", width 88'-10 7/8". Ramp 1: Five spans, consisting of a two span continuous and a three span continuous. Total Length 360'-2", width 48'-10 5/8". Ramp 2: Five spans, consisting of a two span continuous and a three span continuous. Total Length 360'-2 1/2", width 48'-10 5/8". Ramp 3: Four spans, consisting of a four span continuous. Total Length 276'-6 1/8", width 48'-10 5/8". Ramp 4: Five spans, consisting of a two span continuous and a three span continuous. Total Length 360'-2 1/2", width 48'-10 5/8". All existing structure consists of WF beams on concrete piers and abutments. Existing superstructure and substructure are to be repaired and reused.

Structure No. 016-3240 built in 1964. Sec. 046-0404.05-MFT. 33-Span Structure which carries Central Avenue over the Sanitary Drainage and Ship Canal, north of Interstate 55, and back to grade at 39th Street. Only five spans, are affected by the SPUI widening, consisting of a two span continuous and a three spans of a 5-span continuous. Sixteen (16) wide-flange steel stringers for the 3-span and fourteen (14) wide-flange steel stringers for the 2-span structure support a 7" thick (existing) reinforced concrete deck. Reinforced concrete abutments and piers support the stringers. Total length 1433'-8 3/4", width 88'-10 7/8".

Structure Number 016-3241 built in 1964. Sec. 207-1011.1-C.F. South approach structure which carries Central Avenue from grade at 47th Street over the Illinois Central (IC) Railroad, south of Interstate 55. Six spans, consisting of a three span continuous and another three span continuous. Sixteen (16) wide-flange steel stringers support a 7" thick (original) reinforced concrete deck. Reinforced concrete abutments and piers support the stringers. Total length 458'-1", width 88'-10 7/8".

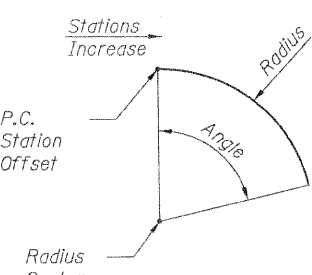
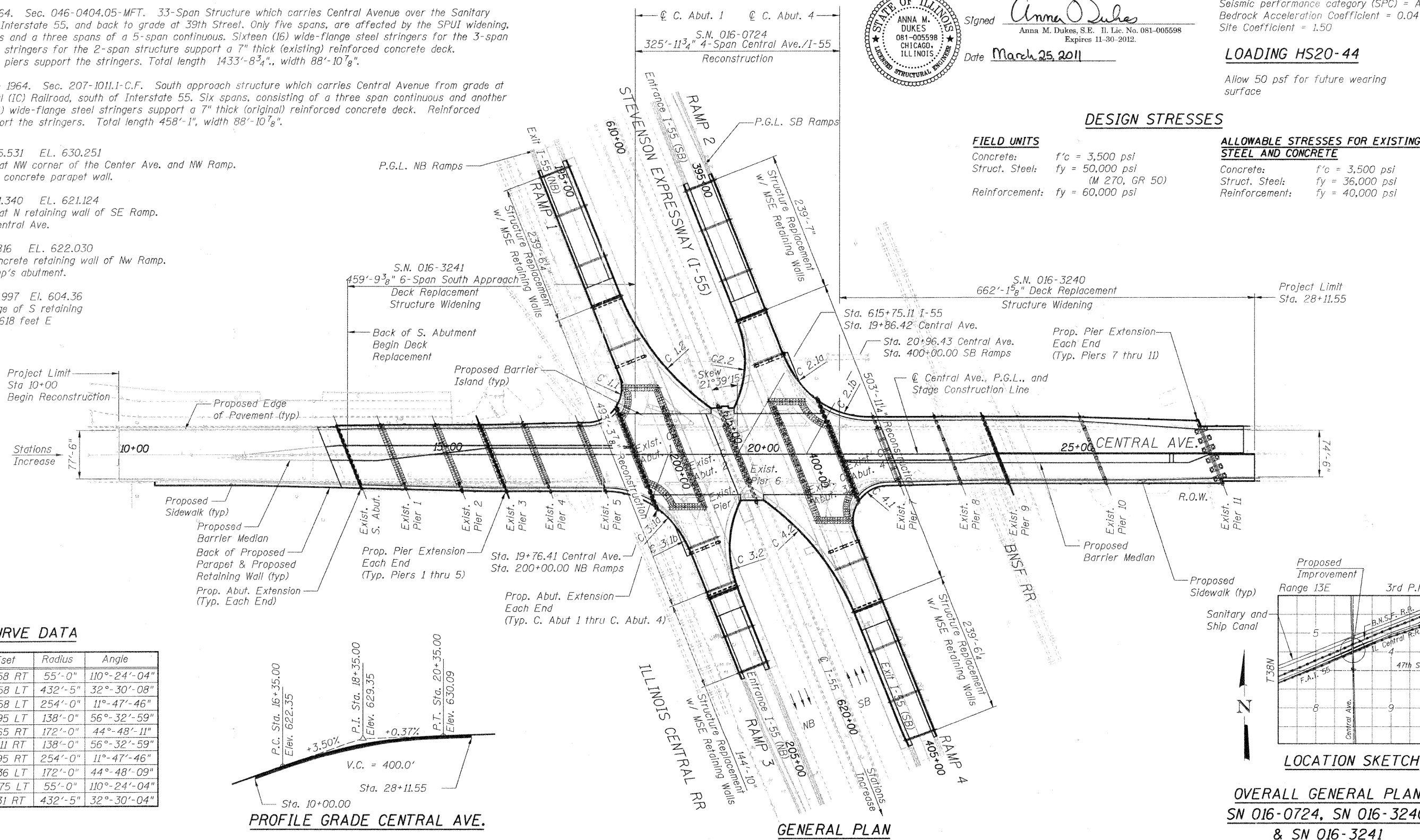
Bench Marks:

BM 51 N 1874340.015 E 1139725.531 EL. 630.251  
Cut square on top of pier at NW corner of the Center Ave. and NW Ramp.  
1.88 Feet NW from back of concrete parapet wall.

BM 60 N 1874267.729 E 1140141.340 EL. 621.124  
Cut square on top of pier at N retaining wall of SE Ramp.  
Approx. 1050 Feet E of Central Ave.

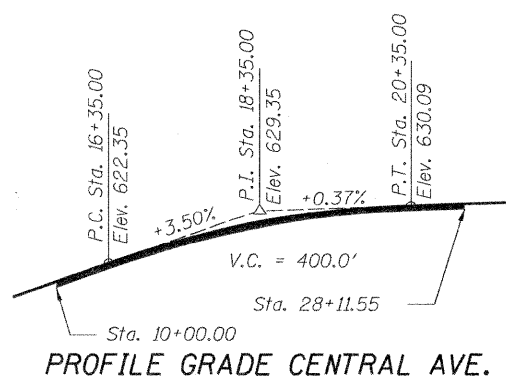
BM 64 N 1874131.115 E 1139419.816 EL. 622.030  
Cut square on top of S concrete retaining wall of Nw Ramp.  
Approx. 66' Feet E of ramp's abutment.

BM 65 N 1873896.493 E 1138873.997 EL. 604.36  
Cut square on top of N edge of S retaining wall of NW Ramp. Approx. 618 feet E of W end of wall.



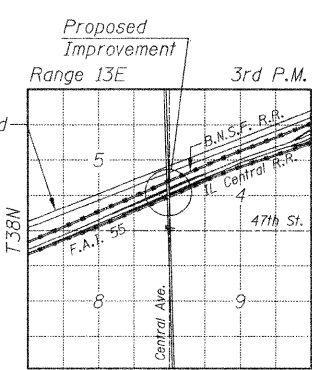
HORIZONTAL CURVE DATA

Ramp	Curve	Station	Offset	Radius	Angle
1	C 1.1	198+53.05	26.58 RT	55'-0"	110°-24'-04"
	C 1.2	197+23.77	23.58 LT	432'-5"	32°-30'-08"
2	C 2.1a	398+29.17	25.58 LT	254'-0"	11°-47'-46"
	C 2.1b	398+81.09	30.95 LT	138'-0"	56°-32'-59"
3	C 2.2	397+69.29	24.65 RT	172'-0"	44°-48'-11"
	C 3.1a	200+18.85	115.11 RT	138'-0"	56°-32'-59"
	C 3.1b	201+18.90	30.95 RT	254'-0"	11°-47'-46"
	C 3.2	201+12.04	80.36 LT	172'-0"	44°-48'-09"
4	C 4.1	400+95.40	100.75 LT	55'-0"	110°-24'-04"
	C 4.2	400+43.88	91.31 RT	432'-5"	32°-30'-04"



PROFILE GRADE CENTRAL AVE.

GENERAL PLAN



LOCATION SKETCH

OVERALL GENERAL PLAN  
SN 016-0724, SN 016-3240,  
& SN 016-3241

TYLIN INTERNATIONAL

DESIGNED	JMA	REVISIONS	
CHECKED	AMD,	NAME	DATE
DRAWN	JMA		
CHECKED	AMD,		
DATE	03/25/2011		

SHEET NO.	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1	55	0711.2R & 1011.1BR	COOK	741	251
3 SHEETS			CONTRACT NO. 60999		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

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3/24/2011