

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2697	142 B-1-I	COOK	48	1
FED. ROAD DIST. NO.	ILLINOIS CONTRACT NO.		60D89	

plus 3
= 51
Total Sheets

D-91-123-08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

**FAU 2697 / WILLOW SPRINGS ROAD
OVER DES PLAINES RIVER AND I & M CANAL
SECTION 142 B-1-I
BRIDGE DECK OVERLAY
PROJECT: ESP-2697(005)
COOK COUNTY
C-91-123-08**

FOR INDEX OF SHEETS SEE SHEET NUMBER 2

THIS IMPROVEMENT IS LOCATED IN
THE VILLAGE OF WILLOW SPRINGS

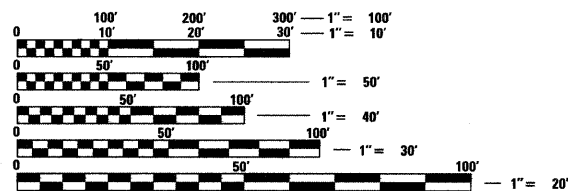
TRAFFIC DATA

2005 ADT - 17,700
POSTED SPEED LIMIT - 40 MPH

WILLOW SPRINGS ROAD

SN: 016-0540 (STA. 114+54.50 TO 129+84.00)
9 - SPAN STEEL CONTINUOUS MULTIBEAM
WITH REINFORCED CONCRETE DECK
ON PIERS AND CLOSED ABUTMENTS

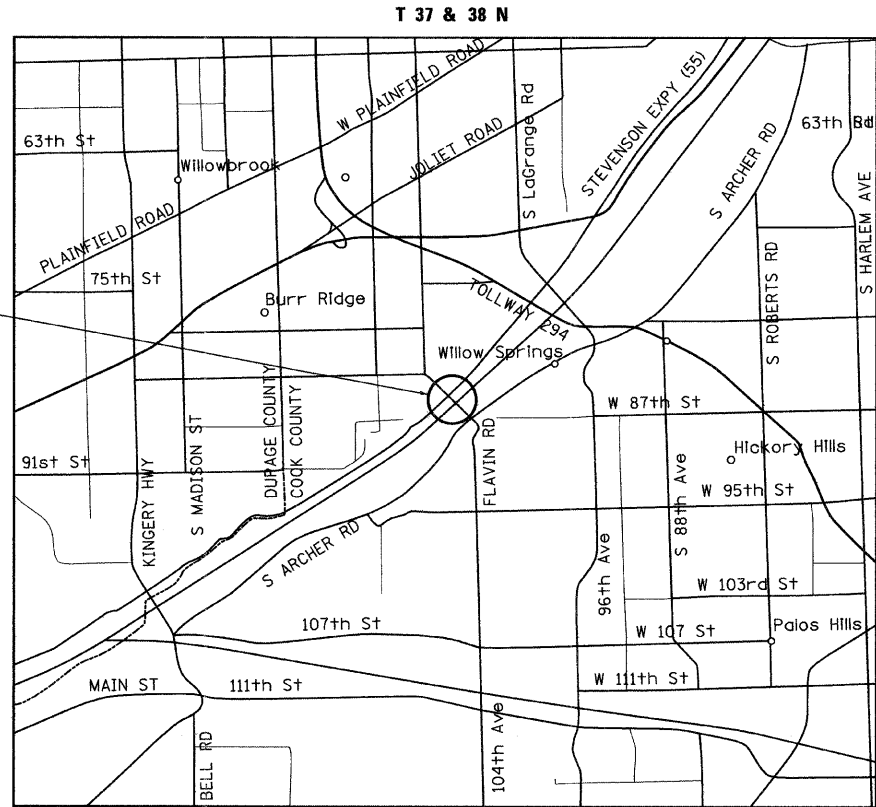
**IMPROVEMENT LOCATION
SN: 016-0540**



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD
ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT
CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS
ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

Ciorba Group, Inc.
DESIGN FIRM
REGISTRATION NUMBER
184-001016
CONSULTING ENGINEERS
SUITE 402, 5507 NORTH CUMBERLAND AVE
CHICAGO, ILLINOIS 60656 ☎ (773) 775-4009



LYONS TOWNSHIP

LOCATION MAP
1" = 5000'

GROSS AND NET LENGTH OF PROJECT = 2080 FT = 0.39 MI



LOCATION OF SECTION INDICATED THUS: -



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SUBMITTED FEBRUARY 3, 2009
Diana M. O'Keefe DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
March 27, 2009
Charles J. Samsell ENGINEER OF DESIGN AND ENVIRONMENT
March 27, 2009
Christina M. Reed DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

DISTRICT 1 DESIGN PLAN PREPARATION ENGINEER: K. ENG (847) 705-4247

CONTRACT NO. 60D89

Rev. 4-10-09

INDEX OF SHEETS

SHEET NO	DESCRIPTION
1	TITLE
2	INDEX OF SHEETS, GENERAL NOTES AND STATE STANDARDS
3	SUMMARY OF QUANTITIES
4	ALIGNMENT & TIES
5	EXISTING CONDITIONS AND REMOVAL PLAN
6	PROPOSED ROADWAY PLAN
7-8	TRAFFIC CONTROL AND PROTECTION - STAGE 1
9-10	TRAFFIC CONTROL AND PROTECTION - STAGE 2
11-12	PAVEMENT MARKING PLAN
13-14	EXISTING TRAFFIC SIGNAL PLANS
15-17	GENERAL PLAN AND ELEVATION
18	GENERAL NOTES AND BILL OF MATERIALS
19	STAGE CONSTRUCTION DETAILS
20	TEMPORARY CONCRETE BARRIER
21-26	SUPERSTRUCTURE REPAIRS
27-29C	EXPANSION JOINT REPLACEMENT
30	NORTH ABUTMENT BEARINGS
31	STEEL REPAIRS
32	ABUTMENTS - CONCRETE REPAIRS
33-36	PIERS
37	DRAINAGE SYSTEM
38	BAR SPLICER DETAILS
39-40	EXISTING FRAMING PLAN
41	EXISTING STRUCTURAL STEEL DETAILS
42	BUTT JOINT AND HMA TAPER DETAILS ARTERIAL ROAD INFORMATION SIGN (BD-32)
43	TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS (TC-10)
44	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS (SNOW PLOW RESISTANT) (TC-11)
45	DISTRICT ONE TYPICAL PAVEMENT MARKINGS (TC-13)
46	TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC) (TC-14)
47	PAVEMENT MARKING LETTERS AND SYMBOLS FOR TRAFFIC STAGING (TC-16)
48	ARTERIAL ROAD INFORMATION SIGN (TC-22)

STATE STANDARDS

000001	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
442101	CLASS B PATCHES
515001	NAME PLATE FOR BRIDGES
630001	STEEL PLATE BEAM GUARDRAIL
631011	TRAFFIC BARRIER TERMINAL, TYPE 2
631031	TRAFFIC BARRIER TERMINAL, TYPE 6
631032	TRAFFIC BARRIER TERMINAL, TYPE 6A
635006	REFLECTOR AND TERMINAL MARKER PLACEMENT
635011	REFLECTOR MARKER AND MOUNTING DETAILS
701606	URBAN LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN
701901	TRAFFIC CONTROL DEVICES
704001	TEMPORARY CONCRETE BARRIER

GENERAL NOTES

- BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "JULIE" AT 800-892-0123 OR 811 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE, AND GAS FACILITIES. (48 HOUR NOTIFICATIONS IS REQUIRED)
- THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES.
- WHEN ARTIFICIAL LIGHTING IS USED IN NIGHT OPERATIONS THE CONTRACTOR SHALL EXERCISE THE UTMOST PRECAUTIONS IN PREVENTING ADVERSE VISIBILITY TO THE MOTORING PUBLIC AND ADJOINING RESIDENTIAL AREAS.
- THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC CONTROL SUPERVISOR AT (847) 705-4470 A MINIMUM OF 72 HOURS PRIOR TO THE PLACEMENT OF ANY TEMPORARY TRAFFIC CONTROL DEVICES.
- THE REMOVAL OF TEMPORARY PAVEMENT MARKING ON ALL NEW SURFACES REQUIRES THE USE OF EQUIPMENT THAT DOES NOT DAMAGE THE SURFACE OR TEXTURE OF THE PAVEMENT. USE HYDRO BLASTING TO REMOVE ANY EXISTING OR TEMPORARY PAVEMENT MARKING ON EXISTING OR NEW PAVEMENT. ANY DAMAGE DONE TO THE NEW PAVEMENT BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.

COMMITMENTS

NONE

HOT-MIX ASPHALT MIXTURE REQUIREMENTS

OPERATIONS	MIXTURE TYPE	AC TYPE	PERCENT AIR VOIDS
ROADWAY RESURFACING	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70 (IL-9.5 mm), 1 1/2"	PG 64-22	4% @ 70 GYR
	LEVELING BINDER (MACHINE METHOD), N70, 1"	PG 64-22*	4% @ 70 GYR

THE UNIT WEIGHT USED TO CALCULATE ALL HMA SURFACE MIXTURE QUANTITIES IS 112 LBS/SQ YD/IN.

* WHEN RAP EXCEEDS 20%, THE NEW ASPHALT BINDER IN THE MIX SHALL BE PG 58-22.

FILE NAME = N:\PROJ\3329\3329_36\Design\ProposedPlan\3329_36-02-india.dgn



Ciorba Group, Inc.
CONSULTING ENGINEERS
6507 North Cumberland Avenue, Suite 402
Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014

USER NAME = wlaneaster	DESIGNED - JCC	REVISED -
	DRAWN - JCC	REVISED -
PLOT SCALE = 1:8000 / IN.	CHECKED - MJL	REVISED -
PLOT DATE = 2/4/2009	DATE - 02/25/08	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**FAU 2697 / WILLOW SPRINGS ROAD
OVER DESPLAINES STREET
INDEX OF SHEETS, STATE STANDARDS & GENERAL NOTES**

SCALE: SHEET NO. OF SHEETS STA. TO STA.

Rev. 4-9-09

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2697	142 B-1-1	COOK	48	2

CONTRACT NO. 60D89

FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT

SUMMARY OF QUANTITIES			URBAN 100% FED. TOTAL QUANTITY	CONSTRUCTION CODE	
CODE NO.	DESCRIPTION	UNIT		ROADWAY 1000-2A	BRIDGE X081-2A
28000510	INLET FILTERS	EACH	25	25	
31101200	SUB-BASE GRANULAR MATERIAL, TYPE B 4"	SQ YD	20	20	
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	35	35	
40600300	AGGREGATE (PRIME COAT)	TON	1	1	
40600635	LEVELING BINDER (MACHINE METHOD), N70	TON	20	20	
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	60	60	
40603340	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70	TON	30	30	
42400200	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ FT	180	180	
44000159	HOT-MIX ASPHALT SURFACE REMOVAL, 2 1/2"	SQ YD	340	340	
44000600	SIDEWALK REMOVAL	SQ FT	180	180	
44000915	HOT-MIX ASPHALT SURFACE REMOVAL (DECK)	SQ YD	9,611		9,611
50102400	CONCRETE REMOVAL	CU YD	167.7		167.7
50157300	PROTECTIVE SHIELD	SQ YD	5,001		5,001
50300255	CONCRETE SUPERSTRUCTURE	CU YD	180.3		180.3
50300260	BRIDGE DECK GROOVING	SQ YD	8,930		8,930
50300300	PROTECTIVE COAT	SQ YD	10,543		10,543
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	5,870		5,870
50500715	JACK AND REMOVE EXISTING BEARINGS	EACH	5		5
50501110	STRUCTURAL STEEL REMOVAL	POUND	4,050		4,050
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	31,290		31,290
50800515	BAR SPLICERS	EACH	158		158
51500100	NAME PLATES	EACH	1		1
52100020	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	5		5
52100530	ANCHOR BOLTS, 1 1/4"	EACH	20		20
58700300	CONCRETE SEALER	SQ FT	694		694
63000000	STEEL PLATE BEAM GUARD RAIL, TYPE A	FOOT	550	550	
63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	1	1	
63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	2	2	
63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	1	1	
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2	2	
63200310	GUARDRAIL REMOVAL	FOOT	466	466	
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	6	2	4
67100100	MOBILIZATION	L SUM	1	0.2	0.8
70101800	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	L SUM	1	0.2	0.8
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	6,650	6,650	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	2,100	2,100	

* DENOTES SPECIALTY ITEM
 @ Y080

SUMMARY OF QUANTITIES			URBAN 100% FED. TOTAL QUANTITY	CONSTRUCTION CODE	
CODE NO.	DESCRIPTION	UNIT		ROADWAY 1000-2A	BRIDGE X081-2A
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	2,050	2,050	
78000100	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	110	110	
78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	10,200	10,200	
78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	525	525	
78000600	THERMOPLASTIC PAVEMENT MARKING - LINE 12"	FOOT	330	330	
78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	90	90	
78008210	POLYUREA PAVEMENT MARKING TYPE I - LINE 4"	FOOT	7,200	7,200	
78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	20	20	
78100105	RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)	EACH	85	85	
78100300	REPLACEMENT REFLECTOR	EACH	175	175	
78200410	GUARDRAIL MARKERS, TYPE A	EACH	25	25	
78200530	BARRIER WALL MARKERS, TYPE C	EACH	170	170	
78300100	PAVEMENT MARKING REMOVAL	SQ FT	6,700	6,700	
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	80	80	
85000200	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1	1	
89502200	MODIFY EXISTING CONTROLLER	EACH	1	1	
X0322050	RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL	EACH	175	175	
X0322256	TEMPORARY INFORMATION SIGNING	SQ FT	52	52	
X0322489	BRIDGE DECK LATEX CONCRETE OVERLAY, 2 1/2 INCHES	SQ YD	9,491		9,491
X0323426	SEDIMENT CONTROL, DRAINAGE STRUCTURE INLET FILTER CLEANING	EACH	50	50	
X0325303	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQ FT	478		478
X0325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	4,182		4,182
X0325775	WET REFLECTIVE TEMPORARY TAPE, TYPE III, 4 INCH	FOOT	18,800	18,800	
X0325837	WET REFLECTIVE TEMPORARY TAPE TYPE III, 6 INCH	FOOT	250	250	
X0325841	WET REFLECTIVE TEMPORARY TAPE, TYPE III, 24 INCH	FOOT	160	160	
X0325842	WET REFLECTIVE TEMPORARY TAPE, TYPE III, LETTERS AND SYMBOLS	SQ FT	73	73	
Z0006201	BRIDGE DECK HYDRO-SCARIFICATION 1"	SQ YD	9,611		9,611
Z0013798	CONSTRUCTION LAYOUT	L SUM	1	0.2	0.8
Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	3,110		3,110
Z0018800	DRAINAGE SYSTEM	L SUM	1		1
Z0030240	IMPACT ATTENUATORS, TEMPORARY (NON- REDIRECTIVE), TEST LEVEL 2	EACH	2	2	
Z0030340	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 2	EACH	2	2	
Z0034390	MODULAR EXPANSION JOINT 6"	FOOT	205		205
Z0034393	MODULAR EXPANSION JOINT 9"	FOOT	68		68
Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1	1	

@ 20076400 TRAINERS HOUR 1000 1000
 X0321781 MECHANICAL SPLICE EACH 256 256

FILE NAME = N:\PROJECTS\3329_38\Design\ProposedPlan\3329_38-03-ecodgn



USER NAME = mready	DESIGNED - JCC	REVISED -
PLOT SCALE = 1:8000' / 1"	DRAWN - JCC	REVISED -
PLOT DATE = 2/4/2009	CHECKED - MJL	REVISED -
	DATE - 02/25/08	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

FAU 2697 / WILLOW SPRINGS ROAD
 OVER DESPLAINES STREET
 SUMMARY OF QUANTITIES

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 3
CONTRACT NO. 60D89				
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				

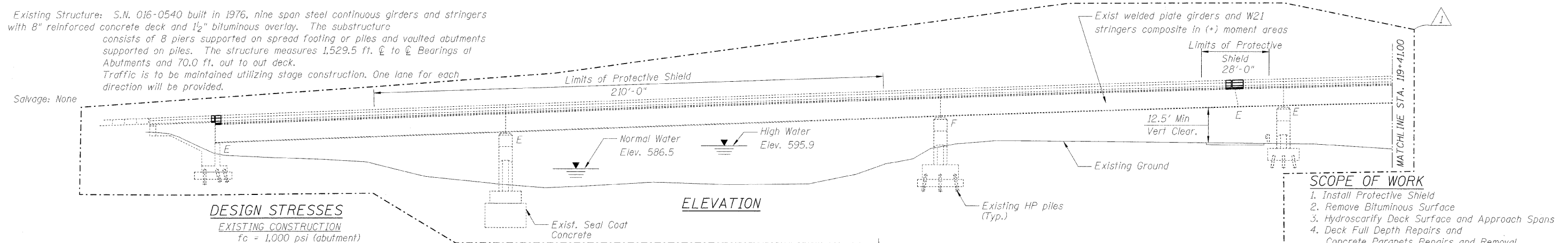
Rev. 4-9-09

Benchmark: Survey Monument (Bronze Disk) located on the concrete sidewalk NE side of bridge for the commuter parking lot on Old Willow Road, Sta. 125+91 offset 46 Rt Elev. 598.39

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure: S.N. 016-0540 built in 1976, nine span steel continuous girders and stringers with 8" reinforced concrete deck and 1 1/2" bituminous overlay. The substructure consists of 8 piers supported on spread footing or piles and vaulted abutments supported on piles. The structure measures 1,529.5 ft. @ Bearings at Abutments and 70.0 ft. out to deck. Traffic is to be maintained utilizing stage construction. One lane for each direction will be provided.

Salvage: None



DESIGN STRESSES

EXISTING CONSTRUCTION

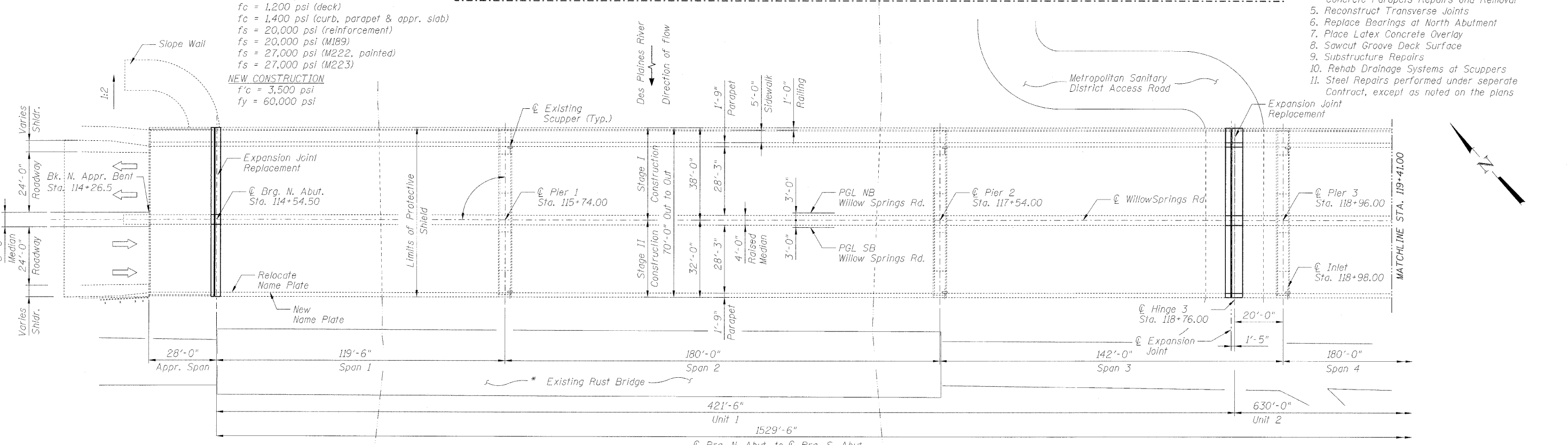
- $f_c = 1,000$ psi (abutment)
- $f_c = 1,200$ psi (deck)
- $f_c = 1,400$ psi (curb, parapet & appr. slab)
- $f_s = 20,000$ psi (reinforcement)
- $f_s = 20,000$ psi (M189)
- $f_s = 27,000$ psi (M222, painted)
- $f_s = 27,000$ psi (M223)

NEW CONSTRUCTION

- $f'_c = 3,500$ psi
- $f_y = 60,000$ psi

SCOPE OF WORK

1. Install Protective Shield
2. Remove Bituminous Surface
3. Hydroscarify Deck Surface and Approach Spans
4. Deck Full Depth Repairs and Concrete Parapets Repairs and Removal
5. Reconstruct Transverse Joints
6. Replace Bearings at North Abutment
7. Place Latex Concrete Overlay
8. Sawcut Groove Deck Surface
9. Substructure Repairs
10. Rehab Drainage Systems at Scuppers
11. Steel Repairs performed under separate Contract, except as noted on the plans



rdanley 4/8/2009

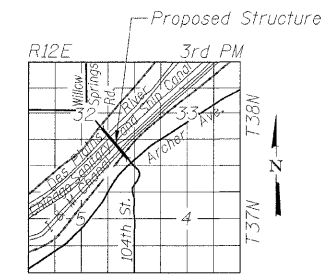
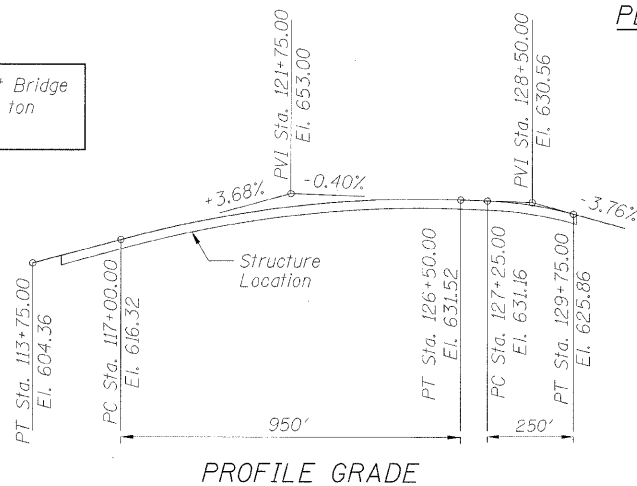
LOADING HS-20-44

No future wearing surface allowance

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications

* Existing Rust Bridge is posted to 10 ton weight limit



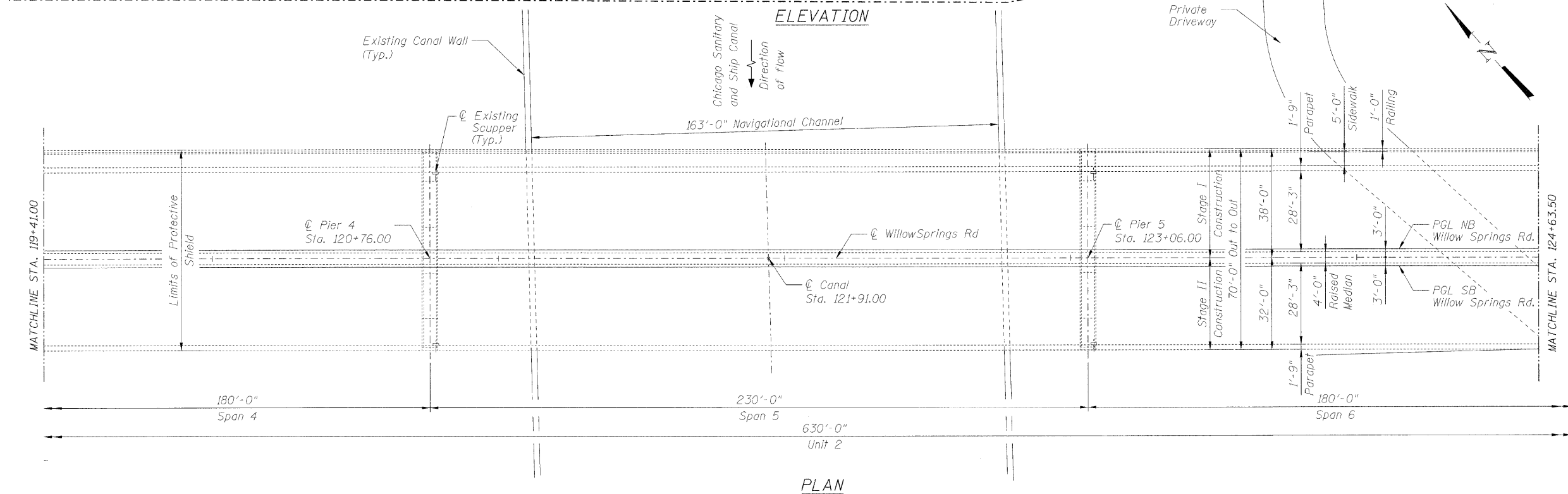
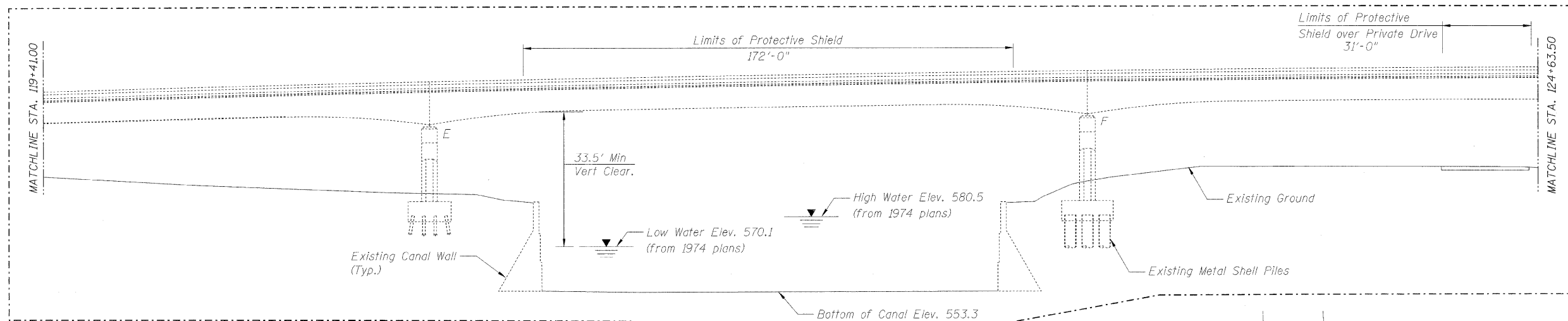
GENERAL PLAN AND ELEVATION I
FAU 2697 WILLOW SPRINGS ROAD
OVER DES PLAINES RIVER,
CHICAGO SANITARY & SHIP CANAL,
ILLINOIS AND MICHIGAN CANAL,
AND ICG RAILROAD
COOK COUNTY
S.N. 016-0540

DESIGNED B. Sauter
CHECKED E. Mroczek
DRAWN R. Danley
CHECKED B. Sauter

SHEET NO. S-1	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	15
S-27 SHEETS			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

Revised 4/08/09 E.K.M.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



GENERAL PLAN AND ELEVATION II
FAU 2697 WILLOW SPRINGS ROAD
OVER DES PLAINES RIVER,
CHICAGO SANITARY & SHIP CANAL,
ILLINOIS AND MICHIGAN CANAL,
AND ICG RAILROAD
COOK COUNTY
S.N. 016-0540

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

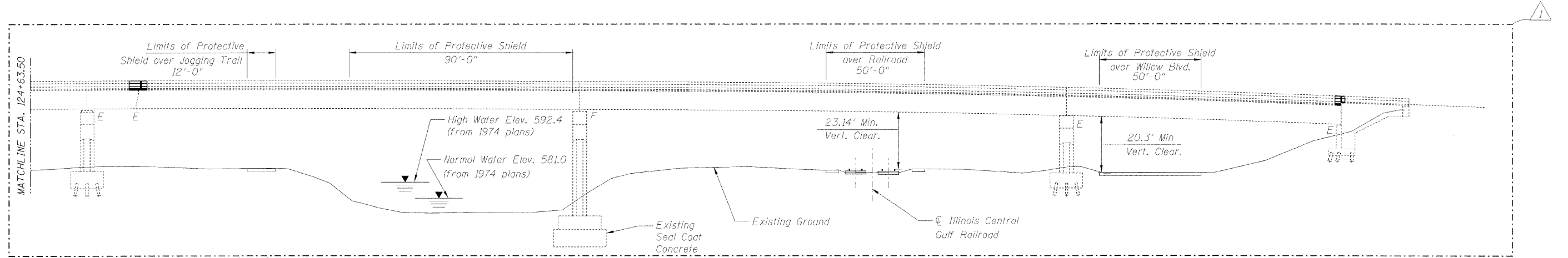
CGI Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

Revised 4/08/09 E.K.M.

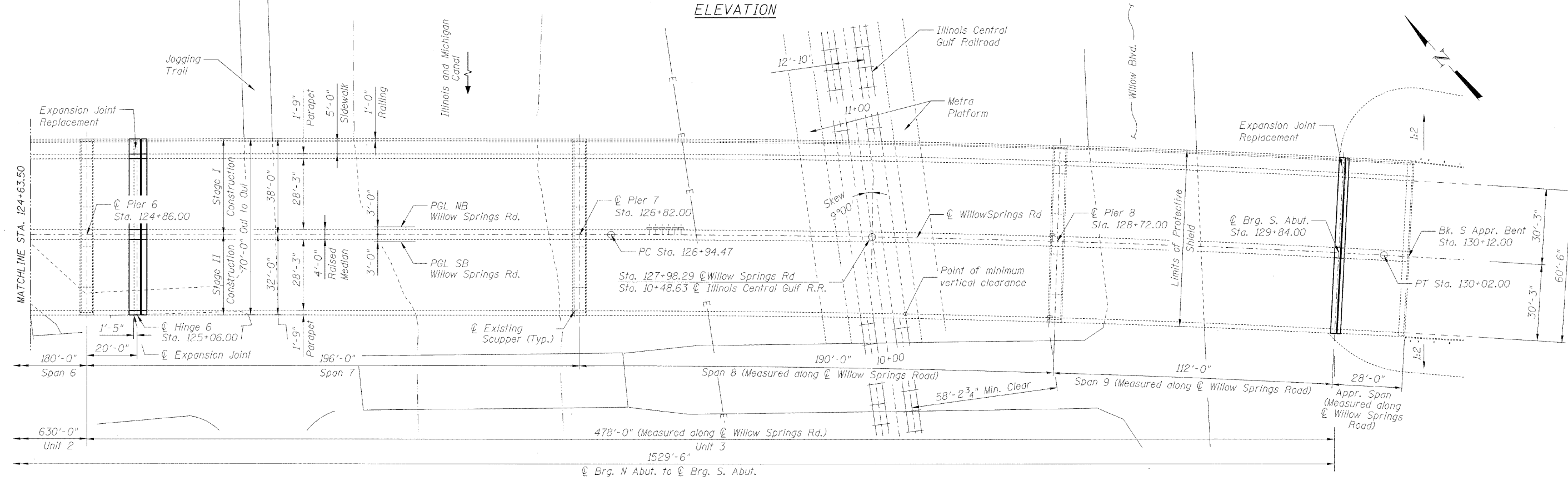
SHEET NO. S-2 S-27 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-1	COOK	48	16
			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

4/8/2009 r-danley

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION



PLAN

HORIZONTAL CURVE

PC = Sta. 126+94.47
 PT = Sta. 130+02.00
 PI = Sta. 128+48.23
 $\Delta = 3^{\circ}04'31.0''$
 $\Delta = 1^{\circ}00'00''$
 T = 153.80
 L = 307.53'
 B = 2.06'
 R = 5,729.58'

LEGEND

— E — Electrical Overhead Line

GENERAL PLAN AND ELEVATION III

FAU 2697 WILLOW SPRINGS ROAD
 OVER DES PLAINES RIVER,
 CHICAGO SANITARY & SHIP CANAL,
 ILLINOIS AND MICHIGAN CANAL,
 AND ICG RAILROAD
 COOK COUNTY
 S.N. 016-0540

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

Ciorba Group, Inc.
 CONSULTING ENGINEERS
 5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
 Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

Revised 4/08/09 E.K.M.

SHEET NO. S-3	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	17
S-27 SHEETS			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

rdantley 4/8/2009 n:\pro\3329\3329_30\design\structural\cad\sh\concrete_repairs\3329_30_03.GP REV 1.sht

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

- Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts - 7/8 in. ϕ , holes - 1 1/16 in. ϕ , unless otherwise noted.
- Calculated weight of Structural Steel = 5,870 lbs.
- All structural steel shall be AASHTO M270 Grade 50.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.
- Plan dimensions and details relative to existing plans are subject to normal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- Existing structural steel shall only be cleaned and painted as required by Special Provision "Cleaning and Painting Contact Areas of Existing Steel Structures".
- The Inorganic zinc rich primer/Acrylic/Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the Acrylic finish coat shall be Interstate Green, Munseil No.7.5G 4/8. See Special Provision for "Cleaning and Painting New Metal Structures".
- Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost incidental to "Concrete Removal"

STATION 121+91
BUILT BY
STATE OF ILLINOIS
F.A. RT. 2697 SEC
2008-018 BR
LOADING HS20
STRUCTURE NO. 016-0540

NAME PLATE
See Std. 515001

Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.

INDEX OF SHEETS

S-1.	General Plan and Elevation I	
S-2.	General Plan and Elevation II	Revised Sheets
S-3.	General plan and Elevation III	
S-4.	General Notes and Bill of Material	
S-5.	Stage Construction Details	
S-6.	Temporary Concrete Barrier	
S-7.	Superstructure Repairs I	
S-8.	Superstructure Repairs II	
S-9.	Superstructure Repairs III	Revised Sheets
S-10.	Superstructure Repairs IV	
S-11.	Superstructure Repairs V	
S-12.	Superstructure Repairs VI	
S-13.	Expansion Joint Replacement I	
S-14.	Expansion Joint Replacement II	
S-15.	Expansion Joint Replacement III	Revised Sheet
S-15A	Parapet Replacement Details	
S-15B	Median Replacement Details	Additional Sheets
S-15C	Existing Railing Details	
S-16.	North Abutment Bearings	Revised Sheet
S-17.	Steel Repairs	
S-18.	Abutments-Concrete Repairs	
S-19.	Piers 1 & 2	
S-20.	Piers 3 & 4	
S-21.	Piers 5 & 6	
S-22.	Piers 7 & 8	
S-23.	Drainage System	
S-24.	Bar Splicer Details	Revised Sheet
S-25.	Existing Framing Plan I	
S-26.	Existing Framing Plan II	
S-27.	Existing Structural Steel Details	

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
* Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	9,611
Concrete Removal	Cu. Yd.	167.7
Protective Shield	Sq. Yd.	5,001
Concrete Superstructure	Cu.Yd.	180.3
Bridge Deck Grooving	Sq.Yd.	8,930
Protective Coat	Sq.Yd.	10,543
Furnishing and Erecting Structural Steel	Pound	5,870
* Structural Steel Removal	Pound	4,050
* Jack and Remove Existing Bearings	Each	5
Reinforcement Bars, Epoxy Coated	Pound	31,290
Bar Splicers	Each	158
Name Plates	Each	1
Elastomeric Bearing Assembly, Type II	Each	5
Anchor Bolts, 1 1/4"	Each	20
Concrete Sealer	Sq. Ft.	694
* Mechanical Splice	Each	256
* Bridge Deck Latex Concrete Overlay, 2 1/2 inches	Sq.Yd.	9,491
Structural Repair of Concrete (Depth Greater Than 5")	Sq. Ft.	478
* Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.	4,182
* Bridge Deck Hydro-Scarification 1"	Sq.Yd.	9,611
* Deck Slab Repair (Full Depth, Type II)	Sq.Yd.	3,110
Drainage System	L.Sum	1
* Modular Expansion Joint 6"	Fcot	205
* Modular Expansion Joint 9"	Fcot	68

* Special Provision

**GENERAL NOTES
AND BILL OF MATERIAL
S.N. 016-0540**

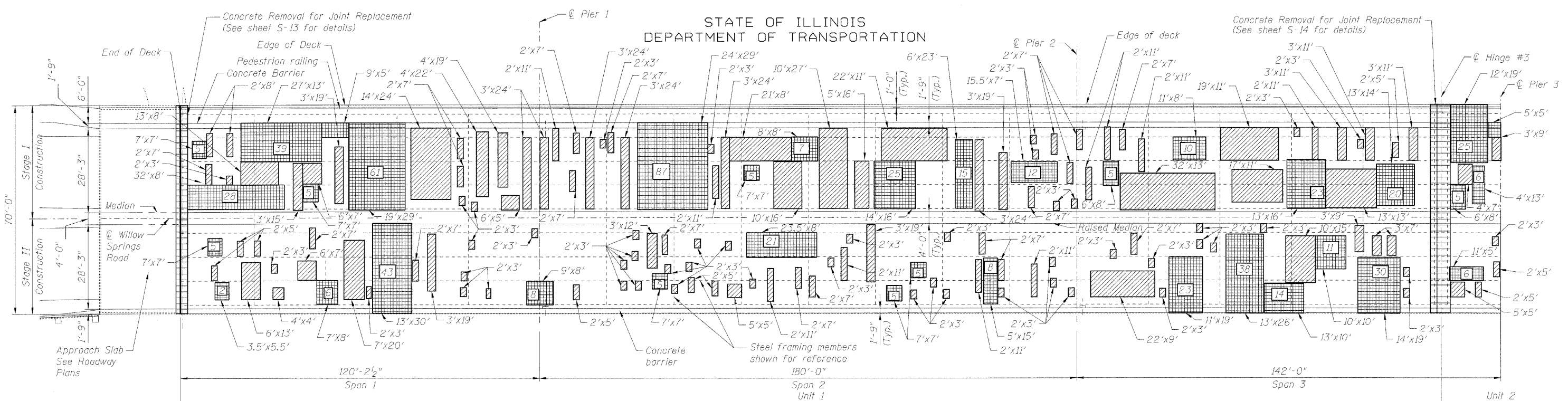
DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

SHEET NO. S-4	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	2008-018 BR	COOK	48	18
S-23 SHEETS			CONTRACT NO. 60E47		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

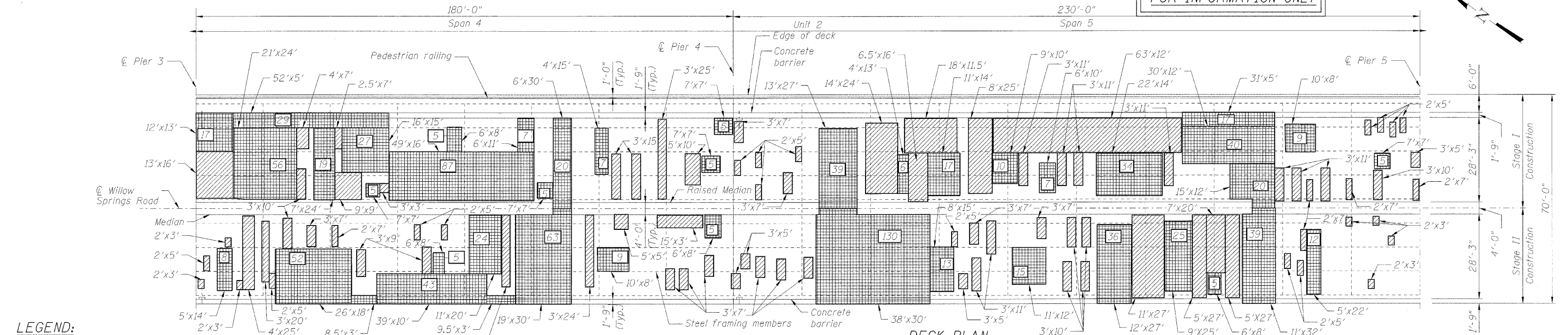
Revised 4/08/09 E.K.M.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DECK PLAN

Deck Slab Repair (Partial Depth)
Estimated Quantity 1133 Sq. Yd.
FOR INFORMATION ONLY



DECK PLAN

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	5,350
Concrete Removal	Cu. Yd.	24.8
Bridge Deck Grooving	Sq. Yd.	4,971
Protective Coat	Sq. Yd.	5,362
Bridge Deck Latex Concrete Overlay, 2 1/2 inches	Sq. Yd.	5,290
Bridge Deck Hydro-Scarification 1"	Sq. Yd.	5,350
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	1,760

LAST DELAMINATION SURVEY:
November 27, 2007
(Typical for all superstructure repairs)

SUPERSTRUCTURE REPAIRS I
S.N. 016-0540

- LEGEND:**
- Deck Slab Repair (Full Depth), Type II
X denotes estimated quantity in Sq. Yd.
 - Concrete removal for expansion joint replacement
 - Deck Slab Repair (Partial Depth)
For information only, Quantity included with Bridge Deck Hydro-Scarification 1"

- NOTES:**
- Repairs shall include but not be limited to the areas shown. The actual areas to be determined by the Engineer at the time of construction.
 - If the length along the bridge centerline of Deck Slab Repairs (Full Depth, Type II) when measured in the field and approved by the Engineer exceeds what is indicated in plan and is equal or greater than 10 feet, the entire section of the adjacent parapet shall be removed and replaced according to details shown on Sheet S-15A.
 - The Engineer shall record the actual deck repair areas in order to document as-built conditions for the future reference.

- For expansion joint rehabilitation, see sheet S-13 thru S-15.
- For parapet removal and repairs see sheet S-9 thru S-12.
- Concrete Removal includes only deck removal at joints.
- Contractor shall use extreme care in the concrete removal operation. Any spalling, beam, shear stud or rebar damage caused by this operation shall be repaired by the Contractor to the satisfaction of the Engineer at no additional cost to the Department.
- Quantities in the Bill of Material for Deck Slab Repairs Full Depth, Type II are 10% greater than areas shown on deck plan to accommodate for degradation since last delamination survey.
- Protective coat shall be applied to N.B. & S.B. Lanes and to newly constructed and repaired areas of concrete on parapets and median.
- Existing reinforcement in the deck shall be cleaned and incorporated into the repairs. Cost included with Deck Slab Repair (Full Depth, Type II).
- Existing scuppers to be temporarily supported and cast with proposed deck if affected by Deck Slab Repair. Cost included with Deck Slab Repair (Full Depth, Type II).
- Bridge Deck Latex Concrete Overlay for each stage shall be placed only after all Deck Slab Repairs for the stage have been completed.

DESIGNED B. Sauter
CHECKED E. Mroczek
DRAWN R. Danley
CHECKED B. Sauter

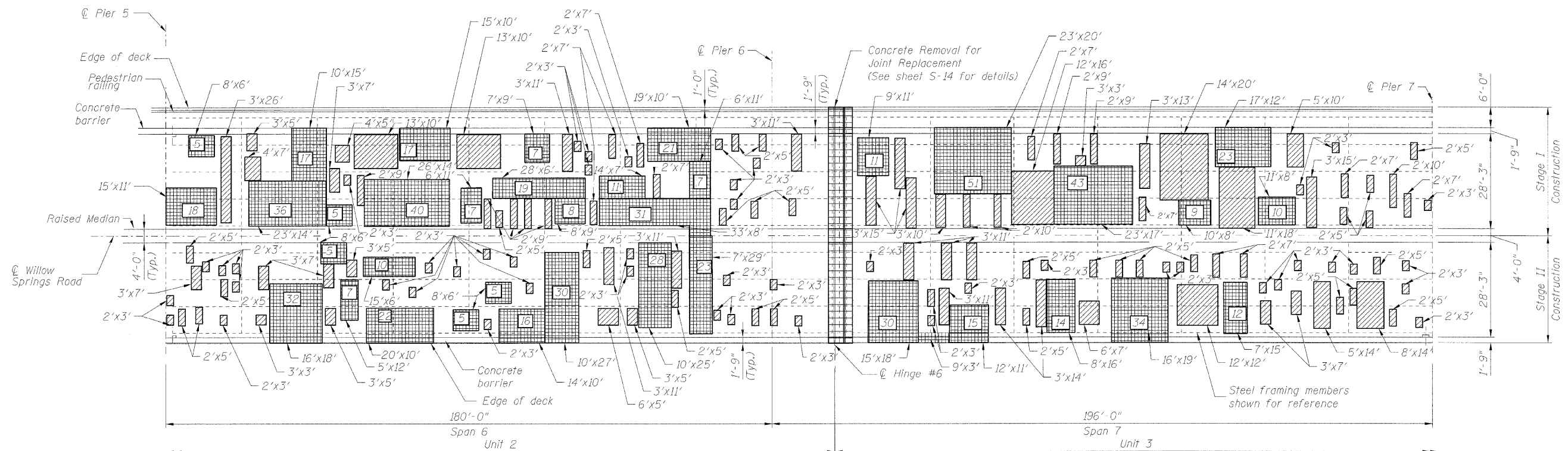


SHEET NO. S-7	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	21
S-27 SHEETS			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

Entire Sheet Revised 4/08/09 E.K.M.

4/8/2009 rdanley m:\pro\3329\3329_30\design\structural\concrete_repairs\3329_30_07-Deck_Repairs_I - REV 1a.dwg

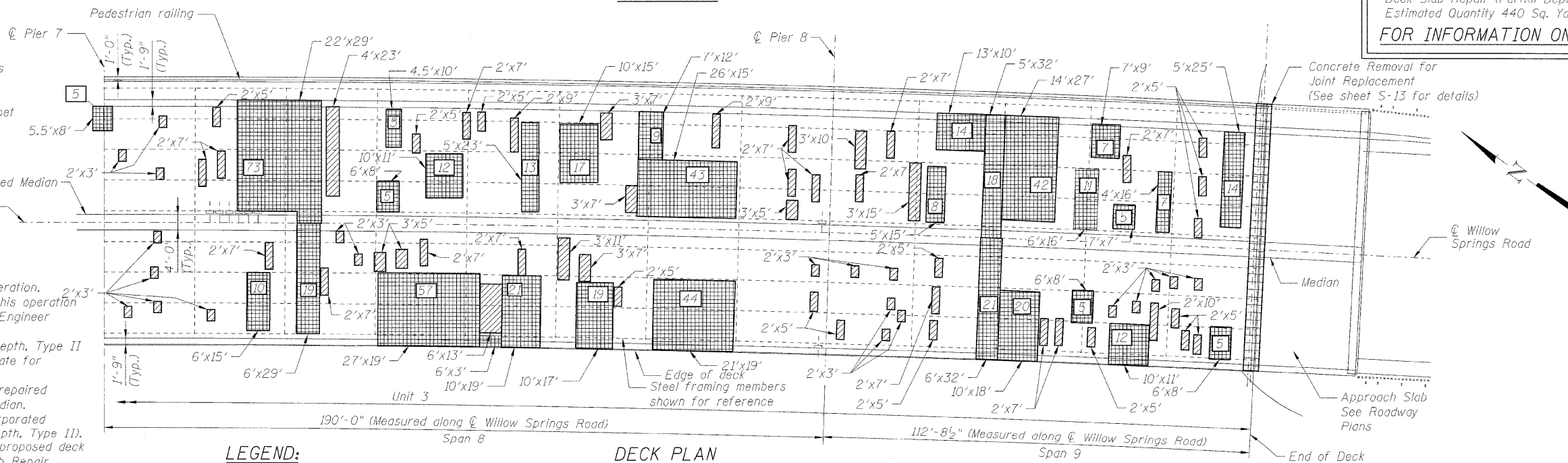
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DECK PLAN

NOTES:

- Repairs shall include but not be limited to the areas shown. The actual areas to be determined by the Engineer at the time of construction.
- If the length along the bridge centerline of Deck Slab Repairs (Full Depth, Type II) when measured in the field and approved by the Engineer exceeds what is indicated in plan and is equal or greater than 10 feet, the entire section of the adjacent parapet shall be removed and replaced according to details shown on Sheet S-15A.
- The Engineer shall record the actual deck repair areas in order to document as-built conditions for the future reference.
- For expansion joint rehabilitation, see sheet S-13 thru S-15.
- For parapet removal and repairs see sheet S-9 thru S-12.
- Concrete Removal includes only deck removal at joints.
- Contractor shall use extreme care in the concrete removal operation. Any spalling, beam, shear stud or rebar damage caused by this operation shall be repaired by the Contractor to the satisfaction of the Engineer at no additional cost to the Department.
- Quantities in the Bill of Material for Deck Slab Repairs Full Depth, Type II are 10% greater than areas shown on deck plan to accommodate for degradation since last delamination survey.
- Protective coat shall be applied to N.B. & S.B. Lanes and to repaired and newly constructed areas of concrete on parapets and median.
- Existing reinforcement in the deck shall be cleaned and incorporated into the repairs. Cost included with Deck Slab Repair (Full Depth, Type II).
- Existing scuppers to be temporarily supported and cast with proposed deck if affected by Deck Slab Repair. Cost included with Deck Slab Repair (Full Depth, Type II).
- Bridge Deck Latex Concrete Overlay for each stage shall be placed only after all Deck Slab Repairs for the stage have been completed.



DECK PLAN

Deck Slab Repair (Partial Depth)
Estimated Quantity 440 Sq. Yd.
FOR INFORMATION ONLY

LEGEND:

- Deck Slab Repair (Full Depth), Type II
X denotes estimated quantity in Sq. Yd.
- Concrete removal for expansion joint replacement
- Deck Slab Repair (Partial Depth)
For information only, Quantity included with Bridge Deck Hydro-Scarification 1"

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	4,261
Concrete Removal	Cu. Yd.	24.8
Bridge Deck Grooving	Sq. Yd.	3,959
Protective Coat	Sq. Yd.	4,273
Bridge Deck Latex Concrete Overlay, 2 1/2 inches	Sq. Yd.	4,201
Bridge Deck Hydro-Scarification 1"	Sq. Yd.	4,261
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	1,350

SUPERSTRUCTURE REPAIRS II
S.N. 016-0540

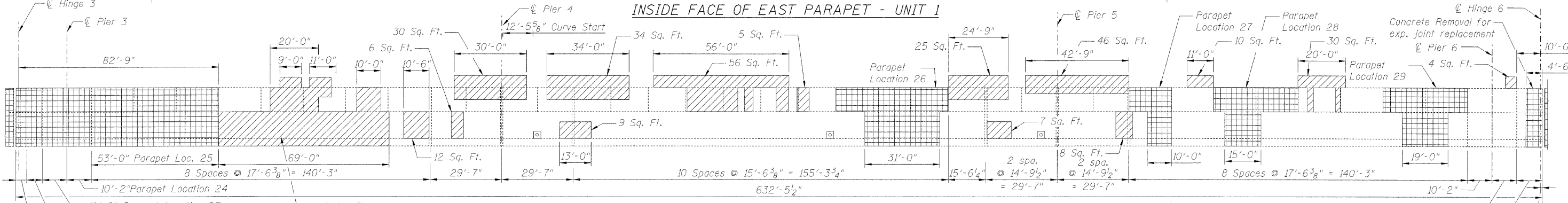
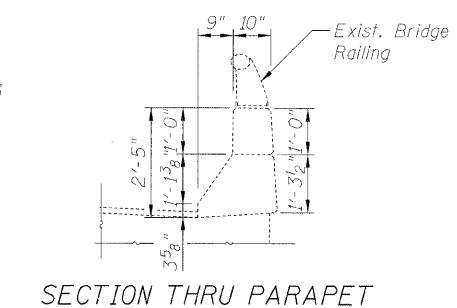
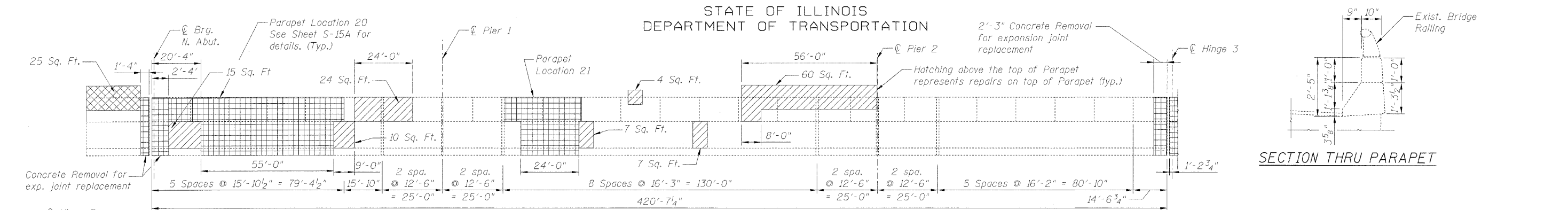
DESIGNED B. Sauter
CHECKED E. Mroczek
DRAWN R. Danley
CHECKED B. Sauter

GIORBA GROUP, INC.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@clorba.com

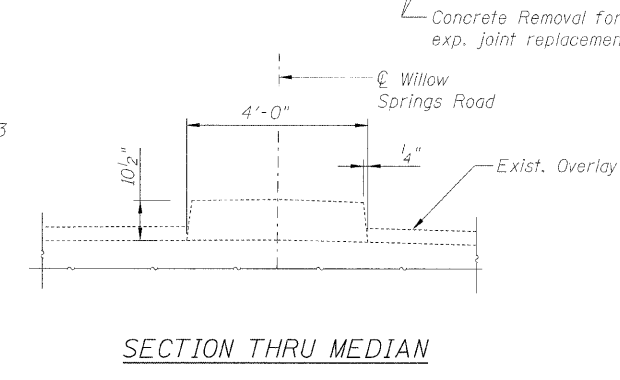
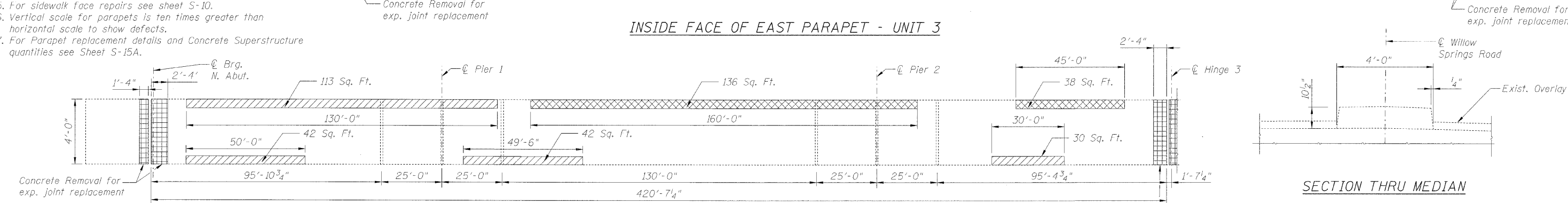
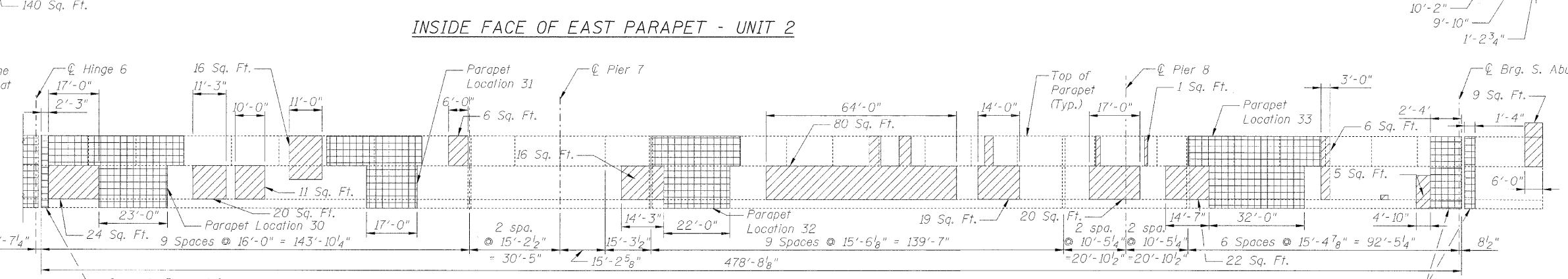
Entire Sheet Revised 4/08/09 E.K.M.

SHEET NO. S-8	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	22
S-27 SHEETS			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



- NOTES:**
- Repairs shall include but not limited to the areas shown. The actual areas to be repaired will be determined by engineer at the time of construction.
 - Removal and reinstallation of railing and related hardware and anchors, if necessary to perform concrete repairs or concrete removal, shall be included respectively with Structural Repair of Concrete and Concrete Superstructure. See Sheet S-15C for Existing Railing Details.
 - Contractor shall use extreme care in the concrete removal operation. Any spalling or rebar damage caused by this operation will be repaired by the Contractor and at no additional cost to the Department.
 - Quantities in the Bill of Material for Structural Concrete Repairs are 10% greater than areas shown to accommodate for degradation since last delamination survey.
 - For sidewalk face repairs see sheet S-10.
 - Vertical scale for parapets is ten times greater than horizontal scale to show defects.
 - For Parapet replacement details and Concrete Superstructure quantities see Sheet S-15A.



- LEGEND:**
- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
 - Structural Repair of Concrete (Depth Greater than 5 inches)
 - Concrete Removal & Concrete Superstructure
 - Electrical Box

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	1,135
Structural Repair of Concrete (Depth Greater than 5 inches)	Sq. Ft.	216
Protective Coat	Sq. Yd.	449
Concrete Removal	Cu. Yd.	47.2

DESIGNED <i>B. Sauter</i>
CHECKED <i>E. Mroczek</i>
DRAWN <i>R. Danley</i>
CHECKED <i>B. Sauter</i>

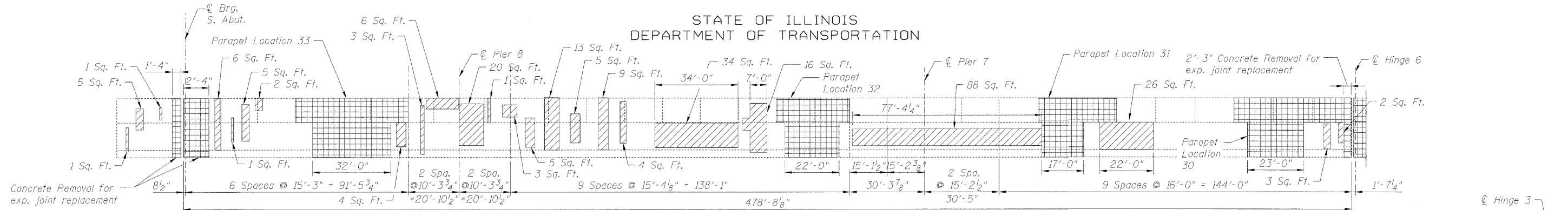
Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

SUPERSTRUCTURE REPAIRS III
S.N. 016-0540

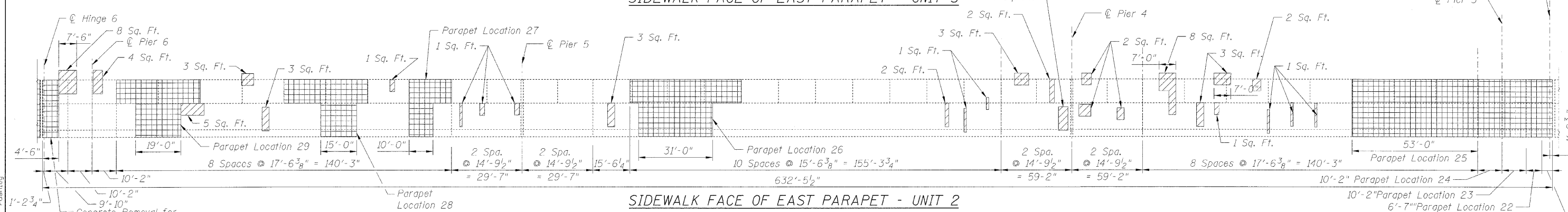
SHEET NO. S-9	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 23
S-27 SHEETS			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

Entire Sheet Revised 4/08/09 E.K.M.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

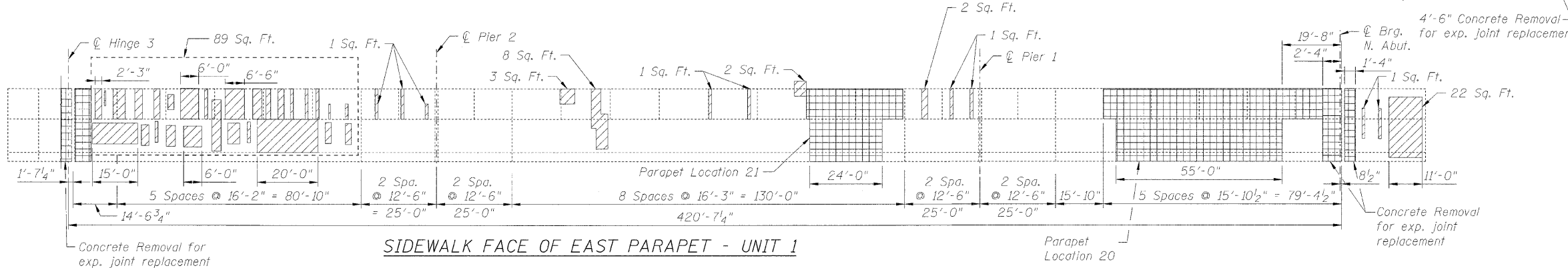


SIDEWALK FACE OF EAST PARAPET - UNIT 3

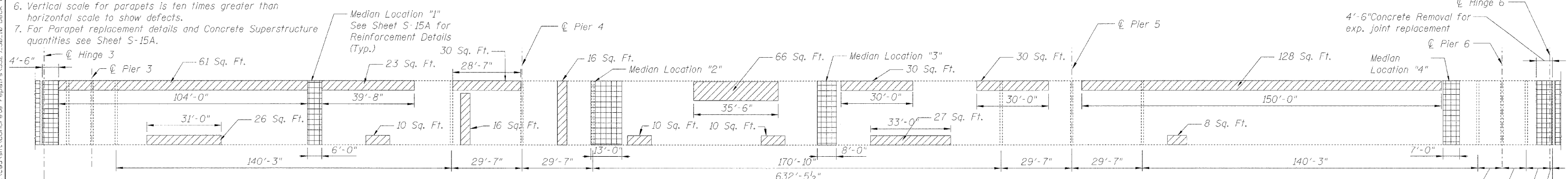


SIDEWALK FACE OF EAST PARAPET - UNIT 2

- NOTES:**
- Repairs shall include but not limited to the areas shown. The actual areas to be repaired will be determined by engineer - at the time of construction.
 - Removal and reinstallation of railing and related hardware and anchors, if necessary to perform concrete repairs or concrete removal, shall be included respectively with Structural Repair of Concrete and Concrete Superstructure. See Sheet S-15C for Existing Railing Details.
 - Quantity for Concrete Removal shown on this sheet is for median removal. Concrete Removal quantities for parapet removal are shown on sheet S-9
 - Contractor shall use extreme care in the concrete removal operation. Any spalling or rebar damage caused by this operation will be repaired by the Contractor and at no additional cost to the Department.
 - Quantities in the Bill of Material for Structural Concrete Repairs are 10% greater than areas shown to accommodate for degradation since last delamination survey.
 - Vertical scale for parapets is ten times greater than horizontal scale to show defects.
 - For Parapet replacement details and Concrete Superstructure quantities see Sheet S-15A.



SIDEWALK FACE OF EAST PARAPET - UNIT 1



MEDIAN PLAN - UNIT 2

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	1,054
Protective Coat	Sq. Yd.	142
Concrete Removal	Cu. Yd.	9.3

- LEGEND:**
- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
 - Concrete Removal and Concrete Superstructure

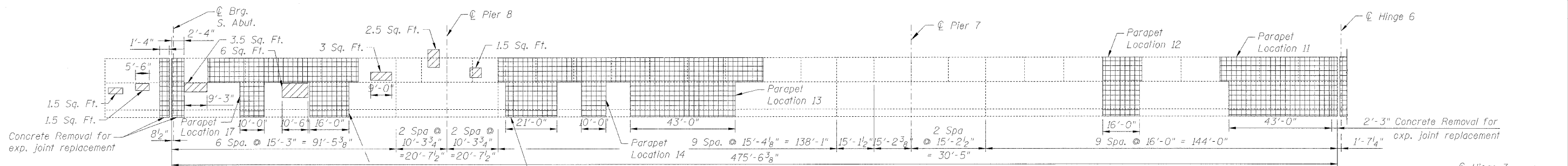
DESIGNED B. Sauter
CHECKED E. Mroczek
DRAWN R. Danley
CHECKED B. Sauter

SUPERSTRUCTURE REPAIRS IV
S.N. 016-0540

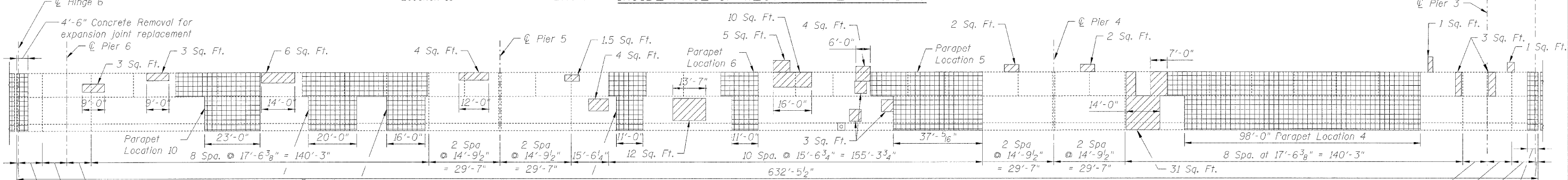
SHEET NO. S-10	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S-27 SHEETS	2697	142 B-1-I	COOK	48	24
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60D89					

1 Entire Sheet Revised 4/08/09 E.K.M.

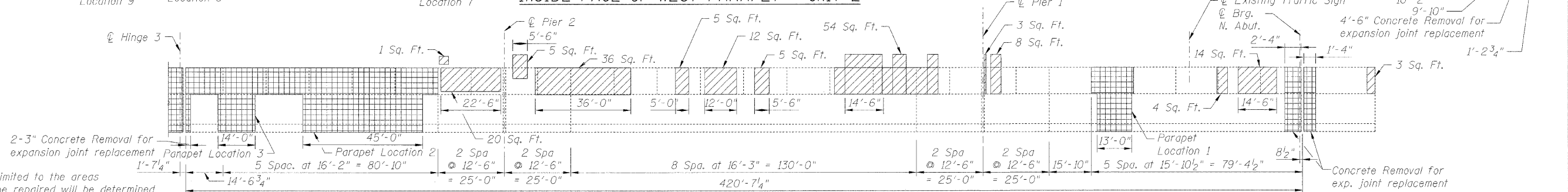
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



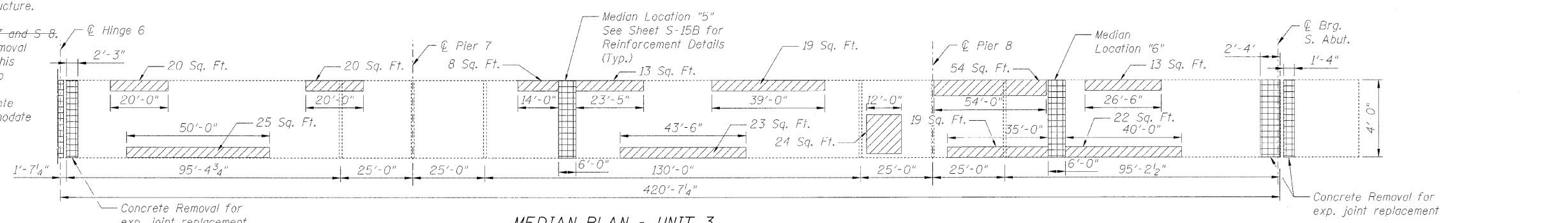
INSIDE FACE OF WEST PARAPET - UNIT 3



INSIDE FACE OF WEST PARAPET - UNIT 2



INSIDE FACE OF WEST PARAPET - UNIT 1



MEDIAN PLAN - UNIT 3
BILL OF MATERIAL

- LEGEND:**
- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
 - Concrete Removal and Concrete Superstructure

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	610
Protective Coat	Sq. Yd.	299
Concrete Removal	Cu. Yd.	61.6

SUPERSTRUCTURE REPAIRS V
S.N. 016-0540

- NOTES:**
- Repairs shall include but not limited to the areas shown. The actual areas to be repaired will be determined by engineer - at the time of construction.
 - Removal and reinstallation of railing and related hardware and anchors, if necessary to perform concrete repairs or concrete removal, shall be included respectively with Structural Repair of Concrete and Concrete Superstructure. See Sheet S-15C for Existing Railing Details.
 - Quantities for Concrete Removal shown on sheets S-7 and S-8.
 - Contractor shall use extreme care in the concrete removal operation. Any spalling or rebar damage caused by this operation will be repaired by the Contractor and at no additional cost to the Department.
 - Quantities in the Bill of Material for Structural Concrete Repairs are 10% greater than areas shown to accommodate for degradation since last delamination survey.
 - Vertical scale for parapets is ten times greater than horizontal scale to show defects.
 - For Parapet replacement details and Concrete Superstructure quantities see Sheet S-15A.

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

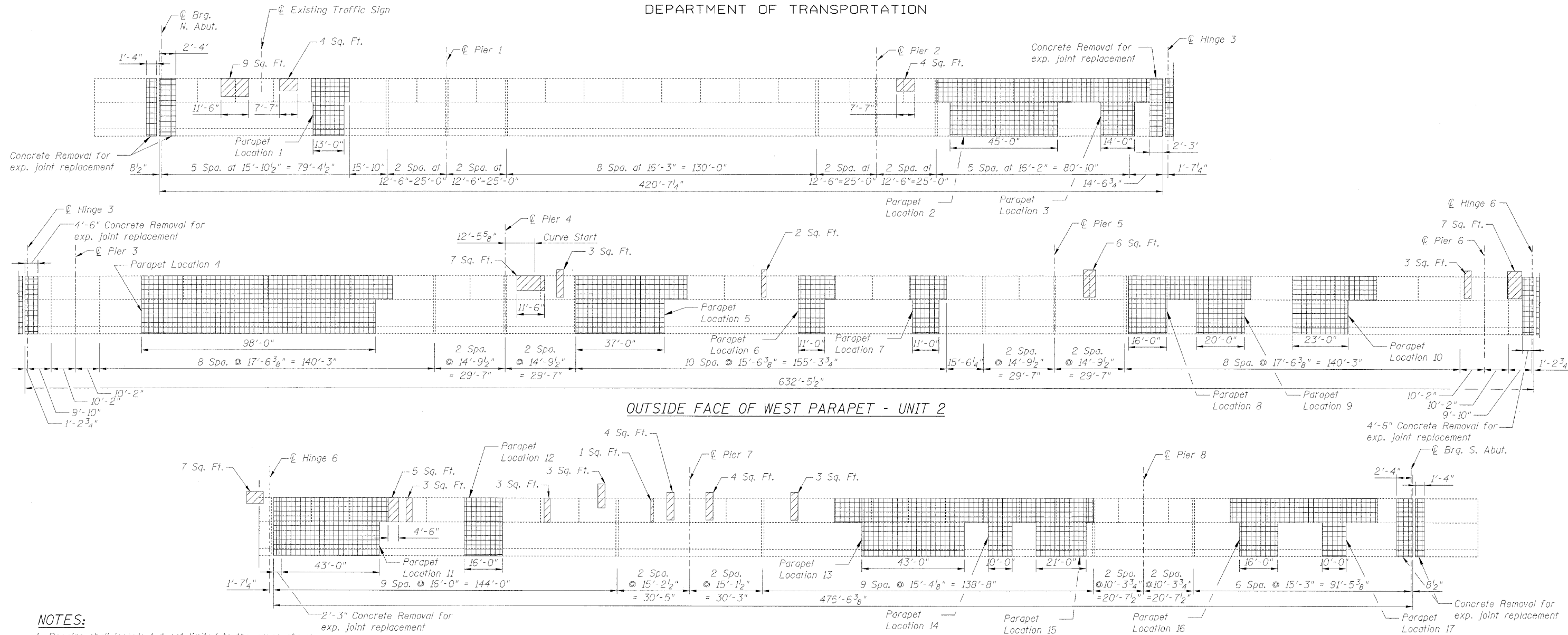
Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

1 Entire Sheet Revised 4/08/09 E.K.M.

SHEET NO. S-11	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	25
S-27 SHEETS			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

4/8/2009 rdanley mt:\pro\3329\3329_30\design\structural\concrete_repairs\3329_30_11\Deck_Repairs5-REV 1.sht

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NOTES:

- Repairs shall include but not limited to the areas shown. The actual areas to be repaired will be determined by engineer - at the time of construction.
- Removal and reinstallation of railing and related hardware and anchors, if necessary to perform concrete repairs or concrete removal, shall be included respectively with Structural Repair of Concrete and Concrete Superstructure. See Sheet S-15C for Existing Railing Details.
- Quantities for Concrete Removal shown on sheet S-11.
- Contractor shall use extreme care in the concrete removal operation. Any spalling or rebar damage caused by this operation will be repaired by the Contractor and at no additional cost to the Department.
- Quantities in the Bill of Material for Structural Concrete Repairs are 10% greater than areas shown to accommodate for degradation since last delamination survey.
- Vertical scale for parapets is ten times greater than horizontal scale to show defects.
- For Parapet replacement details and Concrete Superstructure quantities see Sheet S-15A.

OUTSIDE FACE OF WEST PARAPET - UNIT 3

LEGEND:

- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
- Concrete Removal and Concrete Superstructure

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	86
Protective Coat	Sq. Yd.	18

**SUPERSTRUCTURE REPAIRS VI
S.N. 016-0540**

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

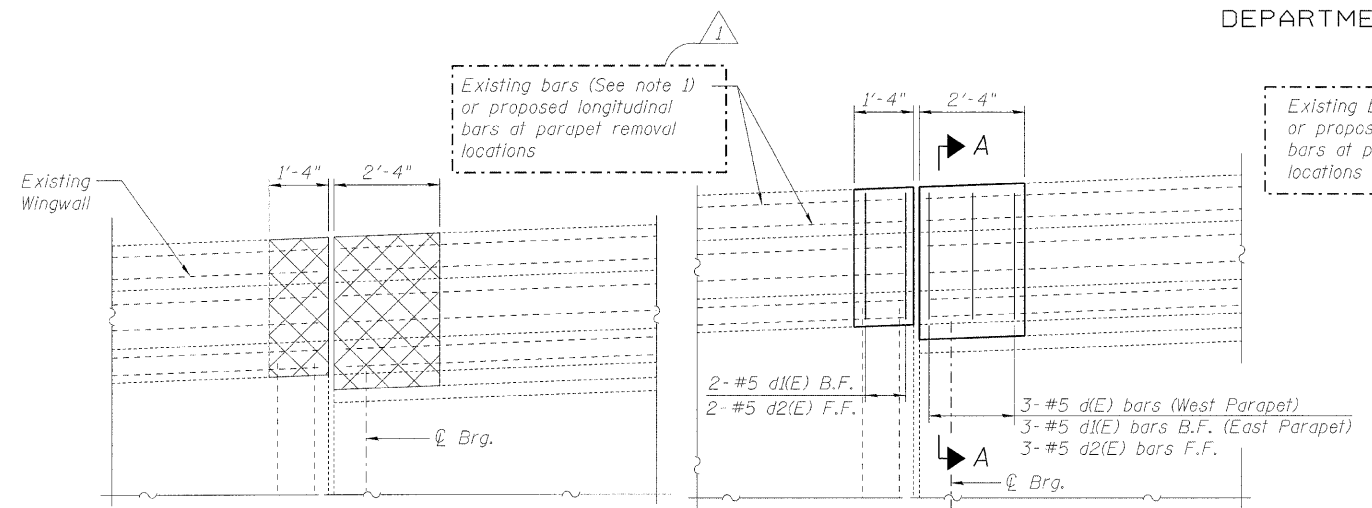
Giorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@giorba.com

SHEET NO. S-12	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	26
S-27 SHEETS			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

Entire Sheet Revised 4/08/09 E.K.M.

4/8/2009 4:08 PM C:\Users\rdanley\Documents\3329_30\design\structural\ced\sh\concrete_repairs\3329_30_12-Deck_Repairs6-REV.Lgh

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

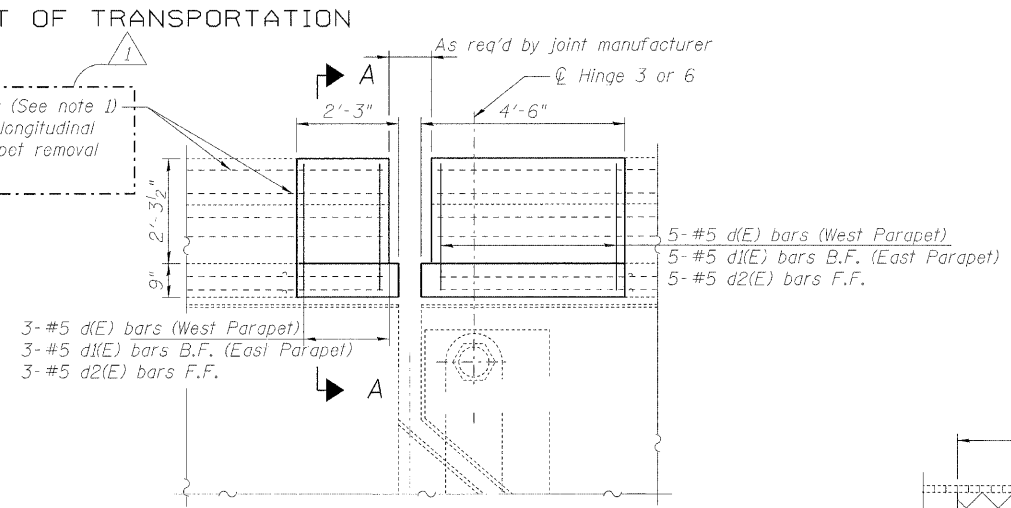


PARAPET REMOVAL AT ABUTMENTS

Southwest Wingwall shown
(Three other locations similar)

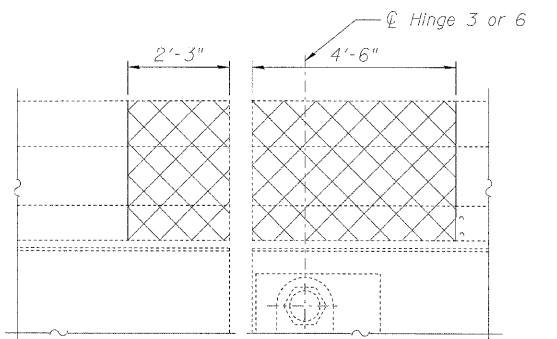
PROPOSED PARAPET ELEVATION AT ABUTMENTS

Southwest Wingwall shown
(Three other locations similar)

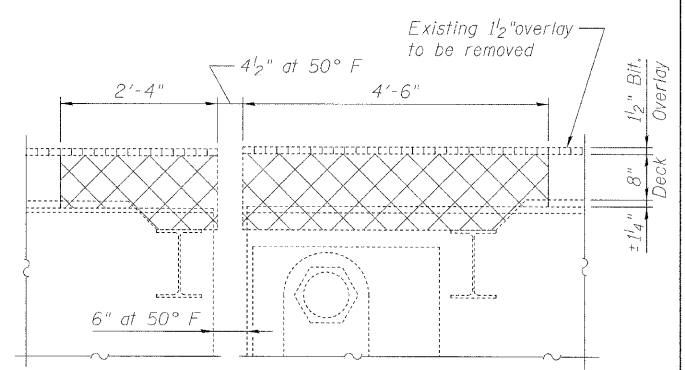


PROPOSED PARAPET ELEVATION AT HINGES

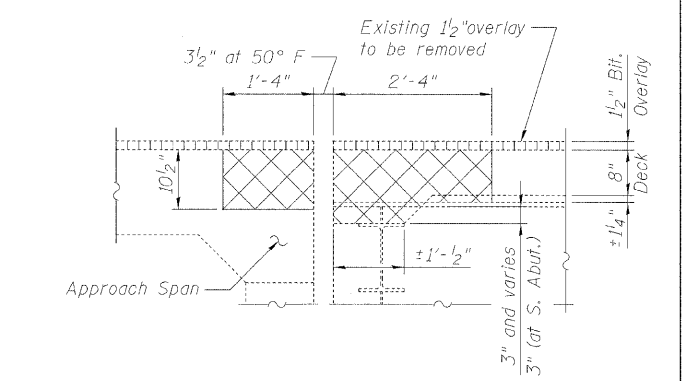
Hinge 3 Northside shown
(Three other locations similar)



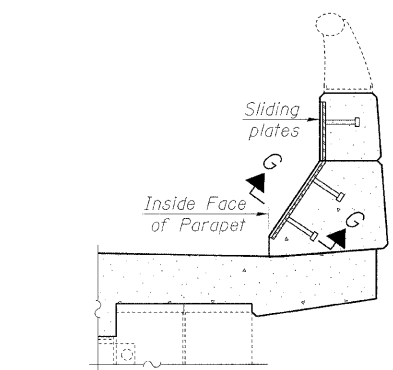
PARAPET REMOVAL AT HINGES



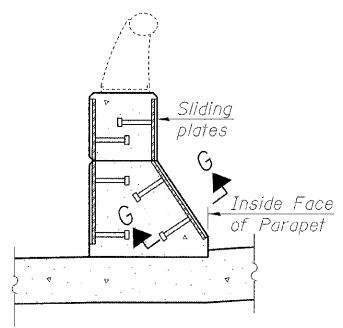
CONCRETE REMOVAL AT HINGES



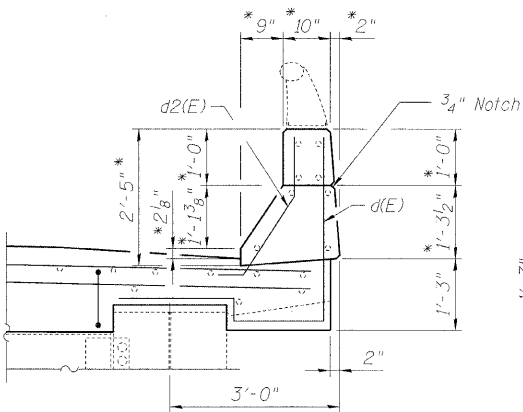
CONCRETE REMOVAL AT ABUTMENTS



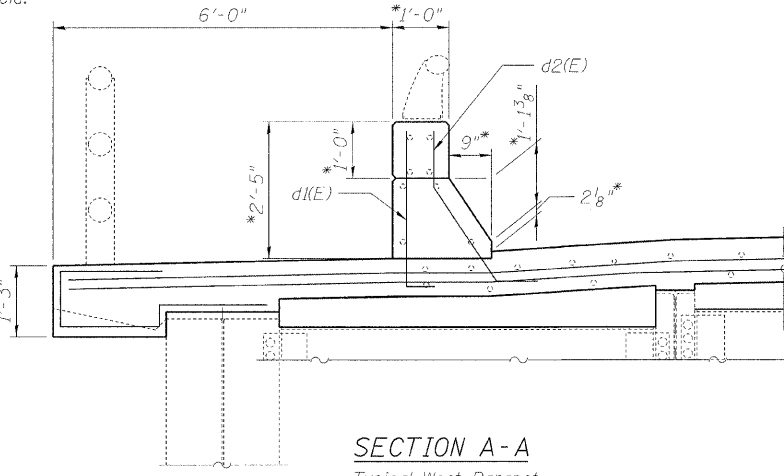
SECTION THRU WEST PARAPET



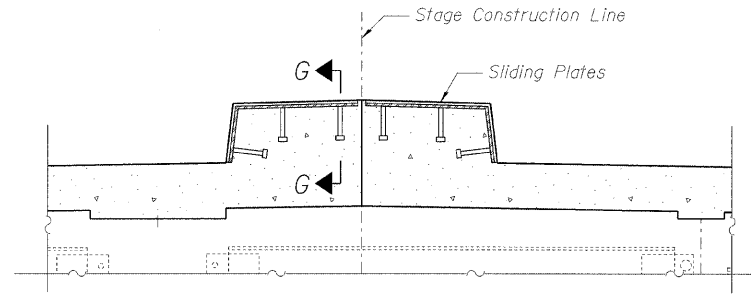
SECTION THRU EAST PARAPET



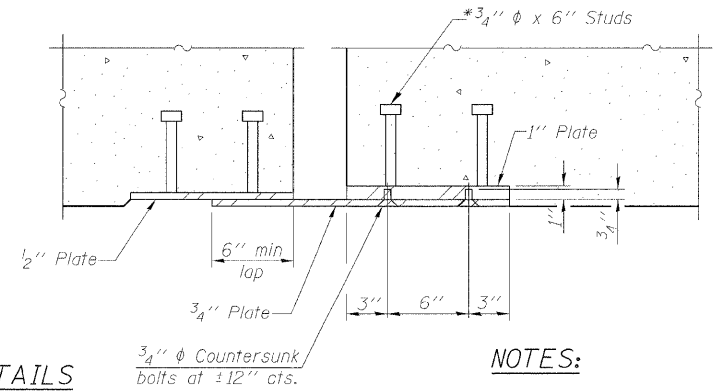
SECTION A-A
Typical East Parapet



SECTION A-A
Typical West Parapet



SECTION THRU MEDIAN



SECTION G-G

STEEL PLATE DETAILS
Included in the Modular Expansion Joint, 9"

NOTES:

- Existing vertical reinforcement protruding from the wingwall and horizontal reinforcement protruding from the existing parapet to remain in place. The existing reinforcement shall be sandblasted clean, straightened and incorporated into the new construction.
- Work this sheet with sheet S-13 and S-14.
- Quantities for concrete removal shown on sheet S-7 & S-8.
- Quantities for concrete superstructure and rebar shown on sheet S-13.

LEGEND:
Concrete Removal

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

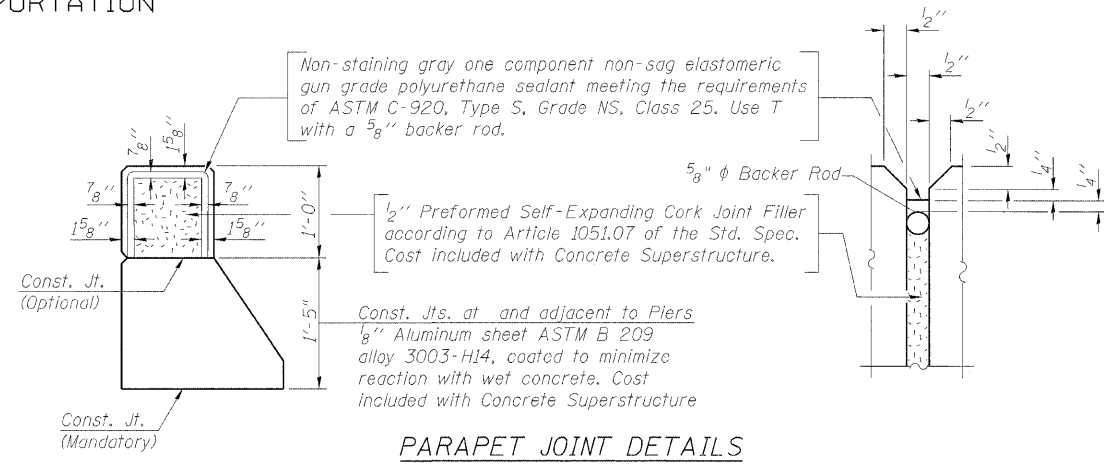
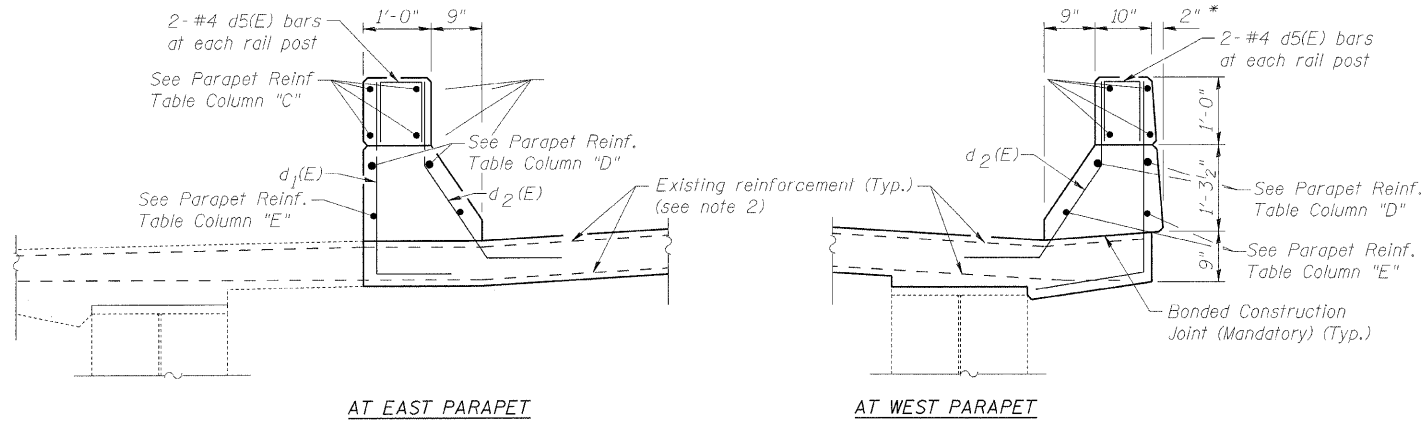
Revised 4/08/09 E.K.M.

EXPANSION JOINT REPLACEMENT III
S.N. 016-0540

SHEET NO. S-15	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	29
S-27 SHEETS			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

r:danley 4/8/2009 4:15:30 PM Exp Joint Replacement III Rev 1.sht 4:15:30 PM Exp Joint Replacement III Rev 1.sht 4:15:30 PM Exp Joint Replacement III Rev 1.sht

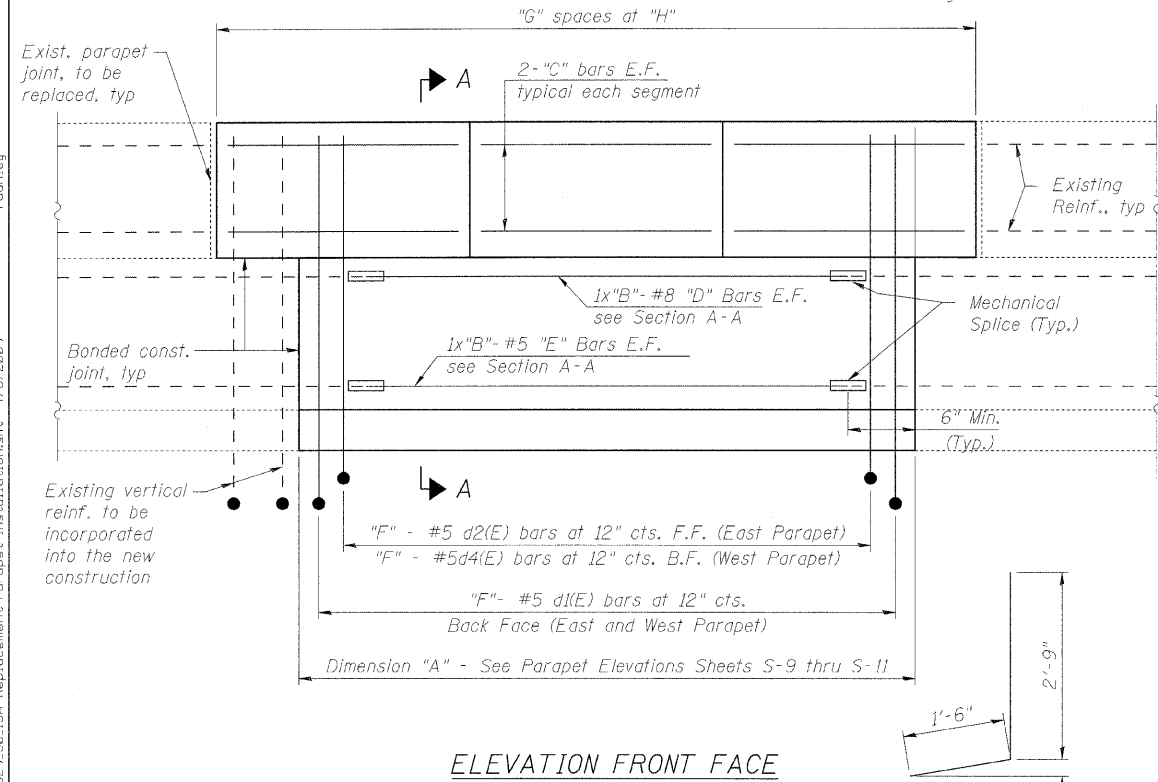
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION A-A * Parapet dimensions should match existing and should be verified (Typ.)

PARAPET REINFORCEMENT TABLE

BILL OF MATERIAL



Parapet Location	A	B	C	D	E	F	G	H
1	13.00'	1	e1(E)	e10(E)	e11(E)	14	1	15'-10 1/2"
2	45.00'	2	e1(E)	e12(E)	e13(E)	46	5	16'-2"
3	14.00'	1	e2(E)	e14(E)	e15(E)	15	1	14'-6 3/4"
4	98.00'	3	e3(E)	e16(E)	e17(E)	99	6	17'-6 3/8"
5	37.00'	2	e4(E)	e18(E)	e19(E)	38	3	15'-6 3/8"
6	11.00'	1	e4(E)	e20(E)	e21(E)	12	1	15'-6 3/8"
7	11.00'	1	e4(E)	e20(E)	e21(E)	12	1	15'-6 3/8"
8	16.00'	1	e3(E)	e24(E)	e25(E)	17	1	17'-6 3/8"
9	20.00'	1	e3(E)	e26(E)	e27(E)	21	2	17'-6 3/8"
10	23.00'	1	e3(E)	e50(E)	e51(E)	24	2	17'-6 3/8"
11	43.00'	2	e1(E)	e12(E)	e13(E)	44	3	16'-0"
12	16.00'	1	e1(E)	e24(E)	e25(E)	17	1	16'-0"
13	43.00'	2	e4(E)	e30(E)	e31(E)	44	4	15'-4 1/8"
14	10.00'	1	e4(E)	e32(E)	e33(E)	11	1	15'-4 1/8"
15	21.00'	1	e4(E)	e34(E)	e35(E)	22	2	15'-4 1/8"
16	16.00'	1	e4(E)	e24(E)	e25(E)	17	2	15'-3"
17	10.00'	1	e4(E)	e32(E)	e33(E)	11	2	15'-3"
20	55.00'	2	e(E)	e36(E)	e37(E)	56	5	15'-10 1/2"
21	24.00'	1	e1(E)	e28(E)	e29(E)	25	2	16'-3"
22	6.58'	1	e5(E)	e38(E)	e39(E)	8	1	11'-0 3/4"
23	10.17'	1	e6(E)	e40(E)	e41(E)	11	1	10'-2"
24	10.17'	1	e6(E)	e40(E)	e41(E)	11	1	10'-2"
25	53.00'	2	e3(E)	e42(E)	e43(E)	54	3	17'-6 3/8"
26	31.00'	2	e4(E)	e44(E)	e45(E)	32	3	15'-6 3/8"
27	10.00'	1	e3(E)	e32(E)	e33(E)	11	1	17'-6 3/8"
28	15.00'	1	e3(E)	e46(E)	e47(E)	16	2	17'-6 3/8"
29	19.00'	1	e3(E)	e48(E)	e49(E)	20	2	17'-6 3/8"
30	23.00'	1	e1(E)	e50(E)	e51(E)	24	3	16'-0"
31	17.00'	1	e1(E)	e52(E)	e53(E)	18	2	16'-0"
32	22.00'	1	e4(E)	e54(E)	e55(E)	23	2	15'-6 1/8"
33	32.00'	2	e4(E)	e56(E)	e57(E)	33	3	15'-4 7/8"

Bar	No.	Size	Length (ft)	Shape
d1(E)	342	# 5	3'-9"	J
d2(E)	806	# 5	3'-5"	J
d4(E)	464	# 5	4'-3"	J
d5(E)	194	# 5	2'-2"	□
e(E)	24	# 5	15'-6"	—
e1(E)	64	# 5	15'-9"	—
e2(E)	4	# 5	14'-3"	—
e3(E)	76	# 5	17'-2"	—
e4(E)	96	# 5	15'-0"	—
e5(E)	4	# 5	9'-6"	—
e6(E)	8	# 5	9'-10"	—
e10(E)	2	# 8	12'-0"	—
e11(E)	2	# 5	12'-0"	—
e12(E)	8	# 8	24'-3"	—
e13(E)	8	# 5	23'-1"	—
e14(E)	2	# 8	13'-0"	—
e15(E)	2	# 5	13'-0"	—
e16(E)	6	# 8	35'-4"	—
e17(E)	6	# 5	33'-9"	—
e18(E)	4	# 8	20'-3"	—
e19(E)	4	# 5	19'-1"	—
e20(E)	4	# 8	10'-0"	—
e21(E)	4	# 5	10'-0"	—
e24(E)	6	# 8	15'-0"	—
e25(E)	6	# 5	15'-0"	—
e26(E)	2	# 8	19'-0"	—
e27(E)	2	# 5	19'-0"	—
e28(E)	2	# 8	23'-0"	—
e29(E)	2	# 5	23'-0"	—
e30(E)	4	# 8	23'-3"	—
e31(E)	4	# 5	22'-1"	—
e32(E)	6	# 8	9'-0"	—
e33(E)	6	# 5	9'-0"	—
e34(E)	2	# 8	20'-0"	—
e35(E)	2	# 5	20'-0"	—
e36(E)	4	# 8	29'-3"	—
e37(E)	4	# 5	28'-1"	—
e38(E)	2	# 8	10'-5"	—

Bar	No.	Size	Length (ft)	Shape	
e39(E)	2	# 5	10'-5"	—	
e40(E)	4	# 8	9'-2"	—	
e41(E)	4	# 5	9'-2"	—	
e42(E)	4	# 8	28'-3"	—	
e43(E)	4	# 5	27'-1"	—	
e44(E)	4	# 8	17'-3"	—	
e45(E)	4	# 5	16'-1"	—	
e46(E)	2	# 8	14'-0"	—	
e47(E)	2	# 5	14'-0"	—	
e48(E)	2	# 8	18'-0"	—	
e49(E)	2	# 5	18'-0"	—	
e50(E)	4	# 8	22'-0"	—	
e51(E)	4	# 5	22'-0"	—	
e52(E)	2	# 8	16'-0"	—	
e53(E)	2	# 5	16'-0"	—	
e54(E)	2	# 8	21'-0"	—	
e55(E)	2	# 5	21'-0"	—	
e56(E)	4	# 8	17'-9"	—	
e57(E)	4	# 5	16'-7"	—	
Reinforcement Bars				Lb.	17,050
Epoxy Coated					
Conc. Superstructure				Cu. Yd.	103.8
Mechanical Splice				Each	256

- NOTES:
- Parapet locations shown on sheets S-9 through S-12.
 - The existing reinforcement that will be kept in place shall be sandblasted clean, straightened, and incorporated into the new construction.
 - Bar bending details shown on sheet S-15.
 - Bars indicated thus 1x2 #5 etc. indicates 1 line of bars with 2 lengths per line.

Lengths of "e" bars are determined based on a 2" clear cover at the upper portion of the parapet and on a Mechanical Splice at 6 inches from the face of the existing parapet.

Bar dimension to be modified in field if parapet removal areas are altered due to conditions

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

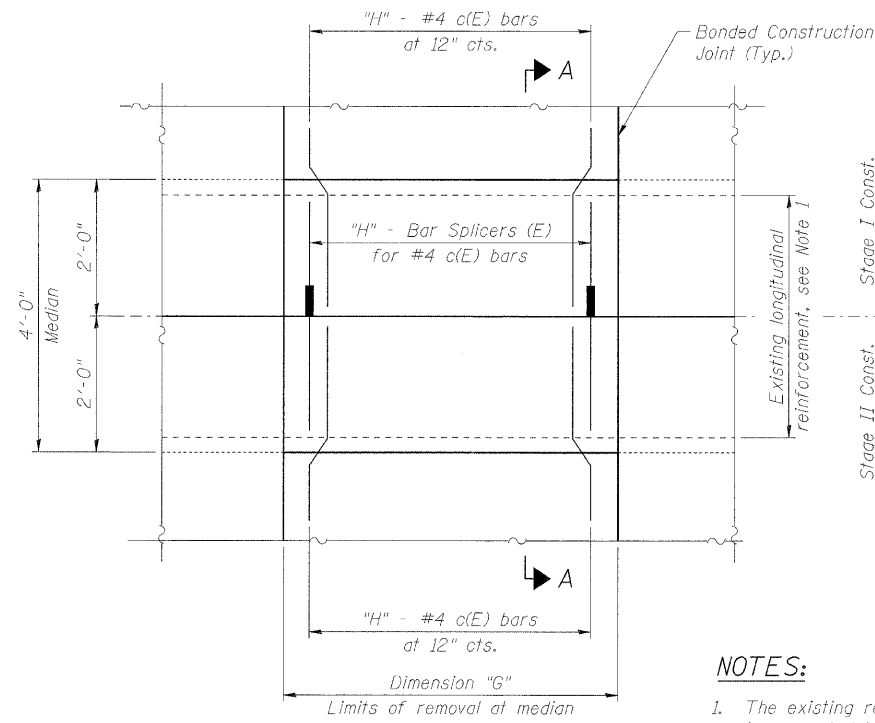
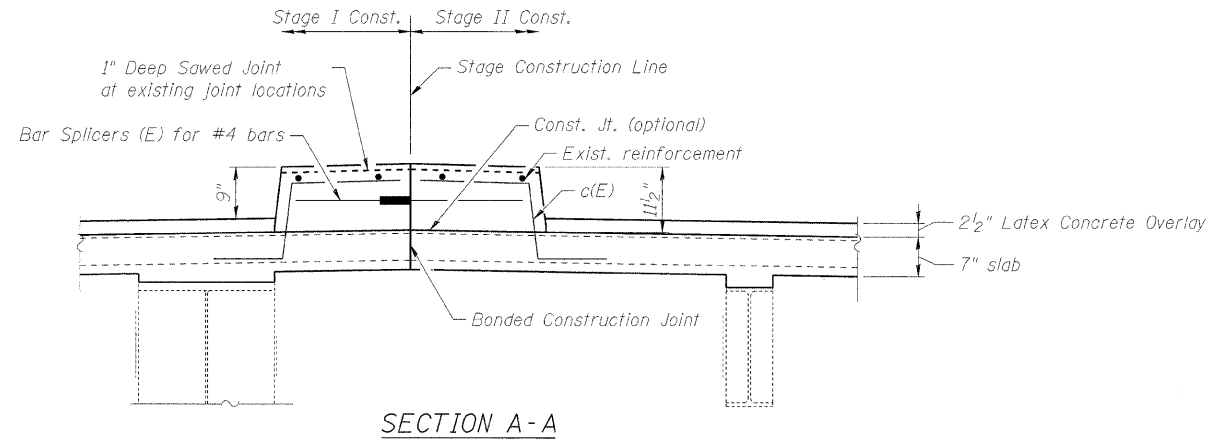
Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

SHEET NO. S-15A	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	29A
S-27 SHEETS			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

Added Sheet 4/08/09 E.K.M.

PARAPET REPLACEMENT DETAILS
S.N. 016-0540

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



TYPICAL MEDIAN PLAN

MEDIAN REINFORCEMENT TABLE

Median Location	"G"	"H"
1	6'-0"	7
2	13'-0"	14
3	8'-0"	9
4	7'-0"	8
5	6'-0"	7
6	6'-0"	7

NOTES:

- The existing reinforcement shall be sandblasted clean, straightened and incorporated into the new construction.
- Bar bending detail shown on sheet S-14.

BILL OF MATERIAL

Bar	No.	Size	Length (ft)	Shape
c(E)	104	#4	2'-10"	
Concrete Superstructure			Cu. Yd.	6.5
Reinforcement Bars, Epoxy Coated			Pound	200
Bar Splicers			Each	52

MEDIAN REPLACEMENT DETAILS

S.N. 016-0540

DESIGNED <i>B. Sauter</i>
CHECKED <i>E. Mroczek</i>
DRAWN <i>R. Danley</i>
CHECKED <i>B. Sauter</i>

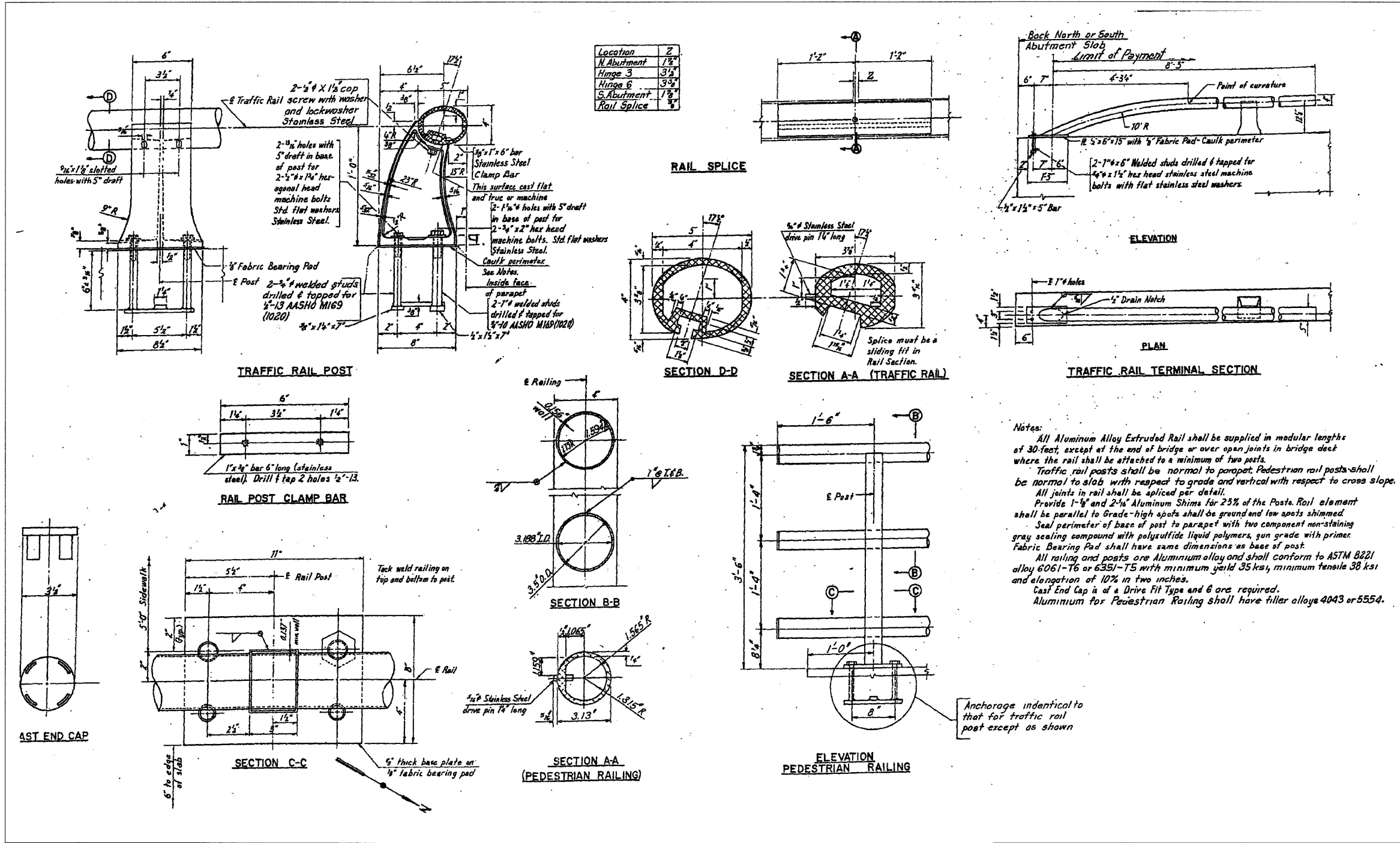


Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

SHEET NO. S-15B S-27 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	29B
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 60D89		

Added sheet 4/08/09 E.K.M.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



Notes:

All Aluminum Alloy Extruded Rail shall be supplied in modular lengths of 30-feet, except at the end of bridge or over open joints in bridge deck where the rail shall be attached to a minimum of two posts.

Traffic rail posts shall be normal to parapet. Pedestrian rail posts shall be normal to slab with respect to grade and vertical with respect to cross slope.

All joints in rail shall be spliced per detail.

Provide 1-1/8" and 2-1/8" Aluminum Shims for 23% of the Posts. Rail element shall be parallel to Grade-high spots shall be ground and low spots shimmed.

Seal perimeter of base of post to parapet with two component non-staining gray sealing compound with polysulfide liquid polymers, gun grade with primer.

Fabric Bearing Pad shall have same dimensions as base of post.

All railing and posts are Aluminum alloy and shall conform to ASTM B821 alloy 6061-T6 or 6351-T5 with minimum yield 35 ksi, minimum tensile 38 ksi and elongation of 10% in two inches.

Cast End Cap is of a Drive Fit Type and 6 are required.

Aluminum for Pedestrian Railing shall have filler alloys 4043 or 5554.

NOTE:

In lieu of reusing the existing cast-in-place anchor device shown, the Contractor has the option of drilling and setting stainless steel anchor rods of the same diameter and grade as the specified cap screws according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications. Substitutions shall be provided at no additional cost.

FROM RECORD PLANS
FOR INFORMATION ONLY

EXISTING RAILING DETAILS
S.N. 016-0540

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter

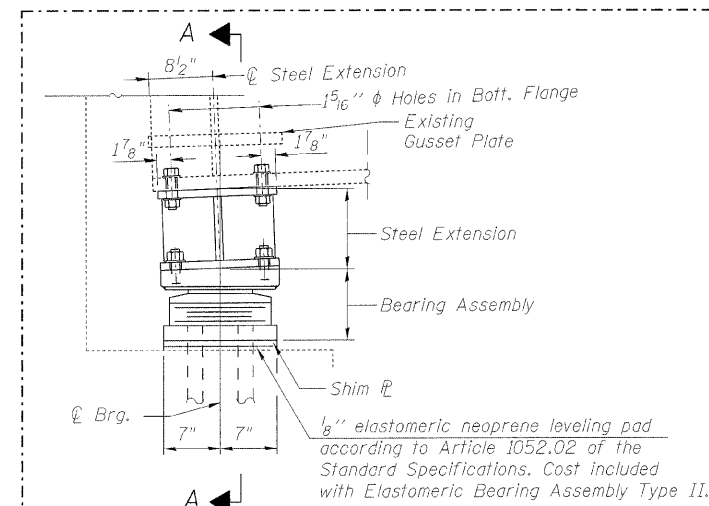
CGI Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorga.com

SHEET NO. S-15C	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2697	142 B-1-I	COOK	48	29C
S-27 SHEETS			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

Added Sheet 4/08/09 E.K.M.

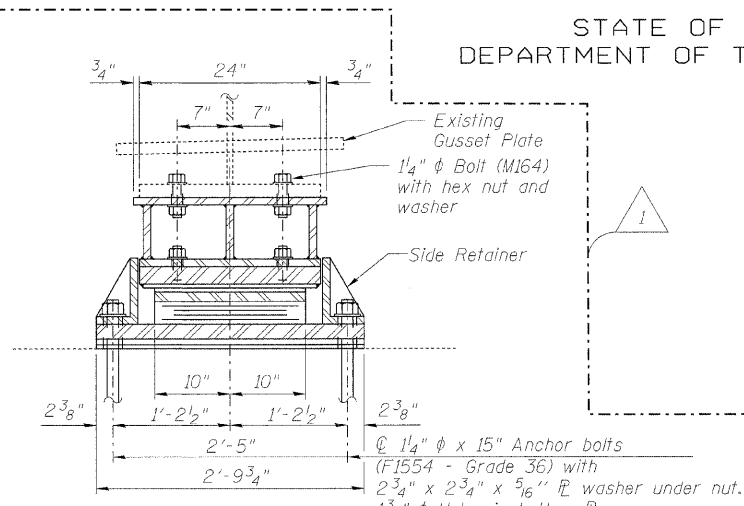
ns:\proj\3329\3329_30\design\structural\ced\sh\concrete repairs\3329_30_15C Railing reinstalation details.dwg 4/8/2009 r-danley

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

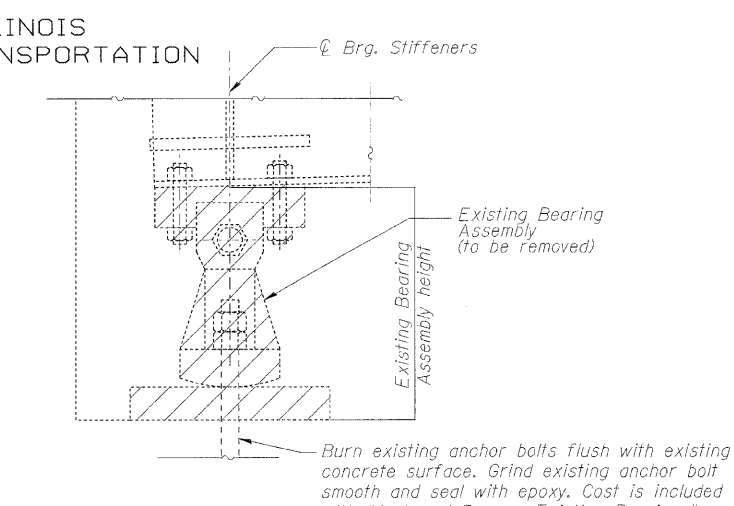


ELEVATION AT N. ABUT.

TYPE II ELASTOMERIC EXP. BRG.



SECTION A-A



EXISTING BEARING REMOVAL DETAIL

Girder	Exist. Brg. Assembly Height (survey) *	H**
A	21"	7 3/4"
B	21 3/8"	7 3/4"
C	20 5/8"	7 1/8"
D	20 1/8"	7 3/4"
E	20 3/8"	7 1/8"

* Distances to be verified in the field prior to ordering any material.

** Adjust "H" accordingly if verified exist. bearing assembly height differs from the height in the table.

NOTES:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.

The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

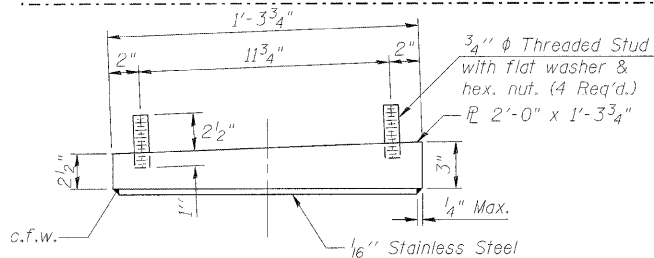
Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

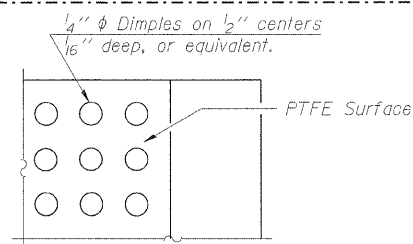
Prior to ordering any material the Contractor shall verify in the field all bearing height and shim thickness dimensions. Weight of steel extensions include in the cost of Furnishing and Erecting Structural Steel.

JACKING AND CRIBBING NOTES:

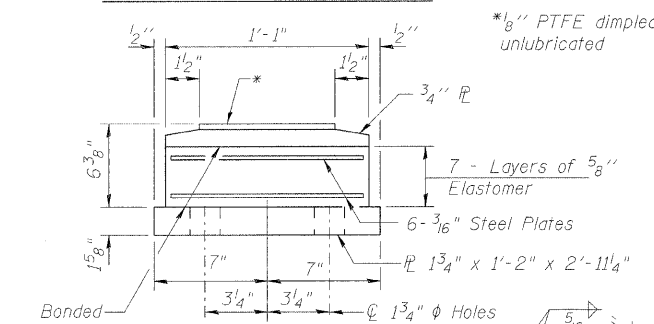
- The Contractor shall submit for approval by the Engineer, plans for jacking prior to commencing any work at the bearings.
- The maximum differential lift between beams at any one substructure unit shall be limited to 1/8".
- Traffic shall be removed from the portion of the structure to be jacked prior to commencing jacking operations. Traffic shall be kept off that portion of the structure during the entire bearing replacement operation. The maximum reaction per bearing is 150 K at the N. Abut. for stage constr. Minimum jack capacity is 150 tons.
- The new bearing shall be in place and the jacks lowered prior to allowing traffic back on that portion of the structure.



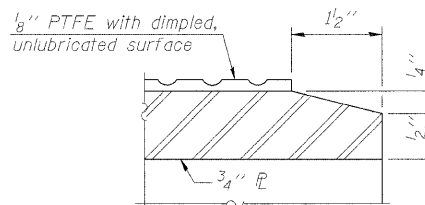
TOP BEARING ASSEMBLY



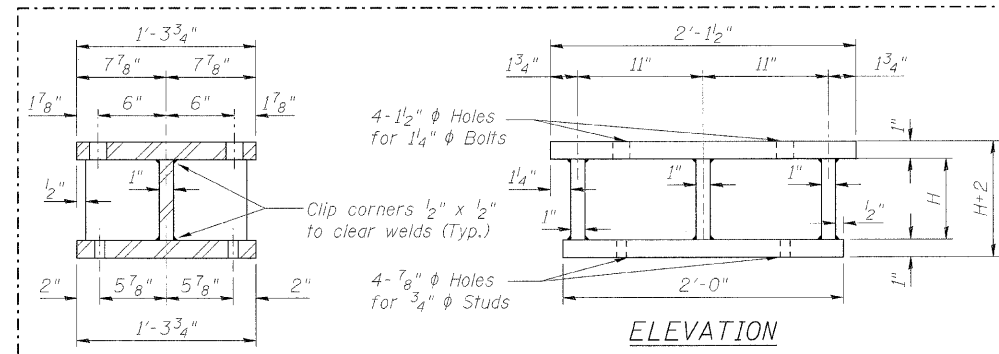
PLAN-PTFE SURFACE



BOTTOM BEARING ASSEMBLY

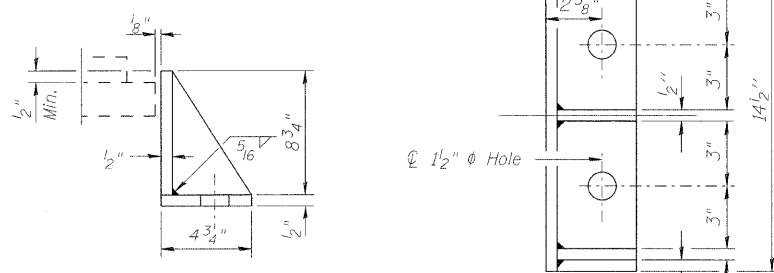


SECTION THRU PTFE



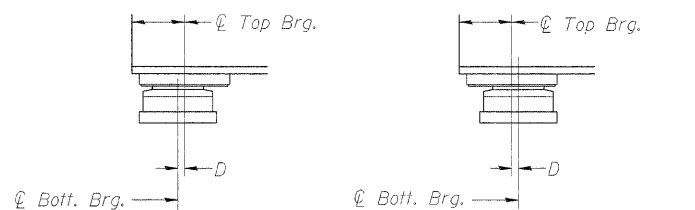
ELEVATION

SECTION D-D



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



BELOW 50°F.

ABOVE 50°F.

(Move bott. brg. away from fixed brg.) (Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

REACTION TABLE

	North Abutment
R _{DI} (k)	105.7
R _{LI} (k)	85.0
R _T (k)	23.0
R _{TOTAL} (k)	213.7

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	5
Jack and Remove Existing Bearings	Each	5
Anchor Bolts 1 1/4" φ	Each	20
Furnishing and Erecting Structural Steel	Pound	1,820

NORTH ABUTMENT BEARINGS
S.N. 016-0540

SHEET NO. S-16	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S-27 SHEETS	2697	142 B-1-1	COOK	48	30
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
			CONTRACT NO. 60D89		

Revised 4/08/09 E.K.M.



4/8/2009 4:16 PM North Abutment Bearing-1-REV Light

DESIGNED	B. Sauter
CHECKED	E. Mroczek
DRAWN	R. Danley
CHECKED	B. Sauter



Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

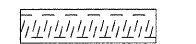
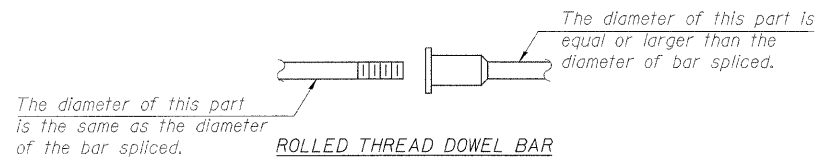
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity = $1.25 \times f_y \times A_s$
(Tension in kips)
 - ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_s$
(Tension in kips)
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_s = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

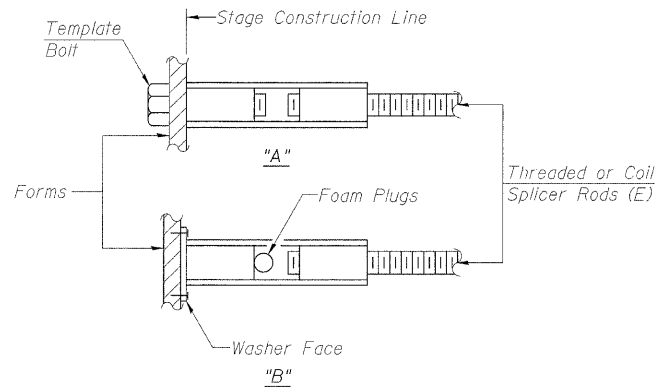
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-2"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



WELDED SECTIONS

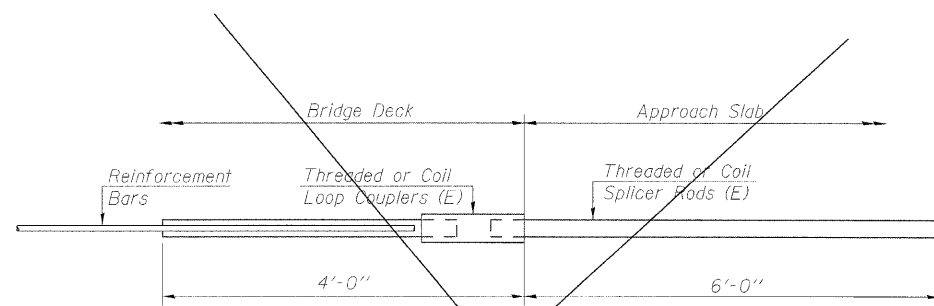
BAR SPLICER ASSEMBLY ALTERNATIVES

**Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



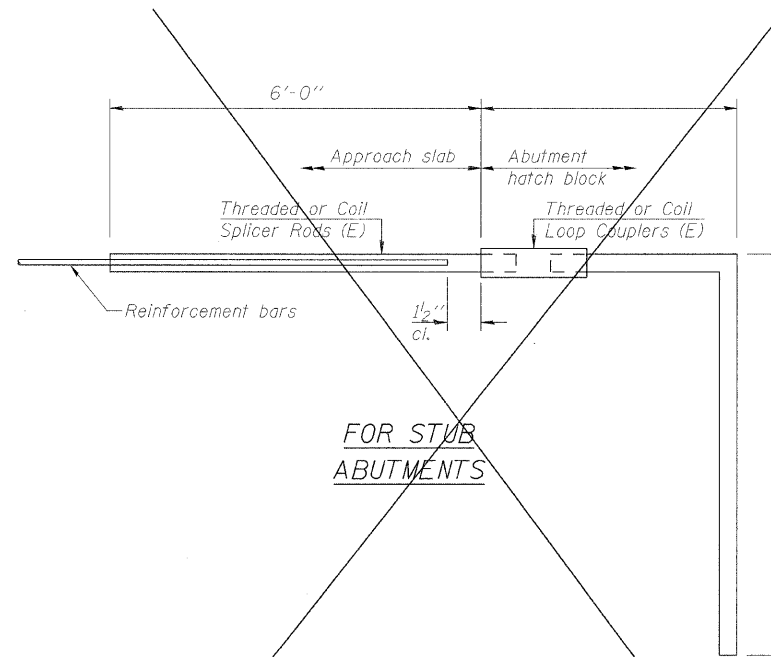
INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



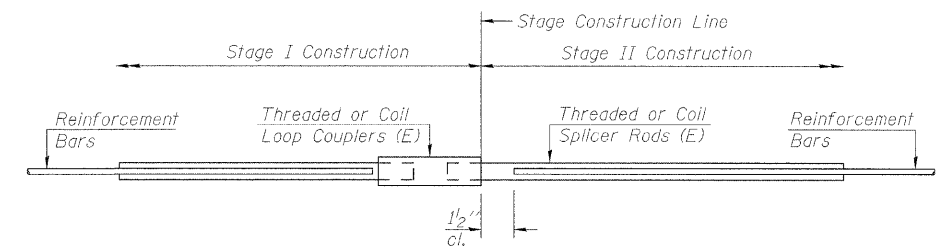
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required =



FOR STUB ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required =



STANDARD

Bar Size	No. Assemblies Required	Location
#6	56	Deck
#7	8	Deck
#1	94	Median

BAR SPLICER DETAILS
S.N. 016-0540

DESIGNED B. Sauter
CHECKED E. Mroczek
DRAWN R. Danley
CHECKED B. Sauter

Ciorba Group, Inc.
CONSULTING ENGINEERS
5507 North Cumberland Avenue, Suite 402 Chicago, Illinois 60656
Tel. 773.775.4009 Fax 773.775.4014 Email chicago@ciorba.com

BSD-1

10-1-08

1 Revised 4/08/09 E.K.M.

SHEET NO. S-24	F.A.U. RTE. 2697	SECTION 142 B-1-I	COUNTY COOK	TOTAL SHEETS 48	SHEET NO. 38
S-27 SHEETS			CONTRACT NO. 60D89		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

4/8/2009 rdenley n:\pro\3329\3329_30\design\structural\ced\sh\concrete repairs\3329_30_24 Bar Splicer Details Rev1.dwg