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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
**PLANS FOR PROPOSED
FEDERAL AID HIGHWAY**

PLAN 1" = 50'
PROFILE HORIZ. 1" = 50'
PROFILE VERT. 1" = 5'
CROSS SECTIONS 1" = 10' HORIZ.
1" = 2' VERT.

**F.A.U. ROUTE 1453 (CERMAK ROAD)
WIDENING & RESURFACING AND BRIDGE REHABILITATION
PROJ. STPM-6003(971) : ILL-43 TO WOLF ROAD
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89
JOB NO.: C-91-435-89
COOK COUNTY**

VILLAGE OF NORTH RIVERSIDE
VILLAGE OF WESTCHESTER
VILLAGE OF BROADVIEW
VILLAGE OF HILLSIDE
VILLAGE OF FOREST PARK

| FA. RTE. | MUNICIPAL SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|----------|-------------------|--------|--------------|-----------|
| 1453 | * | COOK | 233 | 1 |

551 WRS & 551 (B, XB, VB & VB-1) BR-89
C-91-435-89



LOCATION OF SECTION INDICATED THIS: —

FAU ROUTE 1453 OVER 25th. AVE.
STA. 271+83.0 S.B.I. RTE.55-SECT. 551-VB BUILT IN 1961 STRUCTURE NO. 016-0632
SUBSTRUCTURE 1-PILE BENT ABUTMENTS AND MULTIPLE COLUMN PIERS
SUPER STRUCTURE 13-SPAN STEEL BEAMS
2 059'-5" 1 076'-0"

REPAIR AND OVERLAY CONCRETE DECK, REPAIR PIERS & SLOPEWALLS.
TRAFFIC TO BE MAINTAINED UTILIZING STAGE CONSTRUCTION.

FAU ROUTE 1453 OVER I.H.B.R.R. & GARDNER RD.
STA. 282+73.2 S.B.I. RTE.55-SECT. 551-VB BUILT IN 1961 STRUCTURE NO. 016-0631
SUBSTRUCTURE 1-PILE BENT ABUTMENTS AND MULTIPLE COLUMN PIERS
SUPER STRUCTURE 110-SPAN STEEL BEAMS
2 070'-9" 1 059'-1" 1 030'-3"
2 047'-3" 2 054'-1" 2 069'-3"

REPAIR AND OVERLAY CONCRETE DECK, REPAIR PIERS & SLOPEWALLS.
TRAFFIC TO BE MAINTAINED UTILIZING STAGE CONSTRUCTION.

FAU ROUTE 1453 OVER ADDISON CREEK
STA. 200+39.4 S.B.I. RTE.55-SECT. 551-Y BUILT IN 1956 STRUCTURE NO. 016-0633
SUBSTRUCTURE 1-PILE BENT ABUTMENTS AND PIERS
SUPER STRUCTURE 13-SPAN R.C. DECK SLAB BRIDGE
2 030'-9" 1 038'-6"

SUPERSTRUCTURE TO BE PARTIALLY REMOVED AND WIDENED, REPAIR AND OVERLAY CONCRETE DECK.
TRAFFIC TO BE MAINTAINED UTILIZING STAGE CONSTRUCTION.

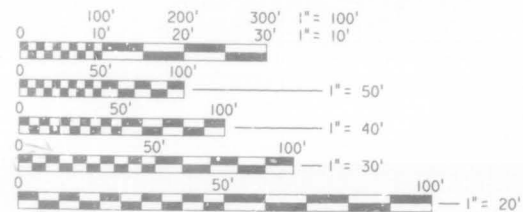
FAU ROUTE 1453 OVER DESPLAINES RIVER
STA. 377+81.4 S.B.I. RTE.55-SECT. 551-XB BUILT IN 1958 STRUCTURE NO. 016-0634
SUBSTRUCTURE 1-P.C. CLOSED ABUTMENTS AND SOLID R.C. PIERS
SUPER STRUCTURE 14-SPAN R.C. GIRDER
4 061'-2"

SUPERSTRUCTURE TO BE TOTALLY REMOVED AND REPLACED WITH 42" P.P.C. I-BEAMS.
TOP PORTION OF ABUTMENTS AND PIERS TO BE REMOVED AND REPLACED.
TRAFFIC TO BE MAINTAINED UTILIZING STAGE CONSTRUCTION.

PROJECT ILL-43 TO WOLF ROAD
ENDS STA. 441+00.00

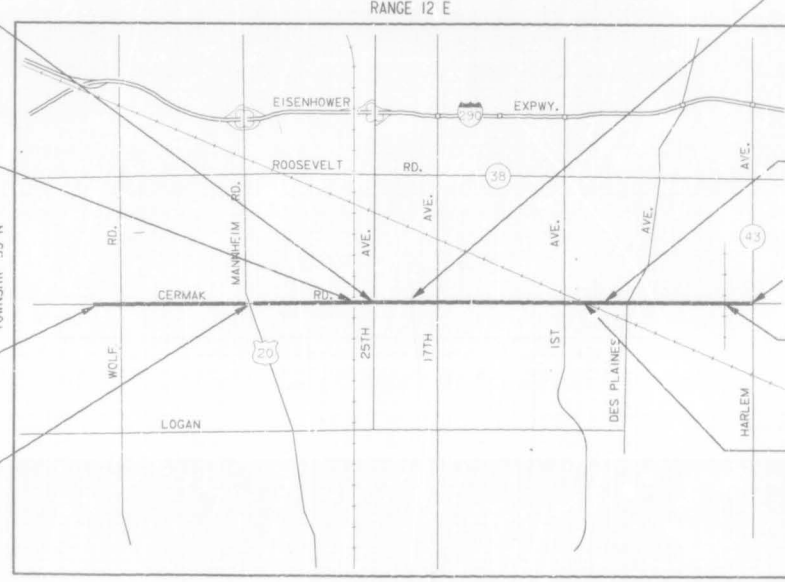
OMISSION
STA. 430+17.6 - STA. 430+33.6

OMISSION
STA. 371+40 - STA. 372+25



PROJECT ILL-43 TO WOLF ROAD
BEGINS STA. 164+93.7

OMISSION
STA. 229+10 - STA. 232+00



LOCATION MAP
NO SCALE

FOR UNDERGROUND UTILITY
LOCATIONS, CALL:
J.U.L.I.E.
TOLL FREE
TEL. 1-800-892-0123

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

DESIGN DESIGNATION
31,966 ADT (OO) MINOR ARTERIAL (COMP-20)
CONTRACT NO. 80579

GROSS LENGTH OF PROJECT = 27,606.3 FT. = 5.229 MILES
NET LENGTH OF PROJECT = 27,215.3 FT. = 5.154 MILES

NOTE: WHEREVER IN THESE PLANS
REFERENCE IS MADE TO BRIDGE
APPROACH PAVEMENT STD. 2302,
IT SHALL MEAN BRIDGE APPROACH
PAVEMENT MODIFIED.
(SEE SHEETS 96 & 97.)

David P. Heslinga DATE 7/17/92
DAVID P. HESLINGA
ILLINOIS REGISTERED PROFESSIONAL ENGINEER NO. 062-36274
MY LICENSE EXPIRES ON 11-30-92

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED July 17 1992

EXAMINED [Signature]

PASSED Sept. 4 1992 [Signature]

APPROVED Sept. 4 1992 [Signature]

PRINTED UNDER THE AUTHORITY
OF THE STATE OF ILLINOIS

DESIGN CONSULTANT:
DONOHUE & ASSOCIATES, INC.
1501 WOODFIELD ROAD, SUITE 200E
SCHAUMBURG, ILLINOIS 60173
PHONE: (708) 605-8800

CONSULTANT PROJECT ENGINEER RICK YOUNG 708-705-4232

BENCH MARKS

TBM # 1 - A "x" of the Northwest Corner of the Bridge over the Railroad Tracks (Northside of Cermak Road on Wingwall Sta. 268+57 / 37' L, El. 648.84)

TBM # 2 - An "x" of the Northwest Corner of the Bridge over 25th Avenue (Northside of Cermak Road adjacent to parapet wall) Sta. 281+63 / 37' L (22nd), El. 646.41

DESCRIPTION

CERMAK ROAD OVER 25TH AVENUE
 Sta. 282+73.20 S.B.T. Rte. 55 - Sect. 551-VR Built in 1961
 Structure No. 016-0632

Substructure: Pile bent abutments & multiple column Reinf. Conc. Piers
 Superstructure: 3-span Non-Composite Steel beams
 Repair & overlay concrete deck. Repair piers & slopewalls. Repair Abutments
 Bearing removal & replacement & joint repair
 Traffic to be maintained utilizing staged construction.

GENERAL NOTES

Fasteners shall be high strength bolts. Bolts 3/4" ϕ , open holes 5/8" ϕ , unless otherwise noted.

Two 1/8" adjusting shims, of the dimension of the bottom pedestal plate, shall be provided for each bearing in addition to all other plates or shims. The adjusting shims shall be used if required to maintain the beams at their original elevations.

The first two coats of the Lead & Chromate-free Alkyd Paint System shall be used for shop & field painting of new structural steel.

Structural steel shall only be cleaned & painted as required by the Special Provision "Cleaning and Painting New Steel and Adjacent Areas of Existing Steel Structures."

Field welding of construction accessories will not be permitted to the bottom flange of beams nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.

Slope wall shall be reinforced with welded wire fabric, 6" x 6" - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the contractor's responsibility to verify such dimensions and details in the field 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 the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The Contractor shall submit drawings for Jacking & Removing Existing Bearings. See Special Provisions.

Prior to pouring of the new concrete for the deck, all loose rust, loose mill scale, & all other foreign material shall be removed from the embedded portions of flanges of beams and diaphragms. The removal shall be accomplished in accordance with the requirements of the SSPC Surf. Prep. Specs. SP-11 for Power Tool Cleaning or SP-2 for Hand Tool Cleaning. Cost shall be incidental to Concrete Removal. Bridge Seat Sealer shall be applied to the seat area of the abutments.

All bonded construction joints bet. new and existing concrete shall be made in accordance with Article 504.13 (a)(2) of the Std. Specifications.

TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|---|----------|-------|--------|--------|
| Formed Conc. Repair (Depth \leq 5") | Sq. Ft. | - | 122 | 122 |
| Concrete Removal | Cu. Yd. | 38.4 | 27.4 | 65.8 |
| Structure Excavation | Cu. Yd. | - | 46.5 | 46.5 |
| Porous Granular Embankment | Ltn. Ft. | - | 154 | 154 |
| Protective Coat | Sq. Ft. | 584.5 | 37.3 | 621.8 |
| Neoprene Expansion Joint 2" | Ltn. Ft. | 140 | - | 140 |
| Class X Concrete Superstructure | Cu. Yd. | 40.8 | - | 40.8 |
| Elastomeric Bearing Assembly Type I | Each | 24 | - | 24 |
| Elastomeric Bearing Assembly Type II | Each | 12 | - | 12 |
| Floor Drain Extension | Each | 20 | - | 20 |
| Class X Concrete | Cu. Yd. | - | 20.2 | 20.2 |
| Furnishing & Erecting Structural Steel | Pounds | 1950 | 11,980 | 13,930 |
| Jack & Remove Existing Bearings | Each | 36 | - | 36 |
| Reinforcement Bars, Epoxy Coated | Pound | 5,550 | 4,250 | 9,800 |
| Temporary Sheet Piling | Sq. Ft. | - | 440 | 440 |
| Pipe Underdrains 6" | Ltn. Ft. | - | 236 | 236 |
| Aluminous Conc. Removal (Deck) | Sq. Yd. | 1,213 | - | 1,213 |
| Slopewall Removal & Replacement | Sq. Yd. | - | 679.8 | 679.8 |
| Protective Shield | Sq. Yd. | 506 | - | 506 |
| Bridge Deck Concrete Overlay | Sq. Yd. | - | - | - |
| Option (1=3%) | Sq. Yd. | 1,199 | - | 1,199 |
| Conc. Bridge Deck Surf. Rem. (Method 3) | Sq. Yd. | 1,147 | - | 1,147 |
| Deck Slab Repair (Full-Depth, Type I) | Sq. Yd. | 26 | - | 26 |
| Bridge Seat Sealer | Sq. Ft. | - | 210 | 210 |
| Removing and Re-Erecting Existing Railing | Lin. Ft. | 120 | - | 120 |

* See Special Provisions

DESIGN SPECIFICATIONS

1989 AASHTO, 1990 & 1991 INTERIMS
 (New Construction Only)

LOADING HS20-44

No Additional Allowance for F.W.S.

DESIGN STRESSES

$f'_c = 3,500$ psi.
 $f_y = 60,000$ psi. (Reinf.)
 $f_y = 36,000$ psi. (Struct) M270 Gr. 36

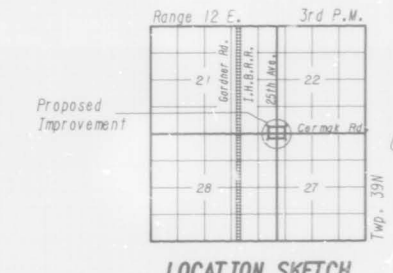
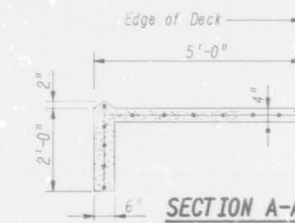
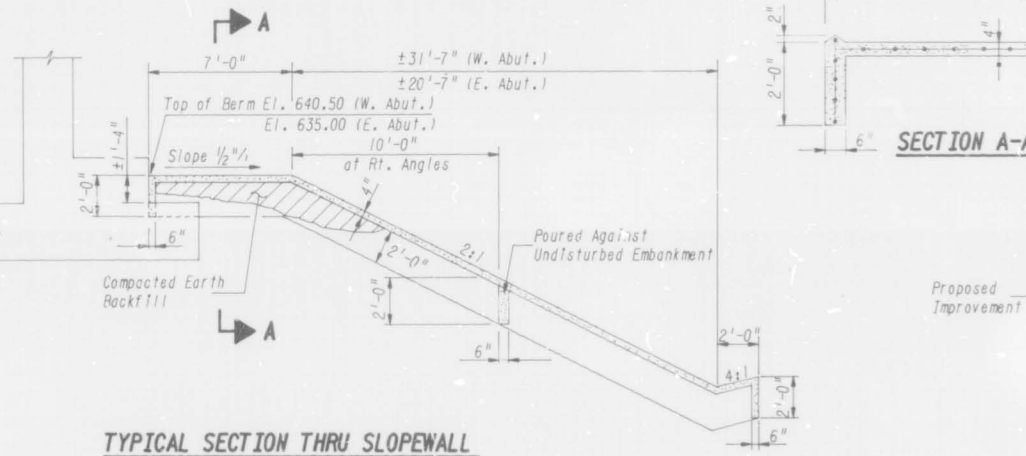
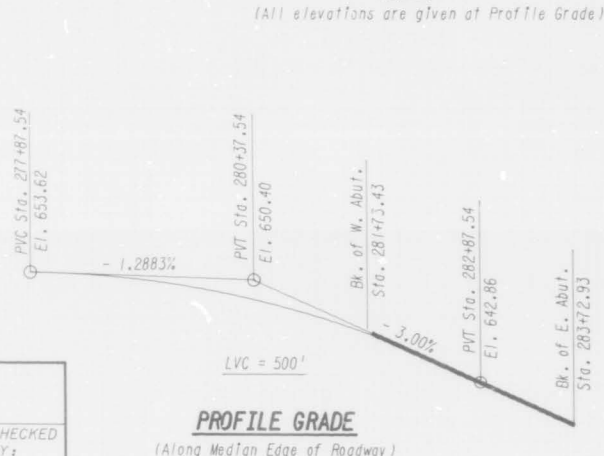
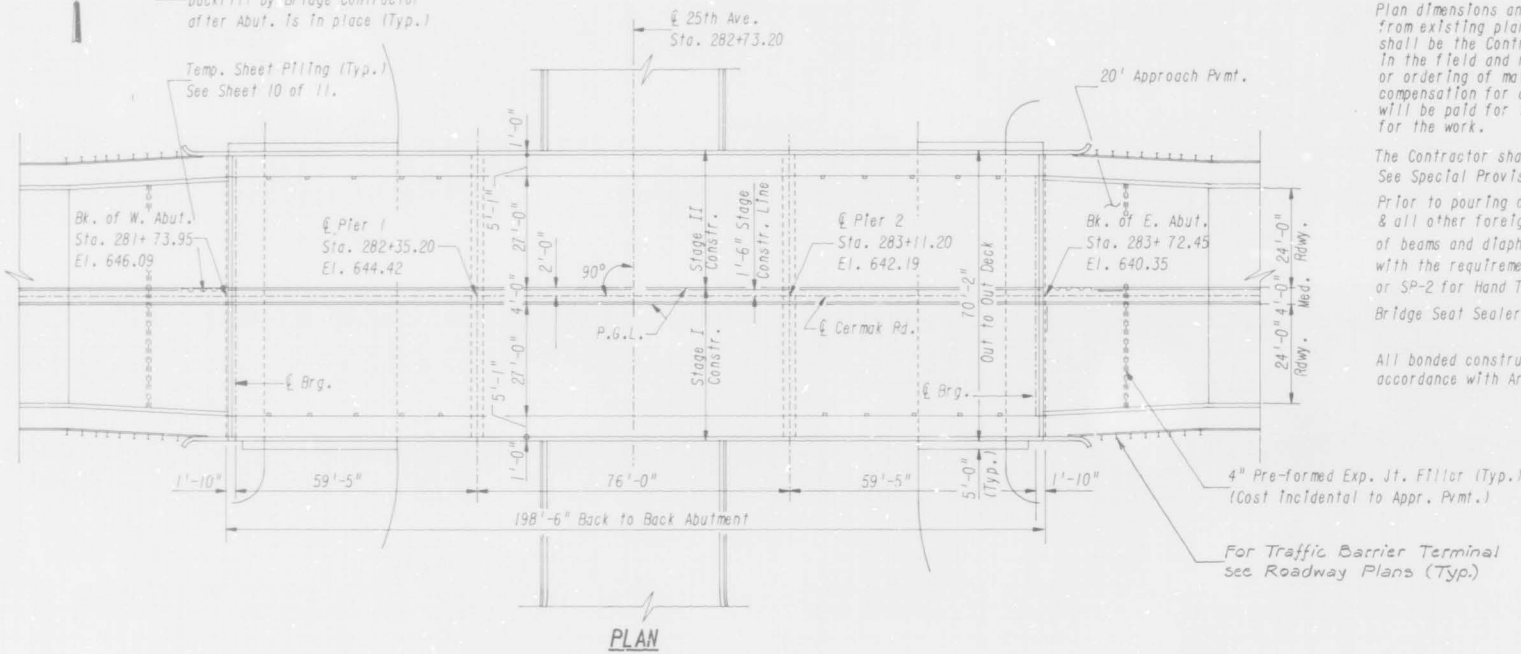
DESIGN STRESSES

$f_c = 1,000$ psi. (Substructure)
 $f_c = 1,400$ psi. (Superstructure)
 $f_s = 20,000$ psi. (Reinf.)
 $f_s = 18,000$ psi. (Struct.)

APPROVED
 FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson
 Engineer of Bridges and Structures

Phillip D. Frey
 EXP. 11/30/92



ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAK ROAD OVER 25TH AVENUE
GENERAL PLAN
 F.A.U. RTE 145
 SECTION 551WRS & 551 (B, XB, YB & VB-1) BR-89
 STA. 282+73.20
 COOK COUNTY
 Structure #: 016-0632 Date: Jan., 1992

Donohue
 Engineers & Architects

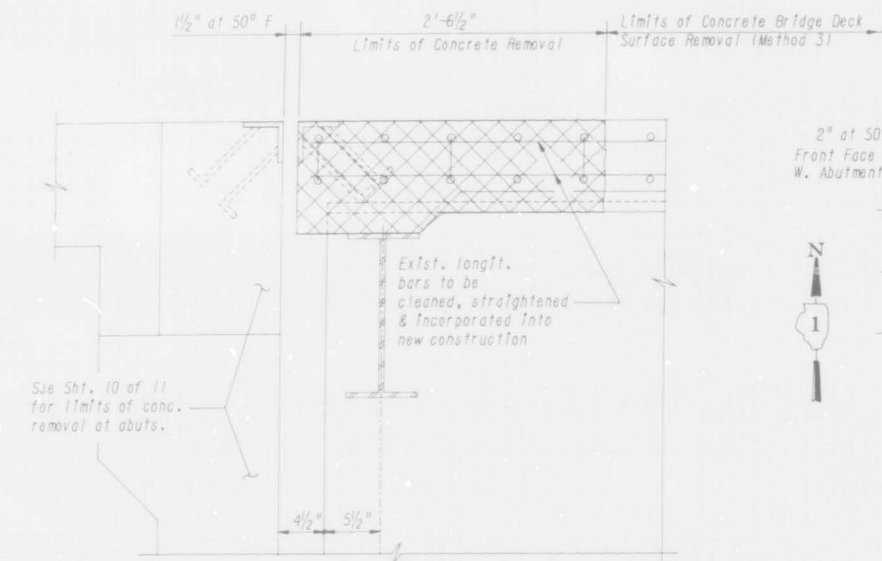
| | | | |
|-------------------|------------------------|----------------|------------------|
| DESIGN BY: J.H.R. | DESIGN CK'D BY: S.C.L. | DRAWN BY: E.Z. | CHECKED BY: H.S. |
|-------------------|------------------------|----------------|------------------|

PROJECT NUMBER 18046.005

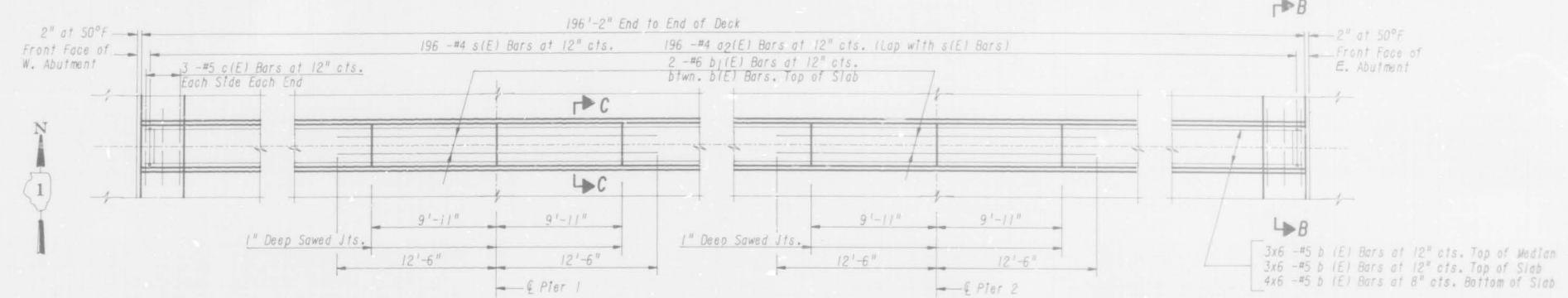
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 SCALE: _____

| F.A.U. NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|--|---------|--------|--------------|-----------|
| 1453 | ** | COOK | 233 | 156 |
| FED. ROAD DIST. NO. BILLBOARD FED. AID PROJECT | | | | |

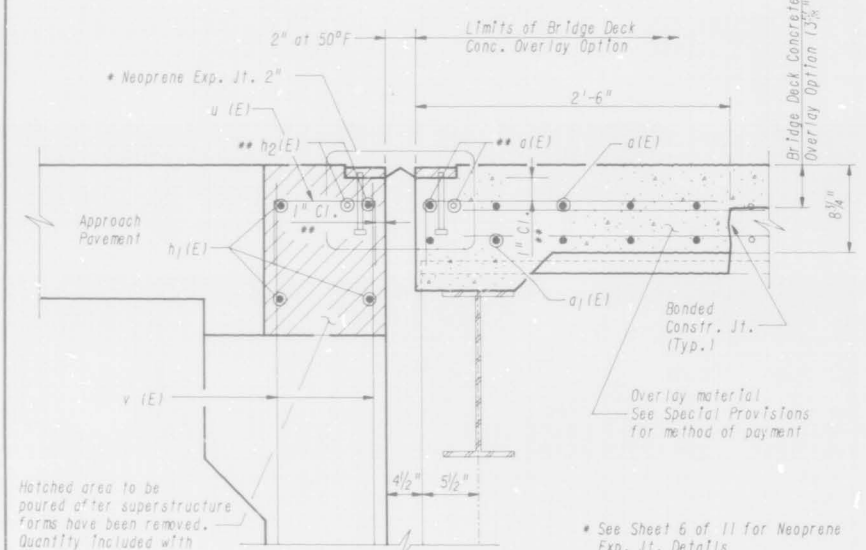
**SECTION 551WRS 8
551 (B, XB, VB & VB-1) BR-B9



SHOWING REMOVAL
(All reinforcement, angle & studs within removal area shall be removed except as noted).



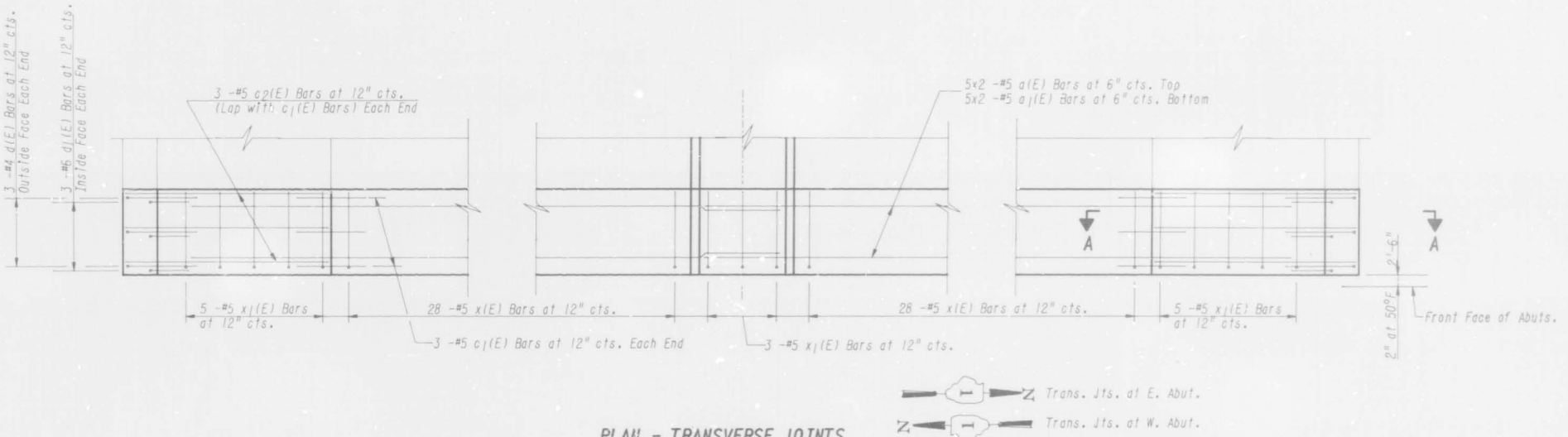
PLAN - MEDIAN



SECTION D-D
SHOWING NEW CONSTRUCTION

LEGEND

- Concrete Removal



PLAN - TRANSVERSE JOINTS

a2(E), b1(E), c2(E) & s(E) bars not shown for clarification of drawing.

NOTES:
For Sections A-A, B-B, & C-C, see Sheet 4 of 11.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 2x3 #5 etc. indicates 2 lines of bars with 3 lengths per line.
Minimum lap for #5 bars = 2'-2"

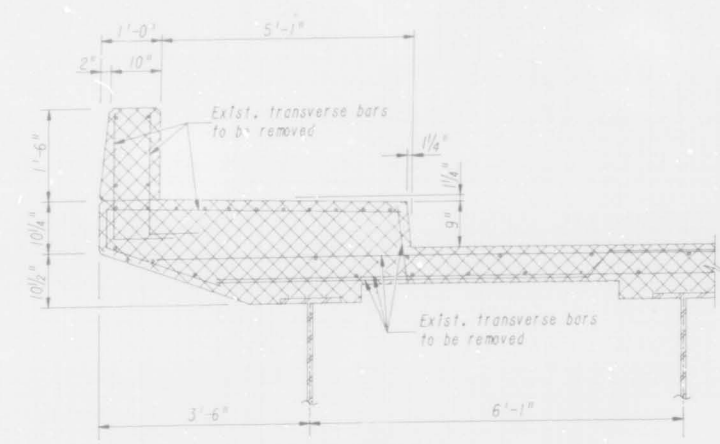
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 FILE=TRANJIT1.DGN
 W.U.=
 SCALE=1/4" = 1'-0" DATE:

| | | | |
|--|----------------------------|-------------------|-----------------------|
| Donohue Engineers & Architects COMPUTER AIDED DESIGN/CONSTRUCTION | | | |
| DESIGN BY: S.C.L. | DESIGN CK'D. BY: P.D.F. | DRAWN BY: E.Z. | CHECKED BY: S.C.L. |
| PROJECT NUMBER 18046.005 | | | |

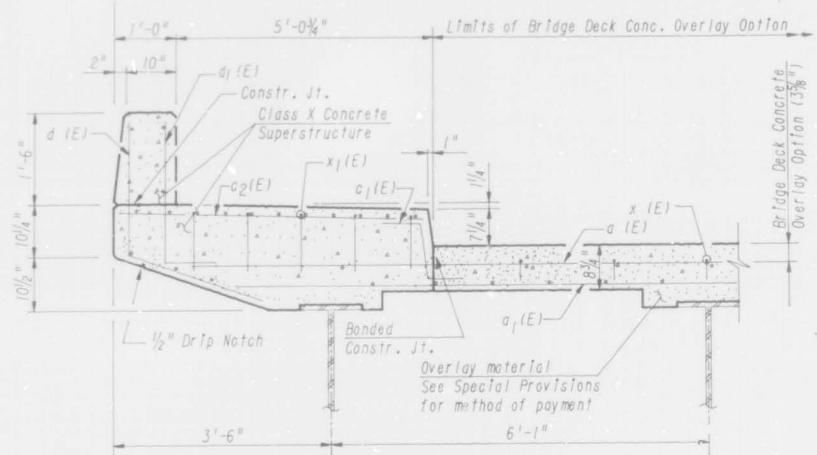
ILLINOIS DEPARTMENT OF TRANSPORTATION
 CERMAK ROAD OVER 25th AVENUE
TRANSVERSE JOINTS & MEDIAN
 F.A.U. RTE 1453
 SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-B9
 STA. 282+73.00
 COOK COUNTY
 Structure #: 016-0632 Date: Jan., 1992



| | | | | | | |
|--|--|---------------------|---------|------------------|--------------|-----------|
| **SECTION 551WRS B 551 (B, XB, VB & VB-1) BR-B9 | | F.A.U. NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| | | 1453 | ** | COOK | 233 | 157 |
| | | FED. ROAD DIST. NO. | STATE | FED. AID PROJECT | | |
| | | | | | | |

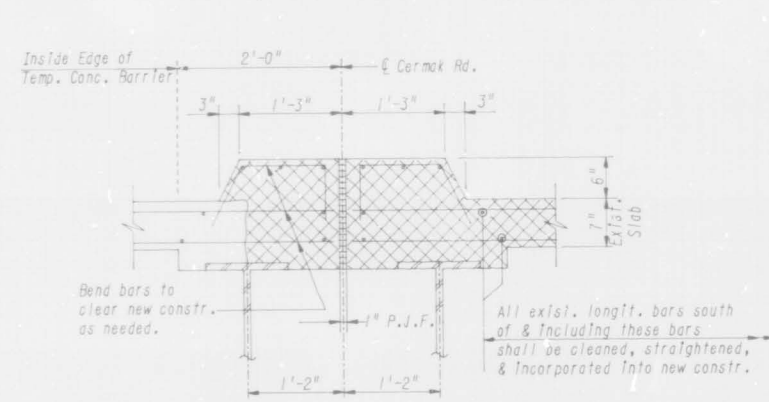


SHOWING REMOVAL
All exst. longitudinal bars shall be cleaned, straightened, & incorporated into new construction.

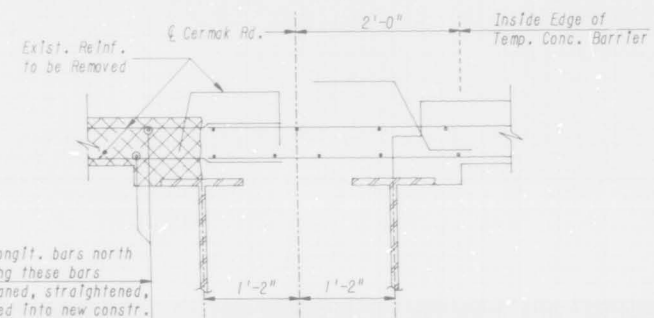


SHOWING NEW CONSTRUCTION
Geometry of new slab, sidewalk and parapet shall match existing.

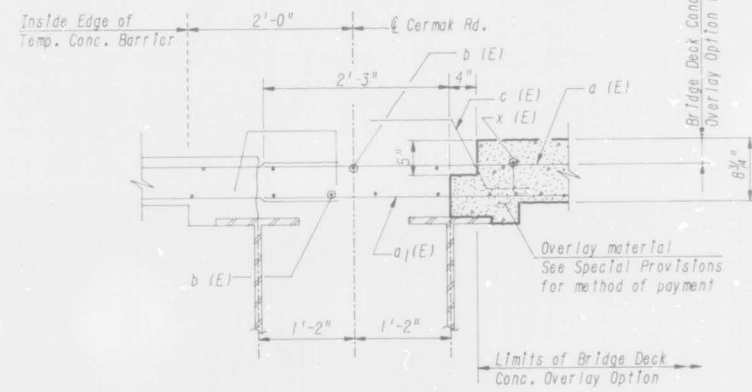
SECTION A-A



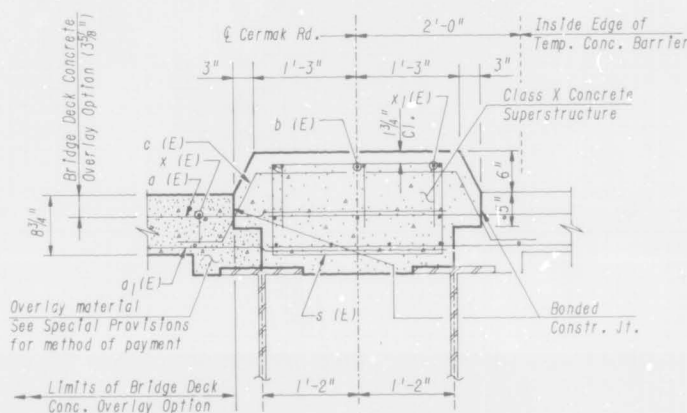
SHOWING STAGE I REMOVAL
All exst. reinf. bars to be removed except as noted.



SHOWING STAGE II REMOVAL

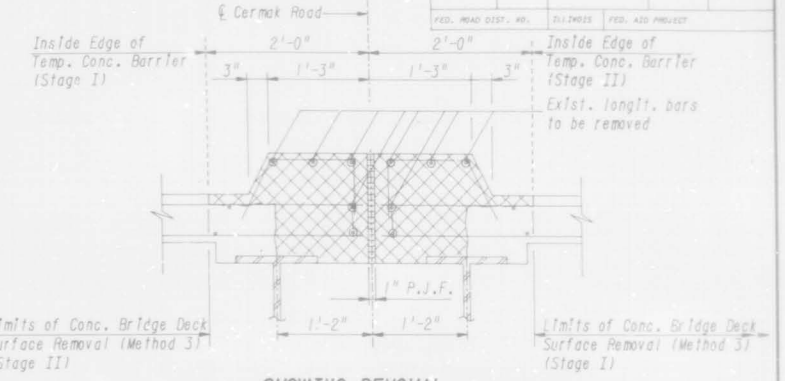


SHOWING STAGE I CONSTRUCTION



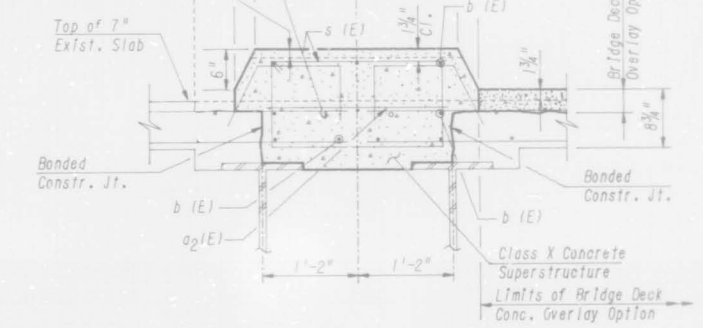
SHOWING STAGE II CONSTRUCTION

SECTION B-B
Looking East

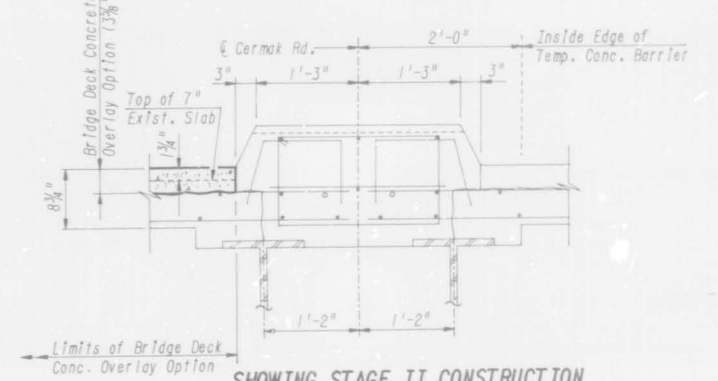


SHOWING REMOVAL & INCORPORATED INTO NEW CONSTRUCTION

All exst. transverse bars shall be cleaned, straightened, & incorporated into new construction.



SHOWING STAGE I CONSTRUCTION



SHOWING STAGE II CONSTRUCTION

LEGEND

- Concrete Removal

SECTION C-C
Looking East

ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAK ROAD OVER 251st AVENUE
TRANSVERSE JOINT & MEDIAN DETAILS
F.A.U. RTE 1453
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-B9
STA. 282+73.20
COOK COUNTY

Structure #: 016-0632 Date: Jan., 1992

DATE: _____
SCALE: _____
W.U. = _____
FILE: t11r01j12.dgn
PRF: t11r01j12.prf

| | | | |
|--|------------------|-----------|-------------|
| Donohue Engineers & Architects | | | |
| DESIGN BY: | DESIGN CK'D. BY: | DRAWN BY: | CHECKED BY: |
| S.C.L. | P.D.F. | E.Z. | H.S. |
| PROJECT NUMBER 18046.005 | | | |



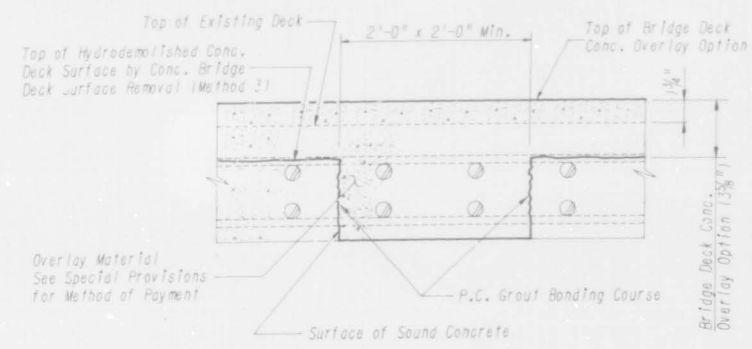
**SUPERSTRUCTURE
BILL OF MATERIAL**

| BAR | NO. | SIZE | LENGTH | SHAPE |
|--|-----|------|----------|-------|
| a(E) | 20 | #5 | 33'-9" | — |
| a ₁ (E) | 20 | #5 | 34'-9" | — |
| a ₂ (E) | 196 | #4 | 2'-0" | — |
| b(E) | 60 | #5 | 34'-6" | — |
| b ₁ (E) | 4 | #6 | 25'-0" | — |
| c(E) | 12 | #5 | 2'-6" | — |
| c ₁ (E) | 12 | #5 | 2'-6" | — |
| c ₂ (E) | 12 | #5 | 5'-8" | — |
| d(E) | 12 | #4 | 4'-6" | — |
| d ₁ (E) | 12 | #6 | 3'-3" | — |
| s(E) | 196 | #4 | 6'-9" | — |
| x(E) | 112 | #5 | 2'-9" | — |
| x ₁ (E) | 26 | #5 | 3'-2" | — |
| Removing and Re-Erecting Existing Railing | | | | |
| | | | Lin. Ft. | 120 |
| Concrete Removal | | | | |
| | | | Cu. Yd. | 38.4 |
| Concrete Bridge Deck Surf. Rem. (Method 3) | | | | |
| | | | Sq. Yd. | 1,147 |
| Deck Slab Removal (Full Depth, Type I) | | | | |
| | | | Sq. Yd. | 26 |
| Reinforcement Bars, Epoxy Coated | | | | |
| | | | Pound | 5,550 |
| Bridge Deck Conc. Overlay Option (3%) | | | | |
| | | | Sq. Yd. | 1,199 |
| Class X Concrete Superstructure | | | | |
| | | | Cu. Yd. | 40.8 |
| Neoprene Expansion Joint 2" | | | | |
| | | | Lin. Ft. | 140 |
| Floor Drain Extension | | | | |
| | | | Each | 20 |

*** Based on an assumption that 6% of delaminated areas indicated on Sheet 2 will require Deck Slab Removal (Full-Depth, Type I). Actual quantity may vary.

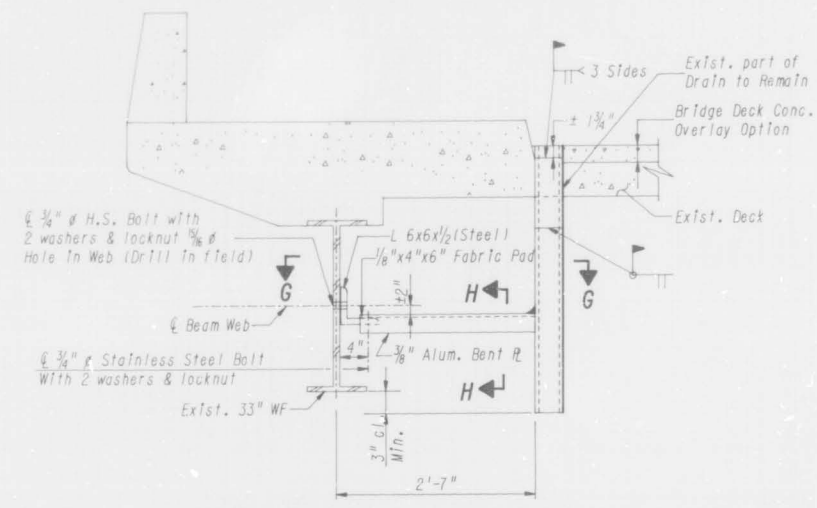
Reinforcement bars designated (E) shall be epoxy coated.

Bars indicated thus 2 x 3 = #5 etc. indicates 2 lines of bars with 3 lengths per line.

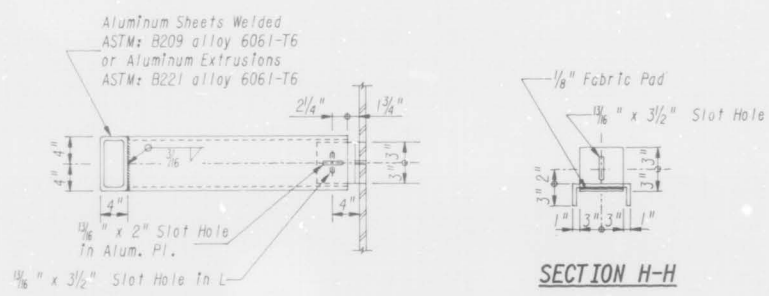


BRIDGE DECK CONC. OVERLAY - METHOD 3

1. Remove existing variable thickness bituminous concrete overlay.
2. Remove the entire surface area of the concrete deck, as shown on the plans, to a depth that will generally expose the upper half of the topmost bars in the main upper reinforcing mat. Removal shall be accomplished using hydrodemolition equipment.
3. After the hydrodemolition is complete & the deck surface has been cleaned, the Engineer may direct additional removal. This removal shall be accomplished using power-driven hand tools or hydrodemolition equipment if approved by the Engineer.
4. Where concrete removal by hydrodemolition has exposed the lower mat of reinforcement, the involved area shall be removed full-depth as directed by the Engineer.
5. Provide Protective Shield beneath Deck Slab Removal (Full Depth).
6. Clean exist. reinforcement bars by sandblasting, as directed by the Engineer.
7. Any existing reinforcement bars which have a loss of more than 25% of their cross-section through corrosion shall be replaced as directed by the Engineer. No welding of bars will be permitted. New bars should be lapped a minimum of 30 bar diameters to existing bars.
8. Forms shall be provided to enable placement of new concrete. Immediately ahead of placing the overlay mixture, a thin coating of grout shall be placed.
9. All patches shall be poured using the overlay material at the time of placement of the overlay. The concrete shall be placed to the level of hydrodemolished deck & shall be thoroughly consolidated with hand-held vibrators.
10. Place Bridge Deck Concrete Overlay Option.
11. See Special Provisions for Bridge Deck Overlay.

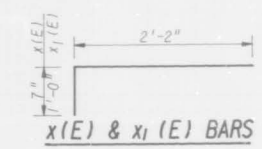
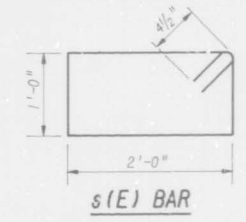
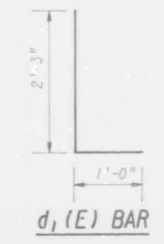
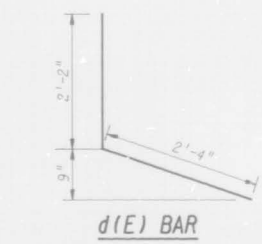
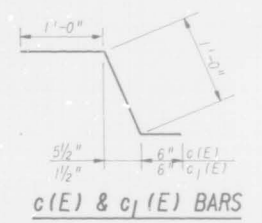


**FLOOR DRAIN EXTENSION DETAIL
(20 Required)**



SECTION G-G

SECTION H-H



PWF= superdet.000 TAPE NO.
FILE= superdet.dgn
W.U.=
SCALE=
DATE=

Donohue
Engineers & Architects
CORPORATE DESIGNATION

| | | | |
|------------|--------------|-----------|-------------|
| DESIGN BY: | DESIGN CK'D. | DRAWN BY: | CHECKED BY: |
| S.C.L. | BY: J.H.R. | R.K.B. | S.C.L. |

PROJECT NUMBER 18046.005

ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAK ROAD OVER 251st AVENUE

SUPERSTRUCTURE DETAILS

F.A.U. RTE 1453
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89
STA. 282+73.20
COOK COUNTY

Structure #: 016-0632 Date: Jan., 1992

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|---------------------|----------|------------------|-------------|-----------|
| F.A.U. RTE. | SECTION | COUNTY | SPAL SHEETS | SHEET NO. |
| 1453 | 551-VB | COOK | 233 | 159 |
| FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT | | |

| | | |
|------------|-------------|-------------|
| Joint Size | "C" at 50°F | "D" at 50°F |
| 2" | 2" | 1 1/2" Min. |
| 2 1/2" | 2 1/2" | 1 3/4" Min. |
| 4" | 3" | 2 1/2" Min. |

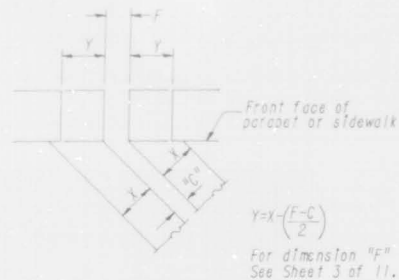
INSTALLATION NOTES

1. Install sponge mandrels into positions shown to form flap convolution.
2. Install parapet or sidewalk plate (trim roadway flap to fit before applying epoxy).
3. Install continuous seal in roadway.
4. Install anchor blocks as indicated.

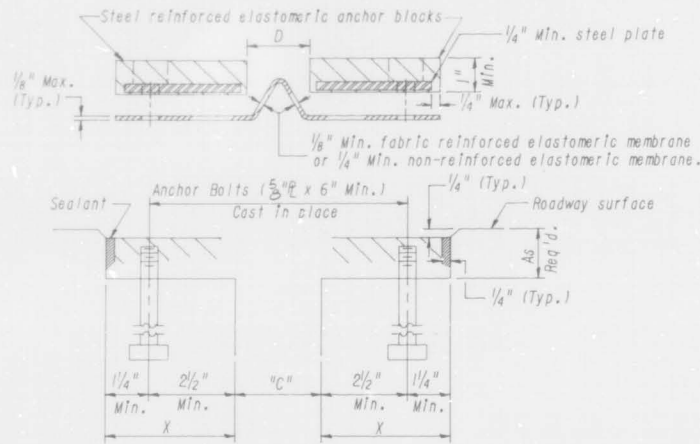
NOTE A: Maximum spacing of anchor bolts shall be 12" centers.

SKEW LIMITATIONS

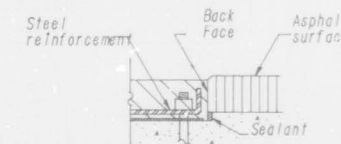
The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews. For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D", might require modifications to insure a minimum clearance of 1/2" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±12" cts.



FORMING BLOCKOUT SKETCH



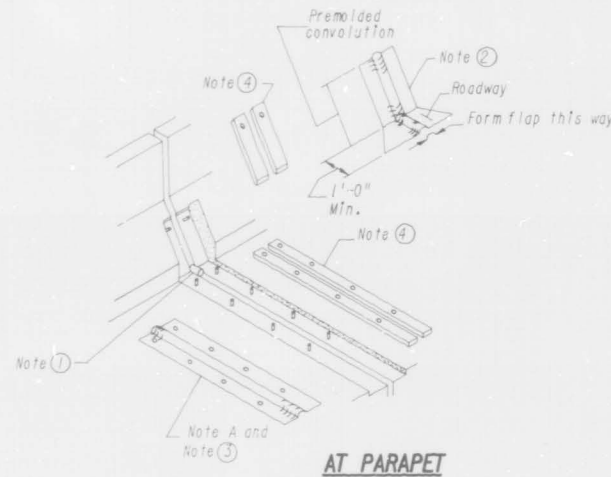
CROSS SECTION



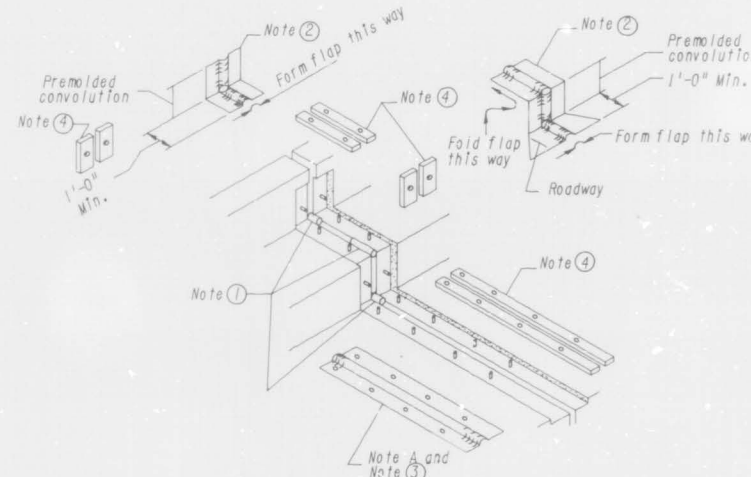
ANCHOR BLOCK REINFORCEMENT WITH ASPHALT SURFACE

GENERAL NOTES

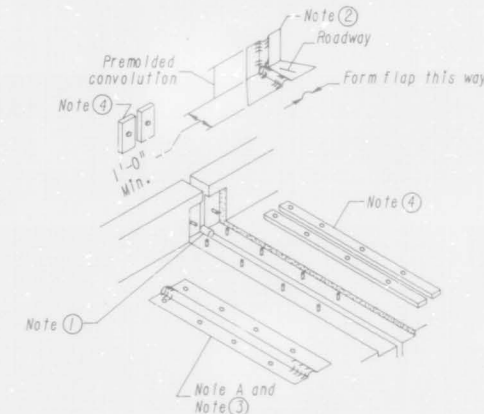
Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane. See Special Provisions.
The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.
The steel reinforcement must extend up the back face of anchor blocks when asphalt surfaces are used but is optional in concrete blockout.
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.
Joint openings shall be adjusted in accordance with Article 503.07(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.
The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.



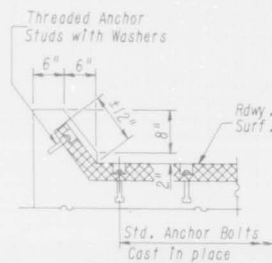
AT PARAPET



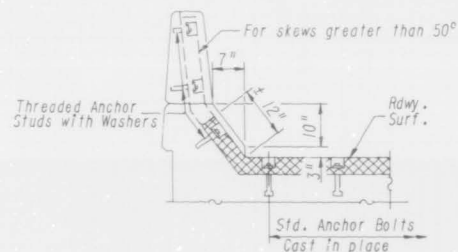
AT SIDEWALK OR MEDIAN



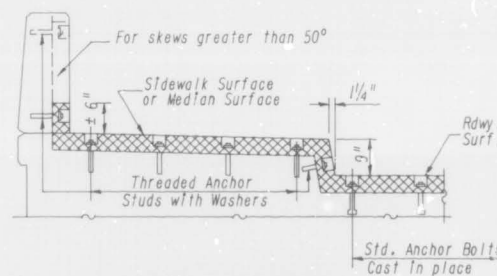
AT WALL



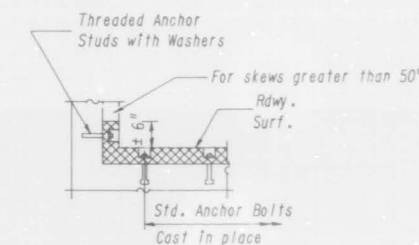
AT CURB



AT PARAPET



AT SIDEWALK OR MEDIAN TYPICAL END TREATMENTS



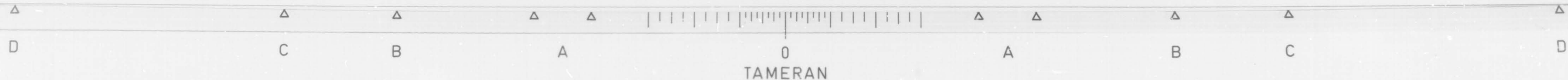
AT WALL

ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAK ROAD OVER 25th AVENUE
CONTINUOUS SEAL TYPE
NEOPRENE EXPANSION JOINTS
F.A.U. RTE 1453 SECTION 551-VB
STA. 282+73.20
COOK COUNTY

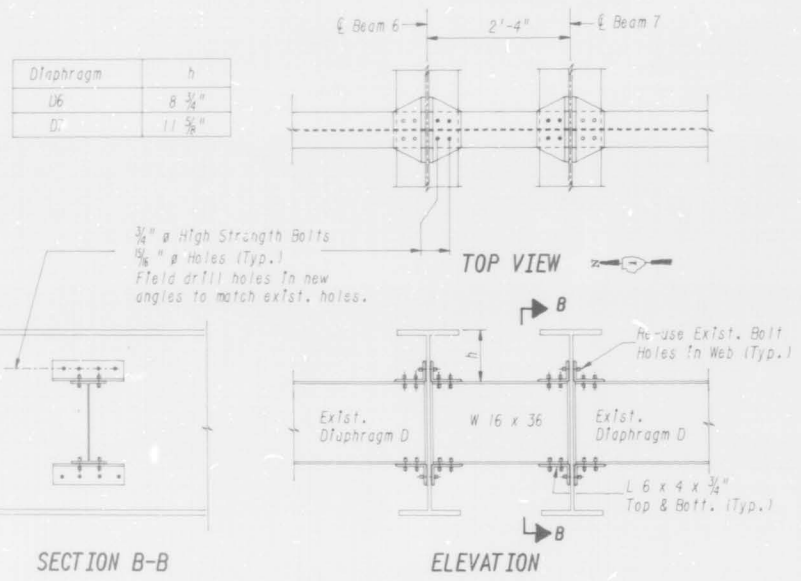
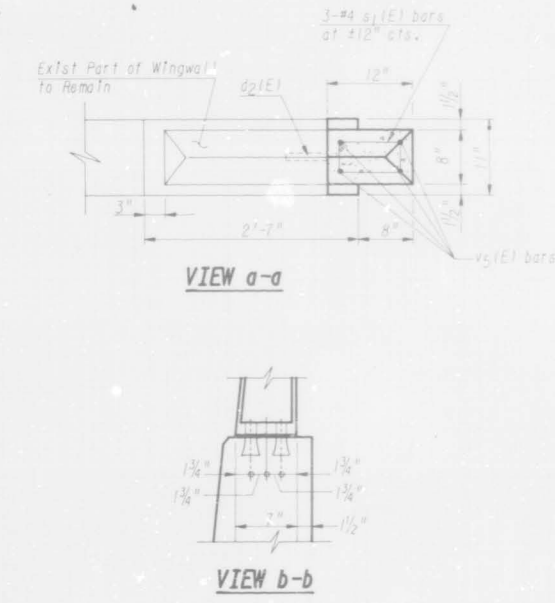
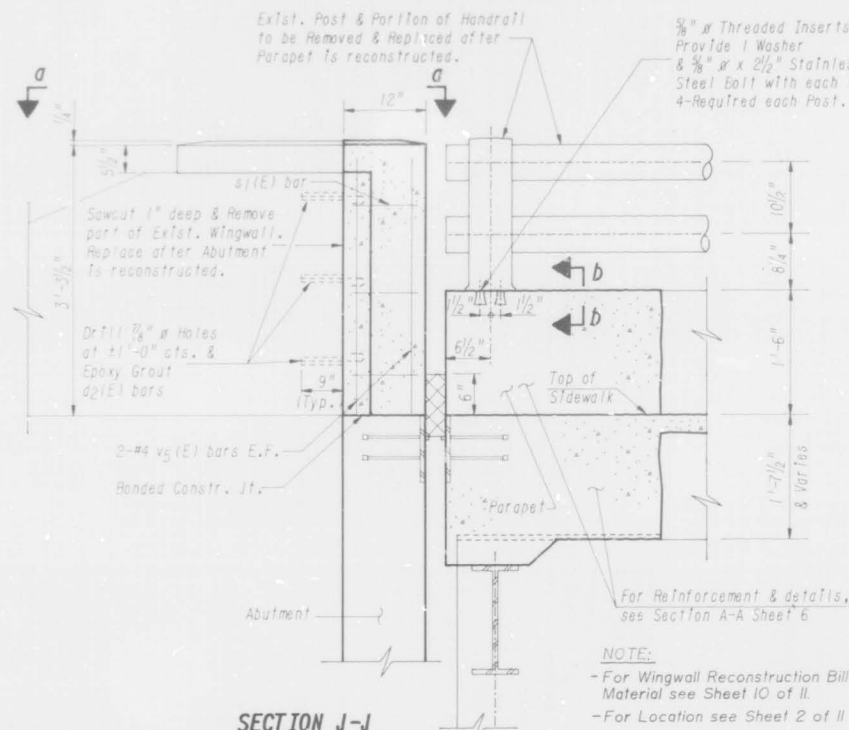
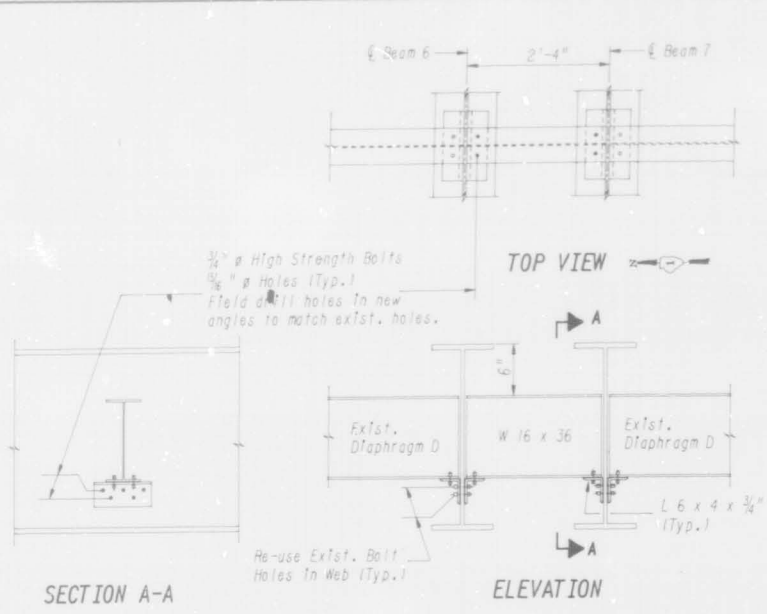
Structure #: 016-0632 Date: Jan., 1991

Sheet 6 of 11

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FILE=NEQJTB5.DGN
W.U.=
SCALE=
DATE=
EJ-CS 6-1-89



| | | | | |
|--|----------|------------------|-------------|-----------|
| F.A.U. NO. | DISTRICT | COUNTY | FEED SHEETS | SHEET NO. |
| 1453 | ** | COOK | 233 | 110 |
| FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT | | |
| ** SECTION 551WRS & 551 1B, 1X, 1Y & 1Z-1) BR-89 | | | | |



| Beam Number | Bearing W. Abut. | | | Pier 1 | | | Pier 2 | | | Bearing E. Abut. | | |
|-------------|------------------|------------|------------|--------|--------|--------|--------|------------|------------|------------------|--------|--------|
| | Span 1 | Span 2 | Span 3 | Span 1 | Span 2 | Span 3 | Span 1 | Span 2 | Span 3 | Span 1 | Span 2 | Span 3 |
| 1 | 23'-9" | 19'-1 1/2" | 16'-6 1/2" | 14'-9" | 23'-3" | 23'-3" | 14'-9" | 16'-6 1/2" | 19'-1 1/2" | 23'-9" | | |
| 2 | D | D | D | D | D | D | D | D | D | D | D | D |
| 3 | D | D | D | D | D | D | D | D | D | D | D | D |
| 4 | D | D | D | D | D | D | D | D | D | D | D | D |
| 5 | D | D | D | D | D | D | D | D | D | D | D | D |
| 6 | D1 | D6 | D7 | D7 | D7 | D6 | D7 | D7 | D7 | D6 | D1 | D1 |
| 7 | D | D | D | D | D | D | D | D | D | D | D | D |
| 8 | D | D | D | D | D | D | D | D | D | D | D | D |
| 9 | D | D | D | D | D | D | D | D | D | D | D | D |
| 10 | D | D | D | D | D | D | D | D | D | D | D | D |
| 11 | D | D | D | D | D | D | D | D | D | D | D | D |
| 12 | D | D | D | D | D | D | D | D | D | D | D | D |

FRAMING PLAN

All existing beams are W33 x 141.
All existing diaphragms D are W16 x 36.

| | 0.4 Sp. 1 | Pier 1 | 0.5 Sp. 2 | Pier 2 | 0.6 Sp. 3 |
|-----------------------------------|-----------|--------|-----------|--------|-----------|
| I _s (in ⁴) | 7,450 | 10,449 | 7,450 | 10,449 | 7,450 |
| S _s (in ³) | 447.6 | 609.5 | 447.6 | 609.5 | 447.6 |
| Q (K/ft.) | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| M _Q (K) | 196.3 | 425.6 | 201.0 | 425.6 | 196.3 |
| M _U (K) | 349.9 | 326.6 | 359.2 | 326.6 | 349.9 |
| M (Imp) (K) | 94.9 | 84.8 | 89.4 | 84.8 | 94.9 |
| M Total (K) | 641.1 | 837.0 | 649.6 | 837.0 | 641.1 |
| T _s (k.s.f.) | 17.19 | 16.48 | 17.42 | 16.48 | 17.19 |

| | W. Abut. | Pier 1 | Pier 2 | E. Abut. |
|--------------------|----------|--------|--------|----------|
| R _Q (K) | 18.5 | 65.9 | 65.9 | 18.5 |
| R _U (K) | 36.1 | 43.0 | 43.0 | 36.1 |
| Imp. (K) | 9.8 | 8.3 | 8.3 | 9.8 |
| R (Total) (K) | 64.4 | 117.2 | 117.2 | 64.4 |

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s.

Notes: Two hardened washers shall be required over all oversize holes for diaphragms.

The existing diaphragms shall be supported during the installation of the new diaphragms.
Cost Incidental to FURNISHING & ERECTING STRUCTURAL STEEL.

Donohue
Engineers & Architects
COMPUTER AIDED DESIGN

| | | | |
|-------------------|------------------------|----------------|------------------|
| DESIGN BY: J.H.R. | DESIGN CK'D BY: S.C.L. | DRAWN BY: E.Z. | CHECKED BY: H.S. |
|-------------------|------------------------|----------------|------------------|

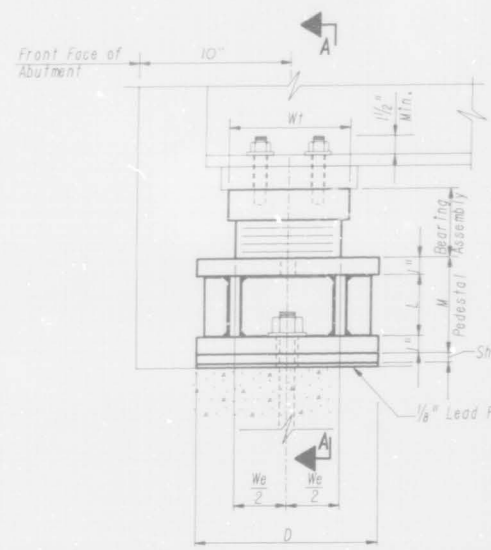
PROJECT NUMBER 18046.005

ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAN ROAD OVER 25th AVENUE
FRAMING PLAN & STRUCTURAL STEEL DETAILS
F.A.U. RTE 1453
SECTION 551WRS & 551 1B, 1X, 1Y & 1Z-1) BR-89
STA. 282+73.20
COOK COUNTY

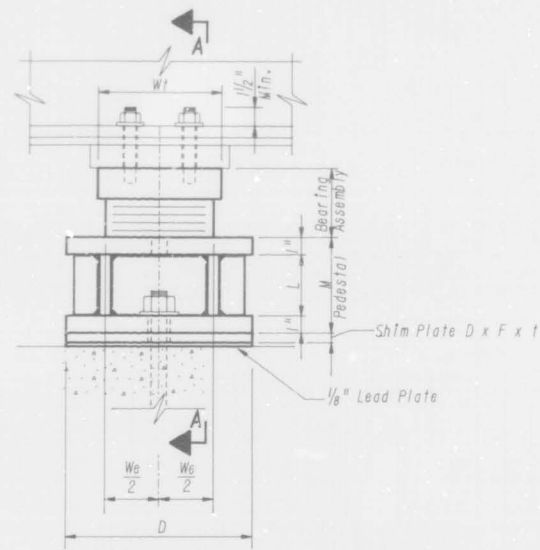
Structure #: 016-0632 Date: Jan., 1992

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SCALE=

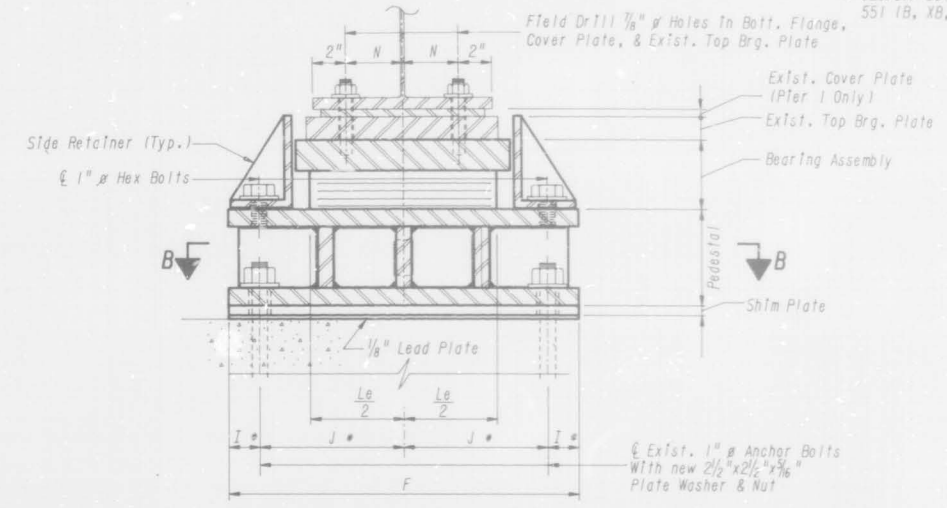




ELEVATION AT E. ABUTMENT
(Side Retainer Omitted to Clarify View)
(12 Required)

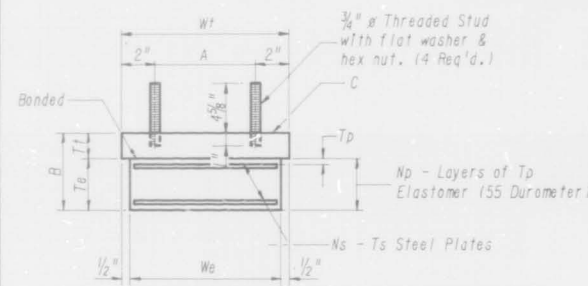


ELEVATION AT PIER 1
(Side Retainer Omitted to Clarify View)
(12 Required)



SECTION A-A

ELASTOMERIC BEARING ASSEMBLY, TYPE I



BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.

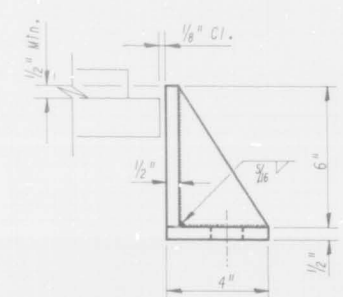
BEARING & PEDESTAL DIMENSION TABLE

| LOCATION | NO. OF BRGS. | We | Le | Np | Tp | Ns | Ts | Te | Tt | W1 | A | B | C | D | E | F | G | H | I* | J* | K | L | M | N |
|-------------|--------------|-----|-----|----|------|----|------|--------|--------|-----|----|--------|----------------|-----|--------|---------|--------|--------|--------|--------|---------|--------|--------|--------|
| E. Abutment | 12 | 7" | 12" | 5 | 3/8" | 4 | 1/2" | 2 1/4" | 2" | 8" | 4" | 4 1/4" | 2"x8"x14" | 12" | 6 1/4" | 22 1/2" | 4 1/2" | 5 1/8" | 3" | 8 1/4" | 9 1/4" | 6 1/4" | 8 1/4" | 3 3/4" |
| Pier 1 | 12 | 10" | 14" | 6 | 1/8" | 5 | 1/8" | 3 1/4" | 2 3/8" | 11" | 7" | 5 3/8" | 2 3/8"x11"x16" | 15" | 9 1/4" | 24 1/2" | 6" | 5 1/8" | 4 1/2" | 7 3/4" | 10 1/4" | 4 1/2" | 6 1/2" | 3 3/4" |

SHIM PLATE THICKNESS "t" TABLE

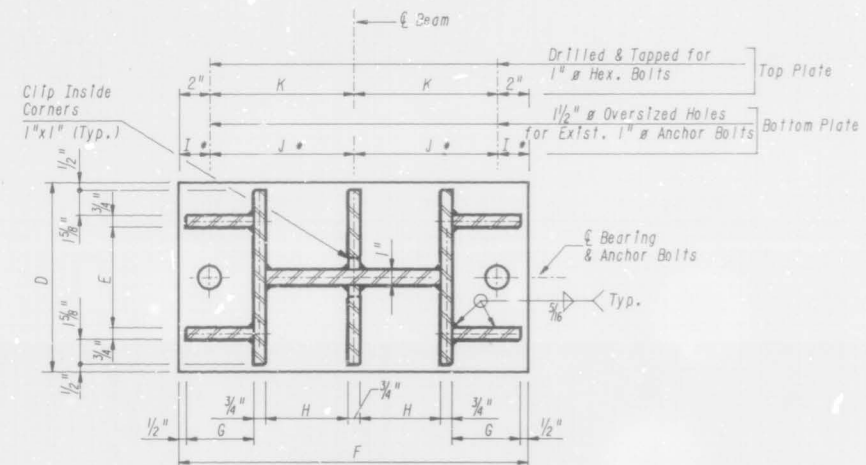
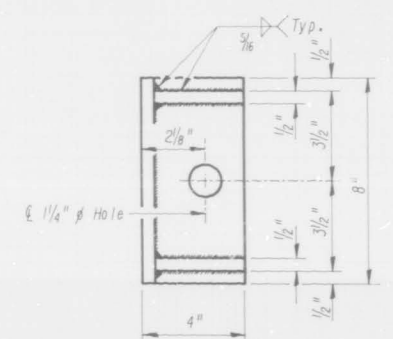
| LOCATION | BEAM | | | | | |
|-------------|---------|---------|---------|--------|--------|--------|
| | 1 or 12 | 2 or 11 | 3 or 10 | 4 or 9 | 5 or 8 | 6 or 7 |
| E. Abutment | 0 | 3/8" | 0 | 5/8" | 0 | 3/8" |
| Pier 1 | 0 | 3/8" | 0 | 7/8" | 0 | 3/8" |

* The Contractor shall field verify locations of existing anchor bolts prior to fabrication of pedestals.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight Included with Structural Steel.



SECTION B-B

(Showing bottom plate, top plate similar except as noted)

BILL OF MATERIAL

| Item | Unit | Total |
|-------------------------------------|------|-------|
| Jack & Remove Exist. Bearings | Each | 24 |
| Elastomeric Bearing Assembly Type I | Each | 24 |

Donohue
Engineers & Architects
CORPORATE HEADQUARTERS

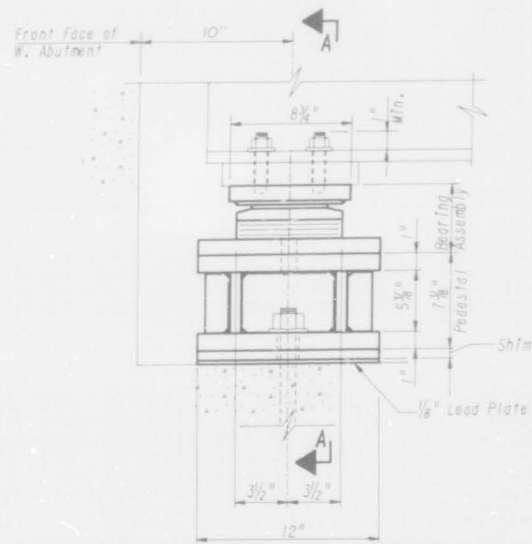
| | | | |
|--------------------------|------------------------|----------------|--------------------|
| DESIGN BY: S.C.L. | DESIGN CK'D BY: P.D.F. | DRAWN BY: E.Z. | CHECKED BY: S.C.L. |
| PROJECT NUMBER 18046.005 | | | |

ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAK ROAD OVER 251st AVENUE
ELASTOMERIC BEARING ASSEMBLY TYPE I
F.A.U. RTE 1453
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89
STA. 282+73.20
COOK COUNTY
Structure #: 016-0632 Date: Jan., 1992

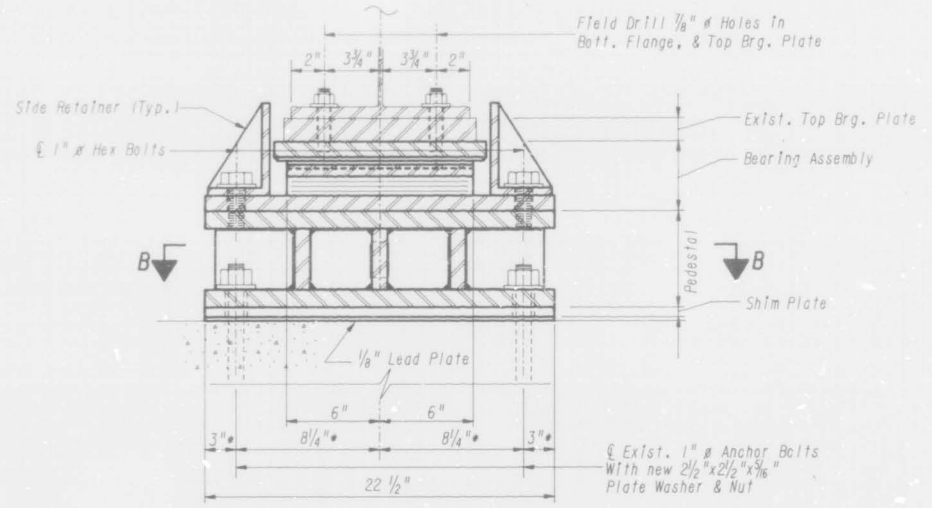
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DATE:

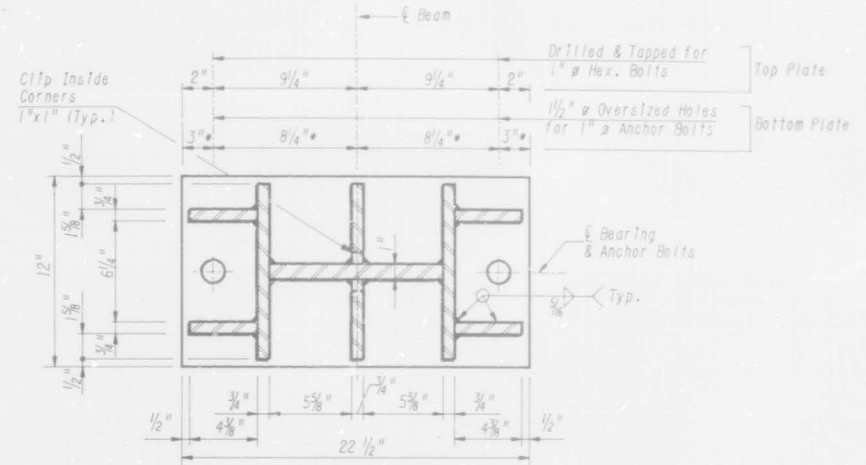




ELEVATION AT W. ABUTMENT
(Side Retainer Omitted to Clarify View)
(12 Required)
ELASTOMERIC BEARING ASSEMBLY, TYPE II

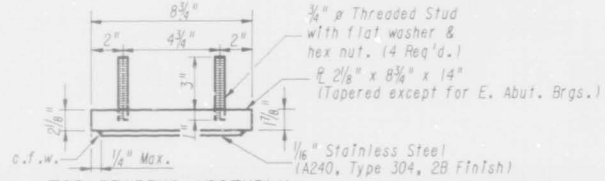


SECTION A-A

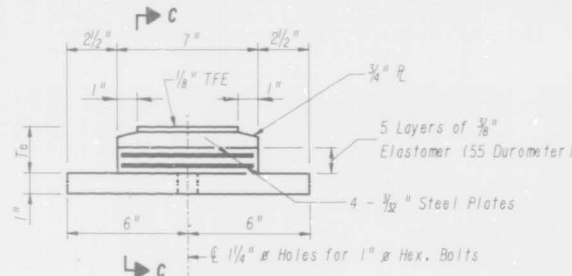


SECTION B-B
(Showing bottom plate, top plate similar except as noted)

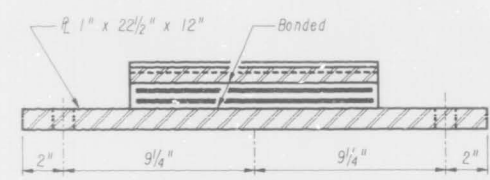
* The Contractor shall field verify locations of existing anchor bolts prior to fabrication of pedestals.



TOP BEARING ASSEMBLY
(Looking North)



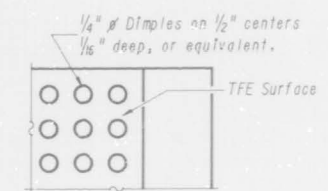
BOTTOM BEARING ASSEMBLY



SECTION C-C

SHIM PLATE THICKNESS "t" TABLE

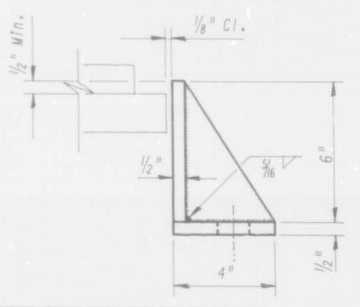
| BEAM | 1 or 12 | 2 or 11 | 3 or 10 | 4 or 9 | 5 or 8 | 6 or 7 |
|------|---------|---------|---------|--------|--------|--------|
| "4" | 0 | 3/16" | 0 | 5/8" | 0 | 3/16" |



PLAN-TFE SURFACE

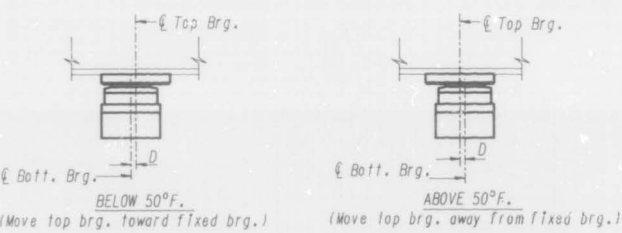
BILL OF MATERIAL

| Item | Unit | Total |
|--------------------------------------|------|-------|
| Jack & Remove Exist. Bearings | Each | 12 |
| Elastomeric Bearing Assembly Type II | Each | 12 |



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



SETTING TOP BEARING ASSEMBLIES AT EXP. BRG.

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

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

ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAK ROAD OVER 25th AVENUE

ELASTOMERIC BEARING ASSEMBLY TYPE II

F.A.U. RTE 1453
SECTION 551WRS 3 551 (B, XB, VB & VB-1) BR-89
STA. 271+6.00
COOK COUNTY

Structure #: 016-0631 Date: Jan., 1992

Donohue
Engineers & Architects

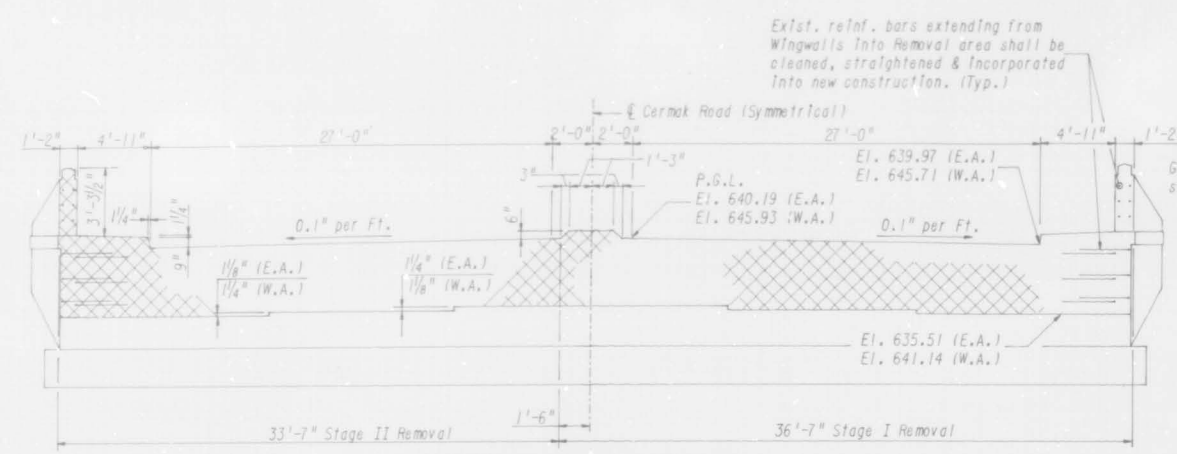
| | | | |
|------------|------------------|-----------|-------------|
| DESIGN BY: | DESIGN CK'D. BY: | DRAWN BY: | CHECKED BY: |
| S.C.L. | P.D.F. | E.Z. | S.C.L. |

PROJECT NUMBER 18046.004

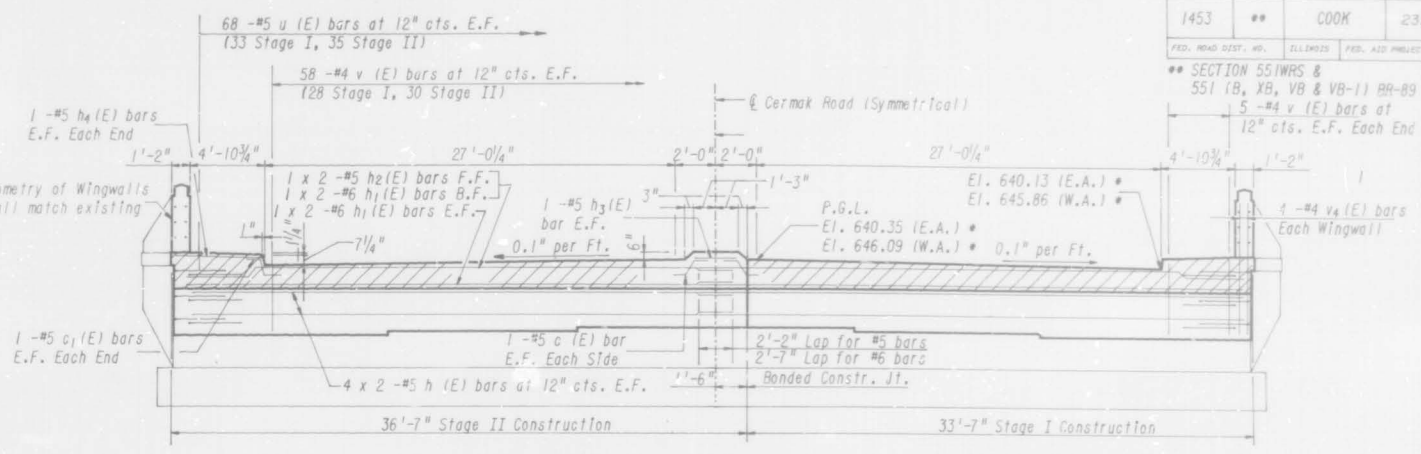
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DATE: _____
SCALE: _____

| F.A.U. R.F.E. | SECTION | COUNTY | SHEET NO. | TOTAL SHEETS |
|---------------|---------|--------|-----------|--------------|
| 1453 | ** | COOK | 233 | 163 |

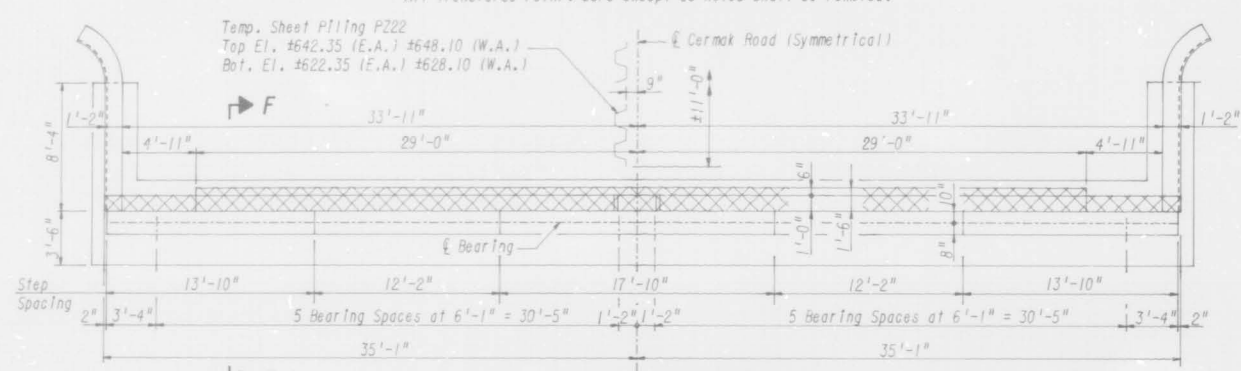
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT
 ** SECTION 55 IWBRS & 55 I (B, XB, VB & VB-1) BR-89
 5 - #4 v (E) bars at 12" cts. E.F. Each End



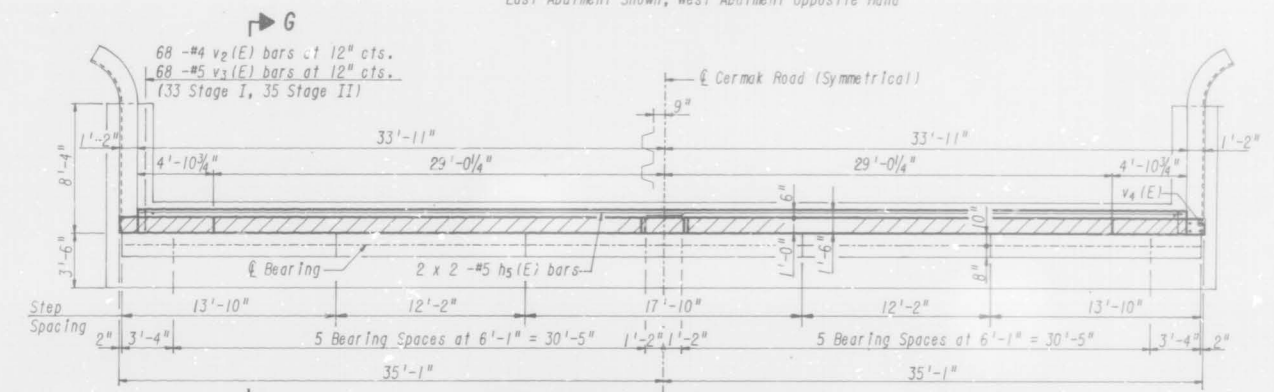
ELEVATION - SHOWING REMOVAL
 East Abutment Shown, West Abutment Opposite Hand
 All transverse reinf. bars except as noted shall be removed.



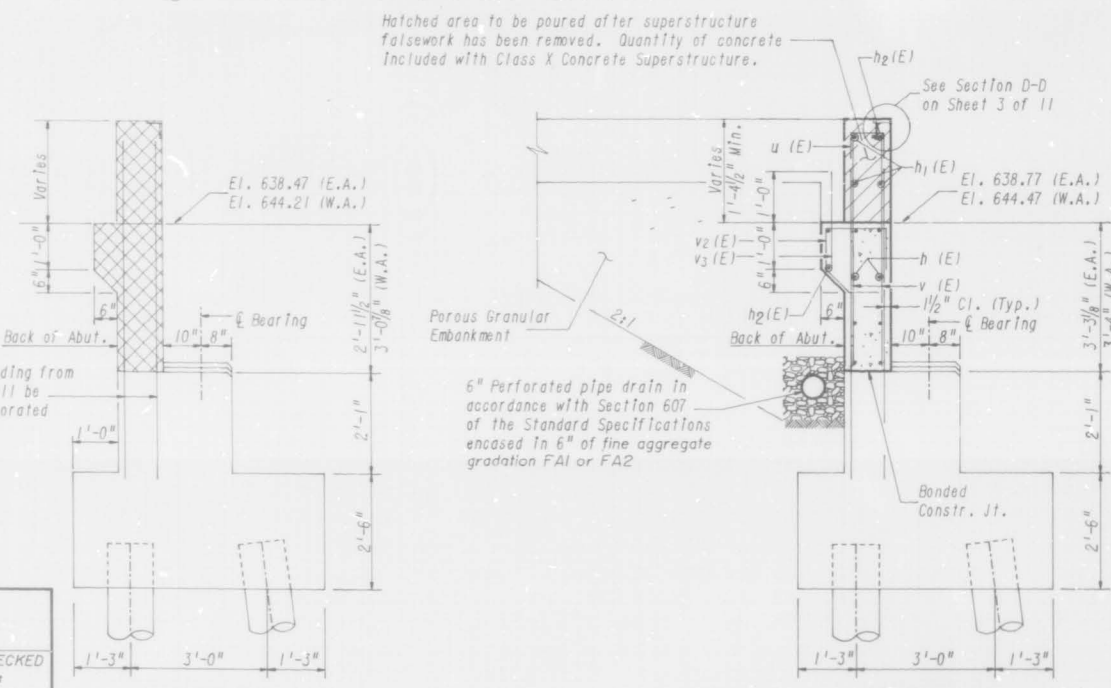
ELEVATION - SHOWING NEW CONSTRUCTION
 East Abutment Shown, West Abutment Opposite Hand
 * Elevations given at Back of Abutment



PLAN - SHOWING REMOVAL
 East Abutment Shown, West Abutment Opposite Hand

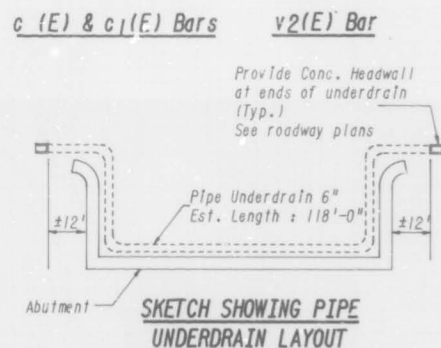
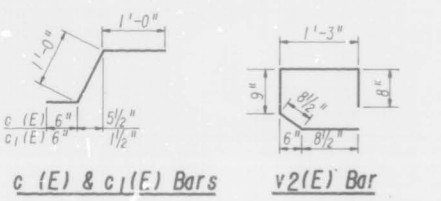
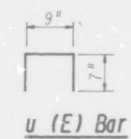


PLAN - SHOWING NEW CONSTRUCTION
 East Abutment Shown, West Abutment Opposite Hand



SECTION F-F

SECTION G-G



BILL OF MATERIALS - BOTH ABUTS.

| Bars | No. | Size | Length | Shape |
|---------------------------------|----------|------|---------|-------|
| c (E) | 8 | #5 | 2'-6" | |
| c1 (E) | 8 | #5 | 2'-6" | |
| h (E) | 32 | #5 | 35'-10" | |
| h1 (E) | 12 | #6 | 36'-0" | |
| h2 (E) | 12 | #5 | 34'-10" | |
| h3 (E) | 4 | #5 | 2'-6" | |
| h4 (E) | 8 | #5 | 5'-7" | |
| u (E) | 136 | #5 | 1'-11" | |
| v (E) | 232 | #4 | 4'-1" | |
| v1 (E) | 40 | #4 | 5'-0" | |
| v2 (E) | 136 | #4 | 4'-1" | |
| v3 (E) | 136 | #5 | 2'-0" | |
| v4 (E) | 16 | #4 | 8'-4" | |
| v5 (E) | 16 | #4 | 3'-1" | |
| s1 (E) | 12 | #4 | 2'-8" | |
| d2 (E) | 12 | #6 | 2'-0" | |
| Reinforcement Bars Epoxy Coated | Pounds | | 4250 | |
| Class X Concrete | Cu. Yd. | | 20.7 | |
| Concrete Removal | Cu. Yd. | | 27.5 | |
| Porous Granular Embankment | Cu. Yd. | | 154 | |
| Pipe Underdrain 6" | Lin. Ft. | | 236 | |
| Temp. Sheet Piling | Sq. Ft. | | 440 | |
| Structure Excavation | Cu. Yd. | | 46.5 | |

LEGENDS

- Concrete Removal
- E.F. : Each Face
- F.F. : Front Face
- B.F. : Back Face
- E.A. : East Abutment
- W.A. : West Abutment

NOTES

- Reinforcement bars designated (E) shall be epoxy coated.
- Bars indicated thus 2x3 - #5 etc. Indicates 2 lines of bars with 3 lengths per line.
- Contractor shall exercise caution not to damage exist. anchor bolts.
- The size & length of Temp. Sheet Piling are for estimation purpose only. The Contractor shall be responsible for actual design & shall submit for Engineer's approval according to Specifications.

ILLINOIS DEPARTMENT OF TRANSPORTATION
 CERMAK ROAD OVER 25th AVENUE
ABUTMENTS
 F.A.U. RTE 1453
 SECTION 55 IWBRS & 55 I (B, XB, VB & VB-1) BR-89
 STA. 282+73.20
 COOK COUNTY
 Structure #: 016-0632 Date: Jan., 1992

Donohue
 Engineers & Architects
 DESIGN BY: P.D.F. BY: S.C.L.
 DRAWN BY: S.C.L.
 CHECKED BY: S.C.L.
 PROJECT NUMBER 18046.005

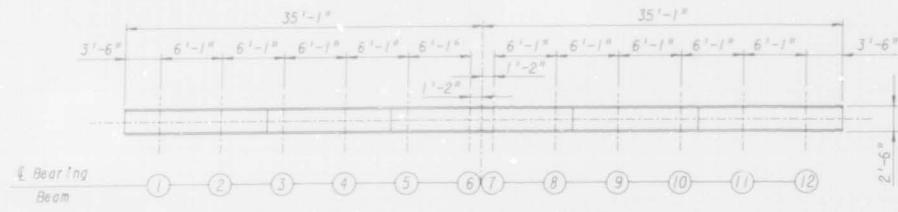
TAPE NO.
 DATE

SCALE

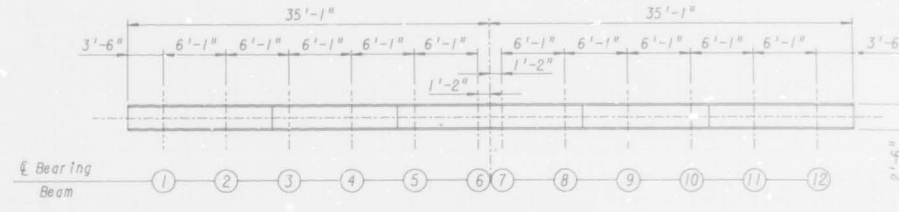


| F.A.U. R/F | SECTION | QUANTITY | TOTAL SHEETS | SHEET NO. |
|------------|---------|----------|--------------|-----------|
| 1453 | ** | COOK | 233 | 104 |

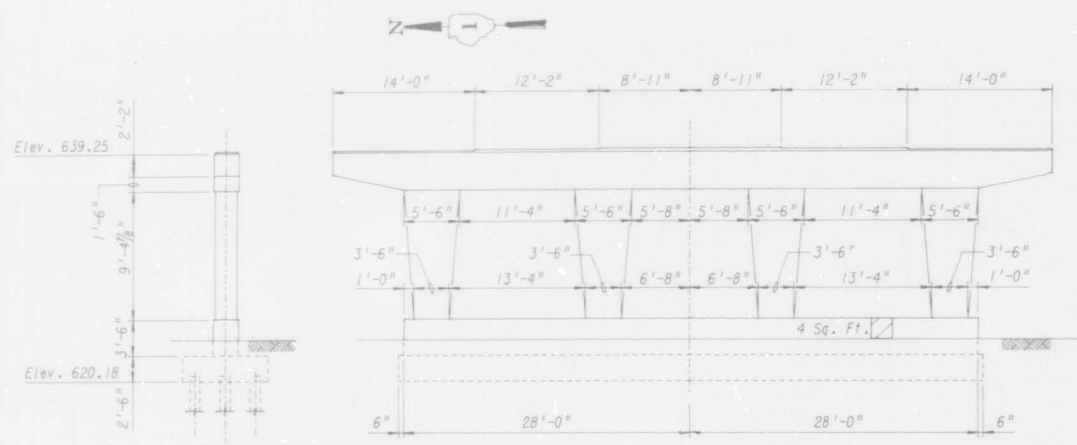
** SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89



TOP PLAN

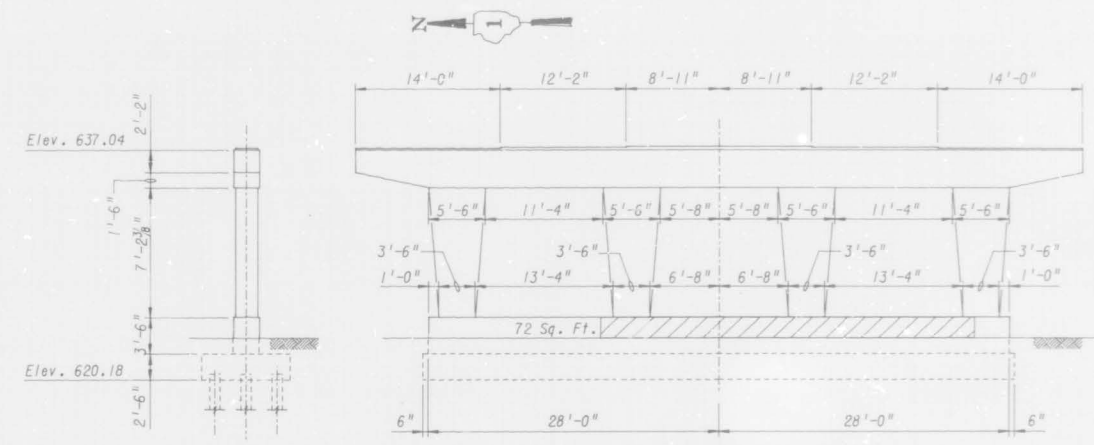


TOP PLAN



NORTH ELEVATION

WEST ELEVATION



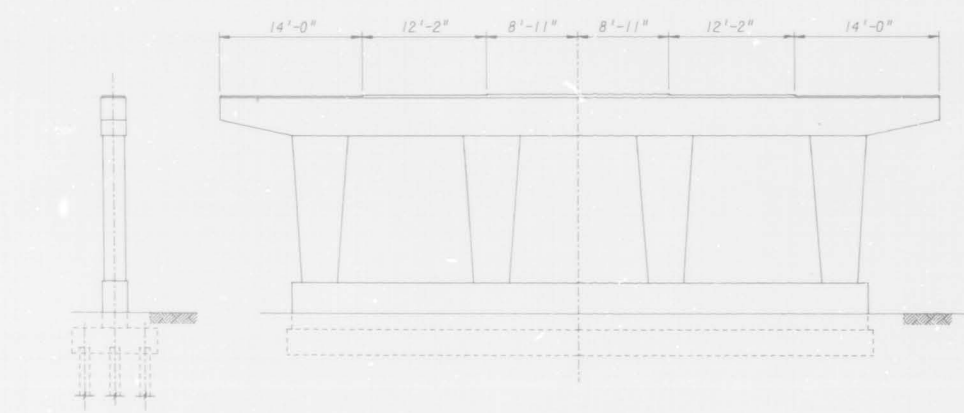
NORTH ELEVATION

WEST ELEVATION

Notes:
Quantities & locations of repair are for information purposes only. It shall be the Contractor's responsibility to verify such dimensions and details in the field 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 the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

LEGEND

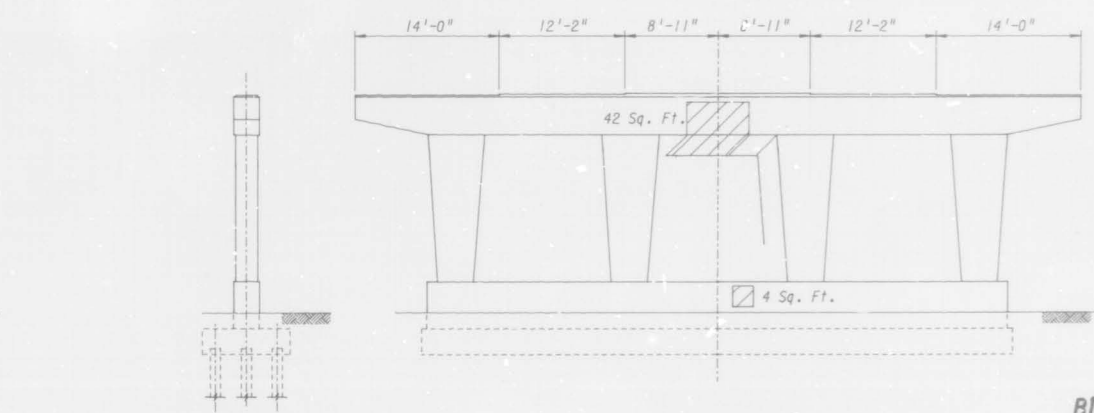
- Formed Concrete Repair (Depth equal to or less than 5")



SOUTH ELEVATION

EAST ELEVATION

PIER 1



SOUTH ELEVATION

EAST ELEVATION

PIER 2

Bill of Material

| Item | Unit | Pier 1 | Pier 2 | Total |
|----------------------------------|---------|--------|--------|-------|
| Formed Conc. Repair (Depth ≤ 5") | Sq. Ft. | 4 | 118 | 122 |

ILLINOIS DEPARTMENT OF TRANSPORTATION
CERMAK ROAD OVER 25th AVENUE
PIERS 1 & 2
F.A.U. RTE 1453
SECTION 551WRS & 551 (B, XB, VB & VB-1) BR-89
STA. 282+73.20
COOK COUNTY
Structure #: 016-0632 Date: Jan., 1992

Donohue
Engineers & Architects
DESIGN BY: J.H.R.
CK'D. BY: S.C.L.
DRAWN BY: E.Z.
CHECKED BY: S.C.L.
PROJECT NUMBER 18046.005

TAPE NO.
DATE:

PRF= FILE= W.U.= SCALE=

